V-00168-9 (915033)

CITY OF BUFFALO, ERIE COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT

MAIN-LASALLE REVITALIZATION PROJECT

PHASE I - SITE REMEDIATION

TECHNICAL SPECIFICATIONS

prepared for:

Department of Community Development
City of Buffalo
Buffalo, New York 14202

prepared by:

URS Greiner Consultants, Inc.
282 Delaware Avenue
Buffalo, New York 14202

April 1999

G2817

TECHNICAL SPECIFICATIONS
FOR
MAIN-LASALLE
REVITALIZATION PROJECT
PHASE I - SITE REMEDIATION

Owner:

Department of Community Development
City of Buffalo
Buffalo, New York

Prepared By:

URS Greiner Consultants, Inc.
282 Delaware Avenue
Buffalo, New York

April 1999

TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

MAIN-LASALLE

REVITALIZATION PROJECT

PHASE I - SITE REMEDIATION

SCHEDULE OF PAY ITEMS

Pay Item	Description	Unit	Unit Price	Quant.	Total Price
1.	Mobilization	L.S.	_____	1	_____
2.	Demobilization	L.S.	_____	1	_____
3.	Project Record Drawings	L.S.	_____	1	_____
4.	Survey	L.S.	_____	1	_____
5.	Erosion and Sedimentation Control	L.S.	_____	1	_____
6.	Clearing and Demolition	L.S.	_____	1	_____
7.	Low Permeability Soil	cy	_____	43,500	_____
8.	Contaminated Soil Excavation and Placement	cy	_____	68,310	_____
9a.	Clean Construction and Demolition Material Excavation and Placement (Clean C&D)	cy	_____	44,660	_____
9b.	Contaminated Construction and Demolition Material Excavation and Placement	cy	_____	16,500	_____
10.	Proposed Water Main Pipe Liner Material Excavation and Placement	cy	_____	8,500	_____
11.	Select Fill (Clean)	cy	_____	17,800	_____
12.	Geotextile	L.F.	_____	1,450	_____
				Total Cost =	_____

DIVISION 1 - GENERAL

SECTION 01010

SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provision of the contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to this section.

1.2 LOCATION AND DESCRIPTION OF PROJECT

The Buffalo Urban Renewal Agency (BURA) is proposing to redevelop an approximate 50 acre site in Buffalo's University District. The existing site is comprised of vacant properties, a former Conrail right-of-way (ROW), McCarthy Park, several commercial businesses, and a small reservoir used by the Buffalo Sewer Authority. A large portion of the site is occupied by a former stone quarry which was partially backfilled with a variety of materials during the 1950's and 1960's.

The proposed redevelopment will be constructed in three phases. The work described within these technical specifications includes the remediation of contaminated areas of the site in preparation for the development of Phase I of the project.

1.3 WORK SUMMARY

1.3.1 Site Clearing and Demolition: The Contractor shall remove all vegetation from within the limits shown on the drawings. Limited clearing will be performed in the designated "wooded area" and buffer zones. All vegetation shall be shredded/chipped and disposed of on site.

The site contains a variety of improvements which must be demolished or removed. Items which must be removed and saved are itemized in the specifications and on the drawings. Demolished items will be disposed of both onsite and/or offsite as specified.

1.3.2 Remove Contaminated Soil from Residential Area: The Contractor shall remove contaminated fill from the designated residential area. The excavation will extend from the existing ground surface down to native soil or bedrock, which ever is encountered first. The Contractor shall place the excavated soil in the on-site areas shown on the drawings (below the low permeability final cover or other park areas to be covered with topsoil) as required to achieve subgrade elevations.

1.3.3 Final Cover Construction: A final cover system shall be constructed within the limits shown on the drawings. The final cover system within the limits of the former quarry consists of one (1) foot of low-permeability soil and six (6) inches of topsoil. Other areas of the site (i.e., outside the former quarry limits and the "wooded area") receive six (6) inches of topsoil only. The low permeability soil shall be provided by the Contractor from off-site sources. The topsoil will be provided under a separate contract.

1.3.4 A proposed water main pipe trench shall be excavated to the limits shown on the drawings and backfilled with clean fill (C&D material). Material excavated from the trench shall be used as fill below the low permeability soil final cover. The water main pipe will not be installed as part of this contract.

1.3.5 Excavation of Construction and Demolition (C&D) Material: Existing clean C&D material on the site from within the park area shall be used first, to backfill the proposed water main pipe trench and second as fill in the residential area (see residential area fill requirements below). Excess C&D material which is not needed for backfill in the proposed water main pipe trench or residential area and contaminated C&D material, will be placed elsewhere on the site as required to achieve subgrade elevations.

1.3.6 Backfill of the Residential Area: The Contractor shall backfill the residential area to the

elevations shown after the contaminated soil excavation is complete. The upper two feet of fill shall consist of 18 inches of clean select fill provided by the Contractor from off-site sources, and six (6) inches of topsoil, provided and placed under separate contract, above the select fill. All fill below the two-feet depth shall consist of on-site, clean C&D debris.

1.3.6 Documentation: All remedial activities are subject to reviews by both the Owner and the NYSDEC. A detailed documentation process is required to verify that all remedial activities were performed in conformance with the approved design. The Contractor shall complete the detailed record drawing, supplemental record drawing requirements and associated survey activities established in the technical specifications. Survey and record information is critical to document construction of the final cover system.

1.4 WORK ITEMS PROVIDED BY OTHERS

1.4.1 Analytical Testing of C&D Materials

On-site C&D materials designated for excavation and reuse for on-site fill has been tested for analytical parameters as required in Section 01415 - Analytical Testing. All tested C&D material was found to be acceptable for on-site use as shown in the Contract Documents. All areas of C&D suitable for on-site use are designated on the drawings.

1.4.2 Topsoil and Seeding

Topsoil and seeding shall be performed/provided under a separate contract, and are not part of this Contract. All remedial site work shall be coordinated with the topsoil installer. The Topsoil Contractor will place topsoil over all areas of the site (limits shown on drawings). Topsoil will be placed to a six inch (min) thickness. The topsoil will be provided by the Topsoil Contractor from off-site sources. All areas of the site which are covered with topsoil will be seeded.

1.5 FUTURE CONTRACTS

Future contract work will include the construction of houses in the residential area and construction of all support facilities (i.e. utilities, water main, roadways, landscaping etc.) Some residential area construction work may be concurrent with this project. Future work shall also include placement of topsoils and seeding and construction of park facilities (athletic facilities, walkways, driveways etc....).

1.6 SEQUENCE OF WORK

1.6.1 Sequence of and scheduling of work shall be based on a Notice-to-Proceed being issued by April 9, 1999. Project milestones will be adjusted accordingly for any delays in issuing the Notice-to-Proceed.

1.6.2 The residential area shall be excavated and backfilled by the milestone date of_____, 1999. Residential construction will commence after backfill is placed and approved and the topsoil and seed has been placed (under separate contract).

1.6.3 All work shall be completed within the milestone date, _____ calendar days from the date the Notice to Proceed is issued.

PART 2 - MATERIALS
(NOT APPLICABLE)

PART 3 - EXECUTION
(NOT APPLICABLE)

END OF SECTION 01010

SECTION 01050

SURVEY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to this section.

1.2 SUMMARY

A. The Contractor shall provide all materials, labor, equipment and incidentals required to conduct accurate surveys prior to, during and after construction activities.

B. The work shall include, but shall not necessarily be limited to, stake-out as shown on the Contract Drawings and as required, quantity surveys and record surveys consistent with current, generally-accepted construction surveying practice.

C. Work shall be laid out using vertical and horizontal control datum referenced in the Contract Drawings. The Contractor shall transfer all horizontal and vertical survey control from offsite survey markers (to be located by the Contractor).

D. The establishment of survey control and stake-out survey shall proceed immediately following the Contractor's mobilization and shall expeditiously progress to completion in a satisfactory manner.

E. The Contractor shall perform surveys for measurement and payment of completed work.

F. All survey and related notes shall be performed in observance of and to facilitate the preparation of project record drawings as described in Division 1 Section "Project Record Documents."

1.3 QUALITY CONTROL

A. All survey, layout and related work shall be performed by or under the direction of a State of New York-licensed surveyor with registration current throughout the life of the Contract.

1.4 SUBMITTALS

A. Prior to the start of any survey work, the Contractor shall submit to the Engineer for approval the names, addresses, telephone numbers and qualifications of the surveyor, crew chief, superintendent and all other persons who are proposed to perform surveys or survey-related duties.

B. Description and recovery sketches of all control survey monuments established by the Contractor.

C. Alignment, location and elevation of all below-grade permanent structures encountered, even if utilities not shown on the Contract Drawings, such as pipe lines, wells, cables, subsurface drains and all other structures for the preparation of record drawings.

D. All original survey field notes, records and calculations used by the Contractor's licensed surveyor shall be submitted no later than the date of acceptance of the Work. The submittal shall include computer disk(s) and accompanying field notebooks. All data necessary to perform the work shall be submitted in a bound book(s), or other acceptable manner, organized chronologically and fully indexed. All computations performed to facilitate the surveying activities shall be provided

in 3-ring notebooks, indexed chronologically. The Contractor shall also provide source information on all computer programs used during the Project.

PART 2 - PRODUCTS

2.1 MATERIAL AND EQUIPMENT

A. The Contractor shall provide all materials as required to properly perform the surveys, including, but not limited to, instruments, tapes, rods, measures, mounts and tripods, stakes and hubs, nails, ribbons, other reference markers and all else as required. All material shall be of good professional quality and in first-class condition.

B. All lasers, transits and other instruments shall be serviced and/or calibrated within the six months prior to the commencement of work. All instruments and equipment shall be maintained in accurate calibration throughout the execution of the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

A. The Contractor shall be responsible for the accuracy of his surveyor's work and shall maintain all reference points and stakes throughout the life of the Contract. Damaged or destroyed points, bench marks, stakes or any reference points made inaccessible by the progress of the construction shall be replaced or transferred to the satisfaction of the Engineer by the Contractor at no additional cost to the Owner. Any of the previously described points which may be subject to damage or destruction shall be transferred by the Contractor before they are damaged or destroyed. All new (transferred) horizontal points shall be tied to existing control

by a closed traverse having a minimum closures at 1:20000. New vertical control points shall be set via a closed loop level run having a closure of not greater than 0.05 x (times) m, where m is the square root of the length of the level run in miles. All new control points shall be referenced by four (4) swing ties to acceptable objects and recorded. Any alterations or revisions in the reference points shall be so noted and the information submitted to the Engineer immediately. All computations necessary to establish the exact position of the work from control points shall be made and preserved by the Contractor. All survey notes and other records necessary to accomplish the work shall be neatly made on a new bound hardcover field notebook acceptable to the Engineer. Field notes collected using electronic data collection shall be presented on 3½-inch computer disk(s) accompanied by a hard copy of the raw field data.

B. Survey markers must be checked and maintained on a regular basis due to the anticipated shifting and settlement of the site due to the consolidation of the underlying waste.

C. Make all measurements and check all dimensions necessary for the proper execution of the work called for by the Contact Documents. Lines and grades shall be established and maintained.

D. Within the Project limits, grade and lift thickness shall be controlled with markers such as stakes placed on a square grid no further than 50 feet apart with additional stakes placed at key points such as breaks in slope. Survey shall verify that the low permeability soil and select fill is placed within the allowable tolerances for material thickness.

1. Low permeability soil shall be placed to a 1.0 foot depth, $\pm$ 0.1 feet.
2. Select fill shall be placed to a 1.5 foot depth, $\pm$ 0.1 feet.

E. The Contractor shall provide all survey activities necessary for the preparation and furnishing of record drawings as described in Division 1 Section "Project Record Documents". The licensed surveyor shall stamp all supplemental record drawings.

3.2 ENGINEER'S INSPECTION

A. The Engineer may at any time inspect all or any portion of the stakeout survey work or notes made by the Contractor. Any necessary corrections to the work shall be made immediately by the Contractor at no additional cost to the Owner. Such checking by the Engineer shall not relieve the Contractor of any responsibility for the accuracy or completeness of his work.

3.3 SURVEYS FOR MEASUREMENT AND PAYMENT

A. The Contractor shall perform surveys, in a manner acceptable to the Engineer, to determine quantities of unit cost work and percent of completion of lump sum work. The nature and number of surveys required shall be agreed upon between the Contractor and the Engineer prior to performance of work.

B. The Contractor's field project manager shall sign the surveyor's field notes and shall certify the quantities for payment purposes.

END OF SECTION 01050

SECTION 01150

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including general and supplementary conditions and other Division 1 Specification sections, apply to this section.

1.2 SUMMARY

This section defines the methods of measuring the payment quantities for all work performed by the Contractor under this unit price contract. All payment item quantities shall be computed based on field survey of complete work, as finally accepted.

1.3 NON-DIRECT PAYMENT

A. The Contractor advised that while specifically required or called for by the Contract Documents, no direct payment will be made for:

1. Special controls
2. Insurances and bonds
3. Supervision
4. Home office support
5. Equipment maintenance

6. Laboratory and field testing

7. Restoration of areas, outside the limits of work, damaged by the Contractor.

8. Temporary site facilities and utilities.

9. Health and Safety

The costs of this work, and any others not specifically identified, shall be included in the unit prices for the various items in the contract.

1.4 ENGINEER'S ESTIMATE OF QUANTITIES

A. The Engineer's estimated quantities for unit prices shall be considered as approximate only. The Owner/ Engineer does not expressly or by implication agree that the nature of the materials encountered below the surface of the ground or the actual quantities of material encountered or required will correspond therewith and reserves the right to increase or decrease any quantity or to eliminate any quantity as may be deemed necessary. Neither the Owner nor the Contractor will be entitled to any adjustments in a unit bid price as a result of any change in quantity except as specifically allowed by the Contract. Except as stipulated above, the Contractor agrees to accept the aforesaid unit bid prices as complete and total compensation for any additions or deductions caused by a variation in quantities as a result of more accurate measurement, or by any changes or alterations in the Work ordered by the Owner, and for use in the computation of the value of the work performed for progress payments.

1.5 MEASUREMENT

A. The measurement of all quantities shall be by a licensed surveyor employed by the Contractor and verified by the Engineer and Owner prior to acceptance, recommending, authorizing, and processing request for payment.

B. All survey measurements for quantities shall be in a form acceptable to the Engineer and shall include all summaries, calculations, drawings, sketches, and notes necessary for the Engineer and Owner to verify quantities.

PART 2 - PAYMENT ITEMS

2.1 ITEM 1- MOBILIZATION

A. Mobilization includes all labor, material and other costs to bring equipment, tools, temporary facilities, utilities, personnel and other items to the site as necessary to begin the work.

B. Payment under this item will be a lump sum as full compensation for all work required. Payment for this item can not exceed two and one-half (2 ½) percent of the total bid price.

Payment for this item will not be made until five (5) percent of the total of all items of work is complete and acceptable to the Engineer and Owner. Delays and extensions of time shall not entitle the Contractor to additional compensation for this pay item.

2.2 ITEM 2 - DEMOBILIZATION

A. Demobilization includes removal of all construction equipment, removal of temporary facilities and utilities, and any other closeout activities not included for payment elsewhere.

B. Payment under this item will be a lump sum as full compensation for performing all demobilization activities. This item shall not be less than one-half of one percent of the total bid price. Delays and extensions of time shall not entitle the Contractor to additional compensation for this pay item.

2.3 ITEM 3 - PROJECT RECORD DRAWINGS

A. Work under this item includes the preparation, review, and submittal of project record drawings, for the work covered under Section 01720.

B. Payment under this item will be a lump sum as full compensation for all required work, including record red-line drawings and supplemental record drawings. No payment will be made until all drawings are approved.

2.4 ITEM 4 - SURVEY

A. Measurement for this item will be for furnishing project survey and stakeout required by the Contract. Project survey and stakeout shall be provided in accordance with the requirements of Section 01050.

B. Payment under this item will be a lump sum as full compensation for all work required. Progress payments will be made based on the percentage of work completed. Twenty (20) percent of this item will be withheld until the record drawings are approved.

2.5 ITEM 5 - EROSION AND SEDIMENTATION CONTROL

A. Basis of Measurement - The measurement for this item shall be to provide run-on and erosion and sedimentation control in accordance with the requirements specified.

B. Basis of Payment - The Lump Sum Price bid for this item shall be full compensation for furnishing and installing all labor, materials, tools, equipment and appurtenances necessary to complete the work including but not limited to preparation of soil and erosion control plan, preventing water and silt, soils, etc, from running off the project site to adjacent properties or waterways or from entering work areas as shown, specified or directed. This item shall include payment for installation of silt fences and hay-bale dikes and all other temporary erosion control features identified in the Contractor's erosion and sedimentation control plan.

2.6 ITEM 6 - CLEARING AND DEMOLITION

A. Measurement for this item will be the total Clearing and Demolition shown on the drawings and as specified. No payment will be made for clearing beyond the limits shown on the drawings.

B. Basis for Payment: Payment for this item shall be lump sum as full compensation for all work required. Payment for clearing will include vegetation removal, shredding and on-site disposal. Payment for demolition shall include full removal of materials specified, size reduction if required, and on-site or off-site disposal as specified. The limited clearing in the wooded area is also included in this item. Progress payments shall be made as a percent of the bid amount based on the percent of work completed.

2.7 ITEM 7 - LOW PERMEABILITY SOIL

A. Basis of Measurement - The measurement for low permeability soil will be the actual number of cubic yards of soil placed and compacted (with the specified in-place permeability) as measured by survey prior to and after placement. Low permeability soil required for construction of the final cover system is included in this item. Low permeability soil shall be furnished and placed in accordance with the requirements specified under Division 2, Section "Soil Fill and Backfill."

B. Basis of Payment - The unit price for this item shall be full compensation for furnishing and installing all labor, material, tools, equipment and appurtenances necessary to complete the work. Payment shall include the furnishing and placement of soil, transport to the site and all geotechnical and analytical testing as shown, specified or directed. No payment shall be made for soil which is not placed within the required survey tolerance and/or limits shown on the drawings, unless specifically requested and approved by Engineer.

2.8 ITEM 8 - CONTAMINATED SOIL EXCAVATION AND PLACEMENT

A. Basis of Measurement - The measurement of this item will be the volume of excavation. Measurement shall be by survey of the cubic yards of material in-place prior to and after excavation.

B. Basis of Payment - The unit price for this item will be full compensation for furnishing all labor, materials and equipment necessary to complete the work including but not limited to:

- Excavation of contaminated soil from the designated residential area and on-site transport to fill areas.
- Placement and compaction of contaminated soil to required grades.
- Laboratory and field testing of soil.
- All other specified work required to relocate the contaminated soil.

2.9 ITEM 9a - CLEAN CONSTRUCTION AND DEMOLITION (C&D) MATERIALS EXCAVATION AND PLACEMENT (CLEAN C&D)

A. Basis of Measurement - The measurement of this item will be the volume of clean C&D material excavation. Measurement shall be by survey of the cubic yards of material in-place prior to and after excavation. Clean C&D material shall be defined as all excavated material outside the limits of the designated residential area, from those areas shown on the drawings as clean C&D and which meets the "Clean Material Use Criteria" established in Division 1 Section "Analytical Testing."

B. Basis of Payment - The unit price for this will be full compensation for furnishing all labor, material and equipment necessary to complete the work including but not limited to:

- Excavation of clean C&D debris and on-site transport to fill areas.
- Sorting and on-site disposal of oversize materials as required by the specifications.
- Placement and compaction of clean C&D to required grades.

- All survey, erosion protection and other specified work required to relocate the 'clean' C&D material.

2.10 ITEM 9b-CONTAMINATED CONSTRUCTION AND DEMOLITION (C&D) MATERIAL EXCAVATION AND PLACEMENT (CONTAMINATED C&D)

A. Basis of Measurement - The measurement of this item will be the volume of contaminated C&D excavation. Measurement shall be by survey of the cubic yards of material in-place prior to and after excavation. Contaminated C&D material shall be defined as shown on the drawings or which does not meet the "Clean Material Use Criteria" established in Division 1 Section "Analytical Testing" (if additional testing is required due to suspected contamination).

B. Basis of Payment-The unit price for this item will be full compensation for furnishing all labor, materials and equipment necessary to complete the work including but not limited to:

- Survey and layout of vertical and horizontal limits of excavation area to delineate "Contaminated" C&D for non-residential areas based on the drawings.
- Excavation of contaminated C&D and on-site transport to fill areas.
- Sorting and on-site disposal of oversize materials as required by the specifications
- Placement and compaction of contaminated C&D to required grades
- All other specified work required to relocate the contaminated C&D debris.

2.11 ITEM 10-PROPOSED WATER MAIN PIPELINE MATERIAL EXCAVATION AND PLACEMENT

A. Basis of Measurement - The measurement of this item will be the actual number of cubic yards of material excavated. Measurement shall be by survey of the material in-place prior to and after excavation. The upper pay limit shall be at the final subgrade elevations. Measurement shall only extend to the lines shown on the drawings. (i.e., 20' wide by the specified depth). Additional excavation in width or depth shall not be measured or considered for payment.

B. Basis of Payment - The unit price for this item shall be full compensation for providing all material, labor and equipment for excavating the required trench and transporting and placing the excavated material to the required grades and tolerances. Payment shall include all bracing, trench boxes or other provisions required to perform the work, and transportation, compaction and grading of the excavated material.

2.12 ITEM 11 - SELECT FILL

A. Basis of Measurement - The measurement of this item shall be the actual number of cubic yards of soil placed and compacted as measured by survey prior to and after placement in the residential area. All select fill placed in addition to the minimum required 18 inches shall be approved by the Engineer prior to placement and measurement for payment.

B. Basis of Payment - The unit price for this item shall be full compensation for furnishing all labor, material and equipment required to supply and place the soil. Payment shall include the furnishing and placement of soil, transport to the site and all geotechnical and analytical testing as shown, specified or directed.

2.13 ITEM 12 - GEOTEXTILE

A. Basis of Measurement - The measurement of this item shall be the actual length of trench in which, the geotextile is installed in accordance with the Contract Documents. Measurement shall be by survey of the lineal feet of trench after geotextile placement.

B. Basis of Payment - The unit price for this item shall be full compensation for furnishing all labor, material and equipment required to supply and place the geotextile.

END OF SECTION 01150

SECTION 01200

PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

This Section specifies administrative and procedural requirements for project meetings, including, but not limited to, the following:

- Preconstruction conferences
- Progress meetings
- Final site inspection

1.3 GENERAL REQUIREMENTS

A. Meetings and conferences will take place at the Project site or some other location within the City of Buffalo satisfactory to both the Engineer and the Contractor.

B. All expenses associated with attending the meetings that are incurred or caused by the Contractor shall be borne by the Contractor.

C. Additional meetings may be called by either the Engineer or the Contractor during any stage of this Project when it is deemed necessary to raise significant questions,

establish new guidelines, introduce a new aspect to the Project or any other items that will affect the progress of the Work.

D. The Engineer shall schedule and administer all meetings required during the progress of the Work. The Engineer shall:

- Prepare an agenda for the meetings
- Preside at the meetings
- Record the minutes of the meetings including significant proceedings and decisions
- Reproduce and distribute copies of the minutes of the meetings to all representatives who attended the meeting and to parties affected by the decisions made at the meeting

1.4 PRECONSTRUCTION CONFERENCE

A. A preconstruction conference will be scheduled before starting construction, at a time convenient to the Owner and the Engineer, but no later than 15 days after the Notice to Proceed is issued. The conference will be held at the Project Site or another convenient location. The meeting will be conducted to review responsibilities and personnel assignments.

B. Attendees: Authorized representatives of the Owner, Engineer, and their consultants; the Contractor and its superintendent; major subcontractors; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

C. Agenda: Discuss items of significance that could affect progress, including the following:

Tentative construction schedule
Critical work sequencing
Designation of responsible personnel
Procedures for processing field decisions and Change Orders
Procedures for processing Applications for Payment
Distribution of Contract Documents
Submittal of Shop Drawings, Product Data, and Samples
Preparation of record documents
Use of the premises
Parking availability
Office, work, and storage areas
Equipment deliveries and priorities
Health and Safety Plan
Erosion and Sedimentation Control Plan
First aid
Security
Housekeeping
Working hours

1.5 PROGRESS MEETINGS

A. Progress meetings will be conducted at the Project Site at two-week intervals, or as otherwise required for performance of the work.

B. Attendees: In addition to representatives of the Owner and the Engineer, each contractor, subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with the Project and authorized to conduct matters relating to the Work.

C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.

- Review work progress since last meeting.

- Contractor's Construction Schedule: Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.

- Planned progress for the succeeding work period.

- Review the present and future needs of each entity present, including the following:

  Interface requirements
  Time
  Sequences
  Status of submittals
  Deliveries
  Access
  Site utilization
  Temporary facilities and services
  Hours of work
  Hazards and risks
  Housekeeping
  Quality and work standards
  Change Orders

D. Schedule Updating: The Contractor shall revise the Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

1.6 FINAL SITE INSPECTION

The Contractor, Engineer, Owner and regulatory agencies shall perform a final site inspection after work is complete. A final punch list of work items may be developed if deemed necessary.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01200

SECTION 01400

QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to this Section.

1.2 SUMMARY

A. This section includes administrative and procedural requirements for quality-control services.

B. Quality-control services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by the Engineer.

C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.

1.3 RESPONSIBILITIES

A. Contractor Responsibilities: Unless otherwise indicated as the responsibility of another identified entity, the Contractor shall provide inspections, tests, and other quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction. Costs for these services are included in the Contract Sum.

1. Where individual sections specifically indicate that certain inspections, tests, and other quality-control services are the Contractor's responsibility, the Contractor shall employ and pay a qualified independent testing agency to perform quality-control services. Costs for these services are included in the Contract Sum.

2. Where individual sections specifically indicate that certain inspections, test, and other quality-control services are the Owner's responsibility, the Owner will employ and pay a qualified independent testing agency to perform those services.

3. Where the Owner has engaged a testing agency for testing and inspecting a part of the Work, and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner, unless agreed to in writing by the Owner.

B. Retesting: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility.

The cost of retesting construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests performed on original construction indicated noncompliance with Contract Document requirements.

C. Associated Services: Cooperate with agencies performing required inspections, tests, and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:

- Provide access to the Work

- Furnish incidental labor and facilities necessary to facilitate inspections and tests
- Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples
- Provide facilities for storage and curing, if required of test samples
- Deliver samples to testing laboratories
- Provide the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency
- Provide security and protection of samples and test equipment at the Project Site.

D. Duties of the Testing Agency: The independent agency engaged by the Contractor to perform inspections, sampling, and testing of materials and construction specified in individual sections shall cooperate with the Engineer and the Contractor in performance of the agency's duties. The testing agency shall provide qualified personnel to perform required inspections and tests.

- The agency shall notify the Engineer and the Contractor promptly of irregularities or deficiencies observed in the work during performance of its services.

- The agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.

- The agency shall not perform any duties of the Contractor.

E. Coordination: Coordinate the sequence of activities to accommodate required services with a minimum of delay. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.

- The Contractor is responsible for scheduling times for inspections, tests, taking samples, and similar activities.

1.4 SUBMITTALS

A. The independent testing agency shall submit a certified written report, in duplicate, of each inspection, test, or similar service through the Contractor to the Engineer.

- Submit additional copies of each written report directly to the governing authority, when the authority so directs.

B. Report Data: Written reports of each inspection, test, or similar service shall include, but are not limited to the following:

- Date of Issue
- Project title and number
- Name, address, and telephone number of testing agency
- Dates and locations of samples and tests or inspections
- Names of individuals making the inspection or test
- Designation of the work and test method
- Identification of product and specification section
- Complete inspection or test data
- Test results and an interpretation of test results

C. The location of all in-place density tests and permeability sample locations within the limits of the final cover system shall be shown on the applicable supplemental record drawing.

PART 2 - PRODUCTS (Not Applicable)

SECTION 01410

SOIL TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specifications, apply to this Section.

1.2 SUMMARY

A. The Contractor shall employ and pay for an independent soil testing (geotechnical) laboratory (shall also be taken to mean laboratories) to perform the specified material testing services. The selected laboratory shall be acceptable to the Engineer.

B. Inspection, sampling and testing shall be as specified in this section and in the individual sections of these specifications. The work shall include services related to:

- Laboratory Testing of Soils
- Field Testing of Soils

C. All repeat testing which results from the Contractor's negligence or the failure of material test results to meet specification requirements shall be at the Contractor's own expense.

D. The testing laboratory is not authorized to: approve or accept any portion of the work; rescind, alter or augment the requirements of the Contract Documents; or perform any duties of the Contractor or Engineer other than laboratory-related services as specified.

1.3 RELATED SECTIONS

Division 1 Section "Quality Control"
Division 2 Section "Soil Fill and Backfill"

1.4 QUALIFICATIONS OF LABORATORY

A. The Contractor shall retain the services of a laboratory to conduct required physical tests on soil materials. This laboratory shall be fully equipped with sufficient testing apparatus and personnel to conduct all quality-control-related in-place and laboratory tests in a timely manner of acceptable high quality.

B. The laboratory shall provide a written QA/QC program for all project activities and shall certify that the minimum standards will be met before any testing can begin and before any work requiring such testing can begin. Any changes such as the laboratory, instrumentation, personnel, or delegation of laboratory work shall be approved by the Engineer in advance.

C. Inspection and Approval: The Engineer reserves the right to inspect the Contractor's laboratory and organization. If the inspection reveals deficiencies, the Contractor shall rectify them. If necessary, additional inspections will be made. Costs for initial inspection will be borne by the Owner. Costs derived from additional inspections due to laboratory deficiencies shall be paid by the Contractor. All testing procedures being conducted by the Contractor shall be available for inspection by the Engineer at any time.

D. Provisions of All Facilities: Measuring and testing devices, laboratory equipment, instruments, transportation, and supplies necessary to accomplish the required testing shall be provided by the Contractor. Measuring and testing devices shall be calibrated at maximum 12-month intervals by devices of accuracy traceable to either the National Bureau of Standards or other widely accepted values of natural

physical constants. The Engineer, on behalf of the Owner, may perform quality assurance testing and inspection of the materials and activities, using the facilities and equipment furnished by the Contractor. The Owner's testing and inspection will in no way relieve the Contractor of the responsibility of performing tests necessary to meet the construction requirements.

E. Laboratory Personnel: The Contractor's laboratory organization shall be experienced in the type of testing work to be performed. A representative of the laboratory shall be at the work site as necessary for sampling, inspection, and testing to control the quality of the work. The laboratory personnel will be evaluated and approved with reference to their education and related professional experience in the performance of specified QA/QC activities.

1.5 SUBMITTALS

A. Name, address, telephone number, and name of contact person at proposed laboratories.

B. Submit Laboratory QA/QC program for all activities to be performed during the contract.

C. Submit copy of certificate of testing equipment calibration, made by accredited calibration agency, as applicable.

D. Submit reports of inspections and tests as described hereinafter.

1.6 LABORATORY DUTIES

A. Cooperate with Engineer and provide qualified personnel promptly on notice.

B. Perform specified inspections, sampling and testing of materials and methods of construction; comply with applicable standards; ascertain compliance with requirements of Contracts Documents.

C. Notify Engineer and Contractor of irregularities or deficiencies which are observed during performance of services, within one (1) work day of the observance.

D. Submit reports of inspections and tests to the Contractor and Engineer within five (5) working days of the earliest test date on the report, unless otherwise approved or indicated in these specifications. Reports shall include the following:

- Date issued.
- Project title and number.
- Testing laboratory name and address.
- Name and signature of inspector.
- Date of inspection or sampling.
- Date of test.
- Physical location in project site.
- Type of inspection or test including standard test number.
- Sample name and/or numbers as designated or approved by the Engineer.
- Results of tests and observations regarding compliance with Contract Documents.
- Signature of laboratory manager or approved equivalent.

E. Perform additional tests and services as required to assure compliance with the Contract Documents.

1.7 CONTRACTOR'S COORDINATION WITH LABORATORY

A. The Contractor shall cooperate with laboratory personnel, provide the lab with access to all work, and provide lab with access to manufacturer's and subcontractor's operations.

B. Provide to the laboratory representative samples of materials to be tested, in required quantities.

C. Furnish the laboratory with labor and facilities for the following:

- To provide access to work which will be tested.
- To obtain and handle samples at the site.
- To facilitate inspections and tests.
- For laboratory's exclusive use for storage and curing, if required, of test samples.

D. Notify both laboratory and Engineer sufficiently in advance of operations to allow for assignment of both of their personnel and scheduling of tests.

E. Arrange with laboratory and pay for, additional samples and tests required for Contractor's convenience.

1.8 PROCEDURES/METHODS

A. Standard test methods shall be utilized for the project. Where these methods are not practical, other properly validated and standardized methods or state-of-the-art methods for which appropriate precision, accuracy and interlaboratory comparison data have been generated shall be substituted with the approval of the Engineer. All methods are subject to the prior approval of the Engineer. Laboratory test reports shall specifically state the testing procedures used. The Contractor shall list

references used as sources for the procedures. The test methods shall be appropriate for the data required. These include field sampling techniques and laboratory procedures. For nonstandard or modified sampling methods, detailed method write-ups with appropriate references are required.

B. At the end of the project, the Contractor shall provide a copy of all test data including log books, instrument outputs, and calculations. It is imperative that these records be maintained in good order throughout the project by the Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS

All material used in acceptance testing, including those for soil materials, shall be the actual materials proposed for use on the project. The Contractor shall obtain sufficient representative samples of the required materials from the Owner (in the case of Owner-furnished materials) or product manufacturer or supplier to complete the testing, with adequate materials remaining for retesting in the case of disputes. Transportation of the soil materials to the laboratory shall be the responsibility of the Contractor.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01410

SECTION 01415

ANALYTICAL TESTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. It is anticipated that the low permeability soils, select fill and other miscellaneous fill to be imported from off site, will be obtained from existing commercial suppliers and will be certified "clean" by the suppliers. However, if the Contractor imports materials from non-certifiable sources, the Contractor must provide analytical data demonstrating that analytical criteria are met. The Contractor shall collect representative samples of the soil borrow at a rate of one (1) sample per borrow source per soil type (i.e., low-permeability soil and select fill). The Contractor shall arrange for timely analysis of the samples at a ELAP-certified laboratory. Each laboratory shall have current ELAP certification for the specific analytical method it performs under this contract. The purpose of this specification is to chemically test and certify the environmental quality of the materials utilized for fill.

B. The Owner reserves the right to collect random samples of the soil and to conduct independent chemical analyses of the materials. In the event that either the Contractor's or Owner's test results indicate unacceptable results, then the materials shall not be used.

1.3 APPLICABLE PUBLICATIONS

The references listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basis designation only (e.g., OSWER 9360.4-10).

CODE OF FEDERAL REGULATIONS (CFR)

CFR 40 Part 50	National Primary and Secondary Ambient Air Quality Standards
CFR 49 Part 173, Appendix E	Guidelines for the Classification and Packing Group Assignment of Class 4 Materials

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC)

NYSDEC ASP	Analytical Services Protocol (ASP), October 1995 Edition

ENVIRONMENTAL PROTECTION AGENCY (EPA)

CERCLA	Region II Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Quality Assurance Manual, October 1989
OSWER 9360.4-10	Removal Program Representative Sampling Guidance, Vol.1: Soil, November 1991

SW-846	Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods, 3rd Edition, Final Update III, June 1997.
EPA-600/4-79-020	Methods for Chemical Analysis of Water and Wastes, Revised March 1983.
EPA-600/4-84-076	Characterization of Hazardous Waste Sites - A Method Manual: Volume II. Available Sampling Methods, Second Edition, December 1984, NTIS No. PB85-168771

1.4 SUBMITTALS

The Contractor shall submit for approval:

A. Documentation of proposed laboratories' ELAP certification.

B. Copies of all laboratory and field test reports shall be submitted to the Engineer at least two (2) weeks prior to bringing any material to the site for use as grading fill or cover soil.

1.5 ANALYTICAL DATA PROVIDED BY OWNER

A. C&D debris which shall be used as clean fill on the site has been analyzed for Target Compound List (TCL) organics, and Target Analyte List (TAL) metals. Test results are available to the Contractor.

B. Tests performed on soil in the residential area are available for the Contractor's information.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.1 SAMPLING

A. This section of the specifications includes all work associated with sampling and testing. The off-site material to be used as low permeability soil and select fill shall be collected at a rate of one sample per borrow source for each material type. Only soils which meet the criteria of this section shall be used on the site.

B. Quality Control (QC) Samples: QC samples shall be analyzed at the stated frequency in each analytical method. In general, QC samples shall be analyzed at a frequency of one per twenty samples or one per analytical batch. This and other QC information such as surrogate spike recoveries (for organic analyses) shall also be reported with the test results.

C. Labeling: Each sample container shall be clearly identified with the name of the project, field sample ID, the field sample stockpile/borrow area number, analytical tests to be performed, date and time of sampling.

D. Preservation and Storage: Sample preservation and holding time requirements are summarized in the referenced methods.

E. Sampling Procedures:

1) The low permeability, and select fill soil shall be analyzed at the Contractor's laboratory to confirm the material is clean (below the specified limits - see Tables 01415- 1A through 1D) prior to being used on the site. Soil which exceeds the limits shall not be used.

2) One composite sample will be collected from random locations at each borrow site, for each material. The owner and engineer shall be notified prior to sampling such that they can observe all sampling operations. The number of grab samples per composite will be determined in the field by the Engineer.

3.2 ANALYTICAL METHODS

A. All proposed off-site borrow soils shall be tested for Target Compound List (TCL) organics and Target Analyte List (TAL) metals and shall be analyzed following the applicable USEPA SW-846 procedures. Only materials which contain concentrations of organic compounds and inorganic analytes below the Clean material Use Criteria (see Tables 01415-1A - 1D) shall be used. Samples shall be analyzed for:

Volatile Organics (Method SW8260B);
Semivolatile Organics (Method SW8270C);
Organochlorine Pesticides and PCBs (Method SW8081A/SW8082);
TAL Metals (Method SW6010B/7000A);
Total Cyanide (Method SW9012A);

The TAL metals shall be analyzed following SW-846 Method 6010B except for arsenic (Method SW7060A), lead (Method SW7421), selenium (Method SW7740), thallium (Method SW7841), and Mercury (Method SW7471A).

3.3 ANALYTICAL REPORTS AND DELIVERABLES

The analytical data packages must conform to NYSDEC ASP Category B deliverables. The turnaround time (TAT) for the soil data packages and diskettes shall be not more than 7 days. The TATs reflect the allowable time to provide the Engineer with the specified deliverable. TATs are measured from date of sample collection.

3.4 DATA VALIDATION

All analytical samples collected will receive a limited data review. This review will include a review of holding times, completeness of all required deliverables; review of QC results (surrogates, spikes, duplicates) to determine if the data is within the protocol-required limits and specifications; a determination that all samples were analyzed using established and agreed upon analytical protocols; an evaluation of the raw data to confirm the results provided in the data summary sheets; and a review of laboratory data qualifiers. The methods referenced in this section as well as the general guidelines presented in the following documents will be used to aide the chemist during the data review:

- USEPA Region II CLP *Organic Data Review and Preliminary Review*, SOP HW-6, Revision 11, June 1996 (or most recent version); and
- USEPA Region II CLP Inorganic Data Review, SOP HW-2, Rev. # XI, January 1992 (or most recent version)

3.5 DATA USABILITY

A Data Usability Summary Report (DUSR) will be submitted to the Engineer, and will describe the samples and the analytical parameters. Data deficiencies, analytical protocol deviations, and quality control problems are identified and their effect on the data will be discussed. The DUSR will also include recommendations on resampling/reanalysis.

TABLE 01415-1A

Clean Material Use Criteria - Maximum Allowable Concentrations

Volatile Organic Contaminants

Contaminant	Clean Material Use Criteria (mg/kg)	Contaminant	Clean Material Use Criteria (mg/kg)
Total VOCs	10.0	1,1-Dichloroethene	0.4
Acetone	0.2	1,2-Dichloroethene (total)	*
Benzene	0.06	1,2-Dichloropropane	*
Bromodichloromethane	*	1,3-Dichloropropene	*
Bromoform	*	(trans)	5.5
Bromomethane	*	Ethylbenzene	*
2-Butanone	0.3	2-Hexanone	0.1
Carbon Disulfide	2.7	Methylene Chloride	1.0
Carbon Tetrachloride	0.6	4-Methyl-2-Pentanone	*
Chlorobenzene	1.7	Styrene	1.4
Chloroethane	1.9	Tetrachloroethene	0.8
Chloroform	0.3	1,1,1-Trichloroethane	*
Chloromethane	*	1,1,2-Trichloroethane	0.6
Cis-1,3-Dichloropropene	*	1,1,2,2-Tetrachloroethane	1.5
Dibromochloromethane	*	Toluene	0.7
1,1-Dichloroethane	0.2	Trichloroethene	0.2
1,2-Dichloroethane	0.1	Vinyl Chloride	1.2
		Xylenes (Total)	

* Contaminants with an "*" do not have individual limits in the NYSDEC's TAGM 4046. The total of all TCL volatile organic compounds, however, shall not exceed the maximum allowable concentration listed above as Total VOCs.

Source: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, January 24, 1994.

TABLE 01415-1B
Clean Material Debris Use Criteria - Maximum Allowable Concentrations
Semi-Volatile Organic Contaminants

Contaminant	Clean Material Use Criteria (mg/kg or ppm)	Contaminant	Clean Material Use Criteria (mg/kg or ppm)
Total SVOCs	500	Diethylphthalate	7.1
Acenaphthene	50.0	Dimethylphthalate	2.0
Acenaphthylene	41.0	Di-n-butylphthalate	8.1
Anthracene	50.0	Di-n-octylphthalate	50.0
Benzo(a)anthracene	0.224 or MDL**	Fluoranthene	50.0
Benzo(a)pyrene	0.061 or MDL**	Fluorene	50.0
Benzo(b)fluoranthene	1.1**	Hexachlorobenzene	0.41
Benzo(g,h,i)perylene	50.0	Hexachlorobutadiene	8.2*
Benzo(k)fluoranthene	1.1**	Hexachloroethane	46*
bis(2-ethylhexyl)phthalate	50.0	Hexachlorocyclopentadiene	50.0
bis-(2-Chloroethyl)ether	0.58*	Indeno(1,2,3-cd)pyrene	3.2**
bis-(2-Chloroethoxy)methane	50.0	Isophorone	4.4
4-Bromophenylphenylether	50.0	2-Methylnaphthalene	36.4
Butylbenzylphthalate	32*	2-Methylphenol	0.100 or MDL
Carbazole	0.4**	4-Methylphenol	0.9
Chrysene	0.220 or MDL	Naphthalene	13.0
4-Chloroaniline	0.240 or MDL	Nitrobenzene	0.200 or MDL
4-Chloro-3-methylphenol	0.8	2-Nitroaniline	0.430 or MDL
2-Chlorophenol	50.0	4 Nitroaniline	50.0
4 Chlorophenylphenylether	50.0	2-Nitrophenol	0.330 or MDL
2 Chloronaphthalene	50.0	4-Nitrophenol	0.100 oe MDL
2,4-Dinitrotoluene	6.2	3-Nitroaniline	0.500 or MDL
Dibenzofuran	0.014 or MDL**	N-Nitroso-di-n-propylamine	0.091*
Dibenz(a,h)anthracene	50.0	N-Nitrosodiphenylamine	50.0
1,2-Dichlorobenzene	50.0	2,2'-oxybis(1-Chloropropane)	50.0
1,3-Dichlorobenzene	50.0	Pentachlorophenol	1.0 or MDL
1,4-Dichlorobenzene	1.4*	Phenanthrene	50.0
3,3'-Dichlorobenzidine	0.4	Phenol	0.03 or MDL
2,4-Dichlorophenol	50.0	Pyrene	50.0
4,6 Dinitro-2-methylphenol	50.0	1,2,4-Trichlorobenzene	50.0
2,4-Dimethylphenol	0.200 or MDL	2,4,5-Trichlorophenol	0.1
2,4-Dinitrophenol	1.0	2,4,6-Trichlorophenol	50.0
2,6-Dinitrotoluene		Total cPAH	1.0**

Source: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, January 24, 1994.

* Criteria designated with an asterisk (*) were established using EPA Region III Risk Based Concentration Table (April 1996). Levels for Soil Ingestion-Residential were utilized. These risk based concentrations have been adopted by other EPA regions.
MDL = Method Detection Limit

** C&D debris to be used as fill in the residential area must meet individual cPAH criteria and have a total cPAH level of 1 ppm or less. Low permeability soil and top soil (used in non-residential areas) are not required to meet the "Total cPAH" criteria. The total cPAH limit is a site specific NYSDOH requirement.

TABLE 01415-1C
Clean Material Use Criteria - Maximum Allowable Concentration
Organic Pesticides and PCBs

Contaminant	Clean Material Use Criteria (mg/kg or ppm)	Contaminant	Clean Material Use Criteria (mg/kg or ppm)
Total Pesticides	10 ppm	gamma-BHC (Lindane)	0.06
Aldrin	0.041	gamma-chlordane	0.54
alpha-BHC	0.11	Heptachlor	0.10
Endrine aldehyde	*	Heptachlor epoxide	0.02
Alpha-chlordane	*	Methoxychlor	*
beta-BHC	0.2	Total PCBs	1.0
delta-BHC	0.3		
4,4'-DDD	2.9		
4,4'-DDE	2.1		
4,4'-DDT	2.1		
Dieldrin	0.044		
Endosulfan I	0.9		
Endosulfan II	0.9		
Endosulfan sulfate	1.0	Toxaphene	*
Endrin	0.10		
Endrin ketone	N/A		

Source: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, January 24, 1994.

* Contaminants marked with an "*" do not have individual limits in NYSDEC's TAGM 4046; however, the total pesticides and PCB concentrations shall be less than the maximum allowable concentrations listed above as Total Pesticides and Total PCBs, respectively.

TABLE 01415-1D
Clean Material Use Criteria -
Maximum Allowable Concentrations
Inorganics

Contaminant	Clean Material Use Criteria (mg/kg or ppm)
Aluminum	78,000
Antimony	31*
Arsenic	7.5
Barium	300
Beryllium	0.16
Cadmium	1
Chromium	10
Cobalt	30
Copper	25
Cyanide	1600*
Iron	2000
Lead	No levels established
Magnesium	No levels established
Manganese	390*
Mercury	0.1
Nickel	13
Potassium	No levels established
Selenium	2
Silver	390*
Sodium	No levels established
Thallium	No levels established
Vanadium	150
Zinc	20

Notes

1. * = Criteria established using EPA Region III Risk Based Concentrations. No specific levels were provided in the TAGM for these parameters and site background levels are not available.

2. Criteria noted as "no levels established" indicates that TAGM criteria is based on site background (not available) and that no risk based criteria has been established.

Source: NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046, January 24, 1994.

END OF SECTION 01415

SECTION 01500
TEMPORARY FACILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this section.

1.2 SUMMARY

This section specifies the provisions for temporary site facilities to be provided by the Contractor. The Contractor shall coordinate the location of any temporary facilities with the Engineer and utility hookups with the appropriate agencies.

1.3 FIELD OFFICE

A field office is not required but may be provided if deemed necessary by the Contractor.

1.4 UTILITIES

The Contractor shall be responsible for all utility connections, charges and fees. Utility connection and usage shall be at the discretion of the Contractor. A hardline or cellular phone shall be available during all site activities for emergency use.

1.5 POTABLE WATER

The Contractor shall maintain at all times a supply of drinking water for the Engineer, Owner and Contractor personnel.

1.6 TOILET FACILITIES

The Contractor shall provide and maintain sanitary facilities at the site for his employees, the Engineer and the Owner. Facilities shall comply with regulations of the local and state health departments.

1.7 SECURITY

A. The Contractor shall be responsible for the Contractor's equipment, materials and tools on the site.

B. The Contractor shall maintain a log of all persons entering and leaving the site during work hours.

1.8 FACILITY REMOVAL

At the time of Substantial Completion, the Contractor shall remove all temporary facilities and utility connections and shall leave the premises in a condition acceptable to the Engineer.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01500

SECTION 01564

SITE HEALTH AND SAFETY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this section.

1.2 SUMMARY:

This item specifies the minimum requirements for health, safety, and emergency response for the project. The Contractor shall develop and implement a written Site Health and Safety Plan (SHASP) which at a minimum meets the requirements of this section and complies with applicable Federal and State regulations. The SHASP shall be submitted for review to the Engineer before any onsite work can be initiated. The SHASP, complete with all comments addressed, will be made a part of the Contract Documents.

1.3 REFERENCES:

The Site Health and Safety Plan shall meet applicable requirements contained in the following publications.

A. 29 CFR 1910, General Industry, Occupational Safety and Health Administration (OSHA) Safety and Health Standards.

B. 29 CFR 1926, Construction Industry, OSHA Safety and Health Standards.

C. USEPA Order 1440.2, Health and Safety Requirements for Employees Engaged in Field Activities, July 12, 1981.

D. NIOSH/OSHA/USCG/USEPA, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, October 1985.

E. Standard Operating Safety Guides, United States Environmental Protection Agency, Office of Emergency and Remedial Response, November 1984.

F. "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices." American Conference of Governmental Industrial Hygienists, Cincinnati, Ohio, Current Edition.

G. "Guide to Occupational Exposure Values." American Conference of Governmental Industrial Hygienists, Cincinnati, Ohio, Current Edition.

H. Department of Labor, Occupational Safety and Health Administration, 29 CFR, Part 1910, Air Contaminants; Final Rule, January 19, 1989.

I. "Pocket Guide to Chemical Hazards" National Institute for Occupational Safety and Health and Occupational Safety and Health Administration, Cincinnati, Ohio, Current Edition.

1.4 DEFINITIONS:

A. Onsite Personnel: Onsite personnel shall include the Contractor, Subcontractor(s), the Owner and his representatives, and the local, state, and federal government representatives having jurisdiction over the work performed under this contract, as well as all employees/agents of these parties.

B. Visitors: All personnel present on site not qualifying as Onsite Personnel.

C. Health and Safety Manager: The Health and Safety Manager (HSM) must have a formal education and training in occupational health and safety with a minimum of

three years experience in hazardous waste site operations. The HSM must have a working knowledge of State and Federal Occupational Safety and Health Regulations. He shall be responsible for the development, implementation, and oversight of the SHASP and shall provide necessary direction and supervision to the Site Health and Safety Officer. He shall also be responsible for site- specific training, review of air monitoring data, and review of any accident reports. The HSM shall be available during normal working hours.

D. Site Health and Safety Officer: The Site Health and Safety Officer (SHSO) must have a minimum of two years of related experience. He must have a working knowledge of State and Federal Occupational Safety and Health Regulations and must have demonstrable experience in the proper use of air monitoring instrumentation used at the site. The SHSO shall be certified in CPR and first aid. The SHSO must be on site during active working hours. The responsibilities of the SHSO are as follows:

1. Implement the SHASP on site.
2. Enforce day-to-day health and safety protocols in effect on site.
3. Require that all workers involved in intrusive activities on the site have had appropriate waste site worker training and medical examinations, and review and maintain training and medical certifications on site.
4. Require that all personnel entering the site understand the provisions of the SHASP.
5. Conduct daily health and safety inspections and prepare weekly reports.
6. Conduct periodic training sessions in proper use and maintenance of personal protective equipment and safety practices.
7. Check the condition of all emergency equipment weekly and its availability on a daily basis.
8. Conduct periodic emergency response drills.
9. Conduct daily health and safety meetings each morning.

10. Direct and advise Contractor personnel, visitors, and Subcontractor(s) on all aspects, especially changes, related to health and safety requirements at the site.
11. Conduct necessary health and safety monitoring.
12. Conduct air monitoring program.
13. Monitor site and perimeter conditions and determine all necessary changes in levels of personal protection and, if warranted, execute work stoppages.
14. Report changes in site conditions and changes in personal protection requirements to the Engineer.
15. Prepare accident/incident reports.
16. Prepare and maintain all Field Activities Forms in an orderly fashion.

E. Monitoring: Monitoring includes the use of real-time, direct reading field instruments to provide necessary information for the selection of proper personal protective equipment for onsite personnel and visitors and for the protection of general public health and the environment during the performance of the work on site.

F. Medical Consultant: The Medical Consultant must be a physician that is certified in occupational medicine and familiar with potential site hazards of the project. The Medical Consultant shall be available to consult with local emergency medical services and will provide medical evaluations of personnel assigned to the project.

1.5 SITE SAFETY AND HEALTH PLAN REQUIREMENTS:

This contract will require work which may involve exposure to physical and chemical hazards. The Contractor shall ensure adequate protection for all onsite personnel and implement a complete Site Health and Safety Plan for all personnel working on or visiting the site.

A. The Site Health and Safety Plan shall address, as a minimum, the following subject areas in accordance with 29 CFR, 1910.120:

1. Health and safety organization (responsibilities, qualifications, and chain-of-command).

2. A health and safety risk or hazard analysis for each site task and operation to be performed.

3. Provisions for employee training to assure compliance with 1910.120(e).

4. Personal protective equipment (PPE) to be used by employees for each of the site tasks and operations being conducted to eliminate potential exposures as required by the personal protective equipment program in 1910.120(g)(5).

5. Medical surveillance requirements in accordance with 1910.120(f).

6. Real-time air monitoring to identify and monitor exposures to onsite personnel and offsite receptors; personnel and environmental sampling techniques, and instrumentation to be used.

7. Site control measures in accordance with 1910.120(d).

8. Personnel and equipment decontamination procedures in accordance with 1910.120(k).

9. Standard Operating Safety Procedures, engineering controls, and work practices.

10. An Emergency Response Plan meeting the requirements of 1910.120(l) for safe and effective responses to emergencies, including communications, emergency rescue, fire protection, ambulance service, first aid, spill/release response, PPE, and other equipment.

11. First aid requirements.

12. Confined space entry procedures meeting the requirements of 1910.146.

13. A spill containment program meeting the requirements of 1910.120(j).

14. Heat/cold stress monitoring.

15. Logs, reports, and record keeping.

16. Site description and contamination evaluation.

1.6 SUBMITTALS:

A. The Contractor's Site Health and Safety Plan (SHASP) submitted to the Engineer prior to the startup of work.

B. Written certification of hazardous waste site worker training (initial and refresher), site-specific health and safety training, first aid training, and medical surveillance for all personnel participating in intrusive construction activities.

1.7 COMPLIANCE:

A. Consistent disregard for the provisions of the SHASP by the Contractor or his Subcontractor(s), or employees shall be deemed just and sufficient cause for

stoppage of work. Such work stoppage shall not form the basis of claim for either extra payment or extension of time for the project completion.

B. The Contractor's compliance with the minimum requirements in these specifications does not relieve the Contractor from the responsibility of implementing proper health and safety procedures under unforeseen conditions.

PART 2 - MATERIALS: (Not Applicable)

PART 3 - EXECUTION:

3.1 RESPONSIBILITIES:

The Contractor shall: (a) develop and submit for review a Site Health and Safety Plan; (b) employ a Health and Safety Manager, Site Health and Safety Officer, and a Medical Consultant; and (c) conduct all necessary monitoring activities to protect his onsite personnel and others in the area.

3.2 SITE SAFETY AND HEALTH PLAN IMPLEMENTATION:

The SHASP shall be developed and implemented by the Contractor's HSM. The requirements described herein shall be used as a minimum outline description of the SHASP. The SHASP shall be site-specific and incorporate an assessment of the hazards associated with the remediation work to be performed under this Contract. The SHASP shall address potential hazards associated with the performance of work.

3.3 SITE HEALTH AND SAFETY PLAN ELEMENTS:

A. Health and Safety Organization: The Contractor shall submit a health and safety organization chart naming key project personnel, defining their duties, responsibilities, and presenting a structure to implement the SHASP as well as

address problems and take corrective actions. Key project personnel will at a minimum include the Contractor's Project Manager, Health and Safety Manager, Site Health and Safety Officer, and Field Team Personnel

B. Hazard Assessment: The purpose of the Hazard Assessment is to provide information necessary for selecting personal protective equipment, establishing air monitoring requirements, and determining health and safety procedures necessary to protect all onsite personnel, the environment, and the public.

1. Chemical Hazards: A qualitative evaluation of chemical hazards shall be based on the following:

- Nature of potential contaminants
- Locations of potential contaminants at the project site
- Levels of contaminants
- Potential for personnel/public exposure during various site activities
- Effects of potential contaminants on human health

2. Physical Hazards: The Contractor shall assess the potential for physical hazards affecting personnel during the performance of work.

3. Training:

a.) General: The Contractor shall certify that all personnel assigned to or regularly entering areas of intrusive activity beyond the Support Zone for the purpose of performing or supervising work, for health, safety, security, or administrative purposes, for maintenance, or for any other site-related function, have received appropriate health and safety training in accordance with 29 CFR 1910.120 (e). Training shall consist of a minimum of 40 hours initial off-site

training and three (3) days onsite experience. Twenty-four (24) hours of initial off-site training is acceptable for workers on site only occasionally for a specific limited task and who are unlikely to be exposed over Permissible Exposure Limits (PALS). In addition, the Contractor's supervisory personnel shall have a minimum of eight (8) hours additional specialized training on managing hazardous waste operations. Documentation of all such training shall be submitted to the Engineer before any employees will be allowed beyond the Support Zone.

b.) Site-Specific Training: All personnel assigned to or entering active intrusive work areas of the site shall complete one site-specific training session to guarantee that all such personnel are familiar with the use of health and safety, respiratory, and protective equipment and with the safety and security procedures required for the site. The initial site-specific training session shall be conducted by the HSM. The Contractor shall notify the Engineer at least five (5) days prior to the initial site-specific training session so that the Owner and Government personnel involved in the project may attend. Follow-up site-specific training sessions for new personnel or visitors shall be conducted by the SHSO. The Contractor shall provide site-specific training to all Contractor's and Subcontractor's employees and Government representatives consistent with the requirements of OSHA Standard 29 CFR 1910.120, prior to the commencement of work. The site-specific training program shall address all elements of the SHASP.

c.) Records: The Contractor shall keep records of all training periods, documenting date, attendance, and topics covered. Additionally, the Contractor shall be responsible for, and shall guarantee that,

only personnel successfully completing the required training are permitted to enter active intrusive work areas of the site.

4. Medical Surveillance: The Contractor shall provide the services of a Medical Consultant who is a physician board certified in occupational medicine to perform the medical examinations for all employees who perform intrusive work in the Exclusion Zone, in accordance with 29 CFR 1910.120(f). The Medical Consultant shall review the medical examination results to certify if Contractor's personnel are fit to perform assigned tasks using personal protective equipment. The medical surveillance protocol to be implemented is the Medical Consultant's responsibility but shall meet the requirements of USEPA, OSHA Standards 29 CFR 1910.134, and ANSI Z88.2-1980. The components of the Contractor's medical examination shall be included in the SHASP. The Contractor shall maintain and preserve medical records on workers permitted to enter beyond the Support Zone for 30 years after they leave employment as per 29 CFR Part 1910.20.

a.) Onsite personnel entering the Exclusion Zone, and not employed by the Contractor or his Subcontractor shall be required to sign a declaration that he/she has undergone a physical examination of the same or similar scope and has been certified fit to enter contaminated areas requiring personal protective equipment necessary for this project.

b.) Lost-Time Injuries: Any employee who develops a lost-time injury or illness during the period of the contract as a result of work in the Exclusion Zone must be evaluated by the Medical Consultant. The employee's supervisor shall be provided with a written statement indicating the employee's fitness (ability to return to work), signed by the Medical Consultant prior to allowing the employee to re-enter the Exclusion Zone. A copy of this written statement shall be

submitted to the Engineer. An accident report describing the events leading up to and causing the injury or illness shall be submitted to the Engineer.

5. Site Control: The Contractor shall establish a system to control access to the site. This system shall be incorporated into the layout of the site into work zones. The work zones shall include the Support Zone, Contamination Reduction Zones, and Exclusion Zones (active intrusive work areas). The system shall assure that only authorized persons enter active intrusive work areas.

   a.) The Contractor shall restrict access and mark the outer limits of the active intrusive work areas with high visibility barrier tape or flagging and signs warning unauthorized personnel not to enter.

   b) If construction is concurrent, the Contractor will be responsible for establishing a means of communication between the active work areas. The Contractor will also be responsible for establishing a means of communication between workers within the same work area.

   c.) Site security shall be established and maintained.

6. Standard Safety Practices: The Contractor shall develop, implement, and enforce safe work practices and engineering safeguards for the work covered under these specifications. General site health and safety directives for conducting onsite work which shall be included in the SHASP and enforced during site activities include but are not limited to:

   a.) Eating and smoking shall be prohibited except in designated areas outside the Exclusion Zone and Contamination Reduction Zone as identified by the SHSO.

b.) Before initiating any non-routine operation in any restricted area, all personnel shall consult the SHSO about health and safety requirements for the operations.

c.) A buddy system shall be implemented for all activities involving the use of respiratory protective equipment.

d.) The Contractor shall implement protocols for loading and unloading material on site. These protocols shall include DOT requirements covering such items as grounding, placarding, driver qualifications, and the use of wheel locks. Operation of other heavy construction equipment shall be in accordance with OSHA Standard 29 CFR Part 1926.

7. Personal Protective Equipment: The Contractor shall provide all onsite personnel with appropriate personal protective equipment and protective clothing as required by the SHASP. The Contractor shall ensure that all safety equipment and protective clothing is kept clean and well-maintained.

a.) Selection of personal protective equipment is based on the potential toxicity or physical dangers associated with hazardous materials and possible routes of exposure. Based on known or anticipated hazards, personnel will be required to wear a minimum of Level D protection. The adequacy of personal protection shall be confirmed through air monitoring conducted by the Contractor's Site Health and Safety Officer (SHSO). If the need to upgrade the level of personal protection arises, the SHSO will provide his personnel with the appropriate equipment. PPE selection, evaluation, and reevaluation is an on-going process directly related to the change in conditions as encountered at the site.

b.) Various levels of PPE must be made available on site during construction activities. It is anticipated that Level D and Level D-Modified PPE will be required.

8. Decontamination:

a.) Equipment Decontamination: The Contractor shall construct a decontamination pad within the Contamination Reduction Zone(s) for removing soil from all vehicles and equipment leaving the exclusion zone(s). The decontamination pad(s) shall include a high-pressure water wash area for equipment and vehicles. A designated clean area shall be established within the Contamination Reduction Zone(s) for performing equipment maintenance.

Any item taken into the Exclusion Zone must be assumed to be contaminated and must be carefully inspected and/or decontaminated before the item leaves the area. All contaminated vehicles, equipment, and materials shall be cleaned and decontaminated to the satisfaction of the Engineer prior to leaving the area. All construction material shall be handled and brought on site in such a way as to minimize the potential for contaminants being carried off site. Separate, clearly-marked parking and delivery areas shall be established.

Water used for personnel and equipment decontamination will be collected and pumped into a recharge trench which will allow the water to seep into the ground within the limits of the final cover system.

b.) Personnel Decontamination: Personnel shall be required to go through a thorough decontamination procedure in the

Contamination Reduction Zone prior to entering the Support Zone. Decontamination shall consist of soap and water washing of worker's hands, and face, and wet wiping of worker's boots or shoes.

9. Air Monitoring: The Contractor shall perform continuous real-time monitoring during active work at each work area and at site perimeter stations. Real-time organic vapor monitoring shall be conducted using Photoionization and/or Flame Ionization Detectors at each active work area within the breathing zone. All real-time monitoring shall be run continuously during active work. Real-time monitoring for combustibles, oxygen, hydrogen sulfide, and particulates shall also be run continuously along with the organic vapor monitoring. In addition, real-time, direct reading monitors shall be used at least hourly at one upwind and three downwind perimeter stations to monitor releases resulting from onsite activity and to provide information necessary to determine work rates and the implementation of control measures to prevent unacceptable contamination concentrations from leaving the site. Results of the real-time monitoring shall be logged and reported to the Engineer.

10. Emergency Equipment and First Aid Requirements:

a.) Fire Extinguishers: The type and number of fire extinguishers shall be determined by the Contractor. Inspection and maintenance shall be the responsibility of the Contractor. At least one 20-lb type ABC fire extinguisher shall be located at each entrance to each active work area with additional units located in onsite offices, and on each piece of heavy equipment. These fire extinguishers shall be utilized for putting out equipment or personnel fires and not to be employed as sole fire fighting equipment for large site fire.

b.) Emergency Eye Wash: Portable emergency eye wash units shall be provided by the Contractor. These portable units must be protected from freezing and shall be located close to the work area and at each equipment decontamination station. The emergency eye wash units shall meet the requirements specified in ANSI Z358.1-1981.

c.) First Aid Kits: The size and number of kits shall be sufficient for the maximum number of people on site at one time. The kits shall be equipped as per the recommendations of the Medical Consultant and shall be able to provide stabilization for patients requiring offsite treatment and general first aid. The first aid kit locations shall be specially marked and provided with adequate water and other supplies necessary to cleanse and decontaminate burns, wounds, or lesions.

d.) Onsite Emergency Vehicle: The Contractor shall provide at all times while onsite work proceeds, a designated emergency vehicle which will be used to transport injured personnel to the hospital for treatment. This vehicle shall contain a map showing the route and written directions to the hospital.

11. Emergency Response Plan and Procedures

a.) The Contractor shall develop an Emergency Response Plan which shall be submitted as part of the SHASP. This plan shall be designed to delineate contingency procedures to be used in the event of injuries to employees or other site-related accidents. The Emergency Response Plan shall include the procedures to be used to mitigate the harmful effects of chemical exposure as well as rescue and first aid services to be rendered. The Contractor shall

coordinate with local agencies (fire department, police department, emergency medical services, etc.) prior to beginning work.

b.) Emergency response agencies and current telephone numbers shall be included in the SHASP.

c.) The Contractor shall include in the SHASP a set of contingency procedures. At a minimum, these procedures shall describe:

- The actions that the Contractor will take in response to a worker injury or illness, a heavy equipment related accidents, fires, explosions, or any spill of contaminated materials;
- The name, address, and phone number (home and office) of the person(s) designated by the Contractor to act as emergency coordinator;
- A list of all emergency equipment at the site;
- Escape routes which will be used in the event of a sudden release, explosion, fire, etc.;
- A map showing the route to the nearest hospital;

d.) The Contractor shall prepare a Contingency Plan designed to prevent the spread of contaminants to adjacent areas. The plan shall incorporate a comprehensive air monitoring program which will follow NYSDEC and NYSDOH guidelines for a Community

Air Monitoring Plan and shall meet the minimum requirements of the Project Contingency Plan.

The Community Air Monitoring Plan, particulate limits shall be modified for this project as follows:

- An action level of 150 micrograms per cubic meter (integrated over a maximum period of 15 minutes) shall be established.

- If the site particulate levels exceed the 150 micron/cubic meter limit, then particulate measurements upwind of the site shall be recorded. If the work site level exceeds background by more than 100 micrograms/cubic meter, then remedial site activities must be performed.

The NYSDEC and NYSDOH community Air Monitoring Plan has been provided as an attachment to this section.

e.) The Contractor shall promptly report in writing to the Engineer and Owner all accidents arising out of, or in connection with, the performance of the work, whether on or adjacent to the site, which caused death, personal injury, or property damage, giving full details and statements of witnesses.

f.) Accident Investigation and Reporting: The Contractor shall develop a system, including forms, on which the pertinent details about accidents, damage, existing hazards, and actions taken to alleviate problems can be listed . These forms shall be appended to the Contractor's SHASP.

12. Heat/Cold Stress Monitoring:

a.) As a minimum, the Contractor shall establish work/rest schedules based on ambient conditions and the level of protection being utilized and identify necessary physiological monitoring requirements.

b.) Procedures to monitor, avoid, and treat heat/cold stress shall be established in accordance with "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities," NIOSH/OSHA/USCG/EPA, October 1985; U.S. Dept. of Health and Human Services, Public Health Service, Centers for Disease Control, National Institute for Occupational Safety Health; Publication No. 85-115.

c) Field implementation of the Heat/Cold Stress Prevention Plan shall be performed by a person with current first aid/CPR certification who is trained to recognize symptoms of heat and cold stress.

13. Spill Control Plan: The Contractor shall provide spill control measures; including methods, means, and facilities required to prevent contamination by site wastes, contaminated groundwater, equipment fuels, oils, and greases, and any other potentially hazardous materials. If a spill occurs, the following actions, at a minimum, shall be taken by the Contractor.

a.) Notify the Owner and Engineer immediately.

b.) Take immediate measures to control and contain the spill within the site boundaries.

c.) Keep unnecessary people away, isolate the hazardous area, and deny entry.

d.) Stay upwind; keep out of low lying areas.

e.) Allow no flares, smoking, or flames in hazard area.

f.) For liquids, keep combustibles away from the spilled material.

14. Fires: The Contractor shall develop procedures for responding to both small and large fires which shall address the following minimum actions:

a.) Evacuation procedures.

b.) Extinguishing methods.

c.) Notification of emergency response services, Engineer, and Owner.

15. Logs, Reports, and Record keeping: The Contractor shall maintain logs and reports covering the implementation of the SHASP. The format shall be developed by the Contractor to include Daily Safety Logs, Air Monitoring Logs, and a Close-Out Safety Report. These logs and reports shall be appended to the Contractor's SHASP.

a.) Daily Safety Logs shall be completed by the SHSO and submitted to the Engineer on a daily basis. These logs shall include:

- Date
- Work area(s) checked
- Employees present in work areas
- Equipment being utilized by employees
- Protective clothing being worn by employees
- Protective devices being used by employees
- Accidents or breaches of procedure

b.) Air Monitoring Logs shall be completed by the SHSO and submitted to the Engineer on a daily basis. These logs shall include:

- Date of report
- Equipment utilized for air monitoring
- Real-time air monitoring readings from each work location
- Calibration records
- Signature of individual taking readings
- Specific locations of real-time readings
- Exact time monitoring was conducted
- Meteorological conditions
- Any required equipment repair

c.) Close-out Safety Report: At the completion of the work, the Contractor shall submit a Close-out Safety Report. The report shall be signed and dated by the Site Health and Safety Officer and submitted to the Engineer. The report shall include procedures and techniques used to decontaminate equipment, vehicles, and decontamination facilities. The report shall include a summary of safety aspects of the entire project.

3.4 COMMUNICATIONS:

A hardline telephone communications system shall be established by the Contractor. Two way radios shall be utilized for onsite communication. A map giving directions to the nearest hospital and a list of emergency numbers, including the Owner, Engineer, police, fire, ambulance, hospital, and the NYSDEC shall be prominently posted near the telephone.

3.5 POSTED REGULATIONS:

A. The Contractor shall develop a series of posted regulations which shall address onsite protocols regarding use of personal protective equipment, personal hygiene, and provisions for smoking and eating on the site.

B. These protocols shall be posted at various locations on site and shall be reviewed with the Contractor's personnel.

END OF SECTION 01564

Community Air Monitoring Plan
(Ground Intrusive Activities)

Real-time air monitoring, for volatile compounds and particulate levels at the perimeter of the work area is necessary. The plan must include the following:

- Volatile organic compounds must be monitored at the downwind perimeter of the work area on a continuous basis. If total organic vapor levels exceed 5 ppm above background, work activities must be halted and monitoring continued under the provisions of a Vapor Emission Response Plan. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

- Particulates should be continuously monitored upwind, downwind and within the work area at temporary particulate monitoring stations. If the downwind particulate level is 100* ~~150~~ $\mu g/m^3$ greater than the upwind particulate level, then dust suppression techniques must be employed. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

Vapor Emission Response Plan

If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the work area, activities will be halted and monitoring continued. If the organic vapor level decreases below 5 ppm above background, work activities can resume. If the organic vapor levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the work area, activities can resume provided:

- the organic vapor level 200 ft. downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm over background.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring as directed by the Safety Officer will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

Major Vapor Emission

If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

* SEE SECTION 3.3,B,11(d) FOR REVISED PARTICULATE REQUIREMENTS.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and if the following levels persist for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect;

- if organic vapor levels are approaching 5 ppm above background.

However, the Major Vapor Emission Response Plan shall be immediately placed into effect if organic vapor levels are greater than 10 ppm above background.

Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in the Health and Safety Plan of the Work Plan will go into effect.

2. The local police authorities will immediately be contacted by the Safety Officer and advised of the situation.

3. Frequent air monitoring will be conducted at 30 minutes intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Safety Officer.

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Project Record Documents.

B. Project Record Documents required include the following:

Marked-up copies of Contract Drawings
Supplemental Record Drawings (newly prepared drawings)
Test Records

C. The Contractor is responsible for obtaining, maintaining, and recording Project Record Document information.

E. Maintenance of Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition. Make documents and Samples available at all times for the Engineer's inspections.

1.3 RECORD DRAWINGS

A. Markup Procedure: During construction, maintain a set of blue- or black-line white prints of Contract Drawings and Shop Drawings for Project Record Document purposes.

1. Mark these Drawings to show the actual installation where the installation varies from the installation shown originally. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later. Items required to be marked include, but are not limited to, the following:

Dimensional changes to the Drawings
Revisions to details shown on the Drawings
Locations and depths of underground utilities
Revisions to routing of piping and conduits
Correct grade and alignment of roads and other structures
Changes made by change order or Construction Change Directive
Changes made following the Engineer's written orders
Details not on original Contract Drawings
Revised grading elevations
Revised excavation and fill limits
Revised drainage

2. Mark record prints of Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings location.

3. Mark record sets with red erasable colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.

4. Mark important additional information that was either shown schematically or omitted from original Drawings.

5. Note Construction Change Directive numbers, alternate numbers, change-order numbers, and similar identification.

C. Preparation of Transparencies: When authorized, prepare a full set of corrected transparencies of Contract Drawings and Shop Drawings.

1. Incorporate changes and additional information previously marked on print sets. Erase, redraw, and add details and notations where applicable. Identify and date each drawing; include the printed designation "PROJECT RECORD DRAWINGS" in a prominent location on each drawing.

2. Refer instances of uncertainty to the Engineer for resolution.

3. The Owner will furnish the Contractor one set of transparencies of original Contract Drawings for use in recording changes and additional information. Other printing as required is the Contractor's responsibility.

Review of Transparencies: Before copying and distributing, submit corrected transparencies and the original marked-up prints to the Engineer for review. When acceptable, the Engineer will initial and date each transparency. Acceptance by the Engineer indicates acceptance of general scope of revisions, additional information recorded, and of the quality of drafting.

The Engineer will return transparencies and the original marked-up prints to the Contractor for organizing into sets, printing, binding, and final submittal.

D. Copies and Distribution: After completing the preparation of transparency record drawings, print 3 blue- or black-line prints of each drawing, whether or not changes and additional information were recorded. Organize the copies into manageable sets. Bind each set with durable-paper cover sheets. Include appropriate identification, including titles, dates, and other information on the cover sheets.

1. Organize and bind original marked-up set of prints that were maintained during the construction period in the same manner.

2. Organize record transparencies into sets matching the print sets. Place these sets in durable tube-type drawing containers with end caps. Mark the end cap of each container with suitable identification.

Submit the marked-up record set, transparencies, and 3 copy sets to the Engineer for the Owner's records; the Engineer will retain 1 of the 3 copy sets.

1.4 SUPPLEMENTAL RECORD DRAWINGS

The Contractor(s) shall prepare and submit supplemental record drawings of the work completed as described in the technical specifications. All supplemental record drawings shall be stamped by the licensed surveyor.

A. The following supplemental record drawings shall be required:

1. Elevations of the Final Cover System subgrade. The drawing will show spot elevations on the established grid system and one foot topographic lines prior to low permeability soil placement.

2. Post Excavation Grades in the residential area.

3. C&D Fill in Residential Area (i.e., final grade minus 2').

4. Final Grade - This drawing will document the select fill placed in the residential area, the low permeability soil layer and final grades throughout the site.

4. The Low Permeability Soil and Select Fill Layer portion of the Final Grade Drawing and the C&D Fill in Residential Area Drawing shall indicate the top and bottom elevations of the layer, as well as the total thickness of the layer, on a 50-foot by 50-foot grid, at the toes, tops and midpoints of slopes, at the final cover limits, at the tie-in point to adjacent grades and at other unique points that do not lie on grid points. Each drawing shall also show record contour lines of the top of the layer. The limits of the final cover system, property lines and other points of reference shall be provided on all drawings. The low permeability soil portion of the drawing shall show in-place density test and permeability sample locations.

B. Supplemental Record drawings shall be stamped and signed by a land surveyor licensed in the State of New York.

C. Each supplemental record drawing shall be prepared on a 30" by 42" sheet and shall locate all work referenced to the limits of work.

D. All locations shall be referenced to the horizontal coordinate system. The grid coordinate system shall be shown on all supplemental record drawings. Elevations shall be referenced to the vertical control established for the project.

E. Transparencies, copies and distribution of Supplemental Record Drawings, shall be provided as required for Record Drawings.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 RECORDING

Post changes and modifications to the Documents as they occur. Do not wait until the end of the Project.

END OF SECTION 01720

DIVISION 2 - SITE WORK

SECTIONS 02210

SOIL FILL AND BACKFILL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to this section.

1.2 SUMMARY

This specification describes the construction and testing requirements for the following:

A. Low permeability soil for the final cover system

B. Select fill to be placed in the residential area.

C. Backfill of contaminated site soils

D. Backfill of Construction and Demolition (C&D) debris

1.3 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic description and shall be the latest published version.

A. American Society for Testing and Materials (ASTM)

ASTM D-422 Particle-Size Analysis of Soils

ASTM D-698	Moisture-Density Relations of Soil and Soil Aggregate Using 5.5-Pound Rammer and 12-inch drop (Standard Proctor)
ASTM D-2216	Laboratory Determination of Water Moisture Content of Soil, Rock, and Soil-Aggregate Mixtures
ASTM D-2922	Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D-3017	Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D-4318	Liquid Limit, Plastic Limit and Plasticity Index of soils
ASTM D-5084	Permeability Test (Constant Head in Triaxial Cell with Back Pressure Saturation)

1.4 SUBMITTALS

A. Material Management Work Plan: see Division 2, Section "Excavation" for additional information.

B. The Contractor shall submit required test reports and a 5-pound sample of each soil material. Samples shall be submitted in tagged bags that identify the type of material, project name, source and date the sample was taken. All laboratory test reports shall be provided before the represented soil is allowed on the site.

C. General: The Contractor will not be permitted to bring on site any proposed off site materials until submittals required for those materials are approved in writing by the Engineer. No on site materials will be permitted to be placed without Engineer's approval of submittals required for those materials.

D. Testing Laboratory: The laboratory the Contractor proposes for any field and laboratory work shall be subject to Engineer's prior written approval. See Section

"Soil Testing Laboratory Services" for required laboratory submittals. Any testing services performed by an unapproved laboratory may be disallowed by the Engineer requiring the materials to be retested by an approved laboratory. Such retesting shall be performed at no additional cost to the Owner.

E. Material Certifications for the proposed Geotextile to be placed in the Proposed Water Main Pipe Trench.

F. Certification from Material Suppliers stating that provided soils are "clean", noncontaminated as defined by NYSDEC's TAGM 4046 (see Specification 01415) or applicable analytical test results demonstrating compliance.

G. All proposed off site borrow source information shall require sufficient review time.

PART 2 - PRODUCTS

2.1 LOW PERMEABILITY SOIL:

A. Low permeability soil shall be used to construct the final cover system within the limits shown on the drawings.

B. The Contractor shall provide low permeability soil material from an approved offsite source consisting of material less than 3-inches in any dimension and classified as CL, SC, GC, SM, GM or ML by the Unified Soil Classification System. The offsite material shall be capable of meeting the required maximum in-place permeability of $1x10^{-5}$ cm/sec. The Contractor shall be required to perform the tests identified on Table 02210-1 and submit the analyses to the Engineer prior to bringing the material onsite.

C. The low permeability material shall be free from roots and other deleterious materials.

D. The Contractor shall utilize the results of the borrow material tests to determine acceptable ranges of moisture content and minimum dry densities for soil placement to ensure that the permeability requirement is met. In no instance will soils be placed at less than 95% of maximum dry density as determined by the Standard Proctor Test (ASTM D-698).

E. Material with a remolded permeability exceeding the maximum permissible value for the low permeability soil, represented by the test, will not be used as low permeability soil.

F. No material shall be used without prior approval of the Engineer. The Contractor shall schedule construction activities so that the proposed soil material is laboratory tested and results available a minimum of five working days prior to its planned use. See paragraph "Pre-Construction Testing" in this Section.

2.2 SELECT FILL

A. Select fill shall be placed in the residential area to a minimum depth of 1.5 feet (± 0.1 feet) above all clean C&D debris fill. Additional select fill shall be placed in the residential area if the quantity of available C&D material is insufficient. The Engineer shall approve of all additional select fill prior to placement.

B. Select fill shall meet all of the material requirements established for low permeability soil, except there will be no permeability requirement.

2.3 CONTAMINATED SITE SOILS

A. Contaminated site soil is defined as all existing fill material in the proposed residential area. See previous site documents for detailed analytical test results on these materials.

B. Contaminated site soils shall be excavated from the residential area. See Division 2, Section "Excavation" for additional information.

C. Contaminated site soils shall be placed in non residential site areas as shown on the drawings to achieve subgrade elevations shown on the drawings. See paragraph "SEQUENCE OF SUBGRADE FILL" in this Section for additional information.

2.3 CONSTRUCTION AND DEMOLITION (C&D) DEBRIS BACKFILL

A. C&D debris is defined as all material (primarily C&D debris) located within the C&D material excavation areas shown on the drawings. C&D debris backfill shall consist of on-site materials which are approved for site use. See Division 1, Section "Analytical Testing Services and Division 2, Section "Excavation" for additional information.

B. Designated clean C&D debris material shall be used as fill in residential areas (but not within two (2) feet of final grade), fill for the proposed water main pipe trench, or as fill in non-residential areas. Contaminated C&D debris material shall be placed to achieve subgrade elevations in non-residential areas shown on the drawings. See paragraph "SEQUENCE OF SUBGRADE FILL" in this section for additional information.

2.4 PRECONSTRUCTION TESTING

A. Preconstruction (laboratory) testing shall be completed and approved by the Engineer before the material is used on the site.

B. Proposed soils to be used as soil fill or backfill shall be divided into 5,000 cy increments (i.e., stockpiles or designated excavation areas) and tested as noted below. All tests shall be numbered or otherwise designated such that all parties will

know what stockpile or excavation area is represented by each test, and such that problem materials can be isolated. Both off-site and on-site soils shall be tested.

C. See Division 1, Section "Analytical Testing Services" for analytical test requirements.

TABLE 02210-1

MINIMUM PRECONSTRUCTION TESTING

TEST	TEST FREQUENCY		
	Low Permeability Soil and Select Fill[1]	Contaminated Soil	C&D Debris
1. Grainsize with Hydrometer	1 per 2,500 cy	N.R.	N.R.
2. Moisture Content	1 per 1,000 cy	N.R.	N.R.
3. Atterberg Limits[2]	1 per 2,500 cy	N.R.	N.R.
4. Moisture-Density Curve	1 per 5,000 cy	1 per soil type	N.R.
5. Permeability[2]	Minimum 3 per soil source AND as required to establish minimum density and moisture requirements	N.R.	N.R

[1] See also, analytical test requirements for Low Permeability Soil and Select Fill
[2] Permeability testing and Atterberg Limit testing will not be required for structural fill
N.R. = Not required

3.0 EXECUTION

3.1 GENERAL - PLACEMENT AND COMPACTION

A. The Contractor shall be required to have an onsite soils manager supervising all fill placement. See Division 2, Section "Excavation" for detailed responsibilities of the manager.

B. Fill shall be placed in the areas designated on the Contract Drawings and where required to achieve required lines, grades, and elevations shown on the drawings.

C. The fill material shall be approved by the Engineer prior to planned placement. The fill material shall be placed in maximum lift thicknesses (measured after compaction) as specified for each material. Fill shall be spread in approximately horizontal layers of uniform thickness by bulldozers or other approved means and compacted by approved compaction equipment. If necessary, discing, harrowing, or other approved means shall be employed to break up the material, to blend it with water, or to aerate (dewater) it to reduce moisture content prior to compaction. The placement moisture content shall be maintained to promote effective compaction.

D. Handling, spreading and compacting of materials and the construction of all fill materials shall be performed in accordance with the best commonly used modern practice, and shall be directed toward obtaining a stable and homogeneous fill which is free of stratifications, lenses, or pockets which do not satisfy these specifications.

E. No material shall be placed above a previous lift of fill or prepared subgrade until the specified field and laboratory testing has been performed to verify that the required properties have been achieved for the underlying material.

F. The Contractor shall provide equipment and labor to assist the laboratory personnel in field testing and in obtaining fill samples at the direction of the Engineer. The Contractor shall cooperate in every way with this effort and no claim shall be made for time and materials expended for testing and sampling, nor for delays incidental to the sampling and testing, nor for remediation and retesting.

G. Soils or C&D debris otherwise suitable for fill may be excessively wet in their natural in-place or stockpiled conditions or may absorb water during movement, storage or placement. Excess water may cause these soils to become soft, unstable or unacceptable. Drying of the soil by approved manipulation or admixture methods

may be necessary to obtain the required moisture content and the required density, and shall be accomplished by the Contractor in approved areas by methods acceptable to the Engineer.

H. Except as otherwise provided for herein, the Contractor shall use only approved types of compactors which can demonstrate, to the satisfaction of the Engineer, that the required degree of compaction can be achieved without damaging any of the other features of the project. Compaction operations shall be carried out in a manner and sequence which shall permit the performance of all necessary moisture content and density tests. Prior to placement of any layer, any portions of the previous layer which are unsuitable in the judgement of the Engineer shall be removed to a location approved by the Engineer and replaced with suitable material and compacted in-place, or shall be otherwise remediated as approved by the Engineer.

I. The top surface and edges of each lift shall be scarified, and moisture added as necessary prior to placement of subsequent lifts, to provide a homogeneous mass as deemed necessary by the Engineer.

J. The Contractor shall be responsible for the stability of all compacted fill, throughout the Contract, and shall replace any portion which, in the judgement of the Engineer, has become disturbed beyond its accepted state.

K. The Engineer may make visual inspections of the construction procedures. The Contractor's laboratory shall perform in-place field density and moisture tests to determine that the fill is being constructed in accordance with the specifications. The Contractor shall schedule fill placement to permit in-place and, as applicable, sampling and laboratory testing of the fill. No additional fill material shall be placed until the in-place fill has been tested and has been approved by the Engineer.

L. The Engineer reserves the right to make minor adjustments or revisions to lines or grades indicated on the contract drawings, if found necessary as the work progresses, to obtain satisfactory construction. Such additional work shall be paid for at the unit price for such work indicated in the Contract. Such adjustments and revisions shall not constitute a cause for claim or delays in the approved construction schedule.

M. If, in the judgement of the Engineer, the soil to be used for fill does not conform to the characteristics of the pre-approved and tested borrow material samples, the material will be rejected and shall be removed and/or discarded by the Contractor to approved disposal areas.

N. Placing soils or C&D debris which is frozen will not be permitted. Placed fill material which becomes frozen shall be removed prior to placing additional fill unless it can be verified with in place testing that the required material properties of the in place material have been maintained. Fill shall not be placed on frozen materials.

3.2 SEQUENCE OF SUBGRADE FILL

To ensure availability of subgrade fill, excavated on-site material shall be placed in the following locations and sequence:

A. Contaminated Site Soil (from the residential area)

1. To the furthest extent possible, contaminated soil will be reused on site.

2. Excavated contaminated soils shall be placed within the limits of the final cover systems to achieve subgrade elevations.

3. Excess contaminated soil shall be used to raise the elevation of the proposed 30-foot wide greenway along the extreme western portion of the site, or to raise the elevation of recreation areas and/or will be used for architectural embankments as directed by the Owner.

4. Under no circumstance will contaminated soil occupy the final elevation at the end of construction in any area of the site. All areas filled with contaminated soil will be covered or capped with six (6) inches of topsoil and/or 12 inches of low permeability soils as shown on the drawings.

5. Any contaminated soil remaining at the end of construction will be transported off-site by a licensed solid waste hauler to a permitted disposal facility. If this disposal is required, all additional tasks and costs will be established in a Change Order between the Contractor and the Owner.

B. Soil/Debris from the proposed water main pipeline excavation shall be placed within the limits of and below the low permeability soil layer of the final cover system to achieve subgrade elevations. Under no circumstances will this material occupy the final elevation at the end of construction in any area of the site. All areas filled with this material will be capped with six (6) inches of topsoil (provided under separate contract) and 12 inches of low permeability soil as shown on the drawings.

C. C&D Debris

1. Clean C&D debris shall be used to backfill the proposed water main pipe line excavation and shall be placed in the residential area as required to meet grades two (2) feet below final grade.

2. Clean debris not required for the water main line backfill or residential area shall be used to achieve subgrade elevations below the final cover system, or elsewhere on the site.

3. Contaminated C&D shall be used to backfill non-residential areas of the site (except the proposed water main pipeline).

4. Excess C&D debris shall be used for architectural embankments around the site as directed by the Engineer.

3.3 LOW PERMEABILITY SOIL AND SELECT FILL PLACEMENT:

A. Low permeability soil shall be placed on the surface of the approved subgrade as a single lift that will produce a one-foot thick layer after compaction (± 0.1 feet). The low permeability soil will be compacted to a minimum in-place density measuring 95 percent of the maximum dry density, as determined by Standard Proctor tests. The low permeability soil shall exhibit a maximum in-place permeability of 1×10^{-5} cm/sec. Higher minimum in-place densities may be required to attain the required permeability (as determined by laboratory testing).

B. Select fill shall be placed in a maximum compacted lift thickness of one (1) foot. The select fill shall be compacted to a minimum in-place density of 90% of the maximum dry density, as determined by Standard Proctor test. The completed select fill layer constructed in the residential area shall have a minimum depth of 1.5 feet (± 0.1 foot tolerance). Additional select fill may be required (subject to approval by the Engineer).

C. Select fill shall not be placed in the residential area until the Engineer has approved the subgrade by confirming that all required materials have been excavated and approval is received from the regulatory agencies. Confirmation may include sampling and analysis of the subgrade. Sampling and analysis shall be performed by the Engineer, at the Owner's expense.

D. Should the soil be too wet to permit proper compaction, all work on the portions of the compacted fill thus affected shall be delayed until the material has dried to an

acceptable moisture content. Drying of the soil by manipulation may be necessary to obtain the proper moisture content throughout the material to achieve the specified compaction and permeability, and shall be accomplished by the Contractor, at no additional cost to the Owner. Any required manipulation of the material shall be performed to obtain a homogeneous moisture content prior to compaction.

E. In small areas where large compaction equipment is not capable of reaching, the material shall be compacted to the same requirements, using smaller equipment and in lifts not to exceed six (6) inches. When the operation occurs adjacent to structures, the materials shall be placed and compacted uniformly in such a manner as to prevent wedging action or eccentric loading upon or against the structures.

F. The Contractor shall maintain the surface moisture of the completed layer to prevent desiccation cracking. Desiccation cracks in the low permeability soil layer shall be repaired by the Contractor.

G. Tolerances: Thickness tolerance for the 1 foot compacted low permeability soil layer shall be $\pm$ 0.1 feet as determined by survey. See Division 1 Section "Survey Requirements" and "Project Record Documents" for additional requirements for monitoring and documenting final cover construction.

3.4 CONTAMINATED SOIL PLACEMENT

A. The Contractor shall excavate contaminated soil from the residential area and place the soil in the designated fill locations to obtain subgrade elevations. No soil placement shall begin until the fill area is approved by the Engineer.

B. Contaminated soil shall be placed in one (1) foot lifts and compacted to a minimum of 95% of maximum dry density, as determined by standard Proctor tests.

C. Soil moisture content shall be maintained such that compaction is readily obtained and dust is minimized.

D. Tolerances: Contaminated soil shall be placed to required subgrade elevations (and as required to achieve specified slopes) ± 0.2 feet.

3.5 CONSTRUCTION AND DEMOLITION (C&D) DEBRIS PLACEMENT

A. Only existing on-site C&D debris shall be used as fill material.

B. C&D debris shall be placed in maximum lift thickness of one (1) foot and compacted with a minimum of six (6) passes of a compactor (minimum weight 10 tons).

C. C&D debris deemed by the Engineer to be too wet to properly compact, shall be mixed in-place with dry material to provide a suitably compact mass as determined by the Engineer.

D. Oversize C&D debris (material which is greater than 6 inches in any dimension shall be segregated from the other fill and placed in the designated oversize material area. Oversize debris shall be placed such that overlying materials can be compacted and voids are minimized.

E. Tolerances: C&D debris shall be placed to required subgrade elevations (and as required to achieve specified slopes) ± 0.2 feet.

3.6 MATERIAL EXCAVATED FROM PROPOSED WATER MAIN PIPELINE

A. Excavated materials shall be placed below the low permeability soil layer of the final cover system.

B. Placement, compaction and testing requirements for the material shall be the same as that required for C&D debris.

3.7 FIELD TESTING

TABLE 02210-2

MINIMUM FIELD TESTING FREQUENCIES

TEST	TEST FREQUENCY		
	Low Permeability Soil	Contaminated Soil and Select Fill	C&D Debris and Material from Pipeline
1. Density	9/acre/lift	9/acre/lift	NR
2. Moisture	9/acre/lift	9/acre/lift	NR
2. Undisturbed Permeability	1/acre/lift	NR	NR

NOTE 1: All in-place density and permeability sample locations for the low permeability soil and select fill shall be shown on the applicable supplemental record drawing.

NR = Not Required.

END OF SECTION 02210

SECTION 02220

EXCAVATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.2 SUMMARY

A. Excavate for removal of contaminated soil from the proposed residential area.

B. Excavate for removal of C&D debris.

C. Excavate soil/debris as required for the Proposed Water Main pipe.

D. All other excavation work not covered elsewhere in these specifications.

1.3 REFERENCE STANDARDS:

A. Occupational Safety and Health Administration (OSHA) - 29 CFR, Part 1926 Subpart P -Excavation.

1.4 SITE INFORMATION

A. Prior to starting any work, the Contractor shall become thoroughly familiar with the site, the site conditions, and all portions of the work within this specification section. The Contractor shall satisfy himself, at a minimum by actual examination

of the work site, as to the existing grades, elevations, actual and potential site conditions, and the work actually required under this specification section.

1.5 SUBMITTALS

A. The Contractor shall develop and submit a Material Management Work Plan which details the excavation, handling and placement procedures for site soils and C&D debris. The plan will demonstrate how the Contractor's Operations will meet project requirements. The Plan will be reviewed and approved by the Engineer prior to beginning excavation work.

- The Material Management Work Plan shall contain a provisions for the control and monitoring of dust (see division 1, Section "Site Health and Safety" for allowable levels and minimum monitoring). Plan shall include work sequencing to minimize dust and contingency operations which could be employed.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Temporary measures as specified in Division 2 Section "Erosion and Sedimentation Control."

PART 3 - EXECUTION

3.1 EXCAVATION AND STOCKPILING - GENERAL

A. During site remediation/construction, the Contractor will be required to provide an onsite soils manager who will be responsible for the implementation of the soil management plan. The responsibilities of the onsite soils manager include:

- Management of excavated contaminated soil including handling, reuse and/or onsite storage. If visual contamination or PID readings are identified, which are dissimilar to the composition or PID readings previously obtained for the near surface contaminated soils, segregation and sampling of the material will be required.

- Management of excavated contaminated soil. This includes appropriately capping all contaminated soil areas with a minimum of 6 inches of topsoil, and/or 12 inches of low permeability soil.

- Implementation of a perimeter air quality monitoring program.

- Coordination of health and safety issues with site activities.

- Coordination of erosion and sediment control procedures during site activities.

- Management of excavation and fill activities to ensure compliance with the Contractor's approved material management work plan.

B. The Contractor shall be responsible for ensuring positive drainage of all existing and newly graded areas and other construction areas during each phase of the work. Any temporary drains or drainage ditches which may be needed but which are not shown on the contract drawings shall be provided, backfilled, and regraded when no longer required at no additional cost to the Owner. The Contractor shall also provide temporary siltation/sediment control measures, as approved by the Engineer, during construction. Erosion and sedimentation control shall be in accordance with Division 2 Section "Erosion and Sedimentation Control."

C. The Contractor shall provide drainage controls to control run-off, as indicated on the contract drawings and as required, to allow the work to proceed in sufficiently

dry conditions. Run-on and Run-off control shall be in accordance with Division 2 Section "Erosion and Sedimentation Control."

D. Stockpiles: Soils and C&D debris excavated during construction shall be stockpiled in a designated area for future placement or hauled directly to proposed fill placement areas, unless otherwise approved, directed, or specified by the Engineer. Stockpiles shall be located as proposed by the Contractor and as approved by the Engineer. Proper erosion and sedimentation control shall be installed around stockpiles as required. The Contractor shall be responsible for maintaining all stockpiles in a manner acceptable to the Engineer. This includes periodically upgrading and/or repairing erosion and sedimentation control features as required.

E. Suspected Hazardous Waste: The Contractor shall cease excavation in an area if materials are encountered which the Engineer suspects as being hazardous waste or which appear to vary substantially from previously tested soils. Suspect material which has already been excavated shall be placed on and under plastic sheeting. The Contractor shall facilitate the Engineer's collection of representative samples of such materials. The Contractor shall have the samples analyzed by an analytical laboratory to determine disposal alternatives. All laboratory and sampling costs associated with this will be the responsibility of the Owner. Time is of the essence in the testing and proper identification of suspected hazardous waste. After an approved facility is identified, materials shall be loaded directly onto trucks or other approved equipment on the same work day they were excavated. No storage on vehicles or trucks or storage adjacent to the originating excavation beyond 24 hours will be permitted. If offsite disposal is determined to be required, the Engineer will negotiate a change order with the Contractor to account for handling and disposal of the waste.

F. Care of Water: The Contractor shall take all necessary precautions and shall furnish all equipment needed to handle any surface water and groundwater which

may be encountered at any time during construction of the work. Only dewatering deemed by the Engineer to be essential to the work will be permitted. The Contractor shall minimize dewatering operations as much as is practicable.

G. Unsatisfactory Material: The Contractor shall remove, in their entirety or as otherwise directed, unsatisfactory materials encountered at or near the surface of planned final excavation grades and replace with clean C&D debris in accordance with Division 2, Section "Soil Fill and Backfill". Unsatisfactory materials shall include materials classified by ASTM D-2487 as PT, OH, and OL. Unsatisfactory materials also include excessively wet, loose, or soft soil which prevent effective construction including subsequent placement of overlying pipe, soils, or structures, as determined by the Engineer.

H. Unyielding Material and Authorized Over excavation: Unyielding materials such as cobbles or boulders which are encountered at the required limit of trench or other excavation work shall be removed to attain the specified minimum excavated cross section. Only approved methods will be permitted to perform such work. Removal of unyielding material may include overexcavation or fracturing of rocks down to required excavation grade. Such overexcavation will not be permitted without the Engineer's approval.

I. Unauthorized Overexcavation: Trenches or other excavations opened beyond specified or shown limits due to unauthorized overexcavation or unintended overexcavation due to Contractor's negligence in construction control shall be backfilled with approved replacement fill (see paragraph G above), as required to replace unsatisfactory material, at the Contractor's own expense.

3.2 EXCAVATION OF CONTAMINATED SOILS

A. Excavation of contaminated soils in the proposed residential areas shall extend from the existing ground surface down to native soil or bedrock, which ever is

encountered first. All existing fill shall be removed from the area (except for slopes to existing grades at project limits).

B. The Engineer will be onsite during all excavation activities to define the bottom limits of the excavation and to confirm that all required fill is removed. The Engineer will also monitor the excavation with a photoionization detector to verify that contamination of the soil is not greater than anticipated, and collect confirmatory samples as required.

C. The Contractor may sequence the work such that a portion of the proposed residential area can be approved for backfill while other areas are still being excavated. The Engineer will work with the Contractor to accomplish this.

D. Runoff from contaminated areas shall not be allowed to contact clean areas or clean backfill.

E. Excavated soil shall be placed as fill in other areas of the site. See Division 2, Section "Soil Fill and Backfill" for the sequence of fill placement and placement requirements.

3.3 EXCAVATION OF C&D DEBRIS

A. C&D debris shall be excavated from the areas designated on the drawings, to the depths indicated or as necessary to reach required subgrade elevations. Excavated C&D debris shall be placed as fill in other areas of the site.

B. C&D debris, determined (by the Engineer) during excavation to be too contaminated for use on site shall be hauled off site to a permitted disposal facility. In the event that materials are visually determined to be significantly different than anticipated materials, and are suspected of being hazardous, then the Contractor shall segregate the material in preparation for sampling and testing by the

Engineer. Should off-site disposal be required, the additional services and costs shall be established at that time in a change order between the Contractor and the Owner.

C. See Division 2, Section "Soil Fill and Backfill" for sequencing of fill placement and placement requirements.

D. Oversize materials may be encountered during C&D debris excavation. These materials shall be segregated and placed in the designated oversize material disposal area.

3.4 EXCAVATION OF PROPOSED WATER MAIN PIPE LINE

A. The Proposed Water Main Pipe line shall be excavated (and backfilled) to the limits shown on the drawings.

B. Trenching operations shall be performed in compliance with all required safety protocols.

C. Excavated materials shall be used as fill elsewhere on the site as specified in Section 02210 - Soil Fill and Backfill.

3.5 PROTECTION OF PEOPLE, AND PROPERTY

A. Protect plant life, lawns, trees, shrubs, and other features to remain as a portion of final landscaping.

B. Protect bench marks, existing structures, unless they are to be relocated, fences and paving from excavation equipment and vehicular traffic.

C. Plan and conduct operations so as to safeguard people and property, minimize traffic inconvenience, and provide safe working conditions and minimize Environmental impact

END OF SECTION 02220

SECTION 02230

SITE CLEARING AND DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

This Section includes the following:

Protecting existing trees and vegetation to remain
Removing trees and other vegetation
Chipping and shredding and on-site disposal of vegetation
Clearing
Limited Clearing in the designated wooded area and buffer zones
Demolition of above-grade site improvements
Disconnecting, capping or sealing and abandoning site utilities in place.

1.3 MATERIALS OWNERSHIP

All cleared and demolished materials shall remain on the site except as noted below. Materials to be removed from the site which shall become the Contractor's property and shall be legally disposed are as follows:

- Transformer(s) on Power Poles
- Razor wire from fencing (adjacent to Amherst Street)

1.4 SUBMITTALS

A. Photographs or videotape, sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.

1.5 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Engineer and authorities having jurisdiction.

B. Notify utility locator service for area where Project is located before site clearing.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Provide erosion-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Locate and clearly flag trees and vegetation to remain or to be relocated.

D. Protect from damage existing site improvements to remain during construction. Restore damaged improvements to their original condition, as acceptable to Engineer.

3.2 TREE PROTECTION

A. Erect and maintain a temporary fence around drip line of individual trees or around perimeter drip line of groups of trees to remain. Remove fence when construction is complete.

1. Do not store construction materials, debris, or excavated material within drip line of remaining trees.

2. Do not permit vehicles, equipment, or foot traffic within drip line of remaining trees.

B. Do not excavate within drip line of trees, unless otherwise indicated.

C. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Engineer.

3.3 UTILITIES

A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed. Arrange with utility companies to shut off indicated utilities.

B. Existing Utilities: Do not interrupt utilities serving adjacent (off-site) facilities unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Engineer not less than two days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without Engineer's written permission.

3.4 CLEARING

A. Remove obstructions, trees, shrubs, and other above grade vegetation to permit excavation or installation of the final cover system. Tree stumps and all other vegetation shall be cut to the ground elevation (+1½ inches maximum) No grubbing or root removal shall be performed.

1. Roots and grasses will be removed as part of the excavation work or shall be covered over in-place within the limits of the final cover system or other fill areas.

2. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated. Limits of clearing shall be the areas shown on the drawings. Damage outside of these limits caused by the Contractor's operations shall be corrected at the Contractor's expense.

3. The clearing operations shall be controlled to prevent the generation and spread of dust to avoid creating a nuisance or health hazard in surrounding areas.

B. All cleared vegetation shall be chipped/shredded and placed in the designated vegetation disposal areas and subsequently covered with the final cover system or topsoil (in areas outside the final cover system limits).

1. Vegetation shall be shredded to a uniform size not exceeding three (3) inches in any dimension.

2. Shredded vegetation shall be placed to a maximum thickness of three (3) inches unless approved otherwise by the Engineer.

C. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.

Place fill material in horizontal layers not exceeding eight (8) inches loose thickness, and compact each layer to a density equal to adjacent original ground.

3.5 LIMITED CLEARING IN WOODED AREA AND BUFFER ZONES

A. The Contractor shall perform limited clearing activities in the designated "wooded area" and buffer zones to prepare the area for topsoil placement.

B. Limited clearing shall consist of the removal of all brush, vegetation and trees less than 3" ± in diameter. In isolated locations, smaller trees may be left at the discretion of the Engineer.

C. All other requirements for clearing shall apply. All brush and trees shall be cut to ground level (+1½" maximum). Removed material shall be shredded and disposed of on site.

3.6 TOPSOIL STRIPPING

A. All topsoil shall be left in place during clearing and demolition. In excavation areas, topsoil shall be removed during and as part of the excavation process. In fill areas, the topsoil shall be left in place and covered over.

B. The Contractor shall avoid disturbing grassed areas to minimize erosion of exposed soils.

3.7 DEMOLITION OF SITE IMPROVEMENTS

A. Remove existing above- grade site improvements as indicated and as necessary to facilitate new construction.

B. Above grade site improvements shall be demolished and except as specified in paragraph 1.3, the debris shall be placed in specified disposal areas on the site.

1. The site improvements shall be laid flat in the oversize material area and crushed as necessary so as to prevent voids in the fill.

2. The debris shall be mixed with soil during placement to prevent void spaces from developing in the fill.

C. Walkways, roadways, athletic courts and other at-grade or below-grade improvements shall be broken up (so as to prevent a water barrier), left in-place and covered with the final cover system.

END OF SECTION 02230

SECTION 02270

EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

This section provides the requirements for temporary run-on control and erosion and sedimentation controls to limit the escape of sediment from the site.

1.3 GENERAL REQUIREMENTS

A. The Contractor shall design, furnish, install and maintain all temporary control measures as shown on the Contractor's Erosion and Sedimentation Control Plan and/or directed by the Engineer during the life of the Contract to control soil erosion and the escape of sediment through the use of berms, straw bale dikes, dams, sediment basins, diversion swales, silt fences, temporary vegetation, fiber mats, netting, gravel, mulches and other approved devices or methods.

B. The Contractor's Erosion and Sedimentation Controls shall cover all work associated under the contract and all concurrent work performed by the topsoil and seeding Contractor. The Topsoil and Seeding Contractor shall be responsible for maintaining the controls after the Contractor has left the site.

C. The Contractor shall provide temporary vegetation and erosion control measures for all soil stockpiles.

D. The Contractor shall prepare an Erosion and Sedimentation Control Plan which meets the requirements of the New York State Department of Environmental Conservation document "SPDES General Permit for Storm Water Discharge for Construction Activities" dated August 1, 1993, including recommended details, methods and acceptable practices. The erosion and sedimentation control of the site shall be the responsibility of the Contractor and he shall be responsible for any and all repairs and monetary fines related to the escape of sediment from the site.

E. In the event of conflict between these specification requirements and pollution control laws, rules or regulations of federal, state or local agencies, the more restrictive laws, rules or regulations shall apply.

1.4 SUBMITTALS

The Contractor shall prepare and submit his Erosion and Sediment Control Plan at lease five (5) working days before the Pre-Work Conference to the Engineer for review and approval. The Contractor shall include in his Plan erosion control features at all soil stockpile locations. Approval of the Contractor's Plan by the Engineer shall be required prior to the start of any work by the Contractor. The Contractor shall be responsible for the adequacy of the Plan regardless of approval.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL

A. The Contractor shall conduct all work in conformance with the approved Erosion and Sediment Control Plan. Surface drainage from cuts and fills within the limits of work shall be graded to control erosion.

B. Temporary erosion and sediment control measures shall be provided and maintained until the permanent work is completed. Fills and waste areas shall be constructed by selective placement of materials to eliminate fine-grained materials on the surface which may erode and contaminate adjacent waterways. The Contractor shall comply with all applicable laws concerning soil erosion and sediment control.

3.2 INSTALLATION

A. The Contractor shall furnish, install and maintain an erosion control plan during the course of construction. He shall design a plan to minimize erosion from cleared areas, excavations and fill operations.

B. Silt fences, straw bale dikes or temporary vegetation shall be installed as shown on the Contractor's Erosion and Sediment Control Plan, where necessary and as directed by the Engineer.

C. Erosion and sediment control measures shall be phased out upon completion of the construction work and the stabilization of all drainage areas.

3.3 RUN-ON CONTROL

A. The Contractor shall install required run-on control features. Care shall be taken by the Contractor to eliminate any and all run-on from the areas surrounding the limit of work from impacting on the work area.

B. The Contractor shall, at a minimum, implement approved and required run-on controls to maintain a suitably dry working area throughout construction, as approved by the Engineer.

C. The Contractor shall provide and maintain at all times, ample approved means and devices to promptly remove and disposal of all water entering the work areas during the construction.

D. Construction will not be permitted where water is flowing or ponded.

3.4 MAINTENANCE

A. Silt fences shall be maintained and sediment materials removed as directed by the Engineer when bulges develop in the silt fence.

B. Straw bale dikes shall be inspected frequently and cleaned and/or replaced promptly when necessary and/or directed by the Engineer.

END OF SECTION 02270

MAIN - LASALLE REVITALIZATION PROJECT
PHASE I REMEDIATION

VOLUNTARY CLEANUP
V-00168-9

MAY 1999

CITY OF BUFFALO
DEPARTMENT OF COMMUNITY DEVELOPMENT
Erie County, New York

MAIN - LASALLE REVITALIZATION PROJECT PHASE I - SITE REMEDIATION

PREPARED FOR
BUFFALO URBAN RENEWAL AGENCY
CITY OF BUFFALO
BUFFALO, New York

MAY 1999

SITE LOCATION MAP

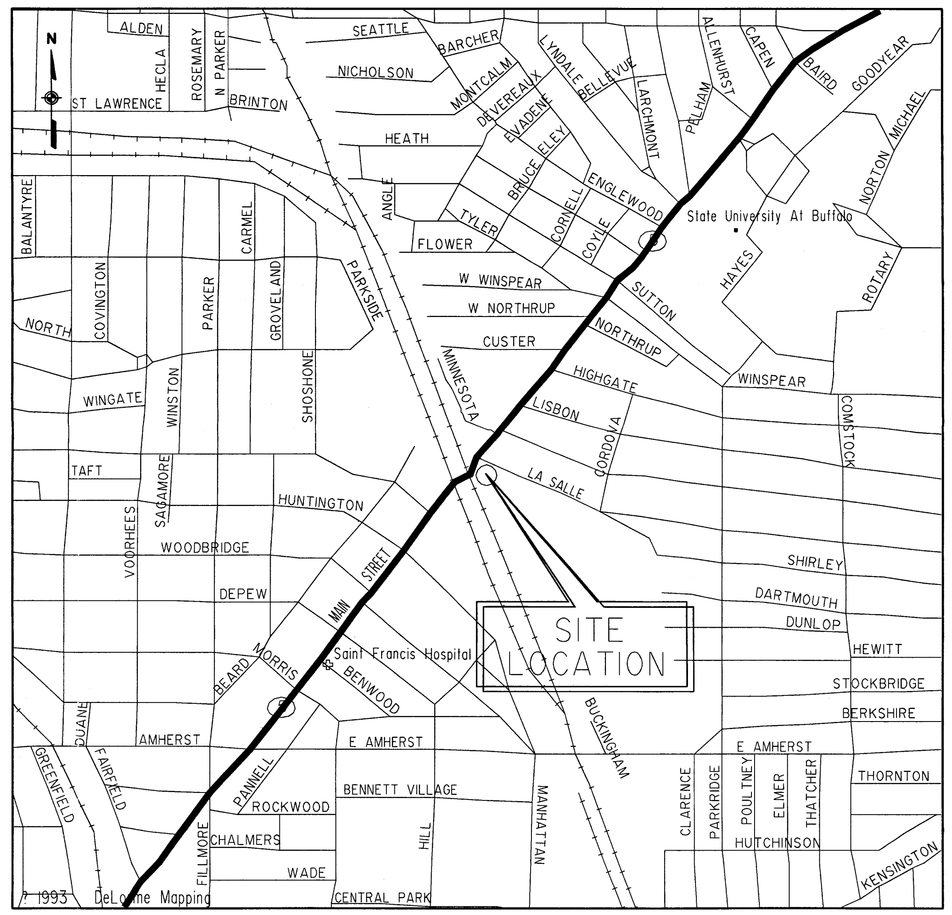


TABLE OF CONTENTS

URS Greiner
Consultants, Inc.

282 DELWARE AVENUE
BUFFALO, NEW YORK

FINAL

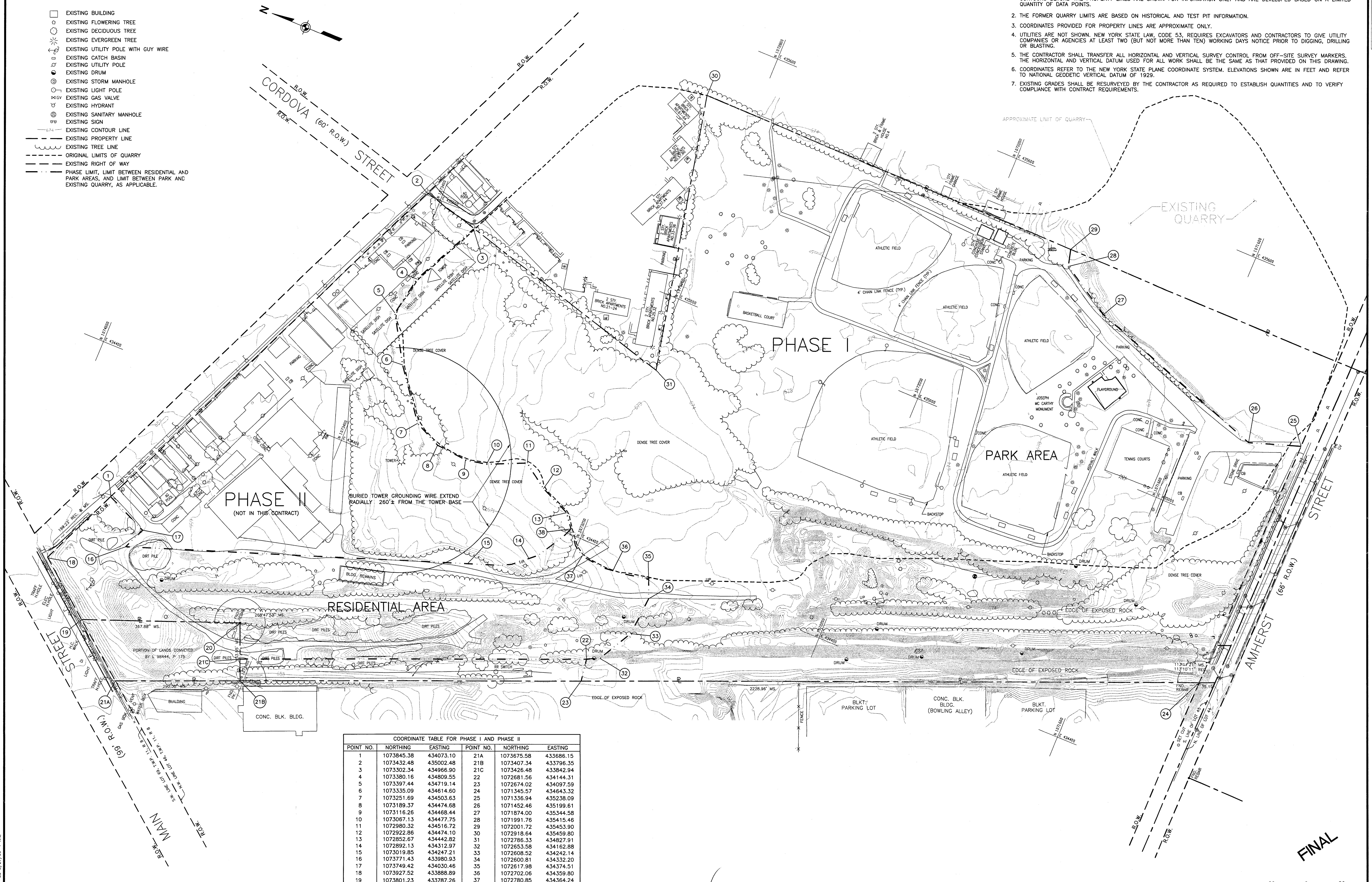
J:\35453\CADNEW\TOPO\ EC-3783.dwg Id: 5/27/99-4 RAL

NOTES:

1. EXISTING SITE CONDITIONS ARE BASED ON AERIAL AND GROUND SURVEYS CONDUCTED BY DELEUW,CATHER & COMPANY. CONTOURS BEYOND THE PROPERTY LINES ARE SHOWN FOR INFORMATION ONLY AND ARE DEVELOPED BASED ON A LIMITED QUANTITY OF DATA POINTS.
2. THE FORMER QUARRY LIMITS ARE BASED ON HISTORICAL AND TEST PIT INFORMATION.
3. COORDINATES PROVIDED FOR PROPERTY LINES ARE APPROXIMATE ONLY.
4. UTILITIES ARE NOT SHOWN. NEW YORK STATE LAW, CODE 53, REQUIRES EXCAVATORS AND CONTRACTORS TO GIVE UTILITY COMPANIES OR AGENCIES AT LEAST TWO (BUT NOT MORE THAN TEN) WORKING DAYS NOTICE PRIOR TO DIGGING, DRILLING OR BLASTING.
5. THE CONTRACTOR SHALL TRANSFER ALL HORIZONTAL AND VERTICAL SURVEY CONTROL FROM OFF-SITE SURVEY MARKERS. THE HORIZONTAL AND VERTICAL DATUM USED FOR ALL WORK SHALL BE THE SAME AS THAT PROVIDED ON THIS DRAWING.
6. COORDINATES REFER TO THE NEW YORK STATE PLANE COORDINATE SYSTEM. ELEVATIONS SHOWN ARE IN FEET AND REFER TO NATIONAL GEODETIC VERTICAL DATUM OF 1929.
7. EXISTING GRADES SHALL BE RESURVEYED BY THE CONTRACTOR AS REQUIRED TO ESTABLISH QUANTITIES AND TO VERIFY COMPLIANCE WITH CONTRACT REQUIREMENTS.

LEGEND

- EXISTING BUILDING
- EXISTING FLOWERING TREE
- EXISTING DECIDUOUS TREE
- EXISTING EVERGREEN TREE
- EXISTING UTILITY POLE WITH GUY WIRE
- EXISTING CATCH BASIN
- EXISTING UTILITY POLE
- EXISTING DRUM
- EXISTING STORM MANHOLE
- EXISTING LIGHT POLE
- EXISTING GAS VALVE
- EXISTING HYDRANT
- EXISTING SANITARY MANHOLE
- EXISTING SIGN
- EXISTING CONTOUR LINE
- EXISTING PROPERTY LINE
- EXISTING TREE LINE
- ORIGINAL LIMITS OF QUARRY
- EXISTING RIGHT OF WAY
- PHASE LIMIT, LIMIT BETWEEN RESIDENTIAL AND PARK AREAS, AND LIMIT BETWEEN PARK AND EXISTING QUARRY, AS APPLICABLE.



COORDINATE TABLE FOR PHASE I AND PHASE II					
POINT NO.	NORTHING	EASTING	POINT NO.	NORTHING	EASTING
1	1073845.38	434073.10	21A	1073675.58	433686.15
2	1073432.48	435002.48	21B	1073407.34	433796.35
3	1073302.34	434966.90	21C	1073426.48	433842.94
4	1073380.16	434809.55	22	1072681.56	434144.31
5	1073397.44	434719.14	23	1072674.02	434097.59
6	1073335.09	434614.60	24	1071345.57	434643.32
7	1073251.69	434503.63	25	1071336.94	435238.09
8	1073189.37	434474.68	26	1071452.46	435199.61
9	1073116.26	434468.44	27	1071874.00	435344.58
10	1073067.13	434477.75	28	1071991.76	435415.46
11	1072980.32	434516.72	29	1072001.72	435453.90
12	1072922.86	434474.10	30	1072918.64	435459.80
13	1072852.67	434442.82	31	1072786.33	434827.91
14	1072892.13	434312.97	32	1072653.58	434162.88
15	1073019.85	434247.21	33	1072608.52	434242.14
16	1073771.43	433980.93	34	1072600.81	434332.20
17	1073749.42	434030.46	35	1072617.98	434374.51
18	1073927.52	433888.89	36	1072702.06	434359.80
19	1073801.23	433787.26	37	1072780.85	434364.24
20	1073458.08	433919.88	38	1072828.65	434411.77

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: M.D.A.
DRAWN BY: S.L.S.
CHECKED BY: M.D.A.
PROJ. ENGR. R.H.

URS Greiner
Consultants, Inc.
JOB No. 0535453

ERIE COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT
CITY OF BUFFALO
MAIN – LASALLE
REVITALIZATION PROJECT
NEW YORK STATE

PHASE 1
SITE REMEDIATION

EXISTING SITE CONDITIONS

Scale: 1"= 80' | Date: MAY 1999 | DWG. #1

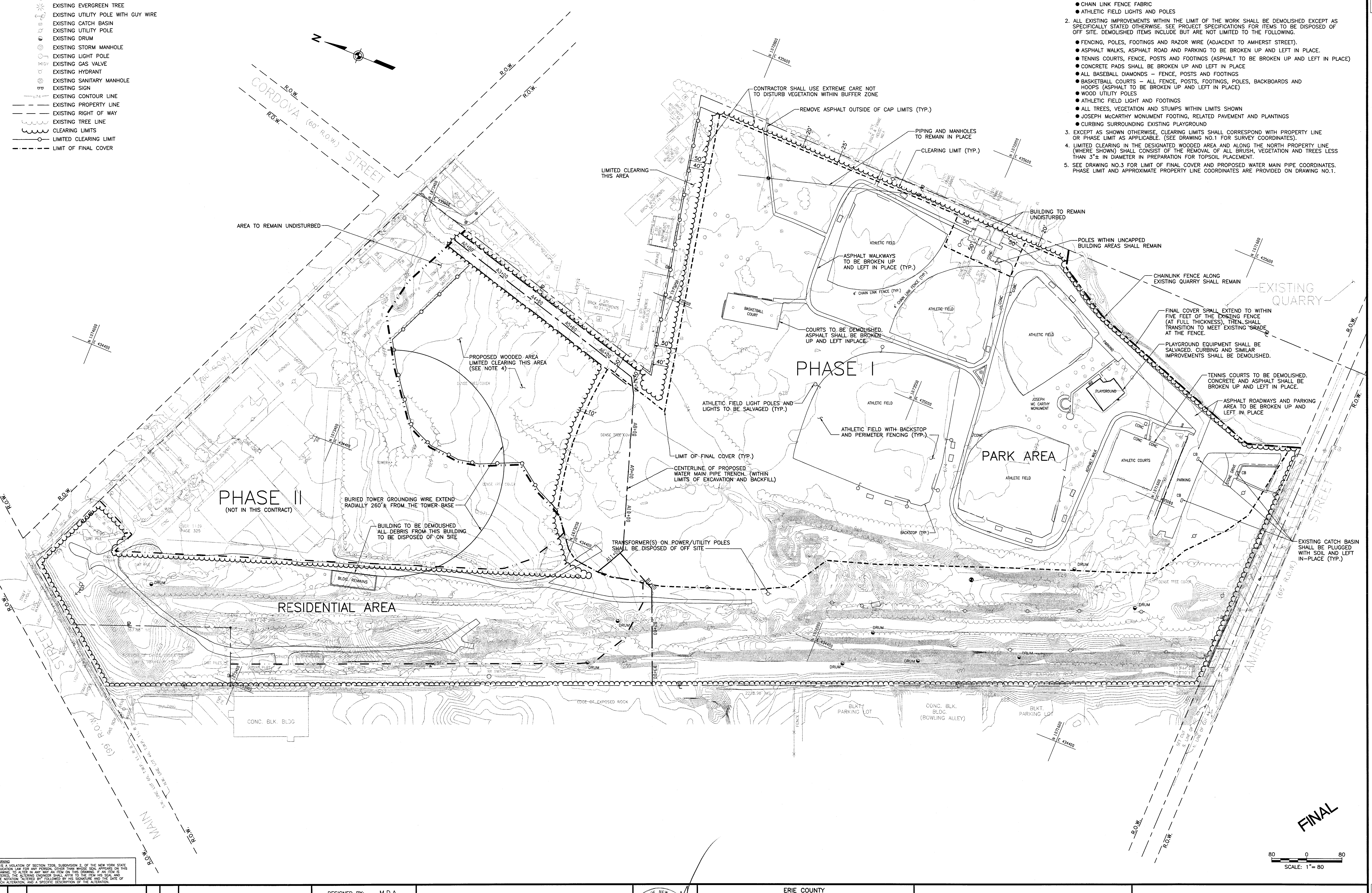
J:\35453\CAD\NEWTOPO\ EC-3922.DWG 1=80 5/27/99-4 RAL

LEGEND

- EXISTING BUILDING
- EXISTING FLOWERING TREE
- EXISTING DECIDUOUS TREE
- EXISTING EVERGREEN TREE
- EXISTING UTILITY POLE WITH GUY WIRE
- EXISTING CATCH BASIN
- EXISTING UTILITY POLE
- EXISTING DRUM
- EXISTING STORM MANHOLE
- EXISTING LIGHT POLE
- EXISTING GAS VALVE
- EXISTING HYDRANT
- EXISTING SANITARY MANHOLE
- EXISTING SIGN
- EXISTING CONTOUR LINE
- EXISTING PROPERTY LINE
- EXISTING RIGHT OF WAY
- EXISTING TREE LINE
- CLEARING LIMITS
- LIMITED CLEARING LIMIT
- LIMIT OF FINAL COVER

NOTES:

1. THE FOLLOWING ITEMS SHALL BE SALVAGED (UNHARMED) AND DELIVERED TO THE CITY OF BUFFALO PARKS DEPARTMENT FOR REUSE IN McCARTHY PARK.
   - PLAYGROUND EQUIPMENT
   - JOSEPH McCARTHY MONUMENT
   - PARK BENCHES AND PICNIC TABLES.
   - ATHLETIC BLEACHERS
   - CHAIN LINK FENCE FABRIC
   - ATHLETIC FIELD LIGHTS AND POLES
2. ALL EXISTING IMPROVEMENTS WITHIN THE LIMIT OF THE WORK SHALL BE DEMOLISHED EXCEPT AS SPECIFICALLY STATED OTHERWISE. SEE PROJECT SPECIFICATIONS FOR ITEMS TO BE DISPOSED OF OFF SITE. DEMOLISHED ITEMS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING.
   - FENCING, POLES, FOOTINGS AND RAZOR WIRE (ADJACENT TO AMHERST STREET).
   - ASPHALT WALKS, ASPHALT ROAD AND PARKING TO BE BROKEN UP AND LEFT IN PLACE.
   - TENNIS COURTS, FENCE, POSTS AND FOOTINGS (ASPHALT TO BE BROKEN UP AND LEFT IN PLACE)
   - CONCRETE PADS SHALL BE BROKEN UP AND LEFT IN PLACE
   - ALL BASEBALL DIAMONDS – FENCE, POSTS AND FOOTINGS
   - BASKETBALL COURTS – ALL FENCE, POSTS, FOOTINGS, POLES, BACKBOARDS AND HOOPS (ASPHALT TO BE BROKEN UP AND LEFT IN PLACE)
   - WOOD UTILITY POLES
   - ATHLETIC FIELD LIGHT AND FOOTINGS
   - ALL TREES, VEGETATION AND STUMPS WITHIN LIMITS SHOWN
   - JOSEPH McCARTHY MONUMENT FOOTING, RELATED PAVEMENT AND PLANTINGS
   - CURBING SURROUNDING EXISTING PLAYGROUND
3. EXCEPT AS SHOWN OTHERWISE, CLEARING LIMITS SHALL CORRESPOND WITH PROPERTY LINE OR PHASE LIMIT AS APPLICABLE. (SEE DRAWING NO.1 FOR SURVEY COORDINATES).
4. LIMITED CLEARING IN THE DESIGNATED WOODED AREA AND ALONG THE NORTH PROPERTY LINE (WHERE SHOWN) SHALL CONSIST OF THE REMOVAL OF ALL BRUSH, VEGETATION AND TREES LESS THAN 3"± IN DIAMETER IN PREPARATION FOR TOPSOIL PLACEMENT.
5. SEE DRAWING NO.3 FOR LIMIT OF FINAL COVER AND PROPOSED WATER MAIN PIPE COORDINATES. PHASE LIMIT AND APPROXIMATE PROPERTY LINE COORDINATES ARE PROVIDED ON DRAWING NO.1.



SCALE: 1"= 80'

WARNING
IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, OTHER THAN WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: M.D.A.
DRAWN BY: S.L.S.
CHECKED BY: M.D.A.
PROJ. ENGR. R.H.

URS Greiner
Consultants, Inc.
JOB No. 0535453

ERIE COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT
CITY OF BUFFALO
MAIN – LASALLE
REVITALIZATION PROJECT
NEW YORK STATE

PHASE 1
SITE REMEDIATION

DEMOLITION AND CLEARING PLAN

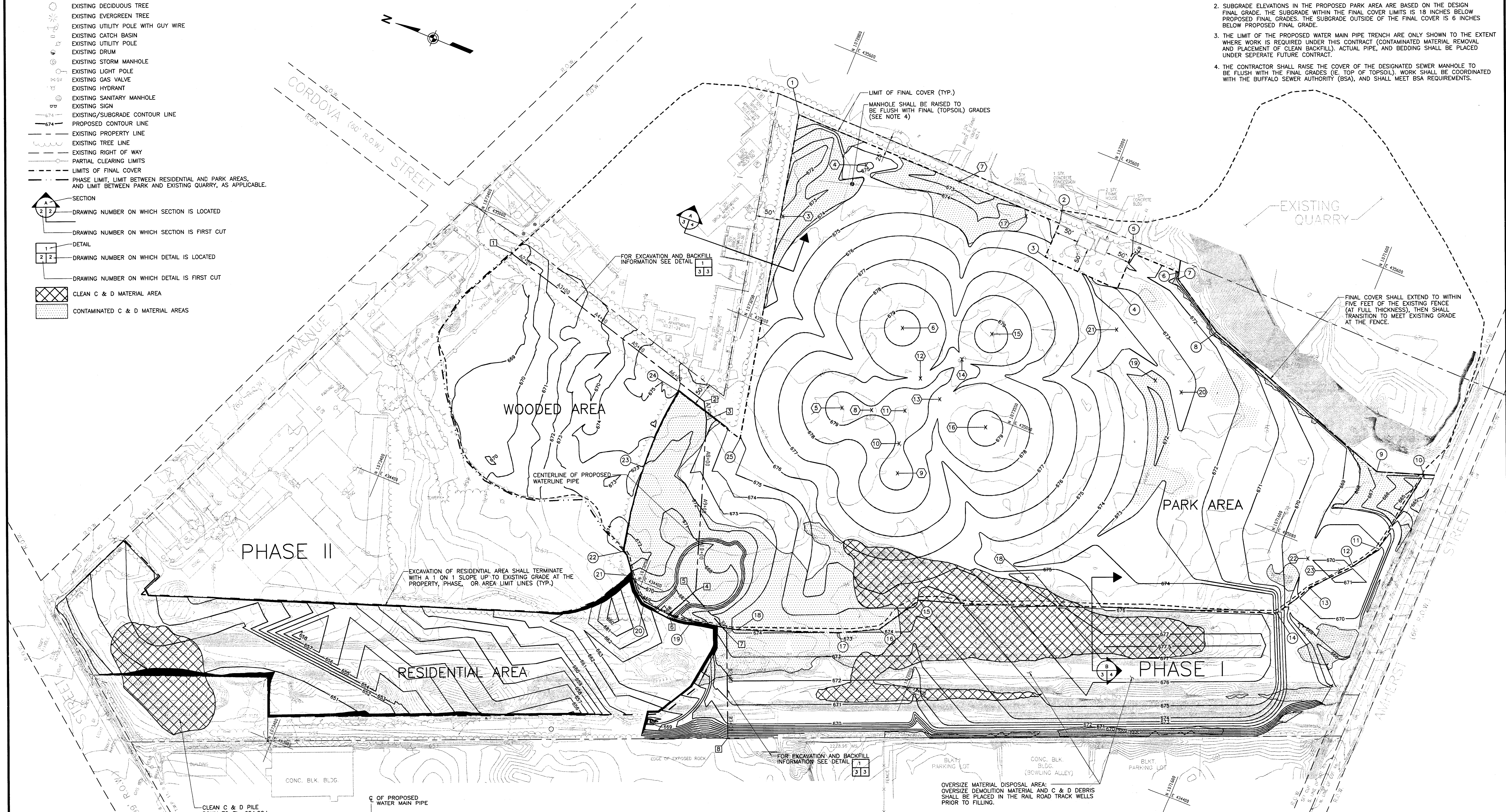
Scale: 1"= 80' | Date: MAY 1999 | DWG. #2

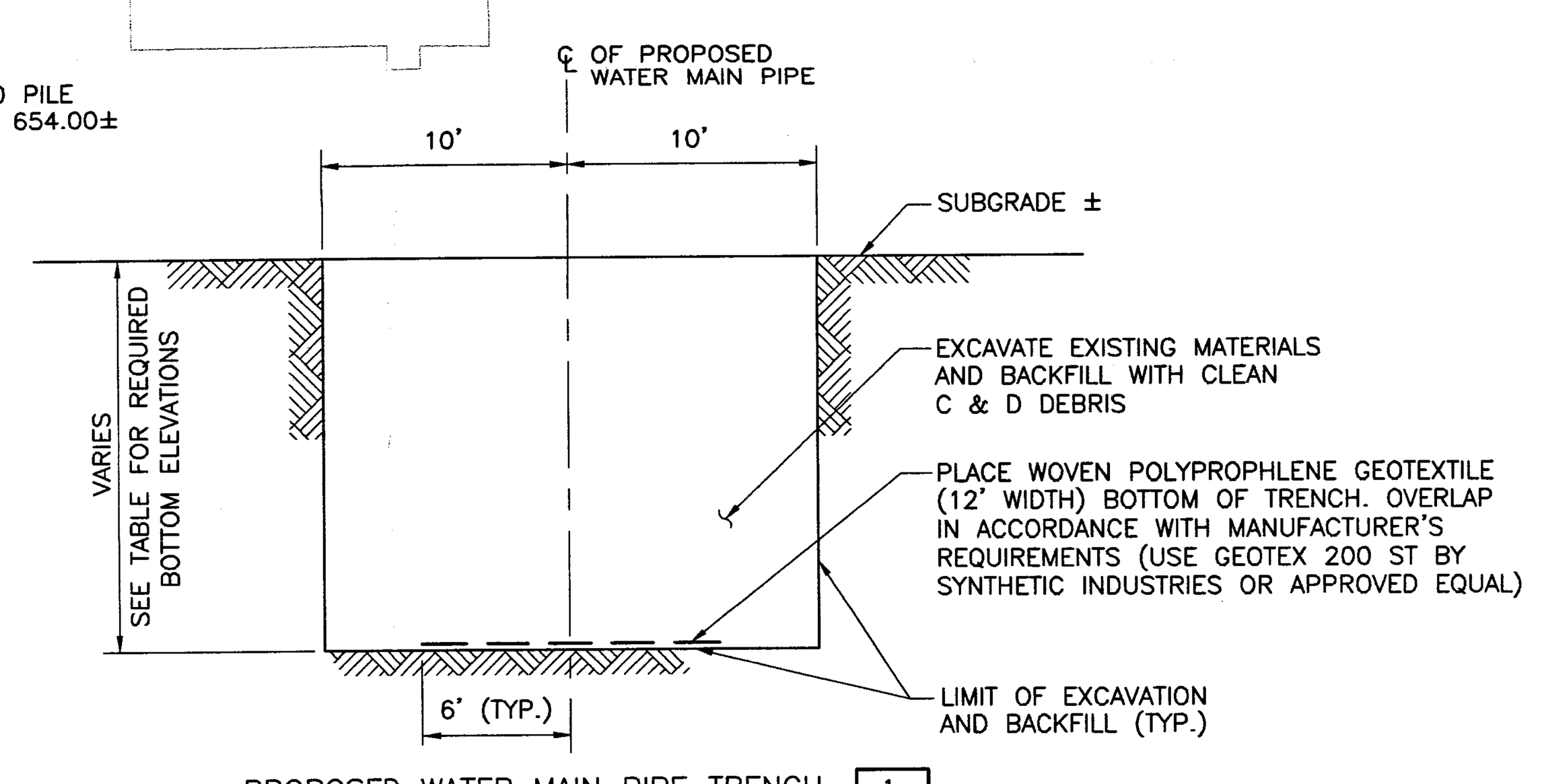
NOTES:

1. SUBGRADE ELEVATIONS IN THE RESIDENTIAL AREA REFLECT ANTICIPATED POST EXCAVATION GRADES. SEE PROJECT SPECIFICATIONS FOR EXCAVATION LIMIT CRITERIA. SOME VARIATION IN THE ACTUAL POST EXCAVATION ELEVATIONS SHOULD BE EXPECTED DUE TO VARIATIONS IN BEDROCK AND NATIVE SOIL ELEVATIONS.
2. SUBGRADE ELEVATIONS IN THE PROPOSED PARK AREA ARE BASED ON THE DESIGN FINAL GRADE. THE SUBGRADE WITHIN THE FINAL COVER LIMITS IS 18 INCHES BELOW PROPOSED FINAL GRADES. THE SUBGRADE OUTSIDE OF THE FINAL COVER IS 6 INCHES BELOW PROPOSED FINAL GRADE.
3. THE LIMIT OF THE PROPOSED WATER MAIN PIPE TRENCH ARE ONLY SHOWN TO THE EXTENT WHERE WORK IS REQUIRED UNDER THIS CONTRACT (CONTAMINATED MATERIAL REMOVAL AND PLACEMENT OF CLEAN BACKFILL). ACTUAL PIPE, AND BEDDING SHALL BE PLACED UNDER SEPERATE FUTURE CONTRACT.
4. THE CONTRACTOR SHALL RAISE THE COVER OF THE DESIGNATED SEWER MANHOLE TO BE FLUSH WITH THE FINAL GRADES (IE. TOP OF TOPSOIL). WORK SHALL BE COORDINATED WITH THE BUFFALO SEWER AUTHORITY (BSA), AND SHALL MEET BSA REQUIREMENTS.

LEGEND

- EXISTING BUILDING
- EXISTING FLOWERING TREE
- EXISTING DECIDUOUS TREE
- EXISTING EVERGREEN TREE
- EXISTING UTILITY POLE WITH GUY WIRE
- EXISTING CATCH BASIN
- EXISTING UTILITY POLE
- EXISTING DRUM
- EXISTING STORM MANHOLE
- EXISTING LIGHT POLE
- EXISTING GAS VALVE
- EXISTING HYDRANT
- EXISTING SANITARY MANHOLE
- EXISTING SIGN
- EXISTING/SUBGRADE CONTOUR LINE
- 674 PROPOSED CONTOUR LINE
- EXISTING PROPERTY LINE
- EXISTING TREE LINE
- EXISTING RIGHT OF WAY
- PARTIAL CLEARING LIMITS
- LIMITS OF FINAL COVER
- PHASE LIMIT, LIMIT BETWEEN RESIDENTIAL AND PARK AREAS, AND LIMIT BETWEEN PARK AND EXISTING QUARRY, AS APPLICABLE.
- SECTION / DRAWING NUMBER ON WHICH SECTION IS LOCATED / DRAWING NUMBER ON WHICH SECTION IS FIRST CUT
- DETAIL / DRAWING NUMBER ON WHICH DETAIL IS LOCATED / DRAWING NUMBER ON WHICH DETAIL IS FIRST CUT
- CLEAN C & D MATERIAL AREA
- CONTAMINATED C & D MATERIAL AREAS





PROPOSED WATER MAIN PIPE TRENCH EXCAVATION AND BACKFILL DETAIL 1/3 3
NOT TO SCALE

COORDINATE TABLE FOR LIMIT OF FINAL COVER

POINT NO.	NORTHING	EASTING	POINT NO.	NORTHING	EASTING
1	1072862.25	435434.44	14	1071535.76	434844.85
2	1072267.23	435430.64	15	1072245.11	434583.85
3	1072268.90	435352.80	16	1072299.16	434496.47
4	1072102.20	435347.59	17	1072375.69	434457.37
5	1072100.45	435429.57	18	1072543.61	434372.57
6	1071995.24	435428.90	19	1072671.00	434364.30
7	1071991.76	435415.46	20	1072780.85	434364.24
8	1071874.00	435344.58	21	1072822.83	434404.27
9	1071452.46	435199.61	22	1072860.20	434444.84
10	1071358.62	435230.87	23	1072888.71	434640.67
11	1071388.23	435049.53	24	1072877.75	434801.07
12	1071423.57	434994.82	25	1072720.63	434758.11
13	1071492.05	434919.45			

COORDINATE TABLE FOR SPOT ELEVATIONS

PT.NO.	NORTHING	EASTING	ELEV.	PT.NO.	NORTHING	EASTING	ELEV.
3	1072813.54	435224.81	672.50	13	1072363.45	434992.44	678.50
4	1072691.03	435389.96	675.50	14	1072351.68	435087.54	678.30
5	1072546.62	434898.57	679.70	15	1072312.37	435160.96	679.70
6	1072492.24	435101.34	679.70	16	1072251.40	434975.09	679.70
7	1072495.87	435433.22	672.50	17	1072338.99	435418.08	674.50
8	1072487.29	434917.56	679.20	18	1072050.32	434711.67	676.30
9	1072387.81	434815.80	679.70	19	1071955.76	435201.19	672.50
10	1072407.75	434874.54	679.20	20	1071896.21	435198.59	673.50
11	1072422.14	434942.70	679.90	21	1072071.33	435269.27	674.50
12	1072417.61	435017.53	678.50	22	1071517.62	434974.22	669.50
				23	1071445.70	434976.33	670.30

COORDINATE TABLE FOR PROPOSED WATER MAIN PIPE TRENCH

POINT NO.	STATION	NORTHING	EASTING	BOTTOM OF EXCAVATION ELEV.
1	A1+65.59	1073317.15	434936.96	662.83
2	A6+79.66	1072821.14	434801.91	667.12
3	A7+19.22	1072801.19	434767.57	666.70
4	A10+79.45	1072687.58	434425.83	663.00
5	A10+88.32	1072691.53	434417.89	662.96
6	A11+55.74	1072723.09	434358.34	662.26
7	B1+08.40	1072594.50	434369.57	665.78
8	B3+29.76	1072509.71	434165.09	651.30

FINAL

SCALE: 1"= 80

WARNING: IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: M.D.A.
DRAWN BY: S.L.S.
CHECKED BY: M.D.A.
PROJ. ENGR. R.H.

URS Greiner
Consultants, Inc.
JOB No. 0535453

STATE OF NEW YORK — JAMES A. LANZO — LICENSED PROFESSIONAL ENGINEER — No. 65478

ERIE COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT
CITY OF BUFFALO
MAIN – LASALLE
REVITALIZATION PROJECT
NEW YORK STATE

PHASE 1
SITE REMEDIATION

SUBGRADE GRADING PLAN

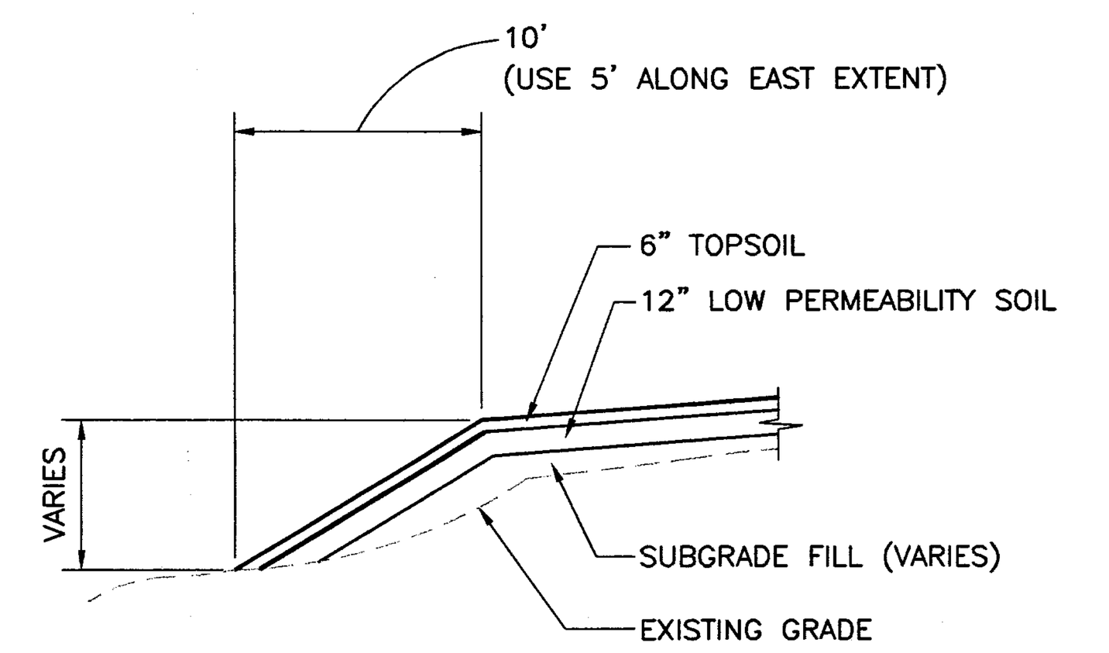
Scale: 1"= 80' Date: MAY 1999 DWG. #3

NOTES:

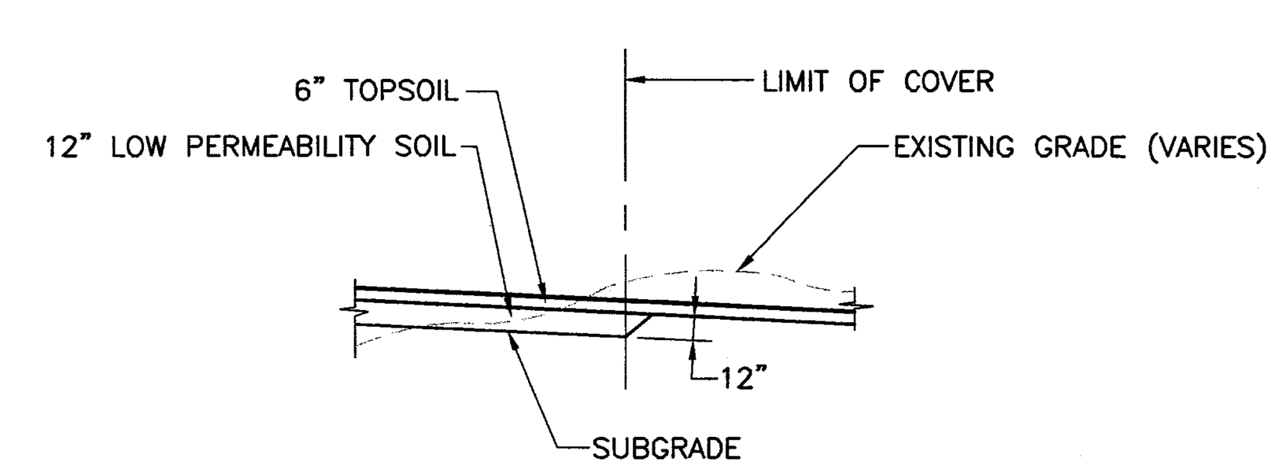
1. FINAL GRADES REFLECT TOP OF TOPSOIL ELEVATIONS (SIX INCHES OF TOPSOIL) TOPSOIL WILL BE PROVIDED AND PLACED UNDER SEPARATE CONTRACT.
2. SEE DRAWING NO.3 FOR LIMITS OF FINAL COVER AND RESIDENTIAL AREAS.
3. TOPSOIL AND SEEDING LIMITS SHALL CORRESPOND WITH THE CLEARING LIMITS AND THE RESIDENTIAL AREA LIMITS.
4. FINAL REDEVELOPMENT OF THE PARK AND RESIDENTIAL AREA IS NOT INCLUDED IN THIS PHASE OF THE WORK. FINAL REDEVELOPMENT WILL BE PERFORMED UNDER FUTURE CONTRACTS.

LEGEND

- EXISTING BUILDING
- EXISTING FLOWERING TREE
- EXISTING DECIDUOUS TREE
- EXISTING EVERGREEN TREE
- EXISTING UTILITY POLE WITH GUY WIRE
- EXISTING CATCH BASIN
- EXISTING UTILITY POLE
- EXISTING DRUM
- EXISTING STORM MANHOLE
- EXISTING LIGHT POLE
- EXISTING GAS VALVE
- EXISTING HYDRANT
- EXISTING SANITARY MANHOLE
- EXISTING SIGN
- EXISTING/SUBGRADE CONTOUR LINE
- PROPOSED CONTOUR LINE
- EXISTING PROPERTY LINE
- EXISTING TREE LINE
- PROPOSED CLEARING LIMIT
- EXISTING RIGHT OF WAY
- LIMITS OF PHASE I AND PHASE II
- LIMITS OF FINAL COVER
- TOPSOIL AND SEEDING LIMITS
- SECTION
- DRAWING NUMBER ON WHICH SECTION IS LOCATED
- DRAWING NUMBER ON WHICH SECTION IS FIRST CUT



EAST/NORTHSIDE FINAL COVER TRANSITION SECTION A/3|4



WEST/SOUTHSIDE FINAL COVER TRANSITION SECTION B/3|4

COORDINATE TABLE FOR SPOT ELEVATIONS

PT.NO.	NORTHING	EASTING	ELEV.	PT.NO.	NORTHING	EASTING	ELEV.
3	1072813.54	435224.81	674.00	13	1072363.45	434992.44	680.00
4	1072691.03	435389.96	677.00	14	1072351.68	435087.54	679.80
5	1072546.62	434898.57	681.20	15	1072312.37	435160.96	681.20
6	1072492.24	435101.34	681.20	16	1072251.40	434975.09	681.20
7	1072495.87	435433.22	674.00	17	1072338.99	435418.08	676.00
8	1072487.29	434917.56	680.70	18	1072050.32	434711.67	677.80
9	1072387.81	434815.80	681.20	19	1071955.76	435201.19	674.00
10	1072407.75	434874.54	680.70	20	1071896.21	435198.59	675.00
11	1072422.14	434942.70	681.40	21	1072071.33	435269.27	676.00
12	1072417.61	435017.53	680.00	22	1071517.62	434974.22	671.00
				23	1071445.70	434976.33	671.80

FINAL

SCALE: 1"= 80

WARNING: IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, OTHER THAN WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

REVISIONS

DESIGNED BY: M.D.A.
DRAWN BY: S.L.S.
CHECKED BY: M.D.A.
PROJ. ENGR. R.H.

URS Greiner Consultants, Inc.
JOB No. 0535453

ERIE COUNTY
DEPARTMENT OF COMMUNITY DEVELOPMENT
CITY OF BUFFALO
MAIN – LASALLE
REVITALIZATION PROJECT
NEW YORK STATE

PHASE 1
SITE REMEDIATION

FINAL GRADING PLAN

Scale: 1"= 80' | Date: MAY 1999 | DWG. #4

J:\35453\CAD\NEWTOPO\ EC-3925.DWG 1=80 5/27/99-6 RAL

Main - LA Sauce