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INITIAL RESPONSES TO CEC STAFF DATA REQUEST SET 2 (1-48)

CA3 Backup Generating Facility (21-SPPE-01)

SUBMITTED TO: CALIFORNIA ENERGY COMMISSION
SUBMITTED BY: **Vantage Data Centers**

July 21, 2021

DAYZEN LLC

INTRODUCTION

Attached are Vantage Data Centers (VDC) responses to California Energy Commission (CEC) Staff Data Request Set No. 2 (1-48) for the CA3 Backup Generation Facility (CA3BGF) Application for Small Power Plant Exemption (SPPE) (21-SPPE-01). Staff issued Data Request Set No. 2 on June 28, 2021.

The Data Responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as Staff presented them and are keyed to the Data Request numbers (1-48). Additional tables, figures, or documents submitted in response to a data request (e.g., supporting data, stand-alone documents such as plans, folding graphics, etc.) are found in Attachments at the end of the document and labeled with the Data Request Number for ease of reference.

For context, the text of the Background and Data Request precede each Data Response.

GENERAL OBJECTIONS

VDC objects to all data requests that require analysis beyond which is necessary to comply with the California Environmental Quality Act (CEQA) or which require VDC to provide data that is in the control of third parties and not reasonably available to VDC. Notwithstanding this objection, VDC has worked diligently to provide these responses swiftly to allow the CEC Staff to prepare the Initial Study/Mitigated Negative Declaration (IS/MND).

AIR QUALITY AND GREENHOUSE GAS EMISSIONS

BACKGROUND

The proposed project would require a permit from the Bay Area Air Quality Management District (District or BAAQMD). For purposes of inter-agency consistency, staff needs copies of all correspondence between the applicant and the District in a timely manner to stay up to date on any issues that arise prior to completion of the environmental document.

DATA REQUESTS

1. Please provide copies of all substantive correspondence between the applicant and the District regarding the project, including application and e-mails, within one week of submittal or receipt. This request is in effect until staff publishes the environmental document.

RESPONSE TO DATA REQUEST 1

VDC will docket copies responsive to this request as directed. To date there have been correspondence between VDC and the BAAQMD as described.

2. Please identify the current schedule for the BAAQMD permit application submittal. Please submit a copy of that application to the docket when it is submitted to BAAQMD.

RESPONSE TO DATA REQUEST 1

VDC has not yet filed an application for BAAQMD permits for the emergency generators and will not likely file any application until after Staff produces its environmental document.

BACKGROUND

The Project Description (p.2-7) states that manufacturer specification sheets for the proposed generators and ratings-related evidence would be provided in SPPE Application Appendix A-1. Staff cannot locate this information in Appendix A-1, the NOx Modeling Report [TN# 237423]. Engine manufacturer and emissions control device specifications sheets should be provided.

DATA REQUEST

3. Please provide up-to-date manufacturer specification sheets showing engine-generator and emissions control system performance specifications. This information should identify potential emissions for a foreseeable range of engine

load settings, and documentation substantiating the effectiveness of proposed selective catalytic reduction (SCR) and diesel particulate filter (DPF) systems.

RESPONSE TO DATA REQUEST 3

The specification sheets that were in the SPPE Application, Appendix A were rejected by CEC docketing because they had a copyright symbol on them. The specification sheets for the CA3 backup generators are the same as those that were accepted for docketing in the AWS Gilroy Backup Generating Facility SPPE Application docket. Please see TN 237629. VDC has requested documentation to substantiate the effectiveness of the proposed SCR and DPF systems and will provide when received. VDC believes that Staff has previously verified the effectiveness of the same equipment to be used for the CA3BGF generators in other backup generating facilities before the Commission and therefore, the documentation may not be necessary for Staff to complete its CEQA-level evaluation.

BACKGROUND

Staff needs additional information to clarify the Potential To Emit (PTE) of the project in the context of the District's June 3, 2019 policy for emergency backup power generators.

DATA REQUEST

4. Please provide emission calculations to disclose the PTE for the project, considering the 2019 District policy to include emissions resulting from emergency operation of 100 hours per year per standby generator, in addition to the proposed levels of permitted emissions for readiness testing and maintenance.

RESPONSE TO DATA REQUEST 4

The PTE will be updated in the revised air quality impact analysis which will be submitted on or before August 9, 2021.

Background: Ambient Air Quality Impact Analysis For Construction

The applicant estimated construction-phase emissions (p.4-25 and in Appendix A-2 of the SPPE Application) and concluded the discussion of construction-phase impacts without quantifying criteria pollutant ambient air quality impacts. The evaluation indicates that construction sources are represented as a single

area source (p.9 of Appendix A-2); however, the analysis does not include supporting calculations to show how the project construction emissions were translated into the single area source nor does the analysis show the concentrations of criteria air pollutants resulting from the analysis of the area source.

DATA REQUESTS

5. Please provide an ambient air quality impact analysis that confirms whether the construction-phase criteria pollutant emissions would comply with the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS).

RESPONSE TO DATA REQUEST 5

VDC's consultant is currently conducting a construction CAAQS/NAAQS analysis and will provide it and the requested supporting materials on or before August 9, 2021.

6. Please support the analysis of construction-phase criteria pollutant impacts by demonstrating how the construction sources are represented in the dispersion model and how concentrations of criteria air pollutants during different averaging times are derived. This information should demonstrate how daytime-only construction activities are represented in the consideration of 1-hour and daily impacts.

RESPONSE TO DATA REQUEST 6

Please see Response to Data Request 5.

Background: Ambient Air Quality Impact Analysis Scope

The applicant provides a one-page summary of the Air Quality Impact Analysis for normal operations and dispersion modeling results (p.4-30 and in Table 4.3-9 of the SPPE Application). The applicant only presents potential impacts for 1-hour NO_2 concentrations. Modeling and ambient air quality impact analyses for other criteria pollutants (e.g., namely CO, PM10, PM2.5 and SO_2) and annual-average NO_2 impacts are also needed to show compliance with all the CAAQS and NAAQS.

DATA REQUEST

7. Please provide an ambient air quality impact analysis for CO, PM10, PM2.5 and SO_2, and for annual average NO_2 impacts during typical readiness and maintenance testing to demonstrate compliance with the CAAQS and the NAAQS.

RESPONSE TO DATA REQUEST 7

VDC's consultant is currently conducting an operational CAAQS/NAAQS analysis and will provide it and the requested supporting materials on or before August 9, 2021. It should be noted that due to comments received from the City of Santa Clara pursuant to its Project Clearance Committee (PCC) review, VDC has reconfigured 8 generators in the generator yard to allow the fire access road to avoid encroaching on a 15-foot setback requirement along Walsh Avenue. The new analysis will reflect this modification. The modified general arrangement and site layout plan is included in Attachment LU DR-44.

BACKGROUND

The SPPE application shows certain assumptions for air quality impact analyses of the typical readiness and maintenance testing emissions (p.4-30) that need to be verified. Assumptions in the analysis appear to include having no more than a specific group of eight generator-engines in use at any one time, during any given hour of testing, and no more than 35 hours per year per engine for testing (p.4-26). The modeling assumes engines would be tested at 0% load. The modeling also presumes that routine readiness testing would be limited to occur within certain hours of the day, although this is not explicit in the application. Additionally, for impacts to be consistent with those predicted by the modeling files, the stacks should not have horizontal releases or rain-caps. Staff would like to verify that these project features and/or analytical assumptions can be made enforceable.

DATA REQUESTS

8. Please confirm that the applicant would request the District to require an enforceable limit on concurrent operation of standby engines during all readiness and maintenance testing scenarios so that no more than the prescribed groups of eight generators would operate for maintenance and testing at any given time.

RESPONSE TO DATA REQUEST 8

VDC agrees to request the District to include a permit condition as described.

9. Please confirm that the applicant would request the District to require an enforceable limit that would allow no more than 35 hours per year per engine, averaged over all engines, and no more than 50 hours per year for any single engine, for readiness and maintenance testing.

RESPONSE TO DATA REQUEST 9

VDC agrees to request the District to include a permit condition, but rather than have the condition limit average hours to no more than 35 hours, VDC will request the permit condition include a limit on total NOx emissions equivalent to 35 hours per year per engine.

10. Please confirm that the applicant would request the District to require an enforceable limit that would allow testing of standby engines only between the hours of 7 AM to 6 PM daily.

RESPONSE TO DATA REQUEST 10

VDC agrees to request the District to include a permit condition as described.

11. Please confirm that all standby engine exhaust stacks would not have horizontal releases or rain-caps.

RESPONSE TO DATA REQUEST 11

VDC confirms that all standby engine exhaust stacks would not have horizontal releases or rain-caps.

BACKGROUND

The impact analysis for NO_2 (in Table 4.3-9 of the SPPE Application; and in Appendix A-1) appears to address only one operational mode at 0% load (zero-load settings) for typical readiness and maintenance testing of the diesel backup generators. The proposed average daily NOx emissions of 193 lb/day (in Table 4.3-6) would be equivalent to 8 lb/hr NOx. However, the NO_2 modeling files appear to assume only 3.44 lb/hr of NOx per engine, at stack conditions that reflect lower-temperature and lower-velocity releases than assumed in health risk modeling files. As such, the NO_2 modeling may not reflect maximum potential hourly emissions or worst-case stack conditions.

The applicant does not provide evidence to demonstrate that a "zero-load" scenario of engine use would cause the highest concentrations of NO_2 or other pollutants because the NO_2 impact analysis is not supported by any screening analysis for other scenarios or modes of engine use at different load levels. The application does not tabulate the range of potential hourly emission rates per engine or the different stack temperature and velocity conditions needed to assess the impacts of the full range of expected engine loads.

To screen for worst-case hourly NO_2 impacts due to a full range of engine loads, NOx emissions from each of the engines at different loads and stack conditions would require evaluation using the ozone limiting method (OLM) to account for the contribution of background ozone and NO_2 levels that vary depending upon the hour of the impact.

DATA REQUESTS

12. Please tabulate the potential hourly emission rates per engine for each pollutant and tabulate the different stack conditions anticipated to occur at different engine loads representing a full range of engine loads up to 100%.

RESPONSE TO DATA REQUEST 12

The analysis requested will be included in the analysis requested in Data Request 7 and will be provided on or before August 9, 2021.

13. Please provide a screening evaluation of the ambient air quality impacts to identify the worst-case engine load-settings and tabulate the results of the screening results for each pollutant during use of the engines at a range of reasonably foreseeable load levels, including 100% load.

RESPONSE TO DATA REQUEST 13

Please see Response to Data Request 12.

14. Please screen all engines and different load levels of engine use for worst-case hourly NO_2 impacts using OLM.

RESPONSE TO DATA REQUEST 14

Please see Response to Data Request 12.

15. Please provide the results of the screening evaluation in a manner that lists the modeled source or source-groups, and the modeled years, that correspond with the worst-case modeled concentrations for each pollutant and each load-setting

RESPONSE TO DATA REQUEST 15

Please see Response to Data Request 12.

BACKGROUND

The applicant's modeling files indicate that the evaluation the project's compliance with the 1-hour NO_2 CAAQS uses a default federal processing procedure for 1-hour NO_2 concentrations, which is automatically enabled in AERMOD through the setting "POLLUTID NO2." Staff is concerned that this setting that is for federal NO_2 processing may have underestimated the highest 1-hour NO_2 concentrations in the evaluation of exceedances against the 1-hour NO_2 CAAQS. The background concentrations of NO_2 in the evaluation of the 1-hour NO_2 CAAQS should capture the maximum single-hour background concentration or the maximum seasonal hour-of-day values (SEASHR) for the most recent three years available.

DATA REQUESTS

16. Please confirm that use of the setting "POLLUTID NO2", as in the applicant's refined 1-hour NO_2 CAAQS analysis, provides a conservative result that matches or exceeds the result that would otherwise be obtained by setting "POLLUTID NO2 H1H." If not, please reevaluate 1-hour NO_2 impacts using "POLLUTID NO2 H1H."

RESPONSE TO DATA REQUEST 16

Although the model runs indicate that the "Pollutant NO2" setting was used for the 1-hour NO_2 modeling, VDC's consultant has confirmed that a post-processing script was used to obtain the appropriate modeling result for the 1-hour NO2 CAAQS analysis.

17. Please ensure that the screening and refined evaluation of 1-hour NO2 impacts in relation to the CAAQS captures either the maximum single-hour background concentration or the maximum seasonal hour-of-day values for the most recent three years available.

RESPONSE TO DATA REQUEST 17

VDC can confirm that the screening and refined evaluation of 1-hour NO2 impacts will use either the maximum single-hour background concentration or the maximum seasonal hour-of-day values for the most recent three years available.

18. Please support the selection of background NO_2 concentration values by submitting a copy of historical NO_2 monitoring data and the worksheet used in developing the seasonal hour-of-day values.

RESPONSE TO DATA REQUEST 18

VDC's consultant is currently compiling this information and will submit with the air quality analysis pursuant to Data Request 7 on or before August 9, 2021.

BACKGROUND: ELECTRONIC FILES Inconsistencies

The SPPE application includes two technical reports related to air quality in Appendix A-1 (NOx Modeling Report [TN# 237423]) and Appendix A-2 (Technical Report AQIA [TN# 237381]). Both air quality reports were dated "March 2021" and prepared by Ramboll US Consulting, Inc. Portions of these reports appear to have been prepared before the final dispersion modeling results were completed. Electronic modeling output files submitted to staff by the applicant indicate that AERMOD runs were executed on and timestamped 4/27/21.

Staff is concerned that modeling output files produced by AERMOD seem to be missing or transferred incorrectly into Ramboll's "March 2021" reports.

- ***The technical report in Appendix A-2 claims that for CA3BGF operation, generators were modeled as if they could operate at any hour of the day (p.9), but the output files produced by AERMOD show testing limited to between 7 AM and 6 PM. The applicant's proposed hours of testing should be clarified.***
- ***Inconsistent building structure assumptions appear in the consideration of downwash effects, and these may lead to incompatible results among the different modeling runs. Operational phase modeling for health risks indicate 179 buildings were processed for downwash effects (BPIP.SUM file dated 2/16/2021); however, operational phase modeling for NO_2 indicates 223 buildings were processed for downwash effects (in BPIP.SUM file***

dated 3/15/2021). All operational phase modeling should reflect the same built environment.

- ***Emergency generator stack parameters (exit temperatures, exit velocities) appear to be inconsistent between the modeling of NO_2 (Appendix A-1, Table B-2) and health risks (Appendix A-2, Table 15). The rationale for assuming different stack parameters is not clear.***
- ***The output file for 1-hour NO_2 impacts in folder "aermod.monthly.no2.8eg" shows the highest result related to the NAAQS for source-group "GROUP2AB," but the March 2021 NOx Modeling Report does not identify this source-group. The report should identify the source-group causing the maximum impact.***
- ***The output file for 1-hour NO_2 impacts in folder "aermod.monthly.no2.LSG" shows a result for source-group "G1LSG_BG" that doesn't appear in the March 2021 NOx Modeling Report, where the result for "GROUPLSG" related to the NAAQS is 186.35 $\mu g/m^3$ (Table B-5 of Appendix A-1, SPPE application). In contrast, "GROUPLSG" does not exist in the output file. The report should summarize the impacts of the modeled source-groups.***
- ***The 1-hour NO_2 impact of 175.84 $\mu g/m^3$ for "GROUPLSG" related to the CAAQS (Table B-6 of Appendix A-1, SPPE application) is presented with a background concentration of 161.87 $\mu g/m^3$. However, according to Table 3 of Appendix A-1 the CAAQS analysis includes the maximum 1-hour concentration plus the maximum hourly background concentration (168.87 $\mu g/m^3$). With the higher background, the sum of modeled result plus background would exceed the CAAQS of 339 $\mu g/m^3$. The report should provide a consistent presentation of 1-hour NO_2 modeled concentrations plus background concentrations for consideration against the CAAQS.***

To resolve each of these discrepancies, a close reevaluation and revision of the "March 2021" reports is recommended because staff cannot efficiently evaluate the project without relying on the information in the application, and we expect the application and supporting technical reports to accurately reflect the modeling details within the electronic files.

DATA REQUEST

19. Please verify that the air quality technical reports reflect the most up-to-date dispersion modeling results and revise the dispersion modeling and technical reports as necessary to resolve the discrepancies noted above and to reflect responses to these data requests.

RESPONSE TO DATA REQUEST 19

VDC's consultant is in the process of refining the 1-hour NO2 analysis in conjunction with the Operational CAAQS/NAAQS analysis and will ensure that the updated model runs are consistent with the associated write-up and tables which will be provided on or before August 9, 2021.

BACKGROUND: Health Risk Impacts

The application and supporting electronic files of modeling do not provide complete documentation of health risk results. This makes it difficult to determine whether the health risk results can be supported by substantial evidence. The application shows that during construction, annual average PM2.5 impacts (0.27 µg/m^3) would approach the threshold (0.3 µg/m^3), and during routine operation, the project could cause 9.48 excess cancer cases per million for residential receptors, compared to a threshold of 10 (in Tables 4.3-10 and 4.3-11, and in Appendix A-2). Staff needs supporting information to ensure transparency of the impacts as presented in the application. The following tables appear to be missing from the application: Appendix A-2, Table 20: Construction Health Risk Impacts, and Table 21: Operational Health Risk Impacts.

For staff to validate the results, staff needs to review how the modeled concentrations were used in estimating each chemical dose and the subsequent estimates of risk factors. The applicant may provide spreadsheet files showing live, embedded calculations to complete the review.

DATA REQUESTS

20. Please provide tables or spreadsheets with the embedded calculations live and intact showing the maximum modeled concentrations of the speciated chemicals that contribute to health risks at each of the maximally exposed receptors. To substantiate the chemical intake or dose, please tabulate for each maximally exposed receptor type: the concentration (µg/m^3) of each chemical contributing to cancer risk; the concentration and chronic hazard quotient for each chemical contributing to chronic hazard index, and the concentration and acute hazard quotient for each chemical contributing to acute hazard index.

RESPONSE TO DATA REQUEST 20

VDC's consultant is in the process of revising the operational health risk assessment and will provide the requested materials on or before August 9, 2021.

21. Please tabulate the construction and operational health risk results by listing the coordinates for each maximally exposed receptor type (residential, worker, school, daycare, and recreational).

RESPONSE TO DATA REQUEST 21

VDC's consultant is in the process of revising the operational health risk assessment and will provide the requested materials on or before August 9, 2021.

BACKGROUND: Sensitive receptors

Sensitive receptors are defined as groups of individuals that may be more susceptible to health risks due to chemical exposure. Sensitive individuals, such as infants, the aged, and people with specific illnesses or diseases, are the subpopulations which are more sensitive to the effects of toxic substance exposure.

BAAQMD recommends that any proposed project including the siting of a new TAC emissions source assess associated community risks and hazards impacts within 1,000 feet of the proposed project, and take into account both individual and nearby cumulative sources (that is, proposed project plus existing and foreseeable future projects). However, the applicant did not provide a list of sensitive receptors near the project site.

DATA REQUESTS

22. Please provide the list of all the sensitive receptors within 1,000 feet of the proposed project, including their names, types, and addresses.

RESPONSE TO DATA REQUEST 22

VDC's consultant is currently compiling this information and will provide it on or before August 9, 2021.

23. Please also provide their coordinate or UTMs.

RESPONSE TO DATA REQUEST 23

VDC's consultant is currently compiling this information and will provide it on or before August 9, 2021.

24. Please also provide a map of these sensitive receptors.

RESPONSE TO DATA REQUEST 24

VDC's consultant is currently compiling this information and will provide it on or before August 9. 2021.

BACKGROUND: CUMULATIVE Health Risk Assessment

The BAAQMD CEQA Guidelines for assessing cumulative health risk impacts recommend investigating all sources of toxic air contaminants (TACs) within 1,000 feet of a proposed project. The SPPE Application only analyzed the health risk impacts related to the project itself. Staff needs the cumulative health risks evaluation to complete the environmental document. Because of the nearby railroad (CalTrain) and surrounding industrial stationary sources that could present elevated existing levels of TAC, staff requests information on TAC sources within 2,000 feet of the project fence-line.

DATA REQUESTS

25. Please contact the BAAQMD for information on the potential cumulative TAC health risks for all sources of TACs including railroad, highway, and stationary sources within 2,000 feet of the proposed project boundary.

RESPONSE TO DATA REQUEST 25

VDC's consultant is currently conducting a cumulative health risk assessment and will provide it on or before August 9. 2021.

26. Please analyze the project's contribution to cumulative health risk impacts in conjunction with the impacts of the nearby sources reported by BAAQMD.

RESPONSE TO DATA REQUEST 26

VDC's consultant is currently conducting a cumulative health risk assessment and will provide it on or before August 9. 2021.

27. Please provide a cumulative TAC health risks analysis to include all sources of TACs within 2,000 feet of the proposed project.

RESPONSE TO DATA REQUEST 27

VDC's consultant is currently conducting a cumulative health risk assessment and will provide it on or before August 9. 2021.

BACKGROUND: BUILDING SERVER ROOMS COOLING

The Project Description does not include information on the cooling system design for the data center or the type of refrigerant that would be used in providing cooling to the data center and the servers.

DATA REQUESTS

28. Please provide a description of the cooling system design for the data center and identify the refrigerant proposed.

RESPONSE TO DATA REQUEST 28

The data center data modules will be cooled via Computer Room Air Handling (CRAH) units located around the perimeter of the data modules. These CRAHs will transfer heat generated by IT equipment to a centralized chilled water loop. Heat will be extracted from the chilled water loop and rejected to the atmosphere via forty-eight (48) air cooled chillers with ambient free-cooling economizers located on roof dunnage. The refrigerant used in the air-cooled chillers proposed is R-134a.

29. Please provide an estimate of annual refrigerant leakage, reported as CO2e emissions, from the cooling system proposed for CA3DC.

RESPONSE TO DATA REQUEST 28

The chiller manufacturer estimates a worst case (barring unpredictable catastrophes) of 1% annual refrigerant loss a year. Each chiller is charged with 811.4 lbs of R-134a. We would estimate then a total of 391 lbs. of refrigerant would be lost in a year for all (48) of the chiller for the whole data center. Since R-134a has a GWP of 1,430, CA31 should create ~557,000 lbs. equivalent of CO2 into the atmosphere due to refrigerant loss. The chiller manufacturer is not willing to put in writing a less than 1% loss as an estimate, so the above figures are based on a worst-case scenario versus an expected yearly average, which according to VDC's experience is far less than 1%.

BACKGROUND: State of California GHG Goals and Programs

This Executive Order establishes a goal for California to achieve carbon neutrality as soon as possible and no later than the year 2045 and to maintain net negative carbon emissions thereafter. It directs the California Air Resources Board (CARB) to work with other state agencies to incorporate this goal into future Scoping Plans by identifying and recommending measures to meet the goal. It also directs state agencies to work with businesses to achieve the goals.

On page 4-74 of the SPPE application Part II (TN 237423), it states:

"Because the project would not become operational prior to the end of 2020, consistency with the CAP cannot be used to determine significance under CEQA. The project, however, would still be required to be consistent with the requirements of the CAP, and implementation of required CAP measures would reduce GHG emissions from the project. The City is embarking on a process to update the CAP to reflect 2030 GHG reduction targets in SB 32, but that process is ongoing and would not precede the subject project application."

Staff will need to describe the project and its emissions in the context of the State of California policies, programs, and long-term goals for achieving carbon neutrality.

DATA REQUESTS

30. Please explain how the proposed data center and diesel back-up generators would be consistent with the State of California's goal of carbon neutrality no later than 2045?

RESPONSE TO DATA REQUEST 30

VDC understands and agrees with Staff's assertions that it should describe the project and its emission in the context of the State of California policies, programs, and long-term goals for achieving carbon neutrality. It appears Staff's data requests may also be attempting to respond to comments from the BAAQMD in other proceedings in which it wrongly asserts that each project must be show it complies with the state objectives. This is a misinterpretation of the caselaw previously cited by the BAAQMD in other proceedings and inappropriately conflates the requirements for GHG analysis for a plan that allows future projects with those applicable to an individual project.

First, the assertion that an individual project must demonstrate it complies with future policy goas relies on caselaw[1] that is not applicable to an individual data center project. The case relied upon involves a long-term regional development plan for the San Diego area that was intended to guide the area's transportation infrastructure from 2010 to 2050. A programmatic CEQA approach would look at the impacts of that plan from

[1] (Cleveland Nat'l Forest Foundation v. San Diego Ass'n of Governments (2017) 3 Cal.5th 497, 516)

2010 to 2050 including an estimate of GHG if the plan were implemented. In the case of that plan, the specific transportation-related actions of the plan are laid out and therefore the GHG emissions from each action can be estimated over the planning horizon. The GHG emissions from actions laid out in the San Diego transportation plan are not speculative because they are "planned" and within the control of the agency implementing the plan. Therefore, it is reasonable to compare those emissions to goals and policies for GHG reductions over the same planning horizon. Additionally, because individual components of the plan would receive project-level approval throughout the planning horizon up to the year 2050, it is appropriate to analyze the plan's emissions against future targets and thresholds that would be in place when those project-level approvals occur and the individual components are constructed and become operational. Conversely, for a near-term development project such as a data center, it is more appropriate to discuss the project's direct impacts to determine if they are consistent with existing local, regional, and statewide efforts to meet interim GHG targets as part of an overall strategy to achieve the long-term reduction goal along a trajectory of continual emissions reduction. But indirect emissions should be treated differently because the project owner has no control over the sources of those indirect emissions.

For the CA3DC, the vast majority of GHG emissions are an indirect effect. The CA3DC requires electricity and SVP's provision of electricity results in those GHG indirect emissions. A proper analysis of whether the CA3DC would have a significant cumulative impact of GHG emissions should focus on SVP's GHG emission profile from the procurement and generation of electricity to serve the CA3DC, and whether the CA3DC's demand for electricity would impede SVP's ability to meet the State goals and objectives. This is exactly the approach taken and approved by the Commission in all prior data center SPPEs. As the Commission is a main driver of GHG reduction goals for the electricity sector, it is well aware that the electricity sector's innovation is often driven by the provision of new generation sources. This is done by renewable procurement targets applied to utilities such as SVP and requirements that new non-renewable sources of electricity meet efficiency standards. Therefore, new electricity demand allows utilities to increase GHG free or GHG reduced sources of generation with additional procurement. This structure has made it possible for the State of California to meet its RPS goals and will be critical to meeting the future goals and policies. It is not required by CEQA, nor is it reasonable, to require in a project level CEQA analysis for a data center which only indirectly results in GHG emissions from the consumption of electricity, proof that the data center can achieve statewide goals for the electricity sector over which is has no control. The conclusion is simply that the CA3DC's demand for electricity does not prevent, and may likely contribute to, SVP's generation profile meeting the GHG and RPS goals of the State.

With respect to its direct GHG emissions, the project has demonstrated that it will not result in significant GHG impacts pursuant to CEQA by comparing the GHG emissions

from operation of the CA3BGF to the adopted BAAQMD significance threshold. Statewide policy to achieve carbon neutrality can be achieved by strengthening the electrical grid so that the CA3DC will not be curtailed. In addition, as the State continues to develop its plan for carbon neutrality it should consider the need for essential services to continue during emergencies. It is impossible for VDC to predict what regulations may apply to the CA3BGF in the future, but VDC will continue to comply, as it does with all its facilities, with applicable regulations.

With respect to its indirect emissions, the CA3DC has no control over SVP's procurement of electricity. As discussed at length in the evidentiary proceedings for the Walsh Backup Generating Facility, the Mission College Backup Generating Facility, and the Sequoia Backup Generating Facility, SVP is on track to meet all of the State's goals. Implementation is regulated by the Commission through its approval process of SVP's Integrated Resource Plan. Therefore, CEQA allows the Commission to rely on the broad regulation of utility procurement and its own enforcement of those goals and objectives, to conclude that the electricity demand of the CA3DC would not impede SVP from meetings its portion of the State's electricity sector GHG reduction goals assigned to it by the State of California.

31. Has the project applicant explored the procurement of renewable diesel and/or carbon offsets as a means of contributing to the State's goal of carbon neutrality? Please explain.

RESPONSE TO DATA REQUEST 31

VDC has recently set a corporate commitment to achieve Net Zero Carbon Emissions by 2030. As part of our strategy to achieve this aggressive goal, VDC is actively exploring all options to reduce or eliminate the emissions from the use of diesel generators. This year we will be conducting a feasibility analysis for the use of renewable diesel. VDC is measuring its GHG footprint and will be achieving commitment to Net Zero Carbon emissions by 2030. Carbon removal offsets will be purchased for emissions that we cannot eliminate through efficiency measures. Investments in carbon removal projects at a local/regional level where VDC's data centers operate will be prioritized.

As described above, VDC's commitment to Net Zero Carbon Emissions by 2030 is not required for the Commission to find that the CA3BGF and CA3DC will not result in significant GHG impacts.

32. What currently available options have the applicant evaluated to contribute to this goal?

RESPONSE TO DATA REQUEST 32

Please see Response to Data Request 32.

33. What additional options may become available in time for the project to contribute to this goal?

RESPONSE TO DATA REQUEST 33

Please See Response to Data Request 32.

BACKGROUND: ELECTRIC VEHICLE CHARGING SPACES

Page 4-77 of the SPPE application Part II (TN 237423) states that the project proposes to implement a few efficiency measures including electric vehicle (EV) parking without providing further details. City of Santa Clara's 2013 Climate Action Plan (CAP) Measure 6.3 recommends 5 percent of all new parking spaces be designated for electric vehicle charging. Staff needs to confirm whether the project would comply with the City of Santa Clara's 2013 CAP Measure 6.3.

DATA REQUEST

34. Please confirm whether the project would comply with the City of Santa Clara's 2013 CAP Measure 6.3 and provide details for the number of electric vehicle charging spaces to be built for the project.

RESPONSE TO DATA REQUEST 34

As noted in section 6.3 of the 2013 CAP, the Santa Clara Climate Action Plan requires that all nonresidential developments designate at least one EV charging space and recommends a minimum of five percent of all parking be designated as EV charging spaces. Per section 5.106.5.3.3 of the 2019 California Green Building Standards Code, a development with 114 required parking spaces must designate at least 13 as EV charging spaces. The CA3DC provides 13 EV charging spaces on-site.

BACKGROUND: CONSISTENCY WITH GHG REDUCTION STRATEGY

The SPPE application Part II (TN 237423) includes discussion of consistency with some of the GHG reduction measures. However, the application failed to demonstrate consistency with the following control measures or policies from City of Santa Clara CAP, City of Santa Clara General Plan, and Bay Area 2017 Clean Air Plan.

a. City of Santa Clara CAP:

Measure 7.2 Urban cooling

Require new parking lots to be surfaced with low-albedo materials to reduce heat gain, provided it is consistent with the Building Code.

Staff needs to know whether the project would implement this control measure.

Solar panels

The City adopted a 2035 reduction target of 834,400 MT CO2e/yr, to be met by additional measures beyond those proposed for 2020. These include customer-installed 10,000 kW of solar on about 2,000 residential homes, nonresidential buildings, parking garages, parking lots, and other feasible areas (Page 59 of the CAP).

Staff needs to know if the project would install solar panels and how much capacity would be installed to help the City to meet its 2035 GHG reduction target.

b. City of Santa Clara General Plan:

Air Quality Policy 5.10.2-P4

Encourage measures to reduce greenhouse gas emissions to reach 30 percent below 1990 levels by 2020.

Page 4-84 of the SPPE application Part II (TN 237423) states that water conservation and energy efficiency measures included in the project would reduce GHG emissions associated with the generation of electricity. Staff needs detailed description of the measures that are going to be included in the project to demonstrate consistency with the Air Quality Policy 5.10.2-P4 in the City's General Plan.

Energy Policy 5.10.3-P1

Promote the use of renewable energy resources, conservation and recycling programs.

Staff needs to know whether the applicant would purchase all its electricity from Santa Clara Green Power, which is available through SVP.

Water Policy 5.10.4-P6

Maximize the use of recycled water for construction, maintenance, irrigation and other appropriate applications.

Staff needs to confirm whether recycled water would be used for construction, maintenance, irrigation, or other appropriate applications.

c. Bay Area 2017 Clean Air Plan

ECM-1 Energy Efficiency

Decrease the amount of energy consumed in the Bay Area through increased efficiency and conservation to reduce the amount of fossil fuel needed to produce the electricity that the region uses.

Page 4-85 of the SPPE application Part II (TN 237423) states that due to the relatively high electrical demand of the data center uses on the site, energy efficiency measures have been included in the design and operation of the electrical and mechanical systems on the site. Staff needs detailed description of the energy efficiency measures that are going to be included in the project to demonstrate consistency with the control measure ECM-1 Energy Efficiency in the Bay Area 2017 Clean Air Plan.

DATA REQUEST

35. Please provide detailed analysis of the effectiveness and likely implementation for each component of the control measures/policies mentioned above.

RESPONSE TO DATA REQUEST 35

a. City of Santa Clara CAP:

Measure 7.2 Urban cooling

The project will meet the City's Climate Action Plan as adopted in its Building Code. Trees are proposed to be planted adjacent to the parking bays. If identified as a requirement by the City during the Building permit phase, a high-albedo surface paving course (such as a light-colored chip-seal) can be placed over the asphalt paving in the parking bays.

The CA3DC is not planning to install solar on its rooftop as there is insufficient space given the roof mounted equipment space requirements.

b. City of Santa Clara General Plan:

Air Quality Policy 5.10.2-P4

The CA3DC has been designed with significant energy efficiency measures to reduce its electrical consumption as described in more detail below. In addition to the measures below the CA3DC is estimated to operate at an annual average PUE of approximately 1.25 which is significantly below the industry average as reported by Uptime Institute. The CA3DC will also have an average rack rating estimated to be 8.3 kW, which is slightly half of the threshold at which the City of Santa Clara requires an efficiency study.

Energy Policy 5.10.3-P1

Please see Response to Data Requests 30 and 31. As part of its sustainability plan commitments, VDC is working with SVP to see if an option for provision of lower carbon electricity is available and feasible.

Water Policy 5.10.4-P6

The CA3DC would use recycled water for mechanical cooling and for landscaping saving significant amounts of potable water. It is not cost effective to use recycled water for toilets.

c. Bay Area 2017 Clean Air Plan

ECM-1 Energy Efficiency

VDC has incorporated the following energy efficiency measures into the design of the CA3DC to reduce electrical consumption:

1. Premium efficiency electrical distribution equipment for critical IT systems
    a. Proposed electrical distribution is ~17.5% more efficient than baseline as defined in ASHRAE 90.4 “Energy Standard for Data Centers”)
2. Ambient free-cooling coils on air cooled chillers
    a. Coils allow chiller compressors to be offloaded when ambient conditions drop below thresholds

b. Chillers with free cooling coils consume on average 10% less energy annually than their non-economizing counterparts in AHRI test conditions. We would expect more energy savings due to the temperate climate in California.

3. Adiabatic assist pads on condenser coils of chillers
    a. Pads use evaporation of water to suppress dry bulb temperatures of inlet air for chiller condenser coils, decreasing the lift of the chiller compressor
    b. System only used during peak ambient times during the year to optimize energy conservation from evaporation and minimize water usage. Pads also allow to not oversize chillers for peak hours, giving the ability to optimize chiller performance during the typical operation conditions. This typically yields an energy savings on an annualized basis.
    c. This system provides on average 10% energy savings annually for the mechanical chiller plant
4. Heat recovery on VRF systems
    a. VRF systems are able to pull heat from zones in cooling and re-route to zones in heating, increasing efficiency.

BIOLOGICAL RESOURCES

BACKGROUND: Compensation for Pallid Bat Roosts

The applicant proposed measures to reduce impacts to special-status bats from removal of bat roosts, if present, as part of PD-BIO-2. PD-BIO-2 states "a mitigation program addressing compensation, exclusion methods, and roost removal procedures will be developed prior to implementation." Compensation includes mitigation undertaken to replace lost or adversely impacted habitat with habitat having similar functions of equal or greater ecological value. The method for determining the adequate amount of compensation was not defined in PD-BIO-2 and therefore staff is unable to determine if the mitigation is adequate to compensate for potential impacts to pallid bats from loss of roosting habitat. In addition, staff has proposed changes to the existing language so that it more accurately reflects the type of impacts associated with the proposed project. Therefore, CEC staff is proposing changes to the applicant's design measure PD-BIO-2.

DATA REQUEST

36. Staff proposes the following modifications to the language of **PD BIO-2**. New language is in **bold underline text** and deleted language is in strike-through text. Please provide the final version of **PD BIO-2** with a statement that the applicant will accept these changes and incorporate the revised version of **PD BIO-2** into the project. If the applicant disagrees with any of these changes, please propose alternate language using **bold underline text** for new language and strike-through text for deleted language.

PD BIO-2 Avoid and Minimize Impacts to Bat Species

- If suitable roosting habitat for special-status bats will be affected by Project construction (e.g., removal o**f**r buildings, **removal of trees** modification of bridges), a qualified wildlife biologist will conduct surveys for special-status bats during the appropriate time of day to maximize detectability to determine if bat species are roosting near the work area no less than 7 days and no more than 14 days prior to beginning **tree removal and/or demolition** ground disturbance and/or construction. Survey methodology may include visual surveys of bats (e.g., observation of bats during foraging period), inspection for suitable habitat,

bat sign (e.g., guano), or use of ultrasonic detectors (e.g., Anabat, etc.). Visual surveys will include trees within 0.25 mile of Project construction activities. The type of survey will depend on the condition of the potential roosting habitat. If no bat roosts are found, then no further study is required.

- If evidence of bat use is observed, the number and species of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts.

- If roosts are determined to be present and must be removed, the bats will be excluded from the roosting site before the **tree or structure** facility is removed. A mitigation program addressing compensation, exclusion methods, and roost removal procedures will be developed prior to implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave, but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young).

- **If roosts cannot be avoided or it is determined that construction activities may cause roost abandonment, such activities may not commence until permanent, elevated bat houses have been installed outside of, but near the construction area. Placement and height will be determined by a qualified wildlife biologist, but the height of bat house will be at least 15 feet. Bat houses will be multi-chambered and be purchased or constructed in accordance with CDFW standards. The number of bat houses required will be dependent upon the size and number of colonies found, but at least one bat house will be installed for each pair of bats (if occurring individually), or of sufficient number to accommodate each colony of bats to be relocated.**

RESPONSE TO DATA REQUEST 36

The modifications proposed above for PD BIO-2 are acceptable to VDC.

BACKGROUND: Clarifications on Tree Inventory and Tree Removal

Staff needs clarifications regarding the applicant's potential impacts from loss of protected trees to complete its CEQA analysis. The 2590 Walsh Tree Inventory

Report–Exhibit 2 included in SPPE application lists 66 trees as recommended for removal. In addition, the Biological Resources Assessment–Exhibit 6 depicts that 66 trees are proposed for removal. However, Section 4.4.1, page 4-41, of the SPPE application and the Biological Resources Assessment, page 25, states 65 trees would be removed. Staff requires clarifications on the tree count as there is some missing and/or inaccurate information. Please provide the following additional information:

DATA REQUESTS

37. Clarify if 65 or 66 trees are proposed to be removed as part of the project.

RESPONSE TO DATA REQUEST 37

This is confirmation that the correct number of trees to be removed is 66. Reference to "65" was a typo in the reports referenced and are now corrected.

38. Provide a final Landscape Drawing Set that includes the Tree Disposition Plan, Tree Disposition, and Landscape Plan.

RESPONSE TO DATA REQUEST 38

Please see Attachment BIO DR-38.

39. Update **PD-BIO-3** to reflect the correct number of trees to be removed, as necessary.

RESPONSE TO DATA REUQEST 39

PD BIO-3 has been updated to reflect that 66 is the correct number of trees to be removed.

> The project applicant shall obtain the appropriate tree removal permits from the City of Santa Clara for removal of all healthy mature trees. Acquisition of this permit will include details of the final mitigation numbers. The City of Santa Clara's landscape ordinance mandates a 2:1 replacement with 24-inch box size trees, or 1:1 replacement with 36-in box size trees. The CA3DC proposes to mitigate for the loss of 66 trees through a combination of 24-inch box size and 36-inch box size.

BACKGROUND: Tree Protections for Trees to Remain

The applicant proposed measures to reduce impacts to protected trees to remain on site during demolition and construction as part of PD-BIO-4. PD-BIO-4 states "project applicant will follow the Tree Protection Measures for trees that are to remain in place, as stated in the attached arborist report on pages 5-12 (Appendix B)". These measures typically would be included in the Landscape Drawing Set and approved by the City of Santa Clara. Based on prior discussions between CEC staff and City of Santa Clara staff, the City of Santa Clara has been applying specific conditions of Architectural Review Approval calling for the 2:1 tree replacement and protection of trees to be retained according to the approved landscaped plans, rather than as a mitigation measure in the Mitigation, Monitoring, and Reporting Program (MMRP). The City of Santa Clara would review and enforce tree removal and replacement ratios initially through the Architectural Review. Therefore, CEC staff is proposing changes to the applicant's design measure PD-BIO-4.

DATA REQUEST

40. Staff proposes the following modifications to the language of **PD BIO-4**. New language is in **bold underline text** and deleted language is in strike-through text)

Please provide the final version of **PD BIO-4** with a statement that the applicant will accept these changes and incorporate the revised version of **PD BIO-4** into the project. If the applicant disagrees with any of these changes, please propose alternate language using **bold underline text** for new language and strike-through text for deleted language.

PD BIO-4 Trees to Remain: Avoidance and Minimization of Impacts

The project applicant will follow the Tree Protection Measures for trees that are to remain in place, as **included as specific conditions by the City of Santa Clara as part of Architectural Review Approval and included on the approved landscape plans for the project.** Stated in the attached arborist report on pages 5-12 (Appendix B). These measures include but are not limited to fencing, erosion control, pruning, root cutting, no compaction tree protection zones, watering/irrigation considerations, etc.

RESPONSE TO DATA REQUEST 40

VDC agrees to the modifications to PD BIO-4.

LAND USE

Background: Required Variances for Proposed Site Plan

According to Section 4.11.3.2 of the SPPE application, the project would require the City of Santa Clara Zoning Administrator to permit minor modifications of height, area, and yard regulations for an ML zone. If the project would exceed a 25% threshold of any ML zone requirement, the project would require variance approval by the Planning Commission at a notified public hearing. Additional information from the SPPE application is needed to confirm the compatibility of the proposed project components relative to the ML zone requirements.

Data Requests

41. According to Section 2.3.2 of the SPPE application, the CA3DC would be set back at a minimum of 109 feet from Walsh Avenue. However, the generator yard would be located on the north side of CA3DC near Walsh Avenue, within the 109-foot setback. Please provide the distance of the generator yard from Walsh Avenue.

RESPONSE TO DATA REQUEST 41

Due to the irregular shape of the property and the location of the property on a curving segment of Walsh Avenue the front face of the generator yard does not run parallel to Walsh Avenue. The perimeter screen wall of the generator yard is 108 feet from Walsh Avenue at its furthest point and 34 feet from Walsh Avenue at its closest point.

42. According to Section 2.3.1 of the SPPE application, the height of the elevator parapet on the CA3DC is at 117 feet above ground level. However, Section 4.11.3.2 of the SPPE application describes the height of the elevator penthouse as 112.7 feet. Please provide the correct maximum height of the elevator structures and describe the structural differences between the parapet and the penthouse.

RESPONSE TO DATA REQUEST 42

The proposed height of the elevator parapet is 112.7 feet above ground level. The parapet is measured from the top of coping and represents the highest point of the elevator penthouse.

43. What is the square footage of the CA3BGF and the substation?

RESPONSE TO DATA REQUEST 43

The CA3 Backup Generating Facility is 35,536 square feet and the substation is 24,865 square feet. This information has also been added to the revised Site Plan.

44. The switching station is not illustrated on the Architectural Site Plan. Please provide detailed information on its location within the site plan or provide an updated site plan.

RESPONSE TO DATA REQUEST 44

The switching station portion of the substation is located on the 60KV side of the fence of the substation. This area has been highlighted in the Revised Site Plan Attachment LU DR-44. Additionally, two new poles have been added to the site plan. One pole with a 2-way disconnect switch and one with a 1-way switch.

45. The Architectural Site Plan indicates that perimeter fencing would be installed along Walsh Avenue. What type of fencing (i.e., type of materials) would be installed, and what would be the anticipated height of this fencing?

RESPONSE TO DATA REQUEST 45

The proposed perimeter fence will be an 8-foot-tall steel palisade fence.

46. Please state:

    a. Whether there has been any discussion with the City of Santa Clara Planning Division about required variances for the project;

    b. Information on person(s) contacted; and

    c. Any comments received from the City Planning Division.

RESPONSE TO DATA REQUEST 46

VDC engaged in conversations with the City of Santa Clara planning division concerning all facets of the development before the SPPE Application was docketed. VDC has formally filed its PCC application. The PCC review process has begun and the City has issued PCC comments. VDC is responding to those comments. Additionally, VDC representatives have met with the planning division and reviewed

their comments. Coordination with the City of Santa Clara planning division representatives Debby Fernandez and Gloria Sciara is ongoing.

PROJECT DESCRIPTION

BACKGROUND: Follow-up to Data Request 13

In Data Request 13, staff requested that the applicant provide information about the poles that would be used to support the transmission lines from the SVP 60 kV system to the CA3DC, including proposed pole structure configurations and measurements. Photographs were provided to show the anticipated configuration of the transmission poles, but no measurements were provided.

DATA REQUEST

47. Please provide the height, exact or approximate, of the transmission line poles.

RESPONSE TO DATA REQUEST 47

SVP will design and own the transmission poles. It is estimated the height of the poles will range between 70 to 80 feet above grade.

TRANSPORTATION

BACKGROUND: VMT FROM DEMOLITION TRIPS, FOLLOW UP FROM DATA REQUEST 23

The project would require demolition of the existing building and the removal of 10,000 cubic yards of soil and undocumented fill from the site. The application does not provide the locations of the expected landfills and recycling centers where demolition materials, soil spoils, and other inert construction wastes would be disposed.

DATA REQUEST

48. Please provide the names and trip distances to the expected landfills and recycling centers where construction debris is anticipated to be disposed.

RESPONSE TO DATA REQUEST 48

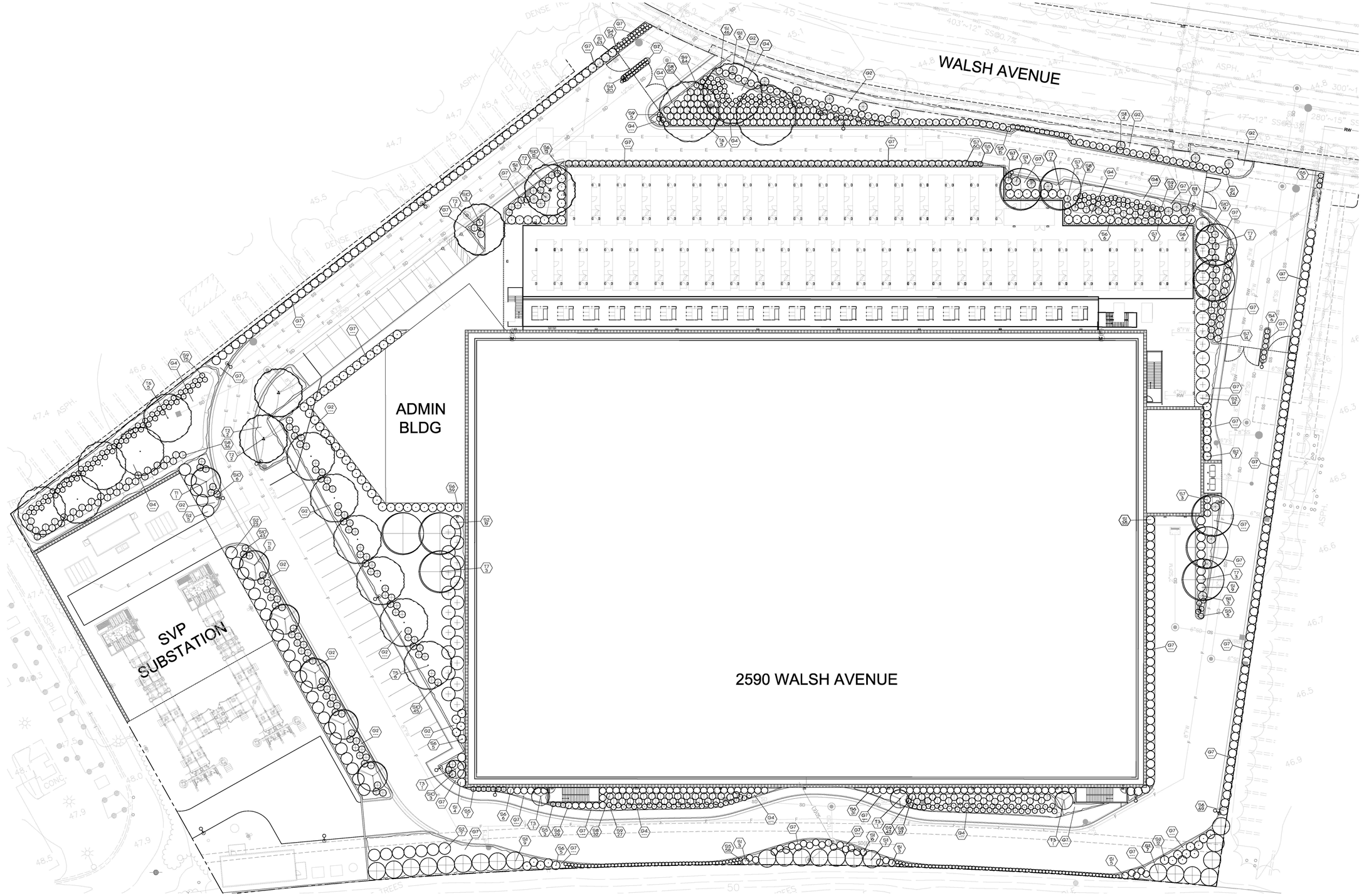
VDC's contractor has estimated the following:

- **C&D:** 1900 tons of material will be sent to Waste Management, San Jose. Approx.: 19 Miles from the site. Address is 15999 Guadalupe Mines Rd, San Jose, CA 95120
- **Concrete & Asphalt**: 7000 tons of material will be sent to Stevens Creek Quarry, Sunnyvale. Approx. 6 miles from the site. Address is 501 Carl Rd, Sunnyvale, CA 94089
- **Metal:** 60 tons of material will be sent to Sims Metals, San Jose. Approx. 10 miles from the site. Address is 1720 Monterey Rd, San Jose, CA 95112
- **Green Waste:** 200 tons of material will be sent to Vision Recycling, Newark. Approx. 18 miles from the site. Address is 6756 Central Ave, Newark, CA 94560

Based on the amount of material on this project VDC will be able to achieve over 75% diversion from the landfills.

ATTACHMENT BIO DR-38

Revised Landscape Plans



PLANT NOTES:

1. THE CONTRACTOR SHALL VERIFY PLANT QUANTITIES FROM THE PLANTING PLAN. QUANTITIES SHOWN IN THE LEGEND ARE FOR CONVENIENCE ONLY.
2. NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY IN THE EVENT OF ANY DISCREPANCIES BETWEEN ACTUAL SITE CONDITIONS AND THE PLANTING PLAN.
3. PLANT GROUNDCOVER IN SHRUB AREAS AS NOTED, USE TRIANGULAR SPACING.
4. SEE DETAIL AND SPECIFICATION SHEETS FOR ADDITIONAL INFORMATION.
5. THERE WILL BE NO MATERIALS OR PLANT MATERIALS SUBSTITUTIONS WITHOUT APPROVAL OF THE OWNER OR THE LANDSCAPE ARCHITECT.
6. ALL SLOPES PLANTED WITH GROUND COVER NOT TO EXCEED A 2:1 SLOPE.
7. PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS (2% MIN.)
8. IN THE EVENT OF ANY DISCREPANCIES BETWEEN THIS PLAN AND ACTUAL SITE CONDITIONS, THE LANDSCAPE ARCHITECT IS TO BE NOTIFIED IMMEDIATELY.
9. ENTIRE SITE IS TO BE ROUGH GRADED BY THE GRADING CONTRACTOR TO WITHIN 3/10TH FOOT OF FINISH GRADE. LANDSCAPE CONTRACTOR IS TO FINE GRADE ALL LANDSCAPE AREAS.
10. ALL SITE UTILITIES ARE TO BE PROTECTED DURING CONSTRUCTION. IN THE EVENT OF CONFLICT BETWEEN THE PLANS AND UTILITIES THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT. ANY DAMAGE TO UTILITIES, STRUCTURES, OR OTHER FEATURES TO REMAIN, AND CAUSED BY THE LANDSCAPE CONTRACTOR SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
11. THE WORK IN THESE DRAWINGS AND SPECIFICATIONS MAY RUN CONCURRENTLY WITH WORK BY OTHERS. THE LANDSCAPE CONTRACTOR SHALL COORDINATE THE WORK WITH OTHER CONTRACTORS.
12. PRIOR TO ANY DIGGING OR TRENCHING, CALL UNDERGROUND SERVICE ALERT -1.800.227.2600

PLANT SYMBOLS

SYMBOL — INDICATES PLANT KEY
XX — INDICATES PLANT QUANTITY

PLANT LIST:

KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE	REMARKS	W.U.C.O.L.	APPEN. 'D' COMPLIANCE
	TREES						
T1	LOPHESTEMON CONFERTUS	QUEENSLAND BOX		24" BOX	STANDARD	MEDIUM	
T2	---	---					
T3	JUNIPERUS S. 'SKYROCKET'	SKYROCKET JUNIPER	---	24" BOX	COLUMNAR	LOW	
T4	ARBUTUS 'MARINA'	MARINA STRAWBERRY TREE	---	24" BOX	STANDARD	LOW	COMPLIANT
T5	PLATANUS A. 'COLUMBIA'	LONDON PLANE TREE	---	24" BOX	STANDARD	MEDIUM	COMPLIANT
T6	PLATANUS R. 'ROOSEVELT'	CALIFORNIA SYCAMORE	---	24" BOX	LOW-BRANCH	MEDIUM	COMPLIANT
T7	TRISTANIA LAURINA	WATER GUM	---	24" BOX	MULTI-TRUNK	LOW	COMPLIANT
	SHRUBS						
S1	CALLISTEMON C. 'LITTLE JOHN'	LITTLE JOHN DWARF BOTTLEBRUSH	---	5 GAL		LOW	
S2	PITTOSPORUM T. 'MARJORIE CHANNON'	VARIEGATED KOHUHU	--	15 GAL		LOW	
S3	PHORMIUM 'MAORI MAIDEN'	NEW ZEALAND FLAX	---	5 GAL		LOW	
S4	TULBAGHIA V. 'TRICOLOR'	TRI-COLOR SOCIETY GARLIC	---	1 GAL		LOW	COMPLIANT
S5	DIETES G. 'VARIEGATA'	STRIPED FORTNIGHT LILY	---	5 GAL		LOW	
S6	PITTOSPORUM T. 'VARIEGATA'	VARIEGATED PITTOSPORUM	---	5 GAL		LOW	
S7	RHAPHIOLEPIS U. 'MINOR'	DWARF 'PEDDO' HAWTHORN	---	5 GAL		LOW	
S8	CHONDROPETALUM TECTORUM	SMALL CAPE RUSH	---	5 GAL		LOW	COMPLIANT
S9	JUNCUS PATENS	CALIFORNIA GRAY RUSH	---	5 GAL		LOW	COMPLIANT
S10	MUHLENBERGIA RIGENS	DEER GRASS	---	5 GAL		LOW	COMPLIANT
S11	PHORMIUM T. 'MAORI CHIEF'	NEW ZEALAND FLAX	---	5 GAL		LOW	
	GROUND COVERS						
G1	BULBINE FRUTESCENS	STALKED BULBINE	---	1 GAL	18" O.C.	LOW	
G2	ROSMARINUS O. 'HUNTINGTON CARPET'	CARPET ROSEMARY	---	1 GAL	36" O.C.	LOW	
G3	PENNISETUM A. 'LITTLE BUNNY'	LITTLE BUNNY DWARF FOUNTAIN GRASS	---	1 GAL	24" O.C.	LOW	
G4	MAHONIA REPENS	CREEPING MAHONIA	--	1 GAL	24" O.C.	LOW	COMPLIANT
G5	STONE MULCH	1/2" DIA. RIVER WASHED	--	---	3" DEPTH	--	
G6	BAILEJA DOUGLASII	'TERESA BUENA'	--	1 GAL	24" O.C.	LOW	
G7	OSTEOSPERMUM F. 'WHITE'	FREEWAY DAISY	--	1 GAL	24" O.C.	LOW	

0 10 20 40
Scale 1" = 20 ft
sheet size = 42"x30"

SCALE: AS NOTED

OWNER
VANTAGE DATA CENTERS

ARCHITECT
SHEEHAN NAGLE HARTRAY ARCHITECTS
130 East Randolph, Suite 3100
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o: 312.633.2900
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MEP ENGINEER
KW mission critical engineering
KW
Mission Critical Engineering
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STRUCTURAL ENGINEER

CIVIL ENGINEER
RUTH AND GOING, INC.
Civil Engineering Land Surveying Planning
2216 THE ALAMEDA SANTA CLARA, CA 95050
(408) 236-2400 FAX (408) 236-2419

LANDSCAPE ARCHITECT
REED ASSOCIATES
LANDSCAPE ARCHITECTURE

PROGRESS SET
NOT FOR CONSTRUCTION

No.	Description	Date

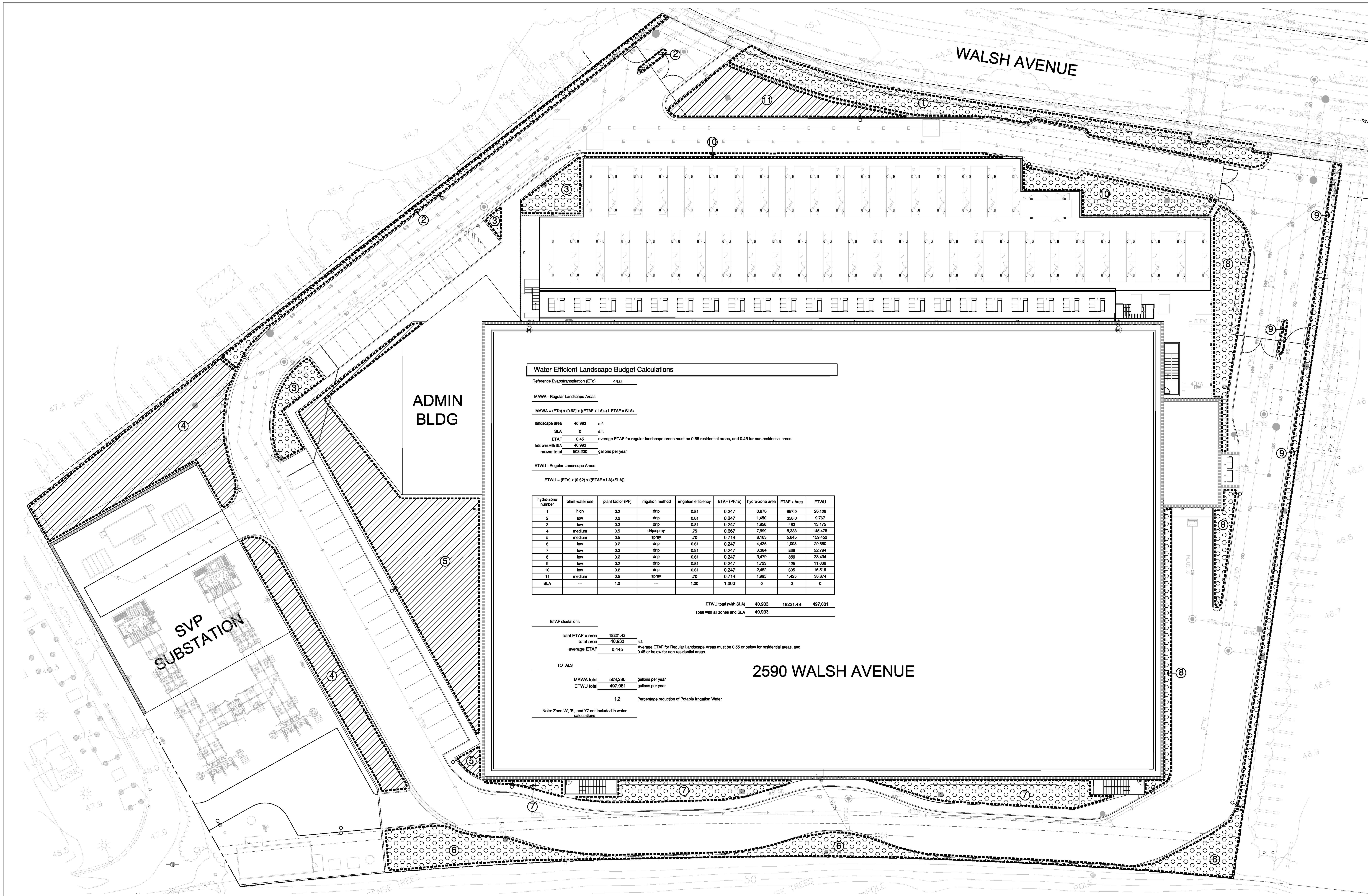
VANTAGE CA31

2590 WALSH AVENUE
SANTA CLARA, CA 95051

MASTERPLAN

Landscape Planting Plan

L1.0



Water Efficient Landscape Budget Calculations

Reference Evapotranspiration (ETo) 44.0

MAWA - Regular Landscape Areas

MAWA = (ETo) x (0.62) x ((ETAF x LA)+(1-ETAF x SLA)

landscape area	40,993	s.f.
SLA	0	s.f.
ETAF	0.45	average ETAF for regular landscape areas must be 0.55 residential areas, and 0.45 for non-residential areas.
total area with SLA	40,993	
mawa total	503,230	gallons per year

ETWU - Regular Landscape Areas

ETWU = (ETo) x (0.62) x ((ETAF x LA)+SLA))

hydro-zone number	plant water use	plant factor (PF)	irrigation method	irrigation efficiency	ETAF (PF/IE)	hydro-zone area	ETAF x Area	ETWU
1	high	0.2	drip	0.81	0.247	3,876	957.0	26,108
2	low	0.2	drip	0.81	0.247	1,450	358.0	9,767
3	low	0.2	drip	0.81	0.247	1,956	483	13,175
4	medium	0.5	drip/spray	.75	0.667	7,999	5,333	145,475
5	medium	0.5	spray	.70	0.714	8,183	5,845	159,452
6	low	0.2	drip	0.81	0.247	4,436	1,095	29,880
7	low	0.2	drip	0.81	0.247	3,384	836	22,794
8	low	0.2	drip	0.81	0.247	3,479	859	23,434
9	low	0.2	drip	0.81	0.247	1,723	425	11,606
10	low	0.2	drip	0.81	0.247	2,452	605	16,516
11	medium	0.5	spray	.70	0.714	1,995	1,425	38,874
SLA	---	1.0	---	1.00	1.000	0	0	0
					ETWU total (with SLA)	40,933	18221.43	497,081
					Total with all zones and SLA	40,933		

ETAF clculations

total ETAF x area	18221.43	
total area	40,933	s.f.
average ETAF	0.445	Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

TOTALS

MAWA total	503,230	gallons per year
ETWU total	497,081	gallons per year
	1.2	Percentage reduction of Potable Irrigation Water

Note: Zone 'A', 'B', and 'C' not included in water calculations

IRRIGATION HYDRO-ZONE LEGEND

PLANTS ARE GROUP TO HAVE MATCHING WATER REQUIREMENTS AND MICRO-CLIMATE CHARACTERISTICS.
HYDROZONE DESIGNATION IS DETERMINED BY HIGHEST WATER REQUIREMENT PLANTING IN ZONE.

- MEDIUM WATER REQUIREMENT
- LOW WATER REQUIREMENT (DROUGHT TOLERANT PLANTING)

0 10 20 40
Scale 1" = 20 ft
sheet size = 42"x30"

OWNER
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LANDSCAPE ARCHITECT
REED ASSOCIATES
LANDSCAPE ARCHITECTURE

PROGRESS SET
NOT FOR CONSTRUCTION

No.	Description	Date

VANTAGE CA31

2590 WALSH AVENUE
SANTA CLARA, CA 95051

MASTERPLAN

Landscape Hydrozone Plan

L2.0

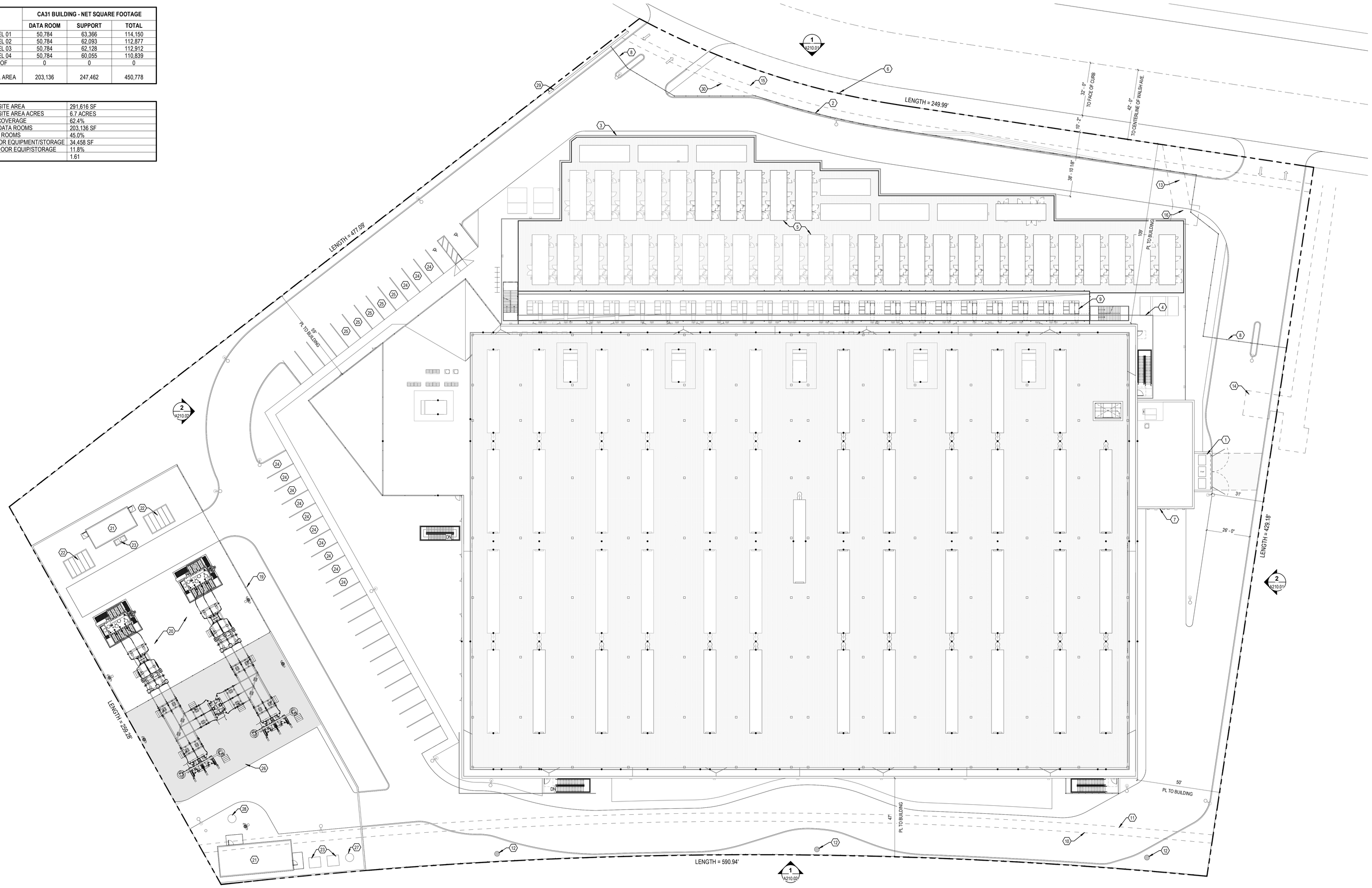
SCALE: AS NOTED

ATTACHMENT LU DR-44

Revised General Arrangement and Site Layout

	CA31 BUILDING - NET SQUARE FOOTAGE		
	DATA ROOM	SUPPORT	TOTAL
LEVEL 01	50,784	63,366	114,150
LEVEL 02	50,784	62,093	112,877
LEVEL 03	50,784	62,128	112,912
LEVEL 04	50,784	60,055	110,839
ROOF	0	0	0
TOTAL AREA	203,136	247,462	450,778

TOTAL SITE AREA	291,616 SF
TOTAL SITE AREA ACRES	6.7 ACRES
% LOT COVERAGE	62.4%
TOTAL DATA ROOMS	203,136 SF
% DATA ROOMS	45.0%
OUTDOOR EQUIPMENT/STORAGE	34,458 SF
% OUTDOOR EQUIP/STORAGE	11.8%
F.A.R.	1.61



1 SITE PLAN
3/64" = 1'-0"

GENERAL NOTES

PARKING

PER CITY OF SANTA CLARA TITLE 18 ZONING SECTION 18.74.020.D.2 DATA CENTERS. ONE SPACE PER FOUR THOUSAND (4,000) SQUARE FEET OF GROSS FLOOR AREA RESULTING IN A MINIMUM OF 114 PARKING SPACES. THE PROJECT APPLICANT IS REQUESTING A ZONING ADMINISTRATOR MODIFICATION TO ALLOW FOR SHARED PARKING WITH THE EXISTING EXCESS PARKING OF THE CA2 CAMPUS ACROSS WALSH AVE. WHEN COMBINED THE TOTAL PARKING FAR EXCEEDS THE REQUIRED PARKING REQUIREMENT.

BIKE PARKING

THE NUMBER AND TYPE OF BIKE SPACES WILL BE PROVIDED AS REQUIRED BY THE CITY OF SANTA CLARA.
PER THE CALIFORNIA BUILDING CODE - 5.106.4.1 BICYCLE PARKING:
LONG-TERM PARKING (CLASS 1) = 6 (5% OF VEHICULAR PARKING)
SHORT-TERM PARKING (CLASS 2) = 6 (5% OF VEHICULAR PARKING)

BUILDING HEIGHT

THE PROJECT SITE IS ZONED AS MH. THE MAXIMUM BUILDING HEIGHT UNDER THE MH ZONING DESIGNATION IS 70 FEET WITH A PREVIOUSLY APPROVED MODIFICATION ALLOWING AN INCREASE IN HEIGHT UP TO 25 PERCENT. BUILDINGS UNDER THIS DESIGNATION ARE REQUIRED TO HAVE AT LEAST 15-FOOT SETBACK DISTANCE FROM THE STREET. THIS ZONING DESIGNATION ACCOMMODATES INDUSTRIES OPERATING SUBSTANTIALLY WITHIN AN ENCLOSED BUILDING. THE PREVIOUSLY APPROVED ALLOWABLE HEIGHT OF THE PROPOSED BUILDINGS TO THE TOP OF THE ROOF WOULD BE APPROXIMATELY 87.5 FEET ABOVE GROUND SURFACE (102.25 FEET ABOVE GROUND SURFACE TO THE TOP OF THE ROOF SCREEN). THE PROPOSED BUILDINGS WOULD BE SET BACK FROM THE STREET BY MORE THAN 15 FEET.

AIRPORT OPERATION

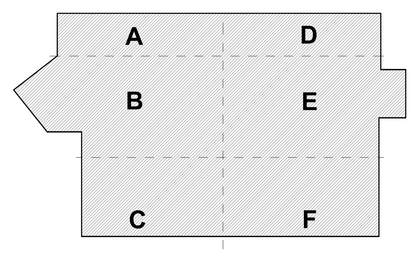
THE PROJECT SITE IS LOCATED APPROXIMATELY 0.3 MILE WEST OF THE NORMAN Y. MINETA SAN JOSE INTERNATIONAL AIRPORT, AND IS NOT WITHIN THE NORMAN Y. MINETA SAN JOSE INTERNATIONAL AIRPORT INFLUENCE AREA. THE HEIGHT OF THE PROPOSED BUILDINGS TO THE TOP OF THE METAL SCREEN WOULD BE APPROXIMATELY 102.25 FEET ABOVE GROUND SURFACE. AIRPORT SAFETY HAZARDS ASSOCIATED WITH THE NORMAN Y. MINETA SAN JOSE INTERNATIONAL AIRPORT WERE EVALUATED ACCORDING TO AIRPORT SAFETY ZONES AND FEDERAL AVIATION REGULATIONS PART 77 AIRSPACE SURFACES. THE PROJECT SITE IS OUTSIDE OF ALL AIRPORT SAFETY ZONES. ADDITIONALLY, THE PROPOSED PROJECT WOULD NOT INTRUDE UPON THE PART 77 AIRSPACE SURFACE FOR THE NORMAN Y. MINETA SAN JOSE INTERNATIONAL AIRPORT, WHICH ESTABLISHES A MAXIMUM STRUCTURE HEIGHT OF 212 FEET (ABOVE MEAN SEA LEVEL) FOR THE PROJECT SITE. IN ACCORDANCE WITH FAA REQUIREMENTS, THE PROJECT APPLICANT WOULD COMPLETE AND SUBMIT ALL NECESSARY NOTICES AND DOCUMENTATION TO THE FAA TO OBTAIN THE NECESSARY APPROVALS FOR CONSTRUCTION IN COMPLIANCE WITH FAA'S NOTICE OF PROPOSED CONSTRUCTION REQUIREMENTS. DUE TO COMPLIANCE WITH APPLICABLE REGULATIONS SET FORTH BY THE NORMAN Y. MINETA SAN JOSE INTERNATIONAL AIRPORT AND THE FAA, THE PROJECT WOULD NOT RESULT IN A CHANGE IN AIR TRAFFIC PATTERNS OR OBSTRUCT AIRPORT OPERATIONS.

SHEET NOTES

NOTE: NOT ALL SHEET NOTES BELOW MAY BE USED ON THIS SHEET

1	TRASH ENCLOSURE AND STAGING AREA (DASHED)
2	8' TALL STEEL PALISADE PERIMETER FENCE
3	29' TALL GENERATOR YARD SCREEN
4	VERTICAL CABLE TRAY SCREEN
5	GENERATOR YARD
6	PROPERTY LINE
7	LOADING DOCK
8	SECURITY GATE
9	ELECTRICAL GEAR
10	20' GENERAL PURPOSE EASEMENT
11	5' WIRE CLEARANCE EASEMENT
12	EXISTING ELECTRICAL POLE, TYP.
13	UNDERGROUND ELECTRIC EASEMENT
14	ELECTRIC UTILITY EASEMENT
15	10' GENERAL PURPOSE EASEMENT
16	SITE LIGHTING, SEE ELECTRICAL DRAWINGS
17	AIR HANDLING UNIT, TYP.
18	ROOFTOP CHILLER, TYP.
19	SUBSTATION SCREEN WALL
20	SUBSTATION
21	CONTROL ENCLOSURE
22	MEDIUM VOLTAGE BOARD
23	TRANSFORMER
24	EV CHARGING SPACE
25	CLEAN AIR VEHICLE SPACE
26	SWITCHING STATION (SHADED AREA)
27	NEW 69KV POLE WITH 2-WAY DISCONNECT SWITCH
28	NEW 69KV TURN POLE WITH 1-WAY SWITCH
29	8' TALL CMU NOISE BARRIER WALL
30	15' LANDSCAPED FRONT YARD SETBACK

KEY PLAN



OWNER

VANTAGE DATA CENTERS

ARCHITECT

SHEEHAN NAGLE HARTRAY ARCHITECTS

SHEEHAN NAGLE HARTRAY ARCHITECTS
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STRUCTURAL ENGINEER

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CIVIL ENGINEER

HMH
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REED ASSOCIATES

PROGRESS SET
NOT FOR CONSTRUCTION

No.	Description	Date
1	Issued for 100% SD	07-16-2021

VANTAGE CA31

2590 WALSH AVENUE
SANTA CLARA, CA 95051
APN : 216-28-112

Issued for 100% SD

ARCHITECTURAL SITE PLAN

AS100.01

SCALE: AS NOTED