

ADDENDUM NO: 04

DATE OF ADDENDUM: 11/25/2014

**Hammonasset Beach State Park West Beach Improvements
Madison, CT
BI – T – 603**

Original Bid Due Date / Time:	11/19/2014	1:00 pm
REVISED BID DATE/TIME	12/10/2014	1:00 PM

Previous Addendums: Addendum No. 03- November 17, 2014: Addendum No. 2- November 14, 2014: Addendum No. 01- November 12, 2014

TO: Prospective Bid Proposers:

This Addendum forms part of the "Contract Documents" and modifies or clarifies the original "Contract Documents" for this Project dated August 25, 2014. Prospective Bid Proposers shall acknowledge receipt of the total number the Addenda issued for this Project on the space provided on Section 00 41 00 Bid Proposal Form. Failure to do may subject Bid Proposers to disqualification.

The following clarifications are applicable to drawings and specifications for the project referenced above.

ADDENDUM NO 02 ATTACHMENTS:

The following items have been incorporated inn Addendum No. 02 and being reissued as referenced in Addendum No. 03:

1. Connecticut EPA Flood Management Requirements (4 pages) Attached to this Addendum
2. Attachment 1: Floor Contingency Plan (2 pages) Attached to this Addendum
3. Test Boring Location Plan (L.002 Mark-up) (1 page) Attached to this Addendum
4. Revised Drawing C101 dated 11/14/2014
5. Revised Drawing C101A dated 11/14/2014
6. Revised Drawing C104 dated 11/14/2014
7. Drawing C110 dated 11/14/2014
8. Revised Drawing A 104 dated 11/14/14
9. Revised Drawing A 106 dated 11/14/14.
10. Revised Drawing E 201 dated 11/14/14

Item 1

SECTION 02 45 90 TREATED WOOD PILES

Add the following Sub-paragraph to Article 1.2:

3. All piles to be driven to a depth of 40 ft below ground surface and shall bear within the naturally deposited sands for a 25 ton allowable load capacity.

Change the following Sub-paragraph to Article 1.2: No. 2

2. Prior to the start of production work, drive eight (8) piles throughtout the site to confirm anticipated pile length.

Article 2.1, Paragraph B: Delete tip diameter and butt diameter and insert the following:

All piles shall be Class A 14 inch or Class B 12 inch per sheet S100 with a minimum 8 inch tip.

Article 2.1, Paragraph F: Add the following: Piles are land piles not highly exposed to salt water.

Article 4.2 BASIS OF PAYMENT

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Delete Sub-subparagraphs 1 and 2 in their entirety and insert the following:

1. Base Bid: Refer to Sheet S100 for number of piles. Note: Boardwalk piles have been removed from the project.

Item 2

SHEETS C.001 AND C101- SITE PREPRATION PLANS

Clarification:

Grove of Trees in the location of the "Tot Lot" and the grading is shown as a tree line. Survey does not locate all individual trees. All trees within the tree line that interfere with new work, must be removed to complete construction of the Tot Lot.

Section 31 10 00 Site Clearing requires removal of all trees, shrubs and vegetation as required for construction.

Trees not labeled to remain or to be removed shall be removed if required for construction.

Existing Septic Tanks to be removed are assumed to be 5,000 gallon tanks.

Existing Leaching Field is located to the north of the east septic tank; distribution box is assumed to be a standard 4 ft. by 4 ft. by 4 ft. pre cast concrete with duel inlets and multiple outlets.

At removed septic tanks, piping and distribution box contractor shall backfill and restore area per the following;

Excavations made for removing septic tanks, distribution boxes and pipes are to be backfilled to subgrade with "satisfactory soil" meeting the requirements of Spec Section 31 20 00, Part 2, Subsection 2.1.B. Excavations are to be backfilled according to Spec Section 31 20 00, Part , Subsection 3.9. Backfill is to be compacted according to Spec Section 31 20 00, Part 3, Subsection 3.14. Sand and beach grass within these areas shall be restored.

Item 3

SHEETS C.001A SITE LAYOUT

Clarification: Base Contract includes water line to location of proposed Water Meter Pit adjacent to the Storage Shed. Water meter, meter, and connections are part of Supplemental bid for Storage Shed.

Item 4

ALL CIVIL SHEETS C.001, C.002, C.003, C.101, C101A, C102, C104, C 105, C108, C111

Clarification: All electrical work indicated on the above Civil Drawings are part of the electrical contractor's scope.

Item 5

SHEET L-002 PLANTING PLAN

Clarification: The work does not including replanting of beach grass.

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Item 6

SHEET S-001 GENERAL NOTES

Timber Piles Note 4: Clarification: All piles on Drawing S.100, including ramp piles, shall be 25-Ton piles.

Timber Piles Note. 5: Change hammer energy to 8,500-10,500 ft-lbs per blow

Item 7

SHEET S-100 PILE LAYOUT PLAN

Foundation Notes:

Delete note 3 and insert the following: Pre-auger all piles. To a ten (10) ft. depth.

Clarification: Sheet S-100 shows quantity of piles; (boardwalk piles shown on S-101 have been deleted from the work

Item 8

SHEET S-102 DECK FRAMING PLAN

Clarification: All 4 x 14 split caps and 2 x 10 joists indicated shall be pressure treated.

Item 9

SHEET S-102 DECK FRAMING PLAN

Clarification: All 4 x 14 split caps and 2 x 10 joists indicated shall be pressure treated.

Item 10

SHEET A-130 PICNIC SHELTER

1. Change Note 3.5 as follows: 4 inch concrete pad with WWF, 6 x 6 w2.9 x 2.9 and No. 4 rebar continuous at bottom of perimeter haunch.
2. Change Note 3.6: Final design of foundation to be provided by pre-engineered structure manufacturer. Minimum reinforcing to be #4 bars vertical and horizontal at 12 inches O.C. E.W.

Item 11

Sheet A201- ENLARGED ELEVATION SHADE STRUCTURE

Sheet A202- ENLARGED ELEVATION NORTH CANOPY TRUSS

Clarification; The shade structure on the elevated deck is part of the base contract.

Item 12

Sheet P101- FLOOR PLAN PLUMBING;

Add the following note regarding heat tracing:

Heat trace shall be equal to Raychem XL-Trace. For water buried pipe system and flow maintenance above ground piping system.

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Item 13

Sheet P102- ROOF PLAN PLUMBING;

Add the following Solar Hot Water Notes;

1. Solar collectors shall be changed for 6 units to 4 unit; flat plate or evacuated tubes are acceptable
2. Provide one 120 gallon solar rated tank.
3. Heat dump devices are acceptable or flash blow-off to drain. There is insufficient room for a drain back system.
4. The solar water system is performance specification; Submit all calculations, sketches, piping diagrams, etc. in the shop drawing phase of construction

Item 14

Sheet E 101- ELECTRICAL FLOOR PLAN

Add the Following Note:

Electrical contractor shall provide all electrical connections to heat trace system indicated on Plumbing Drawing P.101

Item 15

Sheet SE 101- ELECTRICAL SITE PLAN

Clarification: Base contract for Vehicle electrical charging station includes:

1. Conduit and conductors as shown.
2. Stub conduit above sidewalk 12 inches and provide 6 ft whip of conductors.
3. Provide temporary seal at top of conduit.
4. Charging station by Others including install and final wiring connections.
5. Base bid shall terminate at panel as indicated.

Clarification: Base contract for Storage Shed feed includes:

1. Conduit and conductors as shown.
2. Terminate the conduit 24 inches above grade in a temporary weathertight, lockable pull box.
3. Support pull box on ground anchored unistrut frame.

Clarification: Handholds for Future Spot Lights:

Provide 12 inch by 12 inch by 12 inch deep handholds at 12 locations indicated.

Add the Following Notes at Electrical Vehicle Charging Stations.:

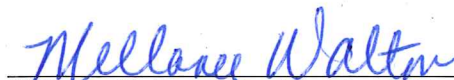
Provide 1 ½ inch Schedule 80 PVC conduit with pull wire from Vehicle Charging Station back to Room 111 in Bathhouse House. Provide one conduit for each charging station; total of four (4).

Clarification: Question was asked about size and specification for pump controls: We note the following:

The electrical enclosures for the pump stations are part of a "delegated design." Refer to Spec Section 22 13 29, Part 1, Sub-section 1.5.A. Note that design of a concrete pedestal base for the control panels is also part of the design requirement. Whether all controls for the 2 pump stations are housed in 1, 2 or more enclosures is left to the designer.

Clarification: All electrical work indicated on the following Civil Drawings are part of the electrical contractor's scope. SHEETS C.001, C.002, C.003, C.101, C101A, C102, C104, C 105, C108, C111

End of Addendum 04



Mellanee Walton, Associate Fiscal Administrative Officer
Department of Administrative Services
On Behalf of the Division of Construction Services



Connecticut Department of Administrative Services
Division of Construction Services
165 Capitol Avenue
Hartford, CT 06106
Attention: Mr. Bolton

Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106
Attention: Tom Tyler

Application No.: 201404999-FMC & FME
Town: Madison
Waters: Long Island Sound


Dear Mr. Bolton and Mr. Tyler:

The Commissioner of Energy and Environmental Protection has approved your application to conduct certain regulated activities. Your attention is directed to the conditions of the enclosed permit. You should read your permit carefully. Construction and other work must conform to that which is authorized.

If you have not already done so, you should contact your local Planning and Zoning Office and the U. S. Army Corps of Engineers to determine local and federal permit requirements on your project, if any. Write the Corps' New England District, Regulatory Branch, 696 Virginia Road, Concord, MA 01742-2751; <http://www.nae.usace.army.mil/> or call 1-800-343-4789.

If you have any questions concerning your permit, please contact the Inland Water Resources Division at (860) 424-3019.

10/28/14
DATE


Sharon Yurasevecz, P.E.
Civil Engineer

COPIES FURNISHED TO:

All Parties
Mayor/First Selectman
Conservation Commission
Inland Wetland Agency

DEEP Inland Fisheries
DPH Drinking Water Section
U. S. Army Corps of Engineers
Planning & Zoning Commission



FLOOD MANAGEMENT

Connecticut Department of Administrative Services
Division of Construction Services
165 Capitol Avenue
Hartford, CT 06106

Attention: Mr. Bolton

Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106

Attention: Tom Tyler

Application No.: FM-201404999
Town: Madison
Waters: Long Island Sound

Dear Mr. Bolton and Mr. Tyler:

The Inland Water Resources Division of the Department of Energy & Environmental Protection has reviewed the flood management certification application and exemption request prepared by Michael Bartos of LandTech Consultants, and signed by Jeffrey Bolton of the Department of Administrative Services and Tom Tyler of the Department of Energy and Environmental Protection ("Certifying Agencies").

Specifically, an exemption is requested from the provisions of Section 25-68h-2(b)(4) of the Regulations of Connecticut State Agencies (RCSA). RCSA Section 25-68h-2(b)(4) requires that structures located with a "coastal high hazard area" shall be elevated such that the lowest portion of the structural member is elevated to one foot above the base flood.

The project consists of improvements at the Hammonasset Beach State Park West Beach. The improvements include a new multi-purpose building and storage building, reconstruction of the parking lot and demolition of the old concession stand. The new multi-purpose building will include restrooms, lifeguard station, communication center and concession. The activity is located the town of Madison and shown on plans entitled, "Hammonasset Beach State Park West Beach Improvements," signed by Michael Bartos, dated May 1, 2014 revised through July 24, 2014. The project is located within the 100-year floodplain of Long Island Sound.

The structure has been elevated above the base flood elevation (BFE) however cannot provide the one foot of freeboard due to ADA requirements. The agency has determined that while the structure does not meet the ideal design, it is not possible to do so without significant cost and environmental impact.

In addition, the agency has determined that the activity is in the public interest, will not injure persons or damage property in the area of such activity or critical activity, and complies with the provisions of the National Flood Insurance Program. Therefore, in accordance with CGS Section 25-68d(d), your request for approval of the above referenced certification and exemption request from RCSA Section 25-68h-2(b)(4) is granted with the following conditions:

Special Conditions:

None

Operating Conditions:

1. This approval shall expire ten years after issuance or if the construction of any structures or facilities authorized herein is not commenced within three years of issuance of this approval.
2. The Certifying Agency may not make any alterations, except de minimis alterations, to any structure, facility, or activity authorized by this certification unless the Certifying Agency applies for and receives a modification of this certification. A de minimis alteration means a change in the design or operation of the authorized permit that does not increase its adverse environmental or other regulatory impacts.
3. In constructing or maintaining any structure or facility or conducting any activity authorized herein, or in removing any such structure or facility, the Certifying Agency shall employ best management practices to control storm water discharges, to prevent erosion and sedimentation, and to otherwise prevent pollution of wetlands and other waters of the State. The Certifying Agency shall immediately inform the Commissioner of any adverse impact or hazard to the environment which occurs or is likely to occur as the direct result of the construction, maintenance, or conduct of structures, facilities, or activities authorized herein. Best Management Practices include, but are not limited, to practices identified in the *Connecticut Guidelines for Soil Erosion and Sediment Control* as revised, *2004 Connecticut Stormwater Quality Manual*, Department of Transportation's *ConnDOT Drainage Manual* as revised, and the Department of Transportation Standard Specifications as revised.
4. All temporary structures, cofferdams, and fill shall not impede the movement of flood flows and shall be removed at the completion of their use. The design of such temporary structure, cofferdams and fill shall be based on the DOT Drainage Manual, where applicable. All temporary and permanent fill shall be clean and free of stumps, rubbish, hazardous and toxic material.
5. The Certifying Agency shall cause remove equipment and materials to be removed from the floodplain during periods when flood warnings have been issued or are anticipated by a responsible federal, state or local agency. It shall be the Certifying Agency's responsibility to obtain such warnings when flooding is anticipated.

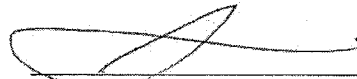
Department of Administrative Services and Department of
Energy and Environmental Protection
Hammonasset, Madison, CT
201404999-FMC & FME
Page 3 of 3

This authorization is subject to and does not derogate any present or future property rights or other rights or powers of the State of Connecticut, conveys no property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state, or local laws or regulations pertinent to the property or activity affected thereby. No revisions or alterations to the approved plans are allowed without first obtaining written approval from this Division of such alterations.

If there are any questions, contact Sharon Yurasevecz of the Inland Water Resources Division at 860-424-3861.

Sincerely,

10/27/14
Date


Macky McCleary
Deputy Commissioner

CAC/SKY

Attachment I: Flood Contingency Plan

Most of the Middle Beach Improvements project area falls within a VE (elev 13) flood hazard zone as delineated by the Federal Emergency Management Agency (FEMA). This zone extends from the shoreline north about 950 feet. North of the VE zone is an AE (elev 12) flood hazard zone.

This flood contingency plan describes the actions to be taken by the Contractor in the event of a flood during construction and by the Department of Energy and Environmental Protection (Owner) in the event of a flood after construction. The flood contingency plan is to be carried out promptly whenever flood conditions become imminent.

Part 1: Flood Contingency Plan – Operations During Construction

The Contractor is responsible for implementing this Flood Contingency Plan during construction. The following measures will be undertaken to ensure the protection of life and property and to prevent pollution during construction.

The Contractor is to implement the flood contingency plan upon hearing of a National Weather Service flood alert or upon notification by the Town of Madison or the State of Connecticut of threatening flood conditions.

An emergency storage area outside all flood hazard zones is available to the contractor. The area is the Shoreline Greenway Trail Trailhead Parking Area, which is above the 500-year flood elevation. The Shoreline Greenway Trail Trailhead Parking Area is located on Park property with access from the south side of Boston Post Road, 350 feet east of the park entrance. See attached location map.

Upon receipt of a flood emergency warning, the Contractor is to complete the following tasks.

- Cancel incoming shipments of construction equipment and materials. Shipments en route are to be diverted to an area outside all flood hazard zones.
- Cover soil stockpiles with erosion control blanket anchored securely.
- Remove construction trailers, construction equipment and materials, excluding asphalt and soil materials excavated from the site, and store them temporarily at the emergency storage area. No liquids, floatable materials, equipment of any kind, waste materials or debris are to remain within the project area.
- Remove personnel and vehicles from the Park.
- After flood waters have subsided and the Owner has authorized re-entry into the Park, transfer trailers, construction equipment and materials temporarily stored at the Shoreline Greenway Trail Trailhead Parking Area back to the project area and re-commence construction. Restore parking area to its original condition.

Part 2: Flood Contingency Plan – Operations After Construction

The Owner will be responsible for implementing this Flood Contingency Plan after construction.

All structures or structural improvements to the project area are elevated above the base flood or have flood proofing. The temporary erosion and sediment controls will remain in place until the exposed soils have stabilized in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. After project construction is complete, the only known potential

sources of pollution within the West Beach Improvements project area located below the base flood elevation within the project area are the trash containers and the temporary propane storage tanks.

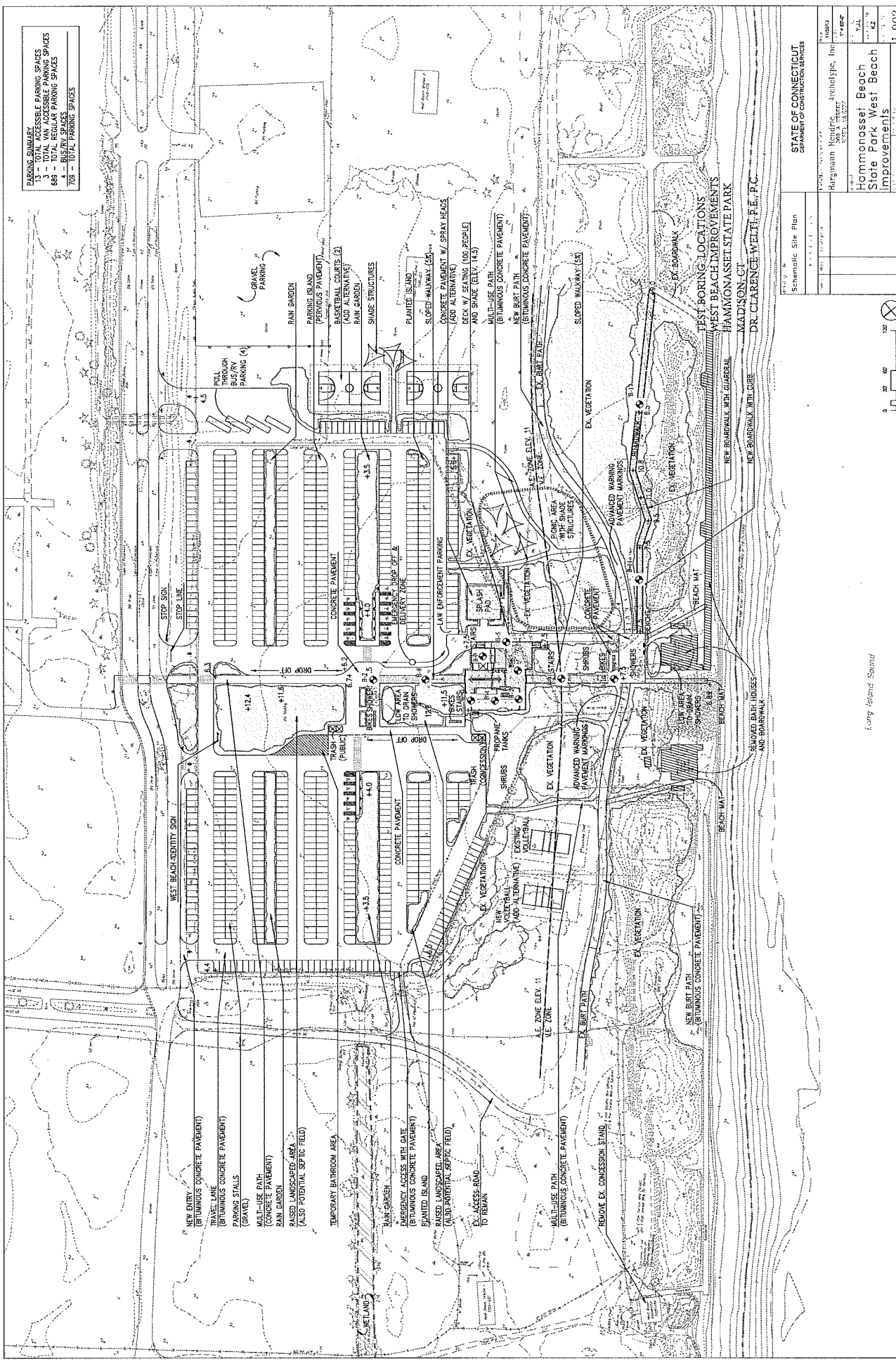
In the event of a flood emergency, the following related specifically to the Middle Beach project area should be incorporated into the flood emergency activities for the entire park.

- Order and manage the evacuation of all non-staff personnel and vehicles. If portable restrooms are in use, relocate them to an area above the base flood elevation.
- Secure the concession and bathhouse building and the storage shed. Turn off power and water.
- See that pollution sources are secured. Close propane tank valves. Remove trash containers to a location above the base flood elevation.

Responsible person:

John Hine
Park & Recreation Supervisor 1
Hammonasset Beach State Park
State Parks Division
Bureau of Outdoor Recreation
Connecticut Department of Energy and Environmental Protection
PO Box 271, 1288 Boston Post Rd.
Madison, CT 06443
Phone: 203.245.2785
Fax: 203.245.9201
Email: john.hine@ct.gov

PARKING SUMMARY	
13	- TOTAL ACCESSIBLE PARKING SPACES
683	- TOTAL VAN ACCESSIBLE PARKING SPACES
4	- BUS/RV SPACES
708	- TOTAL PARKING SPACES



STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	
PROJECT NO.	11-1111-11
PROJECT NAME	Schematic Site Plan
DATE	11/11/11
SCALE	AS SHOWN
DESIGNER	Blugman Associates, Inc.
PROJECT LOCATION	Hammonasset Beach State Park West Beach Improvements
PROJECT NUMBER	11-1111-11
DATE	11/11/11
SCALE	AS SHOWN
DESIGNER	Blugman Associates, Inc.
PROJECT LOCATION	Hammonasset Beach State Park West Beach Improvements
PROJECT NUMBER	11-1111-11
DATE	11/11/11
SCALE	AS SHOWN
DESIGNER	Blugman Associates, Inc.

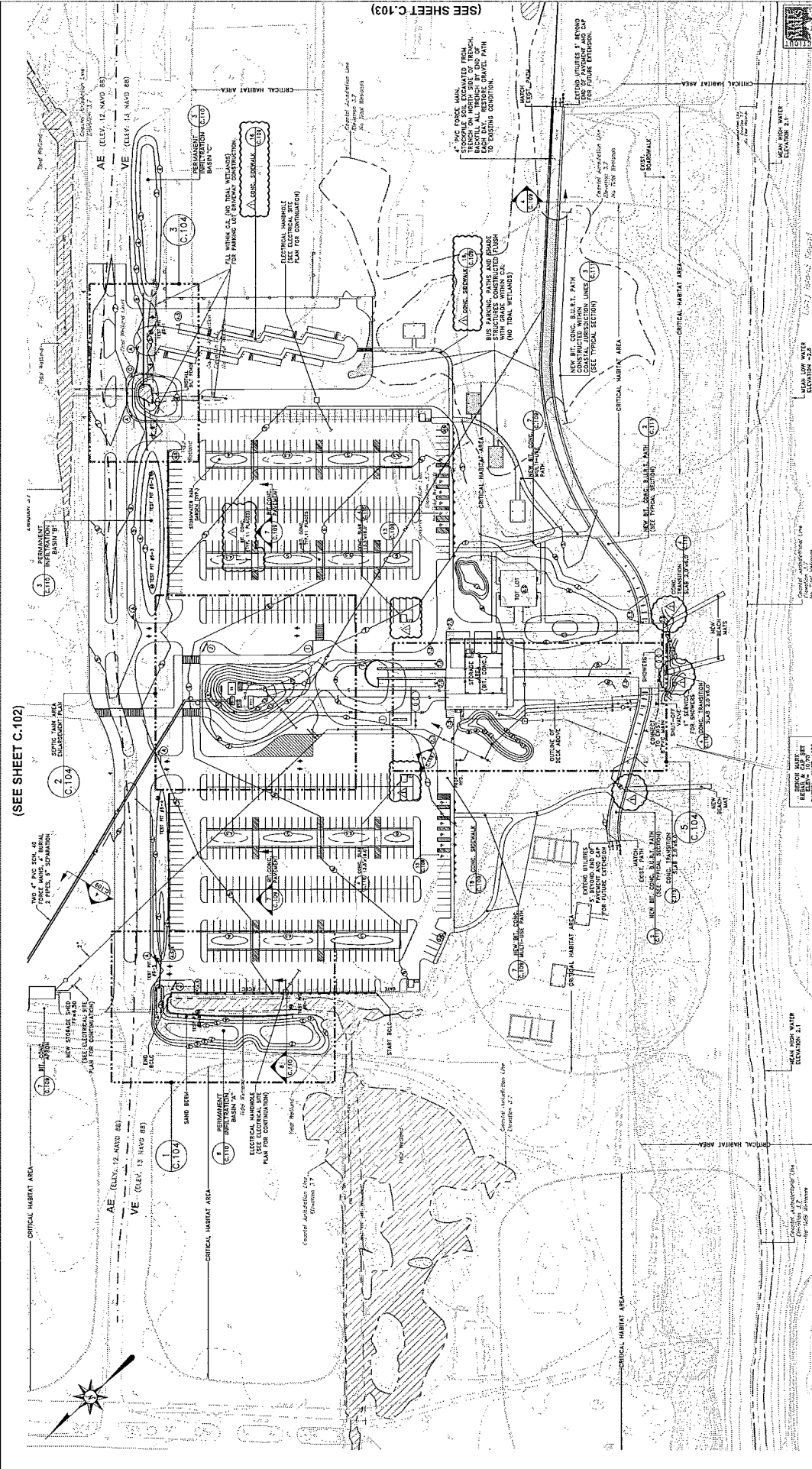


Long Island Sound

11-002

(SEE SHEET C.103)

(SEE SHEET C.102)



STATE OF CONNECTICUT
 DEPARTMENT OF ADMINISTRATIVE SERVICES
 DIVISION OF CONSTRUCTION SERVICES

Project: **Hammonasset Beach State Park West Beach Improvements**

Contract No.: **89-1-603**

Sheet No.: **C.101**

DATE: **8/23/2014**

BY: **8/23/2014**

CHK: **8/23/2014**

APP: **8/23/2014**

DESIGNER: **8/23/2014**

DATE: **8/23/2014**

CHK: **8/23/2014**

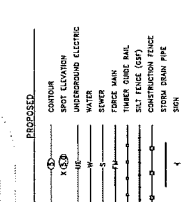
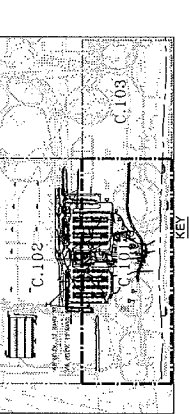
APP: **8/23/2014**

DESIGNER: **8/23/2014**

Site Grading and Utilities

REVISIONS:

NO.	DATE	DESCRIPTION
1	8/23/2014	ISSUE FOR REVIEW
2	8/23/2014	ISSUE FOR REVIEW
3	8/23/2014	ISSUE FOR REVIEW
4	8/23/2014	ISSUE FOR REVIEW
5	8/23/2014	ISSUE FOR REVIEW
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100	8/23/2014	ISSUE FOR REVIEW



LEGEND

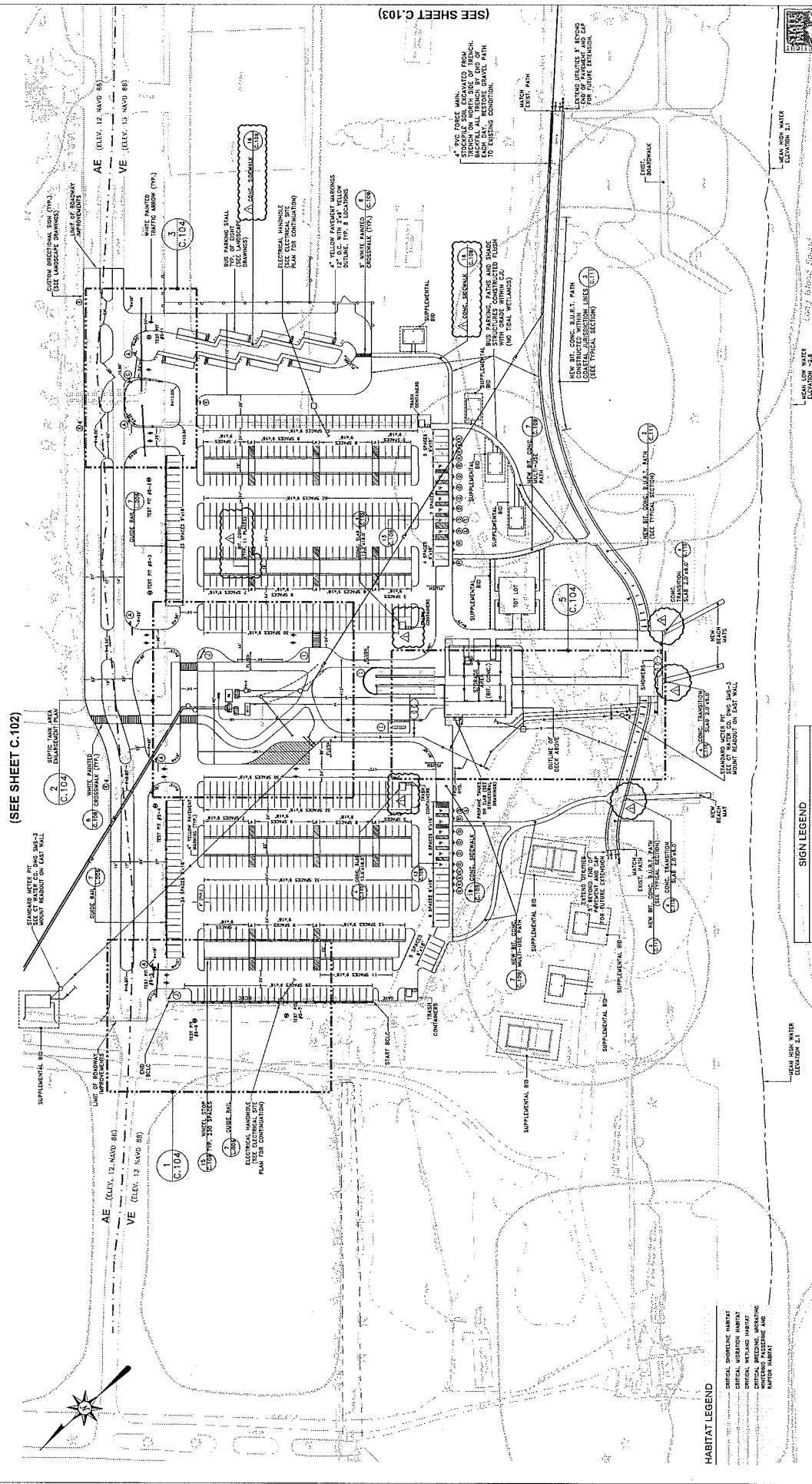
EXISTING

- CONCRETS
- SPOT ELEVATION
- COASTAL PROTECTION LINE
- TRAIL
- TELEPHONE
- ELECTRIC
- HIGH-VOLTAGE ELECTRIC (UNDERGROUND)
- WATER

PROPOSED

- THICKER CURB RAIL
- TREES
- TRAIL LINK
- UNDERGROUND ELECTRIC
- SEWER
- EDGE OF WATER
- STORM DRAIN PIPE
- HYDRANT
- MONITOR WELL

SCALE IN FEET: 0, 50, 100



(SEE SHEET C.102)

(SEE SHEET C.103)

HABITAT LEGEND

CRITICAL BIRDLING HABITAT
 CRITICAL WETLAND HABITAT
 CRITICAL WETLAND HABITAT
 CRITICAL WETLAND HABITAT
 CRITICAL WETLAND HABITAT
 CRITICAL WETLAND HABITAT

LEGEND

CONTOURS
 SPOT ELEVATION
 PROPOSED CONSTRUCTION LINE
 TELEPHONE
 ELECTRIC
 WATER
 UNDERGROUND UTILITY ELECTRICAL (UNDERGROUND)
 TELEPHONE
 WATER

PROPOSED

THREE QUARTER RAIL
 TREES
 PROPOSED CONSTRUCTION LINE
 EDGE OF WATER
 STORM DRAIN PIPE
 PUMP
 MONUMENT
 MONITOR WELL
 SON

EXISTING

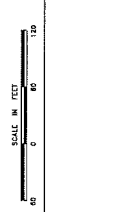
THREE QUARTER RAIL
 TREES
 PROPOSED CONSTRUCTION LINE
 EDGE OF WATER
 STORM DRAIN PIPE
 PUMP
 MONUMENT
 MONITOR WELL
 SON

SIGN LEGEND

SOME ARE SIGNALS TO BE INSTALLED PER CT STATE SIGNAL SHEET 701-258-02.

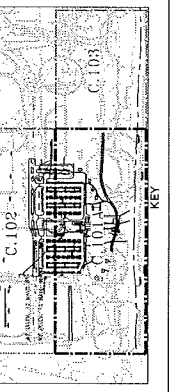
SYMBOL	JOB NUMBER	DESCRIPTION
(A)	31-34A	STOP
(B)	31-31B	PROHIBITION (STOPPING)
(C)	31-118	DO NOT ENTER
(D)	31-32B	ONE-WAY (MOTORIST'S PATH)
(E)	31-64B	NO ACCESS (SIGNALS)
(F)	31-65B	NO PARKING ANY TRAIL
(G)	-	NO LEFT TURN
(H)	-	AUTHORIZED PARKING ONLY
(I)	-	STOP FOR SIGNAL (MOTORIST'S PATH)
(J)	-	PARKING LOT SIGN (SEE LANDSCAPE PLAN)
(K)	-	ELECTRIC VEHICLE CHARGING STATION

KEY



STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES	DATE: 8/13/2014
DRAWN BY: [Signature]	CHECKED BY: [Signature]
DESIGNED BY: [Signature]	DATE: 8/13/2014
PROJECT: State Park West Beach Improvements	
SCALE: 1"=15'-0"	
SHEET NO: 11-1344-01	SHEET TOTAL: 11-1403
PROJECT NO: C.101A	

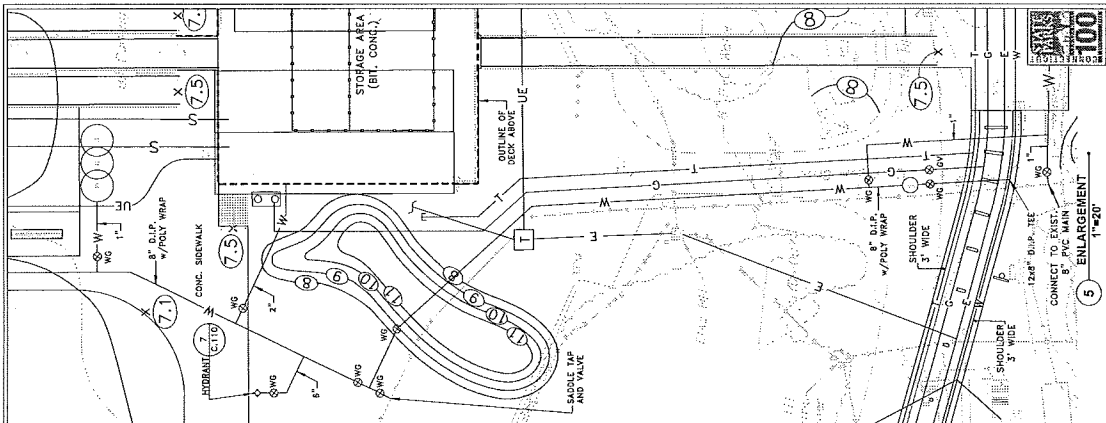
Project Name: State Park West Beach Improvements
Client: State Park West Beach
Location: State Park West Beach
Scale: 1" = 15'-0"
Sheet No: 11-1344-01
Project No: C.101A



Project Name: State Park West Beach Improvements
Client: State Park West Beach
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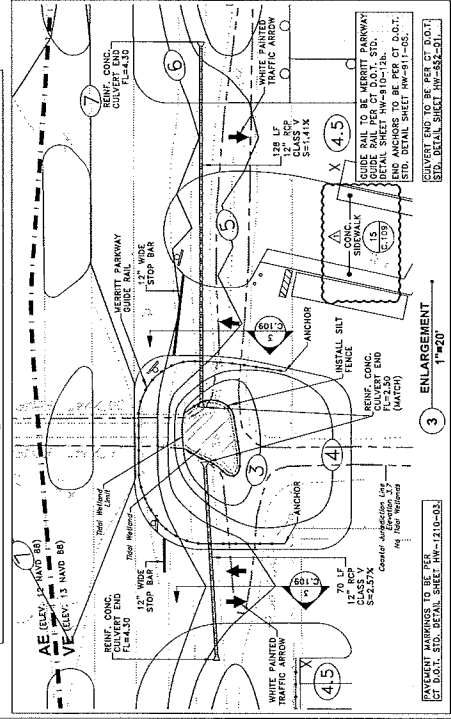
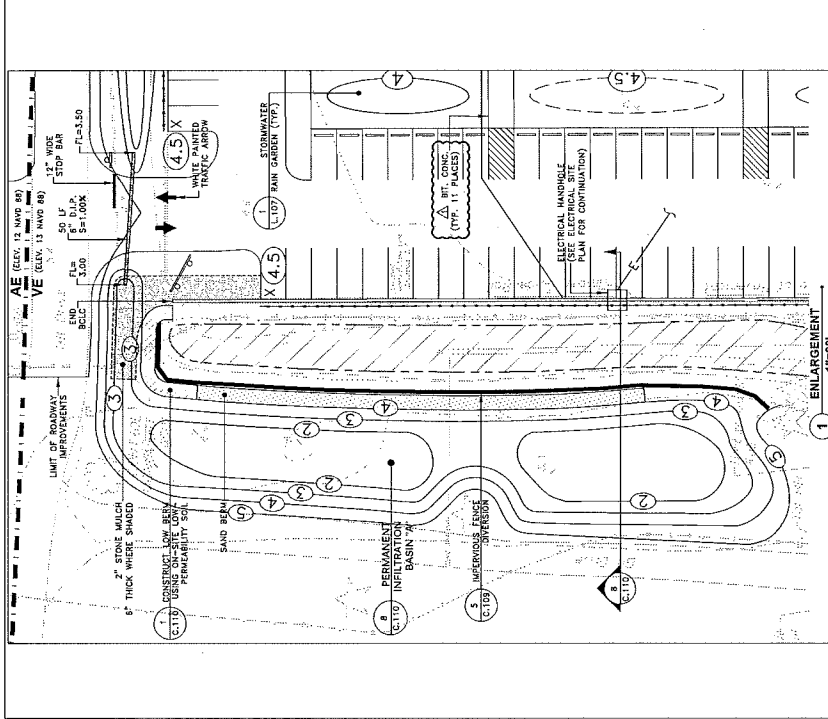
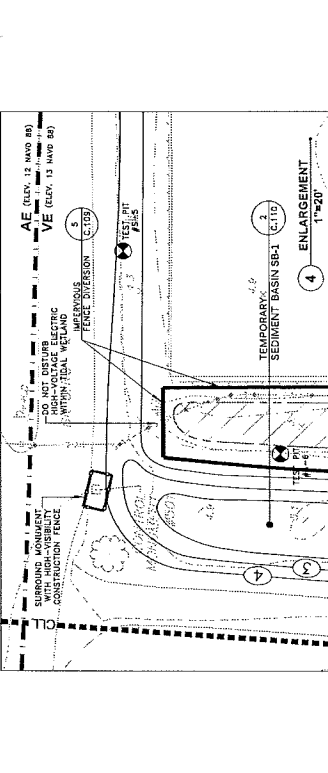
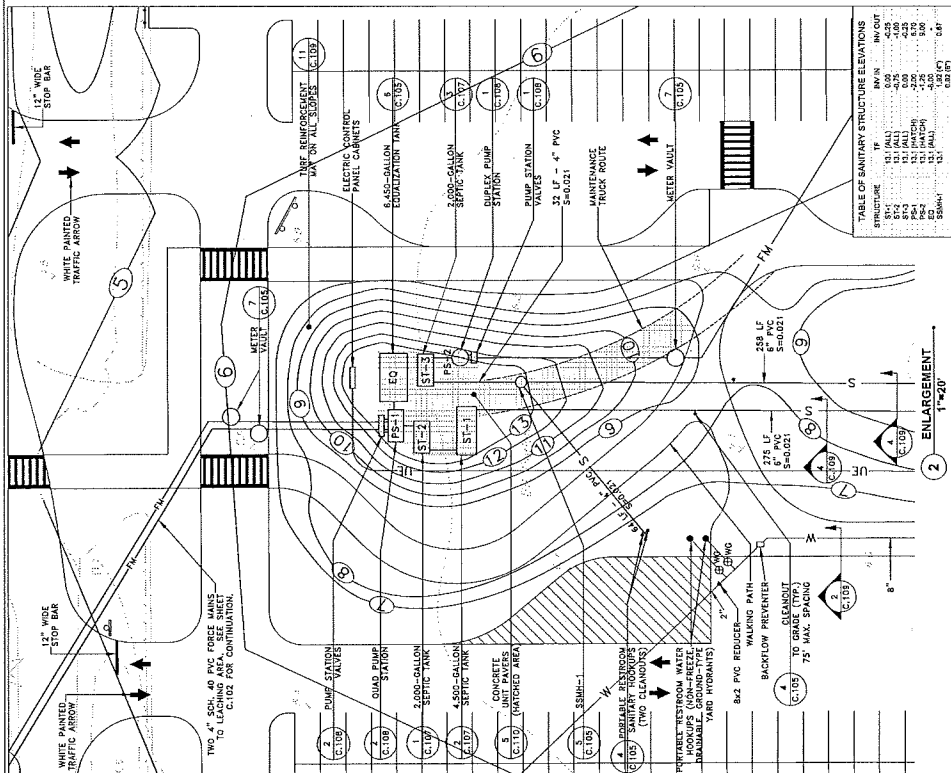


Engagement Details and Notes

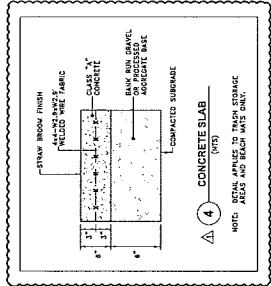
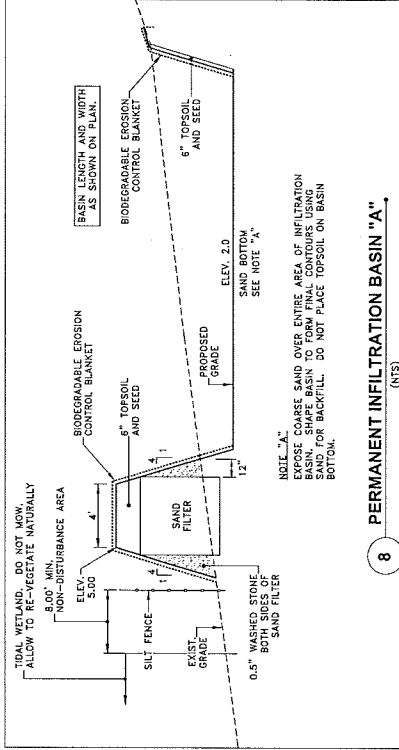
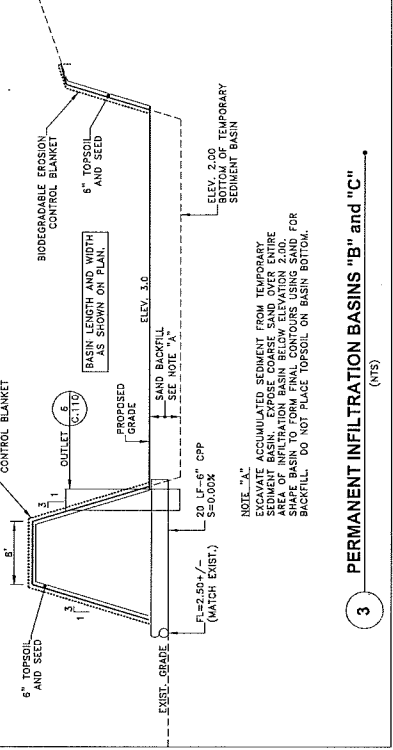
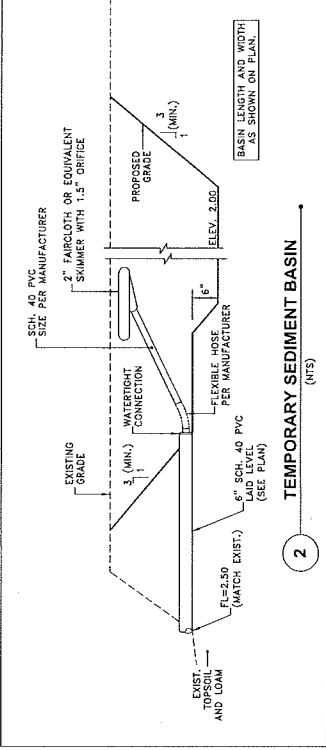
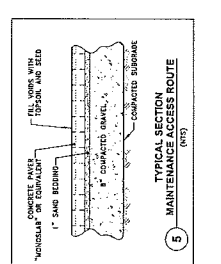
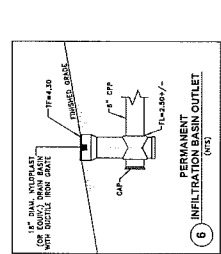
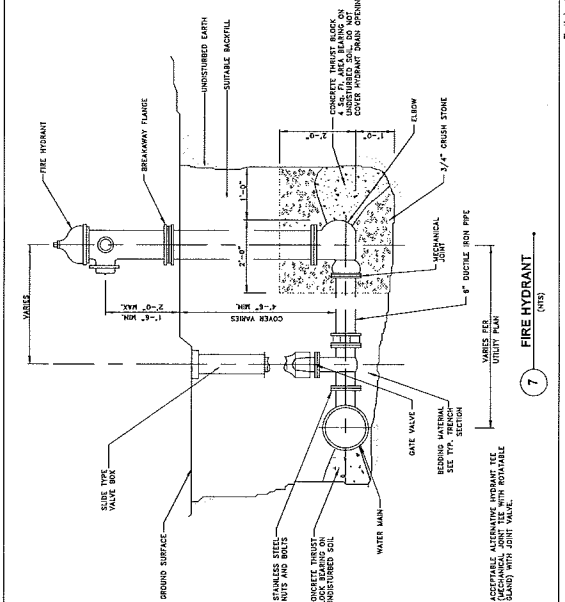
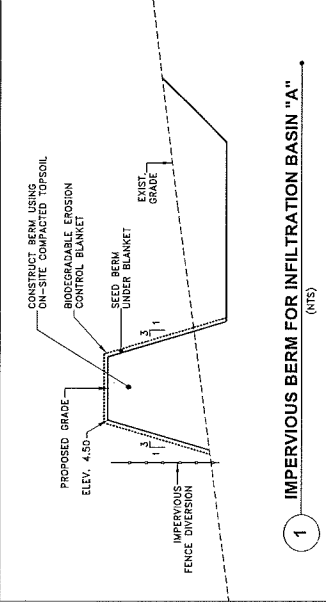
STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

DATE	8/7/15 TO 8/15	DESIGN	8/7/15
REVISION		ISSUE	
NO.	DESCRIPTION	DATE	BY
1	ISSUE FOR PERMITS	8/7/15	JAC
2	REVISION TO ADDRESS COMMENTS	8/14/15	JAC
3	REVISION TO ADDRESS COMMENTS	8/14/15	JAC
4	REVISION TO ADDRESS COMMENTS	8/14/15	JAC
5	REVISION TO ADDRESS COMMENTS	8/14/15	JAC

PROJECT NO. HW-1210-03
DRAWING NO. C.104



STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES



STATE OF CONNECTICUT DEPARTMENT OF ADMINISTRATIVE SERVICES DIVISION OF CONSTRUCTION SERVICES	PROJECT NUMBER: 11-1344-01 PROJECT TITLE: B-1-683
CONTRACTOR: Hammonsset Beach State Park West Beach Improvements PROJECT MANAGER: John A. Johnson PROJECT ENGINEER: John A. Johnson	DATE: 8/13/2014 DRAWING NO.: AS SHOWN SCALE: AS SHOWN SHEET NO.: 1 TOTAL SHEETS: 1
PROJECT NO.: 11-1344-01 PROJECT TITLE: B-1-683	SHEET NO.: 1 TOTAL SHEETS: 1

GROUNDING ELECTRODE CONDUCTOR FOR AC SYSTEMS	
SIZE OF SERVICE ENCLASPED	MINIMUM SIZE OF GROUNDING ELECTRODE CONDUCTOR (AWG)
100 AMP	8
150 AMP	6
200 AMP	4
250 AMP	3
300 AMP	2
350 AMP	2
400 AMP	2
450 AMP	2
500 AMP	2
600 AMP	2
700 AMP	2
800 AMP	2
900 AMP	2
1000 AMP	2

VOLTAGE DROP SCHEDULE	
PERCENT VOLTAGE DROP TO LOADS	
100 FT	1.00
200 FT	2.00
300 FT	3.00
400 FT	4.00
500 FT	5.00
600 FT	6.00
700 FT	7.00
800 FT	8.00
900 FT	9.00
1000 FT	10.00
1200 FT	12.00
1400 FT	14.00
1600 FT	16.00
1800 FT	18.00
2000 FT	20.00
2200 FT	22.00
2400 FT	24.00
2600 FT	26.00
2800 FT	28.00
3000 FT	30.00
3200 FT	32.00
3400 FT	34.00
3600 FT	36.00
3800 FT	38.00
4000 FT	40.00
4200 FT	42.00
4400 FT	44.00
4600 FT	46.00
4800 FT	48.00
5000 FT	50.00

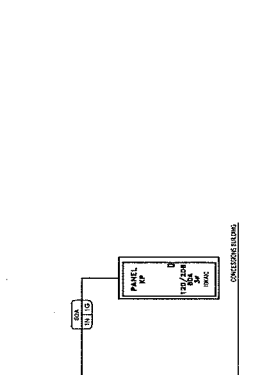
FEEDER SIZING CHART				
WIRE SIZE (AWG)	CURRENT (AMPS)	VOLTAGE (VOLTS)	LENGTH (FEET)	WIRE SIZE (AWG)
10	30	120	100	10
12	40	120	100	12
14	50	120	100	14
16	60	120	100	16
18	70	120	100	18
20	80	120	100	20
22	90	120	100	22
24	100	120	100	24
26	110	120	100	26
28	120	120	100	28
30	130	120	100	30
32	140	120	100	32
34	150	120	100	34
36	160	120	100	36
38	170	120	100	38
40	180	120	100	40
42	190	120	100	42
44	200	120	100	44
46	210	120	100	46
48	220	120	100	48
50	230	120	100	50
52	240	120	100	52
54	250	120	100	54
56	260	120	100	56
58	270	120	100	58
60	280	120	100	60
62	290	120	100	62
64	300	120	100	64
66	310	120	100	66
68	320	120	100	68
70	330	120	100	70
72	340	120	100	72
74	350	120	100	74
76	360	120	100	76
78	370	120	100	78
80	380	120	100	80
82	390	120	100	82
84	400	120	100	84
86	410	120	100	86
88	420	120	100	88
90	430	120	100	90
92	440	120	100	92
94	450	120	100	94
96	460	120	100	96
98	470	120	100	98
100	480	120	100	100

FEEDER LEGEND

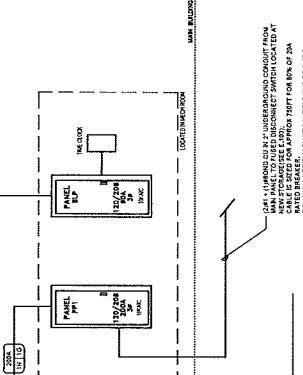
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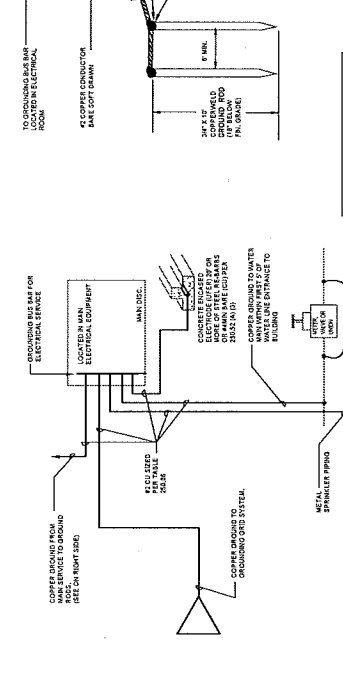
ELECTRICAL POWER RISER DIAGRAM - CONCESSIONS BUILDING



ELECTRICAL POWER RISER DIAGRAM - MAIN BUILDING

NOTE

- IF AVAILABLE ON THE PREMISES AT EACH BUILDING OR STRUCTURE SERVED, EXISTING IN-RACE TRAYS SHOULD BE USED TO RISE THE GROUNDING ELECTRODE SYSTEM WHERE SPECIFIED IN THIS DRAWING.
- ALL OTHER METAL PARTS USE INTERNAL COPPER PLUMBING, WATER MAIN, GAS PIPES SHALL BE BONDING WITH MAIN SERVICE GROUNDING WITH APPROXIMATE GROUNDING CONDUCTOR SIZE PER NEC.
- GROUNDING WIRE TO BE INSTALLED BY FELLOW FINISHED GRADE. ALL CONNECTIONS SHALL BE CABLED.
- THE GROUNDING WIRE SHALL BE INSTALLED SUCH THAT AT LEAST A FEET OF LENGTH IS CONTACT WITH THE SOIL. IF IT IS NOT CONTACT WITH THE SOIL, THE WIRE SHALL BE BENT AT AN ANGLE AND NOT TO EXCEED 90 DEGREES FROM THE VERTICAL. THE WIRE SHALL BE BENT AT AN ANGLE THAT IS AT LEAST 1/2 INCH DEEP.
- CONNECT MAIN SERVICE GROUNDING BUS TO BUILDING STEEL BY APPLICABLE BUILDING WITHOUT STEEL STRUCTURE SHALL HAVE COPPER GROUNDING DIRECTLY CONNECTED TO GROUNDING WIRE SYSTEM.
- PROVIDE GROUNDING ELECTRODE CONDUCTORS SEE PER NEC.



ELECTRICAL SERVICE AND BUILDING GROUNDING DETAIL

MINIMUM WIRE SIZE FOR CIRCUIT BREAKERS AND FUSES

CIRCUIT BREAKER OR FUSE RATING (AMPS)	MINIMUM WIRE SIZE (AWG)
15	14
20	12
25	10
30	8
35	6
40	4
45	4
50	4
60	4
70	4
75	4
80	4
90	4
100	4
110	4
125	4
150	4
175	4
200	4
225	4
250	4
300	4
350	4
400	4
450	4
500	4
600	4
700	4
800	4
900	4
1000	4

INDICATE AMPERAGE OF FEEDER WITHIN THE CONDUIT

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STATE OF CONNECTICUT
 DEPARTMENT OF ADMINISTRATIVE SERVICES
 DIVISION OF CONSTRUCTION SERVICES

Hammonasset Beach State Park West Beach Improvements

Electrical Power Riser Diagrams and Details