PLANNING COMMISSION AGENDA REPORT

MEETING DATE: JANUARY 14, 2019 **ITEM NUMBER:** PH-1

SUBJECT: **PLANNING APPLICATION 18-28, A MASTER PLAN FOR THE DEVELOPMENT OF THE ORANGE COUNTY MUSEUM OF ART AT 655 TOWN CENTER DRIVE**

DATE: **DECEMBER 21, 2018**

FROM: **PLANNING DIVISION/DEVELOPMENT SERVICES DEPARTMENT**

PRESENTATION BY: **DANIEL INLOES, ECONOMIC DEVELOPMENT ADMINISTRATOR**

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DESCRIPTION

Planning Application 18-28 is a request for a Master Plan for the construction of the Orange County Museum of Art (OCMA). The project-specific master plan proposes the construction of a 53,875-square-foot structure and a future 10,000-square-foot expansion. The OCMA building will include a permanent and special exhibition space, an exhibition corridor with storefront glass facing the pedestrian walkway along Avenue of the Arts, a landscaped second floor outdoor terrace, a café, a museum shop, and the associated administration area. The project will leverage the existing parking structures onsite for employee and patron parking and is proposing a bus turnout along the Avenue of the Arts to support school bus traffic.

APPLICANT

The applicant is Aaron Ragan from Morphosis, representing the property owner, the Orange County Museum of Art.

RECOMMENDATION

Staff recommends that the Planning Commission adopt a Resolution to:

1. Approve an Addendum to the previously-approved Final Program Environmental Impact Report (PEIR) No. 1047; and
2. Approve the Master Plan, subject to conditions of approval.

PLANNING APPLICATION SUMMARY

Location: 655 Town Center Drive (3333 Avenue of the Arts)

Application: PA-18-28

Request: Master Plan for the Orange County Museum of Art

SUBJECT PROPERTY:

Zone: TC – Town Center
General Plan: Cultural Arts Center
Lot Dimensions: Irregular
Lot Area: 1.69 Acres (73,742 SF)
Existing Development: Vacant lot

SURROUNDING PROPERTY:

North: Julianne & George Argyros Plaza & Segerstrom Hall
South: Plaza Tower
East: Avenue of the Arts Hotel
West: Renee and Henry Segerstrom Concert Hall

DEVELOPMENT STANDARD COMPARISON

Development Standard	Required/Allowed	Proposed/Provided
Lot Size:		
Lot Width	NA	Varies
Lot Area	NA	1.69 Acres (73,742 SF)
FAR (Floor Area Ratio)	1.67 Maximum[1] 140,000 SF allocated for the project	1.42[2] 63,875 SF
Maximum Number of Stories/Building Height	315 FT	75 FT
Building Footprint	NA	36,127 SF
Open Space	NA	35,780 SF
Circulation (Enclosed Loading Dock driveway)		1,835 SF
Setbacks (Buildings)		
Front (Avenue of the Arts)	20 FT	20 FT
Side Left (Toward Plaza Tower) Right (Toward Plaza)	NA	 28 FT 88 FT
Rear (Toward Segerstrom Concert Hall)	NA	3 FT
Setbacks (Landscaping)		
Front (Avenue of the Arts)	20 FT	20 FT
Parking		
Number of Spaces	40 spaces[3]	40 spaces (provided within existing onsite parking structures)
Total Number of Spaces in Town Center Master Plan Area	7,267 spaces[4]	7,267 spaces

NA = Not Applicable or No Requirement (Based on North Costa Mesa Specific Plan)

(1) This is an area-based floor area ratio established for Sub-area 2 of Area 4 – South Coast Plaza Town Center. Sub-area 2 is an 11.21-acre area comprised of several different parcels. Based on a 1.67 maximum FAR, 815,474 square feet of building floor area is allowed in Subarea 2. Of that total, 140,000 square feet is the project-specific square footage allocated to the museum project within the North Costa Mesa Specific Plan (NCMSP).

(2) Based on current building square footage records for Segerstrom Hall, Renee and Henry Segerstrom Concert Hall, South Coast Repertory, and the proposed project, 694,015 square feet is built/proposed within the 11.21-acre area identified as Sub-area 2 in the NCMSP, resulting in a 1.42 FAR. (3) Number of required spaces is based on a parking study prepared for the site (see staff report discussion). (4) The number of spaces onsite has been established in other entitlements onsite and therefore the number provided is the number required regardless of demand.	
CEQA Status	Addendum to Final Program Environmental Impact Report (PEIR) No. 1047 (State Clearinghouse No. 200041100)
Final Action	Planning Commission

BACKGROUND

Project Site/Environs

The site is within the South Coast Plaza Town Center and Theater Arts District. This area is bounded by Sunflower Avenue to the north, Avenue of the Arts to the east, the San Diego (I-405) Freeway to the south, and Bristol Street to the west. It includes a mix of uses which include; performing arts venues, a hotel, high-rise office, restaurants, and parking structures. The area is governed by the South Coast Plaza Town Center Preliminary Master Plan and the Theater Arts District Plan, both of which were previously incorporated into the adopted North Costa Mesa Specific Plan (SP-00-01) and anticipated in a General Plan Amendment (GP-00-02).

The preliminary master plan development guidelines for the project site can be found within the North Costa Mesa Specific Plan, Area 4 – South Coast Plaza Town Center, Sub-Area 2, Site C. Site C is identified as Art Museum/Academy with unbuilt entitlements for 140,000 square feet of building area, 80 high-rise residential units within a mixed-use development, and a maximum height of 315 feet. The North Costa Mesa Specific Plan requires a final master plan to be submitted once a detailed development of the site is proposed to evaluate its conformance with the North Costa Mesa Specific Plan and review the associated parking study. The Renee and Henry Segerstrom Concert Hall went through the same final master plan process when it was entitled in 2003 (PA-03-01).

The vacant site for the Orange County Museum of Art is bounded by Avenue of the Arts to the east; a fire lane and Plaza Tower to the south; a pedestrian path and South Coast Repertory to the west; and the Julianne and George Argyros Plaza and Segerstrom Hall to the north.

The project site is a single parcel subdivided in 2001 from a larger lot under Parcel Map 99-112. The parcel layout corresponds to the layout identified within the Theater Arts District Plan. The site is currently a well-maintained vacant lot that is used for parking school buses for students attending programs at the performing art venues and occasional special events.

ANALYSIS

Project Description

The proposed Master Plan includes a 63,875-square-foot art museum, comprised of 53,875 square feet planned for Phase 1 and 10,000 square feet for a future Phase 2 expansion. The development also features a 27,087-square-foot second-floor outdoor terrace; this is divided into 15,821square feet of hardscape and 11,266 square feet of passive landscaping with turf, shrubs, and trees. While the hardscape of the outdoor terrace is evaluated as outdoor activity space and reviewed for parking demand, it is not included in the floor area ratio since it is not an enclosed space. The museum's maximum height will be 74.5 feet which is approximately 38 feet shorter than the adjacent buildings and 240 feet shorter than the maximum height allowed by the development standards for the site. The front entrance faces the Julianne and George Argyros Plaza and a gallery walkway with storefront glass exhibiting several of the museum's art pieces will face the pedestrian walkway along Avenue of the Arts. The design minimizes the building's "back of house" to 44 linear feet along Avenue of the Arts where the entrance to the interior loading dock is located. The building will include a lobby, museum store, museum café, education spaces, event spaces, a public gallery space, offices, back of house, and service utilities. Table 1 below shows the breakdown of the square footage by use. The proposed plans include providing a café that sells food and non-alcoholic beverages.

Table 1 – Programmatic Uses

Building Areas	Ground Floor	Mezzanine	Level 02	Terrace	Roof	Total By Use
Lobby/Exhibition/Event	29,803	6,104	7,471	15,821	0	59,199
Office	0	2,705	0	0	0	2,705
Back of House	3,760	0	0	0	0	3,760
Utility Rooms	2,564	301	344	0	823	4,032
Total Square Foot by Location	32,367	9,110	7,815	15,821	823	

The OCMA proposes to use this space to exhibit and collect modern and contemporary art. These exhibitions will span the major developments of modern art and contemporary art as well as host traveling exhibitions from around the world. The museum will provide educational programs for K-12 and college students, provide exhibition openings, free family days, and offer the venue as a rental space for events.

Operation and Maintenance of the Museum

The OCMA will provide a collection of uses that include an art museum, a café, a shop, and an event space. Since there are residentially-zoned properties within 200 feet of the project site (580 Anton), staff has included conditions that require all lighting to be shielded or directed away from residential uses, amplified public communication systems shall not be audible in the adjacent residential areas, the trash facilities shall remain within the enclosed loading area to minimize potential noise and odor impacts, and no truck deliveries shall occur anytime between 8:00 PM and 7:00 AM.

The OCMA currently proposes to operate the exhibition hall, shop, and café from the hours of 11 AM until 8 PM Tuesday through Sunday. This will allow for school tours in the morning and allow for patrons to attend prior to evening performances at the surrounding performing arts venues. These hours are within the permitted hours of operation for developments where food and beverage are served that are within 200 feet of residentially-zoned property (Costa Mesa Municipal Code (CMMC) Section 13-49) and are therefore consistent with City code requirements.

In addition to the exhibition, shop, and café hours, the applicant is also requesting more flexible hours for special events and rental events onsite. Staff proposes extending the hours for these events from 6:00 AM until Midnight. 6:00 AM is the allowable opening time for a restaurant within 200 feet of a residentially-zoned property and midnight is the latest time another restaurant is open within the Theater Arts District. These more flexible hours allow for the variety of uses the OCMA is requesting while still being consistent with our code and the character of the Theater Arts District. Based on recommended conditions of approval discussed below the additional flexibility on the time shall have mitigated impacts to overlap between uses within the OCMA and between the OCMA and other venues.

Staff has included conditions of approval to ensure these events do not cause unnecessary impacts to the residents and remain an ancillary and infrequent use of the site as described in the parking study. First, is a condition (Condition of Approval (COA) No. 7) to limit the number of events to 30 rental events and four exhibition openings a year. This condition is consistent with the parking study and the frequency of events held at the museum's previous location. The condition will allow for the museum to request additional events subject to approval by the Director of Development Services. A second condition, (COA No. 8), would ensure that scheduled start times of events are not to occur during typical primary weekday or weekend show times at the other performing art venues. Segerstrom Hall has its primary show times at 1:00 PM, 2:00 PM and 7:30 PM, South Coast Repertory at 2:00 PM and 7:45, and the Segerstrom Concert Hall at 8:00 PM. Restricting the art museum to starting events either 15 minutes before or 15 minutes after these start times is consisted with how this area currently is managed and will assist in safe circulation on the site. A third condition, (COA No. 9), would require the landscaped area on the terrace to remain as a passive landscape space and not be used for events. The landscaped area on the second floor terrace is contributing to the aesthetic quality of this building from the high-rise buildings within the surrounding buildings, keeping this space clear will ensure a consistently pleasant view as the programmatic use changes on the hardscape. It also provides greater distance and a sound buffer for the residents from the outdoor activity space. A fourth condition, (COA No. 10), would prohibit outdoor activity areas to be open past 11:00 PM. This includes the second floor outdoor terrace and the outdoor seating area for the café. While events may occur onsite until midnight, as staff proposes, the closure of the second floor outdoor terrace will ensure that the additional hours will not create a noise impact to the neighbors and keep the art museum in tune with the character of the Theater Arts District which has no outdoor activity space within 200 feet of residential uses that is open after 11:00 PM. The typical museum hours will not be affected by this condition. However, this condition will ensure that any events hosted onsite will not have significant impacts to the residential neighbors less than 200 feet away.

The proposed project is maintaining all existing fire lanes and turnaround locations so the fire department may serve the site in case of an emergency. A fire lane is on the south end of the property between Plaza Tower and the new OCMA building. The existing fire lane consists of Grasscrete and asphalt and the applicant is proposing to upgrade this fire lane with pervious pavers to ensure water filtration and provide a more aesthetically attractive pedestrian path that is consistent with the Julianne and George Argyros Plaza hardscape. The fire truck turnaround and fire lane through the Julianne and George Argyros Plaza will also remain. This will provide access to both the front and back part of this building as well as access to neighboring buildings in the Town Center area.

On-Street Parking and Bus Staging on Avenue of the Arts

OCMA is proposing to add a bus turn-out/drop-off location along Avenue of the Arts. This is necessary to serve school buses that will be coming to the site to serve the K-12 school program and ensure buses park outside of the regular travel lanes during pick-up and drop-off times. A public easement is to be placed on the bus turn-out and an ADA compliant pedestrian path of travel along the property is to be provided, as conditioned by Public Services. Since there is no on-street parking on Avenue of the Arts along the frontage of the proposed OCMA development and the site has requested to be addressed off of Avenue of the Arts and to diminish the potential of illegal on-street parking, overcrowding in the bus drop-off area, or confused drivers arriving at the museum, the museum will develop a circulation plan for its site to ensure that potential patrons are informed of the location of onsite parking areas and can safely and legally navigate to the site. This plan shall also establish guidelines for the efficient use of the bus drop-off area including that school buses shall have priority use of the bus turn-out area but that afterhours this area may be used as a drop-off location for rideshare services. This is a condition of approval (COA No.11) and will be reviewed and approved by Planning and Public Services prior to certificate of occupancy.

Site Access and Parking

The OCMA project site abuts Avenue of the Arts but only provides direct vehicular access onsite to service and delivery vehicles using the interior loading dock at the southeast corner. School buses will be using the bus turn-out on Avenue of the Arts or the roundabout staging area on Town Center Drive. Pedestrians and bicycle traffic will have access to the site from the public sidewalk or through the pedestrian linkages throughout the Theater Arts District. Guests arriving by car must park their vehicles in one of the parking structures onsite. To further encourage bicycling, the museum has been conditioned to provide a bike rack onsite.

According to CMMC Section 13-90, if the parking requirement for a particular use is not specified within Table 13-89, the parking ratio shall be determined by the planning staff; by either determining the most comparable use specified in the code or by other appropriate source. Since there is no use within the Table 13-89 that could be deemed comparable to an art museum, a parking study was provided by the applicant's traffic and parking consultant (LLG). A third-party consultant retained by the City (LSA) reviewed the study

along with City staff and concurred with the results of LLG's evaluation. Both the LLG parking study and LSA's evaluation are provided as appendices to the staff report.

The study produced by LLG based its parking demand estimates for the various proposed uses on actual counts from the previous OCMA site in Newport Beach and the results from a collection of museums of similar size surveyed in 2015 for the Statistical Survey of Annual Visitation from the Association of Art Museum Directors (AAMD). Based on this information, LLG found the typical parking demand for this use during normal operating hours in a similarly-sized space is 40 spaces. While this is typical parking demand, there are some other uses of the site which would likely require a considerably higher parking demand such as; grand opening of exhibits, museum free days, or rental events. The estimates provided in the parking study were provided by the applicant and its experience at its existing location. These uses will be conditioned to ensure that their impact to the Theater Arts District parking supply is mitigated by limiting the number of special events and scheduling them off-peak hours or existing primary show-times (COA Nos. 7, 8, 12). A majority of these conditions have been discussed in the operations section of the analysis but additional conditions that speak directly to managing parking supply are discussed below.

The parking for the museum and the Theater Arts District in general is provided as an area-wide shared parking solution drawing from several parking structures located throughout the District. The shared parking analysis methodology, ratios, and demand distribution for each use has been established since the shared parking was approved on June 25, 2001 to determine the long-term parking needs in all of Town Center. The parking study assumes full tenant occupancy of all existing buildings and presumes evening and weekend shows at the Segerstrom Center for the Arts since there are only a handful of weekday matinee shows in a given year. The total number of parking spaces provided throughout the site is 7,267 spaces located in four parking structures and several surface parking lots. This includes 4,363 parking spaces north of Anton Boulevard within the same super block as the art museum's project site. The adopted shared parking study for the Theater Arts District was used for the Parking Study evaluation completed by LLG and shows that there is a surplus of 644 parking spaces during the highest peak in parking demand. This suggests that the Theater Arts District has sufficient parking for the proposed use as an art museum with occasional events. In Table 2 you will see the estimated parking demand for the various uses of the space.

Table 2 – Types of Uses on the Site

Type of Use	Parking Demand
Art Museum	40
Grand Opening of Exhibits	300
Museum Free Days	122
Rental Events	200

Since there is no direct comparison or ratio in the CMMC to determine parking requirements for this site, staff relied on the parking study, the peer review, and considered heavily the existing large surplus of parking spaces onsite. Staff concluded that given the 7,267 parking spaces currently provided within the Theater Arts District and the 644 space surplus identified by the parking study, there is adequate parking to serve the normal operations and events associated with the museum. To ensure that this use does not cause parking issues, staff has included conditions to help control demand and track visitation for the site. First,

per COA No. 15, the museum will ensure that special or rental events will not occur during the same time as museum free-days when the free day is on a weekday. Second, per COA No. 12, events that will have more than 100 people in attendance shall be limited to weekdays after 5:00 PM (after peak museum hours) and weekends. Such concerns do not exist on weekday evenings and weekends because a majority of the high-rise office buildings will be at minimal staff at these times, thereby freeing up a substantial amount of shared parking spaces. The parking study from LLG estimates that there will be over 3,000 parking space surplus during typical operations after 5:00 PM on weekdays and throughout the day on weekends. Third, per COA No. 19, prior to the issuance of building permits the Museum shall provide a template for an annual visitation and use summary to Planning Division for review and approval. This summary shall be provided each year for the first three years to obtain a clear understanding of the museum's circulation and parking demand.

Outdoor Activity Space

The South Coast Town Center Master Plan and Theater Arts District Plan identify outdoor activity space throughout the Town Center area. The proposed project identifies specific outdoor activity spaces for this project site. First, there is the stair structure to the north of the building that orients concrete stadium seating toward the Julianne and George Argyros Plaza. This passive seating area will be open to all and connects the new project with the Julianne and George Argyros Plaza which includes an outdoor stage. Second, the museum proposes to have folding doors along the front façade that would allow for visitors to buy food and beverages at the café and sit outside between the stair structure and the café. Since there is limited space within this area the applicant is proposing 3 tables and six chairs. This furniture is not shown in the site plan so the project is conditioned to revise the site plan to show where the staging of tables and chairs are going to be located(COA No. 17). This will be reviewed by planning to ensure that the description matches the design of the outdoor dining area. Since this café is ancillary to the primary use and will most likely be patronized by people attending the museum, the performance venues, or working in the office high rises, the additional demand on parking was considered negligible. This is the same treatment provided to the Julianne and George Argyros Plaza bistro and its associated outdoor seating. Third, as identified above the project proposes a second-floor outdoor terrace over the majority of the building. This terrace includes 11,266 square feet of passive landscaping, 15,821 of flat plaza like space that may be used for a special exhibit or an event, and lastly a collection of concrete steps which are oriented toward the plaza and provide outdoor seating for museum patrons and pedestrian access from the second floor terrace to the mezzanine.

Building Design

The OCMA building is proposed to be a two-story structure oriented towards the Julianne and George Argyros Plaza. Its asymmetric design allows for assimilation into the space. The higher second story to the east matches the elevation of the South Coast Repertory while its lower elevation to the west diminishes the pressure the structure applies to the public space. Its unique curve along the front façade aligns and extends the curvilinear façade of the Concert Hall while leveraging its own angles and identity. The glass along the west and

north elevation opens the interior design to the exterior which is a common theme with both the Segerstrom Halls Firebird art piece, which is both inside and outside of the building, and the Concert Halls spiral lighting, which is equally viewed from the outside of the building and the inside due to the wall of glass. This theme is reflected in the OCMA building by placing a gallery corridor with storefront glass along Avenue of the Arts that will make some of the art pieces viewable from the public pedestrian walkway. The building also embraces the district's common open space or plaza theme be proposing a large second floor terrace which has a significant amount of passive landscaping but also a large open hardscape which allows for a flexible plaza-type space. This makes this building not only aesthetically pleasing to view from the ground but also from the several high rises which are in the district. Lastly, this building engages the existing Julianne and George Argyros Plaza not only by facing it but also by orienting stairs that descend from the second floor to the mezzanine toward the plaza. The project is designed as a unique, artistic and harmoniously designed structure and welcome space consistent with the intent of the Theater Arts District and North Costa Mesa Specific Plan.

Landscaping

The primary landscaping requirement for this project is the 20-foot landscape setback required along Avenue of the Arts. The applicant proposes a strip of landscaping between two pedestrian walkways; one abutting the street that is within a sidewalk easement required by Public Services and the other along the building to allow members of the public to view the art pieces in the window gallery. While the Code allows for pedestrian walkways within the landscape setback, this walkway is wide and results in a majority of the setback between the building and the street being comprised of hardscape. For this reason, staff has conditioned this project to widen the strip of landscaping to increase the proportion of landscaping along Avenue of the Arts and be more in character for the surrounding development (COA No. 13). The condition requires the applicant to widen the landscaping strip by an additional 3 feet; which would result in the landscape setback area being comprised of a majority of softscape and still maintain a seven-foot-wide walkway along the building.

The overall landscaping plan for the site is comprehensive with landscaping along all pedestrian walkways and on all four sides of the building. There are 5,065 square feet of landscaping around the building and 11,266 square feet of landscaping on the second floor terrace. Existing trees will be maintained or replaced one-for-one and 26 trees will be planted on the second floor terrace; 16 will be highly visible from the street. The proposed landscape plan also includes several green walls with a cable system and Madagascar jasmine growing from the ground, as well, to add to the vertical verdant space.

GENERAL PLAN AND ZONING CODE CONFORMANCE

Conformance with the City of Costa Mesa General Plan

The Costa Mesa General Plan establishes the long-range planning and policy direction that guides change and preserves the qualities that define the community. The 2015-2035 General Plan sets forth the vision for Costa Mesa for the next two decades. This vision

focuses on protecting and enhancing Costa Mesa's diverse residential neighborhoods, accommodating an array of businesses that both serve local needs and attract regional and international spending, and providing cultural, educational, social, and recreational amenities that contribute to the quality of life in the community. Over the long term, General Plan implementation will ensure that development decisions and improvements to public and private infrastructure are consistent with the goals, objectives, and policies contained in this Plan.

Art Museums are a permitted use in the Town Center District (TC) and are consistent with the corresponding Cultural Arts Center General Plan Land Use Designation.

The following analysis evaluates the proposed project's consistency with specific policies and objectives of the 2015-2035 General Plan listed below.

- **Policy LU-3.5:** Provide opportunities for the development of well-planned and designed projects which, through vertical or horizontal integration, provide for the development of compatible residential, commercial, industrial, institutional, or public uses within a single project or neighborhood.

- **Policy LU-3.8:** Ensure that new development reflects existing design standards, qualities, and features that are in context with nearby development and surrounding residential neighborhoods.

- **Policy LU-6.15:** Promote unique and specialized commercial and industrial districts within the City which allow for incubation of new or growing businesses and industries.

- **Policy LU-6.17:** Engage in activities that promote Costa Mesa as a great place to live, work, and develop a business.

- **Policy LU-10.7:** Maintain and enhance the City's status and image as a centrally located destination and cultural center in Orange County.

- **Objective CD-2A:** Encourage future development and redevelopment to reinforce district scale, identity, and urban form.

- **Policy CD-2.2:** Support and seek land uses and development that correspond or enrich our existing districts.

- **Objective CD-8A**: Encourage a high level of architectural and site design quality.

Consistency

The proposed project would enhance the existing Theater Arts District by the addition of an art venue. The character of the surrounding area is defined by the arts with the Segerstrom Hall and Judy Morr theater to the north, South Coast Repertory, Renee and Henry Segerstrom Concert Hall, and Samueli Theater to the west. The OCMA would contribute to an established cluster of creative venues and develop positive synergies. The General Plan Land Use Element recognizes this area as a suitable location for an art museum when it

states, "that the Cultural Arts Center designation allows intensely developed mixed commercial and cultural uses within a limited area." It goes on to list an Art Museum as one of the intended uses within this area (LU-45).

This project's site planning supports the existing development in the area and adds to the Theater Arts District. The building has 360-degree, high-quality design and roof coverings which screen the roof equipment from view from the surrounding high rises. The building is positioned on the site to compliment the Concert Hall's façade and the elevations of the Concert Hall and the Serra Sculpture. The building's front entrance is oriented toward the Julianne and George Argyros Art Plaza and provides a stepped structure to contribute to this flexible outdoor venue space. The building also provides a gallery corridor that allows views from the sidewalk along Avenue of the Arts.

Therefore, the project would not conflict with any applicable land use plan, policy, or regulation (including but not limited to the General Plan or zoning regulations).

Conformance with the Zoning Code

According to the City's zoning map, the project site is located in the Town Center -TC zoning district. Zoning and development standards for the TC district are incorporated into Chapter 13-20 (Zoning Districts) of the City's Zoning Code and are further elaborated upon in the North Costa Mesa Specific Plan (NCMSP). The TC zoning district is intended to allow intensely developed mixed commercial and residential uses within a very limited geographical area. Specifically, the project complies with Zoning Code provisions for allowable Floor Area Ratio, parking, and building setbacks. It is built within the maximum allowed square footage, trip budget, and height maximums specified in the NCMSP. New landscaping treatments along Avenue of the Arts, will provide a visually attractive view from the streets, and new trees and hedges are proposed to provide verdant space. Therefore, with the approval of the Master Plan, the project would not conflict with the Zoning Code.

JUSTIFICATIONS FOR APPROVAL

Pursuant to Title 13, Section 13-29(g)(5), Master Plan Findings, of the Municipal Code, the Planning Commission shall find that the evidence presented in the administrative record substantially meets specified findings. Staff recommends approval of the proposed project, based on the following assessment of facts and findings which are also reflected in the draft Resolution.

Master Plan Findings

The Master Plan meets the broader goals of the General Plan and the Zoning Code by exhibiting excellence in design, site planning, integration of uses and structures, and the protection of the integrity of neighboring development. As noted earlier in this report, the project, as conditioned, would meet the purpose and intent of the Theater Arts District, the stated policies of the General Plan and the Zoning Code. The project would allow for the development of a vacant lot that is surrounded by urban development. The proposed

project would enhance the visual appearance of the property from the public streets and provide the type and mix of uses consistent with the General Plan, Zoning, and Theater Arts District plan.

PUBLIC NOTICE

Pursuant to Title 13, Section 13-29(d), of the Costa Mesa Municipal Code, three types of public notification were completed no less than 10 days prior to the date of the January 14, 2018 public hearing:

1. Mailed notice. A public notice was mailed to all property owners within a 500-foot radius of the project site. The required notice radius is measured from the external boundaries of the property. (See attached Notification Radius Map.)
2. On-site posting. A public notice was posted on each street frontage of the project site.
3. Newspaper publication. A public notice was published once in the Daily Pilot newspaper.

ENVIRONMENTAL DETERMINATION

Development on the project site was previously analyzed under Final Program Environmental Impact Report (PEIR) No. 1047 (State Clearinghouse No. 200041100) for the South Coast Plaza Town Center Project. The PEIR concluded that significant environmental impacts would result from the previously-approved project, but were mitigated to less than significant levels except in the areas of Transportation and Circulation, Air Quality, Population, Employment and Housing. Findings and a Statement of Overriding Considerations were adopted at that time. The proposed museum is a smaller less intense development than was originally analyzed. Therefore, there are no changes to the conclusions of the previously-approved PEIR. Per CEQA Guidelines Section 15162, an addendum to the previously-approved PEIR has been prepared and will be provided to the Planning Commission for consideration. A copy of the Addendum is included with this report under separate cover. The PEIR and the Addendum are posted online at:

https://www.costamesaca.gov/city-hall/city-departments/development-services/planning/environmental-notices-and-reports

Findings of the Addendum

Based on information and analyses in the Addendum to the SCPTC Program EIR (Addendum) and pursuant to Section 15162 of the State CEQA Guidelines, the City has determined the following:

1. There are no substantial changes to the project that would require major revisions of the SCPTC Program EIR due to new significant environmental effects or a substantial increase in severity of impacts identified in the EIR.

2. Substantial changes have not occurred in the circumstances under which the project is being undertaken that will require major revisions to the SCPTC Program EIR to disclose new significant environmental effects or that would result in a substantial increase in severity of impacts identified in the SCPTC Program EIR; and
3. There is no new information of substantial importance which was not known at the time the SCPTC Program EIR was certified, indicating any of the following:
   a. The project will have one or more new significant effects not discussed in the certified SCPTC Program EIR;
   b. There are impacts determined to be significant in the SCPTC Program EIR that would be substantially more severe;
   c. There are additional mitigation measures or alternatives to the project that would substantially reduce one or more significant effects identified in the SCPTC Program EIR; and
   d. There are additional mitigation measures or alternatives rejected by the project proponent that are considerably different from those analyzed in the SCPTC Program EIR that would substantially reduce a significant impact identified in that EIR.

When no substantial changes, new significant impacts, or new mitigation measures are identified, an Addendum to the previously-approved Program EIR is the appropriate CEQA compliance document. The Planning Commission must review and consider the information in the Addendum. Adoption of the addendum is included in the attached Resolution for approval.

LEGAL REVIEW

The draft resolutions have been reviewed and approved as to form by the City Attorney's Office.

ALTERNATIVES

1. *Approve the project with modifications*. The Planning Commission may suggest specific changes that are necessary to alleviate concerns. If any of the additional requested changes are substantial, the item should be continued to a future meeting to allow a redesign or additional analysis. In the event of significant modifications to the proposal, staff will return with a revised resolution incorporating new findings and/or conditions.

2. *Deny the project*. If the Planning Commission believes that there are insufficient facts to support the findings for approval, the Planning Commission must deny the application, provide facts in support of denial, and direct staff to return to the Planning Commission at its next meeting with a Resolution for denial to be placed on the Commission's consent calendar. If the project were denied, the applicant could not submit substantially the same type of application for at least six months.

CONCLUSION

The Master Plan reflects a quality project that is consistent with the intent of the Zoning Code and General Plan. The addendum to the previously approved Program EIR shows the same or reduced environmental impacts compared to the previously approved preliminary master plan for the site. Staff recommends approval of the Master Plan for the Orange County Museum of Art.

DANIEL INLOES, AICP
Economic Development Administrator

BARRY CURTIS, AICP
Director of Economic and Development Services

Attachments:
1. Vicinity, Zoning, and Notification Radius Map
2. Site Photos
3. Applicant's Project Description/Executive Summary
4. Draft Planning Commission Resolution
5. Parking Study prepared by LLG
6. Peer Review of Parking Study prepared by LSA
7. Conceptual Plans
8. Addendum to SCPTC Program EIR (Under separate cover)

Distribution:
Director of Economic and Development Services
Assistant Director of Development Services
Deputy City Attorney
Director of Public Services
City Engineer
Transportation Services Manager
Fire Protection Analyst
File

Applicant's Representative:
Orange County Museum of Art
c/o Todd Smith
South Coast Plaza Village
1661 W. Sunflower Ave.
Santa Ana, CA 92704

Architect:
Morphosis
c/o Aaron Ragan
3440 Wesley Street
Culver City, CA 90232

CEQA
Consultant: LSA
c/o Ryan Bensley
20 Executive Part, Suite 200
Irvine, CA 92614

ATTACHMENT 1

Vicinity of 655 Town Center Drive (OCMA Site)

Legend

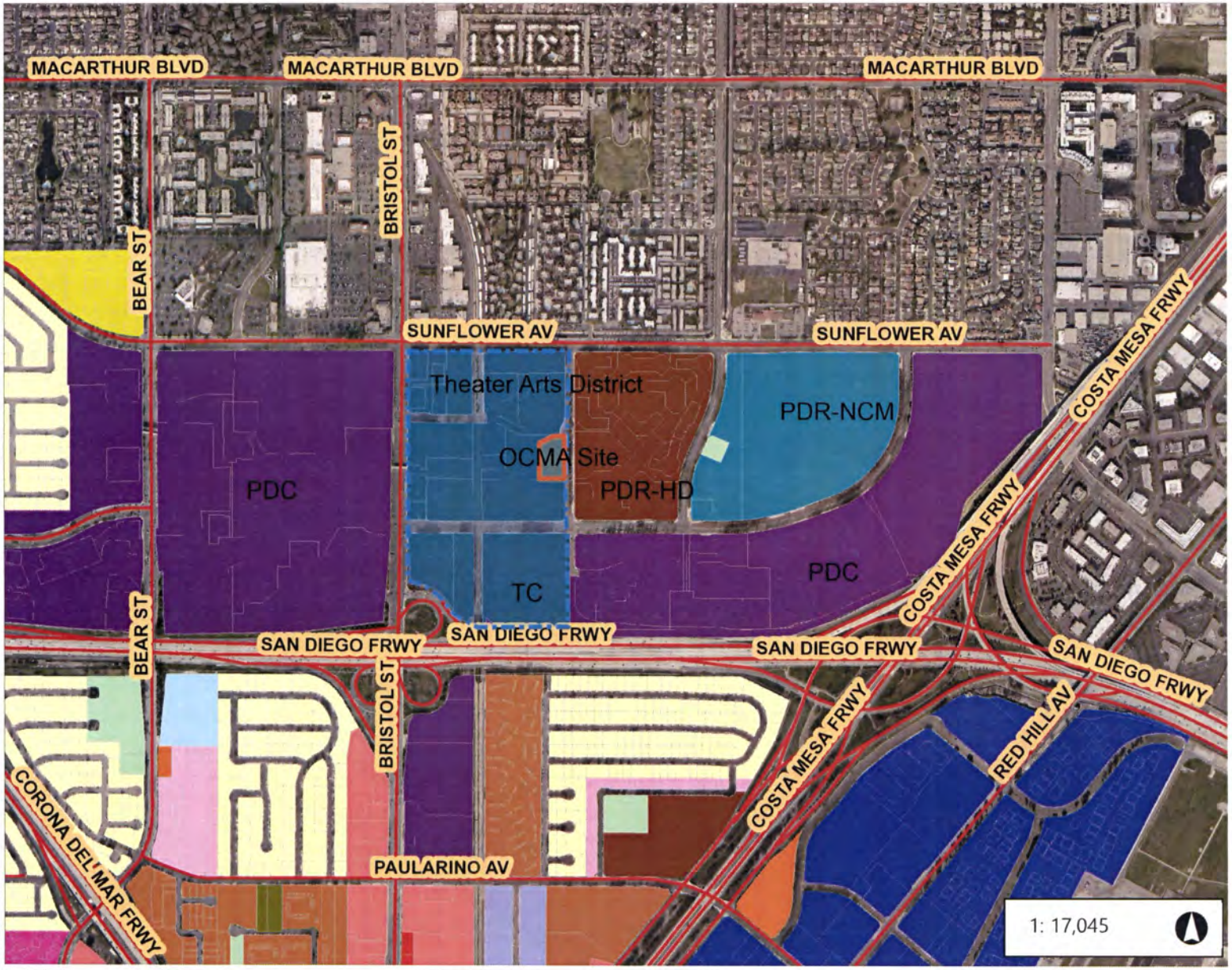
Notes

0.5 0 0.27 0.5 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

Costa Mesa

Zoning Around 655 Town Center Drive (OCMA Site)



Legend

Zoning

- AP - Administrative Professional
- IR-MLT - Institutional Recreational I
- R1 - Single-Family Residential
- R2-MD - Multiple-Family Residentia
- R2-HD - Multiple-Family Residentia
- R3 - Multiple Family Residential
- MG - General Industrial
- MP - Industrial Park
- PDI - Planned Development Industr
- C1 - Local Business
- C2 - General Business
- C1-S - Shopping Center
- TC - Town Center
- PDR-NCM - Planned Development Mesa
- I&R - Institutional Recreactional
- I&R-S - Institutional Recreational - S
- P - Parking
- CL - Commercial Limited
- PDC - Planned Development Comr
- PDR-LD - Planned Development R
- PDR-MD - Planned Development R Density
- PDR-HD - Planned Development R

Notes

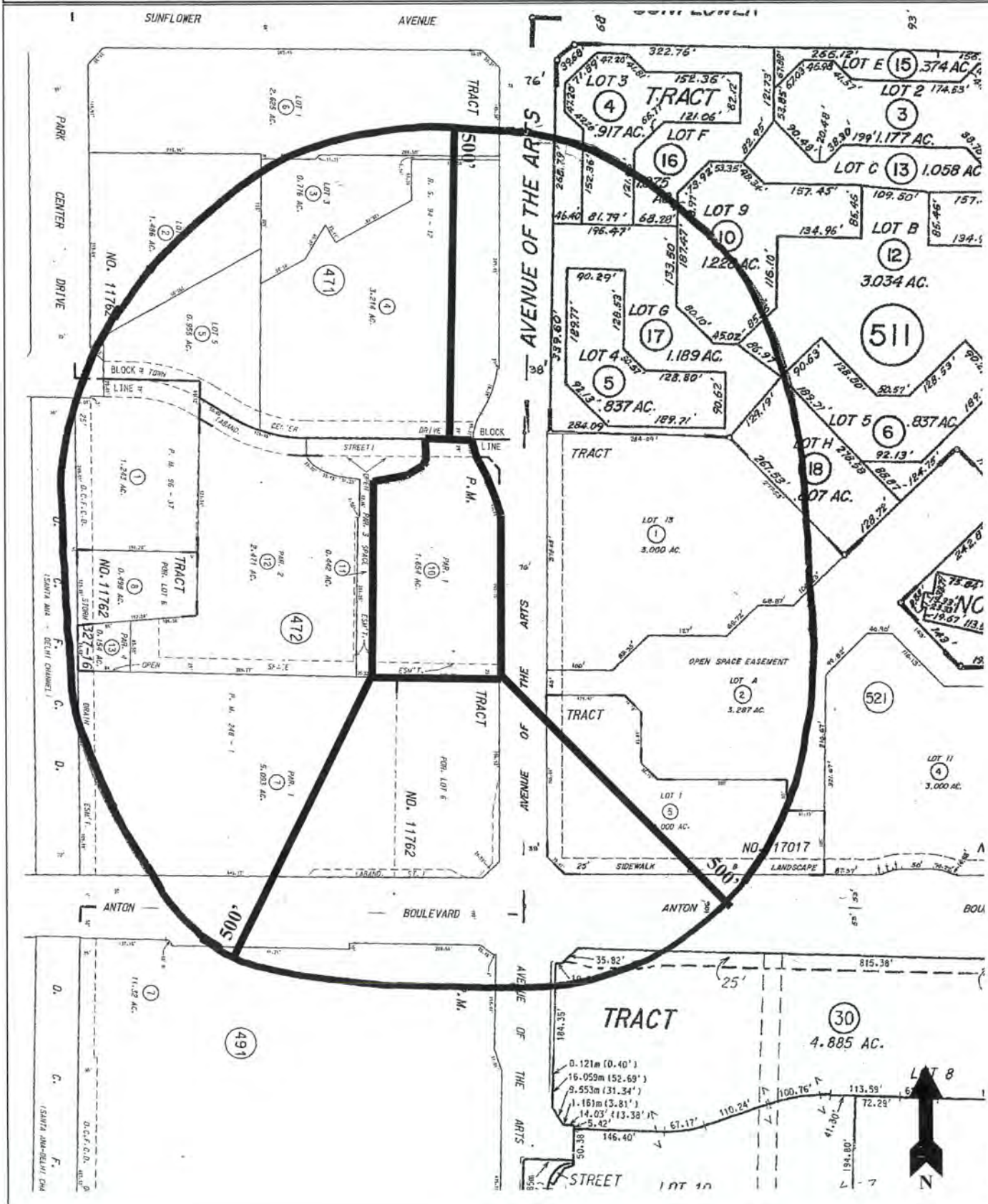
0.5 0 0.27 0.5 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

Advanced Listing Services Inc
Ownership Listings & Radius Maps
P.O. Box 2593 • Dana Point, CA • 92624
Office: (949) 361-3921 • Cell: (949) 310-6869
www.Advancedlisting.com denise@advancedlisting.com

Subject APN: 410-472-10
500' Radius

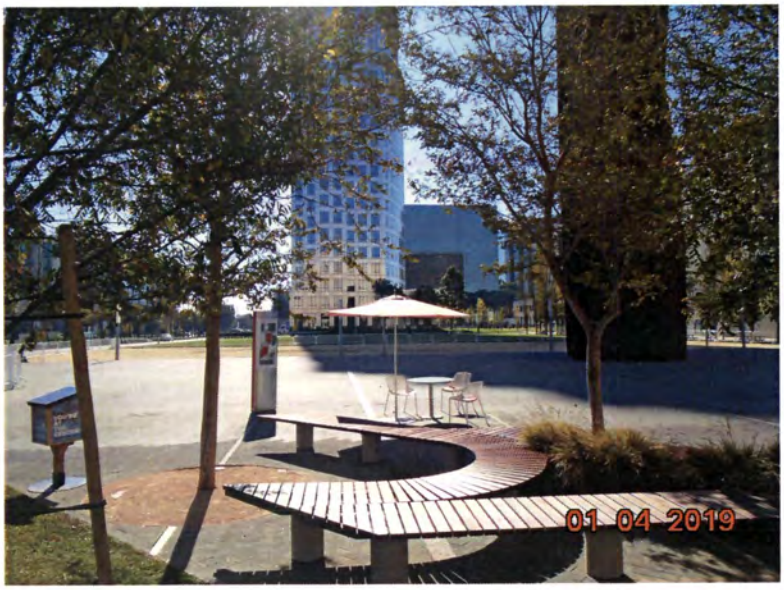
Address: 3333 AVENUE OF THE ARTS
COSTA MESA CA 92626



Photos

Existing fire lane - conditioned to be upgraded

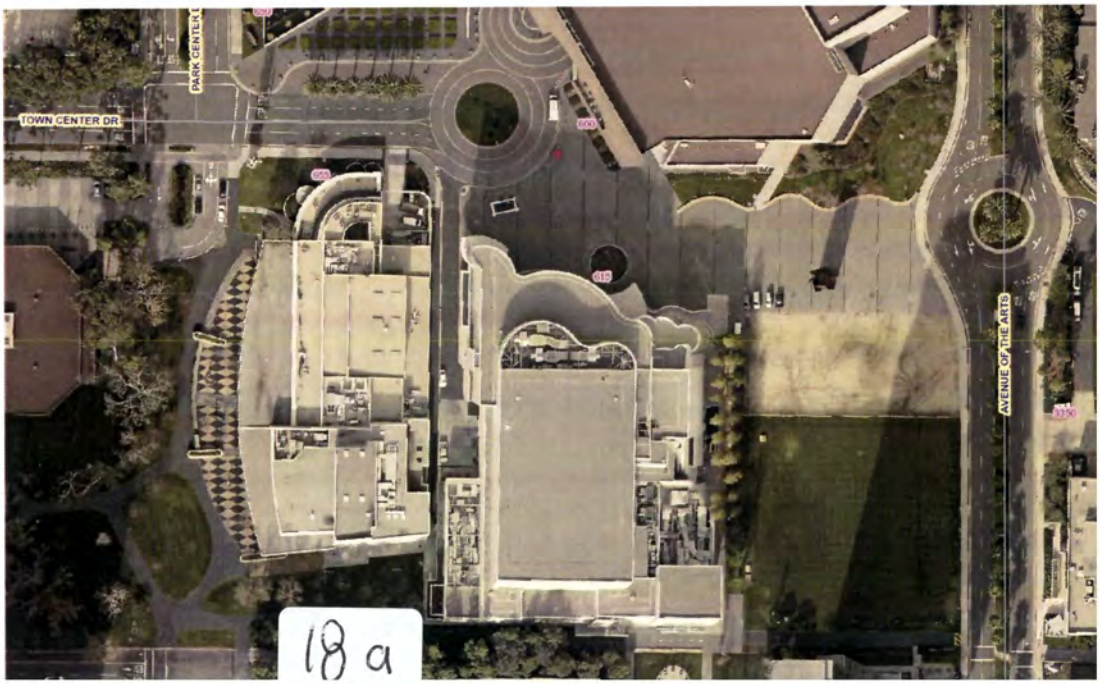
View from fire land towards plaza



View in Julianne and George Argyros Plaza toward site

Project site from street

Aerial view of the project site and neighboring buildings. Town Center at the upper corner of the image will be used for bus staging as well as a new bus turn-out on Avenue of the Arts. Project site includes grassy and gravel area at the lower left hand side of image.



18 a

On Project Site - View West

On Project Site - View North

On Project Site - View East

On Project Site - View South

ATTACHMENT 3

OCMA

December 19, 2018

Mr. Daniel Inloes
Economic Development Administrator
Development Services, Planning Division
City of Costa Mesa
77 Fair Drive
Costa Mesa, CA 92626

Dear Mr. Inloes,

As the premier visual arts organization in Orange County, the Orange County Museum of Art (OCMA) is committed to exhibiting and collecting the best of modern and contemporary art and making the arts accessible to all. We offer a host of programs that engage the community with art and artists.

Our new home at Segerstrom Center for the Arts will provide the museum significantly more exhibition space than our former space. As a museum dedicated to art of the 20th and 21st century, our exhibitions will be able to span the major developments of modern art (from Post-Impressionism through Pop Art) and contemporary art (from Conceptual to art of today) in world-class galleries. Our ability to host major international traveling exhibitions will position OCMA as **THE** venue between LA and San Diego to experience and enjoy masterpieces from the last 125 years of art history. We will be able tell the story of 20- and 21- century art, design and architecture in new and exciting ways.

Since 1962, OCMA has an established reputation as an innovative art museum with a history of actively discovering and engaging with living artists at pivotal points in their careers. The museum has organized and presented critically praised exhibitions that have traveled nationally and internationally to more than 35 museums. The museum's collection of more than 4,500 works of art include important examples by artists from Southern California including John Baldessari, Chris Burden, Vija Celmins, Bruce Conner, Richard Diebenkorn, Robert Irwin, Catherine Opie, Charles Ray, and Ed Ruscha. Recognizing the growing influence of the Pacific Region within Southern California and the art world in general, in recent years the museum has broadened its focus to include artists of the Pacific Rim, transforming its biennial series into the California-Pacific Triennial, the first in the world to examine the totality of contemporary art from Pacific Rim. In the last five years alone, OCMA has featured works by artists from 23 Pacific Rim countries, including Australia, Cambodia, Canada, China, Colombia, Indonesia, Japan, Mexico, New Zealand, South Korea and Vietnam. This growing globalization of the exhibition program reflects the emergence of Pacific Rim cultures as the leading hotbed for new and emerging artists.

Hours and admission fees.

While a final decision as to our hours of operation has not been made, we expect to be open Tuesday through Sunday from 11am until early evening (ranging from 6-8pm). These hours will allow us to serve school tours in the morning and accommodate attendees before performances at Segerstrom Center and SCR in the evening. Likewise, final admission prices for our opening in 2021 have not been set. At our location in Newport Beach, general admission was ten dollars, with reduced rates for students, active military and seniors. The museum also prided itself on offering free admission at various points during each month. Pending funding from corporate sponsors, the museum would expect to continue free admission at times.

Education

OCMA is dedicated to providing educational programs for K-12 and college students throughout the year and in a number of structured and freeform activities. Our Free School Tours program serves approximately 6,500 Orange County youth each year. Grades two through twelve are served with a concentration on fourth graders. Of the 27 school districts that take part in this free program, nearly 60% of the students come from Title 1 schools. With a larger building, more galleries, enhanced educational spaces and a central location in the middle of the county, we fully expect these numbers to increase dramatically at Segerstrom Center. The opportunities for collaboration with the Center and its affiliated performing groups will only add to the educational benefits for school-aged students. In addition to the free tours, OCMA stood apart by covering transportation expenses for schools.

The museum is building its new home to be a community gathering spot. We will make our facilities open to a variety of civic, community and other non-profit groups in an ongoing and inclusive manner. We will also make our special event spaces (interior and exterior) available to corporations and individuals for important events in the lives of the individuals or corporations.

Below you find a summary of the many features of the proposed museum. We are excited to work with the City of Costa Mesa to bring the Orange County Museum of Art to its new home at Segerstrom Center for the Arts.

Sincerely,

Todd D. Smith
Director and CEO

Project Area

Gross Lot Area: 73,742 sqft = 1.693 Acres (per record survey filed on January 26th, 2017)

Proposed Gross Building Area: 66,750 sqft

(includes 56,750 sqft for phase 1 and 10,000 sqft for future phase 2 expansion)

Allowable FAR: 1.67 (per the North Costa Mesa Specific Plan- Area 4 Sub Area 2)

Proposed FAR: 0.91 (including future phase 2 expansion)

Open Space Area: 35,780 sqft (48.5%)

Driveway and Parking Area: 1,410 sqft (1.9%)

Use/Zoning

Zoning District: Area 4- South Coast Plaza Town Center, Sub Area 2- Segerstrom Center for the Arts

General Land Use Designation: Cultural Arts Center

Programmatic Breakdown:

-Lobby/Store/Café (A3, A2 and B): 5,700 sqft

-Education Spaces (A3): 1,100 sqft

-Event Spaces (A3): 4,600 sqft

-Public Gallery Space (A3): 23,500 sqft

-Administrative (B): 2,500 sqft

-Operations & Service Utilities: 19,350 sqft

Height

Max Allowable Height Per Specific Plan: 315 ft

Proposed Building Height: 74'-6" ft

Adjacent Building Heights:

Segerstrom Center For the Arts- 139 ft (70 ft from site)

Segerstrom Concert Hall- 113 ft (24 ft from site)

Plaza Tower- 318 ft (38 ft from site)

Required Setbacks:

East Setback from Avenue of the Arts: 20 ft minimum from ultimate property line

North, South, West Setbacks: 0 ft

- The building sits fully within the required setbacks and easements. There are no minor modifications being requested for this project.

Programmed Outdoor Activities:

2nd Floor Terrace- The outdoor roof terrace can accommodate a wide range of activities for both public and private events. The open configuration gives it the flexibility to host informal concerts, movie screenings as well as seated events. Additionally, the terrace provides an ideal venue for extensive and oversized art installations in support of a range of art and design programming.

Café- Accessed directly from the main lobby and the Arts Plaza, the cafe and museum shop are positioned to provide access to food and merchandise without purchasing a ticket or entering the gallery areas. Located directly adjacent to

the plaza, the café incorporates full height glazing and sliding glass doors to allow cafe seating to extend to the exterior. This exterior area, flanked by the plaza stair, provides an intimate outdoor seating area for the public, and doubles as a protected social gathering space during special events. The position of the café and museum shop afford high visibility from the plaza and are poised to attract both museumgoers as well as outside passersby.

Landscape

The second-floor terrace will be enhanced by over 10,000 sqft of landscaping along its southern and eastern edges. The planter along the eastern edge of the terrace will be designed to accommodate a line of mature trees which will provide shading to the terrace and be visible from the street and plaza below. Additional landscaping will be provided at the plaza level along the East and West building elevations. See enclosed landscape drawings for additional information.

Parking

According to the 6/6/2016 Parking Study completed by Linscott Law & Greenspan Engineers, the current peak parking demands in the Town Center District fall well below the current parking supply in Town Center. When the projected parking demands for OCMA are incorporated, the parking supply still exceeds the demand maintaining the parking surplus for the area. As a result, the proposed OCMA project will not include any onsite parking and will instead use the available parking capacity in the area. Several of the area parking garages are within 500 to 1000 feet of the OCMA site enabling easy pedestrian access to the museum after parking.

Access and Circulation

Building Entry Points- The public entry for the museum will be on the northern side of the building off the Arts Plaza. There will also be a separate staff entry at the southern side of the building and an enclosed loading dock for deliveries and trash removal at the southeastern corner of the site accessed from the Avenue of the Arts near the existing service drive for the Plaza Tower office building.

Bus Drop-off- To accommodate school buses, a drop off is being proposed directly adjacent to the eastern side of the museum. This curb cut and drop off area would be accessed from the Avenue of the Arts.

Emergency Access- The existing fire access lane on the south side of the site will be maintained along with the existing 90-degree turnout at the southwest corner of the site. On the northern side of the site, an existing fire access lane runs through the plaza to connect the Avenue of the Arts to Town Center Drive. The existing continuous fire access lane and fire access turnaround in the plaza will be maintained.

WQMP

For post construction storm water management, the city of Costa Mesa defaults to the Water Quality Management Plan (WQMP) requirements for North Orange County. These requirements state that the development must treat the Design Capture Volume (DCV) to the maximum extent possible. For the Orange County Museum of Art (OCMA) project, the DCV is 3,000 cubic feet which is calculated based on a 0.7" rainfall depth. Per discussion with the City of Costa Mesa, the proposed development minimizes the amount of proposed impervious areas and accomplishes treatment to the maximum extent possible by directing storm water to impervious area disconnection best management practices (BMPs) and to a hydrodynamic separator (Contech CDS).

Sustainability

The Sustainability Framework for the Orange County Museum of Art integrates five focus areas to ensure economic, social and environmental sustainability and creates a dynamic, vibrant destination for cultural exploration and community participation. The intent of this framework is to deliver a suggested comprehensive strategy that embraces a wide definition of sustainability, while providing specific and actionable ways in which sustainability will materialize directly through the construction of the museum and onwards throughout its operation. The five focus areas are:

1. Community Focus
2. Transportation Connectivity
3. Health & Wellness
4. Water Conservation
5. Sustainable Materials

Museum facilities present unique challenges to sustainability, with stringent climate controls, enhanced reliance on lighting, high peak visitors, and sensitive art pieces, yet serve as an opportunity for curiosity, education, and community. These challenges and opportunities are not typically addressed by typical green building code or voluntary sustainability frameworks, and instead must be tailored to the Orange County Museum of Art and the community it serves.

Expansion

The design will provide infrastructure and structural capacity for a future 10,000 sqft one story addition on the 2nd level at the south end of the terrace. While no timeframe is proposed, the expansion is envisioned to match the general appearance of the rest of the second level building enclosure.

ATTACHMENT 4

RESOLUTION NO. PC-19 -

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF COSTA MESA ADOPTING THE ADDENDUM TO THE PREVIOUSLY_APPROVED FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT NO. 1047 AND APPROVING PLANNING APPLICATION PA-18-28 FOR THE MASTER PLAN FOR THE CONSTRUCTION OF THE ORANGE COUNTY MUSEUM OF ART AT 655 TOWN CENTER DRIVE

THE PLANNING COMMISSION OF THE CITY OF COSTA MESA HEREBY RESOLVES AS FOLLOWS:

WHEREAS, an application was filed by Aaron Ragan from Morphosis, representing Orange County Museum of Art, the property owner, requesting approval of the following: ***Planning Application 18-28***: A Master Plan Master Plan for the construction of the Orange County Museum of Art (OCMA). The project-specific master plan proposes the construction of a 53,875-square-foot structure and a future 10,000-square-foot expansion. The OCMA building will include a permanent and special exhibition space, an exhibition corridor with storefront glass facing the pedestrian walkway along Avenue of the Arts, a landscaped second floor outdoor terrace, a café, a museum shop, and the associated administration area. The project will leverage the existing parking structures onsite for employee and patron parking and is proposing a bus turnout along the Avenue of the Arts to support school bus traffic.

WHEREAS, pursuant to the California Environmental Quality Act (CEQA), an Addendum to the previously-approved Final Program Environmental Impact Report No. 1047 for the South Coast Plaza Town Center Project.

WHEREAS, no substantial changes, new significant impacts, new information, or new mitigation measures have been identified an addendum to the previously-approved program EIR is the appropriate CEQA compliance document.

WHEREAS, the Planning Commission has reviewed and considered the Addendum and has found that the Addendum is complete, adequate, and complies with all requirements of CEQA, the CEQA Guidelines, and the City of Costa Mesa Environmental Guidelines.

WHEREAS, the Addendum for the previously-approved Final Program Environmental Impact Report, No. 1047 The South Coast Plaza Town Center Project, for this project reflects the independent judgment of the City of Costa Mesa.

WHEREAS, a duly noticed public hearing was held by the Planning Commission on January 14, 2019, with all persons having the opportunity to speak for and against the proposal.

BE IT RESOLVED that, based on the evidence in the record and the findings contained in Exhibit A, and subject to the conditions of approval and mitigation measures indicated in the Mitigation Monitoring Program contained within Exhibits B and C, respectively, the Planning Commission hereby **ADOPTS** the addendum to the previously-approved final program environmental impact report No. 1047 and **APPROVES** Planning Application PA-18-28.

BE IT FURTHER RESOLVED that the Costa Mesa Planning Commission does hereby find and determine that adoption of this Resolution is expressly predicated upon the activity as described in the staff report for Planning Application PA-18-28 and upon the applicant's compliance with each and all of the conditions in Exhibits B, the Mitigation Monitoring Program in Exhibit C, and compliance of all applicable federal, state, and local laws. Any approval granted by this resolution shall be subject to review, modification or revocation if there is a material change that occurs in the operation, or if the applicant fails to comply with any of the conditions of approval and/or mitigation measures.

BE IT FURTHER RESOLVED that if any section, division, sentence, clause, phrase or portion of this resolution, or the documents in the record in support of this resolution, are for any reason held to be invalid or unconstitutional by a decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining provisions.

PASSED AND ADOPTED this 14th day of January, 2019.

_____

Stephan Andranian, Chair
Costa Mesa Planning Commission

STATE OF CALIFORNIA)
COUNTY OF ORANGE) ss
CITY OF COSTA MESA)

I, Barry Curtis, Secretary to the Planning Commission of the City of Costa Mesa, do hereby certify that the foregoing Resolution No. PC-19- __ was passed and adopted at a regular meeting of the City of Costa Mesa Planning Commission held on January 14, 2019 by the following votes:

AYES: COMMISSIONERS

NOES: COMMISSIONERS

ABSENT: COMMISSIONERS

ABSTAIN: COMMISSIONERS

_____
Barry Curtis, Secretary
Costa Mesa Planning Commission

EXHIBIT A

FINDINGS (APPROVAL)

A. The information presented substantially complies with Costa Mesa Municipal Code Section 13-29(g)(5) because:

Finding: The Master Plan meets the broader goals of the General Plan and the Zoning Code by exhibiting excellence in design, site planning, integration of uses and structures, and the protection of the integrity of neighboring development.

Facts in Support of Findings: The project, as conditioned, meets the purpose and intent of the stated policies of the General Plan, and the Zoning Code. The project will allow for the development of a vacant parcel with a structure that is within the development entitlements that have been approved and anticipated for in the Town Center Master Plan, Theater Art District Plan, the North Costa Mesa Specific Plan, and the General Plan. The proposed project will enhance the visual appearance of the property from the public streets and provide the type of use consistent with a Cultural Arts Center.

The following analysis evaluates the proposed project's consistency with specific policies and objectives of the 2015-2035 General Plan.

- **Policy LU-3.5:** Provide opportunities for the development of well-planned and designed projects which, through vertical or horizontal integration, provide for the development of compatible residential, commercial, industrial, institutional, or public uses within a single project or neighborhood.

- **Policy LU-3.8:** Ensure that new development reflects existing design standards, qualities, and features that are in context with nearby development and surrounding residential neighborhoods.

- **Policy LU-6.15:** Promote unique and specialized commercial and industrial districts within the City which allow for incubation of new or growing businesses and industries.

- **Policy LU-6.17:** Engage in activities that promote Costa Mesa as a great place to live, work, and develop a business.

- **Policy LU-10.7:** Maintain and enhance the City's status and image as a centrally located destination and cultural center in Orange County.

- **Objective CD-2A:** Encourage future development and redevelopment to reinforce district scale, identity, and urban form.

- **Policy CD-2.2:** Support and seek land uses and development that correspond or enrich our existing districts.

- **Objective CD-8A**: Encourage a high level of architectural and site design quality.

Consistency

The proposed project would enhance the existing Theater Arts District through the addition of an art venue. The character of the surrounding area is defined by the arts with the Segerstrom Hall and Judy Morr theater to the north, South Coast Repertory, the Renee and Henry Segerstrom Concert Hall, and the Samueli Theater to the west. The project will contribute to an established cluster of creative venues and develop positive synergies. The General Plan Land Use Element recognizes this area as a suitable location for an art museum when it states, "that the Cultural Arts Center designation allows intensely developed mixed commercial and cultural uses within a limited area." It goes on to list an Art Museum as one of the intended uses within this area (LU-45).

This project's site planning supports the existing development in the area and adds to the Theater Arts District. The building has 360-degree high quality design and roof coverings which screen the roof equipment from view from the surrounding high rises. The building is positioned on the site to compliment the Concert Hall's façade and the elevations of the Concert Hall and the Serra Sculpture. The building's front entrance is oriented toward the Julianne and George Argyros Art Plaza and provides a stepped structure to contribute to this flexible outdoor venue space. The building also provides a gallery corridor that allows views from the sidewalk along Avenue of the Arts.

Therefore, the project would not conflict with any applicable land use plan, policy, or regulation (including but not limited to the General Plan or zoning regulations).

B. The project has been reviewed for compliance with the California Environmental Quality Act (CEQA), the CEQA Guidelines, and the City's environmental procedures. An Addendum of the previously-approved Final Program Environmental Impact Report has been prepared for the project in accordance with CEQA. The Mitigation measures from the PEIR have been adopted as conditions of approval and included as Exhibit C.

C. The project, as conditioned, is consistent with Chapter XII, Article 3, Transportation System Management, of Title 13 of the Costa Mesa Municipal Code in that there are traffic impact fees that will be collected to mitigate impacts of the project.

D. The building intensities within the Theater Arts District necessitates fire apparatus access and provision of on-site fire hydrant.

E. The bus turnout on the property and the property abutting Avenue of the Arts will require easements from Public Services for street and sidewalk easements respectively.

EXHIBIT B

CONDITIONS OF APPROVAL (NOTE: CONDITIONS SHALL BE COMPLIED WITH AT TIME OF CONSTRUCTION OF ANY PROJECT IN THIS MASTER PLAN)

Plng.

1. Planning Application PA-18-28 shall comply with the conditions of approval, code requirements, special district requirements, and mitigation measures of the Final Program Environmental Impact Report No. 1047 for this project and as listed in the attached Mitigation Monitoring Program (Exhibit C).
2. The use(s) shall be limited to the type of operation(s) as described in the staff report. Any change in the operational characteristics including, but not limited to, the hours of operation indicated, shall require review by the Planning Division and may require an amendment subject to either Zoning Administrator or Planning Commission approval, depending on the nature of the proposed change. The applicant is reminded that the Code allows the Planning Commission to modify or revoke any planning application based on findings related to public nuisance and/or noncompliance with conditions of approval [Title 13, Section 13-29(o)].
3. All lighting shall be shielded or directed way from residential uses on the east side of Avenue of the Arts.
4. No amplified public communication systems shall be audible in the adjacent residential areas. Amplified sound during events are allowed but must comply with Costa Mesa Municipal Code.
5. Trash facilities shall remain within the enclosed loading area to minimize potential noise and odor impacts.
6. No truck deliveries shall occur anytime between 8:00 PM and 7:00 AM.
7. There shall be no more than 30 rental events and four exhibition openings a year unless additional events have been approved by the Director of Development Services or his designee.
8. The OCMA shall coordinate with the performing art venues to ensure large event times are staggered by at least 15 minutes whenever possible. The OCMA will work cooperatively with the Department of Development Services and performing art venues to resolve if issues occur.
9. The landscaped area on the second floor outdoor terrace shall remain passive landscape space and will not be used for events.
10. No outdoor activity areas are to be used past 11 :00 PM.
11. Prior to final inspection a Circulation Plan for their site shall be reviewed and approved to ensure that the potential patrons, service entities, and employees are informed of the location and operational characteristics of the bus turnout, shared parking within the Theater Arts District, interior loading dock, and the use of the private portion of Town Center Drive. This plan shall discuss all modes of arrival.
12. All rental and special events greater than 100 people must occur on weekends or after 5:00 PM on weekdays.
13. The landscaping strip within the 20-foot landscape setback shall be widened by 3 feet or the landscape within the 20-foot setback shall be redesigned to ensure that living softscape makes up the majority of this area.

14. Bike racks shall be installed onsite and the OCMA shall coordinate with the City to identify the appropriate location and amount within the circulation plan required by a previous condition.
15. No special events or rental events shall occur during hours of operation of museum free days when the museum free day is on a weekday.
16. The OCMA will match the ground lighting within the Julianne and George Argyros Plaza on its portion of the plaza.
17. Prior to issuance of building permits the outdoor area seating in front of the building shall be shown on the plans. This includes a couple of tables and chairs. In total should be seating for approximately 12 people including the concrete bench on the back of the stair structure.
18. The fire lane on the south side of the building shall be paved with pervious pavers or another material approved by Planning Division.
19. Prior to the issuance of building permits the Museum shall coordinate with the Planning Division to provide a template for an annual visitation and use summary that shall be provided each year for the first three years of operation to obtain a clear understanding of the museum's circulation and parking demand.
20. Mitigation measures from the IS/MND for this project have been included as Exhibit C. If any of these conditions are removed or substantially modified, the Planning Commission must make a finding that the project will not result in significant environmental impacts.
21. The conditions of approval including Mitigation Measures incorporated by reference in these Conditions of Approval as Exhibit C, code requirements, and special district requirements of PA-18-28 shall be blueprinted on the face of the site plan as part of the plan check submittal package.
22. Prior to issuance of building permits, a final landscape plan indicating the landscape palette and the design/material of paved areas shall be submitted for review and approval by the Planning Division.
23. Landscaping and irrigation shall be installed in accordance with the approved plans prior to final inspection or occupancy clearance.
24. Prior to issuance of building permits, developer shall contact the U.S. Postal Service with regard to location and design of mail delivery facilities. Such facilities shall be shown on the site plan, landscape plan, and/or floor plan.
25. No exterior roof access ladders, roof drain scuppers, or roof drain downspouts are permitted. This condition relates to visually prominent features of scuppers or downspouts that not only detract from the architecture but may be spilling water from overhead without an integrated gutter system which would typically channel the rainwater from the scupper/downspout to the ground. An integrated downspout/gutter system which is painted to match the building would comply with the condition. This condition shall be completed under the direction of the Planning Division.
26. Prior to the issuance of Building Permits, the Applicant shall submit a Lighting Plan and Photometric Study for the approval of the City's Development Services Department. The Lighting Plan shall demonstrate compliance with the following:

The mounting height of lights on light standards shall not exceed 18 feet in any location on the project site unless approved by the Director of Development Services.

- The intensity and location of lights on building shall be subject to the Director of Development Services' approval.
- All site lighting fixtures shall be provided with a flat glass lens. Photometric calculations shall indicate the effect of the flat glass lens fixture efficiency.
- Lighting design and layout shall limit spill light to no more than 0.5 foot-candle at the property line of the surrounding neighbors, consistent with the level of lighting that is deemed necessary for safety and security purposes on-site.
- Glare shields may be required for select light standards.

27. It is recommended that the project incorporate green building design and construction techniques where feasible. The applicant may contact the Building Safety Division at (714) 754-5273 for additional information. CAL Green Code or higher as determined by applicant.
28. Prior to issuance of grading permits, developer shall submit for review and approval a Construction Management Plan. This plan features methods to minimize disruption to the neighboring residential uses to the fullest extent that is reasonable and practicable. The plan shall include construction parking and vehicle access and specifying staging areas and delivery and hauling truck routes. The plan should mitigate disruption to residents during construction. The truck route plan shall preclude truck routes through residential areas and major truck traffic during peak hours. The total truck trips to the site shall not exceed 200 trucks per day (i.e., 100 truck trips to the site plus 100 truck trips from the site) unless approved by the Director of Development Services or Transportation Services Manager.
29. The subject property's ultimate finished grade level may not be filled/raised in excess of 36 inches above the finished grade of any abutting property. If additional fill dirt is needed to provide acceptable on-site storm water flow to a public street, an alternative means of accommodating that drainage shall be approved by the City's Building Official prior to issuance of any grading or building permits. Such alternatives may include subsurface tie-in to public storm water facilities, subsurface drainage collection systems and/or sumps with mechanical pump discharge in-lieu of gravity flow. If mechanical pump method is determined appropriate, said mechanical pump(s) shall continuously be maintained in working order. In any case, development of subject property shall preserve or improve the existing pattern of drainage on abutting properties.
30. The applicant shall contact the Planning Division to arrange a Planning inspection of the site prior to the release of occupancy/utilities. This inspection is to confirm that the conditions of approval and code requirements have been satisfied.
31. Transformers, backflow preventers, and any other approved above-ground utility improvement shall be located outside of the required street setback area and shall be screened from view, under direction of Planning

staff. Any deviation from this requirement shall be subject to review and approval of the Director of Development Services.

32. A comprehensive sign program shall be submitted for all on-site signs (i.e., monument, directional, wall mounted) for review and approval of the Director of Development Services prior to issuance of sign permits.
33. The applicant shall defend, indemnify, and hold harmless the City, its elected and appointed officials, agents, officers and employees from any claim, action, or proceeding (collectively referred to as "proceeding") brought against the City, its elected and appointed officials, agents, officers or employees arising out of, or which are in any way related to, the applicant's project, or any approvals granted by City related to the applicant's project. The indemnification shall include, but not be limited to, damages, fees and/or costs awarded against the City, if any, and cost of suit, attorney's fees, and other costs, liabilities and expenses incurred in connection with such proceeding whether incurred by the applicant, the City and/or the parties initiating or bringing such proceeding. This indemnity provision shall include the applicant's obligation to indemnify the City for all the City's costs, fees, and damages that the City incurs in enforcing the indemnification provisions set forth in this section. City shall have the right to choose its own legal counsel to represent the City's interests, and applicant shall indemnify City for all such costs incurred by City.
34. In the event that archaeological resources are encountered during grading and construction, all construction activities shall be temporarily halted or redirected to permit the sampling, identification, and evaluation of archaeological materials as determined by the City, who shall establish, in cooperation with the project Applicant and a certified archaeologist, the appropriate procedures for exploration and/or salvage of the artifacts.
35. Prior to issuance of Certificate of Occupancy (C of O), the applicant shall provide a BIN model and a high resolution PDF of the scaled and dimensioned digital site plan(s) for the project site as built, on either a CD or thumb drive, to the Planning Division. All site plans shall include an accurate and precise drawing of all building footprints and property line locations for the entire project site. All buildings shall be annotated with its corresponding address and suites if applicable.
36. If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 24 hours of notification by the NAHC. The MLD may recommend scientific removal and

nondestructive analysis of human remains and items associated with Native American burials.

Bldg

37. Prior to issuing the Building permit the conditions of approval shall be on the approved Architectural plans.
38. Prior to the Building Division (AQMD) issuing a demolition permit contact South Coast Air Quality Management District located at:
    21865 Copley Dr.
    Diamond Bar, CA 91765-4178
    Tel: 909- 396-2000
    Or
    Visit its web site
    http://www.costamesaca.gov/modules/showdocument.aspx?documentid=23381
    The Building Division will not issue a demolition permit until an Identification number is provided By AQMD
39. Provide a plan to the County of Orange Health Department for review and approval.
40. Submit a precise grading plans, an erosion control plan and a hydrology study. If it is determined that a grading plan is not required a drainage plan shall be provided. A precise grading plan shall not be required if any of the following are met:
    1. An excavation which does not exceed 50 CY on any one site and which is less than 2 feet in vertical depth, or which does not create a cut slope greater than 1½:1 (excluding foundation area).
    2. A fill less than 1 foot in depth placed on natural grade with a slope flatter than 5:1, which does not exceed 50 CY on any one lot and does not obstruct a drainage course.
    3. A fill less than 3 feet in depth, not intended to support structures, which does not exceed 50 CY on any one lot and does not obstruct a drainage course.
41. Submit a soils report for this project. Soils report recommendations shall be blueprinted on both the architectural and the precise grading plans.
42. The ground immediately adjacent to the foundation shall be sloped away from the building at a slope of not less than 5-percent for a minimum distance of 10 feet measured perpendicular to the face of the wall per CBC sec. 1804.3. See also exception.
    On graded sites, the top of exterior foundation shall extend above the elevation of the street gutter at point of discharge or the inlet of an approved discharge devise a minimum of 12 inches plus 2-percent per 2013 California Building Code sec. 1808.7.4
43. If soil contamination exists, then remediation plans shall be submitted to both the Building Division and the County of Orange for review, approval and Building permit(s) shall not be issued until the soil is certified as clean and usable by a Soil's Engineer.
44. At the time of development, submit for approval an Offsite Plan to the Engineering Division and Grading Plan to the Building Division that shows Sewer, Water, Existing Parkway Improvements and the limits of work on the site, and hydrology calculations, both prepared by a registered Civil Engineer or Architect. Construction Access approval must be obtained

prior to Building or Engineering Permits being issued by the City of Costa Mesa. Pay Offsite Plan Check fee per Section 13-231 of the C.C.M.M.C. and an approved Offsite Plan shall be required prior to Engineering Permits being issued by the City of Costa Mesa.

45. Maintain the public Right-of-Way in a "wet-down" condition to prevent excessive dust and remove any spillage from the public right-of-way by sweeping or sprinkling.
46. Pay Offsite Plan Check fee per Section 13-231 of the CMMC and an approved Offsite Plan shall be required prior to Engineering Permits being issued by the City of Costa Mesa.
47. Obtain an encroachment permit from the Engineering Division for any work in the City public right-of-way. Pay required permit fee and cash deposit or surety bond to guarantee construction of off-site street improvements at time of permit per CMMC Secs. 15-31 and 15-32 as approved by the City Engineer. Cash deposit or surety bond amount to be determined by the City Engineer.
48. Obtain a permit from the City of Costa Mesa, Engineering Division, at the time of development and then reconstruct sidewalk per City of Costa Mesa Standards as shown on the Offsite Plan in connection with the new bus turnout.
49. Dedicate a sidewalk easement behind driveway approach and obstructions to construct sidewalk flares for ADA compliance.

CODE REQUIREMENTS (NOTE: CODE REQUIREMENTS SHALL BE COMPLIED WITH AT TIME OF CONSTRUCTION OF ANY PROJECT IN THIS MASTER PLAN)

The following list of federal, state and local laws applicable to the project has been compiled by staff for the applicant's reference. Any reference to "City" pertains to the City of Costa Mesa.

Plng.

1. All contractors and subcontractors must have valid business licenses to do business in the City of Costa Mesa. Final inspections, final occupancy and utility releases will not be granted until all such licenses have been obtained.
2. Address assignment shall be requested from the Planning Division prior to submittal of working drawings for plan check. The approved address of individual units, suites, buildings, etc., shall be blueprinted on the site plan and on all floor plans in the working drawings.
3. Prior to issuance of building permits, applicant shall contact the US Postal Service with regard to location and design of mail delivery facilities. Such facilities shall be shown on the site plan, landscape plan, and/or floor plan.
4. All noise-generating construction activities shall be limited to 7 a.m. to 7 p.m. Monday through Friday and 9 a.m. to 6 p.m. Saturday. Noise-generating construction activities shall be prohibited on Sunday and the following Federal holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.
5. Two (2) sets of detailed landscape and irrigation plans, which meet the requirements set forth in Costa Mesa Municipal Code Sections 13-101

through 13-108 and the City's Water Efficient Landscape Guidelines, shall be required as part of the project plan check review and approval process. Plans shall be forwarded to the Planning Division for final approval prior to issuance of building permits.

6. Two (2) sets of landscape and irrigation plans, approved by the Planning Division, shall be attached to two of the final building plan sets.
7. All on-site utility services shall be installed underground.
8. Installation of all utility meters shall be performed in a manner so as to obscure the installation from view from any place on or off the property. The installation shall be in a manner acceptable to the public utility and shall be in the form of a vault, wall cabinet, or wall box under the direction of the Planning Division.
9. Any mechanical equipment such as air-conditioning equipment and duct work shall be screened from view in a manner approved by the Planning Division.
10. The project shall comply with the NPDES requirements, as follows:
    - Construction General Permit Notice of Intent (NOI) Design: Prior to the issuance of preliminary or precise grading permits, the project Applicant shall provide the City Engineer with evidence that an NOI has been filed with the Storm Water Resources Control Board (SWRCB). Such evidence shall consist of a copy of the NOI stamped by the SWRCB or Regional Water Quality Control Board (RWQCB), or a letter from either agency stating that the NOI has been filed.
    - Construction Phase Storm Water Pollution Prevention Plan (SWPPP): Prior to the issuance of grading permits, the Applicant shall prepare a SWPPP that complies with the Construction General Permit and will include at a minimum the following:
    - Discuss in detail the BMPs planned for the project related to control of sediment and erosion, nonsediment pollutants, and potential pollutants in non-storm water discharges;
    - Describe post-construction BMPs for the project;
    - Explain the maintenance program for the project's BMPs
    - List the parties responsible for the SWPPP implementation and the BMP maintenance during and after grading. The project Applicant shall implement the SWPPP and modify the SWPPP as directed by the Construction General Permit.

Bldg.

11. The Applicant shall comply with the requirements of the following adopted codes Code, 2016 California Building Code, 2016 California Electrical code, 2016 California Mechanical code , 2016 California Plumbing code , 2016 California Green Building Standards Code and 2016 California Energy Code (or the applicable adopted, California Building code California Electrical code, California Mechanical code California Plumbing Code, California Green Building Standards and California Energy Code at the time of plan submittal or permit issuance) and California Code of Regulations also known as the California Building Standards Code, as amended by the City of Costa Mesa. Requirements for accessibility to

sites ,facilities, buildings and elements by individuals with disability shall comply with chapter 11B of the 2016 California Building Code.

12. Prior to the issuance of Grading Permits, the project Applicant shall provide the City of Costa Mesa Department of Building Safety with a geotechnical investigation of the project site detailing recommendations for remedial grading in order to reduce the potential of on-site soils to cause unstable conditions. Design, grading, and construction shall be performed in accordance with the requirements of the California Building Code applicable at the time of grading, appropriate local grading regulations, and the recommendations of the geotechnical consultant as summarized in a final written report, subject to review by the City of Costa Mesa Department of Building Safety.
13. Submit precise grading plans, an erosion control plan, and a hydrology study.
14. The Applicant shall submit a soils report for this project. Soils Report recommendations shall be blueprinted on both the architectural and grading plans. For existing slopes or when new slopes are proposed, the Soils Report shall address how existing slopes or the new slopes will be maintained to avoid erosion or future failure.
15. On graded sites the top of exterior foundation shall extend above the elevation of the street gutter at point of discharge or the inlet of an approved discharge devise a minimum of 12 inches plus 2 percent. 2013 California Building Code Section 1808.7.4.
16. The ground immediately adjacent to the foundation shall be sloped away from the building at a slope of not less than 5% for a minimum distance of 10 feet measured perpendicular to the face of the wall per BCB Section 1804.3
17. All construction contractors shall comply with South Coast Air Quality Management District (SCAQMD) regulations, including Rule 403, Fugitive Dust. All grading (regardless of acreage) shall apply best available control measures for fugitive dust in accordance with Rule 403. To ensure that the project is in full compliance with applicable SCAQMD dust regulations and that there is no nuisance impact off the site, the contractor would implement each of the following:
    a. Moisten soil not more than 15 minutes prior to moving soil or conduct whatever watering is necessary to prevent visible dust emissions from exceeding 100 feet in any direction.
    b. Apply chemical stabilizers to disturbed surface areas (completed grading areas) within five days of completing grading or apply dust suppressants or vegetation sufficient to maintain a stabilized surface.
    c. Water excavated soil piles hourly or covered with temporary coverings.
    d. Water exposed surfaces at least twice a day under calm conditions. Water as often as needed on windy days when winds are less than 25 miles per day or during very dry weather in order to maintain a

surface crust and prevent the release of visible emissions from the construction site.

e. Wash mud-covered tired and under-carriages of trucks leaving construction sites.
f. Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud, which would otherwise be carried off by trucks departing project sites.
g. Securely cover loads with a tight fitting tarp on any truck leaving the construction sites to dispose of debris.
h. Cease grading during period when winds exceed 25 miles per hour.

18. Prior to demolition activities, removal and/or abatement of asbestos containing building materials, lead based paints, and hazardous materials associated with the existing building materials, an investigation shall be conducted by a qualified environmental professional in consultation with the Costa Mesa Fire Department. An asbestos and hazardous materials abatement plan shall be developed by the qualified environmental professional, in order to clearly define the scope and objective of the abatement activities.
19. During demolition, grading, and excavation, workers shall comply with the requirements of Title 8 of the California Code of Regulations, Section 1529, which provides for exposure limits, exposure monitoring, respiratory protection, and good working practices by workers exposed to asbestos. Asbestos-contaminated debris and other wastes shall be managed and disposed of in accordance with the applicable provision of the California Health and Safety Code.
20. During demolition, grading, and excavation, workers shall comply with the requirements of Title 8 of the California Code of Regulations, Section 1532.1, which provides for exposure limits, exposure monitoring, respiratory protection, and good working practice by workers exposed to lead. Lead-contaminated debris and other wastes shall be managed and disposed of in accordance with the applicable provision of the California Health and Safety Code.
21. Prior to investigations, demolition, or renovation, all activities shall be coordinated with Dig Alert (811).
22. Visual inspections for areas of impact to soil shall be conducted during site grading. If unknown or suspect materials are discovered during construction by the contractor that are believed to involve hazardous wastes or materials, the contractor shall:
    - Immediately stop work in the vicinity of the suspected contaminant, removing workers and the public from the area;
    - Notify the City Engineer and Costa Mesa Fire Department;
    - Secure the area(s) in question;

    Implement required corrective actions, including remediation if applicable.

23. In order to comply with the 2003 DAMP, the project shall prepare a Storm Drain Plan, Stormwater Pollution Prevention Plan (SWPPP), and Water Quality Management Plan (WQMP) conforming to the current National Pollution Discharge Elimination System (NPDES) requirements, prepared by a Licensed Civil Engineer or Environmental Engineer, which shall be submitted to the Department of Public Services for review and approval.
    - The SWPPP shall be prepared and updated as needed during the course of construction to satisfy the requirements of each phase of development.
    - The plan shall incorporate all necessary Best Management Practices (BMPs) and other City requirements to eliminate polluted runoff until all construction work for the project is completed. The SWPPP shall include treatment and disposal of all dewatering operation flows and for nuisance flows during construction.
    - A WQMP shall be maintained and updated as needed to satisfy the requirements of the adopted NPDES program.
    - The plan shall ensure that the existing water quality measures for all improved phases of the project are adhered to. Location of the BMPs shall not be within the public right-of-way.
24. Prior to the issuance of any Grading Permit, the Applicant shall:
    - Prepare a detailed Hydrology Study, approved by the City Engineer.
    - Design all storm drain facilities, approved by the City Engineer, for 25-year storm event protection.
    - Design all storm drains in the public right-of-way to be a minimum of 24 inches by City of Costa Mesa requirements and in accordance with the Orange County Local Drainage Manual including a minimum spacing between manholes of 300 feet.
25. Prior to approval of Plans, the project shall fulfill the City of Costa Mesa Drainage Ordinance No. 06-19 requirements.
26. The project Applicant shall submit grading plans, an erosion control plan, and a hydrology study.

Trans.

27. Construct all proposed driveway approaches to comply with city standards.
28. Fulfill San Joaquin Hills Transportation Corridor Fee Ordinance requirement at the time of issuance of building permit by submitting the required fee to the Planning Division. For the proposed use, the corridor fee rate is: $5.39 per square foot. NOTE: This fee is subject to revision and possible increase effective July 1st of each year. ESTIMATED AT $359,782.50
29. Fulfill mitigation of off-site traffic impacts at the time of issuance of occupancy by submitting to the Planning Division the required traffic impact fee pursuant to the prevailing schedule of charges adopted by the City Council. The traffic impact fee is calculated including credits for all existing uses. At the current rate the Traffic Impact Fee is estimated at:

$882,190.00. NOTE: The Traffic Impact Fee will be recalculated at the time of issuance of building permit/certificate of occupancy based upon any changes in the prevailing schedule of charges adopted by the City Council and in effect at that time.

30. Close unused drive approaches, or portion of, with full height curb and gutter that comply with City Standards.

Eng.

31. At the time of development submit for approval an offsite plan to the engineering division and grading plan to the building division that shows sewer, water, existing parkway improvements and the limits of work on the site, and hydrology calculations, both prepared by a registered civil engineer or architect. Cross lot drainage shall not occur. Construction access approval must be obtained prior to building or engineering permits being issued by the city of costa mesa. Pay offsite plan check fee per section 13-231 of the C.C.M.M.C. and an approved offsite plan shall be required prior to engineering permits being issued by the City Of Costa Mesa.
32. A construction access permit and deposit will be required by city of costa mesa, engineering division prior to start of any on-site work, necessary during construction for street sweeping and to guarantee replacement costs in case of damage to existing public improvements.
33. Obtain a permit from the City of Costa Mesa, Engineering Division, at the time of development and then construct P.C.C. driveway approaches per City of Costa Mesa standards as shown on the offsite plan. Location and dimensions are subject to the approval of the transportation services manager. ADA compliance required for all new driveway approaches.
34. Obtain a permit from the City Of Costa Mesa, Engineering Division, at the time of development and then remove any existing driveways and/or curb depressions that will not be used and replace with full height curb and sidewalk.
35. Fulfill City Of Costa Mesa Drainage Ordinance No. 06-19 requirements prior to approval of plans.
36. Fulfill Drainage Fee requirements per City of Costa Mesa Ordinance No. 06-19 prior to approval of approval of Plans.
37. In order to comply with the 2003 Drainage Area Management Plan (DAMP), the proposed Project shall prepare a Water Quality Management Plan conforming to the Current National Pollution Discharge Elimination System (NPDES) and the Model WQMP, prepared by a Licensed Civil Engineer or Environmental Engineer, which shall be submitted to the Department of Public Works for review and approval.

    a) A WQMP (Priority or Non-Priority) shall be maintained and updated as needed to satisfy the requirements of the adopted NPDES program. The plan shall ensure that the existing water quality measures for all improved phases of the project are adhered to.

    b) Location of BMPs shall not be within the public right-of-way.

Fire

38. Comply with the requirements of the 2016 California Fire Code, including the 2016 Intervening Update and referenced standards as amended by the City of Costa Mesa.
39. Projections, including eaves, shall be one-hour fire resistive construction, heavy timber or of noncombustible material if they project into the 5-foot

setback area from the property line. They may project a maximum of 12 inches beyond the 3-foot setback. CRC Tables R302.1(1) and R302.1(2).

40. The final Master Plan for development of the project shall provide sufficient capacity for fire flows required by the City of Costa Mesa Fire Department.
41. Vehicular access shall be provided and maintained serviceable throughout construction to all required fire hydrants.
42. The project shall provide approved smoke detectors to be installed in accordance with the 2016 Edition of the Uniform Fire Code.
43. The project shall provide fire extinguishers with a minimum rating of 2A to be located within 75 feet of travel distance from all areas. Extinguishers may be of a type rated 2A, 10BC as these extinguishers are suitable for all types of fires and are less expensive.
44. The project shall provide a fire alarm system.
45. The project shall provide individual numeric signage for proposed residences with minimum 6 inches height.
46. As final building plans are submitted to the City of Costa Mesa for review and approval, the Costa Mesa Police Department shall review all plans for the purpose of ensuring that design requirements are incorporated into the building design to increase safety and avoid unsafe conditions. These measures focus on security measures are recommended by the Police Department, including but not limited to, the following:
    - Lighting shall be provided in open areas and parking lots.
    - Required building address numbers shall be readily apparent from the street and rooftop building identification shall be readily apparent from police helicopters for emergency response agencies.
    - Landscaping requirements (e.g., minimize use of hedges, use of low height shrubs for greater visibility).
    - Emergency vehicle parking areas shall be designated within proximity to buildings.
    - Prior to the issuance of a Building Permit, the City of Costa Mesa Police Department shall review and approve the developer's project design features to satisfy local requirements. The applicant shall then pay the appropriate fee in effect to mitigate the project's proportionate impact to additional demands on police protection services, if any.

Street Trees

47. All City trees shall be protected in place during construction. Damaged trees shall be replaced with a 24-inch box tree or larger. Tree species shall be determined by the City arborist.

SPECIAL DISTRICT REQUIREMENTS (NOTE: SPECIAL DISTRICT REQUIREMENTS SHALL BE COMPLIED WITH AT TIME OF CONSTRUCTION OF ANY PROJECT IN THIS MASTER PLAN)

The requirements of the following special districts are hereby forwarded to the applicant:

Sani.	1.	Applicant will be required to construct sewers to serve this project, at his own expense, meeting the approval of the Costa Mesa Sanitary District.
	2.	County Sanitation District fees, fixture fees, inspection fees, and sewer permit are required prior to installation of sewer.
	3.	County Sanitation District fees, fixtures fees, inspection fees, and sewer permit are required prior to installation of sewer.
	4.	Applicant shall submit a plan showing sewer improvements that meets the District Engineer's approval to the Building Division as part of the plans submitted for plan check.
	5.	Applicant will be required to coordinate with the Costa Mesa Sanitary District to comply with all recommended studies and improvements, prior to issuance of a building permit.
	6.	Unless an offsite trash hauler is being used. The applicant shall contact the Costa Mesa Sanitary District to pay trash collection program fees and arrange for service for all new residences. Residences using bin or dumpster services are exempt from the requirement.
	7.	Applicant shall submit a plan showing sewer improvements that meets the District Engineer's approval to the Building Division as part of the plans submitted for plan check.
	8.	The applicant is required to contact the Costa Mesa Sanitary District at (714) 754-5307 to arrange final sign-off prior to certificate of occupancy being released.
	9.	Applicant shall contact Costa Mesa Sanitary District at (949) 654-8400 for any additional district requirements.
AQMD	10.	Applicant shall contact the Air Quality Management District (AQMD) at (800) 288-7664 for potential additional conditions of development or for additional permits required by AQMD.
Water	11.	Customer shall contact the Mesa Water District – Engineering Desk and submit an application and plans for project review. Customer must obtain a letter of approval and a letter of project completion from Mesa Water District.
School	12.	Pay applicable Newport Mesa Unified School District fees to the Building Division prior is issuance of building permits.
State	13.	Comply with the requirements of the California Department of Food and Agriculture (CDFA) to determine if red imported fire ants (RIFA) exist on the property prior to any soil movement or excavation. Call CDFA at (714) 708-1910 for information.

EXHIBIT C

MITIGATION MEASURES FROM PROGRAM ENVIRONMENTAL IMPACT REPORT ADDENDUM

1. The City of Costa Mesa Will Review the final site plans for development within the South Coast Plaza Town Center (SCPTC) Project area for consistency with any adopted plans for the areas.
2. As the subsequent phases of the SCPTC project are submitted to the City of Costa Mesa, the project traffic study area intersections' performance shall be monitored against the City's Annual Development Phasing and Monitoring Report to determine when future improvements are required.
3. The project applicant shall be required to fund all costs associated with implementation of intersection improvements to the following intersections: Bristol/Segerstrom, Bristol/MacArthur, Flower/MacArthur, SR-55 NB ramps/MacArthur, and Main/Sunflower. Impacts to intersections at Main/MacArthur and Main/Sunflower would be significant with or without project implementation and are considered significant and unavoidable impacts. These circulation improvements shall be completed prior to the creation of project-specific impact at these locations. The timing of these improvements will be determined by the City of Costa Mesa based on intersection performance monitoring as set forth in Traffic Mitigation Measure 1.

   The following intersection improvements are required:

   - Bristol/Sunflower: Convert 3rd northbound through lane to a shared through/right turn lane (provide 2NBL, 2NBT, 1 shared NBT/NBR, and 1 NBR).
   - Fairview/South Coast: Covert 2nd eastbound through lane to a shared through/right turn lane (provide 1 EBL/1 EBT, 1 shared EBT/EBR, and 1 EBR).
   - Bristol/Paularino: Add a southbound right turn lane. Add a second westbound right turn lane shown in the current general plan.
   - Park Center/Sunflower: Convert northbound through lane to a shared left-turn/through lane to a shared left-turn through lane to a right-turn lane. Requires split phasing in the north/south direction (provide 1 NBL, 1 shared NBL/NBT/NBR, 1 shared SBL/SBT, and 1 SBR).
   - Main/MacArthur: Provide right-turn overlap signal phasing for northbound and southbound right turns.
   - Main and Sunflower: Convert 3rd southbound lane to a right turn lane with overlap phasing.
   - Bristol/Segerstrom: General Plan Improvements: Add a second left turn for each approach, 3rd and 4th eastbound through lanes, 3rd westbound through lane, and right-turn lanes for each approach. Non-General Plan Improvements: Add a 4th westbound through lane.
   - Bristol/MacArthur: General Plan Improvements: Add right turn lanes for southbound, eastbound, and westbound approaches. Non-General Plan Improvements: Add 4th eastbound and westbound through lanes, add right turn overlap for westbound right turn lanes.

- Flower/MacArthur: General Plan Improvements: None. Non-General Plan Improvements: Add northbound and westbound right turn lanes.
- SR-55 NB Ramps and MacArthur: General Plan Improvements: None. Non-General Plan Improvements: Add 3rd northbound right turn lanes.

4. All future development of the SCPTC site shall be designed to comply with all applicable geologic and seismic safety requirements of the Uniform Building Code and mitigation as defined by Public Resources code Section 2693(c). Verification of such compliance will be confirmed during the City's plan review and building permit issuance process.
5. Grading and foundation plans, including foundation loads, shall be reviewed by a registered soils engineer, and approved by the City of Costa Mesa Building Safety Division.
6. All grading and earthwork shall be performed under the observation of a registered geotechnical engineer in order to achieve proper sub-grade preparation, selection of satisfactory materials, and placement and compaction of all structural fill.
7. Prior to approval of each grading plan by the City of Costa Mesa, the property owner/developer shall submit a soils and geological report for the areas to be graded, based on proposed grading and prepared by registered soils engineer and approved by the City of Costa Mesa Building Safety Division.
8. Prior to issuance of each building permit by the City of Costa Mesa, the property owner/developer shall submit for review and approval by the City of Costa Mesa Building Safety Division, a detailed foundation design information for the subject building(s), prepared by a registered civil engineer, based on recommendations by a geotechnical engineer.
9. Prior to issuance of each building permit by the City of Costa Mesa, the property owner/developer shall submit plans showing that the proposed structure has been analyzed by a registered civil engineer for earthquake loading and designed according to the most recent seismic standards in the Uniform Building Code adopted by the City of Costa Mesa.
10. If a permit is required for discharge of perched groundwater encountered during excavation for site improvements, the applicant shall acquire such permit(s) from the applicable agency(ies) (e.g., Santa Ana Regional Water Quality Control Board, County Flood Control or County Sanitation District) and provide evidence of permit issuance to the Costa Mesa Building Safety Division prior to initiating any such discharge.
11. Prior to issuance of a grading permit, the applicant shall obtain an NPDES Stormwater Permit from the County of Orange. Applicable BMP provisions shall be incorporated into the NPDES Permit.
12. Prior to the initiation of grading, a construction security service shall be established at the construction site. Initially, the service shall ensure that no unauthorized entry is made into the construction area. For the duration of each phase of construction, the project applicant shall provide sufficient on-site security personnel on a 24-hour, seven days a week basis, to patrol all areas of construction and prohibit unauthorized entry.

13. Private on-site security is to be provided by the project applicant as the project is developed and operational.

ATTACHMENT 5

LAW & GREENSPAN engineers

MEMORANDUM

To:	Daniel Inloes, AICP Development Services Department City of Costa Mesa	Date:	November 9, 2018
From:	Trissa (de Jesus) Allen, P.E. LLG, Engineers	LLG Ref:	2.16.3673.1
Subject:	Parking Study Update for the Proposed OCMA in South Coast Town Center		

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Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit this Parking Study Update for the proposed OCMA within the South Coast Town Center area of the City of Costa Mesa. This update addresses comments provided by City staff on our prior report dated August 18, 2016 (included in ***Appendix A***), which relate to the site modifications at 3420 Bristol Street, known as the California Bank & Trust Building in the northwest portion of South Coast Town Center, and the addition of the 496-SF built-in bistro kiosk/Café 360 in Arts Plaza (per PA-15-36: Amendments to Town Center Drive and Segerstrom Hall Master Plans at 600 Town Center). Our study approach and findings are summarized below.

a. The South Coast Town Center (SCTC) parking model, which was developed on June 25, 2001 to determine long-term parking needs in all of Town Center, and previously updated for the proposed relocation of OCMA to SCTC (those relocation plans were previously evaluated in our August 18, 2016 study), was used as basis for this updated parking analysis.

b. For the purposes of the parking model, SCTC was originally disaggregated into subareas known as Zones 1, 2, 3, and 4 (see ***Figure 1***). The proposed OCMA will be located within Zone 1, and by agreement, its weekday daytime parking needs will be accommodated within the Center Tower parking structure located nearby and also within Zone 1.

c. The existing development in all of SCTC, which is summarized in ***Table 1***, corresponds to full tenant occupancy of all existing buildings, and presumes no Segerstrom Center for the Arts (SCFTA) matinees on weekdays, because the analysis is based on "typical weekday" conditions. The current SCFTA event calendar from today through July 2019 indicates that there are only two upcoming 2:00 PM weekday performances: Shen Yun on April 17, 2019, and Phantom of the Opera on July 11, 2019. South Coast Repertory's (SCR's) current calendar through June 2019 indicates that there are no weekday matinees scheduled.

   The proposed modifications to the 3400 Bristol Street/California Bank & Trust Building (red text in *Table 1*) will result in 7,362 SF (plus 2,118 SF of outdoor/patio dining) of restaurant, and 59,463 SF of office. As indicated by

the red text of footnote [a] in *Table 1*, the 496-SF built-in bistro kiosk/Café 360 in Arts Plaza (per PA-15-36: Amendments to Town Center Drive and Segerstrom Hall Master Plans at 600 Town Center) is considered ancillary use, and does not generate incremental parking demand.

d. Existing parking supply in SCTC totals 7,267 spaces, which consists of 4,363 spaces north of Anton Boulevard (including the site modifications at 3420 Bristol Street/California Bank & Trust Building), and 2,904 spaces south of Anton Boulevard.

e. The shared parking ratios and profiles of the SCTC model (per ***Table 2***, and previously summarized in our August 2016 study) were applied in conjunction with the size inputs per *Table 1* to develop a snapshot of existing parking conditions in Town Center, as presented in ***Tables 3*** and ***4*** under weekday and weekend conditions, respectively.

f. For full occupancy in SCTC, without OCMA, parking needs are greater during a weekday, with a peak demand of 6,586 spaces (at 2:00pm), which corresponds to a **surplus of 681 spaces** when compared against the 7,267-space supply within Town Center. Parking surpluses during all other hours on a weekday and weekend day will be greater.

g. Based on operational data provided by OCMA, OCMA's parking needs were previously estimated in our August 2016 study, which were then added to existing parking demand in Town Center, and presented in ***Tables 5*** and ***6*** under weekday and weekend conditions, respectively.

h. Based on the application of the SCTC model, existing plus OCMA (typical operations) conditions within Town Center correspond to a peak demand of 6,623 spaces at 2:00pm (including a demand of 37 spaces for OCMA during that hour), which corresponds to a **surplus of 644 spaces** when compared against the 7,267-space supply within Town Center. Parking surpluses during all other hours on a weekday and weekend day will be greater.

We appreciate the opportunity to prepare this updated analysis. Please call us at 949.825.6175 if you have any questions or comments. Thank you.

LINSCOTT LAW & GREENSPAN engineers

TABLE 1
SOUTH COAST TOWN CENTER
EXISTING DEVELOPMENT SUMMARY WITH PROJECT
Orange County Museum of Art, Costa Mesa

Description	Restau-rant (SF)	Office (SF)	Bank (SF)	Medical Office (SF)	Trade School (SF)	Performing Arts Theater Seats	Performing Arts Theater (SF)	Retail (SF)	Hotel Rooms	Hotel Rest./ Banquet (SF)	Hotel Meeting /Conf. (SF)	Hotel Total (SF)	TOTAL (SF)
ZONE 1													
650 Town Center (Center Tower, Center Club)	18,000	446,500	0	0	0	*0*	0	0	*0*	0	0	0	464,500
600 Town Center (Segerstrom Center for the Arts) [a]:													
Segerstrom Hall	0	0	0	0	0	*2,994*	237,000	0	*0*	0	0	0	237,000
Renee&Henry Segerstrom Concert Hall	0	0	0	0	0	*1,954*	n/a	0	*0*	0	0	0	n/a
Samueli Theater	0	0	0	0	0	*417*	4,700	0	*0*	0	0	0	4,700
655 Town Center (South Coast Repertory) [b]	0	0	0	0	0	*937*	39,640	0	*0*	0	0	0	39,640
ZONE 1 TOTAL:	**18,000**	**446,500**	**0**	**0**	**0**	*6,302*	**281,340**	**0**	*0*	**0**	**0**	**0**	**745,840**
ZONE 2													
686 Anton (The Westin SCP) [c]	0	0	0	0	0	*0*	0	0	*392*	17,657	19,891	330,000	330,000
650 Anton (retail, Pizzeria Ortica)	5,120	0	0	0	0	*0*	0	5,145	*0*	0	0	0	10,265
600 Anton (Plaza Tower)	0	436,424	0	0	0	*0*	0	0	*0*	0	0	0	436,424
3300 Bristol (previously Scott's Seafood; future Water Grill Restaurant)	18,717	0	0	0	0	*0*	0	0	*0*	0	0	0	18,717
ZONE 2 TOTAL:	**23,837**	**436,424**	**0**	**0**	**0**	*0*	**0**	**5,145**	*392*	**17,657**	**19,891**	**330,000**	**795,406**
ZONE 3													
3420 Bristol (CA Bank & Trust)	7,362	59,463	0	0	0	*0*	0	0	*0*	0	0	0	66,825
Patio SF	2,118												2,118
3400 Bristol (Toni & Guy Academy)	0	0	0	0	17,200	*0*	0	0	*0*	0	0	0	17,200
695 Town Center (Park Tower)	2,757	287,966	0	0		*0*	0	15,513	*0*	0	0	0	306,236
ZONE 3 TOTAL:	**12,237**	**347,429**	**0**	**0**	**17,200**	*0*	**0**	**15,513**	*0*	**0**	**0**	**0**	**392,379**
ZONE 4													
655 Anton (SubZero/Wolf Showroom)	0	0	0	0	0	*0*	0	9,333	*0*	0	0	0	9,333
633 Anton (Mastro's Steakhouse)	11,340	0	0	0	0	*0*	0	0	*0*	0	0	0	11,340
3200 Park Center (Brookfield Residential)	0	302,615	0	0	0	*0*	0	0	*0*	0	0	0	302,615
3210 Park Center [d]	9,260	0	0	0	0	*0*	0	0	*0*	0	0	0	9,260
601 Anton (TGI Fridays)	8,345	0	0	0	0	*0*	0	0	*0*	0	0	0	8,345
611 Anton (Comerica Bank)	0	302,615	0	0	0	*0*	0	0	*0*	0	0	0	302,615
675 Anton (Pacific Union Financial; previously 3233 Park Center/B of A)	0	67,436	0	0	0	*0*	0	0	*0*	0	0	0	67,436
3200 Bristol (US Bank, Etrade Financial)	0	0	103,292	14,975	0	*0*	0	0	*0*	0	0	0	118,267
ZONE 4 TOTAL:	**28,945**	**672,666**	**103,292**	**14,975**	**0**	*0*	**0**	**9,333**	*0*	**0**	**0**	**0**	**829,211**
EXISTING TOWN CENTER TOTAL (Zones 1, 2, 3, and 4)	**83,019**	**1,903,019**	**103,292**	**14,975**	**17,200**	*6,302*	**281,340**	**29,991**	*392*	**17,657**	**19,891**	**330,000**	**2,762,836**

Notes:

[a] The Segerstrom Center for the Arts campus also includes the Arts Plaza (and PA-15-36 Amendments, which include the 496-SF Café 360), Judy Morr Theater, Dodge Education Center, and Leatherby's Café Rouge, which are all ancillary uses and/or alternative spaces not used concurrently with Segerstrom Hall, Concert Hall, and Samueli Theater.

[b] South Coast Repertory includes 507 seats in the Segerstrom Stage, 336 seats in the Argyros Stage, and 94 seats in the Nicholas Studio.

[c] Includes 11,657 SF that was previously occupied by Pinot Provence (restaurant).

[d] 3210 Park Center currently includes 3,804 SF of restaurant (Specialty's) and 6,775 SF of office uses, but this study presumed 9,260 SF of restaurant (consistent with prior Town Center studies) as a conservative measure (i.e., 9,260 SF of restaurant yields a greater parking requirement compared to a mix of restaurant and office uses).

LINSCOTT LAW & GREENSPAN engineers

TABLE 2
SOUTH COAST TOWN CENTER
SHARED PARKING RATIO AND PROFILE SUMMARY
Orange County Museum of Art, Costa Mesa

Land Use Types ⇨	Office		Banks		Medical Office		Retail		Restaurant		Performing Arts Theater (Events) [a]		Hotel Guest Rooms		Hotel Rest./Lounge		Hotel Meeting/ Conference		Health Club	
Peak Parking Ratio ⇨	2.5 spaces per 1,000 SF		5 spaces per 1,000 SF		6 spaces per 1,000 SF		4 spaces per 1,000 SF		12 spaces per 1,000 SF		1 space per 3 seats		1 space per 2 rooms		7.2 spaces per 1,000 SF *(12 spaces per 1,000 SF @ 60% non-guest)*		13.2 spaces per KSF *(22 spaces per 1,000 SF @ 60% non-guest)*		6.5 spaces per KSF	
Time of Day ⇩	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends
6:00 AM	3%	0%	3%	0%	3%	0%	0%	0%	0%	0%	0%	0%	100%	90%	20%	20%	0%	0%	80%	10%
7:00 AM	20%	3%	20%	3%	20%	3%	8%	3%	2%	2%	0%	0%	85%	70%	20%	20%	0%	0%	80%	30%
8:00 AM	63%	10%	63%	10%	63%	10%	17%	10%	5%	3%	[a]	0%	65%	60%	20%	20%	50%	50%	65%	85%
9:00 AM	93%	13%	93%	13%	93%	13%	40%	30%	10%	6%	[a]	0%	55%	50%	20%	20%	100%	100%	55%	70%
10:00 AM	100%	13%	100%	13%	100%	13%	65%	45%	20%	8%	[a]	0%	45%	40%	20%	20%	100%	100%	50%	50%
11:00 AM	100%	17%	100%	17%	100%	17%	83%	73%	30%	10%	[a]	0%	35%	35%	30%	30%	100%	100%	40%	65%
12:00 PM	90%	17%	90%	17%	90%	17%	92%	85%	50%	30%	[a]	30%	30%	30%	50%	30%	100%	100%	40%	45%
1:00 PM	90%	13%	90%	13%	90%	13%	95%	95%	70%	45%	[a]	70%	30%	30%	70%	45%	100%	100%	40%	50%
2:00 PM	97%	10%	97%	10%	97%	10%	92%	100%	60%	45%	[a]	70%	35%	35%	60%	45%	100%	100%	30%	45%
3:00 PM	93%	7%	93%	7%	93%	7%	90%	100%	60%	45%	[a]	70%	35%	40%	55%	45%	100%	100%	50%	50%
4:00 PM	77%	7%	77%	7%	77%	7%	83%	90%	50%	45%	[a]	70%	45%	50%	50%	45%	100%	100%	67%	50%
5:00 PM	47%	3%	47%	3%	47%	3%	75%	75%	70%	60%	[a]	70%	60%	60%	70%	60%	100%	100%	90%	45%
6:00 PM	23%	3%	23%	3%	23%	3%	78%	65%	90%	90%	61%	80%	70%	70%	90%	90%	100%	100%	100%	25%
7:00 PM	7%	3%	7%	3%	7%	3%	85%	60%	100%	95%	68%	90%	75%	80%	100%	95%	100%	100%	95%	10%
8:00 PM	7%	3%	7%	3%	7%	3%	83%	55%	100%	100%	76%	100%	90%	90%	100%	100%	100%	100%	50%	5%
9:00 PM	3%	0%	3%	0%	3%	0%	58%	40%	100%	100%	76%	100%	95%	95%	100%	100%	100%	100%	10%	0%
10:00 PM	3%	0%	3%	0%	3%	0%	30%	38%	90%	95%	76%	100%	100%	100%	90%	95%	50%	50%	10%	0%
11:00 PM	0%	0%	0%	0%	0%	0%	12%	13%	70%	85%	61%	80%	100%	100%	70%	85%	0%	0%	0%	0%
Midnight	0%	0%	0%	0%	0%	0%	0%	0%	50%	70%	53%	70%	100%	100%	50%	70%	0%	0%	0%	0%

Note:

[a] Presumes no matinees on weekdays, and that parking needs are solely attributable to theater administrative staff between 8:00 AM and 5:00 PM.

TABLE 3
WEEKDAY SHARED PARKING DEMAND ANALYSIS
EXISTING DEVELOPMENT IN TOWN CENTER
Orange County Museum of Art, Costa Mesa

LINSCOTT LAW & GREENSPAN engineers

	Zone 1				Zone 2							Zone 3						Zone 4							
								Hotel																Town Center Total Demand	Town Ctr Supply = 7,267 Surplus or (Deficiency)
LAND USE	Rest-aurants	Office	Perf. Arts Theater Events [a]	Zone 1 Total Demand	Rest-aurants	Office	Retail	Guest Rooms	Rest./ Banquet	Meeting/ Conf.	Zone 2 Total Demand	Rest-aurants	Office	Medical Office	Trade School	Retail	Zone 3 Total Demand	Rest-aurants	Office	Bank	Medical Office	Retail	Zone 4 Total Demand		
SIZE	18,000 SF	446,500 SF	6,302 seats	--	23,837 SF	436,424 SF	5,145 SF	392 rooms	17,657 SF	19,891 SF	--	12,237 SF	347,429 SF	0 SF	17,200 SF	15,513 SF	--	28,945 SF	672,666 SF	103,292 SF	14,975 SF	9,333 SF	--	--	--
PEAK DEMAND	216 spaces	1,116 spaces	2,101 spaces	3,433 spaces	286 spaces	1,091 spaces	21 spaces	196 spaces	127 spaces	263 spaces	1,983 spaces	147 spaces	869 spaces	0 spaces	172 spaces	62 spaces	1,249 spaces	347 spaces	1,682 spaces	516 spaces	90 spaces	37 spaces	2,673 spaces	9,339 spaces	--
6:00 AM	0	33	0	33	0	33	0	196	25	0	254	0	26	0	0	0	26	0	50	15	3	0	69	382	6,885
7:00 AM	4	223	0	228	6	218	2	167	25	0	418	3	174	0	0	5	182	7	336	103	18	3	468	1,294	5,973
8:00 AM	11	703	*165*	879	14	687	3	127	25	131	989	7	547	0	17	11	582	17	1,059	325	57	6	1,465	3,915	3,352
9:00 AM	22	1,038	*165*	1,224	29	1,015	8	108	25	263	1,447	15	808	0	77	25	924	35	1,564	480	84	15	2,177	5,774	1,493
10:00 AM	43	1,116	*165*	1,324	57	1,091	13	88	25	263	1,538	29	869	0	172	40	1,110	69	1,682	516	90	24	2,382	6,354	913
11:00 AM	65	1,116	*165*	1,346	86	1,091	17	69	38	263	1,563	44	869	0	95	52	1,059	104	1,682	516	90	31	2,423	6,391	876
NOON	108	1,005	*165*	1,277	143	982	19	59	64	263	1,529	73	782	0	95	57	1,007	174	1,513	465	81	34	2,267	6,081	1,186
1:00 PM	151	1,005	*165*	1,321	200	982	20	59	89	263	1,612	103	782	0	103	59	1,046	243	1,513	465	81	35	2,338	6,317	950
2:00 PM	**130**	**1,083**	***165***	**1,377**	**172**	**1,058**	**19**	**69**	**76**	**263**	**1,656**	**88**	**843**	**0**	**103**	**57**	**1,091**	**208**	**1,631**	**501**	**87**	**34**	**2,462**	**6,586**	**681**
3:00 PM	130	1,038	*165*	1,332	172	1,015	19	69	70	263	1,606	88	808	0	103	56	1,055	208	1,564	480	84	34	2,370	6,363	904
4:00 PM	108	860	*165*	1,132	143	840	17	88	64	263	1,415	73	669	0	103	52	897	174	1,295	398	69	31	1,966	5,410	1,857
5:00 PM	151	525	*165*	841	200	513	15	118	89	263	1,198	103	408	0	103	47	661	243	790	243	42	28	1,346	4,045	3,222
6:00 PM	194	257	1,282	1,733	257	251	16	137	114	263	1,039	132	200	0	40	48	420	313	387	119	21	29	868	4,060	3,207
7:00 PM	216	78	1,429	1,723	286	76	17	147	127	263	917	147	61	0	40	53	300	347	118	36	6	32	539	3,479	3,788
8:00 PM	216	78	1,597	1,891	286	76	17	176	127	263	946	147	61	0	40	52	299	347	118	36	6	31	538	3,674	3,593
9:00 PM	216	33	1,597	1,846	286	33	12	186	127	263	907	147	26	0	40	36	249	347	50	15	3	22	438	3,439	3,828
10:00 PM	194	33	1,597	1,825	257	33	6	196	114	131	738	132	26	0	40	19	217	313	50	15	3	11	392	3,172	4,095
11:00 PM	151	0	1,282	1,433	200	0	2	196	89	0	488	103	0	0	17	7	127	243	0	0	0	4	248	2,295	4,972
MIDNIGHT	108	0	1,114	1,222	143	0	0	196	64	0	403	73	0	0	0	0	73	174	0	0	0	0	174	1,871	5,396

Note:
[a] Presumes no matinees on weekdays, and 165 administrative staff between 8:00 AM and 5:00 PM on weekdays.

WEEKDAY PEAK PARKING DEMAND: 6,586
PARKING SUPPLY: 7,267
SURPLUS OR (DEFICIENCY): 681

hfa

TABLE 4
WEEKEND SHARED PARKING DEMAND ANALYSIS
EXISTING DEVELOPMENT IN TOWN CENTER
Orange County Museum of Art, Costa Mesa

LINSCOTT LAW & GREENSPAN engineers

	Zone 1				Zone 2							Zone 3						Zone 4						Town Center Total Demand	Town Ctr Supply = 7,267 Surplus or (Deficiency)
								Hotel																		
LAND USE	Rest-aurants	Office	Perf. Arts Theater Events	Zone 1 Total Demand	Rest-aurants	Office	Retail	Guest Rooms	Rest./ Banquet	Meeting/ Conf.	Zone 2 Total Demand	Rest-aurants	Office	Medical Office	Trade School	Retail	Zone 3 Total Demand	Rest-aurants	Office	Bank	Medical Office	Retail	Zone 4 Total Demand		
SIZE	18,000 SF	446,500 SF	6,302 seats	--	23,837 SF	436,424 SF	5,145 SF	392 rooms	17,657 SF	19,891 SF	--	12,237 SF	347,429 SF	0 SF	17,200 SF	15,513 SF	--	28,945 SF	672,666 SF	103,292 SF	14,975 SF	9,333 SF	--	--	--
PEAK DEMAND	216 spaces	1,116 spaces	2,101 spaces	3,433 spaces	286 spaces	1,091 spaces	21 spaces	196 spaces	127 spaces	263 spaces	1,983 spaces	147 spaces	869 spaces	0 spaces	172 spaces	62 spaces	1,249 spaces	347 spaces	1,682 spaces	516 spaces	90 spaces	37 spaces	2,673 spaces	9,339 spaces	--
6:00 AM	0	0	0	0	0	0	0	176	25	0	202	0	0	0	0	0	0	0	0	0	0	0	0	202	7,065
7:00 AM	4	33	0	38	6	33	1	137	25	0	202	3	26	0	0	2	31	7	50	15	3	1	77	347	6,920
8:00 AM	6	112	0	118	9	109	2	118	25	131	394	4	87	0	52	6	149	10	168	52	9	4	243	905	6,362
9:00 AM	13	145	0	158	17	142	6	98	25	263	551	9	113	0	114	19	254	21	219	67	12	11	329	1,293	5,974
10:00 AM	17	145	0	162	23	142	9	78	25	263	540	12	113	0	114	28	267	28	219	67	12	17	342	1,311	5,956
11:00 AM	22	190	0	211	29	185	15	69	38	263	598	15	148	0	114	45	322	35	286	88	15	27	451	1,582	5,685
NOON	65	190	630	885	86	185	17	59	38	263	648	44	148	0	114	53	358	104	286	88	15	32	525	2,416	4,851
1:00 PM	97	145	1,471	1,713	129	142	20	59	57	263	669	66	113	0	114	59	352	156	219	67	12	35	489	3,223	4,044
2:00 PM	97	112	1,471	1,680	129	109	21	69	57	263	647	66	87	0	114	62	329	156	168	52	9	37	422	3,078	4,189
3:00 PM	97	78	1,471	1,646	129	76	21	78	57	263	624	66	61	0	114	62	303	156	118	36	6	37	354	2,927	4,340
4:00 PM	97	78	1,471	1,646	129	76	19	98	57	263	641	66	61	0	114	56	297	156	118	36	6	34	350	2,934	4,333
5:00 PM	130	33	1,471	1,634	172	33	15	118	76	263	676	88	26	0	114	47	275	208	50	15	3	28	305	2,890	4,377
6:00 PM	194	33	1,681	1,909	257	33	13	137	114	263	818	132	26	0	52	40	251	313	50	15	3	24	406	3,382	3,885
7:00 PM	205	33	1,891	2,130	272	33	12	157	121	263	857	140	26	0	0	37	203	330	50	15	3	22	421	3,610	3,657
8:00 PM	**216**	**33**	**2,101**	**2,350**	**286**	**33**	**11**	**176**	**127**	**263**	**896**	**147**	**26**	**0**	**0**	**34**	**207**	**347**	**50**	**15**	**3**	**21**	**437**	**3,890**	**3,377**
9:00 PM	216	0	2,101	2,317	286	0	8	186	127	263	870	147	0	0	0	25	172	347	0	0	0	15	362	3,721	3,546
10:00 PM	205	0	2,101	2,306	272	0	8	196	121	131	728	140	0	0	0	24	163	330	0	0	0	14	344	3,541	3,726
11:00 PM	184	0	1,681	1,864	243	0	3	196	108	0	550	125	0	0	0	8	133	295	0	0	0	5	300	2,847	4,420
MIDNIGHT	151	0	1,471	1,622	200	0	0	196	89	0	485	103	0	0	0	0	103	243	0	0	0	0	243	2,453	4,814

WEEKEND PEAK PARKING DEMAND: 3,890
PARKING SUPPLY: 7,267
SURPLUS OR (DEFICIENCY): 3,377

59

TABLE 5
WEEKDAY SHARED PARKING DEMAND ANALYSIS
EXISTING DEVELOPMENT IN TOWN CENTER PLUS OCMA (TYPICAL OPERATIONS)
Orange County Museum of Art, Costa Mesa

	Zone 1				Zone 2							Zone 3						Zone 4										
								Hotel																Town Center	Town Ctr Supply = 7,267	Future OCMA	Town Ctr Demand	Residual
LAND USE	Rest-aurants	Office	Perf. Arts Theater Events [a]	Zone 1 Total Demand	Rest-aurants	Office	Retail	Guest Rooms	Rest./ Banquet	Meeting/ Conf.	Zone 2 Total Demand	Rest-aurants	Office	Medical Office	Trade School	Retail	Zone 3 Total Demand	Rest-aurants	Office	Bank	Medical Office	Retail	Zone 4 Total Demand	Total Demand	Surplus or (Deficiency)	Parking Demand	with OCMA	Surplus or (Deficiency)
SIZE	18,000 SF	446,500 SF	6,302 seats	--	23,837 SF	436,424 SF	5,145 SF	392 rooms	17,657 SF	19,891 SF	--	12,237 SF	347,429 SF	0 SF	17,200 SF	15,513 SF	--	28,945 SF	672,666 SF	103,292 SF	14,975 SF	9,333 SF	--	--	--	--	--	--
PEAK DEMAND	216 spaces	1,116 spaces	2,101 spaces	3,433 spaces	286 spaces	1,091 spaces	21 spaces	196 spaces	127 spaces	263 spaces	1,983 spaces	147 spaces	869 spaces	0 spaces	172 spaces	62 spaces	1,249 spaces	347 spaces	1,682 spaces	516 spaces	90 spaces	37 spaces	2,673 spaces	9,339 spaces	--	--	--	--
6:00 AM	0	33	0	33	0	33	0	196	25	0	254	0	26	0	0	0	26	0	50	15	3	0	69	382	6,885	0	382	6,885
7:00 AM	4	223	0	228	6	218	2	167	25	0	418	3	174	0	0	5	182	7	336	103	18	3	468	1,294	5,973	0	1,294	5,973
8:00 AM	11	703	*165*	879	14	687	3	127	25	131	989	7	547	0	17	11	582	17	1,059	325	57	6	1,465	3,915	3,352	17	3,932	3,335
9:00 AM	22	1,038	*165*	1,224	29	1,015	8	108	25	263	1,447	15	808	0	77	25	924	35	1,564	480	84	15	2,177	5,774	1,493	17	5,791	1,476
10:00 AM	43	1,116	*165*	1,324	57	1,091	13	88	25	263	1,538	29	869	0	172	40	1,110	69	1,682	516	90	24	2,382	6,354	913	31	6,385	882
11:00 AM	65	1,116	*165*	1,346	86	1,091	17	69	38	263	1,563	44	869	0	95	52	1,059	104	1,682	516	90	31	2,423	6,391	876	39	6,430	837
NOON	108	1,005	*165*	1,277	143	982	19	59	64	263	1,529	73	782	0	95	57	1,007	174	1,513	465	81	34	2,267	6,081	1,186	40	6,121	1,146
1:00 PM	151	1,005	*165*	1,321	200	982	20	59	89	263	1,612	103	782	0	103	59	1,046	243	1,513	465	81	35	2,338	6,317	950	39	6,356	911
2:00 PM	**130**	**1,083**	***165***	**1,377**	**172**	**1,058**	**19**	**69**	**76**	**263**	**1,656**	**88**	**843**	**0**	**103**	**57**	**1,091**	**208**	**1,631**	**501**	**87**	**34**	**2,462**	**6,586**	**681**	**37**	**6,623**	**644**
3:00 PM	130	1,038	*165*	1,332	172	1,015	19	69	70	263	1,606	88	808	0	103	56	1,055	208	1,564	480	84	34	2,370	6,363	904	27	6,390	877
4:00 PM	108	860	*165*	1,132	143	840	17	88	64	263	1,415	73	669	0	103	52	897	174	1,295	398	69	31	1,966	5,410	1,857	17	5,427	1,840
5:00 PM	151	525	*165*	841	200	513	15	118	89	263	1,198	103	408	0	103	47	661	243	790	243	42	28	1,346	4,045	3,222	17	4,062	3,205
6:00 PM	194	257	1,282	1,733	257	251	16	137	114	263	1,039	132	200	0	40	48	420	313	387	119	21	29	868	4,060	3,207	0	4,060	3,207
7:00 PM	216	78	1,429	1,723	286	76	17	147	127	263	917	147	61	0	40	53	300	347	118	36	6	32	539	3,479	3,788	0	3,479	3,788
8:00 PM	216	78	1,597	1,891	286	76	17	176	127	263	946	147	61	0	40	52	299	347	118	36	6	31	538	3,674	3,593	0	3,674	3,593
9:00 PM	216	33	1,597	1,846	286	33	12	186	127	263	907	147	26	0	40	36	249	347	50	15	3	22	438	3,439	3,828	0	3,439	3,828
10:00 PM	194	33	1,597	1,825	257	33	6	196	114	131	738	132	26	0	40	19	217	313	50	15	3	11	392	3,172	4,095	0	3,172	4,095
11:00 PM	151	0	1,282	1,433	200	0	2	196	89	0	488	103	0	0	17	7	127	243	0	0	0	4	248	2,295	4,972	0	2,295	4,972
MIDNIGHT	108	0	1,114	1,222	143	0	0	196	64	0	403	73	0	0	0	0	73	174	0	0	0	0	174	1,871	5,396	0	1,871	5,396

	WEEKDAY PEAK PARKING DEMAND:	**6,586**
	PARKING SUPPLY:	**7,267**
	SURPLUS OR (DEFICIENCY):	**681**

	6,623
	7,267
	644

Note:
[a] Presumes no matinees on weekdays, and 165 administrative staff between 8:00 AM and 5:00 PM on weekdays.

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TABLE 6
WEEKEND SHARED PARKING DEMAND ANALYSIS
EXISTING DEVELOPMENT IN TOWN CENTER PLUS OCMA (TYPICAL OPERATIONS)
Orange County Museum of Art, Costa Mesa

LINSCOTT LAW & GREENSPAN engineers

	Zone 1				Zone 2							Zone 3						Zone 4										
								Hotel																				
LAND USE	Rest-aurants	Office	Perf. Arts Theater Events	Zone 1 Total Demand	Rest-aurants	Office	Retail	Guest Rooms	Rest./ Banquet	Meeting/ Conf.	Zone 2 Total Demand	Rest-aurants	Office	Medical Office	Trade School	Retail	Zone 3 Total Demand	Rest-aurants	Office	Bank	Medical Office	Retail	Zone 4 Total Demand	Town Center Total Demand	Town Ctr Supply = 7,267 Surplus or (Deficiency)	Future OCMA Parking Demand	Town Ctr Demand with OCMA	Residual Surplus or (Deficiency)
SIZE	18,000 SF	446,500 SF	6,302 seats	--	23,837 SF	436,424 SF	5,145 SF	392 rooms	17,657 SF	19,891 SF	--	12,237 SF	347,429 SF	0 SF	17,200 SF	15,513 SF	--	28,945 SF	672,666 SF	103,292 SF	14,975 SF	9,333 SF	--	--	--	--	--	--
PEAK DEMAND	216 spaces	1,116 spaces	2,101 spaces	3,433 spaces	286 spaces	1,091 spaces	21 spaces	196 spaces	127 spaces	263 spaces	1,983 spaces	147 spaces	869 spaces	0 spaces	172 spaces	62 spaces	1,249 spaces	347 spaces	1,682 spaces	516 spaces	90 spaces	37 spaces	2,673 spaces	9,339 spaces	--	--	--	--
6:00 AM	0	0	0	0	0	0	0	176	25	0	202	0	0	0	0	0	0	0	0	0	0	0	0	202	7,065	0	202	7,065
7:00 AM	4	33	0	38	6	33	1	137	25	0	202	3	26	0	0	2	31	7	50	15	3	1	77	347	6,920	0	347	6,920
8:00 AM	6	112	0	118	9	109	2	118	25	131	394	4	87	0	52	6	149	10	168	52	9	4	243	905	6,362	17	922	6,345
9:00 AM	13	145	0	158	17	142	6	98	25	263	551	9	113	0	114	19	254	21	219	67	12	11	329	1,293	5,974	17	1,310	5,957
10:00 AM	17	145	0	162	23	142	9	78	25	263	540	12	113	0	114	28	267	28	219	67	12	17	342	1,311	5,956	31	1,342	5,925
11:00 AM	22	190	0	211	29	185	15	69	38	263	598	15	148	0	114	45	322	35	286	88	15	27	451	1,582	5,685	39	1,621	5,646
NOON	65	190	630	885	86	185	17	59	38	263	648	44	148	0	114	53	358	104	286	88	15	32	525	2,416	4,851	40	2,456	4,811
1:00 PM	97	145	1,471	1,713	129	142	20	59	57	263	669	66	113	0	114	59	352	156	219	67	12	35	489	3,223	4,044	39	3,262	4,005
2:00 PM	97	112	1,471	1,680	129	109	21	69	57	263	647	66	87	0	114	62	329	156	168	52	9	37	422	3,078	4,189	37	3,115	4,152
3:00 PM	97	78	1,471	1,646	129	76	21	78	57	263	624	66	61	0	114	62	303	156	118	36	6	37	354	2,927	4,340	27	2,954	4,313
4:00 PM	97	78	1,471	1,646	129	76	19	98	57	263	641	66	61	0	114	56	297	156	118	36	6	34	350	2,934	4,333	17	2,951	4,316
5:00 PM	130	33	1,471	1,634	172	33	15	118	76	263	676	88	26	0	114	47	275	208	50	15	3	28	305	2,890	4,377	17	2,907	4,360
6:00 PM	194	33	1,681	1,909	257	33	13	137	114	263	818	132	26	0	52	40	251	313	50	15	3	24	406	3,382	3,885	0	3,382	3,885
7:00 PM	205	33	1,891	2,130	272	33	12	157	121	263	857	140	26	0	0	37	203	330	50	15	3	22	421	3,610	3,657	0	3,610	3,657
8:00 PM	**216**	**33**	**2,101**	**2,350**	**286**	**33**	**11**	**176**	**127**	**263**	**896**	**147**	**26**	**0**	**0**	**34**	**207**	**347**	**50**	**15**	**3**	**21**	**437**	**3,890**	**3,377**	**0**	**3,890**	**3,377**
9:00 PM	216	0	2,101	2,317	286	0	8	186	127	263	870	147	0	0	0	25	172	347	0	0	0	15	362	3,721	3,546	0	3,721	3,546
10:00 PM	205	0	2,101	2,306	272	0	8	196	121	131	728	140	0	0	0	24	163	330	0	0	0	14	344	3,541	3,726	0	3,541	3,726
11:00 PM	184	0	1,681	1,864	243	0	3	196	108	0	550	125	0	0	0	8	133	295	0	0	0	5	300	2,847	4,420	0	2,847	4,420
MIDNIGHT	151	0	1,471	1,622	200	0	0	196	89	0	485	103	0	0	0	0	103	243	0	0	0	0	243	2,453	4,814	0	2,453	4,814
																							WEEKEND PEAK PARKING DEMAND:	3,890			3,890	
																							PARKING SUPPLY:	7,267			7,267	
																							SURPLUS OR (DEFICIENCY):	3,377			3,377	

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APPENDIX A

AUGUST 8, 2016 PARKING STUDY

MEMORANDUM

To:	Willa Bouwens-Killeen Daniel Inloes Development Services Department City of Costa Mesa	Date:	August 18, 2016
From:	Paul W. Wilkinson, P.E. Trissa (de Jesus) Allen, P.E. LLG, Engineers	LLG Ref:	2.16.3673.1
Subject:	Parking Study for the Proposed OCMA in South Coast Town Center		

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Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit this Parking Study for the proposed OCMA within the South Coast Town Center area of the City of Costa Mesa. Our study approach and findings, which address comments provided by City staff, are summarized below.

1. Parking Methodology and Existing Conditions

a. The South Coast Town Center (SCTC) model, which was developed on June 25, 2001, was used as basis for the analysis.

b. SCTC was disaggregated into Zones 1, 2, 3, and 4 (see ***Figure 1***). The proposed OCMA will be located within Zone 1, and by agreement, its weekday daytime parking needs will be accommodated within the Center Tower parking structure located nearby and also within Zone 1.

c. The existing development for SCTC, which is summarized in ***Table 1***, reflects full tenant occupancy of all existing buildings and presumes no theater matinees on weekdays. The future Water Grill Restaurant (previously Scott's Seafood) has been accounted for in Zone 2 to address City staff's comments.

   Also requested by City staff, Zone 4, which corresponds to the area located south of Anton Boulevard, was included in the analysis. It should be noted that 3210 Park Center (located within Zone 4) currently includes 3,804 SF of restaurant use (Specialty's) and 6,775 SF of office, but the main body of the analysis presumes 9,260 SF of restaurant (consistent with prior SCTC studies) as basis, and as a conservative measure because 9,260 SF of restaurant yields a greater parking requirement compared to a mix of restaurant and office uses. ***Appendix A*** of this technical memorandum contains ***Tables A-1*** through ***A-5***, and ***Figures A-1*** through ***A-4***, which reflect the less conservative parking scenario corresponding to 3,804 SF of restaurant and 6,775 SF of office for 3210 Park Center.

d. The shared parking ratios and profiles of the SCTC model (per ***Table 2***) were applied in conjunction with the size inputs per *Table 1* to develop a snapshot

of existing parking conditions in Town Center without OCMA, as presented in ***Tables 3*** and ***4*** under weekday and weekend conditions, respectively.

e. Existing parking supply in SCTC totals 7,307 spaces, which consist of 4,403 spaces north of Anton Boulevard, and 2,904 spaces south of Anton Boulevard.

f. For full occupancy in SCTC, without OCMA, parking needs are greater during a weekday, with a peak demand of 6,553 spaces (at 2:00pm), which corresponds to a **surplus of 754 spaces** when compared against the 7,307-space supply within Town Center. Parking surpluses during all other hours on a weekday and weekend day will be greater.

2. OCMA Parking Demand Estimation

a. Based on operational data provided by OCMA, OCMA's parking needs were estimated for the following four scenarios:
   - **Typical Operations** (weekdays and weekends)
   - **Free Family Day** (6-9 per year; weekends only)
   - **Rental Events** (20-35 per year; weeknights or Saturday evenings only)
   - **Exhibition Openings** (3-4 per year; Friday evenings only)

b. ***Table 5*** describes the operational basis and indicates the following peak demand for OCMA under each scenario:
   - **Typical Operations: 40 spaces at 12:00pm**
   - **Free Family Day:** 122 spaces at 1:00pm
   - **Rental Events:** 200 spaces between 6:00pm and 9:00pm
   - **Exhibition Openings:** 300 spaces at 7:00pm

3. Integration of OCMA Demand into SCTC Model

a. During typical operations, OCMA's hourly demand estimates were added to the existing demand summaries for Town Center. These results are presented in ***Tables 6*** and *7*, and illustrated on ***Figures 2*** and ***4***.

b. Based on the application of the SCTC model, existing plus OCMA (typical operations) conditions within Town Center correspond to a peak demand of 6,590 spaces at 2:00pm (including a demand of 37 spaces for OCMA during that hour), which corresponds to a **surplus of 717 spaces** when compared against the 7,307-space supply within Town Center. Parking surpluses during all other hours on a weekday and weekend day will be greater. (See *Figures 2* and *4*, plus the summary in ***Table 8***)

c. Under conditions with a special event at OCMA (Free Family Day, rental events, exhibition openings), the weekday peak demand remains the same (6,590 spaces at 2:00pm). Weekend peak demand occurs at 8:00pm and varies between 3,787 spaces (Free Family Day) and 3,978 spaces (rental events), corresponding to a surplus of 3,329 spaces to 3,520 spaces when compared against the 7,307-space supply within Town Center. (See *Figures 3* and *5*, plus the summary in *Table 8*)

d. Based on the above findings, there will be adequate existing supply in SCTC to fully serve OCMA's future, incremental parking needs.

4. Validation by Comparison to Actual Conditions

a. Based on actual parking demand counts provided to LLG by the South Coast Plaza Office Division for the Center Tower, Plaza Tower, and CA Bank & Trust parking structures, weekday parking demand and surpluses in unreserved spaces were sorted and ranked, as summarized in ***Table 9***. The data included 25 weekdays, from Monday, February 22, 2016 through Friday, April 1, 2016.

b. Focusing to Zone 1 (where OCMA will be located), the Center Tower parking structure, which will serve the weekday daytime parking needs of OCMA by agreement, provides 1,070 unreserved spaces. As indicated on *Table 9*, the 95th percentile peak demand observed on a weekday (857 spaces at 10:00am) translates to an **actual surplus of 213 spaces**.

c. ***Table 10*** indicates that, accounting for OCMA's parking needs under typical operations at the 10:00am peak hour, the weekday surplus of 213 spaces would only be slightly reduced to **182 residual surplus spaces** within Zone 1. This finding supports the study's conclusion that there will be adequate supply

d. Because additional parking opportunities will be available outside of Zone 1, *Table 10* also compares OCMA demand against actual surpluses with the inclusion of Zone 2 and Zone 3. *Table 10* shows that, at 2:00pm, the actual surplus with the addition of OCMA demand within Zones 1, 2, and 3 is estimated to be 354 spaces. Deriving the calculated surplus from *Table 6* in a similar manner for Zones 1, 2, and 3 results in an estimated surplus of 275 spaces (i.e., 4,403-space supply minus 4,128-space demand with OCMA at 2:00pm within Zones 1, 2, and 3), which validates the 354-space actual surplus reported in *Table 10*.

e. Based on the above findings, there will be adequate existing SCTC supply north of Anton Boulevard, specifically within Zone 1 alone, and Zones 1, 2, and 3 collectively, to fully serve OCMA's future, incremental parking needs.

LINSCOTT LAW & GREENSPAN engineers

We appreciate the opportunity to prepare this analysis. Please call us at 949.825.6175 if you have any questions or comments. Thank you.

cc: Annette Wiley, Wiley Architects
Todd Smith, OCMA
Brandon Welling, Morphosis
Crystal Wang, Morphosis

LINSCOTT LAW & GREENSPAN engineers

TABLE 1
SOUTH COAST TOWN CENTER
EXISTING DEVELOPMENT SUMMARY
Orange County Museum of Art, Costa Mesa

Description	Restau-rant (SF)	Office (SF)	Bank (SF)	Medical Office (SF)	Trade School (SF)	Performing Arts Theater Seats	Performing Arts Theater (SF)	Retail (SF)	Hotel Rooms	Hotel Rest./ Banquet (SF)	Hotel Meeting /Conf. (SF)	Hotel Total (SF)	TOTAL (SF)
ZONE 1													
650 Town Center (Center Tower, Center Club)	18,000	446,500	0	0	0	*0*	0	0	*0*	0	0	0	464,500
600 Town Center (Segerstrom Center for the Arts) [a]:													
Segerstrom Hall	0	0	0	0	0	*2,994*	237,000	0	*0*	0	0	0	237,000
Renee&Henry Segerstrom Concert Hall	0	0	0	0	0	*1,954*	n/a	0	*0*	0	0	0	n/a
Samueli Theater	0	0	0	0	0	*417*	4,700	0	*0*	0	0	0	4,700
655 Town Center (South Coast Repertory) [b]	0	0	0	0	0	*937*	39,640	0	*0*	0	0	0	39,640
ZONE 1 TOTAL:	**18,000**	**446,500**	**0**	**0**	**0**	*6,302*	**281,340**	**0**	*0*	**0**	**0**	**0**	**745,840**
ZONE 2													
686 Anton (The Westin SCP) [c]	0	0	0	0	0	*0*	0	0	*392*	17,657	19,891	330,000	330,000
650 Anton (retail, Pizzeria Ortica)	5,120	0	0	0	0	*0*	0	5,145	*0*	0	0	0	10,265
600 Anton (Plaza Tower)	0	436,424	0	0	0	*0*	0	0	*0*	0	0	0	436,424
3300 Bristol (previously Scott's Seafood; future Water Grill Restaurant)	18,717	0	0	0	0	*0*	0	0	*0*	0	0	0	18,717
ZONE 2 TOTAL:	**23,837**	**436,424**	**0**	**0**	**0**	*0*	**0**	**5,145**	*392*	**17,657**	**19,891**	**330,000**	**795,406**
ZONE 3													
3420 Bristol (CA Bank & Trust)	0	61,658	0	5,167	0	*0*	0	0	*0*	0	0	0	66,825
3400 Bristol (Toni & Guy Academy)	0	0	0	0	17,200	*0*	0	0	*0*	0	0	0	17,200
695 Town Center (Park Tower)	2,757	287,966	0	0		*0*	0	15,513	*0*	0	0	0	306,236
ZONE 3 TOTAL:	**2,757**	**349,624**	**0**	**5,167**	**17,200**	*0*	**0**	**15,513**	*0*	**0**	**0**	**0**	**390,261**
ZONE 4													
655 Anton (SubZero/Wolf Showroom)	0	0	0	0	0	*0*	0	9,333	*0*	0	0	0	9,333
633 Anton (Mastro's Steakhouse)	11,340	0	0	0	0	*0*	0	0	*0*	0	0	0	11,340
3200 Park Center (Brookfield Residential)	0	302,615	0	0	0	*0*	0	0	*0*	0	0	0	302,615
3210 Park Center [d]	9,260	0	0	0	0	*0*	0	0	*0*	0	0	0	9,260
601 Anton (TGI Fridays)	8,345	0	0	0	0	*0*	0	0	*0*	0	0	0	8,345
611 Anton (Comerica Bank)	0	302,615	0	0	0	*0*	0	0	*0*	0	0	0	302,615
675 Anton (Pacific Union Financial; previously 3233 Park Center/B of A)	0	67,436	0	0	0	*0*	0	0	*0*	0	0	0	67,436
3200 Bristol (US Bank, Etrade Financial)	0	0	103,292	14,975	0	*0*	0	0	*0*	0	0	0	118,267
ZONE 4 TOTAL:	**28,945**	**672,666**	**103,292**	**14,975**	**0**	*0*	**0**	**9,333**	*0*	**0**	**0**	**0**	**829,211**
EXISTING TOWN CENTER TOTAL (Zones 1, 2, 3, and 4)	**73,539**	**1,905,214**	**103,292**	**20,142**	**17,200**	*6,302*	**281,340**	**29,991**	*392*	**17,657**	**19,891**	**330,000**	**2,760,718**

Notes:

[a] The Segerstrom Center for the Arts campus also includes the Arts Plaza, Judy Morr Theater, Dodge Education Center, and Leatherby's Café Rouge, which are all ancillary uses and/or alternative spaces not used concurrently with Segerstrom Hall, Concert Hall, and Samueli Theater.

[b] South Coast Repertory includes 507 seats in the Segerstrom Stage, 336 seats in the Argyros Stage, and 94 seats in the Nicholas Studio.

[c] Includes 11,657 SF that was previously occupied by Pinot Provence (restaurant).

[d] 3210 Park Center currently includes 3,804 SF of restaurant (Specialty's) and 6,775 SF of office uses, but this study presumed 9,260 SF of restaurant (consistent with prior Town Center studies) as a conservative measure (i.e., 9,260 SF of restaurant yields a greater parking requirement compared to a mix of restaurant and office uses).

LINSCOTT LAW & GREENSPAN engineers

TABLE 2
SOUTH COAST TOWN CENTER
SHARED PARKING RATIO AND PROFILE SUMMARY
Orange County Museum of Art, Costa Mesa

Land Use Types ⇨	Office		Banks		Medical Office		Retail		Restaurant		Performing Arts Theater (Events) [a]		Hotel Guest Rooms		Hotel Rest./Lounge		Hotel Meeting/ Conference		Health Club	
Peak Parking Ratio ⇨	2.5 spaces per 1,000 SF		5 spaces per 1,000 SF		6 spaces per 1,000 SF		4 spaces per 1,000 SF		12 spaces per 1,000 SF		1 space per 3 seats		1 space per 2 rooms		7.2 spaces per 1,000 SF *(12 spaces per 1,000 SF @ 60% non-guest)*		13.2 spaces per KSF *(22 spaces per 1,000 SF @ 60% non-guest)*		6.5 spaces per KSF	
Time of Day ⇩	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends	Week-days	Week-ends
6:00 AM	3%	0%	3%	0%	3%	0%	0%	0%	0%	0%	0%	0%	100%	90%	20%	20%	0%	0%	80%	10%
7:00 AM	20%	3%	20%	3%	20%	3%	8%	3%	2%	2%	0%	0%	85%	70%	20%	20%	0%	0%	80%	30%
8:00 AM	63%	10%	63%	10%	63%	10%	17%	10%	5%	3%	[a]	0%	65%	60%	20%	20%	50%	50%	65%	85%
9:00 AM	93%	13%	93%	13%	93%	13%	40%	30%	10%	6%	[a]	0%	55%	50%	20%	20%	100%	100%	55%	70%
10:00 AM	100%	13%	100%	13%	100%	13%	65%	45%	20%	8%	[a]	0%	45%	40%	20%	20%	100%	100%	50%	50%
11:00 AM	100%	17%	100%	17%	100%	17%	83%	73%	30%	10%	[a]	0%	35%	35%	30%	30%	100%	100%	40%	65%
12:00 PM	90%	17%	90%	17%	90%	17%	92%	85%	50%	30%	[a]	30%	30%	30%	50%	30%	100%	100%	40%	45%
1:00 PM	90%	13%	90%	13%	90%	13%	95%	95%	70%	45%	[a]	70%	30%	30%	70%	45%	100%	100%	40%	50%
2:00 PM	97%	10%	97%	10%	97%	10%	92%	100%	60%	45%	[a]	70%	35%	35%	60%	45%	100%	100%	30%	45%
3:00 PM	93%	7%	93%	7%	93%	7%	90%	100%	60%	45%	[a]	70%	35%	40%	55%	45%	100%	100%	50%	50%
4:00 PM	77%	7%	77%	7%	77%	7%	83%	90%	50%	45%	[a]	70%	45%	50%	50%	45%	100%	100%	67%	50%
5:00 PM	47%	3%	47%	3%	47%	3%	75%	75%	70%	60%	[a]	70%	60%	60%	70%	60%	100%	100%	90%	45%
6:00 PM	23%	3%	23%	3%	23%	3%	78%	65%	90%	90%	61%	80%	70%	70%	90%	90%	100%	100%	100%	25%
7:00 PM	7%	3%	7%	3%	7%	3%	85%	60%	100%	95%	68%	90%	75%	80%	100%	95%	100%	100%	95%	10%
8:00 PM	7%	3%	7%	3%	7%	3%	83%	55%	100%	100%	76%	100%	90%	90%	100%	100%	100%	100%	50%	5%
9:00 PM	3%	0%	3%	0%	3%	0%	58%	40%	100%	100%	76%	100%	95%	95%	100%	100%	100%	100%	10%	0%
10:00 PM	3%	0%	3%	0%	3%	0%	30%	38%	90%	95%	76%	100%	100%	100%	90%	95%	50%	50%	10%	0%
11:00 PM	0%	0%	0%	0%	0%	0%	12%	13%	70%	85%	61%	80%	100%	100%	70%	85%	0%	0%	0%	0%
Midnight	0%	0%	0%	0%	0%	0%	0%	0%	50%	70%	53%	70%	100%	100%	50%	70%	0%	0%	0%	0%

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Note:

[a] Presumes no matinees on weekdays, and that parking needs are solely attributable to theater administrative staff between 8:00 AM and 5:00 PM.

TABLE 3
WEEKDAY SHARED PARKING DEMAND ANALYSIS
EXISTING DEVELOPMENT IN TOWN CENTER
Orange County Museum of Art, Costa Mesa

LINSCOTT LAW & GREENSPAN engineers

	Zone 1				Zone 2							Zone 3						Zone 4							
								Hotel																	
LAND USE	Rest-aurants	Office	Perf. Arts Theater Events [a]	Zone 1 Total Demand	Rest-aurants	Office	Retail	Guest Rooms	Rest./ Banquet	Meeting/ Conf.	Zone 2 Total Demand	Rest-aurants	Office	Medical Office	Trade School	Retail	Zone 3 Total Demand	Rest-aurants	Office	Bank	Medical Office	Retail	Zone 4 Total Demand	Town Center Total Demand	Town Ctr Supply = 7,307 Surplus or (Deficiency)
SIZE	18,000 SF	446,500 SF	6,302 seats	--	23,837 SF	436,424 SF	5,145 SF	392 rooms	17,657 SF	19,891 SF	--	2,757 SF	349,624 SF	5,167 SF	17,200 SF	15,513 SF	--	28,945 SF	672,666 SF	103,292 SF	14,975 SF	9,333 SF	--	--	--
PEAK DEMAND	216 spaces	1,116 spaces	2,101 spaces	3,433 spaces	286 spaces	1,091 spaces	21 spaces	196 spaces	127 spaces	263 spaces	1,983 spaces	33 spaces	874 spaces	31 spaces	172 spaces	62 spaces	1,172 spaces	347 spaces	1,682 spaces	516 spaces	90 spaces	37 spaces	2,673 spaces	9,261 spaces	--
6:00 AM	0	33	0	33	0	33	0	196	25	0	254	0	26	1	0	0	27	0	50	15	3	0	69	383	6,924
7:00 AM	4	223	0	228	6	218	2	167	25	0	418	1	175	6	0	5	187	7	336	103	18	3	468	1,299	6,008
8:00 AM	11	703	*165*	879	14	687	3	127	25	131	989	2	551	20	17	11	599	17	1,059	325	57	6	1,465	3,933	3,374
9:00 AM	22	1,038	*165*	1,224	29	1,015	8	108	25	263	1,447	3	813	29	77	25	947	35	1,564	480	84	15	2,177	5,796	1,511
10:00 AM	43	1,116	*165*	1,324	57	1,091	13	88	25	263	1,538	7	874	31	172	40	1,124	69	1,682	516	90	24	2,382	6,368	939
11:00 AM	65	1,116	*165*	1,346	86	1,091	17	69	38	263	1,563	10	874	31	95	52	1,061	104	1,682	516	90	31	2,423	6,394	913
NOON	108	1,005	*165*	1,277	143	982	19	59	64	263	1,529	17	787	28	95	57	983	174	1,513	465	81	34	2,267	6,057	1,250
1:00 PM	151	1,005	*165*	1,321	200	982	20	59	89	263	1,612	23	787	28	103	59	1,000	243	1,513	465	81	35	2,338	6,270	1,037
2:00 PM	**130**	**1,083**	***165***	**1,377**	**172**	**1,058**	**19**	**69**	**76**	**263**	**1,656**	**20**	**848**	**30**	**103**	**57**	**1,058**	**208**	**1,631**	**501**	**87**	**34**	**2,462**	**6,553**	**754**
3:00 PM	130	1,038	*165*	1,332	172	1,015	19	69	70	263	1,606	20	813	29	103	56	1,020	208	1,564	480	84	34	2,370	6,329	978
4:00 PM	108	860	*165*	1,132	143	840	17	88	64	263	1,415	17	673	24	103	52	868	174	1,295	398	69	31	1,966	5,381	1,926
5:00 PM	151	525	*165*	841	200	513	15	118	89	263	1,198	23	411	15	103	47	598	243	790	243	42	28	1,346	3,983	3,324
6:00 PM	194	257	1,282	1,733	257	251	16	137	114	263	1,039	30	201	7	40	48	326	313	387	119	21	29	868	3,966	3,341
7:00 PM	216	78	1,429	1,723	286	76	17	147	127	263	917	33	61	2	40	53	189	347	118	36	6	32	539	3,368	3,939
8:00 PM	216	78	1,597	1,891	286	76	17	176	127	263	946	33	61	2	40	52	188	347	118	36	6	31	538	3,563	3,744
9:00 PM	216	33	1,597	1,846	286	33	12	186	127	263	907	33	26	1	40	36	136	347	50	15	3	22	438	3,327	3,980
10:00 PM	194	33	1,597	1,825	257	33	6	196	114	131	738	30	26	1	40	19	116	313	50	15	3	11	392	3,071	4,236
11:00 PM	151	0	1,282	1,433	200	0	2	196	89	0	488	23	0	0	17	7	48	243	0	0	0	4	248	2,216	5,091
MIDNIGHT	108	0	1,114	1,222	143	0	0	196	64	0	403	17	0	0	0	0	17	174	0	0	0	0	174	1,814	5,493

Note:
[a] Presumes no matinees on weekdays, and 165 administrative staff between 8:00 AM and 5:00 PM on weekdays.

WEEKDAY PEAK PARKING DEMAND: 6,553
PARKING SUPPLY: 7,307
SURPLUS OR (DEFICIENCY): 754

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TABLE 4
WEEKEND SHARED PARKING DEMAND ANALYSIS
EXISTING DEVELOPMENT IN TOWN CENTER
Orange County Museum of Art, Costa Mesa

LINSCOTT LAW & GREENSPAN engineers

	Zone 1				Zone 2							Zone 3						Zone 4						Town Center Total Demand	Town Ctr Supply = 7,307 Surplus or (Deficiency)
								Hotel																		
LAND USE	Rest-aurants	Office	Perf. Arts Theater Events	Zone 1 Total Demand	Rest-aurants	Office	Retail	Guest Rooms	Rest./ Banquet	Meeting/ Conf.	Zone 2 Total Demand	Rest-aurants	Office	Medical Office	Trade School	Retail	Zone 3 Total Demand	Rest-aurants	Office	Bank	Medical Office	Retail	Zone 4 Total Demand		
SIZE	18,000 SF	446,500 SF	6,302 seats	--	23,837 SF	436,424 SF	5,145 SF	392 rooms	17,657 SF	19,891 SF	--	2,757 SF	349,624 SF	5,167 SF	17,200 SF	15,513 SF	--	28,945 SF	672,666 SF	103,292 SF	14,975 SF	9,333 SF	--	--	--
PEAK DEMAND	216 spaces	1,116 spaces	2,101 spaces	3,433 spaces	286 spaces	1,091 spaces	21 spaces	196 spaces	127 spaces	263 spaces	1,983 spaces	33 spaces	874 spaces	31 spaces	172 spaces	62 spaces	1,172 spaces	347 spaces	1,682 spaces	516 spaces	90 spaces	37 spaces	2,673 spaces	9,261 spaces	--
6:00 AM	0	0	0	0	0	0	0	176	25	0	202	0	0	0	0	0	0	0	0	0	0	0	0	202	7,105
7:00 AM	4	33	0	38	6	33	1	137	25	0	202	1	26	1	0	2	30	7	50	15	3	1	77	346	6,961
8:00 AM	6	112	0	118	9	109	2	118	25	131	394	1	87	3	52	6	150	10	168	52	9	4	243	905	6,402
9:00 AM	13	145	0	158	17	142	6	98	25	263	551	2	114	4	114	19	252	21	219	67	12	11	329	1,291	6,016
10:00 AM	17	145	0	162	23	142	9	78	25	263	540	3	114	4	114	28	262	28	219	67	12	17	342	1,307	6,000
11:00 AM	22	190	0	211	29	185	15	69	38	263	598	3	149	5	114	45	316	35	286	88	15	27	451	1,577	5,730
NOON	65	190	630	885	86	185	17	59	38	263	648	10	149	5	114	53	331	104	286	88	15	32	525	2,389	4,918
1:00 PM	97	145	1,471	1,713	129	142	20	59	57	263	669	15	114	4	114	59	305	156	219	67	12	35	489	3,176	4,131
2:00 PM	97	112	1,471	1,680	129	109	21	69	57	263	647	15	87	3	114	62	281	156	168	52	9	37	422	3,030	4,277
3:00 PM	97	78	1,471	1,646	129	76	21	78	57	263	624	15	61	2	114	62	254	156	118	36	6	37	354	2,878	4,429
4:00 PM	97	78	1,471	1,646	129	76	19	98	57	263	641	15	61	2	114	56	248	156	118	36	6	34	350	2,886	4,421
5:00 PM	130	33	1,471	1,634	172	33	15	118	76	263	676	20	26	1	114	47	208	208	50	15	3	28	305	2,823	4,484
6:00 PM	194	33	1,681	1,909	257	33	13	137	114	263	818	30	26	1	52	40	149	313	50	15	3	24	406	3,281	4,026
7:00 PM	205	33	1,891	2,130	272	33	12	157	121	263	857	31	26	1	0	37	96	330	50	15	3	22	421	3,503	3,804
8:00 PM	**216**	**33**	**2,101**	**2,350**	**286**	**33**	**11**	**176**	**127**	**263**	**896**	**33**	**26**	**1**	**0**	**34**	**94**	**347**	**50**	**15**	**3**	**21**	**437**	**3,778**	**3,529**
9:00 PM	216	0	2,101	2,317	286	0	8	186	127	263	870	33	0	0	0	25	58	347	0	0	0	15	362	3,607	3,700
10:00 PM	205	0	2,101	2,306	272	0	8	196	121	131	728	31	0	0	0	24	55	330	0	0	0	14	344	3,433	3,874
11:00 PM	184	0	1,681	1,864	243	0	3	196	108	0	550	28	0	0	0	8	36	295	0	0	0	5	300	2,751	4,556
MIDNIGHT	151	0	1,471	1,622	200	0	0	196	89	0	485	23	0	0	0	0	23	243	0	0	0	0	243	2,373	4,934

WEEKEND PEAK PARKING DEMAND: 3,778
PARKING SUPPLY: 7,307
SURPLUS OR (DEFICIENCY): 3,529

TABLE 5
OCMA PARKING DEMAND ESTIMATION
Orange County Museum of Art, Costa Mesa

LINSCOTT LAW & GREENSPAN engineers

TYPICAL OPERATIONS (weekday or weekend)

Annual Attendance 50,000 visitors per year
Weekly Attendance 962 visitors per week (52 weeks/year)
Daily Attendance (rounded) 200 visitors per day in operation (open Wednesday through Sun, 11AM - 5PM)

	Visitor						Visitor Parking Accumulation	Employee Demand	Student Tour Buses in Designated Staging Areas	Total Demand
	Arrivals			Departures						
Time	%	Persons	Vehicles	%	Persons	Vehicles	(spaces)	(spaces)	(spaces)	(spaces)
8:00 AM	0%	0	0	0%	0	0	0	17	0	17
9:00 AM	0%	0	0	0%	0	0	0	17	0	17
10:00 AM	18%	36	14	0%	0	0	14	17	0	31
11:00 AM	18%	36	14	8%	16	6	22	17	0	39
12:00 PM	18%	36	14	16%	32	13	23	17	0	40
1:00 PM	16%	32	13	17%	34	14	22	17	0	39
2:00 PM	15%	30	12	18%	36	14	20	17	0	37
3:00 PM	10%	20	8	22%	44	18	10	17	0	27
4:00 PM	5%	10	5	19%	38	15	0	17	0	17
5:00 PM	0%	0	0	0%	0	0	0	17	0	17
Total	**100%**	**200**	**80**	**100%**	**200**	**80**				

FREE FAMILY DAY (6-9 times per year; Saturdays or Sundays only)

Anticipated Attendance (peak) 1,200 visitors per day

	Visitor						Visitor Parking Accumulation	Employee Demand	Student Tour Buses in Designated Staging Areas	Total Demand
	Arrivals			Departures						
Time	%	Persons	Vehicles	%	Persons	Vehicles	(spaces)	(spaces)	(spaces)	(spaces)
8:00 AM	0%	0	0	0%	0	0	0	17	0	17
9:00 AM	0%	0	0	0%	0	0	0	17	0	17
10:00 AM	12%	144	58	0%	0	0	58	17	0	75
11:00 AM	14%	168	67	7%	84	34	91	17	0	108
12:00 PM	14%	168	67	12%	144	58	100	17	0	117
1:00 PM	14%	168	67	13%	156	62	105	17	0	122
2:00 PM	12%	144	58	14%	168	67	96	17	0	113
3:00 PM	10%	120	48	15%	180	72	72	17	0	89
4:00 PM	10%	120	48	13%	156	62	58	17	0	75
5:00 PM	7%	84	34	13%	156	62	30	17	0	47
6:00 PM	4%	48	19	9%	108	43	6	8	0	14
7:00 PM	3%	36	14	4%	48	19	1	8	0	9
8:00 PM	0%	0	0	0%	0	0	1	8	0	9
Total	**100%**	**1,200**	**480**	**100%**	**1,200**	**480**				

RENTAL EVENTS (weeknights or Saturday evenings; 20-35 events per year)

Anticipated Attendance (peak) 400 guests per event

	Guests						Guest Parking Accumulation	Employee Demand	Student Tour Buses in Designated Staging Areas	Total Demand
	Arrivals			Departures						
Time	%	Persons	Vehicles	%	Persons	Vehicles	(spaces)	(spaces)	(spaces)	(spaces)
5:00 PM	0%	0	0	0%	0	0	0	40	--	40
6:00 PM	100%	400	160	0%	0	0	160	40	--	200
7:00 PM	0%	0	0	0%	0	0	160	40	--	200
8:00 PM	0%	0	0	0%	0	0	160	40	--	200
9:00 PM	0%	0	0	0%	0	0	160	40	--	200
10:00 PM	0%	0	0	50%	200	80	80	40	--	120
11:00 PM	0%	0	0	50%	200	80	0	40	--	40
12:00 AM	0%	0	0	0%	0	0	0	40	--	40
Total	**100%**	**400**	**160**	**100%**	**400**	**160**				

EXHIBITION OPENINGS (Friday evenings; 3-4 times per year)

Anticipated Attendance (peak) 1,000 guests per event

	Guests						Guest Parking Accumulation	Employee Demand	Student Tour Buses in Designated Staging Areas	Total Demand
	Arrivals			Departures						
Time	%	Persons	Vehicles	%	Persons	Vehicles	(spaces)	(spaces)	(spaces)	(spaces)
5:00 PM	0%	0	0	0%	0	0	0	100	--	100
6:00 PM	50%	500	200	10%	100	40	160	100	--	260
7:00 PM	40%	400	160	30%	300	120	200	100	--	300
8:00 PM	10%	100	40	30%	300	120	120	100	--	220
9:00 PM	0%	0	0	30%	300	120	0	100	--	100
10:00 PM	0%	0	0	0%	0	0	0	100	--	100
11:00 PM	0%	0	0	0%	0	0	0	100	--	100
12:00 AM	0%	0	0	0%	0	0	0	100	--	100
Total	**100%**	**1,000**	**400**	**100%**	**1,000**	**400**				

TABLE 6
WEEKDAY SHARED PARKING DEMAND ANALYSIS
EXISTING DEVELOPMENT IN TOWN CENTER PLUS OCMA (TYPICAL OPERATIONS)
Orange County Museum of Art, Costa Mesa

LINSCOTT LAW & GREENSPAN engineers

	Zone 1				Zone 2							Zone 3						Zone 4									
								Hotel																Town Center	Town Ctr Supply = 7,307	Future OCMA	Town Ctr Demand	Residual
LAND USE	Rest-aurants	Office	Perf. Arts Theater Events [a]	Zone 1 Total Demand	Rest-aurants	Office	Retail	Guest Rooms	Rest./ Banquet	Meeting/ Conf.	Zone 2 Total Demand	Rest-aurants	Office	Medical Office	Trade School	Retail	Zone 3 Total Demand	Rest-aurants	Office	Bank	Medical Office	Retail	Zone 4 Total Demand	Total Demand	Surplus or (Deficiency)	Parking Demand	with OCMA	Surplus or (Deficiency)
SIZE	18,000 SF	446,500 SF	6,302 seats	--	23,837 SF	436,424 SF	5,145 SF	392 rooms	17,657 SF	19,891 SF	--	2,757 SF	349,624 SF	5,167 SF	17,200 SF	15,513 SF	--	28,945 SF	672,666 SF	103,292 SF	14,975 SF	9,333 SF	--	--	--	--	--	--
PEAK DEMAND	216 spaces	1,116 spaces	2,101 spaces	3,433 spaces	286 spaces	1,091 spaces	21 spaces	196 spaces	127 spaces	263 spaces	1,983 spaces	33 spaces	874 spaces	31 spaces	172 spaces	62 spaces	1,172 spaces	347 spaces	1,682 spaces	516 spaces	90 spaces	37 spaces	2,673 spaces	9,261 spaces	--	--	--	--
6:00 AM	0	33	0	33	0	33	0	196	25	0	254	0	26	1	0	0	27	0	50	15	3	0	69	383	6,924	0	383	6,924
7:00 AM	4	223	0	228	6	218	2	167	25	0	418	1	175	6	0	5	187	7	336	103	18	3	468	1,299	6,008	0	1,299	6,008
8:00 AM	11	703	*165*	879	14	687	3	127	25	131	989	2	551	20	17	11	599	17	1,059	325	57	6	1,465	3,933	3,374	17	3,950	3,357
9:00 AM	22	1,038	*165*	1,224	29	1,015	8	108	25	263	1,447	3	813	29	77	25	947	35	1,564	480	84	15	2,177	5,796	1,511	17	5,813	1,494
10:00 AM	43	1,116	*165*	1,324	57	1,091	13	88	25	263	1,538	7	874	31	172	40	1,124	69	1,682	516	90	24	2,382	6,368	939	31	6,399	908
11:00 AM	65	1,116	*165*	1,346	86	1,091	17	69	38	263	1,563	10	874	31	95	52	1,061	104	1,682	516	90	31	2,423	6,394	913	39	6,433	874
NOON	108	1,005	*165*	1,277	143	982	19	59	64	263	1,529	17	787	28	95	57	983	174	1,513	465	81	34	2,267	6,057	1,250	40	6,097	1,210
1:00 PM	151	1,005	*165*	1,321	200	982	20	59	89	263	1,612	23	787	28	103	59	1,000	243	1,513	465	81	35	2,338	6,270	1,037	39	6,309	998
2:00 PM	**130**	**1,083**	***165***	**1,377**	**172**	**1,058**	**19**	**69**	**76**	**263**	**1,656**	**20**	**848**	**30**	**103**	**57**	**1,058**	**208**	**1,631**	**501**	**87**	**34**	**2,462**	**6,553**	**754**	**37**	**6,590**	**717**
3:00 PM	130	1,038	*165*	1,332	172	1,015	19	69	70	263	1,606	20	813	29	103	56	1,020	208	1,564	480	84	34	2,370	6,329	978	27	6,356	951
4:00 PM	108	860	*165*	1,132	143	840	17	88	64	263	1,415	17	673	24	103	52	868	174	1,295	398	69	31	1,966	5,381	1,926	17	5,398	1,909
5:00 PM	151	525	*165*	841	200	513	15	118	89	263	1,198	23	411	15	103	47	598	243	790	243	42	28	1,346	3,983	3,324	17	4,000	3,307
6:00 PM	194	257	1,282	1,733	257	251	16	137	114	263	1,039	30	201	7	40	48	326	313	387	119	21	29	868	3,966	3,341	0	3,966	3,341
7:00 PM	216	78	1,429	1,723	286	76	17	147	127	263	917	33	61	2	40	53	189	347	118	36	6	32	539	3,368	3,939	0	3,368	3,939
8:00 PM	216	78	1,597	1,891	286	76	17	176	127	263	946	33	61	2	40	52	188	347	118	36	6	31	538	3,563	3,744	0	3,563	3,744
9:00 PM	216	33	1,597	1,846	286	33	12	186	127	263	907	33	26	1	40	36	136	347	50	15	3	22	438	3,327	3,980	0	3,327	3,980
10:00 PM	194	33	1,597	1,825	257	33	6	196	114	131	738	30	26	1	40	19	116	313	50	15	3	11	392	3,071	4,236	0	3,071	4,236
11:00 PM	151	0	1,282	1,433	200	0	2	196	89	0	488	23	0	0	17	7	48	243	0	0	0	4	248	2,216	5,091	0	2,216	5,091
MIDNIGHT	108	0	1,114	1,222	143	0	0	196	64	0	403	17	0	0	0	0	17	174	0	0	0	0	174	1,814	5,493	0	1,814	5,493
																							WEEKDAY PEAK PARKING DEMAND:	6,553			6,590	
																							PARKING SUPPLY:	7,307			7,307	
																							SURPLUS OR (DEFICIENCY):	754			717	

Note:
[a] Presumes no matinees on weekdays, and 165 administrative staff between 8:00 AM and 5:00 PM on weekdays.

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3

TABLE 7
WEEKEND SHARED PARKING DEMAND ANALYSIS
EXISTING DEVELOPMENT IN TOWN CENTER PLUS OCMA (TYPICAL OPERATIONS)
Orange County Museum of Art, Costa Mesa

LINSCOTT LAW & GREENSPAN engineers

	Zone 1				Zone 2							Zone 3						Zone 4										
								Hotel																				
LAND USE	Rest-aurants	Office	Perf. Arts Theater Events	Zone 1 Total Demand	Rest-aurants	Office	Retail	Guest Rooms	Rest./ Banquet	Meeting/ Conf.	Zone 2 Total Demand	Rest-aurants	Office	Medical Office	Trade School	Retail	Zone 3 Total Demand	Rest-aurants	Office	Bank	Medical Office	Retail	Zone 4 Total Demand	Town Center Total Demand	Town Ctr Supply = 7,307 Surplus or (Deficiency)	Future OCMA Parking Demand	Town Ctr Demand with OCMA	Residual Surplus or (Deficiency)
SIZE	18,000 SF	446,500 SF	6,302 seats	--	23,837 SF	436,424 SF	5,145 SF	392 rooms	17,657 SF	19,891 SF	--	2,757 SF	349,624 SF	5,167 SF	17,200 SF	15,513 SF	--	28,945 SF	672,666 SF	103,292 SF	14,975 SF	9,333 SF	--	--	--	--	--	--
PEAK DEMAND	216 spaces	1,116 spaces	2,101 spaces	3,433 spaces	286 spaces	1,091 spaces	21 spaces	196 spaces	127 spaces	263 spaces	1,983 spaces	33 spaces	874 spaces	31 spaces	172 spaces	62 spaces	1,172 spaces	347 spaces	1,682 spaces	516 spaces	90 spaces	37 spaces	2,673 spaces	9,261 spaces	--	--	--	--
6:00 AM	0	0	0	0	0	0	0	176	25	0	202	0	0	0	0	0	0	0	0	0	0	0	0	202	7,105	0	202	7,105
7:00 AM	4	33	0	38	6	33	1	137	25	0	202	1	26	1	0	2	30	7	50	15	3	1	77	346	6,961	0	346	6,961
8:00 AM	6	112	0	118	9	109	2	118	25	131	394	1	87	3	52	6	150	10	168	52	9	4	243	905	6,402	17	922	6,385
9:00 AM	13	145	0	158	17	142	6	98	25	263	551	2	114	4	114	19	252	21	219	67	12	11	329	1,291	6,016	17	1,308	5,999
10:00 AM	17	145	0	162	23	142	9	78	25	263	540	3	114	4	114	28	262	28	219	67	12	17	342	1,307	6,000	31	1,338	5,969
11:00 AM	22	190	0	211	29	185	15	69	38	263	598	3	149	5	114	45	316	35	286	88	15	27	451	1,577	5,730	39	1,616	5,691
NOON	65	190	630	885	86	185	17	59	38	263	648	10	149	5	114	53	331	104	286	88	15	32	525	2,389	4,918	40	2,429	4,878
1:00 PM	97	145	1,471	1,713	129	142	20	59	57	263	669	15	114	4	114	59	305	156	219	67	12	35	489	3,176	4,131	39	3,215	4,092
2:00 PM	97	112	1,471	1,680	129	109	21	69	57	263	647	15	87	3	114	62	281	156	168	52	9	37	422	3,030	4,277	37	3,067	4,240
3:00 PM	97	78	1,471	1,646	129	76	21	78	57	263	624	15	61	2	114	62	254	156	118	36	6	37	354	2,878	4,429	27	2,905	4,402
4:00 PM	97	78	1,471	1,646	129	76	19	98	57	263	641	15	61	2	114	56	248	156	118	36	6	34	350	2,886	4,421	17	2,903	4,404
5:00 PM	130	33	1,471	1,634	172	33	15	118	76	263	676	20	26	1	114	47	208	208	50	15	3	28	305	2,823	4,484	17	2,840	4,467
6:00 PM	194	33	1,681	1,909	257	33	13	137	114	263	818	30	26	1	52	40	149	313	50	15	3	24	406	3,281	4,026	0	3,281	4,026
7:00 PM	205	33	1,891	2,130	272	33	12	157	121	263	857	31	26	1	0	37	96	330	50	15	3	22	421	3,503	3,804	0	3,503	3,804
8:00 PM	**216**	**33**	**2,101**	**2,350**	**286**	**33**	**11**	**176**	**127**	**263**	**896**	**33**	**26**	**1**	**0**	**34**	**94**	**347**	**50**	**15**	**3**	**21**	**437**	**3,778**	**3,529**	**0**	**3,778**	**3,529**
9:00 PM	216	0	2,101	2,317	286	0	8	186	127	263	870	33	0	0	0	25	58	347	0	0	0	15	362	3,607	3,700	0	3,607	3,700
10:00 PM	205	0	2,101	2,306	272	0	8	196	121	131	728	31	0	0	0	24	55	330	0	0	0	14	344	3,433	3,874	0	3,433	3,874
11:00 PM	184	0	1,681	1,864	243	0	3	196	108	0	550	28	0	0	0	8	36	295	0	0	0	5	300	2,751	4,556	0	2,751	4,556
MIDNIGHT	151	0	1,471	1,622	200	0	0	196	89	0	485	23	0	0	0	0	23	243	0	0	0	0	243	2,373	4,934	0	2,373	4,934
																								WEEKEND PEAK PARKING DEMAND:	3,778		3,778	
																								PARKING SUPPLY:	7,307		7,307	
																								SURPLUS OR (DEFICIENCY):	3,529		3,529	

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TABLE 8
PARKING SUMMARY [a]
Orange County Museum of Art, Costa Mesa

Scenario	Weekday		Weekend	
	Peak Demand at 2:00 PM	Supply = 7,307 sp Surplus or (Deficiency)	Peak Demand at 8:00 PM	Supply = 7,307 sp Surplus or (Deficiency)
Existing (no OCMA)	6,553	754	3,778	3,529
Existing with OCMA (Typical Operations)	6,590	717	3,778	3,529
Existing with OCMA (Rental Events)	6,590	717	3,978	3,329
Existing with OCMA (Exhibition Openings)	6,590	717	--	--
Existing with OCMA (Free Family Day)	--	--	3,787	3,520

Note:
[a] Based on full floor area occupancy and 2001 Town Center Shared Parking model.

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TABLE 9
PARKING DEMAND COUNTS (per South Coast Plaza Office Division) [a]
Orange County Museum of Art, Costa Mesa

		Zone 1 & Zone 2						Zone 3		Zones 1, 2, & 3 Total	
		Center Tower		Plaza Tower		Center Tower + Plaza Tower		Park Tower + Ca Bank & Trust			
Parking Supply (unreserved)		1070		1155		2225		1121		3346	
nth Percentile	Time	Demand	Surplus/ Deficiency	Demand	Surplus/ Deficiency	Demand	Surplus/ Deficiency	Demand	Surplus/ Deficiency	Demand	Surplus/ Deficiency
Average	10:00 AM	851	219	887	268	1738	487	844	277	2582	764
	12:30 PM	851	219	961	194	1812	413	838	283	2649	697
	2:00 PM	837	233	1019	136	1855	370	833	288	2688	658
85th Percentile	10:00 AM	851	219	1032	123	1877	348	869	252	2743	603
	12:30 PM	844	226	1070	85	1924	301	861	260	2769	577
	2:00 PM	835	235	1098	57	1937	288	857	264	2789	557
90th Percentile	10:00 AM	854	216	1043	112	1885	340	872	249	2765	581
	12:30 PM	847	223	1092	63	1948	277	867	254	2806	540
	2:00 PM	837	233	1113	42	1993	232	861	260	2847	499
95th Percentile	**10:00 AM**	**857**	**213**	**1059**	**96**	**1904**	**321**	**876**	**245**	**2821**	**525**
	12:30 PM	**852**	**218**	**1112**	**43**	**2047**	**178**	**871**	**250**	**2898**	**448**
	2:00 PM	**841**	**229**	**1175**	**(20)**	**2093**	**132**	**864**	**257**	**2955**	**391**
96th Percentile	10:00 AM	866	204	1068	87	1913	312	879	242	2834	512
	12:30 PM	868	202	1119	36	2073	152	877	244	2926	420
	2:00 PM	851	219	1193	(38)	2111	114	867	254	2975	371
97th Percentile	10:00 AM	914	156	1097	58	1940	285	899	222	2843	503
	12:30 PM	955	115	1149	6	2090	135	905	216	2977	369
	2:00 PM	906	164	1220	(65)	2114	111	881	240	2989	357
98th Percentile	10:00 AM	962	108	1125	30	1967	258	919	202	2853	493
	12:30 PM	1043	27	1178	(23)	2106	119	934	187	3028	318
	2:00 PM	960	110	1247	(92)	2118	107	894	227	3003	343
99th Percentile	10:00 AM	1010	60	1154	1	1995	230	939	182	2862	484
	12:30 PM	1130	(60)	1208	(53)	2123	102	962	159	3080	266
	2:00 PM	1015	55	1273	(118)	2121	104	908	213	3017	329
100th Percentile	10:00 AM	1058	12	1183	(28)	2022	203	959	162	2872	474
	12:30 PM	1218	(148)	1238	(83)	2140	85	991	130	3131	215
	2:00 PM	1069	1	1300	(145)	2125	100	921	200	3031	315

Note:
[a] Parking demand counts were increased for 100% floor area occupancy. Data included 25 weekdays, from Monday, February 22, 2016 through Friday, April 1, 2016.

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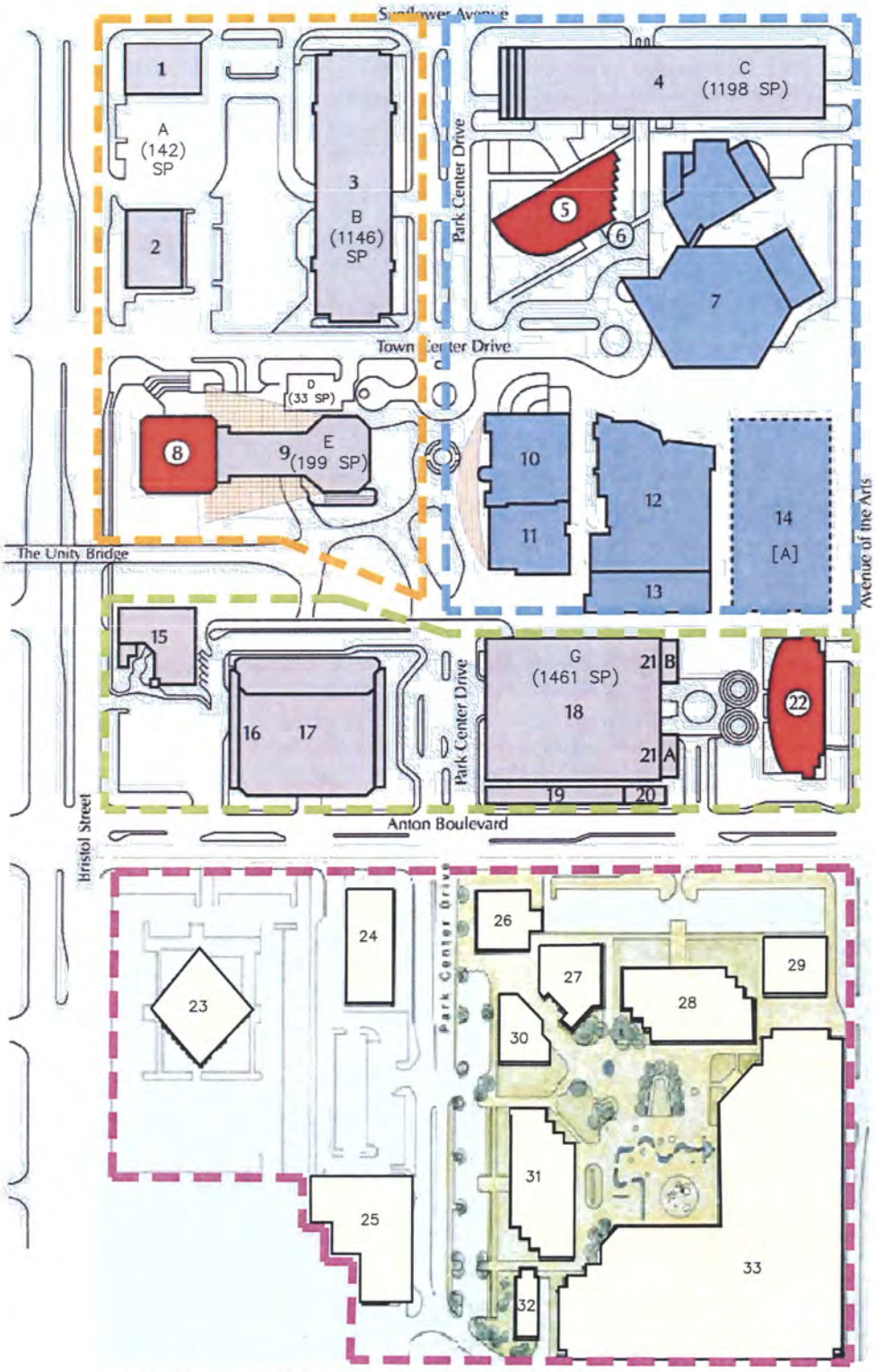
TABLE 10
TYPICAL WEEKDAY DAYTIME OPERATIONS
OCMA DEMAND vs ACTUAL SURPLUS [a]
Orange County Museum of Art, Costa Mesa

Time	OCMA Demand	Zone 1		Zone 1 & Zone 2		Zones 1, 2, &3	
		95th Percentile Surplus from Table 9	North of Anton Residual Surplus (w/ OCMA)	95th Percentile Surplus from Table 9	North of Anton Residual Surplus (w/ OCMA)	95th Percentile Surplus from Table 9	North of Anton Residual Surplus (w/ OCMA)
8:00 AM	17	--	--	--	--	--	--
9:00 AM	17	--	--	--	--	--	--
10:00 AM	31	213	**182**	321	**290**	525	**494**
11:00 AM	39	--	--	--	--	--	--
12:00 PM	40	218	**178**	178	**138**	448	**408**
1:00 PM	39	--	--	--	--	--	--
2:00 PM	37	229	**192**	132	**95**	391	**354**
3:00 PM	27	--	--	--	--	--	--
4:00 PM	17	--	--	--	--	--	--
5:00 PM	17	--	--	--	--	--	--

Note:
[a] "Surplus" (without OCMA) as carried over from Table 9.



n:\3600\2163673 – ocma's new facility, costa mesa\dwg\3673f-1.dwg LDP 11:22:32 08-18-2016 mempin

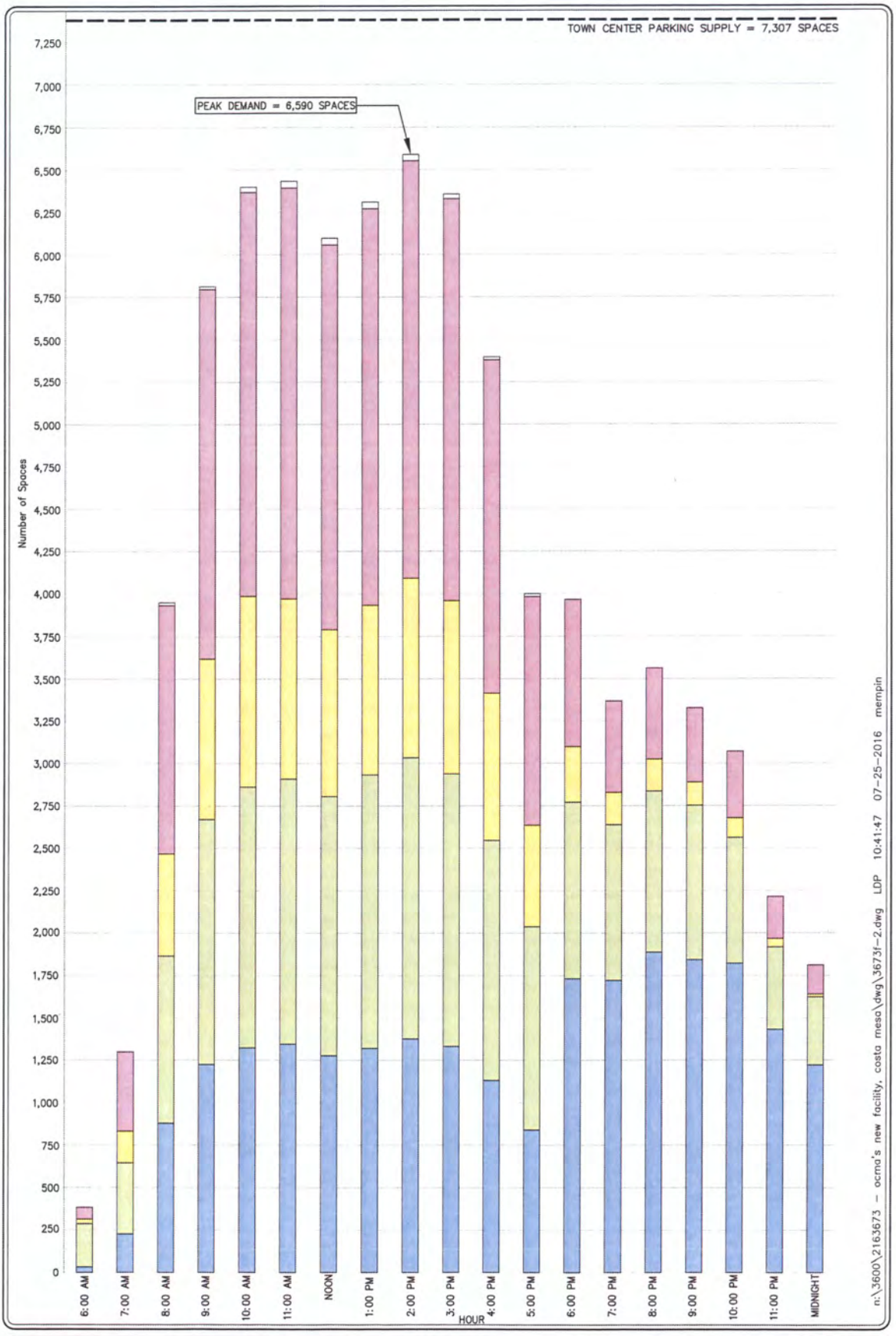
LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY
- ZONE 1
- ZONE 2
- ZONE 3
- ZONE 4

FIGURE 1

TOWN CENTER SITE PLAN
OCMA, COSTA MESA

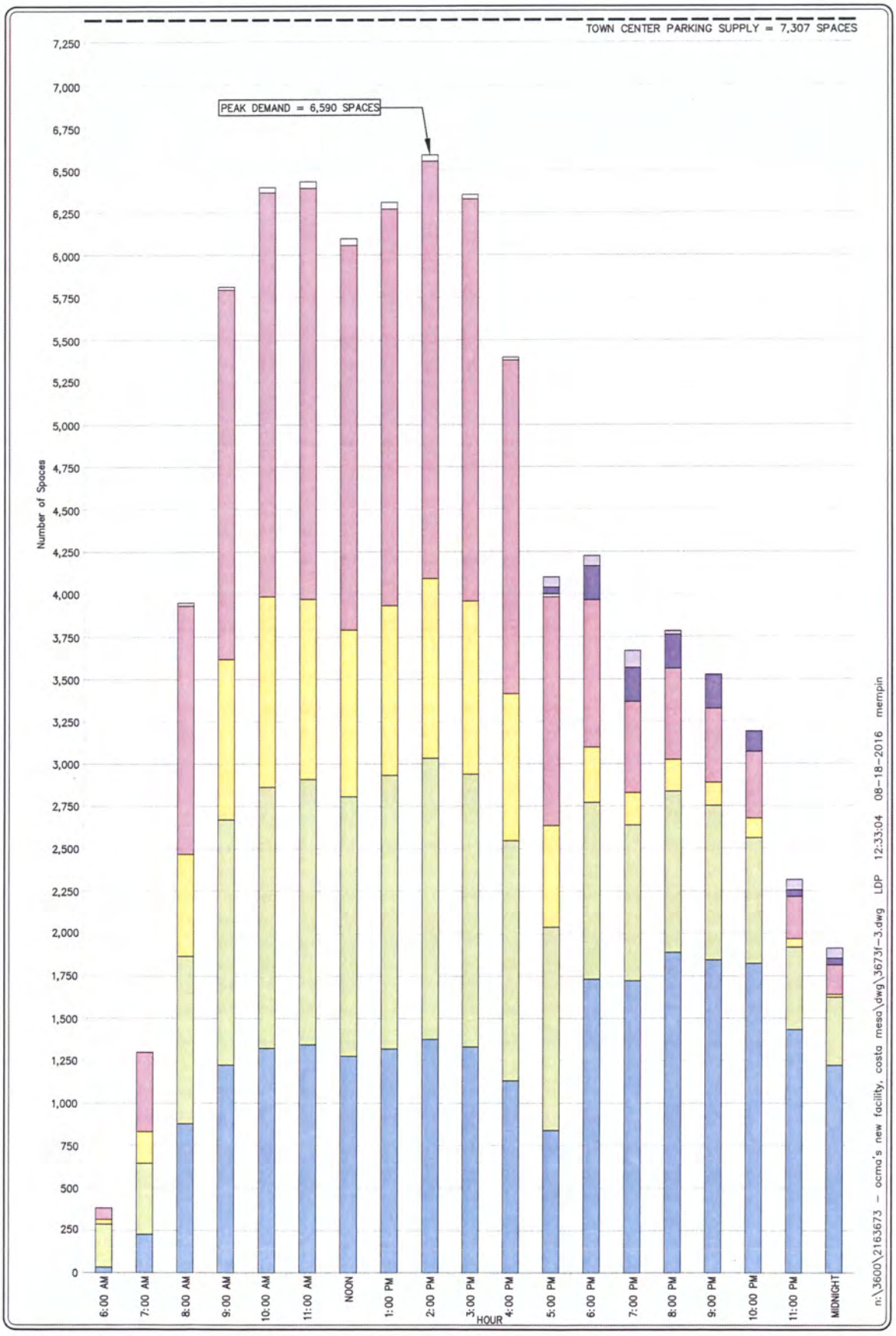


LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY
- = ZONE 1 (NO MATINEES; WITH EVENING EVENTS)
- = ZONE 2
- = ZONE 3
- = ZONE 4
- = FUTURE OCMA – TYPICAL OPERATIONS

FIGURE 2
WEEKDAY OCMA – TYPICAL SUPPLY VS. DEMAND
OCMA, COSTA MESA



LINSCOTT LAW & GREENSPAN engineers

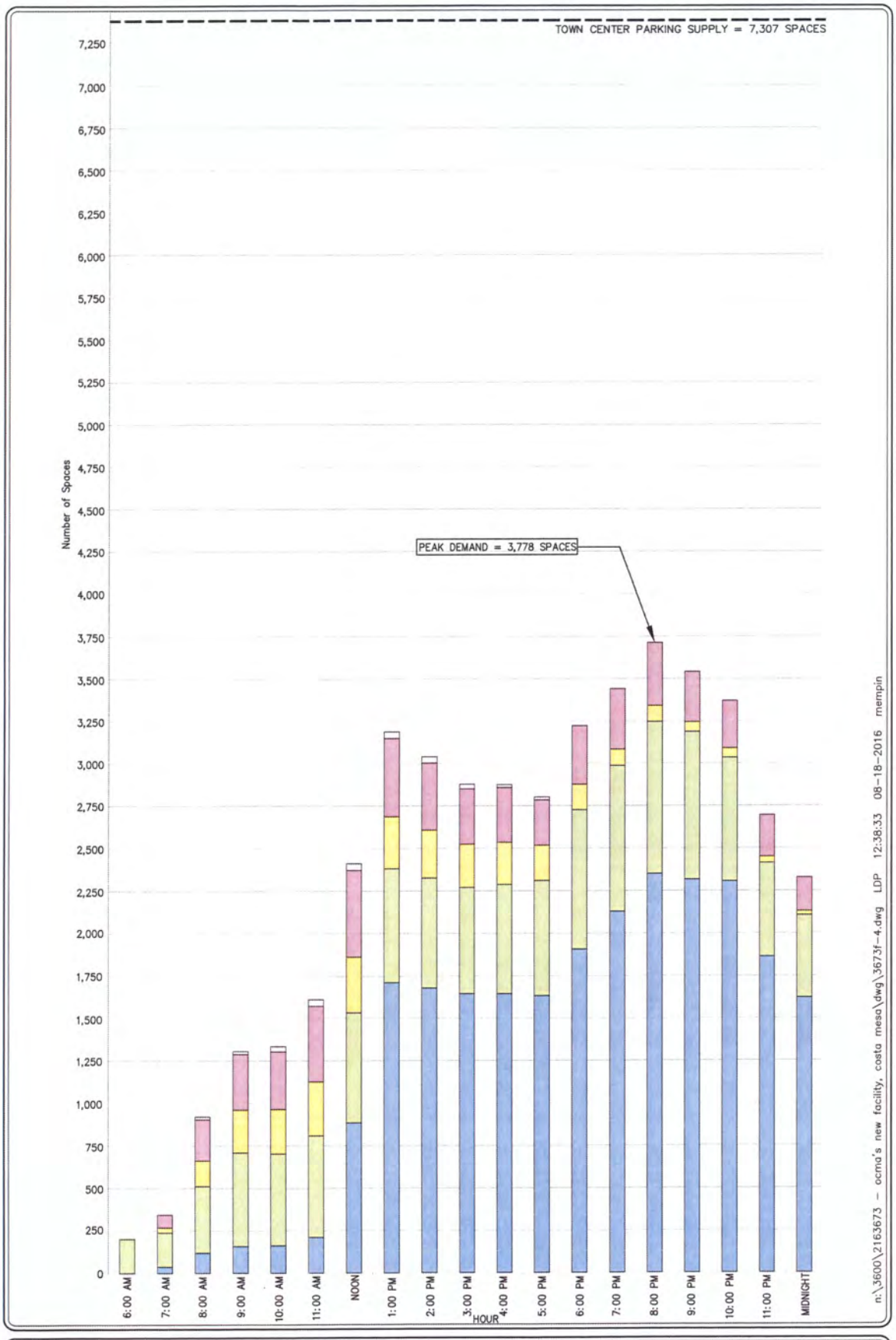
N NO SCALE

KEY

- = ZONE 1 (NO MATINEES; WITH EVENING EVENTS)
- = ZONE 2
- = ZONE 3
- = ZONE 4
- = FUTURE OCMA – TYPICAL OPERATIONS
- = FUTURE OCMA – RENTAL EVENTS
- = FUTURE OCMA – EXHIBITION OPENINGS

FIGURE 3

WEEKDAY
OCMA – EVENTS
SUPPLY VS. DEMAND
OCMA, COSTA MESA



LINSCOTT LAW & GREENSPAN engineers

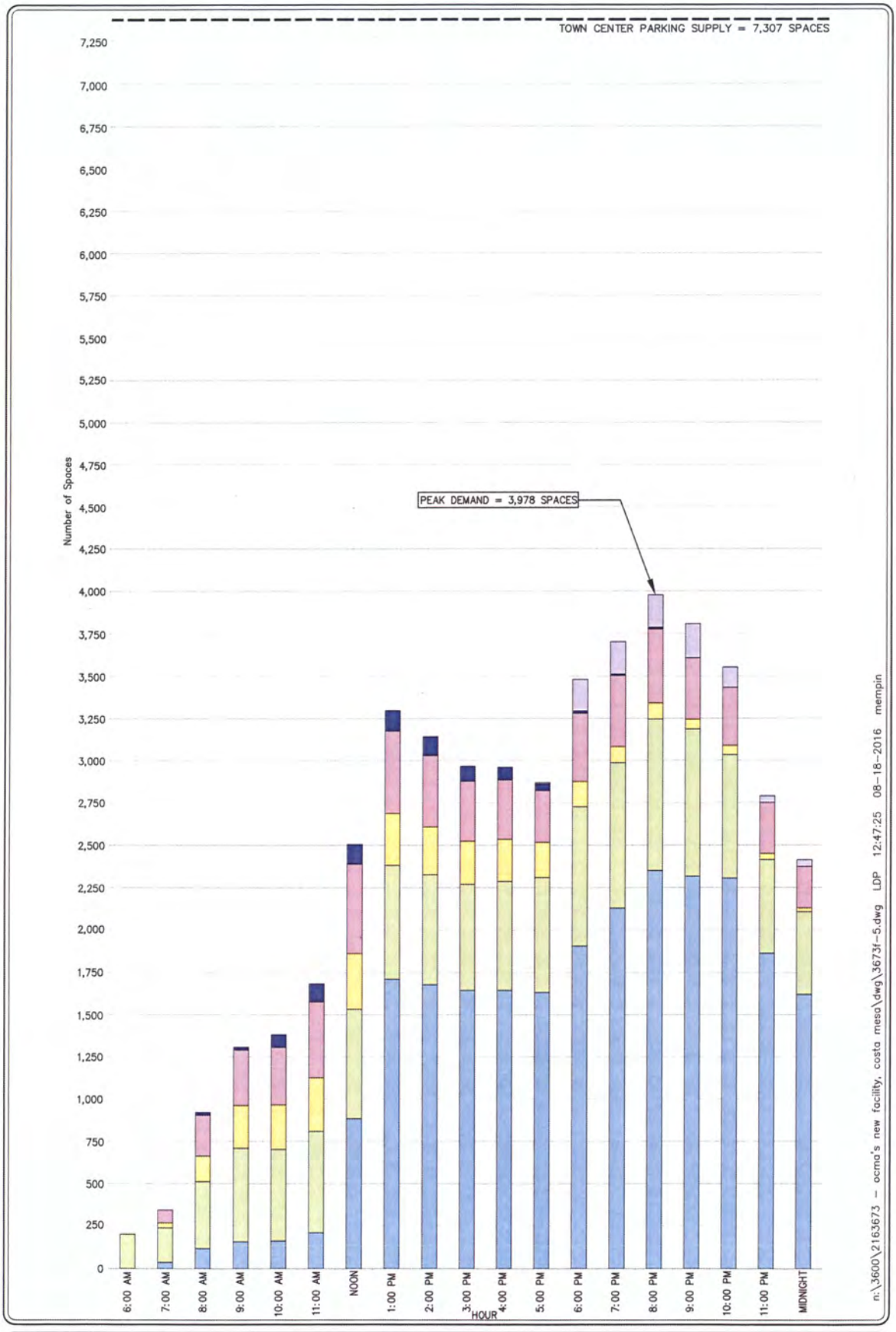
N NO SCALE

KEY

- = ZONE 1 (WITH MATINEES AND EVENING EVENTS)
- = ZONE 2
- = ZONE 3
- = ZONE 4
- = FUTURE OCMA – TYPICAL OPERATIONS

FIGURE 4

WEEKEND
OCMA – TYPICAL
SUPPLY VS. DEMAND
OCMA, COSTA MESA



n:\3600\2163673 - ocma's new facility, costa mesa\dwg\3673f-5.dwg LDP 12:47:25 08-18-2016 mempin

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

- = ZONE 1 (WITH MATINEES AND EVENING EVENTS)
- = ZONE 2
- = ZONE 3
- = ZONE 4
- = FUTURE OCMA – FREE FAMILY DAY
- = FUTURE OCMA – RENTAL EVENTS

FIGURE 5

WEEKEND
OCMA – EVENTS
SUPPLY VS. DEMAND
OCMA, COSTA MESA

APPENDIX A

Alternative Scenario for 3210 Park Center

TABLE A-1
WEEKDAY SHARED PARKING DEMAND ANALYSIS
EXISTING DEVELOPMENT IN TOWN CENTER
Orange County Museum of Art, Costa Mesa

LINSCOTT LAW & GREENSPAN engineers

	Zone 1				Zone 2							Zone 3						Zone 4							
								Hotel																Town Center Total Demand	Town Ctr Supply = 7,307 Surplus or (Deficiency)
LAND USE	Rest-aurants	Office	Perf. Arts Theater Events [a]	Zone 1 Total Demand	Rest-aurants	Office	Retail	Guest Rooms	Rest./ Banquet	Meeting/ Conf.	Zone 2 Total Demand	Rest-aurants	Office	Medical Office	Trade School	Retail	Zone 3 Total Demand	Rest-aurants	Office	Bank	Medical Office	Retail	Zone 4 Total Demand		
SIZE	18,000 SF	446,500 SF	6,302 seats	--	23,837 SF	436,424 SF	5,145 SF	392 rooms	17,657 SF	19,891 SF	--	2,757 SF	349,624 SF	5,167 SF	17,200 SF	15,513 SF	--	23,489 SF	679,441 SF	103,292 SF	14,975 SF	9,333 SF	--	--	--
PEAK DEMAND	216 spaces	1,116 spaces	2,101 spaces	3,433 spaces	286 spaces	1,091 spaces	21 spaces	196 spaces	127 spaces	263 spaces	1,983 spaces	33 spaces	874 spaces	31 spaces	172 spaces	62 spaces	1,172 spaces	282 spaces	1,699 spaces	516 spaces	90 spaces	37 spaces	2,624 spaces	9,213 spaces	--
6:00 AM	0	33	0	33	0	33	0	196	25	0	254	0	26	1	0	0	27	0	51	15	3	0	69	384	6,923
7:00 AM	4	223	0	228	6	218	2	167	25	0	418	1	175	6	0	5	187	6	340	103	18	3	470	1,301	6,006
8:00 AM	11	703	*165*	879	14	687	3	127	25	131	989	2	551	20	17	11	599	14	1,070	325	57	6	1,473	3,940	3,367
9:00 AM	22	1,038	*165*	1,224	29	1,015	8	108	25	263	1,447	3	813	29	77	25	947	28	1,580	480	84	15	2,187	5,805	1,502
10:00 AM	43	1,116	*165*	1,324	57	1,091	13	88	25	263	1,538	7	874	31	172	40	1,124	56	1,699	516	90	24	2,386	6,372	935
11:00 AM	65	1,116	*165*	1,346	86	1,091	17	69	38	263	1,563	10	874	31	95	52	1,061	85	1,699	516	90	31	2,420	6,391	916
NOON	108	1,005	*165*	1,277	143	982	19	59	64	263	1,529	17	787	28	95	57	983	141	1,529	465	81	34	2,250	6,039	1,268
1:00 PM	151	1,005	*165*	1,321	200	982	20	59	89	263	1,612	23	787	28	103	59	1,000	197	1,529	465	81	35	2,307	6,240	1,067
2:00 PM	**130**	**1,083**	***165***	**1,377**	**172**	**1,058**	**19**	**69**	**76**	**263**	**1,656**	**20**	**848**	**30**	**103**	**57**	**1,058**	**169**	**1,648**	**501**	**87**	**34**	**2,439**	**6,531**	**776**
3:00 PM	130	1,038	*165*	1,332	172	1,015	19	69	70	263	1,606	20	813	29	103	56	1,020	169	1,580	480	84	34	2,346	6,305	1,002
4:00 PM	108	860	*165*	1,132	143	840	17	88	64	263	1,415	17	673	24	103	52	868	141	1,308	398	69	31	1,947	5,361	1,946
5:00 PM	151	525	*165*	841	200	513	15	118	89	263	1,198	23	411	15	103	47	598	197	798	243	42	28	1,309	3,945	3,362
6:00 PM	194	257	1,282	1,733	257	251	16	137	114	263	1,039	30	201	7	40	48	326	254	391	119	21	29	813	3,911	3,396
7:00 PM	216	78	1,429	1,723	286	76	17	147	127	263	917	33	61	2	40	53	189	282	119	36	6	32	475	3,304	4,003
8:00 PM	216	78	1,597	1,891	286	76	17	176	127	263	946	33	61	2	40	52	188	282	119	36	6	31	474	3,499	3,808
9:00 PM	216	33	1,597	1,846	286	33	12	186	127	263	907	33	26	1	40	36	136	282	51	15	3	22	373	3,262	4,045
10:00 PM	194	33	1,597	1,825	257	33	6	196	114	131	738	30	26	1	40	19	116	254	51	15	3	11	334	3,012	4,295
11:00 PM	151	0	1,282	1,433	200	0	2	196	89	0	488	23	0	0	17	7	48	197	0	0	0	4	202	2,170	5,137
MIDNIGHT	108	0	1,114	1,222	143	0	0	196	64	0	403	17	0	0	0	0	17	141	0	0	0	0	141	1,782	5,525

Note:
[a] Presumes no matinees on weekdays, and 165 administrative staff between 8:00 AM and 5:00 PM on weekdays.

WEEKDAY PEAK PARKING DEMAND: 6,531
PARKING SUPPLY: 7,307
SURPLUS OR (DEFICIENCY): 776

TABLE A-2
WEEKEND SHARED PARKING DEMAND ANALYSIS
EXISTING DEVELOPMENT IN TOWN CENTER
Orange County Museum of Art, Costa Mesa

LINSCOTT LAW & GREENSPAN engineers

	Zone 1				Zone 2							Zone 3						Zone 4						Town Center Total Demand	Town Ctr Supply = 7,307 Surplus or (Deficiency)
								Hotel																	
LAND USE	Rest-aurants	Office	Perf. Arts Theater Events	Zone 1 Total Demand	Rest-aurants	Office	Retail	Guest Rooms	Rest./ Banquet	Meeting/ Conf.	Zone 2 Total Demand	Rest-aurants	Office	Medical Office	Trade School	Retail	Zone 3 Total Demand	Rest-aurants	Office	Bank	Medical Office	Retail	Zone 4 Total Demand		
SIZE	18,000 SF	446,500 SF	6,302 seats	--	23,837 SF	436,424 SF	5,145 SF	392 rooms	17,657 SF	19,891 SF	--	2,757 SF	349,624 SF	5,167 SF	17,200 SF	15,513 SF	--	23,489 SF	679,441 SF	103,292 SF	14,975 SF	9,333 SF	--	--	--
PEAK DEMAND	216 spaces	1,116 spaces	2,101 spaces	3,433 spaces	286 spaces	1,091 spaces	21 spaces	196 spaces	127 spaces	263 spaces	1,983 spaces	33 spaces	874 spaces	31 spaces	172 spaces	62 spaces	1,172 spaces	282 spaces	1,699 spaces	516 spaces	90 spaces	37 spaces	2,624 spaces	9,213 spaces	--
6:00 AM	0	0	0	0	0	0	0	176	25	0	202	0	0	0	0	0	0	0	0	0	0	0	0	202	7,105
7:00 AM	4	33	0	38	6	33	1	137	25	0	202	1	26	1	0	2	30	6	51	15	3	1	76	345	6,962
8:00 AM	6	112	0	118	9	109	2	118	25	131	394	1	87	3	52	6	150	8	170	52	9	4	243	905	6,402
9:00 AM	13	145	0	158	17	142	6	98	25	263	551	2	114	4	114	19	252	17	221	67	12	11	328	1,289	6,018
10:00 AM	17	145	0	162	23	142	9	78	25	263	540	3	114	4	114	28	262	23	221	67	12	17	339	1,304	6,003
11:00 AM	22	190	0	211	29	185	15	69	38	263	598	3	149	5	114	45	316	28	289	88	15	27	447	1,574	5,733
NOON	65	190	630	885	86	185	17	59	38	263	648	10	149	5	114	53	331	85	289	88	15	32	508	2,372	4,935
1:00 PM	97	145	1,471	1,713	129	142	20	59	57	263	669	15	114	4	114	59	305	127	221	67	12	35	462	3,149	4,158
2:00 PM	97	112	1,471	1,680	129	109	21	69	57	263	647	15	87	3	114	62	281	127	170	52	9	37	395	3,002	4,305
3:00 PM	97	78	1,471	1,646	129	76	21	78	57	263	624	15	61	2	114	62	254	127	119	36	6	37	326	2,850	4,457
4:00 PM	97	78	1,471	1,646	129	76	19	98	57	263	641	15	61	2	114	56	248	127	119	36	6	34	322	2,857	4,450
5:00 PM	130	33	1,471	1,634	172	33	15	118	76	263	676	20	26	1	114	47	208	169	51	15	3	28	266	2,784	4,523
6:00 PM	194	33	1,681	1,909	257	33	13	137	114	263	818	30	26	1	52	40	149	254	51	15	3	24	347	3,223	4,084
7:00 PM	205	33	1,891	2,130	272	33	12	157	121	263	857	31	26	1	0	37	96	268	51	15	3	22	359	3,442	3,865
8:00 PM	**216**	**33**	**2,101**	**2,350**	**286**	**33**	**11**	**176**	**127**	**263**	**896**	**33**	**26**	**1**	**0**	**34**	**94**	**282**	**51**	**15**	**3**	**21**	**372**	**3,713**	**3,594**
9:00 PM	216	0	2,101	2,317	286	0	8	186	127	263	870	33	0	0	0	25	58	282	0	0	0	15	297	3,542	3,765
10:00 PM	205	0	2,101	2,306	272	0	8	196	121	131	728	31	0	0	0	24	55	268	0	0	0	14	282	3,371	3,936
11:00 PM	184	0	1,681	1,864	243	0	3	196	108	0	550	28	0	0	0	8	36	240	0	0	0	5	244	2,695	4,612
MIDNIGHT	151	0	1,471	1,622	200	0	0	196	89	0	485	23	0	0	0	0	23	197	0	0	0	0	197	2,328	4,979

WEEKEND PEAK PARKING DEMAND: 3,713
PARKING SUPPLY: 7,307
SURPLUS OR (DEFICIENCY): 3,594

75

TABLE A-3
WEEKDAY SHARED PARKING DEMAND ANALYSIS
EXISTING DEVELOPMENT IN TOWN CENTER PLUS OCMA (TYPICAL OPERATIONS)
Orange County Museum of Art, Costa Mesa

LINSCOTT LAW & GREENSPAN engineers

	Zone 1				Zone 2							Zone 3						Zone 4										
								Hotel																				
LAND USE	Rest-aurants	Office	Perf. Arts Theater Events [a]	Zone 1 Total Demand	Rest-aurants	Office	Retail	Guest Rooms	Rest./ Banquet	Meeting/ Conf.	Zone 2 Total Demand	Rest-aurants	Office	Medical Office	Trade School	Retail	Zone 3 Total Demand	Rest-aurants	Office	Bank	Medical Office	Retail	Zone 4 Total Demand	Town Center Total Demand	Town Ctr Supply = 7,307 Surplus or (Deficiency)	Future OCMA Parking Demand	Town Ctr Demand with OCMA	Residual Surplus or (Deficiency)
SIZE	18,000 SF	446,500 SF	6,302 seats	--	23,837 SF	436,424 SF	5,145 SF	392 rooms	17,657 SF	19,891 SF	--	2,757 SF	349,624 SF	5,167 SF	17,200 SF	15,513 SF	--	23,489 SF	679,441 SF	103,292 SF	14,975 SF	9,333 SF	--	--	--	--	--	--
PEAK DEMAND	216 spaces	1,116 spaces	2,101 spaces	3,433 spaces	286 spaces	1,091 spaces	21 spaces	196 spaces	127 spaces	263 spaces	1,983 spaces	33 spaces	874 spaces	31 spaces	172 spaces	62 spaces	1,172 spaces	282 spaces	1,699 spaces	516 spaces	90 spaces	37 spaces	2,624 spaces	9,213 spaces	--	--	--	--
6:00 AM	0	33	0	33	0	33	0	196	25	0	254	0	26	1	0	0	27	0	51	15	3	0	69	384	6,923	0	384	6,923
7:00 AM	4	223	0	228	6	218	2	167	25	0	418	1	175	6	0	5	187	6	340	103	18	3	470	1,301	6,006	0	1,301	6,006
8:00 AM	11	703	*165*	879	14	687	3	127	25	131	989	2	551	20	17	11	599	14	1,070	325	57	6	1,473	3,940	3,367	17	3,957	3,350
9:00 AM	22	1,038	*165*	1,224	29	1,015	8	108	25	263	1,447	3	813	29	77	25	947	28	1,580	480	84	15	2,187	5,805	1,502	17	5,822	1,485
10:00 AM	43	1,116	*165*	1,324	57	1,091	13	88	25	263	1,538	7	874	31	172	40	1,124	56	1,699	516	90	24	2,386	6,372	935	31	6,403	904
11:00 AM	65	1,116	*165*	1,346	86	1,091	17	69	38	263	1,563	10	874	31	95	52	1,061	85	1,699	516	90	31	2,420	6,391	916	39	6,430	877
NOON	108	1,005	*165*	1,277	143	982	19	59	64	263	1,529	17	787	28	95	57	983	141	1,529	465	81	34	2,250	6,039	1,268	40	6,079	1,228
1:00 PM	151	1,005	*165*	1,321	200	982	20	59	89	263	1,612	23	787	28	103	59	1,000	197	1,529	465	81	35	2,307	6,240	1,067	39	6,279	1,028
2:00 PM	**130**	**1,083**	***165***	**1,377**	**172**	**1,058**	**19**	**69**	**76**	**263**	**1,656**	**20**	**848**	**30**	**103**	**57**	**1,058**	**169**	**1,648**	**501**	**87**	**34**	**2,439**	**6,531**	**776**	**37**	**6,568**	**739**
3:00 PM	130	1,038	*165*	1,332	172	1,015	19	69	70	263	1,606	20	813	29	103	56	1,020	169	1,580	480	84	34	2,346	6,305	1,002	27	6,332	975
4:00 PM	108	860	*165*	1,132	143	840	17	88	64	263	1,415	17	673	24	103	52	868	141	1,308	398	69	31	1,947	5,361	1,946	17	5,378	1,929
5:00 PM	151	525	*165*	841	200	513	15	118	89	263	1,198	23	411	15	103	47	598	197	798	243	42	28	1,309	3,945	3,362	17	3,962	3,345
6:00 PM	194	257	1,282	1,733	257	251	16	137	114	263	1,039	30	201	7	40	48	326	254	391	119	21	29	813	3,911	3,396	0	3,911	3,396
7:00 PM	216	78	1,429	1,723	286	76	17	147	127	263	917	33	61	2	40	53	189	282	119	36	6	32	475	3,304	4,003	0	3,304	4,003
8:00 PM	216	78	1,597	1,891	286	76	17	176	127	263	946	33	61	2	40	52	188	282	119	36	6	31	474	3,499	3,808	0	3,499	3,808
9:00 PM	216	33	1,597	1,846	286	33	12	186	127	263	907	33	26	1	40	36	136	282	51	15	3	22	373	3,262	4,045	0	3,262	4,045
10:00 PM	194	33	1,597	1,825	257	33	6	196	114	131	738	30	26	1	40	19	116	254	51	15	3	11	334	3,012	4,295	0	3,012	4,295
11:00 PM	151	0	1,282	1,433	200	0	2	196	89	0	488	23	0	0	17	7	48	197	0	0	0	4	202	2,170	5,137	0	2,170	5,137
MIDNIGHT	108	0	1,114	1,222	143	0	0	196	64	0	403	17	0	0	0	0	17	141	0	0	0	0	141	1,782	5,525	0	1,782	5,525
																								WEEKDAY PEAK PARKING DEMAND:	6,531		6,568	
																								PARKING SUPPLY:	7,307		7,307	
																								SURPLUS OR (DEFICIENCY):	776		739	

Note:
[a] Presumes no matinees on weekdays, and 165 administrative staff between 8:00 AM and 5:00 PM on weekdays.

TABLE A-4
WEEKEND SHARED PARKING DEMAND ANALYSIS
EXISTING DEVELOPMENT IN TOWN CENTER PLUS OCMA (TYPICAL OPERATIONS)
Orange County Museum of Art, Costa Mesa

LINSCOTT LAW & GREENSPAN engineers

	Zone 1				Zone 2							Zone 3						Zone 4									
								Hotel																Town Center	Town Ctr Supply = 7,307	Future OCMA	Town Ctr Demand	Residual Surplus
LAND USE	Rest-aurants	Office	Perf. Arts Theater Events	Zone 1 Total Demand	Rest-aurants	Office	Retail	Guest Rooms	Rest./ Banquet	Meeting/ Conf.	Zone 2 Total Demand	Rest-aurants	Office	Medical Office	Trade School	Retail	Zone 3 Total Demand	Rest-aurants	Office	Bank	Medical Office	Retail	Zone 4 Total Demand	Total Demand	Surplus or (Deficiency)	Parking Demand	with OCMA	or (Deficiency)
SIZE	18,000 SF	446,500 SF	6,302 seats	--	23,837 SF	436,424 SF	5,145 SF	392 rooms	17,657 SF	19,891 SF	--	2,757 SF	349,624 SF	5,167 SF	17,200 SF	15,513 SF	--	23,489 SF	679,441 SF	103,292 SF	14,975 SF	9,333 SF	--	--	--	--	--	--
PEAK DEMAND	216 spaces	1,116 spaces	2,101 spaces	3,433 spaces	286 spaces	1,091 spaces	21 spaces	196 spaces	127 spaces	263 spaces	1,983 spaces	33 spaces	874 spaces	31 spaces	172 spaces	62 spaces	1,172 spaces	282 spaces	1,699 spaces	516 spaces	90 spaces	37 spaces	2,624 spaces	9,213 spaces	--	--	--	--
6:00 AM	0	0	0	0	0	0	0	176	25	0	202	0	0	0	0	0	0	0	0	0	0	0	0	202	7,105	0	202	7,105
7:00 AM	4	33	0	38	6	33	1	137	25	0	202	1	26	1	0	2	30	6	51	15	3	1	76	345	6,962	0	345	6,962
8:00 AM	6	112	0	118	9	109	2	118	25	131	394	1	87	3	52	6	150	8	170	52	9	4	243	905	6,402	17	922	6,385
9:00 AM	13	145	0	158	17	142	6	98	25	263	551	2	114	4	114	19	252	17	221	67	12	11	328	1,289	6,018	17	1,306	6,001
10:00 AM	17	145	0	162	23	142	9	78	25	263	540	3	114	4	114	28	262	23	221	67	12	17	339	1,304	6,003	31	1,335	5,972
11:00 AM	22	190	0	211	29	185	15	69	38	263	598	3	149	5	114	45	316	28	289	88	15	27	447	1,574	5,733	39	1,613	5,694
NOON	65	190	630	885	86	185	17	59	38	263	648	10	149	5	114	53	331	85	289	88	15	32	508	2,372	4,935	40	2,412	4,895
1:00 PM	97	145	1,471	1,713	129	142	20	59	57	263	669	15	114	4	114	59	305	127	221	67	12	35	462	3,149	4,158	39	3,188	4,119
2:00 PM	97	112	1,471	1,680	129	109	21	69	57	263	647	15	87	3	114	62	281	127	170	52	9	37	395	3,002	4,305	37	3,039	4,268
3:00 PM	97	78	1,471	1,646	129	76	21	78	57	263	624	15	61	2	114	62	254	127	119	36	6	37	326	2,850	4,457	27	2,877	4,430
4:00 PM	97	78	1,471	1,646	129	76	19	98	57	263	641	15	61	2	114	56	248	127	119	36	6	34	322	2,857	4,450	17	2,874	4,433
5:00 PM	130	33	1,471	1,634	172	33	15	118	76	263	676	20	26	1	114	47	208	169	51	15	3	28	266	2,784	4,523	17	2,801	4,506
6:00 PM	194	33	1,681	1,909	257	33	13	137	114	263	818	30	26	1	52	40	149	254	51	15	3	24	347	3,223	4,084	0	3,223	4,084
7:00 PM	205	33	1,891	2,130	272	33	12	157	121	263	857	31	26	1	0	37	96	268	51	15	3	22	359	3,442	3,865	0	3,442	3,865
8:00 PM	**216**	**33**	**2,101**	**2,350**	**286**	**33**	**11**	**176**	**127**	**263**	**896**	**33**	**26**	**1**	**0**	**34**	**94**	**282**	**51**	**15**	**3**	**21**	**372**	**3,713**	**3,594**	**0**	**3,713**	**3,594**
9:00 PM	216	0	2,101	2,317	286	0	8	186	127	263	870	33	0	0	0	25	58	282	0	0	0	15	297	3,542	3,765	0	3,542	3,765
10:00 PM	205	0	2,101	2,306	272	0	8	196	121	131	728	31	0	0	0	24	55	268	0	0	0	14	282	3,371	3,936	0	3,371	3,936
11:00 PM	184	0	1,681	1,864	243	0	3	196	108	0	550	28	0	0	0	8	36	240	0	0	0	5	244	2,695	4,612	0	2,695	4,612
MIDNIGHT	151	0	1,471	1,622	200	0	0	196	89	0	485	23	0	0	0	0	23	197	0	0	0	0	197	2,328	4,979	0	2,328	4,979
																								WEEKEND PEAK PARKING DEMAND:	3,713		3,713	
																								PARKING SUPPLY:	7,307		7,307	
																								SURPLUS OR (DEFICIENCY):	3,594		3,594	

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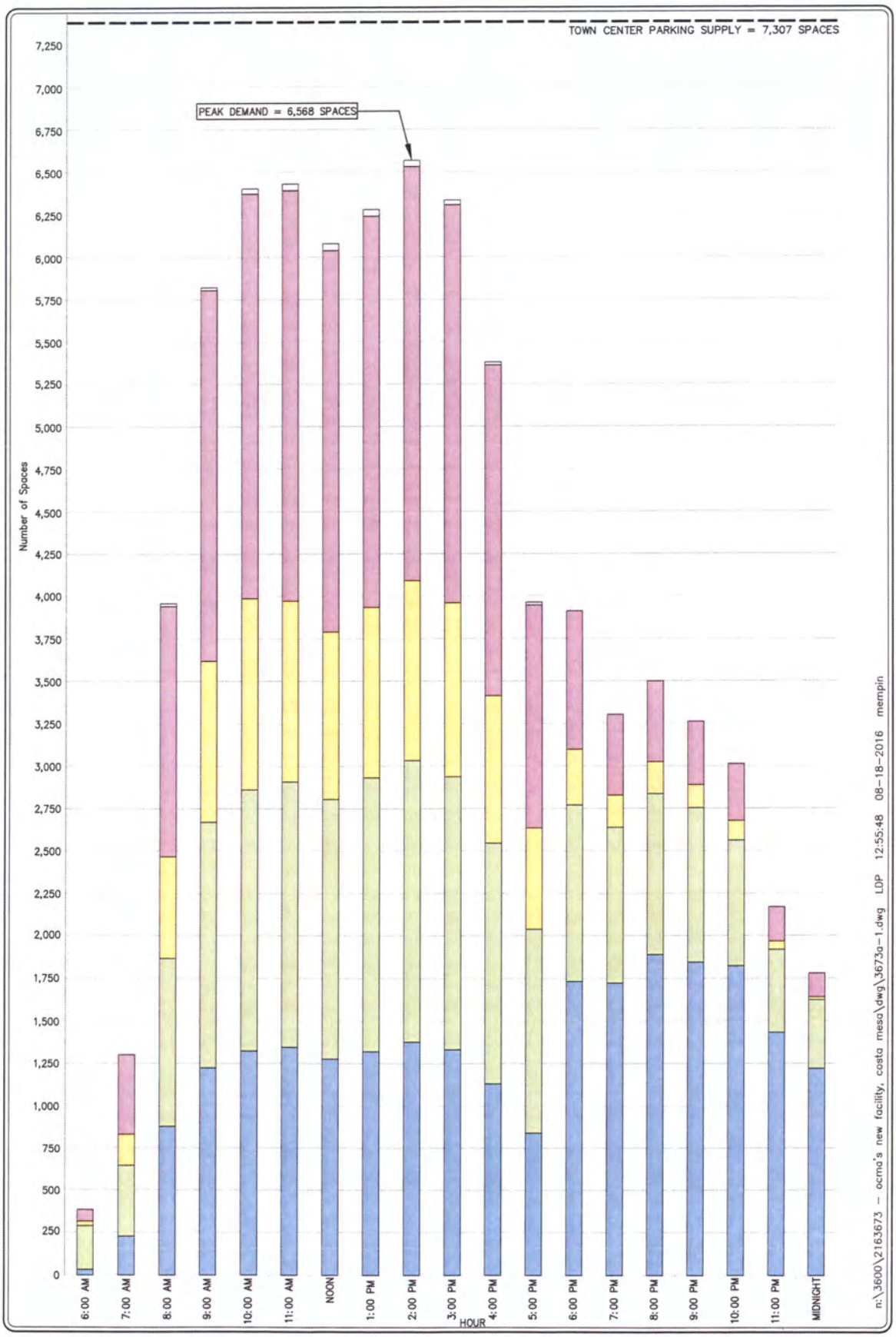
LINSCOTT LAW & GREENSPAN engineers

TABLE A-5
PARKING SUMMARY [a]
Orange County Museum of Art, Costa Mesa

Scenario	Weekday		Weekend	
	Peak Demand at 2:00 PM	Supply = 7,307 sp Surplus or (Deficiency)	Peak Demand at 8:00 PM	Supply = 7,307 sp Surplus or (Deficiency)
Existing (no OCMA)	6,531	776	3,713	3,594
Existing with OCMA (Typical Operations)	6,568	739	3,713	3,594
Existing with OCMA (Rental Events)	6,568	739	3,913	3,394
Existing with OCMA (Exhibition Openings)	6,568	739	--	--
Existing with OCMA (Free Family Day)	--	--	3,722	3,585

Note:
[a] Based on full floor area occupancy and 2001 Town Center Shared Parking model.

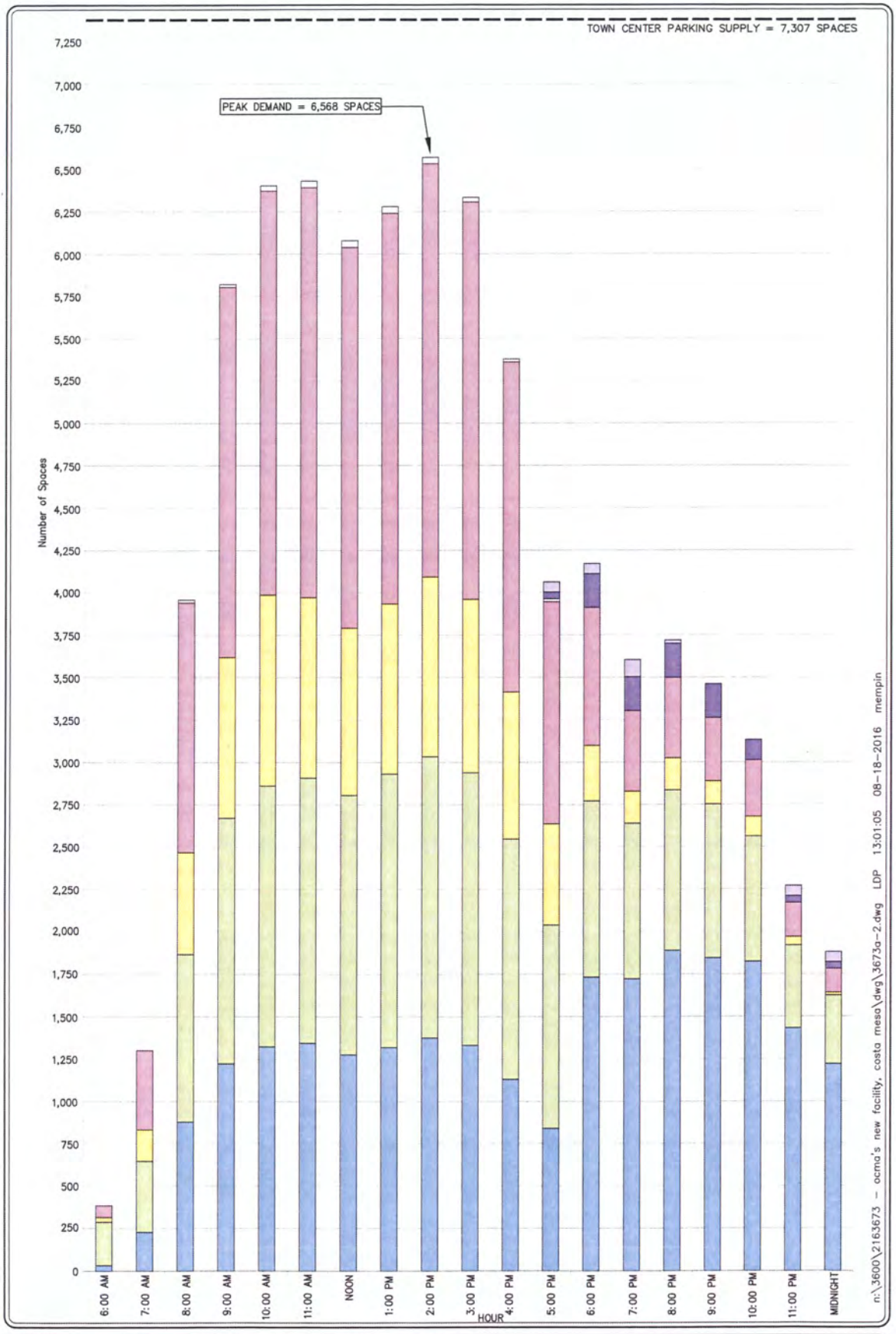


LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY
- = ZONE 1 (NO MATINEES; WITH EVENING EVENTS)
- = ZONE 2
- = ZONE 3
- = ZONE 4
- = FUTURE OCMA – TYPICAL OPERATIONS

FIGURE A–1
WEEKDAY
OCMA – TYPICAL
SUPPLY VS. DEMAND
OCMA, COSTA MESA



LINSCOTT LAW & GREENSPAN engineers

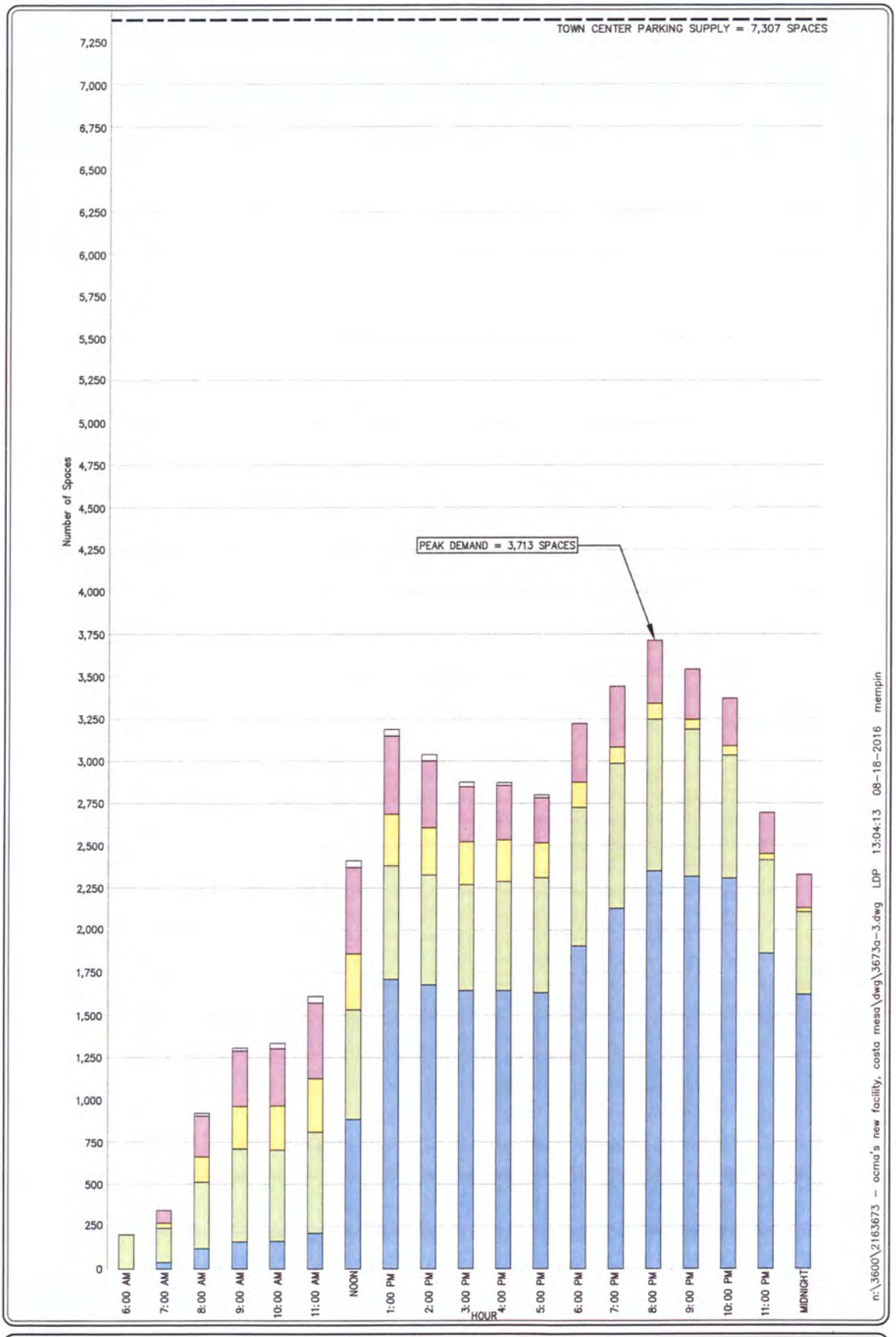
N NO SCALE

KEY

- = ZONE 1 (NO MATINEES; WITH EVENING EVENTS)
- = ZONE 2
- = ZONE 3
- = ZONE 4
- = FUTURE OCMA – TYPICAL OPERATIONS
- = FUTURE OCMA – RENTAL EVENTS
- = FUTURE OCMA – EXHIBITION OPENINGS

FIGURE A–2

WEEKDAY
OCMA – EVENTS
SUPPLY VS. DEMAND
OCMA, COSTA MESA



LINSCOTT LAW & GREENSPAN engineers

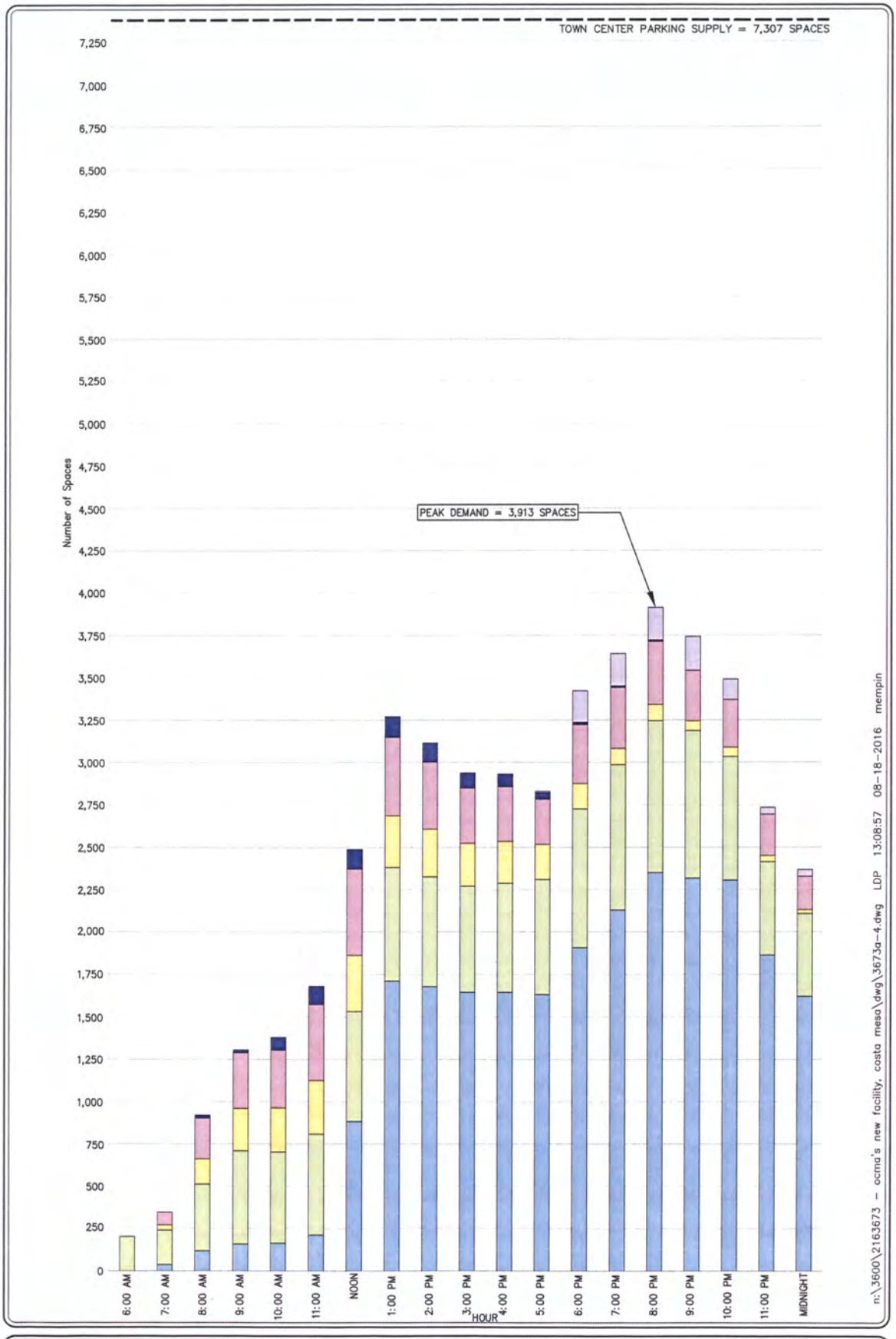
N NO SCALE

KEY

- = ZONE 1 (WITH MATINEES AND EVENING EVENTS)
- = ZONE 2
- = ZONE 3
- = ZONE 4
- = FUTURE OCMA – TYPICAL OPERATIONS

FIGURE A–3

WEEKEND
OCMA – TYPICAL
SUPPLY VS. DEMAND
OCMA, COSTA MESA



LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

- = ZONE 1 (WITH MATINEES AND EVENING EVENTS)
- = ZONE 2
- = ZONE 3
- = ZONE 4
- = FUTURE OCMA – FREE FAMILY DAY
- = FUTURE OCMA – RENTAL EVENTS

FIGURE A–4

WEEKEND
OCMA – EVENTS
SUPPLY VS. DEMAND
OCMA, COSTA MESA

ATTACHMENT 6

LSA

FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: December 20, 2018

TO: Daniel Inloes, City of Costa Mesa

FROM: Arthur Black, LSA

SUBJECT: Parking Study Peer Review – Orange County Museum of Art

At your request, LSA has reviewed the *Parking Study Update for the Proposed OCMA in South Coast Town Center* (LLG, July 26, 2018). That parking study updated an evaluation of the Orange County Museum of Art (OCMA) prepared in August 2016, which itself relied on a parking model developed for South Coast Town Center in June 2001.

The June 2001 parking model developed specialized parking rates for the South Coast Town Center area including total parking demand and variation in parking demand by time of day. If the City of Costa Mesa (City) is not satisfied that the June 2001 parking model addresses the parking needs of the South Coast Town Center area, then the assumptions developed as part of that effort will need to be revisited prior to adding new land uses to the South Coast Town Center. If the City is satisfied that the June 2001 parking model adequately provides for the areas parking needs, then those metrics developed specifically for the South Coast Town Center should continue to be applied for future land use development.

The July 2018 Parking Study Update applies the previously derived rates and time of day variations of the parking model for the OCMA. The July 2018 Parking Study Update reports that, based on operational data, the OCMA is anticipated to require 37 parking spaces during typical weekday hours overlapping with office parking demand (i.e., 2:00 p.m.) and a peak of 40 parking spaces required during typical operations (i.e., at 12:00 p.m. on a weekday or a weekend). The previous location of OCMA in Newport Beach provided approximately 115 parking spaces. Anecdotally, this parking lot did not fill up, even during special premiere events.

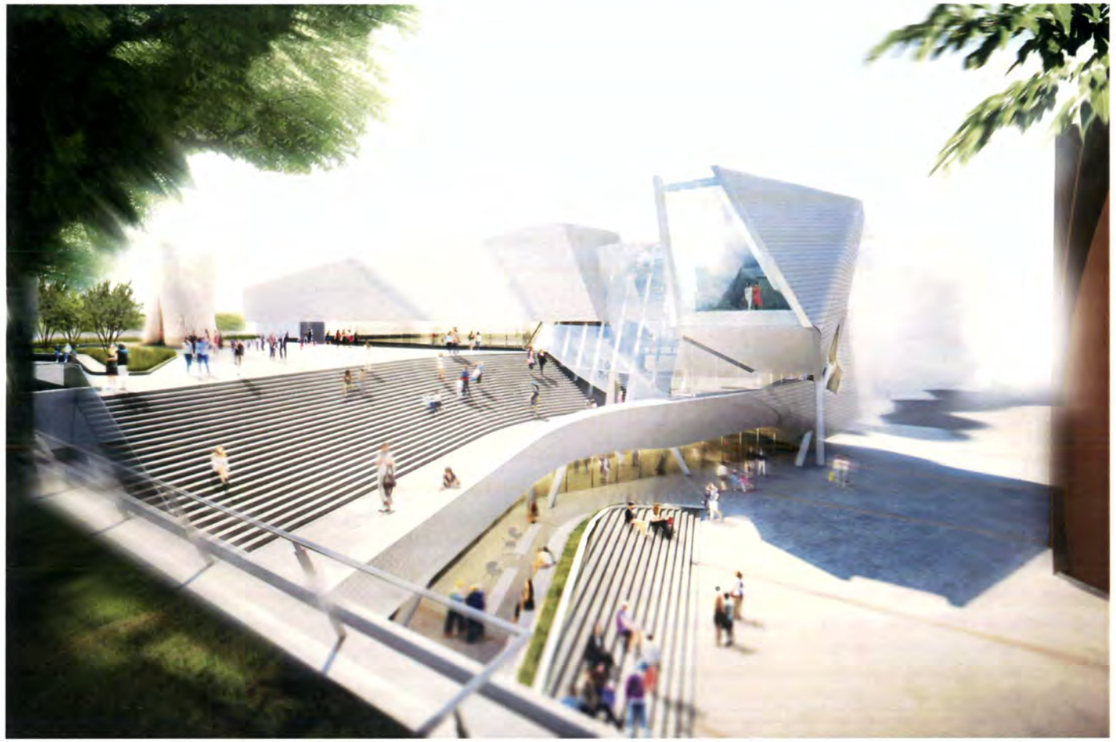
Whether considering typical parking demand of up to 40 parking spaces or special event parking demand of up to 115 parking spaces, the 681 surplus parking spaces identified on a weekday or the 644 surplus parking spaces on a weekend (during performing arts theater events) would accommodate OCMA parking demand.

It should be noted that the June 2001 parking model, the analysis in August 2016, and the parking update in July 2018 represent typical conditions without a weekday matinee performing arts event. However, weekday matinee performing arts events are scheduled periodically without appearing to

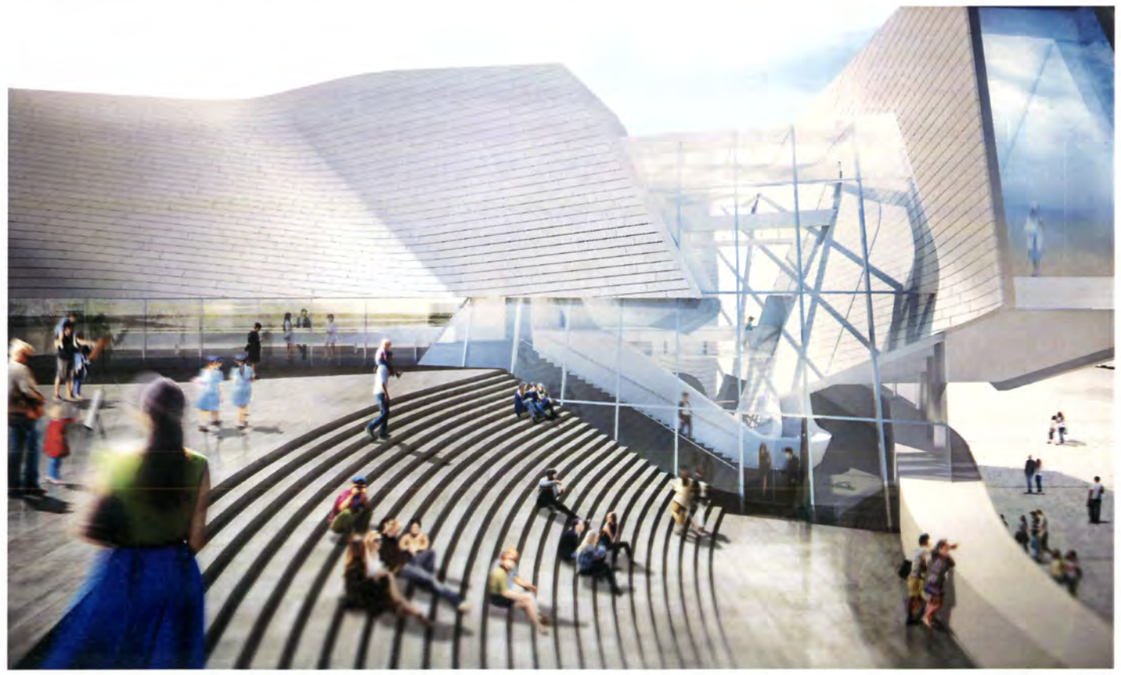
result in a shortfall of parking spaces. The typical parking demand for OCMA of up to 40 parking spaces represents approximately 1 percent of the parking supply north of Anton Boulevard and should not result in a parking impact during matinee performing arts events.

Because the July 2018 parking study applies parking rates consistent with the parking model that has historically been applied to the South Coast Town Center, the historic South Coast Town Center parking model appears to have been effective at managing parking demand within this district, the parking demand estimated for OCMA is consistent with anecdotal observation of the previous location of OCMA in Newport Beach, and the OCMA parking demand would require approximately 1 percent of the parking supply north of Anton Boulevard, the conclusion of the July 2018 parking study that the OCMA would not result in parking impacts appears to be supported.

ATTACHMENT 7



LEVEL 2 VIEW FROM NORTHEAST CORNER



LEVEL 02 VIEW TOWARDS ATRIUM

ORANGE COUNTY MUSEUM OF ART

3333 AVENUE OF THE ARTS,
COSTA MESA, CALIFORNIA

PLANNING SUBMISSION SET

PROJECT SUMMARY	
SITE ADDRESS	3333 Avenue of the Arts, Costa Mesa, CA 92626 (formerly 655 Town Center Drive)
APPLICANT	Todd Smith, OCMA Director and CEO Phone: 949-759-1122 x201 Email: tsmith@ocma.net
AUTHORIZED AGENT	Aaron Ragan, Morphosis Architects Phone: 424-258-6225 Email: a.ragan@morphosis.net
PROJECT AREA	**Gross Lot Area:** 73,742 sq.ft = 1.693 acres (per record survey filed on January 26th, 2017)
	Proposed Gross Building Area: 63,875 sq.ft (includes 10,000 sq.ft future Phase 2 expansion)
	Allowable FAR: 1.67 (per the North Costa Mesa Specific Plan - Area 4 Sub Area 2)
	Proposed FAR: 0.91 (including future Phase 2 expansion)
	Open Space Area: 35,780 sq.ft (48.5%)
	Driveway and Parking Area: 1,410 sq.ft (1.9%)
USE / ZONING	**Zoning District:** Area 4 - South Coast Plaza Town Center, Sub Area 2 - Segerstrom Center for the Arts
	General Land Use Designation: Cultural Arts Center
	Programmatic Breakdown: - Lobby/Store/Cafe (A3, A2, and B) - Education Spaces (A3) - Event Spaces (A3) - Public Gallery Space (A3) - Administrative (B) - Operations & Service Utilities
HEIGHT	**Max Allowable Height per Specific Plan:** 315 ft
	Proposed Building Height: 74'-6"
	Adjacent Building Heights: - Segerstrom Center for the Arts: 139 ft (70 ft from site) - Segerstrom Concert Hall: 113 ft (24 ft from site) - Plaza Tower: 318 ft (38ft from site)

AREAS	GROUND	MEZZANINE	LEVEL 02	ROOF	TOTAL
BACK OF HOUSE	3,760	0	0	0	3,760 sq.ft
MECHANICAL/UTILITY	2,564	301	344	823	4,032 sq.ft
OFFICE	0	2,705	0	0	2,705 sq.ft
LOBBY/EXHIBITION/EVENT	29,803	6,104	7,471	0	43,378 sq.ft
TOTAL	36,127 sq.ft	9,110 sq.ft	7,815 sq.ft	823 sq.ft	**53,875 sq.ft**

SHEET INDEX - MASTER PLAN SUBMITTAL SET

85

OCMA

ARCHITECT:
mOrphosis
3440 Wesley Street
Culver City, CA 90232

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www.morphosis.net
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NEW YORK, NY 10001

ISSUES / REVISIONS		
DATE	SYMBOL	DESCRIPTION
07.27.2018		MASTER PLAN SUBMISSION
12.20.2018		MASTER PLAN REVISION

KEY PLAN:

PROJECT:
ORANGE COUNTY MUSEUM OF ART

655 TOWN CENTER DRIVE
COSTA MESA, CA 92626

COVER SHEET

DATE:	12/20/18
PROJECT NO:	35102
DRAWING BY:	Author
CHK BY:	Checker
DRAWING NO:	G-000.00

GENERAL NOTES:

1. WORK SHOWN HEREON SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," LATEST EDITION AND SUPPLEMENTS, THE CALIFORNIA BUILDING CODE (EXCAVATION AND GRADING), AND CITY OF COSTA MESA LOCAL ORDINANCES AS APPLICABLE.
2. ALL GRADING WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS AND RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT, "PROPOSED NEW ORANGE COUNTY MUSEUM OF ART", BY LEIGHTON CONSULTING, INC, DATED JULY 19, 2016.
3. EXISTING TOPOGRAPHY SHOWN HEREON WAS TAKEN FROM A BASE MAP STAMPED AND SIGNED BY HENNON SURVEYING & MAPPING, INC, DATED MARCH 1, 2016
4. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS.
5. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL JOIN CONDITIONS FOR GRADING, DRAINAGE AND UNDERGROUND FACILITIES INCLUDING LOCATION AND ELEVATION OF EXISTING UNDERGROUND FACILITIES AT CROSSINGS WITH PROPOSED UNDERGROUND FACILITIES. IF CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND SHALL NOT BEGIN CONSTRUCTION UNTIL THE CHANGED CONDITIONS HAVE BEEN EVALUATED.
6. ALL DRAWINGS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR ARCHITECT.
7. THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.
8. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
9. THE EXISTENCE, LOCATION AND CHARACTERISTICS OF UNDERGROUND UTILITY INFORMATION SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM A REVIEW OF AVAILABLE RECORD DATA. NO REPRESENTATION IS MADE AS TO THE ACCURACY OR COMPLETENESS OF SAID UTILITY INFORMATION. THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
10. IF AT ANY TIME DURING GRADING OPERATIONS, ANY UNFAVORABLE GEOLOGICAL CONDITIONS ARE ENCOUNTERED, GRADING IN THAT AREA WILL STOP UNTIL APPROVED CORRECTIVE MEASURES ARE OBTAINED.
11. THE PROPOSED GRADE IS THE FINAL GRADE AND NOT THE ROUGH GRADE. THE CONTRACTOR SHALL SUBTRACT THE THICKNESS OF THE PAVED SECTION AND/OR LANDSCAPE TOPSOIL SECTION TO ARRIVE AT THE ROUGH GRADE ELEVATION.
12. STRAIGHT GRADE SHALL BE MAINTAINED BETWEEN CONTOUR LINES AND SPOT ELEVATIONS UNLESS OTHERWISE SHOWN ON THE PLANS.
13. ALL DEBRIS AND FOREIGN MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT APPROVED DISPOSAL SITES. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS FOR THE TRANSPORTATION OF MATERIAL TO AND FROM THE SITE.
14. ALL FILL SOILS OR SOILS DISTURBED OR OVEREXCAVATED DURING CONSTRUCTION SHALL BE COMPACTED PER THE REQUIREMENTS OF THE SOILS REPORT BUT NOT LESS THAN 90% MAXIMUM DENSITY AS DETERMINED BY A.S.T.M. SOIL COMPACTION TEST D-1557.
15. THE CONTRACTOR SHALL OBTAIN AN O.S.H.A. PERMIT FROM THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO THE CONSTRUCTION OF TRENCHES OR EXCAVATIONS WHICH ARE FIVE FEET OR DEEPER.
16. DIMENSIONS TO PIPELINES ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
17. ALL WATER LINES SHALL BE INSTALLED WITH 36" MINIMUM COVER FROM TOP OF PIPE TO FINISHED GRADE, UNLESS OTHERWISE NOTED.
18. THRUST BLOCKS SHALL BE INSTALLED AT WATERLINE HORIZONTAL AND VERTICAL BENDS, TEES, CAPPED ENDS AND REDUCERS ACCORDING TO THE DETAILS PROVIDED ON THESE PLANS.
19. CONSTRUCTION STAKING FOR IMPROVEMENTS SHOWN ON THESE PLANS SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR.
20. THE CONTRACTOR SHALL REPLACE ALL EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION TO MATCH EXISTING, INCLUDING PERMANENT TRENCH RESURFACING.
21. CONTRACTOR TO CONTACT UNDERGROUND SERVICE ALERT (800-227-2600) PRIOR TO EXCAVATION.
22. ALL DIMENSIONS ARE IN FEET OR DECIMALS THEREOF.
23. ALL CURB DIMENSIONS AND RADII ARE TO PAVEMENT FACE OF CURB.
24. CONTRACTOR TO BE AWARE OF ALL OVERHEAD LINES AT ALL TIMES, SO AS NOT TO DISTURB THEM.
25. WATER SHALL BE PROVIDED ONSITE AND USED TO CONTROL DUST DURING CONSTRUCTION OPERATIONS.
26. CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FROM THE CITY OF COSTA MESA FOR ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
27. STORM DRAINAGE SYSTEMS SHOWN ON THESE PLANS HAVE BEEN DESIGNED FOR THE FINAL SITE CONDITION AT COMPLETION OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE DRAINAGE OF THE SITE, DURING INTERIM CONDITIONS OF CONSTRUCTION.
28. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS, INCLUDING NPDES, FROM THE APPROPRIATE JURISDICTIONAL AGENCIES FOR DISCHARGE OF GROUNDWATER THAT MAY BE NECESSARY TO ACCOMPLISH EXCAVATIONS SHOWN ON THESE PLANS.

COUNTY OF ORANGE GRADING NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH GRADING-CODE OF THE COUNTY OF ORANGE AND ANY AMENDMENTS BY THE CITY OF COSTA MESA OR SPECIAL REQUIREMENTS OF THE PERMIT. A COPY OF THE GRADING CODE AND MANUAL SHALL BE RETAINED ON THE JOB SITE WHILE WORK IS IN PROGRESS.
2. GRADING SHALL NOT BE STARTED WITHOUT FIRST NOTIFYING THE CITY INSPECTOR. A PRE-GRADING MEETING ON THE SITE IS REQUIRED BEFORE START OF GRADING WITH THE FOLLOWING PEOPLE PRESENT: OWNER, GRADING CONTRACTOR, DESIGN CIVIL ENGINEER, SOIL ENGINEER, ENGINEERING GEOLOGIST, DISTRICT GRADING INSPECTOR AND WHEN REQUIRED THE ARCHAEOLOGIST AND PALEONTOLOGIST. THE REQUIRED INSPECTIONS FOR GRADING WILL BE EXPLAINED AT THIS MEETING.
3. ISSUANCE OF GRADING PERMIT DOES NOT ELIMINATE THE NEED FOR PERMITS FROM OTHER AGENCIES WITH REGULATORY RESPONSIBILITIES FOR CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE WORK AUTHORIZED ON THIS PLAN.
4. THE GRADING PERMIT AND AN APPROVED COPY OF THE GRADING PLAN SHALL BE ON THE PERMITTED SITE WHILE WORK IS IN PROGRESS.
5. PRELIMINARY SOIL AND GEOLOGY REPORTS AND ALL SUBSEQUENT REPORTS AS APPROVED BY THE BUILDING DIVISION ARE CONSIDERED A PART OF THE APPROVED GRADING PLAN.
6. THE SOIL ENGINEER AND ENGINEERING GEOLOGIST SHALL PERFORM SUFFICIENT INSPECTIONS AND BE AVAILABLE DURING GRADING AND CONSTRUCTION TO VERIFY COMPLIANCE WITH THE PLANS, SPECIFICATIONS AND THE CODE WITHIN THEIR PURVIEW.
7. THE CIVIL ENGINEER SHALL BE AVAILABLE DURING GRADING TO VERIFY COMPLIANCE WITH THE PLANS, SPECIFICATIONS, CODE AND ANY SPECIAL CONDITIONS OF THE PERMIT WITHIN THEIR PURVIEW.
8. THE SOIL ENGINEER AND ENGINEERING GEOLOGIST SHALL, AFTER CLEARING AND PRIOR TO THE PLACEMENT OF FILL IN CANYONS, INSPECT EACH, CANYON FOR AREAS OF ADVERSE STABILITY AND TO DETERMINE THE PRESENCE OR ABSENCE OF SUBSURFACE WATER OR SPRING FLOW. IF NEEDED, SUB DRAINS WILL BE DESIGNED AND CONSTRUCTED PRIOR TO THE PLACEMENT OF FILL IN EACH RESPECTIVE CANYON.
9. SUB DRAIN OUTLETS SHALL BE COMPLETED AT THE BEGINNING OF THE SUB DRAIN CONSTRUCTION.
10. THE EXACT LOCATION OF THE SUB DRAINS SHALL BE SURVEYED IN THE FIELD LINE/GRADE AND SHOWN ON AS-GRADED PLANS.
11. AREAS TO RECEIVE FILL SHALL BE PROPERLY PREPARED AND APPROVED IN WRITING BY THE SOIL ENGINEER AND THE BUILDING OFFICIAL PRIOR TO PLACING FILL.
12. FILLS SHALL BE BENCHED INTO COMPETENT MATERIAL PER PFRD STANDARD PLAN NO. 1322.
13. ALL EXISTING FILLS SHALL BE APPROVED BY THE BUILDING OFFICIAL OR REMOVED PRIOR TO PLACING ADDITIONAL FILLS.
14. FILLS SHALL BE COMPACTED THROUGHOUT TO A MINIMUM OF 90% RELATIVE COMPACTION. AGGREGATE BASE FOR ASPHALTIC AREAS SHALL BE COMPACTED TO MINIMUM OF 95% RELATIVE COMPACTION.
15. CUT AND FILL SLOPES SHALL BE NO STEEPER THAN 2-FOOT HORIZONTAL TO 1-FOOT VERTICAL (2:1) EXCEPT WHERE SPECIFICALLY APPROVED OTHERWISE.
16. ALL CUT SLOPES SHALL BE INVESTIGATED BOTH DURING AND AFTER GRADING BY THE ENGINEERING GEOLOGIST TO DETERMINE IF ANY SLOPE STABILITY PROBLEM EXISTS. SHOULD EXCAVATION DISCLOSE ANY GEOLOGICAL HAZARDS OR POTENTIAL GEOLOGICAL HAZARDS, THE ENGINEERING GEOLOGIST SHALL SUBMIT RECOMMENDED TREATMENT TO THE BUILDING OFFICIAL FOR APPROVAL.
17. WHERE SUPPORT OR BUTTRESSING OF CUT AND NATURAL SLOPES IS DETERMINED TO BE NECESSARY BY THE ENGINEERING GEOLOGIST AND SOIL ENGINEER, THE SOIL ENGINEER SHALL SUBMIT DESIGN, LOCATIONS AND CALCULATIONS TO THE BUILDING OFFICIAL PRIOR TO CONSTRUCTION. THE ENGINEERING GEOLOGIST AND SOIL ENGINEER SHALL INSPECT AND CONTROL THE CONSTRUCTION OF THE BUTTRESSING AND CERTIFY TO THE STABILITY OF THE SLOPE AND ADJACENT STRUCTURES UPON COMPLETION.
18. WHEN CUT PADS ARE BROUGHT TO NEAR GRADE, THE ENGINEERING GEOLOGIST SHALL DETERMINE IF THE BEDROCK IS EXTENSIVELY FRACTURED OR FAULTED AND WILL READILY TRANSMIT WATER, IF CONSIDERED NECESSARY BY THE ENGINEERING GEOLOGIST AND SOIL ENGINEER, A COMPACTED FILL BLANKET WILL BE PLACED.
19. ALL TRENCH BACKFILL SHALL BE TESTED AND APPROVED BY THE SOIL ENGINEER.
20. ANY EXISTING IRRIGATION LINES AND CISTERNS SHALL BE REMOVED OR CRUSHED IN PLACE AND APPROVED BY THE BUILDING OFFICIAL AND SOIL ENGINEER.
21. ANY EXISTING WATER WELLS SHALL BE ABANDONED IN COMPLIANCE WITH THE SPECIFICATIONS APPROVED BY ORANGE COUNTY, HEALTH CARE AGENCY, AND DIVISION OF ENVIRONMENTAL HEALTH.
22. ANY EXISTING CESSPOOLS SEPTIC TANKS SHALL BE ABANDONED IN COMPLIANCE WITH THE CALIFORNIA PLUMBING CODE.
23. STOCKPILING OF EXCESS MATERIAL SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO EXCAVATION.
24. EXPORT SOIL MUST BE TRANSPORTED TO A LEGAL DUMP OR TO A PERMITTED SITE APPROVED BY THE BUILDING DIVISION.
25. THE PERMITTEE IS RESPONSIBLE FOR DUST CONTROL MEASURES.
26. THE PERMITTEE SHALL GIVE REASONABLE NOTICE TO THE OWNER OF ADJOINING LANDS AND BUILDINGS PRIOR TO BEGINNING EXCAVATIONS WHICH MAY AFFECT THE LATERAL AND SUBJACENT SUPPORT OF THE ADJOINING PROPERTY. THE NOTICE SHALL STATE THE INTENDED DEPTH OF EXCAVATION AND WHEN THE EVACUATION WILL COMMENCE. THE ADJOINING OWNER SHALL BE ALLOWED AT LEAST 30 DAYS AND REASONABLE ACCESS ON THE ON THE PERMITTED PROPERTY TO PROTECT HIS STRUCTURE, IF HE SO DESIRES, UNLESS OTHERWISE PROTECTED BY LAW.
27. ALL CONCRETE STRUCTURES THAT COME IN CONTACT WITH THE ON-SITE SOILS SHALL BE CONSTRUCTED WITH TYPE V CEMENT, UNLESS DEEMED UNNECESSARY BY SOLUBLE SULFATE-CONTENT TESTS CONDUCTED BY THE SOIL ENGINEER.
28. SLOPES EXCEEDING 5 FEET IN HEIGHT SHALL BE PLANTED WITH AN APPROVED PLANT MATERIAL. IN ADDITION, SLOPES EXCEEDING 15 FEET IN HEIGHT SHALL BE PROVIDED WITH, AN APPROVED IRRIGATION SYSTEM, UNLESS OTHERWISE APPROVED BY THE BUILDING OFFICIAL.
29. ALL EXISTING DRAINAGE COURSES THROUGH THIS SITE SHALL REMAIN OPEN UNTIL FACILITIES TO HANDLE STORM WATER ARE APPROVED AND FUNCTIONAL: HOWEVER, IN ANY CASE, THE PERMITTEE SHALL BE HELD LIABLE FOR ANY DAMAGE DUE TO OBSTRUCTING NATURAL DRAINAGE PATTERNS.
30. SANITARY FACILITIES SHALL MAINTAIN ON THE SITE.
31. THE LOCATION AND PROTECTION OF ALL UTILITIES IS THE RESPONSIBILITY OF THE PERMITTEE.
32. APPROVED PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS SHALL BE USED TO PROTECT ADJOINING PROPERTIES DURING GRADING.
33. GRADING OPERATION INCLUDING MAINTENANCE OF EQUIPMENT HUMAN OCCUPANCY SHALL BE CONDUCTED BETWEEN THE HOURS OF 7:00AM AND 7:00PM MONDAY THRU FRIDAY. SATURDAYS 9:00AM THRU 6:00PM PROHIBITED ALL HOURS SUNDAYS AND THE FOLLOWING FEDERAL HOLIDAYS. CHRISTMAS DAY, NEW YEARS DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY AND THANKSGIVING DAY. CMMC SEC 13-279.
    - (A) ALL CONSTRUCTION VEHICLES OR EQUIPMENT, FIXED OR MOBILE, OPERATED WITHIN 1,000 FEET OF A DWELLINGS SHALL BE EQUIPPED WITH PROPERLY OPERATING AND MAINTAINED MUFFLERS
    - (B) STOCKPILING AND/OR VEHICLE STAGING AREAS SHALL BE LOCATED AS FAR A PRACTICABLE FROM DWELLINGS AND WITHIN THE LIMITS OF GRADING PERMIT.
34. GRADING AND EXCAVATION SHALL BE HALTED DURING PERIODS OF HIGH WINDS. ACCORDING TO AQMD MEASURE F-4, HIGH WINDS ARE DEFINED AS 30MPH OR GREATER. THIS LEVEL OCCURS ONLY UNDER UNUSUALLY EXTREME CONDITIONS, SUCH AS SANTA ANA WIND CONDITIONS.
35. ASPHALT SECTIONS MUST BE: PARKING STALL = 3" A/C OVER 6" A/B, DRIVES 3" A/C OVER 10" (COMM) 12" (INDUSTRIAL), OR: PRIOR TO ROUGH GRADE RELEASE FOR BUILDING PERMITS BY THE CITY INSPECTOR, THE SOIL ENGINEER SHALL SUBMIT FOR APPROVAL, PAVEMENT SECTION RECOMMENDATIONS BASED ON "R" VALUE ANALYSIS OF THE SUB-GRADE SOILS, AND EXPECTED TRAFFIC INDICES.
36. ROOF GUTTERS SHALL BE INSTALLED TO PREVENT ROOF DRAINAGE FROM FALLING ON MANUFACTURED SLOPES.
37. THE CIVIL ENGINEER, AS A CONDITION OF ROUGH GRADE APPROVAL, SHALL PROVIDE A BLUE TOP WITH ACCOMPANYING WITNESS STAKE, SET AT THE CENTER OF EACH PAD REFLECTING THE PAD ELEVATION FOR PRECISE PERMITS AND A BLUE TOP WITH WITNESS STAKE SET AT THE DRAINAGE SWALE HIGH POINT REFLECTING THE HIGH POINT ELEVATION FOR PRELIMINARY PERMITS.
38. PRIOR TO FINAL APPROVAL, THE CIVIL ENGINEER SHALL CERTIFY TO THE BUILDING OFFICIAL THE AMOUNT OF EARTH MOVED DURING THE GRADING OPERATION.
39. THE ENGINEERING GEOLOGIST SHALL PERFORM PERIODIC INSPECTIONS AND SUBMIT A COMPLETE REPORT AND MAP UPON COMPLETION OF THE ROUGH GRADING.
40. THE GRADING CONTRACTOR SHALL SUBMIT A STATEMENT OF COMPLIANCE TO THE APPROVED GRADING PLAN PRIOR TO FINAL APPROVAL.
41. THE COMPACTION REPORT AND APPROVAL FROM THE SOIL ENGINEER SHALL INDICATE THE TYPE OF FIELD TESTING PERFORMED. THE METHOD OF OBTAINING THE IN-PLACE DENSITY SHALL BE IDENTIFIED WHETHER SAND CONE, DRIVE RING, OR NUCLEAR, AND SHALL BE NOTED FOR EACH TEST. SUFFICIENT MAXIMUM DENSITY DETERMINATIONS SHALL BE PERFORMED TO VERIFY THE ACCURACY OF THE MAXIMUM DENSITY CURVES USED BY THE FIELD TECHNICIAN.
42. IN THE EVENT THAT SOIL CONTAMINATION IS DISCOVERED DURING EXCAVATION AND REMOVAL OF EXISTING TANK, WORK SHALL BE STOPPED UNTIL A SITE ASSESSMENT AND MITIGATION PLAN HAS BEEN PREPARED, SUBMITTED AND APPROVED BY HCA/ENVIRONMENTAL HEALTH AND PDSD/GRADING.

EROSION CONTROL

43. IN THE CASE OF EMERGENCY, CALL --
44. EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON. NECESSARY MATERIALS SHALL BE AVAILABLE ON SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES WHEN RAIN IS IMMINENT.
45. EROSION CONTROL DEVICES SHALL NOT BE MOVED OR MODIFIED WITHOUT THE APPROVAL OF THE BUILDING OFFICIAL.
46. ALL REMOVABLE EROSION PROTECTIVE DEVICES SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN THE 5 DAY RAIN PROBABILITY FORECAST EXCEEDS 40%.
47. AFTER A RAINSTORM, ALL SILT AND DEBRIS SHALL BE REMOVED FROM STREETS, CHECK BERMS AND BASINS.
48. GRADED AREAS ON THE PERMITTED AREA PERIMETER MUST DRAIN AWAY FROM THE FACE OF SLOPES AT THE CONCLUSION OF EACH WORKING DAY. DRAINAGE IS TO BE DIRECTED TOWARD DESILTING FACILITIES.
49. THE PERMITTEE AND CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATER CREATES A HAZARDOUS CONDITION.
50. THE PERMITTEE AND CONTRACTOR SHALL INSPECT THE EROSION CONTROL WORK AND INSURE THAT THE WORK IS IN ACCORDANCE WITH THE APPROVED PLANS.

ENVIRONMENTAL NOTES

51. THE PERMITTEE SHALL NOTIFY ALL GENERAL CONTRACTORS, SUBCONTRACTORS, MATERIAL SUPPLIERS, LESSEES, AND PROPERTY OWNERS: THAT DUMPING OF CHEMICALS INTO THE STORM DRAIN SYSTEM OR THE WATERSHED IS PROHIBITED.
52. PERMITTEE SHALL MAINTAIN CONSTRUCTION SITE IN SUCH A CONDITION THAT AN ANTICIPATED STORM DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITE. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SOLID OR LIQUID CHEMICAL SPILLS; WASTES FROM PAINTS, STAINS, SEALANTS, GLUES, LIMES, PESTICIDES, HERBICIDES, WOOD PRESERVATIVES, AND SOLVENTS; ASBESTOS FIBERS, PAINT FLAKES OR STUCCO FRAGMENTS; FUELS, OILS, LUBRICANTS, AND HYDRAULIC, RADIATOR OR BATTERY FLUIDS; FERTILIZERS, VEHICLE/EQUIPMENT WASH WATER AND CONCRETE WASH WATER; CONCRETE, DETERGENT, OR FLOATABLE WASTES; WASTES FROM ANY ENGINE/EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING AND SUPER CHLORINATED POTABLE WATER LINE FLUSHING. DURING CONSTRUCTION, PERMITTEE SHALL DISPOSE OF SUCH MATERIALS IN A SPECIFIED AND CONTROLLED TEMPORARY AREA ON-SITE, PHYSICALLY SEPARATED FROM POTENTIAL STORM WATER RUNOFF, WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
53. PERMITTEE MAY DISCHARGE MATERIAL OTHER THAN STORM WATER ONLY WHEN NECESSARY FOR PERFORMANCE AND COMPLETION OF CONSTRUCTION PRACTICES AND WHERE THEY DO NOT: CAUSE OR CONTRIBUTE TO A VIOLATION OF ANY WATER QUALITY STANDARD; CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR NUISANCE; OR CONTAIN A HAZARDOUS SUBSTANCE IN A QUANTITY REPORTABLE UNDER FEDERAL REGULATIONS 40 CFR PARTS 117 AND 302.
54. DEWATERING OF CONTAMINATED GROUNDWATER, OR DISCHARGING CONTAMINATED SOILS VIA SURFACE EROSION IS PROHIBITED. DEWATERING OF NON-CONTAMINATED GROUNDWATER REQUIRES A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FROM THE RESPECTIVE STATE REGIONAL WATER QUALITY CONTROL BOARD.
55. SPECIAL NOTE:
    "SURVEY MONUMENTS SHALL BE PRESERVED AND REFERENCED BEFORE CONSTRUCTION AND REPLACED AFTER CONSTRUCTION PURSUANT TO SECTION 8771 OF THE BUSINESS AND PROFESSIONS CODE."

1-800-227-2600
CALL USA/SC FOR UNDERGROUND LOCATING 48 HOURS BEFORE YOU DIG!

IMPORTANT NOTICE
SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES A DIGALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID. FOR YOUR DIGALERT I.D. NUMBER CALL UNDERGROUND SERVICE ALERT TOLL FREE 1-800-227-2600 TWO WORKING DAYS BEFORE YOU DIG

LEGEND:

GENERAL
- CIVIL LIMITS OF WORK
- SHEET MATCH LINE

ANNOTATION
- 100.00 XX — SURFACE ELEVATION/UTILITY ELEVATION
- (100.00 XX) — EXISTING SURFACE ELEVATION/UTILITY ELEVATION
- (XX) — CONSTRUCTION NOTE
- 2.0% — FLOW (DIRECTION AND GRADE)
- 2:1 — SLOPE (DIRECTION AND RUN:RISE)
- [XX] — HORIZONTAL CONTROL POINT LABEL
- (CX) — CURVE DATA LABEL
- FF=100.00 — PAD/FINISHED FLOOR ELEVATION

SITE
- CURB/BACK OF CURB/GUTTER
- RETAINING WALL/SITE WALL
- PROPERTY LINE/RIGHT OF WAY
- CENTER LINE
- FENCE
- TO BE DEMOLISHED

EROSION CONTROL
- SANDBAGS
- FIBER ROLL
- PROPOSED BUILDING EXCAVATION OUTLINE
- EXISTING DRAINAGE DIRECTION OF FLOW
- PROTECT TREE IN PLACE

GRADING
- 100 — PROPOSED MAJOR CONTOUR
- 102 — PROPOSED MINOR CONTOUR
- FLOW LINE
- GB — GRADE BREAK LINE
- R — RIDGE LINE
- EARTHEN SWALE
- SAWCUT
- LIMITS OF GRADING
- GRADING BENCH
- TOP / TOE — GRADED SLOPE (HORIZONTAL:VERTICAL)

UTILITY
- SS — SANITARY SEWER
- W — WATER
- DW — DOMESTIC WATER
- FW — FIRE WATER
- SD — STORM DRAIN
- G — GAS
- E — ELECTRIC
- T — TELEPHONE
- PERFORATED PIPE
- POINT OF CONNECTION
- COORDINATION POINT
- CAP OR PLUG
- UTILITY MANHOLE
- UTILITY CLEANOUT
- STORM DRAIN INLET
- AREA DRAIN/PLANTER DRAIN
- TRENCH DRAIN
- FIRE HYDRANT
- THRUST BLOCK
- FIRE DEPARTMENT CONNECTION (FDC)
- POST INDICATOR VALVE (PIV)
- WATER VALVE
- BACKFLOW ASSEMBLY
- UTILITY METER VAULT
- POINT OF CONNECTION
- COORDINATION POINT
- UTILITY CLEANOUT
- STORM DRAIN INLET
- THRUST BLOCK
- FIRE DEPARTMENT CONNECTION (FDC)
- POST INDICATOR VALVE (PIV)
- BACKFLOW ASSEMBLY
- FIRE WATER METER VAULT

THIS PLAN HAS BEEN REVIEWED AND CONFORMS TO RECOMMENDATIONS OF SOILS ENGINEERING/GEOLOGICAL REPORT "PROPOSED NEW ORANGE COUNTY MUSEUM OF ART" BY LEIGHTON CONSULTING, INC, DATED JULY 19, 2016.

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SIGNATURE ______ DATE ______ STAMP

ABBREVIATIONS:

AC	ASPHALTIC CONCRETE	MIN.	MINIMUM
BCR	BEGIN CURVE RETURN	MH	MANHOLE
BW	BACK OF WALK	(N)	NORTH
BLDG	BUILDING	NTS	NOT TO SCALE
BM	BENCH MARK	PA	PLANTER AREA
BOS	BOTTOM OF STAIRS	POC	POINT OF CONNECTION
BOT/BT	BOTTOM OF TRENCH	PIV	POST INDICATOR VALVE
BMP	BEST MANAGEMENT PRACTICES	PCC	POINT OF COMPOUND CURVE
CB	CATCH BASIN	PRC	POINT OF REVERSE CURVE
CI	CAST IRON	PRV	PRESSURE REDUCING VALVE
CL	CENTER LINE	PVC	POLYVINYL CHLORIDE
CMU	CONCRETE MASONRY UNIT	R	RADIUS
CO	CLEANOUT	RCIP	RECTANGULAR CAST IRON PIPE
CONC	PORTLAND CEMENT CONCRETE	RD	ROOF DRAIN
CF	CURB FACE	RW	RIGHT-OF-WAY
DW	DOMESTIC WATER	(S)	SOUTH
(E)	EAST	S=	SLOPE EQUALS
ECR	END CURVE RETURN	SD	STORM DRAIN
EG	EDGE OF GUTTER	SSMH	SANITARY SEWER MANHOLE
EL. OR ELEV	ELEVATION	SS	SANITARY SEWER
ELEC	ELECTRIC, ELECTRICAL	STD	STANDARD
EX. OR EXIST.	EXISTING	SDMH	STORM DRAIN MANHOLE
FDC	FIRE DEPARTMENT CONNECTION	TC	TOP OF CURB
FF	FINISHED FLOOR	TEL	TELEPHONE
FG	FINISHED GRADE (LANDSCAPE)	TG	TOP OF GRATE
FS	FINISHED SURFACE (HARDSCAPE)	TOS	TOP OF STAIRS
FH	FIRE HYDRANT	TW	TOP OF WALL
FL	FLOW LINE	TS	TRAFFIC SIGNAL
FT	FOOT OR FEET	TSB	TRAFFIC SIGNAL BOX
FU	FIXTURE UNITS	TYP	TYPICAL
FW	FIRE WATER	TV	TELEVISION
GPM	GALLONS PER MINUTE	VIF	VERIFY IN FIELD
GV	GATE VALVE	VLT	VAULT
HDPE	HIGH DENSITY POLYETHYLENE	VCP	VITRIFIED CLAY PIPE
HP	HIGH POINT	(W)	WEST
INV.	INVERT	W	WATER
LP	LOW POINT	WM	WATER METER
MAX.	MAXIMUM	WV	WATER VALVE

SHEET INDEX:

CIVIL DRAWINGS

C-001.0	TITLE SHEET
C-100.0	SURVEY (FOR REFERENCE ONLY)
C-101.0	SURVEY (FOR REFERENCE ONLY)
C-110.0	EROSION CONTROL PLAN
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C-141.0	GRADING PLAN
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C-501.0	DETAILS

PROJECT SITE

VICINITY MAP
NOT TO SCALE

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09-06-18		PLANNING REV 01
12-20-18		REVISED PLANNING SET

KEY PLAN:

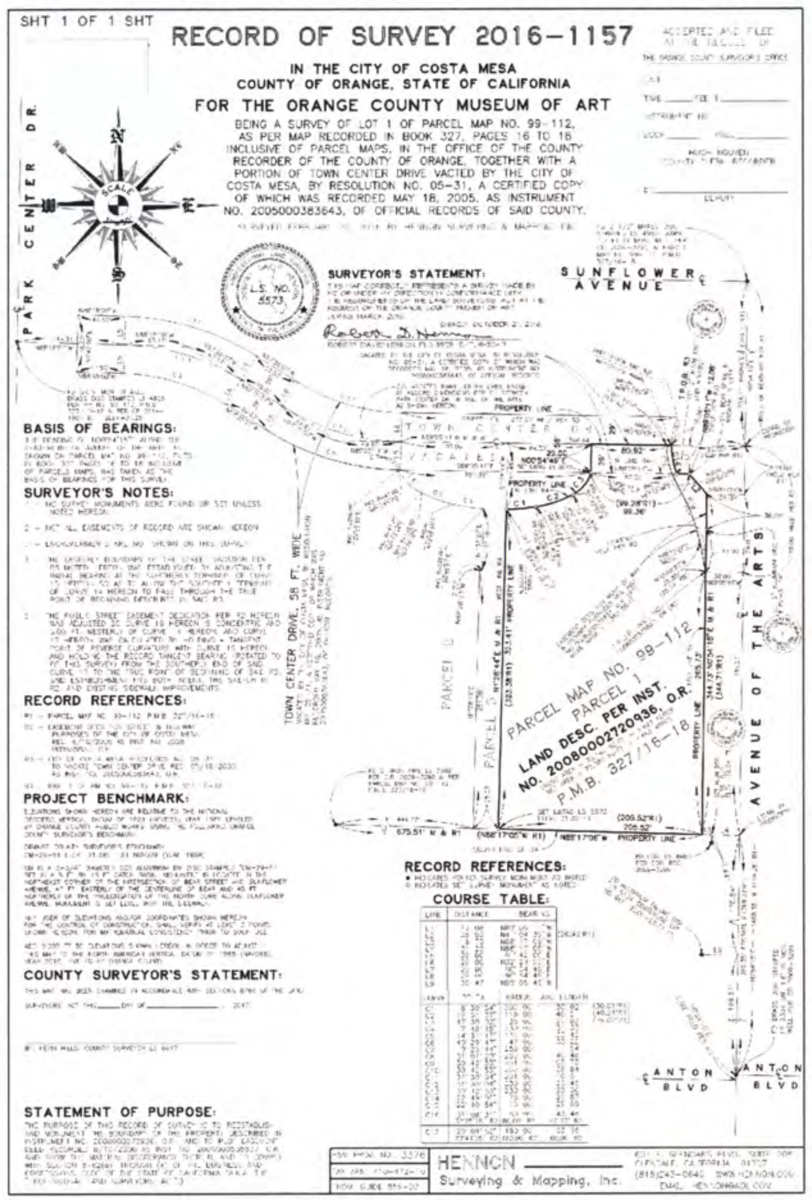
PROJECT
ORANGE COUNTY MUSEUM OF ART
3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

TITLE SHEET

SEAL & SIGNATURE:

DATE:	11-16-18
PROJECT No:	35102
DRAWING BY:	
CHK BY:	
DWG No:	C-001.0
FILE No:	

FILED JANUARY 26, 2017 IN RS BK 290 PG 32



LEGAL DESCRIPTION:

Real property in the City of Costa Mesa, County of Orange, State of California, described as follows:

LOT 1 OF PARCEL MAP NO. 99-112, IN THE CITY OF COSTA MESA, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 327, PAGES 16, 17 AND 18 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY.

EXCEPTING THEREFROM ALL OIL, GAS AND OTHER HYDROCARBONS, NON-HYDROCARBON GASES OR GASEOUS SUBSTANCES, ALL OTHER MINERALS OF WHATEVER NATURE, WITHOUT REGARD TO SIMILARITY TO THE ABOVE-MENTIONED SUBSTANCES, AND ALL SUBSTANCES THAT MAY BE PRODUCED THEREWITH FROM THE PROPERTY, AS RESERVED IN GIFT DEED RECORDED DECEMBER 14, 1999, AS INSTRUMENT NO. 19990648567 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM ALL GEOTHERMAL RESOURCES, EMBRACING INDIGENOUS STEAM, HOT WATER AND HOT BRINES, STEAM AND OTHER GASES, HOT WATER AND HOT BRINES RESULTING FROM WATER, GAS OR OTHER FLUIDS ARTIFICIALLY INTRODUCED INTO SUBSURFACE FORMATIONS, HEAT OR OTHER ASSOCIATED ENERGY FOUND BENEATH THE SURFACE OF THE EARTH, AND BYPRODUCTS OF ANY OF THE FOREGOING SUCH AS MINERALS (EXCLUSIVE OF OIL OR HYDROCARBON GAS THAT CAN BE SEPARATELY PRODUCED) WHICH ARE FOUND IN SOLUTION OR ASSOCIATION WITH OR DERIVED FROM ANY OF THE FOREGOING, AS RESERVED IN GIFT DEED RECORDED DECEMBER 14, 1999, AS INSTRUMENT NO. 19990648567 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM ALL WATER RIGHTS, ALL RIPARIAN RIGHTS, IF ANY, APPURTENANT TO SAID PROPERTY, AS RESERVED IN GIFT DEED RECORDED DECEMBER 14, 1999, AS INSTRUMENT NO. 19990648567 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM THE SOLE AND EXCLUSIVE RIGHT FROM TIME TO TIME TO BORE OR DRILL AND MAINTAIN WELLS AND OTHER WORKS INTO AND THROUGH THE PROPERTY AND ADJOINING STREETS, ROADS AND HIGHWAYS BELOW A DEPTH OF FIVE HUNDRED FEET (500') BELOW THE SURFACE THEREOF FOR THE PURPOSE OF EXPLORING FOR AND PRODUCING ENERGY RESOURCES; THE RIGHT TO PRODUCE, INJECT, STORE AND REMOVE FROM AND THROUGH SAID BORES, WELLS OR WORKS, OIL, GAS, WATER AND OTHER SUBSTANCES OF WHATEVER NATURE, AND THE RIGHT TO PERFORM BELOW SAID DEPTH ANY AND ALL OPERATIONS DEEMED BY GRANTOR NECESSARY OR CONVENIENT FOR THE EXERCISE OF SUCH RIGHTS WITHOUT INTERFERING IN ANY MANNER WITH SURFACE OR SUBSURFACE USAGE OF THE PROPERTY ABOVE DEPTH OF FIVE HUNDRED FEET (500') AND WITHOUT CAUSING SUBSIDENCE OR REMOVAL OF SUBJACENT OR LATERAL SUPPORT, AS RESERVED IN GIFT DEED RECORDED DECEMBER 14, 1999, AS INSTRUMENT NO. 19990648567 OF OFFICIAL RECORDS.

TOGETHER WITH THAT PORTION OF TOWN CENTER DRIVE ADJOINING PARCEL 1 OF SAID PARCEL MAP AS VACATED BY THE CITY OF COSTA MESA, BY RESOLUTION NO. 05-31, A CERTIFIED COPY OF WHICH WAS RECORDED MAY 18, 2005, AS INSTRUMENT NO. 2005000383643 OF OFFICIAL RECORDS.

APN: 410-472-19

SURVEYOR'S NOTES:

1. BOUNDARY LINES SHOWN HEREON WERE ESTABLISHED FROM PUBLIC AND/OR PRIVATE SURVEY MONUMENTS WHOSE CHARACTER AND SOURCE ARE SO NOTED HEREON. LOT LINES WERE ESTABLISHED AS SHOWN ON RECORD OF SURVEY HEREON.
2. LEGAL DESCRIPTION WAS SUPPLIED BY CLIENT.
3. TITLE REPORT WAS SUPPLIED BY CLIENT. SEE TITLE REPORT MATTERS.
4. THE AREA OF THE SUBJECT PROPERTY IS AS FOLLOWS:

AREA = 73,740 SQ.FT. GROSS = 72,377 SQ.FT. NET
(AREA IS BASED ON FIELD MEASUREMENTS)
(NET = GROSS MINUS STREET DEDICATIONS)

BASIS OF BEARINGS:

THE BEARING OF N00°34'15"E ALONG THE CENTERLINE OF AVENUE OF THE ARTS, AS SHOWN ON PARCEL MAP NO. 99-112, FILED IN BOOK 327 PAGES 16 TO 18 INCLUSIVE OF PARCELS MAPS, WAS TAKEN AS THE BASIS OF BEARINGS FOR THIS SURVEY.

FLOOD ZONE:

THE SUBJECT PROPERTY IS DESIGNATED AS "OTHER FLOOD AREAS", FEMA FLOOD ZONE "X" (SHADED), WHICH IS DEFINED AS SUBJECT TO 0.2% (500 YEAR) ANNUAL CHANCE FLOOD; AREA OF 1% (100 YEAR) ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEE FROM 1% ANNUAL CHANCE FLOOD, PER FEMA FLOOD INSURANCE RATE MAP NO. 06059C0256J, COMMUNITY OF COSTA MESA, CALIFORNIA, EFFECTIVE DECEMBER 3, 2009.

PROJECT BENCHMARK:

ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29) YEAR 1985 LEVELED BY ORANGE COUNTY PUBLIC WORKS, USING THE FOLLOWING ORANGE COUNTY SURVEYOR'S BENCHMARK.

ORANGE COUNTY SURVEYOR'S BENCHMARK
CM-28-81 ELEV = 31.385 FEET NGVD29 (YEAR 1985)

BM IS A 3-3/4" DIAMETER OCS ALUMINUM BM DISC STAMPED "CM-28-81" SET IN A 5 FT BY 15 FT CATCH BASIN. MONUMENT IS LOCATED IN THE NORTHEAST CORNER OF THE INTERSECTION OF BEAR STREET AND SUNFLOWER AVENUE, 47 FT. EASTERLY OF THE CENTERLINE OF BEAR AND 45 FT. NORTHERLY OF THE PROLONGATION OF THE NORTH CURB ALONG SUNFLOWER AVENUE. MONUMENT IS SET LEVEL WITH THE SIDEWALK.

ANY USER OF ELEVATIONS AND/OR COORDINATES SHOWN HEREON FOR THE CONTROL OF CONSTRUCTION SHALL VERIFY AT LEAST 3 POINTS SHOWN HEREON FOR MATHEMATICAL CONSISTENCY PRIOR TO SUCH USE.

ADD 2.20' TO ELEVATIONS SHOWN HEREON IN ORDER TO ADJUST THIS MAP TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) YEAR 2005 LEVELED BY ORANGE COUNTY.

ALTA TABLE A ITEMS 16, 17, AND 18 NOTE:

THERE IS NO VISIBLE EVIDENCE OF EARTH MOVING OR BUILDING CONSTRUCTION, PROPOSED CHANGES IN STREET RIGHT OF WAY LINES, SIDEWALK OR STREET CONSTRUCTION OR REPAIRS, USE OF SITE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL, NOR OF WETLANDS.

TITLE MATTERS:

PER PRELIMINARY TITLE REPORT ORDER NO. ... FIRST AMERICAN TITLE INSURANCE COMPANY ...

(6) ITEM 6 ...

(13) ITEM 13 ...

(14) ITEM 14 ...

(15) ITEM 15 ...

(17) ITEM 17 ...

(18) ITEM 18 ...

(20) ITEM 20 ...

ALTA/NSPS LAND TITLE & ARCHITECTURAL DESIGN SURVEY OF
ORANGE COUNTY MUSEUM OF ART
IN THE CITY OF COSTA MESA, COUNTY OF ORANGE, STATE OF CALIFORNIA

TITLE MATTERS CONTINUED:

(22) ITEM 22 ...

(23) ITEM 23 ...

(30) ITEM 30 ...

ALTA/NSPS LAND TITLE SURVEY CERTIFICATE:

TO:

Orange County Museum of Art, a California nonprofit public benefit corporation

First American Title Insurance Company

And all of their successors and/or assigns.

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS ... OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON FEBRUARY 29, 2016.

DATE: OCT 23, 2018

ROBERT DAVID HENNON, PLS 5573 (EXPIRES 9-30-19)

ALTA/NSPS LAND TITLE & ARCHITECTURAL DESIGN SURVEY OF ORANGE COUNTY MUSEUM OF ART IN THE CITY OF COSTA MESA, COUNTY OF ORANGE, STATE OF CALIFORNIA	HENNON Surveying & Mapping, Inc.	601 E. GLENOAKS BLVD., SUITE 208 GLENDALE, CALIFORNIA 91207 (818)243-0640

PROJECT NO. 3376

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CHK BY:
DWG No:
C-100.0
FILE No.:

PRELIMINARY NOT FOR CONSTRUCTION OCMA TEAM CIRCULATION ONLY

FOR REFERENCE ONLY
DRAWING NOT TO SCALE

87

BY Robert D. Hennon DATE OCT 23, 2018
ROBERT DAVID HENNON, PLS 5573 (EXPIRES 9-30-19)

ALTA/NSPS LAND TITLE & ARCHITECTURAL DESIGN SURVEY OF
ORANGE COUNTY MUSEUM OF ART
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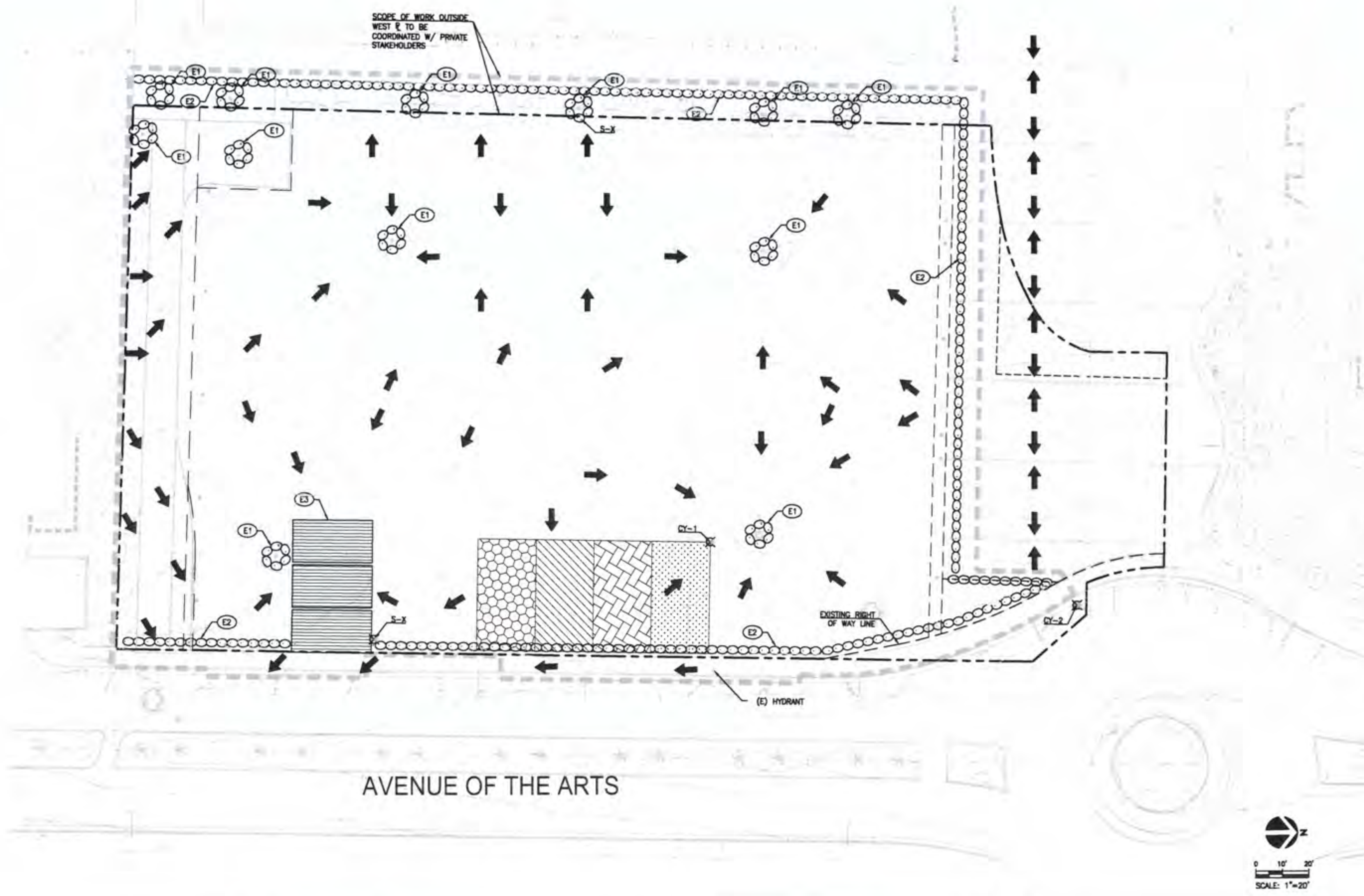


BMP NOTES:

THE FOLLOWING BMPS AS OUTLINED IN, BUT NOT LIMITED TO, THE BEST MANAGEMENT PRACTICE HANDBOOK, CALIFORNIA STORMWATER QUALITY TASK FORCE, SACRAMENTO, CALIFORNIA, JULY 2012, MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT (ADDITIONAL MEASURES MAY BE REQUIRED IF DEEMED APPROPRIATE BY CITY INSPECTORS):

EROSION CONTROL

EC1-SCHEDULING
~~EC2-PRESERVATION OF EXISTING VEGETATION~~
~~EC3-HYDRAULIC MULCH~~
~~EC4-HYDROSEEDING~~
~~EC5-SOIL BINDERS~~
~~EC6-STRAW MULCH~~
~~EC7-GEOTEXTILES AND MATS~~
~~EC8-WOOD MULCHING~~
~~EC9-EARTH DIKES AND DRAINAGE SWALES~~
~~EC10-VELOCITY DISSIPATION DEVICES~~
~~EC11-SLOPE DRAINS~~
~~EC12-STREAMBANK STABILIZATION~~
~~EC13-RESERVED~~
~~EC14-COMPOST BLANKET~~
~~EC15-SOIL PREPARATION/ROUGHENING~~
~~EC16-NON VEGETATIVE STABILIZATION~~

TEMPORARY SEDIMENT CONTROL

~~SE1-SILT FENCE~~
~~SE2-SEDIMENT BASIN~~
~~SE3-SEDIMENT TRAP~~
~~SE4-CHECK DAM~~
~~SE5-FIBER ROLLS~~
~~SE6-GRAVEL BAG BERM~~
SE7-STREET SWEEPING AND VACUUMING
SE8-SANDBAG BARRIER
SE9-STRAW BALE BARRIER
SE10-STORM DRAIN INLET PROTECTION
~~SE11-ACTIVE TREATMENT SYSTEMS~~
~~SE12-MANUFACTURED LINEAR SEDIMENT CONTROLS~~
~~SE13-COMPOST SOCKS AND BERMS~~
~~SE14-BIOFILTER BAGS~~

EQUIPMENT TRACKING CONTROL

TC1-STABILIZED CONSTRUCTION ENTRANCE/EXIT
~~TC2-STABILIZED CONSTRUCTION ROADWAY~~
TC3-ENTRANCE/OUTLET TIRE WASH

WIND EROSION CONTROL

WE1-WIND EROSION CONTROL

NON-STORMWATER MANAGEMENT

NS1-WATER CONSERVATION PRACTICES
~~NS2-DEWATERING OPERATIONS~~
NS3-PAVING AND GRINDING OPERATIONS
~~NS4-TEMPORARY STREAM CROSSING~~
~~NS5-CLEAR WATER DIVERSION~~
NS6-ILLICIT CONNECTION/DISCHARGE
~~NS7-POTABLE WATER/IRRIGATION~~
NS8-VEHICLE AND EQUIPMENT CLEANING
~~NS9-VEHICLE AND EQUIPMENT FUELING~~
~~NS10-VEHICLE AND EQUIPMENT MAINTENANCE~~
~~NS11-PILE DRIVING OPERATIONS~~
NS12-CONCRETE CURING
NS13-CONCRETE FINISHING
~~NS14-MATERIAL OVER WATER~~
~~NS15-DEMOLITION ADJACENT TO WATER~~
~~NS16-TEMPORARY BATCH PLANTS~~

WASTE MANAGEMENT & MATERIALS POLLUTION CONTROL

WM1-MATERIAL DELIVERY AND STORAGE
WM2-MATERIAL USE
WM3-STOCKPILE MANAGEMENT
WM4-SPILL PREVENTION AND CONTROL
WM5-SOLID WASTE MANAGEMENT
WM6-HAZARDOUS WASTE MANAGEMENT
~~WM7-CONTAMINATED SOIL MANAGEMENT~~
WM8-CONCRETE WASTE MANAGEMENT
WM9-SANITARY/SEPTIC WASTE MANAGEMENT
WM10-LIQUID WASTE MANAGEMENT

EROSION CONTROL NOTES:

1. TEMPORARY EROSION CONTROL DEVICES SHOWN ON THE GRADING PLAN WHICH INTERFERE WITH THE WORK SHALL BE RELOCATED OR MODIFIED AS AND WHEN THE INSPECTOR SO DIRECTS AS THE WORK PROGRESSES TO MEET "AS GRADED" CONDITIONS.
2. ALL LOOSE SOIL AND DEBRIS SHALL BE REMOVED FROM THE STREET AREAS UPON STARTING OPERATIONS AND PERIODICALLY THEREAFTER AS DIRECTED BY THE INSPECTOR
3. WHEN THE INSPECTOR SO DIRECTS, A 12-INCH BERM SHALL BE MAINTAINED ALONG THE TOP OF THE SLOPE OF THOSE FILLS ON WHICH GRADING IS NOT IN PROGRESS.
4. STORM AND SEWER DRAIN TRENCHES THAT ARE CUT THROUGH BASIN DIKES OR BASIN INLET DIKES SHALL BE PLUGGED WITH SANDBAGS.
5. EXCEPT WHEN THE INSPECTOR DIRECTS OTHERWISE, ALL DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN RAIN IS FORECAST, AND SHALL BE MAINTAINED DURING THE RAINY SEASON (OCTOBER 15 TO APRIL 15).
6. SANDBAGS SHALL BE STOCKPILED ON SITE, READY TO BE PLACED IN POSITION WHEN RAIN IS FORECAST, OR WHEN THE INSPECTOR SO DIRECTS.
7. A "STANDBY EMERGENCY CREW" SHALL BE ALERTED BY THE PERMITTEE OR THE CONTRACTOR TO PERFORM EMERGENCY WORK DURING RAINSTORMS. THE PARTY TO BE CONTACTED IS:
NAME: ____________________ (TO BE FILLED IN BY CONTRACTOR)
PHONE NUMBER: ____________________

DUST CONTROL NOTES:

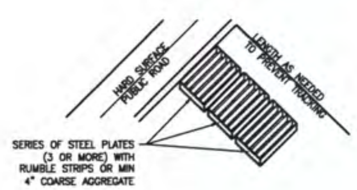
1. DUST SHALL BE CONTROLLED BY WATERING AND/OR APPLYING A DUST PALLIATIVE. THE DUST PALLIATIVE SHALL BE APPLIED IN THE AMOUNT AT THE LOCATIONS AS DIRECTED BY THE ENGINEER.
2. WATER FOR DUST CONTROL SHALL BE APPLIED BY MEANS OF PRESSURE TYPE DISTRIBUTORS OR PIPE LINES EQUIPPED WITH A SPRAY SYSTEM OR HOSES WITH NOZZLES THAT WILL INSURE A UNIFORM APPLICATION OF WATER.
3. UNLESS WATER IS APPLIED BY MEANS OF PIPE LINES, AT LEAST ONE MOBILE UNIT WITH A MINIMUM CAPACITY OF 100 GALLONS SHALL BE AVAILABLE FOR APPLYING WATER.
4. ALL SOIL MATERIALS OR DEBRIS TRUCKED FROM THE SITE SHALL BE COVERED AND SPRINKLED PRIOR TO ENTERING PUBLIC STREETS.
5. PROVIDE FOR WET SUPPRESSION OR CHEMICAL STABILIZING OF EXPOSED SOILS.
6. PROVIDE FOR RAPID CLEAN-UP OF SEDIMENTS DEPOSITED ON THE PAVED ROADS.
7. LIMIT THE AMOUNT OF AREAS DISTURBED BY CLEARING & EARTH MOVING OPERATIONS BY SCHEDULING THESE ACTIVITIES IN PHASES.

EROSION CONTROL NOTES:

(E1) PROVIDE INLET PROTECTION PER DETAIL 1, HEREON.
(E2) PLACE SANDBAGS TRIPLE ROW PER DETAIL 2, HEREON.
(E3) STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 3, HEREON.

LEGEND

LIMIT LINE OF EROSION CONTROL
PROPERTY LINE
EXISTING RIGHT OF WAY LINE
SANDBAGS
FLOW DIRECTION
INLET PROTECTION
CY-1 NON-VISIBLE POLLUTANT AND NON-STORM WATER DISCHARGE SAMPLE LOCATION
CY-2 NON-CONTAMINATED SAMPLE LOCATION
S-X RUNOFF DISCHARGE SAMPLE LOCATIONS
CONTRACTORS YARD SUBJECT TO CHANGE BASED ON CONTRACTORS MEANS AND METHODS.
MATERIAL STORAGE AREA. SUBJECT TO CHANGE BASED ON CONTRACTORS MEANS AND METHODS.
VEHICLE STORAGE AREA. SUBJECT TO CHANGE BASED ON CONTRACTORS MEANS AND METHODS
WASTE MATERIAL STORAGE AREA. SUBJECT TO CHANGE BASED ON CONTRACTORS MEANS AND METHODS.



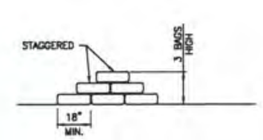
NOTES:

1. THE CONSTRUCTION ENTRANCE ROADWAYS SHALL BE STABILIZED SO AS TO PREVENT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC ROADS. DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS INTO THE STORM DRAIN SYSTEM.
2. STABILIZED CONSTRUCTION ENTRANCE SHALL BE:
   A. LOCATED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE OR FROM A PUBLIC RIGHT OF WAY, STREET, ALLEY, AND SIDEWALK OR PARKING AREA.
   B. SERIES OF STEEL PLATES WITH "RUMBLE STRIPS", AND/OR MIN 4" COARSE AGGREGATE WITH LENGTH, WIDTH AND THICKNESS AS NEEDED TO ADEQUATELY PREVENT ANY TRACKING ONTO PAVED SURFACE.
3. ADD A WASH RACK WITH SEDIMENT TRAP LARGE ENOUGH TO COLLECT ALL WASH WATER.
4. ALL VEHICLES ACCESSING THE CONSTRUCTION SITE SHALL UTILIZE THE STABILIZED CONSTRUCTION ENTRANCE SITES.

STREET MAINTENANCE

1. REMOVE ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS IMMEDIATELY.
2. SWEEP PAVED AREAS THAT RECEIVE CONSTRUCTION TRAFFIC WHENEVER SEDIMENT BECOMES VISIBLE.
3. PAVEMENT WASHING WITH WATER IS PROHIBITED IF IT RESULTS IN A DISCHARGE TO THE STORM DRAIN SYSTEM.

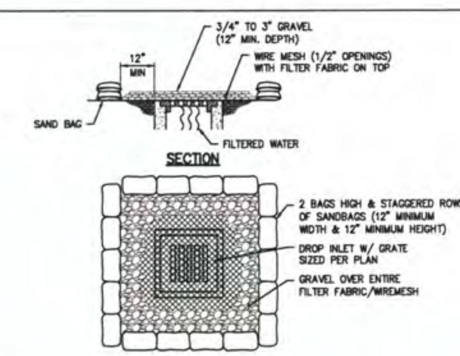
3 STABILIZED CONSTRUCTION ENTRANCE N.T.S.



NOTES:

1. SANDBAG SHALL BE FILLED WITH NON-COHESIVE, CLASS 1 OR CLASS 2, PERMEABLE MATERIAL FREE FROM CLAY AND DELETERIOUS MATERIAL.

2 SANDBAG BARRIER N.T.S.



NOTES:

1. PLACE WIRE MESH OVER AND 1' (MINIMUM) BEYOND THE INLET STRUCTURE. (MESH OPENINGS NOT TO EXCEED 1/2" x 1/2" WIRE)
2. PLACE FILTER FABRIC OVER WIRE MESH.
3. PLACE 3/4" TO 3" GRAVEL OVER THE FILTER FABRIC/WIRE MESH (12" MINIMUM DEPTH OVER THE ENTIRE INLET OPENING).
4. SAND BAG MATERIAL: POLYPROPYLENE, POLYETHYLENE OR POLYMIDE WOVEN FABRIC, MINIMUM UNIT WEIGHT 4 OUNCES PER SQUARE YARD, MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.
5. SAND BAG SHALL BE FILLED WITH NON-COHESIVE, CLASS 1 OR CLASS 2 PERMEABLE MATERIAL FREE FROM CLAY AND DELETERIOUS MATERIAL.
6. PLACE SEVERAL LAYERS OF SAND BAGS (12" MINIMUM HIGH) OVERLAPPING THE BAGS AND PACKING THEM TIGHTLY TOGETHER.
7. LEAVE GAP OF ONE BAG ON THE TOP ROW TO SERVE AS A SPILLWAY.

1 STORM DRAIN INLET PROTECTION N.T.S.

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KEY PLAN:

PROJECT

ORANGE COUNTY MUSEUM OF ART

3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

EROSION CONTROL PLAN

SEAL & SIGNATURE:

REGISTERED PROFESSIONAL ENGINEER REZA REZAIAN No. C62048 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

DATE:	11-16-18
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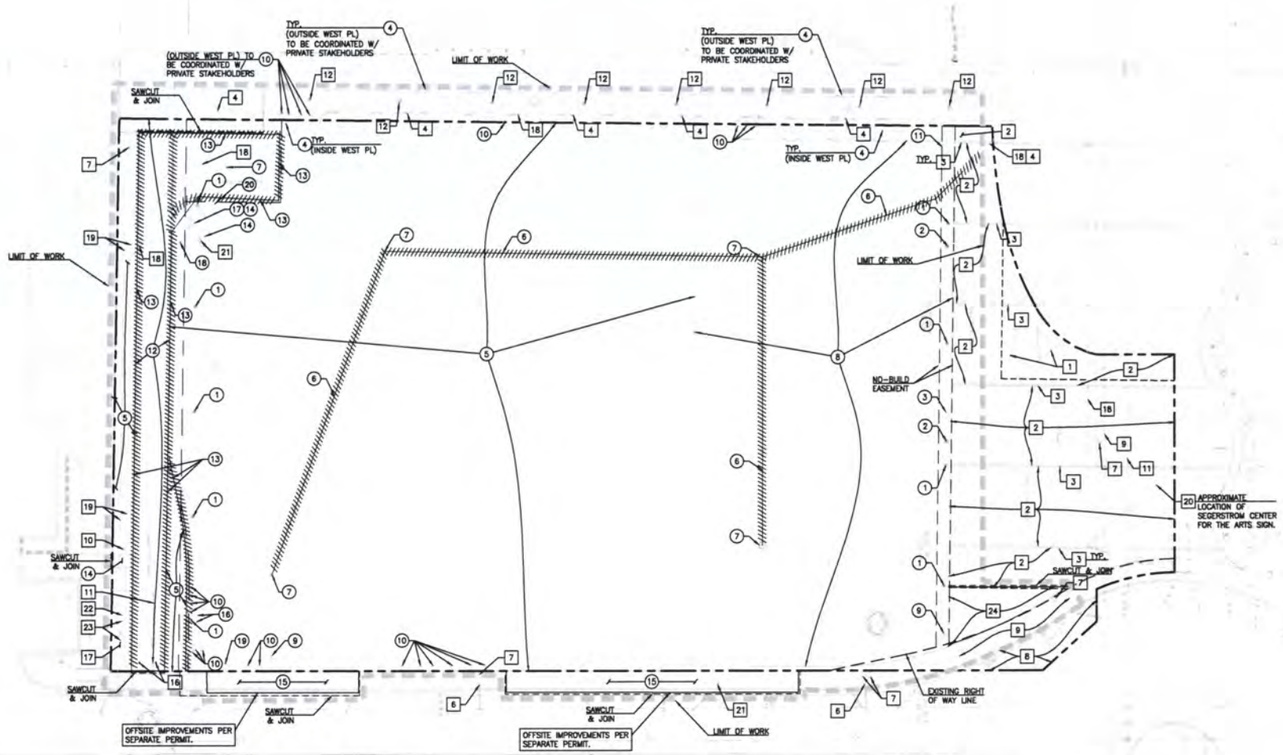
DWG No.:	C-110.0
FILE No.:	



0 10' 20'
SCALE: 1"=20'

GENERAL DEMOLITION NOTES:

1. CONTRACTOR TO CLEAR PROJECT SITE AREA WITHIN THE CONFINES OF THE DEMOLITION LIMIT LINE. THE CONTRACTOR SHALL DEMOLISH AND REMOVE FROM THE SITE ALL EXISTING UTILITIES, STRUCTURES, PLANTERS, TREES, AND ALL OTHER SITE FEATURES, UNLESS OTHERWISE NOTED ON THE PLAN.
2. REMOVAL OF LANDSCAPING SHALL INCLUDE ROOTS AND ORGANIC MATERIALS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS AND SHALL PAY ALL FEES NECESSARY FOR ENCROACHMENT, GRADING, DEMOLITION AND DISPOSAL OF SAID MATERIALS AS REQUIRED BY PRIVATE, LOCAL AND STATE JURISDICTIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A SITE INSPECTION TO FULLY ACKNOWLEDGE THE EXTENT OF THE DEMOLITION WORK.
5. THE CONTRACTOR SHALL VERIFY AND LOCATE ALL EXISTING ABOVE AND UNDERGROUND UTILITIES. LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND ARE SHOWN FOR GENERAL INFORMATION ONLY.
6. DAMAGE TO ANY EXISTING UTILITIES AND SERVICES TO REMAIN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL REPAIR AND/OR REPLACE IN KIND.
7. EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT DEBRIS AND UNSUITABLE MATERIALS FROM ENTERING STORM DRAINS, SANITARY SEWERS AND STREETS.
8. DUST CONTROL SHALL BE IMPLEMENTED DURING DEMOLITION.
9. DEMOLITION IS LIMITED TO WITHIN DEMOLITION LIMIT LINE UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL VERIFY THE LOCATION AND QUANTITY OF EXISTING SURFACE STRUCTURES AND SHALL BE SOLELY RESPONSIBLE FOR ANY UNIDENTIFIED UTILITIES, IMPROVEMENTS, TREES, ETC. TO BE DEMOLISHED AND REMOVED WITHIN THE DEMOLITION LIMIT LINE, INCLUDING APPURTENANT FOUNDATIONS OR SUPPORTS.
11. DEMOLITION CALLOUTS IN THIS SECTION ARE REPRESENTATIVE OF WHAT IS TO BE DONE, NOT AN ITEMIZED ACCOUNTING FOR EACH PIPE, CATCH BASIN, MANHOLE, VAULT, ETC. THAT IS TO BE DEMOLISHED, REMOVED AND DISPOSED OF.

DEMOLITION NOTES

PROTECT-IN-PLACE	REMOVE & DEMOLISH
1 SERRA IRON SCULPTURE	1 BOLLARD LIGHT
2 ASPHALT PAVERS ON CONCRETE BASE	2 LIGHT POLE & CONCRETE BASE
3 TRENCH DRAIN	3 ELECTRICAL PULL BOX
4 STORM DRAIN INLET	4 TREES
5 STORM DRAIN CLEANOUT	5 GRASS
6 STREET LIGHT	6 STORM DRAIN PIPE
7 ELECTRICAL PULL BOX	7 CATCH BASIN/DRAIN INLET
8 CONCRETE ASPHALT PAVEMENT	8 DECOMPOSED GRANITE
9 ELECTRICAL DUCTBANK/ CONDUIT	9 SIGN
10 CLEANOUT	10 IRRIGATION PULL BOX
11 SANITARY SEWER PIPE	11 UNKNOWN PULL BOX
12 LIGHTPOLE	12 CONCRETE ASPHALT PAVEMENT
13 NOT USED	13 MOWSTRIP/CONCRETE CURB
14 NOT USED	14 CONCRETE PAVEMENT
15 NOT USED	15 SIDEWALK AND CURB & GUTTER (TO BE INCLUDED IN OFF-SITE IMPROVEMENTS UNDER SEPARATE PERMIT)
16 BOLLARD	16 RECLAIMED WATER PULLBOX
17 HEDGE	17 IRRIGATION PANEL TO BE RELOCATED.
18 STORM DRAIN PIPE	18 WATER VALVE.
19 WATER PIPE	19 IRRIGATION METER TO BE RELOCATED.
20 SIGN	20 ELECTRICAL PULL BOX TO BE RELOCATED.
21 FIRE HYDRANT TO BE RELOCATED	
22 POST INDICATOR VALVE	
23 BACKFLOW PREVENTER	
24 CONTRACTOR TO REMOVE ASPHALT PAVERS AND STOCKPILE FOR REUSE AS REQUIRED PER PROPOSED IMPROVEMENTS.	

LEGEND:

- LIMIT OF WORK
- UTILITY/MOWSTRIP DEMOLITION
- SAWCUT AND JOIN
- PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- SITE WALL
- EXISTING TRENCH DRAIN

NOTES:

1. CONTRACTOR TO VERIFY EXTENT OF EXISTING ONSITE IRRIGATION SYSTEM AND DEMOLISH AS NECESSARY.

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05-16-16		PRICING SET
06-09-16		50% SD
07-22-16		100% SD PRICING
08-10-16		100% SD
06-15-18		50% DD
08-17-18		100% DD
09-06-18		PLANNING REV 01
12-20-18		REVISED PLANNING SET

KEY PLAN:

PROJECT
ORANGE COUNTY MUSEUM OF ART
3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

DEMOLITION PLAN

SEAL & SIGNATURE:
REGISTERED PROFESSIONAL ENGINEER REZA RAZANI No. C52048 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

DATE: 11-16-18
PROJECT No: 35102
DRAWING BY:
CHK BY:
DWG No: C-120.0
FILE No:

90

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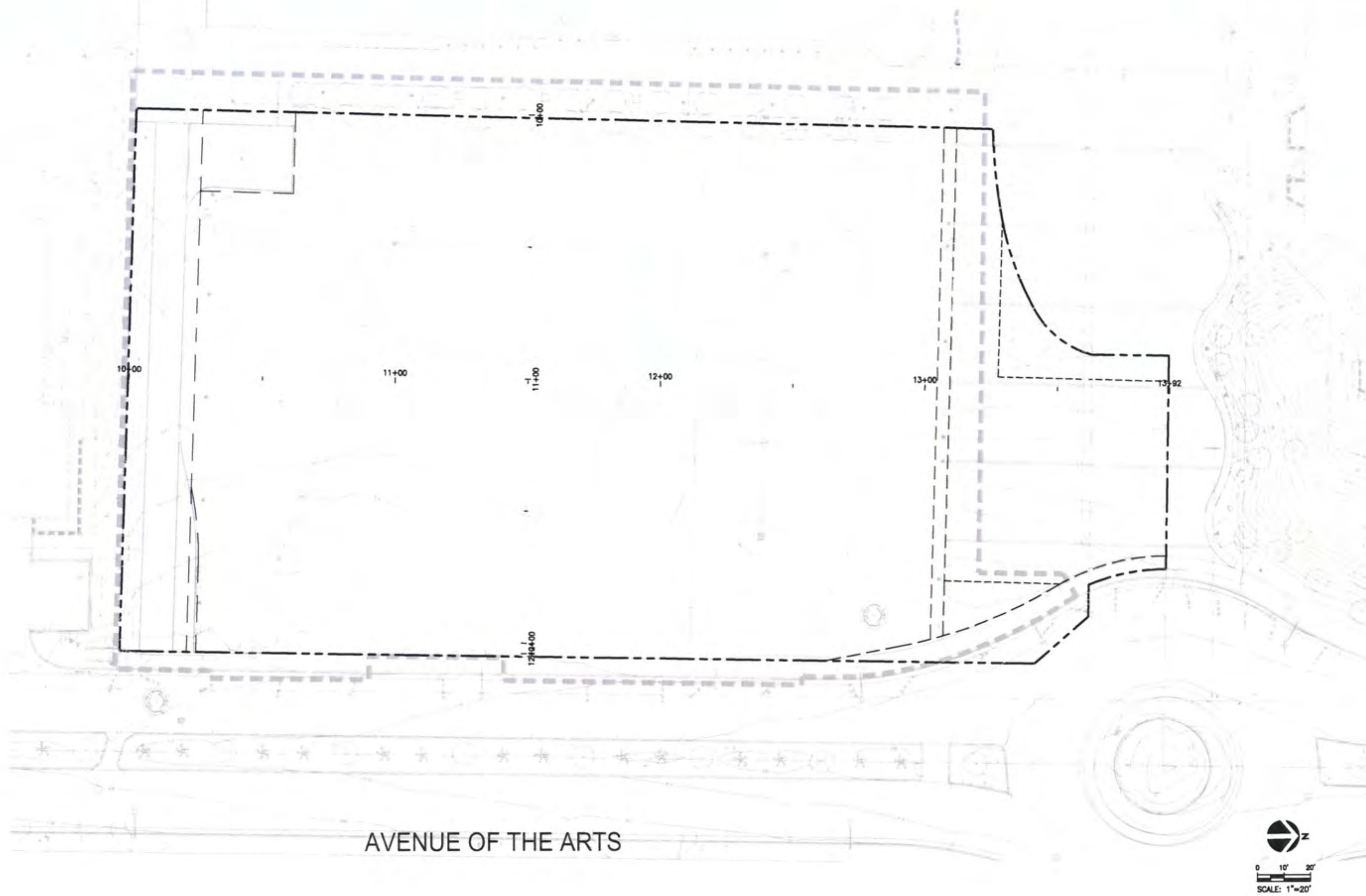
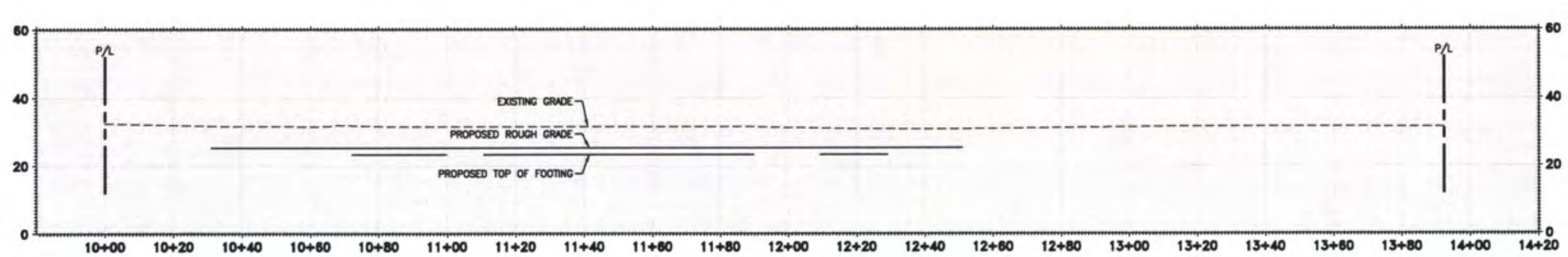
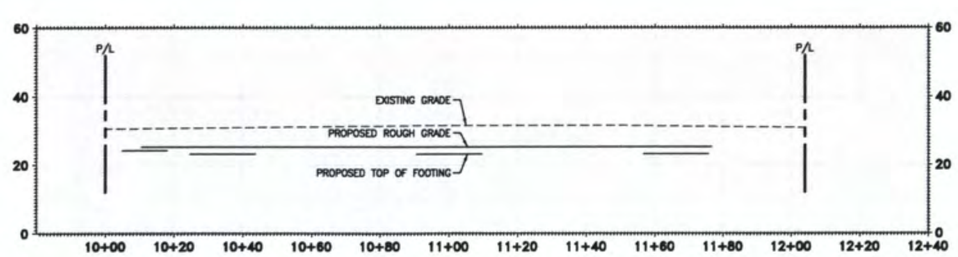




PROFILE A
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=20'



PROFILE B
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=20'

91

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09-06-18		PLANNING REV 01
12-20-18		REVISED PLANNING SET

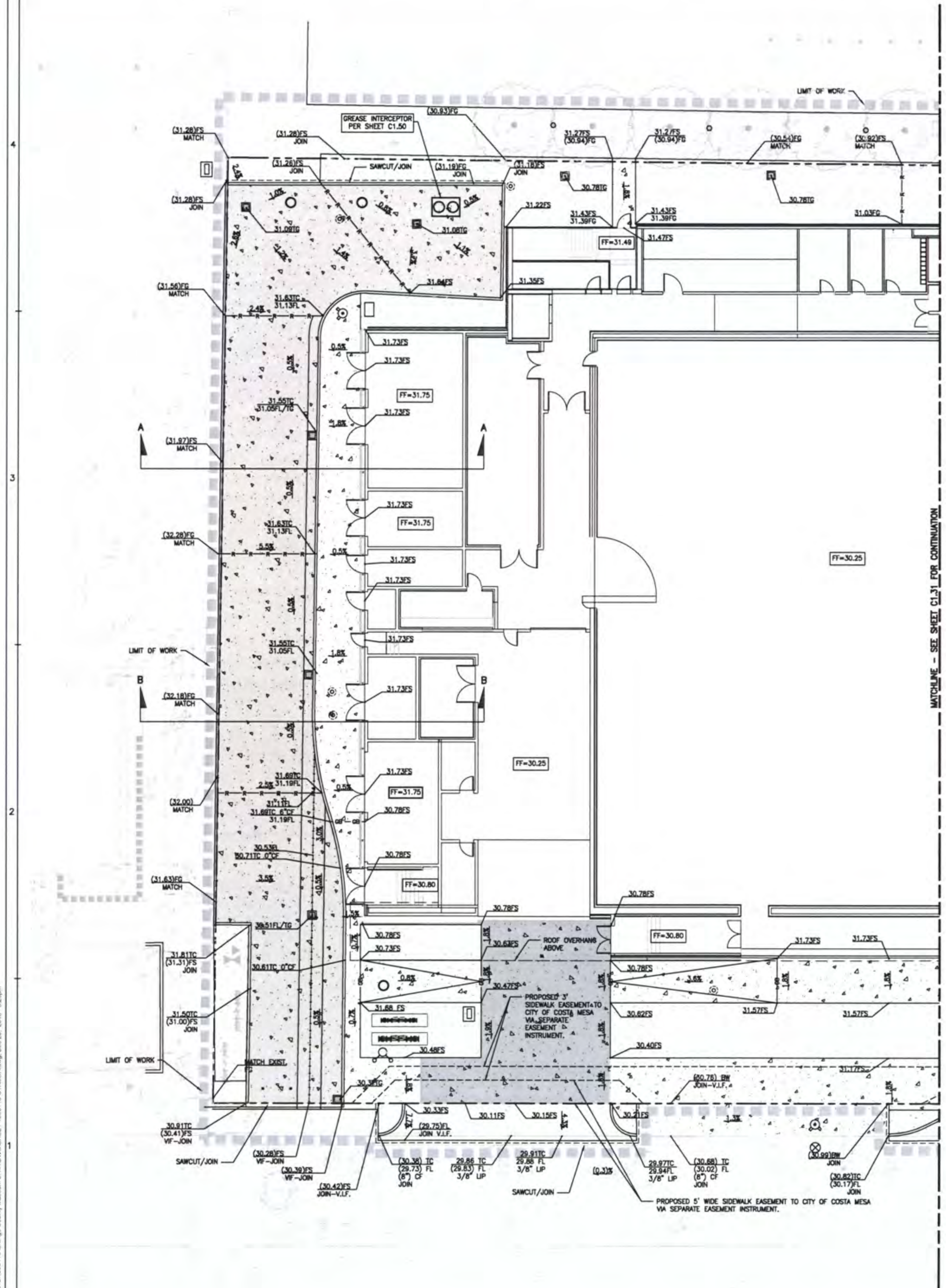
KEY PLAN:

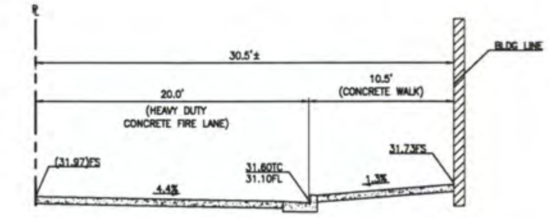
PROJECT:
ORANGE COUNTY MUSEUM OF ART
3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

ROUGH GRADING PLAN

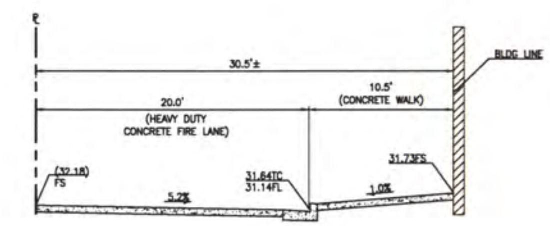
SEAL & SIGNATURE:
REGISTERED PROFESSIONAL ENGINEER REZA REZAIAN No. C62046 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA
NOT FOR CONSTRUCTION

DATE: 11-16-18
PROJECT No.: 35102
DRAWING BY:
CHK BY:
DWG No.: C-130.0
FILE No.:





A-A SECTION
1"=5'



B-B SECTION
1"=5'

LEGEND:

- CIVIL LIMITS OF WORK
- SHEET MATCH LINE
- SAWCUT / JOIN LINE
- PROPERTY LINE
- PROPOSED EASEMENT TO BE DEDICATED TO CITY OF COSTA MESA VIA SEPARATE EASEMENT INSTRUMENT
- EXISTING RIGHT OF WAY LINE
- ROOF OVERHANG ABOVE

SCALE: 1"=10'

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09-06-18		PLANNING REV 01
12-20-18		REVISED PLANNING SET

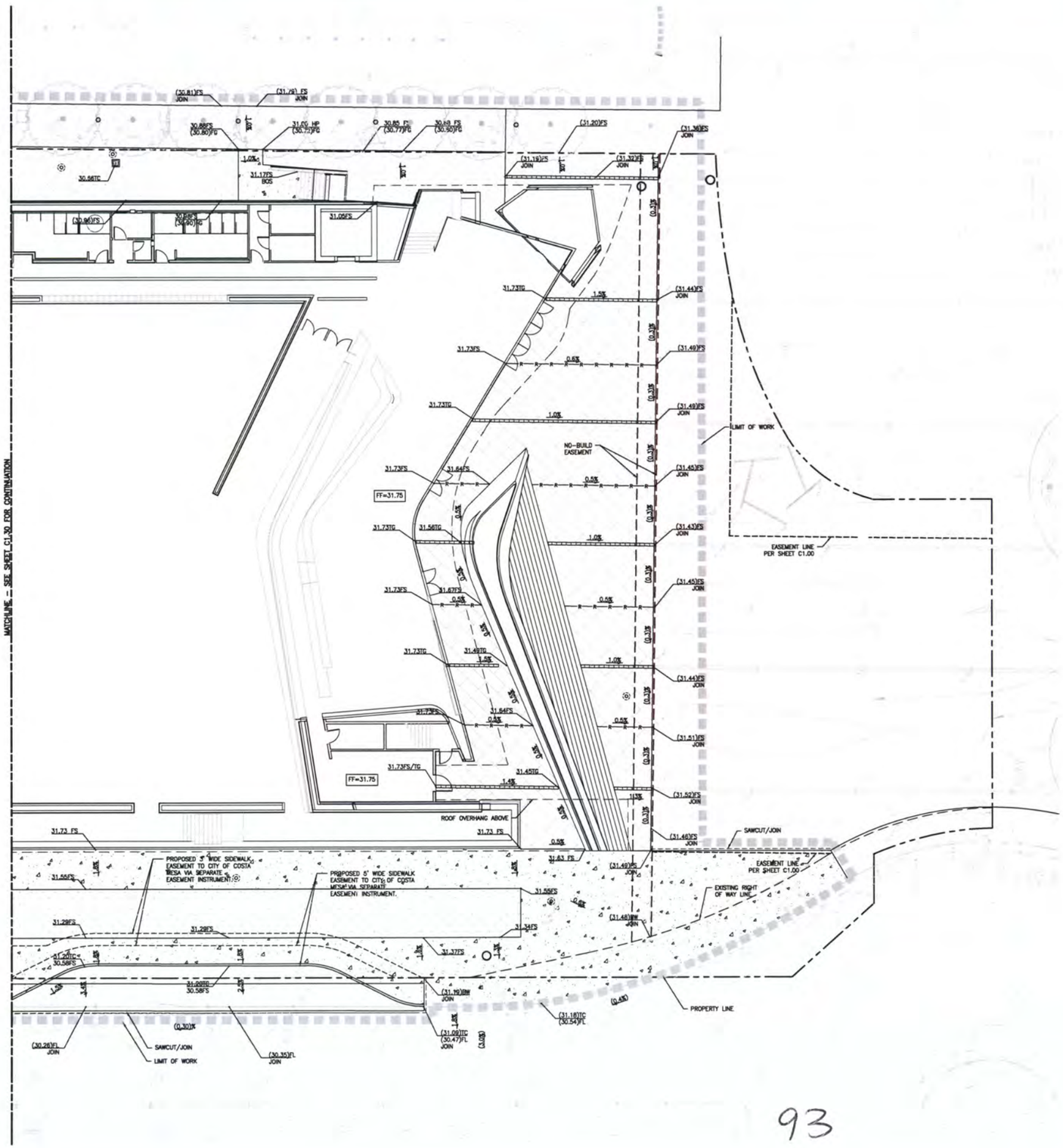
KEY PLAN:

PROJECT
ORANGE COUNTY MUSEUM OF ART
3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

GRADING PLAN

SEAL & SIGNATURE:

DATE:	11-16-18
PROJECT No.	35102
DRAWING BY:	
CHK BY:	
DWG No.	C-140.0
FILE No.	



LEGEND:

- CIVIL LIMITS OF WORK
- SHEET MATCH LINE
- SAWCUT / JOIN LINE
- PROPERTY LINE
- PROPOSED EASEMENT TO BE DEDICATED TO CITY OF COSTA MESA VIA SEPARATE EASEMENT INSTRUMENT
- EXISTING RIGHT OF WAY LINE
- ROOF OVERHANG ABOVE

SCALE: 1"=10'

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KEY PLAN:

PROJECT
ORANGE COUNTY MUSEUM OF ART
3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

GRADING PLAN

SEAL & SIGNATURE:
REGISTERED PROFESSIONAL ENGINEER REZA REZAIAN No. C62048 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

DATE: 11-16-18
PROJECT No: 35102
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CHK BY:
DWG No: C-141.0
FILE No:

93

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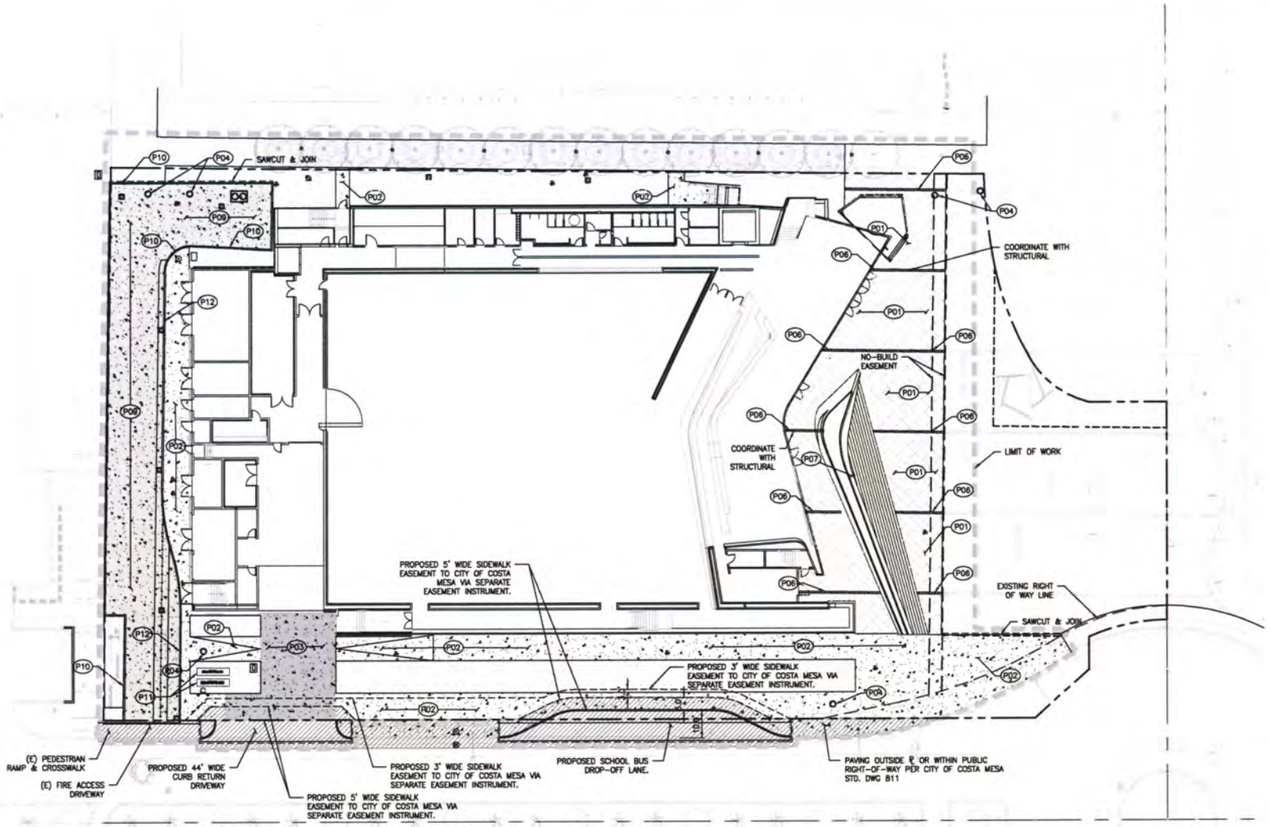

PAVING CONSTRUCTION NOTES

- P01 PAVERS ON CONCRETE BASE PER DETAIL 2, SHEET C-500.0.
- P02 CONCRETE PAVEMENT PER DETAIL 3, SHEET C-500.0.
- P03 HEAVY DUTY CONCRETE PAVEMENT PER DETAIL 4, SHEET C-500.0.
- P04 RECESSED MANHOLE COVER.
- P05 TRUNCATED DOMES.
- P06 TRENCH DRAIN PER DETAIL 1, SHEET C-500.0.
- P07 CONCRETE STAIRS PER ARCHITECTURAL PLAN.
- P08 CONCRETE WALL PER ARCHITECTURAL PLAN.
- P09 PERVIOUS PAVEMENT.
- P10 6" CONCRETE CURB PER DETAIL 5, SHEET C-500.0.
- P11 CONCRETE PAD PER MESA WATER STD. DWG. 22.
- P12 6" INTEGRAL CONCRETE CURB AND GUTTER PER DETAIL 6, SHEET C-500.0.

LEGEND

- LIMIT OF WORK
- PROPERTY LINE
- OVERHANG ABOVE
- SAWCUT & JOIN
- PROPOSED EASEMENT LINE TO BE DEDICATED TO CITY OF COSTA MESA VIA SEPARATE EASEMENT INSTRUMENT
- EXISTING RIGHT OF WAY LINE
- PAVERS ON CONCRETE BASE, PER DETAIL 1, HEREON.
- CONCRETE PAVEMENT
- HEAVY DUTY VEHICULAR CONCRETE PAVEMENT
- PLANTER AREA/LANDSCAPE (REFER TO LANDSCAPING PLANS FOR DETAILS)
- TRUNCATED DOMES
- EXTENT OF OFFSITE IMPROVEMENTS
- PERVIOUS PAVEMENT

NOTES:
IN GROUND LIGHTING TO MATCH THAT OF EXISTING PLAZA.

94

0 10' 20'
SCALE: 1"=20'

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KEY PLAN:

PROJECT
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3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

PAVING PLAN

SEAL & SIGNATURE:
REGISTERED PROFESSIONAL ENGINEER REZA REZAIE No. C62048 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

DATE: 11-16-18
PROJECT No: 35102
DRAWING BY:
CHK BY:
DWG No. C-150.0
FILE No:

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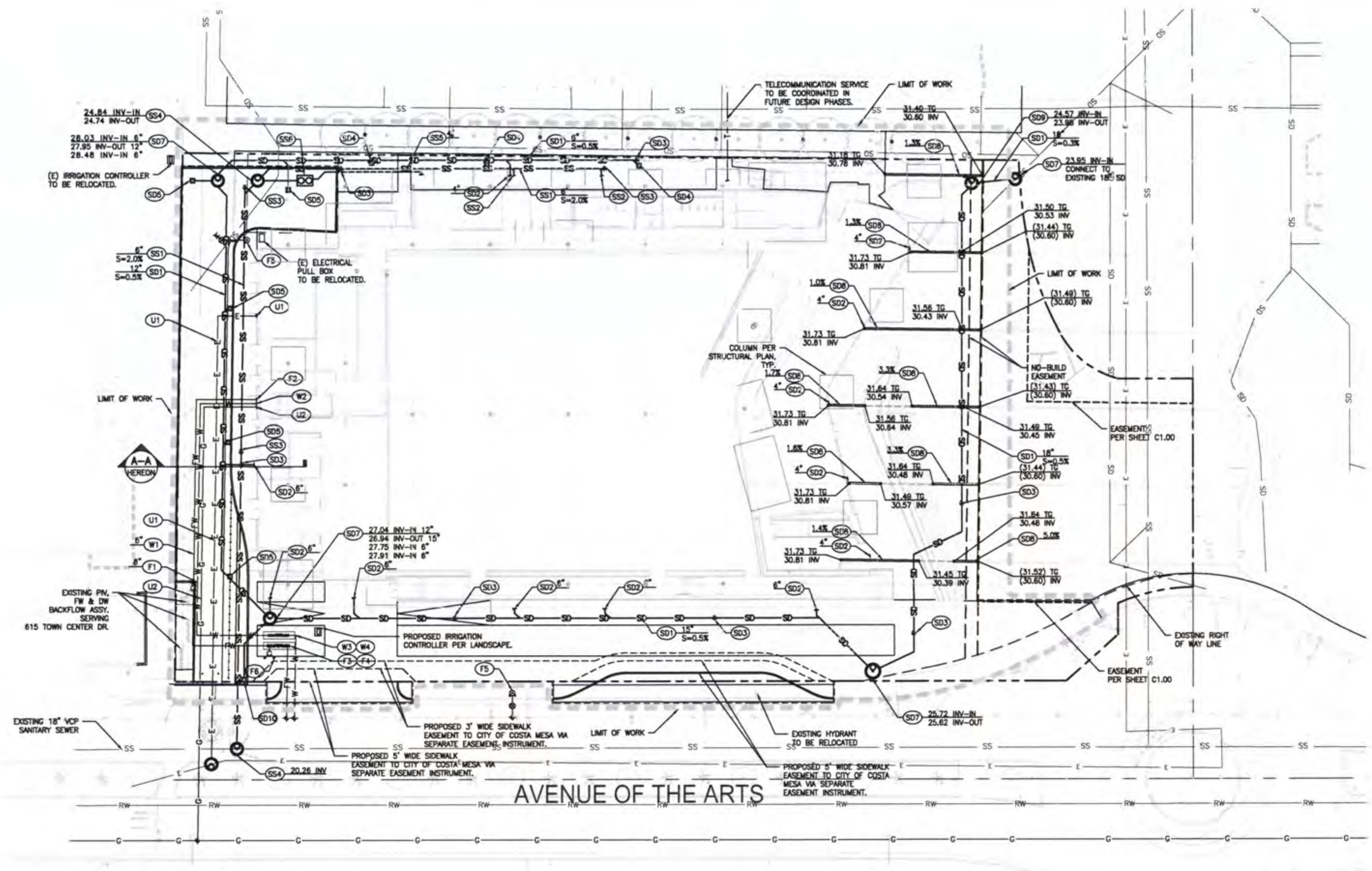


UTILITY CONSTRUCTION NOTES:

STORM DRAIN

- (SD1) PVC, SDR-35 STORM DRAIN PIPE PER DETAIL 1, SHEET C501.0. SIZE AND SLOPE PER PLAN.
- (SD2) POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING DRAWINGS FOR CONTINUATION.
- (SD3) CLEANOUT PER DETAIL 2, SHEET C501.0.
- (SD4) PLANTER DRAIN PER DETAIL 3, SHEET C501.0.
- (SD5) PRECAST CONCRETE CATCH BASIN. JENSEN PRECAST PRODUCTS OR APPROVED EQUIVALENT. SIZE AND GRATE BEARING TYPE PER PLAN.
- (SD6) REINFORCED CONCRETE PIPE.
- (SD7) 36"-DIAMETER PRECAST CONCRETE MANHOLE PER APWA STANDARD PLAN 200-2.
- (SD8) TRENCH DRAIN, MATCH EXISTING. PER DETAIL 1, SHEET C5.00.
- (SD9) CONTECH CDS UNIT. MODEL CDS1515-3 PER MANUFACTURER.
- (SD10) OVERFLOW "BUBBLER" CATCH BASIN.

SANITARY SEWER

- (SS1) PVC, SDR-35 SANITARY SEWER PIPE. SIZE AND SLOPE PER PLAN.
- (SS2) POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING DRAWINGS FOR CONTINUATION.
- (SS3) CLEANOUT PER DETAIL 2, SHEET C501.0.
- (SS4) PRECAST CONCRETE MANHOLE PER APWA STANDARD PLAN 200-2.
- (SS5) 4" GREASE WASTE PIPE
- (SS6) 500 GALLON GREASE INTERCEPTOR

DOMESTIC WATER

- (W1) PVC C-900 DOMESTIC WATER PIPE. SIZE PER PLAN.
- (W2) POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING DRAWINGS FOR CONTINUATION.
- (W3) REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER. PER MESA WATER STD. DWG. 16.
- (W4) WATER METER. INSTALLATION BY MESA WATER DISTRICT. SHOWN FOR COORDINATION PURPOSES ONLY. CONTRACTOR TO COORDINATE WATER SERVICE CONNECTION WITH LOCAL PROVIDER.

FIRE WATER

- (F1) PVC C-900 FIRE WATER PIPE. SIZE AND MATERIAL PER PLAN.
- (F2) POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING DRAWINGS FOR CONTINUATION.
- (F3) DOUBLE CHECK DETECTOR BACKFLOW PREVENTER. PER MESA WATER STD. DWG. 22.
- (F4) WATER METER. INSTALLATION BY MESA WATER DISTRICT. SHOWN FOR COORDINATION PURPOSES ONLY. CONTRACTOR TO COORDINATE FIRE WATER SERVICE CONNECTION WITH LOCAL PROVIDER.
- (F5) FIRE HYDRANT. PER MESA WATER STD. DWG. 4.
- (F6) FIRE DEPARTMENT CONNECTION.

OTHER UTILITIES

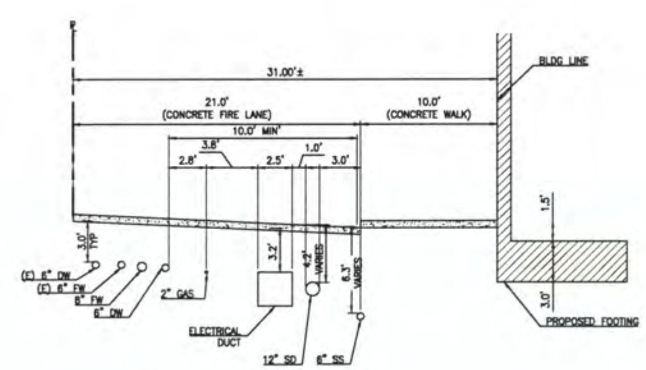
- (U1) ELECTRICAL CONDUIT. SEE ELECTRICAL DRAWINGS FOR DETAILS AND SPECIFICATIONS. SHOWN FOR COORDINATION PURPOSES ONLY.
- (U2) GAS LINE. SEE GAS COMPANY DRAWINGS FOR DETAILS AND SPECIFICATIONS. SHOWN FOR COORDINATION PURPOSES ONLY.
- (U3) MECHANICAL LINE. SEE MECHANICAL DRAWINGS FOR DETAILS AND SPECIFICATIONS. SHOWN FOR COORDINATION PURPOSES ONLY.

LEGEND:

- CIVIL LIMITS OF WORK
- SHEET MATCH LINE
- PROPERTY LINE
- PROPOSED EASEMENT TO BE DEDICATED TO CITY OF COSTA MESA VIA SEPARATE EASEMENT INSTRUMENT
- EXISTING RIGHT OF WAY LINE
- POINT OF CONNECTION

NOTE TO CONTRACTOR:

ALL EXISTING UTILITIES SHOWN ON THIS PLAN ARE FROM AVAILABLE RECORD DOCUMENTS AND AS-BUILT PLANS. CONTRACTOR SHALL CONFIRM LOCATION, SIZE, DEPTH AND CONDITION OF ALL EXISTING UTILITIES BEFORE COMMENCING CONSTRUCTION.



SECTION A-A

N.T.S.

95

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SCALE: 1"=20'

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09-06-18		PLANNING REV 01
12-20-18		REVISED PLANNING SET

KEY PLAN:

PROJECT

ORANGE COUNTY MUSEUM OF ART

3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

UTILITY PLAN

SEAL & SIGNATURE:

REGISTERED PROFESSIONAL ENGINEER REZA REZAIAN No. C62048 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

DATE:	11-16-18
PROJECT No.:	35102
DRAWING BY:	
CHK BY:	
DWG No.:	C-160.0
FILE No.:	

EXISTING FIRE LANE TO BE REPAVED. EXTENT OF EXISTING FIRE LANE TO MATCH EXISTING.

59.23'

23.44'

FIRE LANE PER SEGERSTROM ARTS PLAZA PROJECT

R150.00'

EXISTING FIRE HYDRANT TO REMAIN

EXISTING FIRE HYDRANT TO BE RELOCATED

PROPOSED HEAVY DUTY CONCRETE PAVEMENT TO MATCH EXISTING CONDITION

R150.00'

EXISTING FIRE APPARATUS TURNAROUND AREA TO BE MAINTAINED

NO-BUILD EASEMENT

156.82'

20.02'

EXISTING FIRE LANE TO BE REPAVED. EXTENT OF EXISTING FIRE LANE TO MATCH EXISTING.

PROPOSED FIRE WATER POINT OF CONNECTION

PROPOSED DOMESTIC WATER POINT OF CONNECTION

PROPOSED 4" PVC, C900 DOMESTIC WATER PIPE

PROPOSED 6" PVC, C900 FIRE WATER PIPE

PROPOSED CONCRETE FIRE LANE

PROPOSED COMBINED METER AND BACKFLOW PREVENTER BY MESA WATER DISTRICT

FIRE LANE PER SEGERSTROM ARTS PLAZA PROJECT

EXISTING FIRE HYDRANT TO REMAIN

EXISTING RIGHT OF WAY LINE

R150.00'

20.00'

EXISTING FIRE HYDRANT APPROXIMATELY 146' FROM PROPERTY LINE ON AVENUE OF THE ARTS

PROPOSED 5' WIDE SIDEWALK EASEMENT TO CITY OF COSTA MESA VIA SEPARATE EASEMENT INSTRUMENT.

PROPOSED 3' WIDE SIDEWALK EASEMENT TO CITY OF COSTA MESA VIA SEPARATE EASEMENT INSTRUMENT.

EXISTING FIRE ACCESS DRIVEWAY AND PEDESTRIAN CROSSWALK TO REMAIN SEE IMAGE 1 HEREON.

R150.00'

PROPOSED 5' WIDE SIDEWALK EASEMENT TO CITY OF COSTA MESA VIA SEPARATE EASEMENT INSTRUMENT.

R150.00'

EXISTING FIRE HYDRANT TO BE RELOCATED

EXISTING FIRE LANE ON AVENUE OF THE ARTS

PROPOSED FIRE DEPARTMENT CONNECTION

CONNECT TO EXISTING 12" WATER MAIN

EXISTING FIRE LANE ON AVENUE OF THE ARTS

EXISTING FIRE LANE ON AVENUE OF THE ARTS

AVENUE OF THE ARTS

IMAGE 1

LEGEND:

- CIVIL LIMITS OF WORK
- SHEET MATCH LINE
- SAWCUT / JOIN LINE
- PROPERTY LINE
- PROPOSED RIGHT OF WAY LINE TO BE DEDICATED TO CITY OF COSTA MESA VIA SEPARATE EASEMENT INSTRUMENT
- EXISTING RIGHT OF WAY LINE
- 150-FOOT FIRE HYDRANT RADIUS
- FIRE LANE
- FIRE HYDRANT LOCATION
- FIRE DEPARTMENT CONNECTION LOCATION

N

0 10' 20'

SCALE: 1"=20'

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ISSUES / REVISIONS:		
DATE	SYMBOL	DESCRIPTION
05-16-16		PRICING SET
06-09-16		50% SD
07-22-16		100% SD PRICING
08-10-16		100% SD
06-15-18		50% DD
08-17-18		100% DD
09-06-18		PLANNING REV 01
12-20-18		REVISED PLANNING SET

KEY PLAN:

PROJECT

ORANGE COUNTY MUSEUM OF ART

3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

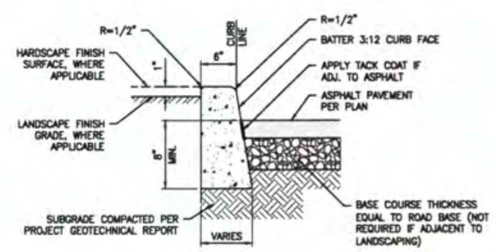
FIRE ACCESS PLAN

SEAL & SIGNATURE:

REGISTERED PROFESSIONAL ENGINEER
MESA REZAIE
No. C62048
Exp. 9/30/19
CIVIL
STATE OF CALIFORNIA

DATE: 11-16-18
PROJECT No: 35102
DRAWING BY:
CHK BY:
DWG No. C-180.0
FILE No:

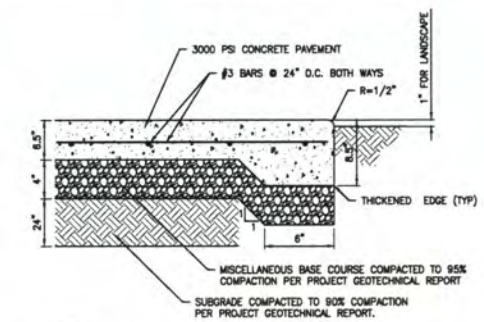
P:\2015\150011\Orange County Museum of Art\DWG\SHEET-150011c-C1.807A.dwg, Dec 20, 2018 - 5:27pm



NOTES:

1. ISOLATION JOINTS SHALL BE PLACED ONLY AS SPECIFIED.
2. CONTROL JOINTS CONSISTING OF 1" DEEP SCORES SHALL BE PLACED AT 10' INTERVALS O.C.
3. WHERE A WALK IS ADJACENT TO THE CURB, THE JOINTS SHALL ALIGN WITH JOINTS IN THE WALK.

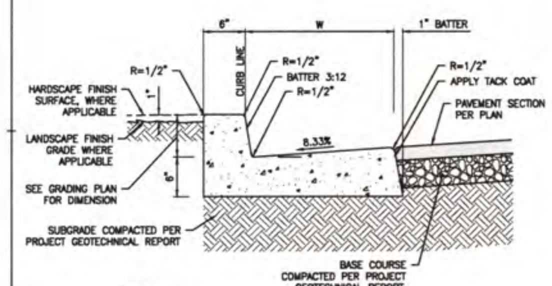
5 CONCRETE CURB N.T.S.



NOTES:

1. ALL TREAD SURFACES SHALL BE SLIP-RESISTANT.
2. REFER TO ARCHITECTURAL DRAWINGS FOR COLOR, PATTERN, TEXTURE, AND FINISH.
3. SEE PLAN FOR LOCATION OF CONTROL JOINTS.

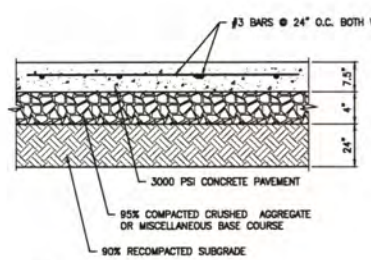
3 CONCRETE WALK N.T.S.



NOTES:

1. ISOLATION JOINTS SHALL BE PLACED ONLY AS SPECIFIED.
2. CONTROL JOINTS CONSISTING OF 1" DEEP SCORES SHALL BE PLACED AT 10' INTERVALS O.C.
3. WHERE A WALK IS ADJACENT TO THE CURB THE JOINTS SHALL ALIGN WITH JOINTS IN THE WALK.

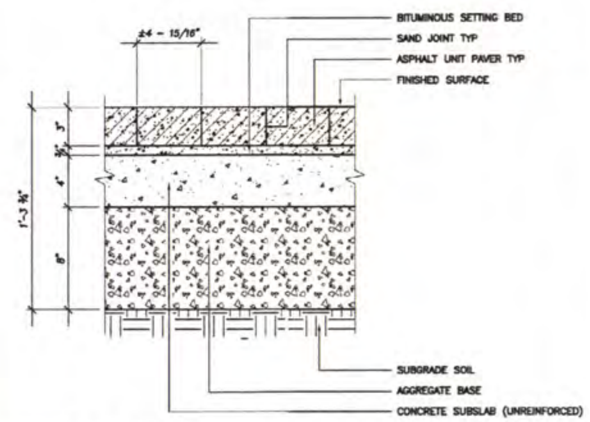
6 CONCRETE CURB AND GUTTER N.T.S.



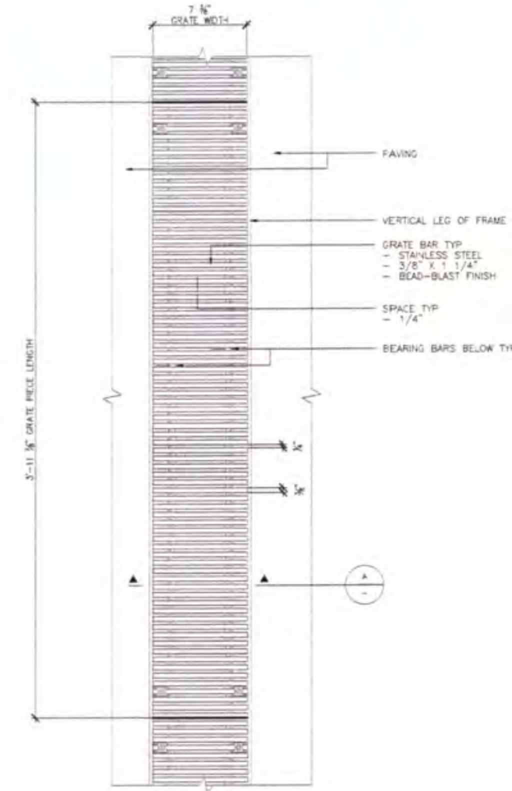
NOTES:

1. PAVEMENT SECTIONS ARE BASED ON RECOMMENDATIONS FROM THE PROJECT GEOTECHNICAL REPORT.
2. REFER TO ARCHITECTURAL PLANS FOR CONCRETE COLOR, PATTERN, TEXTURE, AND FINISH.
3. SEE PLAN FOR LOCATION OF CONTROL JOINTS.

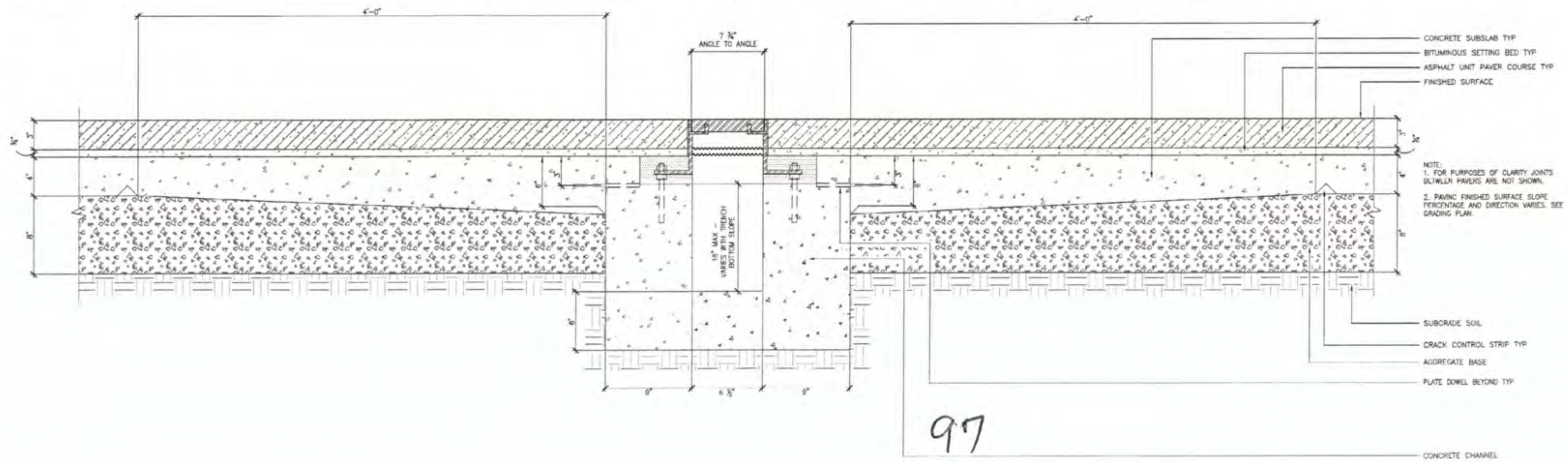
4 HEAVY DUTY CONCRETE PAVEMENT N.T.S.



2 ASPHALT UNIT PAVERS TO MATCH EXISTING PLAZA N.T.S.



TRENCH DRAIN GRATE



NOTE:
1. FOR PURPOSES OF CLARITY JOINTS BETWEEN PAVERS ARE NOT SHOWN.
2. PAVING FINISHED SURFACE SLOPE PERCENTAGE AND DIRECTION VARIES. SEE GRADING PLAN.

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1 TRENCH DRAIN TO MATCH EXISTING PLAZA N.T.S.

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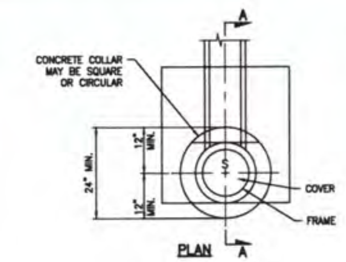
KEY PLAN:

PROJECT
ORANGE COUNTY MUSEUM OF ART
3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

DETAILS

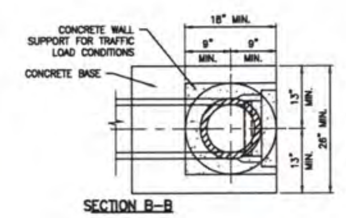
SEAL & SIGNATURE:
REGISTERED PROFESSIONAL ENGINEER REZA REZAIAN No. C62048 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

DATE: 11-16-18
PROJECT No.: 35102
DRAWING BY:
CHK BY:
DWG No.: C-500.0
FILE No.:

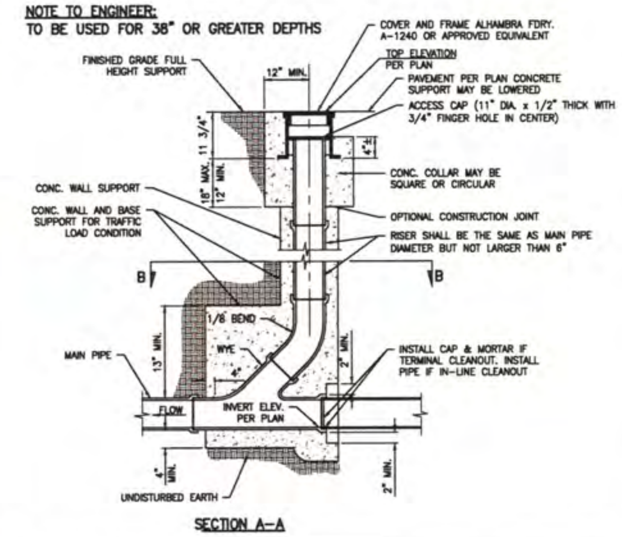


NOTES

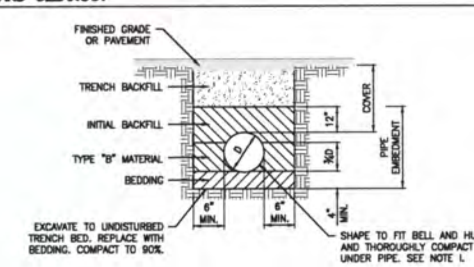
1. SEE PROJECT PLANS FOR INVERT ELEVATION.
2. PIPE AND FITTINGS, EXCEPT AS OTHERWISE SHOWN ON HEREON, SHALL BE OF THE SAME MATERIAL AS THE SEWER, UNLESS APPROVED ADAPTERS ARE UTILIZED AND MAY BE ANY OF THE FOLLOWING:
   A. VC PIPE
   B. PE PIPE
   C. ABS SOLID PIPE
   D. ABS COMPOSITE PIPE
   E. PVC PLASTIC PIPE
3. PIPES AND FITTINGS SHALL BE PROPERLY ALIGNED AND MAINTAINED WHILE CONCRETE IS BEING PLACED AND ALLOWED TO HARDEN. JOINTS FOR PIPES AND FITTINGS SHALL BE MADE PRIOR TO PLACING CONCRETE. CONCRETE FOR BEDDING, ENCASEMENT, AND WALL SUPPORT FOR PIPES AND FITTINGS SHALL BE PLACED UNIFORMLY AROUND THE PIPE AND FITTINGS AS SHOWN HEREON TO MAINTAIN PROPER ALIGNMENT.
4. THE ACCESS FRAME, COVER AND CAP SHALL BE CAST IRON. THE FINGER HOLES MAY BE DRILLED OUT OR MAY BE BLOCKED OUT PRIOR TO CASTING; THEY SHALL NOT BE PUNCHED OUT.
5. THE CONTRACTOR, AT HIS OPTION, MAY PLACE EITHER CIRCULAR OR SQUARE CONCRETE PIPE WALL SUPPORTS AS SHOWN HEREON.



NOTE TO ENGINEER:
TO BE USED FOR 36" OR GREATER DEPTHS



2 STANDARD CLEANOUT N.T.S.

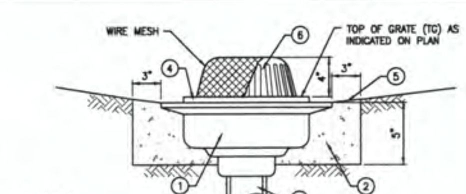


BEDDING	CLEAN COARSE SAND.
CLEAN COARSE SAND	SHALL CONFORM TO THE REQUIREMENTS OF SAND FOR PORTLAND CEMENT CONCRETE AS SPECIFIED IN SECTION 200–1.5.5 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2018 EDITION.
INITIAL BACKFILL	NATIVE MATERIAL – MAXIMUM SIZE NOT TO EXCEED 1 1/2".
TRENCH BACKFILL	NATIVE MATERIAL – 90% COMPACTION MIN. (95% COMPACTION IN UPPER 3.0' OF PAVED AREAS). UP TO CLASS IV SOILS, TYPE ML,CL FINE GRAINED, LL<50, MEDIUM TO NO PLASTICITY. NOTE, IF CLASS IV SOIL, TYPE MH OR ALL CLASS V SOILS THEN USE CLEAN COURSE SAND.
"TYPE" B MATERIAL	SHALL BE ONE OF THE FOLLOWING: 1. NATIVE FREE DRAINING MATERIAL OR CRUSHED ROCK CONFORMING TO SUBSECTION 200–1.2 AND TABLE 200–1.2.1(A) OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION". FOR PIPES UP TO AND INCLUDING 15", MAXIMUM ROCK GRADATION SHALL BE $\frac{1}{2}$". FOR PIPES OVER 15", MAXIMUM ROCK GRADATION SHALL BE $\frac{3}{4}$". 2. CLEAN COARSE SAND.

NOTES:

1. EXCAVATE FOR BELLS OR HUBS SO FULL LOAD IS CARRIED BY PIPE BARRELS.
2. TYPE "B" MATERIAL SHALL BE PLACED IN A MANNER SUCH AS SLICING SHOVEL-SPADING, OR SHOVEL RODDING TO INSURE COMPLETE FILLING OF THE "HAUNCH AREAS" BELOW THE PIPE. (JETTING OF TYPE "B" MATERIAL IS NOT AUTHORIZED UNLESS PREVIOUSLY APPROVED).
3. TRENCH BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 217–2 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2018 EDITION. WATER DENSIFIED BACKFILL SHALL NOT BE USED.

1 FLEXIBLE PIPE BEDDING DETAIL N.T.S.



LEGEND:

(1) GALVANIZED CAST IRON BODY AND GRATE AREA DRAIN.
(2) 2,500 PSI PORTLAND CEMENT CONCRETE PAD (PAD MAY BE EITHER ROUND OR SQUARE IN PLAN VIEW).
(3) OUTLET PIPE TO MATCH PIPE SIZE PER PLAN.
(4) TOP OF DRAIN ELEVATION PER PLAN.
(5) FINISH GRADE PER PLAN.
(6) DOME TOP WHERE INDICATED ON PLAN (SEE TABLE BELOW)

SIZE	TYPE	ITEM DESCRIPTION	MODEL NO.	FREE AREA (SQ IN)
6" DIA.	DOME	JAY R. SMITH MFG. CO.	2671-U-G	25
6" DIA.	DOME	ZURN PLUMBING PRODUCTS	Z415-VP-G	12
12" DIA.	DOME	ZURN PLUMBING PRODUCTS	Z121-VP-G	78
12" DIA.	DOME	JAY R. SMITH MFG. CO.	2675-G	53

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3 PLANTER DRAIN DETAIL N.T.S.

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ISSUES / REVISIONS:		
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08-17-18		100% DD
09-06-18		PLANNING REV 01
12-20-18		REVISED PLANNING SET

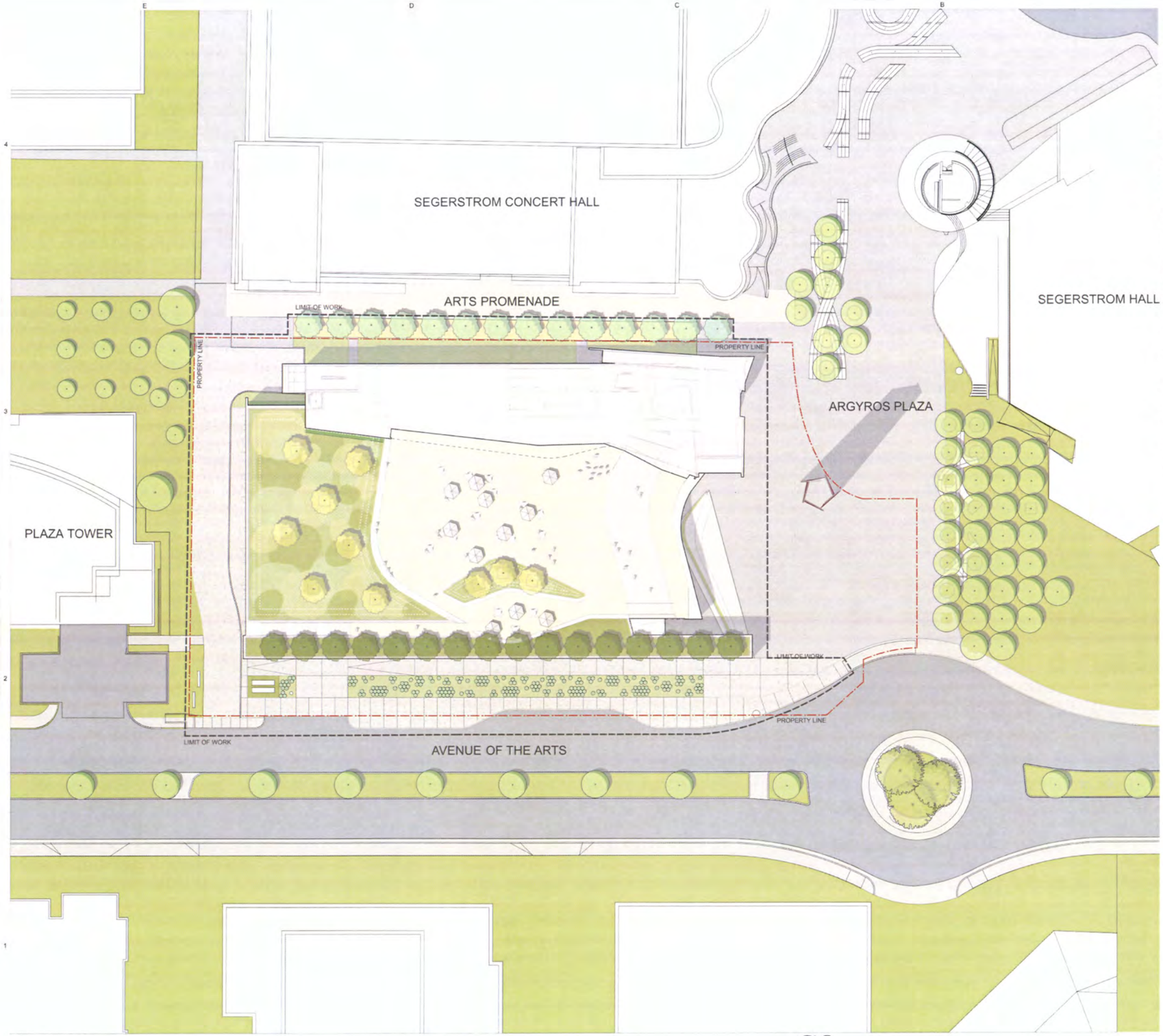
KEY PLAN:

PROJECT:
ORANGE COUNTY MUSEUM OF ART
3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

DETAILS

SEAL & SIGNATURE:
REGISTERED PROFESSIONAL ENGINEER REZA REZAIAN No. C62048 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

DATE: 11-16-18
PROJECT No.: 35102
DRAWING BY:
CHK BY:
DWG No.: C-501.0
FILE No.:



Landscape Orientation Plan
SCALE: 1" = 20'-0"

99

01

GENERAL NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH AND TO LOCATE ALL EXISTING SITE CONDITIONS AND UNDERGROUND UTILITIES, PIPES, AND OTHER SUBSTRUCTURES, AND TO PROTECT THEM FROM DAMAGE. THE EXPENSE OF REPAIR, BODILY INJURY OR REPLACEMENT OF SAID SUBSTRUCTURES INCLUDING DAMAGE OF THE OWNER'S PROPERTY SHALL BE BORN BY THE CONTRACTOR. THE CONTRACTOR SHALL HAND DIG FOOTINGS, TREE WELLS, PLANTING BEDS, ETC. AS REQUIRED. CONTRACTOR IS RESPONSIBLE FOR CONTACTING UTILITY COMPANIES PRIOR TO ANY EXCAVATION.

2. LOCATION AND ELEVATION OF ALL EXISTING IMPROVEMENTS WITH AND ADJACENT TO THE AREA OF WORK SHALL BE CONFIRMED BY FIELD MEASUREMENT PRIOR TO EXCAVATION AND CONSTRUCTION OF NEW WORK. EXTREME CARE SHALL BE EXERCISED IN EXCAVATION AND WORKING NEAR EXISTING UTILITIES. REFER TO CIVIL DRAWING FOR GENERAL REFERENCE. CONTRACTOR WILL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND UTILITIES, PIPES AND OTHER SUBSTRUCTURES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS, DETAILS AND SPECIFICATIONS IF REVISIONS ARE NECESSARY BECAUSE OF ACTUAL LOCATION IN THE FIELD.THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE IMMEDIATELY REPORTED TO THE RESIDENT ENGINEER.

3. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES, LANDSCAPING, AND FEATURES TO REMAIN ON AND/OR ADJACENT TO THE PROJECT SITE DURING CONSTRUCTION. CONTRACTOR SHALL REPAIR, AT HIS OWN EXPENSE, ALL DAMAGE RESULTING FROM HIS OPERATIONS OR NEGLIGENCE.

4.THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO ENFORCE SAFETY MEASURES OR REGULATIONS.

5. IN AN EMERGENCY THREATENING THE SAFETY OF LIFE, WORK OR ADJOINING PROPERTY, THE CONTRACTOR IS HEREBY INSTRUCTED TO ACT AT HIS DISCRETION TO PREVENT SUCH LOSS OR INJURY.

6. ANY CONFLICTING INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND OWNER OR THE OWNER'S AUTHORIZED REPRESENTATIVE AND OWNER SHALL ASSUME THAT THE CONTRACTOR HAS INCORPORATED THE SPECIFIED ITEM.

7. DO NOT WILLFULLY PROCEED WITH CONSTRUCTION OF DESIGN WHEN UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND OWNER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.

8. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE SUBCONTRACTOR'S ACCOMPLISHMENT OF SCOPE OF WORK. CONTRACTOR SHALL COORDINATE CONSTRUCTION WITH OTHER TRADES WORKING ON THE SITE SIMULTANEOUSLY.

9. CONTRACTOR SHALL NOTIFY OWNER'S AUTHORIZED REPRESENTATIVE 48 HOURS PRIOR TO COMMENCEMENT OF WORK TO COORDINATE PROJECT INSPECTION SCHEDULES. CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY TO PROVIDE ALL WORK. WORK TO BE COMPLETE IN PLACE AS SPECIFIED.

10. CONTRACTOR IS RESPONSIBLE FOR SETTING GRADES ON ALL HARD AND SOFT SURFACES. CONTRACTOR SHALL BE RESPONSIBLE FOR POSITIVE DRAINAGE FROM HARD SURFACES FOR THIS PROJECT.

11. ALL MATERIALS SHALL BE OF STANDARD, APPROVED AND FIRST GRADE QUALITY AND SHALL BE IN PRIME CONDITION WHEN INSTALLED AND ACCEPTED. ANY COMMERCIALLY PROCESSED OR PACKAGED MATERIAL SHALL BE DELIVERED TO THE SITE IN THE ORIGINAL UNOPENED PACKAGING BEARING THE MANUFACTURER'S GUARANTEED ANALYSIS.

12. THE CONTRACTOR AGREES TO HOLD THE CITY AND THE A/E HARMLESS FROM ANY CLAIMS ARISING OUT OF HIS OPERATIONS OR THE OPERATIONS OF ANY OF HIS SUBCONTRACTORS, MATERIALS SUPPLIERS, OR AGENTS.

13. THE CONTRACT DRAWINGS REPRESENT THE FINISHED CONSTRUCTION AND DO NOT INDICATE METHODS, PROCEDURES, OR SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO MAINTAIN THE INTEGRITY OF STRUCTURES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, CONSTRUCTION, AND MAINTENANCE OF ALL SAFETY DEVICES, INCLUDING SHORING AND BRACING.

14. ALL LOCAL, MUNICIPAL, AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THE PROJECT SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR THE ENFORCEMENT OF FEDERAL AND MUNICIPAL OCCUPATIONAL SAFETY AND HEALTH REGULATIONS AND REQUIREMENTS.

PRELIMINARY NOT FOR CONSTRUCTION

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550 LOMAS SANTA FE DR
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OJB LANDSCAPE ARCHITECTURE

ISSUES / REVISIONS

DATE	SYMBOL	DESCRIPTION
07.27.2018		MASTER PLAN SUBMISSION
12.20.2018		REVISED PLANNING SET

KEY PLAN:

PROJECT:

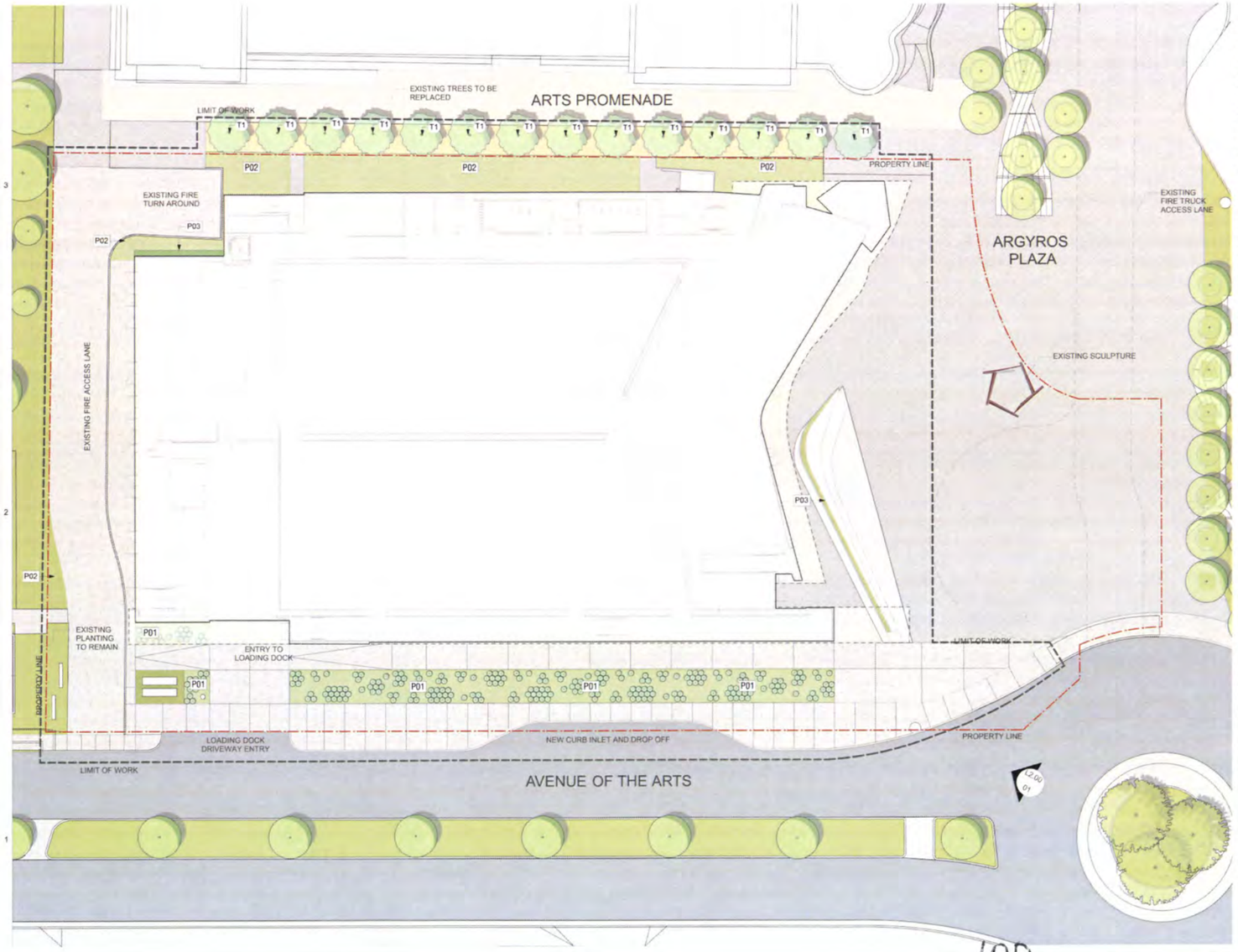
ORANGE COUNTY MUSEUM OF ART

3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

OVERALL LANDSCAPE PLAN

DATE: 06/15/18
PROJECT NO: 35102
DRAWING BY:
CHK BY:
DRAWING NO:

L-0.00



Level 01
SCALE: 1/16" = 1'-0"

01

LANDSCAPE LEGEND

TOTAL LANDSCAPE AREA: 19,230 SF

PLANTING

P01 - ORNAMENTAL PLANTING (ON GRADE)
DIANELLA REVOLUTA 'LITTLE REV'
CONTAINER - 5 GAL
QTY - 223
SEDUM REFLEXUM 'BLUE SPRUCE'
CONTAINER - 1 GAL
QTY - 1,230

NOTES - PROVIDE 24" OF ORGANIC FERTILE SOIL. PROVIDE ROOT BARRIER AT ALL TREES WITHIN 5' OF HARDSCAPE

P02 - ORNAMENTAL PLANTING (ON GRADE)
DIANELLA REVOLUTA 'LITTLE REV'
CONTAINER - 5 GAL
QTY - 195
NOTES - PROVIDE 24" OF ORGANIC FERTILE SOIL. PROVIDE ROOT BARRIER AT ALL TREES WITHIN 5' OF HARDSCAPE

P03 - VINES
FICUS PUMILA
CONTAINER - 5 GAL
QTY - 58
NOTES - PROVIDE 24" OF ORGANIC FERTILE SOIL

P04 - ORNAMENTAL PLANTING (ON STRUCTURE)
AGAVE AMERICANA
CONTAINER - 10 GAL
QTY - 100
AGAVE ATTENUATA
CONTAINER - 10 GAL
QTY - 200
AGAVE PARRYI V. TRUNCATA
CONTAINER - 10 GAL
QTY - 175
ALOE VERA
CONTAINER - 10 GAL
QTY - 200
DIANELLA HYBRID 'CLARITY BLUE'
CONTAINER - 5 GAL
QTY - 196
KNIPHOFIA UVARIA 'ECHO MANGO'
CONTAINER - 5 GAL
QTY - 196
LOMANDRA HYSTRIX 'TROPIC BELLE'
CONTAINER - 5 GAL
QTY - 196
SALVIA CLEVELANDII 'POZO BLUE'
CONTAINER - 5 GAL
QTY - 196
SEDUM REFLEXUM 'BLUE SPRUCE'
CONTAINER - 3 GAL
QTY - 600

NOTES - PROVIDE 24" OF ORGANIC FERTILE SOIL. PROVIDE ROOT BARRIER AT ALL TREES WITHIN 5' OF HARDSCAPE

P05 - ORNAMENTAL PLANTING (ON STRUCTURE)
DIANELLA REVOLUTA 'LITTLE REV'
CONTAINER - 5 GAL
QTY - 820

NOTES - PROVIDE 24" OF ORGANIC FERTILE SOIL. PROVIDE ROOT BARRIER AT ALL TREES WITHIN 5' OF HARDSCAPE

BERMS

B01 - BOTANICAL BERMS (ON STRUCTURE)
TOPOGRAPHY TO REACH 30 IN. ABOVE FINISHED SURFACE. TO BE STABILIZED WITH A GEOSYNTHETIC ROOT REINFORCEMENT MATRIX

B02 - BOTANICAL BERMS (ON STRUCTURE)
TOPOGRAPHY TO REACH 30 IN. ABOVE FINISHED SURFACE. TO BE STABILIZED WITH A GEOSYNTHETIC ROOT REINFORCEMENT MATRIX

B03 - BOTANICAL BERMS (ON STRUCTURE)
TOPOGRAPHY TO REACH 30 IN. ABOVE FINISHED SURFACE. TO BE STABILIZED WITH A GEOSYNTHETIC ROOT REINFORCEMENT MATRIX

TREES

T1 ULMUS CARPINIFOLIA X PARVIFOLIA 'FRONTIER' / FRONTIER ELM
CONTAINER - 60" BOX
FORM - STANDARD
CLEAR TRUNK - 8' MIN
QTY: 14
NOTES - PROVIDE MINIMUM 48" OF ORGANIC FERTILE SOIL. TREE TO HAVE UNDERDRAIN AND TIE INTO STORM SYSTEM; PROVIDE ROOTBALL ANCHORING SYSTEM; PROVIDE UPLIGHTS PER LIGHTING PLANS

T2 CERCIDIUM X 'DESERT MUSEUM' / THORNLESS PALO VERDE
CONTAINER - 72" BOX
FORM - MULTI TRUNK
QTY: 11
NOTES - 10'X10'X4 D TREE WELL PROVIDE MINIMUM 48" OF ORGANIC FERTILE SOIL. TREE TO HAVE UNDERDRAIN AND TIE INTO STORM SYSTEM; PROVIDE ROOTBALL ANCHORING SYSTEM. PROVIDE UPLIGHTS PER LIGHTING PLANS

T3 QUERCUS VIRGINIANA 'CATHEDRAL' / CATHEDRAL LIVE OAK
CONTAINER - 72" BOX
FORM - STANDARD
CLEAR TRUNK - LOW BRANCH
QTY: 17
NOTES - 10'X10'X4 D TREE WELL PROVIDE MINIMUM 48" OF ORGANIC FERTILE SOIL. TREE TO HAVE UNDERDRAIN AND TIE INTO STORM SYSTEM; PROVIDE ROOTBALL ANCHORING SYSTEM. PROVIDE UPLIGHTS PER LIGHTING PLANS

NOTES
1. PROVIDE 100% DRIP IRRIGATION IN ALL ORNAMENTAL PLANTING AREAS
2. PROVIDE MINIMUM 2 IRRIGATION BUBBLERS PER TREE

IRRIGATION GENERAL NOTES

1. ALL LOCAL MUNICIPAL AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR.

2. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE.

3. THE CONTRACTOR SHALL OBTAIN THE PERTINENT ENGINEERING OR ARCHITECTURAL PLANS BEFORE BEGINNING WORK.

4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK INDICATED HEREIN BEFORE BEGINNING WORK.

5. THIS DESIGN IS DIAGRAMMATIC. ALL EQUIPMENT SHOWN IN PAVED AREAS IS FOR DESIGN CLARITY ONLY AND IS TO BE INSTALLED WITHIN PLANTING AREAS.

6. THE CONTRACTOR SHALL NOT WILLFULLY INSTALL ANY EQUIPMENT AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN CONDITIONS EXIST THAT WERE NOT EVIDENT AT THE TIME THESE PLANS WERE PREPARED. ANY SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO ANY WORK OR THE IRRIGATION CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY FIELD CHANGES DEEMED NECESSARY BY THE OWNER.

7. INSTALL ALL EQUIPMENT AS SHOWN IN THE DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH LOCAL CITY, COUNTY AND STATE REQUIREMENTS FOR BOTH EQUIPMENT AND INSTALLATION.

8. ACTUAL LOCATION FOR THE INSTALLATION OF THE BACKFLOW PREVENTER AND THE AUTOMATIC CONTROLLER IS TO BE DETERMINED IN THE FIELD BY THE OWNER'S AUTHORIZED REPRESENTATIVE.

9. CONTRACTOR IS TO PROVIDE AN ADDITIONAL PILOT WIRE FROM CONTROLLER ALONG ENTIRETY OF MAIN LINE TO THE LAST RCV ON EACH AND EVERY LEG OF MAIN LINE. LABEL SPARE WIRES AT BOTH ENDS.

10. ALL PIPE UNDER PAVED AREAS TO BE INSTALLED IN SLEEVING TWICE THE DIAMETER OF THE PIPE CARRIED. SEE LEGEND FOR TYPE. ALL WIRE UNDER PAVED AREAS TO BE INSTALLED IN A SCH. 40 SLEEVE THE SIZE REQUIRED TO EASILY PULL WIRE THROUGH. ALL SLEEVES TO BE INSTALLED WITH A MINIMUM DEPTH AS SHOWN ON THE SLEEVING DETAILS. SLEEVES TO EXTEND AT LEAST 12" PAST THE EDGE OF THE PAVING.

11. ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED IN SHRUB OR GROUND COVER AREAS WHERE POSSIBLE. ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED AS SHOWN ON THE INSTALLATION DETAILS. INSTALL ALL QUICK COUPLER AND REMOTE CONTROL VALVES WITHIN 18" OF HARDSCAPE.

12. ALL HEADS ARE TO BE INSTALLED WITH THE NOZZLE, SCREEN AND ARCS SHOWN ON THE PLANS. ALL HEADS ARE TO BE ADJUSTED TO PREVENT OVERSPRAY ONTO BUILDINGS, WALLS, FENCES AND HARDSCAPE. THIS INCLUDES, BUT NOT LIMITED TO, ADJUSTMENT OF DIFFUSER PIN OR ADJUSTMENT SCREW, REPLACEMENT OF PRESSURE COMPENSATING SCREENS, REPLACEMENT OF NOZZLES WITH MORE APPROPRIATE RADIUS UNITS AND THE REPLACEMENT OF NOZZLES WITH ADJUSTABLE ARC UNITS.

13. CONTRACTOR SHALL INSTALL ADDITIONAL CHECK VALVES TO HEADS AND LATERALS AS REQUIRED TO PREVENT LOW HEAD DRAINAGE.

14. THE CONTRACTOR SHALL USE PROPER GROUNDING TECHNIQUES FOR GROUNDING THE CONTROLLER AND RELATED EQUIPMENT PER MANUFACTURERS SPECIFICATIONS. SWEENEY AND ASSOCIATES RECOMMENDS MEASURING FOR PROPER GROUND AT LEAST ONCE ANNUALLY, AND NECESSARY ADJUSTMENTS MADE TO COMPLY WITH MANUFACTURER SPECIFICATIONS.

IRRIGATION LEGEND

NOTE A:
LATERAL LINE AND MAINLINE PIPING WITHIN BUILDING SHALL BE A TYPE 'K' COPPER AND IS SHOWN FOR CLARITY ONLY. ACTUAL DESIGN AND ROUTING SHALL BE COMPLETED BY PLUMBING ENGINEER AND INSTALLED BY PLUMBING CONTRACTOR. EACH STUB-OUT WITHIN EACH PLANTER SHALL HAVE A COPPER FEMALE ADAPTER FOR THE LANDSCAPE CONTRACTOR CONNECTION. ALL PIPING THROUGH BUILDING TO EXTERIOR AND THROUGH BUILDING TO UPPER FLOOR SHALL BE PROVIDED BY PLUMBER. SOME PENETRATION LOCATIONS ARE SHOWN OUTSIDE THE PLANTERS FOR CLARITY ONLY. ACTUAL PENETRATION LOCATIONS ARE TO BE WITHIN THE PLANTERS. CONTRACTOR SHALL COORDINATE ALL COPPER PIPE SIZES, PENETRATION LOCATIONS WITH ALL APPLICABLE TRADES PRIOR TO INSTALLATION.

NOTE B:
STEEL ELECTRICAL CONDUITS FOR LOW VOLTAGE IRRIGATION CONTROL WIRES TO ON-STRUCTURE PLANTERS. REFER TO PLAN FOR SIZING. ACTUAL DESIGN AND ROUTING SHALL BE COMPLETED BY ELECTRICAL ENGINEER AND INSTALLED BY ELECTRIAN. ELECTRICIAN TO PROVIDE A 1/4" NYLON PULL ROPE WITH CONDUITS FROM CONTROLLER TO PLANTER TO ALLOW IRRIGATION CONTRACTOR TO PULL CONTROL WIRES BETWEEN THE CONTROLLER AND PLANTER. COORDINATE ALL CONDUITS WITH GENERAL CONTRACTOR AND APPROPRIATE TRADES. SOME PENETRATION LOCATIONS ARE SHOWN OUTSIDE THE PLANTERS FOR CLARITY ONLY. ACTUAL PENETRATION LOCATIONS ARE TO BE WITHIN THE PLANTERS. CONTRACTOR SHALL COORDINATE CONDUIT PENETRATION LOCATIONS WITH ALL APPLICABLE TRADES PRIOR TO INSTALLATION.

PRELIMINARY NOT FOR CONSTRUCTION

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OJB LANDSCAPE ARCHITECTURE

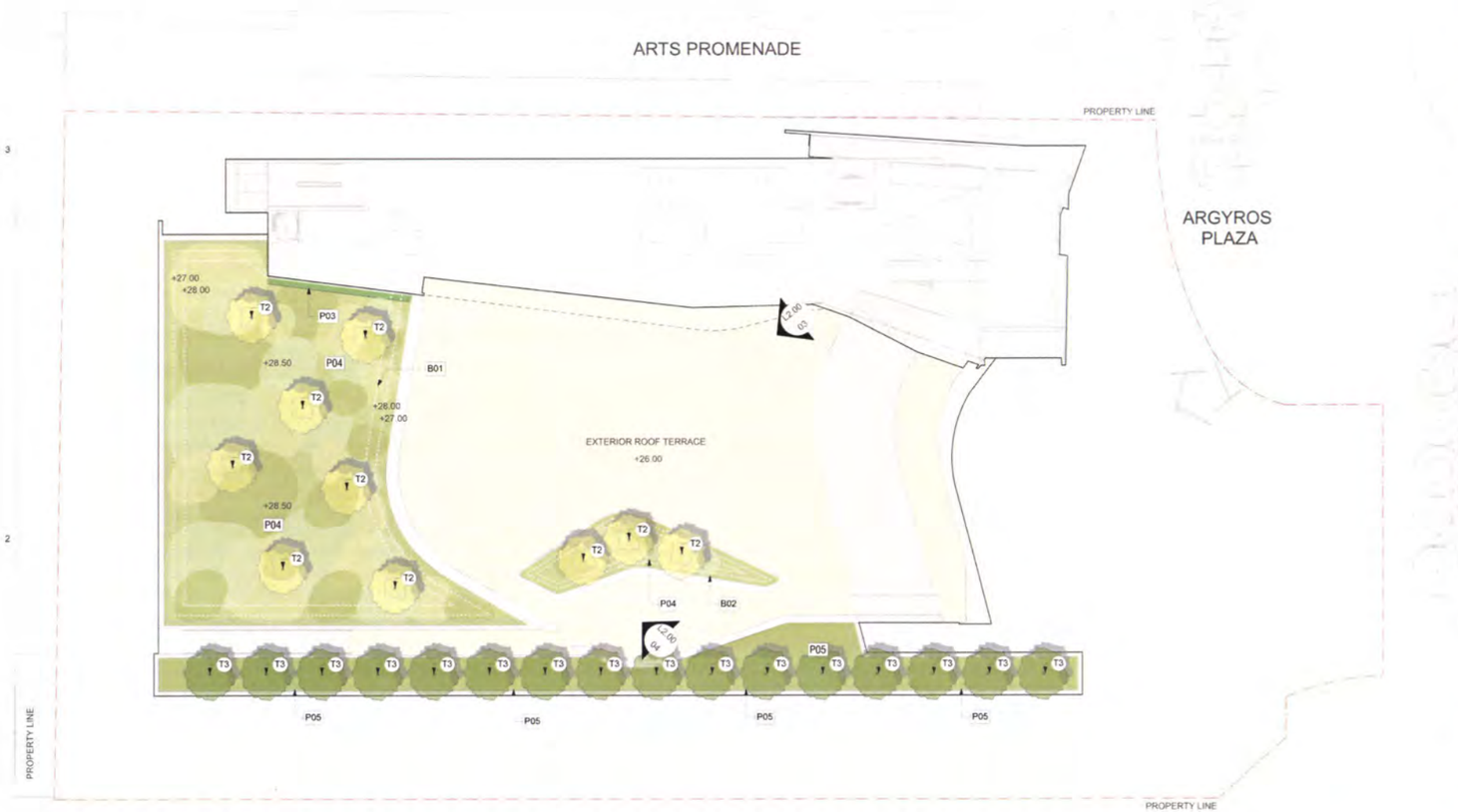
ISSUES / REVISIONS		
DATE	SYMBOL	DESCRIPTION
07.27.2018		MASTER PLAN SUBMISSION
12.20.2018		REVISED PLANNING SET

KEY PLAN:

PROJECT:
ORANGE COUNTY MUSEUM OF ART
3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

LANDSCAPE PLAN - LEVEL 1

DATE: 06/15/18
PROJECT NO: 35102
DRAWING BY:
CHK BY:
DRAWING NO:
L-1.10



Level 02
SCALE: 1/16" = 1'-0"

101

01

LANDSCAPE LEGEND

TOTAL LANDSCAPE AREA: 19,230 SF

PLANTING

P01 - ORNAMENTAL PLANTING (ON GRADE)
DIANELLA REVOLUTA 'LITTLE REV'
CONTAINER - 5 GAL
QTY - 223
SEDUM REFLEXUM 'BLUE SPRUCE'
CONTAINER - 1 GAL
QTY - 1,230

NOTES - PROVIDE 24" OF ORGANIC FERTILE SOIL. PROVIDE ROOT BARRIER AT ALL TREES WITHIN 5' OF HARDSCAPE

P02 - ORNAMENTAL PLANTING (ON GRADE)
DIANELLA REVOLUTA 'LITTLE REV'
CONTAINER - 5 GAL
QTY - 195
NOTES - PROVIDE 24" OF ORGANIC FERTILE SOIL. PROVIDE ROOT BARRIER AT ALL TREES WITHIN 5' OF HARDSCAPE

P03 - VINES
FICUS PUMILA
CONTAINER - 5 GAL
QTY - 58
NOTES - PROVIDE 24" OF ORGANIC FERTILE SOIL

P04 - ORNAMENTAL PLANTING (ON STRUCTURE)
AGAVE AMERICANA
CONTAINER - 10 GAL
QTY - 100
AGAVE ATTENUATA
CONTAINER - 10 GAL
QTY - 200
AGAVE PARRYI V. TRUNCATA
CONTAINER - 10 GAL
QTY - 175
ALOE VERA
CONTAINER - 10 GAL
QTY - 200
DIANELLA HYBRID 'CLARITY BLUE'
CONTAINER - 5 GAL
QTY - 196
KNIPHOFIA UVARIA 'ECHO MANGO'
CONTAINER - 5 GAL
QTY - 196
LOMANDRA HYSTRIX 'TROPIC BELLE'
CONTAINER - 5 GAL
QTY - 196
SALVIA CLEVELANDII 'POZO BLUE'
CONTAINER - 5 GAL
QTY - 196
SEDUM REFLEXUM 'BLUE SPRUCE'
CONTAINER - 3 GAL
QTY - 600

NOTES - PROVIDE 24" OF ORGANIC FERTILE SOIL. PROVIDE ROOT BARRIER AT ALL TREES WITHIN 5' OF HARDSCAPE.

P05 - ORNAMENTAL PLANTING (ON STRUCTURE)
DIANELLA REVOLUTA 'LITTLE REV'
CONTAINER - 5 GAL
QTY - 820

NOTES - PROVIDE 24" OF ORGANIC FERTILE SOIL. PROVIDE ROOT BARRIER AT ALL TREES WITHIN 5' OF HARDSCAPE.

BERMS

B01 - BOTANICAL BERMS (ON STRUCTURE)
TOPOGRAPHY TO REACH 30 IN. ABOVE FINISHED SURFACE. TO BE STABILIZED WITH A GEOSYNTHETIC ROOT REINFORCEMENT MATRIX

B02 - BOTANICAL BERMS (ON STRUCTURE)
TOPOGRAPHY TO REACH 30 IN. ABOVE FINISHED SURFACE. TO BE STABILIZED WITH A GEOSYNTHETIC ROOT REINFORCEMENT MATRIX

TREES

T1 ULMUS CARPINIFOLIA X PARVIFOLIA 'FRONTIER' / FRONTIER ELM
CONTAINER - 60" BOX
FORM - STANDARD
CLEAR TRUNK - 8' MIN.
QTY: 14
NOTES - PROVIDE MINIMUM 48" OF ORGANIC FERTILE SOIL. TREE TO HAVE UNDERDRAIN AND TIE INTO STORM SYSTEM. PROVIDE ROOTBALL ANCHORING SYSTEM. PROVIDE UPLIGHTS PER LIGHTING PLANS

T2 CERCIDIUM X 'DESERT MUSEUM' / THORNLESS PALO VERDE
CONTAINER - 72" BOX
FORM - MULTI TRUNK
QTY: 11
NOTES - 10'X10'X4'D TREE WELL.PROVIDE MINIMUM 48" OF ORGANIC FERTILE SOIL. TREE TO HAVE UNDERDRAIN AND TIE INTO STORM SYSTEM; PROVIDE ROOTBALL ANCHORING SYSTEM. PROVIDE UPLIGHTS PER LIGHTING PLANS

T3 QUERCUS VIRGINIANA 'CATHEDRAL' / CATHEDRAL LIVE OAK
CONTAINER - 72" BOX
FORM - STANDARD
CLEAR TRUNK - LOW BRANCH
QTY: 17
NOTES - 10'X10'X4'D TREE WELL.PROVIDE MINIMUM 48" OF ORGANIC FERTILE SOIL. TREE TO HAVE UNDERDRAIN AND TIE INTO STORM SYSTEM; PROVIDE ROOTBALL ANCHORING SYSTEM. PROVIDE UPLIGHTS PER LIGHTING PLANS

NOTES
1. PROVIDE 100% DRIP IRRIGATION IN ALL ORNAMENTAL PLANTING AREAS
2. PROVIDE MINIMUM 2 IRRIGATION BUBBLERS PER TREE

IRRIGATION GENERAL NOTES

1. ALL LOCAL MUNICIPAL AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR.

2. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE.

3. THE CONTRACTOR SHALL OBTAIN THE PERTINENT ENGINEERING OR ARCHITECTURAL PLANS BEFORE BEGINNING WORK.

4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK INDICATED HEREIN BEFORE BEGINNING WORK.

5. THIS DESIGN IS DIAGRAMMATIC. ALL EQUIPMENT SHOWN IN PAVED AREAS IS FOR DESIGN CLARITY ONLY AND IS TO BE INSTALLED WITHIN PLANTING AREAS.

6. THE CONTRACTOR SHALL NOT WILLFULLY INSTALL ANY EQUIPMENT AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN CONDITIONS EXIST THAT WERE NOT EVIDENT AT THE TIME THESE PLANS WERE PREPARED. ANY SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO ANY WORK OR THE IRRIGATION CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY FIELD CHANGES DEEMED NECESSARY BY THE OWNER.

7. INSTALL ALL EQUIPMENT AS SHOWN IN THE DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH LOCAL CITY, COUNTY AND STATE REQUIREMENTS FOR BOTH EQUIPMENT AND INSTALLATION.

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OJB LANDSCAPE ARCHITECTURE

ISSUES / REVISIONS

DATE	SYMBOL	DESCRIPTION
07.27.2018		MASTER PLAN SUBMISSION
12.20.2018		REVISED PLANNING SET

KEY PLAN:

PROJECT:
ORANGE COUNTY MUSEUM OF ART
3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

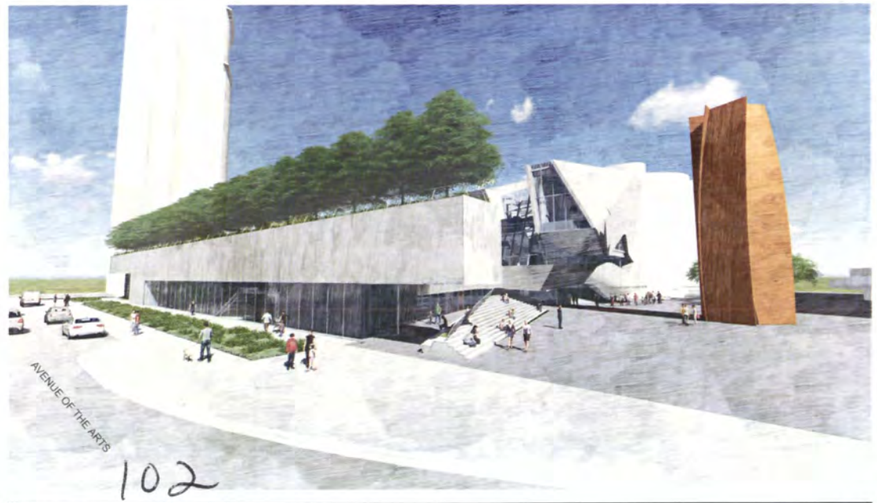
LANDSCAPE PLAN - LEVEL 2

DATE: 06/15/18
PROJECT NO: 35102
DRAWING BY:
CHK BY:
DRAWING NO:
L-1.20

TERRACE LEVEL PERSPECTIVE 04

SITE PLAN 02

TERRACE LEVEL PERSPECTIVE 03



GROUND LEVEL PERSPECTIVE 01

PRELIMINARY NOT FOR CONSTRUCTION

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OJB LANDSCAPE ARCHITECTURE

ISSUES / REVISIONS

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07.27.2018		MASTER PLAN SUBMISSION
12.20.2018		REVISED PLANNING SET

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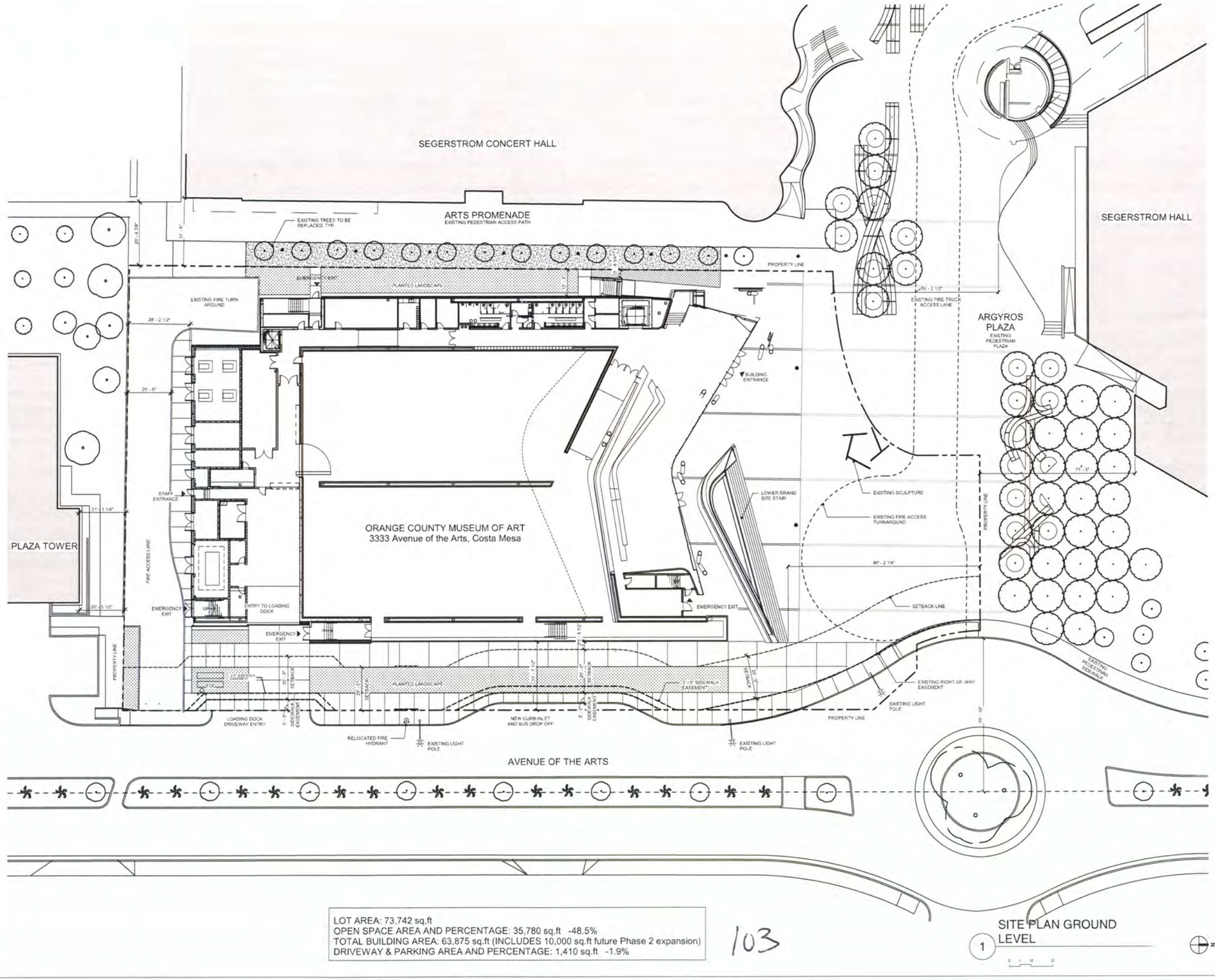
PROJECT:
ORANGE COUNTY MUSEUM OF ART

3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

ILLUSTRATIVE RENDERINGS

DATE 06/15/18
PROJECT NO 35102
DRAWING BY
CHK BY
DRAWING NO
L-2.00



LOT AREA: 73,742 sq.ft
OPEN SPACE AREA AND PERCENTAGE: 35,780 sq.ft -48.5%
TOTAL BUILDING AREA: 63,875 sq.ft (INCLUDES 10,000 sq.ft future Phase 2 expansion)
DRIVEWAY & PARKING AREA AND PERCENTAGE: 1,410 sq.ft -1.9%

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1 SITE PLAN GROUND LEVEL

N

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CIVIL ENGINEER:
KPFF CONSULTING ENGINEERS
6080 CENTER DRIVE
LOS ANGELES, CA 90045

MECHANICAL ELECTRICAL PLUMBING:
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800 WILSHIRE BOULEVARD
16TH FLOOR
LOS ANGELES, CA 90017

LIGHTING DESIGNER:
HORTON LEES BROGDEN LIGHTING DESIGN
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FIRE/LIFE-SAFETY CODE COMPLIANCE:
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LOS ANGELES, CA 90017

GEOTECHNICAL ENGINEER:
JOHN A MARTIN ASSOCIATES
LEIGHTON CONSULTING, INC
850 SAN CLEMENTE DRIVE
NEWPORT BEACH, CA 92660

COST ANALYSIS:
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35 W. 35TH STREET
SUITE 301
NEW YORK, NY 10001

ISSUES / REVISIONS

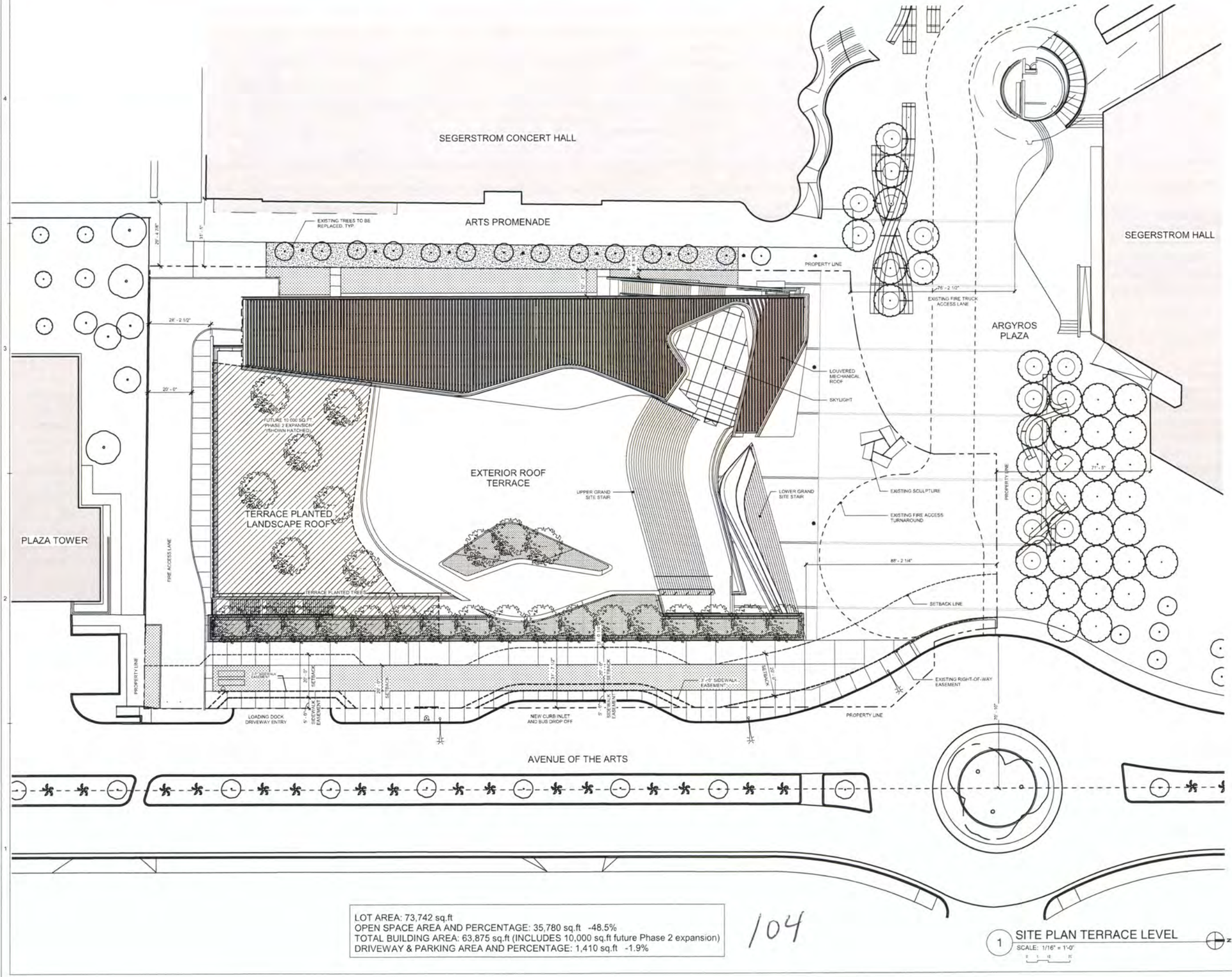
DATE	SYMBOL	DESCRIPTION
07.27.2018		MASTER PLAN SUBMISSION
10.19.2018		MASTER PLAN REVISION
12.20.2018		MASTER PLAN REVISION

KEY PLAN:

PROJECT:
ORANGE COUNTY MUSEUM OF ART
655 TOWN CENTER DRIVE
COSTA MESA, CA 92626

SITE PLAN / LANDSCAPE PLAN GROUND LEVEL

DATE: 12/20/18
PROJECT NO: 35102
DRAWING BY: Author
CHK BY: Checker
DRAWING NO:
A-011.01



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104

1 SITE PLAN TERRACE LEVEL
SCALE: 1/16" = 1'-0"

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COST ANALYSIS:
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SUITE 301
NEW YORK, NY 10001

ISSUES / REVISIONS

DATE	SYMBOL	DESCRIPTION
07.27.2018		MASTER PLAN SUBMISSION
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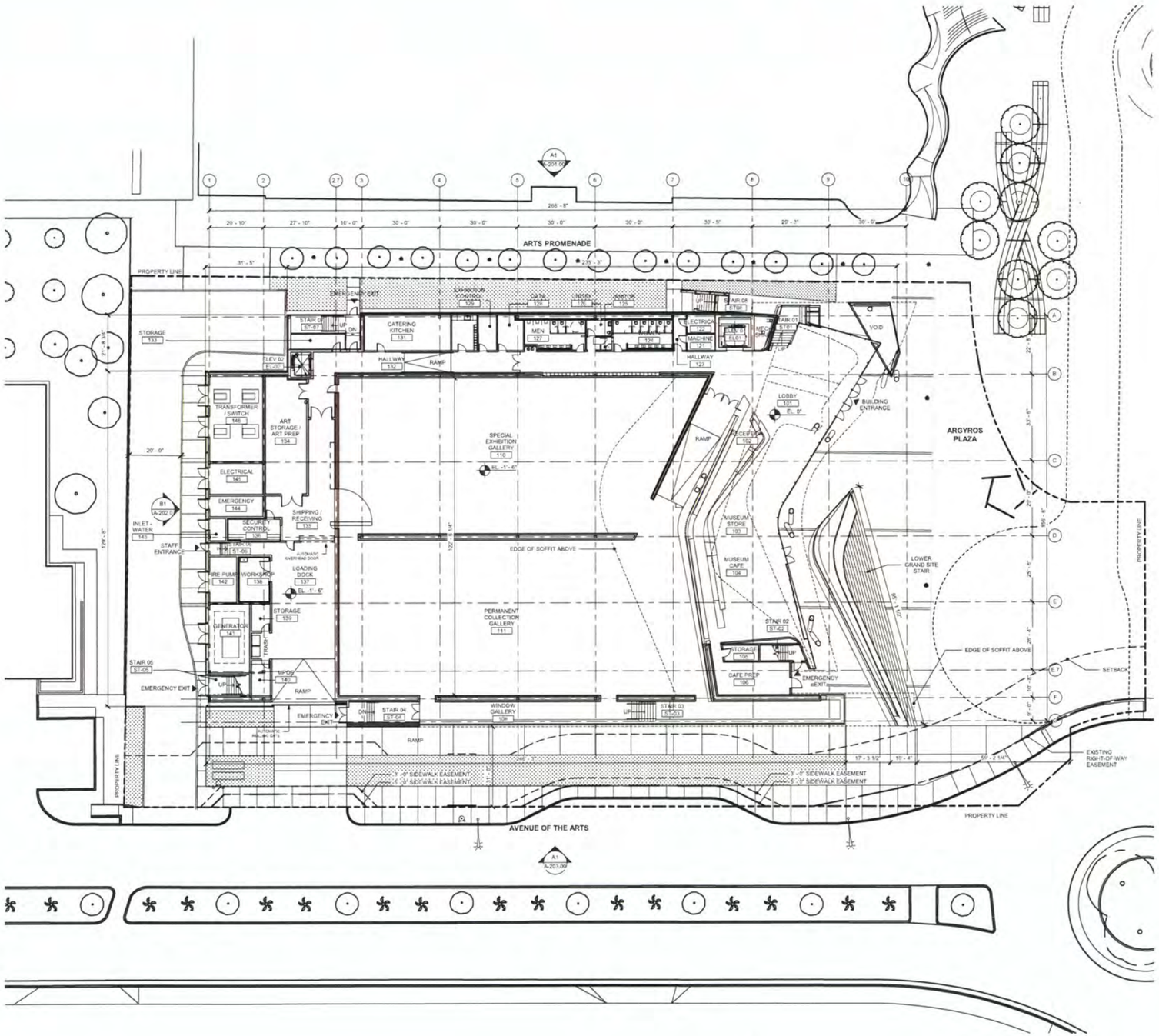
12.20.2018		MASTER PLAN REVISION

KEY PLAN:

PROJECT:
ORANGE COUNTY MUSEUM OF ART
655 TOWN CENTER DRIVE
COSTA MESA, CA 92626

SITE PLAN / LANDSCAPE PLAN TERRACE LEVEL

DATE: 12/20/18
PROJECT NO: 35102
DRAWING BY: Author
CHK BY: Checker
DRAWING NO:
A-012.01



105

A1 FLOOR PLAN OVERVIEW
FIRST FLOOR EL. 0'-0"
SCALE: 1/16" = 1'-0"

N

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PROJECT:
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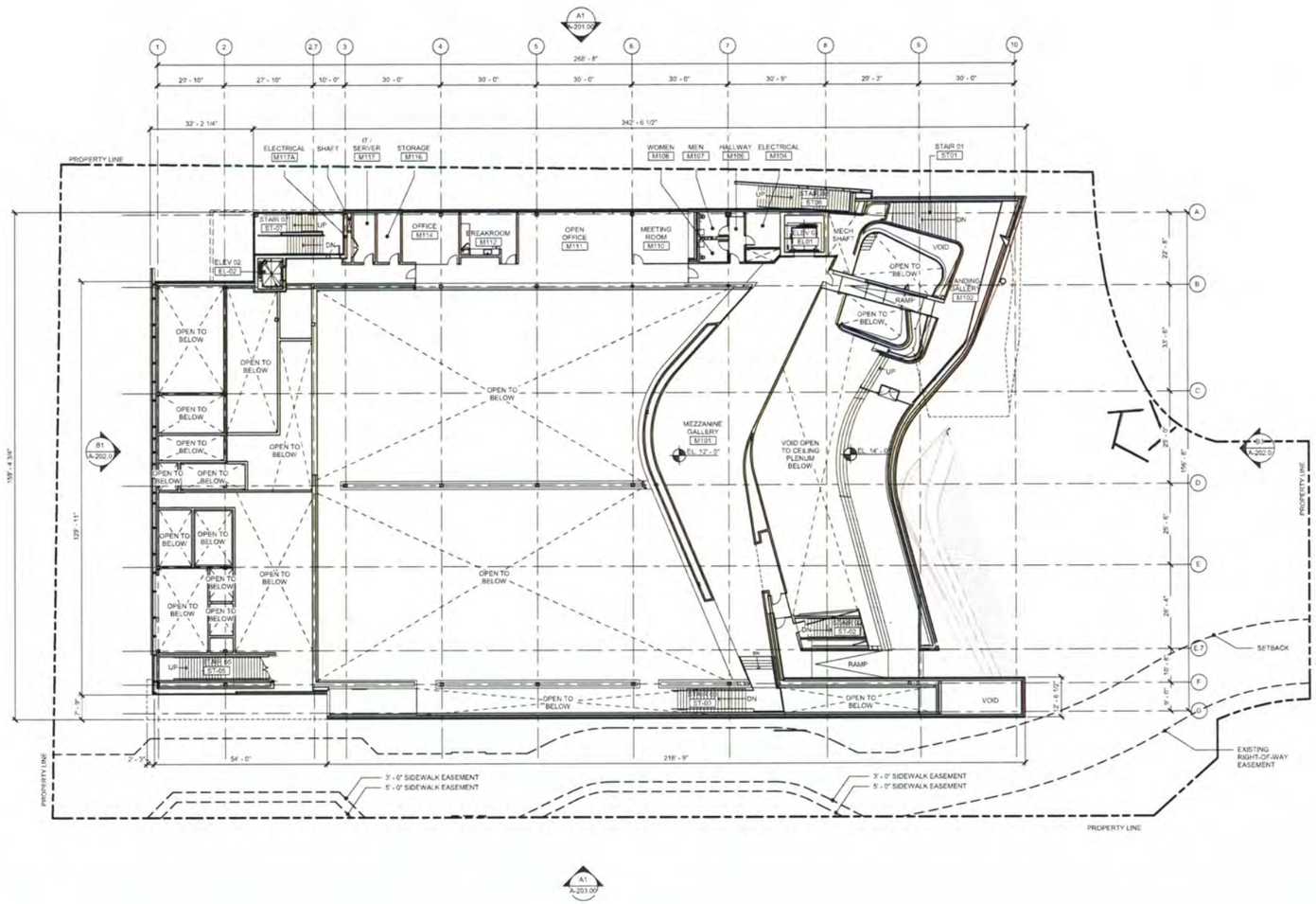
655 TOWN CENTER DRIVE
COSTA MESA, CA 92626

FLOOR PLAN OVERVIEW - FIRST FLOOR

DATE:	12/20/18
PROJECT NO:	35102
DRAWING BY:	Author
CHK BY:	Checker
DRAWING NO:	A-101.00



106

FLOOR PLAN OVERVIEW
FIRST FLOOR MEZZANINE EL.
A1 12'-0"
SCALE: 1/16" = 1'-0"

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ISSUES / REVISIONS

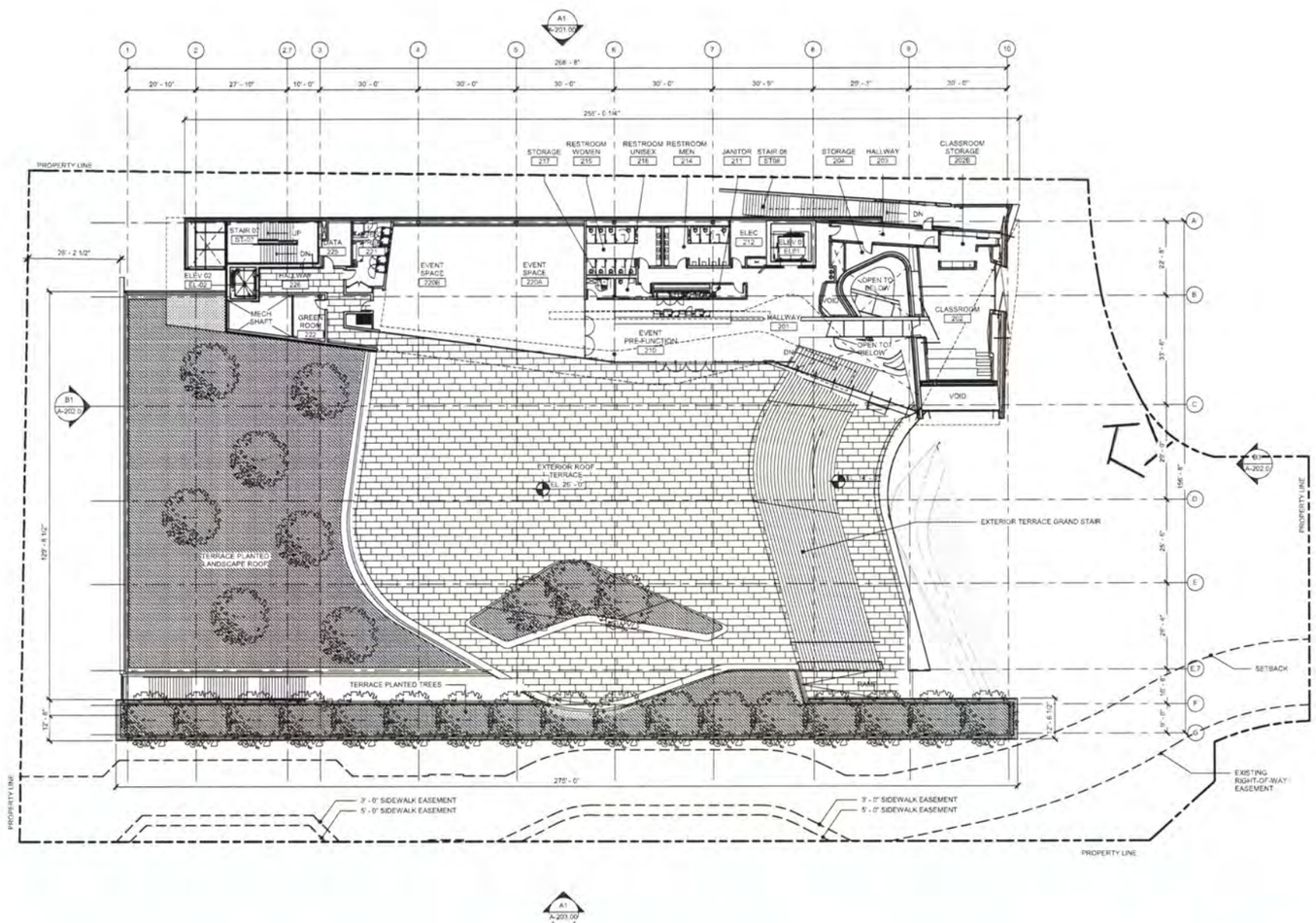
DATE	SYMBOL	DESCRIPTION
07.27.2018		MASTER PLAN SUBMISSION
12.20.2018		MASTER PLAN REVISION

KEY PLAN:

PROJECT:
ORANGE COUNTY MUSEUM OF ART
655 TOWN CENTER DRIVE
COSTA MESA, CA 92626

FLOOR PLAN OVERVIEW - FIRST FLOOR MEZZANINE

DATE:	12/20/18
PROJECT NO:	35102
DRAWING BY:	Author
CHK BY:	Checker
DRAWING NO:	A-101.01



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FLOOR PLAN OVERVIEW
SECOND FLOOR EL. 26'-0"

A1 SCALE: 1/16" = 1'-0"

OCMA

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ISSUES / REVISIONS:

DATE	SYMBOL	DESCRIPTION
07.27.2018		MASTER PLAN SUBMISSION
12.20.2018		MASTER PLAN REVISION

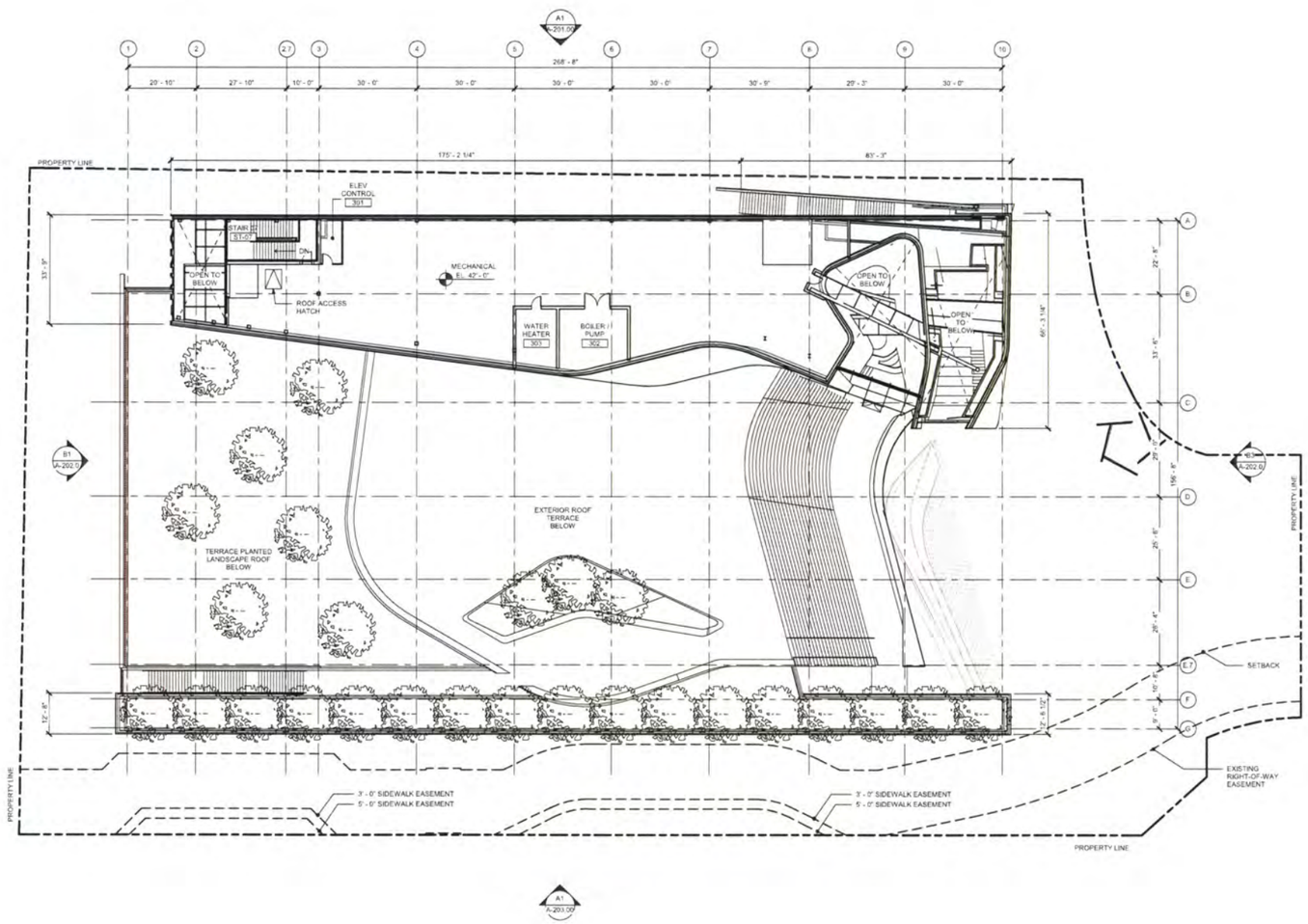
KEY PLAN:

PROJECT:
ORANGE COUNTY MUSEUM OF ART

655 TOWN CENTER DRIVE
COSTA MESA, CA 92626

FLOOR PLAN OVERVIEW - SECOND FLOOR

DATE:	12/20/18
PROJECT NO:	35100
DRAWING BY:	Author
CHK BY:	Checker
DRAWING NO:	A-102.00



108

FLOOR PLAN OVERVIEW
MECHANICAL FLOOR EL. 42'-0"

A1 SCALE: 1/16" = 1'-0"

N

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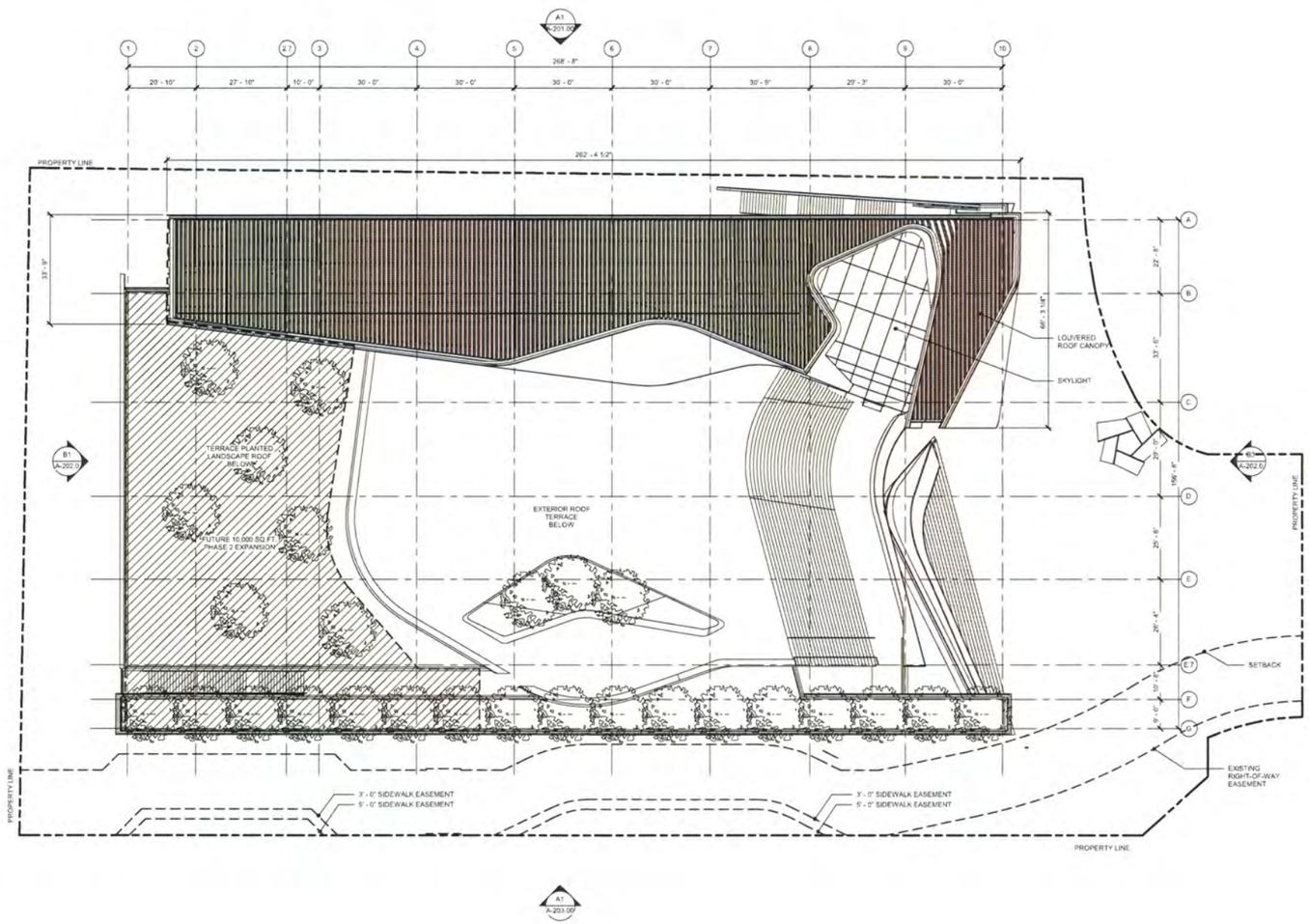
12.20.2018		MASTER PLAN REVISION

KEY PLAN:

PROJECT:
ORANGE COUNTY MUSEUM OF ART
655 TOWN CENTER DRIVE
COSTA MESA, CA 92626

FLOOR PLAN OVERVIEW - MECHANICAL FLOOR

DATE:	12/20/18
PROJECT NO:	35102
DRAWING BY:	Author
CHK BY:	Checker
DRAWING NO:	A-103.00



109

A1 ROOF PLAN OVERVIEW
SCALE: 1/16" = 1'-0"

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07.27.2018		MASTER PLAN SUBMISSION
12.20.2018		MASTER PLAN REVISION

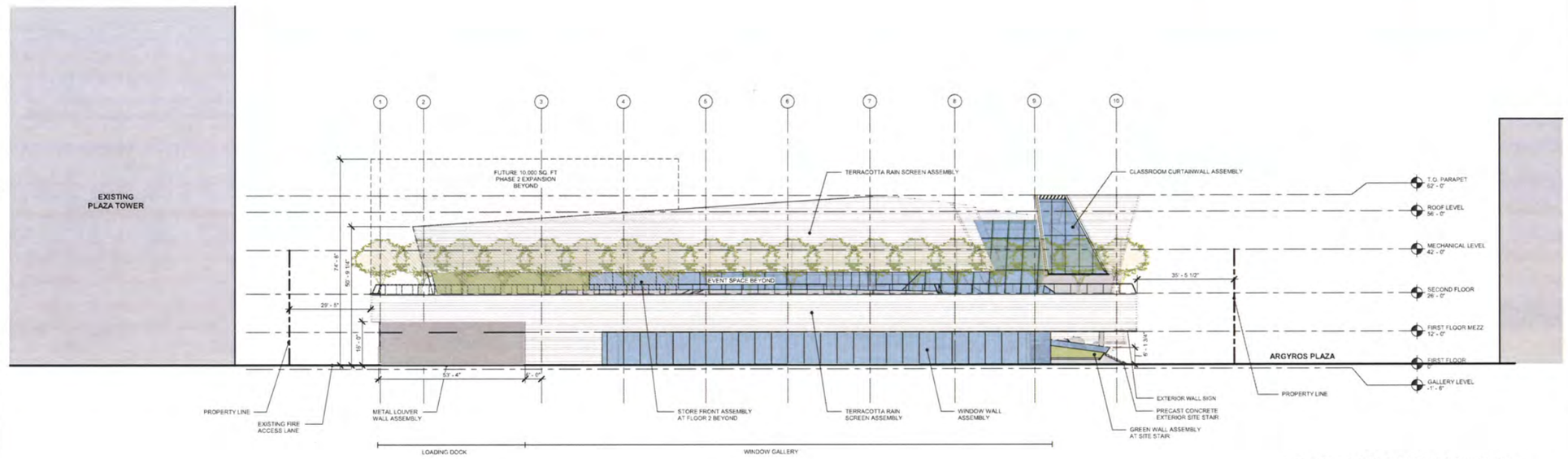
KEY PLAN:

PROJECT:
ORANGE COUNTY MUSEUM OF ART
655 TOWN CENTER DRIVE
COSTA MESA, CA 92626

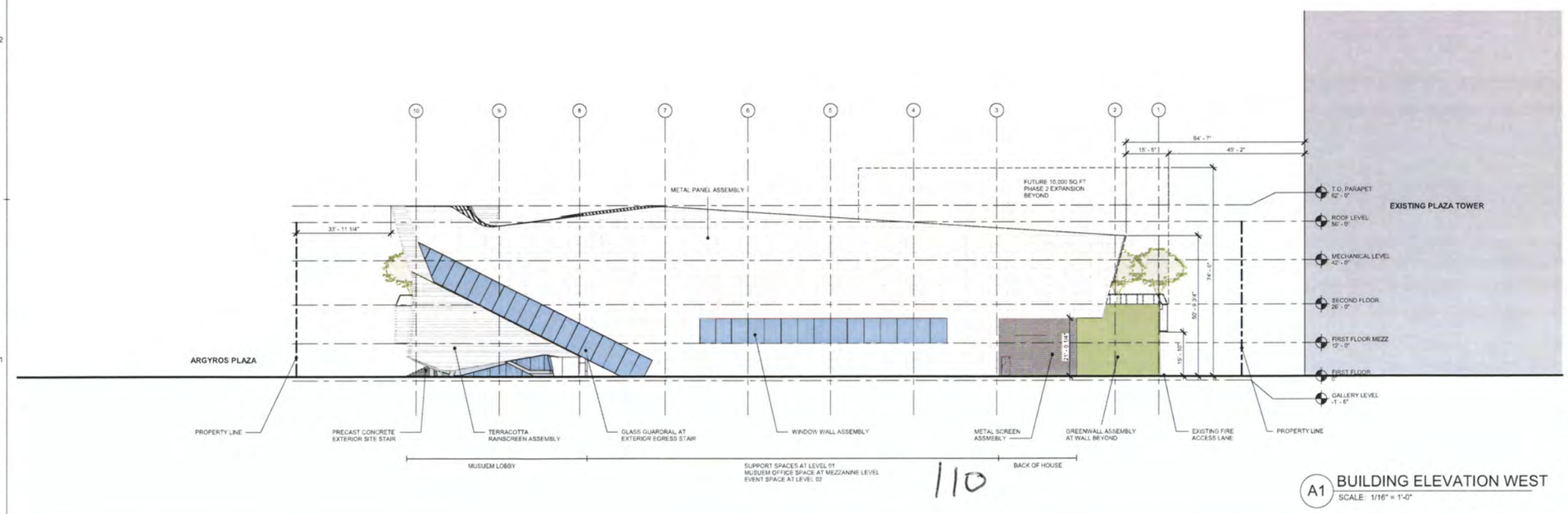
FLOOR PLAN OVERVIEW - ROOF PLAN

DATE:	12/20/18
PROJECT NO:	35103
DRAWING BY:	Author
CHK BY:	Checker

DRAWING NO:
A-104.00



A3 BUILDING ELEVATION EAST
SCALE: 1/16" = 1'-0"



110

A1 BUILDING ELEVATION WEST
SCALE: 1/16" = 1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

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ISSUES / REVISIONS

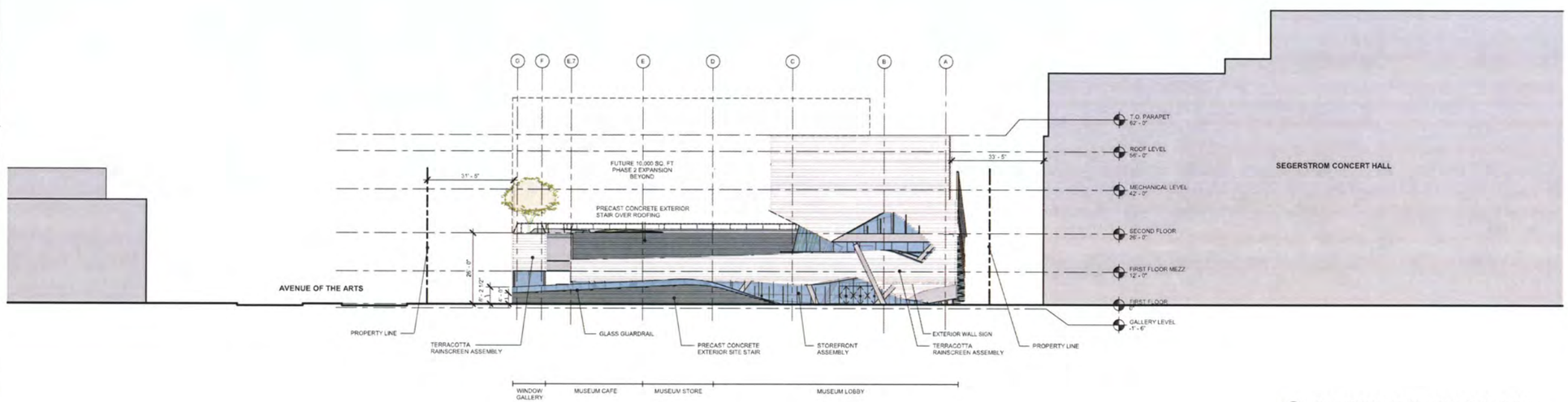
DATE	SYMBOL	DESCRIPTION

KEY PLAN:

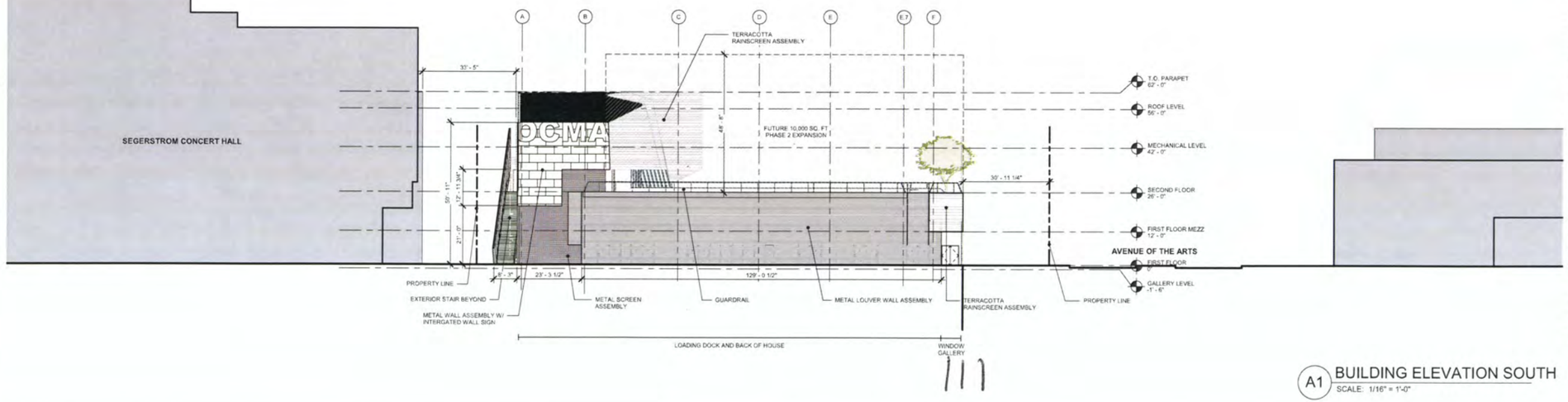
PROJECT:
ORANGE COUNTY MUSEUM OF ART
3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

BUILDING ELEVATIONS

DATE:	10/26/18
PROJECT NO:	35102
DRAWING BY:	Author
CHK BY:	Checker
DRAWING NO:	A-201.00



A3 BUILDING ELEVATION NORTH
SCALE: 1/16" = 1'-0"



A1 BUILDING ELEVATION SOUTH
SCALE: 1/16" = 1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

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ISSUES / REVISIONS

DATE	SYMBOL	DESCRIPTION

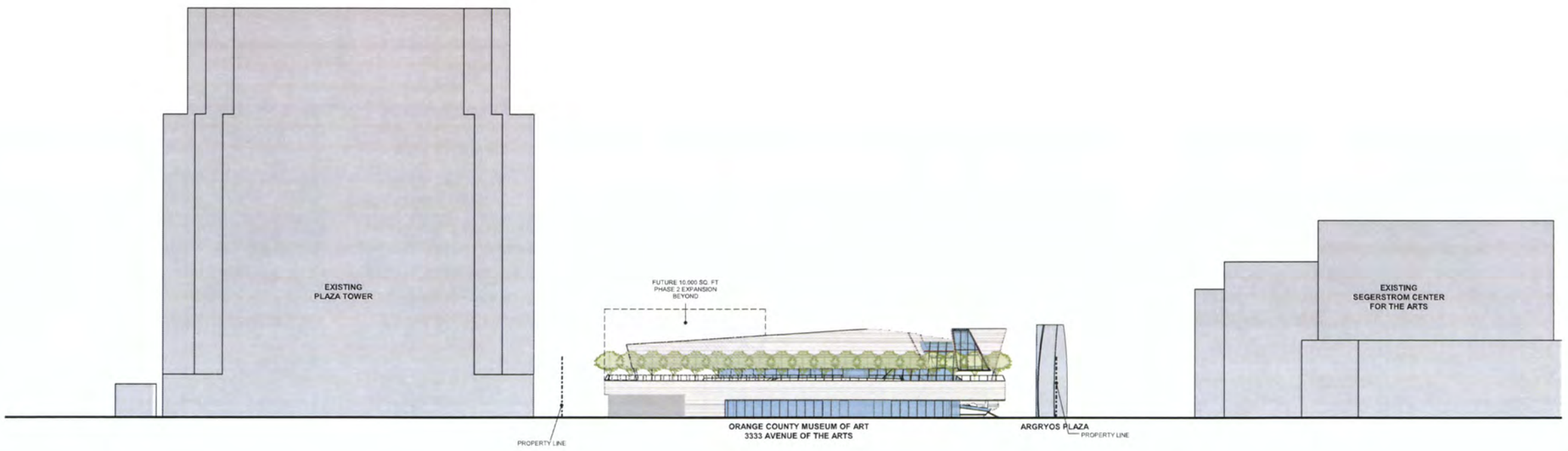
KEY PLAN:

PROJECT:
ORANGE COUNTY MUSEUM OF ART
3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

BUILDING ELEVATIONS

DATE:	10/26/18
PROJECT NO:	35102
DRAWING BY:	Author
CHK BY:	Checker

DRAWING NO:
A-202.00



112

A1 AVENUE OF THE ARTS - STREET ELEVATION
SCALE: 1/32" = 1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

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ISSUES / REVISIONS

DATE	SYMBOL	DESCRIPTION

KEY PLAN:

PROJECT:
ORANGE COUNTY MUSEUM OF ART
3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

CONTEXT ELEVATION

DATE:	10/26/18
PROJECT NO:	35102
DRAWING BY:	Author
CHK BY:	Checker
DRAWING NO:	A-203.00

ATTACHMENT 8

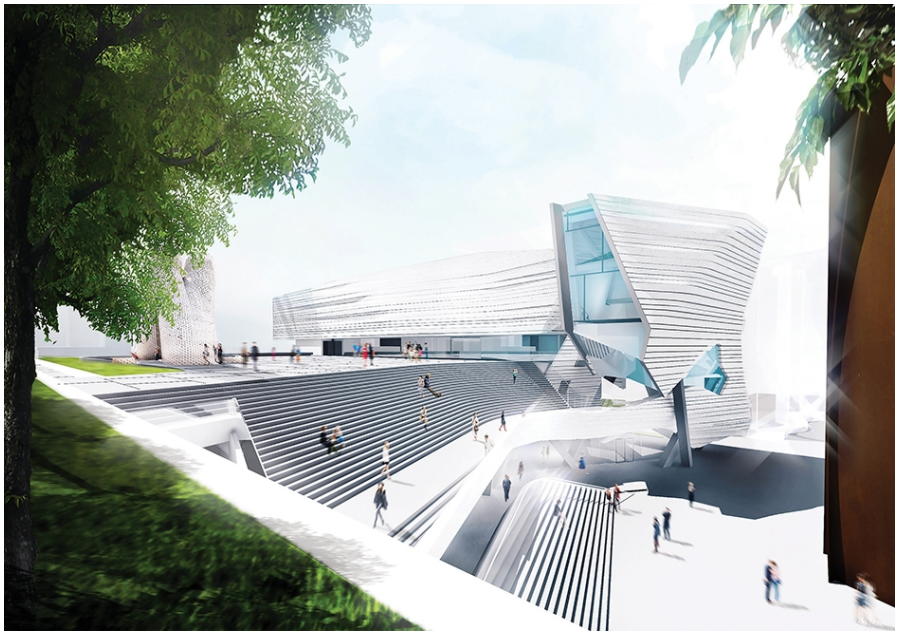
UNDER SEPARATE COVER

ADDENDUM TO THE FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE SOUTH COAST PLAZA TOWN CENTER PROJECT SCH NO. 2000041100

ORANGE COUNTY MUSEUM OF ART PROJECT

3333 AVENUE OF THE ARTS

CITY OF COSTA MESA, CALIFORNIA



December 2018

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ADDENDUM TO THE FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT FOR THE SOUTH COAST PLAZA TOWN CENTER PROJECT SCH NO. 2000041100

ORANGE COUNTY MUSEUM OF ART PROJECT

3333 AVENUE OF THE ARTS

CITY OF COSTA MESA, CALIFORNIA

Submitted to:

City of Costa Mesa
77 Fair Drive
Costa Mesa, California 92626

Prepared by:

LSA
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Irvine, California 92614
(949) 553-0666

Project No. CCM1803

December 2018

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TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

LIST OF ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
ADT	average daily trips
ALUC	(Orange County) Airport Land Use Commission
Applicant	Orange County Museum of Art (or OCMA)
AQMP	Air Quality Management District
Basin	South Coast Air Basin
BMPs	Best Management Practices
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emission Estimator Model
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CH_4	methane
City	City of Costa Mesa
CMP	Congestion Management Plan
CMSD	Costa Mesa Sanitary District
CO	carbon monoxide
CO_2	carbon dioxide
EIR	Environmental Impact Report
EO	Executive Order
FAA	Federal Aviation Administration
FAR	floor area ratio
ft	foot/feet
GHGs	greenhouse gases
I-405	Interstate 405
lbs/day	pounds per day
LOS	levels of service
LSTs	localized significance thresholds
m	meter/meters

Master Plan	*Costa Mesa Theater and Arts District Plan*
MCWD	Mesa Consolidated Water District
MT CO_2e/yr	metric tons of carbon dioxide equivalent per year
MWD	Mesa Water District (formerly MCWD)
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
O_3	ozone
OCMA	Orange County Museum of Art
OCSD	Orange County Sanitation District
PFs	project design features
$PM_{2.5}$	particulate matter less than 2.5 microns in size
PM_{10}	particulate matter less than 10 microns in size
PRC	Public Resource Code
Program EIR No. 1052	Final Program EIR No. 1052 for the North Costa Mesa High-Rise Residential Projects
Proposed Project	Addendum to the Final EIR for the South Coast Plaza Town Center Project
PVC	polyvinyl chloride
ROGs	reactive organic gases
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCG	Southern California Gas Company
SCH	State Clearinghouse
SCPTC Program EIR	Final Program EIR No. 1047 for the South Coast Plaza Town Center Project

SCPTC Project, or Approved Project	South Coast Plaza Town Center Project
SCs	standard conditions
SO_X	sulfur oxides
Specific Plan	*North Costa Mesa Specific Plan*
SR-55	State Route 55
SRA	Source Receptor Area
SWPPP	Storm Water Pollution Prevention Plan
TC	Town Center District
TDM	Transportation Demand Management
VOC	volatile organic compounds

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

The Final Program Environmental Impact Report (EIR) No. 1047 for the South Coast Plaza Town Center Project (SCPTC Program EIR) was certified on February 7, 2001 (State Clearinghouse [SCH] No. 2000041100). The approved South Coast Plaza Town Center Project (SCPTC Project or Approved Project) contemplated the net addition of 1,109,445 square feet of new retail, office, hotel, and cultural arts-related uses, including a 140,000-square-foot art museum/academy, within the *North Costa Mesa Specific Plan* (Specific Plan; Updated 2016). The SCPTC Program EIR is intended to serve as the primary environmental document for subsequent actions within the SCPTC Project site. The art museum/academy space was approved for a currently vacant rectangular-shaped site (Orange County Museum of Art [OCMA] site) at 655 Town Center Drive. The OCMA site is north of the Plaza Tower and west of Avenue of the Arts in the South Coast Metro area.

The SCPTC Project also included the following main objectives:

- Amend the Costa Mesa 1990 General Plan to accommodate the proposed development requests, and eliminate the non-conforming status of existing development with respect to floor area ratio standards (i.e., building intensities) that existed when the Notice of Preparation was issued for the South Coast Plaza Town Center EIR;

- Revise the vehicle trip budget and schedule of traffic improvements for South Coast Plaza Town Center, while maintaining acceptable levels of service on the project area's streets and surrounding circulation system;

- Establish General Plan policies related to development rights transfers for land dedications; and

- Amend the *North Costa Mesa Specific Plan* and the *Town Center Master Plan* to reflect the revised trip budget, permitted floor area ratios, and maximum permitted building heights.

The SCPTC Program EIR analyzed the conceptual development of 11 building sites, labeled Buildings A through K within the area subject to the *Town Center Master Plan* (the SCPTC Project site). The Building E site included the development of the 140,000-square-foot art museum/academy at the southwest corner of Town Center Drive and Avenue of the Arts. The findings for the SCPTC Program EIR noted that most potentially significant impacts were mitigated to a less than significant level; however, significant and unavoidable impacts were identified for operations at two intersections, construction emissions, regional emissions, and employment growth.

On November 21, 2006, the Final Program EIR No. 1052 for the North Costa Mesa High-Rise Residential Projects (Program EIR No. 1052) was certified (SCH No. 2006011077). Program EIR No. 1052 analyzed the approved North Costa Mesa High-Rise Residential Projects, which contemplated the demolition of existing structures, minor modifications to unbuilt entitlements, and/or substitution of unbuilt entitlements for the construction of new high-rise residential structures collectively totaling 1,269 dwelling units, with commercial/retails uses. As stated in

Program EIR No. 1052, the SCPTC Program EIR has also analyzed the project area that included the following sites: Site 1 – Segerstrom Town Center, Site 2 – Orange County Museum of Art, and Site 5 – Pacific Arts Plaza. The analysis presented in the SCPTC Program EIR is relied upon as it relates to these three sites in Program EIR No. 1052. In 2007, General Plan Amendment (GP-06-02) was approved to allow 535 high-rise/high-density residential units in specific locations in South Coast Plaza Town Center. In Sub-Area 2 (Segerstrom Center for the Arts), 80 high-rise residential units may be constructed at the vacant lot to the north and abutting the Plaza Tower office building in conjunction with the new art museum/academy building. For this sub-area, the maximum allowable floor area ratio (FAR) is 1.67 and the maximum allowable number of dwelling units is 80 units. This Addendum to the SCPTC Program EIR does not addend or revise Program EIR No. 1052 as the high-rise residential entitlements are not being removed from the OCMA site. The project would modify only the 2001 entitlements as analyzed in the SCPTC Program EIR.

The OCMA site is located in Area 4 (South Coast Plaza Town Center), Sub-Area 2 (Segerstrom Center for the Arts) of the *North Costa Mesa Specific Plan* (Specific Plan; Updated 2016). Figure 1.1, Regional Location and Project Vicinity, shows the regional location of the OCMA site and the SCPTC Project site (figures are located at the end of each chapter). Figure 1.2, Project Components for the South Coast Plaza Town Center Project, provides the locations of each project component evaluated in the SCPTC Program EIR. Detailed site plans for each building were not provided in the SCPTC Program EIR.

The OCMA (Applicant) is now seeking entitlements from the City of Costa Mesa (City) to reduce the square footage of the art museum/academy space from 140,000 square feet to approximately 66,750 square feet, with 56,750 square feet as part of an initial phase and a 10,000-square-foot expansion included and envisioned in a second phase (Proposed Project). The Proposed Project would include the development of the museum, with a café and second-floor terrace that would allow for outdoor events and art installations. In addition, as the OCMA site is a currently vacant parcel, the Proposed Project would also revise the address of the site from 655 Town Center Drive to 3333 Avenue of the Arts. Residential development is not proposed at the OCMA site as part of the Proposed Project. The other project components evaluated in the SCPTC Program EIR and Program EIR No. 1052 would not be affected by the modifications proposed by the Applicant. The discussion below describes which components of the project as approved under SCPTC Program EIR would remain unmodified by the Proposed Project and which components would constitute changes from the SCPTC Program EIR.

Pursuant to the provisions of the California Environmental Quality Act (CEQA) and the *State CEQA Guidelines*, the City is the Lead Agency charged with the responsibility of deciding whether to approve the Proposed Project, including all requisite discretionary actions. As part of its decision-making process, the City is required to review and consider potential environmental effects that could result from construction and operation of the Proposed Project.

Since the SCPTC Program EIR does not include any of the residential units entitled under Program EIR No. 1052, and since Program EIR No. 1052 relied on the SCPTC Program EIR for the analysis of the art museum development, the SCPTC Program EIR remains the valid and certified CEQA documentation for future development of the art museum on the site, and is used to determine whether future development falls within the size and type of uses analyzed in the Program EIR.

However, the Proposed Project would not remove the existing residential entitlements on the OCMA site for potential future development.

1.1.1 CEQA Process

The City's review of the Proposed Project and other related project components is limited to examining environmental effects associated with differences between the Proposed Project and the project as analyzed in the SCPTC Program EIR. Pursuant to CEQA and the *State CEQA Guidelines*, the City has prepared this Addendum to the SCPTC Program EIR (Addendum) to provide decision-makers with a factual basis for evaluating the specific environmental impacts associated with the Proposed Project and to determine whether there are changes in circumstances or new information of substantial importance that would require preparation of a subsequent or supplemental EIR.

According to Section 21166 of CEQA and Section 15162 of the *State CEQA Guidelines*, a subsequent EIR is not required for the proposed changes unless the City determines on the basis of substantial evidence that one or more of the following conditions are met:

1. Substantial changes are proposed in the project that require major revisions of the previous EIR due to involvement of new significant environmental effects or a substantial increase in severity of previously identified significant effects;

2. Substantial changes have occurred with respect to the circumstances under which the project is undertaken that will require major revisions of the previous EIR due to involvement of new significant environmental 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 exercise of reasonable diligence at the time the previous EIR was certified, shows any of the following:

    - The project will have one or more significant effects not discussed in the previous EIR;

    - Significant effects previously examined will be substantially more severe than identified in the previous EIR;

    - 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 proponent declines to adopt the mitigation measures or alternatives; or

    - Mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponent declines to adopt the mitigation measures or alternatives.

Under *State CEQA Guidelines*, Section 15163, if any of the conditions noted above are present but only minor additions or changes would be necessary to make the previous EIR adequate to apply to the project in the changed situation, a supplemental EIR may be prepared.

This Addendum reviews changes to the SCPTC Program EIR via the Proposed Project and to conditions that have occurred since the Program EIR was certified, and compares the environmental effects of development of the Proposed Project with those previously disclosed in the SCPTC Program EIR. It also reviews new information of substantial importance that was not known and could not have been known with exercise of reasonable diligence at the time the SCPTC Program EIR was certified and evaluates whether there are new or more severe significant environmental effects associated with changes in circumstances under which project development is being undertaken. It further examines whether, as a result of any changes or any new information, a subsequent or supplemental EIR may be required. This examination includes an analysis of provisions of Section 21166 of CEQA and Section 15162 of the *State CEQA Guidelines* and their applicability to the Proposed Project.

Section 15164 of the *State CEQA Guidelines* states that an Addendum to an EIR shall be prepared "if some changes or additions are necessary, but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred." Thus, if none of the above conditions is met, the City may not require preparation of a subsequent or supplemental EIR. Rather, the City can decide that no further environmental documentation is necessary or can require that an Addendum be prepared.

Based upon review of the facts as presented in the analysis contained in this document, the City finds that an Addendum to the previously certified SCPTC Program EIR is the appropriate document in compliance with CEQA. The rationale and the facts for this finding are provided in the body of this Addendum.

1.1.2 Summary of Unchanged Items

The project components listed below were covered in the SCPTC Program EIR and have not changed with the Proposed Project. Therefore, these components are not subject to the analysis provided in this Addendum.

- Ten of the structures, Buildings A through D and F through K, will remain the same and are not altered by the scope of the Proposed Project.
- The Proposed Project will remain on the same location as originally proposed for Building E (the OCMA site).
- The Proposed Project will continue to utilize existing parking structures and existing access locations.

In addition, Sites 1, 3, 4, and 5 from Program EIR No. 1052 would not be altered by the Proposed Project.

1.1.3 Summary of Changed Items

The components listed below are included for the Proposed Project and include changes from the project as analyzed in the SCPTC Program EIR.

- The 140,000-square-foot art museum development would be reduced by approximately 73,250 square feet for a total of 66,750 square feet. Approximately 10,000 square feet of this 66,750 square feet would be developed as a Phase 2 expansion. The proposed height of the museum would also be reduced from 80 ft to 75 ft.

- To accommodate school buses, a drop-off area would be located directly adjacent to the eastern side of the art museum. The curb cut and drop-off area would be accessed from Avenue of the Arts.

- The Proposed Project would not include any residential units as entitled by the certified Program EIR No. 1052 and the 2007 General Plan Amendment, which allowed for high-rise residential development on the OCMA site in addition to the art museum. However, the residential entitlements for the OCMA site would remain unchanged.

- The grading plan, site plan, and landscaping will be changed to reflect the Proposed Project.

1.2 FINDINGS OF THIS ADDENDUM

As the Lead Agency for the Proposed Project, the City has determined that analyses of project environmental effects are best provided through the use of an Addendum (*State CEQA Guidelines,* Section 15164) and that none of the conditions set forth in Public Resource Code (PRC), Section 21166, or *State CEQA Guidelines*, Section 15162, requiring preparation of a subsequent or supplemental EIR, have been met.

1. There are no substantial changes to the project that would require major revisions of the SCPTC Program EIR due to new significant environmental effects or a substantial increase in severity of impacts identified in the SCPTC Program EIR;

2. Substantial changes have not occurred in the circumstances under which the project is being undertaken that will require major revisions to the SCPTC Program EIR to disclose new significant environmental effects or that would result in a substantial increase in severity of impacts identified in the SCPTC Program EIR; and

3. There is no new information of substantial importance that was not known at the time the SCPTC Program EIR was certified, indicating any of the following:

    - The project will have one or more new significant effects not discussed in the certified SCPTC Program EIR;

    - There are impacts determined to be significant in the SCPTC Program EIR that would be substantially more severe;

    - There are additional mitigation measures or alternatives to the project that would substantially reduce one or more significant effects identified in the SCPTC Program EIR; and

    - There are additional mitigation measures or alternatives rejected by the project proponent that are considerably different from those analyzed in the SCPTC Program EIR that would substantially reduce a significant impact identified in that EIR.

The complete evaluation of potential environmental effects of the Proposed Project, including rationale and facts supporting the City's findings, is contained in Chapter 3.0 of this Addendum.

1.3 FORMAT OF ADDENDUM

This Addendum has been organized into three chapters, as described in the sections below.

1.3.1 Chapter 1.0: Introduction

Chapter 1.0 includes a description of the purpose and scope of the Addendum, previous environmental documentation, project approvals, findings of the Addendum, and existing documents to be incorporated by reference.

1.3.2 Chapter 2.0: Changes to Project

Chapter 2.0 describes the location and setting of the site, an overview of the Proposed Project, and the necessary City discretionary actions to implement the Proposed Project. Those project components that have the potential to have a physical effect on the environment are addressed in Chapter 3.0 of this Addendum.

1.3.3 Chapter 3.0: Comparative Evaluation of Environmental Impacts

The analysis contained in Chapter 3.0 describes an overview of the project as analyzed in the SCPTC Program EIR that would have included a larger development than the Proposed Project described in Chapter 2.0 of this Addendum. Because the updated version of the Proposed Project described in Chapter 2.0 represents a smaller project with reduced square footage, the analysis in Chapter 3.0 concludes that the SCPTC Program EIR project would have greater environmental impacts than the current Proposed Project.

Chapter 3.0 contains the environmental analyses of the Proposed Project's impacts compared to the impacts analyzed in the certified SCPTC Program EIR. This comparative analysis has been undertaken pursuant to provisions of CEQA to provide the City decision-makers with a factual basis for determining whether the Proposed Project, changes in circumstances, or new information since the SCPTC Program EIR was certified would require additional environmental review or preparation of a subsequent or supplemental EIR. Chapter 3.0 also contains findings for each environmental topic to determine whether conditions, as set forth in PRC Section 21166 or Section 15162 of the *State CEQA Guidelines* requiring preparation of a subsequent or supplemental EIR, have been met.

Environmental topics analyzed in this Addendum include:

- Aesthetics
- Air Quality/Greenhouse Gases
- Geology and Soils
- Hydrology/Water Quality
- Noise
- Population/Employment/Housing
- Public Services/Utilities/Energy Consumption
- Transportation and Circulation

1.4 EXISTING DOCUMENTS TO BE INCORPORATED BY REFERENCE

As permitted in Section 15150 of the *State CEQA Guidelines*, this Addendum has referenced several technical studies, analyses, and reports. Information from the documents that has been incorporated by reference has been briefly summarized in the appropriate section(s) of this Addendum. Documents incorporated by reference are available for review at the City of Costa Mesa, Development Services Department, located at 77 Fair Drive, Costa Mesa, CA 92626. Contact Daniel Inloes, Economic Development Administrator, at (714) 754-5088 or daniel.inloes@costamesaca.gov for additional information.

Documents incorporated by reference include, but are not limited to:

- City of Costa Mesa. *Final Program Environmental Impact Report #1047 South Coast Plaza Town Center Project*, 2001 (SCH No. 2000041100, certified February 5, 2001)
- City of Costa Mesa. *Final Program Environmental Impact Report #1052 North Costa Mesa High-Rise Residential Projects*, 2006 (SCH No. 2006011077, certified November 21, 2006)
- City of Costa Mesa. 2015–2035 General Plan, 2016
- City of Costa Mesa. *General Plan Environmental Impact Report*, 2016 (SCH No. 2015111068)
- City of Costa Mesa. *North Costa Mesa Specific Plan* (Specific Plan), 2016
- City of Costa Mesa. *Costa Mesa Theater and Arts District Plan*, 2004 (amended 2006 and 2008)
- City of Costa Mesa. Municipal Code

1.5 CONTACT PERSONS

The Lead Agency for approval of the Addendum and the Proposed Project is the City. Questions regarding preparation of this Addendum, its assumptions, or its conclusions should be referred to:

Daniel Inloes, AICP
Economic Development Administrator
City of Costa Mesa
77 Fair Drive
Costa Mesa, CA 92626

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LSA

LEGEND

- OCMA Site
- South Coast Plaza Town Center Project Site

0 400 800

FEET

SOURCE: Bing Maps

FIGURE 1.1

Orange County Museum of Art Project

Regional Location and Project Vicinity

I:\CCM1803\G\Project Location.cdr (10/31/2018)

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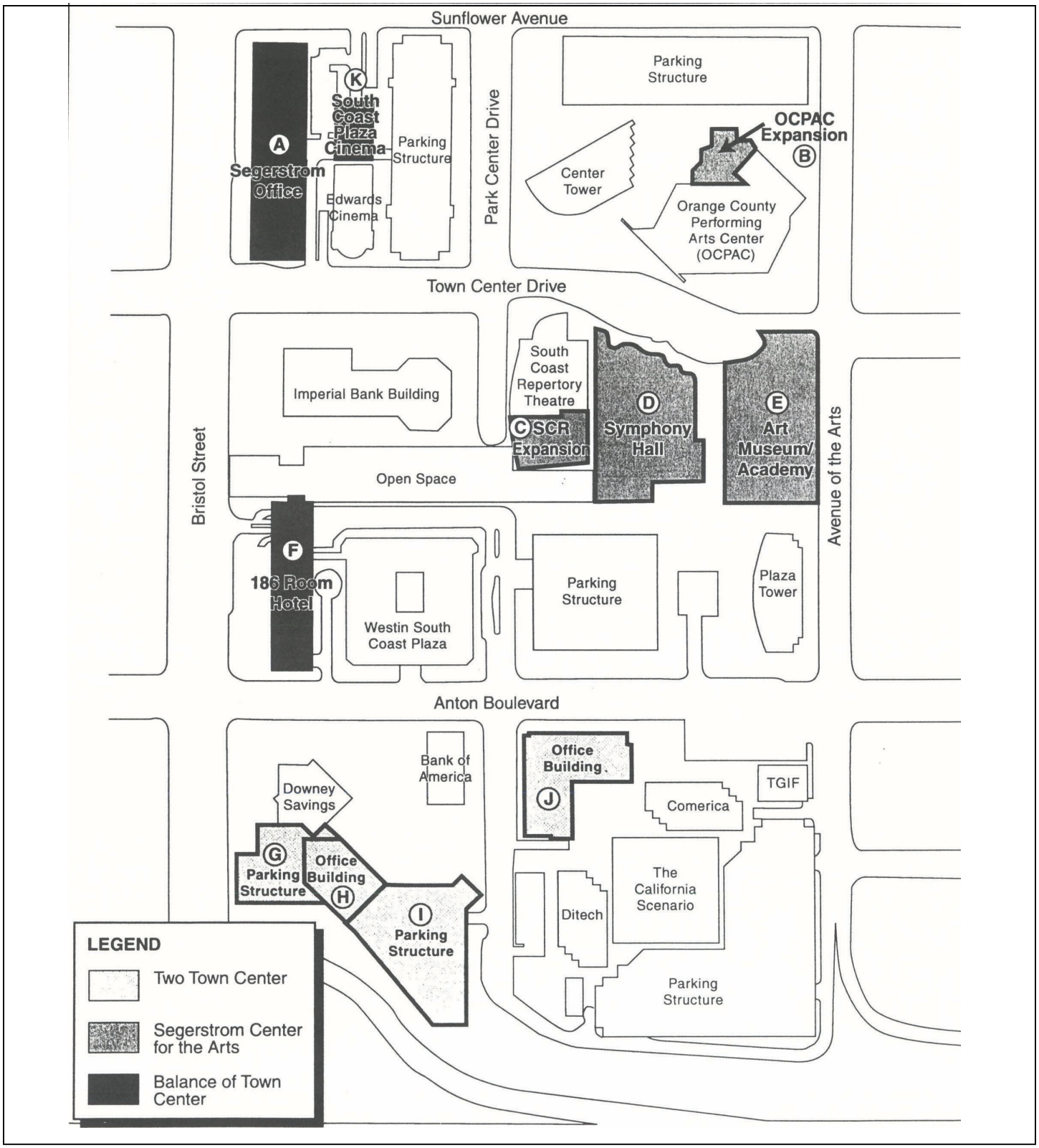

LSA

BUILDING LEGEND

A - Segerstrom Office
B - OCPAC Expansion
C - SCR Expansion
D - Symphony Hall
E - Art Museum/Academy
F - 186 Room Hotel
G - Parking Structure
H - Office Building
I - Parking Structure
J - Office Building
K - South Coast Plaza Cinema

N

0 150 300
FEET

SOURCE: Michael Brandman Associates, 7/2000

I:\CCM1803\G\Project Components.cdr (10/22/2018)

FIGURE 1.2

Orange County Museum of Art Project

Project Components of the
South Coast Plaza Town Center Project

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2.0 PROJECT DESCRIPTION

2.1 PROJECT HISTORY

On February 5, 2001, the City Council of the City of Costa Mesa adopted the Final Program Environmental Impact Report No. 1047 for the South Costa Plaza Town Center Project (SCPTC Program EIR; SCPTC Project or Approved Project). The SCPTC Project included amendments to the 1990 General Plan and the *North Costa Mesa Specific Plan* to create a new land use designation of "Cultural Arts Center" and a corresponding floor area ratio (FAR) of 1.77 for the South Coast Plaza Town Center (Area 4).

The approved development included in the SCPTC Program EIR included 11 separate buildings, Buildings A through K, all of which are located on 54 acres bordered by Sunflower Avenue to the north, Bristol Street to the west, Avenue of the Arts to the east, and Interstate 405 (I-405) to the south. The approved land uses included retail, office, hotel, and cultural-art related uses across the 54-acre SCPTC Project site. The height of the approved art museum located at Building E did not exceed 80 ft, which is substantially lower than the maximum height of 315 ft permitted by the Specific Plan. The SCPTC area included passenger pick-up and drop-off areas from Town Center Drive to the site of the proposed Symphony Hall and Museum. The SCPTC Project did not include on-site parking, but would utilize existing parking structures and existing access locations.

On November 21, 2006, the City of Costa Mesa City Council certified Final Program EIR No. 1052 for the North Costa Mesa High-Rise Residential Projects. EIR No. 1052 evaluated five separate sites, located on a total of 128 acres of land included in the Specific Plan boundaries. The approved land uses included residential, commercial/retail, and cultural-art related uses across the project area. The approved development included 80 residential units in addition to the previously approved 140,000-square-foot art museum on the OCMA site, presumably in a high-rise tower over the museum space. The North Costa Mesa High-Rise Residential Projects also included an underground parking structure to accommodate the museum and residential uses. The North Costa Mesa High-Rise Residential Projects were approved as part of General Plan Amendment GP-06-02. However, this Addendum to the SCPTC Program EIR does not addend or revise Program EIR No. 1052 as the high-rise residential entitlements are not being removed from the OCMA site. The project would modify only the 2001 entitlements as analyzed in the SCPTC Program EIR.

2.2 PROJECT CHANGES

2.2.1 Proposed Changes to the Project Described in the SCPTC Program EIR

The OCMA (Applicant) is now seeking entitlements from the City to reduce the square footage of the art museum/academy space from 140,000 square feet to approximately 56,750 square feet as part of an initial phase, with a 10,000-square-foot expansion envisioned in a second phase for a total of 66,750 square feet (Proposed Project). The Proposed Project would include the development of the museum, with a café and second-floor terrace that would allow for outdoor events and art installations. The Proposed Project includes a bus drop-off area on the eastern side of the museum along Avenue of the Arts, in addition to the passenger pick-up and drop-off locations identified for the SCPTC Project.

The other project components evaluated in the SCPTC Program EIR would not be affected by the Proposed Project modifications. No modifications to the Entitlements for Buildings A through D and F through K are proposed. Those buildings would continue to include retail, office, restaurant, and hotel space in ten stand-alone buildings, as depicted in the project components for the SCPTC Program EIR. In addition, the other project components evaluated in Program EIR No. 1052 would not be affected by the Proposed Project modifications, and no modifications to the Entitlements for any of the sites included in Program EIR No. 1052 are proposed.

As part of the Proposed Project modifications, residential development is not proposed at the OCMA site, and the proposed art museum/academy has a smaller total square footage compared to that which was previously evaluated at a programmatic level in the SCPTC Program EIR. The gross lot area location of the OCMA site is approximately 1.7 acres.

The final grading plan, site plan, and landscaping would be altered to reflect the proposed art museum. Detailed characteristics of the Proposed Project are provided in Section 2.4, Project Characteristics, below.

2.3 PROJECT SITE LOCATION AND SETTING

2.3.1 Project Site Location

The SCPTC Project site evaluated in the SCPTC Program EIR consists of approximately 54 acres of land located in the central portion of Orange County, California, within the City of Costa Mesa. The SCPTC Project site is approximately 0.7 mile west of the City of Irvine boundary and immediately south of the City of Santa Ana boundary. The SCPTC site is directly north of Interstate 405 (I-405) and 0.7 mile west of State Route 55 (SR-55).

The SCPTC Project site is located at the southeast corner of Sunflower Avenue and Bristol Street. The Building E site is located at 3333 Avenue of the Arts, at the southwest corner of Town Center Drive and Avenue of the Arts. Refer to Figure 1.1, for the OCMA site's location within the larger SCPTC Project site. While the SCPTC Project site is inclusive of the entire 54-acre site originally evaluated in the SCPTC Program EIR, the Proposed Project would only include modifications to the 1.7-acre OCMA site identified as the Building E site in the SCPTC Program EIR.

2.3.2 Project Setting and Existing Conditions

2.3.2.1 Existing Land Use

The 54-acre SCPTC Project site is currently developed with Segerstrom Hall, the South Coast Repertory, the Westin South Coast Plaza, the Renee and Henry Segerstrom Concert Hall, additional office and retail uses, and parking. The 1.7-acre OCMA site is currently undeveloped and utilized as a gathering space for events related to the Segerstrom Center for the Arts. The OCMA site is flat, with grass on the southern portion and a dirt area on the northern portion of the site, currently being used to stage construction materials such as dumpsters, trailers, and fencing.

2.3.2.2 Surrounding Land Uses

The SCPTC Project site is directly bordered on the north by retail uses and condominiums across Sunflower Avenue. Avenue of the Arts Hotel, Costa Mesa Marriott, and apartment complexes are located to the east of the SCPTC Project site. Office, commercial and restaurant uses, and a parking garage are located south of Anton Boulevard adjacent to I-405. The South Coast Plaza shopping center is located west of the SCPTC Project site across Bristol Street.

2.4 PROJECT CHARACTERISTICS

2.4.1 Site Plan

The developments for Buildings A through D and F through K included in the SCPTC Program would not be modified by the Proposed Project, and the boundary for Building E would remain the same; however, the development included in the SCPTC Program EIR for Building E of the SCPTC Project site (the OCMA site) would be reduced by approximately 73,250 square feet. In addition, the height of the proposed development would be reduced by 5 feet (ft) compared to the SCPTC Program EIR project, which included an 80 ft development on the OCMA site.

As shown on Figure 1.2, in Chapter 1.0 above, the proposed art museum would be developed on Building E of the previously approved site plan contemplated in the SCPTC Program EIR. The art museum would have a square footage of approximately 66,750 square feet on a 73,742-square-foot (1.7-acre) site, with a FAR of 0.91, which is consistent with the Cultural Arts Center land use designation that allows for a FAR of 1.77 and General Plan Amendment GP-06-02 for Sub-Area 2, which was updated to a maximum allowable FAR of 1.67. The building lot coverage would be approximately 96 percent. Figure 2.1, Proposed Site Plan for the OCMA – Ground Level/Terrace Level, provides a detailed view of the site plan for the proposed art museum and associated improvements on the OCMA site.

2.4.2 Project Components

2.4.2.1 Art Museum (Building E)

The two-story art museum would consist of approximately 66,750 gross square feet , would be developed on the site of Building E in the southeastern portion of the SCPTC Project site (the OCMA site), and would not exceed 75 ft in height. This building would provide a lobby, store, café, education spaces, event spaces, public gallery space, administrative areas, and operational, service, and utility space. The programmatic breakdown of uses and square footages is provided in Table 2.A, below.

The outdoor second-floor terrace would accommodate a wide range of activities including both public and private events such as informal concerts, movie screenings, as well as seated events. Events with amplified music would conform to the City's Noise Ordinance. The terrace also provides an ideal venue for extensive and oversized art installations.

Table 2.A: Programmatic Project Breakdown

Use	Square Footage
Lobby/Store/Café	5,700
Educational	1,100
Event Space	4,600
Public Gallery Space	23,5000
Administrative	2,600
Operations & Service Utilities	19,250
2nd Phase Expansion[1]	10,000
Total	**66,750**

[1] The 2nd Phase expansion would include a one-story addition on the second level at the south end of the terrace.

The café and museum shop would be accessed from the main lobby and the Julianne and George Argyros Plaza. This area would be accessible to the public without the purchase of tickets or without entering the gallery area. The café would include full-height glazed and sliding glass doors to allow café seating to extend to the exterior. The exterior area, flanked by the plaza stairs, would provide an outdoor seating area for the public and a protected social gathering space during events.

2.4.2.2 Architectural Design

The Proposed Project would be designed to provide an active façade along Avenue of the Arts with a dynamic exterior and glazed glass along the storefront to provide direct views into the galleries from the sidewalk. A variety of building materials such as terracotta rain-screen assembly, metal louver wall assembly, metal panel assembly, precast concrete, and glazed glass would be incorporated to make the buildings both visually interesting and appealing. The use of multilevel rooflines, inset windows, and curved walls would minimize reflective surface areas. In addition, all building materials would be treated to prevent glare. The terracotta rain-screen assembly would have a matted finish and the metal would be painted. In addition, the glass would have energy- efficient coating and would be recessed to prevent direct sun exposure and glare. Figure 2.2, Elevations, illustrates the conceptual building elevations and the proposed architectural style and elements.

2.4.2.3 Landscaping

Landscaping for the Proposed Project would include a variety of tree and plant species. The second-floor terrace would include over 10,000 square feet of landscaping along the southern and eastern edge of this area. The planter along the eastern edge of the terrace would be designed to accommodate a line of mature trees, which would provide shading to the terrace and would be visible from the street and plaza below. Additional landscaping would be provided at the plaza level along the east and west building elevations. All ornamental planting areas would be provided with 100 percent drip irrigation systems. The existing trees on the west side of the OCMA site would be replaced. Existing planting on the south side of the OCMA site would be maintained.

2.4.2.4 Access, Circulation, and Parking

The driveways providing access to the OCMA site would be in the same locations as those described in the SCPTC Program EIR; however, an additional bus drop-off area would be located along Avenue

of the Arts on the eastern side of the proposed museum. The public entry for the museum would be located on the northern side of the building off of the existing Julianne and George Argyros Plaza. There would also be a separate staff entry at the southern side of the building and enclosed loading dock for deliveries and trash removal on the southeastern corner of the site accessed from Avenue of the Arts near the existing service drive for the adjacent Plaza Tower office building. Loading dock and trash removal hours would be between 7:00 a.m. and 8:00 p.m., Monday through Saturday, in accordance with Section 8-81 of the City's Municipal Code.

No internal vehicular circulation for on-site parking is planned within the OCMA site. The existing fire access lane on the south side of the site would be maintained along with the existing 90-degree turnout at the southwest corner of the OCMA site. On the north side of the OCMA site, an existing fire access lane runs through the Julianne and George Argyros Plaza to connect Avenue of the Arts to Town Center Drive. The existing continuous fire access lanes and fire access turnaround in the plaza would be maintained.

Pedestrian access would continue to be provided by existing sidewalks between Town Center Drive and Avenue of the Arts within the Julianne and George Argyros Plaza and along Avenue of the Arts. As described above, the passenger pick-up and drop-off zone at Town Center Drive would serve the proposed art museum. In addition, a bus drop-off area to accommodate school buses would be located on Avenue of the Arts. Refer to Figure 2.1, for the existing pedestrian sidewalk and proposed bus drop-off area.

According to the 2016 *Parking Study* (completed by Linscott Law & Greenspan Engineers), the current peak parking demands in the Town Center District fall well below the current parking supply in Town Center. When the projected parking demands for the proposed art museum are incorporated, the parking supply still exceeds the demand maintaining the parking surplus for the area. Similar to the SCPTC Project, the Proposed Project would not include any on-site parking and would instead use the available parking capacity in the area. Several of the parking garages in the area are located within 500 and 1,000 ft of the OCMA site enabling easy pedestrian access to the museum from the parking garages.

2.4.2.5 Infrastructure

Water. Domestic water service, water mains, fire hydrants, and fire service are provided to the SCPTC Project site by the Mesa Water District (MWD), which was formerly known as the Mesa Consolidated Water District. The entire SCPTC Project site is within the boundaries of the MWD. Existing MWD facilities within the SCPTC Project site are 12-inch interconnected water mains that run throughout the SCPTC Project site.

Sewer. The SCPTC Project site is served by both the Costa Mesa Sanitary District (CMSD) and the Orange County Sanitation District (OCSD). The Proposed Project would connect to the existing public sewer main along Avenue of the Arts.

Drainage. The OCMA site has a flat topography. Four localized low points occur on the OCMA site to facilitate drainage to four large catch basins. The existing plaza on the northern edge of the OCMA site utilizes long trench drains running north and south to keep slopes less than 2 percent in any

direction. The pathway on the western edge of the site slopes east towards the existing landscaping. The existing fire access lane along the southern edge of the OCMA site has a highpoint that directs stormwater toward catch basins at the western edge and toward Avenue of the Arts at the eastern end. The existing drainage system on the OCMA site currently has no stormwater treatment devices. Infiltration is not feasible due to the soil type within the OCMA site.

Utilities and Service Systems. Utilities for the Proposed Project would include electricity provided by Southern California Edison (SCE) and natural gas provided by the Southern California Gas Company (SCG). There are both underground and aboveground electrical facilities within the vicinity of the SCPTC Project site, including on Sunflower Avenue, Town Center Drive, Avenue of the Arts, and Bristol Street. Existing gas facilities include gas mains under Sunflower Avenue, Avenue of the Arts, and Bristol Street. All new utility infrastructure for electricity and natural gas would be installed underground within the OCMA site and would connect to existing facilities.

2.4.3 Construction Schedule

It is anticipated that the construction period for the Proposed Project would be approximately 24 months. Current projections are to commence construction in May 2019, with completion in May 2021.

2.5 GENERAL PLAN AND ZONING

2.5.1 General Plan

The Costa Mesa General Plan Land Use Map designates the OCMA site as Cultural Arts Center. The Proposed Project would not require a General Plan Amendment.

2.5.2 Specific Plan

The *North Costa Mesa Specific Plan* Land Use Map designates the OCMA site as Cultural Arts Center. The Proposed Project would not require a Specific Plan Amendment.

2.5.3 Costa Mesa Theater & Arts District Plan

The *Costa Mesa Theater and Arts District Plan* (Master Plan) designates the OCMA site as an "additional arts venue" for approximately 140,000 square feet of a new venue as a part of the Segerstrom Center for the Arts. The Proposed Project would require a project-specific Master Plan for the proposed art museum.

2.5.4 Zoning

The OCMA site is zoned Town Center District (TC). This district is intended to allow intensely developed mixed commercial and residential uses within a very limited geographical area bounded by Sunflower Avenue to the north, I-405 to the south, Bristol Street to the west, and Avenue of the Arts to the east. Developments within this designation can range from one- and two-story office and retail buildings to mid- and high-rise buildings. The Proposed Project would not require a zone change.

2.6 ANTICIPATED DISCRETIONARY APPROVALS AND MINISTERIAL PERMITS

It is anticipated that the Proposed Project may require the following discretionary approvals and ministerial permits:

- Preliminary Project Review;
- Master Plan;
- Approval of this Addendum to the SCPTC Program EIR;
- Project Approval;
- Grading, street and infrastructure permits;
- Utility permits, including sewer, water, and storm drain;
- Sign permits;
- Building permits; and
- Any other necessary discretionary or ministerial permits and approvals required for the construction or operation of the Proposed Project.

2.7 PROJECT DESIGN FEATURES

Project Design Features are specific design components of the Proposed Project that have been incorporated to reduce potential environmental impacts. As these features are part of the project design, they do not constitute mitigation measures.

2.7.1 SCPTC Program EIR

The SCPTC Program EIR identified the following project design features (PFs) and standard conditions (SCs) listed in Table 2.B as part of the project design for the SCPTC Project. Applicable project design features are indicated in bold in Table 2.B below and would also be incorporated as part of the Proposed Project. Similarly, the Mitigation Monitoring and Reporting Program included in the SCPTC Program EIR contained mitigation measures intended to address the impacts of the entire SCPTC Project. Applicable mitigation measures required to address potentially significant impacts of the Proposed Project are listed under each impact category in Section 3 below. Any mitigation measures included in the SCPTC Program EIR that do not apply to the Proposed Project are not discussed in this EIR Addendum.

Table 2.B: Project Design Features and Standard Conditions

Land Use	**SC: The Proposed Project will be subject to all of the applicable conditions and regulations set forth in the *North Costa Mesa Specific Plan*, the City of Costa Mesa zoning ordinance, and all requirements and enactments of federal, state, county, city and other governmental entities with jurisdiction. All such requirements and enactments of these agencies will become conditions of project implementation.**
Transportation and Circulation	PF: These are considered to be improvements that are integral to the Proposed Project, and are included in the traffic impact analysis prior to mitigation. The only design feature that falls into this category is the proposed street vacation of a portion of Town Center Drive between Park Center Drive and Avenue of the Arts (with related amendment to the City's Master Plan of Highways). SC: The long-range general plan improvements within the City of Costa Mesa, which are assumed in the background conditions, will be funded mostly by an areawide circulation system funding mechanism such as the city traffic impact fee program or special benefit district fees. The proposed South Coast Town Center project will be responsible for the payment of fees to the city of Costa Mesa as set forth below. • The Applicant shall participate in the implementation of Master Plan of Highways improvements through the payment of development impact fees in accordance with City of Costa Mesa Ordinance 93-11 and Resolution 93-43. The payment of development impact fees shall be submitted to the City of Costa Mesa Planning Division for the mitigation of off-site traffic impacts at the time of issuance of building permits. The required fee shall be paid pursuant to the prevailing schedule of charges adopted by the City Council in effect at the time of issuance of building permits. • The Applicant shall be responsible for the payment of fees in accordance with the San Joaquin Hills Transportation Corridor Fee Ordinance. Fees shall be paid to the Costa Mesa Planning Division prior to the issuance of building permits. • The Applicant shall comply with the Transportation Demand Management (TDM) requirements of the City of Costa Mesa TDM Ordinance (Costa Mesa Municipal Code §13-880 through 13-888) through the provision of one or more improvements set forth in Costa Mesa Municipal Code §13-884.
Air Quality	**SC: All construction contractors shall comply with South Coast Air Quality Management District (SCAQMD) regulations, including Rule 402, the Nuisance Rule, and Rule 403, Fugitive Dust. Prior to the issuance of a grading permit where grading permit will occur on more than 50 acres at one time, the Applicant shall submit a grading plan or grading contingency plan to the SCAQMD in accordance with Rule 403. All grading (regardless of size) shall apply best available control measures for fugitive dust in accordance with Rule 403. To ensure that the project is in full compliance with applicable SCAQMD dust regulations and that there is no nuisance impact off the site, the contractor will implement each of the following:** **a. Develop a project grading plan or contingency plan and submit the plan to the SCAQMD consistent with the provisions of Rule 403. (Note: only applicable where more than 50 acres are graded.)** **b. Moisten soil not more than 15 minutes prior to moving soil or conduct whatever watering is necessary to prevent visible dust emissions from exceeding 100 feet in any direction.** **c. Apply chemical stabilizers to disturbed surface areas (completed grading areas) within five days of completing grading or apply dust suppressants or vegetation sufficient to maintain a stabilized surface.** **d. Water excavated soil piles hourly or cover with temporary coverings.**

Table 2.B: Project Design Features and Standard Conditions

	e. Water exposed surfaces at least twice a day under calm conditions. Water as often as needed on windy days when winds are less than 25 miles per day [sic] or during very dry weather in order to maintain a surface crust and prevent the release of visible emissions from the construction sites. **f. Wash mud-covered tires and under-carriages of trucks leaving construction sites.** **g. Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or med [sic], which would otherwise be carried off by trucks departing project sites.** **h. Securely cover loads with a tight fitting tarp on any truck leaving the construction sites to dispose of debris.** **i. Cease grading during periods when winds exceed 25 miles per hour.** **SC: To reduce emissions from project-related vehicle trips, the Applicant shall adhere to the City of Costa Mesa Municipal Code §13-880 through 13-888 (Transportation Demand Management)[1] and the South Coast Air Quality Management District Regulation XV to reduce vehicle traveled to the maximum extent feasible. The code includes measures such as:** • **Preferential parking for carpool vehicles;** • **Bicycle parking and shower facilities;** • **Information provided to employees on transportation alternatives;** • **Rideshare vehicle loading areas;** • **Vanpool vehicle accessibility; and** • **Bus stop improvements.** **To reduce emissions from the power plant providing electricity to the site, prior to the issuance of building permits, the Applicant shall demonstrate to the satisfaction of the City of Costa Mesa Building Safety Division that the project shall adhere to Title 24 of the California Code, which requires new development to use energy efficient electrical and mechanical systems.**
Noise	**SC: The City of Costa Mesa has adopted a Noise Ordinance[2] that excludes control of construction activities during the hours between 7 a.m. and 8 p.m. All noise generating construction activities within 500 feet of residential areas should be limited to these times.** **SC: The Applicant shall prepare a truck route plan for review and approval by the City of Costa Mesa Engineering Division prior to the approval of the construction access permit. The truck route permit shall preclude truck routes through residential areas.** **SC: All activities on the project site are required to comply with the City of Costa Mesa Noise Ordinance.**

1 The City of Costa Mesa Municipal Code has been updated since the certification of the SCPTC Program EIR. The City's Municipal Code Article 12 (Transportation Demand Management) Section 13-197 (Facility Standards) would apply to the Proposed Project.

2 The City of Costa Mesa Noise Ordinance has been updated since the certification of the SCPTC Program EIR. The current Noise Ordinance would apply to the Proposed Project, which exempts construction noise during the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 6:00 p.m. on Saturday. Construction activities are prohibited on Sundays and the following specified federal holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

Table 2.B: Project Design Features and Standard Conditions

Geology and Soils	**SC: Compliance with Uniform Building Code provisions and standard subdivision engineering requirements, as specified in the city's conditions of approval, will satisfactory address the geotechnical issues described in the Program EIR.**
Hydrology and Water Quality	**PF: The project incorporates the following design features related to hydrology, flood hazard, and water quality:** • **Construction of the structural BMPs as identified in the SWPPP, and required by the NPDES Stormwater Permit issued to the project site by the County of Orange/City of Costa Mesa to capture urban runoff contaminants from developed areas prior to discharge to on-site storm drain facilities.** **SC: Compliance with Uniform Building Code[3] provisions and standard subdivision engineering requirements, as specified in the city's conditions of approval, will satisfactorily address the hydrology and drainage issues described in this section of the EIR.**
Public Services, Utilities, and Energy Consumption	Fire PF: A water delivery system designed to provide adequate fire flows to the project site and maintain a roadway system to provide adequate access to and through the site are a part of the design of the project. **SC: Concurrent with the issuance of building permits the Applicant shall pay the North Costa Mesa Fire Fee in effect at that time, as applicable.** SC: Each final master plan for the project site shall provide sufficient capacity for fire flows required by the Costa Mesa Fire Department. **SC: Vehicular access to all fire hydrants must be provided and maintained throughout construction.** Police **SC: As final building pans [sic] are submitted to the City of Costa Mesa for review and approval, the Police Department shall review all plans for the purposes of ensuring that the proper design features are incorporated into the building plans to increase safety.** **SC: Environmental design considerations shall be incorporated into the development and maintenance of the Proposed Project to deter such criminal activity as burglary and robbery.** **SC: All buildings shall be well marked with names and addresses to enhance rapid response, rooftops shall be marked for building identification by police helicopter, and there shall be designated emergency vehicle parking areas closed to buildings.** Water Service **PF: All on-site irrigation lines for recycled water would be identified so as to avoid connection would potable water lines.** **PF: Design requirements would be specified to the City for potable and recycled water plumbing systems within proposed buildings.** **PF: Prior to the issuance of an Application Permit the Application Plan Check/Inspection Fee and Performance Guarantee Bond shall be paid by the Applicant to the [Mesa Water District].**

[3] The State of California adopts a set of new construction codes every three years referred to as the California Building Standards Code. The 2016 California Building Code (CBC) includes the latest adopted standards that apply to the Proposed Project.

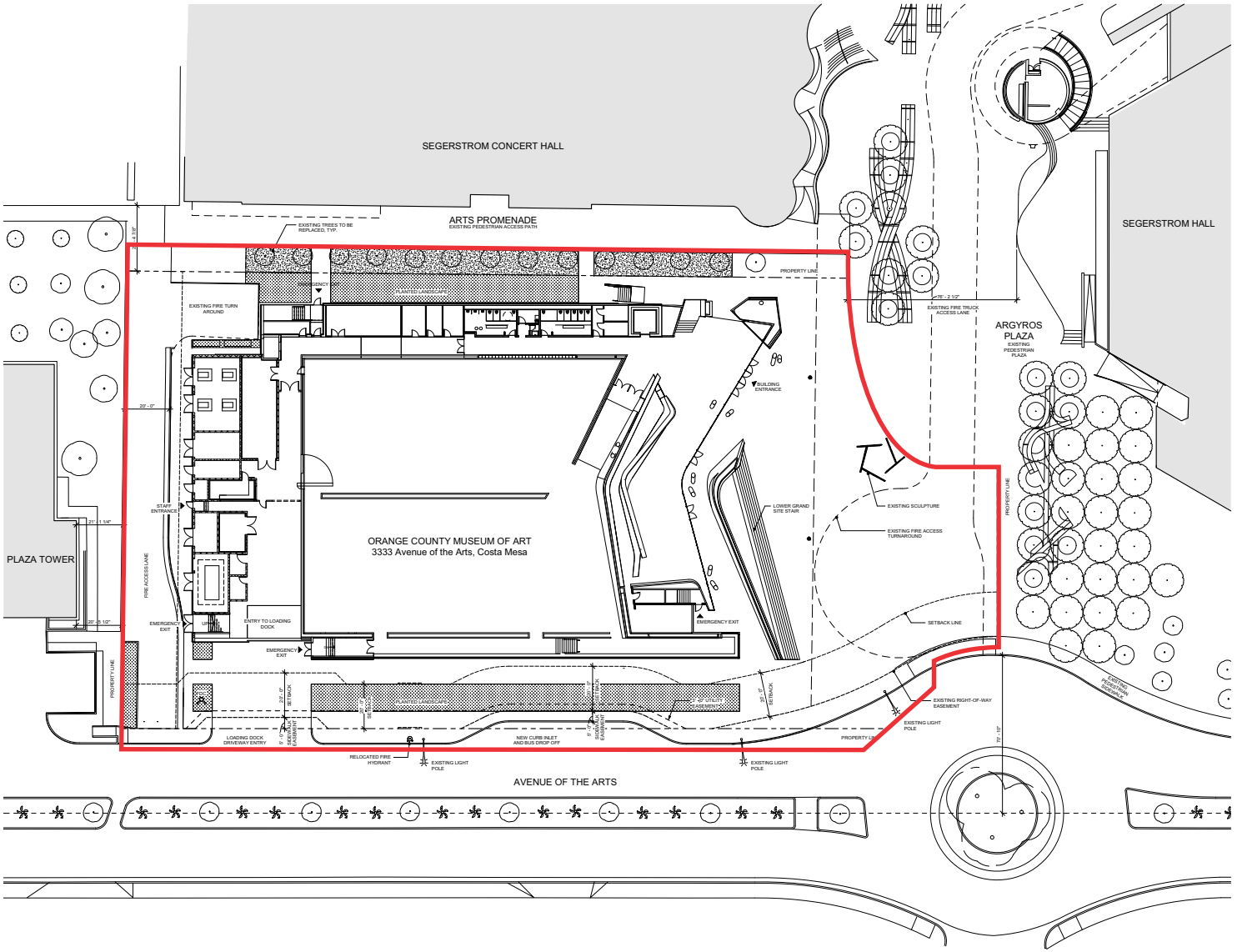
Table 2.B: Project Design Features and Standard Conditions

	PF: Prior to the approval of plans or the execution of a service agreement, a Development Impact Fee shall be collected by the [Mesa Water District] from the Applicant. **PF: Water conservation plans as required by the State of California shall be incorporated into building plans for the project. The measures to be implemented include, but are not limited to:** • **Low-flow fittings, fixtures, and equipment, including low-flush toilets and urinals (Health and Safety Code 17921.3)** • **Use of self close valves for drinking fountains and lavatory faucets in public facilities (Government Code Section 7800)** • **Insulation of water pipes and water heating systems (Title 24, California Administrative Code, Section 25352)** • **Use of low flow sprinkler heads in irrigation systems (California Conservation in Landscaping Act, AB 325)** <u>Wastewater Service</u> **PF: All on-site wastewater sewer lines will be provided and ties [sic] to the existing sewer line system.** **SC: Prior to the issuance of building permits, a letter shall be obtained from the CMSD and the OCSD verifying that there is sufficient capacity in receiving trunk lines to serve the Proposed Project.** **SC: Prior to issuance of connection permit(s), the Applicant shall pay all applicable fees.** <u>Solid Waste</u> **SC: Although no significant impacts to solid waste disposal have been identified, the following measures are recommended to minimize waste disposal and assist the City of Costa Mesa in compliance with AB 939.** • **In accordance with the requirements of AB 939, construction contractors shall reuse construction forms where practicable or applicable, attempt to balance soils on the site, minimize over cutting of lumber and polyvinyl chloride (PVC) piping where feasible, and reuse landscape containers to the extend [sic] feasible.** • **Recycling bins for glass, metals, paper, wood, plastic, green waste, and cardboard shall be placed on construction sits [sic] for use by construction workers.** • **In construction specifications and bid packages, require building materials made of recycled materials, to the extent feasible and economically practicable.** • **As a part of the ongoing operations of the SCPTC Project, the following measures shall be integrated into project design:** ○ **Source reduction, source separation and recycling measures shall focus on paper goods, yard waste, plastic, wood waste, and glass;** ○ **"Buy-recycled" policies, such as price preferences for recycled products;** ○ **Source reduction policies;** ○ **In-house recycling;** ○ **Drop-off sites;** ○ **Employee education;** ○ **Customer education; and** ○ **Manufacturing design modification to promote source reduction or recycling.**

Table 2.B: Project Design Features and Standard Conditions

	Electricity/Natural Gas SC: Prior to the recordation of the Final Master Plans, the Applicant shall provide the City of Costa Mesa a letter from Southern California Edison Company and Southern California Gas indicating the ability to provide service to the project. **SC: The Applicant shall comply with the guidelines provided by the Southern California Edison Company with respect to easement restrictions, construction guidelines, and potential amendments of right-of-way in any existing Southern California Edison easements on the project site.** • **SC: Prior to the issuance of each building permit, the building owner/developer shall submit plans showing that each structure will comply with the State Energy Efficiency Standards for nonresidential buildings (Title 24, Part 6, Article 2, California Code of Regulations).**
Aesthetics	**PF: The project incorporates the following design features related to aesthetics and visual resources:** • **The proposed SCPTC Project will incorporate signage, landscaping, and exterior lighting that comply with applicable city requirements.** • **The size, height, building materials, and orientation of structures associated with the SCPTC Project will conform with City requirements.** **SC: The SCPTC Project will be required to comply with Uniform Building Code provisions, standard subdivision engineering requirements, and applicable provisions of the Costa Mesa General Plan and *North Costa Mesa Specific Plan* as specified in the City's conditions of approval.**

*Project Features and Standard Conditions in **Bold** indicate these are applicable to the Proposed Project.



LSA

LEGEND

- OCMA Site

N

0 35 70

FEET

SOURCE: OCMA

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FIGURE 2.1
Page 1 of 2

Orange County Museum of Art Project

Proposed Site Plan - Ground Level

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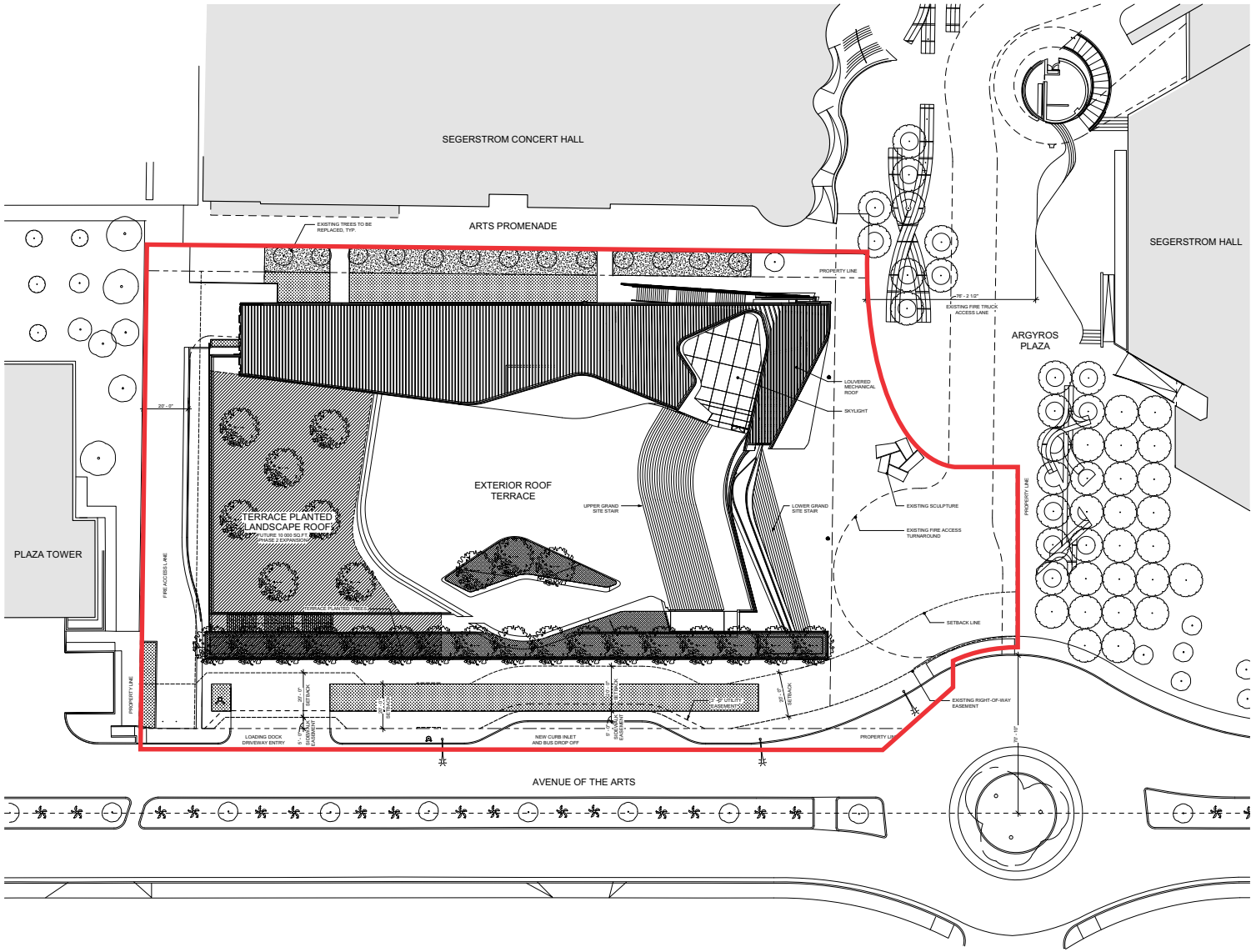

LSA

LEGEND

- OCMA Site

N

0 35 70

FEET

SOURCE: OCMA

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FIGURE 2.1
Page 2 of 2

Orange County Museum of Art Project

Proposed Site Plan - Terrace Level

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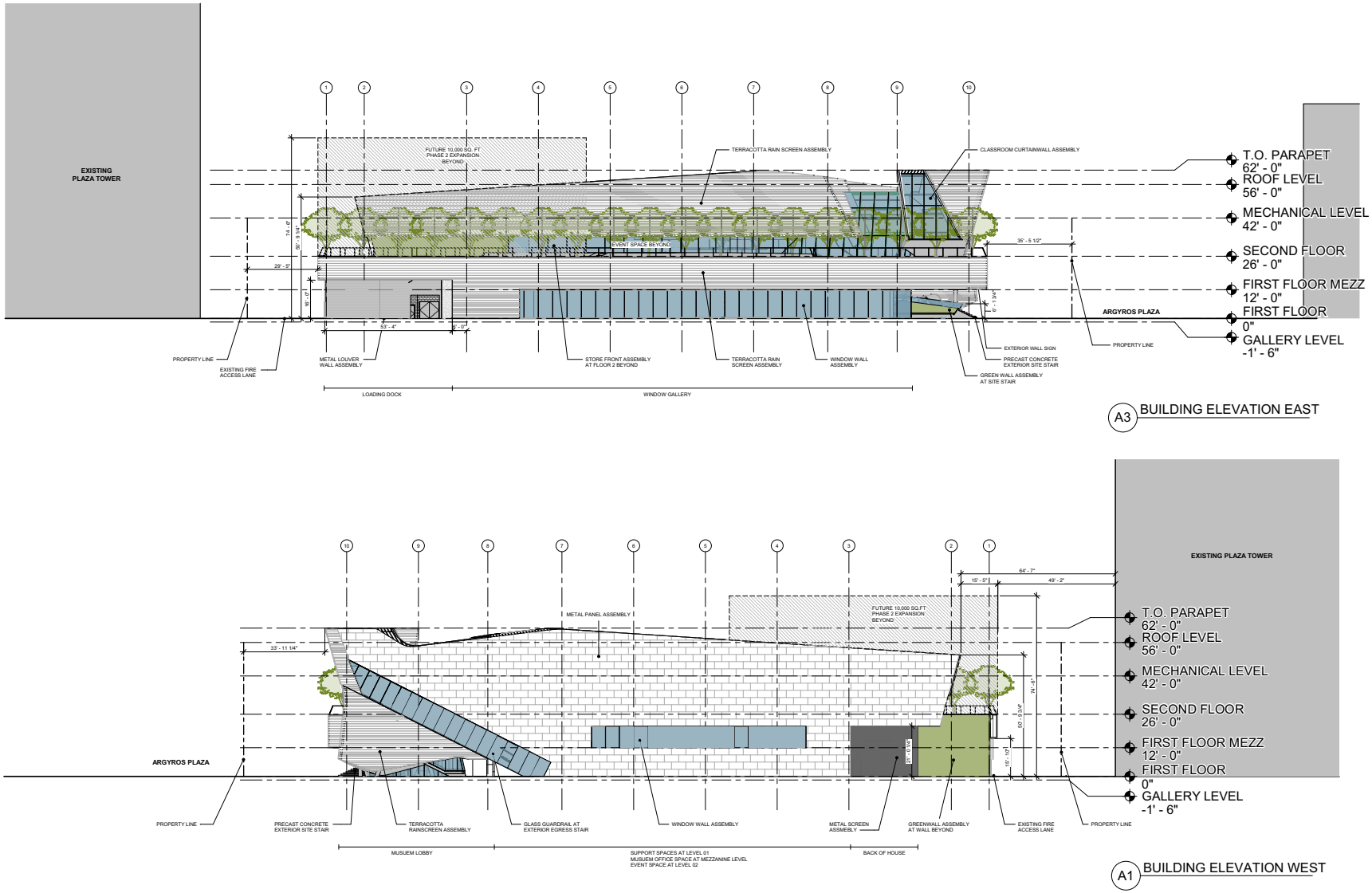

LSA

FIGURE 2.2
Page 1 of 3

Orange County Museum of Art Project

Elevations

SOURCE: OCMA

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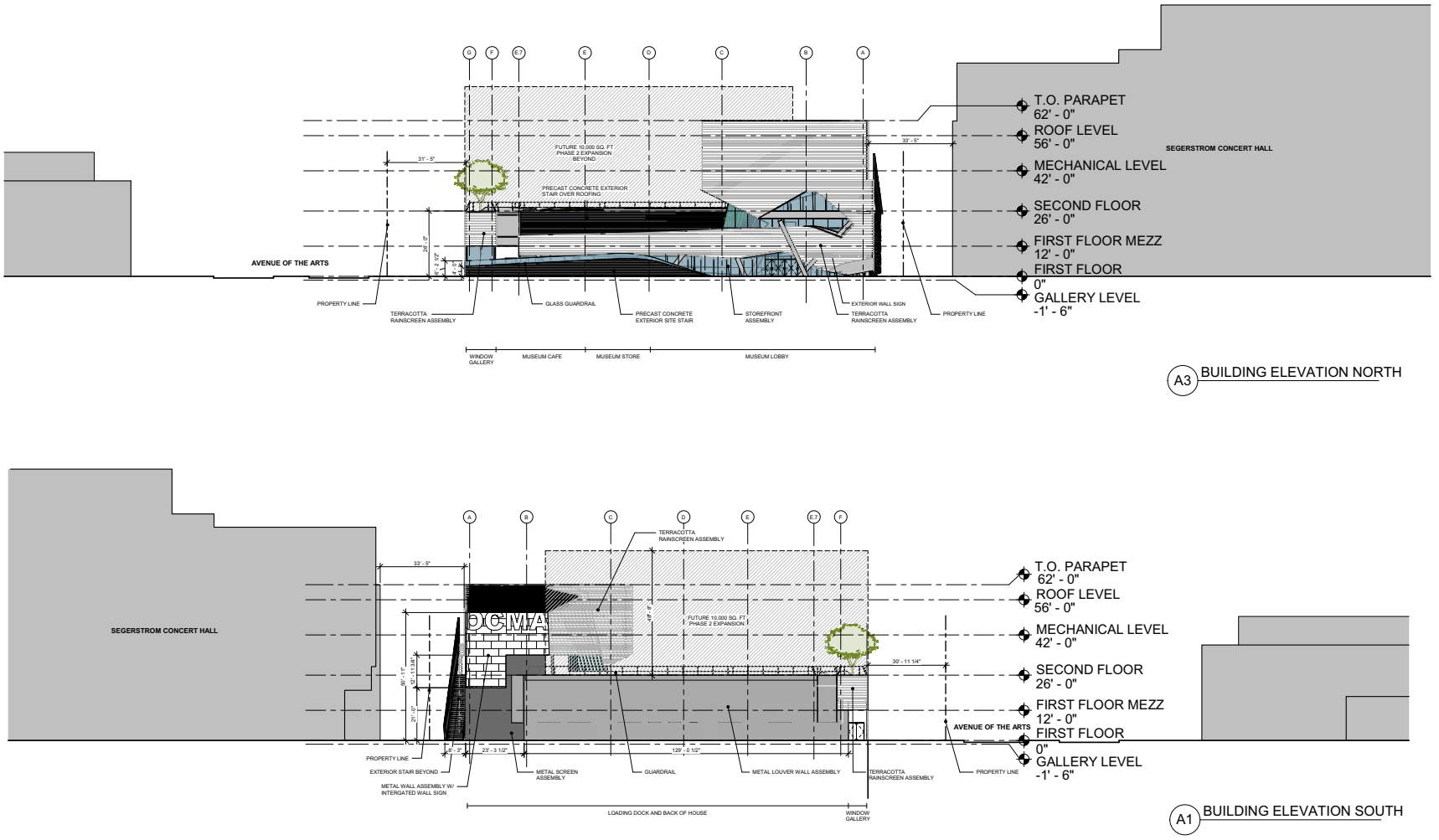

LSA

FIGURE 2.2
Page 2 of 3

Orange County Museum of Art Project

Elevations

SOURCE: OCMA

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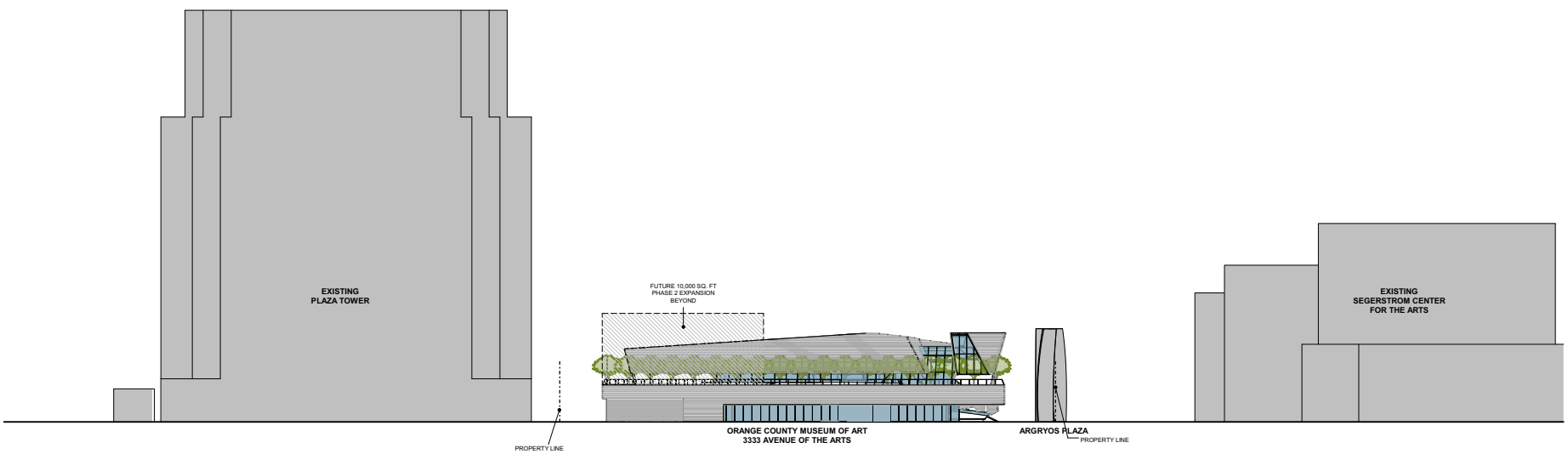

AVENUE OF THE ARTS - STREET ELEVATION
A1

LSA

FIGURE 2.2
Page 3 of 3

Orange County Museum of Art Project
Elevations

SOURCE: OCMA

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3.0 COMPARATIVE EVALUATION OF ENVIRONMENTAL IMPACTS

The following discussion contains an analysis of the potential impacts of the Proposed Project as compared to the project as analyzed in the SCPTC Program EIR, which was certified by the City on February 5, 2001. As explained in Chapter 1.0, this comparative analysis has been undertaken pursuant to the California Environmental Quality Act (CEQA) and to provide the City decision-makers with a factual basis for determining whether the proposed changes to the SCPTC Program EIR, changes in circumstances, or new information since the certification of the SCPTC Program EIR require additional environmental review or preparation of a subsequent or supplemental EIR. The basis for each finding is explained in the analysis that follows.

3.1 EFFECTS FOUND NOT TO BE SIGNIFICANT

In the course of evaluating impacts in the SCPTC Program EIR, the following effects in Table 3.1.A were found not to be significant in the Initial Study prepared for the SCPTC Program EIR:

Table 3.1.A: Effects Found Not To Be Significant in the SCPTC Program EIR

Environmental Topic	Effects Found Not To Be Significant
Agricultural and Forestry Resources	At the time the Notice of Preparation (NOP) for the SCPTC Program EIR was distributed in 2000, the SCPTC Project site was highly urbanized and did not contain any agricultural lands. The SCPTC Project site was not under a Williamson Act Contract. Therefore, this issue was not addressed in the SCPTC Program EIR.
Biological Resources	Due to the highly disturbed and graded character of the SCPTC Project site when the NOP for the SCPTC Program EIR was distributed, the potential for sensitive plant and/or animal species to inhabit the SCPTC Project site or surrounding area was determined to be remote and highly unlikely; therefore, the SCPTC Program EIR did not address the issue of biological resources.
Cultural Resources	A cultural resources record search was conducted and included in Appendix F of the SCPTC Program EIR. Due to the developed and highly disturbed nature of the SCPTC Project site when the NOP for the SCPTC Program EIR was distributed, the potential for archaeological, paleontological, and/or historical resources to be located on the SCPTC Project site was considered highly unlikely; therefore, the SCPTC Program EIR did not address the issue of cultural resources.
Mineral Resources	When the NOP for the SCPTC Program EIR was distributed in 2000, the SCPTC Project site was determined not to be within a mineral resource zone classified as significant or of unknown significance and, therefore, the City, as lead agency, determined there were no significant mineral resources within the SCPTC Project site as defined by the State of California. Therefore, this issue was not addressed in the SCPTC Program EIR.
Recreation	When the NOP for the SCPTC Program EIR was distributed in 2000, the SCPTC Project site did not include neighborhood or regional parks. The City determined that none of the uses involved in the implementation of the SCPTC Project would negatively affect existing neighborhood, regional parks, or private recreational amenities (e.g., "The California Scenario" outdoor sculpture garden, Town Center Open Space easement, etc.) in surrounding areas, nor affect the physical environment in relation to recreation uses. Therefore, the SCPTC Program EIR did not address the issue of recreation.
Native American Consultation under AB 52 / Tribal Cultural Resources	The NOP for the SCPTC Program EIR was circulated on April 10, 2000. AB 52 applies to any project for which an NOP was filed on or after July 1, 2015. Therefore, the SCPTC Program EIR Project was not required to comply with the provisions of AB 52, as this legislation went into effect after the circulation of the NOP.

AB = Assembly Bill
SCPTC Program EIR = Final Program EIR No. 1047 for the South Coast Plaza Town Center Project

Due to the relatively minor changes to the SCPTC Program EIR related to the reduction of the project footprint and reconfiguration of the art museum/academy, the environmental topics listed above will not be further discussed in this Addendum as the conclusions in the SCPTC Program EIR would remain applicable to the Proposed Project.

3.2 LAND USE AND RELEVANT PLANNING PROGRAMS

3.2.1 Environmental Setting

Existing land uses in the SCPTC Project site include mixed-use office, commercial, and cultural arts uses. Since the certification of the SCPTC Program EIR, the South Coast Plaza Cinema and Edwards Cinema have been removed and the Renee and Henry Segerstrom Concert Hall has been developed. The OCMA site remains an undeveloped property located in a highly developed area of the City of Costa Mesa.

Land uses surrounding the OCMA site are comprised of commercial, retail, residential, office, and visitor accommodations. Since the certification of the SCPTC Program EIR, mid-rise residential uses have been developed on the east side of Avenue of the Arts, directly across from the Plaza Tower. John Wayne Airport is still located approximately 1.5 miles south of the OCMA site.

Relevant land use plans that apply to the OCMA site that have been updated since the SCPTC Program EIR include:

- City of Costa Mesa 2015–2035 General Plan (2016)
- *North Costa Mesa Specific Plan* (last updated in 2016)
- Orange County Airport Environ Land Use Plan for John Wayne Airport (amended in 2008)

3.2.2 SCPTC Program EIR

The SCPTC Program EIR analyzed the development of various land uses within three distinct areas of the SCPTC Project site (Two Town Center [now known as Pacific Arts Plaza], the Segerstrom Center for the Arts, and the balance of the SCPTC Project site). Although the proposed land use mix within each area of the SCPTC Project site would vary, the SCPTC Program EIR concluded that the proposed uses would be compatible with the existing land uses within each area because they represent expansions of the same uses (type, height, and density) that existed within the SCPTC Project site prior to the approval of the SCPTC Project. In addition, the SCPTC Program EIR noted that the project would be required to comply with the development standards as set forth in the *North Costa Mesa Specific Plan*, the conditions of approval adopted as part of the SCPTC Project, and the mitigation measures included in the SCPTC Program EIR, which would ensure that the proposed uses would result in less than significant impacts with respect to land use incompatibilities.

The SCPTC Program EIR evaluated the compatibility of proposed cultural uses, including a proposed art museum/academy on the OCMA site, with the existing cultural/arts venues in the immediately surrounding area. The SCPTC Program EIR concluded that the new cultural uses would complement the existing cultural uses and be consistent with the General Plan policy to include the inclusion of art and aesthetically pleasing architecture into new development and redevelopment that would have the effect of perpetuating the image of the “City of the Arts.” As the SCPTC Program EIR project

would not introduce any new types of land uses within the SCPTC Project site, and because the project would result in less than significant shade and shadow impacts on the Lakes Apartment Complex to the east of the SCPTC Project site, the SCPTC Program EIR determined that the project would be compatible with surrounding land uses as well.

The SCPTC Program EIR concluded that the project would be inconsistent with the Urban Commercial Center land use designation included in the 1992 Costa Mesa General Plan and the *North Costa Mesa Specific Plan* and would require an amendment to those planning documents to create a new Cultural Arts Center land use designation. Implementation of the SCPTC Program EIR project would also require a revision to the trip budgets specific in the Costa Mesa General Plan and *Town Center Master Plan*. No significant impacts were identified related to consistency with these land use plans. The Costa Mesa General Plan was updated in 2016 (2015–2035 General Plan), which included the Cultural Arts Center designation and provided consistency for the land uses proposed for the OCMA site. The Amendment to the *North Costa Mesa Specific Plan* would correct any inconsistencies between then existing development and the Specific Plan. The SCPTC Program EIR project was determined to be consistent with other relevant planning programs that were in effect when the SCPTC Program EIR was prepared in 2000, including the City's Zoning Ordinance, the South Coast Air Quality Management District's (SCAQMD) Air Quality Management Plan, the Southern California Association of Governments' (SCAG) Regional Comprehensive Plan and Guide, and the SCAG Regional Transportation Plan. The SCPTC Program EIR identified a potentially significant impact related to compatibility with the Orange County Airport Environs Land Use Plan because the SCPTC Project would allow structures taller than 10 stories or 132.88 ft (Buildings A and F) within the Federal Aviation Administration (FAA) notice area for John Wayne Airport. However, the SCPTC Program EIR concluded that impacts would be less than significant with implementation of a mitigation measure that would require an applicant proposing structures that exceed 132.88 ft to submit a notice to the FAA and comply with any provisions and restrictions imposed by the FAA and the Orange County Airport Land Use Commission (ALUC).

3.2.3 Analysis of Project Changes

This section focuses on impacts to on-site and surrounding land uses, and impacts related to land use planning programs resulting from implementation of the Proposed Project on the SCPTC Project site as compared to the project analyzed in the SCPTC Program EIR. The analysis of impacts to on-site and surrounding land uses is based on the current environmental setting of the SCPTC Project site and the OCMA site.

3.2.3.1 Compatibility with On-Site Land Uses

The Proposed Project would be located in the same area within the SCPTC Project site as was previously analyzed in the SCPTC Program EIR (within the Segerstrom Center for the Arts area of the SCPTC Project site). The only change to the Proposed Project would be a reduction in the square footage and height of the art museum building on the OCMA site. The Segerstrom Center for the Arts area of the SCPTC Project site has been developed with an expanded repertory theater, construction of a symphony hall, and expansion of uses at the Segerstrom Hall, all of which are compatible with the Proposed Project. Similar to the SCPTC Program EIR project, development of the Proposed Project on the OCMA site would complement the existing on-site land uses in the

vicinity of the OCMA site and be consistent with the General Plan policy to encourage the inclusion of art and aesthetically pleasing architecture into new development and redevelopment that would have the effect of perpetuating the image of the "City of Arts." In addition, the Proposed Project would be required to comply with the development standards set forth in the *North Costa Mesa Specific Plan*, the conditions of approval adopted as part of the SCPTC Project, and the mitigation measures included in the SCPTC Program EIR. Therefore, impacts related to compatibility with on-site land uses would remain less than significant with implementation of the Proposed Project.

3.2.3.2 Compatibility with Surrounding Land Uses

As noted above, most of the land uses surrounding the SCPTC Project site identified in the SCPTC Program EIR are still present. The Proposed Project would be located in the same area of the SCPTC Project site as the art museum/academy analyzed in the SCPTC Program EIR. The Proposed Project's building height would be reduced from 80 ft to 75 ft, which is either the same or shorter compared to the heights of most off-site surrounding structures. A new multi-family residential structure (580 Anton) was recently developed on the northeast corner of Avenue of the Arts/Anton Boulevard intersection. Given its recent construction, the 580 Anton project did not exist when the SCPTC Program EIR was approved. The Proposed Project would be compatible with the multi-family residential uses included in the 580 Anton project; similar to compatibility with other existing similar land uses to the east. The Proposed Project's cultural arts uses are considered a compatible usage with existing and planned off-site land uses (residential, office, and commercial) to the north and east, similar to what was concluded in the SCPTC Program EIR. Therefore, impacts related to compatibility with surrounding off-site land uses would remain less than significant with implementation of the Proposed Project.

3.2.3.3 Related Planning Programs

The Proposed Project would be subject to the same related planning programs as were analyzed in the SCPTC Program EIR. The Costa Mesa General Plan Land Use Element contains policies that ensure land uses are located and implemented in a manner that preserves the residential character of the City, can be accommodated by existing and/or planned infrastructure, ensures the economic viability of the community, and minimizes impacts on existing and physical resources. Similar to the SCPTC Program EIR, the Proposed Project is generally consistent with the Land Use Element and is consistent with the goal to ensure that land use decisions made by the City are based on careful consideration of these factors. The SCPTC Program EIR required an amendment to the City of Costa Mesa's General Plan to create a new Cultural Arts Center land use designation. As this has already been approved, the Proposed Project would be consistent with the City of Costa Mesa General Plan Land Use Element, which has a Cultural Arts Center land use designation. The Proposed Project would also be consistent with the City's policy to encourage the integration of art and "aesthetically pleasing architecture" as the design of the Proposed Project would be modern, providing an active façade along both the Julianne and George Argyros Plaza and Avenue of the Arts with a dynamic exterior and glass storefront to provide direct views into the galleries from the sidewalk. To ensure compatibility, similar to the SCPTC Program EIR project, the Proposed Project would implement Mitigation Measure 1-2, which would require the City of Costa Mesa to review the final plans for the Proposed Project to ensure consistency with any adopted plans for the area.

The Proposed Project is one of the last features being developed as part of the SCPTC Project. The SCPTC Program EIR required a revision to the trip budgets specified in the *North Costa Mesa Specific Plan* and the *Town Center Master Plan* to be consistent with the City of Costa Mesa's Growth Management Element. As this has already been approved, the Proposed Project would not require any trip budget revisions. The Proposed Project is part of the phased development approach that was put in place for implementation of the SCPTC Program EIR Project to show consistency with Costa Mesa General Plan Policy 317, demonstrating the ability of the circulation system to support the proposed levels of development. Overall, similar to the SCPTC Program EIR Project, the Proposed Project would be consistent with the City of Costa Mesa's Growth Management Element.

In order to be consistent with the *North Costa Mesa Specific Plan*, the SCPTC Program EIR Project implemented an amendment to the Specific Plan to reflect revised budget trips, permitted floor area ratios, and permitted maximum building height. The Proposed Project would be developed within the SCPTC Project site, which already includes a cluster of cultural and arts venues. The Proposed Project would be easily integrated and compatible with the existing uses that were part of the SCPTC Program EIR Project, and would be consistent with the Specific Plan in that the land use would be complementary to surrounding development. The height of the Proposed Project would be reduced from 80 ft to 75 ft. The Proposed Project would be consistent with the maximum building height permitted by the SCPTC Program EIR Project and consistent with the *North Costa Mesa Specific Plan* building height requirements. Finally, implementation of the Proposed Project would not result in any nonconformity impacts, as the Proposed Project would be covered under the amendment to the *North Costa Mesa Specific Plan* that was implemented by the SCPTC Program EIR Project. The Proposed Project would have square footage of approximately 66,750 square feet on a 73,742-square-foot (1.7-acre) site, with a FAR of 0.91, which is consistent with the Cultural Arts Center land use designation that allows for a FAR of 1.77 and General Plan Amendment GP-06-02 for Sub-Area 2, which was updated to a maximum allowable FAR of 1.67. Overall, similar to the Approved Project, the Proposed Project would be consistent with the *North Costa Mesa Specific Plan.*

The Proposed Project would also be consistent with the City of Costa Mesa's Zoning Ordinance since implementation would not alter the Town Center district zoning of the OCMA site. The TC zoning designation allows for intensely developed mixed commercial uses that can range from one-and two-story office and retail buildings to mid- to high-rise buildings. The only change to the Proposed Project when compared to the SCPTC Program EIR Project is a reduction in building height from 80 ft to 75 ft and a reduction in building square footage. Overall, similar to the Approved Project, the Proposed Project would be consistent with the City of Costa Mesa Zoning Ordinance.

Regarding regional planning programs, the Proposed Project, similar to the Approved Project, would be consistent with the SCAQMD, SCAG's Regional Comprehensive Plan and Guide, and the Regional Mobility/Regional Transportation Plan as the land use is already approved and considered in those planning documents.

The Proposed Project would also be consistent with the Orange County Airport Environs Land Use Plan for building heights encroaching into airport conical surfaces. Any structure to be built within the SCPTC Project site that exceeds 132.88 ft would require approval of the FAA pursuant to FAR 77 as such a structure would encroach upon the 100:1 Notice Surface for John Wayne Airport

threshold. The structure associated with the Proposed Project would have a height of 75 ft, and as such, the Proposed Project would not encroach on the 100:1 Notice Surface for John Wayne Airport threshold, and would therefore not be subject to FAA approval pursuant to FAR 77. Overall, the Proposed Project would be consistent with the Orange County Airport Environs Land Use Plan.

Impacts related to compatibility with related planning programs would remain less than significant.

3.2.3.4 Cumulative Impacts

The study area for the Approved Project and Proposed Project relating to cumulative land use impacts takes into consideration both related projects and consistency with plans, policies, and programs of the City of Costa Mesa and responsible agencies. The OCMA site, as well as the planned structure, was included in the cumulative analysis for land use impacts as analyzed in the SCPTC Program EIR. The Proposed Project would be developed in the same area and would include a smaller building. The areas within and around the Proposed Project site have been developed with commercial, retail, hotel, office, and institutional uses (e.g., museums, and performing arts centers, etc.). To the north and to the east of the Project site, there are multi-family residential uses. Due to the types of land uses surrounding the Proposed Project, and because the Proposed Project is a reduction of size but the same use as considered in the SCPTC Program EIR, land use compatibility would not be cumulatively impacted by implementation of the Proposed Project.

3.2.4 Findings Related to Land Use and Relevant Planning Programs

No New Significant Effects Requiring Major EIR Revisions. Based on the foregoing analysis and information, there is no evidence that the Proposed Project requires a major change to the SCPTC Program EIR. The Proposed Project would not result in new significant environmental impacts related to land use and relevant planning programs, and there would not be a substantial increase in the severity of impacts described in the SCPTC Program EIR.

No Substantial Change in Circumstances Requiring Major EIR Revisions. With the exception of the removed cinemas, new concert hall, and new residential units, the OCMA site and surrounding area have not been developed or altered since the SCPTC Program EIR was prepared. In addition, these new uses were considered and approved as part of the larger SCPTC Program EIR project or Program EIR No. 1052 and its subsequent addenda. Because any new development that has occurred in the vicinity of the SCPTC project site has been subject to environmental review requirements, any environmental impacts associated with such development have already been evaluated and mitigated to the extent feasible. Further, the Proposed Project is located on the same museum site that was analyzed in the SCPTC Program EIR and there have been no substantial changes related to the circumstances of this site. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to land use and relevant planning programs that would require major changes to the SCPTC Program EIR.

No New Information Showing Greater Significant Effects than the SCPTC Program EIR. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the SCPTC Program EIR was certified, indicating that a new significant effect not reported in that document may occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new

significant impact to land use and relevant planning programs requiring major revisions to the SCPTC Program EIR.

No New Information Showing Ability to Reduce Significant Effects in SCPTC Program EIR. There are no alternatives to the project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to land use and relevant planning programs identified and considered in the SCPTC Program EIR.

3.2.5 Standard Conditions

Relevant standard conditions identified in the SCPTC Program EIR related to land use and relevant planning programs are identified in Table 2.B, above.

3.2.6 Mitigation Measures

The following mitigation measure was included in the SCPTC Program EIR pertaining to land use and relevant planning programs and are applicable to the Proposed Project:

Mitigation Measure Land Use 1-2	The City of Costa Mesa will review the final site plans for development within the South Coast Plaza Town Center (SCPTC) Project area for consistency with any adopted plans for the areas.

3.3 TRANSPORTATION AND CIRCULATION

3.3.1 Environmental Setting

The traffic analysis in the SCPTC Program EIR is based on the *City of Costa Mesa South Costa Plaza Town Center Traffic Analysis* (October 2000), prepared by Austin-Foust Associates, Inc. The following analysis of the Proposed Project is based primarily on the *Trip Generation Memorandum* (October 2018) prepared by LSA Associates, Inc., and provided in Appendix B.

Regional access to the OCMA site is provided by I-405 and SR-55. I-405 is located directly south of the SCPTC Project site and is approximately 0.2 mile south of the OCMA site, while SR-55 is located approximately 0.7 mile to the east. Local access to the project vicinity is provided by several arterial and commuter roadways, described in Section 5.2.2 of the SCPTC Program EIR. Section 5.2.2 also describes existing conditions for non-vehicular transportation. Since certification of the SCPTC Program EIR, the striped Class II bike lane on Sunflower Avenue has been implemented.

3.3.2 SCPTC Program EIR

The SCPTC Program EIR concluded that the project would result in significant impacts to four Costa Mesa intersections and six Santa Ana intersections. The implementation of mitigation measures identified in the SCPTC Program EIR at the four intersections in Costa Mesa would reduce those impacts to less than significant levels. The mitigation set forth in the SCPTC Program EIR included physical improvements as well as payment for the cost of planned improvements, plus a share of the cost of feasible improvements in addition to those already planned. The deletion of Town Center Drive from the City's Master Plan of Highways was determined to have a negligible impact outside

the SCPTC Project site, but a significant impact on one intersection within the SCPTC Project site. The amount of traffic associated with the SCPTC Program EIR Project that was anticipated to use arterials included in the Congestion Management Plan (CMP) highway system was less than the established threshold of three percent of the roadway's capacity. Therefore, no further analysis related to CMP consistency was required in the SCPTC Program EIR. The proposed expansion within the Segerstrom Center for the Arts area utilizes existing parking structures and existing access locations.

3.3.3 Analysis of Project Changes

Similar to the SCPTC Program EIR Project, construction of the Proposed Project would not require any street or lane closures, but may result in minor increases in traffic due to construction equipment delivery and construction worker trips. While temporary delays in traffic may occur due to oversized vehicles traveling at lower speeds on Avenue of the Arts, Park Center Drive, Town Center Drive, and Sunflower Avenue accessing the Proposed Project site, delays would be occasional and of short duration and would not be increased due to the changes in the Proposed Project as compared to the SCPTC Program EIR. Therefore, impacts related to construction traffic would remain less than significant.

As described in the *Trip Generation Memorandum* (2018) prepared for the Proposed Project, trip generation estimates were developed for operation of the Proposed Project, based on the reduction in size of the building to be developed on the OCMA site. The Proposed Project consists of a total of 66,750 square feet of museum exhibition and teaching space, which is just under one-half the size analyzed in the SCPTC Program EIR. The trip generation was compared for the previously anticipated and analyzed land use and the currently Proposed Project. The SCPTC Program EIR Project (the 140,000-square-foot museum/academy that would have been developed on the OCMA site) was anticipated to generate 7,874 average daily trips (ADT) with 146 trips generated during the a.m. peak hour and 1,022 trips generated during the p.m. peak hour. The 66,750-square-foot Proposed Project is anticipated to generate 3,754 ADT with 69 trips generated during the a.m. peak hour and 488 trips generated during the p.m. peak hour. Therefore, when compared to the SCPTC Program EIR, the Proposed Project would result in 4,120 fewer trips on a daily basis, with 77 fewer trips in the a.m. peak hour and 534 fewer trips in the p.m. peak hour. In addition, due to the reduced size of the Proposed Project, and other roadway improvements implemented since the time of the SCPTC Program EIR, the significant impacts identified for the four Costa Mesa intersections and six Santa Ana intersections would be less than significant under the Proposed Project, as all intersections analyzed in the vicinity of the project site are anticipated to operate at a LOS D or better.

In 2016, the City of Costa Mesa prepared a citywide traffic analysis analyzing the potential impacts of changes to the General Plan. This analysis included the SCPTC Project that included development at the OCMA site with a 140,000-square-foot museum development generating 7,874 daily trips. Intersections within and surrounding the project site were included in the analysis of the *City of Costa Mesa General Plan Update Traffic Analysis* (February 2016), prepared by Stantec. The analysis concluded that with implementation of the SCPTC Program EIR Project (which includes the 140,000-square-foot museum developed at the OCMA site) all of the nearby intersections would operate at acceptable level of service (LOS) A, B, C, or D conditions. That being concluded, the Proposed Project (the 66,750-square-foot museum) would generate 4,120 fewer trips per day, 77

fewer trips during the a.m. peak hour, and 534 fewer trips during the p.m. peak hour and would not contribute to the degradation of the LOS conditions at the nearby intersections that were studied in the *City of Costa Mesa General Plan Update Traffic Analysis* (2016). Therefore, the Proposed Project would not result in an increase to traffic impacts related to intersections or applicable plans, policies, and ordinances measuring the effectiveness of the circulation system, and impacts would remain less than significant.

According to the 2016 *Parking Study*, the current peak parking demands in the Town Center District, where the Proposed Project would be located, fall well below the current parking supply in Town Center. When the projected parking demand for the Proposed Project is incorporated, the parking supply still exceeds the demand. Similar to the SCPTC Program EIR Project, the Proposed Project would not include any on-site parking and would instead use the available capacity in the area. Several of the parking garages located in the Proposed Project area enable easy pedestrian access to the OCMA site from their locations. Therefore, impacts related to parking would remain less than significant.

3.3.4 Cumulative Impacts

The cumulative forecast in the SCPTC Program EIR was developed using the 2020 General Plan build-out forecast using assumptions based on the designated General Plan land uses in the project area and surrounding land uses. Reasonably foreseeable (or related) projects consist of projects that are approved but not yet built, as well as projects that are in various stages of the application and approval process but have not yet been approved. The SCPTC Program EIR concluded the Project's contribution to long-range cumulative impacts to intersection operations would be mitigated to less than significant. However, two intersections in Santa Ana (Main Street/MacArthur Boulevard and Main Street/Sunflower Avenue), would operate at LOS F under future build-out conditions. Therefore, because the City of Costa Mesa cannot ensure improvements within another jurisdiction, significant and unavoidable impacts to these intersections were identified in the SCPTC Program EIR. As stated in the *Trip Generation Memorandum* (2018) prepared for the Proposed Project, the Proposed Project would result in 4,120 fewer trips on a daily basis than the SCPTC Program EIR Project, with 77 fewer trips in the a.m. peak hour and 534 fewer trips in the p.m. peak hour. Therefore, as the Proposed Project would result in even less traffic impacts than the Approved Project, cumulative impacts at the two Santa Ana intersections would remain significant and unavoidable; however, the Proposed Project would result in fewer and not substantially greater cumulatively considerable traffic impacts.

3.3.5 Findings Related to Traffic

No New Significant Effects Requiring Major EIR Revisions. Based on the foregoing analysis and information, there is no evidence that the Proposed Project requires a major change to the SCPTC Program EIR. The Proposed Project would not result in new significant environmental impacts related to transportation and traffic, and there would not be a substantial increase in the severity of impacts described in the SCPTC Program EIR.

No Substantial Change in Circumstances Requiring Major EIR Revisions With the exception of the removed cinemas, new concert hall, and new residential units, the OCMA site and surrounding area have not been developed or altered since the SCPTC Program EIR was prepared. In addition, these

new uses were considered and approved as part of the larger SCPTC Program EIR project or Program EIR No. 1052 and its subsequent addenda. Because any new development that has occurred in the vicinity of the SCPTC project site has been subject to environmental review requirements, any environmental impacts associated with such development have already been evaluated and mitigated to the extent feasible. Further, the Proposed Project is located on the same museum site that was analyzed in the SCPTC Program EIR and there have been no substantial changes related to the circumstances of this site. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to transportation and traffic that would require major changes to the SCPTC Program EIR.

No New Information Showing Greater Significant Effects than the SCPTC Program EIR. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the SCPTC Program EIR was certified, indicating that a new significant effect not reported in that document may occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to transportation and traffic requiring major revisions to the SCPTC Program EIR.

No New Information Showing Ability to Reduce Significant Effects in SCPTC Program EIR. There are no alternatives to the project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to transportation and traffic identified and considered in the SCPTC Program EIR.

3.3.6 Standard Conditions

Relevant standard conditions identified in the SCPTC Program EIR related to transportation and circulation are identified in Table 2.B, above.

3.3.7 Mitigation Measures

The following mitigation measures were identified in the SCPTC Program EIR and would be applicable to the Proposed Project, unless the improvements identified in these measures have already been implemented:

Mitigation Measure Transportation 1	As the subsequent phases of the SCPTC project are submitted to the City of Costa Mesa, the project traffic study area intersections' performance shall be monitored against the City's Annual Development Phasing and Monitoring Report to determine when future improvements are required.
Mitigation Measures Transportation 2	The project applicant shall be required to fund all costs associated with implementation of intersection improvements to the following intersections: Bristol/ Segerstrom, Bristol/MacArthur, Flower/MacArthur, SR-55 NB ramps/MacArthur, and Main/Sunflower. Impacts to intersections at Main/MacArthur and Main/ Sunflower would be significant with or without project

implementation and are considered significant and unavoidable impacts. These circulation improvements shall be completed prior to the creation of project-specific impact at these locations. The timing of these improvements will be determined by the City of Costa Mesa based on intersection performance monitoring as set forth in Traffic Mitigation Measure 1.

The following intersection improvements are required:

- Bristol/Sunflower: Convert 3rd northbound through lane to a shared through/right turn lane (provide 2NBL, 2NBT, 1 shared NBT/NBR, and 1 NBR).
- Fairview/South Coast: Covert 2nd eastbound through lane to a shared through/right turn lane (provide 1 EBL/1 EBT, 1 shared EBT/EBR, and 1 EBR).
- Bristol/Paularino: Add a southbound right turn lane. Add a second westbound right turn lane shown in the current general plan.
- Park Center/Sunflower: Convert northbound through lane to a shared left-turn/through lane to a shared left-turn through lane to a right-turn lane. Requires split phasing in the north/south direction (provide 1 NBL, 1 shared NBL/NBT/NBR, 1 shared SBL/SBT, and 1 SBR).
- Main/MacArthur: Provide right-turn overlap signal phasing for northbound and southbound right turns.
- Main and Sunflower: Convert 3rd southbound lane to a right turn lane with overlap phasing.
- Bristol/Segerstrom: General Plan Improvements: Add a second left turn for each approach, 3rd and 4th eastbound through lanes, 3rd westbound through lane, and right-turn lanes for each approach. Non-General Plan Improvements: Add a 4th westbound through lane.
- Bristol/MacArthur: General Plan Improvements: Add right turn lanes for southbound, eastbound, and westbound approaches. Non-General Plan Improvements: Add 4th eastbound and westbound

through lanes, add right turn overlap for westbound right turn lanes.

- Flower/MacArthur: General Plan Improvements: None. Non-General Plan Improvements: Add northbound and westbound right turn lanes.
- SR-55 NB Ramps and MacArthur: General Plan Improvements: None. Non-General Plan Improvements: Add 3rd northbound right turn lanes.

3.4 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

3.4.1 Environmental Setting

Please refer to Section 5.3.1, Air Quality, Existing Conditions, of the SCPTC Program EIR, for a summary of the existing environmental setting for Air Quality. The air quality analysis in the SCPTC Program EIR is based on the *Air Quality Assessment* (June 2000) prepared by Mestre Greve Associates. The following analysis of the Proposed Project is based on the *Air Quality and Greenhouse Gas Memorandum* (November 2018) prepared by LSA Associates, Inc. (LSA) and provided in Appendix A. Refer to the *Air Quality and Greenhouse Gas Memorandum* (2018) for additional background information concerning the regulatory framework and existing setting related to air quality and greenhouse gas (GHG) emissions, as well as a description of the methodology used to complete the emissions modeling presented below. Modeled air emissions are consistent with the trip generation estimates developed for the Proposed Project, as detailed in the *Trip Generation Memorandum* (November 2018), also prepared by LSA and provided in Appendix B.

The OCMA site is located within the City of Costa Mesa, which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). However, the SCAQMD reports to the California Air Resources Board (CARB) and all emissions are also governed by the California Ambient Air Quality Standards (CAAQS) as well as the National Ambient Air Quality Standards (NAAQS).

The OCMA site remains unimproved, is not currently utilized for any land use or activity, and does not currently produce GHG emissions.

3.4.2 SCPTC Program EIR

The SCPTC Program EIR assumed that construction of the SCPTC Project would require grading on 8.2 acres of the 54-acre SCPTC project site. Temporary impacts from project construction included fugitive dust, as well as carbon monoxide (CO), reactive organic gases (ROG), oxides of sulfur (SO_X), particulate matter less than 10 microns in size (PM_{10}) and oxides of nitrogen (NO_X) emissions. Construction emissions were calculated assuming specific construction equipment, a one-year construction period, and assumptions for construction worker vehicle travel. PM_{10} and NO_X construction emissions were considered to be significant. Operational with project CO concentrations were projected to the same as the future no project CO concentrations and the

SCPTC project's contribution to CO levels was considered less than significant. As the SCPTC project would not increase CO levels, it was not considered to create a significant local air quality impact.

Long-term regional emissions would be generated mostly by motor vehicles, with additional emissions resulting from natural gas for space heating and the generation of electricity. The daily emissions from the SCPTC project were determined to be significant for CO, ROG, and NO_X emissions.

The SCPTC Program EIR concluded that short-term construction emissions would be reduced to an extent but would remain significant, specifically for NO_X and PM_{10}. Future with project CO emissions were not projected to increase above CEQA's measurable increase levels and are therefore were not considered significant. Long-term regional air quality impacts would be reduced with mitigation measures but would still be significant, specifically for CO, NO_X, and ROG. The SCPTC project included mitigation measures to reduce air quality emissions to be consistent with the Air Quality Management Plan (AQMP).

3.4.3 Analysis of Project Changes

3.4.3.1 Construction Emissions

Short-Term Construction Emissions. Emissions of pollutants would occur during construction of the Proposed Project from soil disturbance and equipment exhaust. Major sources of emissions during construction include: (1) exhaust emissions from construction equipment and vehicles; and (2) fugitive dust generated by grading activities, construction vehicles, and equipment traveling over exposed surfaces.

Peak daily emissions associated with the on-site construction equipment, on-road haul trucks and vendor trips, and fugitive dust emissions during each of the construction tasks were calculated using the most recent version of the California Emission Estimator Model (CalEEMod, Version 2016.3.2). Construction would occur in five phases. The construction equipment list in CalEEMod is used to calculate on-site emissions for each construction phase. The total peak-day construction emissions for each phase are summarized in Table 3.4.A and detailed in Appendix A. The emissions listed in Table 3.4.A represent the maximum daily emissions generated during each construction phase.

Because on-site construction operations must comply with dust control and other measures prescribed by SCAQMD Rule 403, compliance with dust control rules is assumed in the analysis.

The SCPTC Program EIR concluded that implementation of the SCPTC Project would result in emissions of volatile organic compounds (VOC) and NO_X that would contribute to the O_3, NO_2, PM_{10}, and particulate matter less than 2.5 microns in size ($PM_{2.5}$) nonattainment designations of the Basin. Therefore, construction activities related to the Proposed Project would contribute to the previously identified significant regional air quality impacts. However, as shown in Table 3.4.A, construction emissions associated with the Proposed Project would not exceed the SCAQMD daily emissions thresholds; additionally, emissions associated with the smaller art museum included in the Proposed Project would be lower than those of the larger museum included in the SCPTC Project. Therefore, the Proposed Project would not contribute to new or worsening impacts than those identified in the SCPTC Program EIR, and no additional mitigation is required.

Table 3.4.A: Short-Term Regional Construction Emissions

Construction Phase	Total Regional Pollutant Emissions (lbs/day)							
	VOC	NO_X	CO	SO_2	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	1.76	19.51	8.25	0.02	2.35	0.88	1.18	0.81
Grading	1.46	16.07	6.97	0.02	2.01	0.74	1.01	0.68
Building Construction	2.47	17.34	15.05	0.03	0.38	0.93	0.10	0.89
Paving	0.90	8.49	9.41	0.01	0.15	0.47	0.04	0.43
Architectural Coatings	62.15	1.70	2.08	0.00	0.07	0.11	0.02	0.11
Peak Daily Emissions	**62.15**	**25.84**	**24.46**	**0.04**	**3.23**		**1.99**	
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**		**55**	
Exceedance?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA Associates, Inc. (November 2018).
Note: Column totals may not add due to rounding from the model results.
CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds

Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, as well as cut-and-fill grading operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions at the time of construction. All development projects in the SCAQMD, including the Proposed Project, are required to comply with SCAQMD Rule 403 to control fugitive dust. The PM_{10} and $PM_{2.5}$ portions of the fugitive dust emissions are included in Table 3.4.A. As indicated in this table, compliance with SCAQMD Rule 403 would ensure that fugitive dust (PM_{10} and $PM_{2.5}$) emissions would be below SCAQMD thresholds; in addition, the smaller museum would have fewer emissions than those identified for the larger project analyzed in the SCPTC Program EIR.

Localized Significance Construction Emissions. SCAQMD has issued guidance on applying CalEEMod modeling results to localized significance thresholds (LST) analyses. LSTs represent the maximum emissions from a project that would not be expected to result in an exceedance of the federal or State ambient air quality standards. LSTs are based on the ambient concentrations of that pollutant within the project's Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For this project, the appropriate SRA is North Coastal Orange County (Area 18).

The SCPTC Program EIR did not provide an LST analysis. Table 3.4.B shows that the calculated emissions rates for the proposed on-site construction activities are below the LSTs for CO, NO_X, PM_{10}, and $PM_{2.5}$ at the nearest sensitive receptor, which is a residential apartment complex approximately 75 ft to the east of the OCMA site. Therefore, with compliance with SCAQMD Rule 403, the Proposed Project would not cause any short-term localized air quality impacts.

Table 3.4.B: Summary of On-Site Construction Emissions, Localized Significance

Construction	Emission Rates (lbs/day)			
	NO_X	CO	PM_{10}[1]	$PM_{2.5}$[1]
On-Site Construction Emissions	19	13	3.1	2.0
Localized Significance Threshold	**119**	**868**	**6.1**	**4.4**
Exceedance?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (November 2018).
Notes: On-site emissions represent maximum daily construction emissions.
SRA – North Coastal Orange County Area, 1.7 acres, receptors at 75 feet.
[1] Total PM_{10} and $PM_{2.5}$ daily emissions with fugitive dust mitigation measures implemented.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size

3.4.3.2 Operational Emissions

Long-Term Operational Emissions. Long-term air pollutant emission impacts are those associated with stationary sources and mobile sources involving any changes related to the project. The Proposed Project would result in net increases in both stationary- and mobile-source emissions over existing conditions. The stationary-source emissions would come from area and energy sources.

In 2016, the City updated its General Plan and estimated that the 140,000-square-foot art museum/ academy building included as part of the SCPTC Project would generate approximately 7,874 ADTs. According to the *Trip Generation Memorandum* (2018), the smaller 66,750-square-foot art museum included in the Proposed Project is anticipated to generate 3,754 ADTs (or 4,120 fewer trips per day than the larger museum evaluated in the SCPTC Program EIR). The long-term operational emissions associated with the Proposed Project for each criteria pollutant, which are shown in Table 3.4.C, were modeled in CalEEMod using this lower trip rate. Table 3.4.C shows that the regional operational emissions associated with the smaller art museum included in the Proposed Project would be lower than those of the larger museum included in the SCPTC Project and would not exceed any of the corresponding SCAQMD daily emissions thresholds for any criteria pollutants.

The SCPTC Program EIR concluded that implementation of the SCPTC Project would result in a significant and unavoidable air quality impact for criteria air pollutants because it would significantly contribute to the nonattainment designations of the Basin. As shown in Table G, the SCAQMD emission thresholds would not be exceeded for criteria pollutants by the Proposed Project-related emissions. Therefore, long-term air quality impacts related to the Proposed Project would not result in new or worsening impacts than those identified in the SCPTC Program EIR.

Localized Significance Operational Emissions. Table 3.4.D shows the calculated emissions for the proposed operational activities compared with the appropriate LSTs. By design, the localized impacts analysis only includes on-site sources; however, the CalEEMod outputs do not separate on-site and off-site emissions for mobile sources. For a worst-case scenario assessment, the emissions shown in Table 3.4.D include all on-site Proposed Project-related stationary sources and 5 percent of the Proposed Project-related new mobile sources, which is an estimate of the amount of Proposed

Table 3.4.C: Regional Operational Emissions

Source	Pollutant Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Previously Analyzed Project (140,000-square-foot art museum/academy)						
Area	3.13	<0.01	0.01	0	<0.01	<0.01
Energy	0.09	0.79	0.66	<0.01	0.06	0.06
Mobile	11.57	56.45	125.52	0.46	36.49	10.00
Total Previously Analyzed Project Emissions	**14.79**	**57.24**	**126.19**	**0.46**	**36.55**	**10.06**
Proposed Project (66,750-square-foot art museum)						
Area	1.49	<0.01	<0.01	0	<0.01	<0.01
Energy	0.04	0.37	0.31	<0.01	0.03	0.03
Mobile	5.52	26.91	59.84	0.22	17.40	4.77
Total Proposed Project Emissions	**7.05**	**27.29**	**60.15**	**0.22**	**17.43**	**4.80**
Total Net Emissions	**-7.74**	**-29.96**	**-66.04**	**-0.24**	**-19.16**	**-5.26**
SCAQMD Thresholds	**55.0**	**55.0**	**550.0**	**150.0**	**150.0**	**55.0**
Exceedance?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (November 2018).
Note: Column totals may not add due to rounding from the model results.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds

Project-related new vehicle traffic that would occur on site. A total of 5 percent is considered conservative because the average trip lengths assumed are 16.6 miles for home to work, 8.4 miles for home to shopping, and 6.9 miles for other types of trips. The average on-site distance driven is unlikely to be even 1,000 ft, which is approximately 2 percent of the total miles traveled. Considering the total trip length included in CalEEMod, a 5 percent assumption is conservative.

Table 3.4.D shows that the operational emission rates would not exceed the LSTs for the closest sensitive receptor, the residential apartment complex located 75 ft (23 m) to the east of the OCMA site.

Table 3.4.D: Long-Term Operational Localized Impacts Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Total On-Site Emissions	1	3	0.8	0.2
LST Thresholds	**119**	**868**	**1.7**	**1.7**
Exceedance?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (November 2018).
Notes: Column totals may not add due to rounding from the model results.
SRA – North Coastal Orange County Area, 1.7 acres, receptors at 75 feet.
CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance thresholds
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SRA = Source Receptor Area

Odors. Odor complaints are most commonly associated with agricultural land uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, and landfills, etc. Similar to the SCPTC Project, the Proposed Project would not include any of those types of uses; therefore, the Proposed Project would not result in a new or worsening significant impact related to odors.

Air Quality Management Plan Consistency. The land use designation for the OCMA site is "Cultural Arts Center" in the City's General Plan. The Proposed Project involves the construction and operation of a smaller museum than was included as part of the SCPTC Project; therefore, it is consistent with the existing General Plan designation for the site, which was approved as part of the actions associated with the SCPTC Project. Because the Proposed Project would be consistent with the General Plan designation for the OCMA site, the Proposed Project would be consistent with the current regional AQMP and the Proposed Project would not result in a new or worsening impact related to implementation of the AQMP.

Long-Term Microscale (CO Hot-Spot) Analysis. The SCPTC Program EIR concluded that CO hot spots are not an environmental impact of concern for the SCPTC Project and localized air quality impacts related to CO hot spots were identified as less than significant.

Because the trip generation potential of the Proposed Project is lower than estimated for the art museum included in the SCPTC Program EIR, the net decrease of new trips in the AM and PM peak hours would not cause worsening of congestion in the vicinity of the SCPTC Project site.

Therefore, the Proposed Project can be implemented in the build-out scenario with no significant peak-hour intersection impacts. Given the extremely low level of CO concentrations in the vicinity of the SCPTC Project site and the lack of traffic impacts at any intersections, Proposed Project-related vehicles are not expected to contribute significantly to CO concentrations exceeding the State or federal CO standards. Because no CO hot spot would occur, as identified in the SCPTC Program EIR, there would be no Proposed Project-related impacts on CO concentrations.

3.4.3.3 Greenhouse Gas Impact Analysis

The SCPTC Program EIR did not analyze the SCPTC Project's GHG emissions because the CEQA guidance in effect at that time did not require lead agencies to prepare such an analysis in their CEQA documentation. Nevertheless, GHG emissions are presented in this Addendum to fully disclose those impacts. This analysis does not present new information that would not have been previously known to the City, as the lead agency under CEQA for the SCPTC Project, because the scientific link between GHGs, climate change, and new development was understood at the time the SCPTC Project was under environmental review, even though CEQA did not require an analysis if GHGs at that time. Therefore, the City was reasonably aware that the SCPTC Project would create GHG emissions when it approved the SCPTC Project in 2001.

Construction GHG Emissions. During construction of the Proposed Project, GHGs would be emitted through the operation of construction equipment and from worker and vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Furthermore, CH_4 is emitted

during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

Table 3.4.E lists the annual GHG emissions from construction of the Proposed Project.

Table 3.4.E: Construction Greenhouse Gas Emissions

Construction Phase - Year	Greenhouse Gas Emissions (MT/yr)			
	CO_2	CH_4	N_2O	CO_2e
Site Preparation - 2019	1.63	<0.01	0	1.64
Grading - 2019	2.70	<0.01	0	2.72
Building Construction - 2019	201.82	0.03	0	202.63
Building Construction - 2020	107.49	0.02	0	107.91
Paving - 2020	6.52	<0.01	0	6.57
Architectural Coating - 2020	1.57	<0.01	0	1.58
Total Construction Emissions	**321.74**	**0.05**	**0**	**323.04**
Amortized over 30 years	**11**	**<0.01**	**0**	**11**

Source: Compiled by LSA (November 2018).
Note: Column totals may not add due to rounding from the model results.
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide

Per SCAQMD guidance,[4] due to the long-term nature of GHGs in the atmosphere, instead of determining significance of construction emissions alone, the total construction emissions are amortized over 30 years (an estimate of the life of the Proposed Project), added to the operational emissions, and compared to the applicable GHG significance threshold. Amortized construction GHG emissions from Table 3.4.E (11 metric tons of carbon dioxide equivalent per year [MT CO_2e/yr]) have been added to the operational GHG emissions in Table 3.4.F below.

Operational GHG Emissions. The Proposed Project consists of construction and operation of a museum. The total net annual GHG emissions were calculated by subtracting the GHG emissions from the previously planned 140,000-square-foot art museum/academy from the total GHG emissions associated with the proposed 66,750-square-foot art museum included in the Proposed Project.

The GHG emission estimates presented in Table 3.4.F show the emissions from the previously approved art museum, the emissions associated with the Proposed Project at opening, and the net change in GHG emissions. The total net annual GHG emissions, including amortized construction emissions from the Proposed Project, would be a negative 3,974 MT CO_2e/yr. Therefore, annual GHG emissions would be below the screening threshold of 3,000 MT CO_2e/yr for commercial projects. The Proposed Project would not impede or interfere with achieving the State's emission reduction objectives in Assembly Bill (AB) 32 (and EO S-03-05).

[4] SCAQMD. 2008. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules, and Plans. Website: http://www.aqmd.gov/docs/default-source/ceqa/ handbook/ greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2 (accessed April 2018).

Table 3.4.F: Operational Greenhouse Gas Emissions

Source	Pollutant Emissions (MT/yr)					
	Bio- CO_2	NBio- CO_2	Total CO_2	CH_4	N_2O	CO_2e
Previously Analyzed Project (140,000-square-foot art museum/academy)						
Area Sources	0	<0.01	<0.01	<0.01	0	<0.01
Energy Sources	0	156.14	156.14	<0.01	<0.01	157.07
Mobile Sources	0	7,360.24	7,360.24	0.38	0	7,369.66
Waste Sources	0.78	0	0.78	0.05	0	1.94
Water Usage	19.13	0	19.13	1.97	0.05	82.09
Total Previously Analyzed Project Emissions	**19.91**	**7,516.39**	**7,536.30**	**2.39**	**0.05**	**7,610.76**
Proposed Project (66,750-square-foot art museum)						
Total Construction emissions amortized over 30 years	**0**	**8.36**	**8.36**	**<0.01**	**0**	**8.39**
Area Sources	0	<0.01	<0.01	0	0	<0.01
Energy Sources	0	74.45	74.45	<0.01	<0.01	74.89
Mobile Sources	0	3,509.26	3,509.26	0.18	0	3,513.75
Waste Sources	0.37	0	0.37	0.02	0	0.93
Water Usage	9.12	0	9.12	0.94	0.02	39.14
Total Proposed Project Emissions	**9.50**	**3,592.07**	**3,601.56**	**1.14**	**0.02**	**3,637.10**
Total Net New Emissions	**-10.41**	**-3,924.32**	**-3,934.74**	**-1.25**	**-0.03**	**-3,973.66**
					SCAQMD Threshold	**3,000.0**
					Exceedance?	**No**

Source: Compiled by LSA (November 2018)
Note: Column totals may not add due to rounding from the model results.
Bio-CO_2 = biologically generated CO_2
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide
NBio-CO_2 = Non-biologically generated CO_2
SCAQMD = South Coast Air Quality Management District

Greenhouse Gas Plan Consistency. The Proposed Project could have the potential to conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. The applicable plan for the Proposed Project is the City of Costa Mesa 2015–2035 General Plan. The General Plan's GHG emission targets and goals are based on meeting the goals in Executive Order (EO) B-30-15 and Senate Bill (SB) 32 and established in the ARB 2017 Scoping Plan. The General Plan supports four of the climate change action categories through energy efficiency, green building, recycling/waste, and water conservation through the proposed goals, objectives, and policies listed in the Conservation Element.

As stated previously, the SCAQMD's thresholds used EO S-3-05 goal as the basis for deriving the screening level. The California Governor issued EO S-3-05, GHG Emissions, in June 2005, which established the following reduction targets:

- 2010: Reduce GHG emissions to 2000 levels
- 2020: Reduce GHG emissions to 1990 levels
- 2050: Reduce GHG emissions to 80 percent below 1990 levels.

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires ARB to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap, which was phased in, starting in 2012. Therefore, as the Proposed Project's emissions meet the threshold for compliance with EO S-3-05, the Proposed Project's emissions also comply with the goals of AB 32. Additionally, as the Proposed Project meets the current interim emissions targets/thresholds established by SCAQMD, the Proposed Project would also be on track to meet the reduction target of 40 percent below 1990 levels by 2030 mandated by EO B-30-15 and SB 32. Furthermore, all of the post 2020 reductions in GHG emissions are addressed via regulatory requirements at the State level, and the Proposed Project would be required to comply with these regulations as they come into effect.

At a level of negative 3,974 MT CO_2e/yr, the Proposed Project's GHG emissions are below the SCAQMD GHG emissions threshold of 3,000 MT CO_2e/yr for the City's Cultural Arts land use designation, and are in compliance with the reduction goals of the City of Costa Mesa 2015–2035 General Plan, AB 32, and SB 32. Furthermore, the Proposed Project would comply with applicable Green Building Standards and the City of Costa Mesa's policies regarding sustainability (as dictated by the City's General Plan). Therefore, the Proposed Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

3.4.4 Cumulative Impacts

Air pollution is inherently a cumulative type of impact measured across an air basin. The discussion above includes an analysis of the Proposed Project's contribution to cumulative air impacts. As identified in the SCPTC Program EIR, the SCPTC project would contribute incrementally to a cumulatively considerable significant adverse impact. As stated above, the Proposed Project's construction- and operation-related regional daily emissions are less than the SCAQMD significance thresholds for all criteria pollutants. In addition, adherence to SCAQMD rules and regulations on a project-by-project basis would substantially reduce potential impacts associated with the related projects and basin-wide air pollutant emissions. Further, the Proposed Project has reduced emissions as compared to the larger museum component contemplated for the OCTA site in the SCPTC Program EIR. Therefore, the Proposed Project would not worsen or have a cumulatively considerable increase in emissions as compared to the SCPTC Program EIR, and the Proposed Project's cumulative air quality impacts would remain less than significant.

3.4.5 Findings Related to Air Quality and Greenhouse Gas Emissions

No New Significant Effects Requiring Major EIR Revisions. Based on the foregoing analysis and information, there is no evidence that the Proposed Project requires a major change to the SCPTC Program EIR. The Proposed Project would not result in new significant environmental impacts related to air quality and GHGs, and there would not be a substantial increase in the severity of impacts described in the SCPTC Program EIR.

No Substantial Change in Circumstances Requiring Major EIR Revisions. With the exception of the removed cinemas, new concert hall, and new residential units, the OCMA site and surrounding area have not been developed or altered since the SCPTC Program EIR was prepared. In addition, these new uses were considered and approved as part of the larger SCPTC Program EIR project or Program

EIR No. 1052 and its subsequent addenda. Because any new development that has occurred in the vicinity of the SCPTC project site has been subject to environmental review requirements, any environmental impacts associated with such development have already been evaluated and mitigated to the extent feasible. Further, the Proposed Project is located on the same museum site that was analyzed in the SCPTC Program EIR and there have been no substantial changes related to the circumstances of this site. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to air quality and GHGs that would require major changes to the SCPTC Program EIR.

No New Information Showing Greater Significant Effects than the SCPTC Program EIR. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the SCPTC Program EIR was certified, indicating that a new significant effect not reported in that document may occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to air quality and GHGs requiring major revisions to the SCPTC Program EIR.

No New Information Showing Ability to Reduce Significant Effects in SCPTC Program EIR. There are no alternatives to the project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to air quality identified and considered in the SCPTC Program EIR.

3.4.6 Standard Conditions

Relevant standard conditions identified in the SCPTC Program EIR related to air quality are identified in Table 2.B, above.

3.4.7 Mitigation Measures

The SCPTC Program EIR did not require any mitigation measures related to air quality and GHG emissions. As described above, the Proposed Project would result in less than significant impacts related to air quality and GHG emissions; therefore, no mitigation is required and the conclusions in the SCPTC Program EIR related to air quality remain true for the Proposed Project.

3.5 NOISE

3.5.1 Environmental Setting

Please refer to Section 5.4.2, Noise, Existing Conditions, of the SCPTC Program EIR, for a summary of the existing environmental setting for Noise. The noise analysis in the SCPTC Program EIR is based on the *Noise Assessment for: South Coast Plaza Town Center Costa Mesa* (October 2000) prepared by Mestre Greve Associates.

3.5.2 SCPTC Program EIR

Noise measurements for the SCPTC Project were taken at four locations, two within the SCPTC Project site and two in residential areas in the vicinity of the SCPTC Project site. The SCPTC Project included demolition activities in the Pacific Arts Plaza portion of the SCPTC Project site, which could result in high levels of construction noise. According to the SCPTC Program EIR, peak noise levels

from construction activities within the Segerstrom Center for the Arts portion of the SCPTC Project site, which included the development of an art museum/academy at the OCMA site, would range from 56 A-weighted decibels (dBA) to 82 dBA at the Lakes Apartments located northeast of the OCMA site across from Avenue of the Arts. All construction noise activity would be controlled though compliance with the construction hours set forth in the City's Noise Ordinance, which was included as a standard condition in the SCPTC Program EIR. The Noise Ordinance has been updated since the certification of the 2001 SCPTC Program EIR. The Proposed Project would comply with the standards included in the current Noise Ordinance. The City also adopted a standard condition requiring the Applicant to prepare a truck route plan for review and approval by the City's Engineering Division prior to the approval of a construction access permit. Compliance with this standard condition would limit construction haul trip noise by prohibiting truck routes through residential areas. Implementation of these standard City requirements was determined to reduce construction noise impacts to a level that is considered less than significant.

The SCPTC Program EIR concluded that potential noise impacts on surrounding land uses would mostly be generated by projected traffic noise increases. The SCPTC Program EIR Project, in conjunction with cumulative development for future (2020) traffic noise conditions, was projected to increase future noise levels by 1.5 dBA. This increase was not considered significant.

The SCPTC Program EIR concluded that the proposed land uses typically do not result in any noise impacts from on-site activities, with the exception of parking lots. Due to the distance of the proposed parking lots at Pacific Arts Plaza from the nearest residences, which would be located more than 500 ft from those parking lots across from Avenue of the Arts, the maximum noise levels at those residences were determined to be 67 dBA, below the 70 dBA maximum noise level limit set forth in the City's Noise Ordinance. The SCPTC Program EIR concluded that any parking activities within the Segerstrom Center for the Arts portion of the SCPTC Project site would not exceed the City's Noise Ordinance. Therefore, the SCPTC Program EIR concluded there would be no noise impacts from parking lot activities. Furthermore, all noise levels generated on the SCPTC Project site must comply with the City's Noise Ordinance. The closest residences to the SCPTC Project site were east of Avenue of the Arts, approximately 75 ft from the nearest point on the SCPTC Project site. Due to the restrictions of the City's Noise Ordinance and the typical range of noise expected to be considered typical for a commercial use, it was determined the commercial uses included in the SCPTC Program EIR would not exceed the City's maximum noise level standards.

Noise sources affecting the SCPTC Project site include I-405 and, to a lesser extent, traffic from other arterial roadways. The City's interior noise standards are 55 Community Noise Equivalent Level (CNEL) for retail, 50 CNEL for general office space, and 45 CNEL for private office space and hotel guestrooms. The SCPTC Program EIR concluded that buildings constructed to then current energy efficiency standards achieve a minimum of 20 decibels (dB) of outdoor-to-indoor noise reduction, and most commercial buildings achieve a noise reduction of at least 25 dB. The SCPTC Program EIR Project components within the Segerstrom Center for the Arts portion of the SCPTC Project site are located along Town Center Drive and Avenue of the Arts. It was determined that these roadways do not generate noise levels significant enough to preclude achievement of the interior noise level thresholds of buildings located along them.

3.5.3 Analysis of Project Changes

3.5.3.1 Construction Noise

Construction of the Proposed Project would include similar construction activities and equipment to those analyzed for the SCPTC Program EIR Project. However, implementation of the Proposed Project would not require demolition activities as the OCMA site is currently vacant. The SCPTC Program EIR determined that construction noise levels at nearby sensitive receptors (approximately 75 ft to the east of Avenue of the Arts) would range between 56 dBA to 82 dBA. The OCMA site is located approximately 188 ft southwest of the nearest sensitive receptors (east of Avenue of the Arts) and, therefore, these sensitive receptors could be exposed to construction noise levels ranging between 48 dBA to 75 dBA as a result of the Proposed Project. Therefore, the Proposed Project would result in decreased construction noise levels on sensitive receptors in comparison to the SCPTC Program EIR Project, mainly due to the more than doubling of distance the Proposed Project would be from the nearest sensitive receptors. Similar to the SCPTC Program EIR, the Proposed Project would be required to implement standard conditions presented above in Table 2.B, including compliance with the City's Noise Ordinance, to reduce construction noise level impacts on sensitive receptors.

The Proposed Project would not generate construction noise levels louder than the SCPTC Program EIR Project at sensitive receptors and would implement the above standard conditions; therefore, impacts would remain less than significant.

3.5.3.2 Long Term Off-Site Impacts-Traffic Noise

The Proposed Project would construct a smaller art museum than previously analyzed as part of the SCPTC Program EIR and, therefore, would generate fewer vehicle trips than previously identified. With the reduction in vehicle trips from the Proposed Project, it is anticipated that traffic noise levels along Avenue of the Arts between Town Center and Anton Boulevard would not increase due to implementation of the Proposed Project. As such, similar to the SCPTC Program EIR, a maximum 0.5 CNEL increase in noise levels along Avenue of the Arts between Town Center and Anton Boulevard is anticipated to be generated by the Proposed Project. Traffic noise along Avenue of the Arts between Town Center and Anton Boulevard with implementation of the Proposed Project is anticipated to be similar to what was analyzed in the SCPTC Program EIR. As such, sensitive receptors within 100 ft of the centerline of Avenue of the Arts would be exposed to estimated noise levels of 62 dBA CNEL. The City's daytime exterior and interior noise standards for residential uses are 55 dBA CNEL. However, according to the City's Municipal Code, private balconies in multi-family residential developments that are 6 ft deep or less are exempt from the City's exterior noise standards (Costa Mesa Municipal Code Title 13 Planning, Zoning, and Development, Chapter XIII, Noise Control, Section 13-278). As such, the residential balconies near the OCMA site (including those at the recently completed 580 Anton project) are exempt from the City's exterior noise level standards for residential uses. Based on the United States Environmental Protection Agency's (EPA) *Protective Noise Levels* (1978), with a combination of exterior walls, doors, and windows, standard residential construction in Southern California (warm climate) would provide more than 24 dBA in exterior-to-interior noise reduction with windows closed and 12 dBA or more with windows open (national average is 25 dBA with windows closed and 15 dBA with windows open). Therefore, the interior noise levels due to vehicle noise at the nearby sensitive receptors along Avenue of the Arts

with implementation of the Proposed Project are anticipated to be well below the 55 dBA CNEL interior noise standard for residential units set forth in the City's Noise Ordinance. Therefore, impacts related to long term off-site traffic noise impacts would remain less than significant.

3.5.3.3 Long Term Off-Site Impacts - On-Site Activities/Parking Lot Activities/Deliveries

Similar to the SCPTC Program EIR, noise levels on the OCMA site associated with the Proposed Project must comply with the City's Noise Ordinance. The Noise Ordinance defines the noise level limits that can be generated in a residential area by a noise source on private property. The closest existing residents to the OCMA site are 188 ft northeast, on the east side of Avenue of the Arts. Additionally, a new mid-rise multi-family residential structure (580 Anton) was recently completed on the northeast corner of the Avenue of the Arts/Anton Boulevard intersection, approximately 99 ft southeast of the OCMA site. The Proposed Project, once operational, would not generate noise levels any louder than what was anticipated for the OCMA site in the SCPTC Program EIR. In addition, the OCMA site is currently being used as a temporary event space, which has included the use of amplified sound for musical performances, movie screenings, and other entertainment uses. The Proposed Project's outdoor second-floor terrace would accommodate a wide range of activities including both public and private events, such as informal concerts, movie screenings, as well as seated events, similar to the events currently being held on the site. Events with amplified music would conform to the City's Noise Ordinance. Standard Conditions listed in the SCPTC Program EIR and provided in Table 2.B above state that all activities on the SCPTC project site are required to comply with the City of Costa Mesa Noise Ordinance. As such, similar to the SCPTC Program EIR Project, operation of the Proposed Project would not generate noise levels at the nearby sensitive receptors that would exceed City standards. Impacts would remain less than significant with implementation of the Proposed Project.

The Proposed Project would use the existing parking structures on the SCPTC Project site and would result in similar noise levels from parking lot activities as identified in the SCPTC Program EIR. The nearest residential units to the existing parking structures that would be used by the Proposed Project are located more than 500 ft away and, therefore, would be exposed to noise levels less than 67 dBA. Any parking activities associated with the Proposed Project, similar to the SCPTC Program EIR Project, would not exceed the noise standards set forth in the City's Noise Ordinance.

As part of the Proposed Project's design, there would be a separate staff entry at the southern side of the art museum building and an enclosed loading dock for deliveries and trash removal on the southeastern corner of the OCMA site. The loading dock would be accessible from Avenue of the Arts near the existing service drive for the adjacent Plaza Tower office building. Loading dock and trash removal hours would be between 7:00 a.m. and 8:00 p.m., Monday through Saturday, in accordance with Section 8-81 of the City's Municipal Code. Delivery trucks and trash trucks typically generate noise levels of 80 dBA as measured from 10 ft. The nearest sensitive receptor to the southern side of the art museum building where such activities would occur is the recently completed 580 Anton multi-family residential project, which is approximately 150 ft east of the location where such activities would occur. As such, these residential units could be exposed to exterior noise levels of 56.6 dBA and interior noise levels of 32.6 dBA (assuming an exterior-to-interior attenuation of 24 dBA). The exterior noise levels would be exempt (as discussed above) and

the interior noise levels would be well below the 55 dBA CNEL interior noise level standard. Impacts would remain less than significant with implementation of the Proposed Project.

Similar to the SCPTC Program EIR, the Proposed Project would be required to implement standard conditions presented above in Table 2.B to reduce noise level impacts at off-site sensitive receptors.

3.5.3.4 Long Term On-Site Impacts – Traffic Noise

The Proposed Project would be located in the Segerstrom Center for the Arts portion of the SCPTC Project site along Avenue of the Arts. Previous analysis conducted in the SCPTC Program EIR indicated that Avenue of the Arts would not generate noise levels significant enough to preclude achievement of the interior noise levels for buildings located along this roadway. The Proposed Project would be located along Avenue of the Arts, and similar to the conclusions of the SCPTC Program EIR, would not experience noise levels (exterior or interior) that would be above the City's existing thresholds. As such, impacts would remain less than significant with implementation of the Proposed Project.

3.5.4 Cumulative Impacts

A cumulative noise or vibration impact would occur if multiple sources of noise and vibration combine to create impacts in close proximity to a sensitive receptor. Therefore, the cumulative area for noise impacts is the SCPTC Project site and any sensitive receptors in the immediately surrounding area. Cumulative noise impacts would occur as a result of increased traffic volumes on local roadways due to future growth in the vicinity of the SCPTC Project site. The SCPTC Program EIR determined that none of the roadway segments in the vicinity of the SCPTC Project site would experience a noise level increase greater than the applicable noise thresholds. As the Proposed Project would result in fewer vehicle trips than the museum building analyzed in the SCPTC Program EIR, the Proposed Project would not result in any greater contribution to noise impacts than identified in the SCPTC Program EIR. The Proposed Project would not contribute to a significant noise level increase from traffic volumes and, therefore, would not have a cumulatively significant traffic noise impact.

3.5.5 Findings Related to Noise

No New Significant Effects Requiring Major EIR Revisions. Based on the foregoing analysis and information, there is no evidence that the Proposed Project requires a major change to the SCPTC Program EIR. The Proposed Project would not result in new significant environmental impacts related to noise, and there would not be a substantial increase in the severity of impacts described in the SCPTC Program EIR.

No Substantial Change in Circumstances Requiring Major EIR Revisions. With the exception of the removed cinemas, new concert hall, and new residential units, the OCMA site and surrounding area have not been developed or altered since the SCPTC Program EIR was prepared. In addition, these new uses were considered and approved as part of the larger SCPTC Program EIR project or Program EIR No. 1052 and its subsequent addenda. Because any new development that has occurred in the vicinity of the SCPTC project site has been subject to environmental review requirements, any environmental impacts associated with such development have already been evaluated and

mitigated to the extent feasible. Further, the Proposed Project is located on the same museum site that was analyzed in the SCPTC Program EIR and there have been no substantial changes related to the circumstances of this site. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to noise that would require major changes to the SCPTC Program EIR.

No New Information Showing Greater Significant Effects than the SCPTC Program EIR. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the SCPTC Program EIR was certified, indicating that a new significant effect not reported in that document may occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to noise requiring major revisions to the SCPTC Program EIR.

No New Information Showing Ability to Reduce Significant Effects in SCPTC Program EIR. There are no alternatives to the project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to noise identified and considered in the SCPTC Program EIR.

3.5.6 Standard Conditions

Relevant standard conditions identified in the SCPTC Program EIR related to noise and vibration are identified in Table 2.B, above.

3.5.7 Mitigation Measures

As described above, the Proposed Project would result in less than significant impacts related to noise; therefore, no mitigation is required.

3.6 GEOLOGY AND SOILS

3.6.1 Environmental Setting

Please refer to Section 5.5.1, Geology and Soils, Environmental Setting, of the SCPTC Program EIR, for a summary of the existing environmental setting for Geology and Soils. This section summarizes information provided in the *Geotechnical Assessment* (May 2000) prepared by Zeiser Kling Consultants, Inc. The following analysis of the Proposed Project is supplemented by the *Geotechnical Exploration Report* (July 19, 2016), prepared by Leighton Consulting, Inc. and provided in Appendix C.

The regional and local geology and soils of the OCMA site are the same as described in the SCPTC Program EIR. The OCMA site has been not been developed or altered since the certification of the SCPTC Program EIR.

3.6.2 SCPTC Program EIR

The SCPTC Program EIR concluded that the project, like other developments in Southern California, is subject to earthquake related impacts. However, the SCPTC Program EIR Project was not anticipated to be subject to surface rupture or unusually severe ground-shaking. The SCPTC Project site may contain unstable conditions that could limit development due to shallow groundwater,

slope instability, expansive and corrosive soils, and settlement. However, with soil improvement methods, project design features, standard conditions, and mitigation measures, these would all be reduced to less than significant levels. Similarly, with implementation of standard geologic mitigation measures, the SCPTC Program EIR determined the site was not anticipated to be affected by liquefaction. The SCPTC Program EIR Project included some components that may encounter groundwater conditions approximately 17 ft below ground surface (bgs). However, if groundwater is encountered, dewatering would be required and no impact to groundwater supplies would occur. The SCPTC Program EIR determined that compliance with applicable Uniform Building Code requirements related to subsidence and other geologic conditions would ensure that no significant impacts would occur. Undocumented fill, settlement potential, expansive soils, and corrosive soil on the site were also determined not to be significant impacts. Mitigation measures were included to ensure potential impacts related to manufactured slopes would be less than significant.

3.6.3 Analysis of Project Changes

3.6.3.1 Geologic Faulting and Seismicity

Similar to the SCPTC Program EIR Project, the Proposed Project would be located on the OCMA site. Therefore, all regional geologic conditions would continue to apply. Similarly, the Proposed Project is not anticipated to be impacted by surface rupture from earthquakes because there are no known faults on or through the SCPTC Project site. As the Proposed Project would be located in Southern California, a seismically active region, the OCMA site may experience significant ground shaking during an earthquake. The Proposed Project would be designed to meet seismic design standards in compliance with the current version of the California Building Code. The Proposed Project would not result in any new significant impacts related to geologic faulting and seismicity, and impacts would remain less than significant with implementation of the same mitigation measures that were identified in the SCPTC Program EIR.

3.6.3.2 Liquefaction

Similar to the SCPTC Program EIR Project, the Proposed Project is located within an area that could be affected by seismically induced liquefaction if ground water levels are relatively close to the surface during a seismic event. The Proposed Project would be designed in compliance with building and engineering requirements set forth in the current version of the California Building Code with respect to liquefaction. Development of the Proposed Project would also implement standard geologic measures as identified in the SCPTC Program EIR. The Proposed Project would not result in any new significant impacts related to liquefaction and impacts would remain less than significant with implementation of the same mitigation measures that were identified in the SCPTC Program EIR.

3.6.3.3 Groundwater

According to the *Geotechnical Exploration Report* (2016), previous field investigations in the vicinity of the OCMA site encountered groundwater as shallow as 9 ft bgs. Therefore, during development of the Proposed Project, perched groundwater conditions could occur at as shallow as approximately 8 ft below the ground surface. If the Proposed Project would require excavations deeper than approximately 8 ft bgs during construction, dewatering and discharge to storm drain or sewer facilities would be required. Dewatering and disposal of perched groundwater is not

anticipated to affect domestic groundwater supplies, as such supplies are located 80 ft bgs within the SCPTC Project site and are not connected to the perched groundwater areas. Similar to the SCPTC Program EIR Project, the Proposed Project would be required to comply with applicable California Building Code requirements related to perched groundwater conditions. The Proposed Project would not result in any new significant impacts related to groundwater and impacts would remain less than significant with implementation of the same mitigation measures that were identified in the SCPTC Program EIR.

3.6.3.4 Subsidence

Similar to the SCPTC Program EIR Project, the Proposed Project could experience localized ground subsidence if excessive groundwater extraction or local dewatering occurs. The Proposed Project would be required to comply with applicable California Building Code requirements related to subsidence conditions. The Proposed Project would not result in any new significant impacts related to subsidence and impacts would remain less than significant with implementation of the same mitigation measures that were identified in the SCPTC Program EIR.

3.6.3.5 Undocumented Fill

The Proposed Project would be located in an area where various deposits of artificial fill or minor deposits of undocumented or controlled fills may be present. The SCPTC Program EIR indicated that such undocumented fill was not encountered during the geotechnical investigation completed in support of the SCPTC Program EIR and such conditions are not expected to significantly impact the SCPTC Project site, which includes the OCMA site. Conditions like these are not considered atypical if discovered during implementation of the Proposed Project. The *Geotechnical Exploration Report* (2016) assumed that site grading would require the overexcavation and removal of undocumented fill beneath the locations of the proposed building footprint and new hardscape areas, such as courtyards, sidewalks, and pavement areas. Similar to the SCPTC Program EIR Project, development of the Proposed Project would not result in any significant impacts related to undocumented fills.

3.6.3.6 Settlement Potential

Construction of the Proposed Project on surficial soil deposits would likely be affected by consolidation and compression-related settlement. The Proposed Project would be designed to comply with California Building Code requirements related to settlement potential to avoid building damage. Similar to the SCPTC Program EIR Project, development of the Proposed Project would not result in any significant impacts related to settlement potential due to implementation of required building design features.

3.6.3.7 Slope Instability

The OCMA site where the Proposed Project would be developed is topographically flat. Some non-natural slopes were identified in locations within the SCPTC Project site; however, the area where the Proposed Project would be located is not in an area with slopes. If manufactured slopes are implemented during the development of the Proposed Project, mitigation measures identified in the SCPTC Program EIR (provided below) would be applied to reduce potentially surficially or grossly unstable slopes. The Proposed Project would not result in any new significant impacts related to

slope instability and impacts would remain less than significant with implementation of the same mitigation measures that were identified in the SCPTC Program EIR.

3.6.3.8 Expansive and Corrosive Soils

The Proposed Project would be developed on the OCMA site, which is currently vacant. According to the *Geotechnical Exploration Report* (2016), the soil on the OCMA site is considered very severely corrosive to ferrous metals. In addition, the near surface soils are highly expansive.

The majority of the SCPTC Project site, including areas around the Proposed Project, have been previously developed utilizing appropriate geologic standards. Similar geologic standards to those implemented elsewhere in the SCPTC Project site and identified in the SCPTC Program EIR would be implemented to reduce potential impacts related to expansive or corrosive soils. The Proposed Project would not result in any new significant impacts related to expansive or corrosive soils and impacts would remain less than significant.

3.6.4 Cumulative Impacts

Although the Proposed Project would develop the currently vacant OCMA site, the potential exposure to the effects of seismic activity and/or unstable soil conditions would not increase substantially as compared to those identified in the SCPTC Program EIR, and project implementation would not result in potential cumulative impacts because the Proposed Project would be required to meet applicable structural design requirements. Similarly, other development proposed in the City and elsewhere in the region must also comply with the specific building design parameters prescribed in the applicable regulations to ensure that potential loss of life and structural damage is minimized. Therefore, no significant cumulative impacts would occur as a result of project implementation. In consideration of all of the above, the Proposed Project does not involve any major changes to the SCPTC Program EIR and would not result in any new significant cumulative environmental impacts or a substantial increase in the severity of cumulative impacts or require new or substantially different mitigation measures.

3.6.5 Findings Related to Geology and Soils

No New Significant Effects Requiring Major EIR Revisions. Based on the foregoing analysis and information, there is no evidence that the Proposed Project requires a major change to the SCPTC Program EIR. The Proposed Project would not result in new significant environmental impacts related to geology and soils, and there would not be a substantial increase in the severity of impacts described in the SCPTC Program EIR.

No Substantial Change in Circumstances Requiring Major EIR Revisions. With the exception of the removed cinemas, new concert hall, and new residential units, the OCMA site and surrounding area have not been developed or altered since the SCPTC Program EIR was prepared. In addition, these new uses were considered and approved as part of the larger SCPTC Program EIR project. Further, the Proposed Project is located on the same museum site that was analyzed in the SCPTC Program EIR and there have been no substantial changes related to the circumstances of this site. There is no information in the record or otherwise available that indicates that there are substantial changes in

circumstances pertaining to geology and soils that would require major changes to the SCPTC Program EIR.

No New Information Showing Greater Significant Effects than the SCPTC Program EIR. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the SCPTC Program EIR was certified, indicating that a new significant effect not reported in that document may occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to geology and soils requiring major revisions to the SCPTC Program EIR.

No New Information Showing Ability to Reduce Significant Effects in SCPTC Program EIR. There are no alternatives to the project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to geology and soils identified and considered in the SCPTC Program EIR.

3.6.6 Standard Conditions

Relevant standard conditions identified in the SCPTC Program EIR related to geology and soils are identified in Table 2.B, above.

3.6.7 Mitigation Measures

The following mitigation measures that were identified in the SCPTC Program EIR to be implemented would be applicable to the Proposed Project.

Mitigation Measure 5-1	All future development of the SCPTC site shall be designed to comply with all applicable geologic and seismic safety requirements of the Uniform Building Code and mitigation as defined by Public Resources code Section 2693(c). Verification of such compliance will be confirmed during the City's plan review and building permit issuance process.
Mitigation Measure 5-2	Grading and foundation plans, including foundation loads, shall be reviewed by a registered soils engineer, and approved by the City of Costa Mesa Building Safety Division.
Mitigation Measure 5-3	All grading and earthwork shall be performed under the observation of a registered geotechnical engineer in order to achieve proper sub-grade preparation, selection of satisfactory materials, and placement and compaction of all structural fill.
Mitigation Measure 5-4	Prior to approval of each grading plan by the City of Costa Mesa, the property owner/developer shall submit a soils and geological report for the areas to be graded, based on proposed grading and prepared by registered soils engineer and approved by the City of Costa Mesa Building Safety Division.

Mitigation Measure 5-5 Prior to issuance of each building permit by the City of Costa Mesa, the property owner/developer shall submit for review and approval by the City of Costa Mesa Building Safety Division, a detailed foundation design information for the subject building(s), prepared by a registered civil engineer, based on recommendations by a geotechnical engineer.

Mitigation Measure 5-6 Prior to issuance of each building permit by the City of Costa Mesa, the property owner/developer shall submit plans showing that the proposed structure has been analyzed by a registered civil engineer for earthquake loading and designed according to the most recent seismic standards in the Uniform Building Code adopted by the City of Costa Mesa.

Mitigation Measure 5-7 If a permit is required for discharge of perched groundwater encountered during excavation for site improvements, the applicant shall acquire such permit(s) from the applicable agency(ies) (e.g., Santa Ana Regional Water Quality Control Board, County Flood Control or County Sanitation District) and provide evidence of permit issuance to the Costa Mesa Building Safety Division prior to initiating any such discharge.

3.7 HYDROLOGY AND WATER QUALITY

3.7.1 Environmental Setting

There have been no major changes to the existing setting of the SCPTC Project site with respect to hydrology and water quality since the SCPTC Program EIR was certified. Please refer to Section 5.6.1, Hydrology and Water Quality, Environmental Setting, of the SCPTC Program EIR, for a summary of the existing environmental setting for Hydrology and Water Quality. The following analysis of the Proposed Project is supplemented by the *Water Quality Management* Plan (July 13, 2018), prepared by KPFF Consulting Engineers and provided in Appendix D.

3.7.2 SCPTC Program EIR

The SCPTC Program EIR concluded that the Project would not have impacts to hydrology and water quality issues. The SCPTC Program EIR Project was analyzed and determined to be consistent with goals, objectives, and policies of the Costa Mesa General Plan related to hydrology and water quality. The SCPTC Program EIR concluded that the project would not alter regional hydrologic conditions as site development was determined not to divert stormwater discharges to other watershed or to drainage facilities that have not historically received site runoff. Implementation of the Project nominally increases impervious surfaces within the SCPTC Project site; however, the SCPTC Program EIR determined that such a nominal increase would minimally increase stormwater runoff volumes and velocities. The SCPTC Program EIR determined that the SCPTC Project is not located in a 100-year floodplain and, therefore, impacts from flooding were determined to not significantly impact the SCPTC Project site. During construction, the Project would be required to comply with the Municipal National Pollutant Discharge Elimination System (NPDES), which requires

the development and implementation of Best Management Practices (BMPs) to control erosion and siltation and contain runoff from the construction sites within the SCPTC Project site. The SCPTC Program EIR also noted that the Project would be subject to City and County grading ordinances and was required to prepare a Water Quality Management Plan (WQMP) in accordance with the Orange County DAMP. With these measures implemented, water quality impacts during short term construction activities were determined to be less than significant. Once operational, the SCPTC Program EIR determined that the project would marginally increase the amount of stormwater runoff within the SCPTC Project site; however, due to the intensely built-up nature of the SCPTC Project site, this increase was considered nominal and would not result in a significant long-term water quality impact. Overall, the SCPTC Program EIR concluded that project implementation would result in less than significant impacts related to hydrology and water quality.

3.7.3 Analysis of Project Changes

3.7.3.1 Hydrology

Similar to the SCPTC Program EIR Project, the Proposed Project would be located on the OCMA site; therefore, similar hydrological conditions would apply. The OCMA site is currently vacant with permeable surfaces (i.e., grass and dirt surfaces) and once developed would nominally increase impervious surfaces within the SCPTC Project site. The increase in impervious surfaces from the Proposed Project has already been accounted for in the SCPTC Program EIR. Development of the Proposed Project, similar to the SCPTC Program EIR Project, would not alter regional hydrologic conditions by diverting stormwater discharges to watersheds or drainage facilities that have not historically received runoff from the SCPTC Project site. Additionally, implementation of the Proposed Project would result in only minor increases in stormwater runoff volumes and velocities; however, no significant alteration in the existing drainage patterns on the OCMA site would be affected. The Proposed Project would not result in any new significant impacts related to hydrology and impacts would remain less than significant.

3.7.3.2 Flood Hazard

Similar to the SCPTC Program EIR Project, the Proposed Project would not be located in a 100-year floodplain (the OCMA site is located in Zone X – 0.2 Percent Annual Chance Flood Hazard Zone). As such, implementation of the Proposed Project would not be significantly impacted by flooding. The Proposed Project would not result in any new significant impacts related to flooding and impacts would remain less than significant.

3.7.3.3 Water Quality

During grading and construction activities associated with the Proposed Project, the potential for surface water runoff to carry sediment and small quantities of pollutants into stormwater systems would exist. Similar to the SCPTC Program EIR Project, the Proposed Project would disturb more than one acre. Therefore, it would be required to comply with the Municipal NPDES, which requires development of and implementation of BMPs to control erosion and siltation and contaminated runoff from construction sites. The Proposed Project would also be subject to City and County grading ordinances, which contain construction practices to control erosion by preparation of a WQMP in accordance with the Orange County DAMP. The Proposed Project would also be required

to implement Mitigation Measure 6-1 from the SCPTC Program EIR to ensure water quality impacts during construction remain less than significant.

Once developed and operational, the Proposed Project would increase the same amount of impervious surfaces as compared to the museum analyzed in the SCPTC Program EIR that was to be developed on the OCMA site. Such an increase in impervious surfaces would marginally increase the amount of stormwater runoff on the OCMA site; however, due to the intensely built-up nature of the SCPTC Project site, the increase generated by the Proposed Project would be nominal. Additionally, the stormwater runoff increase at the OCMA site was previously analyzed and accounted for in the SCPTC Program EIR. A Preliminary Water Quality Management Plan has been prepared for the Proposed Project. As described in the Water Quality Management Plan, the results of the soils investigation conducted for the Proposed Project indicate that infiltration is not feasible. Therefore, the recommended LID BMP consists of one Continuous Deflective Separation (CDS) mechanical treatment hydrodynamic separator designed to treat the stormwater and gradually discharge the treated stormwater to the existing drainage system within the SCPTC Project site. The Proposed Project would not result in any new significant impacts related to water quality and impacts would remain less than significant.

3.7.4 Cumulative Impacts

The SCPTC Program EIR determined that implementation of the Project and other projects in the area would continue contributing to increases in stormwater runoff that flows into the Santa Ana Delhi Channel and eventually the Pacific Ocean. As the SCPTC Program EIR included analysis of a museum on the OCMA site, the Proposed Project would also contribute to stormwater increases. The incremental contribution the Proposed Project would generate to water quality impacts would not be cumulatively significant because the Proposed Project would comply with California Building Code requirements, implement stormwater and water quality management BMPs, and City requirements. Based on this, similar to the SCPTC Program EIR conclusions, the Proposed Project would not contribute to, nor cause a cumulative impact on hydrological and water quality conditions within the area of the SCPTC Project site. In consideration of all of the above, the Proposed Project does not involve any major changes to the SCPTC Program EIR and would not result in any new significant cumulative environmental impacts or a substantial increase in the severity of cumulative impacts or require new or substantially different mitigation measures.

3.7.5 Findings Related to Hydrology

No New Significant Effects Requiring Major EIR Revisions. Based on the foregoing analysis and information, there is no evidence that the Proposed Project requires a major change to the SCPTC Program EIR. The Proposed Project would not result in new significant environmental impacts related to hydrology and water quality, and there would not be a substantial increase in the severity of impacts described in the SCPTC Program EIR.

No Substantial Change in Circumstances Requiring Major EIR Revisions. With the exception of the removed cinemas, new concert hall, and new residential units, the project site and surrounding area have not been developed or altered since the SCPTC Program EIR was prepared. In addition, these new uses were considered and approved as part of the larger SCPTC Program EIR project. Further, the Proposed Project is located on the same museum site that was analyzed in the SCPTC Program

EIR and there have been no substantial changes related to the circumstances of this site. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to hydrology and water quality that would require major changes to the SCPTC Program EIR.

No New Information Showing Greater Significant Effects than the SCPTC Program EIR. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the SCPTC Program EIR was certified, indicating that a new significant effect not reported in that document may occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to hydrology and water quality requiring major revisions to the SCPTC Program EIR.

No New Information Showing Ability to Reduce Significant Effects in SCPTC Program EIR. There are no alternatives to the Proposed Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to hydrology and water quality identified and considered in the SCPTC Program EIR.

3.7.6 Standard Conditions

Relevant standard conditions identified in the SCPTC Program EIR related to hydrology and water quality are identified in Table 2.B, above.

3.7.7 Mitigation Measures

The following mitigation measure that was identified in the SCPTC Program EIR would be applicable to the Proposed Project.

Mitigation Measure 6-1 Prior to issuance of a grading permit, the applicant shall obtain an NPDES Stormwater Permit from the County of Orange. Applicable BMP provisions shall be incorporated into the NPDES Permit.

3.8 POPULATION, EMPLOYMENT, AND HOUSING

3.8.1 Environmental Setting

Please refer to Section 5.7.1, Population, Employment, and Housing, Existing Conditions, of the SCPTC Program EIR, for a summary of the existing environmental setting for Population, Employment, and Housing.

3.8.2 SCPTC Program EIR

The SCPTC Program EIR concluded that the Project would not directly or indirectly generate a population increase in Costa Mesa or the Orange County subregion as it did not include residential development and was not anticipated to attract a substantial number of employees from outside of Orange County. Construction activities may require some construction workers to relocate to the area; however, this indirect population increase was considered temporary and was not expected to result in a permanent significant impact. The SCPTC Program EIR Project was anticipated to generate

direct employment opportunities, including short-term construction jobs and long-term retail, office, and service employment positions. The SCPTC Program EIR estimated the Project, with a net increase of 1,109,445 square feet of building space, would generate approximately 2,324 jobs. Specifically, the 140,000-square-foot museum that was contemplated for the OCMA site was anticipated to generate 74 jobs. The number of jobs expected to be generated would constitute a minor percentage of the job growth that was forecast to occur in Orange County and the City between 2000 and 2010. The SCPTC Program EIR concluded that the Project would not attract a substantial amount of employees from outside of Orange County and would provide increased job opportunities for residents of Costa Mesa and surrounding jurisdictions. The Approved Project's creation of 2,324 jobs was considered to be a beneficial impact to employment. Job creation generated was anticipated to increase the demand for housing in Costa Mesa and other surrounding communities. The SCPTC Program EIR concluded that implementation of the Project would require more housing for employees (1,526 housing units) than the 1,507 new housing units that were anticipated to be supplied between 2000 and 2010 within the subregional geographic units in Orange County that most closely represent the City (Community Analysis Areas 44 and 45 in the demographic projections prepared by the Center for Demographic Research at California State University, Fullerton). The additional housing demand generated was anticipated to impact housing supply and contribute to pressures upon vacancy and housing costs in the surrounding area. The SCPTC Program EIR identified that the City had recently adopted the General Plan Housing Element which would implement and refine policy programs for future housing supplies as needed in the City; however, since projected growth in employment in the Project area was outpacing local housing development and supply, it was concluded that a potential significant impact to housing availability in the region would occur. The SCPTC Program EIR concluded that no feasible Project specific mitigation measures were available to reduce this impact; therefore, the SCPTC Program EIR concluded that the Project would result in a significant and unavoidable impact to the area's housing market.

3.8.3 Analysis of Project Changes

3.8.3.1 Population

The Proposed Project would develop a smaller sized art museum on the OCMA site than what was analyzed in the SCPTC Program EIR; therefore, the Proposed Project is anticipated to generate less employment than the 74 jobs identified in the SCPTC Program EIR. Similar to the SCPTC Program EIR Project, the Proposed Project would not include residential development and would not attract a substantial number of employees from outside of Orange County. Therefore, direct and indirect population growth generated by the Proposed Project in the City of Costa Mesa and surrounding jurisdictions would not occur, similar to the SCPTC Program EIR conclusions. The Proposed Project would not result in any new significant impacts related to direct or indirect population growth and impacts would remain less than significant.

3.8.3.2 Employment

The Proposed Project would develop a smaller art museum on the OCMA site in comparison to what was analyzed in the SCPTC Program EIR. Therefore, the Proposed Project would provide slightly fewer employment opportunities during construction and operation. The SCPTC Program EIR concluded that the art museum that would be developed on the OCMA site would generate 74 jobs.

Using the same employment generation factor of 1 employee/1,800 sq ft of art museum space that was used in the SCPTC Program EIR, it is estimated that the smaller art museum included in the Proposed Project would generate 37 jobs. The City of Costa Mesa *Final Environmental Impact Report for the 2015–2035 General Plan* indicates that the City, per the 2012–2035 Regional Transportation Plan (RTP), is estimated to have 88,300 jobs in 2020 and 88,800 jobs in 2035. City sources estimate that there will be 104,425 jobs in 2030.[5] Proposed Project related employment generation (including the 37 jobs created by the art museum and the 2,250 jobs that would be created by the other components of the SCPTC Program EIR Project that would not be affected by the Proposed Project) would constitute approximately 2.6 percent of the projected job growth per the RTP in 2020 and 2035 and 2.2 percent of the City estimated job growth in 2030. These percentages are slightly lower than those identified in the SCPTC Program EIR. Therefore, it is anticipated that the City of Costa Mesa employment projections would accommodate the 2,287 jobs that would be generated by the Proposed Project. Additionally, the Costa Mesa General Plan already reflects the development of the OCMA site and, therefore, the employment projections included in the City's General Plan already consider the jobs that would be created by the Proposed Project. The Proposed Project would not result in any new significant impacts related to employment and impacts would remain less than significant.

3.8.3.3 Implications of Labor Demand Relative to Housing Supply

Since approval of the SCPTC Program EIR, the City of Costa Mesa has approved various versions of its General Plan Housing Element. As such, policies and programs have been implemented to ensure that a balance of jobs to housing supply is provided within the City. As discussed above, based on the reduced square footage of the art museum that would be developed on the OCMA site associated with the Proposed Project, an estimated 37 jobs would be generated. According to the *Housing Element for the Costa Mesa General Plan 2013-2021*, the City's housing supply increased by 2,461 units between 2000 and 2010[6], a substantially higher increase than the 1,507 new housing units that were forecast to be built within CAAs 44 and 45 (the subregional geographic units that serve as a proxy for the City) between 2000 and 2010, as described in the SCPTC Program EIR. Therefore, there are indications that the local housing market may be better able to accommodate the pressure for new housing created by the Proposed Project. Although the SCPTC Program EIR determined that there would be a significant and unavoidable impact to housing supply relative to labor demands, as discussed above, the Proposed Project would generate less new employment than the SCPTC Program EIR Project. Therefore, the Proposed Project would not exacerbate the significant and unavoidable impacts identified in the SCPTC Program EIR on the local housing supply related to labor demand.

3.8.4 Cumulative Impacts

Similar to the SCPTC Program EIR Project, implementation of the Proposed Project would not contribute to direct or indirect population growth within the City of Costa Mesa or nearby jurisdictions as the Proposed Project would not include residential development. As such, the

[5] City of Costa Mesa, *Final Environmental Impact Report for the 2015–2035 General Plan*, Population and Housing 4.13, pg. 4.13-1.

[6] City of Costa Mesa, *Housing Element for the Costa Mesa General Plan: 2013-2021*, adopted January 21, 2014, Table HOU-22: Housing Units by Type (1990-2010).

Proposed Project would not result in a greater cumulative contribution to population growth and cumulative impacts than was identified in the SCPTC Program EIR.

The number of jobs generated by the Proposed Project would be consistent with future employment growth within the City of Costa Mesa and would constitute small percentages of the estimated employment growth. Although the Proposed Project would contribute to the generation of new jobs in the City, the City General Plan and the conclusions in the SCPTC Program EIR considered the addition of these jobs. Additionally, compared to the SCPTC Program EIR Project, the Proposed Project would have less of a cumulative contribution in new jobs, compared to what was identified for in the SCPTC Program EIR. The Proposed Project would not result in a greater contribution to cumulative impacts related to job generation than was identified in the SCPTC Program EIR.

From a cumulative perspective, the City of Costa Mesa, through its Housing Element, has policies in place to ensure that an employment to housing availability balance continues to be attainable in the future. Although the Proposed Project would contribute to the generation of employment in the City, this generation is nominal when compared to existing and future projects in the City. Because the OCMA would be relocating from its existing facility in neighboring Newport Beach, it is assumed that most of the employees that would fill the 37 jobs created by the Proposed Project's art museum currently live within the City of Costa Mesa or nearby jurisdictions and would not need to relocate to new housing. The Proposed Project would not result in a greater contribution to cumulative impacts related to employment and housing balance than was identified in the SCPTC Program EIR.

3.8.5 Findings Related to Population and Housing

No New Significant Effects Requiring Major EIR Revisions. Based on the foregoing analysis and information, there is no evidence that the Proposed Project requires a major change to the SCPTC Program EIR. The Proposed Project would not result in new significant environmental impacts related to population, employment, and housing, and there would not be a substantial increase in the severity of impacts described in the SCPTC Program EIR.

No Substantial Change in Circumstances Requiring Major EIR Revisions. With the exception of the removed cinemas, new concert hall, and new residential units, the project site and surrounding area have not been developed or altered since the SCPTC Program EIR was prepared. In addition, these new uses were considered and approved as part of the larger SCPTC Program EIR project or Program EIR No. 1052 and its subsequent addenda. Because any new development that has occurred in the vicinity of the SCPTC project site has been subject to environmental review requirements, any environmental impacts associated with such development have already been evaluated and mitigated to the extent feasible. Further, the Proposed Project is located on the same museum site that was analyzed in the SCPTC Program EIR and there have been no substantial changes related to the circumstances of this site. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to population, employment, and housing that would require major changes to the SCPTC Program EIR.

No New Information Showing Greater Significant Effects than the SCPTC Program EIR. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the SCPTC Program EIR was certified, indicating that a new significant effect not reported in that document may occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to population, employment, and housing requiring major revisions to the SCPTC Program EIR.

No New Information Showing Ability to Reduce Significant Effects in SCPTC Program EIR. There are no alternatives to the project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to population, employment, and housing identified and considered in the SCPTC Program EIR.

3.8.6 Standard Conditions

No Standard Conditions related to population, employment, and housing were identified in the SCPTC Program EIR, and none are required for the Proposed Project.

3.8.7 Mitigation Measures

As described above, the Proposed Project would not exacerbate the significant and unavoidable impacts on the local housing supply related to labor demand identified in the SCPTC Program EIR. As with the SCPTC Program EIR, there are no feasible project-specific measures available to lessen this potentially significant impact. However, it should be noted that the City has approved a substantial number of new residential units within the South Coast Metro area since the certification of the SCPTC Program EIR in 2001, which should help alleviate the pressure for new housing units in the City and surrounding jurisdictions.

3.9 PUBLIC SERVICES, UTILITIES, AND ENERGY CONSUMPTION

3.9.1 Environmental Setting

Please refer to Section 5.8, Public Services, Utilities, and Energy Consumption, of the SCPTC Program EIR, for a summary of the existing environmental setting for Public Services, Utilities and Energy Consumption.

3.9.2 SCPTC Program EIR

The SCPTC Program EIR concluded that the SCPTC Project would result in an incremental increase in the number of calls for fire and police protection services. An increase in employees and visitors to the SCPTC Project site would generate increased levels of service calls from the site during short-term construction and long-term operation of the SCPTC Project. Implementation of the SCPTC Project would result in a potentially significant impact to fire protection services; however, implementation of project design features, standard conditions, and City requirements would reduce impacts to less than significant. The Costa Mesa Police Department indicated that no significant impacts would occur as a result of the SCPTC Project. Additionally, implementation of standard conditions and requirements and mitigation measures would ensure that impacts to police protection services would remain less than significant.

The SCPTC Program EIR concluded that the SCPTC Project would generate solid waste from demolition and construction activities and was expected to generate 2,133 tons of solid waste annually at full build out. The SCPTC Program EIR concluded that the County of Orange Integrated Waste Management Department (IWMD) would have adequate capacity to accommodate solid waste from demolition, construction, and operational activities, and no significant impacts to solid waste service would occur. Additionally, the SCPTC Program EIR project would implement project design features that would help reduce impacts to solid waste service.

The SCPTC Program EIR concluded that the SCPTC Project would generate approximately 179,000 gallons per day of wastewater, all of which would be adequately served by existing wastewater facilities in the area. The SCPTC Project would also implement project design features and standard conditions that would reduce wastewater impacts to a level that is considered less than significant.

The SCPTC Program EIR concluded that the SCPTC Project would consume 43,891 gallons per day of potable water, which would be provided and accommodated by the Mesa Consolidated Water District (MCWD; now known as the Mesa Water District). Recycled water available through the Orange County Water District's Green Acres program would be used for landscape irrigation, toilets, and trap primers. The SCPTC Project would also implement project design features and standard conditions that would reduce water resource impacts to a level that is considered less than significant.

The SCPTC Program EIR concluded that the SCPTC Project would use 13.62 million kilowatt/hours per year of electricity and demand 31,723 cubic feet/square feet/year of natural gas. Southern California Edison (SCE) and Southern California Gas (SCG) both indicated that the SCPTC Program EIR project demand for electricity and natural gas would be accommodated by existing and previously planned future facilities. The SCPTC Project would implement standard conditions that would reduce impacts to energy resources to a level that is considered less than significant.

3.9.3 Analysis of Project Changes

3.9.3.1 Public Services

The Proposed Project would be located in the same area (on the OCMA site) that was analyzed previously in the SCPTC Program EIR. The museum being developed as part of the Proposed Project would be smaller in size (square footage) and height than what was originally analyzed in the SCPTC Program EIR. As such, the Proposed Project would generate incrementally less demand for fire service and police protection service than what was previously analyzed for the SCPTC Project. The Proposed Project would implement the same project design features and standard conditions of approval as the SCPTC Project and would also implement Mitigation Measures 8-1 and 8-2 as included in the SCPTC Program EIR. Similar to the SCPTC Project, with implementation of these design features, standard conditions, and mitigation measures, impacts to public services due to the Proposed Project would be less than significant. The Proposed Project would not result in any new or substantially greater significant impacts related to public service (fire and police protection services), and impacts would remain less than significant.

3.9.3.2 Utilities

Analysis provided in the SCPTC Program EIR regarding utility impacts (solid waste, wastewater, and water) accounted for a 140,000-square-foot museum that was to be developed on the OCMA site. The Proposed Project would be developed on the same OCMA site, but would be smaller and shorter than the building that was originally analyzed in the SCPTC Program EIR. As such, the Proposed Project would generate less demand on utility services in Costa Mesa when compared to what was analyzed for the SCPTC Project. The Proposed Project would implement the same project design features and standard conditions as included in the SCPTC Program EIR to ensure that impacts to utility services would be less than significant. The Proposed Project would not result in any new or substantially greater significant impacts related to utility service (solid waste, wastewater, and water) and impacts would remain less than significant.

3.9.3.3 Energy Consumption

The energy consumption (electricity and natural gas) of the Proposed Project on the OCMA site has already been included in the analysis presented in the SCPTC Program EIR. However, the Proposed Project is smaller in size than what was originally analyzed. As such, the Proposed Project would generate less energy consumption demand than was previously analyzed. Both SCE and SCG have indicated that energy facilities and supply are available to accommodate the SCPTC Project and, therefore, it is assumed that such supplies would also be available to accommodate development of the smaller Proposed Project. Similar to the SCPTC Project, the Proposed Project would implement standard conditions to reduce impacts related to energy consumption. The Proposed Project would not result in any new or substantially greater significant impacts related to energy consumption and impacts would remain less than significant.

3.9.4 Cumulative Impacts

The SCPTC Program EIR concluded that development of the SCPTC Project and future projects in the vicinity would increase the demand for public services, utilities, and energy consumption. Service providers have indicated that public service and utility facilities have been planned for future growth and that implementation of the SCPTC Program EIR, even though it would have an incremental need for such services, would be adequately supplied. The SCPTC Program EIR analyzed the potential impacts of a larger museum building on the OCMA site. As such, the smaller-sized Proposed Project would not cumulatively contribute to cumulative impacts related to public services, utilities, and energy consumption beyond what was previously analyzed in the SCPTC Program EIR. In consideration of all of the above, the Proposed Project does not involve any major changes to the SCPTC Program EIR and would not result in any new or substantially greater significant cumulative environmental impacts or a substantial increase in the severity of cumulative impacts or require new or substantially different mitigation measures.

3.9.5 Findings Related to Public Services, Utilities, and Energy

No New Significant Effects Requiring Major EIR Revisions. Based on the foregoing analysis and information, there is no evidence that the Proposed Project requires a major change to the SCPTC Program EIR. The Proposed Project would not result in new significant environmental impacts related to public services, utilities, and energy, and there would not be a substantial increase in the severity of impacts described in the SCPTC Program EIR.

No Substantial Change in Circumstances Requiring Major EIR Revisions. With the exception of the removed cinemas, new concert hall, and new residential units, the project site and surrounding area have not been developed or altered since the SCPTC Program EIR was prepared. In addition, these new uses were considered and approved as part of the larger SCPTC Program EIR project or Program EIR No. 1052 and its subsequent addenda. Because any new development that has occurred in the vicinity of the SCPTC Project site has been subject to environmental review requirements, any environmental impacts associated with such development have already been evaluated and mitigated to the extent feasible. Further, the Proposed Project is located on the same museum site that was analyzed in the SCPTC Program EIR, and there have been no substantial changes related to the circumstances of this site. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to public services, utilities, and energy that would require major changes to the SCPTC Program EIR.

No New Information Showing Greater Significant Effects than the SCPTC Program EIR. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the SCPTC Program EIR was certified, indicating that a new significant effect not reported in that document may occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to public services, utilities, and energy requiring major revisions to the SCPTC Program EIR.

No New Information Showing Ability to Reduce Significant Effects in SCPTC Program EIR. There are no alternatives to the project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to public services, utilities, and energy identified and considered in the SCPTC Program EIR.

3.9.6 Standard Conditions

Relevant standard conditions identified in the SCPTC Program EIR related to public services, utilities and energy consumption are identified in Table 2.B, above.

3.9.7 Mitigation Measures

The following mitigation measures were identified in the SCPTC Program EIR and would be applicable to the Proposed Project:

Mitigation Measure 5.9	Prior to the initiation of grading, a construction security service shall be established at the construction site. Initially, the service shall ensure that no unauthorized entry is made into the construction area. For the duration of each phase of construction, the project applicant shall provide sufficient on-site security personnel on a 24-hour, seven days a week basis, to patrol all areas of construction and prohibit unauthorized entry.
Mitigation Measure 5.10	Private on-site security is to be provided by the project applicant as the project is developed and operational.

3.10 AESTHETICS

3.10.1 Environmental Setting

Please refer to Section 5.9, Aesthetics, of the SCPTC Program EIR, for a summary of the existing environmental setting for shadow, light, and glare impacts that could result from implementation of the SCPTC Project.

3.10.2 SCPTC Program EIR

The SCPTC Program EIR analyzed shade and shadow and light and glare impacts associated with the SCPTC Project. Because the SCPTC Project included high-rise office and hotel development and other tall structures, exhibits that simulated the potential extent of building shadow coverage at the hours of 10 a.m. and 2 p.m. on the winter and summer solstice (the shortest and longest days of the year, respectively) were included in the SCPTC Program EIR. These worst-case scenarios reflected a full build out of the maximum building heights and densities allowed under the SCPTC Project. The analysis concluded that the SCPTC Project would mostly cast shade and shadow on the SCPTC Project site. If shade/shadows were to extend onto adjacent properties, they would not be cast on sensitive receptors (e.g., residential uses, schools, etc.). Because shade and shadow impacts would be limited primarily to the SCPTC Project site and adjacent roadways or non-sensitive receptors, the SCPTC Program EIR concluded that no significant impacts would occur.

The SCPTC Program EIR concluded that the SCPTC Project would introduce new sources of light and glare into the area. Glare would be generated from lights and the sun reflecting off windows and shiny, metallic surfaces. The uses proposed along the western perimeter of the SCPTC Project site could result in additional glare along Bristol Street; however, this glare was not expected to be significant due to the existing glare conditions occurring in the highly urbanized area. Additionally, the SCPTC Project would avoid glare through compliance with City guidelines relating to surface coatings and buffer areas provided by landscaping features. In addition, all buildings would undergo a site-specific review by the City of Costa Mesa. Due to the existing urban nature of the SCPTC Project site and surrounding area, the SCPTC Program EIR concluded that the SCPTC Project introduction of new light sources would not be substantial. The SCPTC Project would implement direct lighting and/or shielding features and comply with the City's building code requirements, which would reduce potential light impacts to a less than significant level.

3.10.3 Analysis of Project Changes

3.10.3.1 Shadow

The museum being developed as part of the Proposed Project would be located on the same OCMA site that was previously analyzed under the SCPTC Program EIR; however, the museum building included in the Proposed Project would be 5 ft shorter (from 80 ft to 75 ft) than the building that was previously analyzed. Therefore, the building shadow simulations (Figures 5.9-1 through 5.9-4) in the SCPTC Program EIR, which depict a slightly taller museum building than what is being put forth as part of the Proposed Project, provide a fairly accurate representation of the Proposed Project's shade/shadow impacts. As shown in Figures 5.9-1 through 5.9-4 in the SCPTC Program EIR, the Proposed Project would cast shadows mainly on the OCMA site itself or onto the adjacent Avenue of the Arts during the summer and winter solstices. Shadows would not be cast on any nearby sensitive

receptors, including any of the multi-family residential units east of Avenue of the Arts. Similar to the SCPTC Project, the Proposed Project would not generate shadows that would cast onto nearby sensitive receptors. As such, no impacts are anticipated to occur. The Proposed Project would not result in any new or substantially greater significant impacts related to shade and shadow, and impacts would remain less than significant.

3.10.3.2 Light and Glare

Similar to the SCPTC Project, construction of the Proposed Project would occur only during daylight hours. Any construction-related illumination during evening and nighttime hours would be used for safety and security purposes only and would occur only for the duration required for the temporary construction process. Construction equipment would not create substantial glare as limited equipment would be used, and the OCMA site would be shielded from vehicular and pedestrian views with the use of construction fencing. The Proposed Project would also implement the same project design features and standard conditions as the SCPTC Project to reduce light and glare impacts during construction. Construction of the Proposed Project would not result in any new or substantially greater significant effects related to light and glare during construction, and impacts would remain less than significant.

The Proposed Project would be designed with modern architecture that would complement the surrounding buildings on the SCPTC Project site and off-site uses. The Proposed Project would include an active façade along Avenue of the Arts with a dynamic exterior and glass storefront to provide direct views into the galleries from the sidewalk. A variety of building materials such as terracotta, metal louvers and panels, precast concrete, and glass would be incorporated to make the buildings both visually interesting and appealing. The use of multilevel rooflines, inset windows, and curved walls would minimize reflective surface areas. In addition, all building materials would be treated to prevent glare. The terracotta rain-screen assembly would have a matted finish. Exposed steel columns would be painted, and the glass used in the building's windows would have an energy-efficient coating. The windows on the eastern façade would be recessed to prevent direct sun exposure and glare, and the eastern edge of the second-floor terrace would feature a line of mature trees, which would minimize any potential glare on uses across Avenue of the Arts. Lighting features associated with the Proposed Project would be directed to avoid spilling onto adjacent uses. The Proposed Project's lighting would be comparable to the type and intensity of lighting that is already generated by the existing urban development in the SCPTC Project site. Similar to the SCPTC Project, the Proposed Project would include project design features and comply with City standards to limit glare and lighting impacts. Operation of the Proposed Project would not result in any new or substantially greater significant effects related to light and glare, and impacts would remain less than significant.

3.10.4 Cumulative Impacts

Similar to the SCPTC Project, the Proposed Project would result in the increasing urbanization of the general area, which could nominally contribute to an increase in shadows, glare, and lighting. The cumulative area for shade and shadow impacts would be substantially localized to the OCMA site and cumulative glare and lighting impacts would also be limited to the OCMA site and immediate vicinity (not impacting sensitive receptors). Further, the Proposed Project's incremental contribution

would not be cumulatively considerable because it would comply with applicable requirements included in the California Building Code, the City of Costa Mesa General Plan, and the *North Costa Mesa Specific Plan*. Finally, the Proposed Project would incorporate project design features that would reduce shadows, glare, and lighting. In consideration of all of the above, the Proposed Project would not require any major changes to the SCPTC Program EIR and would not result in any new or substantially greater significant cumulative environmental impacts or a substantial increase in the severity of cumulative impacts or require new or substantially different mitigation measures.

3.10.5 Findings Related to Aesthetics

No New Significant Effects Requiring Major EIR Revisions. Based on the foregoing analysis and information, there is no evidence that the Proposed Project requires a major change to the SCPTC Program EIR. The Proposed Project would not result in new significant environmental impacts related to aesthetics, and there would not be a substantial increase in the severity of impacts described in the SCPTC Program EIR.

No Substantial Change in Circumstances Requiring Major EIR Revisions. With the exception of the removed cinemas, new concert hall, and new residential units, the project site and surrounding area have not been developed or altered since the SCPTC Program EIR was prepared. In addition, these new uses were considered and approved as part of the larger SCPTC Program EIR project or Program EIR No. 1052 and its subsequent addenda. Because any new development that has occurred in the vicinity of the SCPTC Project site has been subject to environmental review requirements, any environmental impacts associated with such development have already been evaluated and mitigated to the extent feasible. Further, the Proposed Project is located on the same museum site that was analyzed in the SCPTC Program EIR and there have been no substantial changes related to the circumstances of this site. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to aesthetics that would require major changes to the SCPTC Program EIR.

No New Information Showing Greater Significant Effects than the SCPTC Program EIR. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the SCPTC Program EIR was certified, indicating that a new significant effect not reported in that document may occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to aesthetics requiring major revisions to the SCPTC Program EIR.

No New Information Showing Ability to Reduce Significant Effects in SCPTC Program EIR. There are no alternatives to the project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to aesthetics identified and considered in the SCPTC Program EIR.

3.10.6 Standard Conditions

Relevant standard conditions identified in the SCPTC Program EIR related to aesthetics are identified in Table 2.B, above.

3.10.7 Mitigation Measures

The SCPTC Program EIR did not require any mitigation measures related to aesthetics. As described above, the Proposed Project would result in less than significant impacts related to aesthetics (shadow, shade, glare, and lighting); therefore, no mitigation is required, and the conclusions in the SCPTC Program EIR related to aesthetics remain true for the Proposed Project.

3.11 FINDINGS OF THIS ADDENDUM

Based on information and analyses in this Addendum to the SCPTC Program EIR (Addendum) and pursuant to Section 15162 of the *State CEQA Guidelines*, the City has determined the following:

1. There are no substantial changes to the project that would require major revisions of the SCPTC Program EIR due to new significant environmental effects or a substantial increase in severity of impacts identified in the EIR;

2. Substantial changes have not occurred in the circumstances under which the project is being undertaken that will require major revisions to the SCPTC Program EIR to disclose new significant environmental effects or that would result in a substantial increase in severity of impacts identified in the SCPTC Program EIR; and

3. There is no new information of substantial importance which was not known at the time the SCPTC Program EIR was certified, indicating any of the following:

    a. The project will have one or more new significant effects not discussed in the certified SCPTC Program EIR;

    b. There are impacts determined to be significant in the SCPTC Program EIR that would be substantially more severe;

    c. There are additional mitigation measures or alternatives to the project that would substantially reduce one or more significant effects identified in the SCPTC Program EIR; and

    d. There are additional mitigation measures or alternatives rejected by the project proponent that are considerably different from those analyzed in the SCPTC Program EIR that would substantially reduce a significant impact identified in that EIR.

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5.0 LIST OF PREPARERS

5.1 CITY OF COSTA MESA

Daniel Inloes, Economic Development Administrator, Development Services Department

5.2 ADDENDUM PREPARERS

The following individuals were involved in the preparation of this Addendum to the SCPTC Program EIR (Addendum). The nature of their involvement is summarized below.

Ashley Davis, Principal in Charge
Ryan Bensley, AICP, Project Manager, Associate/Environmental Planner
Christina Hirt, Environmental Planner
Chris Graham, Environmental Planner

5.3 TECHNICAL REPORT PREPARERS

The following individuals were involved in the preparation of the technical reports in support of this Addendum. The nature of their involvement is summarized below.

5.3.1 LSA

The following individuals were involved in the preparation of the following technical reports:

Air Quality and Greenhouse Gas Memorandum (November 2018):

- Amy Fischer, Principal, Air Quality Group

Trip Generation Memorandum (October 2018):

- Arthur Black, Associate, Transportation Group

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APPENDIX A

AIR QUALITY AND GREENHOUSE GAS MEMORANDUM

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LSA

CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: November 8, 2018

TO: Daniel Inloes, Senior Planner, City of Costa Mesa

FROM: Michael Slavick, Senior Air Quality and Climate Change Specialist

SUBJECT: Air Quality and Greenhouse Gas Memorandum for the Orange County Museum of Art Project in the City of Costa Mesa, California

INTRODUCTION

LSA Associates, Inc. (LSA) is pleased to submit this air quality and greenhouse gas (GHG) analysis for the proposed Orange County Museum of Art Project located at 3333 Avenue of the Arts in Costa Mesa, California (Proposed Project). The following memorandum summarizes the Project Description and the regulatory setting and provides a quantitative assessment of the potential long-term and short-term air quality and GHG impacts associated with construction and operation of the Proposed Project. To quantify air quality and GHG emissions, LSA utilized the California Emissions Estimator Model (CalEEMod, Version 2016.3.2) and compared the net change in air quality and GHG emissions between the Previously Analyzed Project in the approved General Plan and the Proposed Project.

PROJECT LOCATION AND DESCRIPTION

The South Coast Plaza Town Center (SCPTC) Project site is directly bordered on the north by retail uses and condominiums across Sunflower Avenue. The Avenue of the Arts Hotel, the Costa Mesa Marriott, and apartment complexes are located to the east of the SCPTC Project site. Commercial and restaurants uses and a parking garage are located south of Anton Boulevard adjacent to Interstate 405 (I-405). The South Coast Plaza shopping center is located west of the SCPTC Project site across Bristol Street.

The 54-acre SCPTC Project site is currently developed with Segerstrom Hall, Segerstrom Center for the Arts, South Coast Repertory, the Westin South Coast Plaza, the Renee and Henry Segerstrom Concert Hall, additional office and retail uses, and parking. Under the City of Costa Mesa's (City) approved Final Program Environmental Impact Report (EIR) No. 1047 for the South Coast Plaza Town Center Project, the SCPTC project contemplated the net addition of 1,109,445 square feet of new retail, office, hotel, and cultural arts-related uses, including a 140,000-square-foot art museum/academy, within the *North Costa Mesa Specific Plan* (Updated 2016) area. The developments for Buildings A through D and F through K included in the SCPTC Program EIR would not be modified by the Proposed Project, and the site boundary for Building E (i.e., the proposed Orange County Museum of Art [OCMA] Project; OCMA site) would remain the same; however, the development included in the SCPTC Program EIR for Building E of the SCPTC Project site would be reduced. Residential development is not currently proposed at the OCMA site, and the proposed art museum/academy has a smaller total square footage compared to that which was previously

evaluated at a programmatic level in the SCPTC Program EIR. The other project components evaluated in the SCPTC Program EIR would not be affected by the modifications proposed by the Applicant.

The 1.7-acre OCMA site is currently undeveloped and utilized as a gathering space for events related to the Segerstrom Center for the Arts and the Concert Hall. The OCMA site is flat, with grass on the southern portion and a dirt area on the northern portion of the site, currently being used to stage construction materials such as dumpsters, trailers, and fencing.

The OCMA (Applicant) is now seeking entitlements from the City to reduce the square footage of the art museum/academy space from 140,000 square feet to approximately 66,750 square feet. The Proposed Project would include the development of the museum, with a café and second-floor terrace that would allow for outdoor events and art installations. Construction of the Proposed Project is anticipated to commence in May 2019 and would include the construction of a 66,750-square-foot museum, loading dock driveway entry, and new curb inlet and bus drop-off area along the Avenue of the Arts. The Proposed Project would be fully operational in May 2021.

EXISTING SENSITIVE LAND USES IN THE PROJECT AREA

Sensitive receptors are defined as those segments of a population such as children, athletes, elderly, and the sick that are more susceptible to the effects of air pollution than the population at large. Sensitive sites are defined as land uses where sensitive receptors are likely to spend time, including residences such as private homes, condominiums, apartments, and living quarters, schools, preschools, daycare centers, and health facilities such as hospitals or retirement and nursing homes, long-term care hospitals, hospices, prisons, and dormitories or similar live-in housing.[1] The SCPTC Project site is surrounded by various land uses, with the nearest sensitive receptors to the northeast. The areas adjacent to the SCPTC Project site include the following uses:

- **North:** Condominiums across Sunflower Avenue
- **East:** Commercial uses and apartment complexes
- **South:** Commercial and restaurant uses and a parking garage
- **West:** South Coast Plaza shopping center

The nearest sensitive receptors are the apartment complexes located 75 feet (ft) (23 meters [m]) to the east of the OCMA site.

EXISTING SETTING

The SCPTC Project site is located in the City of Costa Mesa, which is part of the South Coast Air Basin (Basin), and is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

[1] South Coast Air Quality Management District (SCAQMD). 2018. Air Quality Guidance Document - Glossary. Website: http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/glossary.pdf (accessed April 2018).

Climate/Meteorology

Air quality in the planning area is affected not only by various emission sources (e.g., mobile, stationary, and area sources) but also by atmospheric conditions such as wind speed, wind direction, temperature, and rainfall. The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States gives the Basin the worst air pollution problem in the nation.

Climate in the Basin is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern border, and high mountains surround the rest of the Basin, which lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a climate that is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted; however, periods of extremely hot weather, winter storms, or Santa Ana wind conditions do occur.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station closest to the SCPTC Project site is the Santa Ana Meteorological Station. The monthly average maximum temperature recorded at this station from 1906 onwards ranged from 68.1°F in January to 84.7°F in August, with an annual average maximum of 75.8°F. The monthly average minimum temperature recorded at this station ranged from 43.1°F in January to 61.6°F in August, with an annual average minimum of 52.0°F. January is typically the coldest month, and August is typically the warmest month in this area of the Basin.

Most rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. The Santa Ana Meteorological Station monitored precipitation from 1906 onwards, during which average monthly rainfall varied from 0.02 inch in July to 3.05 inches in February, with an annual total of 13.69 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

Although the Basin has a semi-arid climate, air near the surface is generally moist because of the presence of a shallow marine layer. With very low average wind speeds, there is a limited capacity to disperse air contaminants horizontally. The dominant daily wind pattern is an onshore 8- to 12-mile–per-hour (mph) daytime breeze and an offshore 3 to 5 mph nighttime breeze. The typical wind flow pattern fluctuates only with occasional winter storms or strong northeasterly (Santa Ana) winds from the mountains and deserts northeast of the Basin. Summer wind flow patterns represent worst-case conditions because this is the period of higher temperatures and more sunlight, which result in ozone (O_3) formation.

Temperature normally decreases with altitude, and a reversal of this atmospheric state, where temperature increases with altitude, is called an inversion. The height from the Earth to the inversion base is known as the mixing height. Persistent low inversions and cool coastal air tend to create morning fog and low stratus clouds. Cloudy days are less likely in the eastern portions of the

Basin and are about 25 percent more likely along the coast. The vertical dispersion of air pollutants in the Basin is limited by temperature inversions in the atmosphere close to the Earth's surface.

Inversions are generally lower in the nighttime when the ground is cooler than during daylight hours when the sun warms the ground and, in turn, the surface air layer. As this heating process continues, the temperature of the surface air layer approaches the temperature of the inversion base, causing heating along its lower edge. If enough warming takes place, the inversion layer becomes weak and opens up to allow the surface air layers to mix upward. This can be seen in the middle-to-late afternoon on a hot summer day when the smog appears to clear up suddenly. Winter inversions typically break earlier in the day, preventing excessive smog buildup.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversions or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problem is the accumulation of carbon monoxide (CO) and nitrogen oxides (NO_X) due to extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog.

Local Air Quality

The SCAQMD, together with the California Air Resources Board (ARB), maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the SCPTC Project site is the Costa Mesa Monitoring Station. This station is approximately 3 miles to the southwest of the SCPTC Project site, and monitors air pollutant data for CO, hourly and 8-hour ozone, nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). In addition, other criteria pollutants (i.e., particulate matter less than 10 microns in size [PM_{10}] and particulate matter less than 2.5 microns in size [$PM_{2.5}$]), data were obtained from the Anaheim Monitoring Station. The air quality trends from these two stations are used to represent the ambient air quality in the vicinity of the SCPTC Project site. The ambient air quality data monitored at these stations within the past 3 years are listed in Table A.

As shown in Table A, the ambient air quality data indicate that CO, PM_{10}, $PM_{2.5}$, NO_2, and SO_2 levels are consistently below the relevant State and federal standards. The State 8-hour O_3 standards were exceeded between one and five times in the last 3 years.

Air Pollution Constituents and Attainment Status

ARB coordinates and oversees both State and federal air pollution control programs in the State. ARB oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the United States Environmental Protection Agency (EPA) and local air quality districts. ARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. Data collected at these stations are used by ARB and the EPA to classify air basins as attainment, nonattainment, nonattainment-transitional, or unclassified, based on air quality data for the most recent three calendar years compared with the ambient air quality standards (AAQS).

Table A: Ambient Air Quality Monitored in the Project Vicinity

Pollutant	Standard	2015	2016	2017
Carbon Monoxide (CO) – Anaheim Monitoring Station				
Maximum 1-hour concentration (ppm)		3.1	2.6	2.5
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		2.2	2.1	2.1
Number of days exceeded:	State: ≥ 9.0 ppm	0	0	0
	Federal: ≥ 9 ppm	0	0	0
Ozone (O_3) – Costa Mesa Monitoring Station				
Maximum 1-hour concentration (ppm)		0.099	0.090	0.090
Number of days exceeded:	State: > 0.09 ppm	1	0	0
Maximum 8-hour concentration (ppm)		0.08	0.069	0.080
Number of days exceeded:	State: > 0.07 ppm	2	0	5
	Federal: > 0.07 ppm	2	0	4
Coarse Particulates (PM_{10}) – Anaheim Monitoring Station				
Maximum 24-hour concentration (µg/m³)		66	74	95
Number of days exceeded:	State: > 50 µg/m³	NA	NA	NA
	Federal: > 150 µg/m³	NA	NA	NA
Annual arithmetic average concentration (µg/m³)		NA	NA	NA
Exceeded for the year:	State: > 20 µg/m³	NA	NA	NA
Fine Particulates ($PM_{2.5}$) – Anaheim Monitoring Station				
Maximum 24-hour concentration (µg/m³)		45.8	44.4	53.9
Number of days exceeded:	Federal: > 35 µg/m³	0	0	0
Annual arithmetic average concentration (µg/m³)		9.4	9.4	11.6
Exceeded for the year:	State: > 12 µg/m³	No	No	No
	Federal: > 15 µg/m³	No	No	No
Nitrogen Dioxide (NO_2) – Costa Mesa Monitoring Station				
Maximum 1-hour concentration (ppm)		0.052	0.059	0.045
Number of days exceeded:	State: > 0.18 ppm	0	0	0
	Federal: > 0.10 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.011	0.010	0.010
Exceeded for the year:	State: > 0.030 ppm	No	No	No
	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2) – Costa Mesa Monitoring Station				
Maximum 24-hour concentration (ppm)		0.0011	0.007	0.0005
Number of days exceeded:	State: > 0.04 ppm	0	0	0
Maximum 1-hour concentration (ppm)		0.0045	0.0033	0.0019
Number of days exceeded:	State: > 0.25 ppm	0	0	0
	Federal: > 0.075 ppm	0	0	0

Source: EPA. Air Data Air Quality Monitors. Website: http://www.epa.gov/airdata/ad_maps.html (accessed November2018).
µg/m³ = micrograms per cubic meter
EPA = United States Environmental Protection Agency
NA = not available
ppm = parts per million

Attainment areas may be:

- Attainment/unclassified ("unclassifiable" in some lists), which have never violated the air quality standard of interest or do not have enough monitoring data to establish attainment or nonattainment status;

- Attainment/maintenance (national ambient air quality standards [NAAQS] only), which violated an NAAQS that is currently in use (was nonattainment) in or after 1990, but now attains the standard and is officially re-designated as attainment by the EPA with a maintenance State Implementation Plan (SIP); or

- Attainment (usually only for California ambient air quality standards [CAAQS], but sometimes for NAAQS), which have adequate monitoring data to show attainment, have never been nonattainment, or, for NAAQS, have completed the official maintenance period.

Additional restrictions are imposed on nonattainment areas as required by the EPA. The air quality data collected from monitoring stations are also used to monitor progress in attaining air quality standards. Table B lists the attainment status for the criteria pollutants in the Basin.

Table B: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 1-hour	Nonattainment	N/A
O_3 8-hour	Nonattainment	Extreme Nonattainment[1]
PM_{10}	Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Unclassified/Attainment (1-hour) Attainment/Maintenance (Annual)
SO_2	Attainment	Unclassified/Attainment
Lead	Attainment[2]	Unclassified/Attainment[1]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: ARB. Air Quality Standards and Area Designations. Website: http://www.arb.ca.gov/desig/desig.htm (accessed November 2018).

[1] Area has a design value of 0.175 ppm and above.

[2] Except in Los Angeles County.

ARB = California Air Resources Board
CO = carbon monoxide
N/A = not applicable
NO_2 = nitrogen dioxide
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
ppm = parts per million
SO_2 = sulfur dioxide

Description of Global Climate Change and its Sources

Global climate change (GCC) is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (e.g., precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes in addition to rising temperatures.

Climate change refers to any change in measures of weather (e.g., temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from natural factors (e.g., changes in the sun's intensity), natural processes within the climate system (e.g., changes in ocean circulation), or human activities (e.g., the burning of fossil fuels, land clearing, or agriculture). The primary observed effect of GCC has been a rise in the average global tropospheric[1] temperature of 0.36°F per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling shows that further warming may occur, which may induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of the State could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns, or more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones. Specific effects in the State might include a decline in the Sierra Nevada snowpack, erosion of the State's coastline, and seawater intrusion in the San Joaquin Delta.

Global surface temperatures have risen by 1.33°F ±0.32°F over the last 100 years. The rate of warming over the last 50 years is almost double that over the last 100 years (Intergovernmental Panel on Climate Change [IPCC] 2013). The latest projections, based on state-of-the-art climate models, indicate that temperatures in the State are expected to rise 3°F to 10.5°F by the end of the century (California Energy Commission 2006). The prevailing scientific opinion on climate change is that "most of the warming observed over the last 60 years is attributable to human activities" (IPCC 2013). Increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming. The observed warming effect associated with the presence of GHGs in the atmosphere (from either natural or human sources) is often referred to as "the greenhouse effect."[2]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced GCC are:[3]

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

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1 The troposphere is the zone of the atmosphere characterized by water vapor, weather, winds, and decreasing temperature with increasing altitude.

2 The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse allows heat from sunlight in and reduces the amount of heat that escapes, GHGs like CO_2, CH_4, and N_2O in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

3 The GHGs listed are consistent with the definition in Assembly Bill 32 (Government Code 38505), as discussed later in this memorandum.

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which some scientists believe can cause global warming. While GHGs produced by human activities include naturally occurring GHGs (e.g., CO_2, CH_4, and N_2O), some gases (e.g., HFCs, PFCs, and SF_6) are completely new to the atmosphere. Certain other gases (e.g., water vapor) are short-lived in the atmosphere compared to these GHGs, which remain in the atmosphere for significant periods of time and contribute to climate change in the long term. Water vapor is generally excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes (e.g., oceanic evaporation). For the purposes of this air quality study, the term "GHGs" will refer collectively to the six gases identified in the bulleted list provided above.

These gases vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of metric tons[1] of "CO_2 equivalents" (metric tons [MT] of CO_2e). For example, N_2O is 298 times more potent at contributing to global warming than CO_2. Table C identifies the GWP for each GHG analyzed in this memorandum.

Table C: Global Warming Potential for Selected Greenhouse Gases

Pollutant	Lifetime (Years)	Global Warming Potential (100-year)[1]
Carbon Dioxide (CO_2)	~100[2]	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	121	298

Source: ARB. First Update to the Climate Change Scoping Plan (2014).

[1] The 100-year global warming potential estimates are from Section 8.7.1.2 of The Global Warming Potential Concept in the IPCC 2007 Fourth Assessment Report (AR4). Website: http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm (accessed November 2018).

[2] CO_2 has a variable atmospheric lifetime and cannot be readily approximated as a single number.

ARB = California Air Resources Board

CO_2 = carbon dioxide

IPCC = Intergovernmental Panel on Climate Change

The following discussion summarizes the characteristics of the six primary GHGs.

Carbon Dioxide

In the atmosphere, carbon generally exists in its oxidized form as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals, and plants; volcanic outgassing; decomposition of organic matter; and evaporation from the oceans. Human-caused sources of CO_2

[1] A metric ton is equivalent to approximately 1.1 tons.

include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. The Earth maintains a natural carbon balance, and when concentrations of CO_2 are upset, the system gradually returns to its natural state through natural processes. Natural changes to the carbon cycle work slowly, especially compared to the rapid rate at which humans are adding CO_2 to the atmosphere. Natural removal processes (e.g., photosynthesis by land- and ocean-dwelling plant species) cannot keep pace with this extra input of human-made CO_2, and consequently the gas is building up in the atmosphere. The concentration of CO_2 in the atmosphere has risen approximately 30 percent since the late 1800s.[1]

The transportation sector remained the largest source of GHG emissions in 2016, representing 39 percent of the State's GHG emission inventory.[2] The largest emissions category within the transportation sector is on-road, which consists of passenger vehicles (cars, motorcycles, and light-duty trucks) and heavy-duty trucks and buses. Emissions from on-road sources constitute more than 92 percent of the transportation sector total. Industry and electricity generation were the State's second- and third-largest categories of GHG emissions, respectively.

Methane

CH_4 is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources of CH_4 include fires, geologic processes, and bacteria that produce CH_4 in a variety of settings (most notably, wetlands) (EPA 2010). Anthropogenic sources include rice cultivation, livestock, landfills and waste treatment, biomass burning, and fossil fuel combustion (e.g., the burning of coal, oil, and natural gas). As with CO_2, the major removal process of atmospheric CH_4—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and CH_4 concentrations in the atmosphere are increasing.

Nitrous Oxide

N_2O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N_2O is also a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion sources emit N_2O. The quantity of N_2O emitted varies according to the types of fuel, technology, and pollution control devices used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in the State.

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1 California Environmental Protection Agency (CalEPA). Climate Action Team Report to Governor Schwarzenegger and the Legislature. Website: http://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF (accessed November 2018).

2 CalEPA. Air Resources Board. California GHG Emission Inventory. Website: https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf (accessed November 2018).

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

HFCs are primarily used as substitutes for O_3-depleting substances regulated under the Montreal Protocol.[1] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in the State; however, the rapid growth in the semiconductor industry, which is active in the State, has led to greater use of PFCs. However, there are no known project-related emissions of these three GHGs; therefore, these substances are not discussed further in this analysis.

Emissions Sources and Inventories

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, national, State, and local GHG emission inventories. However, because GHGs persist for a long time in the atmosphere, accumulate over time, and are generally well mixed, their impact on the atmosphere and climate cannot be tied to a specific point of emission.

Global Emissions

Worldwide emissions of GHGs in 2016 totaled 23.6 billion metric tons of carbon dioxide equivalent per year (MT CO_2e/yr).[2] Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change (UNFCCC).

United States Emissions

In 2016, the United States emitted approximately 6.546 billion MT CO_2e, down from 7.4 billion MT in 2007. Total United States emissions increased by 2.8 percent from 1990 to 2016, and emissions increased from 2015 to 2016 by 2.0 percent. Of the six major sectors nationwide—the electric power industry, transportation, industry, agriculture, commercial, and residential—the electric power industry and transportation sectors combined account for approximately 70 percent of the GHG emissions; the majority of the electric power industry and all of the transportation emissions are generated from direct fossil fuel combustion. Greenhouse gas emissions in 2016 were 11.6 percent below 2005 levels (EPA 2018).

State of California Emissions

According to ARB emission inventory estimates, the State emitted approximately 429.33 million metric tons of CO_2e (MMT CO_2e) emissions in 2016. This is a decrease representing an overall decrease of 13 percent since peak levels in 2004 and 2 MMT CO_2e below the 1990 level and the State's 2020 GHG target (ARB 2018).

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1 The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the O_3 layer by phasing out the production of several groups of halogenated hydrocarbons that are believed to be responsible for O_3 depletion and are also potent GHGs.

2 United Nations Framework Convention on Climate Change (UNFCCC). 2018. GHG data from UNFCCC. Website: https://unfccc.int/process/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc (accessed November 2018).

ARB estimates that transportation was the source of approximately 41 percent of the State's GHG emissions in 2016, followed by electricity generation (both in State and out of State) at 16 percent and industrial sources at 23 percent. The remaining sources of GHG emissions were residential and commercial activities at 12 percent, agriculture at 8 percent, and other not-specified sources at 1 percent (ARB 2018).

ARB is responsible for developing the State GHG Emission Inventory. This inventory estimates the amount of GHGs emitted to and removed from the atmosphere by human activities in the State and supports the Assembly Bill (AB) 32 Climate Change Program. ARB's current GHG emission inventory covers the years 1990–2014 and is based on fuel use, equipment activity, industrial processes, and other relevant data (e.g., housing, landfill activity, and agricultural lands).

ARB staff has projected statewide unregulated GHG emissions for 2020, which represent the emissions that would be expected to occur in the absence of any GHG reduction actions, at 509 MMT CO_2e. GHG emissions from the transportation and electricity sectors as a whole are expected to increase but remain at approximately 30 percent and 32 percent of total CO_2e emissions, respectively (ARB 2014).

REGULATORY SETTING

Federal Regulations/Standards

Pursuant to the federal Clean Air Act (CAA) of 1970, the EPA established the NAAQS. The NAAQS were established for six major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health.

As discussed above, data collected at permanent monitoring stations are used by the EPA to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the EPA. The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA for the Basin.

State Regulations/Standards

In 1967, the State Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus (i.e., the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board), to establish ARB. Since its formation, ARB has worked with the public, the business sector, and local governments to find solutions to the State's air pollution problems.

The California Air Pollution Control Officers Association (CAPCOA) is a nonprofit association of the air pollution control officers from all 35 local air quality agencies throughout California. CAPCOA was formed in 1976 to promote clean air and to provide a forum for sharing knowledge, experience, and information among the air quality regulatory agencies around the State. CAPCOA meets regularly with federal and State air quality officials to develop statewide rules and to assure consistent application of rules and regulations. CAPCOA works with specialized task forces (including regulated industry) by participating actively in the legislative process, and continuing to coordinate local

efforts with those of the State and federal air agencies. The goal is to protect public health while maintaining economic vitality. California adopted the California Clean Air Act in 1988. ARB administers the CAAQS for the 10 air pollutants designated in the California Clean Air Act. These 10 State air pollutants are the six criteria pollutants designated by the federal CAA as well as four others: visibility-reducing particulates, H_2S, sulfates, and vinyl chloride.

California Climate Action Milestones

In 1988, AB 4420 directed the California Energy Commission (CEC) to report on "how global warming trends may affect the State's energy supply and demand, economy, environment, agriculture, and water supplies" and offer "recommendations for avoiding, reducing and addressing the impacts." This marked the first statutory direction to a State agency to address climate change.

The California Climate Action Registry was created to encourage voluntary reporting and early reductions of GHG emissions with the adoption of Senate Bill (SB) 1771 in 2000. The CEC was directed to assist by developing metrics and identifying and qualifying third-party organizations to provide technical assistance and advice to GHG emission reporters. The next year, SB 527 amended SB 1771 to emphasize third-party verification.

SB 1771 also contained several additional requirements for the CEC, including (1) updating the State's GHG inventory from an existing 1998 report and continuing to update it every 5 years; (2) acquiring, developing, and distributing information on GCC to agencies and businesses; (3) establishing a State interagency task force to ensure policy coordination; and (4) establishing a climate change advisory committee to make recommendations on the most equitable and efficient ways to implement GCC requirements. In 2006, AB 1803 transferred preparation of the inventory from the CEC to ARB with AB 1803. ARB updates the inventory annually.

AB 1493, authored by Assembly Member Fran Pavley in 2002, directed ARB to adopt regulations to achieve the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles. The so-called "Pavley" regulations, or Clean Car regulations, were approved by ARB in 2004. On September 24, 2009, ARB adopted amendments to the "Pavley" regulations that reduced GHG emissions in new passenger vehicles from 2009 through 2016. AB 1493 also directed the State's Climate Action Registry to adopt protocols for reporting reductions in GHG emissions from mobile sources prior to the operative date of the regulations.

The California Renewable Portfolio Standard Program, which requires electric utilities and other entities under the jurisdiction of the California Public Utilities Commission to meet 20 percent of their retail sales with renewable power by 2017, was established by SB 1078 in 2002. The Renewable Portfolio Standard was accelerated to 20 percent by 2010 by SB 107 in 2006. The program was subsequently expanded by the renewable electricity standard approved by ARB in September 2010, requiring all utilities to meet a 33 percent target by 2020. The renewable electricity standard is projected to reduce GHG emissions from the electricity sector by at least 12 MMT CO_2e in 2020.

Executive Order (EO) S-3-05 (June 2005) established GHG targets for the State (e.g., returning to year 2000 emission levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050). EO S-3-05 directed the Secretary of the California Environmental Protection Agency (CalEPA)

to coordinate efforts to meet the targets with the heads of other State agencies. This group became the Climate Action Team.

In 2006, the State Legislature passed the California Global Warming Solutions Act of 2006 (AB 32), which created a comprehensive, multiyear program to reduce GHG emissions in California. AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal of reducing emissions to 1990 levels by 2020. The Scoping Plan was first approved by ARB in 2008 and must be updated every 5 years. The First Update to the Climate Change Scoping Plan was approved by ARB on May 22, 2014. In 2016, the State Legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the State Legislature passed companion legislation AB 197, which provides additional direction for developing the Scoping Plan. ARB has prepared a second update to the Scoping Plan to reflect the 2030 target set by EO B-30-15 and codified by SB 32.

California is implementing the world's first Low Carbon Fuel Standard for transportation fuels, pursuant to both EO S-01-07 (signed January 2007) and AB 32. The standard requires a reduction of at least 10 percent in the CO intensity of the State's transportation fuels by 2020. This reduction is expected to reduce GHG emissions in 2020 by 17.6 MMT CO_2e. Also in 2007, AB 118 created the Alternative and Renewable Fuel and Vehicle Technology Program. The CEC and ARB administer this program, which provides funding for alternative fuel and vehicle technology research, development, and deployment in order to attain the State's climate change goals, achieve the State's petroleum reduction objectives and clean air and GHG emission reduction standards, develop public and private partnerships, and ensure a secure and reliable fuel supply.

In addition to vehicle emissions regulations and the Low Carbon Fuel Standard, the third effort to reduce GHG emissions from transportation is the reduction in the demand for personal vehicle travel (i.e., vehicle miles traveled [VMT]). This measure was addressed in September 2008 through the Sustainable Communities and Climate Protection Act of 2008, or SB 375. The enactment of SB 375 initiated an important new regional land use planning process to mitigate GHG emissions by integrating and aligning planning for housing, land use, and transportation for California's 18 MPOs. The bill directed ARB to set regional GHG emission reduction targets for most areas of the State. SB 375 also contained important elements related to federally mandated regional transportation plans and the alignment of State transportation and housing planning processes.

ARB released the Final 2017 Climate Change Scoping Plan Update in November 2017. This Scoping Plan Update establishes a proposed framework of action for California to meet the target of 40 percent reduction in GHGs by 2030 compared to 1990 levels. This goal builds on California's success in establishing effective policies that have helped reduce emissions of GHGs while delivering substantial economic and environmental benefits. Further, the goal aligns California with the rest of the world in the global effort to fight climate change.

The first Scoping Plan was required by AB 32, the Global Warming Solutions Act, and was adopted in 2008. Under that plan, California set in place a range of effective programs to slash GHGs from cars, trucks, fuels, industry, and electrical generation, and the State is well on its way to achieving the goal of AB 32 to reach 1990 levels of GHGs by 2020. The 2017 Climate Change Scoping Plan Update builds on those programs and takes aim at the 2030 target established by SB 32 (Pavley). That bill,

and related laws, is designed specifically to continue California's leadership in the fight against climate change and guide the State toward an equitable clean energy economy and prosperous future. To reach that future, the 2017 Climate Change Scoping Plan Update draws on the successes and the lessons learned from the first chapter of California's efforts to fight climate change under AB 32. The 2017 Climate Change Scoping Plan Update builds on key programs such as the Cap-and-Trade Regulation; the Low Carbon Fuel Standard; and much cleaner cars, trucks, and freight movement, powering the State off cleaner renewable energy, and strategies to reduce methane emissions from agricultural and other wastes by using methane to meet energy needs.

REGIONAL AIR QUALITY PLANNING FRAMEWORK

The 1976 Lewis Air Quality Management Act established the SCAQMD and other air quality districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the State.

ARB is responsible for incorporating air quality management plans for local air basins into a SIP for EPA approval. Significant authority for air quality control within them has been given to local air quality districts that regulate stationary-source emissions and develop local nonattainment plans.

SCAQMD Rules

The Proposed Project would be required to comply with regional rules that assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best available control measures (BACMs) so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors.

SCAQMD Rule 403 Measures

- Water active sites at least three times daily (locations where grading is to occur will be thoroughly watered prior to earthmoving).

- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 ft of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).

- Traffic speeds on all unpaved roads shall be reduced to 15 mph or less.

REGIONAL AIR QUALITY MANAGEMENT PLAN

SCAQMD is responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the Basin. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. SCAQMD prepares a new AQMP every 3 years, updating the previous plan and 20-year horizon.

The latest plan is the 2016 AQMP, which incorporates the latest scientific and technological information and planning assumptions, including the 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and updated emission inventory methodologies for various source categories. The 2016 AQMP included the integrated strategies and measures needed to meet the NAAQS, implementation of new technology measures, and demonstrations of attainment of the 1-hour and 8-hour ozone NAAQS as well as the latest 24-hour and annual $PM_{2.5}$ standards. Key elements of the 2016 AQMP include:

- Calculation and credit for co-benefits from other planning efforts (e.g., climate, energy, and transportation);
- A strategy with fair-share emission reductions at the federal, State, and local levels;
- Investment in strategies and technologies meeting multiple air quality objectives;
- Identification of new partnerships and significant funding for incentives to accelerate deployment of zero and near zero technologies;
- Enhanced socioeconomic assessment, including an expanded environmental justice analysis;
- Attainment of the 24-hour $PM_{2.5}$ standard in 2019 with no additional measures;
- Attainment of the annual $PM_{2.5}$ standard by 2025 with implementation of a portion of the ozone strategy; and
- Attainment of the 1-hour ozone standard by 2022 with no reliance on "black box" future technology (CAA Section 182(e)(5) measures).

Local Policies

City of Costa Mesa 2015–2035 General Plan

State law requires that every city and county adopt a comprehensive, long-term General Plan. A General Plan represents the community's view of its future and is often referred to as a blueprint for growth and development. As a result, local decision-makers oftentimes use the goals and policies of the General Plan as a basis on which to formulate land use decisions. Some of the relevant policies listed in the City's General Plan include:

1. **Objective CON-2.A:** Work to conserve energy resources in existing and new buildings, utilities, and infrastructure.

Energy Efficiency and Conservation

- **Policy CON-2.A.1:** Promote efficient use of energy and conservation of available resources in the design, construction, maintenance, and operation of public and private facilities, infrastructure, and equipment.
- **Policy CON-2.A.2:** Consult with regional agencies and utility companies to pursue energy efficiency goals. Expand renewable energy strategies to reach zero net energy for both residential and commercial new construction.
- **Policy CON-2.A.3:** Continue to develop partnerships with participating jurisdictions to promote energy efficiency, energy conservation, and renewable energy resource development by leveraging the abilities of local governments to strengthen and reinforce the capacity of energy efficiency efforts.
- **Policy CON-2.A.4:** Encourage new development to take advantage of Costa Mesa's optimal climate in the warming and cooling of buildings, including use of heating, ventilation, and air conditioning (HVAC) systems.

Green Building Sustainable Development Practices

- **Policy CON-2.A.5:** Promote environmentally sustainable development principles for buildings, master planned communities, neighborhoods, and infrastructure.
- **Policy CON-2.A.6:** Encourage construction and building development practices that reduce resource expenditures throughout the lifecycle of a structure.
- **Policy CON-2.A.7:** Continue to require all City facilities and services to incorporate energy and resource conservation standards and practices and require that new municipal facilities be built within the LEED Gold standards or equivalent.
- **Policy CON-2.A.8:** Continue City green initiatives in purchases of equipment, and agreements that favor sustainable products and practices.

Solid Waste Reduction and Recycling

- **Policy CON-2.A.9:** Encourage waste management programs that promote waste reduction and recycling to minimize materials sent to landfills. Maintain robust programs that encourage residents and businesses to reduce, reuse, recycle, and compost.
- **Policy CON-2.A.10:** Support waste management practices that provide recycling programs. Promote organic recycling, landfill diversion, zero waste goals, proper hazardous waste collections, composting, and the continuance of recycling centers.
- **Policy CON-2.A.11:** Continue construction and demolition programs that require recycling and minimize waste in haul trips.

2. **Objective CON-4.A:** Pursue the prevention of the significant deterioration of local and regional air quality.

Air Quality

- **Policy CON-4.A.**1: Support regional policies and efforts that improve air quality to protect human and environmental health, and minimize disproportionate impacts on sensitive population groups.
- **Policy CON-4.A.2:** Encourage businesses, industries, and residents to reduce the impact of direct, indirect, and cumulative impacts of stationary and non-stationary pollution sources.
- **Policy CON-4.A.3:** Require that sensitive uses such as schools, childcare centers, parks and playgrounds, housing, and community gathering places are protected from adverse impacts of emissions.
- **Policy CON-4.A.4:** Continue to participate in regional planning efforts with the Southern California Association of Governments, nearby jurisdictions, and the South Coast Air Quality Management District to meet or exceed air quality standards.

Climate Change

- **Policy CON-4.A.5:** Encourage compact development, infill development, and a mix of uses that are in proximity to transit, pedestrian, and bicycling infrastructures.
- **Policy CON-4.A.6:** Enhance bicycling and walking infrastructure, and support public bus service, pursuant to the Circulation Element's goals, objectives, and policies.
- **Policy CON-4.A.7:** Encourage installation of renewable energy devices for businesses and facilities and strive to reduce community-wide energy consumption.
- **Policy CON-4.A.8:** Develop long-term, community-wide strategies and programs that work at the local level to reduce greenhouse gases and Costa Mesa's "carbon footprint."

THRESHOLDS OF SIGNIFICANCE

Pollutants with Regional Effects

SCAQMD has established daily emissions thresholds for construction and operation for the evaluation of proposed projects in the Basin. The emissions thresholds were established based on the attainment status of the Basin with regard to air quality standards for specific criteria pollutants. Because the concentration standards were set by the EPA at a level that protects public health with an adequate margin of safety, these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

Regional Thresholds for Construction Emissions

The following California Environmental Quality Act (CEQA) significance thresholds for construction emissions have been established for the Basin:

- 75 pounds per day (lbs/day) of volatile organic compounds (VOCs)
- 100 lbs/day of NO_X
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}

- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of sulfur oxides (SO_X)

Projects in the Basin with construction-related emissions that exceed any of these emission thresholds are considered to be significant under SCAQMD guidelines.

Regional Thresholds for Operational Emissions

The following CEQA significance thresholds for operational emissions have been established for the Basin:

- 55 lbs/day of VOCs
- 55 lbs/day of NO_X
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of SO_X

Projects in the Basin with operational emissions that exceed any of these emission thresholds are considered to be significant under SCAQMD guidelines.

The phase-out of leaded gasoline started in 1976. Since gasoline no longer contains lead, the Proposed Project is not anticipated to result in air quality impacts related to lead; therefore, no further discussion related to lead is provided in this analysis.

Thresholds for Localized Impacts Analysis

SCAQMD published its *Final Localized Significance Threshold Methodology* in July 2008, recommending that all air quality analyses include an assessment of both construction and operational impacts on the air quality of nearby sensitive receptors from emissions of CO, NO_X, PM_{10}, and $PM_{2.5}$. Localized significance thresholds (LSTs) represent the maximum emissions from a project that would not be expected to result in an exceedance of the NAAQS or CAAQS. LSTs are based on the ambient concentrations of that pollutant within the project's Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For this project, the appropriate SRA is North Coastal Orange County (Area 18).

If the total acreage disturbed is less than or equal to 5 acres per day, then the SCAQMD's screening look-up tables can be used to determine if a project has the potential to result in a significant impact. In the case of CO and NO_2, because ambient levels are below the NAAQS and CAAQS, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. This would apply to PM_{10} and $PM_{2.5}$, both of which are nonattainment pollutants (SCAQMD 2006). For these two, the significance criteria are the pollutant concentration thresholds presented in SCAQMD Rules 403. The Rule 403 threshold of 10.4 $\mu g/m^3$ applies to construction emissions.

Based on the SCAQMD recommended methodology[1] and the construction equipment planned, no more than 1.7 acres[2] would be disturbed on any one day; thus, the 1.7-acre LSTs have been used for construction emissions. On-site operational emissions would occur from stationary and mobile sources. On-site vehicle emissions are the largest source of emissions, and it is assumed that the on-site travel routes for the Proposed Project would occupy up to 1.7 acres of the surface area. Therefore, the 1.7-acre thresholds would apply during Project operations.

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. The nearest residential land use is 75 ft (23 m) to the east of the OCMA site. Therefore, the following emissions thresholds for the SRA North Coastal Orange County (Area 18) apply during project construction and operation:

Construction LSTs

- 119 lbs/day of NO_X
- 868 lbs/day of CO
- 6.1 lbs/day of PM_{10}
- 4.4 lbs/day of $PM_{2.5}$

Operation LSTs

- 119 lbs/day of NO_X
- 868 lbs/day of CO
- 1.7 lbs/day of PM_{10}
- 1.7 lbs/day of $PM_{2.5}$

GLOBAL CLIMATE CHANGE

State CEQA Guidelines Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

A project would normally have a significant effect on the environment if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Currently, there is no statewide GHG emissions threshold established to determine potential GHG emissions impacts of a project. Threshold methodology and thresholds are still being developed and revised by air quality districts in the State. Therefore, this environmental issue remains unsettled and must be evaluated on a case-by-case basis until such time as SCAQMD adopts significance thresholds and GHG emissions impact methodology. In the absence of a climate action plan for the City, SCAQMD thresholds, when adopted, would apply to future development in the City.

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1 SCAQMD. *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds*. Website: www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/caleemod-guidance.pdf (accessed April 2018).

2 A maximum disturbance of 1.7 acres would occur during the grading phase from the use of one rubber-tired dozer, and one grader for 8 hours per day.

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD convened a GHG CEQA Significance Threshold Stakeholder Working Group (Working Group).[1] Based on the last Working Group meeting (Meeting No. 15) held in September 2010, SCAQMD proposed an analysis methodology using a tiered approach for the evaluation of GHG emissions for development projects where SCAQMD is not the lead agency (SCAQMD 2010). The applicable tier for this commercial development project is Tier 3 (if GHG emissions are less than 3,000 MT CO_2e/yr, project-level and cumulative GHG emissions are less than significant).

METHODOLOGY

The California Emission Estimator Model (i.e., SCAQMD-approved air quality and GHG emissions model) was not in existence when the SCPTC Program EIR was approved in 2001. In order to be consistent with the latest version of the air quality models, the SCAQMD-approved CalEEMod model is utilized for the construction and operational emissions analysis for the Previously Analyzed Project (140,000-square-foot art museum/academy) and Proposed Project (66,750-square-foot art museum) scenarios. In 2016, the City updated its General Plan and estimated that the 140,000-square-foot art museum/academy building included as part of the SCPTC Project would generate approximately 7,874 average daily trips (ADTs). According to the Trip Generation Memorandum (2018), the smaller 66,750-square-foot art museum included in the Proposed Project is anticipated to generate 3,754 ADTs (or 4,120 fewer trips per day than the larger museum evaluated in the SCPTC Program EIR). The long-term operational emissions associated with the Proposed Project for each criteria pollutant were modeled in CalEEMod using this lower trip rate.

AIR QUALITY IMPACT ANALYSIS

Short-Term (Construction) Emissions

Emissions of pollutants would occur during construction of the Proposed Project from soil disturbance and equipment exhaust. Major sources of emissions during construction include: (1) exhaust emissions from construction equipment and vehicles; and (2) fugitive dust generated by grading activities, construction vehicles, and equipment traveling over exposed surfaces.

Peak daily emissions associated with the on-site construction equipment, on-road haul trucks and vendor trips, and fugitive dust emissions during each of the construction tasks were calculated using the most recent version of the California Emissions Estimator Model (CalEEMod, Version 2016.3.2). As shown in Table D, construction of the Proposed Project would occur in five phases. The construction equipment list in CalEEMod is used to calculate on-site emissions for each construction phase. The total peak-day construction emissions for each phase are summarized in Table E and detailed in the attachment to this memorandum. The emissions listed in Table E represent the maximum daily emissions generated during each construction phase. Because on-site construction operations must comply with dust control and other measures prescribed by SCAQMD Rule 403, compliance with dust control rules is assumed in the analysis.

[1] SCAQMD. Greenhouse Gases (GHG) CEQA Significance Thresholds. Website: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ghg-significance-thresholds/ (accessed April 2018).

Table D: Construction Schedule

Phase Name	Phase Start Date	Phase End Date	Number of Days/Week	Number of Days
Site Preparation	5/1/2019	5/2/2019	5	2
Grading and Excavation	5/3/2019	5/8/2019	5	4
Building Construction	5/9/2019	5/6/2020	5	260
Architectural Coatings	5/7/2020	5/20/2020	5	10
Paving	5/21/2020	6/3/2020	5	10

Source: Correspondence with the City of Costa Mesa (2018.)
CalEEMod = California Emissions Estimator Model

Table E: Short-Term Regional Construction Emissions

Construction Phase	Total Regional Pollutant Emissions (lbs/day)							
	VOC	NO_X	CO	SO_2	Fugitive PM_{10}	Exhaust PM_{10}	Fugitive $PM_{2.5}$	Exhaust $PM_{2.5}$
Site Preparation	1.76	19.51	8.25	0.02	2.35	0.88	1.18	0.81
Grading	1.46	16.07	6.97	0.02	2.01	0.74	1.01	0.68
Building Construction	2.47	17.34	15.05	0.03	0.38	0.93	0.10	0.89
Paving	0.90	8.49	9.41	0.01	0.15	0.47	0.04	0.43
Architectural Coatings	62.15	1.70	2.08	0.00	0.07	0.11	0.02	0.11
Peak Daily Emissions	**62.15**	**25.84**	**24.46**	**0.04**	**3.23**		**1.99**	
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**		**55**	
Exceedance?	**No**	**No**	**No**	**No**	**No**		**No**	

Source: Compiled by LSA Associates, Inc. (November 2018).
Note: Column totals may not add due to rounding from the model results.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_2 = sulfur dioxide
VOC = volatile organic compounds

The SCPTC Program EIR concluded that implementation of the SCPTC Project would result in emissions of VOCs and NO_X that would contribute to the O_3, NO_2, PM_{10}, and $PM_{2.5}$ nonattainment designations of the Basin. Therefore, construction activities related to the Proposed Project would contribute to the previously identified significant regional air quality impacts. However, as shown in Table E, construction emissions associated with the Proposed Project would not exceed the SCAQMD daily emissions thresholds; additionally, emissions associated with the smaller art museum included in the Proposed Project would be lower than those of the larger museum included in the SCPTC Project. Therefore, the Proposed Project would not contribute to new or worsening impacts than those identified in the SCPTC Program EIR, and no additional mitigation is required.

Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, as well as cut-and-fill grading operations. Dust generated during construction varies substantially on a project-by-project basis, depending on the level of activity, the specific operations, and weather conditions at the time of construction. All specific development projects will be required to comply with SCAQMD Rule 403 to control fugitive dust. The PM_{10} and $PM_{2.5}$ portions of the fugitive dust emissions are included in Table E. As indicated in this table, compliance with SCAQMD Rule 403 would ensure that fugitive dust (PM_{10} and $PM_{2.5}$) emissions would be less than significant.

Localized Significance Construction Emissions

The SCPTC Program EIR did not provide an LST analysis. Table F shows that the calculated emissions rates for the proposed on-site construction activities are below the LSTs for CO, NO_X, PM_{10}, and $PM_{2.5}$ at the nearest sensitive receptor, which is a residential apartment complex approximately 75 ft (23 m) to the east of the OCMA site. Therefore, with compliance with SCAQMD Rule 403 measures to control fugitive dust, the Proposed Project would not cause any short-term localized air quality impacts.

Table F: Summary of On-Site Construction Emissions, Localized Significance

Construction	Emission Rates (lbs/day)			
	NO_X	CO	PM_{10}[1]	$PM_{2.5}$[1]
On-Site Construction Emissions	19	13	3.1	2.0
Localized Significance Threshold	**119**	**868**	**6.1**	**4.4**
Exceedance?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (November 2018).
Notes: On-site emissions represent maximum daily construction emissions.
SRA – North Coastal Orange County Area, 1.7 acres, receptors at 23 meters
[1] Total PM_{10} and $PM_{2.5}$ daily emissions with fugitive dust mitigation measures implemented.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in size
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
SRA = source receptor area

Long-Term Operational Emissions

Long-term air pollutant emission impacts are those associated with stationary sources and mobile sources involving any project-related changes. The Proposed Project would result in net increases in both stationary- and mobile-source emissions. The stationary-source emissions would come from area and energy sources.

The SCPTC Program EIR anticipated that all of the uses included in the SCPTC Project, including the art museum/academy, would generate approximately 10,001 average daily trips (ADT). In 2016, the City updated its General Plan and estimated that the 140,000-square-foot art museum/academy building included as part of the SCPTC Project would generate approximately 7,874 ADTs. According to the Trip Generation Memorandum (2018), the smaller 66,750-square-foot art museum included in the Proposed Project is anticipated to generate 3,754 ADTs (or 4,120 fewer trips per day than the larger museum evaluated in the SCPTC Program EIR). The long-term operational emissions associated with the Proposed Project for each criteria pollutant, which are shown in Table G, were modeled in CalEEMod using this lower trip rate.

The arena subtype of recreational land use was used in CalEEMod because the software does not include a museum subtype, and energy and water consumption and solid waste disposal quantities were calculated using conservative rates for a recreational land use. Area sources include architectural coatings, consumer products, and landscaping. Energy sources include natural gas consumption for heating. Table G shows that the net change in all criteria pollutants as a result of the Proposed Project would not exceed the corresponding SCAQMD daily emission thresholds for any criteria pollutants.

Table G: Regional Operational Emissions

Source	Pollutant Emissions (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Previously Analyzed Project (140,000-square-foot art museum/academy)						
Area	3.13	<0.01	0.01	0	<0.01	<0.01
Energy	0.09	0.79	0.66	<0.01	0.06	0.06
Mobile	11.57	56.45	125.52	0.46	36.49	10.00
Total Previously Analyzed Project Emissions	**14.79**	**57.24**	**126.19**	**0.46**	**36.55**	**10.06**
Proposed Project (66,750-square-foot art museum)						
Area	1.49	<0.01	<0.01	0	<0.01	<0.01
Energy	0.04	0.37	0.31	<0.01	0.03	0.03
Mobile	5.52	26.91	59.84	0.22	17.40	4.77
Total Proposed Project Emissions	**7.05**	**27.29**	**60.15**	**0.22**	**17.43**	**4.80**
Total Net New Emissions	**-7.74**	**-29.96**	**-66.04**	**-0.24**	**-19.16**	**-5.26**
SCAQMD Thresholds	**55.0**	**55.0**	**550.0**	**150.0**	**150.0**	**55.0**
Exceedance?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (November 2018).
Note: Column totals may not add due to rounding from the model results.
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SCAQMD = South Coast Air Quality Management District
SO_X = sulfur oxides
VOC = volatile organic compounds

The SCPTC Program EIR concluded that implementation of the SCPTC Project would result in a significant and unavoidable air quality impact for criteria air pollutants because it would significantly contribute to the nonattainment designations of the Basin. As described above and shown in Table G, the SCAQMD emission thresholds would not be exceeded for criteria pollutants by the Proposed Project-related emissions. Therefore, long-term air quality impacts related to the Proposed Project would not result in new or worsening impacts than those identified in the SCPTC Program EIR.

Localized Significance Operational Emissions

Table H shows the calculated emissions for the proposed operational activities compared with the appropriate LSTs. By design, the localized impacts analysis only includes on-site sources; however, the CalEEMod outputs do not separate on-site and off-site emissions for mobile sources. For a worst-case scenario assessment, the emissions shown in Table H include all on-site project-related stationary sources and 5 percent of the project-related new mobile sources, which is an estimate of the amount of project-related new vehicle traffic that would occur on site. A total of 5 percent is considered conservative because the average trip lengths assumed are 16.6 miles for home to work, 8.4 miles for home to shopping, and 6.9 miles for other types of trips. The average on-site distance driven is unlikely to be even 1,000 ft, which is approximately 2 percent of the total miles traveled. Considering the total trip length included in CalEEMod, a 5 percent assumption is conservative.

Table H shows that the operational emission rates would not exceed the LSTs for the residential apartment complex located 75 ft (23 m) to the east of the OCMA site.

Table H: Long-Term Operational Localized Impacts Analysis

Emissions Sources	Pollutant Emissions (lbs/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Total On-Site Emissions	1	3	0.8	0.2
LST Thresholds	**119**	**868**	**1.7**	**1.7**
Exceedance?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (November 2018).
Notes: Column totals may not add due to rounding from the model results.
SRA – North Coastal Orange County Area, 1.7 acres, receptors at 23 meters.
CO = carbon monoxide
lbs/day = pounds per day
LST = localized significance thresholds
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
SRA = Source Receptor Area

Odors

Odor complaints are most commonly associated with agricultural land uses, wastewater treatment plants, food processing plants, chemical plans, composting, refineries, and landfills, etc. Similar to the SCPTC Project, the Proposed Project would not include any of those types of uses; therefore, the Proposed Project would not result in a new or worsening significant impact related to odors.

Air Quality Management Plan Consistency

A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the air quality plans. A consistency determination fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review due to the air quality plan strategy being based on projections from local General Plans.

Projects are considered consistent with, and would not conflict with or obstruct implementation of the AQMP, if the growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP. The future emissions forecasts are primarily based on demographic and economic growth projections provided by SCAG. Thus, demographic growth forecasts for various socioeconomic categories (e.g., population, housing, and employment by industry) developed by SCAG for its 2016 Regional Transportation Plan (SCAG 2016) were used to estimate future emissions in the Final 2016 AQMP (SCAQMD 2016).

Pursuant to the methodology provided in Chapter 12 of the SCAQMD *CEQA Air Quality Handbook* (1993), consistency with the 2016 AQMP is affirmed when a project (1) does not increase the frequency or severity of an air quality standards violation or cause a new violation and (2) is consistent with the growth assumptions in the AQMP. Consistency review is presented as follows:

1. The Proposed Project would result in short-term construction and long-term operational pollutant emissions that are all less than the CEQA significance emissions thresholds established by SCAQMD, as demonstrated above; therefore, the Proposed Project could not result in an

increase in the frequency or severity of any air quality standards violation and will not cause a new air quality standard violation.

2. The *CEQA Air Quality Handbook* (1993) indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan elements, Specific Plans, and significant projects. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities; therefore, the Proposed Project is not defined as a significant project.

The SCPTC Program EIR concluded that implementation of the SCPTC Project could potentially exceed the assumptions in the AQMP and would not be considered consistent with the AQMP. Consequently, impacts would be potentially significant.

The land use designation for the OCMA site is "Cultural Arts Center" in the City's General Plan. The Proposed Project involves the construction and operation of a smaller museum than was included as part of the SCPTC Project; therefore, it is consistent with the existing General Plan designation for the OCMA site, which was approved as part of the actions associated with the SCPTC Project. Based on the consistency analysis presented above, the Proposed Project would be consistent with the current regional AQMP and the Proposed Project would not result in a new or worsening impact related to implementation of the AQMP.

Long-Term Microscale (CO Hot-Spot) Analysis

Vehicular trips associated with the Proposed Project would contribute to congestion at intersections and along roadway segments in the vicinity of the SCPTC Project site. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the Proposed Project. The primary mobile-source pollutant of local concern is CO, a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (residents, schoolchildren, the elderly, and hospital patients, etc.).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended, to determine a project's effect on local CO levels.

When the SCAQMD *CEQA Air Quality Handbook* (1993) was published, the Basin was designated nonattainment under the CAAQS and NAAQS for CO. With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Basin have steadily declined. In 2007, the Basin was re-designated as attainment for CO under both the CAAQS and NAAQS. As identified within SCAQMD's 2003 AQMP (2005), peak carbon monoxide concentrations in the Basin were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection. All areas of

the Basin have continued to remain below the federal standards (35 ppm 1-hour and 9 ppm 8-hour standards) since 2003 (SCAQMD 2016).

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the Anaheim Monitoring Station showed a highest recorded 1-hour concentration of 1.4 ppm (the State standard is 20 ppm) and a highest 8-hour concentration of 0.8 ppm (the State standard is 9 ppm) during the past 3 years (Table A). The highest CO concentrations would normally occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Reduced speeds and vehicular congestion at intersections result in increased CO emissions.

The SCPTC Program EIR concluded that CO hot spots are not an environmental impact of concern for the Proposed Project and localized air quality impacts related to CO hot spots were identified as less than significant.

Because the trip generation potential of the Proposed Project is lower than estimated for the art museum included in the SCPTC Program EIR, the net decrease of new trips in the AM and PM peak hours would not cause worsening of congestion in the vicinity of the SCPTC Project site.

Therefore, the Proposed Project can be implemented in the build-out scenario with no significant peak-hour intersection impacts. Given the extremely low level of CO concentrations in the project area and the lack of traffic impacts at any intersections, project-related vehicles are not expected to contribute significantly to CO concentrations exceeding the State or federal CO standards. Because no CO hot spot would occur, as identified in the SCPTC Program EIR, there would be no project-related impacts on CO concentrations.

Greenhouse Gas Impact Analysis

The SCPTC Program EIR did not analyze the SCPTC Project's GHG emissions because the CEQA guidance in effect at that time did not require lead agencies to prepare such an analysis in their CEQA documentation. Nevertheless, GHG emissions are presented in this memorandum to fully disclose those impacts. This analysis does not present new information that would not have been previously known to the City, as the lead agency under CEQA for the SCPTC Project, because the scientific link between GHGs, climate change, and new development was understood at the time the SCPTC Project was under environmental review, even though CEQA did not require an analysis of GHGs at that time. Therefore, the City was reasonably aware that the SCPTC Project would create GHG emissions when it approved the SCPTC Project in 2001.

Construction GHG Emissions

During construction of the Proposed Project, GHGs would be emitted through the operation of construction equipment and from worker and vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

Table I lists the annual GHG emissions from construction of the Proposed Project.

Table I: Construction Greenhouse Gas Emissions

Construction Phase	Greenhouse Gas Emissions (MT/yr)			
	CO_2	CH_4	N_2O	CO_2e
Site Preparation - 2019	1.63	<0.01	0	1.64
Grading - 2019	2.70	<0.01	0	2.72
Building Construction - 2019	201.82	0.03	0	202.63
Building Construction - 2020	107.49	0.02	0	107.91
Paving - 2020	6.52	<0.01	0	6.57
Architectural Coating - 2020	1.57	<0.01	0	1.58
Total Construction Emissions	**321.74**	**0.05**	**0**	**323.04**
Amortized over 30 years	**11**	**<0.01**	**0**	**11**

Source: Compiled by LSA (November 2018).
Note: Column totals may not add due to rounding from the model results.
CH_4 = methane MT/yr = metric tons per year
CO_2 = carbon dioxide N_2O = nitrous oxide
CO_2e = carbon dioxide equivalent

Per the SCAQMD guidance,[1] due to the long-term nature of the GHGs in the atmosphere, instead of determining significance of construction emissions alone, the total construction emissions are amortized over 30 years (an estimate of the life of the Proposed Project), added to the operational emissions, and compared to the applicable GHG significance threshold. Amortized construction GHG emissions from Table I (8.4 MT CO_2e/yr) have been added to the operational GHG emissions in Table J below.

Operational GHG Emissions

The Proposed Project consists of the construction and operation of a museum. The total net annual GHG emissions are calculated by subtracting the GHG emissions from the previously planned 140,000-square-foot art museum/academy land-use from the total GHG emissions associated with the proposed 66,750-square-foot art museum included in the Proposed Project. The GHG emission estimates presented in Table J show the emissions from the previously approved art museum, the emissions associated with the Proposed Project at opening, and the net change in GHG emissions. The attachment to this memorandum includes the CalEEMod outputs. The total net annual GHG emissions, including amortized construction emissions from the Proposed Project, would be a negative 3,974 MT CO_2e/yr. Therefore, annual GHG emissions would be below the screening threshold of 3,000 MT CO_2e/yr for commercial projects. The Proposed Project would not impede or interfere with achieving the State's emission reduction objectives in AB 32 (and EO S-03-05).

[1] SCAQMD. 2008. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. Website: http://www.aqmd.gov/docs/default-source/ceqa/ handbook/ greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2 (accessed April 2018).

Table J: Operational Greenhouse Gas Emissions

Source	Pollutant Emissions (MT/yr)					
	Bio- CO_2	NBio- CO_2	Total CO_2	CH_4	N_2O	CO_2e
Previously Analyzed Project (140,000-square-foot art museum/academy)						
Area Sources	0	<0.01	<0.01	<0.01	0	<0.01
Energy Sources	0	156.14	156.14	<0.01	<0.01	157.07
Mobile Sources	0	7,360.24	7,360.24	0.38	0	7,369.66
Waste Sources	0.78	0	0.78	0.05	0	1.94
Water Usage	19.13	0	19.13	1.97	0.05	82.09
Total Previously Analyzed Project Emissions	**19.91**	**7,516.39**	**7,536.30**	**2.39**	**0.05**	**7,610.76**
Proposed Project (66,750-square-foot art museum)						
Total Construction emissions amortized over 30 years	0	8.36	8.36	<0.01	0	8.39
Area Sources	0	<0.01	<0.01	0	0	<0.01
Energy Sources	0	74.45	74.45	<0.01	<0.01	74.89
Mobile Sources	0	3,509.26	3,509.26	0.18	0	3,513.75
Waste Sources	0.37	0	0.37	0.02	0	0.93
Water Usage	9.12	0	9.12	0.94	0.02	39.14
Total Proposed Project Emissions	**9.50**	**3,592.07**	**3,601.56**	**1.14**	**0.02**	**3,637.10**
Total Net New Emissions	**-10.41**	**-3,924.32**	**-3,934.74**	**-1.25**	**-0.03**	**-3,973.66**
SCAQMD Threshold						3,000.0
Exceedance?						No

Source: Compiled by LSA (November 2018)
Note: Column totals may not add due to rounding from the model results.
Bio-CO_2 = biologically generated CO_2
CH_4 = methane
CO_2 = carbon dioxide
CO_2e = carbon dioxide equivalent
MT/yr = metric tons per year
N_2O = nitrous oxide
NBio-CO_2 = Non-biologically generated CO_2
SCAQMD = South Coast Air Quality Management District

Greenhouse Gas Plan Consistency

The Proposed Project could have the potential to conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. The applicable plan for the Proposed Project is the City of Costa Mesa 2015–2035 General Plan. The General Plan's GHG emission targets and goals are based on meeting the goals in EO B-30-15 and SB 32 and established in the ARB 2017 Scoping Plan. The General Plan supports four of the climate change action categories through energy efficiency, green building, recycling/waste, and water conservation through the proposed goals, objectives, and policies listed in the Conservation Element.

As stated previously, the SCAQMD's thresholds used EO S-3-05 goal as the basis for deriving the screening level. The California Governor issued EO S-3-05, GHG Emissions, in June 2005, which established the following reduction targets:

- 2010: Reduce GHG emissions to 2000 levels
- 2020: Reduce GHG emissions to 1990 levels
- 2050: Reduce GHG emissions to 80 percent below 1990 levels.

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires ARB to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap, which was phased in, starting in 2012. Therefore, as the Proposed Project's emissions meet the threshold for compliance with EO S-3-05, the Proposed Project's emissions also comply with the goals of AB 32. Additionally, as the Proposed Project meets the current interim emissions targets/thresholds established by SCAQMD, the Proposed Project would also be on track to meet the reduction target of 40 percent below 1990 levels by 2030 mandated by EO-B-30-15 and SB-32. Furthermore, all of the post 2020 reductions in GHG emissions are addressed via regulatory requirements at the State level, and the Proposed Project will be required to comply with these regulations as they come into effect.

At a level of negative 3,974 MT CO_2e/yr, the Proposed Project's GHG emissions are below the SCAQMD GHG emissions threshold of 3,000 MT CO_2e/yr for the City's Cultural Arts land use designation, and are in compliance with the reduction goals of the City of Costa Mesa's 2015–2035 General Plan, AB 32, and SB 32. Furthermore, the Proposed Project would comply with applicable Green Building Standards and the City of Costa Mesa's policies regarding sustainability (as dictated by the City's General Plan). Therefore, the Proposed Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases, and impacts are considered to be less than significant.

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Attachment: CalEEMod Modeling Runs

Orange County Museum of Art: Proposed Project

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	66.75	1000sqft	1.70	66,750.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The Lot Acreage and the Square Feet are from the Addendum to the Final Program Environmental Impact Report for the South Coast Plaza Center Project (LSA Associates, Inc., 2018).

Construction Phase - Construction would commence in May 2019 and continue for approximately 24 months.

Vehicle Trips - The Trip Rates are from the Orange County Museum of Art Trip Generation Memo (LSA Associates, Inc., 2018).

Architectural Coating -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	260.00
tblLandUse	LotAcreage	21.46	1.70
tblVehicleTrips	ST_TR	10.71	56.24
tblVehicleTrips	SU_TR	10.71	56.24
tblVehicleTrips	WD_TR	10.71	56.24

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					
2019	2.4657	19.5119	14.9610	0.0279	5.8890	0.9267	6.7721	2.9774	0.8949	3.7898	0.0000	2,622.4739	2,622.4739	0.5422	0.0000	2,632.9542
2020	62.1490	16.0346	14.5252	0.0278	0.3834	0.8041	1.1875	0.1033	0.7766	0.8798	0.0000	2,594.0258	2,594.0258	0.4151	0.0000	2,604.0368
Maximum	**62.1490**	**19.5119**	**14.9610**	**0.0279**	**5.8890**	**0.9267**	**6.7721**	**2.9774**	**0.8949**	**3.7898**	**0.0000**	**2,622.4739**	**2,622.4739**	**0.5422**	**0.0000**	**2,632.9542**

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					
2019	2.4657	19.5119	14.9610	0.0279	2.3513	0.9267	3.2343	1.1757	0.8949	1.9881	0.0000	2,622.4739	2,622.4739	0.5422	0.0000	2,632.9542
2020	62.1490	16.0346	14.5252	0.0278	0.3834	0.8041	1.1875	0.1033	0.7766	0.8798	0.0000	2,594.0258	2,594.0258	0.4151	0.0000	2,604.0368
Maximum	**62.1490**	**19.5119**	**14.9610**	**0.0279**	**2.3513**	**0.9267**	**3.2343**	**1.1757**	**0.8949**	**1.9881**	**0.0000**	**2,622.4739**	**2,622.4739**	**0.5422**	**0.0000**	**2,632.9542**

	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**	**56.40**	**0.00**	**44.45**	**58.49**	**0.00**	**38.58**	**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	1.4918	6.0000e-005	6.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0146	0.0146	4.0000e-005		0.0156
Energy	0.0412	0.3747	0.3148	2.2500e-003		0.0285	0.0285		0.0285	0.0285		449.6616	449.6616	8.6200e-003	8.2400e-003	452.3337
Mobile	5.2207	26.9124	57.1172	0.2052	17.2300	0.1687	17.3987	4.6101	0.1574	4.7675		20,916.2899	20,916.2899	1.1013		20,943.8222
Total	**6.7538**	**27.2871**	**57.4388**	**0.2074**	**17.2300**	**0.1972**	**17.4272**	**4.6101**	**0.1859**	**4.7960**		**21,365.9661**	**21,365.9661**	**1.1100**	**8.2400e-003**	**21,396.1715**

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	1.4918	6.0000e-005	6.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0146	0.0146	4.0000e-005		0.0156
Energy	0.0412	0.3747	0.3148	2.2500e-003		0.0285	0.0285		0.0285	0.0285		449.6616	449.6616	8.6200e-003	8.2400e-003	452.3337
Mobile	5.2207	26.9124	57.1172	0.2052	17.2300	0.1687	17.3987	4.6101	0.1574	4.7675		20,916.2899	20,916.2899	1.1013		20,943.8222
Total	**6.7538**	**27.2871**	**57.4388**	**0.2074**	**17.2300**	**0.1972**	**17.4272**	**4.6101**	**0.1859**	**4.7960**		**21,365.9661**	**21,365.9661**	**1.1100**	**8.2400e-003**	**21,396.1715**

	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	Site Preparation	Site Preparation	5/1/2019	5/2/2019	5	2	
2	Grading	Grading	5/3/2019	5/8/2019	5	4	

3	Building Construction	Building Construction	5/9/2019	5/6/2020	5	260
4	Paving	Paving	5/7/2020	5/20/2020	5	10
5	Architectural Coating	Architectural Coating	5/21/2020	6/3/2020	5	10

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 100,125; Non-Residential Outdoor: 33,375; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	28.00	11.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

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					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000

Off-Road	1.7123	19.4821	7.8893	0.0172		0.8824	0.8824		0.8118	0.8118		1,704.9189	1,704.9189	0.5394		1,718.4044
Total	**1.7123**	**19.4821**	**7.8893**	**0.0172**	**5.7996**	**0.8824**	**6.6819**	**2.9537**	**0.8118**	**3.7655**		**1,704.9189**	**1,704.9189**	**0.5394**		**1,718.4044**

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	0.0427	0.0299	0.3243	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.3725	88.3725	2.7600e-003		88.4415
Total	**0.0427**	**0.0299**	**0.3243**	**8.9000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**88.3725**	**88.3725**	**2.7600e-003**		**88.4415**

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					2.2618	0.0000	2.2618	1.1519	0.0000	1.1519			0.0000			0.0000
Off-Road	1.7123	19.4821	7.8893	0.0172		0.8824	0.8824		0.8118	0.8118	0.0000	1,704.9189	1,704.9189	0.5394		1,718.4044
Total	**1.7123**	**19.4821**	**7.8893**	**0.0172**	**2.2618**	**0.8824**	**3.1442**	**1.1519**	**0.8118**	**1.9637**	**0.0000**	**1,704.9189**	**1,704.9189**	**0.5394**		**1,718.4044**

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	0.0427	0.0299	0.3243	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.3725	88.3725	2.7600e-003		88.4415
Total	**0.0427**	**0.0299**	**0.3243**	**8.9000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**88.3725**	**88.3725**	**2.7600e-003**		**88.4415**

3.3 Grading - 2019

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					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000

Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775		1,396.3909	1,396.3909	0.4418		1,407.4359
Total	**1.4197**	**16.0357**	**6.6065**	**0.0141**	**4.9143**	**0.7365**	**5.6507**	**2.5256**	**0.6775**	**3.2032**		**1,396.3909**	**1,396.3909**	**0.4418**		**1,407.4359**

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	0.0427	0.0299	0.3243	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.3725	88.3725	2.7600e-003		88.4415
Total	**0.0427**	**0.0299**	**0.3243**	**8.9000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**88.3725**	**88.3725**	**2.7600e-003**		**88.4415**

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					1.9166	0.0000	1.9166	0.9850	0.0000	0.9850			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775	0.0000	1,396.3909	1,396.3909	0.4418		1,407.4359
Total	**1.4197**	**16.0357**	**6.6065**	**0.0141**	**1.9166**	**0.7365**	**2.6530**	**0.9850**	**0.6775**	**1.6625**	**0.0000**	**1,396.3909**	**1,396.3909**	**0.4418**		**1,407.4359**

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	0.0427	0.0299	0.3243	8.9000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		88.3725	88.3725	2.7600e-003		88.4415
Total	**0.0427**	**0.0299**	**0.3243**	**8.9000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**88.3725**	**88.3725**	**2.7600e-003**		**88.4415**

3.4 Building Construction - 2019

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	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846		2,018.0224	2,018.0224	0.3879		2,027.7210

Total	**2.2721**	**15.9802**	**13.4870**	**0.0220**		**0.9158**	**0.9158**		**0.8846**	**0.8846**		**2,018.0224**	**2,018.0224**	**0.3879**		**2,027.7210**

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	0.0443	1.2596	0.3389	2.7700e-003	0.0704	8.4700e-003	0.0789	0.0203	8.1000e-003	0.0284		295.1479	295.1479	0.0216		295.6880
Worker	0.1493	0.1045	1.1351	3.1100e-003	0.3130	2.4400e-003	0.3154	0.0830	2.2400e-003	0.0853		309.3036	309.3036	9.6600e-003		309.5452
Total	**0.1936**	**1.3641**	**1.4739**	**5.8800e-003**	**0.3834**	**0.0109**	**0.3943**	**0.1033**	**0.0103**	**0.1136**		**604.4515**	**604.4515**	**0.0313**		**605.2332**

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	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846	0.0000	2,018.0224	2,018.0224	0.3879		2,027.7210
Total	**2.2721**	**15.9802**	**13.4870**	**0.0220**		**0.9158**	**0.9158**		**0.8846**	**0.8846**	**0.0000**	**2,018.0224**	**2,018.0224**	**0.3879**		**2,027.7210**

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	0.0443	1.2596	0.3389	2.7700e-003	0.0704	8.4700e-003	0.0789	0.0203	8.1000e-003	0.0284		295.1479	295.1479	0.0216		295.6880
Worker	0.1493	0.1045	1.1351	3.1100e-003	0.3130	2.4400e-003	0.3154	0.0830	2.2400e-003	0.0853		309.3036	309.3036	9.6600e-003		309.5452
Total	**0.1936**	**1.3641**	**1.4739**	**5.8800e-003**	**0.3834**	**0.0109**	**0.3943**	**0.1033**	**0.0103**	**0.1136**		**604.4515**	**604.4515**	**0.0313**		**605.2332**

3.4 Building Construction - 2020

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467

Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**		**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

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	0.0378	1.1531	0.3064	2.7500e-003	0.0704	5.8000e-003	0.0762	0.0203	5.5500e-003	0.0258		293.1641	293.1641	0.0204		293.6730
Worker	0.1382	0.0932	1.0306	3.0100e-003	0.3130	2.3700e-003	0.3154	0.0830	2.1900e-003	0.0852		299.7022	299.7022	8.6000e-003		299.9171
Total	**0.1760**	**1.2463**	**1.3371**	**5.7600e-003**	**0.3834**	**8.1700e-003**	**0.3916**	**0.1033**	**7.7400e-003**	**0.1110**		**592.8663**	**592.8663**	**0.0290**		**593.5901**

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**	**0.0000**	**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

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	0.0378	1.1531	0.3064	2.7500e-003	0.0704	5.8000e-003	0.0762	0.0203	5.5500e-003	0.0258		293.1641	293.1641	0.0204		293.6730
Worker	0.1382	0.0932	1.0306	3.0100e-003	0.3130	2.3700e-003	0.3154	0.0830	2.1900e-003	0.0852		299.7022	299.7022	8.6000e-003		299.9171
Total	**0.1760**	**1.2463**	**1.3371**	**5.7600e-003**	**0.3834**	**8.1700e-003**	**0.3916**	**0.1033**	**7.7400e-003**	**0.1110**		**592.8663**	**592.8663**	**0.0290**		**593.5901**

3.5 Paving - 2020

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.9461	1,296.9461	0.4111		1,307.2246

Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8402**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**		**1,296.9461**	**1,296.9461**	**0.4111**		**1,307.2246**

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	0.0642	0.0433	0.4785	1.4000e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		139.1474	139.1474	3.9900e-003		139.2472
Total	**0.0642**	**0.0433**	**0.4785**	**1.4000e-003**	**0.1453**	**1.1000e-003**	**0.1464**	**0.0385**	**1.0200e-003**	**0.0396**		**139.1474**	**139.1474**	**3.9900e-003**		**139.2472**

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8402**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**	**0.0000**	**1,296.9461**	**1,296.9461**	**0.4111**		**1,307.2246**

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	0.0642	0.0433	0.4785	1.4000e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		139.1474	139.1474	3.9900e-003		139.2472
Total	**0.0642**	**0.0433**	**0.4785**	**1.4000e-003**	**0.1453**	**1.1000e-003**	**0.1464**	**0.0385**	**1.0200e-003**	**0.0396**		**139.1474**	**139.1474**	**3.9900e-003**		**139.2472**

3.6 Architectural Coating - 2020

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					
Archit. Coating	61.8773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**62.1194**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.0296	0.0200	0.2209	6.4000e-004	0.0671	5.1000e-004	0.0676	0.0178	4.7000e-004	0.0183		64.2219	64.2219	1.8400e-003		64.2679
Total	**0.0296**	**0.0200**	**0.2209**	**6.4000e-004**	**0.0671**	**5.1000e-004**	**0.0676**	**0.0178**	**4.7000e-004**	**0.0183**		**64.2219**	**64.2219**	**1.8400e-003**		**64.2679**

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					
Archit. Coating	61.8773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**62.1194**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.0296	0.0200	0.2209	6.4000e-004	0.0671	5.1000e-004	0.0676	0.0178	4.7000e-004	0.0183		64.2219	64.2219	1.8400e-003		64.2679
Total	**0.0296**	**0.0200**	**0.2209**	**6.4000e-004**	**0.0671**	**5.1000e-004**	**0.0676**	**0.0178**	**4.7000e-004**	**0.0183**		**64.2219**	**64.2219**	**1.8400e-003**		**64.2679**

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	5.2207	26.9124	57.1172	0.2052	17.2300	0.1687	17.3987	4.6101	0.1574	4.7675		20,916.2899	20,916.2899	1.1013		20,943.8222
Unmitigated	5.2207	26.9124	57.1172	0.2052	17.2300	0.1687	17.3987	4.6101	0.1574	4.7675		20,916.2899	20,916.2899	1.1013		20,943.8222

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	3,754.02	3,754.02	3754.02	8,103,059	8,103,059
Total	3,754.02	3,754.02	3,754.02	8,103,059	8,103,059

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Arena	16.60	8.40	6.90	0.00	81.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Arena	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

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	0.0412	0.3747	0.3148	2.2500e-003		0.0285	0.0285		0.0285	0.0285		449.6616	449.6616	8.6200e-003	8.2400e-003	452.3337
NaturalGas Unmitigated	0.0412	0.3747	0.3148	2.2500e-003		0.0285	0.0285		0.0285	0.0285		449.6616	449.6616	8.6200e-003	8.2400e-003	452.3337

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					
Arena	3822.12	0.0412	0.3747	0.3148	2.2500e-003		0.0285	0.0285		0.0285	0.0285		449.6616	449.6616	8.6200e-003	8.2400e-003	452.3337
Total		**0.0412**	**0.3747**	**0.3148**	**2.2500e-003**		**0.0285**	**0.0285**		**0.0285**	**0.0285**		**449.6616**	**449.6616**	**8.6200e-003**	**8.2400e-003**	**452.3337**

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					
Arena	3.82212	0.0412	0.3747	0.3148	2.2500e-003		0.0285	0.0285		0.0285	0.0285		449.6616	449.6616	8.6200e-003	8.2400e-003	452.3337
Total		**0.0412**	**0.3747**	**0.3148**	**2.2500e-003**		**0.0285**	**0.0285**		**0.0285**	**0.0285**		**449.6616**	**449.6616**	**8.6200e-003**	**8.2400e-003**	**452.3337**

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	1.4918	6.0000e-005	6.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0146	0.0146	4.0000e-005		0.0156
Unmitigated	1.4918	6.0000e-005	6.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0146	0.0146	4.0000e-005		0.0156

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	0.1695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3217					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.3000e-004	6.0000e-005	6.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0146	0.0146	4.0000e-005		0.0156
Total	**1.4918**	**6.0000e-005**	**6.8300e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0146**	**0.0146**	**4.0000e-005**		**0.0156**

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					
Architectural Coating	0.1695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3217					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Landscaping	6.3000e-004	6.0000e-005	6.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0146	0.0146	4.0000e-005		0.0156
Total	**1.4918**	**6.0000e-005**	**6.8300e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0146**	**0.0146**	**4.0000e-005**		**0.0156**

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 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Orange County Museum of Art: Proposed Project

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	66.75	1000sqft	1.70	66,750.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The Lot Acreage and the Square Feet are from the Addendum to the Final Program Environmental Impact Report for the South Coast Plaza Center Project (LSA Associates, Inc., 2018).

Construction Phase - Construction would commence in May 2019 and continue for approximately 24 months.

Vehicle Trips - The Trip Rates are from the Orange County Museum of Art Trip Generation Memo (LSA Associates, Inc., 2018).

Architectural Coating -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	260.00
tblLandUse	LotAcreage	21.46	1.70
tblVehicleTrips	ST_TR	10.71	56.24
tblVehicleTrips	SU_TR	10.71	56.24
tblVehicleTrips	WD_TR	10.71	56.24

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					
2019	2.4516	19.5093	15.0495	0.0282	5.8890	0.9266	6.7721	2.9774	0.8948	3.7898	0.0000	2,652.5410	2,652.5410	0.5424	0.0000	2,663.0008
2020	62.1466	16.0277	14.6076	0.0281	0.3834	0.8040	1.1874	0.1033	0.7765	0.8798	0.0000	2,623.4897	2,623.4897	0.4154	0.0000	2,633.4811
Maximum	**62.1466**	**19.5093**	**15.0495**	**0.0282**	**5.8890**	**0.9266**	**6.7721**	**2.9774**	**0.8948**	**3.7898**	**0.0000**	**2,652.5410**	**2,652.5410**	**0.5424**	**0.0000**	**2,663.0008**

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					
2019	2.4516	19.5093	15.0495	0.0282	2.3513	0.9266	3.2343	1.1757	0.8948	1.9881	0.0000	2,652.5410	2,652.5410	0.5424	0.0000	2,663.0008
2020	62.1466	16.0277	14.6076	0.0281	0.3834	0.8040	1.1874	0.1033	0.7765	0.8798	0.0000	2,623.4897	2,623.4897	0.4154	0.0000	2,633.4811
Maximum	**62.1466**	**19.5093**	**15.0495**	**0.0282**	**2.3513**	**0.9266**	**3.2343**	**1.1757**	**0.8948**	**1.9881**	**0.0000**	**2,652.5410**	**2,652.5410**	**0.5424**	**0.0000**	**2,663.0008**

	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**	**56.40**	**0.00**	**44.45**	**58.49**	**0.00**	**38.59**	**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	1.4918	6.0000e-005	6.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0146	0.0146	4.0000e-005		0.0156
Energy	0.0412	0.3747	0.3148	2.2500e-003		0.0285	0.0285		0.0285	0.0285		449.6616	449.6616	8.6200e-003	8.2400e-003	452.3337
Mobile	5.5158	26.6394	59.8447	0.2171	17.2300	0.1673	17.3973	4.6101	0.1561	4.7661		22,117.8145	22,117.8145	1.0881		22,145.0170
Total	**7.0488**	**27.0142**	**60.1662**	**0.2193**	**17.2300**	**0.1958**	**17.4258**	**4.6101**	**0.1846**	**4.7946**		**22,567.4907**	**22,567.4907**	**1.0968**	**8.2400e-003**	**22,597.3663**

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	1.4918	6.0000e-005	6.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0146	0.0146	4.0000e-005		0.0156
Energy	0.0412	0.3747	0.3148	2.2500e-003		0.0285	0.0285		0.0285	0.0285		449.6616	449.6616	8.6200e-003	8.2400e-003	452.3337
Mobile	5.5158	26.6394	59.8447	0.2171	17.2300	0.1673	17.3973	4.6101	0.1561	4.7661		22,117.8145	22,117.8145	1.0881		22,145.0170
Total	**7.0488**	**27.0142**	**60.1662**	**0.2193**	**17.2300**	**0.1958**	**17.4258**	**4.6101**	**0.1846**	**4.7946**		**22,567.4907**	**22,567.4907**	**1.0968**	**8.2400e-003**	**22,597.3663**

	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	Site Preparation	Site Preparation	5/1/2019	5/2/2019	5	2	
2	Grading	Grading	5/3/2019	5/8/2019	5	4	

3	Building Construction	Building Construction	5/9/2019	5/6/2020	5	260
4	Paving	Paving	5/7/2020	5/20/2020	5	10
5	Architectural Coating	Architectural Coating	5/21/2020	6/3/2020	5	10

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 100,125; Non-Residential Outdoor: 33,375; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	28.00	11.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

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					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000

Off-Road	1.7123	19.4821	7.8893	0.0172		0.8824	0.8824		0.8118	0.8118		1,704.9189	1,704.9189	0.5394		1,718.4044
Total	**1.7123**	**19.4821**	**7.8893**	**0.0172**	**5.7996**	**0.8824**	**6.6819**	**2.9537**	**0.8118**	**3.7655**		**1,704.9189**	**1,704.9189**	**0.5394**		**1,718.4044**

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	0.0392	0.0273	0.3595	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4791	94.4791	2.9500e-003		94.5530
Total	**0.0392**	**0.0273**	**0.3595**	**9.5000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**94.4791**	**94.4791**	**2.9500e-003**		**94.5530**

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					2.2618	0.0000	2.2618	1.1519	0.0000	1.1519			0.0000			0.0000
Off-Road	1.7123	19.4821	7.8893	0.0172		0.8824	0.8824		0.8118	0.8118	0.0000	1,704.9189	1,704.9189	0.5394		1,718.4044
Total	**1.7123**	**19.4821**	**7.8893**	**0.0172**	**2.2618**	**0.8824**	**3.1442**	**1.1519**	**0.8118**	**1.9637**	**0.0000**	**1,704.9189**	**1,704.9189**	**0.5394**		**1,718.4044**

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	0.0392	0.0273	0.3595	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4791	94.4791	2.9500e-003		94.5530
Total	**0.0392**	**0.0273**	**0.3595**	**9.5000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**94.4791**	**94.4791**	**2.9500e-003**		**94.5530**

3.3 Grading - 2019

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					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000

Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775		1,396.3909	1,396.3909	0.4418		1,407.4359
Total	**1.4197**	**16.0357**	**6.6065**	**0.0141**	**4.9143**	**0.7365**	**5.6507**	**2.5256**	**0.6775**	**3.2032**		**1,396.3909**	**1,396.3909**	**0.4418**		**1,407.4359**

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	0.0392	0.0273	0.3595	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4791	94.4791	2.9500e-003		94.5530
Total	**0.0392**	**0.0273**	**0.3595**	**9.5000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**94.4791**	**94.4791**	**2.9500e-003**		**94.5530**

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					1.9166	0.0000	1.9166	0.9850	0.0000	0.9850			0.0000			0.0000
Off-Road	1.4197	16.0357	6.6065	0.0141		0.7365	0.7365		0.6775	0.6775	0.0000	1,396.3909	1,396.3909	0.4418		1,407.4359
Total	**1.4197**	**16.0357**	**6.6065**	**0.0141**	**1.9166**	**0.7365**	**2.6530**	**0.9850**	**0.6775**	**1.6625**	**0.0000**	**1,396.3909**	**1,396.3909**	**0.4418**		**1,407.4359**

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	0.0392	0.0273	0.3595	9.5000e-004	0.0894	7.0000e-004	0.0901	0.0237	6.4000e-004	0.0244		94.4791	94.4791	2.9500e-003		94.5530
Total	**0.0392**	**0.0273**	**0.3595**	**9.5000e-004**	**0.0894**	**7.0000e-004**	**0.0901**	**0.0237**	**6.4000e-004**	**0.0244**		**94.4791**	**94.4791**	**2.9500e-003**		**94.5530**

3.4 Building Construction - 2019

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	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846		2,018.0224	2,018.0224	0.3879		2,027.7210

Total	**2.2721**	**15.9802**	**13.4870**	**0.0220**		**0.9158**	**0.9158**		**0.8846**	**0.8846**		**2,018.0224**	**2,018.0224**	**0.3879**		**2,027.7210**

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	0.0424	1.2587	0.3043	2.8500e-003	0.0704	8.3400e-003	0.0787	0.0203	7.9800e-003	0.0282		303.8417	303.8417	0.0201		304.3443
Worker	0.1371	0.0954	1.2581	3.3200e-003	0.3130	2.4400e-003	0.3154	0.0830	2.2400e-003	0.0853		330.6769	330.6769	0.0103		330.9355
Total	**0.1795**	**1.3541**	**1.5624**	**6.1700e-003**	**0.3834**	**0.0108**	**0.3942**	**0.1033**	**0.0102**	**0.1135**		**634.5186**	**634.5186**	**0.0304**		**635.2798**

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	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846	0.0000	2,018.0224	2,018.0224	0.3879		2,027.7210
Total	**2.2721**	**15.9802**	**13.4870**	**0.0220**		**0.9158**	**0.9158**		**0.8846**	**0.8846**	**0.0000**	**2,018.0224**	**2,018.0224**	**0.3879**		**2,027.7210**

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	0.0424	1.2587	0.3043	2.8500e-003	0.0704	8.3400e-003	0.0787	0.0203	7.9800e-003	0.0282		303.8417	303.8417	0.0201		304.3443
Worker	0.1371	0.0954	1.2581	3.3200e-003	0.3130	2.4400e-003	0.3154	0.0830	2.2400e-003	0.0853		330.6769	330.6769	0.0103		330.9355
Total	**0.1795**	**1.3541**	**1.5624**	**6.1700e-003**	**0.3834**	**0.0108**	**0.3942**	**0.1033**	**0.0102**	**0.1135**		**634.5186**	**634.5186**	**0.0304**		**635.2798**

3.4 Building Construction - 2020

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467

Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**		**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

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	0.0361	1.1543	0.2749	2.8300e-003	0.0704	5.7200e-003	0.0761	0.0203	5.4700e-003	0.0257		301.8933	301.8933	0.0190		302.3672
Worker	0.1267	0.0852	1.1447	3.2200e-003	0.3130	2.3700e-003	0.3154	0.0830	2.1900e-003	0.0852		320.4369	320.4369	9.2100e-003		320.6672
Total	**0.1628**	**1.2395**	**1.4196**	**6.0500e-003**	**0.3834**	**8.0900e-003**	**0.3915**	**0.1033**	**7.6600e-003**	**0.1109**		**622.3302**	**622.3302**	**0.0282**		**623.0344**

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	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**	**0.0000**	**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

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	0.0361	1.1543	0.2749	2.8300e-003	0.0704	5.7200e-003	0.0761	0.0203	5.4700e-003	0.0257		301.8933	301.8933	0.0190		302.3672
Worker	0.1267	0.0852	1.1447	3.2200e-003	0.3130	2.3700e-003	0.3154	0.0830	2.1900e-003	0.0852		320.4369	320.4369	9.2100e-003		320.6672
Total	**0.1628**	**1.2395**	**1.4196**	**6.0500e-003**	**0.3834**	**8.0900e-003**	**0.3915**	**0.1033**	**7.6600e-003**	**0.1109**		**622.3302**	**622.3302**	**0.0282**		**623.0344**

3.5 Paving - 2020

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.9461	1,296.9461	0.4111		1,307.2246

Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8402**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**		**1,296.9461**	**1,296.9461**	**0.4111**		**1,307.2246**

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	0.0588	0.0395	0.5315	1.4900e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		148.7743	148.7743	4.2800e-003		148.8812
Total	**0.0588**	**0.0395**	**0.5315**	**1.4900e-003**	**0.1453**	**1.1000e-003**	**0.1464**	**0.0385**	**1.0200e-003**	**0.0396**		**148.7743**	**148.7743**	**4.2800e-003**		**148.8812**

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8402**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**	**0.0000**	**1,296.9461**	**1,296.9461**	**0.4111**		**1,307.2246**

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	0.0588	0.0395	0.5315	1.4900e-003	0.1453	1.1000e-003	0.1464	0.0385	1.0200e-003	0.0396		148.7743	148.7743	4.2800e-003		148.8812
Total	**0.0588**	**0.0395**	**0.5315**	**1.4900e-003**	**0.1453**	**1.1000e-003**	**0.1464**	**0.0385**	**1.0200e-003**	**0.0396**		**148.7743**	**148.7743**	**4.2800e-003**		**148.8812**

3.6 Architectural Coating - 2020

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					
Archit. Coating	61.8773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**62.1194**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.0272	0.0183	0.2453	6.9000e-004	0.0671	5.1000e-004	0.0676	0.0178	4.7000e-004	0.0183		68.6651	68.6651	1.9700e-003		68.7144
Total	**0.0272**	**0.0183**	**0.2453**	**6.9000e-004**	**0.0671**	**5.1000e-004**	**0.0676**	**0.0178**	**4.7000e-004**	**0.0183**		**68.6651**	**68.6651**	**1.9700e-003**		**68.7144**

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					
Archit. Coating	61.8773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**62.1194**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.0272	0.0183	0.2453	6.9000e-004	0.0671	5.1000e-004	0.0676	0.0178	4.7000e-004	0.0183		68.6651	68.6651	1.9700e-003		68.7144
Total	**0.0272**	**0.0183**	**0.2453**	**6.9000e-004**	**0.0671**	**5.1000e-004**	**0.0676**	**0.0178**	**4.7000e-004**	**0.0183**		**68.6651**	**68.6651**	**1.9700e-003**		**68.7144**

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	5.5158	26.6394	59.8447	0.2171	17.2300	0.1673	17.3973	4.6101	0.1561	4.7661		22,117.8145	22,117.8145	1.0881		22,145.0170
Unmitigated	5.5158	26.6394	59.8447	0.2171	17.2300	0.1673	17.3973	4.6101	0.1561	4.7661		22,117.8145	22,117.8145	1.0881		22,145.0170

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	3,754.02	3,754.02	3754.02	8,103,059	8,103,059
Total	3,754.02	3,754.02	3,754.02	8,103,059	8,103,059

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Arena	16.60	8.40	6.90	0.00	81.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Arena	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

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	0.0412	0.3747	0.3148	2.2500e-003		0.0285	0.0285		0.0285	0.0285		449.6616	449.6616	8.6200e-003	8.2400e-003	452.3337
NaturalGas Unmitigated	0.0412	0.3747	0.3148	2.2500e-003		0.0285	0.0285		0.0285	0.0285		449.6616	449.6616	8.6200e-003	8.2400e-003	452.3337

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				
Arena	3822.12	0.0412	0.3747	0.3148	2.2500e-003		0.0285	0.0285		0.0285	0.0285		449.6616	449.6616	8.6200e-003	8.2400e-003	452.3337
Total		**0.0412**	**0.3747**	**0.3148**	**2.2500e-003**		**0.0285**	**0.0285**		**0.0285**	**0.0285**		**449.6616**	**449.6616**	**8.6200e-003**	**8.2400e-003**	**452.3337**

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					
Arena	3.82212	0.0412	0.3747	0.3148	2.2500e-003		0.0285	0.0285		0.0285	0.0285		449.6616	449.6616	8.6200e-003	8.2400e-003	452.3337
Total		**0.0412**	**0.3747**	**0.3148**	**2.2500e-003**		**0.0285**	**0.0285**		**0.0285**	**0.0285**		**449.6616**	**449.6616**	**8.6200e-003**	**8.2400e-003**	**452.3337**

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	1.4918	6.0000e-005	6.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0146	0.0146	4.0000e-005		0.0156
Unmitigated	1.4918	6.0000e-005	6.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0146	0.0146	4.0000e-005		0.0156

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	0.1695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3217					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.3000e-004	6.0000e-005	6.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0146	0.0146	4.0000e-005		0.0156
Total	**1.4918**	**6.0000e-005**	**6.8300e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0146**	**0.0146**	**4.0000e-005**		**0.0156**

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					
Architectural Coating	0.1695					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3217					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000

Landscaping	6.3000e-004	6.0000e-005	6.8300e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0146	0.0146	4.0000e-005		0.0156
Total	**1.4918**	**6.0000e-005**	**6.8300e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0146**	**0.0146**	**4.0000e-005**		**0.0156**

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 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Orange County Museum of Art: Proposed Project

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	66.75	1000sqft	1.70	66,750.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The Lot Acreage and the Square Feet are from the Addendum to the Final Program Environmental Impact Report for the South Coast Plaza Center Project (LSA Associates, Inc., 2018).

Construction Phase - Construction would commence in May 2019 and continue for approximately 24 months.

Vehicle Trips - The Trip Rates are from the Orange County Museum of Art Trip Generation Memo (LSA Associates, Inc., 2018).

Architectural Coating -

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	200.00	260.00
tblLandUse	LotAcreage	21.46	1.70
tblVehicleTrips	ST_TR	10.71	56.24
tblVehicleTrips	SU_TR	10.71	56.24
tblVehicleTrips	WD_TR	10.71	56.24

2.0 Emissions Summary

2.1 Overall Construction

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	tons/yr										MT/yr					
2019	0.2117	1.5194	1.2876	2.4200e-003	0.0477	0.0807	0.1284	0.0167	0.0778	0.0944	0.0000	206.1488	206.1488	0.0334	0.0000	206.9834
2020	0.4150	0.7816	0.7187	1.3600e-003	0.0182	0.0395	0.0577	4.9000e-003	0.0381	0.0430	0.0000	115.5922	115.5922	0.0185	0.0000	116.0545
Maximum	**0.4150**	**1.5194**	**1.2876**	**2.4200e-003**	**0.0477**	**0.0807**	**0.1284**	**0.0167**	**0.0778**	**0.0944**	**0.0000**	**206.1488**	**206.1488**	**0.0334**	**0.0000**	**206.9834**

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	tons/yr										MT/yr					
2019	0.2117	1.5194	1.2876	2.4200e-003	0.0382	0.0807	0.1188	0.0118	0.0778	0.0896	0.0000	206.1486	206.1486	0.0334	0.0000	206.9832
2020	0.4150	0.7816	0.7187	1.3600e-003	0.0182	0.0395	0.0577	4.9000e-003	0.0381	0.0430	0.0000	115.5921	115.5921	0.0185	0.0000	116.0544
Maximum	**0.4150**	**1.5194**	**1.2876**	**2.4200e-003**	**0.0382**	**0.0807**	**0.1188**	**0.0118**	**0.0778**	**0.0896**	**0.0000**	**206.1486**	**206.1486**	**0.0334**	**0.0000**	**206.9832**

	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**	**14.47**	**0.00**	**5.12**	**22.63**	**0.00**	**3.55**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-1-2019	7-31-2019	0.6463	0.6463
2	8-1-2019	10-31-2019	0.6504	0.6504
3	11-1-2019	1-31-2020	0.6335	0.6335
4	2-1-2020	4-30-2020	0.5861	0.5861
5	5-1-2020	7-31-2020	0.4052	0.4052
		Highest	0.6504	0.6504

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	tons/yr										MT/yr					
Area	0.2722	1.0000e-005	8.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6600e-003	1.6600e-003	0.0000	0.0000	1.7700e-003
Energy	7.5200e-003	0.0684	0.0574	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003	0.0000	74.4465	74.4465	1.4300e-003	1.3600e-003	74.8889
Mobile	0.9256	4.9845	10.5063	0.0379	3.0790	0.0305	3.1095	0.8251	0.0285	0.8536	0.0000	3,509.2594	3,509.2594	0.1796	0.0000	3,513.7505
Waste						0.0000	0.0000		0.0000	0.0000	0.3735	0.0000	0.3735	0.0221	0.0000	0.9253
Water						0.0000	0.0000		0.0000	0.0000	9.1223	0.0000	9.1223	0.9370	0.0221	39.1387
Total	**1.2053**	**5.0529**	**10.5646**	**0.0384**	**3.0790**	**0.0357**	**3.1147**	**0.8251**	**0.0337**	**0.8588**	**9.4958**	**3,583.7076**	**3,593.2034**	**1.1401**	**0.0235**	**3,628.7052**

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	tons/yr										MT/yr					
Area	0.2722	1.0000e-005	8.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6600e-003	1.6600e-003	0.0000	0.0000	1.7700e-003
Energy	7.5200e-003	0.0684	0.0574	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003	0.0000	74.4465	74.4465	1.4300e-003	1.3600e-003	74.8889
Mobile	0.9256	4.9845	10.5063	0.0379	3.0790	0.0305	3.1095	0.8251	0.0285	0.8536	0.0000	3,509.2594	3,509.2594	0.1796	0.0000	3,513.7505
Waste						0.0000	0.0000		0.0000	0.0000	0.3735	0.0000	0.3735	0.0221	0.0000	0.9253
Water						0.0000	0.0000		0.0000	0.0000	9.1223	0.0000	9.1223	0.9370	0.0221	39.1387

Total	1.2053	5.0529	10.5646	0.0384	3.0790	0.0357	3.1147	0.8251	0.0337	0.8588	9.4958	3,583.7076	3,593.2034	1.1401	0.0235	3,628.7052

	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	Site Preparation	Site Preparation	5/1/2019	5/2/2019	5	2	
2	Grading	Grading	5/3/2019	5/8/2019	5	4	
3	Building Construction	Building Construction	5/9/2019	5/6/2020	5	260	
4	Paving	Paving	5/7/2020	5/20/2020	5	10	
5	Architectural Coating	Architectural Coating	5/21/2020	6/3/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 100,125; Non-Residential Outdoor: 33,375; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	28.00	11.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Site Preparation - 2019

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	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0195	7.8900e-003	2.0000e-005		8.8000e-004	8.8000e-004		8.1000e-004	8.1000e-004	0.0000	1.5467	1.5467	4.9000e-004	0.0000	1.5589
Total	**1.7100e-003**	**0.0195**	**7.8900e-003**	**2.0000e-005**	**5.8000e-003**	**8.8000e-004**	**6.6800e-003**	**2.9500e-003**	**8.1000e-004**	**3.7600e-003**	**0.0000**	**1.5467**	**1.5467**	**4.9000e-004**	**0.0000**	**1.5589**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.3000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0815	0.0815	0.0000	0.0000	0.0816
Total	**4.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0815**	**0.0815**	**0.0000**	**0.0000**	**0.0816**

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	tons/yr										MT/yr					
Fugitive Dust					2.2600e-003	0.0000	2.2600e-003	1.1500e-003	0.0000	1.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0195	7.8900e-003	2.0000e-005		8.8000e-004	8.8000e-004		8.1000e-004	8.1000e-004	0.0000	1.5467	1.5467	4.9000e-004	0.0000	1.5589
Total	**1.7100e-003**	**0.0195**	**7.8900e-003**	**2.0000e-005**	**2.2600e-003**	**8.8000e-004**	**3.1400e-003**	**1.1500e-003**	**8.1000e-004**	**1.9600e-003**	**0.0000**	**1.5467**	**1.5467**	**4.9000e-004**	**0.0000**	**1.5589**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000

Worker	4.0000e-005	3.0000e-005	3.3000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0815	0.0815	0.0000	0.0000	0.0816
Total	**4.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0815**	**0.0815**	**0.0000**	**0.0000**	**0.0816**

3.3 Grading - 2019

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	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8400e-003	0.0321	0.0132	3.0000e-005		1.4700e-003	1.4700e-003		1.3600e-003	1.3600e-003	0.0000	2.5336	2.5336	8.0000e-004	0.0000	2.5536
Total	**2.8400e-003**	**0.0321**	**0.0132**	**3.0000e-005**	**9.8300e-003**	**1.4700e-003**	**0.0113**	**5.0500e-003**	**1.3600e-003**	**6.4100e-003**	**0.0000**	**2.5336**	**2.5336**	**8.0000e-004**	**0.0000**	**2.5536**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	6.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1631	0.1631	1.0000e-005	0.0000	0.1632
Total	**8.0000e-005**	**6.0000e-005**	**6.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1631**	**0.1631**	**1.0000e-005**	**0.0000**	**0.1632**

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	tons/yr										MT/yr					
Fugitive Dust					3.8300e-003	0.0000	3.8300e-003	1.9700e-003	0.0000	1.9700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8400e-003	0.0321	0.0132	3.0000e-005		1.4700e-003	1.4700e-003		1.3600e-003	1.3600e-003	0.0000	2.5336	2.5336	8.0000e-004	0.0000	2.5536
Total	**2.8400e-003**	**0.0321**	**0.0132**	**3.0000e-005**	**3.8300e-003**	**1.4700e-003**	**5.3000e-003**	**1.9700e-003**	**1.3600e-003**	**3.3300e-003**	**0.0000**	**2.5336**	**2.5336**	**8.0000e-004**	**0.0000**	**2.5536**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000

Worker	8.0000e-005	6.0000e-005	6.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1631	0.1631	1.0000e-005	0.0000	0.1632
Total	**8.0000e-005**	**6.0000e-005**	**6.7000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1631**	**0.1631**	**1.0000e-005**	**0.0000**	**0.1632**

3.4 Building Construction - 2019

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	tons/yr										MT/yr					
Off-Road	0.1920	1.3503	1.1397	1.8600e-003		0.0774	0.0774		0.0748	0.0748	0.0000	154.6958	154.6958	0.0297	0.0000	155.4392
Total	**0.1920**	**1.3503**	**1.1397**	**1.8600e-003**		**0.0774**	**0.0774**		**0.0748**	**0.0748**	**0.0000**	**154.6958**	**154.6958**	**0.0297**	**0.0000**	**155.4392**

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	3.6500e-003	0.1084	0.0272	2.4000e-004	5.8600e-003	7.1000e-004	6.5700e-003	1.6900e-003	6.8000e-004	2.3700e-003	0.0000	23.0117	23.0117	1.5900e-003	0.0000	23.0515
Worker	0.0114	9.0800e-003	0.0987	2.7000e-004	0.0260	2.1000e-004	0.0262	6.8900e-003	1.9000e-004	7.0800e-003	0.0000	24.1165	24.1165	7.5000e-004	0.0000	24.1353
Total	**0.0151**	**0.1175**	**0.1258**	**5.1000e-004**	**0.0318**	**9.2000e-004**	**0.0327**	**8.5800e-003**	**8.7000e-004**	**9.4500e-003**	**0.0000**	**47.1282**	**47.1282**	**2.3400e-003**	**0.0000**	**47.1868**

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	tons/yr										MT/yr					
Off-Road	0.1920	1.3503	1.1397	1.8600e-003		0.0774	0.0774		0.0748	0.0748	0.0000	154.6956	154.6956	0.0297	0.0000	155.4391
Total	**0.1920**	**1.3503**	**1.1397**	**1.8600e-003**		**0.0774**	**0.0774**		**0.0748**	**0.0748**	**0.0000**	**154.6956**	**154.6956**	**0.0297**	**0.0000**	**155.4391**

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	3.6500e-003	0.1084	0.0272	2.4000e-004	5.8600e-003	7.1000e-004	6.5700e-003	1.6900e-003	6.8000e-004	2.3700e-003	0.0000	23.0117	23.0117	1.5900e-003	0.0000	23.0515

Worker	0.0114	9.0800e-003	0.0987	2.7000e-004	0.0260	2.1000e-004	0.0262	6.8900e-003	1.9000e-004	7.0800e-003	0.0000	24.1165	24.1165	7.5000e-004	0.0000	24.1353
Total	**0.0151**	**0.1175**	**0.1258**	**5.1000e-004**	**0.0318**	**9.2000e-004**	**0.0327**	**8.5800e-003**	**8.7000e-004**	**9.4500e-003**	**0.0000**	**47.1282**	**47.1282**	**2.3400e-003**	**0.0000**	**47.1868**

3.4 Building Construction - 2020

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	tons/yr										MT/yr					
Off-Road	0.0924	0.6729	0.6001	1.0000e-003		0.0362	0.0362		0.0350	0.0350	0.0000	82.6017	82.6017	0.0153	0.0000	82.9850
Total	**0.0924**	**0.6729**	**0.6001**	**1.0000e-003**		**0.0362**	**0.0362**		**0.0350**	**0.0350**	**0.0000**	**82.6017**	**82.6017**	**0.0153**	**0.0000**	**82.9850**

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	1.6800e-003	0.0534	0.0132	1.3000e-004	3.1500e-003	2.6000e-004	3.4200e-003	9.1000e-004	2.5000e-004	1.1600e-003	0.0000	12.3099	12.3099	8.1000e-004	0.0000	12.3301
Worker	5.6900e-003	4.3600e-003	0.0483	1.4000e-004	0.0140	1.1000e-004	0.0141	3.7100e-003	1.0000e-004	3.8100e-003	0.0000	12.5829	12.5829	3.6000e-004	0.0000	12.5919
Total	**7.3700e-003**	**0.0578**	**0.0615**	**2.7000e-004**	**0.0171**	**3.7000e-004**	**0.0175**	**4.6200e-003**	**3.5000e-004**	**4.9700e-003**	**0.0000**	**24.8928**	**24.8928**	**1.1700e-003**	**0.0000**	**24.9220**

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	tons/yr										MT/yr					
Off-Road	0.0924	0.6729	0.6001	1.0000e-003		0.0362	0.0362		0.0350	0.0350	0.0000	82.6016	82.6016	0.0153	0.0000	82.9849
Total	**0.0924**	**0.6729**	**0.6001**	**1.0000e-003**		**0.0362**	**0.0362**		**0.0350**	**0.0350**	**0.0000**	**82.6016**	**82.6016**	**0.0153**	**0.0000**	**82.9849**

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	tons/yr										MT/yr					
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	0.0000	0.0000
Vendor	1.6800e-003	0.0534	0.0132	1.3000e-004	3.1500e-003	2.6000e-004	3.4200e-003	9.1000e-004	2.5000e-004	1.1600e-003	0.0000	12.3099	12.3099	8.1000e-004	0.0000	12.3301

Worker	5.6900e-003	4.3600e-003	0.0483	1.4000e-004	0.0140	1.1000e-004	0.0141	3.7100e-003	1.0000e-004	3.8100e-003	0.0000	12.5829	12.5829	3.6000e-004	0.0000	12.5919
Total	**7.3700e-003**	**0.0578**	**0.0615**	**2.7000e-004**	**0.0171**	**3.7000e-004**	**0.0175**	**4.6200e-003**	**3.5000e-004**	**4.9700e-003**	**0.0000**	**24.8928**	**24.8928**	**1.1700e-003**	**0.0000**	**24.9220**

3.5 Paving - 2020

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	tons/yr										MT/yr					
Off-Road	4.2000e-003	0.0423	0.0444	7.0000e-005		2.3500e-003	2.3500e-003		2.1600e-003	2.1600e-003	0.0000	5.8829	5.8829	1.8600e-003	0.0000	5.9295
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.2000e-003**	**0.0423**	**0.0444**	**7.0000e-005**		**2.3500e-003**	**2.3500e-003**		**2.1600e-003**	**2.1600e-003**	**0.0000**	**5.8829**	**5.8829**	**1.8600e-003**	**0.0000**	**5.9295**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	2.9000e-004	2.2000e-004	2.4600e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.6420	0.6420	2.0000e-005	0.0000	0.6424
Total	**2.9000e-004**	**2.2000e-004**	**2.4600e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.6420**	**0.6420**	**2.0000e-005**	**0.0000**	**0.6424**

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	tons/yr										MT/yr					
Off-Road	4.2000e-003	0.0423	0.0444	7.0000e-005		2.3500e-003	2.3500e-003		2.1600e-003	2.1600e-003	0.0000	5.8828	5.8828	1.8600e-003	0.0000	5.9295
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.2000e-003**	**0.0423**	**0.0444**	**7.0000e-005**		**2.3500e-003**	**2.3500e-003**		**2.1600e-003**	**2.1600e-003**	**0.0000**	**5.8828**	**5.8828**	**1.8600e-003**	**0.0000**	**5.9295**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000

Worker	2.9000e-004	2.2000e-004	2.4600e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.6420	0.6420	2.0000e-005	0.0000	0.6424
Total	**2.9000e-004**	**2.2000e-004**	**2.4600e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.6420**	**0.6420**	**2.0000e-005**	**0.0000**	**0.6424**

3.6 Architectural Coating - 2020

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	tons/yr										MT/yr					
Archit. Coating	0.3094					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.3106**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	1.3000e-004	1.0000e-004	1.1400e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2963	0.2963	1.0000e-005	0.0000	0.2965
Total	**1.3000e-004**	**1.0000e-004**	**1.1400e-003**	**0.0000**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2963**	**0.2963**	**1.0000e-005**	**0.0000**	**0.2965**

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	tons/yr										MT/yr					
Archit. Coating	0.3094					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.3106**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000

Worker	1.3000e-004	1.0000e-004	1.1400e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2963	0.2963	1.0000e-005	0.0000	0.2965
Total	**1.3000e-004**	**1.0000e-004**	**1.1400e-003**	**0.0000**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2963**	**0.2963**	**1.0000e-005**	**0.0000**	**0.2965**

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	tons/yr										MT/yr					
Mitigated	0.9256	4.9845	10.5063	0.0379	3.0790	0.0305	3.1095	0.8251	0.0285	0.8536	0.0000	3,509.2594	3,509.2594	0.1796	0.0000	3,513.7505
Unmitigated	0.9256	4.9845	10.5063	0.0379	3.0790	0.0305	3.1095	0.8251	0.0285	0.8536	0.0000	3,509.2594	3,509.2594	0.1796	0.0000	3,513.7505

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	3,754.02	3,754.02	3754.02	8,103,059	8,103,059
Total	3,754.02	3,754.02	3,754.02	8,103,059	8,103,059

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-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Arena	16.60	8.40	6.90	0.00	81.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Arena	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	7.5200e-003	0.0684	0.0574	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003	0.0000	74.4465	74.4465	1.4300e-003	1.3600e-003	74.8889
NaturalGas Unmitigated	7.5200e-003	0.0684	0.0574	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003	0.0000	74.4465	74.4465	1.4300e-003	1.3600e-003	74.8889

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	tons/yr										MT/yr					
Arena	1.39508e+006	7.5200e-003	0.0684	0.0574	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003	0.0000	74.4465	74.4465	1.4300e-003	1.3600e-003	74.8889
Total		**7.5200e-003**	**0.0684**	**0.0574**	**4.1000e-004**		**5.2000e-003**	**5.2000e-003**		**5.2000e-003**	**5.2000e-003**	**0.0000**	**74.4465**	**74.4465**	**1.4300e-003**	**1.3600e-003**	**74.8889**

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	tons/yr										MT/yr					
Arena	1.39508e+006	7.5200e-003	0.0684	0.0574	4.1000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003	0.0000	74.4465	74.4465	1.4300e-003	1.3600e-003	74.8889
Total		**7.5200e-003**	**0.0684**	**0.0574**	**4.1000e-004**		**5.2000e-003**	**5.2000e-003**		**5.2000e-003**	**5.2000e-003**	**0.0000**	**74.4465**	**74.4465**	**1.4300e-003**	**1.3600e-003**	**74.8889**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	564038	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	564038	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated	0.2722	1.0000e-005	8.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6600e-003	1.6600e-003	0.0000	0.0000	1.7700e-003
Unmitigated	0.2722	1.0000e-005	8.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6600e-003	1.6600e-003	0.0000	0.0000	1.7700e-003

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	tons/yr										MT/yr					
Architectural Coating	0.0309					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2412					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6600e-003	1.6600e-003	0.0000	0.0000	1.7700e-003
Total	**0.2722**	**1.0000e-005**	**8.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.6600e-003**	**1.6600e-003**	**0.0000**	**0.0000**	**1.7700e-003**

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	tons/yr										MT/yr					
Architectural Coating	0.0309					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2412					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.0000e-005	1.0000e-005	8.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.6600e-003	1.6600e-003	0.0000	0.0000	1.7700e-003
Total	**0.2722**	**1.0000e-005**	**8.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.6600e-003**	**1.6600e-003**	**0.0000**	**0.0000**	**1.7700e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			

Mitigated	9.1223	0.9370	0.0221	39.1387
Unmitigated	9.1223	0.9370	0.0221	39.1387

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	28.7539 / 1.83536	9.1223	0.9370	0.0221	39.1387
Total		**9.1223**	**0.9370**	**0.0221**	**39.1387**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	28.7539 / 1.83536	9.1223	0.9370	0.0221	39.1387
Total		**9.1223**	**0.9370**	**0.0221**	**39.1387**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.3735	0.0221	0.0000	0.9253
Unmitigated	0.3735	0.0221	0.0000	0.9253

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	MT/yr			
Arena	1.84	0.3735	0.0221	0.0000	0.9253
Total		**0.3735**	**0.0221**	**0.0000**	**0.9253**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	1.84	0.3735	0.0221	0.0000	0.9253
Total		**0.3735**	**0.0221**	**0.0000**	**0.9253**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Orange County Museum of Art: Previously Analyzed Project

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	140.00	1000sqft	1.70	140,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The Lot Acreage and Square Feet are from the Addendum to the Final Program Environmental Impact Report for the South Coast Plaza Center Project (LSA Associates, Inc., 2018).

Construction Phase - No construction emissions were analyzed for the Previously Analyzed Project scenario.

Off-road Equipment - No construction emissions were analyzed for the Previously Analyzed Project scenario.

Trips and VMT - No construction emissions were analyzed for the Previously Analyzed Project scenario.

Grading - No construction emissions were analyzed for the Previously Analyzed Project scenario.

Vehicle Trips - The Trip Rates are from the Orange County Museum of Art Trip Generation Memo (LSA Associates, Inc., 2018).

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	0.00
tblConstructionPhase	PhaseEndDate	5/2/2019	4/30/2019
tblLandUse	LotAcreage	45.00	1.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	10.71	56.24
tblVehicleTrips	SU_TR	10.71	56.24
tblVehicleTrips	WD_TR	10.71	56.24

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					
2019	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	0.0000	0.0000

Maximum	**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**	**0.0000**	**0.0000**

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					
2019	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	0.0000	0.0000
Maximum	**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**	**0.0000**	**0.0000**

	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**

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	3.1289	1.3000e-004	0.0143	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0306	0.0306	8.0000e-005		0.0327
Energy	0.0865	0.7859	0.6602	4.7200e-003		0.0597	0.0597		0.0597	0.0597		943.1104	943.1104	0.0181	0.0173	948.7148
Mobile	10.9499	56.4454	119.7963	0.4303	36.1378	0.3539	36.4917	9.6691	0.3302	9.9992		43,869.3720	43,869.3720	2.3098		43,927.1178
Total	**14.1652**	**57.2315**	**120.4708**	**0.4350**	**36.1378**	**0.4137**	**36.5515**	**9.6691**	**0.3900**	**10.0590**		**44,812.5131**	**44,812.5131**	**2.3280**	**0.0173**	**44,875.8653**

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	3.1289	1.3000e-004	0.0143	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0306	0.0306	8.0000e-005		0.0327
Energy	0.0865	0.7859	0.6602	4.7200e-003		0.0597	0.0597		0.0597	0.0597		943.1104	943.1104	0.0181	0.0173	948.7148
Mobile	10.9499	56.4454	119.7963	0.4303	36.1378	0.3539	36.4917	9.6691	0.3302	9.9992		43,869.3720	43,869.3720	2.3098		43,927.1178
Total	**14.1652**	**57.2315**	**120.4708**	**0.4350**	**36.1378**	**0.4137**	**36.5515**	**9.6691**	**0.3900**	**10.0590**		**44,812.5131**	**44,812.5131**	**2.3280**	**0.0173**	**44,875.8653**

	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	Site Preparation	Site Preparation	5/1/2019	4/30/2019	5	0	

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; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	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
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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	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**	**0.0000**	**0.0000**	**0.0000**

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	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	0.0000	0.0000
Worker	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	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**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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	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**	**0.0000**	**0.0000**	**0.0000**

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	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	0.0000	0.0000
Worker	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	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**	**0.0000**	**0.0000**	**0.0000**

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	10.9499	56.4454	119.7963	0.4303	36.1378	0.3539	36.4917	9.6691	0.3302	9.9992		43,869.3720	43,869.3720	2.3098		43,927.1178
Unmitigated	10.9499	56.4454	119.7963	0.4303	36.1378	0.3539	36.4917	9.6691	0.3302	9.9992		43,869.3720	43,869.3720	2.3098		43,927.1178

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	7,873.60	7,873.60	7873.60	16,995,180	16,995,180
Total	7,873.60	7,873.60	7,873.60	16,995,180	16,995,180

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Arena	16.60	8.40	6.90	0.00	81.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Arena	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

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	0.0865	0.7859	0.6602	4.7200e-003		0.0597	0.0597		0.0597	0.0597		943.1104	943.1104	0.0181	0.0173	948.7148
NaturalGas Unmitigated	0.0865	0.7859	0.6602	4.7200e-003		0.0597	0.0597		0.0597	0.0597		943.1104	943.1104	0.0181	0.0173	948.7148

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					
Arena	8016.44	0.0865	0.7859	0.6602	4.7200e-003		0.0597	0.0597		0.0597	0.0597		943.1104	943.1104	0.0181	0.0173	948.7148
Total		**0.0865**	**0.7859**	**0.6602**	**4.7200e-003**		**0.0597**	**0.0597**		**0.0597**	**0.0597**		**943.1104**	**943.1104**	**0.0181**	**0.0173**	**948.7148**

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					
Arena	8.01644	0.0865	0.7859	0.6602	4.7200e-003		0.0597	0.0597		0.0597	0.0597		943.1104	943.1104	0.0181	0.0173	948.7148
Total		**0.0865**	**0.7859**	**0.6602**	**4.7200e-003**		**0.0597**	**0.0597**		**0.0597**	**0.0597**		**943.1104**	**943.1104**	**0.0181**	**0.0173**	**948.7148**

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	3.1289	1.3000e-004	0.0143	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0306	0.0306	8.0000e-005		0.0327
Unmitigated	3.1289	1.3000e-004	0.0143	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0306	0.0306	8.0000e-005		0.0327

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	0.3556					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.7720					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3300e-003	1.3000e-004	0.0143	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0306	0.0306	8.0000e-005		0.0327
Total	**3.1289**	**1.3000e-004**	**0.0143**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0306**	**0.0306**	**8.0000e-005**		**0.0327**

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					
Architectural Coating	0.3556					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.7720					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3300e-003	1.3000e-004	0.0143	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0306	0.0306	8.0000e-005		0.0327
Total	**3.1289**	**1.3000e-004**	**0.0143**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0306**	**0.0306**	**8.0000e-005**		**0.0327**

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 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Orange County Museum of Art: Previously Analyzed Project - South Coast AQMD Air District, Summer

Orange County Museum of Art: Previously Analyzed Project

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	140.00	1000sqft	1.70	140,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The Lot Acreage and Square Feet are from the Addendum to the Final Program Environmental Impact Report for the South Coast Plaza Center Project (LSA Associates, Inc., 2018).

Construction Phase - No construction emissions were analyzed for the Previously Analyzed Project scenario.

Off-road Equipment - No construction emissions were analyzed for the Previously Analyzed Project scenario.

Trips and VMT - No construction emissions were analyzed for the Previously Analyzed Project scenario.

Grading - No construction emissions were analyzed for the Previously Analyzed Project scenario.

Vehicle Trips - The Trip Rates are from the Orange County Museum of Art Trip Generation Memo (LSA Associates, Inc., 2018).

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	0.00
tblConstructionPhase	PhaseEndDate	5/2/2019	4/30/2019
tblLandUse	LotAcreage	45.00	1.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	10.71	56.24
tblVehicleTrips	SU_TR	10.71	56.24
tblVehicleTrips	WD_TR	10.71	56.24

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					
2019	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	0.0000	0.0000

Maximum	**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**	**0.0000**	**0.0000**

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					
2019	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	0.0000	0.0000
Maximum	**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**	**0.0000**	**0.0000**

	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**

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	3.1289	1.3000e-004	0.0143	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0306	0.0306	8.0000e-005		0.0327
Energy	0.0865	0.7859	0.6602	4.7200e-003		0.0597	0.0597		0.0597	0.0597		943.1104	943.1104	0.0181	0.0173	948.7148
Mobile	11.5687	55.8729	125.5169	0.4552	36.1378	0.3509	36.4887	9.6691	0.3273	9.9964		46,389.4237	46,389.4237	2.2822		46,446.4776
Total	**14.7840**	**56.6590**	**126.1914**	**0.4600**	**36.1378**	**0.4107**	**36.5485**	**9.6691**	**0.3871**	**10.0562**		**47,332.5648**	**47,332.5648**	**2.3003**	**0.0173**	**47,395.2251**

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	3.1289	1.3000e-004	0.0143	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0306	0.0306	8.0000e-005		0.0327
Energy	0.0865	0.7859	0.6602	4.7200e-003		0.0597	0.0597		0.0597	0.0597		943.1104	943.1104	0.0181	0.0173	948.7148
Mobile	11.5687	55.8729	125.5169	0.4552	36.1378	0.3509	36.4887	9.6691	0.3273	9.9964		46,389.4237	46,389.4237	2.2822		46,446.4776
Total	**14.7840**	**56.6590**	**126.1914**	**0.4600**	**36.1378**	**0.4107**	**36.5485**	**9.6691**	**0.3871**	**10.0562**		**47,332.5648**	**47,332.5648**	**2.3003**	**0.0173**	**47,395.2251**

	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	Site Preparation	Site Preparation	5/1/2019	4/30/2019	5	0	

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; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	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
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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	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**	**0.0000**	**0.0000**	**0.0000**

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	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	0.0000	0.0000
Worker	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	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**	**0.0000**	**0.0000**	**0.0000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	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	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**	**0.0000**	**0.0000**	**0.0000**

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	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	0.0000	0.0000
Worker	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	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**	**0.0000**	**0.0000**	**0.0000**

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	11.5687	55.8729	125.5169	0.4552	36.1378	0.3509	36.4887	9.6691	0.3273	9.9964		46,389.4237	46,389.4237	2.2822		46,446.4776
Unmitigated	11.5687	55.8729	125.5169	0.4552	36.1378	0.3509	36.4887	9.6691	0.3273	9.9964		46,389.4237	46,389.4237	2.2822		46,446.4776

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	7,873.60	7,873.60	7873.60	16,995,180	16,995,180
Total	7,873.60	7,873.60	7,873.60	16,995,180	16,995,180

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Arena	16.60	8.40	6.90	0.00	81.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Arena	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

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	0.0865	0.7859	0.6602	4.7200e-003		0.0597	0.0597		0.0597	0.0597		943.1104	943.1104	0.0181	0.0173	948.7148
NaturalGas Unmitigated	0.0865	0.7859	0.6602	4.7200e-003		0.0597	0.0597		0.0597	0.0597		943.1104	943.1104	0.0181	0.0173	948.7148

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					
Arena	8016.44	0.0865	0.7859	0.6602	4.7200e-003		0.0597	0.0597		0.0597	0.0597		943.1104	943.1104	0.0181	0.0173	948.7148
Total		**0.0865**	**0.7859**	**0.6602**	**4.7200e-003**		**0.0597**	**0.0597**		**0.0597**	**0.0597**		**943.1104**	**943.1104**	**0.0181**	**0.0173**	**948.7148**

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					
Arena	8.01644	0.0865	0.7859	0.6602	4.7200e-003		0.0597	0.0597		0.0597	0.0597		943.1104	943.1104	0.0181	0.0173	948.7148
Total		**0.0865**	**0.7859**	**0.6602**	**4.7200e-003**		**0.0597**	**0.0597**		**0.0597**	**0.0597**		**943.1104**	**943.1104**	**0.0181**	**0.0173**	**948.7148**

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	3.1289	1.3000e-004	0.0143	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0306	0.0306	8.0000e-005		0.0327
Unmitigated	3.1289	1.3000e-004	0.0143	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0306	0.0306	8.0000e-005		0.0327

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	0.3556					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.7720					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3300e-003	1.3000e-004	0.0143	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0306	0.0306	8.0000e-005		0.0327
Total	**3.1289**	**1.3000e-004**	**0.0143**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0306**	**0.0306**	**8.0000e-005**		**0.0327**

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					
Architectural Coating	0.3556					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.7720					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.3300e-003	1.3000e-004	0.0143	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0306	0.0306	8.0000e-005		0.0327
Total	**3.1289**	**1.3000e-004**	**0.0143**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0306**	**0.0306**	**8.0000e-005**		**0.0327**

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 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Orange County Museum of Art: Previously Analyzed Project

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Arena	140.00	1000sqft	1.70	140,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The Lot Acreage and Square Feet are from the Addendum to the Final Program Environmental Impact Report for the South Coast Plaza Center Project (LSA Associates, Inc., 2018).

Construction Phase - No construction emissions were analyzed for the Previously Analyzed Project scenario.

Off-road Equipment - No construction emissions were analyzed for the Previously Analyzed Project scenario.

Trips and VMT - No construction emissions were analyzed for the Previously Analyzed Project scenario.

Grading - No construction emissions were analyzed for the Previously Analyzed Project scenario.

Vehicle Trips - The Trip Rates are from the Orange County Museum of Art Trip Generation Memo (LSA Associates, Inc., 2018).

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	0.00
tblConstructionPhase	PhaseEndDate	5/2/2019	4/30/2019
tblLandUse	LotAcreage	45.00	1.70
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	10.71	56.24
tblVehicleTrips	SU_TR	10.71	56.24
tblVehicleTrips	WD_TR	10.71	56.24

2.0 Emissions Summary

2.1 Overall Construction

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	tons/yr										MT/yr					
2019	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	0.0000	0.0000

Maximum	**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**	**0.0000**	**0.0000**

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	tons/yr										MT/yr					
2019	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	0.0000	0.0000
Maximum	**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**	**0.0000**	**0.0000**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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	tons/yr										MT/yr					
Area	0.5710	2.0000e-005	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Energy	0.0158	0.1434	0.1205	8.6000e-004		0.0109	0.0109		0.0109	0.0109	0.0000	156.1425	156.1425	2.9900e-003	2.8600e-003	157.0704
Mobile	1.9412	10.4544	22.0358	0.0796	6.4578	0.0640	6.5218	1.7305	0.0597	1.7902	0.0000	7,360.2445	7,360.2445	0.3768	0.0000	7,369.6640
Waste						0.0000	0.0000		0.0000	0.0000	0.7815	0.0000	0.7815	0.0462	0.0000	1.9362
Water						0.0000	0.0000		0.0000	0.0000	19.1329	0.0000	19.1329	1.9651	0.0464	82.0887
Total	**2.5280**	**10.5979**	**22.1580**	**0.0804**	**6.4578**	**0.0749**	**6.5327**	**1.7305**	**0.0706**	**1.8011**	**19.9144**	**7,516.3905**	**7,536.3049**	**2.3911**	**0.0493**	**7,610.7629**

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	tons/yr										MT/yr					
Area	0.5710	2.0000e-005	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Energy	0.0158	0.1434	0.1205	8.6000e-004		0.0109	0.0109		0.0109	0.0109	0.0000	156.1425	156.1425	2.9900e-003	2.8600e-003	157.0704
Mobile	1.9412	10.4544	22.0358	0.0796	6.4578	0.0640	6.5218	1.7305	0.0597	1.7902	0.0000	7,360.2445	7,360.2445	0.3768	0.0000	7,369.6640
Waste						0.0000	0.0000		0.0000	0.0000	0.7815	0.0000	0.7815	0.0462	0.0000	1.9362

Water						0.0000	0.0000		0.0000	0.0000	19.1329	0.0000	19.1329	1.9651	0.0464	82.0887
Total	**2.5280**	**10.5979**	**22.1580**	**0.0804**	**6.4578**	**0.0749**	**6.5327**	**1.7305**	**0.0706**	**1.8011**	**19.9144**	**7,516.3905**	**7,536.3049**	**2.3911**	**0.0493**	**7,610.7629**

	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	Site Preparation	Site Preparation	5/1/2019	4/30/2019	5	0	

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; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	0	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	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
Site Preparation	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

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	tons/yr										MT/yr					
Fugitive Dust	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	0.0000	0.0000
Off-Road	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	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**	**0.0000**	**0.0000**	**0.0000**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	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	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**	**0.0000**	**0.0000**	**0.0000**

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	tons/yr										MT/yr					
Fugitive Dust	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	0.0000	0.0000
Off-Road	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	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**	**0.0000**	**0.0000**	**0.0000**

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	tons/yr										MT/yr					
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	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	0.0000	0.0000
Worker	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	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**	**0.0000**	**0.0000**	**0.0000**

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	tons/yr										MT/yr					
Mitigated	1.9412	10.4544	22.0358	0.0796	6.4578	0.0640	6.5218	1.7305	0.0597	1.7902	0.0000	7,360.2445	7,360.2445	0.3768	0.0000	7,369.6640
Unmitigated	1.9412	10.4544	22.0358	0.0796	6.4578	0.0640	6.5218	1.7305	0.0597	1.7902	0.0000	7,360.2445	7,360.2445	0.3768	0.0000	7,369.6640

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Arena	7,873.60	7,873.60	7873.60	16,995,180	16,995,180
Total	7,873.60	7,873.60	7,873.60	16,995,180	16,995,180

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Arena	16.60	8.40	6.90	0.00	81.00	19.00	66	28	6

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Arena	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0158	0.1434	0.1205	8.6000e-004		0.0109	0.0109		0.0109	0.0109	0.0000	156.1425	156.1425	2.9900e-003	2.8600e-003	157.0704
NaturalGas Unmitigated	0.0158	0.1434	0.1205	8.6000e-004		0.0109	0.0109		0.0109	0.0109	0.0000	156.1425	156.1425	2.9900e-003	2.8600e-003	157.0704

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	tons/yr										MT/yr					
Arena	2.926e+006	0.0158	0.1434	0.1205	8.6000e-004		0.0109	0.0109		0.0109	0.0109	0.0000	156.1425	156.1425	2.9900e-003	2.8600e-003	157.0704
Total		**0.0158**	**0.1434**	**0.1205**	**8.6000e-004**		**0.0109**	**0.0109**		**0.0109**	**0.0109**	**0.0000**	**156.1425**	**156.1425**	**2.9900e-003**	**2.8600e-003**	**157.0704**

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	tons/yr										MT/yr					
Arena	2.926e+006	0.0158	0.1434	0.1205	8.6000e-004		0.0109	0.0109		0.0109	0.0109	0.0000	156.1425	156.1425	2.9900e-003	2.8600e-003	157.0704

Total		**0.0158**	**0.1434**	**0.1205**	**8.6000e-004**		**0.0109**	**0.0109**		**0.0109**	**0.0109**	**0.0000**	**156.1425**	**156.1425**	**2.9900e-003**	**2.8600e-003**	**157.0704**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	1.183e+006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Arena	1.183e+006	0.0000	0.0000	0.0000	0.0000
Total		**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	tons/yr										MT/yr					
Mitigated	0.5710	2.0000e-005	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Unmitigated	0.5710	2.0000e-005	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003

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	tons/yr										MT/yr					

Architectural Coating	0.0649					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5059					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Total	**0.5710**	**2.0000e-005**	**1.7900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.4700e-003**	**3.4700e-003**	**1.0000e-005**	**0.0000**	**3.7000e-003**

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	tons/yr										MT/yr					
Architectural Coating	0.0649					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5059					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.7900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.4700e-003	3.4700e-003	1.0000e-005	0.0000	3.7000e-003
Total	**0.5710**	**2.0000e-005**	**1.7900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.4700e-003**	**3.4700e-003**	**1.0000e-005**	**0.0000**	**3.7000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	19.1329	1.9651	0.0464	82.0887
Unmitigated	19.1329	1.9651	0.0464	82.0887

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	60.3078 / 3.84944	19.1329	1.9651	0.0464	82.0887
Total		**19.1329**	**1.9651**	**0.0464**	**82.0887**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Arena	60.3078 / 3.84944	19.1329	1.9651	0.0464	82.0887
Total		**19.1329**	**1.9651**	**0.0464**	**82.0887**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.7815	0.0462	0.0000	1.9362
Unmitigated	0.7815	0.0462	0.0000	1.9362

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	3.85	0.7815	0.0462	0.0000	1.9362
Total		**0.7815**	**0.0462**	**0.0000**	**1.9362**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Arena	3.85	0.7815	0.0462	0.0000	1.9362
Total		**0.7815**	**0.0462**	**0.0000**	**1.9362**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

TRIP GENERATION MEMORANDUM

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CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: December 20, 2018

TO: Daniel Inloes, City of Costa Mesa

FROM: Arthur Black, LSA

SUBJECT: Trip Generation – Orange County Museum of Art

At your request, LSA has prepared this analysis of trip generation for the proposed Orange County Museum of Art (OCMA) located within the Segerstrom Center for the Arts in Costa Mesa. In 2001, the City of Costa Mesa (City) certified Environmental Impact Report #1047 for the South Coast Plaza Town Center project (Town Center EIR). The Town Center EIR analyzed the potential impacts of developing more than 1 million square feet of additional retail, office, hotel, and cultural arts related uses, including a site for an art museum. The potential art museum analyzed was 140,000 square feet including exhibition and teaching space. In 2006, this analysis was augmented to allow for the addition of 80 high-rise residential units at the art museum site.

Much of the development anticipated in the Town Center EIR has been constructed. However, the art museum site remains vacant. The proposed project would relocate OCMA from its previous location in Newport Beach to the site set aside for an art museum south of Segerstrom Hall and east of the Renée and Henry Segerstrom Concert Hall. Residential development is not part of the proposed project description. The proposed project consists of a total of 66,750 square feet of museum exhibition and teaching space, which is just under half of the size analyzed in the Town Center EIR. OCMA proposes an initial phase of 56,750 square feet and a potential 10,000-square-foot expansion in a future second phase (for a total of 66,750 square feet).

Trip Generation

LSA prepared a comparison of the trip generation for the previously anticipated and analyzed land use and the currently proposed project. The trip generation potential for both the previous project and the current project were calculated using trip rates provided on Table 3-3 “Peak Hour Trip Generation Rates” of the City of Costa Mesa General Plan Update Traffic Analysis (Stantec, 2016). Table A presents the trip generation calculations. As Table A shows, the proposed project is anticipated to generate 4,652 fewer trips per day than previously anticipated. In the a.m. peak hour, the proposed project will generate 118 fewer trips. In the p.m. peak hour, the proposed project will generate 584 fewer trips than previously anticipated.

Table A: Trip Generation Comparison

Land Use	Size	Unit	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Rates[1]									
High Density Residential	–	DU	6.65	0.10	0.41	0.51	0.40	0.22	0.62
Museum	–	TSF	56.24	0.74	0.30	1.04	3.50	3.80	7.30
Trip Generation									
Previously Analyzed Project									
Museum/academy	140.000	TSF	7,874	104	42	146	490	532	1,022
High-rise tower	80	DU	532	8	33	41	32	18	50
Total Previously Analyzed Project			8,406	112	75	187	522	550	1,072
Proposed Project									
Orange County Museum of Art	66.750	TSF	3,754	49	20	69	234	254	488
New Trip Generation			**(4,652)**	**(63)**	**(55)**	**(118)**	**(288)**	**(296)**	**(584)**

[1] Trip rates are referenced from Table 3-3 in the City of Costa Mesa General Plan Update Traffic Analysis.
ADT = average daily trips
DU = dwelling unit
TSF = thousand square feet

General Plan Traffic Analysis

In 2016, the City prepared a citywide traffic analysis analyzing the potential impacts of changes to the General Plan. Changes to the General Plan included increasing residential dwelling units and general office development, and decreasing commercial and motel development. LSA confirmed that analysis of the General Plan included 140,000 square feet of museum development generating 7,874 daily trips (Table 3-2, Citywide Land Use and ADT Trip Generation Summary).

Intersections within and surrounding Town Center were included in the City of Costa Mesa General Plan Update Traffic Analysis (Stantec, 2016). These intersections are listed here as they are numbered in the General Plan traffic analysis:

9. Bristol Street and Sunflower Avenue
11. Avenue of the Arts and Sunflower Avenue
12. Sakioka Drive and Sunflower Avenue
13. Anton Boulevard and Sunflower Avenue
16. Bristol Street and Town Center Drive
25. Bristol Street and Anton Boulevard
27. Avenue of the Arts and Anton Boulevard
28. Sakioka Drive and Anton Boulevard
42. Bristol Street and Interstate 405 (I-405) northbound ramps
43. Bristol Street and I-405 southbound ramps

Figure 3-1 in the General Plan traffic analysis illustrated the anticipated difference between anticipated daily traffic with General Plan conditions and existing daily traffic. The area where the OCMA is proposed was shown as an area with at least 10,000 additional daily trips. The General Plan includes some intersection improvements to accommodate this anticipated growth. The following intersection improvements are included in the financially constrained plan.

9. Bristol Street and Sunflower Avenue: Add a third northbound left-turn lane
42. Bristol Street and I-405 northbound ramps: Restripe westbound exclusive through lane to a shared through right-turn lane

Other than these two improvements, the remainder of the intersections in the vicinity of the project site were not anticipated to require any widening over existing conditions. Table B shows the intersection performance in the General Plan Buildout condition (including 140,000 square feet of museum space).

Table B: 2035 Intersection Level of Service Summary

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS
9. Bristol St/Sunflower Ave	0.69	B	0.89	D
11. Avenue of the Arts/Sunflower Ave	0.45	A	0.57	A
12. Sakioka Dr/Sunflower Ave	0.38	A	0.52	A
13. Anton Blvd/Sunflower Ave	0.44	A	0.55	A
16. Bristol St/Town Center Dr	0.44	A	0.55	A
25. Bristol St/Anton Blvd	0.45	A	0.84	D
27. Avenue of the Arts/Anton Blvd	0.48	A	0.71	C
28. Sakioka Dr/Anton Blvd	0.40	A	0.55	A
42. Bristol St/I-405 NB Ramps	0.53	A	0.84	D
43. Bristol St/I-405 SB Ramps	0.54	A	0.69	B

Source: Table 3-11 in the City of Costa Mesa General Plan Update Traffic Analysis
I-405 = Interstate 405
ICU = Intersection Capacity Utilization
LOS = level of service
NB = northbound
SB = southbound

As Table B shows, all intersections in the vicinity of the project site are anticipated to operate at level of service (LOS) D or better. Because the previously considered art museum (140,000 square feet) was included in the General Plan traffic analysis, the General Plan traffic analysis concluded that all of the intersections in the vicinity of the project would operate at a satisfactory LOS D or better, and the proposed project (66,750 square feet) would generate 4,652 fewer trips per day, 118 fewer a.m. peak-hour trips, and 584 fewer p.m. peak-hour trips than previously anticipated. Therefore, no new or substantially increased traffic impacts are anticipated with the proposed project.

APPENDIX C

GEOTECHNICAL EXPLORATION REPORT

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GEOTECHNICAL EXPLORATION REPORT
PROPOSED NEW ORANGE COUNTY MUSEUM OF ART
SEGERSTROM CENTER FOR THE PERFORMING ARTS
3499 AVENUE OF THE ARTS
COSTA MESA, CALIFORNIA

Prepared for:

ORANGE COUNTY MUSEUM OF ART

850 San Clemente Drive
Newport Beach, California 92660

Project No. 11342.001

July 19, 2016

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

Leighton Consulting, Inc.
A LEIGHTON GROUP COMPANY

July 19, 2016

Project No. 11342.001

Orange County Museum of Art
850 San Clemente Drive
Newport Beach, California 92660

Attention: Ms. Annette Wiley

Subject: Geotechnical Exploration Report
Proposed New Orange County Museum of Art
Segerstrom Center for the Performing Arts
3499 Avenue of the Arts
Costa Mesa, California

In accordance with our May 6, 2016 proposal, authorized on May 11, 2016, Leighton Consulting, Inc. (Leighton) has prepared this geotechnical exploration report for the subject project. We understand the subject project consists of the construction of a new 52,000-square-foot museum with an approximate footprint of 34,000 square feet. No subterranean levels are anticipated. The purpose of our work was to evaluate the subsurface conditions at the site, identify potential geologic and seismic hazards, and provide geotechnical recommendations for design and construction.

The results of our exploration indicate the site is underlain by up to 25 feet of compressible clayey soils. Groundwater was encountered in this exploration at depths ranging from 20 to 25 feet below the existing ground surface (bgs) but has been encountered in previous explorations at depths as shallow as 9 feet bgs. The proposed project is deemed feasible from a geotechnical standpoint if the recommendations in the attached report are implemented in the design and construction.

17781 Cowan ▪ Irvine, CA 92614-6009
949.250.1421 ▪ 949.250.1114 Fax

We appreciate the opportunity to be of service to you on this project. If you have any questions or if we can be of further service, please contact us at ***(866) LEIGHTON***; specifically at the phone extensions or e-mail as listed below.

Respectfully submitted,

LEIGHTON CONSULTING, INC.

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Leighton

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1.0 INTRODUCTION

1.1 Site Description and Proposed Development

The project site (Site) is located at 3499 Avenue of the Arts in the city of Costa Mesa, California. The site location (latitude 33.6916°, longitude -117.8815°) and immediate vicinity are shown on Figure 1, *Site Location Map.* The site is bordered by a paved promenade to the north, Avenue of the Stars to the east, a commercial high-rise building to the south, and an existing performance arts building (Renee and Henry Segerstrom Concert Hall) to the west.

The project site is the last undeveloped parcel at the Segerstrom Center for the Performing Arts (SCFTPA). The site is rectangular in shape and measures roughly 100 feet by 200 feet in plan. Currently, the project area is occupied by a large grass field and dirt lot.

Based on the Alta Survey prepared by Michael Baker International (MBI, 2015), the ground surface at the site is approximately at Elevation (El.) +31 feet mean sea level (msl). Review of the United States Geological Survey (USGS) 7.5 Minute Series Newport Beach, California Quadrangle (USGS, 1981) indicates sheet flow is generally toward the southwest.

Based on review of aerial photographs dated from 1952 to 2012, grading operations for the adjacent concert hall to the west of the Site had begun by 2004 and construction was near completion by 2005. The South Coast Repertory Theater building located farther to the west of the Site appears to have been originally built sometime between 1972 and 1980. Prior to 1972, aerial photos indicate the area was an agricultural site (NETR, 2016).

Based on discussions with project team members, we understand that a 52,000-square-foot, at grade, museum building with a footprint of approximately 34,000 square feet is proposed. In addition, ancillary improvements consisting of underground utilities, concrete hardscaping, and landscaping are anticipated.

1.2 Previous Investigations

Leighton has performed previous geotechnical investigations and/or provided geotechnical recommendations for various developments at SCFTPA in 1998, 2001, and 2006 (Leighton, 2001a, 20011b, 2006). A total of nine hollow stem

augers were advanced between 1998 and 2001 to depths ranging from approximately 61 to 81 feet below the existing ground surface (bgs) for the existing concert hall to the immediate west. In addition, in 2001, a total of seven CPT soundings were advanced to approximate depths of 70 feet bgs. Ultimately, due to shallow groundwater conditions and compressible clay soils, a driven pile foundation system was recommended to support the structure.

Three of these previous borings (PA-1, PA-2, and PA-6) drilled by Leighton in 1998 are located within the Site boundary. The borings were drilled to depths ranging from 61½ feet to 71½ feet bgs. Logs of these previous exploratory borings are provided in Appendix B, *Previous Boring Logs*. The locations of the borings are shown on Figure 2, *Geotechnical Exploration Map*.

In 2001, Leighton performed a pumping test and provided recommendations for temporary construction dewatering. Three groundwater wells were installed to depths of approximately 35 feet bgs. The pumping well was pumped at approximately 35 gallons per minute and water levels were drawn down to the bottom of the well. Drawdowns in the adjacent monitoring wells located approximately 50 and 75 feet away were measured to be approximately 4½ feet below static groundwater levels in each well.

In 2006, Leighton provided foundation recommendations for a proposed Henry Segerstrom sculpture. No additional field exploration was performed and based on a review of previous investigations, a driven pile foundation was recommended for the sculpture.

The subsurface soils encountered in the previous investigations consisted of approximately 1 to 4 feet of artificial fill overlying 15 to 21 feet of native clayey soils. Below the native clays, the explorations encountered interbedded silty sands, sands, clayey silts, and clays. Groundwater was encountered at depths ranging from 9 to 14 feet below existing grade. Laboratory testing indicated that the near surface soils are highly expansive

1.3 Purpose and Scope

The purpose of our current scope of work was to evaluate the subsurface conditions at the Site relative to the proposed development and provide geotechnical recommendations to aid in the design and construction for the project as currently planned. Building loads were unavailable at the time of this report. For the purposes of preparing this report, we assumed a maximum dead

plus live column load of 500 kips. Once actual building loads are known, they should be provided to Leighton as they may affect the conclusions and recommendations in this report.

Our scope of work included the following tasks:

- *Background Review* – We reviewed readily available in-house reports and published geotechnical literature, aerial photographs, and maps relevant to the site. We evaluated geological hazards and potential geotechnical issues that may significantly impact the site. The documents reviewed are listed in Section 7.0.

- *Field Exploration* – Prior to the field exploration, we marked the proposed exploration locations and contacted Underground Service Alert (USA) for utility clearance. Our subsurface exploration included drilling, logging, and sampling of 4 hollow-stem auger borings to depths ranging from approximately 5 to 76 ½ feet bgs and 6 CPTs to depths ranging from approximately 70 to 75 feet bgs. Soil samples were collected at selected depth intervals from the borings and transported to our laboratory for testing. The approximate locations of the borings and CPTs are shown on Figure 2.

- *Percolation Testing* – Two borings, P-1 and P-2, were advanced to depths of 10 feet bgs and 5 feet bgs, respectively. Each boring was converted into a temporary percolation test well with slotted PVC and gravel backfill. Upon completion of percolation testing, the temporary wells were removed and the boring was backfilled with tamped soil cuttings. The results of the percolation tests are provided in Appendix E, *Percolation Test Results.* The approximate locations of the percolation test well borings are shown on Figure 2.

- *Laboratory Testing* – Performed laboratory testing of selected soil samples to evaluate geotechnical engineering characteristics of the encountered earth materials within the boring depths.

- *Engineering Analysis* – The data obtained from our background review and field exploration were evaluated and analyzed to develop recommendations for the proposed development.

- *Report Preparation* – This report presents our findings, conclusions, and recommendations for the proposed development.

2.0 FIELD EXPLORATION AND LABORATORY TESTING

Prior to field exploration, a geologist from our firm performed site reconnaissance to identify and evaluate the planned exploration locations with respect to access for exploration equipment and subsurface structures. Underground Service Alert was then notified of the proposed locations for utility clearance prior to exploration.

2.1 Field Explorations

Subsurface exploration consisted of 4 hollow-stem auger soil borings (LB-1, LB-2, P-1, and P-2) and 6 CPT soundings (CPT-1 through CPT-6). The borings were advanced by a conventional truck-mounted drilling rig using 3¼-inch-diameter (inner diameter) hollow stem augers and were extended to depths ranging from approximately 5 feet to 75½ feet bgs. The CPTs were pushed with a 30-ton CPT rig in which a standard Cone equipped with a 15 cm^2 tip was advanced at a constant rate of approximately 1 inch per second to depths ranging from approximately 70 to 75 feet bgs. Shear wave velocities were recorded in CPT-1. The logs of the test borings and CPTs are included in Appendix A, *Exploration Logs* and the approximate locations of the borings and CPTs are shown on Figure 2.

Soil sampling was performed by the Standard Penetration Test (SPT) in accordance with ASTM D1586 procedures using a thick wall split barrel design sampler with sharpened cutting shoe and ball check vent. Samples were collected at either 2½- or 5-foot intervals throughout the depth of exploration. The sampler is driven below the bottom of the borehole by a 140-pound weight (hammer) free-falling 30 inches using an automatic hammer to provide greater consistency in the drop height and striking frequency. The number of blows to drive the sampler the final 12 inches of the 18-inch drive interval is termed the "blowcount" or SPT N-value. The N-values provide a measure of relative density in granular (non-cohesive) soils and comparative consistency in cohesive soils. Bulk samples were also obtained from the borings for laboratory analysis.

Each soil sample collected was visually reviewed in the field and its description was entered in the boring logs in general conformance with the Unified Soil Classification System (USCS) pursuant to ASTM D2488 to aid in the evaluation of its significant properties for engineering use. All samples were sealed and packaged for transport to our laboratory. After completion of drilling, the borings were immediately backfilled with tamped soil cuttings except for P-1 and P-2, which were converted to temporary percolation wells to perform percolation

testing. Once percolation testing was complete, the well casings were removed and the borings were backfilled. Excess soil cuttings were spread onsite.

2.2 Laboratory Testing

Laboratory tests were performed on representative soil samples to verify the field classification of the samples and to determine the geotechnical properties of the subsurface materials. The following tests were performed:

- In-situ moisture content and density (ASTM D2216 and ASTM D2937);
- Consolidation (ASTM D 2435);
- Direct shear (ASTM D3080);
- Expansion Index (ASTM D4829);
- Maximum dry density and optimum moisture content (ASTM D1557);
- R-Value (DOT CA 301); and
- Corrosivity Suite - Sulfate, Chloride, pH and Resistivity (California Test Methods 417, 422 and 532/643).

All laboratory tests were performed in general conformance with American Society of the International Association for Testing and Materials (ASTM) or Caltrans procedures. The results of the in-situ moisture and density tests are presented on the geotechnical boring logs in Appendix A. The results of other laboratory tests are presented in Appendix C, *Laboratory Test Results*.

2.3 Percolation Testing

Percolation testing was performed within borings P-1 and P-2 to evaluate the infiltration characteristics of subsurface soils. Borings P-1 and P-2 were drilled to approximate depths of 5 and 10 feet, respectively. The percolation tests were conducted in general accordance with the percolation test procedure as presented in the Orange County Department of Public Works *Best Management Practices Technical Guidance Document* (OCDPW, 2011). Results of the percolation testing are presented in Appendix E – *Percolation Test Data*. The test locations are shown on Figure 2.

A boring percolation test is useful for field measurements of the infiltration rate of soils, and is suited for testing when the design depth of the infiltration device is

deeper than current existing grades, especially in areas where it is difficult to dig test pits, or where the depths of these test pits would be considerably deep. The test consists of excavating a boring to the depth of the invert of the proposed infiltration device.

The infiltration rate for the test was calculated by dividing the rate of discharge by the infiltration surface area, or flow area. The volume of discharge was calculated by adding the total volume of water that dropped within the PVC pipe and within the annulus, and incorporating a porosity reduction factor to account for the porosity of the annulus material. The flow area was based on the average water height within the slotted pipe section of the test well. The percolation test in boring P-1 was performed at a depth range of approximately 5 to 10 feet bgs, and the percolation test in boring P-2 was performed at approximately 0 to 5 feet bgs.

Results of the infiltration testing indicate an infiltration rate of approximately 0.01 inch/hour in P-1 and 0.23 inch/hour in P-2. Due to the poor results of infiltration testing caused by the presence of clayey soils (and the shallow depth to groundwater), direct infiltration to the subsurface is not considered feasible at this site.

3.0 GEOTECHNICAL FINDINGS

3.1 Regional Geologic Setting

The site is located within the Peninsular Ranges geomorphic province of California. The Peninsular Ranges province extends approximately 900 miles southward from the Santa Monica Mountains to the tip of Baja California (Yerkes et al., 1965) and is characterized by elongated, northwest-trending mountain ridges and sediment-floored valleys. The province includes numerous northwest-trending fault zones, most of which either die out, merge with, or are terminated by faults that form the southern margin of the Transverse Ranges province. These northwest-trending fault zones include the San Jacinto, Whittier-Elsinore, Palos Verdes, and Newport-Inglewood fault zones.

Locally, the subject site is located is located in the Tustin Plain within the southeastern margin of the Los Angeles Basin, a large structural depression within the Peninsular Ranges geomorphic province of California. In general, the Tustin Plain consists of approximately 1,400 feet of unconsolidated to semi-consolidated Quaternary-age alluvial sediments. Underlying the Quaternary alluvial deposits are Tertiary-age bedrock units consisting of sandstone, siltstone, shale and conglomerate on the order of 31,000 feet in thickness. The subject site has been part of a flood plain, receiving finer-grained materials during flood and heavy storm events.

3.2 Surficial Geology

The project site is located approximately 3 miles to the east of the Santa Ana River. Geologic mapping of the project area indicates that near-surface native soils consist of Quaternary-aged young alluvial valley deposits within a broad alluvial fan derived primarily from the Santa Ana River floodplain comprised of varying proportions of gravel, sand, silt, and clay (Morton, 2004). These deposits are anticipated to be underlain by a thick (several thousands of feet) sequence of sedimentary rock formations. The geologic units in the vicinity of the project site are shown on Figure 3, *Regional Geology Map*.

3.3 Subsurface Soil Conditions

The site is underlain by a mantle of undocumented artificial fill materials (Afu) approximately 2 to 3 feet thick overlying Quaternary-aged young alluvial valley

deposits (Qya). The artificial fill consists primarily of sandy gravel in the northern portion of the Site, which is believed to be associated with previous construction activities for the adjacent concert hall, and clay in the southern end of the Site. Below the artificial fill, Quaternary-aged young alluvial valley deposits were encountered to the maximum depth explored of approximately 75 feet. The alluvium generally consists of approximately 20 to 25 feet of soft to stiff clay with low to high plasticity overlying interbedded sands, silty sands, silts, and clays. The interbedded soils below approximately 25 feet were found to range in density from medium dense/stiff to dense/hard.

Detailed descriptions of the subsurface soils encountered in the borings and CPTs are presented on the boring and CPT logs (Appendix A). Some of the engineering properties of these soils are described in the following sections. The locations of the borings are shown on Figure 2.

3.3.1 Expansive Soil Characteristics

Expansive soils contain significant amounts of clay particles that swell considerably when wetted and shrink when dried. Foundations constructed on these soils are subject to uplifting forces caused by the swelling. Without proper mitigation measures, heaving and cracking of both building foundations and slabs-on-grade could result. The near surface onsite soils consist predominantly of silty sand, clayey sand, sandy clay, sandy silt, to clayey silt. The laboratory test result of a representative bulk sample from boring LB-1 indicated a very high expansion potential when wetted (EI = 113).

Variance in expansion potential of onsite soil is anticipated; therefore, additional testing is recommended upon completion of rough grading to confirm the expansion potential result presented in this report.

3.3.2 Soil Corrosivity

In general, soil environments that are detrimental to concrete have high concentrations of soluble sulfates and/or pH values of less than 5.5. Section 4.3 of ACI 318 (ACI, 2011). The 2013 California Building Code (CBC), provides specific guidelines for the concrete mix-design when the soluble sulfate content of the soil exceeds 0.1 percent by weight or 1,000 parts per million (ppm). The minimum amount of chloride ions in the soil

environment that are corrosive to steel, either in the form of reinforcement protected by concrete cover or plain steel substructures, such as steel pipes, is 500 ppm per California Test 532. Concentrations of chloride ions above the stated concentration or other characteristics such as soil resistivity or redox potential may warrant special corrosion protection measures.

For screening purposes a bulk sample was tested from boring LB-1 to provide a preliminary evaluation of corrosivity. The test result indicates a soluble sulfate concentration of 954 ppm, chloride content of 142 ppm, pH value of 8.52, and a minimum resistivity value of 557 ohm-cm.

The results of the resistivity test indicate that the underlying soils are very severely corrosive to buried ferrous metals per ASTM STP 1013. Based on the measured water-soluble sulfate contents from the soil samples, concrete in contact with the soil is expected to have moderate exposure to sulfate attack per ACI 318-11. The samples tested for water-soluble chloride content indicate a low potential for corrosion of steel in concrete due to the chloride content of the soil. The chemical analysis test results for the onsite soil from our geotechnical exploration are included in Appendix C of this report.

3.3.3 Soil Compressibility

Two samples of the onsite soils recovered from the borings were subjected to consolidation testing to evaluate the compressibility of these materials under loads representative of anticipated structural bearing stresses. Although not precisely known, the maximum dead plus live column load for the planned building is anticipated to be about 500 kips. The results of in-situ resistance testing in our explorations and laboratory consolidation testing indicate that the onsite clay soils are relatively compressible. The results of testing are presented in Appendix C, *Laboratory Test Results*.

3.3.4 Shear Strength

Evaluation of the shear strength characteristics of the soils included laboratory Direct Shear testing. The results of testing are included in Appendix C as well composite summary graphs that provide values of angle of internal friction (ø) and cohesion (c) for use in geotechnical analysis.

3.3.5 Excavation Characteristics

Based on our subsurface explorations performed at the site and our experience from grading jobs in the vicinity of the site, we anticipate the onsite artificial fill and near surface alluvial materials can be readily excavated using conventional excavation equipment in good operating condition. Excavations below 8 feet will likely encounter wet soils that require subgrade stabilization techniques.

3.3.6 Shrinkage

Shrinkage of excavated artificial fill and natural soils upon compaction is anticipated to be moderate. Based on review of the moisture and density data generated from this exploration and considering an average of 90 percent relative compaction (ASTM D1557) for recompacted fill, shrinkage of the site soils is anticipated to vary within 3 to 6 percent for the upper 5 to 10 feet of soil.

3.4 Groundwater Conditions

Groundwater was encountered in our current borings at depths ranging from approximately 20 feet to 25 feet bgs at the time of drilling. However, the groundwater level had not yet stabilized at the time of measurement.

In the vicinity of the project site, the historically shallowest groundwater depth is reported to be approximately 5 to 10 feet bgs (CGS, 1998). Previous field investigations encountered groundwater as shallow as 9 feet bgs. Based on our field explorations, groundwater may impact the proposed development and temporary construction dewatering will be required for excavations deeper than about 8 feet bgs.

Fluctuations of the groundwater level, localized zones of perched water, and an increase in soil moisture should be anticipated during and following the rainy seasons or periods of locally intense rainfall or storm water runoff.

Due to shallow groundwater at this site direct infiltration to the subsurface is **not** recommended.

4.0 GEOLOGIC/SEISMIC HAZARDS

Geologic and seismic hazards include surface faulting, seismic shaking, liquefaction, seismically induced settlement, lateral spreading, seismically induced landslides, seiches and tsunamis, and flooding. The following sections discuss these hazards and their potential impact at the project site.

4.1 Faulting and Seismicity

4.1.1 Surface Fault Rupture

Our review of available in-house literature indicates that the site is not located within an Alquist-Priolo Earthquake Fault Zone (CGS, 2014; Bryant and Hart, 2007). Based on the current geologic framework, the potential for surface fault rupture at the site is expected to be low. There are no mapped or currently known active surface faults at this site (Figure 4, *Regional Seismicity Map*).

4.1.2 Seismicity and Ground Shaking

The principal seismic hazard to the site is ground shaking resulting from an earthquake occurring along any of several major active and potentially active faults in southern California. Known regional active faults that could produce significant ground shaking at the site include the San Joaquin Hills, Newport Inglewood Fault zone, and the Puente Hills faults, located approximately >1 mile (>1.6 km), 5.7 miles (9.2 km) , and 12.6 miles (20.3 km), respectively, from the site. Major regional faults with surface expression in proximity to the site are shown on Figure 4.

The peak ground acceleration (PGA_M) for the site calculated per ASCE 7-10 in accordance with California Building Code (CBC) 2013 is 0.596g. Using the United States Geological Survey (USGS) 2008 Interactive Deaggregations utilities, the model earthquake from the Maximum Considered Earthquake (MCE) is a magnitude 6.8 earthquake event occurring at 2.3 kilometers (1.4 miles) from the site. The probability of exceedance for the model earthquake is 2% in 50 years (i.e., a return period of approximately 2,475 years). Seismic design parameters are presented in Section 5.4 of the report.

4.1.3 Historic Seismicity

A search of historical earthquakes was performed using the computer program EQSEARCH (Blake, 2000) for the time period between 1800 and 2016. Within that time frame 1062 earthquakes (>M4.0) were found within a 62-mile (100-kilometer) radius around this site. Of these earthquakes, the closest was located 1.2 miles (1.9 kilometers) west of the site and occurred on July 8, 1902. Although not precisely located, its epicenter (N33.7000° latitude, W-117.9000° longitude) is located west of the site in a relatively quiescent seismic zone. The causative fault is unknown; however, the quake registered a magnitude 4.0 Mw earthquake with peak ground acceleration (PGA) of 0.12g. The largest recorded PGA at the site is estimated to have been roughly 0.32g from the magnitude 6.3 Long Beach Earthquake that shook the region in 1933. For a general view of recorded historical seismic activity see Figure 4.

4.2 Secondary Seismic Hazards

4.2.1 Liquefaction Potential

Liquefaction is the loss of soil strength or stiffness due to increasing pore-water pressure during severe ground shaking. Liquefaction is associated primarily with loose (low density), saturated, fine- to medium-grained, cohesionless soils. When the pore-water pressure approaches the total overburden pressure, the soil reduces greatly in strength and temporarily behaves similarly to a fluid. Effects of liquefaction can include sand boils, excessive settlement, bearing capacity failures below structural foundations, and seismically-induced lateral ground displacements.

As shown on the State of California Seismic Hazard Zones Map for the Newport Beach Quadrangle (CGS, 1997), the site is mapped within an area that has been identified as being susceptible to liquefaction (Figure 5, *Seismic Hazard Map*).

We have evaluated liquefaction potential using the CPT soundings and the historic high groundwater level at 5 feet bgs. A peak ground acceleration of 0.6g and a modal earthquake magnitude of 7 was used in the analysis based on the results of site-specific deaggregation of seismic hazard. The results of the analyses suggest that sandy soils below about 20 feet bgs

may be susceptible to liquefaction. Surface manifestation of liquefaction, including ground cracking, is deemed unlikely due to the depth of liquefiable layers. The results of liquefaction analysis are included in Appendix D, *Liquefaction Analysis*.

4.2.2 Seismically-Induced Settlement

Seismically-induced settlement consists of dynamic settlement of unsaturated soil (above groundwater) and liquefaction-induced settlement (below groundwater). These settlements occur primarily within low density sandy soil due to reduction in volume during and shortly after an earthquake event.

The potential total earthquake-induced settlement is estimated to be less than 1 inch. The differential settlement can be taken as half the total settlement over a horizontal distance of 30 feet.

4.2.3 Lateral Spreading

Liquefaction may also cause lateral spreading. For lateral spreading to occur, the liquefiable zone must be continuous, unconstrained laterally, and free to move along gently sloping ground toward an unconfined area. As the site is relatively constrained laterally, the potential for earthquake-induced lateral spreading at the site is low.

4.2.4 Earthquake-Induced Landsliding

As shown on Figure 5, *Seismic Hazard Map* the site is not mapped within a seismically-induced landslide hazard zone identified by the State of California (CGS, 1997a). In addition, due to project site being relatively flat, it is our opinion that the potential for seismically-induced landslide hazard at the site is negligible.

4.2.5 Earthquake-Induced Flooding

Earthquake-induced flooding can result from the failure of dams or other water-retaining structures resulting from earthquakes. The project is located approximately 20 miles downstream from Prado Dam in the Prado Dam Inundation zone (Figure 7, *Dam Inundation Map*). Prado Dam is an

earth-fill dam across the Santa Ana River in the Chino Hills near Corona, Riverside County, California, with the resulting impounded water creating Prado Flood Control Basin reservoir. The U.S. Army Corps of Engineers (ACOE) completed the dam in the Lower Santa Ana River Canyon in 1941 for the primary purpose of downstream flood control. The area upstream from the dam contains 2,255 square miles (5,840 km2) of the watershed's 2,650 square miles (6,900 km2). The Prado Flood Control Basin also provides water storage for groundwater recharge operations. The height of Prado Dam was raised approximately 28 feet adding 140,000 acre-feet to the basin and increasing the dam's level of protection to 190-years. New outlet works and a new outlet channel increased Prado Dam's controlled discharge capacity from 9,500 cubic feet per second (cfs) to 30,000 cfs.

Catastrophic failure of the dam is a very unlikely event and dam safety regulations are enforced by the Division of Dams, Army Corp of Engineers, and Department of Water Resources. Inspectors may require dam owners to perform work, maintenance or implement controls if issues are found with the safety of the dam. Due to the new improvements, raising the height of the dam and continuous monitoring by the ACOE and others, it is our opinion that the potential for earthquake induced flooding to affect the site is low.

4.2.6 Seiches and Tsunamis

Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Tsunamis are waves generated in large bodies of water by fault displacement or major ground movement. Based on the absence of an enclosed water body near the site and the inland location of the site, seiche and tsunami risks at the site are considered negligible.

4.3 Flooding

According to a Federal Emergency Management Agency (FEMA) flood insurance rate map (FEMA, 2009), the site is located within a 500-year flood zone (Figure 6, *Flood Hazard Zone Map*). Regionally, storm runoff flow is generally directed to the southwest. The majority of this area is urbanized and storm water runoff is directed through streets and storm drains.

5.0 GEOTECHNICAL DESIGN RECOMMENDATIONS

Presented herein are our design recommendations for site grading, foundation, retaining walls, pavement, and construction considerations for the project. The geotechnical consultant should review the grading plans, foundation plans, and specifications as they become available to verify that the recommendations presented in this report have been incorporated. Our recommendations are considered minimal and may be superseded by more conservative requirements of the owner, architect, structural engineer, building code, or the City of Costa Mesa.

Building plans were not available at the time this report was prepared. These recommendations should be considered preliminary until a review of proposed building plans has been performed by Leighton.

5.1 Site Grading

All site grading should be performed in accordance with the applicable local codes and in accordance with the project specifications that are prepared by the appropriate design professional.

Site grading is expected to consist of overexcavation of undocumented fill, foundation excavation, backfill, and other site improvement work. We expect the finished site grade will be similar to the existing grade. If additional fill is placed to raise the grade, settlement should be expected. Our preliminary calculations showed that approximately one inch of settlement should be expected for every additional foot of fill placed at the site. As an alternative, light weight fill can be used to reduce settlement at the site. The amount of settlement can be estimated when the final grading plan is available.

To provide improved support for floor slabs, paving, sidewalks, and other concrete slabs-on-grade, existing fill soils or disturbed natural soils should be excavated and replaced as engineered fill.

Because of the expansive nature of the onsite clay soils, precautions should be taken to reduce the potential heaving of concrete slabs on grade. A layer of relatively non-expansive, predominantly granular soils is recommended immediately beneath all concrete slabs, including Portland cement concrete paving. This select non-expansive granular soil should contain sufficient fines so as to be relatively impermeable when compacted. A 2-foot-thick layer of non-

expansive soils would normally be considered adequate. However, if it is desired to provide even greater protection against heaving of such slabs, a thicker layer of non-expansive soils could be used.

Good drainage of surface water, preferably away from the proposed structure, should be provided by providing adequate slopes to all graded and paved surfaces. Where good surface drainage is not possible, subdrains should be provided within planter areas to prevent accumulation of water within the upper soils. Proper drainage will be important to minimize infiltration of water into adjacent subgrade soils. Such drainage will also be important for proper plant growth.

Cut-off walls achieved by deepening curb sections or grade beams around planters or other comparable barriers are also recommended to minimize lateral flow of irrigation water beneath the adjacent subgrade soils. Leighton should review the final grading plan and landscape plan when it becomes available to verify the recommendations in this report.

5.1.1 Site Preparation

Preparation of the site for construction will initially require the removal of undocumented fill in conjunction with the removal of foundations for the previously existing structures. The fill should be removed to expose suitable bearing native soils. The actual extent of fill removal will be dependent upon the conditions exposed during excavation and as determined by the geotechnical engineer at the time of grading. The excavated material may be replaced as structural compacted fill with review and approval of the material by the geotechnical engineer.

Existing utility and irrigation lines should also be removed if they interfere with the proposed construction. The excavations that result from removal of these features should be properly backfilled with engineered fill.

5.1.2 Overexcavation

To reduce the potential for adverse differential settlement of the proposed improvements and to provide a uniform subgrade for support, the underlying soil should be prepared in such a manner that a uniform response to the applied loads is achieved. The recommendations for

earthwork and site preparation are based upon the assumptions that the finish grade will be similar to the existing elevation.

Museum Building: The soils that underlie the proposed museum building are recommended to be over excavated to a depth of at least 5 feet below the existing grade or the building pad subgrade, whichever is lower in elevation.

Ancillary Structures: The preparation of the areas to support ancillary lightly loaded structures that may be less sensitive to distortions is recommended to include overexcavation of the undocumented fill soils or a minimum depth of 3 feet and replaced with engineered fill.

Pavement and Hardscape: Preparation of areas to support new hardscape such as courtyards, sidewalks, and new pavement areas should be over excavated to remove all undocumented fill or a minimum depth of 3 feet and replaced with engineered fill.

The excavation should extend laterally a distance equal to the depth of overexcavation. Upon completion of overexcavation, the subgrade should be prepared as subsequently described in this report. Local conditions may be encountered which could require additional overexcavation beyond the above noted minimum to obtain an acceptable subgrade. The actual depths and lateral extents of remedial grading will be determined by the geotechnical consultant, based on subsurface conditions encountered during grading.

5.1.3 Subgrade Preparation

After excavating as recommended, the moisture content of the soils should be determined, and the soils slowly and uniformly moistened (or dried) as necessary to bring the soils to a uniform moist condition. All concrete slabs on grade, including floor slabs, should be underlain by at least 2 feet of non-expansive soil.

The moisture content of relatively non-expansive and predominantly granular soils should be brought to within 2 percent of optimum moisture content to a depth of 18 inches. The moisture content of any clayey soils should be brought to about 4 percent over optimum moisture content to a

depth of 18 inches. The moisture content of the subgrade should be checked and approved by Leighton prior to placing the required fill.

When grading is interrupted by heavy rains, fill operations should not be resumed until the moisture content and the dry density of the placed fill are satisfactory.

5.1.4 Fill Materials

On-site sandy soil that is free of construction debris, organics, cobbles, boulders, rubble, or rock larger than 4 inches in largest dimension is suitable to be used as fill for support of structures. Any imported soils should have an Expansion Index less than 20. Import soils should be evaluated and tested by Leighton if the materials are questionable.

5.1.5 Fill Placement and Compaction

Fill soils should be placed in loose lifts not exceeding 8 inches, moisture-conditioned to within 2 percent of optimum moisture content for sandy soils and at least 4 percent above optimum moisture content for clayey soils, and compacted to a minimum of 90 percent of the maximum dry density as determined by ASTM Test Method D 1557. Aggregate base should be compacted to a minimum of 95 percent relative compaction.

5.1.6 Wet and Pumping Soil

Subgrade stability issues may be encountered during subgrade preparation and site grading due to the moisture sensitivity of the clayey soils that are expected to comprise the subgrade and the relatively high in-situ moisture contents of the material based on recovered soil samples. Stability problems may be mitigated by either undercuting unstable soils or performing chemical or mechanical modification of the subgrade to allow grading activities to proceed. Chemical modification consists of the addition of either lime or Portland cement to a properly processed subgrade followed by recompaction. Chemical modification will require the geotechnical engineer's approval prior to implementing a modification program. Mechanical stabilization consists of the placement of a coarse (2- to 4-inch nominal particle diameter) crushed aggregate to serve as working mat.

Depending upon the degree of instability, a geogrid may also be required in conjunction with the coarse aggregate.

5.2 Foundation Design

Due to the presence of compressible clay, settlement is a major design consideration. Allowable bearing pressures for shallow spread-type foundations will be limited to reduce the potential for excessive settlement.

Due to the presence of expansive soils, it may prove efficient to support the museum building on a mat foundation, which facilitates resistance of floor slab heave. The following sections provide recommendations for the geotechnical parameters for design and construction of shallow foundations.

Design Parameters – Spread footings established at least 3 feet below the lowest adjacent grade may be designed using an allowable bearing capacity of 2,000 pounds per square foot (psf). The allowable bearing capacity may be increased by one-third for transient loads such as wind and seismic forces.

Mat foundations may be designed using an allowable bearing capacity of 750 psf and a coefficient of vertical subgrade reaction of 50 pounds per cubic inch (pci). These values may be increased by one-third for transient loads such as wind and seismic forces.

Settlement – The estimated static total settlement of spread footings or mat foundation based on the above allowable design parameters is approximately 1 inch. Differential settlement can be estimated as ½ inch over a horizontal distance of 30 feet. Seismically induced settlement due to liquefaction as mentioned in Section 4.2 should be included in the structural design.

Since settlement is a function of contact bearing pressure, differential settlement can be expected between areas where a large differential loading condition exists. *The settlement estimates should be reviewed by Leighton when final foundation plans and loads for the proposed structures become available.*

5.3 Slabs-on-Grade

Concrete slabs may be designed using a modulus of subgrade reaction of 100 pci provided the subgrade is prepared as described in Section 5.1 (underlain by

at least 2 feet of non-expansive engineered fill). From a geotechnical standpoint, we recommend slab-on-grade be a minimum 5 inches thick with No. 3 rebar placed at the center of the slab at 24 inches on center in each direction. The structural engineer should design the actual thickness and reinforcement based on anticipated loading conditions. Where moisture-sensitive floor coverings or equipment is planned, the slabs should be protected by a minimum 10-mil-thick vapor barrier between the slab and subgrade. A coefficient of friction of 0.35 can be used between the floor slab and the vapor barrier.

Minor cracking of concrete after curing due to drying and shrinkage is normal and should be expected; however, concrete is often aggravated by a high water/cement ratio, high concrete temperature at the time of placement, small nominal aggregate size, and rapid moisture loss due to hot, dry, and/or windy weather conditions during placement and curing. Cracking due to temperature and moisture fluctuations can also be expected. The use of low-slump concrete or low water/cement ratios can reduce the potential for shrinkage cracking. Additionally, our experience indicates that the use of reinforcement in slabs and foundations can generally reduce the potential but not eliminate for concrete cracking.

To reduce the potential for excessive cracking, concrete slabs-on-grade should be provided with construction or weakened plane joints at frequent intervals. Joints should be laid out to form approximately square panels.

5.3.1 Moisture Vapor Retarder

The following recommendations are for informational purposes since they are unrelated to the geotechnical performance of the foundation. Post-construction moisture migration should be expected below the foundation.

In general, interior floor slabs with moisture sensitive floor coverings are recommended to be underlain by a minimum 10-mil thick vapor retarder that has a permeance of less than 0.3 perms, as determined by ASTM E 96, and meets the applicable code requirements (ASTM E1745). The use of a capillary moisture break (crushed gravel layer) in conjunction with a vapor retarder is not considered to be necessary due to the lack of shallow groundwater conditions unless required by code. A sand layer below the synthetic sheeting will, however, serve to protect the sheeting from punctures if the underlying soils or gravel layer contain sharp, angular

particles. Sand layer thickness above the barrier should also be determined by the engineer/architect as they deem necessary. Sand layers should be installed where applicable in accordance with ACI Publication 302 Guide for Concrete Floor and Slab Construction.

Leighton does not practice in the field of moisture vapor transmission evaluation, since this is not specifically a geotechnical issue. Therefore, we recommend that a qualified person, such as the flooring subcontractor and/or structural engineer, be consulted to evaluate the general and specific moisture vapor transmission paths and any impact on the proposed construction. That person should provide recommendations for mitigation of potential adverse impact of moisture vapor transmission on various components of the structures as deemed appropriate.

5.4 Seismic Design Parameters

To accommodate effects of ground shaking produced by regional seismic events, seismic design should be performed by the designing structural engineer in accordance with the 2013 edition of the California Building Code (CBC). Table 1, *2013 CBC Seismic Parameters*, below tabulates seismic design parameters based on the 2013 CBC methodology, which is based on ASCE/SEI 7-10. Based on the measured shear wave velocities, the site falls Class D. Accordingly, the recommended parameters are based on an envelope encompassing both site classes.

Table 1 - 2013 CBC Seismic Design Parameters

CBC Categorization/Coefficient	Design Value
Site Longitude (decimal degrees)	-117.8815
Site Latitude (decimal degrees)	33.6916
Site Class Definition	D
Seismic Design Category	D
Mapped spectral response acceleration parameter at short period, S_S	1.548g
Mapped spectral response acceleration parameter at a period of 1 sec, S_1	0.573g
Short Period (0.2 sec) Site Coefficient, F_a	1.0
Long Period (1.0 sec) Site Coefficient, F_v	1.5
Adjusted spectral response acceleration parameter at short period, S_{MS}	1.548g
Adjusted spectral response acceleration parameter at a period of 1 sec, S_{M1}	0.859g
Design spectral response acceleration parameter at short period, S_{DS}	1.032g
Design spectral response acceleration parameter at a period of 1 sec, S_{D1}	0.573g
Peak Ground Acceleration, PGA_M	0.596g

5.5 Lateral Earth Pressures

Recommended lateral earth pressures are provided as equivalent fluid unit weights, in psf/ft. or pcf.

Table 2 – Lateral Earth Pressures

Condition	Equivalent Fluid Unit Weight for Level Backfill (psf/ft)
Active	40
Seismic Increment	30
At-Rest	60
Passive	250
Coefficient of Friction	0.3

The above passive resistance values apply to soils above the historic high groundwater level of 8 feet bgs and do not contain an appreciable factor of

safety, so the structural engineer should apply the applicable factors of safety and/or load factors during design.

Cantilever walls that are designed for a deflection at the top of the wall of at least 0.001H, where H is equal to the wall height, may be designed using the active earth pressure condition. Rigid walls that are not free to rotate, walls that are braced at the top, and walls that provide indirect support for foundations should be designed using the at-rest condition. The seismic increment of earth pressure should be combined with the active earth pressure to evaluate seismic loading.

The above lateral earth pressures are based on fully drained conditions. Infiltrating surface water may build-up behind proposed retaining walls. Therefore, retaining walls and walls below grade should be designed to resist hydrostatic pressures (equivalent fluid pressure of 62.4 pounds per cubic foot) or be provided with positive drainage behind the wall.

Lateral load resistance will be provided by the sliding resistance at the base of the foundation and the passive pressure developed along the front of the foundation.

In addition to the above lateral forces due to retained earth, surcharge due to improvements, such as an adjacent structure, should be considered in the design of the retaining wall. Loads applied within a 1:1 projection from the surcharging structure on the stem of the wall shall be considered as lateral surcharge. For lateral surcharge conditions, we recommend utilizing a horizontal load equal to 50 percent of the vertical load, as a minimum. This horizontal load should be applied below the 1:1 projection plane. To minimize the surcharge load from an adjacent building, deepened building footings may be considered.

5.6 Preliminary Pavement Design

The recommended paving thicknesses presented in the table below are based on our results of R-value testing of near-surface samples from LB-3. Laboratory tests results are presented in Appendix C. We used a design R-value of 3 in our analysis.

5.6.1 Asphalt Concrete Paving

The required paving and base thicknesses will depend on the expected wheel loads and volume of traffic (Traffic Index or TI). Assuming that the paving subgrade will consist of the on-site or comparable soils compacted to at least 95% of the maximum dry density obtainable by the ASTM Designation D1557 method of compaction as recommended, the minimum recommended paving thicknesses are presented in the following table.

Table 3 - Asphalt Concrete Pavement Sections

Area	Traffic Index	Asphalt Concrete (inches)	Base Course (inches)
Light Truck	5	3	10
Heavy Truck	6	4	12
Main Drives	7	4	16

The asphalt paving sections were determined using the Caltrans design method. We can determine the recommended paving and base course thicknesses for other Traffic Indices if required. Careful inspection is recommended to verify that the recommended thicknesses or greater are achieved, and that proper construction procedures are followed.

5.6.2 Portland Cement Concrete Paving

Portland cement concrete paving sections as well as all other concrete slabs and walks supported on grade should be underlain by at least 2 feet of properly compacted fill consisting of relatively non-expansive soils. We have assumed that such a subgrade will have an R-value of at least 40, which will need to be verified during grading.

Portland cement concrete (PCC) paving sections were determined in accordance with procedures developed by the Portland Cement Association. PCC paving sections for a range of Traffic Indices are presented in the following table. We have assumed that the Portland Cement Concrete will have a compressive strength of at least 3,000 pounds per square inch.

Table 4 - PCC Paving Sections

Area	Traffic Index	PCC (inches)	Base Course (inches)
Car Parking	4	6½	4
Light Truck	5	7	4
Heavy Truck	6	7½	4

The paving should be provided with expansion joints at regular intervals no more than 15 feet in each direction. Load transfer devices, such as dowels or keys, are recommended at joints in the paving to reduce possible offsets. The paving sections in the above table have been developed based on the strength of unreinforced concrete. Steel reinforcing may be added to the paving to reduce cracking and to prolong the life of the paving.

5.7 Cement Type and Corrosion Protection

Based on the results of laboratory testing, concrete structures in contact with the onsite soil are expected to have moderate exposure to water-soluble sulfates in the soil. Common Type II cement may be used for concrete construction onsite and the concrete should be designed in accordance with CBC 2013 requirements. However, concrete exposed to recycled water should be designed using Type V cement.

Based on our laboratory testing, the onsite soil is considered very severely corrosive to ferrous metals. Ferrous pipe should be avoided by using high-density polyethylene (HDPE) or other non-ferrous pipe when possible. Ferrous pipe, if used, should be protected by polyethylene bags, tap or coatings, di-electric fittings or other means to separate the pipe from onsite soils.

5.8 Temporary Excavation and Shoring Design

All temporary excavations, including utility trenches, retaining wall excavations, and foundation excavations should be performed in accordance with project plans, specifications, and all OSHA requirements. Excavations 5 feet or deeper should be laid back or shored in accordance with OSHA requirements before personnel are allowed to enter.

No surcharge loads should be permitted within a horizontal distance equal to the height of cut or 5 feet, whichever is greater from the top of the cut, unless the cut is shored appropriately. Excavations that extend below an imaginary plane inclined at 45 degrees below the edge of any adjacent existing site foundation should be properly shored to maintain support of the adjacent structure.

Typical cantilever shoring should be designed based on the active fluid pressure of 35 pcf. If excavations are braced at the top and at specific design intervals, the active pressure may then be approximated by a rectangular soil pressure distribution with the pressure per foot of width equal to 25H, where H is equal to the depth of the excavation being shored.

If the planned excavations are adjacent to existing buildings or retaining walls, the shoring should be designed to accommodate the surcharge pressure from existing structures and vehicular loading within a 1:1 plane projected upward from the bottom of the excavation perimeter. A uniform horizontal pressure equal to ½ of the foundation bearing pressure may be assumed for preliminary design.

5.9 Trench Backfill

Utility trenches should be backfilled with compacted fill in accordance with Sections 306-1.2 and 306-1.3 of the Standard Specifications for Public Works Construction, ("Greenbook"), 2013 Edition. Utility trenches can be backfilled with onsite sandy material free of rubble, debris, organic and oversized material up to (≤) 3-inches in largest dimension. Prior to backfilling trenches, pipes should be bedded in and covered with either:

(1) **Sand:** A uniform, sand material that has a Sand Equivalent (SE) greater-than-or-equal-to (≥) 30, passing the No. 4 U.S. Standard Sieve (or as specified by the pipe manufacturer), water densified in place, or

(2) **CLSM:** Controlled Low Strength Material (CLSM) conforming to Section 201-6 of the *Standard Specifications for Public Works Construction,* ("Greenbook"), 2013 Edition. CLSM is preferred under the building footprint, to reduce the potential for water infiltration under the building.

Pipe bedding should extend at least 4 inches below the pipeline invert and at least 12 inches over the top of the pipeline. Native and clean fill soils can be used as backfill over the pipe bedding zone, and should be placed in thin lifts, moisture conditioned above optimum, and mechanically compacted to at least 90

percent relative compaction, relative to the ASTM D 1557 laboratory maximum density.

5.10 Drainage and Landscaping

Building walls below grade should be waterproofed or at least damp proofed, depending upon the degree of moisture protection desired. Surface drainage should be designed to direct water away from foundations and toward approved drainage devices. Irrigation of landscaping should be controlled to maintain, as much as possible, consistent moisture content sufficient to provide healthy plant growth without overwatering.

5.11 Additional Geotechnical Services

The geotechnical recommendations presented in this report are based on subsurface conditions as interpreted from limited subsurface explorations and limited laboratory testing. Leighton should review the grading and foundation plans and specifications, when available, to comment on the geotechnical aspects. Our recommendations should be revised, as necessary, based on future plans and incorporated into the final design plans and specifications. Our conclusions and recommendations presented in this report should be reviewed and verified by Leighton during site construction and revised accordingly, if exposed geotechnical conditions vary from our preliminary findings and interpretations. The recommendations presented in this report are only valid if Leighton verifies the site conditions during construction.

Geotechnical observation and testing should be provided during the following activities:

- Grading and excavation of the site;
- Shoring installation;
- Subgrade Preparation;
- Compaction of all fill materials;
- Utility trench backfilling and compaction;
- Footing excavation and slab-on-grade preparation;
- Pavement subgrade and base preparation;
- Placement of asphalt concrete and/or concrete; and
- When conditions are encountered during construction that are not consistent with the conditions described herein.

6.0 LIMITATIONS

Leighton's professional services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing in this or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional opinions included in this report.

As in many projects, conditions revealed in excavations may be at variance with preliminary findings. If this occurs, the geotechnical consultant should evaluate the changed conditions and additional recommendations be obtained, as warranted.

The identification and testing of hazardous, toxic, or contaminated materials were outside the scope of Leighton's work. Should such materials be encountered at any time, or their existence be suspected, and all measures stipulated in local, County, State and Federal regulations, as applicable, should be implemented.

This report is issued with the understanding that it is the responsibility of the owner, or of the owner representative, to ensure that the information and recommendations contained herein are brought to the attention of the necessary design consultants for the project and incorporated into the plans; and that the necessary steps are taken to see that the contractors carry out such recommendations in the field.

The findings of this report are considered valid as of the report's date. However, changes in the condition of a property can occur with the passage of time, whether due to natural processes or the work of man on the subject or adjacent properties. In addition, changes in standards of practice may occur from legislation or the broadening of knowledge. Accordingly, the findings of this report may at some future time be invalidated wholly or partially by changes outside Leighton's control.

The conclusions and recommendations in this report are based in part upon data that were obtained from a necessarily limited number of observations, site visits, excavations, samples, and tests. Such data are strictly applicable only with respect to the specific locations explored, and therefore may not completely define all subsurface conditions throughout the site. The nature of many sites is that differing geotechnical or geological conditions can occur within small distances and under varying climatic conditions. Furthermore, changes in subsurface conditions can and do occur over time. Therefore, the findings, conclusions, and recommendations presented in this report can be relied upon only if Leighton has the opportunity to observe the subsurface conditions during grading and construction of the project, in order to verify that our preliminary findings are representative of the site.

This report is intended only for the use of the client and their representatives, and only as related expressly to the subject project. This report is not intended for any Third Party reliance. No responsibility is assumed for any Third Party that utilizes this report.

7.0 REFERENCES

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Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, clients can benefit from a lowered exposure to the subsurface problems that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed below, contact your GBA-member geotechnical engineer. Active involvement in the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Geotechnical-Engineering Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled*. No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

You Need to Inform Your Geotechnical Engineer about Change

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

This Report May Not Be Reliable

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be*, and, in general, *if you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying it. A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface through various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing were performed*. The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team from project start to project finish, so the individual can provide informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, *they are not final*, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* revealed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a full-time member of the design team, to:

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction observation.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only*. To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely*. Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

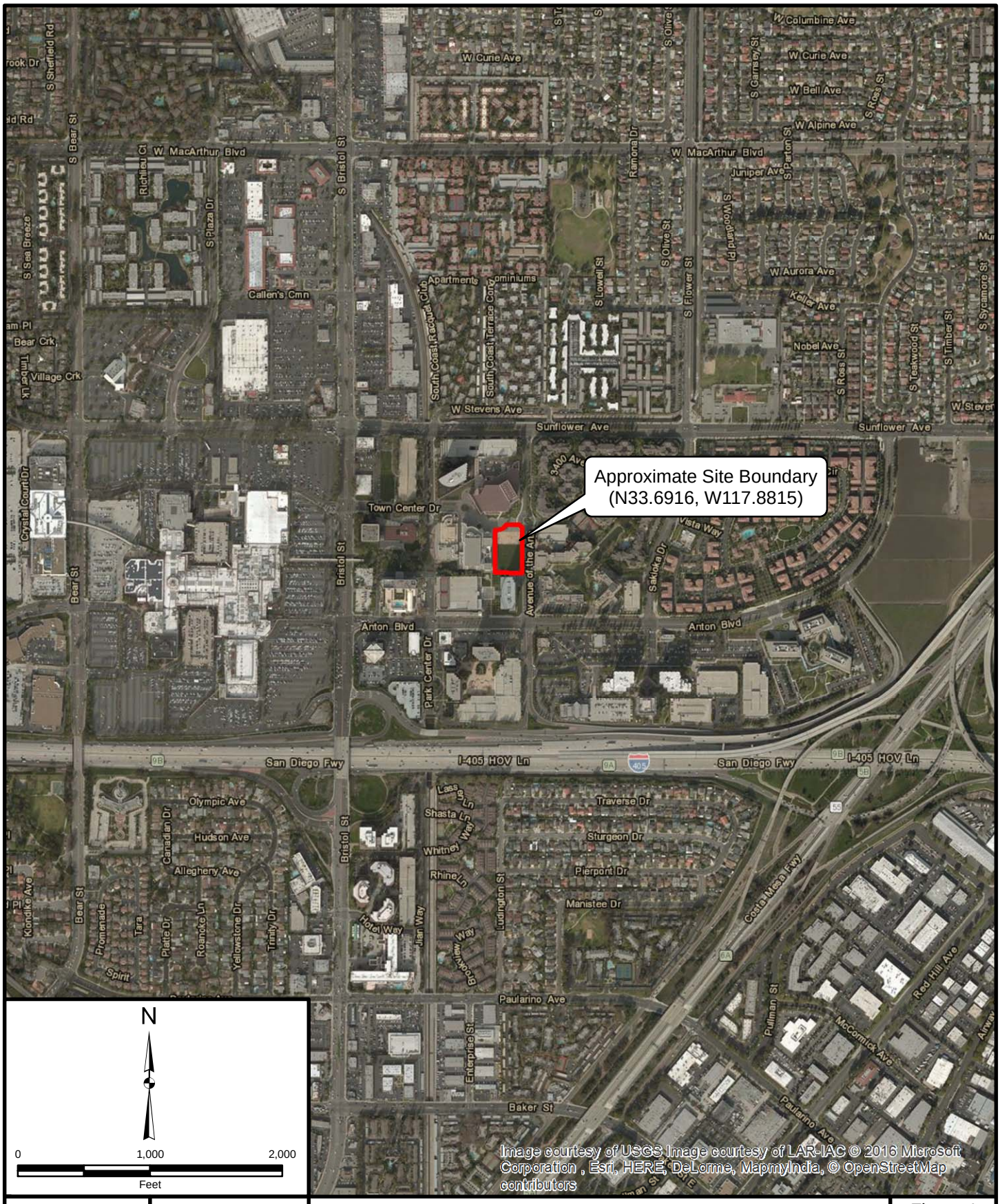
The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures*. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old.*

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration.*** Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org



Project: 11342.001	Eng/Geol: CCK/EBP
Scale:1 " = 1,000 '	Date: July 2016

Base Map: ESRI ArcGIS Online 2016
Thematic Information: Leighton
Author: Leighton Geomatics (btran)

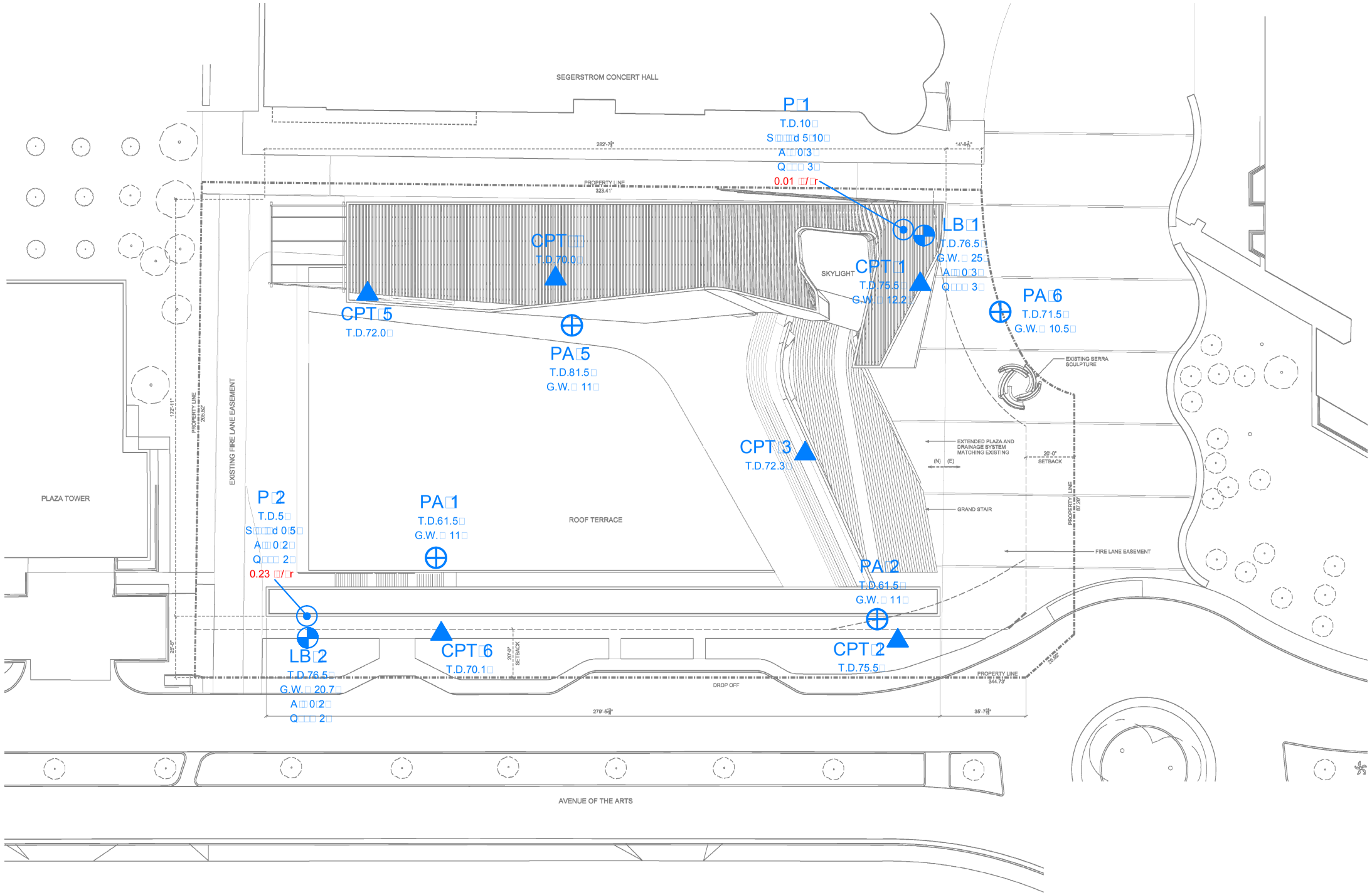
SITE LOCATION MAP

Orange County Museum of Art
3499 Avenue of the Arts
Costa Mesa, California

Figure 1

Leighton

Map Saved as P:\Drafting\11342\001\Maps\11342-001_F01_SLM_2016-07-18.mxd on 6/21/2016 10:13:46 AM



LEGEND

LB-2
T.D.76.5□
G.W.□ 20.7□
A□□ 0□2□
Q□□□ 2□

APPROXIMATE LOCATION OF HOLLOW STEM AUGER BORINGS SHOWN WITH TOTAL DEPTH (T.D.), DEPTH TO GROUNDWATER (G.W.) AND DEPTH TO EARTH UNITS IN FEET (CURRENT INVESTIGATION)

CPT-6
T.D.70.1□
G.W.□ 12.2□

APPROXIMATE LOCATION OF CONE PENETROMETER TESTS (CPT) SOUNDING SHOWN WITH TOTAL DEPTH (T.D.) DEPTH TO GROUNDWATER (G.W.) WHEN MEASURED BY PORE PURE PRESSURE DISSIPATION TEST (CURRENT INVESTIGATION)

P-2
T.D.5□
S□□□d 0□5□
A□□ 0□2□
Q□□□ 2□
0.23 □/□r

APPROXIMATE LOCATION OF PERCOLATION BORINGS SHOWN WITH TOTAL DEPTH (T.D.) DEPTH TO EARTH UNITS AND SLOTTED 0.020 CASING INTERVAL IN FEET. INFILTRATION RATE SHOWN IN RED IN INCHES PER HOUR (IN/HR)

PA-6
T.D.71.5□
G.W.□ 10.5□

APPROXIMATE LOCATION OF HOLLOW STEM AUGER BORINGS SHOWN WITH TOTAL DEPTH (T.D.) DEPTH TO GROUNDWATER (G.W.) IN FEET (LEIGHTON □ ASSOCIATES, 1998)

SITE BOUNDARY

N

0 50 100
SCALE FEET

Pr□□113□2.001	E□□/G□□□CCK/EBP
S□□□□1"□50□	D□□□□J□□□2016
R□□r□□□□□	

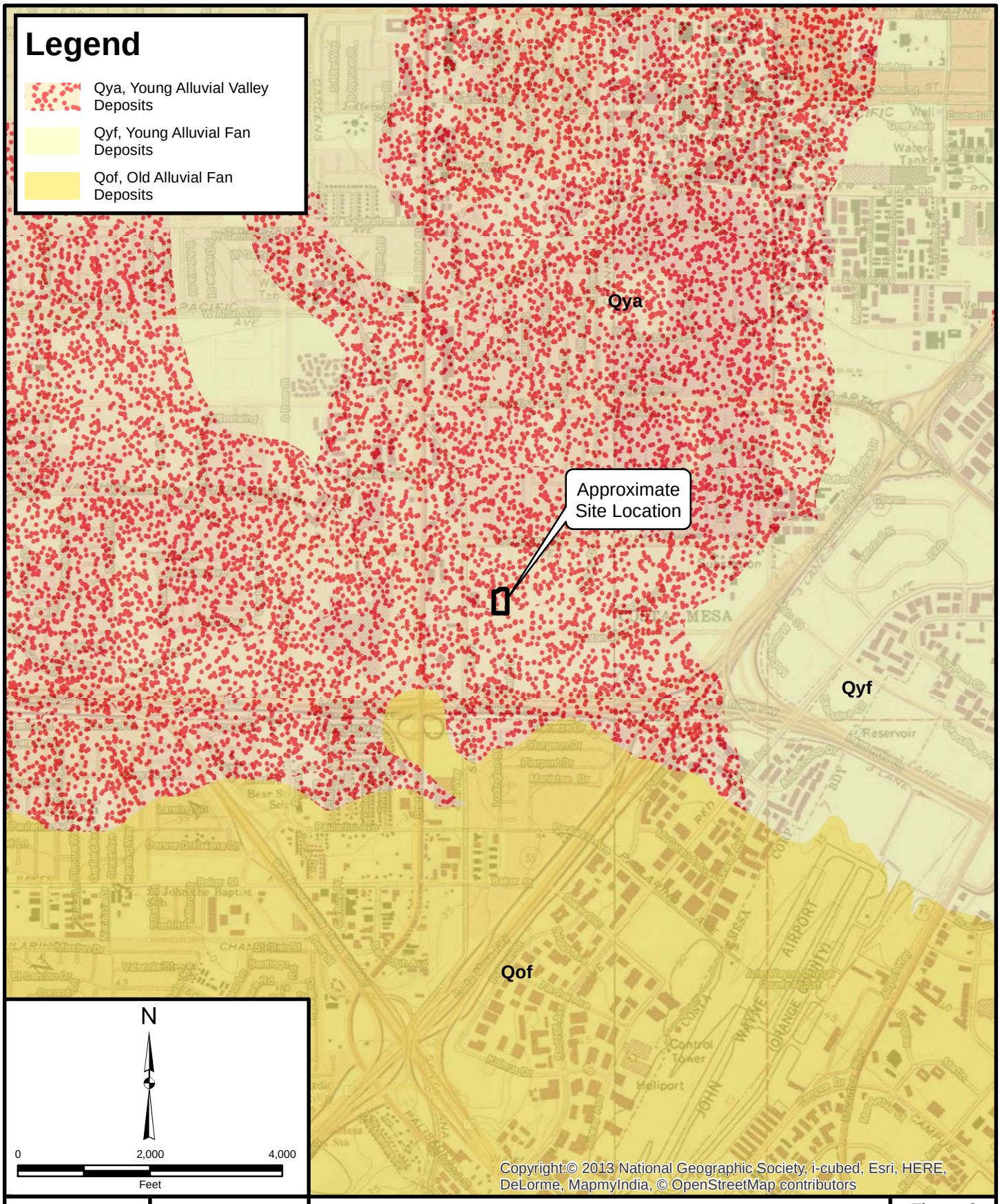
P:\DRAFTING 113□2.001\CAD 2016\06.21.113□2.001□F02□GEM□2016□07.18.DWG (07.18.16 1:37:59PM) P□□□d□□□□□□

GEOTECHNICAL EXPLORATION MAP

Or□□□□ C□□□□□ M□□□□□ □□Ar□
3□99 A□□□□□ □□□□□ Ar□□
C□□□□ M□□□, C□□□r□□□

F□□□r□ 2

L□□□□□□□



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Scale:1 " = 2,000 '	Date: July 2016

Base Map: ESRI ArcGIS Online 2016
Thematic Information: Leighton, USGS
Author: Leighton Geomatics (btran)

REGIONAL GEOLOGY MAP

Orange County Museum of Art
3499 Avenue of the Arts
Costa Mesa, California

Figure 3

Leighton

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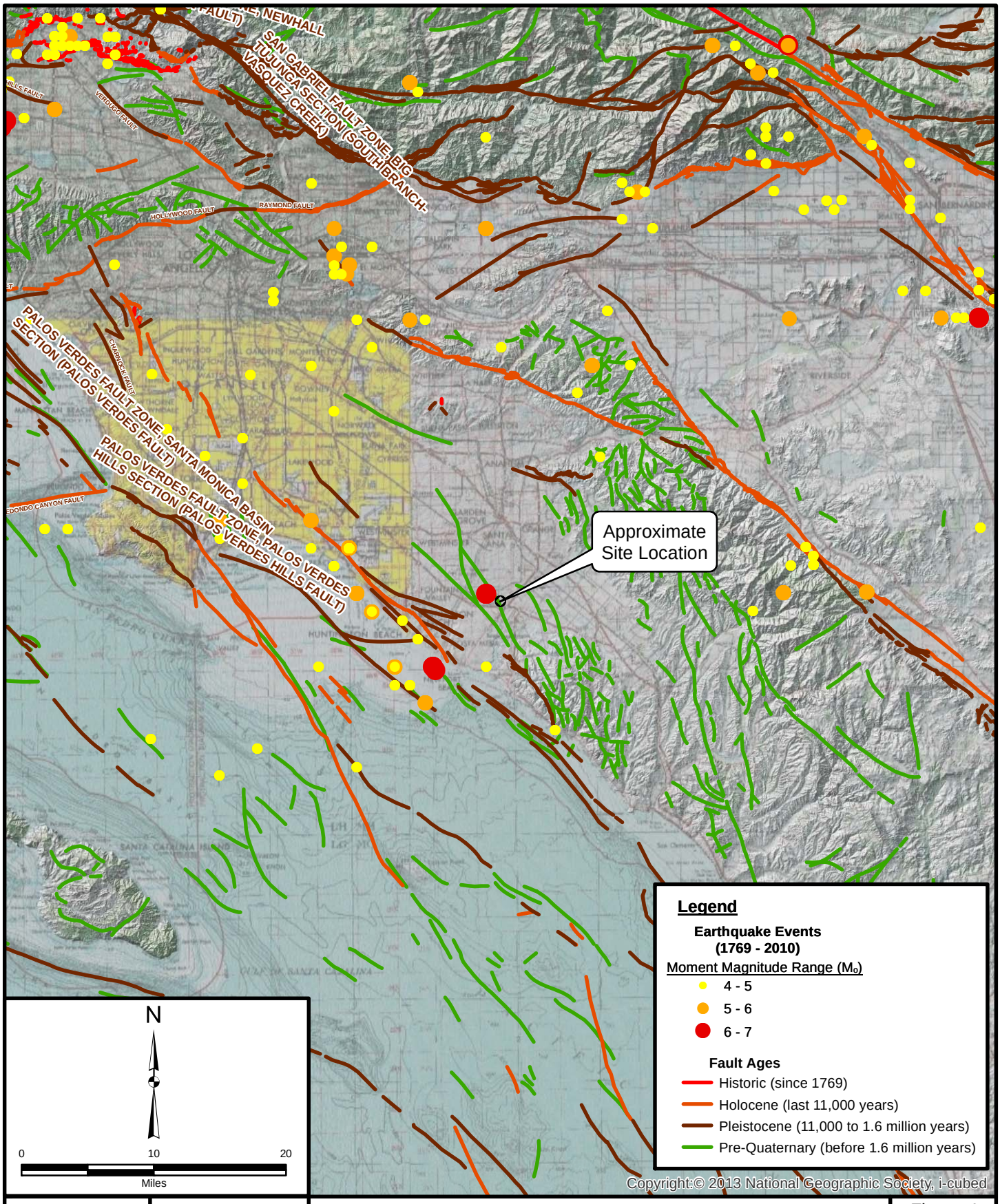

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Scale:1 " = 10 miles	Date: July 2016
Base Map:ESRI Resources Center, 2014 Faults: CGS 2010 Author: (btran)	

REGIONAL SEISMICITY MAP

Orange County Museum of Art
3499 Avenue of the Arts
Costa Mesa, California

Figure 4

Leighton

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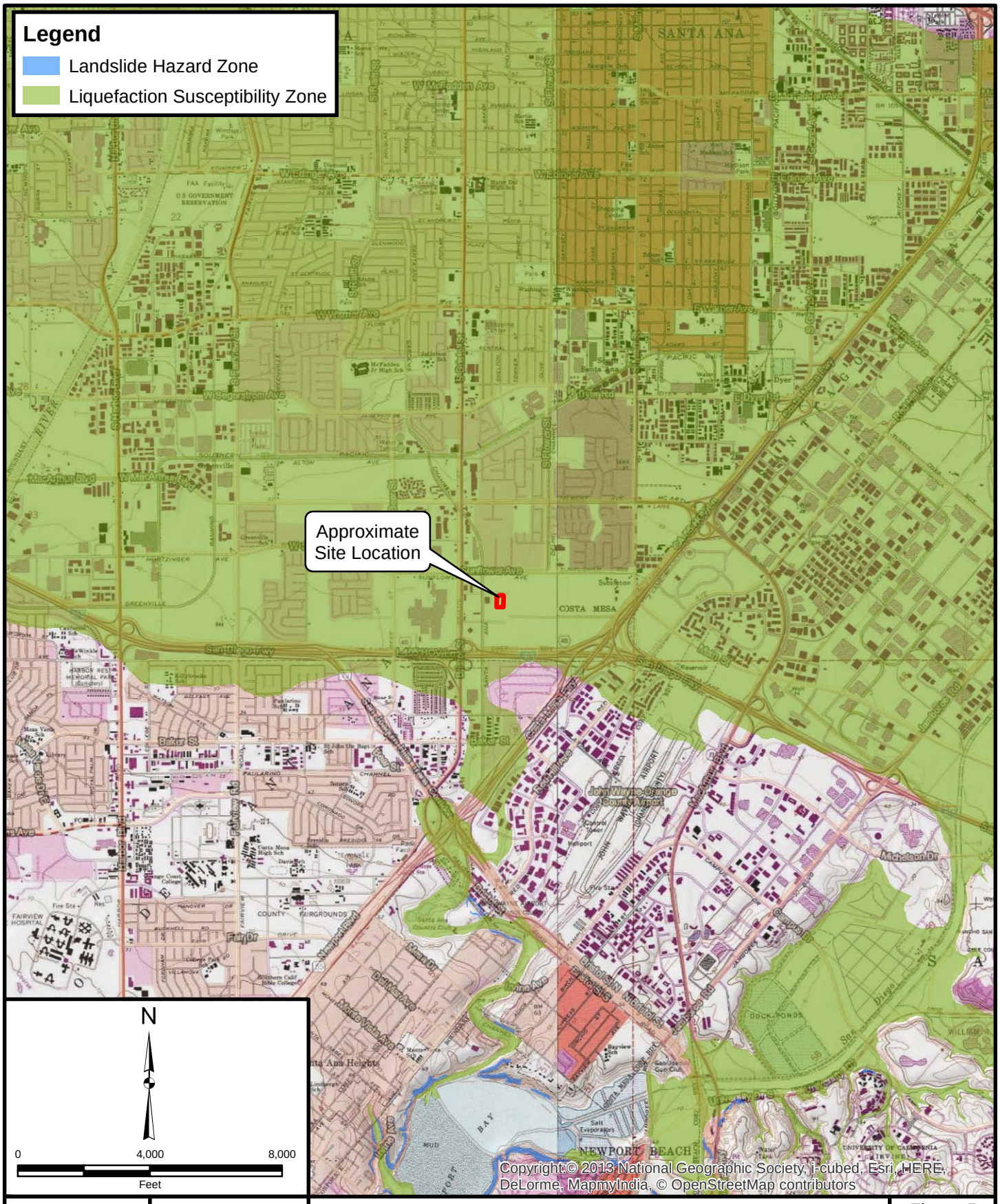


Project: 11342.001	Eng/Geol: CCK/EBP
Scale:1 " = 4,000 '	Date: July 2016

Base Map: ESRI ArcGIS Online 2016
Thematic Information: Leighton, CGS
Author: Leighton Geomatics (btran)

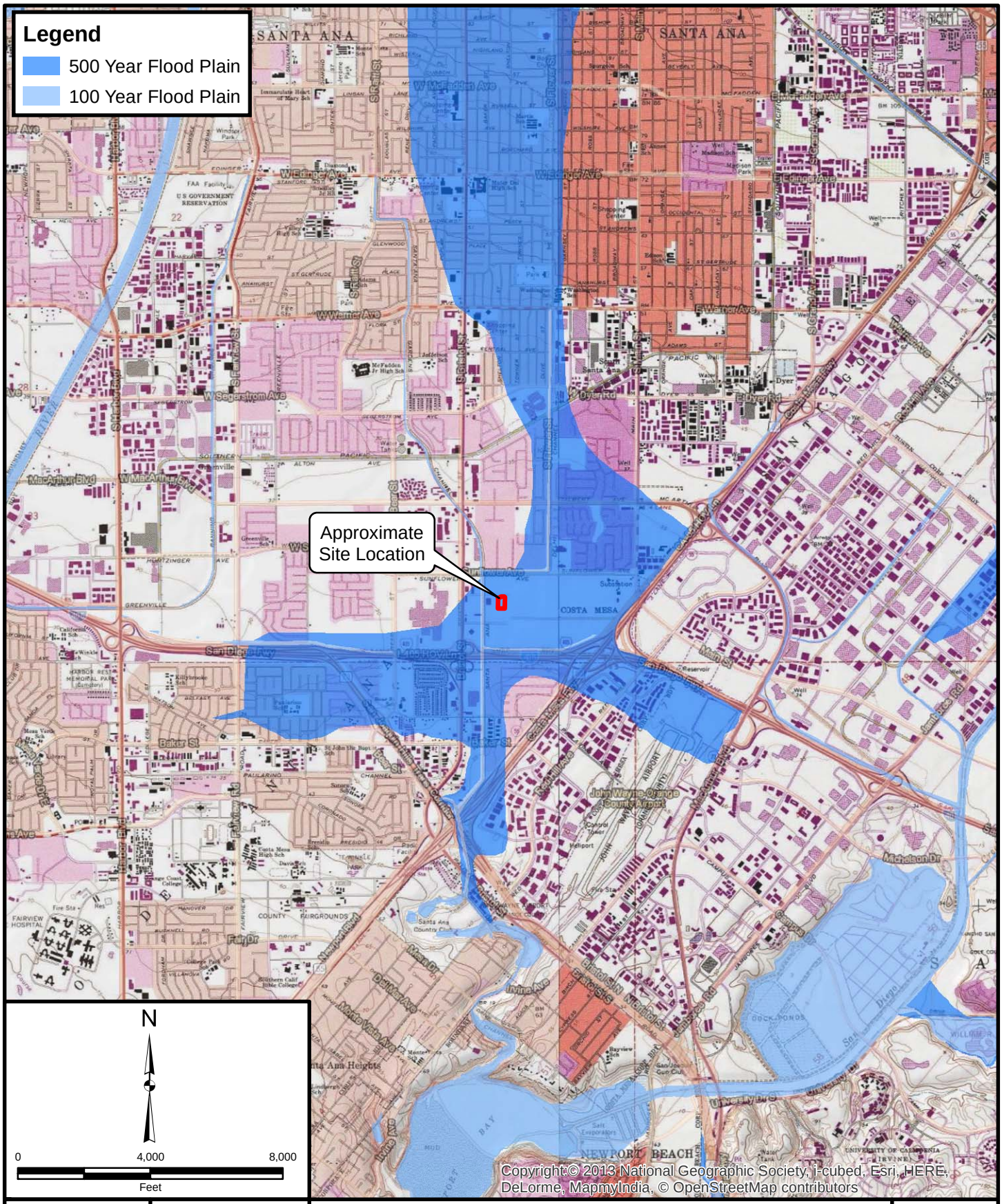
SEISMIC HAZARD MAP

Orange County Museum of Art
3499 Avenue of the Arts
Costa Mesa, California

Figure 5

Leighton

Map Saved as P:\Drafting\11342\001\Maps\11342-001_F05_SHM_2016-07-18.mxd on 6/20/2016 5:10:41 PM



Project: 11342.001	Eng/Geol: CCK/EBP
Scale:1 " = 4,000 '	Date: July 2016

Base Map: ESRI ArcGIS Online 2016
Thematic Information: Leighton, CA DWR, FEMA
Author: Leighton Geomatics (btran)

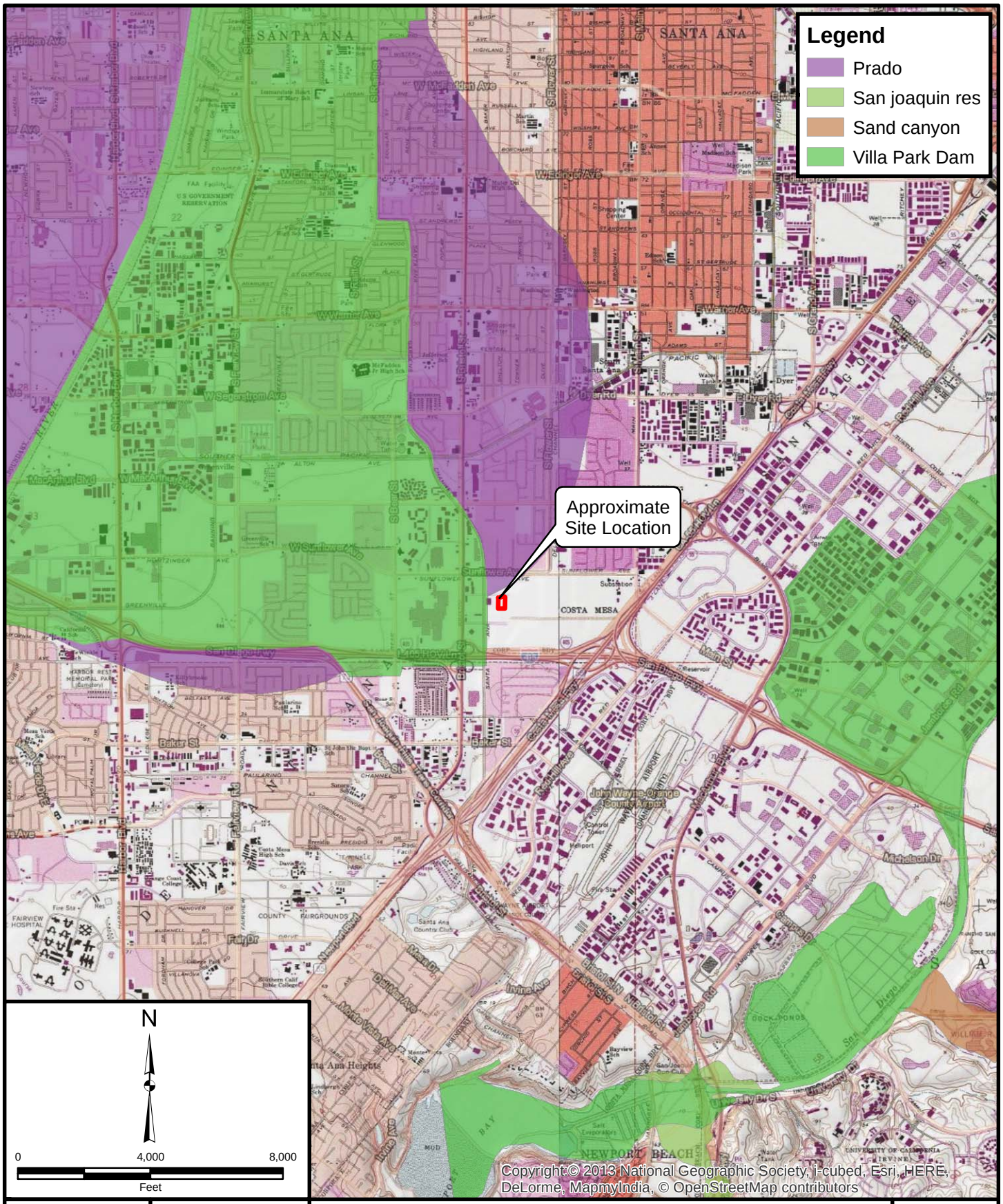
FLOOD HAZARD ZONE MAP

Orange County Museum of Art
3499 Avenue of the Arts
Costa Mesa, California

Figure 6

Leighton

Map Saved as P:\Drafting\11342\001\Maps\11342-001_F06_FHM_2016-07-18.mxd on 6/21/2016 9:27:12 AM



Project: 11342.001	Eng/Geol: CCK/EBP
Scale:1 " = 4,000 '	Date: July 2016

Base Map: ESRI ArcGIS Online 2016
Thematic Information: Leighton, CA DWR, FEMA
Author: Leighton Geomatics (btran)

DAM INUNDATION MAP

Orange County Museum of Art
3499 Avenue of the Arts
Costa Mesa, California

Figure 7

Leighton

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APPENDIX A

GEOTECHNICAL BORING AND CPT LOGS

Leighton

GEOTECHNICAL BORING LOG LB-1

Project No.	11342.001	**Date Drilled**	6-7-16
Project	Orange County Museum of Art	**Logged By**	EBP
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140 lbslb - Autohammer - 30" Drop	**Ground Elevation**	31'
Location	See Figure 2, Geotechnical Exploration Map	**Sampled By**	EBP

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
		N S								*This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.*	
30	0								GP	**Artificial Fill, undocumented: (Afu)** @0': Sandy GRAVEL (GP), light gray, dry, very dense, fine to coarse grained, few silt	
									CL	**Quaternary Young Alluvial Valley Deposits: (Qya)** @3': CLAY (CL), dark brown, moist, few sand to gravel sized $CaCO_3$ nodules, low plasticity	
25	5			S-1 BB-1		2 3 5		33		@5': CLAY (CL), dark brown, moist, firm, few sand to gravel sized $CaCO_3$ nodules, low plasticity	MD, CR, EI, RV
20	10			R-1		6 9 10				@10': CLAY (CL), olive brown, moist, stiff, medium plasticity, slight oxidation staining	CN, DS
15	15			S-2		1 1 1		36	CH	@15': Fat CLAY (CH), dark olive brown, moist, soft, high plasticity, slight oxidation staining	
10	20			R-2		6 14 19				@20': Fat CLAY (CH), olive brown, moist, very stiff, oxidation staining, high amount of $CaCO_3$	CN, DS
5	25			S-3		10 17 29		15	SW	@25': SAND (SW), yellowish brown, saturated, dense, fine to coarse grained, trace silt, well graded; Groundwater encounted while drilling	
	30										

SAMPLE TYPES:

B	BULK SAMPLE
C	CORE SAMPLE
G	GRAB SAMPLE
R	RING SAMPLE
S	SPLIT SPOON SAMPLE
T	TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		

GEOTECHNICAL BORING LOG LB-1

Project No.	11342.001	**Date Drilled**	6-7-16
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Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140 lbslb - Autohammer - 30" Drop	**Ground Elevation**	31'
Location	See Figure 2, Geotechnical Exploration Map	**Sampled By**	EBP

Elevation Feet	Depth Feet	Graphic Log (N / S)	Attitudes	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	30			R-3		23 42 50/3"				@30': No recovery	
0											
	35			S-4		3 4 7		27	ML	@35': SILT (ML), yellowish brown, saturated, stiff, few fine grained sand	
-5											
	40			R-4		6 10 12	88	33	CL	@40': Silty CLAY (CL), olive brown, saturated, stiff, low plasticity, slight oxidation staining	
-10											
	45			S-5		17 33 50/5"		25	SM	@45': Silty SAND (SM), yellowish brown, saturated, very dense, fine to medium grained	
-15											
	50			R-5		13 50/4"				@50': No recovery	
-20											
	55			S-6		6 11 22		14	ML	@55': Sandy SILT (ML), light olive gray, saturated, hard, fine grained	
-25											
	60										

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

GEOTECHNICAL BORING LOG LB-1

Project No.	11342.001	**Date Drilled**	6-7-16
Project	Orange County Museum of Art	**Logged By**	EBP
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140 lbslb - Autohammer - 30" Drop	**Ground Elevation**	31'
Location	See Figure 2, Geotechnical Exploration Map	**Sampled By**	EBP

Elevation Feet	Depth Feet	Graphic Log (N / S)	Attitudes	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	60			R-6		7 15 20	117	17	SC	@60': Clayey SAND (SC) olive brown, saturated, medium dense, fine to medium grained	
-30											
	65			S-7		5 9 20		22	SP	@65': SAND (SP), light gray, saturated, medium dense, fine to medium grained, trace silt, poorly graded	
-35											
	70			R-7		6 24 35	99	26	ML	@70': Sandy SILT (ML), olive gray, saturated, hard, fine grained, trace clay, slight oxidation staining	
-40											
	75			S-8		6 9 16		19	SM	@75': Silty SAND (SM), dark yellowish brown, saturated, medium dense, fine grained	
-45											
										Total Depth = 76.5 feet Groundwater encountered while drilling at 25 feet Borehole backfilled with cuttings and tamped 6/7/16	
	80										
-50											
	85										
-55											
	90										

Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

GEOTECHNICAL BORING LOG LB-2

Project No.	11342.001	**Date Drilled**	6-7-16
Project	Orange County Museum of Art	**Logged By**	EBP
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140 lbslb - Autohammer - 30" Drop	**Ground Elevation**	31'
Location	See Figure 2, Geotechnical Exploration Map	**Sampled By**	EBP

Elevation Feet	Depth Feet	Graphic Log (N / S)	Attitudes	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
30	0			BB-1				CL	**Artificial Fill, undocumented: (Afu)** @0': CLAY (CL), dark olive brown, moist, trace sand, trace organic debris, medium plasticity	
								CL	**Quaternary Young Alluvial Valley Deposits: (Qya)** @2': CLAY (CL), olive brown, moist, trace fine grained sand, oxidation staining, low to medium plasticity	
25	5			R-1	3 6 9	86	33		@5': Clay (CL), medium brown, moist, stiff, trace fine grained sand, trace fine pinhole porosity, low to medium plasticity	
20	10			S-1	push push push		45	CH	@10': Fat CLAY (CH), olive gray, very moist, very soft, trace sand, many rootcasts, medium to high plasticity	
15	15			R-2	4 6 12	107	21	SC	@15': Clayey SAND (SC), grayish brown, moist, medium dense, fine to coarse grained, oxidation staining, pockets with light yellowish brown coarse grained sand and $CaCO_3$ nodules	
10	20			S-2	2 5 6		23	CL SM	@20': CLAY (CL), light yellowish brown, moist, stiff, trace coarse grained sand, low to medium plasticity, oxidation staining @20.7': Silty SAND (SM), yellowish brown, saturated, medium dense, fine to coarse grained, silt % decreases and grain size increases with depth; Groundwater encountered while drilling	
5	25			R-3	8 18 26	108	19	CL	@25': CLAY (CLAY), olive brown, saturated, very stiff, trace coarse grained sand, oxidation staining, $CaCO_3$ nodules up to gravel sized, low to medium plasticity	
	30									

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		

GEOTECHNICAL BORING LOG LB-2

Project No.	11342.001	**Date Drilled**	6-7-16
Project	Orange County Museum of Art	**Logged By**	EBP
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140 lbslb - Autohammer - 30" Drop	**Ground Elevation**	31'
Location	See Figure 2, Geotechnical Exploration Map	**Sampled By**	EBP

Elevation Feet	Depth Feet	Graphic Log (N / S)	Attitudes	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
										This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.	
0	30			S-3		3 6 12		27	SM	@30': SIlty SAND (SM), yellowish brown, saturated, medium dense, fine grained, laminations	
									ML	@31.1': Sandy SILT (ML), yellowish brown, saturated, very stiff, fine grained, laminations	
-5	35			R-4		6 13 16	100	26	SM	@35': Silty SAND (SM), yellowish brown, saturated, medium dense, fine to medium grained	
									ML	@36.4': Clayey SILT (ML), olive brown, saturated, very stiff, laminations, medium palsticity	
-10	40			S-4		3 7 16		29	SM	@40': Silty SAND (SM), yellowish brown, saturated, medium dense, fine grained	
									CL	@41': CLAY (CL), yellowish brown, saturated, very stiff, trace sand, laminatins, medium plasticity	
-15	45			R-5		11 19 50/3"	106	20	SP	@45': SAND (SP), light gray and yellowish brown, saturated, very dense, fine to coarse grained, poorly graded, oxidation staining	
-20	50										
-25	55			R-6		25 50/4"	112	18	SM	@55': Silty SAND (SM), light gray, saturated, very dense, fine grained	
	60										

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

GEOTECHNICAL BORING LOG LB-2

Project No.	11342.001	**Date Drilled**	6-7-16
Project	Orange County Museum of Art	**Logged By**	EBP
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140 lbslb - Autohammer - 30" Drop	**Ground Elevation**	31'
Location	See Figure 2, Geotechnical Exploration Map	**Sampled By**	EBP

Elevation Feet	Depth Feet	Graphic Log (N / S)	Attitudes	Sample No.	Bulk / Driven	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	60			S-5		5 10 10		22	CL	@60': CLAY (CL), light gray and olive brown, saturated, very stiff, medium plasticity, 1 to 2-inch thick interbeds of sand and silty sand	
-30											
	65			R-7		9 27 49	116	17		@65': Silty CLAY (CL), olive brown, saturated, hard, trace sand, medium plasticity	
-35											
	70			S-6		20 50/4"		21	SM	@70': Silty SAND (SM), yellowish brown, saturated, very dense, fine to medium grained, oxidation staining	
-40											
	75			R-8		9 16 31	97	26	SM+ML CL	@75': Interbedded SIlty SAND (SM) and sandy SILT (ML), olive brown, saturated, dense to hard, fine grained @72.6': CLAY (CL), olive brown, saturated, hard, medium plasticity, laminations	
-45											
	80									Total Depth = 76.5 feet Groundwater encountered while drilling at 20.7 feet Borehole backfilled with cuttings and tamped 6/7/16	
-50											
	85										
-55											
	90										

SAMPLE TYPES:

B	BULK SAMPLE
C	CORE SAMPLE
G	GRAB SAMPLE
R	RING SAMPLE
S	SPLIT SPOON SAMPLE
T	TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		

GEOTECHNICAL BORING LOG P-1

Project No.	11342.001	**Date Drilled**	6-7-16
Project	Orange County Museum of Art	**Logged By**	EBP
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140 lbslb - Autohammer - 30" Drop	**Ground Elevation**	31'
Location	See Figure 2, Geotechnical Exploration Map	**Sampled By**	EBP

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
		N S		Bulk Driven					*This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.*	
30	0							GP	**Artificial Fill, undocumented: (Afu)** @0': Sandy GRAVEL (GP), light gray, dry, very dense, fine to coarse grained, few silt	
25	5							CL	**Quaternary Young Alluvial Valley Deposits: (Qya)** @3': CLAY (CL), dark brown, moist, few sand to gravel sized $CaCO_3$ nodules, low plasticity	
20	10								Total Depth = 10 feet No Groundwater encountered Percolation test well installed 2-inch diameter solid casing 0'-5' bgs 2-inch diameter 0.02 slotted casing 5'-10' bgs Well annulus filled with All-purpose gravel Well casing removed and boring backfilled with cuttings on 6/8/16	
15	15									
10	20									
5	25									
	30									

SAMPLE TYPES:

B	BULK SAMPLE
C	CORE SAMPLE
G	GRAB SAMPLE
R	RING SAMPLE
S	SPLIT SPOON SAMPLE
T	TUBE SAMPLE

TYPE OF TESTS:

-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		

GEOTECHNICAL BORING LOG P-2

Project No.	11342.001	**Date Drilled**	6-7-16
Project	Orange County Museum of Art	**Logged By**	EBP
Drilling Co.	Martini Drilling	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140 lbslb - Autohammer - 30" Drop	**Ground Elevation**	31'
Location	See Figure 2, Geotechnical Exploration Map	**Sampled By**	EBP

Elevation Feet	Depth Feet	Graphic Log (N / S)	Attitudes	Sample No. (Bulk / Driven)	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
30	0							CL	**Artificial Fill, undocumented: (Afu)** @0': CLAY (CL), dark olive brown, moist, trace sand, medium plasticity	
								CL	**Quaternary Young Alluvial Valley Deposits: (Qya)** @2': CLAY (CL), olive brown, moist, trace fine grained sand, oxidation staining, medium plasticity	
25	5								Total Depth = 5 feet No Groundwater encountered Percolation test well installed 2-inch diameter 0.02 slotted casing 0'-5' bgs Well annulus filled with All-purpose gravel Well casing removed and boring backfilled with cuttings on 6/8/16	
	10									
20										
	15									
15										
	20									
10										
	25									
5										
	30									

SOIL DESCRIPTION: This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

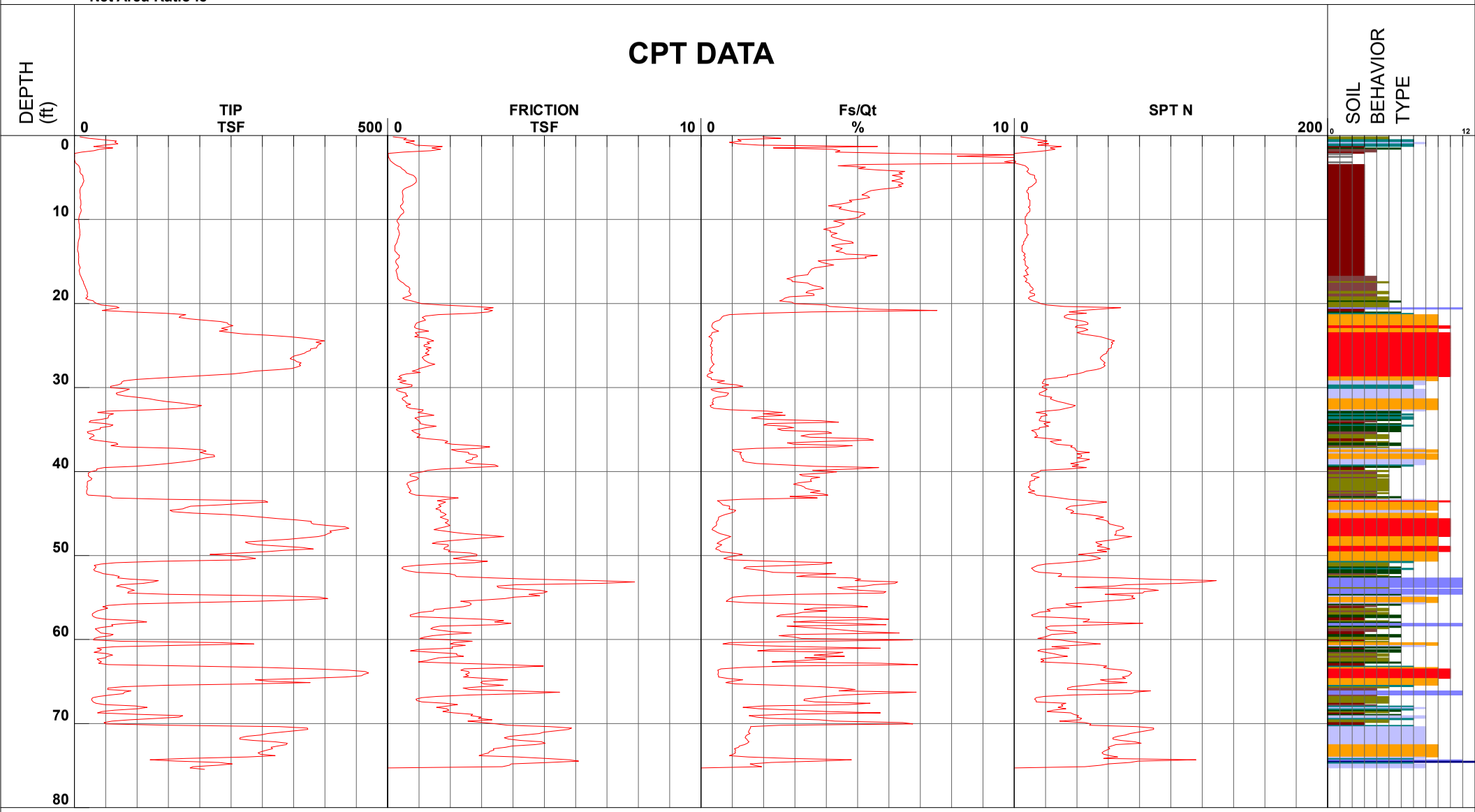
-200	% FINES PASSING	DS	DIRECT SHEAR	SA	SIEVE ANALYSIS
AL	ATTERBERG LIMITS	EI	EXPANSION INDEX	SE	SAND EQUIVALENT
CN	CONSOLIDATION	H	HYDROMETER	SG	SPECIFIC GRAVITY
CO	COLLAPSE	MD	MAXIMUM DENSITY	UC	UNCONFINED COMPRESSIVE STRENGTH
CR	CORROSION	PP	POCKET PENETROMETER		
CU	UNDRAINED TRIAXIAL	RV	R VALUE		

Leighton

Project	OC Museum of Art	Operator	DG-RC	Filename	SDF(526).cpt
Job Number	11342.001	Cone Number	DDG1366	GPS	
Hole Number	CPT-01	Date and Time	6/7/2016 9:08:23 AM	Maximum Depth	75.46 ft
EST GW Depth During Test		11.90 ft			

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

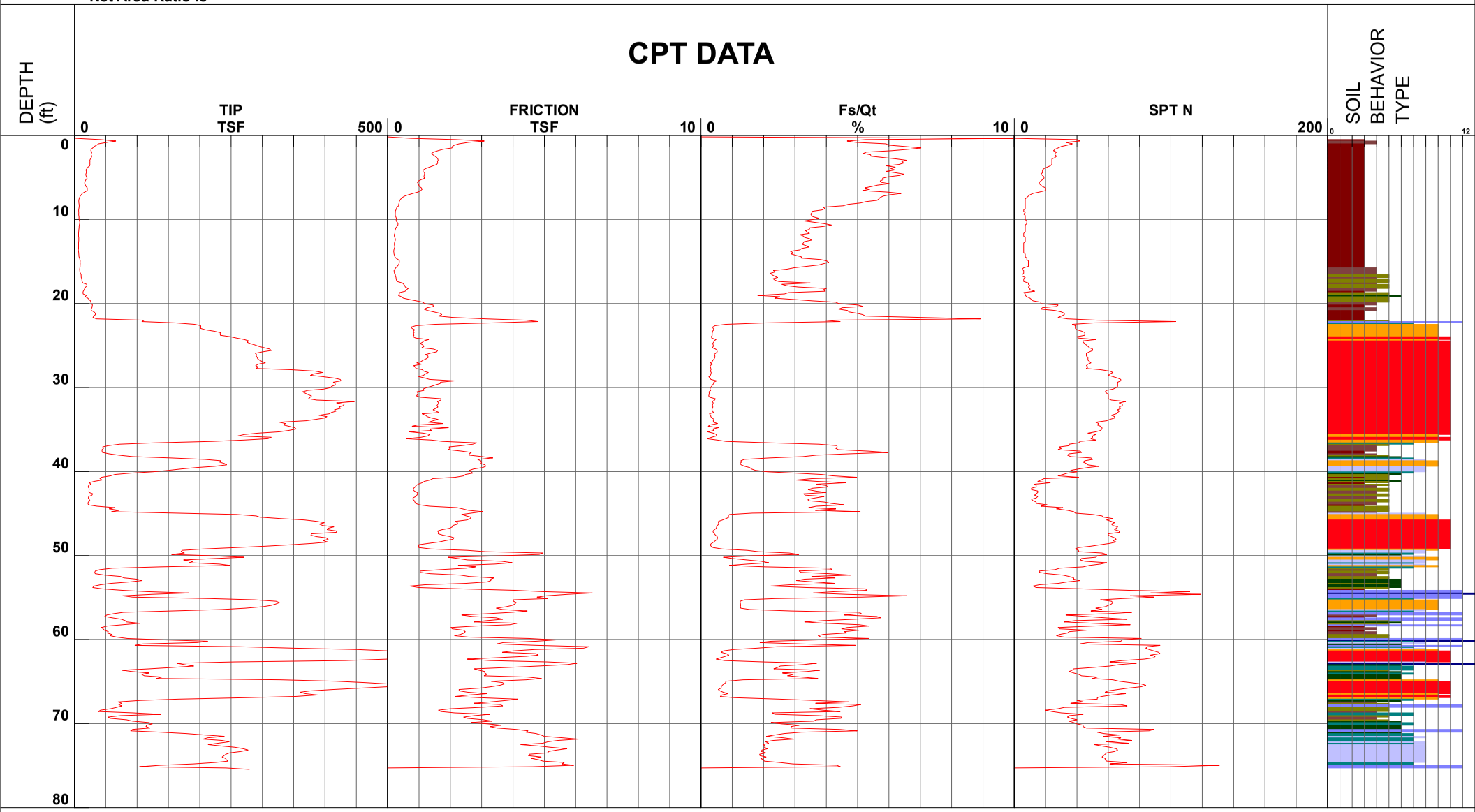
S*Soil behavior type and SPT based on data from UBC-1983

Leighton

Project	OC Museum of Art	Operator	DG-RC	Filename	SDF(531).cpt
Job Number	11342.001	Cone Number	DDG1366	GPS	
Hole Number	CPT-02	Date and Time	6/7/2016 2:43:13 PM	Maximum Depth	75.46 ft
EST GW Depth During Test		12.00 ft			

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

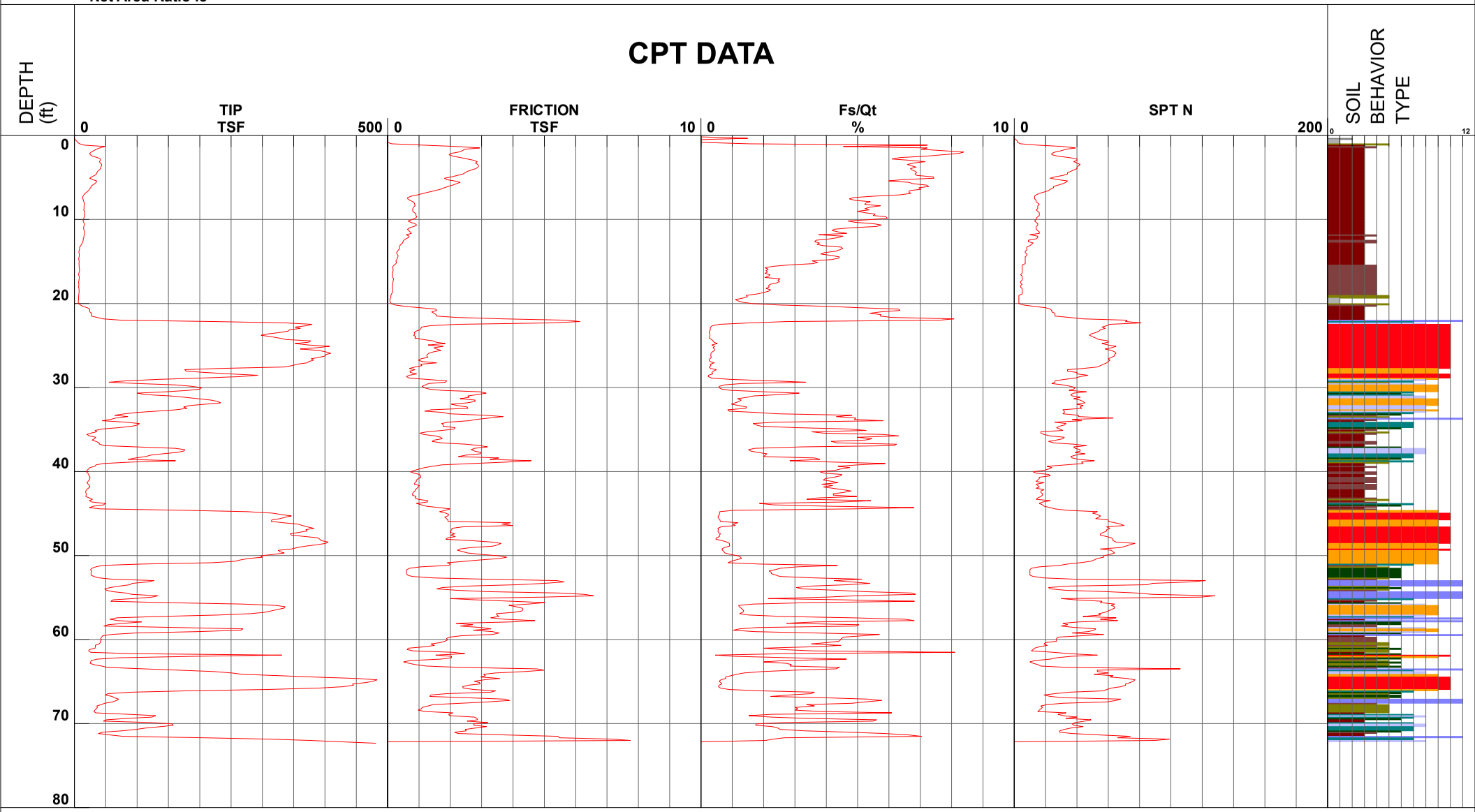
S*Soil behavior type and SPT based on data from UBC-1983

Leighton

Project	OC Museum of Art	Operator	DG-RC	Filename	SDF(530).cpt
Job Number	11342.001	Cone Number	DDG1366	GPS	
Hole Number	CPT-03	Date and Time	6/7/2016 1:51:20 PM	Maximum Depth	72.34 ft
EST GW Depth During Test		12.00 ft			

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

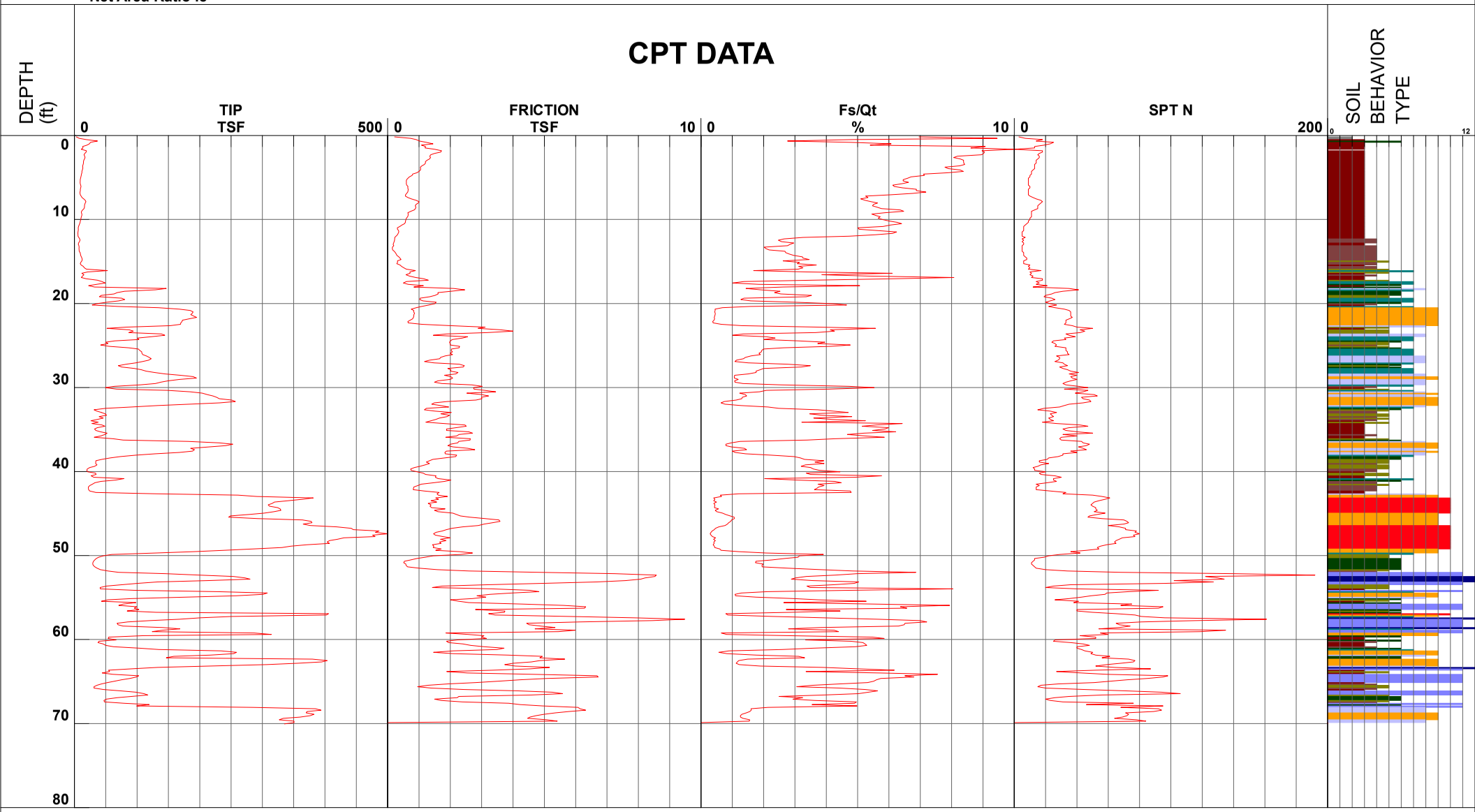
S*Soil behavior type and SPT based on data from UBC-1983

Leighton

Project	OC Museum of Art	Operator	DG-RC	Filename	SDF(527).cpt
Job Number	11342.001	Cone Number	DDG1366	GPS	
Hole Number	CPT-04	Date and Time	6/7/2016 11:09:08 AM	Maximum Depth	70.05 ft
EST GW Depth During Test		12.00 ft			

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

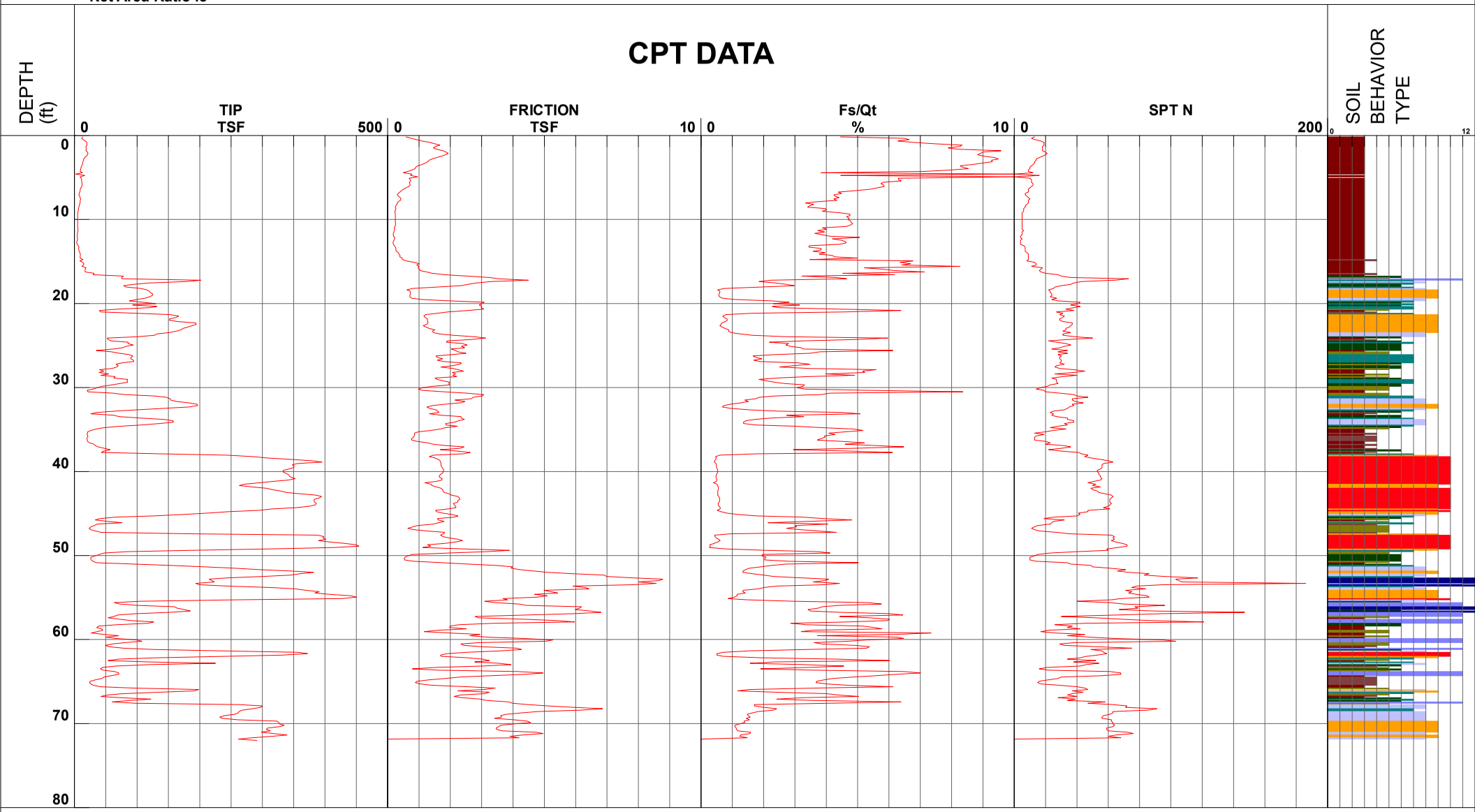
S*Soil behavior type and SPT based on data from UBC-1983

Leighton

Project	OC Museum of Art	Operator	DG-RC	Filename	SDF(528).cpt
Job Number	11342.001	Cone Number	DDG1366	GPS	
Hole Number	CPT-05	Date and Time	6/7/2016 12:06:32 PM	Maximum Depth	72.01 ft
EST GW Depth During Test		12.00 ft			

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

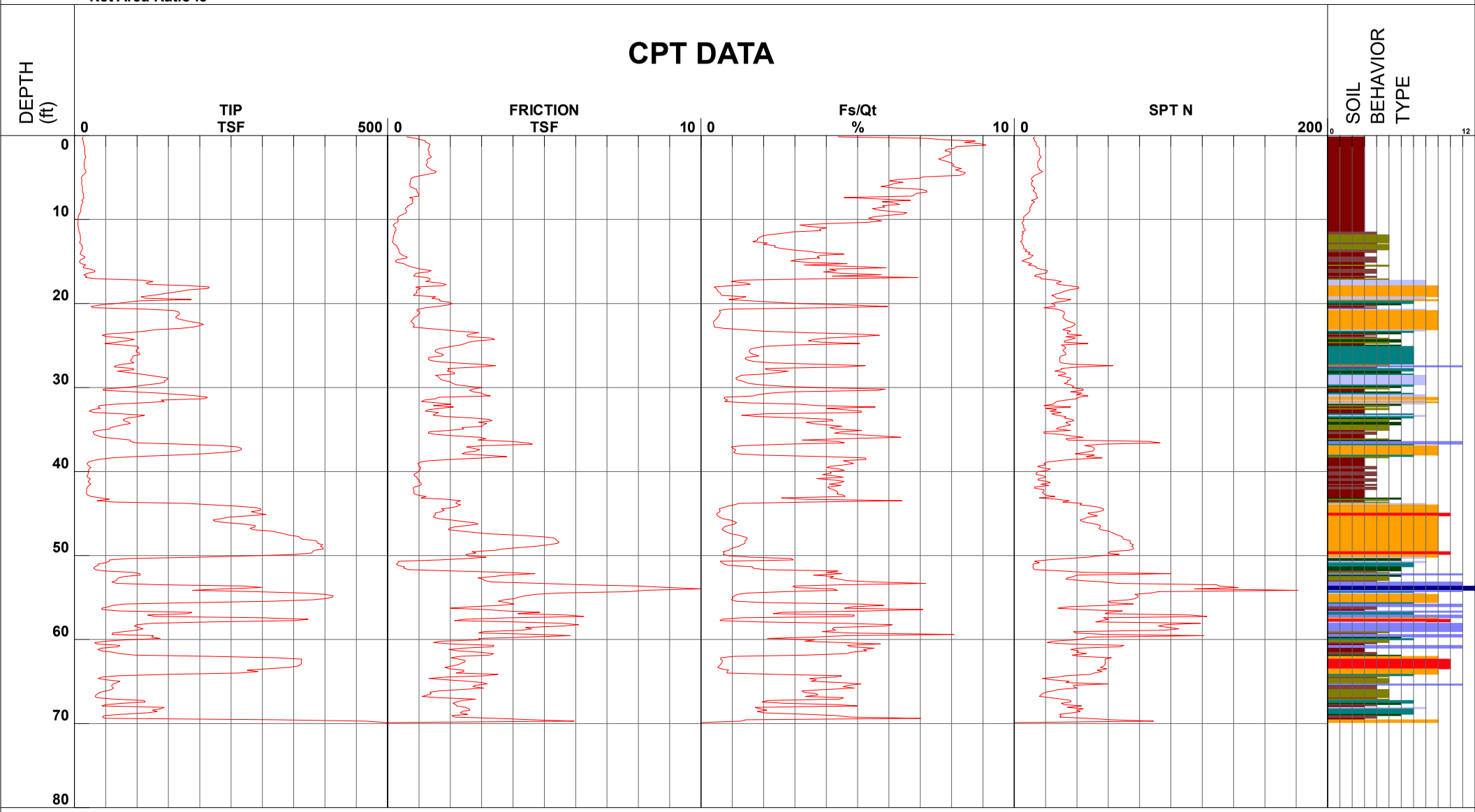
S*Soil behavior type and SPT based on data from UBC-1983

Leighton

Project	OC Museum of Art	Operator	DG-RC	Filename	SDF(529).cpt
Job Number	11342.001	Cone Number	DDG1366	GPS	
Hole Number	CPT-06	Date and Time	6/7/2016 1:01:24 PM	Maximum Depth	70.05 ft
EST GW Depth During Test		12.00 ft			

Net Area Ratio .8

CPT DATA



1 - sensitive fine grained
2 - organic material
3 - clay
4 - silty clay to clay
5 - clayey silt to silty clay
6 - sandy silt to clayey silt
7 - silty sand to sandy silt
8 - sand to silty sand
9 - sand
10 - gravelly sand to sand
11 - very stiff fine grained (*)
12 - sand to clayey sand (*)

Cone Size 10cm squared

S*Soil behavior type and SPT based on data from UBC-1983

APPENDIX B

PREVIOUS BORING LOGS BY LEIGHTON

Leighton

GEOTECHNICAL BORING LOG PA-1

Date 4-9-98 | Sheet 1 of 3

Project Segrestrom Performing Arts Center | Project No. 1980088-001

Drilling Co. 2R DRILLING | Type of Rig HSA-Mech. Hammer

Hole Diameter 8 in. | Drive Weight 140 lb | Drop 30 in.

Elevation Top of Hole 30' | Location Southeast Quadrant of Lot

Logged By JDH

Sampled By JDH

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
30	0			BAG-1					3" ASPHALT; NO BASE	
								CH	FAT CLAY, dark brown, moist, trace sand, medium grained, medium plasticity	
25	5			S-1	2 4 4				medium stiff to stiff	
				BAG-2						EI
20	10			T-1		81.0	41.0	CH		HS, AL, CN, UC
				R-1	1 3 4	95.0	28.1	CL	LEAN CLAY, olive-gray, moist, soft, medium plasticity	
15	15			S-2	2 3 4		24.5	ML	SANDY SILT, light gray, moist, medium stiff, fine grained, non-plastic	-200
10	20			R-2	12 11 12	103.0	22.6	SM	SILTY SAND, light brown, moist, medium dense, fine grained, low plasticity	
5	25			S-3	2 3 5				olive-gray, loose	
0	30									

SAMPLE TYPES:
- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AL ATTERBERG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

505A(11/77)

LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG PA-1

Date 4-9-98 | Sheet 2 of 3

Project Segrestrom Performing Arts Center | Project No. 1980088-001

Drilling Co. 2R DRILLING | Type of Rig HSA-Mech. Hammer

Hole Diameter 8 in. | Drive Weight 140 lb | Drop 30 in.

Elevation Top of Hole 30' | Location Southeast Quadrant of Lot

Logged By JDH

Sampled By JDH

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
0	30			R-3	5 8 15	113.0	15.5	SM	SILTY SAND, olive-gray, moist/wet, medium dense, fine grained, some alkaline deposits	
-5	35			S-4	3 4 6		24.5	ML	SANDY SILT, olive-gray and orange-brown, moist/wet, stiff, fine grained, low plasticity	-200
-10	40			R-4	10 13 14	91.0	35.3	CL	LEAN CLAY, olive-gray, wet, stiff, trace sand, fine grained, medium plasticity	
-15	45			S-5	3 5 7			SP	POORLY-GRADED SAND, yellow-orange/green-gray, wet, medium dense, medium grained	
-20	50			R-5	7 12 19				no sample recovery, medium dense	
-25	55			S-6	7 15 31			SM	SILTY SAND, olive-gray, wet, dense, fine grained	-200
-30	60									

SAMPLE TYPES:
- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AL ATTERBERG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

GEOTECHNICAL BORING LOG PA-1

Date 4-9-98 | Sheet 3 of 3

Project Segrestrom Performing Arts Center | Project No. 1980088-001

Drilling Co. 2R DRILLING | Type of Rig HSA-Mech. Hammer

Hole Diameter 8 in. | Drive Weight 140 lb | Drop 30 in.

Elevation Top of Hole 30' | Location Southeast Quadrant of Lot

Logged By JDH

Sampled By JDH

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
-30	60			R-6	8 10 15	91.0	36.1	SP	POORLY-GRADED SAND, green-gray, wet, medium dense, fine and coarse grained	
-35	65									
-40	70								Total depth of PA-1: 61.5 ft Water level encountered at 11.0 ft during drilling. Backfilled with soil cuttings, tamped, capped with cold asphalt patch.	
-45	75									
-50	80									
-55	85									
-60	90									

SAMPLE TYPES:

- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AL ATTERBERG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

505A(11/77)

LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG PA-2

Date 4-9-98 | Sheet 1 of 3

Project Segrestrom Performing Arts Center | Project No. 1980088-001

Drilling Co. 2R DRILLING | Type of Rig HSA-Mech Hammer

Hole Diameter 8 in. | Drive Weight 140 lb | Drop 30 in.

Elevation Top of Hole 30' | Location Northeast Quadrant of Lot

Logged By JDH

Sampled By JDH

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
30	0			BAG-1					3" ASPHALT 2.5" AGGREGATE BASE	
								CH	FAT CLAY, dark brown, moist, trace sand, fine grained, medium plasticity	
25	5			R-1	3 6 11	89.0	29.8		stiff	
				BAG-2						CR
20	10			S-2	2 2 2				moist/wet, soft to medium stiff	
15	15			R-3	2 2 4	99.0	25.4	ML	SILT, light gray, wet, soft, some sand, fine grained, low plasticity	-200
10	20			S-4	4 5 9				stiff	
								SW	WELL-GRADED SAND, yellow-orange, wet, some gravel, fine to coarse grained	
5	25			R-5	10 13 20	120.0	10.8		medium dense	
0	30									

SAMPLE TYPES:

- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AL ATTERBERG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

505A(11/77)

LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG PA-2

Date 4-9-98 | Sheet 2 of 3

Project Segrestrom Performing Arts Center | Project No. 1980088-001

Drilling Co. 2R DRILLING | Type of Rig HSA-Mech Hammer

Hole Diameter 8 in. | Drive Weight 140 lb | Drop 30 in.

Elevation Top of Hole 30' | Location Northeast Quadrant of Lot

Logged By JDH

Sampled By JDH

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
0	30			T-1				SW	No sample recovery, sand, wet	
				S-6	4 8 15			SP	POORLY-GRADED SAND, olive-gray, wet, medium dense, trace silt, fine grained	
-5	35			R-7	8 12 11	107.0	20.0	SP	same	-200
								ML	SANDY SILT, orange-brown, moist/wet, fine grained	
-10	40			T-2				CL	LEAN CLAY, olive, moist	HS, AL, CN, UC
				R-8	3 4 8	90.0	30.3	ML	SILT, olive-gray, moist/wet, medium stiff, low plasticity	
-15	45			R-9	20 32 45	109.0	17.4	SW-SM	WELL-GRADED SAND, yellow-orange, wet, dense, with silt, medium grained	
-20	50			S-10	7 13 18			SP	POORLY-GRADED SAND, green-gray/yellow-orange, wet, dense, fine grained	
-25	55			R-11	13 18 29	110.0	20.4		green-gray	
								ML	SANDY SILT, green-gray, fine grained, non/low plasticity	
-30	60									

SAMPLE TYPES:
- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AL ATTERBERG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

GEOTECHNICAL BORING LOG PA-2

Date 4-9-98 | Sheet 3 of 3

Project Segrestrom Performing Arts Center | Project No. 1980088-001

Drilling Co. 2R DRILLING | Type of Rig HSA-Mech Hammer

Hole Diameter 8 in. | Drive Weight 140 lb | Drop 30 in.

Elevation Top of Hole 30' | Location Northeast Quadrant of Lot

Logged By JDH

Sampled By JDH

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
-30	60			S-12	3 5 9			SM	SILTY SAND, green-gray, moist/wet, medium dense, fine grained	-200
								ML	SANDY SILT, green-gray, moist/wet, stiff, medium/coarse grained	
-35	65									
-40	70								Total depth of PA-2: 61.5 ft Water level encountered at 11.1 ft. Backfilled with soil cuttings, tamped, capped with cold asphalt patch.	
-45	75									
-50	80									
-55	85									
-60	90									

SAMPLE TYPES:
- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AL ATTERBERG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

505A(11/77)

LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG PA-6

Date 4-10-98 | Sheet 1 of 3

Project Segrestrom Performing Arts Center | Project No. 1980088-001

Drilling Co. 2R DRILLING | Type of Rig HSA-Mech Hammer

Hole Diameter 8 in. | Drive Weight 140 lb | Drop 30 in.

Elevation Top of Hole 30' | Location North-Central Section of Lot

Logged By JDH

Sampled By JDH

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
30	0			BAG-1					3.5" ASPHALT; NO AGGREGATE BASE	
				R-1	3 5 8			CH	FAT CLAY, dark gray, moist, medium stiff, trace sand, fine grained, medium plasticity	
25	5			R-2	3 6 7	73.0	49.3		olive-gray	
				BAG-2						
20	10			S-2	2 1 2				light brown, wet, soft	
15	15			R-3	3 4 4	94.0	26.9	ML	SILT, dark brown, moist, soft to medium stiff, medium plasticity	
10	20			S-4	6 9 10			SW-SM	WELL-GRADED SAND, yellow-orange, wet, medium dense, with silt, fine to coarse grained	SA
5	25			R-5	11 28 35				yellow-orange/light gray, dense	
0	30									

SAMPLE TYPES:
- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AL ATTERBERG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

LEIGHTON & ASSOCIATES

GEOTECHNICAL BORING LOG PA-6

Date 4-10-98 | Sheet 2 of 3

Project Segrestrom Performing Arts Center | Project No. 1980088-001

Drilling Co. 2R DRILLING | Type of Rig HSA-Mech Hammer

Hole Diameter 8 in. | Drive Weight 140 lb | Drop 30 in.

Elevation Top of Hole 30' | Location North-Central Section of Lot

Logged By JDH

Sampled By JDH

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
0	30			S-6	4 7 11			SM	SILTY SAND, brown/olive-gray, wet, medium dense, fine grained	SA
-5	35			R-7	5 9 16	109.0	20.0		olive-gray	DS
-10	40			S-8	3 3 5		37.4	CL	LEAN CLAY, gray, wet, medium stiff to stiff, low plasticity	-200
-15	45			S-9	11 22 30			SP	POORLY-GRADED SAND, yellow-orange, wet, very dense, fine grained	
-20	50			S-10	4 8 8			SM	SILTY SAND, light gray, wet, medium dense, fine grained	
-25	55			S-11	13 17 13		21.7	SP	POORLY-GRADED SAND, gray, wet, fine grained	-200
								SM	SILTY SAND, light gray, moist/wet, medium dense to dense, fine grained	
-30	60									

SAMPLE TYPES:

- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AL ATTERBERG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

GEOTECHNICAL BORING LOG PA-6

Date 4-10-98 | Sheet 3 of 3

Project Segrestrom Performing Arts Center | Project No. 1980088-001

Drilling Co. 2R DRILLING | Type of Rig HSA-Mech Hammer

Hole Diameter 8 in. | Drive Weight 140 lb | Drop 30 in.

Elevation Top of Hole 30' | Location North-Central Section of Lot

Logged By JDH

Sampled By JDH

Elevation Feet	Depth Feet	Graphic Log	Attitudes	Tube Sample No.	Blows Per Foot	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	DESCRIPTION	Type of Tests
-30	60			S-12	5 10 18			SP	POORLY-GRADED SAND, green-gray, wet, medium dense, trace silt, fine/medium grained	
-35	65			S-13	6 12 11		22.6	ML	SANDY SILT, olive-gray, wet, very stiff, fine grained, non-plastic	-200
-40	70			S-14	10 21 27			SP	POORLY-GRADED SAND, olive-gray, wet, dense, some silt, fine grained	
-45	75									
-50	80								Total depth of PA-6: 71.5 ft Water encountered at 10.6 ft. Backfilled with soil cuttings, tamped, capped with cold asphalt patch.	
-55	85									
-60	90									

SAMPLE TYPES:

- S SPLIT SPOON
- R RING SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- DS DIRECT SHEAR
- MD MAXIMUM DENSITY
- CN CONSOLIDATION
- CR CORROSION
- SA SIEVE ANALYSIS
- AL ATTERBERG LIMITS
- EI EXPANSION INDEX
- RV R-VALUE

APPENDIX C

LABORATORY TESTING

Leighton

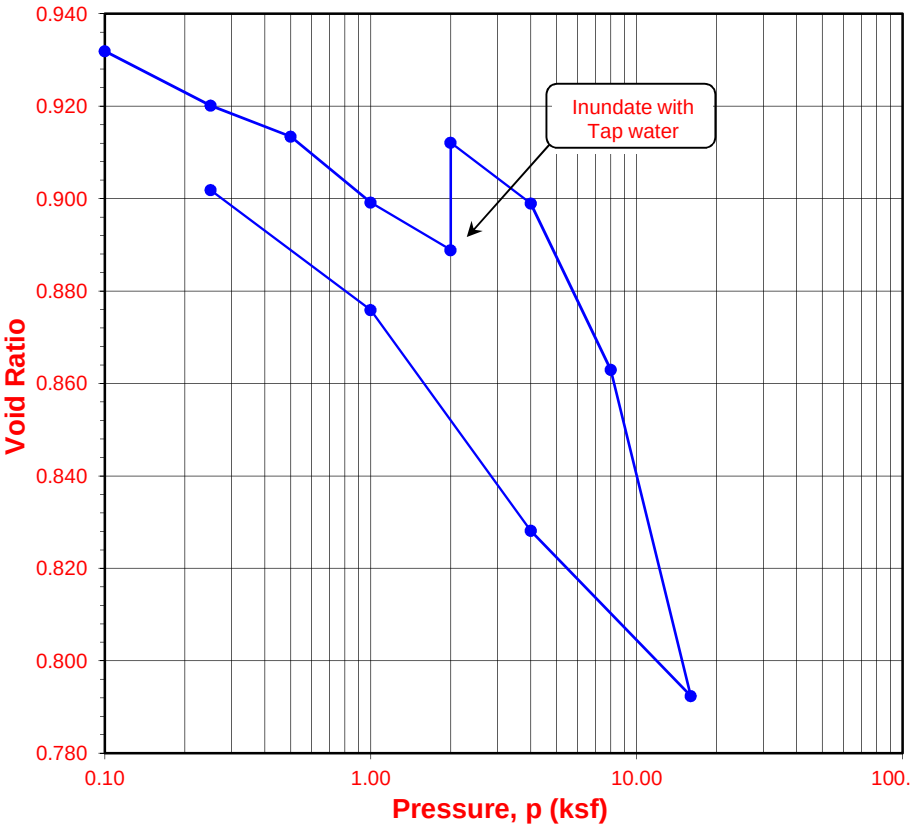
ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS

ASTM D 2435

Leighton

Project Name:	OC Museum of Modern Art	Tested By: G. Bathala	Date: 06/29/16
Project No.:	11342.001	Checked By: J. Ward	Date: 07/11/16
Boring No.:	LB-1	Depth (ft.): 10.0	
Sample No.:	R-1	Sample Type: Ring	
Soil Identification:	Olive brown lean clay (CL)		

Sample Diameter (in.)	2.415
Sample Thickness (in.)	1.000
Wt. of Sample + Ring (g)	183.11
Weight of Ring (g)	44.22
Height after consol. (in.)	0.9834
Before Test	
Wt.Wet Sample+Cont. (g)	205.30
Wt.of Dry Sample+Cont. (g)	172.33
Weight of Container (g)	69.42
Initial Moisture Content (%)	32.0
Initial Dry Density (pcf)	87.5
Initial Saturation (%)	93
Initial Vertical Reading (in.)	0.2903
After Test	
Wt.of Wet Sample+Cont. (g)	228.95
Wt. of Dry Sample+Cont. (g)	193.51
Weight of Container (g)	45.08
Final Moisture Content (%)	34.01
Final Dry Density (pcf)	88.1
Final Saturation (%)	100
Final Vertical Reading (in.)	0.2704
Specific Gravity (assumed)	2.71
Water Density (pcf)	62.43

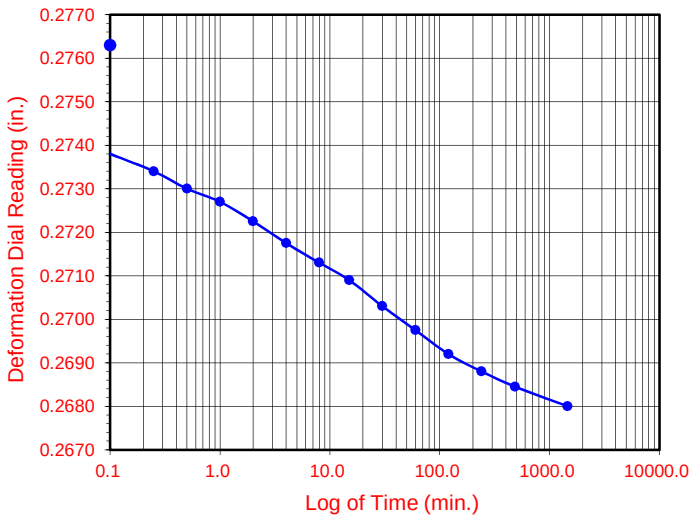


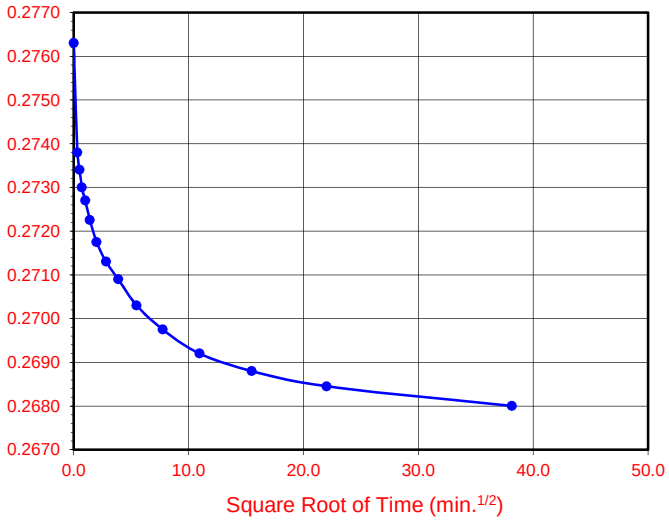
Pressure (p) (ksf)	Final Reading (in.)	Apparent Thickness (in.)	Load Compliance (%)	Deformation % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.10	0.2893	0.9990	0.00	0.11	0.932	0.11
0.25	0.2830	0.9927	0.02	0.73	0.920	0.71
0.50	0.2790	0.9887	0.07	1.13	0.913	1.06
1.00	0.2706	0.9803	0.17	1.97	0.899	1.80
2.00	0.2643	0.9740	0.27	2.60	0.889	2.33
2.00	0.2763	0.9860	0.27	1.40	0.912	1.13
4.00	0.2680	0.9777	0.42	2.23	0.899	1.81
8.00	0.2477	0.9574	0.59	4.26	0.863	3.67
16.00	0.2093	0.9190	0.78	8.10	0.792	7.32
4.00	0.2299	0.9396	0.57	6.04	0.828	5.47
1.00	0.2560	0.9657	0.43	3.43	0.876	3.00
0.25	0.2704	0.9801	0.33	1.99	0.902	1.66

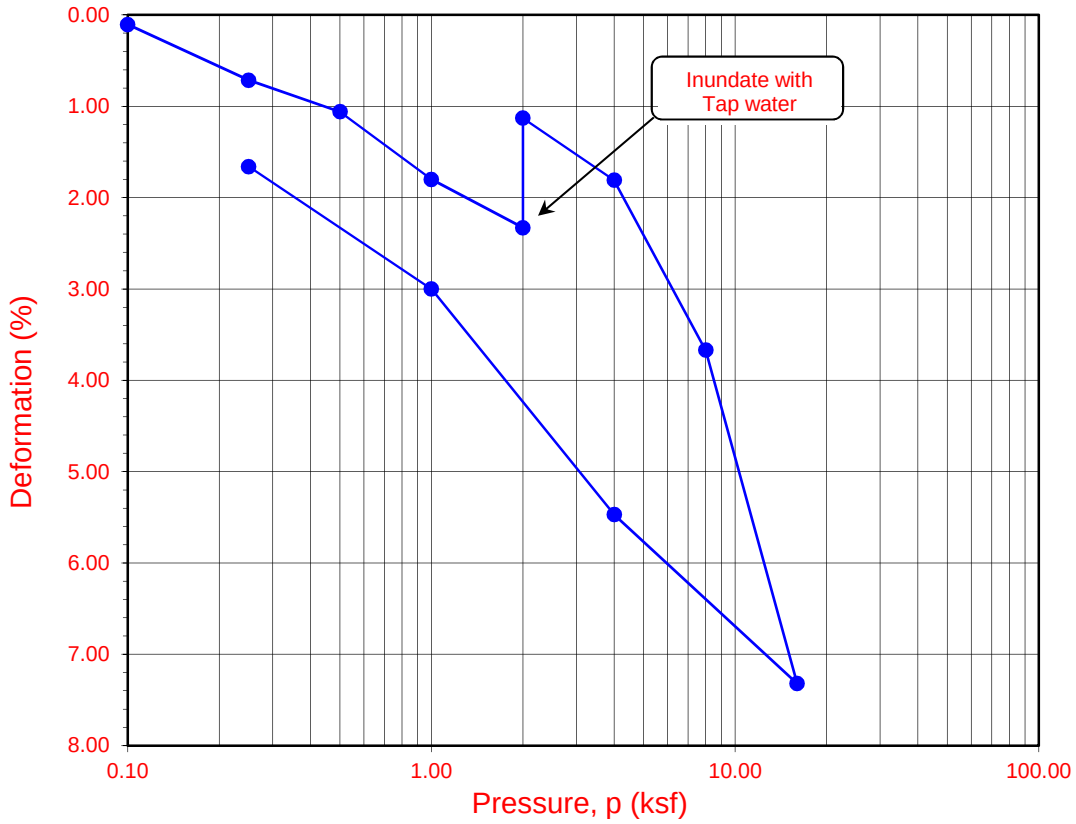
Time Readings @ 4.0 ksf

Date	Time	Elapsed Time (min)	Square Root of Time	Dial Rdgs. (in.)
7/5/16	8:35:00	0.0	0.0	0.2763
7/5/16	8:35:06	0.1	0.3	0.2738
7/5/16	8:35:15	0.2	0.5	0.2734
7/5/16	8:35:30	0.5	0.7	0.2730
7/5/16	8:36:00	1.0	1.0	0.2727
7/5/16	8:37:00	2.0	1.4	0.2723
7/5/16	8:39:00	4.0	2.0	0.2718
7/5/16	8:43:00	8.0	2.8	0.2713
7/5/16	8:50:00	15.0	3.9	0.2709
7/5/16	9:05:00	30.0	5.5	0.2703
7/5/16	9:35:00	60.0	7.7	0.2698
7/5/16	10:35:00	120.0	11.0	0.2692
7/5/16	12:35:00	240.0	15.5	0.2688
7/5/16	16:40:00	485.0	22.0	0.2685
7/6/16	8:50:00	1455.0	38.1	0.2680

Time Readings @ 4.0 ksf







Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
LB-1	**R-1**	**10.0**	**32.0**	**34.0**	**87.5**	**88.1**	**0.934**	**0.902**	**93**	**100**

Soil Identification: Olive brown lean clay (CL)

Leighton

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 11342.001

OC Museum of Modern Art

07-16

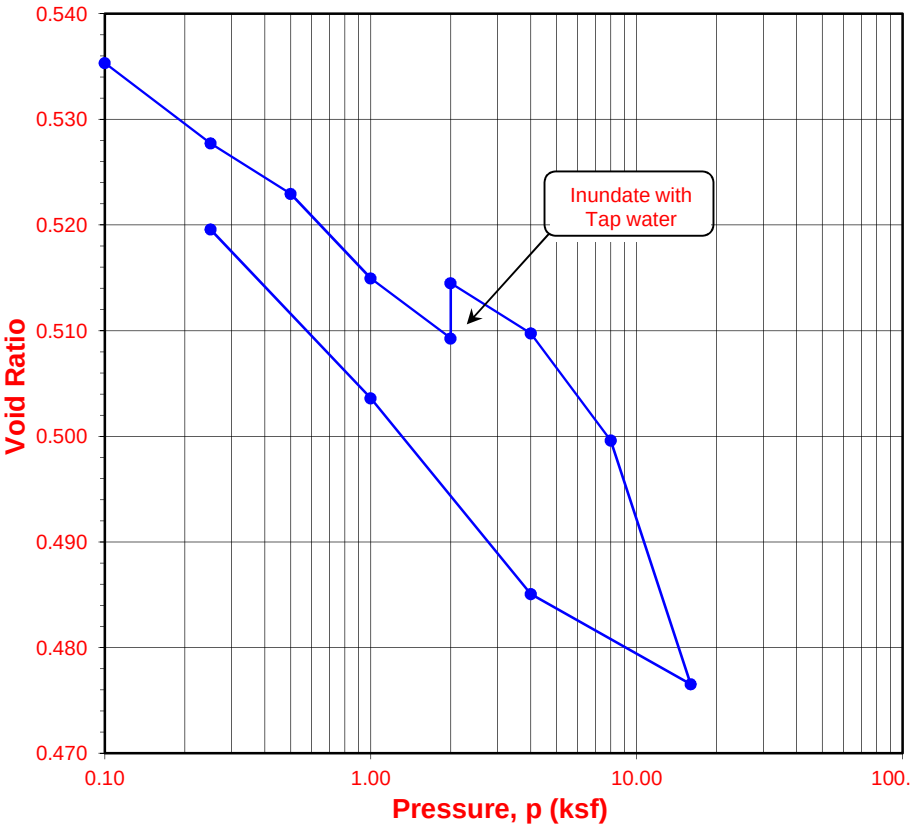
ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS

ASTM D 2435

Leighton

Project Name:	OC Museum of Modern Art	Tested By: G. Bathala	Date: 06/29/16
Project No.:	11342.001	Checked By: J. Ward	Date: 07/11/16
Boring No.:	LB-1	Depth (ft.): 20.0	
Sample No.:	R-2	Sample Type: Ring	
Soil Identification:	Light olive brown lean clay (CL), caliche noted		

Sample Diameter (in.)	2.415
Sample Thickness (in.)	1.000
Wt. of Sample + Ring (g)	200.22
Weight of Ring (g)	42.55
Height after consol. (in.)	0.9884
Before Test	
Wt.Wet Sample+Cont. (g)	210.59
Wt.of Dry Sample+Cont. (g)	185.46
Weight of Container (g)	57.28
Initial Moisture Content (%)	19.6
Initial Dry Density (pcf)	109.6
Initial Saturation (%)	98
Initial Vertical Reading (in.)	0.3151
After Test	
Wt.of Wet Sample+Cont. (g)	257.39
Wt. of Dry Sample+Cont. (g)	232.56
Weight of Container (g)	57.22
Final Moisture Content (%)	18.70
Final Dry Density (pcf)	111.7
Final Saturation (%)	99
Final Vertical Reading (in.)	0.3001
Specific Gravity (assumed)	2.70
Water Density (pcf)	62.43

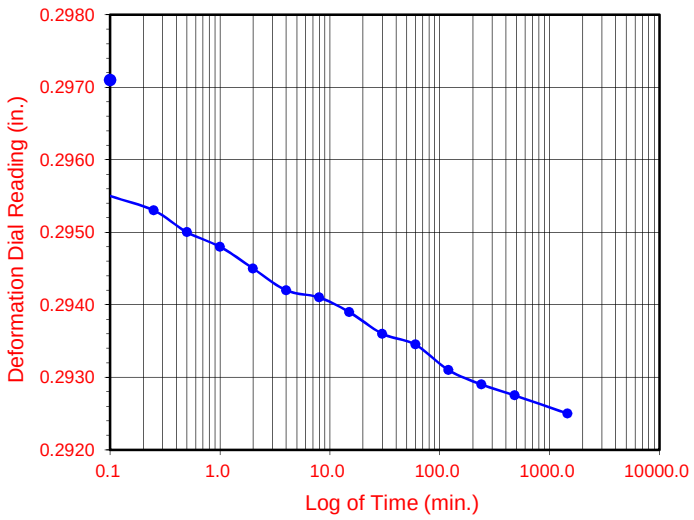


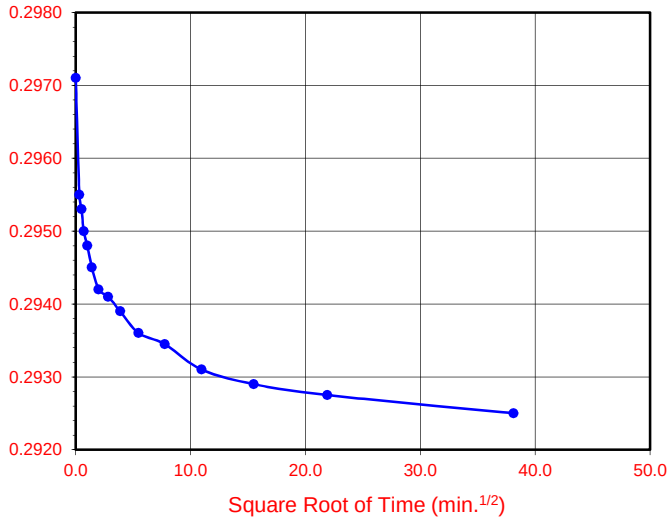
Pressure (p) (ksf)	Final Reading (in.)	Apparent Thickness (in.)	Load Compliance (%)	Deformation % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.10	0.3137	0.9986	0.00	0.14	0.535	0.14
0.25	0.3084	0.9934	0.03	0.67	0.528	0.64
0.50	0.3049	0.9899	0.07	1.02	0.523	0.94
1.00	0.2987	0.9837	0.17	1.64	0.515	1.47
2.00	0.2937	0.9787	0.30	2.14	0.509	1.84
2.00	0.2971	0.9821	0.30	1.80	0.515	1.50
4.00	0.2925	0.9775	0.45	2.26	0.510	1.81
8.00	0.2838	0.9688	0.66	3.13	0.500	2.47
16.00	0.2662	0.9512	0.92	4.89	0.477	3.97
4.00	0.2747	0.9596	0.63	4.04	0.485	3.41
1.00	0.2887	0.9737	0.43	2.64	0.504	2.21
0.25	0.3001	0.9851	0.33	1.50	0.520	1.17

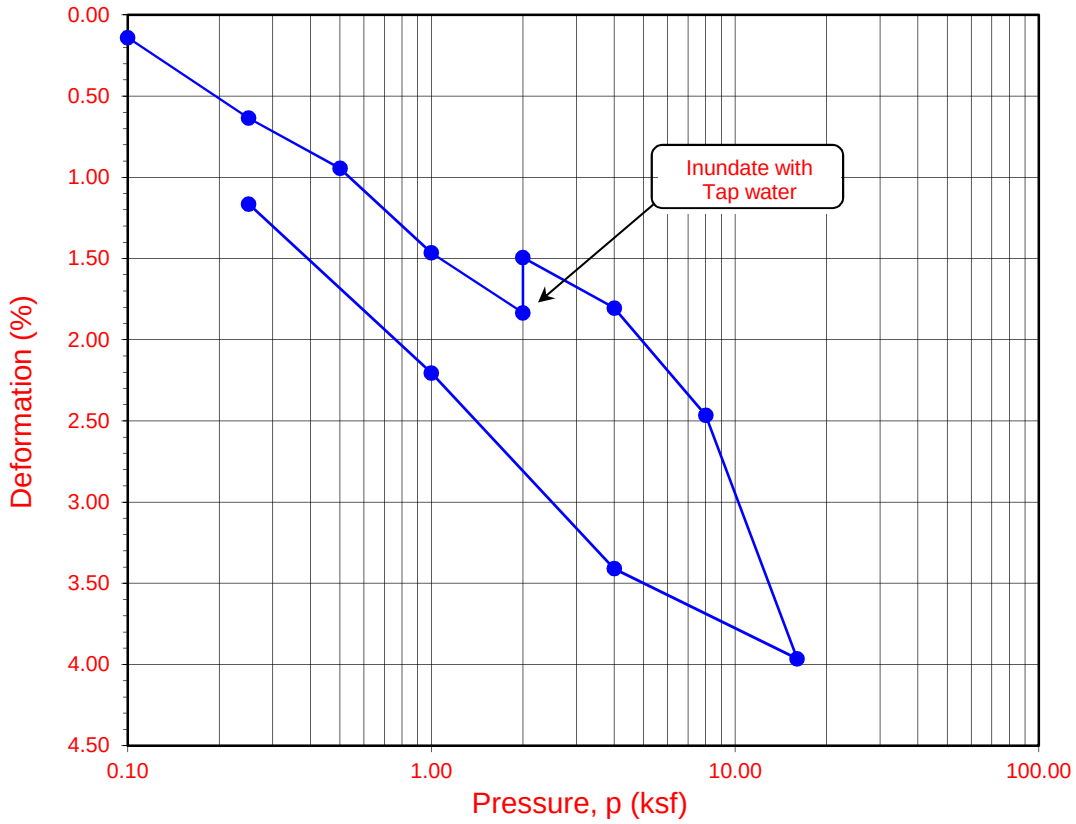
Time Readings @ 4.0 ksf

Date	Time	Elapsed Time (min)	Square Root of Time	Dial Rdgs. (in.)
7/5/16	8:40:00	0.0	0.0	0.2971
7/5/16	8:40:06	0.1	0.3	0.2955
7/5/16	8:40:15	0.2	0.5	0.2953
7/5/16	8:40:30	0.5	0.7	0.2950
7/5/16	8:41:00	1.0	1.0	0.2948
7/5/16	8:42:00	2.0	1.4	0.2945
7/5/16	8:44:00	4.0	2.0	0.2942
7/5/16	8:48:00	8.0	2.8	0.2941
7/5/16	8:55:00	15.0	3.9	0.2939
7/5/16	9:10:00	30.0	5.5	0.2936
7/5/16	9:40:00	60.0	7.7	0.2935
7/5/16	10:40:00	120.0	11.0	0.2931
7/5/16	12:40:00	240.0	15.5	0.2929
7/5/16	16:40:00	480.0	21.9	0.2928
7/6/16	8:52:00	1452.0	38.1	0.2925

Time Readings @ 4.0 ksf







Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
LB-1	**R-2**	**20.0**	**19.6**	**18.7**	**109.6**	**111.7**	**0.537**	**0.520**	**98**	**99**

Soil Identification: Light olive brown lean clay (CL), caliche noted

Leighton

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 11342.001

OC Museum of Modern Art

07-16

Leighton

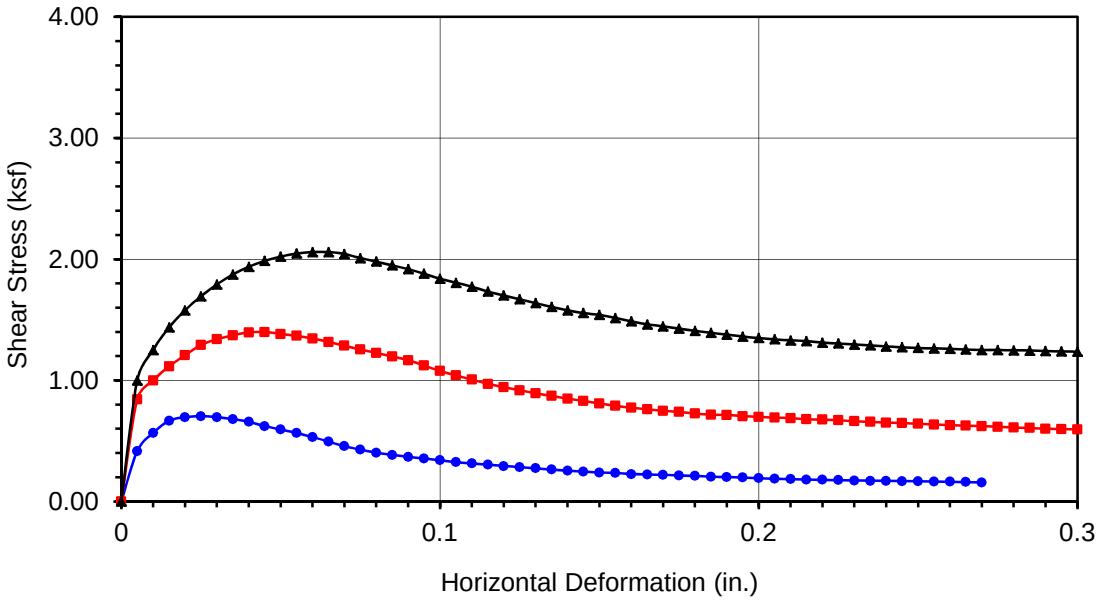
DIRECT SHEAR TEST

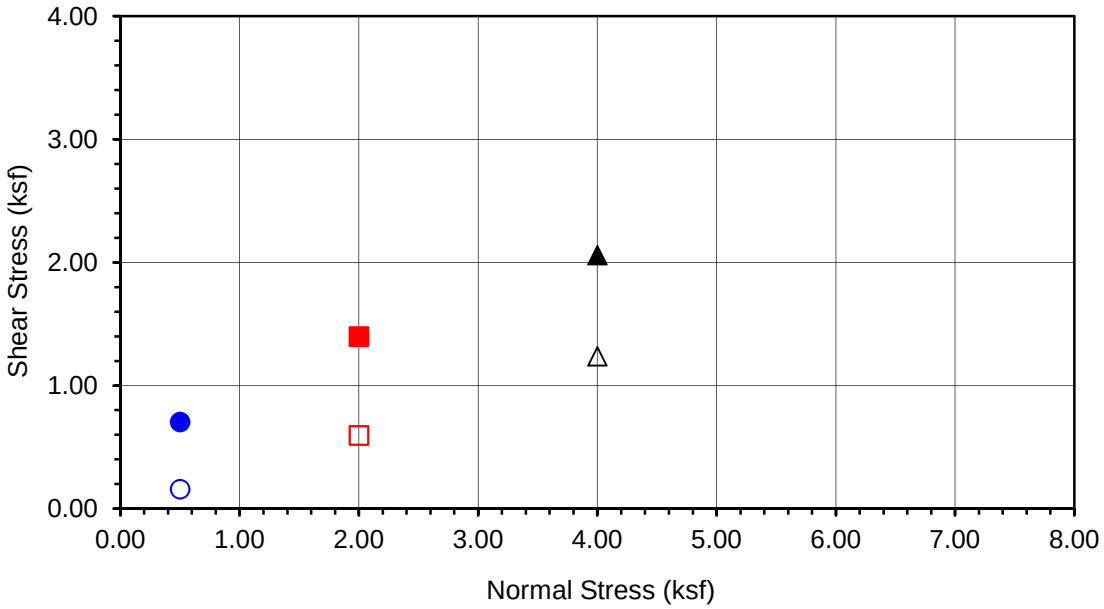
Consolidated Drained - ASTM D 3080

Project Name:	OC Museum of Modern Art	Tested By:	G. Bathala	Date:	06/29/16
Project No.:	11342.001	Checked By:	J. Ward	Date:	07/06/16
Boring No.:	LB-1	Sample Type:	Ring		
Sample No.:	R-1	Depth (ft.):	10.0		

Soil Identification: Olive brown lean clay (CL)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	182.24	182.65	183.77
Weight of Ring(gm):	43.24	43.00	44.02
Before Shearing			
Weight of Wet Sample+Cont.(gm):	205.30	205.30	205.30
Weight of Dry Sample+Cont.(gm):	172.33	172.33	172.33
Weight of Container(gm):	69.42	69.42	69.42
Vertical Rdg.(in): Initial	0.0000	0.2538	0.0000
Vertical Rdg.(in): Final	0.0113	0.2607	-0.0249
After Shearing			
Weight of Wet Sample+Cont.(gm):	196.94	200.18	206.39
Weight of Dry Sample+Cont.(gm):	158.23	163.16	170.73
Weight of Container(gm):	54.71	58.65	66.13
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**LB-1**
Sample No.	**R-1**
Depth (ft)	**10**
Sample Type:	
Ring	
Soil Identification:	
Olive brown lean clay (CL)	

Normal Stress (kip/ft²)	0.500	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.704	■ 1.399	▲ 2.059
Shear Stress @ End of Test (ksf)	○ 0.157	□ 0.594	△ 1.236
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	32.04	32.04	32.04
Dry Density (pcf)	87.6	88.0	88.0
Saturation (%)	93.5	94.4	94.5
Soil Height Before Shearing (in.)	1.0113	0.9931	0.9751
Final Moisture Content (%)	37.4	35.4	34.1

Leighton

DIRECT SHEAR TEST RESULTS

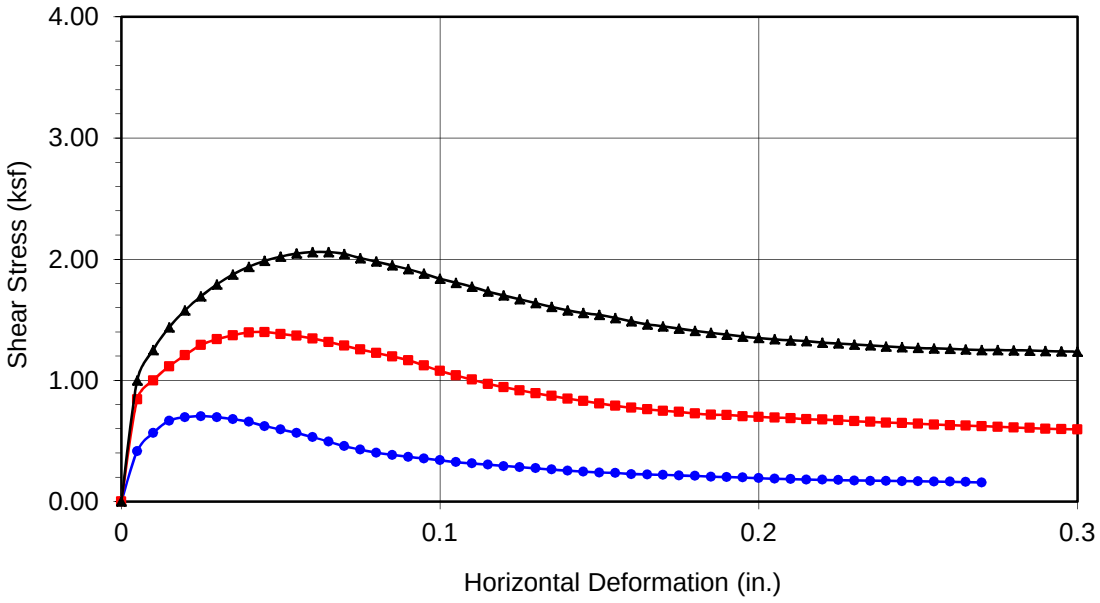
Consolidated Drained - ASTM D 3080

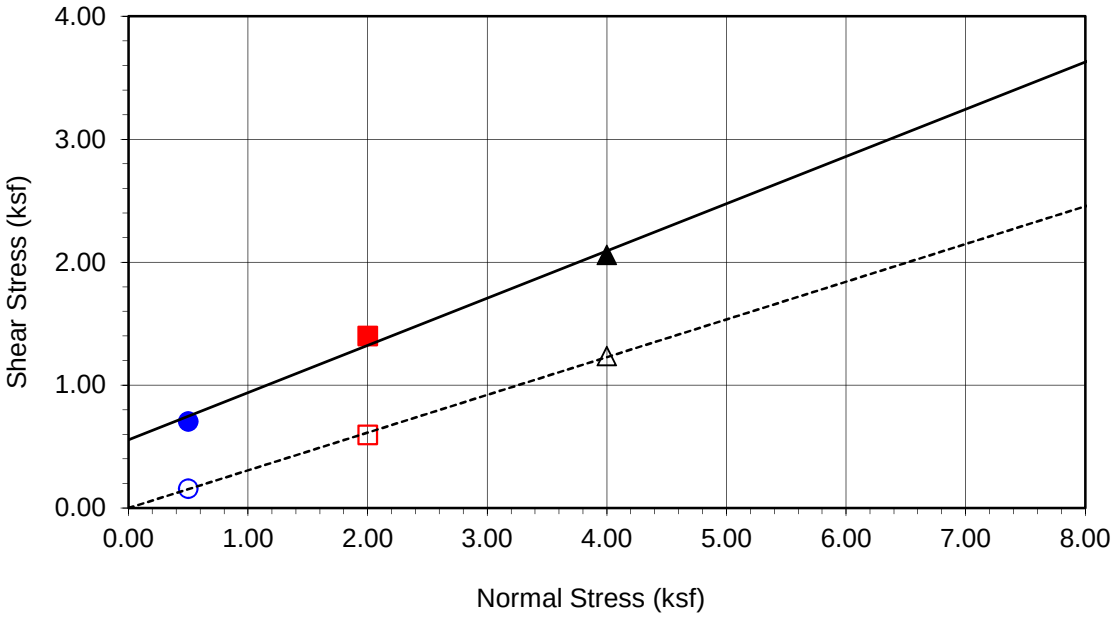
Project No.: 11342.001

OC Museum of Modern Art

06-16

DS LB-1, R-1 @ 10, ult y-intercept set to 0





Boring No.	**LB-1**
Sample No.	**R-1**
Depth (ft)	**10**
Sample Type:	Ring
Soil Identification:	Olive brown lean clay (CL)

Strength Parameters

	C (psf)	ϕ (^{o})
Peak	555	21
Ultimate	0	17

Normal Stress (kip/ft²)	0.500	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.704	■ 1.399	▲ 2.059
Shear Stress @ End of Test (ksf)	○ 0.157	□ 0.594	△ 1.236
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	32.04	32.04	32.04
Dry Density (pcf)	87.6	88.0	88.0
Saturation (%)	93.5	94.4	94.5
Soil Height Before Shearing (in.)	1.0113	0.9931	0.9751
Final Moisture Content (%)	37.4	35.4	34.1

Leighton

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 11342.001

OC Museum of Modern Art

06-16

DS LB-1, R-1 @ 10, ult y-intercept set to 0

Leighton

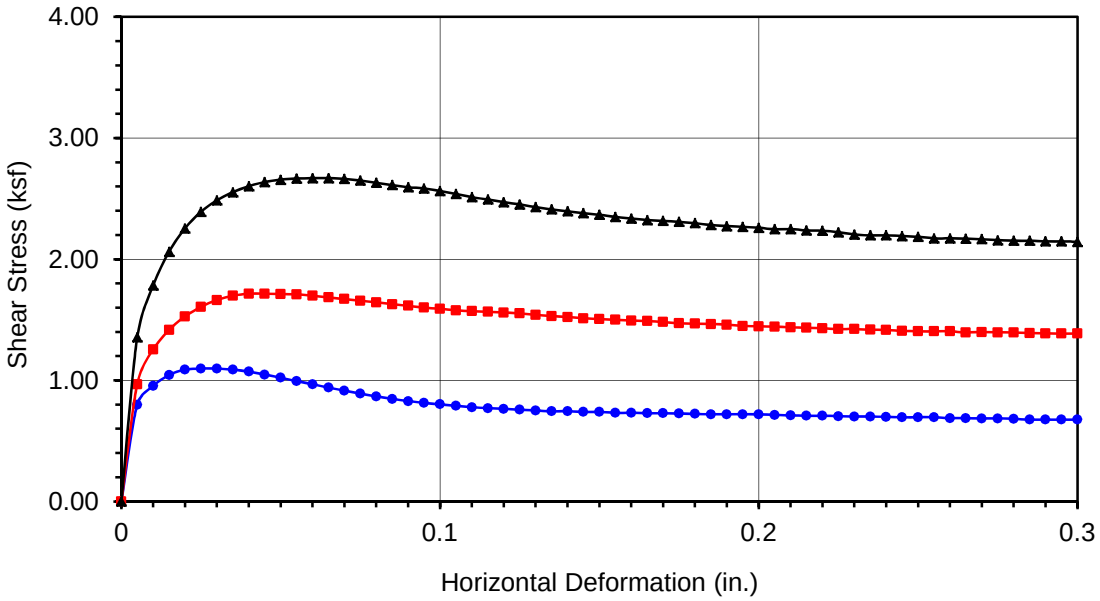
DIRECT SHEAR TEST

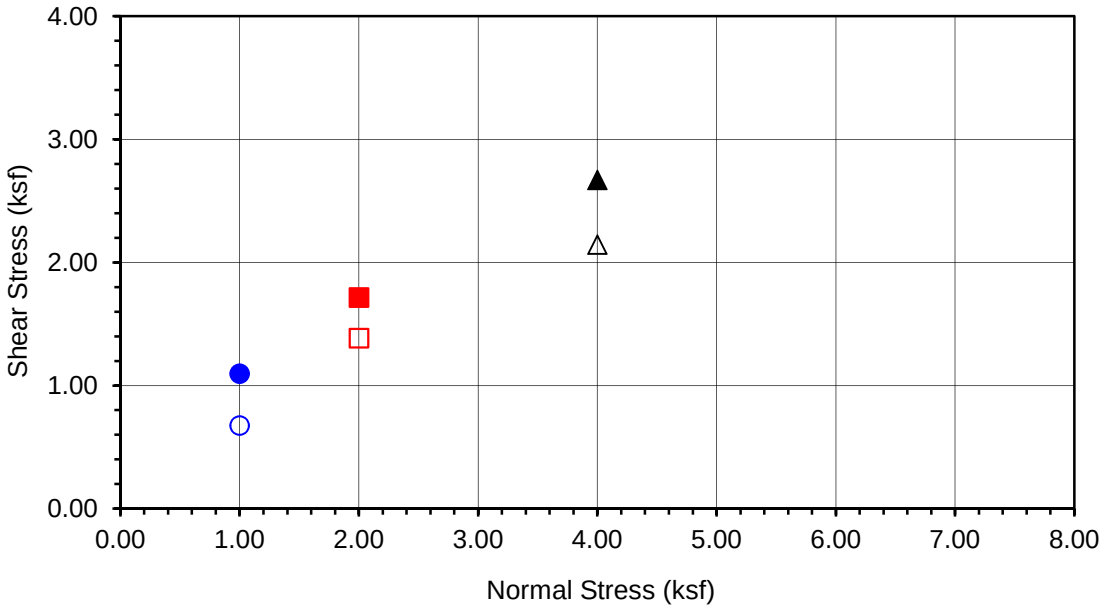
Consolidated Drained - ASTM D 3080

Project Name:	OC Museum of Modern Art	Tested By:	G. Bathala	Date:	06/29/16
Project No.:	11342.001	Checked By:	J. Ward	Date:	07/06/16
Boring No.:	LB-1	Sample Type:	Ring		
Sample No.:	R-2	Depth (ft.):	20.0		

Soil Identification: Light olive brown lean clay (CL), caliche noted

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	196.87	196.59	201.54
Weight of Ring(gm):	42.56	41.37	45.96
Before Shearing			
Weight of Wet Sample+Cont.(gm):	210.59	210.59	210.59
Weight of Dry Sample+Cont.(gm):	185.46	185.46	185.46
Weight of Container(gm):	57.28	57.28	57.28
Vertical Rdg.(in): Initial	0.2564	0.2767	0.0000
Vertical Rdg.(in): Final	0.2605	0.2858	-0.0171
After Shearing			
Weight of Wet Sample+Cont.(gm):	215.38	220.48	212.72
Weight of Dry Sample+Cont.(gm):	187.59	193.39	186.09
Weight of Container(gm):	59.82	64.62	57.41
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**LB-1**
Sample No.	**R-2**
Depth (ft)	**20**
Sample Type:	
Ring	
Soil Identification:	
Light olive brown lean clay (CL), caliche noted	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.097	■ 1.716	▲ 2.669
Shear Stress @ End of Test (ksf)	○ 0.676	□ 1.386	△ 2.144
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	19.61	19.61	19.61
Dry Density (pcf)	107.3	107.9	108.2
Saturation (%)	92.7	94.2	94.8
Soil Height Before Shearing (in.)	0.9959	0.9909	0.9829
Final Moisture Content (%)	21.8	21.0	20.7

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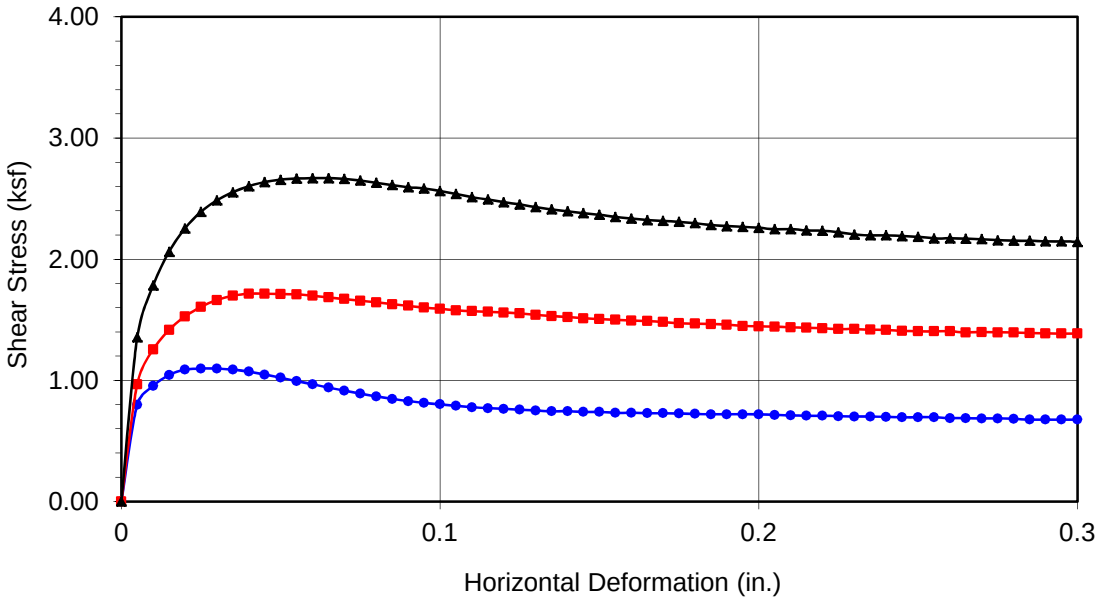
DIRECT SHEAR TEST RESULTS

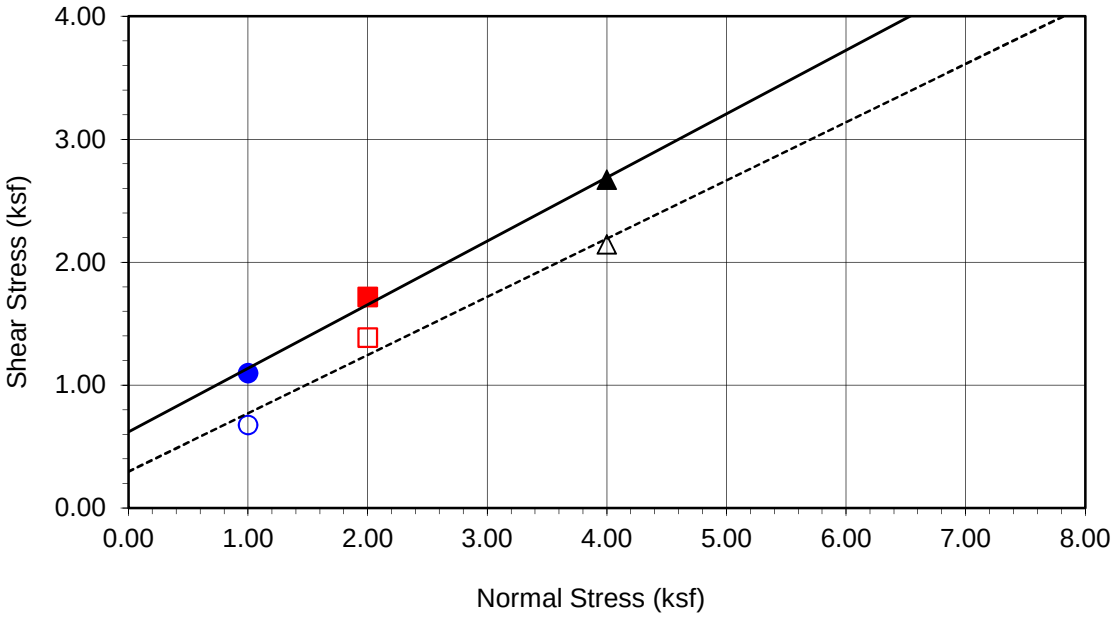
Consolidated Drained - ASTM D 3080

Project No.: 11342.001

OC Museum of Modern Art

06-16





Boring No.	**LB-1**
Sample No.	**R-2**
Depth (ft)	**20**
Sample Type:	Ring
Soil Identification:	Light olive brown lean clay (CL), caliche noted

Strength Parameters

	C (psf)	ϕ (^{o})
Peak	621	27
Ultimate	297	25

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.097	■ 1.716	▲ 2.669
Shear Stress @ End of Test (ksf)	○ 0.676	□ 1.386	△ 2.144
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	19.61	19.61	19.61
Dry Density (pcf)	107.3	107.9	108.2
Saturation (%)	92.7	94.2	94.8
Soil Height Before Shearing (in.)	0.9959	0.9909	0.9829
Final Moisture Content (%)	21.8	21.0	20.7

Leighton

DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 11342.001

OC Museum of Modern Art

06-16

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EXPANSION INDEX of SOILS

ASTM D 4829

Project Name:	OC Museum of Modern Art	Tested By:	S. Felter	Date:	07/01/16
Project No.:	11342.001	Checked By:	J. Ward	Date:	07/06/16
Boring No.:	LB-1	Depth (ft.):	5-10		
Sample No.:	BB-1				
Soil Identification:	Very dark grayish brown fat clay with sand (CH)s				

Dry Wt. of Soil + Cont.	(g)	1000.00
Wt. of Container No.	(g)	0.00
Dry Wt. of Soil	(g)	1000.00
Weight Soil Retained on #4 Sieve		0.00
Percent Passing # 4		100.00

MOLDED SPECIMEN		Before Test	After Test
Specimen Diameter	(in.)	4.01	4.01
Specimen Height	(in.)	1.0000	1.1130
Wt. Comp. Soil + Mold	(g)	558.30	415.98
Wt. of Mold	(g)	201.40	0.00
Specific Gravity (Assumed)		2.70	2.70
Container No.		O	O
Wet Wt. of Soil + Cont.	(g)	702.50	617.38
Dry Wt. of Soil + Cont.	(g)	608.20	511.05
Wt. of Container	(g)	0.00	201.40
Moisture Content	(%)	15.50	34.34
Wet Density	(pcf)	107.7	112.7
Dry Density	(pcf)	93.2	83.9
Void Ratio		0.809	1.009
Total Porosity		0.447	0.502
Pore Volume	(cc)	92.6	115.7
Degree of Saturation (%) [S_{meas}]		**51.8**	91.9

SPECIMEN INUNDATION in distilled water for the period of 24 h or expansion rate < 0.0002 in./h

Date	Time	Pressure (psi)	Elapsed Time (min.)	Dial Readings (in.)
07/01/16	9:11	1.0	0	0.0760
07/01/16	9:21	1.0	10	0.0765
Add Distilled Water to the Specimen				
07/01/16	10:05	1.0	44	0.1620
07/05/16	7:01	1.0	5620	0.1890
07/05/16	8:05	1.0	5684	0.1890

Expansion Index (EI_{meas}) = ((Final Rdg - Initial Rdg) / Initial Thick.) x 1000	**113**

MODIFIED PROCTOR COMPACTION TEST

ASTM D 1557

Project Name:	OC Museum of Modern Art	Tested By:	O. Figueroa	Date:	06/29/16
Project No.:	11342.001	Input By:	J. Ward	Date:	07/06/16
Boring No.:	LB-1	Depth (ft.):	5-10		
Sample No.:	BB-1				
Soil Identification:	Very dark grayish brown fat clay with sand (CH)s				

Note: Corrected dry density calculation assumes specific gravity of 2.70 and moisture content of 1.0% for oversize particles

Preparation Method:	X	Moist	
		Dry	
Compaction Method	X	Mechanical Ram	
		Manual Ram	

Scalp Fraction (%)	
#3/4	
#3/8	
#4	6.6

Rammer Weight (lb.) = 10.0

Height of Drop (in.) = 18.0

Mold Volume (ft³) 0.03340

TEST NO.	1	2	3	4	5	6
Wt. Compacted Soil + Mold (g)	3580	3714	3764	3791	3780	
Weight of Mold (g)	1840	1840	1840	1840	1840	
Net Weight of Soil (g)	1740	1874	1924	1951	1940	
Wet Weight of Soil + Cont. (g)	385.5	384.4	396.2	414.3	396.6	
Dry Weight of Soil + Cont. (g)	361.5	344.7	347.6	356.6	333.3	
Weight of Container (g)	39.4	38.3	38.5	39.2	38.6	
Moisture Content (%)	7.45	12.96	15.72	18.18	21.48	
Wet Density (pcf)	114.8	123.7	127.0	128.8	128.1	
Dry Density (pcf)	106.9	109.5	109.7	109.0	105.4	

Maximum Dry Density (pcf)	**110.0**	**Optimum Moisture Content (%)**	**15.0**
Corrected Dry Density (pcf)	**112.5**	**Corrected Moisture Content (%)**	**14.0**

X Procedure A
Soil Passing No. 4 (4.75 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)
May be used if +#4 is 20% or less

☐ Procedure B
Soil Passing 3/8 in. (9.5 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)
Use if +#4 is >20% and +3/8 in. is 20% or less

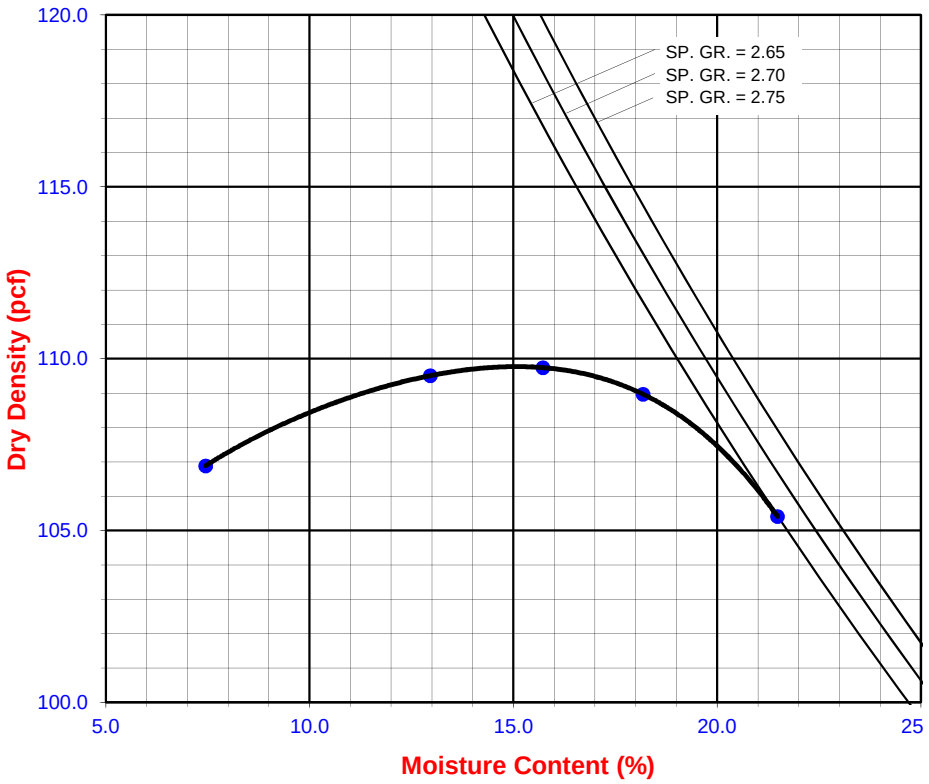
☐ Procedure C
Soil Passing 3/4 in. (19.0 mm) Sieve
Mold : 6 in. (152.4 mm) diameter
Layers : 5 (Five)
Blows per layer : 56 (fifty-six)
Use if +3/8 in. is >20% and +¾ in. is <30%

Particle-Size Distribution:

GR:SA:FI

Atterberg Limits:

LL,PL,PI



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R-VALUE TEST RESULTS

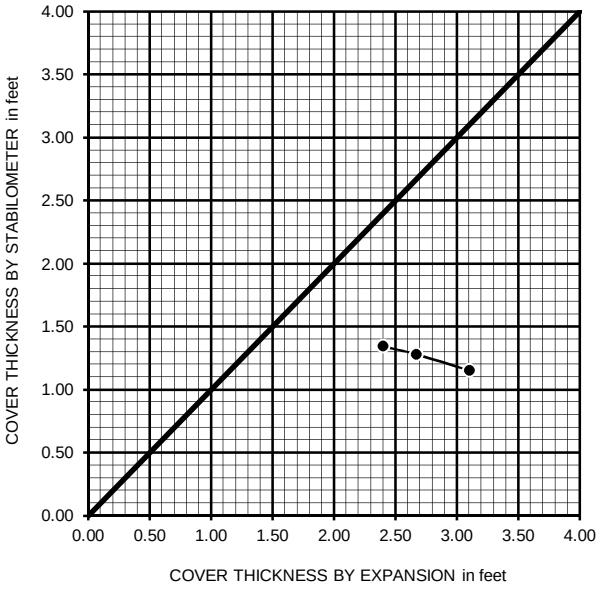
DOT CA Test 301

PROJECT NAME:	OC Museum of Modern Art	PROJECT NUMBER:	11283.001
BORING NUMBER:	LB-1	DEPTH (FT.):	5-10
SAMPLE NUMBER:	BB-1	TECHNICIAN:	S. Felter
SAMPLE DESCRIPTION:	Very dark grayish brown (CH)s	DATE COMPLETED:	7/6/2016

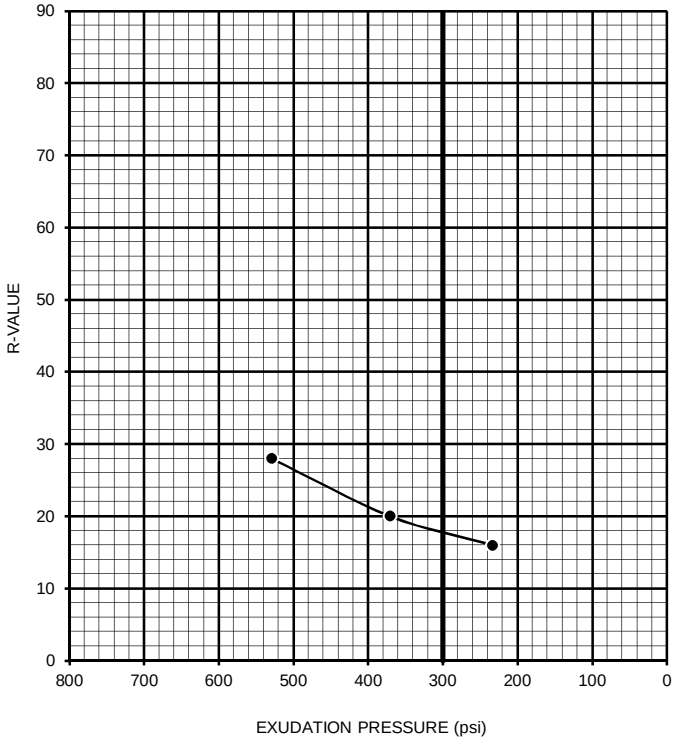
TEST SPECIMEN	a	b	c
MOISTURE AT COMPACTION %	24.5	25.5	25.9
HEIGHT OF SAMPLE, Inches	2.56	2.59	2.56
DRY DENSITY, pcf	102.2	100.7	100.8
COMPACTOR PRESSURE, psi	150	90	50
EXUDATION PRESSURE, psi	529	371	233
EXPANSION, Inches x 10exp-4	93	80	72
STABILITY Ph 2,000 lbs (160 psi)	109	121	127
TURNS DISPLACEMENT	3.21	3.47	3.58
R-VALUE UNCORRECTED	27	19	15
R-VALUE CORRECTED	28	20	16

DESIGN CALCULATION DATA	a	b	c
GRAVEL EQUIVALENT FACTOR	1.0	1.0	1.0
TRAFFIC INDEX	5.0	5.0	5.0
STABILOMETER THICKNESS, ft.	1.15	1.28	1.34
EXPANSION PRESSURE THICKNESS, ft.	3.10	2.67	2.40

EXPANSION PRESSURE CHART



EXUDATION PRESSURE CHART



R-VALUE BY EXPANSION:	3
R-VALUE BY EXUDATION:	18
EQUILIBRIUM R-VALUE:	3

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TESTS for SULFATE CONTENT
CHLORIDE CONTENT and pH of SOILS

Project Name: OC Museum of Modern Art Tested By : G. Berdy Date: 07/01/16

Project No. : 11342.001 Data Input By: J. Ward Date: 07/06/16

Boring No.	LB-1			
Sample No.	BB-1			
Sample Depth (ft)	5-10			
Soil Identification:	Very dark grayish brown (CH)s			
Wet Weight of Soil + Container (g)	160.58			
Dry Weight of Soil + Container (g)	159.42			
Weight of Container (g)	67.65			
Moisture Content (%)	1.26			
Weight of Soaked Soil (g)	100.45			

SULFATE CONTENT, DOT California Test 417, Part II

Beaker No.	91			
Crucible No.	6			
Furnace Temperature (°C)	860			
Time In / Time Out	9:00/9:45			
Duration of Combustion (min)	45			
Wt. of Crucible + Residue (g)	45.1252			
Wt. of Crucible (g)	45.1023			
Wt. of Residue (g) (A)	0.0229			
PPM of Sulfate (A) x 41150	942.33			
PPM of Sulfate, Dry Weight Basis	**954**			

CHLORIDE CONTENT, DOT California Test 422

ml of Extract For Titration (B)	30			
ml of AgNO3 Soln. Used in Titration (C)	1.6			
PPM of Chloride (C -0.2) * 100 * 30 / B	140			
PPM of Chloride, Dry Wt. Basis	**142**			

pH TEST, DOT California Test 643

pH Value	**8.52**			
Temperature °C	20.5			

SOIL RESISTIVITY TEST

DOT CA TEST 643

Project Name:	OC Museum of Modern Art		Tested By :	G. Berdy	Date: 07/06/16
Project No. :	11342.001		Data Input By:	J. Ward	Date: 07/06/16
Boring No.:	LB-1		Depth (ft.) :	5-10	
Sample No. :	BB-1				

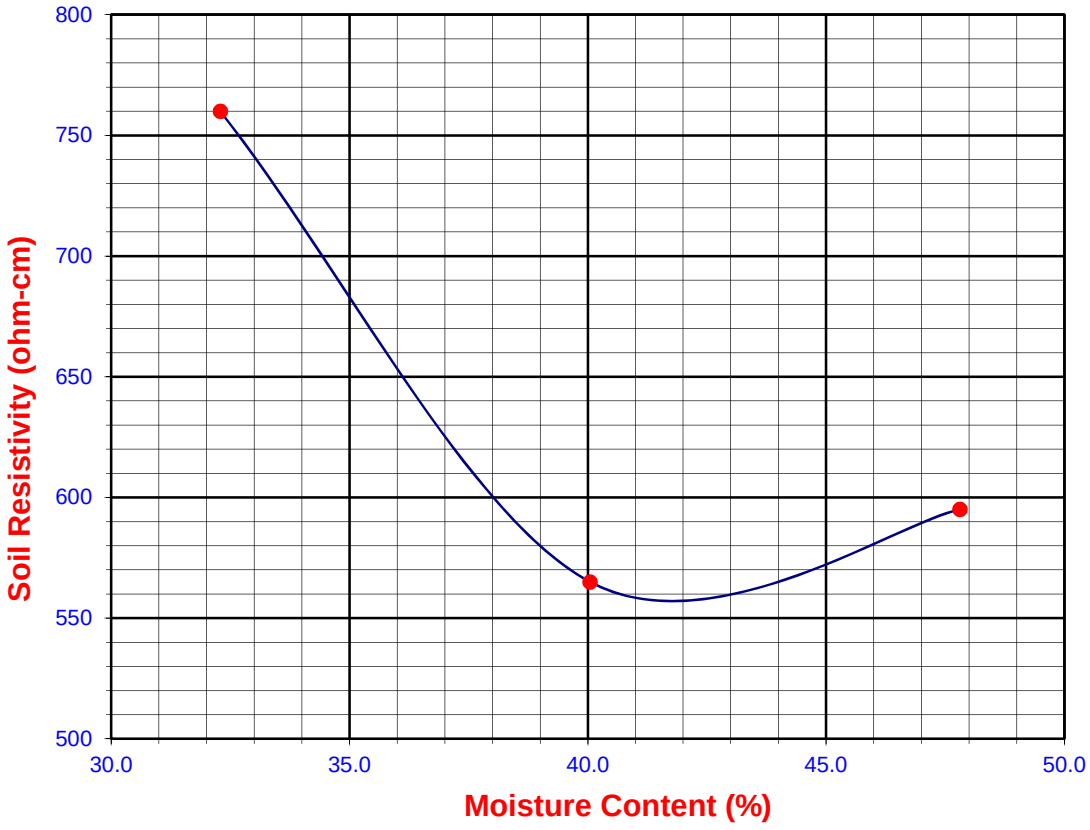
Soil Identification:* Very dark grayish brown (CH)s

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	40	32.29	760	760
2	50	40.05	565	565
3	60	47.80	595	595
4				
5				

Moisture Content (%) (MCi)	1.26
Wet Wt. of Soil + Cont. (g)	160.58
Dry Wt. of Soil + Cont. (g)	159.42
Wt. of Container (g)	67.65
Container No.	
Initial Soil Wt. (g) (Wt)	130.55
Box Constant	1.000
MC =(((1+Mci/100)x(Wa/Wt+1))-1)x100	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 643		DOT CA Test 417 Part II	DOT CA Test 422	DOT CA Test 643	
557	**41.7**	**954**	**142**	**8.52**	**20.5**



APPENDIX D
LIQUEFACTION ANALYSIS

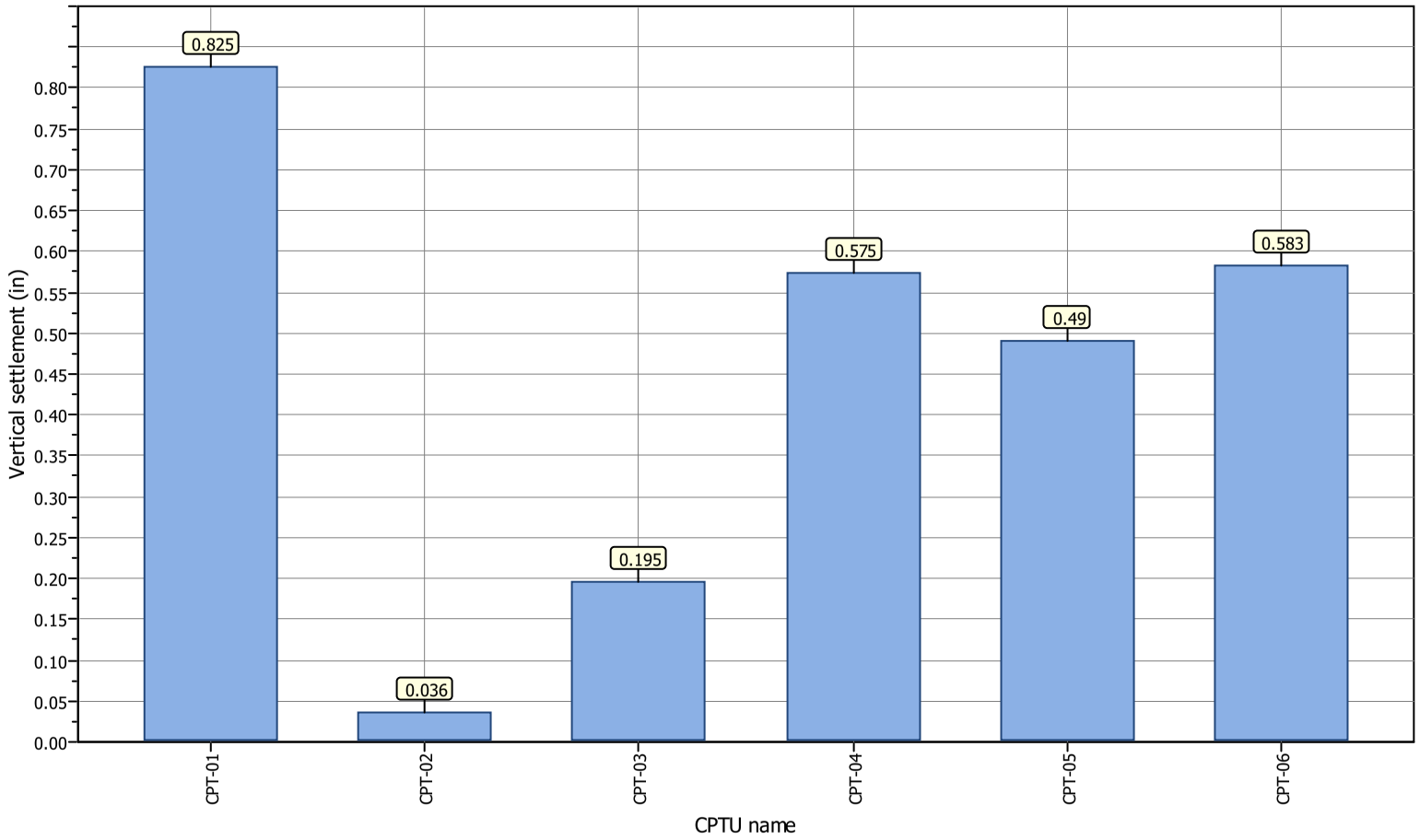
Leighton

Leighton Consulting
17781 Cowan
Irvine, CA 92614

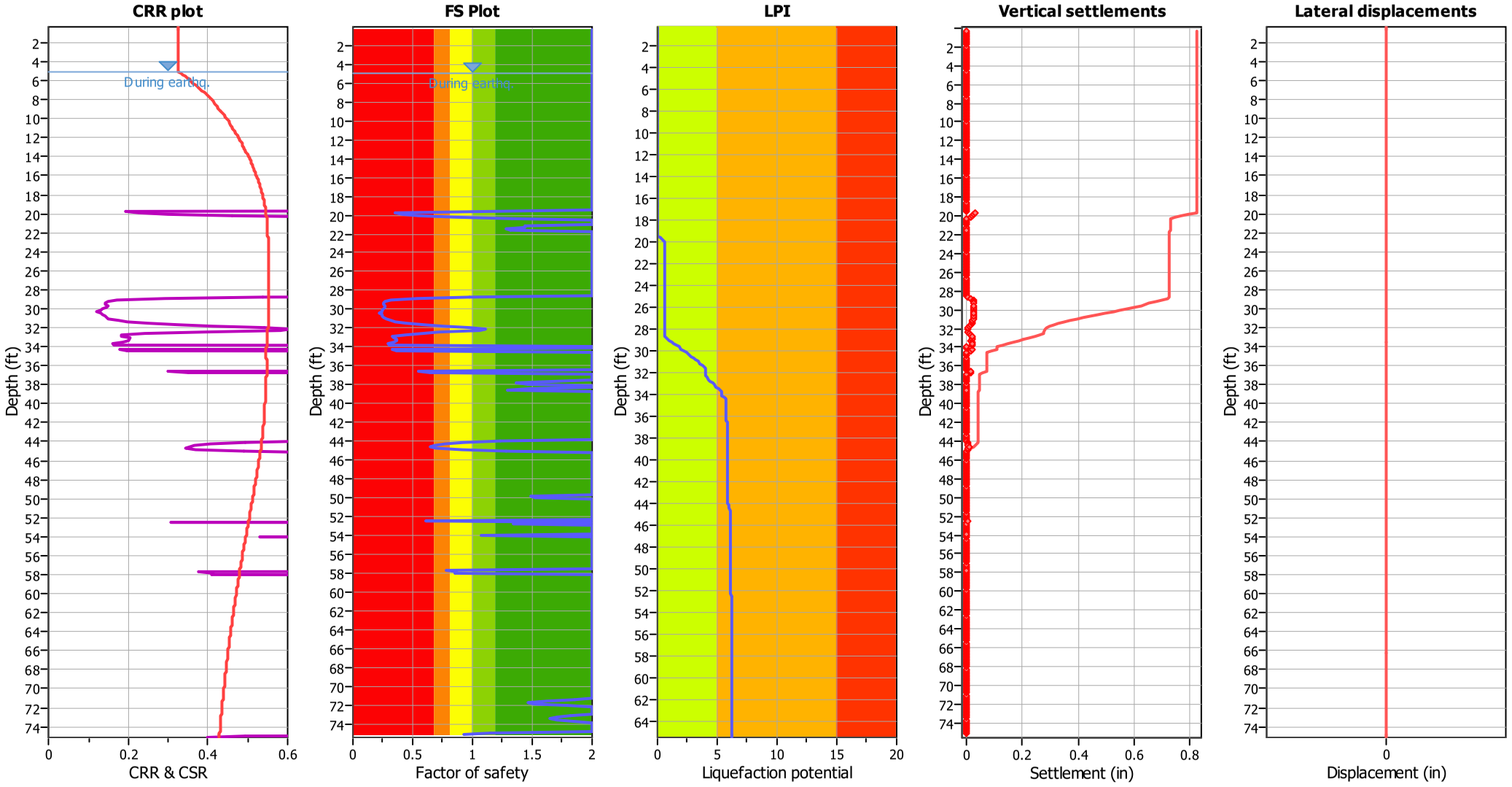
Project title : OCMA

Location : 3499 Avenue of the Arts, Costa Mesa, CA

Overall vertical settlements report



Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.60	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	8.00 ft	Fill height:	N/A	Limit depth:	N/A

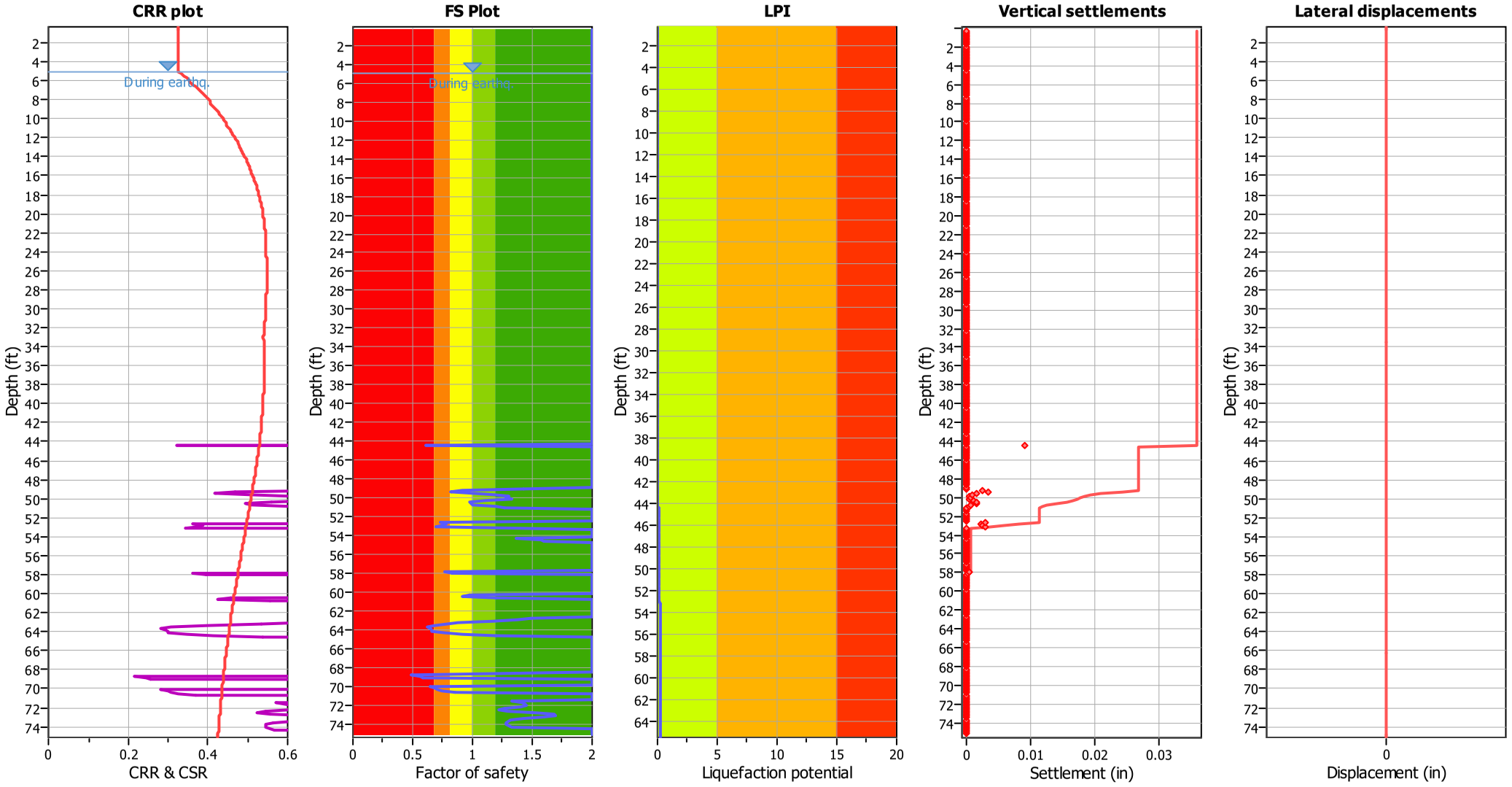
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.60	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	8.00 ft	Fill height:	N/A	Limit depth:	N/A

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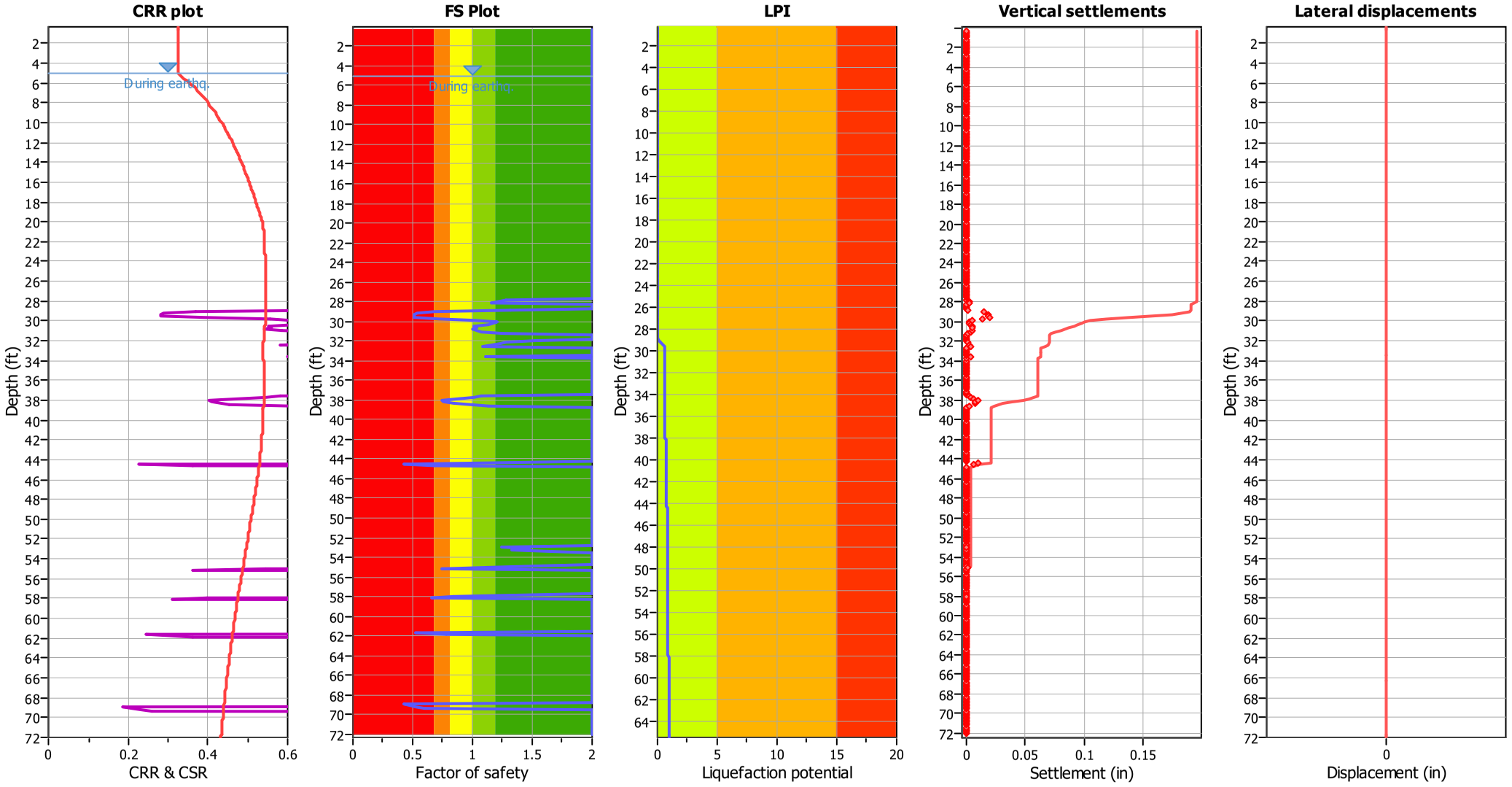
Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.60	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	8.00 ft	Fill height:	N/A	Limit depth:	N/A

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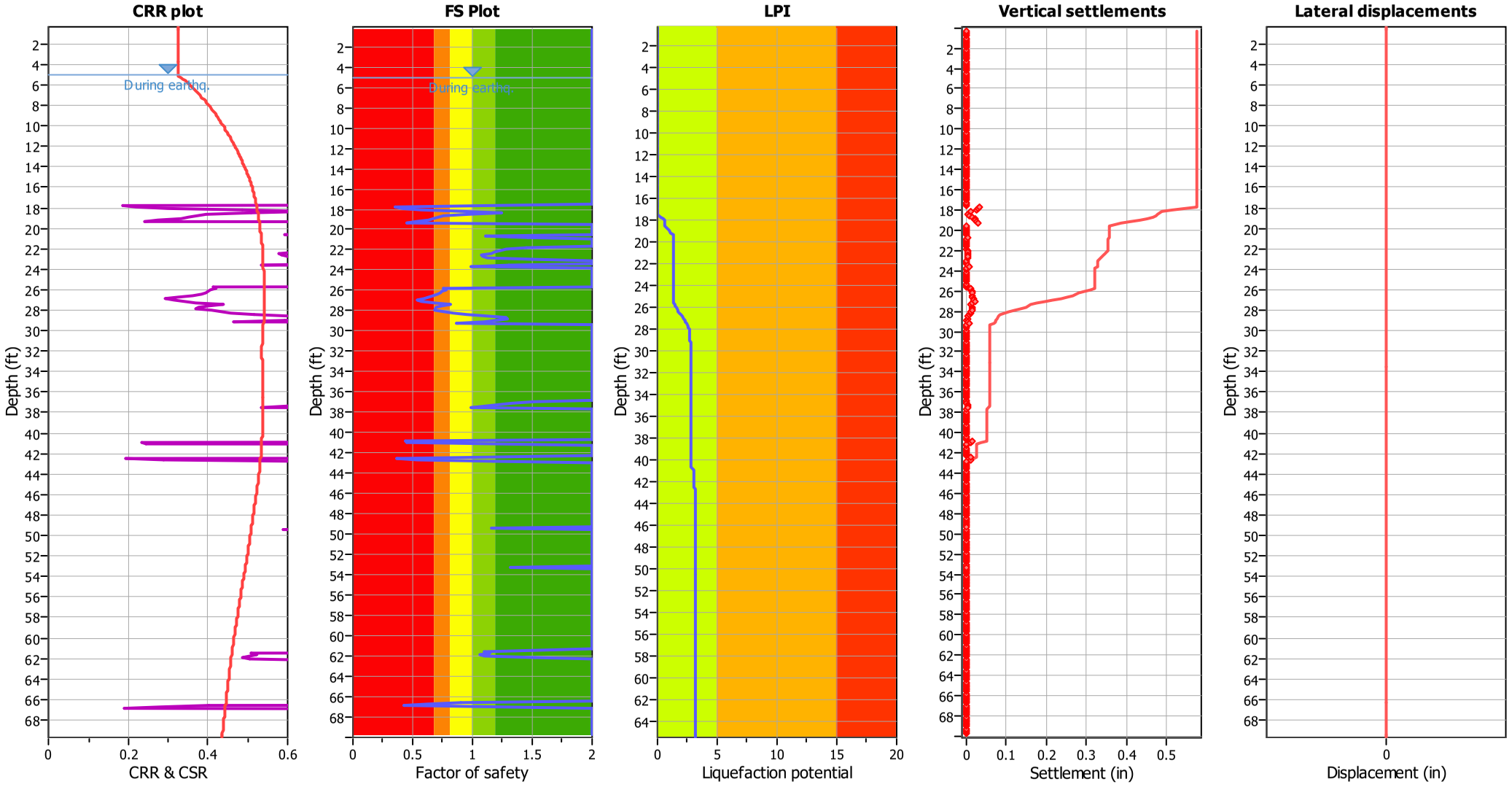
Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.60	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	8.00 ft	Fill height:	N/A	Limit depth:	N/A

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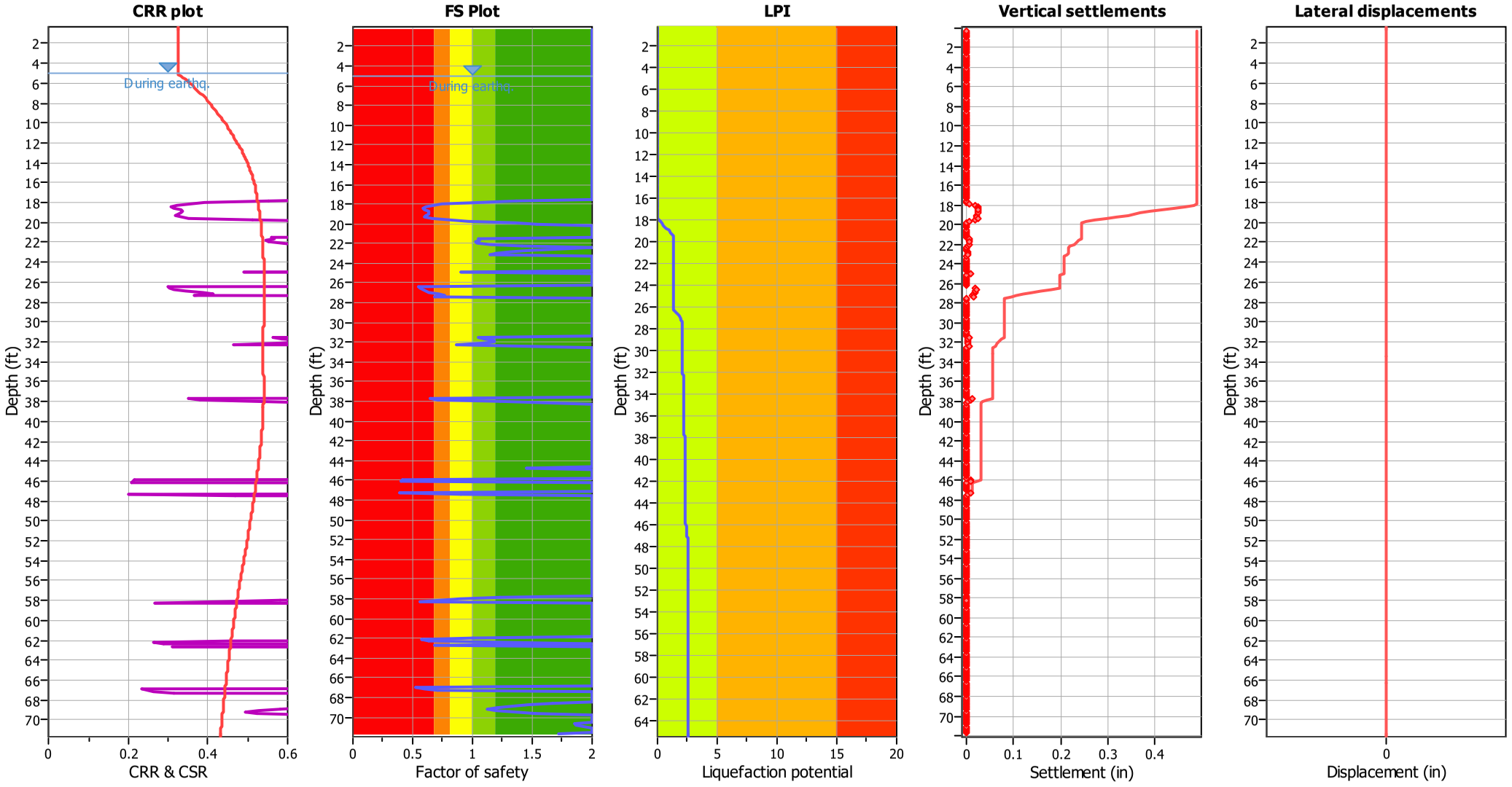
Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.60	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	8.00 ft	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

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LPI color scheme

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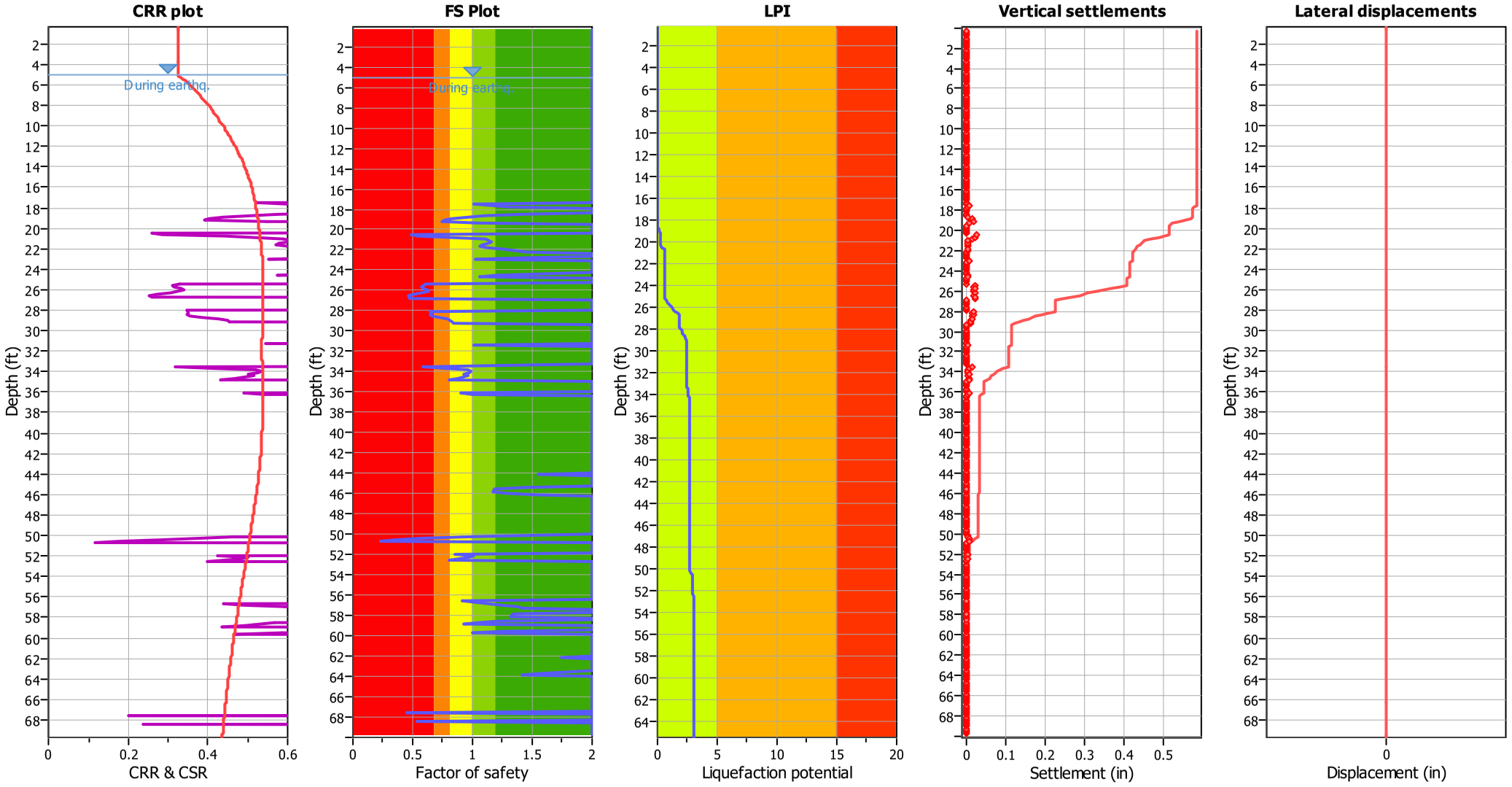
Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	NCEER (1998)	Depth to water table (erthq.):	5.00 ft	Fill weight:	N/A
Fines correction method:	NCEER (1998)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.00	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.60	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	8.00 ft	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

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LPI color scheme

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- High risk
- Low risk

APPENDIX E

PERCOLATION TEST RESULTS

Leighton

Boring Percolation Test Data Sheet

Project Number:	11342.001	**Test Hole Number:**	P-1
Project Name:	OC Museum of Art	**Date Excavated:**	6/7/2016
Earth Description:	Alluvium	**Date Tested:**	6/8/2016
Liquid Description:	Tap water	**Depth of boring (ft):**	10
Tested By:	EBP	**Diameter of boring (in):**	8
Time Interval Standard		**Diameter of casing (in):**	2
Start Time for Pre-Soak:	6/7/16 3:59 PM	**Length of slotted of casing (ft):**	5
Start Time for Standard:	6/8/16 8:22 AM	**Depth to Initial Water Depth (ft):**	21
Standard Time Interval Between Readings, mins:	30	**Porosity of Annulus Material, *n* :**	0.43
		Bentonite Plug at Bottom: No	

Percolation Data

Reading	Time	Time Interval, Δt (min.)	Initial/Final Depth to Water (ft.)	Initial/Final Water Height, H_0/H_f (in.)	Total Water Drop, Δd (in.)	Percolation Rate (min./in.)	Infiltration Rate (in./hr.)
1	8:22	30	6.06	47.3	0.4	83.33	0.01
	8:52		6.09	46.9			
2	8:52	30	6.09	46.9	0.2	125.00	0.01
	9:22		6.11	46.7			
3	9:22	30	6.11	46.7	0.0	0.00	0.00
	9:52		6.11	46.7			
4	9:52	30	6.11	46.7	0.0	0.00	0.00
	10:22		6.11	46.7			
5	10:22	30	6.11	46.7	0.1	250.00	0.00
	10:52		6.12	46.6			
6	10:52	30	6.12	46.6	0.0	0.00	0.00
	11:22		6.12	46.6			
7	11:22	30	6.12	46.6	0.0	0.00	0.00
	11:52		6.12	46.6			
8	11:52	30	6.12	46.6	0.0	0.00	0.00
	12:22		6.12	46.6			
9	12:22	30	6.12	46.6	0.0	0.00	0.00
	12:52		6.12	46.6			
10	12:52	30	6.12	46.6	0.0	0.00	0.00
	13:22		6.12	46.6			
11	13:22	30	6.12	46.6	0.1	250.00	0.00
	13:52		6.13	46.4			
12	13:52	30	6.13	46.4	0.2	125.00	0.01
	14:22		6.15	46.2			

Infiltration Rate (I) = Flow Volume/Flow Area/Δt

Infiltration Rate, I (Final Reading) = **0.01** **in./hr.**

Boring Percolation Test Data Sheet

Project Number:	11342.001	**Test Hole Number:**	P-2
Project Name:	OC Museum of Art	**Date Excavated:**	6/7/2016
Earth Description:	Alluvium	**Date Tested:**	6/8/2016
Liquid Description:	Tap water	**Depth of boring (ft):**	5
Tested By:	EBP	**Diameter of boring (in):**	8
Time Interval Standard		**Diameter of casing (in):**	2
Start Time for Pre-Soak:	6/7/16 12:16 PM	**Length of slotted of casing (ft):**	5
Start Time for Standard:	6/8/16 8:28 AM	**Depth to Initial Water Depth (ft):**	21
Standard Time Interval Between Readings, mins:	30	**Porosity of Annulus Material, *n* :**	0.43
		Bentonite Plug at Bottom: No	

Percolation Data

Reading	Time	Time Interval, Δt (min.)	Initial/Final Depth to Water (ft.)	Initial/Final Water Height, H_0/H_f (in.)	Total Water Drop, Δd (in.)	Percolation Rate (min./in.)	Infiltration Rate (in./hr.)
1	8:28	30	0.25	57.0	2.2	13.89	0.07
	8:58		0.43	54.8			
2	8:58	30	0.43	54.8	1.6	19.23	0.05
	9:28		0.56	53.3			
3	9:28	30	0.56	53.3	5.0	5.95	0.18
	9:58		0.98	48.2			
4	9:58	30	0.98	48.2	5.3	5.68	0.21
	10:28		1.42	43.0			
5	10:28	30	1.42	43.0	5.3	5.68	0.23
	10:58		1.86	37.7			
6	10:58	30	1.86	37.7	4.6	6.58	0.23
	11:28		2.24	33.1			
7	11:28	30	2.24	33.1	4.6	6.58	0.26
	11:58		2.62	28.6			
8	12:01	30	1.12	46.6	5.5	5.43	0.22
	12:31		1.58	41.0			
9	12:31	30	1.58	41.0	5.0	5.95	0.23
	13:01		2.00	36.0			
10	13:01	30	2.00	36.0	4.6	6.58	0.24
	13:31		2.38	31.4			
11	13:31	30	2.38	31.4	5.3	5.68	0.32
	14:01		2.82	26.2			
12	14:06	30	1.40	43.2	5.3	5.68	0.23
	14:36		1.84	37.9			

Infiltration Rate (I) = Flow Volume/Flow Area/Δt

Infiltration Rate, I (Final Reading) = **0.23** **in./hr.**

APPENDIX F

EARTHWORK AND GRADING GUIDE SPECIFICATIONS

Leighton

APPENDIX F

LEIGHTON CONSULTING, INC.
EARTHWORK AND GRADING GUIDE SPECIFICATIONS

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Leighton

F-1.0 GENERAL

F-1.1 Intent

These Earthwork and Grading Guide Specifications are for grading and earthwork shown on the current, approved grading plan(s) and/or indicated in the Leighton Consulting, Inc. geotechnical report(s). These Guide Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the project-specific recommendations in the geotechnical report shall supersede these Guide Specifications. Leighton Consulting, Inc. shall provide geotechnical observation and testing during earthwork and grading. Based on these observations and tests, Leighton Consulting, Inc. may provide new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

F-1.2 Role of Leighton Consulting, Inc.

Prior to commencement of earthwork and grading, Leighton Consulting, Inc. shall meet with the earthwork contractor to review the earthwork contractor's work plan, to schedule sufficient personnel to perform the appropriate level of observation, mapping and compaction testing. During earthwork and grading, Leighton Consulting, Inc. shall observe, map, and document subsurface exposures to verify geotechnical design assumptions. If observed conditions are found to be significantly different than the interpreted assumptions during the design phase, Leighton Consulting, Inc. shall inform the owner, recommend appropriate changes in design to accommodate these observed conditions, and notify the review agency where required. Subsurface areas to be geotechnically observed, mapped, elevations recorded, and/or tested include (1) natural ground after clearing to receiving fill but before fill is placed, (2) bottoms of all "remedial removal" areas, (3) all key bottoms, and (4) benches made on sloping ground to receive fill.

Leighton Consulting, Inc. shall observe moisture-conditioning and processing of the subgrade and fill materials, and perform relative compaction testing of fill to determine the attained relative compaction. Leighton Consulting, Inc. shall provide *Daily Field Reports* to the owner and the Contractor on a routine and frequent basis.

F-1.3 The Earthwork Contractor

The earthwork contractor (Contractor) shall be qualified, experienced and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Guide

Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing grading and backfilling in accordance with the current, approved plans and specifications.

The Contractor shall inform the owner and Leighton Consulting, Inc. of changes in work schedules at least one working day in advance of such changes so that appropriate observations and tests can be planned and accomplished. The Contractor shall not assume that Leighton Consulting, Inc. is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish earthwork and grading in accordance with the applicable grading codes and agency ordinances, these Guide Specifications, and recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of Leighton Consulting, Inc., unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, adverse weather, etc., are resulting in a quality of work less than required in these specifications, Leighton Consulting, Inc. shall reject the work and may recommend to the owner that earthwork and grading be stopped until unsatisfactory condition(s) are rectified.

F-2.0 PREPARATION OF AREAS TO BE FILLED

F-2.1 Clearing and Grubbing

Vegetation, such as brush, grass, roots and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies and Leighton Consulting, Inc.. Care should be taken not to encroach upon or otherwise damage native and/or historic trees designated by the Owner or appropriate agencies to remain. Pavements, flatwork or other construction should not extend under the “drip line” of designated trees to remain.

Leighton Consulting, Inc. shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 3 percent of organic materials (by dry weight: ASTM D 2974). Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area. As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that

are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed.

F-2.2 Processing

Existing ground that has been declared satisfactory for support of fill, by Leighton Consulting, Inc., shall be scarified to a minimum depth of 6 inches (15 cm). Existing ground that is not satisfactory shall be over-excavated as specified in the following Section D-2.3. Scarification shall continue until soils are broken down and free of large clay lumps or clods and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

F-2.3 Overexcavation

In addition to removals and over-excavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be over-excavated to competent ground as evaluated by Leighton Consulting, Inc. during grading. All undocumented fill soils under proposed structure footprints should be excavated

F-2.4 Benching

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), (>20 percent grade) the ground shall be stepped or benched. The lowest bench or key shall be a minimum of 15 feet (4.5 m) wide and at least 2 feet (0.6 m) deep, into competent material as evaluated by Leighton Consulting, Inc.. Other benches shall be excavated a minimum height of 4 feet (1.2 m) into competent material or as otherwise recommended by Leighton Consulting, Inc.. Fill placed on ground sloping flatter than 5:1 (horizontal to vertical units), (<20 percent grade) shall also be benched or otherwise over-excavated to provide a flat subgrade for the fill.

F-2.5 Evaluation/Acceptance of Fill Areas

All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by Leighton Consulting, Inc. as suitable to receive fill. The Contractor shall obtain a written acceptance (*Daily Field Report*) from Leighton Consulting, Inc. prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys and benches.

F-3.0 FILL MATERIAL

F-3.1 Fill Quality

Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by Leighton Consulting, Inc. prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to Leighton Consulting, Inc. or mixed with other soils to achieve satisfactory fill material.

F-3.2 Oversize

Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 6 inches (15 cm), shall not be buried or placed in fill unless location, materials and placement methods are specifically accepted by Leighton Consulting, Inc.. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 feet (3 m) measured vertically from finish grade, or within 2 feet (0.61 m) of future utilities or underground construction.

F-3.3 Import

If importing of fill material is required for grading, proposed import material shall meet the requirements of Section D-3.1, and be free of hazardous materials ("contaminants") and rock larger than 3-inches (8 cm) in largest dimension. All import soils shall have an Expansion Index (EI) of 20 or less and a sulfate content no greater than (≤) 500 parts-per-million (ppm). A representative sample of a potential import source shall be given to Leighton Consulting, Inc. at least four full working days before importing begins, so that suitability of this import material can be determined and appropriate tests performed.

F-4.0 FILL PLACEMENT AND COMPACTION

F-4.1 Fill Layers

Approved fill material shall be placed in areas prepared to receive fill, as described in Section D-2.0, above, in near-horizontal layers not exceeding 8 inches (20 cm) in loose thickness. Leighton Consulting, Inc. may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers, and only if the building officials with the appropriate jurisdiction approve. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

F-4.2 Fill Moisture Conditioning

Fill soils shall be watered, dried back, blended and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM) Test Method D 1557.

F-4.3 Compaction of Fill

After each layer has been moisture-conditioned, mixed, and evenly spread, each layer shall be uniformly compacted to not-less-than (≥) 90 percent of the maximum dry density as determined by ASTM Test Method D 1557. In some cases, structural fill may be specified (see project-specific geotechnical report) to be uniformly compacted to at-least (≥) 95 percent of the ASTM D 1557 modified Proctor laboratory maximum dry density. For fills thicker than (>) 15 feet (4.5 m), the portion of fill deeper than 15 feet below proposed finish grade shall be compacted to 95 percent of the ASTM D 1557 laboratory maximum density. Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

F-4.4 Compaction of Fill Slopes

In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by back rolling of slopes with sheepsfoot rollers at increments of 3 to 4 feet (1 to 1.2 m) in fill elevation, or by other methods producing satisfactory results acceptable to Leighton Consulting, Inc.. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of the ASTM D 1557 laboratory maximum density.

F-4.5 Compaction Testing

Field-tests for moisture content and relative compaction of the fill soils shall be performed by Leighton Consulting, Inc.. Location and frequency of tests shall be at our field representative(s) discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

F-4.6 Compaction Test Locations

Leighton Consulting, Inc. shall document the approximate elevation and horizontal coordinates of each density test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that Leighton

Consulting, Inc. can determine the test locations with sufficient accuracy. Adequate grade stakes shall be provided.

F-5.0 EXCAVATION

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by Leighton Consulting, Inc. during grading. Remedial removal depths shown on geotechnical plans are estimates only. The actual extent of removal shall be determined by Leighton Consulting, Inc. based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, then observed and reviewed by Leighton Consulting, Inc. prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by Leighton Consulting, Inc..

F-6.0 TRENCH BACKFILLS

F-6.1 Safety

The Contractor shall follow all OSHA and Cal/OSHA requirements for safety of trench excavations. Work should be performed in accordance with Article 6 of the *California Construction Safety Orders*, 2009 Edition or more current (see also: http://www.dir.ca.gov/title8/sb4a6.html).

F-6.2 Bedding and Backfill

All utility trench bedding and backfill shall be performed in accordance with applicable provisions of the 2015 Edition of the *Standard Specifications for Public Works Construction* (Green Book). Bedding material shall have a Sand Equivalent greater than 30 (SE>30). Bedding shall be placed to 1-foot (0.3 m) over the top of the conduit, and densified by jetting in areas of granular soils, if allowed by the permitting agency. Otherwise, the pipe-bedding zone should be backfilled with Controlled Low Strength Material (CLSM) consisting of at least one sack of Portland cement per cubic-yard of sand, and conforming to Section 201-6 of the 2015 Edition of the *Standard Specifications for Public Works Construction* (Green Book). Backfill over the bedding zone shall be placed and densified mechanically to a minimum of 90 percent of relative compaction (ASTM D 1557) from 1 foot (0.3 m) above the top of the conduit to the surface. Backfill above the pipe zone shall **not** be jetted. Jetting of the bedding around the conduits shall be observed by Leighton Consulting, Inc. and backfill above the pipe zone (bedding) shall be observed and tested by Leighton Consulting, Inc..

F-6.3 Lift Thickness

Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to Leighton Consulting, Inc. that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method, and only if the building officials with the appropriate jurisdiction approve.

APPENDIX D

WATER QUALITY MANAGEMENT PLAN

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WQ XX-XXXX

County of Orange/Santa Ana Region Priority Project Water Quality Management Plan (WQMP)

Project Name:

Orange County Museum of Art

3333 AVENUE OF THE ARTS, COSTA MESA, CA 92626

Grading Permit Number: TBD
Building Permit Number: TBD
Parcel 1 of Parcel Map 99-112,
Parcel Map Book 327

Prepared for:
Orange County Museum of Art
850 San Clemente Drive
Newport Beach, CA 92660
(949) 759-1122

Prepared by:
Reza Rezaian, PE
Reza.rezaian@kpff.com
KPFF Consulting Engineers
700 South Flower Street, Suite 2100
Los Angeles, CA 90017
(213) 418-0201

Prepared Date: 07-13-18

Project Owner's Certification			
Planning Application No. (If applicable)		Grading Permit No.	TBD
Tract/Parcel Map and Lot(s) No.	Parcel 1 of Parcel Map 99-112, Parcel Map Book - 327	Building Permit No.	TBD
Address of Project Site and APN (If no address, specify Tract/Parcel Map and Lot Numbers)			3333 Avenue of the Arts, Costa Mesa, CA 92626

This Water Quality Management Plan (WQMP) has been prepared for The City of Costa Mesa by KPFF Consulting Engineers. The WQMP is intended to comply with the requirements of the County of Orange NPDES Stormwater Program requiring the preparation of the plan.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan, including the ongoing operation and maintenance of all best management practices (BMPs), and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the current Orange County Drainage Area Management Plan (DAMP) and the intent of the non-point source NPDES Permit for Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the incorporated Cities of Orange County within the Santa Ana Region. Once the undersigned transfers its interest in the property, its successors-in-interest shall bear the aforementioned responsibility to implement and amend the WQMP. An appropriate number of approved and signed copies of this document shall be available on the subject site in perpetuity.

Owner: Orange County Museum of Art			
Title			
Company	Orange County Museum of Art		
Address	850 San Clemente Drive, Newport Beach, CA 92660		
Email			
Telephone #	(949) 759-1122		
I understand my responsibility to implement the provisions of this WQMP including the ongoing operation and maintenance of the best management practices (BMPs) described herein.			
Owner Signature	To be signed with final approval	Date	

Preparer (Engineer):			
Title	Reza Rezaian	PE Registration #	C62048
Company	KPFF Consulting Engineers		
Address	700 South Flower Street, Suite 2100, Los Angeles, CA 90017		
Email	Reza.Rezaian@kpff.com		
Telephone #	213-418-0201		
I hereby certify that this Water Quality Management Plan is in compliance with, and meets the requirements set forth in, Order No. R8-2009-0030/NPDES No. CAS618030, of the Santa Ana Regional Water Quality Control Board**.**			
Preparer Signature	To be stamped and signed with final approval	Date	
Place Stamp Here			

Contents

Page No.

Attachments

Section I Permit(s) and Water Quality Conditions of Approval or Issuance

Provide discretionary or grading/building permit information and water quality conditions of approval, or permit issuance, applied to the project. If conditions are unknown, please request applicable conditions from staff. *Refer to Section 2.1 in the Technical Guidance Document (TGD) available on the OC Planning website (ocplanning.net).*

Project Infomation			
Permit/Application No. (If applicable)		Grading or Building Permit No. (If applicable)	Grading: TBD Building: TBD
Address of Project Site (or Tract Map and Lot Number if no address) and APN	3333 Avenue of the Arts, Costa Mesa, CA 92626		
Water Quality Conditions of Approval or Issuance			
Water Quality Conditions of Approval or Issuance applied to this project. (Please list verbatim.)	• National Pollutant Discharge Elimination System Permit (NPDES) • Federal Clean Water Act (CWA) • Santa Ana Regional Water Quality Management Plan (WQMP) • Fourth Term Permit (Order No. R8-2009-0030)(North County Permit) by Santa Ana Regional Board Water Quality Control Board (SARWQCB)		
Conceptual WQMP			
Was a Conceptual Water Quality Management Plan previously approved for this project?	A Conceptual Water Quality Management Plan was not previously approved for this project.		
Watershed-Based Plan Conditions			
Provide applicable conditions from watershed - based plans including WIHMPs and TMDLS.	WIHMPs and TMDLS are not necessary for this project since watershed-based plan conditions are not necessary to be included for this site.		

Section II

II.1 Project Description

Provide a detailed project description including:

- Project areas;
- Land uses;
- Land cover;
- Design elements;
- A general description not broken down by drainage management areas (DMAs).

Include attributes relevant to determining applicable source controls. *Refer to Section 2.2 in the Technical Guidance Document (TGD) for information that must be included in the project description.*

Description of Proposed Project				
Development Category (From Model WQMP, Table 7.11-2; or -3):	New Development Project Category 1.			
Project Area (ft^2): 73,747	Number of Dwelling Units: 0		SIC Code: 8231	
Project Area	Pervious		Impervious	
	Area (acres or sq ft)	Percentage	Area (acres or sq ft)	Percentage
Pre-Project Conditions	62,316 sq ft	84.5%	11,431 sq ft	15.5%
Post-Project Conditions	8,037 sq ft	11%	65,711 sq ft	89%
Drainage Patterns/Connections	The existing site is flat. Four localized low points occur at the large landscape area to facilitate drainage into four large catch basins. The existing pedestrian plaza at the north utilizes long trench drains running north and south to keep slopes under 2% in any direction. The pathway west of our site slopes to the east towards landscaped area on our site. The existing fire access lane at the south has a high point at about the midpoint and directs storm water toward catch basins at the west and toward Avenue of the Arts on the east.The existing drainage system has no storm water treatment device and is assumed that the construction of the existing development was not subjected to WQMP. The proposed site will be required to mitigate approximately 3,600 cubic feet,			

or 27,000 gallons of storm water. The City of Costa Mesa defaults to the Water Quality Management Plan (WQMP) as specified by north Orange County.

Based on the results of the geotechnical investigation, infiltration is not technically feasible due to the soil type within the project site. Therefore, stormwater runoff is directed to storm drainage system to minimize, if not prevent, infiltration.

Under the proposed development, grading design will direct storm water runoff from developed areas to storm water management/treatment systems based on the City of Costa Mesa guidelines. A hydrodynamic separator (Contech CDS unit) is proposed for storm water treatment to comply with the City of Costa Mesa WQMP requirements.

The CDS unit design has been discussed and conceptually approved by City of Costa Mesa representatives in multiple discussions.

The BMP Exhibit, Attachment F, shows the project's Proposed Drainage Sub-Area. The exhibit also shows the proposed drainage system, including the proposed CDS mechanical treatment system.

Narrative Project Description:	The project involves the construction of the new Orange County Museum of Art building, which includes the construction of the following: • Proposed 53,000 SF museum building • Stair Element • Site Improvements • School bus drop off • Non-standard 60'-wide driveway The redevelopment covers an approximate area of 73,747 SF (1.69 acre). Under the proposed development, the site is 89% impervious and 11% pervious, as compared to existing condition of 15.5% impervious and 84.5% pervious. The storm water runoff from the existing site routes to catch basins and trench drains that convey water in various diameter storm drain pipes to a private, existing 18" reinforced concrete pipe at the northwest. Our proposed project will likely utilize the existing 18" RCP pipe as our final outlet for drainage. Runoff from the site and the roof will be conveyed to the proposed storm water treatment system with our outlet routing around the building to the northwest. KPFF believes the existing 18" storm drain will have sufficient capacity for our project, but this will be verified with City of Costa Mesa. An additional overflow outlet has been designed to convey runoff to Avenue of the Arts. Storm water runoff from developed areas will be captured and conveyed to the proposed Contech CDS unit to meet City of Costa Mesa guidelines. The proposed site will be required to mitigate approximately 3,600 cubic feet, or 27,000 gallons of storm water. The City of Costa Mesa defaults to the Water Quality Management Plan (WQMP) as specified by north Orange County as previously discussed. The site is bounded on the east by Avenue of the Arts which houses a large utility corridor. This utility corridor includes a 12" water main and 14" reclaimed water pipe owned by Mesa Water District, an 18" sanitary sewer pipe owned by Costa Mesa Sanitary District, a Southern California Gas main, and a Southern California Edison electrical service. The existing sanitary sewer and storm drain pipes to the west of our site are private utilities, and flow from south to north to serve the surrounding buildings. Existing underground water pipes and infrastructure including a fire water backflow assembly, domestic water backflow assembly and a post indicator valve, are located at the south end of our site and route west to serve the Segerstrom Concert Hall. Lastly, the site is bounded at the north by Segerstrom Center for the Arts plaza, which houses existing utilities and site infrastructure. The proposed site will likely utilize the landscape area and the fire access road at the south as a utility corridor for the building. Water, fire water, gas,

.	electrical, and sanitary sewer utilities will be connected to the mains in Avenue of the Arts. The water and fire water pipes will need separate meters and backflow preventers, which will need to be located close to the property line. The Fire Department Connection is located at the southeast corner of the site along Avenue of the Arts. There will be food preparation and cooking at the Café on the north end of the building. People are expected to eat while relaxing in the outdoor seating. There is a loading dock included in the project along Avenue of the Arts. There is a tree grove in the Northeast section of the site, which encompasses the majority of landscape area. There will be no addition of parking areas on the site. There is an existing parking structure serving Segerstrom Center for the Arts located nearby that will be utilized for the new development. There will be no infrastructure transfer to public agencies (i.e. City, County, Caltrans, etc.) There are no outdoor materials-storage areas permissible on site. There are no vehicle/equipment maintenance, repair bays or stations permissible on the site. This is a priority project. The project is not claiming any Water Quality Credits. The project falls in the Newport Bay Watershed, which is governed under the Newport Bay - Newport Coast WIHMP.

II.2 Potential Stormwater Pollutants

Determine and list expected stormwater pollutants based on land uses and site activities. *Refer to Section 2.2.2 and Table 2.1 in the Technical Guidance Document (TGD) for guidance.*

Pollutants of Concern			
Pollutant	Check One for each: E=Expected to be of concern N=Not Expected to be of concern		Additional Information and Comments
Suspended-Solid/ Sediment	E ☒	N ☐	From landscaped areas
Nutrients	E ☒	N ☐	From landscaped areas and from food
Heavy Metals	E ☒	N ☐	From corrosion inhibitors
Pathogens (Bacteria/Virus)	E ☒	N ☐	From food & animal wastes (pets)
Pesticides	E ☒	N ☐	From fertilizers used in landscaped areas
Oil and Grease	E ☒	N ☐	From food preparation and cooking
Toxic Organic Compounds	E ☒	N ☐	From landscape maintenance
Trash and Debris	E ☒	N ☐	From food, drinks and plants or trees

II.3 Hydrologic Conditions of Concern

Determine if streams located downstream from the project area are potentially susceptible to hydromodification impacts. *Refer to Section 2.2.3.1 in the Technical Guidance Document (TGD) for North Orange County or Section 2.2.3.2 for South Orange County.*

☒ No – Show map

☐ Yes – Describe applicable hydrologic conditions of concern below. *Refer to Section 2.2.3 in the Technical Guidance Document (TGD).*

The project does not foresee any hydrologic conditions of concern (HCOC) upon its completion and operation. Although there is an increase in the percent imperviousness of the site from 15.5% to 89%, per the geotechnical report, existing site soils are clay and do not allow infiltration of storm water. See following page for excerpt from geotech report. Therefore, our proposed project will not significantly change the discharge flow rate, the discharge volume, nor the time of concentration. There is no impact expected to any hydrologic conditions both onsite/upstream and offsite/downstream.

testing. Once percolation testing was complete, the well casings were removed and the borings were backfilled. Excess soil cuttings were spread onsite.

2.2 Laboratory Testing

Laboratory tests were performed on representative soil samples to verify the field classification of the samples and to determine the geotechnical properties of the subsurface materials. The following tests were performed:

- In-situ moisture content and density (ASTM D2216 and ASTM D2937);
- Consolidation (ASTM D 2435);
- Direct shear (ASTM D3080);
- Expansion Index (ASTM D4829);
- Maximum dry density and optimum moisture content (ASTM D1557);
- R-Value (DOT CA 301); and
- Corrosivity Suite - Sulfate, Chloride, pH and Resistivity (California Test Methods 417, 422 and 532/643).

All laboratory tests were performed in general conformance with American Society of the International Association for Testing and Materials (ASTM) or Caltrans procedures. The results of the in-situ moisture and density tests are presented on the geotechnical boring logs in Appendix A. The results of other laboratory tests are presented in Appendix C, *Laboratory Test Results*.

2.3 Percolation Testing

Percolation testing was performed within borings P-1 and P-2 to evaluate the infiltration characteristics of subsurface soils. Borings P-1 and P-2 were drilled to approximate depths of 5 and 10 feet, respectively. The percolation tests were conducted in general accordance with the percolation test procedure as presented in the Orange County Department of Public Works *Best Management Practices Technical Guidance Document* (OCDPW, 2011). Results of the percolation testing are presented in Appendix E – *Percolation Test Data*. The test locations are shown on Figure 2.

A boring percolation test is useful for field measurements of the infiltration rate of soils, and is suited for testing when the design depth of the infiltration device is

deeper than current existing grades, especially in areas where it is difficult to dig test pits, or where the depths of these test pits would be considerably deep. The test consists of excavating a boring to the depth of the invert of the proposed infiltration device.

The infiltration rate for the test was calculated by dividing the rate of discharge by the infiltration surface area, or flow area. The volume of discharge was calculated by adding the total volume of water that dropped within the PVC pipe and within the annulus, and incorporating a porosity reduction factor to account for the porosity of the annulus material. The flow area was based on the average water height within the slotted pipe section of the test well. The percolation test in boring P-1 was performed at a depth range of approximately 5 to 10 feet bgs, and the percolation test in boring P-2 was performed at approximately 0 to 5 feet bgs.

Results of the infiltration testing indicate an infiltration rate of approximately 0.01 inch/hour in P-1 and 0.23 inch/hour in P-2. Due to the poor results of infiltration testing caused by the presence of clayey soils (and the shallow depth to groundwater), direct infiltration to the subsurface is not considered feasible at this site.

II.4 Post Development Drainage Characteristics

Describe post development drainage characteristics. *Refer to Section 2.2.4 in the Technical Guidance Document (TGD).*

The project's storm drainage system, consisting of a mechanical filtration system, trench drains, catch basins and series of drain pipes, sizes ranging from 4" to 18" in diameter, as described under Section II.1, is connected to an existing drainage systems at the Northwest corner of the the project site. This existing privately owned 18" drainage main discharges into a public drainage system. This public drainage system discharges into the following water bodies before the storm water finally reaches the Pacific Ocean:

Upper New Port Bay
Lower New Port Bay

The storm drainage system consists of a private, existing 18" reinforced concrete pipe at the northwest. Our proposed project will likely utilize the existing 18" RCP pipe as our final outlet for drainage. Runoff from the site and the roof will be conveyed to the proposed storm water treatment system with our outlet routing around the building to the northwest. KPFF believes the existing 18" storm drain will have sufficient capacity for our project, but this will be verified with City of Costa Mesa. An additional overflow outlet has been designed to convey runoff to Avenue of the Arts.

II.5 Property Ownership/Management

Describe property ownership/management. *Refer to Section 2.2.5 in the Technical Guidance Document (TGD).*

The project is owned by Orange County Museum of Art, which is responsible for the long term maintenance of the stormwater facilities. All stormwater facilities, which are privately owned, includes the following:

1) Storm drain manholes
2) Existing and proposed storm drainage pipes with diameter ranging from 4"to 18"
3) Existing and proposed trench drains
4) Proposed mechanical treatment hydrodynamic separator

Section III Site Description

III.1 Physical Setting

Fill out table with relevant information. *Refer to Section 2.3.1 in the Technical Guidance Document (TGD).*

Name of Planned Community/Planning Area (if applicable)	N/A
Location/Address	3333 Avenue of the Arts
	Costa Mesa, CA 92626
General Plan Land Use Designation	Commercial
Zoning	Commercial
Acreage of Project Site	1.69
Predominant Soil Type	Type D

III.2 Site Characteristics

Fill out table with relevant information and include information regarding BMP sizing, suitability, and feasibility, as applicable. *Refer to Section 2.3.2 in the Technical Guidance Document (TGD).*

Site Characteristics	
Precipitation Zone	Zone 6 (Annual average precipitation is 11.65 inches.)
Topography	The project site is located approximately 30 feet above mean sea level and is relatively flat.
Drainage Patterns/Connections	The existing drainage pattern allows storm water to flow to existing trench drains and catch basins and into the existing drainage system without treatment, while the proposed pattern collects and conveys stormwater to a CDS unit for treatment before discharging into the public system.

Soil Type, Geology, and Infiltration Properties	The project site has a soil classification D. It is located within the southeastern margin of the Los Angeles Basin, a large structural depression within the Peninsular Ranges of geomorphic province of Southern California and within the Tustin Plain, which comprised of approximately 1,400 feet unconsolidated to semi-consolidated Quaternary-age alluvial sediments. There are no mapped or currently known active faults at this site. The site is located within the liquefaction Seismic Hazard Zone. No landslides are known to exist within or adjacent to the site. See Attachment C for the area soil map.
Hydrogeologic (Groundwater) Conditions	Groundwater is within 9 feet to 14 feet below existing grade. Based on field explorations, groundwater may impact the proposed development and temporary construction dewatering will be required for excavations deeper than about 8 feet bgs. Due to shallow groundwater at this site, direct infiltration to the subsurface is not recommended. See Attachment C for the area groundwater map.
Geotechnical Conditions (relevant to infiltration)	The shallow site soils are generally highly expansive. Natural subsurface materials encountered generally consisted of 15 feet to 21 feet of clayey soils underlain with interbedded silty sands, sands, clayey silts, and clays. In addition, based on the Orange County Infiltration Study, the site has overlapping infiltration constraint. See Attachment C for the Orange County Infiltration Study.
Off-Site Drainage	There will be minor sources of runon from existing neighboring site improvements. The volumes/ flow will be negligible.
Utility and Infrastructure Information	Proposed project and surrounding existing infrastructure consist of drainage pipes with diameters ranging from 4” to 18.”

III.3 Watershed Description

Fill out table with relevant information and include information regarding BMP sizing, suitability, and feasibility, as applicable. *Refer to Section 2.3.3 in the Technical Guidance Document (TGD).*

Receiving Waters	Upper and Lower New Port Bay, Pacific Ocean
303(d) Listed Impairments	DDT, Chlordane, PCBs(Polychlorinated biphenyls),
Applicable TMDLs	Upper: DDT 0.44g/d; Chlordane 0.25g/d; PCBs 0.25g/d Lower: DDT 0.16g/d; Chlordane 0.09g/d; PCBs 0.66g/d
Pollutants of Concern for the Project	Suspended solids/ sediments, nutrients, heavy metals, pathogens bacteria/viruses, pesticides, toxic organic compounds, trash and debris
Environmentally Sensitive and Special Biological Significant Areas	The project site is not located within an environmentally sensitive and special biological significant area.

Section IV Best Management Practices (BMPs)

IV. 1 Project Performance Criteria

Describe project performance criteria. Several steps must be followed in order to determine what performance criteria will apply to a project. These steps include:

- If the project has an approved WIHMP or equivalent, then any watershed specific criteria must be used and the project can evaluate participation in the approved regional or sub-regional opportunities. (Please ask your assigned planner or plan checker regarding whether your project is part of an approved WIHMP or equivalent.)
- Determine applicable hydromodification control performance criteria. *Refer to Section 7.II-2.4.2.2 of the Model WQMP.*
- Determine applicable LID performance criteria. *Refer to Section 7.II-2.4.3 of the Model WQMP.*
- Determine applicable treatment control BMP performance criteria. *Refer to Section 7.II-*3.2.2 *of the Model WQMP.*
- Calculate the LID design storm capture volume for the project. *Refer to Section 7.II-2.4.3 of the Model WQMP.*

(NOC Permit Area only) Is there an approved WIHMP or equivalent for the project area that includes more stringent LID feasibility criteria or if there are opportunities identified for implementing LID on regional or sub-regional basis?	YES ☐	NO ☒
If yes, describe WIHMP feasibility criteria or regional/sub-regional LID opportunities.	N/A	

Project Performance Criteria	
If HCOC exists, list applicable hydromodification control performance criteria (Section 7.II-2.4.2.2 in MWQMP)	HCOC does not exist in the project as the stormwater from the project site is discharged to a public storm system, which is engineered, hardened and regularly maintained to ensure design flow. No sensitive stream habitat will be affected.
List applicable LID performance criteria (Section 7.II-2.4.3 from MWQMP)	Priority projects must infiltrate, harvest and use, evapotranspire or biotreat/biofilter, the 85th percentile, 24-hour storm event (Design Capture Volume).
List applicable treatment control BMP performance criteria (Section 7.II-3.2.2 from MWQMP)	If it is not feasible to meet LID performance criteria through retention and or biotreatment provided on-site or at regional/sub-regional scale, then treatment control BMP shall be provided on-site or off-site prior to discharge to waters in the US. Sizing of treatment control BMP(s) shall be based on either the unmet volume after claiming water quality credits, if appropriate (See Section 7.II-3.1 Water Quality Credits), and as calculated under TGD Appendix VI. If treatment control BMP(s) can treat all the remaining unmet volume and have a medium to high effectiveness for reducing the primary Pollutants of Concern, POC(s), the project is said to be in compliance; a waiver application and participation in an alternative program is not required.
Calculate LID design storm capture volume for Project.	Total Drainage Area = 73,747 SF with 65,711 SF impervious % IMP = 89.1% Run-off Coeff., C, = (0.75 x IMP)+0.15= 0.818 Rainfall Depth, d, = 0.7" (from WQMP Map) Design Capture Volume= C x d x A = 0.818 x (0.7/12) x 73,747 SF = 3,519 CF

IV.2. Site Design and Drainage

Describe site design and drainage including

- A narrative of site design practices utilized or rationale for not using practices;
- A narrative of how site is designed to allow BMPs to be incorporated to the MEP
- A table of DMA characteristics and list of LID BMPs proposed in each DMA.
- Reference to the WQMP "BMP Exhibit."
- Calculation of Design Capture Volume (DCV) for each drainage area.
- A listing of GIS coordinates for LID and Treatment Control BMPs.

Refer to Section 2.4.2 in the Technical Guidance Document (TGD).

Based on the results of the soils investigation conducted for the site, infiltration is not feasible due to the following:

- High water table, between 10 ft to 14 ft below existing grade;
- Shallow site soils generally highly expansive;
- Natural subsurface materials encountered generally consisted of 15 feet to 21 feet of clayey soils underlain with inter-layered silty sands, poorly graded sands, sandy and clayey silts, and sandy and silty clays up to a maximum explored depth of 71 feet; and,
- Site has overlapping infiltration constraint, based on the Orange County Infiltration Study.

Since infiltration is not feasible for the site, the recommended LID BMP consists of one CDS mechanical treatment hydrodynamic separator designed to treat the stormwater and gradually discharge the treated stormwater to the existing drainage system within the project site.

The site is taken as one drainage area covering 73,747 SF. Stormwater runoff from the site is designed to flow to the CDS mechanical hydrodynamic separator for treatment. The treated stormwater is then discharged to the existing drainage system of the site.

The BMP Exhibit, Attachment F, shows the details of the proposed CDS unit.

IV.3 LID BMP Selection and Project Conformance Analysis

Each sub-section below documents that the proposed design features conform to the applicable project performance criteria via check boxes, tables, calculations, narratives, and/or references to worksheets. *Refer to Section 2.4.2.3 in the Technical Guidance Document (TGD) for selecting LID BMPs and Section 2.4.3 in the Technical Guidance Document (TGD) for conducting conformance analysis with project performance criteria.*

IV.3.1 Hydrologic Source Controls (HSCs)

If required HSCs are included, fill out applicable check box forms. If the retention criteria are otherwise met with other LID BMPs, include a statement indicating HSCs not required.

Name	Included?
Localized on-lot infiltration	☐
Impervious area dispersion (e.g. roof top disconnection)	☐
Street trees (canopy interception)	☐
Residential rain barrels (not actively managed)	☐
Green roofs/Brown roofs	☐
Blue roofs	☐
Impervious area reduction (e.g. permeable pavers, site design)	☐
Other:	☐
Other:	☐
Other:	☐
Other:	☐
Other:	☐
Other:	☐
Other:	☐
Other:	☐

Hydrologic Source Control is not required for the project as the hydrodynamic separator will be utilized for treatment.

IV.3.2 Infiltration BMPs

Identify infiltration BMPs to be used in project. If design volume cannot be met, state why.

Name	Included?
Bioretention without underdrains	☐
Rain gardens	☐
Porous landscaping	☐
Infiltration planters	☐
Retention swales	☐
Infiltration trenches	☐
Infiltration basins	☐
Drywells	☐
Subsurface infiltration galleries	☐
French drains	☐
Permeable asphalt	☐
Permeable concrete	☐
Permeable concrete pavers	☐
Other:	☐
Other:	☐

Show calculations below to demonstrate if the LID Design Storm Capture Volume can be met with infiltration BMPs. If not, document how much can be met with infiltration and document why it is not feasible to meet the full volume with infiltration BMPs.

Infiltration is not feasible for the site, as discussed under Section IV.2 of this document. A CDS mechanical hydrodynamic separator is proposed for the project, instead, to address project stormwater management requirement.

The following calculations shows that the volume treated by the CDS mechanical treatment unit is greater than the design capture volume.
Total Drainage Area = 73,747 SF
% IMP = 89.1%
Run-off Coeff., C, = (0.75 x IMP)+0.15= 0.818

Rainfall Depth, d, = 0.7" (from WQMP Map)
Design Capture Volume= C x d x A
= 0.818 x (0.7/12) x 73,747 SF
= 3,519 CF

The CDS mechanical treatment unit will treat 10-year peak flow of 3.54 CF, which exceeds the Design Capture Volume required.

IV.3.3 Evapotranspiration, Rainwater Harvesting BMPs

If the full Design Storm Capture Volume cannot be met with infiltration BMPs, describe any evapotranspiration and/or rainwater harvesting BMPs included.

Name	Included?
All HSCs; *See Section IV.3.1*	☐
Surface-based infiltration BMPs	☐
Biotreatment BMPs	☐
Above-ground cisterns and basins	☐
Underground detention	☐
Other:	☐
Other:	☐
Other:	☐

Show calculations below to demonstrate if the LID Design Storm Capture Volume can be met with evapotranspiration and/or rainwater harvesting BMPs in combination with infiltration BMPs. If not, document below how much can be met with either infiltration BMPs, evapotranspiration, rainwater harvesting BMPs, or a combination, and document why it is not feasible to meet the full volume with these BMP categories.

Evapotranspiration and/ or rainwater harvesting were not recommended for this project because it is anticipated that fixture and irrigation demand were insufficient. The treatment volume of the proposed CDS mechanical treatment unit is greater than the computed design capture volume.

IV.3.4 Biotreatment BMPs

If the full Design Storm Capture Volume cannot be met with infiltration BMPs, and/or evapotranspiration and rainwater harvesting BMPs, describe biotreatment BMPs included. Include sections for selection, suitability, sizing, and infeasibility, as applicable.

Name	Included?
Bioretention with underdrains	☐
Stormwater planter boxes with underdrains	☐
Rain gardens with underdrains	☐
Constructed wetlands	☐
Vegetated swales	☐
Vegetated filter strips	☐
Proprietary vegetated biotreatment systems	☐
Wet extended detention basin	☐
Dry extended detention basins	☐
Other:	☐
Other:	☐

Show calculations below to demonstrate if the LID Design Storm Capture Volume can be met with infiltration, evapotranspiration, rainwater harvesting and/or biotreatment BMPs. If not, document how much can be met with either infiltration BMPs, evapotranspiration, rainwater harvesting BMPs, or a combination, and document why it is not feasible to meet the full volume with these BMP categories.

Biotreatment is not utilized due to anticipated limited space for landscape treatment options. CDS unit discussed and concept approved with the city.

The following calculations shows that the volume treated by the CDS mechanical treatment unit is greater than the design capture volume.
Total Drainage Area = 73,747 SF
% IMP = 89.1%
Run-off Coeff., C, = (0.75 x IMP)+0.15= 0.818

Rainfall Depth, d, = 0.7" (from WQMP Map)
Design Capture Volume= C x d x A
= 0.818 x (0.7/12) x 73,747 SF
= 3,519 CF
The treatment volume of proposed CDS mechanical unit is greater than the design capture volume.

IV.3.5 Hydromodification Control BMPs

Describe hydromodification control BMPs. *See Section 5 of the Technical Guidance Document (TGD).* Include sections for selection, suitability, sizing, and infeasibility, as applicable. Detail compliance with Prior Conditions of Approval (if applicable).

Hydromodification Control BMPs	
BMP Name	**BMP Description**

Hydromodification Control BMPs are not applicable to this peoject.

IV.3.6 Regional/Sub-Regional LID BMPs

Describe regional/sub-regional LID BMPs in which the project will participate. *Refer to Section 7.II-2.4.3.2 of the Model WQMP*.

Regional/Sub-Regional LID BMPs
None.

IV.3.7 Treatment Control BMPs

Treatment control BMPs can only be considered if the project conformance analysis indicates that it is not feasible to retain the full design capture volume with LID BMPs. Describe treatment control BMPs including sections for selection, sizing, and infeasibility, as applicable.

Treatment Control BMPs	
BMP Name	**BMP Description**
CDS Mechanic Treatment Unit	The proposed CDS mechanical treatment unit is a precast underground separation chamber with a 48" manhole access. The outlet is connected to the existing storm drain that conveys the treated stormwater to the 18" storm drain for disposal to public storm drain system.

IV.3.8 Non-structural Source Control BMPs

Fill out non-structural source control check box forms or provide a brief narrative explaining if non-structural source controls were not used.

Non-Structural Source Control BMPs				
Identifier	**Name**	**Check One**		**If not applicable, state brief reason**
		Included	**Not Applicable**	
N1	Education for Property Owners, Tenants and Occupants	☒	☐	
N2	Activity Restrictions	☒	☐	
N3	Common Area Landscape Management	☒	☐	
N4	BMP Maintenance	☒	☐	
N5	Title 22 CCR Compliance (How development will comply)	☐	☒	No hazardous waste from this project
N6	Local Industrial Permit Compliance	☐	☒	No local water quality ordinance
N7	Spill Contingency Plan	☐	☒	No hazardous waste from this property
N8	Underground Storage Tank Compliance	☐	☒	No underground storage tank within the project boundary
N9	Hazardous Materials Disclosure Compliance	☐	☒	No hazardous waste from this project.
N10	Uniform Fire Code Implementation	☐	☒	No fire code implementation.
N11	Common Area Litter Control	☒	☐	
N12	Employee Training	☒	☐	
N13	Housekeeping of Loading Docks	☒	☐	No loading docks are proposed for this project.
N14	Common Area Catch Basin Inspection	☒	☐	
N15	Street Sweeping Private Streets and Parking Lots	☒	☐	
N16	Retail Gasoline Outlets	☐	☒	No gasoline outlets are proposed for this project.

IV.3.9 Structural Source Control BMPs

Fill out structural source control check box forms or provide a brief narrative explaining if structural source controls were not used.

Structural Source Control BMPs				
Identifier	**Name**	**Check One**		**If not applicable, state brief reason**
		Included	**Not Applicable**	
S1	Provide storm drain system stenciling and signage	☒	☐	
S2	Design and construct outdoor material storage areas to reduce pollution introduction	☐	☒	No outdoor material storage as the site has already an existing one.
S3	Design and construct trash and waste storage areas to reduce pollution introduction	☒	☐	
S4	Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	☒	☐	
S5	Protect slopes and channels and provide energy dissipation	☐	☒	Site is relatively flat.
	Incorporate requirements applicable to individual priority project categories (from SDRWQCB NPDES Permit)	☒	☐	
S6	Dock areas	☐	☒	No dock areas in this project.
S7	Maintenance bays	☐	☒	No maintenance bays in this project.
S8	Vehicle wash areas	☐	☒	No vehicle wash areas in this project.
S9	Outdoor processing areas	☐	☒	No outdoor processing areas in this project.
S10	Equipment wash areas	☐	☒	No equipment wash areas in this project.
S11	Fueling areas	☐	☒	No fueling areas in this project.
S12	Hillside landscaping	☐	☒	No hill side landscaping in this project. Site is relatively flat.
S13	Wash water control for food preparation areas	☒	☐	
S14	Community car wash racks	☐	☒	No community car wash racks in this project.

IV.4 Alternative Compliance Plan (If Applicable)

Describe an alternative compliance plan (if applicable). Include alternative compliance obligations (i.e., gallons, pounds) and describe proposed alternative compliance measures. *Refer to Section 7.II 3.0 in the WQMP.*

IV.4.1 Water Quality Credits

Determine if water quality credits are applicable for the project. *Refer to Section 3.1 of the Model WQMP for description of credits and Appendix VI of the Technical Guidance Document (TGD) for calculation methods for applying water quality credits.*

<table>
<tr><th colspan="5">Description of Proposed Project</th></tr>
<tr><td colspan="5">Project Types that Qualify for Water Quality Credits (Select all that apply):</td></tr>
<tr><td colspan="2">☐ Redevelopment projects that reduce the overall impervious footprint of the project site.</td><td colspan="2">☐ Brownfield redevelopment, meaning redevelopment, expansion, or reuse of real property which may be complicated by the presence or potential presence of hazardous substances, pollutants or contaminants, and which have the potential to contribute to adverse ground or surface WQ if not redeveloped.</td><td>☐ Higher density development projects which include two distinct categories (credits can only be taken for one category): those with more than seven units per acre of development (lower credit allowance); vertical density developments, for example, those with a Floor to Area Ratio (FAR) of 2 or those having more than 18 units per acre (greater credit allowance).</td></tr>
<tr><td colspan="2">☐ Mixed use development, such as a combination of residential, commercial, industrial, office, institutional, or other land uses which incorporate design principles that can demonstrate environmental benefits that would not be realized through single use projects (e.g. reduced vehicle trip traffic with the potential to reduce sources of water or air pollution).</td><td colspan="2">☐ Transit-oriented developments, such as a mixed use residential or commercial area designed to maximize access to public transportation; similar to above criterion, but where the development center is within one half mile of a mass transit center (e.g. bus, rail, light rail or commuter train station). Such projects would not be able to take credit for both categories, but may have greater credit assigned</td><td>☐ Redevelopment projects in an established historic district, historic preservation area, or similar significant city area including core City Center areas (to be defined through mapping).</td></tr>
<tr><td>☐ Developments with dedication of undeveloped portions to parks, preservation areas and other pervious uses.</td><td>☐ Developments in a city center area.</td><td>☐ Developments in historic districts or historic preservation areas.</td><td>☐ Live-work developments, a variety of developments designed to support residential and vocational needs together – similar to criteria to mixed use development; would not be able to take credit for both categories.</td><td>☐ In-fill projects, the conversion of empty lots and other underused spaces into more beneficially used spaces, such as residential or commercial areas.</td></tr>
</table>

Calculation of Water Quality Credits (if applicable)	N/A

IV.4.2 Alternative Compliance Plan Information

Describe an alternative compliance plan (if applicable). Include alternative compliance obligations (i.e., gallons, pounds) and describe proposed alternative compliance measures. *Refer to Section 7.II 3.0 in the Model WQMP.*

N/A

Section V Inspection/Maintenance Responsibility for BMPs

Fill out information in table below. Prepare and attach an Operation and Maintenance Plan. Identify the funding mechanism through which BMPs will be maintained. Inspection and maintenance records must be kept for a minimum of five years for inspection by the regulatory agencies. *Refer to Section 7.II 4.0 in the Model WQMP.*

BMP Inspection/Maintenance			
BMP	**Reponsible Party(s)**	**Inspection/ Maintenance Activities Required**	**Minimum Frequency of Activities**
CDS Mechanical Treatment Hydrodynamic Separator	Owner	Check for and remove sediment and materials. Follow any additional manufacturer's recommendations.	Minimum of twice annually

Section VI BMP Exhibit (Site Plan)

VI.1 BMP Exhibit (Site Plan)

Include a BMP Exhibit (Site Plan), at a size no less than 24" by 36," which includes the following minimum information:

- Insert in the title block (lower right hand corner) of BMP Exhibit: the WQMP Number (assigned by staff) and the grading/building or Planning Application permit numbers
- Project location (address, tract/lot number(s), etc.)
- Site boundary
- Land uses and land covers, as applicable
- Suitability/feasibility constraints
- Structural BMP locations
- Drainage delineations and flow information
- Delineate the area being treated by each structural BMP
- GIS coordinates for LID and Treatment Control BMPs
- Drainage connections
- BMP details
- Preparer name and stamp

Please do not include any areas outside of the project area or any information not related to drainage or water quality. The approved BMP Exhibit (Site Plan) shall be submitted as a plan sheet on all grading and building plan sets submitted for plan check review and approval. The BMP Exhibit shall be at the same size as the rest of the plan sheets in the submittal and shall have an approval stamp and signature prior to plan check submittal.

VI.2 Submittal and Recordation of Water Quality Management Plan

Following approval of the Final Project-Specific WQMP, three copies of the approved WQMP (including BMP Exhibit, Operations and Maintenance (O&M) Plan, and Appendices) shall be submitted. In addition, these documents shall be submitted in a PDF format.

Each approved WQMP (including BMP Exhibit, Operations and Maintenance (O&M) Plan, and Appendices) shall be recorded in the Orange County Clerk-Recorder's Office, prior to close-out of grading and/or building permit. Educational Materials are not required to be included.

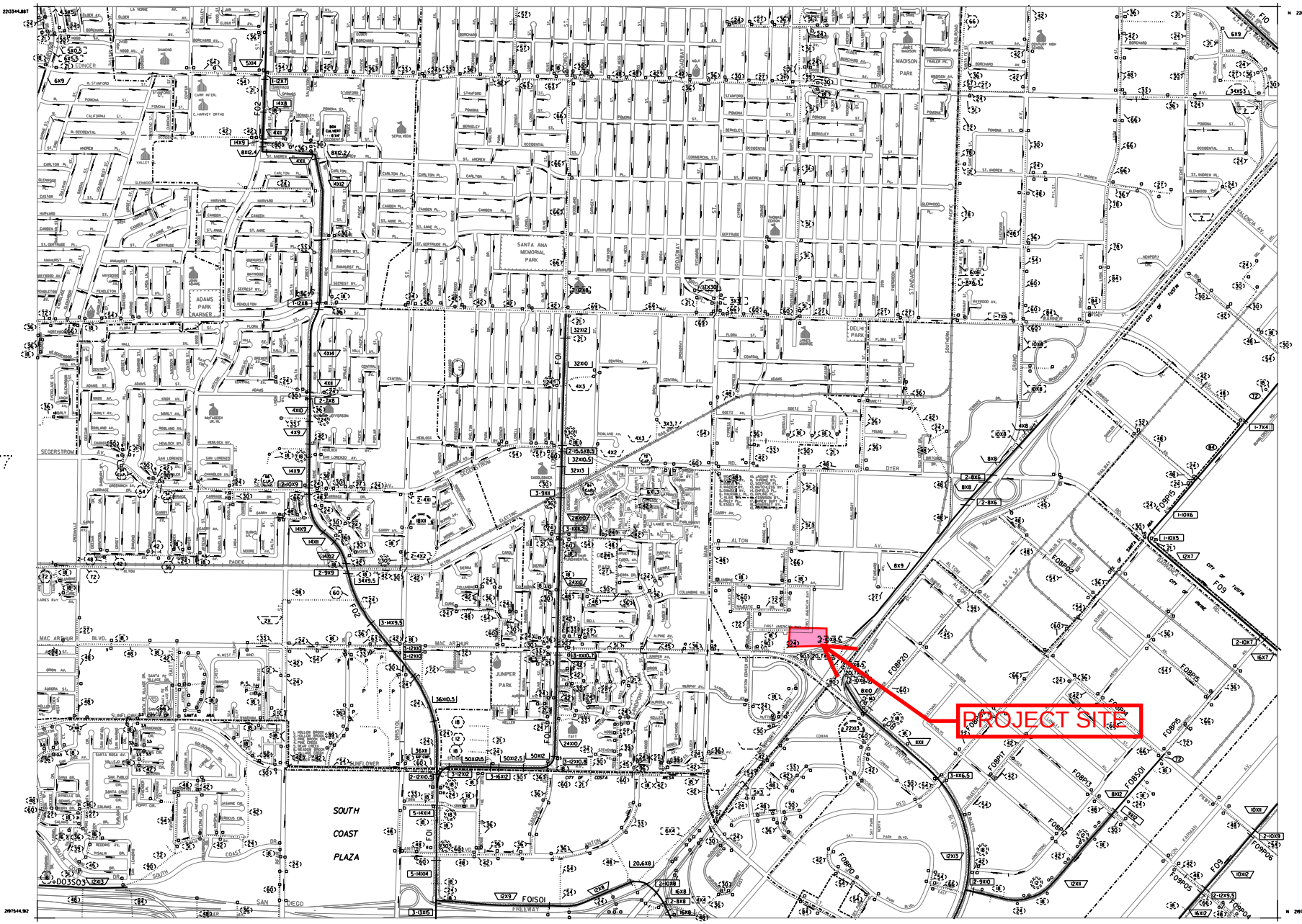
Section VII Educational Materials

Refer to the Orange County Stormwater Program (ocwatersheds.com) for a library of materials available. Please only attach the educational materials specifically applicable to this project. Other materials specific to the project may be included as well and must be attached.

Education Materials			
Residential Material (http://www.ocwatersheds.com)	**Check If Applicable**	**Business Material (http://www.ocwatersheds.com)**	**Check If Applicable**
The Ocean Begins at Your Front Door	☒	Tips for the Automotive Industry	☐
Tips for Car Wash Fund-raisers	☐	Tips for Using Concrete and Mortar	☐
Tips for the Home Mechanic	☐	Tips for the Food Service Industry	☐
Homeowners Guide for Sustainable Water Use	☐	Proper Maintenance Practices for Your Business	☒
Household Tips	☐	**Other Material**	**Check If Attached**
Proper Disposal of Household Hazardous Waste	☐		
Recycle at Your Local Used Oil Collection Center (North County)	☐	Tips for protecting your watershed.	☒
Recycle at Your Local Used Oil Collection Center (Central County)	☐	Building Maintenance	☒
Recycle at Your Local Used Oil Collection Center (South County)	☐	Waste Handling and Disposal	☒
Tips for Maintaining a Septic Tank System	☐		☐
Responsible Pest Control	☐		☐
Sewer Spill	☐		☐
Tips for the Home Improvement Projects	☐		☐
Tips for Horse Care	☐		☐
Tips for Landscaping and Gardening	☒		☐
Tips for Pet Care	☐		☐
Tips for Pool Maintenance	☐		☐
Tips for Residential Pool, Landscape and Hardscape Drains	☐		☐
Tips for Projects Using Paint	☐		☐

Attachment A

RECEIVING WATERS



NOTICE

This drainage map has been prepared for information purposes only. The location and ownership of facilities have been determined from available information provided by public agencies, but may not be exact. The user of this map is responsible for verifying exact location, ownership and regional versus local character of drainage facilities.

Additional information may be obtained from public plans and recorded deeds. Character designations shown on this map are for convenience only and are not controlling. Neither the county of Orange nor the Orange County Flood Control District (OCFCD) assumes any liabilities for inaccuracies of this map.

To notify the Resources & Development Management Department (RDMD) of additions or corrections, please call Sid Gutierrez at (714) 834-5398 or by email at sid.gutierrez@rdmd.ocgov.com

ORANGE COUNTY FLOOD CONTROL DISTRICT

BASEMAP OF DRAINAGE FACILITIES IN ORANGE COUNTY

REVISION	DATE	SHEET NO.	DWG NO.
APU	JAN.01/2020	38	MAPS-113-3

Existing O.C.F.C.D. / Existing LOCAL

- Channel Drainage Area Boundary
- Major Sub-Area Drainage Boundary
- Minor Sub-Area Drainage Boundary
- Existing O.C.F.C.D. Facility
- Existing Local Facility
- Existing Retaining Basin or Reservoir
- Natural Watercourse
- City Limits
- Greenbelt
- Pump Station
- Catch Basin (length in feet)
- Drop Inlet or Other Entry
- Owner/ship (if other than City or County)
- Private
- State
- Federal

Earth Trapezoidal Channel (base width by height in feet)
Reinforced Concrete Trapezoidal Channel (base width by height in feet)
Reinforced Concrete Rectangular Channel (base width by height in feet)
Reinforced Concrete Box (RCB) (number of barrels-span by height in feet)
Reinforced Concrete Pipe (RCP) (diameter in inches)
Metal Steel Channel (MSC) (base width by pile height in feet/pile length in feet)
Corrugated Metal Pipe (CMP) (diameter in inches)
Concrete Pipe (diameter in inches)
Concrete Oval Pipe (width by height in inches)
Steel Pipe (diameter in inches)
Reinforced Concrete Arch (base span by height in inches)
Corrugated Metal Arch (base span by height in inches)

Scale: 1" = 600'

Attachment B

303d LIST

REGION	REGION NAME	WATER BODY NAME	WBID	WATER BODY TYPE	WATER BODY TYPE CODE	INTEGRATED REPORT CATEGORY	USGS CATALOGING UNIT	CALWATER WATERSHED	ESTIMATED SIZE AFFECTED	UNIT	POLLUTANT	POLLUTANT CATEGORY	FINAL LISTING DECISION	TMDL REQUIREMENT STATUS	EXPECTED TMDL COMPLETION DATE	EXPECTED ATTAINMENT DATE	USEPA TMDL APPROVED DATE	COMMENTS INCLUDED ON 303(d) LIST	POTENTIAL SOURCES	SOURCE CATEGORY
8	Regional Board 8 - Santa Ana Region	Newport Bay, Lower (entire lower bay, including Rhine Channel, Turning Basin and South Lido Channel to east end of H-J Moorings)	CAB801140001999032214185 9	Bay & Harbor	B	5	18070201	80114000	767	Acres	Chlordane	Pesticides	List on 303(d) list (TMDL required list)	5A	2019				Source Unknown	Source Unknown
8	Regional Board 8 - Santa Ana Region	Newport Bay, Lower (entire lower bay, including Rhine Channel, Turning Basin and South Lido Channel to east end of H-J Moorings)	CAB801140001999032214185 9	Bay & Harbor	B	5	18070201	80114000	767	Acres	Copper	Metals/Metalloids	Do Not Delist from 303(d) list (TMDL required list)	5A	2007				Source Unknown	Source Unknown
8	Regional Board 8 - Santa Ana Region	Newport Bay, Lower (entire lower bay, including Rhine Channel, Turning Basin and South Lido Channel to east end of H-J Moorings)	CAB801140001999032214185 9	Bay & Harbor	B	5	18070201	80114000	767	Acres	DDT (Dichlorodiphenyltrichloroethane)	Pesticides	List on 303(d) list (TMDL required list)	5A	2019				Source Unknown	Source Unknown
8	Regional Board 8 - Santa Ana Region	Newport Bay, Lower (entire lower bay, including Rhine Channel, Turning Basin and South Lido Channel to east end of H-J Moorings)	CAB801140001999032214185 9	Bay & Harbor	B	5	18070201	80114000	767	Acres	Indicator Bacteria	Pathogens	Do Not Delist from 303(d) list (being addressed with USEPA approved TMDL)	5B			2/28/2000		Source Unknown	Source Unknown
8	Regional Board 8 - Santa Ana Region	Newport Bay, Lower (entire lower bay, including Rhine Channel, Turning Basin and South Lido Channel to east end of H-J Moorings)	CAB801140001999032214185 9	Bay & Harbor	B	5	18070201	80114000	767	Acres	Nutrients	Nutrients	List on 303(d) list (being addressed by USEPA approved TMDL)	5B			1/1/1999		Source Unknown	Source Unknown
8	Regional Board 8 - Santa Ana Region	Newport Bay, Lower (entire lower bay, including Rhine Channel, Turning Basin and South Lido Channel to east end of H-J Moorings)	CAB801140001999032214185 9	Bay & Harbor	B	5	18070201	80114000	767	Acres	PCBs (Polychlorinated biphenyls)	Other Organics	List on 303(d) list (TMDL required list)	5A	2019				Source Unknown	Source Unknown
8	Regional Board 8 - Santa Ana Region	Newport Bay, Lower (entire lower bay, including Rhine Channel, Turning Basin and South Lido Channel to east end of H-J Moorings)	CAB801140001999032214185 9	Bay & Harbor	B	5	18070201	80114000	767	Acres	Pesticides	Pesticides	List on 303(d) list (being addressed by USEPA approved TMDL)	5B			1/1/2004		Agriculture	Agriculture
8	Regional Board 8 - Santa Ana Region	Newport Bay, Lower (entire lower bay, including Rhine Channel, Turning Basin and South Lido Channel to east end of H-J Moorings)	CAB801140001999032214185 9	Bay & Harbor	B	5	18070201	80114000	767	Acres	Pesticides	Pesticides	List on 303(d) list (being addressed by USEPA approved TMDL)	5B			1/1/2004		Contaminated Sediments	Sediment
8	Regional Board 8 - Santa Ana Region	Newport Bay, Lower (entire lower bay, including Rhine Channel, Turning Basin and South Lido Channel to east end of H-J Moorings)	CAB801140001999032214185 9	Bay & Harbor	B	5	18070201	80114000	767	Acres	Sediment Toxicity	Toxicity	Do Not Delist from 303(d) list (TMDL required list)	5A	2019				Source Unknown	Source Unknown

Attachment C

WATER MAPS

SUBJECT TO FURTHER REVISION

LOS ANGELES COUNTY
ORANGE COUNTY

SAN BERNARDINO COUNTY
ORANGE COUNTY

RIVERSIDE COUNTY
ORANGE COUNTY

LOS ANGELES COUNTY
ORANGE COUNTY

Project Location

LEGEND

City Boundaries

OCWD Groundwater Basin Protection Boundary

Depth To Groundwater

<= 5'

5-10'

Note: Data are not available for South Orange County at this time.

Source:
Sprotte, Fuller and Greenwood, 1980.
California Division of Mines and Geology;
California Geological Survey

0 2 4 8 Kilometers

0 1.25 2.5 5 Miles

TITLE

NORTH ORANGE COUNTY
MAPPED SHALLOW GROUNDWATER

ORANGE COUNTY
INFILTRATION STUDY

JOB ORANGE CO. CA

SCALE	1" = 1.25 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	02/09/11
JOB NO.	9526-E

PACE
Advanced Water Engineering

FIGURE

XVI-2e

P:\9526E\6-GIS\Mxds\Reports\InfiltrationFeasability_20110215\9526E_FigureXVI-2e_DepthToGroundwater15ft_20110215.mxd

SUBJECT TO FURTHER REVISION

LEGEND

- Depth To First Groundwater Contours
- City Boundaries
- OCWD Groundwater Basin Protection Boundary

Note: Data are not available for South Orange County at this time.

Source:
Sprotte, Fuller and Greenwood, 1980.
California Division of Mines and Geology;
California Geological Survey

LOS ANGELES COUNTY
ORANGE COUNTY

SAN BERNARDINO COUNTY
ORANGE COUNTY

RIVERSIDE COUNTY
ORANGE COUNTY

Project Location

0 2 4 8 Kilometers

0 1.25 2.5 5 Miles

TITLE
NORTH ORANGE COUNTY
MAPPED DEPTH TO FIRST
GROUNDWATER

JOB
ORANGE CO.
ORANGE COUNTY
INFILTRATION STUDY
CA

SCALE	1" = 1.25 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	02/09/11
JOB NO.	9526-E

PACE
Advanced Water Engineering

FIGURE
XVI-2d

P:\9526E\6-GIS\Mxds\Reports\InfiltrationFeasability_20110215\9526E_FigureXVI-2d_DepthToGroundwaterOverview_20110215.mxd

SUBJECT TO FURTHER REVISION

LEGEND

- Orange County Precipitation Stations
- 24 Hour, 85th Percentile Rainfall (Inches)
- 24 Hour, 85th Percentile Rainfall (Inches) - Extrapolated
- City Boundaries

Rainfall Zones

Design Capture Storm Depth (inches)

- 0.65"
- 0.7
- 0.75
- 0.80
- 0.85
- 0.90
- 0.95
- 1.00
- 1.10"

Note: Events defined as 24-hour periods (calendar days) with greater than 0.1 inches of rainfall.
For areas outside of available data coverage, professional judgment shall be applied.

LOS ANGELES COUNTY
ORANGE COUNTY
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY

0.65
0.7
0.75
0.8
0.85
0.9
0.95
1
1.05

Project Location

0 3 6 12 Kilometers
0 1.8 3.6 7.2 Miles

P:\19526E\16-GIS\Mxds\Reports\InfiltrationFeasability_20110215\19526E_FigureXVI-1_RainfallZones_20110215.mxd

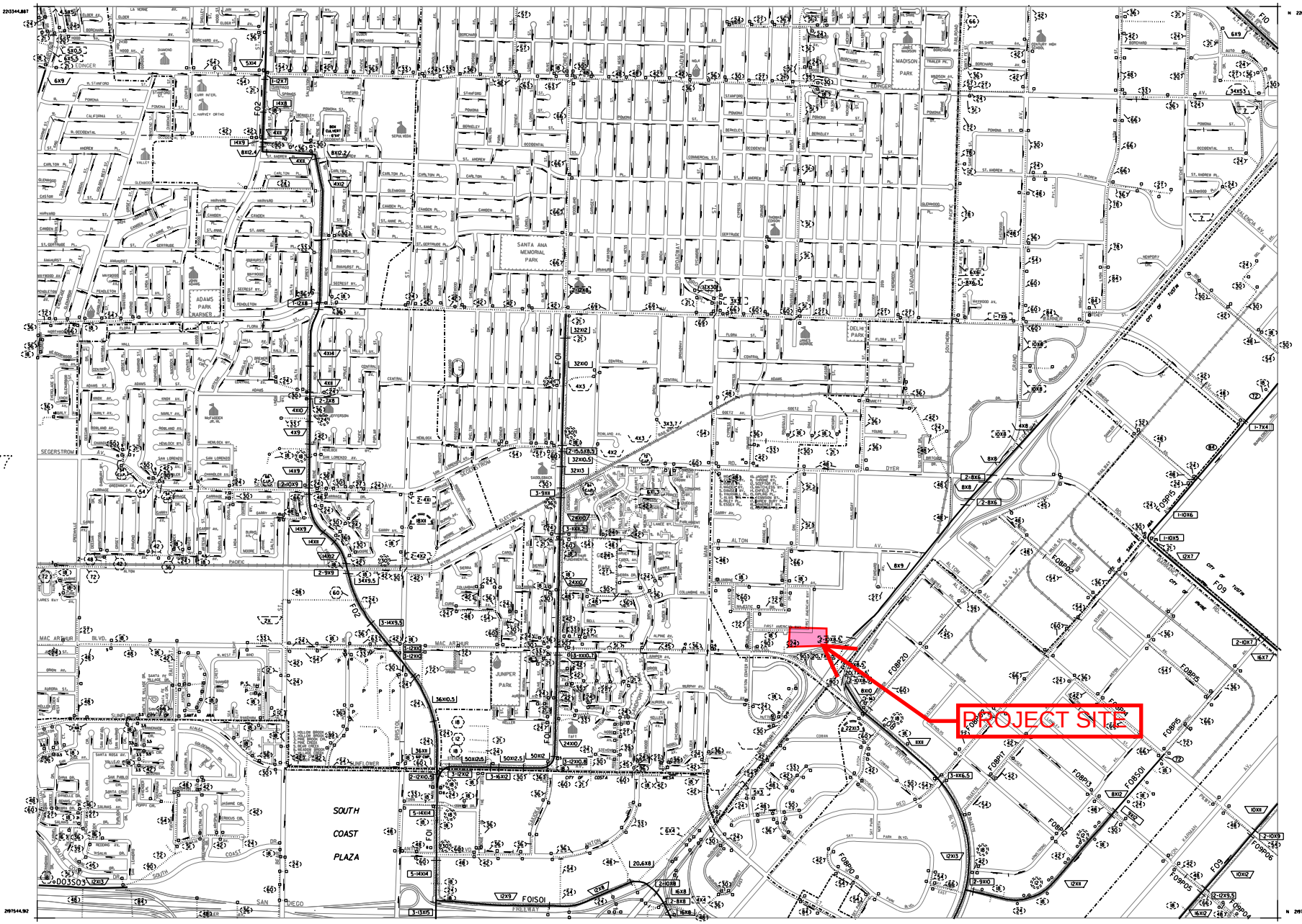
TITLE: RAINFALL ZONES

JOB: ORANGE COUNTY TECHNICAL GUIDANCE DOCUMENT — ORANGE CO., CA

SCALE	1" = 1.8 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	04/22/10
JOB NO.	19526-E

PACE Advanced Water Engineering

FIGURE XVI-1



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ORANGE COUNTY FLOOD CONTROL DISTRICT

BASEMAP OF DRAINAGE FACILITIES IN ORANGE COUNTY

REVISION	DATE	SHEET NO.	DWG NO.
APU	JAN.01/2020	38	MAPS-113-3

Existing O.C.F.C.D. / Existing LOCAL

- Channel Drainage Area Boundary
- Major Sub-Area Drainage Boundary
- Minor Sub-Area Drainage Boundary
- Existing O.C.F.C.D. Facility
- Existing Local Facility
- Existing Retaining Basin or Reservoir
- Natural Watercourse
- City Limits
- Greenbelt
- Pump Station
- Catch Basin (length in feet)
- Drop Inlet or Other Entry
- Owner/ship (if other than City or County)
- Private
- State
- Federal

Earth Trapezoidal Channel (base width by height in feet)
Reinforced Concrete Trapezoidal Channel (base width by height in feet)
Reinforced Concrete Rectangular Channel (base width by height in feet)
Reinforced Concrete Box (RCB) (number of barrels-span by height in feet)
Reinforced Concrete Pipe (RCP) (diameter in inches)
Metal Steel Channel (MSC) (base width by pile height in feet/pile length in feet)
Corrugated Metal Pipe (CMP) (diameter in inches)
Concrete Pipe (diameter in inches)
Concrete Oval Pipe (width by height in inches)
Steel Pipe (diameter in inches)
Reinforced Concrete Arch (base span by height in inches)
Corrugated Metal Arch (base span by height in inches)

Scale: 1" = 600'

SUBJECT TO FURTHER REVISION

LOS ANGELES COUNTY
ORANGE COUNTY

SAN BERNARDINO COUNTY
ORANGE COUNTY

RIVERSIDE COUNTY
ORANGE COUNTY

LOS ANGELES COUNTY
ORANGE COUNTY

Project Location

LEGEND

- City Boundaries
- OCWD Groundwater Basin Protection Boundary

Plume Protection Boundaries

- North Basin Groundwater Protection Project
- South Basin Groundwater Protection Project
- El Toro Marine Base
- Tustin Marine Air Base
- Approximate Selenium Contamination Area

Note: Individual contamination sites are not plotted.
See State Water Resources Control Board Geotracker database (http://geotracker.waterboards.ca.gov),
Department of Toxic Substance Control Envirostor database (http://www.envirostor.dtsc.ca.gov) and other applicable sources for current listing of active contaminated sites.

Groundwater basin and plume protection boundaries for South Orange County are not shown on this exhibit at this time

0 2 4 8 Kilometers

0 1.25 2.5 5 Miles

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TITLE
NORTH ORANGE COUNTY
GROUNDWATER PROTECTION
AREAS

ORANGE COUNTY
INFILTRATION STUDY

JOB
ORANGE CO.

SCALE	1" = 1.25 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	04/22/10
JOB NO.	9526-E

CA

PACE
Advanced Water Engineering

FIGURE
XVI-2f

Susceptibility

Potential Areas of Erosion, Habitat, & Physical Structure Susceptibility

Channel Type

- Earth (Unstable)
- Earth (Stabilized)
- Stabilized

Tidel Influence

- <= Mean High Water Line (4.28')

Water Body

- Basin
- Dam
- Lake
- Reservoir

Other Lands

- Airport/Military

Project Location

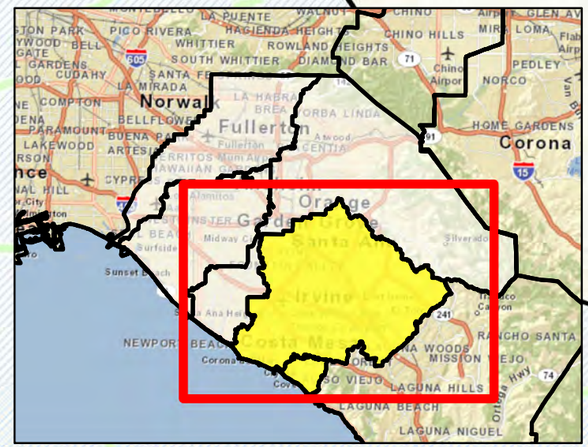
AnaheimBay-HuntingtonHarbor Watershed

Santa Ana River Watershed

Santa Ana River Watershed

South Orange County

El Modena-Irvine Retarding Basin
Lower Peters Canyon Retarding Basin
Eastfoot Retarding Basin
Orchard Estates Retention Basin
Hicks Canyon Retarding Basin
Rattlesnake Reservoir
East Hicks Canyon Retarding Basin
Siphon Reservoir
Bee Canyon Retarding Basin
Round Canyon Retarding Basin
Trabuco Retarding Basin
Marshburn Retarding Basin
Agua Chinon Retarding Basin
North Lake
South Lake
Basin Number 2
Basin Number 1
Sand Canyon Reservoir
Laguna Reservoir
Bonita Canyon Reservoir
San Joaquin Reservoir
Big Canyon Reservoir
Harbor View Dam
Village Pond Park
John Wayne Airport



N

0 9,000 18,000 Feet

TITLE: SUSCEPTIBILITY ANALYIS NEWPORT BAY-NEWPORT COASTAL STREAMS

JOB: ORANGE COUNTY WATERSHED MASTER PLANNING ORANGE CO. CA

SCALE	1" = 12000'
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	04/30/10
JOB NO.	9526-E

PACE Advanced Water Engineering

FIGURE 4

P:\9526E\6-GIS\Mxds\SuceptabilityMaps_20100505\9526E_NewportBaySusceptibility_20100430.mxd

SUBJECT TO FURTHER REVISION

LEGEND

- OCWD Groundwater Basin Protection Boundary
- City Boundaries

Infiltration Constraints

- 1 Constraint
- 2 Overlapping Constraints
- 3 Overlapping Constraints
- 4 Overlapping Constraints

Analysis Layers Included: 1. Hydrologic Soil Group D, 2. Landslide Hazard Zone, 3. Groundwater Protection Areas 4. Approximate Selinium Area, 5. Depth to Groundwater <= 5'

Note: Screening datasets are not exhaustive. The applicant should always conduct a review of available site-specific information relative to infiltration constraints as part of assessing the feasibility of stormwater infiltration.
Source;
Infiltration Constraint Analysis: PACE/Geosyntec

Project Location

0 2.5 5 10 Kilometers

0 1.8 3.6 7.2 Miles

P:\19526E\6-GIS\Mxds\Reports\InfiltrationFeasability_20110215\19526E_FigureXVI-2g_InfiltrationFinal_20110215.mxd

TITLE
INFILTRATION ANALYSIS
OVERLAPPING CONSTRAINT
LOCATIONS

JOB
ORANGE COUNTY
INFILTRATION STUDY
ORANGE CO. CA

SCALE	1" = 1.8 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	04/22/10
JOB NO.	19526-E

PACE
Advanced Water Engineering

FIGURE
XVI-2g

SUBJECT TO FURTHER REVISION

LEGEND

City Boundaries

Seismic Hazards

Potential Landslide Area

Source:
Seismic Hazard Zone Maps
Division of Mines and Geology, California Geology Survey,
Publication Date: 2005; Data Downloaded 02-09-2011

http://www.conservation.ca.gov/cgs/shzp/Pages/Index.aspx

LOS ANGELES COUNTY
ORANGE COUNTY

SAN BERNARDINO COUNTY
ORANGE COUNTY

RIVERSIDE COUNTY
ORANGE COUNTY

Project Location

0 2.5 5 10 Kilometers

0 1.8 3.6 7.2 Miles

P:\9526E\6-GIS\Mxds\Reports\InfiltrationFeasability_20110215\9526E_FigureXVI-2c_Landslides_20110215.mxd

TITLE
HYDROLOGIC SOIL GROUP
TYPE D NRCS SOIL SURVEY

ORANGE COUNTY
INFILTRATION STUDY

CA

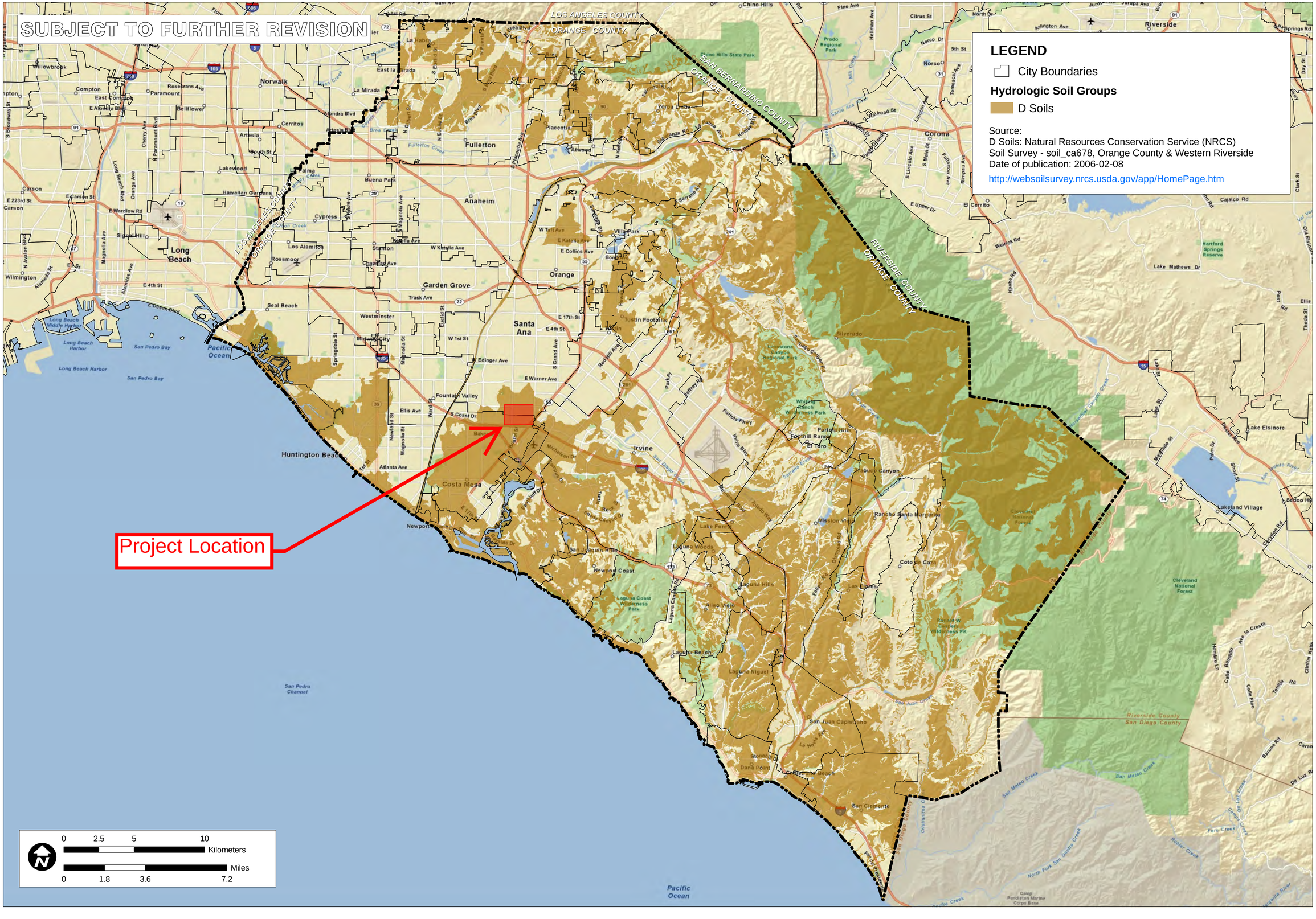
JOB
ORANGE CO.

SCALE	1" = 1.25 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	02/09/11
JOB NO.	9526-E

PACE
Advanced Water Engineering

FIGURE
XVI-2c

SUBJECT TO FURTHER REVISION



LEGEND

City Boundaries

Hydrologic Soil Groups

D Soils

Source:
D Soils: Natural Resources Conservation Service (NRCS)
Soil Survey - soil_ca678, Orange County & Western Riverside
Date of publication: 2006-02-08
http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

TITLE: HYDROLOGIC SOIL GROUP
TYPE D NRCS SOIL SURVEY

JOB: ORANGE COUNTY
INFILTRATION STUDY
CA
ORANGE CO.

SCALE	1" = 1.8 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	02/09/11
JOB NO.	9526-E

PACE
Advanced Water Engineering

FIGURE
XVI-2b

P:\9526E\6-GIS\Mxds\Reports\InfiltrationFeasability_20110215\9526E_FigureXVI-2b_D-Soils_20110215.mxd

SUBJECT TO FURTHER REVISION

LEGEND

City Boundaries

Hydrologic Soil Groups

- A Soils
- B Soils
- C Soils
- D Soils

Source:
Soils: Natural Resources Conservation Service (NRCS)
Soil Survey - soil_ca678, Orange County & Western Riverside
Date of publication: 2006-02-08
http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

Project Location

0 2.5 5 10 Kilometers

0 1.8 3.6 7.2 Miles

P:\95226E\6-GIS\Mxds\Reports\InfiltrationFeasability_20110215\95226E_FigureXVI-2a_HydroSoils_20110215.mxd

TITLE: NRCS HYDROLOGIC SOILS GROUPS

JOB: ORANGE COUNTY INFILTRATION STUDY — ORANGE CO. CA

SCALE	1" = 1.8 miles
DESIGNED	TH
DRAWING	TH
CHECKED	BMP
DATE	02/09/11
JOB NO.	95226-E

PACE Advanced Water Engineering

FIGURE XVI-2a

Attachment D

EDUCATIONAL MATERIALS

IC3. BUILDING MAINTENANCE

1. Properly collect and dispose of water when pressure washing buildings, rooftops, and other large objects.
2. Properly prepare work area before conducting building maintenance.
3. Properly clean and dispose of equipment and wastes used and generated during building maintenance.
4. Employ soil erosion and stabilization techniques when exposing large areas of soil.
5. Store toxic material under cover when not in use and during precipitation events.
6. Properly dispose of fluids from air conditioning, cooling tower, and condensate drains.
7. Regularly inspect air emission control equipment under AQMD permit.
8. Train employees on these BMPs, storm water discharge prohibitions, and wastewater discharge requirements.

OPTIONAL:

9. Switch to non-toxic chemicals for maintenance when possible.
10. Use chemicals that can be recycled.

Pollution Prevention

Consider pollution prevention measures at all times for improving pollution control. Implementation of pollution prevention measures may reduce or eliminate the need to implement other more costly or complicated procedures.

The following pollution prevention principles apply to most industries:

- Affirmative Procurement - Use alternative, safer, or recycled products.
- Redirect storm water flows away from areas of concern.
- Reduce use of water or use dry methods.
- Reduce storm water flow across facility site.
- Recycle and reuse waste products and waste flows.
- Move or cover potential pollution from storm water contact.
- Provide on-going employee training in pollution prevention.

Best Management Practices

1. **Properly collect and dispose of water when pressure washing buildings, rooftops, and other large objects.**
    - If pressure washing where the surrounding area is paved, use a water collection device that enables collection of wash water and associated solids. Use a sump pump, wet vacuum or similarly effective device to collect the runoff and loose materials. Dispose of the collected runoff and solids properly.
    - If pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement.
2. **Properly prepare work area before conducting building maintenance.**
    - Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.
    - Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
    - Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a storm drain.
3. **Properly clean and dispose of equipment and wastes used and generated during building maintenance.**
    - Clean paint brushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer

drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.
- Properly dispose of wash water, sweepings, and sediments.
- Properly store equipment, chemicals, and wastes.
- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.

OPTIONAL:
- Recycle residual paints, solvents, lumber, and other materials to the maximum extent practicable

4. **Employ soil erosion and stabilization techniques when exposing large areas of soil.**
    - Confine excavated materials to pervious surfaces away from storm drain inlets, sidewalks, pavement, and ditches. Material must be covered if rain is expected.
    - Use chemical stabilization or geosynthetics to stabilize bare ground surfaces.
5. **Store toxic material under cover when not in use and during precipitation events.**
6. **Properly dispose of fluids from air conditioning, cooling tower, and condensate drains.**
7. **Regularly inspect air emission control equipment under AQMD permit.**

8. **Training**

    1. **Train employees on these BMPs, storm water discharge prohibitions, and wastewater discharge requirements.**
    2. **Train employees on proper spill containment and cleanup.**
        - Establish training that provides employees with the proper tools and knowledge to immediately begin cleaning up a spill.
        - Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.
        - BMP IC17 discusses Spill Prevention and Control in detail.
    3. **Establish a regular training schedule, train all new employees, and conduct annual refresher training.**
    4. **Use a training log or similar method to document training.**

OPTIONAL:

9. **Switch to non-toxic chemicals for maintenance when possible.**
    - If cleaning agents are used, select biodegradable products whenever feasible
    - Consider using a waterless and non-toxic chemical cleaning method for graffiti removal (e.g. gels or spray compounds).
10. **Use chemicals that can be recycled.**
    - Buy recycled products to the maximum extent practicable

References

California Storm Water Best Management Practice Handbooks. Industrial/Commercial Best Management Practice Handbook. Prepared by Camp Dresser& McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. King County Surface Water Management. July 1995. On-line: http://dnr.metrokc.gov/wlr/dss/spcm.htm

Stormwater Management Manual for Western Washington. Volume IV Source Control BMPs. Prepared by Washington State Department of Ecology Water Quality Program. Publication No. 99-14. August 2001.

IC21. WASTE HANDLING AND DISPOSAL

1. Prevent waste materials from coming in direct contact with wind or rain.
2. Design waste handling and disposal area to prevent stormwater runon.
3. Design waste handling and disposal area to contain spills.
4. Keep waste collection areas clean.
5. Secure solid waste containers when not in use.
6. Regularly inspect, repair, and/or replace waste containers.
7. Do not fill waste containers with washout water or any other liquid.
8. Use all of a product before disposing of the container.
9. Segregated wastes by type and label and date wastes.
10. Label and store hazardous wastes according to hazardous waste regulations.
11. Train employees on these BMPs, storm water discharge prohibitions, and wastewater discharge requirements.

OPTIONAL:

12. Minimize waste.

Pollution Prevention

Consider pollution prevention measures at all times for improving pollution control. Implementation of pollution prevention measures may reduce or eliminate the need to implement other more costly or complicated procedures.

The following pollution prevention principles apply to most industries:

- Affirmative Procurement - Use alternative, safer, or recycled products.
- Redirect storm water flows away from areas of concern.
- Reduce use of water or use dry methods.
- Reduce storm water flow across facility site.
- Recycle and reuse waste products and waste flows.
- Move or cover potential pollution from storm water contact.
- Provide on-going employee training in pollution prevention.

Best Management Practices

1. **Prevent waste materials from coming in direct contact with wind or rain.**
    - Cover the waste management area with a permanent roof.
    - If this is not feasible, cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene, or hypalon.
    - Cover dumpsters to prevent rain from washing out waste materials.
2. **Design waste handling and disposal area to prevent stormwater runon.**
    - Enclose the waste handling and disposal area or build a berm around it.
    - Position roof downspouts to direct stormwater away from waste handling and disposal area.
3. **Design waste handling and disposal area to contain spills.**
    - Place dumpsters or other waste receptacles on an impervious surface.
    - Construct a berm around the area to contain spills.
    - Install drains connected to the public sewer or the facility's process wastewater system within these contained areas. **DO NOT** discharge to a public sewer until contacting the local sewer authority to find out if pretreatment is required.
4. **Keep waste collection areas clean.**
    - When cleaning around waste handling and disposal areas use dry methods when possible (e.g. sweeping, use of absorbents).
    - If water must be used, collect water and discharge to the sewer if permitted to do so. **DO NOT** discharge to a public sewer until contacting the local sewer authority to find out if pretreatment is required. If discharge to the sanitary sewer is not allowed, pump water to a tank and dispose of properly.

OPTIONAL:

- Post "No Littering" signs.

5. **Secure solid waste containers when not in use.**
6. **Regularly inspect, repair, and/or replace waste containers.**
7. **Do not fill waste containers with washout water or any other liquid.**
8. **Use all of a product before disposing of the container.**
9. **Segregate wastes by type and label and date wastes.**
    - Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal.
    - Ensure that only appropriate solid wastes are added to solid waste containers.
    - Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc. may not be disposed of in solid waste containers.
10. **Label and store hazardous wastes according to hazardous waste regulations.**
    - Consult your local hazardous waste agency or Fire Department for details.
    - Obtain a hazardous waste generator license or permit.

11. **Training**

    1. **Train employees on these BMPs, storm water discharge prohibitions, and wastewater discharge requirements.**
    2. **Train employees in proper waste handling and disposal.**
    3. **Train employees on proper spill containment and cleanup.**
        - Establish training that provides employees with the proper tools and knowledge to immediately begin cleaning up a spill.
        - Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.
        - BMP IC17 discusses Spill Prevention and Control in detail.
    4. **Establish a regular training schedule, train all new employees, and conduct annual refresher training.**
    5. **Use a training log or similar method to document training.**

OPTIONAL:

12. **Minimize waste.**
    - Recycle materials whenever possible.
    - Modify processes or equipment to increase efficiency.
    - Identify and promote use of non-hazardous alternatives.
    - Reduction in the amount of waste generated can be accomplished using many different types of source controls such as:
        - Production planning and sequencing
        - Process or equipment modification
        - Raw material substitution or elimination
        - Loss prevention and housekeeping
        - Waste segregation and separation

        - Close loop recycling
    - Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.

References

California Storm Water Best Management Practice Handbooks. Industrial/Commercial Best Management Practice Handbook. Prepared by Camp Dresser& McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July 1998 (Revised February 2002 by the California Coastal Commission).

OPTIONAL:

- Reduction in the amount of waste generated can be accomplished using many different types of source controls such as:
    - Production planning and sequencing
    - Process or equipment modification
    - Raw material substitution or elimination
    - Loss prevention and housekeeping
    - Waste segregation and separation
    - Close loop recycling

Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, if we are not careful, our daily activities can lead directly to water pollution problems. Water that drains through your watershed can pick up pollutants which are then transported to our waterways and beautiful ocean.

You can prevent water pollution by taking personal action and by working with members of your watershed community to prevent urban runoff from entering your waterway.

For more information, please call the **Orange County Stormwater Program** at **1.877.89.SPILL** or visit **www.ocwatersheds.com**

To report a spill, call the **Orange County 24-Hour Water Pollution Problem Reporting Hotline** at **1.877.89.SPILL**.

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help protect your watershed. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

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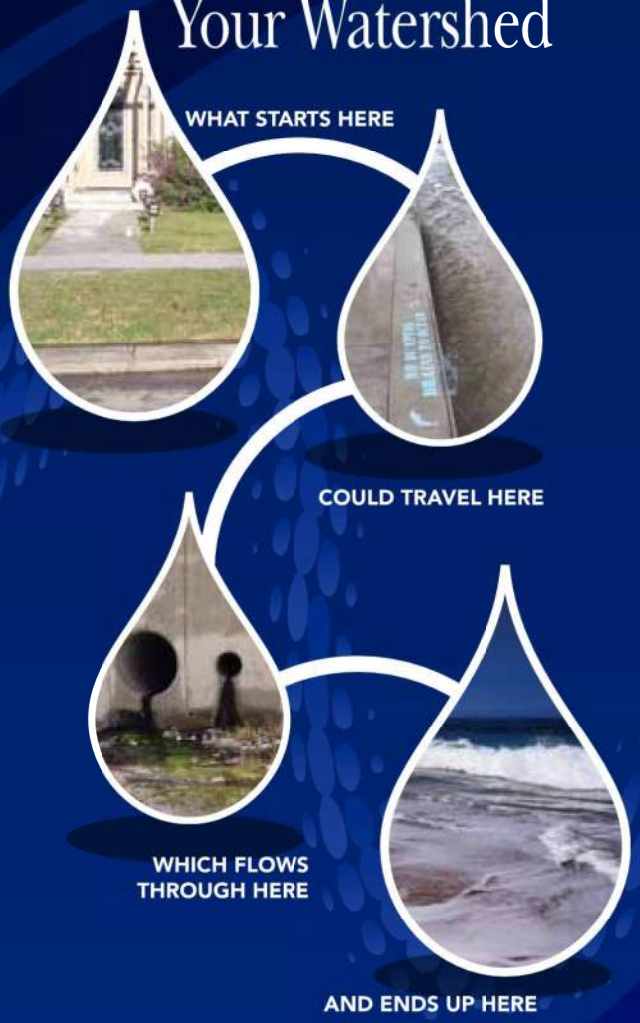
Help Prevent Ocean Pollution:

Tips For Protecting Your Watershed



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Tips for Protecting Your Watershed

My Watershed. Our Ocean.

Water + shed, *noun: A region of land within which water flows down into a specified water body, such as a river, lake, sea, or ocean; a drainage basin or catchment basin.*

Orange County is comprised of 11 major watersheds into which most of our water flows, connecting all of Orange County to the Pacific Ocean.

As water from rain (stormwater) or sprinklers and hoses (urban runoff) runs down your driveway and into your neighborhood streets, sidewalks and gutters, it flows into storm drains that lead to waterways within your watershed. The waterways from other cities merge as they make their way through our watersheds until all the runoff water in Orange County meets at the Pacific Ocean. The water that reaches our ocean is not pure. As it flows through the watershed, it picks up pollutants such as litter, cigarette butts, fertilizer, pesticides, pet waste, motor oil and lawn clippings. Unlike water that enters the sewer (from sinks and toilets), water that enters the storm drain is not treated before it flows, ultimately, to the ocean.

Water quality can be improved by "Adopting Your Watershed." Through this effort, we are challenging citizens and organizations to join the Orange County Stormwater Program and others who are working to protect and restore our creeks, rivers, bays and ocean.

There are many opportunities to get involved:

- Appreciate your watershed - explore the creeks, trails and ocean and make observations about its conditions. If you see anything abnormal (such as dead fish, oil spills, leaking barrels, and other pollution) contact the Orange County 24-hour water pollution problem reporting hotline at 1.877.89.SPILL to report the problem.
- Research your watershed. Learn about what watershed you live in by visiting www.ocwatersheds.com.
- Find a watershed organization in your community and volunteer to help. If there are no active groups, consider starting your own.
- Visit EPA's Adopt Your Watershed's Catalog of Watershed Groups at www.epa.gov/adopt to locate groups in your community.
- Organize or join in a creek, river, bay or ocean cleanup event such as Coastal & Inner Coastal Cleanup Day that takes place the 3rd Saturday of every September. For more information visit www.coast4u.org.

Follow these simple tips to protect the water quality of your watershed:

- **Sweep up debris and dispose of it in the trash. Do not hose down driveways or sidewalks into the street or gutter.**
- **Use dry cleanup methods such as cat litter to absorb spills and sweep up residue.**
- **Set your irrigation systems to reflect seasonal water needs or use weather-based controllers. Inspect for runoff regularly.**
- **Cover trashcans securely.**
- **Take hazardous waste to a household hazardous waste collection center. (For example, paint, batteries and petroleum products)**
- **Pick up after your pet.**
- **Follow application and disposal directions for pesticides and fertilizers.**
- **If you wash your car at home, wash it on your lawn or divert the runoff onto a landscaped area. Consider taking your car to a commercial car wash, where the water is reclaimed or recycled.**
- **Keep your car well maintained.**
- **Never pour oil or antifreeze in the street, gutter or storm drain.**

Preventing water pollution at your commercial/industrial site

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many landscape and building maintenance activities can lead to water pollution if you're not careful. Paint, chemicals, plant clippings and other materials can be blown or washed into storm drains that flow to the ocean. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never pour soap or fertilizers into the ocean, so why would you let them enter the storm drains? Follow these easy tips to help prevent water pollution.

Some types of industrial facilities are required to obtain coverage under the State General Industrial Permit. For more information visit: **www.swrcb.ca.gov/stormwater/industrial.html**

For more information, please call the **Orange County Stormwater Program** at **1-877-89-SPILL** (1-877-897-7455) or visit **www.ocwatersheds.com**

To report a spill, call the **Orange County 24-Hour Water Pollution Problem Reporting Hotline** at **1-877-89-SPILL** (1-877-897-7455).

For emergencies, dial 911.

RECYCLE USED OIL

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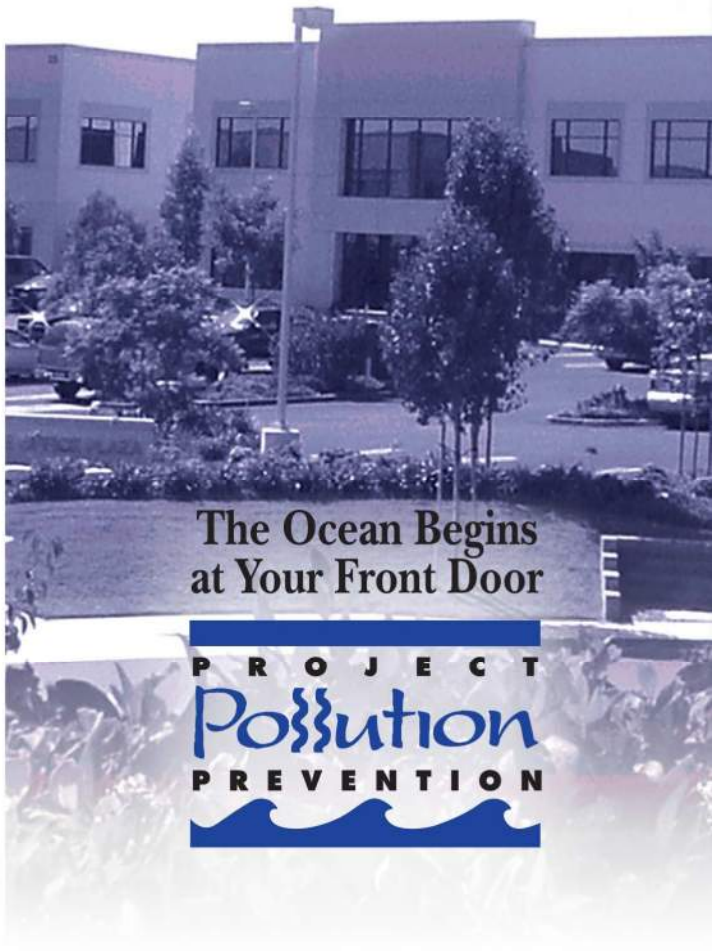
Help Prevent Ocean Pollution:

Proper Maintenance Practices for Your Business



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Proper Maintenance Practices for your Business

Landscape Maintenance

- Compost grass clippings, leaves, sticks and other vegetation, or dispose of it at a permitted landfill or in green waste containers. Do not dispose of these materials in the street, gutter or storm drain.
- Irrigate slowly and inspect the system for leaks, overspraying and runoff. Adjust automatic timers to avoid overwatering.
- Follow label directions for the use and disposal of fertilizers and pesticides.
- Do not apply pesticides or fertilizers if rain is expected within 48 hours or if wind speeds are above 5 mph.
- Do not spray pesticides within 100 feet of waterways.
- Fertilizers should be worked into the soil rather than dumped onto the surface.
- If fertilizer is spilled on the pavement or sidewalk, sweep it up immediately and place it back in the container.

Building Maintenance

- Never allow washwater, sweepings or sediment to enter the storm drain.
- Sweep up dry spills and use cat litter, towels or similar materials to absorb wet spills. Dispose of it in the trash.
- If you wash your building, sidewalk or parking lot, you **must** contain the water. Use a shop vac to collect the water and contact your city or sanitation agency for proper disposal information. Do not let water enter the street, gutter or storm drain.
- Use drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of materials in the trash.
- Use a ground cloth or oversized tub for mixing paint and cleaning tools.
- Use a damp mop or broom to clean floors.
- Cover dumpsters to keep insects, animals, rainwater and sand from entering. Keep the area around the dumpster clear of trash and debris. Do not overfill the dumpster.
- Call your trash hauler to replace leaking dumpsters.
- Do not dump any toxic substance or liquid waste on the pavement, the ground, or near a storm drain. Even materials that seem harmless such as latex paint or biodegradable cleaners can damage the environment.

NEVER DISPOSE OF ANYTHING IN THE STORM DRAIN.

- Recycle paints, solvents and other materials. For more information about recycling and collection centers, visit **www.oclandfills.com**.
- Store materials indoors or under cover and away from storm drains.
- Use a construction and demolition recycling company to recycle lumber, paper, cardboard, metals, masonry, carpet, plastic, pipes, drywall, rocks, dirt, and green waste. For a listing of construction and demolition recycling locations in your area, visit **www.ciwmb.ca.gov/recycle.**
- Properly label materials. Familiarize employees with Material Safety Data Sheets.

PROJECT Pollution PREVENTION

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Fertilizers, pesticides and other chemicals that are left on yards or driveways can be blown or washed into storm drains that flow to the ocean. Overwatering lawns can also send materials into storm drains. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never pour gardening products into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information,
please call the
Orange County Stormwater Program
at **1-877-89-SPILL** (1-877-897-7455)
or visit
www.ocwatersheds.com

UCCE Master Gardener Hotline:
(714) 708-1646

To report a spill,
call the
Orange County 24-Hour
Water Pollution Problem
Reporting Hotline
1-877-89-SPILL (1-877-897-7455).

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while landscaping or gardening. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

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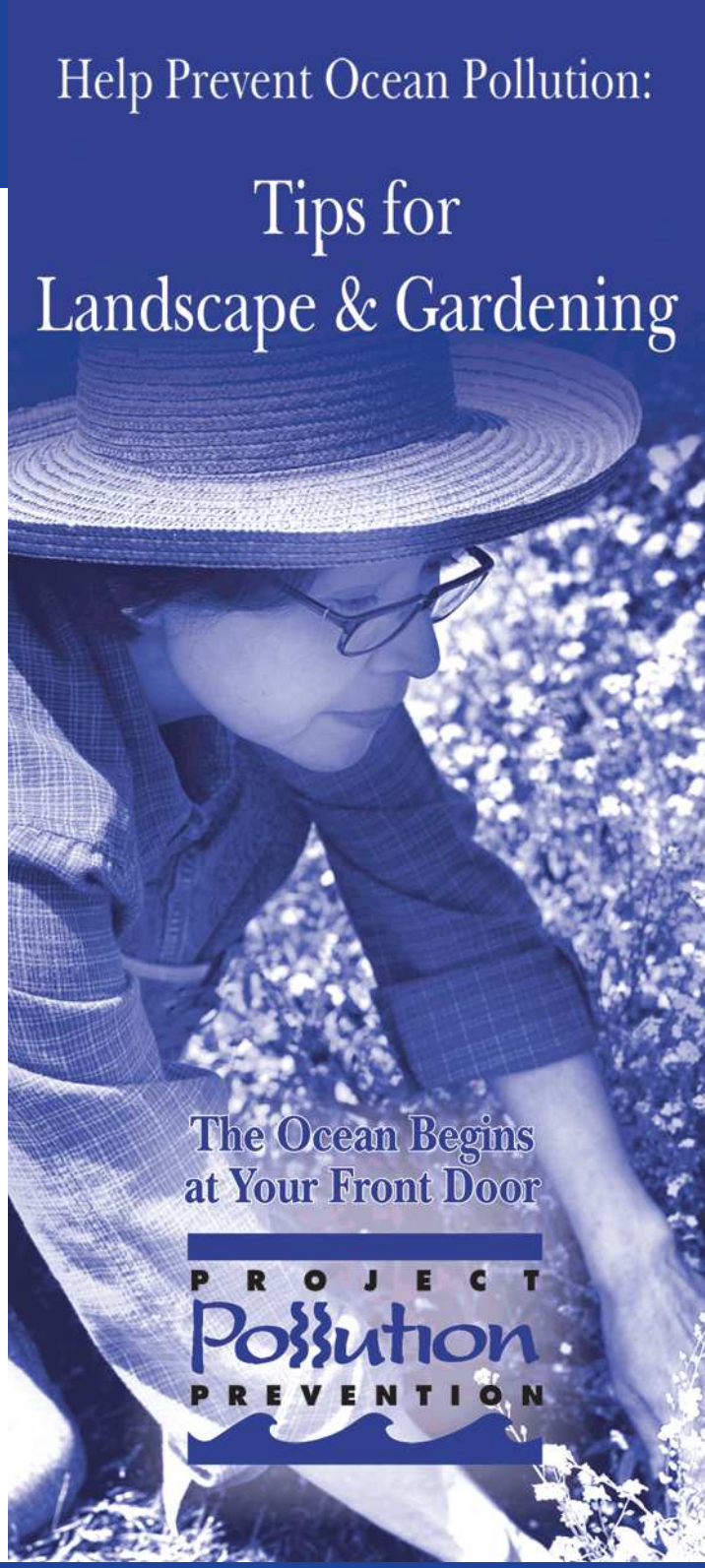
Help Prevent Ocean Pollution:

Tips for Landscape & Gardening



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Tips for Landscape & Gardening

Never allow gardening products or polluted water to enter the street, gutter or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.
- Plant native vegetation to reduce the amount of water, fertilizers, and pesticide applied to the landscape.

- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.

Garden & Lawn Maintenance

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro spray systems. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.

- Use slow-release fertilizers to minimize leaching, and use organic fertilizers.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.

- Rinse empty pesticide containers and re-use rinse water as you would use the product. Do not dump rinse water down storm drains. Dispose of empty containers in the trash.
- When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting. For more information, visit **www.ipm.ucdavis.edu**.
- If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply an absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.
- Take unwanted pesticides to a Household Hazardous Waste Collection Center to be recycled. Locations are provided below.

Household Hazardous Waste Collection Centers

Anaheim:	1071 N. Blue Gum St.
Huntington Beach:	17121 Nichols St.
Irvine:	6411 Oak Canyon
San Juan Capistrano:	32250 La Pata Ave.

For more information, call (714) 834-6752 or visit www.oclandfills.com

The Ocean Begins at Your Front Door

Orange County Stormwater Program

Even if you live miles from the Pacific Ocean, you may be unknowingly polluting it.

Dumping one quart of motor oil into a storm drain can contaminate 250,000 gallons of water.

Did You Know?

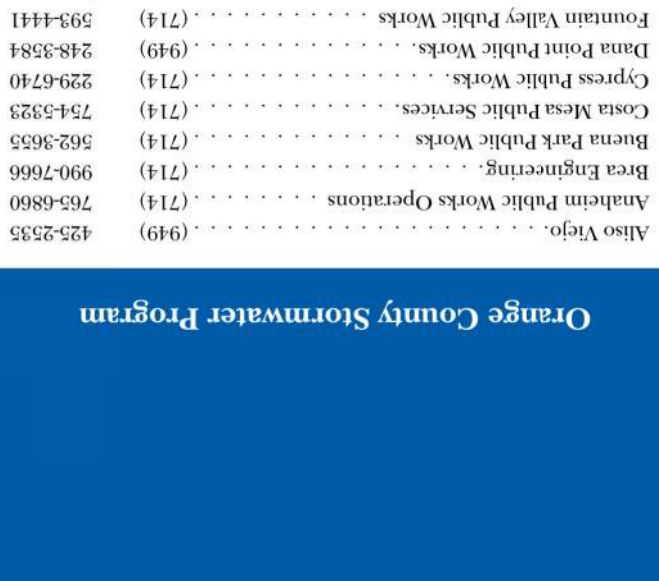
- Most people believe that the largest source of water pollution in urban areas comes from specific sources such as factories and sewage treatment plants. In fact, the largest source of water pollution comes from city streets, neighborhoods, construction sites and parking lots. This type of pollution is sometimes called "non-point source" pollution.
- There are two types of non-point source pollution: stormwater and urban runoff pollution.
- Stormwater runoff results from rainfall. When rainstorms cause large volumes of water to rinse the urban landscape, picking up pollutants along the way.
- Urban runoff can happen any time of the year when excessive water use from irrigation, vehicle washing and other sources carries trash, lawn clippings and other urban pollutants into storm drains.

Where Does It Go?

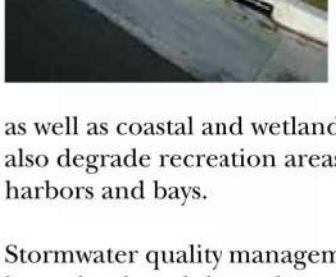
- Anything we use outside homes, vehicles and businesses – like motor oil, paint, pesticides, fertilizers and cleaners – can be blown or washed into storm drains.
- A little water from a garden hose or rain can also send materials into storm drains.
- Storm drains are separate from our sanitary sewer systems; unlike water in sanitary sewers (from sinks or toilets), water in storm drains is not treated before entering our waterways.

Sources of Non-Point Source Pollution

- Automotive leaks and spills.
- Improper disposal of used oil and other engine fluids.
- Metals found in vehicle exhaust, weathered paint, rust, metal plating and tires.
- Pesticides and fertilizers from lawns, gardens and farms.
- Improper disposal of cleaners, paint and paint removers.
- Soil erosion and dust debris from landscape and construction activities.
- Litter, lawn clippings, animal waste, and other organic matter.
- Oil stains on parking lots and paved surfaces.



The Effect on the Ocean



Non-point source pollution can have a serious impact on water quality in Orange County. Pollutants from the storm drain system can harm marine life as well as coastal and wetland habitats. They can also degrade recreation areas such as beaches, harbors and bays.

Stormwater quality management programs have been developed throughout Orange County to educate and encourage the public to protect water quality, monitor runoff in the storm drain system, investigate illegal dumping and maintain storm drains.

Support from Orange County residents and businesses is needed to improve water quality and reduce urban runoff pollution. Proper use and disposal of materials will help stop pollution before it reaches the storm drain and the ocean.

For More Information

California Environmental Protection Agency
www.calepa.ca.gov

- **Air Resources Board**
  www.arb.ca.gov
- **Department of Pesticide Regulation**
  www.cdpr.ca.gov
- **Department of Toxic Substances Control**
  www.dtsc.ca.gov
- **Integrated Waste Management Board**
  www.ciwmb.ca.gov
- **Office of Environmental Health Hazard Assessment**
  www.oehha.ca.gov
- **State Water Resources Control Board**
  www.waterboards.ca.gov

Earth 911 - Community-Specific Environmental Information 1-800-cleanup or visit www.1800cleanup.org

Health Care Agency's Ocean and Bay Water Closure and Posting Hotline
(714) 433-6400 or visit www.ocbeachinfo.com

Integrated Waste Management Dept. of Orange County (714) 834-6752 or visit www.oclandfills.com for information on household hazardous waste collection centers, recycling centers and solid waste collection

O.C. Agriculture Commissioner
(714) 447-7100 or visit www.ocagcomm.com

Stormwater Best Management Practice Handbook
Visit www.cabmphandbooks.com

UC Master Gardener Hotline
(714) 708-1646 or visit www.uccemg.com

The Orange County Stormwater Program has created and moderates an electronic mailing list to facilitate communications, take questions and exchange ideas among its users about issues and topics related to stormwater and urban runoff and the implementation of program elements. To join the list, please send an email to ocstormwaterinfo-join@list.ocwatersheds.com

Aliso Viejo	(949)	425-2535
Anaheim Public Works Operations	(714)	765-6860
Brea Engineering	(714)	990-7666
Buena Park Public Works	(714)	562-3655
Costa Mesa Public Services	(714)	754-5323
Cypress Public Works	(714)	229-6740
Dana Point Public Works	(949)	248-3584
Fountain Valley Public Works	(714)	593-4441
Fullerton Engineering Dept.	(714)	738-6853
Garden Grove Public Works	(714)	741-5956
Huntington Beach Public Works	(714)	536-5431
Irvine Public Works	(949)	724-6315
La Habra Public Services	(562)	905-9792
La Palma Public Works	(714)	690-3310
Laguna Beach Water Quality	(949)	497-0378
Laguna Hills Public Services	(949)	707-2650
Laguna Niguel Public Works	(949)	362-4337
Laguna Woods Public Works	(949)	639-0500
Lake Forest Public Works	(949)	461-3480
Los Alamitos Community Dev.	(562)	431-3538
Mission Viejo Public Works	(949)	470-3056
Newport Beach, Code & Water Quality Enforcement	(949)	644-3215
Orange Public Works	(714)	532-6480
Placentia Public Works	(714)	993-8245
Rancho Santa Margarita	(949)	635-1800
San Clemente Environmental Programs	(949)	361-6143
San Juan Capisrano Engineering	(949)	234-4413
Santa Ana Public Works	(714)	647-3380
Seal Beach Engineering	(562)	431-2527 x317
Stanton Public Works	(714)	379-9222 x204
Tustin Public Works/Engineering	(714)	573-3150
Villa Park Engineering	(714)	998-1500
Westminster Public Works/Engineering	(714)	898-3311 x446
Yorba Linda Engineering	(714)	961-7138
Orange County Stormwater Program	(877)	897-7455
Orange County 24-Hour Water Pollution Problem Reporting Hotline 1-877-89-SPILL (1-877-897-7455)		

On-line Water Pollution Problem Reporting Form

www.ocwatersheds.com

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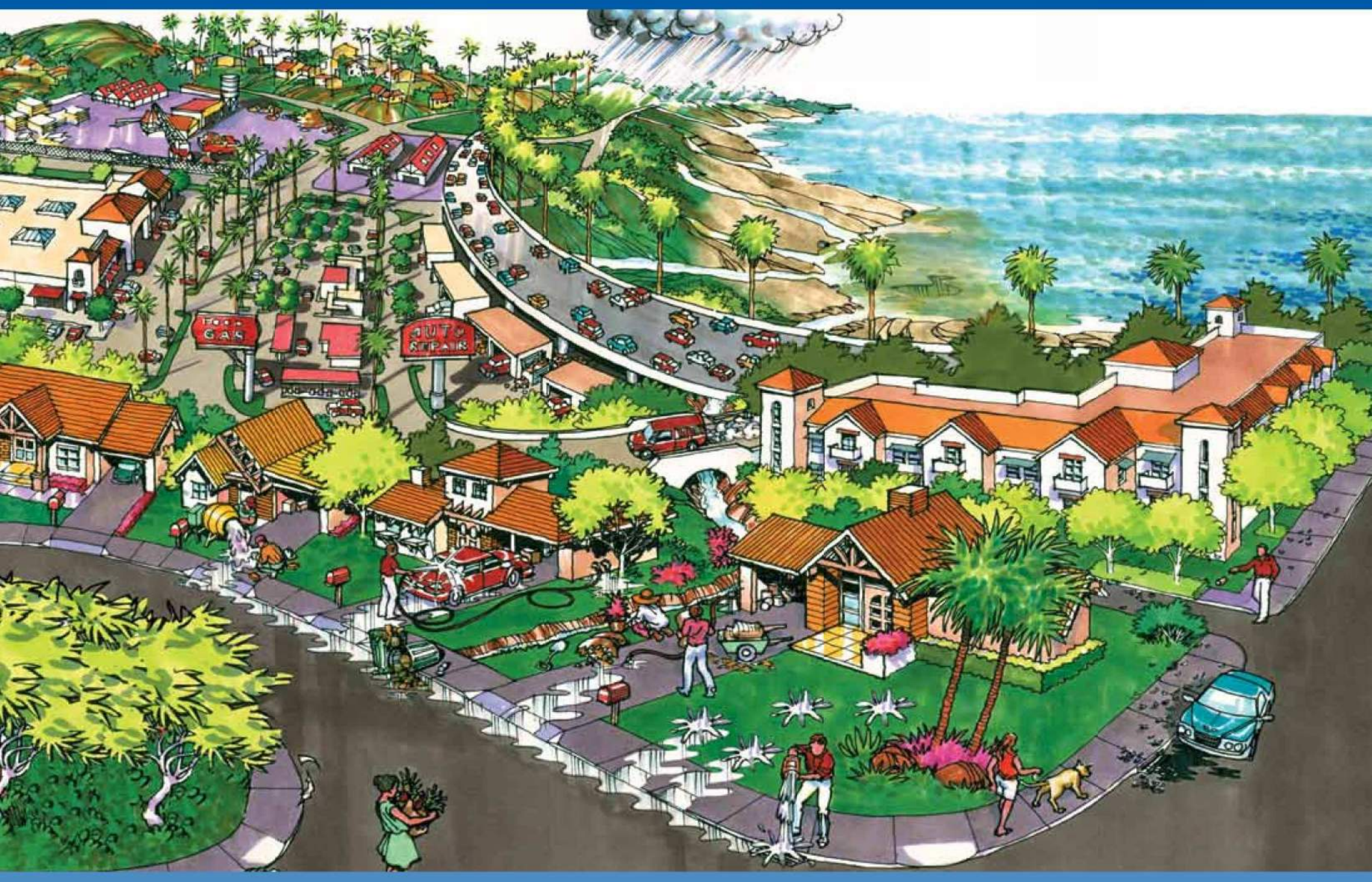
The Ocean Begins at Your Front Door



Never allow pollutants to enter the street, gutter or storm drain!

Follow these simple steps to help reduce water pollution:

Household Activities

- Do not rinse spills with water. Use dry cleanup methods such as applying cat litter or another absorbent material, sweep and dispose of in the trash. Take items such as used or excess batteries, oven cleaners, automotive fluids, painting products and cathode ray tubes, like TVs and computer monitors, to a Household Hazardous Waste Collection Center (HHWCC).
- For a HHWCC near you call (714) 834-6752 or visit www.oclandfills.com.
- Do not hose down your driveway, sidewalk or patio to the street, gutter or storm drain. Sweep up debris and dispose of it in the trash.

Automotive

- Take your vehicle to a commercial car wash whenever possible. If you wash your vehicle at home, choose soaps, cleaners, or detergents labeled non-toxic, phosphate- free or biodegradable. Vegetable and citrus-based products are typically safest for the environment.
- Do not allow washwater from vehicle washing to drain into the street, gutter or storm drain. Excess washwater should be disposed of in the sanitary sewer (through a sink or toilet) or onto an absorbent surface like your lawn.
- Monitor your vehicles for leaks and place a pan under leaks. Keep your vehicles well maintained to stop and prevent leaks.
- Never pour oil or antifreeze in the street, gutter or storm drain. Recycle these substances at a service station, a waste oil collection center or used oil recycling center. For the nearest Used Oil Collection Center call 1-800-CLEANUP or visit www.1800cleanup.org.

Pool Maintenance

- Pool and spa water must be dechlorinated and free of excess acid, alkali or color to be allowed in the street, gutter or storm drain.
- When it is not raining, drain dechlorinated pool and spa water directly into the sanitary sewer.
- Some cities may have ordinances that do not allow pool water to be disposed of in the storm drain. Check with your city.

Landscape and Gardening

- Do not over-water. Water your lawn and garden by hand to control the amount of water you use or set irrigation systems to reflect seasonal water needs. If water flows off your yard onto your driveway or sidewalk, your system is over-watering. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of waste by composting, hauling it to a permitted landfill, or as green waste through your city's recycling program.
- Follow directions on pesticides and fertilizer, (measure, do not estimate amounts) and do not use if rain is predicted within 48 hours.
- Take unwanted pesticides to a HHWCC to be recycled. For locations and hours of HHWCC, call (714) 834-6752 or visit www.oclandfills.com.

Trash

- Place trash and litter that cannot be recycled in securely covered trash cans.
- Whenever possible, buy recycled products.
- Remember: Reduce, Reuse, Recycle.

Pet Care

- Always pick up after your pet. Flush waste down the toilet or dispose of it in the trash. Pet waste, if left outdoors, can wash into the street, gutter or storm drain.
- If possible, bathe your pets indoors. If you must bathe your pet outside, wash it on your lawn or another absorbent/permeable surface to keep the washwater from entering the street, gutter or storm drain.
- Follow directions for use of pet care products and dispose of any unused products at a HHWCC.

Common Pollutants

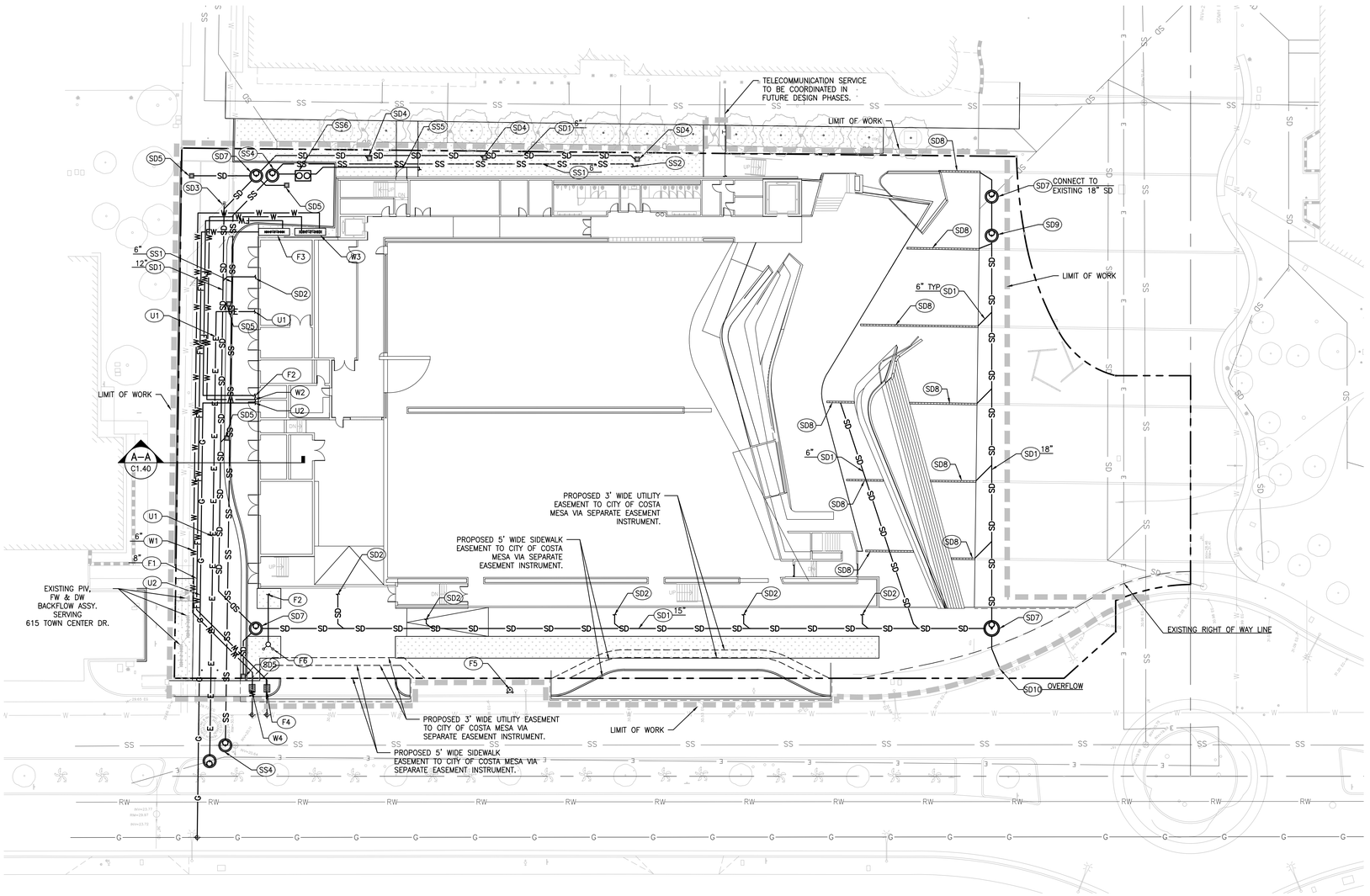
Home Maintenance
- Detergents, cleaners and solvents
- Oil and latex paint
- Swimming pool chemicals
- Outdoor trash and litter

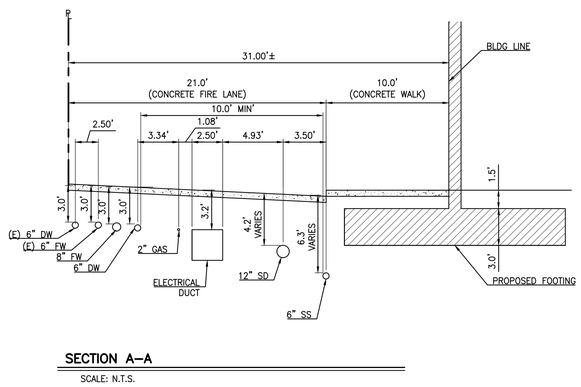
Lawn and Garden
- Pet and animal waste
- Pesticides
- Clippings, leaves and soil
- Fertilizer

Automobile
- Oil and grease
- Radiator fluids and antifreeze
- Cleaning chemicals
- Brake pad dust

Attachment E

UTILITY PLAN





SECTION A–A

SCALE: N.T.S.

UTILITY CONSTRUCTION NOTES:

STORM DRAIN

- (SD1) PVC, SDR–35 STORM DRAIN PIPE. SIZE AND SLOPE PER PLAN.
- (SD2) POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING DRAWINGS FOR CONTINUATION.
- (SD3) CLEANOUT.
- (SD4) PLANTER DRAIN.
- (SD5) PRECAST CONCRETE CATCH BASIN. JENSEN PRECAST PRODUCTS OR APPROVED EQUIVALENT. SIZE AND GRATE BEARING TYPE PER PLAN.
- (SD6) NOT USED.
- (SD7) PRECAST CONCRETE MANHOLE PER APWA STANDARD PLAN 200–2.
- (SD8) TRENCH DRAIN, MATCH EXISTING.
- (SD9) CONTECH CDS UNIT.
- (SD10) PARKWAY DRAIN PER CITY OF COSTA MESA STD. DWG. NO. 418.

SANITARY SEWER

- (SS1) PVC, SDR–35 SANITARY SEWER PIPE. SIZE AND SLOPE PER PLAN.
- (SS2) POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING DRAWINGS FOR CONTINUATION.
- (SS3) NOT USED.
- (SS4) PRECAST CONCRETE MANHOLE PER APWA STANDARD PLAN 200–2.
- (SS5) 2" GREASE WASTE PIPE
- (SS6) GREASE INTERCEPTOR

DOMESTIC WATER

- (W1) PVC C–900 DOMESTIC WATER PIPE. SIZE PER PLAN.
- (W2) POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING DRAWINGS FOR CONTINUATION.
- (W3) REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER.
- (W4) WATER METER VAULT. INSTALLATION BY MESA WATER DISTRICT. SHOWN FOR COORDINATION PURPOSES ONLY. CONTRACTOR TO COORDINATE WATER SERVICE CONNECTION WITH LOCAL PROVIDER.

FIRE WATER

- (F1) PVC C–900 FIRE WATER PIPE. SIZE AND MATERIAL PER PLAN.
- (F2) POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING DRAWINGS FOR CONTINUATION.
- (F3) DOUBLE CHECK DETECTOR BACKFLOW PREVENTER.
- (F4) WATER METER VAULT. INSTALLATION BY MESA WATER DISTRICT. SHOWN FOR COORDINATION PURPOSES ONLY. CONTRACTOR TO COORDINATE FIRE WATER SERVICE CONNECTION WITH LOCAL PROVIDER.
- (F5) FIRE HYDRANT.
- (F6) FIRE DEPARTMENT CONNECTION.

OTHER UTILITIES

- (U1) ELECTRICAL CONDUIT. SEE ELECTRICAL DRAWINGS FOR DETAILS AND SPECIFICATIONS. SHOWN FOR COORDINATION PURPOSES ONLY.
- (U2) GAS LINE. SEE GAS COMPANY DRAWINGS FOR DETAILS AND SPECIFICATIONS. SHOWN FOR COORDINATION PURPOSES ONLY.
- (U3) MECHANICAL LINE. SEE MECHANICAL DRAWINGS FOR DETAILS AND SPECIFICATIONS. SHOWN FOR COORDINATION PURPOSES ONLY.

LEGEND:

- CIVIL LIMITS OF WORK
- SHEET MATCH LINE
- SAWCUT / JOIN LINE
- PROPERTY LINE
- PROPOSED EASEMENT TO BE DEDICATED TO CITY OF COSTA MESA VIA SEPARATE EASEMENT INSTRUMENT
- EXISTING RIGHT OF WAY LINE
- POINT OF CONNECTION

NOTE TO CONTRACTOR:

ALL EXISTING UTILITIES SHOWN ON THIS PLAN ARE FROM AVAILABLE RECORD DOCUMENTS AND AS–BUILT PLANS. CONTRACTOR SHALL CONFIRM LOCATION, SIZE, DEPTH AND CONDITION OF ALL EXISTING UTILITIES BEFORE COMMENCING CONSTRUCTION.

N

0 10' 20'

SCALE: 1"=20'

PRELIMINARY NOT FOR CONSTRUCTION OCMA TEAM CIRCULATION ONLY

OCMA

ARCHITECT:
mOrphosis®
3440 Wesley Street
Culver City, CA 90232
T: 424.258.6200
www.morphosis.com

CIVIL ENGINEER:
KPFF CONSULTING ENGINEERS
700 SOUTH FLOWER STREET
SUITE 2100
LOS ANGELES, CA 90017

kpff
700 South Flower Street
Suite 2100
Los Angeles, CA 90017
O: 213.418.0201
F: 213.266.5294
www.kpff.com

ISSUES / REVISIONS:		
DATE	SYMBOL	DESCRIPTION
05–16–16		PRICING SET
06–09–16		50% SD
07–22–16		100% SD PRICING
08–10–16		100% SD
06–15–18		50% DD
07–27–18		MASTER PLAN SUBMISSION

KEY PLAN:

PROJECT

ORANGE COUNTY MUSEUM OF ART

3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626

UTILITY PLAN

SEAL & SIGNATURE:

REGISTERED PROFESSIONAL ENGINEER REZA REZAIAN No. C62048 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

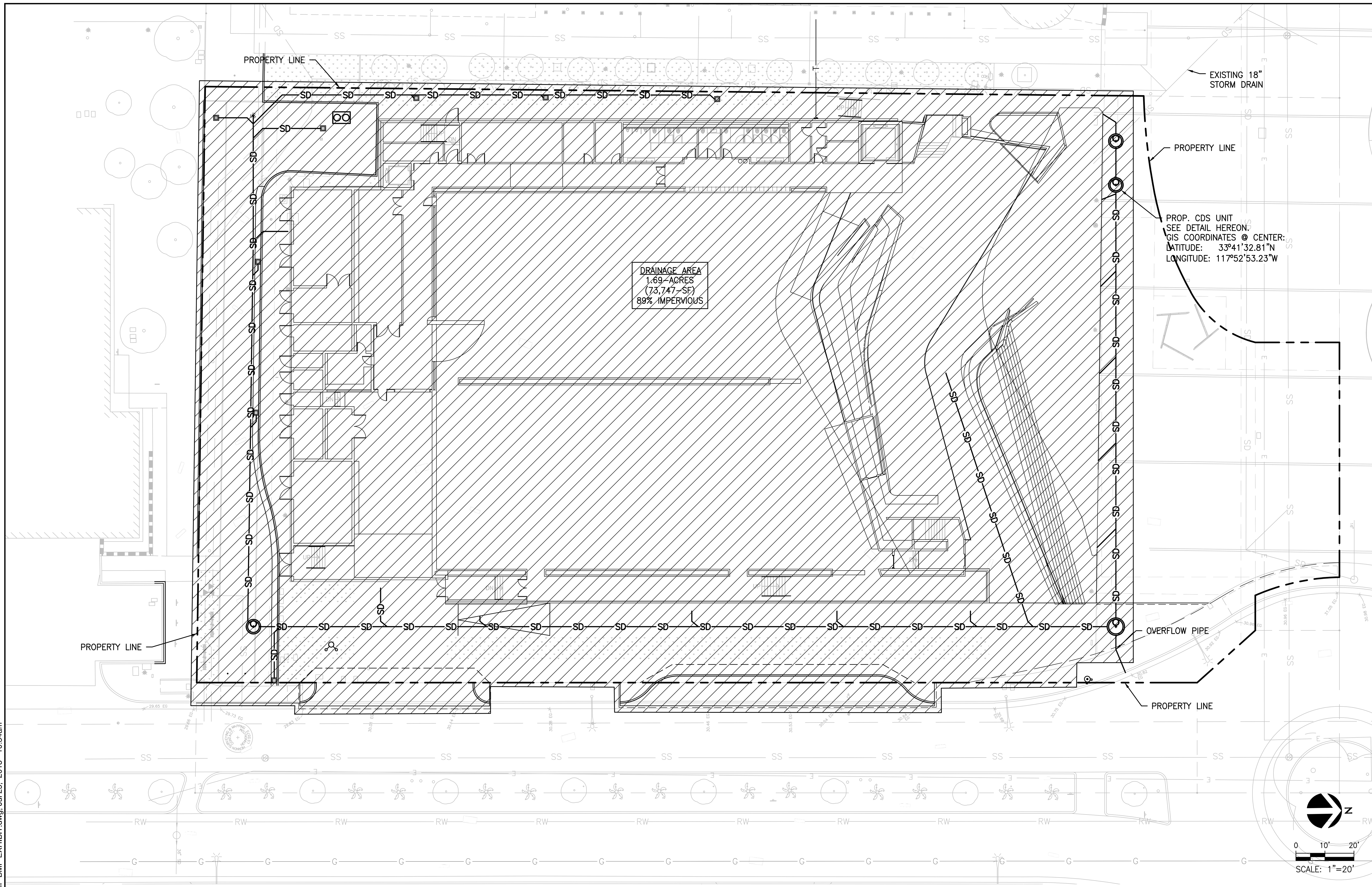
DATE:	07-27-18
PROJECT No.:	35102
DRAWING BY:	
CHK BY:	
DWG No.	C-150.0
FILE No.:	

P:\2015\150110 Orange County Museum of Art\DWG\SHEET\150110-C1.50-UT.dwg, Jul 26, 2018 - 12:35pm

Attachment F

BMP EXHIBIT

WQMP ATTACHMENT F: BMP EXHIBIT

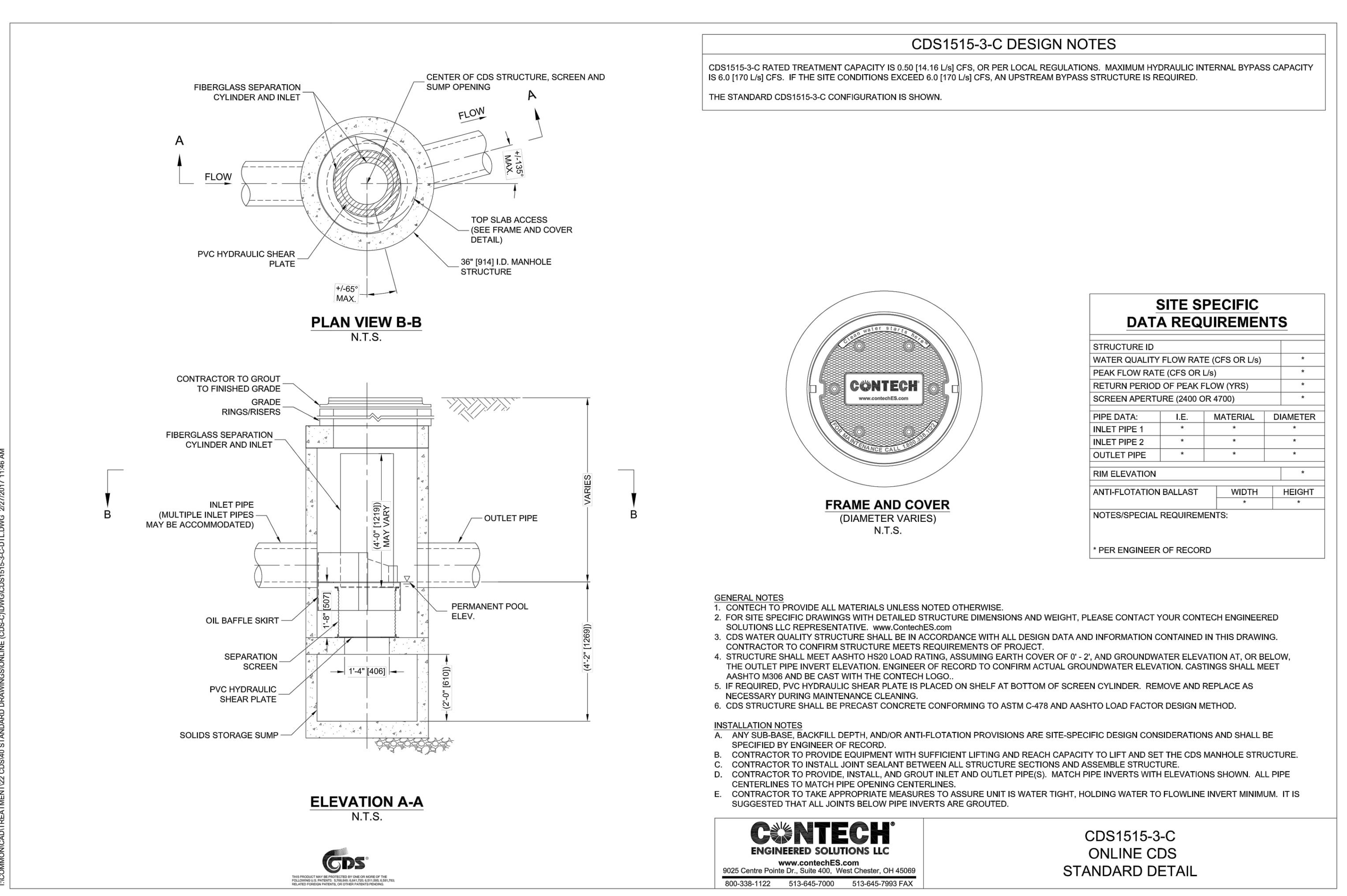


LEGEND

Symbol	Description
— — —	PROPERTY LINE
◎	MANHOLE
—SD—SD—	STORM DRAIN PIPE

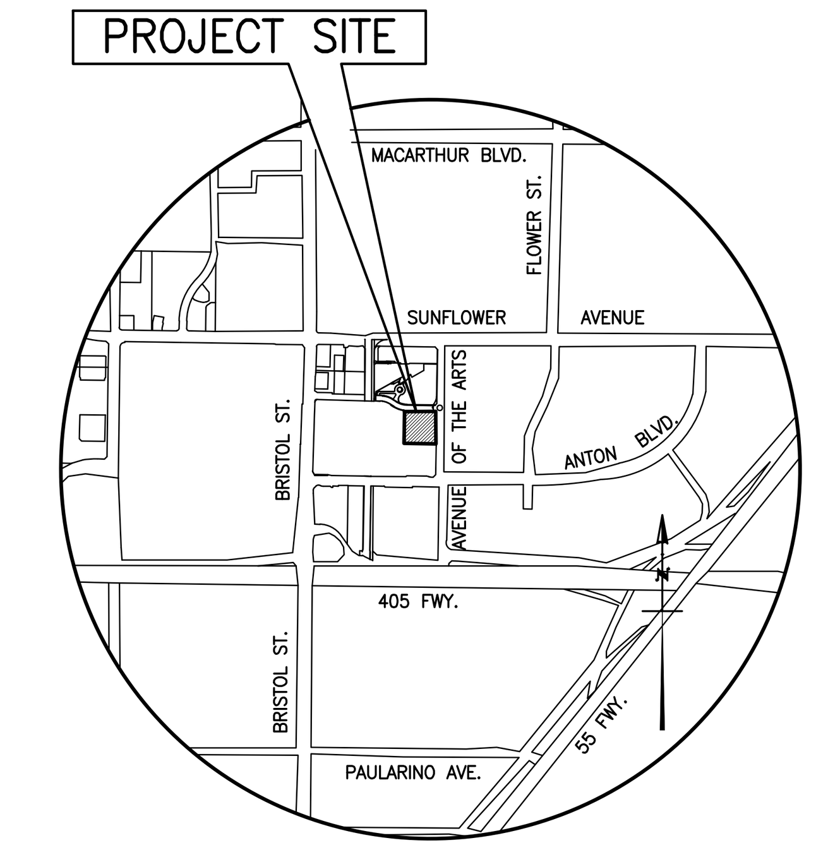
BMP 1: CONTECH CDS UNIT:

◎ CONTECH CDS UNIT



CONTECH CDS UNIT

PROJECT SITE



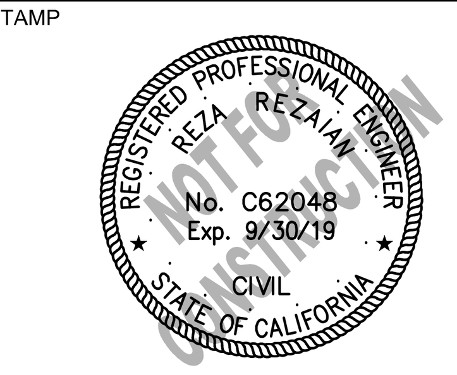
VICINITY MAP
NOT TO SCALE

3333 AVENUE OF THE ARTS
COSTA MESA, CA 92626
PARCEL 1 OF PARCEL MAP 99-112,
PARCEL MAP BOOK – 327

kpff
700 South Flower Street
Suite 2100
Los Angeles, CA 90017
O: 213.418.0201
F: 213.266.5294
www.kpff.com

CONSULTANTS

STAMP



REVISIONS

DATE	△	ISSUED FOR
XX/XX/XX	1	DESCRIPTION

DATE	07.12.18
PROJECT NUMBER	1500110
DESIGNED BY	JB
DRAWN BY	JA
CHECKED BY	RR
SCALE	AS SPECIFIED

KEY MAP

PROJECT DESCRIPTION

ORANGE COUNTY MUSEUM OF ART

3333 AVENUE OF THE ARTS,
COSTA MESA, CA 92626

DRAWING TITLE

WQMP BMP EXHIBIT

SHEET NUMBER (EXHIBIT NUMBER)

F

\\kpffla\civil.com\share\Projects\2015\1500110 Orange County Museum of Art\DWG\SHEET\EXHIBIT\1500110-C-EXH-002 WQMP BMP EXHIBIT.dwg, Jul 25, 2018 - 10:34am

PLANNING COMMISSION SUPPLEMENTAL MEMORANDUM

MEETING DATE: JANUARY 14, 2019 **ITEM NUMBER:** PH-1

SUBJECT: **PLANNING APPLICATION 18-28, A MASTER PLAN FOR THE DEVELOPMENT OF THE ORANGE COUNTY MUSEUM OF ART AT 655 TOWN CENTER DRIVE**

DATE: **JANUARY 10, 2019**

FROM: **PLANNING DIVISION / DEVELOPMENT SERVICES DEPARTMENT**

PRESENTATION BY: **DANIEL INLOES, ECONOMIC DEVELOPMENT ADMINISTRATOR**

STAFF CONTACT: **DANIEL INLOES, AICP (714) 754-5088**
daniel.inloes@costamesaca.gov

The purpose of this memo is to change a fee estimated in Code Requirement 29 from $882,190.00 to $180,480.00 in Exhibit B in Draft Planning Commission Resolution, Attachment 4.

This memo revises code requirement 29 as shown below:

29. Fulfill mitigation of off-site traffic impacts at the time of issuance of occupancy by submitting to the Planning Division the required traffic impact fee pursuant to the prevailing schedule of charges adopted by the City Council. The traffic impact fee is calculated including credits for all existing uses. At the current rate the Traffic Impact Fee is estimated at: ~~$882,190.00~~ $180,480.00. NOTE: The Traffic Impact Fee will be recalculated at the time of issuance of building permit/certificate of occupancy based upon any changes in the prevailing schedule of charges adopted by the City Council and in effect at that time.

DANIEL INLOES
Economic Development Administrator

BARRY CURTIS, AICP
Director of Economic and Development Services

Distribution: Director of Economic and Development Services
Assistant Director of Development Services
Deputy City Attorney
Public Services Director
City Engineer

Transportation Services Manager
Fire Protection Analyst
File

Applicant's
Representative: Orange County Museum of Art
c/o Todd Smith
South Coast Plaza Village
1661 W. Sunflower Ave.
Santa Ana, CA 92704

Architect: Morphosis
c/o Aaron Ragan
3440 Wesley Street
Culver City, CA 90232

CEQA
Consultant: LSA
c/o Ryan Bensley
20 Executive Part, Suite 200
Irvine, CA 92614

Correspondence received after 12pm deadline

Segerstrom Center for the Arts

Terrence W. Dwyer
President

January 14, 2019

City of Costa Mesa Planning Commission
77 Fair View Drive
Costa Mesa, CA 92626

Ladies and Gentlemen:

I am writing on behalf of Segerstrom Center for the Arts (the "Center"), and its ad hoc Board Committee that oversees issues related to the Center's relationship with the Orange County Museum of Art ("OCMA"), in connection with the public hearing of the Costa Mesa Planning Commission ("Commission") scheduled for January 14, 2019. One of the items on the agenda at that hearing is the request of OCMA for a Master Plan relating to OCMA's planned construction of an art museum building on property that is adjacent to the Center's campus in Costa Mesa (the "Museum Parcel").

In general, the Center is in favor of OCMA becoming integrated with the cultural center for Orange County at the Performing Arts Center. As City Staff has noted, there is a desire by the City to make sure OCMA operations and services are integrated within the existing operations and services provided to the public as part of the Performing Arts Center. For the reason discussed below, the Center requests that an additional Condition of Approval for this Master Plan be adopted to ensure, as the City would expect, that the development and use of OCMA is integrated with the uses and operations of the Performing Arts Center, and the "vision" as has previously been approved by the City, before construction begins and a building permit is issued pursuant to this Master Plan.

By way of background, the Museum Parcel was gifted to OCMA by the Center in 2008. At the time of that acquisition the Center and OCMA entered into an agreement under which OCMA agreed to a number of conditions relating to its development of that property. Those conditions, which were for the benefit of, and are enforceable by, the Center, are contained in an "Agreement to Transfer Land" dated June 2, 2008, which has been amended several times. The last such amendment expired in June 2016.

In late 2016, the Center and OCMA commenced discussions relating to a new amendment to the Agreement to Transfer Land (the "Amendment to Agreement to Transfer Land" or "Amendment"), in order to address a number of issues relating to the design and operation of the museum, including (among others), delivery of final plans and specifications for the Museum, commencement of vertical construction, and operations for food and beverages services on the Museum Parcel. While the Center and OCMA have nearly completed the terms and conditions

for the Amendment, neither party has yet executed it. The Center expects that the Amendment will be ready for completion and execution by the parties within 30 days, but in any event, the Amendment should be executed before a building permit is issued pursuant to the Master Plan if approved by the City. Therefore, the Center requests that a Condition of Approval be added to the conditions attached to Application No. PA-18-28 to accomplish this goal, and the we have provided suggested language with the enclosure to this letter.

The Center has discussed with OCMA this condition to wrap-up and formalize the Amendment, which is necessary for the development and use of the museum to be integrated with the current programing and uses at the Performing Arts Center. Also, please note that if OCMA does not meet the conditions in the Agreement to Transfer Land (as amended), the Center is then entitled, pursuant to the terms of its gift, to exercise reverter rights with respect to the Museum Parcel, thereby reacquiring ownership of that property.

Therefore, in order to avoid interference between the operations at the proposed Museum Parcel and the operations at the Center campus, we propose that an additional Condition of Approval to the Master Plan be adopted, with suggested language set forth in the enclosure.

On behalf of the Center, I look forward to continuing our work with the planners at the City to support the world-class operations and service at the Performance Arts Center.

SEGERSTROM CENTER FOR THE ARTS

Terrence W. Dwyer,
President

ENCLOSURE TO LETTER FROM SEGERSTROM CENTER FOR THE ARTS TO COSTA MESA PLANNING COMMISSION

Proposed Condition of Approval for Costa Mesa Planning Commission
Master Plan for Orange County Museum of Art
Application No. PA-18-28

Condition No. ____:

OCMA and the Segerstrom Center for the Arts, as parties to that certain "Agreement to Transfer Land" dated June 2, 2008, as amended, shall complete negotiations and execute the Amendment to Agreement to Transfer Land, which amendment's negotiations had commenced in late 2016, within 30 days of issuance of the Master Plan, and in no event shall a building permit be issued under this Master Plan without the execution of the Amendment by OCMA and the Segerstrom Center for the Arts.

COLGAN, JULIE

Subject: FW: The current proposal for the new homeless shelter in district 5 and the new location for the Orange County Museum of Art

From: Rebecca Trahan [mailto:trahanforcitycouncil2018@gmail.com]
Sent: Tuesday, January 15, 2019 2:49 PM
To: CITY COUNCIL <CITYCOUNCIL@costamesaca.gov>
Subject: The current proposal for the new homeless shelter in district 5 and the new location for the Orange County Museum of Art

Dear Council,

I was hoping to address these matters to you at tonight's city council meeting but unfortunately am not able to attend due to a doctor's appointment. Did any of you see this touching article? To a certain extent I feel it represents the compassionate heart of many Costa Mesans. https://www.today.com/food/little-caesars-pizza-fargo-posted-free-food-note-homeless-t139300 I too believe the homeless are people too and deserve a hand up to help them get back on their feet. However, the current proposal outlined in this article is not the longterm answer: https://www.cityofcostamesanews.com/council-looks-to-take-historic-step-to-address-homelessness-in-costa-mesa/

This should not be built in its current proposed location in district 5 but instead needs to be built in areas where there is more room for such a project. If I had my way I would send it back to the County but as you know legally that appears to no longer be an option. If you need specific suggestions on locations let me know because I do have some suggestions. Please do not approve this project to be built and developed in Costa Mesa. Please approve it elsewhere (as long as there is the appropriate security, mental health help, job training, and more).

Regarding the new location for the museum of art (https://www.latimes.com/socal/daily-pilot/news/tn-dpt-me-ocma-master-plan-20190115-story.html) so far I love this idea! So far this is the perfect new location and will be a great addition to our city. Provided it is a fiscally responsible project and will benefit and add to our city, please approve the planning commission's decision to support this new location.

--
Best regards,
Rebecca Trahan
2018 Costa Mesa District 5 City Council Candidate
949-295-5260
www.takebackcostamesa.com
Please participate in these polls!
http://www.easypolls.net/poll.html?p=5b477c18e4b094aa41303749
http://www.easypolls.net/poll.html?p=5b4771ede4b094aa41303717
http://www.easypolls.net/poll.html?p=5b36720be4b094aa41301654
http://www.easypolls.net/poll.html?p=5b366606e4b094aa41301628
http://www.easypolls.net/poll.html?p=5b366b63e4b094aa4130162f
http://www.easypolls.net/poll.html?p=5b47ad93e4b094aa413037bf
http://www.easypolls.net/poll.html?p=5bd743e7e4b056f2fcd3c877#.W9dD5EJpULY.gmail

http://www.easypolls.net/poll.html?p=5bd74727e4b056f2fcd3c87f#.W9dHziFSzfo.gmail