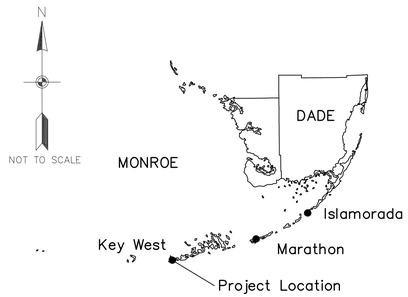
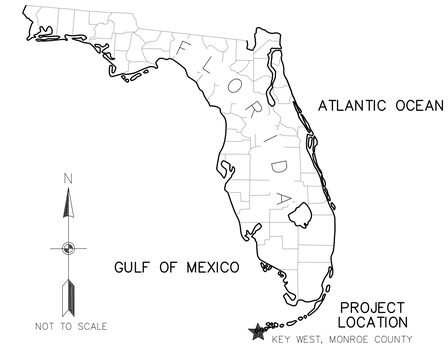
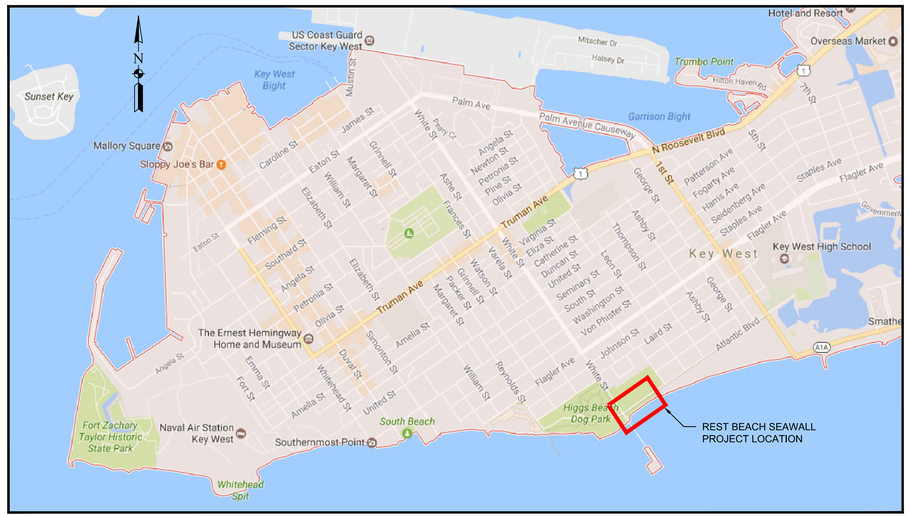
CITY OF KEY WEST
REST BEACH SEAWALL

MONROE COUNTY, FLORIDA
BID PLAN SET



MONROE COUNTY VICINITY MAP





VICINITY MAP
REST BEACH, KEY WEST, FLORIDA

SHEET

SHEET #	TITLE	LATEST UPDATE	REV.
G-001	COVER SHEET AND VICINITY MAP	14-JUN-17	4
G-002	GENERAL NOTES, LEGEND AND ABBREVIATIONS	14-JUN-17	4
C-101	LIMITS OF CONSTRUCTION	14-JUN-17	4
C-102	SITE SURVEY (1 of 2)	14-JUN-17	4
C-103	SITE SURVEY (2 of 2)	14-JUN-17	4
C-104	EXISTING TREES (1 of 2)	14-JUN-17	4
C-105	EXISTING TREES (2 of 2)	14-JUN-17	4
C-106	EXISTING TREE PHOTOS (1 of 2)	14-JUN-17	4
C-107	EXISTING TREE PHOTOS (2 of 2)	14-JUN-17	4
C-108	DEMOLITION PLAN (1 of 3)	14-JUN-17	4
C-109	DEMOLITION PLAN (2 of 3)	14-JUN-17	4
C-110	DEMOLITION PLAN (3 of 3)	14-JUN-17	4
C-111	GRADING PLAN	14-JUN-17	4
C-112	SEAWALL INSTALLATION PLAN (1 of 3)	14-JUN-17	4
C-113	SEAWALL INSTALLATION PLAN (2 of 3)	14-JUN-17	4
C-114	SEAWALL INSTALLATION PLAN (3 of 3)	14-JUN-17	4
C-115	PLANTING PLAN	14-JUN-17	4
C-301	CROSS SECTIONS	14-JUN-17	4
C-302	CROSS SECTIONS	14-JUN-17	4
C-303	CROSS SECTIONS	14-JUN-17	4
C-501	DETAILS	14-JUN-17	4
C-502	DETAILS	14-JUN-17	4
C-503	DETAILS	14-JUN-17	4

FOR REVIEW ONLY - NOT FOR CONSTRUCTION

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed by: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. WALKER
Design file no: KWEL_G-001_COVER SHEET_1706.DWG
Scale: AS SHOWN

TETRA TECH INC.
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TEL: (772) 781-3400
FAX: (772) 781-3411
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL

COVER SHEET AND VICINITY MAP

KEY WEST, MONROE COUNTY, FL

Sheet Reference:
G-001
Sheet 1 of 23

GENERAL NOTES:

1. ELEVATIONS REFERENCED HEREIN ARE SHOWN RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
2. TO CONVERT NAVD88 ELEVATIONS TO NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29) FOR THIS PROPERTY, THE MODEL VALUE OF 1.35 MUST BE ADDED ALGEBRAICALLY TO THE NAVD88 HEIGHT (NGVD29 = 1.35 + NAVD88).
3. HORIZONTAL COORDINATES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD83), FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE.
4. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING ANY WORK UNDER THIS CONTRACT AND NOTIFY THE CITY/ENGINEER IN WRITING OF ANY DIFFERENCES BEFORE COMMENCING WITH CONSTRUCTION.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL EXPENSE FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED BY OPERATIONS IN CONJUNCTION WITH THE COMPLETION OF THIS WORK. THE CONTRACTOR SHALL LOCATE ALL UTILITIES IN THE AREA OF WORK PRIOR TO CONSTRUCTION. THE APPROPRIATE UTILITY COMPANY SHALL BE NOTIFIED BY THE CONTRACTOR AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION ACTIVITIES SO THAT A UTILITY COMPANY REPRESENTATIVE CAN BE PRESENT.
6. THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALL UTILITY LOCATIONS BOTH HORIZONTALLY AND VERTICALLY AND DETERMINING IF ANY CONFLICTS EXIST BETWEEN THE PROPOSED WORK AND THE EXISTING UTILITIES. THIS SHALL BE ACCOMPLISHED PRIOR TO CONSTRUCTION ACTIVITIES COMMENCING.
7. THE CONTRACTOR SHALL REVIEW THE CONTRACT DOCUMENTS AND, IN CASE OF ANY CONFLICT BETWEEN ANY PORTION OF THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL REQUEST CLARIFICATION IN WRITING PRIOR TO BIDDING OR BASE HIS/HER BID ON THE MORE STRINGENT REQUIREMENTS.
8. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL MATERIALS USED TO THE CITY/ENGINEER FOR APPROVAL PRIOR TO ORDER, SHIPMENT, OR INSTALLATION.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL REQUIRED PERMITS ARE OBTAINED AND IN HAND BEFORE BEGINNING ANY CONSTRUCTION. NO CONSTRUCTION OR FABRICATION OF ANY ITEM SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED ALL PERMITS AND ANY OTHER DOCUMENTATION FROM ALL OF THE PERMITTING AND ANY OTHER REGULATORY AUTHORITIES. ANY PENALTIES, STOP WORK ORDERS ON ADDITIONAL WORK RESULTING FROM THE CONTRACTOR BEING IN VIOLATION OF THE REQUIREMENTS ABOVE SHALL BE FULLY BORNE BY THE CONTRACTOR.
10. BEST MANAGEMENT PRACTICES FOR EROSION AND TURBIDITY CONTROL SHALL BE UTILIZED AT ALL TIMES DURING CONSTRUCTION. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO, THE USE OF STAKED HAY BALES, STAKED FILTER CLOTH, STAKED SILT FENCE, AND ANY OTHER SUITABLE METHOD AROUND DRAINAGE STRUCTURES AND AT ALL AREAS SUBJECT TO EROSION. FLOATING OR STAKED TURBIDITY BARRIERS SHALL BE USED IF APPROPRIATE. THE CONTRACTOR SHALL PROVIDE DAILY INSPECTION OF THE EROSION PROTECTION ITEMS AND MAINTAIN THEM DURING THE ENTIRE PERIOD OF CONSTRUCTION.
11. ALL SURFACE WATER DISCHARGES FROM THE SITE SHALL MEET STATE WATER QUALITY STANDARDS (LESS THAN 29 NTU ABOVE BACKGROUND) PRIOR TO REACHING ANY WATERS OF THE STATE.
12. THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF CONSTRUCTION PLANS AND PERMITS ON THE JOB SITE DURING ALL PHASES OF CONSTRUCTION.
13. ALL FIELD LAYOUT AND SURVEYING FOR CONSTRUCTION OF THIS PROJECT SHALL BE PROVIDED BY THE CONTRACTOR AT HIS/HER EXPENSE.
14. AFTER CONSTRUCTION IS COMPLETE, THE CONTRACTOR SHALL PROVIDE THE CITY WITH SIGNED & SEALED 'AS-BUILT' RECORD DRAWINGS OF HIS/HER WORK.

PROJECT SUMMARY:

15. THE PROJECT CONSISTS OF THE INSTALLATION OF 702.1 LINEAR FEET (LF) OF STEEL SHEETPILE WITH A REINFORCED CONCRETE CAP SET AT THE LINES AND GRADES SHOWN. THE TOP OF THE CAP SHALL BE SET AT +3' NAVD88 WITH A TOLERANCE OF +/- 0.25 INCH. SHEETS SHALL BE EZ-95 ASTM A572, GRADE 50. EACH SHEET SHALL BE 12 FEET LONG, WITH 337 SHEETS REQUIRED. THE CONCRETE CAP SHALL BE A MINIMUM OF 36" WIDE AND 18" IN THICKNESS.
16. INCIDENTAL WORK INCLUDES THE FURNISH AND INSTALL OF 594 SQ. FT. OF SIDEWALK, 127 LINEAR FEET OF HANDRAIL, 627 LINEAR FEET OF POST & ROPE FENCE, THE REPAIR OF A 36 SQ. FT. SECTION OF EXISTING SIDEWALK, AND THE PLANTING OF 4,064 NATIVE PLANTS (1 GALLON EACH).
17. THE CONTRACTOR SHALL PROVIDE BID OPTIONS FOR THE FOLLOWING:
    - 17.1. FURNISH AND INSTALL OF EZ-95 ASTM A690 GRADE 50 STEEL SHEETPILE (OR EQUIVALENT).
    - 17.2. COAT STEEL SHEETS WITH A COAL TAR EPOXY COATING OF 16 MILS AFTER A NEAR WHITE SAND BLAST; EACH SHEET SHALL BE COATED FULL LENGTH ON ALL SIDES.
    - 17.3. FURNISH AND INSTALL STEEL SHEET PILE POINTS.
    - 17.4. FURNISH AND INSTALL OF CONCRETE SIDEWALKS & SLABS, 4" MIN. THICKNESS AS A UNIT COST PER SQUARE YARD (SY). COSTS SHALL INCLUDE REMOVAL AND DISPOSAL OF EXISTING CONCRETE SIDEWALK/SLABS.
18. THE CITY OF KEY WEST WILL MAKE THE STAGING AREAS SHOWN ON THE PLANS AVAILABLE FOR USE BY THE CONTRACTOR AT NO COST. THE CONTRACTOR SHALL RESTORE THE STAGING AREAS AT THE COMPLETION OF CONSTRUCTION.
19. THE CONTRACTOR WILL PROVIDE TEMPORARY SITE SECURITY FENCING TO SECURE THE CONSTRUCTION SITE. THE CONTRACTOR WILL NOT ALLOW PUBLIC ACCESS TO THE SITE DURING CONSTRUCTION.
20. THE CONTRACTOR WILL MAINTAIN TRAFFIC ALONG ATLANTIC BLVD DURING ALL PHASES OF CONSTRUCTION IN ACCORDANCE WITH FDOT SPECIFICATION SECTION 102. CONSTRUCTION ACTIVITIES WILL NOT IMPEDE TRAFFIC UNLESS AUTHORIZED IN WRITING BY THE CITY.
21. THE CONTRACTOR SHALL FIELD STAKE THE BULKHEAD ALIGNMENT AT THE INFLECTION POINTS SHOWN ON THE PLANS; CITY AND ENGINEER SHALL APPROVE THE STAKED ALIGNMENT PRIOR TO THE CONTRACTOR INITIATING SITE PREPARATION FOR SHEET PILE INSTALLATION.

DEMOLITION:

22. DEMOLITION ACTIVITIES FOR THIS PROJECT INCLUDE:
    - 22.1. CONCRETE SIDEWALK (2 LOCATIONS TOTALING 365 SQ. FT.)
    - 22.2. CONCRETE SLABS (1 LOCATION TOTALING 175 SQ. FT.)
    - 22.3. WOODEN DECKS (2 LOCATIONS TOTALING 225 SQ. FT.)
    - 22.4. TREES, VEGETATION, & GRASS SOD (16,750 SQ. FT.)
    - 22.5. POST & ROPE FENCE (TOTALING 961 LINEAR FEET)
23. THE CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION OF ALL OBSTRUCTIONS ALONG THE STEEL SHEETPILE'S ALIGNMENT PRIOR TO CONSTRUCTION. THE QUANTITY OF ITEMS REQUIRING DEMOLITION AND REPLACEMENT MAY VARY DEPENDING UPON THE CONTRACTOR'S MEANS AND METHODS.
24. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES OR LOCAL AUTHORITIES FURNISHING GAS, WATER, ELECTRICAL, TELEPHONE, OR SEWER SERVICE SO THEY CAN REMOVE, RELOCATE, DISCONNECT, CAP OR PLUG THEIR EQUIPMENT IN ORDER TO FACILITATE DEMOLITION & INSTALLATION OF THE STEEL SHEETPILE.

DEMOLITION CONT'D:

25. THE CONTRACTOR SHALL PROTECT ALL UTILITIES AND OTHER IMPROVEMENTS SHOWN ON THESE PLANS AND UTILITIES AND OTHER IMPROVEMENTS NOT SHOWN. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR REPAIRS OF UTILITIES AND OTHER IMPROVEMENTS DAMAGED DURING CONSTRUCTION AND SHALL MAINTAIN SUFFICIENT PROTECTION FOR ALL UTILITIES REQUIRED TO PROTECT THEM FROM DAMAGE AND TO PROTECT THE PUBLIC DURING CONSTRUCTION. CONTRACTOR SHALL ALSO SUPPORT EXISTING UTILITIES AS REQUIRED FOR INSTALLATION OF ALL PROPOSED IMPROVEMENTS. ALL COSTS ASSOCIATED WITH PROTECTING, SUPPORTING, REPAIRING, AND OTHER ACTIVITIES RESULTING FROM CONTRACTOR DAMAGING UTILITIES SHALL BE THE CONTRACTORS RESPONSIBILITY AT NO ADDITIONAL COST TO THE CITY.
26. THE CONTRACTOR SHALL SAW-CUT A SMOOTH STRAIGHT EDGE ON ANY CONCRETE PROPOSED FOR DEMOLITION PRIOR TO ITS REMOVAL.

STEEL SHEETPILE:

27. AN ESTIMATED TOTAL OF 337 SHEETS SHALL BE REQUIRED. STEEL SHEETPILE SHALL BE EZ-95, ASTM A572, GRADE 50. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT QUANTITY REQUIRED.
28. ALL STEEL SHEETPILE UTILIZED ON THIS PROJECT SHALL BE NEW.
29. INSTALLATION ACTIVITIES SHALL BE DONE IN SUCH A WAY AS TO NOT DISTURB SURROUNDING STRUCTURES.
30. SHEETPILES SHALL BE SET IN A STRAIGHT LINE BETWEEN INFLECTION POINTS. THE HORIZONTAL LOCATION OF INFLECTION POINTS MAY VARY BY NO MORE THAN 3 FEET.

CONCRETE:

31. ALL CONCRETE SIDEWALKS SHALL MEET FDOT SPECIFICATION SECTION 522. CONCRETE SHALL MEET FDOT SPECIFICATION SECTION 347, PORTLAND CEMENT CONCRETE - CLASS NS.
32. ALL CONCRETE SLABS SHALL MEET FDOT SPECIFICATION SECTION 353. CONCRETE SHALL MEET SPECIFICATION SECTION 346, PORTLAND CEMENT CONCRETE.
33. CONCRETE CAP SHALL MEET SPECIFICATION SECTION 03 31 01 MARINE CONCRETE.
34. ALL REINFORCING BARS SHALL COMPLY WITH ASTM A615/A615M GRADE 60 AND HAVE AT LEAST 3 INCHES OF CONCRETE COVER.
35. MINIMUM LAP SPLICE LENGTH FOR #5 REINFORCING BARS IS 2 FT.

LANDSCAPING:

36. ALL TREES REMOVED AND/OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH THE SAME SPECIES AND SIZE AS EXISTING.
37. AS-BUILT RECORD DRAWINGS SHALL PROVIDE THE LOCATION AND LIST OF ALL TREES, BUSHES AND SHRUBS REMOVED AND/OR DAMAGED AND REPLACED DURING CONSTRUCTION.
38. TREES SHALL BE INSTALLED TO MEET FDOT INDEX NO. 533.

POST & ROPE FENCE:

39. FENCE POSTS SHALL BE 4"x4" SQUARE AND MEET FDOT SPECIFICATION SECTION 954.
40. ROPE SHALL BE WHITE NYLON WITH DIAMETER MATCHING EXISTING ROPE.
41. AS-BUILT RECORD DRAWINGS SHALL PROVIDE THE LOCATION OF ALL POST & ROPE FENCE REMOVED AND REPLACED DURING CONSTRUCTION.

STAGING AREA:

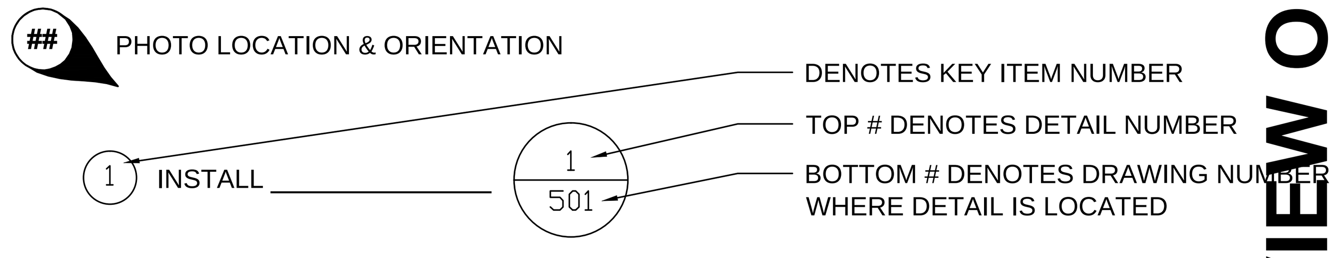
42. UPON COMPLETION OF THE PROJECT, ALL AREAS (INCLUSIVE OF SOD) UTILIZED BY THE CONTRACTOR SHALL BE RESTORED TO EQUAL OR BETTER CONDITION.
43. CONTRACTOR IS RESPONSIBLE FOR SITE SECURITY AND SECURITY OF ITS OWN EQUIPMENT.
44. CONTRACTOR SHALL NOT ALLOW PUBLIC ACCESS TO THE SITE DURING CONSTRUCTION. WITHIN 15 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF WORK, THE CONTRACTOR SHALL CONSTRUCT A TEMPORARY 6 FOOT HIGH CHAIN LINK FENCE RESTRICTING ACCESS TO THE SITE AND AROUND ALL TRAILERS AND MATERIALS. INCLUDE PLASTIC INSERTS, COLORED GREEN, SO THAT VISIBILITY THROUGH THE FENCE IS OBSTRUCTED. DO NOT PLACE OR STORE TRAILERS, MATERIALS, OR EQUIPMENT OUTSIDE THE FENCED AREA. TRAILERS, EQUIPMENT, OR MATERIALS MUST NOT BE OPEN TO PUBLIC VIEW WITH THE EXCEPTION OF THOSE ITEMS WHICH ARE IN SUPPORT OF ONGOING WORK ON ANY GIVEN DAY.
45. KEEP FENCING IN A STATE OF GOOD REPAIR AND PROPER ALIGNMENT. MOW AND MAINTAIN GRASS LOCATED WITHIN THE BOUNDARIES OF THE CONSTRUCTION SITE FOR THE DURATION OF THE PROJECT. GRASS AND VEGETATION ALONG FENCES, BUILDINGS, UNDER TRAILERS, AND IN AREAS NOT ACCESSIBLE TO MOWERS WILL BE EDGED OR TRIMMED NEATLY.
46. WHEN A WARNING OF GALE FORCE WINDS IS ISSUED, TAKE PRECAUTIONS TO MINIMIZE DANGER TO PERSONS, AND PROTECT THE WORK AND NEARBY PROPERTY. PRECAUTIONS MUST INCLUDE, BUT ARE NOT LIMITED TO, CLOSING OPENINGS; REMOVING LOOSE MATERIALS, TOOLS, AND EQUIPMENT FROM EXPOSED LOCATIONS; REMOVING OR SECURING TEMPORARY WORK SURFACES AND/OR ENCLOSURES; AND GENERAL GOOD HOUSEKEEPING. CONTACTOR SHALL SUBMIT A HURRICANE PREPAREDNESS PLAN FOR REVIEW AND APPROVAL PRIOR TO THE START OF CONSTRUCTION.
47. REMOVE ALL CONSTRUCTION RELATED DEBRIS, WASTE MATERIALS, PACKAGING MATERIALS AND THE LIKE FROM THE WORK SITE DAILY. ANY DIRT OR MUD WHICH IS TRACKED ONTO PAVED OR SURFACED ROADWAYS MUST BE CLEANED AWAY. NEATLY STACK ALL MATERIALS, BOTH NEW OR SALVAGED, THAT ARE NOT STORED IN TRAILERS.

HATCHING LEGEND:

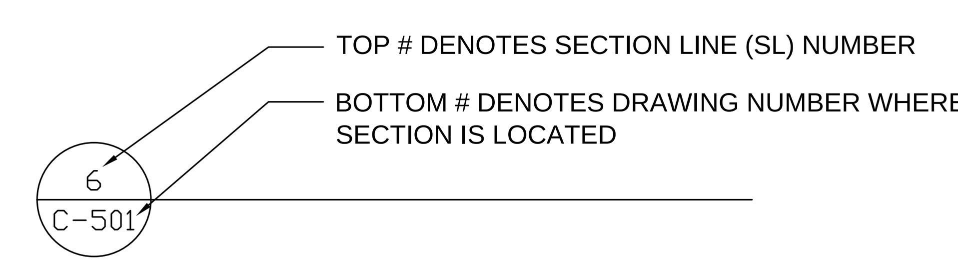
- LIMITS OF CONSTRUCTION
- STAGING AREA LOCATIONS
- SOFT SURFACE (GRASS, SHRUBS, TREES, ETC.)
- HARD SURFACE (CONCRETE)
- HARD SURFACE (TIMBER)
- PI: / E: / N: — SHEETPILE CENTERLINE ALIGNMENT COORDINATES (TYP)
- ITEM TO DEMOLISH (SHEETS C-104 THRU C-106)
  ITEM TO INSTALL/REPAIR (SHEETS C-108 THRU C-110)
- EXCAVATION
- FILL
- EXISTING TOPOGRAPHY
- PROPOSED GRADE

REFERENCE SYMBOLS:

- ## — TREE IDENTIFICATION #
- ## — PHOTO LOCATION & ORIENTATION



KEY ITEM DETAIL DETAIL



SECTION LINE DETAIL

FOR REVIEW ONLY - NOT FOR CONSTRUCTION

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed by: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. McGAHEE
Design file no: KWRB_G-002_GENERAL NOTES_170614.DWG
Scale: AS SHOWN

TETRA TECH INC.
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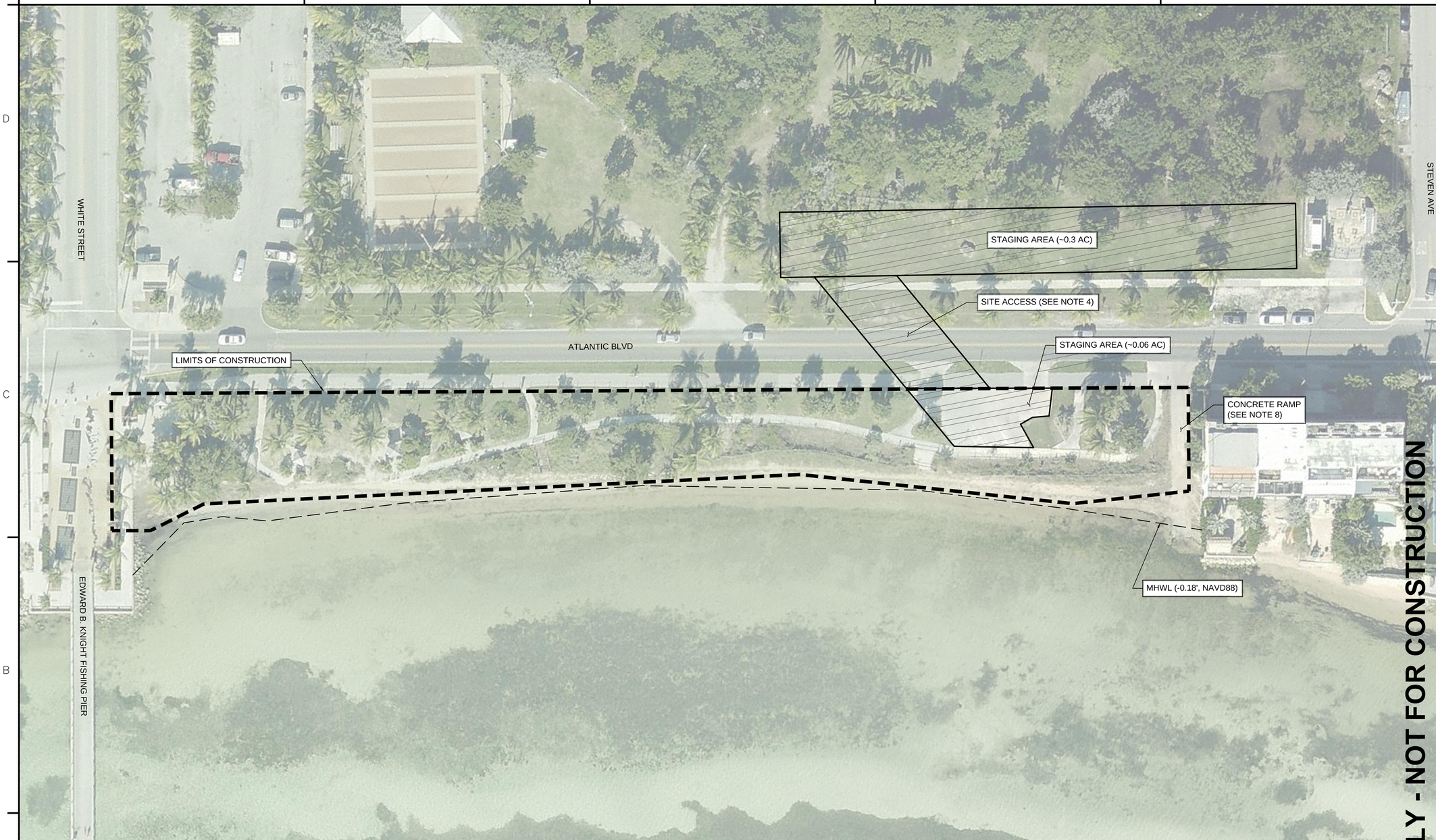
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL

GENERAL NOTES, ABBREVIATIONS, & LEGEND

KEY WEST, MONROE COUNTY, FL



FOR REVIEW ONLY - NOT FOR CONSTRUCTION

NOTES:

1. SEE SHEET C-102 & C-103 FOR SITE SURVEY.
2. THE CITY OF KEY WEST WILL MAKE THE STAGING AREAS SHOWN AVAILABLE FOR USE BY THE CONTRACTOR AT NO COST. THE EXACT LOCATION OF THE SITE ACCESS/CROSSING OF ATLANTIC BLVD. MAY BE SUBJECT TO FIELD ADJUSTMENT BY THE CITY/ENGINEER.
3. UPON COMPLETION OF THE PROJECT, ALL AREAS UTILIZED BY THE CONTRACTOR SHALL BE RESTORED TO THE ORIGINAL OR BETTER CONDITION.
4. THE CONTRACTOR SHALL MAINTAIN TRAFFIC ALONG ATLANTIC BLVD THROUGHOUT CONSTRUCTION IN ACCORDANCE WITH FDOT SPECIFICATION SECTION 102. THE CONTRACTOR SHALL NOT IMPEDE TRAFFIC. CONTRACTOR SHALL PROVIDE FLAGGERS AS NEEDED TO SAFELY CROSS ATLANTIC BLVD.
5. THE CONTRACTOR SHALL MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES THROUGHOUT CONSTRUCTION IN ACCORDANCE WITH FDOT SPECIFICATION SECTION 104. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL NECESSARY PERMITS, INCLUDING A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND TO FILE THE NOTICE OF INTENT.

NOTES CONT'D:

6. CONTRACTOR SHALL PROVIDE ANTI-TRACKING MEASURES AND KEEP ATLANTIC BLVD FREE OF DEBRIS AT ALL TIMES.
7. UNDER NO CIRCUMSTANCE SHALL THE CONTRACTOR'S MATERIALS OR EQUIPMENT ENCROACH SEAWARD OF THE MEAN HIGH WATER LINE (MHWL).
8. PUBLIC ACCESS TO THE CONCRETE RAMP SHALL BE MAINTAINED AT ALL TIMES. CONTRACTOR SHALL NOT STAGE MATERIAL ON THE RAMP.

LEGEND:

- LIMITS OF CONSTRUCTION
- STAGING AREA LOCATIONS
- MEAN HIGH WATER LINE (MHWL)

N

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)

MICHAEL R. BARNETT, PE
FL LIC. # 44625

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Designed by: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. KUNTZ
Design File no: KWBB_C-101_SNGAREA_170614.DWG
Scale: AS SHOWN

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CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL

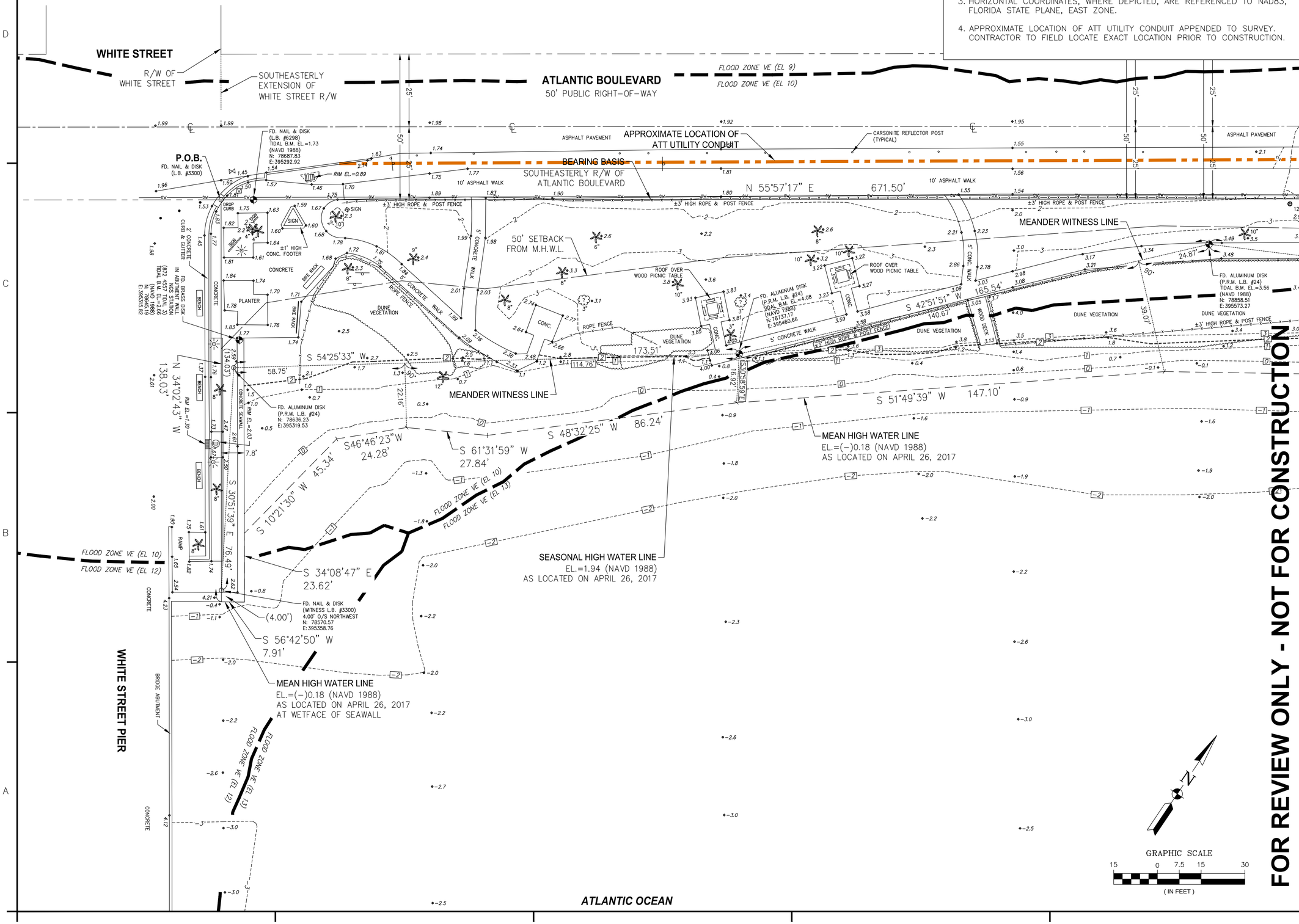
LIMITS OF CONSTRUCTION

KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-101
Sheet 3 of 23

NOTES:

1. SITE SURVEY PERFORMED BY AVIROM & ASSOCIATES INC. ON APRIL 26, 2017.
2. ALL ELEVATIONS ARE REFERENCED TO NAVD88. NGVD29 = 1.35' + NAVD88.
3. HORIZONTAL COORDINATES, WHERE DEPICTED, ARE REFERENCED TO NAD83, FLORIDA STATE PLANE, EAST ZONE.
4. APPROXIMATE LOCATION OF ATT UTILITY CONDUIT APPENDED TO SURVEY. CONTRACTOR TO FIELD LOCATE EXACT LOCATION PRIOR TO CONSTRUCTION.



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Designed by: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. MAYNARD
Design File no: KWB&C-102_EXCND_170614.DWG
Scale: AS SHOWN

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CITY OF KEY WEST
REST BEACH SEAWALL
SITE SURVEY (1 of 2)
KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-102
Sheet 4 of 23

NOTES:

1. SITE SURVEY PERFORMED BY AVIROM & ASSOCIATES INC. ON APRIL 26, 2017.
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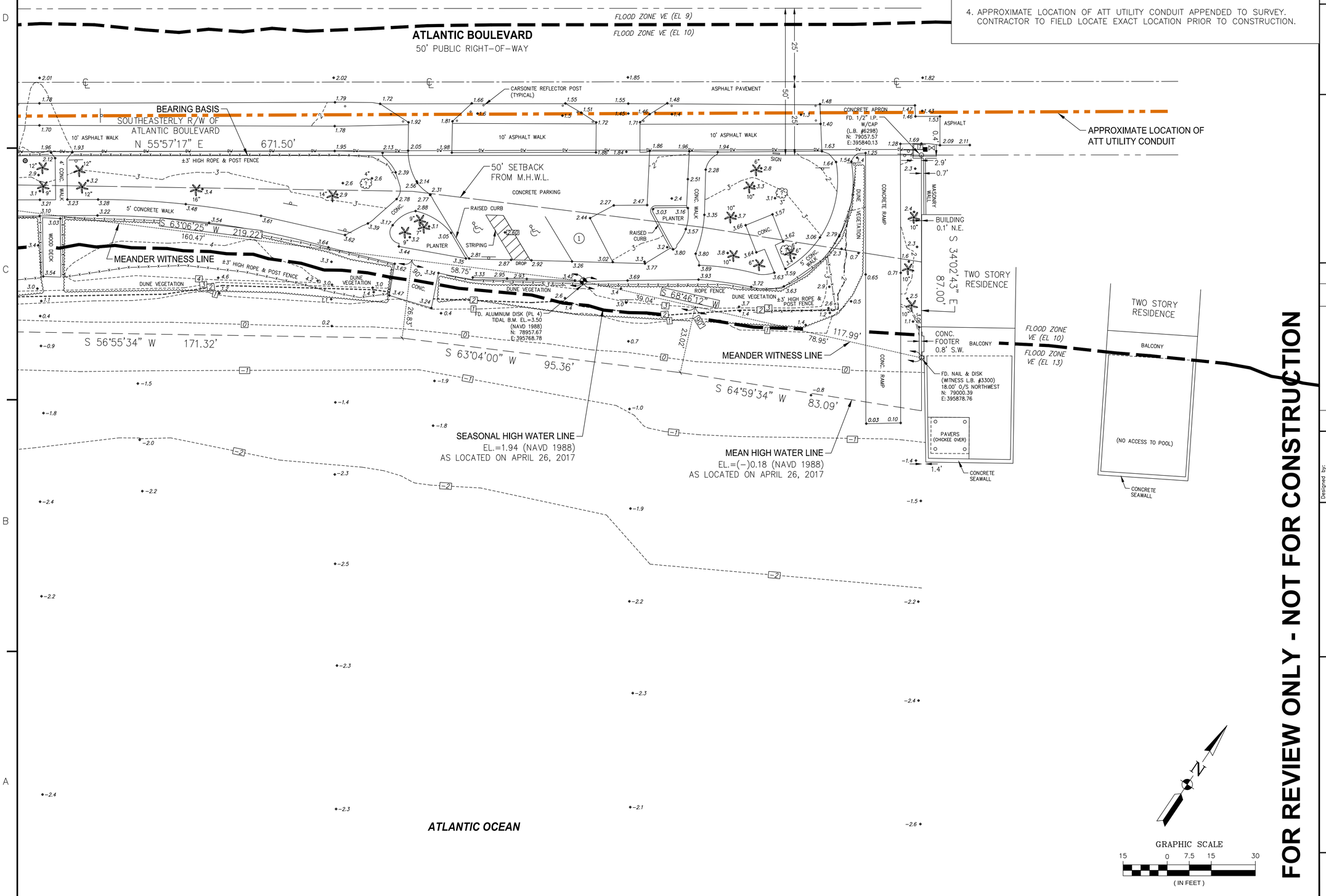

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0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed by: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. MARCHESE
Design file no: KWBS_C-102_EXCND_170614.DWG
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
STE. 104
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411

CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL

SITE SURVEY (2 of 2)

KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-103
Sheet 5 of 23

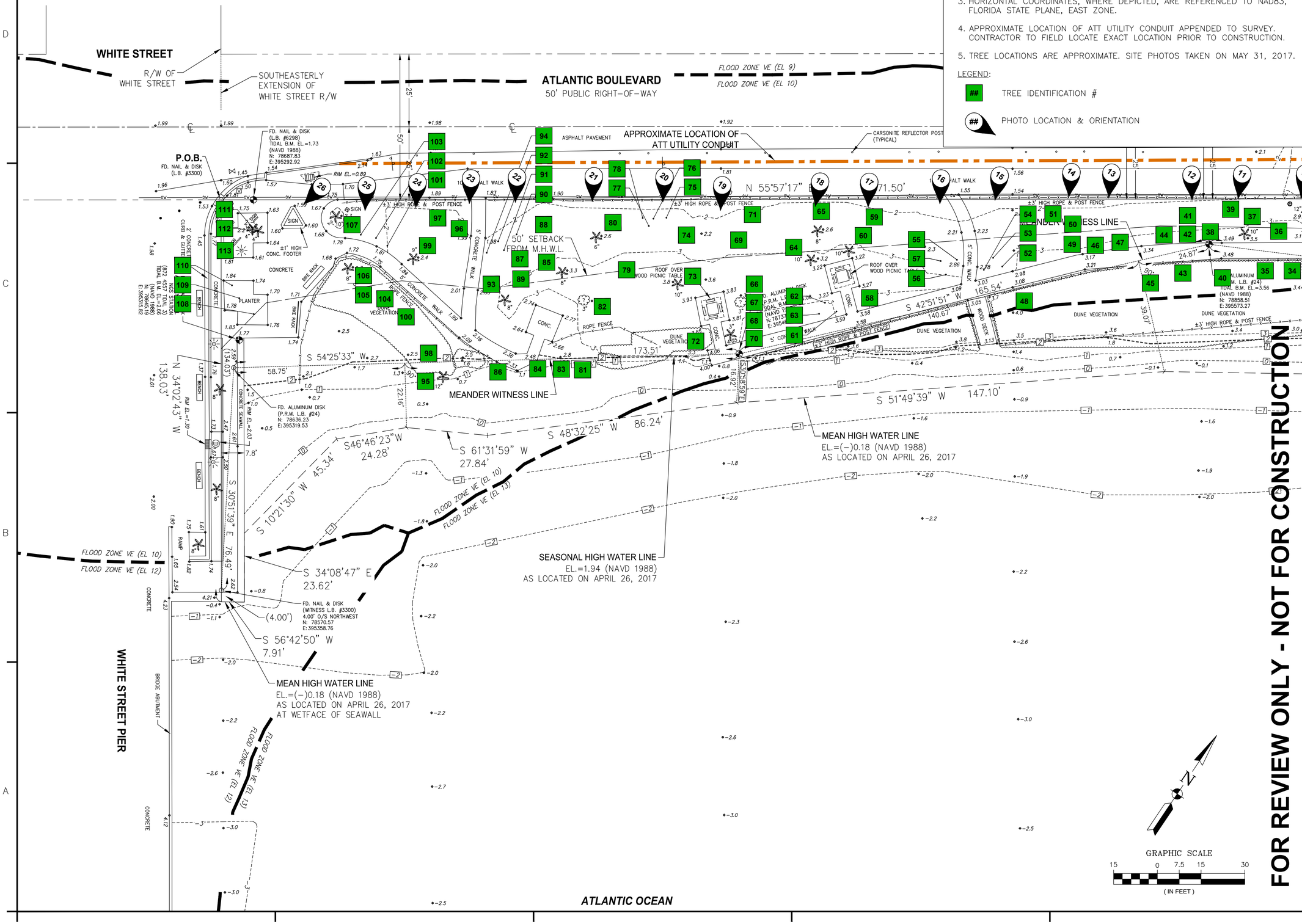
NOTES:

1. SITE SURVEY PERFORMED BY AVIROM & ASSOCIATES INC. ON APRIL 26, 2017.
2. ALL ELEVATIONS ARE REFERENCED TO NAVD88. NGVD29 = 1.35' + NAVD88.
3. HORIZONTAL COORDINATES, WHERE DEPICTED, ARE REFERENCED TO NAD83, FLORIDA STATE PLANE, EAST ZONE.
4. APPROXIMATE LOCATION OF ATT UTILITY CONDUIT APPENDED TO SURVEY. CONTRACTOR TO FIELD LOCATE EXACT LOCATION PRIOR TO CONSTRUCTION.
5. TREE LOCATIONS ARE APPROXIMATE. SITE PHOTOS TAKEN ON MAY 31, 2017.

LEGEND:

TREE IDENTIFICATION

PHOTO LOCATION & ORIENTATION



FOR REVIEW ONLY - NOT FOR CONSTRUCTION

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed by: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. MAYNARD
Design File no: KWB&C-104_EXDWG_TREES_170531.DWG
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
SUITE 104
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411

CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL

EXISTING TREES (1 of 2)

KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-104
Sheet 6 of 23

NOTES:

1. SITE SURVEY PERFORMED BY AVIROM & ASSOCIATES INC. ON APRIL 26, 2017.
2. ALL ELEVATIONS ARE REFERENCED TO NAVD88. NGVD29 = 1.35' + NAVD88.
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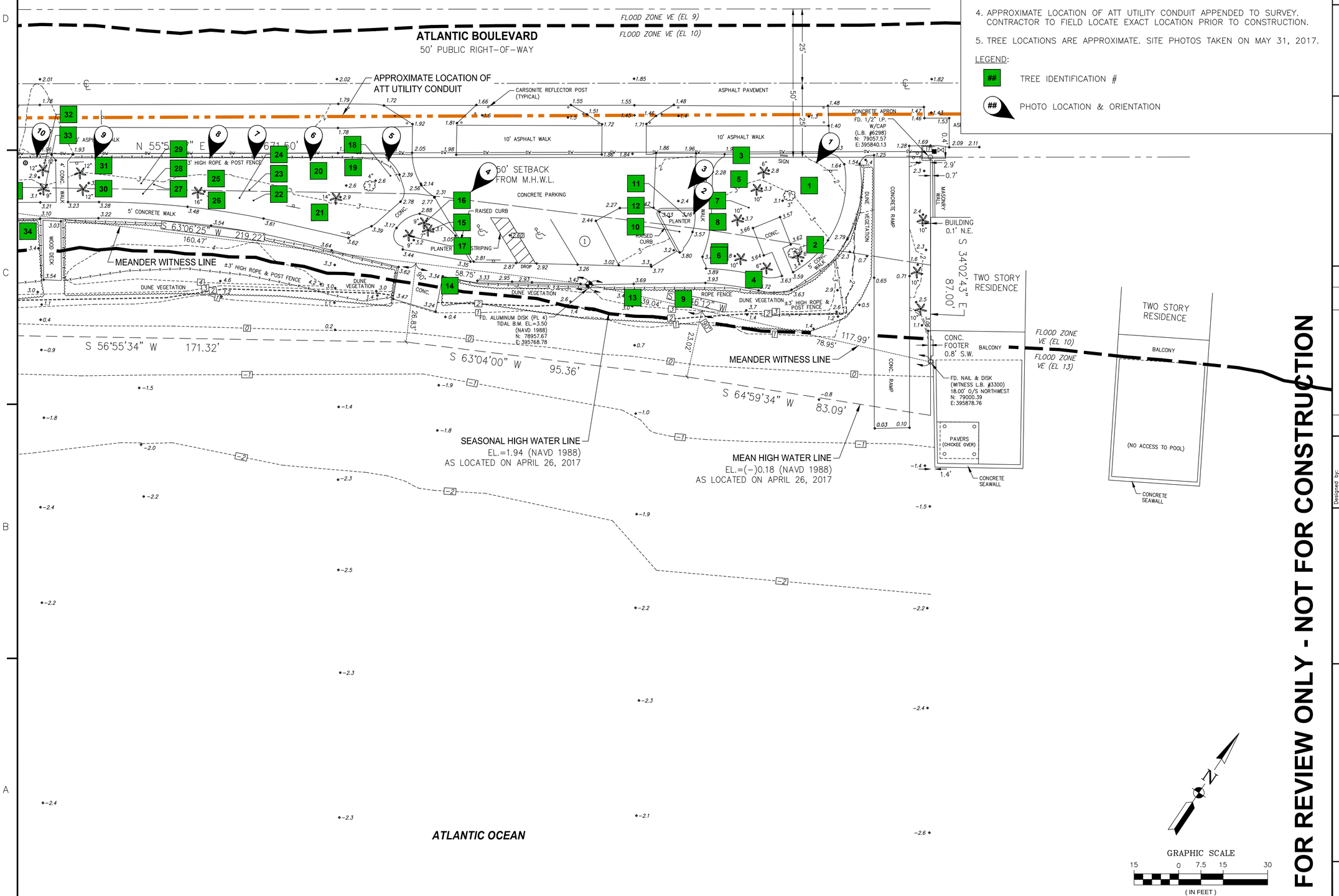
LEGEND:

TREE IDENTIFICATION

PHOTO LOCATION & ORIENTATION



FOR REVIEW ONLY - NOT FOR CONSTRUCTION

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS, VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed by: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. MCCREE
Design file no: KWBS_C-104_EXCND_TREES_170411.DWG
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
STE. 104
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411

CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL

EXISTING TREES (2 of 2)

KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-105
Sheet 7 of 23

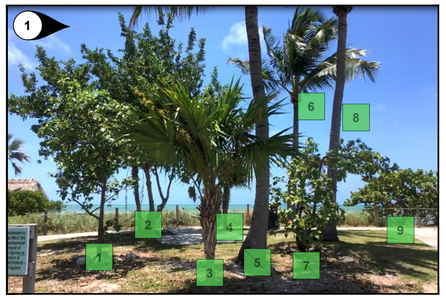
NOTES:

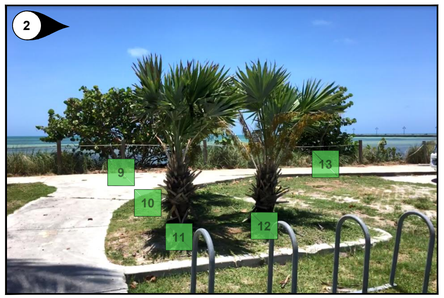
1. SITE PHOTOS TAKEN ON MAY 31, 2017.
2. SEE SHEETS C-104 & C-105 FOR PHOTO LOCATIONS.

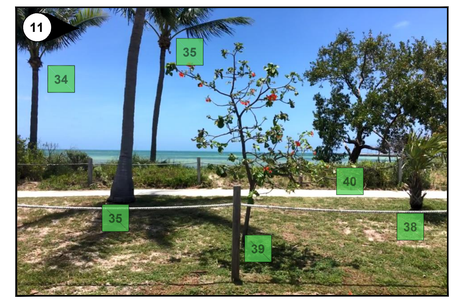
LEGEND:

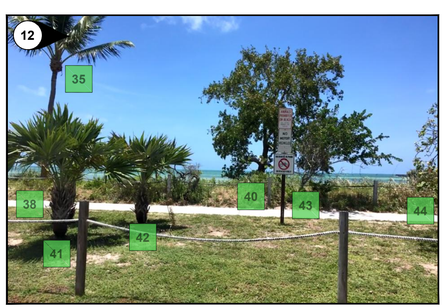
TREE IDENTIFICATION

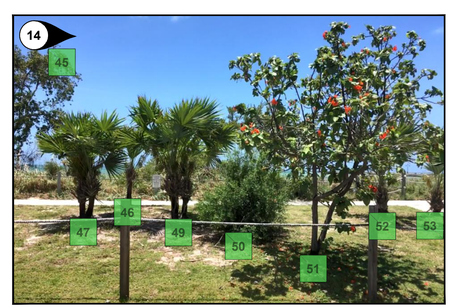
PHOTO LOCATION & ORIENTATION

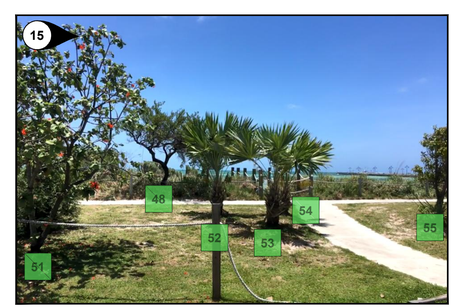


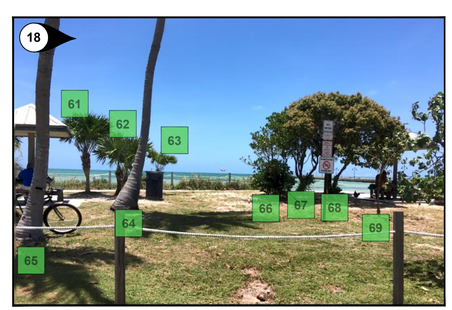












FOR REVIEW ONLY - NOT FOR CONSTRUCTION

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed By: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: M. BARNETT
Design file no: KWRB_C-104_EXDWG_TREES_17V11.DWG
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
SUITE 114
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411

CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL

EXISTING TREE PHOTOS (1 of 2)

KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-106
Sheet 8 of 23

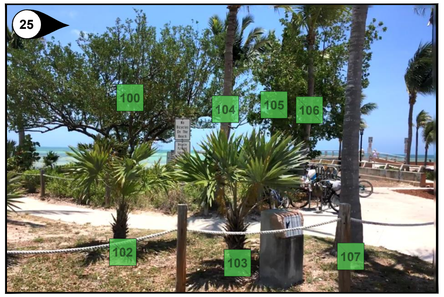
NOTES:

1. SITE PHOTOS TAKEN ON MAY 31, 2017.
2. SEE SHEETS C-104 & C-105 FOR PHOTO LOCATIONS.

LEGEND:

TREE IDENTIFICATION

PHOTO LOCATION & ORIENTATION



FOR REVIEW ONLY - NOT FOR CONSTRUCTION

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed by: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. SAUNDERS
Design File no: M:\REB_C-104_EXCAVD_TREES_17\PLANS
Scale: AS SHOWN

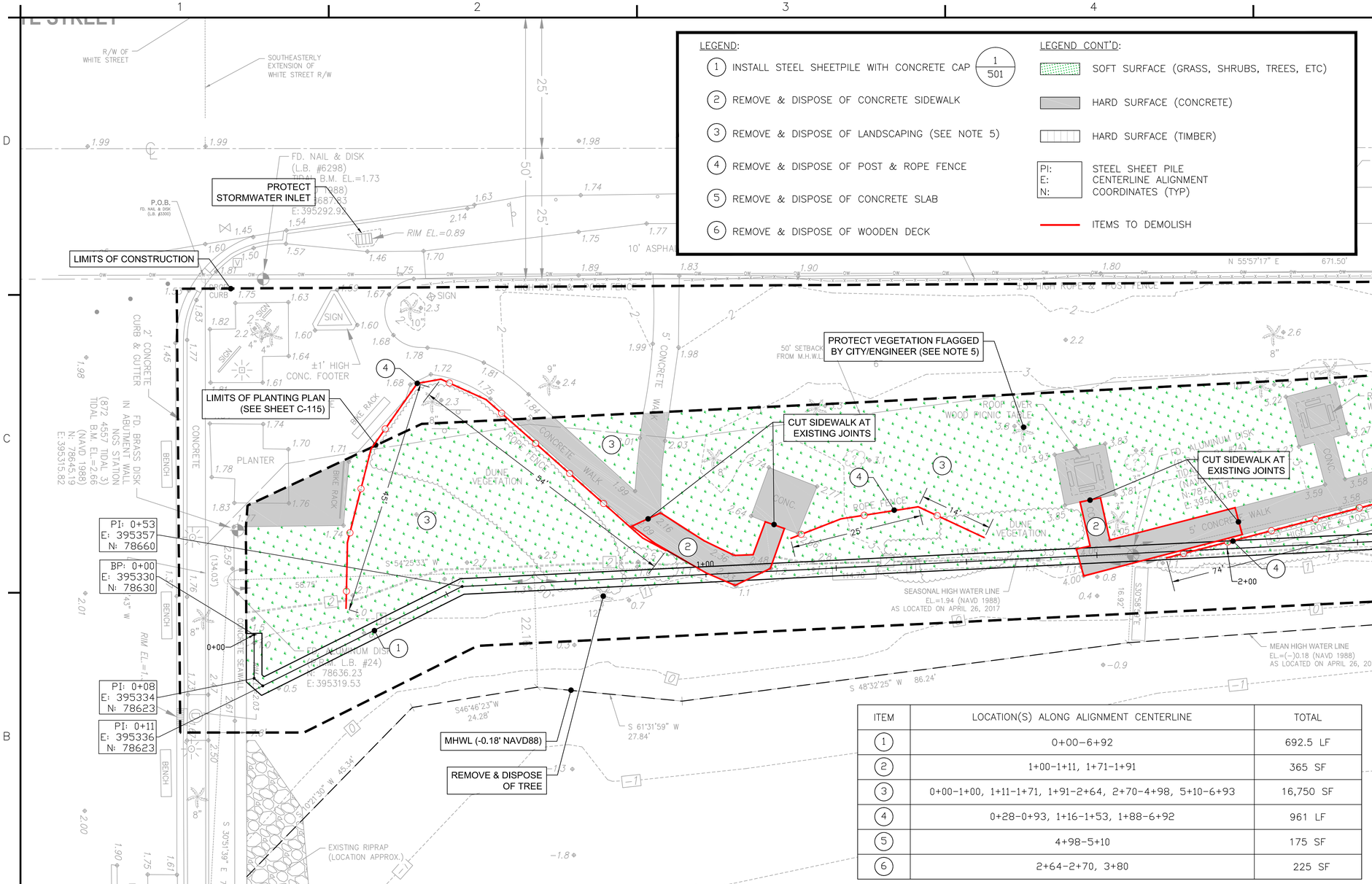
TETRA TECH INC.
759 SOUTH FEDERAL HWY
SUITE 314
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL

EXISTING TREE PHOTOS (2 of 2)

KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-107
Sheet 9 of 23



ITEM	LOCATION(S) ALONG ALIGNMENT CENTERLINE	TOTAL
1	0+00–6+92	692.5 LF
2	1+00–1+11, 1+71–1+91	365 SF
3	0+00–1+00, 1+11–1+71, 1+91–2+64, 2+70–4+98, 5+10–6+93	16,750 SF
4	0+28–0+93, 1+16–1+53, 1+88–6+92	961 LF
5	4+98–5+10	175 SF
6	2+64–2+70, 3+80	225 SF

NOTES:

1. SEE SHEET C–102 & C–103 FOR SITE SURVEY.
2. ALL ELEVATIONS REFERENCED TO NAVD88. NGVD29 = 1.35' + NAVD88.
3. HORIZONTAL COORDINATES, WHERE DEPICTED, ARE REFERENCED TO NAD83, FLORIDA STATE PLANE, EAST ZONE.
4. CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL PRESERVE AND PROTECT ALL TREES/SHRUBS/VEGETATION FLAGGED BY CITY/ENGINEER.
6. DEMOLITION ACTIVITIES FOR THIS PROJECT INCLUDE THE FOLLOWING:
   6.1. CONCRETE SIDEWALK CROSSINGS (2 LOCATIONS TOTALING 365sf).
   6.2. CONCRETE SLABS (1 LOCATION TOTALING 175sf).
   6.3. WOODEN DECKS (2 LOCATIONS TOTALING 225sf).
   6.4. TREES, SHRUBS, VEGETATION & GRASS SOD TO ACCOMMODATE SEAWALL & NEW PLANTINGS (16,750sf).
   6.5. POST & ROPE FENCE (961 LINEAR FEET).
7. SIGNS THAT REQUIRE REMOVAL FOR CONSTRUCTION ACTIVITIES SHALL BE TEMPORARILY RELOCATED AND MAINTAINED ON SITE FOR THE DURATION OF CONSTRUCTION ACTIVITIES. LOCATION SHALL BE APPROVED BY THE CITY.

NOTES (CONT'D):

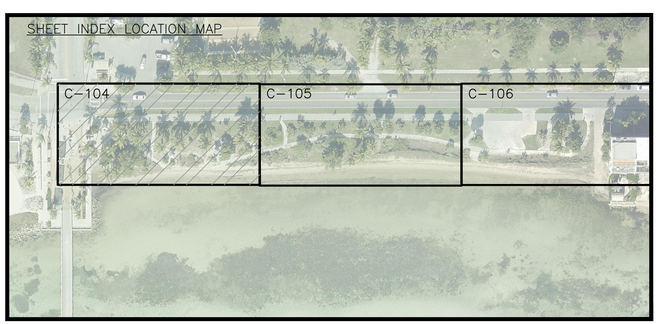
8. THE CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION OF ALL OBSTRUCTIONS ALONG THE BULKHEAD'S ALIGNMENT PRIOR TO CONSTRUCTION. THE QUANTITY OF ITEMS REQUIRING DEMOLITION AND REPLACEMENT SHALL VARY DEPENDING UPON THE CONTRACTOR'S MEANS AND METHODS.
9. CONTRACTOR SHALL FIELD STAKE THE BULKHEAD ALIGNMENT AT THE INFLECTION POINTS SHOWN; CITY AND ENGINEER SHALL APPROVE THE STAKED ALIGNMENT PRIOR TO THE CONTRACTOR INITIATING SITE PREPARATION FOR SHEET PILE INSTALLATION.

Sunshine811

Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.

Check positive response codes before you dig!

SHEET INDEX LOCATION MAP



FOR REVIEW ONLY - NOT FOR CONSTRUCTION

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed By: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. MAYNARD
Design file no: KWBS_C-108_DEMOPLAN_17061.dwg
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
STE. 114
STUART, FL 34994–2936
TEL: (772) 781–3400
FAX: (772) 781–3411
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL

DEMOLITION PLAN (1 of 3)

KEY WEST, MONROE COUNTY, FL

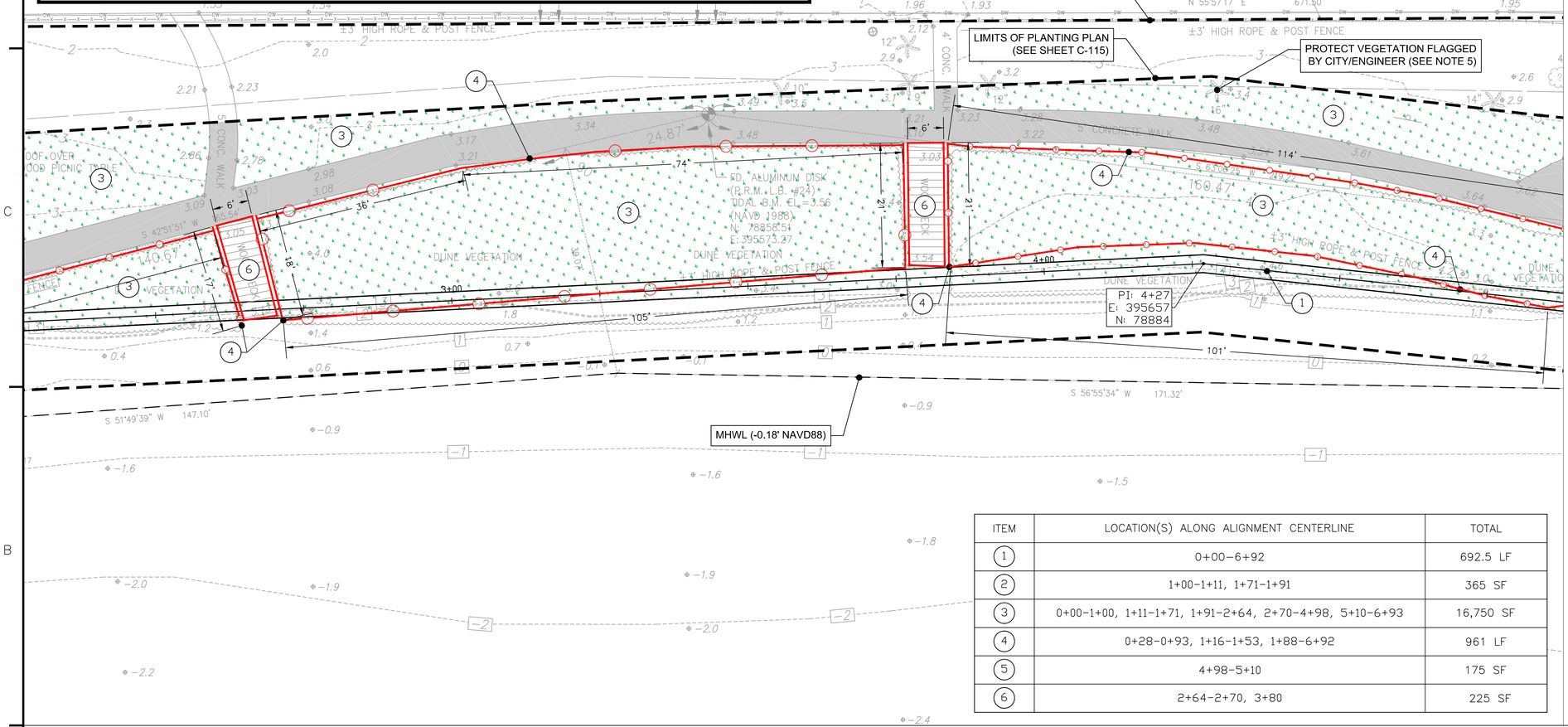
Sheet Reference:
C-108
Sheet 10 of 23

LEGEND:

1. INSTALL STEEL SHEETPILE WITH CONCRETE CAP (1/501)
2. REMOVE & DISPOSE OF CONCRETE SIDEWALK
3. REMOVE & DISPOSE OF LANDSCAPING (SEE NOTE 5)
4. REMOVE & DISPOSE OF POST & ROPE FENCE
5. REMOVE & DISPOSE OF CONCRETE SLAB
6. REMOVE & DISPOSE OF WOODEN DECK

LEGEND CONT'D:

- SOFT SURFACE (GRASS, SHRUBS, TREES, ETC)
- HARD SURFACE (CONCRETE)
- HARD SURFACE (TIMBER)
- PI: / E: / N: — STEEL SHEET PILE CENTERLINE ALIGNMENT COORDINATES (TYP)
- ITEMS TO DEMOLISH



ITEM	LOCATION(S) ALONG ALIGNMENT CENTERLINE	TOTAL
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4	0+28–0+93, 1+16–1+53, 1+88–6+92	961 LF
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NOTES:

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NOTES (CONT'D):

8. THE CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION OF ALL OBSTRUCTIONS ALONG THE BULKHEAD'S ALIGNMENT PRIOR TO CONSTRUCTION. THE QUANTITY OF ITEMS REQUIRING DEMOLITION AND REPLACEMENT SHALL VARY DEPENDING UPON THE CONTRACTOR'S MEANS AND METHODS.
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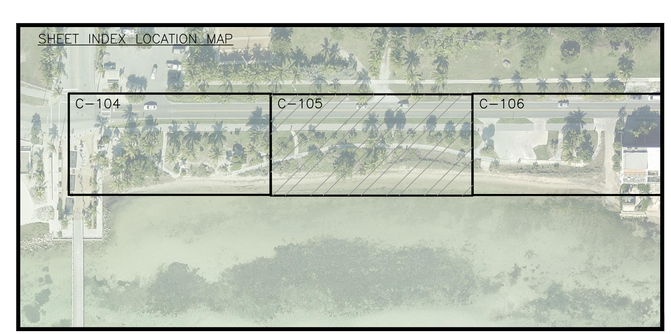
Sunshine 811
Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!

SHEET INDEX LOCATION MAP



FOR REVIEW ONLY - NOT FOR CONSTRUCTION

GRAPHIC SCALE (IN FEET): 10 0 5 10 20

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS WA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed By: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. McCREE
Design file no: KWB2_C-108_DEMOPLAN_170614.dwg
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
STUART, FL 34994–2936
TEL: (772) 781–3400
FAX: (772) 781–3411
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL

DEMOLITION PLAN (2 of 3)

KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-109
Sheet 11 of 23

LEGEND:

1. INSTALL STEEL SHEETPILE WITH CONCRETE CAP (1/501)
2. REMOVE & DISPOSE OF CONCRETE SIDEWALK
3. REMOVE & DISPOSE OF LANDSCAPING (SEE NOTE 5)
4. REMOVE & DISPOSE OF POST & ROPE FENCE
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6. REMOVE & DISPOSE OF WOODEN DECK

LEGEND CONT'D:

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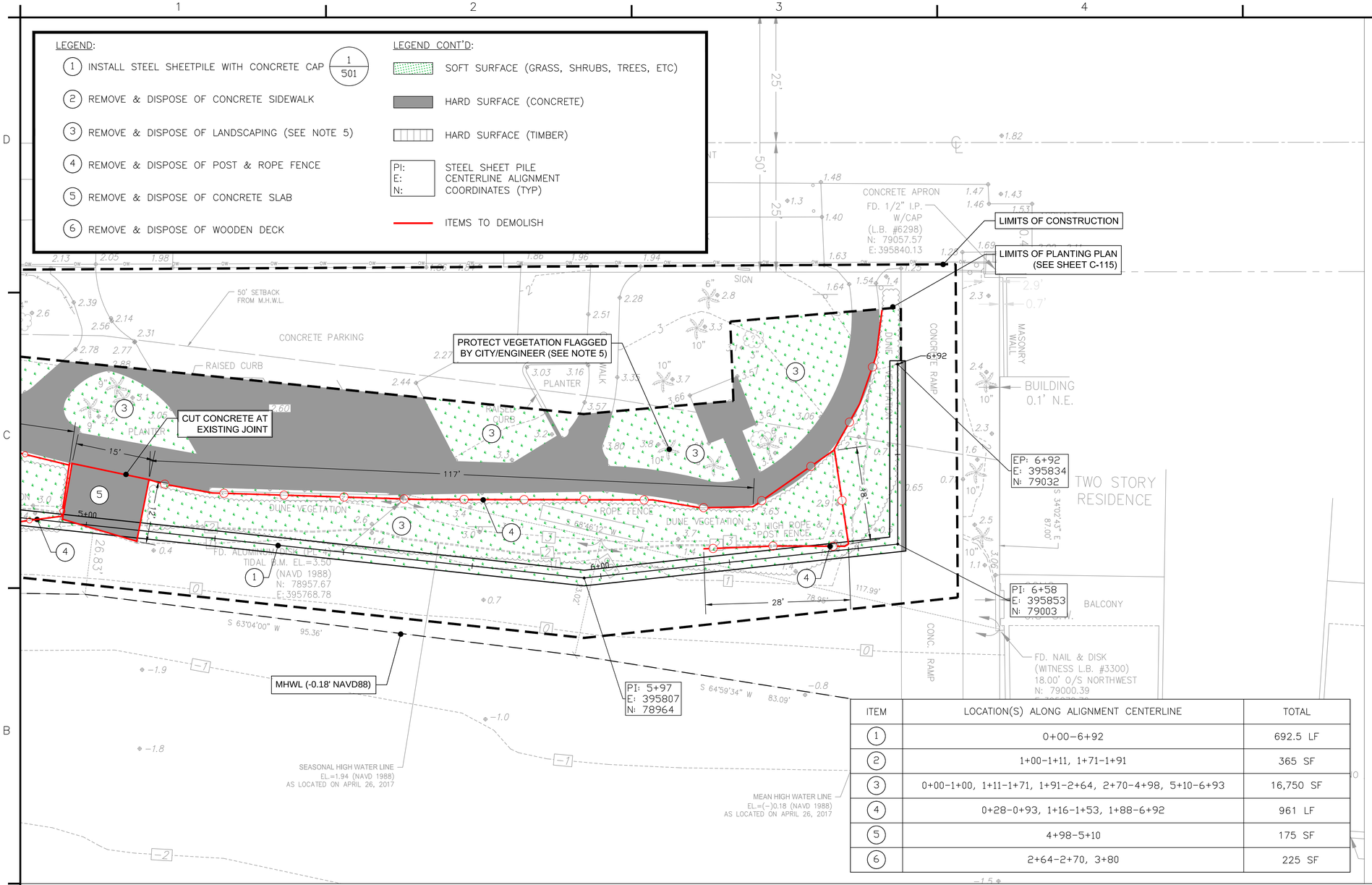
- HARD SURFACE (TIMBER)
- PI: / E: / N: — STEEL SHEET PILE CENTERLINE ALIGNMENT COORDINATES (TYP)
- ITEMS TO DEMOLISH



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NOTES:

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NOTES (CONT'D):

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Sunshine 811

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Check positive response codes before you dig!

SHEET INDEX LOCATION MAP

GRAPHIC SCALE (IN FEET): 10 0 5 10 20

MICHAEL R. BARNETT, PE FL LIC. # 44625

FOR REVIEW ONLY - NOT FOR CONSTRUCTION

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
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0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed By: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. WESTFALL
Design file no: KWB2_C-108_DEMOPLAN_170614.dwg
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
SUITE 114
STUART, FL 34994–2936
TEL: (772) 781–3400
FAX: (772) 781–3411
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL

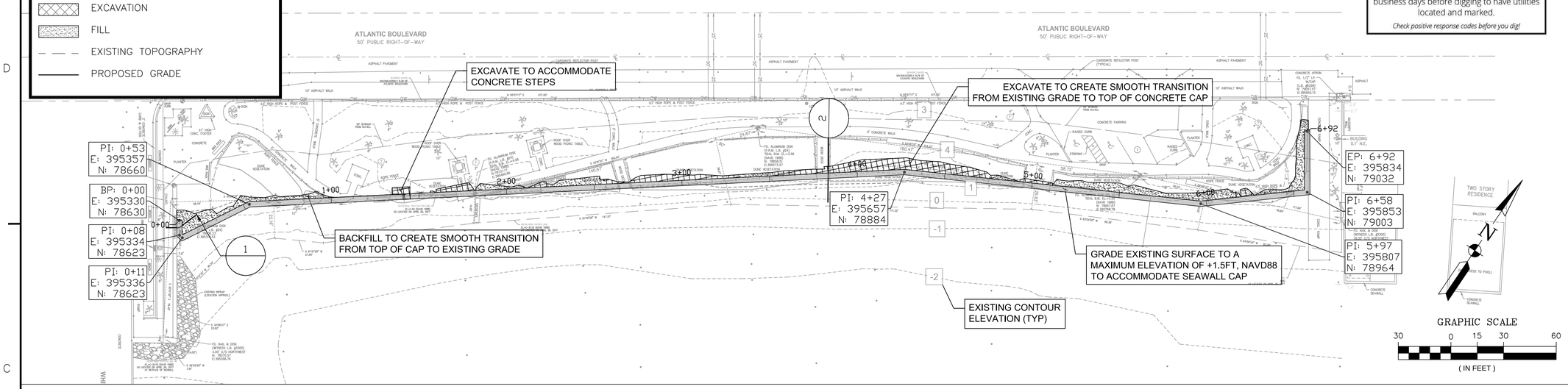
DEMOLITION PLAN (3 of 3)

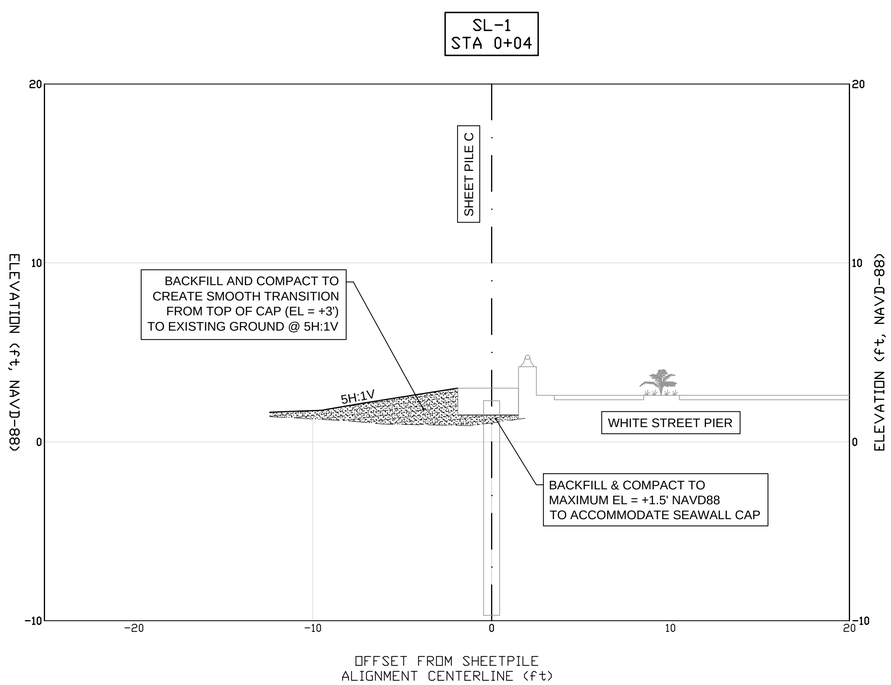
KEY WEST, MONROE COUNTY, FL

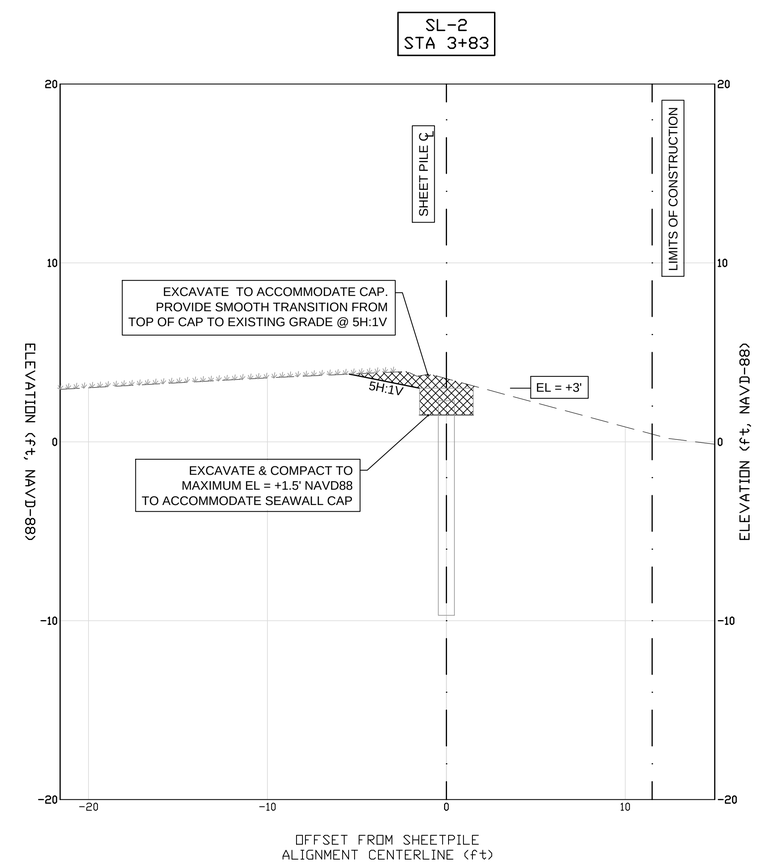
Sheet Reference:
C-110
Sheet 12 of 23

LEGEND:

- HARD SURFACE (CONCRETE)
- EXCAVATION
- FILL
- EXISTING TOPOGRAPHY
- PROPOSED GRADE







NOTES:

1. SEE SHEET C-102 & C-103 FOR SITE SURVEY.
2. ALL ELEVATIONS REFERENCED TO NAVD88. NGVD29 = 1.35' + NAVD88.
3. HORIZONTAL COORDINATES, WHERE DEPICTED, ARE REFERENCED TO NAD83, FLORIDA STATE PLANE, EAST ZONE.
4. CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
5. A TOTAL OF 85CY OF EXCAVATION AND 49CY OF FILL IS ANTICIPATED.

GRAPHIC SCALE
4 0 2 4 8
(IN FEET)

Sunshine811
Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed by: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. WRIGHT
Design file no: KWBS_C-111_GRADINGPLAN_17061
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL
GRADING PLAN
KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-111
Sheet 13 of 23

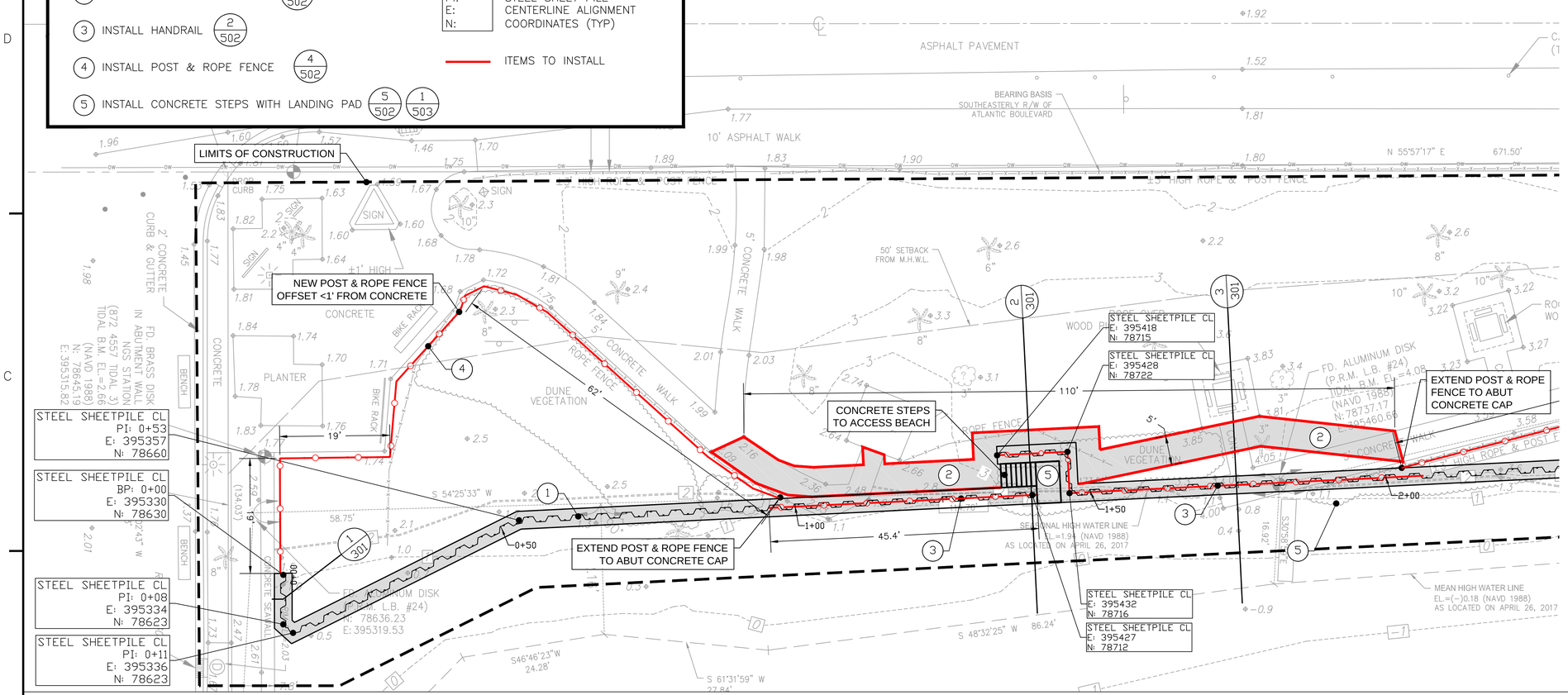
FOR REVIEW ONLY - NOT FOR CONSTRUCTION

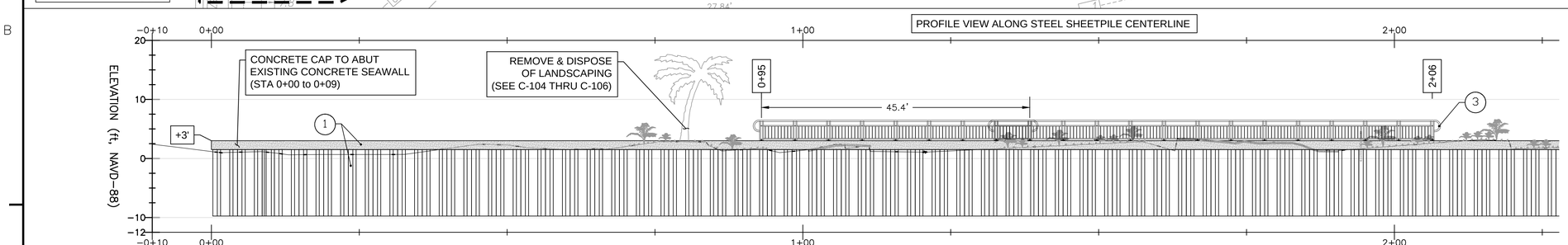
LEGEND:

1. INSTALL STEEL SHEETPILE WITH CONCRETE CAP (1/501)
2. INSTALL CONCRETE SIDEWALK (1/502)
3. INSTALL HANDRAIL (2/502)
4. INSTALL POST & ROPE FENCE (4/502)
5. INSTALL CONCRETE STEPS WITH LANDING PAD (5/502) (1/503)

LEGEND CONT'D:

- HARD SURFACE (CONCRETE)
- PI: E: N: STEEL SHEET PILE CENTERLINE ALIGNMENT COORDINATES (TYP)
- ITEMS TO INSTALL

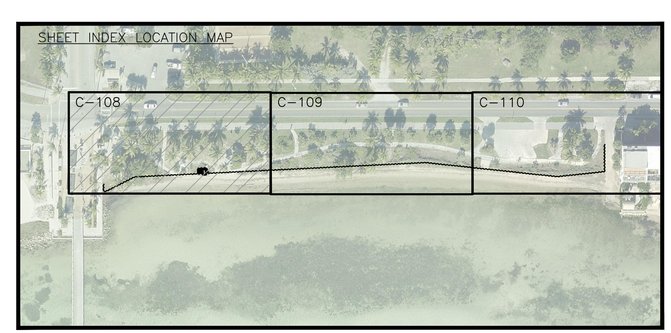




NOTES:

1. ALL ELEVATIONS REFERENCED TO NAVD88. NGVD29 = 1.35' + NAVD88.
2. HORIZONTAL COORDINATES, WHERE DEPICTED, ARE REFERENCED TO NAD83, FLORIDA STATE PLANE, EAST ZONE.
3. CONSTRUCTION ITEMS FOR THIS PROJECT INCLUDE THE FOLLOWING:
   - 3.1. FURNISH AND INSTALL OF 702.1 LINEAR FEET OF STEEL SHEET PILE (337 TOTAL SHEETS)
   - 3.2. FURNISH AND INSTALL OF REINFORCED CONCRETE CAP (707 LINEAR FEET, ~118CY)
   - 3.3. FURNISH AND INSTALL OF NEW SIDEWALKS (594 SQUARE FEET)
   - 3.4. FURNISH AND INSTALL OF HANDRAIL (127 LINEAR FEET)
   - 3.5. FURNISH AND INSTALL OF POST & ROPE FENCE (627 LINEAR FEET)
   - 3.6. FURNISH AND INSTALL OF CONCRETE STEPS WITH LANDING PAD.
   - 3.7. REPAIR OF EXISTING CONCRETE SIDEWALK SECTION (REPAIR CONSISTS OF REMOVING 36 SQUARE FEET OF CONCRETE SIDEWALK, RE-GRADING & COMPACTING BASE FILL, AND REPLACING CONCRETE SIDEWALK)
4. PROFILE VIEW IS SCALED 1H:1V.
5. SEE SHEET C-301 FOR CROSS SECTIONS.

ITEM	LOCATION(S) ALONG ALIGNMENT CENTERLINE	TOTAL
1	0+00-6+92	702.1 LF
2	0+85-1+11	594 SF
3	0+95-2+06	127 LF
4	0+00-1+00, 2+00-6+92	627 LF
5	1+35-1+48	1 LS



FOR REVIEW ONLY - NOT FOR CONSTRUCTION

GRAPHIC SCALE (IN FEET) 10 0 5 10 20

MICHAEL R. BARNETT, PE FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS, VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed by: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. MURPHY
Design file no: KWBS_C-112_BULKHEADPLAN_17041.DWG
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
SUITE 114
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL
SEAWALL INSTALLATION PLAN
KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-112
Sheet 14 of 23

LEGEND:

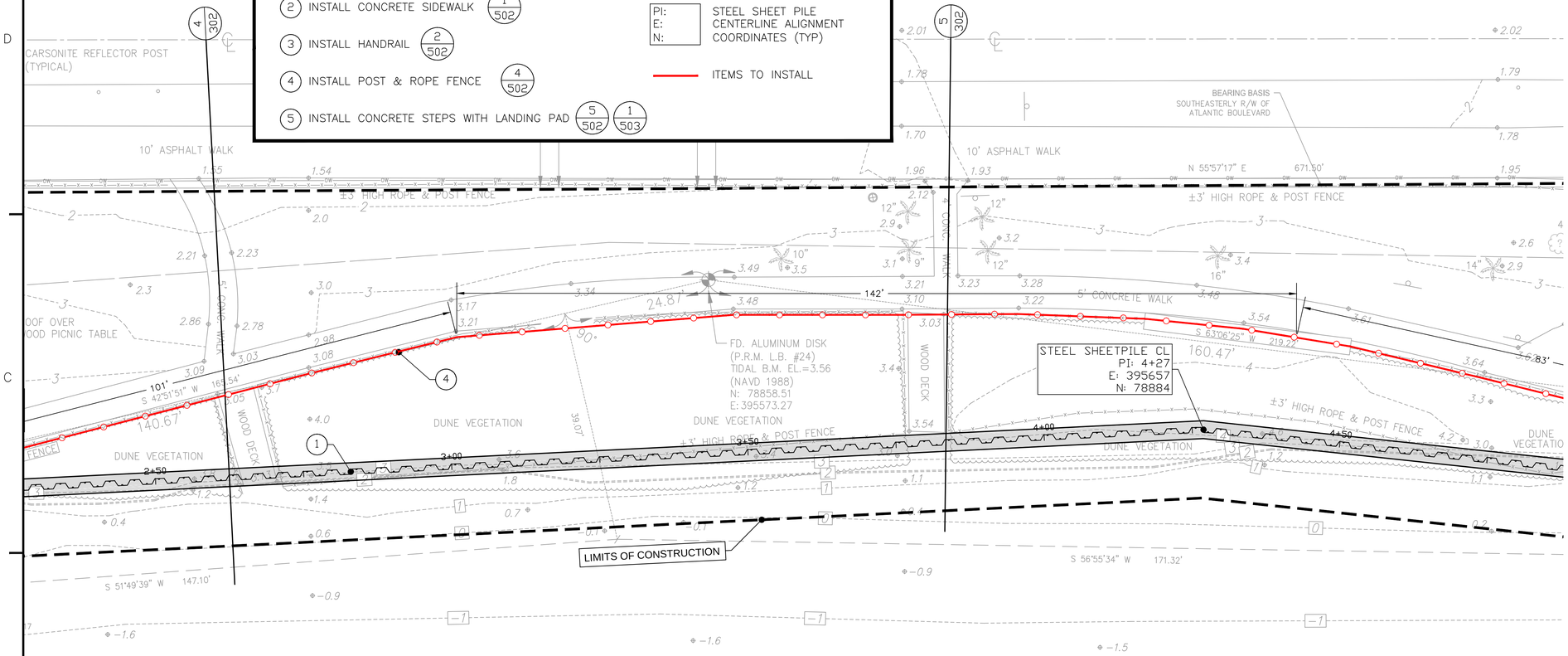
1. INSTALL STEEL SHEETPILE WITH CONCRETE CAP (1/501)
2. INSTALL CONCRETE SIDEWALK (1/502)
3. INSTALL HANDRAIL (2/502)
4. INSTALL POST & ROPE FENCE (4/502)
5. INSTALL CONCRETE STEPS WITH LANDING PAD (5/502) (1/503)

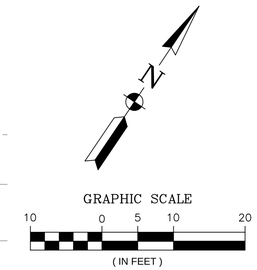
LEGEND CONT'D:

HARD SURFACE (CONCRETE)

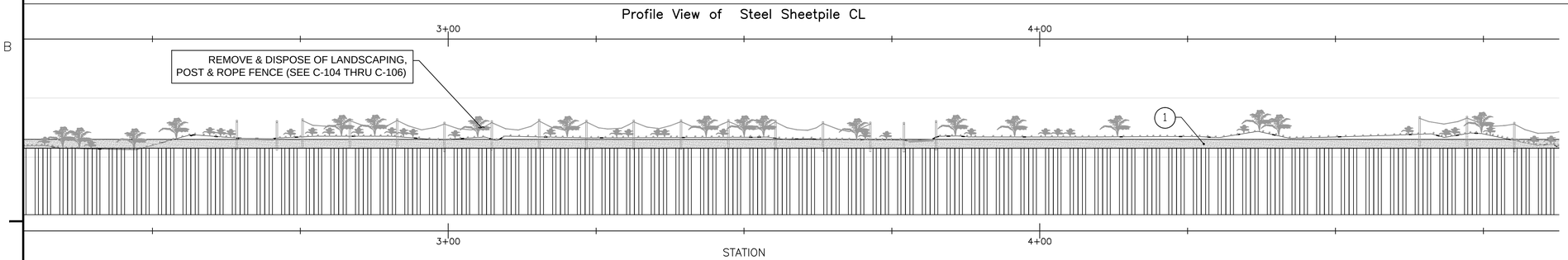
PI:
E:
N:
STEEL SHEET PILE CENTERLINE ALIGNMENT COORDINATES (TYP)

ITEMS TO INSTALL





Profile View of Steel Sheetpile CL



NOTES:

1. ALL ELEVATIONS REFERENCED TO NAVD88. NGVD29 = 1.35' + NAVD88.
2. HORIZONTAL COORDINATES, WHERE DEPICTED, ARE REFERENCED TO NAD83, FLORIDA STATE PLANE, EAST ZONE.
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   - 3.1. FURNISH AND INSTALL OF 702.1 LINEAR FEET OF STEEL SHEET PILE (337 TOTAL SHEETS)
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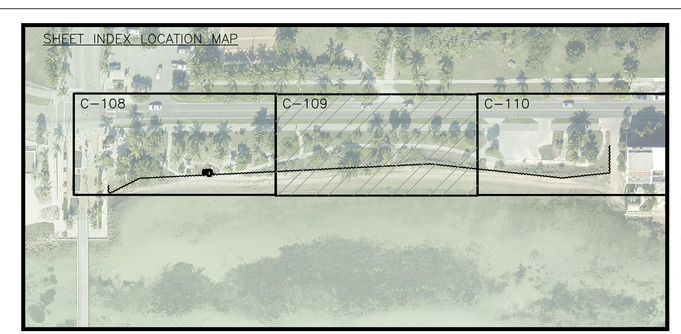
4. PROFILE VIEW IS SCALED 1H:1V.
5. SEE SHEET C-302 FOR CROSS SECTIONS.

ITEM	LOCATION(S) ALONG ALIGNMENT CENTERLINE	TOTAL
1	0+00-6+92	702.1 LF
2	0+85-1+11	594 SF
3	0+95-2+06	127 LF
4	0+00-1+00, 2+00-6+92	627 LF
5	1+35-1+48	1 LS

SHEET INDEX LOCATION MAP



FOR REVIEW ONLY - NOT FOR CONSTRUCTION

MICHAEL R. BARNETT, PE
FL LIC. # 44625

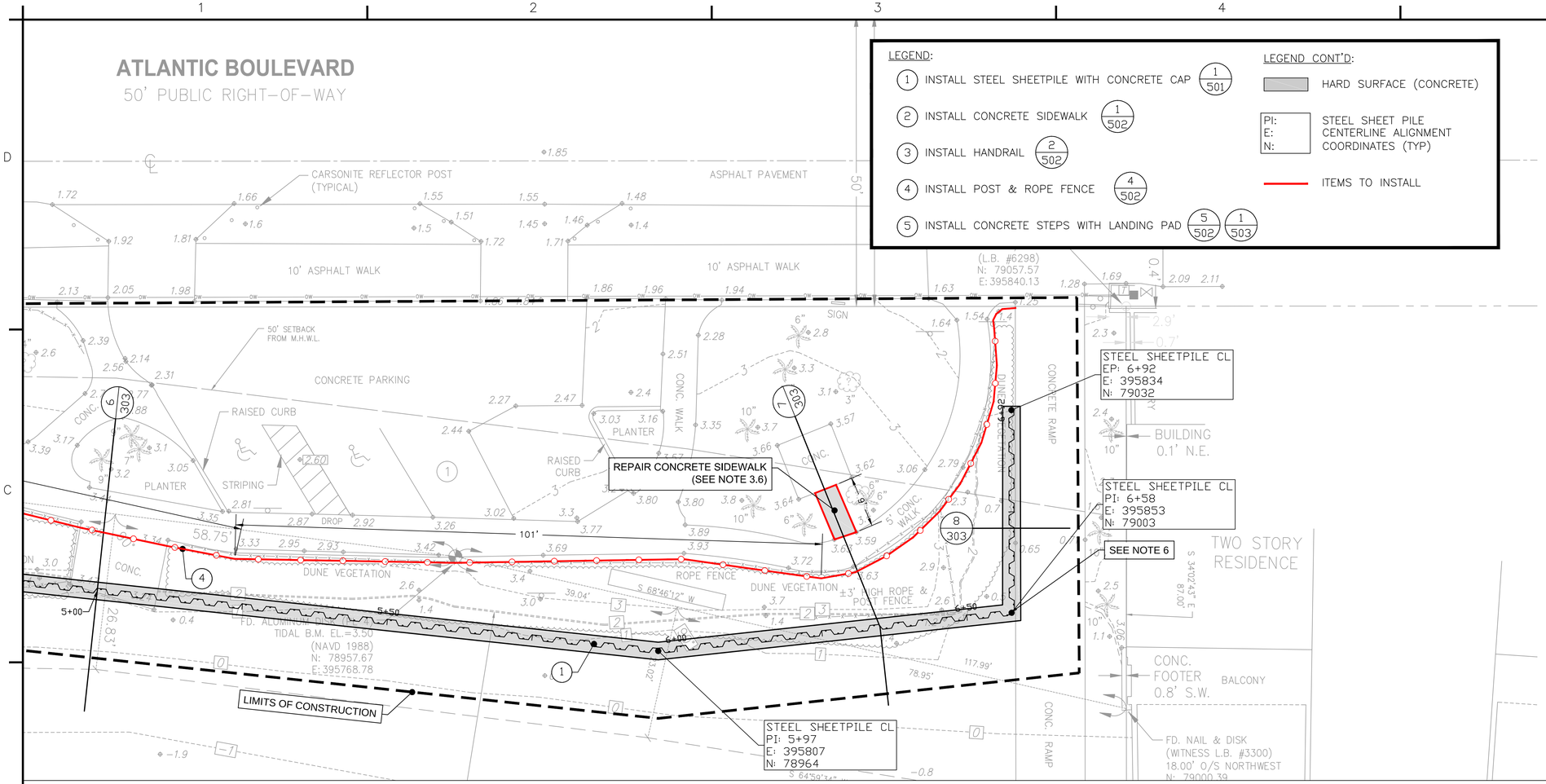
Mark	Description	Date	Appr.
4	ADD BEACH ACCESS VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed By: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. MAYCHEE
Design file no: KWBS_C-112_BUKHEADPAVL.17DWG
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
STE. 114
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411
CERTIFICATE OF AUTHORIZATION NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL
SEAWALL INSTALLATION PLAN
KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-113
Sheet 15 of 23



LEGEND:

1. INSTALL STEEL SHEETPILE WITH CONCRETE CAP (1/501)
2. INSTALL CONCRETE SIDEWALK (1/502)
3. INSTALL HANDRAIL (2/502)
4. INSTALL POST & ROPE FENCE (4/502)
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LEGEND CONT'D:

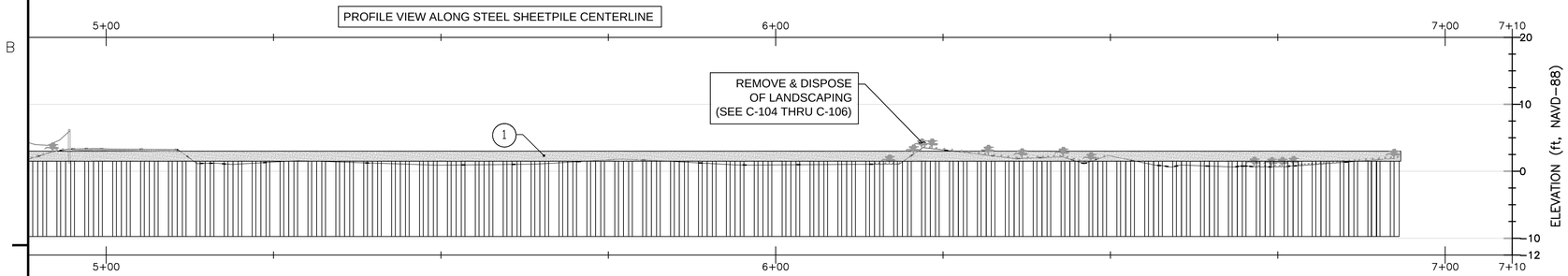
- HARD SURFACE (CONCRETE)
- PI: E: N: STEEL SHEET PILE CENTERLINE ALIGNMENT COORDINATES (TYP)
- ITEMS TO INSTALL

GRAPHIC SCALE

10 0 5 10 20

(IN FEET)

PROFILE VIEW ALONG STEEL SHEETPILE CENTERLINE



NOTES:

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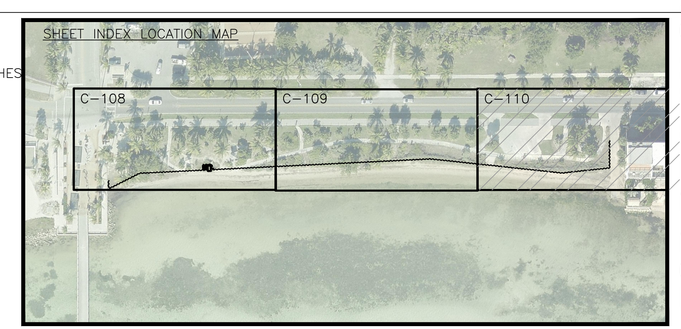
4. PROFILE VIEW IS SCALED 1H:1V.
5. SEE SHEET C-303 FOR CROSS SECTIONS.

NOTES CONT'D:

6. SHEETPILE SHALL BE LOCATED AS CLOSE TO THE EXISTING CONCRETE RAMP AS PRACTICABLE (STA 6+58 to 6+92). A CONCRETE PLUG SHALL BE INSTALLED TO 18 INCHES BELOW GRADE TO ENSURE NO GAP EXISTS BETWEEN THE TWO FEATURES.

ITEM	LOCATION(S) ALONG ALIGNMENT CENTERLINE	TOTAL
1	0+00-6+92	702.1 LF
2	0+85-1+11	594 SF
3	0+95-2+06	127 LF
4	0+00-1+00, 2+00-6+92	627 LF
5	1+35-1+48	1 LS

SHEET INDEX LOCATION MAP



FOR REVIEW ONLY - NOT FOR CONSTRUCTION

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS, VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed by: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. MAHONEY
Design File no: KWBS_C-112_BLOCKEXPAN_170614.dwg
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
STE. 104
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411

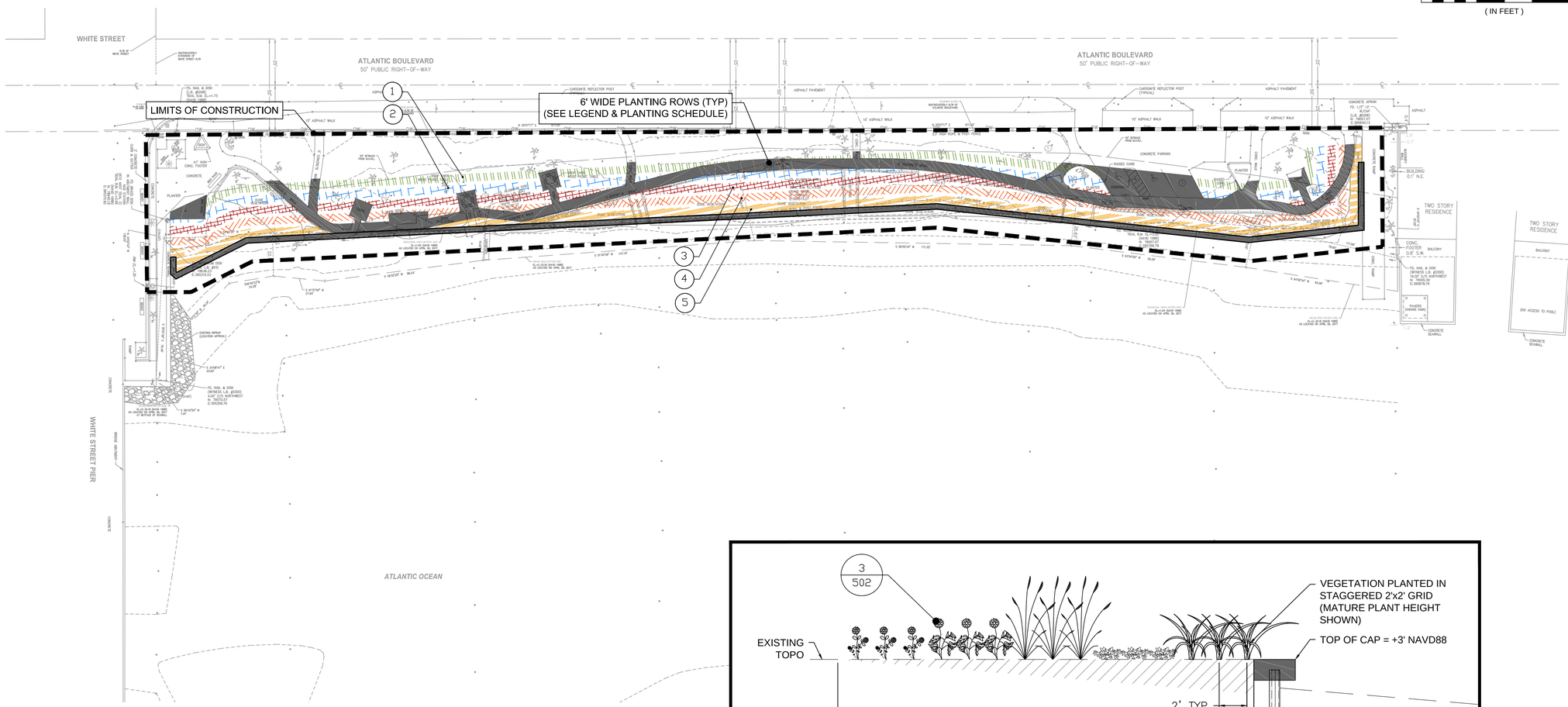
CERTIFICATE OF AUTHORIZATION NO. 2429

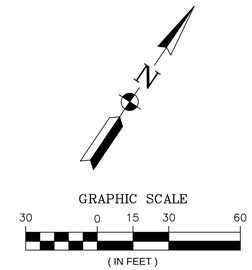
CITY OF KEY WEST
REST BEACH SEAWALL

SEAWALL INSTALLATION PLAN

KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-114
Sheet 16 of 23



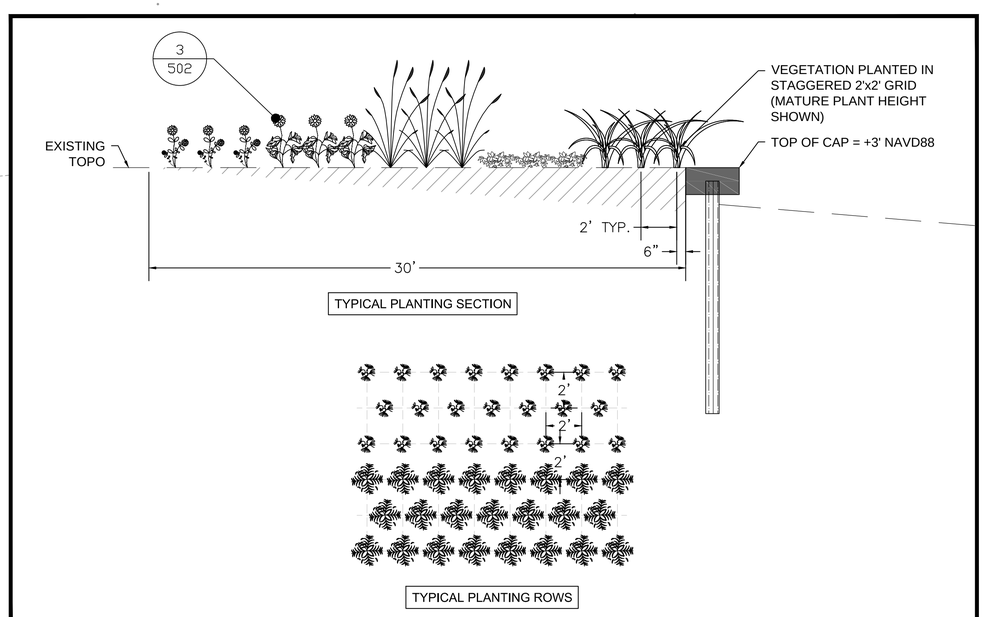


NOTES:

1. SEE SHEET C-102 & C-103 FOR SITE SURVEY.
2. ALL ELEVATIONS REFERENCED TO NAVD88. NGVD29 = 1.35' + NAVD88.
3. SEE SHEET C-502 FOR PLANTING DETAILS.

PLANTING SCHEDULE

ITEM	LEGEND	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE
1		741	Borrichia arborescens	GREEN SEA-OXEYE DAISY	1 GALLON
2		719	Helianthus debilis	DUNE SUNFLOWER	1 GALLON
3		740	Uniola paniculata	SEA OATS	1 GALLON
4		863	Sesuvium portulacastrum	SEA PURSLANE	1 GALLON
5		1,001	Panicum amarum	BEACHGRASS	1 GALLON



FOR REVIEW ONLY - NOT FOR CONSTRUCTION

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS VIA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
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1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed by: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. McCABE
Design file no: KWBS_C-115_PLANTINGPLAN_1706.DWG
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
SUITE 104
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411
CERTIFICATE OF AUTHORIZATION NO. 2429

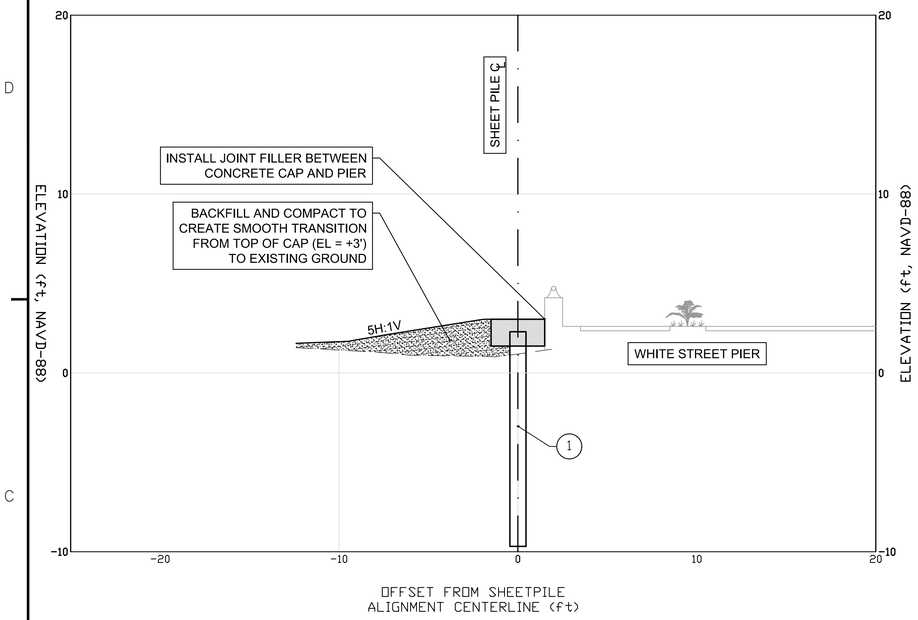
CITY OF KEY WEST
REST BEACH SEAWALL

PLANTING PLAN

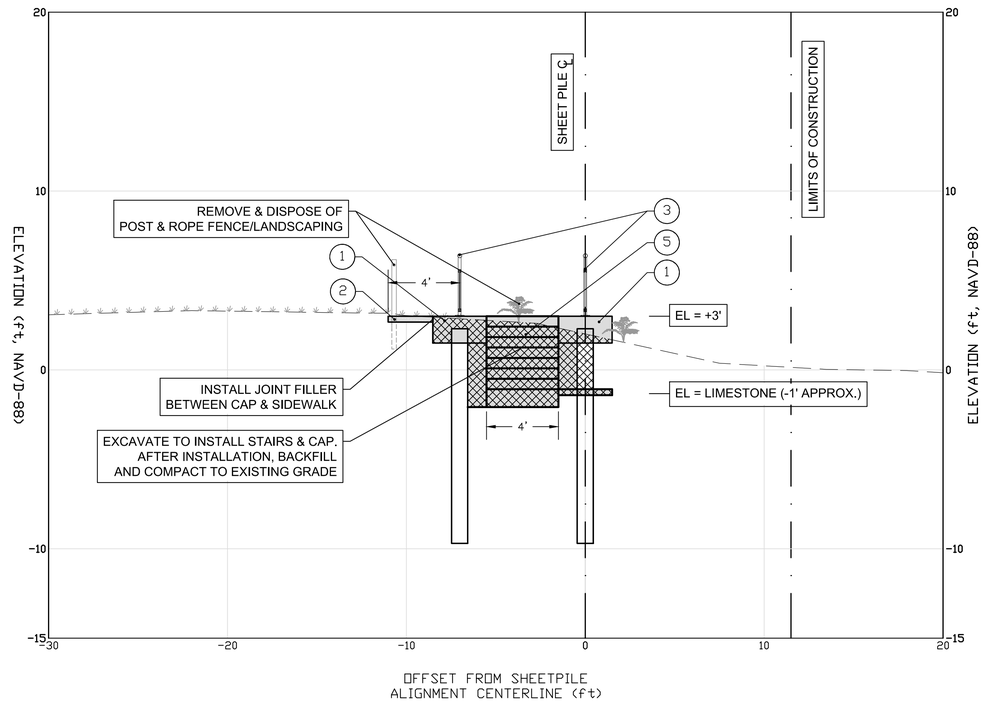
KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-115
Sheet 17 of 23

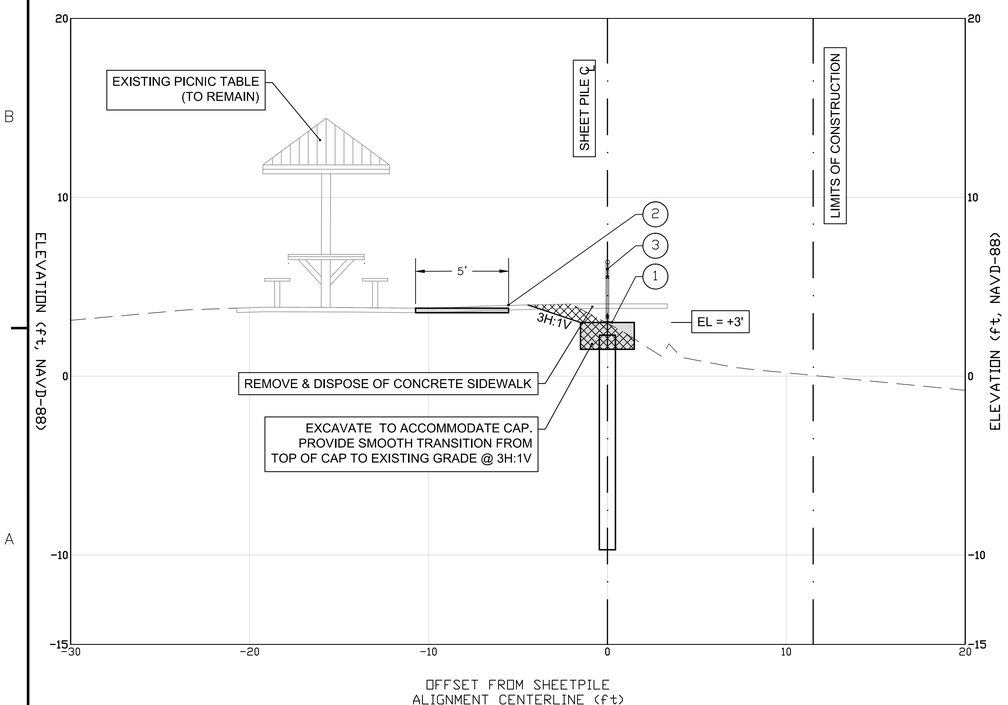
SL-1
STA 0+04



SL-2
STA 1+40



SL-3
STA 1+75



GRAPHIC SCALE

4 0 2 4 8

(IN FEET)

LEGEND:

1. INSTALL STEEL SHEETPILE WITH CONCRETE CAP (1/501)
2. INSTALL CONCRETE SIDEWALK (1/502)
3. INSTALL HANDRAIL (2/502)
4. INSTALL POST & ROPE FENCE (4/502)
5. INSTALL CONCRETE STEPS WITH LANDING PAD (5/502) (1/503)

LEGEND CONT'D:

- HARD SURFACE (CONCRETE)
- EXCAVATION
- FILL
- EXISTING TOPOGRAPHY
- PROPOSED GRADE

FOR REVIEW ONLY - NOT FOR CONSTRUCTION

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
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Designed By: M.A. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. FLOCHARE
Design file no: KWBL_C-112_BULKHEADPLAN_17001.DWG
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
SUITE 314
STUART, FL 34994-2936
TEL (772) 781-3400
FAX (772) 781-3411
CERTIFICATE OF AUTHORIZATION NO. 2429

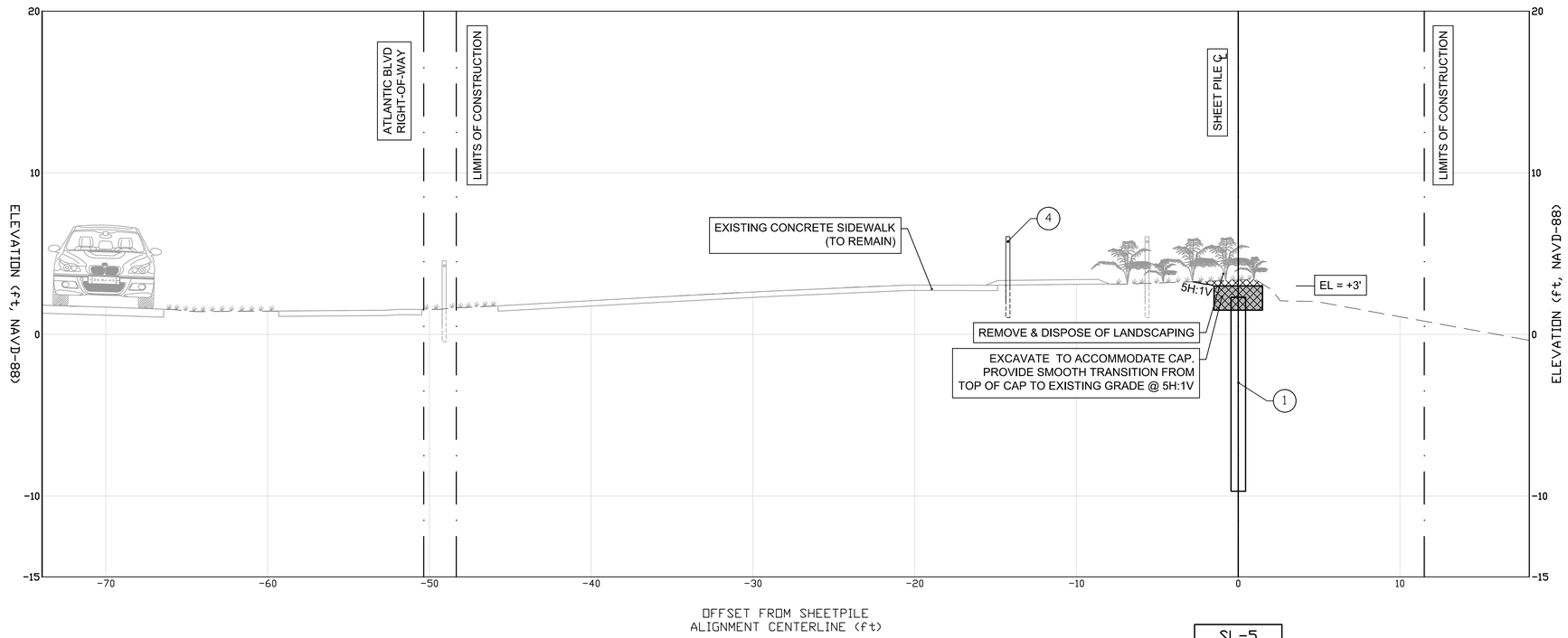
CITY OF KEY WEST
REST BEACH SEAWALL

SECTIONS

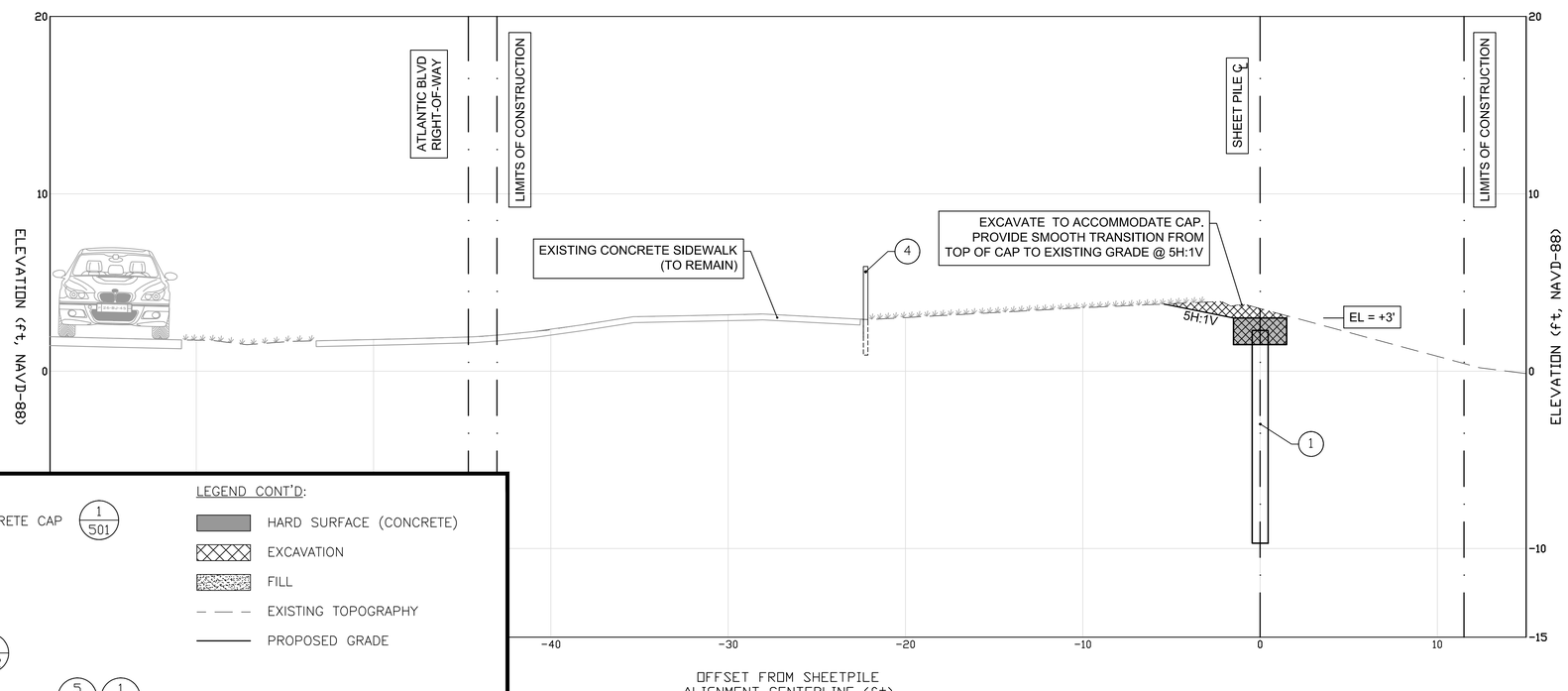
KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-301
Sheet 18 of 23

SL-4
STA 2+62



SL-5
STA 3+83



GRAPHIC SCALE

4 0 2 4 8

(IN FEET)

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5. INSTALL CONCRETE STEPS WITH LANDING PAD (5/502) (1/503)

LEGEND CONT'D:

- HARD SURFACE (CONCRETE)
- EXCAVATION
- FILL
- EXISTING TOPOGRAPHY
- PROPOSED GRADE

FOR REVIEW ONLY - NOT FOR CONSTRUCTION

MICHAEL R. BARNETT, PE
FL LIC. # 44625

Mark	Description	Date	Appr.
4	ADD BEACH ACCESS WA CONCRETE STEPS	6/14/17	MB
3	ADD TREE LOCATION DETAILS	6/6/17	MB
2	MOVE ALIGNMENT SEAWARD/ADD CAP	5/17/17	MB
1	REISSUED BASED ON CLIENT REVIEW	4/6/17	MB
0	ISSUED FOR CLIENT REVIEW	3/31/17	MB

Designed By: M. BARNETT
Drawn By: J. DAVIS
Checked By: R. CZLAPINSKI
Reviewed By: S. WAGNER
Design file no: KWBL_C-112_BUKHEADPAVL_17PH1.DWG
Scale: AS SHOWN

TETRA TECH INC.
759 SOUTH FEDERAL HWY
SUITE 114
STUART, FL 34994-2936
TEL: (772) 781-3400
FAX: (772) 781-3411
CERTIFICATE OF AUTHORIZATION
NO. 2429

CITY OF KEY WEST
REST BEACH SEAWALL

SECTIONS

KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-302
Sheet 19 of 23

LEGEND:

1. INSTALL STEEL SHEETPILE WITH CONCRETE CAP (1/501)
2. INSTALL CONCRETE SIDEWALK (1/502)
3. INSTALL HANDRAIL (2/502)
4. INSTALL POST & ROPE FENCE (4/502)
5. INSTALL CONCRETE STEPS WITH LANDING PAD (5/502) (1/503)

LEGEND CONT'D:

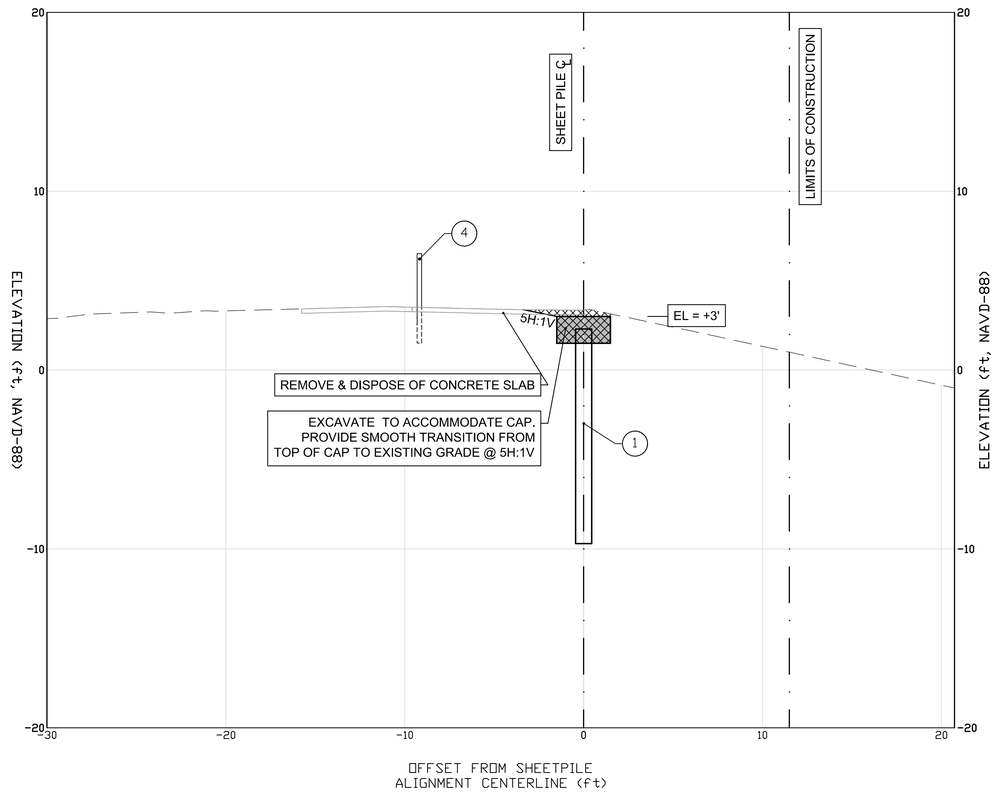
- HARD SURFACE (CONCRETE)
- EXCAVATION
- FILL
- EXISTING TOPOGRAPHY
- PROPOSED GRADE

GRAPHIC SCALE

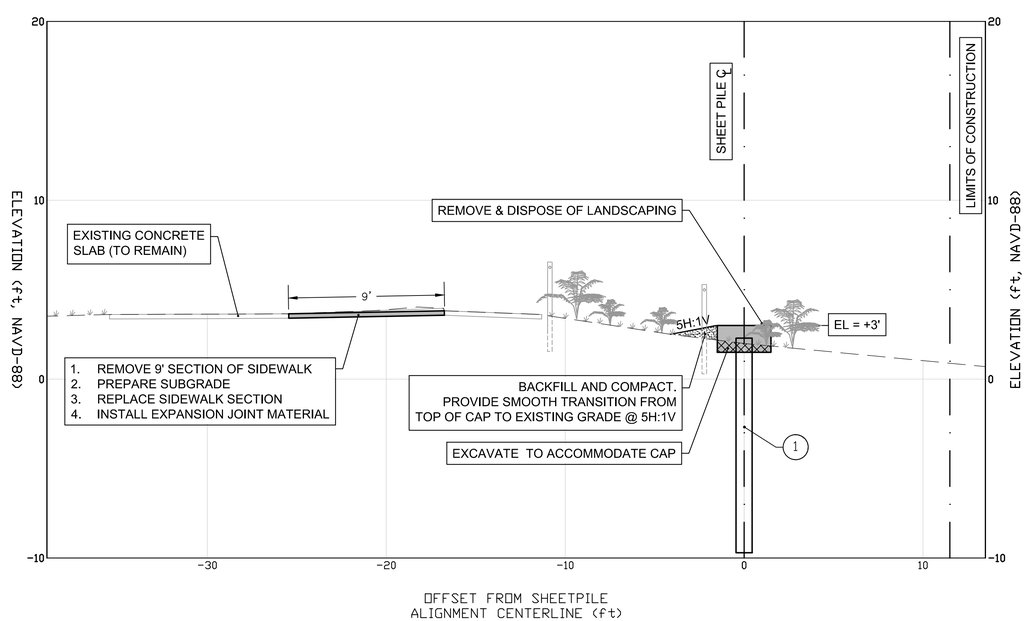
4 0 2 4 8

(IN FEET)

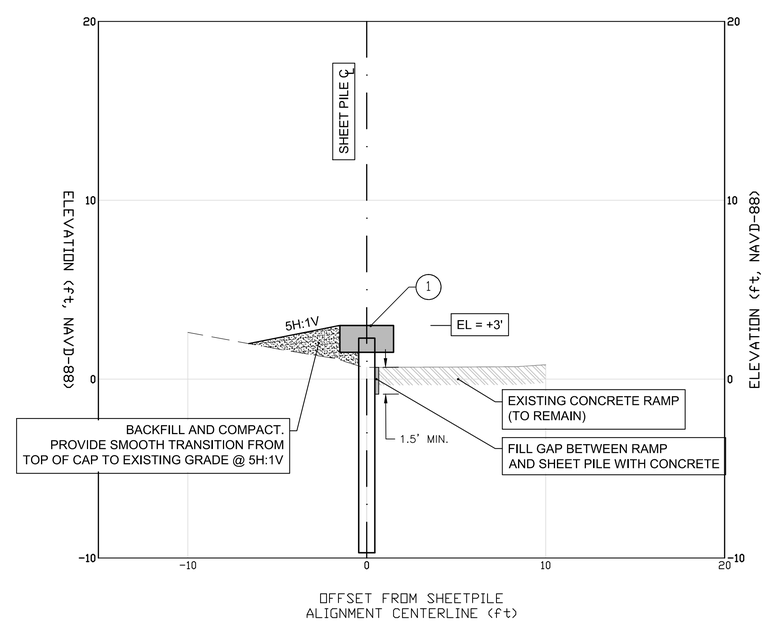
SL-6
STA 5+00



SL-7
STA 6+35



SL-8
STA 6+72



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MICHAEL R. BARNETT, PE
FL LIC. # 44625

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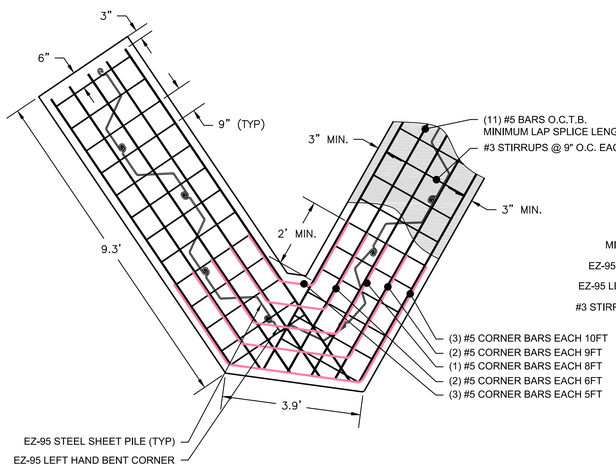
CITY OF KEY WEST
REST BEACH SEAWALL

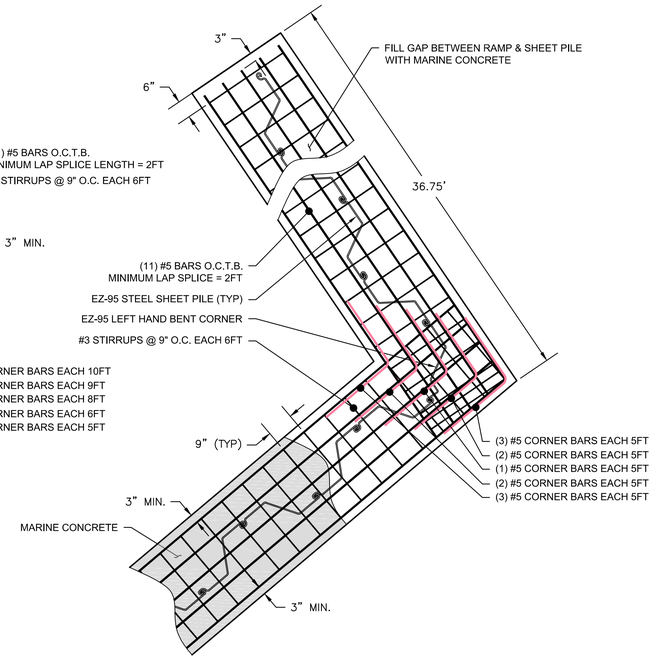
SECTIONS

KEY WEST, MONROE COUNTY, FL

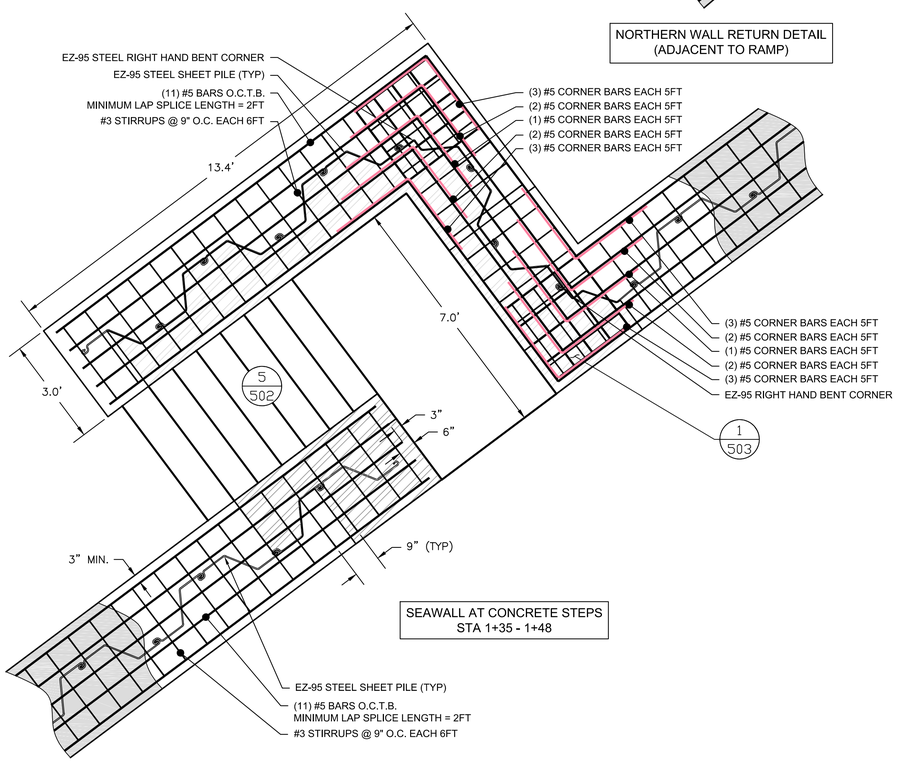
Sheet Reference:
C-303
Sheet 20 of 23



SOUTHERN WALL RETURN DETAIL
(ADJACENT TO WHITE STREET PIER)



NORTHERN WALL RETURN DETAIL
(ADJACENT TO RAMP)



SEAWALL AT CONCRETE STEPS
STA 1+35 - 1+48

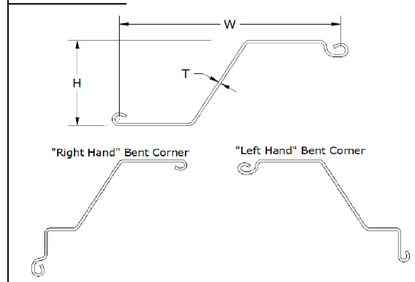
NOTES:

1. CONCRETE CAP SHALL MEET SPECIFICATION SECTION 03 31 01 MARINE CONCRETE.
2. ALL REINFORCING BARS SHALL COMPLY WITH ASTM A615/A615M GRADE 60 AND HAVE AT LEAST 3 INCHES OF CONCRETE COVER.
3. MINIMUM LAP SPLICE FOR #5 REINFORCING BARS IS 2FT.
4. #5 CORNER BARS ARE REQUIRED FOR INFLECTION POINTS LOCATED AT STA 0+53 & 4+27. SEE STA 5+97 INFLECTION POINT DETAIL FOR TYPICAL LAYOUT.

1 SEAWALL DETAILS

SAMUEL 1905
ROLL FORM GROUP

EZ-95 Steel Sheet Piling

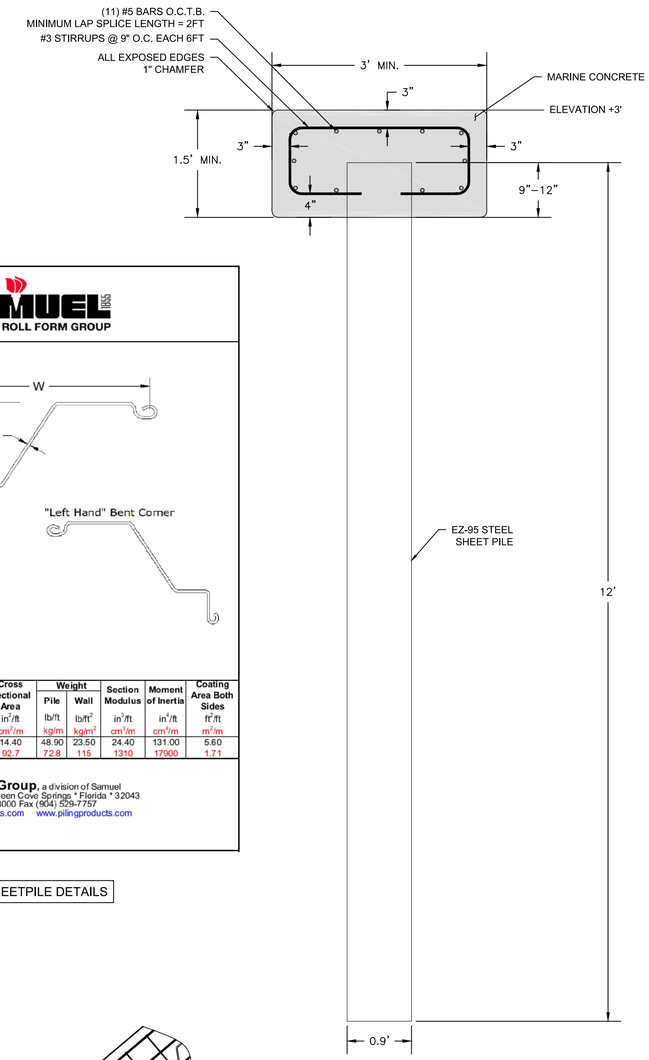


ASTM A572 Grade 50 Steel

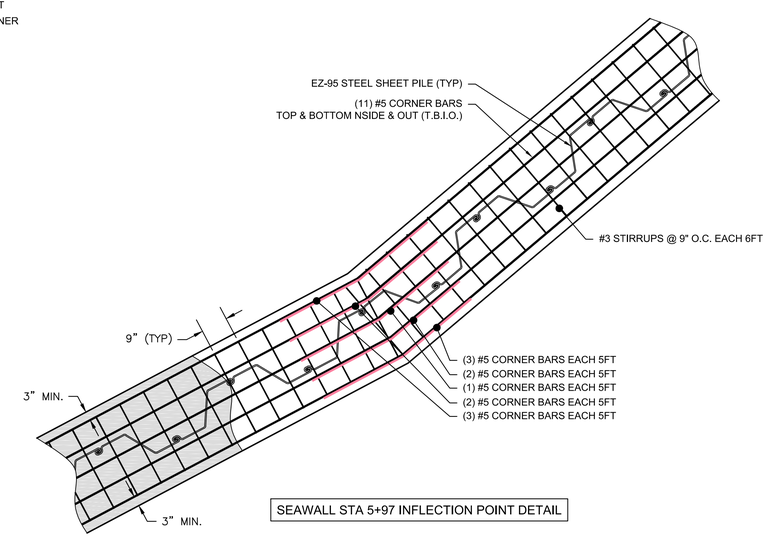
Section	Width W in / mm	Height H in / mm	Thickness T in / mm	Cross Sectional Area in²/ft / cm²/m	Weight Pile lb/ft / kg/m	Weight Wall lb/ft² / kg/m²	Section Modulus in³/ft / cm³/m	Moment of Inertia in⁴/ft / cm⁴/m	Coating Area Both Sides ft²/ft / m²/m
EZ-95	25.00 / 635	10.81 / 275	0.375 / 9.50	14.40 / 92.7	48.90 / 72.8	23.50 / 115	24.40 / 1310	131.00 / 17900	5.60 / 1.71

Roll Form Group, a division of Samuel
945 Center Street * Green Cove Springs * Florida * 32043
(904) 287-8000 Fax (904) 529-7757
sales@pilingproducts.com www.pilingproducts.com

STEEL SHEETPILE DETAILS



TYPICAL SEAWALL SECTION



SEAWALL STA 5+97 INFLECTION POINT DETAIL

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FL LIC. # 44625

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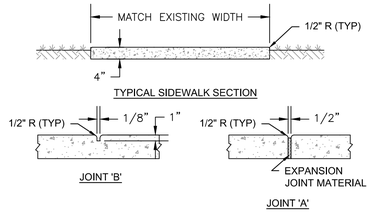
CITY OF KEY WEST
REST BEACH SEAWALL
DETAILS
KEY WEST, MONROE COUNTY, FL

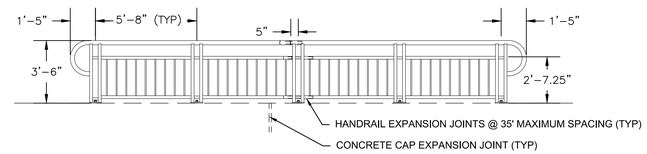
Sheet Reference:
C-501
Sheet 21 of 23



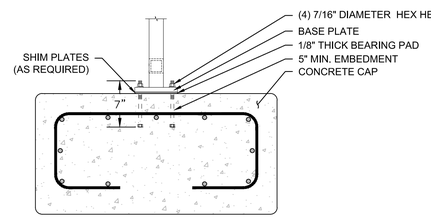
NOTES:

1. SIDEWALKS SHALL BE A MINIMUM OF 4" IN THICKNESS AND CONSTRUCTED IN ACCORDANCE WITH FDOT SPECIFICATION SECTION 522.
2. CONCRETE SHALL MEET FDOT SPECIFICATION SECTION 347.
3. SIDEWALK SLOPES SHALL NOT EXCEED 5% RUNNING SLOPE OR 2% CROSS SLOPE.
4. PROVIDE JOINT 'A' WHERE SIDEWALKS ABUT STRUCTURES AND JOINT 'B' AT AN INTERVAL EQUAL TO THE SIDEWALK'S WIDTH.
5. NO PATCHING OF SIDEWALKS BETWEEN EXISTING JOINTS. CONTRACTOR SHALL FULLY REPLACE SIDEWALK FROM JOINT TO JOINT.

1 CONCRETE SIDEWALK



TYPICAL HANDRAIL ELEVATION VIEW

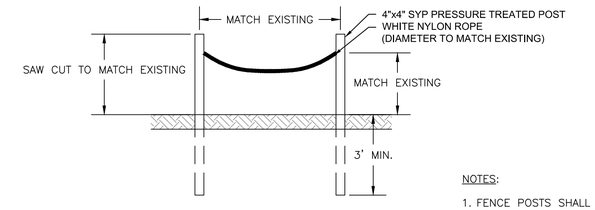


RAIL CONNECTION DETAIL

2 ALUMINUM HANDRAIL

NOTES:

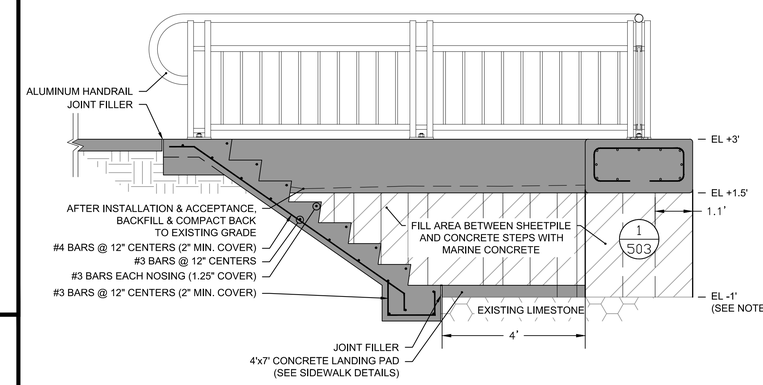
1. HANDRAIL SHALL MEET FDOT DESIGN STANDARD 862.
2. RAILING SHALL HAVE TYPE 1 – PICKET INFILL PANELS.
3. PROVIDE HANDRAIL EXPANSION JOINTS AT A MAXIMUM SPACING OF 35'.
4. ALL FASTENERS SHALL BE GALVANIZED STEEL AND COATED IN ACCORDANCE WITH FDOT SPECIFICATION SECTION 962.

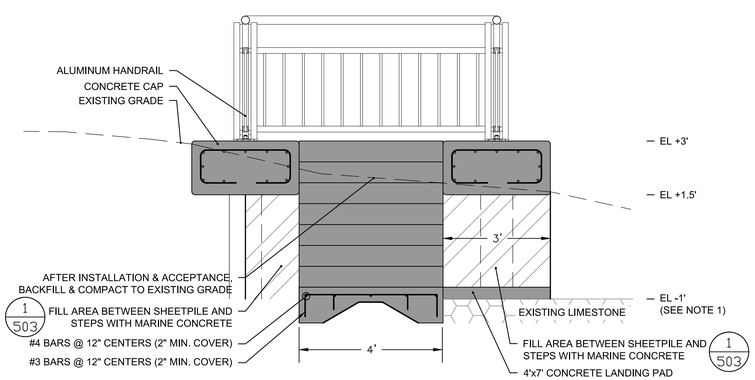


NOTES:

1. FENCE POSTS SHALL BE 4x4 SQUARE AND MEET FDOT SPECIFICATION SECTION 954.

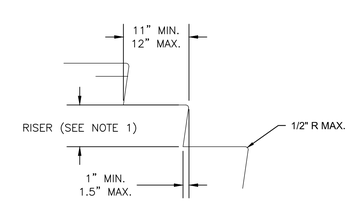
4 POST & ROPE FENCE DETAIL



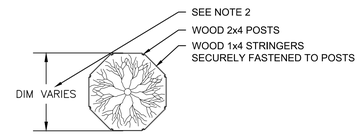


NOTES:

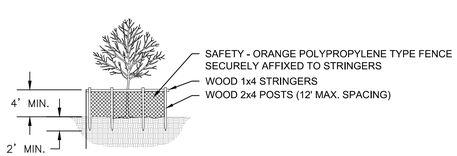
1. CONTRACTOR SHALL FIELD LOCATE ELEVATION OF LIMESTONE AND SELECT A UNIFORM RISER DIMENSION BETWEEN 4" (MINIMUM) AND 7" (MAXIMUM) SO THAT CONCRETE LANDING PAD IS POURED ATOP A LIMESTONE FOUNDATION. DRAWING DEPICTS 7" RISER DIMENSION.
2. CONCRETE SHALL MEET SPECIFICATION 03 31 01 MARINE CONCRETE.
3. CONCRETE STEPS SHALL MEET THE SPECIFICATIONS OF FDOT INDEX NO. 521 AND MODIFIED TO MEET THE DIMENSIONS SHOWN ON THE PLANS.



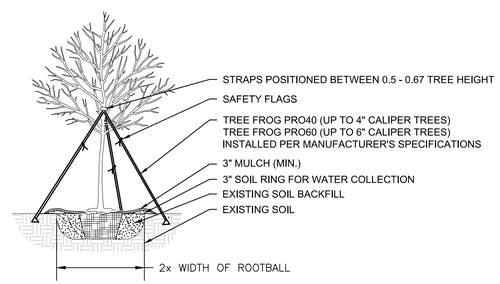
5 CONCRETE STEP DETAILS



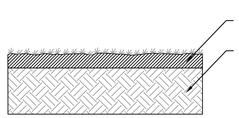
TREE PROTECTION PLAN VIEW



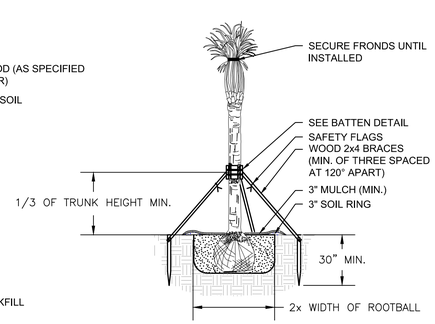
TREE PROTECTION SECTION



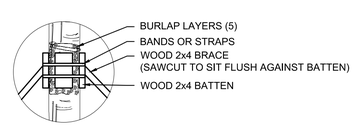
TREE PLANTING DETAIL



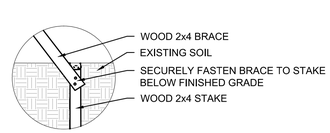
SODDING DETAIL



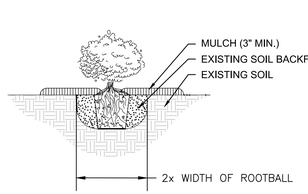
PALM TREE PLANTING DETAIL



WOOD BATTEN DETAIL



STAKING DETAIL



SHRUB/BUSH PLANTING DETAIL

3 LANDSCAPING DETAILS

NOTES:

1. LANDSCAPING SHALL BE INSTALLED TO MEET FDOT DESIGN INDEX NO. 533.
2. TREE PROTECTION BARRICADES SHALL BE LOCATED TO PROTECT A MINIMUM OF 75% OF THE CRITICAL PROTECTION ZONE. CRITICAL PROTECTION ZONE IS DEFINED AS THE AREA SURROUNDING A TREE WITHIN A CIRCLE DESCRIBED BY A RADIUS OF ONE FOOT FOR EACH INCH OF THE TREE TRUCK DIAMETER AT 54" ABOVE FINISHED GRADE. FOR GROUPS OF TREES, PLACE BARRICADES BETWEEN TREES AND CONSTRUCTION ACTIVITY.

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FL LIC. # 44625

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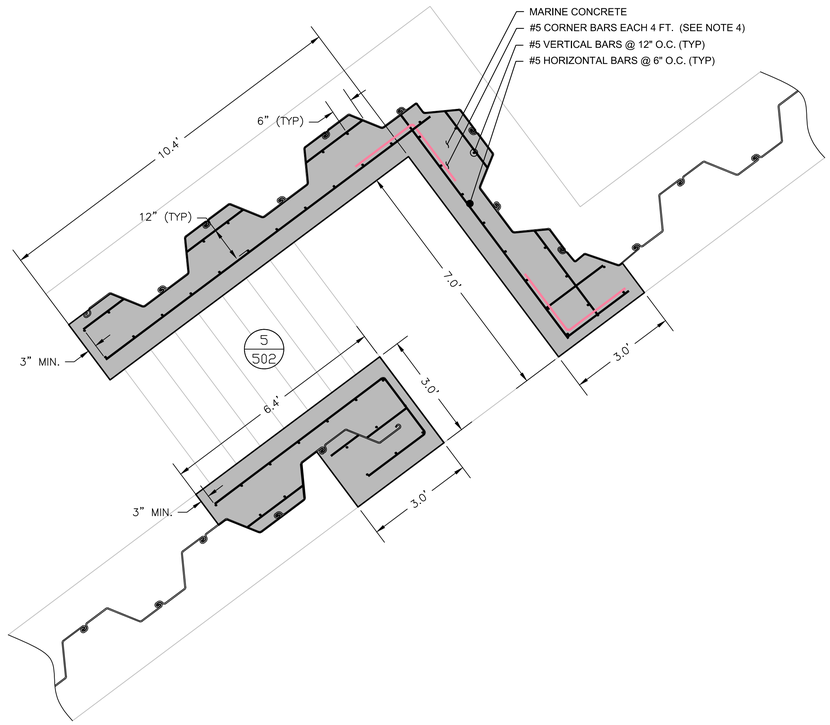
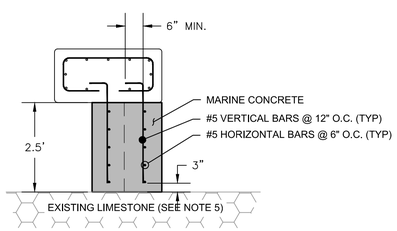
CITY OF KEY WEST
REST BEACH SEAWALL

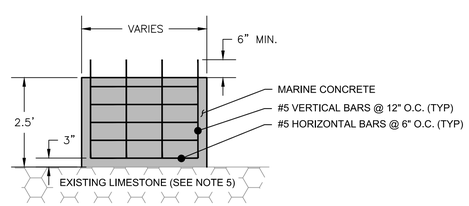
DETAILS

KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-502
Sheet 22 of 23







1 CONCRETE FILL DETAILS FOR BEACH ACCESS

NOTES:

1. CONCRETE CAP SHALL MEET SPECIFICATION SECTION 03 31 01 MARINE CONCRETE.
2. ALL REINFORCING BARS SHALL COMPLY WITH ASTM A615/A615M GRADE 60 AND HAVE AT LEAST 3 INCHES OF CONCRETE COVER.
3. MINIMUM LAP SPLICE FOR #5 REINFORCING BARS IS 2FT.
4. IF CONTINUOUS HORIZONTAL BARS ARE UTILIZED, NO CORNER BARS ARE NECESSARY.
5. ELEVATION OF LIMESTONE IS APPROXIMATE. CONTRACTOR SHALL FIELD LOCATE.

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FL LIC. # 44625

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CITY OF KEY WEST
REST BEACH SEAWALL

DETAILS

KEY WEST, MONROE COUNTY, FL

Sheet Reference:
C-503
Sheet 23 of 23