



Location Map

Construction Drawings For

City of Homer

Homer Seawall Revetment

HDR Project No.10236623

Homer, Alaska

August 2020

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MATERIALS IN PLAN/SECTION

- PROPOSED REVETMENT (PLAN)
- EXISTING GRADE UPLANDS
- EXISTING GRADE BEACH
- EXISTING SHORELINE PROTECTION

GENERAL LINE SYMBOLOGY

- APPROXIMATE EXISTING GRADE
- STILL WATER LEVEL (EL. FLUCTUATES ON DAILY AND SEASONAL BASIS)
- GEOTEXTILE FABRIC

SITE PLAN SYMBOLOGY

- SPOT ELEVATION, FT
- SURVEY CONTROL POINT

ABBREVIATIONS

APPROX.	APPROXIMATELY
REQ'D.	REQUIRED
TYP.	TYPICAL
MISC.	MISCELLANEOUS
MHHW	MEAN HIGHER HIGH WATER
MHW	MEAN HIGH WATER
MSL	MEAN SEA LEVEL
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
LF	LINEAR FEET

GENERAL SYMBOLOGY

ARROW INDICATES DIRECTION OF PLAN NORTH

PLAN
1/4" = 1'-0"

SECTION CUT MARKER
SECTION LETTER
FLAG INDICATES DIRECTION OF SECTION CUT
SHEET WHERE SECTION IS LOCATED

SECTION
3/8" = 1'-0"

DETAIL MARKER
SECTION LETTER
SHEET WHERE SECTION VIEW IS FIRST CUT *

DETAIL
3" = 1'-0"

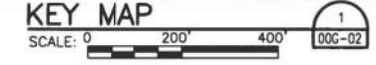
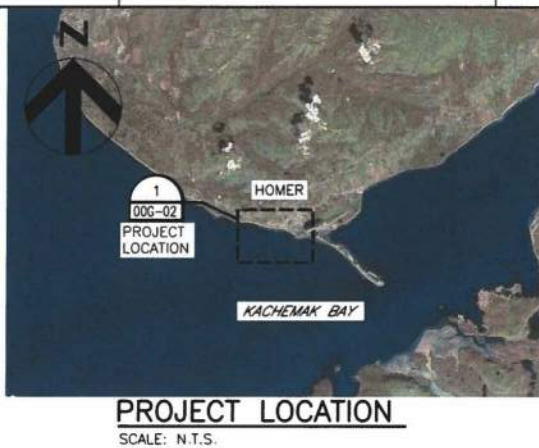
DETAIL NUMBER
SHEET WHERE DETAIL IS LOCATED *

DETAIL NUMBER
SHEET WHERE DETAIL WAS CALLED OUT *

* EXCEPTIONS WHERE THE SHEET NUMBER IS REPLACED BY A DASH (-).

1) FOR COMMON DETAILS, SECTIONS, ELEVATIONS OR DETAILS THAT ARE CUT OR CALLED OUT ON MULTIPLE SHEETS.

2) SECTIONS, ELEVATIONS OR DETAILS THAT ARE LOCATED ON THE SAME SHEET THEY ARE CUT OR CALLED OUT ON.



GENERAL NOTES:

- THESE DRAWINGS ARE INTEGRAL TO THE CONTRACT DOCUMENTS FOR THE HOMER SEAWALL REVETMENT PROJECT. ADDITIONAL REQUIREMENTS FOR THE CONSTRUCTION OF THIS PROJECT ARE CONTAINED IN THE INVITATION TO BID DOCUMENTS PREPARED BY THE CITY OF HOMER.
- THESE DRAWINGS ARE FOR CONSTRUCTION OF AN ARMOR STONE REVETMENT TO PROVIDE SCOUR AND TOE PROTECTION TO THE EXISTING SEAWALL. THE REVETMENT DOES NOT CONSTITUTE RESTORATION OF THE STRUCTURAL INTEGRITY OF THE EXISTING SEAWALL.
- PROJECT SCHEDULE: CONTRACTOR SHALL ONLY CONSTRUCT REVETMENT STRUCTURE WITHIN THE MONTHS OF DECEMBER THROUGH APRIL UNLESS OTHERWISE APPROVED BY THE OWNER. THE REVETMENT IS INTENDED TO BE CONSTRUCTED DURING WINTER MONTHS WHEN BEACH LEVELS ARE AT THEIR LOWEST.
- PROJECT IS ADJACENT TO ENVIRONMENTALLY SENSITIVE AREAS. CONTRACTOR SHALL AVOID/MINIMIZE IMPACTS TO THESE AREAS DURING THE COURSE OF WORK. ANY DAMAGE CAUSED BY THE CONTRACTOR'S ACTIVITIES SHALL BE RESTORED AT THE EXPENSE OF THE CONTRACTOR AND TO THE SATISFACTION OF OWNER AND RESOURCE PROTECTION AGENCIES. THE OWNER SHALL BE THE SOLE ASSESSOR AS TO WHETHER ENVIRONMENTAL IMPACTS HAVE OCCURRED AS A RESULT OF THE CONTRACTOR'S ACTIVITIES. THE OWNER RESERVES THE RIGHT TO SUSPEND WORK AT ANY TIME IF IMPACTS OCCUR AND UNTIL SATISFACTORY CORRECTIVE MEASURES ARE IMPLEMENTED BY THE CONTRACTOR.
- CONTRACTOR SHALL TAKE PRECAUTIONS, SECURE EQUIPMENT, AND PROTECT THE WORK AGAINST ADVERSE WEATHER AND MARINE CONDITIONS.
- ALL EXISTING CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY CONFLICT OR DISCREPANCIES.
- CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS AND OBTAIN PERMISSION FROM APPLICABLE PROPERTY OWNERS FOR STAGING AREA AND LOADING/UNLOADING TRUCKS, BARGES, OR OTHER EQUIPMENT ON PUBLIC OR PRIVATE PROPERTY. ALL COSTS ASSOCIATED WITH PREPARATION AND USE OF SUPPORT FACILITIES FOR THIS PROJECT SHALL BE PAID BY CONTRACTOR. THESE AREAS SHALL BE RESTORED TO PRE-PROJECT CONDITIONS UPON COMPLETION OF THE WORK.

- EXISTING STRUCTURES OR IMPROVEMENTS DAMAGED AS A RESULT OF CONTRACTOR OPERATIONS DURING WORK SHALL BE REPAIRED BY CONTRACTOR AT HIS EXPENSE. STRUCTURES THAT ARE TO BE PROTECTED FROM DAMAGE OR REPAIRED IF DAMAGED INCLUDE BUT ARE NOT LIMITED TO THE EXISTING SEAWALL OUTLET STRUCTURES, EXISTING RIPRAP, ROADS, PRIVATE AND PUBLIC GROUNDS, AND OTHER STRUCTURES OR IMPROVEMENTS.
- CONSTRUCTION EQUIPMENT SHALL NOT OPERATE ON PRIVATE PROPERTY UNLESS PERMISSION HAS BEEN ACQUIRED BY CONTRACTOR FROM THE LAND OWNER.
- CONTRACTOR SHALL PLACE STAKES MARKING ALL ALIGNMENT POINTS PROVIDED ON SHEET 02C-01. STAKES SHALL BE MAINTAINED UNTIL PROJECT ACCEPTANCE. STAKES MAY BE OFFSET LANDWARD OF THE ALIGNMENT POINT IF NECESSARY AND SHALL INDICATE THE OFFSET DISTANCE.
- NOT ALL EXISTING UTILITIES, PIPELINES, AND STRUCTURES ARE SHOWN. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL BE AWARE THAT SHORELINE AND BEACH PROFILE ARE EXTREMELY DYNAMIC AND SUBJECT TO SIGNIFICANT CHANGE OVER SHORT PERIODS OF TIME.
- ALL WORK AREAS SHALL BE SECURED AND SURROUNDED BY CONSTRUCTION BARRICADES, SAFETY FENCE, ETC. AS NECESSARY TO PROTECT THE PUBLIC. FLAGMEN SHALL DIRECT TRAFFIC AT LOCATIONS WHERE TRUCKS ENTER AND EXIT PUBLIC STREETS, IF APPLICABLE.
- INGRESS AND EGRESS OF CONTRACTOR'S VEHICLES SHALL BE KEPT TO A MINIMUM. ALL VEHICLES SHALL USE COMMON PATHWAYS WHENEVER POSSIBLE.
- THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) PROVIDES THE FOLLOWING TIDAL STATISTICS FOR THE PROJECT REGION. CONTRACTOR SHALL BE AWARE THAT ACTUAL DAILY TIDES VARY BY SEVERAL FEET FROM THESE STATISTICAL TIDES DUE TO METEOROLOGICAL FORCES SUCH AS WIND.

MONUMENTS USED FOR SURVEY CONTROL				
NAME	NORTHING	EASTING	ELEVATION	DESCRIPTION
HOMAIR (TT0155)	2,063,049.75	1,364,435.57	70.53'	ALUM CAP

DATUM ELEVATIONS			
DATUM	ELEV. FT (NAVD88)	ELEV. FT (MLLW)	DESCRIPTION
MHHW	12.70	18.10	MEAN HIGHER HIGH WATER
MHW	11.90	17.20	MEAN HIGH WATER
MSL	4.30	9.60	MEAN SEA LEVEL
MLW	-3.60	1.70	MEAN LOW WATER
MLLW	-5.30	0.00	MEAN LOWER LOW WATER
MAXIMUM	19.82	7.98	HIGHEST OBSERVED WATER LEVEL 09-08-2010 16:18

- TIDAL DATUM RELATIONSHIPS SHOWN ARE BASED ON THOSE REPORTED BY NOAA TIDE STATION 9455500, SELDOVIA, ALASKA EPOCH 1983-2001 WITH CONVERSION TO NAVD88 PROVIDED BY ABILITY SURVEYS.
- ANY AND ALL DEBRIS (E.G., BUOYS, DRIFT WOOD) ENCOUNTERED WITHIN THE REVETMENT FOOTPRINT SHALL BECOME THE PROPERTY OF THE CONTRACTOR. SUCH DEBRIS SHALL BE REMOVED BY CONTRACTOR AND DISPOSED IN ACCORDANCE WITH APPLICABLE LAW AND ORDINANCES.

SURVEYING NOTES:

- BEACH UPLAND SURVEY ALONG THE EXISTING SEAWALL WAS PERFORMED BY ABILITY SURVEYS ON JULY 20, 2020 AND REPRESENT THE CONDITIONS THAT EXISTING AS THE TIME OF SURVEY.
- COORDINATES SHOWN ARE IN U.S. FEET AND REFERENCE TO STATE PLANE, ALASKA ZONE 4, NAD 83.
- ELEVATIONS SHOWN ARE IN FEET AND REFERENCED TO NAVD'88.
- THE SURVEY CONTROL LISTED ON THIS SHEET FOR "HOMAIR" SHALL BE APPLIED AS SURVEY CONTROL FOR THE REQUIRED WORK UNDER. SURVEY CONTROL EMPLOYED DURING CONSTRUCTION SHALL MATACH CONTROL PUBLISHED IN THESE DRAWINGS. NO OTHER SURVEY CONTROL SHALL BE CONSIDERED OR APPLIED WITHOUT ENGINEER'S CONCURRENCE. TO MAINTAIN CONSISTENCY BETWEEN PROJECT DESIGN AND CONSTRUCTED WORK, UPDATES, CORRECTIONS, OR OTHER CHANGES PUBLISHED BY NOAA, DGS, AND/OR OTHER ENTITIES FOR THIS CONTROL MONUMENT SHALL NOT BE APPLIED.
- CONTRACTOR SHALL VERIFY ACCURACY OF SURVEY CONTROL MONUMENTS PRIOR TO CONSTRUCTION. IMMEDIATELY REPORT ANY DISCREPANCIES TO ENGINEER.
- AERIAL PHOTOGRAPHY SHOWN ON THESE DRAWINGS OBTAINED BY ARC GIS MAP SERVICE, WORLD IMAGERY (CLARITY) LAST UPDATED 2020.



ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
DESIGNED BY	R. McPHERSON
DRAWN BY	K. FORD
CHECKED BY	D. HEILMAN
PROJECT NUMBER	10021123



CITY OF HOMER

HOMER SEAWALL REVETMENT

LEGENDS, KEY MAP, AND GENERAL NOTES

0 1" 2"	FILENAME	00G-02.DWG	SHEET	00G-02
	SCALE	NONE		

CONSTRUCTION SURVEY REQUIREMENTS:

- 1. CITY OF HOMER (CITY) WILL PERFORM INITIAL, INTERIM, AND FINAL SURVEYS FOR MEASUREMENT AND ACCEPTANCE OF WORK ITEMS. CONTRACTOR, AT THEIR OWN EXPENSE, MAY ELECT TO PERFORM THEIR OWN SURVEYS FOR COMPARISON TO SURVEY WORK PERFORMED BY THE CITY.
2. IF THE CONTRACTOR ELECTS TO PERFORM THEIR OWN SURVEYS, CONTRACTOR SHALL USE SURVEY MOMENTS, SURVEY CONTROL, UNITS, HORIZONTAL DATUM AND VERTICAL DATUM AS PROVIDED IN THESE DRAWINGS FOR ALL SURVEY WORK AND DRAWINGS.
3. IF THE CONTRACTOR ELECTS TO PERFORM THEIR OWN SURVEYS, ALL SURVEY PLOTS SUBMITTED TO ENGINEER SHALL BE SEALED BY PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF ALASKA. PRIOR TO COMMENCING SURVEYING ACTIVITIES, CONTRACTOR SHALL PROVIDE NAME AFFILIATION OF PROFESSIONAL SURVEYOR TO BE USED ON PROJECT.
4. CONSTRUCTION SURVEYING DRAWINGS: IF THE CONTRACTOR ELECTS TO PERFORM THEIR OWN SURVEYS, ALL CONSTRUCTION SURVEYS SUBMITTED TO ENGINEER SHALL BE IN FORM OF PLAN-VIEW AND CROSS-SECTION PLOTS. SURVEY PLOTS SHALL ALSO BE PROVIDED IN AUTOCAD OR OTHER DIGITAL FORMAT APPROVED BY ENGINEER. SURVEY PLOTS SHALL ALSO BE PROVIDED IN AUTOCAD OR OTHER DIGITAL FORMAT APPROVED BY ENGINEER. SURVEY DATA SHALL BE PROVIDED TO ENGINEER IN AN ASCII FORMAT (XYZ FILE). ALL SURVEY DATA SHALL BE REFERENCED TO THE PROJECT DATUMS SHOWN ON THE DRAWINGS. ALL PLOTS SHALL CLEARLY DISPLAY THE FOLLOWING INFORMATION:
A. PROJECT NAME
B. PROFESSIONAL LAND SURVEYOR'S SEAL, SIGNATURE, AND BUSINESS AFFILIATION
C. DATE(S) SURVEYS WERE PERFORMED
D. LOCATION AND DESCRIPTION OF SURVEY CONTROL
E. VERTICAL AND HORIZONTAL DATUMS
F. SHEET NAME
G. NAME OF CONTRACTOR
H. DRAWING SCALE(S)
I. ALL CROSS SECTIONS SHALL INCLUDE LINES REPRESENTING THE SPECIFIED CONSTRUCTION TEMPLATE AND TOLERANCES
5. IF THE CONTRACTOR ELECTS TO PERFORM THEIR OWN SURVEYS, SURVEY TRANSECTS (CROSS-SECTIONS) SHALL BE SPACED 50 FEET (MAX) ALONG THE CONSTRUCTION BASELINE. IN ADDITION, A PROFILE SURVEY SHALL BE PERFORMED ALONG THE CENTERLINE OF THE REVETMENT CREST STARTING AT STA. 0+00 AND ENDING AT STA. 17+00. SURVEY SHOTS ALONG TRANSECTS SHALL BE TAKEN AT ALL SIGNIFICANT GRADE BREAKS AND AT MAXIMUM HORIZONTAL SPACING OF 5 FEET ON CENTER. AT MINIMUM, CROSS SECTIONS SHALL EXTEND FROM THE EXISTING SEAWALL FACE TO 30 FEET SEAWARD OF THE REVETMENT TOE.
6. INITIAL SURVEY REQUIREMENTS: PRIOR TO PLACEMENT OF ANY CONSTRUCTION MATERIAL (E.G. GEOTEXTILE FABRIC, BEDDING STONE), THE CITY WILL PERFORM AN INITIAL SURVEY OF THE PROJECT ARE TO SERVE AS A BASELINE. CONTRACTOR SHALL NOTIFY THE CITY AT LEAST ONE WEEK PRIOR TO COMMENCEMENT OF ON SITE CONSTRUCTION TO ALLOW ADEQUATE TIME FOR THE CITY TO CONDUCT THE INITIAL SURVEY.
7. INTERIM SURVEY REQUIREMENTS: THE CITY WILL PERFORM INTERIM SURVEYS TO CONFIRM QUANTITY AND PLACEMENT OF BEDDING STONE MATERIAL. CONTRACTOR SHALL NOTIFY THE CITY AT LEAST 48 HOURS PRIOR TO PLACEMENT OF ARMOR STONE ON ANY COMPLETED BEDDING STONE PORTIONS OF THE REVETMENT TO ALLOW ADEQUATE TIME FOR THE CITY TO PERFORM AN INTERIM SURVEY.
8. FINAL SURVEY REQUIREMENTS: THE CITY WILL PERFORM A FINAL SURVEY OF THE REVETMENT TO SUBSTANTIATE ACCEPTANCE OF THE REVETMENT, VERIFY PLACEMENT LIMITS OF ARMOR STONE, DOCUMENT CONDITIONS OF THE COMPLETED STRUCTURE, AND SUBSTANTIATE QUANTITIES FOR PAYMENT.

REVETMENT CONSTRUCTION REQUIREMENTS:

- 1. CONTRACTOR/QUARRY SHALL PROVIDE ALL EQUIPMENT AND FACILITIES FOR TESTING CONSTRUCTION MATERIALS, AND SHALL PERFORM ALL REQUIRED TESTING AND ASSOCIATED REPORTING.
2. PRIOR TO TESTING OF STONE, ENGINEER SHALL RECEIVE NOTICE AT LEAST 3 DAYS PRIOR SO THAT ENGINEER MAY ATTEND THE TESTING AND WITNESS THE WORK.
3. PRIOR TO COMMENCING STONE PRODUCTION, CONTRACTOR SHALL PROVIDE THE NAME AND LOCATION OF THE QUARRY THAT WILL PROVIDE THE ARMOUR STONE AND BEDDING STONE FOR THE PROJECT. SUITABLE TEST REPORTS AND SERVICE RECORDS ARE REQUIRED TO DETERMINE THE ACCEPTABILITY OF THE ARMOR STONE AND BEDDING STONE FROM THE PROPOSED SOURCE. REPORTS SHALL BE FROM NEW TESTS PERFORMED ON ACTUAL ARMOR STONE AND BEDDING STONE TO BE USED ON PROJECT. ACCEPTABLE ARMOR STONE AND BEDDING STONE SHALL MEET THE QUALITY ACCEPTANCE CRITERIA IN MATERIAL REQUIREMENTS - ARMOR STONE AND BEDDING STONE NOTE 1, WHEN TESTED IN ACCORDANCE WITH THE PROCEDURES LISTED BELOW:
A. SAMPLING OF THE ROCK MATERIAL SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D 75.
B. THE ABSORPTION OF ROCK MATERIAL SHALL BE DETERMINED IN ACCORDANCE WITH ASTM C 127.
C. THE UNIT WEIGHT OF ROCK MATERIAL SHALL BE PROVIDED BASED ON THE APPARENT SPECIFIC GRAVITY DETERMINED IN ACCORDANCE WITH ASTM C 127.
D. THE LOSS BY ABRASION OF ROCK MATERIAL SHALL BE DETERMINED IN ACCORDANCE WITH ASTM C 535, PROCESSED AND TESTED FOR NO. 1 GRADING.
E. THE GRADATION OF THE ROCK MATERIAL SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D 5519, TEST METHOD C.

- 4. THROUGHOUT THE DURATION OF THE WORK, CONTRACTOR/QUARRY SHALL INSPECT, SAMPLE, AND TEST CONSTRUCTION MATERIALS FOR COMPLIANCE WITH THE SPECIFIED REQUIREMENTS AND RECORD THE INSPECTION OF ALL OPERATIONS. ALL SAMPLING AND TESTING SHALL BE PERFORMED BY A QUALIFIED TESTING LABORATORY MEETING THE REQUIREMENTS OF ASTM D 3740 AND ASTM E 329, OR COMMERCIAL TESTING FACILITY QUALIFIED BY U.S. ARMY CORPS OF ENGINEERS (USACE) MATERIALS TESTING CENTER (MTC). A COPY OF THE RECORDS OF INSPECTION, AS WELL AS THE RECORDS OF CORRECTIVE ACTION TAKEN, SHALL BE PROVIDED TO OWNER. AS A MINIMUM, CONTRACTOR/QUARRY SHALL PERFORM QUALITY CONTROL INSPECTION AND TESTING IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:
A. GRADATION: PRIOR TO CONSTRUCTION AND EVERY 1,000 TONS OR A MINIMUM OF THREE (3) GRADATION TESTS - SAMPLE SIZE SHALL CONSIST OF AT LEAST 50 STONES PER TEST AND WEIGHT AT LEAST 10 TONS PER TEST. REFER TO MATERIAL REQUIREMENTS - ARMOR STONE AND BEDDING STONE, NOTE 2, FOR GRADATION REQUIREMENTS.
B. QUALITY: PRIOR TO CONSTRUCTION AND EVERY 1,000 TONS OR MINIMUM OF THREE (3) SETS OF QUALITY TESTS. REFER TO MATERIAL REQUIREMENTS - ARMOR STONE AND BEDDING STONE, NOTE 1 FOR QUALITY REQUIREMENTS. CONTRACTOR MAY REQUEST A VARIANCE (BEYOND INITIAL SUBMITTAL) TO THE QUALITY TESTING REQUIREMENTS BASED UPON HISTORY AND PERFORMANCE OF SELECTED QUARRY.
C. PLACEMENT: CONTINUOUS INSPECTION OF PLACEMENT TO ENSURE PROPER THICKNESS AND THAT MATERIAL IS NOT SEGREGATED.
5. GRADATION TEST PROCEDURE SHALL BE PERFORMED BY CONTRACTOR/QUARRY AT THE QUARRY UNDER THE DIRECTION OF A QUALIFIED TESTING LABORATORY WITH PERIODIC SITE VISITS/WITNESS BY THE ENGINEER TO VERIFY ARMOR STONE AND BEDDING STONE MEETS THE SPECIFIED SIZE RANGES. TESTING METHODOLOGIES SHALL BE PROVIDED TO ENGINEER A MINIMUM OF FIVE (5) DAYS PRIOR TO INITIATION OF GRADATION TESTS.

MATERIALS REQUIREMENTS - ARMOR STONE AND BEDDING STONE:

- 1. STONE: ALL STONE FOR ROCK MATERIAL SHALL BE DURABLE NATURAL STONE. IT SHALL BE FREE FROM VISIBLE CRACKS, CLAY POCKETS, CAVITIES (VUGS OR "HONEYCOMBS"), LAMINATIONS, AND OTHER DEFECTS THAT WOULD TEND TO INCREASE UNDULY ITS DETERIORATION FROM NATURAL CAUSES. STONE SHALL NOT INCLUDE OBJECTIONABLE QUANTITIES OF DIRT, SAND, CLAY, AND/OR ROCK FINES. STONE SHALL HAVE A MINIMUM UNIT WEIGHT OF 160 POUNDS PER CUBIC FOOT, A MAXIMUM ABSORPTION OF 3%, AND A MAXIMUM LOSS BY ABRASION OF 35%.
2. THE ROCK MATERIAL SHALL BE REASONABLY WELL GRADED AND SHALL INCLUDE ESSENTIALLY ALL STONE SIZES BETWEEN THE TWO EXTREMES SPECIFIED WHICH WILL RESULT IN A DENSE, FAIRLY WELL-GRADED MATERIAL NOT HAVING NOTICEABLE VOIDS OR A LACK OF THE LARGER SIZES. BI-MODAL OR GAP GRADED STONE GRADATION TEST RESULTS MAY RESULT IN REJECTION OF THE STONE MATERIAL. ARMOR STONE SIZE RANGE (GRADATION) SHALL CONFORM TO THE REQUIREMENTS SPECIFIED IN TABLE 1. BEDDING STONE SIZE RANGE (GRADATION) SHALL CONFORM TO THE REQUIREMENTS SPECIFIED IN TABLE 2.

TABLE 1 - REQUIREMENTS FOR ARMOR STONE
STONE WEIGHT, LB | % LIGHTER BY COUNT
5400 | 100
1400 | 50
900 | 15
300 | 2

TABLE 2 - REQUIREMENTS FOR BEDDING STONE
STONE WEIGHT, LB | % LIGHTER BY COUNT
280 | 100
90 | 50
40 | 15
20 | 2

- 3. STONE SHAPE: THE GREATEST DIMENSION OF EACH STONE SHALL NOT BE MORE THAN THREE TIMES ITS LEAST DIMENSION. THE FACES OF INDIVIDUAL STONES SHALL BE ROUGHLY ANGULAR, NOT ROUNDED, IN SHAPE.

PLACEMENT REQUIREMENTS - ARMOR STONE AND BEDDING STONE

- 1. GENERAL: ARMOR STONE AND BEDDING STONE SHALL BE PLACED OVER THE PREPARED SUBGRADE AND GEOTEXTILE FABRIC WITHIN THE LIMITS INDICATED IN THESE DRAWINGS.
2. PLACEMENT: THE ARMOR STONE AND BEDDING STONE LAYERS SHALL BE CONSTRUCTED AS INDICATED IN THESE DRAWINGS, AND INCLUDE THE FOLLOWING CHARACTERISTICS:
A. PLACEMENT TECHNIQUE AND DROP HEIGHT LESS THAN 1 FOOT SHALL BE USED THAT WILL NOT DAMAGE THE GEOTEXTILE MATERIALS.
B. CONTACT BETWEEN INDIVIDUAL ARMOR STONES SHALL BE MAXIMIZED ON ALL SIDES. EACH STONE SHALL HAVE AT LEAST THREE (MINIMUM) POINTS OF CONTACT WITH OTHER STONES.
C. ARMOR STONE AND BEDDING STONE SHALL BE PLACED AND SPREAD IN SUCH A MANNER THAT THE VARIOUS STONE SIZES PRODUCE A RELATIVELY UNIFORM SURFACE AND COMPLETED LAYER THAT IS REASONABLY WELL-GRADED.

COMPACT MASS OF ROCK WITH MINIMAL PERCENTAGE OF VOIDS. SMALLER STONES SHALL BE PLACED AS REQUIRED TO PRODUCE A RELATIVELY UNIFORM FINISHED OUTER SURFACE.
D. ACTUAL ARMOR STONE LIMITS SHALL BE SUCH THAT THE FINISHED SURFACE OF ARMOR STONE IS GENERALLY WITHIN THE SPECIFIED TOLERANCE LIMITS. REQUIREMENTS WITH RESPECT TO THE FINISHED ARMOR STONE AND BEDDING STONE CREST ELEVATION, CREST WIDTH, AND SIDE SLOPES ARE PROVIDED IN THESE DRAWINGS.

- 3. MISPLACED MATERIAL: IF ANY STONE IS DEPOSITED ELSEWHERE THAN IS PLACES DESIGNATED OR APPROVED, THE CONTRACTOR MAY BE REQUIRED TO REMOVE SUCH MISPLACED MATERIAL AND REDEPOSIT IT WHERE DIRECTED AT HIS EXPENSE. MATERIALS DELIVERED TO THE SITE SHALL BE INSPECTED FOR DAMAGE, UNLOADED, AND STORED WITH THE MINIMUM OF HANDLING. MATERIALS SHALL NOT BE STORED DIRECTLY ON THE GROUND WITHOUT A FABRIC OR PLASTIC LINER BENEATH, AND SHALL BE KEPT FREE OF DIRT AND DEBRIS.

MATERIAL REQUIREMENTS - GEOTEXTILE FILTER FABRIC

- 1. GEOTEXTILE FILTER FABRIC SHALL BE PREVIOUS NONWOVEN SHEET, CONSISTING OF LON-CHAIN SYNTHETIC POLYMERS COMPOSED OF AT LEAST 85 PERCENT BY WEIGHT POLYOLEFINS, POLYESTERS, OR POLYAMIDES. SHEETS SHALL BE FORMED INTO A STABLE NETWORK SUCH THAT FILAMENTS OR YARNS RETAIN THEIR RELATIVE POSITION TO EACH OTHER. SHEETS SHALL BE INERT TO CHEMICALS COMMONLY ENCOUNTERED IN NATURAL WATER, THE SOIL CONDITIONS ENCOUNTERED AT THE SITE, AND UV STABILIZED. THE EDGES OF SHEETS SHALL BE SELVEDGED OR OTHERWISE FINISHED TO PREVENT OUTER FILAMENTS OR YARNS FROM PULLIN AWAY FROM THE SHEET.
2. GEOTEXTILE FILTER FABRIC PHYSICAL PROPERTIES: TESTING GEOTEXTILES FOR CONFORMANCE WITH REQUIREMENTS BELOW SHALL COMPLY WITH ASTM D 4759. FILTER FABRIC SHALL BE SAMPLED IN ACCORDANCE WITH ASTM D 4354 AND TESTED TO VERIFY THE FOLLOWING MINIMUM PHYSICAL PROPERTIES AND REQUIREMENTS:

Table with 4 columns: PHYSICAL PROPERTIES, UNIT, TEST METHOD, MEASURE. Rows include APPARENT OPENING SIZE, GRAB TENSILE STRENGTH, TENSILE ELONGATION, CBR PUNCTURE STRENGTH, TRAPEZOID TEAR STRENGTH, ULTRAVIOLET RESISTANCE (500 HOURS).

- 3. ACCEPTABLE PRODUCTS: THE FOLLOWING PRODUCTS OR A/E-APPROVED ALTERNATE MAY BE USED FOR GEOTEXTILE FILTER FABRIC:
A. US FABRICS 250 NW
B. MIRAFI 1100N
C. PROPEX GEOTEX

LISTING OF SPECIFIC MANUFACTURER'S PRODUCTS SHALL NOT BE CONSTRUED AS PRODUCT APPROVAL WITHOUT CERTIFIED TESTS. ACTUAL PHYSICAL PROPERTIES OF THE PRODUCTS FURNISHED SHALL CONFORM TO THE MINIMUM PHYSICAL PROPERTIES SPECIFIED IN MATERIAL REQUIREMENTS - GEOTEXTILE FILTER FABRIC, NOTE 2. IN ADDITION TO THE MINIMUM PHYSICAL PROPERTIES LISTED, OTHER PROPERTIES (SUCH AS FABRIC WEIGHT AND WEAVE TYPE) SHALL BE CONSIDERED BY THE MANUFACTURER IN PROVIDING A PRODUCT THAT IS APPROPRIATE FOR THE NATIVE MATERIAL, METHOD OF INSTALLATION, AND METHOD OF ROCK PLACEMENT FOR THE PROPER FUNCTIONING OF THE FILTER.

- 4. CERTIFIED TEST REPORTS: SUBMIT MANUFACTURER'S CERTIFIED TEST RESULTS TO THE OWNER SHOWING ACTUAL TEST VALUES OF THE FILTER FABRIC PHYSICAL PROPERTIES.
5. SEWN SEAMS: SUBMIT DETAILS FOR SEWN SEAMS, IF APPLICABLE. DETAILS SHALL ADDRESS, BUT NO BE LIMITED TO, THREAD TYPE, THREAD TENSION (SEWING DEVICE), STITCH DENSITY AND TYPE, OVERLAP, AND NUMBER OF ROWS AND TYPE OF CHAINSTITCH. ALSO SUBMIT LABORATORY TEST REPORTS EVALUATING THE LOAD-TRANSFER CAPABILITY OF THE PROPOSED SEAMS IN ACCORDANCE WITH ASTM D 4884.

PLACEMENT REQUIREMENTS - FILTER FABRIC, ARMOR STONE AND BEDDING STONE

- 1. GEOTEXTILE FABRIC SHALL BE PLACED OVER THE PREPARED SUBGRADE AS INDICATED IN THESE DRAWINGS.
2. GEOTEXTILE FABRIC SHEETS SHALL BE LOOSELY LAID AND CONFORM TO SURFACE IRREGULARITIES SO AS TO MINIMIZE TENSION IN THE SHEETS WHEN SUBSEQUENT STONE IS PLACED.
3. LAPS BETWEEN GEOTEXTILE FABRIC SHEETS SHALL BE NO LESS THAN 2 FT. WHEN USED, SEWN SEAMS SHALL BE PREAPPROVED BY ENGINEER AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. GEOTEXTILE FABRIC SHEETS SHALL BE CONTINUOUS WITHIN LIMITS SHOWN ON THE DRAWINGS. TRANSVERSE LAPS SHALL BE PARALLEL TO THE SLOPE GRADIENT. IF LONGITUDINAL LAPS ARE SPECIFICALLY ALLOW BY OWNER, LAPS PARALLEL TO THE SHORELINE SHALL BE NO LESS THAN 4 FT WITH THE HIGHER SHEET OVERLAPPING THE LOWER SHEET.
5. GEOTEXTILE FABRIC SHEETS SHALL NOT BE STAKED DOWN SUCH THAT THEY ARE TAUT AND SUBJECT TO SIGNIFICANT PUNCTURE OR TEARING DURING STONE PLACEMENT.
6. METHOD OF STONE PLACEMENT SHALL BE SUCH THAT GEOTEXTILE FABRIC SHEETS ARE NOT PULLED APART AT THE LAPS OR SIGNIFICANTLY PUNCTURED OR TORN.
7. CONSTRUCTION EQUIPMENT AND/OR VEHICLES SHALL NOT OPERATE DIRECTLY ON GEOTEXTILE MATERIALS, UNLESS OTHERWISE PERMITTED BY OWNER.

- 8. WORK SHALL BE SEQUENCED SO THAT GEOTEXTILE MATERIALS ARE NOT EXPOSE MORE THAN 7 DAYS FROM THE TIME ROLLS ARE REMOVED FROM THEIR PROTECTIVE COVERING AND ARE FULLY COVERED BY STONE AND/OR OPAQUE TEMPORARY COVERINGS. DURING PERIOD OF SHIPMENT AND STORAGE, GEOTEXTILE MATERIALS SHALL BE PROTECTED FROM DIRECT SUNLIGHT, ULTRA-VIOLET RAYS, AND HIGH TEMPERATURES AND IN ACCORDANCE WITH ANY OTHER INSTRUCTIONS OF THE MANUFACTURER. UNPACKAGED ROLLS AND/OR SHEETS SHALL BE PROTECTED WITH TEMPORARY OPAQUE COVERINGS.



Table with 3 columns: ISSUE, DATE, DESCRIPTION

PROJECT MANAGER

Table with 2 columns: DESIGNED BY, DRAWN BY, CHECKED BY, PROJECT NUMBER. Values include R. McPHERSON, K. FORD, D. HEILMAN, 10021123



CITY OF HOMER

HOMER SEAWALL REVETMENT

REVETMENT CONSTRUCTION REQUIREMENTS



FILENAME | OOG-02.DWG
SCALE | NONE

SHEET
OOG-03



NOTES:
1. REFER TO NOTES ON SHEET 00G-02.

EXISTING CONDITIONS 1
SCALE: 0 60' 120' 01C-01



ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
DESIGNED BY	R. McPHERSON
DRAWN BY	K. FORD
CHECKED BY	D. HEILMAN
PROJECT NUMBER	10021123



CITY OF HOMER
HOMER SEAWALL REVETMENT

EXISTING CONDITIONS

SCALE: 0 1" 2"

FILENAME: 01C-00.DWG
SCALE: NONE

SHEET
01C-01



- NOTES:**
1. REFER TO NOTES ON SHEET 00C-02.
 2. GROUND PHOTOGRAPH OF EXISTING SHORELINE PROTECTION (ROCK REVETMENT):



MATCHLINE SEE SHEET 01C-03

ENLARGED EXISTING CONDITIONS 2
 SCALE: 0 15' 30' 02C-02



ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
DESIGNED BY	R. McPHERSON
DRAWN BY	K. FORD
CHECKED BY	D. HEILMAN
PROJECT NUMBER	10021123



CITY OF HOMER

HOMER SEAWALL REVETMENT

ENLARGED EXISTING CONDITIONS - 1

0 1" 2" 02C-02

FILENAME	01C-00.DWG
SCALE	NONE

SHEET
01C-02

NOTES:
1. REFER TO NOTES ON SHEET 00G-02.



ENLARGED EXISTING CONDITIONS 3
SCALE: 0 15' 30' 02C-03



ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
DESIGNED BY	R. McPHERSON
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CITY OF HOMER
HOMER SEAWALL REVETMENT

ENLARGED EXISTING CONDITIONS - 2

0 1' 2' 02C-03

FILENAME	01C-00.DWG
SCALE	NONE

SHEET
01C-03



- NOTES:**
1. REFER TO NOTES ON SHEET 00G-02.
 2. GROUND PHOTOGRAPH OF EXISTING SHORELINE PROTECTION (ROCK REVETMENT):

MATCHLINE SEE SHEET 01C-03

ENLARGED EXISTING CONDITONS 4
 SCALE: 0 15' 30' 02C-04



ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
DESIGNED BY	R. McPHERSON
DRAWN BY	K. FORD
CHECKED BY	D. HEILMAN
PROJECT NUMBER	10021123



CITY OF HOMER
HOMER SEAWALL REVETMENT

ENLARGED EXISTING CONDITIONS - 3

SCALE: 0 1" 2"

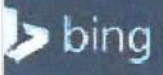
FILENAME: 01C-00.DWG
SCALE: NONE

SHEET
01C-04



NOTES:
1. REFER TO NOTES ON SHEET 00G-02.

CONSTRUCTION BASELINE		
STATION	NORTHING	EASTING
0+00	21691571.4	1913671.8
17+00	21691863.5	1915346.1



PROJECT LAYOUT 1
SCALE: 0 60' 120' 01C-01



ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
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CITY OF HOMER
HOMER SEAWALL REVETMENT

PROJECT LAYOUT	
FILENAME	02C-00.DWG
SCALE	NONE

SHEET
02C-01



- NOTES:**
1. REFER TO NOTES ON SHEET 00G-02.
 2. "BEGIN REVETMENT" COORDINATES DENOTE APPROXIMATE LOCATION OF NEW REVETMENT. CONTRACTOR IS RESPONSIBLE FOR TRANSITIONING NEW REVETMENT INTO EXISTING SHORELINE PROTECTION SMOOTHLY. SEE SHEET 05C-01

ENLARGED PROJECT LAYOUT - 1 2
 SCALE: 0 15' 30' 02C-02



ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
DESIGNED BY	R. McPHERSON
DRAWN BY	K. FORD
CHECKED BY	D. HEILMAN
PROJECT NUMBER	10021123



CITY OF HOMER

HOMER SEAWALL REVETMENT

ENLARGED PROJECT LAYOUT - 1

0 1" 2"

FILENAME	02C-00.DWG	SHEET	02C-02
SCALE	NONE		

NOTES:
 1. REFER TO NOTES ON SHEET 00G-02.



MATCHLINE SEE SHEET 02C-02

MATCHLINE SEE SHEET 02C-04

ENLARGED PROJECT LAYOUT - 2 3
 SCALE: 0 15' 30'



ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
DESIGNED BY	R. McPHERSON
DRAWN BY	K. FORD
CHECKED BY	D. HEILMAN
PROJECT NUMBER	10021123



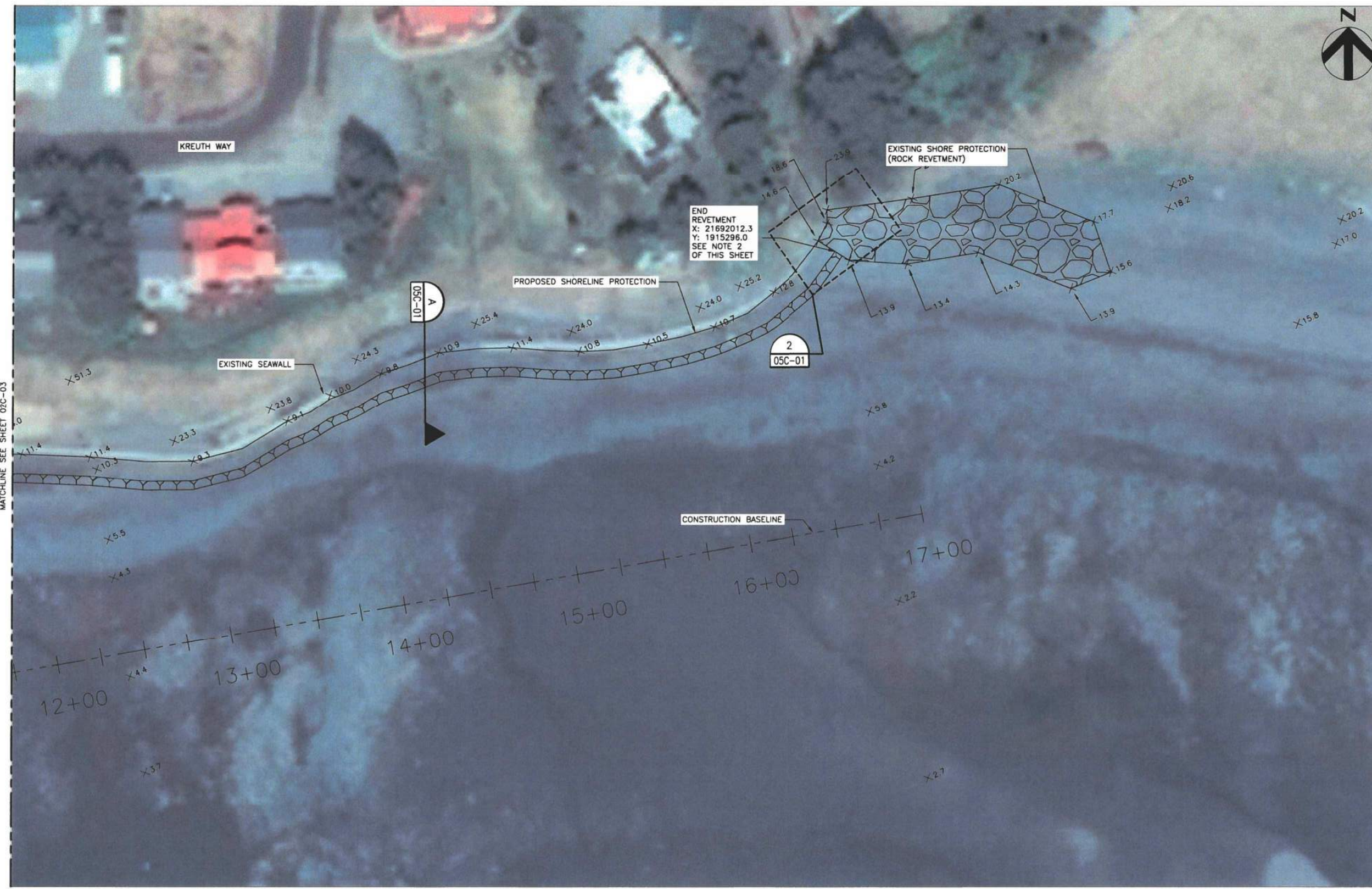
CITY OF HOMER
 HOMER SEAWALL REVETMENT

ENLARGED PROJECT LAYOUT - 2

0 1" 2"

FILENAME | 02C-00.DWG
 SCALE | NONE

SHEET
02C-03



- NOTES:**
1. REFER TO NOTES ON SHEET 00G-02.
 2. "END REVETMENT" COORDINATES DENOTE APPROXIMATE LOCATION OF NEW REVETMENT. CONTRACTOR IS RESPONSIBLE FOR NEW REVETMENT INTO EXISTING SHORELINE PROTECTION SMOOTHLY. SEE SHEET 05C-01

END REVETMENT
 X: 21692012.3
 Y: 1915296.0
 SEE NOTE 2 OF THIS SHEET

MATCHLINE SEE SHEET 02C-03

EXISTING CONDITIONS 4
 SCALE: 0 15' 30' 02C-04



ISSUE	DATE	DESCRIPTION

PROJECT MANAGER	
DESIGNED BY	R. McPHERSON
DRAWN BY	K. FORD
CHECKED BY	D. HEILMAN
PROJECT NUMBER	10021123



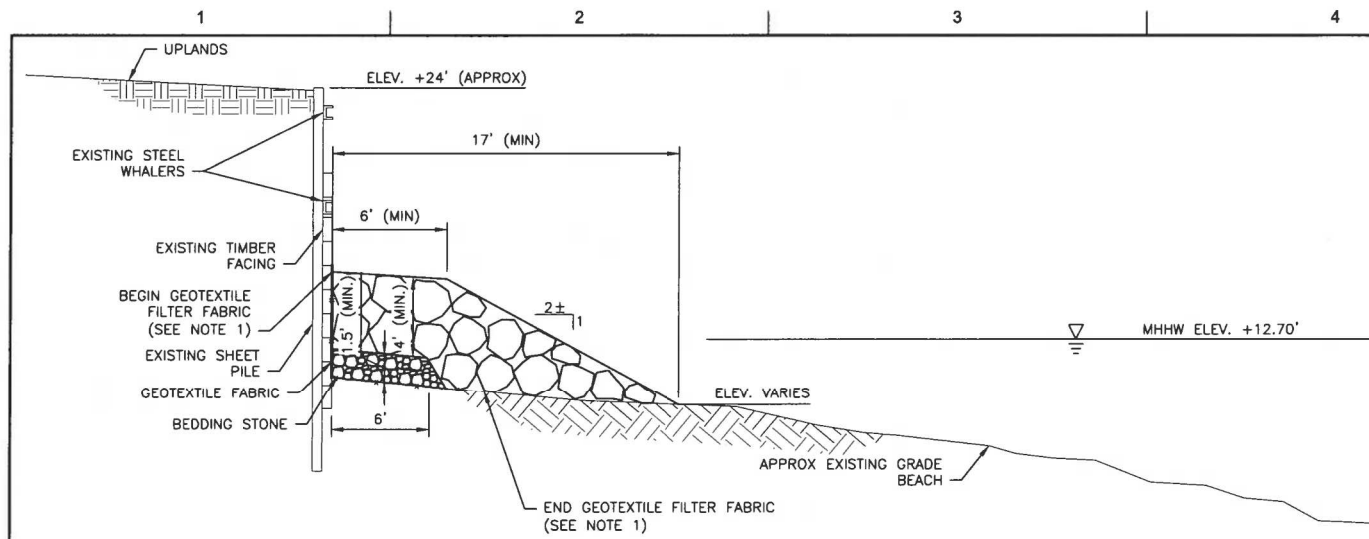
CITY OF HOMER
 HOMER SEAWALL REVETMENT

ENLARGED PROJECT LAYOUT - 3

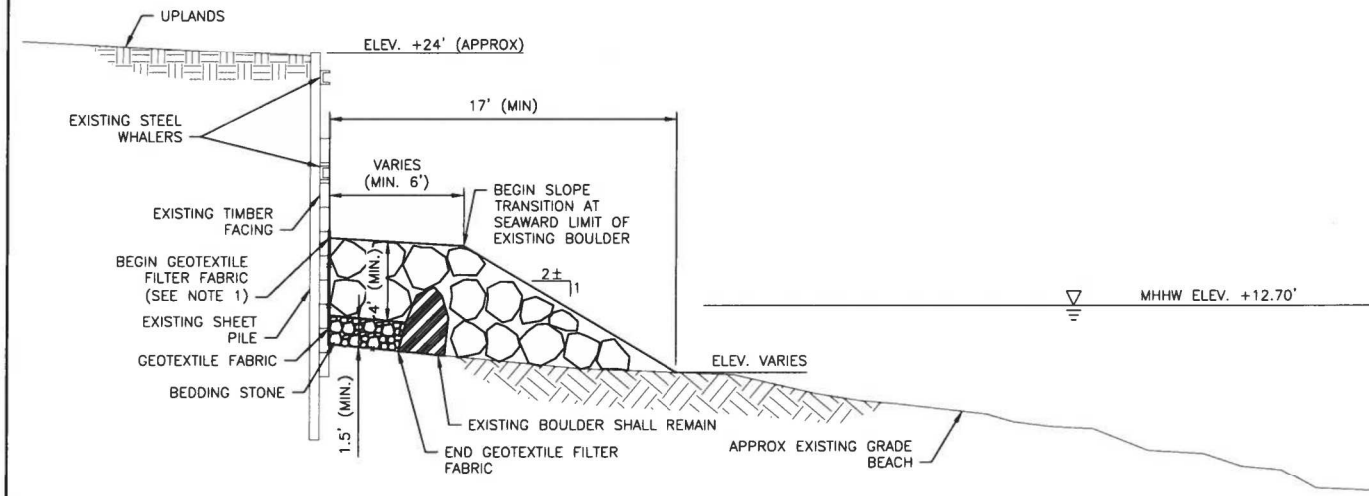
SCALE: 0 1" 2"

FILENAME: 02C-00.DWG
 SCALE: NONE

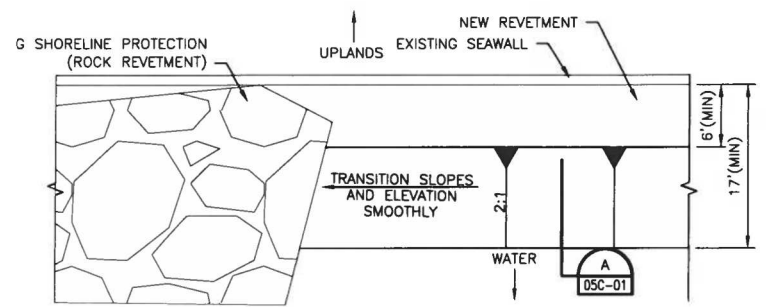
SHEET
02C-04



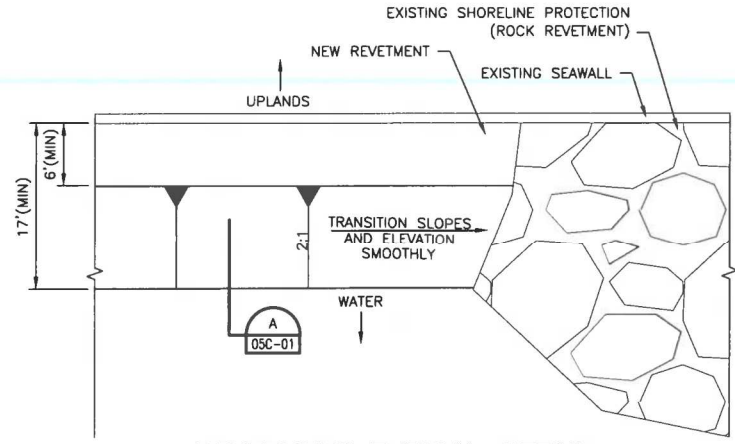
TYPICAL SECTION - REVETMENT SECTION I
SCALE: N.T.S.



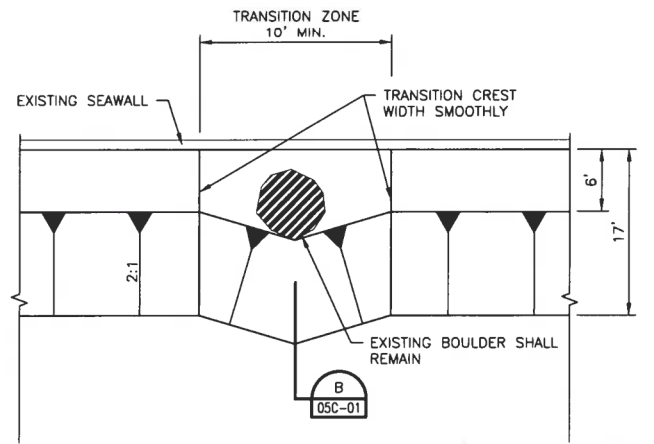
TYPICAL SECTION - EXISTING BOULDER WITHIN REVETMENT
SCALE: N.T.S.



REVETMENT TYPICAL DETAIL - WEST REVETMENT TERMINAL
SCALE: N.T.S.



REVETMENT TYPICAL DETAIL - EAST REVETMENT TERMINAL
SCALE: N.T.S.



REVETMENT TYPICAL DETAIL - EXISTING BOULDER WITHIN REVETMENT FOOTPRINT
SCALE: N.T.S.

- NOTES:**
1. GEOTEXTILE FABRIC SHALL BE LOOSELY PINNED TO THE EXISTING SEAWALL TIMBER FACING AT THE APPROXIMATE HEIGHT OF THE REVETMENT CREST. GEOTEXTILE FABRIC SHALL EXTEND A MINIMUM OF 2' SEAWARD OF THE BEDDING STONE.
 2. EXISTING BOULDERS THAT ARE IMMEDIATELY ADJACENT TO THE EXISTING SEAWALL SHALL NOT BE EXCAVATED OR REMOVED AND REMAIN IN PLACE. SEE NOTE 4 FOR EXISTING BOULDERS IMMEDIATELY ADJACENT TO THE EXISTING SEAWALL.
 3. EXISTING BOULDERS THAT ARE NOT IMMEDIATELY ADJACENT TO THE SEAWALL AND ARE EASILY MOVED (I.E., EXCAVATION IS NOT REQUIRED), SHALL BE RELOCATED AND PLACED AT THE TOE OF THE REVETMENT STRUCTURE. SEE NOTE 4 FOR EXISTING BOULDER THAT ARE NOT EASILY MOVED.
 4. IF AN EXISTING BOULDER IS LOCATED WITHIN THE REVETMENT FOOTPRINT, THE STRUCTURE SHALL SMOOTHLY INCORPORATE THE BOULDER. THE BOULDER SHALL NOT BE EXCAVATED OR REMOVED. TRANSITION TO REVETMENT SLOPE SHALL OCCUR ON THE SEAWARD SIDE OF THE EXISTING BOULDER OR 6' WHICH EVER PROVIDES THE LONGEST REVETMENT CREST WIDTH.
 5. DIMENSIONS SHOWN ON THIS SHEET ARE A MINIMUM (NO MINUS TOLERANCE). MAXIMUM DIMENSION TOLERANCE SHALL NOT EXCEED MORE THAN 1' OF THE DIMENSION SHOWN.



ISSUE	DATE	DESCRIPTION	PROJECT NUMBER
			10021123

PROJECT MANAGER	
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CITY OF HOMER
HOMER SEAWALL REVETMENT

TYPICAL SECTIONS AND DETAILS

0 1' 2' FILENAME 05C-01.DWG SHEET 05C-01
SCALE NONE