River Mile 10.9 Removal Action – Revised Final Volume Estimate

PREPARED FOR: de maximis, inc.

COPY TO: File

PREPARED BY: CH2M HILL

DATE: September 23, 2013

PROJECT NUMBER: 474468.RA.PM.01

This technical memorandum presents the basis for the original volume estimate provided in the Final Design documents as well as the basis for the forecast volume estimate based on actual dredge volumes and in situ conditions encountered during dredging.

RM 10.9 VOLUME ESTIMATE

Final Design Volume Estimate

The Final Design volume estimate was based on the following pre and post dredge surfaces which are included as Attachment #1:

- Drawing C 1 – Existing Site Plan (Sheet 1 of 2)
- Drawing C 2 – Existing Site Plan (Sheet 2 of 2)
- Drawing C 5 – Post Dredging Elevations (Sheet 1 of 2)
- Drawing C 6 – Post Dredging Elevations (Sheet 2 of 2)

The existing site plan was developed using topographical data provided By AECOM's Subcontractor GEOD Corporation (Publication Date: November 14, 2007) and bathymetric data provided by AECOM's subcontractor Gahagan & Bryant Associates (Single Beam Surveyed July 2011, Multi Beam Surveyed October 2011)

The post dredge elevations were based on removing the top 2 feet of sediment in accordance with USEPA Administrative Settlement Agreement and Order on Consent for Removal Action, Docket No. 02 2012 2015 (June 2012).

The Final Design volume was made up of the volumes to be dredged downriver (LPR_Design_SW) and upriver (LPR_Design_NE) of the "No Dredge Zone". The "No Dredge Zone" was based on a 30 foot offset from the two (2) 72 inch water mains owned by Jersey City Municipal Utilities Authority (JCMUA).

The volume of sediment to be removed to the target elevation of 2 feet below the existing surface was estimated to be approximately 16,900 yd^3. The technical specifications allowed for a 4 inch (0.33 ft) vertical tolerance with the final dredge surface not having any 10 foot by 10 foot area with an average elevation greater than 3 inches (0.25 ft) above the target elevation. Therefore, the volume range was estimated to be 15,000 yd^3 to 19,400 yd^3. Table 1 summarizes the Final Design Volume estimates for the removal areas downriver and upriver of the "No Dredge Zone".

TABLE 1 – Final Design Volume Estimate

Dredge Elevation	Dredge Area Volume (yd^3)		TOTAL
	LPR_Design_SW	LPR_Design_NE	
Target Elevation (2 ft)	7,500	9,400	16,900
Maximum Allowable[1]	8,800	10,600	19,400
Minimum Allowable[2]	6,500	8,500	15,000

1 – Maximum allowable based on a 4 inch vertical tolerance

2 – Minimum allowable based on the acceptance criteria where no 10 ft x 10 ft area may average greater than 3 inches above the target elevation

Forecast Volume Estimate

To date based on the acceptance survey for the area downriver of the "No Dredge Zone" approximately 8,100 yd^3 of sediment has been removed. This volume is based on the following surveys:

- Pre Dredge Survey dated July 21, 2013
- Post Dredge Survey for Acceptance Area 1 (Areas 1 to 4T) dated August 29, 2013
- Post Dredge Survey for Acceptance Area 2a (Areas 5, 6 & 6T) dated September 3, 2013

As indicated on the post dredge bathymetric surveys (Attachment #2) there are areas located within the tidal influenced areas of Cuts 4 & 6 (Cuts 4T and 6T) which consist of undredgeable material (i.e., exposed rock). Due to the undredgeable subsurface encountered in Cuts 4T and 6T a preliminary field investigation was conducted by Great Lakes Dredge and Dock personnel on September 13, 2013 to determine if similar conditions would be encountered in the remainder of the Removal Area. The investigation consisted of probing on 10 foot spacing along the shoreline boundary of the Removal Area as well as close to the shoreline as possible. Based on these findings it was determined that the Removal Area upriver of Station 29+50 may not be dredgeable due to rock armor which extends from the shoreline to the toe of the slope. The impacted area in Cut 10 and associated cross sections are provided as Attachment #3.

The several characterization sediment samples were collected from depths of approximately 2 feet in the area upriver of Station 29+50. However, removal of this material may be difficult with the current equipment and removal of the armor rock could potentially impact the integrity of the shoreline. Therefore, the forecast volume for the area upriver of Station 29+50 assumed that only a percentage of the estimated design volume to the target elevation of 2 feet (~2,900 CY) could be removed (0 yd for the minimum, 50% for the maximum and 25% for the Target Elevation). For the remaining area downriver

of Station 29+50 the estimated volume range was based on the allowable vertical tolerance and the minimum acceptance criteria.

Table 2 summarizes the revised forecast dredge volume based on the actual dredge volume for the area downriver of the "No Dredge Zone" and the forecast estimates for the area upriver of the "No Dredge Zone". The revised estimated volume range for the area downriver of Station 29+50 is 14,100 yd^3 to 15,400 yd^3. The re calculated total volume range which includes the entire Removal Area is 14,100 yd^3 to 16,900 yd^3.

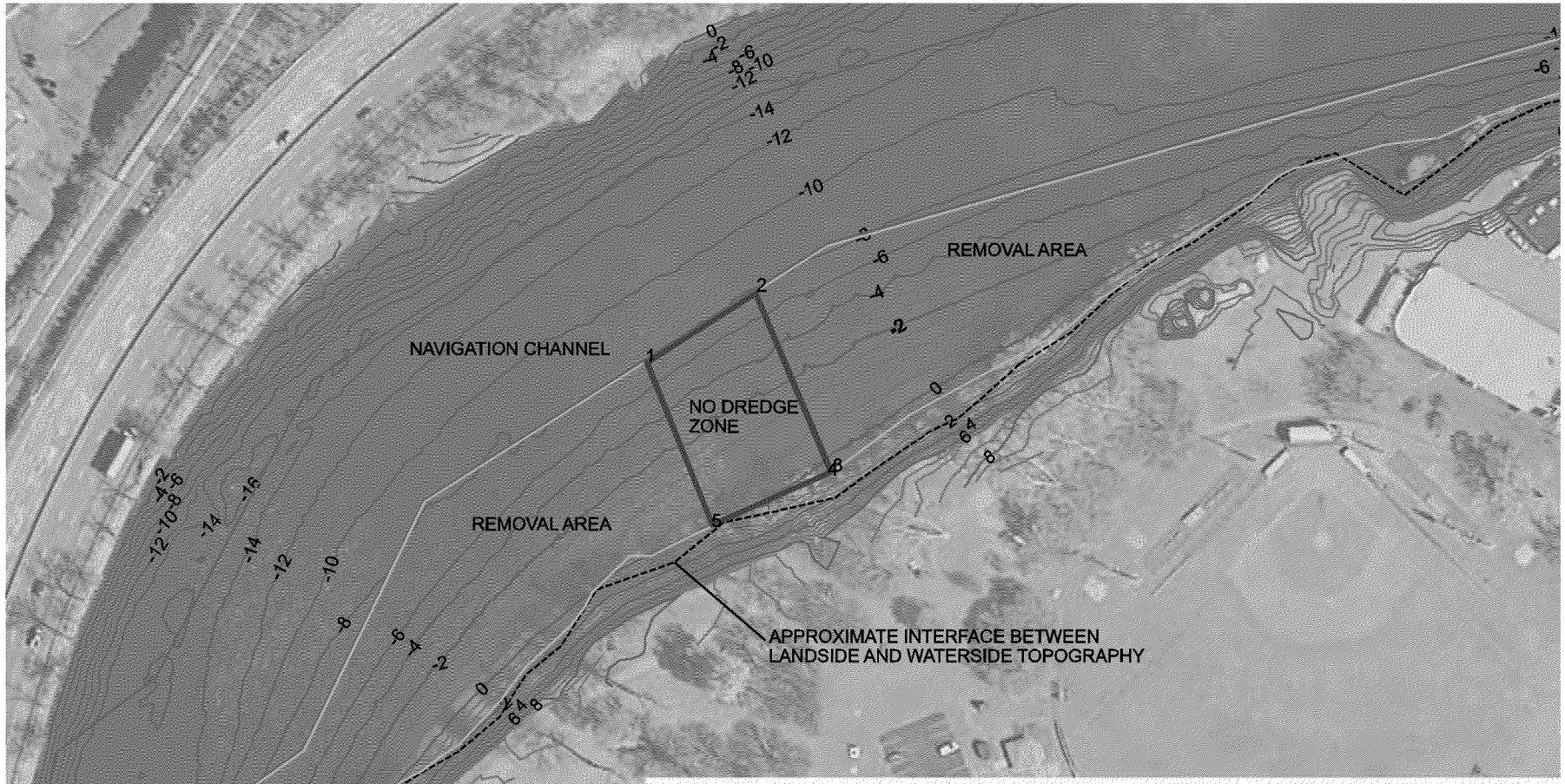
TABLE 2 – Re calculated Volume Estimate: Actuals and Design

Dredge Elevation	Dredge Area Volume (yd^3)		TOTAL
	Downriver of Station 29+50[1]	Upriver of Station 29+50[2]	
Target Elevation (2 ft)	14,600	700	15,300
Maximum Allowable[3]	15,400	1,500	16,900
Minimum Allowable[4]	14,100	0	14,100

1 – Volume based on actuals downriver of the "No Dredge Zone" (8,100 yd^3) and estimated volume downriver of Station 29+50
2 – Estimated volume based on percentage of total estimated design volume to the target elevation of 2 feet (2,900 CY) remaining upriver of Station 29+50 (0% for minimum, 25% for Target Elevation and 50% for maximum)
3 – Maximum allowable based on a 4 inch vertical tolerance for area downriver of Station 29+50
4 – Minimum allowable based on the acceptance criteria where no 10 ft x 10 ft area may average greater than 3 inches above the target elevation for area downriver of Station 29+50

ATTACHMENT 1

Final Design Pre and Post Dredge Surfaces



NO DREDGE BOUNDARY COORDINATES	
Easting	Northing
592976.890	723189.3887
593080.128	723254.9674
593150.587	723087.9362
593145.864	723084.4574
593038.296	723036.6428

LEGEND

- APPROXIMATE INTERFACE BETWEEN LANDSIDE AND WATERSIDE TOPOGRAPHY
- NAVIGATION CHANNEL
- REMOVAL AREA BOUNDARY
- NO DREDGE ZONE

NOTES
1. Grid Coordinate System: NAD 83
2. Landside Veritcal Datum: NGVD 29
3. Waterside Vertical Datum: NGVD 29
4. Topographical Data Provided By AECOM's Subcontractor GEOD Corporation Publication Date: 20071114
5. Bathymetric Data Provided By AECOM's Subcontractor Gahagan & Bryant Associates Single Beam Surveyed July 2011, Multi Beam Surveyed October 2011
6. Removal Area Boundary shown is based on regulatory accepted limits of contaminated sediment

N

25 0 25 50
SCALE 1" = 50'

James J. Brinkman

NJ PROFESSIONAL ENGINEER NO. 24GE05059300

NO.	DATE	REVISION	BY	APV'D
DSGN	DR	CHK	APV'D	
	D LIEBERSBACH	K GALLOWAY		

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RM 10.9 Sediment Deposit and Removal Areas
Lower Passaic River Study Area, New Jersey

RM 10.9 TIME CRITICAL REMOVAL ACTION
CIVIL

DREDGING EXISTING SITE PLAN (SHEET 1 of 2)

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE 15 JULY, 2013
PRJ LOWER PASSAIC RIVER
DWG C-1
SHEET 3 of 27

FILENAME: C01_Existing_Site_Plan.dgn PLOT DATE: 15 JULY, 2013 PLOT TIME: 8:45

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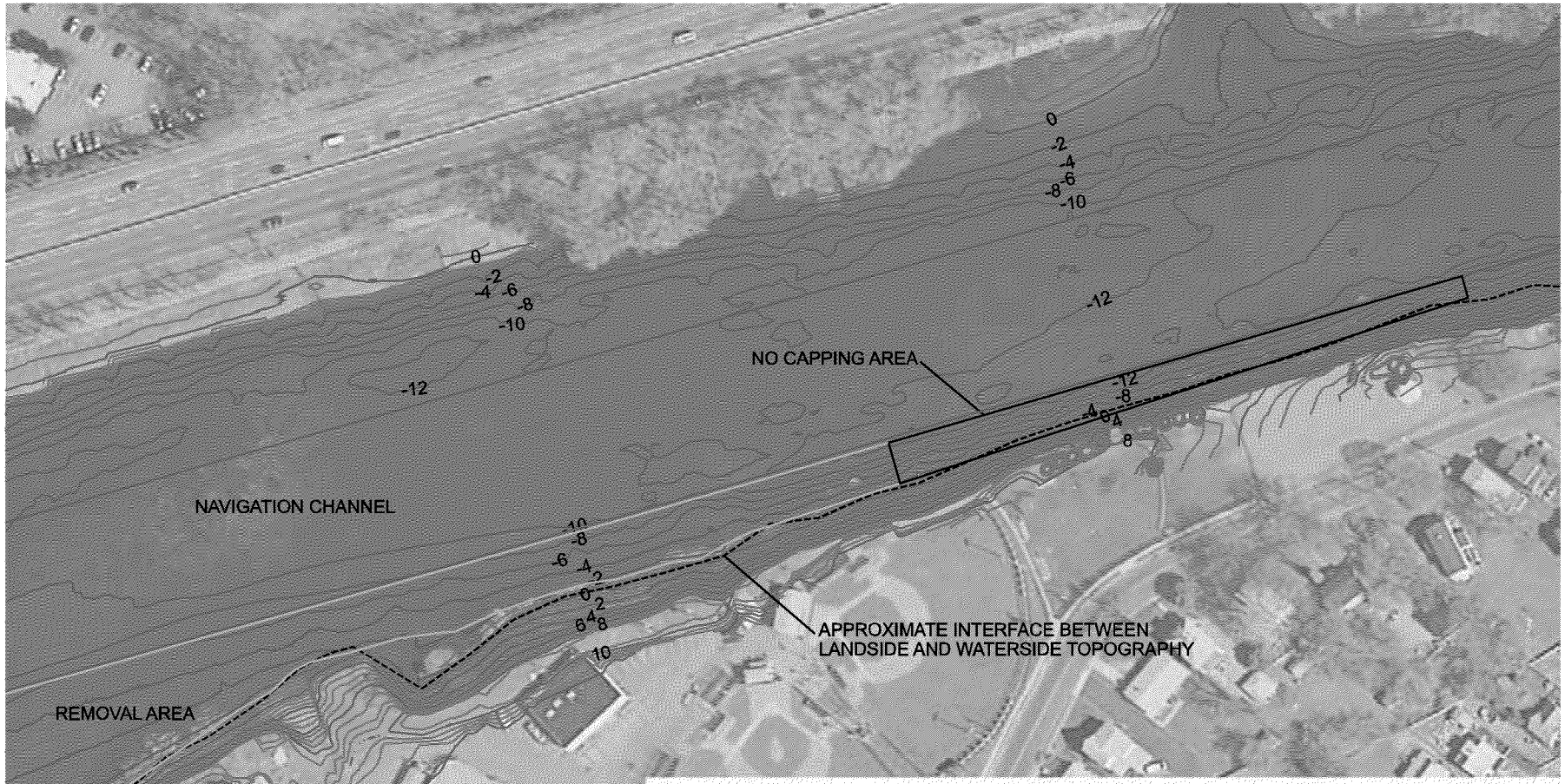

LEGEND

- APPROXIMATE INTERFACE BETWEEN LANDSIDE AND WATERSIDE TOPOGRAPHY
- NAVIGATION CHANNEL
- REMOVAL AREA BOUNDARY
- NO CAPPING AREA

NOTES

1. Grid Coordinate System: NAD 83
2. Landside Veritcal Datum: NGVD 29
3. Waterside Vertical Datum: NGVD 29
4. Topographical Data Provided By AECOM's Subcontractor GEOD Corporation Publication Date: 20071114
5. Bathymetric Data Provided By AECOM's Subcontractor Gahagan & Bryant Associates Single Beam Surveyed July 2011, Multi Beam Surveyed October 2011
6. Removal Area Boundary shown is based on regulatory accepted limits of contaminated sediment

N

25 0 25 50

SCALE 1" = 50'

James J. Brinkman

NJ PROFESSIONAL ENGINEER NO. 24GE05059300

NO.	DATE	REVISION	BY	APV'D

DSGN DR D LIEBERSBACH CHK K GALLOWAY APV'D

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RM 10.9 Sediment Deposit and Removal Areas
Lower Passaic River Study Area, New Jersey

RM 10.9 TIME CRITICAL REMOVAL ACTION
CIVIL

DREDGING
EXISTING SITE PLAN
(SHEET 2 of 2)

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE 2 JULY, 2013
PRJ LOWER PASSAIC RIVER
DWG C-2
SHEET 4 of 27

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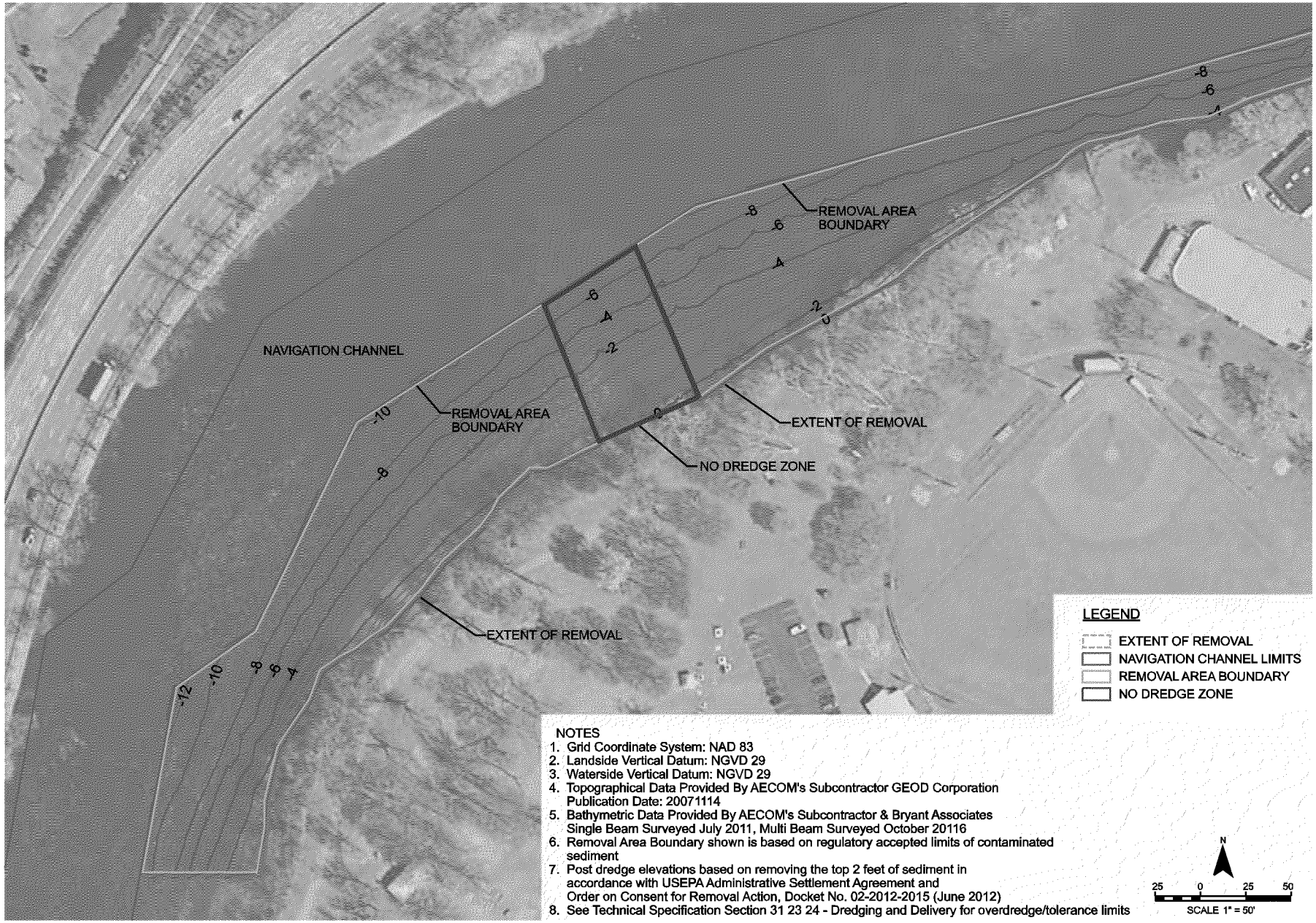

NOTES
1. Grid Coordinate System: NAD 83
2. Landside Vertical Datum: NGVD 29
3. Waterside Vertical Datum: NGVD 29
4. Topographical Data Provided By AECOM's Subcontractor GEOD Corporation Publication Date: 20071114
5. Bathymetric Data Provided By AECOM's Subcontractor & Bryant Associates Single Beam Surveyed July 2011, Multi Beam Surveyed October 20116
6. Removal Area Boundary shown is based on regulatory accepted limits of contaminated sediment
7. Post dredge elevations based on removing the top 2 feet of sediment in accordance with USEPA Administrative Settlement Agreement and Order on Consent for Removal Action, Docket No. 02-2012-2015 (June 2012)
8. See Technical Specification Section 31 23 24 - Dredging and Delivery for overdredge/tolerance limits

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RM 10.9 Sediment Deposit and Removal Areas
Lower Passaic River Study Area, New Jersey

NO.	DATE	REVISION	BY	APV'D

DSGN D LIEBERSBACH DR K GALLOWAY CHK APV'D

James J Brinkman
NJ PROFESSIONAL ENGINEER
NO. 24GE05058300

RM 10.9 TIME CRITICAL REMOVAL ACTION
CIVIL

DREDGING POST DREDGING ELEVATIONS (SHEET 1 of 2)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE 29 JULY, 2013
PRJ LOWER PASSAIC RIVER
DWG C-5
SHEET 7 of 27

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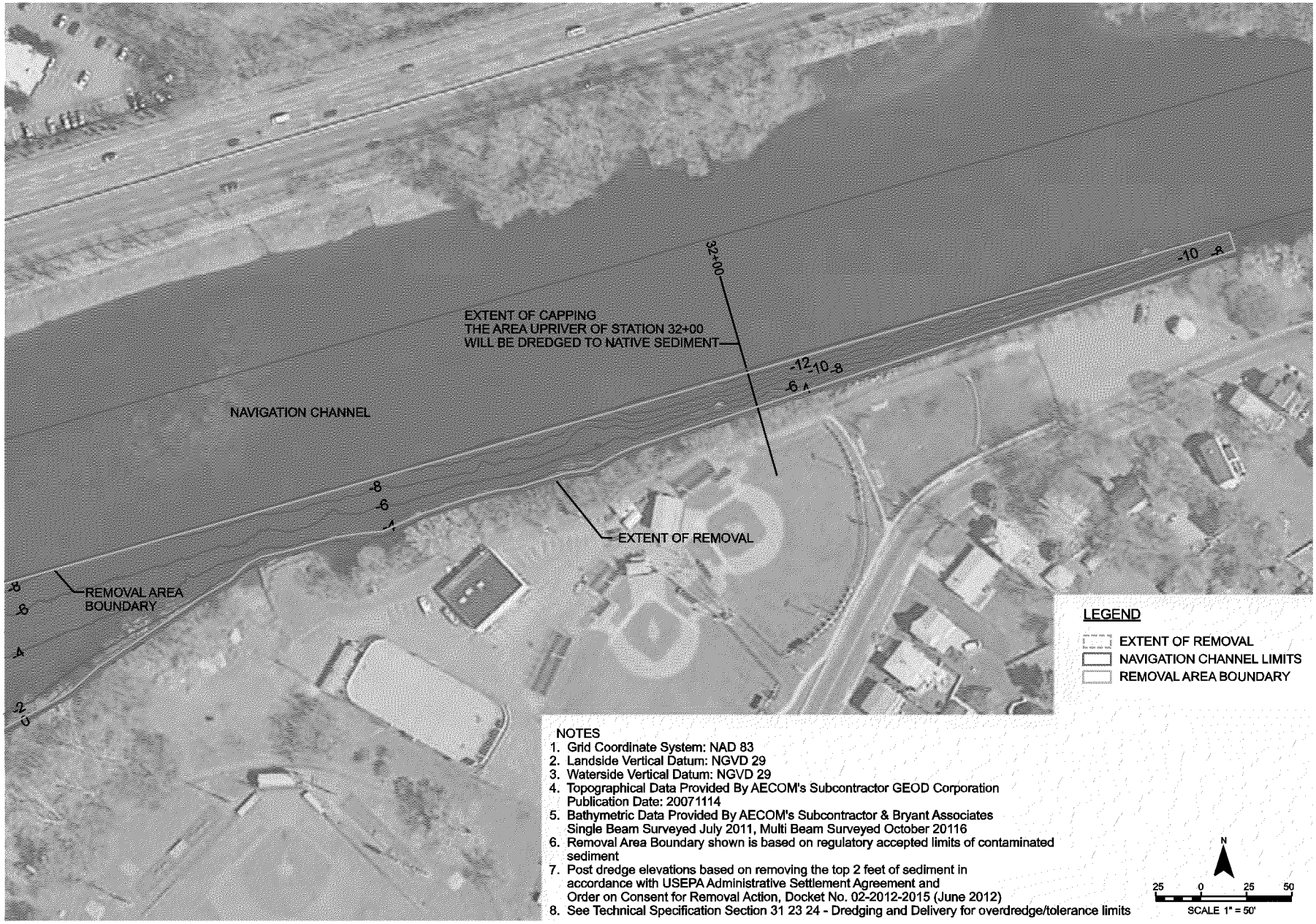

NOTES
1. Grid Coordinate System: NAD 83
2. Landside Vertical Datum: NGVD 29
3. Waterside Vertical Datum: NGVD 29
4. Topographical Data Provided By AECOM's Subcontractor GEOD Corporation Publication Date: 20071114
5. Bathymetric Data Provided By AECOM's Subcontractor & Bryant Associates Single Beam Surveyed July 2011, Multi Beam Surveyed October 20116
6. Removal Area Boundary shown is based on regulatory accepted limits of contaminated sediment
7. Post dredge elevations based on removing the top 2 feet of sediment in accordance with USEPA Administrative Settlement Agreement and Order on Consent for Removal Action, Docket No. 02-2012-2015 (June 2012)
8. See Technical Specification Section 31 23 24 - Dredging and Delivery for overdredge/tolerance limits

James J. Brinkman

NJ PROFESSIONAL ENGINEER NO. 24GE05059300

NO.	DATE	REVISION	BY	APVD

DSGN DR D LIEBERSBACH CHK K GALLOWAY APVD

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RM 10.9 Sediment Deposit and Removal Areas
Lower Passaic River Study Area, New Jersey

RM 10.9 TIME CRITICAL REMOVAL ACTION
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DREDGING POST DREDGING ELEVATIONS (SHEET 2 of 2)

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

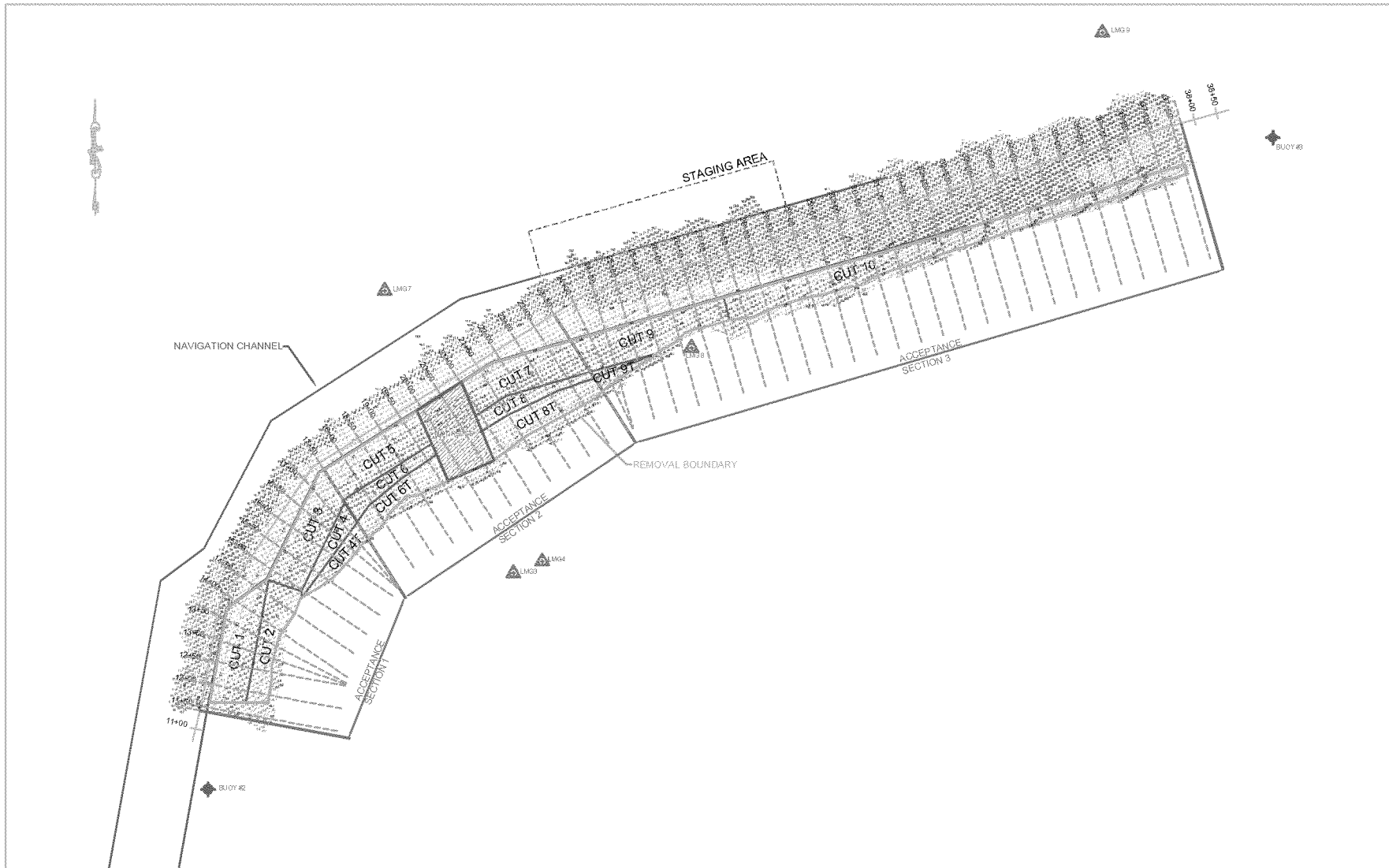
DATE 29 JULY, 2013
PRJ LOWER PASSAIC RIVER
DWG C-8
SHEET 8 of 27

FILENAME: C06_POST_DREDGE.dgn PLOT DATE: 29 JULY, 2013 PLOT TIME: 7:48

FOIA_07123_0002465_0008

ATTACHMENT 2

As Built Bathymetric Surveys



SOUNDINGS
< -2.00'
-2.00-1.99'
2.00-5.99'
6.00-9.99'
10.00-13.99'
>= 14.00'

NOTES:
1. DEPTH CONTOURS IN NGVD29
2. 0.00 MLW = -1.811 NGVD29 @ BELLEVILLE, NJ
3. LANDWARD BOUNDARY OF DATASET CONTAINS TOPO SHOTS TAKEN BY GLDD BETWEEN 7/17-7/20 USING TOTAL STATION

GRAPHIC SCALE

OPERATOR / CONDITIONS	
SURVEY DATE:	JULY 12TH - 17TH
ENGINEER / SURVEYOR:	CFE, MJP, JEM
SURVEY VESSEL:	THE NEWARK BAY
VESSEL OPERATOR:	CFE, MJP
WEATHER:	VARIES
TEMPERATURE:	VARIES
WIND:	VARIES
SEA:	0 FEET

ELECTRONIC EQUIPMENT	
FATHOMETER:	ODOM HYDROTRAC
FREQUENCY(S):	200 KHZ
HEAVE COMP.:	N/A
SOS (AVG):	VARIED
POSITIONING:	TRIMBLE RSS RTK
BASE LOCATION:	COVRD.3
TIDE GAUGE:	N/A
	RTK TIDE USED

PROJECT DETAILS	
HORIZONTAL DATUM:	NAD83
LOCAL GRID:	NEW JERSEY
VERTICAL DATUM:	NGVD29
UNITS HORIZ. / VERT.:	US SURVEY FT
SURVEY/PROJ. CONTROL POINT:	X-
	Y-
	Z-
SURVEY/PROJ. BENCH MARK:	X-
	Y-
	Z-
TIDE STAFF LOCATION:	DEJESSA BRIDGE

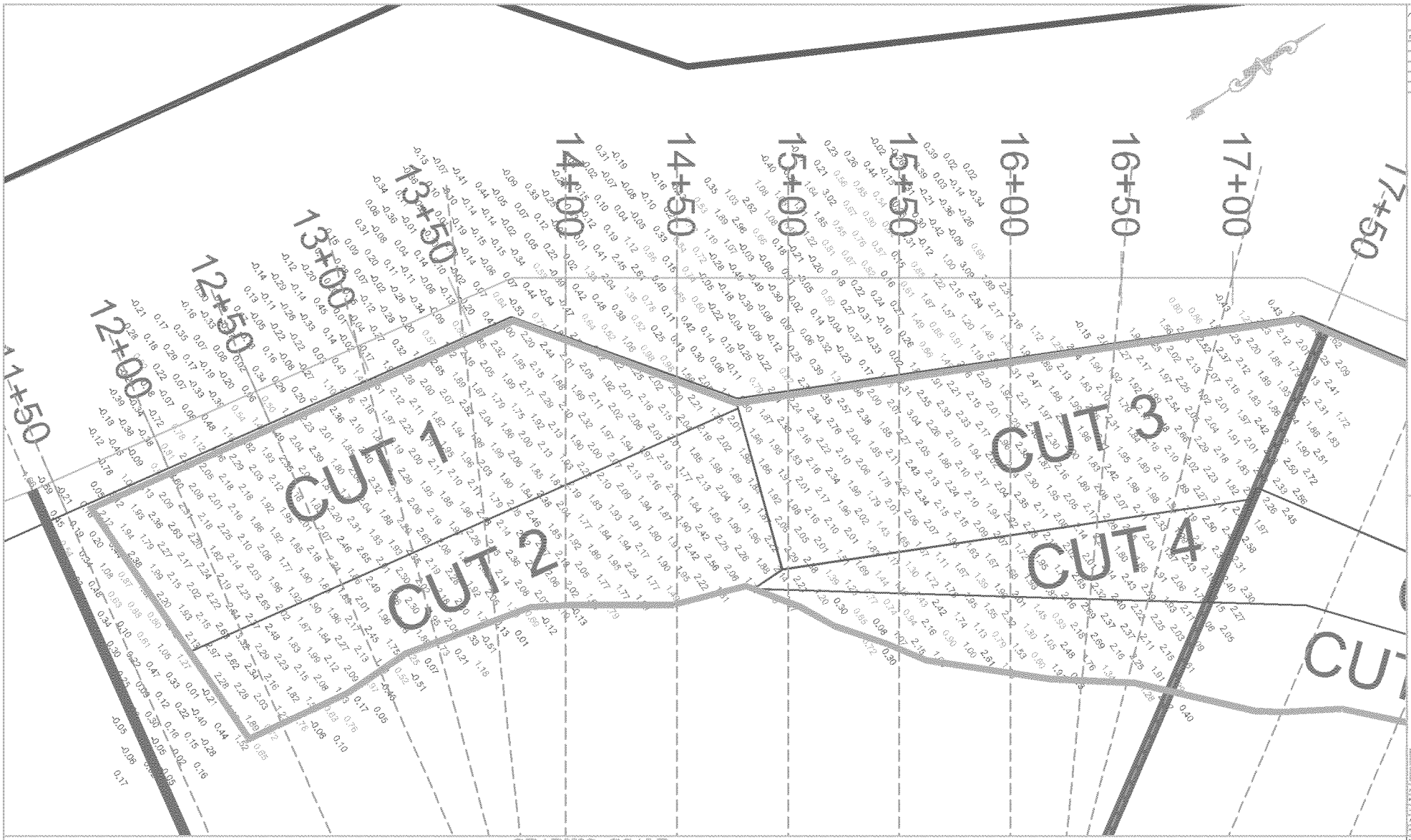
GREAT LAKES DREDGE AND DOCK COMPANY, LLC
2122 York Road Oak Brook IL 60521
Phone: 630.574.3000 Fax: 630.574.1515

LOWER PASSAIC RIVER, NJ
STUDY AREA PROJECT, RIVER MILE 10.9

PRE-DREDGE BATMAP

1:100
JULY 21, 2013
15368
N/A
J. Miller
C. IBNER

01



BD-CND DIFF
< 0.49'
0.50'-0.99'
1.00-1.24'
1.25'-1.49'
1.50'-1.74'
1.75'-2.33'
>= 2.34'

NOTES:
1. DEPTH CONTOURS IN NGVD29
2. 0.08 MLW = -1.811 NGVD29 @ BELLEVILLE, NJ
3. LANDWARD BOUNDARY OF DATASET CONTAINS TOPO SHOTS COLLECTED BY GLDD BETWEEN 8/22-8/23 USING TOTAL STATION
4. HYDROGRAPHIC DATA COLLECTED BY GLDD ON 8/22. HYDROGRAPHIC DATA COLLECTED ON 8/25-29 HAS BEEN MERGED WITH 8/22 DATA IN LOCATIONS WHERE GLDD PERFORMED CLEANUP WORK BETWEEN 8/22 & 8/23

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

OPERATOR / CONDITIONS	
SURVEY DATE:	AUG 22
ENGINEER / LAB NOTES:	JCN
SURVEY PERSONNEL:	THE NEWARK BAY
VESSEL OPERATOR:	JOB C
WEATHER:	CLOUDY/RAINY
TEMPERATURE:	69-81 F
WINDS:	3-10 KTS SW
SEAS:	0 FEET

ELECTRONIC EQUIPMENT	
PATHFINDER:	CODA HYDROTRAC
PROJECTION:	283 K12
DATUM TRANSF:	VA
GPS MODE:	DGPS/RTK
POSITIONING:	TRIMBLE SSS RTK
SATELLITE CONDITIONS:	VBR-7
TIDE GAUGE:	VA
	RTK TIDE USED

PROJECT DETAILS	
HORIZONTAL DATUM:	NAD83
DEPTH DATUM:	N.J. DEP
VERTICAL DATUM:	NGVD29
DATE FORMAT / UNITS:	US SURVEY FT
SURVEYWELL CONTROL POINTS:	Yes
	Yes
	Yes
	Yes
SURVEYWELL DEVIATIONS:	Yes
	Yes
	Yes
	Yes
TIDE POINT LOCATIONS:	DEESSA BRIDGE

REVISIONS

DESCRIPTION	DATE

GREAT LAKES DREDGE AND DOCK COMPANY, LLC
8122 Park Road Oak Brook IL 60521
CIVIL ENGINEERING/SURVEYING DIVISION
Phone 630-574-3000 Fax 630-574-3535

PROJECT
LOWER PASSAIC RIVER, NJ
STUDY AREA PROJECT, RIVER MILE 10.9

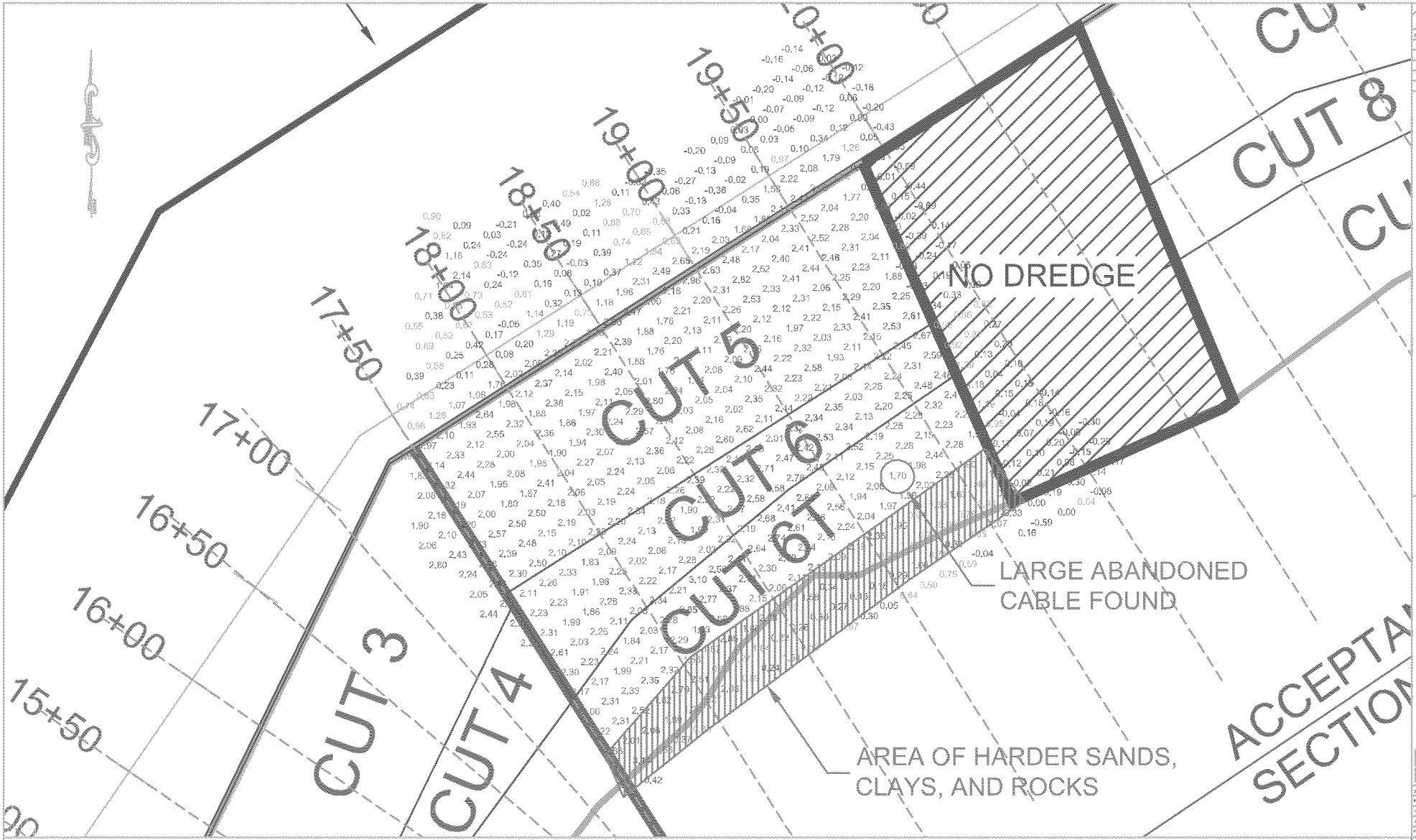
DRAWING TITLE
A51 POST DREDGE DIFFERENCE MAP

SCALE: 1:40
DATE: AUG 29, 2012
DRAWN BY: JBW
APPROVED BY: JL
DWG NO: C-1
VERSION: 1
DATA FILE: C:\DREDGE\DATA\
VERSION: C:\DREDGE

01

SHT 01 OF 01

FOIA_07123_0002465_0011



BD-CND DIFF
< 0.49'
0.50'-0.99'
1.00-1.24'
1.25'-1.49'
1.50'-1.74'
1.75'-2.33'
>= 2.34'

NOTES:
1. DEPTH CONTOURS IN NGVD29
2. 0.00 MLW = -1.811 NGVD29 @ BELLEVILLE, NJ
3. HYDROGRAPHIC DATA COLLECTED BY GLDD ON 9/2 DURING A.M. DATA COLLECTED 9/2 P.M. HAS BEEN MERGED WITH 9/2 A.M. DATA IN LOCATIONS WHERE GLDD PERFORMED CLEANUP WORK BETWEEN THE TWO SURVEYS.
4. HYDROGRAPHIC DATA COLLECTED ON 9/2 HAS BEEN MERGED WITH TOPOGRAPHIC DATA ALONG SHORE, COLLECTED BY GLDD ON 9/3 USING TOTAL STATION

OPERATOR / CONDITIONS	
SURVEY DATE	SEPT 2 A.M & PM
ENGINEER / AUTHORIZER	CE & VP
SURVEY VESSEL	THE DISCOVERY BAY
VESSEL OPERATOR	JC
WEATHER	MOSTLY CLOUDY/RAINY
TEMPERATURE	68-85 F
WINDS	3-10 KN
SEAS	0 FEET

ELECTRONIC EQUIPMENT	
FATHOMETER	ODOM HYDROTRAC
FREQUENCY(IES)	200 KHZ
MAKE SERIES	VA
GPS MAKE	GPS/DGPS
POSITIONING	TRIMBLE 855 RTK
SURF OCTAVE	OCT 7
TIDE GAUGE	VA
	RTK TIDE USED

PROJECT DETAILS	
HORIZONTAL DATUM	NAD83
HORIZ ZONE	NJ - JERSEY
VERTICAL DATUM	NGVD29
UNITS HORIZ / VERTI	US SURVEY FT
SURVEYPOINT CONTROL POINTS	Yes
	Yes
	Yes
	Yes
SURVEYPOINT DEVIATIONS	Yes
	Yes
	Yes
	Yes
TIDE STATION LOCATION	DELAWARE BRIDGE

REVISIONS

DESCRIPTION	DATE

GREAT LAKES DREDGE AND DOCK COMPANY, LLC
2122 York Road Oak Brook IL 60521
CIVIL ENGINEERING/ SURVEYING DIVISION
Phone 630-574-3000 Fax 630-574-3535

LOWER PASSAIC RIVER, NJ
STUDY AREA PROJECT, RIVER MILE 10.9

AS2A FINAL POST-DREDGE DIFFERENCE MAP

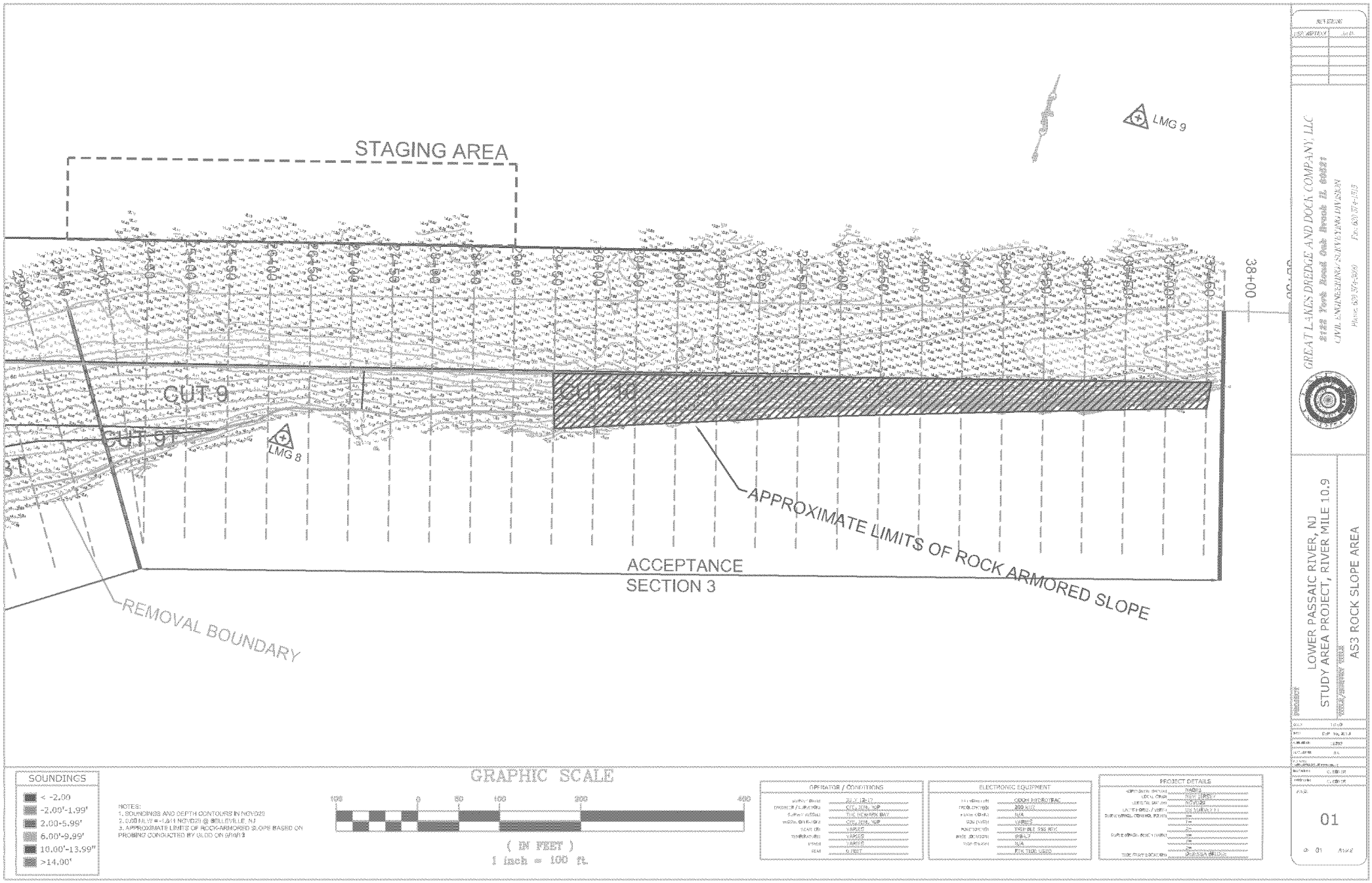
SCALE: 1:40
DATE: SEPT 3, 2013
JOB NO: 12818
DRAWN BY: CL
CHECKED BY: CL
TECHNICIAN: CL
DWG NO: 01
SHEET 01 OF 01 REV 02

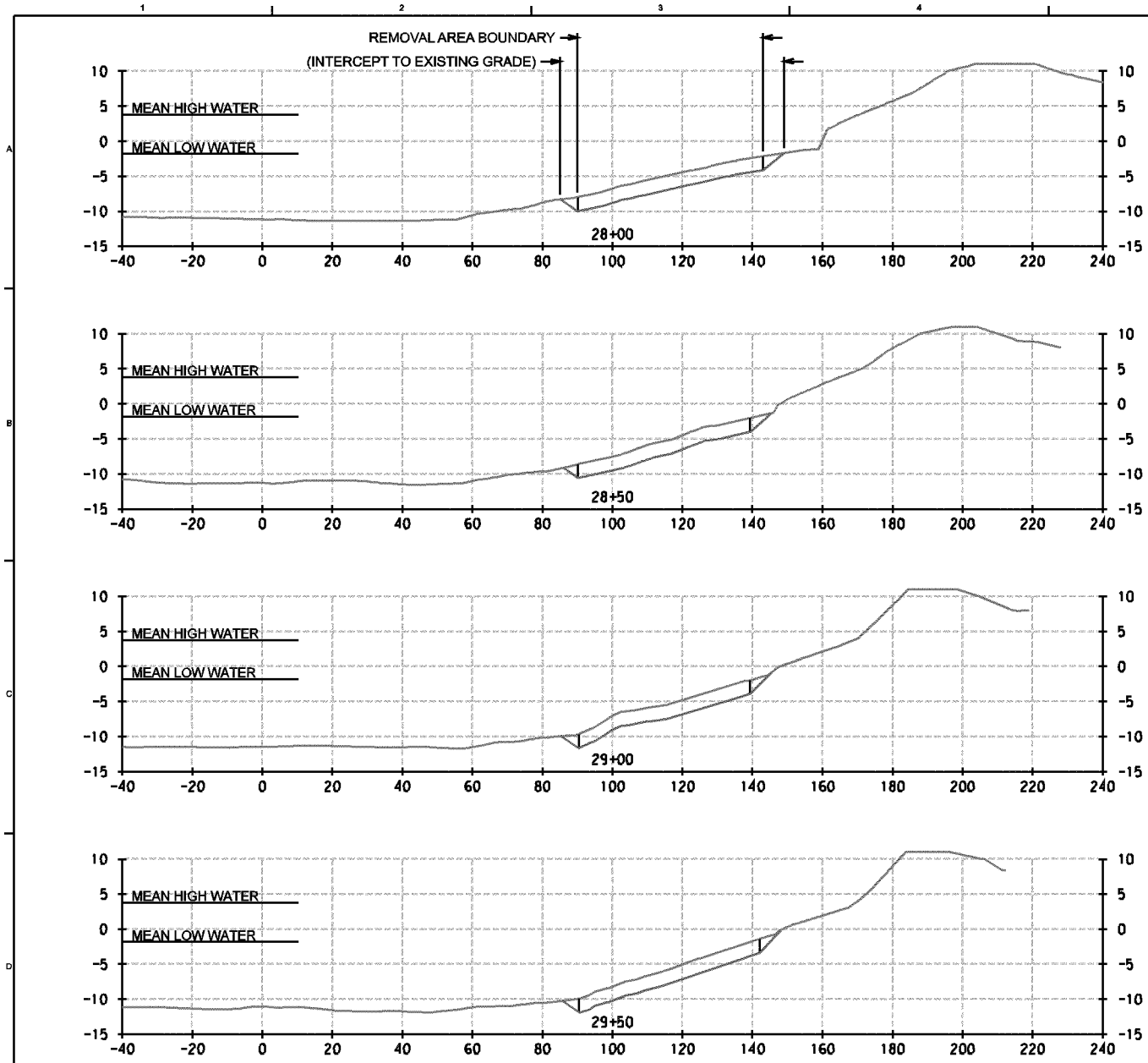
FOIA_07123_0002465_0012

ATTACHMENT 3

Rock Armor Impacted Areas of Cut 10

FOIA_07123_0002465_0014





1. All elevations based on NGVD 29 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on a average target elevation of minus 2 feet from existing sediment surface
4. See Drawing C-7 for location of cross sections

EXISTING SEDIMENT SURFACE
POST DREDGING ELEVATION
REMOVAL AREA BOUNDARY

7.5 0 7.5 15
SCALE 1" = 15'

James J Brinkman

NJ PROFESSIONAL ENGINEER
NO. 24GE05059300

NO.	DATE	REVISION	BY	APVD

DSGN | DR D LIEBERSBACH | CHK K GALLOWAY | APVD

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RM 10.9 Sediment Deposit and Removal Areas
Lower Passaic River Study Area, New Jersey

CH2MHILL®

RM 10.9 TIME CRITICAL REMOVAL ACTION
CIVIL

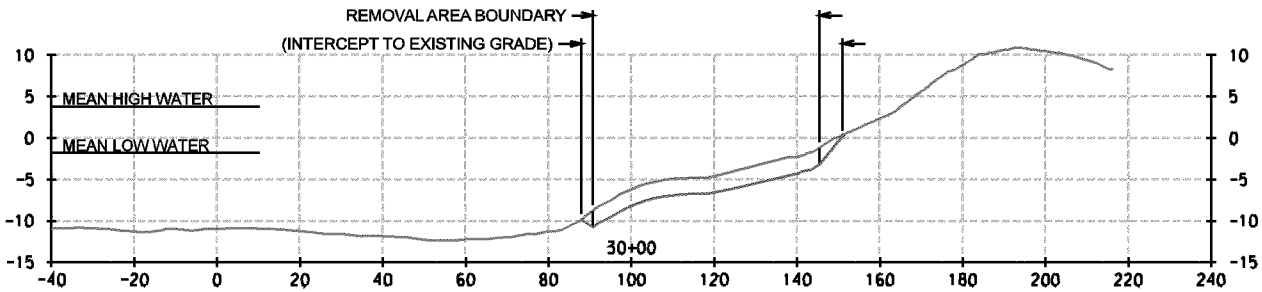
DREDGING
CROSS-SECTIONS
(SHEET 10 OF 14)

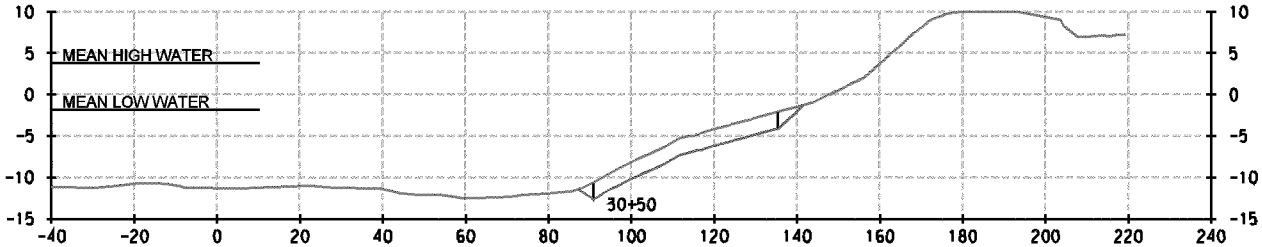
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

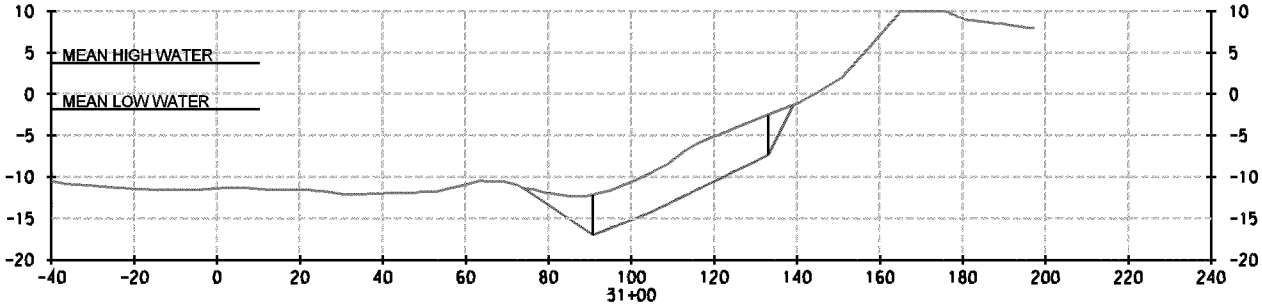
DATE 2 JULY, 2013
PRJ LOWER PASSAIC RIVER
DWG C-16
SHEET 18 of 27

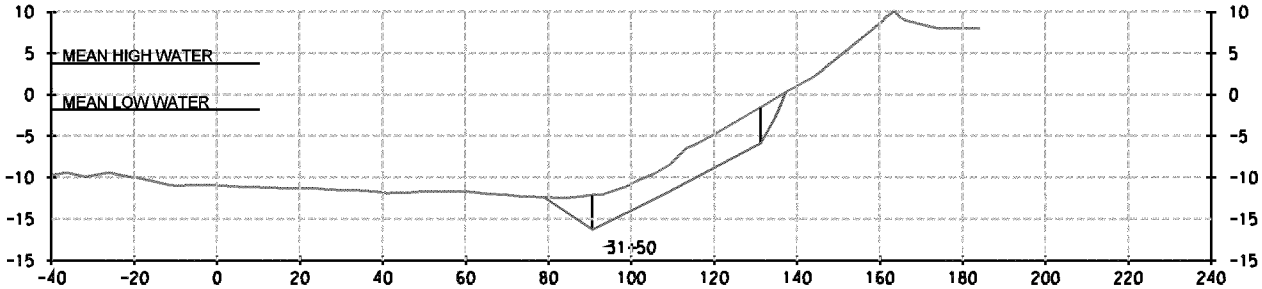
FILENAME: C07_14_Xsec.dgn PLOT DATE: 2 JULY, 2013 PLOT TIME: 7:58

FOIA_07123_0002465_0015









1. All elevations based on NGVD 29 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on a average target elevation of minus 2 feet from existing sediment surface
4. See Drawing C-7 for location of cross sections

EXISTING SEDIMENT SURFACE
POST DREDGING ELEVATION
REMOVAL AREA BOUNDARY

7.5 0 7.5 15
SCALE 1" = 15'

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RM 10.9 TIME CRITICAL REMOVAL ACTION
CIVIL

DREDGING
CROSS-SECTIONS
(SHEET 11 OF 14)

RM 10.9 Sediment Deposit and Removal Areas
Lower Passaic River Study Area, New Jersey

NO. DATE DR REVISION BY APVD
DSGN D LIEBERSBACH CHK K GALLOWAY APVD

James J Brinkman
NJ PROFESSIONAL ENGINEER
NO. 24GE05059500

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING:
0 1"

DATE 2 JULY, 2013
PRJ LOWER PASSAIC RIVER
DWG C-17
SHEET 19 of 27

FILENAME: C07_14_Xsec.dgn PLOT DATE: 2 JULY, 2013 PLOT TIME: 7:58

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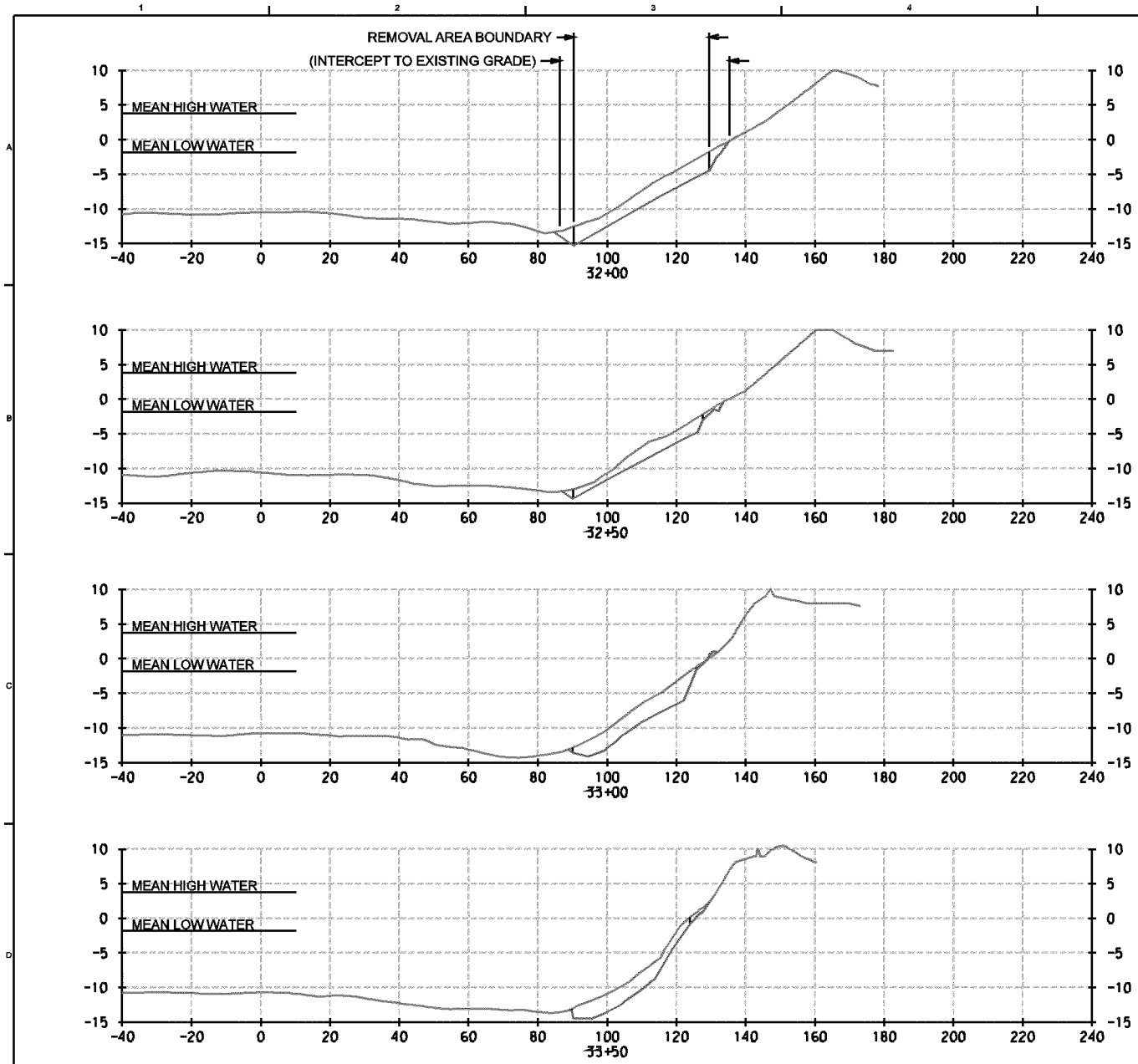

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EXISTING SEDIMENT SURFACE
POST DREDGING ELEVATION
REMOVAL AREA BOUNDARY

7.5 0 7.5 15
SCALE 1" = 15'

James J Brinkman

NJ PROFESSIONAL ENGINEER
NO. 24GE05059300

NO.	DATE	REVISION	BY	APVD

DSGN | DR D LIEBERSBACH | CHK K GALLOWAY | APVD

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RM 10.9 TIME CRITICAL REMOVAL ACTION
CIVIL

RM 10.9 Sediment Deposit and Removal Areas
Lower Passaic River Study Area, New Jersey

DREDGING
CROSS-SECTIONS
(SHEET 12 OF 14)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE 2 JULY, 2013
PRJ LOWER PASSAIC RIVER
DWG C-18
SHEET 20 of 27

FILENAME: C07_14_Xsec.dgn PLOT DATE: 2 JULY, 2013 PLOT TIME: 7:58

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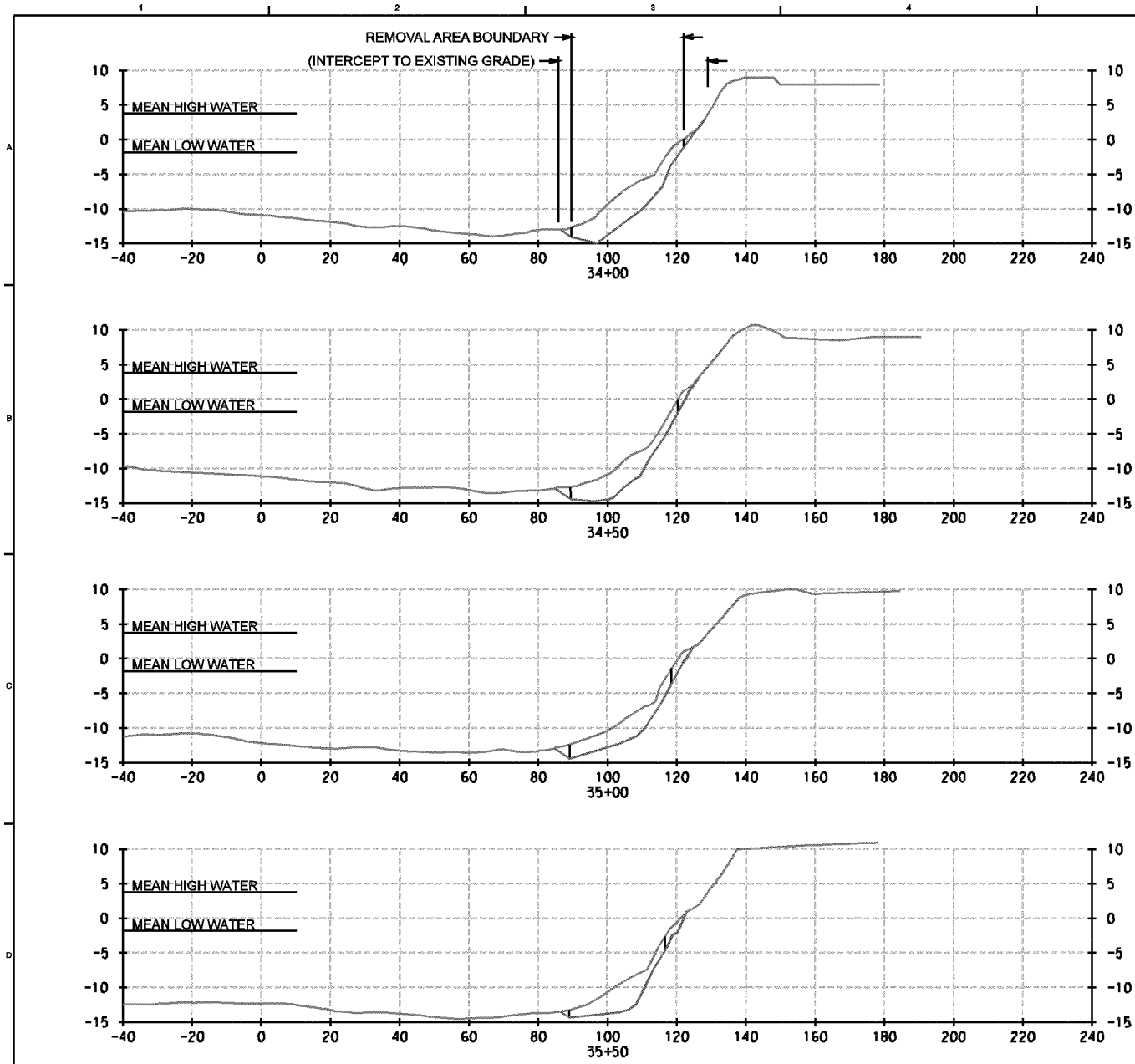

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EXISTING SEDIMENT SURFACE
POST DREDGING ELEVATION
REMOVAL AREA BOUNDARY

7.5 0 7.5 15
SCALE 1" = 15'

James J Brinkman

NJ PROFESSIONAL ENGINEER
NO. 24GE05059300

NO.	DATE	REVISION	BY	APVD

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Lower Passaic River Study Area, New Jersey

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CIVIL

DREDGING
CROSS-SECTIONS
(SHEET 13 OF 14)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE 2 JULY, 2013
PRJ LOWER PASSAIC RIVER
DWG C-19
SHEET 21 of 27

FILENAME: C07_14_Xsec.dgn PLOT DATE: 2 JULY, 2013 PLOT TIME: 7:58

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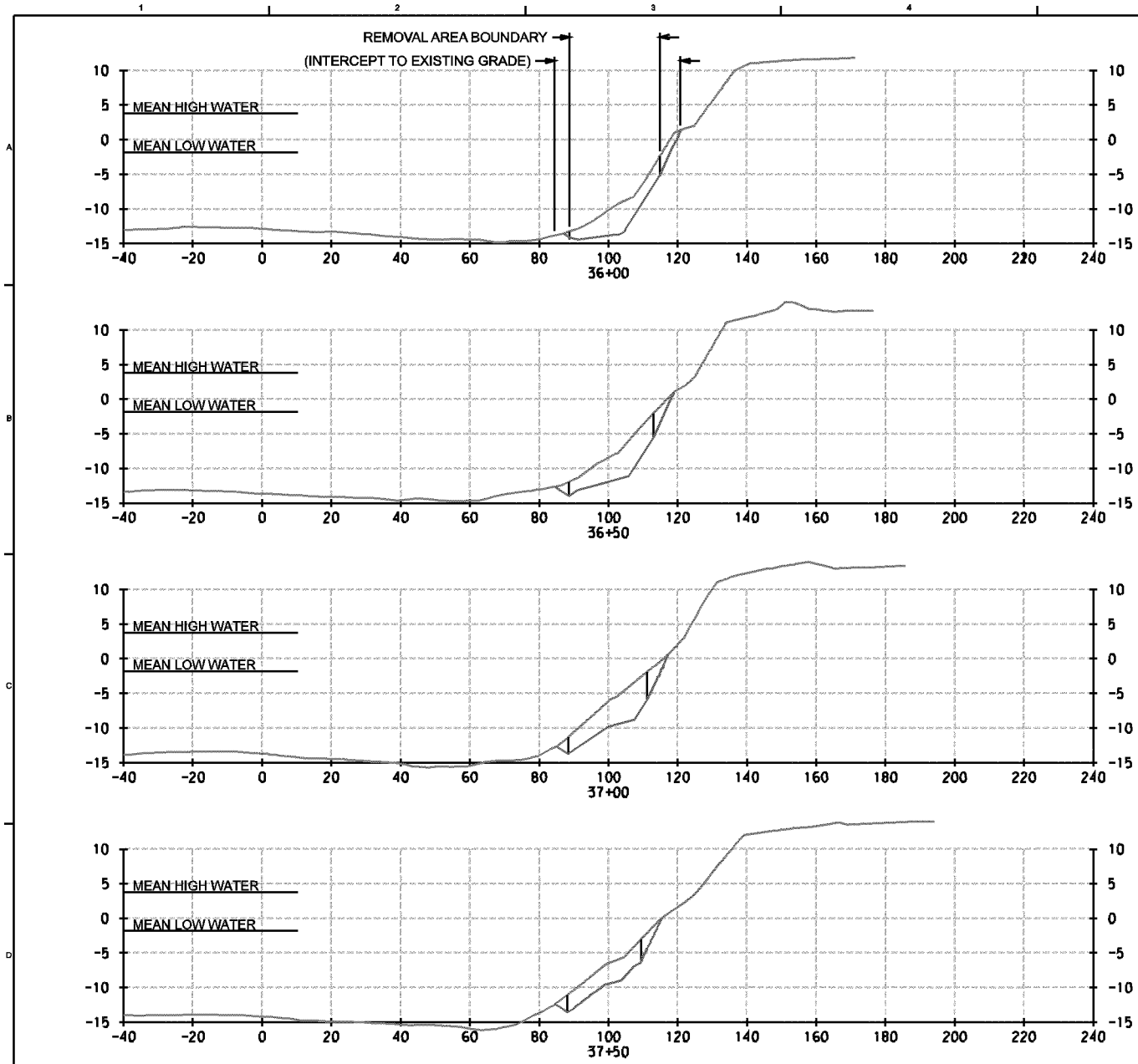

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EXISTING SEDIMENT SURFACE
POST DREDGING ELEVATION
REMOVAL AREA BOUNDARY

7.5 0 7.5 15
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RM 10.9 Sediment Deposit and Removal Areas
Lower Passaic River Study Area, New Jersey

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RM 10.9 TIME CRITICAL REMOVAL ACTION
CIVIL

DREDGING
CROSS-SECTIONS
(SHEET 14 OF 14)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE 2 JULY, 2013
PRJ LOWER PASSAIC RIVER
DWG C-20
SHEET 22 of 27

FILENAME: C07_14_Xsec.dgn PLOT DATE: 2 JULY, 2013 PLOT TIME: 7:58

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