

Atlantic Richfield Company

Paul G. Johnson
Operations Project Manager

Remediation Management
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June 5, 2019

Jessica LaClair
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7016

**RE: Revised Removal Limits for OU-1 and OU-2; Response to Comments
Former Anaconda Plant (a.k.a. Harbor at Hastings Site) Site No. 3-60-022
Hastings-On-Hudson, New York**

Dear Ms. LaClair:

On behalf of Atlantic Richfield Company (AR), please find attached the revised removal limits for Operable Unit 1 (OU-1) and Operable Unit 1 (OU-2), as requested in your response letter dated March 13, 2018, to the Preliminary Design Report (PD Report) submitted November 29, 2017. Also included as requested are responses to the first group of comments in the March 13, 2018 letter.

A. Revised Removal Limits

Following submittal of the Preliminary Design Report, additional investigations were completed in OU-1 and OU-2 in 2017 and 2018 in accordance with the Remedial Design Work Plan (RDWP, 2014) and the New York State Department of Environmental Conservation's (NYSDEC) conditional approval of the Pre-Design Investigation Data Summary Report (PDI DSR, August 2015). These additional investigation results were reported in the PDI DSR Amendment (May 2018) and the Supplement to the PDI DSR Amendment (February 2019). These submittals included revised removal limits for OU-1 and OU-2 based on the investigation findings, which limits were approved by NYSDEC in a letter dated May 6, 2019 and confirmed during our monthly project call of May 14, 2019. Relevant drawings from the Preliminary Design Report were revised based on these revised removal limits.

A revised cover sheet and a total of 19 drawings are attached:

OU-1: C5, C5F, C10, C10A, C10B, C10C, C13, C13A – C13G, and C13H (new)

OU-2: D1, D18 (new), D19 (new), D20 (new).

These drawings have been prepared pursuant to the above and to NYSDEC's OU1 Amended Record of Decision (ROD) and OU2 ROD; (NYSDEC 2012a and 2012b), as well as the Amended Order on Consent dated November 6, 2013. These drawings have been prepared in substantial conformance with the NYSDEC Department of Environmental Remediation Technical Guidance for Site Investigation and Remediation (DER-10; NYSDEC 2010a).

B. Response to First Group of Comments in March 13, 2018 NYSDEC Letter

Following are the comments from the March 13, 2018 letter, followed by ARs responses in bold:

Comments requiring revisions to Preliminary Design Report

1. Based on the approved Remedial Design Work Plan the Preliminary Design should have included an update to the groundwater model, hydrodynamic analysis and sea level rise analysis. Provide these documents as soon as they are completed.
 - a. **The updated groundwater model was submitted as *Appendix B of the Preliminary Design Report – Groundwater Model* on February 8, 2019 and was approved by NYSDEC in a letter dated May 6, 2019.**
 - b. **Hydrodynamic analysis was submitted as the *Hastings on Hudson Hydrodynamic Study Part 2 Morphodynamic Modeling Technical Report* dated December 12, 2018. This report was approved by NYSDEC in a letter dated May 6, 2019.**
 - c. **Sea level rise analysis - The November 2017 PD Report, Section 1.6.2 referenced the 6NYCRR Part 490, Projected Sea-level Rise analysis and associated range for the Lower Hudson-New York City Region, and the following text and added table will be included in the Final Design.**

“Projected sea level rise, based on the ClimAid projections, has been incorporated into 6NYCRR Part 490.4, which lists sea level rise projections for the (a) tidal Mid-Hudson Region, (b) Lower Hudson-New York City Region (region encompassing the Site) and (c) Long Island Region. The tables in subdivisions (a), (b), and (c) of this section establish projected sea-level rise for the specified geographic region relative to the baseline level. “Baseline level” is defined as the average level of the surface of marine or tidal water over the years 2000 through 2004. The following table from Part 490.4 lists the established sea level rise projections for the Site region:

(b) New York City/Lower Hudson

Region Time Interval	Low Projection	Low-Medium Projection	Medium Projection	High-Medium Projection	High Projection
2020s	2 inches	4 inches	6 inches	8 inches	10 inches
2050s	8 inches	11 inches	16 inches	21 inches	30 inches
2080s	13 inches	18 inches	29 inches	39 inches	58 inches
2100	15 inches	22 inches	36 inches	50 inches	75 inches

2. Section 4.10, DNAPL Investigation in NEA – An investigation work plan must be submitted and approved prior to the investigation beginning.

Agreed. The following sentence will be added to the Final Design: “A DNAPL investigation work plan will be submitted and approved prior to the investigation beginning.”

3. Section 4.11 Sediment Removal and Isolation Cap, 1st paragraph, last sentence – A dredged area must be backfilled once it is confirmed that the excavation limits were met in order to limit the amount of resuspension that could occur.

Agreed. The following sentence will be added to the Final Design: “All dredged areas requiring backfill or isolation cap will be backfilled once it is confirmed that the excavation limits were met in order to limit the amount of resuspension that could occur.”

4. Section 4.11, Sediment Removal and Isolation Cap, 4th paragraph – Isolation caps will be required for all backfilled areas prior to demobilization at the end of a given construction season.

Agreed. The following sentence will be added to the Final Design: “The Contractor will be required to complete isolation cap placement over open dredge areas requiring an isolation cap prior to demobilization at the end of a given construction season.”

5. Drawing D-2 – Revise turbidity controls layout if necessary based on the excavations in Kinnally Cove.

The draft layout of turbidity controls for Old Marina and Kinnally Cove are presented in attached Drawing D-18. Turbidity control layout may be modified in the Final Design depending on planned excavation sequencing.

If you have any questions or comments on this submittal, please feel free to contact me at (832) 619-5825.

Sincerely,



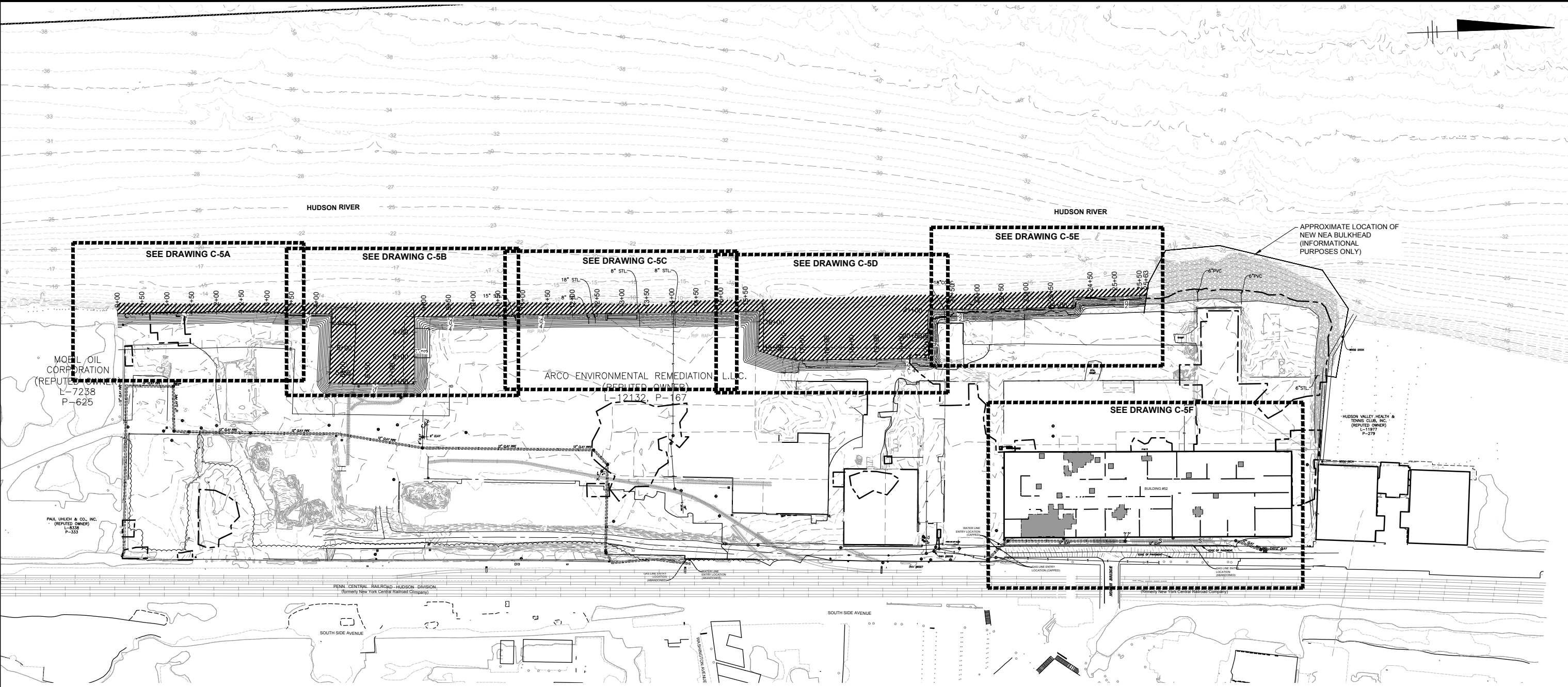
Paul G. Johnson
Operations Project Manager

Enclosures

cc: Francis Frobel, Hastings-On-Hudson
Karl Coplan, Pace/Riverkeeper
File

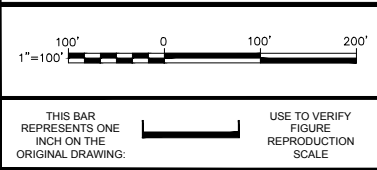
ecc: Jacquelyn Nealon, New York State Department of Health
Maureen Schuck, New York State Department of Health
Kevin Farrar, NYSDEC
John Armitage, NYSDEC
Benjamin Conlon, Esq. NYSDEC, Office of General Counsel
Mark Chertok, Hastings-On-Hudson
Jim Lucari, BP
Michael Daneker, Arnold & Porter
Raymond Kapp, Arcadis
Marc Cicalese, Sovereign Consulting Inc.

CITY: SYRACUSE NY DIV/GROUP/ENVCAD DB: E. KRAHMER LD: G. STEINBERGER PIC: M. GRAVELDING PM: E. BIUPEAU LTR: ON*OFF*REF
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 XREFS: H0H-TITLEBLOCK-CDL
 01701X01
 Proposed excavation limits-grade breaks 10-17
 H0H-ContRenovallimits



- LEGEND:**
- STATIONING LINE
 - EXISTING PILE FIELDS
 - PROPOSED SLOPED SHORELINE EXCAVATION CONTOUR (1-FOOT INTERVAL)
 - APPROXIMATE SHORELINE STRUCTURE DEMOLITION AREA
 - PCB-IMPACTED CONCRETE REMOVAL AREAS
 - EPOXIED JOINTS (TO BE REMOVED)
 - PROPOSED EXCAVATION LIMITS

NOTE:
 1. REFER TO DRAWING G-1 FOR ADDITIONAL BASEMAP AND LEGEND INFORMATION.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name MARK O. GRAVELDING		
Professional Engineer's No. 069985-1		
State NY	Date Signed	Project Mgr.
Designed by	Drawn by	Checked by

NOT FOR CONSTRUCTION

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ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK
 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
GENERAL DEMOLITION PLAN

ARCADIS Project No. B0001701.0002.00134
Date JUNE 2019
ARCADIS ONE LINCOLN CENTER 110 W. FAYETTE ST, STE 300 Syracuse, NY 13202 Tel: 315.446.9120

C-5

CITY: SYRACUSE NY DIV/GROUP-ENVCAD DB: E. KRAHMER LD: G. STEINBERGER PIC: M. GRAVELDING PM: E. DIEVENDOERF TM: E. BUPEAU LVR: ON*OFF+REF*
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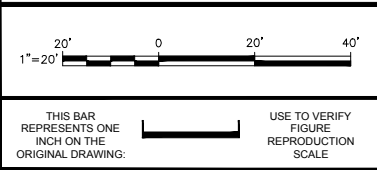


LEGEND:

- PCB-IMPACTED CONCRETE REMOVAL AREAS
- EPOXIED JOINTS (TO BE REMOVED)

NOTES:

- REFER TO DRAWING G-1 FOR ADDITIONAL BASEMAP AND LEGEND INFORMATION.
- ADDITIONAL STRUCTURES AND UNDERGROUND FACILITIES MAY BE PRESENT THAT ARE NOT SHOWN OR INDICATED.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name
MARK O. GRAVELDING
 Professional Engineer's No.
 069985-1
 State
 NY
 Date Signed
 Project Mgr.
 Designed by
 Drawn by
 Checked by

NOT FOR CONSTRUCTION

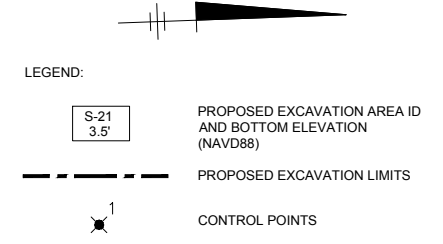
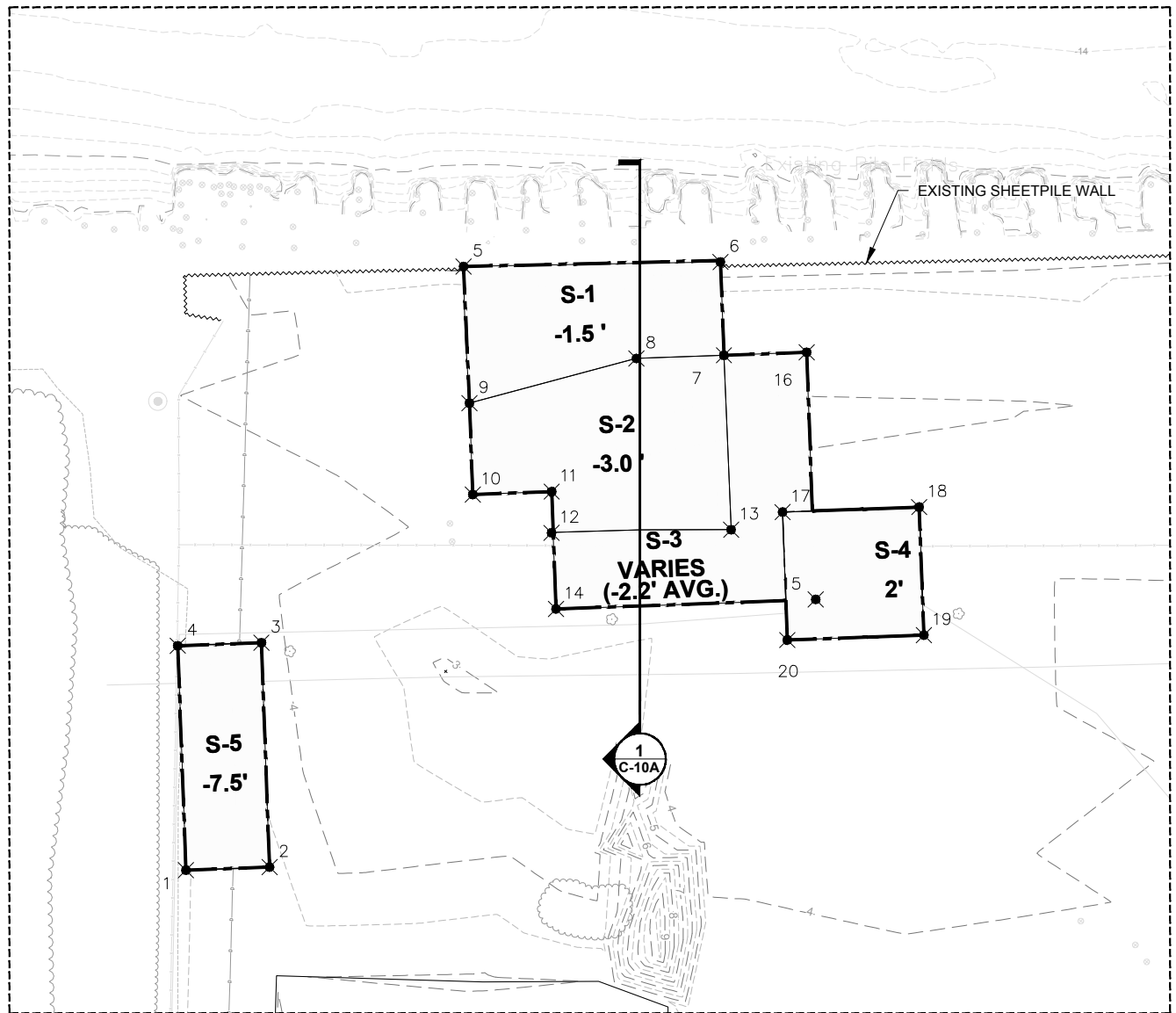
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 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
FORMER BUILDING #52 CONCRETE DEMOLITION PLAN

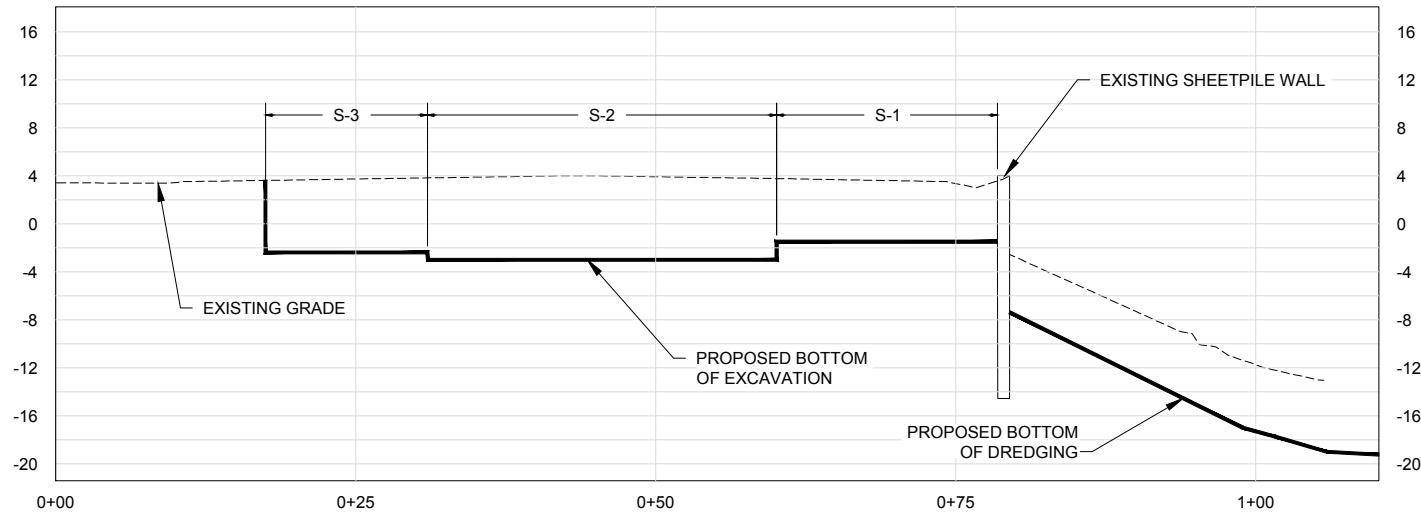
ARCADIS Project No.
 B0001701.0002.00134
 Date
 JUNE 2019
 ARCADIS
 ONE LINCOLN CENTER
 110 W. FAYETTE ST, STE 300
 Syracuse, NY 13202
 Tel: 315.446.9120

C-5F

CITY: SYRACUSE NY DIV/GROUP/ENVCAD DB: E. KRAHMER, K.SARTORI LD: G. STEINBERGER PIC: K. G. DIAS PM: M. GRAVELDING TM: N. FRANGIS LYRON: OFFICE REF: C:\BIM\OneDrive - ARCADIS\BIM_360 Docs\ANA - BP AMCCO CORPORATION\HARBOR AT HASTINGS OUT OF SCOPE\2019\B0001701.000401-DWG\H0H-DRG10_ABC-1701-OU1-(S).DWG LAYOUT: C-10A SAVED: 6/5/2019 3:34 PM ACADVER: 23.0S (LMS TECH) PAGES: 23 OF 23 PLOTSTYLETABLE: PLOTTED: 6/5/2019 3:34 PM BY: SARTORI, KATHERINE

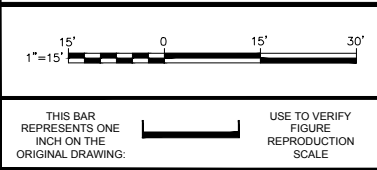


CONTROL POINT	NORTHING	EASTING
1	785986.14	661531.56
2	786001.02	661531.56
3	786001.02	661491.62
4	785986.14	661491.62
5	786039.40	661426.09
6	786085.12	661443.55
7	786085.12	661443.55
8	786069.53	661443.55
9	786039.57	661450.40
10	786039.57	661466.66
11	786053.61	661466.66
12	786053.31	661473.99
13	786085.28	661474.59
14	786053.61	661487.54
15	786099.84	661487.54
16	786099.84	661443.55
17	786094.53	661471.79
18	786118.85	661471.79
19	786118.85	661494.56
20	786094.53	661494.56



EXCAVATION AREA	BOTTOM ELEVATION (NAVD88)
S-1	-1.5'
S-2	-3.0'
S-3	VARIES (12.2' AVG.)
S-4	2'
S-5	-7.5'

- NOTES:
- BACKFILL WILL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS THAT WILL BE INCLUDED AS PART OF THE FINAL DESIGN.
 - SEQUENCE OF EXCAVATION AND NEARSHORE DREDGING WILL BE DETERMINED BY THE REMEDIAL CONTRACTOR. EXISTING SHEETPILE WALL MAY BE REMOVED PRIOR TO EXCAVATION.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name
MARK O. GRAVELDING
Professional Engineer's No.
069985-1
State: NY Date Signed: Project Mgr.:
Designed by: Drawn by: Checked by:

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HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
EXCAVATION OU1 SOUTH PLAN AND CROSS SECTIONS (1 OF 3)

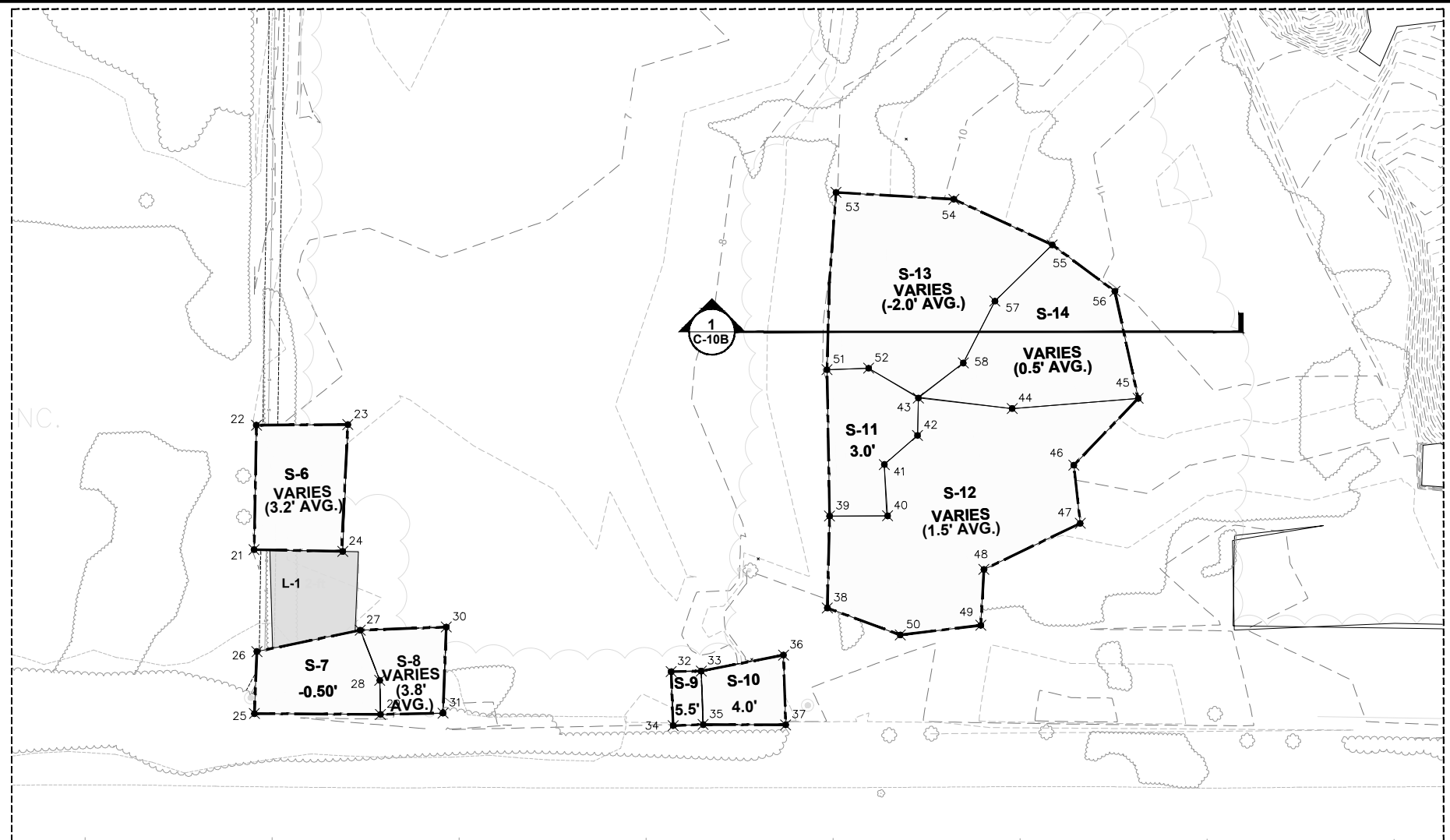
ARCADIS Project No. B0001701.0002.00134
Date: MAY 2019
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C-10A

CITY: SYRACUSE NY DIV/GROUP/ENVCAD DB: E. KRAHMER, K.SARTORI LD: G. STEINBERGER PIC: K. G. DIAS PM: M. GRAVELDING TM: N.FRANZIS LYRON: OFFICE REF: C:\BIM\OneDrive - ARCADIS\BIM 360 Docs\ANA - BP AMOCO CORPORATION\HARBOR AT HASTINGS OUT OF SCOPE\2019\B0001701.000401-DWG\H01-DR10_ABC-1701-OU1-S.dwg LAYOUT: C-10B ACADVER: 23.05 (LMS TECH) PAGES: 23 PLOTSTYLETABLE: PLOTTED: 6/5/2019 1:51 PM BY: SARTORI, KATHERINE

REFERENCES: IMAGES: H01H-TitleBlock-CLD 01701X01 Proposed excavation limits-grade breaks 10-17 C-10a section C-10b section C-10B section 01701X13 control points(S)

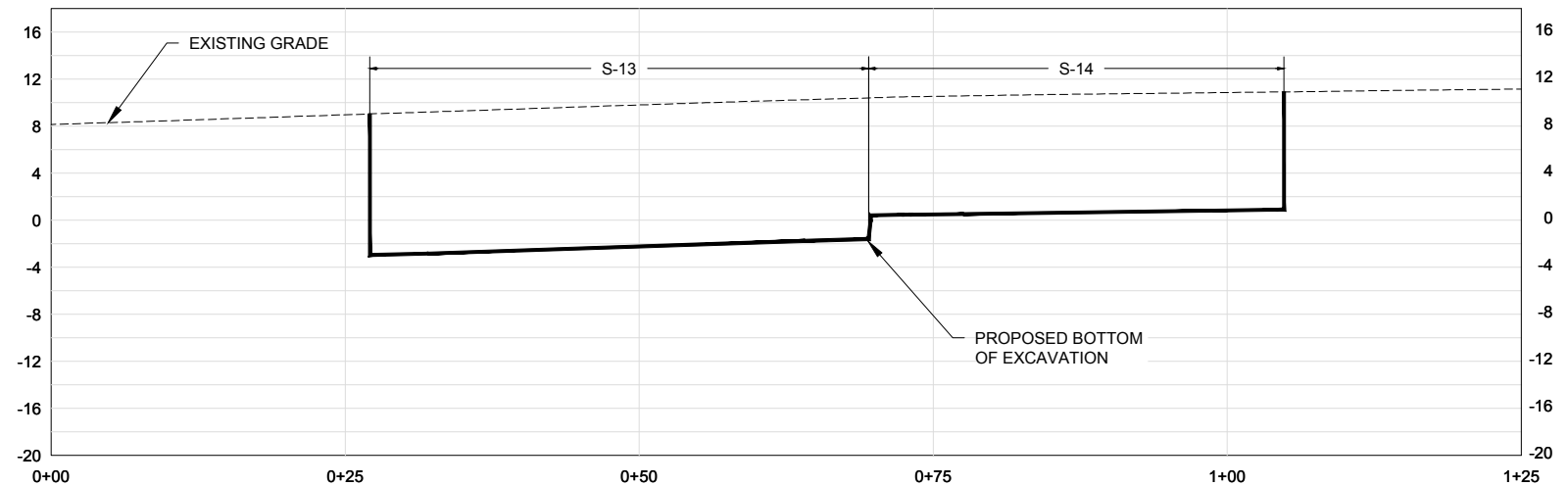
EXCAVATION AREA	BOTTOM ELEVATION
S-6	VARIES (3.2' AVG.)
S-7	-0.50'
S-8	VARIES (3.8' AVG.)
S-9	5.5'
S-10	4.0'
S-11	3.0'
S-12	VARIES (1.5' AVG.)
S-13	VARIES (-2.0' AVG.)
S-14	VARIES (-0.5' AVG.)



LEGEND:

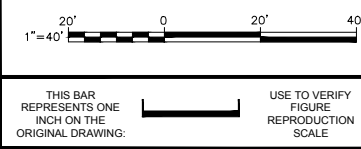
- S-21
3.5' PROPOSED EXCAVATION AREA ID AND BOTTOM ELEVATION (NAVD88)
- PROPOSED EXCAVATION LIMITS
- 21 CONTROL POINTS
- LEAD REMOVAL AREA (SEE NOTE 2)

CONTROL POINT	NORTHING	EASTING
21	785967.32	661875.46
22	785969.17	661842.21
23	785993.61	661842.96
24	785990.99	661876.78
25	785965.81	661919.23
26	785967.08	661902.69
27	785994.90	661897.99
28	785999.63	661911.60
29	785999.50	661920.69
30	786017.92	661898.00
31	786016.20	661920.95
32	786077.58	661912.10
33	786085.61	661912.25
34	786077.58	661926.55
35	786085.61	661926.55
36	786107.75	661908.76
37	786107.66	661927.43
38	786119.93	661896.62
39	786121.42	661872.10
40	786136.93	661872.60
41	786136.56	661858.87
42	786145.70	661851.40
43	786146.29	661841.42
44	786171.26	661845.16
45	786205.02	661843.67
46	786187.18	661860.88
47	786188.32	661876.48
48	786162.13	661887.85
49	786160.76	661902.74
50	786139.14	661904.54
51	786122.16	661832.97
52	786133.28	661832.97
53	786126.29	661785.70
54	786157.72	661788.68
55	786183.55	661801.84
56	786199.84	661814.83
57	786167.69	661816.29
58	786158.64	661832.50



CROSS SECTION 1 C-10B

- NOTES:
- BACKFILL WILL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS THAT WILL BE INCLUDED AS PART OF THE FINAL DESIGN.
 - "L" EXCAVATION AREAS REPRESENT 2-FT DEEP LEAD REMOVAL AREAS.



No.	Date	Revisions	By	Ckd

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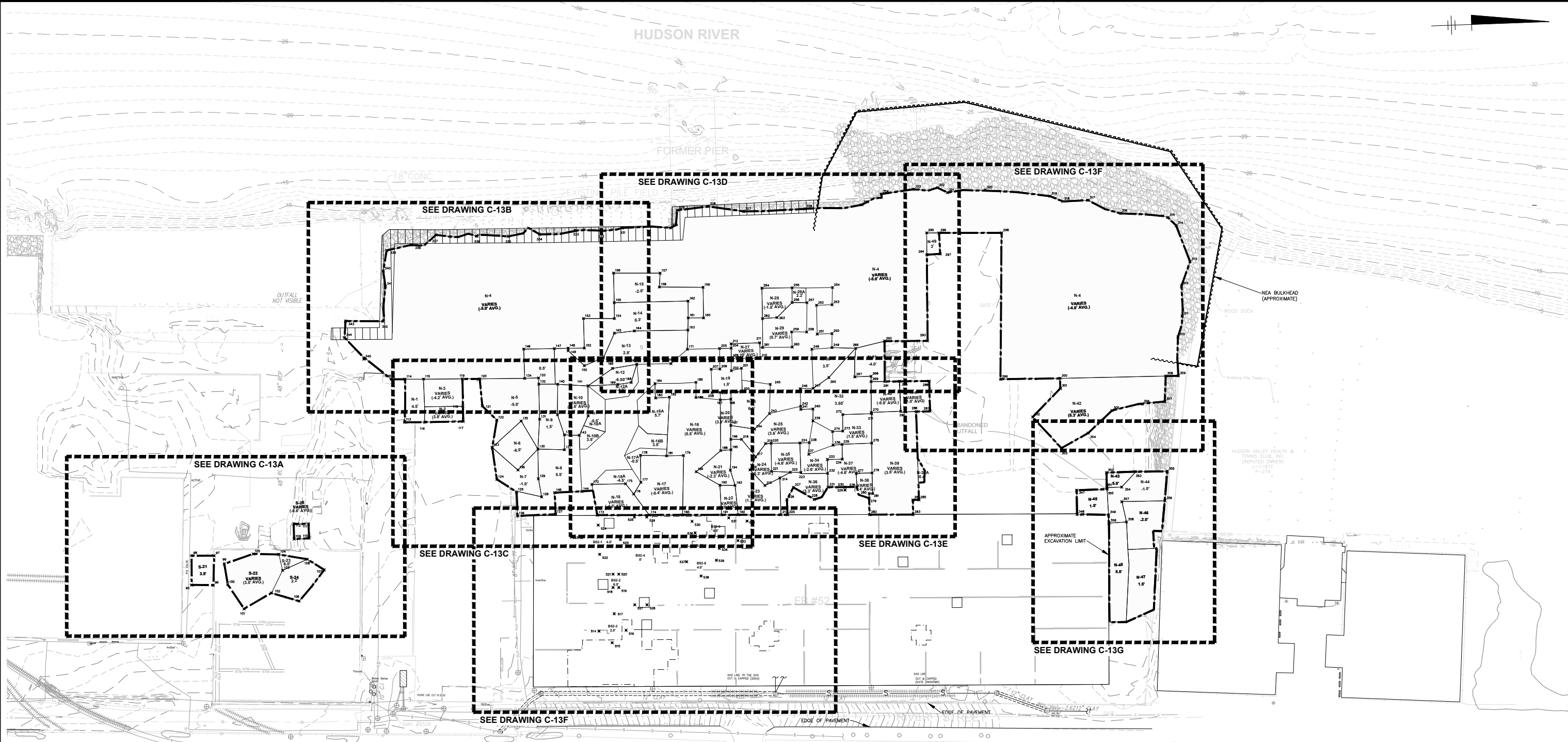
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 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
EXCAVATION OU1 SOUTH PLAN AND CROSS SECTIONS (2 OF 3)

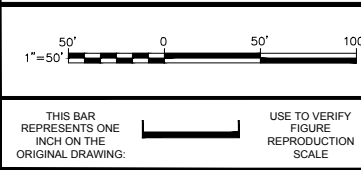
ARCADIS Project No. B0001701.0002.00134
Date MAY 2019
ARCADIS of NY, Inc. One Lincoln Center 110 W. Fayette St., Suite 300 Syracuse, NY 13202 Tel: 315-446-9120

C-10B

CITY: SYRACUSE NY DW:GROUP-ENVCAD DR: E. KRAHMER LD: G. STEINBERGER PIC: M. GRAVELDING PM: E. DIENVENDORF TM: E. BUPEAU LTR: ONE*OFF+REF
 C:\BIM\OpenDrive - ARCADIS\BIM_360 Docs\ANA - BP AMOCO CORPORATION\HARBOR AT HASTINGS OUT OF SCOPE\2019\0001701-000401-DWG\HOH-DR-C13-ABCD-EPG-1701-01-1(N).dwg LAYOUT: C-13 SAVED: 6/5/2019 12:01 PM ACADVER: 23.05 (LMS TECH) PAGES: 1-4
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IMAGES:
 HOH-TITLEBLOCK-CDL
 01701X01
 Proposed excavation limits grade breaks 10-17
 C-13A
 C-13B
 C-13C
 C-13D
 C-13E
 C-13F
 C-13G
 Section 13C
 Section 13E
 01701X13
 control points(N)
 HOH-ContRemovalLimits



No.	Date	Revisions	By	Ckd

Professional Engineer's Name
MARK O. GRAVELDING
 Professional Engineer's No.
 069985-1
 State NY Date Signed Project Mgr.
 Designed by Drawn by Checked by

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ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK
 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
EXCAVATION OU1 NORTH

ARCADIS Project No.
 B0001701.0002.00134
 Date
 JUNE 2019
 ARCADIS
 ONE LINCOLN CENTER
 110 W. FAYETTE ST, STE 300
 Syracuse, NY 13202
 Tel: 315.446.9120

C-13

LEGEND:

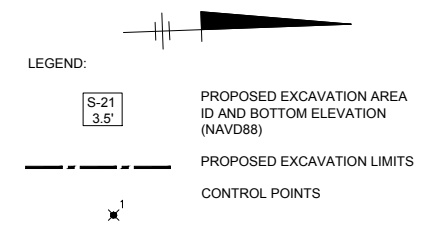
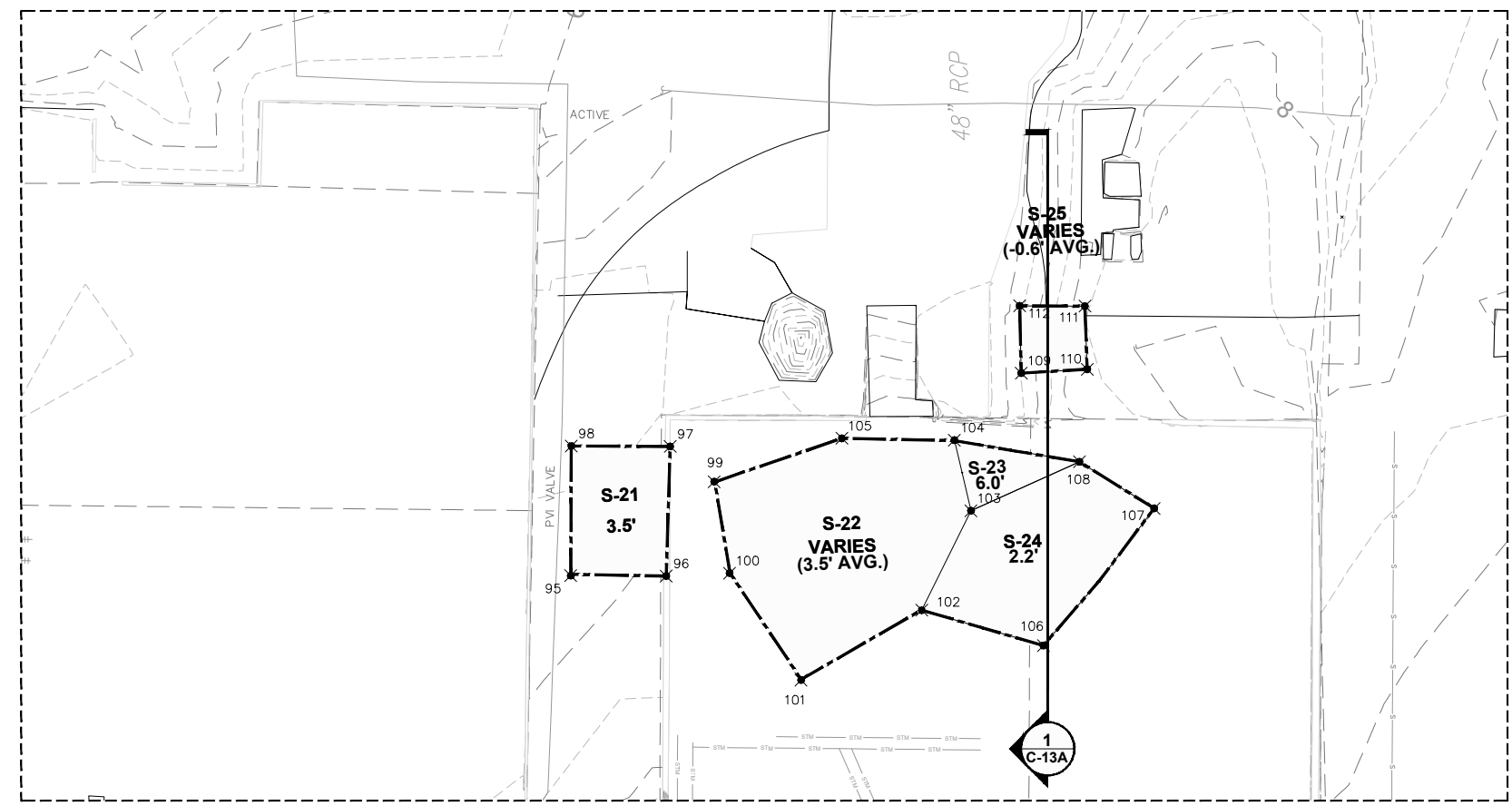
- S-21 3.5'
- PROPOSED EXCAVATION AREA ID AND BOTTOM ELEVATION (NAVD88)
- PROPOSED EXCAVATION LIMITS
- TO BE PERFORMED IN CONJUNCTION WITH NEAR SHORE DREDGING

NOTES:

1. REFER TO DRAWING G-1 FOR ADDITIONAL LEGEND AND BASEMAP INFORMATION.
2. DEWATERING APPROACH, BARRIER WALLS, AND EXCAVATION SLOPING WILL BE DESCRIBED IN FINAL DESIGN AND ON ADDITIONAL DRAWINGS NOT INCLUDED IN THIS SUBMITTAL.
3. CONCRETE SLABS WITHIN EXCAVATION AREAS WILL BE DEMOLISHED AND REMOVED AS PART OF EXCAVATION ACTIVITIES.
4. REFER TO DRAWING C-6 AND C-7 FOR EXISTING UTILITIES. CONTRACTOR SHALL IDENTIFY ANY UTILITIES DISCOVERED TO REMOVE/ABANDON, SUBMIT TO ENGINEER FOR APPROVAL.
5. EXCAVATION AREAS SHALL BE BACKFILLED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

CITY: SYRACUSE NY DW:GROUP-ENVCAD DB: E. KRAHMER LD: G. STEINBERGER PIC: M. GRAVELDING PM: E. BIUPEAU LVR: ON*OFF+REF*
 C:\BIM\OpenDrive - ARCADIS\BIM_360 Docs\ANA - BP AMOCO CORPORATION\HARBOR AT HASTINGS OUT OF SCOPE\2019\B0001701.000401-DWG\HOH-DRC13_ARCDEPG-1701-0U1-(N).dwg LAYOUT: C-13A SAVED: 6/5/2019 12:01 PM ACADVER: 23.0S (LMS TECH) PAGES: 1 OF 8
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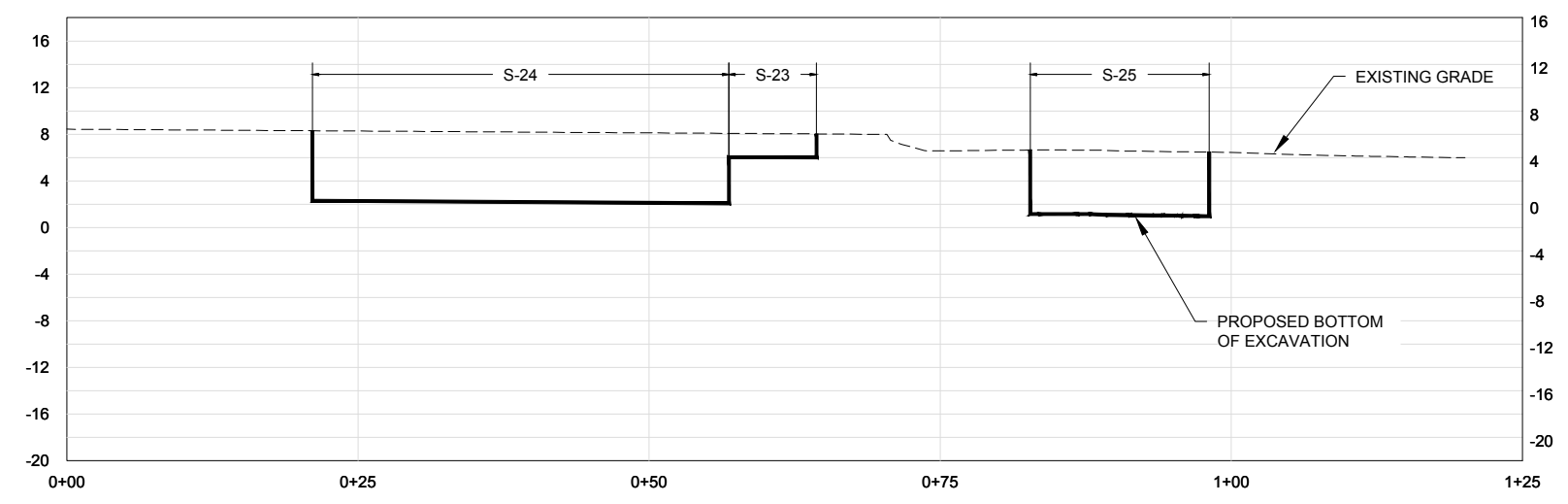
REFERENCES:
 HOH-TITLEBLOCK-CDL
 01701X01
 Proposed excavation limits-grade breaks 10-17
 C-13A
 C-13B
 C-13D
 C-13E section
 C-13G
 Section 13C
 Section 13E
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 control points(N)
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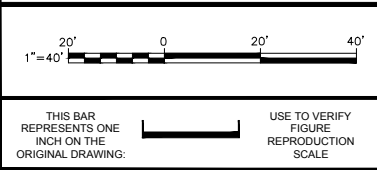
NOTES:
 1. BACKFILL WILL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS THAT WILL BE INCLUDED AS PART OF THE FINAL DESIGN.

CONTROL POINT	NORTHING	EASTING
95	787404.61	661827.29
96	787426.51	661828.18
97	787428.48	661798.48
98	787405.82	661797.56
99	787438.30	661806.93
100	787441.05	661828.05
101	787456.55	661853.17
102	787484.80	661838.17
103	787496.93	661815.74
104	787493.72	661799.42
105	787467.92	661798.06
106	787512.40	661847.28
107	787538.95	661816.74
108	787522.22	661805.42
109	787509.61	661784.60
110	787524.77	661784.27
111	787524.77	661769.79
112	787509.80	661769.17

EXCAVATION AREA	BOTTOM ELEVATION (NAVD88)
S-21	3.5'
S-22	VARIES (3.5' AVE.)
S-23	6.0'
S-24	2.2'
S-25	VARIES (-1.5' AVE)



CROSS SECTION 1 C-13A



No.	Date	Revisions	By	Ckd

Professional Engineer's Name
MARK O. GRAVELDING
 Professional Engineer's No.
 069985-1
 State: NY Date Signed: Project Mgr:
 Designed by: Drawn by: Checked by:

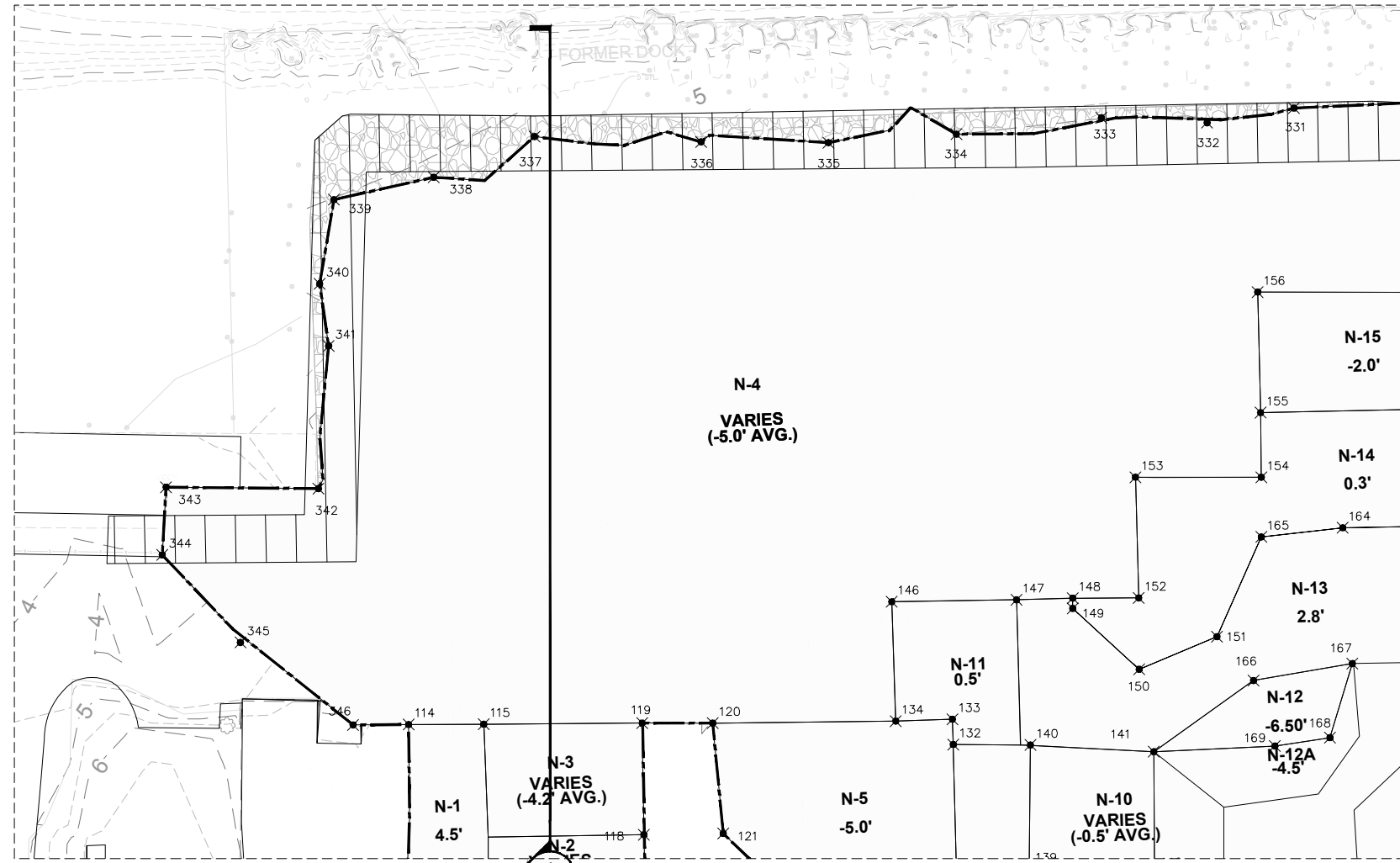
NOT FOR CONSTRUCTION

ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK
 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
EXCAVATION OU1 NORTH PLAN AND CROSS SECTIONS (1 OF 8)

ARCADIS Project No.
 B0001701.0002.00134
 Date
 JUNE 2019
 ARCADIS
 ONE LINCOLN CENTER
 110 W. FAYETTE ST, STE 300
 Syracuse, NY 13202
 Tel: 315.446.9120

C-13A

CITY: SYRACUSE NY DIV/GROUP/ENICAD DR: E. KRAHMER LD: G. STEINBERGER PIC: M. GRAVELDING PM: E. DIEVENDORF TM: E. BUPEAU LTR: ONE*OFF*REF
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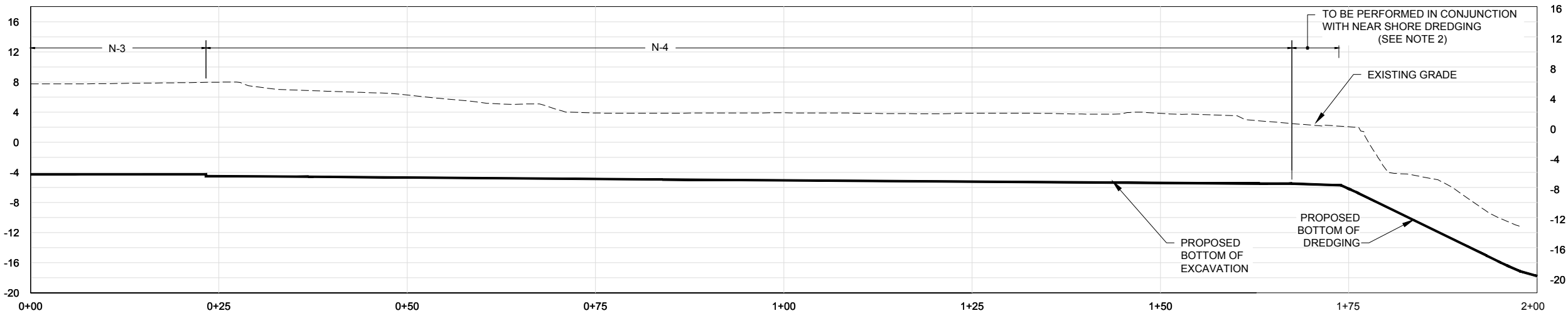
CONTROL POINT	NORTHING	EASTING
114	787627.41	661627.56
115	787646.03	661628.17
118	787684.66	661656.95
119	787685.25	661629.33
120	787702.72	661629.97
121	787704.33	661657.37
132	787762.07	661637.43
133	787762.09	661631.18
134	787748.05	661631.13
140	787781.18	661638.25
141	787811.66	661641.02
146	787748.13	661601.56
147	787779.05	661602.21
148	787792.98	661602.30
149	787792.88	661604.85
150	787808.78	661620.50
151	787828.34	661613.14
152	787809.31	661602.84
153	787809.60	661572.96
154	787840.74	661574.11
155	787841.16	661558.11
156	787841.52	661528.27
164	787860.45	661587.33
165	787840.21	661588.86
166	787836.99	661624.32
167	787861.60	661621.02
168	787855.39	661639.15
169	787841.69	661640.72
331	787852.17	661483.06
332	787830.54	661485.91
333	787804.39	661483.73
334	787768.36	661486.48
335	787733.04	661487.00

LEGEND:

- S-21
3.5' PROPOSED EXCAVATION AREA ID AND BOTTOM ELEVATION (NAVD88)
- PROPOSED EXCAVATION LIMITS
- x CONTROL POINTS
- [] TO BE PERFORMED IN CONJUNCTION WITH NEAR SHORE DREDGING (SEE NOTE 2)

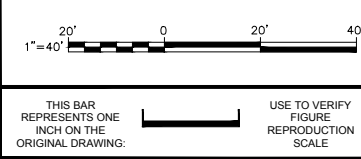
- NOTES:
- BACKFILL WILL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS THAT WILL BE INCLUDED AS PART OF THE FINAL DESIGN.
 - SEQUENCE OF EXCAVATION AND NEARSHORE DREDGING WILL BE DETERMINED BY THE REMEDIAL CONTRACTOR. EXCAVATION LIMITS AND SLOPING SHOWN ARE PRELIMINARY AND MAY BE ADJUSTED DURING FINAL DESIGN.

CONTROL POINT	NORTHING	EASTING
335	787733.04	661487.00
336	787705.08	661486.08
337	787663.90	661483.26
338	787638.58	661492.42
339	787613.68	661497.06
340	787609.38	661517.76
341	787611.04	661533.20
342	787607.22	661568.39
343	787569.51	661566.68
344	787567.96	661583.39
345	787586.52	661605.75
346	787613.67	661627.17



CROSS SECTION 1 C-13B

XREFS: HOH-TITLEBLOCK-CDL
 01701X01
 Proposed excavation limits-grade breaks 10-17
 C-13A
 C-13B
 C-13D
 C-13E section
 C-13G
 Section 13C
 Section 13E
 01701X13
 control points(N)
 HOH-ConRemovalLimits



No.	Date	Revisions	By	Ckd

Professional Engineer's Name MARK O. GRAVELDING		
Professional Engineer's No. 069985-1		
State NY	Date Signed	Project Mgr.
Designed by	Drawn by	Checked by

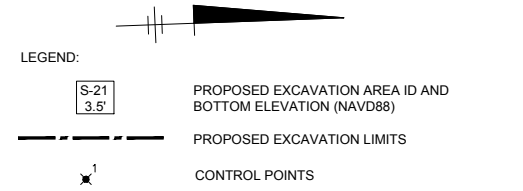
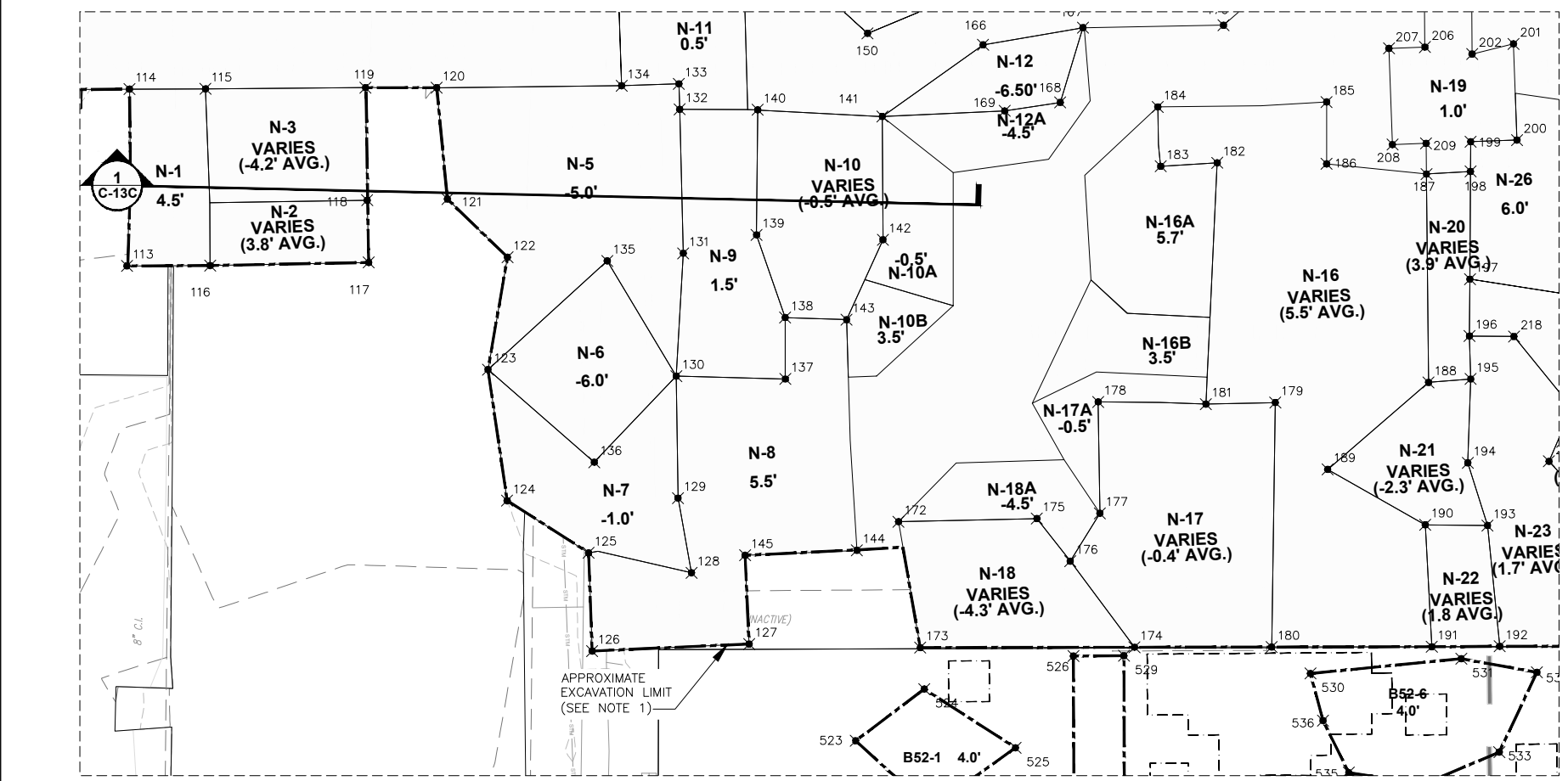
NOT FOR CONSTRUCTION

ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK
 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
EXCAVATION OU1 NORTH PLAN AND CROSS SECTION (2 OF 8)

ARCADIS Project No.
 B0001701.0002.00134
 Date
 JUNE 2019
 ARCADIS
 ONE LINCOLN CENTER
 110 W. FAYETTE ST, STE 300
 Syracuse, NY 13202
 Tel: 315.446.9120

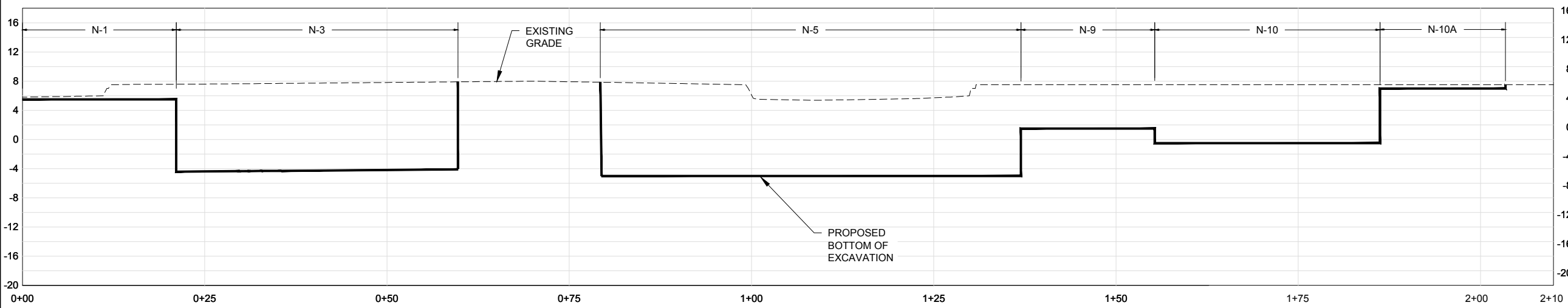
C-13B

CITY: SYRACUSE NY DIV/GROUP/ENVCAD DB: E. KRAHMER LD: G. STEINBERGER PIC: M. GRAVELDING PM: E. BIURAU LTR: ON*OFF*REF
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 PLOTTED: 6/5/2019 3:41 PM BY: SARTORI, KATHERINE



CONTROL POINT	NORTHING	EASTING
113	787625.21	661670.90
114	787627.41	661627.56
115	787646.03	661628.17
116	787645.61	661671.55
117	787684.49	661672.22
118	787684.66	661656.95
119	787685.25	661629.33
120	787702.72	661629.97
121	787704.33	661657.37
122	787718.53	661672.17
123	787712.76	661699.55
124	787716.27	661731.88
125	787735.77	661745.39
126	787735.76	661769.51
127	787774.29	661769.19
128	787760.82	661751.20
129	787758.17	661732.77
130	787758.85	661702.84
131	787761.64	661672.78
132	787762.07	661637.43
133	787762.09	661631.18

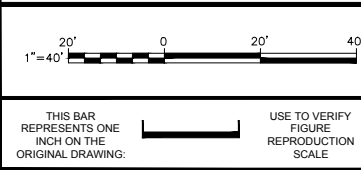
CONTROL POINT	NORTHING	EASTING
134	787748.05	661631.13
135	787742.94	661673.97
136	787737.97	661723.22
137	787785.54	661704.51
138	787786.05	661689.45
139	787779.77	661668.91
140	787781.18	661638.25
141	787811.66	661641.02
142	787810.71	661671.23
143	787801.07	661690.52
144	787801.55	661747.18
145	787774.11	661747.40
150	787808.78	661620.50
166	787836.99	661624.32
167	787861.60	661621.02
168	787855.39	661639.15
169	787841.69	661640.72
170	787896.09	661621.68
172	787812.00	661740.53
173	787816.19	661714.60
174	787868.70	661773.43
175	787845.93	661741.00
176	787853.73	661751.74
177	787861.42	661740.26
178	787862.00	661712.94
179	787905.40	661714.68
180	787902.32	661774.59
181	787888.38	661714.43
182	787893.31	661655.36
183	787879.43	661655.71
184	787879.26	661641.13
185	787920.66	661641.43
186	787920.10	661656.61
187	787944.50	661659.99
188	787943.12	661711.11
189	787917.64	661731.53
190	787941.07	661746.00
191	787941.58	661775.96
192	787958.23	661776.47
193	787956.30	661746.73
194	787952.03	661731.19
195	787953.49	661710.65
196	787953.59	661700.10
197	787954.20	661686.16
198	787955.30	661659.75
199	787955.61	661652.46
200	787966.97	661652.46
201	787966.97	661628.84
202	787956.76	661630.97
206	787945.25	661628.84
207	787936.42	661628.84
208	787936.42	661652.46
209	787944.68	661652.46
216	787971.94	661731.54
218	787964.48	661700.61



CROSS SECTION 1 C-13C

- NOTES:
- BACKFILL WILL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS THAT WILL BE INCLUDED AS PART OF THE FINAL DESIGN.
 - EXCAVATION BOTTOM ELEVATION SUMMARY FOR ALL NORTHERN AREAS PRESENTED ON SHEETS C-13F AND C-13G.

XREFS: HOH-TITLEBLOCK-CDL
 01701X01
 Proposed excavation limits-grade breaks 10-17
 C-13A
 C-13B
 C-13C
 C-13D
 C-13E section
 C-13F section
 Section 13C
 Section 13E
 01701X13
 control points(N)
 HOH-ContRemovalLimits



No.	Date	Revisions	By	Ckd

Professional Engineer's Name
MARK O. GRAVELDING
 Professional Engineer's No.
 069985-1
 State NY Date Signed Project Mgr.
 Designed by Drawn by Checked by

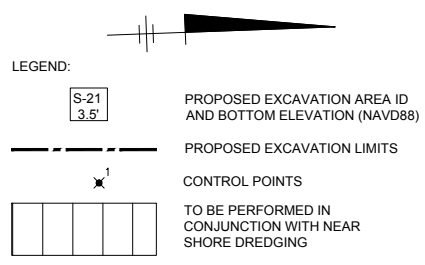
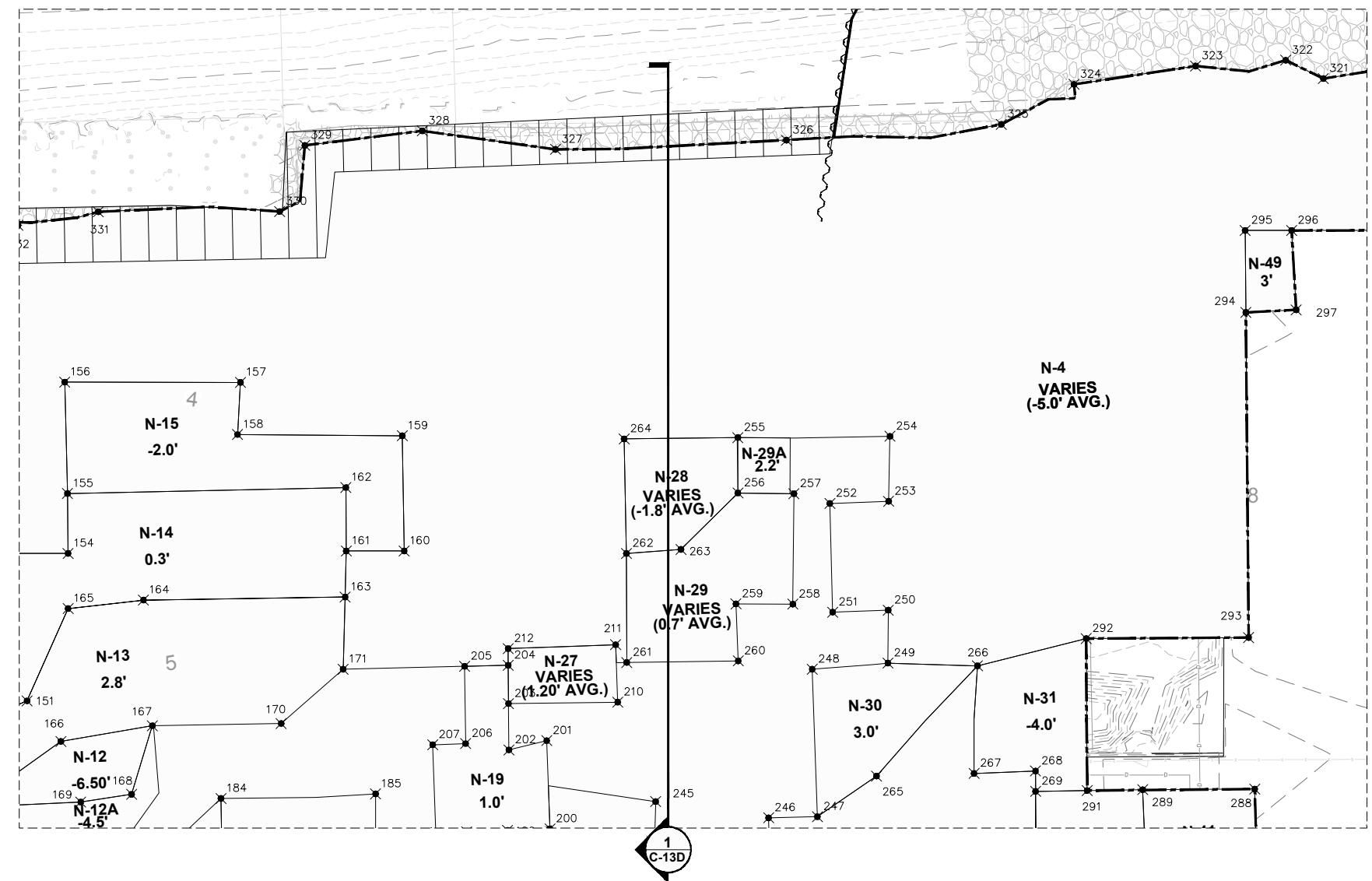
NOT FOR CONSTRUCTION

ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK
 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
EXCAVATION OU1 NORTH PLAN AND CROSS SECTIONS (3 OF 8)

ARCADIS Project No.
 B0001701.0002.00134
 Date
 JUNE 2019
 ARCADIS
 ONE LINCOLN CENTER
 110 W. FAYETTE ST, STE 300
 Syracuse, NY 13202
 Tel: 315.446.9120

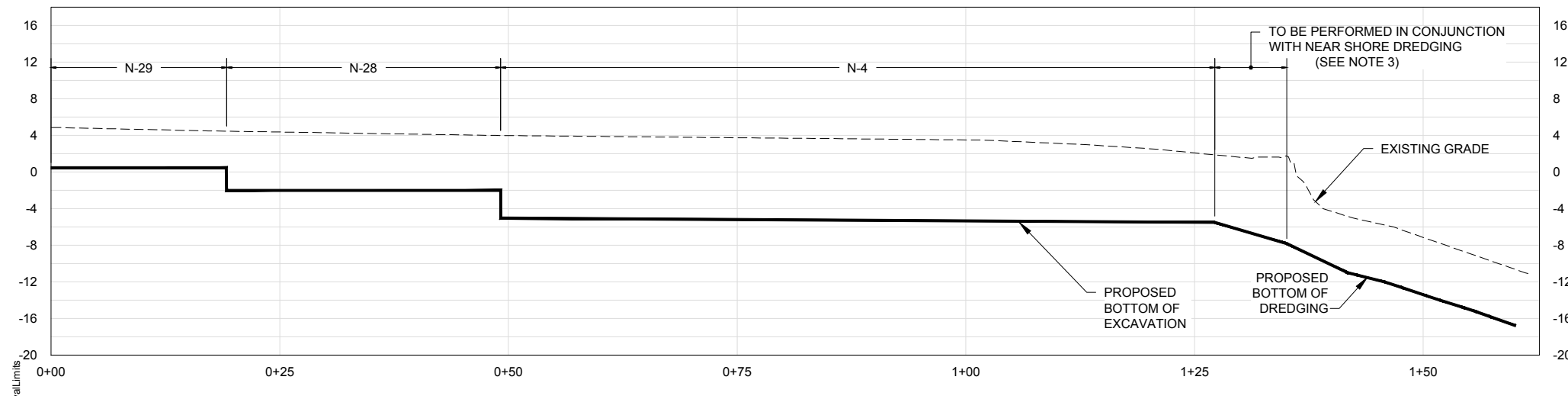
C-13C

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 XREFS: HOH-TITLEBLOCK-CDL 01701X01 Proposed excavation limits-grade breaks 10-17
 C-13A C-13B C-13C C-13D C-13E C-13F section Section 13C Section 13E 01701X13 control points(N) HOH-ConRemovalLimits

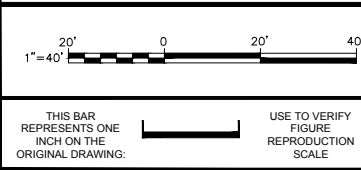


CONTROL POINT	NORTHING	EASTING
151	787828.34	661613.14
154	787840.74	661574.11
155	787841.16	661558.11
156	787841.52	661528.27
157	787888.53	661530.07
158	787887.24	661543.98
159	787931.30	661545.93
160	787930.68	661576.73
161	787915.18	661576.19
162	787915.70	661559.21
163	787914.44	661588.49
164	787860.45	661587.33
165	787840.21	661588.86
166	787836.99	661624.32
167	787861.60	661621.02
168	787855.39	661639.15
169	787841.69	661640.72
170	787896.09	661621.68
171	787913.19	661607.76
184	787879.26	661641.13
185	787920.66	661641.43
201	787966.97	661628.84
202	787956.76	661630.97

CONTROL POINT	NORTHING	EASTING
203	787957.10	661618.58
204	787957.39	661608.32
205	787945.73	661608.18
206	787945.25	661628.84
207	787936.42	661628.84
210	787986.33	661619.26
211	787986.34	661603.87
212	787957.54	661603.87
245	787995.51	661646.21
246	788025.57	661651.65
247	788038.64	661651.83
248	788038.69	661612.34
249	788059.00	661611.45
250	788059.60	661597.30
251	788044.71	661597.30
252	788045.02	661568.20
253	788060.76	661568.20
254	788061.76	661550.82
255	788021.07	661549.69
256	788020.54	661564.50
257	788035.51	661565.24
258	788034.14	661594.76
259	788018.92	661594.14
260	788018.98	661609.40
261	787989.14	661608.73
262	787990.11	661579.60
263	788004.74	661579.03
264	787990.62	661548.93
265	788054.85	661641.55
266	788082.94	661613.05
267	788080.97	661641.78
268	788097.41	661641.74
269	788097.24	661647.18
288	788155.90	661648.71
289	788125.93	661647.78
291	788111.06	661647.47
292	788112.29	661606.82
293	788155.75	661608.14
294	788158.18	661521.19
295	788158.79	661499.26
296	788171.23	661499.70
297	788171.67	661520.98
321	788181.20	661459.41
322	788171.32	661454.13
323	788147.15	661454.80
324	788114.44	661458.52
325	788094.59	661468.50
326	788036.97	661470.66
327	787975.07	661470.84
328	787939.64	661464.59
329	787908.06	661467.32
330	787900.69	661484.76
331	787852.17	661483.06



- NOTES:
- BACKFILL WILL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS THAT WILL BE INCLUDED AS PART OF THE FINAL DESIGN.
 - EXCAVATION BOTTOM ELEVATION SUMMARY FOR ALL NORTHERN AREAS PRESENTED ON SHEETS C-13F AND C-13G.
 - SEQUENCE OF EXCAVATION AND NEARSHORE DREDGING WILL BE DETERMINED BY THE REMEDIAL CONTRACTOR. EXCAVATION LIMITS AND SLOPING SHOWN.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name
MARK O. GRAVELDING
 Professional Engineer's No.
 069985-1
 State NY Date Signed Project Mgr.
 Designed by Drawn by Checked by

NOT FOR CONSTRUCTION

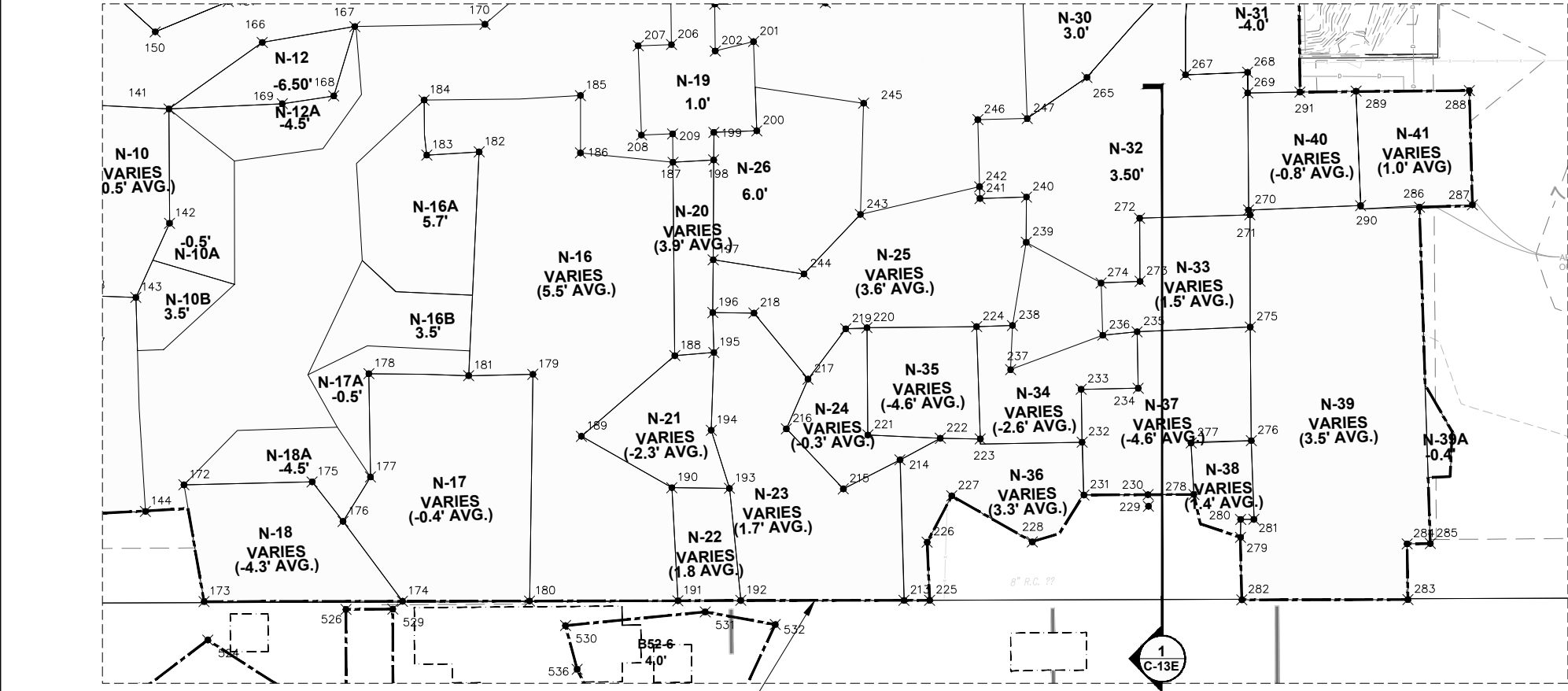
ARCADIS Design & Consultancy for natural and built assets
 ARCADIS OF NEW YORK, INC.
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK
 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
EXCAVATION OU1 NORTH PLAN AND CROSS SECTIONS (4 OF 8)

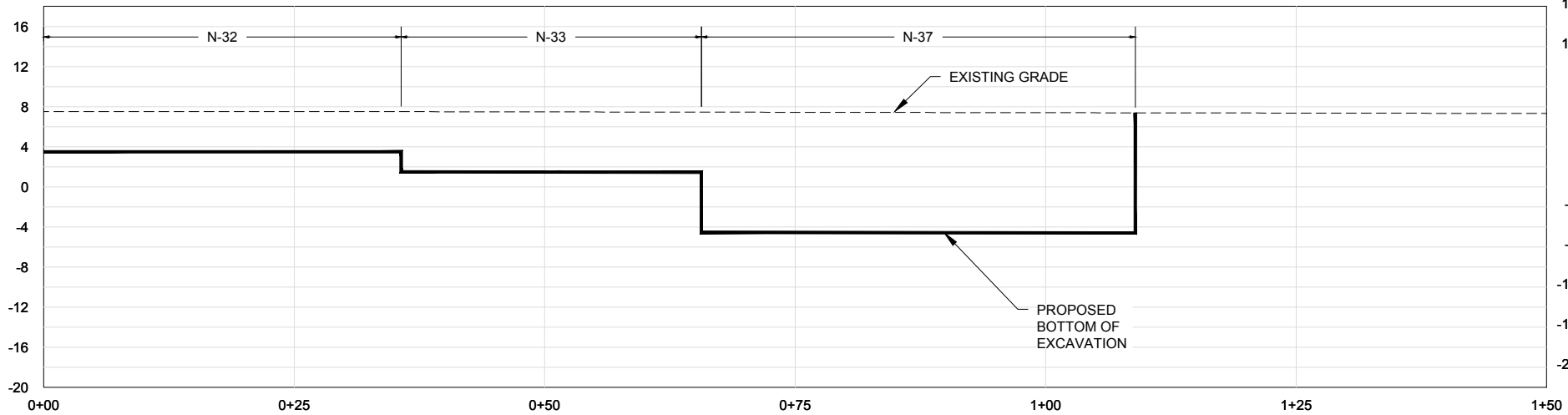
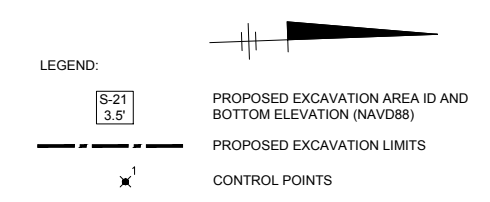
ARCADIS Project No. B0001701.0002.00134
 Date JUNE 2019
 ARCADIS ONE LINCOLN CENTER 110 W. FAYETTE ST, STE 300 Syracuse, NY 13202 Tel: 315.446.9120

C-13D

CITY: SYRACUSE NY DIV/GROUP/ENVCAD DB: E. KRAHMER LD: G. STEINBERGER PIC: M. GRAVELDING PM: E. BIJEAU LTR: ONE*OFF*REF
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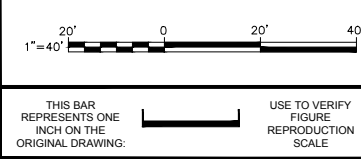


CONTROL POINT	NORTHING	EASTING
141	787811.66	661641.02
142	787810.71	661671.23
143	787801.07	661690.52
144	787801.55	661747.18
150	787808.78	661620.50
166	787836.99	661624.32
167	787861.60	661621.02
168	787855.39	661639.15
169	787841.69	661640.72
170	787896.09	661621.68
172	787812.00	661740.53
173	787816.19	661771.60
174	787868.70	661773.43
175	787845.93	661741.00
176	787853.73	661751.74
177	787861.42	661740.26
178	787862.00	661712.94
179	787905.40	661714.68
180	787902.32	661774.59
181	787888.38	661714.43
182	787893.31	661655.36
183	787879.43	661655.71
184	787879.26	661641.13
185	787920.66	661641.43
186	787920.10	661656.61
187	787944.50	661659.99
188	787943.12	661711.11
189	787917.64	661731.53
190	787941.07	661746.00
191	787941.58	661775.96
192	787958.23	661776.47
193	787956.30	661746.73
194	787952.03	661731.19
195	787953.49	661710.65
196	787953.59	661700.10
197	787954.20	661686.16
198	787955.30	661659.75
199	787955.61	661652.46
200	787966.97	661652.46
201	787966.97	661628.84
202	787956.76	661630.97
203	787957.10	661618.58
206	787945.25	661628.84
207	787936.42	661628.84
208	787936.42	661652.46
209	787944.68	661652.46
213	788001.40	661778.04
214	788001.70	661740.84
215	787986.43	661747.97
216	787971.94	661731.54
217	787978.14	661718.61
218	787964.48	661700.61
219	787988.62	661705.68
220	787994.25	661705.59
221	787993.45	661733.95
222	788012.57	661735.52
223	788023.14	661736.08
224	788023.26	661706.36
225	788008.20	661778.27
226	788008.09	661762.87
227	788015.05	661750.86
228	788035.93	661763.81
229	788066.99	661755.51
230	788066.99	661752.45
231	788050.02	661751.90
232	788050.06	661737.93
233	788050.31	661723.94
234	788065.41	661724.21
235	788065.69	661709.27
236	788056.56	661709.84
237	788031.84	661718.06
238	788032.75	661706.40
239	788037.21	661684.53
240	788037.70	661672.59
241	788025.38	661672.52
242	788025.40	661669.40
243	787993.60	661675.58
244	787978.08	661690.77
245	787995.51	661646.21
246	788025.57	661651.65
247	788038.64	661651.83
248	788054.85	661641.55
249	788080.97	661641.78
250	788097.41	661641.74
251	788097.24	661647.18
252	788096.35	661678.16
253	788096.65	661679.45
254	788067.44	661679.28
255	788066.94	661695.97
256	788056.61	661696.03
257	788095.66	661709.12
258	788094.84	661739.14
259	788078.88	661739.19
260	788079.12	661752.84
261	788091.06	661764.61
262	788091.26	661759.89
263	788094.76	661759.99
264	788090.80	661781.14
265	788134.75	661782.69
266	788135.07	661767.95
267	788141.20	661768.09
268	788141.57	661679.06
269	788155.62	661678.96
270	788155.90	661648.71
271	788125.93	661647.78
272	788126.03	661678.06
273	788111.06	661647.47



- NOTES:
- ADDITIONAL HORIZONTAL DELINEATION SAMPLING WILL BE COMPLETED TO FINALIZE EXCAVATION LIMIT ALONG BUILDING 52 LIMIT. THE FINAL LIMITS SHALL BE INCLUDED IN THE FINAL DESIGN BASED ON THE RESULTS OF THE WORK CURRENTLY BEING PERFORMED.
 - EXCAVATION BOTTOM ELEVATION SUMMARY FOR ALL NORTHERN AREAS PRESENTED ON SHEETS C-13F AND C-13G.
 - BACKFILL WILL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS THAT WILL BE INCLUDED AS PART OF THE FINAL DESIGN.

XREFS: HOH-TITLEBLOCK-CDL
 01701X01
 Proposed excavation limits-grade breaks 10-17
 C-13A
 C-13B
 C-13C
 C-13F section
 C-13G
 Section 13C
 Section 13E
 01701X13
 control points(N)
 HOH-ContRemovalLimits



No.	Date	Revisions	By	Ckd

NOT FOR CONSTRUCTION

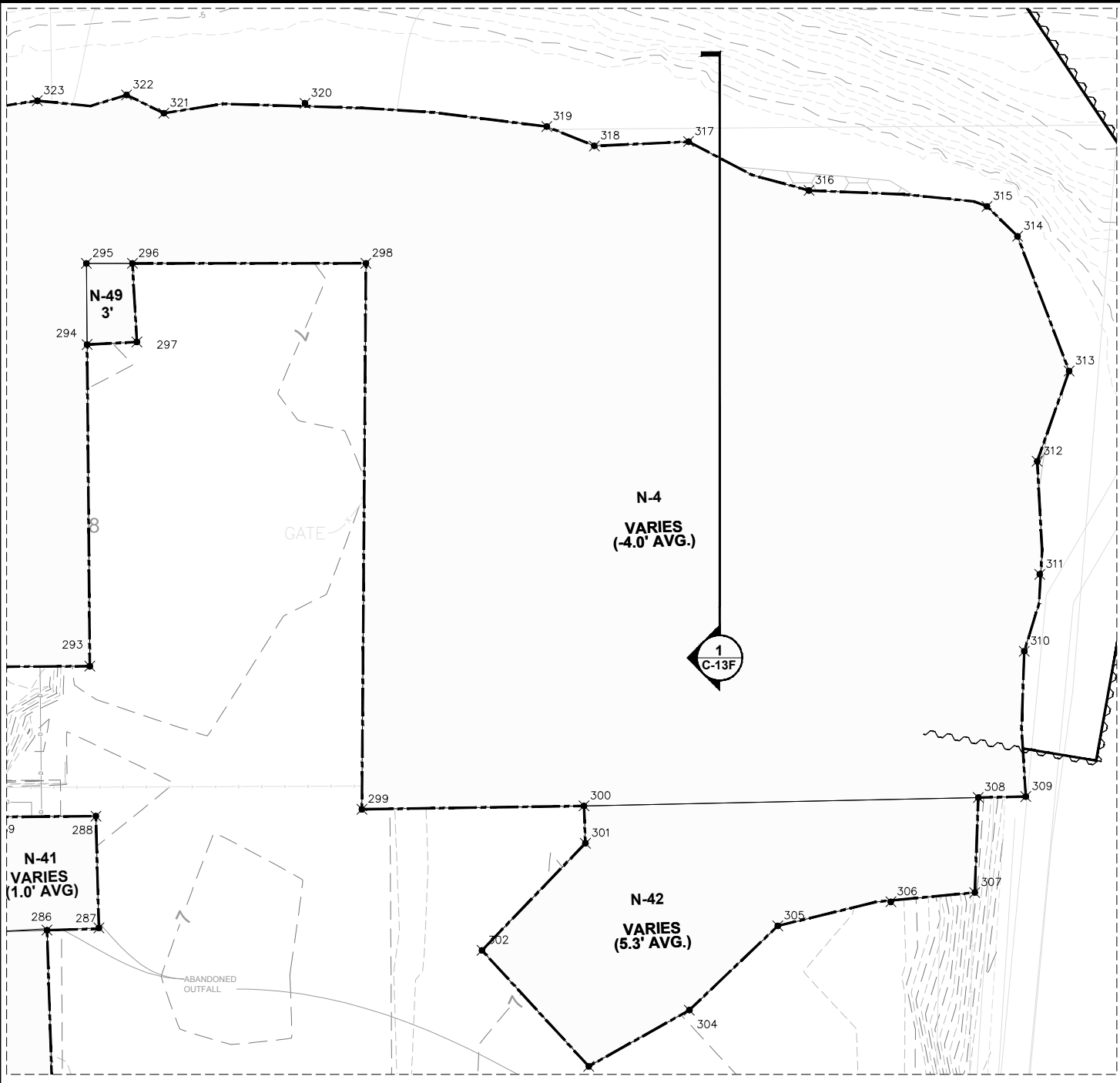
ARCADIS Design & Consultancy
 for natural and built assets
 ARCADIS OF NEW YORK, INC.
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK
 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
EXCAVATION OU1 NORTH PLAN AND CROSS SECTIONS (5 OF 8)

ARCADIS Project No. B0001701.0002.00134
 Date JUNE 2019
 ARCADIS ONE LINCOLN CENTER 110 W. FAYETTE ST, STE 300 Syracuse, NY 13202 Tel: 315.446.9120

C-13E

CITY: SYRACUSE NY DIV: GROUP ENVCAD DR: E. KRAHMER LD: G. STEINBERGER PIC: M. GRAVELDING PM: E. BIJPEAU LVR: ON* OFF=REF
 C:\BIM\OpenDrive - ARCADIS\BIM_360 Docs\ANA - BP AMOCO CORPORATION\HARBOR AT HASTINGS OUT OF SCOPE\2019\0001701.000401-DWG\HOH-DR13_ABCDEFG-1701-OU1-(N).dwg LAYOUT: C-13F SAVED: 6/6/2019 12:01 PM ACADVER: 23.05 (LMS TECH) PAGES: 1 OF 1
 PLOTTED: 6/5/2019 11:19 PM BY: SARTORI, KATHERINE
 XREFS: HOH-TITLEBLOCK-CDL 01701X01 Proposed excavation limits grade breaks 10-17
 C-13A C-13B C-13C C-13E C-13F section C-13G Section 13C Section 13E 01701X13 control points(N) HOH-ConRemovalLimits
 IMAGES:



CONTROL POINT	NORTHING	EASTING
294	788158.18	661521.19
295	788158.79	661499.26
296	788171.23	661499.70
297	788171.67	661520.98
298	788234.33	661501.98
299	788227.85	661649.49
300	788287.91	661650.78
301	788287.91	661660.86
302	788258.91	661688.80
303	788286.63	661721.20
304	788314.37	661706.99
305	788339.09	661685.11
306	788369.87	661679.72
307	788392.65	661678.03
308	788394.54	661652.39
309	788407.38	661652.61
310	788408.40	661613.32
311	788413.34	661592.67
312	788413.77	661562.11
313	788423.28	661538.04
314	788410.67	661501.10
315	788402.71	661492.71
316	788354.78	661486.67
317	788322.73	661472.29
318	788297.21	661472.50
319	788284.55	661466.80
320	788219.43	661458.13
321	788181.20	661459.41
322	788171.32	661454.13
323	788147.15	661454.80

EXCAVATION AREA	BOTTOM ELEVATION (NAVD88)
N-1	5.5'
N-2	VARIES (3.8' AVG.)
N-3	VARIES (-4.2' AVG.)
N-4	VARIES (-4.5' AVG.)
N-5	-5.0'
N-6	-6.0'
N-7	-1.0'
N-8	5.5'
N-9	1.5'
N-10	VARIES (-0.5' AVG.)
N-11	0.5'
N-12	-6.50'
N-13	2.8'
N-14	0.3'
N-15	-2.0'
N-16	VARIES (5.5' AVG.)
N-17	VARIES (-0.4' AVG.)
N-18	VARIES (-4.3' AVG.)
N-19	2.00'
N-20	VARIES (3.9' AVG.)
N-21	VARIES (-2.3' AVG.)
N-22	VARIES (1.8' AVG.)
N-23	VARIES (1.7' AVG.)
N-24	VARIES (-0.3' AVG.)
N-25	VARIES (3.6' AVG.)
N-26	6.00'
N-27	VARIES (1.20' AVG.)
N-28	VARIES (-1.8' AVG.)
N-29	VARIES (0.7' AVG.)
N-30	3.0'

LEGEND:

S-21 3.5' PROPOSED EXCAVATION AREA ID AND BOTTOM ELEVATION (NAVD88)

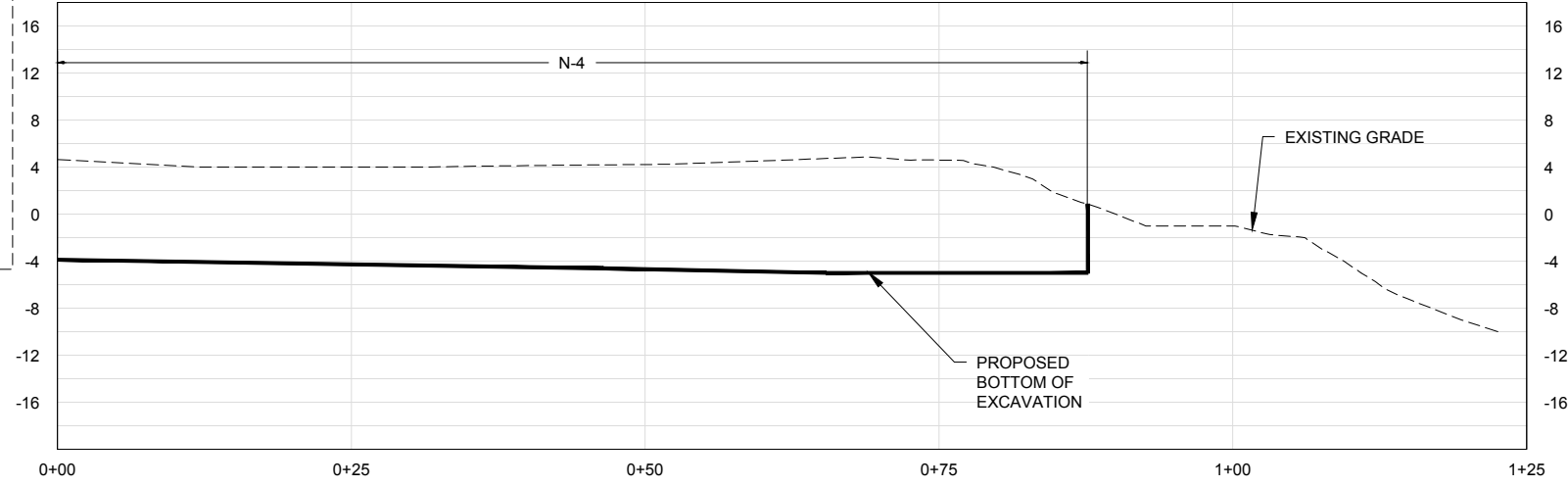
PROPOSED EXCAVATION LIMITS

CONTROL POINTS

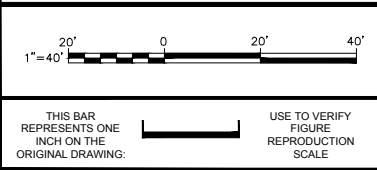
NOTE:

1. BACKFILL WILL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS THAT WILL BE INCLUDED AS PART OF THE FINAL DESIGN.

EXCAVATION AREA	BOTTOM ELEVATION (NAVD88)
N-31	-4.0'
N-32	3.50'
N-33	VARIES (1.5' AVG.)
N-34	VARIES (-2.6' AVG.)
N-35	VARIES (-4.6' AVG.)
N-36	VARIES (3.3' AVG.)
N-37	VARIES (-4.6' AVG.)
N-38	VARIES (1.4' AVG.)
N-39	VARIES (3.5' AVG.)
N-40	VARIES (-0.8' AVG.)
N-41	VARIES (1.0' AVG.)
N-42	VARIES (5.3' AVG.)



CROSS SECTION 1 C-13F



No.	Date	Revisions	By	Ckd

Professional Engineer's Name
MARK O. GRAVELDING

Professional Engineer's No.
069985-1

State
NY

Date Signed

Project Mgr.

Designed by

Drawn by

Checked by

NOT FOR CONSTRUCTION

ARCADIS Design & Consultancy for natural and built assets

ARCADIS OF NEW YORK, INC.

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK

HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2

EXCAVATION OU1 NORTH PLAN AND CROSS SECTIONS (6 OF 8)

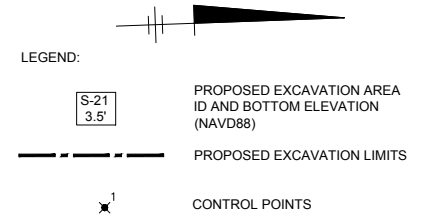
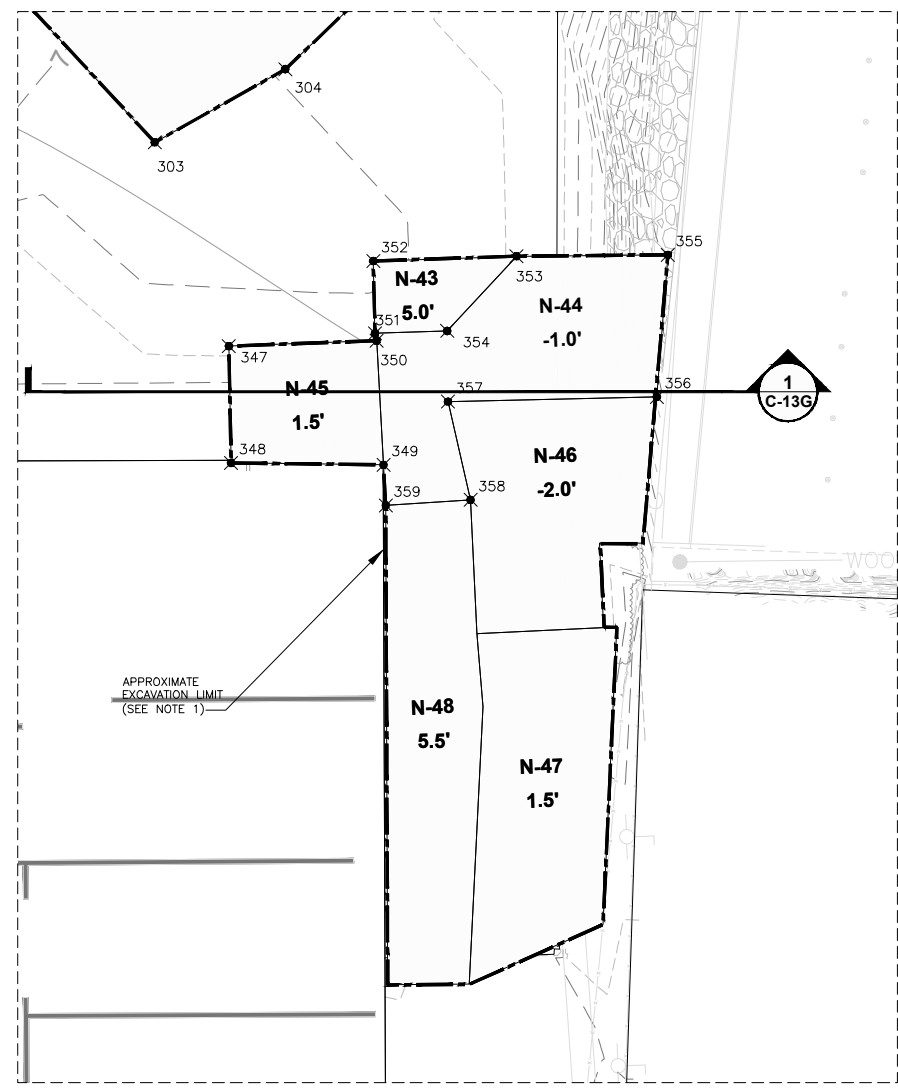
ARCADIS Project No.
B0001701.0002.00134

Date
JUNE 2019

ARCADIS
ONE LINCOLN CENTER
110 W. FAYETTE ST, STE 300
Syracuse, NY 13202
Tel: 315.446.9120

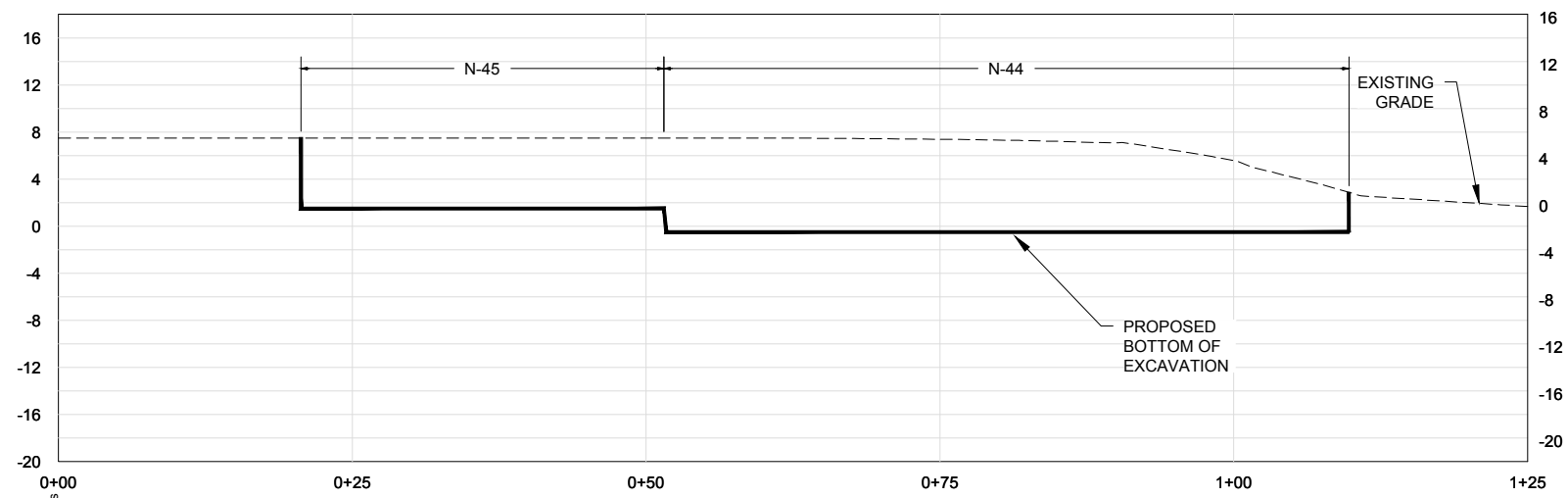
C-13F

CITY: SYRACUSE NY DIV/GROUP/EN/CAD DR: E. KRAHMER LD: G. STEINBERGER PIC: M. GRAVELDING PM: E. BIUREAU LTR: ON*OFF*REF*
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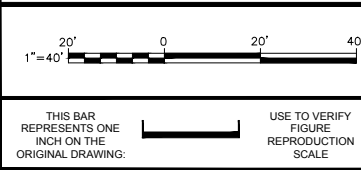
EXCAVATION AREA	BOTTOM ELEVATION (NAVD88)
N-43	5.0'
N-44	-1.0'
N-45	1.5'
N-46	-2.0'
N-47	1.5'
N-48	5.5'
N-49	3.0'

CONTROL POINT	NORTHING	EASTING
347	788300.52	661764.19
348	788300.10	661788.51
349	788331.81	661790.07
350	788331.31	661764.17
351	788331.03	661762.63
352	788331.23	661747.57
353	788361.07	661747.66
354	788346.07	661762.68
355	788392.57	661748.53
356	788389.20	661778.01
357	788345.70	661777.39
358	788349.66	661798.01
359	788331.97	661798.52
360	788328.74	661898.33
361	788345.71	661898.81
362	788350.66	661841.12
363	788349.97	661825.91
364	788373.98	661887.40
365	788379.14	661825.70
366	788376.38	661825.61
367	788376.18	661807.99
368	788385.08	661808.34



CROSS SECTION 1 C-13G

NOTES:
 1. BACKFILL WILL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS THAT WILL BE INCLUDED AS PART OF THE FINAL DESIGN.



No.	Date	Revisions	By	Ckd

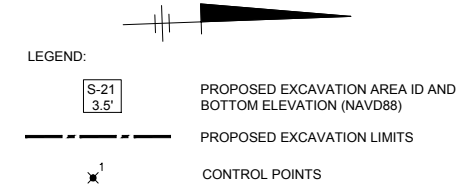
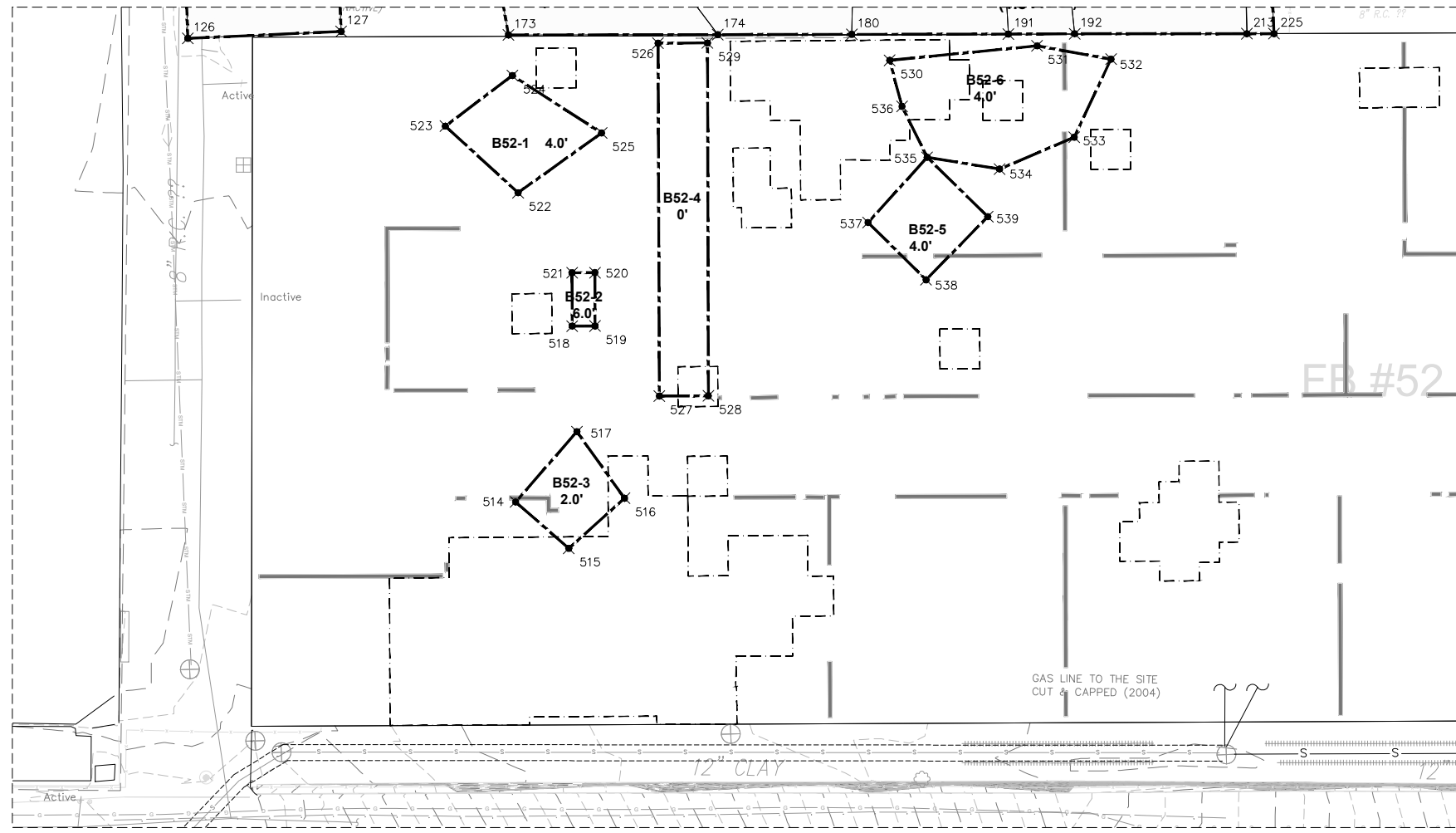
Professional Engineer's Name
MARK O. GRAVELDING
 Professional Engineer's No.
 069985-1
 State
 NY
 Date Signed
 Project Mgr.
 Designed by
 Drawn by
 Checked by

NOT FOR CONSTRUCTION

ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK
 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
EXCAVATION OU1 NORTH PLAN AND CROSS SECTIONS (7 OF 8)

ARCADIS Project No.
 B0001701.0002.00134
 Date
 JUNE 2019
 ARCADIS
 ONE LINCOLN CENTER
 110 W. FAYETTE ST, STE 300
 Syracuse, NY 13202
 Tel: 315.446.9120

C-13G

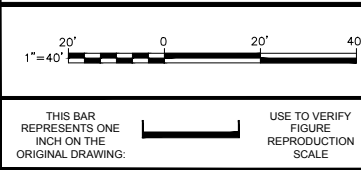


EXCAVATION AREA	BOTTOM ELEVATION
B52-1	4.0'
B52-2	6.0'
B52-3	2.0'
B52-4	0'
B52-5	4.0'
B52-6	4.0'

CONTROL POINTS	NORHTING	EASTING
514	787813.74	661888.67
515	787826.65	661900.78
516	787841.07	661888.74
517	787829.74	661871.61
518	787829.53	661845.12
519	787835.25	661845.32
520	787835.71	661831.95
521	787829.98	661831.75
522	787817.18	661811.21
523	787799.54	661793.86
524	787816.82	661781.79
525	787838.65	661797.01
526	787853.65	661775.03
527	787850.75	661863.44
528	787863.04	661863.84
529	787866.05	661775.42
530	787911.58	661781.43
531	787948.68	661779.16
532	787967.10	661783.18
533	787957.16	661802.39
534	787938.15	661809.68
535	787920.09	661806.08
536	787914.25	661793.10
537	787904.68	661821.87
538	787918.70	661836.75
539	787934.75	661821.51

NOTES:

- BACKFILL WILL BE COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS THAT WILL BE INCLUDED AS PART OF THE FINAL DESIGN.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name MARK O. GRAVELDING		
Professional Engineer's No. 069985-1		
State NY	Date Signed	Project Mgr.
Designed by	Drawn by	Checked by

NOT FOR CONSTRUCTION

ARCADIS OF NEW YORK, INC.
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

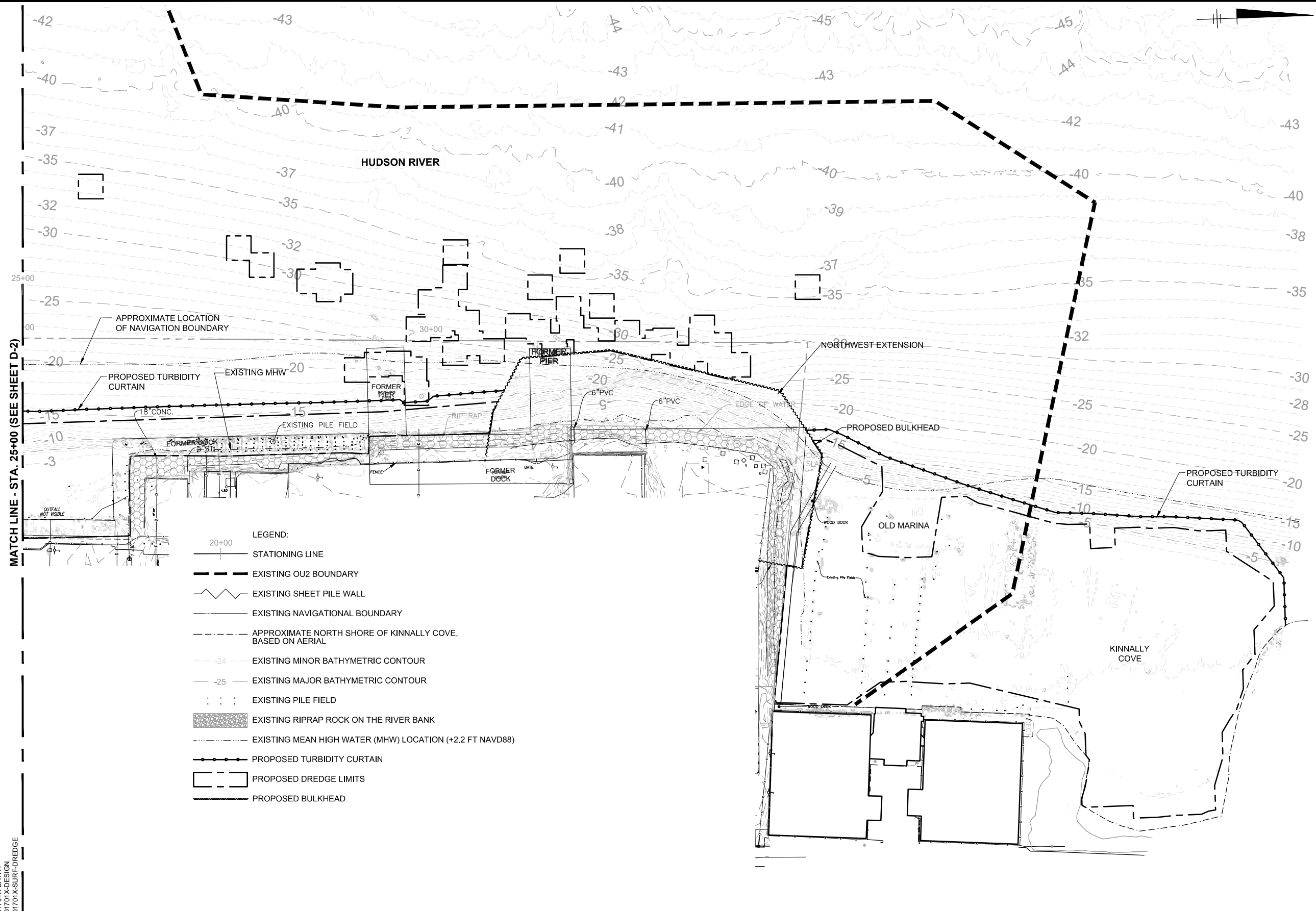
ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK
 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2

EXCAVATION OU1 NORTH PLAN AND CROSS SECTIONS (8 OF 8)

ARCADIS Project No. B0001701.0002.00134
Date JUNE 2019
ARCADIS ONE LINCOLN CENTER 110 W. FAYETTE ST, STE 300 Syracuse, NY 13202 Tel: 315.446.9120

C-13H

CITY: SYRACUSE NY DIV/GRP/ENV/CAD DB.E. KRAHMER LD. G. STEINBERGER PIC. K. G. DIAS PM. R. KAPP TR. S. MCGOWAN LYN. ON. OFF-REF-
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MATCH LINE - STA. 25+00 (SEE SHEET D-2)

- LEGEND:**
- STATIONING LINE
 - EXISTING OU2 BOUNDARY
 - EXISTING SHEET PILE WALL
 - EXISTING NAVIGATIONAL BOUNDARY
 - APPROXIMATE NORTH SHORE OF KINNALLY COVE, BASED ON AERIAL
 - 24- EXISTING MINOR BATHYMETRIC CONTOUR
 - 25- EXISTING MAJOR BATHYMETRIC CONTOUR
 - EXISTING PILE FIELD
 - EXISTING RIPRAP ROCK ON THE RIVER BANK
 - EXISTING MEAN HIGH WATER (MHW) LOCATION (+2.2 FT NAVD88)
 - PROPOSED TURBIDITY CURTAIN
 - PROPOSED DREDGE LIMITS
 - PROPOSED BULKHEAD



No.	Date	Revisions	By	Ckd

Professional Engineer's Name MARK O. GRAVELDING			
Professional Engineer's No. 069985-1			
State NY	Date Signed	Project Mgr. LSK	
Designed by SM	Drawn by MW	Checked by ESD	

NOT FOR CONSTRUCTION

ARCADIS Design & Consultancy for natural and built assets

ARCADIS OF NEW YORK, INC.

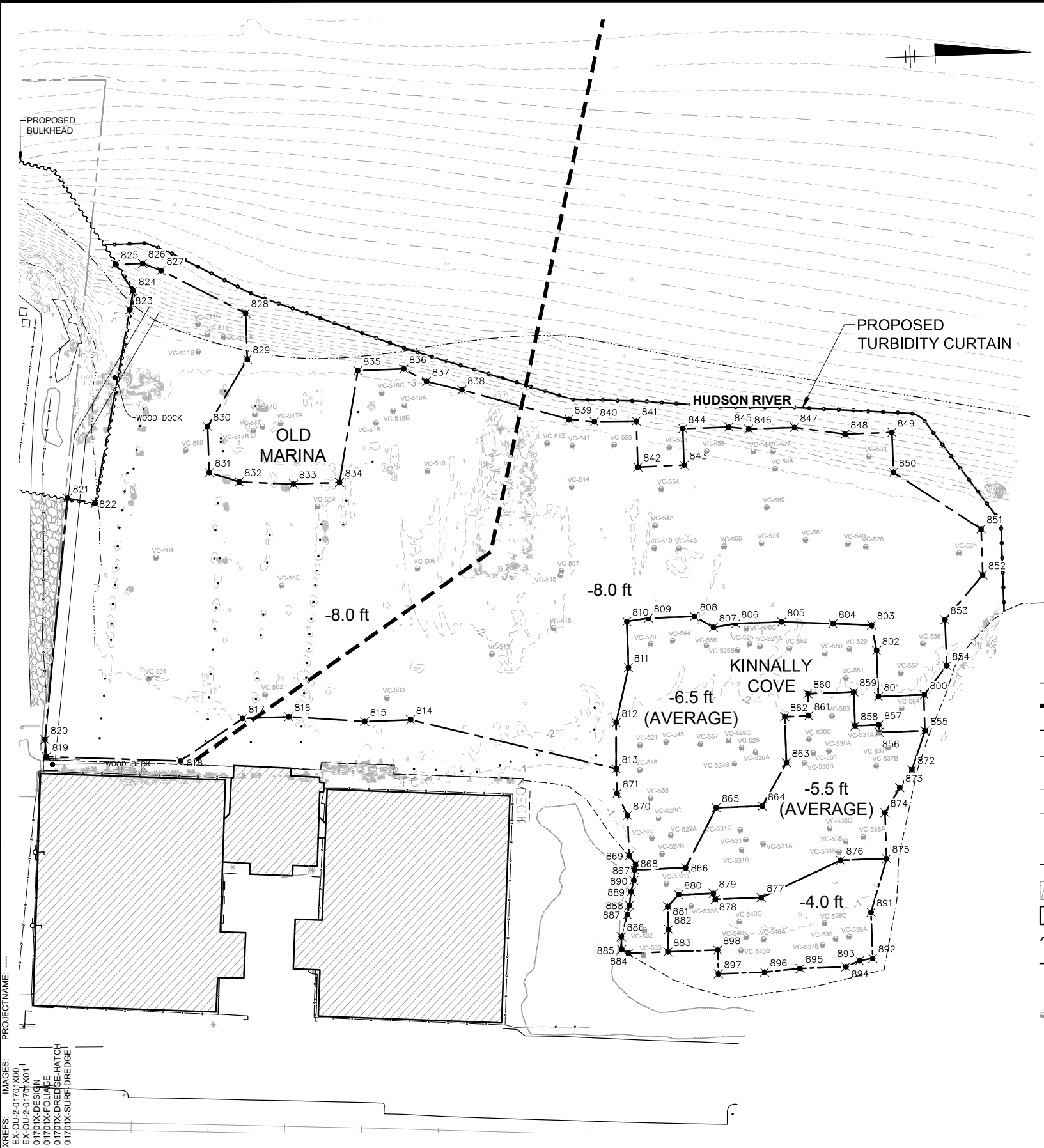
NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK
 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
**OLD MARINA AND KINNALLY COVE
 TURBIDITY CONTROLS LAYOUT**

ARCADIS Project No. B0001701.0002.00134
Date MAY 2019
ARCADIS of NY, Inc. One Lincoln Center 110 W. Fayette St., Suite 300 Syracuse, NY 13202 Tel: 315-446-9120

D-18

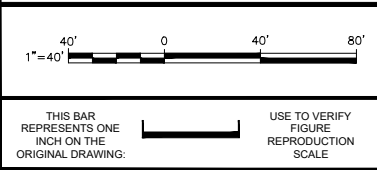
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 EX-01/201701X001
 01701X SURF-DREDGE
 01701X SURF-DREDGE
 01701X SURF-DREDGE
 01701X SURF-DREDGE



CONTROL POINT	NORTHING	EASTING	CONTROL POINT	NORTHING	EASTING	CONTROL POINT	NORTHING	EASTING	CONTROL POINT	NORTHING	EASTING
800	788962.24	661787.97	828	788529.27	661523.18	856	788931.84	661811.34	884	788763.40	661949.26
801	788932.24	661787.97	829	788529.27	661553.18	857	788931.84	661806.46	885	788759.12	661946.76
802	788932.24	661757.97	830	788501.90	661596.08	858	788916.40	661806.46	886	788759.12	661938.25
803	788929.52	661741.27	831	788501.90	661626.08	859	788916.40	661784.42	887	788763.67	661924.14
804	788904.49	661739.46	832	788521.00	661633.00	860	788886.40	661784.42	888	788765.17	661918.02
805	788871.12	661737.12	833	788556.42	661635.70	861	788886.40	661798.87	889	788766.63	661909.28
806	788841.12	661737.12	834	788586.42	661635.70	862	788870.83	661798.87	890	788768.63	661902.00
807	788826.60	661738.98	835	788600.99	661563.33	863	788870.83	661828.87	891	788922.34	661928.27
808	788814.36	661731.43	836	788630.99	661563.33	864	788854.07	661856.51	892	788922.34	661958.27
809	788784.36	661731.43	837	788645.54	661572.02	865	788824.07	661856.51	893	788913.61	661959.58
810	788770.25	661733.11	838	788668.34	661578.37	866	788802.62	661894.98	894	788904.76	661963.18
811	788770.25	661763.11	839	788737.32	661600.06	867	788769.28	661894.98	895	788874.76	661963.18
812	788760.84	661798.78	840	788753.84	661602.18	868	788770.07	661891.30	896	788851.56	661964.78
813	788759.83	661828.78	841	788781.11	661602.77	869	788766.13	661885.84	897	788821.56	661964.78
814	788627.11	661792.03	842	788781.11	661632.77	870	788766.13	661859.47	898	788821.56	661949.26
815	788597.11	661792.03	843	788811.25	661632.59	871	788759.83	661844.86			
816	788547.90	661787.11	844	788811.25	661608.90	872	788952.39	661836.46			
817	788517.90	661787.11	845	788841.25	661608.90	873	788944.06	661847.79			
818	788476.13	661813.32	846	788854.21	661610.71	874	788933.77	661863.72			
819	788389.20	661807.39	847	788884.08	661610.71	875	788933.77	661893.72			
820	788388.49	661796.28	848	788916.76	661616.28	876	788903.77	661893.72			
821	788408.70	661639.58	849	788947.34	661616.28	877	788851.20	661916.13			
822	788426.70	661643.49	850	788947.34	661642.27	878	788821.20	661916.13			
823	788453.91	661518.32	851	789003.15	661681.27	879	788820.14	661912.26			
824	788456.57	661506.09	852	789003.15	661711.27	880	788797.52	661912.26			
825	788445.60	661488.32	853	788977.47	661739.54	881	788790.14	661919.64			
826	788463.44	661488.32	854	788977.47	661769.54	882	788790.14	661934.70			
827	788475.22	661493.41	855	788961.79	661811.34	883	788789.12	661949.26			

- LEGEND:**
- 20+00 STATIONING LINE
 - EXISTING OU2 BOUNDARY
 - EXISTING NAVIGATIONAL BOUNDARY
 - APPROXIMATE NORTH SHORE OF KINNALLY COVE, BASED ON AERIAL
 - EXISTING MINOR BATHYMETRIC CONTOUR
 - EXISTING MAJOR BATHYMETRIC CONTOUR
 - EXISTING PILE FIELD
 - EXISTING MEAN HIGH WATER (MHW) LOCATION (+2.2 FT NAVD88)
 - EXISTING RIPRAP ROCK ON THE RIVER BANK
 - PROPOSED DREDGE LIMITS
 - PROPOSED BULKHEAD
 - PROPOSED TURBIDITY CURTAIN
 - CONTROL POINTS
 - SAMPLE ID
 - DREDGE ELEVATION

- NOTE:**
- POTENTIAL OBSTRUCTIONS WILL BE FURTHER EVALUATED DURING FINAL DESIGN / PRE-CONSTRUCTION.
 - PROPOSED BATHYMETRIC EXCAVATION CONTOURS WILL BE PROVIDED IN THE FINAL DESIGN.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name
MARK O. GRAVELDING
 Professional Engineer's No.
069985-1
 State
NY
 Date Signed

 Project Mgr.
LSK
 Designed by
SM
 Drawn by
MW
 Checked by
ESD

NOT FOR CONSTRUCTION

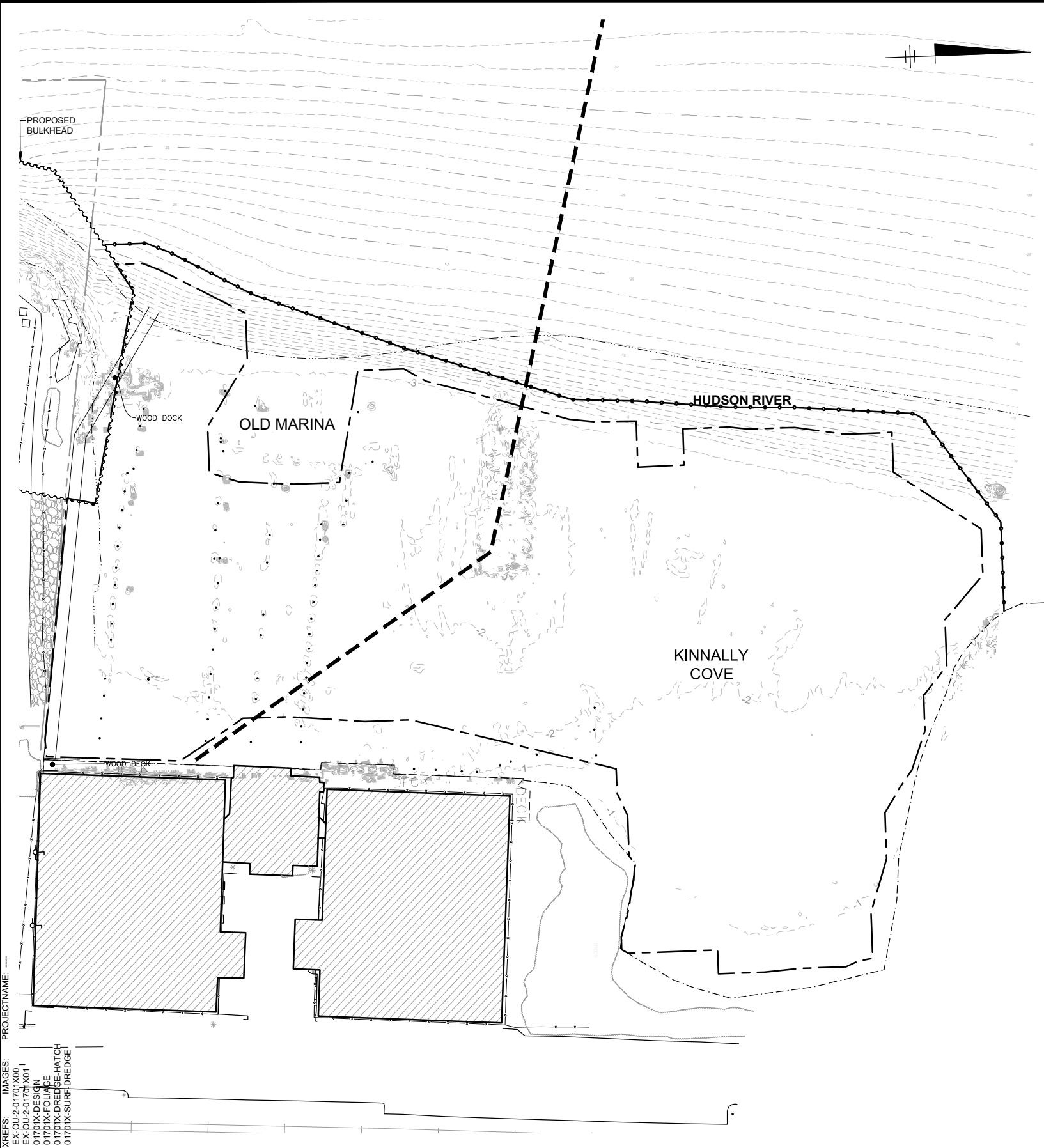
ARCADIS OF NEW YORK, INC.
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ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK
 HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2
DREDGING ELEVATIONS - OLD MARINA AND KINNALLY COVE

ARCADIS Project No.
B0001701.0002.00134
 Date
MAY 2019
 ARCADIS of NY, Inc.
 One Lincoln Center
 110 W. Fayette St., Suite 300
 Syracuse, NY 13202
 Tel: 315-446-9120

D-19

CITY: SYRACUSE NY DW:GROUP-ENVCAD DR: E. KRAHMER LD: G. STEINBERGER PIC: K. G. DIAS PM: R. KAPP TR: S. MCGOWAN LXR ON: OFF-REF
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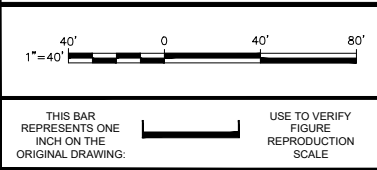


LEGEND:

- STATIONING LINE
- EXISTING OU2 BOUNDARY
- EXISTING NAVIGATIONAL BOUNDARY
- APPROXIMATE NORTH SHORE OF KINNALLY COVE, BASED ON AERIAL
- EXISTING MINOR BATHYMETRIC CONTOUR
- EXISTING MAJOR BATHYMETRIC CONTOUR
- EXISTING PILE FIELD
- EXISTING MEAN HIGH WATER (MHW) LOCATION (+2.2 FT NAVD88)
- EXISTING RIPRAP ROCK ON THE RIVER BANK
- PROPOSED DREDGE LIMITS
- PROPOSED BULKHEAD
- PROPOSED TURBIDITY CURTAIN

NOTE:

- RESTORATION ELEVATIONS WILL BE PROVIDED IN FINAL DESIGN.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name
MARK O. GRAVELDING

Professional Engineer's No.
069985-1

State
NY

Date Signed

Project Mgr.
LSK

Designed by
SM

Drawn by
MW

Checked by
ESD

NOT FOR CONSTRUCTION

ARCADIS Design & Consultancy for natural and built assets

ARCADIS OF NEW YORK, INC.

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ATLANTIC RICHFIELD CO. • HASTINGS-ON-HUDSON, NEW YORK

HARBOR AT HASTINGS SITE PRELIMINARY DESIGN, OU1 AND OU2

RESTORATION PLAN - OLD MARINA AND KINNALLY COVE

ARCADIS Project No.
B0001701.0002.00134

Date
MAY 2019

ARCADIS of NY, Inc.
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110 W. Fayette St., Suite 300
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D-20