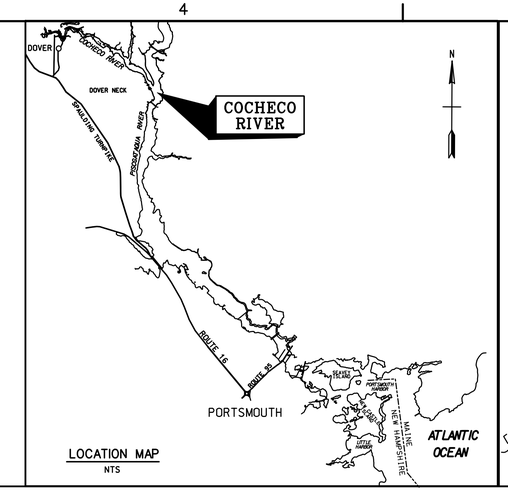
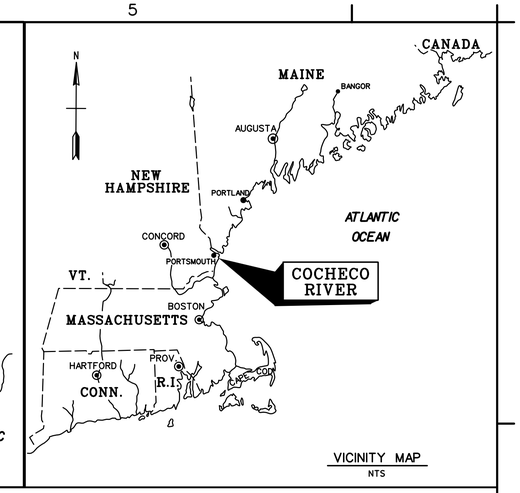
US Army Corps
of Engineers
New England District




LOCATION MAP
NTS




VICINITY MAP
NTS

# MAINTENANCE DREDGING
# 7-FOOT CHANNEL
# COCHECO RIVER
## DOVER, NEW HAMPSHIRE

VALUE ENGINEERING PAYS DIVIDENDS

SAFETY PAYS

SOLICITATION # W912WJ-04-B-0009

SEE SPECIFICATIONS FOR DRAWING SIGNATURES

APPROVED FUNCTIONAL ADEQUACY
ROBERT MEADER /s/
TECHNICAL LEAD ENGINEER DATE:

RECOMMENDED BY:
H. FARRELL MCMILLAN, P.E. /s/
DEPUTY CHIEF, E/P DIV DATE:

REVIEWED BY:
ANTHONY J. MACKOS, P.E. /s/
CHIEF, DESIGN BRANCH DATE:

APPROVED BY:
DAVID L. DULONG, P.E. /s/ 7/20/04
DATE: CHIEF, ENGRG/PLANNING DIV DATE:

REVIEWED BY:
RAIMO LIIAS, P.G. /s/
CH, HTRW/GEOTECH ENGRG BR DATE:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

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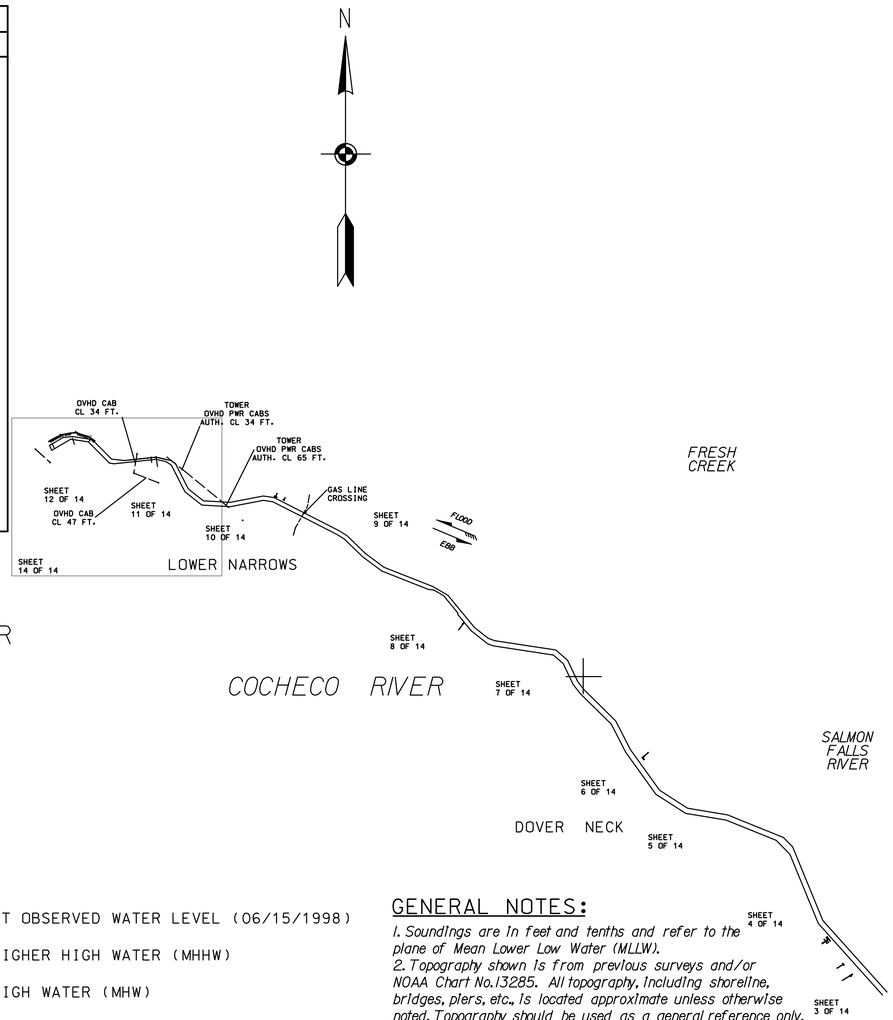
WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
DOVER, NEW HAMPSHIRE

**COVER SHEET & LOCATION MAP**

Reference number:
G-1
Sheet 1 of 14

| LEGEND | |
|---|---|
| EXISTING | DESCRIPTION |
| ——— | REQUIRED DREDGING DEPTH CONTOUR |
| ——— | ALLOWABLE OVERDEPTH DREDGING DEPTH CONTOUR |
| – – – – – | APPROXIMATE CABLE LIMITS |
| - - - - - - - - | APPROXIMATE SEWER, WATER, AND GAS LINES |
| | MATERIAL REQUIRED TO BE DREDGED (FEDERAL CHANNEL) |
| | ALLOWABLE OVERDEPTH (FEDERAL CHANNEL) |
| | MATERIAL REQUIRED TO BE DREDGED (ACCESS CHANNEL) |
| | ALLOWABLE OVERDEPTH (ACCESS CHANNEL) |
| 3 | CHANNEL COORDINATE |
| ○ | TOWER |
| | DOVER LANDING DREDGING |




COCHECO RIVER-DOVER, NEW HAMPSHIRE
7-FOOT CHANNEL
STATE PLANE NAD 1927

| # | Easting | Northing | # | Easting | Northing |
|---|---|---|---|---|---|
| 1 | 724183.67 | 247548.12 | 36 | 713084.08 | 255281.15 |
| 2 | 723284.55 | 248549.74 | 37 | 713126.73 | 255323.35 |
| 3 | 722887.97 | 249517.01 | 38 | 713408.28 | 255040.08 |
| 4 | 722697.40 | 249710.67 | 39 | 713587.21 | 255020.24 |
| 5 | 721996.85 | 249994.50 | 40 | 714032.32 | 255067.43 |
| 6 | 721430.58 | 250088.50 | 41 | 714239.91 | 255018.77 |
| 7 | 721014.93 | 250356.18 | 42 | 714299.83 | 254978.75 |
| 8 | 720594.83 | 250941.31 | 43 | 714481.26 | 254622.78 |
| 9 | 720392.62 | 251334.88 | 44 | 714691.70 | 254456.88 |
| 10 | 719955.10 | 251766.36 | 45 | 715064.00 | 254435.29 |
| 11 | 719858.16 | 251892.37 | 46 | 715529.41 | 254524.64 |
| 12 | 719720.80 | 252180.93 | 47 | 715679.53 | 254502.43 |
| 13 | 719584.15 | 252301.29 | 48 | 716590.16 | 254038.02 |
| 14 | 718739.50 | 252430.16 | 49 | 716701.08 | 253967.92 |
| 15 | 718663.27 | 252459.58 | 50 | 716955.91 | 253720.76 |
| 16 | 718434.36 | 252639.97 | 51 | 717214.03 | 253528.96 |
| 17 | 718250.27 | 252863.26 | 52 | 717894.72 | 253260.09 |
| 18 | 718246.70 | 252891.18 | 53 | 718109.14 | 253136.62 |
| 19 | 718049.17 | 253130.76 | 54 | 718480.07 | 252686.70 |
| 20 | 717910.14 | 253210.82 | 55 | 718669.15 | 252537.71 |
| 21 | 717836.60 | 253218.53 | 56 | 718758.89 | 252503.07 |
| 22 | 717184.60 | 253476.06 | 57 | 719617.21 | 252372.12 |
| 23 | 716916.96 | 253674.95 | 58 | 719781.92 | 252227.05 |
| 24 | 716663.77 | 253920.52 | 59 | 719922.46 | 251931.79 |
| 25 | 716560.44 | 253985.82 | 60 | 720011.42 | 251816.15 |
| 26 | 715661.03 | 254444.52 | 61 | 720453.84 | 251379.84 |
| 27 | 715530.71 | 254463.80 | 62 | 720659.00 | 250980.53 |
| 28 | 715067.98 | 254374.96 | 63 | 721067.53 | 250411.51 |
| 29 | 714669.38 | 254398.08 | 64 | 721458.16 | 250159.95 |
| 30 | 714433.77 | 254583.81 | 65 | 722017.32 | 250067.13 |
| 31 | 714244.19 | 254955.78 | 66 | 722798.29 | 249750.72 |
| 32 | 714172.29 | 255003.81 | 67 | 722926.71 | 249620.21 |
| 33 | 714030.42 | 255037.06 | 68 | 723349.02 | 248590.19 |
| 34 | 713447.94 | 254975.31 | 69 | 724246.16 | 247590.78 |
| 35 | 713380.64 | 254982.77 | | | |

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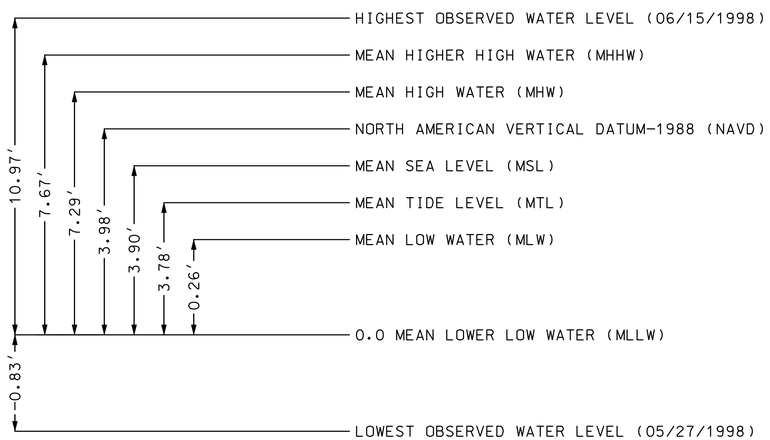
| Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr. |
|---|---|---|---|---|---|---|---|
| | | | | | | | |




## TIDAL DATUM PLANES

*Tidal Datums at Dover, Cocheco River are based on the following:*

| | |
|---|---|
| *Length of Series* | *=2 Months* |
| *Time Period* | *=July 1998 - August 1998* |
| *Tidal Epoch* | *=1960 - 1978* |
| *Contol Tide Station* | *= Portland, Casco Bay (8418150)* |

## GENERAL NOTES:

*1. Soundings are in feet and tenths and refer to the plane of Mean Lower Low Water (MLLW).*
*2. Topography shown is from previous surveys and/or NOAA Chart No.13285. All topography, including shoreline, bridges, piers, etc., is located approximate unless otherwise noted. Topography should be used as a general reference only.*
*3. Bench Mark Data for sheets 2 thru 7: B.M. Cullen (2000) is a high point within chiseled square on piece of black granite at beginning of pier behind #2 Cullen Bay Road, approximately 1.5' x 1.0' of the granite is visible above ground level. Elevation is 8.90 feet above MLLW.*
*4. Bench Mark Data for sheets 7 thru 12: B.M. 041IA (1998) is a NOS disk set in the east end of the concrete retaining wall along the north side of Cocheco Street near George's Marina, 0.3mi (0.2km) east on Cocheco Street from its intersection with Portland Street, 44.8 ft. (13.65 m) east of power pole No.119-14, 15.0 feet (4.58 m) north of the centerline of Cocheco Street, 2.4 feet (0.74 m) west of the east end of the wall, and 3.3 feet (1m) above ground level. Elevation is 24.64 feet above MLLW.*
*4. Coordinates shown are based on the Transverse Mercator Grid System for the State of New Hampshire & NAD 27.*
*5. The sounding information shown on these maps represents the SHOALEST soundings of those obtained from hydrographic surveys conducted during April 2003.*
*6. The sounding information depicted on these maps should NOT be used to determine volumes. Volumes are determined from more sounding information than shown. Additional sounding information is available upon request.*
*7. The information depicted on these maps represents the results of surveys made on the dates indicated and can only be considered as indicating the general conditions existing at that time.*
*8. Entrance to Cocheco River requires passage under bridges and overhead power cables. See NOAA Charts 13283 & 13285 for span. Cable elevations are based on MHW.*
*9. Field Book: R&H 5072.*
*Depthsounder Rolls: 03-659/1 thru 4*
*See NOAA Charts No.13285 & 13283.*

## INDEX TO DRAWINGS

| SHEET NO. | | DRAWING NO. | TITLE |
|---|---|---|---|
| 1 | G-1 | COCCOV.DGN | COVER SHEET & LOCATION MAP |
| 2 | C-1 | COCC101.S01 | GENERAL NOTES, CHANNEL COORDINATES, TIDAL DATUM, KEY PLAN, LEGEND & INDEX TO DRAWINGS |
| 3 | C-2 | COCC102.S02 | DREDGING PLAN |
| 4 | C-3 | COCC103.S03 | DREDGING PLAN |
| 5 | C-4 | COCC104.S04 | DREDGING PLAN & CROSS-SECTION A |
| 6 | C-5 | COCC105.S05 | DREDGING PLAN |
| 7 | C-6 | COCC106.S06 | DREDGING PLAN |
| 8 | C-7 | COCC107.S07 | DREDGING PLAN & CROSS-SECTION B |
| 9 | C-8 | COCC108.S08 | DREDGING PLAN |
| 10 | C-9 | COCC109.S09 | DREDGING PLAN |
| 11 | C-10 | COCC110.S10 | DREDGING PLAN & CROSS-SECTIONS C AND D |
| 12 | C-11 | COCC111.S11 | DREDGING PLAN, OFFLOAD ACCESS CHANNEL & CROSS-SECTION E |
| 13 | C-12 | COCC112.S12 | OFFLOAD, STORAGE AREA, AND DOVER LANDING AREA |
| 14 | C-13 | COCC113.S13 | UPLAND DISPOSAL ACCESS |

## PLAN

*SCALE: 1"=1,000'*

GRAPHIC SCALE:
1"=1,000 — 1000 0 1000 2000

Designed by: Robert Meader
Plotted by: V.J. Gardsedian
ITR Review 7/16/04
Submitted by: Stephen Johnston /s/ Chief, Survey Section
Date: 7/20/04 Rev.:
Design file no.:
Drawing code: 2570
File name: COCC101.S01
Plot date: 7/20/04
Plot scale: 1"=1000'

U.S. ARMY ENGINEER DISTRICT
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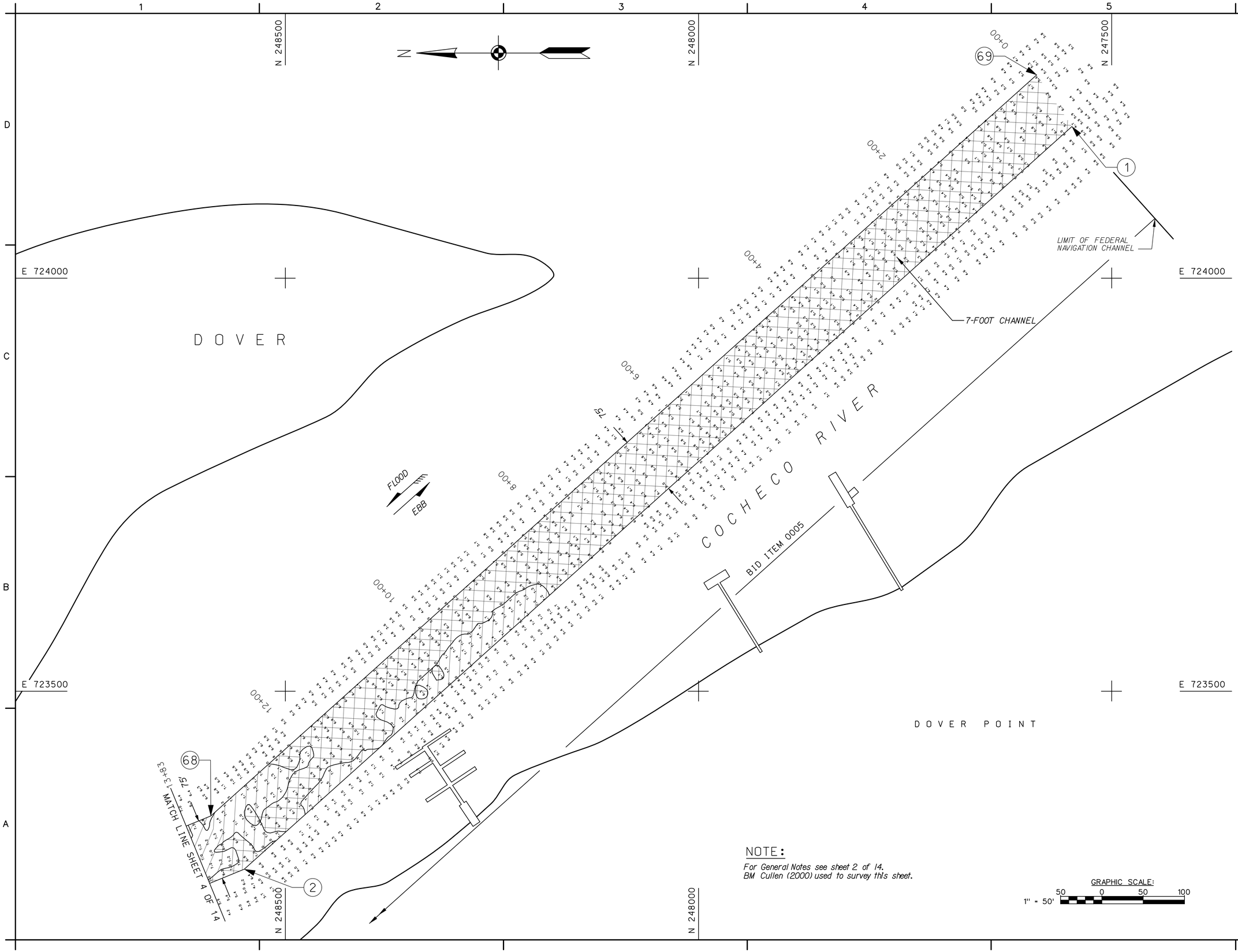
WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
DOVER, NEW HAMPSHIRE

**GENERAL NOTES, CHANNEL COORDINATES, TIDAL DATUM, KEY PLAN, LEGEND, & INDEX TO DRAWINGS**

Reference number:
C-1
Sheet 2 of 14




NOTE:

*For General Notes see sheet 2 of 14.*
*BM Cullen (2000) used to survey this sheet.*

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|---|---|---|---|---|---|---|---|
| | | | | | | | |

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Plotted by: V.J. Garabedian
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Date: 7/20/04 Rev.
Design file no.
Drawing code: 2570
File name: COCC101.S02
Plot date: 7/20/04
Plot scale: 1"=50'

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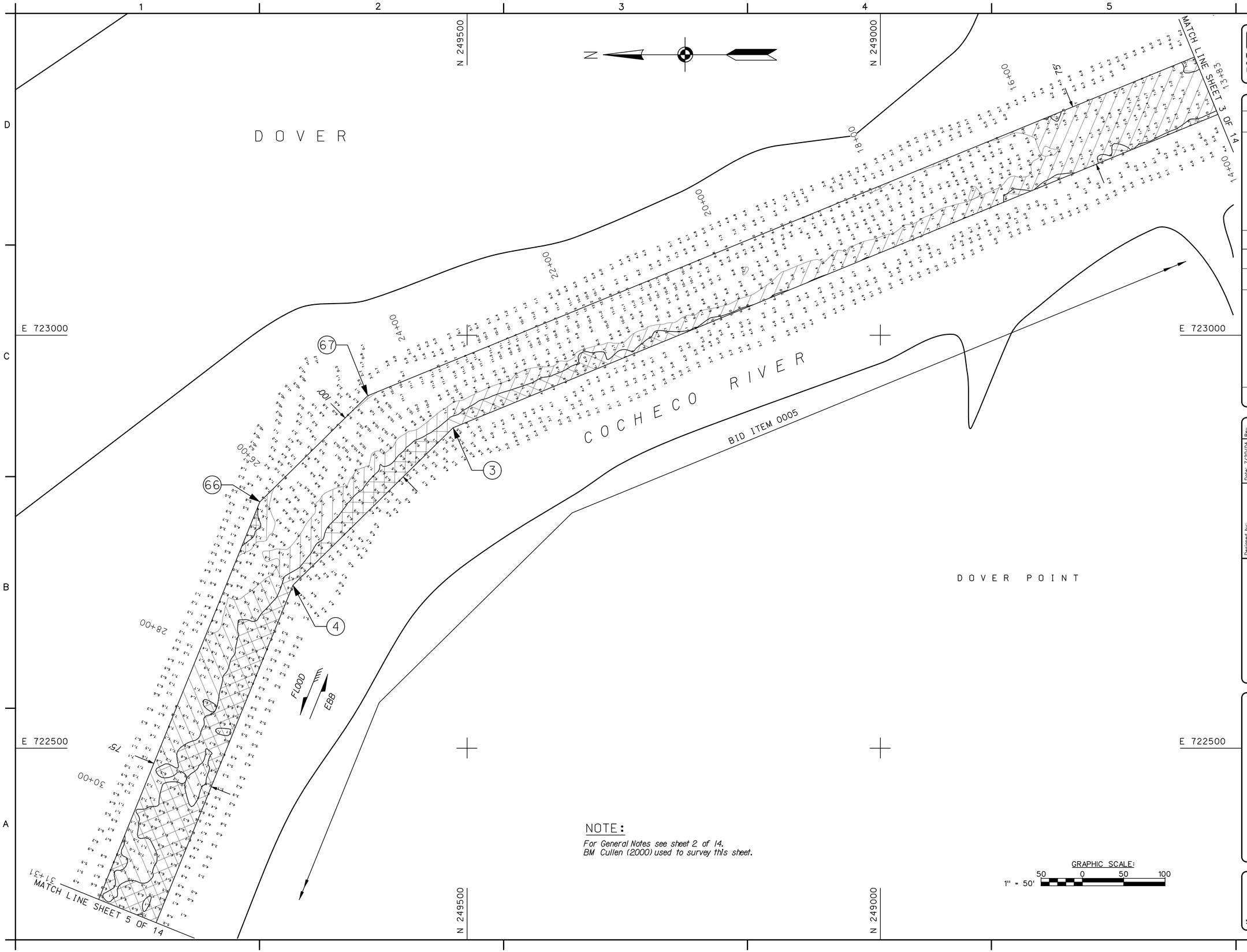
WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
DOVER, NEW HAMPSHIRE

**DREDGING PLAN**

Reference number:
C-2

Sheet 3 of 14




NOTE:

*For General Notes see sheet 2 of 14.*
*BM Cullen (2000) used to survey this sheet.*

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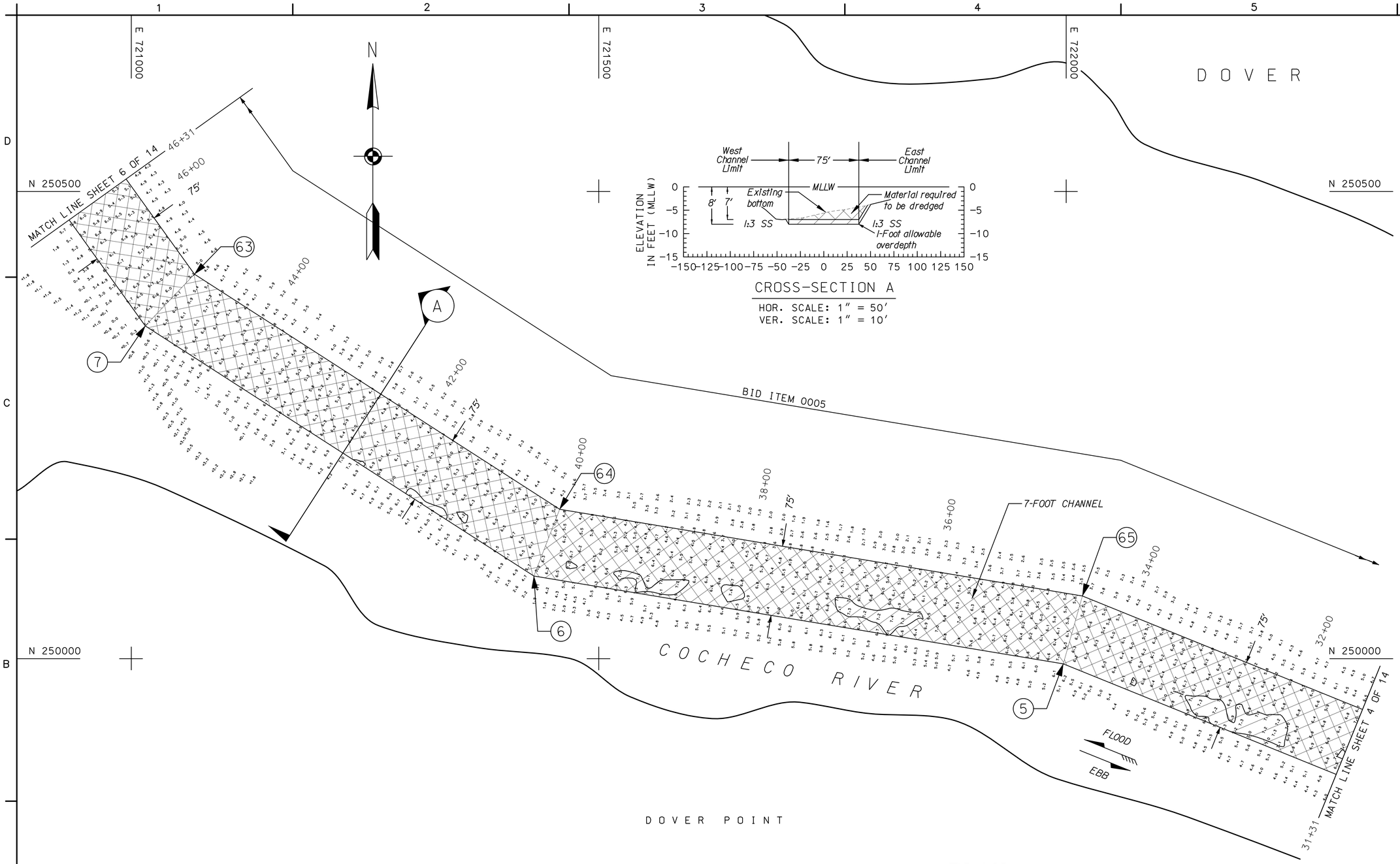
Date: 7/20/04 Rev.
Design file no.
Drawing code: 2570
File name: COCC03.S03
Plot date: 7/20/04
Plot scale: 1"=50'

WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
DOVER, NEW HAMPSHIRE

**DREDGING PLAN**

Reference number:
C-3
Sheet 4 of 14




## PLAN

SCALE: 1"=50'

NOTE:

For General Notes see sheet 2 of 14.
BM Cullen (2000) used to survey this sheet.

GRAPHIC SCALE:
1" = 50' 50 0 50 100
1" = 10' 10 0 10 20

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New England District

| Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr. |
|---|---|---|---|---|---|---|---|

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Plotted by: V.J. Garabedian
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Submitted by: Stephen Johnston /s/ Chief, Survey Section
Date: 7/20/04 Rev.
Design file no.
Drawing code: 2570
File name: COCCI04.S04
Plot date: 7/20/04
Plot scale: 1"=50'

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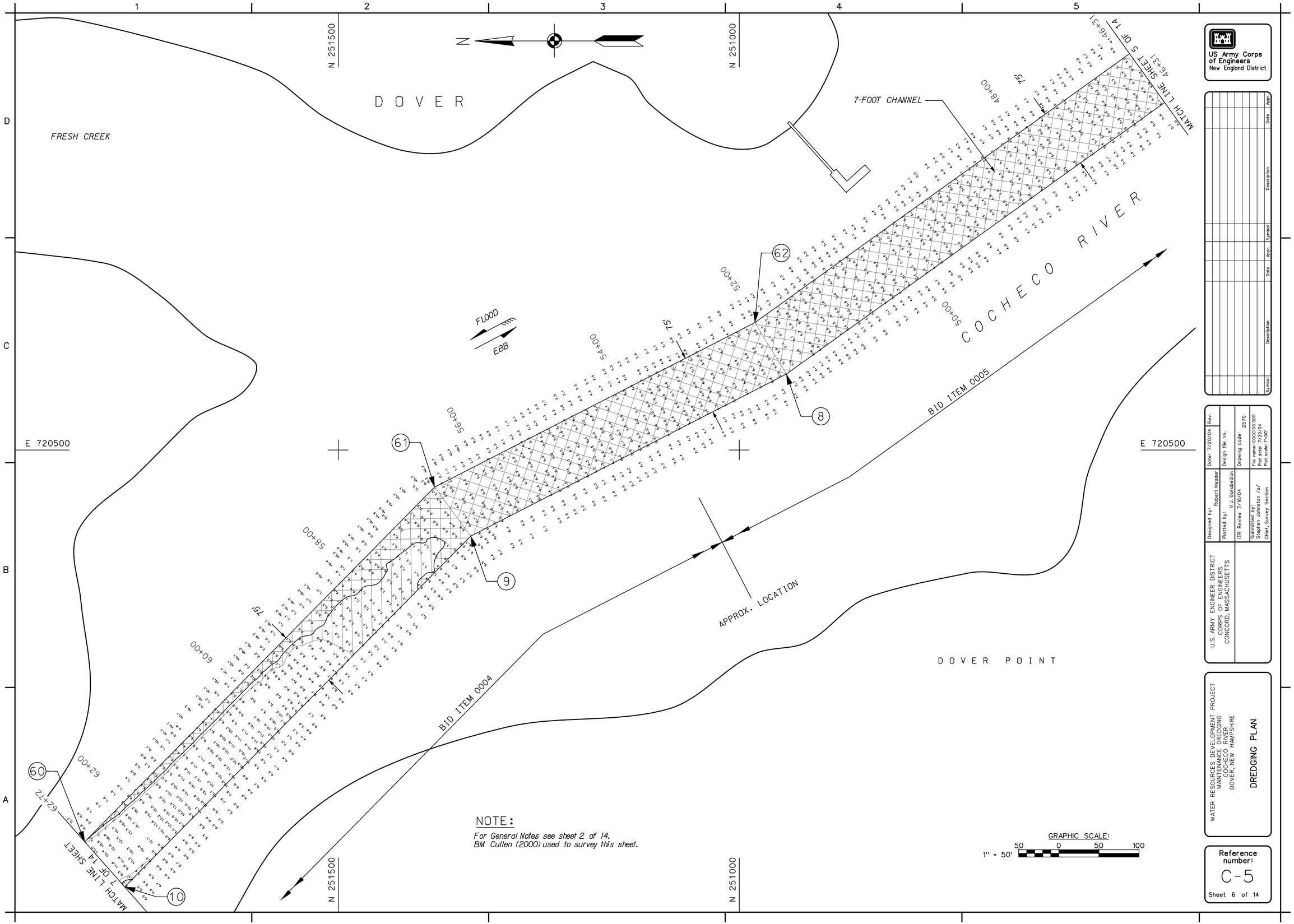
WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
DOVER, NEW HAMPSHIRE

# DREDGING PLAN & CROSS-SECTION-A

Reference number:
C-4

Sheet 5 of 14




NOTE:

For General Notes see sheet 2 of 14.
BM Cullen (2000) used to survey this sheet.

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| Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr. |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

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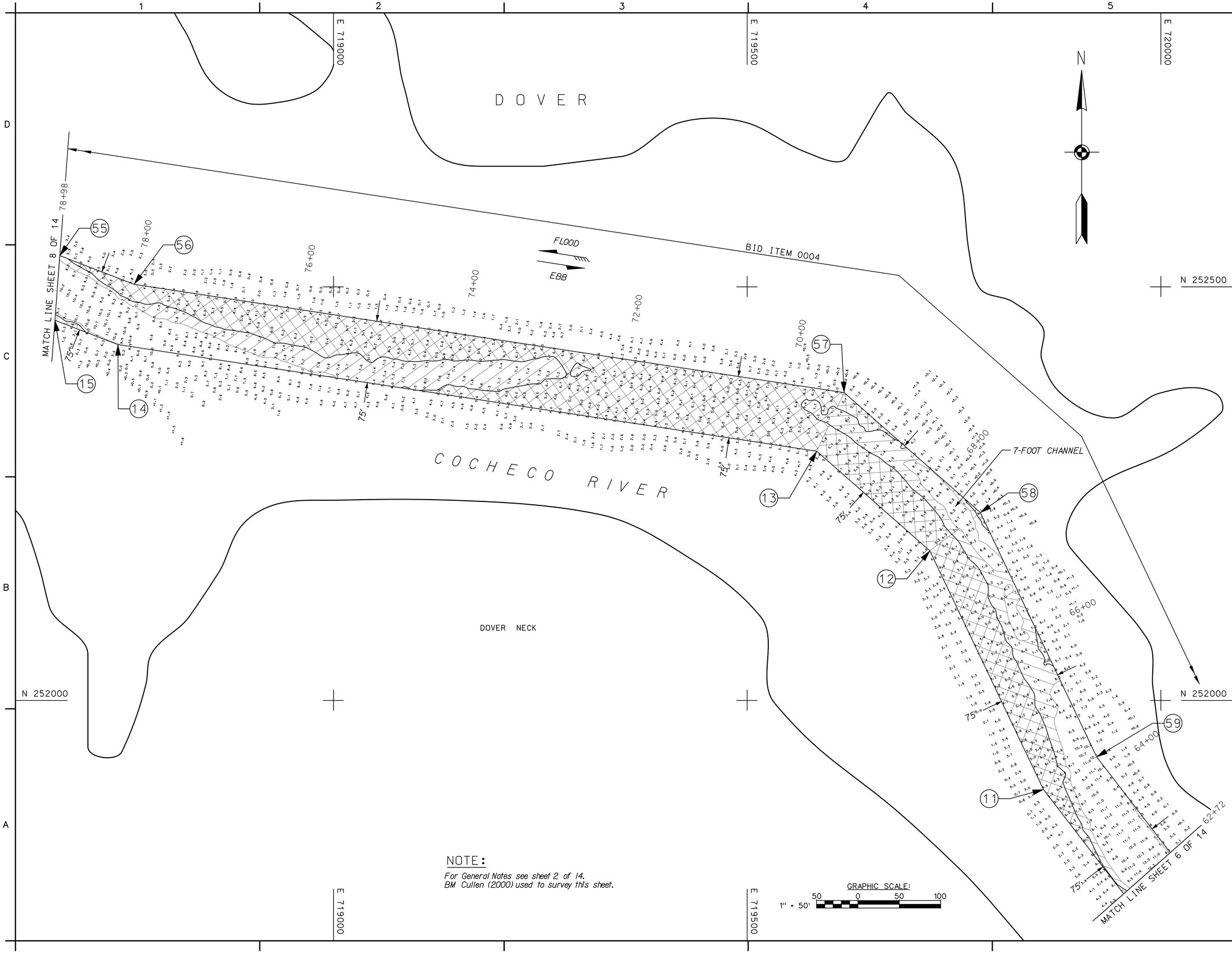
Plotted by: V.J. Gerstadion
ITR Review 7/16/04
Submitted by: Stephen Johnston /s/
Chief, Survey Section
Date: 7/20/04 Rev.
Design file no.
Drawing code: 2570
File name: COCC105.505
Plot date: 7/20/04
Plot scale: 1"=50'

WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
DOVER, NEW HAMPSHIRE

**DREDGING PLAN**

Reference number:
C-5
Sheet 6 of 14




NOTE:

*For General Notes see sheet 2 of 14.*
*BM Cullen (2000) used to survey this sheet.*

GRAPHIC SCALE:
50 0 50 100
1" = 50'

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| Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr. |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

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Submitted by: Stephen Johnston /s/
Chief, Survey Section

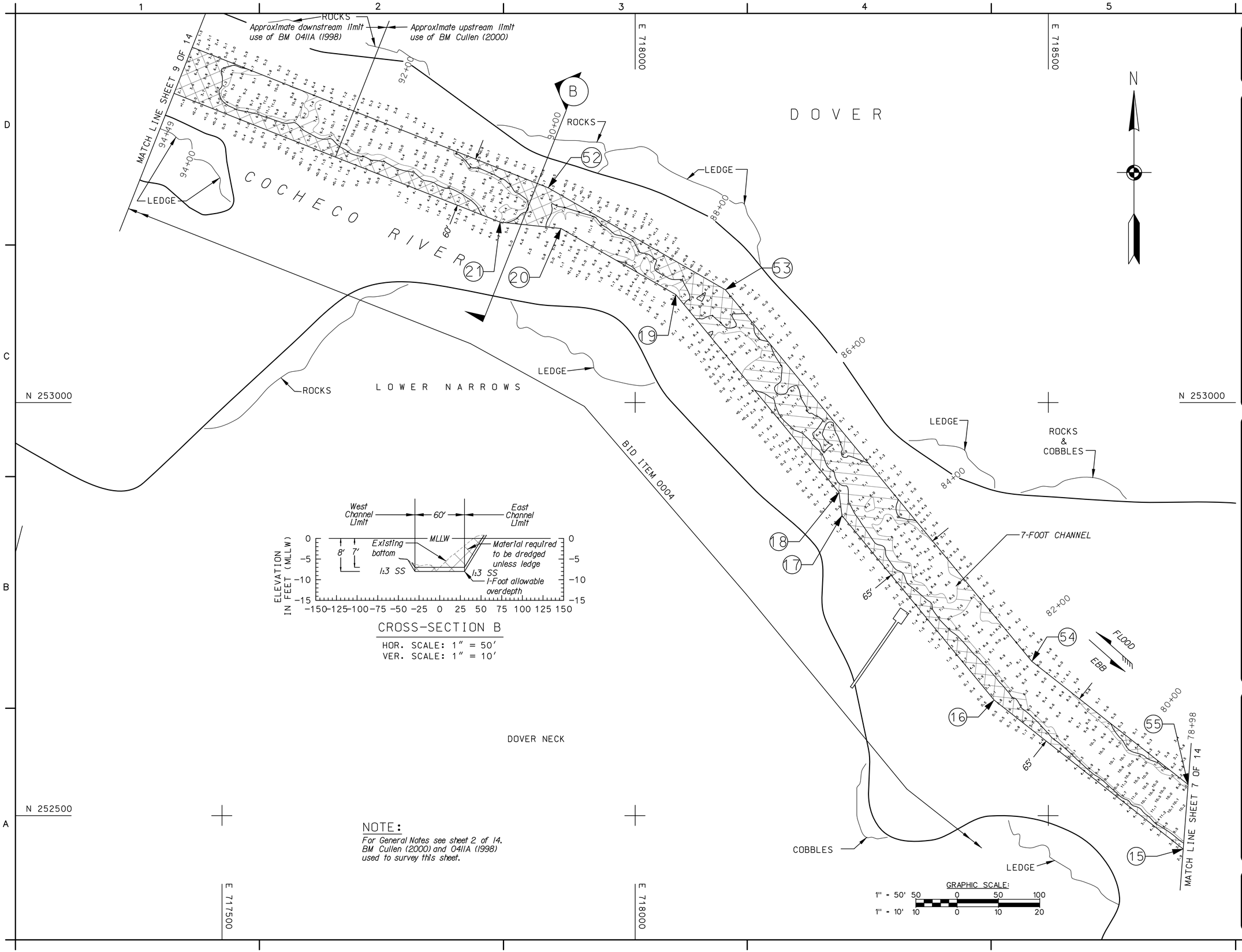
Date: 7/20/04 Rev.:
Design file no.
Drawing code: 2570
File name: COCC106.506
Plot date: 7/20/04
Plot scale: 1"=50'

WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
DOVER, NEW HAMPSHIRE

**DREDGING PLAN**

Reference number:
C-6

Sheet 7 of 14







CROSS-SECTION B

HOR. SCALE: 1" = 50'
VER. SCALE: 1" = 10'

NOTE:

*For General Notes see sheet 2 of 14. BM Cullen (2000) and 041IA (1998) used to survey this sheet.*

US Army Corps of Engineers
New England District

| Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr. |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

Date: 7/20/04 Rev.
Design file no.
Drawing code: 2570
File name: COCC07.507
Plot date: 7/20/04
Plot scale: 1"=50'

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Plotted by: V.J. Garabedian
ITR Review 7/16/04
Submitted by: Stephen Johnston /s/ Chief, Survey Section

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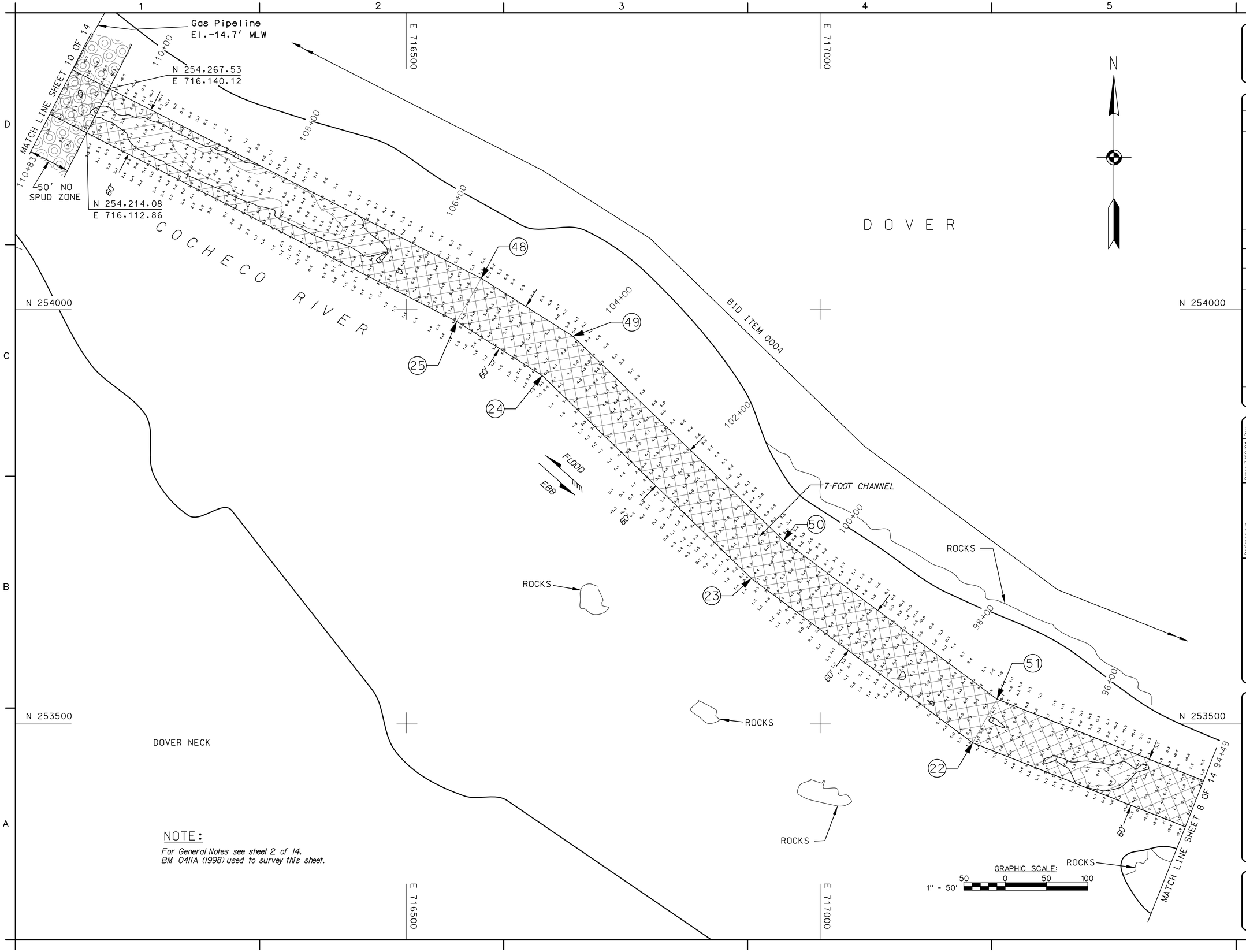
WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
DOVER, NEW HAMPSHIRE

# DREDGING PLAN & CROSS-SECTION B

Reference number:
C-7
Sheet 8 of 14




NOTE:

*For General Notes see sheet 2 of 14.*
*BM 041IA (1998) used to survey this sheet.*

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| Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr. |
|---|---|---|---|---|---|---|---|

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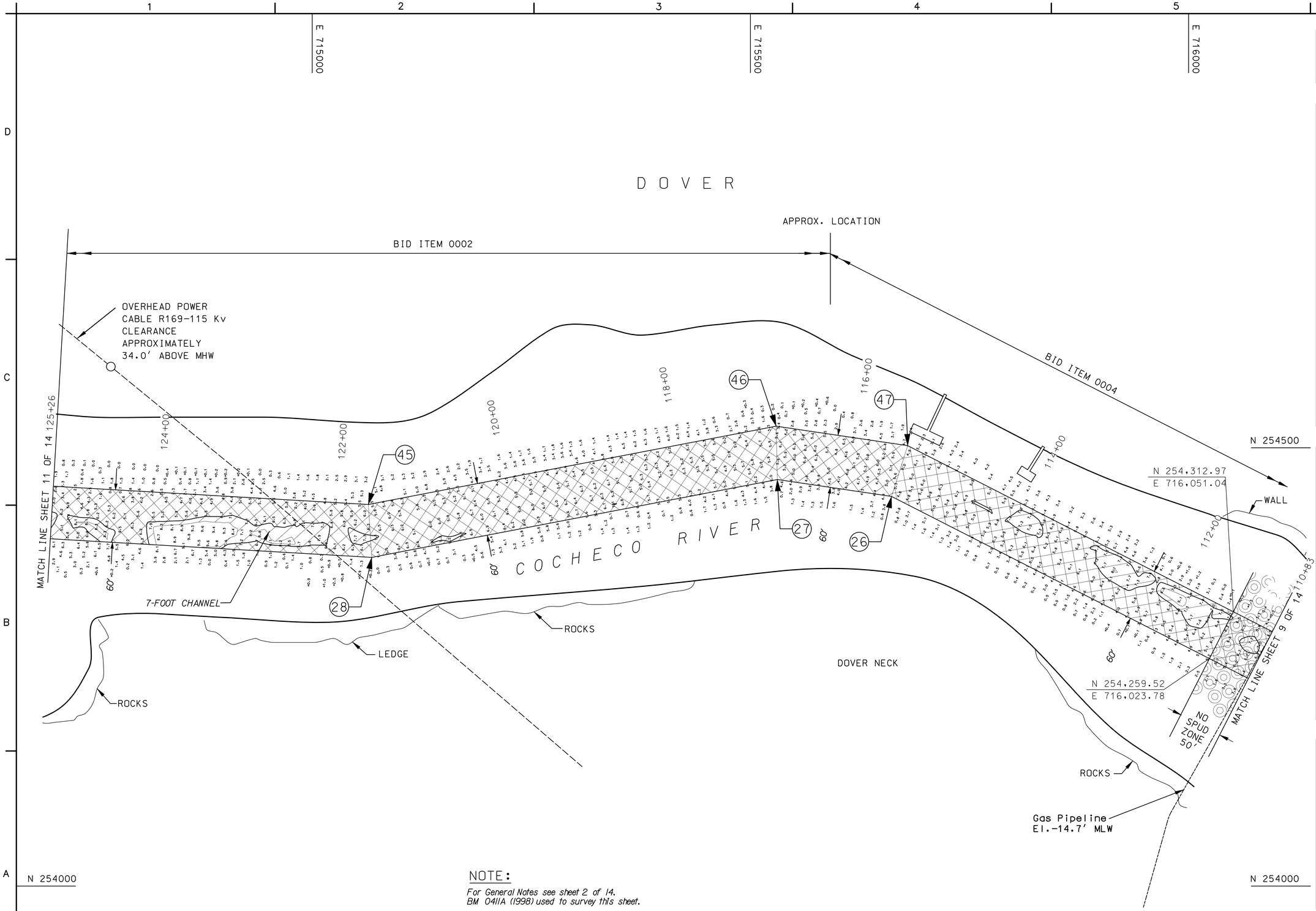
Plotted by: V.J. Garabedian
ITR Review 7/16/04
Submitted by: Stephen Johnston /s/
Chief, Survey Section
Date: 7/20/04 Rev.
Design file no.
Drawing code: 2570
File name: COCC108.508
Plot date: 7/20/04
Plot scale: 1"=50'

WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
DOVER, NEW HAMPSHIRE

# DREDGING PLAN

Reference number:
C-8

Sheet 9 of 14




NOTE:

*For General Notes see sheet 2 of 14.*
*BM 0411A (1998) used to survey this sheet.*

US Army Corps of Engineers
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| Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr. |
|---|---|---|---|---|---|---|---|

U.S. ARMY ENGINEER DISTRICT
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CONCORD, MASSACHUSETTS

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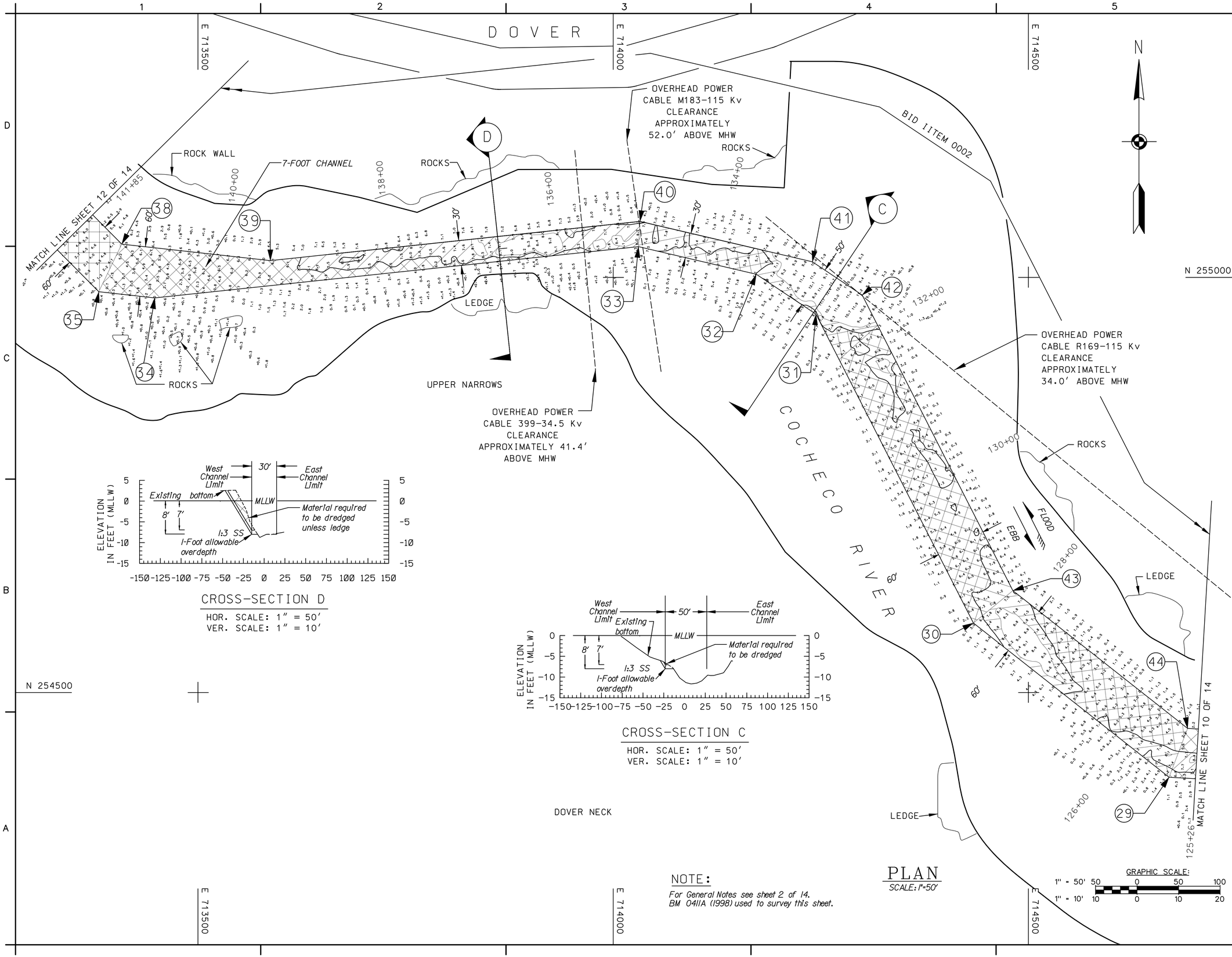
Plotted by: V.J. Garabedian
ITR Review 7/16/04
Submitted by: Stephen Johnston /s/ Chief, Survey Section
Date: 7/20/04 Rev.
Design file no.
Drawing code: 2570
File name: COCC109.S09
Plot date: 7/20/04
Plot scale: 1"=50'

WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
DOVER, NEW HAMPSHIRE

DREDGING PLAN

Reference number:
C-9
Sheet 10 of 14






CROSS-SECTION D

HOR. SCALE: 1" = 50'
VER. SCALE: 1" = 10'



CROSS-SECTION C

HOR. SCALE: 1" = 50'
VER. SCALE: 1" = 10'

NOTE:

For General Notes see sheet 2 of 14.
BM 0411A (1998) used to survey this sheet.

PLAN

SCALE: 1"=50'

GRAPHIC SCALE:
1" = 50' 50 0 50 100
1" = 10' 10 0 10 20

US Army Corps of Engineers
New England District

| Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr. |
|---|---|---|---|---|---|---|---|

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

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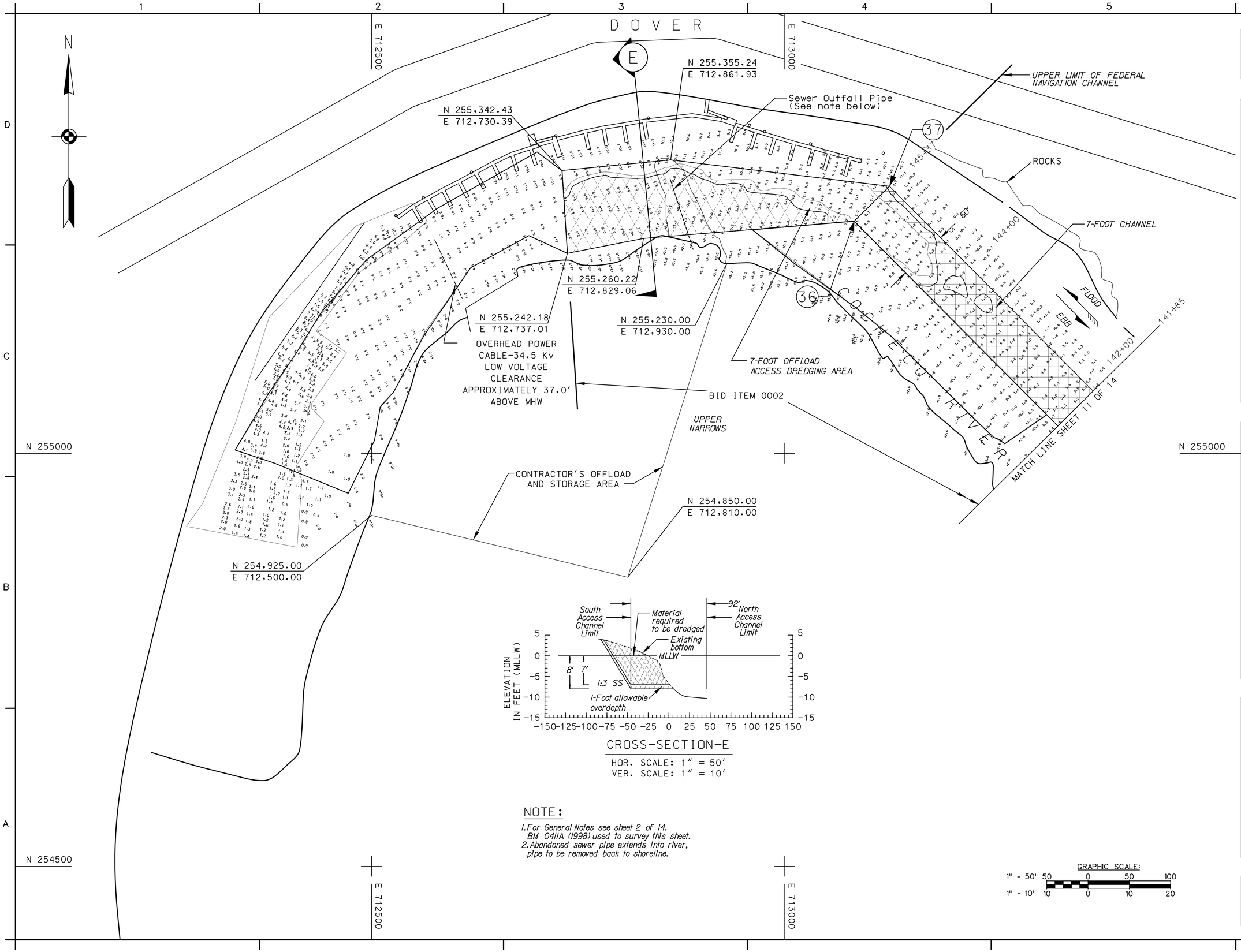
Plotted by: V.J. Garabedian
ITR Review 7/16/04
Submitted by: Stephen Johnston /s/ Chief, Survey Section
Date: 7/20/04 Rev.
Design file no.
Drawing code: 2570
File name: COCC110.S10
Plot date: 7/20/04
Plot scale: 1"=50'

WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
DOVER, NEW HAMPSHIRE

DREDGING PLAN & CROSS-SECTIONS C AND D

Reference number:
C-10

Sheet 11 of 14




CROSS-SECTION-E

HOR. SCALE: 1" = 50'
VER. SCALE: 1" = 10'

NOTE:

1. For General Notes see sheet 2 of 14.
BM 0411A (1998) used to survey this sheet.
2. Abandoned sewer pipe extends into river, pipe to be removed back to shoreline.

GRAPHIC SCALE:
1" = 50' 50 0 50 100
1" = 10' 10 0 10 20

US Army Corps of Engineers
New England District

| Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr. |
|---|---|---|---|---|---|---|---|

Designed by: Robert Meader
Plotted by: V.J. Garabedian
ITR Review 7/16/04
Submitted by: Stephen Johnston /s/ Chief, Survey Section
Date: 7/20/04 Rev.
Design file no.
Drawing code: 2570
File name: COCC111.S11
Plot date: 7/20/04
Plot scale: 1"=50'

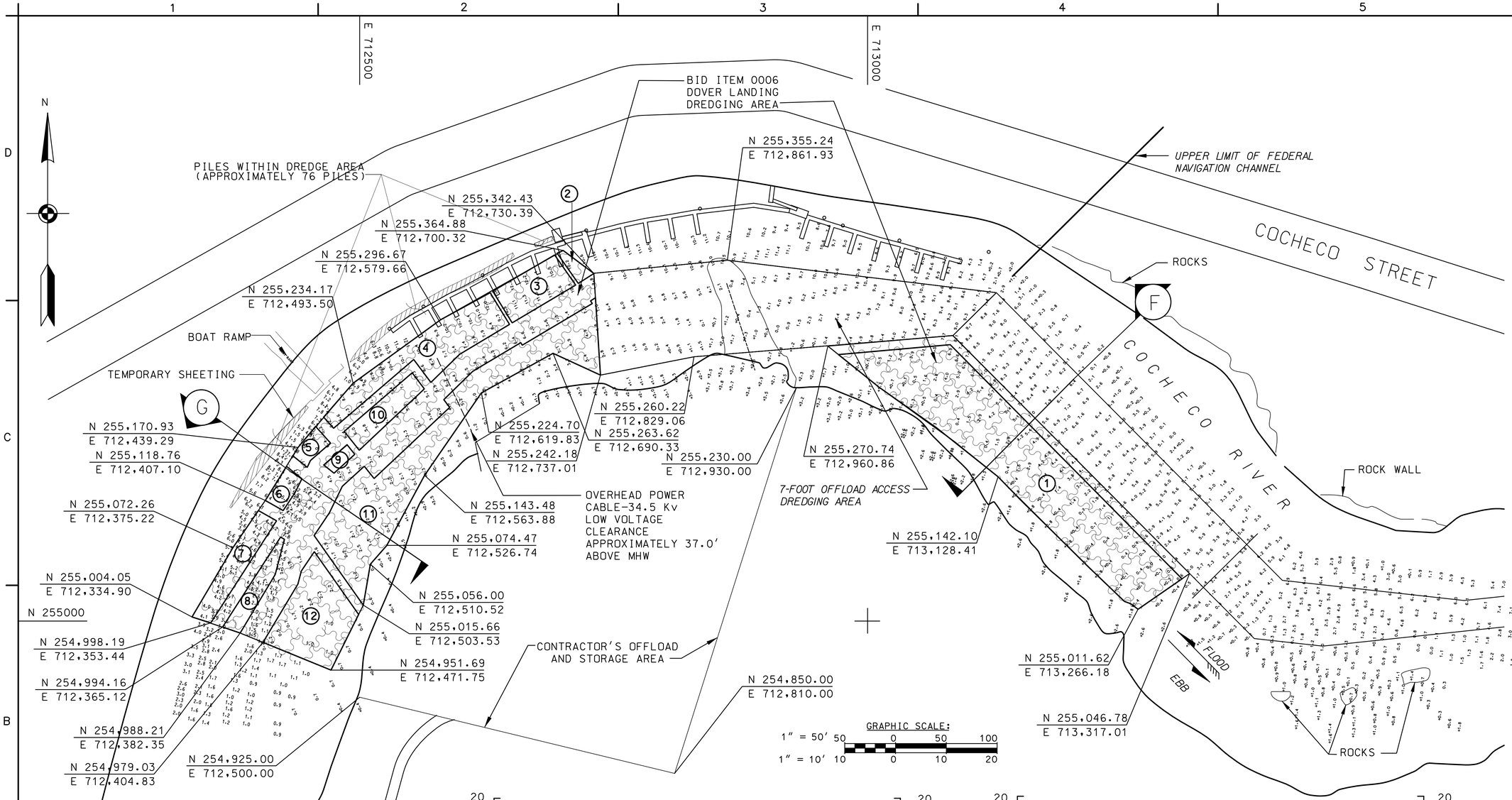
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
CONCORD, MASSACHUSETTS

WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
DOVER, NEW HAMPSHIRE

DREDGING PLAN
OFFLOAD ACCESS CHANNEL
& CROSS-SECTION E

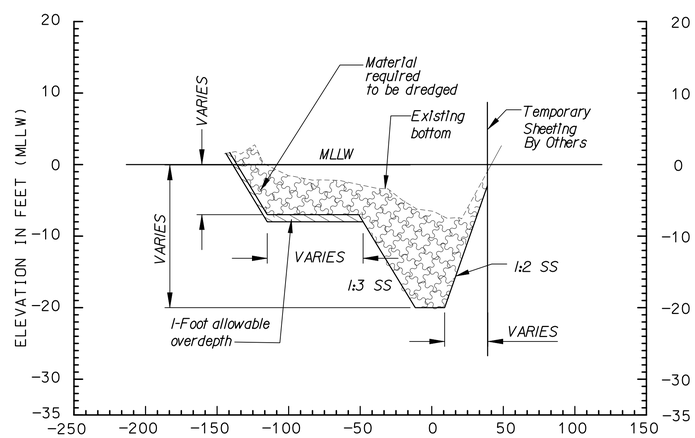
Reference number:
C-11

Sheet 12 of 14

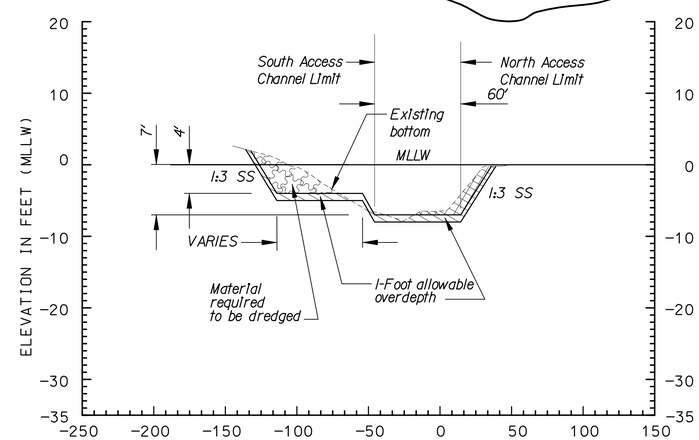



NOTE:

1. For General Notes see sheet 2 of 14.
2. See attachment to Specification Section 02325 for Dover Landing Dredge Area coordinates and dredge depths.
3. Sequence of dredging the Dover Landing to be directed by Contracting Officer.
4. Areas 2,3,4,5,6,7,8,9,& 10 are intended to be dredged to 1' below the top of the underlying clay. Dredge depths provided for these areas represent anticipated dredge depths and may be modified in the field.




CROSS-SECTION-G
HOR. SCALE: 1" = 50'
VER. SCALE: 1" = 10'




CROSS-SECTION-F
HOR. SCALE: 1" = 50'
VER. SCALE: 1" = 10'

US Army Corps of Engineers
New England District

| Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr. |
|---|---|---|---|---|---|---|---|

Designed by: Robert Meader
Plotted by: Robert Meader
ITR Review 7/16/04
Submitted by: Joe Lampara /s/ Chief, Civil Engrg Sect
Date: 7/20/04 Rev.
Design file no.
Drawing code: 2570
File name: cocc112.s12
Plot date: 7/20/04
Plot scale: 1" = 50'

U.S. ARMY ENGINEER DISTRICT
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WATER RESOURCES DEVELOPMENT PROJECT
MAINTENANCE DREDGING
COCHECO RIVER
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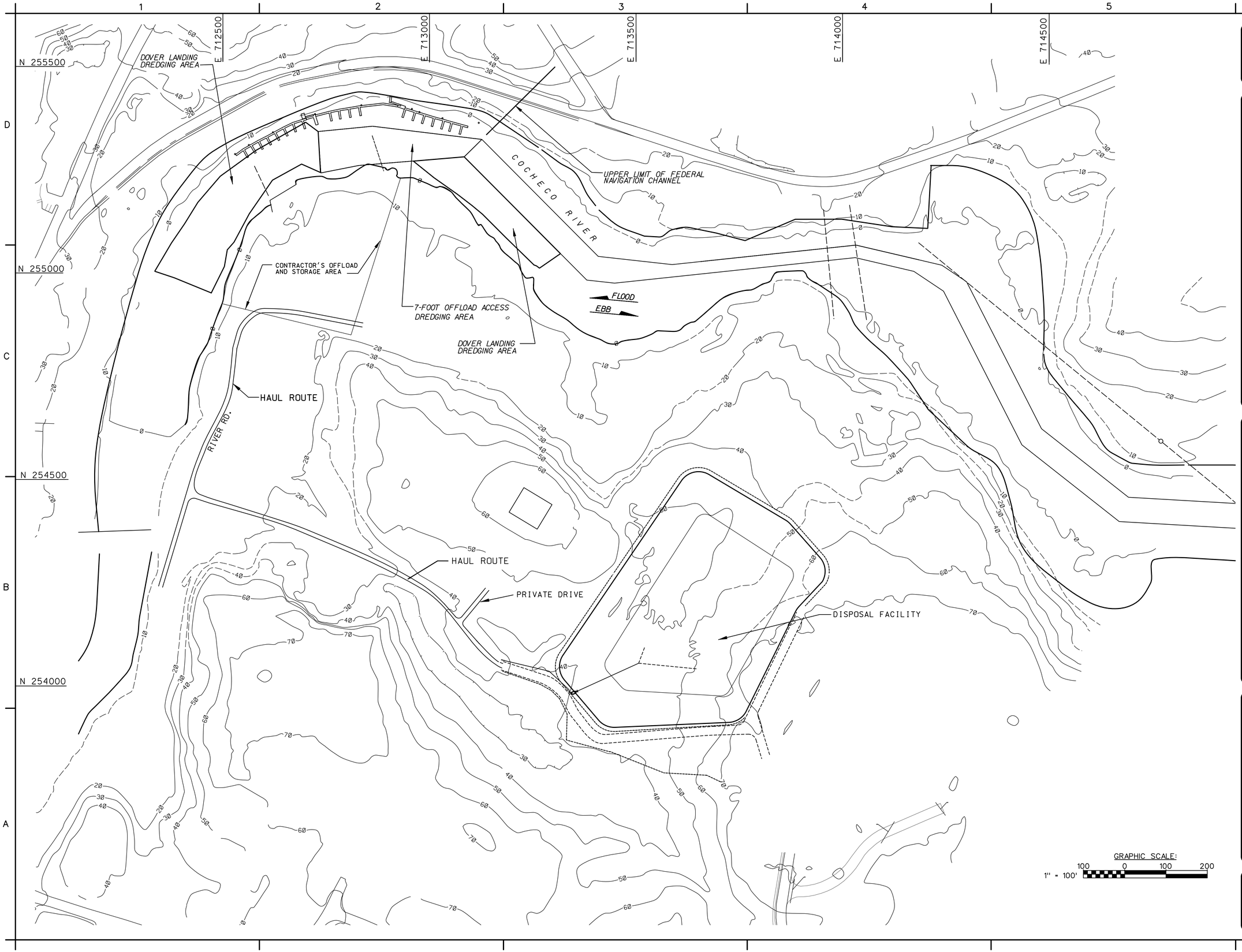
# OFFLOAD, STORAGE AREA, AND DOVER LANDING AREA

Reference number:
C-12
Sheet 13 of 14




US Army Corps of Engineers
New England District

| Symbol | Description | Date | Appr. | Symbol | Description | Date | Appr. |
|---|---|---|---|---|---|---|---|

Designed by: Robert Meader
Plotted by: Robert Meader
ITR Review 7/16/04
Submitted by: Joe Lampara /s/ Chief, Civil Engrg Sect
Date: 7/20/04 Rev.
Design file no. concd13.s13
Drawing code: 2570
File name:
Plot date: 7/20/04
Plot scale: 1" = 100'

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CONCORD, MASSACHUSETTS

WATER RESOURCES DEVELOPMENT PROJECT
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COCHECO RIVER
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**UPLAND DISPOSAL ACCESS**

Reference number:
C-13
Sheet 14 of 14