CU-07

Form 2

CU Certification of Completion

CU BACKFILL/ENGINEERED CAP COMPLETION APPROVAL - FORM 2

Reporting Date	11/19/2009			**Placement Start Date**	10/18/2009
CU Number	7			**Placement End Date**	11/8/2009
Approximate CU Centroid	**Northing**	1615503.004	**Easting**	734592.065	NY State NAD 83
CU Size	4.71	Acres			
Backfill Area	3.75	Acres			
Cap Area	0.96	Acres			

Backfill Surface Mean Tri+ PCBs Concentration (when required)	NA	**mg/kg**
Number of nodes sampled	NA	**mg/kg**

Backfill X	**Type of Backfill** Type 1, Type 2, Nearshore, 15%	**Reference to appropriate drawings attached to Approval Form 1** CU7 Backfill and Cap Plan, 10/24/09
Cap X	**Type of Cap** Type "A" Low Velocity Cap and Type "A" Medium to High Velocity Cap	**Reference to appropriate drawings attached to Approval Form 1** CU7 Backfill and Cap Plan, 10/24/09

CU Checklist	**Indicate one of the following**		**Reviewer Initial Acceptance**			
Item	**Attached**	**Not Applicable**		**GE**		**EPA**
Drawing of Installed Backfill/Cap (with record details, thickness and sample locations [when backfill/cap are placed])	x					
Where applicable in backfill areas provide the following: Sample locations (coordinates), depths, Aroclor and Tri+ PCB concentrations collected including analytical data, field observations, (hard copy and electronic copies [in database format or equivalent]		x				

Comments

Refer to attached Narrative Backfill and Capping Summary and CU 7 Backfill and Cap Drawings.
*Backfill Area does not include 15% backfill material placed over Cap Area.

Upon signing this document, GE certifies that the backfill/cap has been installed satisfactorily and that no further backfill placement or capping is required for this CU. These remedial activities exclude long term operation, monitoring, maintenance and adaptive management at the CU. EPA accepts this certification.

Signature of GE Representative	**Signature of EPA Representative**
Signature	Signature
Name	Name
Date	Date

Narrative

CU 7

Narrative Summary of Backfill and Capping and

EPA Backfill and Capping Agreements

1.0 Cap Placement

A Type "A" Medium to High Velocity Cap and a Type "A" Low Velocity Cap was placed in accordance with the CU 7 Backfill and Capping Plan Drawing, dated October 24, 2009, which was provided to EPA as part of the CU 7 Form 1 package. A multi-beam bathymetric survey of the CU 7 cap was performed after final cap placement on October 28 and November 9, 2009, as shown on the attached CU 7 Type "A" Cap Acceptance Survey, dated November 14, 2009. The surveyed cap thickness on a 5' x 5' grid is shown for all cap areas. Cap thicknesses for the Type "A" Low Velocity Cap includes 15% and near shore Type 2 material, as discussed at the October 29, 2009 daily data meeting.

2.0 Backfill Placement

Backfill materials were placed in accordance with the CU 7 Backfill and Capping Plan Drawing, dated October 24, 2009, provided to EPA as part of the CU 7 Form 1 package. Multi-beam bathymetric surveys for CU 7 were performed after backfill placement on October 28 and November 8, 2009, as shown on the attached CU 7 Backfill Placement Acceptance Drawing, dated November 19, 2009. The difference to backfill prism on a 10' x 10' grid is shown for all backfill areas.

3.0 EPA Field Agreements Specific to CU 7 Backfill and Capping

1. During the 4:00 PM meeting on October 12, 2009, EPA agreed that acceptance surveys of partial areas of a CU may be performed and used for acceptance once placement of backfill or cap in those areas is complete.

2. During a 3:00 PM meeting with EPA on November 12, 2009, GE presented acceptance surveys of the difference to backfill prisms on a 10' x 10' grid in CU 7. GE also presented the Cap Acceptance Survey Drawing during the meeting of November 12, 2009. EPA agreed that the top of cap and backfill elevations, as shown, were acceptable (see attached e-mail, dated November 14, 2009). The Cap Acceptance Survey Drawing, dated November 14, 2009 is included in this package.

Tables

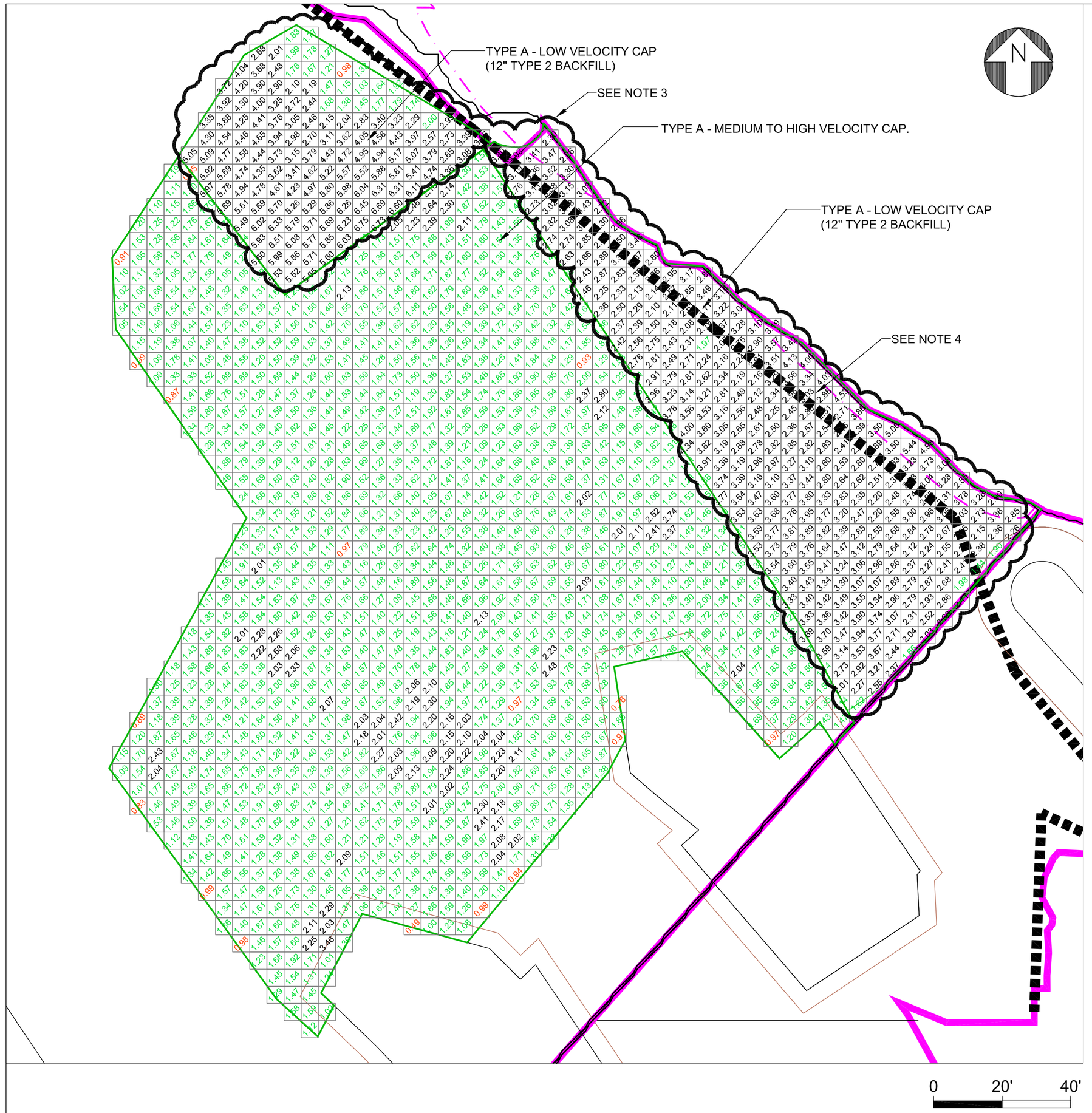
Table 1. CU-7 - All Near-Shore Topographic Measurements

Published Near-Shore Border Set Points				Near-Shore Topographic Measurements				
Name	Easting	Northing	Target Elevation	Easting	Northing	Check Elevation	Horz. Dist	Vert Diff.
7-1	734,613.43	1,615,795.99	117.50	734,613.73	1,615,796.57	115.89	0.64	-1.61
				734,612.43	**1,615,800.02**	**117.02**	**4.15**	**-0.48**
				734,613.88	1,615,802.72	118.57	6.74	1.07
				734,614.21	1,615,804.34	119.33	8.38	1.83
7-2	734,689.91	1,615,743.93	117.50	734,690.00	1,615,743.55	117.31	0.39	-0.19
7-3	734,760.29	1,615,690.00	117.50	734,760.24	1,615,690.31	118.08	0.31	0.58
7-4	734,830.83	1,615,631.68	117.50	734,830.69	1,615,631.68	115.85	0.14	-1.65
				734,831.85	1,615,635.02	116.99	3.49	-0.51
				734,833.85	**1,615,637.10**	**117.90**	**6.21**	**0.40**
				734,835.53	1,615,637.48	118.59	7.47	1.09
				734,838.17	1,615,637.51	119.09	9.38	1.59
7-5	734,900.55	1,615,576.79	117.50	734,900.07	1,615,576.26	116.21	0.72	-1.29
				734,902.49	**1,615,578.10**	**117.18**	**2.33**	**-0.32**
				734,904.72	1,615,582.63	119.18	7.17	1.68
7-6	734,311.00	1,615,480.13	117.50	734,310.35	1,615,480.28	117.81	0.67	0.31
7-7	734,338.46	1,615,433.72	117.50	734,338.20	1,615,434.00	118.05	0.38	0.55
7-8	734,385.69	1,615,379.54	117.50	734,385.84	1,615,379.50	118.64	0.15	1.14
				734,385.78	1,615,377.11	119.19	2.43	1.69
				734,389.25	1,615,380.89	118.23	3.81	0.73
				734,392.11	**1,615,384.03**	**117.30**	**7.84**	**-0.20**
7-9	734,412.60	1,615,372.47	117.50	734,412.89	1,615,372.36	117.66	0.31	0.16
7-10	734,440.72	1,615,336.72	117.50	734,440.84	1,615,336.78	118.27	0.13	0.77
				734,438.41	1,615,334.51	119.07	3.20	1.57
				734,442.68	**1,615,339.73**	**117.53**	**3.58**	**0.03**
				734,444.10	1,615,341.19	117.06	5.60	-0.44
7-11	734,455.54	1,615,292.63	117.50	734,455.70	1,615,292.65	118.59	0.16	1.09
				734,458.66	**1,615,295.25**	**117.75**	**4.07**	**0.25**
				734,460.07	1,615,296.63	116.98	6.04	-0.52
				734,453.26	1,615,289.07	118.86	4.23	1.36
				734,452.94	1,615,288.00	119.13	5.32	1.63
7-12	734,521.22	1,615,217.40	117.50	734,516.46	1,615,223.67	116.77	7.87	-0.73
				734,510.58	1,615,220.61	118.79	11.11	1.29

Notes:

1. Measurements Collected on the 11th of November 2009 using standard land survey methods.
2. At near shore set point locations where the set point elevation was not at tolerance, additional measurments were taken at nearby locations to provide additional information.

Figures



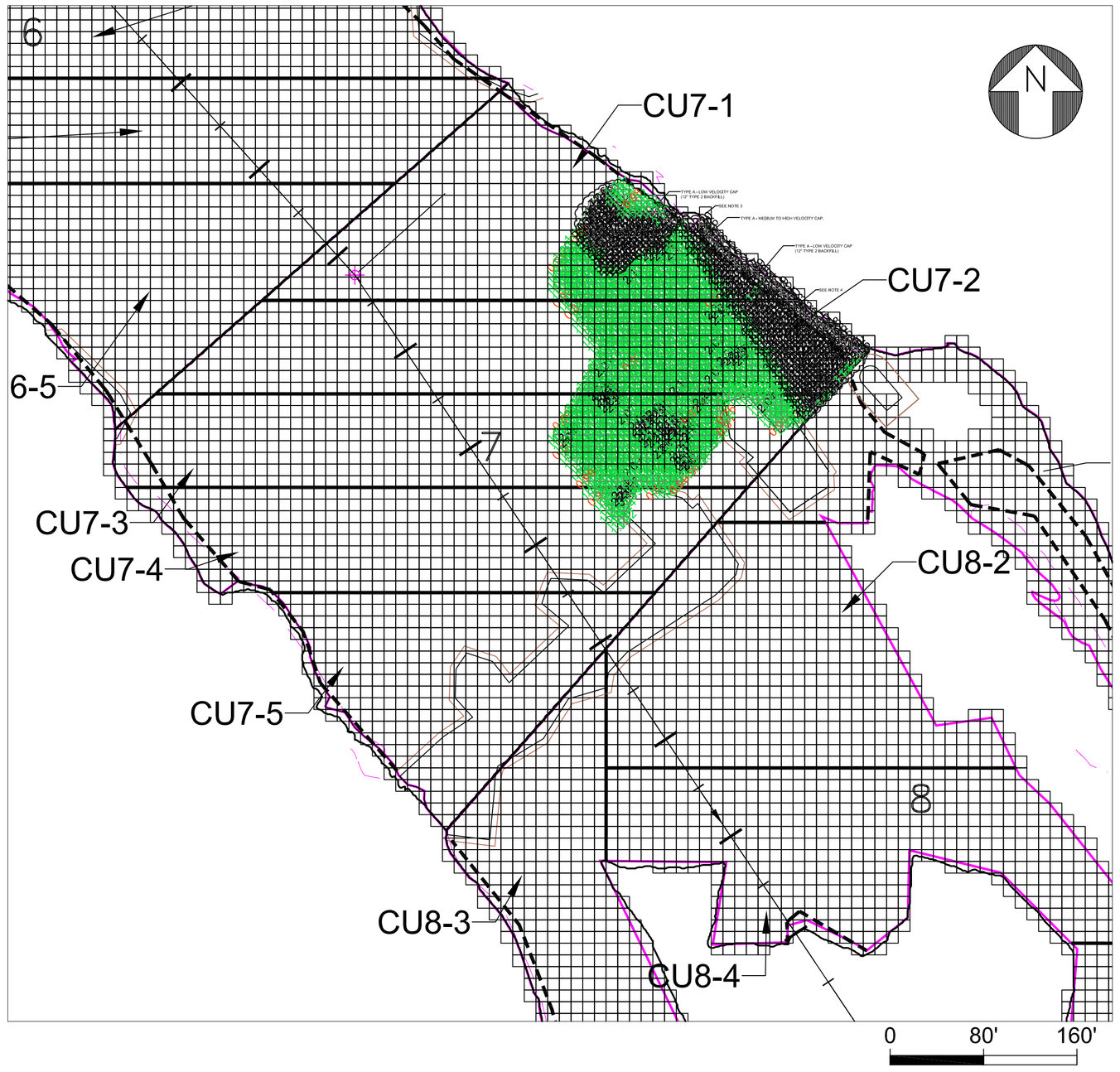
CU7 TYPE A CAP PLACEMENT

NOTES:

1. OSI MULTIBEAM SURVEYS ON OCTOBER 28 & NOVEMBER 9, 2009.
2. CAP THICKNESS IS LISTED IN 5'x5' GRIDS.
3. CAP THICKNESS SHOWN INCLUDES 15% BACKFILL TYPE 2 MATERIAL PLACED OVER TYPE "A" LOW VELOCITY CAP AS DISCUSSED AT THE OCTOBER 29, 2009 DATA MEETING.
4. CAP THICKNESS SHOWN INCLUDES NEAR SHORE BACKFILL TYPE 2 MATERIAL PLACED OVER TYPE "A" LOW VELOCITY CAP AS DISCUSSED AT THE OCTOBER 29, 2009 DATA MEETING.

LEGEND

- 1.20 — 5'x5' GRID WITHIN DESIGN GUIDELINES
- 0.75 — 5'x5' GRID LESS THAN DESIGN GUIDELINES
- 2.30 — 5'x5' GRID ABOVE DESIGN GUIDELINES
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- NEARSHORE BORDER (117.5 FEET)



CU7 TYPE A CAP LOCATION

CU-7
TYPE A CAP
ACCEPTANCE SURVEY

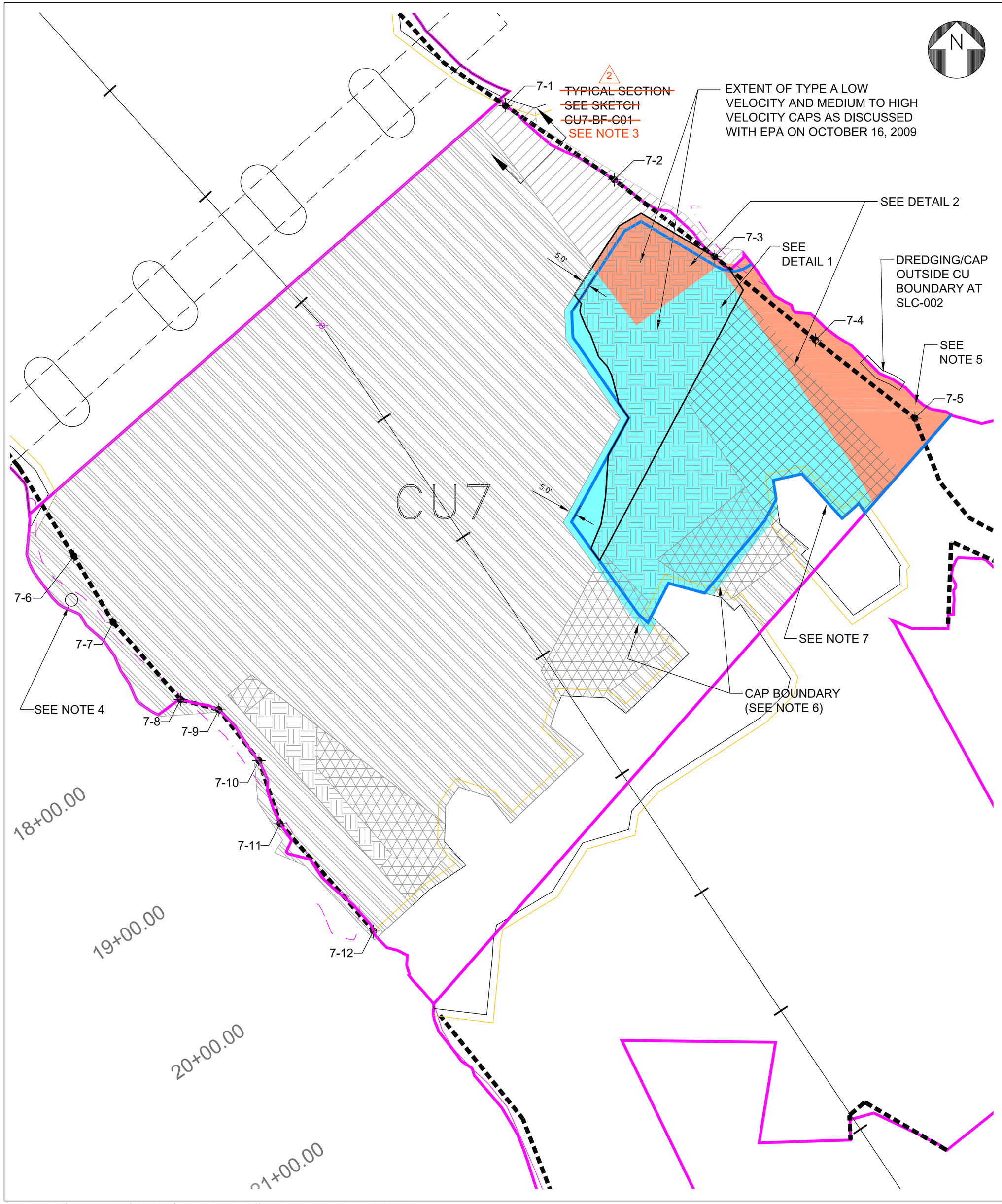
REV	DATE	DRN BY	DRAWING DESCRIPTION	PM
0	11/14/09	JHG	ACCEPTANCE SURVEY	MG

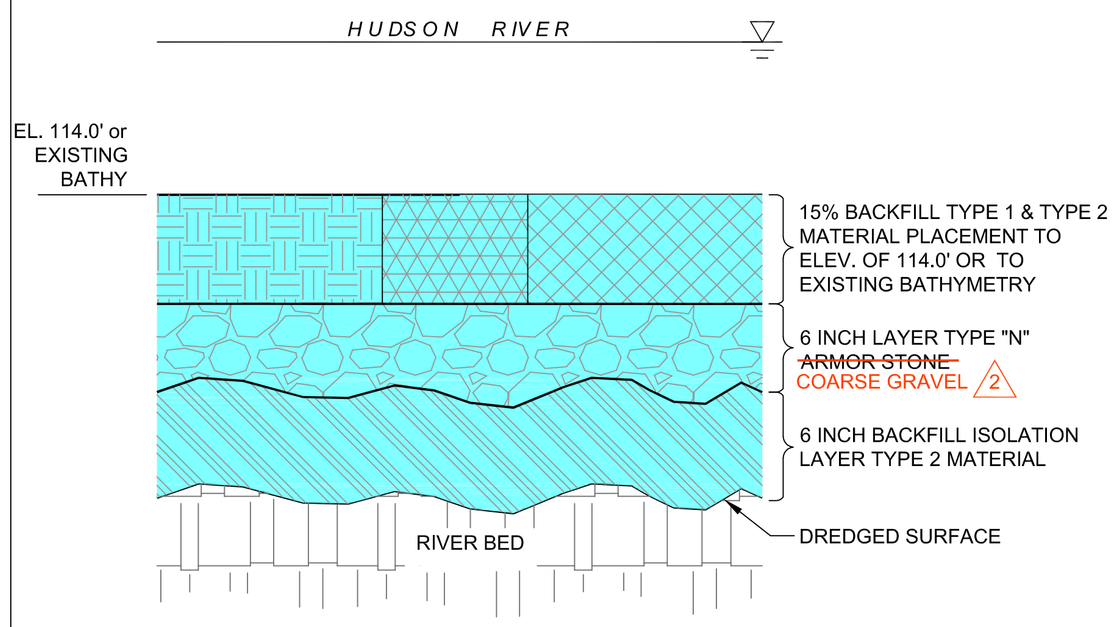
PARSONS
ENGINEERING TECHNOLOGY GROUP
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40–1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746–5311

DRAWING TITLE: CU7 TYPE A CAP ACCEPTANCE SURVEY

DRAWN BY	CHECKED BY	DRAWING NO.	SCALE
JHG	MG	CU7–3	AS SHOWN
DATE: 11/14/09	APPROVED BY: MG		JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CAP TYPE A – LOW(5X5)\CU7–3 TYPE A CAP MED–HIGH.DWG
PLOT DATE: 11/14/2009 2:16 PM PLOTTED BY: 48606

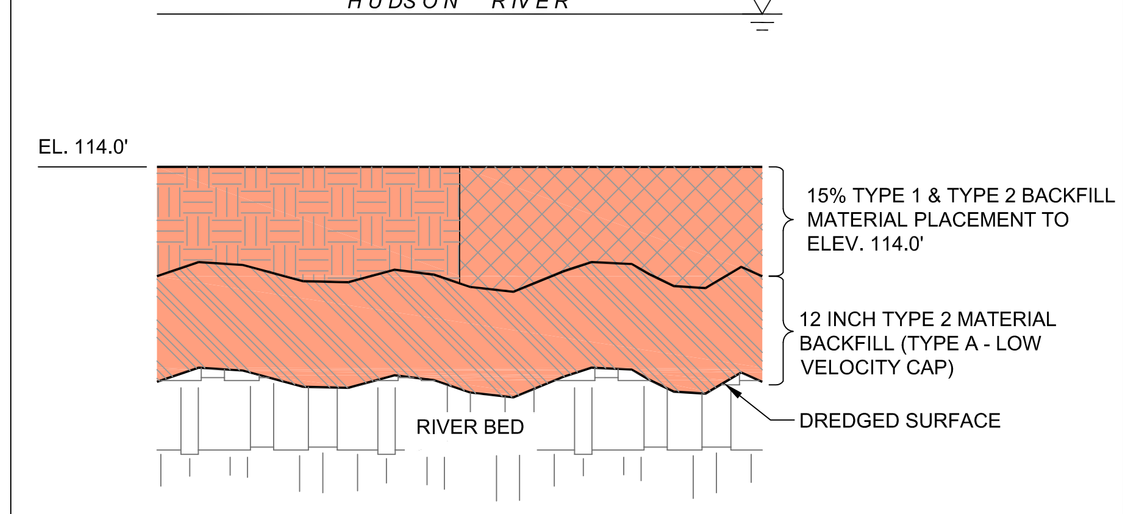




TYPICAL SECTION VIEW

DETAIL 1 - TYPE "A" MEDIUM TO HIGH VELOCITY CAP CU7

NOT TO SCALE



TYPICAL SECTION VIEW

DETAIL 2 - TYPE "A" LOW VELOCITY CAP CU7

NOT TO SCALE

RECORD DRAWING

BATHYMETRY USED FROM OSI MULTIBEAM SURVEY DATA ON OCTOBER 12, 2009

0 40' 80'

LEGEND

- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- 1 FOOT BACKFILL AND NEARSHORE PLACEMENT TYPE 1 MATERIAL
- 1 FOOT BACKFILL AND NEARSHORE PLACEMENT TYPE 2 MATERIAL
- 15% BACKFILL PLACEMENT TO AN ELEV. OF 114.0 FEET TYPE 1 MATERIAL
- 15% BACKFILL PLACEMENT TO AN ELEV. OF 114.0 FEET TYPE 2 MATERIAL
- 15% BACKFILL PLACEMENT TO ORIGINAL BATHYMETRY TYPE 1 MATERIAL
- 15% BACKFILL PLACEMENT TO ORIGINAL BATHYMETRY TYPE 2 MATERIAL
- TYPE A - LOW VELOCITY CAP (12" TYPE 2 BACKFILL)
- TYPE A - MEDIUM TO HIGH VELOCITY CAP.
- 7-12 NEARSHORE BORDER SET POINT
- POTENTIAL LOCATION FOR RIVERINE FRINGING WETLAND CONSTRUCTION (PLANTING BY OTHERS)
- NEARSHORE BORDER (117.5 FEET)
- LIMIT OF NON-COMPLIANT NODE POLYGONS.

NOTES:

1. BACKFILL TO BE PLACED IN ACCORDANCE WITH SECTION 13720 AND DESIGN DRAWINGS B-0021-SK1 AND B-0020-SK1.
2. CAP MATERIALS TO BE PLACED IN ACCORDANCE WITH SECTION 13720 AND DESIGN DRAWING C-0038.
3. PLACEMENT OF NEARSHORE BACKFILL IN TYPE 1 AREAS TO CONSIST OF TYPE 2 BACKFILL TO EL 116.5', THEN TYPE 1 BACKFILL FROM EL 116.5' TO 119'. (SEE SKETCH CU7-BF-01), 2
4. BACKFILL IN THIS AREA TO BE PLACED IN ACCORDANCE WITH TYPICAL RIVERINE FRINGING WETLAND CROSS SECTION AS SHOWN ON CONTRACT DRAWING B-0021-SK1.
5. THE PORTION OF THE WETLAND THAT HAS BEEN IMPACTED BY DREDGING WILL NOT BE RESTORED IN PLACE, BUT MITIGATION WILL CONSIST OF CREATION OF WETLAND IN CU8 SAND BAR AREA (1:1 BY AREA), PER OCTOBER 20, 2008 DAILY DATA MEETING.
6. TOTAL CAP AREA INCLUDES 5' HORIZONTAL OFFSET INTO COMPLIANT AREA, AS PER DRAWING C-0038.
7. LIMIT OF CAP AT 5 FT. HORIZONTAL OFFSET FROM LIMIT OF NON-COMPLIANT NODE POLYGON.

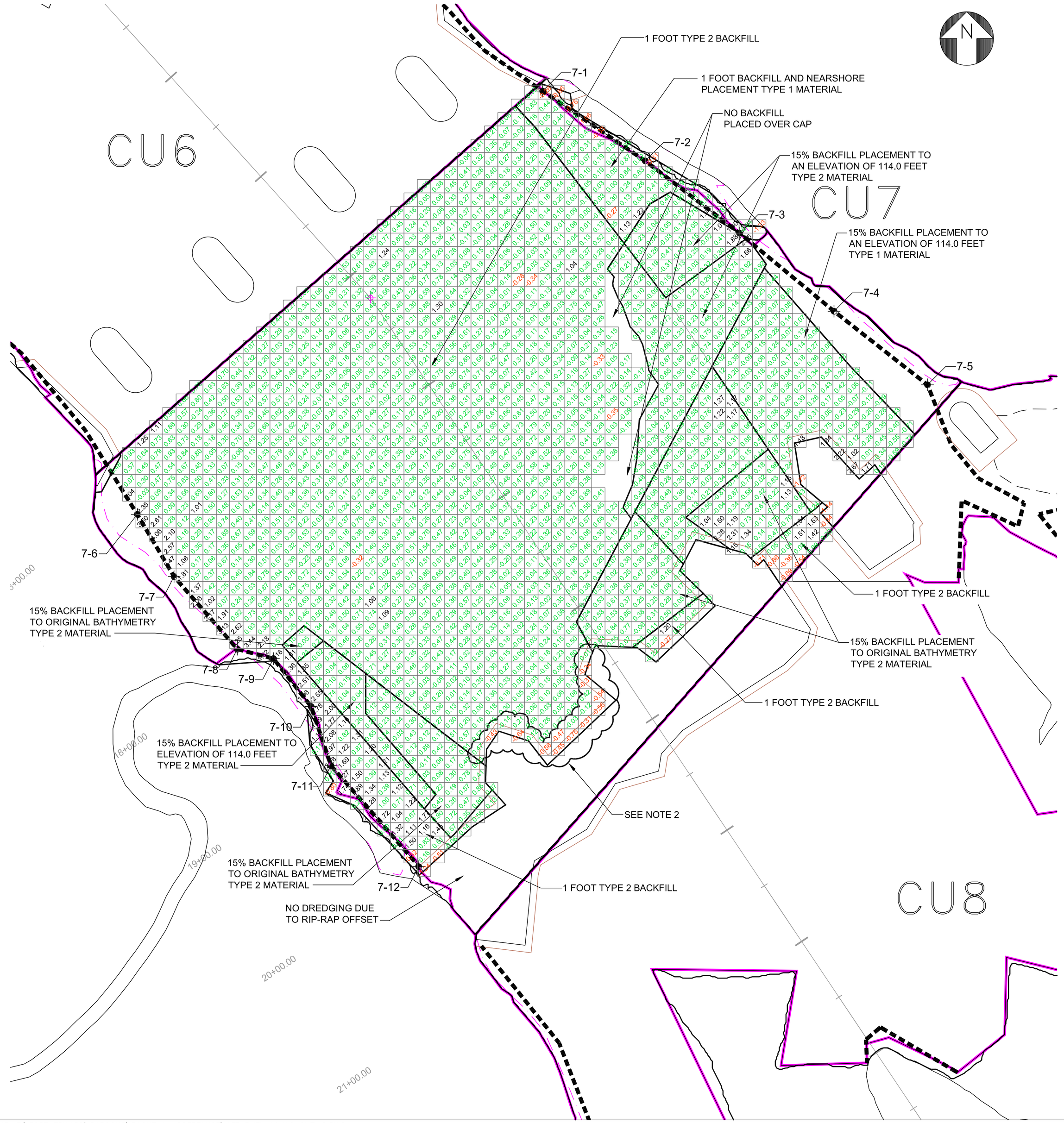
REV	DATE	DRN BY	DRAWING DESCRIPTION	
2	11/15/09	JHG	RECORD DRAWING	MG
1	10/24/09	JHG	REVISED PER EPA COMMENTS	MG
0	10/21/09	JHG	ISSUED FOR EPA REVIEW	MG

PARSONS
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40-1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746-5311

DRAWING TITLE: CU7 BACKFILL & CAP PLAN

DRAWN BY	CHECKED BY	DRAWING NO.	VERSION	SCALE
JHG	MG	CU7-BC-5	A	AS SHOWN
DATE: 11/15/09	APPROVED BY: MG			JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\OSI-BACKFILL CAP\CU7-CAP-SMC-BC-5-RECORD.DWG
PLOT DATE: 11/19/2009 9:17 AM PLOTTED BY: 48606



CU-7 Near-Shore Topographic Measurements
Collected on the 11th of November 2009.

Published Near-Shore Border Set Points				Near-Shore Topographic Measurements				
Name	Easting	Northing	Target Elevation	Easting	Northing	Check Elevation	Horz. Dist	Vert Diff.
7-1	734,613.43	1,615,795.99	117.50	734,613.73	1,615,796.57	115.89	0.64	-1.61
				734,612.43	**1,615,800.02**	**117.02**	**4.15**	**-0.48**
7-2	734,689.91	1,615,743.93	117.50	734,690.00	1,615,743.55	117.31	0.39	-0.19
7-3	734,760.29	1,615,690.00	117.50	734,760.24	1,615,690.31	118.08	0.31	0.58
7-4	734,830.83	1,615,631.68	117.50	734,830.69	1,615,631.68	115.85	0.14	-1.65
				734,831.85	1,615,635.02	116.99	3.49	-0.51
				734,833.85	**1,615,637.10**	**117.90**	**6.21**	**0.40**
7-5	734,900.55	1,615,576.79	117.50	734,900.07	1,615,576.26	116.21	0.72	-1.29
				734,902.49	**1,615,578.10**	**117.18**	**2.33**	**-0.32**
7-6	734,311.00	1,615,480.13	117.50	734,310.35	1,615,480.28	117.81	0.67	0.31
7-7	734,338.46	1,615,433.72	117.50	734,338.20	1,615,434.00	118.05	0.38	0.55
7-8	734,385.69	1,615,379.54	117.50	734,385.84	1,615,379.50	118.64	0.15	1.14
				734,385.78	1,615,377.11	119.19	2.43	1.69
				734,389.25	1,615,380.89	118.23	3.81	0.73
				734,392.11	**1,615,384.03**	**117.30**	**7.84**	**-0.20**
7-9	734,412.60	1,615,372.47	117.50	734,412.89	1,615,372.36	117.66	0.31	0.16
7-10	734,440.72	1,615,336.72	117.50	734,440.84	1,615,336.78	118.27	0.13	0.77
				734,438.41	1,615,334.51	119.07	3.20	1.57
				734,442.68	**1,615,339.73**	**117.53**	**3.58**	**0.03**
7-11	734,455.54	1,615,292.63	117.50	734,455.70	1,615,292.65	118.59	0.16	1.09
				734,458.66	**1,615,295.25**	**117.75**	**4.07**	**0.25**
7-12	734,521.22	1,615,217.40	117.50	734,516.46	1,615,223.67	116.77	7.87	-0.73

Notes:
Additional Topographic Measurements provided as part of CU7 Form 2 Acceptance Package.

NOTES:

1. OSI MULTIBEAM SURVEY DATE #1 OCTOBER 28, 2009. OSI MULTIBEAM SURVEY DATE #2 NOVEMBER 8, 2009.
2. BASED ON RESULTS OF MULTIBEAM #1, DREDGING CONTRACTOR PLACED ADDITIONAL BACKFILL FROM OCTOBER 30 THROUGH NOVEMBER 7, 2009. DATA IN CLOUDED AREA BASED ON OSI MULTIBEAM SURVEY DATE #2 NOVEMBER 8, 2009
3. NUMERIC VALUES IN 10'x10' GRID REPRESENT DIFFERENCE TO TARGET THICKNESS (POSITIVE NUMBERS REFLECT THICKNESS ABOVE TARGET THICKNESS). COLORS DETERMINED USING DIFFERENT BACKFILL TOLERANCES DESCRIBED IN SPEC SECTION 13720.

15% Volume Table

Area	15% Volume (CY)
CU-7 15%	5,694

Notes.
1. Volume calculations are based on data collected through the 9th of November 2009.
2. Volumes were computed using 1' x 1' cell center average data sets. In areas where the near-shore prism slope did not extend underneath the 15% backfill areas, additional slopes were added.
3. Volumes were computed using HYPACK, Inc. 2008 TIN to TIN method.
4. The volume information presented in this table are the results of multibeam surveys performed by Ocean Surveys, Inc. on the survey dates indicated and can only be considered representative of the conditions existing during that time.

LEGEND

- -0.03 — 10x10 GRID WITHIN DESIGN GUIDELINES
- -0.77 — 10x10 GRID LESS THAN DESIGN GUIDELINES
- 1.11 — 10x10 GRID ABOVE DESIGN GUIDELINES
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- 7-11 — NEARSHORE BORDER SET POINT (DATA CONTAINED IN NEARSHORE SUMMARY TABLE)
- POTENTIAL LOCATION FOR RIVERINE FRINGING WETLAND CONSTRUCTION (PLANTING BY OTHERS)
- NEARSHORE BORDER (117.5 FEET)

1 ft. Average Thickness Table

Subunit	Average Thickness (ft)	Approx. Area (acre)	Intended Vol. Placed (CY)	Actual Vol. Placed (CY)	Variation from Planned (CY)
CU7-1	1.24	0.67	1077.8	1336.4	258.7
CU7-2	1.30	0.59	951.9	1235.9	284.0
CU7-3	1.37	0.68	1096.3	1505.4	409.1
CU7-4	1.33	0.63	1018.5	1349.7	331.2
CU7-5	1.14	0.32	511.1	585.9	74.7
				Total =	1,357.7

Notes:
Average thickness and volumes were computed using 10x10 cell center average data sets.

0 40' 80'

CU7
BACKFILL PLACEMENT ACCEPTANCE SURVEY

REV	DATE	DRN BY	DRAWING DESCRIPTION	PM
1	11/19/09	JHG	REVISED PER EPA COMMENTS	MG
0	11/16/09	JHG	ISSUED FOR EPA REVIEW	MG

PARSONS
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40–1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746–5311

DRAWN BY	CHECKED BY	DRAWING NO.	SCALE
JHG	MG	CU7–1	AS SHOWN
DATE 11/19/09	APPROVED BY MG		JOB 442209.01401

DRAWING TITLE: CU7 BACKFILL PLACEMENT ACCEPTANCE SURVEY

FILE NAME: E:\FORT EDWARD\PARSONS\BACKFILL ACCEPTANCE\1FT BKFL 10X10 CU7–2.DWG
PLOT DATE: 11/19/2009 9:37 AM PLOTTED BY: 48606

CU6-1
CU6-2
CU6-3
CU6-4
CU6-5
CU7-1
CU7-2
CU7-3
CU7-4
CU7-5
CU_7
CU8-2
CU8-3
CU8-4
CU_8
CU9-1
WRI 10+00
WRI 15+00
WRI PI 16+21.97
WRI 20+00
WRI 25+00
RM 194.3
RM 194.2
RM 194.1
N

LEGEND

- 107.1 — ELEVATION OF RIVER BOTTOM
- SHORELINE
- SILT CURTAIN
- SHEETPILE
- CU_XX — CERTIFICATION UNIT (TYP)
- CERTIFICATION SUBUNIT
- RM 190 — RIVER MILE
- 250+00 — BASELINE WITH STATIONING

DEPTH OF WATER BELOW 119' NAVD88 (FEET)

0
2
4
6
8
10
12
14
16
18
20+

NOTES

1. GRID SYSTEM IS THE NEW YORK EAST STATE PLANE COORDINATE SYSTEM, NAD 83.
2. ELEVATIONS ARE IN FEET AND ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) BASED ON BENCHMARK "GE-HR-07R" HAVING AN ELEVATION OF 131.89' NAVD88 AS PROVIDED BY PARSONS. "GE-HR-07R" IS A CHISELED "X" ON AN ALUMINUM CAP AT LOCK 7.
3. COLORIZED DEPTH MAP IMAGERY WAS CREATED FROM A GRID OF 1' BY 1' CELLS POSTED WITH THE AVERAGE DEPTH AT THE CELL CENTER X,Y LOCATION.
4. ELEVATIONS REPRESENT THE AVERAGE ELEVATION IN A 10' BY 10' CELL AND ARE POSTED IN THE CENTER OF THE CELL. 10' BY 10' GRID ORIGINS WERE PROVIDED BY PARSONS.
5. BASEMAP FEATURES ARE APPROXIMATE AND WERE OBTAINED FROM DRAWINGS PROVIDED BY ARCADIS.
6. ORTHOPHOTO IMAGERY IS NATURAL COLOR ORTHOPHOTOGRAPHY FLOWN IN 2003 AND WAS PROVIDED BY QEA.
7. DREDGING OPERATION INFORMATION WAS PROVIDED BY CASHMAN DREDGING AND MARINE CONSTRUCTION CO., LLC.
8. REFER TO PREVIOUSLY PROVIDED DREDGE PRISM FOR TARGET ELEVATIONS.
9. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY OCEAN SURVEYS, INC. ON OR BEFORE THE DATE ON THIS DRAWING AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THOSE TIMES. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO OSI.

SURVEY VESSEL:	DEPTH SOUNDER:
R/V ECHO	RESON SEABAT 8125

NAVIGATION SYSTEM: APPLANIX POS MV IN REAL TIME KINEMATIC MODE

SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2008

SURVEY PROCESSING SOFTWARE: HYPACK MULTIBEAM EDITOR VERSION 2008

SCALE IN FEET

50 0 50 100 150

CHECK GRAPHIC SCALE BEFORE USING

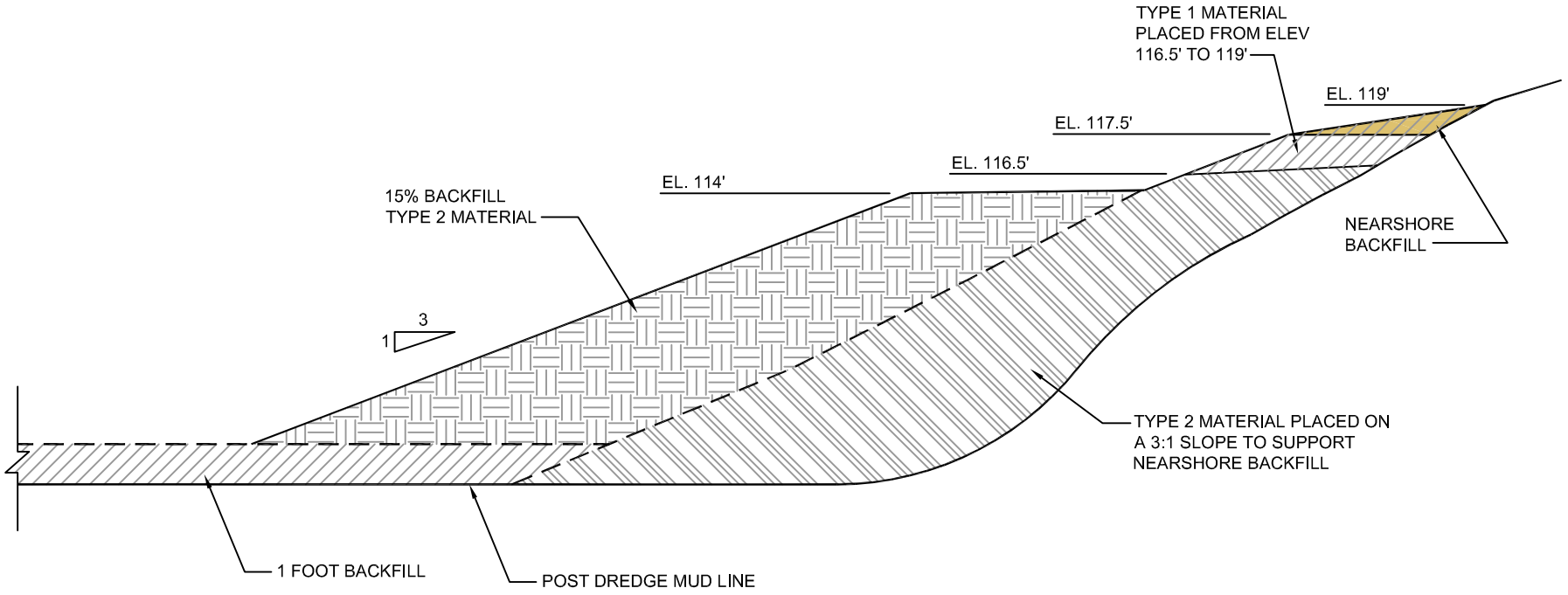
OCEAN SURVEYS, INC.
OLD SAYBROOK, CONNECTICUT
(860) 388-4631
www.oceansurveys.com

CU07 - POST BACKFILL PLACEMENT

HUDSON RIVER, NEW YORK

HUDSON RIVER SEDIMENT REMEDIATION PHASE 1 PROJECT

OSI PROJECT NUMBER:	CURRENT THROUGH SURVEY DATE:	DRAWING:	ISSUE NO.:
09ES022	9 NOVEMBER 2009	PBP-CU07	1



CU7 NEAR SHORE BACKFILL WITH 15% BACKFILL TO ELEV 114' PLACEMENT DETAIL

TYPICAL SECTION NOT TO SCALE

RECORD DRAWING

PARSONS
COMMERCIAL TECHNOLOGY GROUP
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40–1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746–5311

DRAWN BY: JHG	CHECKED BY: MG	DRAWING NO.: CU7–BF–C01	SCALE: NOT TO SCALE
DATE: 11/15/09	APPROVED BY: MG		JOB: 442209

DRAWING TITLE: CU7 NEAR SHORE BACKFILL WITH 15% BACKFILL PLACEMENT DETAIL

FILE NAME: E:\FORT EDWARD\PARSONS\OSI–BACKFILL CAP\CU7–CAP–SMC–BC–5–RECORD.DWG
PLOT DATE: 11/15/2009 2:17 PM PLOTTED BY: 48606

Correspondence

(Letters and Emails)

Galbraith, Michael

From: King.David@epamail.epa.gov
Sent: Saturday, November 14, 2009 9:36 AM
To: Andrew Inglis
Cc: Michael J. Johnson; Timothy Kruppenbacher; Galbraith, Michael; Bryan Minor; Gary Klawinski; Joseph Moloughney
Subject: Re: Discussions regarding CU Backfill and Cap placement

Andrew, I agree with summary.
Dave
Sent by EPA Wireless E-Mail Services

From: "Inglis, Andrew A (GE, Corporate)" [andrew.inglis@ge.com]
Sent: 11/13/2009 05:13 PM EST
To: David King
Cc: <MJohnson@louisberger.com>; "Kruppenbacher, Timothy A (GE, Corporate)" <timothy.kruppenbacher@ge.com>; <michael.galbraith@parsons.com>; <USACE_HRFO@roadrunner.com>; <GKlawinski@ene.com>; "Joseph Moloughney" <Joseph_Moloughney@canals.state.ny.us>
Subject: Discussions regarding CU Backfill and Cap placement

Dave,
Today and yesterday we met and reviewed progress surveys of cap and backfill placement in CUs 1, 2, 3, 4, 7 and 18. This email confirms decisions made during the meeting based on reviews of the maps presented during the meeting.

CU1.
In CU1 it was agreed that sufficient thickness of isolation layer material has been placed while providing enough room to place armor stone below the 105.2' elevation in the navigation channel. It was agreed that placement of armor stone can begin.

CU2.
In CU2 it was agreed that the top of cap and backfill elevations were acceptable. GE will prepare a Form 2 package for EPA review.

CU3 .
In CU3 it was agreed that the top of cap and backfill elevations were acceptable, it was discussed that GE was in the process of placing backfill in an area of the navigation channel where the post dredge elevations were below 102' elevation. Once GE has surveyed that additional backfill location GE will prepare a Form 2 package for EPA review.

CU4.
In CU4 it was agreed that the top of cap elevations in the north east quarter of the CU was acceptable and that backfill placment in that area may begin.

CU7.
In CU7 it was agreed that the top of cap and backfill elevations were acceptable. GE will prepare a Form 2 package for EPA review.

CU18
In CU18 it was agreed that the top of cap elevations were acceptable in both of the cap locations in that CU.

Please let me know if I missed anything.

Thanks,

Andrew A. Inglis
Dredging Task Leader
GE

T +1 518-746-5256

381 Broadway
Building 40-2
Fort Edward, NY 12828
GE Corporate Environmental Programs

GE Imagination at Work

CU-08

Form 2

CU Certification of Completion

CU BACKFILL/ENGINEERED CAP COMPLETION APPROVAL - FORM 2

Reporting Date	12/4/2009			**Placement Start Date**	10/22/2009
CU Number	8			**Placement End Date**	12/4/2009
Approximate CU Centroid	**Northing**	1615205	**Easting**	734925	NY State NAD 83
CU Size	4.99	Acres			
Backfill Area	3.51	Acres			
Cap Area	1.48	Acres			

Backfill Surface Mean Tri+ PCBs Concentration (when required)	NA	**mg/kg**
Number of nodes sampled	NA	**mg/kg**

Backfill	**Type of Backfill**	**Reference to appropriate drawings attached to Approval Form 1**
X	Type 1, Type 2, Type 3, 15%, Nearshore	CU8 Backfill and Cap Plan, 10/29/09

Cap	**Type of Cap**	**Reference to appropriate drawings attached to Approval Form 1**
X	Type "B" Medium Velocity Cap Type "B" Low Velocity Cap	CU8 Backfill and Cap Plan, 10/29/09

CU Checklist	**Indicate one of the following**		**Reviewer Initial Acceptance**			
Item	**Attached**	**Not Applicable**		**GE**		**EPA**
Drawing of Installed Backfill/Cap (with record details, thickness and sample locations [when backfill/cap are placed])	x					
Where applicable in backfill areas provide the following: Sample locations (coordinates), depths, Aroclor and Tri+ PCB concentrations collected including analytical data, field observations, (hard copy and electronic copies [in database format or equivalent]		x				

Comments

Refer to CU8 Narrative Summary of Backfill and Capping and CU8 Backfill Placement Drawings.

Upon signing this document, GE certifies that the backfill/cap has been installed satisfactorily and that no further backfill placement or capping is required for this CU. These remedial activities exclude long term operation, monitoring, maintenance and adaptive management at the CU. EPA accepts this certification.

Signature of GE Representative	**Signature of EPA Representative**
Signature	Signature
Name	Name
Date	Date

Narrative

CU 8

Narrative Summary of Backfill and Capping and

EPA Backfill and Capping Agreements

1.0 Cap Placement

Type "B" Medium Velocity and Type "B" Low Velocity Caps were placed in accordance with the CU 8 Backfill and Cap Plan drawing, dated October 29, 2009, which was provided to EPA as part of the CU 8 Form 1 package. Final multi-beam bathymetric survey of the Type "B" Low Velocity Cap was performed on November 14, 2009, as shown on the attached CU 8 Type "B" Low Velocity Cap Acceptance Survey map, dated December 2, 2009. The surveyed cap thickness on a 5' x 5' grid is shown for the Type "B" Low Velocity Cap. Final multi-beam bathymetric surveys of the Type "B" Medium Velocity isolation layers were performed on November 12 and 15, 2009, as shown on the attached CU 8 Type "B" Medium Velocity Cap Isolation Layer Acceptance Survey map, dated December 2, 2009. As noted on the referenced drawing, the reported thickness of the isolation layer in the northern Type "B" Medium Velocity Cap includes some amount of Type 2 backfill placed in this area prior to the designation of this area as requiring a cap. After the partial placement of Type 2 backfill in some of this area, a full 9-inch layer of Type 2 material with TOC, in accordance with the design requirements for a Type "B" Medium velocity cap, was placed above the Type 2 backfill material. The surveyed isolation layer thickness on a 10' x 10' grid is shown for the Medium Velocity isolation layers. A multi-beam survey of the armor stone layer of the Type "B" Medium Velocity cap areas was completed on November 18, 2009, as shown on the attached CU 8 Type "B" Medium Velocity Cap Armor Layer Acceptance Survey map, dated December 2, 2009. The surveyed armor layer thickness on a 5' x 5' grid is shown for the Medium Velocity Type "B" cap areas.

2.0 Backfill Placement

In accordance with the CU8 Backfill and Cap Plan Drawing, dated October 29, 2009, which was provided to EPA as part of the CU 8 Form 1 package, 1-foot Backfill, Nearshore Backfill and 15% Additional Backfill were placed in CU 8. Final multi-beam bathymetric surveys of the backfill materials were performed on November 10 and 19, 2009 as shown on the attached CU 8 Backfill Acceptance Survey map, dated November 24, 2009. The difference to target thickness of the final backfill surface is shown on a 10' x 10' grid for the 1-foot Backfill and the 15% Additional Backfill. For Nearshore Backfill, the elevations of the nearshore set points are provided in the table on the attached CU 8 Backfill Acceptance Survey map, dated December 3, 2009.

3.0 EPA Field Agreements Specific to CU 8 Backfill and Capping

1. During the 4:00 PM meeting with EPA on October 12, 2009, EPA agreed that acceptance surveys of partial areas of a CU may be performed and used for acceptance once placement of backfill or cap in those areas is complete.

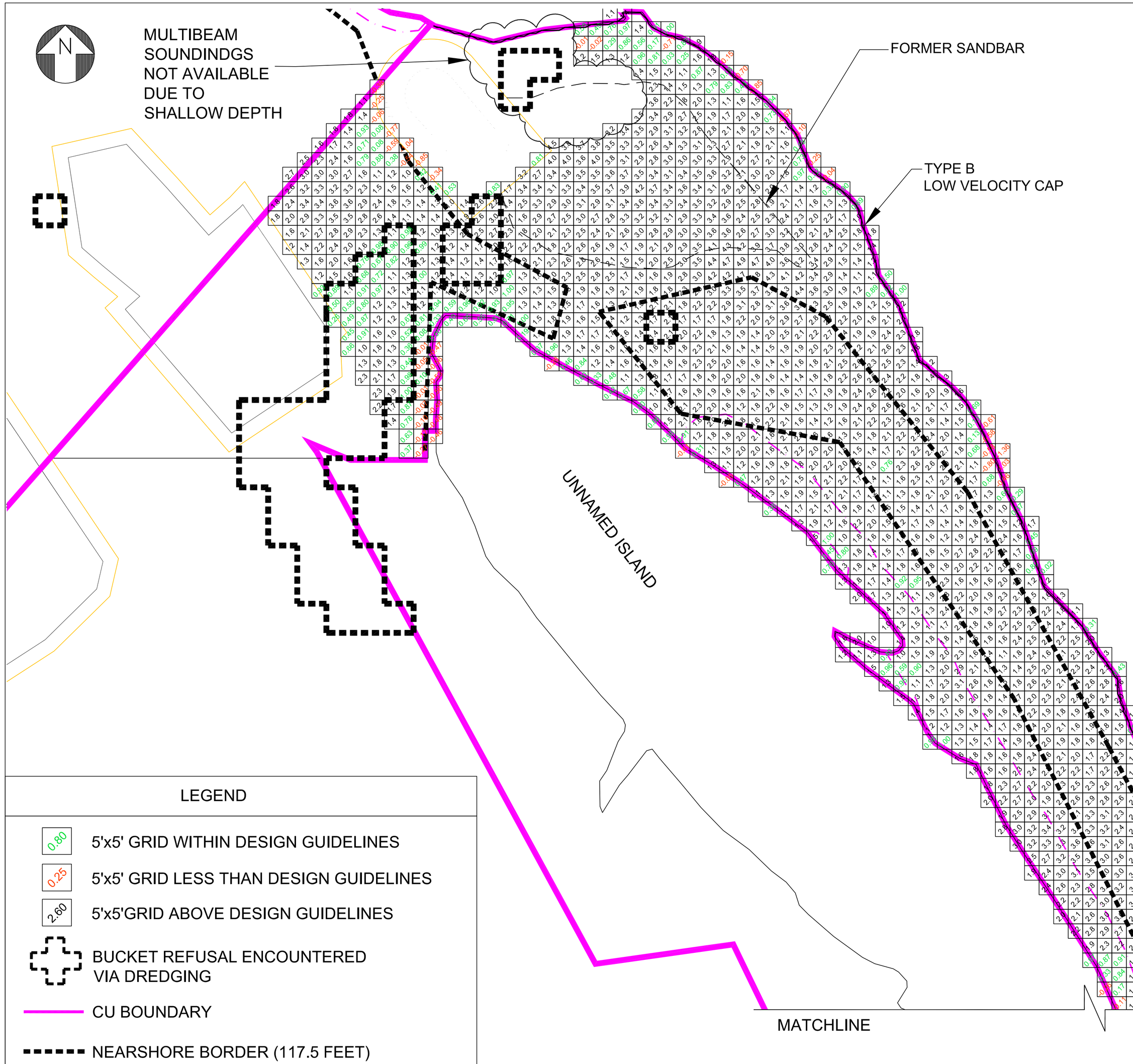
2. During the 4:00 PM meeting with EPA on October 20, 2009, GE and EPA agreed to create a wetland to replace riverine fringing wetland (RFW) removed from CU7. This RFW was situated in CU8 adjacent to the Roger's Island shoreline just south of the railroad bridge.

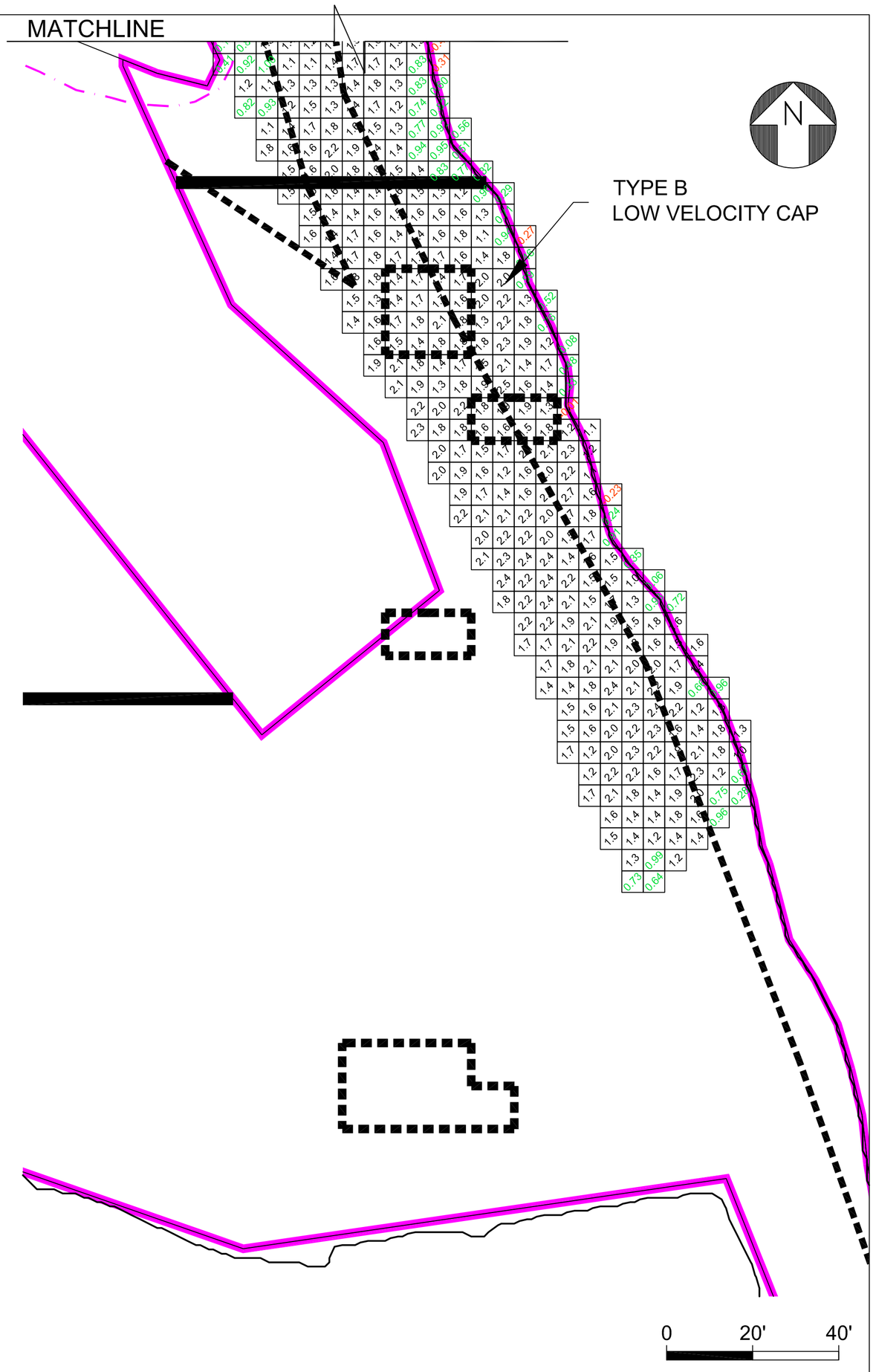
3. During the 4:00 PM meeting with EPA on October 27, 2009, GE presented a Draft Backfill and Cap Plan to EPA, showing an area of approximately 75 ft^2 as receiving a Type "B" high velocity cap. Based on the small area, EPA agreed area be modified to a Type "B" medium velocity cap (See Backfill & Cap Record Drawing, dated December 2, 2009).

4. During a 3:00 PM meeting with EPA on November 19, 2009, GE presented a Backfill Acceptance Survey drawing on a 10' x 10' grid in CU 8. EPA agreed that the backfill thicknesses, as shown, were acceptable. The CU8 Backfill Acceptance Survey Drawing, dated November 24, 2009 is included in this package.

5. In an email dated November 25, 2009 GE informed EPA that significant run-out of placed nearshore backfill was being experienced in CU8. To mitigate this situation GE requested approval to fill deeper areas with Type N stone then place Type 1 or Type 2 (as required in the design) on top of the Type N material. EPA approved this request on November 27, 2009 (see attached email dated November 27, 2009).

Figures





LEGEND

- 0.80 — 5'x5' GRID WITHIN DESIGN GUIDELINES
- 0.25 — 5'x5' GRID LESS THAN DESIGN GUIDELINES
- 2.60 — 5'x5'GRID ABOVE DESIGN GUIDELINES
- BUCKET REFUSAL ENCOUNTERED VIA DREDGING
- CU BOUNDARY
- NEARSHORE BORDER (117.5 FEET)
- MUD - RIP RAP INTERFACE
- 5 FOOT INTERFACE OFFSET
- POTENTIAL LOCATION FOR RIVERINE FRINGING WETLAND CONSTRUCTION (PLANTING BY OTHERS)

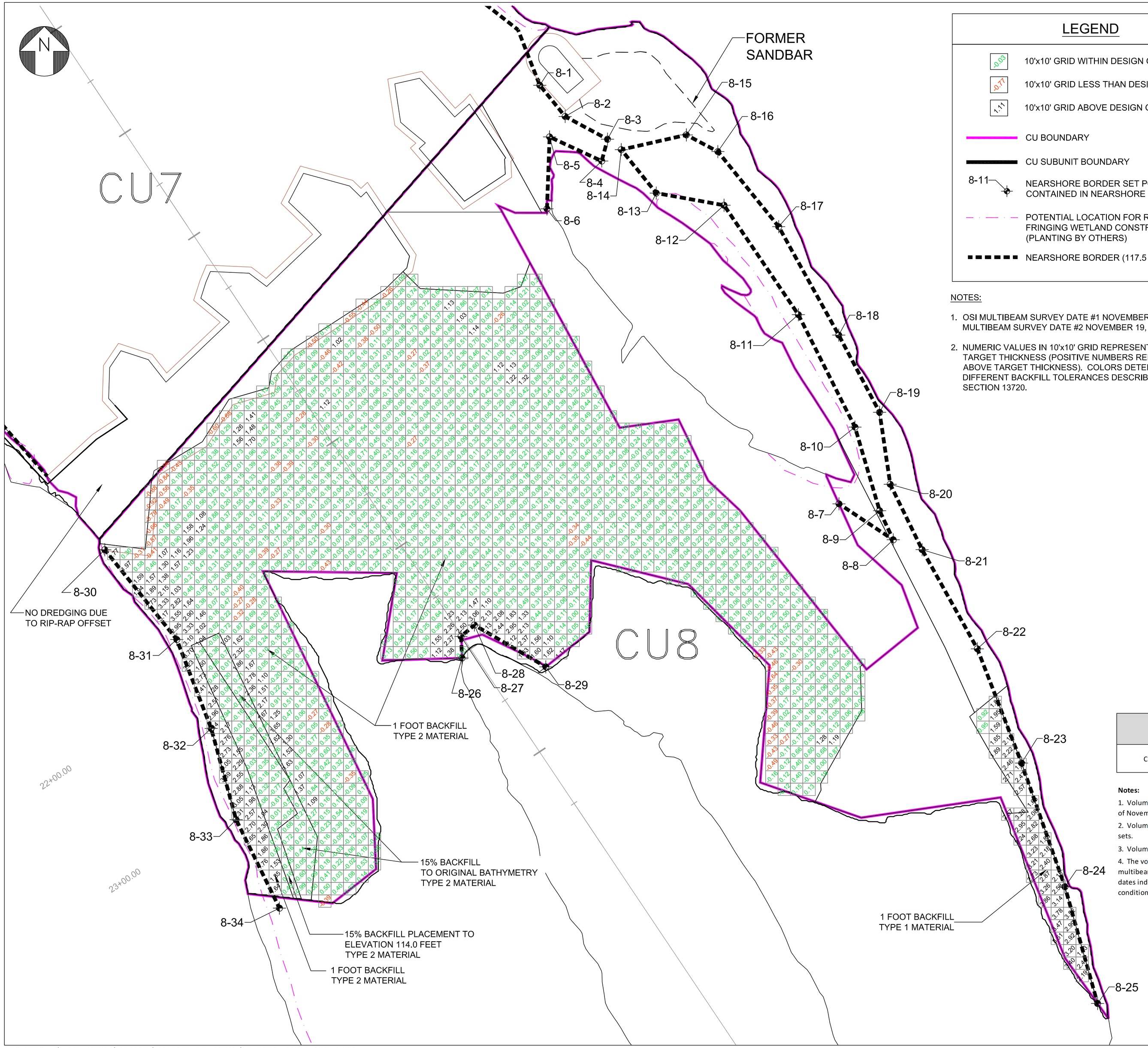
NOTES:

1. OSI MULTIBEAM SURVEY ON NOVEMBER 14, 2009.
2. THICKNESS OF TYPE "B" LOW VELOCITY CAP IS LISTED IN 5'X5' GRIDS.

PARSONS
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40–1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746–5311

DRAWING TITLE	CU8 TYPE "B" LOW VELOCITY CAP ACCEPTANCE SURVEY
DRAWN BY: JHG	CHECKED BY: MG
DATE: 12/02/09	APPROVED BY: MG
DRAWING NO.: CU8–1	SCALE: AS SHOWN
	JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CU8–DWGS (11–23–2009)\CU8–2CAP_B_ISO.DWG
PLOT DATE: 12/3/2009 2:20 PM PLOTTED BY: 48606



LEGEND

- -0.03 — 10'x10' GRID WITHIN DESIGN GUIDELINES
- -0.77 — 10'x10' GRID LESS THAN DESIGN GUIDELINES
- 1.11 — 10'x10' GRID ABOVE DESIGN GUIDELINES
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- 8-11 — NEARSHORE BORDER SET POINT (DATA CONTAINED IN NEARSHORE SUMMARY TABLE)
- POTENTIAL LOCATION FOR RIVERINE FRINGING WETLAND CONSTRUCTION (PLANTING BY OTHERS)
- NEARSHORE BORDER (117.5 FEET)

NOTES:

1. OSI MULTIBEAM SURVEY DATE #1 NOVEMBER 10, 2009. OSI MULTIBEAM SURVEY DATE #2 NOVEMBER 19, 2009.
2. NUMERIC VALUES IN 10'x10' GRID REPRESENT DIFFERENCE TO TARGET THICKNESS (POSITIVE NUMBERS REFLECT THICKNESS ABOVE TARGET THICKNESS). COLORS DETERMINED USING DIFFERENT BACKFILL TOLERANCES DESCRIBED IN SPECIFICATION SECTION 13720.

CU-08 Near-Shore Topographic Soundings Collected 2009-11-24, 2009-12-01 and 2009-12-04.

Published Near-Shore Locations				Near-Shore Confirmation				
Name	Easting	Northing	Target Elevation	Easting	Northing	Check Elevation	Horz. Dist	Vert Diff.
8-1	734918.10	1615532.13	117.50	734,917.83	1,615,532.30	117.10	0.32	-0.40
8-2	734938.53	1615507.00	117.50	734,938.49	1,615,507.14	116.59	0.14	-0.91
				734,943.19	**1,615,512.42**	**117.39**	**7.14**	**-0.11**
8-3	734972.67	1615488.70	117.50	734,972.75	1,615,488.70	117.08	0.08	-0.42
8-4	734967.99	1615471.13	117.50	734,967.77	1,615,470.84	117.04	0.37	-0.46
8-5	734926.00	1615490.51	117.50	734,926.20	1,615,490.48	115.81	0.20	-1.69
				734,932.53	1,615,488.12	116.28	6.96	-1.22
				734,935.13	**1,615,480.02**	**117.25**	**13.91**	**-0.25**
8-6	734923.88	1615432.58	117.50	734,924.70	1,615,432.66	114.68	0.82	-2.82
				734,928.19	1,615,433.69	115.60	4.45	-1.90
				734,932.55	**1,615,434.45**	**117.01**	**8.87**	**-0.50**
				734,932.57	1,615,434.91	117.67	9.00	0.17
8-7	735159.08	1615194.98	117.50	735,159.48	1,615,195.02	117.70	0.40	0.20
8-8	735202.82	1615166.00	117.50	735,203.08	1,615,166.18	116.47	0.31	-1.03
				735,200.17	**1,615,168.71**	**117.03**	**3.79**	**-0.47**
				735,203.79	1,615,170.76	116.56	4.86	-0.94
				735,209.97	1,615,167.51	116.17	7.31	-1.33
				735,196.03	1,615,172.10	117.44	9.13	-0.06
8-9	735191.81	1615189.46	117.50	735,191.84	1,615,189.29	117.31	0.17	-0.19
8-10	735171.98	1615256.80	117.50	735,172.06	1,615,257.14	117.46	0.35	-0.04
8-11	735126.40	1615347.33	117.50	735,126.41	1,615,346.99	117.50	0.34	0.00
8-12	735066.50	1615435.50	117.50	735,066.19	1,615,435.48	116.79	0.31	-0.71
				735,063.88	**1,615,434.05**	**117.56**	**3.00**	**0.06**
8-13	735011.90	1615445.31	117.50	735,012.00	1,615,445.37	117.62	0.12	0.12
8-14	734983.74	1615480.29	117.50	734,983.72	1,615,480.09	116.61	0.20	-0.89
				734,986.19	**1,615,483.72**	**117.37**	**4.22**	**-0.13**
8-15	735036.16	1615492.16	117.50	735,036.21	1,615,492.30	117.60	0.14	0.09
8-16	735061.56	1615478.70	117.50	735,061.26	1,615,478.37	117.31	0.44	-0.19
8-17	735110.52	1615418.24	117.50	735,110.63	1,615,418.47	117.48	0.25	-0.02
8-18	735158.90	1615330.94	117.50	735,158.74	1,615,331.24	117.29	0.34	-0.21
8-19	735191.80	1615268.73	117.50	735,191.60	1,615,268.90	117.52	0.26	0.02
8-20	735200.38	1615210.72	117.50	735,200.24	1,615,210.79	116.74	0.16	-0.76
				735,203.15	**1,615,216.15**	**117.07**	**6.09**	**-0.43**
8-21	735226.07	1615158.07	117.50	735,226.33	1,615,158.29	117.21	0.34	-0.29
8-22	735270.55	1615078.19	117.50	735,270.26	1,615,078.48	116.53	0.41	-0.97
				735,274.36	1,615,079.09	117.05	3.92	-0.45
				735,276.29	**1,615,080.58**	**117.67**	**6.22**	**0.17**
8-23	735306.14	1614986.21	117.50	735,305.80	1,614,986.52	117.52	0.45	0.02
8-24	735341.08	1614886.51	117.50	735,340.89	1,614,886.93	117.33	0.46	-0.17
8-25	735367.40	1614792.49	117.50	735,367.70	1,614,792.34	117.19	0.33	-0.31
8-26	734855.47	1615070.79	117.50	734,855.62	1,615,070.58	115.59	0.26	-1.91
				734,859.09	1,615,069.63	116.78	3.81	-0.72
				734,863.12	**1,615,068.10**	**117.48**	**8.11**	**-0.02**
8-27	734854.65	1615088.15	117.50	734,854.46	1,615,087.79	115.30	0.40	-2.20
				734,858.93	1,615,082.81	116.71	6.84	-0.79
				734,861.82	**1,615,081.61**	**117.30**	**9.70**	**-0.20**
8-28	734865.43	1615097.34	117.50	734,865.52	1,615,097.35	115.04	0.08	-2.46
				734,867.36	1,615,090.43	116.81	7.18	-0.69
				734,869.18	**1,615,084.98**	**117.79**	**12.92**	**0.29**
8-29	734922.95	1615063.65	117.50	734,923.19	1,615,063.82	115.40	0.30	-2.11
				734,921.96	1,615,061.87	116.17	2.03	-1.33
				734,920.17	**1,615,059.55**	**117.43**	**4.95**	**-0.07**
8-30	734567.71	1615158.00	117.50	734,567.89	1,615,158.00	118.61	0.17	1.11
				734,570.11	**1,615,158.99**	**117.85**	**2.59**	**0.35**
8-31	734625.69	1615085.69	117.50	734,626.04	1,615,085.62	117.64	0.36	0.14
8-32	734653.44	1615014.00	117.50	734,653.17	1,615,014.12	117.58	0.29	0.08
8-33	734673.52	1614940.53	117.50	734,673.25	1,614,940.44	117.58	0.29	0.08

CU8 15% Backfill Volume Table

Area	15% Volume Placed
CU8 15% BACKFILL	724 CY

Notes:

1. Volume calculations are based on data collected during the 10th of November 2009 survey.
2. Volumes were computed using a 1' x 1' cell center average data sets.
3. Volumes were computed using HYPACK, Inc. 2008 TIN to TIN.
4. The volume information presented in this table are the results of multibeam surveys performed by Ocean Surveys, Inc. on the survey dates indicated and can only be considered representative of the conditions existing during that time.

CU8 AVERAGE THICKNESS, 1-FOOT BACKFILL

Subunit	Average Thickness (ft)	Approx. Area (acre)	Intended Vol. Placed (CY)	Actual Vol. Placed (CY)	Variation From Planned (CY)
CU-8_2	1.26	0.88	1422.2	1798.1	375.9
CU-8_3	1.15	0.88	1425.9	1643.7	217.8
CU-8_4	1.11	1.07	1733.3	1929.3	196.0
CU-8_5	1.08	0.27	433.3	469.2	35.9

Notes:
Average thickness and volumes were computed using 10x10 cell center average data sets.

CU8 BACKFILL ACCEPTANCE SURVEY

0 40' 80'

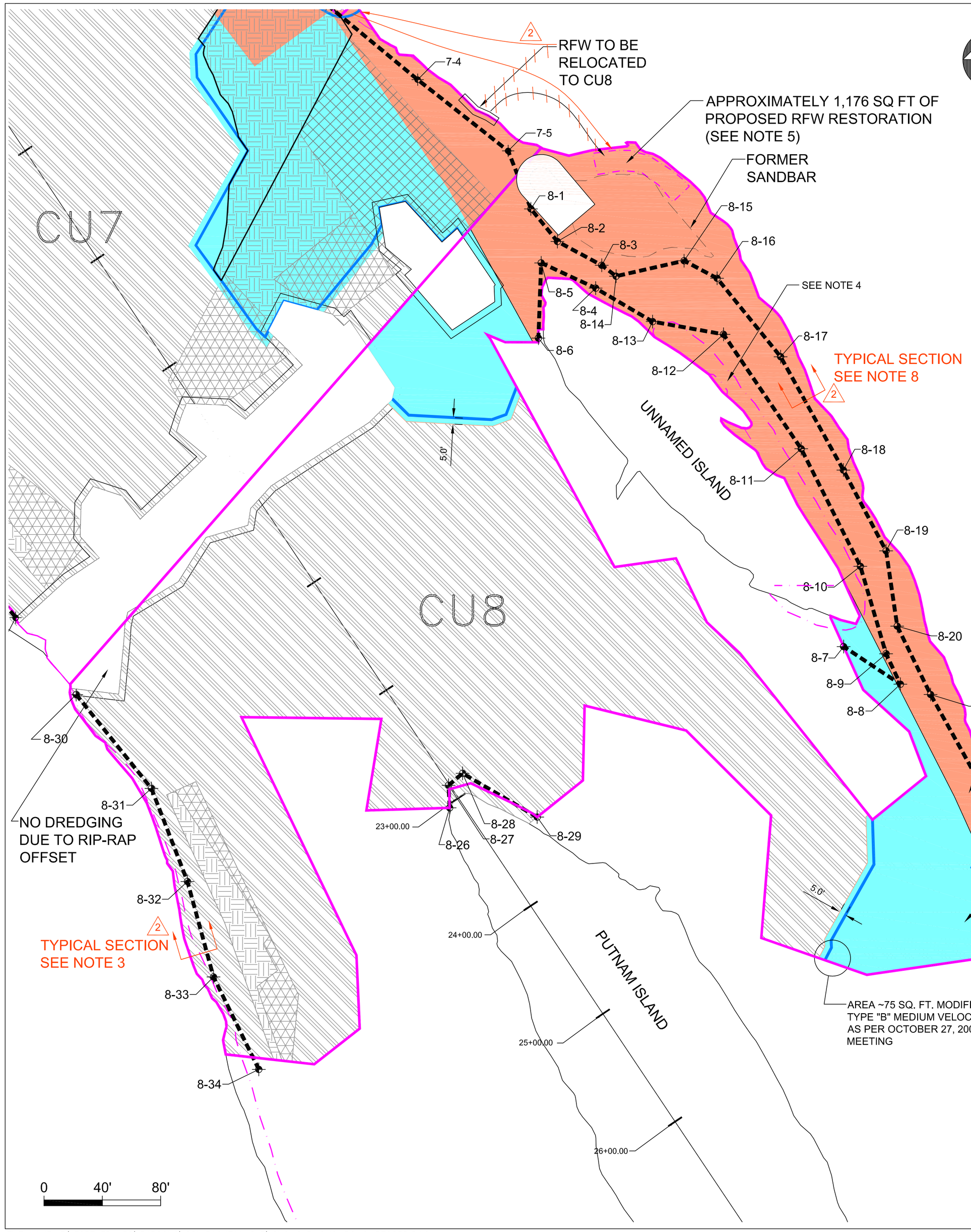
REV	DATE	DRN BY	DRAWING DESCRIPTION	
0	12/02/09	JHG	ISSUED FOR EPA REVIEW	MG

PARSONS
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40–1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746–5311

DRAWING TITLE: CU8 BACKFILL ACCEPTANCE SURVEY

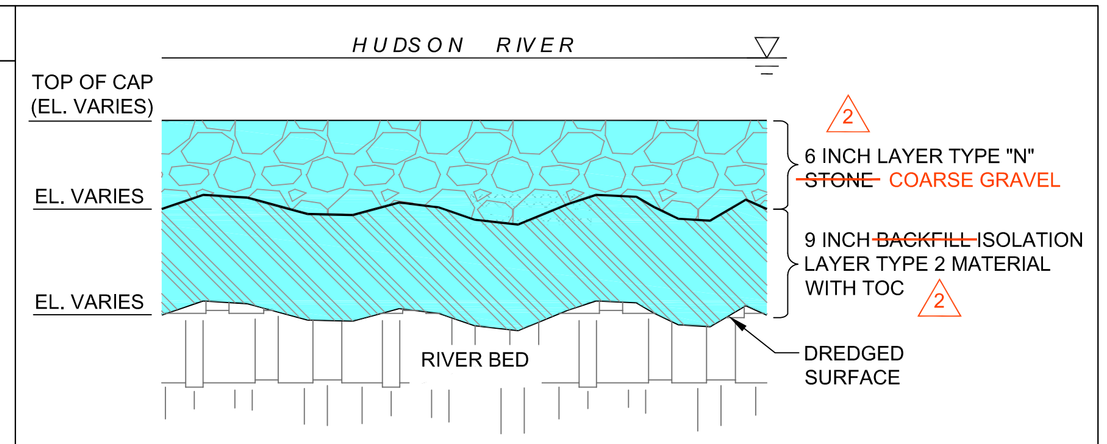
DRAWN BY	CHECKED BY	DRAWING NO.	SCALE
JHG	MG	CU8–2	AS SHOWN
DATE 12/02/09	APPROVED BY MG		JOB 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\BACKFILL ACCEPTANCE\1FT BKFL 10X10 CU8–3.DWG
PLOT DATE: 12/4/2009 2:40 PM PLOTTED BY: GOLDTHWAIT, JAMES



LEGEND

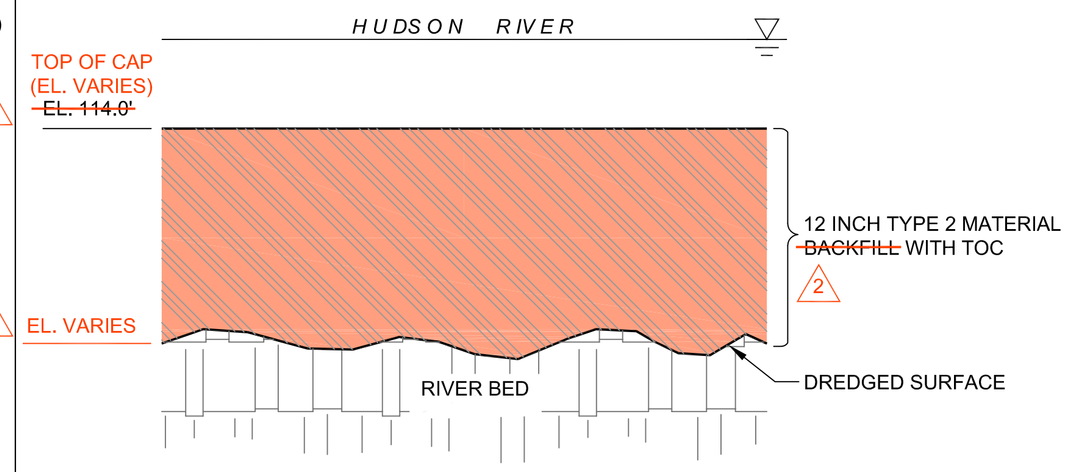
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- 1 FOOT BACKFILL AND NEARSHORE PLACEMENT TYPE 1 MATERIAL
- 1 FOOT BACKFILL AND NEARSHORE PLACEMENT TYPE 2 MATERIAL
- 15% BACKFILL PLACEMENT TO ORIGINAL BATHYMETRY TYPE 2 MATERIAL
- 15% BACKFILL PLACEMENT TO AN ELEV. OF 114.0 FEET TYPE 2 MATERIAL
- TYPE B - LOW VELOCITY CAP (12 INCH LAYER OF TYPE 2 ~~BACKFILL~~ WITH TOC) △2
- TYPE B - MEDIUM VELOCITY CAP. △2
- 8-1 NEARSHORE BORDER SET POINT
- POTENTIAL LOCATION FOR RIVERINE FRINGING WETLAND CONSTRUCTION (PLANTING BY OTHERS)
- NEARSHORE BORDER (117.5 FEET) △2
- LIMIT OF NON-COMPLIANT NODE POLYGONS



TYPICAL SECTION VIEW

DETAIL 1 - TYPE "B" MEDIUM VELOCITY CAP CU8

NOT TO SCALE



TYPICAL SECTION VIEW

DETAIL 2 - TYPE "B" LOW VELOCITY CAP CU8

NOT TO SCALE

NOTES:

1. BACKFILL TO BE PLACED IN ACCORDANCE WITH SECTION 13720 AND DESIGN DRAWINGS B-0021-SK1 AND B-0020-SK1.
2. CAP MATERIALS TO BE PLACED IN ACCORDANCE WITH SECTION 13720 AND DESIGN DRAWING C-0038.
3. PLACEMENT OF NEARSHORE BACKFILL IN TYPE 1 AREAS TO CONSIST OF TYPE 2 BACKFILL TO EL 116.5', THEN TYPE 1 BACKFILL FROM EL 116.5' TO 119'. (SEE SKETCH ~~CU8-BF-01~~) CU8-BF-C01 △2
4. PLACE TYPE 1 BACKFILL, THEN 1 FOOT TYPE 3 BACKFILL PLACED IN ACCORDANCE WITH DESIGN DRAWING B-0021-SK1 - TYPICAL RIVERINE FRINGING WETLAND CROSS SECTION. △2
5. WETLAND CREATED TO REPLACE RIVERINE FRINGING WETLAND REMOVED FROM CU7. MITIGATION WILL CONSIST OF CREATION OF WETLAND (1:1 BY AREA), AS DISCUSSED DURING THE OCTOBER 20, 2008 DAILY DATA MEETING. (SEE SKETCH CU8-WL).
6. TOTAL CAP AREA INCLUDES 5' HORIZONTAL OFFSET INTO COMPLIANT AREA, AS PER DRAWING C-0038.
7. LIMIT OF CAP AT 5 FT. HORIZONTAL OFFSET FROM LIMIT OF NON-COMPLIANT NODE POLYGON.
8. PLACE 1 FOOT TYPE "B" LOW VELOCITY CAP, THEN TYPE 2 BACKFILL TO EL 116.5', THEN TYPE 1 BACKFILL FROM EL 116.5' TO 119' (SEE SKETCH CU8-BF-C02). △2

RECORD DRAWING

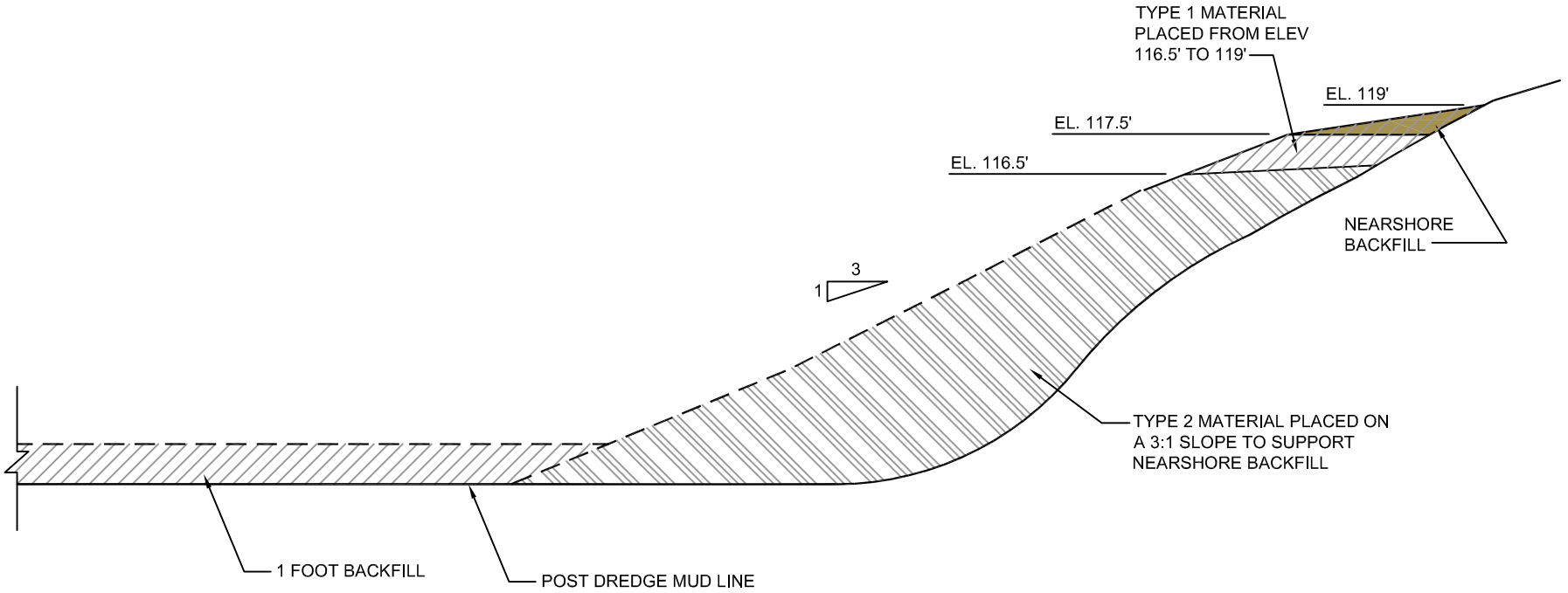
REV	DATE	DRN BY	DRAWING DESCRIPTION	
△2	12/02/09	JHG	RECORD DRAWING	MG
1	10/29/09	JHG	REVISED PER EPA COMMENTS. ISSUED FOR USE	MG
0	10/27/09	JHG	ISSUED FOR EPA REVIEW	MG

PARSONS ENGINEERING SCIENCE
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40-1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746-5311

DRAWING TITLE: CU8 BACKFILL & CAP PLAN

DRAWN BY	CHECKED BY	DRAWING NO.	VERSION	SCALE
JHG	MG	CU8-BC-2	A	AS SHOWN
DATE: 12/02/09	APPROVED BY: MC			JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\OSI-BACKFILL CAP\CU8-CAP-SMC-BC-2-RECORD.DWG
PLOT DATE: 12/2/2009 3:54 PM PLOTTED BY: 48606



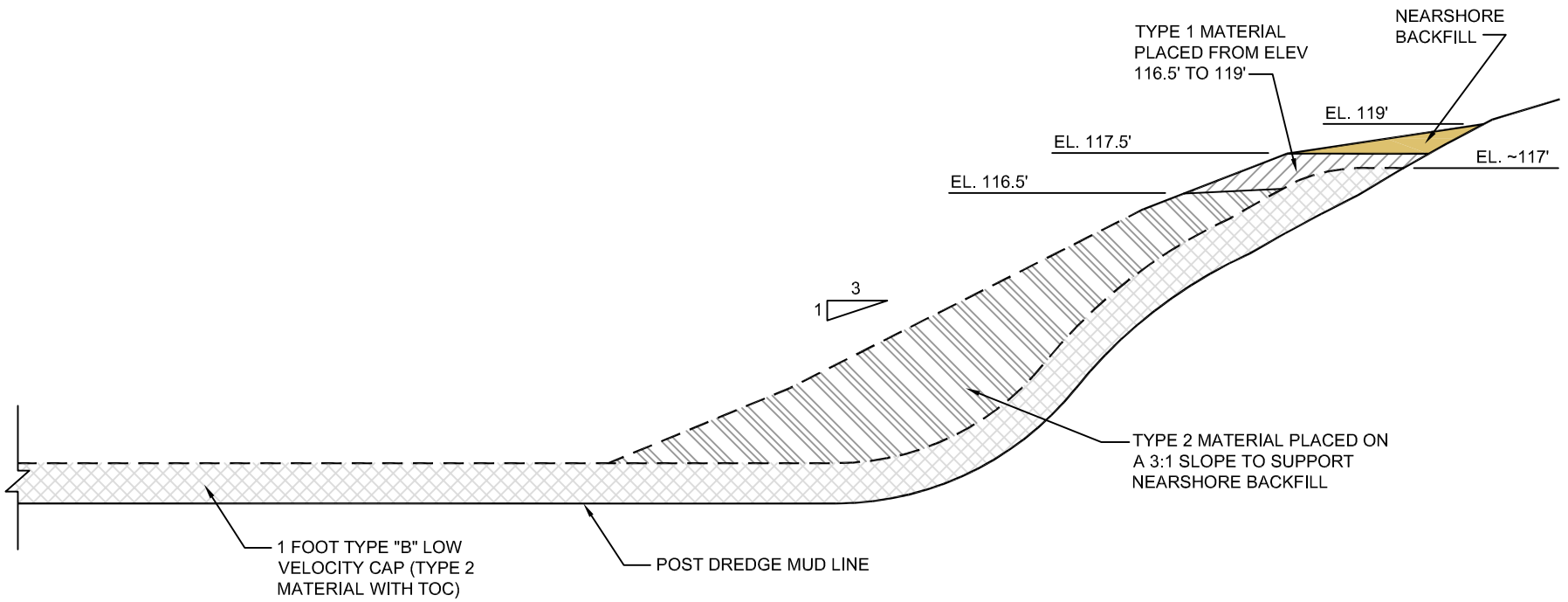
NEAR SHORE BACKFILL PLACEMENT DETAIL

TYPICAL SECTION NOT TO SCALE

RECORD DRAWING

PARSONS COMMERCIAL TECHNOLOGY GROUP GE COMPANY – PARSONS PROJECT OFFICE BUILDING 40–1, 381 BROADWAY FORT EDWARD, N.Y. 12828 (518) 746–5311		DRAWING TITLE CU8 NEAR SHORE BACKFILL PLACEMENT DETAIL	
DRAWN BY JHG	CHECKED BY MG	DRAWING NO. C08–BF–C01	SCALE NOT TO SCALE
DATE 12/03/09	APPROVED BY MG		JOB 442209

FILE NAME: E:\FORT EDWARD\PARSONS\OSI–BACKFILL CAP\CU8–CAP–SMC–BC–2–RECORD.DWG
PLOT DATE: 12/3/2009 10:01 AM PLOTTED BY: 48606



CU8 - EAST CHANNEL NEAR SHORE BACKFILL PLACEMENT DETAIL

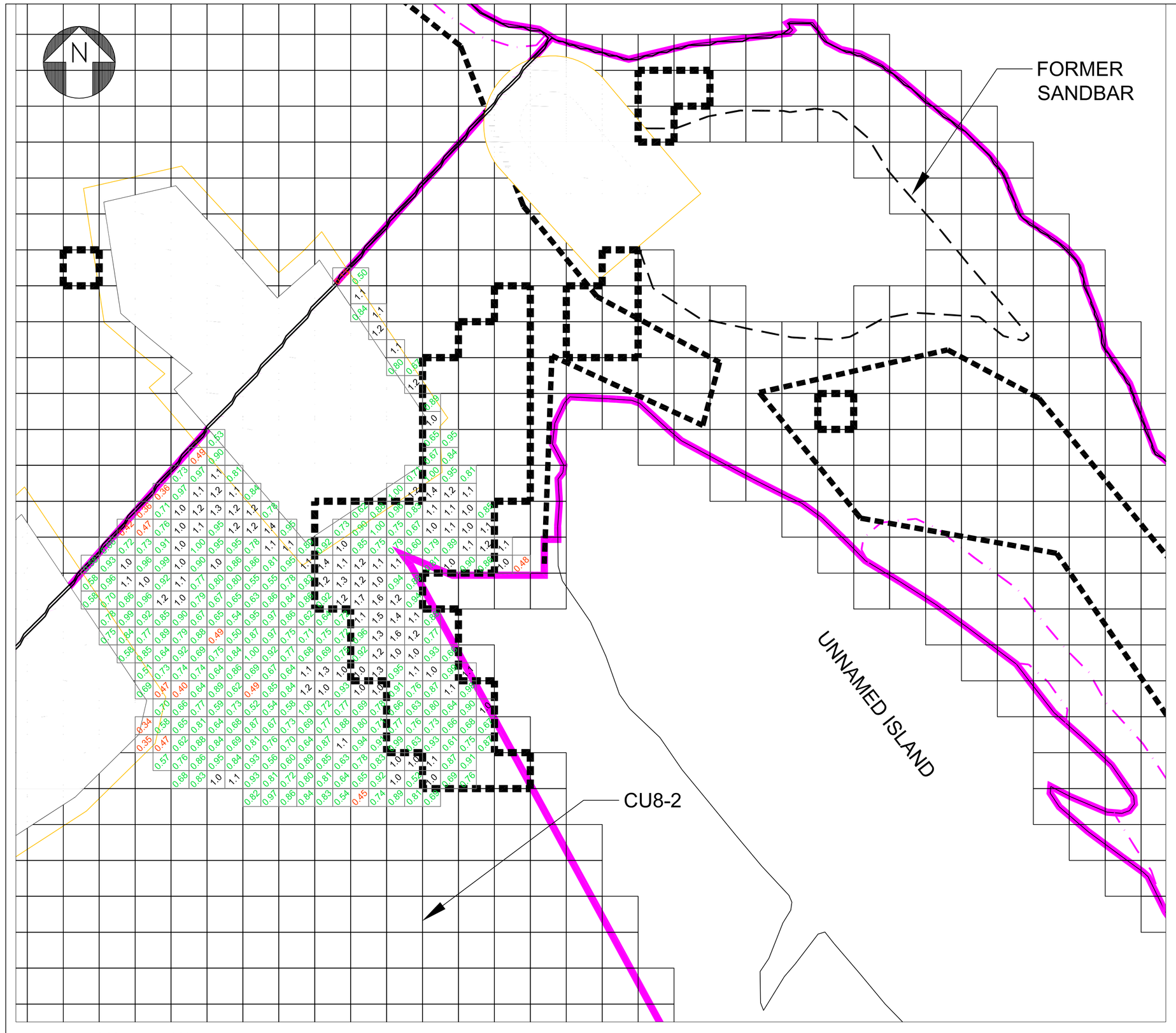
TYPICAL SECTION NOT TO SCALE

RECORD DRAWING

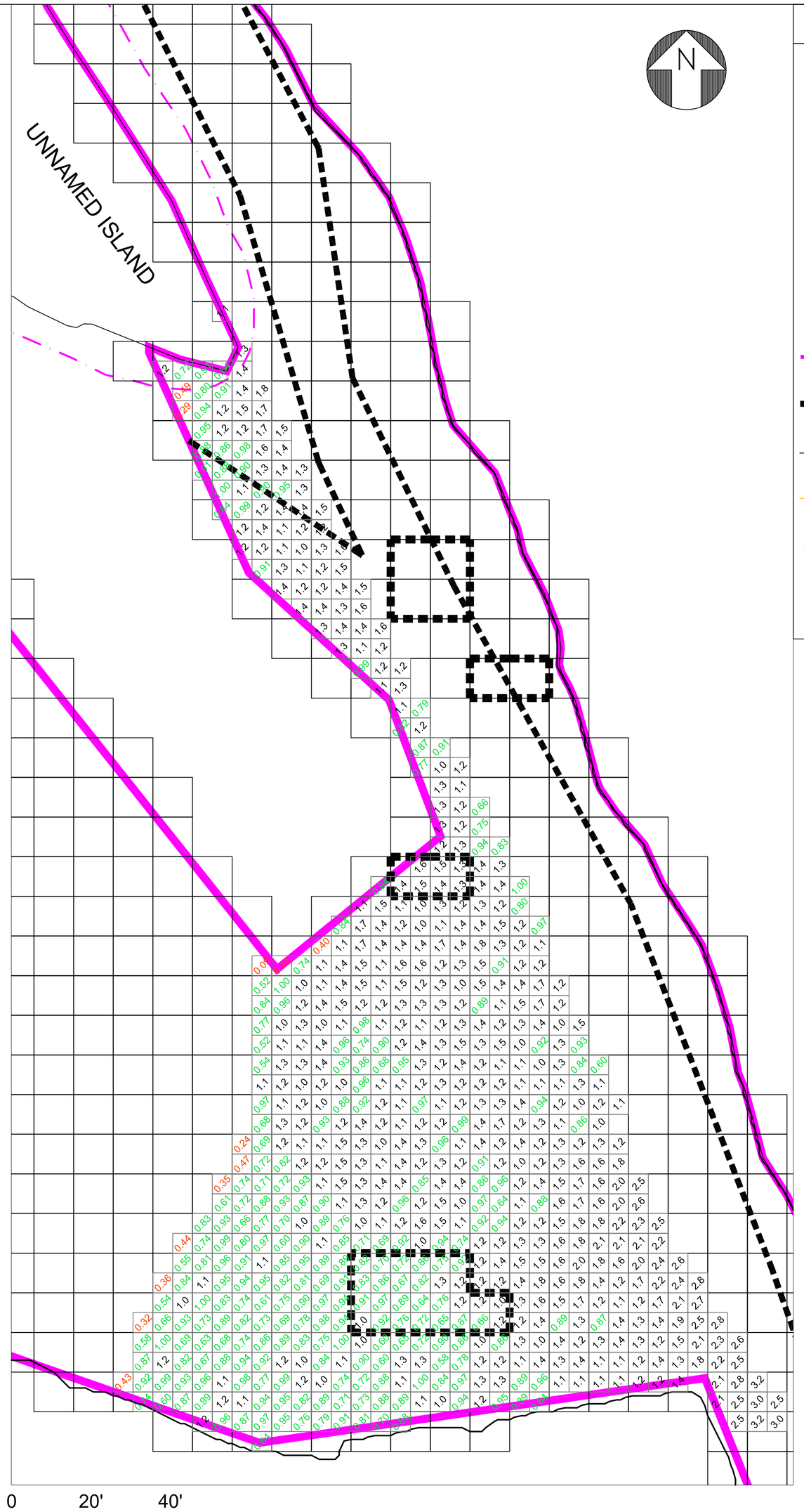
PARSONS
COMMERCIAL TECHNOLOGY GROUP
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40–1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746–5311

DRAWING TITLE: CU8 – EAST CHANNEL NEAR SHORE BACKFILL PLACEMENT DETAIL			
DRAWN BY: JHG	CHECKED BY: MG	DRAWING NO.: CU8–BF–C02	SCALE: NOT TO SCALE
DATE: 12/03/09	APPROVED BY: MG		JOB: 442209

FILE NAME: E:\FORT EDWARD\PARSONS\OSI–BACKFILL CAP\CU8–CAP–SMC–BC–1_A.DWG
PLOT DATE: 12/3/2009 9:36 AM PLOTTED BY: GOLDTHWAIT, JAMES



CU8 TYPE "B" MEDIUM VELOCITY CAP
TYPE "N" ARMOR LAYER THICKNESS
NORTHWEST PORTION



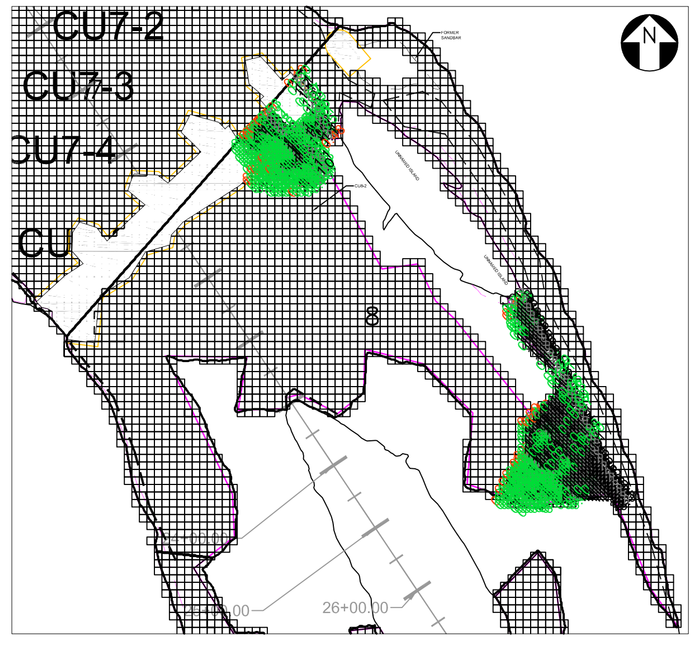
CU8 TYPE "B" MEDIUM VELOCITY CAP
TYPE "N" ARMOR LAYER THICKNESS
SOUTHEAST PORTION

LEGEND

- 0.99 — 5'x5' GRID WITHIN DESIGN GUIDELINES
- 0.49 — 5'x5' GRID LESS THAN DESIGN GUIDELINES
- 1.1 — 5'x5' GRID ABOVE DESIGN GUIDELINES
- BUCKET REFUSAL ENCOUNTERED VIA DREDGING
- CU BOUNDARY
- NEARSHORE BORDER (117.5 FEET)
- MUD - RIP RAP INTERFACE
- 5 FOOT INTERFACE OFFSET
- POTENTIAL LOCATION FOR RIVERINE FRINGING WETLAND CONSTRUCTION (PLANTING BY OTHERS)

NOTES:

1. OSI MULTIBEAM SURVEY ON NOVEMBER 18, 2009.
2. THICKNESS OF ARMOR LAYER IS LISTED ON 5'X5' GRIDS



CU8 LOCATION PLAN
NOT TO SCALE

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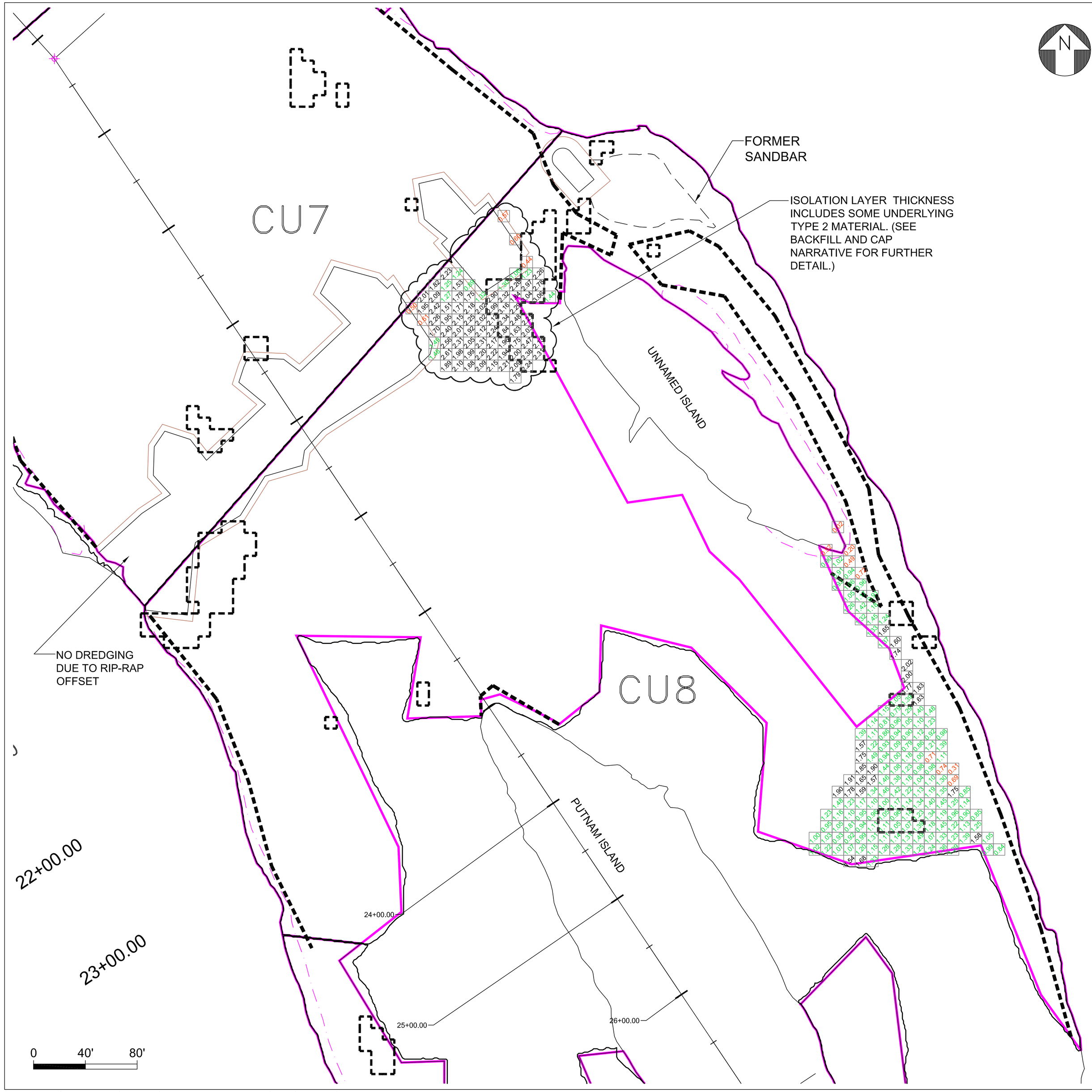
BUILDING 40-1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746-5311

DRAWING TITLE: CU8 TYPE "B" MEDIUM VELOCITY CAP ARMOR LAYER ACCEPTANCE SURVEY

DRAWN BY	CHECKED BY	DRAWING NO.	SCALE
JHG	MG	CU8-2	AS SHOWN
DATE: 12/02/09	APPROVED BY: MG		JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CU8-DWGS (11-23-2009)\CU8-3 TYPE_B_ARM.DWG
PLOT DATE: 12/3/2009 2:16 PM PLOTTED BY: 48606



LEGEND

- 0.80 — 10'x10' GRID WITHIN DESIGN GUIDELINES
- 0.25 — 10'x10' GRID LESS THAN DESIGN GUIDELINES
- 2.60 — 10'x10' GRID ABOVE DESIGN GUIDELINES
- BUCKET REFUSAL ENCOUNTERED VIA DREDGING
- CU BOUNDARY
- NEARSHORE BORDER (117.5 FEET)
- MUD - RIP RAP INTERFACE
- 5 FOOT INTERFACE OFFSET
- POTENTIAL LOCATION FOR RIVERINE FRINGING WETLAND CONSTRUCTION (PLANTING BY OTHERS)

NOTES:

1. OSI MULTIBEAM SURVEY ON NOVEMBER 12 AND 15, 2009.
2. THICKNESS OF ISOLATION LAYER IS LISTED IN 10'X10' GRIDS.

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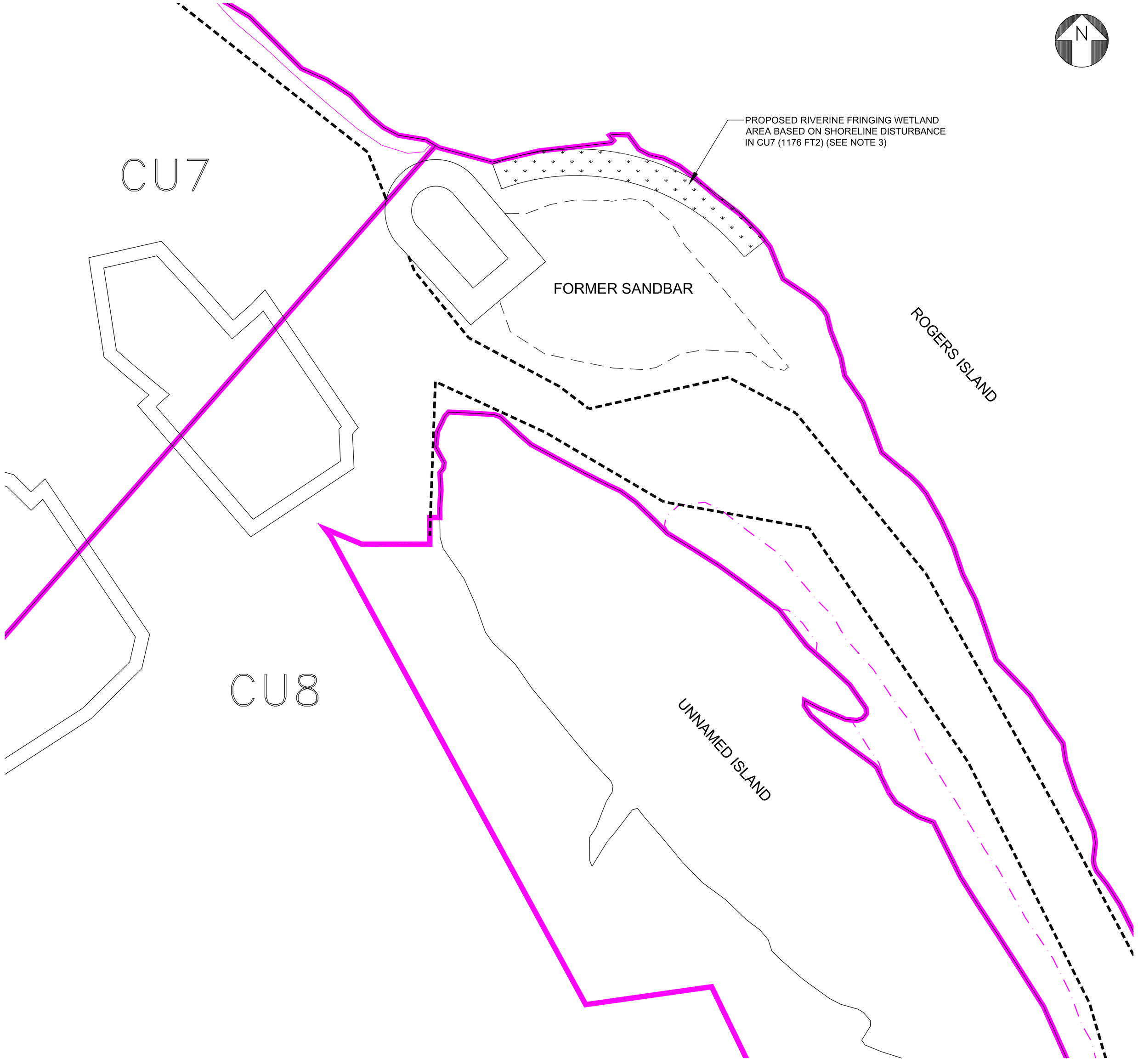
DRAWN BY: JHG	CHECKED BY: MG
DATE: 12/02/09	APPROVED BY: MG

DRAWING TITLE: CU8
TYPE "B" MEDIUM VELOCITY CAP ISOLATION LAYER ACCEPTANCE SURVEY

DRAWING NO.: CU8-1	SCALE: AS SHOWN
	JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CAP TYPE B – MED-HIGH(10X10)-LAYER A\CAP LAYER A 10X10 CU8-2.DWG
PLOT DATE: 12/2/2009 3:32 PM PLOTTED BY: 48606



LEGEND

- BUCKET REFUSAL AREA ENCOUNTERED DURING DREDGING
- CU BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- POTENTIAL LOCATION FOR RIVERINE FRINGING WETLAND CONSTRUCTION (PLANTING BY OTHERS)
- NEARSHORE BORDER (117.5 FEET)
- PROPOSED RIVERINE FRINGING WETLAND AREA

NOTES:

1. BACKFILL TO BE PLACED IN ACCORDANCE WITH SECTION 13720 AND DESIGN DRAWINGS B-0021-SK1 AND B-0020-SK1.
2. RIVERINE FRINGING WETLAND TO BE CONSTRUCTED IN ACCORDANCE WITH DESIGN DRAWING B-0020-SK1.
3. BACKFILL IN THIS AREA TO BE PLACED IN ACCORDANCE WITH TYPICAL RIVERINE FRINGING WETLAND CROSS SECTION AS SHOWN ON CONTRACT DRAWING B-0021-SK1.

RECORD DRAWING

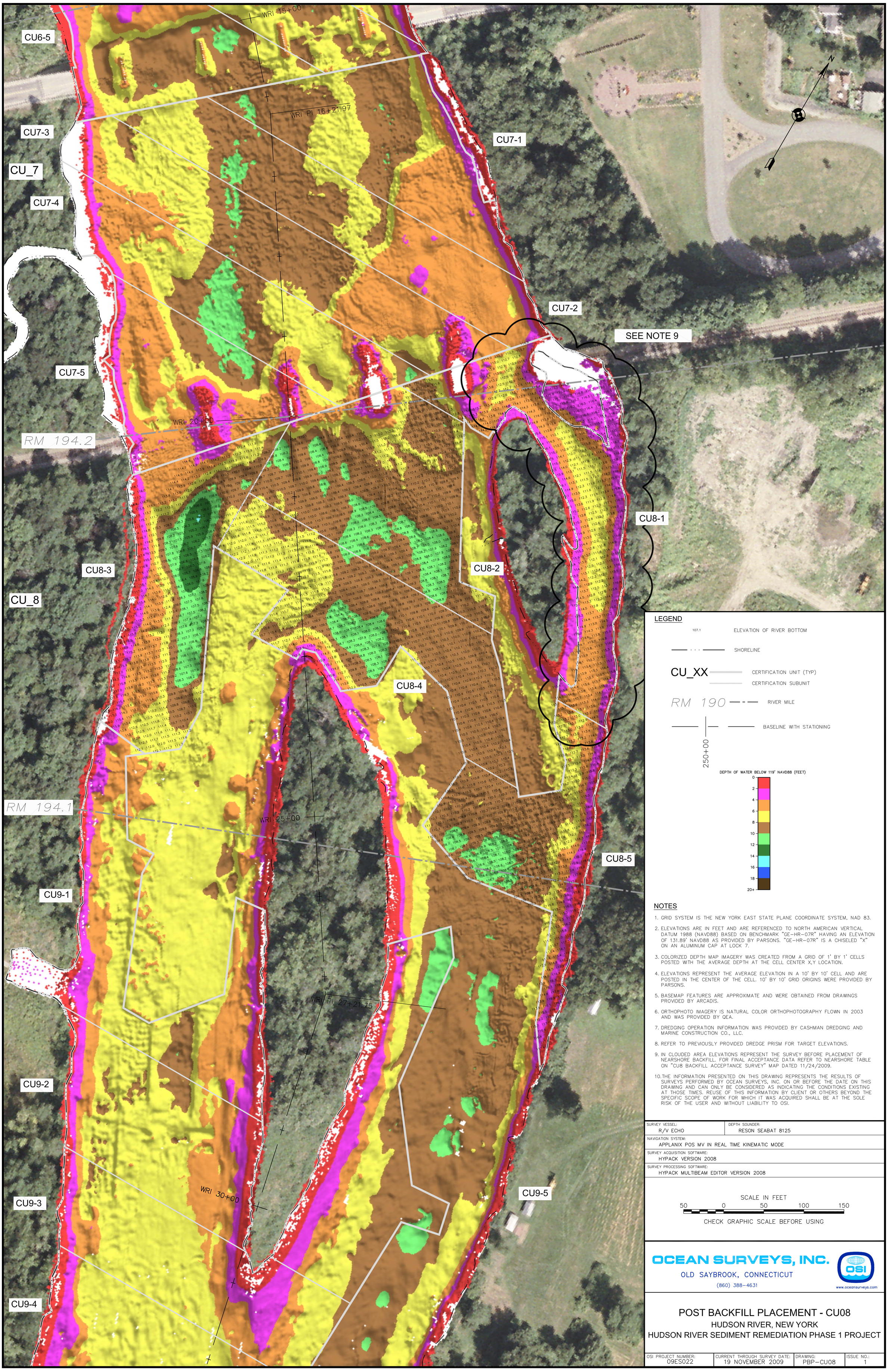
0 40' 80'

PARSONS
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40–1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746–5311

DRAWING TITLE: CU8 RIVERINE FRINGING WETLAND PLAN

DRAWN BY	CHECKED BY	DRAWING NO.	VERSION	SCALE
JHG	MG	CU8–WL	A	AS SHOWN
DATE: 12/02/09	APPROVED BY: MG			JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\OSI–BACKFILL CAP\CU8–WETLAND–RECORD.DWG
PLOT DATE: 12/2/2009 4:24 PM PLOTTED BY: 48606



LEGEND

- 107.1 — ELEVATION OF RIVER BOTTOM
- SHORELINE
- CU_XX — CERTIFICATION UNIT (TYP)
- CERTIFICATION SUBUNIT
- RM 190 — RIVER MILE
- 250+00 — BASELINE WITH STATIONING

DEPTH OF WATER BELOW 119' NAVD88 (FEET)

0 2 4 6 8 10 12 14 16 18 20+

NOTES

1. GRID SYSTEM IS THE NEW YORK EAST STATE PLANE COORDINATE SYSTEM, NAD 83.
2. ELEVATIONS ARE IN FEET AND ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) BASED ON BENCHMARK "GE-HR-07R" HAVING AN ELEVATION OF 131.89' NAVD88 AS PROVIDED BY PARSONS. "GE-HR-07R" IS A CHISELED "X" ON AN ALUMINUM CAP AT LOCK 7.
3. COLORIZED DEPTH MAP IMAGERY WAS CREATED FROM A GRID OF 1' BY 1' CELLS POSTED WITH THE AVERAGE DEPTH AT THE CELL CENTER X,Y LOCATION.
4. ELEVATIONS REPRESENT THE AVERAGE ELEVATION IN A 10' BY 10' CELL AND ARE POSTED IN THE CENTER OF THE CELL. 10' BY 10' GRID ORIGINS WERE PROVIDED BY PARSONS.
5. BASEMAP FEATURES ARE APPROXIMATE AND WERE OBTAINED FROM DRAWINGS PROVIDED BY ARCADIS.
6. ORTHOPHOTO IMAGERY IS NATURAL COLOR ORTHOPHOTOGRAPHY FLOWN IN 2003 AND WAS PROVIDED BY QEA.
7. DREDGING OPERATION INFORMATION WAS PROVIDED BY CASHMAN DREDGING AND MARINE CONSTRUCTION CO., LLC.
8. REFER TO PREVIOUSLY PROVIDED DREDGE PRISM FOR TARGET ELEVATIONS.
9. IN CLOUDED AREA ELEVATIONS REPRESENT THE SURVEY BEFORE PLACEMENT OF NEARSHORE BACKFILL. FOR FINAL ACCEPTANCE DATA REFER TO NEARSHORE TABLE ON "CU8 BACKFILL ACCEPTANCE SURVEY" MAP DATED 11/24/2009.
10. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY OCEAN SURVEYS, INC. ON OR BEFORE THE DATE ON THIS DRAWING AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THOSE TIMES. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO OSI.

SURVEY VESSEL:	DEPTH SOUNDER:
R/V ECHO	RESON SEABAT 8125
NAVIGATION SYSTEM:	APPLANIX POS MV IN REAL TIME KINEMATIC MODE
SURVEY ACQUISITION SOFTWARE:	HYPACK VERSION 2008
SURVEY PROCESSING SOFTWARE:	HYPACK MULTIBEAM EDITOR VERSION 2008

SCALE IN FEET

50 0 50 100 150

CHECK GRAPHIC SCALE BEFORE USING

OCEAN SURVEYS, INC.
OLD SAYBROOK, CONNECTICUT
(860) 388-4631
www.oceansurveys.com

POST BACKFILL PLACEMENT - CU08

HUDSON RIVER, NEW YORK

HUDSON RIVER SEDIMENT REMEDIATION PHASE 1 PROJECT

OSI PROJECT NUMBER:	CURRENT THROUGH SURVEY DATE:	DRAWING:	ISSUE NO.:
09ES022	19 NOVEMBER 2009	PBP-CU08	1

Correspondence

(Letters and E-mails)

Inglis, Andrew A (GE, Corporate)

From: King.David@epamail.epa.gov
Sent: Friday, November 27, 2009 4:17 PM
To: Inglis, Andrew A (GE, Corporate)
Cc: Jakob, Carl (GE, Corporate, non-ge); GKlawinski@ene.com; MJohnson@louisberger.com; Kruppenbacher, Timothy A (GE, Corporate); USACE_HRFO@roadrunner.com
Subject: Re: Placement of alternative material in CU8

Andrew that is OK. the flow is too fast for smaller material.

Dave

"Inglis, Andrew A (GE, Corporate)" <andrew.inglis@ge.com>

11/25/2009 01:52 PM

To: David King/R2/USEPA/US@EPA

cc: "Kruppenbacher, Timothy A (GE, Corporate)" <timothy.kruppenbacher@ge.com>, <MJohnson@louisberger.com>, <USACE_HRFO@roadrunner.com>, <GKlawinski@ene.com>, "Jakob, Carl (GE, Corporate, non-ge)" <carl.jakob@parsons.com>

Subject: Placement of alternative material in CU8

Dave,
Based on reviews of the dredging contractor's post-placement surveys of CU8 and records of placed material, significant run-out of placed nearshore backfill is being experienced behind the island in CU8. To mitigate this situation we are requesting approval to fill deeper areas with Type N stone then place Type 1 or Type 2 (as required in the design) on top of the Type N material.

The type N material would be placed upto elevation 116' then type 2 or type 1 used to raise the elevations to the required 117.5-119' bench.

Let me know if this is acceptable to EPA.

Thanks,

Andrew A. Inglis
Dredging Task Leader
GE

T +1 518-746-5256

381 Broadway

CU-17

Form 2

CU Certification of Completion

CU BACKFILL/ENGINEERED CAP COMPLETION APPROVAL - FORM 2

Reporting Date	10/16/2009			**Placement Start Date**	9/21/2009
CU Number	17			**Placement End Date**	10/11/2009
Approximate CU Centroid	**Northing**	1596601.07	**Easting**	737413.7703	NY State NAD 83
CU Size	4.99	Acres			
Backfill Area	4.47	Acres			
Cap Area	0	Acres			

Backfill Surface Mean Tri+ PCBs Concentration (when required)	NA	**mg/kg**
Number of nodes sampled	NA	**mg/kg**

Backfill	**Type of Backfill**	**Reference to appropriate drawings attached to Approval Form 1**
x	Type 1, Type 2, Nearshore	CU 17 Backfill Plan, 9/21/09
Cap	**Type of Cap**	**Reference to appropriate drawings attached to Approval Form 1**

CU Checklist	**Indicate one of the following**		**Reviewer Initial Acceptance**			
Item	**Attached**	**Not Applicable**		**GE**		**EPA**
Drawing of Installed Backfill/Cap (with record drawing details, thickness and sample locations [when backfill/cap are placed])	x					
Where applicable in backfill areas provide the following: Sample locations (coordinates), depths, Aroclor and Tri+ PCB concentrations collected including analytical data, field observations, (hard copy and electronic copies [in database format or equivalent]		x				

Comments

Refer to attached Narrative Backfill Summary and CU 17 Backfill Placement Drawing.

Upon signing this document, GE certifies that the backfill/cap has been installed satisfactorily and that no further backfill placement or capping is required for this CU. These remedial activities exclude long term operation, monitoring, maintenance and adaptive management at the CU. EPA accepts this certification.

Signature of GE Representative	**Signature of EPA Representative**
Signature	Signature
Name	Name
Date	Date

Narrative

CU 17

Narrative Summary of Backfill and EPA Backfill Agreements

1.0 Backfill Placement

Backfill was placed in accordance with the CU 17 Backfill Plan Record Drawing, dated October 16, 2009. A multi-beam bathymetric survey for CU 17 was performed after final backfill placement on October 12, 2009, as shown on the attached CU 17 Post Backfill Placement Acceptance Drawing, dated October 16, 2009.

2.0 EPA Field Agreements Specific to CU 17 Backfill

The EPA field agreements specific to CU 17 that relate to backfill are:

1. As noted on the CU 17 backfill plan, during the September 11, 2009 daily meeting EPA agreed that placing backfill in the small irregular shaped areas in the navigational channel that were below elevation 102 feet would be unproductive and requested that GE remove those backfill areas from the plan.

2. As noted on the CU 17 backfill plan, during the September 21, 2009 daily meeting EPA requested that GE remove 15% backfill areas from the CU 17 backfill plan pending order of priority of other CUs. EPA informed GE on October 12, 2009 that placement of 15% backfill in CU 17 will not be required.

3. During the 4:00 PM meeting on October 7, 2009, GE brought to EPA's attention that placement of Type 1 backfill at the required 3:1 slope in near shore areas of CU17 was not feasible because the physical properties of the material (natural angle of repose in a submerged state) are such that it is unable not to hold a 3:1 slope. GE reviewed and provided EPA with cross sections on October 7, 2009, which showed the apparent natural angle of repose in a submerged state for Type 1 is closer to 6:1, which are attached as part of this Form 2 package. It was decided that for the CU 17 near shore areas Type 2 backfill material will be placed to elevation 116.5' (over top of the Type 1 material that was already placed) then Type 1 backfill material will be placed from elevation 116.5' to 119'. Refer to the attached near shore detail sketch and Note 4 on the attached Backfill and Capping Plan for further details. EPA agreed with this proposal.

4. During the 4:00 PM meeting on October 13, 2009, GE provided a Draft Backfill Placement Acceptance drawing showing the difference to dredge prism in feet on a 10x10 grid. EPA

requested that the average thickness of 1 foot backfill over each acre within the CU be included on the Backfill Placement Acceptance drawings, to which GE agreed.

5. During the 4:00 PM meeting on October 14, 2009, EPA requested that Planned and Actual volumes placed be included on the Backfill Acceptance Drawings, to which GE agreed.

6. During the 4:00 PM meeting on October 13, 2009, GE and EPA reviewed survey data for placement of near shore backfill. EPA agreed that placement of near shore backfill was acceptable.

Tables

CU-17 Near-Shore Topographic Soundings Collected 2009-10-12

Published Near-Shore Locations				Near-Shore Confirmation				
Name	Easting	Northing	Target Elevation	Easting	Northing	Check Elevation	Horz. Dist	Vert Diff.
GI-E-01	737,391.50	1,597,121.22	117.5	737,392.33	1,597,121.82	119.00	1.03	1.50
				737,393.40	1,597,123.84	118.56	3.24	1.06
				737,391.82	1,597,115.31	118.83	5.92	1.33
				737,390.71	1,597,127.49	117.42	6.32	-0.08
				737,396.17	1,597,116.62	118.98	6.56	1.48
				737,385.76	1,597,126.30	116.63	7.67	-0.87
				737,386.90	1,597,114.45	116.24	8.19	-1.26
GI-E-02	737,414.40	1,597,054.60	117.5	737,414.98	1,597,054.62	118.97	0.58	1.47
				737,416.25	1,597,053.87	118.90	1.99	1.40
				737,411.59	1,597,050.99	116.97	4.58	-0.53
				737,418.73	1,597,052.19	118.03	4.95	0.53
				737,415.73	1,597,049.45	118.37	5.32	0.87
				737,414.54	1,597,060.40	118.91	5.80	1.41
				737,418.63	1,597,058.85	117.86	6.00	0.36
				737,419.83	1,597,050.56	117.92	6.76	0.42
				737,410.85	1,597,060.69	117.82	7.05	0.32
GI-E-03	737,438.50	1,596,985.78	117.5	737,438.56	1,596,988.14	117.44	2.36	-0.06
GI-E-04	737,439.34	1,596,917.66	117.5	737,440.83	1,596,918.49	117.66	1.71	0.16
GI-E-05	737,452.25	1,596,898.75	117.5	737,451.44	1,596,897.53	117.36	1.47	-0.14
				737,454.21	1,596,901.70	117.54	3.54	0.04
				737,455.89	1,596,899.59	117.45	3.73	-0.05
GI-E-06	737,481.39	1,596,841.61	117.5	737,482.37	1,596,841.03	118.67	1.14	1.17
				737,482.08	1,596,837.04	117.98	4.63	0.48
				737,478.87	1,596,846.25	118.30	5.29	0.80
				737,484.00	1,596,836.81	118.58	5.46	1.08
				737,483.88	1,596,847.21	118.34	6.13	0.84
				737,487.55	1,596,838.28	118.40	7.00	0.90
				737,474.81	1,596,844.90	117.32	7.36	-0.18
				737,477.81	1,596,834.70	116.33	7.79	-1.17
				737,472.94	1,596,843.75	116.32	8.71	-1.18
GI-E-07	737,494.38	1,596,816.04	117.5	737,495.10	1,596,815.50	118.19	0.90	0.69
				737,497.39	1,596,818.79	118.06	4.07	0.56
				737,494.84	1,596,811.54	118.01	4.52	0.51
				737,498.14	1,596,813.48	118.25	4.55	0.75
				737,489.57	1,596,810.73	116.59	7.16	-0.92
				737,493.59	1,596,824.18	117.94	8.18	0.44
				737,488.58	1,596,822.22	117.57	8.47	0.07
				737,485.38	1,596,820.90	116.31	10.23	-1.19
GI-E-08	737,524.48	1,596,751.48	117.5	737,524.25	1,596,751.61	117.97	0.26	0.47
				737,525.27	1,596,749.47	117.50	2.16	0.00
				737,529.03	1,596,750.32	118.17	4.70	0.67
				737,531.20	1,596,751.41	117.89	6.73	0.39
GI-E-09	737,537.70	1,596,732.05	117.5	737,538.40	1,596,731.51	117.57	0.88	0.07
GI-E-10	737,578.99	1,596,660.50	117.5	737,579.63	1,596,659.76	117.90	0.98	0.40
GI-E-11	737,637.98	1,596,575.02	117.5	737,637.88	1,596,575.29	117.22	0.28	-0.28
GI-E-12	737,687.86	1,596,489.64	117.5	737,687.96	1,596,488.56	117.88	1.08	0.38
GI-E-13	737,740.81	1,596,404.30	117.5	737,740.29	1,596,404.64	116.33	0.63	-1.17
				737,741.51	1,596,404.13	116.90	0.72	-0.60
				737,740.12	1,596,404.51	116.54	0.72	-0.96
				737,742.58	1,596,405.44	117.74	2.11	0.24
				737,739.99	1,596,402.28	116.21	2.18	-1.29
				737,742.57	1,596,402.49	116.79	2.52	-0.71
				737,740.18	1,596,407.38	116.81	3.15	-0.69
				737,737.96	1,596,408.66	116.64	5.22	-0.86

Figures

PI 231+60.37

RM 190.3

CU17-1

CU 17-3

CU_17

235+00

CU17-2

RM 190.2

CU17-4

CU17-5

240+00

PI 241+53.01

CU18-2

CU_18

245+00

CU18-3

N

LEGEND

107.1 ELEVATION OF RIVER BOTTOM

SHORELINE

CHANNEL

CU_XX CERTIFICATION UNIT (TYP)

CERTIFICATION SUBUNIT

RM 190 RIVER MILE

BASELINE WITH STATIONING

250+00

DEPTH OF WATER BELOW 119' NAVD88 (FEET)

0
2
4
6
8
10
12
14
16
18
20+

NOTES

1. GRID SYSTEM IS THE NEW YORK EAST STATE PLANE COORDINATE SYSTEM, NAD 83.
2. ELEVATIONS ARE IN FEET AND ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) BASED ON BENCHMARK "GE-HR-07R" HAVING AN ELEVATION OF 131.89' NAVD88 AS PROVIDED BY PARSONS. "GE-HR-07R" IS A CHISELED "X" ON AN ALUMINUM CAP AT LOCK 7.
3. COLORIZED DEPTH MAP IMAGERY WAS CREATED FROM A GRID OF 1' BY 1' CELLS POSTED WITH THE AVERAGE DEPTH AT THE CELL CENTER X,Y LOCATION.
4. ELEVATIONS REPRESENT THE AVERAGE ELEVATION IN A 10' BY 10' CELL AND ARE POSTED IN THE CENTER OF THE CELL. 10' BY 10' GRID ORIGINS WERE PROVIDED BY PARSONS.
5. BASEMAP FEATURES ARE APPROXIMATE AND WERE OBTAINED FROM DRAWINGS PROVIDED BY ARCADIS.
6. ORTHOPHOTO IMAGERY IS NATURAL COLOR ORTHOPHOTOGRAPHY FLOWN IN 2003 AND WAS PROVIDED BY QEA.
7. DREDGING OPERATION INFORMATION WAS PROVIDED BY CASHMAN DREDGING AND MARINE CONSTRUCTION CO., LLC.
8. REFER TO PREVIOUSLY PROVIDED DREDGE PRISM FOR TARGET ELEVATIONS.
9. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY OCEAN SURVEYS, INC. ON OR BEFORE THE DATE ON THIS DRAWING AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THOSE TIMES. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO OSI.

SURVEY VESSEL: R/V ECHO	DEPTH SOUNDER: RESON SEABAT 8125
NAVIGATION SYSTEM: APPLANIX POS MV IN REAL TIME KINEMATIC MODE	
SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2008	
SURVEY PROCESSING SOFTWARE: HYPACK MULTIBEAM EDITOR VERSION 2008	

SCALE IN FEET

50 0 50 100 150

CHECK GRAPHIC SCALE BEFORE USING

OCEAN SURVEYS, INC.

OLD SAYBROOK, CONNECTICUT

(860) 388-4631

www.oceansurveys.com

CU17 - POST BACKFILL PLACEMENT

HUDSON RIVER, NEW YORK

HUDSON RIVER SEDIMENT REMEDIATION PHASE 1 PROJECT

OSI PROJECT NUMBER:	CURRENT THROUGH SURVEY DATE:	DRAWING:	ISSUE NO.:
09ES022	12 OCTOBER 2009	PBP-CU17	1

N

231+00.00

232+00.00

233+00.00

234+00.00

235+00.00

236+00.00

237+00.00

238+00.00

239+00.00

240+00.00

241+00.00

242+0

CU17-1

CU17-2

CU17-3

CU17-4

CU17-5

NAVIGATION CHANNEL

CU-17 Near-Shore Topographic Soundings Collected 2009-10-12

Design Near-Shore Locations				Near-Shore Confirmation				
Name	Easting	Northing	Target Elevation	Easting	Northing	Check Elevation	Horz. Dist	Vert Diff.
GI-E-01	737391.50	1597121.22	117.5	737392.33	1597121.82	119.00	1.03	1.50
GI-E-02	737414.40	1597054.60	117.5	737414.98	1597054.62	118.97	0.58	1.47
GI-E-03	737438.50	1596985.78	117.5	737438.56	1596988.14	117.44	2.36	-0.06
GI-E-04	737439.34	1596917.66	117.5	737440.83	1596918.49	117.66	1.71	0.16
GI-E-05	737452.25	1596898.75	117.5	737451.44	1596897.53	117.36	1.47	-0.14
GI-E-06	737481.39	1596841.61	117.5	737482.37	1596841.03	118.67	1.14	1.17
GI-E-07	737494.38	1596816.04	117.5	737495.10	1596815.50	118.19	0.90	0.69
GI-E-08	737524.48	1596751.48	117.5	737524.25	1596751.61	117.97	0.26	0.47
GI-E-09	737537.70	1596732.05	117.5	737538.40	1596731.51	117.57	0.88	0.07
GI-E-10	737578.99	1596660.50	117.5	737579.63	1596659.76	117.90	0.98	0.40
GI-E-11	737637.98	1596575.02	117.5	737637.88	1596575.29	117.22	0.28	-0.28
GI-E-12	737687.86	1596489.64	117.5	737687.96	1596488.56	117.88	1.08	0.38
GI-E-13	737740.81	1596404.30	117.5	737740.29	1596404.64	116.33	0.63	-1.17

Notes.

Survey data collected by Van Dusen and Steves on October 12, 2009.

Subunit	Average Thickness (ft)	Approx. Area (acre)	Planned Vol. Placed (CY)	Actual Vol. Placed (CY)	Variation from Planned (CY)
CU17-1	1.27	0.61	985.2	1251.1	265.9
CU17-2	1.29	1.34	2155.6	2788.1	632.5
CU17-3	1.25	0.79	1274.1	1595.1	321.0
CU17-4	1.36	0.83	1333.3	1815.0	481.7
CU17-5	1.26	0.78	1251.9	1573.6	321.8

Notes:

Average thickness and volumes were computed using 10x10 cell center average data sets.

0 40' 80'

LEGEND

-0.03 10x10 GRID WITHIN DESIGN GUIDELINES

-0.77 10x10 GRID LESS THAN DESIGN GUIDELINES

1.11 10x10 GRID ABOVE DESIGN GUIDELINES

CU BOUNDARY

CU SUBUNIT BOUNDARY

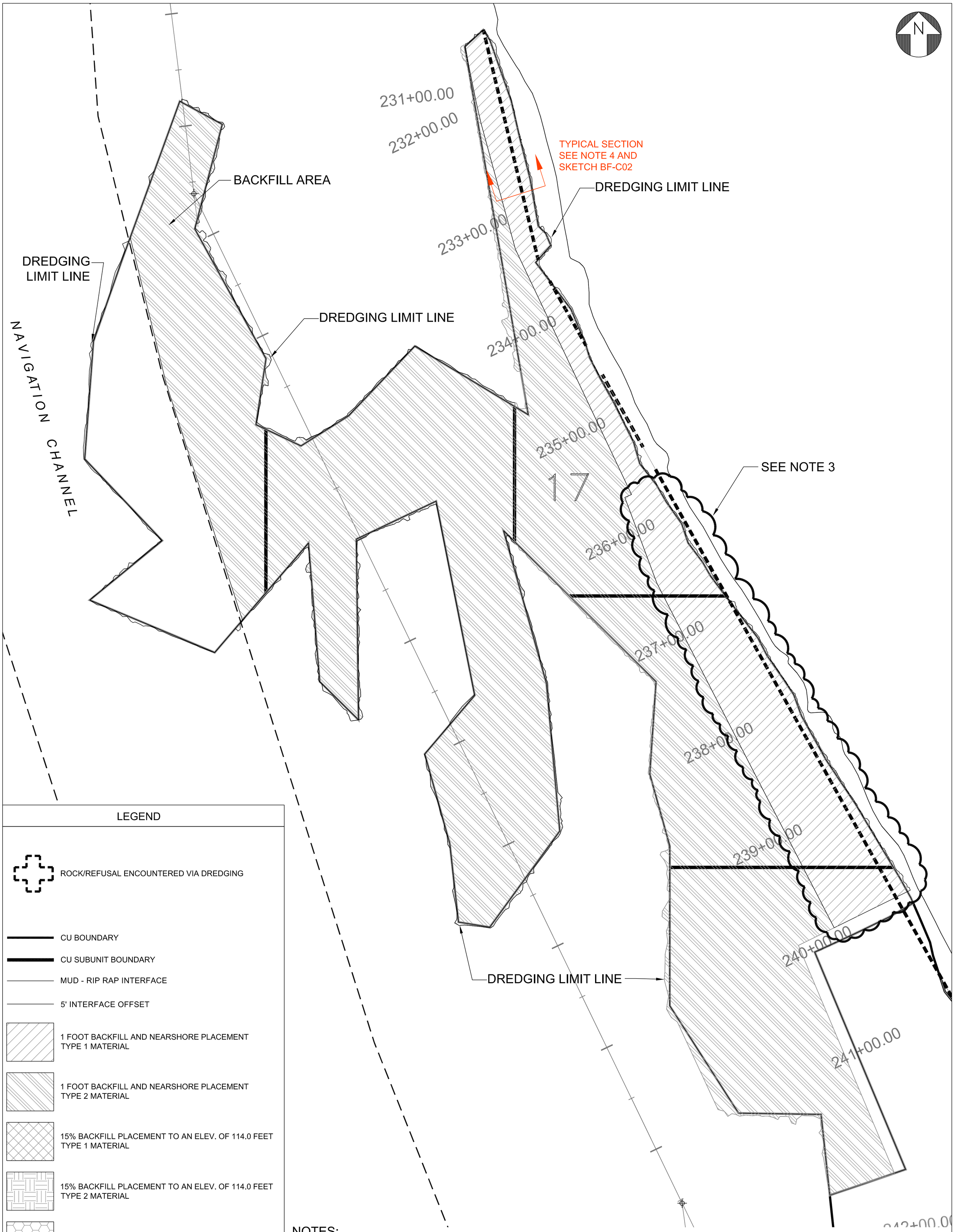
BATHYMETRY USED FROM OSI
SURVEY DATE OCTOBER 12, 2009

CU-17
1 FOOT BACKFILL PLACEMENT ACCEPTANCE SURVEY

PARSONS COMMERCIAL TECHNOLOGY GROUP
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40–1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746–5311

DRAWN BY JHG	CHECKED BY MG	DRAWING TITLE: CU17 BACKFILL PLACEMENT ACCEPTANCE SURVEY	
DATE 10/16/09	APPROVED BY MG	DRAWING NO. CU17	VERSION A / SCALE AS SHOWN / JOB 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CAP & BKFL TEMPLATES\1FT BKFL 10X10 CU17.DWG
PLOT DATE: 10/16/2009 11:06 AM PLOTTED BY: 48606



LEGEND

- ROCK/REFUSAL ENCOUNTERED VIA DREDGING
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- 1 FOOT BACKFILL AND NEARSHORE PLACEMENT TYPE 1 MATERIAL
- 1 FOOT BACKFILL AND NEARSHORE PLACEMENT TYPE 2 MATERIAL
- 15% BACKFILL PLACEMENT TO AN ELEV. OF 114.0 FEET TYPE 1 MATERIAL
- 15% BACKFILL PLACEMENT TO AN ELEV. OF 114.0 FEET TYPE 2 MATERIAL
- 15% BACKFILL PLACEMENT TO ORIGINAL BATHYMETRY TYPE 1 MATERIAL
- 15% BACKFILL PLACEMENT TO ORIGINAL BATHYMETRY TYPE 2 MATERIAL
- POTENTIAL LOCATION FOR RIVERLINE FRINGING WETLAND CONSTRUCTION
- NEARSHORE BORDER (117.5 FEET)
- NATURAL SHORELINE MODERATE ENERGY (SEE ARCADIS DRAWING ET B-0023)
- NATURAL SHORELINE LOW ENERGY (SEE ARCADIS DRAWING B-0023)
- NEARSHORE BORDER SET POINT

NOTES:

1. BACKFILL NOT PLACED WITHIN NAV CHANNEL. ADJUSTED PER AGREEMENT WITH EPA AT 9/11/09 DAILY DATA MEETING..
2. BACKFILL TO BE PLACED IN ACCORDANCE WITH SECTION 13720 AND DESIGN DRAWINGS B-0021 AND B-0020-SK1.
3. ~~CANDIDATE FOR 15% BACKFILL PLACEMENT, PENDING ORDER OF PRIORITY OF OTHER CUs.~~
3. EPA INFORMED GE ON OCTOBER 12, 2009 THAT PLACEMENT OF 15% BACKFILL WILL NOT BE REQUIRED.
4. EPA AND GE AGREED TO USE TYPE 2 MATERIAL ON A 3:1 SLOPE TO SUPPORT NEARSHORE BACKFILL.

BATHYMETRY USED FROM OSI SURVEY DATE AUGUST 26, 2009

CU-17
1 FOOT BACKFILL PLACEMENT

0 40' 80'

REV	DATE	DRN BY	DRAWING DESCRIPTION	PM
1	10/16/09	JHG	RECORD DRAWING	MG
0	9/21/09	JHG	ISSUED FOR USE	MG

PARSONS
COMMERCIAL TECHNOLOGY GROUP
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40–1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746–5311

DRAWING TITLE: CU17 BACKFILL PLAN

DRAWN BY	CHECKED BY	DRAWING NO.	VERSION	SCALE
JHG	MG	CU17–BC–7	A	AS SHOWN
DATE: 10/16/09	APPROVED BY: MG	JOB: 442209.01401		

FILE NAME: E:\FORT EDWARD\PARSONS\OSI–BACKFILL CAP\CU17–BC–7–A.DWG
PLOT DATE: 10/16/2009 11:20 AM PLOTTED BY: 48606

X: 737463.82
Y: 1597057.04

0+80

Length: 150.00

Azimuth: 255.67

X: 737318.49
Y: 1597019.91

0.00 20.00 40.00 60.00 80.00 100.00 120.00 140.00

119.00
117.00
115.00
113.00
111.00
109.00
107.00
105.00

TYPE 1

TYPE 2

Prism
0+80

OSI SURVEY
0+80

091002am
0+80

091006
0+80

Strike Depth: 117.50

DBL 10.00 Ft:In
Depth 2.00 Ft:In

X: 737466.30
Y: 1597047.35

0+90

Length: 150.01

Azimuth: 255.67

X: 737320.96
Y: 1597010.22

0.00 20.00 40.00 60.00 80.00 100.00 120.00 140.00

119.00
117.00
115.00
113.00
111.00
109.00
107.00
105.00

117.5
12" TYPE 1
116.5
TYPE 2

Prism
0+90

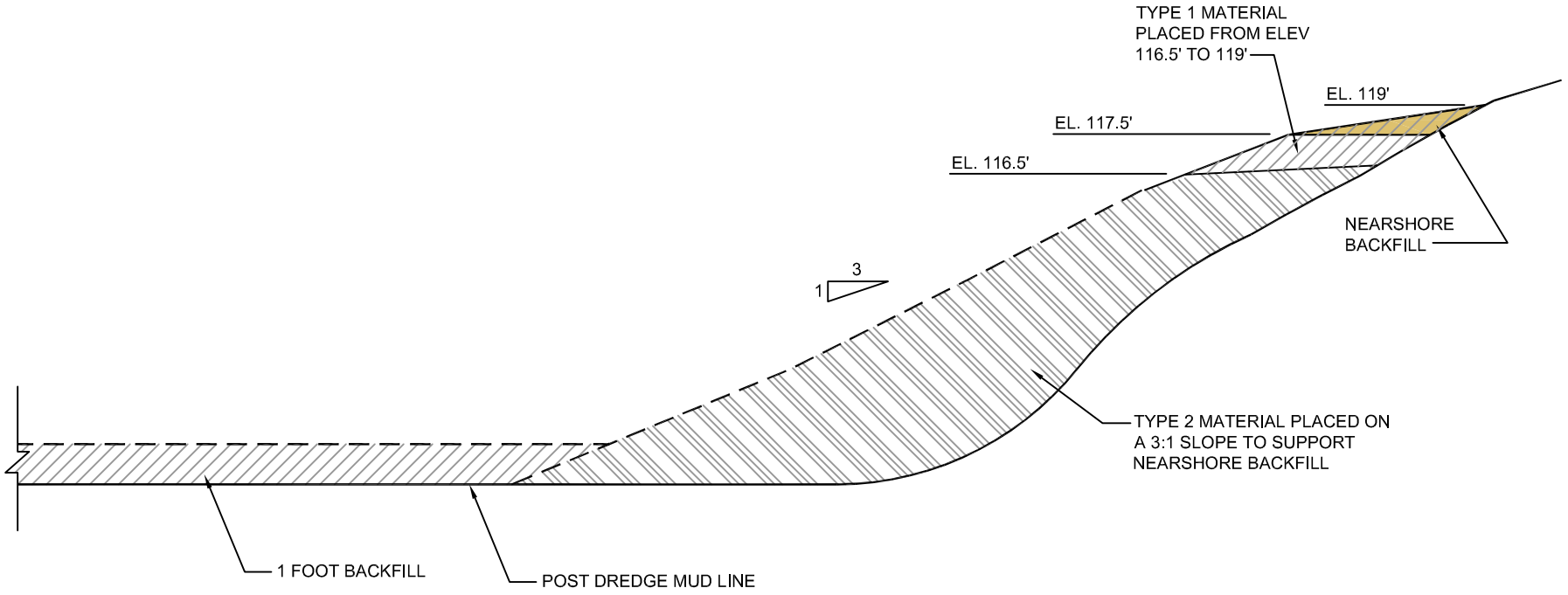
OSI SURVEY
0+90

091002am
0+90

091006
0+90

Strike Depth: 117.50

DBL 10.00 Ft:In
Depth 2.00 Ft:In



NEAR SHORE BACKFILL PLACEMENT DETAIL

TYPICAL SECTION NOT TO SCALE

PARSONS COMMERCIAL TECHNOLOGY GROUP GE COMPANY – PARSONS PROJECT OFFICE BUILDING 40–1, 381 BROADWAY FORT EDWARD, N.Y. 12828 (518) 746–5311		DRAWING TITLE PHASE 1 NEAR SHORE BACKFILL PLACEMENT DETAIL	
DRAWN BY JHG	CHECKED BY MG	DRAWING NO. BF–C02	SCALE NOT TO SCALE
DATE 10/14/09	APPROVED BY MG		JOB 442209

FILE NAME: E:\FORT EDWARD\PARSONS\OSI-BACKFILL CAP\CU8-CAP-SMC-BC-1_A.DWG
PLOT DATE: 10/16/2009 11:47 AM PLOTTED BY: 48606

CU-18

Form 2

CU Certification of Completion

CU BACKFILL/ENGINEERED CAP COMPLETION APPROVAL - FORM 2

Reporting Date	11/19/2009			**Placement Start Date**	10/29/2009
CU Number	18			**Placement End Date**	11/14/2009
Approximate CU Centroid	**Northing**	1595640.203	**Easting**	737827.314	NY State NAD 83
CU Size	6.04	Acres			
Backfill Area	4.93	Acres			
Cap Area	1.11	Acres			

Backfill Surface Mean Tri+ PCBs Concentration (when required)	NA	**mg/kg**
Number of nodes sampled	NA	**mg/kg**

Backfill X	**Type of Backfill** Type 1, Type 2, Nearshore	**Reference to appropriate drawings attached to Approval Form 1** CU18 Backfill and Cap Plan, 10/29/09
Cap X	**Type of Cap** Type "A" Low Velocity Cap and Type "A" Medium to High Velocity Cap	**Reference to appropriate drawings attached to Approval Form 1** CU18 Backfill and Cap Plan, 10/29/09

CU Checklist	**Indicate one of the following**		**Reviewer Initial Acceptance**			
Item	**Attached**	**Not Applicable**		**GE**		**EPA**
Drawing of Installed Backfill/Cap (with record details, thickness and sample locations [when backfill/cap are placed])	x					
Where applicable in backfill areas provide the following: Sample locations (coordinates), depths, Aroclor and Tri+ PCB concentrations collected including analytical data, field observations, (hard copy and electronic copies [in database format or equivalent]		x				

Comments

Refer to attached Narrative Backfill Summary and CU 18 Backfill Placement Drawing.

Upon signing this document, GE certifies that the backfill/cap has been installed satisfactorily and that no further backfill placement or capping is required for this CU. These remedial activities exclude long term operation, monitoring, maintenance and adaptive management at the CU. EPA accepts this certification.

Signature of GE Representative	**Signature of EPA Representative**
Signature	Signature
Name	Name
Date	Date

Narrative

CU 18

Narrative Summary of Backfill and Capping and

EPA Backfill and Capping Agreements

1.0 Cap Placement

A Type "A" Medium to High Velocity Cap and a Type "A" Low Velocity Cap was placed in accordance with the CU 18 Backfill and Capping Plan Drawing, dated October 29, 2009, which was provided to EPA as part of the CU 18 Form 1 package. A multi-beam bathymetric survey of the CU 18 cap was performed after final cap placement on November 11, 2009, as shown on the attached CU 18 Type "A" Cap Acceptance Survey, dated November 17, 2009. The surveyed cap thickness on a 5' x 5' grid is shown for all cap areas.

2.0 Backfill Placement

Backfill materials were placed in accordance with the CU 18 Backfill and Capping Plan Drawing, dated October 29, 2009, provided to EPA as part of the CU 18 Form 1 package. A multi-beam bathymetric survey for CU 18 was performed after backfill placement on November 15, 2009, as shown on the attached CU 18 Backfill Placement Acceptance Drawing, dated November 17, 2009. The difference to backfill prism on a 10' x 10' grid is shown for all backfill areas.

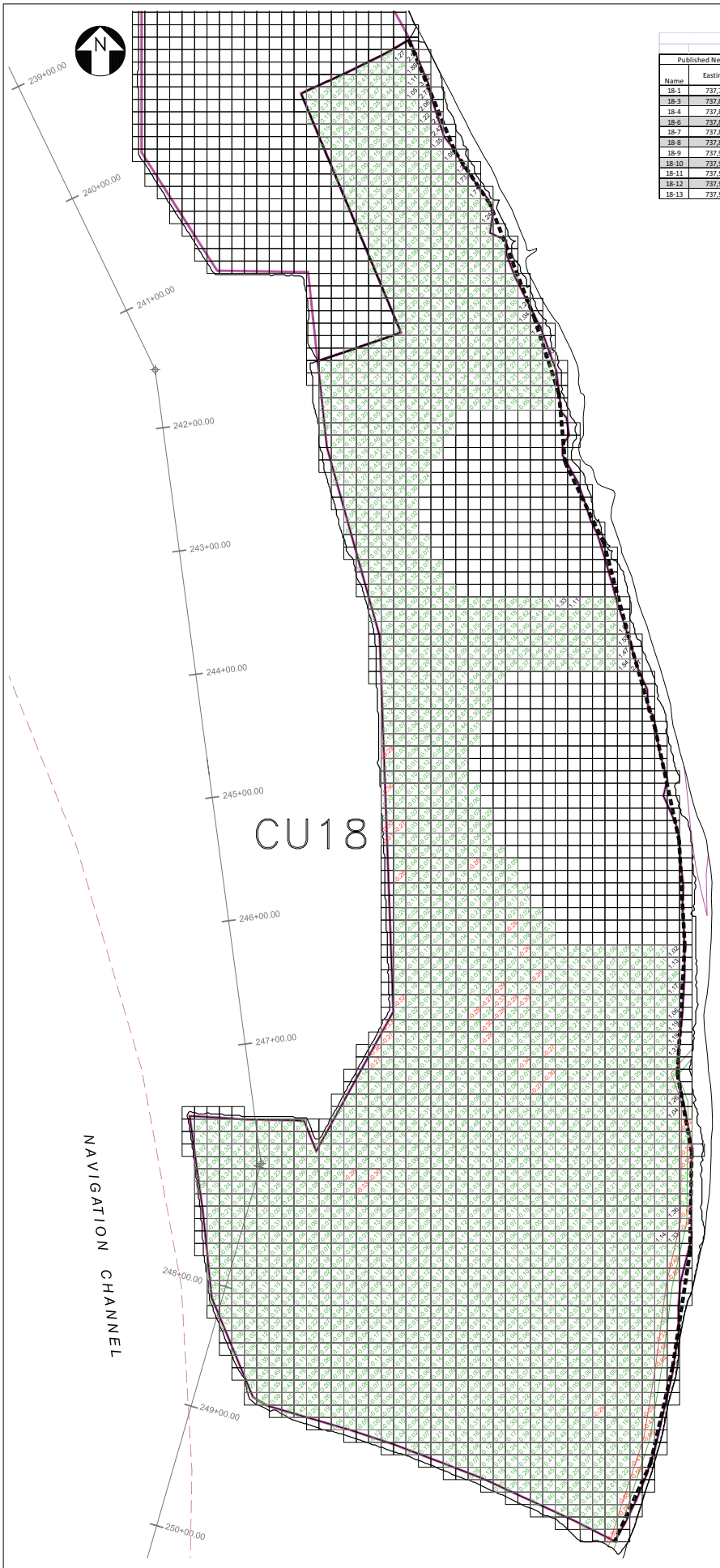
3.0 EPA Field Agreements Specific to CU 18 Backfill and Capping

1. During the 4:00 PM meeting on October 12, 2009, EPA agreed that acceptance surveys of partial areas of a CU may be performed and used for acceptance once placement of backfill or cap in those areas is complete.

2. During the 3:00 PM meeting on November 12, 2009, GE presented a Cap Acceptance Survey Map on a 5' x 5' grid in CU 18. EPA agreed that the cap thicknesses were acceptable (see attached e-mail, dated November 14, 2009). The CU 18 Type "A" Cap Acceptance Survey Drawing, dated November 14, 2009 is included in this package.

3. On November 18, 2009, GE provided EPA with acceptance surveys of the difference to backfill prisms on a 10' x 10' grid in CU 18. EPA agreed that the top backfill elevations were acceptable on November 18, 2009). The CU 18 Backfill Acceptance Survey Drawing, dated November 17, 2009 is included in this package.

Figures



CU-18 Near-Shore Topographic Measurements Collected 2009-11-16

Published Near-Shore Border Set Points				Near-Shore Topographic Measurements				
Name	Easting	Northing	Target Elevation	Easting	Northing	Check Elevation	Horz. Dist	Vert Diff.
18-1	737,772.26	1,596,347.78	117.50	737,772.22	1,596,347.84	117.82	0.07	0.32
18-3	737,809.32	1,596,258.26	117.50	737,809.41	1,596,258.37	117.27	0.14	-0.23
18-4	737,837.41	1,596,216.08	117.50	737,837.33	1,596,216.21	117.70	0.15	0.20
18-6	737,872.83	1,596,125.17	117.50	737,872.88	1,596,125.15	117.88	0.06	0.38
18-7	737,893.00	1,596,063.20	117.50	737,893.09	1,596,063.27	117.62	0.11	0.12
18-8	737,897.91	1,596,008.17	117.50	737,897.73	1,596,008.31	117.05	0.23	-0.45
18-9	737,929.00	1,595,943.47	117.50	737,928.95	1,595,943.54	117.49	0.08	-0.01
18-10	737,951.00	1,595,860.53	117.50	737,951.13	1,595,860.34	117.61	0.23	0.11
18-11	737,970.23	1,595,794.44	117.50	737,970.26	1,595,794.63	117.91	0.19	0.41
18-12	737,989.56	1,595,704.45	117.50	737,989.62	1,595,704.60	117.59	0.16	0.09
18-13	737,994.15	1,595,619.46	117.50	737,994.15	1,595,619.49	117.73	0.03	0.23

1 ft. Average Thickness Table

Subunit	Average Thickness (ft)	Approx. Area (acre)	Intended Vol. Placed (CY)	Actual Vol. Placed (CY)	Variation from Planned (CY)
CU18-1	1.27	0.87	1407.4	1787.6	380.2
CU18-2 & 18-3	1.14	0.89	1429.6	1634.9	205.3
CU18-4	1.08	0.95	1537.0	1667.6	130.6
CU18-5	1.09	1.05	1700.0	1857.2	157.2
CU18-6	1.17	1.13	1825.9	2143.9	317.9
				Total =	1,191.2

Notes:
Average thickness and volumes were computed using 10x10 cell center average data sets.

LEGEND

- -0.03 — 10x10 GRID WITHIN DESIGN GUIDELINES
- -0.17 — 10x10 GRID LESS THAN DESIGN GUIDELINES
- 1.41 — 10x10 GRID ABOVE DESIGN GUIDELINES
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- CU BOUNDARY
- NEARSHORE BORDER (117.5 FEET)

NOTES:

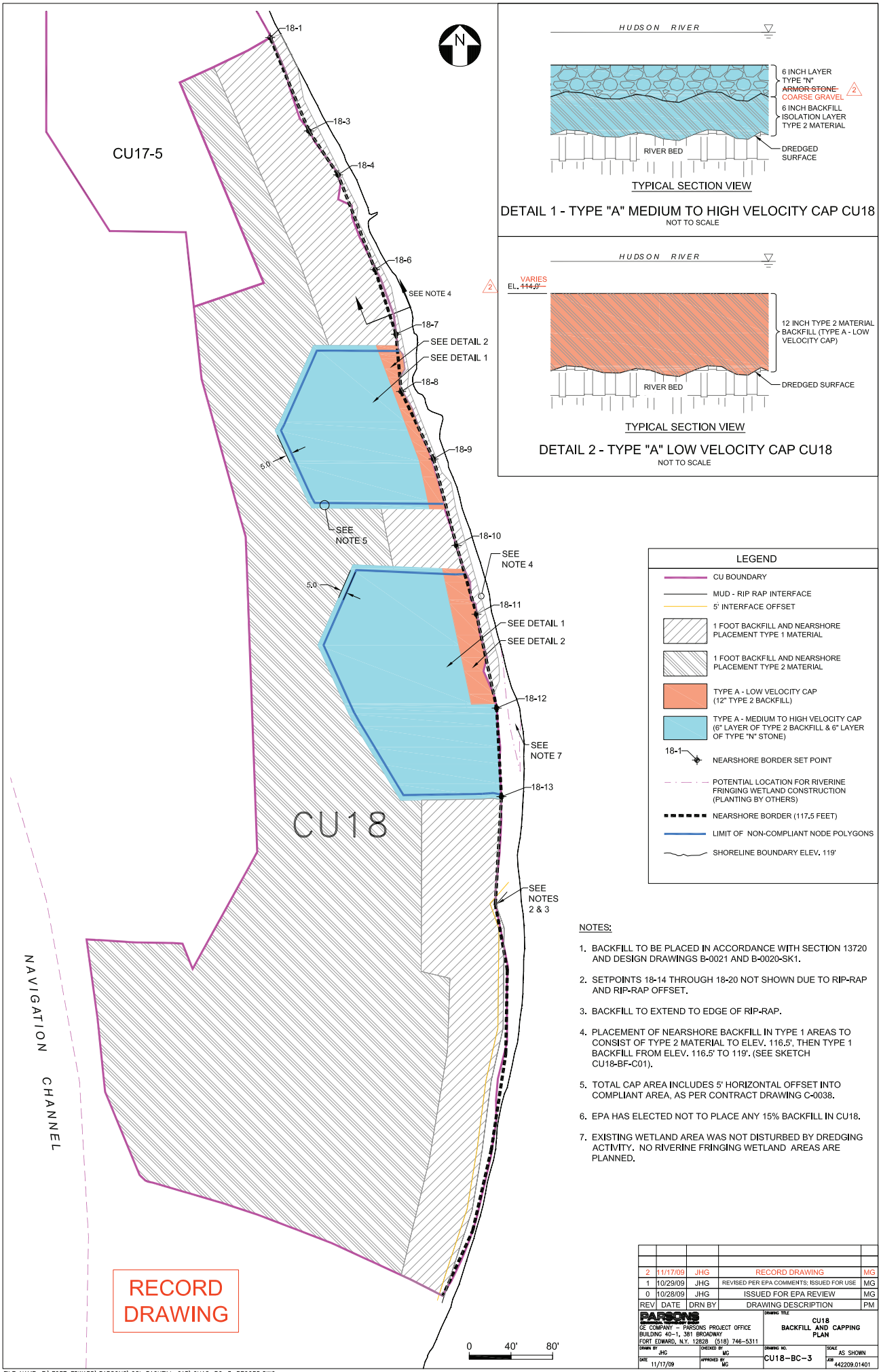
1. BATHYMETRY USED OSI MULTIBEAM SURVEY DATE ON NOVEMBER 15, 2009.
2. NUMERIC VALUES IN 10'x10' GRID REPRESENT DIFFERENCE TO TARGET THICKNESS (POSITIVE NUMBERS REFLECT THICKNESS ABOVE TARGET THICKNESS). COLORS DETERMINED USING DIFFERENT BACKFILL TOLERANCES DESCRIBED IN SPEC SECTION 13720.

CU-18
BACKFILL PLACEMENT ACCEPTANCE SURVEY

PARSONS
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40-1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746-5311

DRAWN BY	CHECKED BY	DRAWING TITLE	
JHG	MG	CU18 BACKFILL PLACEMENT ACCEPTANCE SURVEY	
DATE	APPROVED BY	DRAWING NO.	SCALE
11/17/09	MG	CU18-1	AS SHOWN
			JOB 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\BACKFILL ACCEPTANCE\1FT BKFL 10X10 CU18-1.DWG
PLOT DATE: 11/17/2009 4:29 PM PLOTTED BY: 48606



TYPICAL SECTION VIEW

DETAIL 1 - TYPE "A" MEDIUM TO HIGH VELOCITY CAP CU18

NOT TO SCALE

TYPICAL SECTION VIEW

DETAIL 2 - TYPE "A" LOW VELOCITY CAP CU18

NOT TO SCALE

LEGEND

- CU BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- 1 FOOT BACKFILL AND NEARSHORE PLACEMENT TYPE 1 MATERIAL
- 1 FOOT BACKFILL AND NEARSHORE PLACEMENT TYPE 2 MATERIAL
- TYPE A - LOW VELOCITY CAP (12" TYPE 2 BACKFILL)
- TYPE A - MEDIUM TO HIGH VELOCITY CAP (6" LAYER OF TYPE 2 BACKFILL & 6" LAYER OF TYPE "N" STONE)
- 18-1 NEARSHORE BORDER SET POINT
- POTENTIAL LOCATION FOR RIVERINE FRINGING WETLAND CONSTRUCTION (PLANTING BY OTHERS)
- NEARSHORE BORDER (117.5 FEET)
- LIMIT OF NON-COMPLIANT NODE POLYGONS
- SHORELINE BOUNDARY ELEV. 119'

NOTES:

1. BACKFILL TO BE PLACED IN ACCORDANCE WITH SECTION 13720 AND DESIGN DRAWINGS B-0021 AND B-0020-SK1.
2. SETPOINTS 18-14 THROUGH 18-20 NOT SHOWN DUE TO RIP-RAP AND RIP-RAP OFFSET.
3. BACKFILL TO EXTEND TO EDGE OF RIP-RAP.
4. PLACEMENT OF NEARSHORE BACKFILL IN TYPE 1 AREAS TO CONSIST OF TYPE 2 MATERIAL TO ELEV. 116.5', THEN TYPE 1 BACKFILL FROM ELEV. 116.5' TO 119'. (SEE SKETCH CU18-BF-C01).
5. TOTAL CAP AREA INCLUDES 5' HORIZONTAL OFFSET INTO COMPLIANT AREA, AS PER CONTRACT DRAWING C-0038.
6. EPA HAS ELECTED NOT TO PLACE ANY 15% BACKFILL IN CU18.
7. EXISTING WETLAND AREA WAS NOT DISTURBED BY DREDGING ACTIVITY. NO RIVERINE FRINGING WETLAND AREAS ARE PLANNED.

REV	DATE	DRN BY	DRAWING DESCRIPTION	PM
2	11/17/09	JHG	RECORD DRAWING	MG
1	10/29/09	JHG	REVISED PER EPA COMMENTS; ISSUED FOR USE	MG
0	10/28/09	JHG	ISSUED FOR EPA REVIEW	MG

PARSONS

GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40-1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746-5311

DRAWING TITLE: CU18 BACKFILL AND CAPPING PLAN

DRAWN BY: JHG | CHECKED BY: MG | APPROVED BY: MG | DATE: 11/17/09

DRAWING NO.: CU18-BC-3 | SCALE: AS SHOWN | JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\OSI-BACKFILL CAP\CU18-BC-3-RECORD.DWG
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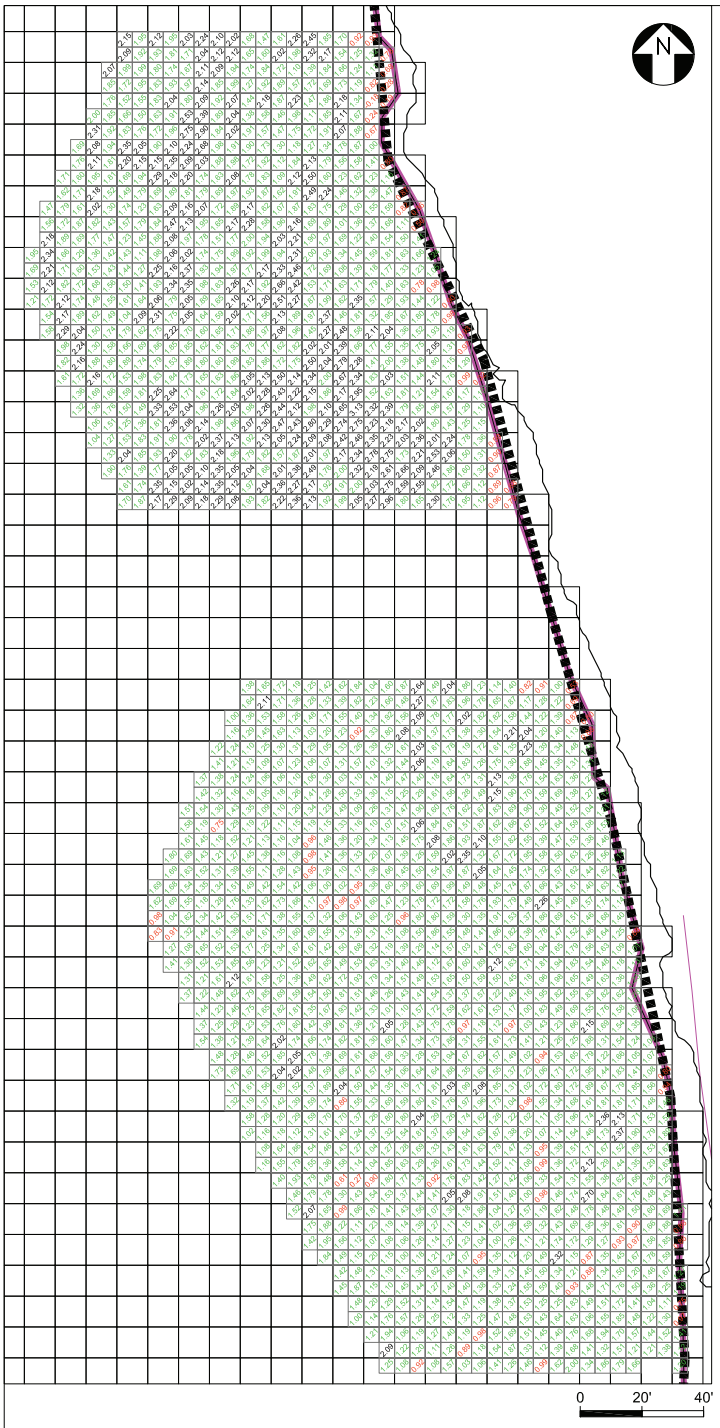
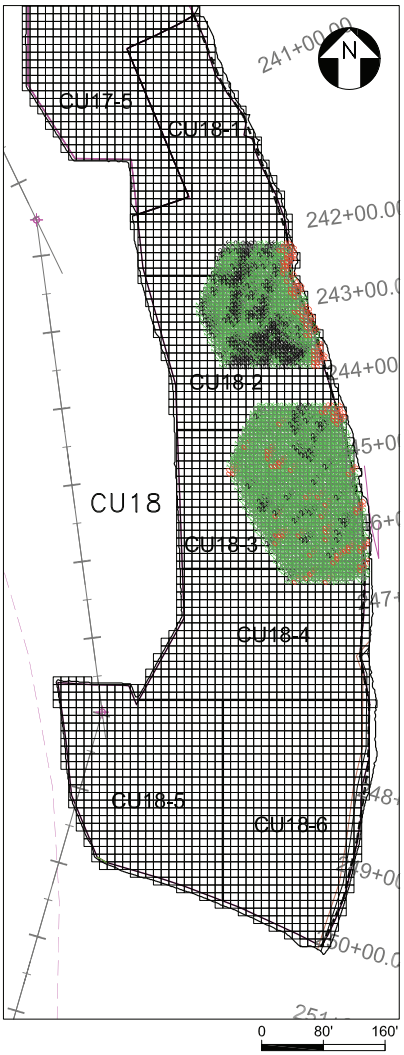


CU18 TYPE A CAP PLACEMENT



CU18 TYPE A CAP LOCATION

LEGEND

- 5'x5' GRID WITHIN DESIGN GUIDELINES
- 5'x5' GRID LESS THAN DESIGN GUIDELINES
- 5'x5' GRID ABOVE DESIGN GUIDELINES
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- NEARSHORE BORDER (117.5 FEET)

NOTES:

1. OSI MULTIBEAM SURVEY ON NOVEMBER 11, 2009.
2. CAP THICKNESS IS LISTED IN 5'x5' GRIDS.

CU18
TYPE A CAP
ACCEPTANCE SURVEY

CU18
1 FOOT BACKFILL PLACEMENT

REV	DATE	DRN BY	DRAWING DESCRIPTION	PM
0	11/17/09	JHG	ISSUED FOR EPA REVIEW	MG

PARSONS
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40-1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746-5311

DRAWING TITLE: CU18 CAP ACCEPTANCE MAP

DRAWN BY	CHECKED BY	DRAWING NO.	SCALE
JHG	MG	CU18	AS SHOWN
DATE 11/17/09	APPROVED BY MG		JOB 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CAP TYPE A – LOW(5X5)\CU18 TYPE A CAP MED-HIGH.DWG
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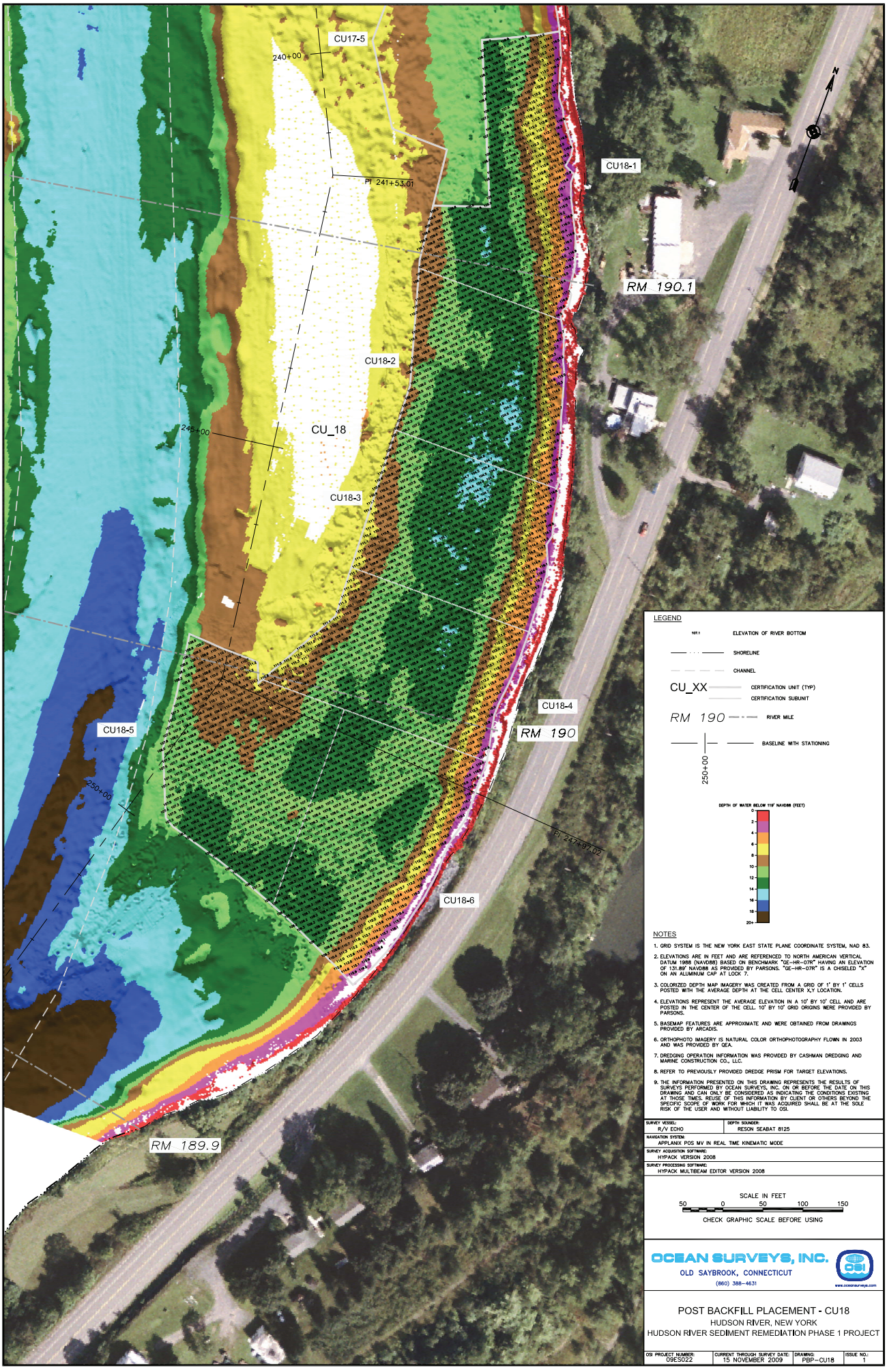

LEGEND

107.1 ELEVATION OF RIVER BOTTOM

SHORELINE

CHANNEL

CU_XX CERTIFICATION UNIT (TYP)

CERTIFICATION SUBUNIT

RM 190 RIVER MILE

250+00 BASELINE WITH STATIONING

DEPTH OF WATER BELOW 110' NAVD88 (FEET)

0
2
4
6
8
10
12
14
16
18
20+

NOTES

1. GRID SYSTEM IS THE NEW YORK EAST STATE PLANE COORDINATE SYSTEM, NAD 83.
2. ELEVATIONS ARE IN FEET AND ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) BASED ON BENCHMARK "GE-HR-07R" HAVING AN ELEVATION OF 131.89' NAVD88 AS PROVIDED BY PARSONS. "GE-HR-07R" IS A CHISELED "X" ON AN ALUMINUM CAP AT LOCK 7.
3. COLORIZED DEPTH MAP IMAGERY WAS CREATED FROM A GRID OF 1' BY 1' CELLS POSTED WITH THE AVERAGE DEPTH AT THE CELL CENTER X,Y LOCATION.
4. ELEVATIONS REPRESENT THE AVERAGE ELEVATION IN A 10' BY 10' CELL AND ARE POSTED IN THE CENTER OF THE CELL. 10' BY 10' GRID ORIGINS WERE PROVIDED BY PARSONS.
5. BASEMAP FEATURES ARE APPROXIMATE AND WERE OBTAINED FROM DRAWINGS PROVIDED BY ARCADIS.
6. ORTHOPHOTO IMAGERY IS NATURAL COLOR ORTHOPHOTOGRAPHY FLOWN IN 2003 AND WAS PROVIDED BY QEA.
7. DREDGING OPERATION INFORMATION WAS PROVIDED BY CASHMAN DREDGING AND MARINE CONSTRUCTION CO., LLC.
8. REFER TO PREVIOUSLY PROVIDED DREDGE PRISM FOR TARGET ELEVATIONS.
9. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY OCEAN SURVEYS, INC. ON OR BEFORE THE DATE ON THIS DRAWING AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THOSE TIMES. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO OSI.

SURVEY VESSEL:	DEPTH SOUNDER:
R/V ECHO	RESON SEABAT 8125
NAVIGATION SYSTEM:	
APPLANIX POS MV IN REAL TIME KINEMATIC MODE	
SURVEY ACQUISITION SOFTWARE:	
HYPACK VERSION 2008	
SURVEY PROCESSING SOFTWARE:	
HYPACK MULTIBEAM EDITOR VERSION 2008	

SCALE IN FEET

50 0 50 100 150

CHECK GRAPHIC SCALE BEFORE USING

OCEAN SURVEYS, INC.
OLD SAYBROOK, CONNECTICUT
(860) 388-4631
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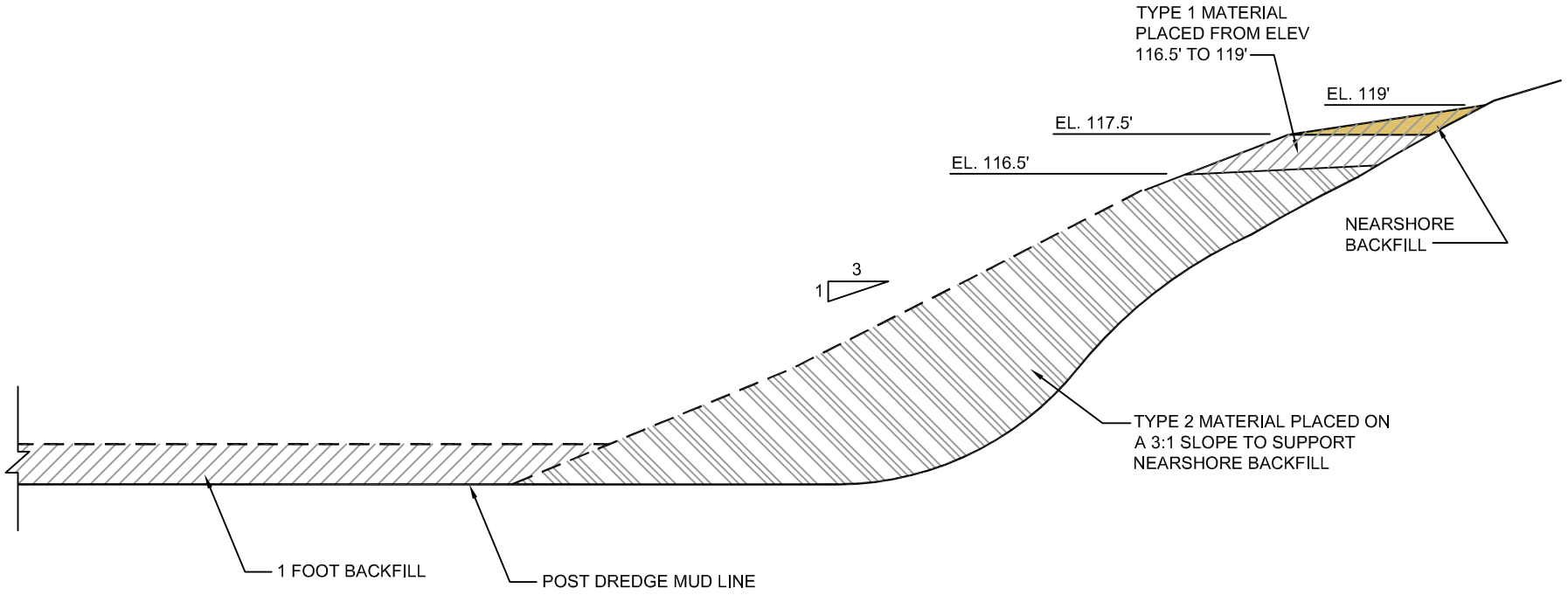
POST BACKFILL PLACEMENT - CU18

HUDSON RIVER, NEW YORK

HUDSON RIVER SEDIMENT REMEDIATION PHASE 1 PROJECT

OSI PROJECT NUMBER:	CURRENT THROUGH SURVEY DATE:	DRAWING:	ISSUE NO.:
09ES022	15 NOVEMBER 2009	PBP-CU18	1



NEAR SHORE BACKFILL PLACEMENT DETAIL

TYPICAL SECTION NOT TO SCALE

RECORD DRAWING

PARSONS
COMMERCIAL TECHNOLOGY GROUP
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40–1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746–5311

DRAWING TITLE: CU18 NEAR SHORE BACKFILL PLACEMENT DETAIL			
DRAWN BY: JHG	CHECKED BY: MG	DRAWING NO.: CU18–BF–C01	SCALE: NOT TO SCALE
DATE: 11/05/09	APPROVED BY: MG		JOB: 442209

FILE NAME: E:\FORT EDWARD\PARSONS\OSI–BACKFILL CAP\CU18–BC–3–RECORD.DWG
PLOT DATE: 11/5/2009 2:16 PM PLOTTED BY: 48606

Correspondence

(Letters and Emails)

Galbraith, Michael

From: King.David@epamail.epa.gov
Sent: Saturday, November 14, 2009 9:36 AM
To: Andrew Inglis
Cc: Michael J. Johnson; Timothy Kruppenbacher; Galbraith, Michael; Bryan Minor; Gary Klawinski; Joseph Moloughney
Subject: Re: Discussions regarding CU Backfill and Cap placement

Andrew, I agree with summary.
Dave
Sent by EPA Wireless E-Mail Services

From: "Inglis, Andrew A (GE, Corporate)" [andrew.inglis@ge.com]
Sent: 11/13/2009 05:13 PM EST
To: David King
Cc: <MJohnson@louisberger.com>; "Kruppenbacher, Timothy A (GE, Corporate)" <timothy.kruppenbacher@ge.com>; <michael.galbraith@parsons.com>; <USACE_HRFO@roadrunner.com>; <GKlawinski@ene.com>; "Joseph Moloughney" <Joseph_Moloughney@canals.state.ny.us>
Subject: Discussions regarding CU Backfill and Cap placement

Dave,
Today and yesterday we met and reviewed progress surveys of cap and backfill placement in CUs 1, 2, 3, 4, 7 and 18. This email confirms decisions made during the meeting based on reviews of the maps presented during the meeting.

CU1.
In CU1 it was agreed that sufficient thickness of isolation layer material has been placed while providing enough room to place armor stone below the 105.2' elevation in the navigation channel. It was agreed that placement of armor stone can begin.

CU2.
In CU2 it was agreed that the top of cap and backfill elevations were acceptable. GE will prepare a Form 2 package for EPA review.

CU3 .
In CU3 it was agreed that the top of cap and backfill elevations were acceptable, it was discussed that GE was in the process of placing backfill in an area of the navigation channel where the post dredge elevations were below 102' elevation. Once GE has surveyed that additional backfill location GE will prepare a Form 2 package for EPA review.

CU4.
In CU4 it was agreed that the top of cap elevations in the north east quarter of the CU was acceptable and that backfill placment in that area may begin.

CU7.
In CU7 it was agreed that the top of cap and backfill elevations were acceptable. GE will prepare a Form 2 package for EPA review.

CU18
In CU18 it was agreed that the top of cap elevations were acceptable in both of the cap locations in that CU.

Please let me know if I missed anything.

Thanks,

Andrew A. Inglis
Dredging Task Leader
GE

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GE Corporate Environmental Programs

GE Imagination at Work