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October 5, 2022
Via email

New Jersey Department of Environmental Protection
Division of Land Resource Protection
501 East State Street, Second Floor
Trenton, NJ 08625
ATTN: Ms. Colleen Keller and Ms. Janet Stewart

RE: Coastal Program Emergency Authorization – Shore Protection Measures
25th Avenue Beach Access and Beach Patrol Building/Oceanfront Safety Facility
Block 289.03, Lot 1 (portion thereof) and Block 317.03, Lot 1 (portion thereof)
City of North Wildwood, Cape May County, NJ
TLCG File No.: 22-1093.2

Dear Ms. Keller and Ms. Stewart,

On behalf of the City of North Wildwood (hereafter "City" or "Applicant"), please accept this request for an Emergency Authorization pursuant to the Coastal Zone Management Rules (CZMR) *(N.J.A.C. 7:7 et seq.)* under the authority of the NJ Department of Environmental Protection (NJDEP). This request follows our previous email exchanges in this regard over the past few days during which the low pressure system remnants of Hurricane Ian stalled off the mid-Atlantic coast causing a sustained multi-day period of significant coastal flooding throughout the region and, more specifically, potentially catastrophic beach and dune erosion to the City of North Wildwood oceanfront. Given the absence of a defined beach berm and loss of greater than 75% of the protective dune system in front of the Beach Patrol Building/Oceanfront Safety Facility, Block 317.03, Lot 1 (portion thereof), the City Engineer has determined that a breach condition is imminent requiring that emergency measures be implemented to re-establish reliable shore protection at this location. Additionally, the 25th Avenue beach access, Block 289.03, Lot 1 (portion thereof), continues to sustain significant erosion which has undermined this vehicular beach access and exposed adjoining shore protection structure to further scour and scarping. These emergent conditions were first observed during the weekend (October 1, 2022) and exacerbated through the following days *(see attached photo pages)*.

Please note that, consistent with previous collaborative discussions with the NJDEP and direction to keep all parties informed, this submission will be transmitted to the Bureau of Coastal and Land Use Compliance and Enforcement staff to ensure that they too are properly informed of the imminent threat and the Applicant's intent to implement emergency shore protections measures in the wake of this most recent coastal storm.

Applicant:
City of North Wildwood
901 Atlantic Avenue
North Wildwood, NJ 08260
Attn: Nicholas Long, City Administrator
609-522-6464
nlong@northwildwood.com

It should be noted that, despite the City's $3.7 million investment in 2022 beach renourishment in advance of the summer season via the NJDEP and USACE-approved sand backpassing project, residual sand reserves were sufficiently depleted by the end of the season that little remained to withstand a single coastal storm event. Sand volume placed as part of the backpassing project was shaped into a dune ridge and dry beach area along the oceanfront consistent with the approved design template. *"The final tally of sand moved from Wildwood beaches to the beaches of North Wildwood was provided by the municipal engineer at 361,221 cubic yards making this season's transfer the largest thus far in this "in house" effort to restore a recreational and storm protection shoreline during this period of extensive oceanfront beach erosion manifesting itself in North Wildwood since the late 1990's."* (2022 Spring Report to the City of North Wildwood on the Condition of City Beaches, Stockton University Coastal Research Center, July 25, 2022). The prior season, 357,000 cubic yards of sand was backpassed by the City for renourishment, also at exceptional expense borne by the City. In total, approximately 1,611,372 cubic yards of sand has been backpassed to renourish the City's eroding beaches since 2016. However, due to prevailing coastal processes, these reserves have been lost in quantity from the beach-dune complex annually and have now settled into offshore deposits.

As a result of this most recent coastal storm event and in light of the depleted sand reserves whereby a dune breach is imminent, the City, as owner of the subject properties and steward of the municipal transportation, utility and public safety infrastructure, has given its permission to pursue the prescribed emergency measures below and is hereby seeking an Emergency Authorization for the following activities:

<u>15th – 16th Avenues waterward of the Beach Patrol Building (Block 317.03, Lot 1 (portion thereof))</u>

1) Immediate deployment of Jersey barriers (20' segments) in a 400LF alignment extending from the 15th Avenue northern right-of-way limit line along the landward edge of dune to the 16th Avenue southern right-of-way limit line
2) Remove/relocate existing composite/timber decking walkway from in front of the building to facilitate Jersey barrier deployment
3) Reshape dune remnants, protecting existing dune vegetation to the maximum extent possible, to establish stabilized slopes secured landward by the Jersey barrier wall
4) Installation of 404LF cantilevered steel bulkhead (coated) with timber cap
5) Reconstruct/stabilize vehicular/pedestrian access from 16th Avenue right-of-way to the beach

The above activities are depicted on a hand sketch prepared by Jim Verna III, P.E. of Van Note-Harvey Associates Inc., dated October 4, 2022, as well as separate hand-annotated detail sheets, each dated October 4, 2022, and a cut sheet for Meever USA sheet piles *(attached)*. A line drawing of these proposed measures is in progress and will be transmitted under separate cover for reference, once completed. Please note that the topographic contours on the hand sketch are vestigial to conditions in 2020 and the aerial image is from February 2022; hence, these do not reflect existing conditions. The proposed activities are designed to avoid previously delineated interdunal freshwater wetlands in the back dune north of the project area limit, as well as its associated transition area. Items 1-3 will commence immediately and are expected to be completed over a one-day period. Items 4 and 5 will commence upon receipt of the bulkhead materials delivery and mobilization and are expected to require several weeks to complete this installation and

associated restorative actions. The project area limits for this activity are depicted on Figure 1 *(attached)* at the terminus of 15th and 16th Avenues, area delineated by a red boundary.

Before specifying the above emergency mitigative actions, an assessment of alternative measures was completed by the City Engineer. Specifically, the standards applicable to emergency post-storm beach restoration under *N.J.A.C. 7:7-10.3* were evaluated, including NJDEP-preferred options under *(b)*, for feasibility. The following is a summary of that alternatives analysis.

Deposition of clean fill material consistent with grain size compatible with that of the existing beach material proved to be problematic in terms of sourcing, logistics, and secondary impacts. The current oceanfront conditions and profile have, at least for now, severed the route for on-beach access to sand reserves further south of the project area limits. Beach berm erosion has extended a significant portion of the tide cycle to the waterward extent of both the 24th and 26th Avenue piers precluding effective transport of sand which could be harvested from Wildwood beaches *(see attached photo pages)*. Moreover, the existing conditions of the profile at Poplar Avenue have exposed the City of Wildwood's stormwater outfall at this location also precluding a southerly truck route. Because these locations are inundated daily by the tidal cycle, the deposition of sand in these areas to re-establish a trucking route for alongshore transfer of sand is infeasible, at least until the beach profile re-forms through accretion *(see attached photo pages)*. The lack of sand reserves in the lower beach profile also makes it impossible to bulldoze sand to the upper beach profile as an alternative means of re-establishing shore protection. Transport of material from sand and gravel mines was assessed, and it was determined that there are several impediments to pursuing this option. The sand composition available from the proximate mines, as compared to that of the *in situ* beach material, was found to be inconsistent. Additionally, the logistics of pursuing this option were not feasible due to existing trucking shortages as compared to the volume of sand required to address this recurrent erosion. Further, offshore sources will require the City's contractor to complete an intermediate sand transfer from street-legal tri-axle dump trucks to the heavy duty off-highway articulated dump trucks necessary to transit the existing oceanfront conditions. Pursuing this option would require duplicative handling of the fill material, if even suitable material could eventually be sourced within a reasonable proximity. Given the emergent nature of this matter, there is insufficient time to pursue an option that is, at best, inefficient, slow and expensive, but also risks secondary damage to municipal infrastructure, including City streets that were not designed for the volume and frequency of heavy transport that would be required for this option.

While hydraulic beach fill/renourishment could access sand reserves in nearshore or offshore waters, where prior backpassed sand has settled and which are unattainable via typical trucking/backpassing, these dredging projects require scheduling years in advance, and the City does not have ready access to or control the availability a dredge for this purpose. The timeline for such a process does not reconcile with the current situation faced by the City, nor does the City have the funds to pursue such a project without significant State and/or Federal participation.

The placement of rock, rubble or concrete is a very slow process, which again relies upon a trucking industry facing existing labor shortages, as well as the challenges of sourcing these materials locally and the secondary impacts to municipal infrastructure, including City streets that were not designed for the volume and frequency of heavy transport that would be required for this option. Additional design concerns were expressed upon evaluating this option in that the placement of these materials restricts future engineering options, including facilitation of public access. The inability to drive piles for future timber walkover/ADA ramp structures would create challenges to efficient and effective public and Beach Patrol staff access to/from the beach. In addition to ready access of the Beach Patrol building by its staff, this oceanfront safety facility also provides

beachgoers with public restrooms. a first aid station, showers/footwash amenities, and shelter via the existing dune walkover/ramp structure at the 15th Avenue right-of-way alignment *(see attached photo pages)*. A breach will destroy this access and the placement of rock, rubble or concrete will complicate or even preclude the replacement of such a facility.

The placement of sand-filled geotextile tubes requires a source for beach sand material, which is not available from the existing beach conditions and is challenging to acquire from offshore sources as was previously described in detail above. To fill these tubes *in situ* would further deplete the City's oceanfront of sand resources, especially given that the prevailing coastal processes trend is one of erosion in this location. While geotextile tubes could serve as a protective measure and means to rebuild the dune features, these applications are only effective when combined with a robust, large-scale hydraulic beach fill project whereby the tube would remain covered for an extended period of time. At present, the State and Federal authorities have not advanced a beach nourishment program of this type in partnership with the City, and it remains unclear if/when the State/Federal Island-wide Dune Construction Project may be implemented from Hereford Inlet south to Cape May Inlet to serve as hurricane and storm damage reduction, including its associated planned cyclical renourishments.

In contrast, a bulkhead, when deployed under certain oceanfront conditions where beach re-nourishment proves to be unreliable and challenging, has proven to be the more efficient and effective means of sustainable shore protection measures. These installations can be implemented rapidly and have longer useful life options where the cost-benefit ratio can be justified and effective shore protection realized. Additionally, the footprint of disturbance for these installations can be minimized to reduce secondary impacts and avoid sensitive areas where sloped angles of repose would otherwise encroach. This option minimizes the number of truck trips required to implement shore protection thereby reducing secondary impacts to the municipal infrastructure. Further, given the minimal footprint, future site improvements, including public accessways and dune construction, can be effectuated over top of and/or on either side of the bulkhead.

<u>25th Avenue Beach Access (Block 289.03, Lot 1 (portion thereof))</u>

1) Immediately reconstruct the beach access via profile grading and deposition of stabilizing material within the residual upper beach berm and back beach limits; relatively minimal volumes of fill material are required to accomplish the necessary grading and restoration
2) Reconstruct the sloped ramps and landings within the access to restore the vehicular and pedestrian use, including pedestrian public access from the boardwalk and the adjoining 26th Avenue pier

The above activities are depicted on a line drawing titled, *"25th Ave and the Beach Adjacent to Amusement Pier, North Wildwood Beach, City of North Wildwood, Cape May County, NJ"*, prepared by Van Note-Harvey Associates Inc., dated October 5, 2022 (attached). Please note that these proposed activities are designed to avoid previously delineated interdunal freshwater wetlands in the back dune north of the project area limit. While the activities are located within the associated transition area, these restorative measures do not extend beyond the pre-existing footprint of disturbance and therefore will not result in adverse impacts to regulated areas *(see attached photo pages)*. Items 1 and 2 will commence immediately upon receipt of Emergency Authorization from NJDEP and are expected to be completed over a one to two-day period. The project area limits for this activity are depicted on Figure 1 (attached) at the terminus of 25th Avenue, area delineated by a red boundary.

Enclosed for review and reference please find the following: 1) a site location map (*"Figure 1 Site Location on Aerial Photographs Depicting the Project Area Limits,"* prepared by The Lomax Consulting Group, dated October 4, 2022); 2) existing conditions photographs depicting post-storm damage and impacted areas; 3) hand sketch prepared by Jim Verna III, P.E. of Van Note-Harvey Associates Inc., dated October 4, 2022, as well as separate hand-annotated detail sheets, each dated October 4, 2022, and a cut sheet for Meever USA sheet piles; and 4) a line drawing titled, *"25th Ave and the Beach Adjacent to Amusement Pier, North Wildwood Beach, City of North Wildwood, Cape May County, NJ"*, prepared by Van Note-Harvey Associates Inc., dated October 5, 2022.

If you have any questions or require additional information, please do not hesitate to contact me. Thank you for your prompt attention to this matter.

Sincerely,
THE LOMAX CONSULTING GROUP, LLC

Peter L. Lomax
Managing Principal

Enclosures

ec: Jennifer Moriarty, Director NJDEP DLRP (w/enclosures)
Becky Mazzei, NJDEP DLRP (w/enclosures)
Kimberly Cahall, Chief Enforcement Officer NJDEP CLUE (w/enclosures)
Michelle Kropilak, Manager NJDEP CLUE (w/enclosures)
Michael Lutz, NJDEP CLUE (w/enclosures)
Mayor Patrick Rosenello, City of North Wildwood (w/enclosures)
Nicholas Long, City Administrator, City of North Wildwood (w/enclosures)
Jim Verna III, PE, Van Note-Harvey Associates, Inc. (w/enclosures)
Neil Yoskin, Esq., Cullen & Dykman LLP (w/enclosures)

FIGURE 1: SITE LOCATION ON AERIAL PHOTOGRAPHS DEPICTING THE PROJECT AREAS LIMITS SOURCE: GIS DATA PROVIDED BY THE NJDEP, BING NEARMAP AND THE COUNTY PLANNING DEPARTMENT	the LOMAX Consulting group	DATE: 2022-10-04	DRAWN BY: EJM
		SCALE: AS NOTED	

\Prj\Act\22-1093.2\St Map\Rs Map\Aerial - Emergency Authorization

SITE PHOTOGRAPHS

PHOTOGRAPH 1. **View north of the dune scarp (right) eroded to a point landward of the pre-existing dune crest between 15th and 16thAvenues in front of the City of North Wildwood Beach Patrol headquarters (left) and upper landing of dune walkover railing (background)**

PHOTOGRAPH 2. **View west of the eroded and scoured public accessway at the 25th Avenue beach access terminus.**

PHOTOGRAPH 3. **View north of the 24th Avenue pier terminus and absence of beach berm waterward of the pier end, which precludes the sand backpassing truck route.**

PHOTOGRAPH 4. **View south of the City of Wildwood exposed stormwater outfall at the Poplar Avenue right-of-way alignment, which precludes the sand backpassing route.**

PHOTOGRAPH 5. **View of the City of North Wildwood Beach Patrol headquarters which serves as a critical oceanfront safety facility with public access amenities. Note: eroded dune scarp is located at the right edge behind the dune fencing.**

PHOTOGRAPH 6. **View of the dune walkover and ADA access ramp in front of the City of North Wildwood Beach Patrol headquarters. Note: eroded dune scarp is located immediately behind the upper staircase landing.**

JV3
10.04.2022

① NOTE- TOPO PERFORMED 7/2020 & 8/25/2020
② AERIAL = FEB. 2022 NOAA MAP
③ 1 & 2 ABOVE DO NOT REPRESENT CURRENT CONDITIONS.

SCALE: 1" = 50'

RECONSTRUCT VEHICLE/PEDESTRIAN ACCESS OVER NEW BULKHEAD.

PERMANENT ACTION:
- CONSTRUCT 404 LF+/- CANTILEVERED STEEL BULKHEAD (COATED) W/ TIMBER CAP (GREENHEART FRAMING, MICRONIZED COPPER AZOLE 5/4" TIMBER DECKING & TYPE 316 STAINLESS STEEL HARDWARE.

TEMPORARY IMMEDIATE ACTION = PLACE JERSEY BARRIERS IN SAME/SIMILAR ALIGNMENT & RE-SHAPE REMNANTS OF DUNE.

PLANTED VEGETATION WHERE POSSIBLE

= LIMIT OF DISTURBANCE

COMPOSITE/TIMBER WALKWAYS TO BE REMOVED AS NECESSARY

400+/- LF

30° (use 22½)

2-45's

2-45's

~~11,987 SQ.FT. (0.275 ACRES) OF DISTURBANCE TO FRESHWATER WETLANDS TRANSITION AREA PROPOSED UNDER AN ACCESS WAIVER FOR THE PROPOSED BULKHEAD~~

~~1,267 SQ.FT. (0.098 ACRES) OF DISTURBANCE TO FRESHWATER WETLANDS PROPOSED UNDER GP 6 FOR THE PROPOSED BULKHEAD~~

WETLANDS LINE

LIMIT OF FRESHWATER WETLANDS TRANSITION AREA

16TH

15TH

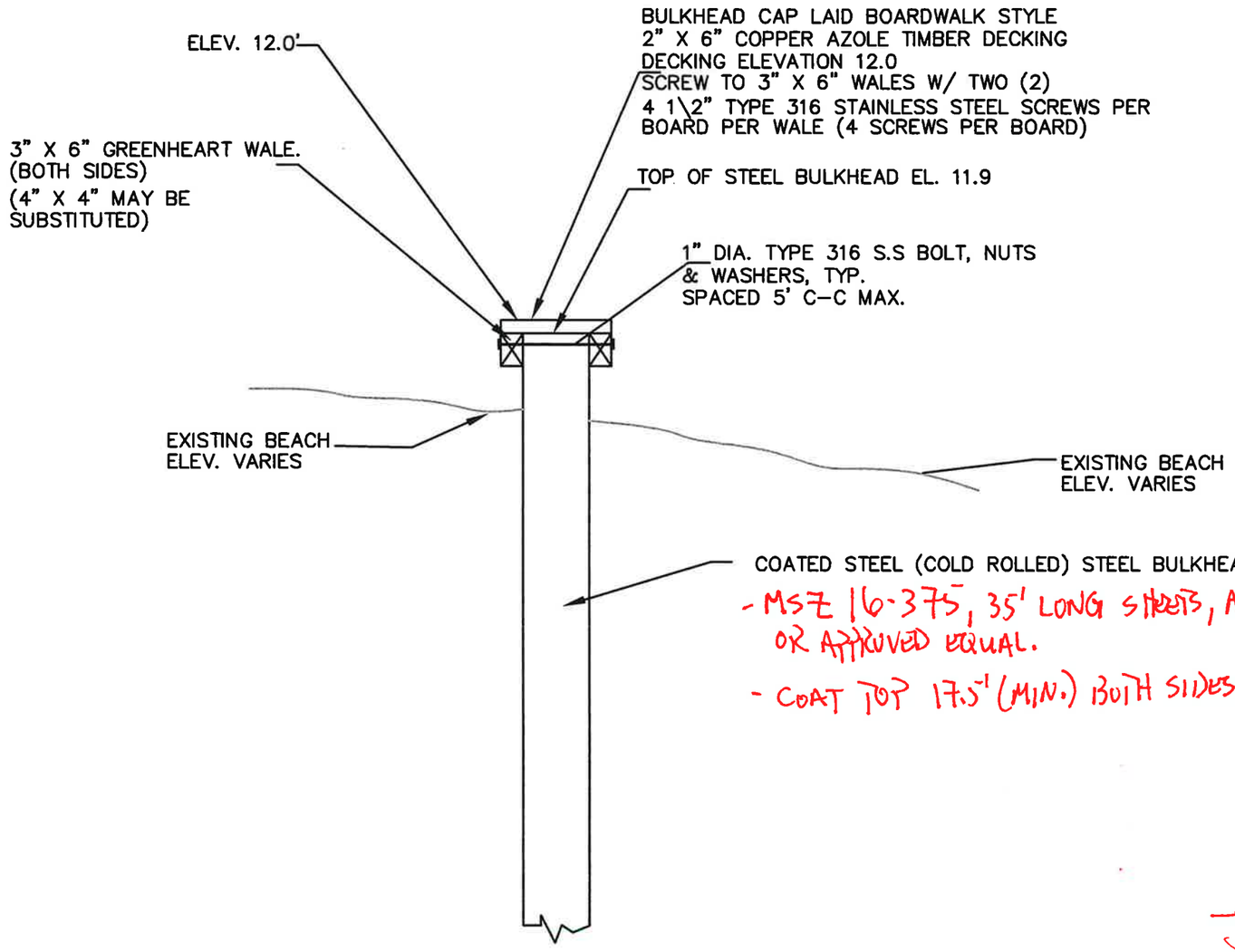
14TH. AVE

OT 1

BLOCK
317.02
LOT 2

DP-2
WG-4
DP-1
WG-4A
WG-4B
WG-1
WF-4
WG-4C

SHEET 5 OF 11 SHEETS

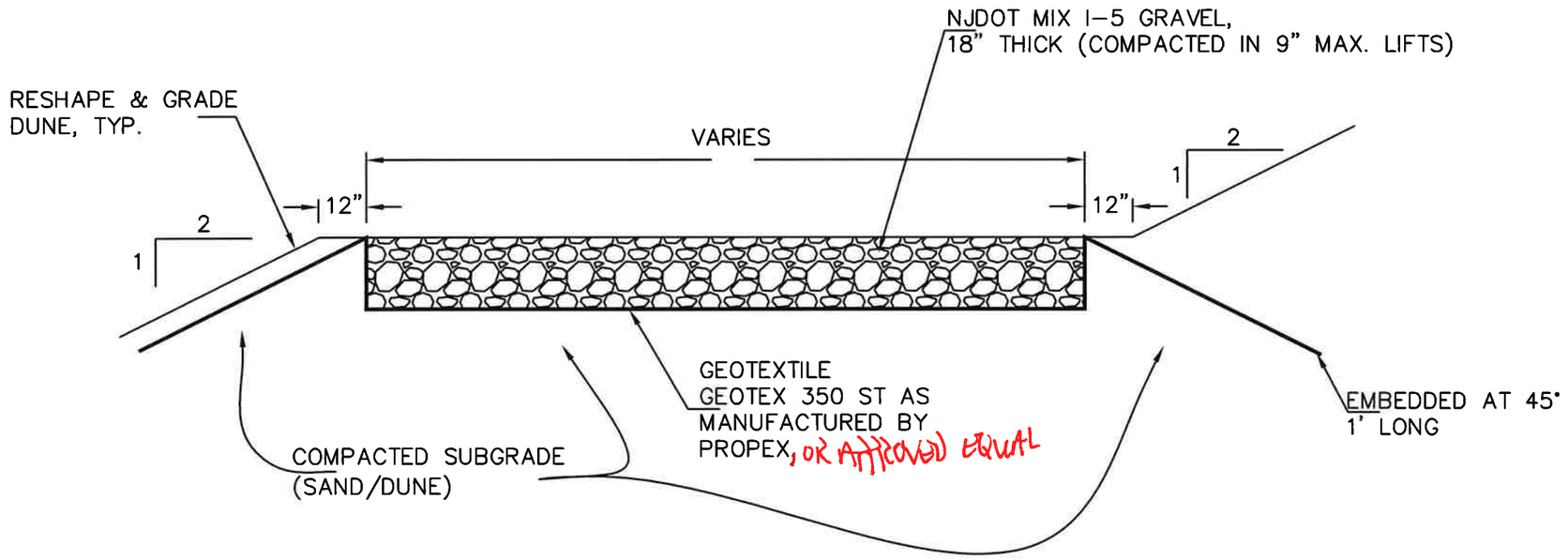


TYPICAL BULKHEAD DETAIL

N.T.S.

NOTE: CANTILEVERED (NO TIE-BACK SYSTEM)

JVB
10.04.2022



NOTE:
1. GEOTEXTILE SECTIONS MUST OVERLAP MINIMUM OF 5', TYP.
2. SLOPE: 1V:12H MAX.

PROPOSED VEHICLE ACCESS DETAIL FOR 16TH AVE.

NOT TO SCALE

JV3
10.04.2022

MEEVER USA

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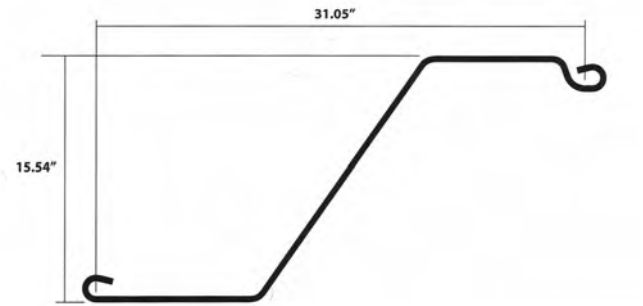
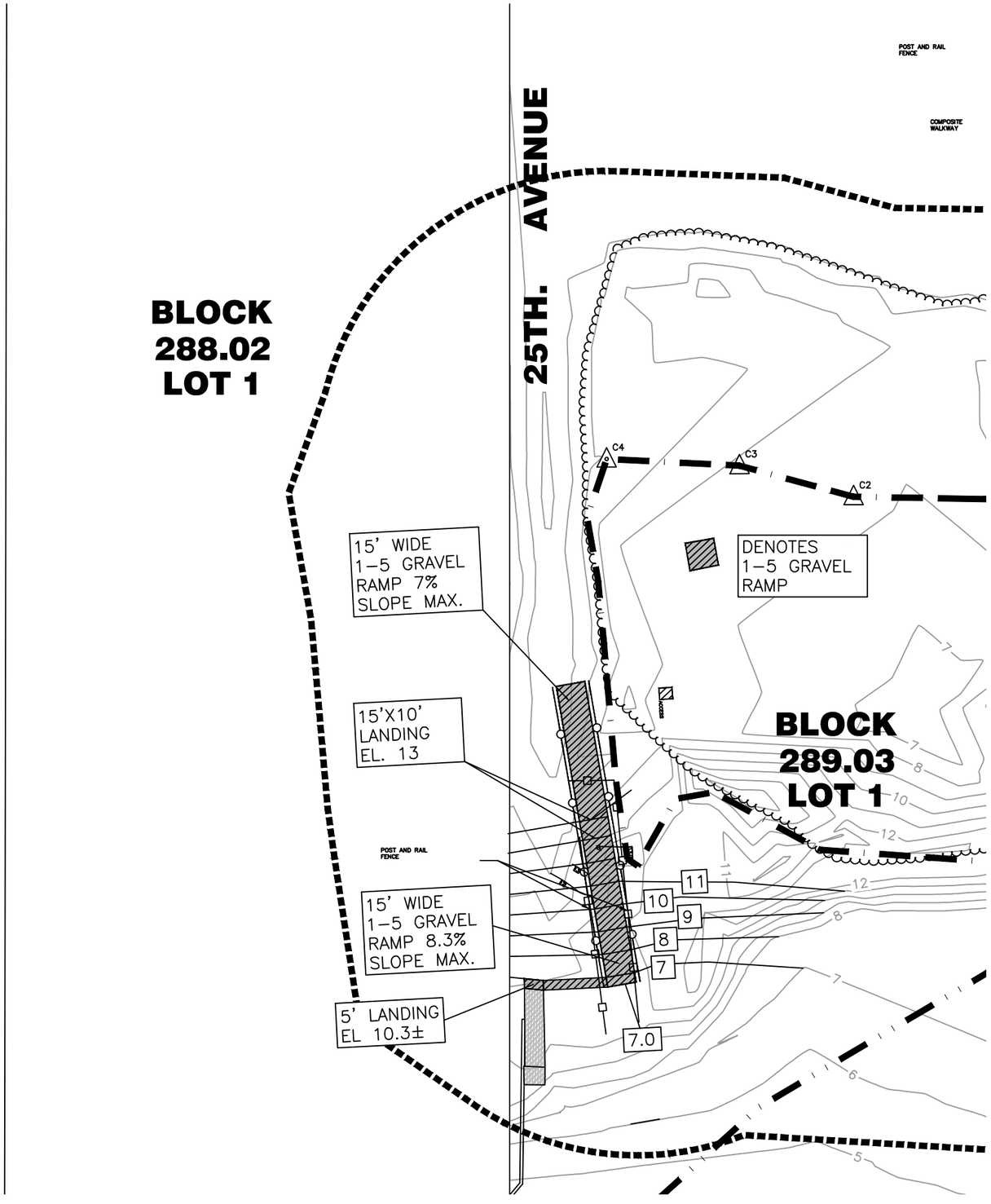
MSZ 16-375 (Cold rolled sheet piles)



Section description	Product group	Shape	Section Modulus	Moment of Inertia	Width	Height	Thickness flange	Thickness web	Weight single	Weight	Coating 2 sides	Coating area
			in^3/ft	in^4/ft	inch	inch	inch	inch	lbs/ft	lbs/ft^2	ft^2/ft	ft^2/ft
			cm^3/m	cm^4/m	mm	mm	mm	mm	kg/m	kg/m^2	m^2/m	m^2/m
MSZ 16-375	Cold rolled sheet piles	Z	34.0	267.9	31.05	15.54	0.375	0.375	59.7	23.06	7.54	1.43
			1,825	36,580	789	395	9.5	9.5	88.79	34.31	2.30	1.43

Production acc. ASTM standards in A572 GR50 or A328
available from inventory and production
Origin: USA



NOTES:
1. TOPOGRAPHY TAKEN FROM DECEMBER 2021

2. IAN STORM HAS SEVERELY ERODED THE AREA DAMAGING DUNE, BERM, AND BEACH ACCESS

RELEASE 10/05/2022

van note-harvey associates, inc.
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SKETCH SHOWING PROPOSED BEACH ACCES

25TH AVE AND THE BEACH ADJACENT TO AMUSEMENT PIER

NORTH WILDWOOD BEACH
CITY OF NORTH WILDWOOD

CAPE MAY COUNTY, N.J.

DRAWN BY	FIELD BK	ORDER No.	FILE No.	SHEET No.
BMP		46006		1
CHECKED BY RP/JV	PAGE	400-21		