Appendix II-E
Form 2 Packages

CU-01

Form 2

CU Certification of Completion

CU BACKFILL/ENGINEERED CAP COMPLETION APPROVAL - FORM 2

Reporting Date	11/24/2009			**Placement Start Date**	10/28/2009
CU Number	1			**Placement End Date**	11/20/2009
Approximate CU Centroid	**Northing**	1616824.789	**Easting**	735165.184	NY State NAD 83
CU Size	3.39	Acres			
Backfill Area	0	Acres			
Cap Area	3.39	Acres			

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

Backfill **NA**	**Type of Backfill** NONE	**Reference to appropriate drawings attached to Approval Form 1**
Cap **X**	**Type of Cap** Type "B" Medium Velocity Cap Type "B" High Velocity Cap	**Reference to appropriate drawings attached to Approval Form 1** CU1 Backfill and Cap Plan, 11/4/09

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 CU1 Narrative Summary of Backfill and Capping and CU1 Cap 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 1

Narrative Summary of Backfill and Capping and
EPA Backfill and Capping Agreements

1.0 Cap Placement

A Type "B" Medium Velocity Cap, and a Type "B" High Velocity Cap was placed in accordance with the CU 1 Backfill and Cap Plan drawing, dated November 4, 2009, which was provided to EPA as part of the CU 1 Form 1 package. Final multi-beam bathymetric surveys of the Type B isolation layers were performed on November 11 and 12, 2009, as shown on the attached CU 1 Type "B" Cap Isolation Layer Acceptance Survey map, dated November 21, 2009. The surveyed isolation layer thickness on a 10' x 10' grid is shown for all cap areas. A multi-beam survey of the armor stone layer was completed on November 19, 2009, as shown on the attached CU 1 Type "B" Cap Armor Layer Acceptance Survey maps, dated November 21, 2009. The surveyed armor layer thickness on a 5' x 5' grid is shown for all cap areas.

2.0 Backfill Placement

In accordance with the CU 1 Backfill and Cap Plan drawing, dated November 4, 2009, which was provided to EPA as part of the CU 1 Form 1 package, backfill materials were not placed as the entire CU was capped.

3.0 EPA Field Agreements Specific to CU 1 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 a meeting with EPA on November 9, 2009, GE presented surveys of the CU 1 cap isolation layer. It was agreed that in Subunit CU1-1, GE would remove excess isolation layer material so that armor stone can be placed below the 105.2' elevation. The excess isolation layer material would be placed in areas of Subunits CU1-3 and CU1-4. In Subunits CU1-3 and CU1-4, GE would place additional isolation layer material to raise the isolation layer to be as close to 9" thick as possible while also providing room to place the armor layer below 105.2'. Lastly, it was agreed that the isolation layer placement in Subunits CU1-2, as shown, was acceptable. (See attached email dated, November 10, 2009.)

3. During a meeting with EPA on November 13, 2009, GE presented final surveys of the CU 1 cap isolation layer. It was agreed that sufficient thickness of isolation layer material had been placed while providing enough room to place armor stone below the 105.2' elevation

in the navigation channel, and that placement of armor stone can begin. (See attached email dated, November 14, 2009.) The CU 1 Type "B" Cap Isolation Layer Acceptance Survey drawing, dated November 21, 2009 is included in this package.

4. On November 20, 2009, GE provided final armor layer placement surveys to EPA via email. EPA informed GE on November 21, 2009, via email, that the armor layer thicknesses were acceptable. (See attached e-mail dated November 21, 2009.) The CU 1 Type "B" Cap Armor Layer Acceptance Survey drawing, dated November 21, 2009 is included in this package.

5. After placing Type O cobble armor in the high velocity Type "B" cap in the navigation channel areas it was observed that the required thickness of armor stone had not been obtained in some locations. In addition, there was not sufficient depth to place additional Type O material, given the diameter of the stone, and remain below the required 105.2' elevation. Similarly to the solution used in CU2, GE placed Type N material on top of the Type O armor stone to increase the thickness of high velocity Type "B" caps in areas of the Navigation Channel with depth restrictions.

Figures

LEGEND

- 0.58 — 5x5 GRID WITHIN DESIGN GUIDELINES (FT.)
- 0.21 — 5x5 GRID LESS THAN DESIGN GUIDELINES (FT.)
- 1.11 — 5x5 GRID ABOVE DESIGN GUIDELINES (FT.)
- ROCK/REFUSAL ENCOUNTERED VIA DREDGING
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- NAVIGATION CHANNEL
- TOE OF FINAL DREDGE PRISM SLOPE

CU1-1 & CU1-2 TYPE "B" CAP ARMOR STONE PLACEMENT

NOTES:

1. OSI MULTIBEAM SURVEY ON NOVEMBER 19, 2009.
2. ARMOR STONE THICKNESS IS LISTED IN 5'x5' GRIDS.
3. A REDUCED ARMOR LAYER (TYPE "O" AND TYPE "N" STONE) WAS PLACED IN CERTAIN LOCATIONS DUE TO RESTRICTIONS OF FINAL CAP ELEVATION IN NAVIGATION CHANNEL.

DWG 1 OF 2

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

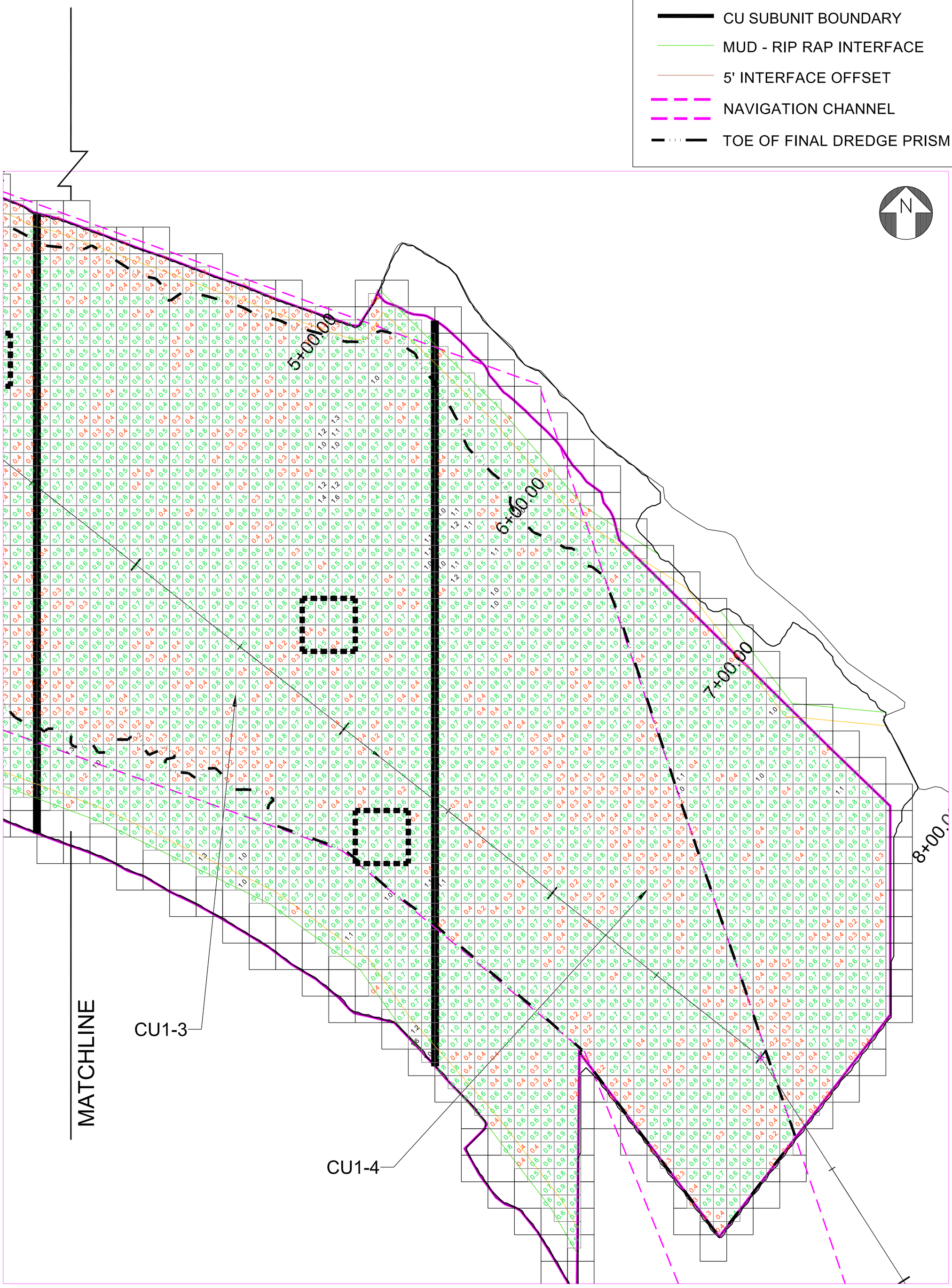
DRAWING TITLE: CU1 TYPE "B" CAP ARMOR LAYER ACCEPTANCE SURVEY

DRAWN BY	CHECKED BY	DRAWING NO.	SCALE
JHG	MG	CU1–1	AS SHOWN
DATE: 11/21/09	APPROVED BY: MG		JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CAP TYPE B – MED–HIGH(5X5)–LAYER B\CU1–1 NAV CHANNEL ELEVATIONS.DWG
PLOT DATE: 11/23/2009 3:11 PM PLOTTED BY: 48606

LEGEND

- 0.58 — 5x5 GRID WITHIN DESIGN GUIDELINES (FT.)
- 0.21 — 5x5 GRID LESS THAN DESIGN GUIDELINES (FT.)
- 1.11 — 5x5 GRID ABOVE DESIGN GUIDELINES (FT.)
- ROCK/REFUSAL ENCOUNTERED VIA DREDGING
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- NAVIGATION CHANNEL
- TOE OF FINAL DREDGE PRISM SLOPE



CU1-3 & CU1-4 TYPE "B" CAP ARMOR STONE PLACEMENT

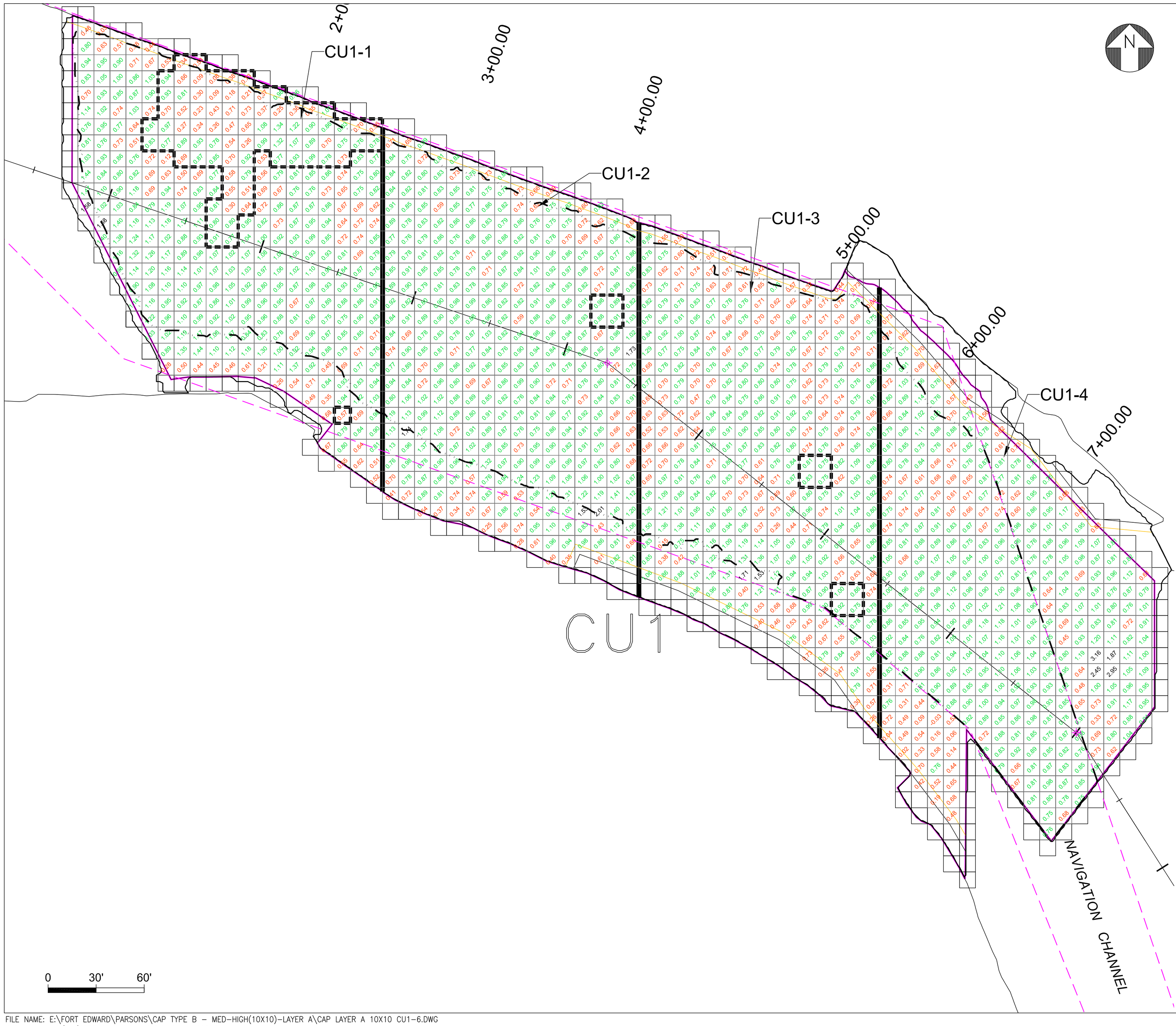
NOTES:

1. OSI MULTIBEAM SURVEY ON NOVEMBER 19, 2009.
2. ARMOR STONE THICKNESS IS LISTED IN 5'x5' GRIDS.
3. A REDUCED ARMOR LAYER (TYPE "O" AND TYPE "N" STONE) WAS PLACED IN CERTAIN LOCATIONS DUE TO RESTRICTIONS OF FINAL CAP ELEVATION IN NAVIGATION CHANNEL.

DWG 2 OF 2

PARSONS COMMERCIAL TECHNOLOGY GROUP GE COMPANY – PARSONS PROJECT OFFICE BUILDING 40–1, 381 BROADWAY FORT EDWARD, N.Y. 12828 (518) 746–5311		DRAWING TITLE CU1 TYPE "B" CAP ARMOR LAYER ACCEPTANCE SURVEY	
DRAWN BY JHG	CHECKED BY MG	DRAWING NO. CU1–2	SCALE AS SHOWN
DATE 11/21/09	APPROVED BY MG		JOB 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CAP TYPE B – MED–HIGH(5X5)–LAYER B\CU1–1 NAV CHANNEL ELEVATIONS.DWG
PLOT DATE: 11/23/2009 3:08 PM PLOTTED BY: 48606



LEGEND

- 0.80 — 10'x10' GRID WITHIN DESIGN GUIDELINES
- 0.65 — 10'x10' GRID LESS THAN DESIGN GUIDELINES
- 1.60 — 10'x10' GRID ABOVE DESIGN GUIDELINES
- BUCKET REFUSAL ENCOUNTERED VIA DREDGING
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- NEARSHORE BORDER (117.5 FEET)
- MUD - RIP RAP INTERFACE
- 5 FOOT INTERFACE OFFSET
- TOE OF FINAL DREDGE PRISM SLOPE

NOTES:

1. OSI MULTIBEAM SURVEY ON NOVEMBER 11 AND 12, 2009.
2. CAP THICKNESS OF ISOLATION LAYER IS LISTED IN 10'X10' GRIDS.
3. A REDUCED ISOLATION LAYER (TYPE 2 BACKFILL WITH TOC) WAS INTENTIONALLY PLACED IN CERTAIN LOCATIONS, DUE TO RESTRICTIONS OF FINAL CAP ELEVATION IN NAVIGATION CHANNEL.

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

DRAWN BY	CHECKED BY
JHG	MG
DATE	APPROVED BY
11/21/09	MG

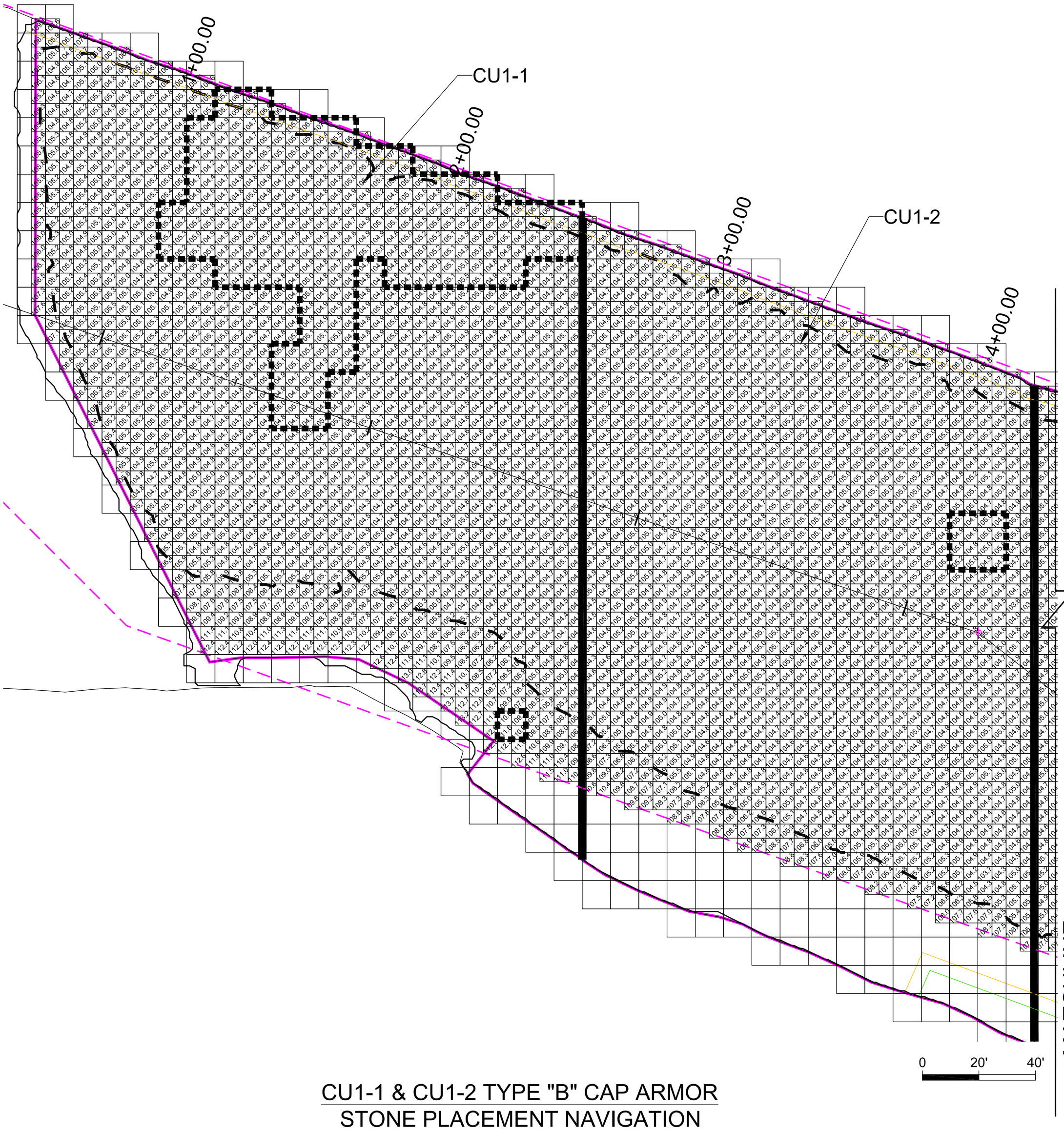
DRAWING TITLE: CU1 TYPE "B" CAP ISOLATION LAYER ACCEPTANCE SURVEY

DRAWING NO.	SCALE
CU1-6	AS SHOWN
	JOB 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CAP TYPE B – MED-HIGH(10X10)-LAYER A\CAP LAYER A 10X10 CU1-6.DWG
PLOT DATE: 11/23/2009 2:59 PM PLOTTED BY: 48606

LEGEND

- 104.5 — 5'x5' GRID ELEVATION (FT)
- BUCKET REFUSAL ENCOUNTERED VIA DREDGING
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- MUD - RIP RAP INTERFACE
- 5 FOOT INTERFACE OFFSET
- NAVIGATION CHANNEL
- TOE OF FINAL DREDGE PRISM SLOPE



CU1-1 & CU1-2 TYPE "B" CAP ARMOR STONE PLACEMENT NAVIGATION CHANNEL ELEVATIONS

NOTES:

1. OSI MULTIBEAM SURVEY ON NOVEMBER 19, 2009.
2. ELEVATION OF CAP ARMOR LAYER IS LISTED IN 5'X5' GRIDS.
3. A REDUCED ARMOR LAYER (TYPE "O" AND TYPE "N" STONE) WAS PLACED IN CERTAIN LOCATIONS DUE TO RESTRICTIONS OF FINAL CAP ELEVATION IN NAVIGATION CHANNEL.

DWG 1 OF 2

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

DRAWING TITLE			
CU1 TYPE "B" CAP ARMOR STONE NAV CHANNEL ELEVATIONS			
DRAWN BY: JHG	CHECKED BY: MG	DRAWING NO.: CU1–7–1	SCALE: AS SHOWN
DATE: 11/21/09	APPROVED BY: MG		JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CAP TYPE B – MED–HIGH(10X10)–LAYER A\CAP LAYER A 5X5CU1–7A–NAV CHANNEL ELEV.DWG
PLOT DATE: 11/23/2009 3:18 PM PLOTTED BY: 48606

LEGEND

104.5 — 5'x5' GRID ELEVATION (FT)

BUCKET REFUSAL ENCOUNTERED VIA DREDGING

CU BOUNDARY

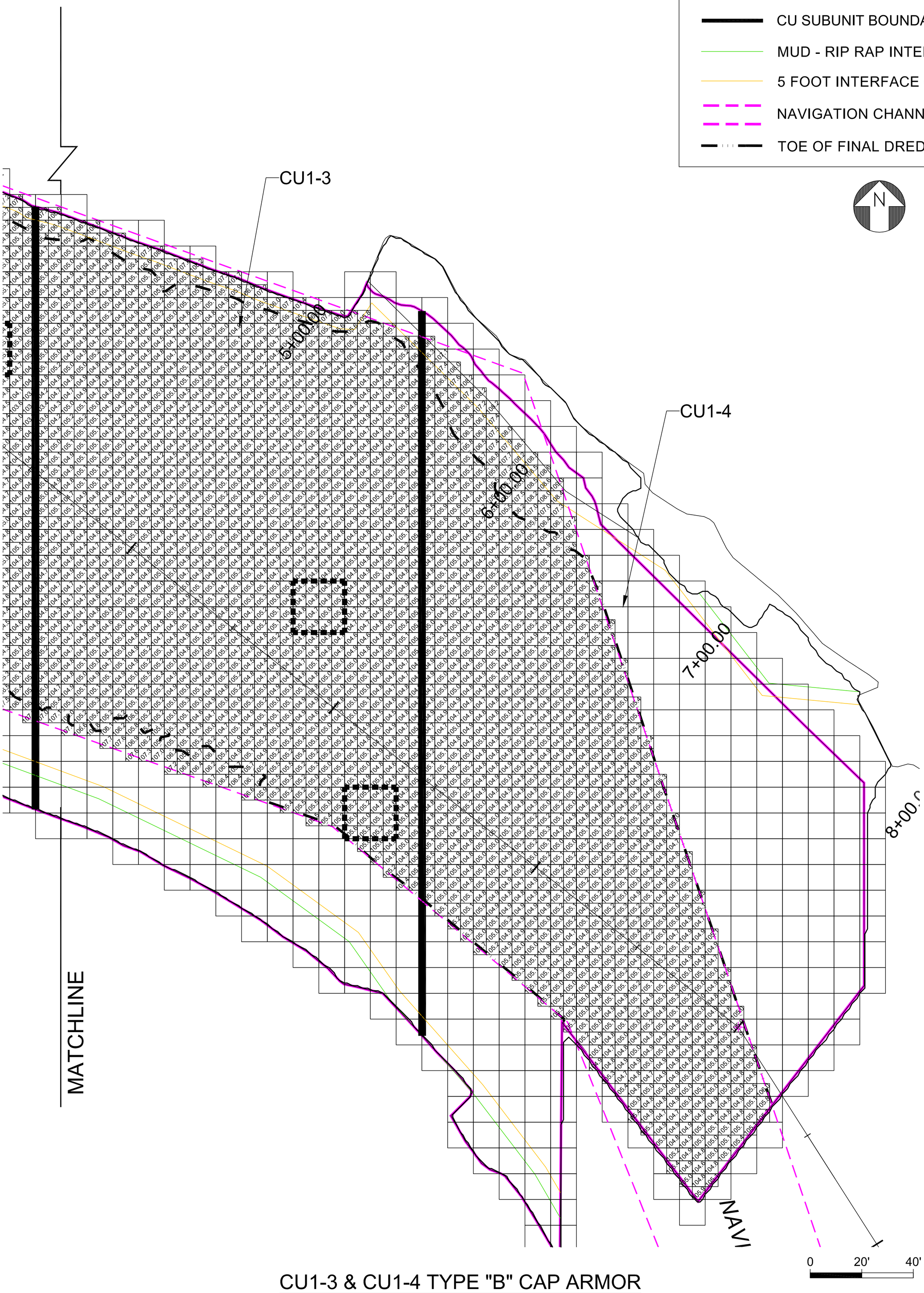
CU SUBUNIT BOUNDARY

MUD - RIP RAP INTERFACE

5 FOOT INTERFACE OFFSET

NAVIGATION CHANNEL

TOE OF FINAL DREDGE PRISM SLOPE



CU1-3 & CU1-4 TYPE "B" CAP ARMOR STONE PLACEMENT NAVIGATION CHANNEL ELEVATIONS

NOTES:

1. OSI MULTIBEAM SURVEY ON NOVEMBER 19, 2009.
2. ELEVATION OF CAP ARMOR LAYER IS LISTED IN 5'X5' GRIDS.
3. A REDUCED ARMOR LAYER (TYPE "O" AND TYPE "N" STONE) WAS PLACED IN CERTAIN LOCATIONS DUE TO RESTRICTIONS OF FINAL CAP ELEVATION IN NAVIGATION CHANNEL.

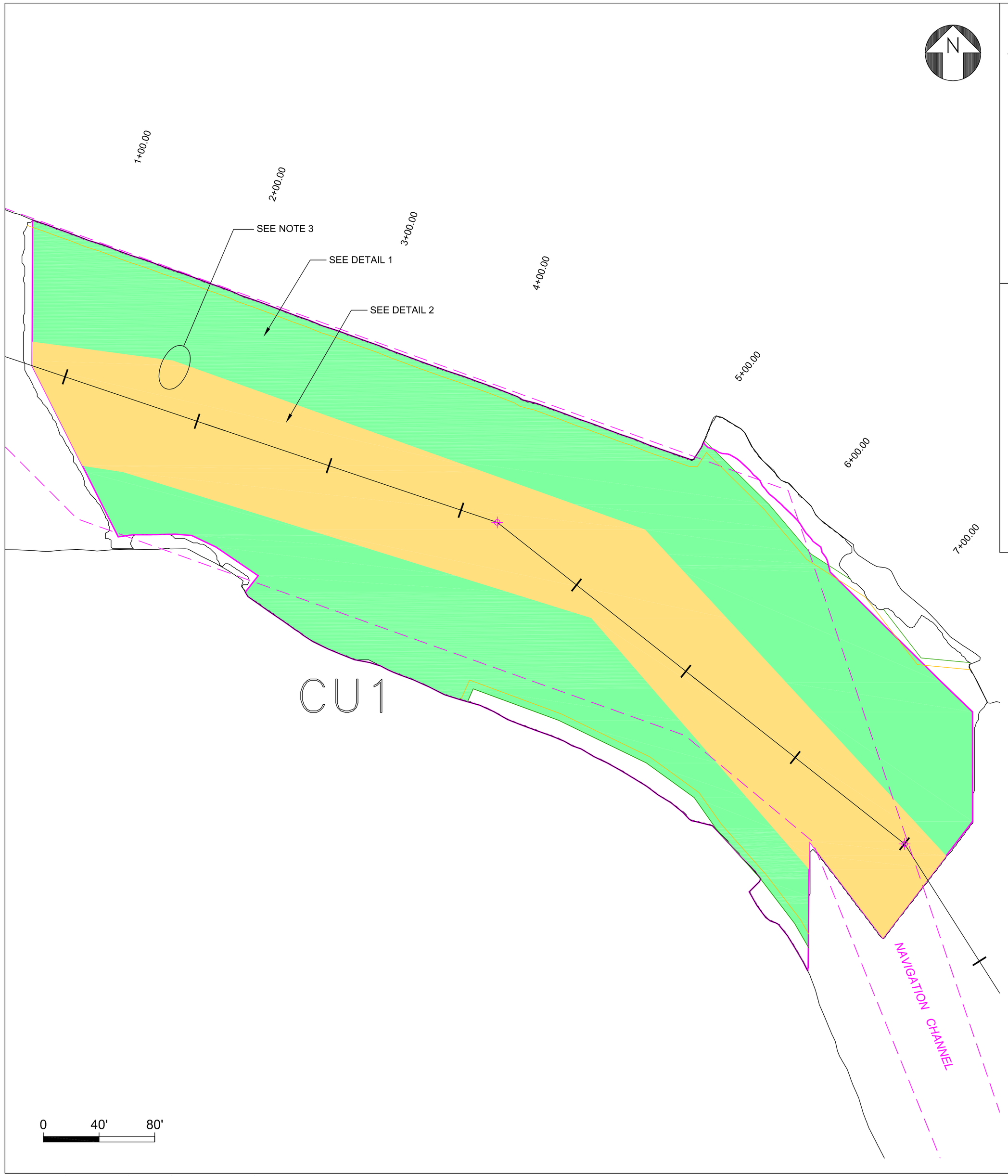
CU1
TYPE "B" CAP
ARMOR STONE
ACCEPTANCE SURVEY
NAVIGATION CHANNEL
ELEVATIONS

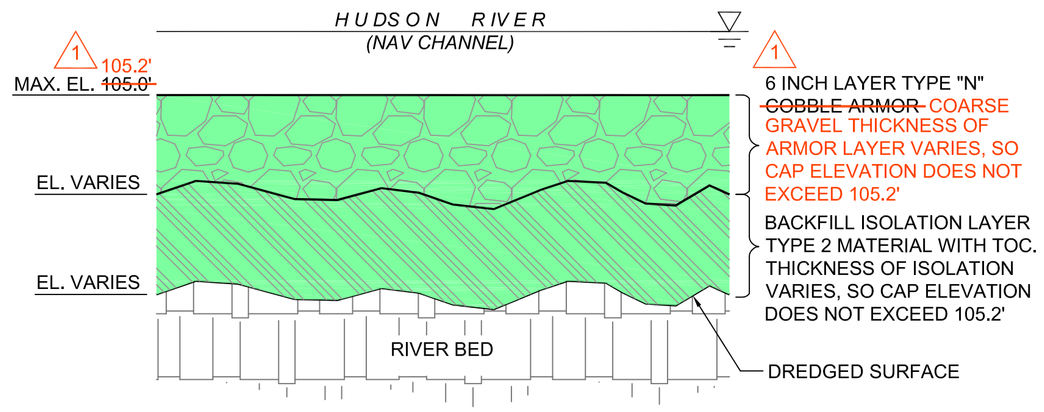
DWG 2 OF 2

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

DRAWING TITLE			
CU1 TYPE "B" CAP ARMOR STONE NAV CHANNEL ELEVATIONS			
DRAWN BY: JHG	CHECKED BY: MG	DRAWING NO.: CU1–7–2	SCALE: AS SHOWN
DATE: 11/21/09	APPROVED BY: MG		JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CAP TYPE B – MED–HIGH(10X10)–LAYER A\CAP LAYER A 5X5CU1–7A–NAV CHANNEL ELEV.DWG
PLOT DATE: 11/23/2009 4:56 PM PLOTTED BY: 48606

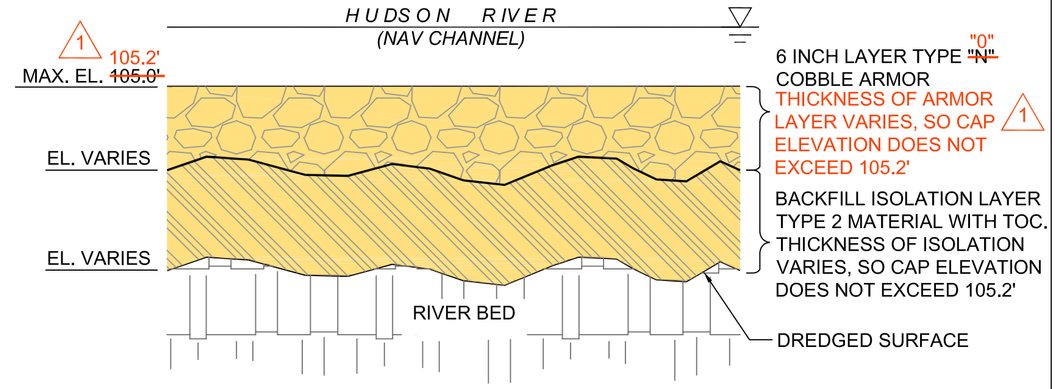




TYPICAL SECTION VIEW

DETAIL 1 - TYPE "B" MEDIUM VELOCITY CAP CU1

NOT TO SCALE



TYPICAL SECTION VIEW

DETAIL 2 - TYPE "B" HIGH VELOCITY CAP CU1

NOT TO SCALE

LEGEND

- CU BOUNDARY
- MUD - RIP RAP INTERFACE
- DREDGING OFFSET
- TYPE "B" - HIGH VELOCITY CAP (9 INCH ISOLATION LAYER OF TYPE 2 BACKFILL WITH TOC AND 6 INCH LAYER TYPE "O" COBBLE ARMOR)
- TYPE "B" - MEDIUM VELOCITY CAP (9 INCH ISOLATION LAYER OF TYPE 2 BACKFILL WITH TOC AND 6 INCH LAYER TYPE "N" ~~ARMOR STONE~~) COARSE GRAVEL 1

NOTES:

1. CAP MATERIALS TO BE PLACED IN ACCORDANCE WITH SECTION 13720 AND DESIGN DRAWING C-0038.
2. THE TOP OF CAP IN NAVIGATION CHANNEL NOT TO EXCEED ELEVATION 105.2'.
3. AERIAL EXTENT OF MEDIUM AND HIGH VELOCITY TYPE "B" ISOLATION CAP REVISED FROM PHASE 1 FINAL DESIGN DUE TO CHANGE IN VELOCITIES DUE TO DEEPER FINAL BATHYMETRY.

RECORD DRAWING

REV	DATE	DRN BY	DRAWING DESCRIPTION	
1	11/21/09	JHG	RECORD DRAWING	MG
0	11/03/09	JHG	ISSUED FOR EPA REVIEW	MG

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

DRAWING TITLE: CU1 BACKFILL & CAP PLAN

DRAWN BY	CHECKED BY	DRAWING NO.	VERSION	SCALE
JHG	MG	CU1-BC-1	B	AS SHOWN
DATE: 11/21/09	APPROVED BY: MG			JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\OSI-BACKFILL CAP\CU1-CAP-SMC-BC-1-RECORD.DWG
PLOT DATE: 11/23/2009 2:55 PM PLOTTED BY: 48606

Correspondence

(Letters and Emails)

Inglis, Andrew A (GE, Corporate)

From: Inglis, Andrew A (GE, Corporate)

Sent: Tuesday, November 10, 2009 8:13 PM

To: king.david@epamail.epa.gov

Cc: MJohnson@louisberger.com; timothy.kruppenbacher@ge.com; michael.galbraith@parsons.com; Bryan Miner (USACE_HRFO@roadrunner.com); GKlawinski@ene.com; Joseph Moloughney

Subject: Discussion regarding CU1 and 2 Backfill and Cap

Dave,
Yesterday we met and reviewed progress surveys of cap isolation layer placement in CU1 and cap armor stone placement in CU2. This emails confirms decisions made during the meeting based on reviews of the maps.

CU1.
In Cu1-1 GE will remove excess backfill material so that armor stone can be placed below 105.2' elevation. This excess backfill material will then be placed in areas of CU1-3 and Cu1-4.
In CU1-3 and 1-4 GE will place additional material to raise the isolation layer to be as close to 9" as possible while also providing room to place the armor layer below 105.2'.
It was agreed that the isolation layer placement in CU1-2 was acceptable.

CU2.
The cap armor stone layer in the southern half of the CU was agreed to be acceptable. It was agreed that portions of the cap armor stone in the northern half of the CU will require additional material. It was also agreed that placing additional Type O material in those areas would result in the cap being above elevation 105.2'. To avoid this situation we agreed that Type N stone could be placed to supplement areas where type O stone had already been placed.

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

Inglis, Andrew A (GE, Corporate)

From: King.David@epamail.epa.gov

Sent: Saturday, November 14, 2009 9:36 AM

To: Inglis, Andrew A (GE, Corporate)

Cc: Michael J. Johnson; Kruppenbacher, Timothy A (GE, Corporate); michael galbraith; 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

Inglis, Andrew A (GE, Corporate)

From: King.David@epamail.epa.gov
Sent: Saturday, November 21, 2009 9:09 AM
To: Inglis, Andrew A (GE, Corporate)
Cc: Mirarchi, Jeff (GE, Corporate, non-ge); Joseph Moloughney; MJohnson@louisberger.com; Kruppenbacher, Timothy A (GE, Corporate); USACE_HRFO@roadrunner.com; MJohnson@louisberger.com; Klawinski, Gary; Rosoff.David@epamail.epa.gov; Skopeck.Kristen@epamail.epa.gov; USACE_HRFO@roadrunner.com; Conetta.Benny@epamail.epa.gov; EGarvey@louisberger.com; mchapman@ene.com
Subject: RE: CU1 Elevations

Andrew,
Cap elevations look good for CU1.

Dave

CU-02

Form 2

CU Certification of Completion

CU BACKFILL/ENGINEERED CAP COMPLETION APPROVAL - FORM 2

Reporting Date	11/19/2009			**Placement Start Date**	10/12/2009
CU Number	2			**Placement End Date**	11/13/2009
Approximate CU Centroid	**Northing**	1614979	**Easting**	736038	NY State NAD 83
CU Size	5.06	Acres			
Backfill Area	1.64	Acres			
Cap Area	3.42	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** CU2 Backfill and Cap Plan, 10/11/09
Cap X	**Type of Cap** Type "B" Low Velocity Cap, Type "B" Medium Velocity Cap, Type "B" High Velocity Cap & Type "B" High Velocity Low Profile Cap	**Reference to appropriate drawings attached to Approval Form 1** CU2 Backfill and Cap Plan, 10/11/09

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 2 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 2

Narrative Summary of Backfill and Capping and

EPA Backfill and Capping Agreements

1.0 Cap Placement

A Type "B" Low Velocity Cap, a Type "B" Medium Velocity Cap, a Type "B" High Velocity Cap, and a Type "B" Low Profile High Velocity Cap was placed in accordance with the CU 2 Backfill and Cap Plan Drawing, dated October 11, 2009, which was provided to EPA as part of the CU 2 Form 1 package. A multi-beam bathymetric survey of the Type "B" Cap Isolation layer was performed on October 21, 2009. This survey indicated areas within the Navigation Channel from Station 21+00.00 to approximately Station 24+00.00 required shoaling to reduce the isolation layer thickness in order to place armor stone. This work was completed from October 23 through October 26, 2009 and resurveyed on October 27, 2009. On October 28, 2009 during a 3:00 PM meeting with EPA, GE presented a map showing the isolation layer thickness and corresponding elevations within the Navigation Channel. EPA agreed the isolation layer thickness was sufficient to place armor stone. Multi-beam surveys of the armor stone were completed on November 1 and November 11, 2009, as shown on the attached CU 2 Cap Type "B" Armor Layer Acceptance Survey, dated November 18, 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 2 Backfill and Cap Plan Drawing, dated October 11, 2009, provided to EPA as part of the CU 18 Form 1 package. A multi-beam bathymetric survey for CU 2 was performed after backfill placement on November 14, 2009, as shown on the attached CU 2 Backfill Placement Acceptance Survey drawing, dated November 18, 2009. The numeric values difference in the 10' x 10' grids represent difference to target thickness (positive numbers reflect thickness above target thickness).

3.0 EPA Field Agreements Specific to CU 3 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 4:00 PM meeting on October 14, 2009, GE discussed the challenges in placing cap material in areas with slopes in excess of 3:1. In CU2 north of Bond Creek, placement of the isolation layer on steep slopes near the navigation channel slopes are light of isolation layer

material and bottom of slope were heavy with material. EPA agreed the ability to maintain the design cap tolerance was limited in these areas.

3. On October 28, 2009 during a 3:00 PM meeting with EPA, GE presented a map showing the isolation layer thickness and corresponding elevations within the Navigation Channel. EPA agreed the isolation layer thickness, as shown, was sufficient to place armor stone (see attached e-mail dated October 28, 2009).

4. During a 3:00 PM meeting with EPA on November 9, 2009, GE presented a preliminary Cap Acceptance Survey Map on a 5' x 5' grid in CU 2. It was observed that the required thickness of armor stone in high velocity Type "B" caps in navigation channel areas had not been obtained but there was not sufficient depth to place additional Type "O" material. GE proposed that rather than place additional Type "O" material in these areas, that Type "N' material be placed. EPA agreed that placement of Type "N" material to finish high velocity Type B caps was acceptable in areas of the Navigation Channel with depth restrictions (see attached e-mail summary dated November 10, 2009).

5. During a 3:00 PM meeting with EPA on November 12, 2009, GE presented a Cap Acceptance Survey Map on a 5' x 5' grid in CU 2. EPA agreed that the cap thicknesses, as shown, were acceptable (see attached e-mail, dated November 14, 2009). The CU2 Type "B" Cap Acceptance Survey Drawing, dated November 18, 2009 is included in this package.

6. During a 3:00 PM meeting with EPA on November 13, 2009, GE presented a drawing and table showing the Riverine Fringing Wetland (RFW) area in Bond Creek. EPA agreed that backfill placement within the RFW area was acceptable. Table and drawing CU2 Bond Creek RFW Detail, dated November 11, 2009, is included in this package.

7. On November 18, 2009, GE provided EPA with acceptance surveys of the difference to backfill prisms on a 10' x 10' grid in CU 2. EPA agreed that the top backfill elevations, as shown, were acceptable. The Backfill Placement Acceptance Survey Drawing, dated November 18, 2009 is included in this package.

Tables

Table 1. CU-2 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.
2-1	735841.76	1615734.89	117.50	735,841.81	1,615,734.91	117.89	0.05	0.39
2-2	735857.89	1615684.63	117.50	735,857.96	1,615,684.72	118.67	0.12	1.17
				735,854.93	**1,615,684.60**	**117.80**	**2.97**	**0.30**
2-3	735883.57	1615617.11	117.50	735,883.37	1,615,617.11	117.90	0.20	0.40
2-4	735908.80	1615548.38	117.50	735,908.60	1,615,548.34	118.82	0.21	1.32
				735,907.95	1,615,547.73	118.19	1.07	0.69
				735,904.76	**1,615,547.37**	**117.23**	**4.17**	**-0.28**
2-5	735939.67	1615458.34	117.50	735,939.54	1,615,458.45	117.91	0.17	0.41
2-6	735985.11	1615367.25	117.50	735,985.26	1,615,367.53	117.22	0.31	-0.28
2-7	736022.46	1615300.38	117.50	736,022.22	1,615,300.28	117.22	0.26	-0.28
2-8	736050.98	1615230.08	117.50	736,050.92	1,615,230.05	116.50	0.07	-1.00
				736,051.83	1,615,235.19	116.70	5.18	-0.80
				736,055.43	**1,615,236.74**	**117.64**	**8.01**	**0.14**
2-9	736071.44	1615163.20	117.50	736,071.41	1,615,163.13	116.45	0.08	-1.05
				736,076.99	**1,615,166.56**	**117.12**	**6.48**	**-0.38**
				736,080.32	1,615,166.94	117.61	9.63	0.11
2-10	736083.15	1615096.33	117.50	736,083.23	1,615,096.37	116.78	0.09	-0.72
				736,085.77	**1,615,097.60**	**117.55**	**2.92**	**0.05**
				736,089.37	1,615,098.07	118.69	6.46	1.19
2-11	736116.21	1615029.22	117.50	736,116.34	1,615,029.11	117.89	0.17	0.39
2-12	736157.82	1614957.28	117.50	736,157.70	1,614,957.53	118.87	0.28	1.37
				736,153.59	1,614,955.37	118.81	4.64	1.31
				736,151.41	1,614,954.40	118.54	7.02	1.04
				736,147.60	**1,614,951.10**	**117.44**	**11.94**	**-0.06**
2-13	736171.84	1614931.95	117.50	736,171.89	1,614,931.93	118.65	0.06	1.15
				736,167.88	1,614,932.28	118.45	3.97	0.95
				736,160.59	**1,614,928.52**	**117.77**	**11.75**	**0.27**
2-14	736219.74	1614698.77	117.50	736,219.71	1,614,698.78	116.76	0.03	-0.74
				736,222.65	**1,614,700.01**	**117.42**	**3.16**	**-0.08**
				736,227.14	1,614,700.64	118.15	7.63	0.65
2-15	736217.02	1614697.84	117.50	736,217.10	1,614,697.70	116.14	0.16	-1.36
2-16	736243.00	1614614.90	117.50	736,243.06	1,614,615.16	115.39	0.27	-2.11
				736,246.34	**1,614,615.16**	**117.34**	**3.35**	**-0.16**
				736,250.04	1,614,615.57	118.88	7.07	1.38
2-17	736269.59	1614532.00	117.50	736,269.88	1,614,531.94	117.25	0.30	-0.25
2-18	736279.53	1614491.00	117.50	736,279.56	1,614,491.00	116.43	0.03	-1.07
				736,282.48	**1,614,492.13**	**117.67**	**3.16**	**0.17**
				736,286.44	1,614,493.87	118.44	7.48	0.94
				736,291.76	1,614,495.04	118.17	12.88	0.67
2-19	735851.62	1615280.20	117.50	735,851.54	1,615,280.36	117.55	0.17	0.05
2-20	735881.26	1615194.92	117.50	735,881.40	1,615,195.12	116.56	0.25	-0.94
				735,879.06	**1,615,194.84**	**117.66**	**2.21**	**0.16**
2-21	735906.78	1615109.24	117.50	735,906.68	1,615,109.48	116.69	0.26	-0.81
				735,903.59	**1,615,108.47**	**117.63**	**3.28**	**0.13**
2-22	735933.67	1615017.86	117.50	735,933.56	1,615,017.85	117.14	0.12	-0.36
2-23	735955.32	1614925.87	117.50	735,955.34	1,614,926.13	117.66	0.26	0.16
2-24	735970.50	1614847.32	117.50	735,970.67	1,614,847.28	116.73	0.17	-0.77
				735,967.97	**1,614,846.38**	**117.22**	**2.70**	**-0.28**
				735,964.47	1,614,845.57	117.97	6.28	0.47
				735,960.15	1,614,844.41	118.33	10.76	0.83
2-25	735987.03	1614754.34	117.50	735,986.81	1,614,754.02	117.29	0.39	-0.21
2-26	736010.78	1614665.66	117.50	736,010.97	1,614,665.51	116.73	0.25	-0.77
				736,007.38	**1,614,664.75**	**117.55**	**3.51**	**0.05**
				736,003.07	1,614,663.15	118.48	8.11	0.97
				736,000.11	1,614,662.99	119.06	10.99	1.56
2-27	736028.90	1614572.77	117.50	736,029.07	1,614,572.73	116.62	0.17	-0.88
				736,027.27	**1,614,572.07**	**117.54**	**1.78**	**0.04**
				736,024.64	1,614,571.13	118.14	4.56	0.64
2-28	736055.32	1614461.44	117.50	736,055.29	1,614,461.74	117.78	0.30	0.28
2-29	736057.92	1614451.52	117.50	736,058.13	1,614,451.34	117.53	0.28	0.03

Notes:

1. Measurements Collected 2009-11-12 and 2009-11-16 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

BOND CREEK RFW AREA

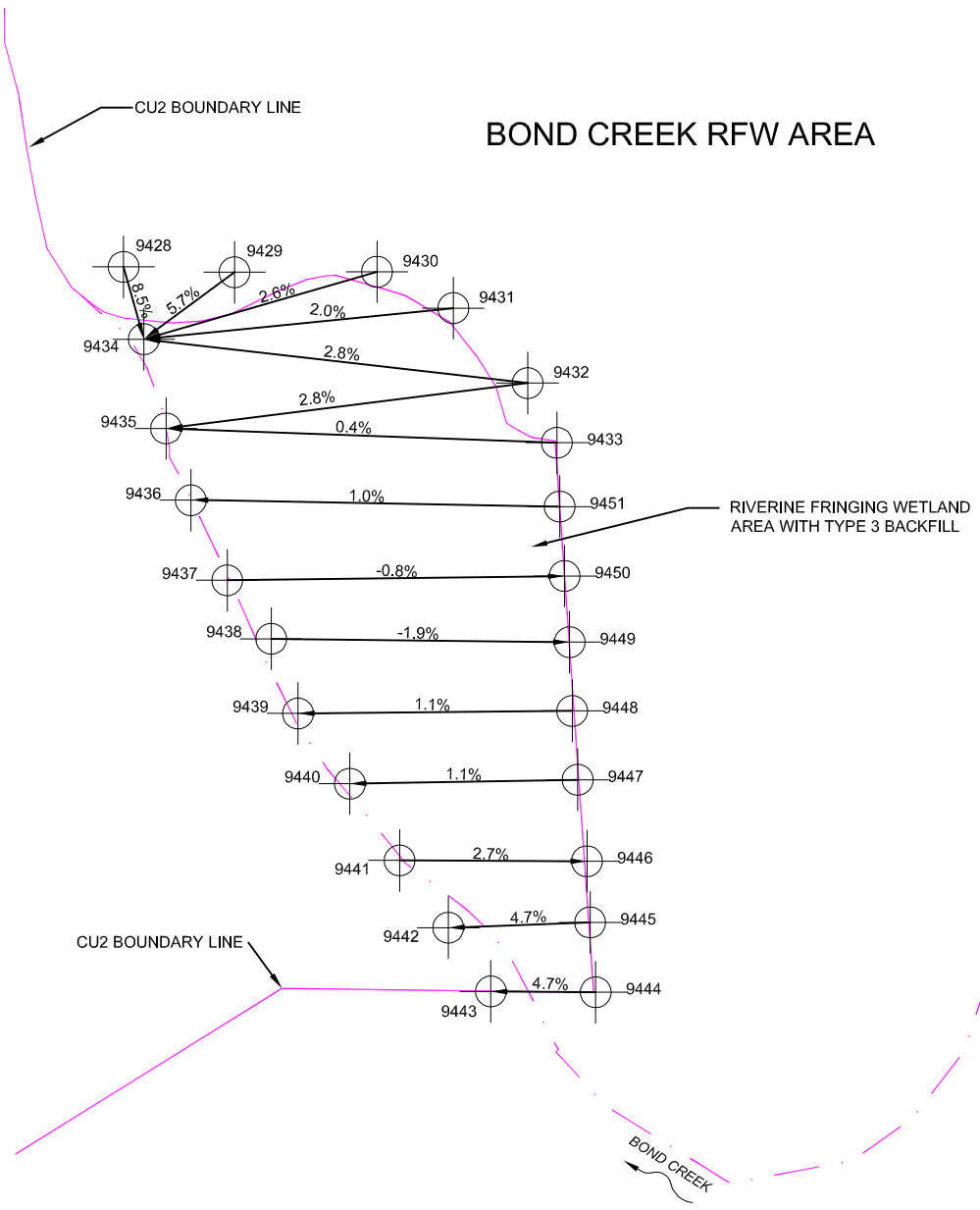


Table 1. CU-2 Bond Creek Riverine Fringing Wetland Area

Topographic data collected 2009-11-05.

ID #	Easting	Northing	Elev. (ft)	Comments	ID #	Easting	Northing	Elev. (ft)	Comments	Elev. Change (ft)	Distance (ft)	Grade %
9443	736,198.25	1,614,931.53	118.35	Behind Bio-log	9444	736,221.03	1,614,931.36	119.42	CU Border	1.07	22.8	**4.7%**
9442	736,189.01	1,614,945.37	117.82	Behind Bio-log	9445	736,219.84	1,614,946.52	119.26	CU Border	1.44	30.8	**4.7%**
9441	736,178.43	1,614,960.00	118.35	Behind Bio-log	9446	736,219.14	1,614,959.81	119.45	CU Border	1.10	40.7	**2.7%**
9440	736,167.62	1,614,976.66	117.83	Behind Bio-log	9447	736,217.12	1,614,977.51	118.39	CU Border	0.56	49.5	**1.1%**
9439	736,156.35	1,614,991.92	116.92	Behind Bio-log	9448	736,215.93	1,614,992.46	117.57	CU Border	0.65	59.6	**1.1%**
9438	736,150.53	1,615,008.12	118.80	Behind Bio-log	9449	736,215.38	1,615,007.40	117.57	CU Border	-1.22	64.9	**-1.9%**
9437	736,140.98	1,615,020.84	118.99	Behind Bio-log	9450	736,214.27	1,615,021.76	118.37	CU Border	-0.61	73.3	**-0.8%**
9436	736,133.06	1,615,038.23	117.90	Behind Bio-log	9451	736,213.22	1,615,036.84	118.73	CU Border	0.83	80.2	**1.0%**
9435	736,127.68	1,615,053.82	118.11	Behind Bio-log	9433	736,212.61	1,615,050.73	118.49	CU Border	0.38	85.0	**0.4%**
9435	736,127.68	1,615,053.82	118.11	Behind Bio-log	9432	736,206.26	1,615,063.68	120.36	Water's Edge	2.25	79.2	**2.8%**
9434	736,122.85	1,615,073.21	118.95	Behind Bio-log	9428	736,118.44	1,615,088.93	120.33	Water's Edge	1.39	16.3	**8.5%**
9434	736,122.85	1,615,073.21	118.95	Behind Bio-log	9429	736,142.56	1,615,087.76	120.35	Water's Edge	1.40	24.5	**5.7%**
9434	736,122.85	1,615,073.21	118.95	Behind Bio-log	9430	736,173.53	1,615,087.85	120.32	Water's Edge	1.37	52.8	**2.6%**
9434	736,122.85	1,615,073.21	118.95	Behind Bio-log	9431	736,190.11	1,615,079.97	120.32	Water's Edge	1.37	67.6	**2.0%**
9434	736,122.85	1,615,073.21	118.95	Behind Bio-log	9432	736,206.26	1,615,063.68	120.36	Water's Edge	1.42	84.0	**1.7%**

Notes:

1.Grid system is in feet and in the New York State Plane coordinate system (East Zone) North American Datum 1983 (NAD83).

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.

3. The information provided represents the results of surveys performed by Ocean Surveys, Inc. (OSI) with Van Dusen and Steves on 5 November 2009 and can only be considered as indicating the conditions existing at that

0 40' 80'

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

DRAWING TITLE: CU2 BOND CREEK RFW DETAIL

DRAWN BY	CHECKED BY	DRAWING NO.	SCALE
JHG	MG	CU2-BOND CREEK	AS SHOWN
DATE: 11/11/09	APPROVED BY: MG		JOB: 442209.01401

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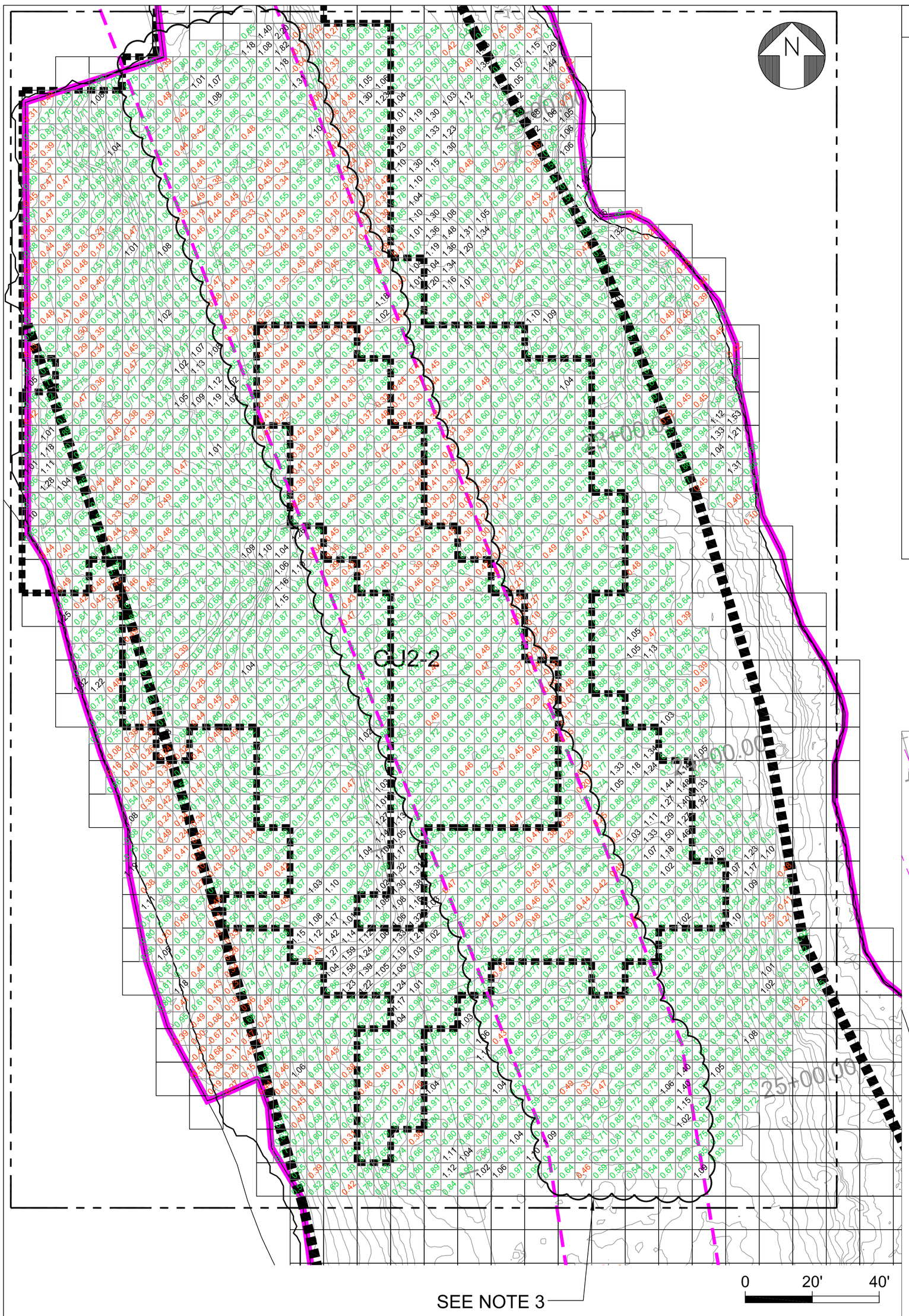
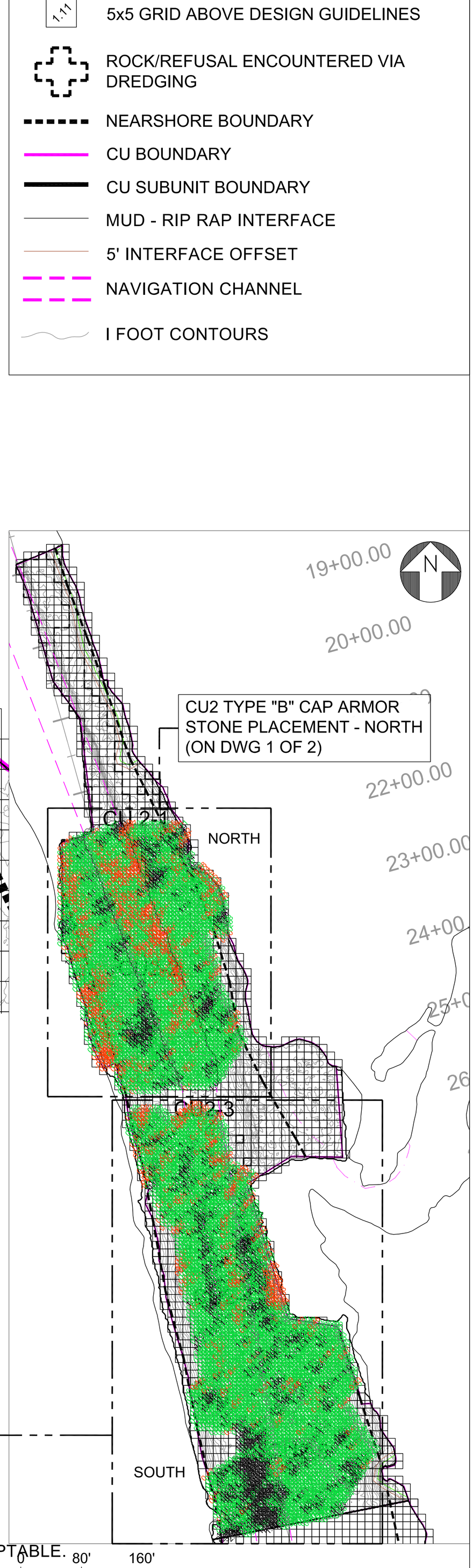


CU2 TYPE "B" CAP ARMOR STONE PLACEMENT
NORTH



CU2 TYPE "B" CAP ARMOR STONE PLACEMENT - NORTH (ON DWG 1 OF 2)

CU2 TYPE "B" CAP ARMOR STONE PLACEMENT- SOUTH (DWG 2 OF 2)

CU2 TYPE "B" CAP LOCATION

LEGEND

- 0.58 — 5x5 GRID WITHIN DESIGN GUIDELINES
- 0.21 — 5x5 GRID LESS THAN DESIGN GUIDELINES
- 1.11 — 5x5 GRID ABOVE DESIGN GUIDELINES
- ROCK/REFUSAL ENCOUNTERED VIA DREDGING
- NEARSHORE BOUNDARY
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- NAVIGATION CHANNEL
- I FOOT CONTOURS

NOTES:

1. OSI MULTIBEAM SURVEY ON NOVEMBER 1, AND NOVEMBER 11, 2009.
2. CAP THICKNESS IS LISTED IN 5'x5' GRIDS AND IS RELATIVE TO THE ISOLATION LAYER SURVEY FROM OCTOBER 21, 2009.
3. ADDITIONAL ARMOR STONE PLACED ON NOVEMBER 10, 2009 AND SURVEYED ON NOVEMBER 11, 2009
4. ARMOR STONE PLACEMENT IN STEEP AREAS WAS REVIEWED WITH EPA ON NOVEMBER 12, 2009 AND DEEMED ACCEPTABLE.

DWG 1 OF 2

CU2
TYPE "B" CAP ARMOR LAYER
ACCEPTANCE SURVEY
(NORTH)

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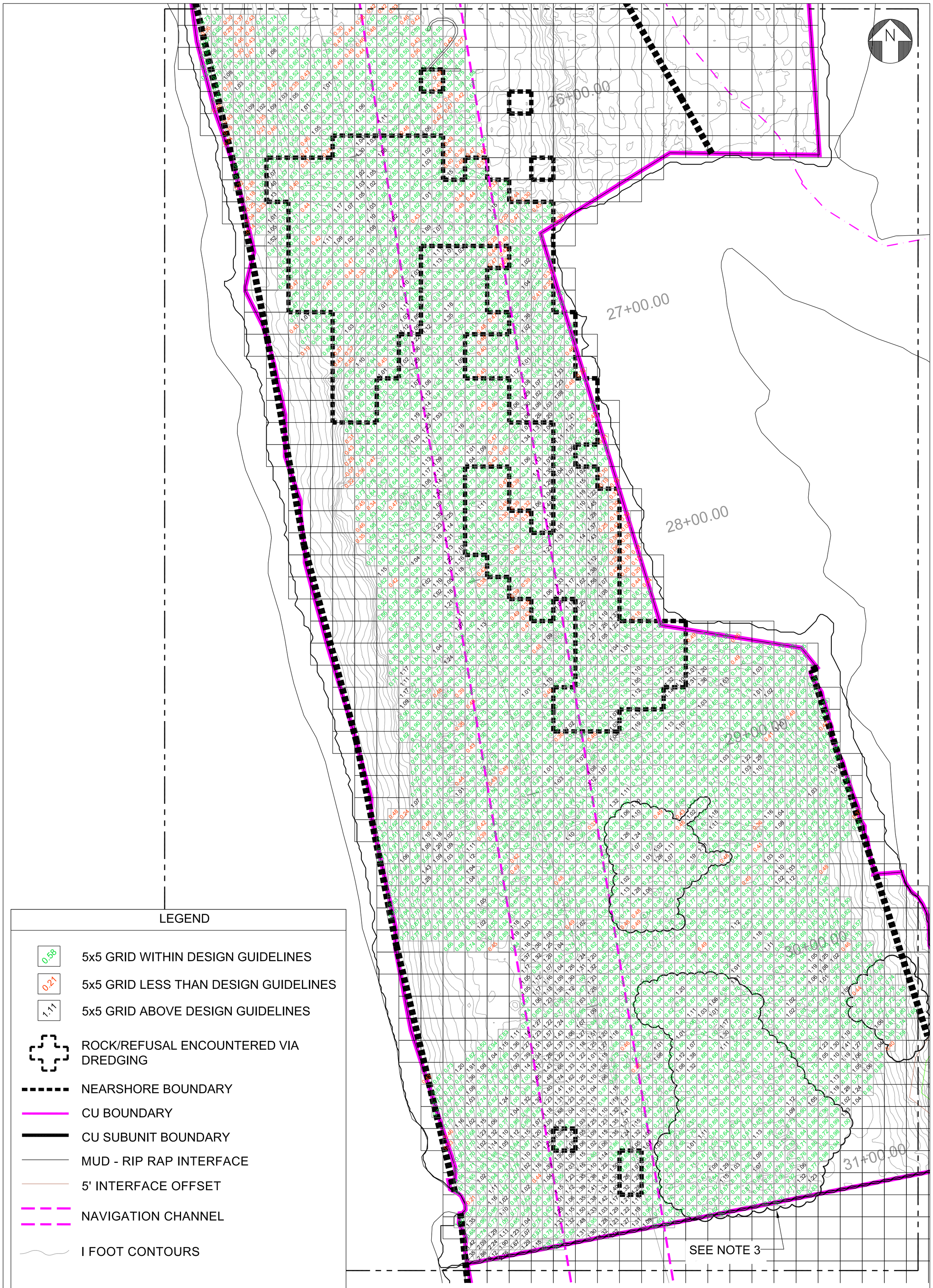
GE COMPANY – PARSONS PROJECT OFFICE
BUILDING 40–1, 381 BROADWAY
FORT EDWARD, N.Y. 12828 (518) 746–5311

DRAWING TITLE		
CU2 TYPE "B" CAP ARMOR LAYER ACCEPTANCE SURVEY (NORTH)		
DRAWN BY: JHG	CHECKED BY: MG	SCALE: AS SHOWN
DATE: 11/18/09	APPROVED BY: MG	DRAWING NO.: CU2–5–1
		JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CAP TYPE B – MED–HIGH(5X5)–LAYER B\CU2–5–CAP–B– 5X5 (M–H VELOCITY – LAYER B).DWG
PLOT DATE: 11/19/2009 3:53 PM PLOTTED BY: 48606



LEGEND

- 0.58 — 5x5 GRID WITHIN DESIGN GUIDELINES
- 0.21 — 5x5 GRID LESS THAN DESIGN GUIDELINES
- 1.11 — 5x5 GRID ABOVE DESIGN GUIDELINES
- ROCK/REFUSAL ENCOUNTERED VIA DREDGING
- NEARSHORE BOUNDARY
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- NAVIGATION CHANNEL
- I FOOT CONTOURS

NOTES:

1. CAP THICKNESS IN CU2 SOUTH IS LISTED IN 5'x5' GRIDS AND IS RELATIVE TO THE ISOLATION LAYER SURVEY FROM OCTOBER 21, NOVEMBER 1, AND NOVEMBER 6, 2009.
2. ARMOR STONE PLACEMENT IN STEEP AREAS WAS REVIEWED WITH EPA ON NOVEMBER 12, 2009 AND DEEMED ACCEPTABLE.
3. ADDITIONAL ARMOR STONE PLACED ON NOVEMBER 5, 2009 AND SURVEYED ON NOVEMBER 6, 2009.

CU2 TYPE "B" CAP ARMOR STONE PLACEMENT SOUTH

CU2
TYPE "B" CAP ARMOR LAYER
ACCEPTANCE SURVEY
(SOUTH)

DWG 2 OF 2

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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: CU2 TYPE "B" CAP ARMOR LAYER ACCEPTANCE SURVEY (SOUTH)	
DATE: 11/18/09	APPROVED BY: MG	DRAWING NO.: CU2–5–2	VERSION: A
		SCALE: AS SHOWN	JOB: 442209.01401

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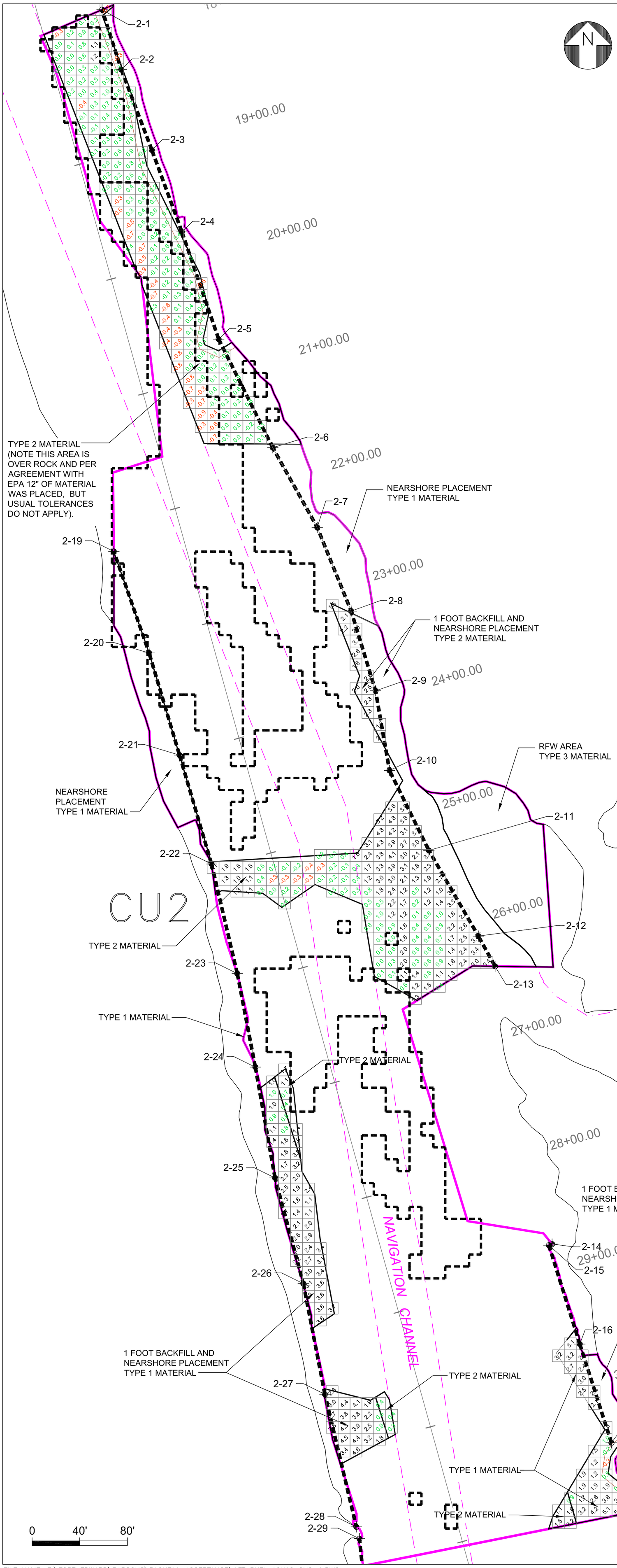
PLOT DATE: 11/19/2009 3:43 PM PLOTTED BY: 48606



CU-2 Near-Shore Topographic Soundings Collected 2009-11-12 and 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.
2-1	735841.76	1615734.89	117.50	735,841.81	1,615,734.91	117.89	0.05	0.39
2-2	735857.89	1615684.63	117.50	735,857.96	1,615,684.72	118.67	0.12	1.17
				735,854.93	**1,615,684.60**	**117.80**	**2.97**	**0.30**
2-3	735883.57	1615617.11	117.50	735,883.37	1,615,617.11	117.90	0.20	0.40
2-4	735908.80	1615548.38	117.50	735,908.60	1,615,548.34	118.82	0.21	1.32
				735,907.95	1,615,547.73	118.19	1.07	0.69
				735,904.76	**1,615,547.37**	**117.23**	**4.17**	**-0.28**
2-5	735939.67	1615458.34	117.50	735,939.54	1,615,458.45	117.91	0.17	0.41
2-6	735985.11	1615367.25	117.50	735,985.26	1,615,367.53	117.22	0.31	-0.28
2-7	736022.46	1615300.38	117.50	736,022.22	1,615,300.28	117.22	0.26	-0.28
2-8	736050.98	1615230.08	117.50	736,050.92	1,615,230.05	116.50	0.07	-1.00
				736,051.83	1,615,235.19	116.70	5.18	-0.80
				736,055.43	**1,615,236.74**	**117.64**	**8.01**	**0.14**
2-9	736071.44	1615163.20	117.50	736,071.41	1,615,163.13	116.45	0.08	-1.05
				736,076.99	**1,615,166.56**	**117.12**	**6.48**	**-0.38**
2-10	736083.15	1615096.33	117.50	736,083.23	1,615,096.37	116.78	0.09	-0.72
				736,085.77	**1,615,097.60**	**117.55**	**2.92**	**0.05**
2-11	736116.21	1615029.22	117.50	736,116.34	1,615,029.11	117.89	0.17	0.39
2-12	736157.82	1614957.28	117.50	736,157.70	1,614,957.53	118.87	0.28	1.37
				736,153.59	1,614,955.37	118.81	4.64	1.31
				736,151.41	1,614,954.40	118.54	7.02	1.04
				736,147.60	**1,614,951.10**	**117.44**	**11.94**	**-0.06**
2-13	736171.84	1614931.95	117.50	736,171.89	1,614,931.93	118.65	0.06	1.15
				736,167.88	1,614,932.28	118.45	3.97	0.95
				736,160.59	**1,614,928.52**	**117.77**	**11.75**	**0.27**
2-14	736219.74	1614698.77	117.50	736,219.71	1,614,698.78	116.76	0.03	-0.74
				736,222.65	**1,614,700.01**	**117.42**	**3.16**	**-0.08**
2-15	736217.02	1614697.84	117.50	736,217.10	1,614,697.70	116.14	0.16	-1.36
2-16	736243.00	1614614.90	117.50	736,243.06	1,614,615.16	115.39	0.27	-2.11
				736,246.34	**1,614,615.16**	**117.34**	**3.35**	**-0.16**
2-17	736269.59	1614532.00	117.50	736,269.88	1,614,531.94	117.25	0.30	-0.25
2-18	736279.53	1614491.00	117.50	736,279.56	1,614,491.00	116.43	0.03	-1.07
				736,282.48	**1,614,492.13**	**117.67**	**3.16**	**0.17**
2-19	735851.62	1615280.20	117.50	735,851.54	1,615,280.36	117.55	0.17	0.05
2-20	735881.26	1615194.92	117.50	735,881.40	1,615,195.12	116.56	0.25	-0.94
				735,879.06	**1,615,194.84**	**117.66**	**2.21**	**0.16**
2-21	735906.78	1615109.24	117.50	735,906.68	1,615,109.48	116.69	0.26	-0.81
				735,903.59	**1,615,108.47**	**117.63**	**3.28**	**0.13**
2-22	735933.67	1615017.86	117.50	735,933.56	1,615,017.85	117.14	0.12	-0.36
2-23	735955.32	1614925.87	117.50	735,955.34	1,614,926.13	117.66	0.26	0.16
2-24	735970.50	1614847.32	117.50	735,970.67	1,614,847.28	116.73	0.17	-0.77
				735,967.97	**1,614,846.38**	**117.22**	**2.70**	**-0.28**
2-25	735987.03	1614754.34	117.50	735,986.81	1,614,754.02	117.29	0.39	-0.21
2-26	736010.78	1614665.66	117.50	736,010.97	1,614,665.51	116.73	0.25	-0.77
				736,007.38	**1,614,664.75**	**117.55**	**3.51**	**0.05**
2-27	736028.90	1614572.77	117.50	736,029.07	1,614,572.73	116.62	0.17	-0.88
				736,027.27	**1,614,572.07**	**117.54**	**1.78**	**0.04**
2-28	736055.32	1614461.44	117.50	736,055.29	1,614,461.74	117.78	0.30	0.28
2-29	736057.92	1614451.52	117.50	736,058.13	1,614,451.34	117.53	0.28	0.03

Notes:
Additional Topographic measurements provided as part of CU2 Form 2 Acceptance Package.

Subunit	Average Thickness (ft)	Approx. Area (acre)	Intended Vol. Placed (CY)	Actual Vol. Placed (CY)	Variation from Planned (CY)
CU2-1	1.11	0.40	648.1	719.4	71.3
CU2-2 through 5	1.32	0.62	996.3	1311.0	314.7
				Total =	386.0

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

LEGEND

- 10x10 GRID WITHIN DESIGN GUIDELINES
- 10x10 GRID LESS THAN DESIGN GUIDELINES
- 10x10 GRID ABOVE DESIGN GUIDELINES
- BUCKET REFUSAL AREA ENCOUNTERED DURING DREDGING
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- 2-11 NEARSHORE BORDER SET POINT (DATA CONTAINED IN NEARSHORE SUMMARY TABLE)
- NEARSHORE BORDER (117.5 FEET)

NOTES:

1. OSI MULTIBEAM SURVEYS 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.

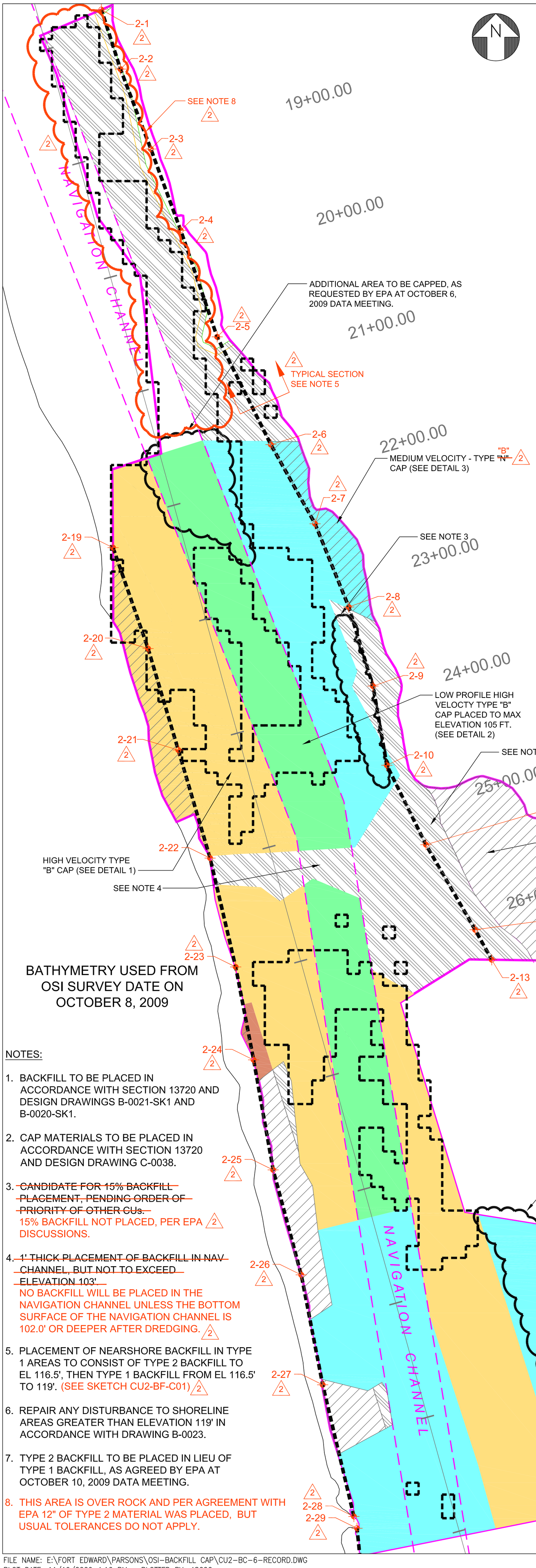
CU2
BACKFILL PLACEMENT ACCEPTANCE SURVEY

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 NO.: CU2-1	SCALE: AS SHOWN
DATE: 11/18/09	APPROVED BY: MG		JOB: 442209.01401

DRAWING TITLE: CU2 BACKFILL PLACEMENT ACCEPTANCE SURVEY

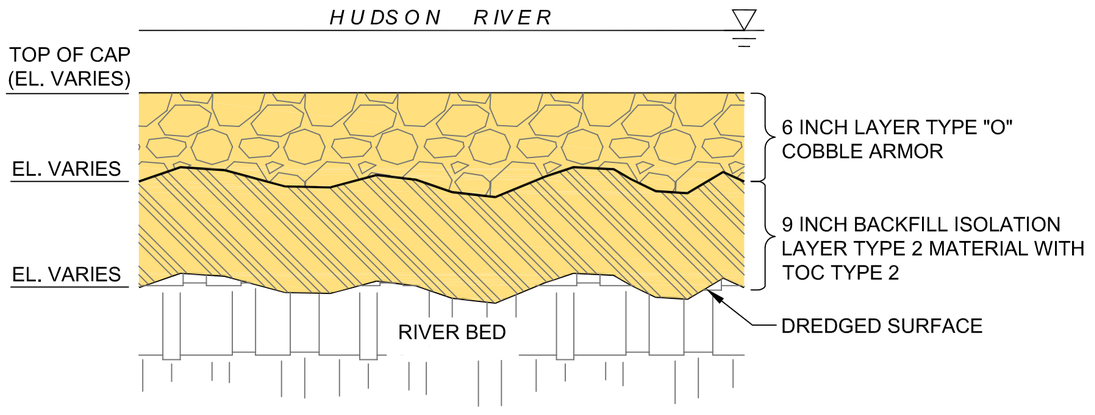
FILE NAME: E:\FORT EDWARD\PARSONS\BACKFILL ACCEPTANCE\1FT BKFL 10X10 CU2-1.DWG
PLOT DATE: 11/19/2009 3:38 PM PLOTTED BY: 48606



BATHYMETRY USED FROM OSI SURVEY DATE ON OCTOBER 8, 2009

NOTES:

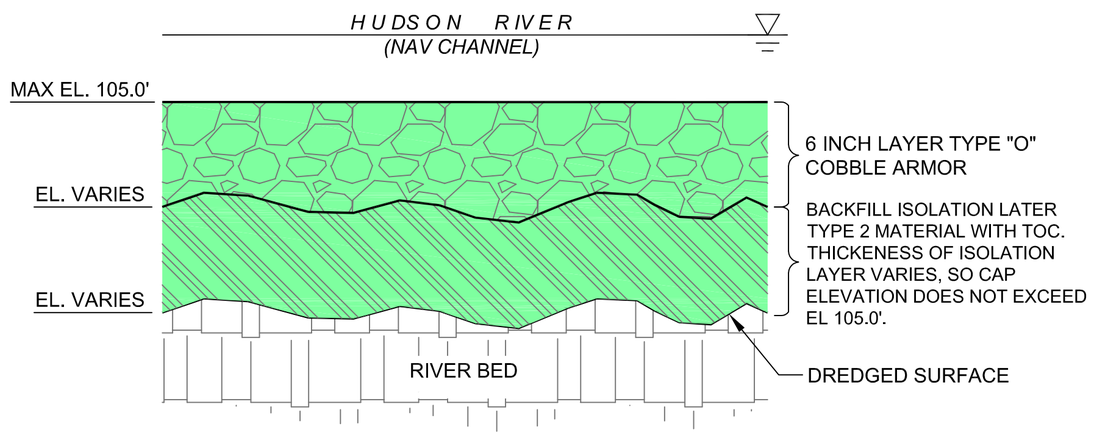
1. BACKFILL TO BE PLACED IN ACCORDANCE WITH SECTION 13720 AND DESIGN DRAWINGS B-0021-SK1 AND B-0020-SK1.
2. CAP MATERIALS TO BE PLACED IN ACCORDANCE WITH SECTION 13720 AND DESIGN DRAWING C-0038.
3. ~~CANDIDATE FOR 15% BACKFILL PLACEMENT, PENDING ORDER OF PRIORITY OF OTHER CUs.~~ 15% BACKFILL NOT PLACED, PER EPA DISCUSSIONS. 2
4. ~~1' THICK PLACEMENT OF BACKFILL IN NAV CHANNEL, BUT NOT TO EXCEED ELEVATION 103'.~~ NO BACKFILL WILL BE PLACED IN THE NAVIGATION CHANNEL UNLESS THE BOTTOM SURFACE OF THE NAVIGATION CHANNEL IS 102.0' OR DEEPER AFTER DREDGING. 2
5. 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 CU2-BF-C01) 2
6. REPAIR ANY DISTURBANCE TO SHORELINE AREAS GREATER THAN ELEVATION 119' IN ACCORDANCE WITH DRAWING B-0023.
7. TYPE 2 BACKFILL TO BE PLACED IN LIEU OF TYPE 1 BACKFILL, AS AGREED BY EPA AT OCTOBER 10, 2009 DATA MEETING.
8. THIS AREA IS OVER ROCK AND PER AGREEMENT WITH EPA 12" OF TYPE 2 MATERIAL WAS PLACED, BUT USUAL TOLERANCES DO NOT APPLY.



TYPICAL SECTION VIEW

DETAIL 1 - CAP CU2

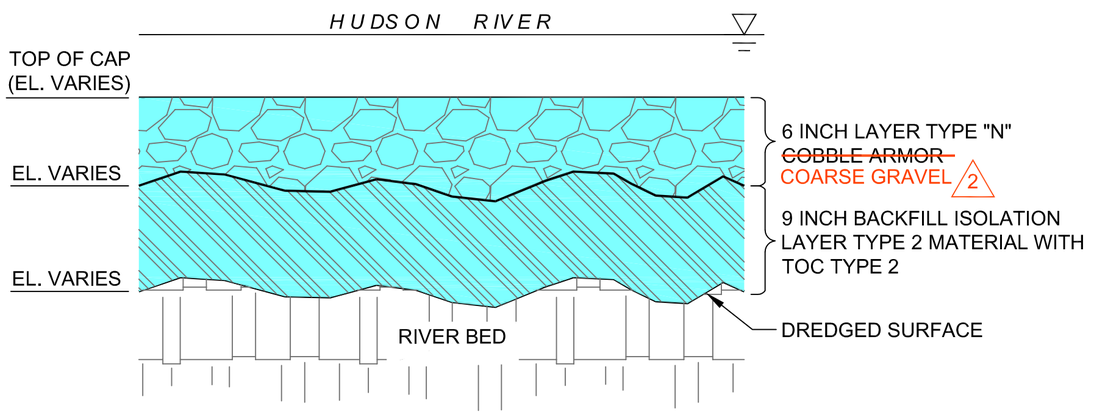
NOT TO SCALE



TYPICAL SECTION VIEW

DETAIL 2 - CU2

NOT TO SCALE



TYPICAL SECTION VIEW

DETAIL 3 - CAP CU2

NOT TO SCALE

LEGEND

- BUCKET REFUSAL AREA ENCOUNTERED DURING 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
- 2 TYPE B - LOW VELOCITY CAP (12 INCH LAYER OF TYPE 2 BACKFILL) WITH TOC
- TYPE B HIGH VELOCITY - LOW PROFILE CAP PLACED TO MAX ELEVATION 105 FT.
- TYPE B - HIGH VELOCITY CAP.
- TYPE B - MEDIUM VELOCITY CAP.
- 2 2-12 NEARSHORE BORDER SET POINT
- POTENTIAL LOCATION FOR RIVERINE FRINGING WETLAND CONSTRUCTION (PLANTING BY OTHERS)
- NEARSHORE BORDER (117.5 FEET)

RECORD DRAWING

0 40' 80'

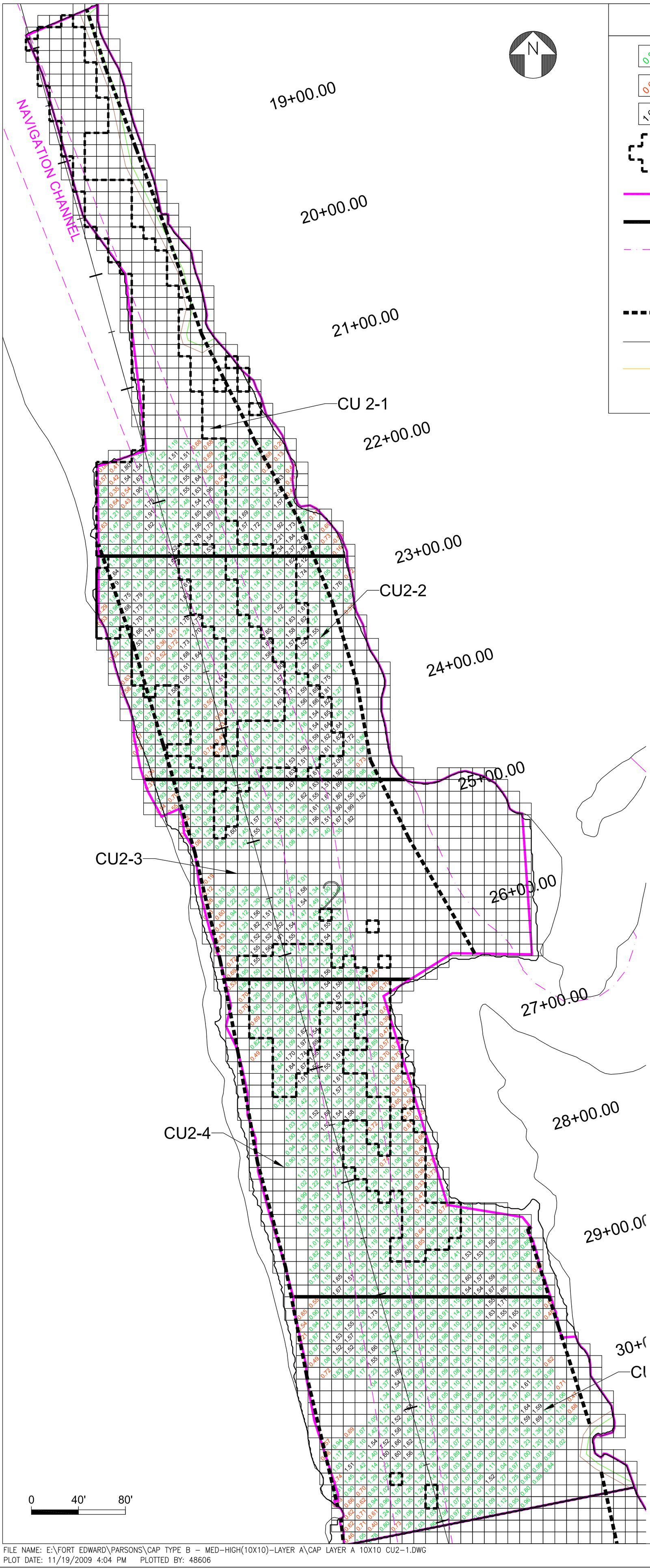
REV	DATE	DRN BY		
2	11/18/09	JHG	RECORD DRAWING	MG
1	10/11/09	JHG	REVISED PER EPA COMMENTS	MG
0	10/10/09	JHG	ISSUED FOR EPA REVIEW	MG

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

DRAWING TITLE: CU–2 BACKFILL AND CAP PLAN

DRAWN BY	CHECKED BY	DRAWING NO.	SCALE
JHG	MG	CU–2–BC–5	AS SHOWN
DATE: 10/18/09	APPROVED BY: MG		JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\OSI–BACKFILL CAP\CU2–BC–6–RECORD.DWG
PLOT DATE: 11/19/2009 4:16 PM PLOTTED BY: 48606



LEGEND

- 0.80 — 10'x10' GRID WITHIN DESIGN GUIDELINES
- 0.65 — 10'x10' GRID LESS THAN DESIGN GUIDELINES
- 1.60 — 10'x10' GRID ABOVE DESIGN GUIDELINES
- BUCKET REFUSAL ENCOUNTERED VIA DREDGING
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- POTENTIAL LOCATION FOR RIVERINE FRINGING WETLAND CONSTRUCTION (PLANTING BY OTHERS)
- NEARSHORE BORDER (117.5 FEET)
- MUD - RIP RAP INTERFACE
- 5 FOOT INTERFACE OFFSET

NOTES:

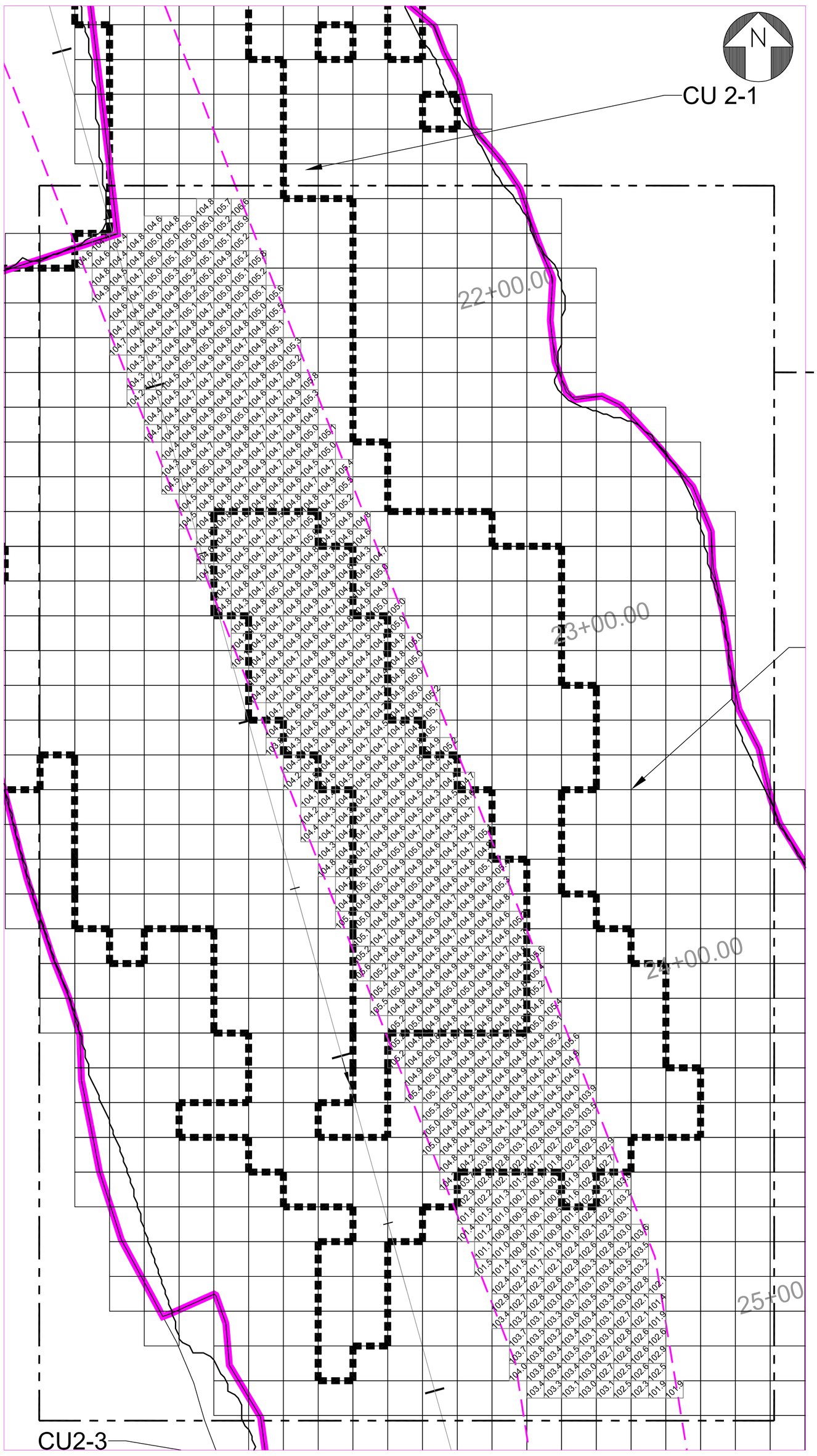
1. OSI MULTIBEAM SURVEY NOVEMBER 14, 2009.
2. CAP THICKNESS OF ISOLATION LAYER IS LISTED 10'X10' GRID.

CU2
TYPE "B" CAP
ISOLATION LAYER
10'x10' GRID
ACCEPTANCE SURVEY

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

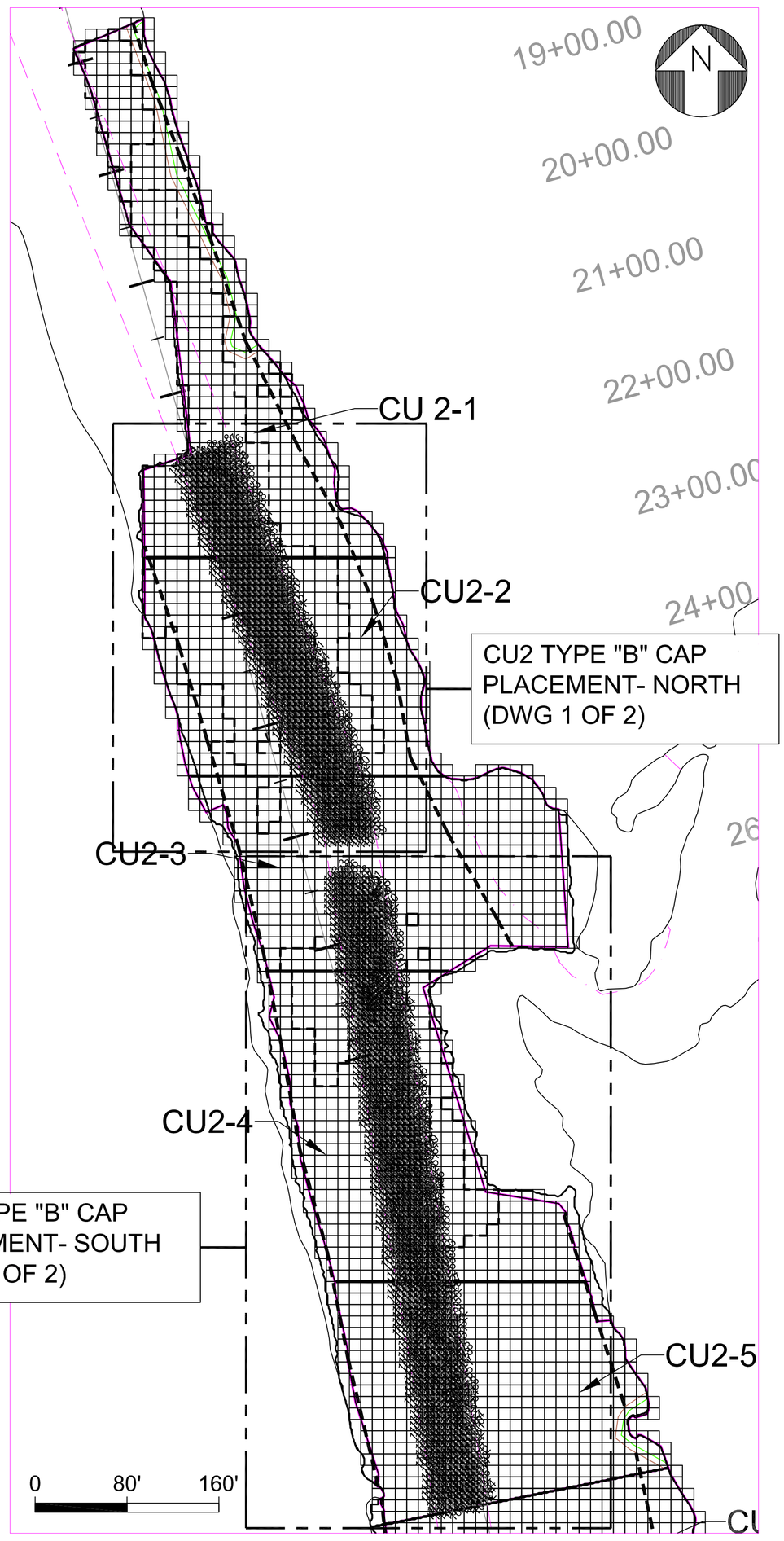
DRAWN BY: JHG	CHECKED BY: MG	DRAWING TITLE: CU2 CAP TYPE "B" ISOLATION LAYER ACCEPTANCE SURVEY	
DATE: 11/18/09	APPROVED BY: MG	DRAWING NO.: CU2	SCALE: AS SHOWN
			JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CAP TYPE B – MED–HIGH(10X10)–LAYER A\CAP LAYER A 10X10 CU2–1.DWG
PLOT DATE: 11/19/2009 4:04 PM PLOTTED BY: 48606



CU2 TYPE "B" CAP MPLACEMENT- NORTH (DWG 1 OF 2)

CU2 TYPE "B" CAP PLACEMENT NORTH



CU2 TYPE "B" CAP LOCATION

LEGEND

- 0.58 — 5x5 GRID WITHIN DESIGN GUIDELINES
- 0.21 — 5x5 GRID LESS THAN DESIGN GUIDELINES
- 1.11 — 5x5 GRID ABOVE DESIGN GUIDELINES
- ROCK/REFUSAL ENCOUNTERED VIA DREDGING
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- NAVIGATION CHANNEL

NOTES:

1. OSI MULTIBEAM SURVEY ON NOVEMBER 1, 2009 OF CU2 NAVIGATION CHANNEL.
2. CAP ELEVATIONS ARE LISTED IN 5'x5' GRIDS.

CU2
TYPE "B" CAP
ARMOR STONE
ACCEPTANCE SURVEY
NAVIGATION CHANNEL
ELEVATIONS

DRAWING 1 OF 2

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

DRAWING TITLE: CU2 TYPE "B" CAP ARMOR STONE NAV CHANNEL ELEVATIONS

DRAWN BY	CHECKED BY	DRAWING NO.	SCALE
JHG	MG	CU2–3–1	AS SHOWN
DATE: 11/18/09	APPROVED BY: MG		JOB: 442209.01401

FILE NAME: E:\FORT EDWARD\PARSONS\CAP TYPE B – MED–HIGH(5X5)–LAYER B\CU2–3–2 NAV CHANNEL ELEVATIONS.DWG
PLOT DATE: 11/18/2009 4:59 PM PLOTTED BY: 48606

LEGEND

- 0.58 — 5x5 GRID WITHIN DESIGN GUIDELINES
- 0.21 — 5x5 GRID LESS THAN DESIGN GUIDELINES
- 1.11 — 5x5 GRID ABOVE DESIGN GUIDELINES
- ROCK/REFUSAL ENCOUNTERED VIA DREDGING
- CU BOUNDARY
- CU SUBUNIT BOUNDARY
- MUD - RIP RAP INTERFACE
- 5' INTERFACE OFFSET
- NAVIGATION CHANNEL

26+00.00
27+00.00
28+00.00
29+00.00
30

CU2 TYPE "B" CAP PLACEMENT- NORTH (DWG 1 OF 2)

CU2 TYPE "B" CAP PLACEMENT- SOUTH (DWG 2 OF 2)

0 20' 40'

CU2 TYPE "B" CAP PLACEMENT SOUTH

19+00.00
20+00.00
21+00.00
22+00.00
23+00.00
24+00
25+0
26

CU 2-1
CU2-2
CU2-3
CU2-4
CU2-5

0 80' 160'

CU2 TYPE "B" CAP LOCATION

NOTES:

1. OSI MULTIBEAM SURVEY ON NOVEMBER 4, 2009 OF CU2 NAVIGATION CHANNEL.
2. CAP ELEVATIONS ARE LISTED IN 5'x5' GRIDS.

CU2
TYPE "B" CAP
ARMOR STONE
ACCEPTANCE SURVEY
NAVIGATION CHANNEL
ELEVATIONS

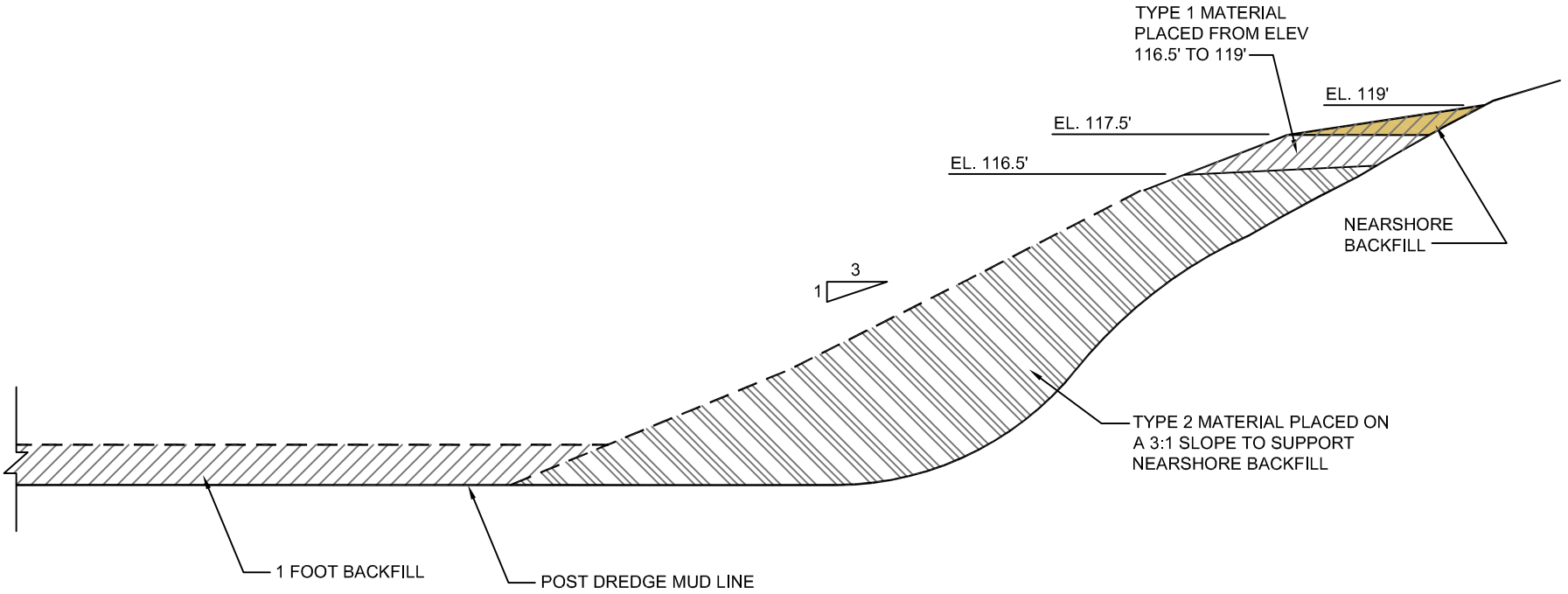
DRAWING 2 OF 2

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. CU2-3-2	VERSION A
DATE 11/18/09	APPROVED BY MG	SCALE AS SHOWN	JOB 442209.01401

DRAWING TITLE: CU2 TYPE "B" CAP ARMOR STONE NAV CHANNEL ELEVATIONS

FILE NAME: E:\FORT EDWARD\PARSONS\CAP TYPE B – MED-HIGH(5X5)-LAYER B\CU2-3-2 NAV CHANNEL ELEVATIONS.DWG
PLOT DATE: 11/18/2009 4:56 PM PLOTTED BY: 48606



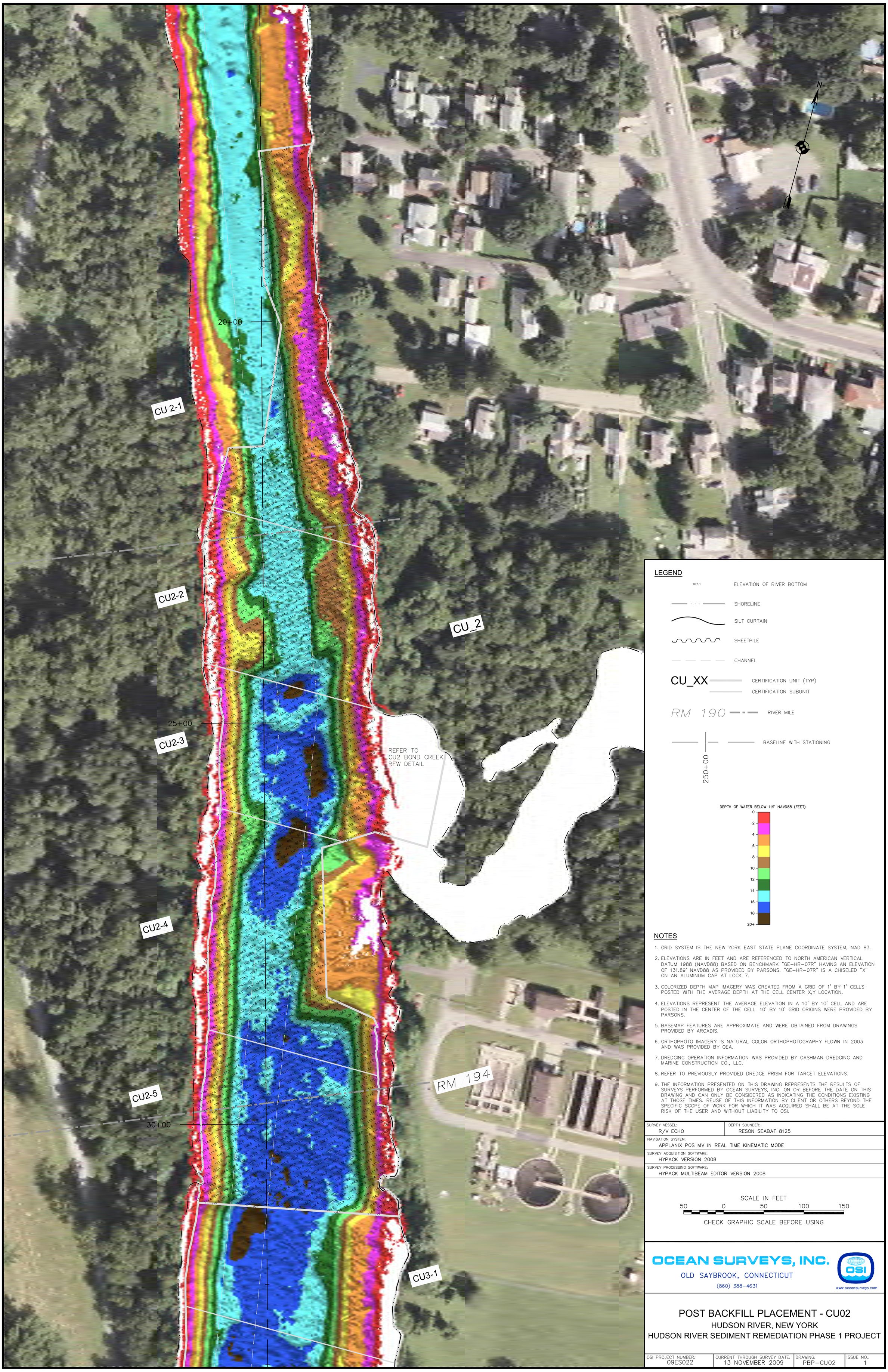
NEAR SHORE BACKFILL PLACEMENT DETAIL

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 CU2 NEAR SHORE BACKFILL PLACEMENT DETAIL	
DRAWN BY JHG	CHECKED BY MG	DRAWING NO. CU2–BF–C01	SCALE NOT TO SCALE
DATE 11/05/09	APPROVED BY MG		JOB 442209

FILE NAME: E:\FORT EDWARD\PARSONS\OSI–BACKFILL CAP\CU2–BC–6–RECORD.DWG
PLOT DATE: 11/5/2009 2:58 PM PLOTTED BY: 48606



LEGEND

- 107.1 — ELEVATION OF RIVER BOTTOM
- SHORELINE
- SILT CURTAIN
- SHEETPILE
- CHANNEL
- 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

POST BACKFILL PLACEMENT - CU02

HUDSON RIVER, NEW YORK

HUDSON RIVER SEDIMENT REMEDIATION PHASE 1 PROJECT

OSI PROJECT NUMBER:	CURRENT THROUGH SURVEY DATE:	DRAWING:	ISSUE NO.:
09ES022	13 NOVEMBER 2009	PBP-CU02	1

Correspondence

(Letters and Emails)

Galbraith, Michael

From: King.David@epamail.epa.gov
Sent: Wednesday, October 28, 2009 10:46 AM
To: Inglis, Andrew A (GE, Corporate)
Cc: Joseph Moloughney; Galbraith, Michael; MJohnson@louisberger.com; timothy.kruppenbacher@ge.com; USACE_HRFO@roadrunner.com
Subject: Re: CU2 isolation layer elevations
Attachments: CAP LAYER A 10x10 CU2-2 Nav Channel elev bd-landscape (1).pdf

Andrew,
Clearances look fine.

Dave

"Inglis, Andrew A (GE, Corporate)" <andrew.inglis@ge.com>
10/28/2009 08:17 AM

To: David King/R2/USEPA/US@EPA
cc: <MJohnson@louisberger.com>, <USACE_HRFO@roadrunner.com>, <timothy.kruppenbacher@ge.com>, <michael.galbraith@parsons.com>, "Joseph Moloughney" <Joseph_Moloughney@canals.state.ny.us>
Subject: CU2 isolation layer elevations

Dave,

See attached survey results for CU2-2 where the dredging contractor removed backfill material to create the space necessary for the armor layer.

Based on the survey we are directing the dredging contractor to place the armor layer in this area.

Let me know ASAP if you have any concerns.

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
 (See attached file: CAP LAYER A 10x10 CU2-2 Nav Channel elev bd-landscape (1).pdf)

Galbraith, Michael

From: Inglis, Andrew A (GE, Corporate) [andrew.inglis@ge.com]
Sent: Wednesday, November 18, 2009 4:14 PM
To: Galbraith, Michael
Subject: FW: Discussion regarding CU1 and 2 Backfill and Cap

From: Inglis, Andrew A (GE, Corporate)
Sent: Tuesday, November 10, 2009 8:13 PM
To: king.david@epamail.epa.gov
Cc: MJohnson@louisberger.com; timothy.kruppenbacher@ge.com; michael.galbraith@parsons.com; Bryan Miner (USACE_HRFO@roadrunner.com); GKlawinski@ene.com; Joseph Moloughney
Subject: Discussion regarding CU1 and 2 Backfill and Cap

Dave,
Yesterday we met and reviewed progress surveys of cap isolation layer placement in CU1 and cap armor stone placement in CU2. This emails confirms decisions made during the meeting based on reviews of the maps.

CU1.
In Cu1-1 GE will remove excess backfill material so that armor stone can be placed below 105.2' elevation. This excess backfill material will then be placed in areas of CU1-3 and Cu1-4.
In CU1-3 and 1-4 GE will place additional material to raise the isolation layer to be as close to 9" as possible while also providing room to place the armor layer below 105.2'.
It was agreed that the isolation layer placement in CU1-2 was acceptable.

CU2.
The cap armor stone layer in the southern half of the CU was agreed to be acceptable. It was agreed that portions of the cap armor stone in the northern half of the CU will require additional material. It was also agreed that placing additional Type O material in those areas would result in the cap being above elevation 105.2'. To avoid this situation we agreed that Type N stone could be placed to supplement areas where type O stone had already been placed.

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

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