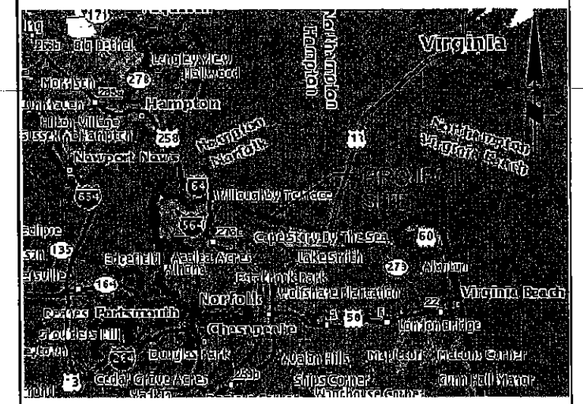
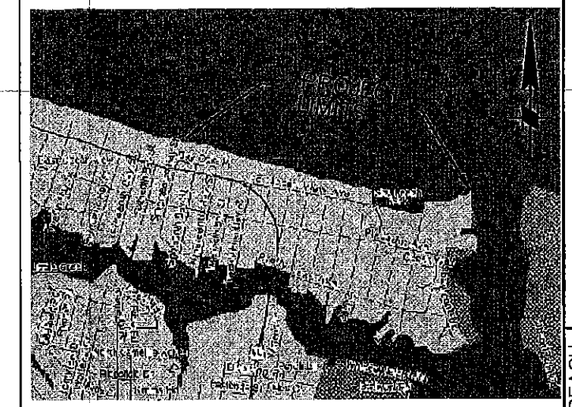
APPENDIX B – Final Construction Plans for Beach Nourishment Project (Submitted September 26, 2003)

Note: Final design template modified from original design shown herein.



VICINITY MAP



LOCATION MAP

City of Norfolk

Department of Public Works

EAST OCEAN VIEW BEACH NOURISHMENT PROJECT

CITY OF NORFOLK, VIRGINIA

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DATE

J.S. KITTERMAN III, P.E.

CITY ENGINEER

TIM POLK

DIRECTOR OF DEPARTMENT OF CITY PLANNING AND CODES ADMINISTRATION

REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH NOURISHMENT PROJECT
NORFOLK, VIRGINIA

COVER SHEET

MOFFATT & NICHOL ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

DSGN	DR	CHK	MC
JM	CS	SUBMITTED BY	TITLE

JOB NO. 5197-04

DATE 9/26/03

SHEET 1 OF 17

T1

GENERAL NOTES:

1. ALL BEACH FILL WORK SHALL CONFORM TO THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS. ALL DREDGING WORK SHALL CONFORM TO THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS AS WELL AS THE REQUIREMENTS CONTAINED WITHIN THE PLANS AND SPECIFICATIONS FOR THE USACOE'S "NEW WORK DREDGING THIMBLE SHOAL CHANNEL" PROJECT.

2. THE CONTRACTOR SHALL PLACE THE PERMIT PLACARDS ON THE JOB SITE AND SHALL COMPLY WITH ALL TERMS OF THE PERMITS PERTAINING TO THE PERFORMANCE OF THE WORK. SEE THE SPECIFICATIONS OF THIS PROJECT AS WELL AS THE USACOE'S "NEW WORK DREDGING THIMBLE SHOAL CHANNEL" PROJECT FOR THE GENERAL REQUIREMENTS OF THIS WORK.

3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY OWNER OF DISCREPANCIES.

4. ALL SAFETY REGULATIONS ARE TO BE STRICTLY FOLLOWED: METHODS OF CONSTRUCTION AND ERECTION OF STRUCTURAL MATERIAL ARE THE CONTRACTORS RESPONSIBILITY.

5. THE CONTRACTOR SHALL, ON A DAILY BASIS, REMOVE FROM THE SITE ANY EXCAVATED MATERIAL OR DEBRIS. DISPOSAL OF THE MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL DEBRIS SHALL BE DISPOSED OF IN A PERMITTED LANDFILL.

6. THESE PLANS ARE INCOMPLETE WITHOUT THE PROJECT TECHNICAL SPECIFICATIONS.

7. THE CONTRACTOR SHALL COORDINATE ACCESS TO THE WORK, STORAGE, AND STAGING AREA LOCATIONS WITH THE OWNER. THE CONTRACTOR SHALL RESTORE THE ACCESS AREAS TO THEIR ORIGINAL CONDITION AFTER WORK IN THE AREA IS COMPLETE. THIS WORK INCLUDES REPLACEMENT OF FENCING, SIGNAGE, AND OTHER MISCELLANEOUS ITEMS.

8. STAGING AREAS SHALL BE AS INDICATED AND FENCED AND MAINTAINED BY THE CONTRACTOR. STAGING AREAS SHALL BE CLEARED OF DEBRIS AND CONTRACTOR INSTALLED AMENITIES AT THE COMPLETION AND ACCEPTANCE OF WORK IN THE AREA.

9. UNLESS OTHERWISE APPROVED BY THE OWNER, EXCESS EQUIPMENT MAY ONLY BE STORED IN APPROVED STORAGE/STAGING AREAS OR TEMPORARY AREAS IN THE IMMEDIATE VICINITY OF THE BEACHFILL PLACEMENT SITE. THE OWNER RESERVES THE RIGHT TO LIMIT SUCH AREAS AS DEEMED NECESSARY. OPERATION OF GRADING AND OTHER CONSTRUCTION EQUIPMENT WILL NOT BE PERMITTED OUTSIDE THE WORK AREA LIMITS EXCEPT FOR INGRESS AND EGRESS OF THE SITE AT APPROVED LOCATIONS. THE STACKING OF DISCHARGE PIPES IN LAYERS EXCEEDING TWO PIPES HIGH SHALL BE PROHIBITED IN ANY OF THE STORAGE OR STAGING AREAS INCLUDING THE TEMPORARY AREAS.

10. ANY EXISTING SIGNS, FENCES, OR OTHER STRUCTURES WITHIN THE WORK LIMITS SHALL BE PROTECTED AND/OR REMOVED AND LATER REPLACED BY THE CONTRACTOR AS DIRECTED.

11. AUTHORIZATION BY WAY OF A RIGHT-OF-ENTRY AGREEMENT WILL BE REQUIRED FROM LANDOWNERS PRIOR TO THE PLACEMENT OF SAND OR GRADING OF ANY SAND DUNES ON PRIVATE PROPERTY.

MATERIALS

1. ALL MATERIALS SHALL BE PRE-APPROVED BY OWNER.

PERMITS

1. IT IS THE INTENT OF THESE PLANS TO BE IN ACCORDANCE WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. ANY DISCREPANCIES BETWEEN THESE PLANS AND APPLICABLE CODES SHALL BE IMMEDIATELY BROUGHT TO THAT ATTENTION OF THE OWNER.

2. IT IS THE INTENT OF THESE PLANS AND THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH THE ENVIRONMENTAL PERMITS ISSUED FOR THIS PROJECT. THE PERMITS ARE HEREBY MADE PART OF THE CONTRACT DOCUMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE AND GOVERN HIMSELF BY ALL PROVISIONS OF THESE PERMITS.

DREDGING

1. NO DREDGING WHATSOEVER SHALL OCCUR BELOW AN ELEVATION OF −58 MLLW.

2. ALL DREDGING SHALL BE PERFORMED WITHIN THE LIMITS OF THE PERMITTED DREDGING AREA AS SHOWN IN THE DRAWINGS.

3. PIPELINE CORRIDOR SHALL BE DELINEATED WITH BUOYS BY THE CONTRACTOR IN THE PRESENCE OF THE OWNER BEFORE PLACEMENT.

4. CONTRACTOR SHALL CONCENTRATE IN PRIMARY BORROW AREAS FIRST BEFORE UTILIZING MATERIALS FROM SECONDARY BORROW AREAS.

5. THE PLANE COORDINATES AND BEARINGS SHOWN FOR THE DREDGING SURVEYS ARE BASED ON THE VIRGINIA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 83 WITH THE 1993 HARN ADJUSTMENT – NAD 83 (93) VIRGINIA SOUTH ZONE.

6. ALL ELEVATIONS SHOWN ON THE DREDGING DRAWINGS ARE REFERENCED TO MEAN LOWER LOW WATER (MLLW) TO MATCH THE USACOE'S PROJECT.

7. THE BATHYMETRY PRESENTED ON THE DREDGING PLANS IS BASED ON A SURVEY COMPLETED ON 8/21/03 BY WEEKS MARINE AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS AT THAT TIME.

BEACH FILL

1. EXISTING BEACH SECTIONS SHOWN HEREIN REFLECT THE CONDITION OF THE BEACH AND OFFSHORE ON THE DATE THEY WERE SURVEYED. CONDITIONS MAY VARY FROM THOSE SHOWN HEREIN.

2. ALL SAND EXCAVATED FROM THE BORROW AREAS SHALL BE TRANSPORTED TO, AND DEPOSITED ON, THE BEACH BETWEEN THE LINES, GRADES, AND CROSS-SECTIONS SHOWN ON THE DRAWINGS.

3. SAND SHALL BE PLACED WITHIN THE LIMITS AND GRADE LINES AS SHOWN IN THE PLANS AS PRACTICALLY POSSIBLE. TOLERANCE SHALL BE WITHIN 0.5 FOOT FOR BERM AND DUNE HEIGHTS AND WIDTHS. ANY MATERIAL PLACED ABOVE THE PRESCRIBED TEMPLATE WILL NOT BE INCLUDED IN THE PAY QUANTITIES.

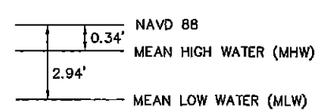
4. CONTRACTOR SHALL TAKE CARE TO GRADE THE BERM AND DUNE SO THAT PONDING LANDWARD OF THE CRESTS IS NOT A PROBLEM.

5. THE PLANE COORDINATES AND BEARINGS SHOWN FOR THE BEACH FILL SURVEYS ARE BASED ON THE VIRGINIA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 83 WITH THE 1993 HARN ADJUSTMENT – NAD 83 (93) VIRGINIA SOUTH ZONE.

6. ALL ELEVATIONS SHOWN ON THE BEACH FILL DRAWINGS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD 88).

7. THE BATHYMETRY/TOPOGRAPHY PRESENTED ON THE BEACH FILL PLANS AND SECTIONS IS BASED ON A SURVEY COMPLETED IN JUNE 2003 BY WATERWAY SURVEYS AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS AT THAT TIME.

8. THE MEAN HIGH WATER ELEVATION AND MEAN LOW WATER ELEVATION SHOWN ON THE BEACH FILL DRAWINGS AND BELOW WERE PROVIDED BY THE CITY OF NORFOLK.



9. HORIZONTAL AND VERTICAL CONTROL FOR THE BEACH FILL SURVEY WAS BASED ON RANGE MONUMENTS AS FOUND BY WATERWAY SURVEYS AND ARE SHOWN ON SHEET C7.

10. CONTOURS FOR THE BEACH FILL PLANS ARE SHOWN AT 1 FT INTERVALS.

11. PRE- AND POST-CONSTRUCTION SURVEYS OF THE BEACH AREA SHALL BE MADE. TRANSECTS SHALL BE AT 100-FOOT INTERVALS. ADDITIONAL ELEVATIONS SHALL BE TAKEN AS NECESSARY TO ACCURATELY REPRESENT TOPOGRAPHY OF THE BEACH AREA.

12. BEACH FILL SLOPES CALLED OUT ON PLANS ARE VERTICAL : HORIZONTAL.

BID QUANTITIES

1. THE FOLLOWING ESTIMATES OF SAND QUANTITIES REQUIRED FOR THE PROJECT ARE:

TOTAL PROJECT FILL	355,000 CY
BERM FILL	290,000 CY
DUNE FILL	65,000 CY

2. WHERE THE QUANTITY OF SAND VARIES LESS THAN 20% ABOVE OR BELOW STATED ESTIMATED QUANTITY REQUIRED, AN EQUITABLE ADJUSTMENT IN CONTRACT PRICE WILL BE MADE. EQUITABLE ADJUSTMENT WILL BE BASED UPON ANY INCREASE OR DECREASE IN COSTS DUE SOLELY BY VARIATIONS BETWEEN 80% AND 120% OF ESTIMATED QUANTITY, USING THE BID UNIT PRICE FOR ADJUSTMENTS.

3. WHERE THE QUANTITY OF SAND VARIES MORE THAN 20% ABOVE OR BELOW STATED ESTIMATED QUANTITY, AN EQUITABLE ADJUSTMENT IN CONTRACT PRICE WILL BE MADE BASED ON NEW NEGOTIATED UNIT PRICES.

ABBREVIATIONS

ACI = AMERICAN CONCRETE INSTITUTE
AISC = AMERICAN INSTITUTE OF STEEL CONSTRUCTION
APPROX = APPROXIMATE
ASTM = AMERICAN SOCIETY FOR TESTING MATERIALS
AWG = AMERICAN WIRE GAUGE
AWPA = AMERICAN WOOD PRESERVERS ASSOCIATION
AWS = AMERICAN WELDING SOCIETY
BC = BARE CONDUCTOR
BLDG = BUILDING
BOTT = BOTTOM
BRKR = BREAKER
CJ = CONSTRUCTION JOINT
CB = CATCH BASIN
CCA = CHROMATED COPPER ARSENATE
CF = CUBIC FEET
CHK = CHECKERED
CI = CAST IRON
CLR = CLEAR
CM = CORRUGATED METAL
CMP = CORRUGATED METAL PIPE
CONC = CONCRETE
COND = CONDUIT
CONST = CONSTRUCTION
CONT = CONTINUOUS
CORR = CORRUGATED
CRT = CIRCUIT
CTS = CENTERS
CY = CUBIC YARDS
DBL = DOUBLE
DET = DETAIL
DIA = DIAMETER
DI = DUCTILE IRON
DIP = DUCTILE IRON PIPE
DISCONT = DISCONTINUOUS
E = EAST
EA = EACH
EC = ELECTRICAL CONTRACTOR
EL = ELEVATION
ELEV = ELEVATION
EQ = EQUAL
ERCP = ELLIPTICAL REINFORCED CONCRETE PIPE
EW = EACH WAY
EXIST = EXISTING
EXP = EXPANSION
FFE = FINISHED FLOOR ELEVATION
FT = FEET
GALV = GALVANIZED
GPM = GALLON PER MINUTE
GRND = GROUND
HORIZ = HORIZONTAL
IN = INCHES
INFO = INFORMATION
INV = INVERT ELEVATION
JB = JUNCTION BOX
JT = JOINT
L = ANGLE
LB = POUND
LF = LINEAR FEET
LG = LONG
LT = LEFT
MAX = MAXIMUM
BM = MENCH MARK
CP = CONTROL POINT
MH = MANHOLE
MHW = MEAN HIGH WATER
MIN = MINIMUM
MISC = MISCELLANEOUS
MLW = MEAN LOW WATER
MSL = MEAN SEA LEVEL
MTD = MOUNTED
MTG = MOUNTING
N = NORTH
NTS = NOT TO SCALE
NEC = NATIONAL ELECTRICAL CODE
NEMA = NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NO. = NUMBER
O.C. = ON CENTER
OUTBD = OUTBOARD
P/S = PRESTRESSED
PERF = PERFORATED
PL = PLATE
PLATF = PLATFORM
PP = POWER POLE
PRV = POWER ROOF VENTILATION
PSI = POUND PER SQUARE INCH
PSF = POUNDS PER SQUARE FOOT
PVC = POLYVINYL CHLORIDE
QTY = QUANTITY
RCP = REINFORCED CONCRETE PIPE
R/C = REINFORCED CONCRETE
REQ'D = REQUIRED
RT = RIGHT
S = SOUTH
S4S = SURFACED FOUR SIDES
SCH = SCHEDULE
SF = SQUARE FOOT
SHT = SHEET
SPA = SPACES
SPIB = SOUTHERN PINE INSPECTION BUREAU
SQ = SQUARE
STA = STATION
STD = STANDARD
T = TON
T/C = TOP OF CONCRETE
T.O.S. = TOP OF STEEL
TBR = TO BE REMOVED
TELE = TELEPHONE
TYP = TYPCIAL
U/G = UNDERGROUND
UON = UNLESS OTHERWISE NOTED
V = VOLT
VERT = VERTICAL
W = WEST
W/ = WITH
WWF = WELDED WIRE FABRIC
" = SECONDS OR INCH
' = MINUTES OR FEET
* = ASTERISK
□ = SQUARE
= NUMBER OR POUNDS
& = AND
@ = AT
℄ = CENTERLINE
Ø = DIAMETER OR PHASE
o = DEGREES
PL = PLATE
MLLW = MEAN LOWER LOW WATER
NOS = NATIONAL OCEAN SERVICE

REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA

GENERAL NOTES & ABBREVIATIONS

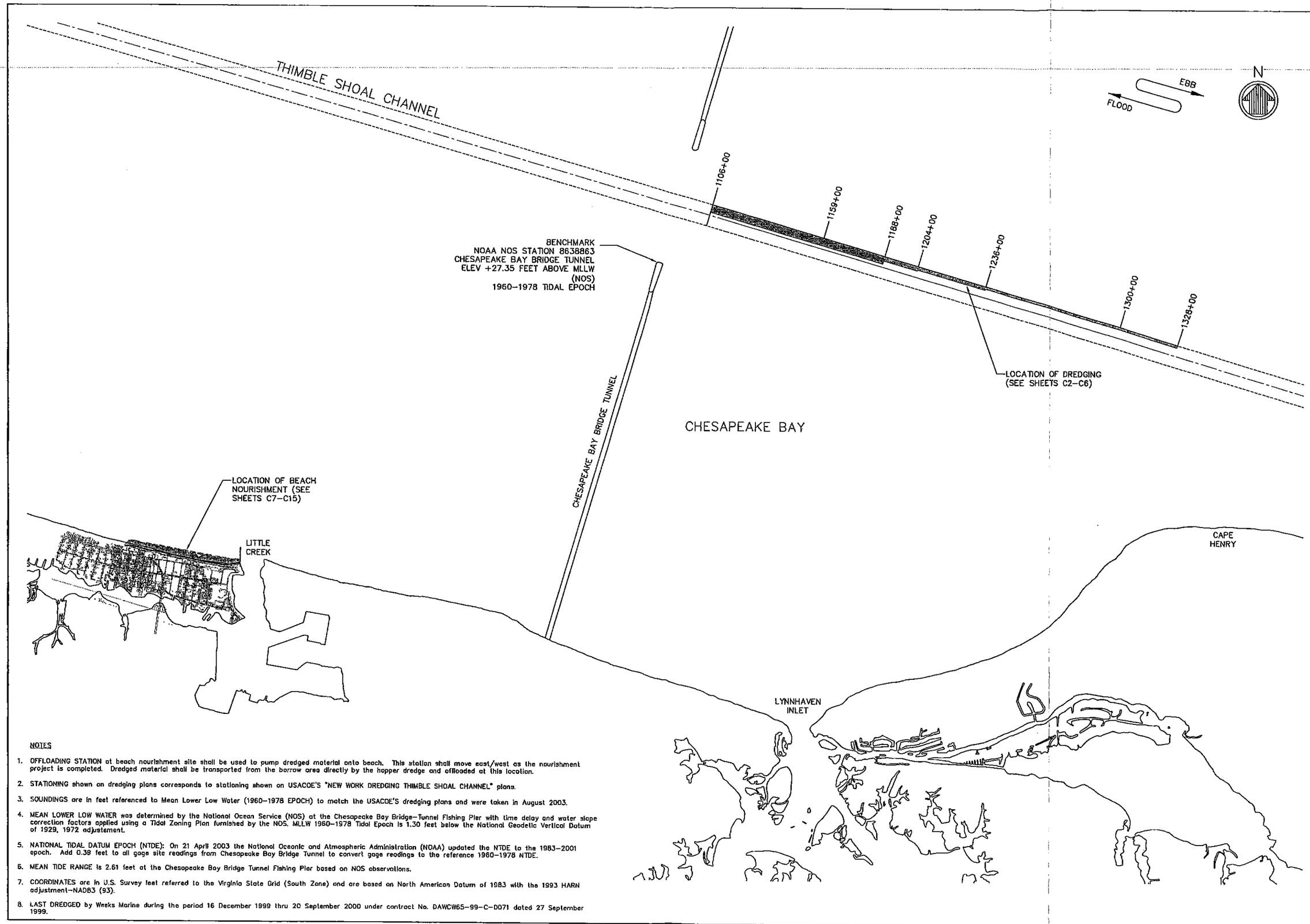
MOFFATT & NICHOL ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

DSGN JM | DR CS | CHK MC | SUBMITTED BY | TITLE
JOB NO. 5197-04

DATE 9/26/03

SHEET 2 OF 17

T2



NOTES

1. OFFLOADING STATION at beach nourishment site shall be used to pump dredged material onto beach. This station shall move east/west as the nourishment project is completed. Dredged material shall be transported from the borrow area directly by the hopper dredge and offloaded at this location.
2. STATIONING shown on dredging plans corresponds to stationing shown on USACOE'S "NEW WORK DREDGING THIMBLE SHOAL CHANNEL" plans.
3. SOUNDINGS are in feet referenced to Mean Lower Low Water (1960–1978 EPOCH) to match the USACOE'S dredging plans and were taken in August 2003.
4. MEAN LOWER LOW WATER was determined by the National Ocean Service (NOS) at the Chesapeake Bay Bridge–Tunnel Fishing Pier with time delay and water slope correction factors applied using a Tidal Zoning Plan furnished by the NOS. MLLW 1960–1978 Tidal Epoch is 1.30 feet below the National Geodetic Vertical Datum of 1929, 1972 adjustement.
5. NATIONAL TIDAL DATUM EPOCH (NTDE): On 21 April 2003 the National Oceanic and Atmospheric Administration (NOAA) updated the NTDE to the 1983–2001 epoch. Add 0.39 feet to all gage site readings from Chesapeake Bay Bridge Tunnel to convert gage readings to the reference 1960–1978 NTDE.
6. MEAN TIDE RANGE is 2.61 feet at the Chesapeake Bay Bridge Tunnel Fishing Pier based on NOS observations.
7. COORDINATES are in U.S. Survey feet referred to the Virginia State Grid (South Zone) and are based on North American Datum of 1983 with the 1993 HARN adjustment–NAD83 (93).
8. LAST DREDGED by Weeks Marine during the period 16 December 1999 thru 20 September 2000 under contract No. DAWCW65–99–C–0071 dated 27 September 1999.

REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA

OVERALL KEY PLAN

MOFFATT & NICHOL
ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

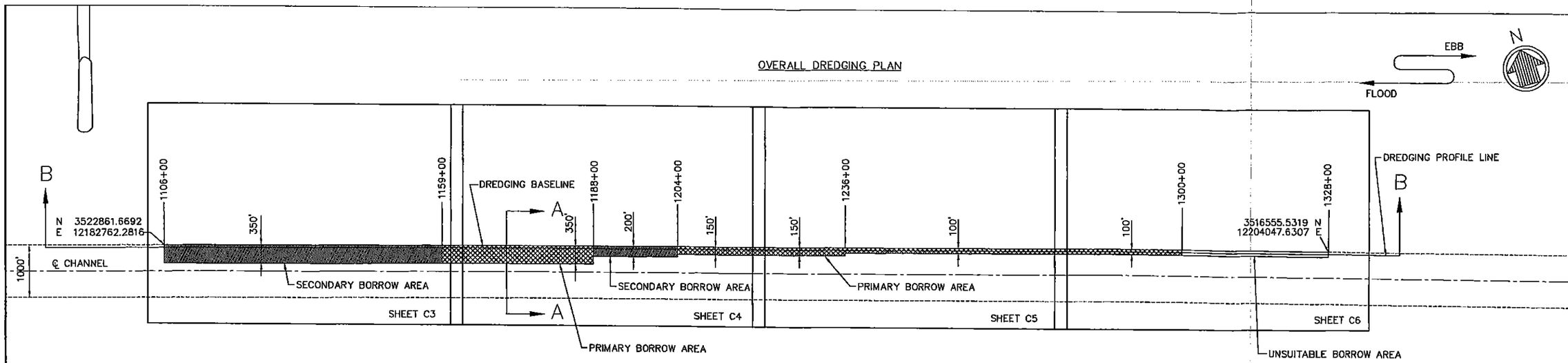
DSGN	DR	CHK
JM	CS	MC
JOB NO. 5197-04	SUBMITTED BY	TITLE

DATE 9/26/03

SHEET 3 OF 17

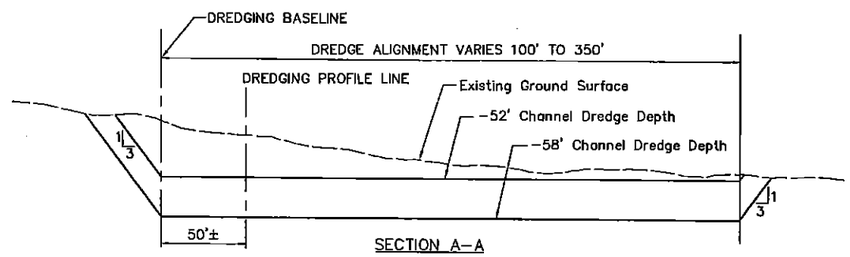
C1

OVERALL DREDGING PLAN



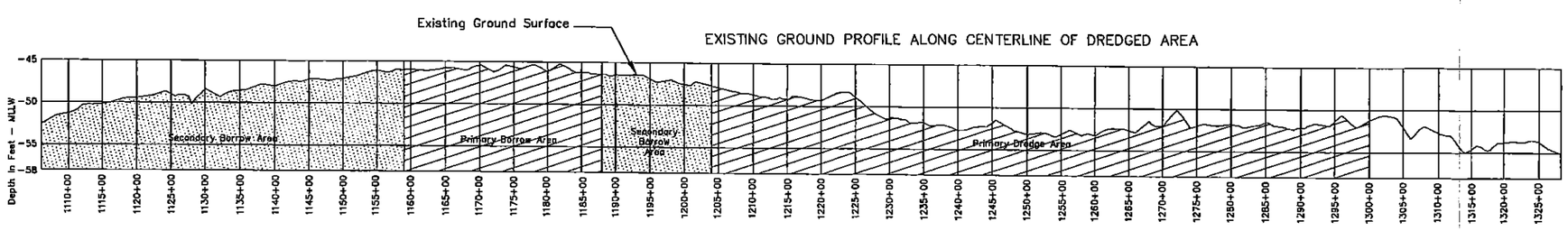
CHESAPEAKE BAY BRIDGE TUNNEL

TYPICAL CROSS SECTION IN PRIMARY BORROW AREAS



SECTION A–A

EXISTING GROUND PROFILE ALONG CENTERLINE OF DREDGED AREA



SECTION B–B

NOTES

1. STATIONING shown on dredging plans corresponds to stationing shown on USACOE's dredging plans.
2. SOUNDINGS are in feet referenced to Mean Lower Low Water to match USACOE's dredging plans and were taken in August 2003.
3. PROPOSED DREDGE ELEVATIONS will range from –52 ft to –58 ft MLLW depending on material encountered.
4. CONTRACTOR shall concentrate in primary borrow areas first before utilizing material from secondary borrow areas.

REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA

DREDGING KEY PLAN

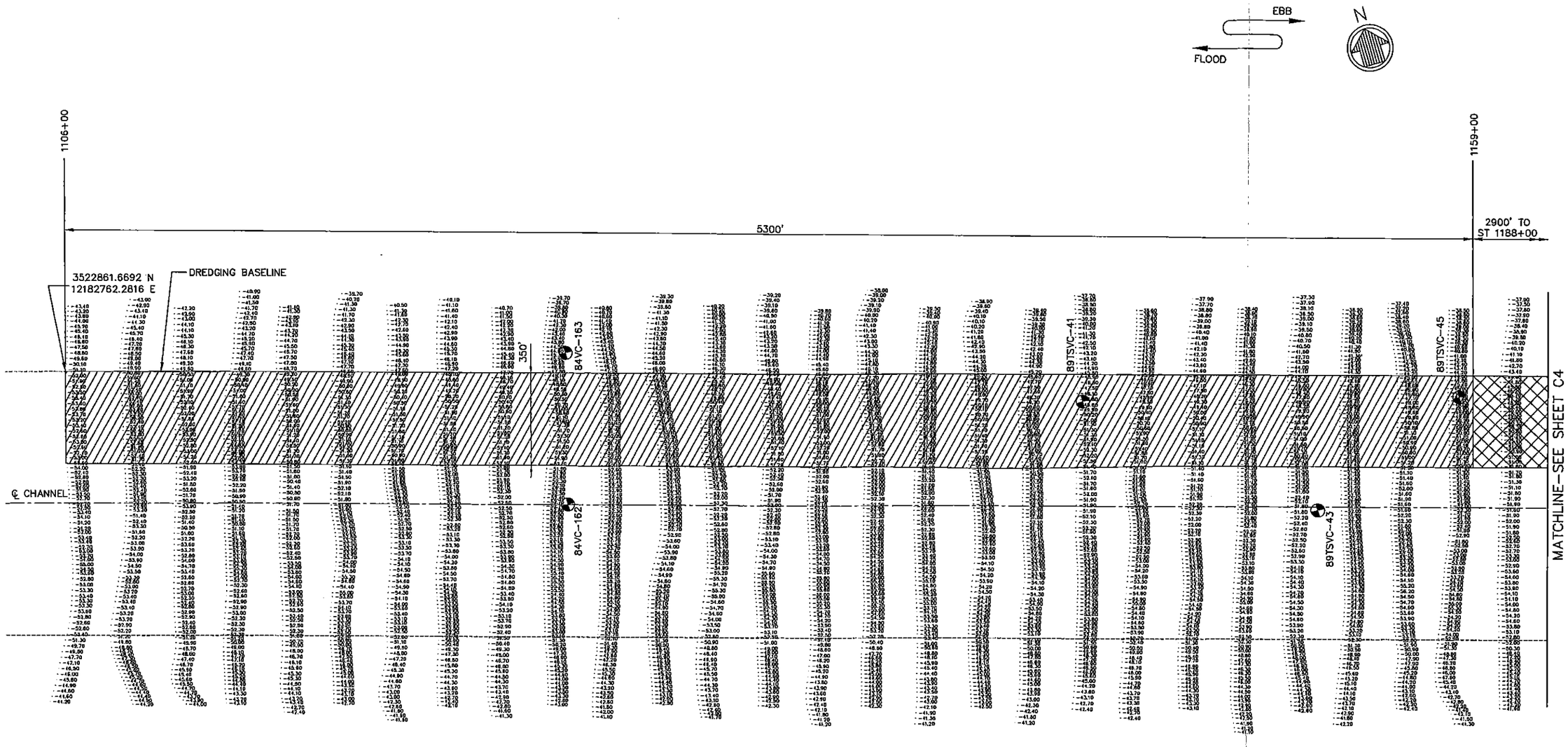
MOFFATT & NICHOL
ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

DSGN	DR	CHK	
JM	CS	MC	
JOB NO. 5197-04	SUBMITTED BY	TITLE	

DATE 9/26/03

SHEET 4 OF 17

C2



LEGEND

- Channel Boundaries
- Primary Borrow Areas
- Secondary Borrow Areas
- Boring Locations

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5. BORING DATA can be found in specifications for USACOE's "NEW WORK DREDGING THIMBLE SHOAL CHANNEL" project.

200' 0' 200' 400'

SCALE: 1"=200'

REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA

DETAILED
DREDGING PLAN
SHEET 1 OF 4

MOFFATT & NICHOL
ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

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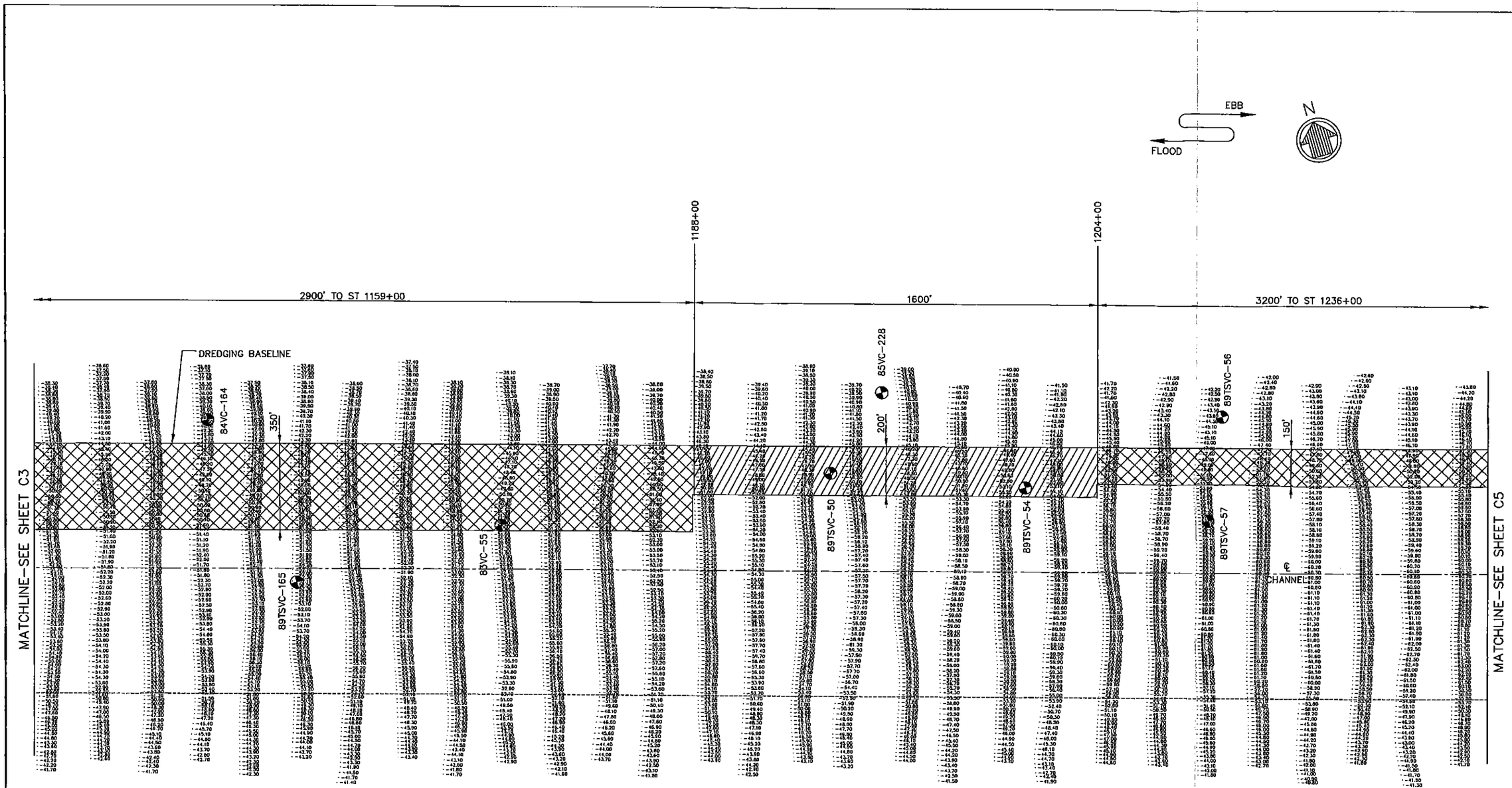
SHEET 5 OF 17

C3



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REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA

DETAILED
DREDGING PLAN
SHEET 2 OF 4

MOFFATT & NICHOL
ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

DSGN	JM	DR	CS	CHK	MC
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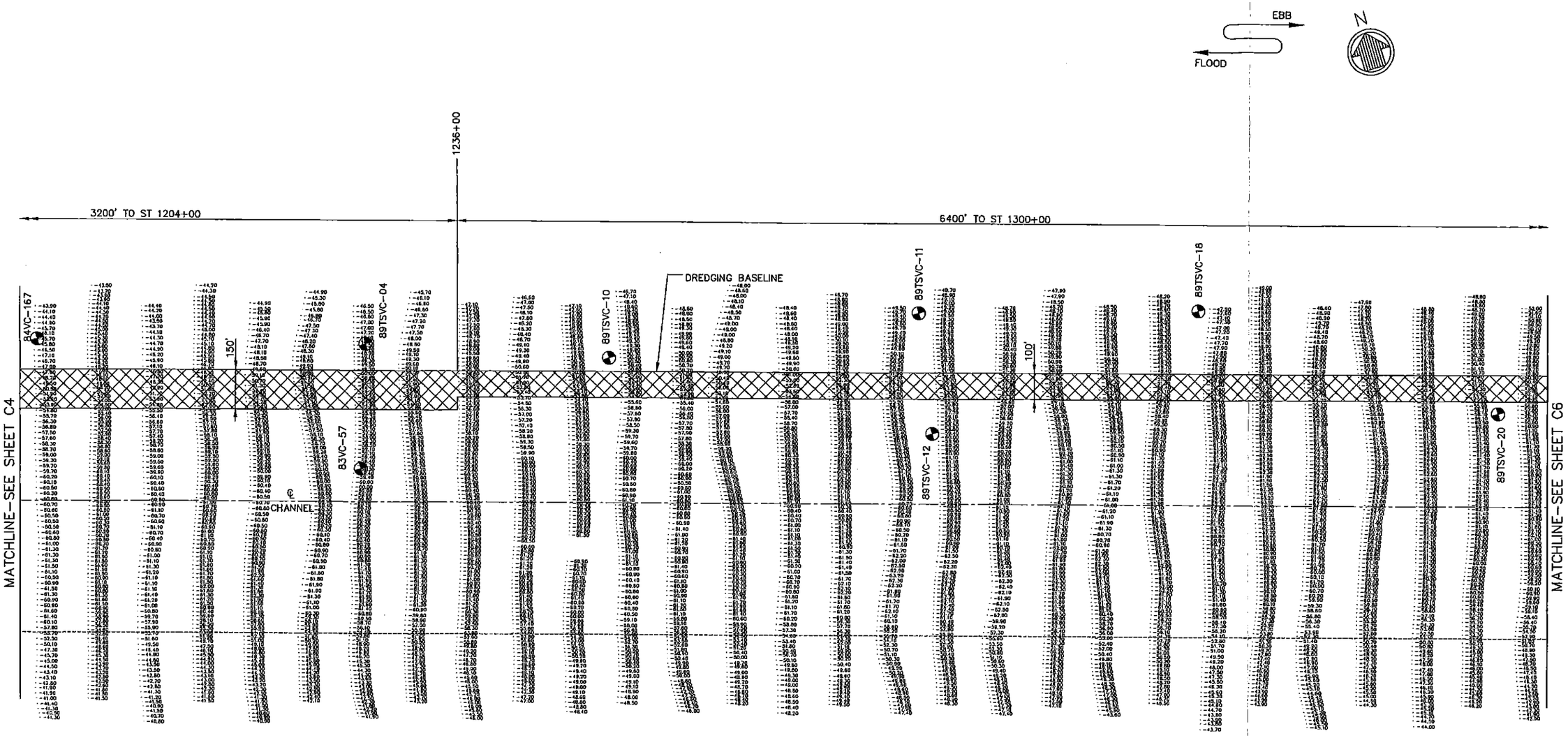
SHEET 6 OF 17

C4



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SCALE: 1"=200'

REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA

DETAILED DREDGING PLAN
SHEET 3 OF 4

MOFFATT & NICHOL
ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

DSGN JM | DR CS | CHK MC | TITLE
JOB NO. 5197-04 | SUBMITTED BY

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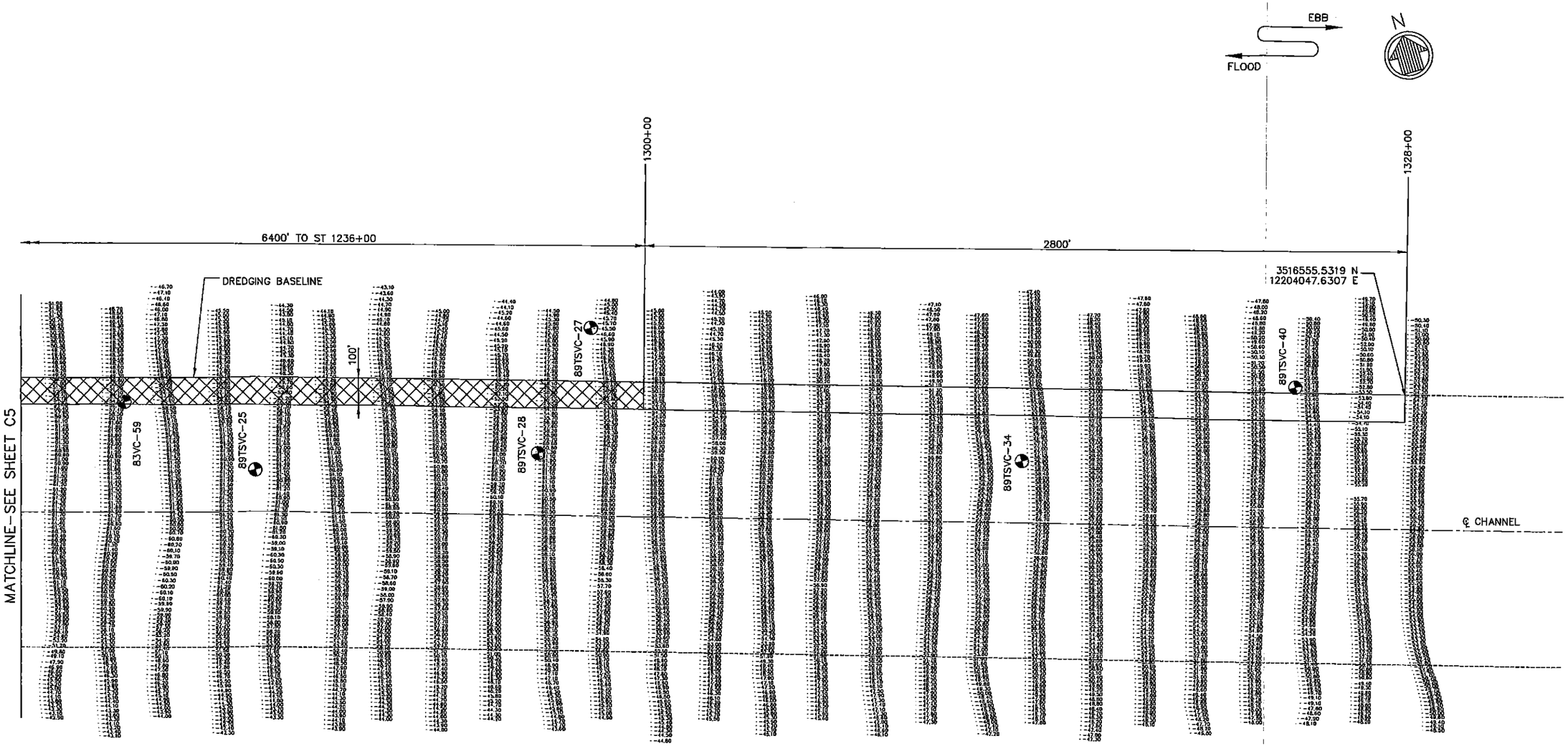
SHEET 7 OF 17

C5



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SCALE: 1"=200'

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EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA

DETAILED
DREDGING PLAN
SHEET 4 OF 4

MOFFATT & NICHOL
ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

DSGN	DR	CHK
JM	CS	MC
JOB NO. 5187-04	SUBMITTED BY	TITLE

DATE 9/26/03

SHEET 8 OF 17

C6

CONSTRUCTION BASE LINE COORDINATE DATA		
CP	NORTHING	EASTING
1	3507071.3534	12156008.9748
2	3507096.3045	12156260.2728
3	3507000.9620	12156701.0314
4	3506885.6052	12157077.4263
5	3506823.0160	12157577.0349
6	3506724.2501	12157973.0555
7	3506390.7694	12159543.2313
8	3506369.4572	12159609.1328
9	3506343.6746	12159727.8972
10	3506224.5097	12160514.1565
11	3506303.3276	12161209.6477

MONUMENT COORDINATE AND ELEVATION DATA			
BM	NORTHING	EASTING	ELEVATION (NAVD 88)
1	3505852.5560	12154126.5181	2.51
2	3506776.2718	12155154.2286	5.66
3	3506644.5960	12157649.5070	15.26
4	3505626.8690	12160410.3080	12.71

REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA

BEACH NOURISHMENT
KEY PLAN

MOFFATT & NICHOL
ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

DSGN JM | DR CS | CHK MC | SUBMITTED BY | TITLE

JOB NO. 5197-04

DATE 9/26/03

SHEET 9 OF 17

C7

EBB
FLOOD
CHESAPEAKE BAY
ELEVATIONS AND CONTOURS IN FEET REFERENCED TO NAVD 88
N
CONSTRUCTION MLW
CONSTRUCTION MHW
CONSTRUCTION TOE OF FILL (APPROXIMATE)
EXISTING BREAKWATER
SLOPE 1:25
SLOPE 1:15
SLOPE 1:20
SLOPE 1:4
CONSTRUCTION SLOPE BREAK (+10.0)
CONSTRUCTION TOE OF BERM (+5.0)
CONSTRUCTION TOE OF DUNE (+5.0)
CONSTRUCTION TOE OF DUNE (+8.0)
TOE OF SPECIAL FILL (+8.0)
EXISTING MHW
EXISTING MLW
CP#1
CP#2
CP#3
CP#4
CP#5
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00
CITY OF NORFOLK PROPERTY
CITY OF NORFOLK PROPERTY LINE
CONSTRUCTION BASELINE
PRIVATE PROPERTY
LANDWARD LIMIT OF FILL
APPROXIMATE LOCATION OF POST-HURRICANE ISABEL DUNE TOE
APPROXIMATE LIMITS OF EXISTING RIP RAP/CONCRETE PROTECTION TO REMAIN. FILL OVER AT LEAST 1' OR AS SHOWN ON SECTIONS (WHICHEVER IS GREATER), TYP.
BAYOAKS PLACE
18TH BAY STREET
19TH BAY STREET
20TH BAY STREET
22ND BAY STREET
KEGAN DRIVE
EXISTING DAMAGED WALKWAY TO REMAIN FILL COMPLETELY UNDERNEATH AND AROUND STRUCTURE
MR. JOHN R. KOIS PROPERTY
CONTRACTOR SHALL STAY 10' OFF PROPERTY LINE AND SHALL PLACE SAND ON A 1:4 SLOPE TO MATCH NATURAL GROUND. COORDINATES FOR PROPERTY BOUNDARY ARE:

PT	N	E
#1	3506862.10	12156857.26
#2	3506850.88	12156931.32
#3	3506592.74	12156812.27
#4	3506580.38	12156886.25

CONTRACTOR SHALL INSTALL HIGH VISIBILITY CONSTRUCTION FENCING LOCATED 5' OFF OF PROPERTY LINE
PROPOSED CONTRACTOR STAGING AREA
PROPOSED CONTRACTOR ACCESS
BM#3
N=3506644.5960
E=12157649.5070
ELEV=15.26 (NAVD 88)
E. OCEAN VIEW AVENUE
PRIVATE PROPERTY
60' 0' 60' 120'
SCALE: 1"=60'
MATCHLINE-SEE SHEET C9

REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA
BEACH NOURISHMENT PLAN
SHEET 1 OF 3

MOFFATT & NICHOL
ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

DSGN JM | DR CS | CHK MC | SUBMITTED BY | TITLE
JOB NO. 5197-04

DATE 9/26/03

SHEET 10 OF 17

C8

MATCHLINE-SEE SHEET C8

CHESAPEAKE BAY

EBB

FLOOD

N

ELEVATIONS AND CONTOURS IN FEET REFERENCED TO NAVD 88

CONSTRUCTION MLW

CONSTRUCTION MHW

EXISTING BREAKWATER, TYP

CONSTRUCTION TOE OF FILL (APPROXIMATE)

EXISTING 24"ø RCP TO REMAIN, CONSTRUCTION TOE OF FILL SHALL BEGIN NO CLOSER THAN 15' LANDWARD FROM OUTLET. CITY SHALL MAINTAIN / INSPECT END OF PIPE ON A ROUTINE BASIS AND AFTER STORM EVENTS TO ENSURE PROPER OPERATION

EXISTING MHW

CP #6

CONSTRUCTION BASELINE

EXISTING MLW

CONSTRUCTION SLOPE BREAK (+0.0)

CONSTRUCTION TOE OF BERM (+5.0)

CONSTRUCTION TOE OF DUNE (+3.0)

CONSTRUCTION CREST OF DUNE (+8.0)

INV=6.6'

EXISTING 24" CI

APPROXIMATE LOCATION OF POST-HURRICANE ISABEL DUNE TOE

CITY OF NORFOLK PROPERTY

LAND WARD LIMIT OF FILL

CITY OF NORFOLK PROPERTY LINE

E. OCEAN VIEW AVENUE

APPROXIMATE LIMITS OF EXISTING RIP RAP/CONCRETE PROTECTION TO REMAIN. FILL OVER AT LEAST 1' OR AS SHOWN ON SECTIONS (WHICHEVER IS GREATER), TYP

LIMIT OF DUNE (+8.0)

LIMIT OF DUNE (+10.0)

TOE OF SPECIAL FILL (+10.0)

TOP OF PIPE = +4.77'

CITY OF NORFOLK PROPERTY

CITY OF NORFOLK PROPERTY LINE

PRIVATE PROPERTY

23RD BAY STREET

24TH BAY STREET

25TH BAY STREET

26TH BAY STREET

60' 0' 60' 120'

SCALE: 1"=60'

MATCHLINE-SEE SHEET C10

REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH NOURISHMENT PROJECT
NORFOLK, VIRGINIA

BEACH NOURISHMENT PLAN
SHEET 2 OF 3

MOFFATT & NICHOL ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

DSGN	DR	CHK	TITLE
JM	CS	MC	
JOB NO. 5197-04	SUBMITTED BY		

DATE 9/26/03

SHEET 11 OF 17

C9

MATCHLINE–SEE SHEET C9

CHESAPEAKE BAY

EBB

FLOOD

N

ELEVATIONS AND CONTOURS IN FEET REFERENCED TO NAVD 88

EXISTING BREAKWATER

EXISTING BREAKWATER

CONSTRUCTION TOE OF FILL (APPROXIMATE)

CONSTRUCTION MHW

CONSTRUCTION MLW

EXISTING STONE JETTY

SLOPE 1:20

SLOPE 1:11

CONSTRUCTION SLOPE BREAK (+0.0)

CONSTRUCTION TOE OF BERM (+5.0)

CP #7

CP #8

CP #9

CP #10

CP #11

EXISTING MHW

EXISTING MLW

CONSTRUCTION BASELINE

CONSTRUCTION TOE OF DUNE (+5.0)

CONSTRUCTION TOP OF DUNE (+10.0)

TOE OF SPECIAL FILL SLOPE (+10.0)

TOE OF SPECIAL FILL (+10.0)

LAND WARD LIMIT OF FILL

APPROXIMATE LOCATION OF POST-HURRICANE ISABEL DUNE TOE

PROPOSED CONTRACTOR ACCESS

PROPOSED CONTRACTOR STAGING AREA

APPROXIMATE LIMITS OF EXISTING RIP RAP/CONCRETE PROTECTION TO REMAIN. FILL OVER AT LEAST 1' OR AS SHOWN ON SECTIONS (WHICHEVER IS GREATER), TYP

CITY OF NORFOLK PROPERTY

CITY OF NORFOLK PROPERTY LINE

PRIVATE PROPERTY

LAND WARD LIMIT OF FILL

APPROXIMATE LIMITS OF EXISTING RIP RAP/CONCRETE PROTECTION TO REMAIN. FILL OVER AT LEAST 1' OR AS SHOWN ON SECTIONS (WHICHEVER IS GREATER), TYP

CITY OF NORFOLK PROPERTY

28TH BAY STREET

CITY OF NORFOLK PROPERTY LINE

PRIVATE PROPERTY

60' 0' 60' 120'

SCALE: 1"=60'

REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA
BEACH
NOURISHMENT PLAN
SHEET 3 OF 3

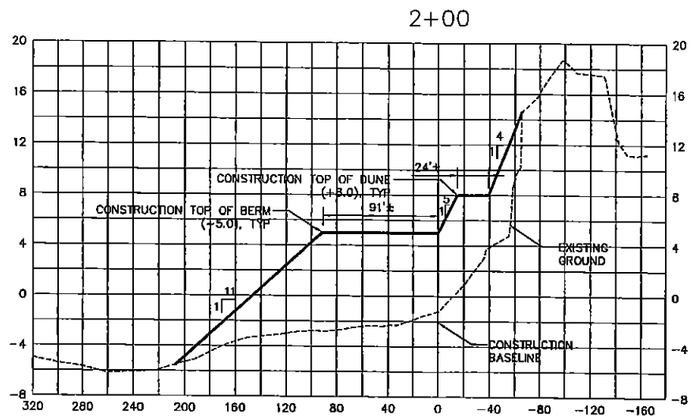
MOFFATT & NICHOL
ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

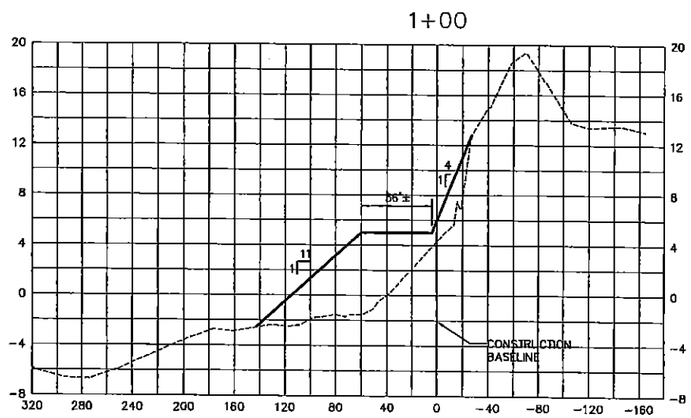
DSGN	DR	CHK	TITLE
JM	CS	MC	
JOB NO. 5197-04	SUBMITTED BY		

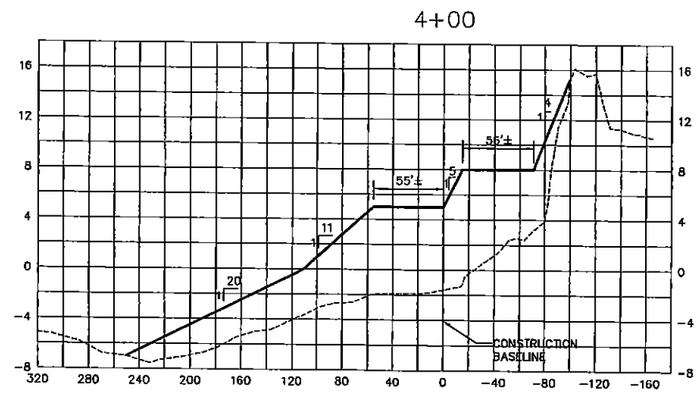
DATE 9/26/03

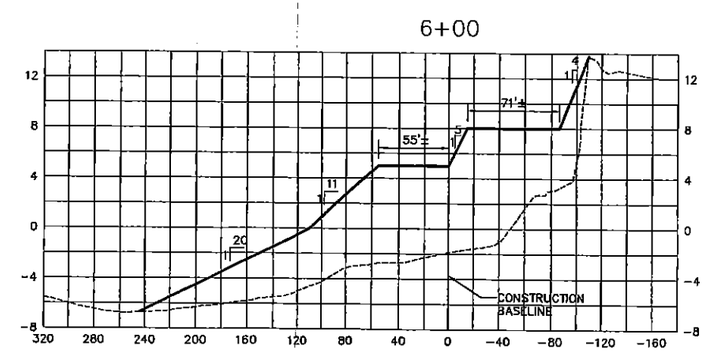
SHEET 12 OF 17

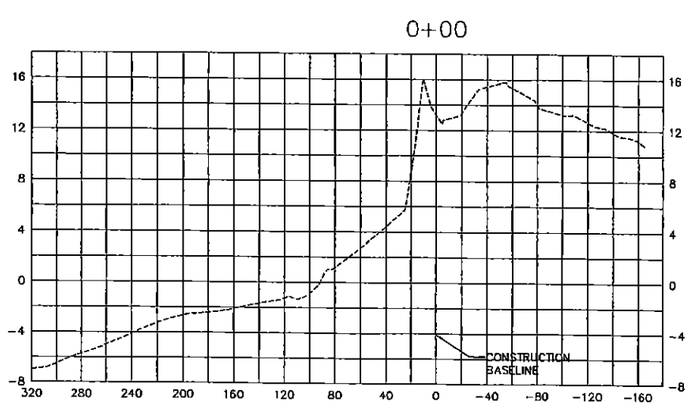
C10

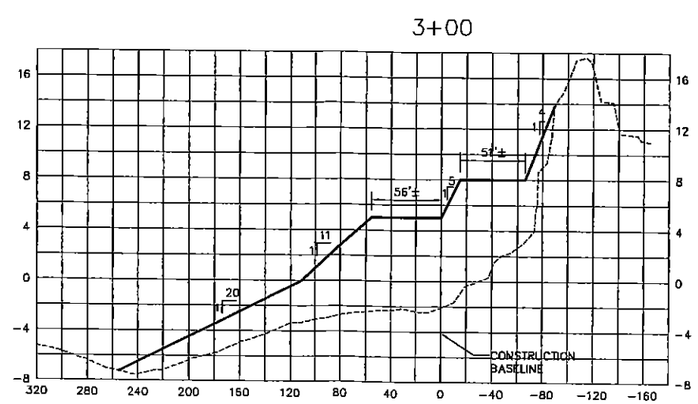


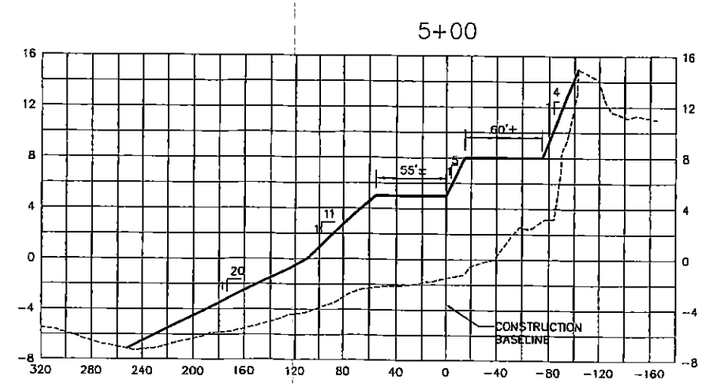


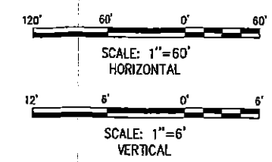












REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA

BEACH NOURISHMENT CROSS SECTIONS SHEET 1 OF 5

MOFFATT & NICHOL ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-625-8222

DSGN	DR	CS	CHK	MC
JM		SUBMITTED BY		TITLE
JOB NO. 5197-04				

DATE 9/26/03

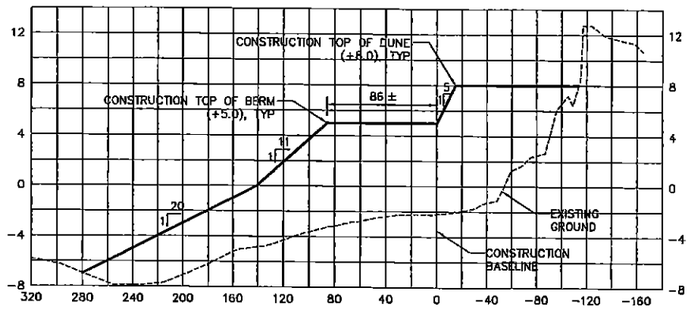
SHEET 13 OF 17

C11

SCALE: 1"=60'
HORIZONTAL

SCALE: 1"=6'
VERTICAL

10+00



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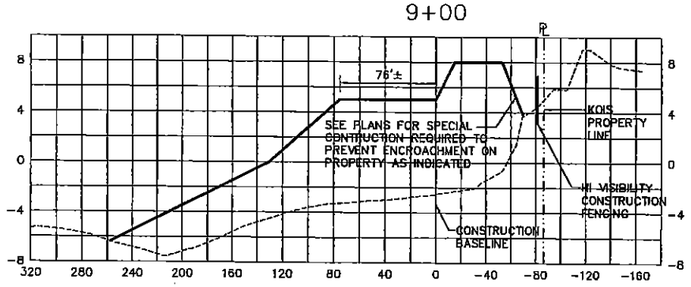

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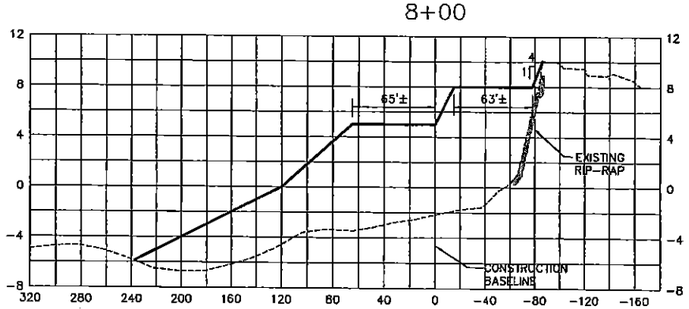

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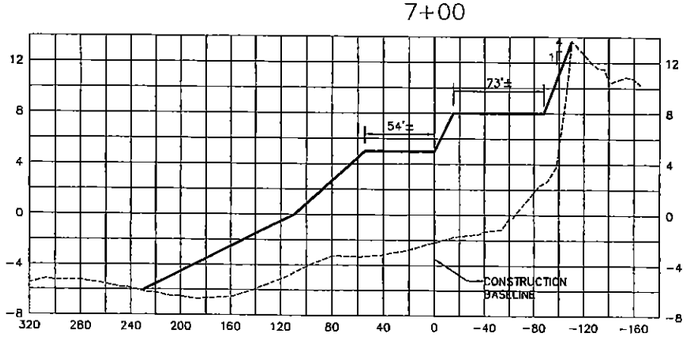

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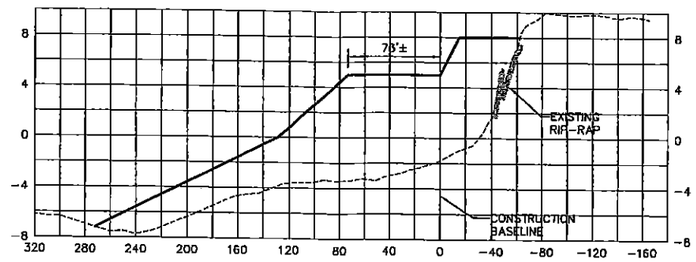

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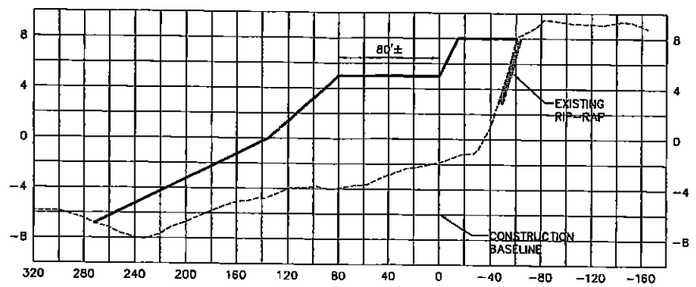

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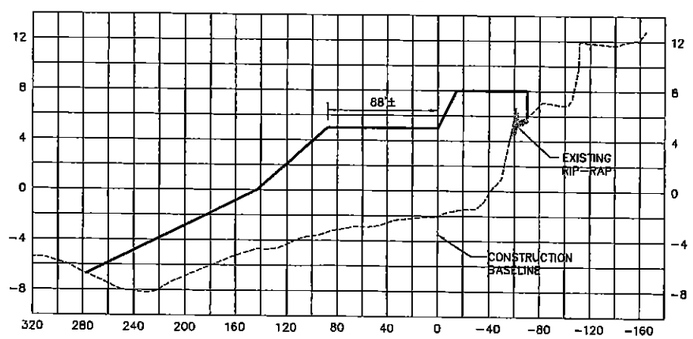

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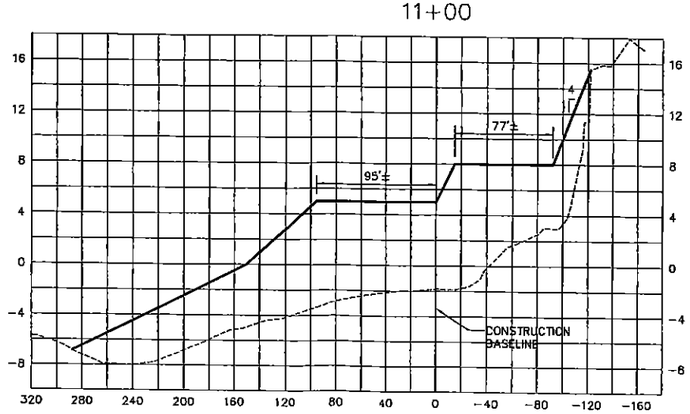

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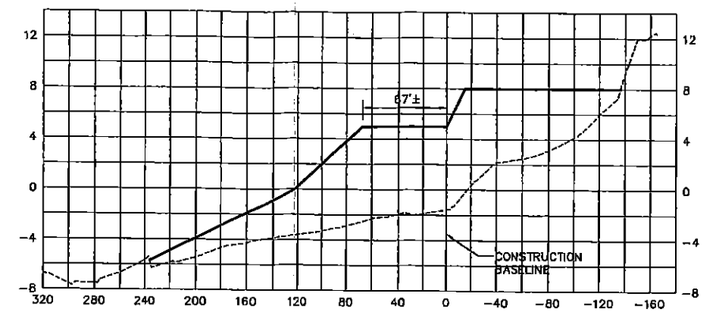

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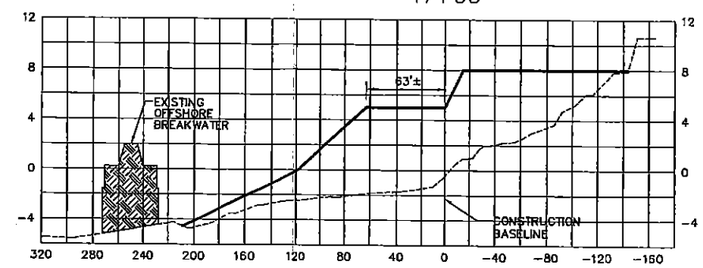

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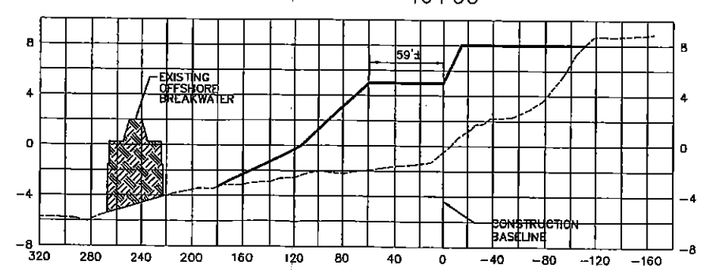

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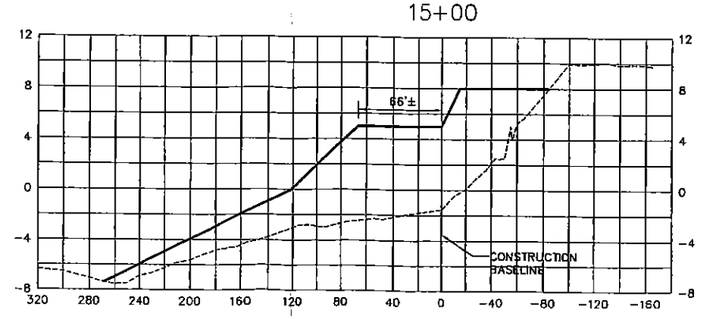

REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA

BEACH NOURISHMENT
CROSS SECTIONS
SHEET 2 OF 5

MOFFATT & NICHOL
ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

DSGN	DR	CHK
JM	CS	MC

SUBMITTED BY

TITLE

JOB NO. 5197-04

DATE 9/26/03

SHEET 14 OF 17

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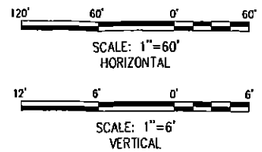

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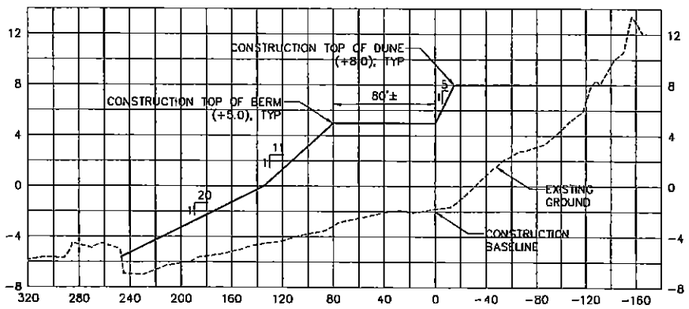

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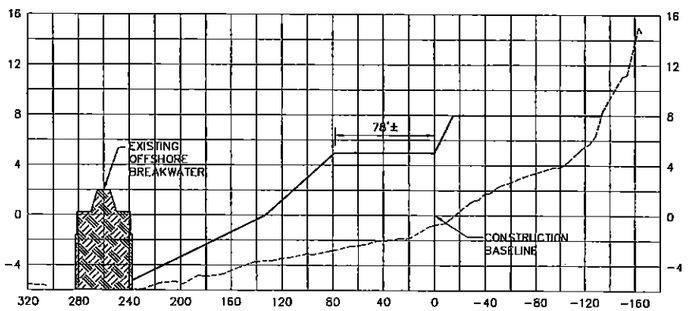

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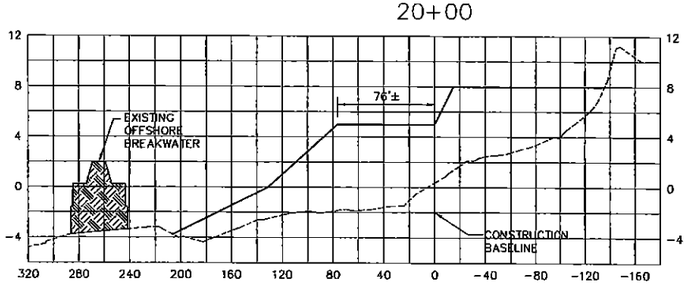

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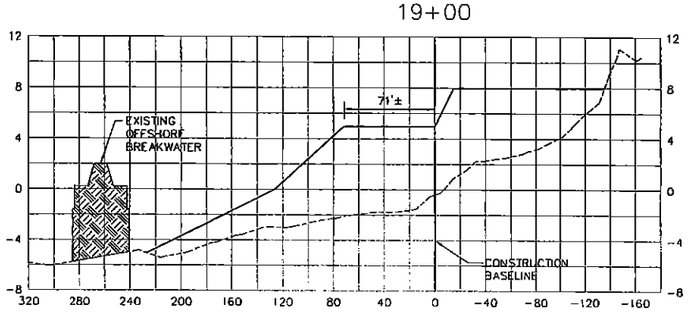

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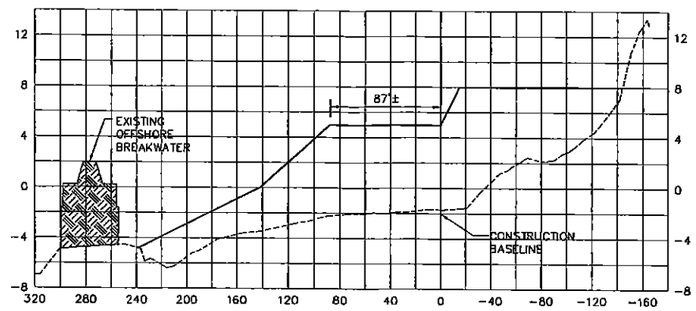

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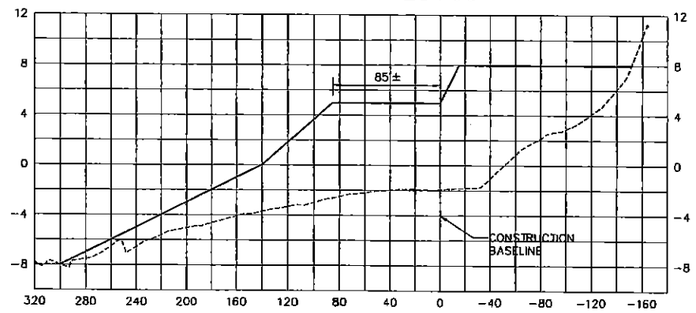

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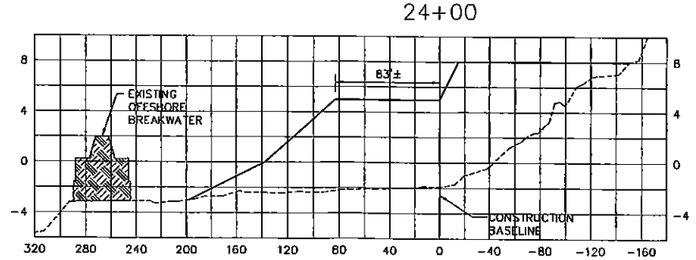

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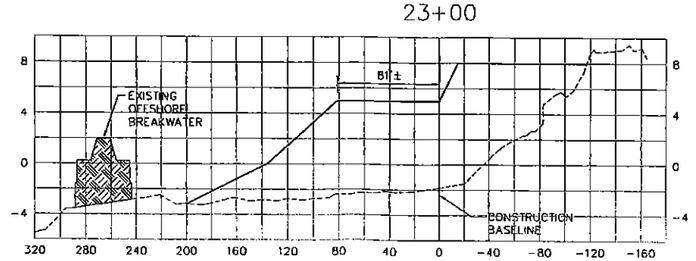

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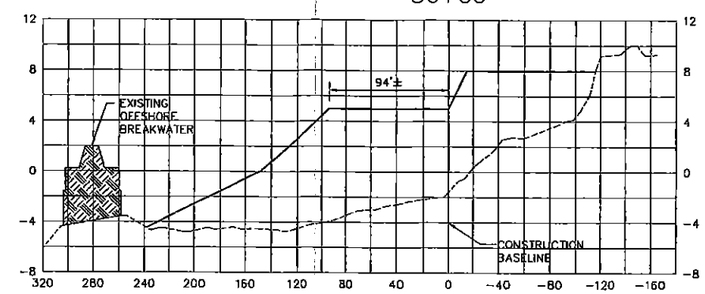

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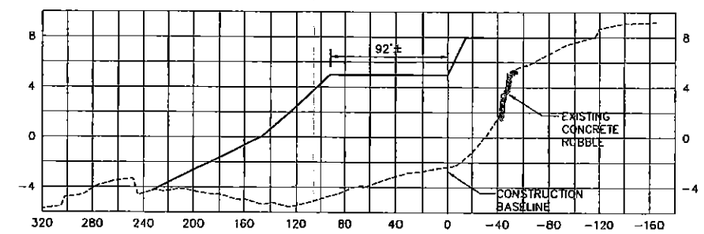

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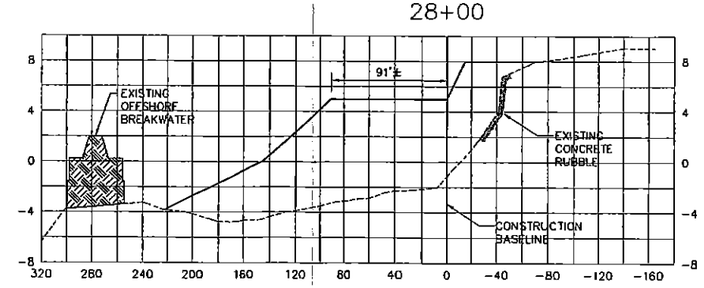

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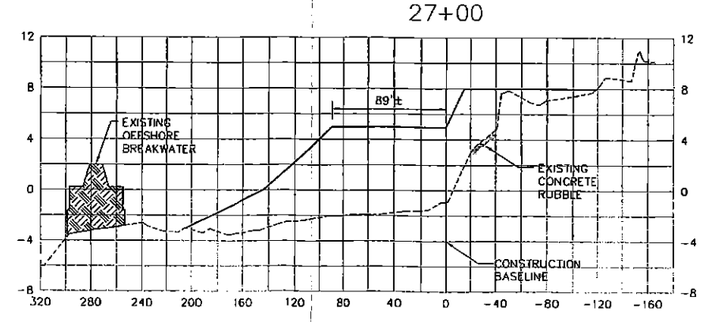


REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA
BEACH NOURISHMENT
CROSS SECTIONS
SHEET 3 OF 5

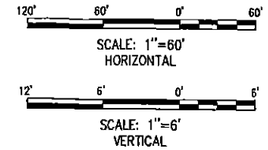
MOFFATT & NICHOL
ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

DSGN JM | DR CS | CHK MC | TITLE
JOB NO. 5197-04 | SUBMITTED BY

DATE 9/26/03

SHEET 15 OF 17

C13



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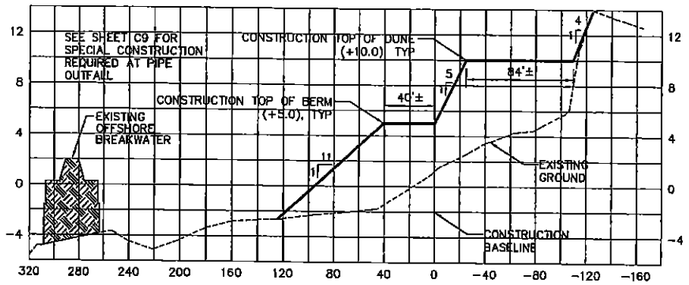

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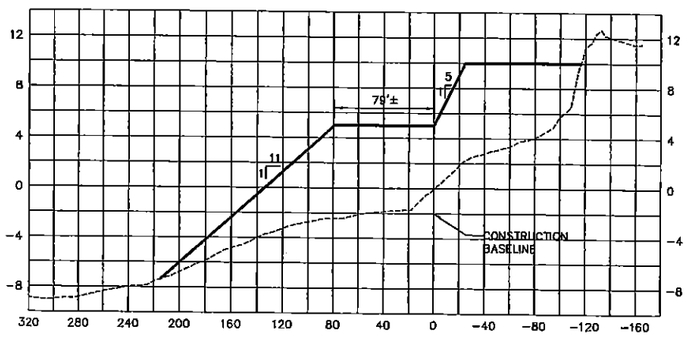

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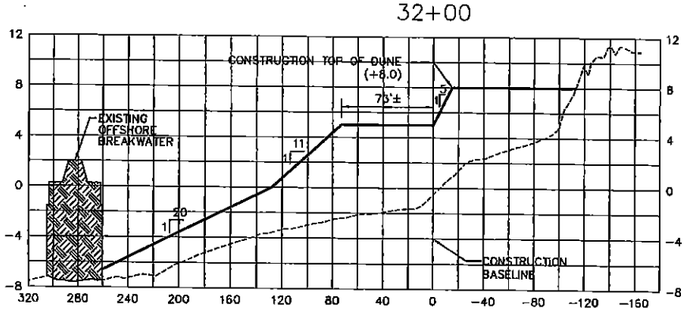

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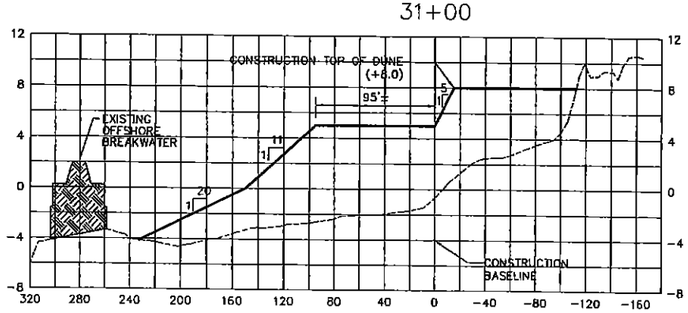

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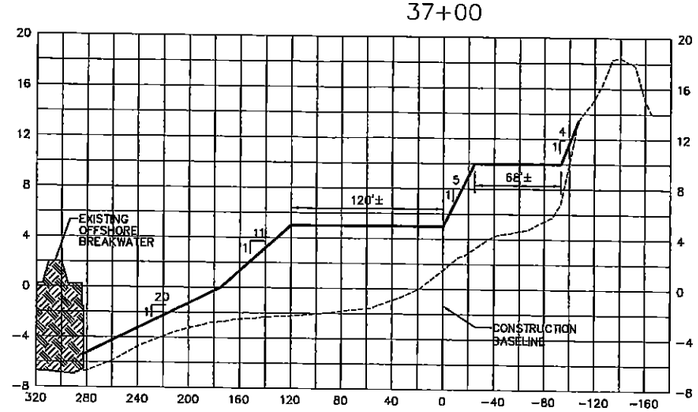

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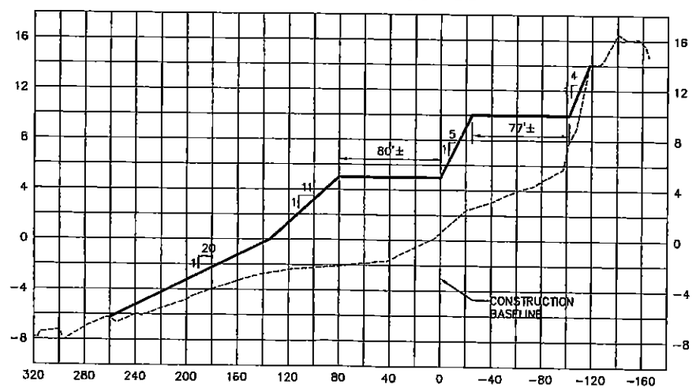

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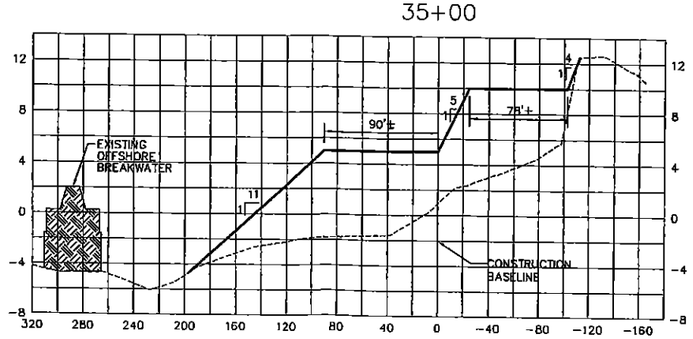

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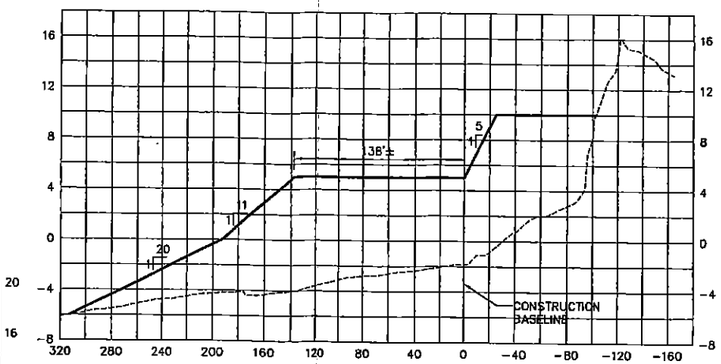

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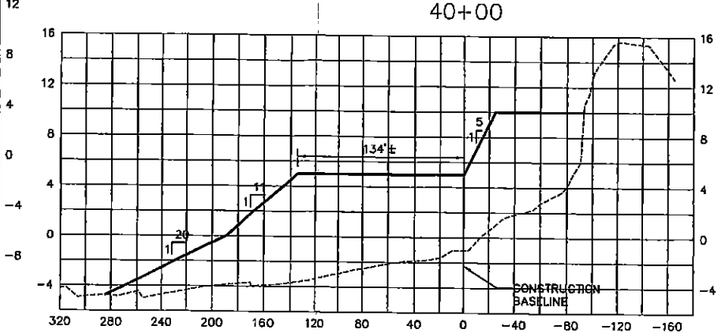

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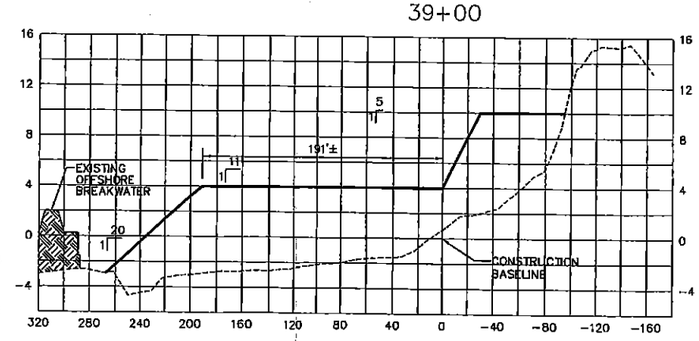

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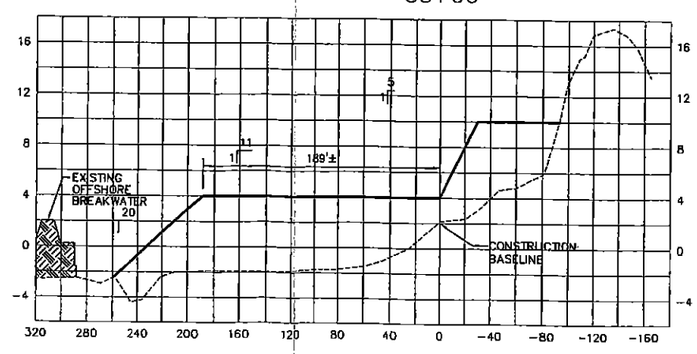


REVISION	DESCRIPTION	BY	DATE

EAST OCEAN VIEW BEACH
NOURISHMENT PROJECT
NORFOLK, VIRGINIA
BEACH NOURISHMENT
CROSS SECTIONS
SHEET 4 OF 5

MOFFATT & NICHOL
ENGINEERS
440 WORLD TRADE CENTER
NORFOLK, VIRGINIA 23510
757-628-8222

DSGN JM | DR CS | CHK MC | SUBMITTED BY | TITLE
JOB NO. 5197-04

DATE 9/26/03

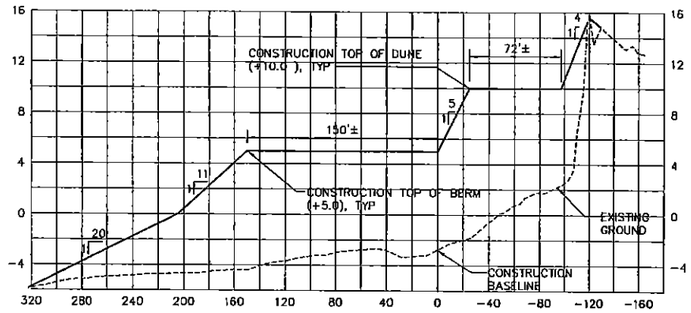
SHEET 16 OF 17

C14

120' 60' 0' 60'
SCALE: 1"=60'
HORIZONTAL

12' 6' 0' 6'
SCALE: 1"=6'
VERTICAL

45+00



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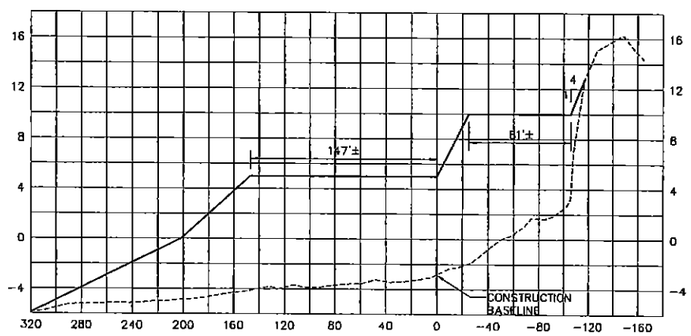

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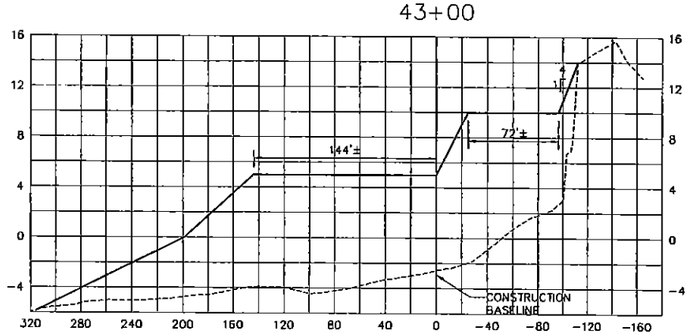

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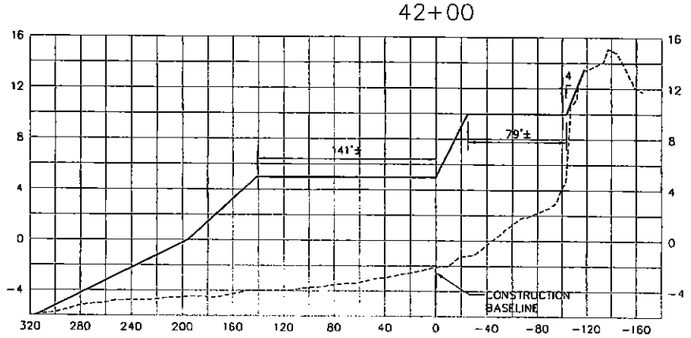

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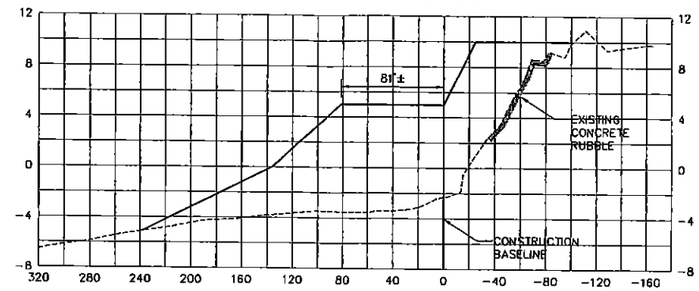

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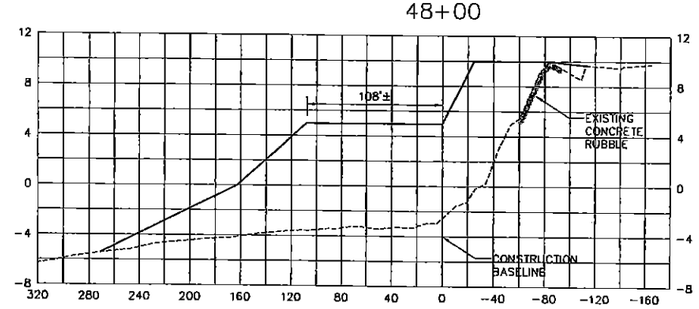

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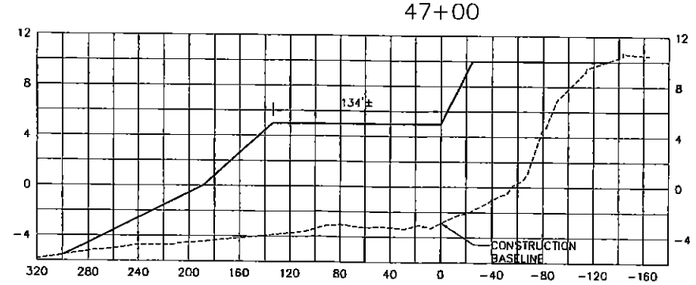

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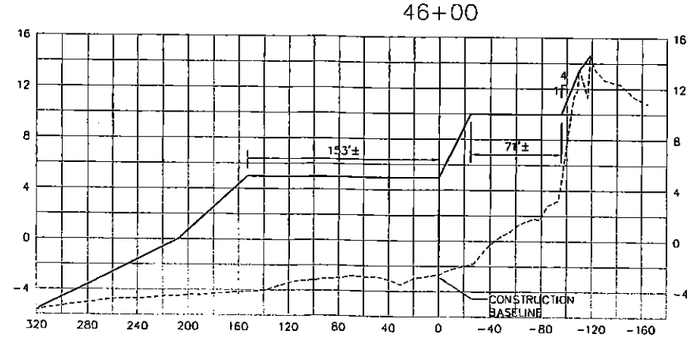

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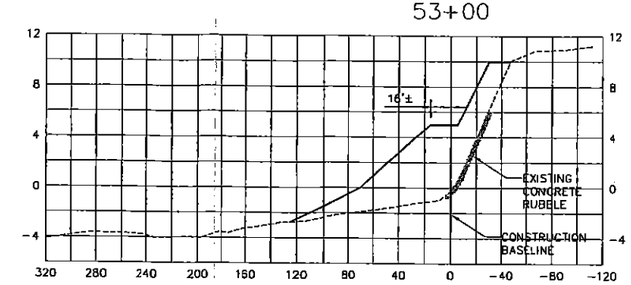

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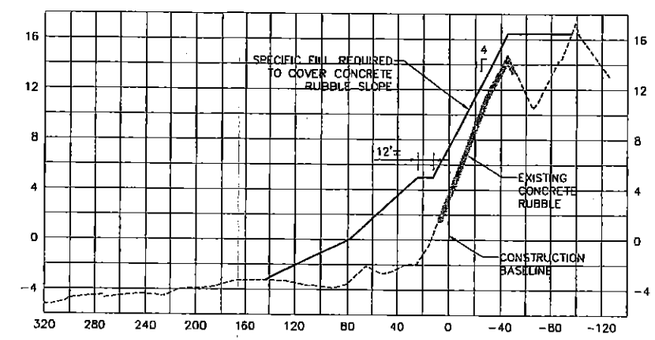

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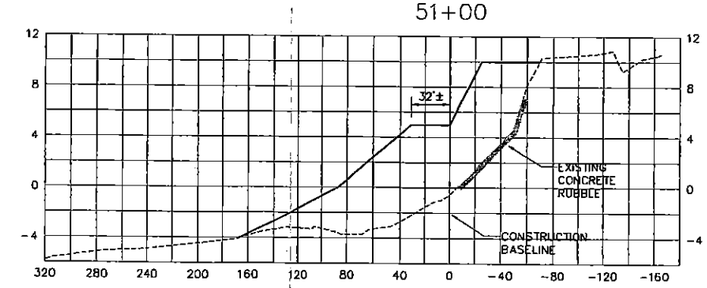

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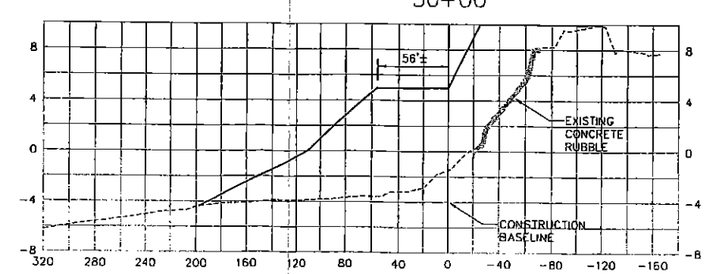

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NOURISHMENT PROJECT
NORFOLK, VIRGINIA
BEACH NOURISHMENT
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SHEET 5 OF 5

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DSGN	DR	CHK	
JM	CS	MC	
JOB NO. 5197-04	SUBMITTED BY	TITLE	

DATE 9/26/03

SHEET 17 OF 17

C15