Environmental Assessment
New York City Department of Parks and Recreation
World's Fair Marina, Queens County, NY

4085-DR-NY

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U.S. Department of Homeland Security
Federal Emergency Management Agency Region 2
285 Fulton Street, NY, NY 10007

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APPENDICES

LIST OF ACRONYMS

APE	Area of Potential Effect
BMPs	Best Management Practices
CBRA	Coastal Barrier Resources Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CRIS	Cultural Resources Information System
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Plan
dB	Decibels
dBA	Decibels (A-weighted)
DHSES	New York State Division of Homeland Security and Emergency Services
DPS	Distinct Population Segment
EA	Environmental Assessment
ECL	Environmental Conservation Law of New York
EFH	Essential Fish Habitat
EO	Executive Order
ESA	Endangered Species Act
FDNY	Fire Department New York
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
Leq	Equivalent noise level
Ldn	Day night noise level
LWRP	Local Waterfront Revitalization Program
MLLW	Mean Lower Low Water
MSA	Magnuson Stevens Fishery Conservation and Management Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
NO_X	Nitrogen Oxides
NO_2	Nitrogen Dioxide
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NYC	New York City

NYCDPR	New York City Department of Parks and Recreation
NYCRR	New York Codes, Rules, and Regulations
NYPD	New York Police Department
NYSDEC	New York State Department of Environmental Conservation
NYSDOS	New York State Department of State
NYSHPO	New York State Historic Preservation Officer
O_3	Ozone
OPA	Otherwise Protected Area
Pb	Lead
$PM_{2.5}$	Particulate Matter equal to or less than 2.5 micrometers in aerodynamic diameter
PM_{10}	Particulate Matter equal to or less than 10 micrograms per cubic meter of air
SSA	Sole-source Aquifer
SO_2	Sulfur Dioxide
SPDES	State Pollution Discharge Elimination System
SPL	Sound pressure level
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION

On October 29, 2012, heavy rain, wind, and storm surge from Hurricane Sandy caused damage throughout the New York City (NYC) area including properties owned and operated by the New York City Department of Parks and Recreation (NYCDPR). President Barack Obama declared a major disaster for affected New York counties on October 30, 2012. NYCDPR has applied for Federal Emergency Management Agency (FEMA) financial assistance under both the Public Assistance Program and the Hazard Mitigation Grant Program as subrecipient in accordance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) of 1974, as amended, (42 United States Code [U.S.C.] §§ 5121-5207); the Sandy Recovery Improvement Act of 2013; and the accompanying Disaster Relief Appropriations Act, 2013. The Sandy Recovery Improvement Act amended the Stafford Act, adding Section 428 Public Assistance Alternative Procedures, which authorizes alternative procedures for permanent work funding under FEMA's Public Assistance Program. The New York State Division of Homeland Security and Emergency Services (DHSES) is the recipient partner for this action.

FEMA prepared this Environmental Assessment (EA) in accordance with Section 102 of the National Environmental Policy Act (NEPA) of 1969, as amended; and the Regulations for Implementation of the National Environmental Policy Act (40 Code of Federal Regulations [CFR] §§1500 to 1508). The purpose of the EA is to analyze the potential environmental impacts of alternatives, including a No Action Alternative, and to determine whether to prepare an Environmental Impact Statement or a Finding of No Significant Impact (FONSI). In accordance with the above referenced regulations and FEMA Directive 108-1 and FEMA Instruction 108-1-1, FEMA evaluates and considers the environmental consequences of actions it funds or undertakes.

2.0 PURPOSE AND NEED

FEMA's Public Assistance Program fosters the protection of health, safety, and welfare of citizens, assists communities in recovering from damages caused by disasters and reduces future losses resulting from natural disasters. The purpose of this project is to reduce damages from storm surge flooding caused by coastal storms such as nor'easters, tropical storms, and hurricanes with the potential to affect the World's Fair Marina and its emergency response, functional, and recreational uses. The primary need is to address damage that the Marina sustained during tidal surges and waves associated with Hurricane Sandy and thereby improve the resiliency of the Marina to withstand future flooding and coastal storms and maintain recreational access. There is also a need to improve the safety and security of the marina, including utility upgrades to bring them up to current codes, to improve emergency response times for NYPD and FDNY, and to address the Americans with Disabilities Act accessibility.

3.0 BACKGROUND

World's Fair Marina, located in Queens County at Flushing Meadows Corona Park, on Flushing Bay (Appendix B, Figure 1), suffered extensive damages from Hurricane Sandy. Damages at Pier 1, Pier 3, and their floating docks included pier floats and top deck boards dislodged and washed away, gangways and railings broken, floating piers destroyed, and all electrical boxes and meters rendered damaged and inoperable. At Pier 1, the "gas office" building flooded with approximately two feet of water causing damage to the building and stopping vessel gas service. Both areas sustained similar damage, though Pier 3 did not experience the same level of destruction as Pier 1. Following the storm, Pier 1 was largely closed to the general public while still permitting "transient dockage" for smaller vessels. NYPD and FDNY also maintain emergency response services at Pier 1 for Flushing Bay including those at LaGuardia Airport and within the Marina.

4.0 ALTERNATIVES

This section discusses the No Action Alternative as a basis for analysis and those alternatives that FEMA considered but eliminated from further analysis.

4.1 Alternative 1: No Action Alternative

The No Action Alternative is defined as maintaining the status quo with no FEMA involvement. World's Fair Marina Pier 1 would remain in its current state, likely remain closed except for transient dockage, and NYCDPR would not implement additional resiliency measures. The pier would remain vulnerable to future storm events. Routine maintenance undertaken by NYCDPR is not part of the proposed project and would still occur as necessary under the No Action Alternative.

4.2 Alternative 2 - Proposed Action: Pier Reconstruction and Resiliency Measures

The proposed project consists of the removal of Pier 1 and associated floating docks and its replacement in a location approximately 1,000 feet to the west. The new location will align to the existing boat launch and landward parking area and be closer to Marina concessions. Some materials will be re-used including the western-most floating docks and the pump-out and refueling dock. New pier supports will be concrete pilings with a cast-concrete deck to provide increased strength. New timber decking will maintain the appearance of the existing pier and docks. In a similar layout as the current but with slightly less capacity, floating docks will attach to the pier along with new flotation devices. Commercial docks for ferry service and recreational boat tours will be accessed by aluminum gangways similar to the existing in use before the storm. A timber wave attenuation screen extending into Flushing Bay will increase resiliency of the pier and floating docks as an additional protection measure against future storm events. The intention of NYCDPR is to increase resiliency of Pier 1 at the new location while better aligning to the landward programming including the boat launch and parking areas. The new location will also provide upgraded facilities for both NYPD and FDNY to improve emergency response times, particularly to incidents at LaGuardia Airport.

Additionally, Pier 3 (pier only, including piles) will be removed and replaced in its current location with repairs to the floating docks to increase resiliency during storm events, and the esplanade and bulkhead around the existing Pier 1 will be repaired. This proposed work meets FEMA's Categorical Exclusions and therefore will not be carried forward in the analysis.

5.0 AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

This section discusses the potential impacts of the No Action Alternative and the Proposed Action on environmental resources. When possible, quantitative information helps to establish potential impacts that FEMA evaluates based on the criteria listed in the table below.

Impact Significance and Context Evaluation Criteria for Potential Impacts

Impact Scale	Criteria
No impact	The resource area would not be affected and there would be no impact.
Negligible	Changes would either be non-detectable or, if detected, would have effects that would be slight and local. Adverse impacts would be well below regulatory standards, as applicable.
Minor	Changes to the resource would be measurable, but the changes would be small and localized. Adverse impacts would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse effects.
Moderate	Changes to the resource would be measurable and have either localized or regional scale impacts. Adverse impacts would be within or below regulatory standards, but historical conditions would be altered on a short-term basis. Mitigation measures would be necessary, and the measures would reduce any potential adverse effects.
Major	Changes to the resource would be readily measurable and would have substantial consequences on regional levels. Adverse impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be required to reduce impacts, though long-term changes to the resource would be expected.

FEMA omitted the following resource topics because the Agency anticipates no substantive impacts for the project considered in this EA:

Resource Area or Regulation Eliminated	**Rationale**
Farmland Protection and Policy Act	FEMA does not anticipate impacts to prime, unique, or farmland land of statewide or local importance from actions evaluated in this EA. FEMA anticipates actions evaluated in this EA will occur at locations commensurate with the risk, within coastal, Census-identified urbanized areas, not subject to the Farmland Protection and Policy Act.
Geology, Topography, and Soils	FEMA does not anticipate impacts to Geology, Topography, and Soils from actions evaluated in this EA. Actions evaluated in this EA are largely within water and depth to rock is approximately 120 meters at the Marina location.
Bald and Golden Eagle Protection Act	FEMA does not anticipated impacts to Bald or Golden Eagles from actions evaluated in this EA. Bald and Golden Eagles are not found in the Caribbean.
Migratory Bird Treaty Act	FEMA does not anticipate impacts to Migratory Birds from actions evaluated in this EA. The proposed action is localized to the existing Marina, which is largely impervious on the landward side and exists in an urbanized area.
Invasive Species	FEMA does not anticipate impacts to Invasive Species from actions evaluated in this EA. The proposed action is localized to the existing Marina, which is largely impervious on the landward side and exists in an urbanized area.
Hazardous Materials	FEMA does not anticipate impacts related to Hazardous Materials from actions evaluated in this EA. The proposed action includes Best Management Practices (BMPs) in the event of a spill during work, and does not involve hookups of active fuel supply to the new Pier.
Land Use and Planning	FEMA does not anticipate impacts to Land Use and Planning from actions evaluated in this EA. The proposed action would reconstruct Marina facilities to pre-disaster capacity and function.

5.1 Air Quality

The United States Environmental Protection Agency (USEPA) has established primary and secondary National Ambient Air Quality Standards (NAAQS) under the provisions of the Clean Air Act of 1970 (42 U.S.C. Part 7401 *et seq*.). Primary standards define levels of air quality necessary to protect public health with an adequate margin of safety. Secondary air quality standards protect the public's welfare by

promoting ecosystem health, preventing decreased visibility, and reducing impacts to vegetation and wildlife. Federal NAAQS are currently established for the following seven criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), lead (Pb), particulate matter equal to or less than 10 micrograms per cubic meter of air (PM_{10}), and PM equal to or less than 2.5 micrometers in aerodynamic diameter ($PM_{2.5}$). NAAQS currently applicable to New York State are provided in Appendix, C Table 1.

Federally funded actions in nonattainment and maintenance areas are subject to General Conformity under Subpart B of 40 CFR Part 93 unless otherwise exempted or related to highway or transit projects regulated under Subpart A. These do not include stationary source emissions regulated under USEPA's New Source Review Programs. For New York State, the applicable *de minimis* levels are as follows:

- CO < 100 tons per year
- Nitrogen oxides (NO_X – including NO_2) < 100 tons per year
- SO_2 ($PM_{2.5}$ precursor) < 100 tons per year
- Pb < 25 tons per year
- PM_{10} < 100 tons per year
- $PM_{2.5}$ < 100 tons per year
- Volatile organic compounds (VOCs) < 50 tons per year

O_3 is a photochemical oxidant that is formed in the atmosphere from VOCs and NO_X. The *de minimis* levels for VOCs and NO_X are applicable to moderate and marginal O_3 nonattainment areas inside the O_3 transport region. The *de minimis* levels for $PM_{2.5}$ and SO_2 are applicable to $PM_{2.5}$ nonattainment and maintenance areas, and the *de minimis* levels for CO are applicable to CO nonattainment and maintenance areas. The emissions from construction activities are subject to air conformity review unless they are shown to be below the applicable *de minimis* levels.

5.1.1 Existing Conditions

New York City has been designated as in maintenance for CO, $PM_{2.5}$, and lead and is currently in attainment of the annual-average NO_2 standard. Queens County is designated as a non-attainment area for 8-Hr Ozone.

5.1.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action Alternative

Under the No Action Alternative, air quality would not change as no emissions from work at these sites would occur. Therefore, the No Action Alternative would have no impact on air quality.

Alternative 2: Proposed Action - Pier Reconstruction and Resiliency Measures

This alternative would result in temporary emissions due to construction activities. $PM_{2.5}$ and PM_{10} levels would likely increase during removal of existing piles and driving of new piles due to construction equipment operation. Emissions from construction vessels, generators, and equipment could temporarily increase the levels of some of the criteria pollutants, including CO, NO_2, O_3, PM_{10}, and non-criteria pollutants such as VOCs. To limit emissions of these pollutants, running times for fuel-burning equipment would be kept to a minimum, and engines would be properly maintained. Construction equipment would use ultra-low sulfur diesel fuel, as required by the Clean Air Non-road Diesel Rule. FEMA anticipates emissions would be below the *de minimis* levels; the subrecipient is required to conduct general conformity applicability analysis to confirm this. Overall, FEMA anticipates impacts on air quality will be short-term and minor as construction activity would be temporary and best management practices (BMPs) are implemented, with no long-term impacts as the capacity of the new piers would match the existing piers.

5.2 Water Resources

5.2.1 Water Quality

The Clean Water Act (CWA) regulates the discharge of pollutants into waters of the United States with responsibility for implementation falling under the jurisdiction of United States Army Corps of Engineers (USACE) and USEPA. Section 404 of the CWA establishes USACE permit requirements for discharging dredged or fill materials. Under Section 402 of the CWA, the National Pollution Discharge Elimination System (NPDES), USEPA regulates both point and non-point pollutant sources including stormwater and stormwater runoff. In New York State, USEPA has delegated the authority to New York State Department of Environmental Conservation (NYSDEC) to administer the NPDES program, referred to as the State Pollution Discharge Elimination System (SPDES). Activities that disturb one acre or more of ground require an SPDES permit. The SPDES permit requires applicants to prepare a Stormwater Pollution Prevention Plan (SWPPP).

Section 1424(e) of the Safe Drinking Water Act of 1974 (Public Law 93–523) authorizes USEPA to designate an aquifer for special protection under the sole-source aquifer (SSA) program. USEPA can make this designation if the aquifer is the sole or principal drinking water resource for an area and if its contamination would create a significant hazard to public health. No federal financial assistance may be provided for any project that USEPA determines may contaminate a sole source aquifer.

USEPA has designated the project area as part of the Kings/Queens Counties Aquifer System (USEPA, 2021b). In northern Queens County, the Upper Glacial Aquifer is underlain by the Magothy Aquifer. Below the Magothy Aquifer is the Raritan Clay, which serves as a confining layer. Below the Raritan Clay, and above the bedrock, is the Lloyd Aquifer. (NYSDEC, 2021).

5.2.2 Wetlands

Wetlands are areas where surface or groundwater inundates or saturates with a frequency and duration sufficient to support, and that under normal hydrological conditions support a prevalence of vegetation typically adapted for life in saturated soil conditions. Actions that may impact wetlands require review under several regulatory programs. Executive Order (EO) 11990, Protection of Wetlands, requires that federally funded agencies avoid, minimize, and mitigate any direct or indirect impacts on wetlands. If an activity affecting a wetland cannot be avoided, the agency must demonstrate that there are no practicable alternatives. Section 404 establishes a permit system to authorize dredge or fill activities in wetlands and requires compensatory mitigation for impacts.

FEMA implements EO 11990 through 44 CFR Part 9 concurrently with EO 11988 (see Section 5.2.3) and uses the 8-step decision making process to evaluate potential effects on and mitigate impacts to wetlands and floodplains. In New York State, NYSDEC administers and regulates wetlands under the Freshwater Wetlands Act (Article 24 of Environmental Conservation Law [ECL]) and the Tidal Wetlands Act (Article 25 of ECL – 6 New York Codes, Rules, and Regulations [NYCRR] Part 661). The United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) map is considered the best available information for wetland mapping.

5.2.3 Floodplain

FEMA uses the 8-step decision-making process for activities that would affect a floodplain to ensure that the proposed project is consistent with EO 11988, Floodplain Management. This process requires evaluating practicable alternatives that avoid or minimize potential adverse impacts on floodplains. If no practicable alternatives exist within or affecting the floodplain, FEMA then seeks to minimize the adverse impacts.

FEMA produces Flood Insurance Rate Maps (FIRMs) to determine if an action is located in the floodplain. FIRMs depict calculated locations of the one percent (100-year) and the 0.2 percent (500-year) floodplains, coastal high hazard areas, and base flood elevation levels. FEMA develops the FIRMs through a mapping process that accounts for topography and history of flooding in the region. In January 2015, FEMA released Preliminary FIRMs for New York City. For EO 11988, FEMA considers Preliminary FIRMs to be the best available data for New York City.

5.2.4 Existing Conditions

NYC is a heavily urbanized area where excavation, filling, construction, and paving have altered surface conditions, including areas within and around the World's Fair Marina. The proposed project site is along the shores of Flushing Bay, mapped as Estuarine and Marine Deepwater in the USFWS NWI map. The Preferred Alternative will require CWA Section 401/404 permits from NYSDEC and USACE.

Piers 1 and 3 of World's Fair Marina are in flood zones VE and AE, per the NYC Preliminary FIRMs dated January 2015. In accordance with EO 11988, FEMA published an Initial Public Notice for the declared disaster (DR-4085 Hurricane Sandy New York) in the *New York Post* on December 14, 2012, as notification that declared counties included mapped floodplains and wetlands.

5.2.5 Potential Impacts and Proposed Mitigation

Alternative 1: No Action Alternative

Under the No Action Alternative there would be no impact on water quality or aquifers. Floodplains and wetlands would see negligible adverse impacts from the continued presence of the existing damaged piers in the Marina.

Alternative 2: Proposed Action – Pier Reconstruction and Resiliency Measures

The subrecipient is required to prepare a SWPPP for construction activities of one acre or greater and follow the conditions of SPDES General Permit for Stormwater Discharges from Construction Activity. FEMA anticipates site- and activity-appropriate BMPs, such as turbidity curtains and shoreward erosion and sediment controls, will minimize adverse effects on water quality during construction. Therefore, any construction-related stormwater runoff would be localized and would result in negligible short-term impacts on water quality, with no impact long term as the capacity and usage of the Piers return to pre-disaster levels.

The total of impervious surfaces would not change by the construction at the Marina site. FEMA anticipates no impact to aquifers as the work does not include substantive new water demand, wastewater discharges, or work that would affect natural groundwater flow through the aquifer. Additionally, NYC does not utilize these aquifers for its potable water.

FEMA conducted the 8-step decision-making process for the proposed action as described in this EA (Appendix A, Document 1). The project would not encourage further development in the floodplain as there would be no increase in capacity with the new Piers. Construction activities would comply with all building code requirements including those for flood-resistant structures located in the 100-year flood zone. FEMA anticipates that BMPs and permit requirements will limit construction to negligible short-term impacts to wetlands and floodplains.

FEMA also anticipates a long-term minor benefit to floodplains and wetlands. Components including steel pipe piles for the new piers and wave screens will help reduce the impacts of storm surge and wave action, helping prevent potential damage to floodplains and nearby wetlands during storm events. Structures and appurtenances will be built in accordance with codes and local floodplain administrator requirements.

5.3 Coastal Resources

The Coastal Zone Management Act (CZMA) is administered by states with coastal shorelines to manage development with a Coastal Zone Management Plan (CZMP). Projects located within designated coastal zones or impacting coastal zones must be evaluated to ensure they are consistent with a state's CZMP. The New York State Department of State (NYSDOS) is responsible for administering the CZMP and maintaining maps of the coastal zone boundaries. The CZMP's coastal management policies seek to promote the beneficial use of coastal resources; prevent their impairment; and management of major activities that may substantially affect resources. Projects receiving federal assistance must follow the procedures outlined in 15 CFR 930 for federal coastal zone consistency determinations.

In NYC, there are three main regulatory programs that target the protection of natural areas; the Special Natural Waterfront Areas, the Significant Coastal Fish and Wildlife Habitats, and the Coastal Erosion Hazard Areas. The Coastal Erosion Hazard Law (ECL 34) empowers NYSDEC to identify and map coastal erosion hazard areas and to adopt regulations (6 NYCRR Part 505). The Coastal Erosion Hazard Area Permit Program manages regulated activities or land disturbance on properties within the coastal erosion hazard areas.

The Coastal Barrier Resources Act (CBRA) of 1982 designated relatively undeveloped coastal barriers along the Atlantic and Gulf coasts of the United States as part of the John H. Chafee Coastal Barrier Resources System and made these areas ineligible for most new federal expenditures and financial assistance. The U.S. Congress designates mapped areas called system units to reserve primarily for wildlife refuge, sanctuary, recreational, or natural resource conservation purposes. CBRA was amended by the Coastal Barrier Improvement Act of 1990 which added the new designation Otherwise Protected Areas (OPAs). OPAs are mapped areas where only federal flood insurance is restricted.

5.3.1 Existing Conditions

The World's Fair Marina is located in the Coastal Zone (Appendix B, Figure 4), which requires conformance with the State's adopted CZMP. New York City is also a Local Waterfront Revitalization Program (LWRP) Community. The LWRP is a planning and regulatory tool that allows a community to refine Statewide coastal policies to apply to local conditions.

The Marina is not within Coastal Barrier Resource Zones or Otherwise Protected Areas covered under the Coastal Barrier Resource Act.

5.3.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action Alternative

Under this alternative, there would be no new work at the World's Fair Marina. Therefore, there would be no change in the coastal characteristics of the area and no effect on coastal resources.

Alternative 2: Proposed Action – Pier and Resiliency Measures

In accordance with the requirement of the CZMA, FEMA consulted with NYSDOS on February 3, 2022, and received concurrence with FEMA's Coastal Zone Consistency Determination for the proposed project on March 18, 2022 (Appendix D, Correspondence 1). FEMA determined that work at the project sites would have a negligible effect on the Coastal Zone and would not have negative impact on scenic resources or coastal erosion. There would be long-term minor beneficial impacts to providing water-based recreation and protecting coastal resources consistent with CZMA and the LWRP.

5.4 Biological Resources

Federal agencies are required to consider the potential effects of federally authorized actions on certain fish and wildlife. Sensitive biological resources are protected under various federal laws and EOs including the Endangered Species Act (ESA) and Magnuson-Stevens Fishery Conservation and Management Act (MSA).

5.4.1 Endangered Species Act

The ESA of 1973 provides a program for the conservation of threatened and endangered plants and animals and their habitats. NOAA is the lead federal regulatory agency for implementing the ESA for marine and anadromous species. The law requires federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The law also prohibits any action that causes a "taking" of any listed species.

NOAA lists two fish and four sea turtle species as federally threatened or endangered in the project area. There is no critical habitat for any of these species in the project area. Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) are anadromous bottom-feeding fish with a marine range along the Atlantic Coast from Canada to Florida and are listed as federally endangered except for the Gulf of Maine Distinct Population Segment (DPS), where they are listed as threatened. Their primary spawning area for Atlantic sturgeon is near Hyde Park, New York (river mile 83) (NMFS 2013). Early life stages are intolerant of salinity and occur primarily in freshwater (Kynard and Horgan 2002, ASMFC 2012); adults prefer deeper marine waters but may opportunistically forage in saline waters (Savoy and Pacileo 2003). Shortnose sturgeon (*Acipenser brevirostrum*) are listed as endangered through their range from Nova Scotia, Canada to St. Johns River, Florida. They are anadromous bottom-feeding fish, and while early life stages remain in the Hudson River (Dovel et al 1992), transient adults may find suitable foraging in the project area (Savoy 2004), albeit typically in deeper waters than the immediate Marina site. The federally listed four sea turtles are the threatened Northwest Atlantic Ocean DPS of loggerhead (*Caretta caretta*) and the North Atlantic DPS of green (*Chelonia mydas*) sea turtles, and the endangered Kemp's ridley (*Lepidochelys kempii*) and leatherback (*Dermochelys coricea*) sea turtles. Each of these species may be found in the late spring through early fall in the coastal waters of New York. Except for the Kemp's ridley (which only see juveniles on Long Island Sound), juveniles and adults of these turtles can be found near the action area.

The green sea turtle is a global species, but forages along the Atlantic coast for a diet consisting largely of algae and seagrass (Seminoff, et. al. 2015). Leatherback sea turtles are adapted to a wider range of water temperatures than other turtles, but due to high energy requirements, must also find nutrient-rich areas to forage for their preferred jellyfish as well as a variety of other plant and animals (NMFS and USFWS 2020). The loggerhead sea turtle is a circumglobal, carnivorous species subsisting on bottom-dwelling invertebrates such as molluscs and crabs (NMFS and USFWS 2008). Juvenile Kemp's ridley may feed on crabs and other benthic invertebrates (NMFS and USFWS 2015). There is no critical habitat for any of these species in the project area.

5.4.2 Magnuson Stevens Fisheries Conservation Act & Essential Fish Habitat

Federal agencies are required to assess the potential impacts that proposed actions and alternatives may have on NOAA Fisheries-regulated Essential Fish Habitat (EFH), in accordance with the Magnuson-Stevens Fishery Conservation and Management Act. Appendix D, Correspondence 4 includes a list of species and life stages NOAA Fisheries has identified as having EFH in Flushing Bay.

5.4.3 Existing Conditions

The presence or absence of federally listed species within or adjacent to project areas would be largely determined by the presence of suitable habitat, which is primarily a product of salinity, temperature, water depth, vegetation, and the extent of human disturbance. The project site in Flushing Bay, Queens, NY is located within a highly developed section of Queens waterfront, which is bulkheaded or otherwise composed of solid man-made shoreline protection structures along a 1.4-mile pedestrian promenade. LaGuardia Airport is situated along the northeast shoreline of the bay and includes a 2,800-foot-long dike protruding into the bay from that shoreline. The Federal Navigation Channel includes much of Flushing Bay, running to the shoreline between the piers and along the existing Pier 1, and runs north to the East River and southeast towards Flushing Creek. NYC Department of Environmental Protection completed a dredge in the area of the proposed new Pier 1 in 2018 that cleared out sediment from combined sewer overflows. Flushing Bay has a tidal range of about 7 feet. Salinity of the bay ranges from 22 to 24 ppt (USACE 2017). Surface temperature typically ranges from 37°F to 69°F. Water depths within the marina currently range from approximately 4 to 10 feet at mean lower low water (MLLW), and the substrate comprises organic silt on top of a silt and sand mixture. Water depths in the navigation channel range from about 5 feet nearest the existing piers to 14-15 feet approaching the East River or Flushing Creek at MLLW (NOAA Nautical Chart #12339).

5.4.4 Potential Impacts and Proposed Mitigation

Alternative 1: No Action Alternative

Under the No Action Alternative, there would be no construction at the World's Fair Marina. Therefore, there would be no impact on wildlife or habitats, including threatened and endangered species and EFH.

Alternative 2: Proposed Action – Pier Reconstruction and Resiliency Measures

FEMA analyzed the potential effects of vessel traffic, sediment resuspension, underwater noise, and habitat modification, and reached the determination that the Preferred Alternative is not likely to adversely affect any listed species or critical habitat. FEMA consulted with NOAA Fisheries under ESA on February 9, 2022, and received concurrence on March 2, 2022, and for EFH on February 8, 2022 and received concurrence on March 4, 2022 (Appendix D, Correspondences 3 and 4).

Given the FEMA finding and NOAA concurrences that the Preferred Alternative is not likely to adversely affect ESA-listed species or Essential Fish Habitat, it would have a negligible to minor short-term impact on biological resources. NOAA clarified in its ESA concurrence letter that further consultation is required if new information reveals effects of the action or the proposed action is modified to cause effects beyond those previously considered in the consultation, a new species is listed or critical habitat designated that may be affected by the identified action, and further consultation would be required in the case of incidental take of a listed species. NOAA also noted in its EFH concurrence that any new information on the effects or changes to the proposed work would require re-initiation of EFH consultation. FEMA anticipates no long-term impact as the Marina returns to pre-disaster capacity and usage.

5.5 Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, requires federal agencies to consider potential effects of actions on cultural resources prior to commencement of work (an "undertaking"). The NHPA defines a historic property as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register of Historic Places." Only those cultural resources determined to be potentially significant under NHPA are subject to avoidance or minimization measures for adverse impacts resulting from an undertaking. To be considered significant, a cultural resource must meet one or more of the criteria established by the National Park Service that would make that resource eligible for inclusion on the National Register of Historic Places (NRHP), as found in 36 CFR Part 60. The term "eligible for inclusion on the NRHP" includes all properties that meet the NRHP listing criteria. Sites not yet evaluated may be considered potentially eligible for inclusion on the NRHP and, as such, are afforded the same consideration as listed properties. Pursuant to 36 CFR 800.4(a)(1), the Area of Potential Effects (APE) is defined as the geographic area(s) within which an undertaking may directly or indirectly affect cultural resources. FEMA determines an APE based on completed research identifying potential and NRHP-listed properties. Within the APE, FEMA evaluates impacts on identified cultural resources for above ground standing structures and below ground prehistoric or historic archaeological resources.

5.5.1 Existing Conditions

The New York State Historic Preservation Officer (NYSHPO) maintains a regularly updated list of New York State's historic properties that are subject to NYSHPO and federal agency review. This list is accessible through the NYSHPO-maintained Cultural Resource Information System (CRIS). FEMA

evaluated the Proposed Action's (undertaking's) potential effects on cultural resources using CRIS and in consultation with NYSHPO.

5.5.1.1 Architectural Resources

The APE for standing structures for the Proposed Action includes the World's Fair Marina, Piers 1 and 3, the Pier 1 relocation site, and the adjacent shoreline. On August 9, 2021, FEMA determined with NYSHPO concurrence that the World's Fair Marina site, including Piers 1 and 3, are not eligible for NRHP listing (Appendix D, Correspondence 2). NYSHPO previously determined the Pier 1 relocation site as not eligible for NRHP listing.

5.5.1.2 Archaeological Resources

The APE for potential archaeological resources is limited to those areas where the project is expected to directly impact or disturb the ground surface as a result of excavation or other construction activities (Appendix D).

CRIS shows Pier 1's existing and proposed relocation sites and the adjacent landward areas in an archaeologically sensitive area. Pier 3 falls outside of an archaeologically sensitive area. The closest documented archaeology site is located within ½-mile of Pier 1. Several other archaeologically documented sites are located over a ½-mile inland. Soil classifications include filled and constructed land as well as highly disturbed land from urban construction, demolition, and re-construction. The dramatic landscape changes along the shoreline and inland over the course of the 20th and 21st centuries have significantly altered the native landscape. Overall, the vertical and horizontal limits of disturbance for the proposed project will be located within the limits of previously disturbed landscapes and will not impact NHRP-listed or eligible properties.

5.5.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

The No Action alternative would result in no above or below ground disturbance. Therefore, it would have no impact on historic standing structures or archaeological resources.

Alternative 2: Proposed Action – Pier Reconstruction and Resiliency Measures

Through completed consultation with NYSHPO, it was determined that the World's Fair Marina site is not eligible for NRHP listing. Therefore, the Proposed Action (undertaking) would have no impact to above ground historic resources and based on lack of archaeological sites in the vicinity and the soil typology, archaeological sensitivity is assessed as low. NYSHPO consultation documentation is included in Appendix D.

5.6 Environmental Justice

Executive Order 12898, *Federal Actions to address the Environmental Justice in Minority Populations and Low-Income Populations*, requires Federal agencies to identify and address any disproportionately high and adverse human health or environmental effects its activities may have on minority or low-income populations. Under USEPA Region 2's "Guidelines for Conducting Environmental Justice Analysis for New York", a community would be considered a Community of Concern if the minority population is 51.1 percent or higher or if 23.59 percent or more of the population is below the poverty line.

5.6.1 Existing Conditions

According to 2015-2019 American Community Survey 5-Year Estimates, within this area of Flushing Bay, defined as the World's Fair Marina, (Piers 1 and 3 and adjacent shoreline facilities, with a 0.5-mile buffer), of 10,645 people within the project area, 10,429 or 98%, are part of a minority population. The data reflects that 5,109, or 48%, reported as being low-income. New York City has percentages of low-income populations that are higher than the national average.

5.6.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action

Under the No Action Alternative, there would be no new work at the World's Fair Marina. Therefore, current conditions would not change, vessel and ferry service would continue to be hindered or discontinued, NYPD and FDNY response times would not be improved, construction of resiliency measures would not occur, and additional recreational and commercial opportunities would not be provided. World's Fair Marina facilities would remain at risk from future storm or flooding events. Therefore, FEMA anticipates the No Action Alternative would have a minor adverse impact on Communities of Concern.

Alternative 2: Proposed Action – Pier Reconstruction and Resiliency Measures

The Proposed Action may result in temporary short-term impacts to populations in the area including increased traffic and noise and limited access to the existing park and landward facilities. NYCDPR would minimize potential impacts by planning and coordinating with project teams prior to construction ensuring BMPs are followed to alleviate and reduce construction-related disruptions. Long term, the reconstruction and added resiliency of Piers 1 and 3 will restore recreational opportunities and commercial services to the Marina. Additionally, the new location will also upgrade facilities for both NYPD and FDNY to improve public safety and emergency response times within the immediate area.

With the Proposed Action, FEMA anticipates no disproportionately high and adverse impacts to Communities of Concern. Alternative 2 would have a negligible, short-term, adverse effect and a minor, long-term, beneficial effect on the community.

5.7 Noise

Sound pressure level (SPL) is used to measure the magnitude of sound and is expressed in decibels (dB). Noise levels are often given in dBA (A-weighted sound levels) instead of dB, with the threshold of human hearing defined as 0 dBA. A dBA is a weighted scale for judging loudness that corresponds to the hearing threshold of the human ear. The SPL increases logarithmically, so that when the intensity of a sound is increased by a factor of 10, its SPL rises by 10 dB, while a 100-fold increase in the intensity of a sound increases the SPL by 20 dB. Equivalent noise level (Leq) is the average of sound energy over time, so that one sound occurring for 2 minutes would have the same Leq of a sound twice as loud occurring for 1 minute. The day night noise level (Ldn) is based on the Leq and is used to measure the average sound impacts for the purpose of guidance for compatible land use. It weights the impact of sound as it is perceived at night against the impact of the same sound heard during the day. This is done by adding 10 dBA to all noise levels measured between 10:00 pm and 7:00 am. For instance, the sound of a car on a rural highway may have an SPL of 50 dBA when *measured* from the front porch of a house. If the measurement were taken at night, a value of 60 dBA would be recorded and incorporated into the 24-hour Ldn.

Leq and Ldn are useful measures when used to determine levels of constant or regular sounds, such as road traffic or noise from a ventilation system. However, neither represents the sound level as it is perceived during discrete events, such as emergency sirens and other impulse noises. They are averages that express the equivalent SPL over a given period of time. Because the decibel scale is logarithmic, louder sounds reflected by higher SPL are weighted more heavily; however, loud infrequent noises, such as emergency sirens, with short durations would not significantly increase Leq or Ldn over the course of a day. The Noise Control Act of 1972 required the USEPA to create a set of noise criteria. In response, the USEPA published *Information On Levels Of Environmental Noise Requisite To Protect Public Health and Welfare With An Adequate Margin Of Safety* in 1974, which explains the impact of noise on humans. The USEPA report found that keeping the maximum 24-hour Ldn value below 70 dBA would protect the majority of people from hearing loss. The USEPA recommends an outdoor Ldn of 55 dBA. According to published lists of noise sources, sound levels, and their effects, sound causes pain starting at approximately 120 to 125 dBA and can cause immediate irreparable damage at 140 dBA. Occupational Safety and Health Administration has adopted a standard of 140 dBA for maximum impulse noise exposure.

5.7.1 Existing Conditions

Existing noise levels would depend on the observer's distance from the source. This is because the proposed project area is located near major thoroughfares and within urban environments. The primary sources of noise near the proposed project site are vehicular traffic along Grand Central Parkway and Northern Boulevard just south of the Marina and air traffic at LaGuardia Airport to the northwest.

5.7.2 Potential Impacts and Proposed Mitigation

Alternative 1: No Action Alternative

The No Action Alternative does not include any construction or site preparation. Therefore, there would be no noise impacts under the No Action Alternative.

Alternative 2: Proposed Action – Pier Reconstruction and Resiliency Measures

Demolition and construction of new Piers and facilities at World's Fair Marina would result in temporary noise increases near the site. Noise levels can be minimized in accordance with New York City noise control code through BMPs such as ensuring that the manufacturer's standard noise control devices are used on construction equipment and that construction activities are conducted in conformance with local noise ordinances regulating construction hours and noise levels. Specifically, driving of new piles for Piers 1 and 3 would include the following BMPs to reduce noise: use of a vibratory hammer to the extent possible; use of a soft start such as pile tapping prior to full energy impact hammering; and use of a cushion block when impact hammering.

Post-construction, noise levels at the Marina would be the same as pre-construction with no net change in noise levels. Noise from outside sources such as LaGuardia Airport at the Marina would not substantially change, as the footprint of Pier 1 would not shift completely off its existing location. Alternative 2 would have a short-term minor impact on noise during construction and no long-term impact on noise levels.

5.8 Cumulative Impacts

This EA considers the overall cumulative impact of the proposed alternatives and other actions that are related in terms of time or proximity. Cumulative impacts represent the "impact on the environment which results from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions." In addition to NEPA, other statutes require federal agencies to consider cumulative impacts. If the alternative does not have direct or indirect effects for a particular resource, there can be no cumulative effects resulting from the project because there would be no impacts to add to past, present, or reasonably foreseeable actions.

FEMA broadly considers the potential for cumulative impacts based on the proposed action and experience with similar type projects. NYCDPR is responsible for consulting with relevant federal, state, and local planning and regulatory agencies, and determining other actions that are underway or proposed at or near each individual project site that, in combination with the proposed project, could result in substantive cumulative effects. Included in the early consideration of flood protection are elements of stormwater detention, bioswales, and perimeter surge protection, among other possible features.

The effects of this project will incrementally increase the shoreline protection from storm surge, flooding, and erosion above the approximately four miles of USACE work along Jamaica Bay shoreline. Parks protections includes manmade features such as berms and bulkheads as well as wetland restorations and native plantings.

There is a proposed LaGuardia Airport Access Improvement Project that would have a stop alongside the esplanade at World's Fair Marina. FEMA does not anticipate substantive levels of overlap or increased usage of either facility based on this proximity or the changes brought by the two projects.

The proposed actions described in this EA would have minimal impact on the affected environment. Implementing BMPs and requirements identified through permitting are expected to limit individual and cumulative impacts. Mitigation measures to reduce impacts are addressed in each affected environment section and project conditions section.

6.0 PERMITS AND PROJECT CONDITIONS

NYCDPR is responsible for obtaining and adhering to all applicable federal, state, and local permits, permit conditions, regulatory compliance, and authorizations for project implementation. Any substantive change to this scope of work would require re-evaluation by FEMA for compliance with NEPA and other environmental and historic preservation laws and Executive Orders. NYCDPR must also adhere to the following conditions during project implementation. Failure to comply with grant conditions may jeopardize federal funding.

1. Any proposed construction in the floodplain must be coordinated with the local floodplain administrator and must comply with federal, state, and local floodplain laws and regulations.
2. Excavated soil and waste materials, including potentially hazardous wastes, must be managed and disposed of in accordance with applicable federal, state, and local regulations. Solid waste haulers will be required to have a NYSDEC waste hauler permit and all waste will need to be disposed of or processed at a permitted facility.
3. If any threatened or endangered species are encountered in the project area, the subrecipient must stop work and notify FEMA to continue consultation with USFWS.
4. Preparation of a SWPPP and adherence to the conditions of SPDES General Permit for Stormwater Discharges is required on project sites where the soil disturbance would be greater than or equal to one acre.
5. The subrecipient and its contractors are required to use appropriate BMPs for construction not limited to sedimentation and erosion control measures, dust control, noise abatement and restriction of work areas to limit vegetation removal and habitat impacts.
6. In the event that unmarked graves, burials, human remains, or archaeological deposits are uncovered, the subrecipient and its contractors will immediately halt construction activities in the vicinity of the discovery, secure the site, and take reasonable measures to avoid or minimize harm

to the discovery. The subrecipient will immediately inform DHSES and FEMA. Work in sensitive areas may not resume until consultations are completed or until an archaeologist who meets the Secretary of the Interior's Professional Qualification Standards determines the extent and historic significance of the discovery.

7. Occupational Safety and Health Administration standards shall be followed during construction to avoid adverse impacts to worker health and safety.
8. BMPs will be used to limit NAAQS emissions during and after construction under USEPA guidelines.

7.0 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

FEMA will make this EA available for agency and public review and comment for a period of 30 days. The public information process will include a public notice with information about the proposed project in *City Record* and the *Queens Chronicle* (print and online). The EA will also be available for download at https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa-repository and at https://www.nycgovparks.org/facilities/marinas/13.

This EA reflects the evaluation and assessment of the federal government, the decision-maker for the federal action. FEMA will take into consideration comments submitted during the public review period. The public is invited to submit written comments by email: <FEMAR2COMMENT@fema.dhs.gov> or by mail:

Federal Emergency Management Agency, Region 2
Environmental Planning and Historic Preservation
26 Federal Plaza
New York, NY 10278

If FEMA receives no substantive comments from the public and/or agency reviewers, FEMA will adopt the EA as final, and FEMA will issue a FONSI. If FEMA receives substantive comments, it will evaluate and address comments and may consider whether changes to the grant or project implementation are appropriate.

8.0 SUMMARY OF IMPACTS

Section	Area of Evaluation	No Action Alternative	Proposed Action: Short-term / Temporary Impacts	Proposed Action: Long-term / Permanent Impacts
5.1	Air Quality	No Impact	Minor Adverse	No Impact
5.2	Water Quality	No Impact	Negligible Adverse	No Impact
5.2	Aquifers	No Impact	No Impact	No Impact
5.2	Floodplain and Wetland	Negligible Adverse	Minor Adverse	Minor Beneficial
5.3	Coastal Resources	No Impact	Negligible Adverse	Minor Beneficial
5.4	Threatened and Endangered Species	No Impact	Negligible to Minor Adverse	No Impact
5.5	Architectural Resources	No Impact	No Impact	No Impact
5.5	Archaeological Resources	No Impact	No Impact	No Impact
5.6	Environmental Justice	Minor Adverse	Negligible Adverse	Minor Beneficial
5.7	Noise	No Impact	Minor Adverse	No Impact

9.0 LIST OF PREPARERS

Federal Emergency Management Agency, Region 2
285 Fulton Street
New York, NY 10007

10.0 REFERENCES

American Fisheries Society
Savoy, T., and D. Pacileo. (2003). *Movements and important habitats of subadult Atlantic sturgeon in Connecticut waters*. Transactions of the American Fisheries Society 132: 1-8.

Savoy, T. (2004). *Population estimate and utilization of the lower Connecticut River by Shortnose sturgeon.* American Fisheries Society 9: 345-352.

Atlantic States Marine Fisheries Commission (ASMFC)
2012 *Habitat Addendum IV to Amendment 1 to the Interstate Fishery Management Plan for Atlantic Sturgeon*. September 2012.

Environmental Biology of Fishes
Kynard, B., and M. Horgan. (2002). *Ontogenetic behavior and migration of Atlantic sturgeon Acipenser oxyrinchus oxyrinchus, and shortnose sturgeon A. brevirostrum, with notes on social behavior*. Environmental Biology of Fishes 63: 137-150.

Fifth International Conference on Case Histories in Geotechnical Engineering
Nikolaou, Sissy, "Local Geology of New York City and Its Effect on Seismic Ground Motions" (2004). International Conference on Case Histories in Geotechnical Engineering. 2. https://scholarsmine.mst.edu/cgi/viewcontent.cgi?article=2611&context=icchge

National Marine Fisheries Service (NMFS)
2013 *Biological Opinion for Tappan Zee Bridge Replacement, NER-2013-9592*. April 10, 2013.

National Marine Fisheries Service (NMFS) and United States Fish and Wildlife Service (USFWS)
2008 *Recovery plan for the Northwest Atlantic Population of the Loggerhead Sea Turtle* (Caretta caretta) *Second Revision*. Accessed at https://repository.library.noaa.gov/view/noaa/3720.

2015 *Kemp's Ridley Sea Turtle* (Lepidochelys Kempii) *5-Year Review: Summary and Evaluation*. Accessed at https://repository.library.noaa.gov/view/noaa/17048.

2020 *Endangered Species Act Status Review of the Leatherback Turtle* (Demochelys coricea) *2020*. Accessed at https://repository.library.noaa.gov/view/noaa/25629.

National Oceanographic and Atmospheric Administration (NOAA)
2013 (Last Correction: 11 November 2021) *NOAA Nautical Chart 12339*. Accessed at https://www.charts.noaa.gov/OnLineViewer/12339.shtml.

Seminoff, J., et. al. (2015). *Status review of the green turtle (*Clelonia mydas*) under the Endangered Species Act.* NOAA Technical Memorandum NMFS. Accessed at https://repository.library.noaa.gov/view/noaa/4922.

New York City Department of City Planning (NYC Planning)
2016 "New York City Waterfront Revitalization Program – Maps & Policies" viewed February 24th, 2021. https://www1.nyc.gov/site/planning/planning-level/waterfront/wrp/wrp-2.page

New York State Department of Environmental Conservation (NYSDEC)
2021 "Major Hydrogeologic Units of the Long Island Aquifer". Accessed March 2, 2021**.** https://www.dec.ny.gov/lands/36231.html

State University of New York Press
Dovel, W.L., A.W. Pekovitch, and T.J. Berggren. (1992). *Biology of the Shortnose Sturgeon (Acipenser brevirostrum Lesueur, 1818) in the Hudson River Estuary, New York*. Pages 187-216 in C.L. Smith, editor, Estuarine Research in the 1980s. State University of New York Press, Albany, New York.

US Census Bureau (USCB)
2021 "Urban and Rural Classification" https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html

2011 "Urban Area Criteria for the 2010 Census" Federal Register Vol 76 No 164

US Army Corps of Engineers (USACE)
2017 *Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study Final Integrated Feasibility Report & Environmental Assessment*. Accessed at https://www.nan.usace.army.mil/Portals/37/docs/Environmental/HRE/HRE%20Final%20MAIN%20Report20April20TDA.pdf?ver=2020-05-29-195054-373.

US Environmental Protection Agency (USEPA)
2003 "Reducing Air Pollution from Non-Road Engines. EPA420-F-03-011" https://nepis.epa.gov/Exe/ZyNET.exe/P10001QT.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2000+Thru+2005&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C00thru05%5CTxt%5C00000013%5CP10001QT.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL

2012 "Fuels & Additives – Diesel Fuel" https://www.epa.gov/diesel-fuel-standards/about-diesel-fuels

2021a "Nonattainment and Maintenance Area Dashboard". Accessed April 5, 2022. https://edap.epa.gov/public/extensions/S4S_Public_Dashboard_1/S4S_Public_Dashboard_1.html

2021b "Interactive Map of SSAs". Accessed April 5, 2022. https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b

New York City Department of Parks and Recreation, Queens County, Flushing Meadows Corona Park

World's Fair Marina
PW4656 (Site 11) Section 428

PAAP Project

FEMA 4085-DR-NY

Executive Order 11988 – FLOODPLAIN MANAGEMENT
Executive Order 11990 – WETLAND PROTECTION

8-STEP PROCESS SUMMARY

Date: 04/25/2022

Prepared By: Kyle Bartowitz, Environmental Protection Specialist

Project: The New York City Department of Parks and Recreation (NYCDPR – the Subrecipient) has applied to FEMA for financial assistance. The New York State Division of Homeland Security and Emergency Services (NYSDHSES) is the Recipient partner for the Proposed Action, which consists of: the removal of Pier 1 and associated floating docks and its replacement in a location approximately 1,000 feet to the west; removal and replacement of Pier 3 on the existing footprint; installation of timber wave attenuation screen extending into Flushing Bay to increase resiliency to the pier and floating docks as an additional protection measure against future storm events. The esplanade and bulkhead at the site of the existing Pier 1 will also be restored. NYCDPR's intention is to increase resiliency of the marina through elevation of utilities and use of steel pipe piles for the new piers, while also better aligning the facility to landward programming including the boat launch and parking areas. The new location will also provide upgraded facilities for both NYPD and FDNY to improve emergency response times, particularly to incidents at LaGuardia Airport.

STEP 1 - Determine whether the proposed actions are located in a wetland and or the 100-year floodplain (500-year floodplain for critical action [44 CFR 9.4]) or whether they have the potential to affect or be affected by a floodplain or a wetland (44 CFR 9.7).

X The project site is located in relation to the floodplains as mapped by:

Preliminary FIRM map: 3604970113G, 01/30/2015
Zone VE (El 15) NAVD88 datum
Latitude 40.759899 / Longitude -73.852817

__X__ The Project is located in the wetland as identified by:

A review of the National Wetlands Inventory (NWI) Map indicates that some work at the proposed project sites lies with in a NWI Designated Wetland classified as **E1UBL**. The following describes the wetland:

Description for code **E1UBL**:

E System **ESTUARINE**: The Estuarine System describes deepwater tidal habitats and adjacent tidal wetlands that are influenced by water runoff from and often semi-enclosed by land. They are located along low-energy coastlines and they have variable salinity.

1 Subsystem **SUBTIDAL**: These habitats are continuously submerged substrate, (i.e. below extreme low water).

UB Class **UNCONSOLIDATED BOTTOM**: Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.

Subclass: None

Modifier(s):
L WATER REGIME **Subtidal**: The substrate is permanently flooded with tidal water.

STEP 2 - Notify the public at the earliest possible time of the intent to carry out an action in a floodplain or wetland and involve the affected and interested public in the decision-making process (see 44 CFR 9.8).

_____Not applicable - Project is not located in a floodplain or wetland.

__X__ Applicable - Notice will be or has been provided by:

A Cumulative Initial Public Notice was published in the New York Post 12/14/2012. An additional public notice will be provided in the public comment period for the Environmental Assessment for this project.

STEP 3 - Identify and evaluate practicable alternatives to locating the proposed action in a floodplain or wetland (including alternative sites, actions, and the "No Action" option) [see 44 CFR 9.9]. If a practicable alternative exists outside of the floodplain or wetland, FEMA must locate the action at the alternative site.

_____Not applicable – Project is not located in a floodplain or in a wetland.

__X__ Applicable – Alternative identified in the EA Document or as described below:

Alternative 1: No Action – World's Fair Marina would remain in its current state, Pier 1 likely remain closed except for transient dockage, and additional resiliency measures would not be implemented. The Marina would remain vulnerable to future storm events.

Alternative 2: Proposed Action - The proposed project consists of the removal of Pier 1 and associated floating docks and its replacement in a location approximately 1,000 feet to the west, and removal and replacement of Pier 3 on the existing footprint, each on steel pipe piles. The new location of Pier 1 will align to the existing boat launch and parking area and be closer to Marina concessions. Some materials will be re-used including the western most floating docks and the pump-out and refueling dock. New pier supports will be concrete pilings with a cast-concrete deck to provide increased strength. Timber decking will be used that maintains the appearance of the existing pier and docks. In a similar layout as the current but with slightly less capacity, floating docks will be attached to the pier along with new flotation devices. Commercial docks for ferry service and recreational boat tours will be accessed by aluminum gangways similar to the existing in use before the storm. A timber wave attenuation screen will be installed, extending into Flushing Bay to increase resiliency to the pier and floating docks as an additional protection measure against future storm events. Utilities will be elevated on a platform above Base Flood Elevation. The intention is to increase resiliency at the new location while better aligning to the landward programming including the boat launch and parking areas. The new location will also provide upgraded facilities for both NYPD and FDNY to improve emergency response times, particularly to incidents at LaGuardia Airport. Additionally, Pier 3 (pier only) will be removed and replaced in its current location with repairs to the floating docks to increase resiliency during storm events, and the esplanade and bulkhead in the area of the existing Pier 1 will be repaired.

STEP 4 - Identify the full range of potential direct or indirect impacts occupancy or modification of floodplains and wetlands and the potential direct and indirect support of floodplain and wetland development that could result from the proposed action (see 44 CFR 9.10).

_____Not applicable – Project is not located in a floodplain or in a wetland.

__X__Applicable – Alternative identified in the EA document or as described below:

Alternative 2: Proposed Action – The work associated with the proposed action at these locations results in the restoration of recreational space, eliminates the hazards of unrepaired facilities, and bolsters the piers against future storm surge and flooding. It would not support additional floodplain or wetland development beyond the existing capacity of the marina facilities. Specifically, there would be minor short-term impacts to wetlands and floodplains during construction at each site, and a minor beneficial long-term impact to wetlands and floodplains with more resilient marina facilities.

The proposed project could not serve its purpose at other locations outside of the special flood hazard area.

STEP 5 - Minimize the potential adverse impacts and support to or within floodplains and wetlands to be identified under Step # 4, restore and preserve the natural and beneficial values served by floodplains, and preserve and enhance the natural and beneficial values served by wetlands (see 44 CFR 9.11).

_____Not applicable – Project is not located in a floodplain or in a wetland.

__X__Applicable – Mitigation measures identified in the EA document or as described below:

The purpose of this project is to restore recreational opportunities and improve resiliency to future storm surge and flooding events on the piers of World's Fair Marina. The use of steel pipe piles for the new piers, as well as elevation of utilities about the Base Flood Elevation, would help preserve the natural and beneficial values of wetlands and floodplains by limiting the potential for damages in future storm or flooding events.

Replacement/repairs and construction of new facilities shall be in accordance with local floodplain ordinances and meet codes to mitigate and minimize adverse effects.

STEP 6 - Re-evaluate the proposed action to determine first, if it is still practicable in lightof its exposure to flood hazards, the extent to which it will aggravate the hazards to others and its potential to disrupt floodplain and wetland values, and second, if alternatives preliminarily rejected at Step #3 are practicable in light of the information gained in Steps #4 and #5. FEMA shall not act in a floodplain or wetland unless it is the only practicable location.

_____Not applicable – Project is not located in a floodplain or in a wetland.

__X__Applicable – Action proposed is located in the only practicable location as described below:

The proposed action is the chosen practicable alternative based upon a review of possible adverse effects on the floodplain.

STEP 7 - Prepare and provide the public with a finding and public explanation of any final decision that the floodplain or wetland is the only practicable alternative (see 44 CFR 9.12).

_____Not applicable – Project is not located in a floodplain or in a wetland.

__X___Applicable – Finding is or will be prepared as described below:

A Cumulative Initial Public Notice was published in the New York Post 12/14/2012. An additional public notice will be provided in the public comment period for the Environmental Assessment for this project.

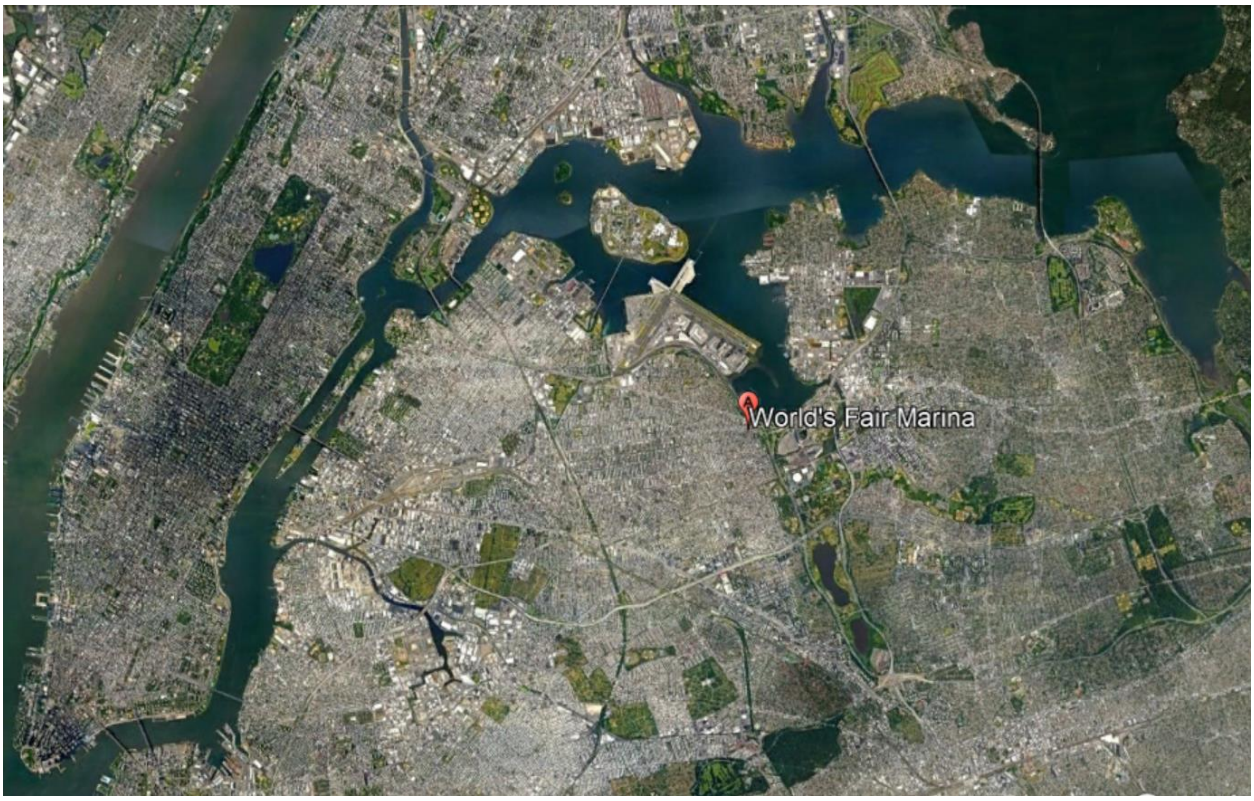
STEP 8 - Review the implementation and post-implementation phases of the proposedaction to ensure the requirements of the Order are fully implemented. Oversight responsibility shall be integrated into the existing process.

_____Not applicable – Project is not located in a floodplain or in a wetland.

__X___Applicable – Approval is conditioned on review of implementation and post-implementation phases to ensure compliance with the order(s).

Review the implementation and post-implementation phase of the proposed action to ensure that the requirement(s) stated in 44 CFR 9.11 are fully implemented.

Appendix B, Figure 1 – Map of Project Location



Appendix B, Figure 2 – Plan Overview

CITY OF NEW YORK PARKS & RECREATION

Parks

RECONSTRUCTION OF THE WORLD'S FAIR MARINA LOCATED ON FLUSHING BAY ADJACENT TO THE GRAND CENTRAL PARKWAY IN FLUSHING MEADOWS-CORONA PARK

BOROUGH OF QUEENS

CONTRACT #: Q099-218M

LOCATION PLAN
NOT TO SCALE

AERIAL PHOTO/ EX. SITE/ STRUCTURE
NOT TO SCALE

CAPITAL PROJECTS
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK, NY 10035

COMMISSIONER
MITCHELL J. SILVER, FAICP, HON. ASLA

DEPUTY COMMISSIONER, CAPITAL PROJECTS
THERESE BRADDICK

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TEAM LEADER, MANHATTAN
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Q099-218M

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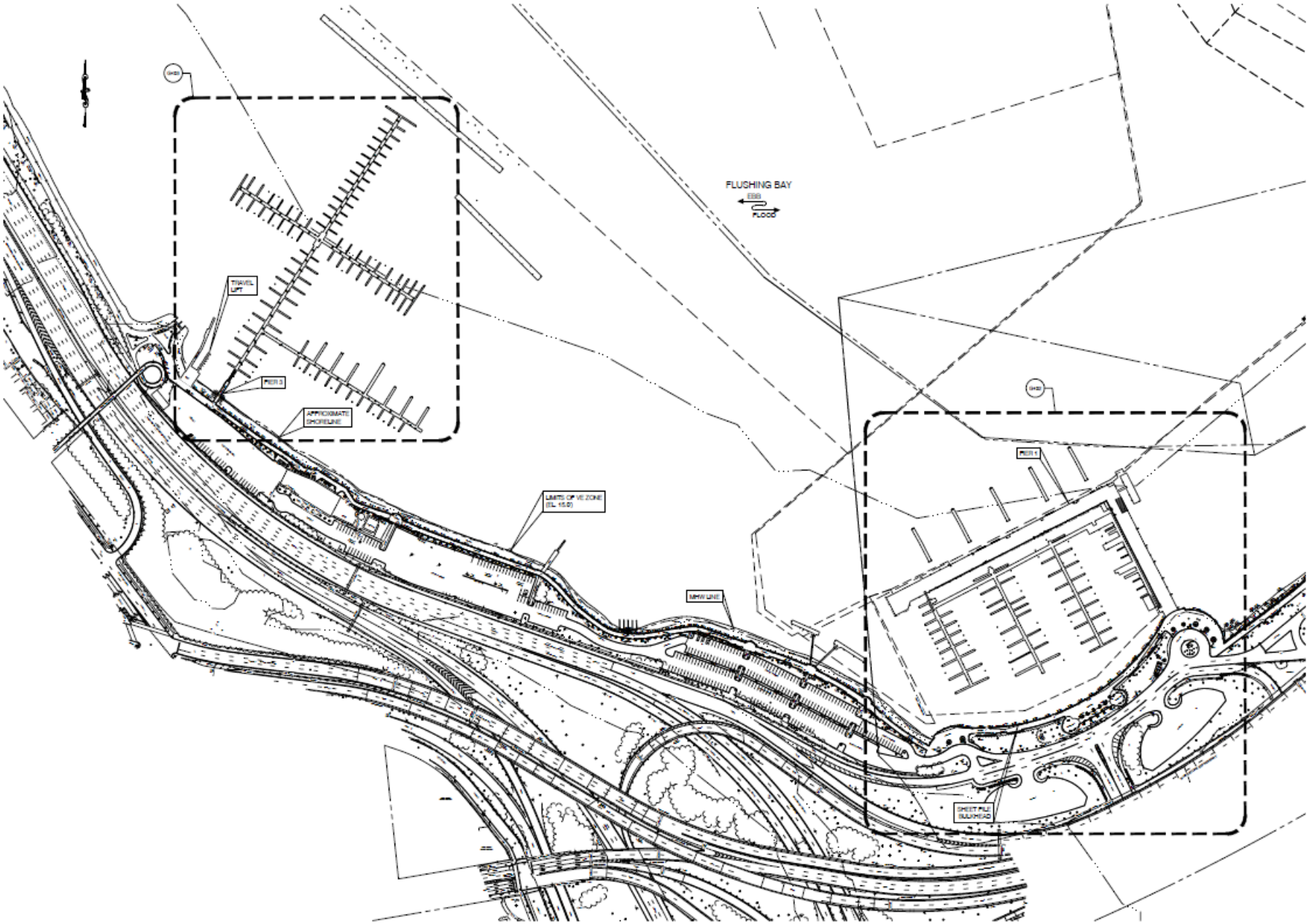
ISSUED FOR REVIEW
OCTOBER 08, 2021



A OVERALL EXISTING SITE PLAN
SCALE: 1" = 100'

0 100 200
SCALE IN FEET

LEGEND:

APPROXIMATE PIER HEAD LINE
MANEUVERING AREA

PROGRESS PRINT
ISSUED FOR REVIEW
OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

MITCHELL J. SILVER, FAICP, HON ASLA
COMMISSIONER

THÉRÈSE BRADDICK,
DEPUTY COMMISSIONER, CAPITAL PROJECTS

ARCHITECTURE AND ENGINEERING

VESNA HADZIBABIC, PE, SECB, LEED AP BD+C
ASSISTANT COMMISSIONER

SUSAN ROSENSTADT-BRESLER, RA
DEPUTY CHIEF

LANDSCAPE ARCHITECTURE

VINCENT CIRRITO, RLA
ASSISTANT COMMISSIONER

NANCY PRINCE, RLA, ASLA
CHIEF OF LANDSCAPE ARCHITECTURE

MEREDITH GRIFFIN
CHIEF OF LANDSCAPE PROGRAM MANAGEMENT

CONSULTANTS:

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Lakhani & Jordan Engineers, P.C.
315 Madison Avenue, 10th floor
New York, N.Y. 10017

NO.	DATE	REVISION

PROJECT MANAGER/DEPUTY DIRECTOR:
DARNICH A. RAHULLADO, P.E.
DISCIPLINE LEAD:
DOMINIC V. DeSANTIS, P.E.
DESIGNER:
CHRISTINE M. SMITH, P.E.
DRAFTED BY:
BEVERLY G. MaROUIS
CHECKED BY:
DOMINIC V. DeSANTIS, P.E.

CONTRACT NO.: Q099-218M
DATE: 10/08/21

PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)

ADDRESS: BLOCK: 1759 LOT: 65
FLUSHING BAY, AT 125-00
NORTHERN BOULEVARD,
CORONA, NY 11368

RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
OVERALL EXISTING SITE PLAN

DRAWING NO.: G101.00

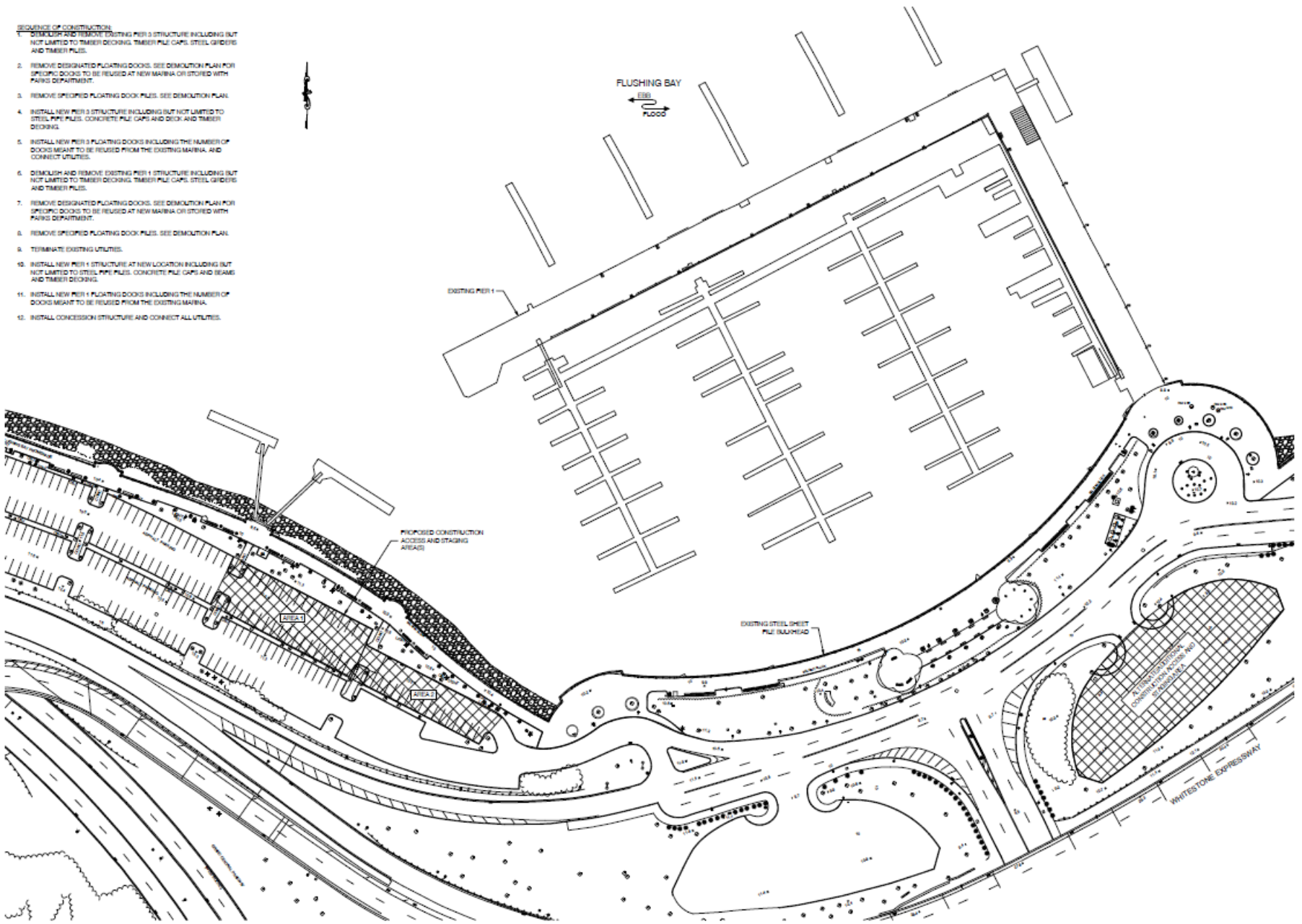
SHEETS IN CONTRACT SET:

SHEET 4 OF 79

BSCAN/DOB NOW JOB#

SEQUENCE OF CONSTRUCTION:

1. DEMOLISH AND REMOVE EXISTING PIER 3 STRUCTURE INCLUDING BUT NOT LIMITED TO TIMBER DECKING, TIMBER PILE CAPS, STEEL GIRDERS AND TIMBER PILES.
2. REMOVE DESIGNATED FLOATING DOCKS. SEE DEMOLITION PLAN FOR SPECIFIC DOCKS TO BE REUSED AT NEW MARINA OR STORED WITH PARKS DEPARTMENT.
3. REMOVE SPECIFIED FLOATING DOCK PILES. SEE DEMOLITION PLAN.
4. INSTALL NEW PIER 3 STRUCTURE INCLUDING BUT NOT LIMITED TO STEEL PIPE PILES, CONCRETE PILE CAPS AND DECK AND TIMBER DECKING.
5. INSTALL NEW PIER 3 FLOATING DOCKS INCLUDING THE NUMBER OF DOCKS MEANT TO BE REUSED FROM THE EXISTING MARINA, AND CONNECT UTILITIES.
6. DEMOLISH AND REMOVE EXISTING PIER 1 STRUCTURE INCLUDING BUT NOT LIMITED TO TIMBER DECKING, TIMBER PILE CAPS, STEEL GIRDERS AND TIMBER PILES.
7. REMOVE DESIGNATED FLOATING DOCKS. SEE DEMOLITION PLAN FOR SPECIFIC DOCKS TO BE REUSED AT NEW MARINA OR STORED WITH PARKS DEPARTMENT.
8. REMOVE SPECIFIED FLOATING DOCK PILES. SEE DEMOLITION PLAN.
9. TERMINATE EXISTING UTILITIES.
10. INSTALL NEW PIER 1 STRUCTURE AT NEW LOCATION INCLUDING BUT NOT LIMITED TO STEEL PIPE PILES, CONCRETE PILE CAPS AND BEAMS AND TIMBER DECKING.
11. INSTALL NEW PIER 1 FLOATING DOCKS INCLUDING THE NUMBER OF DOCKS MEANT TO BE REUSED FROM THE EXISTING MARINA.
12. INSTALL CONCESSION STRUCTURE AND CONNECT ALL UTILITIES.



A PIER 1 STAGING PLAN
SCALE: 1" = 40'

SCALE IN FEET

NOTES:
1. TOPOGRAPHIC SURVEY PROVIDED BY FARYU AND PERFORMED BY XXXX ON XXXXX.
2. HYDROGRAPHIC SURVEY NOT SHOWN FOR CLARITY.
3. STAGING AREA IS CONCEPTUAL ONLY. STAGING SHALL BE COORDINATED WITH THE OWNER BEFORE MOBILIZATION. GENERAL CONTRACTOR SHALL WORK TO COORDINATE STAGING WITH OTHER CONTRACTORS OR OWNERS OPERATIONS ON SITE.

PROGRESS PRINT
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OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

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VESNA HADZIBABIC, PE, SECB, LEED AP BD+C
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NO.	DATE	REVISION

PROJECT MANAGER/DEPUTY DIRECTOR: DARREN A. MANULARDO, P.E.
DISCIPLINE LEAD: DOMINIC V. DeGIACOMI, P.E.
DESIGNER: CHRISTINE M. SMITH, P.E.
DRAFTSPERSON: BEVERLY G. MaROUIZ
CHECKED BY: DOMINIC V. DeGIACOMI, P.E.
CONTRACT NO.: Q099-218M
DATE: 10/08/21

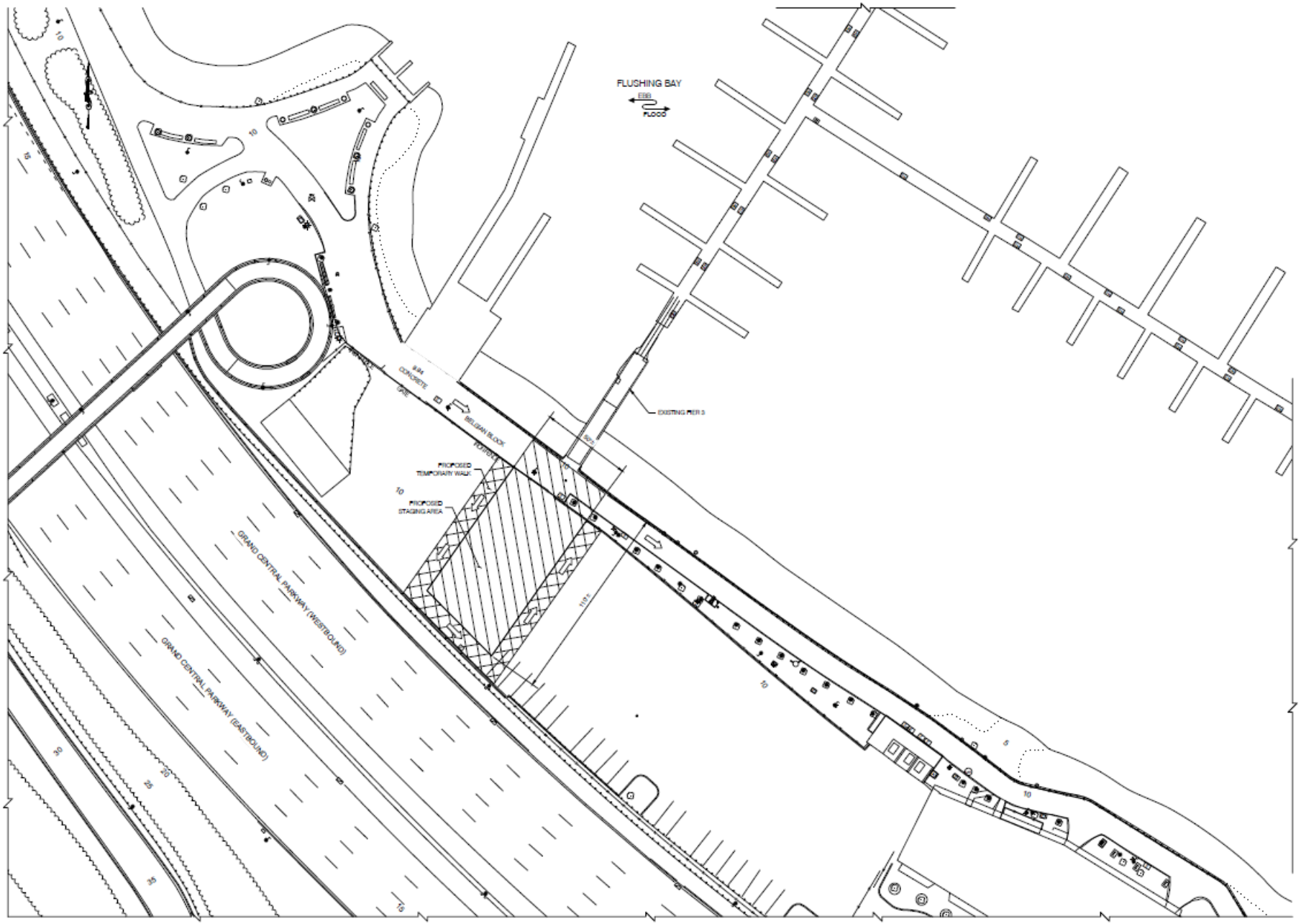
PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: FLUSHING BAY, AT 125-00 NORTHERN BOULEVARD, CORONA, NY 11368
BLOCK: 1789 LOT: 65

RESERVED FOR PLAN EXAMINER'S STAMPS

DRAWING TITLE:
PIER 1 STAGING PLAN

DRAWING NO.: G104.00
SHEETS IN CONTRACT SET:
SHEET 11 OF 79

BSCAN/DOB NOW JOB#



A PIER 3 STAGING PLAN
SCALE: 1" = 20'

SCALE IN FEET

NOTES:
1. TOPOGRAPHIC SURVEY PROVIDED BY FANYU AND PERFORMED BY XXXX ON XXXXX.
2. HYDROGRAPHIC SURVEY NOT SHOWN FOR CLARITY.
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CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

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NO.	DATE	REVISION

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DRAWN BY:
CHRISTINE M. SMITH, P.E.
CHECKED BY:
BEVERLY G. MARQUEZ
CHECKED BY:
DOMINIC V. DeSANTIS, P.E.

CONTRACT NO.: Q099-218M
DATE: 10/08/21

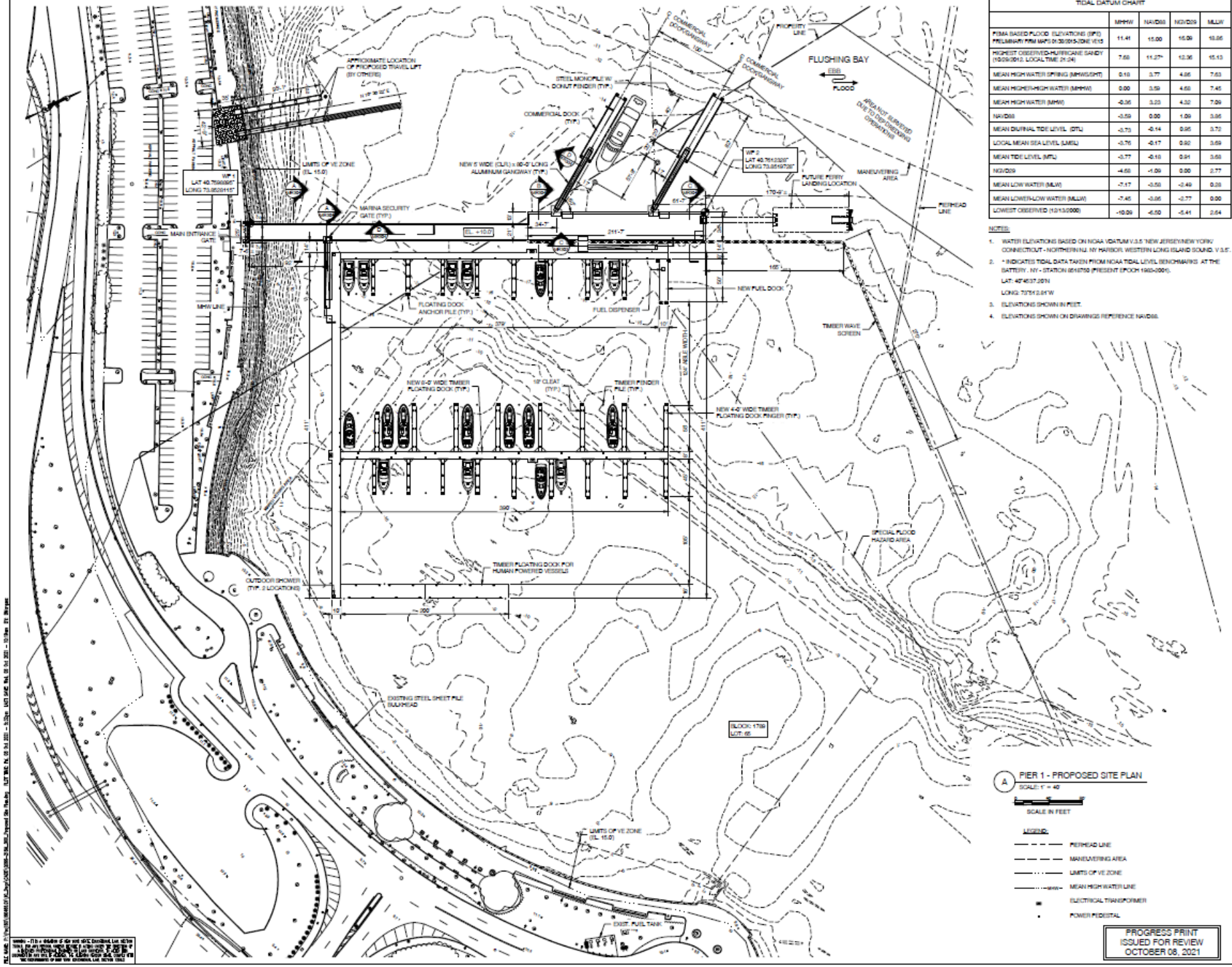
PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: BLOCK: 1789 LOT: 65
FLUSHING BAY, AT 125-00
NORTHERN BOULEVARD,
CORONA, NY 11368

RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
PIER 3 STAGING PLAN

DRAWING NO.: G105.00
SHEETS IN CONTRACT SET:
SHEET 12 OF 79

BSCAN/DOB NOW JOB#



A PIER 1 - PROPOSED SITE PLAN
SCALE: 1" = 40'

SCALE IN FEET

LEGEND:
- PIERHEAD LINE
- MANEUVERING AREA
- LIMITS OF VE ZONE
- MEAN HIGH WATER LINE
- ELECTRICAL TRANSFORMER
- POWER PEDESTAL

TIDAL DATUM CHART				
	MHHW	NAVD88	NGVD29	MLLW
FEMA BASED FLOOD ELEVATIONS (EFE) PRELIMINARY FIRM MAPS 01.30.2015-ZONE VE15	11.41	15.00	15.09	15.86
HIGHEST OBSERVED-HURRICANE SANDY (10/29/2012, LOCAL TIME: 21:24)	7.68	11.27*	12.36	15.13
MEAN HIGHER-HIGH WATER (MHHW)	0.00	3.59	4.68	7.45
MEAN HIGH WATER (MHW)	-0.36	3.23	4.32	7.09
NAVD88	-3.59	0.00	1.09	3.86
MEAN DIURNAL TIDE LEVEL (DTL)	-3.73	-0.14	0.95	3.72
LOCAL MEAN SEA LEVEL (LMSL)	-3.76	-0.17	0.92	3.69
MEAN TIDE LEVEL (MTL)	-3.77	-0.18	0.91	3.68
NGVD29	-4.68	-1.09	0.00	2.77
MEAN LOW WATER (MLW)	-7.17	-3.58	-2.49	0.28
MEAN LOWER-LOW WATER (MLLW)	-7.45	-3.86	-2.77	0.00
LOWEST OBSERVED (12/13/2000)	-10.09	-6.50	-5.41	2.64

NOTES:
1. WATER ELEVATIONS BASED ON NOAA VDATUM V.3.5 'NEW JERSEY/NEW YORK/ CONNECTICUT - NORTHERN NJ, NY HARBOR, WESTERN LONG ISLAND SOUND. V 3.5'.
2. * INDICATES TIDAL DATA TAKEN FROM NOAA TIDAL LEVEL BENCHMARKS AT THE BATTERY , NY - STATION 8518750 (PRESENT EPOCH 1983-2001).
   LAT: 40°42'37.20"N
   LONG: 73°59'3.61"W
3. ELEVATIONS SHOWN IN FEET.
4. ELEVATIONS SHOWN ON DRAWINGS REFERENCE NAVD88.

PROGRESS PRINT
ISSUED FOR REVIEW
OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

MITCHELL A. SILVER, FAICP, HON ASLA
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CHIEF OF LANDSCAPE PROGRAM MANAGEMENT

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NO.	DATE	REVISION

PROJECT MANAGER/DEPUTY DIRECTOR: DARREN A. MARGARITO, P.E.
DISCIPLINE LEAD: DOMINIC V. DeSANTIS, P.E.
DESIGNER: CHRISTINE M. SMITH, P.E.
DRAFTSMEN: BEVERLY G. MARQUEZ
CHECKED BY: DOMINIC V. DeSANTIS, P.E.
CONTRACT NO.: Q099-218M
DATE: 10/06/21

PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: BLOCK: 1759 LOT: 65
FLUSHING BAY, AT 125-00
NORTHERN BOULEVARD,
CORONA, NY 11368

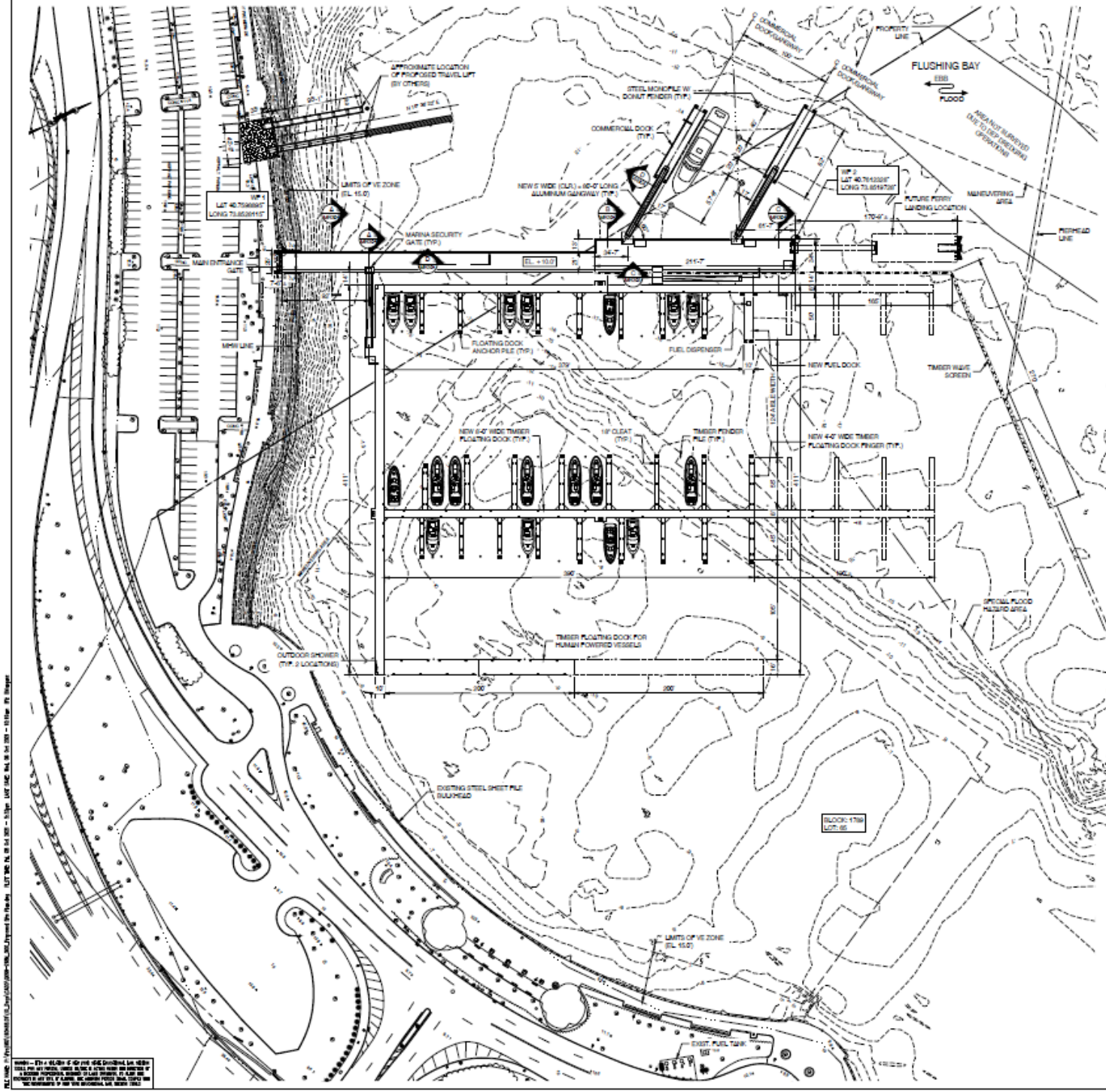
RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
PIER 1 PROPOSED SITE PLAN

DRAWING NO.:
MR201.00

SHEETS IN CONTRACT SET:
SHEET 35 OF 79

BSCAN/DOB NOW JOB#



A PIER 1 - PROPOSED SITE PLAN ADD- ALTERNATES
SCALE: 1" = 40'

SCALE IN FEET

LEGEND:
- PIERHEAD LINE
- MANEUVERING AREA
- LIMITS OF VE ZONE
- MEAN HIGH WATER LINE
- ELECTRICAL TRANSFORMER
- POWER PEDESTAL

TIDAL DATUM CHART				
	MHHW	NAVD88	NGVD29	MLLW
FEMA BASED FLOOD ELEVATIONS (EFE) PRELIMINARY FIRM MAPS 04/30/2014 V-ZONE VE15	11.41	15.00	16.09	13.90
HIGHEST OBSERVED-HURRICANE SANDY (10/29/2012, LOCAL TIME 21:24)	7.68	11.27*	12.36	10.13
MEAN HIGH WATER SPRING (MHWS/SHT)	0.10	3.77	4.86	7.63
MEAN HIGHER-HIGH WATER (MHHW)	0.00	3.59	4.68	7.45
MEAN HIGH WATER (MHW)	-0.30	3.23	4.32	7.09
NAVD88	-3.53	0.00	1.09	3.86
MEAN DIURNAL TIDE LEVEL (DTL)	-3.73	-0.14	0.95	3.73
LOCAL MEAN SEA LEVEL (LMSL)	-3.70	-0.17	0.92	3.69
MEAN TIDE LEVEL (MTL)	-3.77	-0.19	0.91	3.68
NGVD29	-4.68	-1.09	0.00	2.77
MEAN LOW WATER (MLW)	-7.17	-3.58	-2.49	0.28
MEAN LOWER-LOW WATER (MLLW)	-7.45	-3.86	-2.77	0.00
LOWEST OBSERVED (10/13/2000)	-10.09	-6.50	-5.41	2.64

NOTES:
1. WATER ELEVATIONS BASED ON NOAA VDATUM V.3.5 "NEW JERSEY/NEW YORK/ CONNECTICUT - NORTHERN NJ, NY HARBOR, WESTERN LONG ISLAND SOUND, V.3.5".
2. * INDICATES TIDAL DATA TAKEN FROM NOAA TIDAL LEVEL BENCHMARKS AT THE BATTERY , NY - STATION 8518750 (PRESENT EPOCH 1983-2001).
   LAT: 40°42'37.30"N
   LONG: 73°01'2.61"W
3. ELEVATIONS SHOWN IN FEET.
4. ELEVATIONS SHOWN ON DRAWINGS REFERENCE NAVD88.

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OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

MITCHELL J. SILVER, FAICP, HON ASLA
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NO.	DATE	REVISION

PROJECT MANAGER/DEPUTY DIRECTOR: STEPHEN J. RUMELLO, P.E.
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DESIGNED: CHRISTINA M. SMITH, P.E.
DRAFTED BY: BEVERLY G. MARQUEZ
APPROVED BY: DOMINIC V. CHIGHETTO, P.E.

CONTRACT NO.: Q099-218M
DATE: 10/08/21

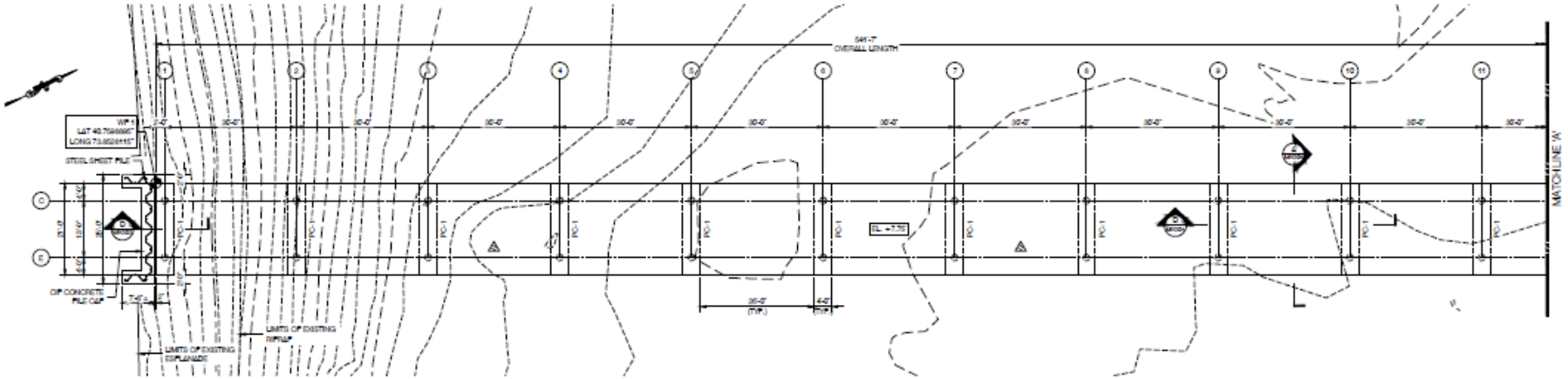
PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION (HURRICANE SANDY)
ADDRESS: BLOCK: 1709 LOT: 65
FLUSHING BAY, AT 125-00 NORTHERN BOULEVARD, CORONA, NY 11368

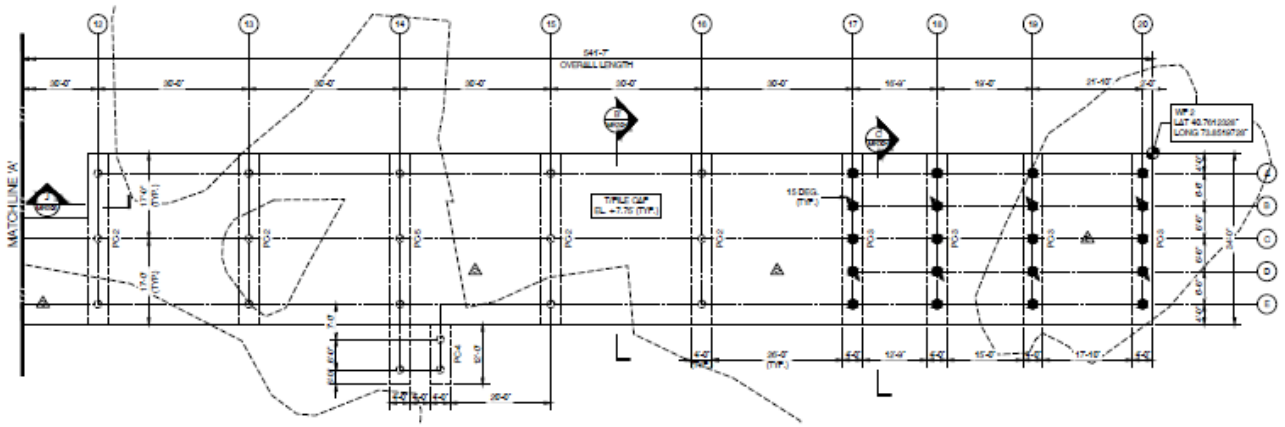
RESERVED FOR PLAN EXAMINER'S STAMPS

DRAWING TITLE:
PIER 1 ADD-ALTERNATES

DRAWING NO.: MR202.00
SHEETS IN CONTRACT SET:
SHEET 24 OF 79

BSCAN/DOB NOW JOB#





A PIER 1 PILE & PILE CAP PLAN
SCALE: 1" = 10'
SCALE IN FEET

NOTES:
1. TOP OF PILE CAP ELEVATION SHOWN ON PLAN.
2. ALL ELEVATIONS SHOWN REFERENCE NAVD 88.
3. INDICATOR PILE LOCATIONS SHOWN SCHEMATICALLY. CONTRACTOR SHALL SUBMIT INDICATOR PILE PLAN FOR REVIEW AND APPROVAL.
4. TIMBER PILES NOT SHOWN FOR CLARITY.

LEGEND:
- 16"Ø ×.375" THK. CONCRETE FILLED (F'_{ck}=5,000 PSI) STEEL PIPE PILE
- 20"Ø ×.375" THK. CONCRETE FILLED (F'_{ck}=5,000 PSI) STEEL PIPE PILE
- 20"Ø ×.375" THK. CONCRETE FILLED BATTER PILES
- PROPOSED INDICATOR PILE (PDA LOAD TEST LOCATION)
- EL. X.XX' — TOP OF PILE CAP ELEVATION (NAVD 88)
- PC-1 — PILE CAP DESIGNATION
- (XX) — BENT NUMBER
- WP-1 — WORK POINT LOCATION AND NUMBER

PROGRESS PRINT
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OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

MITCHELL J. SILVER, FAICP, HON ASLA
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CHIEF OF LANDSCAPE PROGRAM MANAGEMENT

CONSULTANTS:
McLaren Engineering Group
Lakhani & Jordan Engineers, P.C.

NO.	DATE	REVISION

PROJECT MANAGER/ASSIST. DIRECTOR: STEPHEN J. RAMSUNDAR, P.E.
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DESIGNER: CHRISTINA M. SMITH, P.E.
DRAFTED BY: BEVERLY G. MARQUEZ
CHECKED BY: DOMINIC V. DeSANTIS, P.E.
CONTRACT NO.: Q099-218M
DATE: 10/08/21

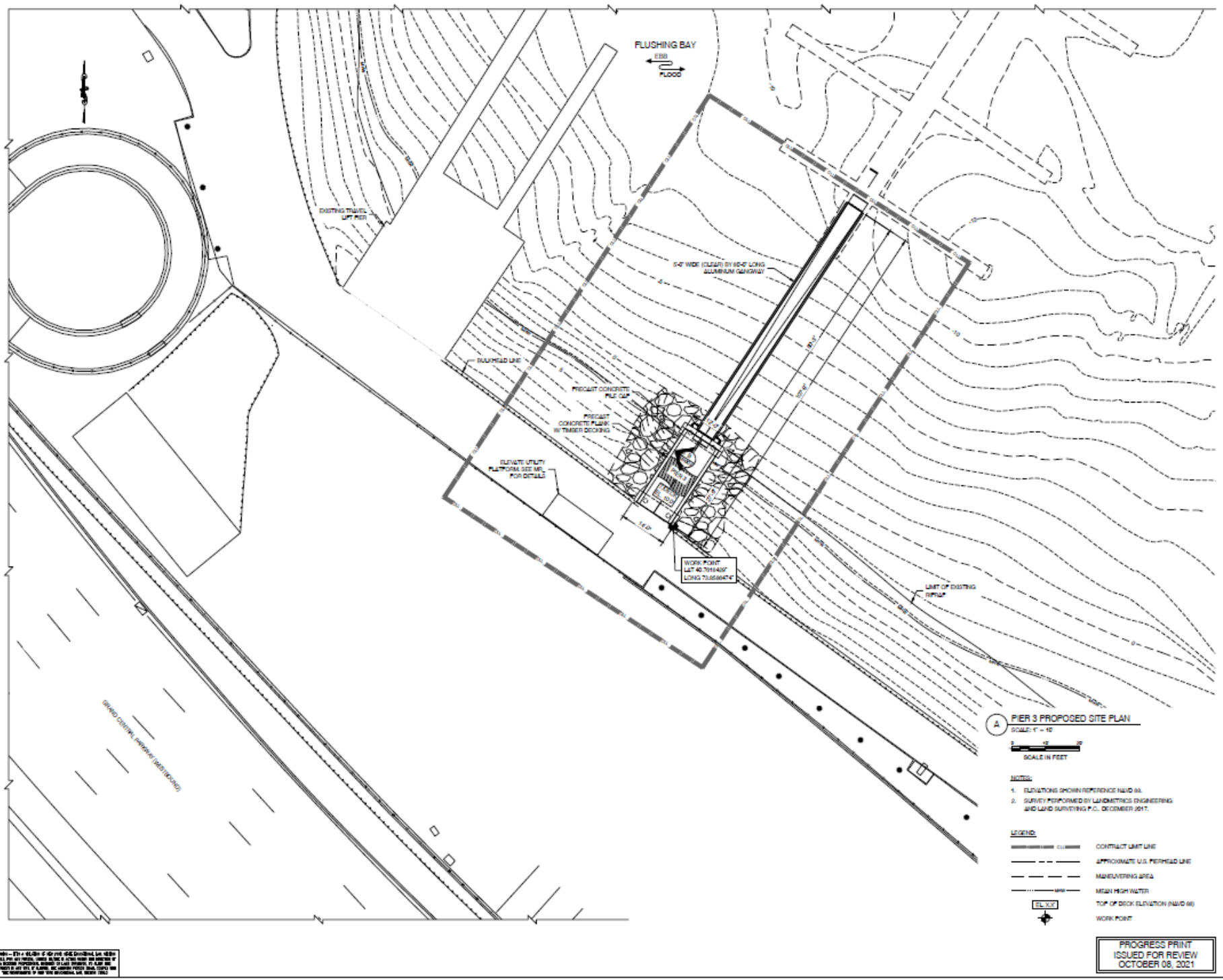
PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: FLUSHING BAY, AT 125-00 NORTHERN BOULEVARD, CORONA, NY 11368
BLOCK: 1709 LOT: 65

RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
PIER 1 PILE & PILE CAP PLAN

DRAWING NO.: MR203.00
SHEETS IN CONTRACT SET:
SHEET 32 OF 79

BSCAN/DOB NOW JOB#



A PIER 3 PROPOSED SITE PLAN
SCALE: 1" = 10'
SCALE IN FEET

NOTES:
1. ELEVATIONS SHOWN REFERENCE NAVD 88.
2. SURVEY PERFORMED BY LANDMETRICS ENGINEERING AND LAND SURVEYING P.C., DECEMBER 2017.

LEGEND:
- CONTRACT LIMIT LINE
- APPROXIMATE U.S. PIERHEAD LINE
- MANEUVERING AREA
- MEAN HIGH WATER
- EL XX' — TOP OF DECK ELEVATION (NAVD 88)
- WORK POINT

PROGRESS PRINT
ISSUED FOR REVIEW
OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
CORETECH CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

MITCHELL J. SILVER, FAICP, HON ASLA
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DEPUTY COMMISSIONER, CAPITAL PROJECTS
ARCHITECTURE AND ENGINEERING
VESNA HADZIBABIC, PE, SECB, LEED AP BD+C
ASSISTANT COMMISSIONER
SUSAN ROSENSTADT-BRESLER, RA
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NO.	DATE	REVISION

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DESIGNED:
CHRISTOPHER M. SMITH, P.E.
CHECKED BY:
BEVERLY G. MARCIALIS
DRAWN BY:
DOMINIC V. DeSANTIS, P.E.

CONTRACT NO.: Q099-218M
DATE: 10/08/21

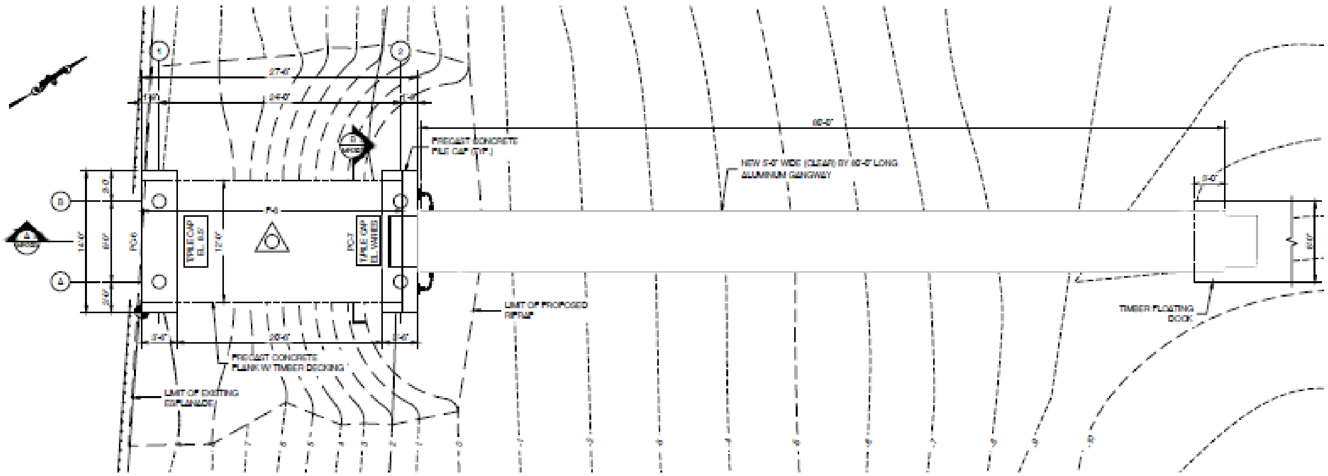
PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLDS FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: FLUSHING BAY, AT 125-00 NORTHERN BOULEVARD, CORONA, NY 11368
BLOCK: 1709 LOT: 65

RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
PIER 3 PROPOSED SITE PLAN

DRAWING NO.: MR206.00
SHEETS IN CONTRACT SET:
SHEET 30 OF 79

BISCAN/DOB NOW JOB#



A PIER 3 - PROPOSED PILE & PILE CAP PLAN

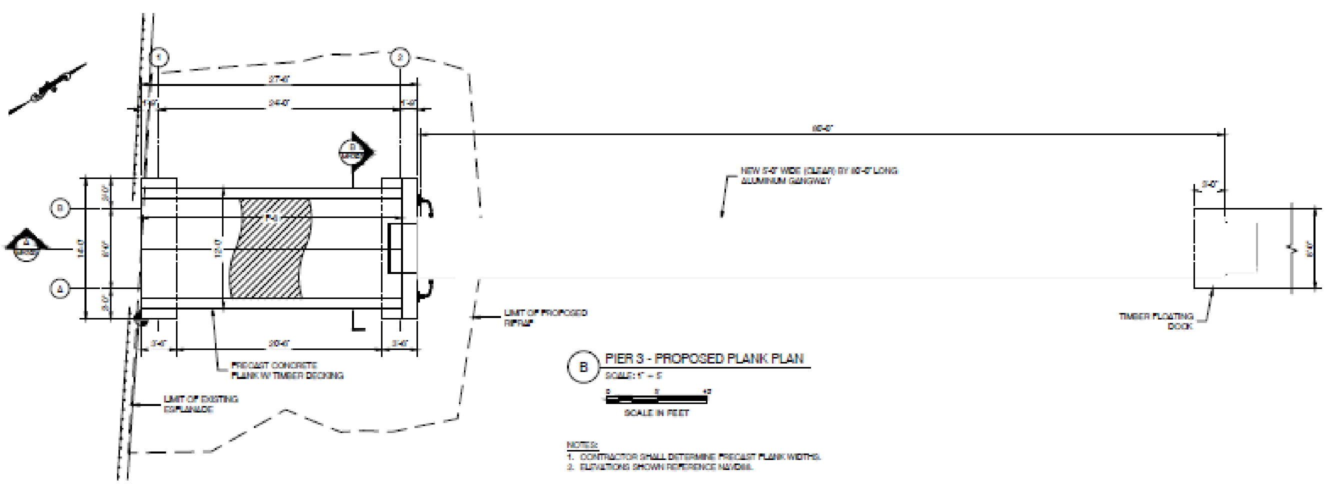
SCALE: 1" = 5'

SCALE IN FEET

LEGEND:

- 16"Ø x .5" THK. CONCRETE FILLED (F'c=5,000 PSI) STEEL PIPE PILE
- PROPOSED INDICATOR PILE (PDA LOAD TEST LOCATION)
- EL. X-XX' — TOP OF PILE CAP ELEVATION (NAVD 88)
- PC-1 — PILE CAP DESIGNATION
- XX — BENT AND PILE IDENTIFICATION
- WORK POINT

NOTES:
1. TOP OF PILE ELEVATION SHALL BE 2'-6" BELOW TOP OF PILE CAP ELEVATION.
2. ALL ELEVATIONS SHOWN REFERENCE NAVD 88.
3. INDICATOR PILE LOCATIONS SHOWN SCHEMATICALLY. CONTRACTOR SHALL SUBMIT INDICATOR PILE PLAN FOR REVIEW AND APPROVAL.



B PIER 3 - PROPOSED PLANK PLAN

SCALE: 1" = 5'

SCALE IN FEET

NOTES:
1. CONTRACTOR SHALL DETERMINE PRECAST PLANK WIDTHS.
2. ELEVATIONS SHOWN REFERENCE NAVD88.

LEGEND:

- EL. X-XX' — TOP OF PLATFORM ELEVATION (NAVD88)
- P-1 — PLANK DESIGNATION
- XX — BENT AND PILE IDENTIFICATION
- WORK POINT AT INSHORE FACE OF PLATFORM

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OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

MITCHELL J. SILVER, FAICP, HON ASLA
COMMISSIONER

THÉRÈSE BRADDICK,
DEPUTY COMMISSIONER, CAPITAL PROJECTS

ARCHITECTURE AND ENGINEERING

VESNA HADZIBABIC, PE, SECB, LEED AP BD+C
ASSISTANT COMMISSIONER

SUSAN ROSENSTADT-BRESLER, RA
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MEREDITH GRIFFIN
CHIEF OF LANDSCAPE PROGRAM MANAGEMENT

CONSULTANTS:

McLaren Engineering Group
Lakhani & Jordan Engineers, P.C.

NO.	DATE	REVISION

CONTRACT NO.: Q099-218M

DATE: 10/08/21

PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)

ADDRESS: BLOCK: 1789 LOT: 65
FLUSHING BAY, AT 125-00
NORTHERN BOULEVARD,
CORONA, NY 11368

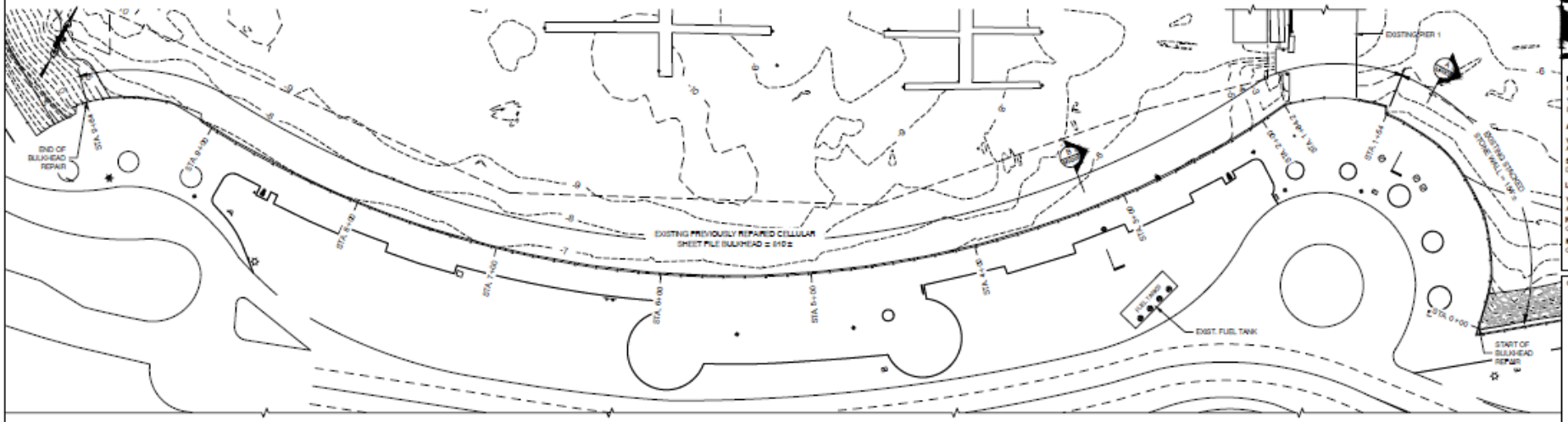
RESERVED FOR PLAN EXAMINER'S STAMPS

DRAWING TITLE:
PIER 3 PROPOSED PILE AND
PILE CAP PLAN, AND PLANK PLAN

DRAWING NO.: MR207.00

SHEETS IN CONTRACT SET: SHEET 38 OF 79

BSCAN/DOB NOW JOB#



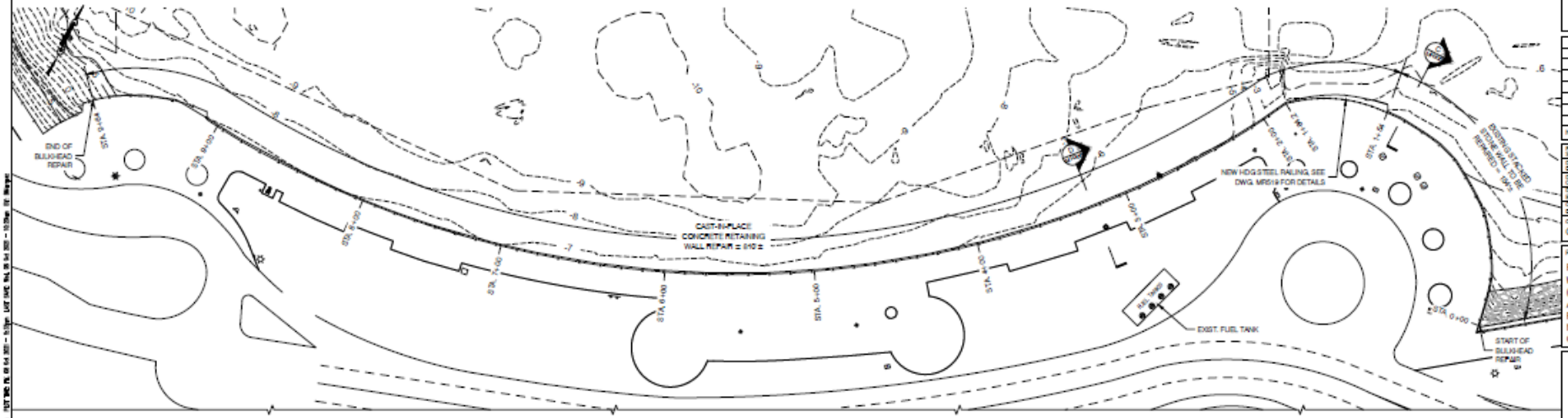
A EXISTING BULKHEAD PART PLAN

SCALE: 1" = 25'

SCALE IN FEET

NOTE:

1. FLOATING DOCKS NOT SHOWN FOR CLARITY.



B BULKHEAD REPAIR PLAN

SCALE: 1" = 25'

SCALE IN FEET

NOTE:

1. FLOATING DOCKS NOT SHOWN FOR CLARITY.

KEY PLAN

NOT TO SCALE

PROGRESS PRINT
ISSUED FOR REVIEW
OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION

CLARETA DEVEAUX
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

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COMMISSIONER

THÉRÈSE BRADDOCK,
DEPUTY COMMISSIONER, CAPITAL PROJECTS

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VESNA HADZIBABIC, PE, SECB, LEED AP BD+C
ASSISTANT COMMISSIONER

SUSAN ROSENSTADT-BRESLER, RA
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Lakhani & Jordan Engineers, P.C.
310 Madison Avenue, 10th floor
New York, N.Y. 10017

NO.	DATE	REVISION

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DISCIPLINE LEAD:
DOMINIC V. DeGIROLAMO, P.E.
DESIGNER:
CHRISTOPHER M. SMITH, P.E.
DRAFTED BY:
BEVERLY G. MARQUEZ
CHECKED BY:
DOMINIC V. DeGIROLAMO, P.E.

CONTRACT NO.: Q099-218M
DATE: 10/08/21

PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)

ADDRESS: BLOCK: 1709 LOT: 65
FLUSHING BAY, AT 125-00
NORTHERN BOULEVARD,
CORONA, NY 11368

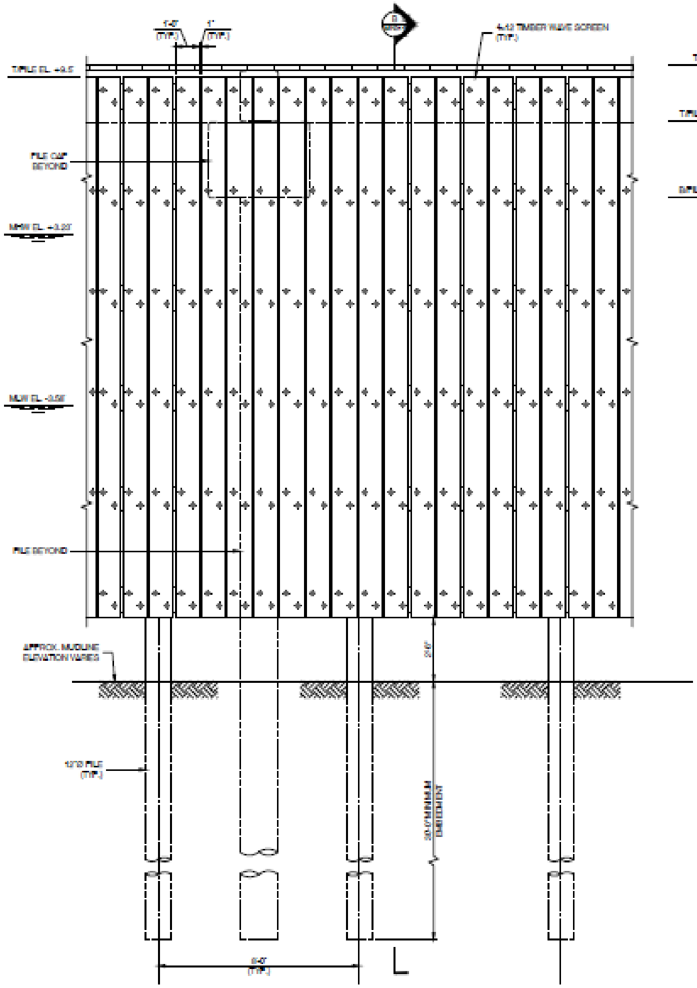
RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
BULKHEAD AND ESPLANADE
REPAIR PLAN

DRAWING NO.:
MR208.00

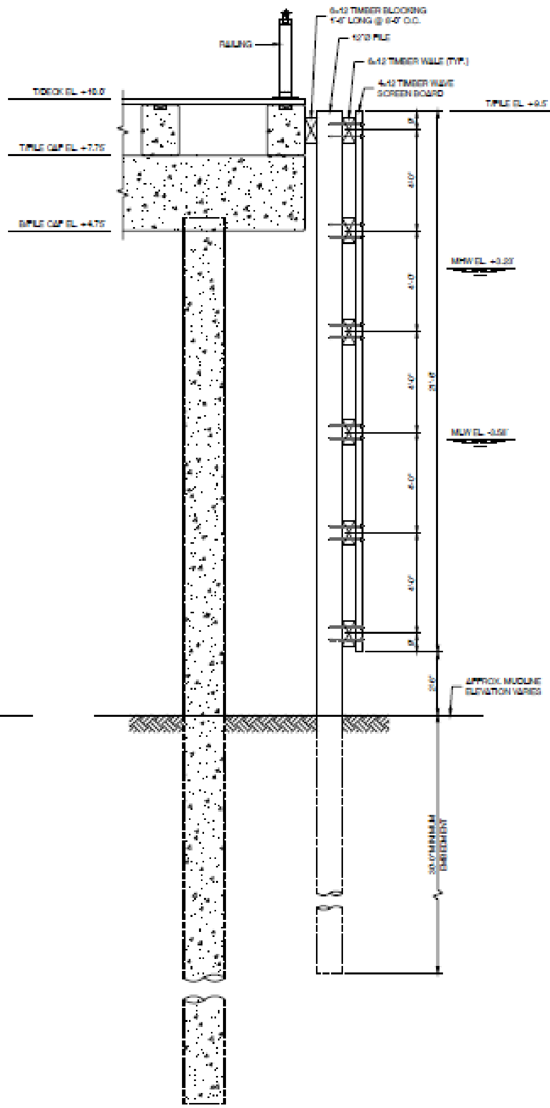
SHEETS IN CONTRACT SET:
SHEET 27 OF 79

BSCAN/DOB NOW JOB#



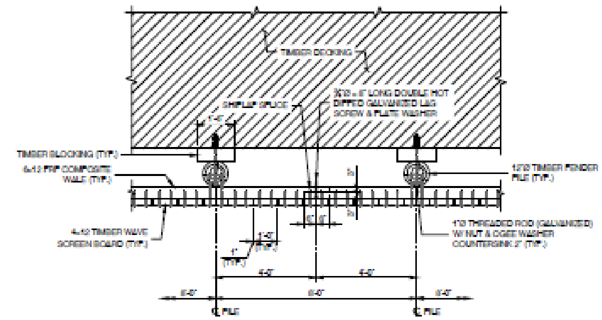
A WAVE SCREEN TYPE 1 ELEVATION
SCALE: 1/2" = 1'-0"
SCALE IN FEET

NOTES:
1. ELEVATIONS REFERENCE NAVD88.
2. CURB AND RAILING NOT SHOWN FOR CLARITY.

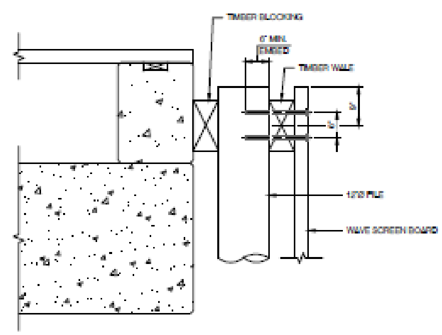


B WAVE SCREEN TYPE 1 SECTION
SCALE: 1/2" = 1'-0"
SCALE IN FEET

NOTES:
1. ELEVATIONS REFERENCE NAVD88.



C WAVE SCREEN TYPE 1 PLAN
SCALE: 1/2" = 1'-0"



D TYPICAL WAVE SCREEN CONNECTION DETAIL
SCALE: 1" = 1'-0"
SCALE IN FEET

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CITY OF NEW YORK
PARKS & RECREATION
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FLUSHING, NEW YORK 11368

MITCHELL J. SILVER, FAICP, HON ASLA
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VESNA HADZIBABIC, PE, SECB, LEED AP BD+C
ASSISTANT COMMISSIONER
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CHIEF OF LANDSCAPE PROGRAM MANAGEMENT

CONSULTANTS:
McLaren ENGINEERING GROUP
applied ingenuity
Lakhani & Jordan Engineers, P.C.

NO.	DATE	REVISION

CONTRACT NO.: Q099-218M
DATE: 10/08/21

PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION (HURRICANE SANDY)
ADDRESS: BLOCK: 1789 LOT: 65
FLUSHING BAY, AT 125-00 NORTHERN BOULEVARD, CORONA, NY 11368

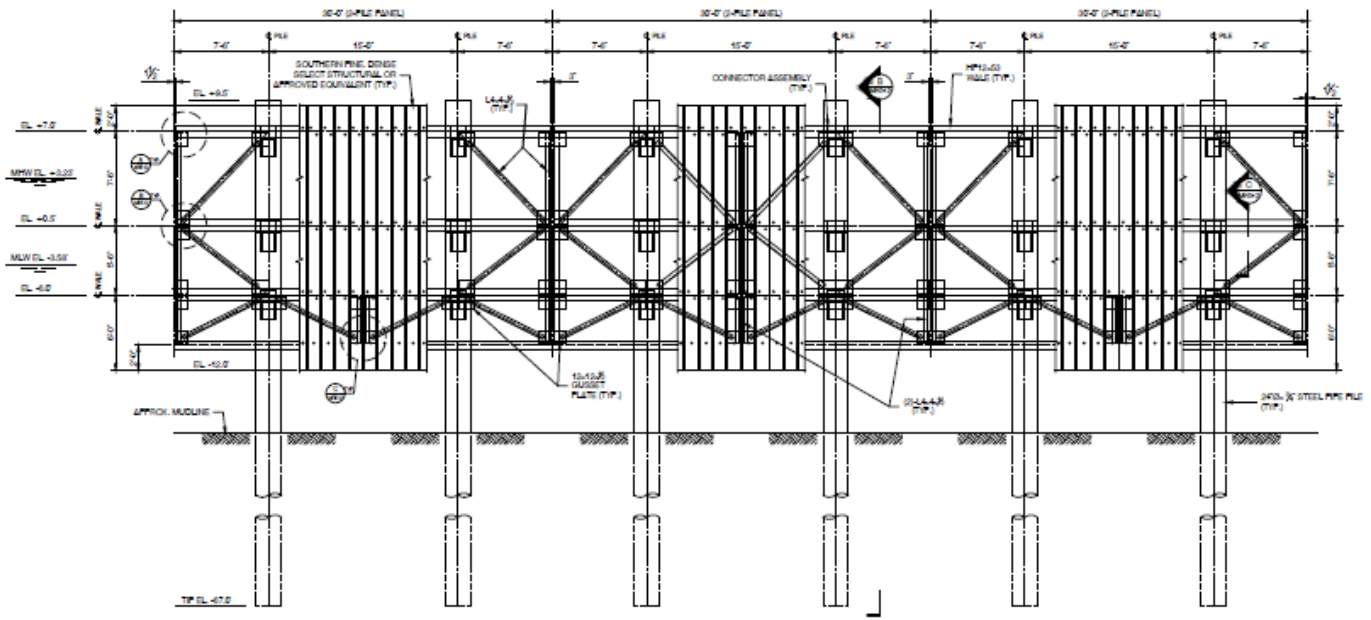
RESERVED FOR PLAN EXAMINER'S STAMPS

DRAWING TITLE:
WAVE SCREEN TYPE 1 DETAILS

DRAWING NO.: MR511.00

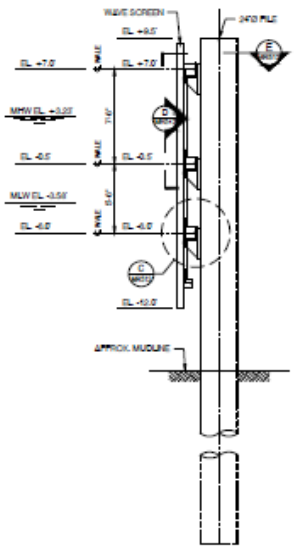
SHEETS IN CONTRACT SET:

BSCAN/DOB NOW JOB#

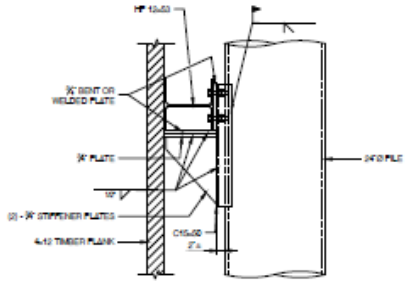


A WAVE SCREEN TYPE 2 ELEVATION
SCALE: 1/4" = 1'-0"
SCALE IN FEET

NOTE:
1. ALL NEW STEEL FRAMING AND MOUNTING PLATES TO BE HOT-DIP GALVANIZED AND COATED.

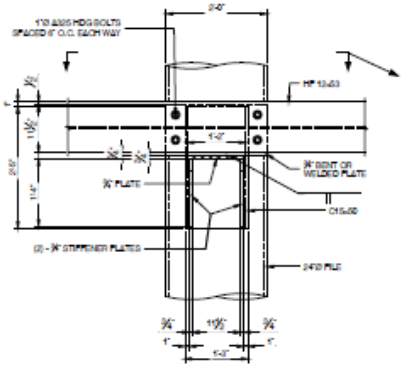


B SECTION
SCALE: 1/4" = 1'-0"
SCALE IN FEET



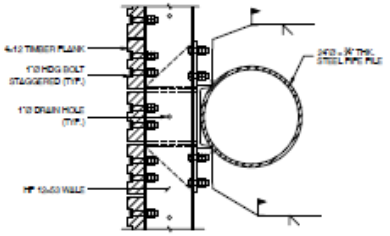
C BOLTED CONNECTION SIDE ELEVATION
SCALE: 1" = 1'-0"
SCALE IN FEET

NOTES:
1. ¾"x9" PLATE WASHERS AT ALL BOLTED CONNECTION.
2. DOUBLE NUT ALL BOLTED CONNECTIONS.



D BOLTED CONNECTION FRONT ELEVATION
SCALE: 1" = 1'-0"
SCALE IN FEET

NOTE:
1. NOTE: TIMBER BOARDS NOT SHOWN FOR CLARITY.



E SECTION
SCALE: 1" = 1'-0"
SCALE IN FEET

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PARKS & RECREATION
CLOISTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

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New York, N.Y. 10017

NO.	DATE	REVISION

PROJECT MANAGER/FACILITY DIRECTOR:
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DISCIPLINE LEAD:
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DESIGNED:
CHRISTIAN M. SMITH, P.E.
DRAFTED BY:
BEVERLY G. MARQUEZ
CHECKED BY:
DOMINIC V. DeGIANTIS, P.E.

CONTRACT NO.: Q099-218M
DATE: 10/08/21

PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: FLUSHING BAY, AT 125-00 NORTHERN BOULEVARD, CORONA, NY 11368
BLOCK: 1709 LOT: 65

RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
WAVE SCREEN TYPE 2 DETAILS

DRAWING NO.: MR512.00
SHEETS IN CONTRACT SET:
SHEET 17 OF 79

BSCAN/DOB NOW JOB#

Appendix B, Figure 3 – Coastal Zone Map

NY Coastal Zone Boundary – World's Fair Marina

Appendix C, Table 1 – New York State NAAQS

NAAQS for Criteria Air Pollutants

As established by EPA the following table lists the current primary NAAQS for the six criteria air pollutants.

Pollutant	Averaging Time	Level	Form
CO	8 hours	9 ppm	Not to be exceeded more than once per year
CO	1hour	35 ppm	Not to be exceeded more than once per year
Pb	3-month average	0.15 g/m3	Not to be exceeded
NO2	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
NO2	1 year	53 ppb	Annual Mean
O3	8 hours	0.07 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
PM2.5	1 year	12.0 g/m3	Annual mean, averaged over 3 years
PM2.5	24 hours	35 g/m3	98th percentile, averaged over 3 years
SO2	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years

U.S. Department of Homeland Security
Federal Emergency Management Agency
FEMA Region II
One World Trade Center
285 Fulton St.
New York, New York 10007

FEMA

December 14, 2021

Jackie Bray
Governor's Authorized Representative
New York State Division of Homeland Security and Emergency Services
1220 Washington Avenue
Building 7A, 4th Floor
Albany, New York 12242

Re: New York State's Coastal Management Program Consistency Review of FEMA-4085-DR-NY Super Storm Sandy: PW4656 Site 11 World's Fair Marina PAAP

Dear Ms. Bray:

On behalf of the New York City Department of Parks and Recreation (NYCDPR) (Sub-Recipient), the New York State Division of Homeland Security and Emergency Services (NYSDHSES) (Recipient) submitted an application for the Federal Emergency Management Agency's (FEMA) Public Assistance (PA) Program for financial assistance to reconstruct the World's Fair Marina Piers 1 and 3, with Pier 1 on a new footprint approximately 1,000 feet to the west, in the borough of Queens, New York. This project received a Waterfront Revitalization Program consistency determination from New York City Planning in March 2019 under the record **WRP # 19-049**.

The proposed project consists of demolition and reconstruction of Piers 1 and 3. Pier 3 would be reconstructed on its present site and widened for ADA accessibility, while Pier 1 would be relocated approximately 1,000 feet west of its current location with parallel floating docks extending south and two commercial docks extending north. The capacity of the new piers would be the same as the existing ones. Timber wave screens will be installed to attenuate wave action along Pier 1. Utilities on the new piers would be elevated to avoid future flooding damages. The bulkhead and esplanade along the present location of Pier 1 would also be reconstructed. Construction would begin in April 2023 and take approximately two years to complete.

New York State Coastal Policies 1 through 44 have been reviewed with respect to the proposed measures to be performed per FEMA's disaster recovery operations. Based on this review, FEMA determined that the above referenced activities are consistent with the policies of the New York State Coastal Management Program (CMP) and will not hinder the achievement of those policies. A summary of the proposed project's consistency with the State Coastal Policies is included as an attachment.

FEMA respectfully requests that NYSDHSES coordinates directly with the New York State Department of State (NYSDOS) to obtain their concurrence with FEMA's Coastal Zone Consistency Determination, in accordance with the requirement of the Coastal Zone Management

Act of 1972 (15 CFR Part 930, Subpart F), prior to the release of federal funding to the grant recipient. FEMA Environmental Planning and Historic Preservation (EHP) looks forward to your office's feedback within 60 days of receipt of this letter. If you have any questions, please contact me.

Sincerely,

BROCK A GIORDANO

Digitally signed by BROCK A GIORDANO
Date: 2021.12.14 16:11:42 -05'00'

Brock Giordano, RPA
EHP Supervisor, NY Sandy
4085-DR-NY

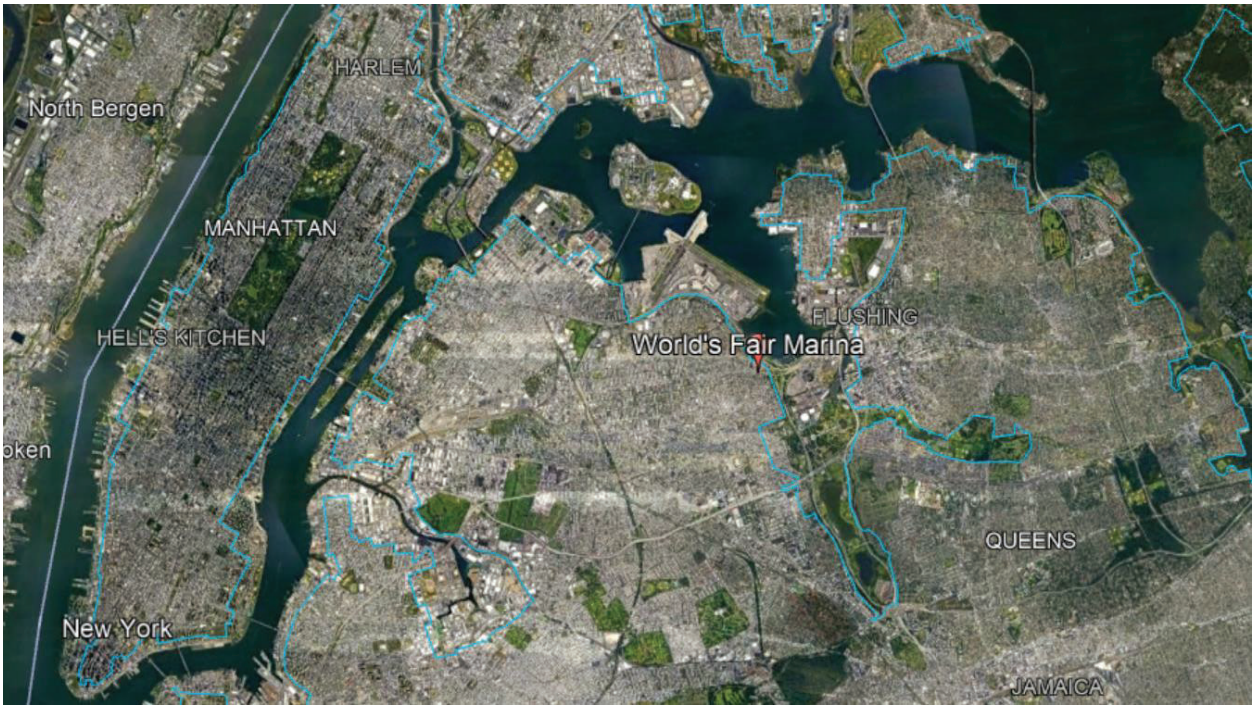
iphone: (347) 574-1467
Email: brock.giordano@fema.dhs.gov

BG/kb

Encl: Project Location Map
Preliminary Project Design Plans/Overview Documents
Consistencies with Coastal Policies of New York Worksheet

ATTACHMENTS

Project Location – World's Fair Marina, Flushing Meadows-Corona Park, Queens, NY



Preliminary Project Design Plans/Overview Documents

CITY OF NEW YORK PARKS & RECREATION

Parks

RECONSTRUCTION OF THE WORLD'S FAIR MARINA LOCATED ON FLUSHING BAY ADJACENT TO THE GRAND CENTRAL PARKWAY IN FLUSHING MEADOWS-CORONA PARK

BOROUGH OF QUEENS

CONTRACT #: Q099-218M

LOCATION PLAN
NOT TO SCALE

AERIAL PHOTO/ EX. SITE/ STRUCTURE
NOT TO SCALE

CAPITAL PROJECTS
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK, NY 10035

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JORGE PRADO, RA
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TEAM LEADER, BRONX
ANDREW PENZI, RLA
TEAM LEADER, BROOKLYN
DAVID MARTIN
TEAM LEADER, MANHATTAN
DESMOND SPILLANE
TEAM LEADER, QUEENS
ERIC MATTES, RLA
TEAM LEADER, STATEN ISLAND
ADRIAN SMITH, RLA

CONSTRUCTION
CHIEF OF CONSTRUCTION
PHILIP GRANITTO

CONSULTANTS:
McLaren Engineering Group
Lakhani & Jordan Engineers, P.C.

Q099-218M

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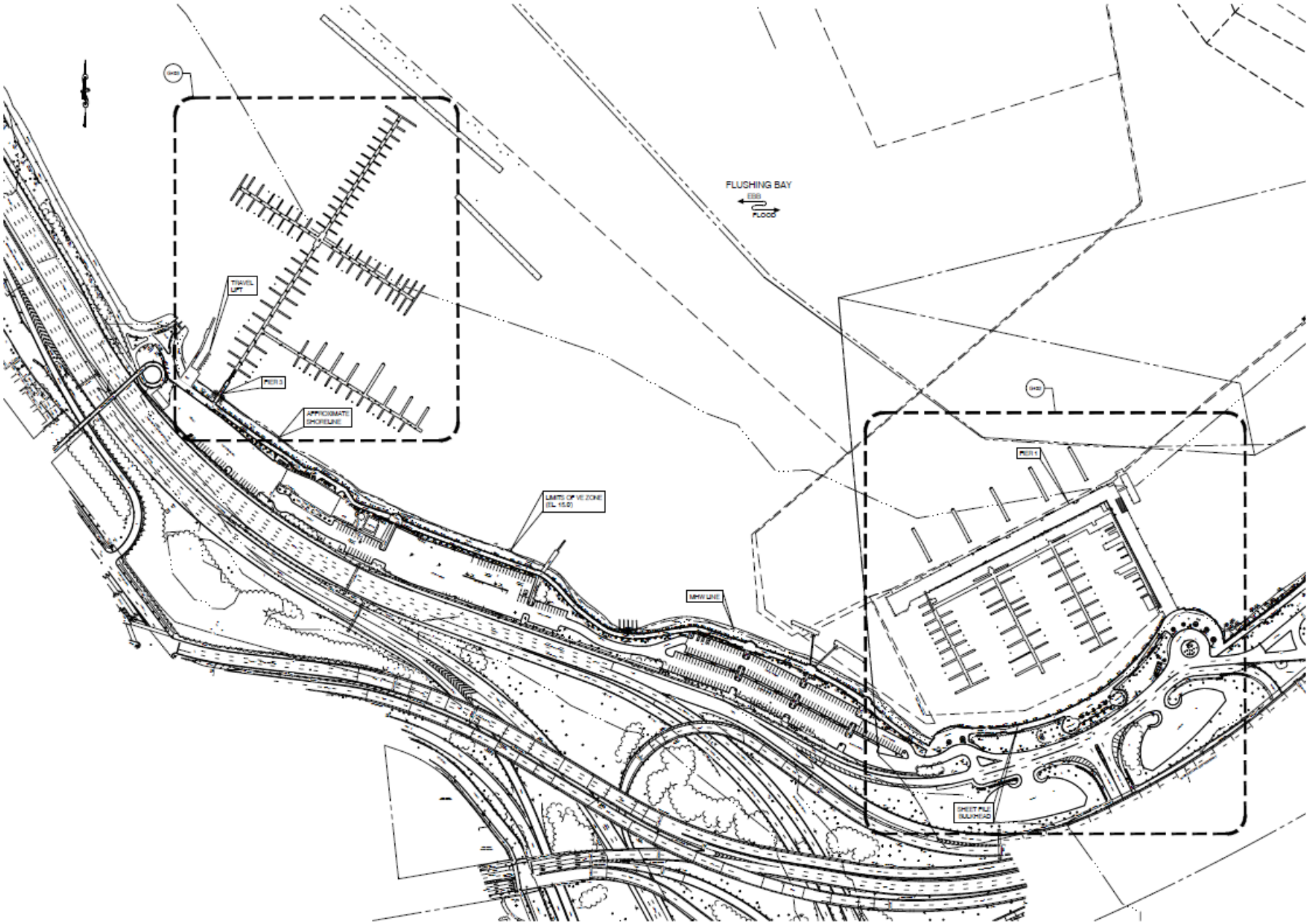

A OVERALL EXISTING SITE PLAN
SCALE: 1" = 100'

0 100 200
SCALE IN FEET

LEGEND:

APPROXIMATE PIER HEAD LINE
MANEUVERING AREA

PROGRESS PRINT
ISSUED FOR REVIEW
OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

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DESIGNER:
CHRISTINE M. SMITH, P.E.
DRAFTED BY:
BEVERLY G. MaROUIS
CHECKED BY:
DOMINIC V. DeSANTIS, P.E.

CONTRACT NO.: Q099-218M
DATE: 10/08/21

PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)

ADDRESS: BLOCK: 1759 LOT: 65
FLUSHING BAY, AT 125-00
NORTHERN BOULEVARD,
CORONA, NY 11368

RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
OVERALL EXISTING SITE PLAN

DRAWING NO.: G101.00

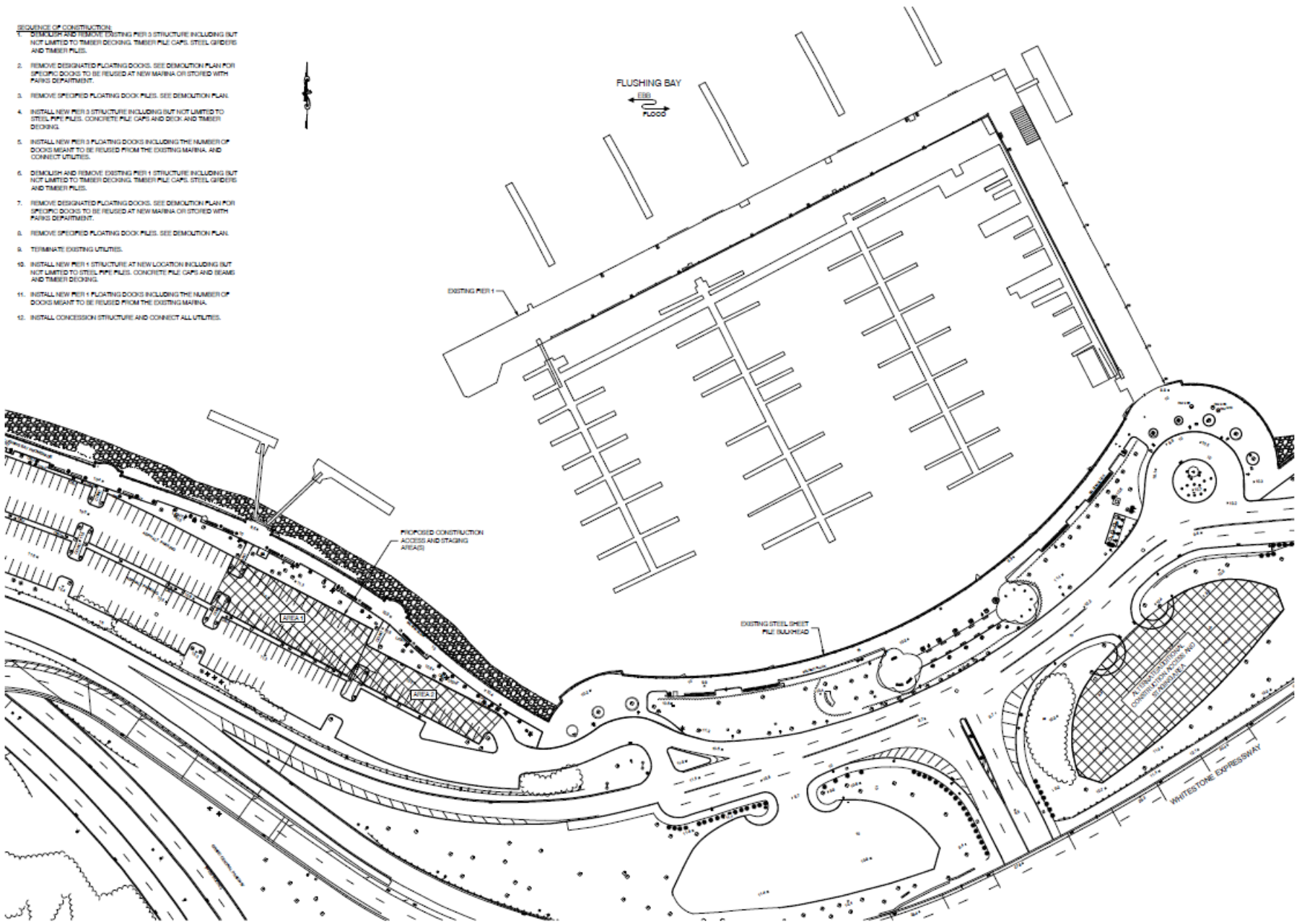
SHEETS IN CONTRACT SET:

SHEET 4 OF 79

BSCAN/DOB NOW JOB#

SEQUENCE OF CONSTRUCTION:

1. DEMOLISH AND REMOVE EXISTING PIER 3 STRUCTURE INCLUDING BUT NOT LIMITED TO TIMBER DECKING, TIMBER PILE CAPS, STEEL GIRDERS AND TIMBER PILES.
2. REMOVE DESIGNATED FLOATING DOCKS. SEE DEMOLITION PLAN FOR SPECIFIC DOCKS TO BE REUSED AT NEW MARINA OR STORED WITH PARKS DEPARTMENT.
3. REMOVE SPECIFIED FLOATING DOCK PILES. SEE DEMOLITION PLAN.
4. INSTALL NEW PIER 3 STRUCTURE INCLUDING BUT NOT LIMITED TO STEEL PIPE PILES, CONCRETE PILE CAPS AND DECK AND TIMBER DECKING.
5. INSTALL NEW PIER 3 FLOATING DOCKS INCLUDING THE NUMBER OF DOCKS MEANT TO BE REUSED FROM THE EXISTING MARINA, AND CONNECT UTILITIES.
6. DEMOLISH AND REMOVE EXISTING PIER 1 STRUCTURE INCLUDING BUT NOT LIMITED TO TIMBER DECKING, TIMBER PILE CAPS, STEEL GIRDERS AND TIMBER PILES.
7. REMOVE DESIGNATED FLOATING DOCKS. SEE DEMOLITION PLAN FOR SPECIFIC DOCKS TO BE REUSED AT NEW MARINA OR STORED WITH PARKS DEPARTMENT.
8. REMOVE SPECIFIED FLOATING DOCK PILES. SEE DEMOLITION PLAN.
9. TERMINATE EXISTING UTILITIES.
10. INSTALL NEW PIER 1 STRUCTURE AT NEW LOCATION INCLUDING BUT NOT LIMITED TO STEEL PIPE PILES, CONCRETE PILE CAPS AND BEAMS AND TIMBER DECKING.
11. INSTALL NEW PIER 1 FLOATING DOCKS INCLUDING THE NUMBER OF DOCKS MEANT TO BE REUSED FROM THE EXISTING MARINA.
12. INSTALL CONCESSION STRUCTURE AND CONNECT ALL UTILITIES.



A PIER 1 STAGING PLAN
SCALE: 1" = 40'

SCALE IN FEET

NOTES:
1. TOPOGRAPHIC SURVEY PROVIDED BY FARYU AND PERFORMED BY XXXX ON XXXXX.
2. HYDROGRAPHIC SURVEY NOT SHOWN FOR CLARITY.
3. STAGING AREA IS CONCEPTUAL ONLY. STAGING SHALL BE COORDINATED WITH THE OWNER BEFORE MOBILIZATION. GENERAL CONTRACTOR SHALL WORK TO COORDINATE STAGING WITH OTHER CONTRACTORS OR OWNERS OPERATIONS ON SITE.

PROGRESS PRINT
ISSUED FOR REVIEW
OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

MITCHELL J. SILVER, FAICP, HON ASLA
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VESNA HADZIBABIC, PE, SECB, LEED AP BD+C
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SUSAN ROSENSTADT-BRESLER, RA
DEPUTY CHIEF
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NO.	DATE	REVISION

PROJECT MANAGER/DEPUTY DIRECTOR: DARREN A. MANULARDO, P.E.
DISCIPLINE LEAD: DOMINIC V. DeGIACOMI, P.E.
DESIGNER: CHRISTINE M. SMITH, P.E.
DRAFTSPERSON: BEVERLY G. MaROUIZ
CHECKED BY: DOMINIC V. DeGIACOMI, P.E.
CONTRACT NO.: Q099-218M
DATE: 10/08/21

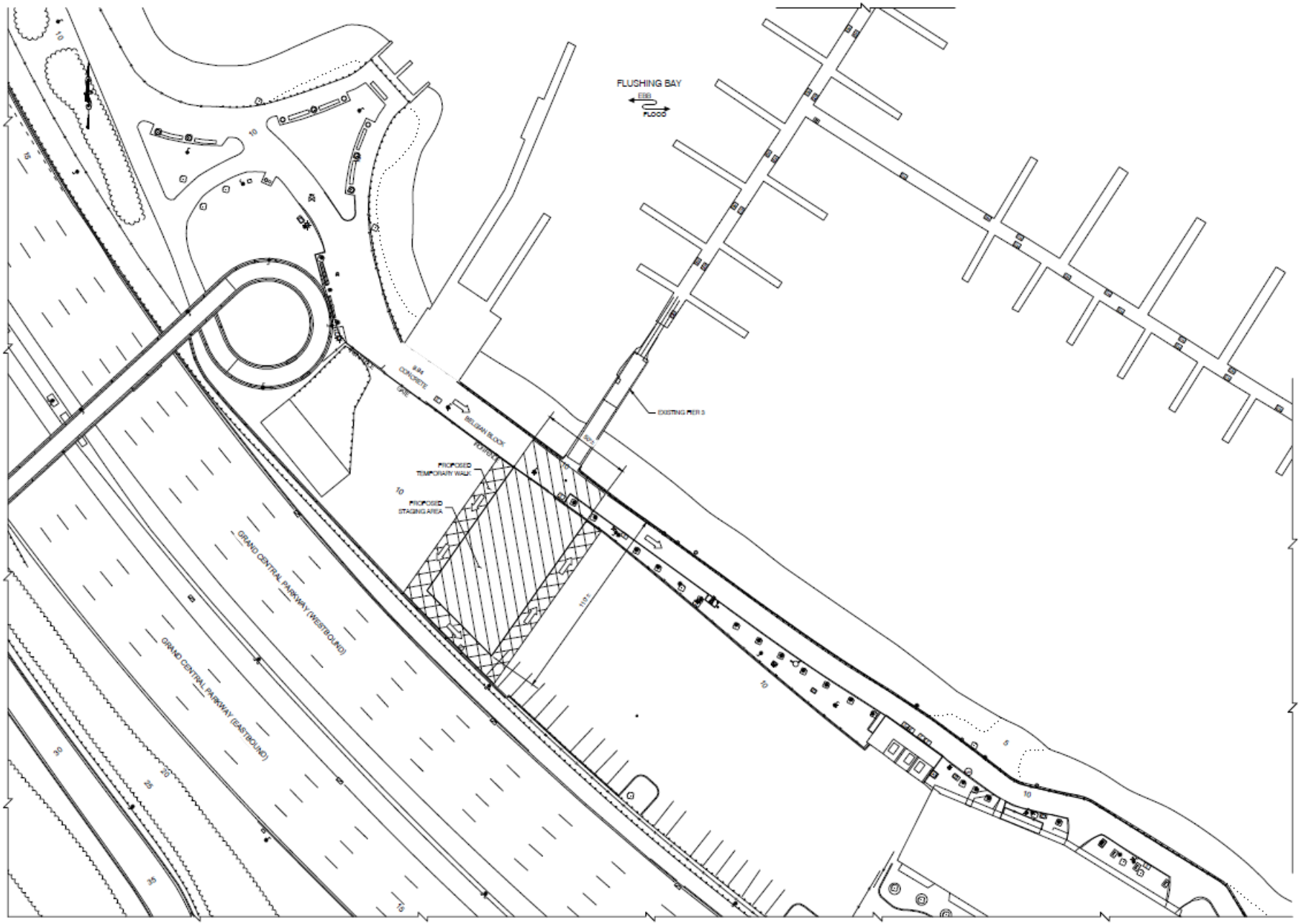
PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: FLUSHING BAY, AT 125-00 NORTHERN BOULEVARD, CORONA, NY 11368
BLOCK: 1789 LOT: 65

RESERVED FOR PLAN EXAMINER'S STAMPS

DRAWING TITLE:
PIER 1 STAGING PLAN

DRAWING NO.: G104.00
SHEETS IN CONTRACT SET:
SHEET 11 OF 79

BSCAN/DOB NOW JOB#



A PIER 3 STAGING PLAN
SCALE: 1" = 20'

SCALE IN FEET

NOTES:
1. TOPOGRAPHIC SURVEY PROVIDED BY FANYU AND PERFORMED BY XXXX ON XXXXX.
2. HYDROGRAPHIC SURVEY NOT SHOWN FOR CLARITY.
3. STAGING AREA IS CONCEPTUAL ONLY. STAGING SHALL BE COORDINATED WITH THE OWNER BEFORE MOBILIZATION. GENERAL CONTRACTOR SHALL WORK TO COORDINATE STAGING WITH OTHER CONTRACTORS OR OWNERS OPERATIONS ON SITE.

PROGRESS PRINT
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OCTOBER 08, 2021

CITY OF NEW YORK
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FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

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DRAWN BY:
CHRISTINE M. SMITH, P.E.
CHECKED BY:
BEVERLY G. MARQUEZ
CHECKED BY:
DOMINIC V. DeSANTIS, P.E.

CONTRACT NO.: Q099-218M
DATE: 10/08/21

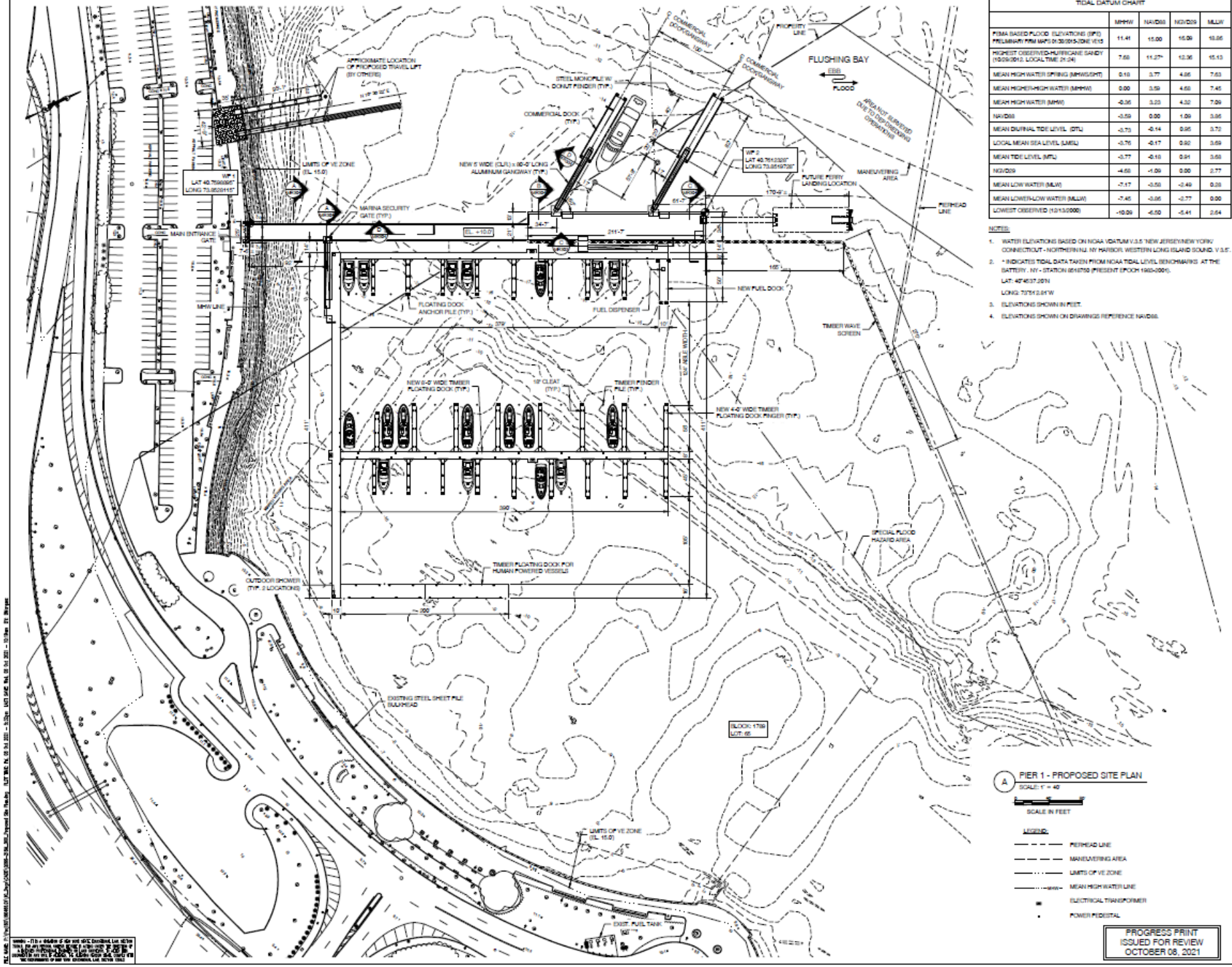
PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: BLOCK: 1789 LOT: 65
FLUSHING BAY, AT 125-00
NORTHERN BOULEVARD,
CORONA, NY 11368

RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
PIER 3 STAGING PLAN

DRAWING NO.: G105.00
SHEETS IN CONTRACT SET:
SHEET 12 OF 79

BSCAN/DOB NOW JOB#



A PIER 1 - PROPOSED SITE PLAN
SCALE: 1" = 40'

SCALE IN FEET

LEGEND:
- PIERHEAD LINE
- MANEUVERING AREA
- LIMITS OF VE ZONE
- MEAN HIGH WATER LINE
- ELECTRICAL TRANSFORMER
- POWER PEDESTAL

TIDAL DATUM CHART				
	MHHW	NAVD88	NGVD29	MLLW
FEMA BASED FLOOD ELEVATIONS (EFE) PRELIMINARY FIRM MAPS 01.30.2015-ZONE VE15	11.41	15.00	15.09	15.86
HIGHEST OBSERVED-HURRICANE SANDY (10/29/2012, LOCAL TIME: 21:24)	7.68	11.27*	12.36	15.13
MEAN HIGHER-HIGH WATER (MHHW)	0.00	3.59	4.68	7.45
MEAN HIGH WATER (MHW)	-0.36	3.23	4.32	7.09
NAVD88	-3.59	0.00	1.09	3.86
MEAN DIURNAL TIDE LEVEL (DTL)	-3.73	-0.14	0.95	3.72
LOCAL MEAN SEA LEVEL (LMSL)	-3.76	-0.17	0.92	3.69
MEAN TIDE LEVEL (MTL)	-3.77	-0.18	0.91	3.68
NGVD29	-4.68	-1.09	0.00	2.77
MEAN LOW WATER (MLW)	-7.17	-3.58	-2.49	0.28
MEAN LOWER-LOW WATER (MLLW)	-7.45	-3.86	-2.77	0.00
LOWEST OBSERVED (12/13/2000)	-10.09	-6.50	-5.41	2.64

NOTES:
1. WATER ELEVATIONS BASED ON NOAA VDATUM V.3.5 'NEW JERSEY/NEW YORK/ CONNECTICUT - NORTHERN NJ, NY HARBOR, WESTERN LONG ISLAND SOUND. V 3.5'.
2. * INDICATES TIDAL DATA TAKEN FROM NOAA TIDAL LEVEL BENCHMARKS AT THE BATTERY , NY - STATION 8518750 (PRESENT EPOCH 1983-2001).
   LAT: 40°42'37.20"N
   LONG: 73°59'3.61"W
3. ELEVATIONS SHOWN IN FEET.
4. ELEVATIONS SHOWN ON DRAWINGS REFERENCE NAVD88.

PROGRESS PRINT
ISSUED FOR REVIEW
OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

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DESIGNER: CHRISTINE M. SMITH, P.E.
DRAFTSMEN: BEVERLY G. MARQUEZ
CHECKED BY: DOMINIC V. DeSANTIS, P.E.
CONTRACT NO.: Q099-218M
DATE: 10/06/21

PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: BLOCK: 1759 LOT: 65
FLUSHING BAY, AT 125-00
NORTHERN BOULEVARD,
CORONA, NY 11368

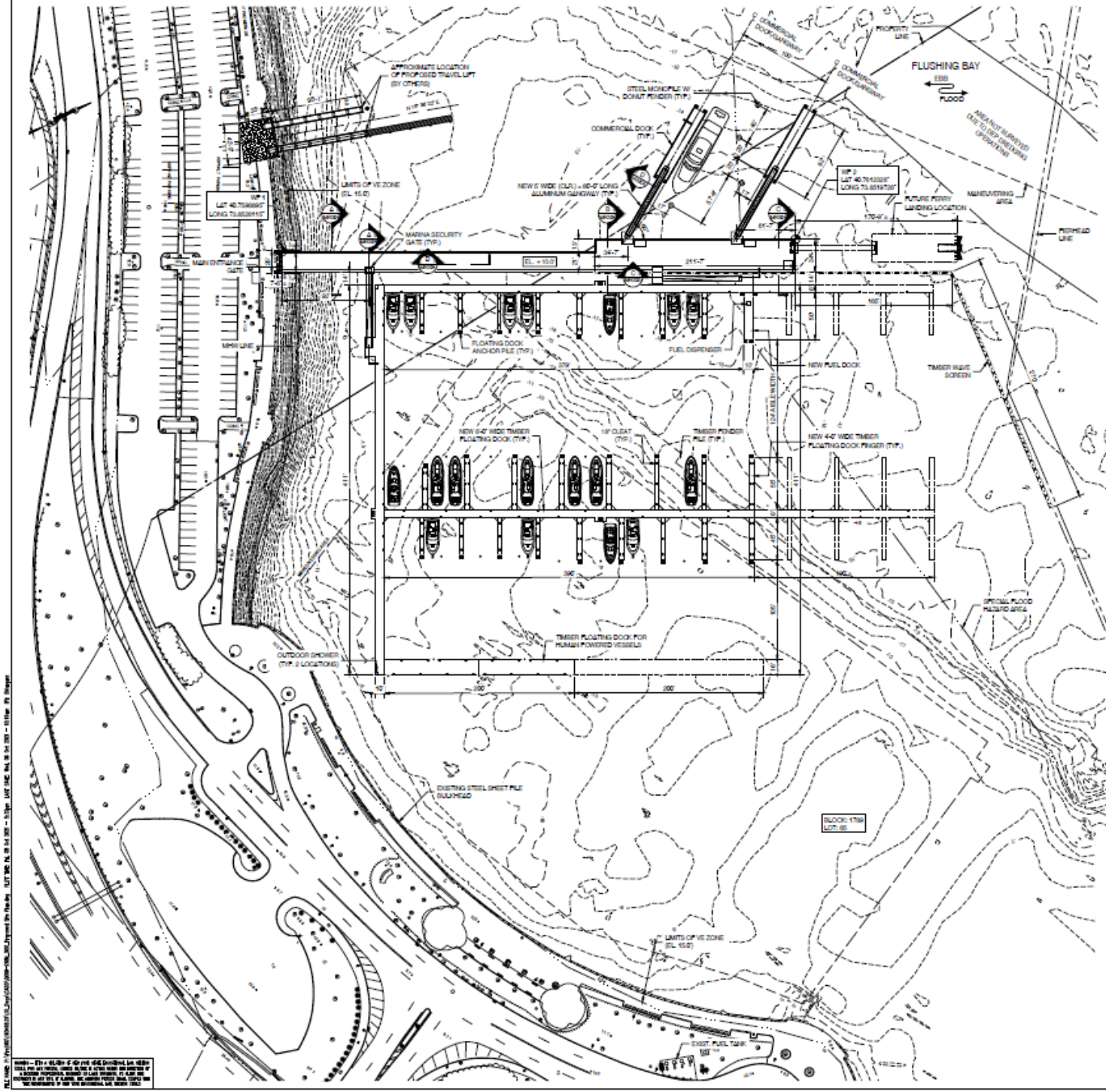
RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
PIER 1 PROPOSED SITE PLAN

DRAWING NO.:
MR201.00

SHEETS IN CONTRACT SET:
SHEET 35 OF 79

BSCAN/DOB NOW JOB#



A PIER 1 - PROPOSED SITE PLAN ADD- ALTERNATES
SCALE: 1" = 40'

SCALE IN FEET

LEGEND:
- PIERHEAD LINE
- MANEUVERING AREA
- LIMITS OF VE ZONE
- MEAN HIGH WATER LINE
- ELECTRICAL TRANSFORMER
- POWER PEDESTAL

TIDAL DATUM CHART				
	MHHW	NAVD88	NGVD29	MLLW
FEMA BASED FLOOD ELEVATIONS (EFE) PRELIMINARY FIRM MAPS 04/30/2014 V-ZONE VE15	11.41	15.00	16.09	13.90
HIGHEST OBSERVED-HURRICANE SANDY (10/29/2012, LOCAL TIME 21:24)	7.68	11.27*	12.36	10.13
MEAN HIGH WATER SPRING (MHWS/SHT)	0.10	3.77	4.86	7.63
MEAN HIGHER-HIGH WATER (MHHW)	0.00	3.59	4.68	7.45
MEAN HIGH WATER (MHW)	-0.30	3.23	4.32	7.09
NAVD88	-3.53	0.00	1.09	3.86
MEAN DIURNAL TIDE LEVEL (DTL)	-3.73	-0.14	0.95	3.73
LOCAL MEAN SEA LEVEL (LMSL)	-3.70	-0.17	0.92	3.69
MEAN TIDE LEVEL (MTL)	-3.77	-0.19	0.91	3.68
NGVD29	-4.68	-1.09	0.00	2.77
MEAN LOW WATER (MLW)	-7.17	-3.58	-2.49	0.28
MEAN LOWER-LOW WATER (MLLW)	-7.45	-3.86	-2.77	0.00
LOWEST OBSERVED (10/13/2000)	-10.09	-6.50	-5.41	2.64

NOTES:
1. WATER ELEVATIONS BASED ON NOAA VDATUM V.3.5 "NEW JERSEY/NEW YORK/ CONNECTICUT - NORTHERN NJ, NY HARBOR, WESTERN LONG ISLAND SOUND, V.3.5".
2. * INDICATES TIDAL DATA TAKEN FROM NOAA TIDAL LEVEL BENCHMARKS AT THE BATTERY , NY - STATION 8518750 (PRESENT EPOCH 1983-2001).
   LAT: 40°42'37.30"N
   LONG: 73°01'2.61"W
3. ELEVATIONS SHOWN IN FEET.
4. ELEVATIONS SHOWN ON DRAWINGS REFERENCE NAVD88.

PROGRESS PRINT
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OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

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DESIGNED: CHRISTINA M. SMITH, P.E.
DRAFTED BY: BEVERLY G. MARQUEZ
APPROVED BY: DOMINIC V. CHIGHETTO, P.E.

CONTRACT NO.: Q099-218M
DATE: 10/08/21

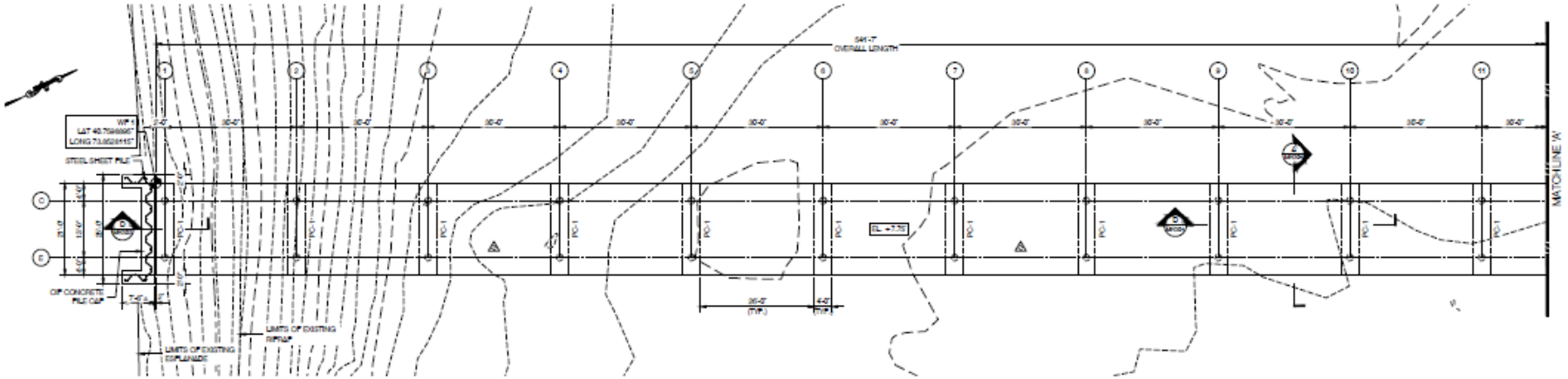
PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION (HURRICANE SANDY)
ADDRESS: BLOCK: 1709 LOT: 65
FLUSHING BAY, AT 125-00 NORTHERN BOULEVARD, CORONA, NY 11368

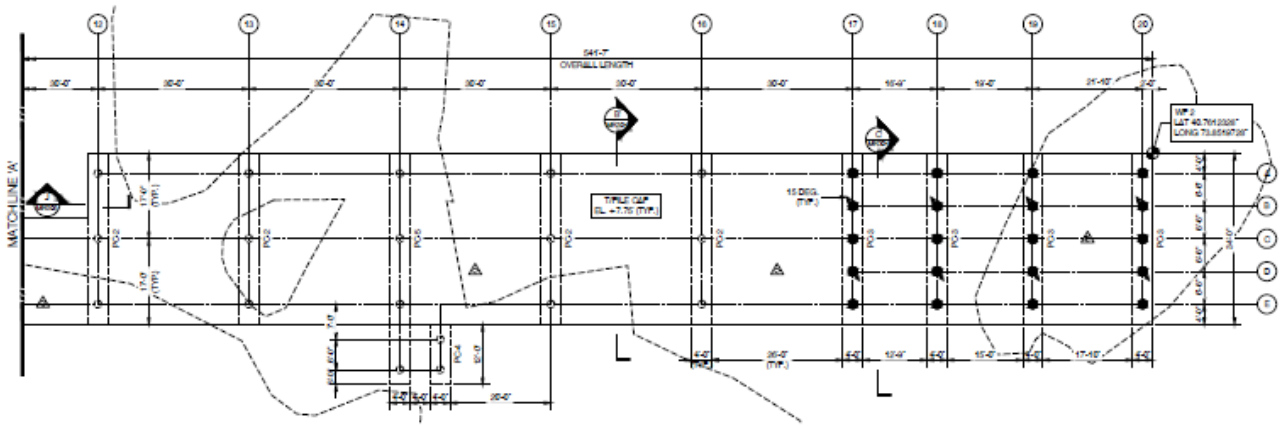
RESERVED FOR PLAN EXAMINER'S STAMPS

DRAWING TITLE:
PIER 1 ADD-ALTERNATES

DRAWING NO.: MR202.00
SHEETS IN CONTRACT SET:
SHEET 24 OF 79

BSCAN/DOB NOW JOB#





A PIER 1 PILE & PILE CAP PLAN
SCALE: 1" = 10'
SCALE IN FEET

NOTES:
1. TOP OF PILE CAP ELEVATION SHOWN ON PLAN.
2. ALL ELEVATIONS SHOWN REFERENCE NAVD 88.
3. INDICATOR PILE LOCATIONS SHOWN SCHEMATICALLY. CONTRACTOR SHALL SUBMIT INDICATOR PILE PLAN FOR REVIEW AND APPROVAL.
4. TIMBER PILES NOT SHOWN FOR CLARITY.

LEGEND:
- 16"Ø ×.375" THK. CONCRETE FILLED (F'_{ck}=5,000 PSI) STEEL PIPE PILE
- 20"Ø ×.375" THK. CONCRETE FILLED (F'_{ck}=5,000 PSI) STEEL PIPE PILE
- 20"Ø ×.375" THK. CONCRETE FILLED BATTER PILES
- PROPOSED INDICATOR PILE (PDA LOAD TEST LOCATION)
- EL. X.XX' — TOP OF PILE CAP ELEVATION (NAVD 88)
- PC-1 — PILE CAP DESIGNATION
- (XX) — BENT NUMBER
- WP-1 — WORK POINT LOCATION AND NUMBER

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OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

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CONSULTANTS:
McLaren Engineering Group
Lakhani & Jordan Engineers, P.C.

NO.	DATE	REVISION

PROJECT MANAGER/ASSIST. DIRECTOR: STEPHEN J. RAMSUNDAR, P.E.
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DESIGNER: CHRISTINA M. SMITH, P.E.
DRAFTED BY: BEVERLY G. MARQUEZ
CHECKED BY: DOMINIC V. DeSANTIS, P.E.
CONTRACT NO.: Q099-218M
DATE: 10/08/21

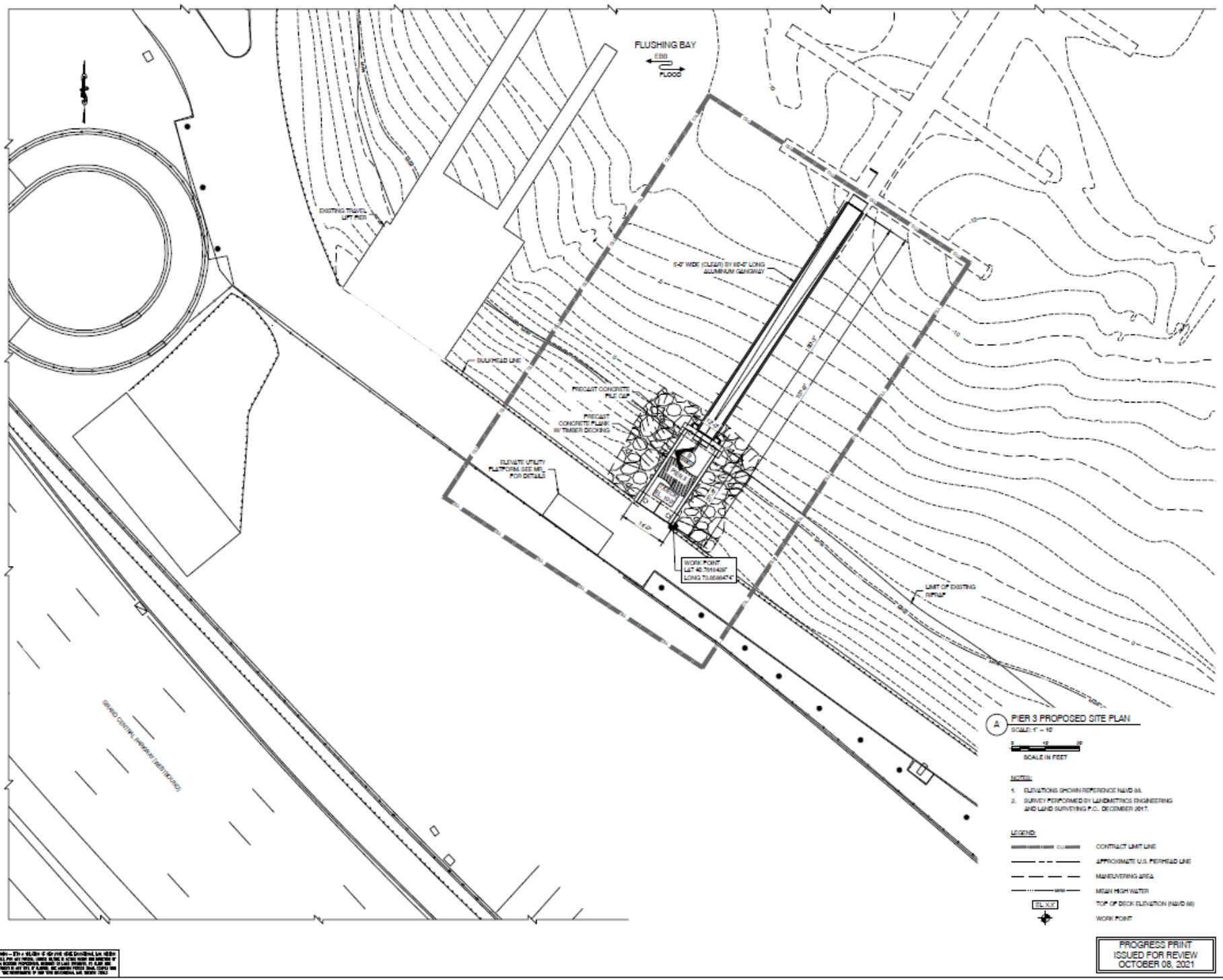
PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: FLUSHING BAY, AT 125-00 NORTHERN BOULEVARD, CORONA, NY 11368
BLOCK: 1709 LOT: 65

RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
PIER 1 PILE & PILE CAP PLAN

DRAWING NO.: MR203.00
SHEETS IN CONTRACT SET:
SHEET 32 OF 79

BSCAN/DOB NOW JOB#



A PIER 3 PROPOSED SITE PLAN
SCALE: 1" = 10'
SCALE IN FEET

NOTES:
1. ELEVATIONS SHOWN REFERENCE NAVD 88.
2. SURVEY PERFORMED BY LANDMETRICS ENGINEERING AND LAND SURVEYING P.C., DECEMBER 2017.

LEGEND:
- CONTRACT LIMIT LINE
- APPROXIMATE U.S. PIERHEAD LINE
- MANEUVERING AREA
- MEAN HIGH WATER
- EL XX' — TOP OF DECK ELEVATION (NAVD 88)
- WORK POINT

PROGRESS PRINT
ISSUED FOR REVIEW
OCTOBER 08, 2021

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PARKS & RECREATION
CORETECH CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

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NO.	DATE	REVISION

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DESIGNED:
CHRISTOPHER M. SMITH, P.E.
CHECKED BY:
BEVERLY G. MARCIALIS
DRAWN BY:
DOMINIC V. DeSANTIS, P.E.

CONTRACT NO.: Q099-218M
DATE: 10/08/21

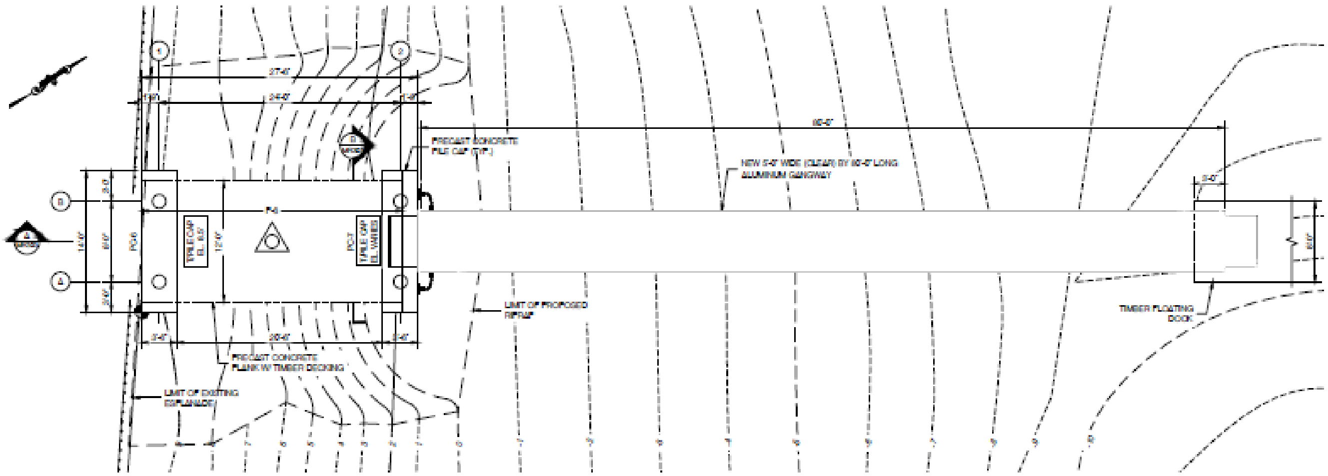
PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLDS FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: FLUSHING BAY, AT 125-00 NORTHERN BOULEVARD, CORONA, NY 11368
BLOCK: 1709 LOT: 65

RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
PIER 3 PROPOSED SITE PLAN

DRAWING NO.: MR206.00
SHEETS IN CONTRACT SET:
SHEET 30 OF 79

BISCAN/DOB NOW JOB#



A PIER 3 - PROPOSED PILE & PILE CAP PLAN

SCALE: 1" = 5'

0 5' 10'

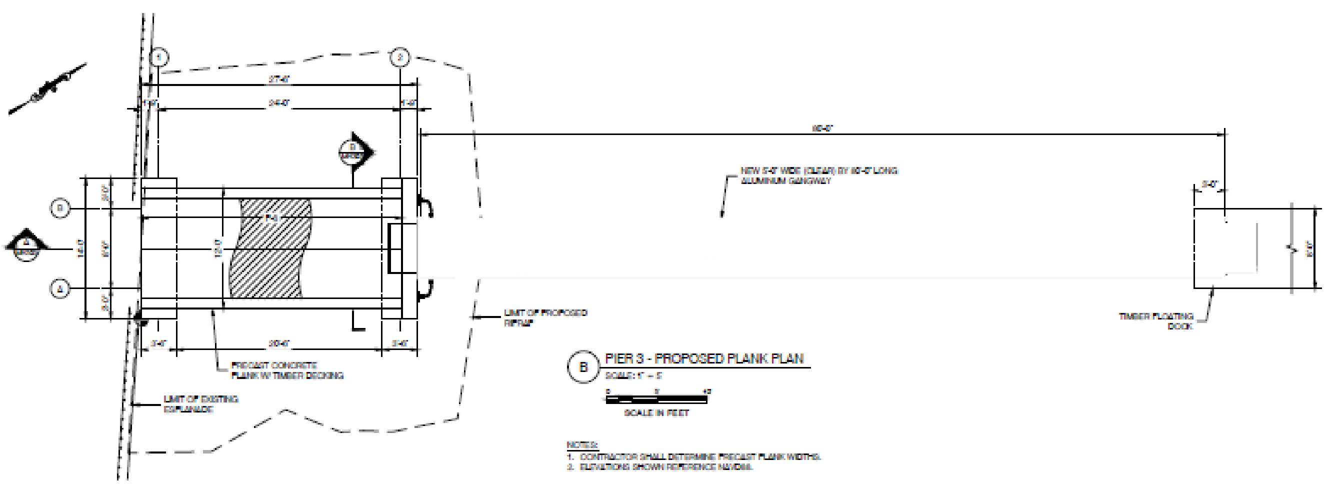
SCALE IN FEET

NOTES:

1. TOP OF PILE ELEVATION SHALL BE 2'-6" BELOW TOP OF PILE CAP ELEVATION.
2. ALL ELEVATIONS SHOWN REFERENCE NAVD 88.
3. INDICATOR PILE LOCATIONS SHOWN SCHEMATICALLY. CONTRACTOR SHALL SUBMIT INDICATOR PILE PLAN FOR REVIEW AND APPROVAL.

LEGEND:

- 16"Ø x .5" THK. CONCRETE FILLED (F'c=5,000 PSI) STEEL PIPE PILE
- PROPOSED INDICATOR PILE (PDA LOAD TEST LOCATION)
- EL. X-XX" — TOP OF PILE CAP ELEVATION (NAVD 88)
- PC-1 — PILE CAP DESIGNATION
- (XX) — BENT AND PILE IDENTIFICATION
- WORK POINT



B PIER 3 - PROPOSED PLANK PLAN

SCALE: 1" = 5'

0 5' 10'

SCALE IN FEET

NOTES:

1. CONTRACTOR SHALL DETERMINE PRECAST PLANK WIDTHS.
2. ELEVATIONS SHOWN REFERENCE NAVD88.

LEGEND:

- EL. X-XX" — TOP OF PLATFORM ELEVATION (NAVD88)
- P-1 — PLANK DESIGNATION
- (XX) — BENT AND PILE IDENTIFICATION
- WORK POINT AT INSHORE FACE OF PLATFORM

PROGRESS PRINT
ISSUED FOR REVIEW
OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

MITCHELL J. SILVER, FAICP, HON ASLA
COMMISSIONER

THÉRÈSE BRADDICK,
DEPUTY COMMISSIONER, CAPITAL PROJECTS

ARCHITECTURE AND ENGINEERING

VESNA HADZIBABIC, PE, SECB, LEED AP BD+C
ASSISTANT COMMISSIONER

SUSAN ROSENSTADT-BRESLER, RA
DEPUTY CHIEF

LANDSCAPE ARCHITECTURE

VINCENT CIRRITO, RLA
ASSISTANT COMMISSIONER

NANCY PRINCE, RLA, ASLA
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MEREDITH GRIFFIN
CHIEF OF LANDSCAPE PROGRAM MANAGEMENT

CONSULTANTS:

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M.G. McLaren Engineering and Land Surveying P.C.

Lakhani & Jordan Engineers, P.C.

NO.	DATE	REVISION

PROJECT MANAGER/DEPUTY DIRECTOR: STEPHEN A. PISMULARO, P.E.

DISCIPLINE LEAD: DOMINIC V. DeSANTIS, P.E.

DESIGNER: CHRISTINE M. SMITH, P.E.

DRAFTED BY: BEVERLY G. MARQUEZ

CHECKED BY: DOMINIC V. DeSANTIS, P.E.

CONTRACT NO.: Q099-218M

DATE: 10/08/21

PROJECT TITLE:

FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)

ADDRESS: BLOCK: 1789 LOT: 65

FLUSHING BAY, AT 125-00 NORTHERN BOULEVARD, CORONA, NY 11368

RESERVED FOR PLAN EXAMINER'S STAMPS

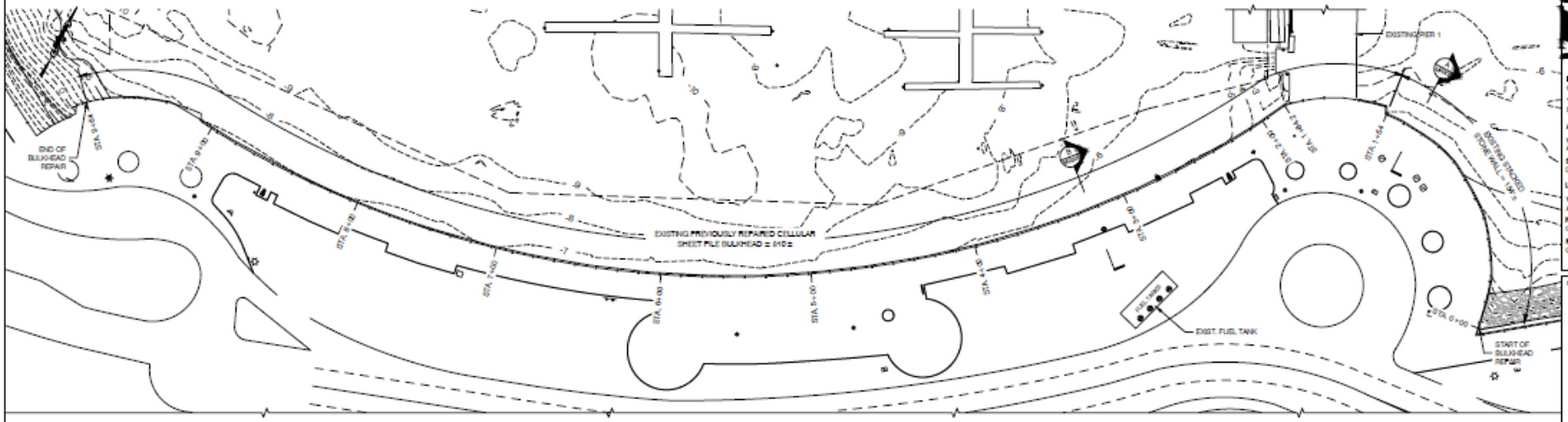
DRAWING TITLE:

PIER 3 PROPOSED PILE AND PILE CAP PLAN, AND PLANK PLAN

DRAWING NO.: MR207.00

SHEETS IN CONTRACT SET:

BSCAN/DOB NOW JOB#



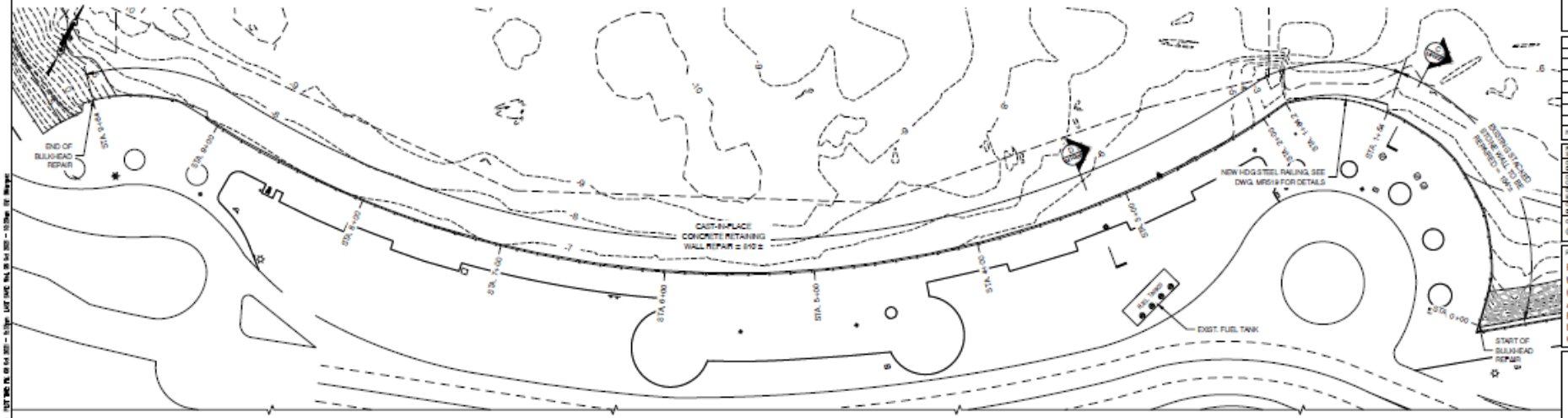
A EXISTING BULKHEAD PART PLAN

SCALE: 1" = 25'

SCALE IN FEET

NOTE:

1. FLOATING DOCKS NOT SHOWN FOR CLARITY.



B BULKHEAD REPAIR PLAN

SCALE: 1" = 25'

SCALE IN FEET

NOTE:

1. FLOATING DOCKS NOT SHOWN FOR CLARITY.

KEY PLAN

NOT TO SCALE

PROGRESS PRINT
ISSUED FOR REVIEW
OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION

CLARETA DEVEAUX
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

MITCHELL J. SILVER, FAICP, HON ASLA
COMMISSIONER

THÉRÈSE BRADDOCK,
DEPUTY COMMISSIONER, CAPITAL PROJECTS

ARCHITECTURE AND ENGINEERING

VESNA HADZIBABIC, PE, SECB, LEED AP BD+C
ASSISTANT COMMISSIONER

SUSAN ROSENSTADT-BRESLER, RA
DEPUTY CHIEF

LANDSCAPE ARCHITECTURE

VINCENT CIRRITO, RLA
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CHIEF OF LANDSCAPE ARCHITECTURE

MEREDITH GRIFFIN
CHIEF OF LANDSCAPE PROGRAM MANAGEMENT

CONSULTANTS:

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Applied Ingenuity
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630 Crawford Ridge Road, Woodcliff Lake, NJ 07677
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Lakhani & Jordan Engineers, P.C.
310 Madison Avenue, 10th floor
New York, N.Y. 10017

NO.	DATE	REVISION

PROJECT MANAGER/DEPUTY DIRECTOR:
STEPHEN J. RAMELLO, P.E.
DISCIPLINE LEAD:
DOMINIC V. DeGIROLAMO, P.E.
DESIGNER:
CHRISTOPHER M. SMITH, P.E.
DRAFTED BY:
BEVERLY G. MARQUEZ
CHECKED BY:
DOMINIC V. DeGIROLAMO, P.E.

CONTRACT NO.: Q099-218M
DATE: 10/08/21

PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)

ADDRESS: BLOCK: 1709 LOT: 65
FLUSHING BAY, AT 125-00
NORTHERN BOULEVARD,
CORONA, NY 11368

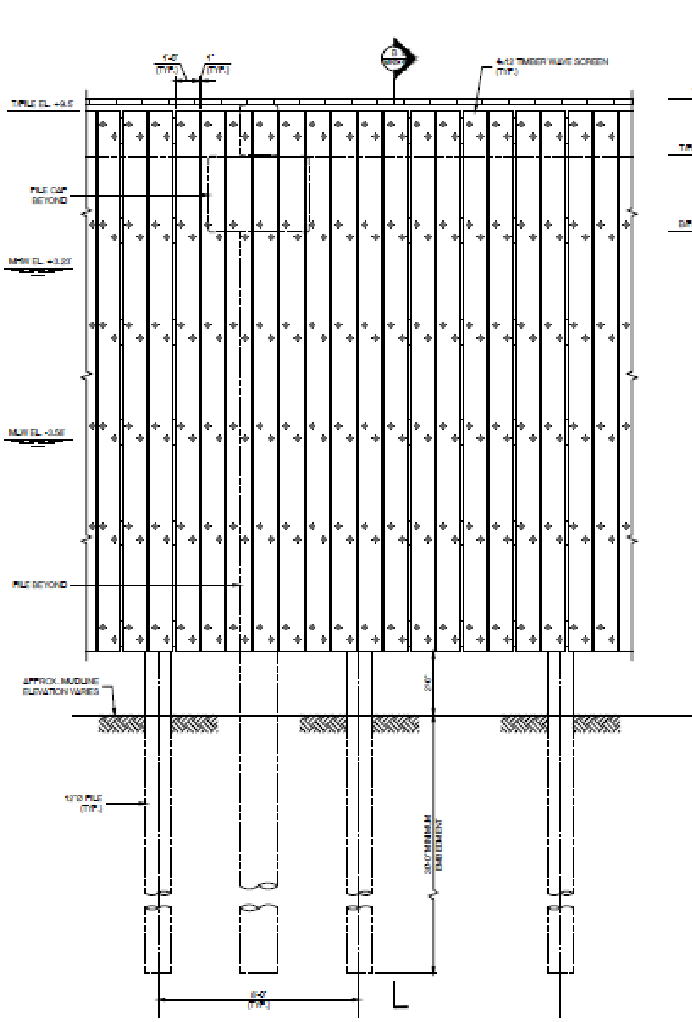
RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
BULKHEAD AND ESPLANADE
REPAIR PLAN

DRAWING NO.:
MR208.00

SHEETS IN CONTRACT SET:
SHEET 27 OF 79

BSCAN/DOB NOW JOB#

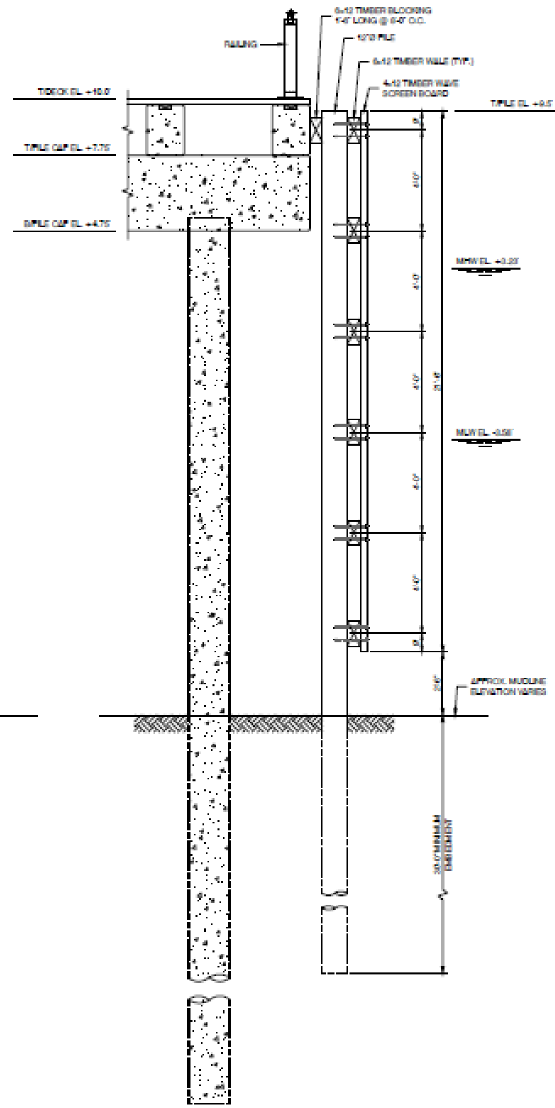


A WAVE SCREEN TYPE 1 ELEVATION

SCALE: 1/2" = 1'-0"

SCALE IN FEET

NOTES:
1. ELEVATIONS REFERENCE NAVD88.
2. CURB AND RAILING NOT SHOWN FOR CLARITY.

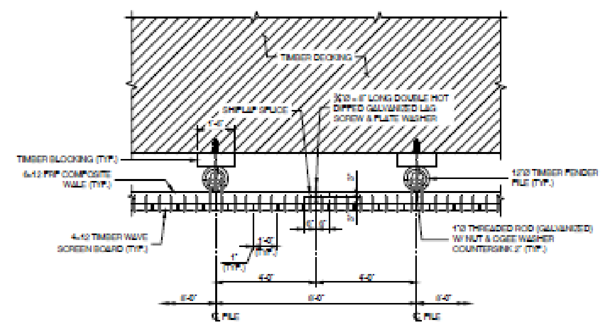


B WAVE SCREEN TYPE 1 SECTION

SCALE: 1/2" = 1'-0"

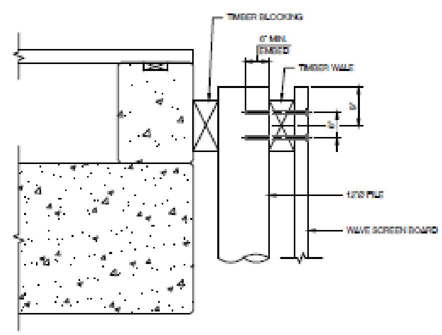
SCALE IN FEET

NOTES:
1. ELEVATIONS REFERENCE NAVD88.



C WAVE SCREEN TYPE 1 PLAN

SCALE: 1/2" = 1'-0"



D TYPICAL WAVE SCREEN CONNECTION DETAIL

SCALE: 1" = 1'-0"

SCALE IN FEET

PROGRESS PRINT
ISSUED FOR REVIEW
OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
OLMSTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

MITCHELL J. SILVER, FAICP, HON ASLA
COMMISSIONER

THÉRÈSE BRADDICK,
DEPUTY COMMISSIONER, CAPITAL PROJECTS

ARCHITECTURE AND ENGINEERING

VESNA HADZIBABIC, PE, SECB, LEED AP BD+C
ASSISTANT COMMISSIONER

SUSAN ROSENSTADT-BRESLER, RA
DEPUTY CHIEF

LANDSCAPE ARCHITECTURE

VINCENT CIRRITO, RLA
ASSISTANT COMMISSIONER

NANCY PRINCE, RLA, ASLA
CHIEF OF LANDSCAPE ARCHITECTURE

MEREDITH GRIFFIN
CHIEF OF LANDSCAPE PROGRAM MANAGEMENT

CONSULTANTS:

McLaren Engineering Group
M. G. McLaren Engineering and Land Surveying P.C.

Lakhani & Jordan Engineers, P.C.

NO.	DATE	REVISION

CONTRACT NO.: Q099-218M
DATE: 10/08/21

PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: BLOCK: 1789 LOT: 65
FLUSHING BAY, AT 125-00
NORTHERN BOULEVARD,
CORONA, NY 11368

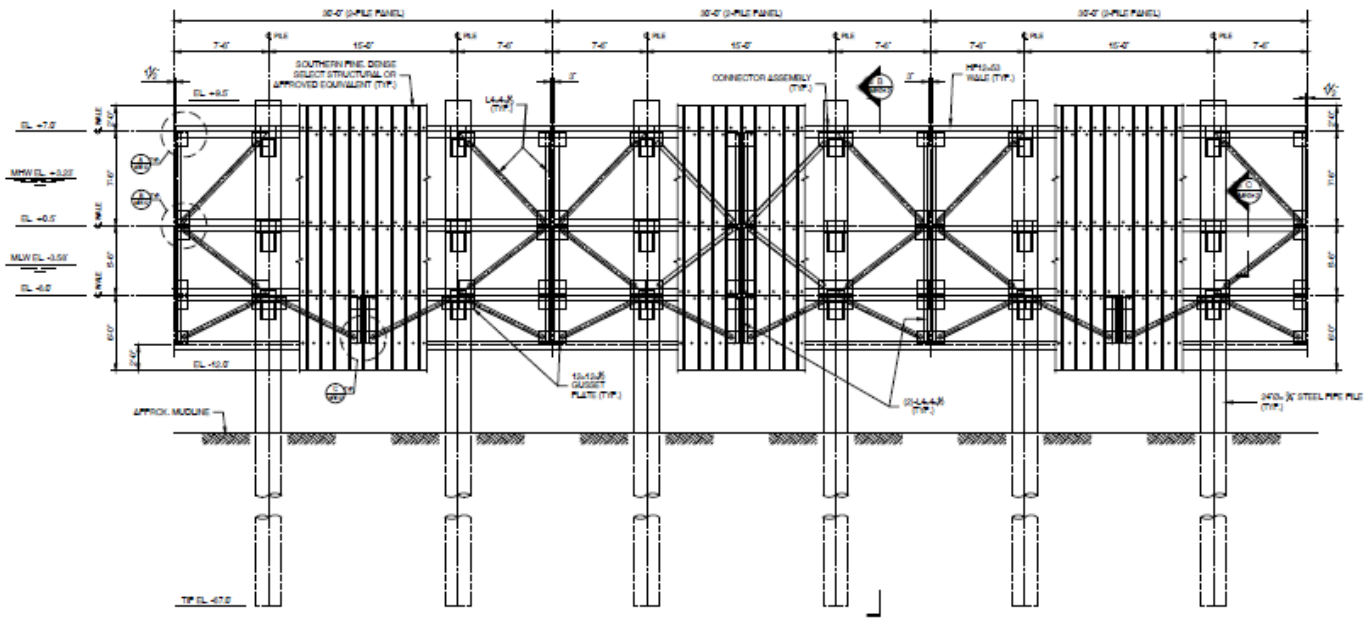
RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
WAVE SCREEN TYPE 1 DETAILS

DRAWING NO.:
MR511.00

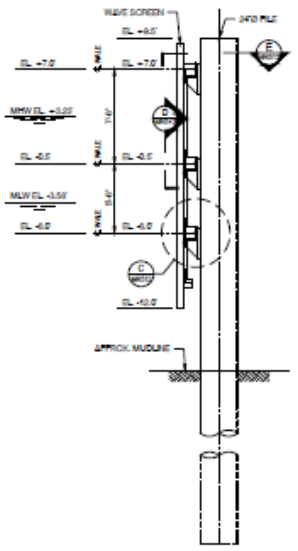
SHEETS IN CONTRACT SET:

BSCAN/DOB NOW JOB#

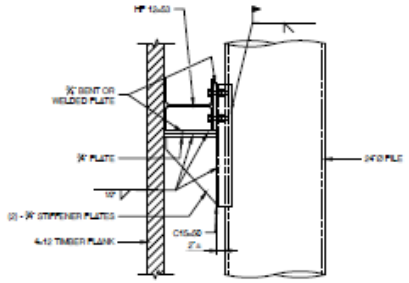


A WAVE SCREEN TYPE 2 ELEVATION
SCALE: 1/4" = 1'-0"
SCALE IN FEET

NOTE:
1. ALL NEW STEEL FRAMING AND MOUNTING PLATES TO BE HOT-DIP GALVANIZED AND COATED.

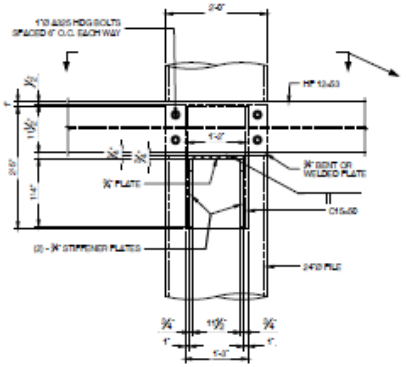


B SECTION
SCALE: 1/4" = 1'-0"
SCALE IN FEET



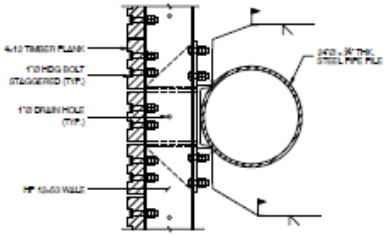
C BOLTED CONNECTION SIDE ELEVATION
SCALE: 1" = 1'-0"
SCALE IN FEET

NOTES:
1. ¾"x9" PLATE WASHERS AT ALL BOLTED CONNECTION.
2. DOUBLE NUT ALL BOLTED CONNECTIONS.



D BOLTED CONNECTION FRONT ELEVATION
SCALE: 1" = 1'-0"
SCALE IN FEET

NOTE:
1. NOTE: TIMBER BOARDS NOT SHOWN FOR CLARITY.



E SECTION
SCALE: 1" = 1'-0"
SCALE IN FEET

PROGRESS PRINT
ISSUED FOR REVIEW
OCTOBER 08, 2021

CITY OF NEW YORK
PARKS & RECREATION
CLOISTED CENTER
FLUSHING MEADOWS CORONA PARK
FLUSHING, NEW YORK 11368

MITCHELL J. SILVER, FAICP, HON ASLA
COMMISSIONER
THÉRÈSE BRADDICK,
DEPUTY COMMISSIONER, CAPITAL PROJECTS
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NO.	DATE	REVISION

PROJECT MANAGER/FACILITY DIRECTOR:
STEPHEN J. PANELLARO, P.E.
DISCIPLINE LEAD:
DOMINIC V. DeGIANTIS, P.E.
DESIGNED:
CHRISTIAN M. SMITH, P.E.
DRAFTED BY:
BEVERLY G. MARQUEZ
CHECKED BY:
DOMINIC V. DeGIANTIS, P.E.

CONTRACT NO.: Q099-218M
DATE: 10/08/21

PROJECT TITLE:
FLUSHING MEADOWS CORONA PARK
WORLD'S FAIR MARINA RECONSTRUCTION
(HURRICANE SANDY)
ADDRESS: FLUSHING BAY, AT 125-00 NORTHERN BOULEVARD, CORONA, NY 11368
BLOCK: 1709 LOT: 65

RESERVED FOR
PLAN EXAMINER'S
STAMPS

DRAWING TITLE:
WAVE SCREEN TYPE 2 DETAILS

DRAWING NO.: MR512.00
SHEETS IN CONTRACT SET:
SHEET 17 OF 79

BSCAN/DOB NOW JOB#

Summary Table for Project's Consistency with Coastal Policies of New York State

Policy 1

Restore, revitalize, and redevelop deteriorated and underutilized waterfront areas for commercial, industrial, cultural, recreational, and other compatible uses.

Consistent. The proposed project will demolish and reconstruct Piers 1 and 3 of the World's Fair Marina, along with repairs to the bulkhead and esplanade along the shoreline, which will provide resiliency to a marina that is used by boaters and other members of the general public.

Policy 2

Facilitate the siting of water-dependent uses and facilities on or adjacent to coastal waters.

Consistent. Reconstructing the marina with improved resiliency will facilitate safer use of the facilities.

Policy 3

Further develop the state's major ports of Albany, Buffalo, New York, Ogdensburg, and Oswego as centers of commerce and industry, and encourage the siting, in these port areas, including those under the jurisdiction of state public authorities, of land use and development which is essential to, or in support of, the waterborne transportation of cargo and people.

N/A. The World's Fair Marina is not adjacent to the abovementioned port areas and the proposed project does not entail work that would alter a major port or waterway.

Policy 4

Strengthen the economic base of smaller harbor areas by encouraging the development and enhancement of those traditional uses and activities which have provided such areas with their unique maritime identity.

N/A. The proposed reconstruction of the World's Fair Marina will not impact harbor areas positively or negatively.

Policy 5

Encourage the location of development in areas where public services and facilities essential to such development are adequate.

Consistent. The proposed reconstruction of the World's Fair Marina will not put a strain on the public services or utilities in the area, as the reconstructed piers will serve the same capacity as existing.

Policy 6

Expedite permit procedures in order to facilitate the siting of development activities at suitable locations.

Consistent. FEMA provides a 60-day consistency determination review period to the NYSDOS Coastal Management Program before processing the federal disaster relief grant specifically for declaration of NY-4085.

Policy 7

Significant coastal fish and wildlife habitats (SCFWH) will be protected, preserved, and where practical, restored so as to maintain their viability as habitats.

Consistent. Sub-recipient will follow Best Management Practices (BMPs) to minimize the potential impacts to SCFWH. Additionally, FEMA will consult with NOAA under Section 7 of the Endangered Species Act and the Magnuson-Stevens Act (Essential Fish Habitat) to determine the potential for effects to species and habitat and assess the viability of BMPs.

Policy 8

Protect fish and wildlife resources in the coastal area from the introduction of hazardous wastes and other pollutants which bio-accumulate in the food chain or which cause significant sub lethal or lethal effect on those resources.

N/A. The proposed project does not entail introduction of hazardous wastes or other pollutants that bio-accumulate in the food chain.

Policy 9

Expand recreational use of fish and wildlife resources in coastal areas by increasing access to existing resources, supplementing existing stocks, and developing new resources.

N/A. The proposed project has no anticipated effects on access to, supplementation of, or development of new resources.

Policy 10

Further develop commercial finfish, shellfish, and crustacean resources in the coastal area by encouraging the construction of new, or improvement of existing on-shore commercial fishing facilities, increasing marketing of the state's seafood, maintaining adequate stocks, and expanding aquaculture facilities.

N/A. Policy is not the proposed project's purpose.

Policy 11

Buildings and other structures will be sited in the coastal area so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.

Consistent. Facilities will be constructed using Best Management Practices and in accordance with NYC Building Code to prevent significant adverse impacts to floodplains.

Policy 12

Activities or development in the coastal area will be undertaken so as to minimize damage to natural resources and property from flooding and erosion by protecting natural protective features including beaches, dunes, barrier islands and bluffs.

N/A. Proposed work will include BMPs to limit damage to natural resources during construction, the new piers will include features such as wave screens to prevent future damages, and there are no natural protective features in the project area.

Policy 13

The construction or reconstruction of erosion protection structures shall be undertaken only if they have a reasonable probability of controlling erosion for at least thirty years as demonstrated in design and construction standards and/or assured maintenance or replacement programs.

N/A. Policy is not the proposed project's purpose.

Policy 14

Activities and development, including the construction or reconstruction of erosion protection structures, shall be undertaken so that there will be no measurable increase in erosion or flooding at the site of such activities or development, or at other locations.

Consistent. The proposed project will be constructed with Best Management Practices in place. All appropriate permits will be acquired, and work will be conducted in accordance with all federal, state, and local laws.

Policy 15

Mining, excavation or dredging in coastal waters shall not significantly interfere with the natural coastal processes which supply beach materials to land adjacent to such waters and shall be undertaken in a manner which will not cause an increase in erosion of such land.

N/A. Proposed project does not include mining, excavation, or dredging.

Policy 16

Public funds shall only be used for erosion protective structures where necessary to protect human life, and new development which requires a location within or adjacent to an erosion hazard area to be able to function, or existing development; and only where the public benefits outweigh the long term monetary and other costs including the potential for increasing erosion and adverse effects on natural protective features.

N/A. Policy is not the proposed project's purpose.

Policy 17

Non-structural measures to minimize damage to natural resources and property from flooding and erosion shall be used whenever possible.

N/A. Project is to reconstruct existing NYC DPR marina facilities.

Policy 18

To safeguard the vital economic, social and environmental interests of the state and of its citizens, proposed major actions in the coastal area must give full consideration to those interests, and to the safeguards which the state has established to protect valuable coastal resource areas.

Consistent. The proposed project will protect the economic and social interests of the state and its citizens because work will be done in compliance with environmental and historical preservation laws generated to protect said interests. All appropriate permits will be acquired, and work will be conducted in accordance with all federal, state, and local laws.

Policy 19

Protect, maintain, and increase the level and types of access to public water-related recreation resources and facilities.

Consistent. Project would maintain existing level of controlled public access to the marina and would not hinder existing recreational uses.

Policy 20

Access to the publicly-owned foreshore and to lands immediately adjacent to the foreshore or the water's edge that are publicly-owned shall be provided and it shall be provided in a manner compatible with adjoining uses.

Consistent. Project would maintain existing level of public access within NYC Parks property and would not hinder existing recreational uses.

Policy 21

Water-dependent and water-enhanced recreation will be encouraged and facilitated and will be given priority over non-water-related uses along the coast.

Consistent. Project would support existing water-dependent uses of the marina and construct new resilient structures.

Policy 22

Development, when located adjacent to the shore, will provide for water-related recreation, whenever such use is compatible with reasonably anticipated demand for such activities, and is compatible with the primary purpose of the development.

Consistent. Project would allow for continued recreational use of marina and would be consistent with existing adjacent uses.

Policy 23

Protect, enhance and restore structures, districts, areas or sites that are of significance in the history, architecture, archaeology or culture of the state, its communities, or the nation.

Consistent. FEMA, in accordance with Section 106 of the National Historic Preservation Act, consulted with the New York State Historic Preservation Officer on July 29, 2021 to determine the potential to affect Historic Properties. FEMA determined and SHPO concurred on August 9, 2021 that the Undertaking will result No Adverse Effect to Historic Properties.

Policy 24

Prevent impairment of scenic resources of statewide significance.

Consistent. The proposed project will not impact known scenic resources of statewide significance.

Policy 25

Protect, restore or enhance natural and man-made resources which are not identified as being of statewide significance, but which contribute to the overall scenic quality of the coastal area.

N/A. Policy is not the proposed project's purpose.

Policy 26

Conserve and protect agricultural lands in the state's coastal area.

N/A. Proposed activities will take place on previously developed land not suitable for agricultural use.

Policy 27

Decisions on the siting and construction of major energy facilities in the coastal area will be based on public energy needs, compatibility of such facilities with the environment, and the facility's need for a shorefront location.

N/A. Policy is not the project's purpose because it does not involve siting and construction of energy facilities.

Policy 28

Ice management practices shall not interfere with the production of hydroelectric power, damage significant fish and wildlife and their habitats, or increase shoreline erosion or flooding.

N/A. The proposed project does not entail or is not influenced by ice management practices.

Policy 29

Encourage the development of energy resources on the outer continental shelf, in Lake Erie and in other water bodies, and ensure the environmental safety of such activities.

N/A. Policy is not the project's purpose as project activities will not include development of energy resources.

Policy 30

Municipal, industrial, and commercial discharge of pollutants, including but not limited to, toxic and hazardous substances, into coastal waters will conform to state and national water quality standards.

N/A. The proposed project does not involve the discharge of municipal, industrial, or commercial discharge of pollutants into coastal waters.

Policy 31

State coastal area policies and management objectives of approved local waterfront revitalization programs will be considered while reviewing coastal water classifications and while modifying water quality standards; however, those waters already overburdened with contaminants will be recognized as being a development constraint.

N/A. Policy is not the project's purpose since project does not involve review of or modification to the state's adopted coastal water classifications or water quality standards.

Policy 32

Encourage the use of alternative or innovative sanitary waste systems in small communities where the costs of conventional facilities are unreasonably high, given the size of the existing tax base of these communities.

N/A. Policy is not this proposal's purpose, as it does not involve evaluation of sanitary waste systems.

Policy 33

Best management practices will be used to ensure the control of stormwater runoff and combined sewer overflows draining into coastal waters.

Consistent. Industry standard BMPs will be employed while conducting all work and staging activities. Sub-recipient is required to obtain the NY State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity if the construction project disturbs more than 5,000 square feet to one acre of land.

Policy 34

Discharge of waste materials into coastal waters from vessels subject to state jurisdiction will be limited so as to protect significant fish and wildlife habitats, recreational areas and water supply areas.

N/A. Policy is not the project's purpose; the project will have no impact on vessel discharges.

Policy 35

Dredging and filling in coastal waters and disposal of dredged material will be undertaken in a manner that meets existing State permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.

Consistent. BMPs would be used during construction activities and construction and demolition (C&D) debris would be disposed offsite at an upland licensed facility.

Policy 36

Activities related to the shipment and storage of petroleum and other hazardous materials will be conducted in a manner that will prevent or at least minimize spills into coastal waters; all practicable efforts will be undertaken to expedite the cleanup of such discharges; and restitution for damages will be required when these spills occur.

Consistent. Project would adhere to safety protocols and procedures developed by the marina.

Policy 37

Best management practices will be utilized to minimize the non-point discharge of excess nutrients, organics and eroded soils into coastal waters.

Not applicable. Project would not involve discharge of nutrients, organics, or eroded soils.

Policy 38

The quality and quantity of surface water and groundwater supplies will be conserved and protected, particularly where such waters constitute the primary or sole source of water supply.

Consistent. Proposed activities have no anticipated effects on the quality or quantity of groundwater supplies.

Policy 39

The transport, storage, treatment and disposal of solid wastes, particularly hazardous wastes, within coastal areas will be conducted in such a manner so as to protect groundwater and surface water supplies, significant fish and wildlife habitats, recreation areas, important agricultural land, and scenic resources.

Consistent. Contractors will use BMPs listed in federal/NYSDEC permits for transport, storage, treatment and disposal of all C&D, hazardous waste, etc. during construction activities. There are no probable adverse impacts on fish and wildlife resources, groundwater supply, recreation areas, scenic resources, or agricultural land.

Policy 40

Effluent discharged from major steam electric generating and industrial facilities into coastal waters will not be unduly injurious to fish and wildlife and shall conform to state water quality standards.

N/A. The proposed project does not entail effluent from a steam electric generating or industrial facility.

Policy 41

Land use or development in the coastal area will not cause national or state air quality standards to be violated.

Consistent. There is no evidence to show that the project or construction activities will violate state or national air quality standards. The subrecipient is required to remove, transport, and dispose of any hazardous debris in compliance with state hazardous materials permit requirements.

Policy 42

Coastal management policies will be considered if the state reclassifies land areas pursuant to the prevention of significant deterioration regulations of the Federal Clean Air Act.

N/A. Policy is not the project's purpose or function as it does not propose reclassifying land areas pursuant to the Federal Clean Air Act.

Policy 43

Land use or development in the coastal area must not cause the generation of significant amounts of acid rain precursors: nitrates and sulfates.

Consistent. The proposed project does not entail significant changes in level of acid rain precursors.

Policy 44

Preserve and protect tidal and freshwater wetlands and preserve the benefits derived from these areas.

Consistent. Project would include BMPs to protect these areas during construction, and the overall footprint and usage of the piers will not change substantially from existing conditions.

STATE OF NEW YORK
DEPARTMENT OF STATE
ONE COMMERCE PLAZA
99 WASHINGTON AVENUE
ALBANY, NY 12231-0001
HTTPS://DOS.NY.GOV

KATHY HOCHUL
GOVERNOR

ROBERT J. RODRIGUEZ
SECRETARY OF STATE

March 18, 2022

Rayana Gonzales
NYS Department of Homeland Security and Emergency Services
1220 Washington Avenue, Bldg 7A, Fl.4
Albany, NY 12226

Re: F-2022 -0079(FA)
FEMA funding for the reconstruction of the World's Fair Marina Piers 1 and 3, with Pier 1 on a new footprint approximately 1,000 feet to the west, in the borough of Queens.
World's Fair Marina, Queens County Flushing Bay
General Concurrence - No Objection to Funding

Dear Rayana Gonzales,

The Department of State (DOS) received the information you submitted regarding the above proposed federal financial assistance on February 3, 2022, and has completed its review. Based on this review, the Department of State has no objection to the release of the U.S. Department of Homeland Security- FEMA Public Assistance Program funding.

This concurrence pertains to the federal financial assistance activity or activities for this project only. If certain activities may require a federal permit or other form of federal agency authorization, the Department of State would conduct separate consistency review(s) of permit activities at the time such application(s) may be made to a federal agency.

When communicating with us regarding this matter, please contact us at (518) 474-6000 and refer to our file # F-2022-0079 (FA).

Sincerely,

Matthew P. Maraglio
Supervisor, Consistency Review Unit
Office of Planning, Development and
Community Infrastructure

MM/rf
cc: FEMA -Brock Gordiana
NYC DCP- Allan Zaretsky

U.S. Department of Homeland Security
Federal Emergency Management Agency
FEMA Region II
One World Trade Center
285 Fulton Street
New York, New York 10007

FEMA

July 29, 2021

R. Daniel Mackay
Deputy Commissioner of Historic Preservation
Division for Historic Preservation
Peebles Island State Park
P. O. Box 189
Waterford, NY 12188-0189

Section 106 Consultation: FEMA-NY-4085-PW-4656(1)
Recipient/Subrecipient: DHSES/NYC Department of Parks and Recreation
Location: World's Fair Marina 125-00 Northern Blvd., Queens, NY (40.760756, -73.850820)
Undertaking: Removal and replacement of Pier 1 and associated floating docks; and replacement of Pier 3 (pier only)

Dear Mr. Mackay:

This letter serves as consultation pursuant to Section 106 of the National Historic Preservation Act for the Undertaking identified above. The Federal Emergency Management Agency (FEMA) will be providing Public Assistance funds authorized under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended, in response to the major Disaster Declaration for FEMA-4085-DR-NY, dated October 28, 2012, as amended.

Project Information
During the incident period from October 27, 2012 through November 9, 2012, high winds, storm surge, and flooding from Hurricane Sandy inundated the facilities on Flushing Bay owned and maintained by New York City Department of Parks and Recreation. This included the World's Fair Marina, Piers 1 and 3, that were constructed as part of the New York World's Fairs in 1939 and 1964, respectively.

Damages at Pier 1, Pier 3, and their floating docks included pier floats and top deck boards dislodged and washed away, gangways and railings broken, floating piers destroyed, and all electrical boxes and meters rendered damaged and inoperable. At Pier 1, the "gas office" building was flooded with approximately two feet of water causing damage to the building and stopping vessel gas service. Both areas sustained similar damage, but Pier 3 did not experience the same level of destruction as Pier 1. Following the storm, Pier 1 was largely closed to the general public while still permitting "transient dockage" for smaller vessels. NYPD and FDNY also maintain emergency response services at Pier 1 for Flushing Bay including those at LaGuardia Airport and within the Marina.

Description of Undertaking
The proposed Undertaking encompasses the removal of Pier 1 and associated floating docks and its replacement in a location approximately 1,000 feet to the west. The intention is to increase resiliency at the new location while better aligning to the landward programming including the boat launch and parking

areas. The new location will also provide upgraded facilities for both NYPD and FDNY to improve emergency response times, particularly to incidents at LaGuardia Airport. As part of the mitigation plan, Pier 3 (pier only) will be removed and replaced in its current location with repairs to the floating docks to increase resiliency during storm events.

Pier 1
Pier 1 and most floating docks will be removed and replaced. Some materials will be re-used including the western most floating docks and the pump-out and refueling dock. As noted, the new location will be approximately 1,000 feet west of the current site. The new location will align to the existing boat launch and parking area and be closer to Marina concessions. New pier supports will be concrete pilings with a cast-concrete deck to provide increased strength. Timber decking will be used that maintains the appearance of the existing pier and docks. In a similar layout as the current but with slightly less capacity, floating docks will be attached to the pier along with new flotation devices. Commercial docks for ferry service and recreational boat tours will be accessed by aluminum gangways similar to the existing in use before the storm. A timber wave attenuation screen will be installed, extending into Flushing Bay to increase resiliency to the pier and floating docks as an additional protection measure against future storm events.

Pier 3
Pier 3 (pier only) will be removed and replaced with a new pier in the same location. The new pier will be shorter, extending approximately 28 feet out from the shoreline to the edge of the waterline. The current pier extends approximately 69 feet from the shoreline to the floating docks. Keeping the new pier generally over land will increase resiliency against future storm events. The "gap" between the old and proposed lengths will be bridged with an aluminum gangway. Like Pier 1, pier supports will be on concrete pilings for added strength. Existing floating docks will be repaired to pre-disaster condition and new flotation devices installed and timber decking replaced, as needed. The width of the floating docks will be expanded from 8 feet to 10 feet. This will better prepare the pier to withstand future storm events.

The permanent scope of work to pre-disaster condition and mitigation meets the description of Tier II Allowances: I.C.1. and V.B.1. as defined in the 2019 New York Statewide Programmatic Agreement.

Area of Potential Effects (APE)
Pursuant to 36 CFR 800.4(a)(1), the area of potential effects (APE) is defined as the geographic area(s) within which the Undertaking may directly or indirectly affect historic resources. Based on the proposed scope of work, FEMA has determined that the APE for this Undertaking will be limited to the World's Fair Marina, Piers 1 and 3, the Pier 1 relocation site, and the immediately adjacent shoreline.

Evaluation of Architectural Significance
Research conducted using the NYSHPO Cultural Resources Information System (CRIS) shows that the Marina including Piers 1 and 3 have not been previously evaluated for National Register of Historic Places (NRHP) eligibility. The Marina and the adjacent landward areas are not designated as NYC Landmarks or Scenic Landmarks and are not located within a calendared or listed NYC (LPC) Historic District. The 1964 World's Fair Marina Pavilions, also known as the "Candela Structures," located landward of Pier 1 and its docks, were previously determined NRHP eligible. Flushing Meadows Corona Park was previously determined an NRHP-eligible historic district and has NRHP listed sites within its boundaries. In addition, the Unisphere, associated with the 1964 World's Fair, is an Individual NYC Landmark.

Pier 1
Pier 1 was constructed as part of the 1939 New York World's Fair. It is visible on historic aerial images, the earliest available for this research date to 1951 and 1954. A 1924 aerial image shows an early pier at about the same location of Pier 1 along with a more natural shoreline in this area of Flushing Bay. As part of the boat basin's construction, the Army Corps of Engineers deepened the channel area and a dike was

added to help break waves. Originally, Pier 1 and this area of the Marina were designed as a "gateway" from the water to the World's Fair site. The curvilinear design of the landward area was symmetrical with a "promenade" (Boat Basin Place) that led Fair goers from the boat basin towards the fairgrounds. Some research indicates that the boat basin was designed more for commercial vessels including ferry service from Manhattan rather than private boats as in later years, which aligns with the early aerial images that show a lack of boat slips and docked boats.

Aerial images from the 1950s show a simple, L-shaped dock with smaller docks within the "L". Major changes to the Marina occurred after 1954 likely for the 1964 World's Fair. The 1966 aerial image shows four parallel series of floating docks within the "L". Landward changes included widening of Grand Central Parkway (Northern Boulevard) (noted to have occurred about 1959) which decreased open space adjacent to the boat basin side parking lots, eliminated the western "cul-de-sac," as well as the "promenade" to the fairgrounds. Boat Basin Place lead to the then new Shea Stadium and its parking area.

By the early 1980s, an extension was added to the eastern side of the pier. However, this is one of several additions and removals into present day evident through aerial images. Specifically, floating docks and boat slips were removed within the "L", the previously added eastern pier extension was also removed/altered, and additional docks were added into the bay to accommodate larger vessels. The pier also appears to change in width over the years, particularly when comparing the 1924 aerial image to more current views. More recently, the Marina reflects its capacity seen in the 1980s with additional boat slips added/replaced. While the pier itself appears to have undergone little overall change since at least 2008, Hurricane Sandy caused damage to Pier 1 and its floating docks rendering it mainly closed to the general public since the storm in 2012.

Pier 3

Pier 3 was constructed by 1964 as an expansion to the Marina for the World's Fair. At this time the entire Marina (including Piers 1, 2, and 3) could accommodate 800 boats. Pier 3 can be seen in the 1966 aerial image as cross-shaped with boat slips along each side of the pier with one additional "arm" toward the base of the pier. By 1980, the end of the pier had been removed, and the "arm" appears to have been extended. Through to the present, images show little changes to the pier and floating docks aside from the addition of wave screens. Like Pier 1, Pier 3 had damage from Hurricane Sandy although not severe enough to close the facility.

Pier 2

Former Pier 2, although not part of the Undertaking, was located between Piers 1 and 3. The T-shaped pier and floating docks appeared to be built in conjunction with Pier 3 as part of the Marina expansion for the 1964 World's Fair. It is visible in aerials from 1966 into the 1990s. By 2008, only remnants of Pier 2 are visible in aerial images.

Candela Structures

The "Candela Structures" were constructed for the 1964 World's Fair. They were previously determined NRHP eligible under Criteria C for Architecture. These structures are emblematic of Modernist and Futurist architecture, with their undulating curves achieved from a pre-cast fiberglass shell. Four arched openings, once holding glass walls, allow for interior access. The structures, prefabricated for use as showroom pavilions, sit landward within the vicinity of Pier 1. Of the three structures originally installed, only two remain at this site. A New York Times article from the 1980s noted that the third pavilion had been relocated to the Adirondacks and adaptively reused as a vacation home. The building material, fiberglass, and the use of the structures, one as a Coast Guard station, are reflective of the maritime setting.

Summary
Changes to landward structures between the Fairgrounds and the Marina since the 1964 World's Fair have had a dissociative effect on the Marina and the Candela Structures. After the 1939 World's Fair, this is evident with the 1959 reconstruction of the Grand Central Parkway. FAA's Phase IA for their adjacent LaGuardia AirTrain project notes "these changes included an expansion of lanes from six to eight, removal of pedestrian pathways as part of the addition of two travel lanes, and improvement and widening of medians and shoulders." The construction and demolition of Shea Stadium and construction of Citi Field have also had marked effects to the area between the Marina and the Fairgrounds. FAA's Phase IA also notes that the Flushing Bay Promenade "with decorative elements such as tiles and plaques, granite blocks, benches, fountains, and railings was constructed in the 1980s as a complement to the Flushing Meadows-Corona Park." This change has also lessened the historic appearance of the landward portions of the Marina.

However, the Marina was part of both the 1939 and 1964 World's Fairs. Robert Moses' overall plan of expanding the Marina in 1964 and the concept of private modes of transportation through automobiles and likely boats for Fair goers also provides a link to the Marina. With the lack of physical historic material remaining for both Piers 1 and 3 and alteration to the landward areas related to the 1939 World's Fair, moving Pier 1 and the floating docks will have minimal effect to the historic context of the Marina. However, the Marina itself was an integral part of both the 1939 and 1964 World's Fairs. This link makes the World's Fair Marina NRHP eligible.

Evaluation of Archaeological Impact
Research using CRIS shows that Pier 1 in its existing location and its proposed relocation with adjacent landward areas are in an archaeologically sensitive area. Pier 3 falls outside of the archaeologically sensitive area. One Native American site is located within ½ mile of Pier 1. Identified as "Grantville" the site was recorded in 1977 is noted as being located in "College Point bounded on the west by Flushing Bay and east by salt marsh." A few other Native American sites are located just over ½ mile inland within Flushing. While the location of such sites is indicative of the former presence of Native American habitation, the dramatic landscape changes along the shoreline and inland over the course of the 20th through 21st century have significantly altered the native landscape.

In 2019, the FAA completed an EIS for the LaGuardia AirTrain project. Their Phase IA study included the Pier 1 relocation site within their APE. The area was assessed with low prehistoric sensitivity, but high historic sensitivity potential "due to the presence of a nineteenth century dike and numerous shipwrecks." However, they noted that the U.S. Coast Survey's Automated Wreck and Obstruction Information System (AWOIS) did not indicate any shipwrecks within their APE, including the Pier 1 relocation site. For their study area, they concluded that "the natural setting of the APE-Archaeology has been heavily altered and exhibits disturbance due to urban development from the mid-twentieth century to early twenty-first century. The disturbance includes filling, grading, demolition of older buildings and facilities, and construction for the LGA, highways, buried utilities, signage and infrastructure, Citi Field, and other urban development. The likelihood of extant significant archaeological resources within the APE-Archaeology is considered low. Based upon the results of the Phase IA Archaeological Survey, no further archaeological work is recommended." SHPO concurred with their findings on November 7, 2019.

Pier 1 removals include removing the L-shaped pier and its support structure. Most floating docks will also be removed, however, the western most section will be removed and re-used to the extent possible at the new location. Piles located within the Pier area and floating docks will also be removed. (See sheet DM 101.00-plan set page 25.) Pier 3 removals will consist of only the pier with its replacement in the same location, but in a smaller footprint.

As noted above, the AWOIS does not indicate shipwrecks within the project APE which includes Piers 1 and 3 and the Pier 1 relocation site. FAA's Phase IA notes that regular dredging of lower Flushing Bay

began by 1833. In the area of the World's Fair Marina, dredging to depths of 8 to 12 feet was undertaken in the 1930s and 6 to 12 feet in 1963 and 1964 coinciding with the expansion of the Marina for the 1964 World's Fair. USACE continues to maintain dredging of Flushing Bay Channel to a depth of six feet which includes the APE. Additionally, landward development including fill to construct the Marina and marina appurtenances have heavily altered the shoreline. Based on this research which shows extensive disturbance within the APE, the potential to impact intact archaeological resources is assessed as low.

Determination of Effect
Based on the information above, FEMA has determined that the proposed Undertaking at Piers 1 and 3 at the World's Fair Marina site will not negatively impact any historic structures and the potential to encounter intact archaeological resources *in situ* is low. Therefore, FEMA has concluded that the determination for this Undertaking is **No Adverse Effect to Historic Properties** that are either on, or eligible for inclusion on, the State or National Register of Historic Places.

FEMA requests concurrence with this determination of effect within fifteen (15) calendar days. For additional information, please contact project reviewer Ashley Gaudlip (ashley.gaudlip@fema.dhs.gov) or archaeologist Brock Giordano (brock.giordano@fema.dhs.gov).

Sincerely,

JAMES M ZWOLAK Digitally signed by JAMES M ZWOLAK Date: 2021.07.29 08:55:44 -04'00' For,

Brock Giordano
FEMA EHP Supervisor
4085-DR-NY

BG/ag

cc: Stephanie Couture, New York Division of Homeland Security and Emergency Services (DHSES)
Gina Santucci, Director of Environmental Review, NYC Landmarks Preservation Commission
Amanda Sutphin, Director of Archaeology, NYC Landmarks Preservation Commission

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Plans_WorldsFairMarina_pgs 51-101

Map Index
FEMA-NY-4085-PW-4656(1)
World's Fair Marina
125-00 Northern Blvd., Queens, NY

Fig. 1. Image of World's Fair Marina via Google Map with Pier 1 and Pier 3 in red.

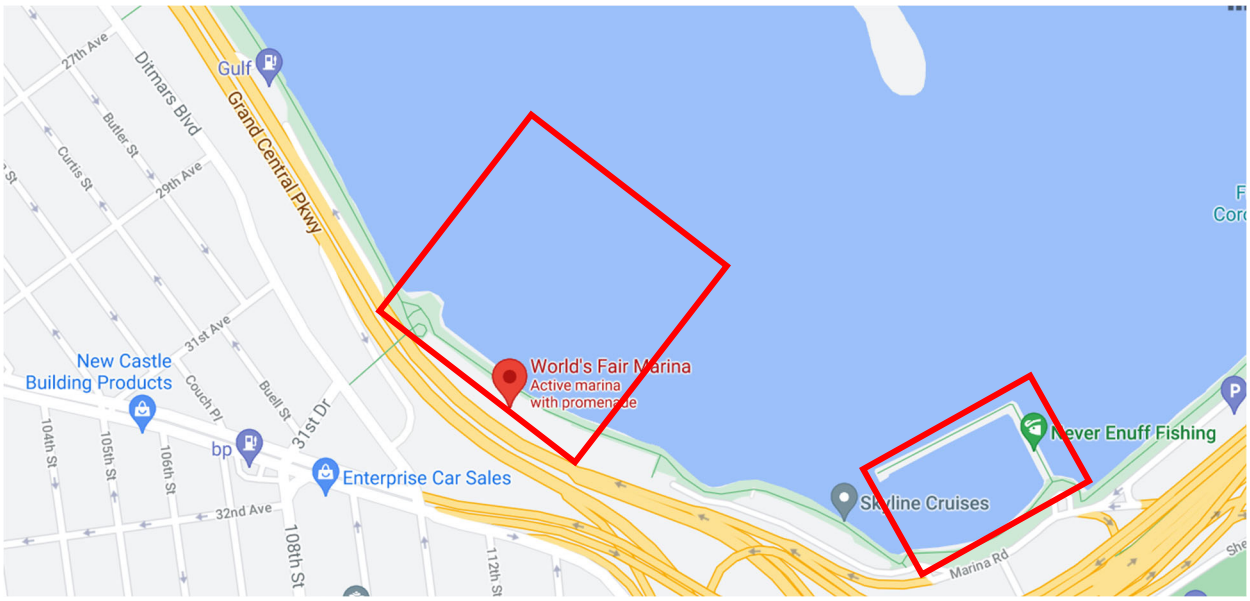

Fig. 2. Image of World's Fair Marina via Google Aerial Map with Pier 1 and Pier 3 in red.

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Fig. 3. Image of World's Fair Marina via CRIS with Pier 1 and Pier 3 in red.

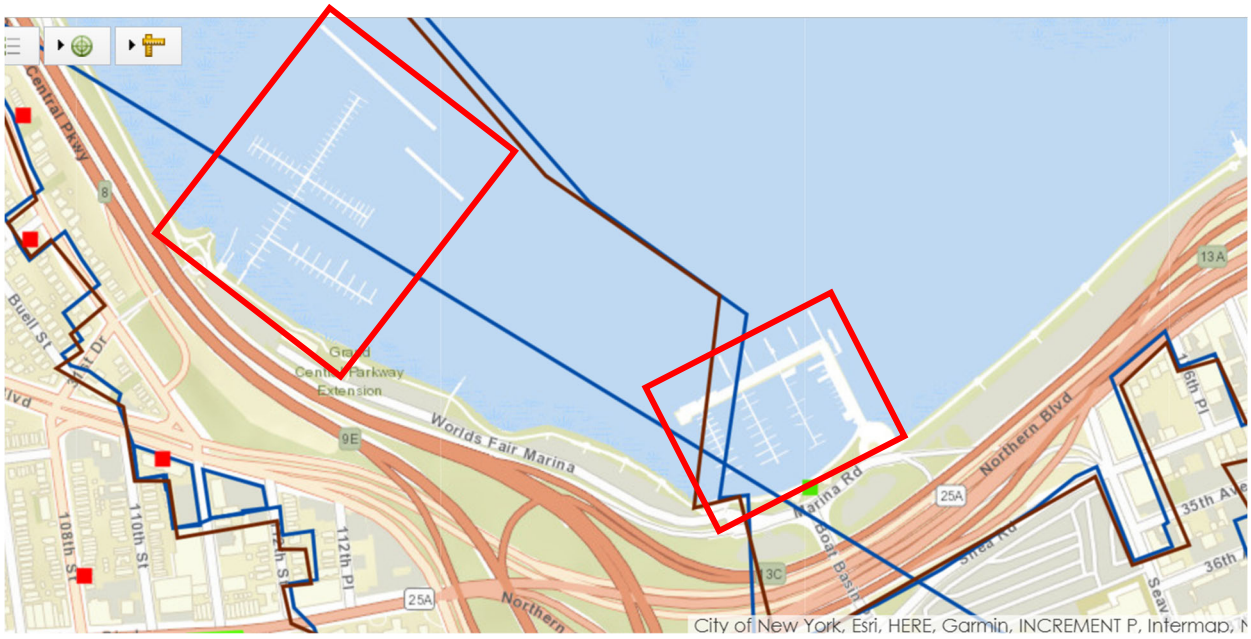

Fig. 4. 1954 Historic Aerial showing Pier 1 and the landward programming.

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Fig. 5. 1966 Historic Aerial showing Piers 1, 2, and 3.

Fig. 6. 1980 Historic Aerial showing Piers 1, 2, and 3.

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Fig. 7. 1994 Historic Aerial showing Piers 1, 2, and 3.

Fig. 8. 2008 Historic Aerial showing Piers 1 and 3 and remnants of Pier 2.

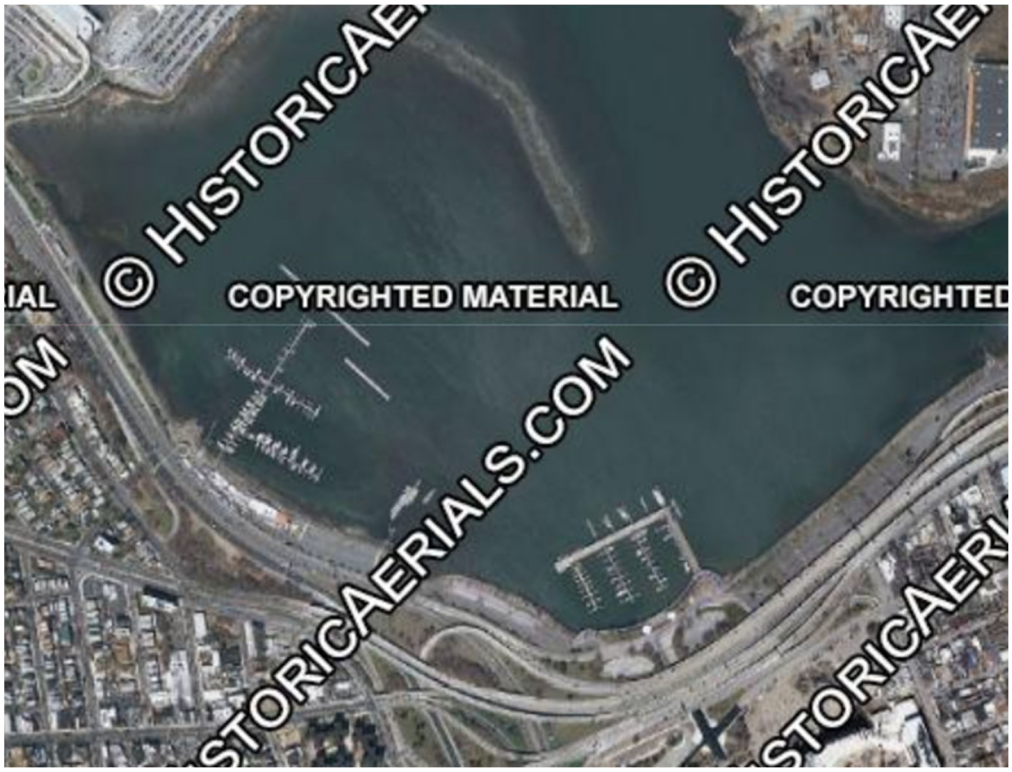

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Fig. 9. Image of World's Fair Marinas in 1924. Image via NYC DoITT Map.

Fig. 10. Image of World's Fair Marinas in 1951. Image via NYC DoITT Map.

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Fig. 11. Image of World's Fair Marinas in 1996. Image via NYC DoITT Map.

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Fig. 1. Image of Pier from Marina Rd. roundabout. Image via Google Street view.

Fig. 2. Image of Pier from Marina Rd. roundabout. Image via Google Street view.

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Fig. 3. Image of Candela Structures adjacent to Pier 1. Image via Google Street view.

Fig. 4. Image of Candela Structures adjacent to Pier 1. Image via Google Street view.

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Fig. 7. Image of Pier 1 post-Hurricane Sandy provided by the Subrecipient.

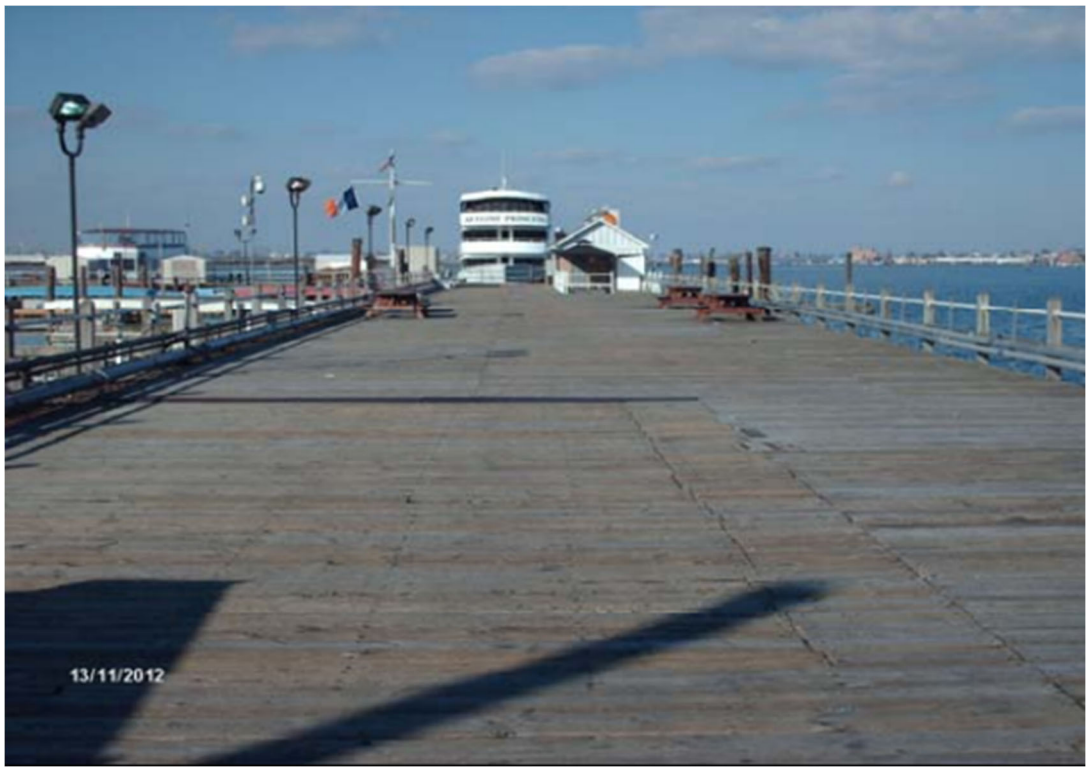

Fig. 8. Image of Pier 1 post-Hurricane Sandy provided by the Subrecipient.

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Fig. 9. Image of Pier 1 post-Hurricane Sandy provided by the Subrecipient.

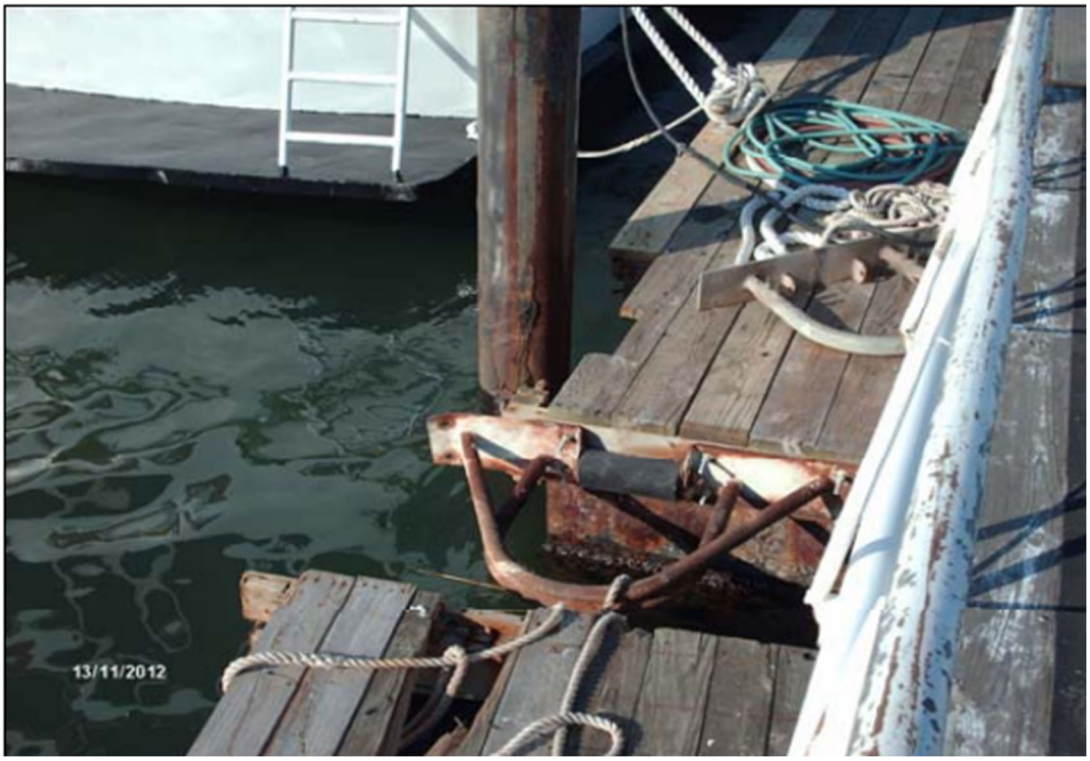
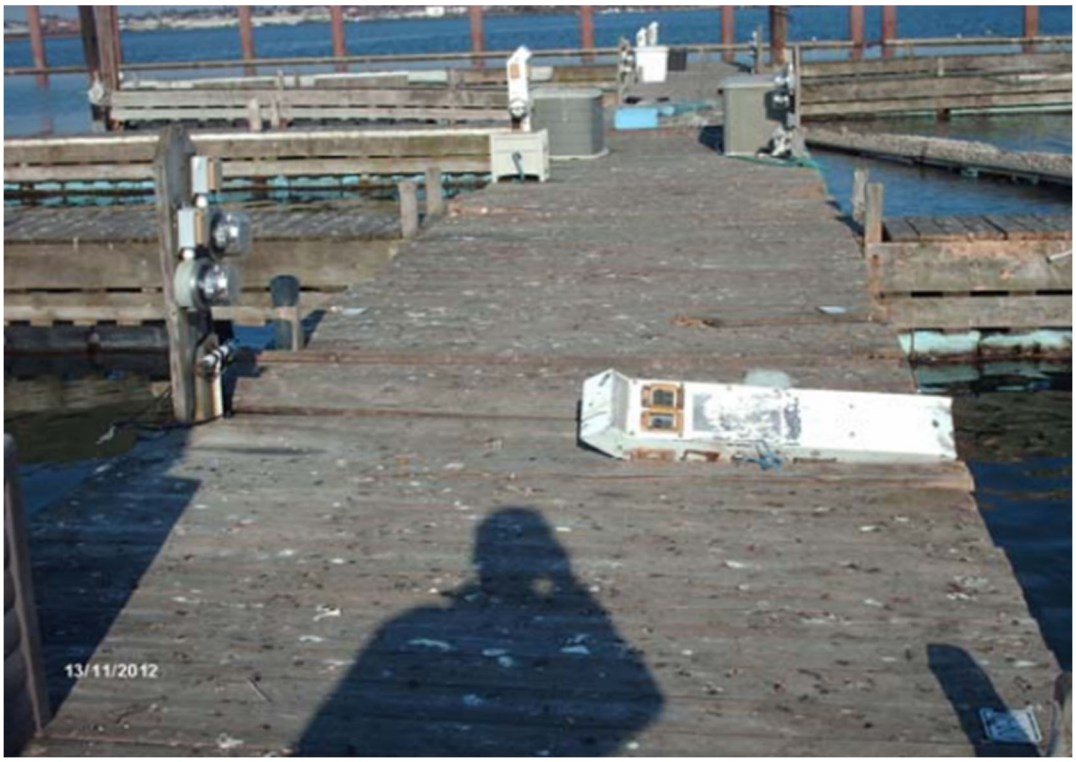


Fig. 10. Image of Pier 1 post-Hurricane Sandy provided by the Subrecipient.



U.S. Department of Homeland Security
Federal Emergency Management Agency
FEMA Region II
26 Federal Plaza.
Suite 1307
278

FEMA

February 8, 2022

Ms. Jennifer Anderson
Assistant Regional Administrator for Protected Resources
Greater Atlantic Regional Fisheries Office
NOAA Fisheries
Via email:

Re: NOAA Review, Section 7 ESA of FEMA-4085-DR-NY Super Storm Sandy: PW4656 Site 11 NYC DPR

Dear Ms. Anderson:

On behalf of the New York City Department of Parks and Recreation (DPR) (Sub-Recipient), the New York State Division of Homeland Security and Emergency Services (NYSDHSES) (Recipient) submitted an application for the Federal Emergency Management Agency's (FEMA) Public Assistance (PA) Program for financial assistance to demolish and reconstruct the World's Fair Marina Piers 1 and 3, with Pier 1 on a new footprint approximately 1,000 feet to the west, in the borough of Queens, New York.

In accordance with Section 7 of the Endangered Species Act of 1973, as amended, FEMA has made the determination that the project being evaluated in the EA may affect, but is not likely to adversely affect, Critical Habitat or species listed as threatened or endangered by the National Oceanic and Atmospheric Administration (NOAA) Fisheries. More information about the project and supporting analysis for this determination are provided below.

PROJECT DESCRIPTION

The Project Area consists of the existing World's Fair Marina Piers 1 and 3, and areas west of the existing Pier 1 for reconstruction, all within its property limits and inside the pierhead line. The proposed work consists of removal of the existing Piers 1 and 3, construction of a new Pier 3 on largely the existing footprint (built with a 10' wide main walkway for the first 400' of length as opposed to the 8' width of the existing for ADA accessibility), construction of a new Pier 1 approximately 1,000 feet west of the existing Pier with partial depth fixed wave screens (4" x 12" timber boards affixed to new 12" to 14" timber piles, 1" gaps between boards, with 4' to 5' gap to mudline), repairs of the bulkhead and esplanade on the shoreline adjacent to the existing Pier 1. Existing timber piles for both piers would be replaced with steel pipe piles (four 18" diameter piles at Pier 3, 169 piles ranging between 14" and 36" diameter at Pier 1). In-water activities associated with the reconstruction would begin in April 2023 and last up to two years. NYC Parks would comply with all regulatory restrictions for in-water construction activities, including no in-water construction work from January 15 through May 31 to protect early life stages of winter flounder, and no sediment disturbing activities from March 1 through June 30 to protect anadromous species.

All in-water activities will be conducted from barge-based equipment. The construction staging for both piers and the marina will take place upland in existing parking lots and at the edge of Pier 3. Approximately 17,000 square feet will be dedicated for staging of Pier 1 and approximately 7,100 square feet will be dedicated to Pier 3.

A full-length turbidity curtain would be installed around the construction site for the duration of demolition activities. All treated timber would be disposed of in accordance with local, state, and federal regulations. After installation of the foundation piles, the superstructures of the proposed fixed structures would be installed, including the fixed pier and wave screen. Utilities, railings, signage, cleats, dockboxes, and other appurtenances would be installed on the finished superstructures. Upland utility connections would be made to provide water, sewer, and electrical service to the marina.

Removal of Existing Structures

Prior to reconstruction of the marina, most existing structures that make up Piers 1 and 3 would be removed, including floating docks, fixed piers, guide piles, mooring piles, dolphins, gangways. Multiple turbidity curtains utilized during construction: one for the removal of the existing Pier 1, one for the new construction of Pier 1 and the marina, and one for the removal and construction of Pier 3. The turbidity curtain for the removal of the existing Pier 1 will be approximately 2,000 feet long and will cover an approximate area of 475,000 square feet. For the construction of new Pier 1, the turbidity curtain will be 2,200 feet long and will cover an approximate area of 665,000 square feet. The turbidity curtain at Pier 3 will be approximately 700 feet long and cover and area of approximately 59,000 square feet. Increases in suspended sediment during pile driving are anticipated to be minimal, to be concentrated within the vicinity of pile driving activity, and to dissipate quickly and without significant adverse impacts to water quality or aquatic biota. Sediment disturbing activities associated with the project, including vibratory extraction of the existing timber piles, pile installation, and debris removal, would be subject to the following avoidance and minimization measures:

- Use of a turbidity curtain during all demolition, debris removal, and reconstruction activities
- Daily inspection and immediate modification, adjustment, or repair any portion of turbidity curtain to correct inadequate performance
- Use of posted lookouts and measures to identify any ESA-listed species in the vicinity of the area
- Debris removal would take place within the extent of the turbidity curtain to the extent practicable

Approximately 3 to 6 vessels (1 to 2 barges, 1 to 2 crew/safety boats, and 2 tugs) would be used at any given time during the project. The floating docks, fixed piers, and any bracing between piles within the boat basin would be disconnected from the piles and removed using a barge-mounted crane, and materials for disposal would be placed on a barge for transport to a licensed facility. Following removal of the surface materials and timber bracing, the existing timber piles would be removed through vibratory extraction. All treated timber would be disposed of in accordance with local, state, and federal regulations.

Reconstruction of Marina Structures

Reconstruction of the marina would include: Pier 3 would be reconstructed on its present site and widened for ADA accessibility, while Pier 1 would be relocated approximately 1,000 feet west of its current location with parallel floating docks extending south and two commercial docks extending north. DPR anticipates vessel usage of the new piers be the same as the existing ones (when operational). Timber wave screens will be installed to attenuate wave action along Pier 1. Utilities on the new piers would be elevated to avoid future flooding damages. These structures would be supported by 14-inch, 18-inch, 20-inch, 24-inch, and/or 36-inch steel pipe piles, as well as 12-inch and 14-inch timber piles. Installation of the new fixed piers, floating docks, wave screen, and gangways would be conducted once debris removal is complete. Turbidity curtains would remain in place for the duration of in-water construction activities to remove the existing Pier 1, construct the new Pier 1, and for the removal and reconstruction of Pier 3. New steel pipe piles for the fixed piers within the marina and the wave screen at the boat basin's western perimeter would be installed using a pneumatic, diesel, or vibratory hammer to the greatest extent practicable. Additional minimization measures are use of a soft start (such as pile tapping) prior to full energy impact hammering and use of a cushion block when impact hammering. In total, the reconstructed marina including Piers 1 and 3 and commercial docks would result in 74,800 square feet (1.72 acres) of overwater coverage (a reduction of ~40,000 square feet due largely to the lowered footprint of the proposed new Pier 1 from the existing), and a 210 square foot footprint occupied by the newly installed piles.

BEST MANAGEMENT PRACTICES AND MINIMIZATION MEASURES

The project would incorporate Best Management Practices (BMPs) to avoid and minimize to the greatest extent possible any potential direct and indirect impacts to federally listed species. BMPs would be required as a condition of any permits authorizing the project, and the BMPs described below have been incorporated into the evaluations below under "Effects Evaluation" for shortnose sturgeon, Atlantic sturgeon, and sea turtles. Consistent with NOAA Fisheries and FHWA guidance (NMFS and FHWA 2018), NYC Parks is proposing the following measures to avoid and minimize potential direct and indirect effects to sturgeon and sea turtles resulting from: underwater noise during pile installation, turbidity and sedimentation, reduced water quality, vessel interaction, and habitat alteration.

Pile Installation

Components of the project that would result in increased underwater noise include: vibratory and impact pile driving during reconstruction of the floating docks, fixed piers, wave screens, and icebreaker. Pile installation would be subject to the following avoidance and minimization measures:

- Use of a vibratory hammer to the extent possible;
- Use of a soft start such as pile tapping prior to full energy impact hammering; and
- Use of a cushion block when impact hammering.

Turbidity and Sediment Resuspension

Sediment disturbing activities associated with the project, including vibratory extraction of the existing timber piles, pile installation, and debris removal, would be subject to the following avoidance and minimization measures:

- Use of full-length turbidity curtains during all demolition, debris removal, and reconstruction activities;
- Use of posted lookouts and measures to identify any ESA-listed species in the vicinity of the area;
- Debris removal would take place within the extent of the turbidity curtain to the extent practicable;
- Removal of existing piles using a vibratory hammer, pulled slowly to reduce sediment sloughing off in the water column;
- Striking or vibrating the pile to break the bond between the sediment and pile during pile removal;
- Placement of removed piles on a barge equipped with protection against spills into the waterway, as well as presence of a spill kit on site should any spill occur
- Shoreward erosion and sediment controls in place before the commencement of work; and
- Following construction, the new marina structures would not alter the natural sediment accretion rates or patterns when compared to the existing characteristics of the site.

Vessel Movement

During all demolition and reconstruction activities for the project, the use of construction vessels, including barges, tugs, and crew vessels, would be subject to the following avoidance and minimization measures:

- Number of vessels would be limited to approximately 4 vessels (2 crew boats and 2 tugs), and 2 barges at any given time during construction;
- All vessels would be shallow draft (5 to 10 feet) and would maintain low speeds (less than 5 knots for push boats and tugs, and less than 10 knots for crew boats); and
- Use of posted lookouts and measures to slow down and avoid any observed sturgeon and sea turtles when operating project vessels in areas where they may be present.

Habitat Alteration

Installation of permanent structures, use of barges, and shading from overwater structures for the project could result in temporary and permanent habitat alteration. These activities would be subject to the following avoidance and minimization measures:

- Sturgeon and sea turtles would be prevented from entering areas within the turbidity curtain(s) temporarily deployed around the existing and proposed new Pier 1 and Pier 3, but the turbidity curtains would be installed only around each immediate project site to minimize this area;
- Grated surfaces of the gangway landings and minimal width of the other structures such as floating docks, and fixed piers, would allow light to reach the water beneath the structure over the course of a day
- Artificial lighting on the marina structures would be oriented to avoid illumination of the surrounding waters at night to the greatest extent practicable, except for any navigational lighting required by the U.S. Coast Guard.

ACTION AREA DESCRIPTION

The action area for purposes of ESA Section 7 review and consultation is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR §402.02). For this project, the action area includes the World's Fair Marina within the 21.7-acre area (which includes the demolition and reconstruction of Pier 1 on a new footprint and Pier 3); the 745 square feet of benthic habitat occupied by the new piles; the 1.72-acre area of aquatic habitat that would be shaded by the floating docks, fixed piers, and wave screens; and the area within the turbidity curtain deployed during demolition and reconstruction. The action area also includes the 103.3-meter (339-foot) radius to account for the maximum distance of behavioral impacts on protected species due to sound from the pile driving activities. NYC Parks would conduct demolition and reconstruction activities within full-length turbidity curtains. The turbidity curtain for the removal of the existing Pier 1 will be approximately 2,000 feet long and will cover an approximate area of 475,000 square feet. For the construction of new Pier 1, the turbidity curtain will be 2,200 feet long and will cover an approximate area of 665,000 square feet. The turbidity curtain at Pier 3 will be approximately 700 feet long and cover and area of approximately 59,000 square feet. These would contain sediment plumes resulting from pile removal/installation estimated at approximately 300 feet and 2,400 feet, respectively, based on NMFS resources. The action area includes all routes that would be traversed by vessels necessary to construct the project, which would typically remain within Flushing Bay during construction. Most construction vessels would remain onsite for the duration of construction or would travel between the construction site and a homeport location to be determined within the East River and Flushing Bay. For the most part, vessels would remain in the immediate project area during construction and would only move to dispose of demolished marina materials. Pier 1 of World's Fair Marina has been closed for multiple years in anticipation of this proposed project, but is typically used as a public marina with heavy use by recreational vessels. This area is expected to encompass all of the effects of the proposed project.

HABITAT CHARACTERISTICS OF THE ACTION AREA

The project site is in Flushing Bay in New York City, New York. The action area is located within a highly developed section of Queens waterfront, which is bulkheaded or otherwise composed of solid man-made shoreline protection structures along a 1.4-mile pedestrian promenade. LaGuardia Airport resides along the northeast shoreline of the bay, and includes a 2,800-foot long dike protrudes into the bay from that shoreline. The Federal Navigation Channel includes much of Flushing Bay, running to the shoreline between the piers and along the existing Pier 1, and runs north to the East River and southeast towards Flushing Creek. NYC Department of Environmental Protection completed a dredge of the project area in 2018 that cleared out sediment from combined sewer overflows. Flushing Bay has a tidal range of about 7 feet. Salinity of the bay ranges from 22 to 24 ppt (USACE 2017). Surface temperature typically ranges from 37°F to 69°F. Water depths within the marina currently range from approximately 4 to 10 feet at mean lower low water (MLLW), and the substrate comprises organic silt on top of a silt and sand mixture. Water depths in the navigation channel range from about 5 feet nearest the existing piers to 14-15 feet approaching the East River or Flushing Creek at MLLW (NOAA Nautical Chart #12339).

ESA LISTED SPECIES

According to the NOAA Fisheries Section 7 website, there are six species listed under the ESA that occur or have the potential to occur in the action area and may be affected by the project:

- Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) – Endangered except for Gulf of Maine Distinct Population Segment (DPS), which is Threatened (77 FR 5880 and 77 FR 5914)
- Green sea turtle (*Chelonia mydas*) – Threatened (81 FR 20057, Recovery Plan: NMFS & USFWS 1991)
- Kemp's ridley sea turtle (*Lepidochelys kempii*) – Endangered (35 FR 18319, Recovery Plan: NMFS et al. 2011)
- Leatherback sea turtle (*Dermochelys coricea*) – Endangered (35 FR 8491, Recovery Plan: NMFS & USFWS 1992
- Loggerhead sea turtle (*Caretta caretta*) – Threatened (76 FR 58868, Recovery Plan: NMFS & USFWS 2008)
- Shortnose sturgeon (*Acipenser brevirostrum*) – Endangered (32 FR 4001, Recovery Plan: NMFS 1998)

The Project Area is not within Critical Habitat for any of the listed species.

Atlantic Sturgeon

There are five Distinct Population Segments (DPSs) of Atlantic sturgeon listed as threatened or endangered. Atlantic sturgeon originating from the New York Bight, Chesapeake Bay, South Atlantic and Carolina DPSs are listed as endangered; the Gulf of Maine DPS is listed as threatened. The marine range of all five DPSs extends along the Atlantic coast from Canada to Cape Canaveral, Florida. Therefore, Atlantic sturgeon from any DPS could be present in the action area.

Atlantic sturgeon are anadromous bottom-feeding fish that spawn in freshwater sections of the Hudson River and overwinter throughout the New York Bight, off the south shore of Long Island, and throughout Long Island Sound (Waldman et al. 1996, Bain 1997, Savoy and Pacileo 2003). Adults migrate from the ocean upriver to spawn in fresh water above the salt front from late April to September (Breece et al. 2021). The primary spawning area for Atlantic sturgeon is near Hyde Park, New York (river mile 83) (NMFS 2013). Adults typically migrate from the river back to marine waters following spawning around the end of July (Breece et al. 2021). Early life stages (i.e., eggs, larvae, and young-of-year) are intolerant of salinity and occur primarily in freshwater habitats; young-of-year Atlantic sturgeon exhibit poor survival at salinities ranging from 5 to 10 ppt, and older juveniles may tolerate salinities up to 12 ppt (Kynard and Horgan 2002, ASMFC 2012). Because the action area is not in freshwater or in a natal river, no early life stages are expected to be present. According to surveys conducted by NMFS and multiple state agencies in the region, the majority of Atlantic sturgeon occurred in waters between 10 and 15 meters (32 and 49 feet) in depth (Dunton et al. 2010). Transient adults and subadults could occur in the action area while opportunistically foraging (Savoy and Pacileo 2003). Non-spawning Atlantic sturgeon prefer deeper, open marine waters (Hatin et al. 2007, Savoy and Pacileo 2003, Dunton et al. 2010) and as such, are not expected to overwinter or otherwise spend prolonged periods of time in Flushing Bay.

Sea Turtles – Green, Kemp's Ridley, Leatherback, and Loggerhead

Four species of federally listed threatened or endangered sea turtles under NMFS jurisdiction may be found seasonally (late spring thru early fall) in the coastal waters of New York: the threatened Northwest Atlantic Ocean DPS of loggerhead and the North Atlantic DPS of green sea turtles, and the endangered Kemp's ridley, and leatherback sea turtles. These species of sea turtles migrate to areas throughout the continental and shelf slope waters of the Atlantic Ocean and occupy these areas from May through the end of November each year. From December through May, these species migrate south to stay in warmer waters, breed, and nest. With the exception of the Kemp's ridley (which only see juveniles on Long Island Sound), juveniles and adults of these turtles can be found near the action area. The Green sea turtle is a global species, but forages along the Atlantic coast for a diet consisting largely of algae and seagrass (Seminoff, et. al. 2015). Leatherback sea turtles are adapted to a wider range of water temperatures than other turtles, but due to high energy requirements, must also find nutrient-rich areas to forage for their preferred jellyfish as well as a variety of other plant and animals (. The Loggerhead sea turtle is circumglobal, carnivorous species subsisting on bottom-dwelling invertebrates such as molluscs and crabs (NMFS and USFWS 2008). Juvenile Kemp's ridley may feed on crabs and other benthic invertebrates (

Shortnose Sturgeon

Shortnose sturgeon are listed as endangered throughout their range which is in Atlantic Ocean waters and associated bays, estuaries, and coastal river systems from the Minas Basin, Nova Scotia, Canada, to the St. Johns River, Florida. Shortnose sturgeon are anadromous bottom-feeding fish that can be found throughout the Hudson River from the Battery at the mouth of the river to the Federal Dam at Troy. Spawning occurs from late March to mid-May in the region from the Federal Dam downstream to Coxsackie, NY (between river miles 152 and 118) (Dovel et al. 1992, Bain 1997), which is well upstream of the project area. Early life stages from eggs to yolk-sac larvae remain near the spawning grounds for approximately eight weeks post-spawn (Buckley and Kynard 1981) and larvae are most commonly concentrated in deeper channel fresh waters where the current is stronger (Hoff et al. 1988, Dovel et al. 1992). Juveniles are distributed throughout the river with concentrations for foraging in the Kingston and Haverstraw Bay regions (Dovel et al. 1992, Bain et al. 1998, Geoghegan et al. 1992). Adult shortnose sturgeon range between river miles 23 and 110 during the summer months, at least 16 river miles north of the action area, and then congregate in overwintering areas at specific locations within that range (NMFS 2013). Based on the spatial distributions, seasonal movement patterns within the Hudson River, and intolerance to salt water, spawning and early life stages do not occur in the action area. The action area may contain suitable foraging habitat for transient adults (Savoy 2004). They are expected to occur mainly in deeper waters than those present at the construction site, but individuals could be found near the marina during foraging. No critical habitat has been designated for shortnose sturgeon.

EFFECTS ANALYSIS

The effects or stressors of the project that could potentially affect ESA-listed species include vessel traffic, sediment resuspension, and underwater noise during pile driving and habitat modification.

Vessel Traffic

The analysis considered three elements: 1) the existing baseline conditions, 2) the action and what it adds to existing baseline conditions, and 3) new baseline conditions (the existing baseline conditions and the action together).

Adding vessels necessary to construct the project to the existing baseline would not increase the risk that any vessel in the area will strike an individual or would increase it to such a small extent that the effect of the action (i.e., any increase in risk of a strike cause by the project) cannot be meaningfully measured or detected. The baseline risk of a vessel strike within the action area is unknown. At present time, the World's Fair Marina is not in use. As such, the only change in overall vessel activity within the action area will be those required for construction and demolition. Because construction vessels do not currently operate regularly within the action area, an evaluation of their potential effects is provided below.

As discussed above under the description of the project, during the project activities, approximately 3 to 6 vessels (1 to 2 barges, 1 to 2 crew/safety boats, and 2 tugs) would be in use at any given time. As the federal navigation channel overlaps the Marina, vessels would need to operate within the navigation channel during construction. This represents a small increase in vessel activity in addition to the baseline for similar vessels. Movement of vessels necessary to construct the project would largely be limited to areas of the project site, and vessel speeds would be relatively slow (i.e., less than 5 knots for barges and tugs, and less than 10 knots for crew/safety boats). Drafts would likely range from 5 to 10 feet across vessel types. The addition of construction vessels would also be intermittent, temporary, and restricted to a small portion of the overall action area on any given day. The limited movement and slow speed of vessels should provide adequate space for ESA-listed species to avoid collision. As such, any increased risk of a vessel strike caused by the project would be too small to be meaningfully measured or detected. As a result, the effect of the action on the risk of a vessel strike in the action area would be insignificant.

The marina reconstruction itself would enable vessels to travel safely in the area and would leave the marina with the same vessel capacity as the existing baseline (when in operation), thus, preserving the status quo with regard to vessel routes and vessel numbers. The project would create docking space for these vessels and bring them into the protected area behind wave screens. Any slight increase in vessel strike risk from altered patterns of use would be too small to be detected or measured. As a result, the effect of the action on the risk of a vessel strike of an ESA species in the action area would be insignificant.

Sediment Resuspension

Pile removal and installation and debris removal for the project have the potential to result in sediment resuspension and increased turbidity within the action area. The use of a full-length turbidity curtain around the sites of demolition of Pier 1, construction of new Pier 1, and demolition and reconstruction of Pier 3 for the duration of all demolition and reconstruction activities would minimize the potential effects of sediment resuspension and increased turbidity in the waterway, and also serve as a physical barrier to prevent species from entering the area and being exposed to turbidity plumes. Sediment disturbance associated with removal and installation of piles would result in minor, short-term increases in total suspended sediment (TSS) of between 5 to 10 mg/L within approximately 300 feet of the pile being driven (FHWA 2012), and re-deposition of

sediments. The greatest potential for increased turbidity during demolition or construction would occur when piles are removed. Both removal and installation of the piles would be conducted intermittently over the course of a workday, rather than continuously throughout the construction duration, which would allow resuspended sediments to dissipate as the work is conducted. The use of a turbidity curtain during pile removal and installation would further minimize the potential for adverse effects from sediment resuspension associated with the piles. Use of a turbidity curtain would also prevent species from entering the area, minimizing their potential exposure to the sediment plumes. Resuspended sediments from pile removal and installation would not result in long-term effects to species. The TSS concentrations expected for pile driving or removal in the Hudson River (5 to 10 mg/L) are below levels shown to have adverse effects on fish (typically up to 1,000.0 mg/L; see summary of scientific literature in Burton 1993; Wilber and Clarke 2001) and benthic communities (390.0 mg/L (EPA 1986)). The small resulting sediment plume, which would be contained within the turbidity curtain, would settle out of the water column within a few hours.

Debris removal would result in resuspended sediment and elevated turbidity concentrations within the action area. However, debris removal would be conducted within a full-length turbidity curtain to the extent practicable. Any sediment resuspended during these activities would be contained within the perimeter of the turbidity curtain and would settle out of the water column within a few hours while the curtain remains deployed.

Sediment resuspension resulting from pile removal or installation and debris removal would have insignificant effects on water depth, water flow, dissolved oxygen levels, salinity, temperature, or the ability for shortnose or Atlantic sturgeon to migrate in the action area. Sea turtle species would not be expected to face adverse effects from sediment plumes as they would be able to swim through or away from them and they breathe air. Any sediment plume resulting from project activities would move with the tidal currents. Listed species that could be present in the action area would be able to swim away from areas temporarily affected by sediment resuspension, and the width of the bay in the action area (~3,000 feet) would allow ample space for species to move away from the sediment disturbing activities. The turbidity curtain would also prevent species from entering the area, and thus would prevent them from being exposed to the highest levels of turbidity produced during pile removal and installation and debris removal activities. Given that increases in suspended sediment would be temporary, minimal, localized to the vicinity of construction activities, and contained within a full-length turbidity curtain, and given that species would be able to easily move away from the project site, any effects would be too small to be meaningfully measured or detected. As a result, the effect of sediment resuspension on ESA species would be insignificant.

Underwater Noise

The greatest potential for underwater noise impacts to listed species from the project would be associated with vibratory and impact hammering during pile removal and reconstruction of the marina structures. All pile removal and installation activities would be completed within a full-length turbidity curtain surrounding each project site. The existing piles would be removed using a vibratory hammer. The new piles for the fixed piers, floating docks, and wave screens would be installed using a vibratory hammer to the extent possible and using a soft start and cushion block when impact hammering is required.

As recommended by NMFS, a vibratory hammer would be used to the extent feasible, and the minimal impact hammering that would be required to seat the piles would be conducted using a cushion block to minimize underwater noise impacts. Pile tapping just prior to cushioned impact hammering would deter species from the immediate vicinity of pile driving, outside the turbidity curtain. The projected noise at the source and distance to relevant thresholds for species in the action area was determined based on the NMFS Greater Atlantic Regional Fisheries Office (GARFO) Acoustic Tool spreadsheet (version updated September 14, 2020). The estimated sound levels and distances to species injury and behavioral thresholds associated with the project are presented in Tables 1 through 3. Steel pipe piles with a diameter of 20 inches were used to estimate the potential underwater noise increases associated with the 18-inch diameter piles for the project, 40" steel pipes for increases of 36" steel pipes using cushioned impact, and timber pipe piles with a diameter of 12 to 16 inches were used to estimate noise levels for the new timber mooring piles within the marina. Pile installation would be limited to periods outside the in-water construction restricted windows (January 15 through June 30) in order to avoid impacts during winter flounder spawning and anadromous species migration, which would also avoid impacts to sturgeon in the action area.

Table 1
Proxy Projects for Estimating Underwater Noise

Project Location	Water Depth (m)	Pile Size (inches)	Pile Type	Hammer Type	Attenuation rate (dB/10m)
Not Available	15	14"	Steel Pipe	Cushioned Impact	5
Lathrop, CA - San Joaquin River	<1	20"	Steel Pipe	Vibratory	5
Lathrop, CA - San Joaquin River	<1	20"	Steel Pipe	Cushioned Impact	5
Geyserville - Russian River, CA	0	24"	Steel Pipe	Vibratory	4
Rodeo, CA - San Francisco Bay, CA	5	24"	Steel Pipe	Cushioned Impact	3
Not Available	5	36	Steel Pipe	Vibratory	5
Alameda, CA	13	40"	Steel Pipe	Cushioned Impact	5
Norfolk, VA	12.2	12-16"	Timber	Vibratory	5

Table 2
Proxy-Based Estimates for Underwater Noise

Type of Pile	Hammer Type	Estimated Peak Noise Level (dB_{Peak})	Estimated Pressure Level (dB_{RMS})	Estimated Single Strike Sound Exposure Level (dB_{sSEL})
14" Steel Pipe	Cushioned Impact	189	173	163
20" Steel Pipe	Vibratory	194	161	169
20" Steel Pipe	Cushioned Impact	193	150	168
24" Steel Pipe	Vibratory	187	175	163
24" Steel Pipe	Cushioned Impact	192	178	167
36" Steel Pipe	Vibratory	185	175	175
40" Steel Pipe	Cushioned Impact	197	184	169
12-16" Timber	Vibratory	176	165	165

Table 3
Estimated Distances to Sturgeon Injury and Behavioral Thresholds

Type of Pile	Hammer Type	Distance (m) to 206dB$_{Peak}$ (injury)	Distance (m) to sSEL of 150 dB (surrogate for 187 dBcSEL injury)	Distance (m) to Behavioral Disturbance Threshold (150 dB$_{RMS}$)
14" Steel Pipe	Cushioned Impact	NA	36.0	56.0
20" Steel Pipe	Vibratory	NA	48.0	32.0
20" Steel Pipe	Cushioned Impact	NA	46.0	10.0
24" Steel Pipe	Vibratory	NA	47.5	77.5
24" Steel Pipe	Cushioned Impact	NA	66.7	103.3
36" Steel Pipe	Vibratory	NA	60.0	60.0
40" Steel Pipe	Cushioned Impact	NA	48.0	78.0
12-16” Timber	Vibratory	NA	39.0	39.0

Table 4
Estimated Distances to Sea Turtle Injury and Behavioral Thresholds

Type of Pile	Hammer Type	Distance (m) to Sea Turtle TSS (SEL weighted) 189 dB$_{RMS}$	Distance (m) to Sea Turtle TSS (Peak SPL) 226 dB$_{Peak}$	Distance (m) to Sea Turtle PTS (SEL weighted) 204 dB$_{SEL}$	Distance (m) to Sea Turtle TSS (Peak SPL) 232 dB$_{Peak}$	Distance (m) to Sea Turtle Behavioral Threshold 175 dB$_{RMS}$
14" Steel Pipe	Cushioned Impact	NA	NA	NA	NA	N
20" Steel Pipe	Vibratory	NA	NA	NA	NA	NA
20" Steel Pipe	Cushioned Impact	NA	NA	NA	NA	NA
24" Steel Pipe	Vibratory	NA	NA	NA	NA	15.0
24" Steel Pipe	Cushioned Impact	NA	NA	NA	NA	20.0
36" Steel Pipe	Vibratory	NA	NA	NA	NA	10.0
40" Steel Pipe	Cushioned Impact	NA	NA	NA	NA	28.0
12-16" Timber	Vibratory	NA	NA	NA	NA	NA

Exposure to underwater noise levels of 206 dB Peak and 187 dB cSEL can result in injury to sturgeon, while levels of 189 dB SEL and 226 dB Peak (temporary threshold shift) or 204 dB SEL and 232 dB Peak (permanent threshold shift) injure sea turtles and levels over 175 dB RMS impact sea turtle behavior. In addition to the “peak” exposure criteria which relates to the energy received from a single pile strike, the potential for injury exists for multiple exposures to noise over a period of time; this is accounted for by the cSEL threshold. The cSEL is not an instantaneous maximum noise level but is a measure of the accumulated energy over a specific period of time (e.g., the period of time it takes to install a pile). While it is not possible to accurately calculate the distance to the 187 dB cSEL isopleth, we calculate the distance to the 150 dB sSEL isopleth. The further away a fish is from the pile being driven, the more strikes it must be exposed to in order to

accumulate enough energy to result in injury. At some distance from the pile, a fish is far enough away that, regardless of the number of strikes it is exposed to, the energy accumulated is low enough that there is no potential for injury.

As described in Table 3, for this project, the distance to the 187 dB cSEL (or 150 dB sSEL) isopleth associated with vibratory or cushioned impact hammering is no greater than 66.7 meters (219 feet) for sturgeon. In order to be exposed to potentially injurious levels of noise during pile driving, a sturgeon would need to be within 67 meters of the pile being driven to be exposed to this noise for any prolonged time period. This would be extremely unlikely to occur as it is expected that sturgeon would modify their behavior at 103.3 meters from the pile and quickly move away from the area before cumulative injury levels are reached. The turbidity curtain would provide additional protection, as it would prevent sturgeon from getting close to the pile driving activities where the noise levels would be highest. Given the small distance a sturgeon would need to move to avoid the disturbance levels of noise, any effects would not be able to be meaningfully measured or detected. Therefore, the effects of noise on sturgeon would be insignificant.

Behavioral effects, such as avoidance or disruption of foraging activities, may occur in sturgeon exposed to noise levels above 150 dB RMS. Considering all of the pile-driving activities, it is expected that underwater noise levels would be below 150 dB RMS at distances beyond a maximum of approximately 103.3 meters (339 feet) from the pile being installed. It is reasonable to assume that a sturgeon, upon detecting underwater noise levels at or above the 150 dB RMS isopleth, would modify its behavior such that it redirects its course of movement away from the ensonified area surrounding the project site. If any movements away from the ensonified area do occur, it is extremely unlikely that these movements would affect essential sturgeon behaviors, as Flushing Bay is sufficiently large enough (about 3,000 feet wide) to allow sturgeon to avoid the ensonified area while continuing to forage and migrate.

As described in Table 4, for this project, there is no significant impact to sea turtle temporary or permanent threshold shifts, and the maximum distance of 28 m (92 ft) at which the behavioral effect threshold is met. Foraging turtles would be reasonably expected to divert from the project site before closing within such a short distance. Therefore, the effect of underwater noise on ESA species would be too small to be meaningfully measured or detected and are thus, insignificant.

Habitat Modification

Shading by construction vessels and the marina structures for the project would not significantly affect benthic habitat, as light would still penetrate the water over the course of the day and similar habitat would continue to be available in the vicinity. Demolition and Reconstruction of the marina structures (with new structures covering 74,800 square feet) would not result in a significant change in overwater coverage compared to the existing marina, which would not have a significant adverse impact on listed species in the action area. Grated surfaces of the gangway landings and minimal widths of the floating docks, piers, and other marina structures would allow light to penetrate the water similar to existing conditions within the boat basin. Species that forage and migrate through the action area would most likely occur in deeper waters outside the Marina, which would not be affected by overwater structures. The construction vessels would be moved periodically during construction, so the area occupied by the vessels would change frequently and habitat would only be shaded for short durations. Demolition and reconstruction of the marina

would not result in a significant change in benthic footprint compared to the existing marina, so there would be no resultant loss of benthic habitat in the or reduction in foraging opportunities for sturgeon, which feed on benthic macroinvertebrates, or ESA-listed sea turtles, which collectively feed largely on all manner of aquatic plants and animals, and foraging habitat would continue to be available within the action area. The reconstructed marina would not create a physical barrier to passage to the East River and Long Island Sound and would not impede the seasonal movement of adult, subadult, or juvenile Atlantic sturgeon. The partial-depth wave screens the boat basin would allow several feet of separation from the river bottom and would not create a physical barrier to sturgeon passage, as sturgeon and sea turtles would be able to swim beneath the structure. Once reconstructed, the new piles within the marina would occupy 210 square feet (0.01 acres) of benthic habitat. Additionally, the area to be affected is small compared to the more preferable foraging habitat that is present within the action area including habitat that would be unaffected near and within the navigation channel. Restored wetland habitat also exists for sea turtles in the action area for foraging purposes.

The marina would undergo some natural deposition of sediments over time, and the deeper waters would allow flushing to occur such that the exposed sediments would not have a long-term impact on water quality in the action area. Benthic organisms would be expected to quickly recolonize the disturbed areas, as similar habitat is present in the action area that would be unaffected or minimally affected by the project activities and would serve as the source of colonizing invertebrates. Therefore, the effects of habitat modification on conservation of the species would be too small to be meaningfully measured or detected and are thus, insignificant.

CONCLUSION

Based on the analysis that all effects of the proposed action will be insignificant or discountable, we have determined that the demolition and reconstruction of Piers 1 and 3 of the World's Fair Marina is not likely to adversely affect any listed species or critical habitat under NOAA Fisheries' jurisdiction. We certify that we have used the best scientific and commercial data available to complete this analysis. Project implementation will be conditioned upon issuance of applicable federal, state, and local permits and in accordance with any conditions of those permits. Therefore, FEMA requests concurrence on its determination that the project is not likely to adversely affect any listed species or critical habitat under NOAA Fisheries' jurisdiction. Should you have any questions, please don't hesitate to call Kyle Bartowitz at (202) 716-4318.

Sincerely,

BROCK A GIORDANO

Digitally signed by BROCK A GIORDANO
Date: 2022.02.09 11:49:24 -05'00'

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Encl: Project Location Map
Preliminary Project Design Plans/Overview Documents

REFERENCES

Atlantic States Marine Fisheries Commission (ASMFC). (2012). *Habitat Addendum IV to Amendment 1 to the Interstate Fishery Management Plan for Atlantic Sturgeon*. September 2012.

Bain, M.B. (1997). *Atlantic and shortnose sturgeons of the Hudson River: common and divergent life history attributes*. Environmental Biology of Fishes, 48: 347-358.

Bain, M.B., D.L. Peterson, and K.K. Arend. (1998). *Population status of shortnose sturgeon in the Hudson River*. Final Report to the National Marine Fisheries Service. U.S. Army Corps of Engineers Agreement # NYD 95-38.

Bain, M.B., N. Haley, D.L. Peterson, K.K. Arend, K.E. Mills, and P.J. Sullivan. (2007). *Recovery of a US Endangered Fish*. PLoS ONE Issue 1, e168 pp: 1-9.

Breece, M.W., Higgs, A.L. and Fox, D.A., 2021. Spawning Intervals, Timing, and Riverine Habitat Use of Adult Atlantic Sturgeon in the Hudson River. Transactions of the American Fisheries Society, 150(4), pp.528-537.

Buckley, J., and B. Kynard. (1981). *Spawning and rearing of shortnose sturgeon from the Connecticut River*. The Progressive Fish-Culturist 43: 74-76.

Dovel, W.L., and T.J. Berggren. (1983). *Atlantic sturgeon of the Hudson River Estuary, New York*. New York Fish and Game Journal 30: 140-172.

Dovel, W.L., A.W. Pekovitch, and T.J. Berggren. (1992). *Biology of the Shortnose Sturgeon (Acipenser brevirostrum Lesueur, 1818) in the Hudson River Estuary, New York*. Pages 187-216 in C.L. Smith, editor, Estuarine Research in the 1980s. State University of New York Press, Albany, New York.

Dunton, K.J., A. Jordaan, K.A. McKown, D.O. Conover, and M.G. Frisk. (2010). *Abundance and distribution of Atlantic sturgeon (Acipenser oxyrinchus) within the Northwest Atlantic Ocean, determined from five fishery-independent surveys*. Fisheries Bulletin, 108: 450-465.

EPA (Environmental Protection Agency). 1986. Quality Criteria for Water. EPA 440/5-86-001.

Federal Highway Administration (FHWA). (2012). *Biological Assessment for the Tappan Zee Pile Installation Demonstration Project*. January 2012.105pp.

Geoghegan, P., M.T. Mattson, and R.G. Keppel. (1992). *Distribution of the Shortnose Sturgeon in the Hudson River Estuary, 1984-1988*. In Estuarine Research in the 1980s, C. Lavett Smith, Editor. Hudson River Environmental Society, Seventh symposium on Hudson River ecology. State University of New York Press, Albany NY, USA.

Geyer, W.R., and R. Chant. (2006). *The Physical Oceanography Processes in the Hudson River Estuary*. In: J.S. Levinson and J.R. Waldman (eds.) The Hudson River Estuary. Cambridge University Press, New York, NY.

Hatin, D., Munro, J., Caron, F., and Simons, R.D. (2007). *Movements, home range size, and habitat use and selection of early juvenile Atlantic Sturgeon in the St. Lawrence Estuarine Transition Zone*. American Fisheries Society, Symposium 56 No. 56: 129-155. American Fisheries Society: Bethesda, Maryland.

Hoff, T.B., R.J. Klauda, and J.R. Young. (1988). *Contribution to the biology of shortnose sturgeon in the Hudson River estuary*. In: Smith, C.L. (ed.) Fisheries Research in the Hudson River, pp. 171-189. State University of New York Press, Albany, New York.

Kynard, B., and M. Horgan. (2002). *Ontogenetic behavior and migration of Atlantic sturgeon Acipenser oxyrinchus oxyrinchus, and shortnose sturgeon A. brevirostrum, with notes on social behavior*. Environmental Biology of Fishes 63: 137-150.

National Marine Fisheries Service (NMFS). (2013). *Biological Opinion for Tappan Zee Bridge Replacement, NER-2013-9592*. April 10, 2013.

National Marine Fisheries Service (NMFS). (2017). *Endangered and Threatened Species; Designation of Critical Habitat for the Endangered New York Bight, Chesapeake Bay, Carolina and South Atlantic Distinct Population Segments of Atlantic Sturgeon and the Threatened Gulf of Maine Distinct Population Segment of Atlantic Sturgeon*. Final Rule. 82 Federal Register 39160-39274. August 17, 2017.

National Marine Fisheries Service (NMFS). (2019). *ESA Section 7 Mapper. Accessed August 13, 2019*. Available at greateratlantic.fisheries.noaa.gov/protected/section7/listing/index.html.

National Marine Fisheries Service (NMFS). (2019a). *Deepening and Maintenance of the Delaware River Federal Navigation Channel*. GARFO-2019-01942. *Accessed September 24, 2021.* Available at https://repository.library.noaa.gov › noaa_22748_DS1.

National Marine Fisheries Service (NMFS) and Federal Highway Administration (FHWA). (2018). *NMFS/FHWA Best Management Practices (BMPs) Manual for Transportation Actions in the Greater Atlantic Region*. April 2018.

New York State Department of Environmental Conservation (NYSDEC). (2004). *Technical & Operational Guidance Series (TOGS) 5.1.9, In-water and Riparian Management of Sediment and Dredged Material*. NYSDEC, Division of Water. Available: https://www.dec.ny.gov/docs/water_pdf/togs519.pdf

Peterson, D., and M. Bain. (2002). *Sturgeon of the Hudson River: Current status and recent trends of Atlantic and shortnose sturgeon*. Annual Meeting of the American Fisheries Society, Baltimore, MD.

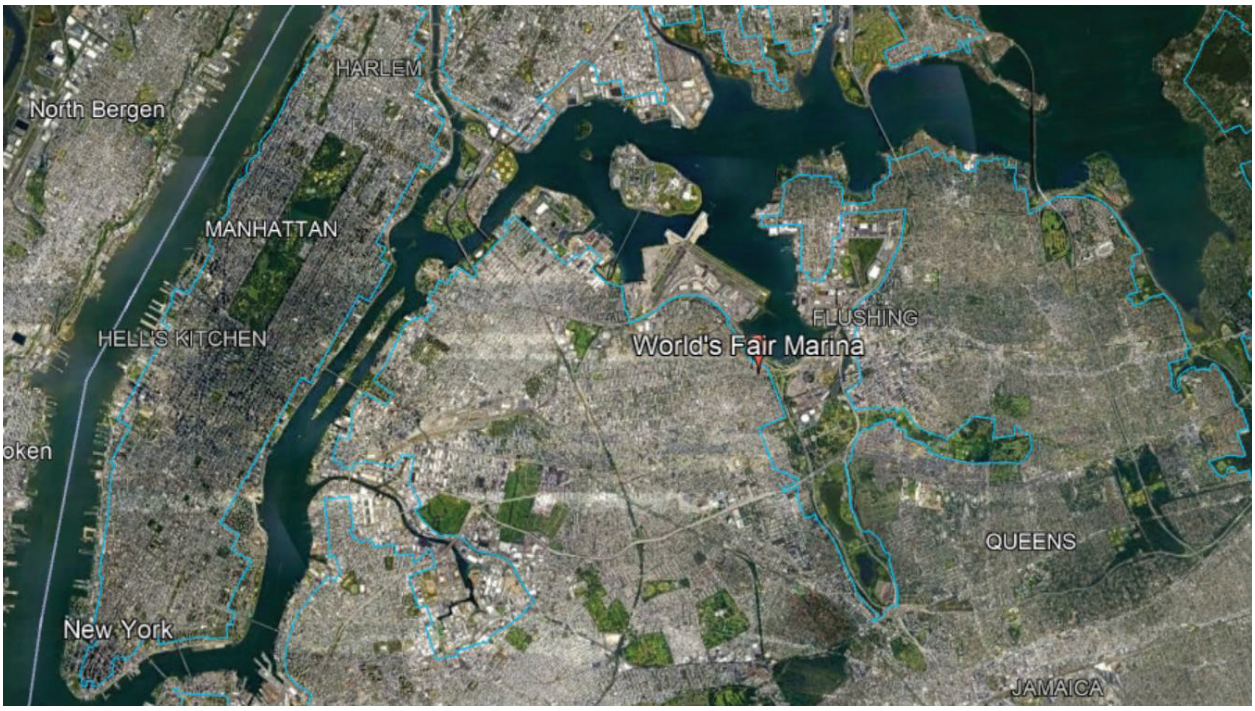
Savoy, T., and D. Pacileo. (2003). *Movements and important habitats of subadult Atlantic sturgeon in Connecticut waters*. Transactions of the American Fisheries Society 132: 1-8.

Waldman, J.R., J.T. Hart, and I.I. Wirgin. (1996). *Stock composition of the New York Bight Atlantic sturgeon fishery based on analysis of mitochondrial DNA*. Transactions of the American Fisheries Society 125: 364-371.

Wilber, D.H., and Clarke, D.G. 2001. Biological effects of suspended sediments: A review of suspended sediment impacts on fish and shellfish with relation to dredging activities in estuaries. North American Journal of Fisheries Management 21(4):855-875.

ATTACHMENTS

Project Location – World's Fair Marina, Flushing Meadows-Corona Park, Queens, NY



Preliminary Project Design Plans/Overview Document

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930

March 2, 2022

Brock Giordano
U.S. Department of Homeland Security
Federal Emergency Management Agency
FEMA Region II
26 Federal Plaza Suite 1307
New York, New York 10278

Re: FEMA-4085-DR-NY Super Storm Sandy: PW4656 Site 11 NYC DPR World's Fair Marina PAAP

Dear Mr. Giordano:

We have completed our consultation under section 7 of the Endangered Species Act (ESA) in response to your email received on February 9, 2022, including follow-up emails up until February 23, 2022, regarding the above-referenced proposed project. We reviewed your consultation request document and related materials. Based on our knowledge, expertise, and your materials, we concur with your conclusion that the proposed action is not likely to adversely affect any National Marine Fisheries Service ESA-listed species or designated critical habitat. Therefore, no further consultation pursuant to section 7 of the ESA is required.

We would like to offer the following clarification to complement your incoming request for consultation. In your biological assessment, you indicate that the marina reconstruction, itself, will not change the vessel capacity from the existing baseline (when in operation), but you do not identify what the current baseline is under Pier 1 operations with limited usage. To follow up, your emails of February 16, 2022, and February 23, 2022, clarified that upon completion of the new Pier 1 there will be a maximum capacity of 76 vessels using the pier. In 2021, a maximum of 85 vessels used the pier at one time. Because there is no net increase in vessel traffic expected once the pier is fully operating, we agree with your determination that the effects of the risk of a vessel strike of an ESA species in the action area is insignificant.

Reinitiation of consultation is required and shall be requested by the lead federal agency or by us, where discretionary federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation; or, (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, reinitiation would be required. Should you have any questions about this correspondence please contact Edith Carson-Supino at (978) 282-8490 or by email (Edith.Carson-Supino@noaa.gov). For

questions related to Essential Fish Habitat, please contact Jessie Murray with our Habitat and Ecosystems Services Division at (978)-675-2175 or Jessie.Murray@noaa.gov.

Sincerely,

Jennifer Anderson

Jennifer Anderson
Assistant Regional Administrator
for Protected Resources

ec: Murray, NMFS/HESD; Bartowitz, FEMA
ECO: GARFO-2022-00401
File Code: H:\Section 7 Team\Section 7\Non-Fisheries\FEMA\Informals\2022\FEMA-4085-DR-NY PW4656 World's Fair Marina Flushing Bay

U.S. Department of Homeland Security
Federal Emergency Management Agency
FEMA Region II
26 Federal Plaza.
Suite 1307

FEMA

February 8, 2022

Ms. Karen Greene
Mid-Atlantic Field Office Supervisor and EFH Coordinator
NOAA Fisheries
Via email: Karen.Greene@noaa.gov

Re: NOAA Essential Fish Habitat Review of FEMA-4085-DR-NY Super Storm Sandy: PW4656 Site 11 NYC DPR

Dear Ms. Greene:

On behalf of the New York City Department of Parks and Recreation (DPR) (Sub-Recipient), the New York State Division of Homeland Security and Emergency Services (NYSDHSES) (Recipient) submitted an application for the Federal Emergency Management Agency's (FEMA) Public Assistance (PA) Program for financial assistance to demolish and reconstruct the World's Fair Marina Piers 1 and 3, with Pier 1 on a new footprint approximately 1,000 feet to the west, in the borough of Queens, New York.

The purpose of this letter is to submit an Essential Fish Habitat (EFH) Worksheet for the Project to the National Oceanic and Atmospheric Administration (NOAA) Fisheries Greater Atlantic Regional Fisheries Office to document compliance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the Fish and Wildlife Coordination Act (FWCA). As per the Worksheet and discussed below, we have reviewed the Project and found that the Project does not result in a substantial adverse effect to EFH. This letter requests an abbreviated consultation and acknowledgement from NOAA that they have received our determination regarding the Project provided in this letter, and that NOAA has no objections to the determination. FEMA also hereby requests any EFH conservation recommendations and recommendations under the FWCA.

PROJECT DESCRIPTION

The Project Area consists of the existing World's Fair Marina Piers 1 and 3, and areas west of the existing Pier 1 for reconstruction, all within its property limits and inside the pierhead line. The proposed work consists of removal of the existing Piers 1 and 3, construction of a new Pier 3 on largely the existing footprint (built with a 10' wide main walkway for the first 400' of length as opposed to the 8' width of the existing for ADA accessibility), construction of a new Pier 1 approximately 1,000 feet west of the existing Pier with partial depth fixed wave screens (4" x 12" timber boards affixed to new 12" to 14" timber piles, 1" gaps between boards, with 4' to 5' gap to mudline), repairs of the bulkhead and esplanade on the shoreline adjacent to the existing Pier 1. Existing timber piles for both piers would be replaced with steel pipe piles (four 18" diameter piles at Pier 3, 169 piles ranging between 14" and 36" diameter at Pier 1). In-water activities associated

with the reconstruction would begin in April 2023 and last up to two years. NYC Parks would comply with all regulatory restrictions for in-water construction activities, including no in-water construction work from January 15 through May 31 to protect early life stages of winter flounder, and no sediment disturbing activities from March 1 through June 30 to protect anadromous species. All in-water activities will be conducted from barge-based equipment. The construction staging for both piers and the marina will take place upland in existing parking lots and at the edge of Pier 3. Approximately 17,000 square feet will be dedicated for staging of Pier 1 and approximately 7,100 square feet will be dedicated to Pier 3.

A full-length turbidity curtain would be installed around the construction site for the duration of demolition activities. All treated timber would be disposed of in accordance with local, state, and federal regulations. After installation of the foundation piles, the superstructures of the proposed fixed structures would be installed, including the fixed pier and wave screens. Utilities, railings, signage, cleats, dockboxes, and other appurtenances would be installed on the finished superstructures. Upland utility connections would be made to provide water, sewer, and electrical service to the marina.

Removal of Existing Structures

Prior to reconstruction of the marina, most existing structures that make up Piers 1 and 3 would be removed, including floating docks, fixed piers, guide piles, mooring piles, dolphins, gangways. Multiple turbidity curtains utilized during construction: one for the removal of the existing Pier 1, one for the new construction of Pier 1 and the marina, and one for the removal and construction of Pier 3. The turbidity curtain for the removal of the existing Pier 1 will be approximately 2,000 feet long and will cover an approximate area of 475,000 square feet. For the construction of new Pier 1, the turbidity curtain will be 2,200 feet long and will cover an approximate area of 665,000 square feet. The turbidity curtain at Pier 3 will be approximately 700 feet long and cover and area of approximately 59,000 square feet. Increases in suspended sediment during pile driving are anticipated to be minimal, to be concentrated within the vicinity of pile driving activity, and to dissipate quickly and without significant adverse impacts to water quality or aquatic biota. Sediment disturbing activities associated with the project, including vibratory extraction of the existing timber piles, pile installation, and debris removal, would be subject to the following avoidance and minimization measures:

- Use of a turbidity curtain during all demolition, debris removal, and reconstruction activities
- Daily inspection and immediate modification, adjustment, or repair any portion of turbidity curtain to correct inadequate performance
- Debris removal would take place within the extent of the turbidity curtain to the extent practicable

Approximately 3 to 6 vessels (1 to 2 barges, 1 to 2 crew/safety boats, and 2 tugs) would be used at any given time during the project. The floating docks, fixed piers, and any bracing between piles within the boat basin would be disconnected from the piles and removed using a barge-mounted crane, and materials for disposal would be placed on a barge for transport to a licensed facility. Following removal of the surface materials and timber bracing, the existing timber piles would be removed through vibratory extraction. All treated timber would be disposed of in accordance with local, state, and federal regulations.

Reconstruction of Marina Structures

Reconstruction of the marina would include: Pier 3 would be reconstructed on its present site and widened for ADA accessibility, while Pier 1 would be relocated approximately 1,000 feet west of its current location with parallel floating docks extending south and two commercial docks extending north. The capacity of the new piers would be the same as the existing ones. Timber wave screens will be installed to attenuate wave action along Pier 1, consisting of 4" x 12" timber boards with 1" gaps extending down to 4 to 5 feet above the mudline. Utilities on the new piers would be elevated to avoid future flooding damages. These structures would be supported by 14-inch, 18-inch, 20-inch, 24-inch, and/or 36-inch steel pipe piles, as well as 12-inch and 14-inch timber piles. Installation of the new fixed piers, floating docks, wave screen, and gangways would be conducted once debris removal is complete. Turbidity curtains would remain in place for the duration of in-water construction activities to remove the existing Pier 1, construct the new Pier 1, and for the removal and reconstruction of Pier 3. New steel pipe piles for the fixed piers within the marina and the wave screen at the boat basin's western perimeter would be installed using a pneumatic, diesel, or vibratory hammer to the greatest extent practicable. Additional minimization measures are use of a soft start (such as pile tapping) prior to full energy impact hammering and use of a cushion block when impact hammering. In total, the reconstructed marina including Piers 1 and 3 and commercial docks would result in 74,800 square feet (1.72 acres) of overwater coverage (a reduction of ~40,000 square feet due largely to the lowered footprint of the proposed new Pier 1 from the existing) and a 210 square foot footprint occupied by the newly installed piles.

BEST MANAGEMENT PRACTICES AND MINIMIZATION MEASURES

The project would incorporate Best Management Practices (BMPs) to avoid and minimize to the greatest extent possible any potential direct and indirect impacts to federally listed species and Critical Habitat. BMPs would be required as a condition of any permits authorizing the project, and the BMPs described below have been incorporated into the evaluations below under "Effects Evaluation". Consistent with NOAA Fisheries and FHWA guidance (NMFS and FHWA 2018), NYC Parks is proposing the following measures to avoid and minimize potential direct and indirect effects to EFH resulting from: underwater noise during pile installation, turbidity and sedimentation, reduced water quality, vessel interaction, and habitat alteration.

Pile Installation

Components of the project that would result in increased underwater noise include: vibratory and impact pile driving during reconstruction of the floating docks, fixed piers, wave screens, and icebreaker. Pile installation would be subject to the following avoidance and minimization measures:

- Use of a vibratory hammer to the extent possible;
- Use of a soft start such as pile tapping prior to full energy impact hammering; and
- Use of a cushion block when impact hammering.

Turbidity and Sediment Resuspension

Sediment disturbing activities associated with the project, including vibratory extraction of the existing timber piles, pile installation, and debris removal, would be subject to the following avoidance and minimization measures:

- Use of full-length turbidity curtains during all demolition, debris removal, and reconstruction activities;
- Debris removal would take place within the extent of the turbidity curtain to the extent practicable;
- Removal of existing piles using a vibratory hammer, pulled slowly to reduce sediment sloughing off in the water column;
- Striking or vibrating the pile to break the bond between the sediment and pile during pile removal;
- Placement of removed piles on a barge equipped with protection against spills into the waterway, as well as presence of a spill kit on site should any spill occur
- Shoreward erosion and sediment controls in place before the commencement of work; and
- Following construction, the new marina structures would not alter the natural sediment accretion rates or patterns when compared to the existing characteristics of the site.

Vessel Movement

During all demolition and reconstruction activities for the project, the use of construction vessels, including barges, tugs, and crew vessels, would be subject to the following avoidance and minimization measures:

- Number of vessels would be limited to approximately 4 vessels (2 crew boats and 2 tugs), and 2 barges at any given time during construction;
- All vessels would be shallow draft (5 to 10 feet) and would maintain low speeds (less than 5 knots for push boats and tugs, and less than 10 knots for crew boats); and

Habitat Alteration

Installation of permanent structures, use of barges, and shading from overwater structures for the project could result in temporary and permanent habitat alteration. These activities would be subject to the following avoidance and minimization measures:

- Anadromous species would be prevented from entering areas within the turbidity curtain(s) temporarily deployed around the existing and proposed new Pier 1 and Pier 3, but the turbidity curtains would be installed only around each immediate project site to minimize this area;
- Grated surfaces of the gangway landings and minimal width of the other structures such as floating docks, and fixed piers, would allow light to reach the water beneath the structure over the course of a day;
- Artificial lighting on the marina structures would be oriented to avoid illumination of the surrounding waters at night to the greatest extent practicable, except for any navigational lighting required by the U.S. Coast Guard.

ESSENTIAL FISH HABITAT ASSESSMENT

The EFH Assessment Worksheet included as Attachment 1 to this appendix identifies the species and life stages for which EFH is designated within the project area. NYC Parks would comply with all regulatory restrictions for in-water construction activities, including no in-water construction work from January 15 through May 31 to protect spawning winter flounder, and no sediment disturbing activities from March 1 through June 30 to protect anadromous species.

The effects or stressors of the project that could potentially affect EFH and NOAA trust resources include vessel traffic, sediment resuspension, underwater noise during pile driving, temporary loss of foraging habitat within the turbidity curtain and ensonified areas, and permanent loss of habitat in the footprint of the piles and from shading by overwater structures.

Vessel Traffic

The analysis considered three elements: 1) the existing baseline conditions, 2) the action and what it adds to existing baseline conditions, and 3) new baseline conditions (the existing baseline conditions and the action together).

Adding vessels necessary to construct the project to the existing baseline would not increase the risk that any vessel in the area will strike an individual or would increase it to such a small extent that the effect of the action (i.e., any increase in risk of a strike cause by the project) cannot be meaningfully measured or detected. The baseline risk of a vessel strike within the action area is unknown. At present time, the World's Fair Marina is not in use. As such, the only change in overall vessel activity within the action area will be those required for construction and demolition. Because construction vessels do not currently operate regularly within the action area, an evaluation of their potential effects is provided below.

As discussed above under the description of the project, during the project activities, approximately 3 to 6 vessels (1 to 2 barges, 1 to 2 crew/safety boats, and 2 tugs) would be in use at any given time. As the federal navigation channel overlaps the Marina, vessels would need to operate within the navigation channel during construction. This represents a small increase in vessel activity in addition to the baseline for similar vessels. Movement of vessels necessary to construct the project would largely be limited to areas of the project site, and vessel speeds would be relatively slow (i.e., less than 5 knots for barges and tugs, and less than 10 knots for crew/safety boats). Drafts would likely range from 5 to 10 feet across vessel types. The addition of construction vessels would also be intermittent, temporary, and restricted to a small portion of the overall action area on any given day. As such, any increased risk of a vessel strike caused by the project would be too small to be meaningfully measured or detected. As a result, the effect of the action on the risk of a vessel strike in the action area would be insignificant.

The marina reconstruction itself would enable vessels to travel safely in the area and would leave the marina with the same vessel capacity as the existing (when in operation). The project would create docking space for these vessels and bring them into the protected area behind wave screens. Any slight increase in vessel strike risk from altered patterns of use would be too small to be detected or measured. As a result, the effect of the action on the risk of a vessel strike in the action area would be insignificant.

Sediment Resuspension

Pile removal and installation and debris removal for the project have the potential to result in sediment resuspension and increased turbidity within the action area. The use of a full-length turbidity curtain around the sites of demolition of Pier 1, construction of new Pier 1, and demolition and reconstruction of Pier 3 for the duration of all demolition and reconstruction activities would minimize the potential effects of sediment resuspension and increased turbidity in the waterway,

and also serve as a physical barrier to prevent species from entering the area and being exposed to turbidity plumes. Sediment disturbance associated with removal and installation of piles would result in minor, short-term increases in total suspended sediment (TSS) of between 5 to 10 mg/L within approximately 300 feet of the pile being driven (FHWA 2012), and re-deposition of sediments. The greatest potential for increased turbidity during demolition or construction would occur when piles are removed. Both removal and installation of the piles would be conducted intermittently over the course of a workday, rather than continuously throughout the construction duration, which would allow resuspended sediments to dissipate as the work is conducted. The use of a turbidity curtain during pile removal and installation would further minimize the potential for adverse effects from sediment resuspension associated with the piles. Use of a turbidity curtain would also prevent species from entering the area, minimizing their potential exposure to the sediment plumes. Resuspended sediments from pile removal and installation would not result in long-term effects to species. The TSS concentrations expected for pile driving or removal in the Hudson River (5 to 10 mg/L) are below levels shown to have adverse effects on fish (typically up to 1,000.0 mg/L; see summary of scientific literature in Burton 1993; Wilber and Clarke 2001) and benthic communities (390.0 mg/L (EPA 1986)). The small resulting sediment plume, which would be contained within the turbidity curtain, would settle out of the water column within a few hours.

Debris removal would result in resuspended sediment and elevated turbidity concentrations within the action area. However, debris removal would be conducted within a full-length turbidity curtain to the extent practicable. Any sediment resuspended during these activities would be contained within the perimeter of the turbidity curtain and would settle out of the water column within a few hours while the curtain remains deployed.

Sediment resuspension resulting from pile removal or installation and debris removal would have insignificant effects on water depth, water flow, dissolved oxygen levels, salinity, temperature, or the ability EFH to navigate in the action area. Any sediment plume resulting from project activities would move with the tidal currents. Species that could be present in the action area would be able to swim away from areas temporarily affected by sediment resuspension, and the width of the bay in the action area (~3,000 feet) would allow ample space for species to move away from the sediment disturbing activities. The turbidity curtain would also prevent species from entering the area, and thus would prevent them from being exposed to the highest levels of turbidity produced during pile removal and installation and debris removal activities. Given that increases in suspended sediment would be temporary, minimal, localized to the vicinity of construction activities, and contained within a full-length turbidity curtain, and given that species would be able to easily move away from the project site, any effects would be too small to be meaningfully measured or detected. As a result, the effect of sediment resuspension on EFH or NOAA trust resources would be insignificant.

Underwater Noise

The greatest potential for underwater noise impacts to fish from the project would be associated with vibratory and impact hammering during pile removal and reconstruction of the marina structures. All pile removal and installation activities would be completed within a full-length turbidity curtain surrounding each project site. The existing piles would be removed using a vibratory hammer. The new piles for the fixed piers, floating docks, and wave screens would be

installed using a vibratory hammer to the extent possible and using a soft start and cushion block when impact hammering is required.

As described in detail below, for this project, the distance to the 187 dB cSEL (or 150 dB sSEL) isopleth associated with vibratory or cushioned impact hammering is no greater than 66.7 meters (219 feet) for sturgeon, which are used as a proxy to estimate noise impacts to similar fish. In order to be exposed to potentially injurious levels of noise during pile driving, a fish would need to be within 67 meters of the pile being driven to be exposed to this noise for any prolonged time period. This would be extremely unlikely to occur as it is expected that fish would modify their behavior at 103 meters from the pile and quickly move away from the area before cumulative injury levels are reached. The turbidity curtain would provide additional protection, as it would prevent fish from getting close to the pile driving activities where the noise levels would be highest. Given the small distance a fish would need to move to avoid the disturbance levels of noise, any effects would not be able to be meaningfully measured or detected. Therefore, underwater noise from the project would not result in significant adverse impacts to EFH or NOAA trust resources.

As recommended by NMFS, a vibratory hammer would be used to the extent feasible, and the minimal impact hammering that would be required to seat the piles would be conducted using a cushion block to minimize underwater noise impacts. Pile tapping just prior to cushioned impact hammering would deter fish from the immediate vicinity of pile driving, outside the turbidity curtain. The projected noise at the source and distance to relevant thresholds for species in the action area was determined based on the NMFS Greater Atlantic Regional Fisheries Office (GARFO) Acoustic Tool spreadsheet (version updated September 14, 2020). The estimated sound levels and distances to species injury and behavioral thresholds associated with the project are presented in Tables 1 through 3, with potential impacts to EFH species represented by thresholds developed for sturgeon. Steel pipe piles with a diameter of 20 inches were used to estimate the potential underwater noise increases associated with the 18-inch diameter piles for the project, while 13” steel pipe piles were used to estimate noise increases for the 14-inch diameter pipes 40” steel pipes for increases of 36” steel pipes using cushioned impact, and timber pipe piles with a diameter of 12 to 16 inches were used to estimate noise levels for the new timber mooring piles within the marina. Pile installation would be limited to periods outside the in-water construction restricted windows (January 15 through June 30) in order to avoid impacts to early life stages of winter flounder.

Table 1
Proxy Projects for Estimating Underwater Noise

Project Location	Water Depth (m)	Pile Size (inches)	Pile Type	Hammer Type	Attenuation rate (dB/10m)
Not Available	15	14"	Steel Pipe	Cushioned Impact	5
Lathrop, CA - San Joaquin River	<1	20"	Steel Pipe	Vibratory	5
Lathrop, CA - San Joaquin River	<1	20"	Steel Pipe	Cushioned Impact	5
Geyserville - Russian River, CA	0	24"	Steel Pipe	Vibratory	4
Rodeo, CA - San Francisco Bay, CA	5	24"	Steel Pipe	Cushioned Impact	3
Not Available	5	36	Steel Pipe	Vibratory	5
Alameda, CA	13	40"	Steel Pipe	Cushioned Impact	5
Norfolk, VA	12.2	12-16”	Timber	Vibratory	5

Table 2
Proxy-Based Estimates for Underwater Noise

Type of Pile	Hammer Type	Estimated Peak Noise Level (dB_{Peak})	Estimated Pressure Level (dB_{RMS})	Estimated Single Strike Sound Exposure Level (dB_{sSEL})
14" Steel Pipe	Cushioned Impact	189	173	163
20" Steel Pipe	Vibratory	194	161	169
20" Steel Pipe	Cushioned Impact	193	150	168
24" Steel Pipe	Vibratory	187	175	163
24" Steel Pipe	Cushioned Impact	192	178	167
36" Steel Pipe	Vibratory	185	175	175
40" Steel Pipe	Cushioned Impact	197	184	169
12-16” Timber	Vibratory	176	165	165

Table 3
Estimated Distances to Sturgeon Injury and Behavioral Thresholds

Type of Pile	Hammer Type	Distance (m) to 206dB_{Peak} (injury)	Distance (m) to sSEL of 150 dB (surrogate for 187 dBcSEL injury)	Distance (m) to Behavioral Disturbance Threshold (150 dB_{RMS})
14" Steel Pipe	Cushioned Impact	NA	36.0	56.0
20" Steel Pipe	Vibratory	NA	48.0	32.0
20" Steel Pipe	Cushioned Impact	NA	46.0	10.0
24" Steel Pipe	Vibratory	NA	47.5	77.5
24" Steel Pipe	Cushioned Impact	NA	66.7	103.3
36" Steel Pipe	Vibratory	NA	60.0	60.0
40" Steel Pipe	Cushioned Impact	NA	48.0	78.0
12-16” Timber	Vibratory	NA	39.0	39.0

Exposure to underwater noise levels of 206 dB Peak and 187 dB cSEL can result in injury to fish. In addition to the "peak" exposure criteria which relates to the energy received from a single pile strike, the potential for injury exists for multiple exposures to noise over a period of time; this is accounted for by the cSEL threshold. The cSEL is not an instantaneous maximum noise level but is a measure of the accumulated energy over a specific period of time (e.g., the period of time it takes to install a pile). While it is not possible to accurately calculate the distance to the 187 dB cSEL isopleth, we calculate the distance to the 150 dB sSEL isopleth. The further away a fish is from the pile being driven, the more strikes it must be exposed to in order to accumulate enough energy to result in injury. At some distance from the pile, a fish is far enough away that, regardless of the number of strikes it is exposed to, the energy accumulated is low enough that there is no potential for injury.

Behavioral effects, such as avoidance or disruption of foraging activities, may occur in fish exposed to noise levels above 150 dB RMS. Considering all of the pile-driving activities, it is expected that underwater noise levels would be below 150 dB RMS at distances beyond a maximum of approximately 103.3 meters (339 feet) from the pile being installed. It is reasonable to assume that a fish, upon detecting underwater noise levels at or above the 150 dB RMS isopleth, would modify its behavior such that it redirects its course of movement away from the ensonified area surrounding the project site. If any movements away from the ensonified area do occur, it is extremely unlikely that these movements would affect essential behaviors, as Flushing Bay is sufficiently large enough (about 3,500 feet wide) to allow fish to avoid the ensonified area while continuing to forage. At its maximum, the width of the ensonified area would extend 339 feet from the outer limits of the western wave screen, or about 15 percent of the width of the Hudson River in the project. Therefore, underwater noise from the project would not result in significant adverse effects to EFH or NOAA trust resources.

Habitat Modification

Shading by construction vessels and the marina structures for the project would not significantly affect benthic habitat, as light would still penetrate the water over the course of the day and similar habitat would continue to be available in the vicinity. Demolition and Reconstruction of the marina structures (with new structures covering 74,800 square feet) would not result in a significant change in overwater coverage compared to the existing marina, which would not have a significant adverse impact on EFH or NOAA trust resources. Grated surfaces of the gangway landings and minimal widths of the floating docks, piers, and other marina structures would allow light to penetrate the water similar to existing conditions within the boat basin. The construction vessels would be moved periodically during construction, so the area occupied by the vessels would change frequently and habitat would only be shaded for short durations. Demolition and reconstruction of the marina would not result in a significant change in benthic footprint compared to the existing marina, so there would be no resultant loss of benthic habitat in the or reduction in foraging opportunities for EFH, which feed on benthic macroinvertebrates, and foraging habitat would continue to be available within the action area.

CONCLUSION

Given the best management practices and avoidance measures described above, habitat alteration within Flushing Bay would be minimal. Project implementation will be conditioned upon issuance of applicable federal, state, and local permits and in accordance with any conditions of those

permits. Therefore, FEMA determinates that the project's adverse effect on EFH and NOAA trust resources would not be substantial and requests an abbreviated EFH consultation. We certify that we have used the best scientific and commercial data available to complete this analysis.

Sincerely,

BROCK A GIORDANO

Digitally signed by BROCK A GIORDANO
Date: 2022.02.09 11:46:42 -05'00'

Brock Giordano, RPA
EHP Supervisor, NY Sandy
4085-DR-NY

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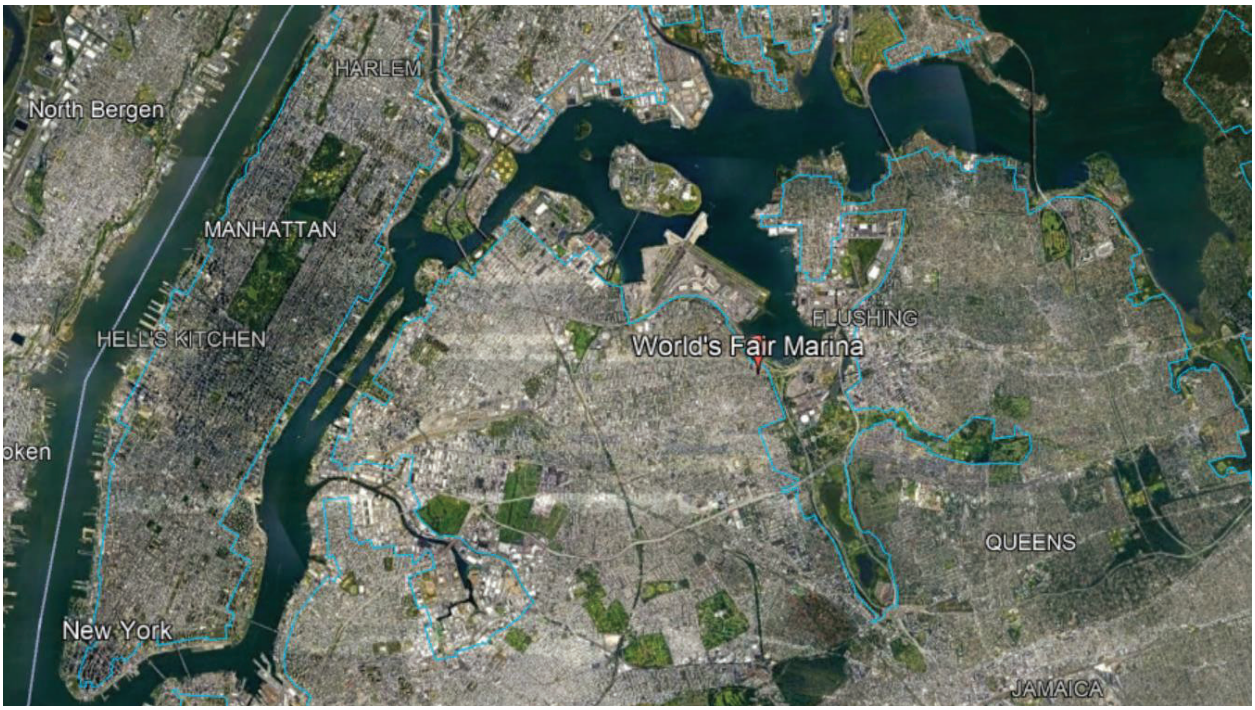
BG/kb

Encl: Project Location Map
NOAA Fisheries Greater Atlantic Regional Fisheries Office Essential Fish Habitat (EFH) Assessment & Fish and Wildlife Coordination Act (FWCA) Worksheet
Preliminary Project Design Plans/Overview Documents

ATTACHMENTS

Project Location – World's Fair Marina, Flushing Meadows-Corona Park, Queens, NY



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
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March 4, 2022

Brock Giordano, RPA
EHP Supervisor, NY Sandy
U.S. Department of Homeland Security
Federal Emergency Management Agency
FEMA Region II
26 Federal Plaza, Suite 1307
New York, New York 10278

RE: Essential Fish Habitat Consultation, FEMA-4085-DR-NY Super Storm Sandy: PW4656 Site 11 NYC DPR World's Fair Marina PAAP

Dear Mr. Giordano:

We have reviewed the information provided in your February 8, 2022, letter and accompanying essential fish habitat assessment (EFH) to demolish and reconstruct the World's Fair Marina Piers 1 and 3 on Flushing Bay in the borough of Queens, New York. Project components are being implemented with financial assistance from the Federal Emergency Management Agency's (FEMA) Public Assistance (PA) Program by the New York State Division of Homeland Security and Emergency Services (NYSDHSES) (Applicant) and New York City Department of Parks and Recreation (Sub-Applicant).

The project consists of the removal of most existing structures that make up the existing Piers 1 and 3 that sustained damage from Superstorm Sandy (i.e., floating docks, fixed piers, guide piles, mooring piles, dolphins, gangways), repairs to the existing bulkhead and esplanade, and the reconstruction of Piers 1 and 3 through the construction of new fixed piers, floating docks, partial fixed depth wave screen, and gangways, supported by 14-inch to 36-inch steel pipe piles and 12-inch to 14-inch timber piles. The reconstruction of Pier 3 is anticipated to be constructed within the same footprint with a main walkway widened by two feet for the first 400-feet for ADA accessibility. The reconstruction of Pier 1 is anticipated to be built 1000 feet west of the existing structure with partial fixed depth timber wave screens and an overall reduced footprint (i.e. approximately 40,000 square feet less than the existing structure).

Project activities are anticipated to temporarily disturb approximately 21.69 acres of aquatic habitat due to turbidity, noise, and physical activity to the substrate and water column and permanently disturb 1.71 acres of the water column in subtidal areas due to shading from over water coverage (which is a reduction of 0.92 acres from existing structure) and 210 square feet of substrate for the footprint of the newly installed piles.

Proposed best management practices (BMPs) have been incorporated into the project design to avoid and minimize disturbances. Such BMPs include:

- the use of a full-length turbidity curtain surrounding the project area, to be inspected daily and adjusted as needed
- working outside of in-water protective windows (winter flounder early life stage EFH (January 15 through May 31) and anadromous species (March 1 through June 30)
- use of a vibratory hammer with a soft start and cushion block for impact hammer, if needed
- grated surfaces for gangway landings and minimizing widths of floating docks and fixed piers to allow light penetration
- with the exception of navigation lights, minimizing artificial lighting through orientation away from surrounding waters at night to the greatest extent practicable.

Construction is anticipated to begin in April 2023 and last up to two years.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the Fish and Wildlife Coordination Act (FWCA) require federal agencies to consult with one another on projects such as this that may adversely affect EFH and other aquatic resources. In turn, we must provide recommendations to conserve EFH. These recommendations may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from actions or proposed actions authorized, funded, or undertaken by that agency. This process is guided by the requirements of our EFH regulation at 50 CFR 600.905, which mandates the preparation of EFH assessments and generally outlines each agency's obligations in this consultation procedure.

Flushing Bay in the vicinity of the project area has been designated as EFH for a number federally managed species including bluefish (*Pomatomus saltatrix*), winter flounder (*Pseudopleuronectes americanus*), summer flounder (*Paralichthys dentatus*), windowpane flounder (*Scophthalmus aquosus*), Atlantic herring (*Clupea harengus*), Atlantic butterfish (*Peprilus triacanthus*), clearnose skate (*Raja eglanteria*), little skate (*Leucoraja erinacea*), red hake (*Urophycis chuss*), winter skate (*Leucoraja ocellata*), and longfin inshore squid (*Doryteuthis pealeii*), and others. Flushing Bay also provides habitat for anadromous fish such as alewife (*Alosa pseudoharengus*) and striped bass (*Morone saxatilis*).

We have reviewed the EFH assessment provided and agree with your conclusion that the adverse effects of this project on EFH will not be substantial. As discussed in the EFH assessment, project activities have been designed to avoid and minimize impacts to the extent practicable, which includes a limited in-water work and a construction schedule aimed to avoid winter flounder early life stage EFH (January 15 through May 31) in addition to the BMPs to be used during construction. While a limited in-water protective window for migrating anadromous fish was also incorporated into the schedule, a time of year restriction (between March 1 and June 30) is not necessary due to the location of the project and width of the waterway in the vicinity of the project.

Based upon all of the information provided, we do not have any objections to the proposed project and additional EFH conservation recommendations are not warranted. Please note that further EFH consultation must be reinitiated pursuant to 50 CFR 600.920(j) if new information becomes available, or if the project is revised in such a manner that affects the basis for the above determination. This includes the nature of compensatory mitigation required by the NYSDEC, should proposed activities include the placement of fill in aquatic habitats.

Endangered Species Act

Federally listed species may be present in the project area and consultation, pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, may be necessary. We understand that you are currently working with our Protected Resources Division on the submission of a request for ESA consultation. Should you have any questions about the Section 7 consultation process, please contact Edith Carson-Supino at 978-282-8490 or by e-mail (Edith.Carson-Supino@noaa.gov).

Conclusion

As always, we are available to coordinate with your staff so that this project can move forward efficiently and expeditiously as possible while still meeting our joint responsibilities to protect and conserve aquatic resources. If you have any questions or need additional information, please contact Jessie Murray in our Highlands, NJ field office at (978) 675-2175 or by e-mail (Jessie.Murray@noaa.gov).

Sincerely,

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Karen M. Greene
Mid-Atlantic Branch Chief
Habitat and Ecosystem Services Division

cc:

GARFO PRD – E. Carson-Supino
FEMA – K. Bartowitz
New York District ACOE – S. Ryba
NYSDEC – D. McReynolds
FWS – S. Sinkevich
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