APPENDIX G: OSPREY NEST DETERRENCE AND RELOCATION PLAN

OSPREY NEST DETERRENCE AND RELOCATION PLAN

AVON MOTEMS COMPLIANCE PROJECT

MARTINEZ, CONTRA COSTA COUNTY, CALIFORNIA

Submitted to:

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INTRODUCTION AND BACKGROUND

This Osprey Nest Deterrence and Relocation Plan (plan) describes the proposed methodology for deterring ospreys (*Pandion haliaetus*) from nesting on Berth 5 of the Avon Marine Oil Terminal (Terminal) and installing a new nest platform in the vicinity. The plan describes deterrence methods and materials that have been successfully implemented on other projects that could potentially be applied to the existing light poles on Berth 5. Nest deterrents would be installed prior to the 2015 osprey nesting season in mid- to late February. In addition, the plan identifies a preferred location for installation of a new osprey nest platform to compensate for loss of the historic nest site and encourage the pair to nest away from the work area for the upcoming Avon MOTEMS Compliance Project (project).

Tesoro personnel have observed a pair of osprey nesting or attempting to nest at Berth 5 for the last several years (José Mendez, pers. comm.). In 2014, the pair constructed a nest on top of the Bent 59 light pole on the south side of Berth 5 after the first nest was destroyed by high winds, but it is unknown whether any young successfully fledged. Since Berth 5 will be demolished as part of the project, Mitigation Measure [MM] BIO-13b in the *Tesoro Avon Marine Oil Terminal Lease Consideration Project Draft EIR* requires that Tesoro "…remove the nest and replace it in a nearby location not subject to project disturbance." Although berth demolition won't occur until later in 2015, Tesoro wishes to discourage ospreys from nesting at Berth 5 in 2015 to maintain construction personnel access and facilitate staging for the upcoming construction season. Since ospreys are unusually persistent at building nests near previous nesting locations, installation of an alternate nest site (i.e., nest platform) prior to or concurrently with deterrence efforts substantially increases the likelihood of success (Brake et al. 2013) and is therefore recommended by this plan.

Information on previous osprey nesting and existing habitat conditions at Berth 5 and vicinity was obtained via personal conversations with Tesoro employee José Mendes and a reconnaissance-level site visit conducted by LSA wildlife biologist Matt Ricketts on November 24, 2014.

OSPREY NESTING ECOLOGY

Historically, ospreys rarely nested on the lowlands adjacent to San Francisco Bay but recent observations from 1999 to 2013 have shown a steady increase in the number of nesting pairs (Brake et al. 2013). Although this species historically nests in trees, ospreys have adapted to increasing human development by constructing nests on artificial structures near water, such as pilings, light poles, cell phone towers, utility poles, and bridges.

In the San Francisco Bay Area, ospreys begin arriving at previous nest sites and nest-building in late February and lay eggs in late March to early April with an incubation period of 32 to 33 days (Baicich and Harrison 1997). The eggs usually hatch from May 1 to the third week of the month. The young generally fledge at between 51 to 59 days after hatching (Baicich and Harrison 1997).

NESTING DETERRENCE ON BERTH 5

Options for deterring osprey nesting at Berth 5 are summarized below. All methods would comply with the federal Migratory Bird Treaty Act and California Fish and Game Code.

1. The existing light poles should be removed prior to mid-February 2015. At a minimum, the four lights atop each pole, which currently provide horizontal support for the base of the nest, should be removed if removal of the entire pole is not feasible.
2. If removal of the existing light poles by mid-February 2015 is not feasible, the tops of existing light poles should be enshrouded with geotextile fabric and affixed to pole tightly to withstand high winds. In addition, nest deterrent devices constructed out of PVC pipe and/or wire arrays (see example photos in Appendix A) should be installed to further obstruct airspace access to the poles. Nest deterrents should be installed so that the lowermost PVC cross-beam is less than 1 foot above the existing mounting arms since ospreys have been observed placing sticks below nest deterrents that were installed too high on other projects (LSA obs.).
3. Daily monitoring visits should be conducted by Tesoro personnel to Berth 5 between January and March 2015 to document osprey use of nearby areas. Any individuals perching on the berth should be harassed (e.g., clapping hands, yelling, playing loud music or running construction equipment), if necessary.

NEST PLATFORM LOCATION

In evaluating the suitability of potential locations for installation of the replacement osprey nest platform, LSA considered distance to Berth 5 (i.e., location of previous nesting) and distance to anticipated disturbance, since these two factors would most strongly influence the likelihood of the pair successfully relocating to the selected location. The ideal location would be as close to Berth 5 and as far from anticipated disturbance as possible. In 2013, an osprey pair at Point Molate successfully fledged young from a nest platform constructed approximately 1,320 feet from its original nest, which was located atop a utility pole that required removal (Brake et al. 2013). Like most raptor species nesting in urban environments, ospreys are somewhat tolerant of human disturbance but are particularly sensitive to abrupt or sporadic disturbance once nesting has begun (Levenson and Koplin 1984).

After considering several options, the best area for installing the new nest platform is south of Berth 5 and west of the pipelines/speeder track (see Figure 1 in Appendix B). This area is relatively close to the 2014 nest but is at least 500 feet from the pipeline and new birth. This area is owned by the State Lands Commission. With respect to the specific location, the nest should be located as close as possible to the water and within the "line-of-sight" from the existing nest location on Berth 5.

NEST PLATFORM INSTALLATION

A variety of designs for artificial osprey nest structures are currently available, but the most important feature of land-based nest structures is an anti-predator guard wrapped around the pole to prevent raccoons from accessing the nest (see Design A & B - Nest Platform in Appendix B. The anti-predator guard is commonly constructed with a section of 5-foot-long sheet metal wrapped completely and tightly around the pole at around 3 to 5 feet above the ground. For the purposes of the current project, LSA recommends purchase and installation of a "Zena Hollonest" manufactured by Zena Design, which is commonly used throughout California by Pacific Gas and Electric. Zena Design's product information sheet for the Hollonest is provided in Appendix B.

Ideally, the replacement nest platform should be as tall as or taller than the original nest support, but not less than 15 feet above the ground or normal water elevation. In addition, the new platform support should be strong enough to support 200 to 300 pounds. The platform should also be installed with a protruding wood perch above the nest, as shown in Design A – Nest Platform in Appendix B; the perch should be perpendicular to the prevailing wind. The addition of sticks to the newly constructed nest platform will help with attracting ospreys to use the structure.

NEST DETERRENT IMPLEMENATION

To minimize the likelihood of ospreys nesting on Berth 5 during the 2015 nesting season, the following nest deterrent tasks should be implemented:

- The replacement nest platform should be installed in mid-late January prior to nest deterrence efforts at Berth 5. Ospreys will be much more likely to avoid nesting at Berth 5 if the alternate nest site is already available.
- Either the light poles should be removed or nest deterrents should be installed on light poles prior to mid-February, when ospreys typically begin arriving at old nest sites and gathering nest material.
- Excluded light poles should be monitored on a daily basis from mid-February through early May to ensure that deterrent devices are functioning properly and that ospreys are not perching at Berth 5. If necessary, Tesoro personnel should be assigned the daily task of playing loud music or operating loud construction equipment (e.g. generator) during daylight hours to discourage ospreys from nesting. Tesoro personnel should monitor the new nest platform at least once every other week from mid-February through March to document presence or absence of osprey activity. Observations should be conducted with binoculars and recorded using a field notebook and/or monitoring forms. On an as-needed basis, a qualified biologist should be available to monitor the old nesting area at Berth 5 and the new nest platform.

REFERENCES

Baicich P.J., Harrison, C.J.O. 1997. A guide to the Nests, Eggs, and Nestlings of North American Birds. 2nd ed. Academic Press, San Diego, CA.

Brake, A.J., H.A. Wilson, R. Leong, and A.M. Fish. 2014. Status of Ospreys nesting on San Francisco Bay. Western Birds 45:190–198.

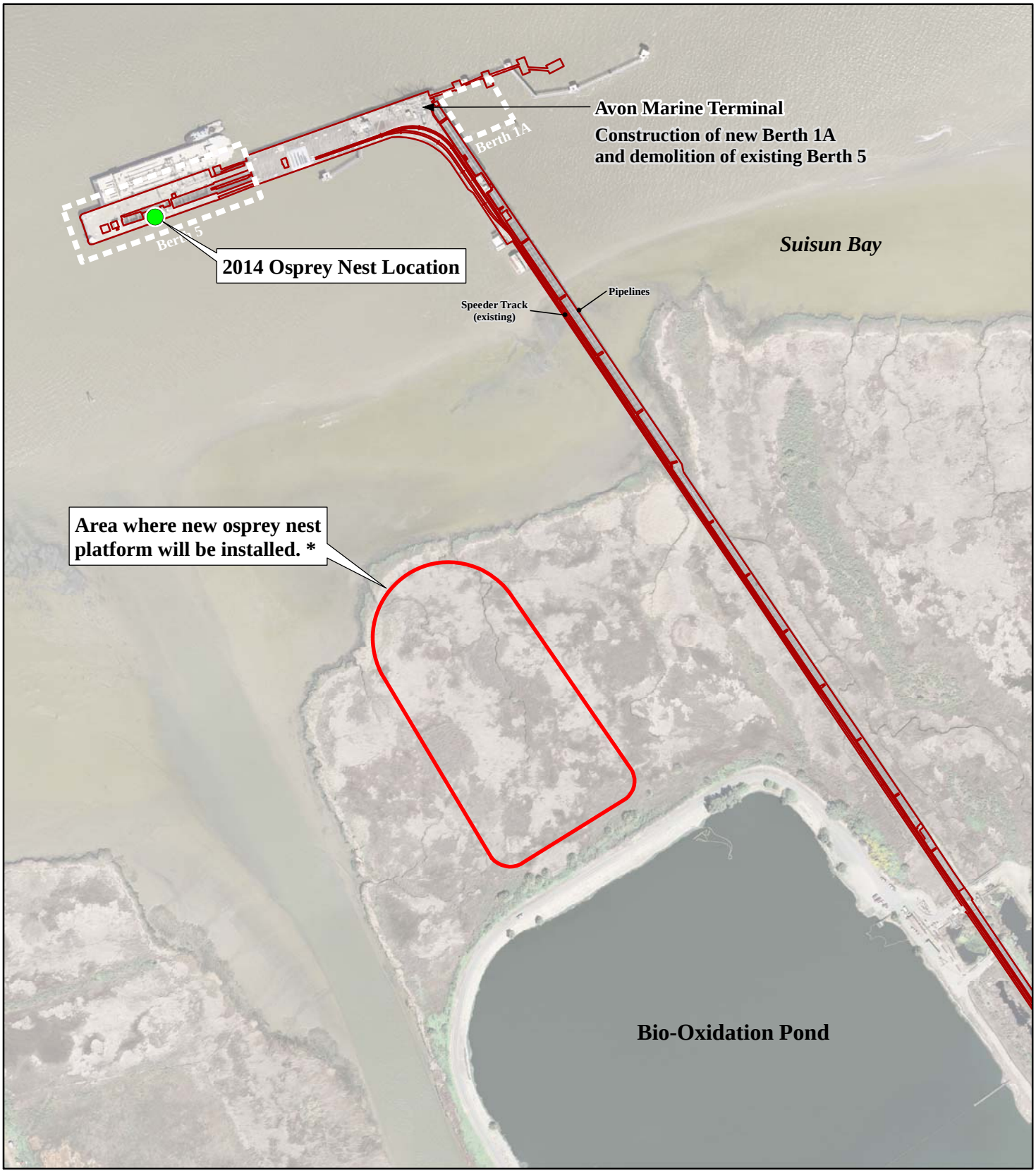
Levonson, H., and J.R. Koplin. 1984. Effects of human activity on productivity of nesting Ospreys. Journal of Wildlife Management 48:1374–1377.

Marti, C. D. 2002. Enhancing Raptor Populations – A Techniques Manual, The Peregrine Fund.

APPENDIX A
NEST DETERRENT PHOTOGRAPHS

APPENDIX B
OSPREY NEST PLATFORM INFORMATION

- Figure 1 – Osprey Nest Platform Location
- Design A & B – Nest Platform
- Zena Hollonest Product Information



LSA

LEGEND

Rail and Pipe Features

* Specific location of new osprey nest platform to be determined based on on-site field conditions.

N

0 175 350
FEET

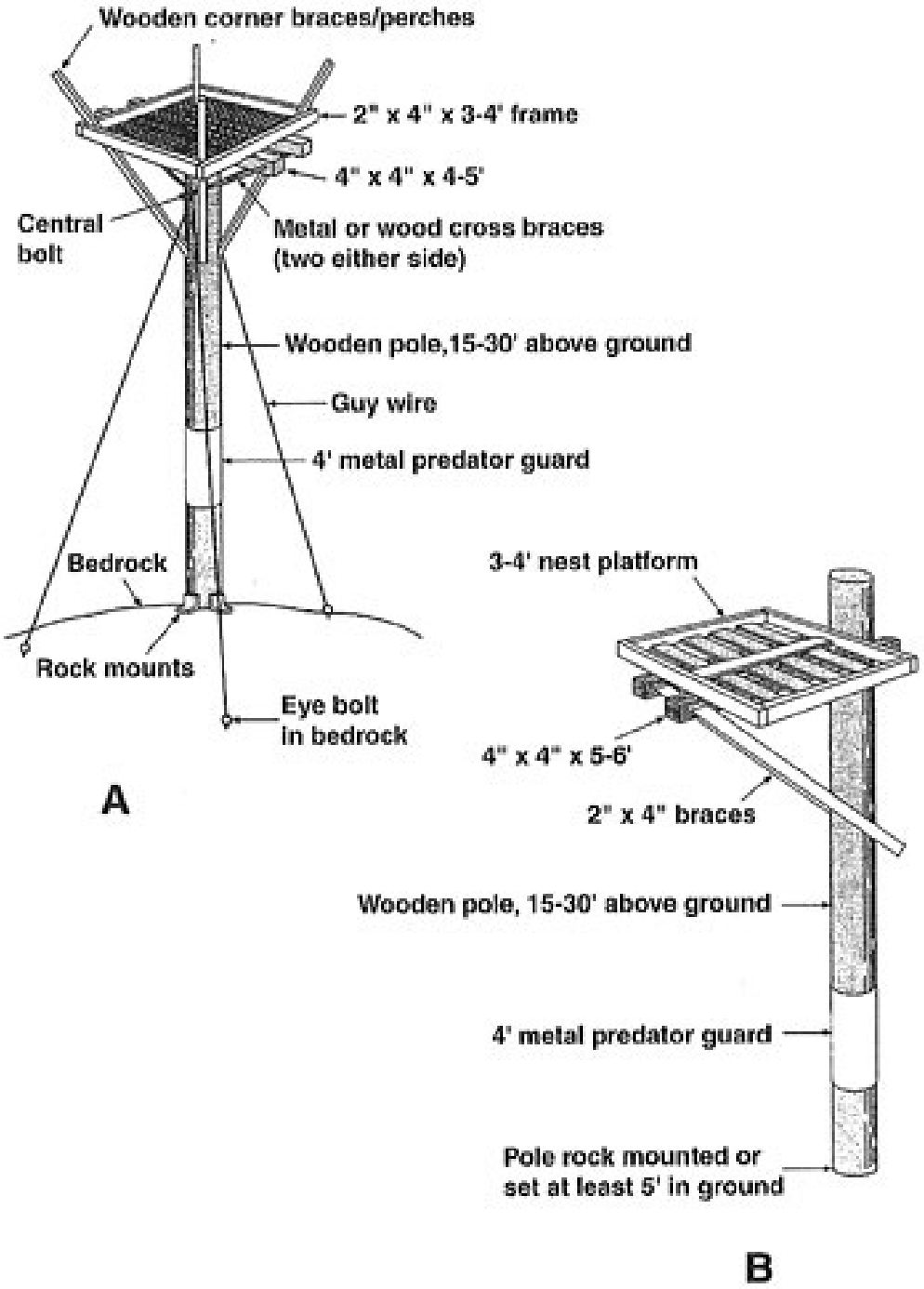
SOURCE: Aerial Imagery- Contra Costa County (2008).

I:\TSO1301\GIS\Maps\Osprey Nest Platform\Figure 1_Osprey Nest Platform Location.mxd (1/21/2015)

FIGURE 1

Avon Marine Terminal
MOTEMS Compliance Project

Osprey Nest Platform Location



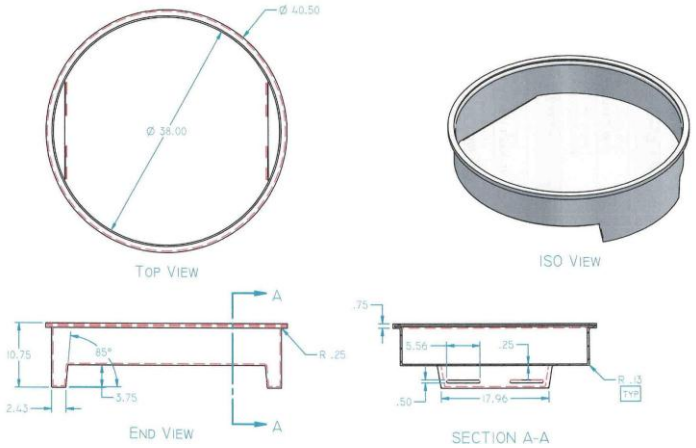
Source: Marti, C. D. 2002. Enhancing Raptor Populations – A Techniques Manual, The Peregrine Fund.

Zena - Bird Nest

" The Hollonest"

The Zena Bird Nest - encourages the birds to use the nest rather than building their own on the power line structures. Moving the birds away from the unsafe, and sensitive areas, effectively lowers the risks of avian electrocution, insulator and streamer flashovers, structure corrosion and bird strikes.

The nest is cross ribbed for extra strength and also has drainage points on two sides



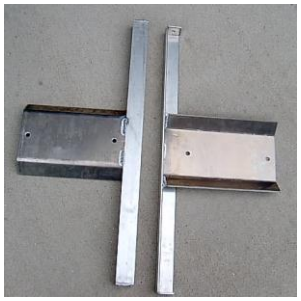
Features

Designed specifically for osprey and larger birds, the Zena Hollonest: *(Available in Gray or Black)*

- Is bird safe and environmentally friendly,
- Installs quickly, reducing downtime,
- Has excellent self-washing characteristics
- Is stackable – for storage & transportation

Application

The Zena Hollonest is shipped stacked & ready to mount on wooden & concrete poles, as well as steel structures within minutes. It is molded using proprietary high-density polyethylene that is contaminant and weather-resistant, and is fixed to the structure using (optional) **aluminum brackets** or **Stainless Steel banding**.



For More Information

To learn more about how our products and services could help your organization, please contact us.

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