# PALM/INDUSTRIAL DISTRIBUTION CENTER

## 2nd Addendum to the Palm/Industrial Distribution Center Final Environmental Impact Report

SCH No. 2007081029

**City of San Bernardino**
Community Development Department
300 North "D" Street, 3rd Floor
San Bernardino, CA 92418

**October 2014**

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# CHAPTER 1 **Introduction**

This document is the 2nd Addendum to the Final Environmental Impact Report for the Palm/Industrial Distribution Center (hereafter the "approved project"), which was certified on September 28, 2011, by the City of San Bernardino Planning Commission by Resolution No. 11-02. The Planning Commission concurrently adopted Facts, Findings, and Statement of Overriding Considerations and the Mitigation Monitoring and Reporting Program, and approved Development Permit Type 2 No. 06-28. The Final Environmental Impact Report (hereafter, "EIR") is comprised of the Draft EIR (Volume I), technical appendices (Volumes II and III), and the Final EIR containing text changes and responses to comments (Volume IV). The 1st Addendum to the EIR was adopted in January, 2013, and dealt with clarifications and corrections of biological resource identification and modifications to biological resource mitigation measures. Also in the 1st Addendum was the possible export of 100,000 cubic yards of soil during grading to the adjacent SANBAG grade separation site, with the remaining 100,000 cubic yards of soil exported to off-site locations as was analyzed in the Final EIR..

This document is the 2nd Addendum to the EIR, and is responsive to CEQA Guidelines Section 15164, which states:

> (a) The lead agency or a responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have [sic] occurred.

CEQA Guidelines Section 15162 sets forth specific requirements for preparation of a supplemental or subsequent EIR, which include:

> (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR … due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
>
> (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR … due to the involvement of new significant effects or a substantial increase in the severity of previously identified significant effects; or
>
> (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete … , shows any of the following:
>
> (A) The project will have one or more significant effects not discussed in the previous EIR … ;
>
> (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
>
> (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
>
> (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

This document is the 2nd Addendum to the Final EIR for the Palm/Industrial Distribution Center project, which was certified on September 28, 2011, by the City of San Bernardino Planning Commission. The subject of this Addendum includes proposed changes to the Project's grading operations whereby none of the previously approved 238,000 cubic yards of soil is exported from the site and the project's grading operations balance all required cut and fill on-site. To effectuate the balanced-site grading program, implementation of two retaining walls are employed, ranging in heights from 4' up to a maximum of 30' in height.

For the approved project, changes in the site and to the grading plans do not represent substantial changes to the project, a change in the circumstances under which the project would be carried out, or present any new information that was not known at the time the EIR was prepared that will involve any new significant impacts, or substantially increase the severity of any of the significant impacts previously identified in the EIR as defined by Section 15162. Therefore, an Addendum is the appropriate document to analyze the changes to the approved project.

The EIR for the project determined that, even with the mitigation measures identified in the EIR, the following impact areas would remain significant and unavoidable:

1. **Air Quality Standards Violations during Operation:** Operation of the proposed project would violate an air quality standard or contribute substantially to an existing or projected air quality violation. The proposed project would generate long-term air quality impacts associated with its operation. The primary source of operational emissions would be motor vehicle emissions (mobile source emissions) generated from project-induced vehicle trips and truck trips associated with operation of the industrial warehouse. Other emissions, identified as "area source emissions," would be generated from natural gas consumption for water and space heating, landscape and building maintenance activities, and use of consumer products. The proposed project's operational emissions would exceed the SCAQMD significance thresholds for $NO_X$ emissions from vehicle trips. Even with implementation of all feasible mitigation measures, $NO_X$ emissions would still exceed the SCAQMD significance threshold. This impact would be significant and unavoidable.
2. **Exceedance of Localized Significance Thresholds:** Construction and operational activities associated with development of the proposed project would generate emissions that would result in an exceedance of localized significance thresholds for $PM_{10}$ and $PM_{2.5}$ established by the SCAQMD, and, therefore, would expose sensitive receptors to substantial pollutant concentrations. This is considered a significant impact. Compliance with project requirements and implementation of mitigation measures MM4.2-8, MM4.2-2(a), MM4.2-2(b), and MM4.2-5(a) through MM4.2-5(d) would reduce this impact, but not to a less-than-significant level.

All other short-term and long-term impacts of the project identified in the EIR would be mitigated to less-than-significant levels.

The analysis in this Addendum concludes that the proposed changes to the site's grading operations by eliminating all soil export and balancing the project's grading operations cut and fill, including utilization of two retaining walls varying in heights from 4' to a maximum of 30' at the southeast corner, would not result in any new effects that could not be mitigated to a less than significant threshold in the following impact areas: Aesthetics, Air Quality; ~~Cultural Resources, Geology and Soils, Hydrology and Water Quality~~, Land Use and Planning, Noise, and ~~Energy and Greenhouse Gas Emissions~~. The proposed

project as revised in this 2nd Addendum would incorporate all mitigation measures identified in the EIR as well as the revised mitigation measures set forth herein.

No substantial changes have been proposed to the project described in the EIR that would require major revisions to the EIR. The proposed modifications would not alter the development permitted on the site. None of the conditions or circumstances that would require preparation of a subsequent or supplemental EIR pursuant to Public Resources Code Section 21166 exists in connection with the modifications proposed by the project under consideration in this Addendum.

## 1.1 INTENDED USES OF THIS DOCUMENT

This Addendum may be used for all the purposes cited in the EIR, including:

- To inform the general public, the local community, responsible and interested public agencies, the decision-making bodies (e.g., Planning Commission and Common Council) and other organizations, entities, and interested persons of the scope of the proposed project, its potential environmental effects, possible measures to reduce potentially significant environmental impacts, and alternatives that could reduce or avoid the significant effects of the proposed project
- To enable the City to consider environmental consequences when deciding whether to approve the proposed project
- To satisfy the substantive and procedural requirements of CEQA

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# CHAPTER 2 Project Overview

## 2.1 PROJECT SITE

The project site is contained within the United States Geological Survey (USGS) 7.5-minute series topographical map for San Bernardino North. The project site is located in the City of San Bernardino (City), San Bernardino County (County), California (State); Assessor's Parcel Number (APN) 266-041-62. The 37.37-acre site is located adjacent (south) to Interstate 215 (I-215), and approximately 3 miles east of Interstate 15 (I-15). Specifically, the project site is situated on the northeast corner of the intersection of Palm Avenue and Industrial Parkway.

The project site is currently vacant. There are two hill features within the site boundaries that occupy approximately 35 percent of the property. The flat terrain of the project site is located between 1,640 and 1,680 feet (ft) above sea level (ASL), with the larger of the two hill features reaching 1,805 ft ASL. The majority of the flat terrain has been disked, though the undisked portions and hill features support the California sagebrush-California buckwheat series vegetation community.

Historically, the project site was reported to have been vacant until the construction of Camp Ono, a United States Army installation that operated during World War II. Camp Ono served multiple purposes, including as a depot, manufacturing facility, munitions storage, and prisoner-of-war camp. The project site itself was reportedly used for tent manufacturing. The camp was closed in June 1947. Since that time, no reported development has occurred on the project site.

The project site is within the Industrial Light (IL) land use category, as established in the City's General Plan. The project site and a large contiguous area to the south, east, and west are currently zoned Industrial. The project site is adjacent to, and immediately north of, the Northwest Redevelopment Area.

Some commercial uses exist along the I-215 frontage and on Palm Avenue; commercial and single-family residential occurs north of Kendall Drive, on the north side of Highway 215. A summary of adjacent land uses is as follows:

- **North:** I-215 is northeast of the project site. Beyond I-215 are various commercial industries and a large residential community. The on-ramp to the southbound I-215 runs directly north of the project site. A Denny's Restaurant and gas station are northwest of the project site, adjacent to Palm Avenue. The land north of Palm Avenue is vacant. The lot at the southeast corner of Palm Avenue and Industrial Parkway (northwest of the project site) is vacant.
- **South:** Directly south of Industrial Parkway is both vacant property and active development, similar to the proposed project. Historic Route 66 and railroad tracks lie beyond this development.
- **East:** I-215 runs along the northeast boundary of the project site. Directly east of I-215, approximately 500 feet from the project site, is the residential community of Verdemont. The hills that currently occupy the project site are visible from the residential community.
- **West:** Directly west of the project site, across Industrial Parkway, is an industrial development.

## 2.2 PROJECT CHARACTERISTICS

The proposed project remains as described in the EIR and includes the construction of a warehouse/distribution facility consisting of a single building totaling 678,275 square feet (sf) on 37.37 acres. Lot coverage would be 42 percent and the building height of the proposed project would not exceed 40 feet (ft) above finished pad. The existing hill features located on site would be leveled, although the approximately 200,000 cubic yards of soil export previously approved would remain balanced on site as fill. The front of the proposed project would be sited along Industrial Parkway. The proposed project would include a small office area and a cross-dock loading configuration. The office area would be located at the northwest corner of the warehouse/distribution facility, with trailer docking stations located along the northern and southern facing portions of the structure. Approximately 23 percent of the project site would be landscaped. The proposed project would include an 8-foot wrought-iron fence around the perimeter and a guard shack for entry and exit.

Access to the project site would be from two driveways located at the northern end of the project site: one off Palm Avenue primarily for automobiles and another on Industrial Parkway for truck and some automobile. All truck traffic into the project site would be cleared through a guard shack situated at the top of the access driveway. The vast majority of traffic will access Industrial Parkway via Palm Avenue, off I-215.

## 2.3 MODIFICATIONS TO THE PROPOSED PROJECT

Since certification of the EIR and adoption of the 1st Addendum to the Final EIR, modifications are being proposed to be made to the project, described as follows:

### 2.3.1 Elimination of Soils Export by Balanced On-Site Grading

As described in the EIR, 200,000 cubic yards of soil would be exported from the site during grading activities. The 1st Addendum analyzed 100,000 cubic yards of that soil being exported to the adjacent SANBAG grade separation project, which is within 0.25 mile of the project site, with the remaining 100,000 cubic yards of soil exported to various locations as described in the EIR.

That air quality analysis within the Final EIR included a mitigation measure that limited the quantity of cut and fill activity to 4,375 cubic yards per day or less and assumed a maximum export of 65 truck loads per day. The cut and fill activity limitations were based on the fugitive dust thresholds while the number of trucks per day was limited by $NO_X$ emissions based on distance traveled. Because the disposal site was unknown, the analysis assumed the modeling program's default round trip distance of 20 miles per trip. Since the publication of the Final EIR, the site conditions have been explored in greater detail. Instead of excess soil being exported, the on-site rock will be crushed and the cut and fill material balanced on-site. Additionally, the type of equipment that would be used on-site during grading and rock crushing operations has been revised since the original modeling to better represent the actual equipment that will be used during these activities. Finally, the air quality emissions modeling program has been updated. URBEMIS 2007, which was used to model the construction activities for the Final EIR has been replaced industry wide with CalEEMod2013. The updated model has revised the calculation of fugitive dust emission from on-site activities and the emission factors associated with equipment types.

Based on the noise and vibration analysis in the Final EIR, construction activities occurring within the project site would involve grading and excavation activities, followed by construction and external finishing of the proposed facilities and associated parking areas, as well as roadway and landscaping improvements. These activities would involve the use of heavy equipment, smaller power tools, generators, and other equipment that generates noise. Each stage of construction would use a different mix of equipment, with noise and vibration levels varying based on the amount and types of equipment in operation and the location of the activity related to potential receptors. The project applicant would comply with the City's regulated hours of construction activities occurring between the hours of 7:00 AM and 8:00 PM. Subsequent to the certification of the Final EIR, the potential for limited rock crushing to occur has been identified due to the geological make-up of the site. Rock crushing would be limited to the hard rock layers that cannot be adequately reduced to fill material grade through the use of typical construction activities. It is not anticipated that the rock crushing equipment would be needed for the entire grading phase, but would be limited to the time that crushing would be necessary to reduce fill size.

Because truck trips required to export the soil from the site to either an adjacent site or to other sites 20 miles away (round-trip truck trips) as analyzed in the EIR would not be required by balancing the site's grading activities, pollutant emissions from the soil export truck operations would be eliminated. Therefore, this Addendum addresses the proposed Project revisions in grading activities from the approved export and transportation of approximately 238,000 cubic yards of excess soil to now "balancing" all cut and fill on-site and eliminating the excess soil export. This Addendum discusses the emissions associated with having a proposed rock crushing operation be added to the scope of on-site grading activities, compares the grading phase emissions estimated in the Final EIR with the revised emissions evaluated using CalEEMod2013 and updated equipment list, and addresses the noise and vibration impacts associated with the use of the rock crushing equipment.

Because fewer pollutant emissions would result in the revised balanced-site grading scenario, the mitigation measure in the Final EIR restricting maximum daily soil export has been eliminated; as has the daily limitation on the site's grading cut and fill cubic yardage; however, overall emissions would remain below SCAQMD thresholds of significance despite the adjusted grading parameters.

## 2.3.2 Site and Plan Changes from the Balanced On-Site Grading

By eliminating the soil exportation of up to 238,000 cubic yards of soil from the site, resulting changes to the proposed project site and development include the following:

- Elevation of project site increased from 3' to approximately 5'.
- Addition of two anchor block retaining walls running along Industrial Parkway by the main truck entrance and a second running along Industrial Parkway mid-slope and then turning along the southeast (site plan east) side of the project and then turning to run along a ten foot (10') setback from the northeastern (site plan north) property line adjacent the I-215 freeway.
- Addition of some tandem trailer parking stalls in the Industrial Parkway adjacent truck yard plus the conversion of some auto parking spaces to trailer parking stalls in the I-215 adjacent truck yard.
- Redesign of northern parking field to all automobile parking from a mix of automobile and trailer parking stalls and addition of a dedicated truck lane along the northern building elevation separated

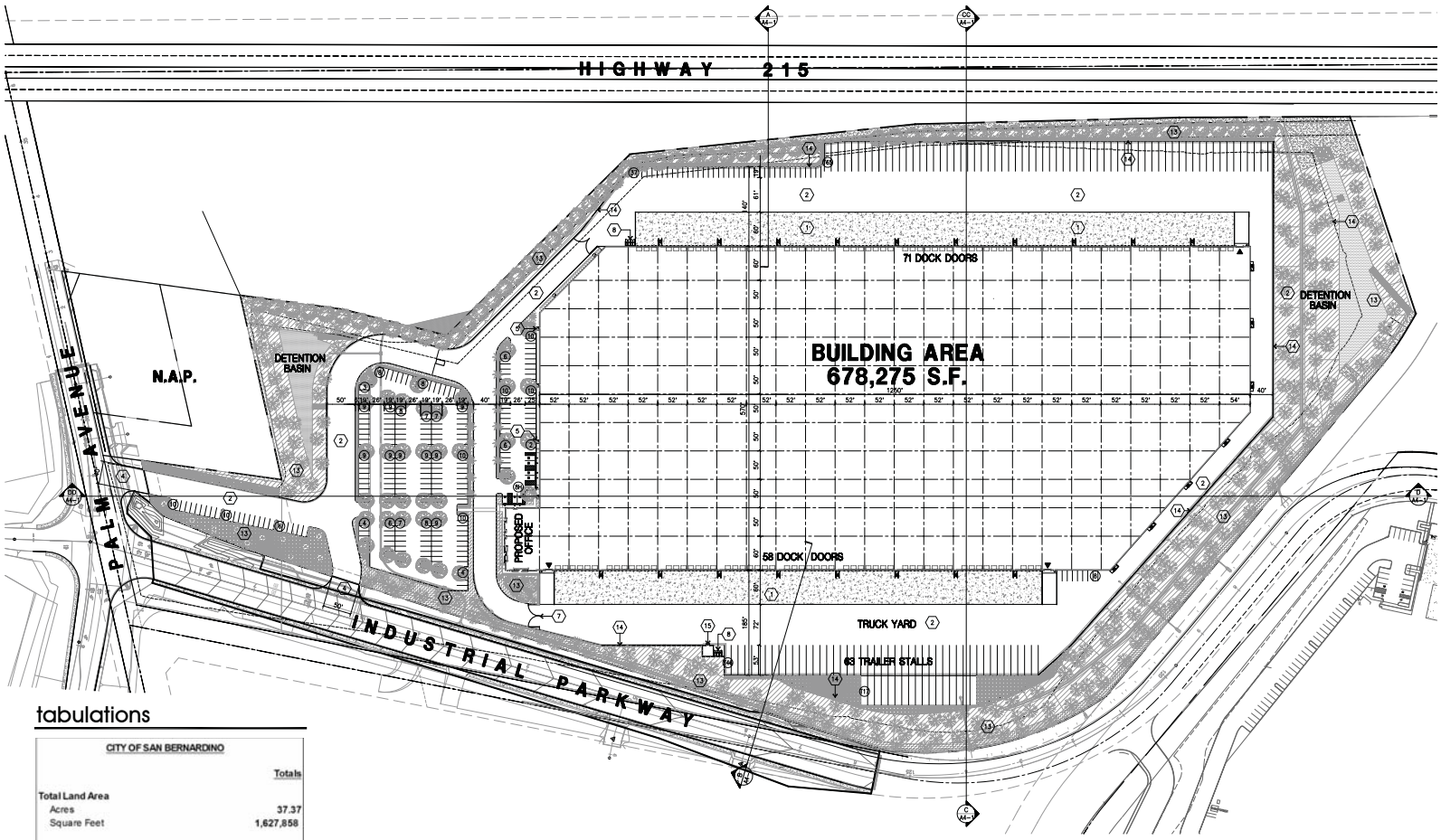
from auto parking to improve safety between truck and automobiles to facilitate logistics movement between truck yards / loading bays.

- Redesign of the project's landscape plan to more drought tolerant and native species plants and trees to promote sustainable landscaping practices.

The proposed changes to the approved project are contained in the following Figures:

- **Figure 1** – Proposed Modified Site Plan
- **Figure 2** – Proposed Modified Landscaping Plan
- **Figure 3** – Proposed Balanced Site Sections w/ Comparative Elevations to Approved Project

The Mitigation Monitoring and Reporting Program (MMRP) that was adopted at the time of certification of the Final EIR and amended by the 1st Addendum to the Final EIR, is also now amended to reflect the changes in the mitigation measures as outlined in this 2nd Addendum.




## SITE PLAN KEYNOTES

1. 6" THICK MINIMUM, REINFORCED CONCRETE TRUCK YARD, W/ #3 @ 18" O.C.E.W. 3500 PSI W. CONSTRUCTION AND/OR EXPANSION JOINTS A MAXIMUM OF 18'-0" O.C. EXPANSION JOINTS TO BE A MIN. OF 1-1/2" DEEP AND A MAXIMUM ULTIMATE WIDTH OF 1/4". VERIFY WITH SOILS ENGINEER. PROVIDE HEAVY BROOM FINISH. ALL JOINTS TO BE CLEANED AND FILLED W/ ASPHALTIC CAULKING.
2. ASPHALT CONCRETE (AC) PAVING.
3. CONCRETE WALKWAY.
4. DRIVEWAY APRONS TO BE CONSTRUCTED PER CITY STANDARD , SEE CIVIL DRAWINGS. PROVIDE STAMPED CONCRETE W/ LIGHT BROOM FIN. AT ALL DRIVE LOCATIONS. - PROVIDE VERTICAL & HORIZONTAL EXPANSION JOINTS AT A MAXIMUM OF 15' O.C. SPACING.
5. 5'-6"X5'-6"X4" THICK CONC. EXTERIOR LANDING PAD TYP. AT ALL EXTERIOR MAN DOORS TO LANDSCAPED AREAS. FINISH TO BE MEDIUM BROOM FINISH PROVIDE WALK TO PUBLIC WAY OR DRIVE WAY AS REQ. BY CITY INSPECTOR.
6. 8' HIGH CONCRETE TILT-UP SCREEN WALL.
7. PROVIDE 6' HIGH WROUGHT IRON MANUALLY OPERATED GATES W/ KNOX-BOX PER FIRE DEPARTMENT STANDARDS PER DRIVEWAY. GATE TO BE DESIGNED FOR 90 MPH WIND LOAD, EXPOSURE "C". CONTRACTOR TO DESIGN & DETAIL GATES, PROVIDE SHOP DRAWINGS & CALCS. PRIOR TO FABRICATION.
8. 6' HIGH CONCRETE TRASH ENCLOSURE PER CITY OF SAN BERNARDINO PUBLIC WORKS STANDARD.
9. APPROXIMATE LOCATION OF TRANSFORMER. CONTRACTOR TO VERIFY WITH S.C.E. PROVIDE LANDSCAPE SCREENING AROUND. ALL GROUND UTILITY STRUCTURES TO HAVE LANDSCAPE SCREENWALLS.
10. CONCRETE SWALE.
11. NOT USED
12. EXTERIOR PARKING LIGHT POLE.
13. LANDSCAPE. ALL LANDSCAPE AREAS INDICATED BY HATCH PATTERN.
14. 8' HIGH WROUGHT IRON FENCE.
15. PUMP HOUSE

## SITE PLAN GENERAL NOTES

1. THE SOILS REPORT PREPARED BY ., DATED IS TO BE A PART OF THESE CONTRACT DOCUMENTS.
2. IF SOILS ARE EXPANSIVE IN NATURE, USE STEEL REINFORCING FOR ALL SITE CONCRETE
3. ALL DIMENSIONS ARE TO THE FACE OF CONCRETE WALL, FACE OF CONCRETE CURB OR GRID LINE U.N.O.
4. SEE "C" PLANS FOR ALL CONCRETE CURBS, GUTTERS AND SWALES. DETAILS ON SHEET AD.1 ARE MINIMUM STANDARDS.
5. THE ENTIRE PROJECT SHALL BE PERMANENTLY MAINTAINED WITH AN AUTOMATIC IRRIGATION SYSTEM. PRIOR TO INSTALLATION & AT LEAST 60 DAYS BEFORE BLDG. COMPLETION.
6. SEE "C" DRAWINGS FOR POINT OF CONNECTIONS TO OFF-SITE UTILITIES. CONTRACTOR SHALL VERIFY ACTUAL UTILITY LOCATIONS.
7. PROVIDE POSITIVE DRAINAGE AWAY FROM BLDG. SEE "C" DRAWINGS.
8. CONTRACTOR TO REFER TO "C" DRAWINGS FOR ALL HORIZONTAL CONTROL DIMENSIONS. SITE PLANS ARE FOR GUIDANCE AND STARTING LAYOUT POINTS.
9. SEE "C" DRAWINGS FOR FINISH GRADE ELEVATIONS.
10. CONCRETE SIDEWALKS TO BE A MINIMUM OF 4" THICK W/ TOOLED JOINTS AT 6' O.C. EXPANSION/CONSTRUCTION JOINTS SHALL BE A MAXIMUM 12' EA. WAY. EXPANSION JOINTS TO HAVE COMPRESSIVE EXPANSION FILLER MATERIAL OF 1/4". FINISH TO BE A MEDIUM BROOM FINISH U.N.O.
11. A SEPARATE PERMIT SHALL BE OBTAINED FOR ALL FENCES, SCREEN WALLS, TRASH ENCLOSURES, LIGHT POLE BASES & SIGNAGE PER CITY STANDARDS.
12. PAINT CURBS AND PROVIDE SIGNS TO INFORM OF FIRE LANES AS REQUIRED BY FIRE DEPARTMENT.
13. CONSTRUCTION DOCUMENTS PERTAINING TO THE LANDSCAPE AND IRRIGATION OF THE ENTIRE PROJECT SITE SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND APPROVED BY PUBLIC FACILITIES DEVELOPMENT PRIOR TO ISSUANCE OF BUILDING PERMITS.
14. PRIOR TO FINAL CITY INSPECTION, THE LANDSCAPE ARCHITECT SHALL SUBMIT A CERTIFICATE OF COMPLETION TO PUBLIC FACILITIES DEVELOPMENT.
15. IT SHALL BE THE RESPONSIBILITY OF THE APPLICANT/REPRESENTATIVE TO FORWARD GUIDELINES FOR LANDSCAPE AND IRRIGATION CONSTRUCTION DOCUMENTS (GREEN HANDOUT) TO THE LANDSCAPE ARCHITECT FOR INFORMATION ON THE REQUIREMENTS AND SUBMITTAL FOR PLAN CHECK.
16. ALL LANDSCAPE AND IRRIGATION DESIGNS SHALL MEET CURRENT CITY STANDARDS AS LISTED IN GUIDELINES OR AS OBTAINED FROM PUBLIC FACILITIES DEVELOPMENT.
17. N/A
18. N/A
19. N/A
20. N/A
21. THE "ENTIRE PROJECT SHALL BE PERMANENTLY MAINTAINED WITH AN AUTOMATIC. IRRIGATION SYSTEM.
22. THERE WILL BE NO ABOVE OR BELOW GRADE CHEMICAL TANKS

## tabulations

| CITY OF SAN BERNARDINO | Totals |
|---|---|
| **Total Land Area** | |
| Acres | 37.37 |
| Square Feet | 1,627,858 |
| **Building Area** | |
| Office (Future) - Ancillary | - |
| Warehouse | 678,275 |
| **Total Building Area** | 678,275 |
| **Coverage** | |
| Building Coverage | 42% |
| **Landscape Required** | |
| 15% of Car Parking Area | 7,515 |
| **Landscape Provided** | |
| Landscape Coverage | 23.45% |
| Landscape Area | 381,747 |
| **Parking Required @ 1/1250** | 543 |
| **Parking Provided** | |
| Standard Stalls (9'x19') | 286 |
| Handicap Stalls (9'x19') | 6 |
| Handicap Van Stalls (9'x19') | 2 |
| Trailer Stalls (12'x53') | 128 |
| Dock Doors | 129 |
| Grade Level Door | 3 |
| **Total Parking Provided** | 554 |

***NOTE:***
***TRAILER PARKING SUBSTITUTED FOR AUTO PARKING***

## code data

| | |
|---|---|
| ***CONSTRUCTION TYPE*** | ***III - B*** |
| ***BUILDING OCCUPANCY*** | ***B, S - 1*** |
| ***AUTOMATIC FIRE SPRINKLERS*** | ***YES*** |
| ***ALLOWABLE AREA WITH 60' MIN. YARDS ON 4 SIDES AND FULLY SPRINKLERED*** | ***UNLIMITED*** |

***ACCESSOR'S PARCEL NO. 266 - 041 - 62***

## vicinity map

1" = 80'
0 80' 160' 240'

PLAN NORTH
TRUE NORTH

## SITE LEGEND

- LANDSCAPED AREA
- CONC. PAVING - SEE "C" DRWGS. FOR THICKNESS
- STANDARD PARKING STALL 9' X 19'
- HANDICAP PARKING STALL, 9' X 19' + 5'W ACCESSIBLE AISLE
- HANDICAP PARKING STALL, 9' X 19' + 8'W ACCESSIBLE AISLE
- TRUCK TRAILER STALL 12' X 53'
- LIGHT STANDARD
- EXISTING PUBLIC FIRE HYDRANT
- PRIVATE FIRE HYDRANT-- APPROXIMATE LOCATION
- CATCH BASIN APPROX. LOCATION
- WATER LINE - SEE CIVIL
- GAS LINE - SEE CIVIL
- SEWER LATERAL SEE CIVIL

***SHEET INDEX:***
1. ***ARCHITECTURAL SITE PLAN***
2. ***ARCHITECTURAL ENLARGED SITE PLAN***
3. ***ARCHITECTURAL ENLARGED SITE PLAN***
4. ***CONCEPTUAL GRADING PLAN***
5. ***CONCEPTUAL LANDSCAPE PLAN***
6. ***FLOOR PLAN***
7. ***ELEVATIONS***
8. ***SITE SECTIONS***

# 678K DISTRIBUTION FACILITY

PALM AVENUE & INDUSTRIAL PARKWAY SAN BERNARDINO, CA — AUGUST 8, 2014


IDS REAL ESTATE GROUP
515 SOUTH FIGUEROA STREET, SUITE # 1600, LOS ANGELES, CALIFORNIA 90071 (213) 362-9300

HPA, INC.
18831 BARDEEN AVENUE, SUITE # 100, IRVINE, CALIFORNIA 92612 (949) 863-1770


## OVERALL SITE PLAN - PROPOSED PROJECT

SCALE: 1"=40'-0"

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## PLANTING LEGEND

| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION |
|---|---|---|---|
| | ACCENT TREES | | SHRUBS |
| | WASHINGTONIA ROBUSTA<br>MEXICAN FAN PALM | | AGAVE AMERICANA<br>CENTURY PLANT |
| | CERCIDIUM X 'DESERT MUSEUM'<br>DESERT MUSEUM PALO VERDE | | NASSELLA TENUISSIMA<br>MEXICAN FEATHER GRASS |
| | PARKING LOT TREES | | PHORMIUM TENAX 'SURFER'<br>DWARF BRONZE NEW ZEALAND FLAX |
| | ULMUS PARVIFOLIA 'DRAKE'<br>EVERGREEN ELM | | |
| | | | |
| | SCREENING TREES | | |
| | EUCALYPTUS POLYANTHEMOS<br>SILVER DOLLAR GUM | | |
| | FICUS MICROCARPA 'GREEN GEM'<br>INDIAN LAUREL FIG | | |
| | | | |
| | STREET TREES | | |
| | TO BE DETERMINED BY PARKS, RECREATION AND COMMUNITY SERVICES DEPARTMENT | | GROUNDCOVER |
| | | | MYOPORUM PARVIFOLIUM |
| | | | ACACIA REDOLENS 'DESERT CARPET'<br>PROSTRATE ACACIA |
| | | | NATIVE HYDROSEED (UNIRRIGATED) |
| | | | ROCK MULCH ACCENT |

## NOTES:

LANDSCAPE AREA CALCULATION (SEE ARCHITECTURAL SITE PLAN): SQUARE FOOTAGE INCLUDES PLANTING IN PARKING STALLS BEHIND WHEEL STOPS, PER OFF-STREET PARKING STANDARDS.

PARKING LOT TREES: ONE 24" BOX MINIMUM REQUIRED FOR EVERY 4 PARKING SPACES (249÷ 4 = 62 REQUIRED/62 PROVIDED), PER OFF-STREET PARKING STANDARDS

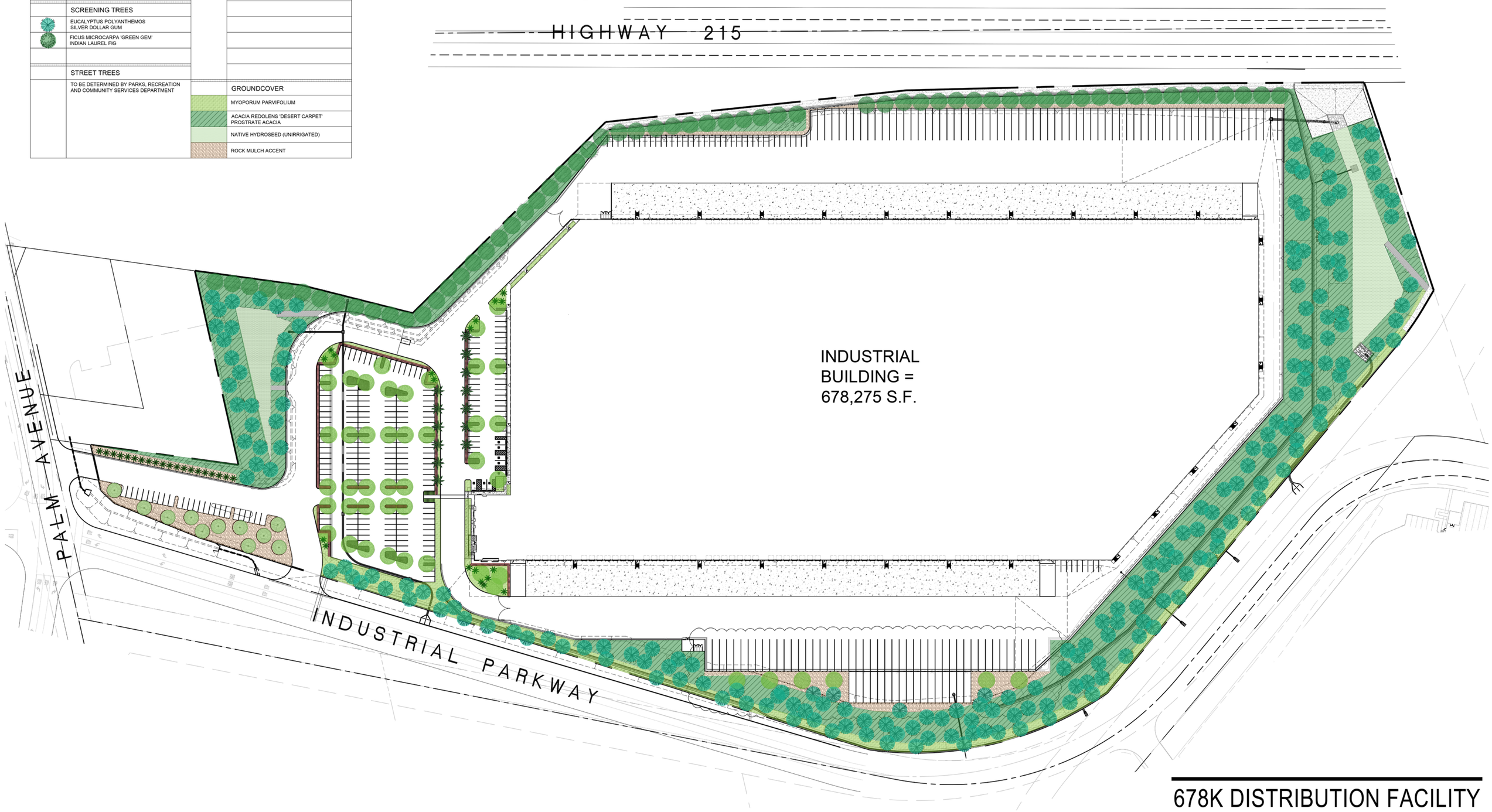
SCREENING TREES: ONE 24" BOX FICUS 'GREEN GEM' REQUIRED FOR EVERY 30' OF FREEWAY FRONTAGE (2,093 L.F. ÷ 30 = 70 REQUIRED/70 PROVIDED), PER FREEWAY CORRIDOR OVERLAY DISTRICT.

PLANT SIZES:

TREES: 50% - 15-GALLON = 39
20% - 24" BOX = 16
15% - 36" BOX = 12
15% - 48" BOX = 12

SHRUBS: 80% - 5 GALLON
20% - 1 GALLON

GROUNDCOVER: 100% COVERAGE @ 1 YEAR




# 678K DISTRIBUTION FACILITY

PALM AVENUE & INDUSTRIAL PARKWAY, SAN BERNARDINO, CALIFORNIA — REVISED AUGUST 27, 2014


IDS REAL ESTATE GROUP / HURD TRUST
515 SOUTH FIGUEROA STREET, SUITE # 1600, LOS ANGELES, CALIFORNIA 90071 — (213) 362-9300

LRM, LTD. LANDSCAPE ARCHITECTURE
10335 JEFFERSON BOULEVARD, CULVER CITY, CALIFORNIA 90232 — (310) 839-6600


## CONCEPTUAL PLANTING PLAN

1" = 60'
0 60' 120' 180'

TRUE NORTH
PLAN NORTH

SCALE: 1"=60'-0"

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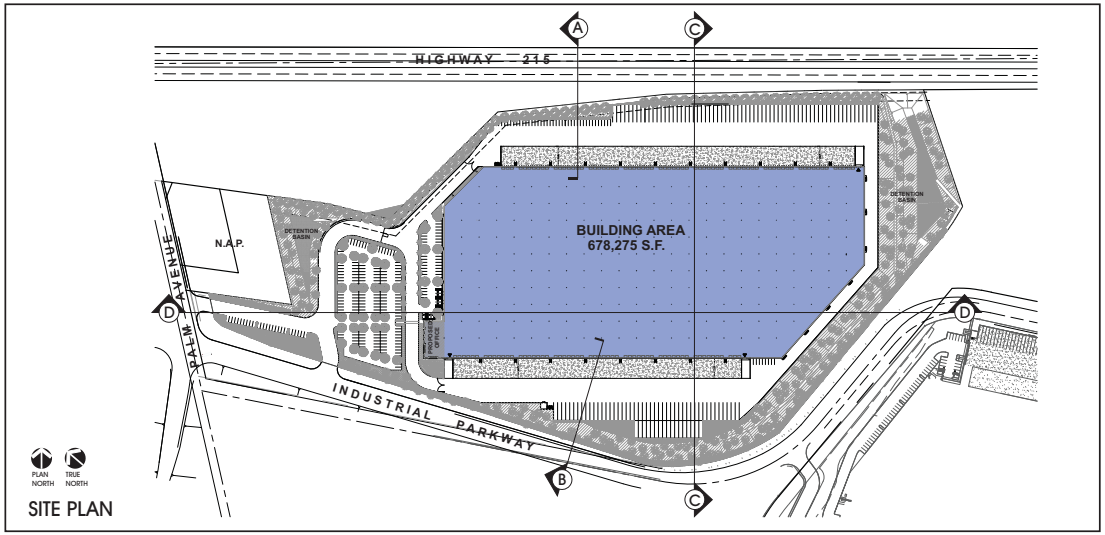
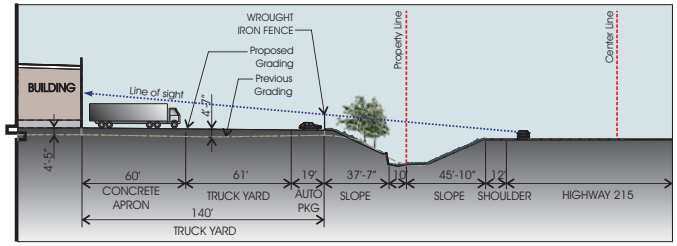
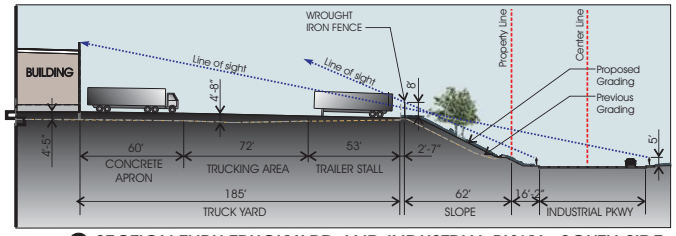
# CONCEPTUAL SECTION ELEVATIONS



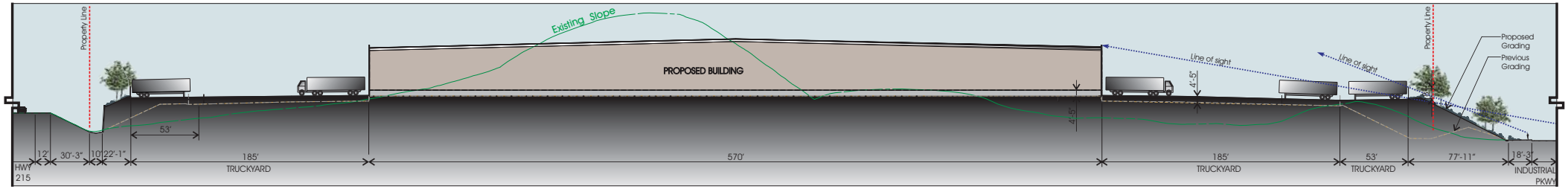

SITE PLAN



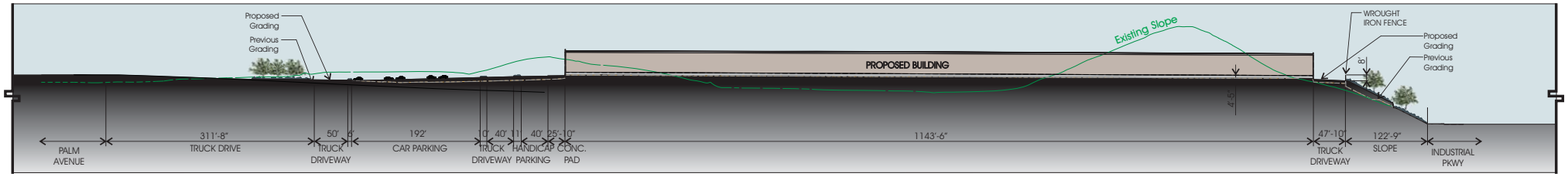

A SECTION THRU TRUCKYARD AND HIGHWAY 215 - NORTH SIDE




B SECTION THRU TRUCKYARD AND INDUSTRIAL PKWY - SOUTH SIDE




C COMPLETE SECTION FROM HIGHWAY 215 TO INDUSTRIAL PKWY FACING EASTWARD WITH EXISTING GRADES SHOWN




D COMPLETE SECTION FROM PALM AVENUE TO INDUSTRIAL PKWY FACING NORTHWARD WITH EXISTING GRADES SHOWN

IDS REAL ESTATE GROUP

VALHALLA REAL ESTATE

PALM DISTRIBUTION CENTER

# Palm / Industrial Parkway Project

## 678K DISTRIBUTION FACILITY

PALM AVENUE & INDUSTRIAL PKWY, SAN BERNARDINO, CA

HPA Job #10269
September 15, 2014

HPA
18331 Bardeen Ave.
Suite 100
Irvine, CA 92612
Tel: 949-863-1770
Fax: 949-863-0851

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# CHAPTER 3 Environmental Impact Analysis

The following analysis summarizes the significance conclusions of the EIR for the project. Subsection 3.1 discusses impacts that were not found to be significant, as identified in Section 4.14 (Effects Not Found to Be Significant) of the Final EIR. Subsections 3.2 discuss impacts that were found to be less than significant, Subsection 3.3 less than significant with mitigation, and Subsection 3.4 significant and unavoidable. For each issue area, the analysis contained in the Final EIR is described, followed by an analysis of project modifications and a conclusion as to whether the project modifications change the significance conclusion in the Final EIR.

## 3.1 EFFECTS NOT FOUND TO BE SIGNIFICANT

The notice of preparation (NOP) for the proposed project identified various impact categories among a number of environmental issues that would not be significantly impacted by the proposed project and, therefore, do not require further review in this Draft EIR. Each of these environmental issues was evaluated in the NOP and determined not to represent a significant impact of the project. The impacts found not to be significant are listed below.

### Aesthetics

Due to the presence of two large hills on site and the presence of the I-215 located on a slightly elevated berm adjacent to the site, views of the San Bernardino Mountains are blocked from most vantage points on the site. These on-site hills also block any view through the site. Views of the San Bernardino Mountains are available from surrounding land uses and streets. Additionally, the proposed project height of the building, approximately 40 feet, plus the additional 12-foot-high berm, as well as the bulk and scale of the project, would not block a scenic vista. No views of an urban skyline, valley, or large body of water are available from surrounding land uses. Proposed setbacks from the public right-of-way and adjacent property lines, as well as the removal of some existing aboveground utilities and their placement underground will enhance the aesthetics of the area. As there are no currently held scenic vistas from and/or through the project site, implementation of the proposed project would have no impact on a scenic vista.

The project site is not located within the viewshed or corridor of a state-designated scenic highway. Additionally, the project site is also not located within a county-designated scenic corridor. Because the project site is neither located proximate to a state-designated highway, nor within a designated view corridor associated with a scenic highway, development of the proposed project would have no impact on scenic resources within a state scenic highway view corridor.

#### *Analysis of Project Modifications*

The project remains as described in the EIR, including heights, architectural features, setbacks, and other characteristics that could affect visual quality. There would continue to be no impact. However, addition of the proposed segmented anchor retaining wall adjacent the I-215 Freeway could have some subjective aesthetic differences than the approved project, so additional discussion plus

incorporation of new mitigation measures to lessen any perceived impacts created by the proposed retaining wall to a less than significant impact is described in Section 3.3 below.

## Agricultural and Forest Resources

There is no Prime Farmland, Farmland of Statewide Importance, or Unique Farmland located on the project site, nor is the project site listed as a candidate for Prime Farmland. The project site is not under a Williamson Act contract, as the project site is currently undeveloped and zoned for industrial uses. There is no forestland or timberland on the project site. No environmental changes associated with the proposed project would result in the conversion of farmland to non-agricultural uses. No impact would occur.

### *Analysis of Project Modifications*

Site conditions remain as described in the EIR. There would continue to be no impact.

## Biological Resources

The project site has not been incorporated in to a HCP or NCCP. As mentioned in the "Regulatory Framework" section, "Regional" subsection, of Section 4.3 (Biological Resources) of the EIR, the *San Bernardino Valley Wide Multi-Species Habitat Conservation Plan* is still under preparation; the schedule for completion and adoption of the MSHCP is uncertain at this time. As such, the proposed project would not conflict with an adopted HCP, NCCP, or other approved local, regional, or state HCP. No impact would occur.

### *Analysis of Project Modifications*

The project site is still not subject to an HCP or NCCP. Therefore, no impact would continue to occur.

## Cultural Resources

As described in Section 4.4.1 (Cultural Resources, Environmental Setting) of the EIR, the only historical resources identified within the project site are old remnants of structures such as concrete foundations and broken fences. Implementation of the proposed project would include the removal of these structures during site preparation (clearing, excavation, trenching, etc.); however, as described above, these remnants are not considered likely to yield information important to history or prehistory, and are not considered eligible or potentially eligible for listing in the NRHP. Therefore, they do not meet the definition of an historical resource under CEQA Guidelines Section 15064.5(a), and their removal would not constitute a significant effect on the environment. Because the identified remnants within the project site are not considered historical resources, their removal as a result of implementation of the proposed project would result in no impact.

### *Analysis of Project Modifications*

There are no historic structures on the project site. Therefore, no impact to historic resources would continue to occur.

## Geology/Soils and Mineral Resources

### *Analysis of Project Modifications*

The changes in the proposed project would not affect the analysis of impacts to geology, soils, and minerals, even if the project site were listed on an Alquist-Priolo Earthquake Fault Zone. There are no unique topographic features on the project site, which remains in the same condition as analyzed previously. No channels, creeks, or riverbeds occur on the project site. The geology of the project site remains as discussed in the EIR and there is no increased risk from liquefaction or seismically inducted ground failure. There are no known mineral resources on the site. There would continue to be no impact.

## Hazards and Hazardous Materials

### *Analysis of Project Modifications*

None of the existing conditions as identified in the EIR has changed. The project would still be required to comply with all applicable codes. There would continue to be no impact.

## Hydrology/Water Quality

The project site is not located in a 100-year flood hazard area according to FEMA Flood Insurance Rate Map No. 06071C7940 F and 06071C7930 F (effective dates March 18, 1996). Therefore, there would be no housing placed within a 100-year flood hazard area and no impact would occur.

The project site is not located in a 100-year flood hazard area as mapped by FEMA. Therefore, implementation of the proposed project would not place structures in a 100-year flood hazard area such that flood flows would be impeded or redirected and no impact would occur.

Tsunamis are large sea waves generated by submarine earthquakes, or similar large-scale, short-duration phenomena, such as volcanic eruptions, that can cause considerable damage to low-lying coastal areas. Because the project site is locate almost 50 miles inland of the Pacific Ocean, the project site would not be subject to tsunami inundation.

Seiches are waves, also caused by large-scale, short-duration phenomena that result from the oscillation of confined bodies of water (such as reservoirs and lakes) that also may damage low-lying adjacent areas, although not as severely as a tsunami. The closest enclosed bodies of water that could result in earthquake-induced seiches are Silverwood Lake (more than 5 miles away) and Lake Arrowhead (more than 10 miles away). Therefore, any potential seiche activity in these lakes would not be expected to reach the project site and would be no risk to the project site from seiches.

Mudflow hazards typically occur where unstable hill slopes are located above gradient or where site soils are unstable and subject to liquefaction, and when substantial rainfall saturates soils causing failure. The hills located on the project site would be removed and the project site graded flat. The project site is not located near steep unstable hill slopes susceptible to mudslides or within a debris flow hazard area. In fact, the closest hillsides up-gradient from the project site are more than 2 miles to the northeast, and are separated from the project site by urban development, including Interstate 215, residential uses, streets, and storm drain systems,

which makes it unlikely that the project site would experience any affects caused by mudslides, if they occurred. Hillsides below-gradient from the project site would not contribute mudslides to the project site (mudslides would have to completely fill in the lower elevation areas before reaching the project site). Therefore, the project site is not expected to be subject to a mudflow risk.

In summary, there would be no impact that would expose people or structures at the project site to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflows.

The project site is not located in the vicinity of any large bodies of water which could utilize a levee or dam, as there are no levees or dams within the project area; they do not impose a threat to the project site and would not result in flood associated with the failure of levee or dam.

### *Analysis of Project Modifications*

The site conditions remain as described in the EIR. Changes by eliminating the soil export and balancing the site's grading operations on-site would not affect or increase flood hazards. A lesser amount of soil would be excavated from the project site in the grading operation's cut and filling than the approved project. There would continue to be no impact.

## Land Use/Planning

The proposed project would not create a physical barrier to or division of an established community. Surrounding the project site, uses consist primarily of industrial use with residential communities east of the I-215 freeway. The northeast boundary of the project site is the I-215 freeway, directly east of the highway is a residential community. As the community is contained to the east of the highway, the proposed project does not impose a threat to divide the already established community, as the highway prevents the residential community from expanding further west in to the project site boundaries. Additionally, there are several vacant lots in the vicinity of the project site and some development that resemble the current uses of this development.

According to the 2005 City of San Bernardino General Plan, the project site is located within the Light Industrial Zoning District. This District is intended to retain, enhance, and intensify existing uses and provide for the new development of lighter industrial uses along major vehicular, rail, and air transportation routes serving the City. Warehousing and wholesaling are permitted uses within this District. The proposed project is not located within the City's Hillside Management Overlay District; alterations to the topography of the site would not conflict with the designation or zoning of the project site. Additionally, the proposed project is not located within the Airport Influence Area of the San Bernardino International Airport Authority. The proposed project is an industrial distribution facility, and it would not conflict with the General Plan land use designation as identified on the General Plan Land Use Plan/Zoning Districts Map.

The project site is not located within Foothill Fire Zones A & B, or C as identified on the Land Use Plan/Zoning Districts Map of the General Plan. As such, the proposed project would have no impact on development within these Foothill Fire Zones.

No habitat conservation plan or natural community conservation plan is applicable to the project site. No impact would occur.

### *Analysis of Project Modifications*

The project would be implemented as identified in the EIR. There are no proposed changes to the site plan, grading plan, or structural characteristics that would affect land use. There would continue to be no impact.

## Noise

The project site is not located within an airport land use plan or within 2 miles of a public airport or public use airport. The nearest public or private airport/airstrip to the project site is the Rialto Municipal Airport, located approximately 4 miles from the project site. The project site is not located within the vicinity of a private airstrip. The nearest public or private airport/airstrip to the project site is the Rialto Municipal Airport, located approximately 4 miles from the project site. Therefore, no impact related to the exposure of people working in the project site to excessive noise levels is anticipated to occur from a public or private airstrip.

### *Analysis of Project Modifications*

The site conditions are the same as identified in the EIR. There is no new private or public airport or airstrip located in the project vicinity. There would continue to be no impact.

## Population and Housing

### *Analysis of Project Modifications*

The project description is the same as that analyzed in the EIR. No housing is proposed and no housing would be displaced. There would continue to be no impact.

## Public Services (Schools)

Because there would be no residential component of the proposed project and no substantial population increase as a result of the proposed project, there would be no increased adverse demand on schools or recreational facilities.

### *Analysis of Project Modifications*

There would continue to be no residential component that could adversely affect schools. There would continue to be no impact.

## Recreation

### *Analysis of Project Modifications*

There would continue to be no residential component of the project that could adversely affect recreation, nor is there a recreational component of the project. There would continue to be no impact.

## Transportation/Traffic

### *Analysis of Project Modifications*

The project site is not located within an airport land use plan. There would continue to be no impact.

# 3.2 LESS-THAN-SIGNIFICANT IMPACTS

## Aesthetics

Operation of the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings.

### *Analysis of Project Modifications*

The minor modifications in the proposed project would not affect the visual quality as analyzed in the Final EIR. Construction activities would remain the same as described in the EIR. However, addition of the proposed segmented anchor retaining wall adjacent the I-215 Freeway could have some subjective aesthetic differences than the approved project, so additional discussion plus incorporation of new mitigation measures to lessen any perceived impacts created by the proposed retaining wall to a less than significant impact is described in Section 3.3 below.

## Air Quality

Development of the proposed project would not conflict with or obstruct implementation of the applicable air quality plan. Development of the proposed project would not expose sensitive receptors to substantial pollutant concentrations due to project-generated toxic air emissions. Operation of the proposed project would generate increased local traffic volumes, but would not expose sensitive receptors to substantial localized CO concentrations. Development of the proposed project would not create objectionable odors affecting a substantial number of people. Compliance with the identified project requirement PR4.2A would ensure that this impact would remain less than significant. Construction of the proposed project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. Compliance with the identified project requirements PR4.2B through PR4.2D would ensure this impact would remain less than significant.

### *Analysis of Project Modifications*

The project modifications would not change the analysis contained in the Final EIR with respect to the AQMP, exposure of sensitive receptors to substantial pollutant concentrations or localized CO concentrations during operation, violation of air quality standards, or create objectionable odors. The changes in the grading plan that would affect air quality during construction are discussed in Section 3.3 (Less-Than-Significant Impacts with Mitigation).

## Biological Resources

The proposed project would not have a substantial adverse impact on federally protected wetlands. The proposed project would not have a substantial adverse impact on movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The proposed project would not conflict with local policies or ordinances protecting biological resources. Compliance with City regulations concerning the destruction of trees as outlined in project requirement PR4.3A would ensure this impact is less than significant.

### *Analysis of Project Modifications*

The project modifications would not affect federally protected wetlands, movement of native resident or migratory fish or wildlife species, or wildlife corridors.

## Geology, Soils, and Mineral Resources

Development of the proposed project would not expose people and/or structures to potentially substantial adverse effects, including the risk of loss, injury, or death, involving landslides and/or slope instability, liquefaction or strong seismic groundshaking. Compliance with applicable federal, state, and local regulations would ensure this impact is less than significant.

Construction and operation of the proposed project would not result in substantial soil erosion, dust, unstable soil conditions, or landslides, mudslides, flooding, siltation, or severe scarring from earth-moving activities on slopes of 15 percent or more. This would be a less-than-significant impact because slope stability, soil stability, and seismic-resistant design of structures proposed for human occupancy are required by the City of San Bernardino General Plan and Building Code and are enforced by City and state regulations.

The proposed project would not result in the loss of availability of a known valuable mineral resource or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. The proposed project would be located in a Mineral Resource Zone as adopted by the State Mining Geology Board and identified in the City's General Plan, but has not been designated as an IE land use zone.

### *Analysis of Project Modifications*

The project modification would not affect geology, soils, or mineral resources. The only project modification that relates to geology and soils relates to elimination of the soil export. Grading activities would remain as described in the Final EIR.

## Hazards and Hazardous Materials

Construction and operation of the proposed project could involve the routine transport, use, and disposal of hazardous materials, but no significant risk from accidental upset or exposure of construction workers or employees would occur. Compliance with existing regulations pertaining to hazardous materials would ensure that this impact would remain less than significant.

The proposed project is located on a site that is included on a list of hazardous materials sites. However, construction or operation of the project would not create or result in a significant hazard to the public or the

environment. The proposed project is within a designated High Wind Area but would be consistent with City wind-resistant design standards. Compliance with project requirement PR4.6A would ensure that the impact would be less than significant.

Implementation of the proposed project would not result in adverse wind effects affecting adjacent property during periods of high-velocity wind. Compliance with project requirement PR4.6A would ensure that the wind effect on adjacent properties would be less than significant.

### *Analysis of Project Modifications*

The proposed modifications would not significantly change the overall grading plan's intent or the areas of the site that would be disturbed, nor would the project involve any transport, use, or disposal of hazardous materials not already identified in the Final EIR.

## Hydrology and Water Quality

Construction of the proposed project could increase stormwater pollutant loads or concentrations, but would not result in a violation of water quality standards or a substantial degradation of water quality. Compliance with the identified project requirements PR4.7A through PR4.7D would ensure that this impact would remain less than significant.

Construction of the proposed project would substantially alter the existing site drainage pattern but would not result in substantial on-site or off-site erosion. Compliance with the identified project requirements PR4.7A through PR4.7E would ensure that this impact would remain less than significant.

The proposed project would substantially alter the existing site drainage pattern and increase the rate of stormwater runoff, but would not significantly contribute to off-site flooding or exceed stormwater conveyance capacity.

Operation of the proposed project would substantially alter the existing site drainage pattern and increase peak runoff rates and total storm flow volumes, but would not result in downstream bed or bank erosion. The impact would be less than significant.

### *Analysis of Project Modifications*

Grading activities that could affect drainage are as identified in the Final EIR and would not change with the project modifications. The project would not result in substantial on-site or off-site erosion. The project would continue to comply with all applicable requirements related to drainage and soil erosion.

## Land Use and Planning

Implementation of the proposed project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the proposed project adopted for the purpose of avoiding or mitigating an environmental effect.

### *Analysis of Project Modifications*

The project modifications would not affect the existing or proposed land uses on the site and the analysis would remain the same as in the Final EIR.

## Noise and Vibration

Construction activities associated with the proposed project would not generate noise levels that exceed the noise standards established by the City of San Bernardino Municipal Code at off-site sensitive receptors. Project requirement PR4.9A would ensure that this impact would remain less than significant.

Operation of the proposed project would not generate noise levels that exceed the noise standards established by the City of San Bernardino Municipal Code at off-site sensitive receptors. Construction activities associated with the proposed project would not generate or expose persons or structures off site to excessive groundborne vibration. Operation of the proposed project would not generate or expose sensitive receptors on or off site to excessive groundborne vibration or groundborne noise levels.

Construction activities associated with development of the proposed project would result in a substantial temporary or periodic increase in ambient noise levels. However, the project's construction noise impacts would be temporary, would not occur during recognized sleep hours, and would be not impact noise-sensitive uses.

Operation of the proposed project would generate increased local traffic volumes but would not cause a substantial permanent increase in ambient noise levels in the project vicinity that exceeds the threshold of significance established in this EIR.

### *Analysis of Project Modifications*

Based on the Final EIR, existing noise levels measured in the residential area off Kendall was 58.4 dBA $L_{eq}$. The construction noise level at the nearest residences from the proposed project was estimated to range between 47 dBA $L_{eq}$ and 56 dBA $L_{eq}$. Construction activities would not result in an increase in noise levels above the existing ambient noise levels and construction noise levels would not exceed the 65 dBA $L_{eq}$ exterior noise limits. Therefore, this impact from noise was determined to be less than significant. In order to ensure that construction noise activities do not create an impact, and in accordance with Section 8.54.060 (I) of the City of San Bernardino Municipal Code, the following project requirement was identified in the Final EIR for the Palm Industrial Project to be implemented during construction.

*PR4.9A* *As required by Section 8.54.060(I) (Exemptions) of the City of San Bernardino Municipal Code, the project applicant/developer shall require by contract specifications that the following construction best management practices (BMPs) be implemented by contractors to reduce construction noise levels:*

- *Ensure that construction equipment is properly muffled according to industry standards*
- *Place noise-generating construction equipment and locate construction staging areas away from sensitive uses, where feasible*

Activities that would occur during construction of the proposed project would have the potential to generate low levels of groundborne vibration. Vibration levels could reach as high as approximately 87 VdB within 25' of the project site. As with noise, vibration levels are attenuated with distance. Therefore, groundborne vibration would be approximately 63 VdB at 400', 57 VdB at 800' and approximately 51 VdB at 1600', well below the FTA's vibration impact thresholds for human annoyance of 75 VdB. At the nearest sensitive receptors, vibration levels from construction are anticipated to be below 65 VdB, which is the threshold of perception for most people. This impact was determined to be less than significant in the FEIR.

## ROCK CRUSHING

Under this revised analysis, rock crushing activities would be added to the typical grading activities identified in the Final EIR. Rock crushing equipment would add noise at levels that are similar and potentially greater than the equipment identified in the Final EIR. Based on a noise monitoring report[1] for the rock crushing equipment anticipated to be used on site, the rock crushing equipment combined with other on-site activities resulted in an $Le_q$ up to 76 dBA at approximately 49 feet (15 meters). Depending on the type of rock crushing equipment used, noise levels could be up to 86 dBA $Le_q$ at approximately 49 feet (15 meters). Because the rock crushing equipment would be stationary as opposed to the other equipment that would traverse the site, the impact from rock crushing noise would depend where the equipment would be located with respect to the off-site sensitive receptors. The closest sensitive receptor to the site would be the residents of Rito Court, located approximately 450 feet east of the project site. There is a masonry wall that separates these receptors from the freeway that attenuates noise by approximately 10 dBA. Therefore, at 450 feet, the noise levels for the operation of the rock crusher would be up to 57 dBA at the nearest receptors, and would be below the City's noise threshold standard. Noise calculations are included as Attachment D.

Typical construction activities for the proposed project, based on the Final EIR, are anticipated to be up to 86 dBA $Le_q$ at 49 feet (15 meters). While rock crushing activities would result in similar noise levels as typical construction equipment, the addition of the rock crushing equipment would increase perceived noise from these sources. Combined with anticipated on-site construction noise, noise at the nearest sensitive receptor is anticipated to be up to approximately 62 dBA, assuming construction equipment is atop the larger hill on site and, therefore, noise would not be attenuated by the existing wall adjacent to the residential community. As the hills on site are reduced, noise sources would fall below the height of the wall, and the noise levels at the residences would decrease, as the wall would again attenuate part of the noise levels. With modification of the project requirement PR4.9A, the perception of noise impacts would also be reduced.

*PR4.9A* *As required by Section 8.54.060(I) (Exemptions) of the City of San Bernardino Municipal Code, the project applicant/developer shall require by contract specifications that the following construction best management practices (BMPs) be implemented by contractors to reduce construction noise levels:*

- *Ensure that construction equipment is properly muffled according to industry standards*

[1] Cotton Beland Associates, Inc. (CBA) 1996. *Noise Monitoring Preliminary Report for Chandler Quarry.* Memorandum. July 2, 1996. (Included as Attachment C)

- *Place noise-generating construction equipment and locate construction staging areas away from sensitive uses, where feasible*
- *Avoid construction rock crushing activities and all high noise level activities (i.e. excavation grading) outside the hours of 8:00 AM and 6:00 PM.*

According to the City of San Bernardino's Municipal Code, construction activities are exempt from the noise ordinance as long as the work is… "performed pursuant to a valid written agreement with the City, or any of its political subdivisions, which provides for noise mitigation measures" and is conducted within the hours of 7:00 AM and 8:00 PM. With implementation of the modified project requirement PR4.9A, construction activities including the use of the rock crushing equipment would reduce noise to levels that may be perceptible, but would not be excessive with respect to the existing sensitive receptors.

Vibration associated with the rock crushing equipment would be typical of other on-site construction equipment and would not exceed 87 VdB at 25 feet. As discussed above, vibration levels of 87 VdB at 25 feet would not result in vibration levels that exceed the FTA's vibration impact thresholds for human annoyance at the nearest sensitive receptors. Therefore, rock crushing activities would not result in vibration impacts beyond what was anticipated in the Final EIR.

The noise and vibration analysis details the impacts anticipated from the addition of rock crushing equipment to the construction scenarios that could occur on-site given the changes in grading activities from what was identified in the Final EIR. As detailed in the analysis, the noise at the nearest sensitive receptors from the operation of the rock crusher would be reduced to 57 dBA Leq when operating on its own, or to 62 dBA Leq or lower when combined with other grading activities. Vibration associated with noise levels is not anticipated to exceed the vibration of typical construction equipment and is not anticipated to exceed 87 VdB at 25'. This would result in a significantly lower vibration level at the nearest sensitive receptor (63 VdB at 400' which is below the perception level for most individuals). While the noise levels are slightly higher than what was identified in the Final EIR, these levels do not exceed regulatory thresholds or threaten the health and safety of residents, nor will noise or vibration compromise the structural integrity of the sensitive receptors. Therefore, operation of the rock crushing equipment in conjunction with other grading equipment would not result in additional or more significant impacts than were identified in the Final EIR.

## Public Services

### *Analysis of Project Modifications*

The project modifications would have no effect on public services. Construction and operational activities would remain the same as identified in the Final EIR with the exception of the modified soil export, which would not change the impact on public services.

## Transportation/Traffic

The proposed project would not increase hazards due to a design feature or incompatible uses. The proposed project would not result in inadequate emergency access. Implementation of mitigation measures MM4.6-3 and MM4.6-4, identified within Impact 4.6-4 of this EIR, would ensure adequate emergency access. The

proposed project would provide adequate parking. The proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

#### *Analysis of Project Modifications*

Because fewer trucks would utilize the freeway to transport excavated soil, traffic on I-215 would be reduced in I-215 compared to the project analyzed in the Final EIR. All other characteristics of the project remain the same, and would not change the analysis in the EIR.

### Utilities and Service Systems

#### *Analysis of Project Modifications*

The project modifications would have no effect on utilities and service systems. Construction and operational activities would remain the same as identified in the Final EIR with the exception of the eliminated soil export, which would not change the impact on utilities.

### Energy and Climate Change

The proposed project would not encourage the wasteful or inefficient use of energy. The proposed project would not require new energy production or transmission facilities, the construction of which would cause significant environmental effects.

#### *Analysis of Project Modifications*

The overall emissions during construction would be reduced compared to the project as analyzed in the Final EIR because of elimination of the soil export. This would reduce greenhouse gas emissions and result in lower utilization of energy resources during construction. Operation would remain the same as analyzed in the EIR.

## 3.3 LESS-THAN-SIGNIFICANT IMPACTS WITH MITIGATION

### Aesthetics

Construction activities under the proposed project could degrade the existing visual character or quality of the site and its surroundings. The project site would be prepared, excavated, and graded to accommodate the new building foundation. During grading for development, views of disturbed soils, stockpiles, construction materials and equipment would be visible from I-215 as well as the neighboring businesses to the northwest and the nearby industrial businesses to the south and east. Incorporation of mitigation would reduce this impact to less than significant.

Implementation of the proposed project would create a new source of substantial light or glare that could adversely affect day or nighttime views in the area. This is a potentially significant impact. Project requirements PR4.1A, PR4.1B, and PR4.1C would reduce this impact to a less-than-significant level.

### *Analysis of Project Modifications*

The revisions to the project as outlined in this Addendum would not change any of the construction activities as outlined in the EIR except as addressed by the updating of the grading fleet including addition of on-site rock crushing operations for harder rock material to be reduced down to fill appropriate diameters suitable for compaction – as addressed in Noise / Vibration above, in Section 32 and in Air Quality Below.

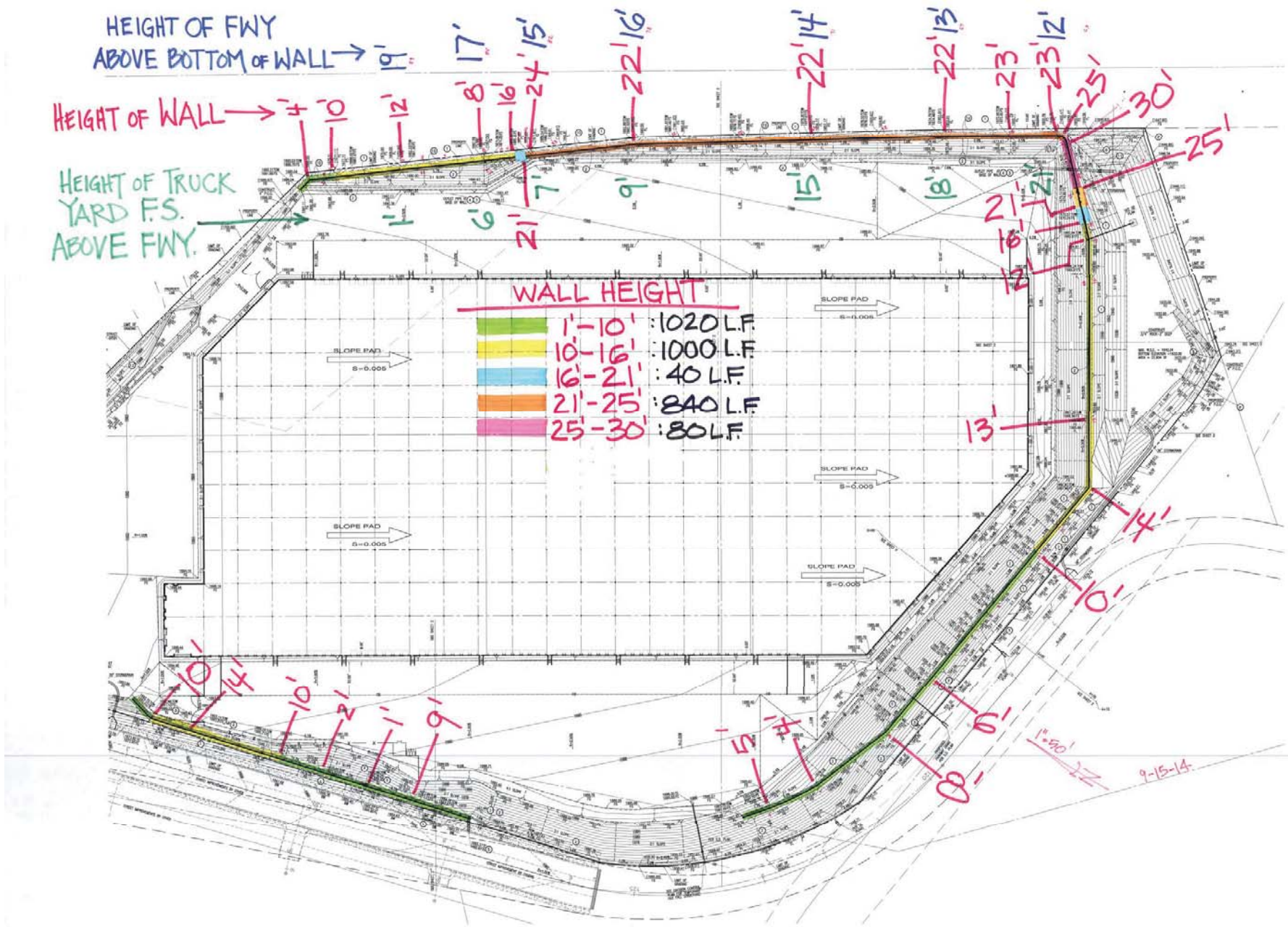
The proposed changes of eliminating soil export and then balancing the site's cut and fill grading activities will raise the elevation of the project's truck yard and building pad by between 3' to 5'-3" and require utilization of two retaining walls: first along Industrial Parkway just south of the main truck driveway, which will run between 1' to 14' in height; and second from the southwestern side of the project running along Industrial Parkway mid-slope towards the site plan's eastern and northern elevations above the eastern detention basin and then along a 10' setback adjacent the property line fronting the I-215 freeway. The second longer segmented block anchor retaining wall varies in height between 4' to 30' in height. The addition of the two proposed segmented anchor retaining walls, and especially the one adjacent the I-215 Freeway could have some subjective aesthetic differences than the approved project, and could be perceived by some to have an aesthetic impact.

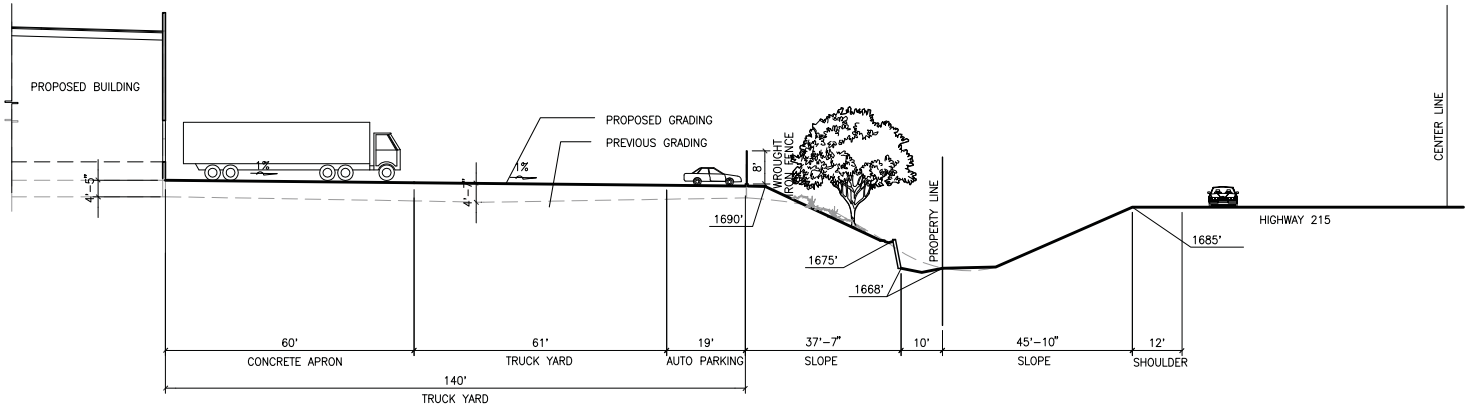
The perceived height of the retaining walls adjacent the I-215 Freeway will be visually broken up due to the height differentials of the I-215 Freeway's elevated roadway above the bottom of the retaining walls, which can be half as tall as the total retaining wall's height, as well as by the 2:1 sloped and landscaped area above the retaining wall rising up to the elevation of the truck yard.

As the natural grade's slope between the western property line at Palm Avenue to the eastern property line at the curve in Industrial Parkway has a natural fall of approximately 53' in elevation, the retaining wall increases in height as the natural grade slope drops and the slope of the project's truck yard and building pad drop at a modest 2.5% and .5% slope, respectively. The project's elevation differential is further exacerbated by the realignment of Palm Avenue and Industrial Parkway as part of the Palm Avenue Grade Separation Project, which further elevates the western property line by an additional 9' to 11' to accommodate the new slope rising to the bridge over the BNSF mainline train rail line.

Figure 4 – Retaining Wall Heights & Elevations details the varying heights of the two retaining walls along with the elevation differentials of the project's northern truck yard above the adjacent I-215 Freeway road bed and the elevation differential from the bottom of the retaining walls along the property line to the finished surface elevation of the I-215 Freeway road bed.

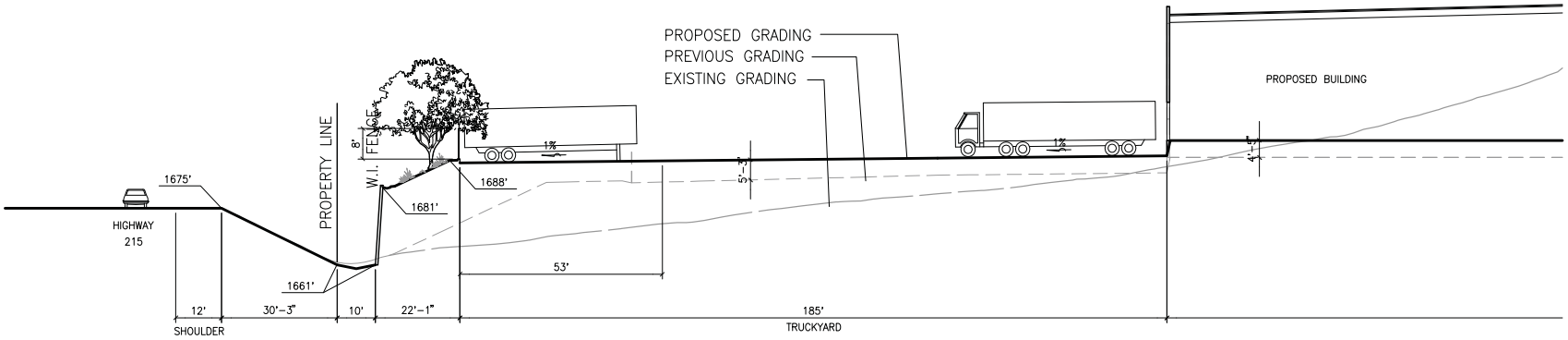
Figures 5-10 are enlarged sections through the site showing the elevation changes from the proposed balanced-site grading plan and use of the retaining walls. The approved project's elevation is also shown as well as the approved project's corresponding elevation to that of the proposed modifications. Figures 8-10 show the project's northern elevation along with the proposed retaining wall and the heights of the property line and I-215 Freeway roadbed.


HEIGHT OF FWY
ABOVE BOTTOM OF WALL
HEIGHT OF WALL
HEIGHT OF TRUCK
YARD F.S.
ABOVE FWY.
WALL HEIGHT
1'-10' : 1020 L.F.
10'-16' : 1000 L.F.
16'-21' : 40 L.F.
21'-25' : 840 L.F.
25'-30' : 80 L.F.
SLOPE PAD
S=0.005
1"=50'
9-15-14



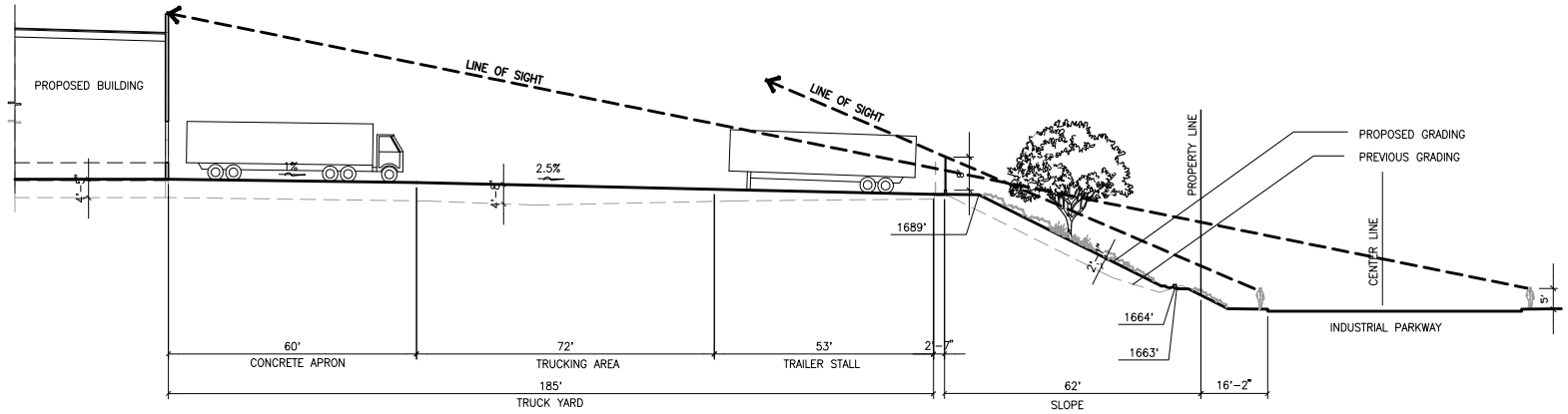

## SECTION THRU TRUCKYARD AND HIGHWAY 215 @ NORTH SIDE (A)

scale: 1' = 30' -0"



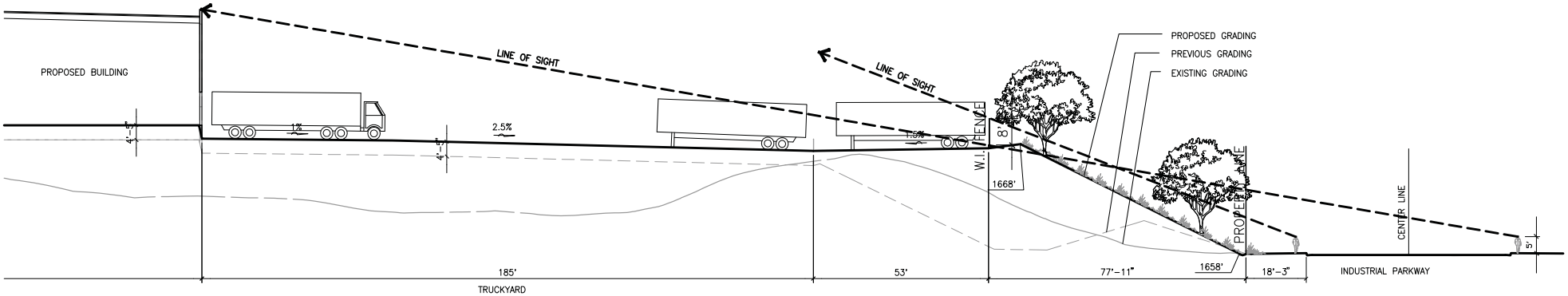

## SECTION FROM HIGHWAY 215 TO NOTH-EAST OF BUILDING WITH EXISTING GRADES SHOWN (CC)

scale: 1' = 30' -0"



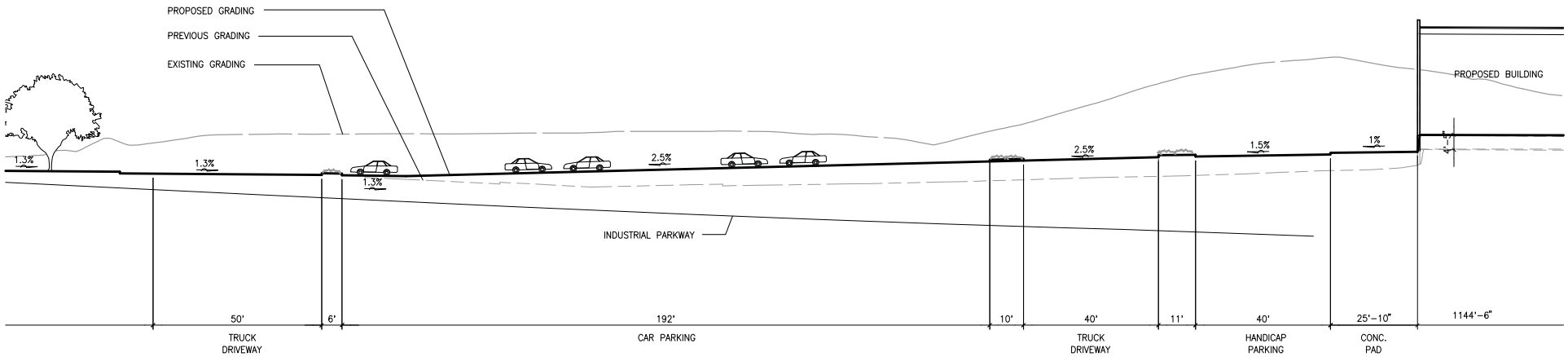

## SECTION THRU TRUCKYARD AND INDUSTRIAL PARKWAY @ SOUTH SIDE (B)

scale: 1' = 20' -0"




## SECTION INDUSTRIAL PARKWAY TO SOUTH-WEST OF BUILDING WITH EXISTING GRADES SHOWN (C)

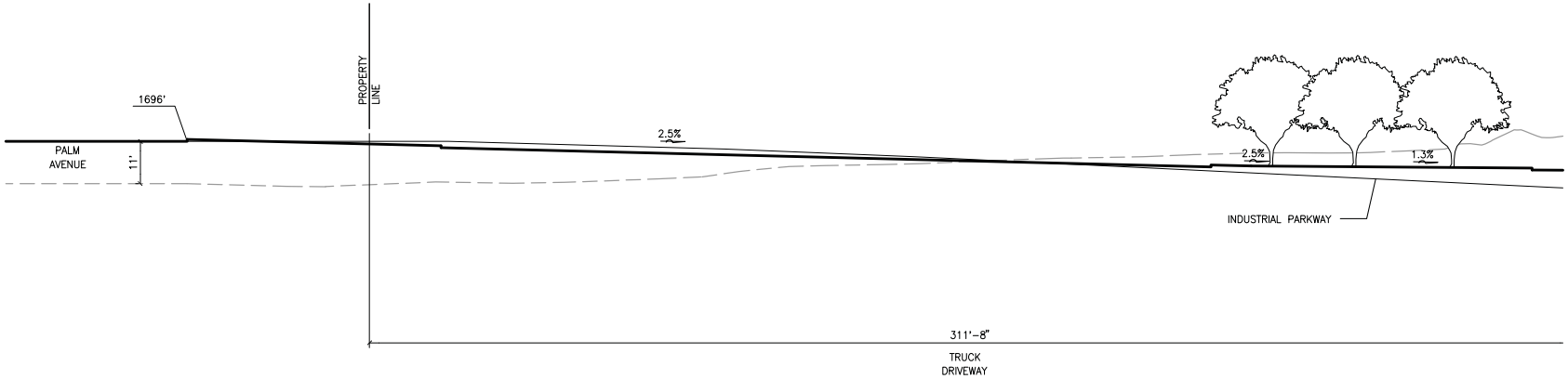
scale: 1' = 20' -0"




## SECTION PALM AVENUE TO NORTHERN SIDE OF BUILDING WITH EXISTING GRADES SHOWN

scale: 1' = 30' -0"

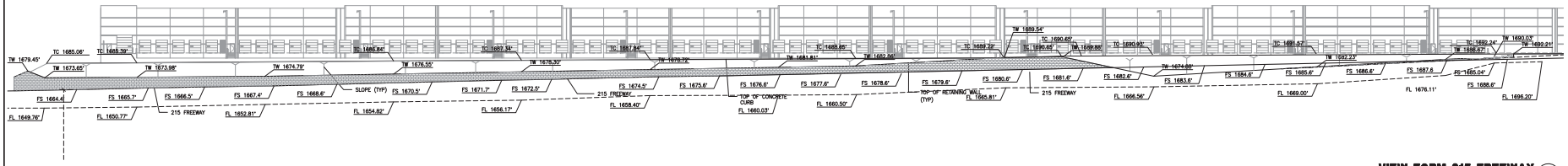
DD




## SECTION PALM AVENUE TO NORTHERN SIDE OF BUILDING WITH EXISTING GRADES SHOWN (cont.)

scale: 1' = 30' -0"

DD




**VIEW FORM 215 FREEWAY** (A)
scale:1' = 30' -0"

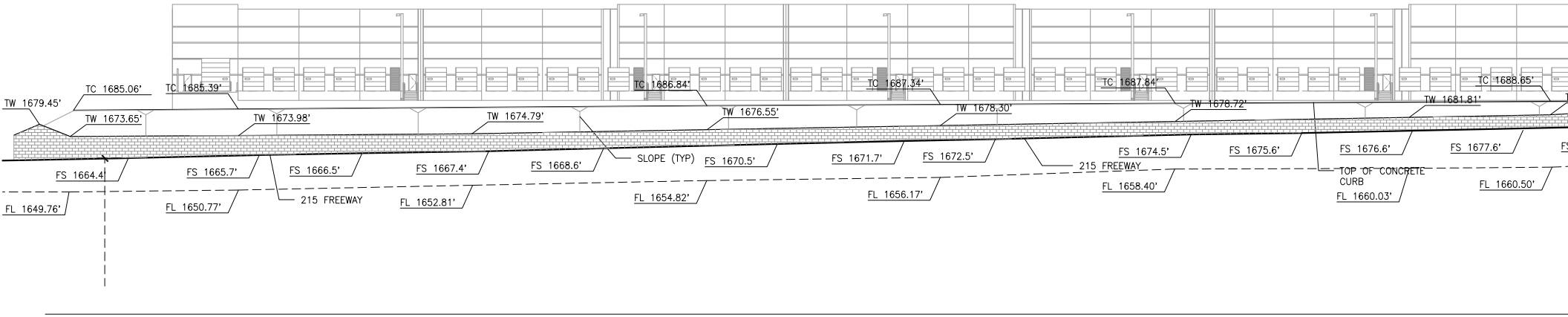
# 678K DISTRIBUTION FACILITY

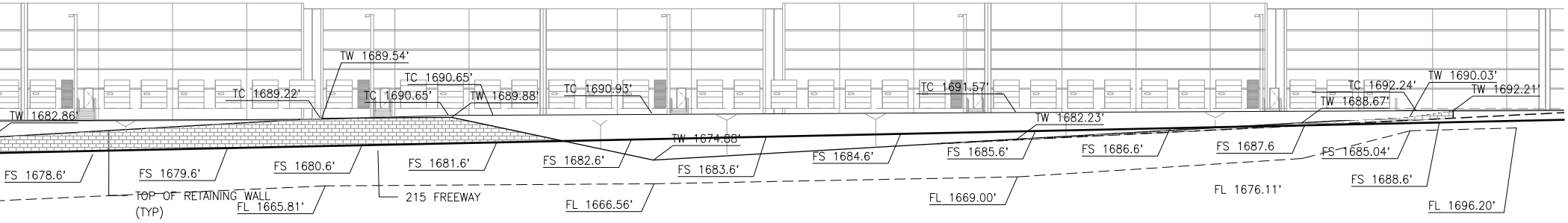
PALM AVENUE & INDUSTRIAL PARKWAY SAN BERNARDINO, CA — AUGUST 8, 2014


IDS REAL ESTATE GROUP
515 SOUTH FIGUEROA STREET, SUITE # 1600, LOS ANGELES, CALIFORNIA 90071 (213) 362-9300

HPA, INC.
18831 BARDEEN AVENUE, SUITE # 100, IRVINE, CALIFORNIA 92612 (949) 863-1770


## SITE SECTIONS


TW 1679.45'
TC 1685.06'
TC 1685.39'
TW 1673.65'
TW 1673.98'
TW 1674.79'
TC 1686.84'
TW 1676.55'
TC 1687.34'
TW 1678.30'
TC 1687.84'
TW 1678.72'
TC 1688.65'
TW 1681.81'
FS 1664.4'
FS 1665.7'
FS 1666.5'
FS 1667.4'
FS 1668.6'
SLOPE (TYP)
FS 1670.5'
FS 1671.7'
FS 1672.5'
FS 1674.5'
FS 1675.6'
FS 1676.6'
FS 1677.6'
215 FREEWAY
TOP OF CONCRETE CURB
FL 1649.76'
FL 1650.77'
215 FREEWAY
FL 1652.81'
FL 1654.82'
FL 1656.17'
FL 1658.40'
FL 1660.03'
FL 1660.50'




# VIEW FORM 215 FREEWAY

scale: 1' = 30' -0"

A

To break up and soften the appearance of the retaining walls, approximately 6" off-sets to the segmented anchor retaining walls will be implemented in horizontal bands approximately 7' apart in height that will be drip irrigated and planted with natural vines to vegetate the wall. Figures 11 and 12 provide additional information and specifications on the vegetated anchor block retaining wall system.

In addition, more mature trees will be planted adjacent the I-215 Freeway elevation through the use of 24" box trees as shown on the Figure 2 – Proposed Landscaping Plan. In addition, instead of the usual one year landscape establishment surety bond, a Two (2) Year landscape establishment surety bond will be posted with the City to ensure the landscaping is maintained and establishes itself during the course of the two years.

As such, the following three new Mitigation Measures shall be included in the project's mitigation to soften the features of the proposed retaining walls by use of vegetation, more mature trees, and by doubling the term of the landscape establishment surety bond period with the City of San Bernardino as follows:

***MM4.1-3(a)*** *The developer shall include 6" setback planter rows every 7 segmented block row heights (approximately 7' vertical) per manufacturer's specifications, including drip irrigation systems and planting of appropriate vines to vegetate the segmented anchor block retaining walls.*

***MM4.1-3(b)*** *The developer shall plant 24" box trees along the I-215 Freeway elevations atop the retaining walls in the 2:1 sloped landscape setback areas.*

***MM4.1-3(c)*** *The developer shall double the standard landscape establishment surety period to twenty-four (24) months by posting the appropriate bond / surety acceptable to the City of San Bernardino.*

Existing along with the above new mitigation measures would continue to reduce any perceived aesthetic impact associated with the proposed modifications to less than significant.

## Air Quality

Construction emissions in the September 2011 Final EIR were calculated using the URBEMIS 2007 computer model developed for the ARB by estimating the types and number of pieces of equipment that would be used to grade and excavate the project site, construct the proposed development, and plant new landscaping within the project site. The construction activities associated with the proposed project would create exhaust emissions, and would generate emissions of dust. Construction equipment within the project site that would generate criteria air pollutants could include excavators, export trucks, and loaders. Some of this equipment would be used during grading activities as well as when structures are erected on the project site. In addition, emissions during construction and grading activities include truck trips off site to remove excavated soil from the project site. Grading was estimated to involve the export of approximately 238,000 cubic yards of soil. The equipment used in the URBEMIS default emissions estimated that the project would have 5 pieces of equipment on-site for grading and limited grading to less than 10 acres per day. The URBEMIS model assumed there would be 1 grader, 1 dozer, 2 loaders (or tractors or backhoes, but only 2 of any combination of these three pieces of equipment), and 1 water truck. The analysis assumed all equipment would be EPA Tier 2 equipment and operate 8 hours per day. The URBEMIS output from the Final EIR Analysis is included as part of Appendix A's Attachment A.

# Anchor Plantable Wall Systems

The Anchor plantable wall system consists of the Anchor Planter Unit and an Anchor Wall retaining wall product. The Planter Unit is designed to be interchangeable and work with several of the Anchor Engineered wall products which include Diamond, Highland Stone, Diamond Pro, Vertica and Vertica Pro. An image of the Anchor Planter Unit and a wall under construction are provided below.

Planter Unit, Isometric View

Several plantable wall systems have been constructed in Southern California using the Anchor Plantable Wall Unis and plantable concrete block systems similar to the Anchor Planter Unit. Images of the blocks and such walls are provided below to show general concept of the units employed and resulting vegetation.

Typical Plantable Wall System Showing Initial Establishment of Vegetation

Vegetation in Anchor Wall Systems plantable walls is optional. If planting is desirable, planting can be done so as to develop green walls and partially vegetated wall. An example of vegetated/partially vegetated walls are provided below. It should be noted that the vegetated wall was constructed at a relatively steep batter with plantable rows spaced approximately 7' apart.

Anchor Wall Systems, Inc.
2525 Costero Magestuoso
San Clemente, CA 92673

main 949-363-6663
fax 949-363-6668
cell 949-303-8215

ANCHORWALL.COM

The Anchor Wall Plantable wall system utilizes an irrigation system which is conveniently hidden in a discrete channel in the top of the block.

The above comments and images show the Anchor Planter Unit and how it is incorporated into retaining wall structures as well as plantable wall systems typical to the Southern California market.

If you have any questions or wish additional information, please feel free to contact Anchor Wall systems at 949-303-8215.

Dean Sandri, P.E.
Engineer
Anchor Wall Systems, Inc

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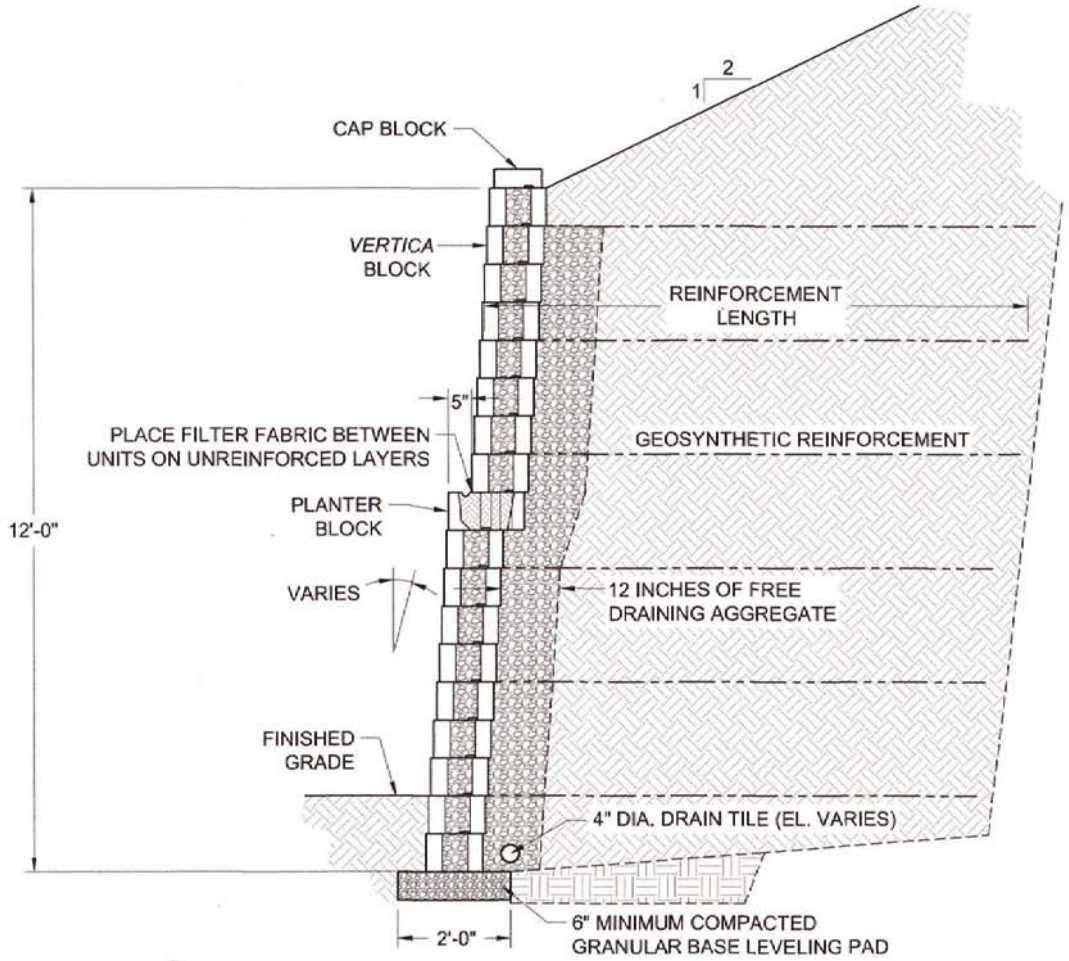


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Anchor Wall Engineering, LLC
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Minnetonka, MN 55345

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Drawn By: MAN
Date: 4/1/2014
Scale: 3/8"=1'-0"

Drawing Title:
Anchor™ Planter Block & Vertica® 12D
12 Ft High Wall

Project Information:
Typical Details for:
Conventional Retaining Walls

www.anchorwall.com
Toll-Free Customer Service: (877) 295-5415
Planter-Vertica12D-TypWallSections

The Final EIR for the Palm Industrial project included the following mitigation measure restricting the number of cubic yards per day of cut and fill activity and the maximum export of trucks:

**MM4.2-5(a)** The developer shall develop a construction schedule approved by the City such that the grading/excavation period results in a maximum on-site cut and fill equal to 4,375 cubic yards or less per day, with a maximum export of 65 truck loads per day.

The maximum cubic yards per day were constrained by particulate matter ($PM_{10}$) emissions predominantly from fugitive dust while the number of truck loads is constrained by $NO_X$ emissions from on-road and off-road vehicles. Note, while other criteria pollutants are emitted from haul trucks, the URBEMIS output showed that the ROG, CO, $SO_2$, and $PM_{2.5}$ emissions were not close to the thresholds in the original analysis and are not factors that will limit the on-site activities. Therefore, emissions from these criteria pollutants are not addressed in this summary. The Final EIR analysis that supports MM4.2-5(a) assumes SCAQMD Rule 403, with the addition of a third daily watering, for Fugitive Dust mitigation to reduce the impacts from fugitive emissions of $PM_{10}$. For $NO_X$ emissions from off-road vehicles associated with construction activities the URBEMIS defaults were used. For $NO_X$ emissions from on-road vehicles associated with truck trips, it was assumed that: (1) each truck load has a 20 cubic yard capacity; (2) 65.36 trucks per day would be used; (3) and, a default of a 20 mile round trip haul distance would be needed to dispose of the 238,000 cubic yards of exported soil. This results in approximately 182 days of active export activity.

As can be seen in Tables AQ1 and AQ2 below (in the "Original" scenario column), both $NO_X$ and $PM_{10}$ emissions are under the regulatory thresholds.

**Table AQ-1 $NO_X$ Emissions Estimates (lbs/day)**

| | Original[a] | Scenario 1[b] | Scenario 3[b] | Scenario 5[b] |
|---|---|---|---|---|
| *Grading* | | | | |
| Fugitive On-site | 0.00 | 0.00 | 0.00 | 0.00 |
| Exhaust On-site | 60.72 | 98.77 | 0.00 | 47.9491 |
| Off-site | 0.15 | 0.20 | 0.00 | 0.1051 |
| *Rock Crushing Support* | | | | |
| Fugitive On-site | 0.00 | 0.00 | 0.00 | 0.00 |
| Exhaust On-site | 0.00 | 0.00 | 33.81 | 33.81 |
| Off-site | 0.00 | 0.00 | 0.13 | 0.13 |
| *Rock Crushing* | | | | |
| Fugitive On-site | 0.00 | 0.00 | 0.00 | 0.00 |
| Exhaust On-site | 0.00 | 0.00 | 13.34 | 13.34 |
| Off-site | 0.00 | 0.00 | 1.00 | 1.00 |
| *Haul Trucks* | | | | |
| On-Road Vehicles | 36.11 | 0.00 | 0.00 | 0.00 |
| **Total Emissions[c]** | 96.97 | 98.96 | 48.28 | 96.33 |
| Threshold | 100 | 100 | 100 | 100 |
| Potentially Significant | No | **No** | No | No |

[a] Source: URBEMIS Model, Atkins August 2011 .(Palm Industrial – Revised August 2011 – Default Soil Export - Mitigated)
[b] Source: CalEEMod Model, Atkins June 2014.
[C] Columns may not add exactly due to rounding. Individual and Total values taken directly from the modeling output.

### *Analysis of Project Modifications*

Under the revised construction grading analysis the Project's cut and fill would be balanced on-site and eliminate the need for any soil export. This would eliminate the $NO_X$ and $PM_{10}$ emissions from haul trucks and allow for additional on-site equipment to be operated. The new activities would require that rock crushing occur on-site to reduce larger rock fragments to acceptable fill size diameters. The revised analysis also takes into account a combined EPA Tier 3 and Tier 4 equipment fleet to be used during construction and rock crushing activities (construction fleet is detailed in Attachment B). Finally, the revised analysis uses the CalEEMod2013 emissions estimator model to estimate emissions from the revised construction activities.

**Table AQ-2 $PM_{10}$ Emissions Estimates (lbs/day)**

| | Original[a] | Scenario 1[b] | Scenario 3[b] | Scenario 5[b] |
|---|---|---|---|---|
| *Grading* | | | | |
| Fugitive On-site | 141.56 | 44.05 | 0.00 | 29.88 |
| Exhaust On-site | 3.18 | 3.75 | 0.00 | 1.8188 |
| Off-site | 0.02 | 0.32 | 0.00 | 0.1691 |
| *Rock Crushing Support* | | | | |
| Fugitive On-site | 0.00 | 0.00 | 14.17 | 14.17 |
| Exhaust On-site | 0.00 | 0.00 | 0.51 | 0.51 |
| Off-site | 0.00 | 0.00 | 0.20 | 0.20 |
| *Rock Crushing* | | | | |
| Fugitive On-site | 0.00 | 0.00 | 89.79 | 89.79 |
| Exhaust On-site | 0.00 | 0.00 | 0.40 | 0.40 |
| Off-site | 0.00 | 0.00 | 1.61 | 1.61 |
| *Haul Trucks* | | | | |
| On-Road Vehicles | 1.58 | 0.00 | 0.00 | 0.00 |
| **Total Emissions[c]** | 146.35 | 48.11 | 106.68 | 138.56 |
| Threshold | 150 | 150 | 150 | 150 |
| Potentially Significant | No | **No** | No | No |

[a] Source: URBEMIS Model, Atkins August 2011 .(Palm Industrial – Revised August 2011 – Default Soil Export - Mitigated)
[b] Source: CalEEMod Model, Atkins June 2014.
[C] Columns may not add exactly due to rounding. Individual and Total values taken directly from the modeling output.

Previous analysis calculated emissions from five identified grading related construction scenarios. However, since then the scenarios have been limited to three potential options akin to expected on site grading activities anticipated to occur. The three potential scenarios identified as being relevant

were Scenario 1, Scenario 3 and Scenario 5, and for consistency the "scenario" numbering remains the same in this document. Under Scenario 1, only grading on-site would occur (no rock crushing activities). Under Scenario 3 only rock crushing activities would occur with up to 4 rock trucks. Finally, under Scenario 5 limited grading activities would occur with rock crushing activities and 4 rock trucks. It is anticipated that the same number of workers would be present regardless of the scenario implemented. Therefore if there are ten operators on-site, only ten pieces of equipment can be operated regardless of the assigned task (grading or rock crushing support). Additionally some of the equipment required for rock crushing support activities are the same as those that would be required under a grading only scenario. Therefore if two dozers are on-site, it is possible that under Scenario 1 both would be assigned to grading tasks while under Scenario 5, one may be assigned to grading while the other is assigned to assist with rock crushing. The following equipment is proposed to be operated on-site during each scenario / construction grading sequence. Note that for any scenario, a scraper can be replaced with a dozer or grader as the modeled scraper is anticipated to have the greater emissions.

1. Grading Only - Total 11 pieces of equipment
    i. 2 Dozers
    ii. 7 Scrappers
    iii. 2 Water trucks

3. Rock Crushing Only (4 Rock Trucks) – Total 10 pieces of equipment
    i. 2 Excavators
    ii. 1 Dozer
    iii. 2 Rock Trucks
    iv. 1 Excavator/Breaker
    v. 1 Loader
    vi. 1 Crusher

5. Grading and Rock Crushing (4 Rock Trucks) – Total 15 pieces of equipment
    i. 2 Dozer
    ii. 3 Scrappers
    iii. 2 Water trucks
    iv. 1 Excavator
    v. 4 Rock Trucks
    vii. 1 Excavator/Breaker
    viii. 1 Loader
    ix. 1 Crusher

The rock crushing equipment is anticipated to be controlled such that moisture levels are between 0.55 to 2.88 percent with the crusher employing direct water sprays. As a conservative estimate, the modeling assumes that a maximum of 19,000 tons per day is run through the crushing equipment. It is highly unlikely that this assumed daily level of crushing activity would be reached due to the physical processing limitations / equipment capacity of any equipment that could be operated on-site. Further, AQMD issues permits for rock crushing equipment to comply with their $NO_X$ emissions thresholds and restricts the monthly volume of rock to be processed / crushed which would be well below the referenced amount noted above used in our calculations. Note, while other criteria pollutants are

emitted from these activities, the CalEEMod output shows that the ROG, CO, $SO_2$, and $PM_{2.5}$ emissions were not close to the thresholds and, similar to the original analysis are not factors that will limit the on-site activities. Therefore, emissions from these criteria pollutants are not addressed in this summary. Table AQ1 shows the $NO_X$ emissions estimated for each of the proposed scenarios in addition to emissions from the original analysis. Table AQ2 shows the $PM_{10}$ emissions estimated for each of the proposed scenarios, along with emissions identified in the original analysis.

As seen in Tables AQ1 and AQ2, none of the proposed construction scenarios exceed the regulatory thresholds for $NO_X$ or $PM_{10}$ emissions. While some scenarios would increase emissions slightly from what was identified in the Final EIR, the level of on-site activity under each construction scenario would not exceed SCAQMD regulatory thresholds and would be consistent with the impacts previously disclosed in the Final EIR.

The analysis in the revised calculations is based on a 38.4 acre site with no limitation to the daily acres to be disturbed. Based on the revised analysis, even without restricting the daily acreage to be disturbed, the $PM_{10}$ thresholds would not be exceeded. Therefore, the portion of FEIR project requirement PR4.2B that limits daily disturbance to 10 acres or less is no longer applicable to grading operations, nor is it a specific mitigation required under SCAQMD's Rule 403.

FEIR Mitigation Measure MM4.2-5(d) states that "the mass grading/excavation phase shall not overlap with fine grading and/or trenching activity phases." The implementation of that mitigation assumed that mass grading, fine grading, and trenching operations were all separate activities that would have a unique set of equipment operating on-site and that ground disturbance when combining all three could necessitate disturbance of more than 10 acres per day. The CalEEMod does not distinguish between mass grading and fine grading, therefore the revised modeling assumes a maximum daily impact for grading that would occur regardless of whether mass grading, fine grading or a combination thereof was being performed. Similarly, the FEIR qualification that trenching and grading activities could not overlap is due to the amount of vehicles on-site and the level of ground disturbance. With the elimination of the 10 acre per day disturbance cap, the reasoning for the mitigation is eliminated. Regardless of whether grading activities are mass grading, fine grading, or trenching, the limiting factor, as detailed in the analysis above, is the amount of vehicles operating daily on-site for 8 hours per day. As long as no additional grading vehicles operate than those quantities identified for the chosen scenario are used concurrently on-site for eight operating hours, it does not matter if the equipment were used for grading, rock crushing support, trenching, or a combination of these activities. Therefore implementation of mitigation measure MM4.2-5(d) is no longer required to ensure emissions meet the regulatory requirements and is hereby deleted.

~~**MM4.2-5(d)** The mass grading/excavation phase shall not overlap with fine grading and/or trenching activity phases.~~

The air quality analysis details the emissions estimates from the revised construction scenarios that could occur on-site given the changes in grading activities from what was identified in the Final EIR. Specifically, soil export is no longer required as cut and fill will be balanced on-site. In addition, current site conditions require rock crushing activities to occur in addition to grading in order to level the site for development. Grading and rock crushing activities may occur independent from each other or may occur on-site at the same time depending on development needs. As detailed in the analysis above for $NO_X$ and

$PM_{10}$, and summarized in Table AQ3 below for all criteria pollutants, while some scenarios would increase emissions slightly from what was identified in the Final EIR, the level of on-site activity under each Scenario would not exceed SCAQMD regulatory thresholds.

**Table AQ-3 Estimated Peak Daily Construction Emissions (lbs/day)**

| | *VOC* | *$NO_X$* | *CO* | *$SO_X$* | *$PM_{10}$* | *$PM_{2.5}$* |
|---|---|---|---|---|---|---|
| Mass Grading FEIR Values [a] | 10.26 | 96.97 | 48.98 | 0.06 | 146.35 | 33.85 |
| *Maximum Daily Emission – FEIR Values* | *63.56* | *96.97* | *96.21* | *0.06* | *146.35* | *33.85* |
| Mass Grading – Revised CalEEMod Model | 6.51 | 98.96 | 141.46 | 0.26 | 48.11 | 15.61 |
| Rock Crushing Plant / Operations Solo [b] | 3.54 | 48.28 | 89.44 | 0.17 | 106.68 | 10.02 |
| Rock Crushing w/ Mass Grading [c] | 6.1 | 96.33 | 144.28 | 0.27 | 138.56 | 17.77 |
| SCAQMD Thresholds | 75 | 100 | 550 | 150 | 150 | 55 |
| Significant Impact? | No | No | No | No | No | No |

SOURCE: FEIR: URBEMIS 2007. Calculation sheets are provided in Appendix B.

a. Assumes watering of the project site would occur four times per day.

SOURCE: ATKINS Memo: CalEEMod2013

b. Scenario 3 per Atkins analysis – w/ four (4) Rock Trucks.

b. Scenario 5 per Atkins analysis – w/ 16 pieces of equipment on site.

d. Blasting limited to a maximum of 220 holes and 11,669 lbs of ANFO per day

## Biological Resources

The Final EIR identified that the proposed project could have a substantial adverse impact on species identified as candidate, sensitive, or special status, riparian habitat or sensitive natural community, an MBTA-protected occupied nest, or interfere with roosting or foraging habitat for migratory species, sensitive avian species, or raptors. These impacts were identified as potentially significant, which would be reduced to less than significant through implementation of mitigation measures MM4.3-1 through MM4.3-4, MM4.3-7, and MM4.3-8. The 1st Addendum to the Final EIR further addressed the project's impacts to biological resources.

### *Analysis of Project Modifications*

The proposed project modifications do not directly affect the site's biological resource impacts to any greater or different degree than as identified and analyzed in the Final EIR and in the 1st Addendum to the Final EIR. Implementation of the required project requirements and mitigation measures as set forth in those documents shall maintain the impacts to a less than significant impact with the required mitigations being implemented.

## Cultural Resources

Construction of the proposed project could cause a substantial adverse change in the significance of previously unknown archaeological resources pursuant to CEQA Guidelines Section 15064.5. This is a potentially significant impact. Implementation of mitigation measure MM4.4-1 and MM4.4-2 would reduce this impact to less than significant.

Construction activities associated with implementation of the proposed project could directly or indirectly result in damage to, or the destruction of, unique paleontological resources. This is a potentially significant impact. Implementation of mitigation measures MM4.4-1 through MM4.4-3 would reduce this impact to less than significant.

Construction activities associated with implementation of the proposed project could disturb human remains, including those interred outside of formal cemeteries. This is a potentially significant impact. Implementation of mitigation measure MM4.4-4 would reduce this impact to less than significant.

### *Analysis of Project Modifications*

The proposed project modifications would have no effect on cultural resources that was not previously analyzed in the EIR. The conditions of the project site have not changed since the original analysis in the EIR, and there are no changes to the site plan or development components. Mitigation measures as identified in the EIR would continue to be implemented, reducing potential impacts to archaeological and paleontological resources to less than significant.

## Hazards and Hazardous Materials

Construction and operation of the proposed project could expose construction workers or the public to significant health and safety hazards through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. This is considered a potentially significant impact; however, compliance with applicable federal, state, and local regulations and implementation of mitigation measures MM4.6-1 and MM4.6-2 would reduce this impact to a less-than-significant level.

Implementation of the proposed project could interfere with an adopted emergency response plan and/or emergency evacuation plan. This is a potentially significant impact. Implementation of mitigation measure MM4.6-3 would reduce this impact to less than significant.

### *Analysis of Project Modifications*

The proposed project modifications would have no affect on hazards or hazardous materials. Construction activities would remain the same as analyzed in the EIR. There would be fewer trucks accessing I-215 during excavation activities; however, because the soil is not contaminated, there would remain no substantial risk from hazardous materials upset. The conditions of the project site have not changed since the original analysis in the EIR, and there are no changes to the site plan or development components. Mitigation measures as identified in the EIR would continue to be implemented, reducing potential impacts with respect to hazards and hazardous materials to less than significant.

## Hydrology and Water Quality

Operation of the proposed project could increase stormwater pollutant loads or concentrations, but would not result in a violation of water quality standards or a substantial degradation of water quality. Compliance with the identified project requirements PR4.7A through PR4.7C and PR4.7E and mitigation measure MM4.7-1 would ensure that this impact would remain less than significant.

The proposed project could increase stormwater runoff and increase pollutant loads in stormwater runoff. This is a potentially significant impact. Compliance with the identified project requirements PR4.7A through PR4.7E and mitigation measure MM4.7-1 would ensure that this impact would remain less than significant.

The proposed project would not substantially otherwise degrade water quality or beneficial uses. Compliance with the identified project requirements PR4.7A through PR4.7G and mitigation measure MM4.7-1 would ensure that this impact would remain less than significant.

### *Analysis of Project Modifications*

The proposed project modifications would have no affect on hydrology or water quality. Construction activities would remain the same as analyzed in the EIR. The project development would continue to comply with all applicable regulations pertaining to soil erosion and stormwater runoff. The conditions of the project site have not changed since the original analysis in the EIR, and there are no changes to the site plan or development components. Mitigation measures as identified in the EIR would continue to be implemented, reducing potential impacts to hydrology and water quality to less than significant.

## Transportation/Traffic

The proposed project would add traffic volumes to intersections that would be potentially significant; however, implementation of mitigation measure MM4.11-1(a) and MM4.11-1(b) would bring the level of service of study area intersections to an acceptable level, and the project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system or an applicable congestion management program. This impact would be less than significant.

### *Analysis of Project Modifications*

The project modifications would not change the operational characteristics of the proposed project, and there would be no change in the traffic analysis for operation as contained in the Final EIR. The only change in traffic would occur during construction, where fewer trucks would access I-215 during the excavation and grading phase of the proposed project, which would result in improvement of traffic at the interchange of Palm Avenue and I-215 as well as on freeway segments; however, this impact was identified as less than significant in the Final EIR, and would remain less than significant with the project modifications. Mitigation measures as identified in the EIR would continue to be implemented, reducing potential impacts to operational traffic to less than significant.

# 3.4 SIGNIFICANT AND UNAVOIDABLE IMPACTS

## Air Quality

Operation of the proposed project would violate an air quality standard or contribute substantially to an existing or projected air quality violation. The proposed project would generate long-term air quality impacts associated with its operation. The primary source of operational emissions would be motor vehicle emissions (mobile source emissions) generated from project-induced vehicle trips and truck trips associated with operation of the industrial warehouse. Other emissions, identified as "area source emissions," would be generated from natural gas consumption for water and space heating, landscape and building maintenance activities, and use of consumer products. The proposed project's operational emissions would exceed the SCAQMD significance thresholds for $NO_X$ emissions from vehicle trips. Even with implementation of all feasible mitigation measures, $NO_X$ emissions would still exceed the SCAQMD significance threshold. This impact would be significant and unavoidable.

Construction and operational activities associated with development of the proposed project would generate emissions that would result in an exceedance of localized significance thresholds for $PM_{10}$ and $PM_{2.5}$ established by the SCAQMD, and, therefore, would expose sensitive receptors to substantial pollutant concentrations. This is considered a significant impact. Compliance with project requirements and implementation of mitigation measures MM4.2-8, MM4.2-2(a), MM4.2-2(b), and MM4.2-5(a) through MM4.2-5(d) would reduce this impact, but not to a less-than-significant level.

### *Analysis of Project Modifications*

Emissions due to reductions in cut and fill activity and elimination of the soil export would be reduced than as analyzed in the Final EIR, but would not be a significant decrease and would remain below SCAQMD thresholds of significance. As all other construction activities would remain the same, the project modifications would not change the impact conclusions with respect to overall exceedance of localized significance thresholds for $PM_{10}$ and $PM_{2.5}$ during other phases of construction. Similarly, the operational characteristics of the proposed project would remain the same as analyzed in the EIR, and, therefore, there would be no change in the significance conclusion for operational emissions of $NO_X$, which would remain a significant and unavoidable impact.

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# CHAPTER 4 Other CEQA Considerations

The EIR disclosed that implementation of the proposed project would result in significant unavoidable impacts to Air Quality and Traffic. The EIR includes mitigation measures to reduce these impacts to the greatest extent feasible while achieving the objectives of the project. The proposed modifications to the project would not increase the proposed development's contribution to those previously identified significant effects.

As described in Public Resources Code Section 21166 and CEQA Guidelines Sections 15162 and 15163, preparation of an EIR Addendum is appropriate where (1) none of the conditions called for preparation of a subsequent or supplement to an EIR have occurred, such as *(a)* substantial changes to the project or the circumstances under which the project is undertaken that would involve major revisions to the EIR due to the involvement of new significant effects or a substantial increase in the severity of previously identified significant effects, or *(b)* new information of substantial importance that was not known at the time of the EIR was certified becomes available and that new information indicates that *(i)* the project would have one or more significant effects not previously discussed in a previous EIR, *(ii)* significant effects previously examined will be substantially more severe than shown in the previous EIR, *(iii)* mitigation measures or alternatives previously found infeasible, which would substantially reduce one or more significant effects of the project, are feasible, but not adopted as part of the project, or *(iv)* mitigation measures or alternatives which are new and would substantially reduce one or more significant effects of the project are available, but not adopted as part of the project; and (2) changes to the EIR made by the Addendum do not raise important new issues about the significant effects on the environment. None of the above conditions would be met as a result of the changes to the project, and no additional environmental analysis or review is required, other than as provided in this Addendum.

No substantial changes have been proposed to the project described in the EIR that would require major revisions to the EIR. The proposed modifications to the project, including elimination of the soil export and balancing the site's grading operations on site along with the inclusion of retaining walls and minor adjustments to the site plan's parking and internal circulation elements would not alter the total amount of development permitted on the site. None of the conditions or circumstances that would require preparation of a subsequent or supplemental EIR pursuant to Public Resources Code Section 21166 exists.

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# CHAPTER 5 **References**

Atkins. 2014. *Memo: CalEEMod 2013*, June.

———. 2011. *URBEMIS Model (Palm Industrial – Revised August 2011 – Default Soil Export – Mitigated)*, August.

Cotton Beland Associates, Inc. (CBA) 1996. *Noise Monitoring Preliminary Report for Chandler Quarry.,* Memorandum. July 2.

PBS&J. 2011. *Palm/Industrial Distribution Center FEIR: URBEMIS 2007*, September.

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# Appendix A Air Quality Output Models

# ATTACHMENT A

## September 2011 Final EIR Mitigated URBEMIS Output

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: R:\General Air Quality Info\Projects\0D2133100 - Palm-Industrial Distribution Center Project EIR\Modeling\Modeling Revisions August 2011\URBEMIS 2011\PI Revised Project 8-2011-dflt-Mitigated.urb924

Project Name: Palm Industrial - Revised August 2011 - Default Soil Export - Mitigated

Project Location: San Bernadino County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011 TOTALS (lbs/day unmitigated) | 10.26 | 96.97 | 48.98 | 0.06 | 566.45 | 4.59 | 571.04 | 118.32 | 4.22 | 122.55 | 11,512.12 |
| 2011 TOTALS (lbs/day mitigated) | 10.26 | 96.97 | 48.98 | 0.06 | 141.76 | 4.59 | 146.35 | 29.63 | 4.22 | 33.85 | 11,512.12 |
| 2012 TOTALS (lbs/day unmitigated) | 9.65 | 89.36 | 46.18 | 0.06 | 566.45 | 4.15 | 570.60 | 118.32 | 3.82 | 122.14 | 11,511.78 |
| 2012 TOTALS (lbs/day mitigated) | 9.65 | 89.36 | 46.18 | 0.06 | 141.76 | 4.15 | 145.91 | 29.63 | 3.82 | 33.45 | 11,511.78 |
| 2013 TOTALS (lbs/day unmitigated) | 317.88 | 63.67 | 96.21 | 0.19 | 100.01 | 3.00 | 101.68 | 20.89 | 2.73 | 22.43 | 20,559.05 |
| 2013 TOTALS (lbs/day mitigated) | 143.10 | 63.67 | 96.21 | 0.19 | 100.01 | 3.00 | 101.68 | 20.89 | 2.73 | 22.43 | 20,559.05 |
| 2014 TOTALS (lbs/day unmitigated) | 317.87 | 0.17 | 2.97 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 457.90 |
| 2014 TOTALS (lbs/day mitigated) | 143.09 | 0.17 | 2.97 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 457.90 |

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 7/1/2011-7/1/2011 Active Days: 1 | 7.56 | 60.87 | 35.76 | 0.00 | 566.26 | 3.19 | 569.46 | 118.26 | 2.94 | 121.20 | 5,971.73 |
| Mass Grading 07/01/2011-10/31/2012 | 7.56 | 60.87 | 35.76 | 0.00 | 566.26 | 3.19 | 569.46 | 118.26 | 2.94 | 121.20 | 5,971.73 |
| Mass Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 566.25 | 0.00 | 566.25 | 118.26 | 0.00 | 118.26 | 0.00 |
| Mass Grading Off Road Diesel | 7.48 | 60.72 | 33.21 | 0.00 | 0.00 | 3.18 | 3.18 | 0.00 | 2.93 | 2.93 | 5,662.17 |
| Mass Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading Worker Trips | 0.08 | 0.15 | 2.55 | 0.00 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 309.55 |
| Time Slice 7/4/2011-12/30/2011 Active Days: 130 | 10.26 | **96.97** | 48.98 | 0.06 | **566.45** | **4.59** | **571.04** | **118.32** | **4.22** | **122.55** | 11,512.12 |
| Mass Grading 07/01/2011-10/31/2012 | 7.56 | 60.87 | 35.76 | 0.00 | 566.26 | 3.19 | 569.46 | 118.26 | 2.94 | 121.20 | 5,971.73 |
| Mass Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 566.25 | 0.00 | 566.25 | 118.26 | 0.00 | 118.26 | 0.00 |
| Mass Grading Off Road Diesel | 7.48 | 60.72 | 33.21 | 0.00 | 0.00 | 3.18 | 3.18 | 0.00 | 2.93 | 2.93 | 5,662.17 |
| Mass Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading Worker Trips | 0.08 | 0.15 | 2.55 | 0.00 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 309.55 |
| Mass Grading 07/02/2011-01/31/2012 | 2.70 | 36.11 | 13.23 | 0.05 | 0.18 | 1.40 | 1.58 | 0.06 | 1.29 | 1.35 | 5,540.39 |
| Mass Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading Off Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading On Road Diesel | 2.70 | 36.11 | 13.23 | 0.05 | 0.18 | 1.40 | 1.58 | 0.06 | 1.29 | 1.35 | 5,540.39 |
| Mass Grading Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 1/2/2012-1/31/2012<br>Active Days: 22 | 9.65 | 89.36 | 46.18 | 0.06 | **566.45** | 4.15 | 570.60 | **118.32** | 3.82 | 122.14 | 11,511.78 |
| Mass Grading 07/01/2011-10/31/2012 | 7.18 | 57.21 | 34.33 | 0.00 | 566.26 | 2.93 | 569.19 | 118.26 | 2.69 | 120.95 | 5,971.39 |
| Mass Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 566.25 | 0.00 | 566.25 | 118.26 | 0.00 | 118.26 | 0.00 |
| Mass Grading Off Road Diesel | 7.11 | 57.08 | 31.98 | 0.00 | 0.00 | 2.92 | 2.92 | 0.00 | 2.68 | 2.68 | 5,662.17 |
| Mass Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading Worker Trips | 0.07 | 0.13 | 2.35 | 0.00 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 309.22 |
| Mass Grading 07/02/2011-01/31/2012 | 2.47 | 32.14 | 11.85 | 0.05 | 0.18 | 1.22 | 1.41 | 0.06 | 1.13 | 1.19 | 5,540.39 |
| Mass Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading Off Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading On Road Diesel | 2.47 | 32.14 | 11.85 | 0.05 | 0.18 | 1.22 | 1.41 | 0.06 | 1.13 | 1.19 | 5,540.39 |
| Mass Grading Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Time Slice 2/1/2012-10/31/2012<br>Active Days: 196 | 7.18 | 57.21 | 34.33 | 0.00 | 566.26 | 2.93 | 569.19 | 118.26 | 2.69 | 120.95 | 5,971.39 |
| Mass Grading 07/01/2011-10/31/2012 | 7.18 | 57.21 | 34.33 | 0.00 | 566.26 | 2.93 | 569.19 | 118.26 | 2.69 | 120.95 | 5,971.39 |
| Mass Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 566.25 | 0.00 | 566.25 | 118.26 | 0.00 | 118.26 | 0.00 |
| Mass Grading Off Road Diesel | 7.11 | 57.08 | 31.98 | 0.00 | 0.00 | 2.92 | 2.92 | 0.00 | 2.68 | 2.68 | 5,662.17 |
| Mass Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading Worker Trips | 0.07 | 0.13 | 2.35 | 0.00 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 309.22 |

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| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 11/1/2012-12/31/2012<br>Active Days: 43 | 2.72 | 22.00 | 12.45 | 0.00 | 100.01 | 1.08 | 101.08 | 20.89 | 0.99 | 21.88 | 2,371.00 |
| Fine Grading 11/01/2012-02/28/2013 | 2.72 | 22.00 | 12.45 | 0.00 | 100.01 | 1.08 | 101.08 | 20.89 | 0.99 | 21.88 | 2,371.00 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 0.00 | 100.00 | 20.88 | 0.00 | 20.88 | 0.00 |
| Fine Grading Off Road Diesel | 2.69 | 21.95 | 11.51 | 0.00 | 0.00 | 1.07 | 1.07 | 0.00 | 0.99 | 0.99 | 2,247.32 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.03 | 0.05 | 0.94 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 123.69 |
| Time Slice 1/1/2013-2/27/2013<br>Active Days: 42 | 2.58 | 20.61 | 11.97 | 0.00 | 100.01 | 0.99 | 101.00 | 20.89 | 0.91 | 21.80 | 2,370.89 |
| Fine Grading 11/01/2012-02/28/2013 | 2.58 | 20.61 | 11.97 | 0.00 | 100.01 | 0.99 | 101.00 | 20.89 | 0.91 | 21.80 | 2,370.89 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 0.00 | 100.00 | 20.88 | 0.00 | 20.88 | 0.00 |
| Fine Grading Off Road Diesel | 2.55 | 20.56 | 11.10 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.91 | 0.91 | 2,247.32 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.03 | 0.05 | 0.87 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 123.57 |
| Time Slice 2/28/2013-2/28/2013<br>Active Days: 1 | 4.32 | 34.78 | 20.80 | 0.00 | 100.01 | 1.67 | 101.68 | 20.89 | 1.54 | 22.43 | 4,209.09 |
| Fine Grading 11/01/2012-02/28/2013 | 2.58 | 20.61 | 11.97 | 0.00 | 100.01 | 0.99 | 101.00 | 20.89 | 0.91 | 21.80 | 2,370.89 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 0.00 | 100.00 | 20.88 | 0.00 | 20.88 | 0.00 |
| Fine Grading Off Road Diesel | 2.55 | 20.56 | 11.10 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.91 | 0.91 | 2,247.32 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.03 | 0.05 | 0.87 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 123.57 |
| Trenching 02/28/2013-02/28/2013 | 1.74 | 14.17 | 8.84 | 0.00 | 0.01 | 0.68 | 0.69 | 0.00 | 0.63 | 0.63 | 1,838.21 |
| Trenching Off Road Diesel | 1.72 | 14.12 | 7.97 | 0.00 | 0.00 | 0.68 | 0.68 | 0.00 | 0.62 | 0.62 | 1,714.64 |
| Trenching Worker Trips | 0.03 | 0.05 | 0.87 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 123.57 |

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| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 3/1/2013-10/31/2013<br>Active Days: 175 | 8.54 | 63.67 | **96.21** | **0.19** | 0.75 | 3.00 | 3.75 | 0.26 | 2.73 | 2.99 | **20,559.05** |
| Building 03/01/2013-10/31/2013 | 8.54 | 63.67 | 96.21 | 0.19 | 0.75 | 3.00 | 3.75 | 0.26 | 2.73 | 2.99 | 20,559.05 |
| Building Off Road Diesel | 2.88 | 13.91 | 10.20 | 0.00 | 0.00 | 0.93 | 0.93 | 0.00 | 0.86 | 0.86 | 1,621.20 |
| Building Vendor Trips | 4.17 | 46.95 | 36.28 | 0.11 | 0.41 | 1.84 | 2.25 | 0.14 | 1.69 | 1.82 | 11,854.59 |
| Building Worker Trips | 1.49 | 2.82 | 49.73 | 0.07 | 0.34 | 0.23 | 0.57 | 0.12 | 0.19 | 0.31 | 7,083.26 |
| Time Slice 11/1/2013-11/29/2013<br>Active Days: 21 | 3.44 | 16.02 | 10.91 | 0.01 | 0.03 | 1.21 | 1.25 | 0.01 | 1.12 | 1.13 | 1,982.56 |
| Asphalt 11/01/2013-11/30/2013 | 3.44 | 16.02 | 10.91 | 0.01 | 0.03 | 1.21 | 1.25 | 0.01 | 1.12 | 1.13 | 1,982.56 |
| Paving Off-Gas | 1.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 2.10 | 12.84 | 8.03 | 0.00 | 0.00 | 1.09 | 1.09 | 0.00 | 1.00 | 1.00 | 1,131.92 |
| Paving On Road Diesel | 0.24 | 3.09 | 1.15 | 0.01 | 0.02 | 0.12 | 0.14 | 0.01 | 0.11 | 0.11 | 603.51 |
| Paving Worker Trips | 0.05 | 0.10 | 1.74 | 0.00 | 0.01 | 0.01 | 0.02 | 0.00 | 0.01 | 0.01 | 247.14 |
| Time Slice 12/2/2013-12/31/2013<br>Active Days: 22 | **317.88** | 0.18 | 3.22 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 458.29 |
| Coating 12/01/2013-01/31/2014 | 317.88 | 0.18 | 3.22 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 458.29 |
| Architectural Coating | 317.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.10 | 0.18 | 3.22 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 458.29 |
| Time Slice 1/1/2014-1/31/2014<br>Active Days: 23 | 317.87 | 0.17 | 2.97 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 457.90 |
| Coating 12/01/2013-01/31/2014 | 317.87 | 0.17 | 2.97 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 457.90 |
| Architectural Coating | 317.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.09 | 0.17 | 2.97 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 457.90 |

Phase Assumptions

Phase: Fine Grading 11/1/2012 - 2/28/2013 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 33.32

Maximum Daily Acreage Disturbed: 5

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Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 7/1/2011 - 10/31/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 33.32

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill:  4375 cubic yards/day;  Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

3 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

3 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 7/2/2011 - 1/31/2012 - Soil Hauling Only

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill:  0 cubic yards/day;  Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 1307.19

Off-Road Equipment:

Phase: Trenching 2/28/2013 - 2/28/2013 - Default Trenching Description

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Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 11/1/2013 - 11/30/2013 - Default Paving Description

Acres to be Paved: 8.33

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 3/1/2013 - 10/31/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 12/1/2013 - 1/31/2014 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

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Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

| | ROG | NOx | CO | SO2 | PM10 Dust | PM10 Exhaust | PM10 | PM2.5 Dust | PM2.5 Exhaust | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 7/1/2011-7/1/2011 Active Days: 1 | 7.56 | 60.87 | 35.76 | 0.00 | 141.58 | 3.19 | 144.77 | 29.57 | 2.94 | 32.51 | 5,971.73 |
| Mass Grading 07/01/2011-10/31/2012 | 7.56 | 60.87 | 35.76 | 0.00 | 141.58 | 3.19 | 144.77 | 29.57 | 2.94 | 32.51 | 5,971.73 |
| Mass Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 141.56 | 0.00 | 141.56 | 29.56 | 0.00 | 29.56 | 0.00 |
| Mass Grading Off Road Diesel | 7.48 | 60.72 | 33.21 | 0.00 | 0.00 | 3.18 | 3.18 | 0.00 | 2.93 | 2.93 | 5,662.17 |
| Mass Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading Worker Trips | 0.08 | 0.15 | 2.55 | 0.00 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 309.55 |
| Time Slice 7/4/2011-12/30/2011 Active Days: 130 | 10.26 | **96.97** | 48.98 | 0.06 | 141.76 | **4.59** | 146.35 | 29.63 | **4.22** | 33.85 | 11,512.12 |
| Mass Grading 07/01/2011-10/31/2012 | 7.56 | 60.87 | 35.76 | 0.00 | 141.58 | 3.19 | 144.77 | 29.57 | 2.94 | 32.51 | 5,971.73 |
| Mass Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 141.56 | 0.00 | 141.56 | 29.56 | 0.00 | 29.56 | 0.00 |
| Mass Grading Off Road Diesel | 7.48 | 60.72 | 33.21 | 0.00 | 0.00 | 3.18 | 3.18 | 0.00 | 2.93 | 2.93 | 5,662.17 |
| Mass Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading Worker Trips | 0.08 | 0.15 | 2.55 | 0.00 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 309.55 |
| Mass Grading 07/02/2011-01/31/2012 | 2.70 | 36.11 | 13.23 | 0.05 | 0.18 | 1.40 | 1.58 | 0.06 | 1.29 | 1.35 | 5,540.39 |
| Mass Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading Off Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading On Road Diesel | 2.70 | 36.11 | 13.23 | 0.05 | 0.18 | 1.40 | 1.58 | 0.06 | 1.29 | 1.35 | 5,540.39 |
| Mass Grading Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 1/2/2012-1/31/2012<br>Active Days: 22 | 9.65 | 89.36 | 46.18 | 0.06 | 141.76 | 4.15 | 145.91 | 29.63 | 3.82 | 33.45 | 11,511.78 |
| Mass Grading 07/01/2011-10/31/2012 | 7.18 | 57.21 | 34.33 | 0.00 | 141.58 | 2.93 | 144.50 | 29.57 | 2.69 | 32.26 | 5,971.39 |
| Mass Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 141.56 | 0.00 | 141.56 | 29.56 | 0.00 | 29.56 | 0.00 |
| Mass Grading Off Road Diesel | 7.11 | 57.08 | 31.98 | 0.00 | 0.00 | 2.92 | 2.92 | 0.00 | 2.68 | 2.68 | 5,662.17 |
| Mass Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading Worker Trips | 0.07 | 0.13 | 2.35 | 0.00 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 309.22 |
| Mass Grading 07/02/2011-01/31/2012 | 2.47 | 32.14 | 11.85 | 0.05 | 0.18 | 1.22 | 1.41 | 0.06 | 1.13 | 1.19 | 5,540.39 |
| Mass Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading Off Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading On Road Diesel | 2.47 | 32.14 | 11.85 | 0.05 | 0.18 | 1.22 | 1.41 | 0.06 | 1.13 | 1.19 | 5,540.39 |
| Mass Grading Worker Trips | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Time Slice 2/1/2012-10/31/2012<br>Active Days: 196 | 7.18 | 57.21 | 34.33 | 0.00 | 141.58 | 2.93 | 144.50 | 29.57 | 2.69 | 32.26 | 5,971.39 |
| Mass Grading 07/01/2011-10/31/2012 | 7.18 | 57.21 | 34.33 | 0.00 | 141.58 | 2.93 | 144.50 | 29.57 | 2.69 | 32.26 | 5,971.39 |
| Mass Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 141.56 | 0.00 | 141.56 | 29.56 | 0.00 | 29.56 | 0.00 |
| Mass Grading Off Road Diesel | 7.11 | 57.08 | 31.98 | 0.00 | 0.00 | 2.92 | 2.92 | 0.00 | 2.68 | 2.68 | 5,662.17 |
| Mass Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mass Grading Worker Trips | 0.07 | 0.13 | 2.35 | 0.00 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 309.22 |

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| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 11/1/2012-12/31/2012<br>Active Days: 43 | 2.72 | 22.00 | 12.45 | 0.00 | 100.01 | 1.08 | 101.08 | 20.89 | 0.99 | 21.88 | 2,371.00 |
| Fine Grading 11/01/2012-02/28/2013 | 2.72 | 22.00 | 12.45 | 0.00 | 100.01 | 1.08 | 101.08 | 20.89 | 0.99 | 21.88 | 2,371.00 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 0.00 | 100.00 | 20.88 | 0.00 | 20.88 | 0.00 |
| Fine Grading Off Road Diesel | 2.69 | 21.95 | 11.51 | 0.00 | 0.00 | 1.07 | 1.07 | 0.00 | 0.99 | 0.99 | 2,247.32 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.03 | 0.05 | 0.94 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 123.69 |
| Time Slice 1/1/2013-2/27/2013<br>Active Days: 42 | 2.58 | 20.61 | 11.97 | 0.00 | 100.01 | 0.99 | 101.00 | 20.89 | 0.91 | 21.80 | 2,370.89 |
| Fine Grading 11/01/2012-02/28/2013 | 2.58 | 20.61 | 11.97 | 0.00 | 100.01 | 0.99 | 101.00 | 20.89 | 0.91 | 21.80 | 2,370.89 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 0.00 | 100.00 | 20.88 | 0.00 | 20.88 | 0.00 |
| Fine Grading Off Road Diesel | 2.55 | 20.56 | 11.10 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.91 | 0.91 | 2,247.32 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.03 | 0.05 | 0.87 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 123.57 |
| Time Slice 2/28/2013-2/28/2013<br>Active Days: 1 | 4.32 | 34.78 | 20.80 | 0.00 | 100.01 | 1.67 | 101.68 | 20.89 | 1.54 | 22.43 | 4,209.09 |
| Fine Grading 11/01/2012-02/28/2013 | 2.58 | 20.61 | 11.97 | 0.00 | 100.01 | 0.99 | 101.00 | 20.89 | 0.91 | 21.80 | 2,370.89 |
| Fine Grading Dust | 0.00 | 0.00 | 0.00 | 0.00 | 100.00 | 0.00 | 100.00 | 20.88 | 0.00 | 20.88 | 0.00 |
| Fine Grading Off Road Diesel | 2.55 | 20.56 | 11.10 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.91 | 0.91 | 2,247.32 |
| Fine Grading On Road Diesel | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fine Grading Worker Trips | 0.03 | 0.05 | 0.87 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 123.57 |
| Trenching 02/28/2013-02/28/2013 | 1.74 | 14.17 | 8.84 | 0.00 | 0.01 | 0.68 | 0.69 | 0.00 | 0.63 | 0.63 | 1,838.21 |
| Trenching Off Road Diesel | 1.72 | 14.12 | 7.97 | 0.00 | 0.00 | 0.68 | 0.68 | 0.00 | 0.62 | 0.62 | 1,714.64 |
| Trenching Worker Trips | 0.03 | 0.05 | 0.87 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 123.57 |

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| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Slice 3/1/2013-10/31/2013<br>Active Days: 175 | 8.54 | 63.67 | **96.21** | **0.19** | 0.75 | 3.00 | 3.75 | 0.26 | 2.73 | 2.99 | **20,559.05** |
| Building 03/01/2013-10/31/2013 | 8.54 | 63.67 | 96.21 | 0.19 | 0.75 | 3.00 | 3.75 | 0.26 | 2.73 | 2.99 | 20,559.05 |
| Building Off Road Diesel | 2.88 | 13.91 | 10.20 | 0.00 | 0.00 | 0.93 | 0.93 | 0.00 | 0.86 | 0.86 | 1,621.20 |
| Building Vendor Trips | 4.17 | 46.95 | 36.28 | 0.11 | 0.41 | 1.84 | 2.25 | 0.14 | 1.69 | 1.82 | 11,854.59 |
| Building Worker Trips | 1.49 | 2.82 | 49.73 | 0.07 | 0.34 | 0.23 | 0.57 | 0.12 | 0.19 | 0.31 | 7,083.26 |
| Time Slice 11/1/2013-11/29/2013<br>Active Days: 21 | 3.44 | 16.02 | 10.91 | 0.01 | 0.03 | 1.21 | 1.25 | 0.01 | 1.12 | 1.13 | 1,982.56 |
| Asphalt 11/01/2013-11/30/2013 | 3.44 | 16.02 | 10.91 | 0.01 | 0.03 | 1.21 | 1.25 | 0.01 | 1.12 | 1.13 | 1,982.56 |
| Paving Off-Gas | 1.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Paving Off Road Diesel | 2.10 | 12.84 | 8.03 | 0.00 | 0.00 | 1.09 | 1.09 | 0.00 | 1.00 | 1.00 | 1,131.92 |
| Paving On Road Diesel | 0.24 | 3.09 | 1.15 | 0.01 | 0.02 | 0.12 | 0.14 | 0.01 | 0.11 | 0.11 | 603.51 |
| Paving Worker Trips | 0.05 | 0.10 | 1.74 | 0.00 | 0.01 | 0.01 | 0.02 | 0.00 | 0.01 | 0.01 | 247.14 |
| Time Slice 12/2/2013-12/31/2013<br>Active Days: 22 | 143.10 | 0.18 | 3.22 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 458.29 |
| Coating 12/01/2013-01/31/2014 | 143.10 | 0.18 | 3.22 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 458.29 |
| Architectural Coating | 143.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.10 | 0.18 | 3.22 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 458.29 |
| Time Slice 1/1/2014-1/31/2014<br>Active Days: 23 | 143.09 | 0.17 | 2.97 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 457.90 |
| Coating 12/01/2013-01/31/2014 | 143.09 | 0.17 | 2.97 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 457.90 |
| Architectural Coating | 143.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Coating Worker Trips | 0.09 | 0.17 | 2.97 | 0.00 | 0.02 | 0.01 | 0.04 | 0.01 | 0.01 | 0.02 | 457.90 |

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 7/1/2011 - 10/31/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 75% PM25: 75%

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For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 75% PM25: 75%

The following mitigation measures apply to Phase: Architectural Coating 12/1/2013 - 1/31/2014 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior:  Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior:  Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior:  Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior:  Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

# ATTACHMENT B

## Summary Tables, Calculations, and CalEEMod Output

# Palm Industrial Grading and Rock Crushing Analysis

## Assumptions to be used with the new modeling

It is anticipated that the same number of workers would be present regardless of the scenario implemented, therefore if there are ten operators onsite, only ten pieces of equipment can be operated regardless of the assigned task. Additionally some of the equipment required for rock crushing support activities are the same as those that would be required under a grading only scenario. Therefore if two dozers are onsite, it is possible that under scenario 1 both would be assigned to grading tasks while under a combined rock crushing and grading scenario, one may be assigned to grading while the other is assigned to assist with rock crushing.

**Grading Phase 1:**

Start Date: 3/1/2014
End Date: 3/5/2014
Total length: 5 days
Total Acreage 33.32
Max. Daily Acreage Disturbed: 10
Off-road Equipment: (Note: see equipment discussion following this phasing discussion)

| *#* | *Equipment* | *Make* | *Model* | *Tier* | *Total #* | *HP* |
|---|---|---|---|---|---|---|
| 1 | Dozer | Cat | D10 | 3 | 2 | 580 |
| 3 | Scrapper | Cat | 637 | 3 | 8 | 526 |
| 0 | Grader | John Deer | 772G | 4 | 1 | |
| 2 | Water Truck | International | 2500 | 3 | 2 | 240 |
| 6 | Total pieces of equipment operating during this phase | | | | | |

**Grading Phase 2:**

Start Date:
End Date:
Total length: 5 days
Total Acreage 33.32
Off-road Equipment: (Note: see equipment discussion following this phasing discussion)

| *#* | *Equipment* | *Make* | *Model* | *Tier* | *Total #* | *HP* |
|---|---|---|---|---|---|---|
| 1 | Dozer | Cat | D10 | 3 | 2 | 580 |
| 4 | Scrapper | Cat | 637 | 3 | 8 | 526 |
| 0 | Grader | John Deer | 772G | 4 | 1 | |
| 0 | Water Truck | International | 2500 | 3 | 2 | |
| 5 | Total pieces of equipment operating during this phase | | | | | |

**Grading Phase 3:**
Start Date:
End Date:
Total length: 5 days
Total Acreage 33.32

| # | Equipment | Make | Model | Tier | Total # | HP |
|---|---|---|---|---|---|---|
| 0 | Dozer | Cat | D10 | 3 | 2 | |
| 1 | Scrapper | Cat | 637 | 3 | 8 | 526 |
| 1 | Grader | John Deer | 772G | 4 | 1 | 265 |
| 0 | Water Truck | International | 2500 | 3 | 2 | |
| 2 | Total pieces of equipment operating during this phase | | | | | |

**Support Phase 1:**
Start Date:
End Date:
Total Acreage 33.32
Max. Daily Acreage Disturbed:

| # | Equipment | Make | Model | Tier | Total # | HP |
|---|---|---|---|---|---|---|
| 2 | Excavator | Cat | 365 | 4 | 2 | 404 |
| 1 | Dozer | Cat | D10 | 3 | 2 | 580 |
| 2 | Rock Truck | Volvo | AF4 | 4 | 2 | 476 |
| 5 | Total pieces of equipment operating during this phase | | | | | |

**Support Phase 2:**
Start Date:
End Date:
Total length: 5 days
Total Acreage 33.32
Max. Daily Acreage Disturbed:
Off-road Equipment:

| # | Equipment | Make | Model | Tier | Total # | HP |
|---|---|---|---|---|---|---|
| 0 | Excavator | Cat | 365 | 4 | 2 | |
| 0 | Dozer | Cat | D10 | 3 | 2 | |
| 2 | Rock Truck | Volvo | AF4 | 4 | 4 | 476 |
| 2 | Total pieces of equipment operating during this phase | | | | | |

**Rock Crushing:**
Start Date: 1
End Date:
Total length: 5 days
Off-road Equipment:

| # | Equipment | Make | Model | Tier | Total # | HP |
|---|---|---|---|---|---|---|
| 1 | Excavator/Break | Hitachi | 350 | 3 | 1 | 271 |
| 1 | Loader | Cat | 980 | 3 | 1 | 349 |
| 1 | Crusher | Pioneer | KPI | 4I | 1 | 440 |
| 3 | Total pieces of equipment operating during this phase | | | | | |

# Palm Industrial Grading and Rock Crushing Analysis

## Analysis Summary Tables

**Table 1: NOX Emissions Estimates (lbs/day)**

| | Original | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5 |
|---|---|---|---|---|---|---|
| Grading | | | | | | |
| Fugitive Onsite | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Exhaust Onsite | 60.72 | 121.90 | 0.00 | 0.00 | 71.08 | 47.9491 |
| Offsite | 0.15 | 0.25 | 0.00 | 0.00 | 0.16 | 0.1051 |
| Rock Crushing Support | | | | | | |
| Fugitive Onsite | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Exhaust Onsite | 0.00 | 0.00 | 25.14 | 33.81 | 25.14 | 33.81 |
| Offsite | 0.00 | 0.00 | 0.09 | 0.13 | 0.09 | 0.13 |
| Rock Crushing | | | | | | |
| Fugitive Onsite | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Exhaust Onsite | 0.00 | 0.00 | 13.34 | 13.34 | 13.34 | 13.34 |
| Offsite | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Haul Trucks | | | | | | |
| On-Road Vehicles | 36.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total Emissions | 96.97 | 122.15 | 39.58 | 48.28 | 110.82 | 96.33 |
| Threshold | 100 | 100 | 100 | 100 | 100 | 100 |
| | No | **YES** | No | No | **YES** | No |

**Table 2: PM10 Emissions Estimates (lbs/day)**

| | Original | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 | Scenario 5 |
|---|---|---|---|---|---|---|
| Grading | | | | | | |
| Fugitive Onsite | 141.56 | 52.19 | 0.00 | 0.00 | 38.03 | 29.88 |
| Exhaust Onsite | 3.18 | 4.55 | 0.00 | 0.00 | 2.62 | 1.8188 |
| Offsite | 0.02 | 0.41 | 0.00 | 0.00 | 0.26 | 0.1691 |
| Rock Crushing Support | | | | | | |
| Fugitive Onsite | 0.00 | 0.00 | 14.17 | 14.17 | 14.17 | 14.17 |
| Exhaust Onsite | 0.00 | 0.00 | 0.46 | 0.51 | 0.46 | 0.51 |
| Offsite | 0.00 | 0.00 | 0.15 | 0.20 | 0.15 | 0.20 |
| Rock Crushing | | | | | | |
| Fugitive Onsite | 0.00 | 0.00 | 89.79 | 89.79 | 89.79 | 89.79 |
| Exhaust Onsite | 0.00 | 0.00 | 0.40 | 0.40 | 0.40 | 0.40 |
| Offsite | 0.00 | 0.00 | 1.61 | 1.61 | 1.61 | 1.61 |
| Haul Trucks | | | | | | |
| On-Road Vehicles | 1.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Total Emissions | 146.35 | 57.15 | 106.57 | 106.68 | 147.48 | 138.56 |
| Threshold | 150 | 150 | 150 | 150 | 150 | 150 |
| | No | No | No | No | No | No |

# Palm Industrial Grading and Rock Crushing Analysis

## Fugitive Dust Emissions from Rock Crushing

| | | lbs/ton | |
|---|---|---|---|
| EPA - AP42 | | **$PM_{10}$** | **$PM_{2.5}$** |
| Tertiary Crushing | Uncontrolled | 0.0024 | 0.0001 |
| | Controlled | 0.00054 | 0.0001 |
| Fine Crushing | Uncontrolled | 0.015 | 0.00007 |
| | Controlled | 0.0012 | 0.00007 |
| Screening | Uncontrolled | 0.0087 | 0.00005 |
| | Controlled | 0.00074 | 0.00005 |
| Fine Screening | Uncontrolled | 0.072 | 0 |
| | Controlled | 0.0022 | 0 |
| Conveyor Transfer Point | Uncontrolled | 0.0011 | 1.30E-05 |
| | Controlled | 4.60E-05 | 1.30E-05 |
| Total: | Uncontrolled | 0.0992 | 0.000233 |
| | Controlled | 0.004726 | 0.000233 |

| | | |
|---|---|---|
| **Tons per day** | Uncontrolled | 930 |
| | Controlled | 19000 |

| | | **$PM_{10}$** | **$PM_{2.5}$** |
|---|---|---|---|
| ***Total emissions lbs/day*** | Uncontrolled | 92.256 | 0.21669 |
| | Controlled | 89.794 | 4.427 |

# Palm Industrial Grading and Rock Crushing Analysis

## Analysis Scenarios By Phase

***Scenario 1 - Grading Only***

| | ROG | $NO_X$ | CO | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| Grading Phase 1 | 2.56 | 48.05 | 54.84 | 0.10 | 31.87 | 7.75 |
| Grading Phase 2 | 2.69 | 50.91 | 57.90 | 0.11 | 16.24 | 6.16 |
| Grading Phase 3 | 1.26 | 23.19 | 28.72 | 0.05 | 9.03 | 1.70 |
| Total: | 6.51 | 122.15 | 141.46 | 0.26 | 57.15 | 15.61 |
| ***Threshold:*** | ***75*** | ***100*** | ***550*** | ***150*** | ***150*** | ***55*** |
| | ***No*** | ***YES*** | ***No*** | ***No*** | ***No*** | ***No*** |

*Equipment List:*

| Grading 1 | Grading 2 | Grading 3 |
|---|---|---|
| 1 Dozer | 1 Dozer | 1 Scrapper |
| 3 Scrapper | 4 Scrapper | 1 Grader |
| 2 Water Truck | | |

*13* Total pieces of onsite equipment

(Revision: Remove 2 pieces of equipment total. 1 must be a scrapper. The 2nd can be contractor's choice - Max 11 pieces of equpment onsite).

Exceedence 22.15

***Scenario 2 - Rock Crushing Only (2 Rock Trucks)***

| | ROG | $NO_X$ | CO | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| Rock Crushing | 1.45 | 14.35 | 28.48 | 0.05 | 2.01 | 0.83 |
| Support Phase 1 | 1.53 | 25.23 | 43.13 | 0.08 | 14.77 | 4.69 |
| Rock Crushing Fugitive | 0.00 | 0.00 | 0.00 | 0.00 | 89.79 | 4.43 |
| Total | 2.98 | 39.58 | 71.61 | 0.13 | 106.57 | 9.95 |
| ***Threshold:*** | ***75*** | ***100*** | ***550*** | ***150*** | ***150*** | ***55*** |
| | ***No*** | ***No*** | ***No*** | ***No*** | ***No*** | ***No*** |

*Equipment List:*

| Rock Crushing | Support Phase 1 |
|---|---|
| 1 Excavator/Breaker | 2 Excavator |
| 1 Loader | 1 Dozer |
| 1 Crusher | 2 Rock Truck |

*8* Total pieces of onsite equipment

***Scenario 3 - Rock Crushing Only (4 Rock Trucks)***

| | ROG | $NO_X$ | CO | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| Rock Crushing | 1.45 | 14.35 | 28.48 | 0.05 | 2.01 | 0.83 |
| Support Phase 1 | 1.53 | 25.23 | 43.13 | 0.08 | 14.77 | 4.69 |
| Support Phase 2 | 0.56 | 8.70 | 17.83 | 0.03 | 0.11 | 0.07 |
| Rock Crushing Fugitive | 0.00 | 0.00 | 0.00 | 0.00 | 89.79 | 4.43 |
| Total: | 3.54 | 48.28 | 89.44 | 0.17 | 106.68 | 10.02 |
| ***Threshold:*** | ***75*** | ***100*** | ***550*** | ***150*** | ***150*** | ***55*** |
| | ***No*** | ***No*** | ***No*** | ***No*** | ***No*** | ***No*** |

*Equipment List:*

| Rock Crushing | Support Phase 1 | Support Phase 2 |
|---|---|---|
| 1 Excavator/Breaker | 2 Excavator | 2 Rock Truck |
| 1 Loader | 1 Dozer | |
| 1 Crusher | 2 Rock Truck | |

10.00 Total pieces of onsite equipment

# Palm Industrial Grading and Rock Crushing Analysis

## Analysis Scenarios By Phase

***Scenario 4 - Limited Grading and Rock Crushing with 2 Rock Trucks***

| | ROG | $NO_X$ | CO | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| Grading Phase 1 | 2.56 | 48.05 | 54.84 | 0.10 | 31.87 | 7.75 |
| Grading Phase 3 | 1.26 | 23.19 | 28.72 | 0.05 | 9.03 | 1.70 |
| Support Phase 1 | 1.53 | 25.23 | 43.13 | 0.08 | 14.77 | 4.69 |
| Rock Crushing | 1.45 | 14.35 | 28.48 | 0.05 | 2.01 | 0.83 |
| Rock Crushing Fugitive | 0.00 | 0.00 | 0.00 | 0.00 | 89.79 | 4.43 |
| Total: | 6.80 | 110.82 | 155.17 | 0.29 | 147.48 | 19.40 |
| ***Threshold:*** | ***75*** | ***100*** | ***550*** | ***150*** | ***150*** | ***55*** |
| | ***No*** | ***YES*** | ***No*** | ***No*** | ***No*** | ***No*** |

(Revision Max 15 pieces of equipment onsite. Remove one scraper or one dozer from grading operations)

Exceedence 10.82

*Equipment List:*

| Grading Phase 1 | Grading Phase 3 | Support Phase 1 | Rock Crushing |
|---|---|---|---|
| 1 Dozer | 1 Scrapper | 2 Excavator | 1 Excavator/Breaker |
| 3 Scrapper | 1 Grader | 1 Dozer | 1 Loader |
| 2 Water Truck | | 2 Rock Truck | 1 Crusher |

16 Total pieces of onsite equipment

***Scenario 5 - Limited Grading and Rock Crushing with 4 Rock Trucks***

| | ROG | $NO_X$ | CO | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| Grading Phase 1 | 2.56 | 48.05 | 54.84 | 0.10 | 31.87 | 7.75 |
| Support Phase 1 | 1.53 | 25.23 | 43.13 | 0.08 | 14.77 | 4.69 |
| Support Phase 2 | 0.56 | 8.70 | 17.83 | 0.03 | 0.11 | 0.07 |
| Rock Crushing | 1.45 | 14.35 | 28.48 | 0.05 | 2.01 | 0.83 |
| Rock Crushing Fugitive | 0.00 | 0.00 | 0.00 | 0.00 | 89.79 | 4.43 |
| Total: | 6.10 | 96.33 | 144.28 | 0.27 | 138.56 | 17.77 |
| ***Threshold:*** | ***75*** | ***100*** | ***550*** | ***150*** | ***150*** | ***55*** |
| | ***No*** | ***No*** | ***No*** | ***No*** | ***No*** | ***No*** |

*Equipment List:*

| Grading Phase 1 | Support Phase 1 | Support Phase 2 | Rock Crushing |
|---|---|---|---|
| 1 Dozer | 2 Excavator | 2 Rock Truck | 1 Excavator/Breaker |
| 3 Scrapper | 1 Dozer | | 1 Loader |
| 2 Water Truck | 2 Rock Truck | | 1 Crusher |

16 Total pieces of onsite equipment

# Palm Industrial Grading and Rock Crushing Analysis

**CalEEMod Summarized Output (lbs/day)**

| | | ROG | $NO_X$ | CO | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|---|
| Thresholds | | 75 | 100 | 550 | 150 | 150 | 55 |
| Grading Phase 1: | | | | | | | |
| | Onsite Exhaust: | 2.4801 | 47.9491 | 53.7361 | 0.1007 | 1.8188 | 1.8188 |
| | Onsitite Fugitive: | | | | | 29.8833 | 5.8867 |
| | Offsite: | 0.0763 | 0.1051 | 1.0993 | 1.91E-03 | 0.1691 | 0.0457 |
| | Total: | 2.5564 | 48.0542 | 54.8354 | 0.10261 | 31.8712 | 7.7512 |
| Grading Phase 2: | | | | | | | |
| | Onsite Exhaust: | 2.6285 | 50.8166 | 56.9497 | 0.1069 | 1.9275 | 1.9275 |
| | Onsitite Fugitive: | | | | | 14.1667 | 4.1897 |
| | Offsite: | 0.0661 | 0.0911 | 0.9527 | 1.66E-03 | 0.1465 | 0.0396 |
| | Total: | 2.6946 | 50.9077 | 57.9024 | 0.10856 | 16.2407 | 6.1568 |
| Grading Phase 3: | | | | | | | |
| | Onsite Exhaust: | 1.222 | 23.1338 | 28.1378 | 0.0528 | 0.7991 | 0.7991 |
| | Onsitite Fugitive: | | | | | 8.1446 | 0.8794 |
| | Offsite: | 0.0407 | 0.0561 | 0.5863 | 1.02E-03 | 0.0902 | 0.0244 |
| | Total: | 1.2627 | 23.1899 | 28.7241 | 0.05382 | 9.0339 | 1.7029 |
| Support Phase 1: | | | | | | | |
| | Onsite Exhaust: | 1.4615 | 25.1425 | 42.1803 | 0.0789 | 0.4571 | 0.4571 |
| | Onsitite Fugitive: | | | | | 14.1667 | 4.1897 |
| | Offsite: | 0.0661 | 0.0911 | 0.9527 | 1.66E-03 | 0.1465 | 0.0396 |
| | Total: | 1.5276 | 25.2336 | 43.133 | 0.08056 | 14.7703 | 4.6864 |
| Support Phase 2: | | | | | | | |
| | Onsite Exhaust: | 0.5373 | 8.6639 | 17.462 | 0.0326 | 0.0537 | 0.0537 |
| | Onsitite Fugitive: | | | | | 0 | 0 |
| | Offsite: | 0.0254 | 0.0351 | 0.3664 | 6.40E-04 | 0.0564 | 0.0153 |
| | Total: | 0.5627 | 8.699 | 17.8284 | 0.03324 | 0.1101 | 0.069 |
| Crushing Phase 1: | | | | | | | |
| | Onsite Exhaust: | 0.7253 | 13.3446 | 18.0008 | 0.0339 | 0.3982 | 0.3982 |
| | Onsitite Fugitive: | | | | | 89.79 | 4.43 |
| | Offsite: | 0.7275 | 1.0024 | 10.4801 | 1.82E-02 | 1.6117 | 0.436 |
| | Total: | 1.4528 | 14.347 | 28.4809 | 0.0521 | 91.8039 | 5.2612 |

# Palm Industrial Remodeling of Grading Emissions

**San Bernardino-South Coast County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Unrefrigerated Warehouse-No Rail | 341.32 | 1000sqft | 38.40 | 341,320.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 32 |
| **Climate Zone** | 10 | | | **Operational Year** | 2014 |
| **Utility Company** | Southern California Edison | | | | |
| **CO2 Intensity (lb/MWhr)** | 630.89 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - re-modeling the grading phases for the proposed Palm Industrail project to determine maximum daily emissions with revised constructon fleet.

Land Use - Based on project specific information

Construction Phase - Separates out phases based on level of onsite activity.

Off-road Equipment - Partial onsite grading. Will always be active onsite regardless of if crushing plant is operating.

Off-road Equipment - Added to Grading Phase 1 if no crushing. Not added to Grading Phase 1 if crushing activities will occur

Off-road Equipment - Added to Grading Phase 1 and Grading Phase 2 if no crushing. Added to Grading Phase 1 and Support 1 if only 2 rock trucks. Not Added if Crushing has 4 rock trucks

Off-road Equipment - Added to Grading and support if crushing is taking place.

Off-road Equipment - Is added to Grading Phase 1 and Grading Phase 3 if crushing activitiy is occurring onsite with only 2 rock trucks

Off-road Equipment - Is added to Grading Phase 1 and Support Phase 1 if crushing activities will have 4 rock trucks.

Grading - Equipment levels

Vehicle Trips - Construction Only

Area Coating - Construction ONly

Energy Use - Construction Only

Water And Wastewater - Construction Only

Solid Waste - Construction Only

Construction Off-road Equipment Mitigation - Actual Equipment Tiers.

Trips and VMT - No vendors

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaCoating | ReapplicationRatePercent | 10 | 0 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 3.00 |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 9.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Interim |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstEquipMitigation | Tier | No Change | Tier 3 |
| tblConstructionPhase | NumDays | 740.00 | 5.00 |
| tblConstructionPhase | NumDays | 75.00 | 5.00 |
| tblConstructionPhase | NumDays | 75.00 | 5.00 |
| tblConstructionPhase | NumDays | 75.00 | 5.00 |
| tblConstructionPhase | NumDays | 75.00 | 5.00 |
| tblConstructionPhase | NumDays | 75.00 | 5.00 |
| tblEnergyUse | LightingElect | 1.75 | 0.00 |
| tblEnergyUse | NT24E | 0.82 | 0.00 |
| tblEnergyUse | NT24NG | 0.03 | 0.00 |
| tblEnergyUse | T24E | 0.45 | 0.00 |
| tblEnergyUse | T24NG | 2.11 | 0.00 |
| tblGrading | AcresOfGrading | 15.00 | 112.50 |
| tblGrading | AcresOfGrading | 20.00 | 38.40 |
| tblGrading | AcresOfGrading | 12.50 | 38.40 |
| tblGrading | AcresOfGrading | 0.00 | 38.40 |
| tblLandUse | LotAcreage | 7.84 | 38.40 |
| tblOffRoadEquipment | HorsePower | 162.00 | 404.00 |

| | | | |
|---|---|---|---|
| tblOffRoadEquipment | HorsePower | 174.00 | 265.00 |
| tblOffRoadEquipment | HorsePower | 255.00 | 580.00 |
| tblOffRoadEquipment | HorsePower | 255.00 | 580.00 |
| tblOffRoadEquipment | HorsePower | 255.00 | 580.00 |
| tblOffRoadEquipment | HorsePower | 361.00 | 526.00 |
| tblOffRoadEquipment | HorsePower | 361.00 | 526.00 |
| tblOffRoadEquipment | HorsePower | 361.00 | 526.00 |
| tblOffRoadEquipment | HorsePower | 97.00 | 349.00 |
| tblOffRoadEquipment | HorsePower | 400.00 | 240.00 |
| tblOffRoadEquipment | HorsePower | 171.00 | 271.00 |
| tblOffRoadEquipment | HorsePower | 87.00 | 440.00 |
| tblOffRoadEquipment | HorsePower | 167.00 | 476.00 |
| tblOffRoadEquipment | HorsePower | 167.00 | 476.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 3.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 3.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 0.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 0.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 0.00 | 2.00 |
| tblOffRoadEquipment | PhaseName | | Grading Phase 1 |
| tblOffRoadEquipment | PhaseName | | Support Phase 1 |
| tblOffRoadEquipment | PhaseName | | Support Phase 2 |
| tblOffRoadEquipment | UsageHours | 7.00 | 8.00 |
| tblSolidWaste | SolidWasteGenerationRate | 320.84 | 0.00 |
| tblTripsAndVMT | VendorTripNumber | 56.00 | 0.00 |
| tblVehicleTrips | ST_TR | 2.59 | 0.00 |
| tblVehicleTrips | SU_TR | 2.59 | 0.00 |
| tblVehicleTrips | WD_TR | 2.59 | 0.00 |

| | | | |
|---|---|---|---|
| tblWater | IndoorWaterUseRate | 78,930,250.00 | 0.00 |

# 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2014 | 8.7355 | 118.6173 | 62.9162 | 0.1085 | 30.0510 | 4.4313 | 34.3961 | 5.9312 | 4.0768 | 9.9286 | 0.0000 | 11,482.2681 | 11,482.2681 | 3.3585 | 0.0000 | 11,552.7959 |
| **Total** | **8.7355** | **118.6173** | **62.9162** | **0.1085** | **30.0510** | **4.4313** | **34.3961** | **5.9312** | **4.0768** | **9.9286** | **0.0000** | **11,482.2681** | **11,482.2681** | **3.3585** | **0.0000** | **11,552.7959** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2014 | 2.6946 | 50.9078 | 57.9024 | 0.1085 | 30.0510 | 1.9287 | 31.8712 | 5.9312 | 1.9286 | 7.7512 | 0.0000 | 11,482.2681 | 11,482.2681 | 3.3585 | 0.0000 | 11,552.7959 |
| **Total** | **2.6946** | **50.9078** | **57.9024** | **0.1085** | **30.0510** | **1.9287** | **31.8712** | **5.9312** | **1.9286** | **7.7512** | **0.0000** | **11,482.2681** | **11,482.2681** | **3.3585** | **0.0000** | **11,552.7959** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **69.15** | **57.08** | **7.97** | **0.00** | **0.00** | **56.47** | **7.34** | **0.00** | **52.69** | **21.93** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 6.7618 | 3.6000e-004 | 0.0364 | 0.0000 | | 1.3000e-004 | 1.3000e-004 | | 1.3000e-004 | 1.3000e-004 | | 0.0747 | 0.0747 | 2.2000e-004 | | 0.0794 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **6.7618** | **3.6000e-004** | **0.0364** | **0.0000** | **0.0000** | **1.3000e-004** | **1.3000e-004** | **0.0000** | **1.3000e-004** | **1.3000e-004** | | **0.0747** | **0.0747** | **2.2000e-004** | **0.0000** | **0.0794** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 6.7618 | 3.6000e-004 | 0.0364 | 0.0000 | | 1.3000e-004 | 1.3000e-004 | | 1.3000e-004 | 1.3000e-004 | | 0.0747 | 0.0747 | 2.2000e-004 | | 0.0794 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **6.7618** | **3.6000e-004** | **0.0364** | **0.0000** | **0.0000** | **1.3000e-004** | **1.3000e-004** | **0.0000** | **1.3000e-004** | **1.3000e-004** | | **0.0747** | **0.0747** | **2.2000e-004** | **0.0000** | **0.0794** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Grading Phase 1 | Grading | 3/1/2014 | 3/7/2014 | 5 | 5 | |
| 2 | Grading Phase 2 | Grading | 3/8/2014 | 3/14/2014 | 5 | 5 | Add to G1 if no crushing |
| 3 | Grading Phase 3 | Grading | 3/15/2014 | 3/21/2014 | 5 | 5 | Add to G1 if only 2 rock trucks in crushing. |
| 4 | Support Phase 1 | Grading | 3/22/2014 | 3/28/2014 | 5 | 5 | Add to G1 if and G3 if only 2 crushing trucks |
| 5 | Support Phase 2 | Grading | 3/29/2014 | 4/4/2014 | 5 | 5 | Add to G1 and S1 if 4 rock trucks |
| 6 | Rock Crushing | Building Construction | 4/5/2014 | 4/11/2014 | 5 | 5 | Add to appropriate Grading and Support phases |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Grading Phase 1 | Off-Highway Trucks | 2 | 8.00 | 240 | 0.38 |
| Grading Phase 1 | Rubber Tired Dozers | 1 | 8.00 | 580 | 0.40 |
| Grading Phase 1 | Scrapers | 3 | 8.00 | 526 | 0.48 |
| Grading Phase 2 | Rubber Tired Dozers | 1 | 8.00 | 580 | 0.40 |
| Grading Phase 2 | Scrapers | 4 | 8.00 | 526 | 0.48 |
| Grading Phase 3 | Graders | 1 | 8.00 | 265 | 0.41 |
| Grading Phase 3 | Scrapers | 2 | 8.00 | 526 | 0.48 |
| Support Phase 1 | Excavators | 2 | 8.00 | 404 | 0.38 |
| Support Phase 1 | Other Material Handling Equipment | 2 | 8.00 | 476 | 0.40 |
| Support Phase 1 | Rubber Tired Dozers | 1 | 8.00 | 580 | 0.40 |
| Support Phase 2 | Other Material Handling Equipment | 2 | 8.00 | 476 | 0.40 |
| Rock Crushing | Other Construction Equipment | 1 | 8.00 | 271 | 0.42 |
| Rock Crushing | Other General Industrial Equipment | 1 | 8.00 | 440 | 0.34 |
| Rock Crushing | Tractors/Loaders/Backhoes | 1 | 8.00 | 349 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Grading Phase 1 | 6 | 15.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading Phase 2 | 5 | 13.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading Phase 3 | 3 | 8.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Support Phase 1 | 5 | 13.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Support Phase 2 | 2 | 5.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Rock Crushing | 3 | 143.00 | 0.00 | 0.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

## 3.2 Grading Phase 1 - 2014

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 29.8833 | 0.0000 | 29.8833 | 5.8867 | 0.0000 | 5.8867 | | | 0.0000 | | | 0.0000 |
| Off-Road | 8.5805 | 113.7096 | 55.5059 | 0.1007 | | 4.3437 | 4.3437 | | 3.9962 | 3.9962 | | 10,680.3000 | 10,680.3000 | 3.1562 | | 10,746.5791 |
| **Total** | **8.5805** | **113.7096** | **55.5059** | **0.1007** | **29.8833** | **4.3437** | **34.2270** | **5.8867** | **3.9962** | **9.8828** | | **10,680.3000** | **10,680.3000** | **3.1562** | | **10,746.5791** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0763 | 0.1051 | 1.0993 | 1.9100e-003 | 0.1677 | 1.3900e-003 | 0.1691 | 0.0445 | 1.2700e-003 | 0.0457 | | 170.5373 | 170.5373 | 0.0104 | | 170.7556 |
| **Total** | **0.0763** | **0.1051** | **1.0993** | **1.9100e-003** | **0.1677** | **1.3900e-003** | **0.1691** | **0.0445** | **1.2700e-003** | **0.0457** | | **170.5373** | **170.5373** | **0.0104** | | **170.7556** |

## 3.2 Grading Phase 1 - 2014

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 29.8833 | 0.0000 | 29.8833 | 5.8867 | 0.0000 | 5.8867 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4801 | 47.9491 | 53.7361 | 0.1007 | | 1.8188 | 1.8188 | | 1.8188 | 1.8188 | 0.0000 | 10,680.3000 | 10,680.3000 | 3.1562 | | 10,746.5790 |
| **Total** | **2.4801** | **47.9491** | **53.7361** | **0.1007** | **29.8833** | **1.8188** | **31.7021** | **5.8867** | **1.8188** | **7.7054** | **0.0000** | **10,680.3000** | **10,680.3000** | **3.1562** | | **10,746.5790** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0763 | 0.1051 | 1.0993 | 1.9100e-003 | 0.1677 | 1.3900e-003 | 0.1691 | 0.0445 | 1.2700e-003 | 0.0457 | | 170.5373 | 170.5373 | 0.0104 | | 170.7556 |
| **Total** | **0.0763** | **0.1051** | **1.0993** | **1.9100e-003** | **0.1677** | **1.3900e-003** | **0.1691** | **0.0445** | **1.2700e-003** | **0.0457** | | **170.5373** | **170.5373** | **0.0104** | | **170.7556** |

## 3.3 Grading Phase 2 - 2014

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 14.1667 | 0.0000 | 14.1667 | 4.1897 | 0.0000 | 4.1897 | | | 0.0000 | | | 0.0000 |
| Off-Road | 8.6694 | 118.5262 | 61.9634 | 0.1069 | | 4.4301 | 4.4301 | | 4.0757 | 4.0757 | | 11,334.4691 | 11,334.4691 | 3.3495 | | 11,404.8077 |
| **Total** | **8.6694** | **118.5262** | **61.9634** | **0.1069** | **14.1667** | **4.4301** | **18.5968** | **4.1897** | **4.0757** | **8.2653** | | **11,334.4691** | **11,334.4691** | **3.3495** | | **11,404.8077** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0661 | 0.0911 | 0.9527 | 1.6600e-003 | 0.1453 | 1.2100e-003 | 0.1465 | 0.0385 | 1.1000e-003 | 0.0396 | | 147.7990 | 147.7990 | 9.0100e-003 | | 147.9882 |
| **Total** | **0.0661** | **0.0911** | **0.9527** | **1.6600e-003** | **0.1453** | **1.2100e-003** | **0.1465** | **0.0385** | **1.1000e-003** | **0.0396** | | **147.7990** | **147.7990** | **9.0100e-003** | | **147.9882** |

## 3.3 Grading Phase 2 - 2014

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 14.1667 | 0.0000 | 14.1667 | 4.1897 | 0.0000 | 4.1897 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.6285 | 50.8166 | 56.9497 | 0.1069 | | 1.9275 | 1.9275 | | 1.9275 | 1.9275 | 0.0000 | 11,334.4691 | 11,334.4691 | 3.3495 | | 11,404.8077 |
| **Total** | **2.6285** | **50.8166** | **56.9497** | **0.1069** | **14.1667** | **1.9275** | **16.0943** | **4.1897** | **1.9275** | **6.1172** | **0.0000** | **11,334.4691** | **11,334.4691** | **3.3495** | | **11,404.8077** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0661 | 0.0911 | 0.9527 | 1.6600e-003 | 0.1453 | 1.2100e-003 | 0.1465 | 0.0385 | 1.1000e-003 | 0.0396 | | 147.7990 | 147.7990 | 9.0100e-003 | | 147.9882 |
| **Total** | **0.0661** | **0.0911** | **0.9527** | **1.6600e-003** | **0.1453** | **1.2100e-003** | **0.1465** | **0.0385** | **1.1000e-003** | **0.0396** | | **147.7990** | **147.7990** | **9.0100e-003** | | **147.9882** |

## 3.4 Grading Phase 3 - 2014

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.1446 | 0.0000 | 8.1446 | 0.8794 | 0.0000 | 0.8794 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.8868 | 51.7574 | 28.7751 | 0.0528 | | 1.9614 | 1.9614 | | 1.8044 | 1.8044 | | 5,599.3199 | 5,599.3199 | 1.6547 | | 5,634.0677 |
| **Total** | **3.8868** | **51.7574** | **28.7751** | **0.0528** | **8.1446** | **1.9614** | **10.1060** | **0.8794** | **1.8044** | **2.6839** | | **5,599.3199** | **5,599.3199** | **1.6547** | | **5,634.0677** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0407 | 0.0561 | 0.5863 | 1.0200e-003 | 0.0894 | 7.4000e-004 | 0.0902 | 0.0237 | 6.8000e-004 | 0.0244 | | 90.9533 | 90.9533 | 5.5400e-003 | | 91.0696 |
| **Total** | **0.0407** | **0.0561** | **0.5863** | **1.0200e-003** | **0.0894** | **7.4000e-004** | **0.0902** | **0.0237** | **6.8000e-004** | **0.0244** | | **90.9533** | **90.9533** | **5.5400e-003** | | **91.0696** |

## 3.4 Grading Phase 3 - 2014

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.1446 | 0.0000 | 8.1446 | 0.8794 | 0.0000 | 0.8794 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.2220 | 23.1338 | 28.1378 | 0.0528 | | 0.7991 | 0.7991 | | 0.7991 | 0.7991 | 0.0000 | 5,599.3199 | 5,599.3199 | 1.6547 | | 5,634.0677 |
| **Total** | **1.2220** | **23.1338** | **28.1378** | **0.0528** | **8.1446** | **0.7991** | **8.9437** | **0.8794** | **0.7991** | **1.6785** | **0.0000** | **5,599.3199** | **5,599.3199** | **1.6547** | | **5,634.0677** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0407 | 0.0561 | 0.5863 | 1.0200e-003 | 0.0894 | 7.4000e-004 | 0.0902 | 0.0237 | 6.8000e-004 | 0.0244 | | 90.9533 | 90.9533 | 5.5400e-003 | | 91.0696 |
| **Total** | **0.0407** | **0.0561** | **0.5863** | **1.0200e-003** | **0.0894** | **7.4000e-004** | **0.0902** | **0.0237** | **6.8000e-004** | **0.0244** | | **90.9533** | **90.9533** | **5.5400e-003** | | **91.0696** |

## 3.5 Support Phase 1 - 2014

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 14.1667 | 0.0000 | 14.1667 | 4.1897 | 0.0000 | 4.1897 | | | 0.0000 | | | 0.0000 |
| Off-Road | 5.5852 | 76.6602 | 31.4046 | 0.0789 | | 2.7736 | 2.7736 | | 2.5517 | 2.5517 | | 8,365.6105 | 8,365.6105 | 2.4721 | | 8,417.5252 |
| **Total** | **5.5852** | **76.6602** | **31.4046** | **0.0789** | **14.1667** | **2.7736** | **16.9403** | **4.1897** | **2.5517** | **6.7413** | | **8,365.6105** | **8,365.6105** | **2.4721** | | **8,417.5252** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0661 | 0.0911 | 0.9527 | 1.6600e-003 | 0.1453 | 1.2100e-003 | 0.1465 | 0.0385 | 1.1000e-003 | 0.0396 | | 147.7990 | 147.7990 | 9.0100e-003 | | 147.9882 |
| **Total** | **0.0661** | **0.0911** | **0.9527** | **1.6600e-003** | **0.1453** | **1.2100e-003** | **0.1465** | **0.0385** | **1.1000e-003** | **0.0396** | | **147.7990** | **147.7990** | **9.0100e-003** | | **147.9882** |

## 3.5 Support Phase 1 - 2014

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 14.1667 | 0.0000 | 14.1667 | 4.1897 | 0.0000 | 4.1897 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.4615 | 25.1425 | 42.1803 | 0.0789 | | 0.4571 | 0.4571 | | 0.4571 | 0.4571 | 0.0000 | 8,365.6105 | 8,365.6105 | 2.4721 | | 8,417.5252 |
| **Total** | **1.4615** | **25.1425** | **42.1803** | **0.0789** | **14.1667** | **0.4571** | **14.6239** | **4.1897** | **0.4571** | **4.6468** | **0.0000** | **8,365.6105** | **8,365.6105** | **2.4721** | | **8,417.5252** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0661 | 0.0911 | 0.9527 | 1.6600e-003 | 0.1453 | 1.2100e-003 | 0.1465 | 0.0385 | 1.1000e-003 | 0.0396 | | 147.7990 | 147.7990 | 9.0100e-003 | | 147.9882 |
| **Total** | **0.0661** | **0.0911** | **0.9527** | **1.6600e-003** | **0.1453** | **1.2100e-003** | **0.1465** | **0.0385** | **1.1000e-003** | **0.0396** | | **147.7990** | **147.7990** | **9.0100e-003** | | **147.9882** |

## 3.6 Support Phase 2 - 2014

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.2257 | 29.2595 | 12.9403 | 0.0326 | | 1.1342 | 1.1342 | | 1.0435 | 1.0435 | | 3,456.9041 | 3,456.9041 | 1.0216 | | 3,478.3567 |
| **Total** | **2.2257** | **29.2595** | **12.9403** | **0.0326** | **0.0000** | **1.1342** | **1.1342** | **0.0000** | **1.0435** | **1.0435** | | **3,456.9041** | **3,456.9041** | **1.0216** | | **3,478.3567** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0254 | 0.0351 | 0.3664 | 6.4000e-004 | 0.0559 | 4.6000e-004 | 0.0564 | 0.0148 | 4.2000e-004 | 0.0153 | | 56.8458 | 56.8458 | 3.4600e-003 | | 56.9185 |
| **Total** | **0.0254** | **0.0351** | **0.3664** | **6.4000e-004** | **0.0559** | **4.6000e-004** | **0.0564** | **0.0148** | **4.2000e-004** | **0.0153** | | **56.8458** | **56.8458** | **3.4600e-003** | | **56.9185** |

## 3.6 Support Phase 2 - 2014

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.5373 | 8.6639 | 17.4620 | 0.0326 | | 0.0537 | 0.0537 | | 0.0537 | 0.0537 | 0.0000 | 3,456.9041 | 3,456.9041 | 1.0216 | | 3,478.3567 |
| **Total** | **0.5373** | **8.6639** | **17.4620** | **0.0326** | **0.0000** | **0.0537** | **0.0537** | **0.0000** | **0.0537** | **0.0537** | **0.0000** | **3,456.9041** | **3,456.9041** | **1.0216** | | **3,478.3567** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0254 | 0.0351 | 0.3664 | 6.4000e-004 | 0.0559 | 4.6000e-004 | 0.0564 | 0.0148 | 4.2000e-004 | 0.0153 | | 56.8458 | 56.8458 | 3.4600e-003 | | 56.9185 |
| **Total** | **0.0254** | **0.0351** | **0.3664** | **6.4000e-004** | **0.0559** | **4.6000e-004** | **0.0564** | **0.0148** | **4.2000e-004** | **0.0153** | | **56.8458** | **56.8458** | **3.4600e-003** | | **56.9185** |

## 3.7 Rock Crushing - 2014

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 2.3088 | 31.4218 | 15.8413 | 0.0339 | | 1.1381 | 1.1381 | | 1.0470 | 1.0470 | | 3,589.1647 | 3,589.1647 | 1.0606 | | 3,611.4381 |
| **Total** | **2.3088** | **31.4218** | **15.8413** | **0.0339** | | **1.1381** | **1.1381** | | **1.0470** | **1.0470** | | **3,589.1647** | **3,589.1647** | **1.0606** | | **3,611.4381** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.7275 | 1.0024 | 10.4801 | 0.0182 | 1.5984 | 0.0133 | 1.6117 | 0.4239 | 0.0121 | 0.4360 | | 1,625.7893 | 1,625.7893 | 0.0991 | | 1,627.8697 |
| **Total** | **0.7275** | **1.0024** | **10.4801** | **0.0182** | **1.5984** | **0.0133** | **1.6117** | **0.4239** | **0.0121** | **0.4360** | | **1,625.7893** | **1,625.7893** | **0.0991** | | **1,627.8697** |

## 3.7 Rock Crushing - 2014

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.7253 | 13.3446 | 18.0008 | 0.0339 | | 0.3982 | 0.3982 | | 0.3982 | 0.3982 | 0.0000 | 3,589.1647 | 3,589.1647 | 1.0606 | | 3,611.4381 |
| **Total** | **0.7253** | **13.3446** | **18.0008** | **0.0339** | | **0.3982** | **0.3982** | | **0.3982** | **0.3982** | **0.0000** | **3,589.1647** | **3,589.1647** | **1.0606** | | **3,611.4381** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.7275 | 1.0024 | 10.4801 | 0.0182 | 1.5984 | 0.0133 | 1.6117 | 0.4239 | 0.0121 | 0.4360 | | 1,625.7893 | 1,625.7893 | 0.0991 | | 1,627.8697 |
| **Total** | **0.7275** | **1.0024** | **10.4801** | **0.0182** | **1.5984** | **0.0133** | **1.6117** | **0.4239** | **0.0121** | **0.4360** | | **1,625.7893** | **1,625.7893** | **0.0991** | | **1,627.8697** |

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Unrefrigerated Warehouse-No Rail | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Unrefrigerated Warehouse-No Rail | 16.60 | 8.40 | 6.90 | 59.00 | 0.00 | 41.00 | 92 | 5 | 3 |

| LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.477446 | 0.065927 | 0.171594 | 0.156638 | 0.055185 | 0.009062 | 0.015877 | 0.037321 | 0.001132 | 0.001346 | 0.004831 | 0.000736 | 0.002906 |

## 4.4 Fleet Mix

## 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Unrefrigerated Warehouse-No Rail | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Unrefrigerated Warehouse-No Rail | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 6.7618 | 3.6000e-004 | 0.0364 | 0.0000 | | 1.3000e-004 | 1.3000e-004 | | 1.3000e-004 | 1.3000e-004 | | 0.0747 | 0.0747 | 2.2000e-004 | | 0.0794 |
| Unmitigated | 6.7618 | 3.6000e-004 | 0.0364 | 0.0000 | | 1.3000e-004 | 1.3000e-004 | | 1.3000e-004 | 1.3000e-004 | | 0.0747 | 0.0747 | 2.2000e-004 | | 0.0794 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.7581 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 3.6800e-003 | 3.6000e-004 | 0.0364 | 0.0000 | | 1.3000e-004 | 1.3000e-004 | | 1.3000e-004 | 1.3000e-004 | | 0.0747 | 0.0747 | 2.2000e-004 | | 0.0794 |
| **Total** | **6.7618** | **3.6000e-004** | **0.0364** | **0.0000** | | **1.3000e-004** | **1.3000e-004** | | **1.3000e-004** | **1.3000e-004** | | **0.0747** | **0.0747** | **2.2000e-004** | | **0.0794** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Consumer Products | 6.7581 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 3.6800e-003 | 3.6000e-004 | 0.0364 | 0.0000 | | 1.3000e-004 | 1.3000e-004 | | 1.3000e-004 | 1.3000e-004 | | 0.0747 | 0.0747 | 2.2000e-004 | | 0.0794 |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **6.7618** | **3.6000e-004** | **0.0364** | **0.0000** | | **1.3000e-004** | **1.3000e-004** | | **1.3000e-004** | **1.3000e-004** | | **0.0747** | **0.0747** | **2.2000e-004** | | **0.0794** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Vegetation

# Appendix B Cotton Beland Noise Study

COTTON/BELAND/ASSOCIATES, INC.
URBAN AND ENVIRONMENTAL PLANNING CONSULTANTS

# Fax Memorandum and Transmittal

July 2, 1996

Fax (310) 326-5810

To: John Robertson
Chandler's Inert Solid Land Fill
From: P. Patrick Mann, AICP, Principal
Project: 886.00 - Chandler Quarry
Subject: Noise Monitoring
Transmitting: Preliminary Report

The following is my draft report for your review. Following your comments, I will prepare a final report for your use.

747 EAST GREEN STREET, SUITE 400 • PASADENA, CALIFORNIA • 91101-2119
(818) 304-0102 • FAX (818) 304-0402 • e-mail cba@pacbell.net

**Noise Monitoring at Chandler Quarry**

This report summarizes noise monitoring conducted at Chandler Quarry and in surrounding areas on Friday, June 28, 1996.

Noise monitoring was conducted for short periods at a number of sites in the vicinity of the quarry to define neighborhood noise levels and noise levels from quarry operations as measured at neighborhood locations.

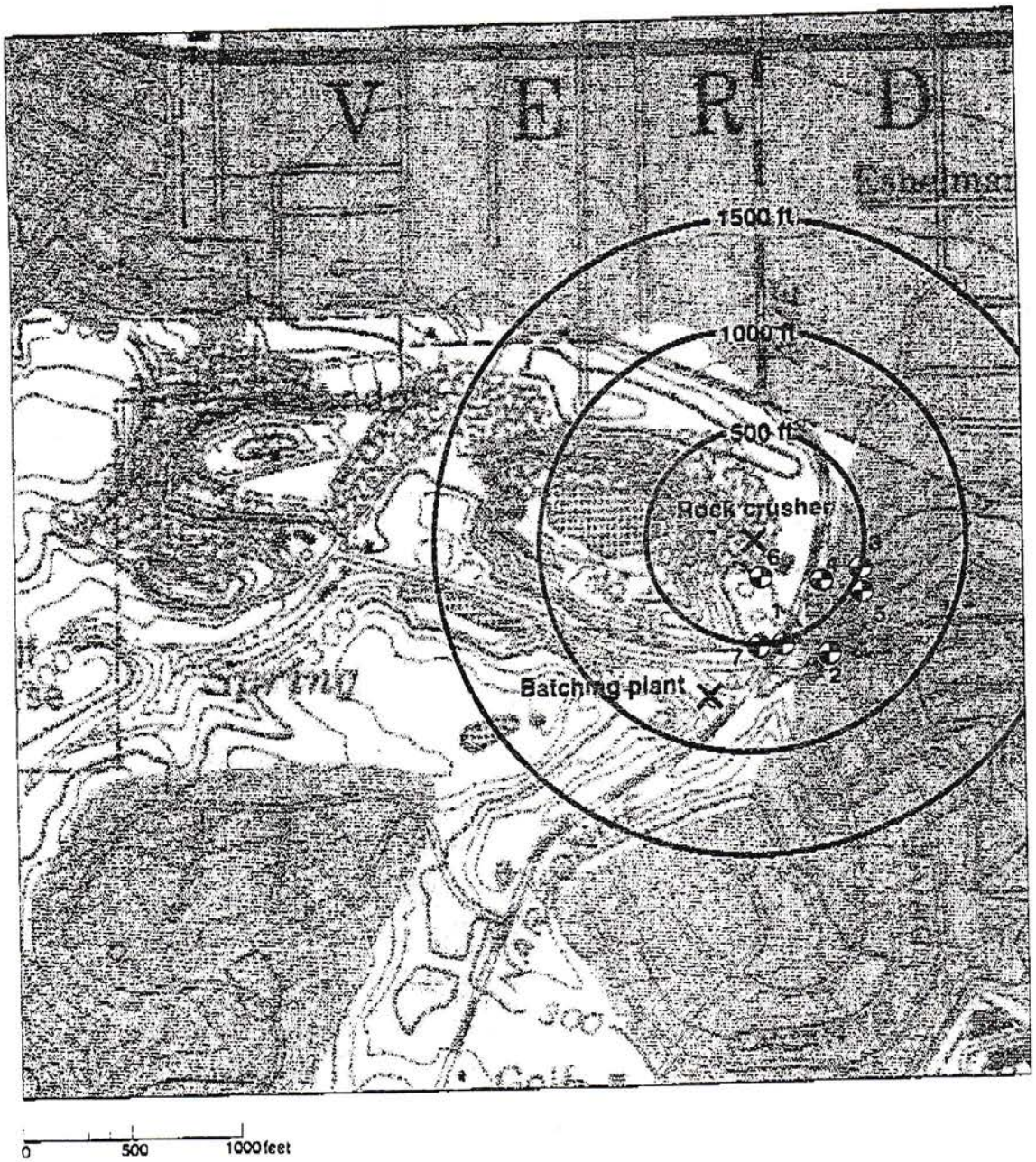
Noise monitoring was conducted using a Brüel & Kjær (B&K) Model 2230 integrating precision sound level meter. The system was calibrated before and after monitoring using a B&K Model 4230 acoustical calibrator. Equipment was rented from AT&T Capital Equipment Corporation, which certifies its calibration.

Measurements were conducted by P. Patrick Mann, Principal, Cotton/Beland/Associates. Mr. Mann is experienced in the operation of sound measuring equipment, analysis of noise data, and enforcement of noise regulations. From 1973 to 1976, he was the City of Inglewood, California's Environmental Standards Manager. In that position, he was responsible for enforcement of that city's noise ordinance and for the operation, programming and data analysis for the City's four-station 24-hour aircraft noise monitoring system and portable aircraft noise monitoring van.

The integrating precision sound level meter records sound energy until reset, and retains the following information: peak sound level, minimum sound level, and equivalent sound level. The instrument display can be selected to show the instantaneous sound pressure level, peak sound level, minimum sound level, Equivalent Sound Level ($L_{eq}$) for the measurement period, or Single Event Level (SEL, or $L_{eq(1\ second)}$).

Monitoring was conducted for short periods of time at each of a number of monitor sites. At the end of each 5- or 10-minute monitoring period, the peak sound level, minimum sound level, and $L_{eq}$ for the period were recorded. During monitoring, the display was set to show the instantaneous A-weighted sound level. The sound level associated with various noise events observed during the monitoring session was recorded on the monitoring session recording form.

The sites at which monitoring was conducted and the location of the noise sources at the Chandler Quarry are shown on Figure 1 on the following page. Summaries of noise measurements are in Table 1 and Table 2 following the figure.




1. Palos Verdes Drive 100 feet south of centerline of Bridlewood Circle.
2. Opposite 3 and 5 Bridlewood Circle.
3. Opposite 11 Bridlewood Circle.
4. Rear yard at 9 Bridlewood Circle.
5. Top of driveway at 8 Bridlewood Circle.
6. Top of interior berm, Chandler Quarry.
7. 25 feet south of gate 2, Chandler Quarry.

**Figure 1. Chandler Quarry Noise Monitor Sites.**

# Table 1
## Summary of Neighborhood Noise Measurements

**Site 1. Palos Verdes Drive East south of Bridlewood Circle**

| Time Period | Noise Level dB(A) Minimum | Maximum | $L_{eq}$ | Comments |
|---|---|---|---|---|
| 07:03 - 07:12 | 46.6 | 86.1 | 70.4 | |
| 07:13 - 07:22 | 46.0 | 85.5 | 69.8 | |
| Total Period | 46.0 | 86.1 | 70.1 | |

**Site 2. East Side of Bridlewood Circle, between #3 and #5**

| Time Period | Noise Level dB(A) Minimum | Maximum | $L_{eq}$ | Comments |
|---|---|---|---|---|
| 07:37 - 07:42 | 42.2 | 55.8 | 47.8 | Stopped for yard maintenance noise |

**Site 3. East Side of Bridlewood Circle, opposite #11**

| Time Period | Noise Level dB(A) Minimum | Maximum | $L_{eq}$ | |
|---|---|---|---|---|
| 07:45 - 07:51 | 43.6 | 62.2 | 51.0 | |
| 07:53 - 08:00 | 43.4 | 71.0 | 53.8 | |
| 08:05 - 08:10 | 44.9 | 65.1 | 51.0 | Reset to clear noise from conversation near microphone. Crusher started immediately after reset. |
| Total Period | 43.4 | 71.0 | 52.3 | |

**Site 4. Rear yard at #9 Bridlewood Circle**

| Time Period | Noise Level dB(A) Minimum | Maximum | $L_{eq}$ | Comments |
|---|---|---|---|---|
| 08:14 - 08:24 | 44.0 | 61.3 | 52.2 | |
| 08:25 - 08:35 | 43.6 | 67.0 | 55.2 | |
| Total Period | 43.6 | 67.0 | 54.0 | |

**Site 5. Driveway at #8 Bridlewood Circle**

| Time Period | Noise Level dB(A) Minimum | Maximum | $L_{eq}$ | Comments |
|---|---|---|---|---|
| 09:25 - 09:35 | 48.4 | 63.8 | 57.1 | Minimums probably from yard maintenance, not from quarry |
| 09:36 - 09:45 | 49.5 | 60.1 | 54.1 | Stopped because of yard maintenance noise at south end of Bridlewood Circle |
| Total Period | 48.4 | 63.8 | 55.9 | |

## Table 2
## Summary of Quarry Noise Measurements

| Site 6. Top of Interior Berm in Chandler Quarry, South of Office | | | | |
|---|---|---|---|---|
| | Noise Level dB(A) | | | |
| Time Period | Minimum | Maximum | $L_{eq}$ | Comments |
| 08:54 - 09:04 | 61.3 | 68.6 | 64.2 | Minimum when no material on conveyors or in crusher, about 1 minute duration |
| 09:04 - 09:09 | 55.0 | 70.8 | 64.4 | Minimum measured behind berm from operations. Stopped when sprinklers came on. |
| Total Period | 55.0 | 70.8 | 64.3 | |

**Site 1. East side of Palos Verdes Drive East, approximately 100 feet south of the centerline of Bridlewood Circle** in the City of Rolling Hills Estates. Microphone approximately 6 feet from edge of pavement in landscaped parkway. Solid wood fence approximately 15 feet behind monitor site.

The batch plant was in operation and loading during the monitoring period at this site, but the crusher was not in operation.

Noise levels at this site are defined almost wholly by traffic. Peak noise levels from cars typically 75-80 dB(A) downhill on the side of the road next to the microphone, 70-75 going up on opposite side of the road. Two trucks from quarry measured going down, 86.1 and 85.3 dB(A) peak noise level.

**Site 2. South End of Bridlewood Circle, opposite #3 and #5.** Microphone on east side of street approximately four feet from curb on pavement.

This location was monitored for a total of approximately 15 minutes, but the total measurements were reset to clear noise from a conversation near the microphone. Totals reflect measurements for only five minutes.

From this location the fence along Palos Verdes Drive, houses on Bridlewood, and distance from the roadway substantially reduce noise from the street. Peak noise levels measured at this site were from traffic on Palos Verdes Drive. A light plane was measured at 53.2 dB(A), mockingbird at 53.6 dB(A) and a truck on Palos Verdes Drive at 47.3 dB(A). The peak noise level resulted from traffic on Palos Verdes Drive or birds in the neighborhood. Quarry noise including truck bells, truck engines, and various motor or compressor noise was audible but no noises from the quarry were observed to affect the noise level. At no time was the noise level over 50 dB(A) when quarry noise was obvious at the monitor site.

**Site 3. East Side of Bridlewood Circle, opposite #11.** Microphone on east side of street approximately four feet from curb on pavement.

This location was monitored for approximately 25 minutes. Meter totals were reset and ignored to clear noise from a conversation near the microphone from 8:01 a.m. to 8:05 a.m.

Minimum noise levels appeared to result from compressor or fan noise well to the north of the site, possibly from commercial buildings near Pacific Coast Highway. Typical peak noise level from noise events measured during the monitor period included 48-49 dB(A) from sprinklers, 52, 55, 59 dB(A) from birds, 61.9, 61.9, 69.4, 65, 60.9, 65.1 dB(A) from cars traveling on Bridlewood Circle, 55.8 dB(A) from the beep from a car alarm being shut off, 51.0, 53.6 from trucks on Palos Verdes Drive or in the quarry, 50.1

from a car on Palos Verdes Drive, 45.0 from a horn at the quarry, 49 from a garage door, 51.2 from a car door slamming, 50.0 from a weed whacker at the south end of Bridlewood Circle.

**Site 4. Rear yard at #9 Bridlewood Circle**, approximately 12 feet west of the residence and 25 feet south of the wall of the adjoining property.

This site was monitored for a total of approximately 20 minutes. Traffic noise from Palos Verdes Drive was much louder at this location than from the Bridlewood Circle.

Peak noise levels from noise events measured included 54.7, 53.8, 51.0, 56.0, 54.0, 57.1, 57.7, 52.8, 54.5, 59.1, 56.4, 56.2 from cars on Palos Verdes Drive; 60.4, 57.7, 55.6, 60.4, 61.6, 62.6, 61.6 from trucks; 54.8, 61.3 from light planes; 54.0, 59.0, 60.3, 57.0 from yard maintenance (mowers, blowers or weed whackers) at nearby front-yard locations. Noise levels from activites at the quarry site could not be identified separately from general community background noise. The lowest noise levels may have been set by a combination of quarry noise with other miscellaneous community noise sources, including traffic noise from Pacific Coast Highway and the compressor or fan noise audible from Bridlewood Circle.

Noise from the crusher, conveyors and other material handling was audible much of the time, and could be clearly identified during periods of low background noise from this location. Occasional bangs and beeping of backing trucks were also audible from the quarry site and could be heard even when cars were passing on Palos Verdes Drive because of the identifiable nature of the noise source.

**Site 5. Driveway at # 8 Bridlewood Circle.** Microphone at west edge of driveway at top of drive, approximately 25 feet south of garage. Microphone elevation approximately 15-20 feet above Bridlewood Circle.

Because the site was higher than the surrounding area, quarry noise was more clearly audible from this location than from the sites at the street on Bridlewood Circle and the rear yard at #9. The conveyors carrying material from the crusher were visible over the quarry berm from this location. Because of the heavy landscaping, it was not clear whether the site had line-of-sight exposure to the crusher.

However, this site is also more exposed to street noise, and yard maintenance noise was constant during the monitoring period. Noise monitoring was conducted for only 10 minutes since the background level was set by yard maintenance equipment in front yards at the south end of Bridlewood Circle and it was not possible to determine noise levels from the quarry even during the quietest periods.

Peak noise levels from noise events measured included 50.9 from birds; 54.0, 54.1 from light planes; 54.8, 62.1 from cars on Bridlewood Circle; 59.8, 52.6 (idle), 51.7 (rear yard), 58-59, 50.5 (rear yard), 56-58 (#11), 55 (#11) from yard maintenance equipment

(mowers, blowers and weed whackers); and 50.0 for one second specifically from clanging noises at the quarry. This was the only neighborhood measurement during which the peak noise level measured was clearly associated with a noise event from the quarry.

**Site 6. Top of berm within Chandler Quarry**, south of office and west of south parking lot. The microphone was in direct line of sight to the rock crusher, but was shielded by the material pile from much of the tractor noise bringing material for loading into the process.

This site was exposed to substantial traffic noise from Palos Verdes Drive, but the primary noise source was the rock crushing and piling operation. Typical noise levels were 61-2 dB(A) when there was no material in the processing line but equipment was running, and 64-66 dB(A) when material was being crushed and conveyors were operating moving substantial amounts of material. Occasional louder events were heard from the crusher or conveyor. Trucks entering the site, including what sounded like an exterior communication radio speaker on one truck, and some noise from the batching plant were occasionally heard. Specific additional events recorded included 67.4 dB(A) and 66.4 from trucks entering the site at Gate 1; and 66.7 when a loader dumped into the crushing process. The minimum noise level measured at the top of the berm was approximately 61 dB(A) when no material was in the crushing process. The low noise level of 55 dB(A) was recorded behind the berm when the equipment was moved as sprinklers were turned on during the second monitoring period.

**Site 7. Chandler Quarry, North of Gate 2**, 25 feet north of roadway.

This site was used for spot measurements of peak noise levels from the batching plant. The batch plant produced continuous noise levels measured at this location of approximately 60 dB(A). Various sqeaks, bangs and thuds produced peak noise levels up to 65 dB(A). One short period of tonal noise, which sounded like a hydraulic pump or lift, was recorded with a peak of 65 dB(A). Trucks passing the monitor site produced peaks to 70 dB(A).

**Conclusions**

Based on the monitoring conducted during the monitoring period, operations at the quarry would not be expected to violate the Rolling Hills Estates noise ordinance, which establishes a maximum continuous noise level at residential properties of 55 dB(A). Based on the noise level measured within your quarry site, estimated to be 150 to 200 feet from the crusher, of 64-66 dB(A), I would expect that the noise level at 400 feet would be approximately 59-61 dB(A) or less, at 800 feet 52-54 dB(A) or less, and beyond 800 feet less than 54 dB(A) for sites with a direct line-of-sight exposure to the crushing operation. For sites substantially shielded by terrain or your internal berm or storage piles, the noise level would be reduced by a minimum of 8 dB from these values.

Observing the distances to residential areas which might have such line-of-sight exposure, homes which overlook the site from Glentree Drive, Via Madonna, Encanto Drive or Aurora Drive would be expected to experience the highest noise levels because they are closest to the site. In no case would I expect noise levels from your operations as measured at such a location to exceed 55dB(A) for more than a few minutes in any hour based on the noise levels observed during the monitoring period.

Although noise levels would not be expected to exceed the limits in the City of Rolling Hills Estates Noise Ordinance, the noise from quarry operations is audible, particularly during periods of low background noise, from nearby locations. In particular, noise from backing trucks, tonal noise from equipment, bangs, squeals and amplified sound (such as from the observed truck communications radio) can be detected, identified and associated with quarry operations.

My recommendations to minimize annoyance from these operations are to maximize the use of the noise abatement practices you appear to be currently following as follows:

1. Arrange operations to minimize backing by all vehicles which use warning bells or buzzers. Based on the observed layout of the site, backing is seldom necessary, but normal operations should be set up so that backing is never normal, and those using the site should be advised to avoid backing whenever possible.

2. Maximize use of and height of internal berms and storage piles to shield operations from surrounding residences whenever possible. Depressing the crusher or surrounding it with storage piles could reduce the noise from crushing operations by up to 3 dB, since it appeared to me that about half of the noise from the crushing and moving operation came from the crusher itself. The noise from conveyors and material falling is not avoidable and cannot all be shielded.

3. Limit hours of operation to periods when neighborhood noise levels are highest.

4. Continue to communicate with neighbors about the nature and frequency of the specific unusual noise conditions you may create so that they are aware of what is going on and what duration they may expect for unusual events. It is my experience that good public relations is worth about 5 decibels of noise abatement.

# Appendix C Noise Calculation Worksheets

Table 1
Noise due to Crushing Equipment

FILE: Rock Crushing Noise

Location: Palm Industrial Project

| Receptor # | | | | | Noise Level (Leq) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2 | 1 | 3 | 4 | 5 | | | |
| | | | | | --Distance to Point of Reception (feet)-- (Property Line to Property Line) | | | | | | | |
| | | | | | 50 | 75 | 95 | 150 | 200 | 450 | 1300 | 600 |
| Noise Source | E.L | R (m) | U.F. | G | 15 | 23 | 29 | 46 | 61 | 137 | 396 | 183 |
| Onsite Construction Noise | 86.0 | 15 | 1 | 0 | 85.86 | 82.3 | 80.3 | 76.3 | 73.8 | 66.8 | 57.6 | 64.3 |
| Wall Attenuation: | | | | | | | | | | 56.78 | 47.56 | 54.28 |
| Crushing Equipment 1 | 66.7 | 45 | 1 | 0 | 76.10 | 72.6 | 70.5 | 66.6 | 64.1 | 57.0 | 47.8 | 54.5 |
| Wall Attenuation: | | | | | | | | | | 47.02 | 37.81 | 44.52 |
| Crushing Equipment 2 | 90.0 | 10 | 1 | 0 | 86.34 | 82.8 | 80.8 | 76.8 | 74.3 | 67.3 | 58.0 | 64.8 |
| Wall Attenuation: | | | | | | | | | | 57.26 | 48.04 | 54.76 |
| Crushing Equipment 3 | 86.0 | 14 | 1 | 0 | 85.26 | 81.7 | 79.7 | 75.7 | 73.2 | 66.2 | 57.0 | 63.7 |
| Wall Attenuation: | | | | | | | | | | 56.18 | 46.96 | 53.68 |

Receptor definitions
1 = Denny's
2 = 5770 Industrial Parkway
3 = 5690 Industrial Parkway
4 = 3071 - 3277 Kendall Drive
5 = Closet Residential (Residents of Rito Ct. NE of the eastern edge of the project)

e.l. + 10log(U.F) - 20log(d/r)-10Glog(d/r)

E.L = Emision level - the noise emission level of that particular piece of equipment at the reference distance.

G = Constant accounting for topography

D = Distance from the receiver to the piece of equipment

U.F. = usage factor (percentage of an hour) = 1

R = reference distance

Crushing equipment 1: Cotton Beland Associates, Inc. (CBA) 1996. *Noise Monitoring Preliminary Report for Chandler Quarry.* Memorandum. July 2, 1996

Crushing equipment 2: Department of Environment Food and Rural Affairs 2008. *Construction Noise Database (Phase 3).* Database of noise emissions from equipment used on construction and open sites. Revised September 2008.

Crushing equipment 3: Ldn Consulting Inc. 2012. *Noise Assessment City of San Marcos*. July 10, 2012.

Table 2

NOISE GENERATION IMPACTS DUE TO CONSTRUCTION WITH ROCK CRUSHING

FILE: Daytime Average Construction Noise.XLS

Location: Palm Industrial Project

| Noise Source | Noise Reference Level (15 meters) | Noise Level (dB Ldn) -- Distance to Point of Reception (feet) -- 50 (15) | 75 (23) | 95 (29) | 150 (46) | 200 (61) | 450 (137) | 1300 (396) | 800 (244) | 1300 (396) | 2000 (610) | 2000 (610) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ave. Const. | 86.0 | 85.9 | 82.3 | 80.3 | 76.3 | 73.8 | 66.8 | 57.6 | 61.8 | | 53.8 | |
| Wall Attenuation: | | 78.9 | | | | | 56.8 | | 51.8 | | | |
| Rock Crusher 3 | 85.3 | 85.1 | 81.6 | 79.5 | 75.6 | 73.1 | 66.0 | 56.8 | 61.0 | | 53.1 | |
| Wall Attenuation: | | | | | | | 56.0 | 46.8 | 51.0 | | 43.1 | |
| Berm Attenuation: | | | | | | | | 33.8 | | | 30.1 | |
| TOTAL DAYTIME NOISE LEVEL AT RECEPTOR: | | 88.5 | 85.0 | 82.9 | 79.0 | 76.5 | 69.4 | 60.2 | 64.4 | | 56.5 | |
| TOTAL ATTENUATED DAYTIME NOISE LEVEL AT RECEPTOR: | | | | | | | 59.4 | 57.6 | 54.4 | | 53.8 | |

| | Distance (ft) | 50 | 75 | 95 | 150 | 200 | 450 | 1300 | 800 |
|---|---|---|---|---|---|---|---|---|---|
| Ave. Const. | 86.0 | 85.9 | 82.3 | 80.3 | 76.3 | 73.8 | 66.8 | 57.6 | 61.8 |
| Wall Attenuation: | | 78.9 | | | | | 56.8 | | 51.8 |
| Rock Crusher 2 | 86.3 | 86.2 | 82.7 | 80.6 | 76.7 | 74.2 | 67.1 | 57.9 | 62.1 |
| Wall Attenuation: | | | | | | | 57.1 | 47.9 | 52.1 |
| Berm Attenuation: | | | | | | | | 34.9 | |
| TOTAL DAYTIME NOISE LEVEL AT RECEPTOR: | | 89.0 | 85.5 | 83.5 | 79.5 | 77.0 | 70.0 | 60.7 | 65.0 |
| TOTAL ATTENUATED DAYTIME NOISE LEVEL AT RECEPTOR: | | | | | | | 60.0 | 57.6 | 55.0 |

| | Distnace (ft) | 50 | 75 | 95 | 150 | 200 | 450 | 1300[a] | 800[b] | 1300[c] | 1300[c] | 800[d] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ave. Const. | 86.0 | 85.9 | 82.3 | 80.3 | 76.3 | 73.8 | 66.8 | 66.8 | 61.8 | 61.8 | 53.8 | 61.8 |
| Wall Attenuation: | | | | | | | 56.8 | 56.8 | 51.8 | | | 51.8 |
| Rock Crusher 2 | 86.3 | 86.2 | 82.7 | 80.6 | 76.7 | 74.2 | 67.1 | 57.9 | 62.1 | 57.9 | 57.9 | 62.1 |
| Wall Attenuation: | | | | | | | 57.1 | 47.9 | 52.1 | 47.9 | 47.9 | 52.1 |
| Berm Attenuation: | | | | | | | | 34.9 | | | 34.9 | |
| TOTAL DAYTIME NOISE LEVEL AT RECEPTOR: | | 89.0 | 85.5 | 83.5 | 79.5 | 77.0 | 70.0 | 67.3 | 65.0 | 63.3 | 59.3 | 65.0 |
| TOTAL ATTENUATED DAYTIME NOISE LEVEL AT RECEPTOR: | | | | | | | 60.0 | 56.8 | 55.0 | 62.0 | 53.9 | 55.0 |

a) Construction equipment at 450', rock crushing equipment >1300 feet behind berm.
b) Construction equipment and rock crushing equipment ~800 feet from 2nd row of houses in neighborhood.
c) Construction equipment is ~ 2,000 feet (top of hill with no shielding from wall) and rock crushing equipment is >1300 feet behind berm.
d) Construction equipment is ~ 2,000 feet (top of hill with no shielding from wall) and rock crushing equipment is >800 feet no wall.