KENAI PENINSULA BOROUGH
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Toll-free within the Borough: 1-800-478-4441
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MIKE NAVARRE
BOROUGH MAYOR

MEMORANDUM

TO: Mike Navarre, Mayor

THRU: Brenda Ahlberg, Community & Fiscal Project Manager

FROM: Dan Mahalak, Water Resource Manager

DATE: July 27, 2016

SUBJECT: Grant Agreement between City of Seward and the Kenai Peninsula Borough on behalf of the Seward Bear Creek Flood Service Area to support the Community Playground Coastal Erosion Mitigation Project.

Storm surges and coastal erosion have removed approximately 300 ft of shoreline material and weakened the waterfront near the community playground east of Ballaine Blvd. and north of Adams Street within the City of Seward. The waterfront to the north and south appear stable and adequately armored, but the affected section without armor will continue to erode and threaten the adjacent asphalt trail, playground facilities, and public use.

The City of Seward has acquired all necessary permits, plans and specifications to mitigate this vulnerable section of shoreline.

The City of Seward requested funding in the amount of $50,000 from the Seward Bear Creek Flood Service Area to supplement this mitigation project on July 7th.

At its regularly scheduled meeting July 11th, the Seward Bear Creek Flood Service Area unanimously voted to recommend $50,000.00 to the City of Seward to supplement this mitigation project. Funds are available from the service area FY17 approved budget in account 259.21212.00000.43011 - contract services for revetment and bank stabilization projects. These funds will be distributed by way of grant agreement and executed upon your approval.

Plans excerpt attached.

HORIZONTAL CONTROL STATEMENT

Coordinate System:
Project coordinates are NAD83(2011) (EPOCH 2010.0000) Alaska State Plane Zone 4 Grid Coordinates.

Basis of Coordinates:
The Basis of Coordinates is Point No. 1, "945 5090L", a stainless steel rod, with datum point and punch mark, encased in a 6" diameter PVC pipe with an aluminum lid, projecting 6" above the ground. Located at the intersection of Port Ave. and the westernmost road leading to the Cruise Ship Dock. NAD83(2011) (EPOCH 2010.0000) coordinates are based on an OPUS Shared Solution, observed 8/24/2011 by the National Oceanic and Atmospheric Administration (NOAA).

NAD83(2011) (EPOCH 2010.0000)
Latitude: N. 60°07'19.96891", Longitude: W. 149°25'49.20564"
Ellipsoid Height: 61.381 feet
NAD83(2011) Alaska State Plane, Zone 4 (U.S. Survey Feet)
2,237,007.7875 North, 1,744,309.4035 East
Project Coordinates (U.S. Survey Feet)
2,237,007.7875 North, 1,744,309.4035 East

Basis of Bearings:
Project bearings are NAD83(2011) Alaska State Plane, Zone 4 grid bearings, as determined by static GPS observations.

VERTICAL CONTROL STATEMENT

The Vertical Datum is Mean-Lower-Low-Water (MLLW=0.0') based on the 1983-2001 Tidal Epoch, NOAA/NOS Tidal Bench Mark list for Station 9455090, Seward, Resurrection Bay, Alaska, published 9/30/2011. The Basis of Vertical Control is: 1) Bench Mark "945 5090L", Point No. 1, a stainless steel rod, with datum point and punch mark, encased in a 6" diameter PVC pipe with an aluminum lid, projecting 6" above the ground. Located at the intersection of Port Ave. and the westernmost road leading to the Cruise Ship Dock. Elev. 22.24 feet and 2) Bench Mark "NO 19 1966", a standard USC&GS Bench Mark Brass Disk set flush in the concrete of the western face of the Cruise Ship Dock, 50 feet west of the SW corner of the Alaska Railroad Passenger Terminal. Elev. 24.36 feet.

Project Elevations are based on differential level loops run from Point No. 1 through all project control points.

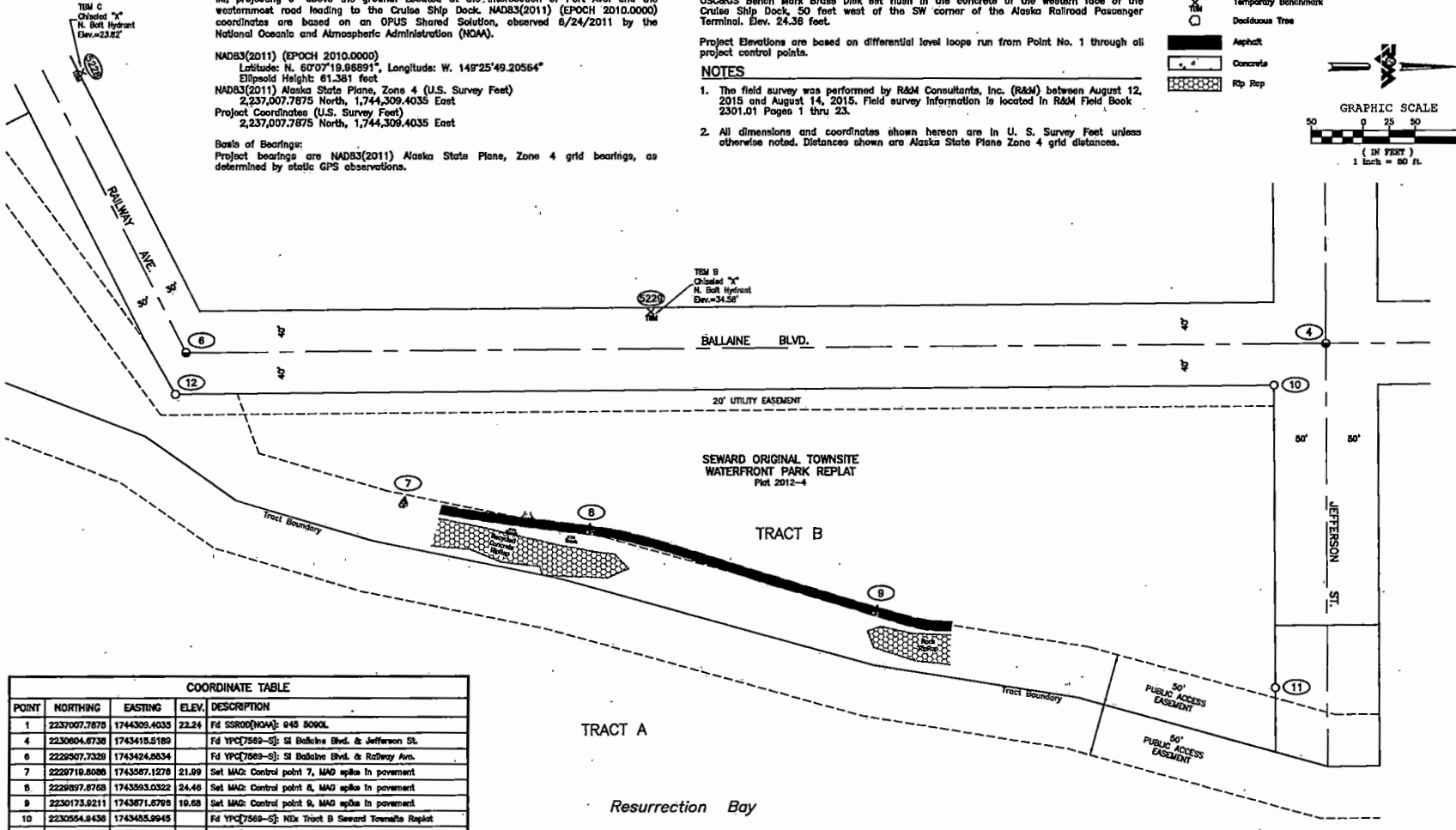
NOTES

1. The field survey was performed by R&M Consultants, Inc. (R&M) between August 12, 2015 and August 14, 2015. Field survey information is located in R&M Field Book 2301.01 Pages 1 thru 23.
2. All dimensions and coordinates shown hereon are in U. S. Survey Feet unless otherwise noted. Distances shown are Alaska State Plane Zone 4 grid distances.

LEGEND

- GPS Control Monument
- Secondary Centerline Monument
- Secondary Monument, Rebar or Rebar with Cap
- Survey Control Point
- Temporary Benchmark
- Deciduous Tree
- Asphalt
- Concrete
- Rip Rap

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.



COORDINATE TABLE				
POINT	NORTHING	EASTING	ELEV.	DESCRIPTION
1	2237007.7875	1744309.4035	22.24	Fd SSR0D[NOAA]: 945 5090L
4	2230604.6738	1743415.5189		Fd YPC[7569-S]: SI Ballaine Blvd. & Jefferson St.
6	2229507.7329	1743424.8834		Fd YPC[7569-S]: SI Ballaine Blvd. & Railway Ave.
7	2229719.8088	1743587.1278	21.99	Set MAG: Control point 7, MAG spike in pavement
8	2229897.8768	1743593.0322	24.46	Set MAG: Control point 8, MAG spike in pavement
9	2230173.9211	1743671.6798	19.68	Set MAG: Control point 9, MAG spike in pavement
10	2230554.8436	1743455.9945		Fd YPC[7569-S]: NEx Tract B Seward Townsite Replat
11	2230557.4295	1743747.8877		Fd YPC[7569-S]: WCMC SEx Tract B Seward Townsite Replat
12	2229487.6068	1743464.8861		Fd YPC[7569-S]: Tract B Townsite Replat
5228	2229407.	1743154.	23.82	Set Chiseled X: TBM C - Chiseled X N. bolt hydrant
5229	2229956.	1743385.	34.58	Set Chiseled X: TBM B - Chiseled X N. bolt hydrant
5230	2233348.	1742475.	19.26	Set Chiseled X: TBM A - Chiseled X E. bolt luminaire

STATE OF ALASKA
49TH
RONALD H. BRIDGE
LS 6252
12/15/15
REGISTERED

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phone: 907.522.1707 • fax: 907.522.3403

CITY OF SEWARD
BEACH EROSION ENGINEERING
SURVEY AND PERMITTING

No.	Description	Date

Drawn by: RHB
Checked by: RHB
Date: 12/16/2015
Project No.: 2301.01
SHEET TITLE: SURVEY CONTROL
SHEET NO: 2 OF 10
G2

Plotted: 12/16/2015 1:42 PM by Jim Robar
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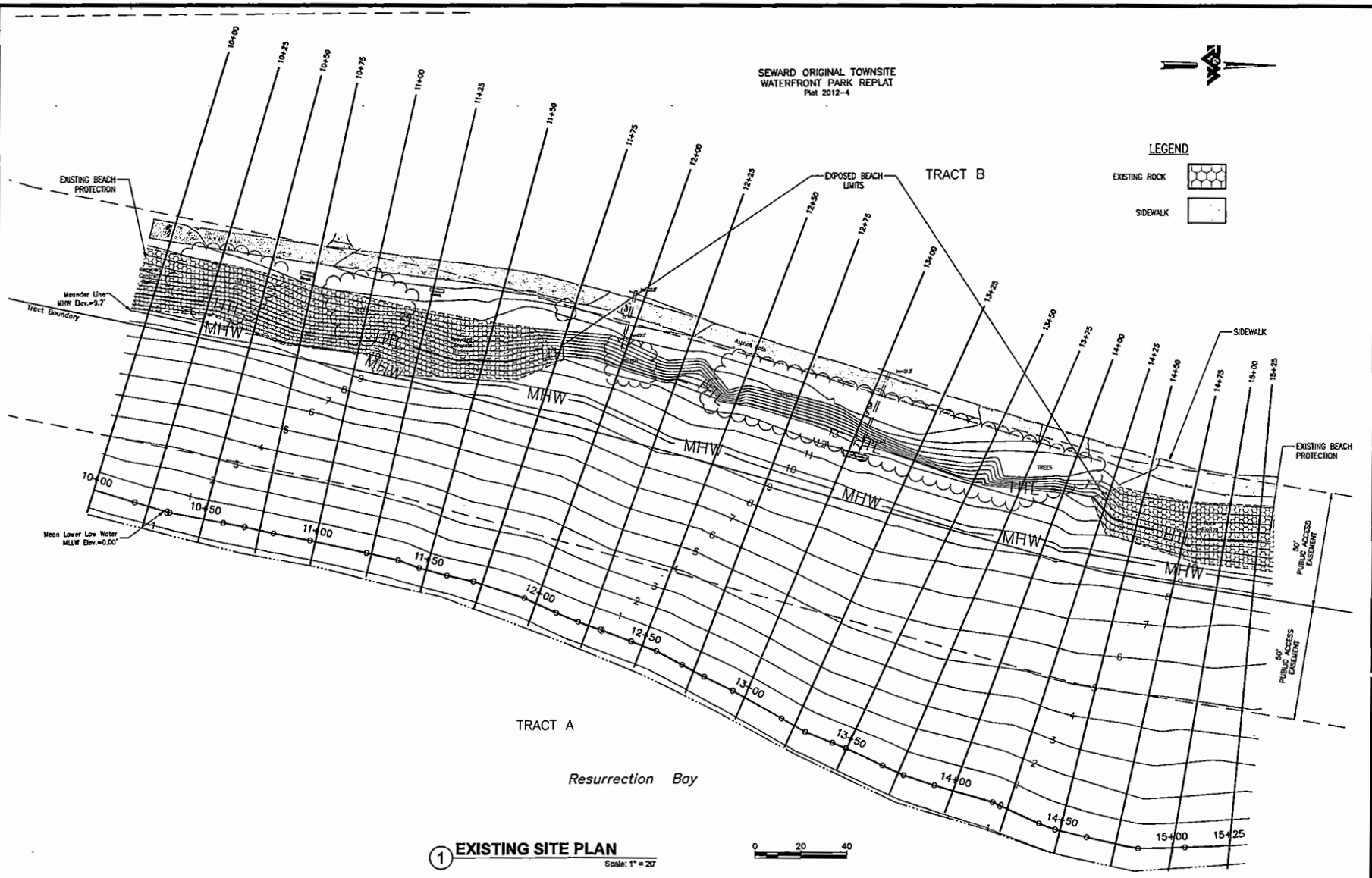

1 EXISTING SITE PLAN

Scale: 1" = 20'

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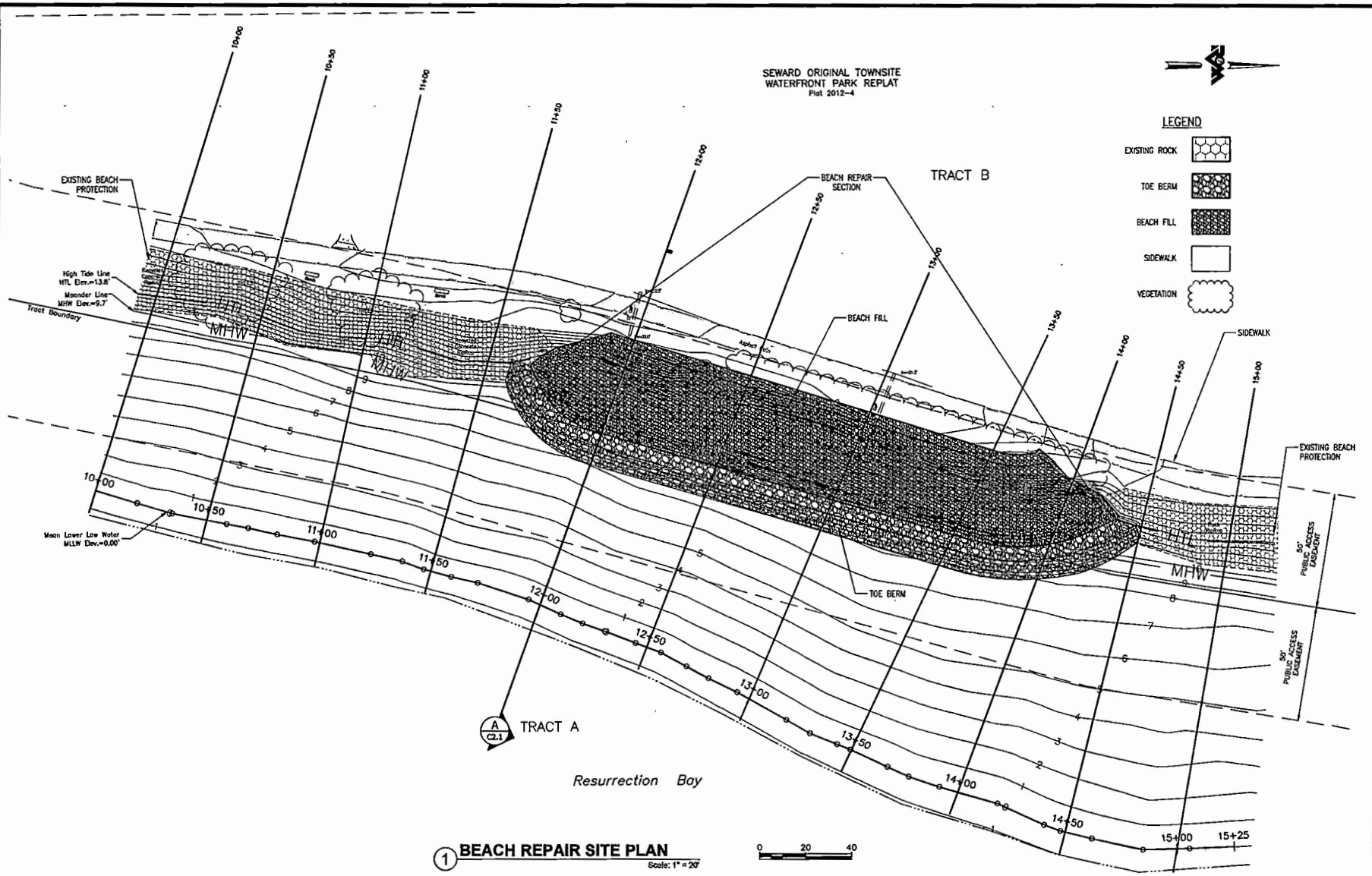
CITY OF SEWARD

BEACH EROSION ENGINEERING
SURVEY AND PERMITTING

No.	Description	Date

Drawn By: BP
Checked By: JD
Date: 12/25/2015
Project No: 2301.01
SHEET TITLE: EXISTING SITE PLAN
SHEET NO: 3 OF 10
C1.0



1 BEACH REPAIR SITE PLAN

Scale: 1" = 20'

Plotted: 12/16/2015 1:53 PM by Brian Pugatch Z:\project\2301.01 c SEWARD Beach Erosion Engineering Survey And Permitting\Civil\ACAD\2301.01 C2.0_Site Repair Plan_4-1 Slope.dwg

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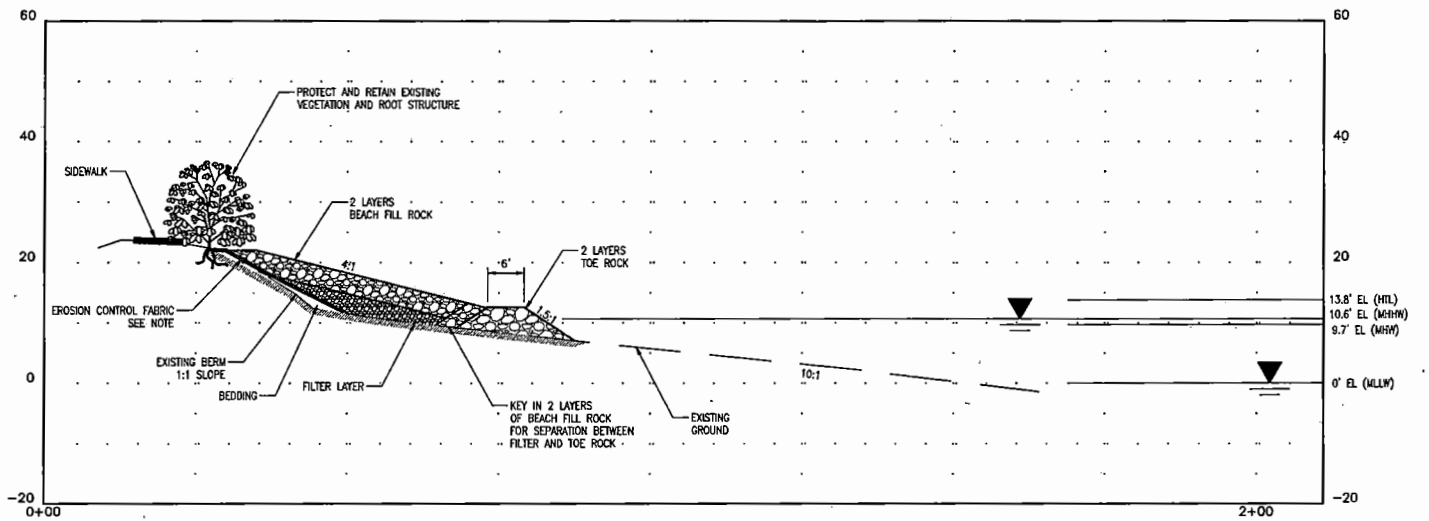
CITY OF SEWARD

BEACH EROSION ENGINEERING
SURVEY AND PERMITTING

No.	Description	Date

Drawn by: BP
Checked by: JD
Date: 12/25/2015
Project No.: 2301.01
SHEET TITLE: BEACH REPAIR SITE PLAN
SHEET NO.: 8 OF 10
C2.0



A TYPICAL REPAIR SECTION
4:1 SLOPE

Scale: 1" = 10'

0 10 20

NOTES:

MATERIALS AND CONSTRUCTION

VEGETATION: MAINTAIN EXISTING VEGETATION INCLUDING SMALL TRESS AND BUSHES. PROTECT EXISTING ROOT STRUCTURE AND BURRY EXPOSED ROOTS WITH BEDDING MATERIAL.

BEDDING: BEDDING MATERIAL SHALL CONSIST OF 3" MINUS WELL GRADED GRAVEL. PLACE BEDDING ON TOP OF EXISTING GROUND.

GEOTEXTILE: PROVIDE A 15 FOOT WIDE ROLL OF NONWOVEN GEOTEXTILE FABRIC SUITABLE FOR EROSION CONTROL WITH THE FOLLOWING PROPERTIES:

GRAB TENSILE STRENGTH	190 LBS
ELONGATION	50%
CBR PUNCTURE	500 LBS
TRAPEZOIDAL TEAR	80 LBS
PERMITTIVITY	1.5 SEC^(-1)
WATER FLOW RATE	100 GPM/FT^2
UV RESISTANCE AT 500 HRS	90%

PROVIDE PROPEX GEOTEX 801UV OR EQUAL.

INSTALL ONE ROW OF THE GEOTEXTILE FABRIC ALONG THE CUT BANK AT THE TOP OF THE REPAIR SECTION FROM APPROXIMATE STATION 11+75 TO STATION 14+25 OR APPROXIMATELY 250 LINEAL FEET. PLACE GEOTEXTILE OVER BEDDING MATERIAL AND EXPOSED ROOTS.

FILTER LAYER: PLACE FILTER LAYER ON EXISTING GROUND AND OR ON BEDDING MARTIAL IN A LAYER OF SUFFICIENT THICKNESS TO ESTABLISH A 4:1 GRADE AND TO SET A SUBGRADE FOR THE FINAL ELEVATION OF THE BEACH FILL ROCK AS SHOWN IN THE DRAWINGS.

BEACH FILL AND TOE BERM ROCK: BEACH FILL TOE BERM ROCK SHALL CONSIST OF DENSE, HARD, ANGULAR, QUARRY STONE OF THE SIZES SHOWN IN THE DRAWINGS. NEITHER THE BREADTH NOR THICKNESS OF ANY PIECE OF ARMOR ROCK SHALL BE LESS THAN 1/3 IT'S LENGTH. THE MINIMUM DENSITY OF THE ROCK SHALL BE 165 LBS / FT^3. BEACH FILL AND TOE BERM ROCK SHALL BE CAREFULLY PLACED AND NOT DROPPED AT THE LOCATIONS AND TO THE THICKNESS SHOWN IN THESE PLANS. PLACE ALL ROCK IN SUCH A MANNER TO PROVIDE A WELL KEYED MASS OF ROCK. PROVIDE INTERLOCKING BETWEEN INDIVIDUAL ROCK PIECES AND ENSURE THAT EACH PIECE OF ROCK IS IN CONTACT WITH THE SURROUNDING ROCK AND WITH THE LEAST PRACTICAL AMOUNT OF VOIDS. THE TOE BERM MUST BE CONSTRUCTED PRIOR TO COMPLETING THE BEACH FILL.

FILL REPORT – TOE BERM ROCK		
DESCRIPTION	UNIT	QUANTITY
TOE BERM VOLUME	CY	600
TOE BERM ROCK	TON	1050
AFFECTED AREA	ACRE	0.13

TOE BERM ROCK SIZES		
WEIGHT (LB)	APPROX. DIA.	% SMALLER BY STONE COUNT
1700	26"	100%
1350	24"	30–50%
1050	22"	0%

FILL REPORT – BELOW HTL		
DESCRIPTION	UNIT	QUANTITY
BEACH FILL VOLUME	CY	1880
AFFECTED AREA	ACRE	0.26

FILL REPORT – BEACH FILL ROCK		
DESCRIPTION	UNIT	QUANTITY
BEACH FILL VOLUME	CY	1750
BEACH FILL ROCK	TON	3100
AFFECTED AREA	ACRE	0.26

BEACH FILL ROCK SIZES		
WEIGHT (LB)	APPROX. DIA.	% SMALLER BY STONE COUNT
900	21"	100%
700	19"	30–50%
500	17.5"	0%

FILL REPORT – 3" MINUS BEDDING		
DESCRIPTION	UNIT	QUANTITY
BEDDING VOLUME	CY	50
AFFECTED AREA	ACRE	0.03

FILL REPORT – FILTER ROCK		
DESCRIPTION	UNIT	QUANTITY
FILTER ROCK VOLUME	CY	550
FILTER ROCK	TON	950
AFFECTED AREA	ACRE	0.14

FILTER ROCK SIZES		
WEIGHT (LB)	APPROX. DIA.	% SMALLER BY STONE COUNT
300	14"	100%
250	13"	30–50%
175	12"	0%

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CITY OF SEWARD
BEACH EROSION ENGINEERING
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No.	Description	Date

Drawn by: BP
Checked by: JD
Date: 12/25/2015
Project no: 2301.01
SHEET TITLE: TYPICAL REPAIR SECTION AND QUANTITIES
SHEET NO: 9 OF 10
C2.1