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RESPONSE TO CEC STAFF DATA REQUEST SET 1 (1-95)

Great Oaks South Backup Generating Facility (20-SPPE-02)

SUBMITTED TO: CALIFORNIA ENERGY COMMISSION
SUBMITTED BY: **Digital Realty**

August 2020

DAYZEN LLC

INTRODUCTION

Attached are Digital Realty's responses to California Energy Commission (CEC) Staff Data Request Set No. 1 (1-95) for the Lafayette Backup Generation Facility (LBGF) Application for Small Power Plant Exemption (SPPE) (20-SPPE-02). Staff issued Data Request Set No. 1 (1-95) on July 6, 2020.

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 (1-95). 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

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

PROJECT DESCRIPTION

BACKGROUND: Building Heights and Site Plan

Building heights are discussed under subsection 2.3.2 of the small power plant exemption (SPPE) application, "Building Heights and Setbacks," where it states the following:

> ***The data center building will be approximately 65 feet in height to the top of parapet to top of the Level 1 slab plus an addition [of] seven feet in elevation change to the top of the Fire Department access road.***
>
> ***The mechanical equipment screen on the roof [of] the building will extend to a height of 73 feet in height from the top of the Level 1 slab plus an addition [of] seven feet in elevation change to the top of the Fire Department access road.***
>
> ***The building would also include an elevator penthouse that will extend to a height of 82 feet in height from the top of the Level 1 slab plus an addition [of] seven feet in elevation change to the top of the Fire Department access road.***

Figure 2.1-1, "Site Plan," shows several labels for the height to the parapet, which are mostly labeled as 71 feet 3 inches (except for locations near the east side of the site). Staff noted one parapet label as 81 feet 8 inches at around the middle of the data center near the generator yard. Figure 2.1-1 shows the power base building (PBB) at the west end of the data center and the "Proposed Future Power Base Building 2" at the east end of the data center. Subsection 2.3.1, "Overview," states that the PBB "will be located on the Lafayette Street side of the building and on Central Expressway side of the building towards the east side of the site." This statement suggests that these two seemingly separate parts of the data center building compose a single PBB. Subsection 2.3.1 includes this statement on the elevation of the PBB: "The elevation of the PBB roof would correspond with the elevation of the floor slab of the third data hall level."

Section 4.9 Hazards includes this statement under Impact HAZ-5: "The maximum height of the proposed LDC would be approximately 122 feet above ground level, or roughly 159 feet [above mean sea level] AMSL…." The application states that the topography of the area is flat with an elevation of approximately 40 feet AMSL (pages 97, 122, and 132).

Subsection 2.2.5 states: "The generator yard will be enclosed with 22 feet high precast concrete screen walls on the south and east ends." However, section 4.13 Noise states the following under Impact NOI-1: "The generator yard would also be shielded by a 12- foot tall screen wall." Section 4.13 Noise also states under Impact NOI-1: "All rooftop equipment would be shielded by 11-foot tall screen walls." Additionally, subsection 2.3.1 states "A concrete masonry unit screen wall, 13 feet in height, would surround the substation."

Appendix AQ1, "Emissions Support Data," includes a page with data on the "Cooling Towers-Wet Surface Condensers." No description or information on the location of the cooling towers is included in Section 2.0 Project Description. The application does not provide building elevation drawings or renderings. Most of the SPPE applications submitted previously to the CEC have included building elevations, including the three prior applications prepared by David J. Powers & Associates (Walsh, Mission College, and Great Oaks South). Building elevations are necessary for staff to understand the project and see how the building elements and dimensions described in the text correspond to the structural elements shown in the drawings.

DATA REQUEST

1. Please describe the elevation of the Level 1 slab relative to the stated building heights of 65, 73, and 82 feet.

RESPONSE TO DATA REQUEST 1

The finish floor elevation is set at +3'-0" above grade to accommodate the raised access floor used throughout the entire building. The rest of the building height datums are measured from finish grade (+0'-0" which = +40'-0" - AMSL). See elevation exhibits included in Attachment PD DR-1 for additional clarification on the building heights per comment above.

2. Please explain the meaning of the addition of seven feet in elevation change to the top of the Fire Department access road.

RESPONSE TO DATA REQUEST 2

The proposed fire access loop road sits approximately 7 feet below the building FFE; the building FFE was elevated to raise the building and the raised access floor out of the

flood plain. To minimize the amount imported fill, the looped fire access roadway was designed to closely match the elevation of the existing site pavement.

3. Please state the elevation of the PBB at the west end of the data center.

RESPONSE TO DATA REQUEST 3

Please see Drawing A3.1, included in Attachment PD DR-1, which shows the west end of the data center.

4. Please describe the construction schedule for the "Proposed Future Power Base Building 2" within the context of the 24-month construction schedule mentioned under subsection 2.3.4, "Site Grading, Excavation, and Construction."

RESPONSE TO DATA REQUEST 4

The 'Proposed Future Power Base Building 2' will be constructed as part of the 24-month construction. 'Powered Base Building' is effectively non-data center spaces (typically office or storage) required to support the data center spaces. When the building is developed, a certain amount non-data center space is allocated for future tenants to use. Some leases require this non-data center area; some leases do not. Therefore, depending on lease requirements, the Power Base Building 2 area may remain in a shell condition or may be built-out as office space or storage space.

The primary Powered Base Building is located on the west side of the building. The Powered Base Building 2 area on the east side of the building and will be used if required by a special lease or if the Powered Base Building Area on the west side gets fully leased.

5. Please explain the relationship of the PBB at the west end of the building to the second PBB at the east end of the building.

RESPONSE TO DATA REQUEST 5

The addition of the PBB at the west end of the building will allow clients to access the data halls at the other end of the facility without having to walk the entire length of the facility (if required by a special lease). This will also give the facility additional office space for those additional clients who rent space in the data halls. Please See

Response to Data Request 4.

6. Please state the elevation of the “Proposed Future Power Base Building 2” at the east end of the data center (described as a two-story building under Section 2.3.1, “Overview,” and in Figure 2.3-1).

RESPONSE TO DATA REQUEST 6

Please see exhibits; A3.5 and A3.8 included in Attachment PD DR-1.

7. Please explain the building elements that add up to the maximum stated height of approximately 122 feet above ground level. Please explain how the maximum height of 159 feet AMSL was determined.

RESPONSE TO DATA REQUEST 7

The current design is maximum of 122’ AMSL.

40’-0” AMSL + 82’-0” (Top of Penthouse) = 122’-0”

+122’-0” AMSL is the maximum permitted height on this northeastern part of the site. And increases as we move south on the site to a +162’-0” AMSL maximum as shown on Drawing A1.0 Existing Site Plan and A1.1 Site Plan included in Attachment PD DR-1.

Information was acquired and based on zoning ordinance 18.64.010 and FAA regulations due to the proximity to the Norman Y. Mineta San Jose International Airport.

8. Please provide detailed building elevation drawings for the west, north, and east sides of the project.

RESPONSE TO DATA REQUEST 8

Please see Drawings A3.0, A3.1, A3.2, A3.3, A3.4, A3.5, A3.6, A3.7 and A3.8 included in Attachment PD DR-1 showing all sides of the new proposed building.

9. Please submit a revised version of subsection 2.3.2 to accurately describe the building and other structure heights, including the top of the parapet and coping, various screen walls, penthouse, and cooling towers. Please ensure that the text matches the information in Figure 2.3-1 and the requested building elevations,

and please include information on the location of the cooling towers.

RESPONSE TO DATA REQUEST 9

The Lafayette Data Center building will be located in the upper north-eastern part of the site and will be set back at a minimum of 15 feet from the front yard to the west (Lafayette Street), a minimum of 15 feet from side yard to the north (Central Expressway), a minimum of 0 feet from the side yard to the south (adjacent to a non-residential zone) and a minimum of 0 feet from the rear yard to the east (adjacent to a non-residential zone; railroad tracks). This new building runs parallel along Central Expressway just north of the existing to remain, 2805 building. In addition, a new Substation will be constructed along Lafayette Street, in front the existing 2805 building. New and existing parking will be distributed throughout the site to accommodate clients.

The new data center building will be approximately 65 feet in height to the top of parapet. The mechanical equipment screening on the roof of the building will extend to a height of 73 feet. And finally, the elevator and stair penthouses that access the roof will extend to a height of 82 feet. All these heights are taken from the top of the Level 1 slab.

BACKGROUND: Building Square Footage

Building square footage is discussed under subsection 2.3.1 of the application, "Overview," where it states the project would include a three-story 576,120 square foot (sq. ft.) data center building. It states that the data center building would consist of a three-level PBB and the three-level data center suite component. A second, two-story PBB would be connected at the east end of the data center. There is no clear information provided in the application showing the data center parts that make up the total 576,120 sq. ft. Using the information shown on Figure 2.3-1, staff tried to confirm the total square footage of the data center building and suite component. Based on the descriptions of Levels 1, 2, and 3 under subsection 2.3.1, staff assume that the data center square footages shown in larger typeface in Figure 2.3-1 include the "electrical rooms" and "flex space" areas shown in the figure. In other words, it appears that those building areas along the generator yard (totaling approximately 34,900 sq. ft.) are part of the data center's full 576,120 sq. ft. As shown in the table below, staff was unable to confirm the total 576,120 sq. ft. stated in the application.

Staff Calculations of Data Center Square Footages			
Data Center Areas	**Square Feet per Floor**	**Number of Stories**	**Total Square Feet**
PBB at West End	16,025	Three	48,075
Data Center Areas West to East (four areas)			
First area (westernmost)	22,308	Three	66,924
Second area	21,982	Three	65,946
Third area	16,090	Three	48,270
Fourth area (easternmost)	20,383	Two	40,766
Proposed Future PBB 2 at East End	11,665	Two	23,330
Total			293,311 sq. ft.

DATA REQUEST

10. Please provide a table and accompanying text to specify and clarify the project's square footages to total 576,120 sq. ft.

RESPONSE TO DATA REQUEST 10

Data has been modified to reflect the changes in floor plan.

Staff Calculations of Data Center Square Footages			
Data Center Areas	**Square Feet per Floor**	**Number of Stories**	**Total Square Feet**
PBB at West End	16,319	Three	48,957
Data Center Areas West to East (four areas)			
First area (westernmost)	48,227	Three	144,682
Second area	52,029	Three	156,089
Third area	38,888	Three	116,665
Fourth area (easternmost)	42,448	Two	84,896
Proposed Future PBB 2 at East End	12,055	Two	24,112
Total			575,401 sq. ft.

* Please note the Square Feet Per Floor that is called out in the chart (supplied in the data requests) is the square footage of the actual data hall area. Not the total building area. The updated numbers in the chart above are the total areas.
** Please note the size of the building has changed and is reflected in the updated numbers in chart and on the Site Plan.

11. Please confirm whether the information shown in Figure 2.3-1, "Site Plan," is accurate. If not, please revise and resubmit Figure 2.3-1 to clarify the square footages of the building components included in the data center building. As stated above, please ensure that the information in Figure 2.3-1 matches the text descriptions of the building and the requested building elevations.

RESPONSE TO DATA REQUEST 11

Site Plan sheet has been updated to reflect the modification in the size of the building. Clarification of building square footages has been stated Response to Data Request 10. See Drawings A1.1 and/or A1.2 included in Attachment PD DR-1.

BACKGROUND: Silicon Valley Power (SVP) Electrical Distribution Facilities Subsection 2.3.8 of the SPPE application indicates that the project would include a new, onsite distribution substation with two electrical supply lines that would connect to SVP's South Loop. Staff require a complete description of the proposed interconnection to the SVP system in order to understand the potential operation of the back-up generators.

DATA REQUESTS

12. Please provide a complete one-line diagram for the new substation. Show all equipment ratings, including bay arrangement of the breakers, disconnect switches, buses, redundant transformers or equipment, etc. that would be required for interconnection of the project.

RESPONSE TO DATA REQUEST 12

Digital Realty does not have this information and has requested SVP to provide it. However, it is expected that the substation will be similar in design to the substation associated with the Walsh Data Center, which was provided to Staff in that proceeding.

13. Please provide a detailed description and a one-line diagram showing how the project would be connected to the existing SVP system. Please label the name of the lines and provide the line voltages and SVP loop information.

RESPONSE TO DATA REQUEST 13

See Response to Data Request 12.

14. Please provide the following for the 60 kilovolt (kV) loop on the SVP system that would serve the project:
    a. A physical description.
    b. The interconnection points to SVP service.
    c. The breakers and isolation devices and use protocols.
    d. A list of other connected loads and type of industrial customers.
    e. A written description of the redundant features that would allow the system to provide continuous service during maintenance and fault conditions.

RESPONSE TO DATA REQUEST 14

See Response to Data Request 12.

15. Please provide the pole configurations that would be used to support the overhead transmission lines from the SVP 60 kV system to the project. Show proposed pole structure configurations and measurements.

RESPONSE TO DATA REQUEST 15

See Response to Data Request 12

16. Please provide a detailed description and drawing of the proposed 60 kV transmission line route, length, possible interconnection points to the existing SVP system, and possible pole locations. Please provide a legend and label the drawing to show the proposed line route, pole locations, and the existing transmission facilities.

RESPONSE TO DATA REQUEST 16

The information that is known at this time about SVP's proposed distribution lines to interconnect the new substation is shown on Drawing C5.1 included in Attachment PD DR-1.

AIR QUALITY, PUBLIC HEALTH, GREENHOUSE GAS EMISSIONS, AND THERMAL AND VISIBLE PLUMES

BACKGROUND: AIR DISTRICT REVIEW

The proposed LBGF would require a permit from the Bay Area Air Quality Management District (District or BAAQMD). For purposes of consistency, staff needs copies of all correspondence between the applicant and the District promptly to stay up to date on any issues that arise before completion of the initial study.

DATA REQUESTS

17. 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 initial study.

RESPONSE TO DATA REQUEST 17

At this time Digital Realty has not had substantive correspondence with the District and has not submitted an application to the District. Digital Realty will update this response as correspondence is delivered to or received from the District.

18. Please identify the current schedule for the BAAQMD permit application submittal. If the application was already filed, please provide a copy of the application. If this application is filed during the CEC proceeding for LBGF, please submit a copy of that application to the CEC docket within five days of submitting it to BAAQMD.

RESPONSE TO DATA REQUEST 18

At this time the application is planned to be filed after the Staff has prepared its IS/MND.

BACKGROUND: EMISSIONS CALCULATIONS

The SPPE application includes an Appendix A, for Air Quality Analysis Technical Appendices (AQ 1 through AQ 5), which documents potential project construction and operation emissions calculations. To validate the applicant's work, staff requests the spreadsheet files of the applicant's emissions calculations in Appendix AQ1, AQ3, and AQ4 for staff's independent review.

DATA REQUEST

19. Please provide spreadsheet versions of the emissions calculations worksheets supporting the SPPE application in Appendix AQ1, AQ3 and AQ4 with the embedded calculations live and intact.

RESPONSE TO DATA REQUEST 19

The spreadsheets supporting the SPPE application in Appendices AQ1, AQ3 and AQ4 with the embedded calculations live and intact will be provided to Staff upon Staff providing a secure link to upload the files. Please provide the link directly to Gregory Darvin of Atmospheric Dynamics, Inc.

BACKGROUND: COOLING TOWER

The SPPE application includes emissions estimates for cooling towers, or wet-surface cooling, in the form of particulate matter (in spreadsheet AQ1-3 of Appendix AQ1). The Project Description for LDC in Section 2 of the SPPE application does not describe this system and indicates that each generator would be air-cooled (Section 2.2.7 and 2.2.8 of SPPE application). The cooling tower, if proposed, appears to be missing from the modeling data provided electronically for ambient air quality impact evaluation for PM10 and PM2.5.

DATA REQUESTS

20. Please clarify if cooling towers would be included in the LDC or LBGF project design. If so, please ensure that particulate matter emissions are included in all facility-wide estimates and that the associated water use is correctly presented throughout the SPPE application.

RESPONSE TO DATA REQUEST 20

The facility will not be using water based cooling towers. This change was made subsequent to submittal and inclusion of the air quality consultant's air analysis for the SPPE. The current proposed air cooled chillers (93 units) to be mounted on the building roofs will not use or discharge water. A description of the air cooled chillers can be found in Appendix F (Noise Analysis) of SPPE Application.

21. Please ensure that PM10 and PM2.5 ambient air quality impacts from the cooling tower are included in facility-wide impacts to air pollutant concentrations.

RESPONSE TO DATA REQUEST 21

The proposed air cooled chillers will not emit PM10 or PM2.5, therefore no analysis for ambient air quality impacts is required.

BACKGROUND: CALEEMOD MODELING FILES
The applicant used CalEEMod to estimate demolition and construction emissions (shown in Table 4.3-6 of the SPPE application) and miscellaneous operational emissions (shown in Table 4.3-15). To validate the applicant's work, staff requests the CalEEMod files with live cells and formulas that the applicant used to estimate emissions.

DATA REQUEST

22. Please provide the CalEEMod files with live cells and formulas used to estimate demolition and construction emissions (shown in Table 4.3-6) and miscellaneous operational emissions (shown in Table 4.3-15).

RESPONSE TO DATA REQUEST 22

The CalEEMod files for construction were provided previously to the CEC. The input file generated by CalEEMod is an Excel file, and the output is a PDF file. These files will be provided again upon Staff providing a secure link to upload the files. Please provide the link directly to Gregory Darvin of Atmospheric Dynamics, Inc.

BACKGROUND: CONSTRUCTION PERIOD
Section 2.3.4 on page 16 of the SPPE application (TN 233041-1) states that:

> ***The demolition and construction activities are estimated to last approximately 24 months to the initial occupancy of the building, with construction activities to last an additional 60 months to bring the building to full occupancy.***

However, section 4.3.2.3, Table 4.3-6 on page 55 states the construction period is approximately 21 months or 462 workdays. Starting on page 106 of 174 of the SPPE application, Part 2 Section 5 – App A-C (TN 233041-2) shows that demolition

and construction are expected to be in 5 different phases over a period of around 24 months. The 60-month construction period shown above from section 2.3.4 does not agree with the assumptions in CalEEMod. Staff needs clarification on the length of the construction period. Staff would also like to know why it would take so much time to construct the proposed project, while it takes typically takes less than 2 years (24 months) to construct other data centers.

DATA REQUESTS

23. Please describe the type of activities expected during the 60-month ramp to average occupancy. Would these include fabrication of server bay racks, installation of servers, server bay uninterruptible power supply (UPS) installation, electrical connections, and/or installation of standby generators in the LBGF yard?

RESPONSE TO DATA REQUEST 23

During the initial 24 months of construction, the building shell will be constructed. On the west side of the building, the main lobby, loading dock and administration offices on the west side of the building will be constructed. In addition, the first of 11 data center suites will be constructed.

The construction of the data center suites will include four electrical 'capacity groups'. A capacity group includes one 3000kW diesel generator (located in the equipment yard), one medium voltage-to-480 Volt transformer (located in the equipment yard, one 480 Volt service switchboard (located inside) and two uninterruptible power systems (UPS) connected in parallel. The build-out of the data center suite will include 'white space' where tenants will install their data center racks and cabinets.

The 60-month period represents the applicant's best estimate for full building occupancy, not an extension too or extension of the construction period. As server space is sold, then the server bay racks, servers, and other support systems, including the backup emergency generators would be installed as needed. The applicant does not consider this period to be construction, but rather an installation period. The engine pad areas and support utility connections will be constructed during the 24-month building construction.

24. Please clarify the length of the construction phase.

RESPONSE TO DATA REQUEST 24

Please See Response to Data Request 23 above. The conservative estimate for the construction period is 24 months. This period allows for any unforeseen delays. Emissions from construction activities are also based on 24 months.

25. Please explain whether CalEEMod provides conservative emissions estimates assuming a continuous construction period, rather than using the construction schedule specified in section 2.3.4.

RESPONSE TO DATA REQUEST 25

Please see Response to Data Request 23 above. Section 2.3.4 simply states that construction will be for a period of 24 months, which is consistent with the CalEEMod analysis prepared by the Applicant's air quality consultant.

26. Please model overlap of construction and operation phases if necessary.

RESPONSE TO DATA REQUEST 26

There is no overlap of construction emissions with operation emissions. Engines will be installed subsequent to construction on an as-needed basis, with all engines installed in the 60-month period following construction.

BACKGROUND: DISPERSION MODELING FOR CONSTRUCTION IMPACTS
The SPPE application and modeling data provided electronically does not include an ambient air quality impacts evaluation for criteria air pollutants during the demolition and construction phases of the project. As such, the application does not quantify impacts to or demonstrate compliance with National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) during construction for the different averaging times of the standards. Staff needs ground-level impacts analysis using dispersion modeling to evaluate public health impacts and to determine compliance with NAAQS and CAAQS during the demolition and construction of the project.

DATA REQUESTS

27. Please provide ground-level impacts analysis using dispersion modeling to show public health impacts and compliance with NAAQS and CAAQS of the criteria pollutants during the demolition and construction of the project. Submit this

modeling data electronically.

RESPONSE TO DATA REQUEST 27

Digital Realty's consultant is currently performing the modeling analysis responsive to this data request and expects to docket the results and upload the modeling files to Staff by August 14, 2020.

28. Please describe the assumptions of the source parameters (e.g., initial dimension and release height of area/volume sources, or stack height, diameter, temperature, and velocity of point sources) used in the dispersion modeling for demolition and construction impacts.

RESPONSE TO DATA REQUEST 28

Please see Response to Data Request 27 above.

BACKGROUND: DIESEL PARTICULATE FILTERS
Page 70 of the SPPE application shows that the standby engines would be United States Environmental Protection Agency (U.S. EPA) certified Tier 2 units equipped with diesel particulate filters (DPFs). However, the SPPE application does not show the make or model or control efficiency of the DPFs. Staff needs such information to complete the initial study.

DATA REQUESTS

29. Please provide the make and model of the DPFs.

RESPONSE TO DATA REQUEST 29

The Applicant has not yet identified the preferred DPF supplier. Once a supplier has been chosen, the data will be provided to the

30. Please provide control efficiency of the DPFs.

RESPONSE TO DATA REQUEST 30

Based on the Applicants review of supplied generic DPF data, we believe that PM10 will

be controlled to levels 90% or greater. We also note that the DPFs provide some level of control of other pollutants, such as NOx, CO, and VOCs. Control of these pollutants was not evaluated in the applicant's emissions calculations. Once supplier data becomes available the Applicant will provide it to the CEC.

31. Please describe the cleaning cycle for the DPFs and explain whether the control efficiency would change during intermittent maintenance and testing of the standby engines.

RESPONSE TO DATA REQUEST 31

The Applicant has not yet identified the preferred DPF supplier. Once a supplier has been chosen, the data will be provided to the CEC.

BACKGROUND: TESTING AND MAINTENANCE FREQUENCIES AND LOADING
Page 56 of the SPPE application states that Section 4.3.2.3 provides six scenarios of the testing and maintenance frequencies and loading proposed for the LBGF. Staff needs a detailed description of the testing and maintenance frequencies and standby engine load points to verify assumptions used in the SPPE analysis.

DATA REQUEST

32. Please provide a detailed description of the testing and maintenance frequencies and standby engine load points for the Cummins QSK95-G9 and Cummins QST30 engines. For example, the description could include the length and engine load points for each weekly, monthly, quarterly, and annual testing and maintenance event.

RESPONSE TO DATA REQUEST 32

The Applicant is not proposing to use a set schedule of maintenance activities with respect to testing frequency, load points, etc. The Applicant will test the engines as necessary within the confines of the 50 hour per year limit. The emissions scenarios presented in Section 4.3.2.3 were provided to show emissions based on the various sets of emissions factors provided, i.e., as emissions bounding calculations.

BACKGROUND: TESTING AND MAINTENANCE LIMITS

The annual emissions and impacts analysis in the SPPE application is based on the assumption of 50 hours per year of testing and maintenance. The daily emissions and impacts analysis is based on the assumption of testing 10 of the larger QSK95 engines per day. It is also assumed that the engines would be tested only from 7 AM to 5 PM in the impacts analysis. Also, the short-term impacts analysis assumes only one engine will be tested at any one time during a single hour. Staff would like to verify that these assumptions would be made enforceable.

DATA REQUESTS

33. Please confirm whether the applicant would request from the District an annual limit, not to exceed in terms of hours per year, on operating each engine for readiness testing and maintenance testing.

RESPONSE TO DATA REQUEST 33

Yes, the Applicant will request and accept enforceable permit conditions an annual limit not to exceed in terms of hours per year, on operating each engine for readiness testing and maintenance testing not to exceed 50 hours per engine.

34. Please confirm that the applicant would request the District to require an enforceable limit that would allow testing of no more than 10 of the larger QSK95 engines per day.

RESPONSE TO DATA REQUEST 34

The applicant will request the District to require an enforceable limit that would allow testing of no more than 10 of the larger QSK95 engines per day.

35. Please confirm that the applicant would request the District to require an enforceable limit that would allow the testing of engines only between 7 AM to 5 PM daily.

RESPONSE TO DATA REQUEST 35

The applicant will request the District to require an enforceable limit that would allow the testing of engines only between 7 AM to 5 PM daily.

36. Please confirm that the applicant would request the District to require an enforceable limit on concurrent testing of engines so that only a single-engine operates for maintenance and testing at any given time.

RESPONSE TO DATA REQUEST 36

The applicant will request the District to require an enforceable limit on concurrent testing of engines so that only a single-engine operates for maintenance and testing at any given time.

BACKGROUND: SENSITIVE RECEPTORS
On page 68 of the application (Table 4.3-17) and Appendix AQ5, the applicant provided a list of sensitive receptors near the project site. On page 70 of the application, the applicant listed four receptors: PMI – Point of maximum impact, MEIR – Maximum exposed individual residential receptor, MEIW - Maximum exposed individual worker receptor, and MEIS - Maximum exposed individual sensitive receptor. Staff needs more information to check the validity of the health risk assessment (HRA).
DATA REQUESTS

Please provide the following information for PMI, MEIR, MIEW, MEIS, and all the sensitive receptors on Table 4.3-17.

37. Their Hot Spots Analysis and Reporting Program (HARP) receptor numbers.

RESPONSE TO DATA REQUEST 37

The Applicant wishes to clarify that the list of sensitive receptors presented in Appendix AQ5 is simply a delineation of sensitive receptors near the facility boundary. There are many more residential and worker receptor locations around the facility, and these locations are covered in the extensive modeling grid for the air quality and HRA analysis. It is highly likely that the MEIR and MEIW will not be receptors on the Appendix AQ5 list. The sensitive receptor list in Appendix AQ5 is presented below. The coordinates are in UTM format only (latitude and longitude are not used in the modeling or HRA). Staff can convert the UTMs to lat/long if they so desire.

In addition, the following should be noted: the UTM coordinates for the list of sensitive receptors were derived from Google Earth and represent moderately accurate locational data. Receptors on the main modeling grid are more precise and in most cases were

used to establish the PMI, MEIR, MEIW, and MEIS locations and attendant HRA values.

38. Their latitude and longitude along with Universal Transverse Mercator (UTM) coordinates. Staff needs this information for the cumulative HRA.

RESPONSE TO DATA REQUEST 38

Please see Response to Data Request 37.

BACKGROUND: CONSTRUCTION HRA
On page 70 and 73 (Table 4.3-21) of the application, the applicant reported the construction health risk for the PMI as 2.56E-6 (or 2.56 per million). However, staff could not verify this number from the modeling files (HARP output) provided by the applicant. The cancer risk of PMI staff found from HARP output is 7.64E-6 (or 7.64 per million). Also, the title of Table 4.3-21: LBGF Residential/Sensitive Health Risk Assessment Summary is confusing.
DATA REQUESTS

39. Please confirm if Table 4.3-21: LBGF Residential/Sensitive Health Risk Assessment Summary on page 73 is for project construction.

RESPONSE TO DATA REQUEST 39

Table 4.3-21 has nothing to do with construction risk. The table is clearly labeled as LBGF Residential/Sensitive Receptor HRA summary. As such, the results presented are for the 30-year exposure analysis for residential and sensitive receptors.

40. The results of MEIW were not included in Table 4.3-21. Please include the results of MEIW, PMI, MEIR, and MEIS in the table.

RESPONSE TO DATA REQUEST 40

Table 4.3-21 is not the Worker HRA summary. Table 4.3-22 presents the worker HRA summary data, and is clearly labeled as such. Table 4.3-21 contains the summary data for the proper receptors per the Residential/Sensitive receptor analysis, and Table 4.3-22 contains the summary data for the identified receptors for the worker analysis based on the operational emissions. No changes are necessary.

41. Please update the table with the correct risk numbers.

RESPONSE TO DATA REQUEST 41

The operational and construction HRAs have been updated. Tables 4.3-21 and Table 4.3-22 are updated as follows:

42. Please provide the assumptions of the construction HRA, such as the duration.

RESPONSE TO DATA REQUEST 42

The HRA input and output files supplied previously clearly indicate the assumptions for the construction analysis. The updated analysis files also indicate all the assumptions. The following presents a brief list of the non-default assumptions:

- Construction emissions evaluated for a two (2) year exposure period for purposes of HRA impacts.
- BAAQMD health tables enabled.
- Construction emissions as derived from CalEEMod were apportioned to 24 point sources across the site for the appropriate modeling periods.
- Construction risk is based solely on DPM emissions.
- Construction risks for the PMI, MEIR, MEIW, and MEIS are as follows:

43. Please also provide the updated HRA files if an updated HRA is completed.

RESPONSE TO DATA REQUEST 43

The updated HRA files for operations and construction will be provided upon Staff providing a secure link to upload the files. Please provide the link directly to Gregory Darvin of Atmospheric Dynamics, Inc.

BACKGROUND: OPERATION HRA

On page 72 of the application, the applicant stated: "the excess lifetime cancer risk associated with concentrations in air estimated for the LBGF PMI location is estimated to be 0.00000595 (5.95E-6 or 5.95 per million)." But this number does not match the PMI number reported in Table 4.3-22 on page 73. Staff could not verify the rest of the numbers in Table 4.3-22 by checking the modeling files

(HARP output) provided by the applicant, either. Also, the title of Table 4.3-22: LBGF Worker Health Risk Assessment Summary is confusing.
DATA REQUESTS

44. Please confirm if Table 4.3-22: LBGF Worker Health Risk Assessment Summary on page 73 is for project operation.

RESPONSE TO DATA REQUEST 44

As noted in Responses to Data Requests 39 and 40, Table 4.3-22 is the worker HRA summary for operational emissions, not construction.

45. Please update Table 4.3-22 for operation risk with the correct risk numbers, including the receptors of PMI, MEIR, MEIS, and MEIW.

RESPONSE TO DATA REQUEST 45

See the revised tables in Response to Data Request 41 above. The worker table (Table 4.3-22) does not contain the MEIR, because the MEIR for operational emissions is presented in Table 4.3-21. The assumptions inherent in the worker analysis do not apply at residential locations.

46. Please also provide the updated HRA files if an updated HRA is completed.

RESPONSE TO DATA REQUEST 46

See Response to Data Request 43 above.

BACKGROUND: OPERATION PHASE IMPACT
On page 56 of the application, the applicant stated: "for conservative evaluation purposes, it was assumed that testing (weekly, monthly, quarterly, annual, and special testing) would occur for no more than 50 hours per year." However, on page 65 of the application, the applicant stated: "each engine was assumed to operate up to 10 hours per day (7AM-5PM) to conservatively represent 10 different engines operating one hour each in any one day for 3-hour, 8-hour, and 24-hour averaging times." The information is mixed and confusing, so staff would like to clarify the assumptions of HRA.

DATA REQUESTS

47. Please confirm that the operation HRA was based on the 50 hours of operations per engine per year concurrently.

RESPONSE TO DATA REQUEST 47

Whenever maintenance and readiness testing occurs, regardless of whether it is daily, weekly, monthly, etc., the following will apply. (1) only one engine will be operated in any clock hour, i.e., there will never be a clock hour where more than one engine is operated for maintenance and readiness testing, (2) each engine will operate a maximum of 50 hours per year, but there will be no single clock hour where more than one engine is operated, and (3) there is nothing confusing about running a single engine for 10 hours to simulate 10 engines running for an hour each, the emissions on an hourly basis are the same. This same logic applies to other averaging periods such as 3 hours, 8 hours, and 24 hours.

Each engine will be permitted to run a maximum of 50 hours per year, but only one engine will operate in any single clock hour. There will be no concurrent engine operations during maintenance and readiness testing.

48. Please explain the assumption of 10 hours per day and how it affected the results of the HRA.

RESPONSE TO DATA REQUEST 48

The HRA for the proposed engines is based solely on DPM emissions. DPM is the approved and accepted surrogate compound for whole diesel exhaust. DPM health risks are only evaluated for cancer risk and chronic hazard index values based on annual emissions, not hourly or daily emissions, i.e., acute hazard indices. The modeling files used in the HRA analysis were adjusted to account for the 50 hour per year runtime for each engine, accounting for the imposed runtime period of 10 hours per day (7 am to 5 pm, per the City of Santa Clara CEQA analysis and Planning Department permit conditions), total emissions hours per year, etc.

49. Please explain the assumptions of the operation HRA, such as the load scenarios.

RESPONSE TO DATA REQUEST 49

Load scenario test schedules were not used or proposed by the applicant. See Response 32 above.

50. In air quality impact analysis, if there are any different assumptions used to evaluate criteria pollutants versus toxic air contaminants, please justify these differences and explain in detail.

RESPONSE TO DATA REQUEST 50

There were no different assumptions used to evaluate criteria pollutants

BACKGROUND: CUMULATIVE IMPACTS
On page 75 of the application, the applicant stated "[a]s of March 2020, the BAAQMD is currently updating the CEQA Cumulative Modeling Impact Guidelines. LBGF will submit, under separate cover, a cumulative impact assessment once the BAAQMD provides the updated procedures." However, the BAAQMD has already updated its Tools and Methodologies for cumulative HRA 1. DATA REQUESTS

51. Please provide the results of cumulative HRA for the project.

RESPONSE TO DATA REQUEST 51

This modeling analysis is currently underway and is estimated to docketed by August 21.

52. The cumulative HRA should include the following receptors: PMI, MEIR, MEIS, and MEIW, and impacts within 1,000-ft of each receptor.

RESPONSE TO DATA REQUEST 52

See Response to Data Request 51 above.

BACKGROUND: CARBON DIOXIDE EQUIVALENT (CO2E) INTENSITY IN POUNDS PER MEGAWATT HOUR (LB/MWH)

In Appendix AQ 4, pdf page 107 of 174, to estimate indirect greenhouse gas (GHG) emissions from electricity consumed by the LDC, the applicant has proposed to use a CO2e Intensity factor of 641.35 pounds per megawatt-hour (lb/MWh), in the CalEEMod assumptions with the operational year of 2023. However, on page 113, in Table 4.8 -2 the footnote states that a carbon intensity factor of 430 lb of CO2e per MWh was used to estimate indirect GHG emissions from the electricity used by the facility.

CEC staff have established in recent data center proceedings that SVP's carbon intensity factor for electricity generation is declining and would continue to drop in future years. On page 112 of the application, it states that SVP's carbon intensity factor for 2019 was determined to be 341 pounds of CO2e per MWh. The first phase of operation of this project is expected to occur in 2023. Staff needs to ensure that a representative carbon intensity value is used to estimate GHG emissions during normal operations.

DATA REQUEST

53. Please reconcile the carbon intensity values in various locations in the applicant's documents as noted above, and please justify the choice of carbon intensity value used to estimate GHG emissions. Revise GHG emissions as needed so that the CEQA analysis discloses expected indirect GHG emissions that could be attributed to the LDC.

RESPONSE TO DATA REQUEST 53

We recalculated the indirect GHG emissions using the CO2e intensity factor of 222 pounds per megawatt-hour, which is the estimated carbon intensity number provided by SVP for the online year of 2023 as identified in Attachment GHG DR-53. The previous energy use value was 134,140 metric tons of CO_2e per year and was based on the default carbon intensity factor contained in CalEEMod. The new energy use value is 88,035 MT CO_2e/year, and was determined using the following formula:

99.8 MW x 24 hours x 365 days = 874,248 MWh per year x 222 lbs CO2e/MWh = 194,083,056 lbs CO2e / 2,000 lbs/short ton = 97,041.528 short tons x .907185 metric tons/short tons = 88,034.618 metric tons CO2e per year

The revised Table 4.8-2 is shown below with changes highlighted. Atmospheric Dynamics, air quality consultant, has also updated the construction information in

Appendix AQ 4 accordingly.

Table 4.8-1: LDC GHG Emissions	
Source	**Annual Emissions (Metric Tons of CO_2e)**
Energy Use[1]	88,035
Mobile Sources[2]	585
Area Sources[3]	816
Water Use[4]	53
Waste Generation[5]	359
Total	**89,848**

Notes:
[1] Based on SVP's proposed carbon intensity factor of 222 pounds of CO_2e per MWh.
[2] Based on ITE trip rates for Data Center (Land Use Code 160) applied to a 576,120 square foot data center.
[3] Based on CalEEMod default emission factors for General Light Industrial land uses applied to a 576,120 square foot data center. The total includes natural gas emissions, which are conservatively assumed to apply to all 576,120 square feet of the building, even though the data halls will not require natural gas.
[4] CalEEMod default emissions adjusted to reflect the maximum project water demand of 67 acre-feet per year.
[5] Based on CalEEMod default emission factors for General Light Industrial land uses applied to a 576,120 square foot data center.

BACKGROUND: LDC and LBGF AND STATE OF CALIFORNIA GOALS AND PROGRAMS

Governor Edmund G. Brown signed Executive Order B-55-18 on September 10, 2018. 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 108 of the SPPE application, 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

54. Has the applicant considered how the proposed data center and diesel back-up generators would contribute to the State of California's goal of carbon neutrality no later than 2045?

RESPONSE TO DATA REQUEST 54

The GHG emissions for maintenance and testing of the backup generators are less than the CEQA Threshold of Significance for stationary sources adopted by the Bay Area Air Quality District.

55. What other technologies to diesel back-up generators have the applicant explored and why were they not pursued?

RESPONSE TO DATA REQUEST 55

Please see Chapter 5 of the Small Power Plant Exemption Application for a discussion of alternative technologies evaluated by Digital Realty. Fuel cells were not described in Chapter 5, however, Digital Realty has deployed fuel cells at one of its out of state facilities. The fuel cell being deployed by Digital Realty does not have an instantaneous startup time and takes a few hours to start up and become stable. The fuel cell also does not handle step up very well and therefore is only used by Digital Realty to provide base load electricity at the same time as utility power and not for emergency backup electricity. In addition, the fuel cell requires a dedicated natural gas pipeline which would introduce fuel risk during an emergency. That is an additional risk not faced by the use of diesel fuel which is readily available and can be transported to the site should the natural gas pipeline be unavailable. For these reasons, the fuel cell is not an appropriate replacement for the emergency generators selected by Digital Realty for the Lafayette Data Center.

56. 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? If not, why not?

RESPONSE TO DATA REQUEST 56

Digital Realty has not explored the procurement of renewable diesel and/or carbon offsets because the LBGF does not result in significant impacts that would require an alternative fuel source. However, a preliminary investigation for the purposes of answering this data request as revealed that emission guarantees for renewable diesel are not available for stationary sources and therefore, any emissions reductions claimed cannot be verified. Please see Responses to Data Request 61.

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

RESPONSE TO DATA REQUEST 57

Digital Realty has designed the LDC to be very efficient with a PUE expected to be 1.30 or lower, which is well below industry average of 1.67. The GHG emissions from maintenance and testing activities of the generators results in very low GHG annual emissions relative to the indirect GHG emissions resulting from electricity consumption of the LDC. As discussed in Response to Data Request 54, SVP is on track to meet the State's GHG reduction goals. As discussed in Responses to Data Requests 55, other technologies cannot yet provide the level of backup electricity generation "insurance" that is required for Digital Realty's customers to be protected from any and all emergencies resulting in a loss of SVP delivery of electricity to the site.

58. What additional options may become available in time for businesses to contribute to this goal?

RESPONSE TO DATA REQUEST 58

See Response to Data Request 57.

BACKGROUND: ALTERNATIVE GENERATING TECHNOLOGIES AND FUELS
On pages 188 thru 190, of Sections 5.3 thru 5.7 in the SPPE application Part 2

Section 5-App A-C TN 233041-2, there is a discussion of various alternative technologies, however, the application did not discuss alternative fuels or fully discuss alternative technologies.

Staff will need to discuss alternative fuels and whether or not they are a feasible approach to reducing GHGs.

DATA REQUESTS

59. Please discuss alternative technologies such as fuel cells.

RESPONSE TO DATA REQUEST 59

See Response to Data Request 55.

60. Please discuss alternative fuels such as renewable diesel and biodiesel.

RESPONSE TO DATA REQUEST 60

See Response to Data Request 56.

61. Please discuss the potential air quality implications that would also need to be considered with these alternative technologies and fuel types.

RESPONSE TO DATA REQUEST 61

Digital Realty has been unable to find verifiable data relating to the use of renewable diesel fuel as a replacement for the CARB diesel fuel. Based on available unverified information it appears that renewable diesel may increase emissions of NOx and reduce PM10 emissions.

62. Please discuss how the reliability of the alternative technologies would affect the configuration of the backup generators for the data center needs.

RESPONSE TO DATA REQUEST 62

Please See Responses to Data Requests 55 and 56.

BACKGROUND: CARBON SEQUESTRATION AFTER REPLANTING TREES

Staff would like to explore the idea of the net CO2e emissions sequestered when the applicant replants off-site trees at a 2:1 ratio as required by the City of Santa Clara. Trees sequester CO2 while they are actively growing. CalEEMod calculates the amount of CO2 sequestered during the growing period of different types of trees, which could be used to quantify the net benefit of carbon emissions sequestration effects. On page 82 of the SPPE application, it states: "As shown in Figure 2.3-2 the project would plant 638 trees to meet the City's replacement requirement [at least 2:1]."

DATA REQUESTS

63. Please quantify the annual net benefit of the carbon emission sequestration effects, in CalEEMod, after replanting trees at a 2:1 ratio as required by the City of Santa Clara.

RESPONSE TO DATA REQUEST 63

The net benefit of the carbon emission sequestration was calculated using the CalEEMod value of 0.0354 CO_2 accumulation per tree per year. The implementation of the proposed project would result in a total of 582 trees (see response to DR 71). With 375 trees removed, the net new trees would be 207. Multiplied by 0.0354, the reduction would be 7.3278 metric tons of CO_2 per year.

BACKGROUND: THERMAL AND VISIBLE PLUME ANALYSIS

On page 112 of the SPPE application (TN 233041-1), the applicant states: "Water consumption results in indirect emissions from electricity usage for water conveyance and wastewater treatment. Indoor uses at the project site would generate a potable water demand of approximately 67 acre-feet per year". In the SPPE application Part 2 Section 5 App A-C (TN 233041-2) on page 63 of 174, the applicant identifies cooling towers – Wet Surface (Wet Sac) condensers, which would be used to cool the data center building. The SPPE application does not address thermal or visible plumes from the building/server cooling system and staff could not find any discussion of a thermal or visible plume analysis for traffic hazards. Staff will need to determine whether thermal and/or visible plumes from the cooling system would be of concern for local aircraft using the nearby airport or reach the Central Expressway and be a hazard to motorists.

DATA REQUESTS

Staff requests the following information in order to complete its evaluation of thermal

plumes from the currently proposed building/server cooling system.

64. Please perform thermal plume modeling of the equipment used to reject heat from the building and data servers.

RESPONSE TO DATA REQUEST 64

The facility will not be using cooling towers or wet surface condensers. The facility will be using air cooled chillers. A description of these air-cooled chiller units, which will be mounted on the building roofs, is presented in Appendix F of the SPPE in the Noise Analysis. There will be 93 (proposed) air cooled units. These units are not connected in any manner to the emergency backup generator engines. These units are used strictly for building and server room cooling.

Digital Realty has engaged a thermal plume modeling analysis which is expected to be completed and docketed by August 21.

65. Please perform a visible plume analysis of the equipment used to reject heat from the server building of data servers.

RESPONSE TO DATA REQUEST 65

Since there will not be a cooling towers for the LCD as described in Responses to Data Requests 64 and 66, no visible plume analysis is necessary.

66. Please describe in detail the heat-rejection units, including adiabatic cooling towers, with enough detail so that staff can confirm the thermal or visible plume modeling.

RESPONSE TO DATA REQUEST 66

The heat rejection equipment which that is capable of evaporation is limited to the air-cooled chillers. The air-cooled chillers are equipped with an adiabatic pre-cooling system that cools the ambient air drawn across the condenser coils. There are 88 air-cooled chillers. For every 6 chillers, there are 2 redundant chillers (66 chillers are required for load and there are 22 redundant chillers for the plant to withstand select electrical and mechanical failure scenarios)

The adiabatic pre-cooling system consists of a low-pressure pumping system designed

to create an even water distribution / flow over evaporative media. The system also contains an automatic drain down valve, auto fill valve, manual drain valves, and water sump high and low level switches. The evaporative media is a removable media cartridge for maintenance and has a water collection channel to reuse excess water mist. Evaporative media is provided along the entire intake assembly of the chiller.

The pumping system is designed to provide 36 GPM over the evaporative media when the pump is enabled. On a design day the evaporation rate is calculated to be approximately 7 GPM air-cooled chiller (when 66 chillers are operating).

The evaporative media is roughly 70% efficient. The maximum chiller condenser airflow rate is 192,607 CFM and with an entering condenser air temperature of 105 deg F DB, the leaving condenser water temperature is nearly 130.5 deg F DB. The maximum total heat rejected per chiller is roughly 1,500 kW when the redundant 22 chillers are offline.

67. Please provide at least the following to support the thermal and visible plume analysis (provide equivalent data if necessary):
    a. Stack (or cooling tower fan cowl) height (m) above ground level (agl)
    b. Exhaust Temperature (degrees K)
    c. Exit Velocity (m/s)
    d. Stack Diameter (m)
    e. Moisture Content (% by weight) (visible plume analysis)
    f. Exhaust Temp (F) (visible plume analysis)
    g. Exhaust Flow Rate (lbs/hr) (visible plume analysis)

RESPONSE TO DATA REQUEST 67

See Responses to Data Requests 64 and 65.

BIOLOGICAL RESOURCES

BACKGROUND: Development and Design Details

The SPPE application lacks specificity and additional information is needed for staff to complete its CEQA analysis. Furthermore, CEC staff is proposing changes to PD BIO-1, a mitigation measure proposed by the applicant and incorporated into the project design to reduce impacts to nesting birds. Changes are necessary because PD BIO-1 lacks the elements and scope necessary to ensure potential project impacts on birds protected by the Migratory Bird Treaty Act (MBTA) and Fish and Game codes would be avoided or reduced to less than significant levels. The applicant's proposed pre-construction survey is limited to nesting raptors, and the timing of the surveys (14 days prior to the start of construction activities or tree removal for the first half of the nesting season, and 30 days prior for the second half) is not adequate to protect bird species during the entirety of the nesting season. Some birds can complete a nest within 14 days, therefore 30 days is too long a time frame and could allow a bird to build a nest and lay eggs, which would prohibit tree removal where the nest occurs and would reduce construction work in this area because a buffer would be needed to protect the bird and the nest. PD BIO-1 also does not specify any protective measures (such as avoidance buffers) in the event nesting birds covered by the MBTA and Fish and Game codes were to establish on the site during construction.

DATA REQUESTS

68. The Biological Resources section (4.4) of the SPPE application, mentions that the site is highly urbanized, and special-status species are not present on-site. Please provide a copy of the results any biological resource surveys performed as well as the results of any plant or animal species research such as review of the California Natural Diversity Database.

RESPONSE TO DATA REQUEST 68

The entirety of the project site consists of developed areas. A biological assessment was not deemed necessary for this project since it is in an urban and built-up environment. The arborist report (Appendix B of the original SPPE application) does not identify any special-status plant species present on the project site, although raptors (birds of prey) could use the trees on the site for nesting. As required by PD BIO-1, a nesting bird survey will be completed prior to project construction. No additional surveys are required.

69. Please provide more descriptive information (e.g. design, materials, location, etc.) and detailed figures for the following:

    a. Bioretention/Bioswale areas, including the landscape planting and the impervious surface areas that would drain to these structures. Also, clarify if the bioretention/bioswale areas would function as retention ponds during flood events.
    b. Sections 2.2.11 and 2.3.3 and 2.3.4 discuss project construction and site parking; laydown areas for construction materials and construction worker parking is not mentioned. Please clarify whether all construction parking and material laydown would occur on-site. If not, please provide details, location and map of any off-site parking and laydown areas.

RESPONSE TO DATA REQUEST 69

Please See the Landscape Drawing Set included in Attachment PD DR-1.

70. The Biological Resources section (4.4) of the SPPE application presents information from the October 2019 Arborist Report included in Appendix B (Part II) of the application. Section 4.4 provides details on protection of trees to remain, guidelines on removal of trees, protection of new trees planted and so forth as well as recommendations from the Arborist Report. However, these measures are not encapsulated in a mitigation measure incorporated into the project design. Please provide a new project design measure (PD BIO-2) that incorporates this information to protect trees on-site during construction.

RESPONSE TO DATA REQUEST 70

PD BIO-2: The project will incorporate the following measures, in accordance with the arborist recommendations, to protect trees from harm that could occur during construction.

- Remove trees #1-6, 15, 21, 23-25, 42-78, 80-83, 94-97, 99-251, 253-257, 259-263, 268-270, 277-313, 315-328, 330-332, 335-338, 340, 411, 414, 420-433, 446-448, 450-453, 456-470, 475, and 476, upon approval from the City of Santa Clara.
- Remove deadwood from remaining Callery pears and Raywood ashes. This will benefit both tree health and worker safety.
- All tree work must be completed by trained tree care personnel under the direction of an International Society of Arboriculture Certified Arborist.

- The Applicant shall alert the Project Arborist when new drawings are available showing grading, utilities, retention area details, or material changes to project features.
- Tree protection fencing shall be installed prior to any demolition equipment entering the site.
    - Fencing shall be installed at or outside the tree protection areas of all trees to be retained.
    - Where existing pavement is within tree protection zones, install tree protection fencing at the edge of pavement. After demolition, relocated tree protection fencing to the edge of the tree protection area.
    - Install tree protection fencing at the edge of the project features.
    - For areas where no construction will occur, tree protection fencing will be installed at the perimeter of the area instead of around each tree individually.
    - Spread wood chips at least four inches thick within tree protection fencing.
- For existing hardscape to be demolished within tree protection zones:
    - Demolish the area nearest the tree first, and work outwards.
    - Do not operate machinery on unpaved areas within tree protection zones.
    - Upon completion of demolition, relocate tree protection fencing to at or outside the tree protection area.
- Minimize grading near trees. Do not complete any grading inside tree protection fencing.
- If live roots over one inch in diameter are encountered at any time, in any location, they must be pruned with a sharp saw or bypass pruners, as close to the edge of the excavation as possible. If roots over three inches in diameter are encountered, do not prune, but instead contact the Project Arborist to determine the best course of action.
- Irrigate all trees to be retained on a monthly basis with potable water, in the absence of heavy rain.
    - Irrigate using a soaker hose placed as close to the tree driplines as practical. Irrigate for 2-4 hours at a very low flow. If this causes runoff, reduce the flow rate. If this is impractical for any tree for any reason, contact the Project Arborist.

71. The Arborist report in Appendix B states that there are 476 trees on the proposed project site; 321 trees are recommended for removal (317 live trees to be removed, 2 dead ones, and 2 stumps), and 155 trees are recommended to remain untouched. However, these numbers do not exactly align with the numbers specified on the Preliminary Tree Disposition Plan located in the same

appendix nor with the numbers specified in Section 4.4 Biological Resources, pages 77, 78 and 82. Please explain and confirm the exact numbers.

RESPONSE TO DATA REQUEST 71

On July 17, 2020, the applicant provided the project team with a new landscape plan, which included in Attachment PD DR 1. The correct number of trees currently existing on the site is 476. Of these, 375 will be removed, 99 will remain, and 2 are stumps that would be removed. Per the City of Santa Clara tree requirements, trees may be replaced at a 2:1 ratio at 24" box size, and at a 1:1 ratio at 36" box size. Tree stumps are not considered trees that require replacement.

The tree mitigation plan shows that 97 trees will be replaced at a 2:1 ratio (resulting in 195, 24" box sized trees) and 288 trees will be replaced at a 1:1 ratio (resulting in 288, 36" box sized trees). In total, 375 trees would be removed and 483 replacement trees would be planted, resulting in a total of 582 trees on-site (483 replacement trees plus 99 existing trees).

72. Staff respectfully proposes the following alterations to the language of PD BIO - 1 (new language is in **bold text** and deleted language is indicated by ~~strike-through~~ text). Please provide a statement that the applicant will accept these changes and incorporate this version of PD BIO -1 into the project. If the applicant disagrees with any of these changes, please propose alternate language.

PD BIO-1: The project will incorporate the following measures to reduce impacts to nesting birds.

- If **possible construction activities, including removal of trees and vegetation clearing shall** ~~removal of the trees on-site would~~ take place between **September and** January**.** ~~and September,~~ **If construction activities, including tree removal and vegetation clearing, must occur during the nesting season (February 1 through August 31)** a preconstruction survey for nesting raptors **and other protected native or migratory birds** shall be conducted by a qualified ornithologist**, approved by the City of Santa Clara,** to identify active ~~nesting raptor~~ nests that may be disturbed during project implementation. Between **February 1 through August 31** ~~January and April~~ (inclusive) pre-construction surveys shall be conducted no more than 14 days prior to the initiation of construction activities**,** ~~or~~ **including** tree **removal**~~relocation~~ or **vegetation clearing. Surveys will be repeated if project activities are suspended or delayed for more than 14 days during the nesting season.** ~~removal. Between May~~

~~and August (inclusive), pre-construction surveys shall be conducted no more than 30 days prior to the initiation of these activities.~~ The surveying ornithologist shall inspect all trees in and immediately adjacent to the construction area to be disturbed by these activities, and the ornithologist shall, in consultation with the State of California~~,~~ Department of Fish and Wildlife (CDFW), designate a construction-free buffer zone ~~(typically 250 feet)~~ around the nest ~~until the end of the nesting activity~~. The size of all buffer zones will initially be a 250- foot radius around the nest of non-raptors and a 500-foot radius around the nest for raptors. Any changes to a buffer zone must be approved by the City of Santa Clara in consultation with CDFW. The nests and buffers will be field checked weekly by the approved ornithologist. The approved buffer zone will be marked in the field with exclusion fencing, within which no construction, tree removal, or vegetation clearing will commence until the ornithologist and the City of Santa Clara, in consultation with CDFW, verify that the nest(s) are no longer active. If an active bird nest is discovered during construction, then a buffer zone shall be established under the guidelines specified.

- The ~~applicant~~ **ornithologist** shall submit a **copy of the pre-construction nest survey** report**(s)** indicating the results of the survey and any designated buffer zones to ~~the satisfaction of~~ the **City of Santa Clara's** Director of Planning and Inspection prior to **the start of construction activities or** the issuance of a tree removal permit by the City Arborist. **The report(s) will contain maps showing the location of all nests, species nesting, status of the nest (e.g. incubation of eggs, feeding of young, near fledging), and the buffer size around each nest (including reasoning behind any alterations to the initial buffer size). The report will be provided within 10 days of completing a pre-construction nest survey.**

RESPONSE TO DATA REQUEST 72

We approve the proposed changes to PD-BIO 1.

CULTURAL/TRIBAL CULTURAL RESOURCES

BACKGROUND

The SPPE application (TN 233041-1) references at least three different sources for the cultural resources literature search and associated report prepared for the applicant. Staff has to date not received a copy of those referenced materials and therefore has no way to independently verify the accuracy of the references in the application. The three different references in the SPPE application are listed below:

- ***Page 83, application part 1, section 4.5, states that Holman & Associates, Inc. conducted the records search in July 2018***
- ***Page 84, application part 1, 4.5.1.2, states that the records search (unknown consultant) was completed July 2019***
- ***Page 89, application part 1, Impact CUL-4, footnote 12, identifies Albion Environmental, Inc. (October 2018) as having conducted the records search***

DATA REQUESTS

73. Please identify the consultant that prepared the literature search and report to eliminate the confusion in the application.

RESPONSE TO DATA REQUEST 73

Holman & Associates prepared the CEQA Archaeological Literature Search on Nov 8, 2019.

74. Please provide a copy of the Cultural Resources Assessment completed for this project.

RESPONSE TO DATA REQUEST 74

The Cultural Resources Assessment was docketed with a Request For Confidentiality on July 24, 2020.

75. Please provide copies of the reports and records from the literature search that provided the background for the Cultural Resources Report. Please ensure that the results include the request of the Information Center (IC) indicating the information requested by the applicant's consultant, and the search area radius

indicated on maps as provided by the IC or prepared by the consultant using shape files provided by the IC.

RESPONSE TO DATA REQUEST 75

Holman & Associates, cultural resources consultant, has requested copies of reports and records identified in the literature search. When received they will be provided to the CEC under a Request For Confidentiality.

76. Please provide a description of the project area of analysis, including the project site, adjacent areas and/or parcels and any linear routes.

RESPONSE TO DATA REQUEST 76

The proposed 2825 Lafayette Street Data Center Project is located in the eastern portion of the City of Santa Clara. The project site is adjacent to Central Expressway on the north, Lafayette Street on the west, industrial uses on the south, and Union Pacific Railroad (UPRR) tracks on the east. The 22.76-acre property includes three buildings and associated paved parking and loading areas. The Project Area consists of two legal parcels: the northern 13.04-acre parcel located at 2825 and 2845 Lafayette Street consists of two unoccupied industrial buildings, and the southern 9.72-acre parcel located at 2805 Lafayette Street includes an operating data center.

BACKGROUND

The application contains other vague or potentially contradictory information about the records search. For instance, the letters to California Native American tribes state that the records search for the proposed project included a 0.25-mile radius from the project site (TN 233041-2, Appendix C). The cultural and tribal cultural resources section of the application, however, states that two Native American sites are located within 0.50 mile of the project site. Staff also notes that while these letters are dated November 8, 2019, the application states that the letters were mailed on November 15, 2019 (TN 233041-1, page 88; TN 233041-2, Appendix C). Additionally, the cultural resources section indicates that there are three recorded cultural resources "nearby" the project site, but only resource P-43-003529 (Santa Clara Public Works Building Maintenance Facility) is named. (TN 233041-1, page 84.)

DATA REQUESTS

77. What was the radius employed during the records search? Why are two distances provided in the application?

RESPONSE TO DATA REQUEST 77

The records searched used a search radius of 0.25-mile.

78. Please clarify whether the letters were mailed on November 8th or 15th.

RESPONSE TO DATA REQUEST 78

The letters were mailed on November 8th, 2019.

79. What are the two unnamed, "nearby" recorded resources?

RESPONSE TO DATA REQUEST 79

The two nearby recorded resources are CA-SCL-430/H and SCL-702/P-43-1080.

BACKGROUND

Assessment of potential impacts on cultural and tribal cultural resources hinges in part on knowing the extent and character of ground-disturbing activities associated with a project. The application describes in Section 2.3.7 the surface and below grade storm water drainage systems, including the use of bio-retention basins.

The application describes in Section 2.3.8 the potential for there to be as many as two tubular steel poles installed to connect Silicon Valley Power's South Loop to the new substation as part of the project.

DATA REQUESTS

80. Please describe the depth of excavation and scarification planned for preparation of the construction grade.

RESPONSE TO DATA REQUEST 80

Per geotechnical considerations for the project area, it is recommended that the maximum depth of required excavation will be approximately two (2) feet. For

improvements at-grade that are not supported on a structural slab, the soil subgrade should be kept moist until it is covered by imported fill.

81. Please describe the extent of below grade excavation that would be required for installation of the drainage facilities in terms of depth below existing grade, and width and length.

RESPONSE TO DATA REQUEST 81

The maximum depth below existing grade for any of the drainage facilities (bioretention areas) is 6'-8" below existing grade. The drainage facilities for the site are spread evenly throughout the site plan. The total amount of area of drainage facilities provided for the site is 24,929 sf. The maximum extent of excavation for the site is 170,265 cubic-feet or 6310 cubic-yards.

82. Please describe the typical excavation required for the installation of the tubular steel poles in terms of depth below existing grade, and width and length.

RESPONSE TO DATA REQUEST 82

The foundations for the proposed high voltage poles are about 5'-6" diameter by 25-ft deep. For the 4 high voltage poles that are proposed along the west side of the property, this will result in 88-cy of excavation for the poles.

83. How deep would the contractor have to excavate to build foundations for the backup generators, data center buildings, and substation?
    a. If the project design has the aforementioned features placed on a substrate of imported, engineered fill, please so state and indicate the depth of excavation from the top of the new grade.

RESPONSE TO DATA REQUEST 83

For the excavation for the piles under the building foundation columns, assuming an 8-pile group with the pile cap, and 296 total pile groups, the excavation quantity will be approximately 18,000-cy. For the excavation at the generator yard / equipment pads, assuming 2' thick pads at each piece of equipment, the total excavation quantity for all pads will be approximately 3,100-cy. The equipment in the substation will required 6" of excavation for the equipment pads. High switch support footings will be drilled piers, 2'-

6” in diameter and 8’ deep. Low switch support footings will be drilled piers, 2’ in diameter and 20’ deep. Dead structure support footings will be drilled piers, 3’ in diameter and 20’ deep. In total, the excavation quantity for the substation will be approximately 25,000-cy.

a. It is recommended that a 12-inch thick layer of engineered fill be placed beneath exterior concrete slabs and flatwork, including the mat slabs are the generator yard (unless pile supported). Alternatively, the upper 12 inches of the existing surface soil may be lime treated to reduce the expansion potential.

BACKGROUND

Section 2.3.4 of the application describes the potential removal of 4,000 cubic yards of soil and undocumented fill and replacement with 34,000 cubic yards of imported fill. It is unclear to staff what the disposition of removed soil and fill would be. Similarly, the application does not appear to identify the source(s) of imported fill. Disposal of excavated soil and acquisition of soils from off-site sources could cause impacts to cultural, tribal cultural, and other kinds of resources through burial, equipment traffic, and excavation.

DATA REQUESTS

84. Please describe the locations where the applicant plans to dispose of soil and fill that would be excavated from the project site.
    a. Include the name(s) and location(s) of the disposal site(s), if known.
    b. If the applicant has not yet identified the specific disposal site(s), please describe their type (such as active construction site or commercial disposal site).

RESPONSE TO DATA REQUEST 84

The Applicant has not hired an EPC contractor but soil and fill disposal will take place at a commercial facility. One such facility is:

Republic Services, Newby Island Landfill
1601 Dixon Landing Road
Milpitas CA 95035

85. Please describe the locations from which the applicant expects to obtain fill for construction of the proposed project.
    a. Include the name(s) and location(s) of the fill source(s).
    b. If the applicant has not yet identified the specific fill source(s), please describe their type (such as construction site, other property owned by the

applicant, or commercial soil supplier).

RESPONSE TO DATA REQUEST 85

The Applicant has not hired an EPC contractor but fill will be imported from a commercial facility. One such facility is:

Stevens Creek Quarry
12100 Stevens Canyon Rd
Cupertino, CA 95014

HAZARDS

BACKGROUND: Fuel Tank Replenishment Strategies
The project design calls for a separate diesel fuel tank for each emergency generator. Each diesel engine would be readiness tested on a regular schedule, consuming a portion of its fuel.

DATA REQUEST

86. Please provide the fuel tank replenishment strategy and frequency, and the estimated frequency of fuel trucks needing to visit the facility for refueling.

RESPONSE TO DATA REQUEST 86

Any and all diesel fuel deliveries will be made via truck by a qualified delivery service when required. Each generator is initially filled to only 95% capacity of its tank. Refills occur when the tank reaches 83% of its capacity. Each generator is run once a month for 30 minutes with no load on the engine. This run rate will require each generator to be refilled to the required 95% capacity approx. every 3 to 5 months, depending on the size of the tank to be replenished. Each generator is also run for a total of four hours per year, under max load, for yearly proving/testing purposes. Upon completion of these tests, the generators will require to be refilled to 95% capacity.

Each diesel fuel fill truck is equipped with spill kits which are either deployed or made at the ready during fill operations. Digital Realty also requires a two-man fill protocol to be observed during all fuel handling operations. This protocol is greater in redundancy than what is followed to replenish fuel tanks at public fuel fill stations.

BACKGROUND: Diesel Fuel Degradation Precautions
Stored diesel fuel is subject to degradation over time, which can render it unsuitable for use and potentially requiring it to be changed-out for fresh fuel.

DATA REQUEST

87. Please describe what measures are planned to maintain adequate quality of the stored fuel. Is the generator equipped with a fuel filtration system? How often might the stored fuel need to be changed-out for new? If needed, how would this be accomplished? How many fuel truck visits would be required?

RESPONSE TO DATA REQUEST 87

Modern commercial diesel fuels contain biocides preventing microbial growth. These and other additives aid to stabilize the fuel ensuring the fuel quality remains high and the fuel viable as it rests. Along with these additives and precautions taken to keep the fuel contained properly and free from exposure to the elements, diesel fuel has the capability to remain viable for several months. Additionally, when replenished with fresh diesel fuel after each month testing procedures, the possibility of the fuel becoming contaminated is again reduced.

Should fuel need to be extracted from a generator tank, the procedures followed to fuel a generator will be strictly adhered to, but run in reverse using an empty fuel delivery truck, two-man protocol for removal and monitoring of the de-fueling procedures with spill kits made ready for immediate use.

The capacity of one 7,500 gallon fuel truck exceeds the capacity of the generators 6,000 gallon belly tank; therefore one fuel truck will be more than adequate to remove the fuel from one generator tank. The number of trucks required to be mobilized in order to remove contaminated fuel from the site is contingent upon the amount of fuel needed to be removed, and will need to be calculated once contaminated fuel is discovered.

POPULATION AND HOUSING

BACKGROUND: PROJECT CONSTRUCTION

Staff needs to know more about the construction of the project, that is, both the LBGF and LDC. The SPPE application notes on page 14 that construction of LBGF is expected to take 6 months and require 10-15 construction workers including one crane operator. The SPPE application notes on page 16 that "Demolition and construction activities are estimated to last approximately 24 months to the initial occupancy of the building. Construction activities are estimated to last an additional 60 months indoors to bring the building to full occupancy." There is no indication of the number of construction workers necessary for the project as a whole. Staff has the following associated questions and requests:

DATA REQUEST

88. What is the estimated number of construction workers during peak activities and on average for the project (LDC inclusive of LBGF)?

RESPONSE TO DATA REQUEST 88

Construction of the project would employ an average of 90 workers per month and reach a peak workforce of 175 in month 10.

BACKGROUND: PROJECT CONSTRUCTION AND OPERATION WORKFORCE

Staff needs to know about the assumptions used for the construction and operations workforce for the project. No assumptions were discussed in the SPPE application.

DATA REQUESTS

89. From where are the project construction and operation workforce expected to be derived from, locally within the Greater Bay Area or non-locally (beyond a two-hour commute of the project site)?

RESPONSE TO DATA REQUEST 89

Digital Realty anticipates that all of the project construction and operation workforce would come from the Greater Bay Area.

90. What portion of the construction and operation workforce does the applicant anticipate would be local and what portion would be non-local?

RESPONSE TO DATA REQUEST 90

See Response to Data Request 89.

TRANSPORTATION

BACKGROUND: Project's Conformance with CLUP Policy S-4
The project is located within the Turning Safety Zone and Inner Safety Zone of the Norman Y. Mineta San Jose International Airport, as designated by the Santa Clara County Comprehensive Land Use Plan (CLUP) for the airport. According to Policy S-4 of the CLUP, above-ground fuel storage and hazardous materials facilities are not permitted in these zones. The project has above-ground diesel storage tanks (total capacity 284,600 gallons). The Transportation/Traffic, Land Use and Planning, and Hazards sections of the SPPE application do not address this issue.

DATA REQUESTS

91. Please provide an analysis of the project's conformance with CLUP Policy S-4 as it relates to the CEQA Guidelines Appendix G questions in the areas of Transportation, Land Use and Planning, and Hazards and Hazardous Materials.

RESPONSE TO DATA REQUEST 91

At the time of the design of this project, the Turning Safety Zone and the Inner Safety Zone associated with Runway 11-29 were going to be deleted from the new CLUP since the City of San Jose recently approved a plan to discontinue use of Runway 11-29. However, after checking with the City of San Jose Airport consultant Cary Green, we understand that the revised CLUP would also involve extending the Turning Safety Zone for the main runways which would still affect the same generators as the current plan. Therefore, Digital Realty has decided to revise the generator plans for the 17 affected generators to install the generator fuel tanks below grade in the same manner as used for the Sequoia Data Center facility. Digital Realty is preparing drawings to show the below grade configuration and anticipates docketing them by August 17, 2020.

With the change in design, the LBGF will comply with CLUP Policy S-4.

92. If the analysis cannot demonstrate the project as proposed is consistent with CLUP Policy S-4, please submit an alternative design for the fuel storage tanks that would be consistent.

RESPONSE TO DATA REQUEST 92

See Response to Data Request 91 above.

BACKGROUND: Communication with Union Pacific Railroad
Union Pacific Railroad tracks run in a north-south direction adjacent to the eastern side of the project site.

DATA REQUEST

93. Please state:
    a) Whether Union Pacific has been notified of the project;
    b) Methods of notification used and person contacted; and
    c) Any comments received from Union Pacific

RESPONSE TO DATA REQUEST 93

Digital Realty has not notified Union Pacific of the project directly and none of the construction or operation activities will encroach on the railroad right of way. Digital Realty has not received any comments from Union Pacific.

BACKGROUND: Vehicle Miles Traveled
As a result of recent updates to the CEQA Guidelines, which include analyzing transportation impacts pursuant to Senate Bill 743, staff requests information on the vehicle miles traveled for the demolition, construction, and operation generated trips.

DATA REQUESTS

94. Please provide the estimated one-way trip lengths for the workers, deliveries, and truck haul trips generated by the project's demolition and construction activities.

RESPONSE TO DATA REQUEST 94

The following CalEEMod default trip lengths were used to estimate one-way trip lengths associated with demolition and construction activities:

- Worker trips = 10.8 miles
- Vendor (delivery) trips = 7.3 miles
- Haul trips = 20 miles

95. Please provide the estimated one-way trip lengths for the workers, deliveries, and truck haul trips generated during project operation.

RESPONSE TO DATA REQUEST 95

The following CalEEMod default trip lengths were used to estimate one-way trip lengths associated with project operation:

- C-W (Commercial Worker) trips = 9.5 miles
- C-C (Commercial Customer) trips = 7.3 miles
- C-NW (Commercial Networker, including deliveries) = 7.3 miles

ATTACHMENT PD DR-1

PCC DRAWING SETS

ARCHITECTURAL DRAWING SET

A1.0 through A4.0

SITE INFORMATION:

OWNER:	DIGITAL REALTY 2825 LAFAYETTE STREET SANTA CLARA, CA 95050-2627
LEGAL:	BOUNDED BY CENTRAL EXPRESSWAY TO THE NORTH, LAFAYETTE STREET TO THE WEST, 2825 LAFAYETTE STREET (SITE) AND RAILROAD TRACKS TO THE EAST, AND 2805 LAFAYETTE STREET (DLR) TO THE SOUTH COUNTY OF SANTA CLARA: 1.78M POPULATION (2010 CENSUS) TAX ASSESSOR'S PARCEL NUMBER (APN): 224-04-093
OWNER:	MH - HEAVY INDUSTRIAL PROCESSING AND STORAGE USES PERMITTED (MH - ZONING ORD 18.50.030) COMMERCIAL STORAGE AND WHOLESALE DISTRIBUTION
FEMA:	FLOOD ZONE X

VICINITY MAP:

N.T.S.

NORTH

EXISTING SITE PLAN

100' 50' 25' 0'
1"=50'-0"

NORTH

DIGITAL REALTY
Data Center Solutions

2825 LAFAYETTE STREET
SANTA CLARA, CA
95050-2627

MEP ENGINEER

ESD

Environmental Systems Design, Inc.

233 South Wacker Drive, Suite 5300
Chicago, Illinois 60606
312.372.1200
www.esdglobal.com
DPR License No. 184-000892 IL

ARCHITECT

HKS

STRUCTURAL ENGINEER

PEOPLES ASSOCIATES
STRUCTURAL ENGINEERS

CIVIL ENGINEER

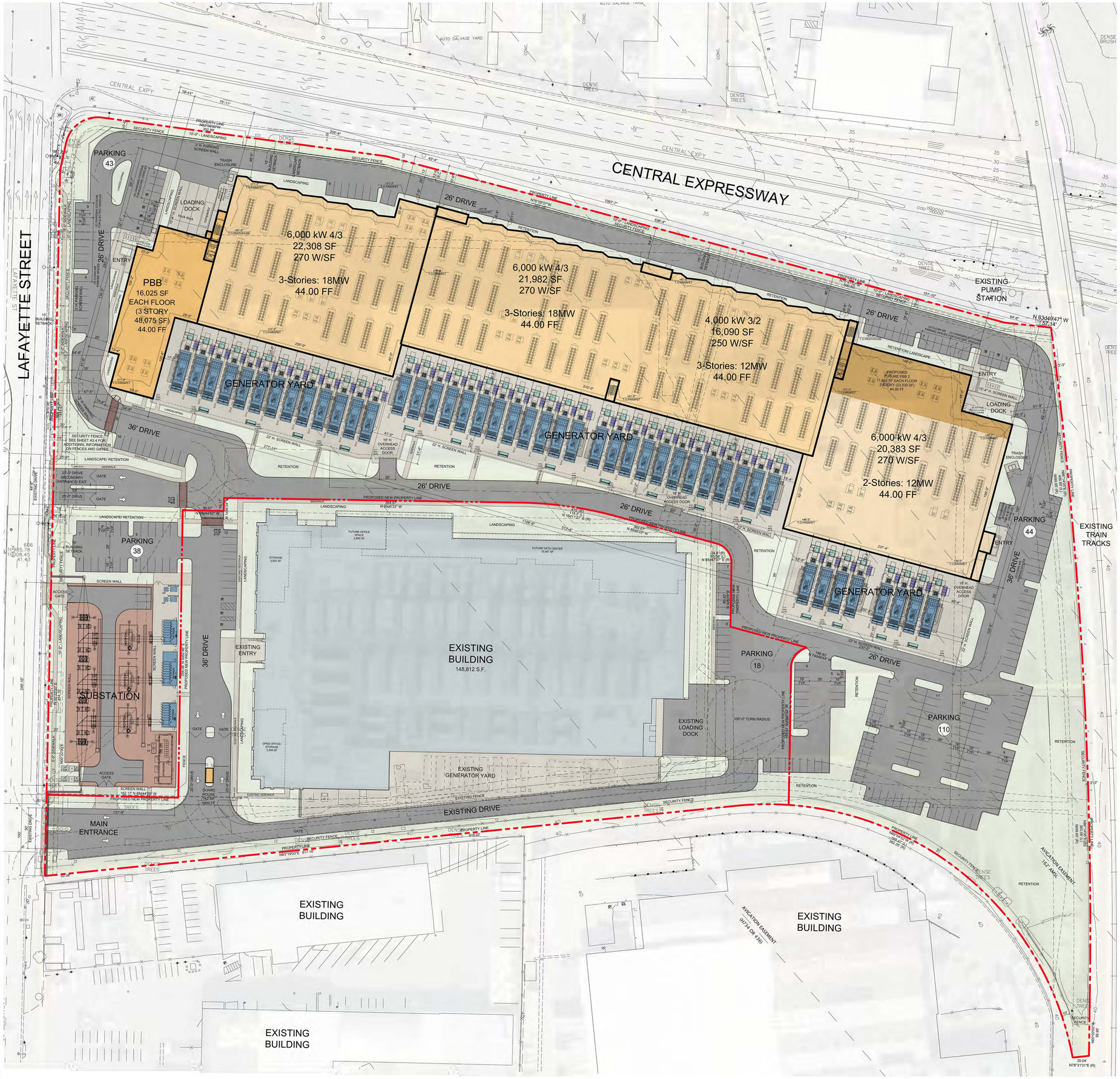
Kimley»Horn

NO.	RECORD	DATE
2	PCC ISSUANCE	06.19.20
1	PCC ISSUANCE	10.28.19

MASTER PLAN

EXISTING SITE PLAN

PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE 6/19/2020
PROJECT ENGINEER	SHEET NUMBER **A1.0**
SCALE AS NOTED	



SITE INFORMATION:

PROJECT NAME:	2825 LAFAYETTE STREET
PROJECT DESCRIPTION:	NEW DATA CENTER
PROJECT CONTACT:	CHAD MENDELL ENVIRONMENTAL SYSTEMS DESIGN, INC. 233 SOUTH WACKER DRIVE, SUITE 5300 CHICAGO, ILLINOIS 60606 312-372-1200
OWNER:	DIGITAL LAFAYETTE, LLC 2825 LAFAYETTE STREET SANTA CLARA, CA 95050-2627
PARCEL NUMBER:	NORTH PARCEL: 224-04-093 SOUTH PARCEL: 224-04-094
LOT NUMBER:	NORTH PARCEL: LOT 2 SOUTH PARCEL: LOT 1
TRACT NUMBER:	NORTH PARCEL: 93 SOUTH PARCEL: 94
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FEMA:	NORTH PARCEL: FLOOD ZONE X SOUTH PARCEL: FLOOD ZONE AH
BUILDING SETBACKS:	FRONT YARD 15'-0" EACH LOT SHALL HAVE A STREET SIDE FRONT YARD OF NOT LESS THAN FIFTEEN (15) FEET IN DEPTH SIDE YARD 15'-0" THE STREET SIDE YARD OF EACH CORNER LOT EXCLUSIVE OF THE FRONT YARD SHALL BE NOT LESS THAN FIFTEEN (15) FEET IN DEPTH REAR YARD 0'-0" SETBACK ADJACENT TO NON-RESIDENTIAL 0' REAR YARD
LANDSCAPE SETBACKS:	FRONT, SIDE YARDS 10'-0" A MINIMUM OF TEN FEET OF THE REQUIRED FRONT AND STREET SIDE YARDS, EXCLUSIVE OF CITY-PERMITTED DRIVEWAY CUTS, SHALL BE DEVELOPED INTO AND PERMANENTLY MAINTAINED AS OPEN LANDSCAPED AREAS SUBJECT TO THE APPROVAL OF THE DIRECTOR OF PLANNING AND INSPECTION.
HEIGHT:	70 FT MAX HEIGHT (ZONING ORD. 18.50.070) MECH AND PARAPETS CAN BE PLACED ABOVE THIS (ZONING ORD. 18.64.010). VARIABLE MAX. HEIGHT BASED ON FAA REGULATIONS.
SITE AREA:	NORTH PARCEL: 691,526.384 S.F. SOUTH PARCEL: 299,683.550 S.F. TOTAL: 991,209.934 S.F. (22.755 ACRES)
TYPE OF USE:	OFFICE/ DATA CENTER
OCCUPANCY GROUP:	BUSINESS GROUP B (CHAPTER 3, SECTION 304)
TYPE OF BUILDING CONSTRUCTION:	TYPE 2B (FULLY SPRINKLERED) (CHAPTER 6, TABLE 601)
BUILDING AREA:	EXISTING BUILDING - 2805: DATA CENTER: 148,812 S.F. NEW BUILDING - 2825: DATA CENTER: 575,401 S.F. TOTAL: 724,213 S.F.
GENERATOR YARD:	108,631 S.F.
% LOT COVERAGE:	30 % (209,869/ 691,526.384 = 0.3034)
FLOOR-TO-AREA RATIO (FAR) PROPOSED NEW BUILDING	0.90
PARKING REQUIRED:	DATA CENTER (EXISTING) 38 SPACES (1 SPACE PER 4,000 S.F.) (148,812 S.F./ 4000 = 38 SPACES) DATA CENTER (NEW) 144 SPACES (1 SPACE PER 4,000 S.F.) (575,401 S.F./ 4000 = 144 SPACES) TOTAL PARKING REQUIRED: 182 SPACES DATA CENTER (NEW): (144 + 38 = 182 SPACES)

PARKING PROVIDED FOR BUILDING 2805:	76 SPACES
PARKING PROVIDED FOR BUILDING 2825:	177 SPACES
TOTAL PARKING PROVIDED:	253 SPACES

* NOTE: THERE ARE **0** COMPACT PARKING STALLS ON THIS SITE.

BICYCLE RACKS REQUIRED:
DATA CENTER (NEW): (CLASS 1 - 5% OF 182 PARKING STALLS) = 10 RACKS
(CLASS 2 - 5% OF 182 PARKING STALLS) = 10 RACKS

BICYCLE RACKS PROVIDED:
DATA CENTER (NEW): CLASS 1 = 10 RACKS
CLASS 2 = 10 RACKS

CHARGING STATION PARKING SPACES REQUIRED:
DATA CENTER (NEW): (6% OF 182 PARKING STALLS) = 11 SPACES

CHARGING STATION PARKING SPACES PROVIDED:
DATA CENTER (NEW): 11 SPACES

CLEAN AIR PARKING SPACES REQUIRED:
DATA CENTER (NEW): (8% OF 182 PARKING STALLS) = 15 SPACES

CLEAN AIR PARKING SPACES PROVIDED:
DATA CENTER (NEW): 15 SPACES

GENERAL NOTES:

1. ALL GATES INSTALLED ON DESIGNATED FIRE DEPARTMENT ACCESS ROADS ARE REQUIRED TO ELECTRICALLY AUTOMATIC POWERED GATES. GATES SHALL BE PROVIDED WITH AN EMERGENCY BATTERY POWER SUPPLY, OR SHALL BE A FAIL-SAFE DESIGN, ALLOWING THE GATE TO BE PUSHED OPEN WITHOUT THE USE OF SPECIAL KNOWLEDGE OR EQUIPMENT. TO CONTROL THE AUTOMATIC GATES A DETECTOR/STROBE SWITCH SHALL BE INSTALLED TO ALLOW EMERGENCY VEHICLES (E.G., FIRE, POLICE, EMS) TO FLASH A VEHICLE MOUNTED STROBE LIGHT TOWARDS THE DETECTOR/STROBE SWITCH, WHICH IN TURN OVERRIDES THE SYSTEM AND OPENS THE GATE. THE GATES SHALL BE EQUIPPED WITH A TOMAR STROBE SWITCH OR 3M OPTICOM DETECTOR TO FACILITATE THIS OVERRIDE.

VICINITY MAP

N.T.S.

NORTH

LEGEND:

LOCATION OF OVERHEAD POWER LINES AND POLES

PROPOSED NEW SITE PLAN

80' 40' 20' 0'
1"=40'-0"

NORTH

DIGITAL REALTY
Data Center Solutions

2825 LAFAYETTE STREET
SANTA CLARA, CA
95050-2627

MEP ENGINEER

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ARCHITECT

HKS

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PEOPLES ASSOCIATES
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CIVIL ENGINEER

Kimley»Horn

NO.	RECORD	DATE
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1	PCC ISSUANCE	10.28.19

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PROJECT MANAGER CM	DATE 06/19/2020
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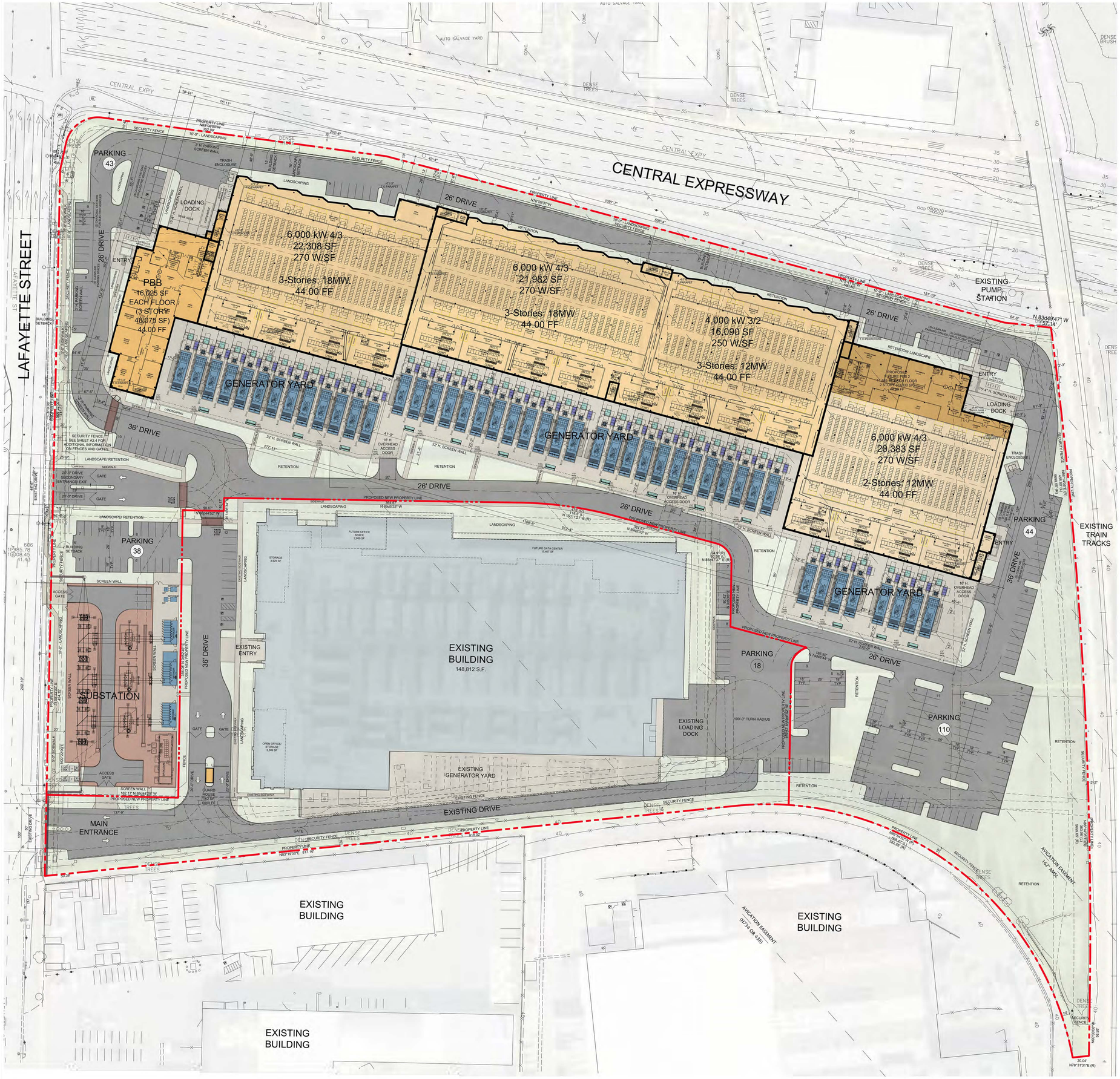

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(CLASS 2 - 5% OF 182 PARKING STALLS) = 10 RACKS

BICYCLE RACKS PROVIDED:
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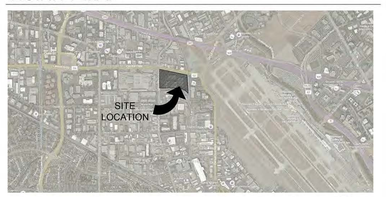
DATA CENTER (NEW): (8% OF 182 PARKING STALLS) = 15 SPACES

CLEAN AIR PARKING SPACES PROVIDED:
DATA CENTER (NEW): 15 SPACES

GENERAL NOTES:

1. ALL GATES INSTALLED ON DESIGNATED FIRE DEPARTMENT ACCESS ROADS ARE REQUIRED TO ELECTRICALLY AUTOMATIC POWERED GATES. GATES SHALL BE PROVIDED WITH AN EMERGENCY BATTERY POWER SUPPLY, OR SHALL BE A FAIL-SAFE DESIGN, ALLOWING THE GATE TO BE PUSHED OPEN WITHOUT THE USE OF SPECIAL KNOWLEDGE OR EQUIPMENT. TO CONTROL THE AUTOMATIC GATES A DETECTOR/STROBE SWITCH SHALL BE INSTALLED TO ALLOW EMERGENCY VEHICLES (E.G., FIRE, POLICE, EMS) TO FLASH A VEHICLE MOUNTED STROBE LIGHT TOWARDS THE DETECTOR/STROBE SWITCH, WHICH IN TURN OVERRIDES THE SYSTEM AND OPENS THE GATE. THE GATES SHALL BE EQUIPPED WITH A TOMAR STROBE SWITCH OR 3M OPTICOM DETECTOR TO FACILITATE THIS OVERRIDE.

VICINITY MAP



N.T.S.

NORTH

LEGEND:

LOCATION OF OVERHEAD POWER LINES AND POLES

PROPOSED NEW SITE PLAN

80' 40' 20' 0'
1"=40'-0"

NORTH

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1	PCC ISSUANCE	10.28.19

MASTER PLAN

PROPOSED NEW SITE PLAN AND FLOOR PLAN

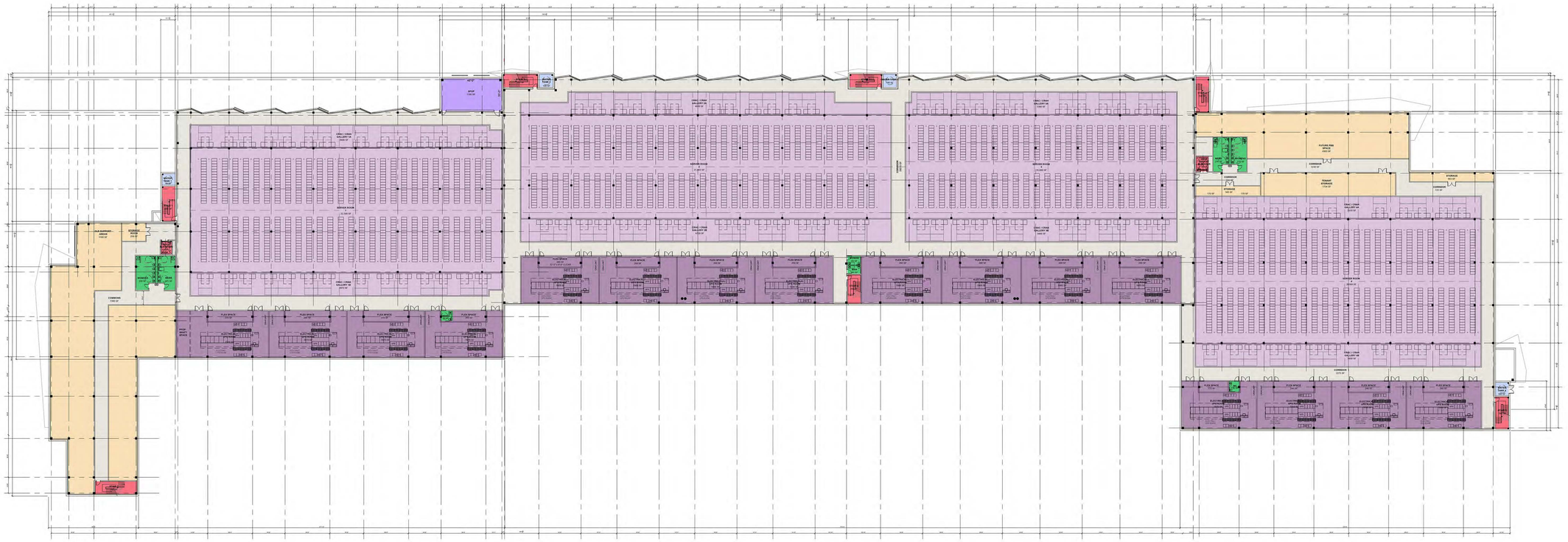
PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE 06/19/2020
PROJECT ENGINEER	SHEET NUMBER **A1.2**
SCALE AS NOTED	

BUILDING INFORMATION:

CODE:	2016 CALIFORNIA BUILDING CODE
TYPE OF USE:	OFFICE/ DATA CENTER
OCCUPANCY GROUP:	BUSINESS GROUP B (CHAPTER 3, SECTION 304)
TYPE OF BUILDING CONSTRUCTION:	TYPE 2B (FULLY SPRINKLER) (CHAPTER 6, TABLE 601)

BUILDING SQUARE FOOTAGE:

GROUND FLOOR:	209,869 S.F.
SECOND FLOOR:	209,440 S.F.
THIRD FLOOR:	156,092 S.F.
TOTAL:	575,401 S.F.



SECOND FLOOR PLAN

60' 30' 15' 0'
1"=30'-0"

NORTH

GROUND FLOOR PLAN

60' 30' 15' 0'
1"=30'-0"

NORTH

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MASTER PLAN

PRELIMINARY FLOOR PLAN

PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE 6/19/2020
PROJECT ENGINEER	SHEET NUMBER **A2.1**
SCALE AS NOTED	

BUILDING INFORMATION:

CODE:	2016 CALIFORNIA BUILDING CODE
TYPE OF USE:	OFFICE/ DATA CENTER
OCCUPANCY GROUP:	BUSINESS GROUP B (CHAPTER 3, SECTION 304)
TYPE OF BUILDING CONSTRUCTION:	TYPE 2B (FULLY SPRINKLER) (CHAPTER 6, TABLE 601)

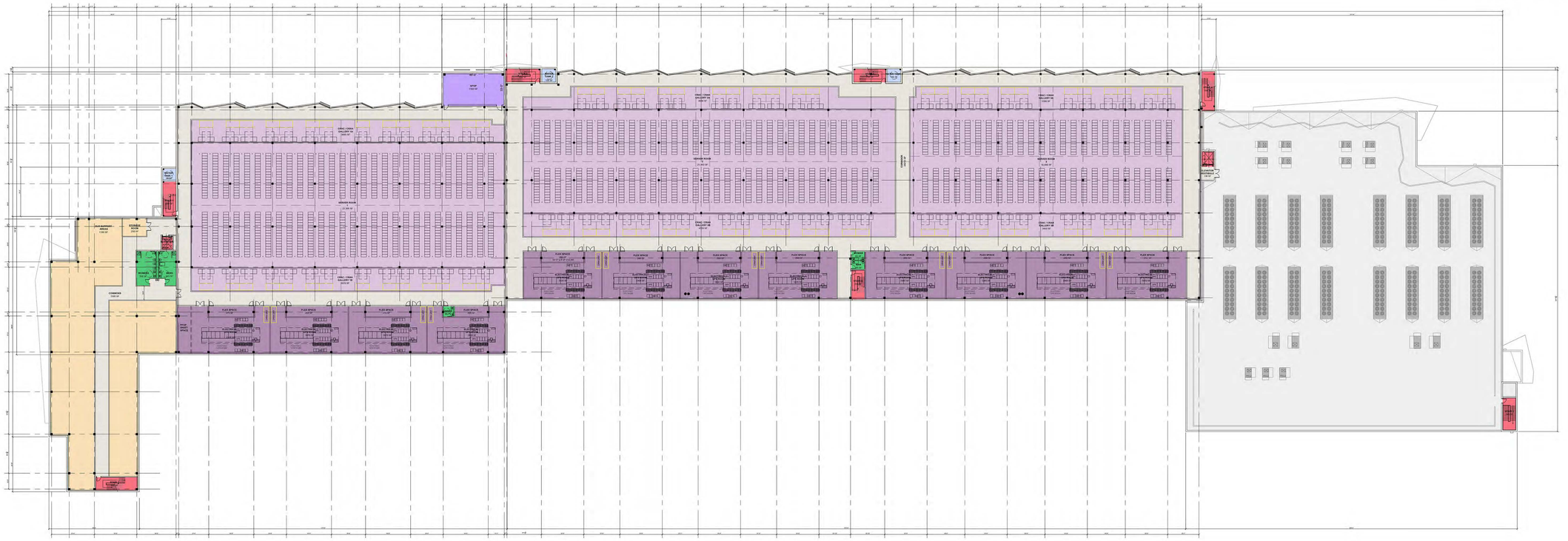
BUILDING SQUARE FOOTAGE:

GROUND FLOOR:	209,869 S.F.
SECOND FLOOR:	209,440 S.F.
THIRD FLOOR:	156,092 S.F.
TOTAL:	575,401 S.F.

ROOF PLAN

60' 30' 15' 0'
1"=30'-0"

NORTH



THIRD FLOOR PLAN

60' 30' 15' 0'
1"=30'-0"

NORTH

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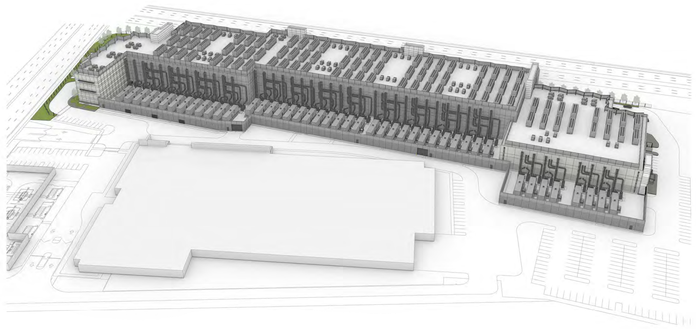
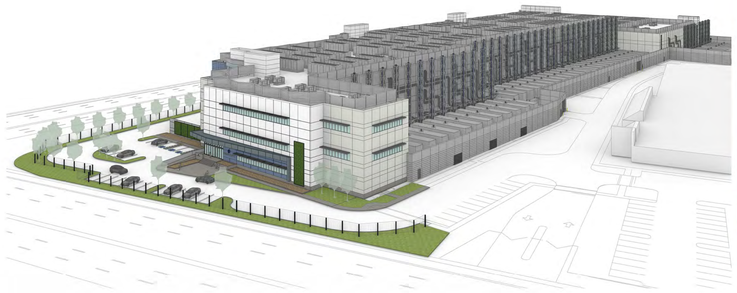
MASTER PLAN

PRELIMINARY FLOOR PLAN

PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE 06/19/2020
PROJECT ENGINEER	SHEET NUMBER **A2.2**
SCALE AS NOTED	



09 OVERALL SOUTH AERIAL PERSPECTIVE



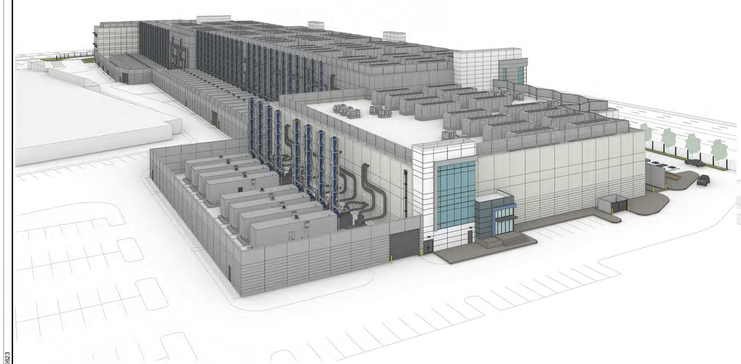
06 SOUTHWEST AERIAL PERSPECTIVE

03 SOUTHWEST PERSPECTIVE RENDERING
1 1/2" = 1'-0"

08 OVERALL NORTH AERIAL PERSPECTIVE

05 NORTHWEST AERIAL PERSPECTIVE

02 NORTHWEST PERSPECTIVE RENDERING
1 1/2" = 1'-0"



07 SOUTHEAST AERIAL PERSPECTIVE

04 NORTHEAST AERIAL PERSPECTIVE

01 NORTHWEST PERSPECTIVE RENDERING
1 1/2" = 1'-0"

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Date: XX/XX/XXXX

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MASTER PLAN

BUILDING PERSPECTIVES

PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE **06/19/2020**
PROJECT ENGINEER	SHEET NUMBER **A3.0**
SCALE	

PLOT DATE: 6/19/2020 1:47:35 PM TEMPLATE VERSION: 3.9.0.20170623

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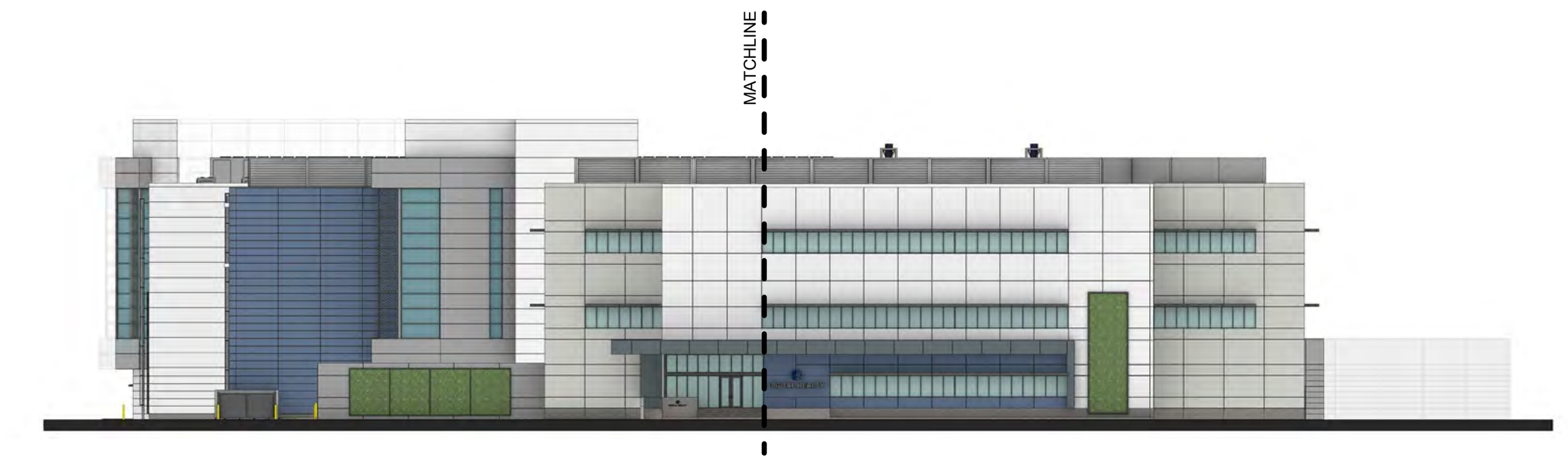
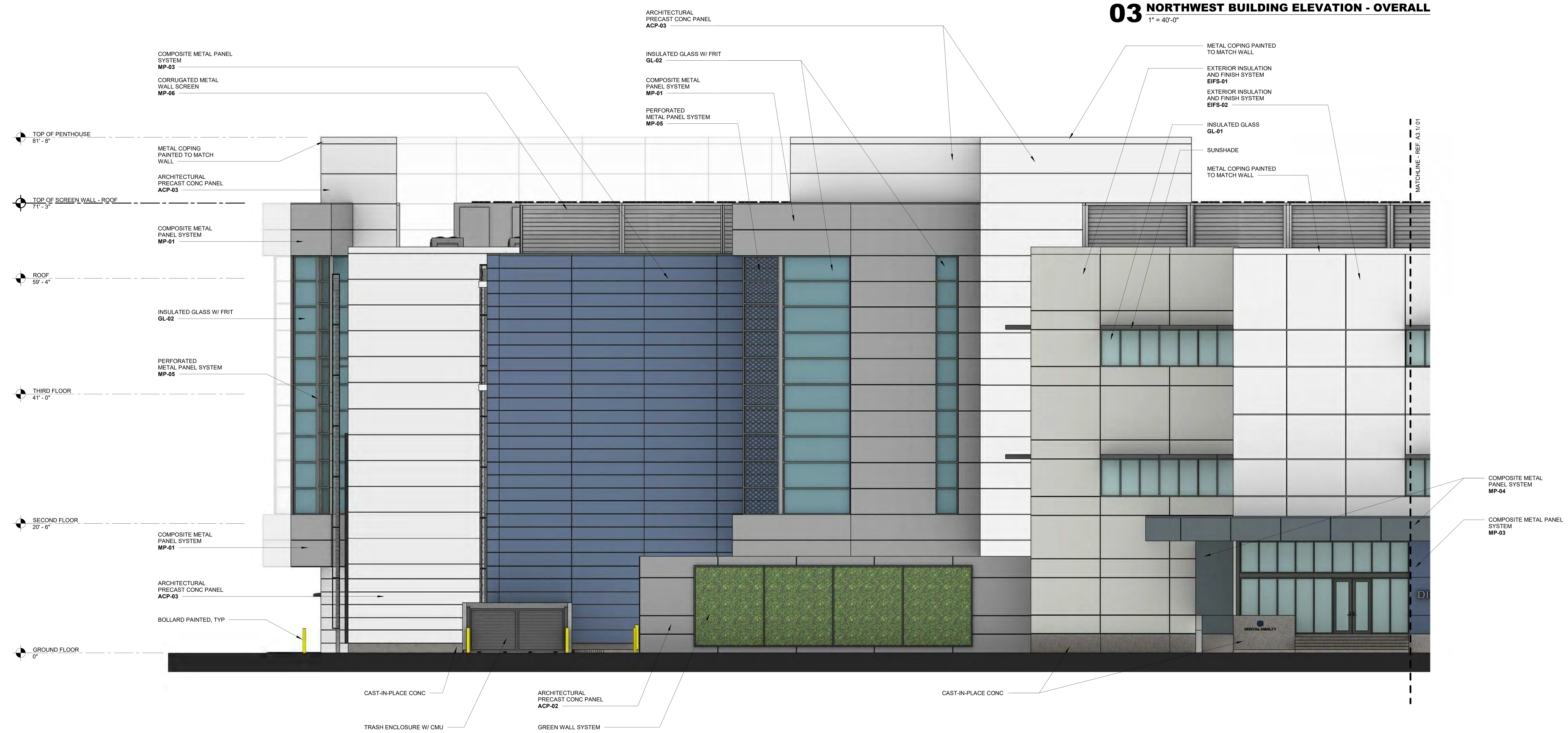
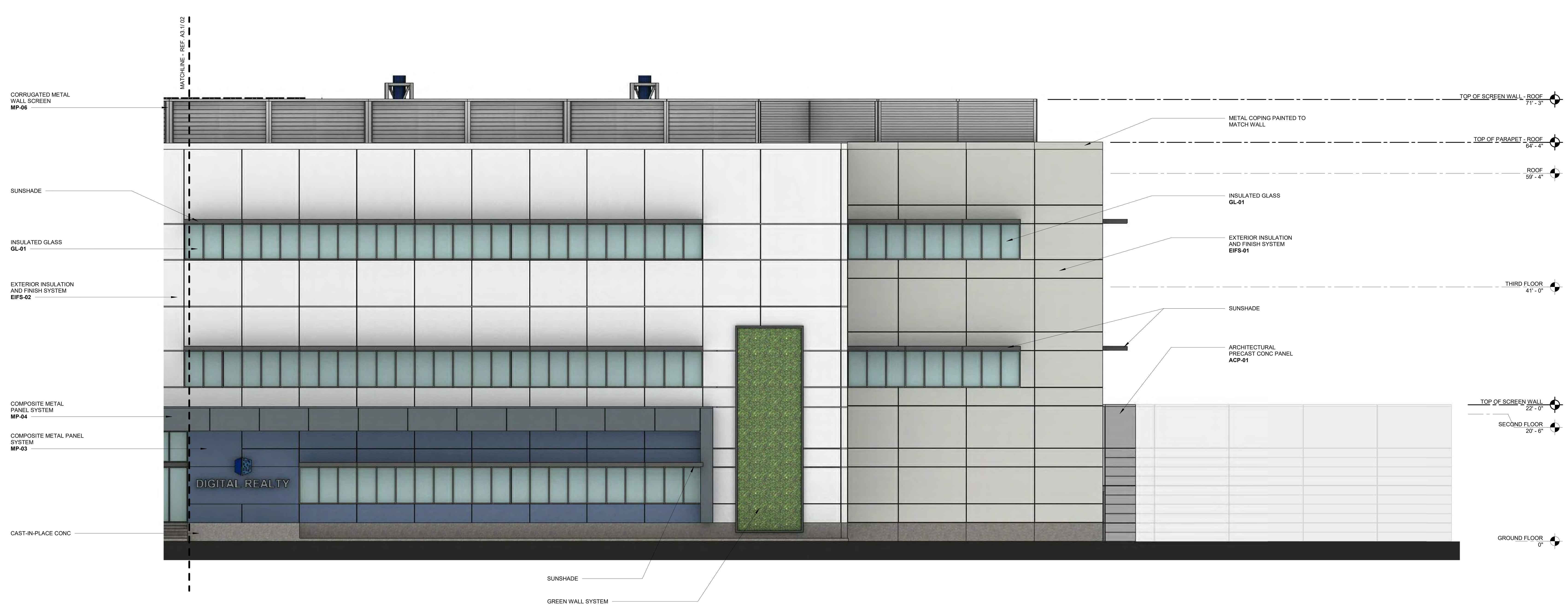


03 NORTHWEST BUILDING ELEVATION - OVERALL
1" = 40'-0"



02 NORTHWEST BUILDING ELEVATION - OVERALL
1/8" = 1'-0"



01 NORTHWEST BUILDING ELEVATION - AREA 01
1/8" = 1'-0"

EXTERIOR MATERIALS LEGEND:

ARCHITECTURAL CONCRETE PANEL (ACP):

ACP-01 ARCHITECTURAL PRECAST CONC PANEL
COLOR: DARK GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

ACP-02 ARCHITECTURAL PRECAST CONC PANEL
COLOR: LIGHT GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: DATA CENTER WALL, SCREEN WALL

ACP-03 ARCHITECTURAL PRECAST CONC PANEL
COLOR: WHITE
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

EXTERIOR GLAZING (GL):

GL-01 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
LOCATION: TYPICAL VISION GLAZING

GL-02 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
SOLID CERAMIC FRIT - 40%
LOCATION: STAIR TOWERS

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS):

EIFS-01 COLOR: LIGHT GRAY
LOCATION: OFFICES

EIFS-02 COLOR: WHITE
LOCATION: OFFICES

METAL PANEL (MP):

MP-01 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-02 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: NORTH ELEVATION

MP-03 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT BLUE
LOCATION: NORTH ELEVATION

MP-04 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: GRAY VELVET
LOCATION: NORTH ELEVATION

MP-05 PERFORATED METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-06 CORRUGATED METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: SCREEN WALL

GREEN SCREEN SYSTEM:

FLAT/NON-ARTICULATED W/ TENSIONING EXTRUSIONS
MOUNTED DIRECTLY TO STRUCTURE

COLORS:

PT-01 DARK GRAY
PT-02 LIGHT GRAY
PT-03 WHITE
PT-04 LIGHT BLUE
PT-05 GRAY VELVET
PT-06 WEB GRAY

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Date: XX/XX/XXXX

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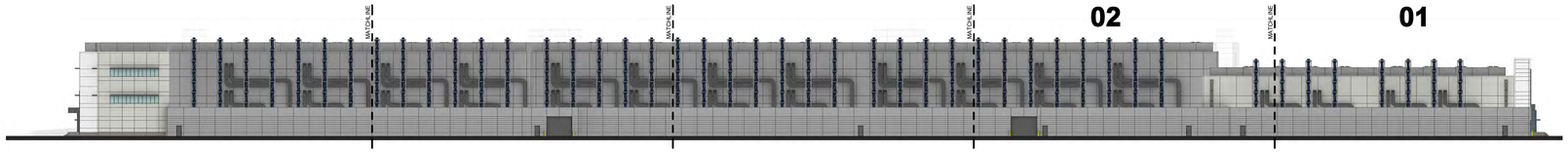
2	PCC ISSUANCE	06.19.20
1	PCC ISSUANCE	10.28.19

MASTER PLAN

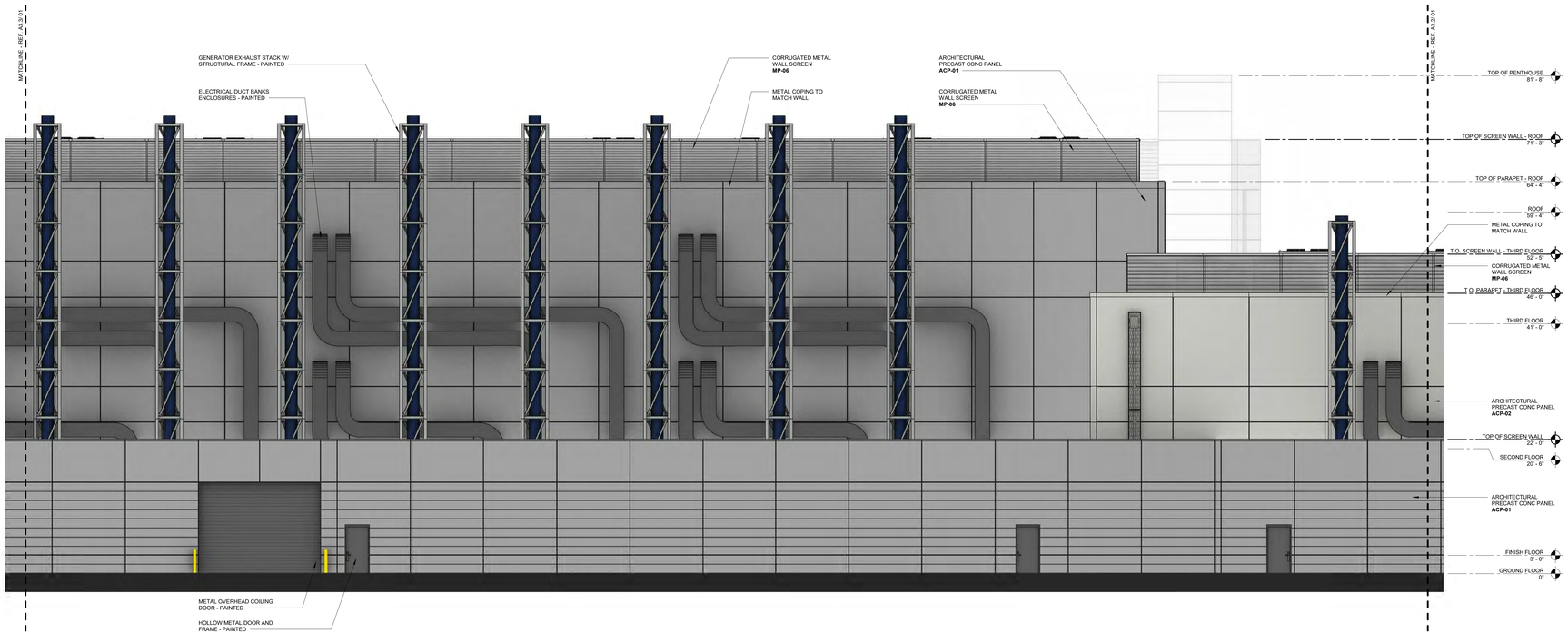
BUILDING ELEVATIONS - NORTHWEST

PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE 06/19/2020
PROJECT ENGINEER	SHEET NUMBER
SCALE	**A3.1**

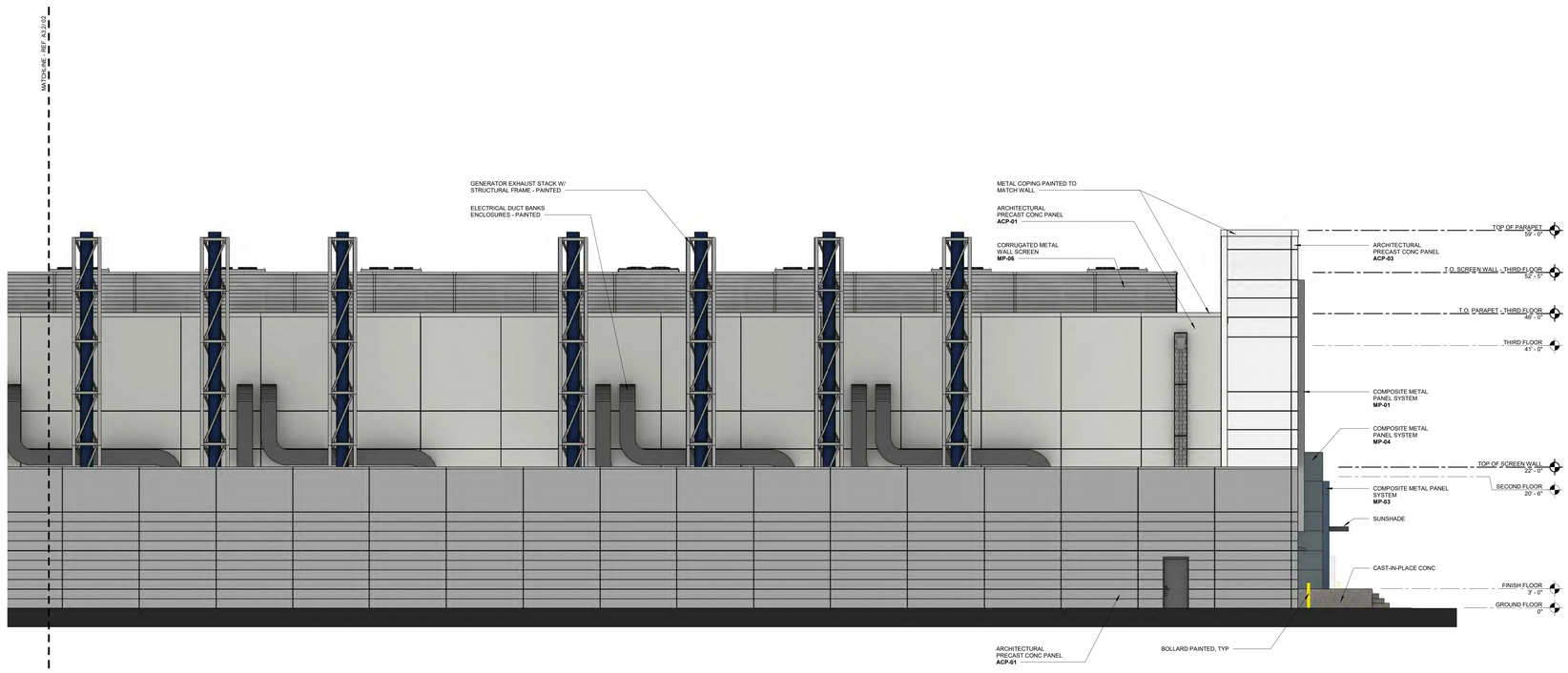
PLOT DATE: 6/19/2020 1:47:39 PM TEMPLATE VERSION: 3.0.0.20170623



03 SOUTHWEST BUILDING ELEVATION - OVERALL
1" = 40'-0"



02 SOUTHWEST BUILDING ELEVATION - AREA 02
1/8" = 1'-0"



01 SOUTHWEST BUILDING ELEVATION - AREA 01
1/8" = 1'-0"

EXTERIOR MATERIALS LEGEND:

ARCHITECTURAL CONCRETE PANEL (ACP):

ACP-01 ARCHITECTURAL PRECAST CONC PANEL
COLOR: DARK GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

ACP-02 ARCHITECTURAL PRECAST CONC PANEL
COLOR: LIGHT GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: DATA CENTER WALL, SCREEN WALL

ACP-03 ARCHITECTURAL PRECAST CONC PANEL
COLOR: WHITE
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

EXTERIOR GLAZING (GL):

GL-01 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
LOCATION: TYPICAL VISION GLAZING

GL-02 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
SOLID CERAMIC FRIT - 40%
LOCATION: STAIR TOWERS

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS):

EIFS-01 COLOR: LIGHT GRAY
LOCATION: OFFICES

EIFS-02 COLOR: WHITE
LOCATION: OFFICES

METAL PANEL (MP):

MP-01 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-02 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: NORTH ELEVATION

MP-03 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT BLUE
LOCATION: NORTH ELEVATION

MP-04 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: GRAY VELVET
LOCATION: NORTH ELEVATION

MP-05 PERFORATED METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-06 CORRUGATED METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: SCREEN WALL

GREEN SCREEN SYSTEM:

FLAT/NON-ARTICULATED W/ TENSIONING EXTRUSIONS MOUNTED DIRECTLY TO STRUCTURE

COLORS:

PT-01 DARK GRAY

PT-02 LIGHT GRAY

PT-03 WHITE

PT-04 LIGHT BLUE

PT-05 GRAY VELVET

PT-06 WEB GRAY

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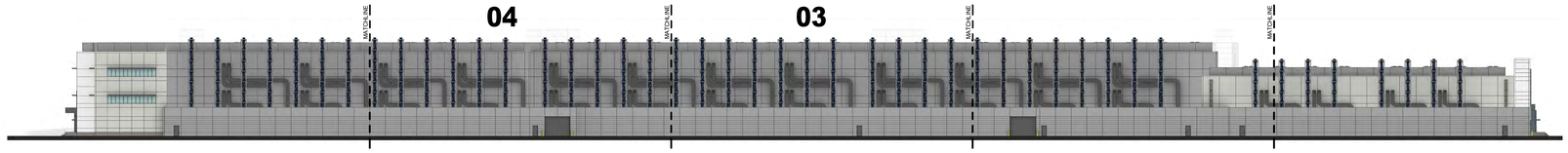
1	PCC ISSUANCE	10.28.19

MASTER PLAN

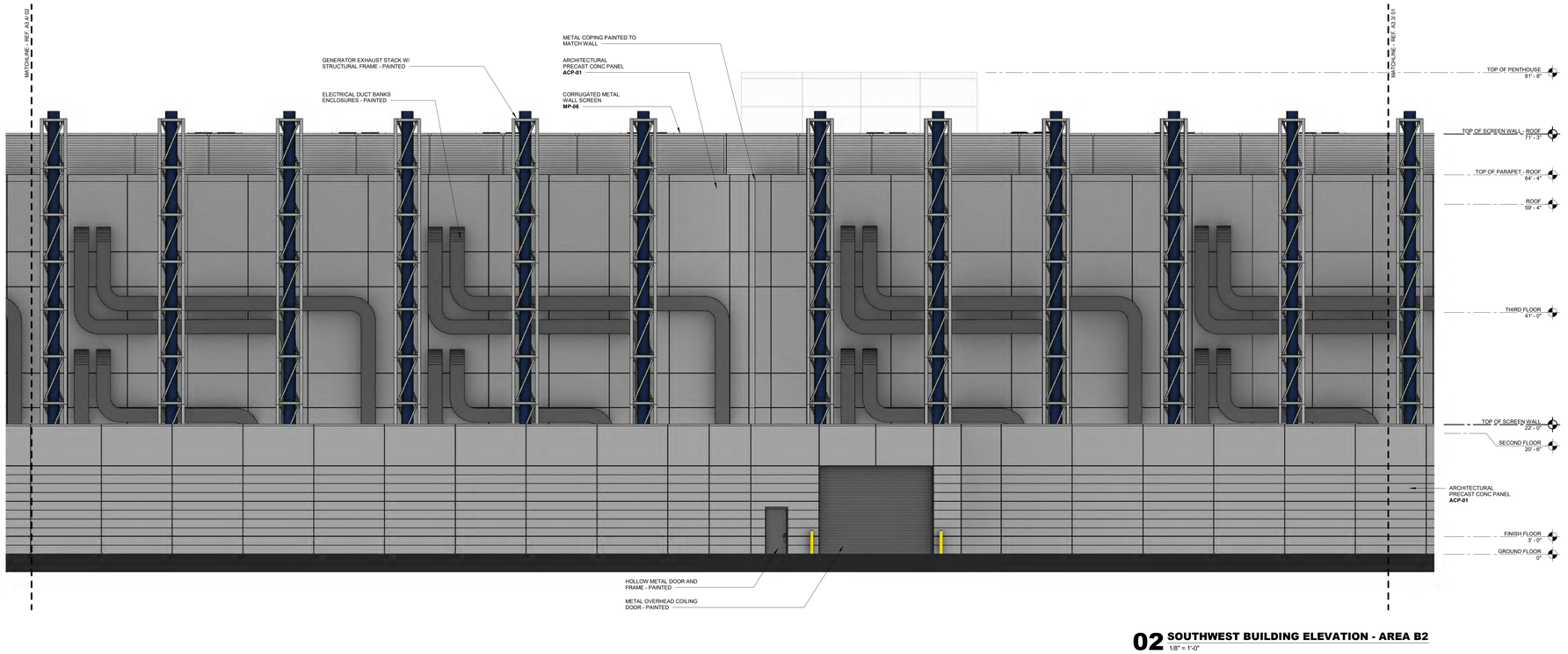
BUILDING ELEVATIONS - SOUTHWEST

PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE **06/19/2020**
PROJECT ENGINEER	SHEET NUMBER **A3.2**
SCALE	

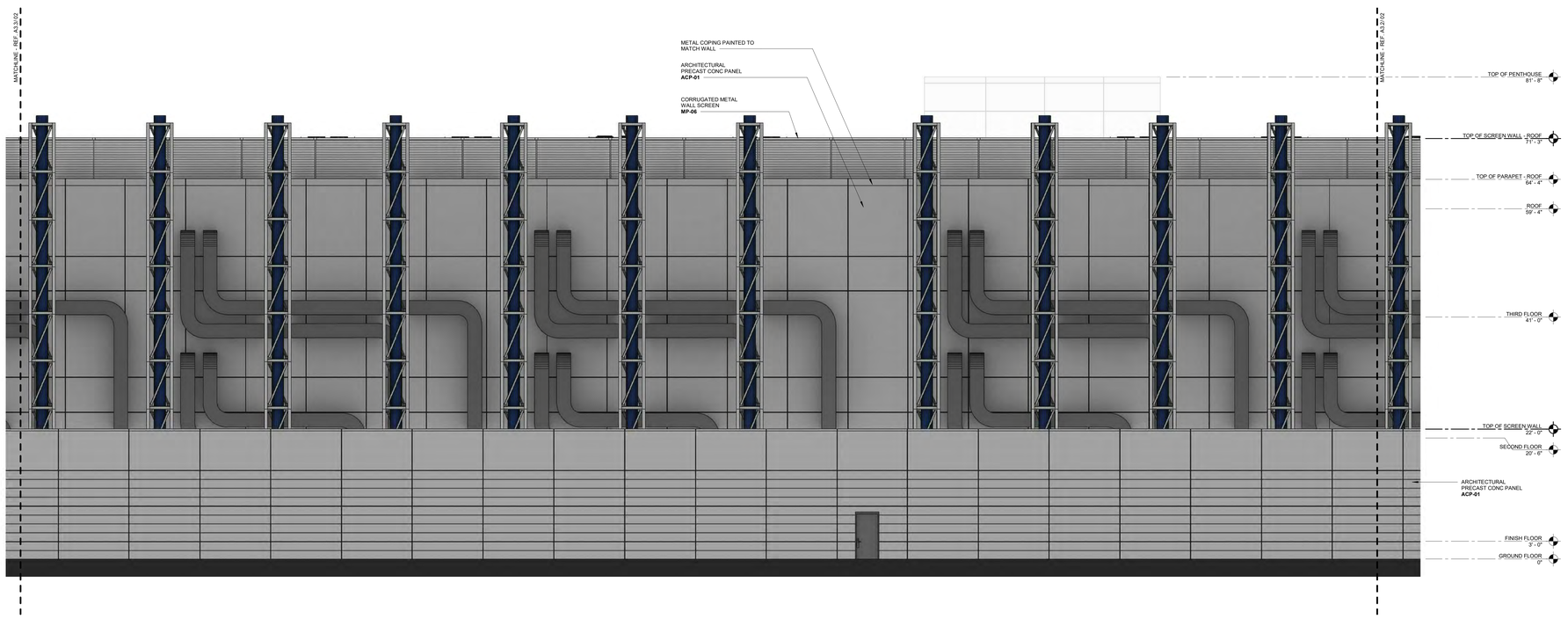
PLOT DATE: 6/19/2020 1:47:23 PM TEMPLATE VERSION: 3.3.0.20170923



03 SOUTHWEST BUILDING ELEVATION - OVERALL
1" = 40'-0"



02 SOUTHWEST BUILDING ELEVATION - AREA B2
1/8" = 1'-0"



01 SOUTHWEST BUILDING ELEVATION - AREA B1
1/8" = 1'-0"

EXTERIOR MATERIALS LEGEND:

ARCHITECTURAL CONCRETE PANEL (ACP):

ACP-01 ARCHITECTURAL PRECAST CONC PANEL
COLOR: DARK GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

ACP-02 ARCHITECTURAL PRECAST CONC PANEL
COLOR: LIGHT GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: DATA CENTER WALL, SCREEN WALL

ACP-03 ARCHITECTURAL PRECAST CONC PANEL
COLOR: WHITE
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

EXTERIOR GLAZING (GL):

GL-01 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
LOCATION: TYPICAL VISION GLAZING

GL-02 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
SOLID CERAMIC FRIT - 40%
LOCATION: STAIR TOWERS

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS):

EIFS-01 COLOR: LIGHT GRAY
LOCATION: OFFICES

EIFS-02 COLOR: WHITE
LOCATION: OFFICES

METAL PANEL (MP):

MP-01 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-02 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: NORTH ELEVATION

MP-03 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT BLUE
LOCATION: NORTH ELEVATION

MP-04 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: GRAY VELVET
LOCATION: NORTH ELEVATION

MP-05 PERFORATED METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-06 CORRUGATED METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: SCREEN WALL

GREEN SCREEN SYSTEM:

FLAT/NON-ARTICULATED W/ TENSIONING EXTRUSIONS
MOUNTED DIRECTLY TO STRUCTURE

COLORS:

PT-01 DARK GRAY

PT-02 LIGHT GRAY

PT-03 WHITE

PT-04 LIGHT BLUE

PT-05 GRAY VELVET

PT-06 WEB GRAY

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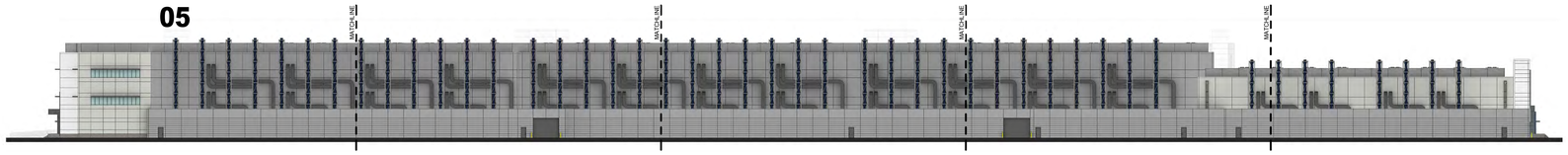
MASTER PLAN

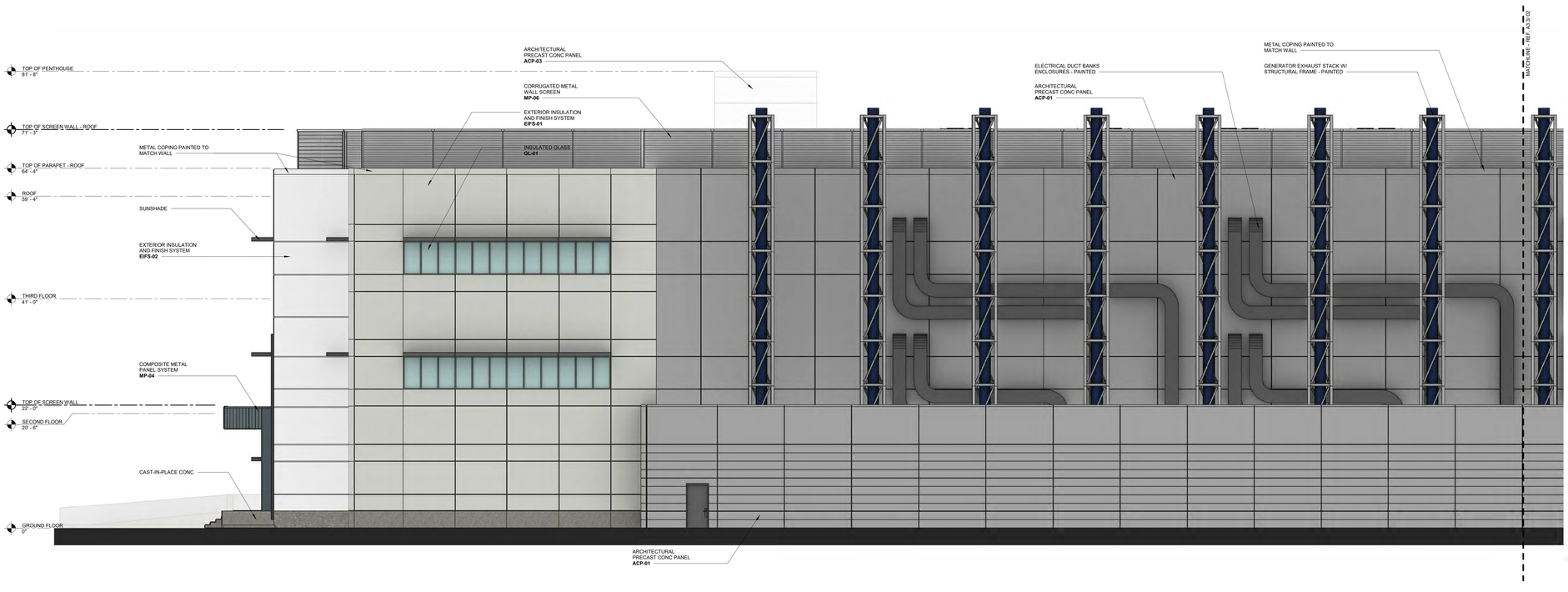
BUILDING ELEVATIONS - SOUTHWEST

PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE **06/19/2020**
PROJECT ENGINEER	SHEET NUMBER **A3.3**
SCALE	

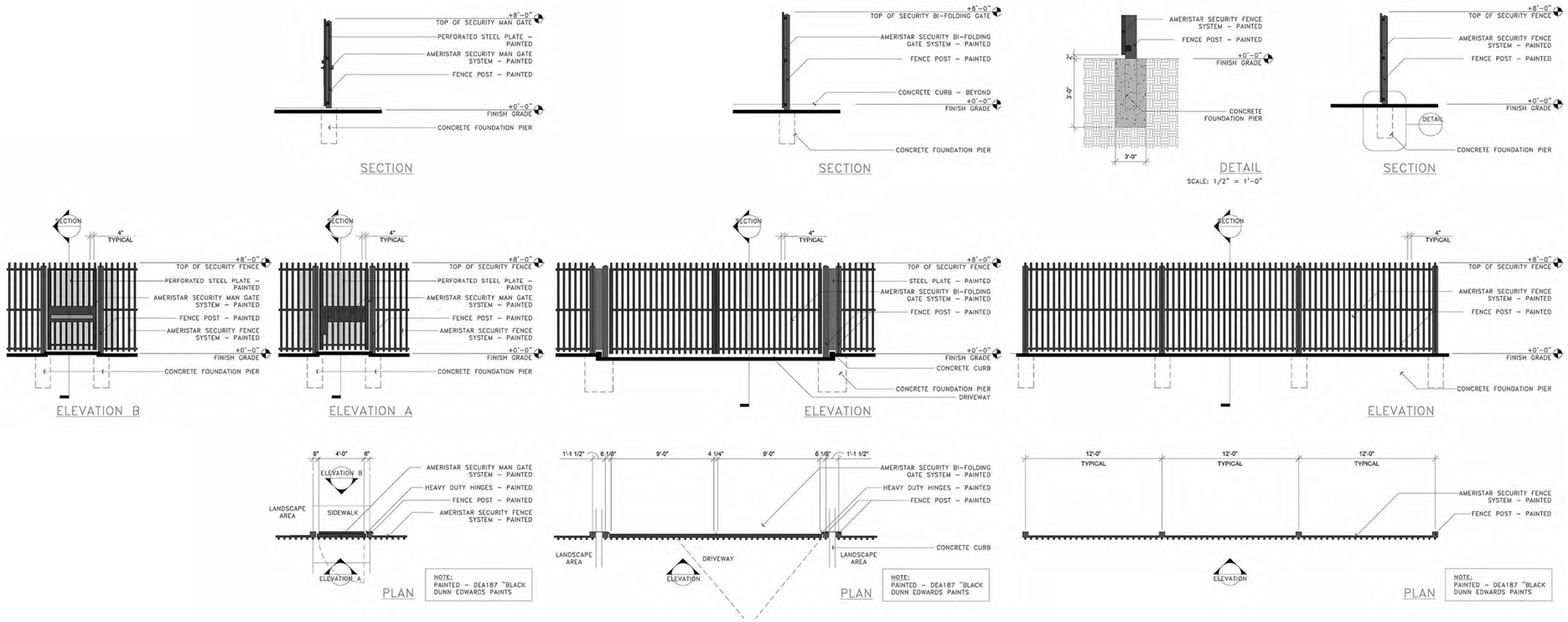
PLOT DATE: 6/19/2020 1:47:27 PM TEMPLATE VERSION: 3.3.0.20170923



03 SOUTHWEST BUILDING ELEVATION - OVERALL
1" = 40'-0"



02 SOUTHWEST BUILDING ELEVATION - AREA 05
1/8" = 1'-0"



01 SECURITY FENCE AND GATE DETAILS
1/4" = 1'-0"

EXTERIOR MATERIALS LEGEND:

ARCHITECTURAL CONCRETE PANEL (ACP):

ACP-01 ARCHITECTURAL PRECAST CONC PANEL
COLOR: DARK GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

ACP-02 ARCHITECTURAL PRECAST CONC PANEL
COLOR: LIGHT GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: DATA CENTER WALL, SCREEN WALL

ACP-03 ARCHITECTURAL PRECAST CONC PANEL
COLOR: WHITE
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

EXTERIOR GLAZING (GL):

GL-01 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
LOCATION: TYPICAL VISION GLAZING

GL-02 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
SOLID CERAMIC FRIT - 40%
LOCATION: STAIR TOWERS

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS):

EIFS-01 COLOR: LIGHT GRAY
LOCATION: OFFICES

EIFS-02 COLOR: WHITE
LOCATION: OFFICES

METAL PANEL (MP):

MP-01 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-02 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: NORTH ELEVATION

MP-03 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT BLUE
LOCATION: NORTH ELEVATION

MP-04 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: GRAY VELVET
LOCATION: NORTH ELEVATION

MP-05 PERFORATED METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-06 CORRUGATED METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: SCREEN WALL

GREEN SCREEN SYSTEM:

FLAT/NON-ARTICULATED W/ TENSIONING EXTRUSIONS MOUNTED DIRECTLY TO STRUCTURE

COLORS:

PT-01 DARK GRAY
PT-02 LIGHT GRAY
PT-03 WHITE
PT-04 LIGHT BLUE
PT-05 GRAY VELVET
PT-06 WEB GRAY

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Arch. Reg. No.: XXXX
Date: XX/XX/XXXX

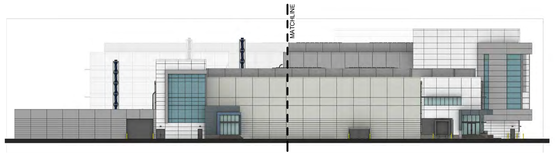
NO.	RECORD	DATE
2	PCC ISSUANCE	06.19.20
1	PCC ISSUANCE	10.28.19

MASTER PLAN

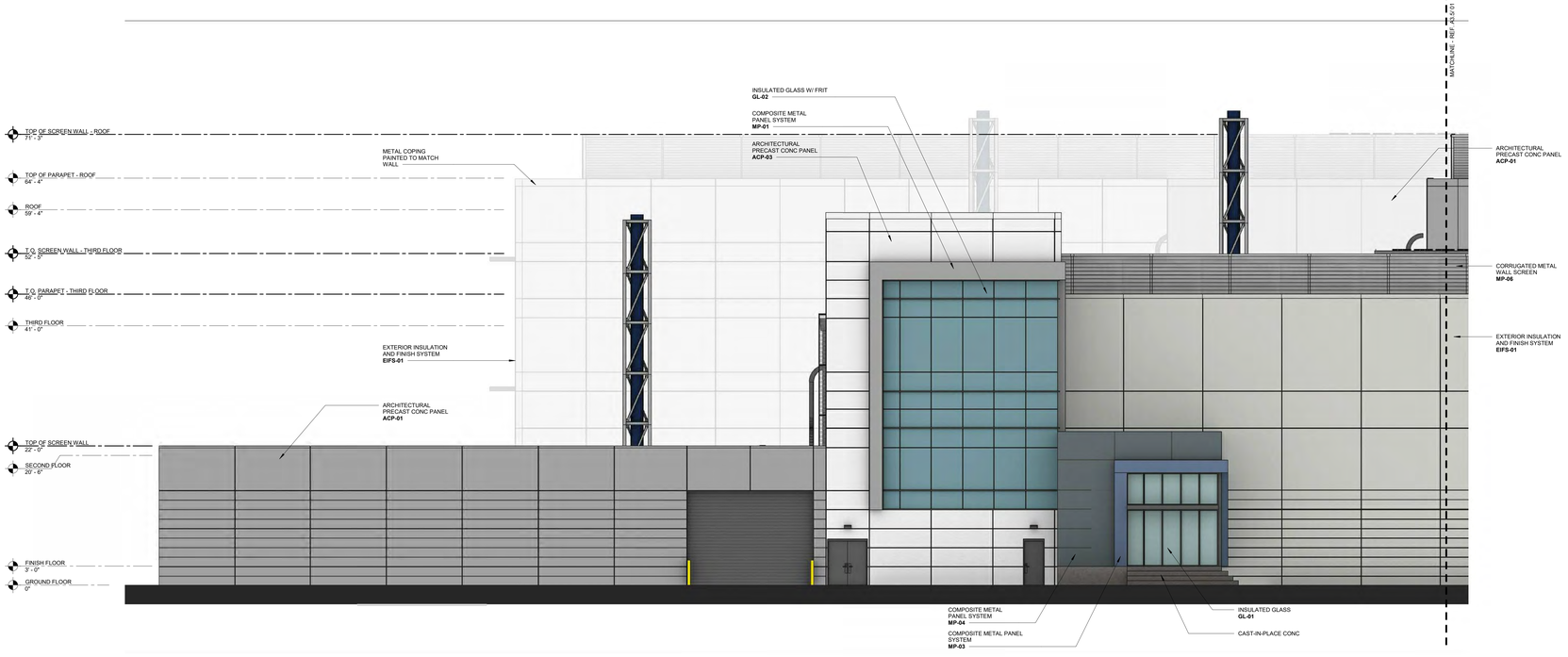
BUILDING ELEVATIONS - SOUTHWEST

PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE **06/19/2020**
PROJECT ENGINEER	SHEET NUMBER **A3.4**
SCALE	

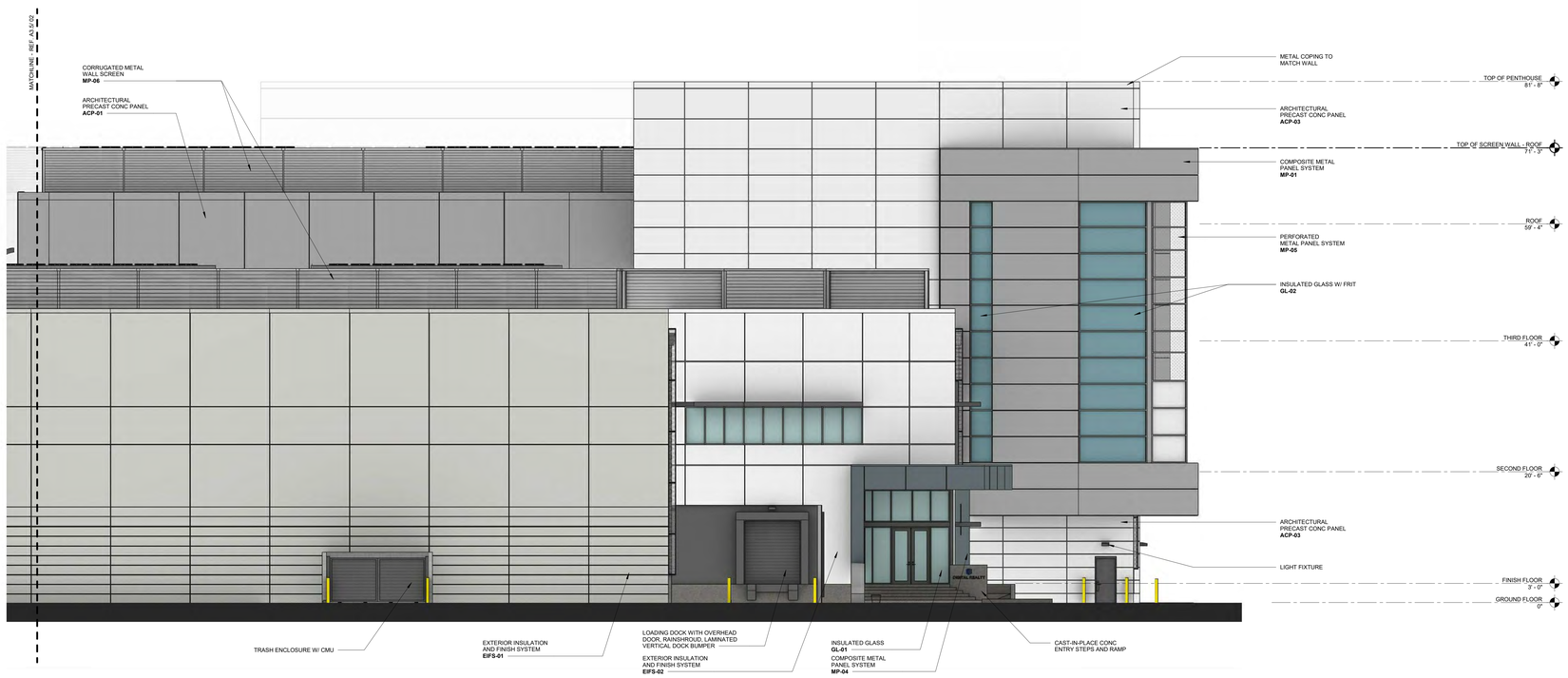
PLOT DATE: 6/19/2020 1:47:51 PM TEMPLATE VERSION: 3.3.0.20170923



03 SOUTHEAST BUILDING ELEVATION - OVERALL
1" = 40'-0"



02 SOUTHEAST BUILDING ELEVATION - AREA 02
1/8" = 1'-0"



01 SOUTHEAST BUILDING ELEVATION - AREA 01
1/8" = 1'-0"

EXTERIOR MATERIALS LEGEND:

ARCHITECTURAL CONCRETE PANEL (ACP):

ACP-01 ARCHITECTURAL PRECAST CONC PANEL
COLOR: DARK GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

ACP-02 ARCHITECTURAL PRECAST CONC PANEL
COLOR: LIGHT GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: DATA CENTER WALL, SCREEN WALL

ACP-03 ARCHITECTURAL PRECAST CONC PANEL
COLOR: WHITE
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

EXTERIOR GLAZING (GL):

GL-01 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
LOCATION: TYPICAL VISION GLAZING

GL-02 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
SOLID CERAMIC FRIT - 40%
LOCATION: STAIR TOWERS

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS):

EIFS-01 COLOR: LIGHT GRAY
LOCATION: OFFICES

EIFS-02 COLOR: WHITE
LOCATION: OFFICES

METAL PANEL (MP):

MP-01 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-02 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: NORTH ELEVATION

MP-03 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT BLUE
LOCATION: NORTH ELEVATION

MP-04 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: GRAY VELVET
LOCATION: NORTH ELEVATION

MP-05 PERFORATED METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-06 CORRUGATED METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: SCREEN WALL

GREEN SCREEN SYSTEM:

FLAT/NON-ARTICULATED W/ TENSIONING EXTRUSIONS MOUNTED DIRECTLY TO STRUCTURE

COLORS:

PT-01 DARK GRAY

PT-02 LIGHT GRAY

PT-03 WHITE

PT-04 LIGHT BLUE

PT-05 GRAY VELVET

PT-06 WEB GRAY

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Arch. Reg. No.: XXXX
Date: XX/XX/XXXX

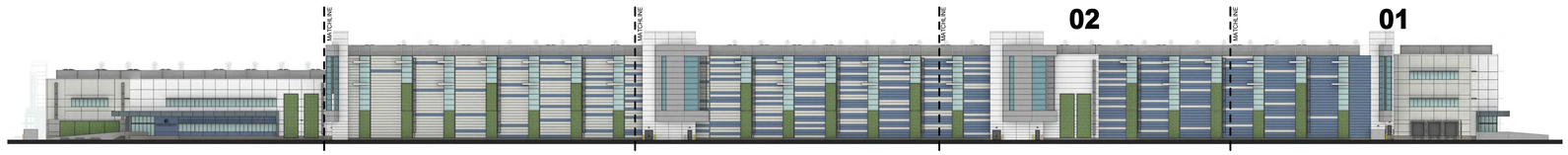
NO.	RECORD	DATE
2	PCC ISSUANCE	06.19.20
1	PCC ISSUANCE	10.28.19

MASTER PLAN

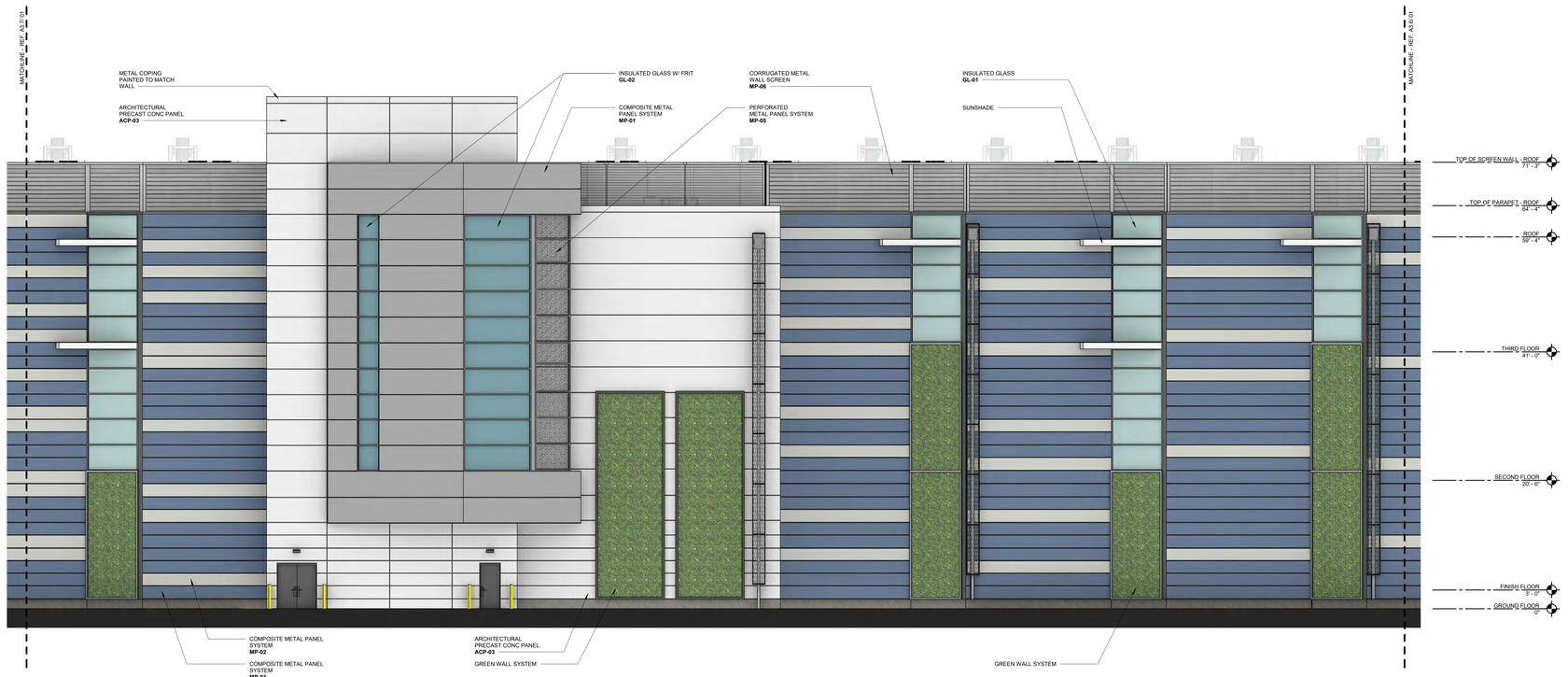
BUILDING ELEVATIONS - SOUTHEAST

PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE **06/19/2020**
PROJECT ENGINEER	SHEET NUMBER **A3.5**
SCALE	

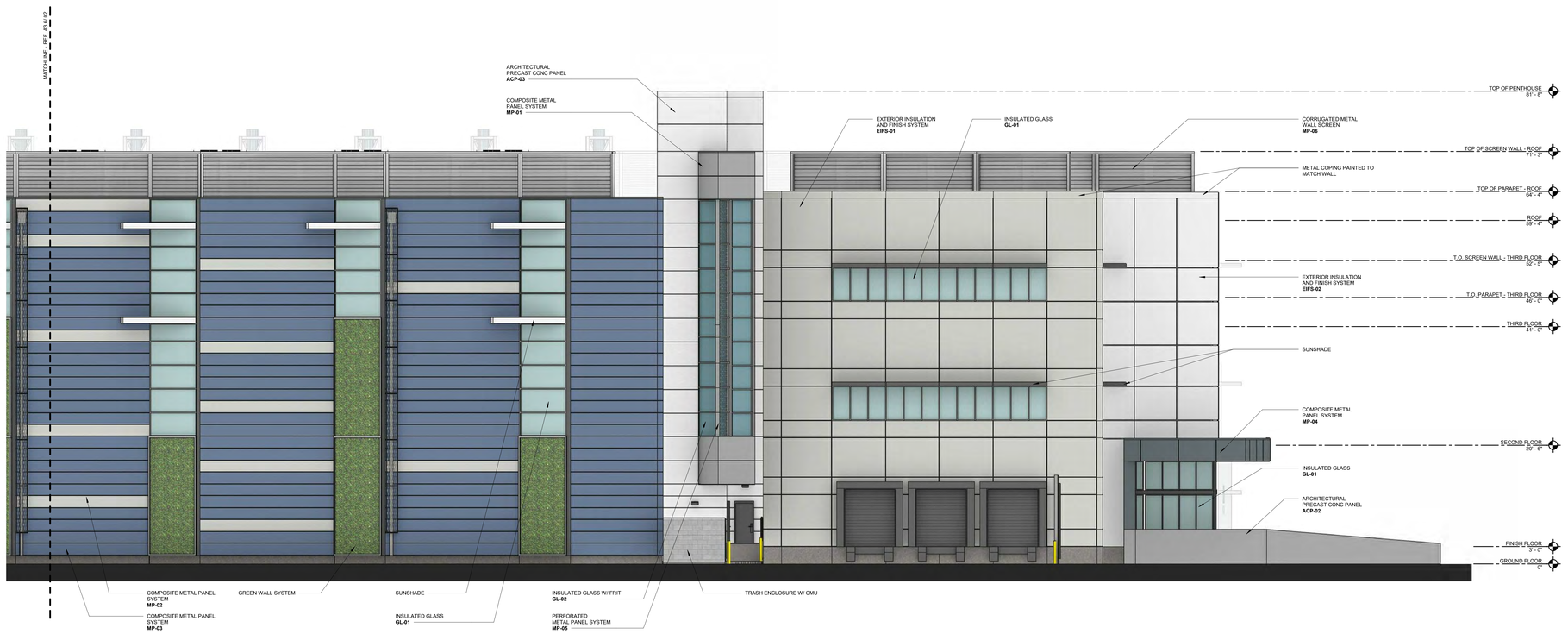
PLOT DATE: 6/19/2020 1:47:24 PM TEMPLATE VERSION: 3.3.0.20170923



03 NORTHEAST BUILDING ELEVATION - OVERALL
1" = 40'-0"



02 NORTHEAST BUILDING ELEVATION - AREA 02
1/8" = 1'-0"



01 NORTHEAST BUILDING ELEVATION - AREA 01
1/8" = 1'-0"

EXTERIOR MATERIALS LEGEND:

ARCHITECTURAL CONCRETE PANEL (ACP):

ACP-01 ARCHITECTURAL PRECAST CONC PANEL
COLOR: DARK GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

ACP-02 ARCHITECTURAL PRECAST CONC PANEL
COLOR: LIGHT GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: DATA CENTER WALL, SCREEN WALL

ACP-03 ARCHITECTURAL PRECAST CONC PANEL
COLOR: WHITE
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

EXTERIOR GLAZING (GL):

GL-01 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
LOCATION: TYPICAL VISION GLAZING

GL-02 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
SOLID CERAMIC FRIT - 40%
LOCATION: STAIR TOWERS

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS):

EIFS-01 COLOR: LIGHT GRAY
LOCATION: OFFICES

EIFS-02 COLOR: WHITE
LOCATION: OFFICES

METAL PANEL (MP):

MP-01 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-02 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: NORTH ELEVATION

MP-03 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT BLUE
LOCATION: NORTH ELEVATION

MP-04 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: GRAY VELVET
LOCATION: NORTH ELEVATION

MP-05 PERFORATED METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-06 CORRUGATED METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: SCREEN WALL

GREEN SCREEN SYSTEM:

FLAT/NON-ARTICULATED W/ TENSIONING EXTRUSIONS
MOUNTED DIRECTLY TO STRUCTURE

COLORS:

PT-01 DARK GRAY
PT-02 LIGHT GRAY
PT-03 WHITE
PT-04 LIGHT BLUE
PT-05 GRAY VELVET
PT-06 WEB GRAY

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Arch. Reg. No.: XXXX
Date: XX/XX/XXXX

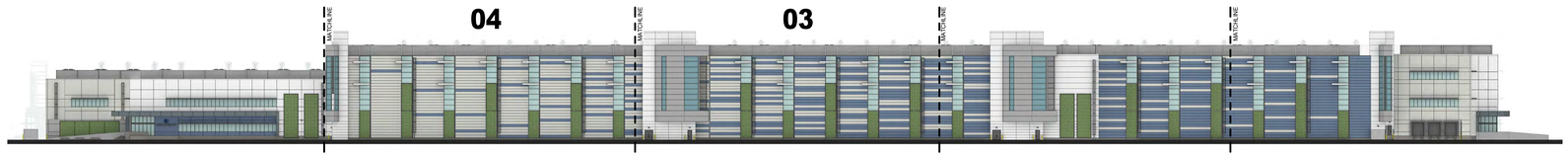
NO.	RECORD	DATE
2	PCC ISSUANCE	06.19.20
1	PCC ISSUANCE	10.28.19

MASTER PLAN

BUILDING ELEVATIONS - NORTHEAST

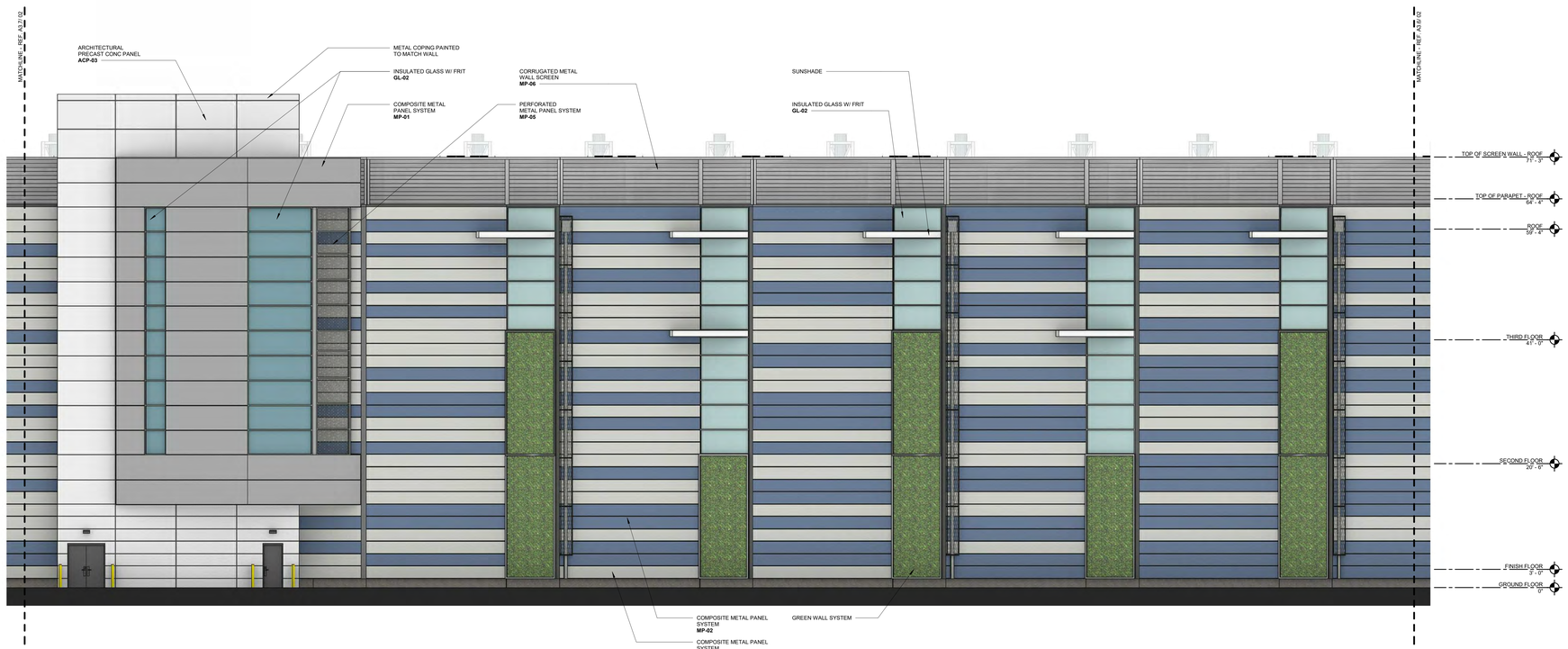
PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE **06/15/2020**
PROJECT ENGINEER	SHEET NUMBER **A3.6**
SCALE	

PLOT DATE: 6/16/2020 1:47:57 PM TEMPLATE VERSION: 3.0.2.0170623



03 EXTERIOR ELEVATION - NORTHEAST - OVERALL
1" = 40'-0"

02 NORTHEAST BUILDING ELEVATION - AREA 04
1/8" = 1'-0"



01 NORTHEAST BUILDING ELEVATION - AREA 03
1/8" = 1'-0"

EXTERIOR MATERIALS LEGEND:

ARCHITECTURAL CONCRETE PANEL (ACP):

ACP-01 ARCHITECTURAL PRECAST CONC PANEL
COLOR: DARK GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

ACP-02 ARCHITECTURAL PRECAST CONC PANEL
COLOR: LIGHT GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: DATA CENTER WALL, SCREEN WALL

ACP-03 ARCHITECTURAL PRECAST CONC PANEL
COLOR: WHITE
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

EXTERIOR GLAZING (GL):

GL-01 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
LOCATION: TYPICAL VISION GLAZING

GL-02 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
SOLID CERAMIC FRIT - 40%
LOCATION: STAIR TOWERS

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS):

EIFS-01 COLOR: LIGHT GRAY
LOCATION: OFFICES

EIFS-02 COLOR: WHITE
LOCATION: OFFICES

METAL PANEL (MP):

MP-01 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-02 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: NORTH ELEVATION

MP-03 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT BLUE
LOCATION: NORTH ELEVATION

MP-04 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: GRAY VELVET
LOCATION: NORTH ELEVATION

MP-05 PERFORATED METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-06 CORRUGATED METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: SCREEN WALL

GREEN SCREEN SYSTEM:

FLAT/NON-ARTICULATED W/ TENSIONING EXTRUSIONS
MOUNTED DIRECTLY TO STRUCTURE

COLORS:

PT-01 DARK GRAY

PT-02 LIGHT GRAY

PT-03 WHITE

PT-04 LIGHT BLUE

PT-05 GRAY VELVET

PT-06 WEB GRAY

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Arch. Reg. No.: XXXX
Date: XX/XX/XXXX

NO.	RECORD	DATE
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1	PCC ISSUANCE	10.28.19

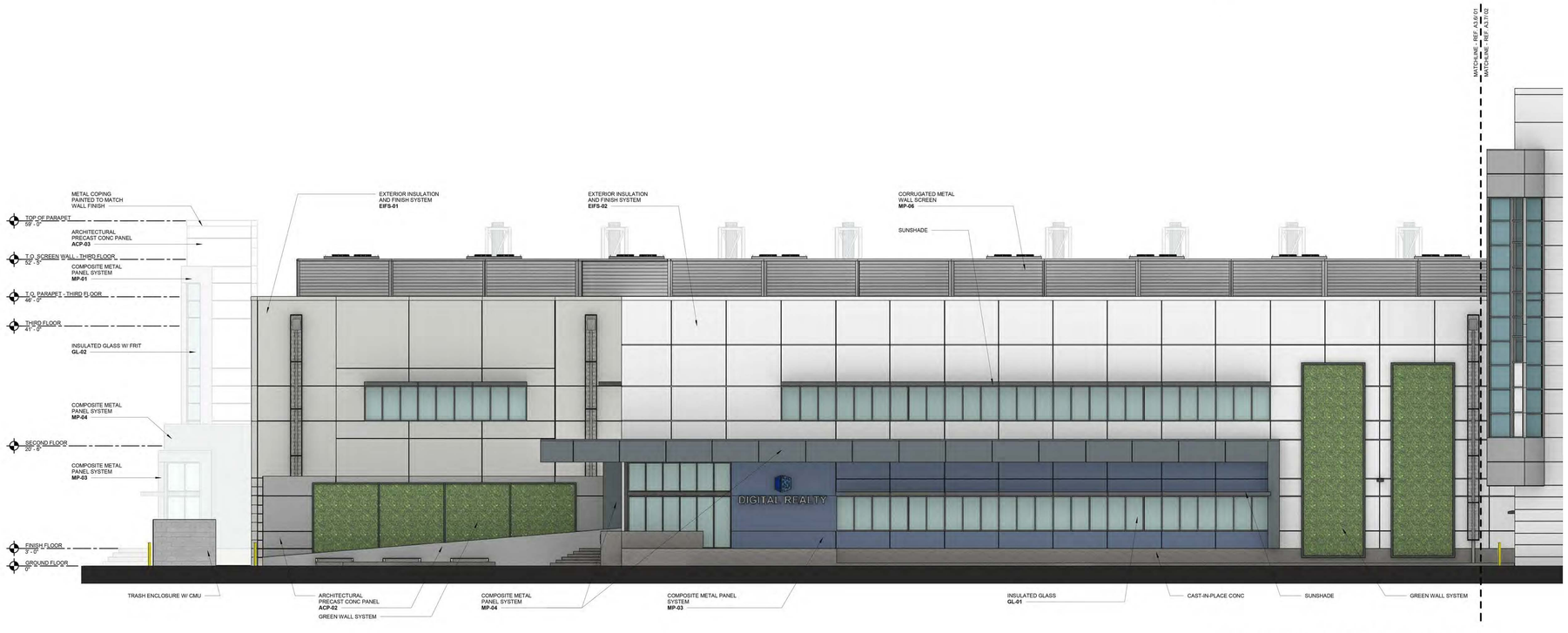
MASTER PLAN

BUILDING ELEVATIONS - NORTHEAST

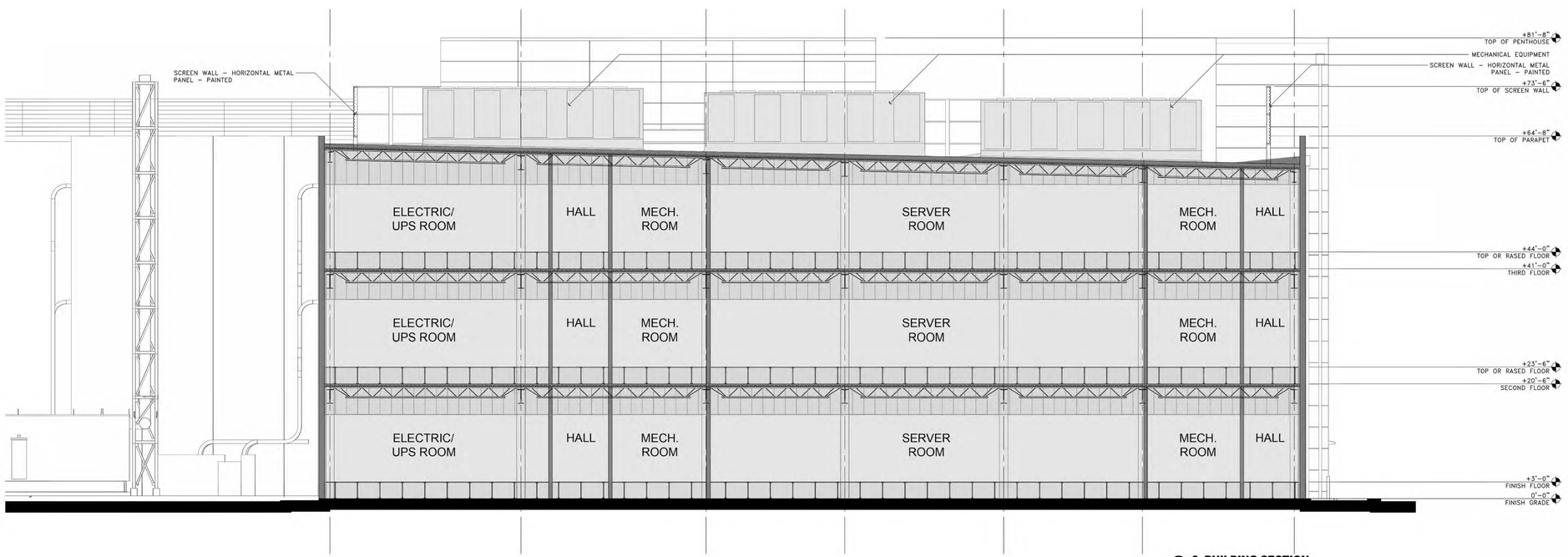
PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE **06/19/2020**
PROJECT ENGINEER	SHEET NUMBER **A3.7**
SCALE	

PLOT DATE: 6/19/2020 1:48:01 PM TEMPLATE VERSION: 3.3.0.20170923

03 EXTERIOR ELEVATION - NORTHEAST - OVERALL
1" = 40'-0"



02 NORTHEAST BUILDING ELEVATION - AREA 05
1/8" = 1'-0"



01 BUILDING SECTION
1/8" = 1'-0"

EXTERIOR MATERIALS LEGEND:

ARCHITECTURAL CONCRETE PANEL (ACP):

ACP-01 ARCHITECTURAL PRECAST CONC PANEL
COLOR: DARK GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

ACP-02 ARCHITECTURAL PRECAST CONC PANEL
COLOR: LIGHT GRAY
FINISH: SMOOTH W/ REVEALS
LOCATION: DATA CENTER WALL, SCREEN WALL

ACP-03 ARCHITECTURAL PRECAST CONC PANEL
COLOR: WHITE
FINISH: SMOOTH W/ REVEALS
LOCATION: STAIR TOWERS, SOUTH DATA CENTER WALLS

EXTERIOR GLAZING (GL):

GL-01 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
LOCATION: TYPICAL VISION GLAZING

GL-02 1" INSULATED / LOW-E VISION GLASS
GLASS SELECTION: VIRACON SOLARBAN 70XL CLEAR
SOLID CERAMIC FRIT - 40%
LOCATION: STAIR TOWERS

EXTERIOR INSULATION AND FINISH SYSTEM (EIFS):

EIFS-01 COLOR: LIGHT GRAY
LOCATION: OFFICES

EIFS-02 COLOR: WHITE
LOCATION: OFFICES

METAL PANEL (MP):

MP-01 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-02 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: NORTH ELEVATION

MP-03 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT BLUE
LOCATION: NORTH ELEVATION

MP-04 COMPOSITE METAL PANEL
BASIS OF DESIGN:
COLOR: GRAY VELVET
LOCATION: NORTH ELEVATION

MP-05 PERFORATED METAL PANEL
BASIS OF DESIGN:
COLOR: DARK GRAY
LOCATION: STAIR TOWER

MP-06 CORRUGATED METAL PANEL
BASIS OF DESIGN:
COLOR: LIGHT GRAY
LOCATION: SCREEN WALL

GREEN SCREEN SYSTEM:

FLAT/NON-ARTICULATED W/ TENSIONING EXTRUSIONS
MOUNTED DIRECTLY TO STRUCTURE

COLORS:

PT-01 DARK GRAY

PT-02 LIGHT GRAY

PT-03 WHITE

PT-04 LIGHT BLUE

PT-05 GRAY VELVET

PT-06 WEB GRAY

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Date: XX/XX/XXXX

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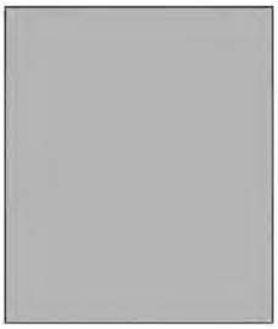
2	PCC ISSUANCE	06.19.20
1	PCC ISSUANCE	10.28.19

MASTER PLAN

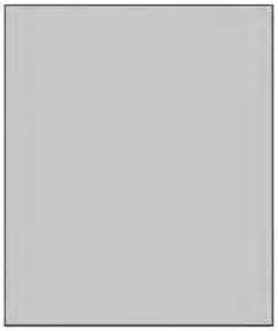
BUILDING ELEVATIONS - NORTHEAST

PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE **06/19/2020**
PROJECT ENGINEER	SHEET NUMBER **A3.8**
SCALE	

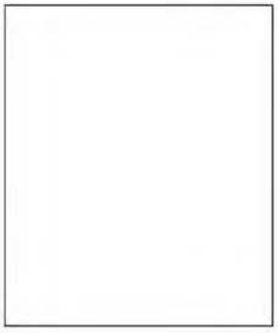
PLOT DATE:
6/19/2020 1:48:05 PM
TEMPLATE VERSION: 3.0.0.20170923



PT-01
DARK GRAY



PT-02
LIGHT GRAY

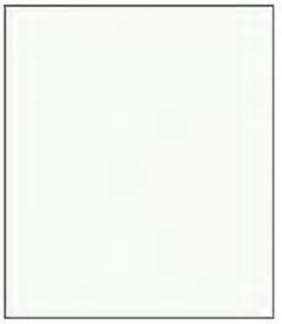


PT-03
WHITE

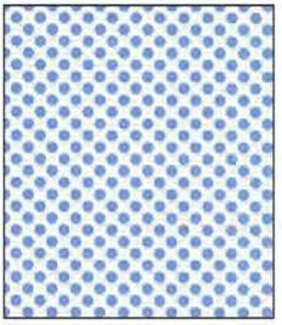
PT-04
LIGHT BLUE

PT-05
GRAY VELVET

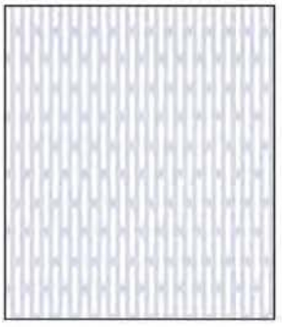
PT-06
WEB GRAY



GL-01
INSULATED GLAZING
SOLARBAN 70XL CLEAR
VIRACON



GL-02
INSULATED GLAZING
SOLARBAN 70XL CLEAR, 40%
FRIT
VIRACON



MP-05
PERFORATED METAL PANEL

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NO.	RECORD	DATE
2	PCC ISSUANCE	06.19.20
1	PCC ISSUANCE	10.28.19

MASTER PLAN

MATERIALS BOARD

PRINCIPAL IN CHARGE MC	PROJECT NUMBER C190280
PROJECT MANAGER CM	DATE 06/19/2020
PROJECT ENGINEER	SHEET NUMBER **A4.0**
SCALE AS NOTED	