Public Archaeology Facility Report

Binghamton University
State University of New York
Binghamton, New York 13902-6000

CULTURAL RESOURCE MANAGEMENT REPORT
PHASE 1B RECONNAISSANCE SURVEY
ONONDAGA LAKE PROJECT, UPLAND AND SHORELINE AREA
SLURRY PIPELINE AND FIBER OPTIC LINE
TOWNS OF CAMILLUS AND GEDDES
ONONDAGA COUNTY
NEW YORK
MCDs 06701 and 06707

Prepared For:

HONEYWELL
301 Plainfield Road, Suite 330
Syracuse, NY 13212

Prepared by:

CHRISTOPHER D. HOHMAN
of the
PUBLIC ARCHAEOLOGY FACILITY

and

PARSONS

APRIL 12, 2011

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APRIL 12, 2011

RECONNAISSANCE SURVEY MANAGEMENT SUMMARY

PROJECT IDENTIFIER: Onondaga Lake Project, Slurry pipeline and Fiber optic line

CULTURAL RESOURCE SURVEY TYPE: Archaeological reconnaissance

LOCATION INFORMATION:
Route:
Minor Civil Division: Towns of Camillus and Geddes (MCDs 06701 and 06707)
County: Onondaga

SURVEY AREA: Wastebed B to Wastebed 13, with connector from Wastebeds 1-8 to Station 94+50
Length: approximately 7213 m (23,659 ft)
Width: 1 m on Surface for slurry pipeline with the exception of several crossings where launching and receiving pits are to be located - the launching and receiving pits range in size from 10 x 10 ft (2) to 10 x 35 ft (2) as well as 262 m (862 ft) of buried line on the property of the State Fairgrounds east of Geddes Brook ; in addition, a 15 cm (6 inch) wide trench adjacent to the slurry pipeline with the trench being excavated to 46 cm (18 inches) in depth by a construction saw to place a fiber optic line in the trench
Size of Area: Approximately .52 acres (.21 ha) of subsurface impact

SENSITIVITY ASSESSMENT:
Precontact: Moderate
Postcontact: Low

ARCHAEOLOGICAL SURVEY METHODOLOGY:
Number of STPs: 0
Number of units: 0
Surface survey: None, due to fill on surface
Soil Borings for Launching and Receiving Pits: 6
Buried Slurry pipeline: 2 soil borings attempted; GPR completed

RESULTS OF ARCHAEOLOGICAL SURVEY:
Number of prehistoric sites identified: 0
Number of historic sites identified: 0
Number of sites recommended for investigation: 0
Number of listed/eligible or potentially eligible sites that may be impacted: 0

AUTHOR/INSTITUTION: Christopher Hohman, Public Archaeology Facility, Binghamton University

DATE OF REPORT: April 12, 2011

SPONSOR: Honeywell

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RECONNAISSANCE SURVEY

This report presents the results of the Phase 1B reconnaissance survey for the Slurry pipeline/Fiber optic line portion of the Onondaga Lake Project, Upland and Shoreline Area. The Slurry pipeline portion of the Onondaga Lake Project is located within the Towns of Camillus and Geddes, Onondaga County, New York. The survey follows the recommendations set forth in the addendum Phase 1B Work Plan (Hohman and Versaggi 2010), although field designs have now included 262 m (861 ft) of buried slurry pipeline on the State Fairgrounds property east of Geddes Brook, as well as a thin 15 cm (6 in) wide trench for a proposed Fiber optic line which will be placed adjacent to the Slurry pipeline. The work plan specified Phase 1B borings at the four launching/receiving pits. The project is a U.S. Environmental Protection Agency (USEPA) Superfund removal action. Honeywell is the sponsor for the project and Parsons is conducting the remediation of the project. To date, potential sources of contamination and areas where soil and sediment removal are necessary have been identified. Site characterization and post-excavation soil sampling continues. A Health and Safety Plan was completed by Parsons and another by the Public Archaeology Facility (PAF). The Public Archaeology Facility complied with both plans during the on-site survey.

The research summarized in this document was performed under the supervision of Dr. Nina M. Versaggi, Director of PAF. Christopher D. Hohman served as project director and is the principal author of this report. All borings were completed by Parratt Wolff, Inc., with boring logs created by Parsons/Honeywell. All project maps were drafted by Hohman on maps supplied by Parsons and Honeywell. Maria Pezutti and Annie Pisani performed all related administrative duties.

The cultural resource survey included in this report applies only to potential archaeological and architectural resources. PAF understands that the USEPA has initiated government-to-government consultations with the Onondaga Nation in compliance with 36 CFR Part 800.4(a)(b) regarding properties of religious and cultural significance. However, at this time, USEPA has not asked Honeywell, Parsons, or PAF to address the task of identifying religious and cultural properties. Therefore, no analysis has been performed as to whether the remediation of the areas included in this report may have an effect on Properties of Cultural and Religious Significance.

I. PROJECT DESCRIPTION

The Slurry pipeline will be located from Wastebed B along the eastern shoreline of Onondaga Lake to Wastebed 13, as well as a connector across Wastebeds 1-8 and a auxiliary feed line east of Wastebeds 1-8. Starting at Wastebed B, the proposed pipeline will be located adjacent to the former causeway on the eastern shoreline and will then move up slope along the western edge of Wastebeds 1-8. The pipeline will then run along an area between I-690 and Wastebeds 1-8, crossing I-690 through Ninemile Creek and then running along Ninemile Creek and I-695 to Wastebed 13 (Appendix III, pp. 34-60). The connector route extends from the main slurry line just southeast of Ninemile Creek across Wastebeds 1-8 to Onondaga Lake and the auxiliary feed line extends from the main slurry line to Onondaga Lake east of Wastebeds 1-8.

The proposed route of the Slurry pipeline will be located on the ground surface throughout the length of the pipeline except at 12 locations under short sections of asphalt and gravel drives, as well as a 262 m (861 ft) section on the State Fairgrounds property adjacent to I-695. All but two of the 12 short locations are located on the filled causeway, on top of wastebeds or on areas that have at least 1.5-3 m (5-10 ft) of fill above earlier wetlands (Table 1, p. 2). The portion of the proposed pipeline that will be placed underneath asphalt roads on top of Wastebeds 1-8 will have a vertical area of potential effect of approximately 1.2 to 1.5 m (4 to 5 ft) below the surface, completely contained within the industrial waste fill horizons. Those areas were not recommended for any Phase 1B testing.

There are two areas where the pipeline is to be bored underneath the surface and have the potential for intact soil horizons and cultural material. The two areas will contain both a launching pit and a receiving pit. The depth of the pits may reach intact soils and therefore were recommended for Phase 1B testing. These two areas include: 1) a launching pit northeast of the CSX Railroad and a receiving pit west of State Fair Boulevard; and 2) a launching pit north of the CSX Railroad on State Fairground property and a receiving pit south of the CSX Railroad on Honeywell property (Appendix IV, pp. 61-64). The steel casing of the pipe at the boring locations will have at least 1.7 m (5.5 ft) of minimum cover.

On the State Fairgrounds property adjacent to I-695, approximately 262 m (861 ft) of the slurry pipeline will be buried 1.5-1.8 m (5-6 ft) below the surface. This stretch of proposed buried slurry pipeline has the potential for intact soil horizons and cultural material and therefore was recommended for Phase 1B testing.

Much of the area of potential effect for the Slurry pipeline will overlap the 20th century causeway, industrial wastes in Wastebeds 1-8, and the north side of Ninemile Creek. The deposits are characterized as industrial waste from the 19th and 20th centuries. The area of potential effect for the Slurry pipeline is approximately 7317 m (24,000 ft) in length with vertical impacts being limited to those areas where the line is to be bored underneath asphalt roadways and railroad tracks, as well as the 262 m (861 ft) where the line is to be buried on the State Fairgrounds property adjacent to I-695.

Table 1. Slurry line locations underneath Surface

Location on Proposed Line	Location	Testing/No Testing
33+50 to 33+75 (Sheet C105)	Adjacent to former causeway underneath asphalt driveway	No testing due to fill to create causeway
36+50 to 37+50 (Sheet C105)	Underneath asphalt drive up to Wastebeds 1-8	No testing due to fill of Wastebeds 1-8
56+00 to 58+00 (Sheet C107)	Under asphalt drive on top of Wastebeds 1-8	No testing due to fill of Wastebeds 1-8
89+02 to 89+87 (Sheet C109)	Under asphalt drive on top of Wastebeds 1-8	No testing due to fill of Wastebeds 1-8
96+75 to 100+00 (Sheet C110)	Underneath fill adjacent to I-690	No testing due to fill adjacent to north and south sides of I-690
105+50 to 107+25 (Sheet C110)	Northeast side of CSX Railroad to south side of State Fair Boulevard	Testing completed for launching and receiving pits
116+00 to 116+50 (Sheet C112)	Under asphalt drive on top of approx. 10 ft of fill above former floodplain of Ninemile Creek	No testing due to depth of fill
136+89 to 145+50 (Sheets C113-C114)	Under 8-10 ft of fill on State Fairgrounds property adjacent to I-695.	Testing completed through 2 soil borings, as well as launching pit for north side of CSX Railroad
145+50 to 148+25 (Sheet C114)	North side of CSX Railroad to south of CSX Railroad, Outfall 019, and gravel drive	Testing completed for launching and receiving pits
169+25 to 169+75 (Sheet C116)	On slope of Wastebed 12	No testing due to fill of Wastebed 12
195+25 to 196+00 (Sheet C117)	Under drive between wastebeds	No testing due to fill of wastebeds
205+25 to 205+50 (Sheet C118)	On top of Wastebed 13	No testing due to fill of Wastebed 13

The Fiber optic line will be placed adjacent to the Slurry pipeline. The area of potential effect for the proposed Fiber optic line will include a 15 cm (6 in) wide trench that will be 46 cm (18 in) in depth. The majority of the proposed Fiber optic line will be placed in documented fill, especially along Onondaga Lake, on Wastebeds 1-8, and on the slope and on top of Wastebed 13. Based on recent excavations along Ninemile Creek and Geddes Brook (Hohman, in progress) as well as soil borings near the intersection of Ninemile Creek and I-690, as well as 1965 and 2003 soil borings in the vicinity of Geddes Brook floodplain and I-695 (which suggest 1-1.2 m [3-4 ft] of fill), it is probable that the

remainder of the Fiber optic line will be placed in industrial waste and will not impact any pre-industrial waste soil horizons.

II. GENERAL PROJECT AREA

Figure 1 places the project in New York State and Onondaga County. Figures 2-3 show the topographic context on the Syracuse West quadrangle.

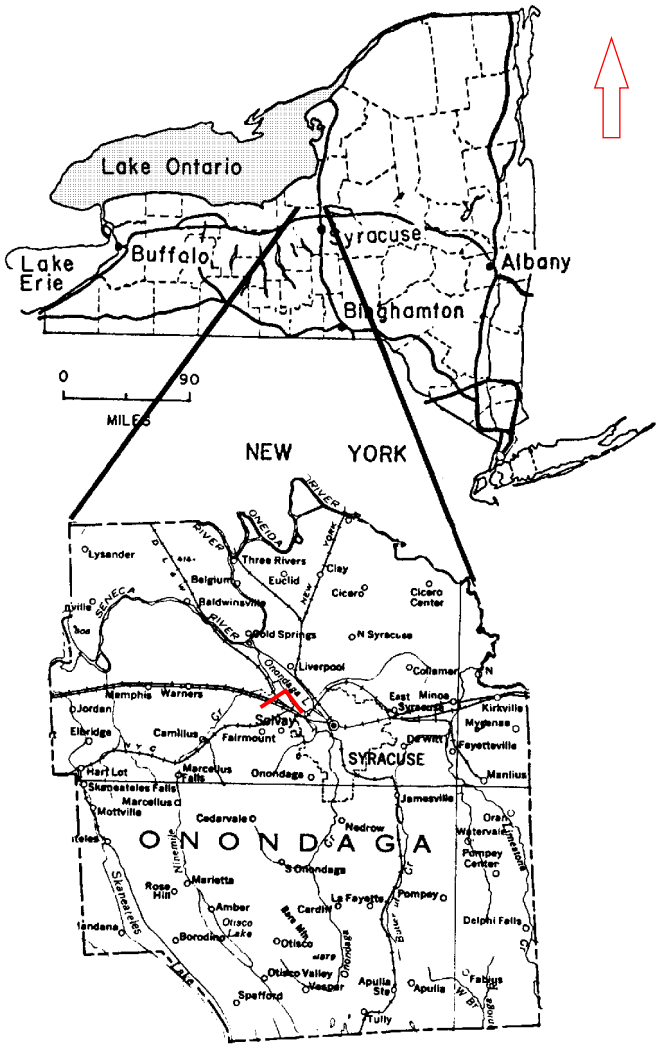

Figure 1. Approximate location of the Slurry pipeline/Fiber optic line of the Onondaga Lake Project (Upland and Shoreline Area) in New York State and Onondaga County.

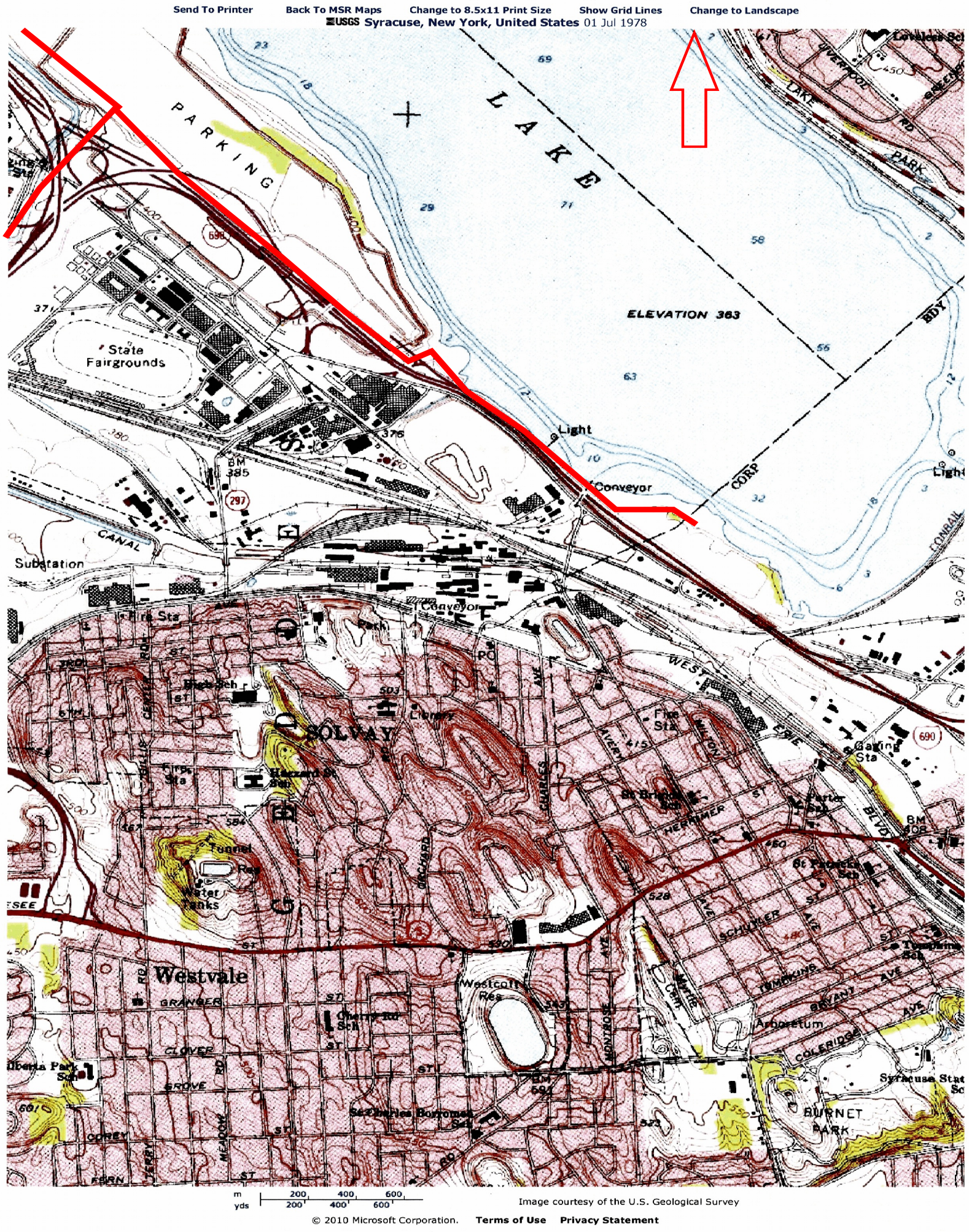

Figure 2. Approximate location of Slurry pipeline/Fiber optic line on 1973/1978 USGS Syracuse West Quadrangle (Map 1 of 2).

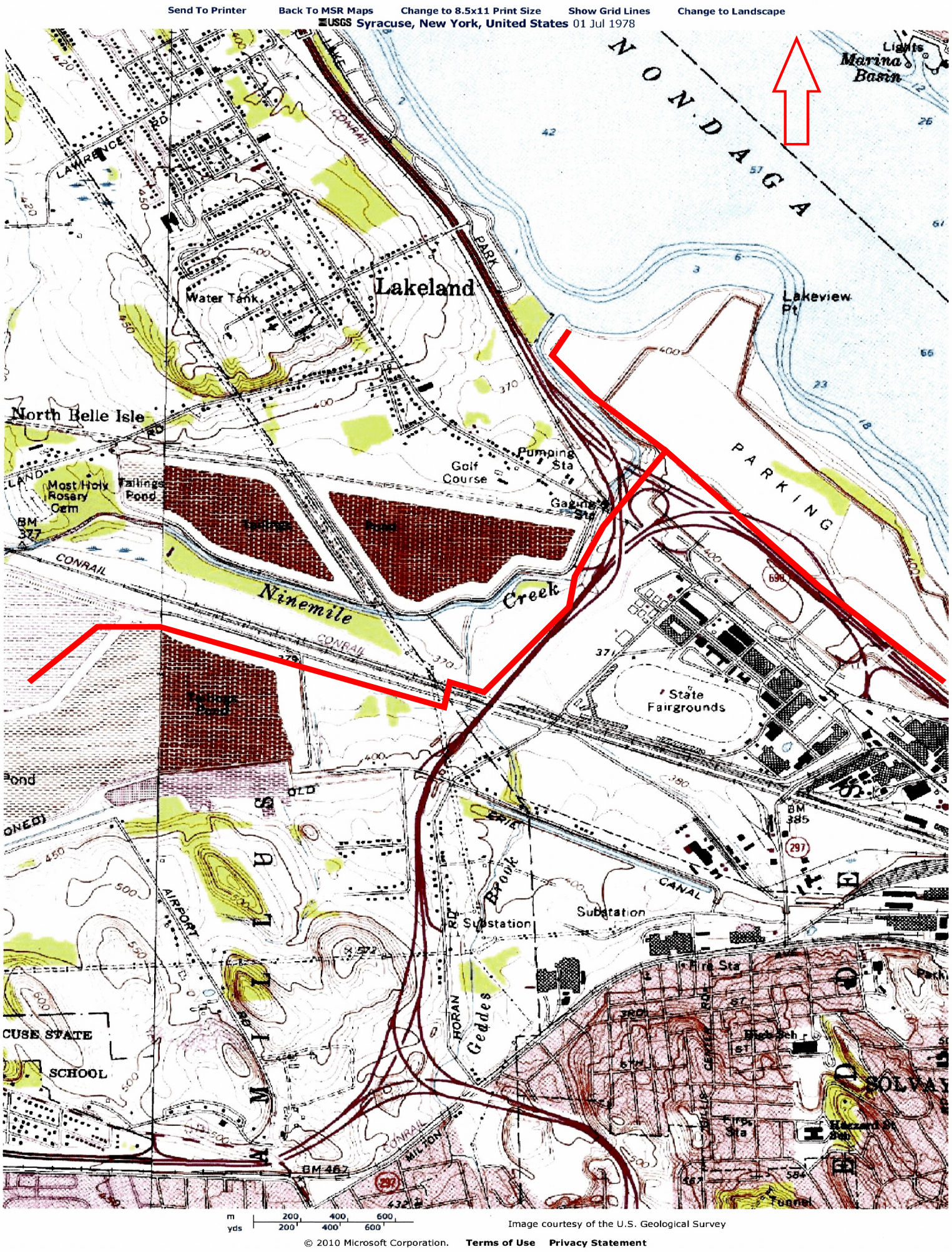

Figure 3. Approximate location of Slurry pipeline/Fiber optic line on 1973/1978 USGS quadrangle (map 2 of 2).

III. BACKGROUND RESEARCH

Background research was previously completed for the area of the Slurry pipeline/Fiber optic line as part of the Phase 1A survey and the Phase 1B Addendum Work Plan (Hohman 2004; Hohman and Versaggi 2010; Hohman 2010), with supplemental information being added to this report. The background research was conducted on the environment, pre-contact and post-contact history of the project area. This research addressed the types of sites likely to be located in the project area based on the results of site file checks, historic maps, county histories, archival documents, and settlement patterns in and around the Onondaga Lake.

3.1 Site Files Search

The site files search indicated that the area to the west and to the south of Onondaga Lake, as well as within 3.2 km (2 mi) radius of Wastebed 13, has a long history of land use and settlement during the centuries and millennia prior to European contact. An extensive archaeological record exists from as early as the Late Archaic period (4000-1500 B.C.) and continuing through the Late Woodland period (A.D. 1000-1500) in the vicinity of Onondaga Lake. Arthur C. Parker (1920) noted "traces of occupation" and a number of projectile points along Ninemile Creek (Hohman 2004; Hohman and Versaggi 2010). The sites around the lake and the adjacent waterways also include campsites, hamlets or villages, burial mounds, and an earthwork (Hohman 2004). The area around Onondaga Lake was important not only for the resources (e.g. potable water, edible plants, medicinal plants, wood, bark, animals, fish, etc.) found within and adjacent to the lake, but also for advantageous locations of villages and special use areas. Ninemile Creek is labeled as "Ostisca River" in the late 18th century (Figure 7, p. 14). References in Morgan (1962: 471) show the Onondaga word for Ninemile Creek as *Us-te'-ka,*translated as Butternut Hickory. Consultations with the Onondaga Nation suggest that the word, Ostisca, could also mean black or black mud (Anthony Gonyea and Wendy Gonyea, pers. comm., January 29, 2009).

3.2 Environmental Setting

The project area lies in the Oneida Lake Plain subregion of the Erie-Ontario Lowlands (Thompson 1966). The Oneida Lake Plain is a relatively flat plain with wetlands created by remnants of glacial Lake Iroquois. Following the retreat of the glaciers and Lake Iroquois from 8,000 to 6,000 B.C., Onondaga Lake was formed.

Wastebed B

The project area for the Slurry pipeline/Fiber optic line begins on the western edge of Onondaga Lake on top of Wastebed B at an elevation of approximately 120 m (394 ft) above sea level (ASL) (Figure 2, p. 4). Wastebed B is situated on top of fill and Solvay wastes. Borings along Wastebed B suggest that there are 3-5 m (10-15 ft) of fill deposits that were placed on top of 1.2-3 m (4-10 ft) of Solvay wastes (Hohman 2004; Mueser Rutledge Consulting Engineers 2004). These fill layers are situated above layers of marl that range from 3-9 m (10-30 ft) in thickness. The thickness of the marl indicates that this mixture of clay, calcium carbonate and shell was natural and was probably not occupied during the pre-contact period. Between 1898 and 1908, filling of the area occurred. Solvay waste was placed behind a bulkhead (Blasland & Bouck Engineers 1989).

Wastebed B to Wastebeds 1-8

The Slurry pipeline/Fiber optic line runs from Wastebed B along the causeway, which was created during the last two centuries, to the top of Wastebeds 1-8. The line in this area is situated at an elevation from 111m (365 ft) ASL at the base of the Wastebed to approximately 131 m (430 ft) ASL at the top of Wastebeds 1-8. In addition, a connector line for the Slurry pipeline runs along Wastebeds 1-8 above Ninemile Creek at an elevation ranging from 111 to 120 m (364 to 394 ft ASL) (Figure 2, p. 4). Based on soil corings and a geomorphological analysis by Geoarchaeology Research Associates (GRA), Wastebeds 1-8 were created from the early 20th century through the mid 20th century on

top of dry land and/or marshy land, as well as the original channel of Ninemile Creek. The wastebeds rise approximately 18 m (60 ft) above the lake shore, with much of that elevation rise due to the waste materials that were placed there. Geomorphological investigations (Aiuvalasit and Schuldenrein 2010) of boring logs suggest that the high wastebeds have thick accumulations of Solvay waste amounting to 9-15 m (30-50 ft) overlying natural deposits. The thick Solvay waste overlies a marl and peat horizon which becomes increasingly more organically enriched from east to west. This likely reflects buried landforms along the margin of Onondaga Lake that become more terrestrial landward from the lake basin (Aiuvalasit and Schuldenrein 2010).

Wastebeds 1-8 to base of Wastebed 13

From Wastebeds 1-8, the Slurry pipeline/Fiber optic line runs along the east side of Ninemile Creek and to the west of I-695 until it reaches the base of Wastebed 13. The elevation of the proposed line from the base of Wastebeds 1-8 to Wastebed 13 ranges from approximately 112-116 m (368 to 379 ft) ASL (Figure 3, p. 5). Within this portion, the proposed Slurry pipeline will be buried beneath the CSX Railroad/State Fair Boulevard and the CSX Railroad (Appendix IV, pp. 61-64), as well as 262 m (861 ft) on the State Fairgrounds property adjacent to I-695. Because Ninemile Creek was rechannelized from its original position to the west of its current location, the present route would have been located farther away from the original location of Ninemile Creek (Figures 13-14, pp. 20-21). Soil borings along the present Ninemile Creek, especially near its confluence with Geddes Brook, documented a diversity of intact sediment types, suggesting alluvial contexts below more recent organic accumulations associated with present wetlands. The mineral horizons likely represent floodplain sequences (i.e., coarser sediments found within or adjacent to former channels, finer sediments in backchannels and swales) (Aiuvalasit and Schuldenrein 2010). 1965 and 2003 elevations of borings of the proposed buried section of the slurry pipeline on the State Fairgrounds property (Appendix V, pp. 65-76) suggest that 1.1-2.2 m (3.6-7.1 ft of fill) have been placed on the surface during or after the construction of I-695. The 1965 elevation of the surface appears to have been within .3 m (1 ft) of the elevation of the present Geddes Brook floodplain.

The western end of the project area is located on the slopes and on top of Wastebed 13. The elevation of the proposed line ranges from 115 m (377 ft) ASL at the base of the wastebed to the 136 m (445 ft) ASL on the edge of the wastebed (Figure 3, p. 5). The 1938 soil survey (Figure 4, p. 8) shows that much of the area in the vicinity of Wastebeds 12-15 consisted of silt and clay loams (Cicero clay loam, Fulton silt loam, Dunkirk silt loam), as well as an alluvial fan (Ps) (USDA 1938). However, the 1977 soil survey depicts the western portion of the project area as wastebeds, gravel pits, or tailing ponds (USDA 1977). The eastern portion of the area of potential effect is located along the edge of the gravel pits/tailing ponds and just to the south of Outfall 019 (formerly known as unnamed tributary of Geddes Brook). Gravel operations in the vicinity of Wastebed 13 removed soil to depths as much as 9 m (30 ft) below the surface. The wastebeds were created and used for the disposal of waste materials as early as 1944 (Blasland and Bouck Engineers 1989). Dikes were constructed around the wastebeds and these used natural soils as well as other fill. A-horizons (topsoils) were removed from Wastebed 13 during gravel operations and some of this topsoil was used to create the dikes. Because Wastebed 13 was built up at least 16.8 m (55 ft) in height, the soil deposits above any gravel operation in Wastebed 13 date from the mid 20th century to the present.

In summary, all portions of the Slurry pipeline/Fiber optic line are in disturbed context (Figures 5-6, pp. 9-10), with the possible exception of the area between Wastebeds 1-8 and Wastebed 13. The area that the Slurry pipeline will be impacting below the surface was recommended for additional archaeological work.

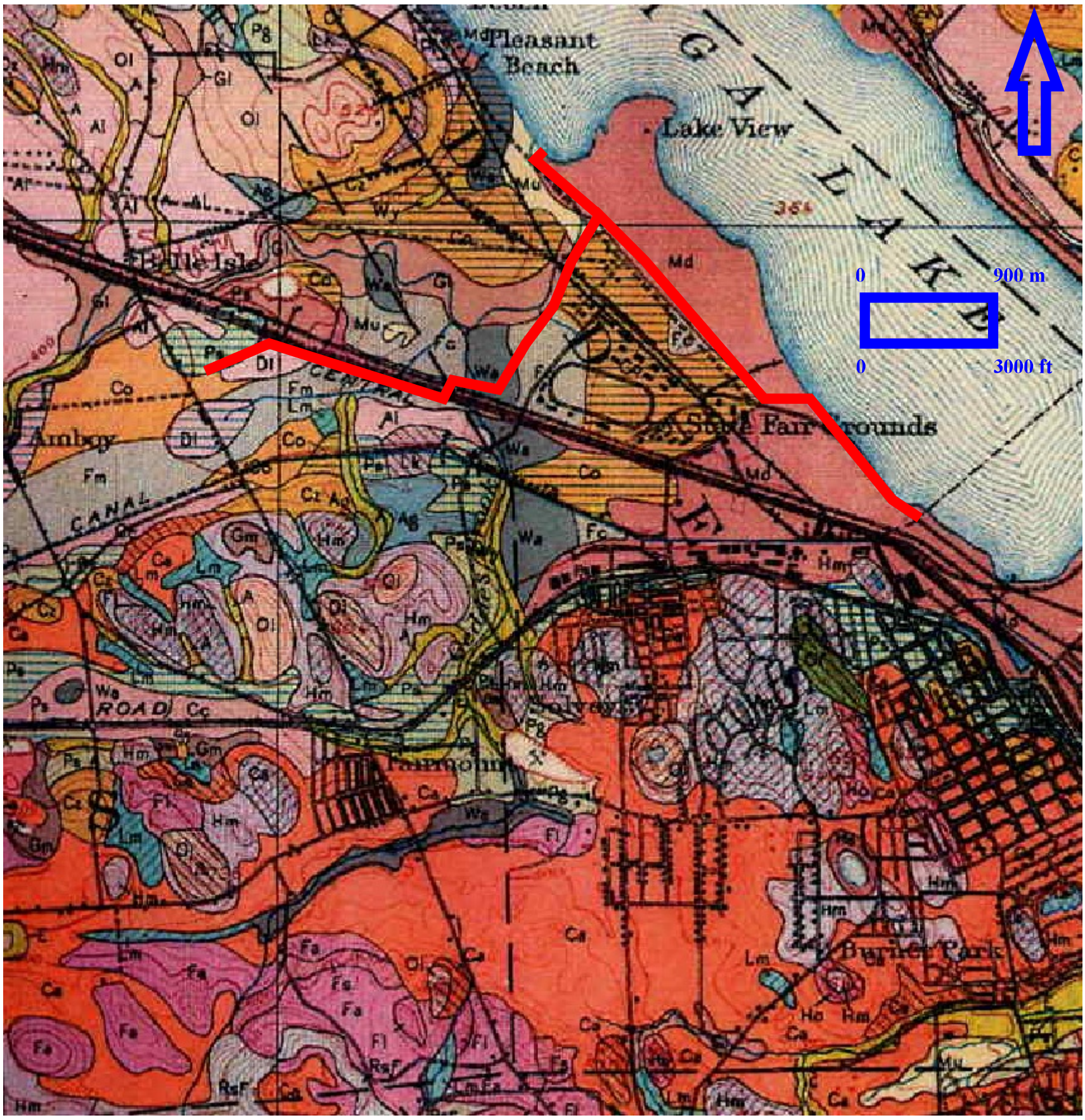

Figure 4. 1938 USDA soil map, with approximate location of Slurry pipeline/Fiber optic line highlighted.

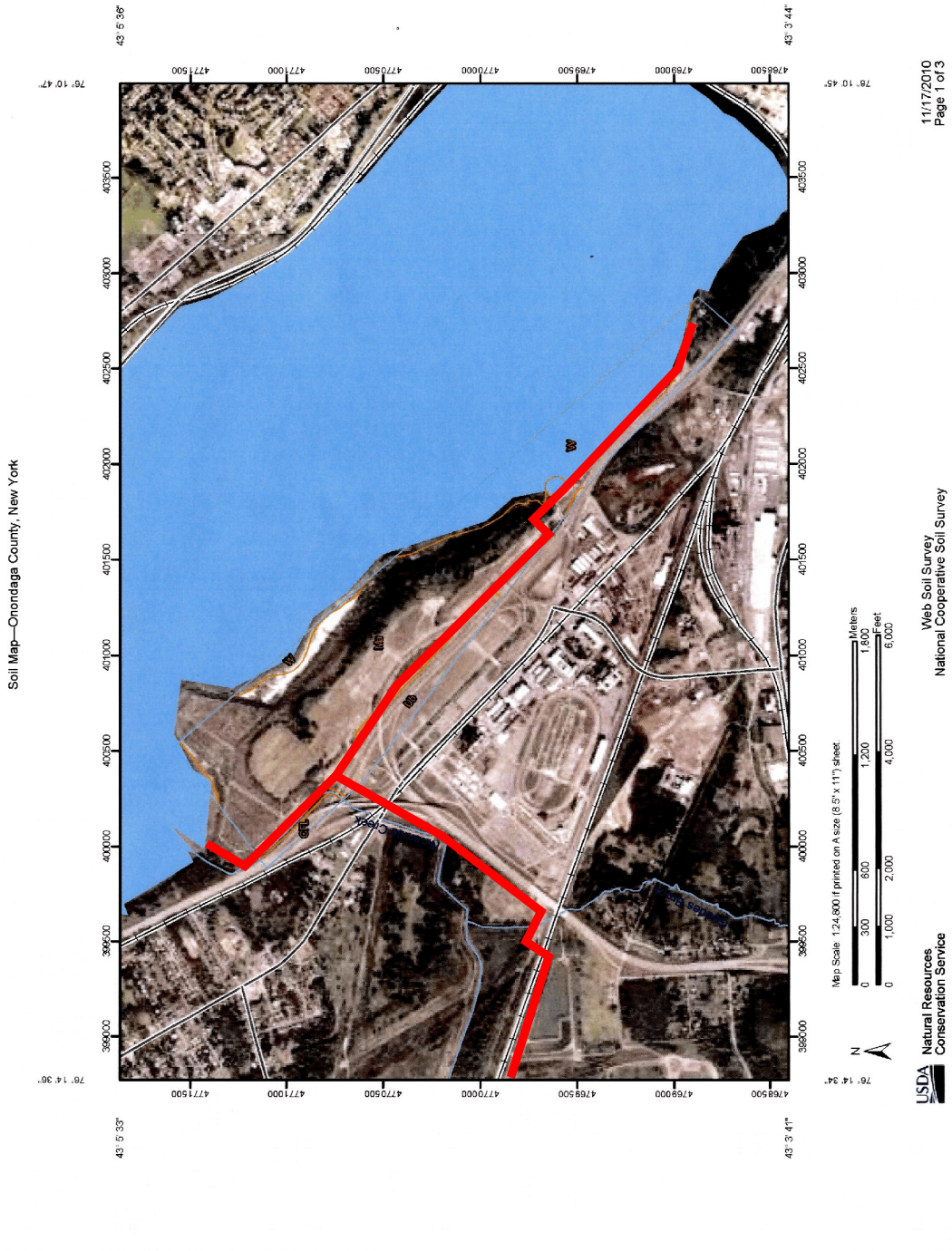

Figure 5. Websoil Survey map, with approximate location of southeastern end of Slurry pipeline/Fiber optic line highlighted.

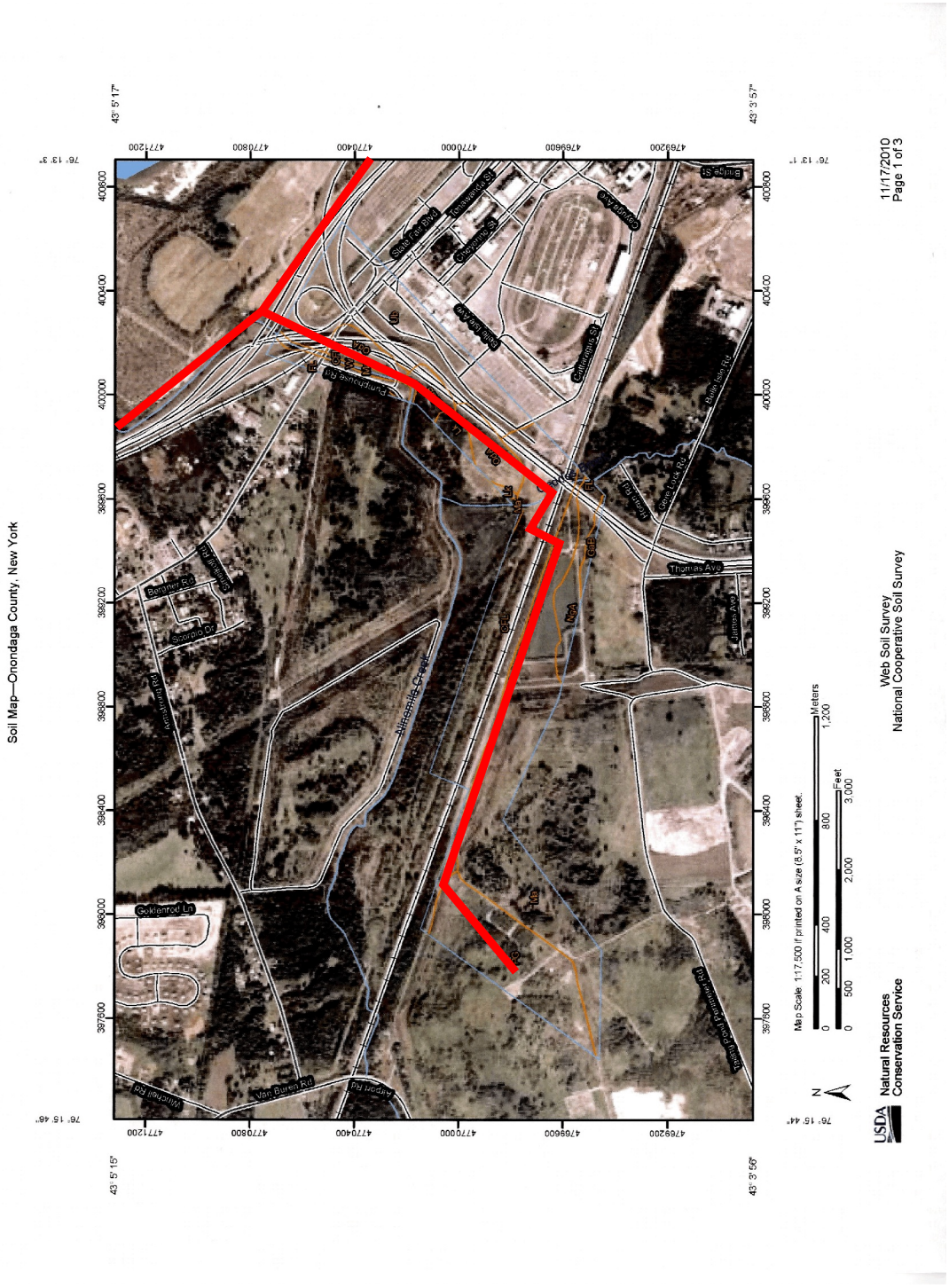

Figure 6. Websoil survey map, with approximate location of western portion of Slurry pipeline/Fiber optic line highlighted.

3.3 Precontact Period History

As noted in Section 3.1, p. 6, the area around Onondaga Lake was important for the resources (e.g. potable water, edible plants, medicinal plants, wood, bark, animals, fish, etc.) found within and adjacent to the lake, as well as for the locations of villages and special use areas.

Precontact Sensitivity Assessment

The proposed location of the Slurry pipeline crosses several different areas: along the causeway from Wastebed B, on top of and on the side of Wastebeds 1-8, just to the east of Ninemile Creek and west of I-695, as well as on the side slope and on top of Wastebed 13. Consultation with members of the Onondaga Nation determined that all areas of the lake were used for important tasks; no specific references to the upper reaches of Ninemile Creek were discussed. The proposed Slurry pipeline in the vicinity of the causeway from Wastebed B is located in an area that was either covered by water or was situated in wetlands (see Figure 7, p. 14). These wetlands were composed of water-saturated muck soils, grasses, ferns and reed-like vegetation. Wetlands are fragile environments that suffer from disturbance to their ecosystems. It is unlikely that evidence of precontact landuse would be found within these wetlands at the eastern end of the Slurry pipeline. This sensitivity assessment is subject to change depending on the land modifications that have occurred through time that would have impacted the archaeological remains of these activities.

In the vicinity of Wastebeds 1-8, low lying areas would likely not contain evidence of precontact landuse; however, slightly higher elevations would be sensitive for overnight camps, camps associated with special purpose resource procurement and processing, as well as for activities that did not require an overnight camp. Evidence may be present under the fill of Wastebeds 1-8 for cultural resources associated with these activities. However, impacts are not expected to reach below the 18 m (60 ft) of fill.

The proposed Slurry pipeline moves west from Wastebeds 1-8 and is situated between Ninemile Creek and I-695. This area prior to the rechannelization of Ninemile Creek would have been located on the floodplain of Ninemile Creek. The area that would have been outside of the former channel of Ninemile Creek may have served as a travel route and would support a sensitivity for short-term camps and activity areas associated with hunting and fishing, as well as collecting wild foods, such as bitternut, hickory nuts, wood and bark. During a walkover of the project area on December 17, 2009, archaeologists noted that the area along the north side of Ninemile Creek, near the confluence of Geddes Brook, contained several feet of industrial waste visible above natural soil horizons. In addition, excavations during the summer of 2010 on the floodplain of Geddes Brook and Ninemile Creek identified Solvay wastes on top of wetland soils. The additional archaeological work, as well as early historic maps, suggest that much of the area on the floodplain of the Ninemile Creek may have contained wetlands. As within the wetlands discussed above, wetlands are fragile environments and if wetlands extended into the project area, evidence of precontact land use within them would be highly unlikely. Instead resource collecting and processing would have concentrated in the drier margins of these water features.

All evidence gathered points to deep impacts in Wastebed 13 by gravel operations during the 20th century, as well as at least 16.8 m (55 ft) of wastes placed on top of the gravel operations in Wastebed 13. This greatly reduces the sensitivity of the Slurry pipeline/Fiber optic line on the side slope and on top of Wastebed 13.

The Phase 1B survey addresses only the identification of archaeological and architectural resources. PAF understands that USEPA has initiated government-to-government consultations with the Onondaga Nation in compliance with 36 CFR Part 800.4 (a)(b) regarding properties of religious and cultural significance. However, at this time, USEPA has not asked Honeywell, Parsons, or PAF to address the task of identifying religious and cultural properties. Therefore, no analysis has been performed as to whether the remediation of the areas included in this report may have an effect on Properties of Cultural and Religious Significance. In the interim, the Onondaga Nation has provided the following statement.

The region of Onondaga Lake and the Onondaga Lake watershed has been our homeland since the dawn of time. We have been a steward of Onondaga Lake since time immemorial and will continue to do so forever, as that is what has been mandated from the Gayanashagowa, the Great Law of Peace. In the 1794 Treaty of Canandaigua the United States government recognized Onondaga Lake as part of our aboriginal territory.

The Lake is the spiritual, cultural and historic center of the Haudenosaunee Confederacy. Over one thousand years ago, the Peacemaker brought the Mohawk, Oneida, Onondaga, Cayuga, and Seneca Nations together on the shores of Onondaga Lake. At the lakeshore, these Nations accepted the message of peace, laid down their arms, and formed the Haudenosaunee Confederacy. The Confederacy was the first representative democracy in the West.

To symbolize the Confederacy, the Peacemaker planted a white pine, the Tree of Peace, on the shore of Onondaga Lake. It is understood that the Peacemaker chose the white pine because the white pine's needles are clustered in groups of five, just as the five founding Nations of the Confederacy clustered together for strength. The boughs of the white pine represent the laws that protect all the people. An eagle was placed at the top of the tree to watch for danger from without and within. Four white roots of peace reach out in the four directions towards anyone or any Nation who wishes to come under this tree of peace.

As the birth place of the Confederacy and democracy, the Lake is sacred to the Haudenosaunee. The Onondaga Nation has resided on the Lake and throughout its watershed since time immemorial, building homes and communities, fishing, hunting, trapping, collecting plants and medicine, planting agricultural crops, performing ceremonies with the natural world dependent on the Lake, and burying our ancestors - the mothers, fathers and children of the Onondaga Nation. The Onondaga Nation views its relationship to this area as a place where we will forever come from and will return to.

It brings great sadness to the people of the Onondaga Nation that despite our long stewardship of the Lake and its watershed, it took only one hundred years of abuse to wreak havoc to the Lake, its tributaries and all the plants, animals and marine life that depend on the Lake and its watershed. Industry interfered with the Onondaga Nations's relationship to the land and disturbed the ancestors that were interred throughout the watershed - either by direct excavation or contamination, or indirect efforts such as construction on top of grave sites. We wish to bring about a healing between us and all others who live within our homelands around the lake. We must in order to protect the future generations "whose faces are looking up from the earth."

We are one with this land and this Lake. It is our duty to work for a healing of this land, and all of its waters and living things, to protect them, and to pass on a healthy environment to future generations - yours and ours.

[1]The Onondaga Nation requested that the oral tradition concerning the significance of Onondaga Lake to the Onondaga and Haudenosaunee Confederacy be included in this report. The Onondaga Nation's statement may not necessarily reflect the views of the Public Archaeology Facility, Parsons or Honeywell International Inc. Further, the inclusion of the Onondaga Nations's oral tradition shall not constitute an admission of any fact or law in any judicial or administrative proceeding. In addition, the statements and findings in this report by Honeywell, Parsons, and the Public Archaeology Facility may not reflect the opinions and views of the Onondaga Nation, and do not constitute an admission by the Onondaga Nation of fact or law in any legal or other proceeding.

Postcontact Period History

At the time of European contact by the French, Dutch, and English, the project area was part of the political, economic, and spiritual heartland of the Onondaga Nation of the Haudenosaunee (Iroquois) Confederacy. Much of the known Onondaga settlements were located to the southeast of Onondaga Lake, although between 1600-1625, the settlement of Kaneenda flourished to the south of Onondaga Lake at the mouth of Onondaga Creek (Bradley 1987).

European settlements developed slowly to the west of Onondaga Lake during the postcontact period. From the 17th century through the mid- to late-19th century, much of the area adjacent to Onondaga Lake was covered with salt marshes, which were used for the production of salt. However, these areas were less favorable locations for residential villages. The tributaries, including Ninemile Creek, as well as the bordering hills were used for a variety of purposes similar to those during the precontact period.

Much of the area just west of Onondaga Lake and along Ninemile Creek was either on low lying marshlands or large lots of unsettled land (Figures 7-12, pp. 14-19). The northernwestern portion of Wastebed B and the causeway appear to be on the fringe of Onondaga Lake and were covered by water on the earliest map. These areas were noted as reclaimed land by 1874 (Figure 10, p. 17). Within the general vicinity of Wastebeds 1-8, the area was identified as "Geddes Marsh" in 1859, and as "Geddes Marsh and reclaimed land" in 1874 (Figures 9 and 10, pp. 16-17). Between 1929 and 1938, the property in the vicinity of Wastebeds 1-8 was fully covered with waste from the Solvay Process Company, and placement continued on the property through 1943 (Thompson 2002). The area along Ninemile Creek remained unoccupied throughout the postcontact period, with the creek being rechannelized in 1926.

Historic maps from the 19th and early 20th centuries identified a series of former structures in the vicinity of Wastebeds 12 and 13. By the early 19th century, at least 12 structures were present on the north/south road in the area of Wastebed 13, as well as to the south in Wastebeds 12 and 14 (Hohman 2004). Most of these structures were removed in the 1920s to 1930s as the area was transformed into the Amboy Airport and later the Syracuse Municipal Airport. When World War II began, the airport turned into a flight training center. After World War II, the airport became a commercial airport, but could not compete with the larger Syracuse Hancock International Airport and closed in 1949 (Freeman 2009). By 1951, the area had been acquired by Allied Chemical and Dye Corporation and gravel pits and tailing ponds had been constructed (Freeman 2009). Beginning in the 1970s, the area of the wastebed was filled in with Solvay waste. The waste continued to be placed in this location through 1985 (Blasland and Bouck Engineers 1989 in Hohman 2010). The wastebed now contains material that is approximately 17-21 m (55-70 ft) higher than the surrounding landscape.

Postcontact Sensitivity Assessment

Much of the area adjacent to Onondaga Lake and along Ninemile Creek may have been used by Native Americans (specifically the Onondaga Nation) in the 17th century and beyond for a variety of purposes, including short-term camps, special use areas, and resource procurement/processing tasks similar to those described in the precontact section. Much of the area from Wastebed B through the causeway to the beginning of Wastebeds 1-8 would have been under the water level of Onondaga Lake or was shoreline that consisted of swamp and sedges (as depicted on Figure 7, p. 14). Wetlands are fragile environments and therefore it is unlikely that evidence of landuse prior to the 19th century would be found within these wetlands. The area on top of Wastebeds 1-8 is located on 9-15 m (30-50 ft) of Solvay wastes and would not contain any postcontact resources of significance. From Wastebeds 1-8 to Wastebed 13, the project area has had little development from the mid 19th century through the present time and contains limited sensitivity for postcontact resources from the mid 19th century through the present.

Although historic structures and roads were identified in the vicinity of Wastebed 13 in the 19th and early 20th centuries, the use of the area as an airport in the mid 20th century, the excavation of the area of Wastebed 13 for gravel pits between 1949 and 1957, as well as the construction of Wastebed 13 after 1951, has likely removed evidence of the earlier domestic residences and roadways, especially in the vicinity of Wastebed 13. Adjacent to the wastebeds, there remains the potential for postcontact Native American sites, depending on the modifications that have taken place in the 20th century adjacent to the current wastebeds. The lack of historic occupations in the 19th and 20th century in the area adjacent to the wastebeds suggests that there is a low sensitivity for 19th or 20th century resources.

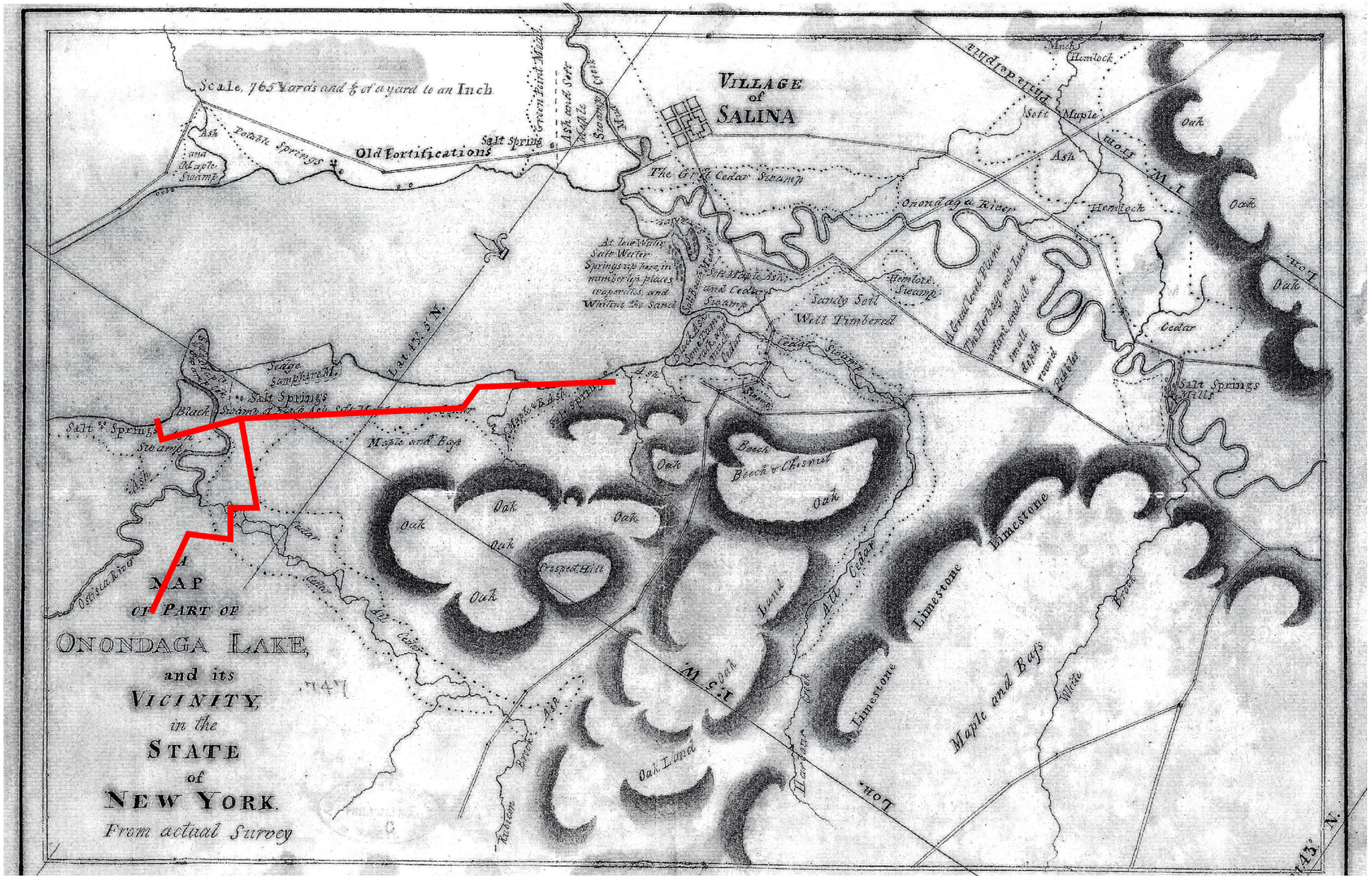

Figure 7. Late 18th century map of Onondaga Lake and its surrounding terrain, with approximate location of Slurry pipeline/Fiber optic line highlighted.

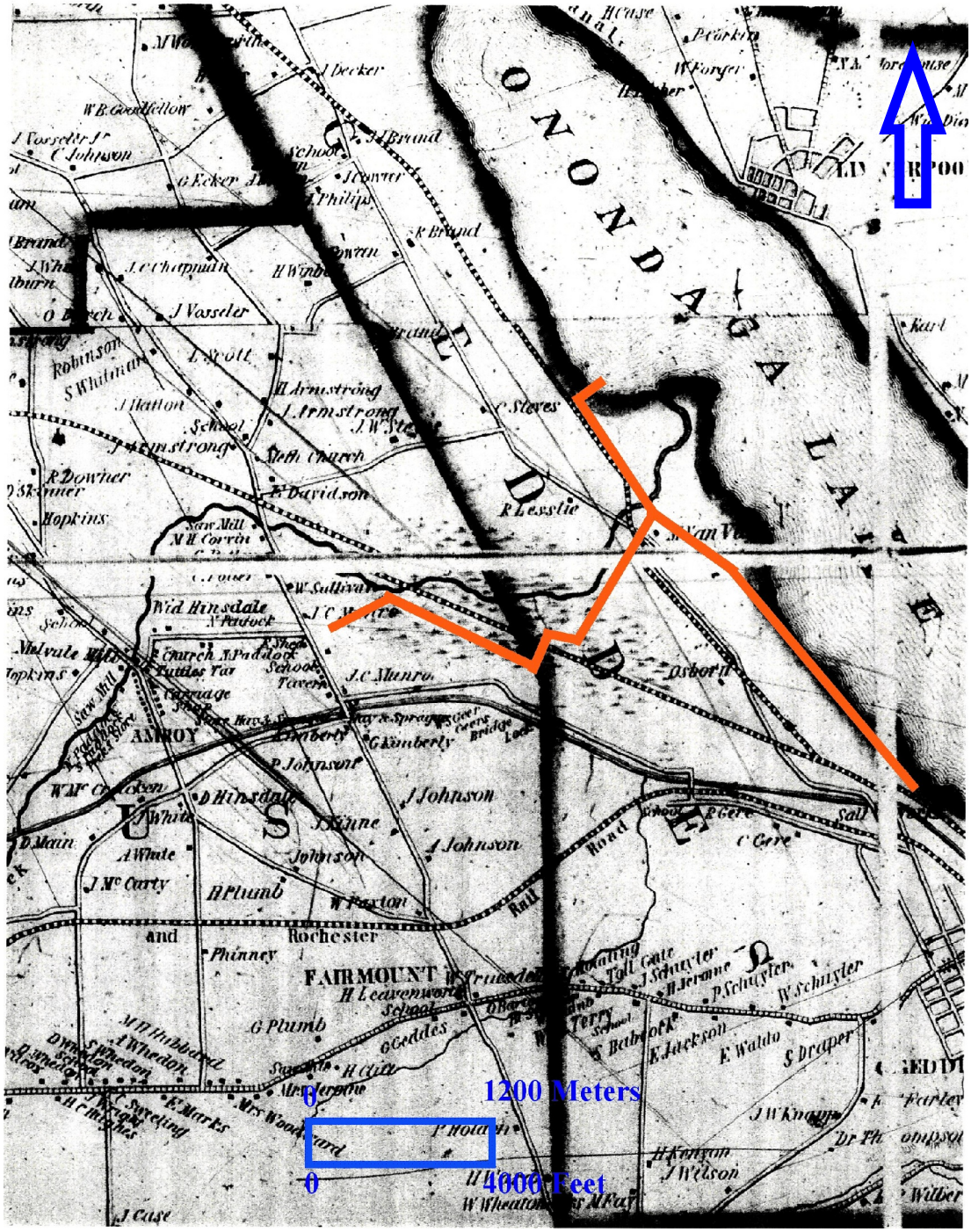

Figure 8. 1852 Fagan map, with approximate location of Slurry pipeline/Fiber optic line.

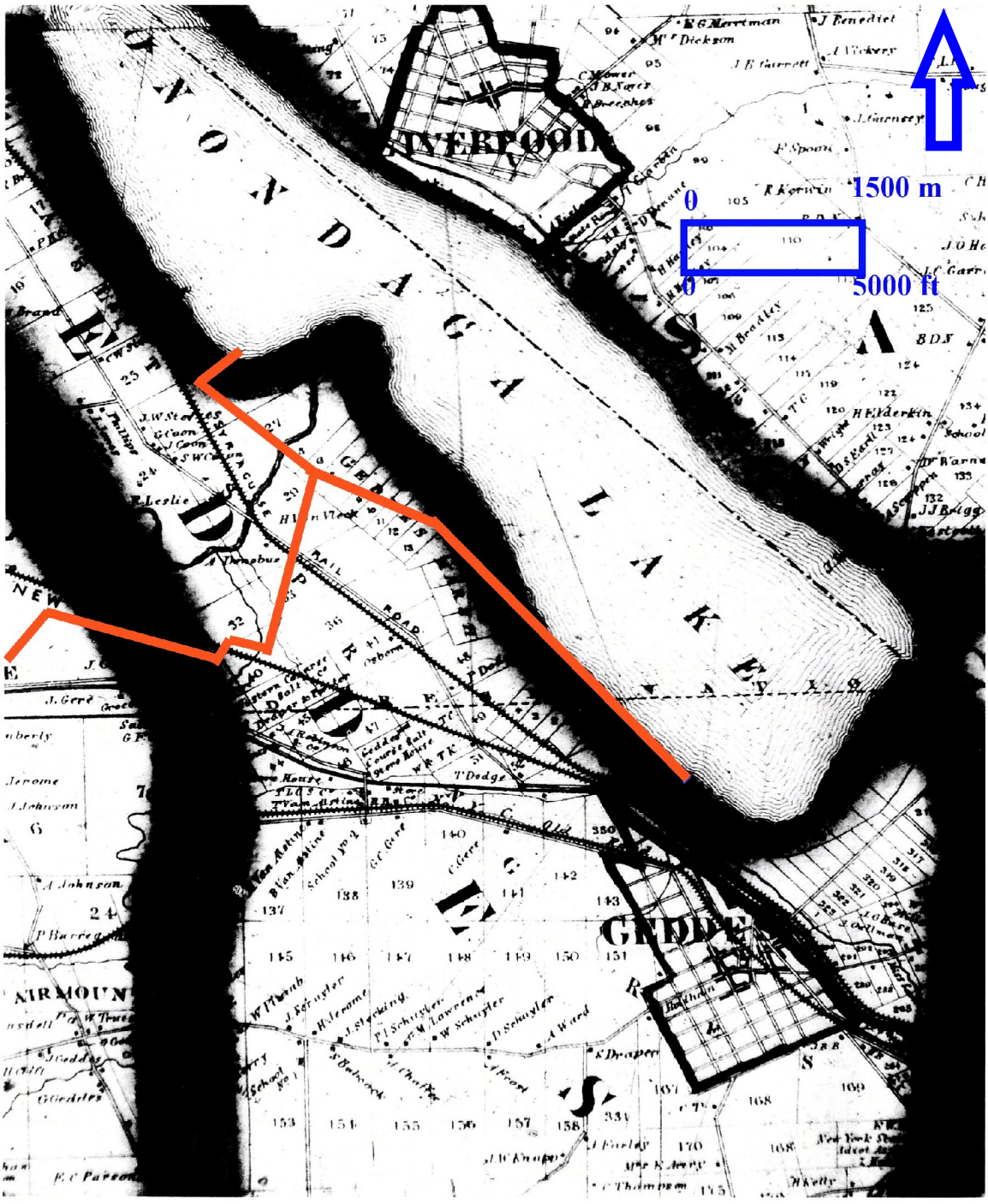

Figure 9. 1859 Sweet map with approximate location of Slurry pipeline/Fiber optic line.

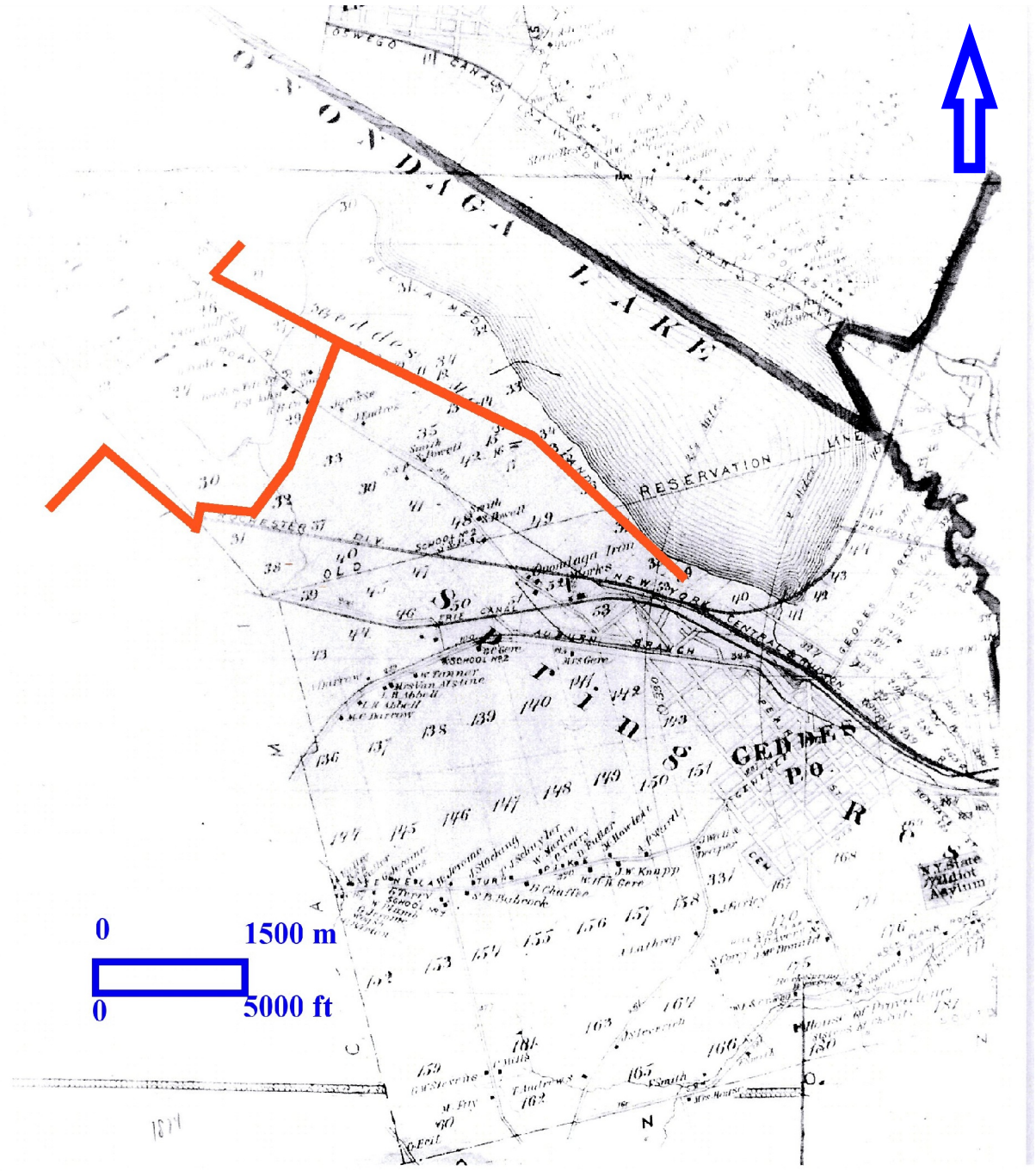

Figure 10. 1874 Sweet map, with approximate location of Slurry pipeline/Fiber optic line.

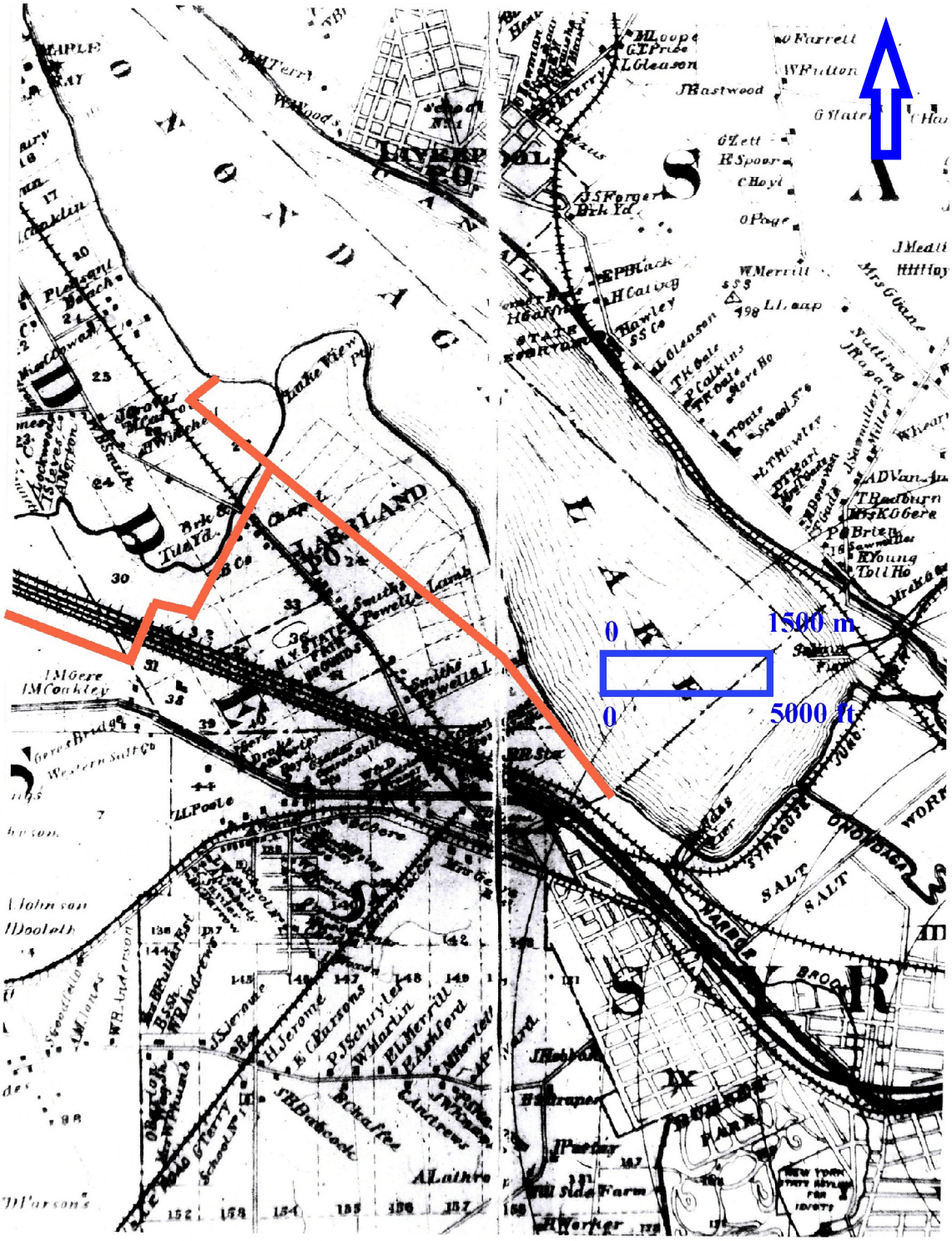

Figure 11. 1889 Sweet map with approximate location of Slurry pipeline/Fiber optic line.

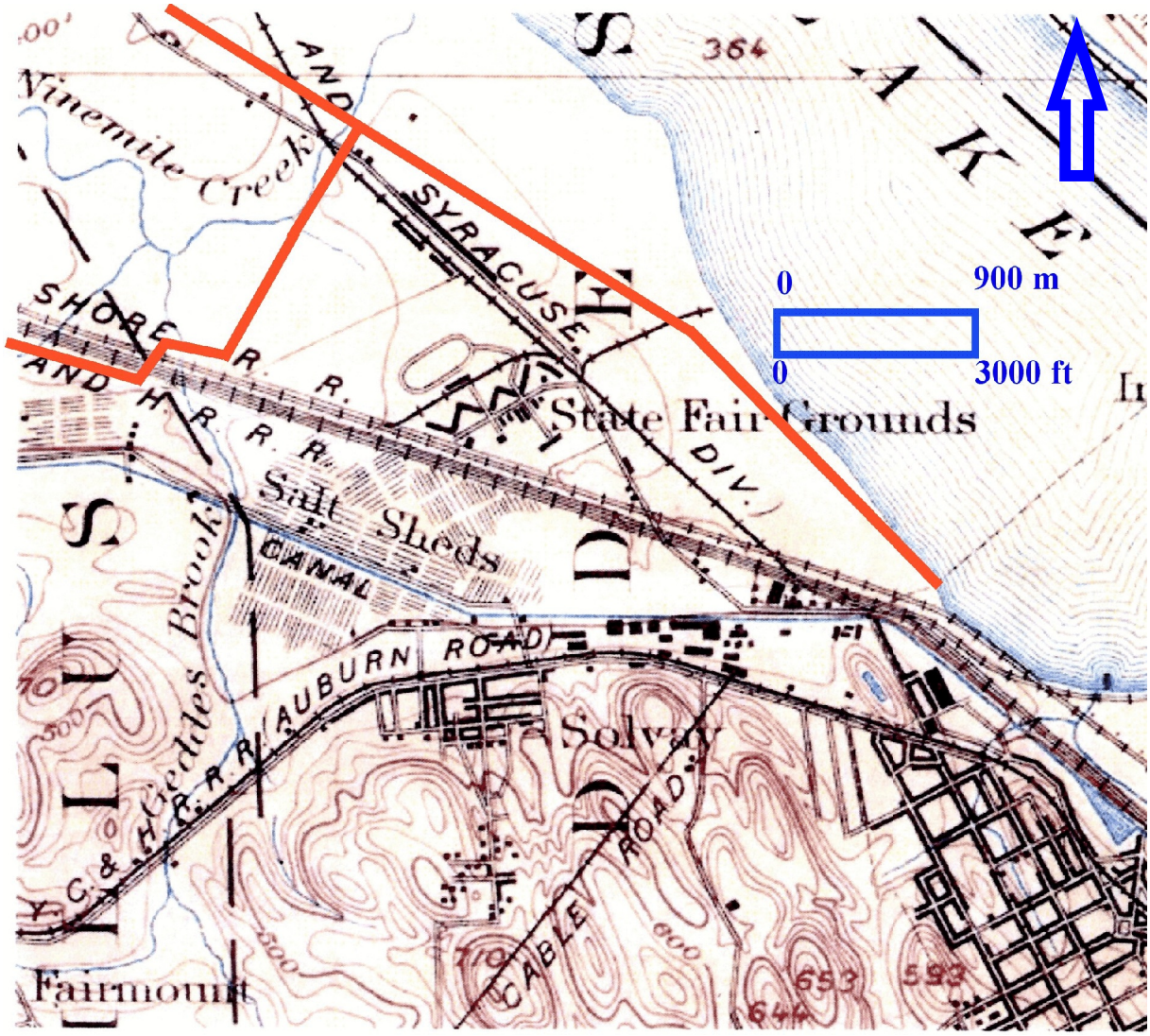

Figure 12. 1898 USGS map with approximate location of Slurry pipeline/Fiber optic line.

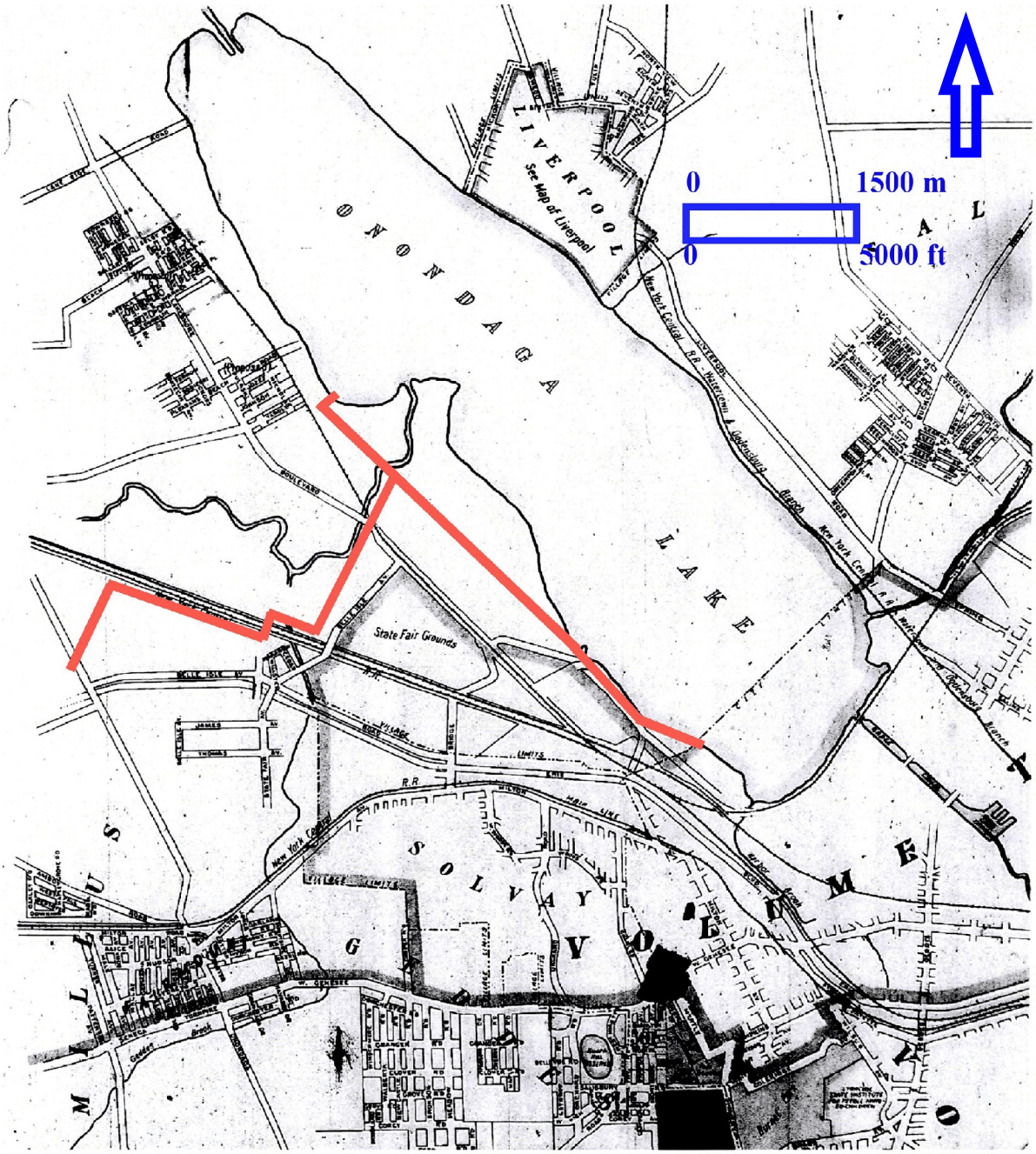

Figure 13. 1928 Sanborn map of Onondaga Lake area, with approximate location of Slurry pipeline/Fiber optic line.

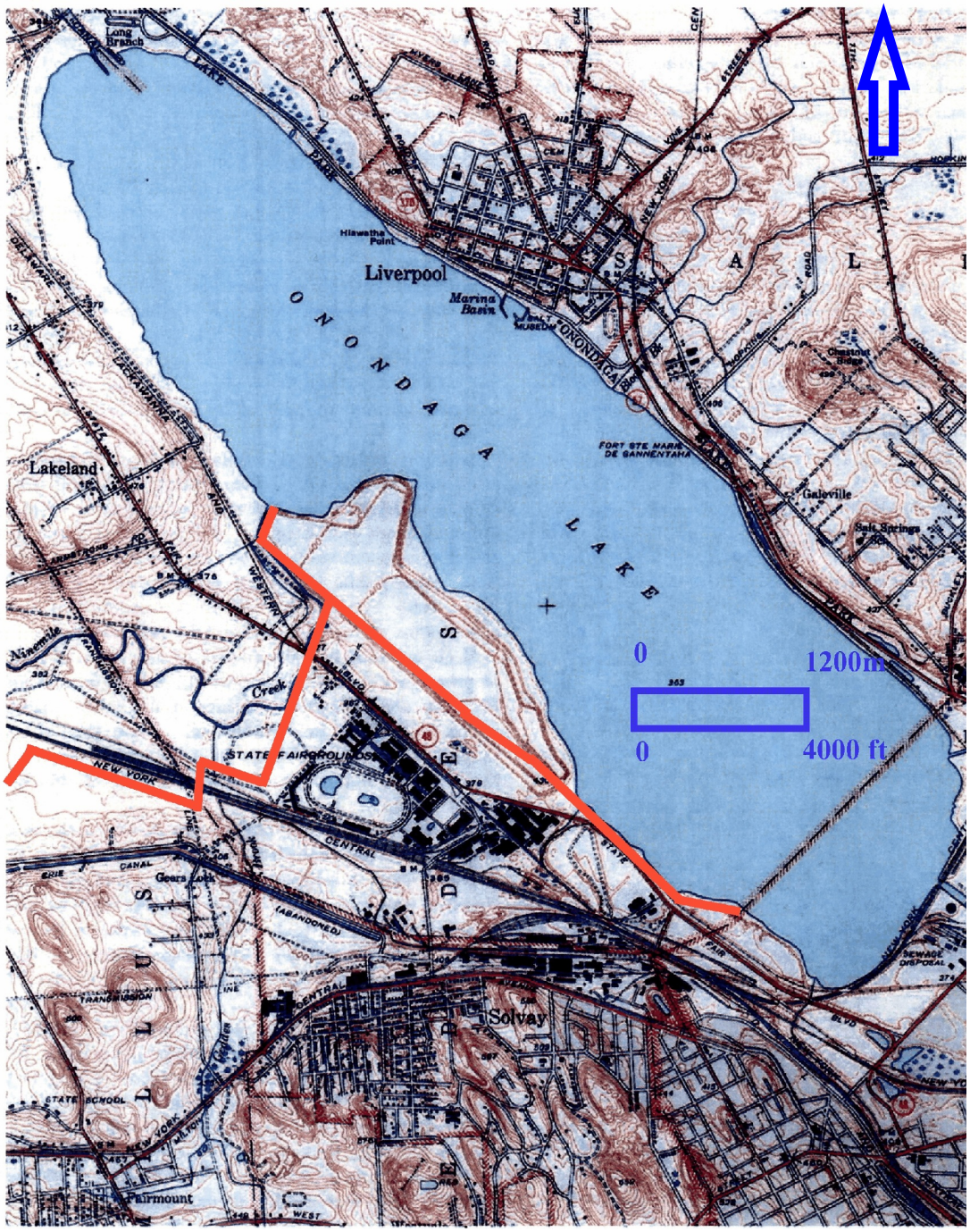

Figure 14. 1947 7.5 minute Syracuse West USGS quadrangle with approximate location of Slurry pipeline/Fiber optic line.

IV. ARCHAEOLOGICAL SURVEY METHODOLOGY

The only archaeological work that was recommended for the Slurry pipeline and acknowledged by New York State Office of Parks, Recreation and Historic Preservation, New York State Department of Environmental Conservation and the Environmental Protection Agency included archaeological testing in the vicinity of the proposed bore pits adjacent to the CSX Railroad and State Fair Boulevard, as well as the proposed bore pits adjacent to the CSX Railroad. In addition, a change in the vertical location of the Slurry pipeline on the State Fairgrounds adjacent to I-695 prompted some additional testing for archaeological resources. The Phase 1B testing that was recommended would consist of soil borings or backhoe trenches (under the supervision of a professional archaeologist) at each bore pit location and at several locations along the portion of the Slurry pipeline that is to be buried along I-695. If soil borings were completed, then the Phase 1B testing would also include the excavation of a backhoe trench at any location that contains a potentially culturally bearing soil horizon. If backhoe trenches are not possible, then 1 x 2 m (3.3 x 6.6 ft) units would be excavated by archaeologists at bore pit locations. No further archaeological work was recommended along the remainder of the proposed Slurry pipeline.

Soil borings were completed by Paratt Wolff within or adjacent to the blueprint locations of the boring pits. One to two soil borings were completed at each boring pit location. The borings were completed through two methods: split spoon hollow stem auger borings, as well as through the use of geoprobes. The split spoon hollow stem auger boring is done primarily with a 6-8 inch diameter auger and is accomplished with continuous split spoon sampling. The geoprobes generally have a 2 inch diameter split spoon that is driven into the ground with a directpush hammer in 2 ft increments (www.pwinc.com/geoprobe-direct-push.html and www.pwinc.com/drilling-and-sampling.html). CRS-SB-X2RP1 was completed with a geoprobe due to overhead utilities, while the other five borings were completed through the split spoon hollow stem auger.

Soil borings were attempted in February by Matt Vetter of Parsons at several locations along the length of the Slurry pipeline adjacent to I-695, but could not be completed due to the fill. In February of 2011, New York Leak Detection completed ground penetrating radar (GPR) at two locations (137+00 and 141+50) to determine the depth of fill.

V. ARCHAEOLOGICAL SURVEY RESULTS

The Phase 1B reconnaissance survey consisted solely of an analysis of soil borings at the proposed bore pits, as well as an analysis of borings, GPR and elevational analysis for the location of the slurry pipeline from Station 136+89 to Station 145+63.

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CSX Railroad and State Fair Boulevard Crossing

At the CSX Railroad and State Fair Boulevard crossing, the proposed launching pit is located on the northeast side of the CSX Railroad tracks and just to the west of a series of buried sewer lines (Appendix IV, pp. 61-64). The maximum depth of the launching pit is 2.6 m (8.6 ft) below the existing grade. Within the proposed launching pit, two soil borings were completed through the use of continuous split spoon auger sampling. The soil borings reached 2.7 m (9 ft) below the existing grade. The soil borings identified two to three horizons down to 2.7 m (9 ft) (Table 2). The upper horizon consisted of gravel and sandy fill down to approximately 1.5 m (5 ft) below the surface with an additional .6 m (2 ft) of fill in SB-X2LP1. Below the upper fill horizon is approximately .6 m (2 ft) of Solvay waste. Within SB-X2LP2, an additional .6 m (2 ft) of gravel fill was identified below the Solvay Waste. No intact A horizons were identified to the depth of planned construction.

Table 2. Soil Boring Results, CSX Railroad and State Fair Boulevard Crossing

Boring Test Number	Location	Stratigraphy
CRS SB-X2 LP1	Northeast side of CSX tracks	0-7.7 ft - fill; 7.7- 9 ft - Solvay waste
CRS SB-X2LP2	Northeast side of CSX tracks	0-5 ft - fill; 5-6 ft - Solvay waste; 6-9 ft - fill
CRS SB-X2RP1	West side of State Fair Boulevard	0-7 ft - fill

The receiving pit for the CSX Railroad and State Fair Boulevard crossing is located on the west side of State Fair Boulevard (Appendix IV, pp. 61-64). The maximum depth proposed for the receiving pit is 2.3 m (7.6 ft) below the existing grade. At the receiving pit, the soil stratigraphy was investigated in a single location through a geoprobe and shovel excavation. The soil stratigraphy within the geoprobe identified at least 2.1 m (7 ft) of gravelly silt and clay fill. No intact A horizons were identified to the depth of planned construction.

CSX Railroad and State Fairground/Honeywell property Crossing

At the CSX Railroad crossing on the State Fairground/Honeywell property, the proposed launching pit is located on the north side of the CSX Railroad line (Appendix IV, pp. 61-64). The maximum depth of the launching pit is 4.6 m (15 ft) below grade. Within the proposed launching pit, two soil borings were completed through the use of continuous split spoon auger sampling. The soil borings reached 4.0 m (13 ft) and 5.2 m (17 ft) respectively. Within both soil borings, there is approximately 2.7 m (9 ft) of gravelly fill which overlays approximately 12 to 15 cm (5 to 6 in) of black organic silt and peat (Table 3). This silt and peat horizon overlays clay horizons which reach to 4 to 5.2 m (13 to 17 ft) below the existing grade. The organic silt and peat horizon appears to represent the intact A horizon. The organic silt and peat horizon, with the clay subsoil is reflective of wetland soils, similar to what was found during shovel test pit excavations on the floodplain of Geddes Brook and Ninemile Creek, just to the north of this launching pit (Hohman in progress). Precontact and postcontact cultural material is not expected to be found within this wetland setting.

Table 3. Soil Boring Results, CSX Railroad and State Fairground/Honeywell Property Crossing

Boring Test Number	Location	Stratigraphy
CRS SB-X4 LP1	North side of CSX tracks	0-9 ft - fill; 9-9.4 ft - Black organic silt; 9.4-12.5 ft - Clay
CRS SB-X4LP2	North side of CSX tracks	0-9 ft - fill; 9-9.5 ft - Black peat and silt; 9.5-17 ft - Clay
CRS SB-X4RP1	South side of CSX Railroad line, OU-19 and a gravel road	0-0.5 ft - Silt; 0-6.7 ft - Brown silt and clay; 6.7-7.1 ft - Black peat and silt; 7.1-17 ft - Clay

The proposed receiving pit is located on Honeywell property to the south of the CSX Railroad line, Outfall 019, and a gravel road (Appendix IV, pp. 61-64). The receiving pit is situated where the gravel mining operation and tailings pond were located. The maximum depth of the receiving pit is 5.2 m (17 ft) below existing grade. Within the proposed receiving pit, one soil boring was completed through the use of continuous split spoon auger sampling. The soil boring reached approximately 5.2 m (17 ft) below the existing grade. Within the soil boring, there is approximately 2.2 m (7.2

ft) of mottled silt and clay (fill) on top of approximately 13 cm (5 in) of a peat and silt horizon. This peat horizon is situated on top of at least 2.9 m (9.5 ft) of clay. As with the soils on the north side of the CSX Railroad line, the peat horizon and the clay B horizon is reflective of wetland soils. Precontact and postcontact cultural material is not expected to be found within this wetland setting.

Slurry pipeline from Station 136+89 to Station 145+63

Soil borings, GPR, and elevational maps were utilized to determine the depth of the fill between Stations 136+89 and 145+63, where the slurry pipeline will be buried 5 to 6 ft (1.5-1.8 m) below the surface. Soil borings were originally completed by Empire Soils Invest., Inc. in 1965 for the construction of I-695. Soil boring #L61 is closest to the Slurry pipeline APE and was probably located approximately 30 m (100 ft) east of the project area, with Soil boring #L62 another 30 m (100 ft) east of #L61. The soil boring log for #L61 noted that the ground surface was at an elevation of 368.9 ft. The present elevation of the ground surface ranges from 372.5 ft at Station 137+50 to 367 ft at Station 141+00. This would suggest that approximately 3.6 ft of fill was placed on top of the surface at Station 137+50 between 1965 and 2009, with increasing amounts of fill to the south, up to 7.1 ft of fill at Station 141+00. Soil borings were attempted between Stations 137+00 and 141+00 by Matt Vetter of Parsons. The soil borings were attempted with a hand auger, but could not reach below .3 m (1 ft) due to the compact fill in this portion of the project area. However, the increase in fill was confirmed by a GPR survey completed by NY Leak Detection in February 2011. During the GPR survey, it was estimated that there was 3 ft of fill at Station 137 and 5 ft of fill at Station 141+50.

Soil boring #L61 found moist clay and silt from the surface down to 2.1 m (7 ft) below the surface. Because the soil profiles in 1965 were not as detailed as those completed by Parsons for other portions of the Onondaga Lake project, it is not clear if there was a mixture of clay and silt in one horizon down to an elevation of 361.9 ft, or if there was a gradation of clayey silt at the top of the horizon to a silty clay at the base of the horizon. The minimal description does not allow for a definitive determination on whether there were wetland soils at this location. In addition, at boring #L62, located approximately 60 m (200 ft) to the east of the Slurry pipeline, the soil profile consisted of .3 m (1 ft) of topsoil on top of 3.3 m (9 ft) of silt and clay.

The Slurry pipeline will be buried 1.5 to 1.8 m (5 to 6 ft) below the surface. This depth exceeds the fill that was identified from elevation differences between the soil borings completed in 1965 and the present elevation in 2010 (between Station 137+00 and Station 141+00), as well as the depth of fill estimated from the GPR survey completed in 2011. Because of the minimal description of the 1965 soil borings and the identification of silt within Soil Borings #L61 and #L62, it cannot be determined if the area between Stations 137+00 and 141+00 were wetlands or the margins of wetlands during the precontact and postcontact periods (although wetlands are highly likely based on Figures 7 and 8, pp. 14-15). Because the fill appears to be approximately 7.1 ft in depth at Station 141+00, the buried pipeline will be placed entirely in fill from Station 141+00 to Station 145+69. Only the APE between 137+00 and 141+00 is in question.

Fiber Optic Line

Following the analysis of the bore pit locations, it was determined in early November of 2010 (Petrone, pers. comm.), that a Fiber optic line would be buried adjacent to the Slurry pipeline. The Fiber optic line will be placed approximately 45 cm (18 inches) below the surface, with the impacts limited to a 15 cm (6 in) wide trench. Because much, or all of the project area is covered with more than 45 cm (18 in) of fill, as evidenced by Wastebed B, the causeway, Wastebeds 1-8, Wastebed 13, and the analysis of the soil borings at the proposed bore pits (Appendix V, pp. 65-70), no further archaeological work is recommended for the proposed Fiber optic line.

VI. RECOMMENDATIONS

The vertical area of potential effect varies for portions of the proposed Slurry pipeline. For the most part, the Slurry pipeline from Wastebed B to Wastebed 13, as well as the extension through Wastebeds 1-8, will be located on the surface with no vertical impacts. Those areas that have no vertical impacts are not recommended for archaeological survey. The road crossings on Wastebeds 1-8 will be placed within the existing fill of the wastebeds and will not impact

intact soils. Therefore, we recommend that this section of the Slurry pipeline will not require archaeological survey since there will not be impacts to intact soil horizons.

Phase 1B survey at the launching and receiving pits included an examination of borings to determine if intact soils with cultural resources would be impacted by the excavation of launching and receiving pits. At the State Fair Boulevard/CSX Railroad crossing, fill extended down to at least 2.1-2.7 m (7-9 ft) below the surface, documenting the lack of intact A horizons to the depth of planned impacts. At the CSX Railroad crossing on the State Fairgrounds and Honeywell properties, fill was identified on top of a thin silt and peat horizon (12-15 cm [5-6 in]). The silt and peat horizon was situated above a clay horizon; these two soil horizons are indicative of wetland soils. Precontact and postcontact cultural material is not expected to be found within these wetland settings. No further archaeological work is recommended for these launching and receiving pits.

The Phase 1B survey for the buried section of the Slurry pipeline included an examination of soil borings from 1965, elevational differences between 1965 and 2010, and a GPR survey. Between Stations 137+00 and 139+00, the Slurry pipeline will be placed in fill that ranges from 3.6 to 5.1 ft in depth, which would suggest that the pipeline will impact soils below the fill. Analysis of the 1965 boring logs cannot determine if the soils below the fill are associated with wetlands or not. Therefore, we recommend that the excavation of the buried Slurry pipeline betweeen Stations 137+00 and 141+00 be monitored by a professional archaeologist and a member of the Onondaga Nation. Alternatively, we recommend additional borings between Stations 137+00 and 141+00 to identify if wetland soils exist below the fill. These results can be summarized in an addendum letter forwarded to all parties. Between Stations 141+00 and 145+69, the elevational differences between 1965 and 2010 suggest that there is 7.1 ft of fill. Therefore, the Slurry pipeline between those stations will be excavated entirely within fill and does not require archaeological survey.

The Fiber optic line will be placed adjacent to the Slurry pipeline and will be approximately 46 cm (18 in) below the surface in a trench that will be no more than 15 cm (6 in) in width. Wastebed B, the causeway, Wastebeds 1-8, and Wastebed 13 have been built on top of thick layers of waste. The borings within the launching and receiving pits identified more than 46 cm (18 in) of fill and testing just to the north at the Geddes Brook and Ninemile confluence (Hohman in progress) identified wetland soil conditions in precontact and postcontact periods. Between Stations 137+00 and 145+69, the fiber optic line will be placed entirely within fill. Therefore, no archaeological work is recommended for the Fiber optic line.

In conclusion, the Phase 1B test borings, analysis of the 1965 NYSDOT borings and surface elevations and a 2011 GPR survey, in all areas of proposed vertical impacts except for between Stations 137+00 and 141+00 documented either a lack of intact soils, or wetland soils with no potential for cultural resources. The Slurry pipeline will impact below the fill between Stations 137+00 and 141+00, and a wetland environment cannot be determined from the 1965 boring #L61. For this 400 ft stretch of the Slurry pipeline, we recommend monitoring of the excavation of the trench or additional detailed borings to understand the soils below the fill. With the exception of this stretch of the Slurry pipeline between Stations 137+00 and 141+00, no cultural resources will be impacted in the proposed area of potential effect. No further archaeological work is recommended along the remainder of the Slurry pipeline (outside of Stations 137+00 and 141+00), the Slurry pipeline connector, in the launching and receiving pits at railroad/road crossings, and along the Fiber optic line.

APPENDIX I. SOURCES

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APPENDIX II. CORRESPONDENCE

PRELIMINARY GEOMORPHOLOGICAL OBSERVATIONS FOR THE ONONDAGA LAKE PROJECT

Prepared for:
PAF, Binghamton University, Binghamton, New York

Prepared by:
Michael Aiuvalasit and Joseph Schuldenrein
Geoarcheology Research Associates, Yonkers, New York
1/22/2010

Geoarcheology Research Associates (GRA) has been contracted by the Public Archaeology Facility (PAF) to examine the geomorphic contexts of properties slated for remedial measures as part of the Onondaga Lake Project, which is sponsored by Honeywell and being conducted by Parsons. GRA's role is to evaluate whether project areas are intact and contain buried deposits with the potential for archeological materials. Evaluations are based on reviewing historical documents compiled by PAF (Hohman 2004 and Hohman and Versaggi 2009), the background literature on the geological and natural setting of Onondaga Lake, and examining logs from geotechnical and soil borings conducted in select portions of the project areas. A brief field visit on December 17, 2009 provided opportunities to examine the project areas first-hand. This document presents initial observations of the project areas. Recommendations are made for use in the planning of upcoming fieldwork.

Harbor Brook/Waste Bed B

Harbor Brook and the Waste Bed B are located along the southwest shore of Onondaga Lake. Waste Bed B is situated along the shoreline of Onondaga Lake behind artifical bulkheads. The waste bed consists of fill deposits placed atop Solvay wastes. Previews of subsurface stratigraphy come from two sources: engineering cross sections along Waste Bed B near the shoreline compiled by Geosyntec Consultants and geotechnical borings by Parsons (Hohman and Versaggi 2009: Appendix II).

Nearly all of the borings identify a general sequence of: fill; Solvay waste; marl; silt and clay; silt and sand; and sand and gravel. The thickness of fill and waste materials extends to depths of 20 ft. The marl is typically described in Parsons geotechnical logs as a gray silt with little fine sand. Also observed are trace organics (peat), trace shells, and oncolites. None of the borings logs are suggestive of deeply buried intact shorelines or nearshore settings. Instead the thick marl deposits are indicative of basin and subaqueous shoreline deposits, which are nether conducive to prehistoric settlement, nor archeological preservation.

The course of Harbor Brook has been extensively modified across the project area to accommodate transportation structures (highway and railroad) as well as the placement of waste beds. The site visit confirmed the widespread historical alteration of adjacent landscapes which are extensively documented by PAF (Hohman 2004 and Hohman and Versaggi 2009). There appears to be little potential for Harbor Brook to retain deeply buried intact sediments and soils.

Ninemile Creek

The Ninemile Creek IRM consists of a narrow APE which is largely confined to the channel and adjacent banks of Ninemile Creek. Our geomorphic evaluation of the Ninemile Creek IRM is broken into segments using the New York State Department of Environmental Conservation (NYSDEC) Reach Boundaries: A) shoreline and mouth of Ninemile Creek; B) between the shoreline and I-690; C) between I-690 and the intersection of Pumphouse Road and the exit ramp of I-690; and D) between the Pumphouse Road intersection and the most upstream portion of the project area, approximately 400 feet upstream past the confluence of Ninemile Creek with Geddes Brook.

Segment A is the confluence of Ninemile Creek and Onondaga Lake. The mouth of this artificial channel has also been dredged in the late 1960's. Historical maps from the early 19th century depict segment A to be near salt springs and swamplands with muck soils (Carlisle and Edwards series) identified in historical soil surveys (1938, USDA 1977). Subsurface testing did not extend into segment A as it is an offshore and subaqueous. The potential for deeply buried archaeological surfaces is low due to the extensive disturbances which were involved in both the creation and maintenance activities along the mouth of the channel.

Segment B extends from the confluence of Ninemile Creek upstream to where it is crossed by I-690. This segment is an artificial channel created in 1927 after the placement of Wastebeds 1-8. The channel is narrow and runs parallel to the north of the I-690 right-of-way. Segment B includes a wetland adjacent to the mouth of the creek identified as SWY-10. Subsurface investigations have consisted of shallow groundwater test pits (series labeled GW-) conducted by Parsons and geoprobe borings into the channel bottom conducted by Blasland, Bouck, and Lee (series labeled TN-; logs found in Hohman and Versaggi 2009: Appendix II). None of the groundwater test pits extended to depths greater than 36 inches (0.9 m). Two sequences were registered: shallow organic topsoil over Solvay waste (n=5); and soft black topsoil over mottled silts (n=5). Neither sequence is indicative of contexts which would preserve intact prehistoric deposits or buried soils. The seemingly undisturbed mottled silts are very likely historically recent alluvium accumulating along the channel and near the mouth of the stream.

Segment C is a narrow project area of the channel and banks of Ninemile Creek between I-690 and the intersection of Pumphouse Road. Subsurface investigations have consisted of shallow groundwater test pits (series labeled GW-) conducted by Parsons and

geoprobe borings into the channel bottom conducted by Blasland, Bouck, and Lee (series labeled TN-; logs found in Hohman and Versaggi 2009: Appendix II). The subsurface tests registered stratigraphy similar to what was observed in Segment B.

A narrow segment Segment D on the southern sides of Ninemile Creek downstream of the confluence with Geddes Brook is slated for remediation. Logs for this area (NMC-SB-07 to -21 (Hohman and Versaggi 2009: Appendix II)) were reviewed. The logs identified two sequences: either shallow impenetrable gravels with a veneer of approximately 6" (0.15 m) of black silts; or black and brown silts capping stiff clays to depths of 2-3'(0.6-0.9 m). Disturbances in the form of Solvay waste are noted in some of the test pits. Such contrasts between cores suggests a buried 'ridge and swale' topography, with gravel bar ridges and swales infilled with fines of clay and silt.

This shallowly buried landscape may register shallowly buried archeological surfaces in sediment either capping gravel bars and in swales infilled with clay. Archeological investigations in the form of shovel testing and the additional field observations of open shovel tests by geomorphologists are recommended to assess the floodplain segments along the southern banks of Ninemile Creek within segment D.

Geddes Brook

The Geddes Brook project area is an expanse of floodplain at the confluence of Geddes Brook and Ninemile Creek, which includes SYW-18. The floodplain has already been delineated as wetlands. The vegetation is dominated by phragmities. Bermed roads and utilities cross through the floodplain, and stand above lower floodplain surfaces heavily vegetated by phragmities. Logs from soil testings (GW-1 to -15 and SB-1 to -54) were reviewed. The stratigraphic observations were recorded with differing levels of detail. The borings with the prefix "GW" were less detailed than those labeled "SB". The GW borings describe the soils largely as "gray or brown organic topsoil" with underlying "brown and gray clay". While the SB logs offer more detailed stratigraphy, the field for stratigraphic documentation on the majority of the printed log sheets obscures the entire description. Regardless, a review of all of the logs provides general impressions of the subsurface stratigraphy. Generally the logs register surface organic horizons (histic epipedons) to a depth of 12". Below are mineral horizons of sands, silts, and clays. While the logs describe the sediments as moist the water table is typically only encountered towards the base of the sequences (which average maximum depths of 36"). The mineral horizons underlying the organic surface horizons likely represent floodplain sequences (i.e. coarser sediments found within or adjacent to former channels, finer sediments in backchannels and swales) associated with Ninemile Creek and Geddes Brook. A cutbank across Ninemile Creek showed a thick sequence of alluvial sands below waste materials which suggests the potential for intact alluvial sequences. There are instances of disturbances in the form of Solvay waste and fill gravels, as noted in many of the logs.

While the project area is currently a wetlands the diversity of intact sediment types recorded in test pits suggest that there are alluvial contexts below more recent organic

accumulations associated with wetlands. These buried sediments have the potential to register floodplain settings along the confluence of Ninemile Creek and Geddes Brook which are different than modern conditions.

These contexts have the potential to register archeological surfaces within what was depicted historically as a cedar swamp and alluvial contexts. Archeological survey employing shovel testing should go forward within this project area to test for intact alluvial surfaces below the approximately 12" of organic surface horizons. In-field geomorphic observations of select shovel tests could provide a clearer understanding of the alluvial sequences and wetland development of the project area through detailed examination of pedogenic features (redoximorphic concentrations, depletions) and correlating facies relationships between subsurface stratigraphic sequences.

Unnamed Tributary of Geddes Brook

The unnamed tributary to Geddes Brook is located along the southern edge of the floodplain of Ninemile Creek and Geddes Brook. Historical background research conducted by PAF (Hohman and Versaggi 2009) indicates that this tributary is an artificial drainage ditch created in the mid-20th century. GRA examined the logs of eighteen borings conducted within the project area. Typical profiles consist of organic muck (O horizons) in the upper two feet, with common organic fragments, roots, and disturbances. Solvay waste is identified in four of the cores, typically within or immediately below the organic muck epipedon. Red-brown silt and clay underlie the muck horizons. These deposits are stiff and moist, with trace gravels identified at the top of the horizon in four of the cores. Trace organics are common at the top of the deposit. The underlying fine silts and clays are largely indicative of lake-bottom sedimentation, which would have been deposited during either higher levels of Onondaga Lake, or preceeding sequences of glacial lakes during the Late Wisconsinan. The potential for intact archaeological resources within the project area of the unnamed tributary is low. The channel is artificial, and therefore is not representative on a natural body of water. Historical maps describe the area as a cedar swamp and wetlands, and the muck soils corroborate this finding. The entire Holocene record is likely confined to the muck and disturbances within the upper two (2) feet of the sequence. This compressed sequence indicative of wetland contexts has been heavily impacted by historical disturbances. From a geomorphological perspective no additional archeological investigations are warranted.

Shoreline

Three shoreline locations adjacent to Ninemile Creek have been identified. Historical background research has identified that these areas were historical shorelines as well, and may have buried archeological surfaces. There are no soil boring logs for these areas to evaluate, therefore subsurface testing is recommended. As the vertical stratigraphy has not been established, testing should attain depths that span the entire Holocene sequence. Therefore limited deep testing in the form of either bucket augers or backhoe trenching should be conducted before devising an archeological testing strategy.

Conclusions

Based on our preliminary evaluation of boring and test pit logs in relationship to background investigations GRA offers the following recommendations:

- The Geddes Brook Tributary and Harbor Brook areas do not require additional field investigations. Both areas were disturbed by historical activities and logs of subsurface tests indicate that these contexts have very limited potential for buried archeological surfaces.

- No subsurface testing has taken place in the three Shoreline locations. Geomorphological testing in the form of either deep bucket augers or backhoe trenching in each of the three segments is recommended to establish a baseline stratigraphy for these project areas, which will guide future archeological investigations.

- Ninemile Creek is also largely disturbed by historical activities. The only section that retains intact deposits is within segment D, along the southern banks of Ninemile Creek downstream of the confluence with Geddes Brook. Logs suggest that underneath a veneer of modern alluvium are ridge and swales of former alluvial channels of Ninemile Creek. Shovel tests within this area should be adequate for testing this area. Inspection of representative shovel tests by a geomorphologist will provide opportunities to model alluvial stratigraphy of this segment of Ninemile Creek.

- The Geddes Brook IRM has the potential for buried archeological surfaces. Logs indicate that below approximately 1' (0.30 m) of organic muck are intact alluvial sequences of sands, silts, and clays. While evidence of disturbances were recorded in some of the cores, these underlying alluvial deposits within the Geddes Brook IRM have the potential to register shallowly buried landforms which may have the potential for archeological deposits. It is recommended that shovel testing be conducted within this area. A geomorphologist should inspect a representative sample of the shovel tests and conduct limited deep testing in the form of bucket augering. Shovel testing should be conducted to the depth of 1 m or until silt or clay marls are encountered. A limited number of bucket augers should be excavated if necessary to correlate stratigraphic sequences between shovel tests.

Works Cited

Crawford, D. E.
2009 Focused Feasibility Study: Wastebeds 1 through 8 Geddes, New York. Report prepared for Honeywell. Prepared by O'Brien & Gere Engineers, Inc.

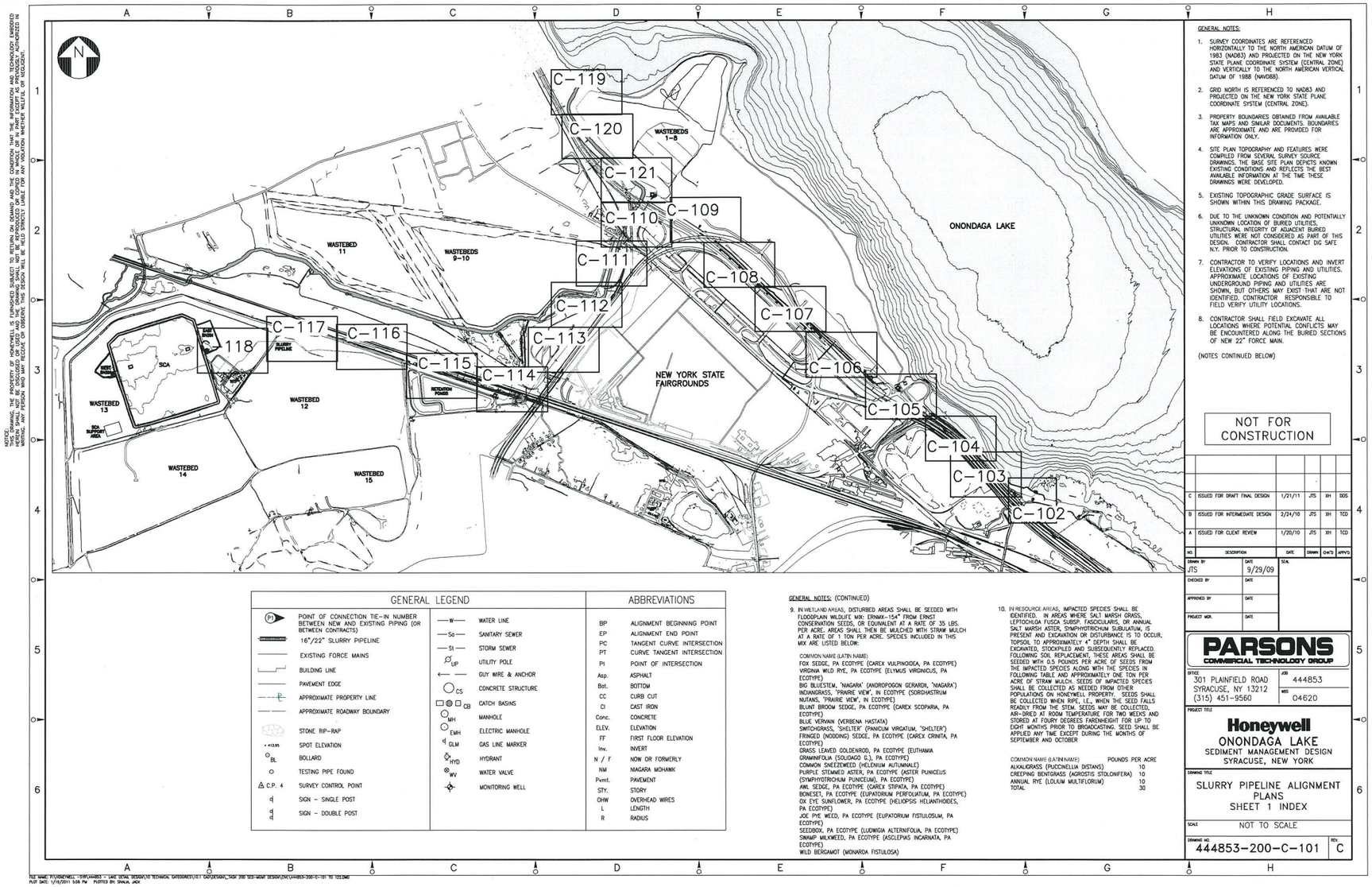
Hohman, C.
2004 Cultural Resource Management Report, Phase 1A Cultural Resource Assessment, Onondaga Lake Project, Onondaga Lake, Wastebed B and Wastebed 13, Towns of Camillus, Geddes and Salina and City of Syracuse, Onondaga County, New York. Prepared for Parsons, Liverpool, New York. Prepared by Public Archaeological Facility, Binghamton, New York.

Hohman, C. and N. Versaggi
2009 Cultural Resource Management Report, Phase 1B Archaeological Work Plan, Onondaga Lake Project, upland and shoreline area, Wastebed 13, Geddes Brook IRM, Tributary of Geddes Brook, Ninemile Creek RI/FS, Shoreline Survey, and Wastebed B/Harbor Brook IRM, Towns of Camillus and Geddes, Onondaga County, New York. Prepared for Honeywell, East Syracuse, New York. Prepared by Public Archaeology Facility, Binghamton, New York and Parsons, Syracuse, New York.

United States Department of Agriculture
1977 *Soil Survey of Onondaga County, New York.* USDA, Washington, D.C.

United States Department of Agriculture
1938 *Soil Survey of Onondaga County, New York.* USDA, Washington, D.C.

APPENDIX III. PROJECT PLANS



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GENERAL NOTES:

1. SURVEY COORDINATES ARE REFERENCED HORIZONTALLY TO THE NORTH AMERICAN DATUM OF 1983 (NAD83) AND PROJECTED ON THE NEW YORK STATE PLANE COORDINATE SYSTEM (CENTRAL ZONE) AND VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. GRID NORTH IS REFERENCED TO NAD83 AND PROJECTED ON THE NEW YORK STATE PLANE COORDINATE SYSTEM (CENTRAL ZONE).
3. PROPERTY BOUNDARIES OBTAINED FROM AVAILABLE TAX MAPS AND SIMILAR DOCUMENTS. BOUNDARIES ARE APPROXIMATE AND ARE PROVIDED FOR INFORMATION ONLY.
4. SITE PLAN TOPOGRAPHY AND FEATURES WERE COMPILED FROM SEVERAL SURVEY SOURCE DRAWINGS. THE BASE SITE PLAN DEPICTS KNOWN EXISTING CONDITIONS AND REFLECTS THE BEST AVAILABLE INFORMATION AT THE TIME THESE DRAWINGS WERE DEVELOPED.
5. EXISTING TOPOGRAPHIC GRADE SURFACE IS SHOWN WITHIN THIS DRAWING PACKAGE.
6. DUE TO THE UNKNOWN CONDITION AND POTENTIALLY UNKNOWN LOCATION OF BURIED UTILITIES, STRUCTURAL INTEGRITY OF ADJACENT BURIED UTILITIES WERE NOT CONSIDERED AS PART OF THIS DESIGN. CONTRACTOR SHALL CONTACT DIG SAFE N.Y. PRIOR TO CONSTRUCTION.
7. CONTRACTOR TO VERIFY LOCATIONS AND INVERT ELEVATIONS OF EXISTING PIPING AND UTILITIES. APPROXIMATE LOCATIONS OF EXISTING UNDERGROUND PIPING AND UTILITIES ARE SHOWN, BUT OTHERS MAY EXIST THAT ARE NOT IDENTIFIED. CONTRACTOR RESPONSIBLE TO FIELD VERIFY UTILITY LOCATIONS.
8. CONTRACTOR SHALL FIELD EXCAVATE ALL LOCATIONS WHERE POTENTIAL CONFLICTS MAY BE ENCOUNTERED ALONG THE BURIED SECTIONS OF NEW 22" FORCE MAIN.

(NOTES CONTINUED BELOW)

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NO	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
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B	ISSUED FOR INTERMEDIATE DESIGN	2/24/10	JTS	XH	TCD
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DRAWN BY	JTS	DATE 9/29/09
CHECKED BY		DATE
APPROVED BY		DATE
PROJECT MGR.		DATE

SEAL

PARSONS
COMMERCIAL TECHNOLOGY GROUP

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SYRACUSE, NY 13212
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JOB 444853
WBS 04620

PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK

DRAWING TITLE
SLURRY PIPELINE ALIGNMENT PLANS
SHEET 1 INDEX

SCALE NOT TO SCALE

DRAWING NO. 444853-200-C-101 REV. C

GENERAL LEGEND

PI	POINT OF CONNECTION TIE-IN NUMBER BETWEEN NEW AND EXISTING PIPING (OR BETWEEN CONTRACTS)
	16"/22" SLURRY PIPELINE
	EXISTING FORCE MAINS
	BUILDING LINE
	PAVEMENT EDGE
P	APPROXIMATE PROPERTY LINE
	APPROXIMATE ROADWAY BOUNDARY
	STONE RIP-RAP
+ 413.35	SPOT ELEVATION
BL	BOLLARD
	TESTING PIPE FOUND
C.P. 4	SURVEY CONTROL POINT
	SIGN - SINGLE POST
	SIGN - DOUBLE POST
W	WATER LINE
So	SANITARY SEWER
St	STORM SEWER
UP	UTILITY POLE
	GUY WIRE & ANCHOR
CS	CONCRETE STRUCTURE
CB	CATCH BASINS
MH	MANHOLE
EMH	ELECTRIC MANHOLE
GLM	GAS LINE MARKER
HYD	HYDRANT
WV	WATER VALVE
	MONITORING WELL

ABBREVIATIONS

BP	ALIGNMENT BEGINNING POINT
EP	ALIGNMENT END POINT
PC	TANGENT CURVE INTERSECTION
PT	CURVE TANGENT INTERSECTION
PI	POINT OF INTERSECTION
Asp.	ASPHALT
Bot.	BOTTOM
CC	CURB CUT
CI	CAST IRON
Conc.	CONCRETE
ELEV.	ELEVATION
FF	FIRST FLOOR ELEVATION
Inv.	INVERT
N / F	NOW OR FORMERLY
NM	NIAGARA MOHAWK
Pvmt.	PAVEMENT
STY.	STORY
OHW	OVERHEAD WIRES
L	LENGTH
R	RADIUS

GENERAL NOTES: (CONTINUED)

9. IN WETLAND AREAS, DISTURBED AREAS SHALL BE SEEDED WITH FLOODPLAIN WILDLIFE MIX: ERNMX-154" FROM ERNST CONSERVATION SEEDS, OR EQUIVALENT AT A RATE OF 35 LBS. PER ACRE. AREAS SHALL THEN BE MULCHED WITH STRAW MULCH AT A RATE OF 1 TON PER ACRE. SPECIES INCLUDED IN THIS MIX ARE LISTED BELOW:

COMMON NAME (LATIN NAME)
FOX SEDGE, PA ECOTYPE (CAREX VULPINOIDEA, PA ECOTYPE)
VIRGINIA WILD RYE, PA ECOTYPE (ELYMUS VIRGINICUS, PA ECOTYPE)
BIG BLUESTEM, 'NIAGARA' (ANDROPOGON GERARDII, 'NIAGARA')
INDIANGRASS, 'PRAIRIE VIEW', IN ECOTYPE (SORGHASTRUM NUTANS, 'PRAIRIE VIEW', IN ECOTYPE)
BLUNT BROOM SEDGE, PA ECOTYPE (CAREX SCOPARIA, PA ECOTYPE)
BLUE VERVAIN (VERBENA HASTATA)
SWITCHGRASS, 'SHELTER' (PANICUM VIRGATUM, 'SHELTER')
FRINGED (NODDING) SEDGE, PA ECOTYPE (CAREX CRINITA, PA ECOTYPE)
GRASS LEAVED GOLDENROD, PA ECOTYPE (EUTHAMIA GRAMINIFOLIA (SOLIDAGO G.), PA ECOTYPE)
COMMON SNEEZEWEED (HELENIUM AUTUMNALE)
PURPLE STEMMED ASTER, PA ECOTYPE (ASTER PUNICEUS (SYMPHYOTRICHUM PUNICEUM), PA ECOTYPE)
AWL SEDGE, PA ECOTYPE (CAREX STIPATA, PA ECOTYPE)
BONESET, PA ECOTYPE (EUPATORIUM PERFOLIATUM, PA ECOTYPE)
OX EYE SUNFLOWER, PA ECOTYPE (HELIOPSIS HELIANTHOIDES, PA ECOTYPE)
JOE PYE WEED, PA ECOTYPE (EUPATORIUM FISTULOSUM, PA ECOTYPE)
SEEDBOX, PA ECOTYPE (LUDWIGIA ALTERNIFOLIA, PA ECOTYPE)
SWAMP MILKWEED, PA ECOTYPE (ASCLEPIAS INCARNATA, PA ECOTYPE)
WILD BERGAMOT (MONARDA FISTULOSA)

10. IN RESOURCE AREAS, IMPACTED SPECIES SHALL BE IDENTIFIED. IN AREAS WHERE SALT MARSH GRASS, LEPTOCHLOA FUSCA SUBSP. FASCICULARIS, OR ANNUAL SALT MARSH ASTER, SYMPHYOTRICHUM SUBULATUM, IS PRESENT AND EXCAVATION OR DISTURBANCE IS TO OCCUR, TOPSOIL TO APPROXIMATELY 4" DEPTH SHALL BE EXCAVATED, STOCKPILED AND SUBSEQUENTLY REPLACED. FOLLOWING SOIL REPLACEMENT, THESE AREAS SHALL BE SEEDED WITH 0.5 POUNDS PER ACRE OF SEEDS FROM THE IMPACTED SPECIES ALONG WITH THE SPECIES IN FOLLOWING TABLE AND APPROXIMATELY ONE TON PER ACRE OF STRAW MULCH. SEEDS OF IMPACTED SPECIES SHALL BE COLLECTED AS NEEDED FROM OTHER POPULATIONS ON HONEYWELL PROPERTY. SEEDS SHALL BE COLLECTED WHEN RIPE, I.E., WHEN THE SEED FALLS READILY FROM THE STEM. SEEDS MAY BE COLLECTED, AIR-DRIED AT ROOM TEMPERATURE FOR TWO WEEKS AND STORED AT FOURY DEGREES FARENHEIGHT FOR UP TO EIGHT MONTHS PRIOR TO BROADCASTING. SEED SHALL BE APPLIED ANY TIME EXCEPT DURING THE MONTHS OF SEPTEMBER AND OCTOBER

COMMON NAME (LATIN NAME)	POUNDS PER ACRE
ALKALIGRASS (PUCCINELLIA DISTANS)	10
CREEPING BENTGRASS (AGROSTIS STOLONIFERA)	10
ANNUAL RYE (LOLIUM MULTIFLORUM)	10
TOTAL	30

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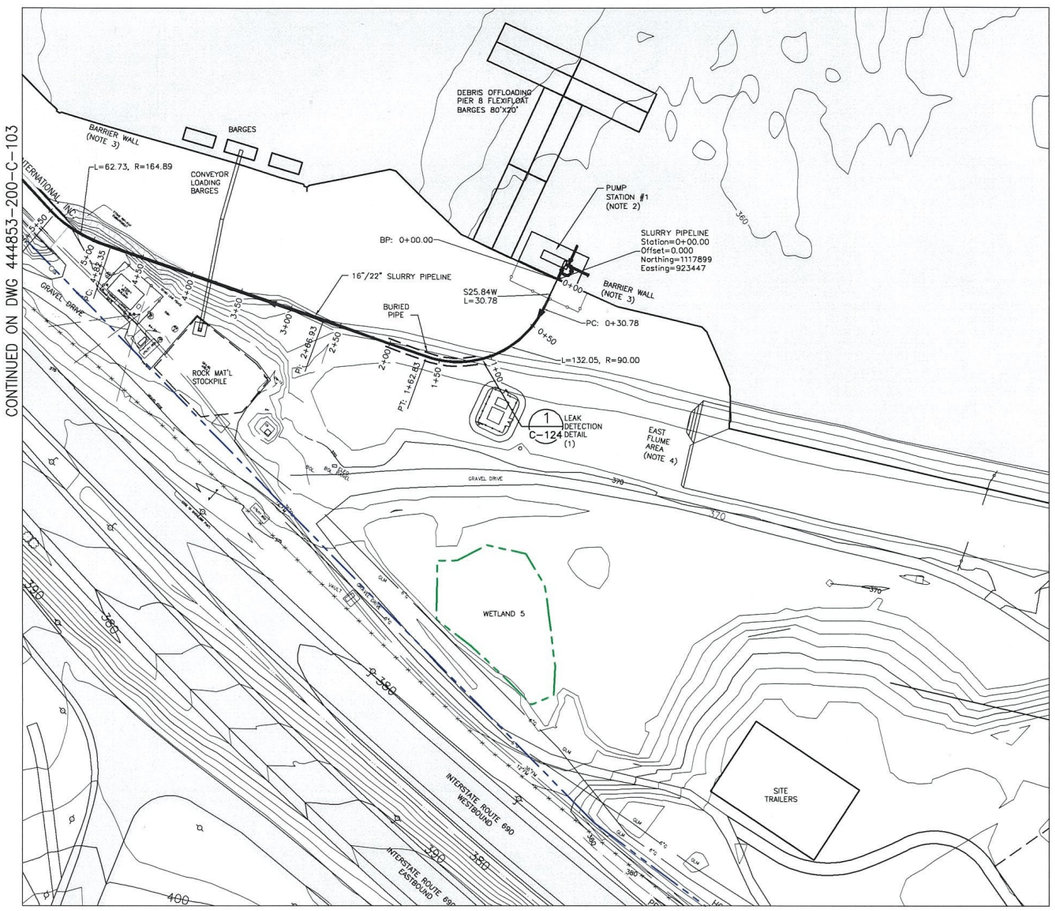

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1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.
2. SEE DRAWING 444853-200-C-401 FOR DETAILED CONFIGURATION AND LAYOUT OF BOOSTER PUMP STATION.
3. EXISTING GRADE CONTOURS PRIOR TO INSTALLATION OF BARRIER WALL ARE SHOWN. SITE RESTORATION OF THIS AREA ARE IN PROGRESS.
4. SEE DRAWINGS 43640003, SHEET 3 OF 23 FOR REVISED GENERAL GRADING PLAN WITHIN THE EAST FLUME AREA.

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JOB: 444853
WBS: 04620

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SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK

DRAWING TITLE
SLURRY PIPELINE ALIGNMENT PLANS SHEET 2

SCALE: SCALE 1"= 50' (IF PRINTED ON 22x34 SHEET)

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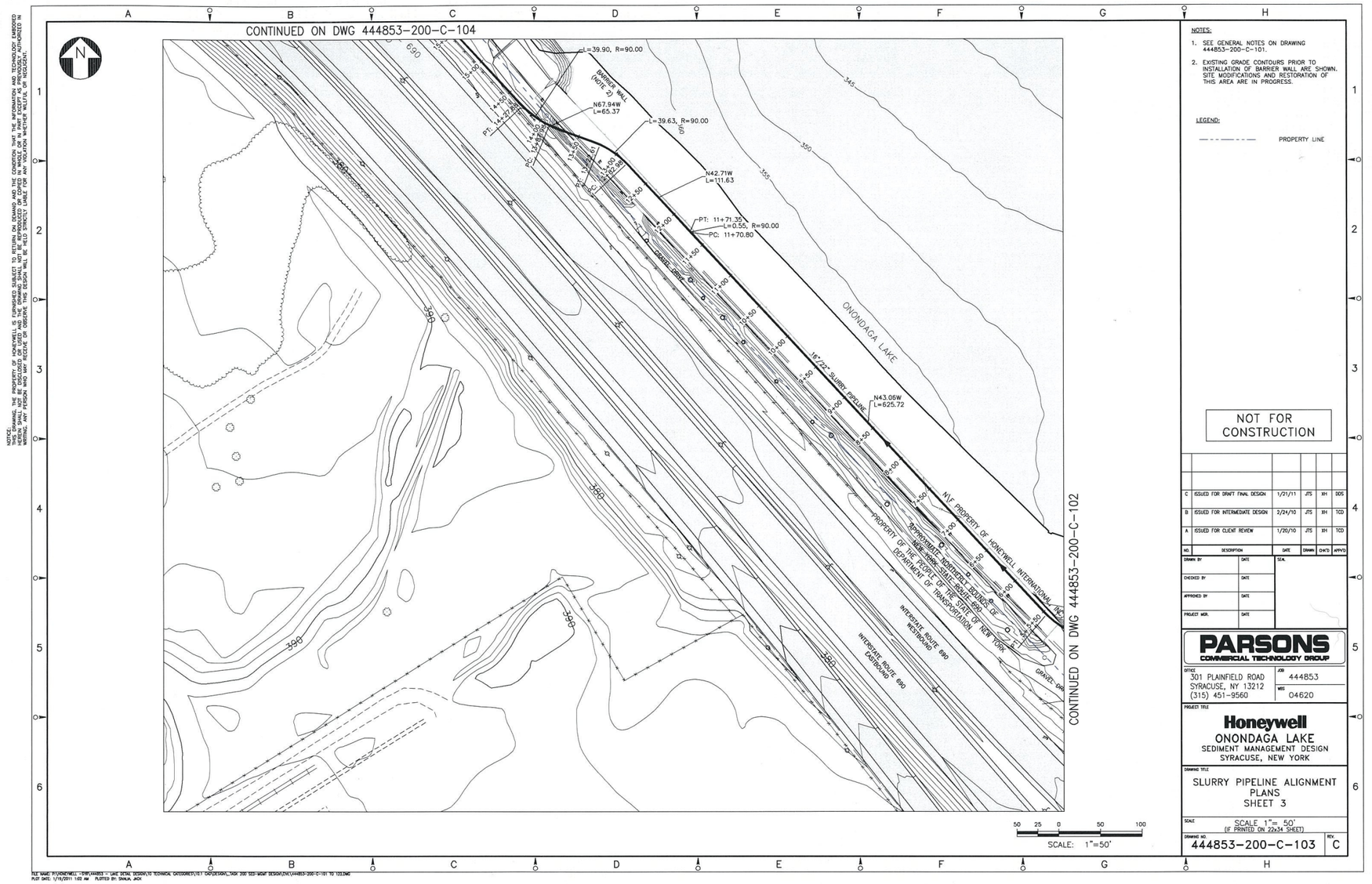

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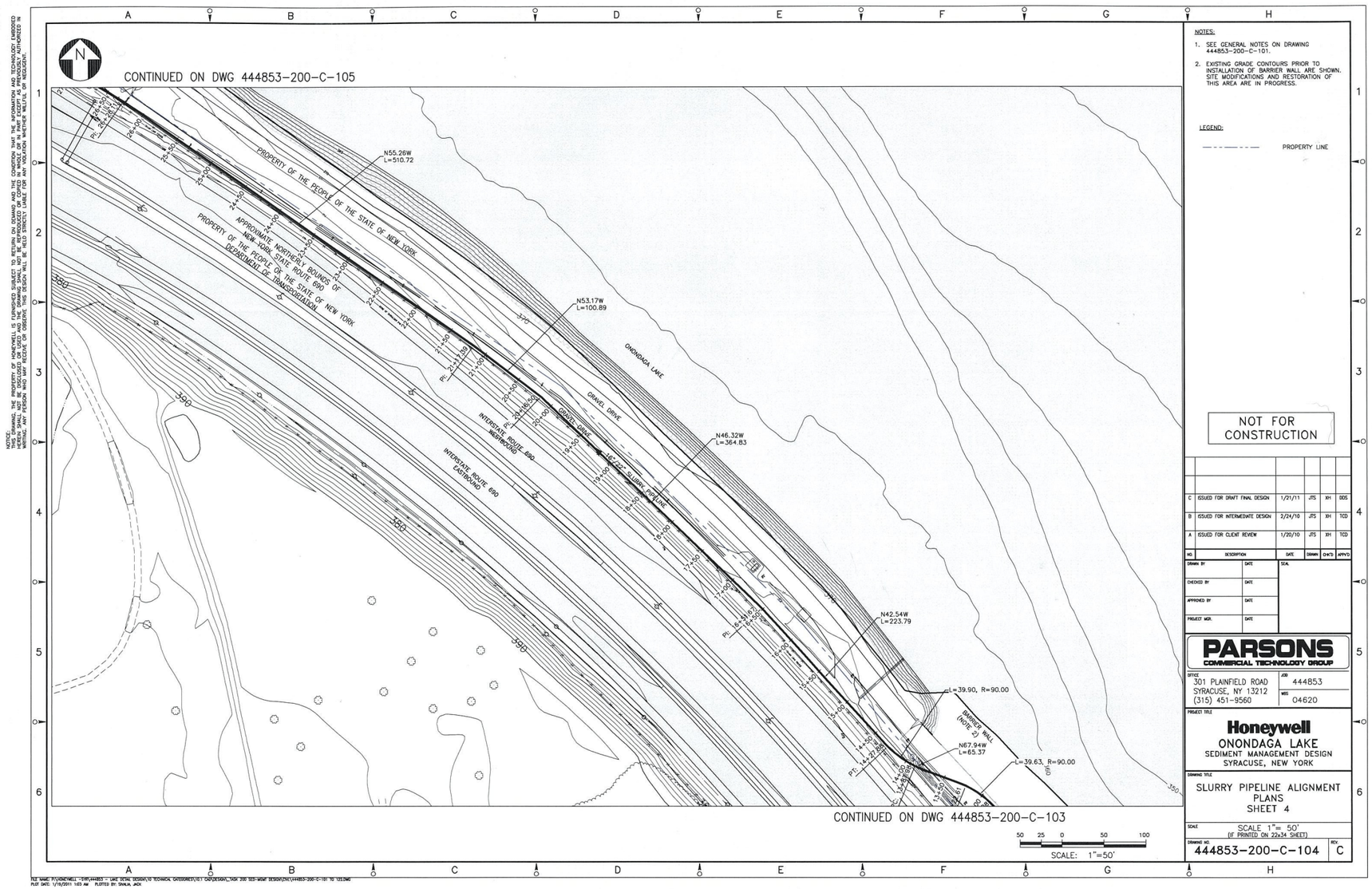

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PROJECT TITLE
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DRAWING TITLE
SLURRY PIPELINE ALIGNMENT
PLANS
SHEET 4

SCALE: SCALE 1"= 50'
(IF PRINTED ON 22x34 SHEET)

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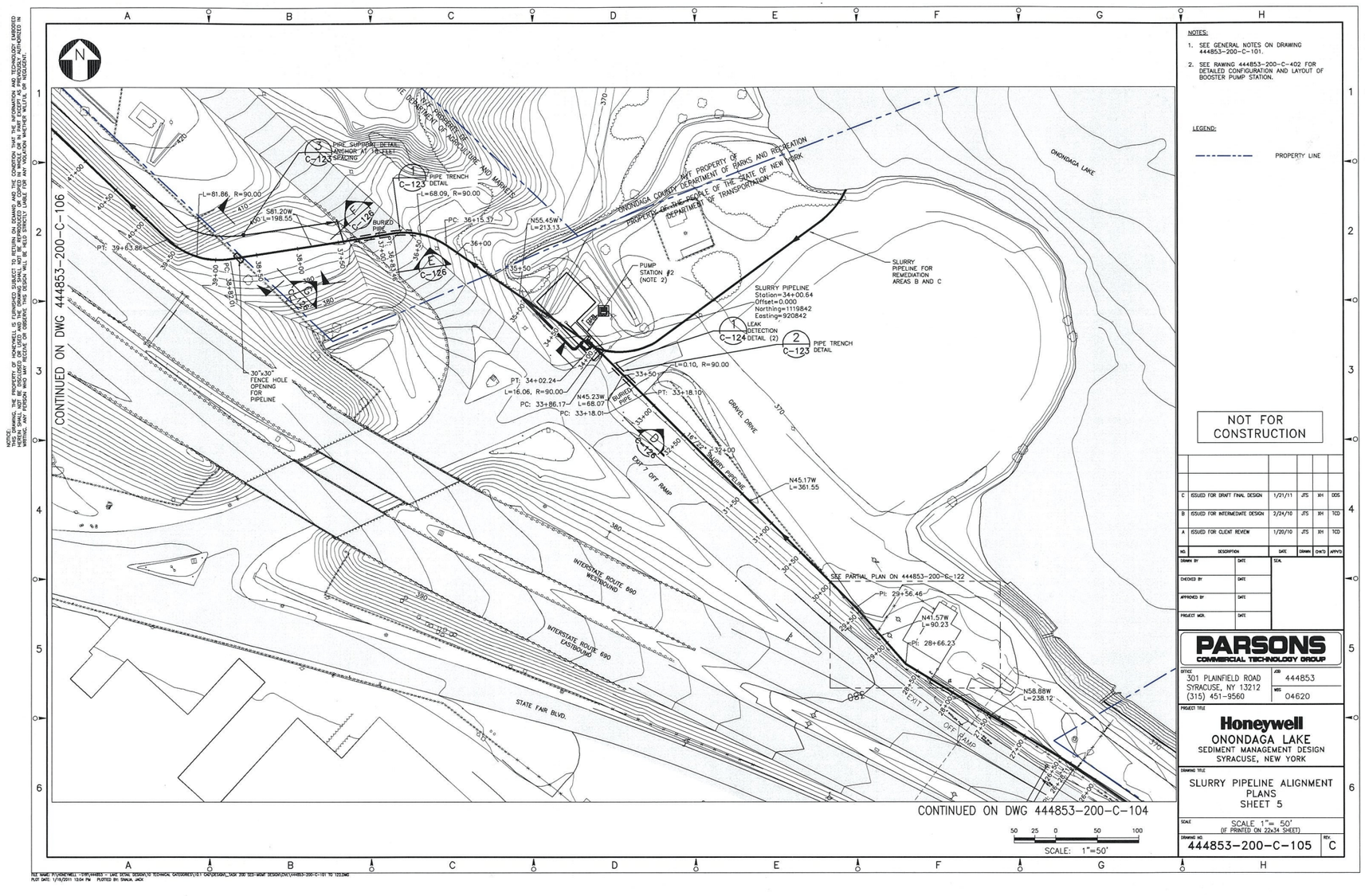
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Honeywell
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SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK
SLURRY PIPELINE ALIGNMENT PLANS SHEET 5
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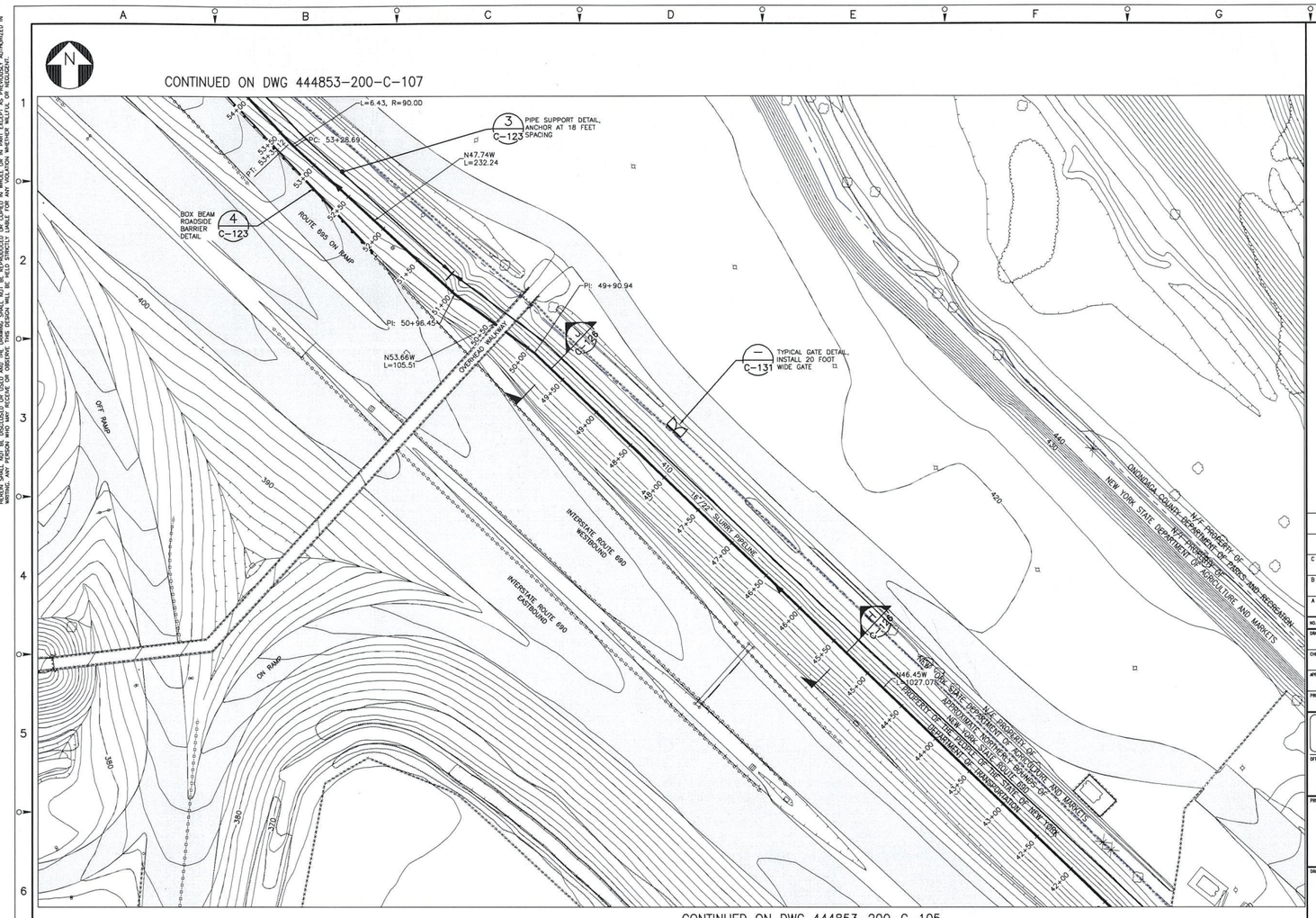
SCALE: 1"=50'
ONONDAGA LAKE
INTERSTATE ROUTE 690 WESTBOUND
INTERSTATE ROUTE 690 EASTBOUND
STATE FAIR BLVD.
EXIT 7 OFF RAMP
GRAVEL DRIVE
SLURRY PIPELINE
PUMP STATION #2 (NOTE 2)
SLURRY PIPELINE Station=34+00.64 Offset=0.000 Northing=1119842 Easting=920842
SLURRY PIPELINE FOR REMEDIATION AREAS B AND C
SEE PARTIAL PLAN ON 444853-200-C-122
30"x30" FENCE HOLE OPENING FOR PIPELINE
PIPE SUPPORT DETAIL ANCHOR AT 8 FEET SPACING
PIPE TRENCH DETAIL
LEAK DETECTION DETAIL (2)
BURIED PIPE
L=81.86, R=90.00
S81.20W L=198.55
PT: 39+63.86
L=68.09, R=90.00
PC: 36+15.37
N55.45W L=213.13
L=16.06, R=90.00
PC: 33+86.17
PT: 34+02.24
N45.23W L=68.07
PC: 33+18.01
PT: 33+18.10
L=0.10, R=90.00
N45.17W L=361.55
PI: 29+56.46
N41.57W L=90.23
PI: 28+66.23
N58.88W L=238.12
PROPERTY OF ONONDAGA COUNTY DEPARTMENT OF PARKS AND RECREATION
PROPERTY OF THE PEOPLE OF THE STATE OF NEW YORK DEPARTMENT OF TRANSPORTATION
N.Y.S. PROPERTY OF DEPARTMENT OF AGRICULTURE AND MARKETS



NOTES:

1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.

LEGEND:

PROPERTY LINE

NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
C	ISSUED FOR DRAFT FINAL DESIGN	1/31/11	JTS	XH	DDS
B	ISSUED FOR INTERMEDIATE DESIGN	2/24/10	JTS	XH	TCD
A	ISSUED FOR CLIENT REVIEW	1/20/10	JTS	XH	TCD

DRAWN BY	DATE	SEAL
CHECKED BY	DATE	
APPROVED BY	DATE	
PROJECT MGR.	DATE	

PARSONS
COMMERCIAL TECHNOLOGY GROUP

OFFICE: 301 PLAINFIELD ROAD, SYRACUSE, NY 13212, (315) 451-9560
JOB: 444853
WBS: 04620

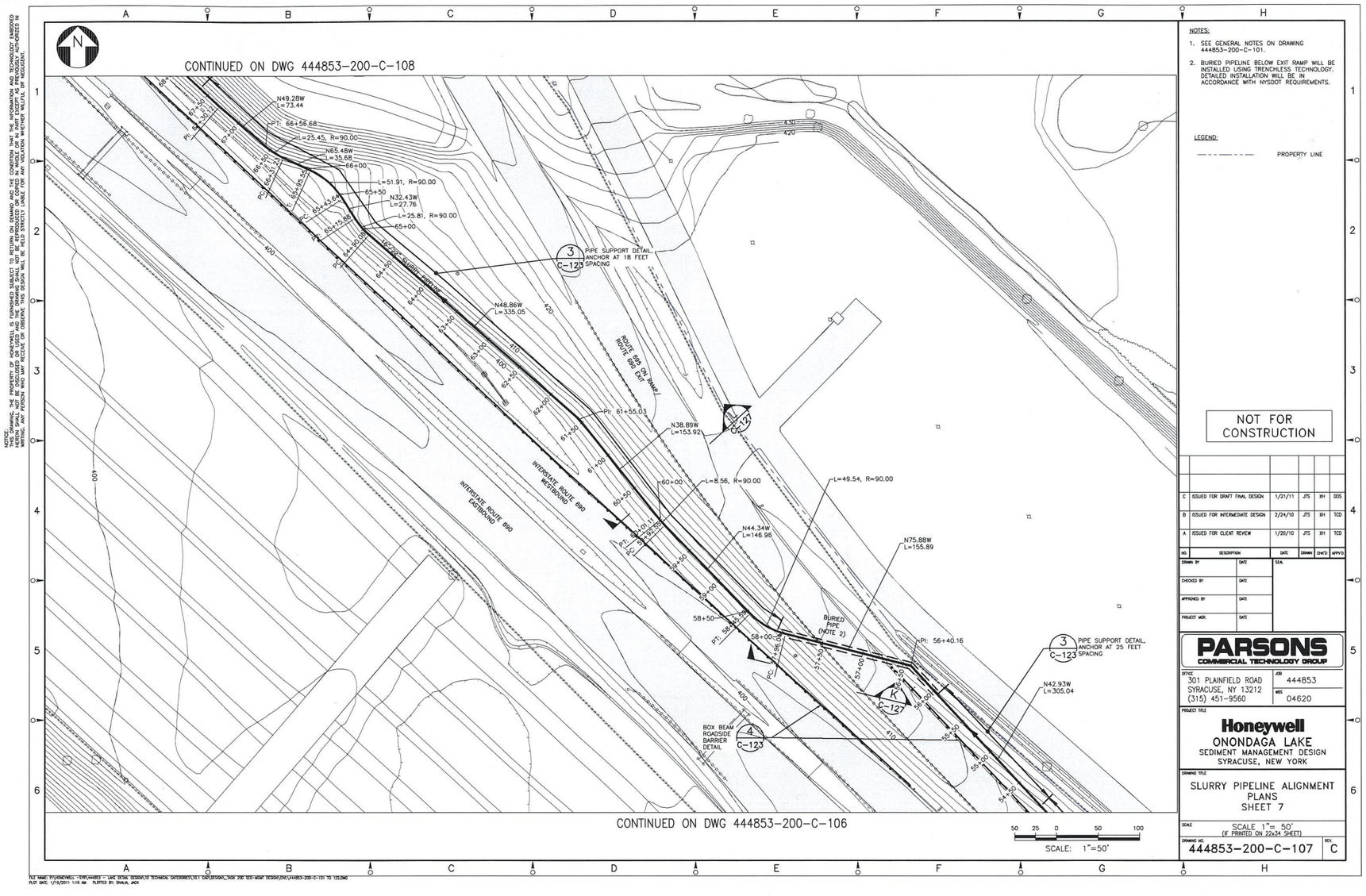
PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK

DRAWING TITLE
SLURRY PIPELINE ALIGNMENT PLANS SHEET 6

SCALE: SCALE 1"= 50' (IF PRINTED ON 22x34 SHEET)

DRAWING NO: 444853-200-C-106 REV: C

FILE NAME: P:\HONEYWELL - SYR\444853 - LAKE BOTTOM DESIGN\10 TECHNICAL CATEGORIES\10.1 CAD\DESIGN_SAGA 200 SED-MGMT DESIGN\DWG\444853-200-C-101 TO 123.DWG
PLOT DATE: 1/19/2011 1:06 AM - PLOTTED BY: SHAILA JACK



NOTICE:
THIS DRAWING, THE PROPERTY OF HONEYWELL, IS FURNISHED SUBJECT TO RETURN ON DEMAND AND ITS CONTENTS MAY NOT BE REPRODUCED, LOANED OR DISCLOSED WITHOUT WRITTEN PERMISSION. THE INFORMATION AND TECHNOLOGY EMBODIED IN THIS DESIGN IS CONFIDENTIAL AND PROPRIETARY TO HONEYWELL AND MAY NOT BE DISCLOSED IN WHOLE OR IN PART TO ANY PERSON WHO MAY RECEIVE OR OBSERVE THIS DESIGN WILL BE HELD STRICTLY LIABLE FOR ANY VIOLATION WHETHER WILLFUL OR NEGLIGENT.

NOTES:

1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.
2. BURIED PIPELINE BELOW EXIT RAMP WILL BE INSTALLED USING TRENCHLESS TECHNOLOGY. DETAILED INSTALLATION WILL BE IN ACCORDANCE WITH NYSDOT REQUIREMENTS.

LEGEND:

PROPERTY LINE

NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
C	ISSUED FOR DRAFT FINAL DESIGN	1/21/11	JTS	JKH	DDS
B	ISSUED FOR INTERMEDIATE DESIGN	2/24/10	JTS	JKH	TCD
A	ISSUED FOR CLIENT REVIEW	1/20/10	JTS	JKH	TCD

DRAWN BY / DATE
CHECKED BY / DATE
APPROVED BY / DATE
PROJECT MGR. / DATE
SEAL

PARSONS
COMMERCIAL TECHNOLOGY GROUP

OFFICE: 301 PLAINFIELD ROAD, SYRACUSE, NY 13212, (315) 451-9560
JOB: 444853
WBS: 04620

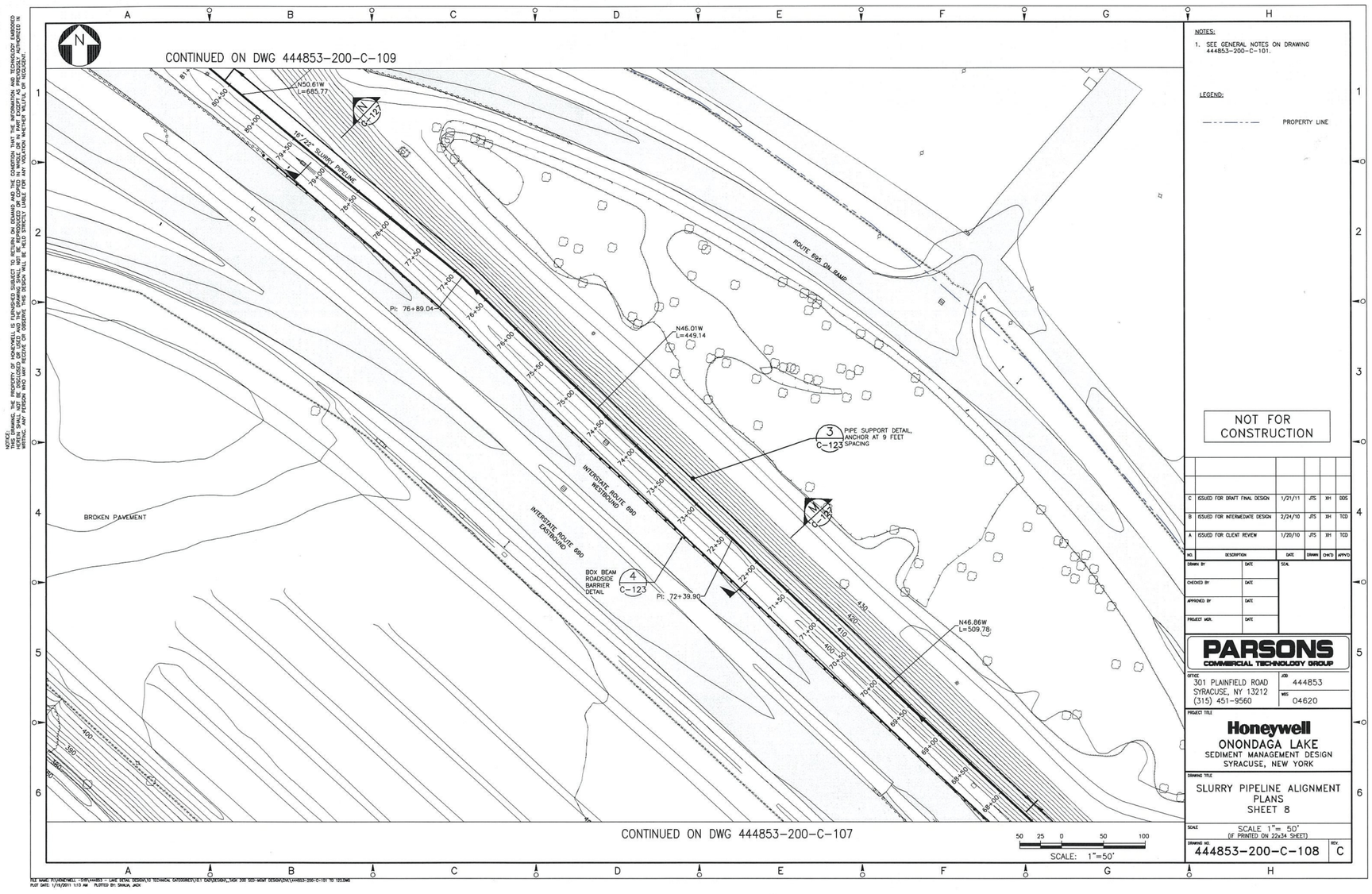
PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK

DRAWING TITLE
SLURRY PIPELINE ALIGNMENT PLANS SHEET 7

SCALE: SCALE 1"= 50' (IF PRINTED ON 22x34 SHEET)

DRAWING NO. 444853-200-C-107 REV. C

FILE NAME: P:\HONEYWELL - SYR\444853 - LAKE DETAIL DESIGN\10 TECHNICAL CATEGORIES\10.1 CAD\DESIGN_MASK 200 SERIES\MSHT DESIGN\DWG\444853-200-C-101 TO 123.DWG
PLOT DATE: 1/19/2011 11:10 AM PLOTTED BY: SHAUN JACK



NOTES:

1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.

LEGEND:

PROPERTY LINE

NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	DRAWN	CK'D	APPV'D
C	ISSUED FOR DRAFT FINAL DESIGN	1/21/11	JTS	JH	DOS
B	ISSUED FOR INTERMEDIATE DESIGN	2/24/10	JTS	JH	TCD
A	ISSUED FOR CLIENT REVIEW	1/20/10	JTS	JH	TCD

DRAWN BY / DATE
CHECKED BY / DATE
APPROVED BY / DATE
PROJECT MGR. / DATE
SEAL

PARSONS
COMMERCIAL TECHNOLOGY GROUP

OFFICE: 301 PLAINFIELD ROAD, SYRACUSE, NY 13212, (315) 451-9560
JOB: 444853
WBS: 04620

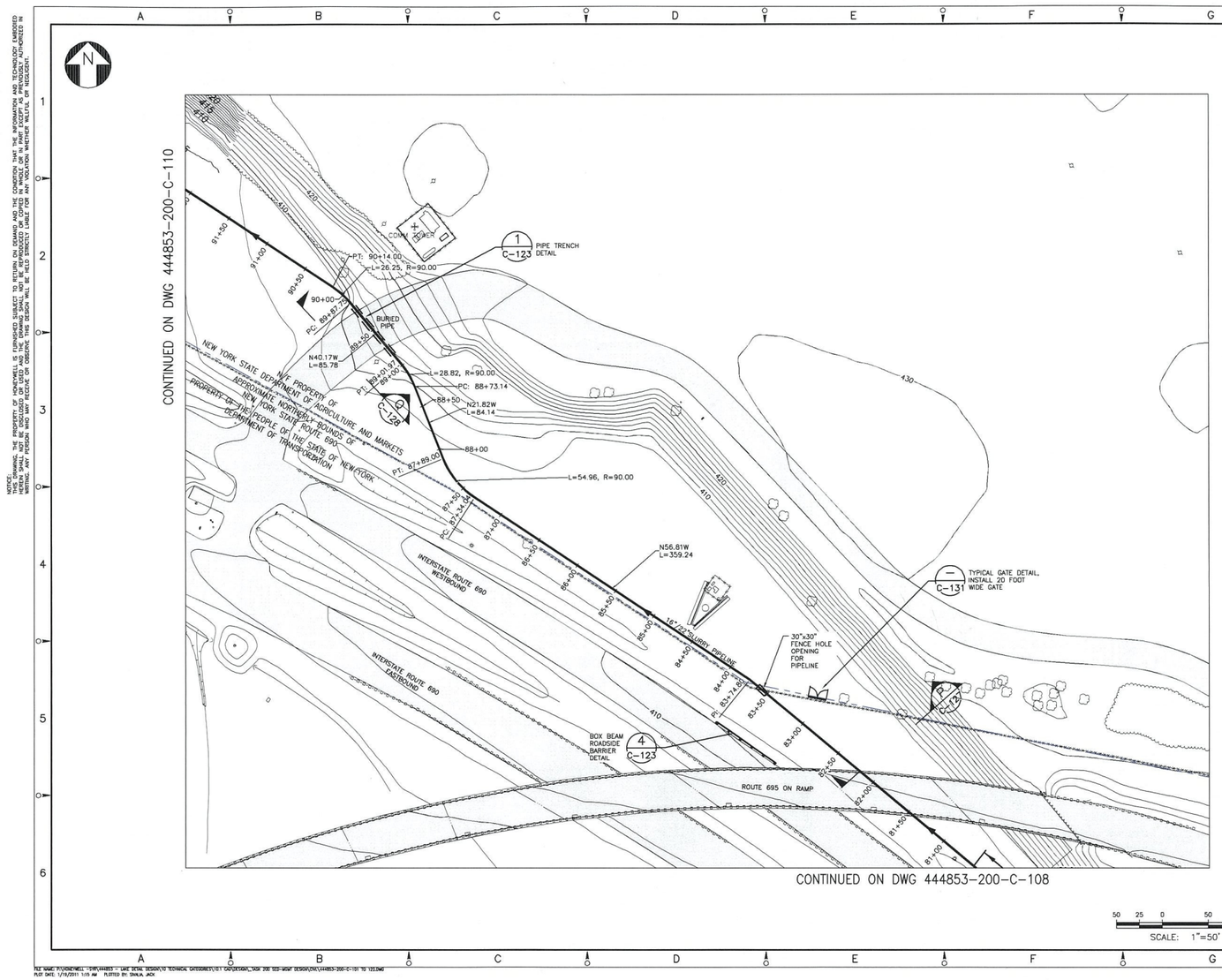
PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK

DRAWING TITLE
SLURRY PIPELINE ALIGNMENT PLANS SHEET 8

SCALE: SCALE 1"= 50' (IF PRINTED ON 22x34 SHEET)

DRAWING NO.: 444853-200-C-108 REV.: C

FILE NAME: P:\HONEYWELL - SYR\444853 - LAKE DETAIL DESIGN\10 TECHNICAL CATEGORIES\10.1 DWG\DESIGN_ 100 SED-MGMT DESIGN\DWG\444853-200-C-101 TO 123.DWG
PLOT DATE: 1/19/2011 11:13 AM PLOTTED BY: SHAILA, JACK



NOTES:

1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.

LEGEND:

PROPERTY LINE

NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
C	ISSUED FOR DRAFT FINAL DESIGN	1/21/11	JTS	XH	DDS
B	ISSUED FOR INTERMEDIATE DESIGN	3/24/10	JTS	XH	TCD
A	ISSUED FOR CLIENT REVIEW	1/20/10	JTS	XH	TCD

DRAWN BY / DATE	SEAL
CHECKED BY / DATE	
APPROVED BY / DATE	
PROJECT MGR. / DATE	

PARSONS
COMMERCIAL TECHNOLOGY GROUP

OFFICE: 301 PLAINFIELD ROAD, SYRACUSE, NY 13212, (315) 451-9560
JOB: 444853
WBS: 04620

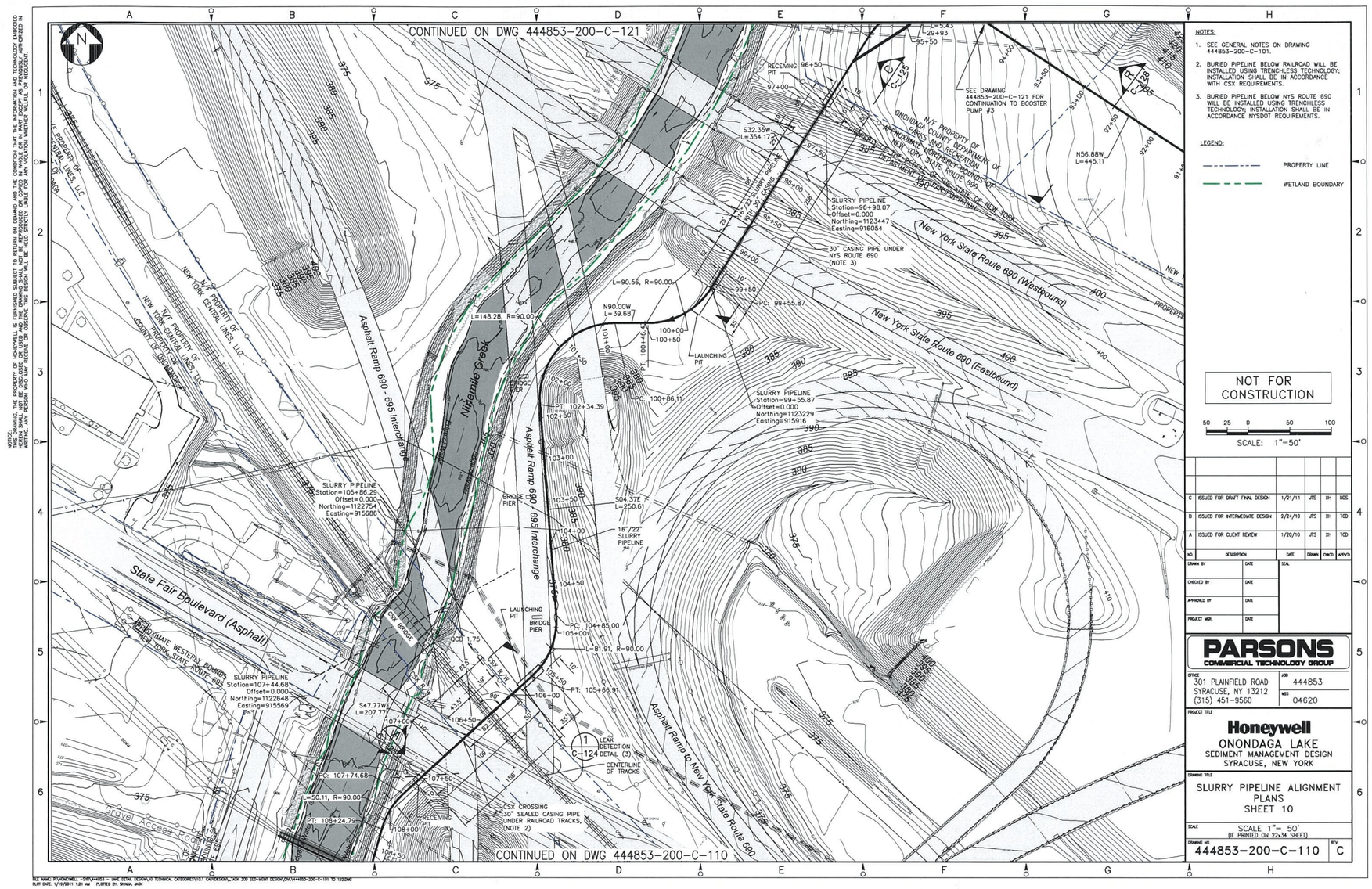
PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK

DRAWING TITLE
SLURRY PIPELINE ALIGNMENT
PLANS
SHEET 9

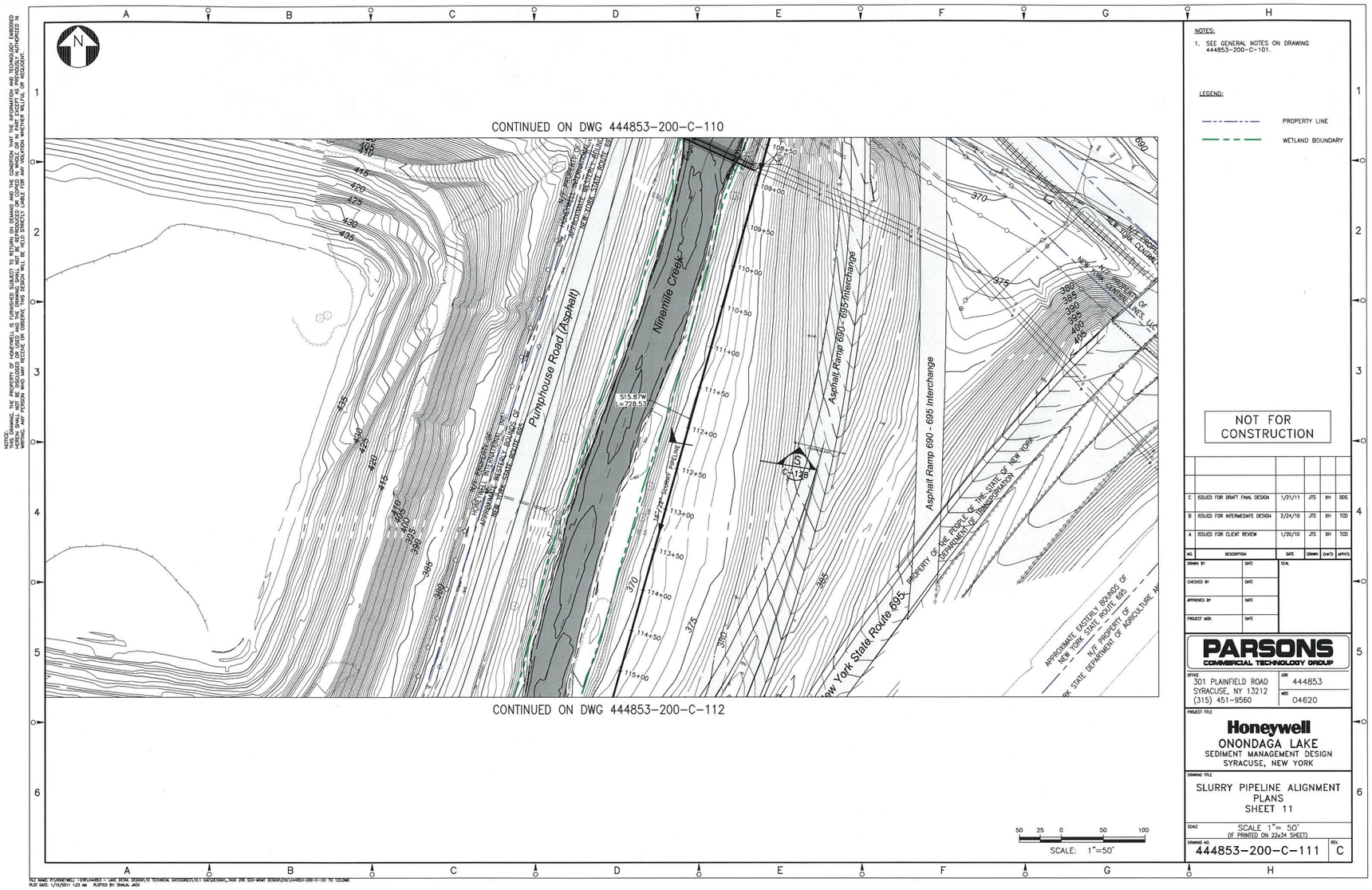
SCALE: SCALE 1"= 50' (IF PRINTED ON 22x34 SHEET)

DRAWING NO.: 444853-200-C-109 REV: C

FILE NAME: P:\HONEYWELL - SYR\444853 - LAKE DETAIL DESIGN\10 TECHNICAL CATEGORIES\10.1 CAD\DESIGN_WORK 200 SDS-WORK DESIGN\DWG\444853-200-C-101 TO 123.DWG
PLOT DATE: 1/19/2011 1:15 AM PLOTTED BY: SINKLA, JACK



FILE NAME: P:\HONEYWELL - SYR\444853 - LAKE ERIE DESIGN\10 TECHNICAL DATA\DRAWINGS\10.1 DAF\DESIGN_SHOP DWG SED-MGMT DESIGN\DWG\444853-200-C-101 TO 122.DWG
PLOT DATE: 1/19/2011 1:21 AM PLOTTED BY: SHAILA, JACK



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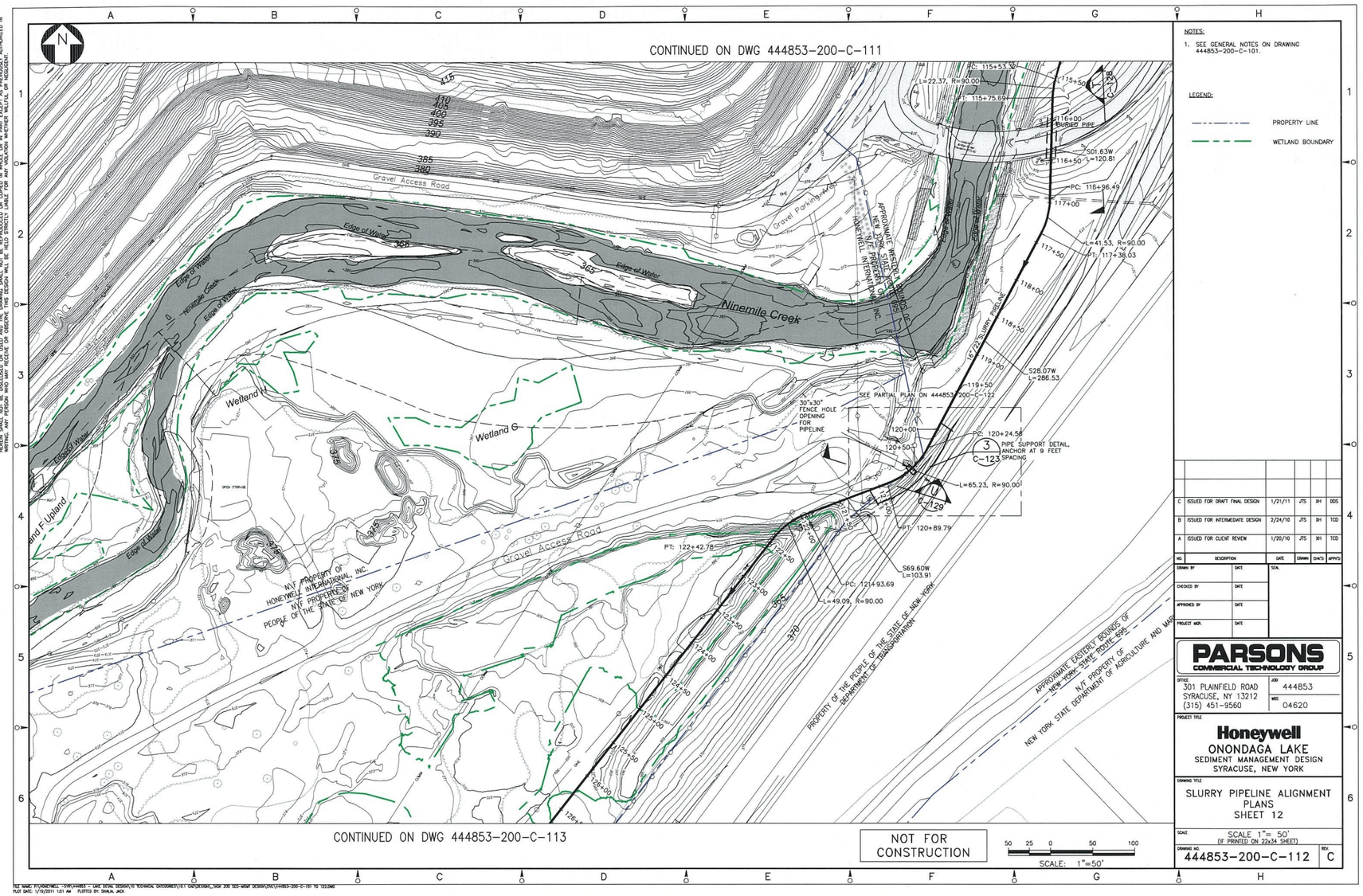
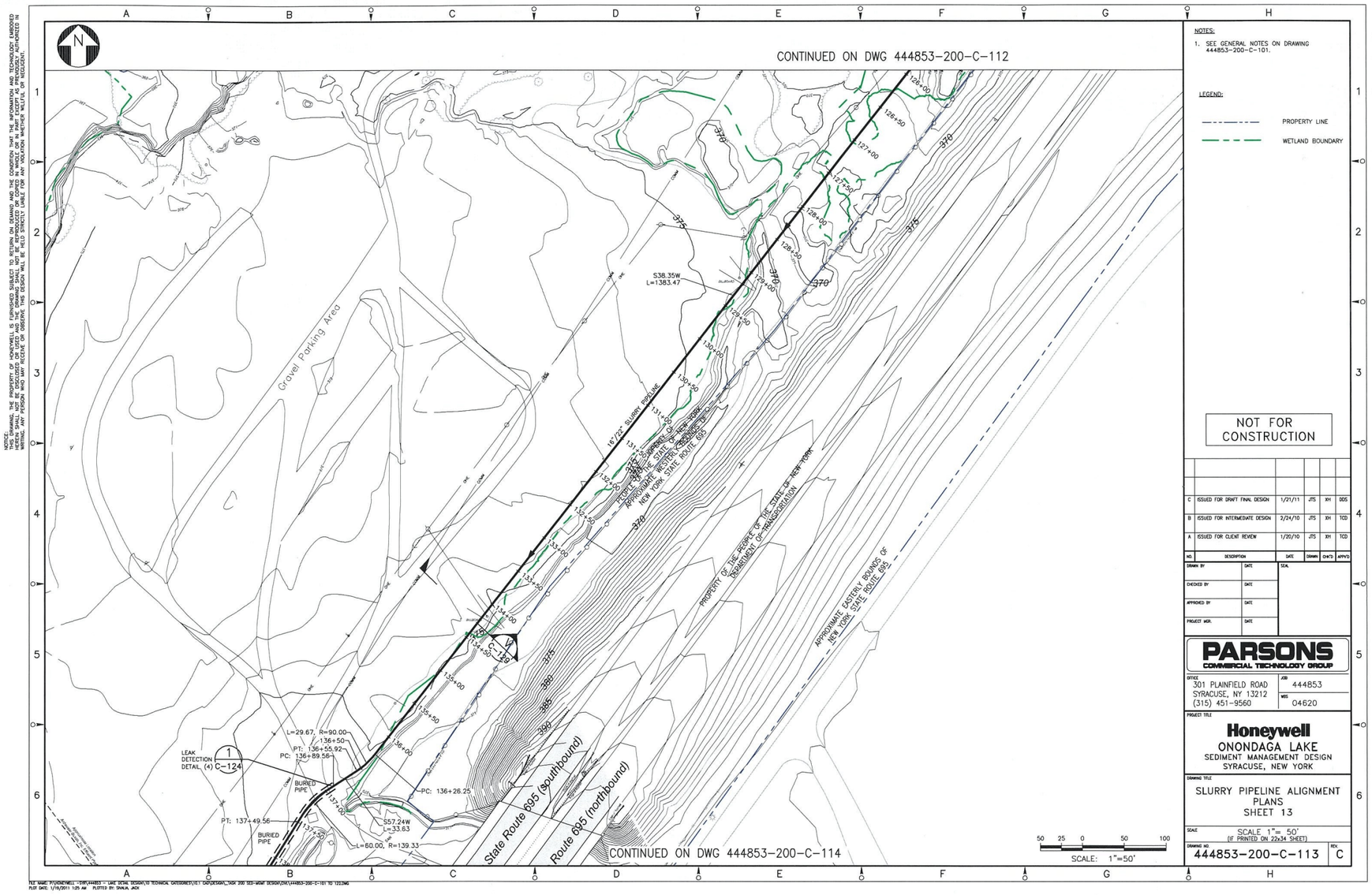
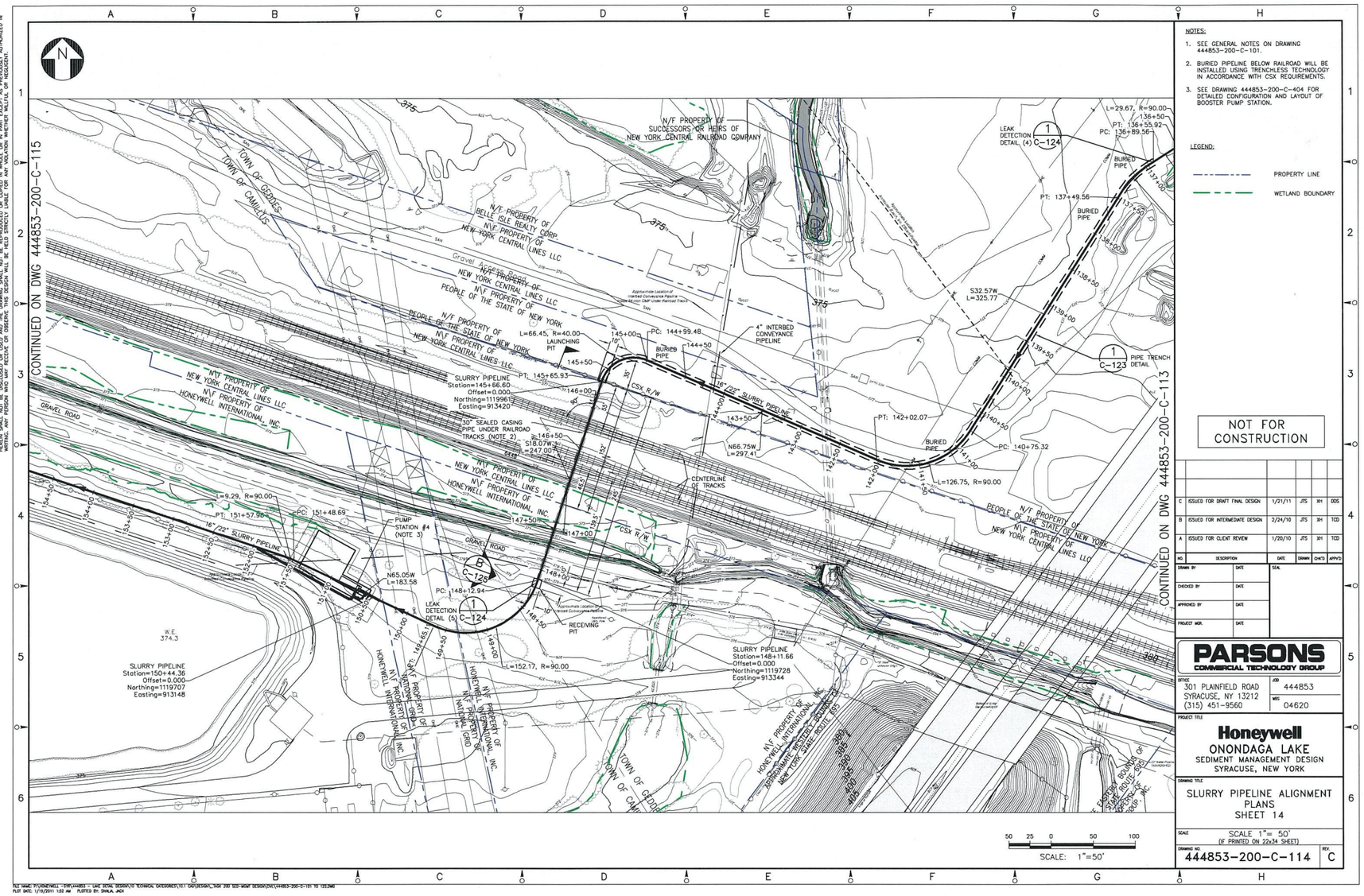
FILE DATE: 1/19/2011 1:23 AM PLOTTED BY: SHAILA JACK





FILE NAME: P:\HONEYWELL - SYR\444853 - LAKE DETAIL DESIGN\10 TECHNICAL CATEGORIES\10.1 CAD\DESIGN_TASK 200 SED-MGMT DESIGN\DWG\444853-200-C-101 TO 122.DWG
PLOT DATE: 1/19/2011 1:25 AM PLOTTED BY: SIMILA, JACK



NOTES:
1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.
2. BURIED PIPELINE BELOW RAILROAD WILL BE INSTALLED USING TRENCHLESS TECHNOLOGY IN ACCORDANCE WITH CSX REQUIREMENTS.
3. SEE DRAWING 444853-200-C-404 FOR DETAILED CONFIGURATION AND LAYOUT OF BOOSTER PUMP STATION.

LEGEND:
- PROPERTY LINE
- WETLAND BOUNDARY

NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
C	ISSUED FOR DRAFT FINAL DESIGN	1/21/11	JTS	XH	DDS
B	ISSUED FOR INTERMEDIATE DESIGN	2/24/10	JTS	XH	TCD
A	ISSUED FOR CLIENT REVIEW	1/20/10	JTS	XH	TCD

DRAWN BY — DATE
CHECKED BY — DATE
APPROVED BY — DATE
PROJECT MGR. — DATE
SEAL

PARSONS
COMMERCIAL TECHNOLOGY GROUP
OFFICE: 301 PLAINFIELD ROAD, SYRACUSE, NY 13212, (315) 451-9560
JOB: 444853
WBS: 04620

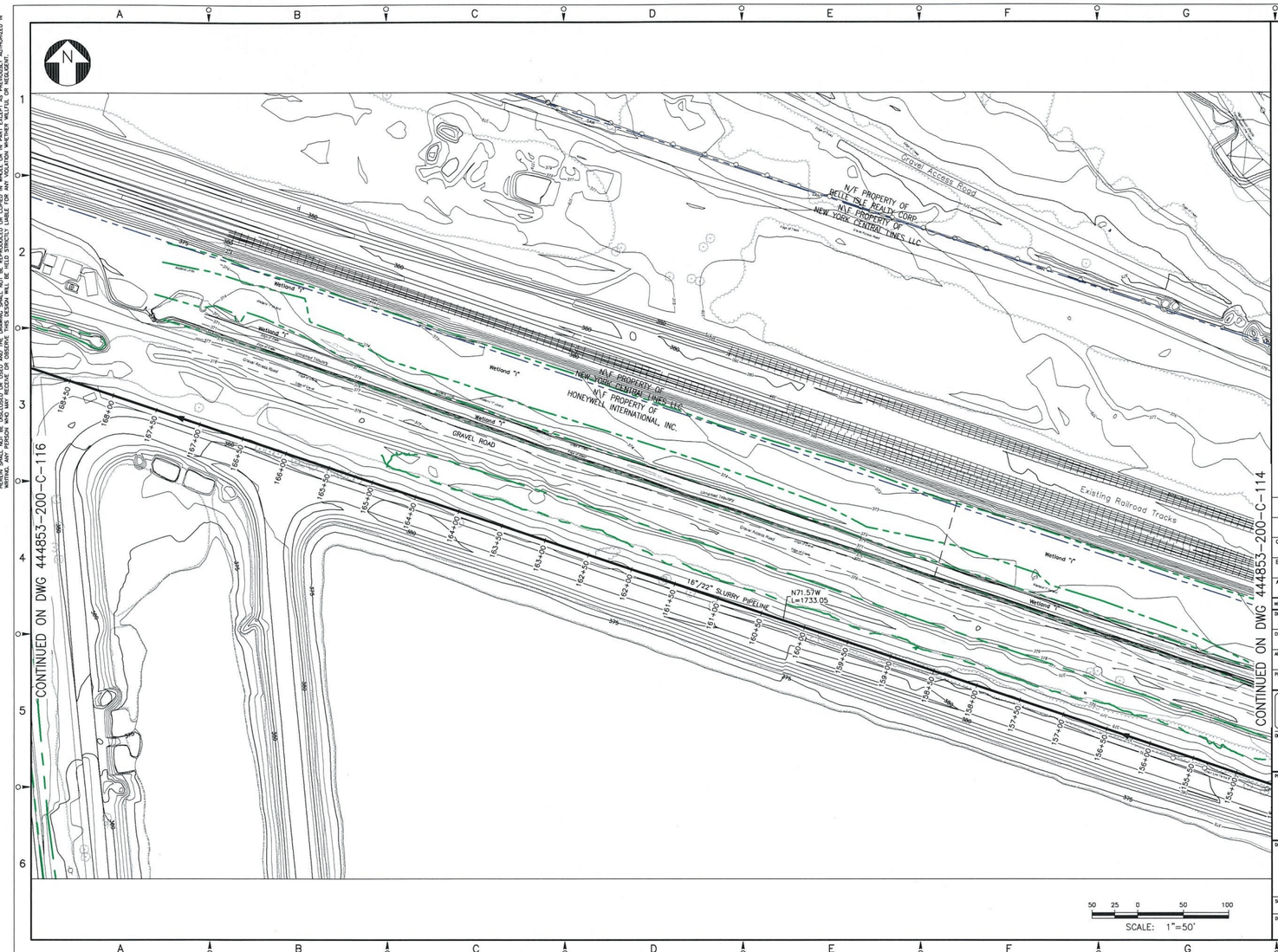
PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK

DRAWING TITLE
SLURRY PIPELINE ALIGNMENT PLANS SHEET 14

SCALE: SCALE 1"= 50' (IF PRINTED ON 22x34 SHEET)

DRAWING NO.: 444853-200-C-114 REV.: C

FILE NAME: P:\HONEYWELL - SYR\444853 - LAKE BOTTOM DESIGN\10 TECHNICAL CATEGORIES\10.1 CAD\DESIGN_TASK 200 SED-MGMT DESIGN\DWG\444853-200-C-101 TO 122.DWG
PLOT DATE: 1/19/2011 1:03 AM PLOTTED BY: SHAUN JACK



NOTES:

1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.

LEGEND:

PROPERTY LINE

WETLAND BOUNDARY

NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
C	ISSUED FOR DRAFT FINAL DESIGN	1/21/11	JTS	XH	DDS
B	ISSUED FOR INTERMEDIATE DESIGN	2/24/10	JTS	XH	TCD
A	ISSUED FOR CLIENT REVIEW	1/20/10	JTS	XH	TCD

DRAWN BY	DATE	SCALE
CHECKED BY	DATE	
APPROVED BY	DATE	
PROJECT MGR.	DATE	

PARSONS
COMMERCIAL TECHNOLOGY GROUP

OFFICE 301 PLAINFIELD ROAD
SYRACUSE, NY 13212
(315) 451-9560

JOB 444853
WBS 04620

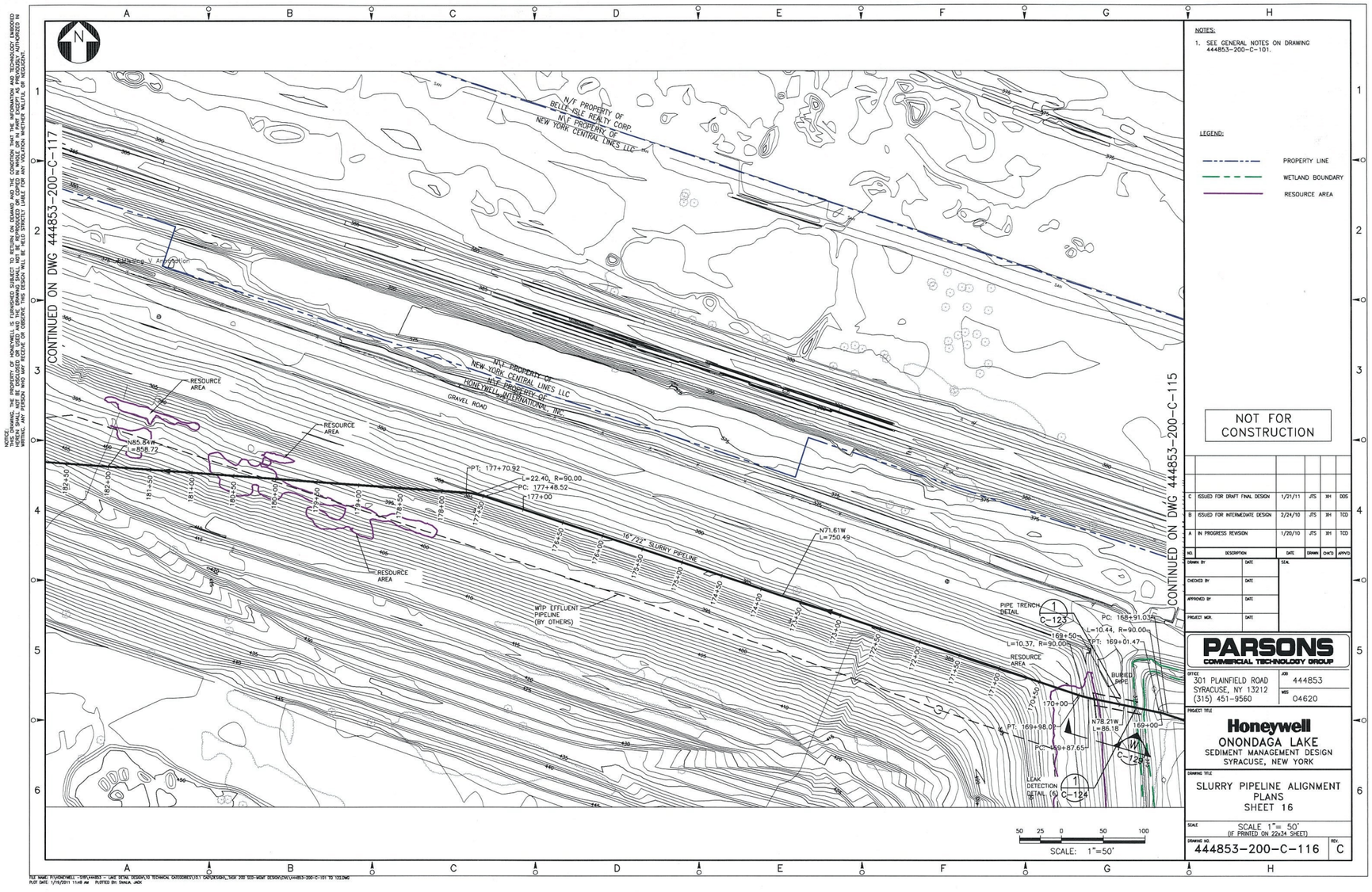
PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK

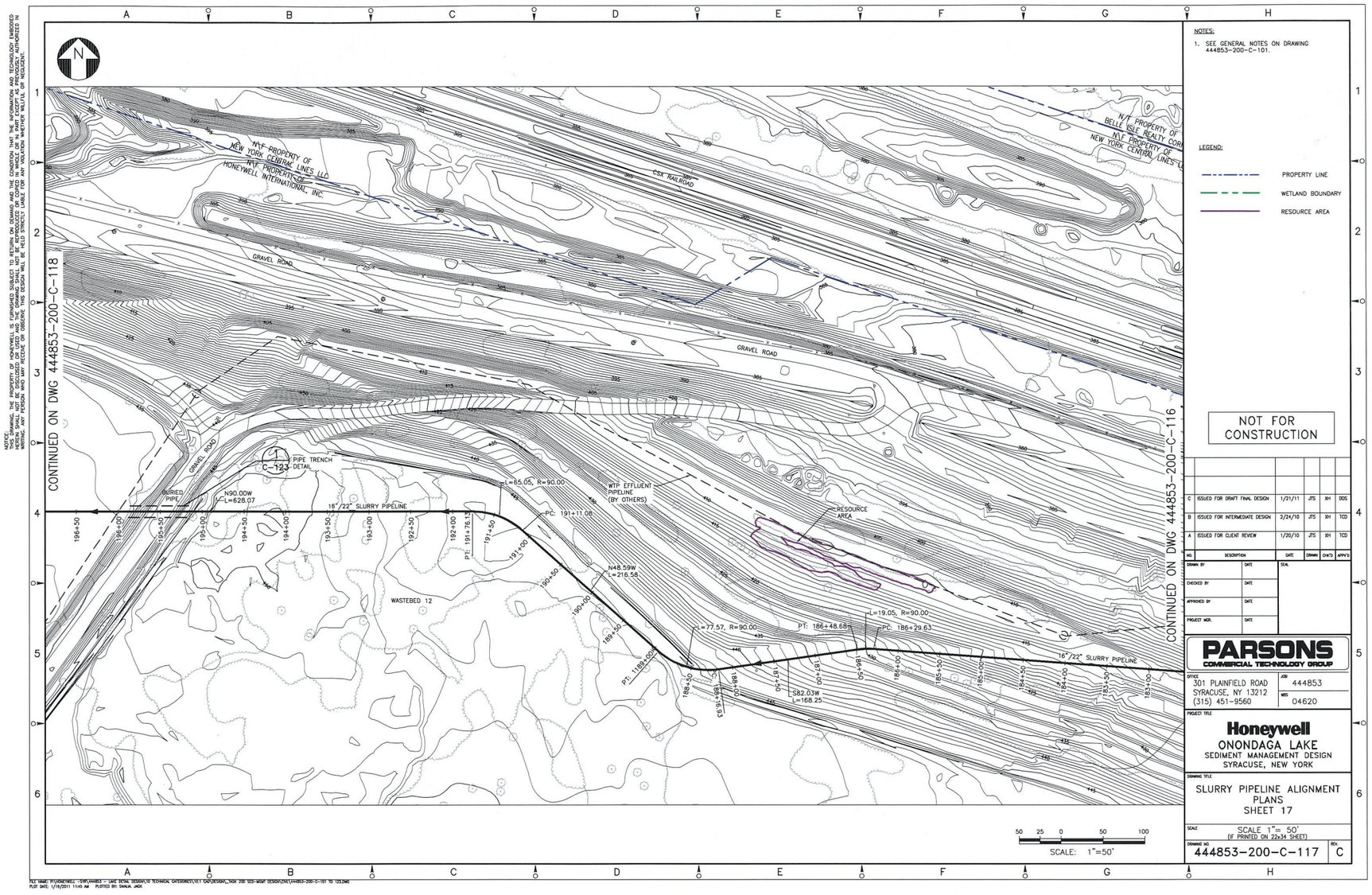
DRAWING TITLE
SLURRY PIPELINE ALIGNMENT
PLANS
SHEET 15

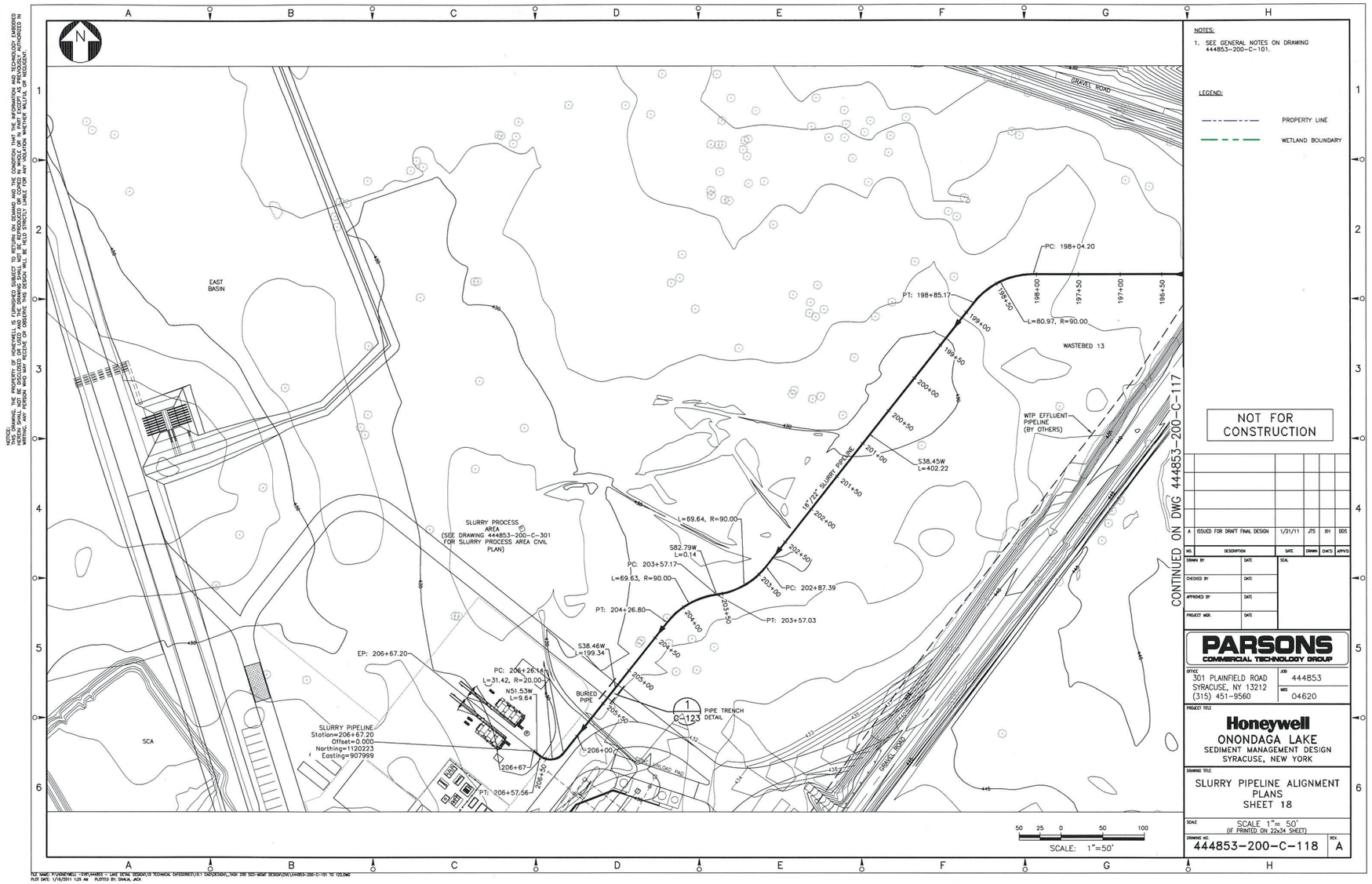
SCALE: SCALE 1"= 50'
(IF PRINTED ON 22x34 SHEET)

DRAWING NO. 444853-200-C-115 REV. C

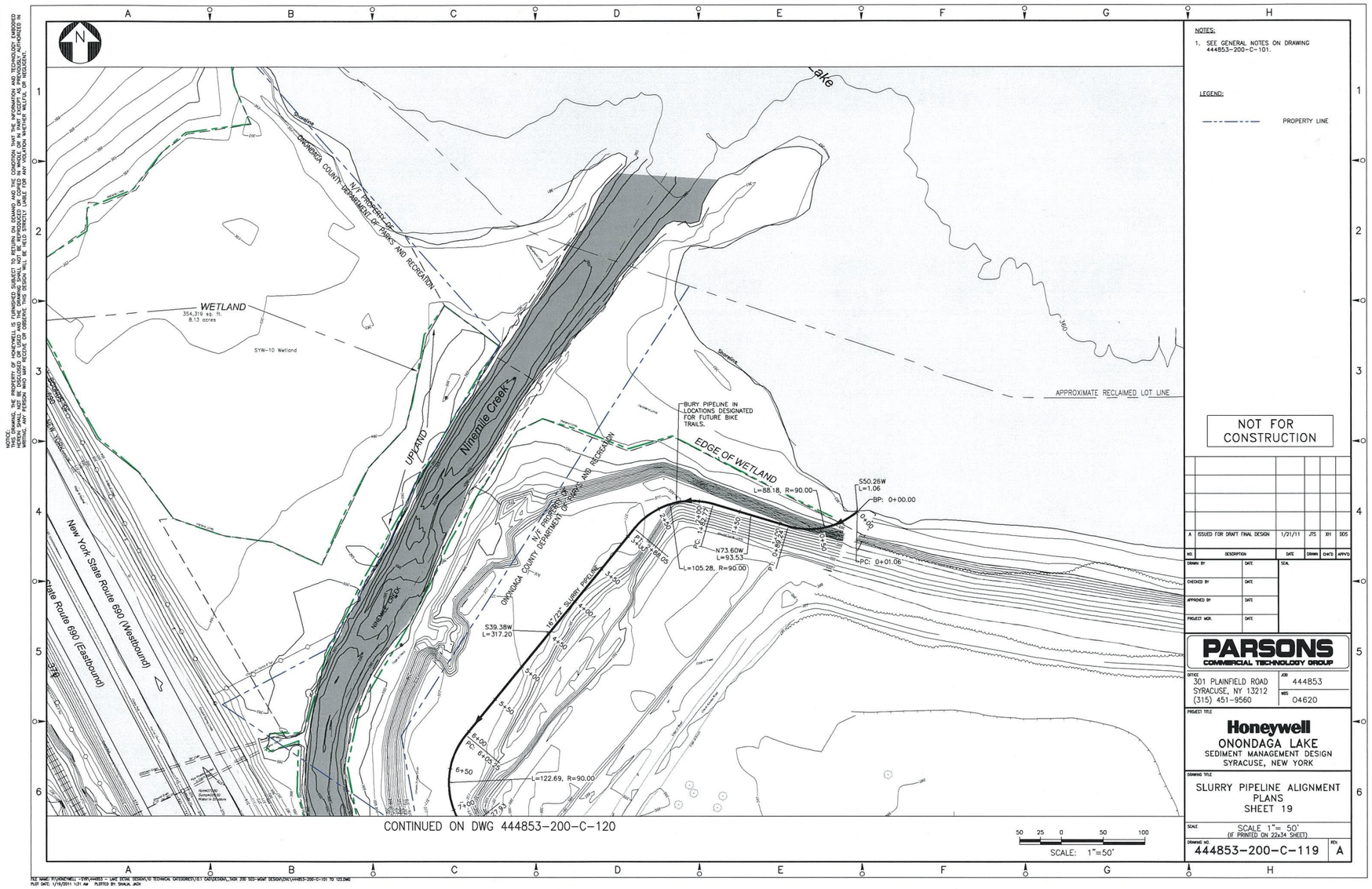
FILE NAME: P:\ONONDAGA\... PLOT DATE: 1/19/2011 1:28 AM PLOTTED BY: SHAUL JACK

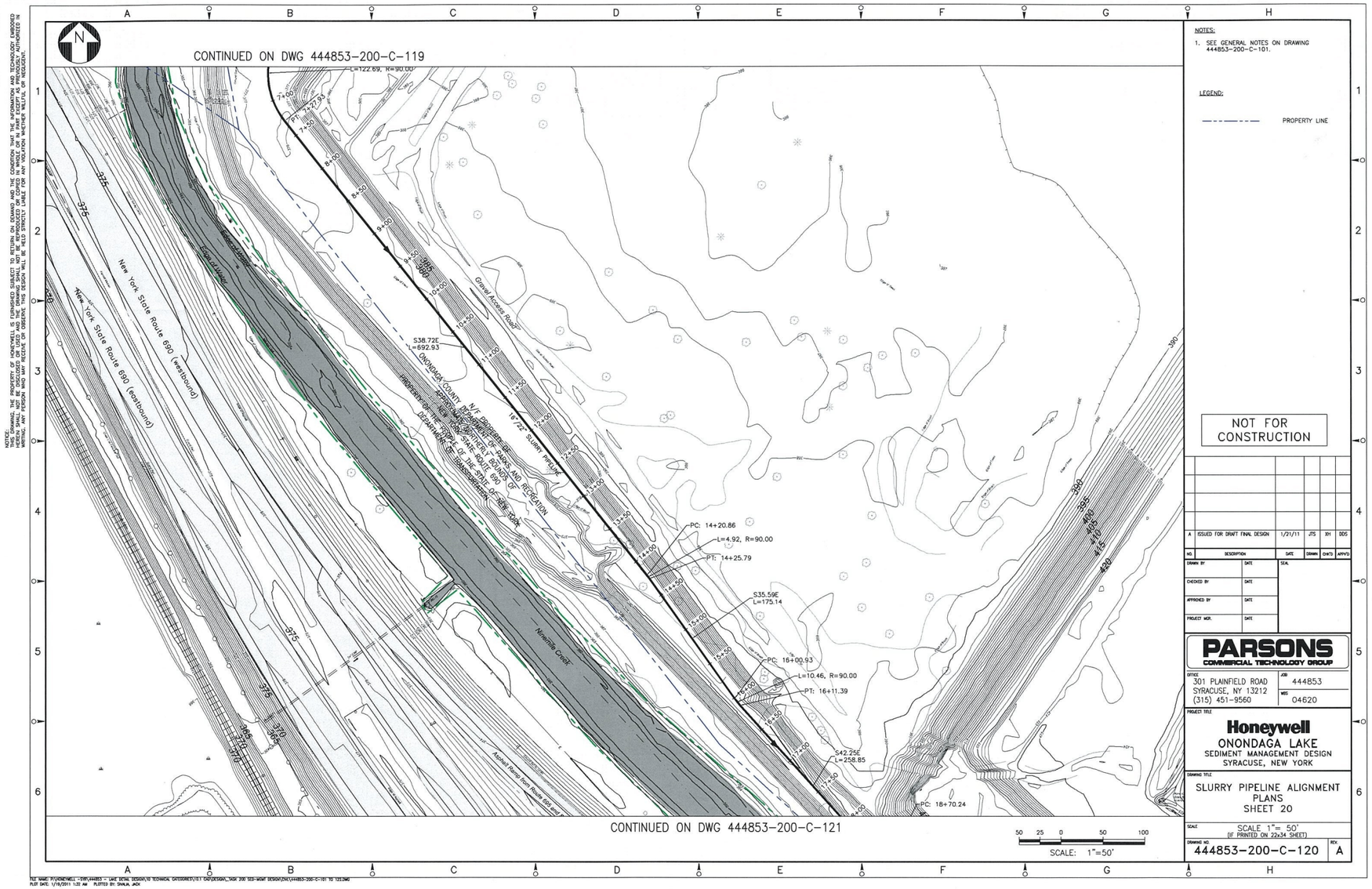

CONTINUED ON DWG 444853-200-C-117
CONTINUED ON DWG 444853-200-C-115
N/F PROPERTY OF BELLE-ISLE REALTY CORP.
N.Y. PROPERTY OF NEW YORK CENTRAL LINES LLC
N.Y. PROPERTY OF NEW YORK CENTRAL LINES LLC
N/F PROPERTY OF HONEYWELL INTERNATIONAL INC.
GRAVEL ROAD
RESOURCE AREA
RESOURCE AREA
RESOURCE AREA
N85.84W L=858.72
PT: 177+70.92
L=22.40, R=90.00
PC: 177+48.52
177+00
16"/22" SLURRY PIPELINE
N71.61W L=750.49
WTP EFFLUENT PIPELINE (BY OTHERS)
PIPE TRENCH DETAIL 1 C-123
PC: 168+91.03
L=10.44, R=90.00
169+50
PT: 169+01.47
L=10.37, R=90.00
RESOURCE AREA
BURIED PIPE
170+00
PT: 169+98.02
PC: 169+87.65
N78.21W L=86.18
169+00
LEAK DETECTION DETAIL (6) 1 C-124
C-125
50 25 0 50 100
SCALE: 1"=50'
NOTES:
1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.
LEGEND:
PROPERTY LINE
WETLAND BOUNDARY
RESOURCE AREA
NOT FOR CONSTRUCTION
C ISSUED FOR DRAFT FINAL DESIGN 1/31/11 JTS XH DDS
B ISSUED FOR INTERMEDIATE DESIGN 2/24/10 JTS XH TCD
A IN PROGRESS REVISION 1/20/10 JTS XH TCD
NO. DESCRIPTION DATE DRAWN CH'K'D APP'VD
DRAWN BY DATE
CHECKED BY DATE
APPROVED BY DATE
PROJECT MGR. DATE
SEAL
PARSONS
COMMERCIAL TECHNOLOGY GROUP
OFFICE 301 PLAINFIELD ROAD SYRACUSE, NY 13212 (315) 451-9560
JOB 444853
WBS 04620
PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK
DRAWING TITLE
SLURRY PIPELINE ALIGNMENT PLANS SHEET 16
SCALE
SCALE 1"= 50' (IF PRINTED ON 22x34 SHEET)
DRAWING NO.
444853-200-C-116
REV.
C
NOTICE
THIS DRAWING, THE PROPERTY OF HONEYWELL IS FURNISHED SUBJECT TO RETURN ON DEMAND AND THE CONDITION THAT THE INFORMATION AND TECHNOLOGY EMBODIED HEREIN SHALL NOT BE DISCLOSED OR USED AND THE DRAWING SHALL NOT BE REPRODUCED OR COPIED IN WHOLE OR IN PART EXCEPT AS PREVIOUSLY AUTHORIZED IN WRITING BY HONEYWELL. ANY REPRODUCTION MADE SHALL BE AS DIRECTED HEREIN AND SHALL CONTAIN THIS NOTICE AND ANY NOTICE APPEARING ON THE ORIGINAL OR ANY AUTHORIZED COPY FROM WHICH MADE, OR SUBSEQUENTLY AUTHORIZED IN WRITING BY HONEYWELL.
FILE NAME: P:\HONEYWELL - SYR\444853 - LAKE BOTTOM DESIGN\10 TECHNICAL CATEGORIES\10.1 CAD\DESIGN_TASK 200 SED-MGMT DESIGN\DWG\444853-200-C-101 TO 122.DWG
PLOT DATE: 1/19/2011 11:48 AM PLOTTED BY: SHAILA JACK


NOTICE:
THIS DRAWING, THE PROPERTY OF HONEYWELL IS FURNISHED SUBJECT TO RETURN ON DEMAND AND THE CONDITION THAT THE INFORMATION AND TECHNOLOGY EMBODIED HEREIN SHALL NOT BE DISCLOSED OR USED AND THIS DRAWING SHALL NOT BE REPRODUCED OR COPIED IN WHOLE OR IN PART EXCEPT AS PREVIOUSLY AUTHORIZED IN WRITING BY ANY PERSON AND ANY RECEIVE OR OBSERVE THIS DESIGN SHALL BE HELD STRICTLY LIABLE FOR ANY VIOLATION WHETHER WILFUL OR NEGLIGENT.
CONTINUED ON DWG 444853-200-C-118
CONTINUED ON DWG 444853-200-C-116
N/F PROPERTY OF NEW YORK CENTRAL LINES LLC
N/F PROPERTY OF HONEYWELL INTERNATIONAL, INC.
N/F PROPERTY OF BELLE ISLE REALTY CORP.
N/F PROPERTY OF NEW YORK CENTRAL LINES LLC
CSX RAILROAD
GRAVEL ROAD
PIPE TRENCH DETAIL
C-123
BURIED PIPE
N90.00W L=628.07
18"/22" SLURRY PIPELINE
L=85.05, R=90.00
PC: 191+11.08
PT: 191+76.13
WTP EFFLUENT PIPELINE (BY OTHERS)
RESOURCE AREA
N48.59W L=216.58
WASTEBED 12
L=77.57, R=90.00
PT: 186+48.68
PC: 186+29.63
L=19.05, R=90.00
S82.03W L=168.25
SCALE: 1"=50'
NOTES:
1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.
LEGEND:
PROPERTY LINE
WETLAND BOUNDARY
RESOURCE AREA
NOT FOR CONSTRUCTION
C ISSUED FOR DRAFT FINAL DESIGN 1/21/11 JTS KH DDS
B ISSUED FOR INTERMEDIATE DESIGN 3/24/10 JTS KH TCD
A ISSUED FOR CLIENT REVIEW 1/20/10 JTS KH TCD
NO. DESCRIPTION DATE DRAWN CHK'D APPV'D
DRAWN BY DATE
CHECKED BY DATE
APPROVED BY DATE
PROJECT MGR. DATE
SEAL
PARSONS
COMMERCIAL TECHNOLOGY GROUP
OFFICE 301 PLAINFIELD ROAD SYRACUSE, NY 13212 (315) 451-9560
JOB 444853
WBS 04620
PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK
DRAWING TITLE
SLURRY PIPELINE ALIGNMENT PLANS SHEET 17
SCALE 1"= 50' (IF PRINTED ON 22x34 SHEET)
DRAWING NO. 444853-200-C-117
REV. C

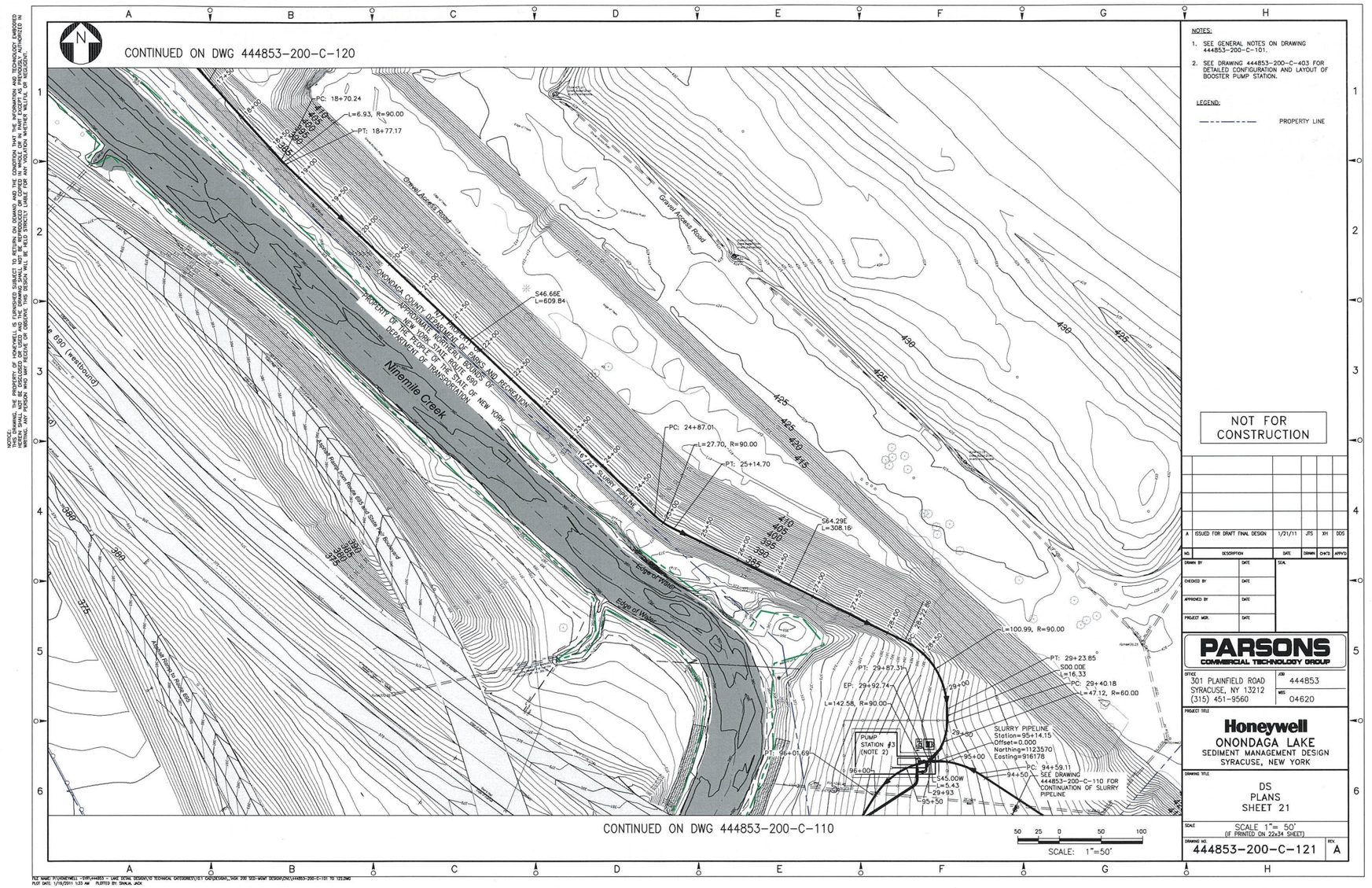


FILE NAME: P:\HONEYWELL - SYR\444853 - LAKE BOTTOM DESIGN\10 TECHNICAL CATEGORIES\10.1 CAD\DESIGN_SHEET 200 SERIES-WASTE DESIGN\DWG\444853-200-C-101 TO 121.DWG
PLOT DATE: 1/19/2011 1:29 AM PLOTTED BY: SHAHJA, JACK


NOTICE:
THIS DRAWING, THE PROPERTY OF HONEYWELL IS FURNISHED SUBJECT TO RETURN ON DEMAND AND THE CONDITION THAT THE INFORMATION AND TECHNOLOGY EMBODIED THEREIN SHALL NOT BE COPIED, USED OR DISCLOSED TO OTHERS EXCEPT AS AUTHORIZED IN WRITING. ANY PERSON WHO MAY RECEIVE OR OBSERVE THIS DESIGN WILL BE HELD STRICTLY LIABLE FOR ANY VIOLATION WHETHER WILLFUL OR NEGLIGENT.
NOTES:
1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.
LEGEND:
PROPERTY LINE
APPROXIMATE RECLAIMED LOT LINE
WETLAND
354,319 sq. ft.
8.13 acres
SYW-10 Wetland
UPLAND
EDGE OF WETLAND
Ninemile Creek
N/F PROPERTY OF ONONDAGA COUNTY DEPARTMENT OF PARKS AND RECREATION
BURY PIPELINE IN LOCATIONS DESIGNATED FOR FUTURE BIKE TRAILS.
New York State Route 690 (Westbound)
State Route 690 (Eastbound)
14"/22" SLURRY PIPELINE
S50.26W
L=1.06
BP: 0+00.00
L=88.18, R=90.00
N73.60W
L=93.53
L=105.28, R=90.00
PC: 0+01.06
S39.38W
L=317.20
L=122.69, R=90.00
CONTINUED ON DWG 444853-200-C-120
SCALE: 1"=50'
NOT FOR CONSTRUCTION
A ISSUED FOR DRAFT FINAL DESIGN 1/21/11 JTS XH DDS
PARSONS
COMMERCIAL TECHNOLOGY GROUP
301 PLAINFIELD ROAD
SYRACUSE, NY 13212
(315) 451-9560
JOB 444853
WBS 04620
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK
SLURRY PIPELINE ALIGNMENT
PLANS
SHEET 19
SCALE 1"= 50'
(IF PRINTED ON 22x34 SHEET)
444853-200-C-119
A



FILE NAME: P:\HONEYWELL - SYR\444853 - LAKE BEDNL DESIGN\10 TECHNICAL CATEGORIES\10.1 CAD\DESIGN_MAIN 200 SCS-WORK DESIGN\DWG\444853-200-C-101 TO 122.DWG
PLOT DATE: 1/19/2011 1:20 AM PLOTTED BY: SHAILA JADA



NOTES:

1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.
2. SEE DRAWING 444853-200-C-403 FOR DETAILED CONFIGURATION AND LAYOUT OF BOOSTER PUMP STATION.

LEGEND:

PROPERTY LINE

NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
A	ISSUED FOR DRAFT FINAL DESIGN	1/21/11	JTS	XH	DDS

DRAWN BY		DATE
CHECKED BY		DATE
APPROVED BY		DATE
PROJECT MGR.		DATE

SEAL

PARSONS
COMMERCIAL TECHNOLOGY GROUP

OFFICE: 301 PLAINFIELD ROAD, SYRACUSE, NY 13212, (315) 451-9560
JOB: 444853
WBS: 04620

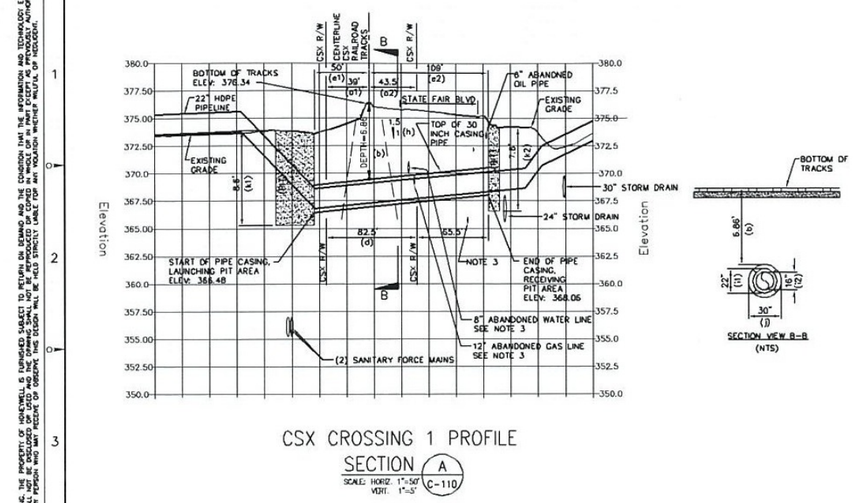
PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK

DRAWING TITLE
DS
PLANS
SHEET 21

SCALE: SCALE 1"= 50' (IF PRINTED ON 22x34 SHEET)

DRAWING NO.: 444853-200-C-121 REV: A

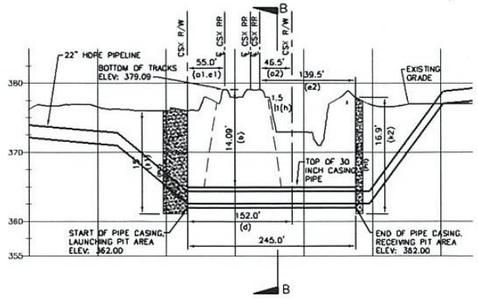
FILE NAME: P:\HONEYWELL - SYR\444853 - LAKE DESIGN\10 TECHNICAL CATEGORIES\10.1 CAD\DESIGN_HIGH 200 SED-WOMP DESIGN\DS\444853-200-C-101 TO 121.DWG
PLOT DATE: 1/19/2011 1:33 AM PLOTTED BY: SINKLA, JACK



CSX CROSSING 1 PROFILE

SECTION A (C-110)

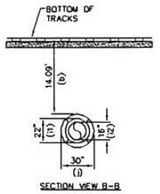
SCALE: HORIZ. 1"=50' VERT. 1"=5'



CSX CROSSING 2 PROFILE

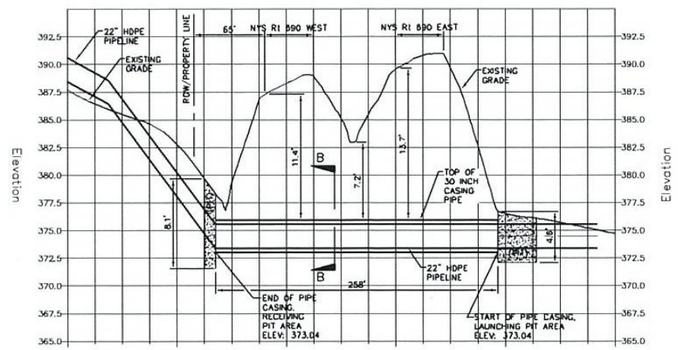
SECTION B (C-114)

SCALE: HORIZ. 1"=80' VERT. 1"=8'



SECTIONS A AND B - LETTER DESCRIPTIONS

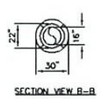
(o1), (o2) DISTANCE FROM CENTERLINE OF TRACKS TO CSX R/W.
(b) DISTANCE FROM BASE-OF-RAIL TO TOP OF CASING.
(c) N/A, BASE-OF-DITCH TO TOP OF CASING.
(d) TOTAL LENGTH OF PIPE ON CSX R/W.
(e1), (e2) DISTANCE FROM CENTERLINE OF NEAREST TRACK TO THE FACE OF PITS, AT A 90 DEGREE ANGLE TO THE TRACKS.
(f) N/A, DISTANCE FROM TOP-OF-VENT PIPE TO GROUND SURFACE. (NOT VENTED)
(g) N/A, DISTANCE FROM CENTERLINE OF TRACKS TO VENT PIPE. (NOT VENTED)
(h) THEORETICAL EMBANKMENT LINE: STARTS 12' FROM CENTERLINE OF TRACKS AND EXTENDS AWAY FROM TRACKS AT A SLOPE OF 1.5' OVER AND 1' DOWN.
(i1), (i2) PRIMARY AND SECONDARY CARRIER PIPE DIAMETERS.
(j) CASING PIPE DIAMETER.
(k1) (k2) DEPTH OF LAUNCHING AND RECEIVING PITS.



NYS ROUTE 690 PROFILE

SECTION C (C-110)

SCALE: HORIZ. 1"=50' VERT. 1"=5'



NOTES:

1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.
2. BURIED PIPELINE BELOW RAILROAD WILL BE INSTALLED USING TRENCHLESS TECHNOLOGY. DETAILED INSTALLATION WILL BE ADDRESSED IN THE FINAL DESIGN DOCUMENTS AND WILL BE IN ACCORDANCE WITH CSX REQUIREMENTS.
3. ESTIMATED LOCATION OF ABANDONED UTILITIES FROM NYSDOT RECORD DRAWINGS (1970, FASH 71-3, FIRC 71-51).

NOT FOR CONSTRUCTION

SCALE: 1"=80'

SCALE: 1"=50'

NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APP'D
A	ISSUED FOR DRAFT FINAL DESIGN	1/21/11	JTS	EH	DDS

DRAWN BY DATE
CHECKED BY DATE
APPROVED BY DATE
PROJECT MGR. DATE
SEAL

PARSONS
COMMERCIAL TECHNOLOGY GROUP
OFFICE: 301 PLAINFIELD ROAD, SYRACUSE, NY 13212, (315) 451-9560

JOB 444853
TASK 04620

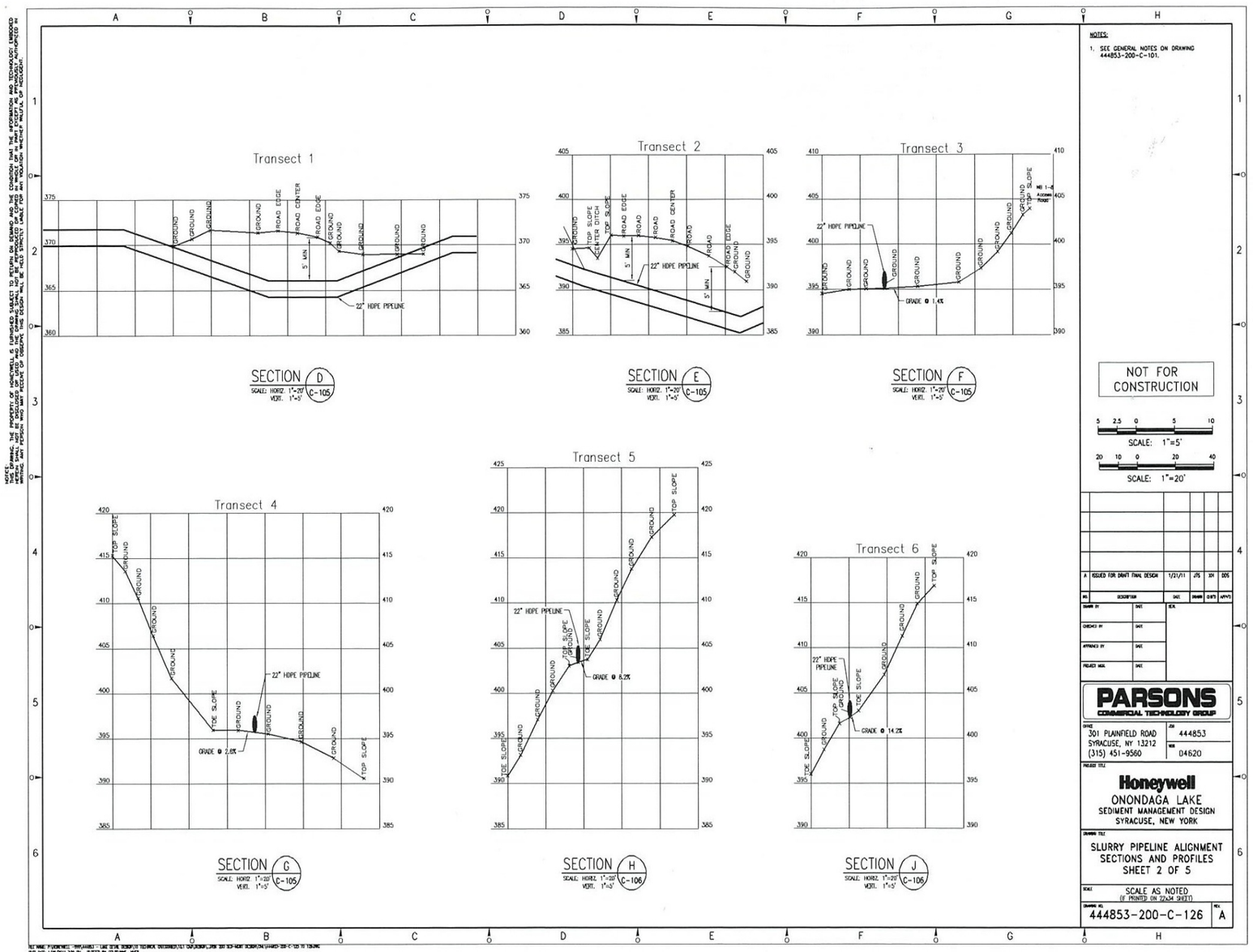
PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK

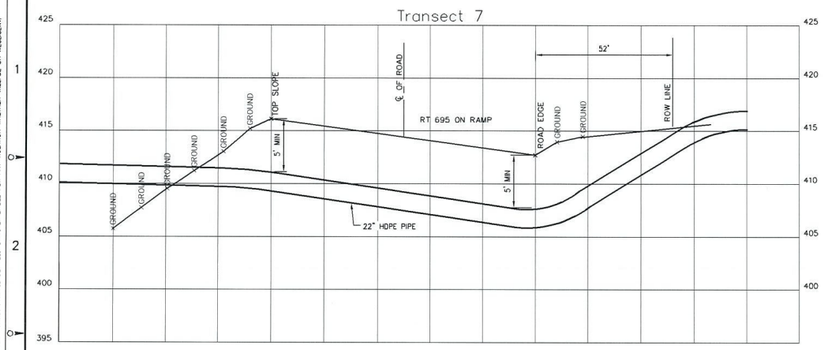
DRAWING TITLE
SLURRY PIPELINE ALIGNMENT SECTIONS AND PROFILES SHEET 1 OF 5

SCALE: SCALE AS NOTED (IF PRINTED ON 22x34 SHEET)

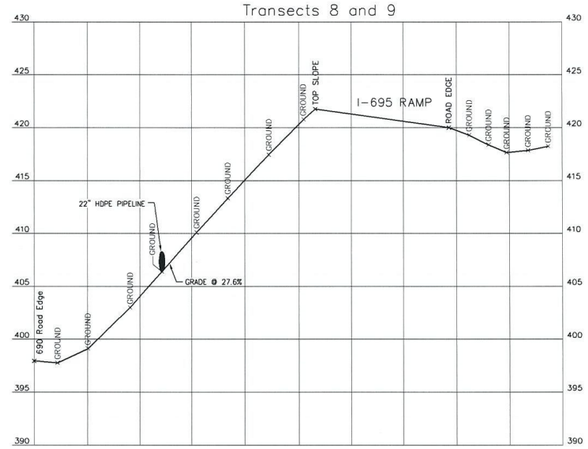
DRAWING NO. 444853-200-C-125 REV. A

FILE NAME: P:\ENGINEERING\---999\444853 - LAKE BED\DESIGN\10 TECHNICAL CHECKING\10.1 CAD\DESIGN_DWGS 200 SERIES\DESIGN\24\444853-200-C-125 TR ISSUE.DWG
PLOT DATE: 1/19/2011 7:11 PM PLOTTED BY: WILLIAM JAMES

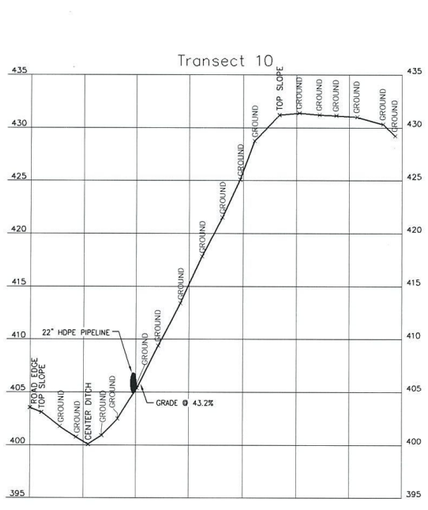

Transect 1
Transect 2
Transect 3
Transect 4
Transect 5
Transect 6
22" HDPE PIPELINE
GRADE @ 2.6%
GRADE @ 8.2%
GRADE @ 14.2%
SECTION D C-105
SECTION E C-105
SECTION F C-105
SECTION G C-106
SECTION H C-106
SECTION J C-106
NOTES:
1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.
NOT FOR CONSTRUCTION
SCALE: 1"=5'
SCALE: 1"=20'
PARSONS
COMMERCIAL TECHNOLOGY GROUP
301 PLAINFIELD ROAD
SYRACUSE, NY 13212
(315) 451-9560
444853
04620
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK
SLURRY PIPELINE ALIGNMENT
SECTIONS AND PROFILES
SHEET 2 OF 5
SCALE AS NOTED
(IF PRINTED ON 22x34 SHEET)
444853-200-C-126
A



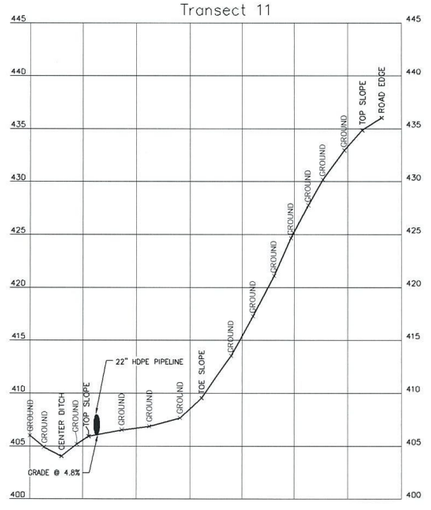
SECTION K
SCALE: HORIZ. 1"=20'
VERT. 1"=5'
C-107



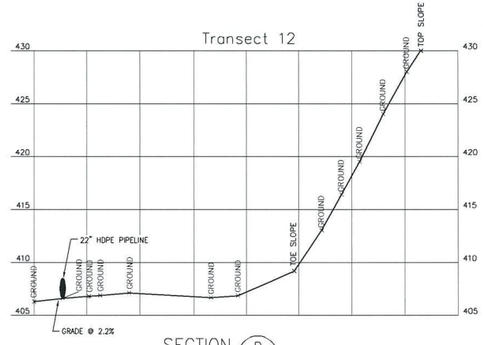
SECTION L
SCALE: HORIZ. 1"=20'
VERT. 1"=5'
C-107



SECTION M
SCALE: HORIZ. 1"=20'
VERT. 1"=5'
C-108



SECTION N
SCALE: HORIZ. 1"=20'
VERT. 1"=5'
C-108



SECTION P
SCALE: HORIZ. 1"=20'
VERT. 1"=5'
C-109

NOTES:

1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.

NOT FOR CONSTRUCTION

5 2.5 0 5 10
SCALE: 1"=5'

20 10 0 20 40
SCALE: 1"=20'

NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
A	ISSUED FOR DRAFT FINAL DESIGN	1/21/11	JTS	XH	DDS

DRAWN BY	DATE	SEAL
CHECKED BY	DATE	
APPROVED BY	DATE	
PROJECT MGR.	DATE	

PARSONS
COMMERCIAL TECHNOLOGY GROUP

OFFICE: 301 PLAINFIELD ROAD, SYRACUSE, NY 13212, (315) 451-9560
JOB: 444853
WBS: 04620

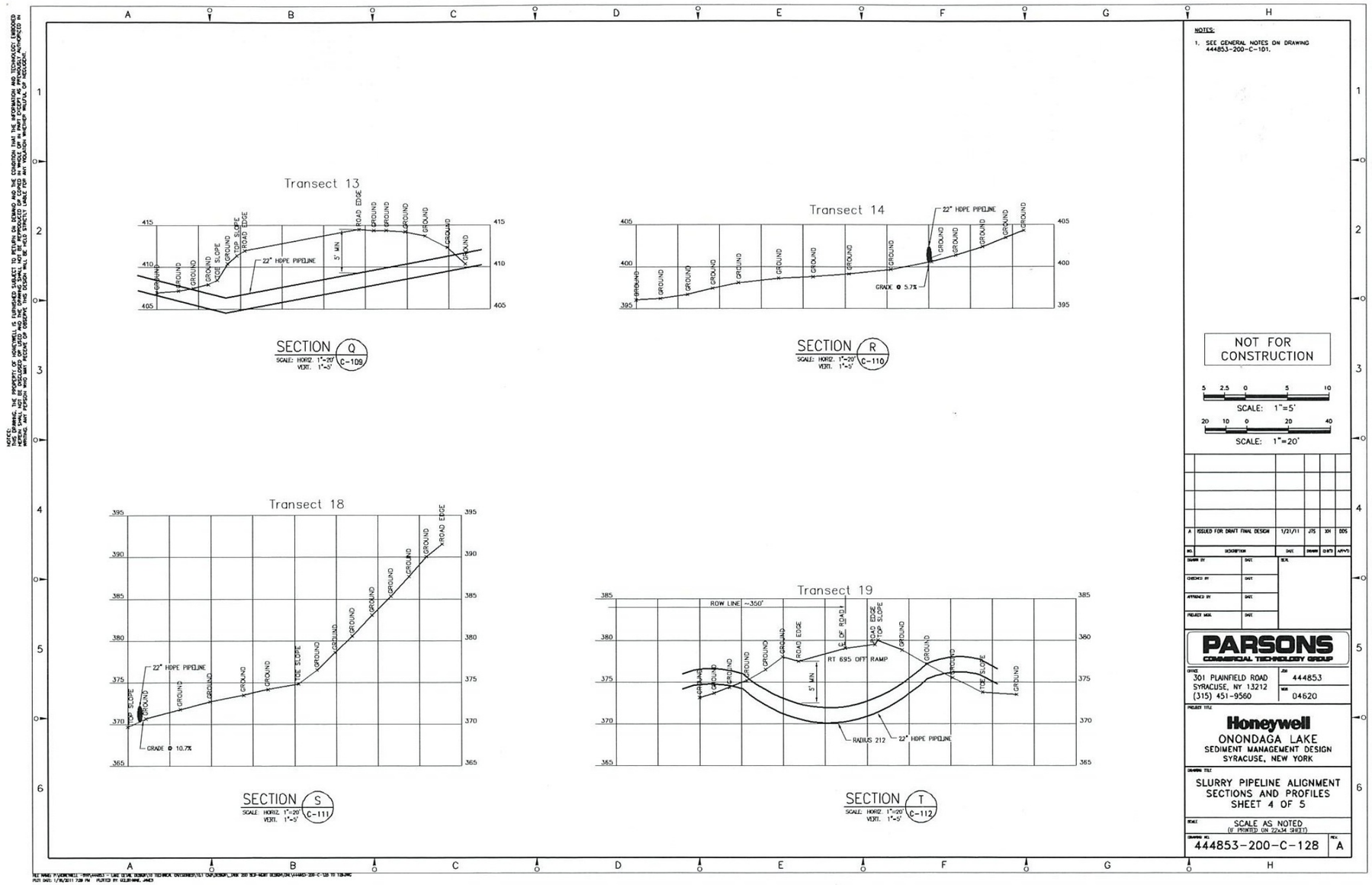
PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK

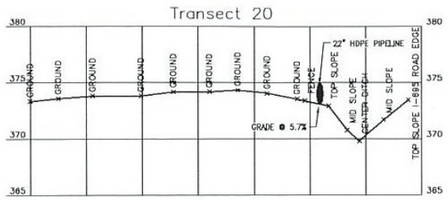
DRAWING TITLE
SLURRY PIPELINE ALIGNMENT
SECTIONS AND PROFILES
SHEET 3 OF 5

SCALE: AS NOTED (IF PRINTED ON 22x34 SHEET)

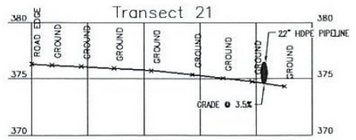
DRAWING NO. 444853-200-C-127 REV. A

FILE NAME: P:\HONEYWELL -SYR\444853 -- LAKE BOTTOM DESIGN\10 TECHNICAL CATEGORIES\10.1 CAD\DESIGN_HIGH 200 SIZE-WORK DESIGN\DWG\444853-200-C-125 TO 129.DWG
PLOT DATE: 1/18/2011 12:54 PM PLOTTED BY: SHAUN JACK

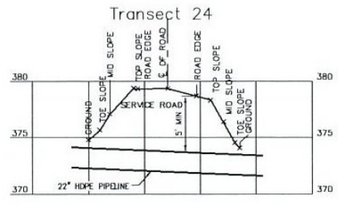




SECTION U
SCALE: HORIZ. 1"=20'
VERT. 1"=5'
C-112



SECTION V
SCALE: HORIZ. 1"=20'
VERT. 1"=5'
C-113



SECTION W
SCALE: HORIZ. 1"=20'
VERT. 1"=5'
C-116

NOTES:

1. SEE GENERAL NOTES ON DRAWING 444853-200-C-101.

NOT FOR CONSTRUCTION

5 2.5 0 5 10
SCALE: 1"=5'

20 10 0 20 40
SCALE: 1"=20'

NO.	DESCRIPTION	DATE	DRAWN	CHKD	APVD
A	ISSUED FOR DRAFT FINAL DESIGN	1/31/11	JTS	RH	DDS

DRAWN BY DATE
CHECKED BY DATE
APPROVED BY DATE
PROJECT MGR. DATE
TECH.

PARSONS
COMMERCIAL TECHNOLOGY GROUP

OFFICE
301 PLAINFIELD ROAD
SYRACUSE, NY 13212
(315) 451-9560

JOB 444853
WBS 04620

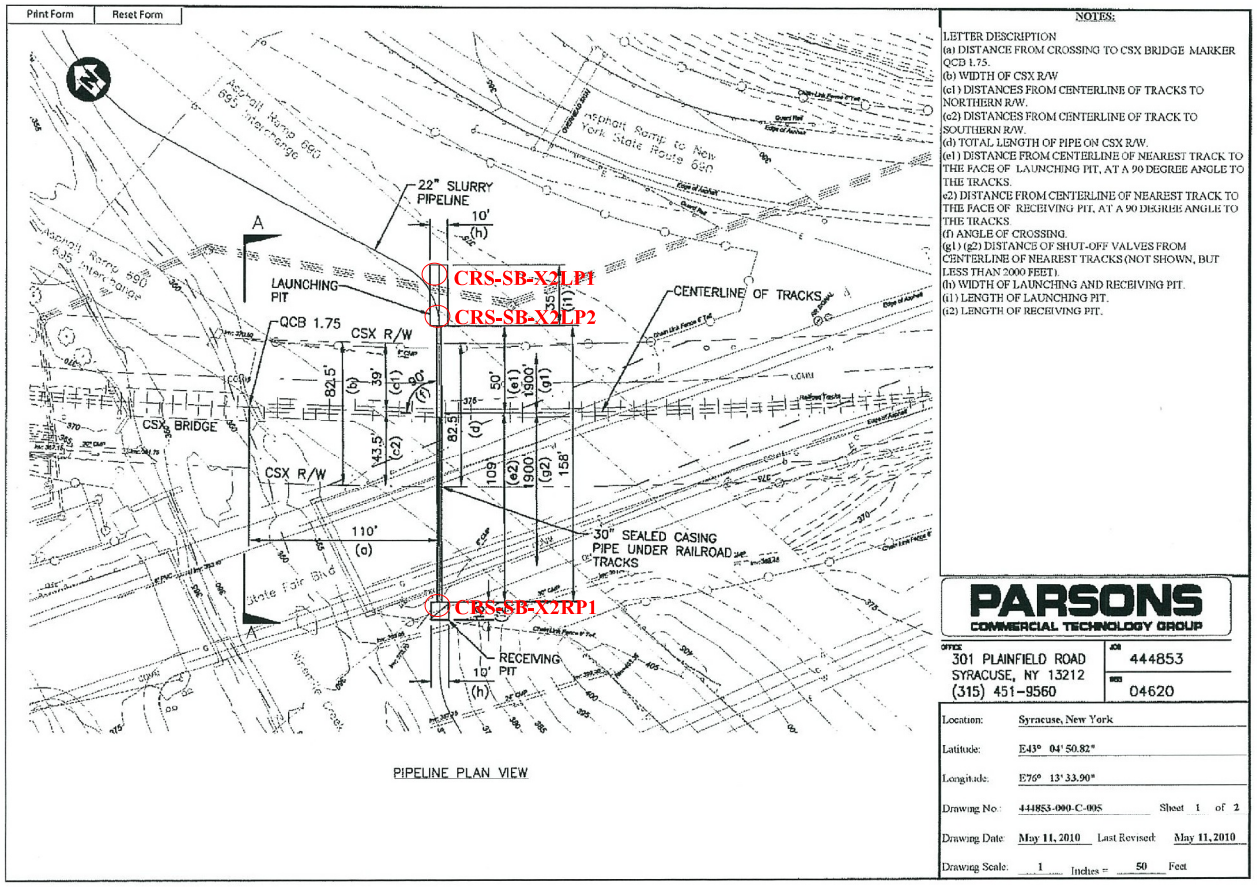
PROJECT TITLE
Honeywell
ONONDAGA LAKE
SEDIMENT MANAGEMENT DESIGN
SYRACUSE, NEW YORK

DRAWING TITLE
SLURRY PIPELINE ALIGNMENT
SECTIONS AND PROFILES
SHEET 5 OF 5

SCALE
SCALE AS NOTED
(IF PRINTED ON 22x34 SHEET)

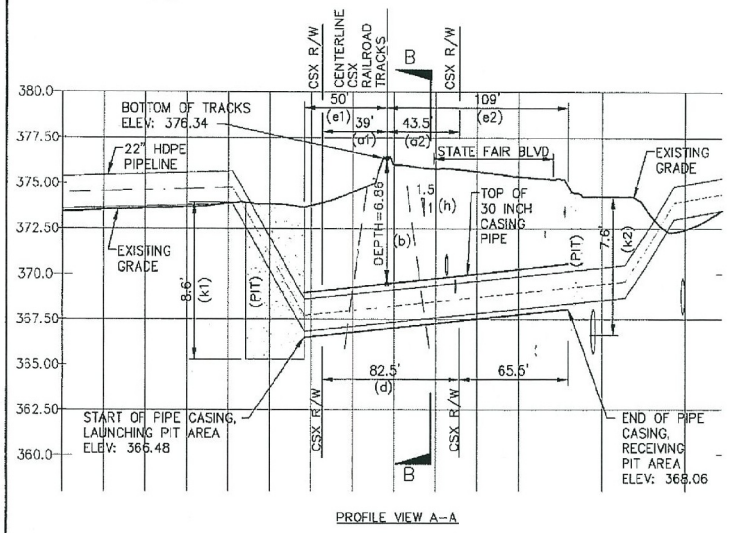
DRAWING NO. 444853-200-C-129 REV. A

APPENDIX IV. PROJECT PLANS (LAUNCHING AND RECEIVING PITS AND SOIL BORING LOCATIONS)

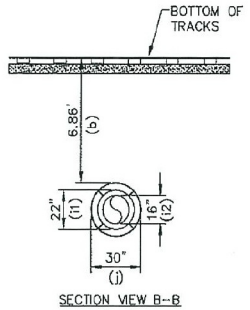


CSX Railroad and State Fair Boulevard Crossing with Launching and Receiving Pits and approximate locations of Soil Borings

Print Form | Reset Form



PROFILE VIEW A--A



SECTION VIEW B--B
(NTS)

NOTES:

THE FRONT OF THE CASING PIPE SHALL BE PROVIDED WITH MECHANICAL ARRANGEMENTS OR DEVICES THAT WILL POSITIVELY PREVENT THE AUGER FROM LEADING THE PIPE SO THAT NO UNSUPPORTED EXCAVATION IS AHEAD OF THE PIPE.
CSXT PIPELINE SPECS. PAGE 23, A), ii) (c)

CASING PIPE ENDS WILL BE SEALED IN ACCORDANCE WITH CSXT SPECS.
CSXT PIPELINE SPECS. PAGE 19, E)

Additional Notes/Information:
LETTER DESCRIPTION
(a1), (a2) DISTANCE FROM CENTERLINE OF TRACKS TO CSX R/W.
(b) DISTANCE FROM BASE-OF-RAIL TO TOP OF CASING.
(c) N/A, BASE-OF-DITCH TO TOP OF CASING
(d) TOTAL LENGTH OF PIPE ON CSX R/W.
(e1), (e2) DISTANCE FROM CENTERLINE OF NEAREST TRACK TO THE FACE OF PITS, AT A 90 DEGREE ANGLE TO THE TRACKS
(f) N/A, DISTANCE FROM TOP-OF-VENT PIPE TO GROUND SURFACE. (NOT VENTED)
(g) N/A, DISTANCE FROM CENTERLINE OF TRACKS TO VENT PIPE. (NOT VENTED)
(h) THEORETICAL EMBANKMENT LINE: STARTS 12' FROM CENTERLINE OF TRACKS AND EXTENDS AWAY FROM TRACKS AT A SLOPE OF 1.5' OVER AND 1' DOWN.
(i1), (i2) PRIMARY AND SECONDARY CARRIER PIPE DIAMETERS.
(j) CASING PIPE DIAMETER.
(k1), (k2) DEPTH OF LAUNCHING AND RECEIVING PITS.

PIPELINE CONTENT DETAILS

CSXT Pipeline Spec. Reference		
	Commodity Description:	Hydraulically Dredged Sediment Slurry
	Maximum Operating Pressure:	130 psi
	Is Commodity Flammable:	☐ Yes ☑ No

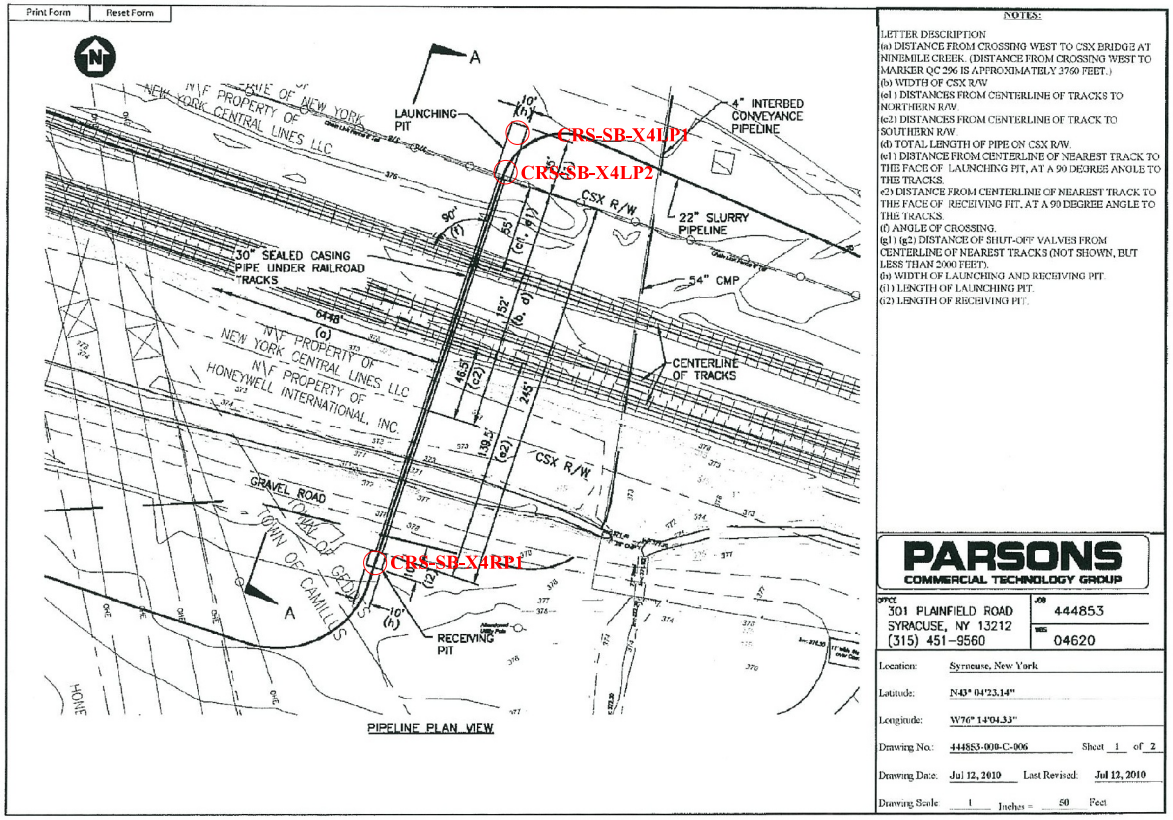
CARRIER/CASING PIPE DETAILS

		Carrier Pipe	Casing Pipe
Page 13, C); & 17, D)	Pipe Material:	Dual Containment HDPE	Steel
Page 13, C), & 17, D)	Material Specifications & Grade:	AWWA C906 DR 9/ DR 26	ASTM A139 Grade B
Page 13, C); & 17, D)	Specified Minimum Yield Strength:	3200 psi (tensile strength at yield)	35,000 psi
	Nominal Size Outside Diameter (Inches):	16" / 22"	30"
Page 14, i), i1)	Wall Thickness (Inches):	1.788" / 0.846"	0.469"
Page 13, C); & 17, D)	Type of Seam:	Seamless - Extruded	Electric Fusion (Arc) Welded Straight
Page 13, C); & 17, D)	Type of Joints:	Fusion Butt Welded	Butt Welded
Page 16, v)	Tunnel Liner Plates Required:	☑ No ☐ Yes	
	Cathodic Protection:	☑ No ☐ Yes Type:	
	Protective Coating:	☑ No ☐ Yes Type:	
	Temp. Track Support or Rip-Rap Req.:	☑ No ☐ Yes Must Describe & Show on Drawing	

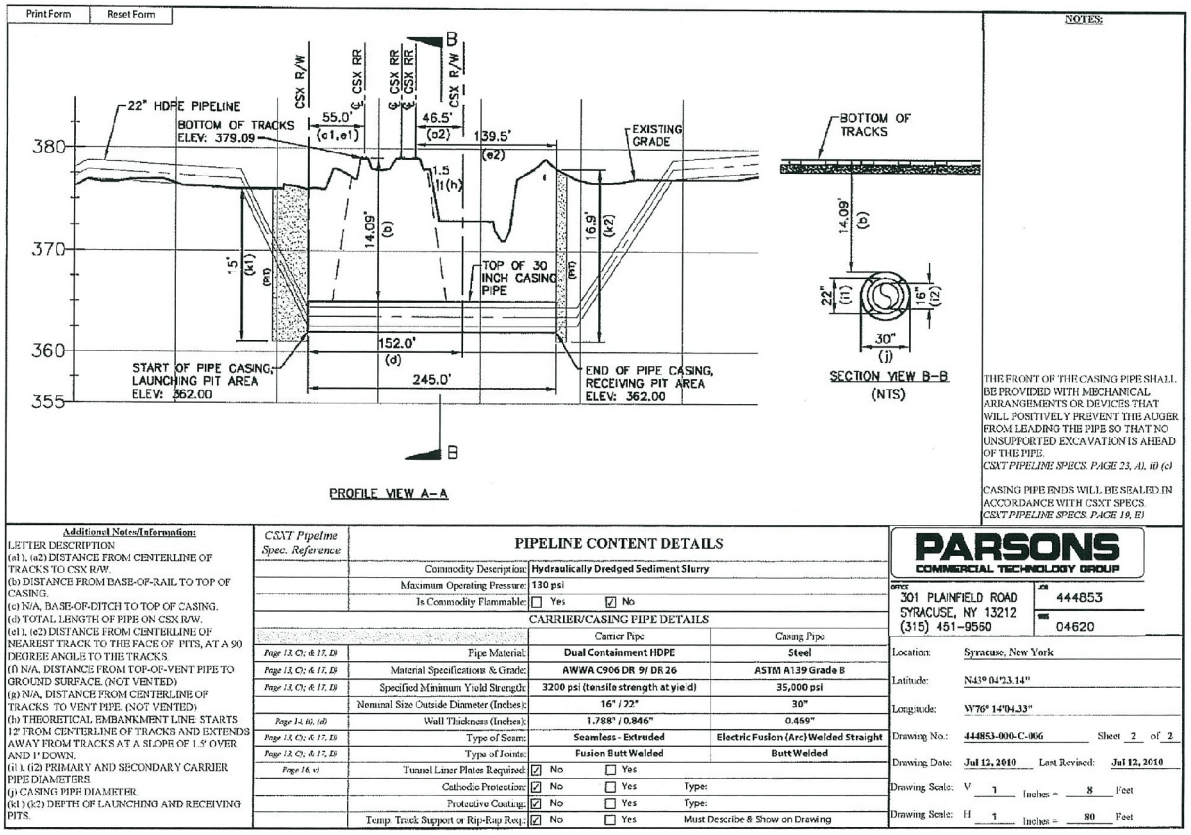
PARSONS
COMMERCIAL TECHNOLOGY GROUP
OFFICE: 301 PLAINFIELD ROAD, SYRACUSE, NY 13212, (315) 451-9560
JOB: 444853
WBS: 04620

Location: Syracuse, New York
Latitude: N43° 04' 50.82"
Longitude: E76° 13' 33.90"
Drawing No.: 444853-000-C-005 Sheet 2 of 2
Drawing Date: May 11, 2010 Last Revised: May 11, 2010
Drawing Scale: V 1 Inches = 5 Feet
Drawing Scale: H 1 Inches = 50 Feet

Project Plans for Launching and Receiving pit for CSX Railroad/State Fair Boulevard Crossing



CSX Railroad and State Fairground/Honeywell Properties Crossing with Launching and Receiving Pits and approximate locations of Soil Borings



Additional Notes/Information:

LETTER DESCRIPTION
(e1), (e2) DISTANCE FROM CENTERLINE OF TRACKS TO CSX R/W.
(b) DISTANCE FROM BASE-OF-RAIL TO TOP OF CASING.
(c) N/A, BASE-OF-DITCH TO TOP OF CASING.
(d) TOTAL LENGTH OF PIPE ON CSX R/W.
(e1), (e2) DISTANCE FROM CENTERLINE OF NEAREST TRACK TO THE FACE OF PITS, AT A 90 DEGREE ANGLE TO THE TRACKS
(f) N/A, DISTANCE FROM TOP-OF-VENT PIPE TO GROUND SURFACE. (NOT VENTED)
(g) N/A, DISTANCE FROM CENTERLINE OF TRACKS TO VENT PIPE. (NOT VENTED)
(h) THEORETICAL EMBANKMENT LINE STARTS 12' FROM CENTERLINE OF TRACKS AND EXTENDS AWAY FROM TRACKS AT A SLOPE OF 1.5' OVER AND 1' DOWN.
(i) 1 (i2) PRIMARY AND SECONDARY CARRIER PIPE DIAMETERS
(j) CASING PIPE DIAMETER
(k1) (k2) DEPTH OF LAUNCHING AND RECEIVING PITS.

CSXT Pipeline Spec. Reference	PIPELINE CONTENT DETAILS		
	Commodity Description:	Hydraulically Dredged Sediment Slurry	
	Maximum Operating Pressure:	130 psi	
	Is Commodity Flammable:	☐ Yes ☑ No	
	CARRIER/CASING PIPE DETAILS		
		Carrier Pipe	Casing Pipe
Page 13, C); & 17, D)	Pipe Material:	Dual Containment HDPE	Steel
Page 13, C); & 17, D)	Material Specifications & Grade:	AWWA C906 DR 9/ DR 26	ASTM A139 Grade B
Page 13, C); & 17, D)	Specified Minimum Yield Strength:	3200 psi (tensile strength at yield)	35,000 psi
	Nominal Size Outside Diameter (Inches):	16" / 22"	30"
Page 14, 6), a)	Wall Thickness (Inches):	1.788" / 0.846"	0.469"
Page 13, C); & 17, D)	Type of Seam:	Seamless - Extruded	Electric Fusion (Arc) Welded Straight
Page 13, C); & 17, D)	Type of Joints:	Fusion Butt Welded	Butt Welded
Page 16, v)	Tunnel Liner Plates Required:	☑ No ☐ Yes	
	Cathodic Protection:	☑ No ☐ Yes Type:	
	Protective Coating:	☑ No ☐ Yes Type:	
	Temp. Track Support or Rip-Rap Req.:	☑ No ☐ Yes Must Describe & Show on Drawing	

PARSONS
COMMERCIAL TECHNOLOGY GROUP

office: 301 PLAINFIELD ROAD, SYRACUSE, NY 13212, (315) 451-9560
Job: 444853
WBS: 04620

Location: Syracuse, New York
Latitude: N43° 04'23.14"
Longitude: W76° 14'04.33"
Drawing No.: 444853-000-C-006 Sheet 2 of 2
Drawing Date: Jul 12, 2010 Last Revised: Jul 12, 2010
Drawing Scale: V 1 Inches = 8 Feet
Drawing Scale: H 1 Inches = 80 Feet

Project Plans for Launching and Receiving pit for CSX Railroad/State Fair/Honeywell Properties Crossing

APPENDIX V. SOIL BORING LOGS AND BORING LOCATION MAPS

BORING LOG Page 1 of 1

Honeywell

Site: Onondaga Lake (Syracuse NY)
Boring No: CRS-SB-X2LP1
Start/End Date: 10/07/2010

Northing: NA
Easting: NA
Elevation: NA

Drilling Company: PARRATT WOLFF INC
Driller: Layne Pech
Logging Company: Parsons
Geologist: M. Vetter Rig Type: CME 75D

Total Depth: 9.0 Ft
Borehole Depth Units: Ft

Depth Ft	Recov	Sample ID	Blow Count	N Value	PID (ppm)	Mercury (mg/kg)	USCS Code	Soil Description	Sample Method	Stratum
0					0		Fill	Hand clear to 5 ft. Dry to moist, loose, gray, coarse to fine SAND and medium to fine sub-rounded Gravel, trace silt		Fill
5			1-1-0-1	1	0		Fill	Moist, very soft, gray and brown, SILT, some coarse to fine sand, trace fine sub-rounded gravel, trace clay.	2SS-140H	
			3-5-5-6	10	0		SOLW	0 to 0.67 ft: Moist, stiff, white, silt-like grains, cemented chunks throughout. 0.67 to 1.33 ft: Moist, medium dense, gray, sand-like grains, little silt-like grains, little fine sub-rounded gravel.	2SS-140H	SOLW
9.0										

Note: Null field indicate reading not taken.

BORING LOG Page 1 of 1

Honeywell

Site: Onondaga Lake (Syracuse NY)
Boring No: CRS-SB-X2LP2
Start/End Date: 10/07/2010

Northing: NA
Easting: NA
Elevation: NA

Drilling Company: PARRATT WOLFF INC
Driller: Layne Pech
Logging Company: Parsons
Geologist: M. Vetter Rig Type: CME 75D

Total Depth: 9.0 Ft
Borehole Depth Units: Ft

Depth Ft	Recov	Sample ID	Blow Count	N Value	PID (ppm)	Mercury (mg/kg)	USCS Code	Soil Description	Sample Method	Stratum
0					0		Fill	Hand clear to 5 ft. Dry to wet, loose, gray, coarse to fine SAND and medium to fine sub-rounded Gravel, trace silt.		Fill
5			1-1-1-3	2	0		SOLW	0 to 0.5 ft: Wet, very loose, gray, coarse to fine SAND and medium to fine sub-rounded Gravel, trace silt (Fill). 0.5 to 0.75 ft: Moist, very soft, dark gray, silt-like grains, cemented chunks throughout (SOLW). 0.75 to 1.0 ft: Moist, very soft, white, silt-like grains, cemented chunks throughout (SOLW).	2SS-140H	SOLW
			11-14-11-11	25	0		Fill	Wet, dense, gray, coarse to fine SAND and medium to fine sub-rounded Gravel, trace silt.	2SS-140H	Fill
9.0										

Note: Null fields indicate reading not taken.

BORING LOG Page 1 of 1

Honeywell

Site: Onondaga Lake (Syracuse NY)
Boring No: CRS-SB-X2RP1
Start/End Date: 10/06/2010 - 10/08/2010

Northing: NA
Easting: NA
Elevation: NA

Drilling Company: PARRATT WOLFF INC
Driller: Layne Pech
Logging Company: Parsons
Geologist: M. Vetter/B. McAllisterRig Type: Geoprobe

Total Depth: 7.0 Ft
Borehole Depth Units: Ft

Depth Ft	Recov	Sample ID	Blow Count	N Value	PID (ppm)	Mercury (mg/kg)	USCS Code	Soil Description	Sample Method	Stratum
0					0		Fill	Hand clear to 5 ft. Dry to moist, dense, brown and gray, coarse to fine sub-rounded GRAVEL, some coarse to fine sand, some silt		Fill
5					0		Fill	Moist, dense, brown, SILT and CLAY, some sub-rounded gravel.	GP	
7.0										

Note: Null fields indicate reading not taken.

BORING LOG Page 1 of 1

Honeywell

Site: Onondaga Lake (Syracuse NY)
Boring No: CRS-SB-X4LP1
Start/End Date: 10/06/2010 - 10/07/2010

Northing: NA
Easting: NA
Elevation: NA

Drilling Company: PARRATT WOLFF INC
Driller: Layne Pech
Logging Company: Parsons
Geologist: M. Vetter Rig Type: CME 75D

Total Depth: 15.0 Ft
Borehole Depth Units: Ft

Depth Ft	Recov	Sample ID	Blow Count	N Value	PID (ppm)	Mercury (mg/kg)	USCS Code	Soil Description	Sample Method	Stratum
0					0		Fill	Hand clear to 5 ft. 0 to 0.25 ft: Topsoil. 0.25 to 2.5 ft: Dry to moist, soft/loose, dark brown, SILT and fine sub-rounded GRAVEL, little coarse sand. 2.5 to 2.6 ft: Wet, soft, brown, SILT and CLAY, trace coarse sand. 2.6 to 5.0 ft: Wet, loose, dark gray, coarse to fine sub-rounded GRAVEL, some coarse to medium sand, little silt.		Topsoil
5			3-3-1-3	4	0		Fill	Wet, medium stiff, dark gray, coarse to fine sub-rounded GRAVEL, some coarse to medium sand, little silt.	2SS-140H	Fill
			5-5-5-3	10	0		Fill	Wet, stiff, dark gray, coarse to fine sub-rounded GRAVEL, some coarse to medium sand, little silt.	2SS-140H	
10			3-3-5-6	8	0		OL/CL	0 to 0.42 ft: Moist, medium stiff, black, organic SILT, some clay, little vegetation, slight organic odor (OL). 0.42 to 0.83 ft: Moist, stiff, red-brown, CLAY and Silt (CL).	2SS-140H	Organic Silt
			8-8-8-8	16	0		CL	Moist, very stiff, red-brown, CLAY, some silt.	2SS-140H	Clay
15.0			4-5-6-9	11	0			No recovery.	2SS-140H	

Note: Null fields indicate reading not taken

BORING LOG Page 1 of 1

Honeywell

Site: Onondaga Lake (Syracuse NY)
Boring No: CRS-SB-X4LP2
Start/End Date: 10/06/2010 - 10/07/2010

Northing: NA
Easting: NA
Elevation: NA

Drilling Company: PARRATT WOLFF INC
Driller: Layne Pech
Logging Company: Parsons
Geologist: M. Vetter Rig Type: CME 75D

Total Depth: 17.0 Ft
Borehole Depth Units: Ft

Depth Ft	Recov	Sample ID	Blow Count	N Value	PID (ppm)	Mercury (mg/kg)	USCS Code	Soil Description	Sample Method	Stratum
0					0		Fill	Hand clear to 5 ft. 0 to 0.25 ft: Topsoil. 0.25 to 3.0 ft: Moist, soft./loose, dark brown, SILT and medium to fine sub-rounded Gravel, little coarse sand. 3.0 to 5 ft: Wet, loose, dark brown, coarse to fine sub-rounded GRAVEL, some coarse to medium sand, little silt.		Topsoil / Fill
5			2-2-3-4	5	0		Fill	Wet, loose, dark brown, coarse to fine sub-rounded GRAVEL, some coarse to medium sand, little silt	2SS-140H	
			5-5-9-6	14	0		Fill	Wet, loose, dark brown, coarse to fine sub-rounded GRAVEL, some coarse to medium sand, little silt	2SS-140H	
10			2-3-4-5	7	0		CL	0.0.5 ft: Wet, medium stiff, black, PEAT and organic SILT. 0.5 to 1.71 ft: Moist, medium stiff, red-brown, CLAY, some silt.	2SS-140H	Peat/Organic Silt / Clay
			5-6-8-6	14	0		CL	No recovery.	2SS-140H	
			3-4-8-11	12	0		CL	Moist, stiff, red-brown, CLAY, some silt.	2SS-140H	
15			15-22-22-20	44	0		CL	Moist, stiff, red-brown, CLAY, some silt.	2SS-140H	
17.0										

Note: Null fields indicate reading not taken.

BORING LOG Page 1 of 1

Honeywell

Site: Onondaga Lake (Syracuse NY)
Boring No: CRS-SB-X4RP1
Start/End Date: 10/06/2010 - 10/07/2010

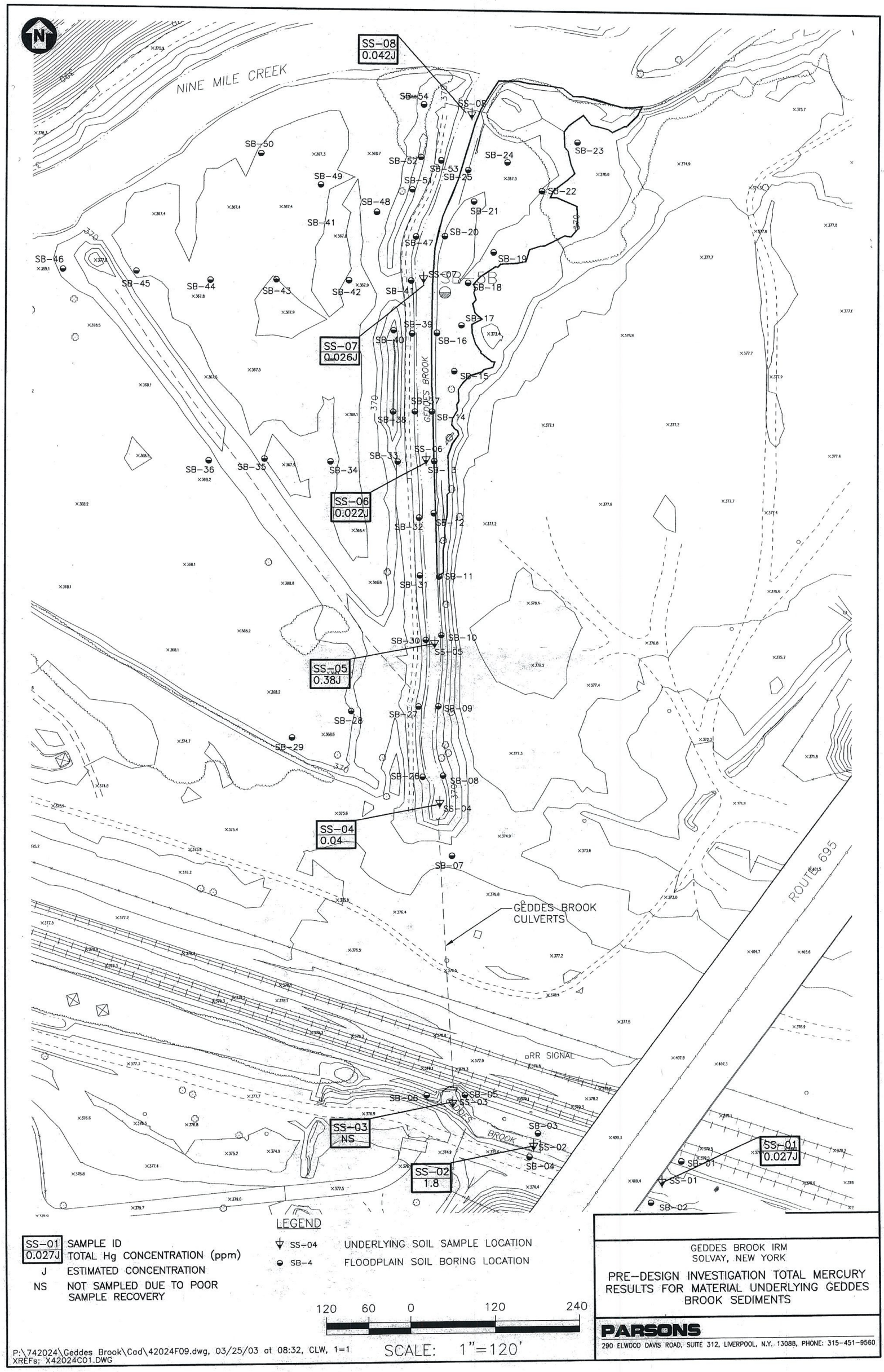
Northing: NA
Easting: NA
Elevation: NA

Drilling Company: PARRATT WOLFF INC
Driller: Layne Pech
Logging Company: Parsons
Geologist: M. Vetter Rig Type: CME 850

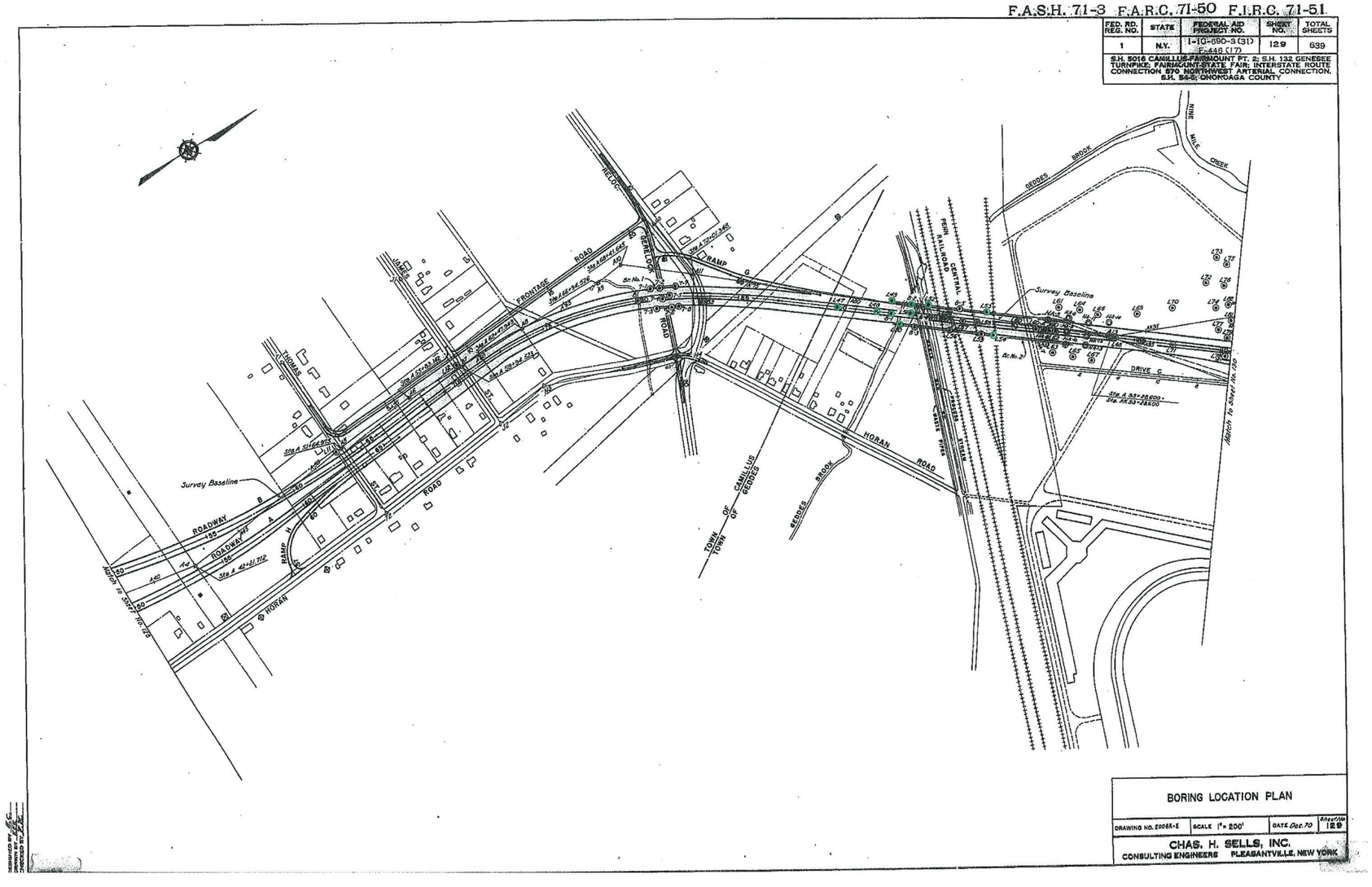
Total Depth: 17.0 Ft
Borehole Depth Units: Ft

Depth Ft	Recov	Sample ID	Blow Count	N Value	PID (ppm)	Mercury (mg/kg)	USCS Code	Soil Description	Sample Method	Stratum
0					0		ML/CL	Hand clear to 5 ft. 0 to 0.5 ft: Dry, loose, dark brown, topsoil and root mass. 0.5 to 5 ft: Dry to moist, brown, SILT and CLAY, little medium to fine gravel, trace coarse sand.		Topsoil
5			2-1-0-1	1	0		ML/CL	Wet, very soft, brown, SILT and Clay, trace fine sand.	2SS-140H	Silt and Clay
			WH-WH-1-2	1	0		PT/OL	0 to 0.17 ft: Wet, very soft, brown, SILT and Clay, trace fine sand (ML/CL). 0.17 to 0.58 ft: Wet, very soft, black, PEAT and organic SILT, organic odor (PT/OL).	2SS-140H	Peat/Org. Sil
10			5-5-5-5	10	0		CL	Moist, medium stiff, red-brown, CLAY, some silt.	2SS-140H	Clay
			6-8-9-9	17	0		CL	Moist, medium stiff, red-brown, CLAY, some silt.	2SS-140H	
			5-5-8-11	13	0		CL	Moist, medium stiff, red-brown, CLAY, some silt.	2SS-140H	
15			10-8-11-8	19	0		CL	Moist, very stiff, red-brown, CLAY, little silt.	2SS-140H	
17.0										

Note: Null fields indicate reading not taken.



2003 map of Soil Boring Locations and Elevations in the vicinity of Geddes Brook IRM



1965 NYSDOT Soil Boring Map

#3

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SOIL MECHANICS
SUBSURFACE EXPLORATION LOG
(CONTRACT)

DISTRICT NO. 3
COUNTY Onondaga
B.S.M. PROJ. NO.
CONTRACT SM 220
PROJECT Camillus-Syracuse Relocation of Route 5, Section A, B, C
QUAD. LOCATION
SOIL SERIES

HOLE NO. L-61
LINE & STA. 90+45
OFFSET 105' LT
DATE, START 4-12-65 SURF. ELEV. 368.9
DATE, FINISH 4-14-65 DEPTH TO WATER Surface
(ALSO DESCRIBE UNDER "REMARKS")

CASING O.D. 2 3/4 I.D. 2 1/4 | WEIGHT OF HAMMER 300 | HAMMER FALL CASING 18" SAMPLER 18"
SAMPLER O.D. 2 I.D. 1 1/2 | INSIDE LENGTH OF SAMPLER 24"

DEPTH BELOW SURFACE	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	CROSS SECTION	MOISTURE	COLOR	FIELD DESCRIPTION OF SOIL AND ROCK	REMARKS
0	2										
	5										
	7										
	9										
	10									CLAY, some silt	
5	10	1	3	3				25			
	10				4			Mst	Br	Elev. 361.9	
	15										
	16										
10	16										
	13	2	2	2				27			
	13				2			Mst	Br	CLAY	
	13										
	8										
	8										
15	8	3	1	1				34			
	8				1			Mst	Br		
	8										
	5										
	6										
20	4	4	1	1				30			
	5				1			Mst	Br		
	8										
	7									Elev. 345.9	
	7										
25	6	5	1	3							
	6				2			Wet	Br		
	8										
	9										
	13										
30	7	6	4	2						Fine SAND, some clay	
	11				2			Wet	Br		
	13										
	12										
	10										
35	8	7	2	1							
	12				2			Wet	Br		
	17										
	21										
	22										
40	28	8	1	1							
	30				1			Wet	Br		
	40										
	39										
	32										
45	29	9	1	2							
	30				4			Wet	Br	Fine SAND	
	32										
	34										
50	39										

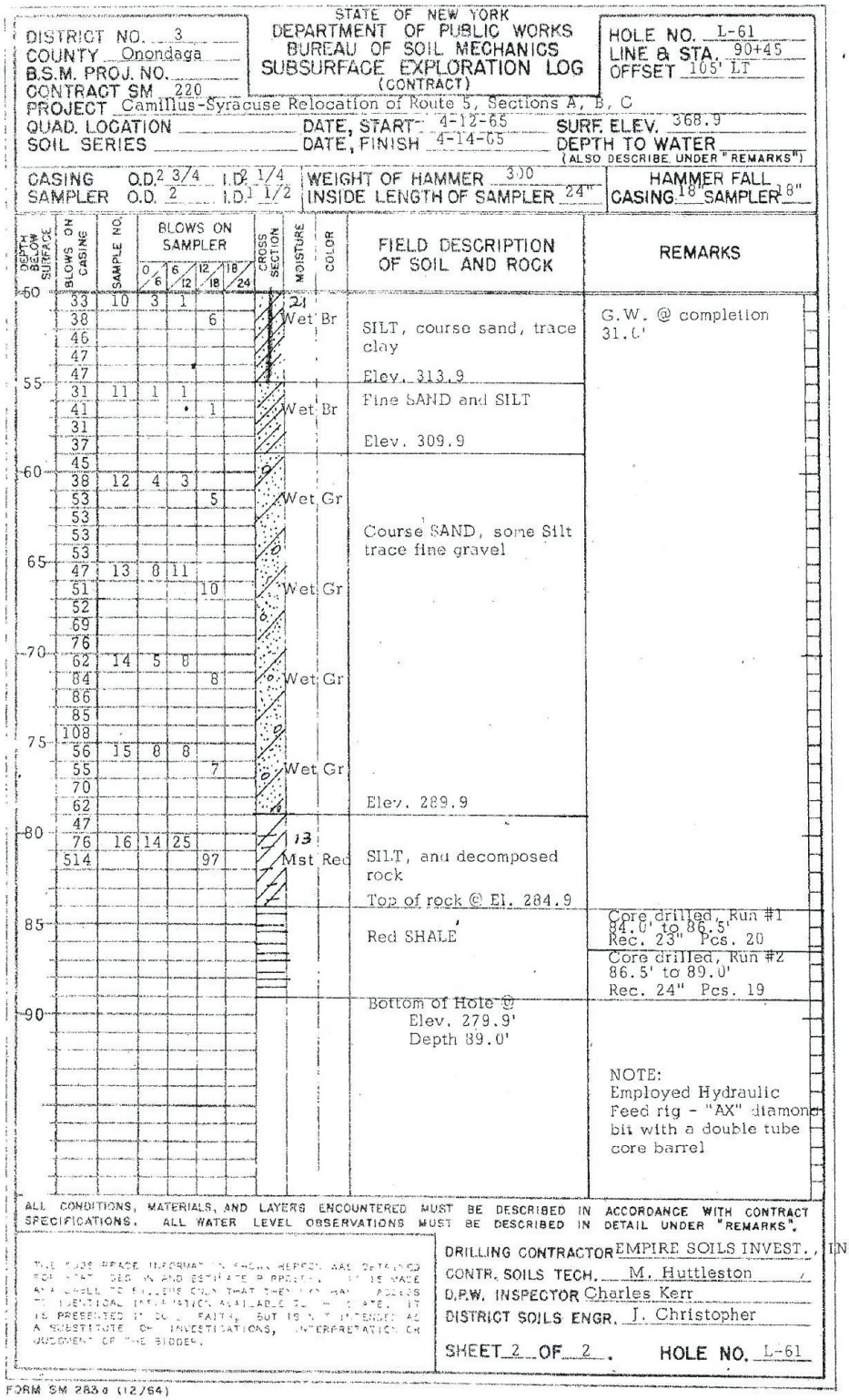
ALL CONDITIONS, MATERIALS, AND LAYERS ENCOUNTERED MUST BE DESCRIBED IN ACCORDANCE WITH CONTRACT SPECIFICATIONS. ALL WATER LEVEL OBSERVATIONS MUST BE DESCRIBED IN DETAIL UNDER "REMARKS".

THE SUBSURFACE INFORMATION SHOWN HEREON WAS OBTAINED FOR STATE DESIGN AND ESTIMATE PURPOSES. IT IS MADE AVAILABLE TO BIDDERS ONLY THAT THEY MAY HAVE ACCESS TO FACTUAL INFORMATION AVAILABLE TO THE STATE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT INTENDED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATIONS OR JUDGMENT OF THE BIDDER.

DRILLING CONTRACTOR EMPIRE SOILS INVEST., INC.
CONTR. SOILS TECH. M. Huttleston
D.P.W. INSPECTOR Charles Kerr
DISTRICT SOILS ENGR. J. Christopher

SHEET 1 OF 2. HOLE NO. L-61

FORM SM 283d (12/64)



STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SOIL MECHANICS
SUBSURFACE EXPLORATION LOG
(CONTRACT)

DISTRICT NO. 3
COUNTY Onondaga
B.S.M. PROJ. NO.
CONTRACT SM 220
PROJECT Camillus-Syracuse Relocation of Route 5, Sections A, B, C
QUAD. LOCATION
SOIL SERIES

HOLE NO. L-61
LINE & STA. 90+45
OFFSET 105' LT

DATE, START 4-12-65
DATE, FINISH 4-14-65
SURF. ELEV. 368.9
DEPTH TO WATER
(ALSO DESCRIBE UNDER "REMARKS")

CASING O.D. 2 3/4 I.D. 2 1/4
SAMPLER O.D. 2 I.D. 1 1/2
WEIGHT OF HAMMER 300
INSIDE LENGTH OF SAMPLER 24"
HAMMER FALL CASING 18" SAMPLER 18"

DEPTH BELOW SURFACE	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	CROSS SECTION	MOISTURE	COLOR	FIELD DESCRIPTION OF SOIL AND ROCK	REMARKS
50	33	10	3	1				21			
	38				6			Wet	Br	SILT, course sand, trace clay	G.W. @ completion 31.0'
	46										
	47									Elev. 313.9	
55	47										
	31	11	1	1							
	41				1			Wet	Br	Fine SAND and SILT	
	31										
	37									Elev. 309.9	
	45										
60	38	12	4	3							
	53				5			Wet	Gr		
	53										
	53									Course SAND, some Silt trace fine gravel	
	53										
65	47	13	8	11							
	51				10			Wet	Gr		
	52										
	69										
	76										
70	62	14	5	8							
	84				8			Wet	Gr		
	86										
	85										
	108										
75	56	15	8	8							
	55				7			Wet	Gr		
	70										
	62									Elev. 289.9	
	47										
80	76	16	14	25				13			
	514				97			Mst	Red	SILT, and decomposed rock	
										Top of rock @ El. 284.9	
85										Red SHALE	Core drilled, Run #1 84.0' to 86.5' Rec. 23" Pcs. 20
											Core drilled, Run #2 86.5' to 89.0' Rec. 24" Pcs. 19
90										Bottom of Hole @ Elev. 279.9' Depth 89.0'	
											NOTE: Employed Hydraulic Feed rig - "AX" diamond bit with a double tube core barrel

ALL CONDITIONS, MATERIALS, AND LAYERS ENCOUNTERED MUST BE DESCRIBED IN ACCORDANCE WITH CONTRACT SPECIFICATIONS. ALL WATER LEVEL OBSERVATIONS MUST BE DESCRIBED IN DETAIL UNDER "REMARKS".

THE SUBSURFACE INFORMATION SHOWN HEREON HAS BEEN OBTAINED FOR STATE USE IN DESIGN AND ESTIMATE PREPARATION. IT IS MADE AVAILABLE TO BIDDERS ONLY THAT THEY MAY HAVE ACCESS TO IDENTICAL DATA WHICH WAS AVAILABLE TO THE STATE. IT IS PRESENTED IN GOOD FAITH, BUT IS NOT TO BE CONSTRUED AS A SUBSTITUTE FOR INVESTIGATIONS, INTERPRETATIONS OR JUDGMENT OF THE BIDDER.

DRILLING CONTRACTOR EMPIRE SOILS INVEST., IN
CONTR. SOILS TECH. M. Huttleston
D.P.W. INSPECTOR Charles Kerr
DISTRICT SOILS ENGR. J. Christopher

SHEET 2 OF 2. HOLE NO. L-61

FORM SM 283a (12/64)

#3

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SOIL MECHANICS
SUBSURFACE EXPLORATION LOG
(CONTRACT)

DISTRICT NO. 3
COUNTY Onondaga
B.S.M. PROJ. NO.
CONTRACT SM 220

HOLE NO. L-62
LINE & STA. 90 + 45
OFFSET 15' RT

PROJECT Camillus-Syracuse Relocation of Route 5, Sections A, B, C
QUAD. LOCATION
SOIL SERIES
DATE, START 4-14-65
DATE, FINISH 4-15-65
SURF. ELEV. 368.6
DEPTH TO WATER Surface (ALSO DESCRIBE UNDER "REMARKS")

CASING O.D. 2 3/4 I.D. 2 1/4
SAMPLER O.D. 2 I.D. 1 1/2
WEIGHT OF HAMMER 300
INSIDE LENGTH OF SAMPLER 24"
HAMMER FALL CASING 18" SAMPLER 18"

DEPTH BELOW SURFACE	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER (0/6, 6/12, 12/18, 18/24)	CROSS SECTION	MOISTURE	COLOR	FIELD DESCRIPTION OF SOIL AND ROCK	REMARKS
0	6						TOPSOIL (1')	
	8							Water top of ground
	8							
	8							
	8				28			
5	6	1	2 1		Mst	Br	SILT and CLAY	
	8		2					
	9							
	9							
10	9				29		Elev. 358.6'	
	8	2	1 1		Wet	Br		
	12		1					
	10							
	12							
15	11				28		CLAY	
	8	3	1 1		Wet	Br		
	11		1					
	12							
	10						Elev. 349.6'	
20	14				11			
	9	4	1 1		Wet	Br		
	10		1				CLAY, some fine sand	
	15							
	13							
25	14							
	11	5	2 2		Wet	Br		
	13		2					
	15							
	20						Elev. 340.6'	
30	21							
	9	6	2 2		Wet	Br		
	12		3				Fine SAND, some clay	
	17							
	15							
35	17							
	8	7	5 4		Wet	Br		
	10		4					
	14							
	22						Elev. 330.6'	
40	20							
	11	8	3 2		Wet	Br		
	17		2					
	15						Fine SAND, some silt	
	21							
45	22							
	18	9	3 3		Wet	Br		
	29		3					
	29							
	31							
50	37						Elev. 318.6'	

ALL CONDITIONS, MATERIALS, AND LAYERS ENCOUNTERED MUST BE DESCRIBED IN ACCORDANCE WITH CONTRACT SPECIFICATIONS. ALL WATER LEVEL OBSERVATIONS MUST BE DESCRIBED IN DETAIL UNDER "REMARKS".

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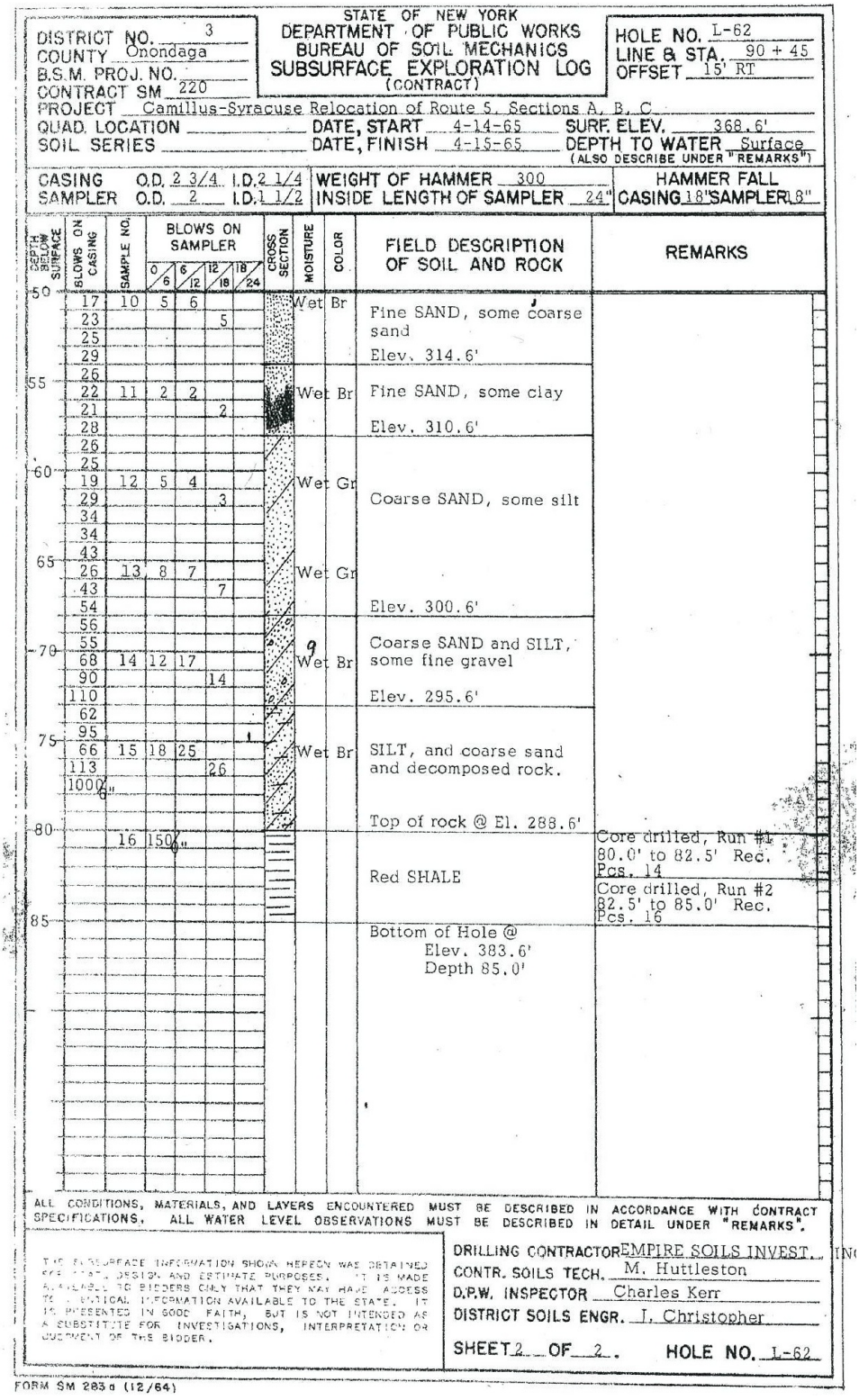
DRILLING CONTRACTOR EMPIRE SOILS INVEST., INC
CONTR. SOILS TECH. M. Huttleston
D.P.W. INSPECTOR Charles Kerr
DISTRICT SOILS ENGR. J. Christopher

SHEET 1 OF 2. HOLE NO. L-62

FORM SM 283a (12/64)



STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF SOIL MECHANICS
SUBSURFACE EXPLORATION LOG
(CONTRACT)

DISTRICT NO. 3
COUNTY Onondaga
B.S.M. PROJ. NO.
CONTRACT SM 220
PROJECT Camillus-Syracuse Relocation of Route 5, Sections A, B, C
QUAD. LOCATION
SOIL SERIES

HOLE NO. L-62
LINE & STA. 90 + 45
OFFSET 15' RT

DATE, START 4-14-65
DATE, FINISH 4-15-65
SURF. ELEV. 368.6'
DEPTH TO WATER Surface (ALSO DESCRIBE UNDER "REMARKS")

CASING O.D. 2 3/4 I.D. 2 1/4
SAMPLER O.D. 2 I.D. 1 1/2
WEIGHT OF HAMMER 300
INSIDE LENGTH OF SAMPLER 24"
HAMMER FALL CASING 18" SAMPLER 18"

DEPTH BELOW SURFACE	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	CROSS SECTION	MOISTURE	COLOR	FIELD DESCRIPTION OF SOIL AND ROCK	REMARKS
50	17	10	5	6				Wet	Br	Fine SAND, some coarse sand	
	23				5						
	25									Elev. 314.6'	
	29										
55	26										
	22	11	2	2				Wet	Br	Fine SAND, some clay	
	21				2						
	28									Elev. 310.6'	
	26										
	25										
60	19	12	5	4				Wet	Gr	Coarse SAND, some silt	
	29				3						
	34										
	34										
	43										
65	26	13	8	7				Wet	Gr		
	43				7						
	54									Elev. 300.6'	
	56										
	55										
70	68	14	12	17				Wet	Br	Coarse SAND and SILT, some fine gravel	
	90				14						
	110									Elev. 295.6'	
	62										
	95										
75	66	15	18	25				Wet	Br	SILT, and coarse sand and decomposed rock.	
	113				26						
	100/6"									Top of rock @ El. 288.6'	
80		16	150/6"								Core drilled, Run #1 80.0' to 82.5' Rec. Pcs. 14
										Red SHALE	Core drilled, Run #2 82.5' to 85.0' Rec. Pcs. 16
85										Bottom of Hole @ Elev. 383.6' Depth 85.0'	

ALL CONDITIONS, MATERIALS, AND LAYERS ENCOUNTERED MUST BE DESCRIBED IN ACCORDANCE WITH CONTRACT SPECIFICATIONS. ALL WATER LEVEL OBSERVATIONS MUST BE DESCRIBED IN DETAIL UNDER "REMARKS".

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DRILLING CONTRACTOR EMPIRE SOILS INVEST., INC
CONTR. SOILS TECH. M. Huttleston
D.P.W. INSPECTOR Charles Kerr
DISTRICT SOILS ENGR. I. Christopher

SHEET 2 OF 2. HOLE NO. L-62

FORM SM 283a (12/64)