ADDENDUM No. 5

February 14, 2019

REQUEST FOR PROPOSALS
(BID DOCUMENTS)

FOR

STUDENT SUCCESS CENTER
PROJECT NO. 950512

The following changes, additions, or deletions shall be made to the following documents as indicated for this Project; and all other terms and conditions shall remain the same. Each Proposer (Design Builder) is responsible for transmitting this information to all affected subcontractors and suppliers before the Proposal Deadline.

1. REQUEST FOR PROPOSALS

A. Proposal Schedule

Delete the "Proposal Schedule" issued in Addendum No. 2 dated February 1, 2019 and **replace** with the one issued in this Addendum.

B. Supplementary Conditions

Delete the "Supplementary Conditions" issued in the Request for Proposal documents and **replace** with the one issued in this Addendum.

C. Project Program & Design Criteria (January 11, 2019)

1. **Delete** the Project Introduction "2.05 Testing Center" on page 3.60 issued in the Request for Proposal documents and **replace** with the one issued in this Addendum.

D. University Furnished Information

1. Table of Contents

   Delete the University Furnished Information Table of Contents, issued in Addendum No. 2 dated February 1, 2019 and **replace** with the one issued in this Addendum.

2. **Add** Item "30. Mobility Hub and Central Campus Linkages" to the Table of Contents and place document in University Furnished Information folder.

30. MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

Mobility Hub and Central Campus Linkages – 100% Construction Document Bid Set	***Gruen Associates***	***January 10, 2019***

2. DESIGN BUILDER QUESTIONS & ANSWERS

Q11	On page 47 of 60 in the General Conditions section (page 115/1304 of the RFP PDF) – the requirements for Professional Liability Insurance are left blank. Please provide the project requirements.
A11	**The Supplementary Conditions addressing the Professional Liability Insurance requirements will be reissued in Addendum No. 5.**

Q12	The RFP and Owner Furnished Documents provides concept design information for the future Mobility Hub dated December 2017. Please confirm if more current plans or design concepts are available for reference.
A12	**The Mobility Hub and Central Campus Linkages, 100% Construction Drawings Bid Set dated January 10, 2019 will be issued with Addendum No. 5**
Q13	Is it anticipated that this building will house student advising spaces based on Student Success Center naming?
A13	**The project program is largely intended for student success through instruction, peer to peer learning and student amenities- but not anticipated to accommodate student advising spaces. The 'Student Success Center' is a legacy name and does not intend to be a direct reflection of its program.**
Q14	Does the multipurpose room have to be located on the lower levels of the building? What is the expected use of this space?
A14	**There is flexibility in regards to the location of the multipurpose room as long as the Design-Builder can meet the required performance and functional objectives and can provide adequate justification for the added value. The project adjacencies specified in the Basis of Design are intended to be guidelines of performance and desired function by the University. The Design-Builder may choose to relax direct adjacencies in the instance where function and performance are met.** **The multipurpose room is anticipated to be a highly scheduled room that will have a split use between student activities and classroom activities. Envisioned to be a special status room, this space will maintain its student affairs character and identity as specified in the Basis of Design while also encouraging active learning and small group discussions through modular flexible furniture solutions.**
Q15	What is the intended use of the Testing center? Is it a required adjacency for the testing center to have direct access to the exterior? Does the Testing center have to be located on the ground level?
A15	**While envisioned to be a multi-function room, this space is primarily intended to be an instructional space that can easily convert to a testing center when necessary. The space shall be conveniently located, easily identified and accessed by students, faculty and potential first-time visitors. It is projected that this space will be highly used throughout the entire week, eventually including the weekends.** **The project adjacencies specified in the Basis of Design are intended to be guidelines of performance and desired function by the University. The Design-Builder may choose to relax direct adjacencies in the instance where function and performance are met.** **The testing center is anticipated to be used for a variety of functions, including instruction, testing and orientation. As such it would be preferable for the testing center to be easily accessed by students and faculty alike. Wayfinding to the testing center should be clear, whether the center is located on the ground level or an upper level If an individual is able to easily orient themselves to the testing center located on any upper floor- the Design-Builder would meet the functional adjacency that is desired by the University.**
Q16	Can the Fire Marshal be available for the next one on one?

A16	**The fire marshal will be available for the first 20 minutes of the next one on one.**
Q17	Please clarify the daylighting requirement at the Large Lecture Hall?
A17	**The Design-Builder is expected to provide daylighting and views outside from this room as specified section 2.04 of the Basis of Design. Window treatments (e.g. motorized sun shades and blackout shades) shall provide instructors the ability to shade and darken the room.** **In addition, the space shall provide transparency, allowing visitors and students to see the space without unduly disruption of class activities.**
Q18	Please clarify if there is an adjacency requirement between the Large Lecture Hall and the Multipurpose room.
A18	**The Multipurpose room and the Large Lecture hall do not have a required spatial adjacency, or a preferred spatial adjacency.**
Q19	Would the University consider a circular projection surface option at the Large Lecture Hall?
A19	**The University would be open to a circular projection surface in the Large Lecture Hall instead of the projection screens identified in the BOD. This option can potentially improve the viewing angles and also provide additional benefits to the acoustics in the room.** **If the design-builder opts to provide a projection system- the integrated projection system should meet the same performance objectives identified in the Basis of Design.** **The projection system to be sized to meet wide viewing angles and to prevent glare, shall be able to accommodate high lumen/ high resolution output, projector selection to prevent flutter noises, shall have the ability to receive independent signal drivers, and be able to provide a seamless optimized visual delivery.**

END OF ADDENDUM

PROPOSAL SCHEDULE

	ACTIVITY	DATE	TIME
A	The RFP will be available to Prequalified Proposers, subcontractors and design consultants.	**1/11/19**	**2:00 PM**
B	**Pre-Proposal Conference & Site Visit – Mandatory for all Prequalified Proposers.** Participants must arrive at University of California, Riverside, Glen Mor, Building K, Room K106/K108, Riverside, CA 92507 at or before the established time.	**1/14/19**	**1:30 PM**
C	The University will hold confidential One-on-One meetings with each Proposer prior to the Technical Proposal Submittal for the purpose of answering questions, clarifying RFP and program requirements, reviewing and validating preliminary designs etc. Meeting location: University of California, Riverside, Pentland Hills Bear Cave B107/C101, Riverside, CA 92507.	**2/7/19**	**8:30 AM (SB)** **11:00 AM (HP)** **1:30 PM (MB)**
		~~**3/7/19**~~	~~**8:30 AM (MB)**~~ ~~**11:00 AM (SB)**~~ ~~**1:30 PM (HP)**~~
	The University will hold confidential One-on-One meetings with each Proposer prior to the Technical Proposal Submittal for the purpose of answering questions, clarifying RFP and program requirements, reviewing and validating preliminary designs etc. Meeting location: University of California, Riverside, University Village, 1299 University Ave., Room EUV-1103, Riverside, CA 92507.	***2/27/19***	***8:00 AM (HP)*** ***10:30 AM (MB)*** ***1:00 PM (SB)***
	The University will hold confidential One-on-One meetings with each Proposer prior to the Technical Proposal Submittal for the purpose of answering questions, clarifying RFP and program requirements, reviewing and validating preliminary designs etc. Meeting location: University of California, Riverside, Alumni & Visitor Center, Alumni Johnson Board Room, 3701 Canyon Crest Drive, Riverside, CA 92521.	**3/21/19**	**8:30 AM (SB)** **11:00 AM (HP)** **1:30 PM (*MB*)**
D	**Technical Proposal Submittal is due from Proposers and will be received only at University of California, Riverside, Planning, Design & Construction, 1223 University Avenue, Suite 240, Riverside, CA 92507. The Technical Proposal Submittal is defined in the *Technical Proposal*.**	**04/11/19**	**2:00 PM**
E	**Lump Sum Base Price Proposal Submittal is due from Proposers and will be received only at University of California, Riverside, Planning, Design & Construction, 1223 University Avenue, Suite 240, Riverside, CA 92507. The Lump Sum Base Price Proposal Submittal is defined in the *Lump Sum Base Price Proposal*.**	**04/12/19**	**2:00 PM**
F	The University's Technical Review Committee will meet to review timely submitted Technical Proposals as described in the Proposal Evaluation Process document.	**4/18/19-4/19/19**	**8:00 AM – 5:00 PM**

G	Proposers shall make an Oral Presentation and describe the best value aspects of their proposals. Cost shall not be discussed during the Oral Presentation.	**4/22/19**	**8:00 – 5:00 PM**
H	Timely submitted Lump Sum Base Price Proposals shall be publicly opened at University of California, Riverside, Planning, Design & Construction, 1223 University Avenue, Conference Room Suite 210-16, Riverside, CA 92507. The University will acknowledge the timely receipt of submittals and whether or not the submittals appear to be responsive. No cost or point scoring information will be disclosed to the public at this time.	**4/23/19**	**11:00 AM**

Late Proposals: Any proposal, modification, or revision that is received at the designated University of California, Riverside, Planning, Design & Construction location after the exact time specified for receipt of proposals is "late" and will not be considered unless it was the only proposal received. Late proposals and modifications that are not considered will be held unopened, unless opened for identification, and then returned to the Proposer after award.

SUPPLEMENTARY CONDITIONS

1. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 1 – GENERAL PROVISIONS

The "Architect of Record" as referred to in the General Conditions is:

_____ _____
(Name) *(License Number)*

2. MODIFICATIONS OF GENERAL CONDITIONS, ARTICLE 2 – UNIVERSITY

The following Subparagraph 2.1.1.1 is added to Article 2.1:

2.1.1.1 The Design Builder shall be responsible for payment of all Division of State Architect (DSA) plan review fees.

3. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 3 – DESIGN BUILDER

a. The following sentence is added to Subparagraph 3.2.5:

Local is considered to be within **sixty (60)** miles from the Project site. If a key member of the design-build team resides further than 60 miles from the project site, arrangements shall be made so as to accommodate impromptu design review meetings and "over-the-shoulder" design reviews so as not to unreasonably inconvenience the University or jeopardize the project schedule.

b. The following sentence is added to Subparagraph 3.2.11:

Construction personnel shall conduct themselves in a professional and workmanlike manner at all times. The University may require the immediate removal and replacement of any employee of the Design Builder, any Subcontractor of any tier, or any supplier whose behavior is detrimental to the safety, security, or progress of the Work, or whose behavior is deemed to be unacceptable to the University. Unacceptable behavior may include, but is not limited to, any action intended to aggravate, harass, or annoy individuals; or any gesture, noise, speech or utterance that is lewd or indecent.

c. The following sentence is added to Subparagraph 3.11.1.2:

A reasonable number of Construction Document packages shall be **six (6)**.

d. Subparagraph 3.11.4.1 is revised to read:

.1 The Design Builder's Design Work shall be consistent with the geotechnical conditions of the project site. The University shall provide geotechnical data describing the soils conditions of the project site. During the Design Phase, the Design Builder and its geotechnical engineer shall conduct any additional geotechnical investigations deemed necessary by the Design Builder to complete its design. The Design Builder's geotechnical engineer shall be a separate firm from the engineer of record for the project.

e. Subparagraph 3.11.5 is added:

The University shall provide a geotechnical report that was utilized during development of the Proposal Documents. The Design Builder shall retain a geotechnical engineer for the project who will become the geotechnical engineer of record for the project. The Design Builder's geotechnical engineer of record may base the Design Work on either the University supplied report or may retain a qualified a professional firm to secure an independent geotechnical report for the project.

The Design Builder's geotechnical report and geotechnical recommendations will be subject to review and acceptance by the University.

f. Subparagraph 3.15.1 is revised as follows:

3.15.1 The Design Builder unconditionally guarantees the Work will be completed in accordance with the requirements of the Contract Documents, and will remain free of defects in workmanship and materials for a period of two (2) years from the date of ***Final Completion*** ~~Substantial Completion~~, unless a longer guarantee period is specifically called for in the Contract Documents. The Design Builder shall repair or replace any and all work, together with any adjacent work that may have been damaged or displaced, which was not in accordance with the requirements of the Contract Documents, or that may be defective in its workmanship or material within the guarantee period specified in the Contract Documents, without any expense whatsoever to the University; ordinary wear and tear and abuse excepted.

g. The following subparagraph 3.27.3 is added:

Notwithstanding the Design Builder's financial liability for any damage or losses that may or may not be covered by the builder's risk property insurance provided hereunder, the Design Builder shall promptly repair and replace any Work or materials damaged or destroyed during the term of this Project and work to maintain or recover the project schedule. The Design Builder shall be responsible to protect the site and segregate all costs associated with any required corrective action, including costs to expedite material and work overtime as necessary to maintain the schedule. The Design Builder will cooperate with the University and the builder's risk carrier to the extent necessary to fully support the costs and expenses covered by the builder's risk policy.

4. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 7 – CHANGES IN THE WORK

a. The following subparagraph 7.3.2.10 is revised as follows:

10. The cost for Insurance and Bonds shall not exceed 2% of items .1 through .9 above

MODIFICATION OF GENERAL CONDITIONS, ARTICLE 8 – CONTRACT TIME

a. The following subparagraph 8.1.2 is added:

The Design Builder and its Subcontractors identified at the time of Proposal submittal shall participate in a mandatory preconstruction meeting conducted by the University's Representative to discuss federal and state labor law requirements applicable to the Contract.

b. Subparagraph 8.2.3 is revised as follows:

8.2.3 Design Builder shall proceed expeditiously with adequate forces and shall achieve ***Final Completion*** ~~Substantial Completion~~ of the Work within the Contract Time. If University's Representative determines and notifies Design Builder that Design Builder's progress is such that Design Builder will not achieve ***Final Completion*** ~~Substantial Completion~~ of the Work within the Contract Time, Design Builder shall immediately and at no additional cost to University, take all measures necessary, including working such overtime, additional shifts, Sundays, or holidays as may be required to ensure that Design Builder will achieve ***Final Completion*** ~~Substantial completion~~ of the Work within the Contract Time. Upon receipt of such notice from University's representative, Design Builder shall immediately notify University's Representative of all measures to be taken to ensure ***Final Completion*** ~~Substantial Completion~~ of the Work within the Contract Time. Design Builder shall reimburse University for any extra costs or expenses (including the reasonable value of any services provided by University's employees) incurred by University as the result of such measures.

c. Subparagraph ***8.4.1.10*** ~~8.4.1.9~~: Adverse weather in excess of **35** days for Phase 3, Construction, will be granted a Contract Time extension pursuant to Article 8.4 of the General Conditions.

5. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 11 – INSURANCE AND BONDS

a. Delete subparagraph 11.1.1 and substitute the following

11.1.1 The UCIP Administrator is listed on the UCIP Manual.

11.1.1 Overview. Except as limited by the provisions of this Article 11.1, the University shall pay for, obtain and maintain a University Controlled Insurance Program ("UCIP") providing Workers' Compensation and Employer's Liability Insurance coverage, Commercial General Liability Insurance coverage, and Excess Liability Insurance coverage, to persons and entities enrolled in the UCIP, for Work performed on or at the Project site and summarized as follows:

For Design Build Contracts
Phase 1: Design Development Documents- UCIP does NOT apply to this portion of the Work
Phase 2: Construction Documents - UCIP does NOT apply to this portion of the Work
Phase 3: Construction - UCIP does apply to this Work

For purposes of the UCIP, Work that is performed at the Project Site could have UIP apply as though it was Work performed on or at the Project Site, on an exception basis, provided that (1) the off-site location meets the requirements of the UCIP Form 4 – UCIP Coverage Questionnaire for Work at a Dedicated Off-Site Location and (2) the Design Builder specifically requests from the University coverage for the offsite location, and (3) the UCIP insurer approves enrollment of the location. Should the Contractor meet ALL criteria shown on the UCIP Form 4: UCIP Coverage Questionnaire for Work at a Dedicated Off-site Location, the Contractor must complete and submit UCIP Form 4 to the UCIP Administrator with its completed UCIP Form 1: Enrollment Information.

Persons and entities eligible for such coverage (see Article 11.1.2), including Design Builder and all Subcontractors, unless excluded under Article 11.1.5, will be required to enroll in the UCIP. Once enrolled, the UCIP will provide coverage as defined herein until the earliest of the following: the date on which University makes final payment to Design Builder, the date a Notice of Cessation is filed for the Contract, or the date the Contract is terminated pursuant to Article 13. Additionally, all enrolled eligible Design Builders and Subcontractors, will be required to obtain their own Commercial Automobile Liability Insurance for all Work (on and off the Project site), as well as their own Commercial General Liability Insurance and Workers' Compensation and Employer's Liability Insurance for their Work not covered by the UCIP (see Article 11.1.10); Excluded Parties and Eligible Parties who are not enrolled must also obtain Commercial Automobile Liability Insurance, Workers' Compensation and Employer's Liability Insurance, and Commercial General Liability Insurance for all Work (on and off the Project site) (see Article 11.1.10). The UCIP shall be administered by the UCIP Administrator identified in the Supplementary Conditions. Pursuant to Article 4.1.4, all communications concerning the UCIP shall be through the University Representative except that written communications between the UCIP Administrator, Design Builder, Subcontractors, eligible, enrolled and excluded parties are authorized as follows:

.1 For the purpose of obtaining copies of any UCIP insurance policies, the *UCIP Insurance Manual* and the *UCIP Safety Standards Manual*.

.2 For the purpose of obtaining any certificates of insurance required by this Article 11

.3 For the purpose of verifying that Design Builder, Subcontractors, eligible parties, enrolled parties and excluded parties have obtained and maintained any insurance required by this Article 11.

.4 For the purpose of enrolling any party in the UCIP

b. The following subparagraph is added to 11.1.2:

An exception to provide UCIP coverage for the Work that is performed at a location off the Project Site will not be provided to any party that does not perform any labor at the Project site and/or who is not enrolled.

c. Add the following subparagraphs to 11.1.10:

The limits for all Commercial Form General Liability Insurance shall not be less than the following:

Coverage	Enrolled	Excluded
Each Occurrence	$ 2,000,000	$ 5,000,000
General Aggregate	$ 4,000,000	$ 10,000,000
Products/Completed Operations Aggregate	$ 4,000,000	$ 5,000,000
Personal/Advertising Injury Aggregate	$ 2,000,000	$ 2,000,000

Ten (10) Years Products/Completed Operations Extension

*The Design Builder shall provide enrolled insurance limits during Phases 1 and 2.

d. The following subparagraph 11.1.10.1.2 is revised as follows:

Commercial Automobile Liability Insurance on an "Occurrence" form covering owned, hired, leased, and non-owned automobiles used by or on behalf of Insured and providing insurance for bodily injury and property damage, with a combined single limit of not less than $5,000,000 bodily injury, $5,000,000 property damage, and with a $5,000,000 policy limit. The Commercial Automobile Liability Insurance shall be provided by Design Builder, Enrolled Parties, Eligible Parties that are not enrolled, and Excluded Parties for all on site and off-site Work.

11.1.10.1 The insurance required by 11.1.10.1.1 (Commercial Form General Liability Insurance) and 11.1.10.1.2 (Commercial Automobile Liability Insurance) shall be (i) issued by companies with a Best rating of A- or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor's or Moody's) or (ii) guaranteed, under terms consented to by the University (such consent to not be unreasonably withheld), by companies with a Best rating of A or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor's or Moody's).

e. Add the following to subparagraph 11.1.10.1.3 as follows:

The insurance required by 11.1.10.1.3 (Workers' Compensation And Employer's Liability Insurance) shall be issued by companies (i) that have a Best rating of B+ or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor's or Moody's); or (ii) that are acceptable to the University.

f. Subparagraph 11.1.1.10.1.4 is revised as follows:

.4 Professional Liability Insurance to insure Design Builder's activities in connection with this Contract. If the insurance under this Article 11.1.10.1.4 is written on a claims-made basis, it shall be maintained continuously for a period no less than three (3) years following termination of this Contract or Final Completion, whichever occurs later. The insurance shall have a retroactive date of placement prior to or coinciding with the date services are first provided that are governed by the terms of this Contract and shall include, without limitation coverage for professional services as called for in this

Contract. The limits of liability for the Professional Liability Insurance shall be no less than the following:

Each Occurrence	***[$10,000.000 /$ 10,000,000]***
General Aggregate	***[$10,000,000 /$ 10,000,000]***

The insurance required by 11.1.10.1.4 (Professional Liability Insurance) shall be issued by companies (1) that have the Best Rating of A- or better (or an equivalent rating by Standard & Poor's or Moody's) or (ii) are acceptable to the University.

g. The following article is added to the General Conditions:

11.1.10.1.5 The Design Builder shall obtain, either itself or through the applicable Subcontractor(s) performing Work involving hazardous materials, Contractor's Pollution Liability (CPL) insurance coverage for such Work AND an endorsement to either its CPL or Commercial Automobile Liability policies for transporting or hauling of hazardous materials. The insurance required by this paragraph 11.1.2.6 shall be (i) issued by companies with a Best rating of A- or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor's or Moody's) or (ii) guaranteed, under terms consented to by the University (such consent to not be unreasonably withheld), by companies with a Best rating of A- or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor's or Moody's). Such insurance shall be written for not less than the following and include the University as Additional Insured by endorsement:

CONTRACTOR'S POLLUTION LIABILITY – Limits of Liability	**Minimum Requirement**
Each Loss:	$ 5,000,000
General Aggregate:	$ 5,000,000

If coverage is provided on a Claims-Made form, Design Builder shall show evidence of coverage to include a three (3)-year Extended Reporting Period beyond completion of such Work. Coverage must extend to Transportation and Hauling of hazardous materials. The University shall require a copy of the policy endorsement noting extension of Transportation coverage. If this extension of coverage is not provided under the Design Builder's or applicable Subcontractor's Contractor's Pollution Liability, then the Design Builder/Subcontractor shall also be required to show evidence of the following under its Commercial Auto policy:

COMMERCIAL AUTO - Combined Single Limit Per Accident	$ 5,000,000

Covering Transportation and/or Hauling of hazardous materials by amending the pollution exclusion of ISO Form CA 00010 6/92 (or its equivalent) in the following manner:

1. Delete Section a. (1) a.: (Pollution) "being transported or towed away by, or handled for movement into, onto or from the Covered Auto."

2. Delete Section a. (1) b.: "Otherwise in the course of transit by the insured."

Coverage shall include MCS-90 endorsement with the University as Additional Insured and shall be endorsed to specifically limit the reimbursement provisions of the MCS-90 to the Named Insured.

6. MODIFICATION OF GENERAL CONDITIONS ARTICLE 15 – MISCELLANEOUS PROVISIONS

This Agreement may be executed in two or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same Agreement. The counterparts of this Agreement may be executed via a University approved digital signature process and shall have the same force and effect as the use of a manual signature. The University reserves the right to

reject any digital signature that cannot be positively verified by the University system as an authentic digital signature.

2.05 TESTING CENTER

DESIGN INTENT & USE

The Testing Center is projected to be a Multipurpose, multi-function space, with five primary uses:

- Classroom
- Open Hours for on-line course exam testing
- Scheduled Orientation / Registration events
- Standardized Testing
- Open Hours for general testing center use (computing, printing, copying, etc.)

Given the Multipurpose nature of room, the space shall have three functional zones: (1) instruction / teaching wall; (2) workstation area; and (3) printing / scanning / copying area. The University plans to schedule the use of this room as a classroom for most of the weekday. There will be some priority times scheduled for such testing. Systems such as power, data, A/V, and lighting shall easily accommodate the use scenarios that are expected for the room in both the near and long-term future. Transparency between these two zones shall balance the need for some visual connection for supervision while not overly disrupting the testing environment.

KEY COMPONENTS

Testing will be completed by laptops. Workstation layout shall support both testing functions and orientation functions; testing requires privacy, while orientation functions may require views to front projection screens and ability to confer with other students. Workstation shall have privacy screens sufficient to ensure security of testing material. At a minimum, 64 workstations with utilities in the tables shall be provided.

ACCESS & CIRCULATION

Room layout and configuration shall allow the instructor(s) to move around the room to monitor activities. The printing/scanning/copying area shall have access without disrupting the testing functions. The University prefers the Testing Center to also have direct exterior access, allowing the space to operate on the weekend when the rest of the building may be closed.

CHARACTER

The space shall be consistent University standards for general instruction space, including use of color, to create modern learning spaces.

OTHER CONSIDERATIONS

Daylighting shall be provided in this room. Window treatments shall provide the ability to shade and darken the room. Provide a variety of lighting options to accommodate and enhance various uses. ~~Individual testing rooms shall separate switching and dimming capabilities; plus, provision of a task light.~~ Acoustics for privacy and testing envi-ronment is an important factor and shall be applied at appropriate wall partitions and ceilings. Provide a space/table for food and drinks to be kept for students to access during exams.

SPACE ADJACENCIES

The space shall be located in an "easy-to-find" location within the building to facilitate access ~~for~~ visitors and first-time students. Additionally, the University prefers close proximity to the building restrooms.

UNIVERSITY FURNISHED INFORMATION

The following information is made available for the convenience of Proposers and is not a part of the Contract. The information is provided subject to the provisions of subparagraph 3.1.1 of the General Conditions.

Issued electronically on the "Request for Proposals" CD
(Located behind the first tab of this binder)

PREVAILING WAGES

General Prevailing Wage Determinations and information can be accessed at www.dir.ca.gov or by contacting University's principal Facility office.

DESCRIPTION

No.	Title:	Prepared by:	Date:
1.	**AS-BUILTS**		
A.	Fine Arts Seismic Facility	Fields Devereaux Architects & Engineers	April 27, 1998
B.	Physical Education Building	Arthur Froehlich, AIA, Architect	April 28, 1952
C.	Physical Education Building Room 102 Alterations for Dance	Cashion Horie Cocke Gonzales Architects, Inc. (CHCG)	June 1986
D.	CHASS-Instruction & Research Facility	PEI Cobb Freed & Partners	March 20, 2008
E.	Administration Building (Hinderaker)	Allison and Rible Architects	January 27, 1961
F.	Humanities and Social Sciences Unit 1	Cesar Pelli & Associates	August 10, 1993
G.	Classroom and Office Unit 1 (Sproul)	Douglas Honnold FAIA, John Rex, FAIA, Architects and Associates	June 2, 1965
H.	Student Academic Support Services Building	Sasaki	March 2009
2.	**UCR MOBILITY HUB AND CENTRAL CAMPUS LINKAGES**		
A.	UCR Mobility Hub and Central Campus Linkages – Scope 1 Report	Gruen Associates	December 21, 2017
B.	UCR Mobility Hub and Central Campus Linkages – Appendices	Gruen Associates	December 21, 2017

3.	**STUDENT SUCCESS CENTER VISIONING WORKSHOP**		
A.	UCR Student Success Center Visioning Workshop Capital Asset Strategies	Capital Planning	April 20, 2017
B.	UCR Student Success Visioning Workshop – Site Selection Study Handout	UCR Capital Planning	April 20, 2017
4.	**UCR 2005 LRDP AND AMENDMENTS**		
A.	Long Range Development Plan 2005	UCR Office of Academic Planning & Budget; Capital & Physical Planning with the assistance of: BMS Design Group	November 2005
B.	2005 Long Range Development Plan Amendment 2	UCR Finance & Business Operations Capital Resource Management	November 2001
C.	2005 LRDP Amendment 3 Campus Infrastructure Overlay Land Use Designation		September 2013
5.	**TOPOGRAPHIC SURVEY**		
	University of California, Riverside Student Success Center Topographic Survey	IMEG	July 13, 2018
6.	**GEOTECHNICAL REPORTS**		
	Proposed Student Success Center UCR Project No. 958056	Twining	December 17, 2018
7.	**PHYSICAL DESIGN FRAMEWORK**		
	Physical Design Framework		2009/10 – 2018/2019
8.	**UC BOARD OF REGENTS**		
	Regents Policy 4400: Policy on University of California Diversity Statement	University of California Board of Regents	Adopted September 20, 2007 Amended September 16, 2010
9.	**STUDENT SUCCESS CENTER CLASSROOM COMPONENT SUMMARY OF FEEDBACK**		

	Student Success Center Classroom Component Summary of Campus Feedback	UCR Office of the Provost and Executive Vice Chancellor	May 2017

10. STUDENT SUCCESS CENTER SITE SELECTION STUDY

	Site Selection Study Student Success Center Building	UCR Capital Asset Strategies	June 16, 2017

11. UC SUSTAINABLE PRACTICES POLICY

	UC Policy on Sustainable Practices	University of California	Issuance Date: July 1, 2004 Effective Date: August 10, 2018

12. UCR CAMPUS PROCESS: GENDER INCLUSIVE FACILITIES 2015

	UCR Campus Process: Gender Inclusive Facilities 2015	Associate Vice Chancellor / Campus Architect Architect & Engineers	November 1, 2015

13. UCR CENTRAL CAMPUS NEIGHBORHOOD STUDY

	UCR Central Campus Neighborhood Study	HKS Spurlock	April 12, 2017

14. UCR PHYSICAL MASTER PLAN STUDY

	UCR Physical Master Plan Study		May 17, 2016

15. UCR PRINCIPLES OF COMMUNITY

	UCR Principles of Community		

16. UCR DINING SERVICES

	Warm Shell Tenant Improvement Space Guideline	UCR Dining Services	March 16, 2018

17. UCR RIVERSIDE SITE FEASIBILITY REPORT

	UCR Site Feasibility Report	Steinberg Hart	January 2018

18. UTILITY MAPS

A..	Student Success Center 100 PSI Air Controls Approximate		10/9/18

	Locations (Draft)	
B.	Student Success Center 100 PSI Steam Controls Approximate Locations (Draft)	10/9/18
C.	Student Success Center Chilled Water Line Approximate Locations (Draft)	10/8/18
D.	Student Success Center Natural Gas Line Approximate Locations (Draft)	10/8/18
E.	Student Success Center Storm Drain Manholes (Surveyed – 2014) Storm Drain Line (Approximate Locations) (Draft)	10/8/18
F.	Student Success Center Existing Electric Distribution (Draft)	10/9/18

19. DAART ENGINEERING FLOW TEST

	Daart Engineering Flow Test UCR Student Success Center	6/7/18

20. UCR CAMPUS STANDARDS - DRAFT

	Div. 3 – Concrete	Revised April 17, 2018
	Div. 4 - Masonry	January 14, 2018
	Div. 5 – Metal	January 14, 2018
	Div. 6 – Wood, Plastics and Composite	January 18, 2018
	Div. 7 – Thermal and Moisture Protection	January 14, 2018
	Div. 8 – Openings	Revised March 21, 2018
	Div. 9 – Finishes	January 14, 2018
	Div. 10 - Specialties	March 12, 2018
	Div. 11 – Equipment	Revised April 15, 2018
	Div. 12 – Furnishings	November 30, 2015
	Div. 13 – Special Construction	January 14, 2018
	Div. 14 – Conveying Systems	January 14, 2018
	Div. 15 – Operation and Maintenance Manuals	

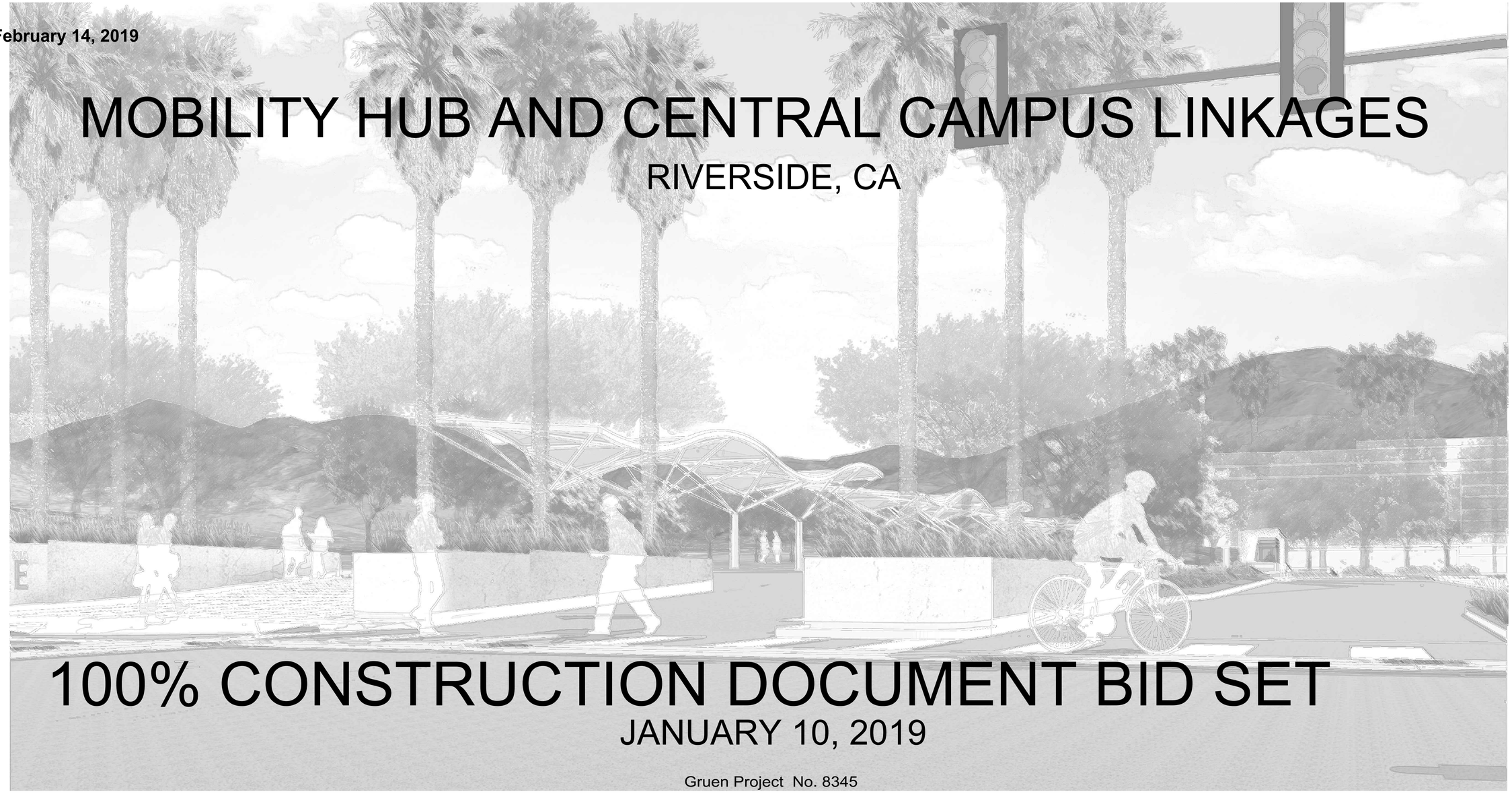
	Div. 21 – Fire Suppression		Revised April 25, 2018
	Div. 22 – Plumbing		Revised April 17, 2018
	Div. 23 – HVAC		March 28, 2018
	Div. 25 – Integrated Automation		Revised March 13, 2018
	Div. 26 - Electrical		January 24, 2018
	Div. 27 – Communications		January 24, 2018
	Div. 28 – Electronic Safety and Security		January 24, 2018
	Div. 31 – Site Work		January 2016
	Div. 32 – Exterior Improvements		March 2016
	Div. 33 – Site Utilities		January 2018
21.	**SEWER CAPACITY STUDY**		
	UC Riverside Physical Master Plan Study Appendix 6.8-A Sanitary Sewer Calculations		
22.	**UCR 2020 - FINAL**		
	UCR 2020 The Path to Preeminence		July 2010
23.	**UCR LANDSCAPE SERVICES DEPT. LANDSCAPE- IRRIGATION GUIDELINES 2012**		
	UCR Landscape Services Dept. Landscape-Irrigation Guidelines 2012		2012
24.	**TREE INVENTORY REPORT**		
	Tree Inventory Report University of California, Riverside Student Success Center Project	Tricia D. Thrasher University of California, Riverside Campus Planning Capital Asset Strategies Psomas	May 9, 2018
25.	**IMPLEMENTATION OF UC GENDER INCLUSIVE FACILITIES POLICY AT UC RIVERSIDE - MEMO**		
	Implementation of UC Gender Inclusive Facilities Policy at UC Riverside - Memo	To: Gerry Bomotti, Vice Chancellor, Planning and Budget From: Jacqueline Norman, Campus Architect & Robert Keith Williams, Certified Building Official	September 18, 2018
26.	**UCR CAMPUS *CONTEXT***		
	UCR Campus ***Context*** (Exemplary Examples / Non-	UCR Planning Design & Construction	2019

	Exemplary Examples		
27.	**WEPA LOW PRINT STATION SPECIFICATIONS**		
	WEPA Low Profile Print Station Specifications	WEPA	
28.	**LAPTOP KIOSK CONFIGURATION**		
	Laptop Kiosk Configuration	Laptops Anytime	
29.	**UCR CAMPUS V2018 UPDATES CADD DRAWINGS AND SUPPORTING DOCUMENTATION**		
A.	UCR Campus v2018 Update Auto CADD Drawings		
B.	University California, Riverside Aerial Target Ground Control Survey Report Job #2011018.003		March 2015
C.	UCR Campus Control Survey – Sheet 1 of 2	Hillwig – Goodrow, Inc.	December 2013
D.	UCR Campus Control Survey – Sheet 2 of 2	Hillwig – Goodrow, Inc.	December 2013
E.	UCR Data Delivery Standards for UCR Planning, & Design Projects Capital Programs		March 13, 2015
F.	UCR Horizontal and Vertical Accuracy of Campus Spatial Data (GIS) (Memorandum)		May 22, 2013
G.	UC Riverside Campus Control Points	Hillwig – Goodrow, Inc.	December 2013
30.	***MOBILITY HUB AND CENTRAL CAMPUS LINKAGES***		
	Mobility Hub and Central Campus Linkages – 100% Construction Document Bid Set	***Gruen Associates***	***January 10, 2019***

Addendum No. 5, February 14, 2019

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

RIVERSIDE, CA



100% CONSTRUCTION DOCUMENT BID SET

JANUARY 10, 2019

Gruen Project No. 8345

ENVIRONMENTAL GRAPHICS

SELBERT PERKINS DESIGN

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Playa del Rey, CA 90293
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MEP ENGINEER

TK1SC

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Los Angeles, CA 90071
TEL (213) 607-8400

NO	SHEET #	TITLE	DATE 05/01/2018 DD SET	10/29/2018 50% CDs	11/27/2018 90% CDs	01/10/2019 100% CDs			
		UCR Mobility Hub Scope 2							
IRRIGATION									
	L401	IRRIGATION PLAN	●	●	●	●			
	L402	IRRIGATION PLAN	●	●	●	●			
	L403	IRRIGATION PLAN	●	●	●	●			
	L404	IRRIGATION PLAN	●	●	●	●			
	L405	IRRIGATION PLAN	●	●	●	●			
	L406	IRRIGATION PLAN	●	●	●	●			
	L407	IRRIGATION PLAN	●	●	●	●			
	L408	IRRIGATION PLAN	●	●	●	●			
	L409	IRRIGATION PLAN	●	●	●	●			
	L410	IRRIGATION LEGEND & NOTES	●	●	●	●			
	L411	IRRIGATION DETAILS	●	●	●	●			
	L412	IRRIGATION DETAILS	●	●	●	●			
	L413	IRRIGATION DETAILS	●	●	●	●			
	L414	IRRIGATION DETAILS	●	●	●	●			
LANDSCAPE									
	L501	MOBILITY HUB PLANTING PLAN	●	●	●	●			
	L502	MOBILITY HUB PLANTING PLAN	●	●	●	●			
	L503	FLEX SPACE PLANTING PLAN	●	●	●	●			
	L504	MOBILITY HUB PLANTING PLAN	●	●	●	●			
	L505	NORTH CAMPUS MALL PLANTING PLAN	●	●	●	●			
	L506	SOUTH RECREATION MALL PLANTING PLAN	●	●	●	●			
	L507	NORTH RECREATION MALL PLANTING PLAN	●	●	●	●			
	L508	NORTH RECREATION MALL PLANTING PLAN	●	●	●	●			
	L600	PLANT SCHEDULE	●	●	●	●			
	L601	PLANTING DETAILS	●	●	●	●			
	L602	PLANTING DETAILS	●	●	●	●			
ELECTRICAL									
	E001	SYMBOLS LIST	●	●	●	●			
	E101	SITE ELECTRICAL PLAN	●	●	●	●			
	E102	SITE ELECTRICAL PLAN	●	●	●	●			
	E103	SITE ELECTRICAL PLAN	●	●	●	●			
	E104	SITE ELECTRICAL PLAN	●	●	●	●			
	E105	SITE ELECTRICAL PLAN	●	●	●	●			
	E106	SITE ELECTRICAL PLAN	●	●	●	●			
	E107	CANOPY LIGHTING INSTALLATION DETAILS	●	●	●	●			
	E108A	SITE ELECTRICAL KIOSK PLANS	●	●	●	●			
	E108B	SITE ELECTRICAL KIOSK ELEVATIONS & SECTIONS			●	●			
	E108C	SITE ELECTRICAL KIOSK ELEVATIONS & SECTIONS			●	●			
	E401	SINGLE LINE DIAGRAM			●	●			
	E401A	SINGLE LINE DIAGRAM				●			
	E402	TRANSFORMER AND FEEDER SCHEDULES			●	●			
	E403	PANEL SCHEDULES			●	●			
	E404	DISTRIBUTED LIGHTING CONTROL SPECIFICATIONS			●	●			
	E405	DMX LIGHTING CONTROL DIAGRAM				●			
	E406	LIGHTING CONTROL PANEL				●			
	E501	LIGHTING FIXTURE SCHEDULES	●	●	●	●			
	E502	TITLE 24 EXTERIOR				●			
	E503	TITLE 24 EXTERIOR				●			
	E504	TITLE 24 INTERIOR				●			
	E701	MISCELLANEOUS DETAILS (EXTERIOR)	●	●	●	●			
	M001	LEGEND, SCHEDULES & NOTES	●	●	●	●			
	M002	TITLE 24 COMPLIANCE FORMS		●	●	●			
	M003	TITLE 24 COMPLIANCE FORMS			●	●			
	M004	TITLE 24 COMPLIANCE FORMS			●	●			
	M201	MECHANICAL FLOOR PLAN	●	●	●	●			
	M501	DETAILS	●	●	●	●			
PLUMBING									
	P001	LEGEND, SCHEDULES & NOTES	●	●	●	●			
	P101	PLUMBING FLOOR PLAN	●	●	●	●			
ENVIRONMENTAL GRAPHICS									
	EG100	SIGN LOCATIONS	●	●	●	●			
	EG101	SIGN LOCATIONS			●	●			
	EG102	SIGN LOCATIONS			●	●			
	EG103	DESIGN STANDARDS REFERENCE	●	●	●	●			
	EG104	CODE COMPLIANCE REFERENCE	●	●	●	●			
	EG105	A01 DESIGN DETAILS	●	●	●	●			
	EG106	A02 DESIGN DETAILS	●	●	●	●			
	EG107	A03, A04, A05, C03 DESIGN DETAILS	●	●	●	●			
	EG108	B01, B02, D01 DESIGN DETAILS			●	●			
	EG109	C01 DESIGN DETAILS			●	●			
	EG110	C02, DESIGN DETAILS				●			

SHEET #	TITLE	DATE 05/01/2018 DD SET	10/29/2018 50% CDs	11/27/2018 90% CDs	01/10/2019 100% CDs			
	UCR Mobility Hub Scope 2							
ARCHITECTURAL								
A101	SITE PLAN	●	●	●	●			
A102	SITE PLAN				●			
A111	CANOPY PLAN	●	●	●	●			
A112	CANOPY PLAN				●			
A121	KIOSK PLANS	●	●	●	●			
A122	KIOSK PLANS				●			
A211	CANOPY ELEVATIONS	●	●	●	●			
A221	KIOSK ELEVATIONS	●	●	●	●			
A222	KIOSK ELEVATIONS BEYOND RAIN SCREEN				●			
A321	KIOSK SECTIONS	●	●	●	●			
A322	KIOSK WALL SECTIONS	●	●	●	●			
A323	KIOSK WALL SECTIONS				●			
A421	KIOSK INTERIOR ELEVATIONS			●	●			
A501	KIOSK WATER PROOFING				●			
A511	CANOPY DETAILS	●	●	●	●			
A512	CANOPY DETAILS				●			
A513	CANOPY DETAILS				●			
A521	KIOSK DETAILS	●	●	●	●			
A522	KIOSK DETAIL PLANS	●	●	●	●			
A523	KIOSK DETAILS			●	●			
A524	KIOSK ROOF DETAILS			●	●			
A525	KIOSK DETAILS				●			
A531	PLANTER DETAILS			●	●			
A541	FENCE DETAILS			●	●			
A542	REC. MALL ALTERNATIVE SECTIONS & ELEV.				●			
A543	GATE DETAILS				●			
A601	DOOR AND WINDOW SCHEDULE			●	●			
A602	DOOR DETAILS			●	●			
A603	WINDOW DETAILS			●	●			
A604	WINDOW DETAILS				●			
A611	PARTITION TYPES			●	●			
A621	PANEL PATTERNS				●			
A622	PANEL PATTERNS				●			
A623	PANEL PATTERNS				●			
A624	PANEL PATTERNS				●			
A625	FENCE PANEL PATTERNS				●			
A626	RAMP PANEL PATTERNS				●			
A627	RAMP PANEL PATTERNS				●			
A641	ROOM FINISH SCHEDULE				●			
A872	ACOUSTIC TILE CEILING DETAILS				●			
A873	ACOUSTIC TILE CEILING DETAILS				●			
HARDSCAPE								
L001	OVERALL SITE PLAN	●	●	●	●			
L002	ABBREVIATIONS AND NOTES		●	●	●			
L003	MATERIALS AND AMENITIES SCHEDULE		●	●	●			
L101	MOBILITY HUB HARDSCAPE PLAN	●	●	●	●			
L102	MOBILITY HUB HARDSCAPE PLAN	●	●	●	●			
L103	NORTH CAMPUS MALL HARDSCAPE PLAN	●	●	●	●			
L104	SOUTH RECREATION MALL HARDSCAPE PLAN	●	●	●	●			
L105	NORTH RECREATION MALL HARDSCAPE PLAN	●	●	●	●			
L106	NORTH RECREATION MALL HARDSCAPE PLAN	●	●	●	●			
L110	ENLARGED PLAN	●	●	●	●			
L111	ENLARGED PLAN	●	●	●	●			
L112	SOUTH PARKLET ENLARGED PLAN	●	●	●	●			
L113	NORTH PARKLET ENLARGED PLAN	●	●	●	●			
L114	RAMP AND STAIRS ENLARGED PLAN		●	●	●			
~~L115~~	~~ENLARGED PLAN~~				●			
L120	MOBILITY HUB ENTRY SECTIONS & ELEVATIONS	●	●	●	●			
L121	MOBILITY HUB ENTRY SECTIONS & ELEVATIONS		●	●	●			
L122	RAMP AND STAIRS SECTIONS & ELEVATIONS		●	●	●			
L123	MOBILITY HUB MEDIAN FENCE PLAN				●			
L124	MOBILITY HUB ENTRY SECTIONS & ELEVATIONS				●			
L125	MOBILITY HUB ENTRY SECTIONS & ELEVATIONS				●			
L126	MOBILITY HUB ENTRY SECTIONS & ELEVATIONS				●			
L201	HARDSCAPE DETAILS	●	●	●	●			
L202	HARDSCAPE DETAILS	●	●	●	●			
L203	HARDSCAPE DETAILS	●	●	●	●			
L204	HARDSCAPE DETAILS	●	●	●	●			
L205	HARDSCAPE DETAILS		●	●	●			
L206	HARDSCAPE DETAILS		●	●	●			

SHEET #	TITLE	DATE 05/01/2018 DD SET	10/29/2018 50% CDs	11/27/2018 90% CDs	01/10/2019 100% CDs			
	UCR Mobility Hub Scope 2							
GENERAL								
---	COVER SHEET AND TITLE PAGE	●	●	●	●			
G001	SHEET INDEX	●	●	●	●			
G002	PROJECT INFO & ABBREVIATIONS			●	●			
G003	REFERNCE SYMBOLS			●	●			
G004	ACCESSIBILITY NOTES			●	●			
G005	GENERAL NOTES			●				
G006	GENERAL NOTES			●	●			
G007	GENERAL NOTES			●	●			
G101	ACCESSIBLE PATH PLAN			●	●			
G102	ACCESSIBLE PATH PLAN			●	●			
G103	ACCESSIBLE PATH PLAN			●	●			
G104	ACCESSIBLE PATH PLAN			●	●			
G105	ACCESSIBLE PATH PLAN			●	●			
G106	ACCESSIBLE PATH PLAN			●	●			
~~G254~~	~~GENERAL NOTES~~			●				
G260	MOUNTING HEIGHT DETAILS			●	●			
G300	EMERGENCY VEHICLE ACCESS DIAGRAM				●			
CIVIL								
C001	TITLE SHEET		●	●	●			
C100	OVERALL KEY MAP	●	●	●	●			
C101	SITE DEMOLITION PLAN	●	●	●	●			
C102	SITE DEMOLITION PLAN	●	●	●	●			
C103	SITE DEMOLITION PLAN	●	●	●	●			
C104	SITE DEMOLITION PLAN	●	●	●	●			
C105	SITE DEMOLITION PLAN	●	●	●	●			
C106	SITE DEMOLITION PLAN	●	●	●	●			
C201	HORIZONTAL CONTROL PLAN AND STRIPING		●	●	●			
C202	HORIZONTAL CONTROL PLAN AND STRIPING		●	●	●			
C203	HORIZONTAL CONTROL PLAN AND STRIPING		●	●	●			
C204	HORIZONTAL CONTROL PLAN AND STRIPING		●	●	●			
C205	HORIZONTAL CONTROL PLAN AND STRIPING		●	●	●			
C206	HORIZONTAL CONTROL PLAN AND STRIPING		●	●	●			
C301	GRADING AND PAVING PLAN	●	●	●	●			
C302	GRADING AND PAVING PLAN	●	●	●	●			
C303	GRADING AND PAVING PLAN	●	●	●	●			
C304	GRADING AND PAVING PLAN	●	●	●	●			
C305	GRADING AND PAVING PLAN	●	●	●	●			
C306	GRADING AND PAVING PLAN	●	●	●	●			
C401	CIVIL UTILITY PLAN	●	●	●	●			
C402	CIVIL UTILITY PLAN	●	●	●	●			
C403	CIVIL UTILITY PLAN	●	●	●	●			
C404	CIVIL UTILITY PLAN	●	●	●	●			
C405	CIVIL UTILITY PLAN	●	●	●	●			
C406	CIVIL UTILITY PLAN	●	●	●	●			
C901	CIVIL DETAILS	●	●	●	●			
C902	CIVIL DETAILS		●	●	●			
C903	CIVIL DETAILS		●	●	●			
C904	CIVIL DETAILS		●	●	●			
SIGNING AND STRIPING								
	TITLE SHEET		●	●	●			
	UNIVERSITY AVENUE & CANYON CREST		●	●	●			
XL780	SIGNAGE & STRIPING PLAN	●	●	●	●			
X559	TRAFFIC SIGNAL PLAN	●	●	●	●			
STRUCTURAL								
S001	GENERAL NOTES	●	●	●	●			
S002	GENERAL NOTES	●	●	●	●			
S100	TYPICAL CONCRETE DETAILS	●	●	●	●			
S101	TYPICAL CONCRETE DETAILS	●	●	●	●			
S102	TYPICAL CONCRETE DETAILS				●			
S120	TYPICAL STEEL DETAILS	●	●	●	●			
S121	TYPICAL STEEL DETAILS				●			
S200	CANOPY FOUNDATION AND ROOF FRAMING	●	●	●	●			
S201	KIOSK FOUNDATION AND ROOF FRAMING	●	●	●	●			
S202	HARDSCAPE FRAMING PLAN AND DETAILS				●			
S301	CANOPY ELEVATIONS AND SECTIONS	●	●	●	●			
S302	CANOPY DETAILS				●			
S303	CANOPY DETAILS				●			
S401	RETAINING WALLS	●	●	●	●			

UNIVERSITY OF CALIFORNIA RIVERSIDE — LET THERE BE LIGHT

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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CONSULTANT

ARCHITECT/ENGINEER SEAL

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KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD-BID SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	.
DRAWN BY	SS
CHECKED BY	DH
SCALE	NTS
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

SHEET INDEX

SHEET TITLE

G001

SHEET NO.

STANDARD ABBREVIATIONS

ACC.	ACCESSIBLE
A.D.	AREA DRAIN
ADJ.	ADJACENT OR ADJUSTABLE
AFF.	ABOVE FINISH FLOOR
ALT.	ALTERNATE
APPROX.	APPROXIMATE
ARCH.	ARCHITECT (URAL)
BLDG.	BUILDING
BO.	BOTTOM OF
CB.	CATCH BASIN
C.L. or ℄	CENTER LINE
CLG.	CEILING
CLR.	CLEAR
C.M.U.	CONCRETE MASONRY UNIT
CONT.	CONTINUOUS
CTR.	CENTER
C.W.	COLD WATER
DIA.	DIAMETER
D.F.	DRINKING FOUNTAIN
DIM.	DIMENSION
DN.	DOWN
D.S.	DOWNSPOUT
DWG.	DRAWING
EA.	EACH
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEC.	ELECTRICAL
E.O.	EDGE OF
EQ.	EQUAL
EXIST.	EXISTING
EXP.	EXPANSION
EXT.	EXTERIOR
F.A.	FIRE ALARM
F.B.O.	FURNISHED BY OWNER
F.D.	FLOOR DRAIN
F.D.C.	FIRE DEPARTMENT CONNECTION
F.E.C.	FIRE EXTINGUISHER CABINET
F.E.H.	FIRE EXTENSION HOOK
F.F.	FINISH FACE OR FLOOR
F.L.	FLOW LINE
FLR.	FLOOR
F.O.	FACE OF
F.O.C.	FACE OF CONCRETE
F.O.F.	FACE OF FINISH
F.O.M.	FACE OF MASONRY
F.O.S.	FACE OF STUD
F.S.	FINISHED SURFACE
GA.	GAUGE
H.C.	ACCESSIBLE
HP	HIGH PERFORMANCE COATING
H.P.	HIGH POINT
HT.	HEIGHT
H.W.	HOT WATER
I.D.	INSIDE DIAMETER
INT.	INTERIOR
JT.	JOINT
M	METER
MAX.	MAXIMUM
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MIR.	MIRROR OR OPPOSITE HAND
MISC.	MISCELLANEOUS
mm	MILLIMETER
M.O.	MASONARY OPENING
MTD.	MOUNTED
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER OR OVERFLOW DRAIN
P.L. or ℙ	PROPERTY LINE
QTY.	QUANTITY
R.	RISER OR RADIUS
RD.	ROOF DRAIN
REF.	REFERENCE
REINF.	REINFORCED
RM.	ROOM
R.O.	ROUGH OPENING
SECT.	SECTION
SIM.	SIMILAR
SPEC.	SPECIFICATIONS
SQ.	SQUARE
SF.	SQUARE FOOT
STD.	STANDARD
SYM.	SYMMETRICAL
T.	TREAD
TEL.	TELEPHONE
TEMP.	TEMPERED
T.O.C.	TOP OF CURB
T.O.P.	TOP OF PARAPET
T.O.R.	TOP OF ROOF
T.O.S.	TOP OF STRUCTURE
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VAR.	VARIES
V.I.F.	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
&	AND
<	ANGLE OR LESS THAN
@	AT
℄	CENTERLINE
[	CHANNEL
ø	DIAMETER OR ROUND
#	NUMBER

PROJECT IDENTIFICATION

OWNER:
UC RIVERSIDE
1223 UNIVERSITY AVE. SUITE 240
RIVERSIDE, CA 92507
TEL. NO. (951) 827-2269

PROJECT ADDRESS:
1223 UNIVERSITY AVE.
RIVERSIDE, CA 92507

LEGAL DESCRIPTION:
[ENTER LEGAL DESCRIPTION PROVIDED BY OWNER]

PROJECT DESCRIPTION:
MOBILITY HUB & CENTRAL CAMPUS LINKAGE

APPLICABLE BUILDING CODE:
2016 CALIFORNIA BUILDING CODE (CBC) – PART 2, TITLE 24, CCR

2016 CALIFORNIA ELECTRICAL CODE (CEC) – PART 3, TITLE 24, CCR

2016 CALIFORNIA MECHANICAL CODE (CMC) – PART 4, TITLE 24, CCR

2016 CALIFORNIA PLUMBING CODE (CPC) – PART 5, TITLE 24, CCR

2016 CALIFORNIA FIRE CODE (CFC) – PART 9, TITLE 24, CCR

2016 CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBSC) – PART 11, TITLE 24, CCR

2016 BUILDING STANDARDS CODE – PART 12, TITLE 24, CCR

AMERICANS WITH DISABILITIES ACT (ADA), PER 2016 EDITION CBC

NFPA 14, INSTALLATION OF STANDPIPE AND HOSE SYSTEMS, 2016 EDITION

NFPA 24, PRIVATE FIRE SERVICE MAIN AND THEIR APPURTENANCES, 2016 EDITION

NFPA 2016 EDITION – CLEAN AGENT FIRE EXTINGUISHER SYSTEMS

INDUSTRIAL RISK INSURERS, IRI – FOR DESIGN OF FIRE PROTECTION SYSTEMS

ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA), 10TH EDITION

ALL ELECTRICAL MATERIALS AND EQUIPMENT LISTED AND LABELED BY UNDERWRITERS LABORATORIES

DESCRIPTION:
NEW CONSTRUCTION – ONE STORY KIOSK & EXTERIOR BUS PLATFORM

CONSTRUCTION TYPE:
TYPE V-B – KIOSK
TYPE II-B – EXTERIOR BUS PLATFORM

FIRE PROTECTION:
NON-SPRINKLERED

FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS SHALL BE AS REQUIRED BY CBC CHAPTER 6 TABLE 601:

PRIMARY STRUCTURAL FRAME:	0 HOUR
BEARING WALLS:	
EXTERIOR:	0 HOUR
INTERIOR:	0 HOUR
NONBEARING WALLS:	
INTERIOR:	(SEE PARTITION SCHEDULE)
FLOOR AND ASSOCIATED SECONDARY MEMBERS:	0 HOUR
ROOF AND ASSOCIATED SECONDARY MEMBERS:	0 HOUR
SHAFT ENCLOSURES:	0 HOUR

IN ADDITION, FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE SHALL BE AS REQUIRED BY CBC CHAPTER 6, TABLE 602.

FIRE SEPARATION DISTANCE	OCCUPANCY GROUP: B
X < 5	1 HOUR
5 ≤ X < 10	1 HOUR
10 ≤ X < 30	0 HOUR
X ≥ 30	0 HOUR

ALLOWABLE HEIGHT:
40'-0" MAX. – KIOSK (PER CBC TABLE 504.3)
55'-0" MAX. – EXTERIOR BUS PLATFORM

BUILDING HEIGHT:
13'-6" – KIOSK
24'-3" – EXTERIOR BUS PLATFORM

BUILDING OCCUPANCIES:
A-3 (ASSEMBLY) – EXTERIOR BUS PLATFORM
B (BUSINESS) – KIOSK

BUILDING AREA:
282 SF – KIOSK
3,342 SF – PER BUS PLATFORM CANOPY

ALLOWABLE AREA PER CBC 506.2:
9,000 SF – KIOSK
9,500 SF – PER BUS PLATFORM CANOPY

BASELINE CALCULATIONS

BUILDING AREA (GFA):

TOTAL SITE AREA: 300,000 S.F.

TOTAL BULIDING AREA: 10,308 S.F.

PER APPLICABLE TABLE: CBC TABLE 506

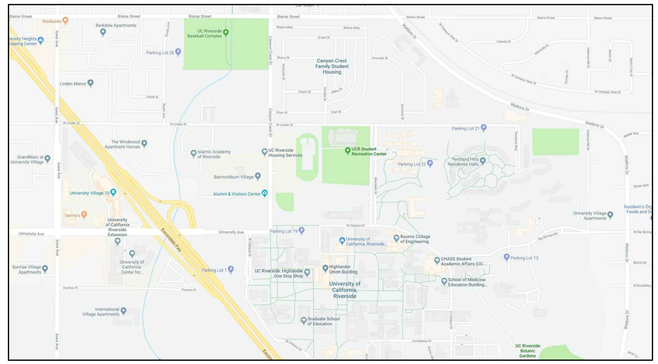
ZONING INFORMATION:

DEFERRED SUBMITTALS

THE FOLLOWING ITEMS WILL BE SUBMITTED SEPARATELY FROM THE PLAN CHECK SUBMITTAL:

1. GUARDRAIL SYSTEM
2. SITE FENCE

VICINITY MAP



PROJECT SITE MAP

MOBILITY HUB
AND CENTRAL CAMPUS
LINKAGES

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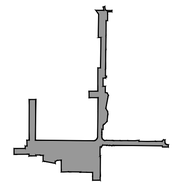

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KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES

DRAWN BY

CHECKED BY

SCALE SHEET

DATE

PROJECT NO. GRUEN # 8345

PROJECT INFO & ABBREVIATIONS

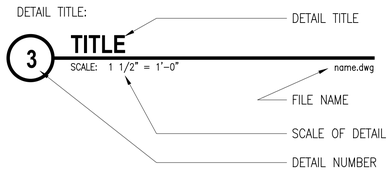
SHEET TITLE

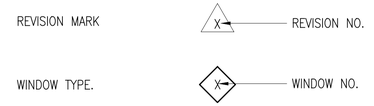
G002

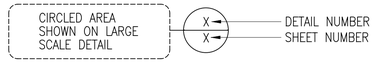
SHEET NO.

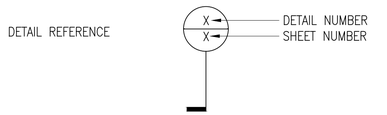
REFERENCE SYMBOLS

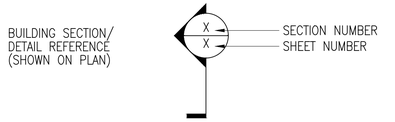
DETAIL TITLE:

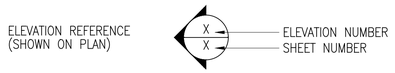


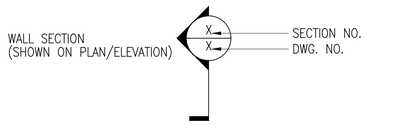


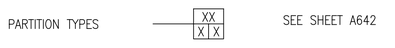


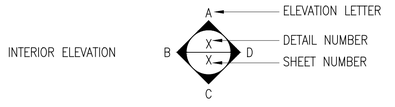


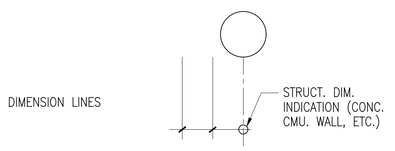












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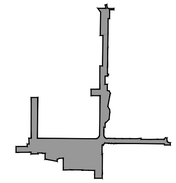

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DATE

PROJECT NO. GRUEN # 8345

REFERENCE SYMBOLS

SHEET TITLE

G003

SHEET NO.

8. ALL BRAILLE SHALL BE GRADE 2, ROUNDED OR DOMED CALIFORNIA BRAILLE DOTS.

8.1 BRAILLE DOTS ARE 1/10 INCH ON CENTER IN EACH CELL WITH 3/10 INCH SPACE BETWEEN CELLS, MEASURED FROM THE SECOND COLUMN OF DOTS IN THE FIRST CELL TO THE FIRST COLUMN OF DOTS IN THE SECOND CELL.

8.2 BRAILLE DOTS ARE RAISED A MINIMUM OF 1/40 INCH ABOVE THE BACKGROUND. (11B–703.3)

9. CONTROLS AND OPERATING MECHANISMS, INCLUDING DISPENSERS, FIRE EXTINGUISHER CABINET DOORS, BOOKDROP DOORS, RECEPTACLES OR OTHER OPERABLE EQUIPMENT, SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE GRASPING, PINCHING OR TWISTING OF THE WRIST. OPERABLE PORTIONS SHALL NOT REQUIRE GREATER THAN 5 POUNDS OPERATING FORCE. (11B–205) (11B–309)

M. MISCELLANEOUS REQUIREMENTS

1. THE BOTTOM OF RECEPTACLE OUTLETS SHALL BE NOT LESS THAN 15 INCHES ABOVE THE FLOOR OR WORKING PLATFORM. (11B–308.2.1)

2. THE CENTER OF THE GRIP OF THE OPERATING HANDLE OF SWITCHES INTENDED TO BE USED BY THE OCCUPANT OF THE ROOM OR AREA TO CONTROL LIGHTING AND RECEPTACLE OUTLETS, APPLIANCES, OR COOLING, HEATING AND VENTILATING EQUIPMENT SHALL BE NOT LESS THAN 3 FEET NOR MORE THAN 4 FEET ABOVE THE FLOOR OR WORK PLATFORM. (11B–308.2.2)

3. THE HIGHEST POINT OF ACTIVATING HANDLE OR LEVER OF FIRE ALARM INITIATING DEVICES (BOXES) SHALL BE LOCATED 48 INCHES ABOVE THE LEVEL OF THE FLOOR, WORK PLATFORM, GROUND SURFACE OR SIDEWALK.

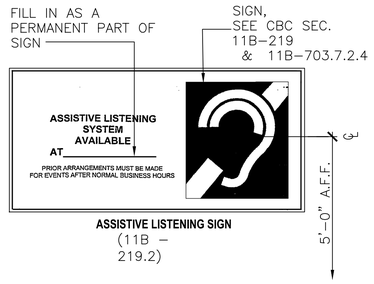
4. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE THE STANDARD USED TO IDENTIFY FACILITIES THAT ARE ACCESSIBLE TO AND USABLE BY PHYSICALLY DISABLED PERSONS. THE SYMBOL SPECIFIED ABOVE SHALL CONSIST OF A WHITE FIGURE ON A BLUE BACKGROUND. THE BLUE SHALL BE EQUAL TO COLOR FS 15090 IN FEDERAL STANDARD 595C. (11B–703.7.2.1)

5. EMERGENCY WARNING SYSTEMS SHALL ACTIVATE A MEANS OF WARNING THE HEARING IMPAIRED. FLASHING VISUAL WARNING SHALL HAVE A FREQUENCY OF NOT MORE THAN 60 FLASHES PER MINUTE.

5.1. THE LAMP SHALL BE A XENON STROBE TYPE OR EQUIVALENT.
5.2. THE COLOR SHALL BE CLEAR OR NORMAL WHITE (I.E. UNFILTERED OR CLEAR FILTERED WHITE LIGHT).
5.3. THE MAXIMUM PULSE DURATION SHALL BE TWO–TENTHS OF ONE SECOND (0.2 SEC) WITH A MAXIMUM DUTY CYCLE OF 40 PERCENT. THE PULSE DURATION IS DEFINED AS THE TIME INTERVAL BETWEEN INITIAL AND FINAL POINTS OF 10 PERCENT OF MAXIMUM SIGNAL.
5.4. THE INTENSITY SHALL BE A MINIMUM OF 75 CANDELA.
5.5. THE FLASH RATE SHALL BE A MINIMUM OF 1 HZ AND A MAXIMUM OF 3 HZ.
5.6. THE APPLIANCE SHALL BE PLACED 80 INCHES ABOVE THE HIGHEST FLOOR LEVEL WITHIN THE SPACE OR 6 INCHES BELOW THE CEILING, WHICHEVER IS LOWER. CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE ON LOCATION AND COLOR OF BACK PLATE (TYPICALLY WHITE).
5.7. IN GENERAL, NO PLACE IN ANY ROOM OR SPACE REQUIRED TO HAVE A VISUAL SIGNAL APPLIANCE SHALL BE MORE THAN 50 FEET FROM THE SIGNAL (IN THE HORIZONTAL PLANE). IN LARGE ROOMS AND SPACES EXCEEDING 100 FEET ACROSS, WITHOUT OBSTRUCTIONS 6 FEET ABOVE THE FINISH FLOOR, SUCH AS AUDITORIUMS, DEVICES MAY BE PLACED AROUND THE PERIMETER, SPACED AT A MAXIMUM 100 FEET APART, IN LIEU OF SUSPENDING APPLIANCES FROM THE CEILING.
5.8. NO SPACE IN COMMON CORRIDORS OR HALLWAYS IN WHICH VISUAL ALARM SIGNALLING APPLIANCES ARE REQUIRED SHALL BE MORE THAN 50 FEET FROM THE SIGNAL.

6. WHERE EXIT SIGNS ARE REQUIRED, TACTILE EXIT SIGNAGE COMPLYING WITH CBC SECTION 11B–703.2 SHALL BE PROVIDED IN ACCORDANCE WITH CBC SECTION 1013.4

7. PROVIDE ASSISTIVE LEARNING SYSTEMS PER ACCESSIBILITY PLANS. PROVIDE ROOM SIGNAGE AS FOLLOWS:



ASSISTIVE LISTENING SIGN (11B – 219.2)

E. FLOORS AND LEVELS

1. ALL FLOOR SURFACES SHALL BE SLIP RESISTANT WITH AN INDIVIDUAL STATIC COEFFICIENT OF FRICTION OF 0.6 OR GREATER PER ASTM C1028 (MODIFIED BY CERAMIC TILE INSTITUTE). (11B–302.1)

2. ABRUPT CHANGES IN LEVEL SHALL NOT EXCEED 1/2 INCH. LEVEL CHANGES NOT EXCEEDING 1/4 INCH MAY BE VERTICAL, CHANGES IN LEVEL BETWEEN 1/4 INCH AND 1/2 INCH SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2. (11B–303.3)

F. CORRIDORS AND AISLES

1. EVERY PORTION OF EVERY BUILDING WHERE THERE ARE INSTALLED SEATS, TABLES, MERCHANDISE, EQUIPMENT OR SIMILAR ITEMS, SHALL BE PROVIDED WITH AISLES LEADING TO AN EXIT.

1.1 EVERY AISLE SHALL BE NOT LESS THAN 3 FEET WIDE IF SERVING ONLY ONE SIDE, AND NOT LESS THAN 4 FEET WIDE IF SERVING BOTH SIDES. SUCH MINIMUM WIDTH SHALL BE MEASURED AT THE POINT FARTHEST FROM AN EXIT. CROSS AISLE OR FOYER SHALL BE INCREASED BY 1–1/2 INCHES FOR EACH 5 FEET IN LENGTH TOWARD THE EXIT, CROSS AISLE OR FOYER. (1018.1)(1029.9)

G. HAZARDS AND PROTRUDING OBJECTS

7. OBJECTS PROJECTING FROM WALLS WITH THEIR LEADING EDGES BETWEEN 27 INCHES AND 80 INCHES ABOVE THE FINISHED FLOOR SHALL PROTRUDE NO MORE THAN 4 INCHES INTO WALKS, HALLS, CORRIDORS, PASSAGEWAYS AND AISLES. (1003.3.2)(11B–307.2)

8. OBJECTS MOUNTED WITH THEIR LEADING EDGES AT OR BELOW 27 INCHES ABOVE THE FINISHED FLOOR MAY PROTRUDE ANY AMOUNT.

9. FREE–STANDING OBJECTS MOUNTED ON POSTS OR PYLONS MAY OVERHANG 12 INCHES MAXIMUM FROM 27 INCHES TO 80 INCHES ABOVE THE GROUND OR FINISHED FLOOR. (11B–307.3)

10. PROTRUDING OBJECTS SHALL NOT REDUCE THE CLEAR WIDTH OF AN ACCESSIBLE ROUTE OR MANEUVERING SPACE. (11B–307.5)

11. ANY OBSTRUCTION OVERHANGING A PEDESTRIAN WAY SHALL BE A MINIMUM OF 80 INCHES ABOVE THE WALKING SURFACE AS MEASURED TO THE BOTTOM OF THE OBSTRUCTION. (11B–307.3)

12. WALKS, HALLS, CORRIDORS, PASSAGEWAYS, AISLES OR OTHER CIRCULATION SPACES SHALL HAVE 80 INCHES MINIMUM CLEAR HEAD ROOM. (1003.3.1)

13. ABRUPT CHANGES IN LEVEL, EXCEPT BETWEEN A WALK OR SIDEWALK AND ADJACENT STREET OR DRIVEWAY, EXCEEDING 4 INCHES IN A VERTICAL DIMENSION, SUCH AS AT PLANTERS OR FOUNTAINS LOCATED IN OR ADJACENT TO WALKS, SIDEWALKS OR OTHER PEDESTRIAN WAYS SHALL BE IDENTIFIED BY CURBS PROJECTING AT LEAST 6 INCHES IN HEIGHT ABOVE THE WALK OR SIDEWALK SURFACE TO WARN THE BLIND OF A POTENTIAL DROP–OFF. WHEN A GUARDRAIL OR HANDRAIL IS PROVIDED, OR WHEN A GUIDE RAIL IS PROVIDED WITH ITS CENTER 3 INCHES PLUS OR MINUS 1 INCH ABOVE THE SURFACE OF THE WALK OR SIDEWALK, OR IF THE WALK IS 5% OR LESS GRADIENT OR NO ADJACENT HAZARD EXISTS, NO CURB IS REQUIRED. (11B–303.5)

K. DRINKING FOUNTAINS

1. DRINKING FOUNTAINS SHALL BE LOCATED COMPLETELY WITHIN ALCOVES OR OTHERWISE POSITIONED SO AS NOT TO ENCROACH INTO PEDESTRIAN WAYS. THE ALCOVE SHALL BE NOT LESS THAN 32 INCHES IN WIDTH AND 18 INCHES IN DEPTH. IF THE ALCOVE IS GREATER THAN 24 INCHES DEEP, THE WIDTH SHALL BE 36 INCHES WIDE MINIMUM. (11B–305)(11B–306)

2. THE BUBBLER SHALL BE ACTIVATED BY A CONTROL, WHICH IS EASILY OPERATED BY A DISABLED PERSON SUCH AS A HAND–OPERATED LEVER TYPE CONTROL LOCATED WITHIN 6 INCHES OF THE FRONT OF THE DRINKING FOUNTAIN. THE BUBBLER OUTLET ORIFICE SHALL BE LOCATED WITHIN 5 INCHES OF THE FRONT OF THE DRINKING FOUNTAIN AND SHALL BE WITHIN 36 INCHES OF THE FLOOR. THE WATER STREAM FROM THE BUBBLER SHALL BE SUBSTANTIALLY PARALLEL TO THE FRONT OF THE DRINKING FOUNTAIN AND PROVIDE A FLOW OF AT LEAST 4 INCHES HIGH. (11B–602.5)(11B–602.6)

10. ALL WALKS WITH A CONTINUOUS GRADIENT SHALL HAVE LEVEL AREAS AT LEAST 5 FEET IN LENGTH AT INTERVALS OF AT LEAST 400 FEET. (1113A.2)(11B–403.7)

C. RAMPS

1. ANY PATH OF TRAVEL SHALL BE CONSIDERED A RAMP IF ITS SLOPE IS GREATER THAN 1 FOOT RISE IN 20 FEET (5%) OF HORIZONTAL RUN. (1003.5)(202)

2. THE MAXIMUM SLOPE OF A RAMP THAT SERVES ANY EXITWAY, PROVIDES ACCESSIBILITY, OR IS IN THE PATH OF TRAVEL SHALL BE 1 FOOT RISE IN 12 FEET (8.33%) OF HORIZONTAL RUN. (1012.2)(11B–405.2)

3. THE CROSS SLOPE ON A RAMP OR THE SLOPE ACROSS A RAMP OR LANDING IN ANY DIRECTION SHALL NOT EXCEED 1/4 INCH PER RISE IN 1 FOOT OF HORIZONTAL RUN (2% GRADIENT). (1012.3)(11B–405.3)

4. THE SURFACE OF RAMPS SHALL BE STABLE, FIRM, AND SLIP RESISTANT. SEE FLOORS AND LEVELS. (1012.7.1)

5. THE SURFACE OF EACH CURB RAMP AND ITS FLARED SIDES SHALL BE SLIP RESISTANT AND SHALL BE OF CONTRASTING FINISH FROM THAT OF THE ADJACENT SIDEWALK. (11B–406.5.4)

D. ENTRANCES

1. ALL ACCESSIBLE ENTRANCES SHALL BE IDENTIFIED WITH AT LEAST ONE STANDARD SIGN AND WITH ADDITIONAL DIRECTIONAL SIGNS AS REQUIRED, VISIBLE FROM APPROACHING PEDESTRIAN TRAFFIC WAYS. (11B–216.6)

2. WHEN AN AUTOMATIC DOOR OPERATOR IS UTILIZED TO OPERATE A PAIR OF DOORS, AT LEAST ONE OF THE DOORS SHALL PROVIDE A CLEAR UNOBSTRUCTED OPENING OF 32 INCHES WITH THE DOOR POSITIONED AT AN ANGLE OF 90 DEGREES FROM ITS CLOSED POSITION. (11B–404.3.1)

3. LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND ARE IN A PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER HARDWARE, PANIC BARS, PUSH–PULL ACTIVATING BARS, OR OTHER TYPE HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE. (1126A.6)(11B–309.4)

4. HAND ACTIVATED DOOR OPENING HARDWARE SHALL BE CENTERED BETWEEN 34 INCHES AND 44 INCHES ABOVE THE FLOOR. (11B–404.2.7) (1126A.6)

5. THE BOTTOM 10 INCHES OF ALL DOORS EXCEPT AUTOMATIC SLIDING DOORS AND SOLID GLASS DOORS SHALL HAVE A SMOOTH UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. WHERE NARROW FRAME DOORS ARE USED, A 10 INCH HIGH SMOOTH PANEL SHALL BE INSTALLED ON THE PUSH SIDE OF THE DOOR, WHICH WILL ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. (11B–404.2.10)

2. THE MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 POUNDS FOR DOORS. SUCH PUSH OR PULL EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHEN FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED BUT NOT TO EXCEED 15 POUNDS. (11B–404.2.9)

3. IF THE DOOR HAS A CLOSER, THEN THE SWEEP PERIOD OF THE CLOSER SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE DOOR WILL TAKE AT LEAST 5 SECONDS TO MOVE TO A POSITION OF 12 DEGREES FROM THE LATCH. (11B–404.2.8.1)

4. WHEN TURNSTILES ARE UTILIZED IN A FACILITY FOR THE PURPOSE OF PROVIDING FULLY CONTROLLED ACCESS, A DOOR OR GATE THAT IS ACCESSIBLE TO THE PHYSICALLY DISABELED SHALL BE PROVIDED ADJACENT TO OR WITHIN A DISTANCE NOT TO EXCEED 30 FEET FROM SUCH TURNSTILE EXIT OR ENTRANCE.

ACCESSIBILITY

A. SITE ACCESSIBILITY

1. SURFACE SLOPES OF ACCESSIBLE PARKING SPACES SHALL NOT EXCEED 1/4–INCH PER FOOT (2% GRADIENT) IN ANY DIRECTION. (11B–502.4)

2. ALL ACCESSIBLE PARKING SPACES AND VEHICLE ACCESS TO AND FROM ACCESSIBLE PARKING SPACES INCLUDING THE DRIVEWAY, AISLE AND STALL AREA, SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 8'–2". (11B–502.5)

3. EACH ACCESSIBLE SPACE SHALL BE IDENTIFIED BY A PERMANENTLY AFFIXED REFLECTORIZED SIGN CONSTRUCTED OF PORCELAIN ON STEEL, BEADED TEXT, OR EQUAL, DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. THE SIGN SHALL NOT BE SMALLER THAN 70 SQUARE INCHES IN AREA AND SHALL BE CENTERED AT THE INTERIOR END OF THE PARKING SPACE AT A MINIMUM HEIGHT OF 60 INCHES FROM THE BOTTOM OF THE SIGN TO THE PARKING SPACE FINISHED GRADE OR CENTERED ON THE WALL AT THE INTERIOR END OF THE PARKING SPACE. (11B–502.6)

4. A SIGN SHALL BE POSTED, IN A CONSPICUOUS PLACE, AT EACH ENTRANCE TO THE OFF–STREET PARKING FACILITY OR IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH STALL OR SPACE. THE SIGN SHALL BE NOT LESS THAN 17 INCHES x 22 INCHES IN SIZE WITH LETTERING NOT LESS THAN 1 INCH IN HEIGHT, WHICH CLEARLY AND CONSPICUOUSLY STATES THE FOLLOWING: "UNAUTHORIZED VEHICLES PARKED IN DESIGNATED ACCESSIBLE SPACES NOT DISPLAYING DISTINGUISHING PLACARDS OR LICENSEE PLATES ISSUED FOR PERSONS WITH DISABLITIES MAY BE TOWED AWAY AT OWNER'S EXPENSE. TOWED VEHICLES MAY BE RECLAIMED AT ..... OR BY TELEPHONING ....." (11B–502.8)

5. IN ADDITION TO THE ABOVE SIGNAGE REQUIREMENTS, THE SURFACE OF EACH PARKING SPACE SHALL HAVE A SURFACE IDENTIFICATION DUPLICATING THE SYMBOL OF ACCESSIBILITY CONSISTING OF A WHITE FIGURE ON A BLUE BACKGROUND, AT LEASE 3 FOOT SQUARE. (11B–502.6.4.1)

B. WALKS AND SIDEWALKS

1. WALKS AND SIDEWALKS SUBJECT TO THESE REGULATIONS SHALL HAVE A CONTINUOUS COMMON SURFACE, NOT INTERRUPTED BY STEPS OR BY ABRUPT CHANGES IN LEVEL EXCEEDING 1/2 INCH AND SHALL BE A MINIMUM OF 48 INCHES WIDE. (3306.2)(11B–403.4)

2. SURFACES WITH A SLOPE OF LESS THAN 6% GRADIENT SHALL BE AT LEAST AS SLIP–RESISTANT AS THAT DESCRIBED AS A MEDIUM SALTED FINISH.

3. SURFACES WITH A SLOPE OF 6% GRADIENT OR GREATER SHALL BE SLIP RESISTANT.

4. WHERE THE SLOPE IN THE DIRECTION OF TRAVEL OF ANY WALK EXCEEDS (1) ONE TO (20) TWENTY HORIZONTAL GRADIENT (5%), IT SHALL COMPLY WITH THE PROVISIONS FOR PEDESTRIAN RAMPS. (1113A.3)(11B–403.3)

5. SURFACE CROSS SLOPES SHALL NOT EXCEED 1/4 INCH PER FOOT. (1114.2.1)(11B–403.3)

6. WALKS, SIDEWALKS, AND PEDESTRIAN WAYS SHALL BE FREE OF GRATINGS WHEREVER POSSIBLE. FOR GRATINGS LOCATED IN THE SURFACE OF ANY OF THESE AREAS, GRID OPENINGS SHALL BE LIMITED TO 1/2 INCH IN THE DIRECTION OF TRAFFIC FLOW. (1113A.5)(11B–302.3)

7. ABRUPT CHANGES IN LEVEL ALONG ANY ACCESSIBLE ROUTE SHALL NOT EXCEED 1/2 INCH. WHEN CHANGES IN LEVEL DO OCCUR, THEY SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2, EXCEPT THAT LEVEL CHANGES NOT EXCEEDING 1/4 INCH MAY BE VERTICAL. (11B–303.3)

8. WHEN CHANGES IN LEVELS GREATER THAN 1/2 INCH ARE NECESSARY, THEY SHALL COMPLY WITH THE REQUIEMENTS FOR CURB RAMPS. (11B–303.4)

9. WALKS SHALL BE PROVIDED WITH A LEVEL AREA NOT LESS THAN 60 INCHES BY 60 INCHES AT A DOOR OR GATE THAT SWINGS TOWARD THE WALK, AND NOT LESS THAN 48 INCHES BY 44 INCHES DEEP AT A DOOR OR GATE THAT SWINGS AWAY FROM THE WALK. SUCH WALKS SHALL EXTEND 24 INCHES TO THE SIDE OF THE STRIKE EDGE OF A DOOR OR GATE THAT SWINGS TOWARD THE WALK. (1126A)(11B–404)

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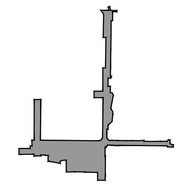

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ACCESSIBILITY NOTES

SHEET TITLE

G004

SHEET NO.

4. SIGNS AND GRAPHICS SHALL INCLUDE BUT NOT NECESSARY BE LIMITED TO THE FOLLOWING. ALL SIGNS SHALL BE INSTALLED PRIOR TO ISSUING A CERTIFICATE OF OCCUPANCY.

   4.1 BUILDING ADDRESS
   4.2 BUILDING ENTRANCE INCLUDING ACCESSIBILITY AND NO SMOKING
   4.3 BUILDING EXIT
   4.4 ROOM CAPACITY (50 OR MORE OCCUPANTS)
   4.5 EQUIPMENT ROOM (DANGER)
   4.6 THIS EXIT TO REMAIN UNLOCKED WHEN THIS BUILDINGS OCCUPIED
   4.7 SIGNAGE SHOWING DISABLED ACCESS
   4.8 STAIR LEVEL, ACCESS AND LIMITS
   4.9 ELEVATOR VESTIBULE EMERGENCY EXITS (USE STAIRWAY IN CASE OF FIRE)
   4.10 TOILET LOGO (MEN, WOMEN, DISABLED ACCESS)

5. METAL LOUVERS IN DOORS SHALL BE PAINTED TO MATCH COLOR OF DOOR. WHERE FIRE DAMPERS ARE REQUIRED, FIRE RATING OF DAMPER SHALL MATCH RATING OF THE DOOR.

110 - EQUIPMENT

NOT USED

120 - FURNISHINGS

NOT USED

130 - SPECIAL CONSTRUCTION

1. TELEVISION ANTENNA CROSS ARMS OR OTHER ROOF OBSTRUCTIONS SHALL BE LOCATED 7 FEET MINIMUM ABOVE THE ROOF IF THE SLOPE IS LESS THAN 30 DEGREES.

14. A PROFESSIONAL ENGINEER, RETAINED BY THE CONTRACTOR, REGISTERED IN THE STATE OF CALIFORNIA, SHALL ENGINEER AND CERTIFY THE STRUCTURAL CALCULATIONS OF THE CURTAINWALL ANCHORAGE AND FRAMING COMPONENTS WITHIN THE PERFORMANCE AND CODE CRITERIA. CALCULATIONS SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER OF RECORD AND SUBMITTED TO BUILDING DEPARTMENT FOR PERMIT REVIEW PROCESS.

15. PERFORMANCE CRITERIA SHALL BE THOSE SPECIFIED WHICH MAY INCLUDE BUT NOT NECESSARILY BE LIMITED TO THE FOLLOWING:

   15.1 THERMAL MOVEMENT ALLOWANCE
   15.2 AIR INFILTRATION LIMITATION
   15.3 TOTALLY WATER TIGHT ENCLOSURE
   15.4 DESIGNED TO WITHSTAND WIND LOADS
   15.5 DESIGNED TO WITHSTAND WINDOW WASHING EQUIPMENT IMPOSED LOADS
   15.6 CODE COMPLIANCE WITH SEISMIC LATERAL FORCE REQUIREMENTS
   15.7 ANCHORAGE TO STRUCTURAL SUPPORT FRAMING

16. THE UNLATCHING OF ANY LEAF SHALL NOT REQUIRE MORE THAN 15 LBS OPERATION.

090 - FINISHES

1. ALL FIRE RESISTIVE PARTITIONS SHALL EXTEND FROM THE FLOOR SLAB TO UNDERSIDE OF FLOOR OR ROOF CONSTRUCTION ABOVE, UNLESS OTHERWISE NOTED ON THE PLANS. ALL OPENINGS THROUGH FIRE RATED PARTITIONS SHALL BE PROTECTED WITH APPROVED FIRE RATED ASSEMBLIES. 1–HOUR AND 2–HOUR FIRE RESISTIVE PARTITIONS SHALL BE TYPE "X" GYPSUM BOARD. PROVIDE AND INSTALL APPROVED DAMPERS FOR ALL DUCTS PENETRATING FIRE RESISTIVE PARTITIONS.

2. INTERIOR WALLS AND CEILING FINISHES SHALL BE INSTALLED IN ACCORDANCE WITH CBC CHAPTER 8. FLAME SPREAD RATINGS SHALL COMPLY WITH SECTION 803.1.1.

3. WHERE GYPSUM BOARD LAYERS DIFFER, STUDS ARE TO BE OFFSET TO PERMIT A CONTINUOUS SMOOTH FINISH LINE IN ALL CORRIDORS OR WHERE SUCH CONDITIONS OCCUR UNLESS OTHERWISE NOTED.

4. ANY DECORATION SHALL BE NON–COMBUSTIBLE OR MEET THE FLAME PROPAGATION PERFORMANCE CRITERIA OF NFPA 701 IN ACCORDANCE WITH CBC SECTION 806.2.

5. WALL AND COLUMN GYPSUM BOARD FACING TO EXTEND 6 INCHES MINIMUM ABOVE CEILING UNLESS REQUIRED TO EXTEND TO STRUCTURE ABOVE.

6. FINISH INDICATED ON SCHEDULE IN WALL AND BASE COLUMNS SHALL APPLY TO ALL WALLS AND COLUMNS WITHIN THE AREA UNLESS OTHERWISE NOTED.

7. PAINT LADDERS, RAILINGS, LOUVERS, STAIR RAILS, TREADS, RISERS AND STRINGERS AND OTHER FERROUS METALS NOT PREFINISHED PER SPECIFICATIONS.

8. ALL CEILING HEIGHTS ARE FROM TOP OF FINISH FLOOR TO FINISHED CEILING UNLESS OTHERWISE NOTED AS DEFINED IN SECTION 000–5.

9. PROVIDE MIN. 12 GAUGE CONCEALED BACKING PLATES IN LENGTHS AND WIDTHS TO ACCOMMODATE THE DIFFERENT CONFIGURATIONS OF WALL MOUNTED EQUIPMENT. BACKING PLATES SHALL BE SECURED TO 3 STUDS MINIMUM BY WELDING OR SELF–THREADING SCREWS.

100 - SPECIALTIES

1. PROVIDE FIRE EXTINGUISHERS AS REQUIRED BY THE FIRE MARSHAL TO INCLUDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2A WITHIN 75 FOOT TRAVEL DISTANCE TO ALL PORTIONS OF THE BUILDING ON EACH FLOOR, AND A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 10BC FOR MECHANICAL ELECTRICAL EQUIPMENT ROOMS.

2. FIRE EXTINGUISHER CABINETS MUST BE FULLY ACCESSIBLE. SEE ACCESSIBILITY NOTES, SECTION M.

3. FIRE EXTINGUISHERS SHALL BE PROVIDED AT EACH FLOOR AS THE BUILDING IS BEING CONSTRUCTED.

070 - THERMAL AND MOISTURE PROTECTION

1. ALL FIXED WINDOWS SHALL BE SEALED TO LIMIT AIR INFILTRATION.

2. OPEN EXTERIOR JOINTS AROUND WINDOWS, DOOR FRAMES, BETWEEN WALLS AND FOUNDATIONS, BETWEEN WALLS AND ROOFS, BETWEEN WALL PANELS, AT PENETRATIONS OF UTILITIES THROUGH THE ENVELOPE, SHALL BE SEALED, CAULKED OR WEATHER STRIPPED TO LIMIT AIR LEAKAGE AND WATER INFILTRATION.

080 - DOORS AND WINDOWS

1. DOOR NUMBERS ARE THE SAME AS ROOM NUMBERS. IF A ROOM HAS MORE THAN ONE DOOR, THE DOOR NUMBER SUFFIX IS SHOWN ON THE PLAN AS "A", "B", "C" ETC.

2. VERIFY ALL DOOR SIZES, SWINGS, LOCATIONS AND DETAILS WITH JOB CONDITIONS PRIOR TO FABRICATION AND INSTALLATION.

3. REQUIRED EXIT DOORS SHALL OPEN ONLY IN THE DIRECTION OF EXIT, UNLESS OTHERWISE EXCEPTED BY THE CODE, AND SHALL BE OPERABLE FROM THE INSIDE WITHOUT USE OF A KEY, SPECIAL KNOWLEDGE OR EFFORT. SPECIAL LOCKING DEVICES SHALL BE THE APPROVED TYPE. VERIFY WITH LOCAL JURISDICTION THE APPROVED MEANS OF LOCKING DOORS FROM INTERIOR.

4. PANIC HARDWARE SHALL BE PROVIDED ON EXIT DOORS SERVING ROOMS, CORRIDORS OR AREAS HANDLING AN OCCUPANT LOAD OF 50 OR MORE IN AN ASSEMBLY OCCUPANCY.

5. ALL DOORS SHALL OPEN OVER A FLOOR OR LANDING NOT MORE THAN 1/2" BELOW THE TOP OF THRESHOLD.

6. DOORS OPENING INTO REQUIRED 1–HOUR FIRE RESISTIVE CORRIDORS SHALL BE PROTECTED WITH A SMOKE OR DRAFT STOP FIRE ASSEMBLY HAVING A 20 MINUTE RATING.

7. DOOR LOCATIONS NOT ESTABLISHED BY DIMENSION SHALL BE CENTERED IN WALL OR 4" FROM FINISHED WALL TO FINISHED JAMB.

8. PROVIDE ACCESS PANELS WHEREVER REQUIRED BY BUILDING CODE OR WHEREVER REQUIRED FOR PROPER OPERATION OF MECHANICAL OR ELECTRICAL EQUIPMENT. CONTRACTOR SHALL COORDINATE LOCATION, SIZE AND TYPE OF ACCESS PANEL WITH HIS SUBCONTRACTOR'S WORK. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL REQUIRED ACCESS PANELS NOT SHOWN ON THE DRAWINGS THROUGH THE SHOP DRAWING PROCESS PRIOR TO INSTALLATION.

9. ALL EXTERIOR DOORS SHALL LIMIT AIR LEAKAGE AROUND THEIR PERIMETER WHEN IN A CLOSED POSITION.

   9.1 PROVIDE AND INSTALL SEALS OR ASTRAGAL AT HEAD, SILL AND JAMBS.
   9.2 MEETING PORTIONS OF SECTIONAL, BI–PARTING OR DOUBLE DOORS SHALL BE PROVIDED WITH AN INTERNAL EDGE MOUNTED WEATHERTIGHT ASTRAGAL OR SEAL. NO EXTERIOR OVERLAPPING ASTRAGALS SHALL BE PERMITTED.
   9.3 DOORS REQUIRING VERTICAL TRACKS OR GUIDES SHALL USE CONTINUOUS MOUNTING ANGLES AND SHALL BE SEALED TO LIMIT AIR LEAKAGE.

10. GLASS DOORS, ADJACENT GLAZED PANELS AND ALL GLAZED OPENINGS WITHIN 18 INCHES OF THE ADJACENT FLOOR OR GRADE SHALL BE SAFETY GLASS APPROVED FOR IMPACT HAZARD.

11. FILL ALL HOLLOW METAL DOOR FRAMES IN MASONRY OR CONCRETE WALLS WITH GROUT AFTER ERECTION.

12. FILL ALL HOLLOW METAL DOOR FRAMES WITH BUILDING INSULATION WHERE DOORS ARE IN SOUND RATED GYPSUM BOARD ASSEMBLIES.

13. PROVIDE AND COORDINATE THE LOCATION OF BLOCK OUTS FOR ALL SECURITY HARDWARE.

6. REMOVE ALL EXISTING BASE AND WALL COVERING AND PREP WALL FOR NEW PAINT AND NEW BASE.

7. CEASE OPERATIONS AND NOTIFY OWNER AND ARCHITECT IMMEDIATELY IF HAZARDOUS MATERIALS ARE IDENTIFIED.

   7.1 DO NOT RESUME OPERATIONS UNTIL HAZARDOUS MATERIALS ARE REMOVED AND SAFETY IS RESTORED.
   7.2 CONTRACTOR SHALL TAKE ANY PRECAUTIONS NECESSARY TO PROTECT ANY STRUCTURE & ANY OTHER AREA OUTSIDE OF CONSTRUCTION ZONE AND SECURE APPROVAL OF SUCH MEASURE FROM THE CITY BUILDING AND SAFETY DEPARTMENT.
   7.3 CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMIT AND APPROVALS FROM GOVERNING AGENCIES REQUIRED FOR SUCH DEMOLITION WORK SHOWN ON THE DRAWINGS. APPLICATION FOR SUCH PERMITS SHALL BE OBTAINED BEFORE STARTING THE DEMOLITION WORK.

8. THE SCOPE OF THE WORK SHALL INCLUDE THE DEMOLITION AND REMOVAL FROM PREMISES OF ALL UNNECESSARY PARTITIONS, DOORS, BUCKS, BLACK IRON, TILE, FINISHES, ETC., AND REQUIRED CAPPING (BY LICENSED TECHNICIANS), TO ACCOMPLISH WORK AS OUTLINED IN THIS SET OF DRAWINGS.

9. CONTRACTOR SHALL REMOVE ALL UNNECESSARY ELECTRICAL, DATA AND TELEPHONE APPARATUS AS REQUIRED. ONLY THOSE EXISTING ELECTRICAL CONVENIENCE OUTLETS AND LIGHTING FIXTURES INDICATED TO REMAIN SHALL BE LEFT ACTIVE. EXISTING OUTLETS NOT TO BE REUSED SHALL BE REMOVED AND PATCHED.

10. ALL ITEMS SPECIFIED FOR REUSE ARE ASSUMED TO BE IN GOOD OPERATING CONDITION. GENERAL CONTRACTOR SHALL VERIFY CONDITION OF ALL ITEMS FOR REUSE AND SHALL NOTIFY THE ARCHITECT OF DISCREPANCIES PRIOR TO INSTALLATION. GENERAL CONTRACTOR SHALL STORE ALL REUSABLE ITEMS SO AS TO PREVENT DAMAGE. CONTRACTOR SHALL REPLACE OR REPAIR DAMAGED ITEMS, AS REQUIRED, AT HIS SOLE COST AND EXPENSE.

11. EXISTING BUILDING SYSTEMS SUCH AS FIRE DETECTION SYSTEMS, PLUMBING AND ELECTRICAL RISERS AND H.V.A.C. SYSTEMS, ETC., SHALL BE PROTECTED FROM DAMAGE AND CAPPED AND/OR TIED OFF AS REQUIRED. ANY SHUT–OFFS REQUIRED SHALL ARRANGE SUCH SHUT–OFFS WITH BUILDING MANAGEMENT.

020-SITEWORK

1. VERIFY CONDITIONS AT THE SITE AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

2. CONFIRM ALL DISTANCES, DATA AND EXISTING STRUCTURES AND UTILITIES ABOVE OR BELOW THE GROUND, WITHIN THE LIMITS OF THIS PROJECT. IN CASES OF CONFLICT, THE ARCHITECT SHALL BE CONSULTED IMMEDIATELY FOR CLARIFICATION.

030 - CONCRETE

SEE STRUCTURAL GENERAL NOTES WHERE APPLICABLE

040 - MASONRY

SEE STRUCTURAL GENERAL NOTES WHERE APPLICABLE

050 - METALS

SEE STRUCTURAL GENERAL NOTES WHERE APPLICABLE

1. RAILINGS AND GUARDRAILS SHALL WITHSTAND FORCES IN COMPLIANCE WITH CHAPTER 16, TABLE 16B – SPECIAL LOADS.

060 - WOOD AND PLASTICS

1. 3/4" FIRE TREATED PLYWOOD BACKING, A MINIMUM 4'–0" X 8'–0", SHALL BE PROVIDED AT TELEPHONE TERMINALS IN ELECTRICAL ROOMS.

000-GENERAL

1. SEE ADDITIONAL GENERAL NOTES ON CIVIL, STRUCTURAL, PLUMBING, MECHANICAL, ELECTRICAL, AND TELECOM DRAWINGS.

2. DO NOT SCALE DRAWINGS. WHERE DIMENSIONS CANNOT BE DETERMINED, REQUEST CLARIFICATION FROM THE ARCHITECT.

3. IF DISCREPANCIES EXIST ON THE DRAWINGS, CONFLICTS SHALL BE RESOLVED IN ACCORDANCE WITH DIVISION 1 OF THE PROJECT MANUAL.

4. DIMENSIONS SHOWN ON THE FLOOR PLANS, PLANS, SECTIONS, AND DETAILS ARE TO FACE OF FINISH, TO COLUMN GRIDLINES, OR TO FACE OF CONCRETE OR MASONRY UNLESS OTHERWISE NOTED OR SHOWN.

5. FOR ALL FLOOR ELEVATIONS REFER TO TOP OF CONCRETE, EXCEPT WHERE FLOOR FINISH IS STONE OR WOOD, REFER TO A FINISHED FLOOR ELEVATION. THIS SHALL BE TOP OF CONCRETE, STONE OR WOOD FLOOR.

6. DETAILS ARE INTENDED TO SHOW DESIGN INTENT FOR ACCOMPLISHING WORK. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB CONDITIONS AND SHALL BE INCLUDED AS PART OF THE WORK.

7. COORDINATE THE INSTALLATION OF THE VARIOUS TRADE ITEMS WITHIN THE SPACE ABOVE CEILINGS (STRUCTURAL MEMBERS, FIREPROOFING, CONDUITS, MECHANICAL DUCTS, INSULATION, SPRINKLER LINES AND DROPS, RECESSED LIGHT FIXTURES AND CEILING CONSTRUCTION THICKNESS, ETC.) TO MAINTAIN THE FINISH CEILING HEIGHT ABOVE THE FLOOR AS INDICATED IN THESE DRAWINGS FOR THE VARIOUS ROOMS AND AREAS.

8. SEPARATE APPROVALS FOR PERMITS FROM GOVERNING AGENCIES SHALL BE REQUIRED FOR CERTAIN BUILDING SYSTEMS, INCLUDING BUT NOT LIMITED TO CURTAIN WALL SYSTEMS, FIRE PROTECTION SYSTEMS, CERTAIN LIGHT–GUAGE AND COLD ROLLED METAL FRAMING SYSTEMS, MISCELLANEOUS METALS, ORNAMENTAL RAILINGS, FIRE ALARM SYSTEMS, FIRE PUMP SYSTEMS, UNDERGROUND TANKS, FUEL OIL SYSTEMS, AND SYSTEMS WHICH REQUIRE THE SUBMISSION OF ADDITIONAL ENGINEERING CALCULATIONS OR DETAIL DRAWINGS FOR AGENCY APPROVAL. A PROFESSIONAL ENGINEER, RETAINED BY THE CONTRACTOR, REGISTERED IN THE STATE OF CALIFORNIA, SHALL ENGINEER AND CERTIFY THE STRUCTURAL CALCULATIONS OF THE CURTAIN WALL ANCHORAGE AND FRAMING COMPONENTS WITHIN THE PERFORMANCE AND CODE CRITERIA. CALCULATIONS SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER OF RECORD AND SUBMITTED TO BUILDING DEPARTMENT FOR PERMIT REVIEW PROCESS.

9. OBTAIN ALL NECESSARY PERMITS FOR WORK, INCLUDING, BUT NOT LIMITED TO, PEDESTRIAN PROTECTION, TRAFFIC CONTROL AND MITIGATION, TEMPORARY STREET CLOSURE, AND OFFSITE IMPROVEMENTS. PERMITS SHALL BE OBTAINED PRIOR TO STARTING THE WORK.

10. PATCH AND REPAIR ALL EXISTING MATERIALS OR EQUIPMENT DAMAGED OR EXPOSED BY REMOVAL WORK OR BY ANY OTHER CONSTRUCTION WORK. MATCH ADJACENT SIMILAR MATERIAL IN TEXTURE AND COLOR UNLESS NOTED OTHERWISE.

000-GENERAL DEMOLITION NOTES

1. EXISTING WORK TO REMAIN: PROVIDE SUCH FORMS OF PROTECTION AS MAY BE NECESSARY TO PREVENT DAMAGE TO EXISTING WORK AND EQUIPMENT TO REMAIN. REPAIR OR REPLACE EXISTING. WORK DAMAGED BY WORK AT NO COST TO OWNER.

2. UNLESS OTHERWISE SHOWN, PATCH AND FINISH SURFACES AS NECESSARY TO MATCH EXISTING. PATCHED WALLS SHALL BE REFINISHED COMPLETELY OR TO THE NEAREST INSIDE CORNERS.

3. MATERIALS NOT MENTIONED TO BE REMOVED THAT INTERFERE WITH NEW CONSTRUCTION, EXCEPT WHERE STRUCTURAL INTEGRITY OF THE ASSEMBLY IS AT RISK, SHALL BE CUT TO CLEAN LINES TO PROVIDE FOR PROPER INTERFACE WITH THE NEW CONSTRUCTION, OR PATCHING AND REPAIR, AS REQUIRED.

4. EXISTING CEILING GRID AND TILES SCHEDULED TO BE REMOVED SHALL BE SALVAGED WHERE POSSIBLE.

5. EXISTING DOORS, FRAMES AND SIDELIGHTS SCHEDULED TO BE REMOVED SHALL BE SALVAGED WHERE POSSIBLE.

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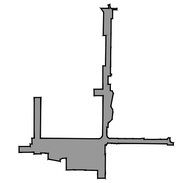

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GENERAL NOTES

SHEET TITLE

G006

SHEET NO.

150 - MECHANICAL AND PLUMBING

SEE ALSO MECHANICAL AND PLUMBING GENERAL NOTES (WHERE APPLICABLE)

1. VERIFY AND MAINTAIN THE CODE AND MANUFACTURER REQUIRED CLEARANCES AROUND INSTALLED EQUIPMENT.
2. ALL FLOOR OPENINGS AT PIPES AND DUCTS SHALL BE SEALED USING APPROVED MATERIALS FOR THAT PURPOSE, EXCEPT WHERE PIPES AND DUCTS ARE IN A 2 HOUR FIRE RESISTIVE SHAFT.
3. HORIZONTAL TRANSITIONS OCCURRING IN DUCT SHAFTS SHALL BE CONSTRUCTED PER THE REQUIREMENTS FOR 2 HOUR FIRE RESISTANCE AND BE SUPPORTED OR SUSPENDED AS REQUIRED.
4. PROVIDE AND INSTALL APPROVED FIRE DAMPERS FOR ALL DUCT PENETRATIONS OF FIRE/SMOKE RESISTIVE WALLS.
5. PROVIDE MECHANICAL EQUIPMENT PADS IN THE SIZES AND LOCATIONS REQUIRED TO ACCOMMODATE THE MECHANICAL EQUIPMENT. SIZES AND LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY.
6. SPRINKLER HEAD LOCATION AND LAYOUT TO BE REVIEWED BY THE ARCHITECT PRIOR TO INSTALLATION.
7. THE INSTALLATION AND OPERATION OF EMERGENCY GENERATOR AND FUEL SUPPLY SHALL BE CHECKED AND APPROVED BY THE FIRE DEPARTMENT PRIOR TO THE INSTALLATION AND OPERATION OF EMERGENCY GENERATOR AND FUEL SUPPLY SYSTEMS.
8. PROVIDE OUTSIDE GAS SHUT–OFF VALVE CONSPICUOUSLY LOCATED AND MARKED.
9. FIRE HYDRANT CALCULATIONS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT PRIOR TO INSTALLATION. FIRE HYDRANT AND ACCESS SHALL BE PROVIDED FOR THE BUILDING. SEE SITE PLAN FOR LOCATION.
10. REFER TO THE PLUMBING DRAWINGS FOR STORM WATER DRAINAGE AND DISCHARGE SYSTEM FROM THE BUILDING.
11. RAINFALL RATE IS [X , X].

160 - ELECTRICAL

SEE ALSO ELECTRICAL GENERAL NOTES (WHERE APPLICABLE)

1. ALL EXITWAYS SHALL BE ILLUMINATED BY A SUITABLY ATTACHED AND APPROVED EMERGENCY LIGHTING SYSTEM DESIGNED TO OPERATE WHEN THE BUILDING POWER SOURCE IS INTERRUPTED.
2. EMERGENCY EXIT AND EXIT SIGN ILLUMINATION SHALL BE PROVIDED AS REQUIRED BY SECTION 1013.
3. IN ADDITION TO ILLUMINATED EXIT SIGNS SHOWN ON ELECTRICAL DRAWINGS AND REFLECTED CEILING PLANS, THE CONTRACTOR SHALL PROVIDE AND INSTALL EXIT SIGNS WITH 6 INCH LETTERS AND DIRECTIONAL ARROWS AS REQUIRED BY CBC SECTION 1013.
4. OBTAIN UL LISTINGS FOR ALL CUSTOM DESIGNED LIGHT FIXTURES.

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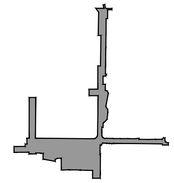

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GENERAL NOTES

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G007

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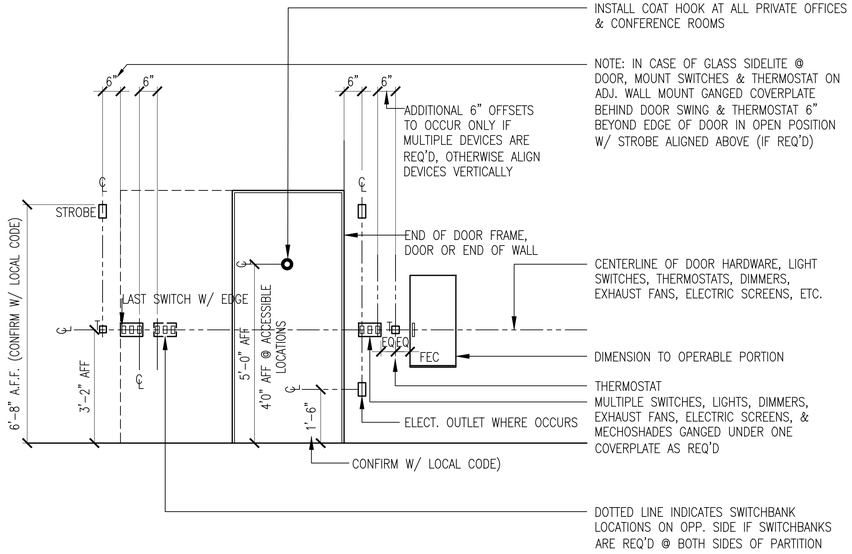

1 LOCATION OF LIGHT SWITCHES & DEVICES

SCALE: 1/2" = 1'-0"

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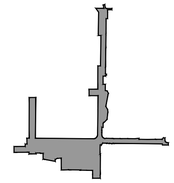

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MOUNTING HEIGHT DETAILS

SHEET TITLE

G260

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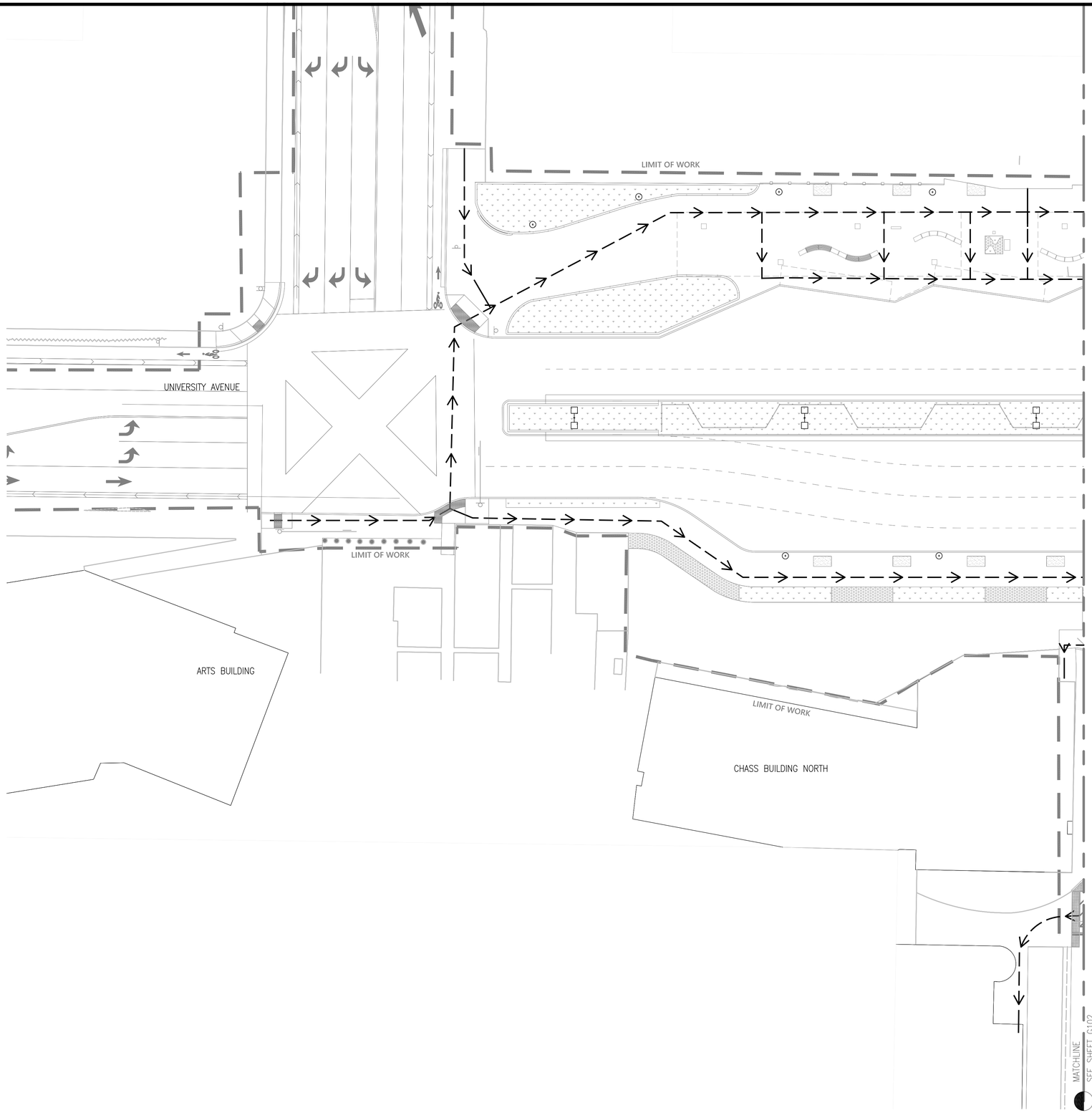

LEGEND

ACCESSIBLE PATH OF TRAVEL (P.O.T.), SEE NOTE FOR REQUIREMENTS

NOTES

P.O.T AS INDICATED IS BARRIER–FREE ACCESS 48" MINIMUM WIDTH WITHOUT ANY ABRUPT CHANGES EXCEEDING 1/2" AT 1:2 MAX SLOPE EXCEPT THAT LEVEL CHANGES DO NOT EXCEED 1/4" VERTICAL. MAX CROSS–SLOPE 2% TYPICAL

ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLAN IS BARRIER–FREE ACCESS ROUTE WITHOUT ABRUPT LEVEL CHANGES EXCEEDING ¼" IF BEVELED AT 1:2 MAXIMUM SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING ¼" MAXIMUM AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM, AND SLIP–RESISTANT. CROSS–SLOPE SHALL NOT BE STEEPER THAN 1:48 AND SLOPE IN THE DIRECTION OF TRAVEL SHALL NOT BE STEEPER THAN 1:20. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM AND FREE OF OBJECTS PROTRUDING MORE THAN 4" FROM THE WALL, ABOVE 27" AND LESS THAN 80" ABOVE THE FLOOR. ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS IN THE PATH OF TRAVEL.

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NORTH

20' 0' 20' 40'

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KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD–BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

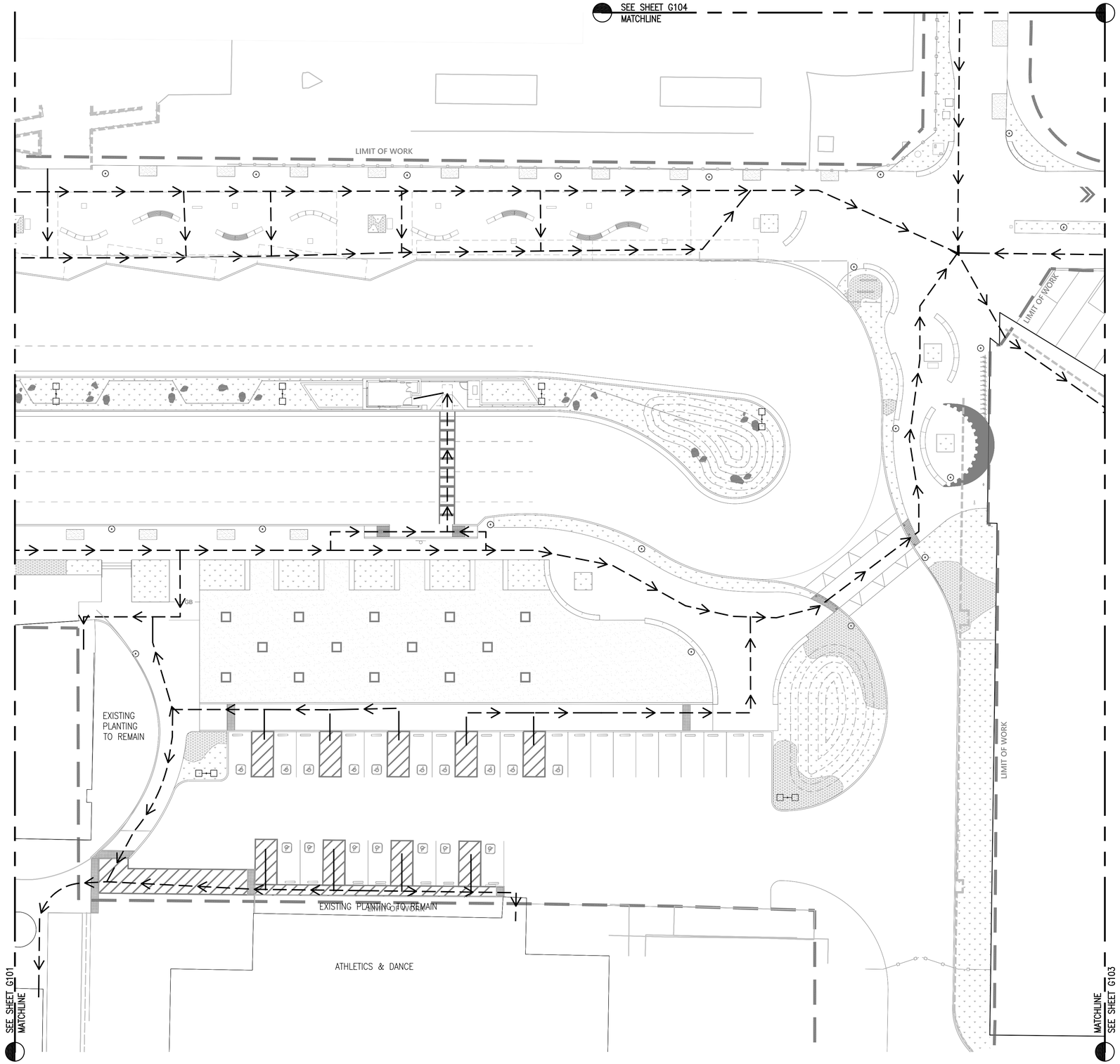
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=20'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

ACCESSIBLE PATH PLAN

SHEET TITLE

G101

SHEET NO.



LEGEND

→ ACCESSIBLE PATH OF TRAVEL (P.O.T.), SEE NOTE FOR REQUIREMENTS

NOTES

P.O.T AS INDICATED IS BARRIER–FREE ACCESS 48" MINIMUM WIDTH WITHOUT ANY ABRUPT CHANGES EXCEEDING 1/2" AT 1:2 MAX SLOPE EXCEPT THAT LEVEL CHANGES DO NOT EXCEED 1/4" VERTICAL. MAX CROSS–SLOPE 2% TYPICAL

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NORTH

20' 0' 20' 40'

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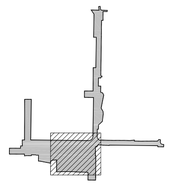

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KEY PLAN

NO.	DATE	ISSUED FOR	BY
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	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

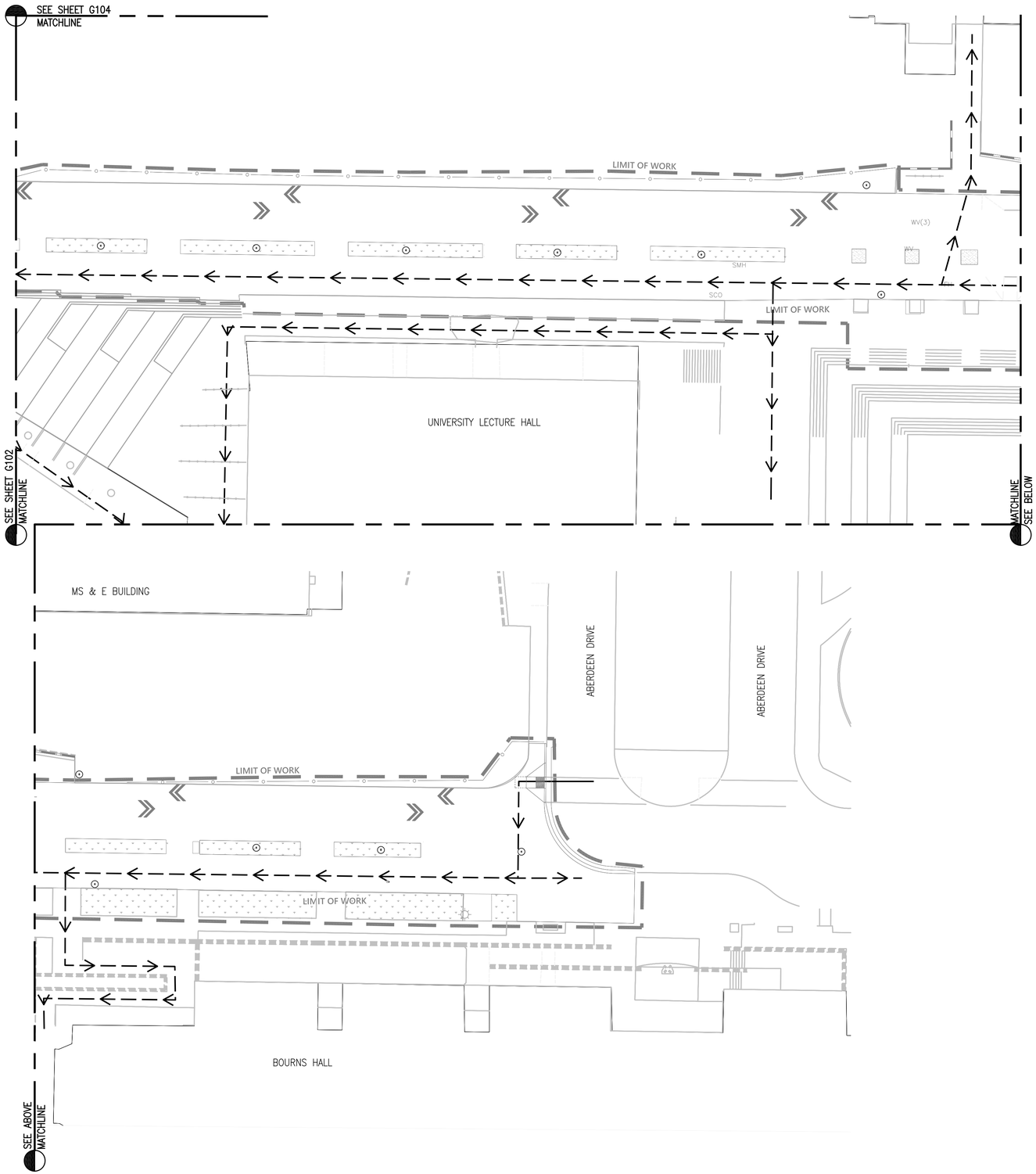
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=20'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

ACCESSIBLE PATH PLAN

SHEET TITLE

G102

SHEET NO.



LEGEND

→ ACCESSIBLE PATH OF TRAVEL (P.O.T.), SEE NOTE FOR REQUIREMENTS

NOTES

P.O.T AS INDICATED IS BARRIER–FREE ACCESS 48" MINIMUM WIDTH WITHOUT ANY ABRUPT CHANGES EXCEEDING 1/2" AT 1:2 MAX SLOPE EXCEPT THAT LEVEL CHANGES DO NOT EXCEED 1/4" VERTICAL. MAX CROSS–SLOPE 2% TYPICAL

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NORTH

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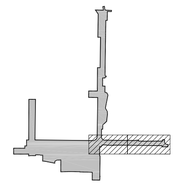

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KEY PLAN

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	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

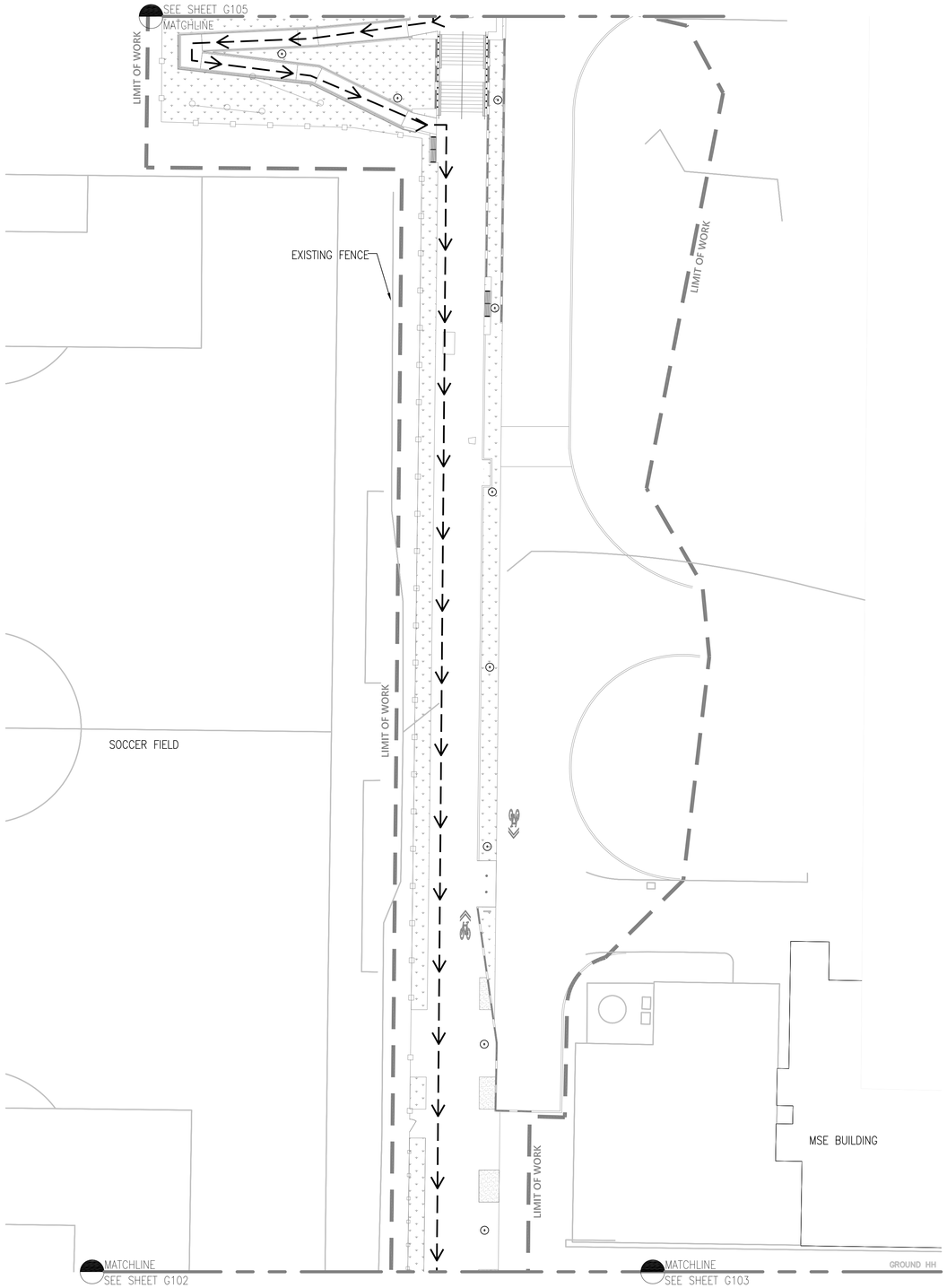
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=20'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

ACCESSIBLE PATH PLAN

SHEET TITLE

G103

SHEET NO.



LEGEND

→ ACCESSIBLE PATH OF TRAVEL (P.O.T.), SEE NOTE FOR REQUIREMENTS

NOTES

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NORTH

20' 0' 20' 40'

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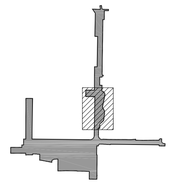

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	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

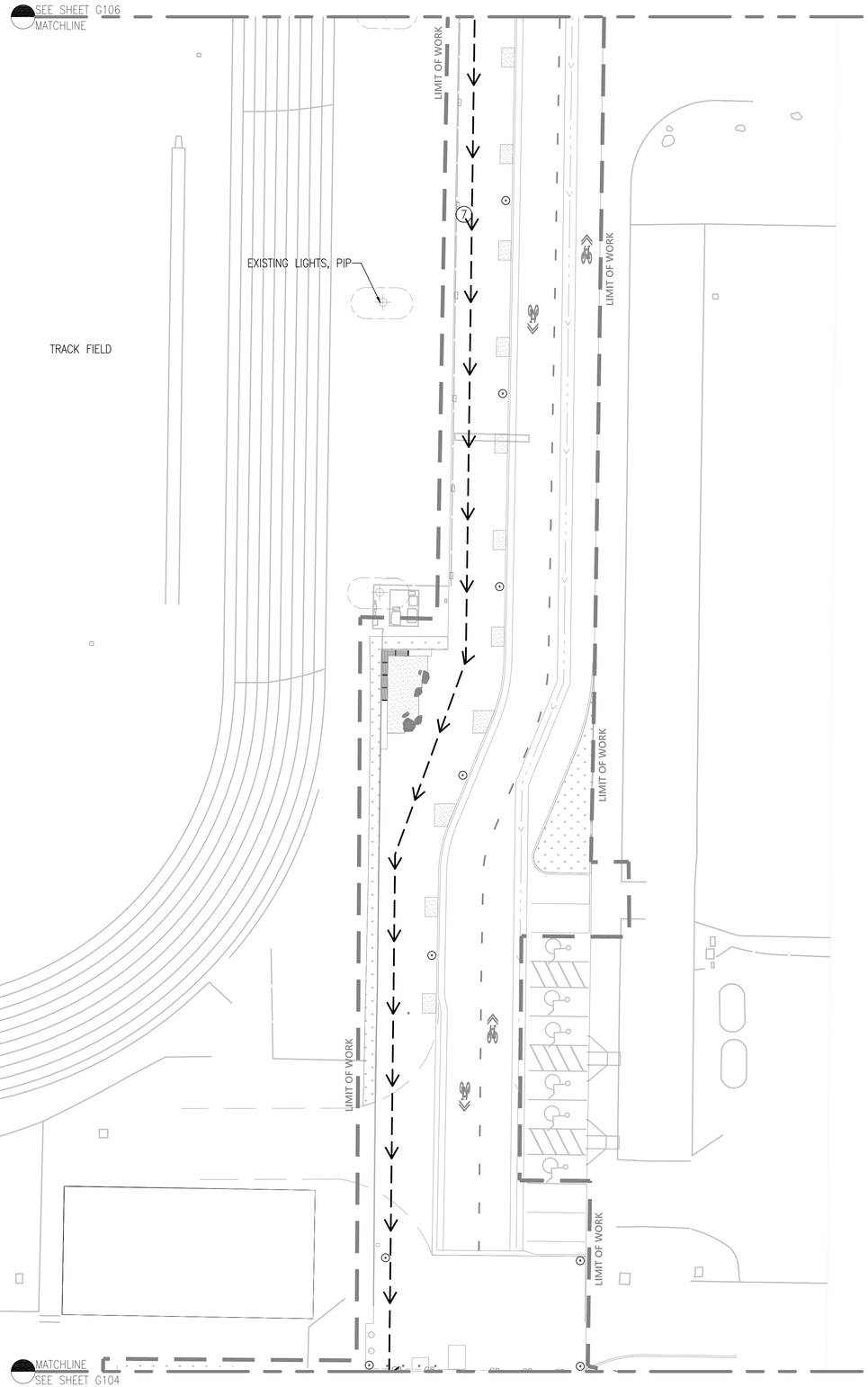
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=20'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

ACCESSIBLE PATH PLAN

SHEET TITLE

G104

SHEET NO.



LEGEND

→ ACCESSIBLE PATH OF TRAVEL (P.O.T.), SEE NOTE FOR REQUIREMENTS

NOTES

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NORTH

20' 0' 20' 40'

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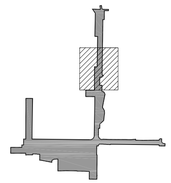

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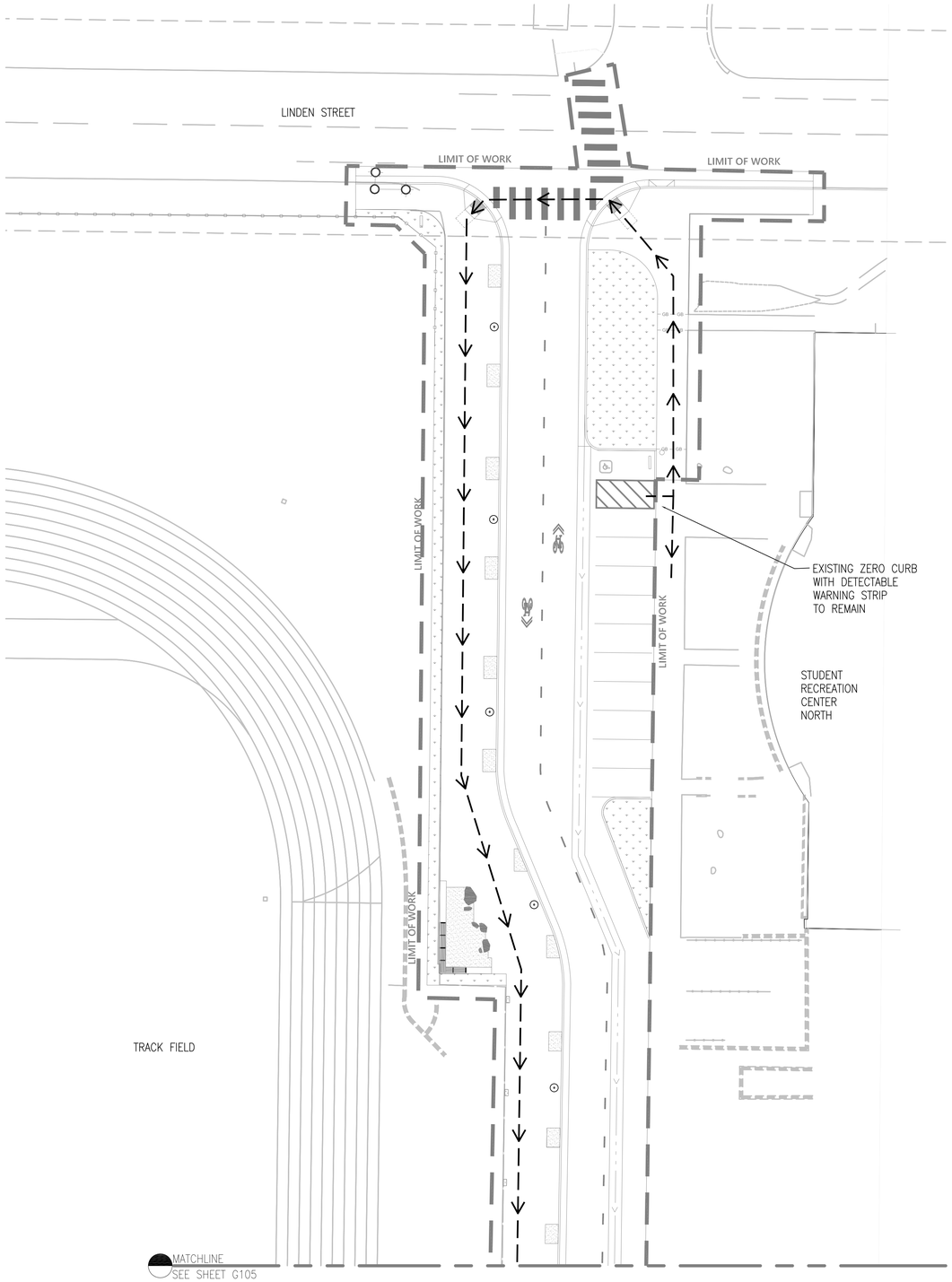
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=20'
DATE	1/10/2019
PROJECT NO.	GRUEN # 8345

ACCESSIBLE PATH PLAN

SHEET TITLE

G105

SHEET NO.



LEGEND

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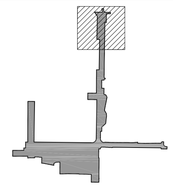

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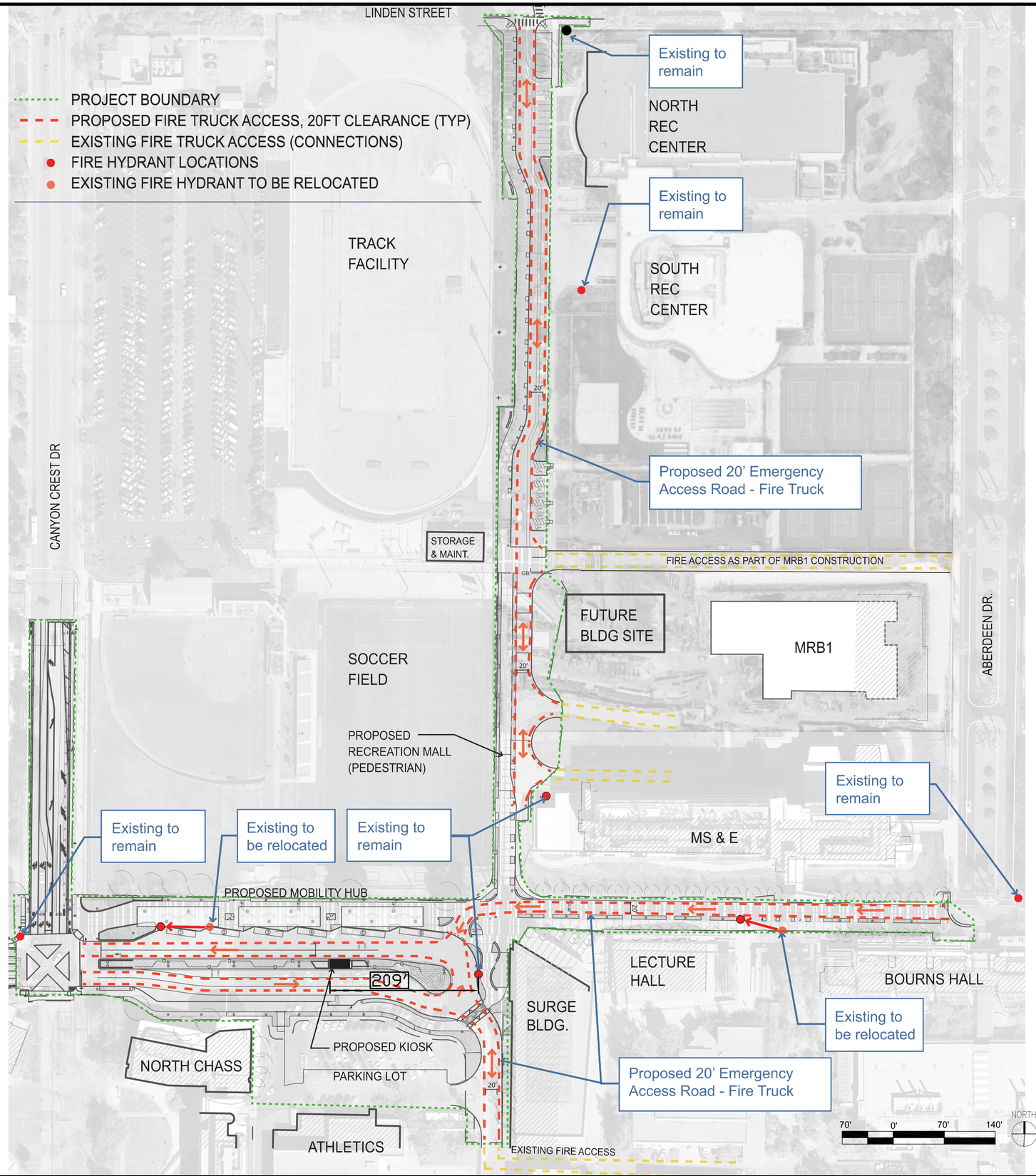
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=20'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

ACCESSIBLE PATH PLAN

SHEET TITLE

G106

SHEET NO.



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	05/01/18	100% DD SET	

BASE FILE NAMES	
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=70'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

EMERGENCY VEHICLE ACCESS DIAGRAM

SHEET TITLE

G300

SHEET NO.

GENERAL NOTES:

1. NO GRADING SHALL BE STARTED WITHOUT FIRST NOTIFYING THE UNIVERSITY'S REPRESENTATIVE.
2. SITE BOUNDARIES, EASEMENTS, DRAINAGE DEVICES, RESTRICTED USE AREAS SHALL BE LOCATED PER CONSTRUCTION STAKING BY FIELD ENGINEER OR LICENSED SURVEYOR. PRIOR TO GRADING, ALL PROPERTY LINES, EASEMENTS, AND RESTRICTED USE AREAS SHALL BE STAKED.
3. ALL OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES SHALL BE SEALED WITH 8 INCHES OF BRICK AND MORTAR OR 6 INCHES OF CONCRETE, UNLESS OTHERWISE SHOWN.
4. CONTRACTOR SHALL ADHERE TO ALL RECOMMENDATIONS SET FORTH IN THE PROJECT GEOTECHNICAL REPORT AND ANY SUBSEQUENT ADDENDUMS, UNLESS SPECIFICALLY AUTHORIZED BY THE GEOTECHNICAL ENGINEER AND THE UNIVERSITY'S REPRESENTATIVE.

GENERAL UTILITY NOTES

1. DIMENSIONS TO PIPELINES ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
2. INSTALLATION OF PIPES IN TRENCHES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. CONTRACTOR TO PROTECT IN PLACE OR ADJUST WHERE NECESSARY ALL EXISTING UTILITY LINES, WHETHER SHOWN OR NOT SHOWN ON THESE PLANS, THAT LAY WITHIN THE LIMITS OF THE NEW CONSTRUCTION, AND ARE NOT SPECIFICALLY MARKED TO BE REMOVED OR ABANDONED.
4. CONTRACTOR TO VERIFY ALL EXISTING UTILITIES THAT ARE IN CONFLICT WITH THE PROJECT, PRIOR TO START OF CONSTRUCTION.
5. THE LOCATION AND PROTECTION OF ALL UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

NOTICE TO CONTRACTORS:

1. THESE PLANS DEPICT THE UNIVERSITY'S DESIGN INTENT AND REGULATORY REQUIREMENTS. THE EXISTENCE, LOCATION, AND CHARACTERISTICS OF UTILITIES AND SITE INFORMATION SHOWN ON THESE PLANS, HAVE BEEN OBTAINED FROM A REVIEW OF AVAILABLE RECORD DATA AND NO REPRESENTATION IS MADE AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, SIZES, LOCATIONS AND QUANTITIES OF ALL EXISTING AND PROPOSED WORK, AND TO RESOLVE ALL DISCREPANCIES PRIOR TO THE COMMENCEMENT OF ANY WORK OR THE PURCHASE OF ANY MATERIALS.
2. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION (2018) OF "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (GREENBOOK). SPECIFICATIONS FOR CONSTRUCTION ACTIVITIES PROVIDED IN THE PROJECT SPECIFICATIONS SHALL SUPERSEDE GREENBOOK SPECIFICATIONS. IT IS THE UNIVERSITY'S INTENT THAT ANY REFERENCE TO GREENBOOK APPLY ONLY TO TECHNICAL REQUIREMENTS. IN THE CASE OF A CONFLICT BETWEEN GREENBOOK AND THE UNIVERSITY'S GENERAL CONDITIONS, THE UNIVERSITY'S GENERAL CONDITIONS SHALL GOVERN.
3. THE UNIVERSITY, THE UNIVERSITY'S REPRESENTATIVE, OR THE RESPONSIBLE GOVERNMENTAL AUTHORITY SHALL HAVE THE RIGHT TO REJECT ANY AND ALL WORK THAT DOES NOT MEET THE UNIVERSITY'S DESIGN INTENT AS DESCRIBED ON THE PLANS HEREIN OR CALLED FOR IN THE DESIGN SPECIFICATIONS, OR AS REQUIRED BY ANY APPLICABLE GOVERNMENTAL CODES, STANDARDS OR DETAILS. ANY WORK REJECTED, RECOGNIZED AS NOT BEING DONE IN A WORKMANLIKE MANNER OR THAT IS OTHERWISE DEEMED AS UNACCEPTABLE, SHALL BE REMOVED AND REINSTALLED AT THE CONTRACTOR'S SOLE EXPENSE.
4. THE CONTRACTOR IS REQUIRED TO REVIEW THE PLANS, THE SOILS AND/OR GEOLOGIC REPORTS, AND THE SITE PRIOR TO COMMENCING WORK.
5. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL JOIN CONDITIONS FOR GRADING, DRAINAGE AND UNDERGROUND FACILITIES, INCLUDING LOCATION AND ELEVATION OF EXISTING UNDERGROUND FACILITIES AT CROSSINGS WITH PROPOSED UNDERGROUND FACILITIES. IF CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE UNIVERSITY'S REPRESENTATIVE AND SHALL NOT BEGIN CONSTRUCTION UNTIL THE CHANGED CONDITIONS HAVE BEEN EVALUATED.
6. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING THE CONSTRUCTION OF THIS PROJECT. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE UNIVERSITY AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
7. FOR TRENCH OR FOOTING EXCAVATIONS DEEPER THAN FIVE FEET, CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE CALIFORNIA CONSTRUCTION AND SAFETY ORDERS, THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AND THE CONSTRUCTION SAFETY ACT SHOULD BE MET.

NOTICE TO CONTRACTORS (CONTINUED):

8. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF EXCAVATION TO ARRANGE FOR FIELD LOCATION OF UTILITY LINES. CALL 811 FOR THIS SERVICE. ANY UTILITY NOT SUBSCRIBING TO THIS SERVICE SHALL BE CONTACTED DIRECTLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHETHER ALL UTILITIES HAVE BEEN NOTIFIED.
9. ALL TRAFFIC CONTROL, BARRICADING, AND CONSTRUCTION SIGNING SHALL BE IN CONFORMANCE WITH THE WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH MANUAL) PUBLISHED BY THE SOUTHERN CALIFORNIA CHAPTER OF THE AMERICAN PUBLIC WORKS ASSOCIATION. DETOUR SIGNS SHALL BE POSTED ON WOOD OR METAL POSTS. SIGNS SHALL NOT BE POSTED ON ANY TREE OR TRAFFIC SIGN.
10. NO WATER SHALL BE TAKEN FROM FIRE HYDRANTS WITHOUT APPROVAL FROM THE UNIVERSITY OR THE GOVERNING WATER PURVEYOR.
12. ALL NON-STORMWATER DISCHARGES FROM THE CONSTRUCTION PHASE ACTIVITIES AT THE PROJECT SITE (I.E., MIXING AND CLEANING OF CONSTRUCTION MATERIALS, CONCRETE AND PLASTER WASHOUT, DISPOSAL OF PAINTS, ADHESIVES, SOLVENTS, AND LANDSCAPE PRODUCTS) SHALL BE PROHIBITED FROM ENTERING THE STORM DRAINAGE SYSTEM (INCLUDING MUNICIPAL STREETS, CATCH BASINS, CURBS, GUTTERS, DITCHES, MAN-MADE CHANNELS, OR UNDERGROUND STORM DRAINS).
13. GROUND WATERING TO CONTROL DUST SHALL BE REQUIRED DURING CONSTRUCTION. PURSUANT TO SCAQMD RULE 403.
14. MATERIALS SUCH AS OIL-BASED ARCHITECTURAL COATINGS, PAINTS AND ASPHALT USED IN CONSTRUCTION SHALL BE CONTROLLED ACCORDING TO SCAQMD REGULATIONS.
15. ALL TRUCKS HAULING DIRT, SAND, OR OTHER LOOSE MATERIALS SHALL BE COVERED OR MAINTAIN AT LEAST TWO FEET OF FREEBOARD (i.e. MINIMUM VERTICAL DISTANCE BETWEEN TOP OF THE LOAD AND THE TOP OF THE TRAILER) IN ACCORDANCE WITH SECTION 23114 OF THE CALIFORNIA VEHICLE CODE.
16. ON-SITE VEHICLE SPEED SHALL BE POSTED AT 15 MILES PER HOUR OR LESS ON ALL UNPAVED ROADS.
17. STREETS ADJACENT TO THE SITE SHALL BE SWEPT DAILY IF VISIBLE SILT OR SOIL MATERIAL HAS ACCUMULATED FROM CONSTRUCTION ACTIVITIES.
18. ENGINES MUST BE MAINTAINED IN GOOD CONDITION ACCORDING TO MANUFACTURER'S SPECIFICATIONS. BOTH GRADING AND CONSTRUCTION ACTIVITIES ARE TO BE SCHEDULED TO EVEN OUT EMISSION PEAKS.
19. GRADING OPERATIONS SHALL BE SUSPENDED DURING SECOND STAGE SMOG ALERTS.
20. THE SITE SHALL BE FENCED TO REDUCE WIND-BLOWN DUST. CONSTRUCTION MATERIALS NOT STORED BEHIND THE TEMPORARY FENCES SHALL BE COVERED. ALL STORED SOIL AND SAND SHALL BE COVERED OR TREATED WITH SOIL BINDERS, WHETHER INSIDE OR OUTSIDE THE TEMPORARY WALL. ALL DEBRIS SHALL BE CLEANED UP DAILY AND PUT IN A DUMPSTER WHICH SHALL HAVE A LID AND THE LID SHALL BE SECURED AT THE END OF THE DAY.
21. CONTRACTOR IS RESPONSIBLE FOR ALL PROJECT RELATED EROSION CONTROL MEASURES.

BASIS OF COORDINATES

COORDINATES ARE CALIFORNIA STATE PLANE COORDINATES, ZONE 6, NAD83(2009.00 EPOCH) TIED TO CONTINUOUS GPS STATIONS "MLFP", "CRFP", "NOCO", AND "RTHS," AS PER VALUES PUBLISHED BY THE CALIFORNIA SPATIAL REFERENCE CENTER (CSRC.) EXISTING CAMPUS CONTROL POINTS 1, 5, 10, 12, AND 13, AS WELL AS EXISTING CONTROL POINTS 101, 103, 105, AND 106 BY JOHNSON & FRANK, WERE CONSTRAINED TO FOR ESTABLISHING POSITIONS AT CONTROL POINTS 301 THROUGH 319.

BENCHMARK INFORMATION

ELEVATIONS ARE DERIVED FROM THE ELLIPSOID HEIGHTS OF THE CONTINUOUS GPS STATIONS "MLFP", "CRFP", "NOCO", AND "RTHS", AS PUBLISHED BY THE CALIFORNIA SPATIAL REFERENCE CENTER, NAVD 88, AND TRANSFORMED TO ORTHOMETRIC HEIGHTS USING GEOID MODEL 2009 OF THE NATIONAL GEODETIC SURVEY. EXISTING CAMPUS CONTROL POINTS 1, 5, 10, 12, AND 13, AS WELL AS EXISTING CONTROL POINTS 101, 103, 105, AND 106 BY JOHNSON & FRANK, WERE CONSTRAINED TO FOR ESTABLISHING ELEVATIONS AT CONTROL POINTS 301 THROUGH 319.

GEOTECHNICAL NOTES:

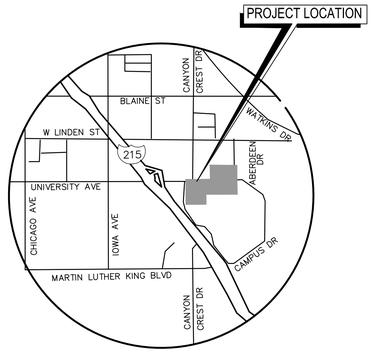
SEE GEOTECHNICAL REPORT, PROJECT NO. 10-17447PW DATED NOVEMBER 13, 2017, PREPARED BY UNITED-HEIDER INSPECTION GROUP. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT.

LEGEND:

- APPROXIMATE CIVIL LIMITS OF WORK
- SAWCUT LINE
- 735 — PROPOSED CONTOUR LINE
- 280 — EXISTING CONTOUR LINE
- O — DAYLIGHT LINE
- EXISTING STORM DRAIN LINE (≥18")
- SD — EXISTING STORM DRAIN LINE (<18")
- SS — EXISTING SANITARY SEWER LINE
- W — EXISTING WATER LINE
- E — EXISTING ELECTRICAL LINE
- G — EXISTING NATURAL GAS LINE
- T — EXISTING TELECOMMUNICATION LINE
- COMM — EXISTING COMMUNICATION LINE
- SD — EXISTING UTILITY TO BE REMOVED
- SD — PROPOSED STORM DRAIN LINE
- SS — PROPOSED SANITARY SEWER LINE
- W — PROPOSED WATER LINE
- FLOW DIRECTION
- SLOPE SYMBOL
- X — X — X — EXISTING CHAIN LINK FENCE
- EXISTING BENCH MARK
- 1370.27 BW — EXISTING ELEVATION
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- CO — EXISTING CLEAN OUT
- EXISTING LIGHT POLE AND FIXTURE
- EXISTING SIGN
- EXISTING BACKFLOW PREVENTER

ABBREVIATIONS:

AV	AIR VAC
BX	BOTTOM OF DRIVEWAY "X"
COMM MH	COMMUNICATIONS MANHOLE
EM	ELECTRIC METER
EMH	ELECTRIC MANHOLE
EPB	ELECTRIC PULLBOX
EVLT	ELECTRIC VAULT
FDC	FIRE DEPT. CONNECTION
FH	FIRE HYDRANT
FL	FLOWLINE
FS	FINISHED SURFACE
GL	GUTTER LIP
GV	GAS VALVE
HB	HOSE BIB
HH	HANDHOLE
ICV	IRRIGATION CONTROLS
PHMH	TELEPHONE MANHOLE
PHRS	TELEPHONE RISER
SCO	SEWER CLEANOUT
SDCB	STORM DRAIN CATCH BASIN
SDCO	STORM DRAIN CLEANOUT
SDDI	STORM DRAIN DROP INLET
SLPB	STREET LIGHT PULLBOX
SMH	SEWER MANHOLE
TB	TOP OF BERM
TC	TOP OF CURB
TG	TOP OF GRATE
TS	TRAFFIC SIGNAL
TSPB	TRAFFIC SIGNAL PULLBOX
TVPB	TELEVISION PULLBOX
TW	TOP OF WALL
TX	TOP OF DRIVEWAY "X"
WM	WATER METER
WSBF	WATER BACKFLOW
WV	WATER VALVE
WVLT	WATER VAULT



VICINITY MAP
NTS

INDEX TO SHEETS

MOBILITY HUB
AND CENTRAL CAMPUS
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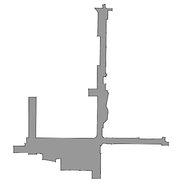

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	05/01/18	100% DD SET	

BASE FILE NAMES	
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PROJECT NO.	GRUEN # 8345

TITLE SHEET

SHEET TITLE

C001

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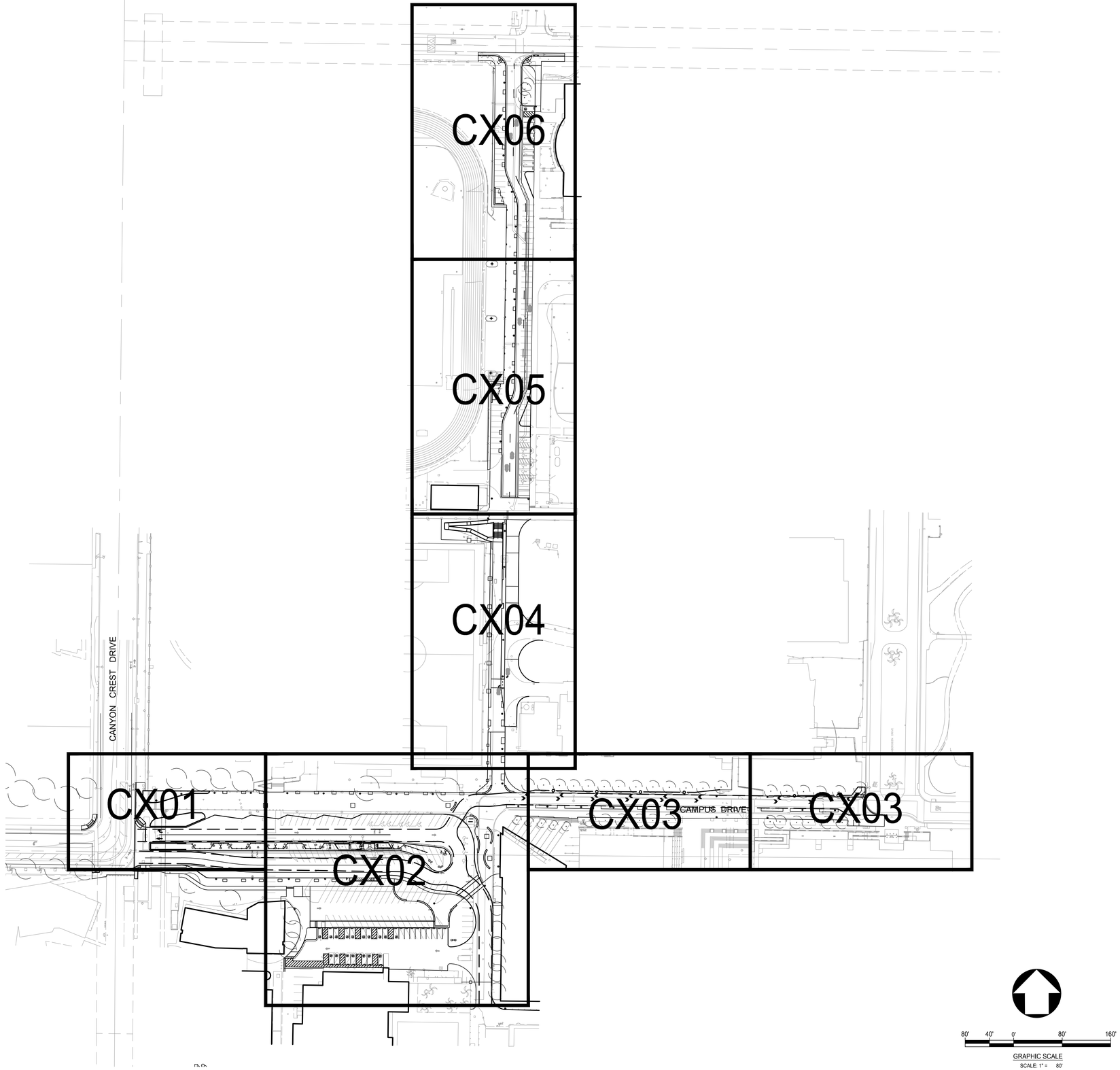

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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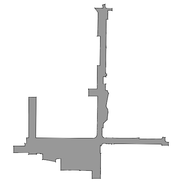

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BASE FILE NAMES	C100.DWG
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OVERALL KEY MAP

SHEET TITLE

C100

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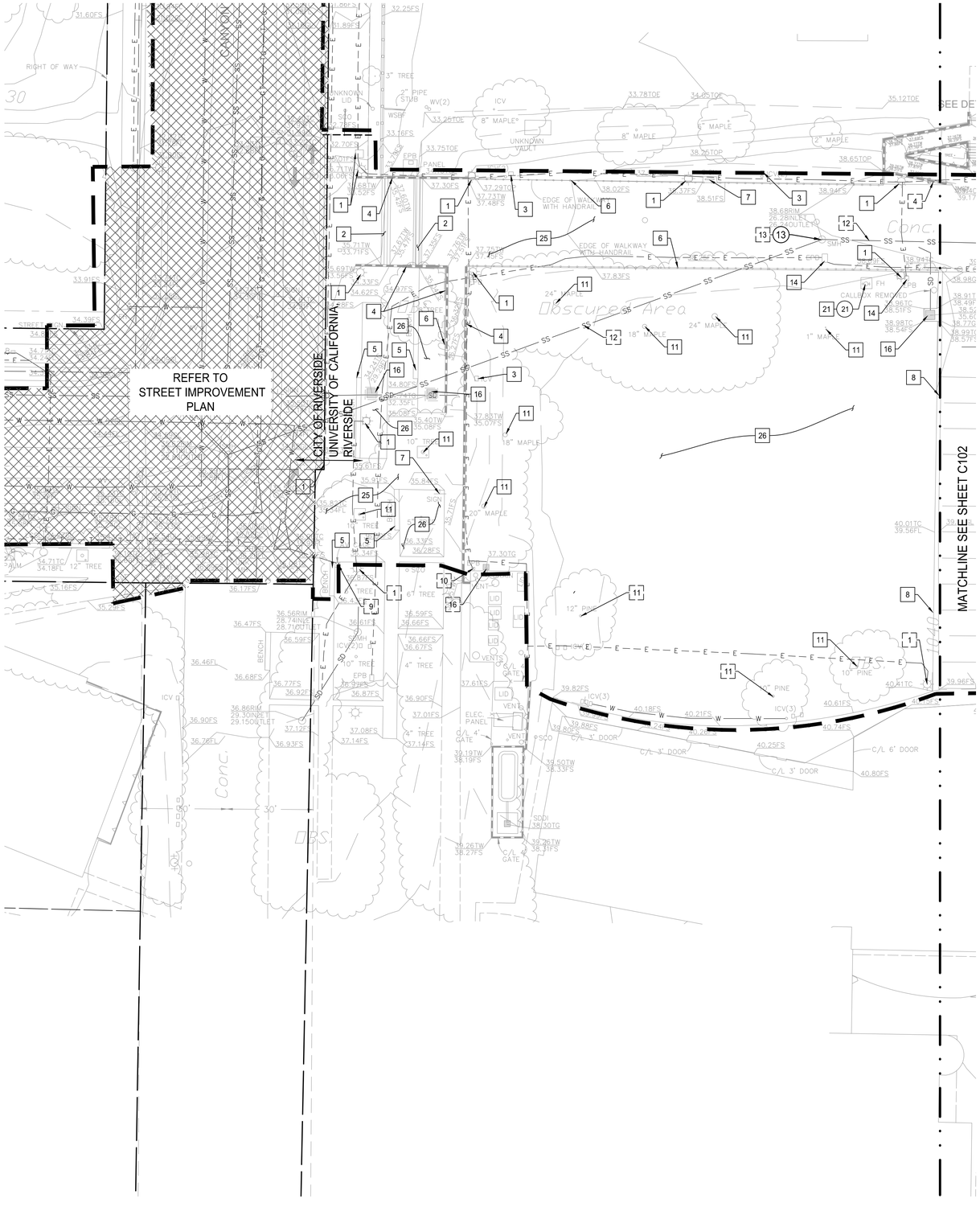

CONSTRUCT
EXISTING TO REMAIN -PROTECT IN PLACE
EXISTING TO REMOVE
REMOVE & RELOCATE
ADJUST TO GRADE
BY OTHERS

CONSTRUCTION NOTES:

1. LIGHT WITH FOOTING
2. STAIRS
3. IRRIGATION CONTROL VALVE
4. RETAINING WALL
5. BENCH
6. HAND RAIL
7. SIGN
8. CURB AND GUTTER
9. VALVE, PER ELECTRICAL PLANS
10. UTILITY BOX, PER ELECTRICAL PLANS
11. TREE
12. SANITARY SEWER
13. SANITARY SEWER MANHOLE
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15. STORM DRAIN
16. STORM DRAIN INLET
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24. ASPHALT CONCRETE BERMS
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27. ASPHALT
28. CURB RAMP
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45. TICKET MACHINE, SALVAGE AND RETURN TO THE UNIVERSITY
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47. FIRE DEPARTMENT CONNECTION
48. ELECTRICAL VAULT
49. STORAGE CONTAINER, COORDINATE LOCATION WITH UNIVERSITY PRIOR TO CONSTRUCTION.
50. POST INDICATOR VALVE
51. CROSSWALK STRIPING, SEE NOTE 7
52. SCOREBOARD, SALVAGE AND RETURN TO THE UNIVERSITY
53. TRASH ENCLOSURE
54. TRUNCATED DOMES

LEGEND:

- LIMITS OF DEMOLITION
- PROPERTY LINE
- SAWCUT AND REMOVE EXISTING PAVEMENT

NOTES:

1. WITHIN DEMOLITION AREA, REMOVE ALL ROOTS,SHRUBS, STRUCTURES, RETAINING WALLS, WALL FOOTINGS, FENCING, STRUCTURAL FOUNDATIONS, PAVED PATHS AND STAIRS, CONCRETE PAVEMENT, ASPHALT PAVEMENT, CURBS, GUTTERS, GROUND COVER, AND ANY EXISTING IMPROVEMENTS NOT SPECIFICALLY NOTED TO REMAIN. REMOVE ALL MISCELLANEOUS TRASH FROM SITE.
2. UNLESS OTHERWISE NOTED, ALL EXISTING UNDERGROUND UTILITIES AND ASSOCIATED STRUCTURES SHALL BE PROTECTED IN PLACE.
3. REFERENCE MECHANICAL, ELECTRICAL AND TELECOMMUNICATION PLANS FOR DEMOLITION AND INSTALLATION OF M, E, & T UTILITIES AND STRUCTURES.
4. REFERENCE LANDSCAPE PLANS FOR TREE PROTECTION AND REMOVALS.
5. REFERENCE LANDSCAPE PLANS FOR DEMOLITION AND INSTALLATION OF IRRIGATION LINES.
6. SHOULD ANY EXISTING UTILITY NOT SHOWN HEREON BE ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER PRIOR TO DEMOLITION OR CONSTRUCTION.
7. CONTRACTOR SHALL SANDBLAST CONFLICTING EXISTING STRIPING AS INDICATED.

811 Know what's below. Call before you dig.

20' 10' 0' 20' 40'

GRAPHIC SCALE
SCALE: 1" = 20'

MOBILITY HUB
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BASE FILE NAMES	C101.DWG
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DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

SITE DEMOLITION PLAN

SHEET TITLE

C101

SHEET NO.

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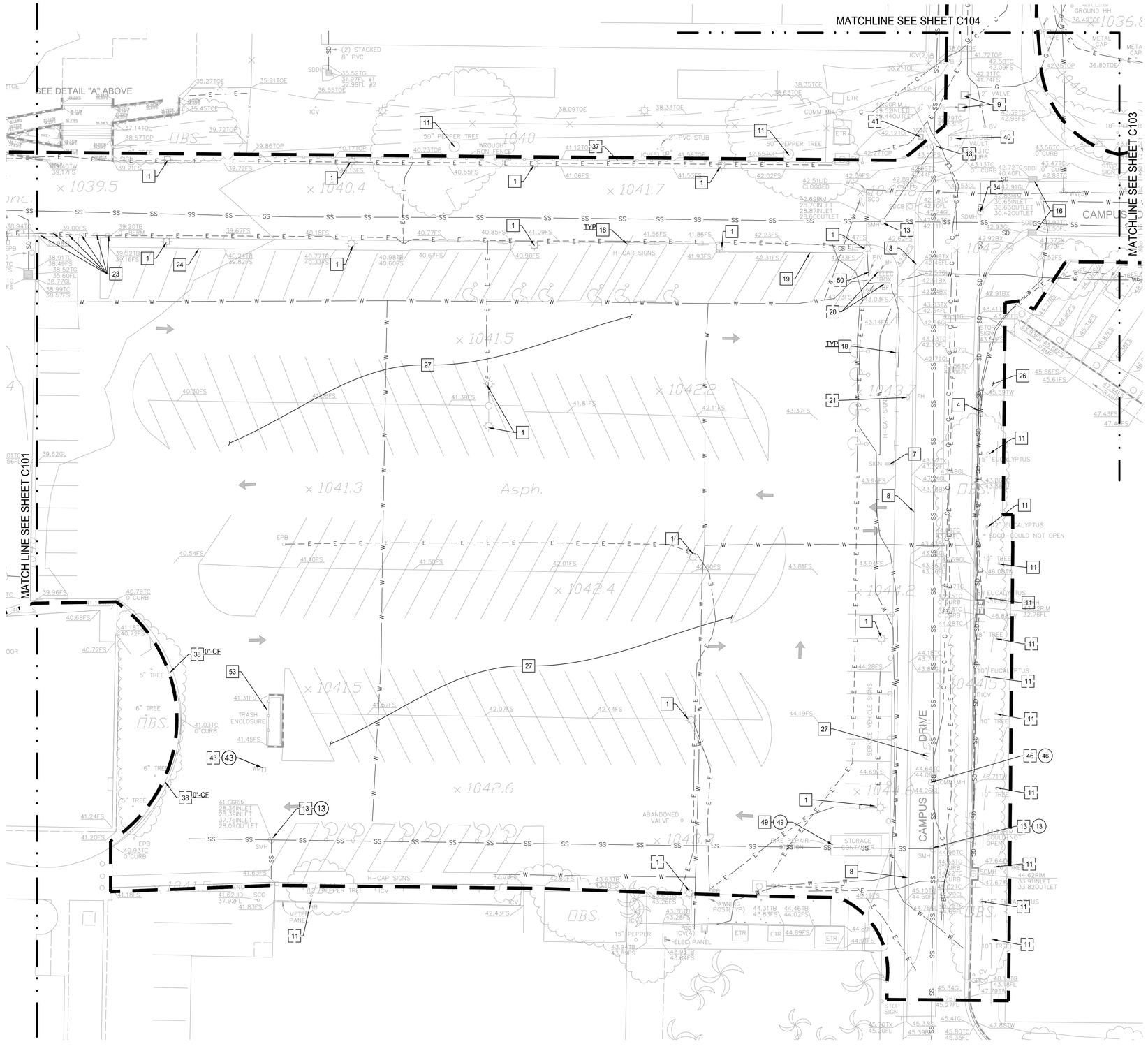

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- EXISTING TO REMOVE
- REMOVE & RELOCATE
- ADJUST TO GRADE
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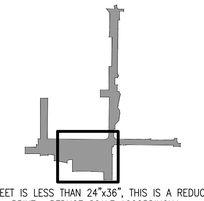

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PROJECT NO.	GRUEN # 8345

SITE DEMOLITION PLAN

SHEET TITLE

C102

SHEET NO.

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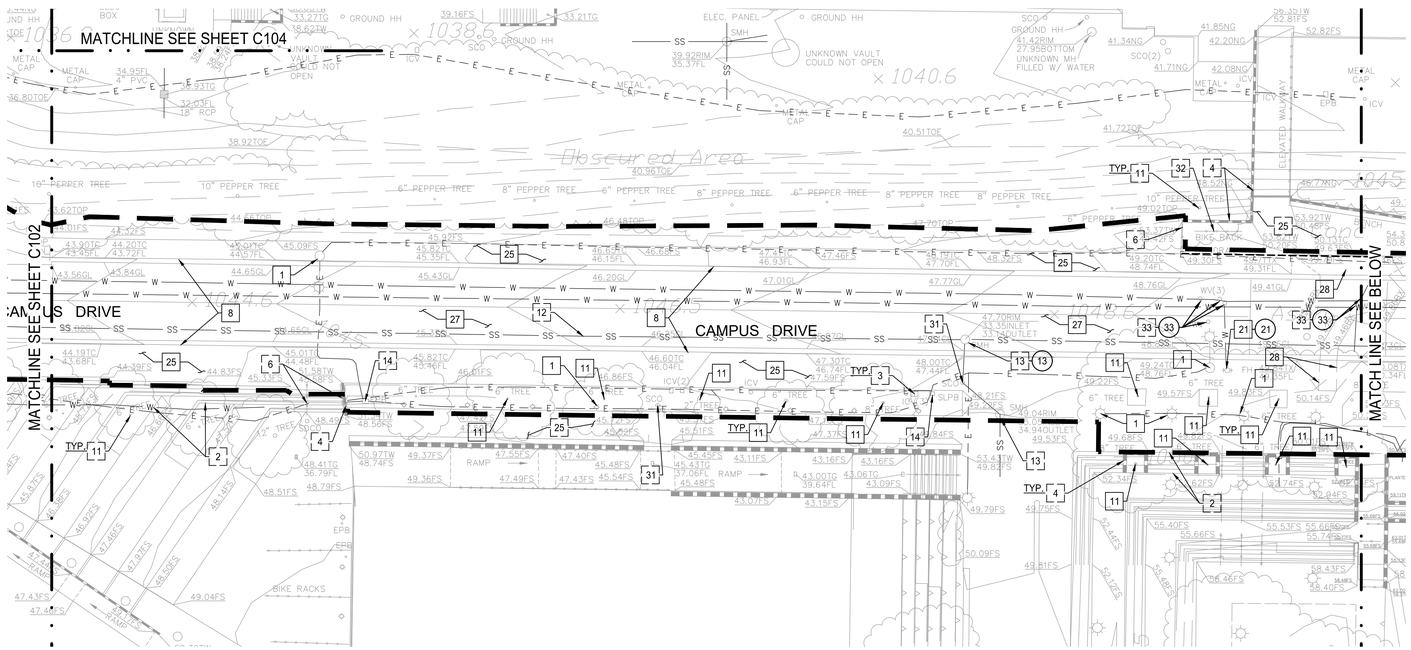

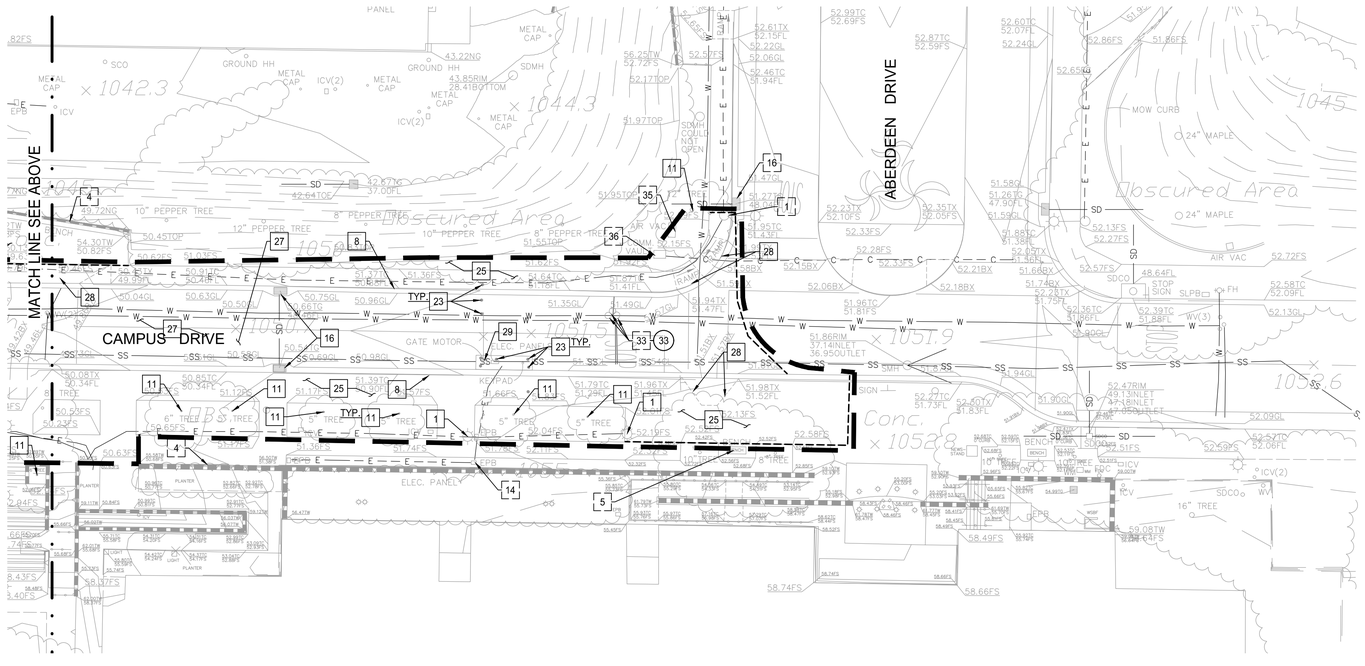

CONSTRUCTION NOTES:

- CONSTRUCT
- EXISTING TO REMAIN -PROTECT IN PLACE
- EXISTING TO REMOVE
- REMOVE & RELOCATE
- ADJUST TO GRADE
- BY OTHERS

1. LIGHT WITH FOOTING
2. STAIRS
3. IRRIGATION CONTROL VALVE
4. RETAINING WALL
5. BENCH
6. HAND RAIL
7. SIGN
8. CURB AND GUTTER
9. VALVE, PER ELECTRICAL PLANS
10. UTILITY BOX, PER ELECTRICAL PLANS
11. TREE
12. SANITARY SEWER
13. SANITARY SEWER MANHOLE
14. PULLBOX, PER ELECTRICAL PLANS
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44. ELECTRICAL CELLULAR EQUIPMENT, PER ELECTRICAL PLANS
45. TICKET MACHINE. SALVAGE AND RETURN TO THE UNIVERSITY
46. COMMUNICATION MANHOLE, PER ELECTRICAL PLANS
47. FIRE DEPARTMENT CONNECTION
48. ELECTRICAL VAULT
49. STORAGE CONTAINER. COORDINATE LOCATION WITH UNIVERSITY PRIOR TO CONSTRUCTION.
50. POST INDICATOR VALVE
51. CROSSWALK STRIPING, SEE NOTE 7
52. SCOREBOARD. SALVAGE AND RETURN TO THE UNIVERSITY
53. TRASH ENCLOSURE
54. TRUNCATED DOMES

LEGEND:

- LIMITS OF DEMOLITION
- PROPERTY LINE
- SAWCUT AND REMOVE EXISTING PAVEMENT

NOTES:

1. WITHIN DEMOLITION AREA, REMOVE ALL ROOTS,SHRUBS, STRUCTURES, RETAINING WALLS, WALL FOOTINGS, FENCING, STRUCTURAL FOUNDATIONS, PAVED PATHS AND STAIRS, CONCRETE PAVEMENT, ASPHALT PAVEMENT, CURBS, GUTTERS, GROUND COVER, AND ANY EXISTING IMPROVEMENTS NOT SPECIFICALLY NOTED TO REMAIN. REMOVE ALL MISCELLANEOUS TRASH FROM SITE.
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4. REFERENCE LANDSCAPE PLANS FOR TREE PROTECTION AND REMOVALS.
5. REFERENCE LANDSCAPE PLANS FOR DEMOLITION AND INSTALLATION OF IRRIGATION LINES.
6. SHOULD ANY EXISTING UTILITY NOT SHOWN HEREON BE ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER PRIOR TO DEMOLITION OR CONSTRUCTION.
7. CONTRACTOR SHALL SANDBLAST CONFLICTING EXISTING STRIPING AS INDICATED.

Know what's below. Call before you dig.

20' 10' 0' 20' 40'

GRAPHIC SCALE
SCALE: 1" = 20'

UNIVERSITY OF CALIFORNIA RIVERSIDE

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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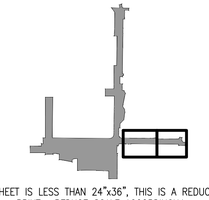


IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD-BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES	C103.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

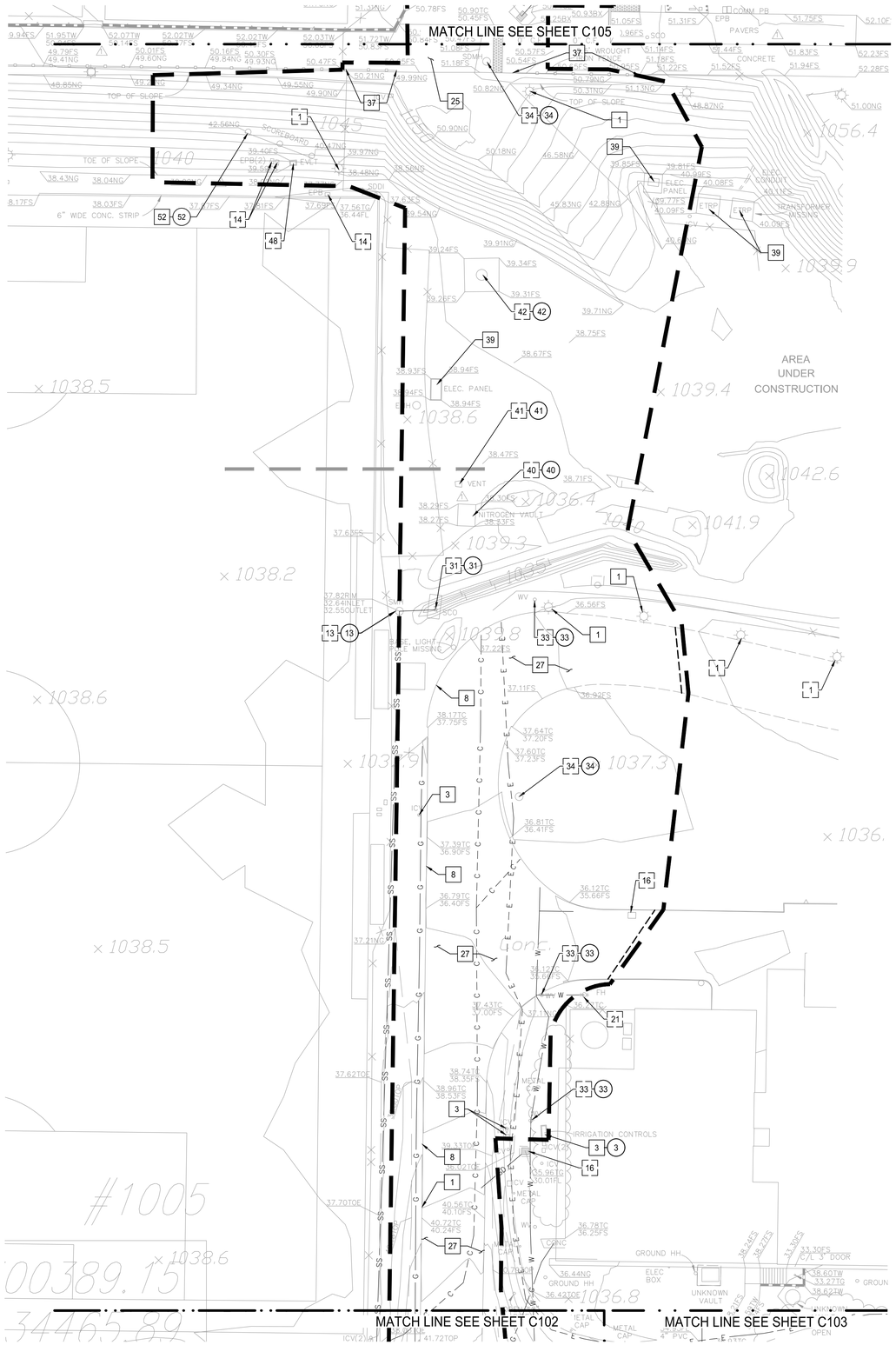
SITE DEMOLITION PLAN

SHEET TITLE

C103

SHEET NO.

Plotted — 1/9/2019 11:25:56 AM :: Saved — 1/8/2019 11:22:27 PM :: W:\UCR\1GRU01320\1ENGR\SHEETS\C103.dwg :: Benjamin.vazquez



CONSTRUCTION NOTES:

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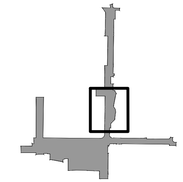

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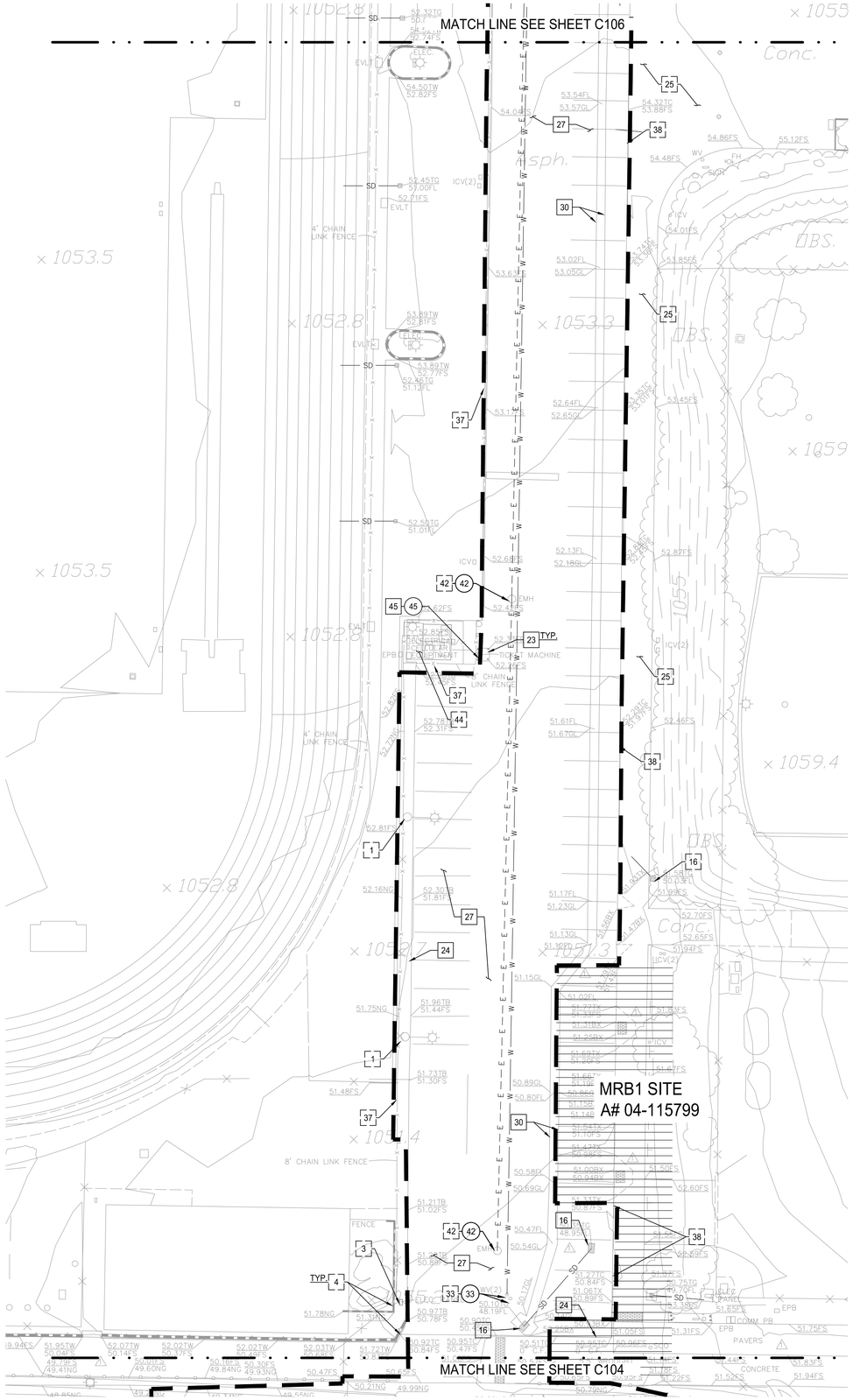
BASE FILE NAMES	C104.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

SITE DEMOLITION PLAN

SHEET TITLE

C104

SHEET NO.



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ARCHITECT/ENGINEER SEAL

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		10/29/18 50% CD SET	
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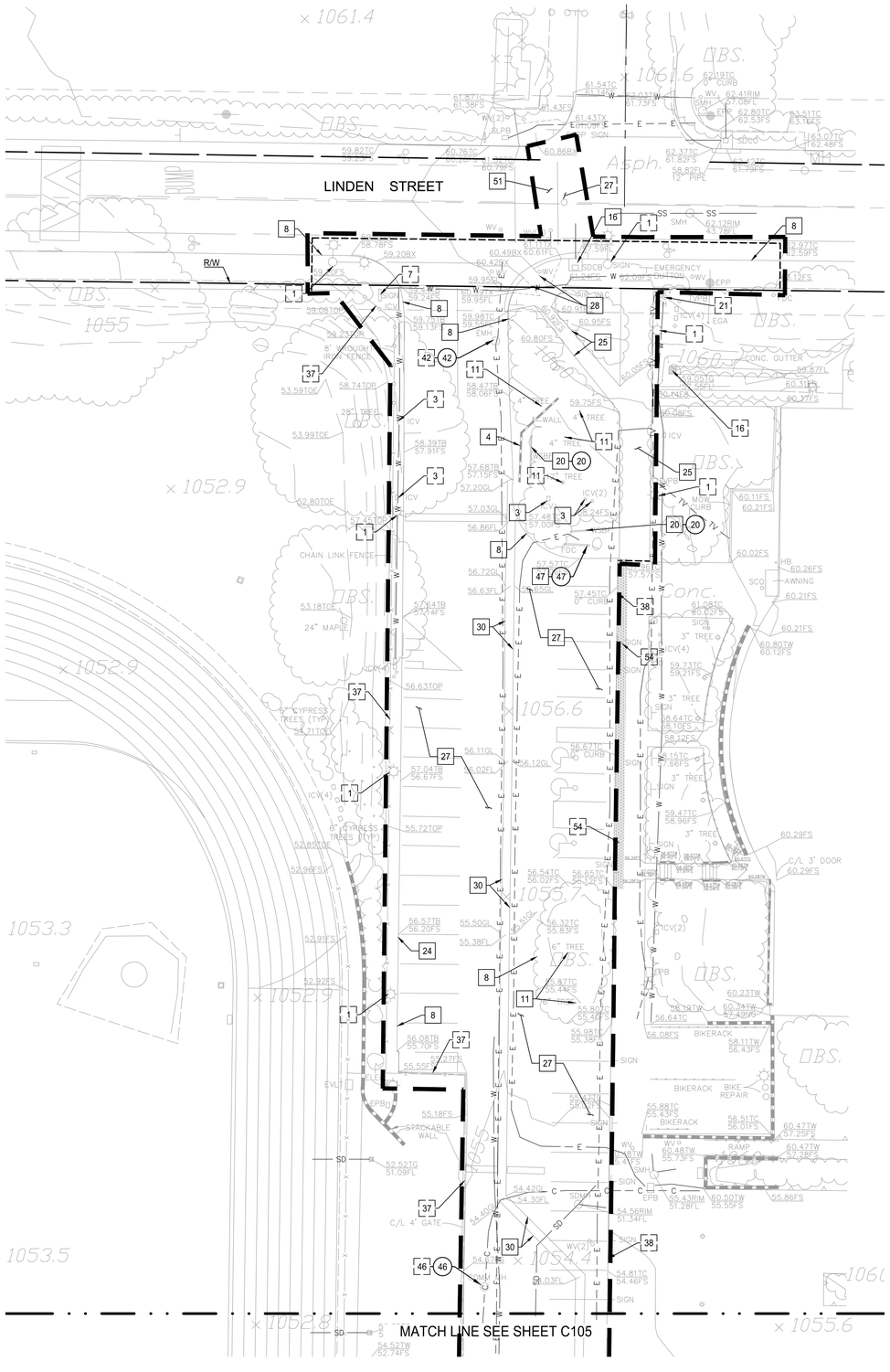
BASE FILE NAMES	C105.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

SITE DEMOLITION PLAN

SHEET TITLE

C105

SHEET NO.



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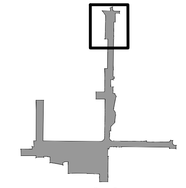

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BASE FILE NAMES	C106.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

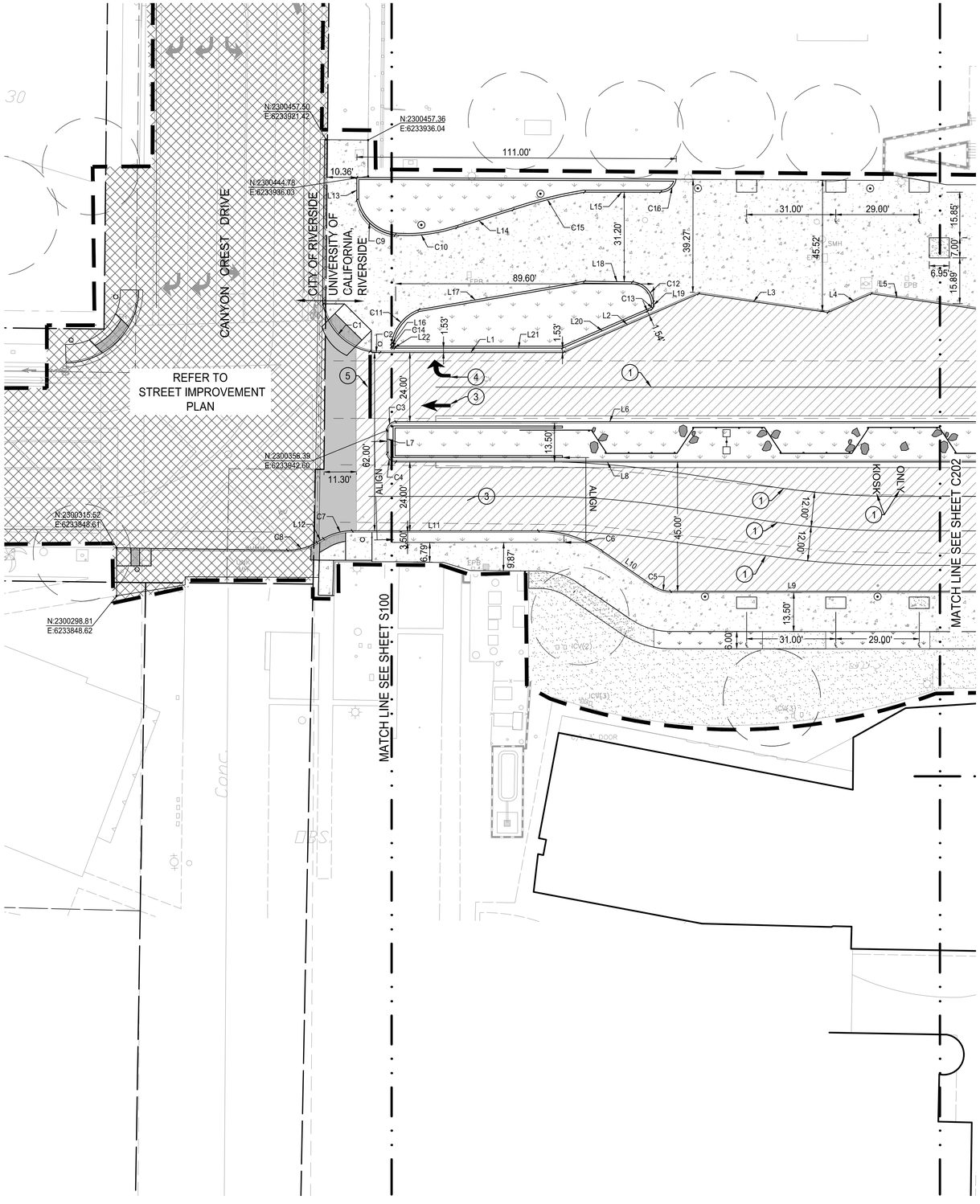
SITE DEMOLITION PLAN

SHEET TITLE

C106

SHEET NO.

Plotted -- 1/9/2019 11:26:42 AM :: Saved -- 1/9/2019 10:59:04 AM :: W:\UCR\TGRU013201\ENGR\SHEETS\C106 .dwg :: Benjamin.vazquez



CONSTRUCTION NOTES:

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1. 6" WHITE LINE WITH BLACK BORDER PAINT AND LEGEND
2. ADA PARALLEL PARKING STALL PER CALTRANS REVISED STANDARD PLAN RSP A90B.
3. TYPE I PAVEMENT ARROW PER CALTRANS STD PLAN A24A
4. TYPE IV (R) PAVEMENT ARROW PER CALTRANS STD PLAN A24A
5. SEE SHEET S100 FOR STOP BAR
6. PARKING SPACE STRIPING PER DETAIL 3/SHEET C902
7. ACCESSIBLE PARKING PER DETAIL 5/ SHEET C902.
8. INSTALL 24" CONTINENTAL CROSSING PER CA MUTCD, FIG 3B-19
9. INSTALL 6" YELLOW CENTER LINE PER CALTRANS STANDARD PLAN A20A.
10. INSTALL PAVEMENT MARKING PER CA MUTCD.
11. WHEEL STOP PER DETAIL 9/ SHEET C901.
12. PASSENGER LOADING ONLY, 5 MINUTE LIMIT SIGN PER DETAIL5/ SHEET C904 TYPE PER PLAN.
13. NOT USED
14. 4" WIDE BLUE PAINTED DIAGONAL STRIPE, 3' ON CENTER, PROVIDE 12" HIGH WHITE PAINTED LETTERS WHICH READ "NO PARKING".

SIGNING AND STRIPING NOTES

1. ALL STRIPING, MARKINGS, AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC UNLESS OTHERWISE NOTED.

LEGEND:

- WORK LIMITS
- MATCH LINE
- PROPERTY LINE
- FIRE LANE
- CONCRETE PAVEMENT (PER DETAIL 2/ SHEET C901)
- ASPHALT PAVEMENT (PER DETAIL 1/ SHEET C901)
- PLANTING AREA (PER PLANTING PLANS)
- GRADED DIRT (PER PLANTING PLANS)
- CONCRETE SIDEWALK (PER HARDSCAPE PLANS)

Line Table		
Line #	Length	Direction
L1	63.77	N90° 00' 00.00"E
L2	51.25	N66° 28' 48.46"E
L3	45.47	S81° 46' 50.85"E
L4	16.35	N66° 34' 16.71"E
L5	45.47	S81° 46' 50.85"E
L6	330.26	N90° 00' 00.00"W
L7	8.00	S0° 20' 34.49"E
L8	401.80	N90° 00' 00.00"E
L9	240.56	N90° 00' 00.00"E
L10	21.33	S55° 20' 30.01"E
L11	64.73	S89° 59' 59.99"E
L12	2.65	N60° 00' 00.00"E

Line Table		
Line #	Length	Direction
L13	7.99	S0° 00' 00.00"E
L14	20.48	N72° 30' 01.34"E
L15	26.48	N90° 00' 00.00"E
L16	1.16	S0° 00' 01.48"E
L17	58.38	S80° 16' 07.50"W
L18	16.67	N89° 11' 11.66"W
L19	1.22	N0° 19' 42.65"E
L20	33.89	N66° 28' 48.46"E
L21	58.25	N90° 00' 00.00"E
L22	0.83	N90° 00' 00.00"E

Curve Table			
Curve #	Length	Radius	Delta
C9	19.08	15.71	69.61
C10	21.82	54.97	22.74
C15	25.60	155.55	9.43
C16	7.62	5.37	81.37
C11	15.99	15.20	60.28
C14	0.63	0.41	88.96
C13	1.01	0.83	69.38
C12	11.42	7.89	82.89
C1	24.71	20.00	70.77
C2	3.55	20.00	10.17
C3	4.73	3.00	90.34
C4	4.69	3.00	89.66
C5	6.65	11.00	34.66
C6	23.59	39.00	34.66
C7	10.47	20.00	30.00
C8	10.72	20.00	30.71

20' 10' 0' 20' 40'

GRAPHIC SCALE
SCALE: 1" = 20'

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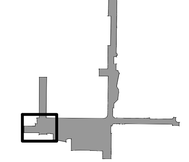


IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD-BID SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	C201.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

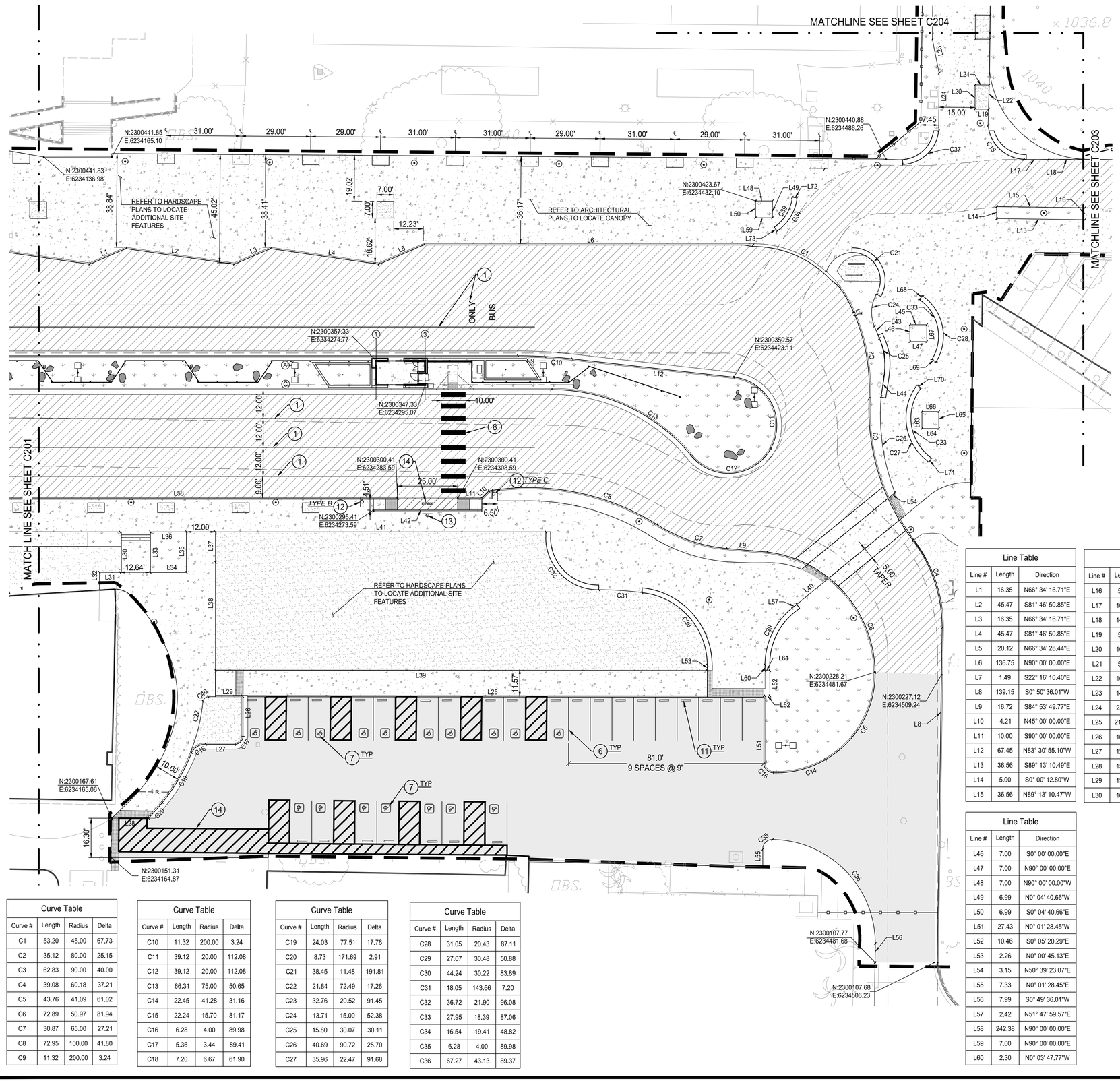
HORIZONTAL CONTROL AND STRIPING PLAN

SHEET TITLE

C201

SHEET NO.

Plotted — 1/9/2019 11:27:35 AM :: Saved — 1/8/2019 1:28:36 PM :: W:\UCR\1GRU013201\ENGR\SHEETS\C201.dwg :: Benjamin.vazquez



CONSTRUCTION NOTES:

- CONSTRUCT
- EXISTING TO REMAIN -PROTECT IN PLACE
- EXISTING TO REMOVE
- REMOVE & RELOCATE
- ADJUST TO GRADE
- BY OTHERS

1. 6" WHITE LINE WITH BLACK BORDER PAINT AND LEGEND
2. ADA PARALLEL PARKING STALL PER CALTRANS REVISED STANDARD PLAN RSP A90B.
3. TYPE I PAVEMENT ARROW PER CALTRANS STD PLAN A24A
4. TYPE IV (R) PAVEMENT ARROW PER CALTRANS STD PLAN A24A
5. SEE SHEET S100 FOR STOP BAR
6. PARKING SPACE STRIPING PER DETAIL 3/SHEET C902
7. ACCESSIBLE PARKING PER DETAIL 5/ SHEET C902.
8. INSTALL 24" CONTINENTAL CROSSING PER CA MUTCD, FIG 3B-19
9. INSTALL 6" YELLOW CENTER LINE PER CALTRANS STANDARD PLAN A20A.
10. INSTALL PAVEMENT MARKING PER CA MUTCD.
11. WHEEL STOP PER DETAIL 9/ SHEET C901.
12. PASSENGER LOADING ONLY, 5 MINUTE LIMIT SIGN PER DETAIL5/ SHEET C904 TYPE PER PLAN.
13. NOT USED
14. 4" WIDE BLUE PAINTED DIAGONAL STRIPE, 3' ON CENTER, PROVIDE 12" HIGH WHITE PAINTED LETTERS WHICH READ "NO PARKING".

SIGNING AND STRIPING NOTES

1. ALL STRIPING, MARKINGS, AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC UNLESS OTHERWISE NOTED.

LEGEND:

- WORK LIMITS
- MATCH LINE
- PROPERTY LINE
- FIRE LANE
- CONCRETE PAVEMENT (PER DETAIL 2/ SHEET C901)
- ASPHALT PAVEMENT (PER DETAIL 1/ SHEET C901)
- PLANTING AREA (PER PLANTING PLANS)
- GRADED DIRT (PER PLANTING PLANS)
- CONCRETE SIDEWALK (PER HARDSCAPE PLANS)

Line Table		
Line #	Length	Direction
L1	16.35	N66° 34' 16.71"E
L2	45.47	S81° 46' 50.85"E
L3	16.35	N66° 34' 16.71"E
L4	45.47	S81° 46' 50.85"E
L5	20.12	N66° 34' 28.44"E
L6	136.75	N90° 00' 00.00"E
L7	1.49	S22° 16' 10.40"E
L8	139.15	S0° 50' 36.01"W
L9	16.72	S84° 53' 49.77"E
L10	4.21	N45° 00' 00.00"E
L11	10.00	S90° 00' 00.00"E
L12	67.45	N83° 30' 55.10"W
L13	36.56	S89° 13' 10.49"E
L14	5.00	S0° 00' 12.80"W
L15	36.56	N89° 13' 10.47"W

Line Table		
Line #	Length	Direction
L16	5.00	N0° 01' 02.67"E
L17	10.25	N90° 00' 00.00"W
L18	14.48	N89° 46' 27.51"E
L19	5.59	S89° 58' 09.52"W
L20	10.06	N0° 12' 01.38"E
L21	5.83	S89° 23' 31.23"E
L22	10.00	S1° 32' 59.23"W
L23	14.37	S11° 10' 57.86"E
L24	23.89	S0° 26' 18.05"W
L25	215.99	N89° 57' 24.35"W
L26	16.16	S0° 00' 00.00"E
L27	12.19	N89° 56' 58.76"W
L28	15.32	N89° 56' 40.48"W
L29	13.95	N89° 59' 54.03"E
L30	16.74	S0° 00' 00.00"E

Line Table		
Line #	Length	Direction
L31	8.44	N90° 00' 00.00"W
L32	7.45	S0° 00' 00.00"E
L33	16.79	S0° 00' 00.00"E
L34	15.00	N90° 00' 00.00"E
L35	16.79	N0° 00' 00.00"W
L36	15.00	S90° 00' 00.00"W
L37	12.66	N0° 00' 19.38"W
L38	44.68	N0° 00' 10.98"E
L39	204.00	N89° 56' 59.18"W
L40	16.72	S50° 34' 20.31"W
L41	136.80	N89° 59' 56.05"W
L42	45.00	S90° 00' 00.00"W
L43	5.51	N22° 09' 40.64"W
L44	8.72	N7° 58' 11.97"E
L45	7.00	N90° 00' 00.00"W

Line Table		
Line #	Length	Direction
L46	7.00	S0° 00' 00.00"E
L47	7.00	N90° 00' 00.00"E
L48	7.00	N90° 00' 00.00"W
L49	6.99	N0° 04' 40.66"W
L50	6.99	S0° 04' 40.66"E
L51	27.43	N0° 01' 28.45"W
L52	10.46	S0° 05' 20.29"E
L53	2.26	N0° 00' 45.13"E
L54	3.15	N50° 39' 23.07"E
L55	7.33	N0° 01' 28.45"E
L56	7.99	S0° 49' 36.01"W
L57	2.42	N51° 47' 59.57"E
L58	242.38	N90° 00' 00.00"E
L59	7.00	N90° 00' 00.00"E
L60	2.30	N0° 03' 47.77"W

Curve Table			
Curve #	Length	Radius	Delta
C1	53.20	45.00	67.73
C2	35.12	80.00	25.15
C3	62.83	90.00	40.00
C4	39.08	60.18	37.21
C5	43.76	41.09	61.02
C6	72.89	50.97	81.94
C7	30.87	65.00	27.21
C8	72.95	100.00	41.80
C9	11.32	200.00	3.24

Curve Table			
Curve #	Length	Radius	Delta
C10	11.32	200.00	3.24
C11	39.12	20.00	112.08
C12	39.12	20.00	112.08
C13	66.31	75.00	50.65
C14	22.45	41.28	31.16
C15	22.24	15.70	81.17
C16	6.28	4.00	89.98
C17	5.36	3.44	89.41
C18	7.20	6.67	61.90

Curve Table			
Curve #	Length	Radius	Delta
C19	24.03	77.51	17.76
C20	8.73	171.69	2.91
C21	38.45	11.48	191.81
C22	21.84	72.49	17.26
C23	32.76	20.52	91.45
C24	13.71	15.00	52.38
C25	15.80	30.07	30.11
C26	40.69	90.72	25.70
C27	35.96	22.47	91.68

Curve Table			
Curve #	Length	Radius	Delta
C28	31.05	20.43	87.11
C29	27.07	30.48	50.88
C30	44.24	30.22	83.89
C31	18.05	143.66	7.20
C32	36.72	21.90	96.08
C33	27.95	18.39	87.06
C34	16.54	19.41	48.82
C35	6.28	4.00	89.98
C36	67.27	43.13	89.37

GRAPHIC SCALE
SCALE: 1" = 20'

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KEY PLAN

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		01/10/19 100% CD-BID SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	C202.DW
DRAWN BY	G
CHECKED BY	Al
SCALE	AS SHOW
DATE	01-10-201
PROJECT NO.	GRUEN # 834

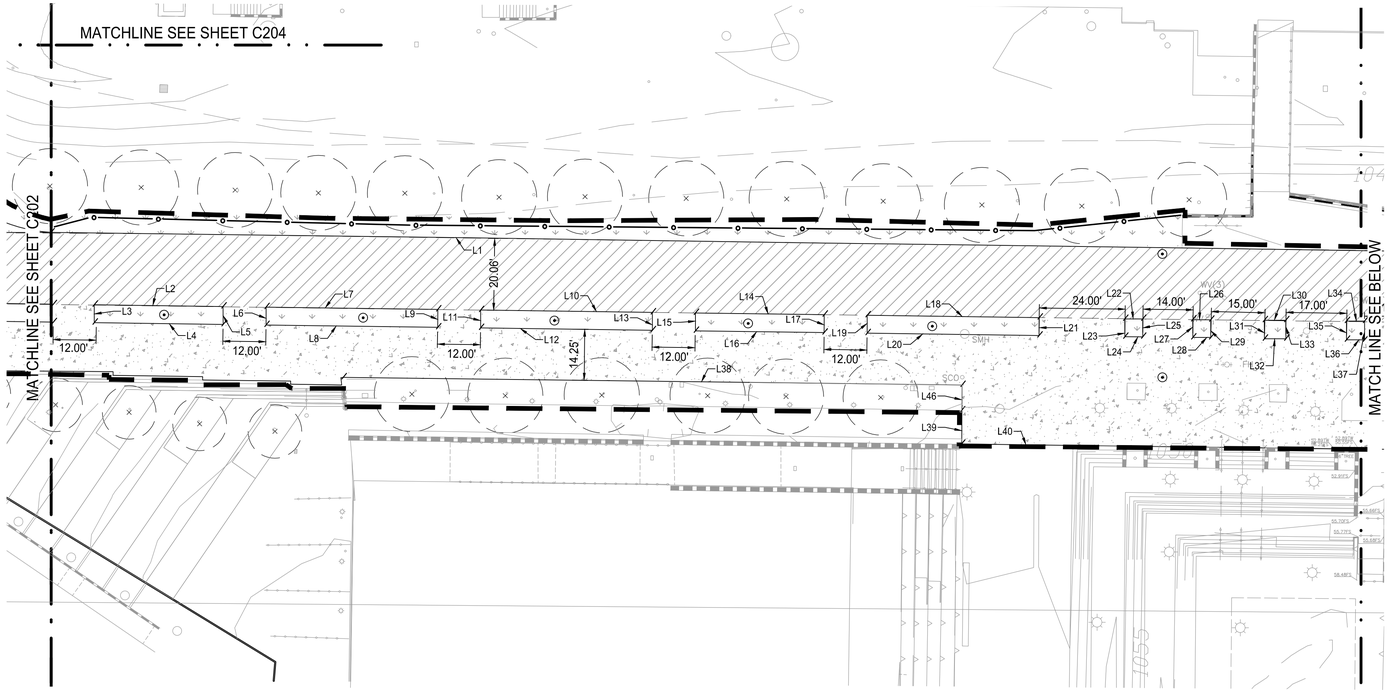
HORIZONTAL CONTROL AND STRIPING PLAN

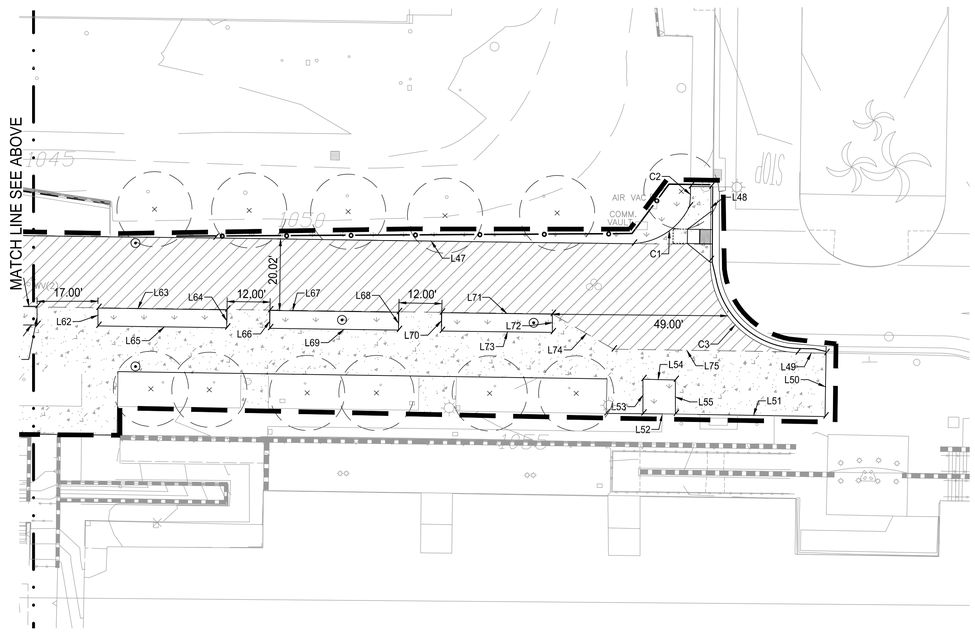
SHEET TITLE

C202

SHEET NO.

Plotted — 1/9/2019 12:02:02 PM :: Saved — 1/9/2019 11:59:12 AM :: Y:\UCR\GRU013201\ENGR\SHEETS\C202.dwg :: celeste.solano





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- GRADED DIRT (PER PLANTING PLANS)
- CONCRETE SIDEWALK (PER HARDSCAPE PLANS)

Line Table		
Line #	Length	Direction
L1	141.15	N89° 25' 06.39"W
L2	36.00	N89° 13' 19.25"W
L3	5.00	S0° 00' 00.00"E
L4	36.01	S89° 13' 10.47"E
L5	5.00	N0° 09' 24.54"W
L6	5.00	S0° 00' 00.00"E
L7	48.00	N89° 13' 10.47"W
L8	47.97	S89° 13' 10.02"E
L9	5.00	N0° 21' 10.93"E
L10	48.00	N89° 13' 10.47"W
L11	5.00	S0° 00' 00.00"E
L12	48.00	S89° 13' 08.25"E
L13	5.00	N0° 00' 04.58"W
L14	36.00	N89° 13' 10.47"W
L15	5.00	S0° 00' 00.00"E
L16	35.98	S89° 13' 10.47"E
L17	5.00	N0° 16' 24.63"E
L18	48.09	N89° 13' 09.77"W
L19	5.00	S0° 00' 00.00"E
L20	48.02	S89° 12' 10.20"E

Line Table		
Line #	Length	Direction
L21	5.01	N0° 48' 40.08"E
L22	5.01	S89° 50' 56.73"E
L23	4.99	N0° 08' 29.12"W
L24	5.00	N89° 52' 15.02"W
L25	4.99	S0° 00' 00.00"E
L26	5.02	S89° 26' 48.68"E
L27	4.99	N0° 08' 29.12"W
L28	5.01	S90° 00' 00.00"W
L29	4.94	S0° 00' 00.01"W
L30	5.99	N89° 59' 41.87"W
L31	5.18	S0° 08' 10.58"E
L32	5.99	N90° 00' 00.00"E
L33	5.18	N0° 08' 10.58"W
L34	5.05	S89° 54' 59.11"E
L35	5.22	N0° 06' 00.81"W
L36	5.05	N89° 53' 20.72"W
L37	5.22	S0° 06' 00.81"E
L38	172.96	N89° 17' 58.64"W
L39	9.36	N0° 03' 47.81"W
L40	30.98	N89° 11' 36.79"W

Line Table		
Line #	Length	Direction
L46	7.10	N0° 52' 43.63"E
L47	217.71	N89° 12' 52.01"W
L48	20.51	N0° 23' 32.34"E
L49	8.03	N89° 03' 41.76"W
L50	17.73	N0° 55' 29.66"E
L51	50.91	S89° 03' 27.24"E
L52	9.00	S89° 13' 50.49"E
L53	9.61	S0° 15' 49.89"E
L54	9.04	N88° 51' 52.01"W
L55	9.55	N0° 00' 00.00"E
L62	5.00	S0° 00' 00.00"E
L63	36.00	N89° 13' 10.47"W
L64	5.00	N0° 00' 00.00"E
L65	36.00	S89° 13' 10.47"E
L66	5.00	S0° 00' 00.00"E
L67	36.00	N89° 11' 44.79"W
L68	5.01	N0° 00' 04.62"E
L69	36.00	S89° 10' 55.98"E
L70	5.12	S0° 00' 05.89"E
L71	31.00	N89° 16' 11.74"W

Line Table		
Line #	Length	Direction
L72	5.10	N0° 00' 00.00"E
L73	31.00	S89° 18' 47.73"E
L74	19.88	S60° 09' 26.21"E
L75	48.44	S89° 08' 54.17"E

Curve Table			
Curve #	Length	Radius	Delta
C1	19.74	18.33	61.69
C2	5.60	37.27	8.61
C3	39.41	25.11	89.90

20' 10' 0' 20' 40'

GRAPHIC SCALE
SCALE: 1" = 20'

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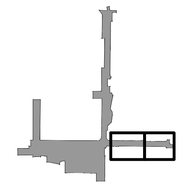

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KEY PLAN

NO.	DATE	ISSUED FOR	B
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		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	C203.DW
DRAWN BY	G
CHECKED BY	AL
SCALE	AS SHOW
DATE	01-10-201
PROJECT NO.	GRUEN # 834

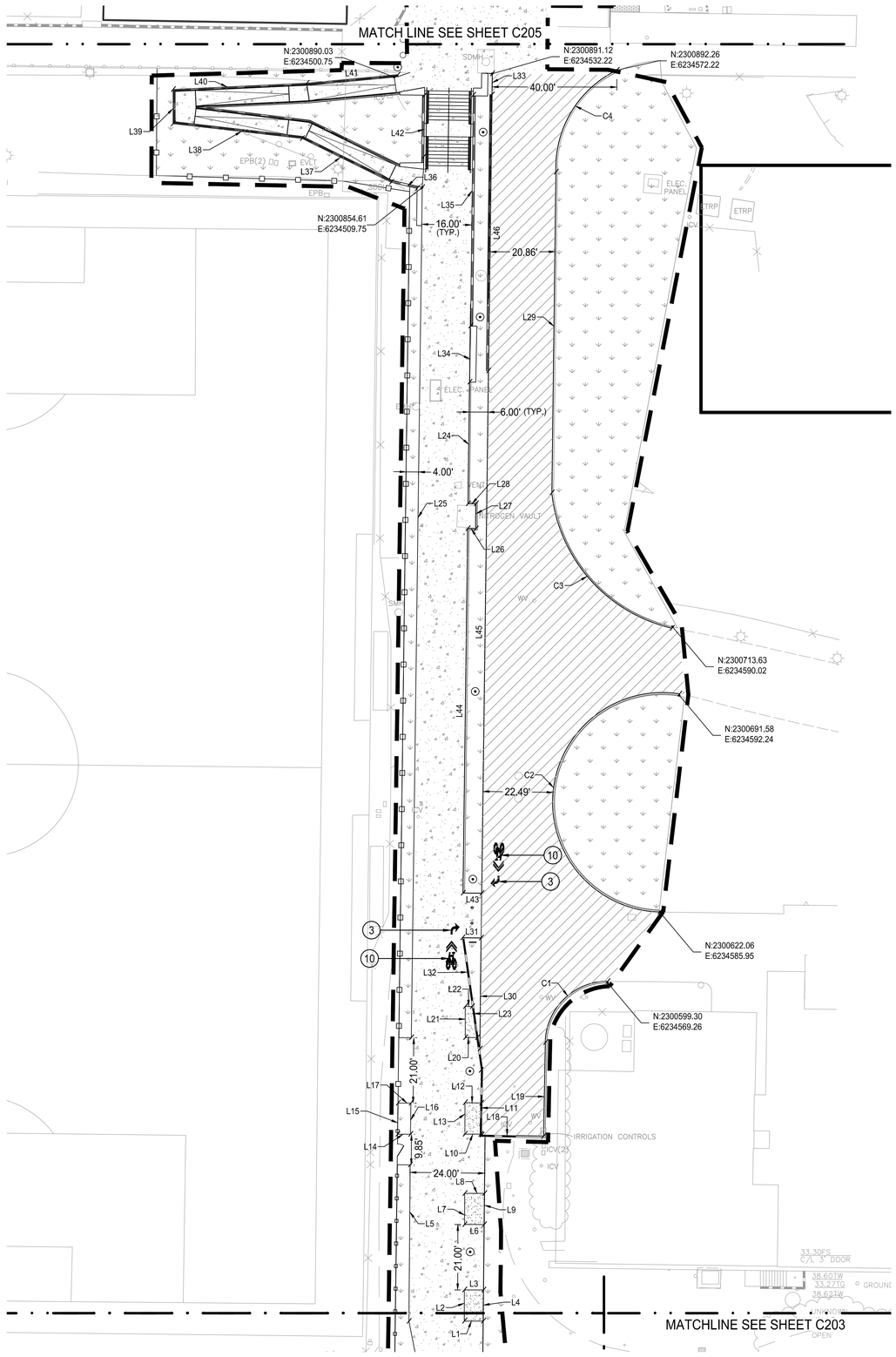
HORIZONTAL CONTROL AND STRIPING PLAN

SHEET TITLE

C203

SHEET NO.

Plotted — 1/9/2019 12:21:00 PM :: Saved — 1/9/2019 12:20:24 PM :: Y:\UCR\GRU01320\1\ENGR\SHEETS\C203.dwg :: celeste.solano



CONSTRUCTION NOTES:

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- GRADED DIRT (PER PLANTING PLANS)
- CONCRETE SIDEWALK (PER HARDSCAPE PLANS)

Line Table		
Line #	Length	Direction
L1	6.06	N89° 56' 37.06"E
L2	10.03	S0° 12' 01.38"W
L3	6.13	N89° 47' 58.62"W
L4	10.00	N0° 35' 53.99"E
L5	50.18	N0° 27' 53.14"E
L6	6.27	N89° 56' 37.06"E
L7	10.00	S0° 12' 01.38"W
L8	6.34	S89° 56' 37.06"W
L9	10.00	N0° 35' 53.99"E
L10	5.10	N89° 56' 37.06"E
L11	10.00	N1° 00' 43.17"E
L12	5.24	N88° 50' 27.73"W
L13	10.11	S0° 12' 01.38"W
L14	4.13	S89° 56' 37.06"W
L15	10.00	N0° 44' 11.15"E
L16	10.00	S0° 53' 34.50"W
L17	4.16	N89° 56' 37.06"E
L18	19.92	S88° 51' 31.46"E
L19	30.06	N1° 03' 53.53"E
L20	3.86	N89° 56' 37.06"E

Line Table		
Line #	Length	Direction
L21	10.00	S0° 04' 45.15"E
L22	2.23	S89° 48' 20.69"W
L23	10.14	N9° 18' 50.86"W
L24	39.03	S0° 44' 17.13"W
L25	272.90	N0° 44' 17.27"E
L26	2.64	N89° 58' 21.68"W
L27	8.03	S0° 06' 09.37"W
L28	2.55	N90° 00' 00.00"E
L29	102.92	N0° 44' 07.14"E
L30	35.62	S0° 38' 43.79"W
L31	5.97	S89° 21' 02.42"E
L32	42.64	N8° 06' 27.95"W
L33	6.74	N0° 44' 17.28"E
L34	18.00	N0° 44' 17.28"E
L35	74.16	N0° 44' 20.90"E
L36	8.50	N76° 46' 54.32"W
L37	31.92	N63° 49' 15.64"W
L38	41.68	N83° 28' 13.08"W
L39	10.98	N0° 00' 00.10"E
L40	42.97	N87° 19' 52.22"E

Line Table		
Line #	Length	Direction
L41	29.40	N84° 38' 25.93"E
L42	19.67	N0° 47' 01.29"E
L43	6.00	S89° 15' 52.19"E
L44	116.93	S0° 44' 17.24"W
L45	167.68	N0° 44' 17.28"E
L46	88.65	N0° 44' 17.28"E

Curve Table			
Curve #	Length	Radius	Delta
C1	31.04	20.00	88.94
C2	115.33	35.23	187.58
C3	62.07	49.93	71.23
C4	40.29	34.91	66.12

20' 10' 0' 20' 40'

GRAPHIC SCALE
SCALE: 1" = 20'

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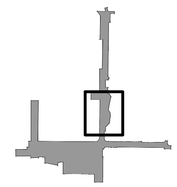


IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	B
		01/10/19 100% CD-BID SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	C204.DW
DRAWN BY	G
CHECKED BY	A\
SCALE	AS SHOW
DATE	01-10-201
PROJECT NO.	GRUEN # 834

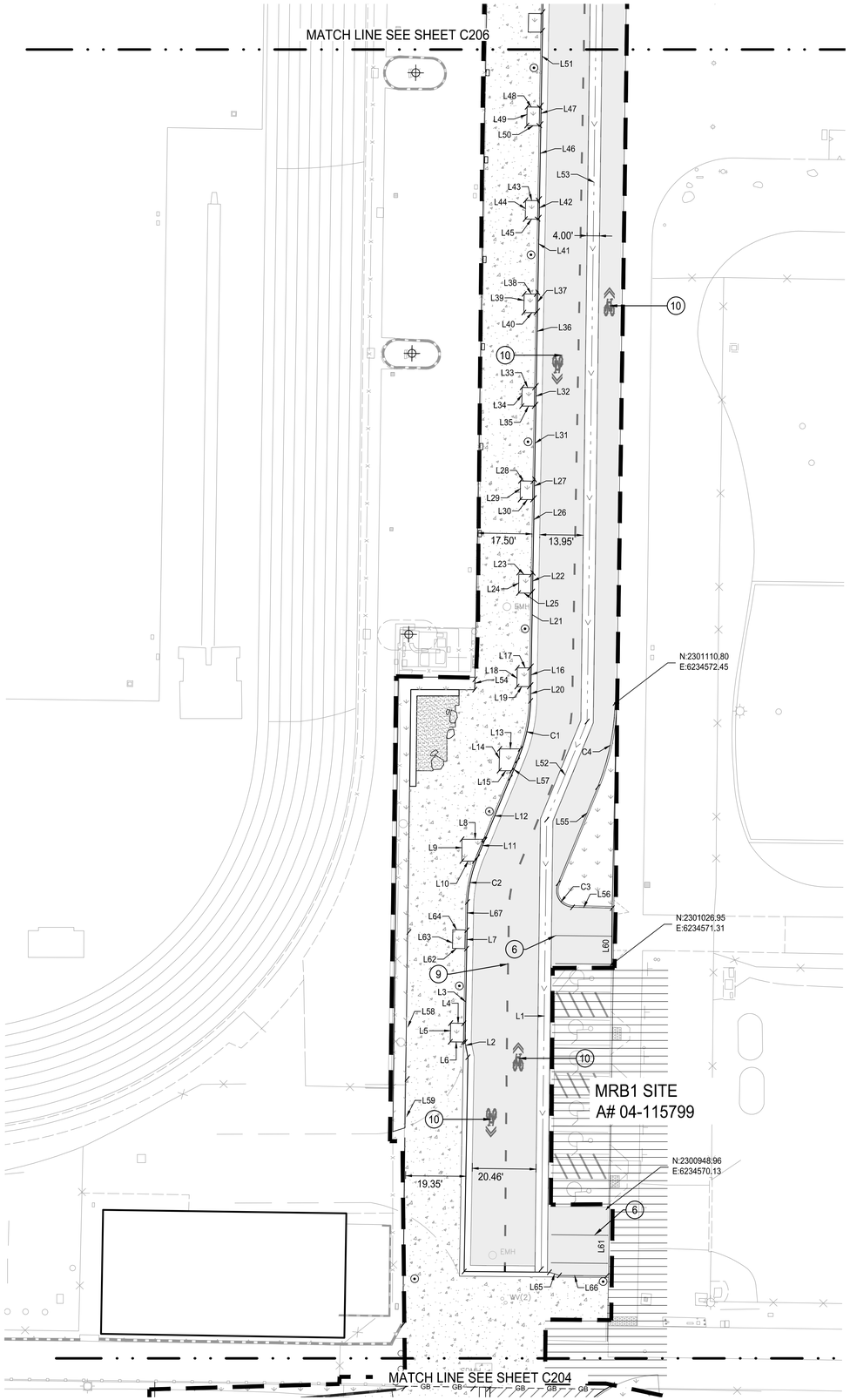
HORIZONTAL CONTROL AND STRIPING PLAN

SHEET TITLE

C204

SHEET NO.

Plotted — 1/9/2019 12:28:47 PM :: Saved — 1/9/2019 12:28:13 PM :: Y:\UCR\1GRU01320\1ENGR\SHEETS\C204.dwg :: celeste.solano



CONSTRUCTION NOTES:

- CONSTRUCT
- EXISTING TO REMAIN -PROTECT IN PLACE
- EXISTING TO REMOVE
- REMOVE & RELOCATE
- ADJUST TO GRADE
- BY OTHERS

1. 6" WHITE LINE WITH BLACK BORDER PAINT AND LEGEND
2. ADA PARALLEL PARKING STALL PER CALTRANS REVISED STANDARD PLAN RSP A90B.
3. TYPE I PAVEMENT ARROW PER CALTRANS STD PLAN A24A
4. TYPE IV (R) PAVEMENT ARROW PER CALTRANS STD PLAN A24A
5. SEE SHEET S100 FOR STOP BAR
6. PARKING SPACE STRIPING PER DETAIL 3/SHEET C902
7. ACCESSIBLE PARKING PER DETAIL 5/ SHEET C902.
8. INSTALL 24" CONTINENTAL CROSSING PER CA MUTCD, FIG 3B-19
9. INSTALL 6" YELLOW CENTER LINE PER CALTRANS STANDARD PLAN A20A.
10. INSTALL PAVEMENT MARKING PER CA MUTCD.
11. WHEEL STOP PER DETAIL 9/ SHEET C901.
12. PASSENGER LOADING ONLY, 5 MINUTE LIMIT SIGN PER DETAIL5/ SHEET C904 TYPE PER PLAN.
13. NOT USED
14. 4" WIDE BLUE PAINTED DIAGONAL STRIPE, 3' ON CENTER, PROVIDE 12" HIGH WHITE PAINTED LETTERS WHICH READ "NO PARKING".

SIGNING AND STRIPING NOTES

1. ALL STRIPING, MARKINGS, AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC UNLESS OTHERWISE NOTED.

LEGEND:

- WORK LIMITS
- MATCH LINE
- PROPERTY LINE
- FIRE LANE
- CONCRETE PAVEMENT (PER DETAIL 2/ SHEET C901)
- ASPHALT PAVEMENT (PER DETAIL 1/ SHEET C901)
- PLANTING AREA (PER PLANTING PLANS)
- GRADED DIRT (PER PLANTING PLANS)
- CONCRETE SIDEWALK (PER HARDSCAPE PLANS)

Line Table		
Line #	Length	Direction
L1	144.21	N0° 41' 44.49"E
L2	4.91	S10° 44' 40.47"E
L3	30.00	S0° 56' 44.62"W
L4	4.23	S88° 49' 57.08"E
L5	6.00	N1° 10' 56.63"E
L6	4.25	N88° 48' 56.08"W
L7	5.94	S0° 59' 01.29"W
L8	6.90	N89° 59' 22.46"E
L9	7.00	N0° 00' 00.88"E
L10	4.00	N89° 59' 59.12"W
L11	6.00	S22° 51' 44.24"W
L12	21.62	S22° 21' 36.95"W
L13	6.63	N89° 59' 30.27"E
L14	7.00	N1° 24' 55.25"E
L15	3.99	S89° 59' 30.12"W
L16	6.00	S1° 00' 53.18"W
L17	3.98	N89° 59' 30.12"E
L18	6.00	N1° 11' 13.59"E
L19	4.00	S89° 59' 30.12"W
L20	5.09	S1° 00' 53.18"W

Line Table		
Line #	Length	Direction
L21	24.01	S0° 59' 22.76"W
L22	6.00	S1° 06' 55.26"W
L23	4.00	S88° 49' 03.37"E
L24	6.01	N0° 59' 07.97"E
L25	4.00	N89° 57' 30.00"W
L26	24.00	S1° 00' 53.18"W
L27	6.00	S1° 00' 53.18"W
L28	3.99	S88° 10' 37.01"E
L29	6.00	N1° 03' 38.63"E
L30	4.00	S89° 59' 30.58"W
L31	24.00	S1° 00' 53.18"W
L32	5.99	S1° 00' 53.18"W
L33	4.00	S88° 49' 03.37"E
L34	6.00	N1° 06' 17.58"E
L35	4.01	S89° 58' 07.78"W
L36	24.01	S1° 00' 53.18"W
L37	6.00	S1° 00' 53.18"W
L38	3.88	S88° 49' 03.37"E
L39	6.00	N1° 10' 56.64"E
L40	3.90	N89° 59' 21.27"W

Line Table		
Line #	Length	Direction
L41	24.00	S1° 00' 53.18"W
L42	6.00	S1° 00' 53.18"W
L43	3.94	S88° 49' 03.37"E
L44	6.00	N1° 10' 56.64"E
L45	3.96	N89° 59' 22.40"W
L46	24.01	S1° 00' 53.18"W
L47	5.99	S1° 00' 53.18"W
L48	4.00	S88° 49' 03.37"E
L49	6.00	N1° 10' 56.63"E
L50	4.00	S89° 59' 30.12"W
L51	24.01	S1° 00' 53.18"W
L52	34.06	N22° 22' 40.80"E
L53	311.84	N0° 44' 09.50"E
L54	3.31	S1° 01' 26.68"W
L55	33.34	N22° 20' 00.98"E
L56	12.75	N88° 42' 30.68"W
L57	6.01	S22° 21' 36.95"W
L58	47.19	S0° 39' 12.00"W
L59	79.04	S1° 01' 30.64"W
L60	17.93	N0° 27' 16.68"E

Line Table		
Line #	Length	Direction
L61	22.01	N1° 05' 19.24"E
L62	4.00	N88° 49' 03.37"W
L63	6.00	N1° 10' 56.63"E
L64	4.00	S88° 49' 57.08"E
L65	3.36	S71° 57' 38.40"E
L66	15.23	S89° 30' 24.62"E
L67	9.05	S1° 12' 55.09"W

Curve Table			
Curve #	Length	Radius	Delta
C1	19.66	51.54	21.8607
C2	14.79	45.25	18.7266
C3	10.62	5.35	113.7085
C4	27.76	77.36	20.5582

20' 10' 0' 20' 40'

GRAPHIC SCALE
SCALE: 1" = 20'

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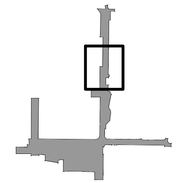

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KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD-BID SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

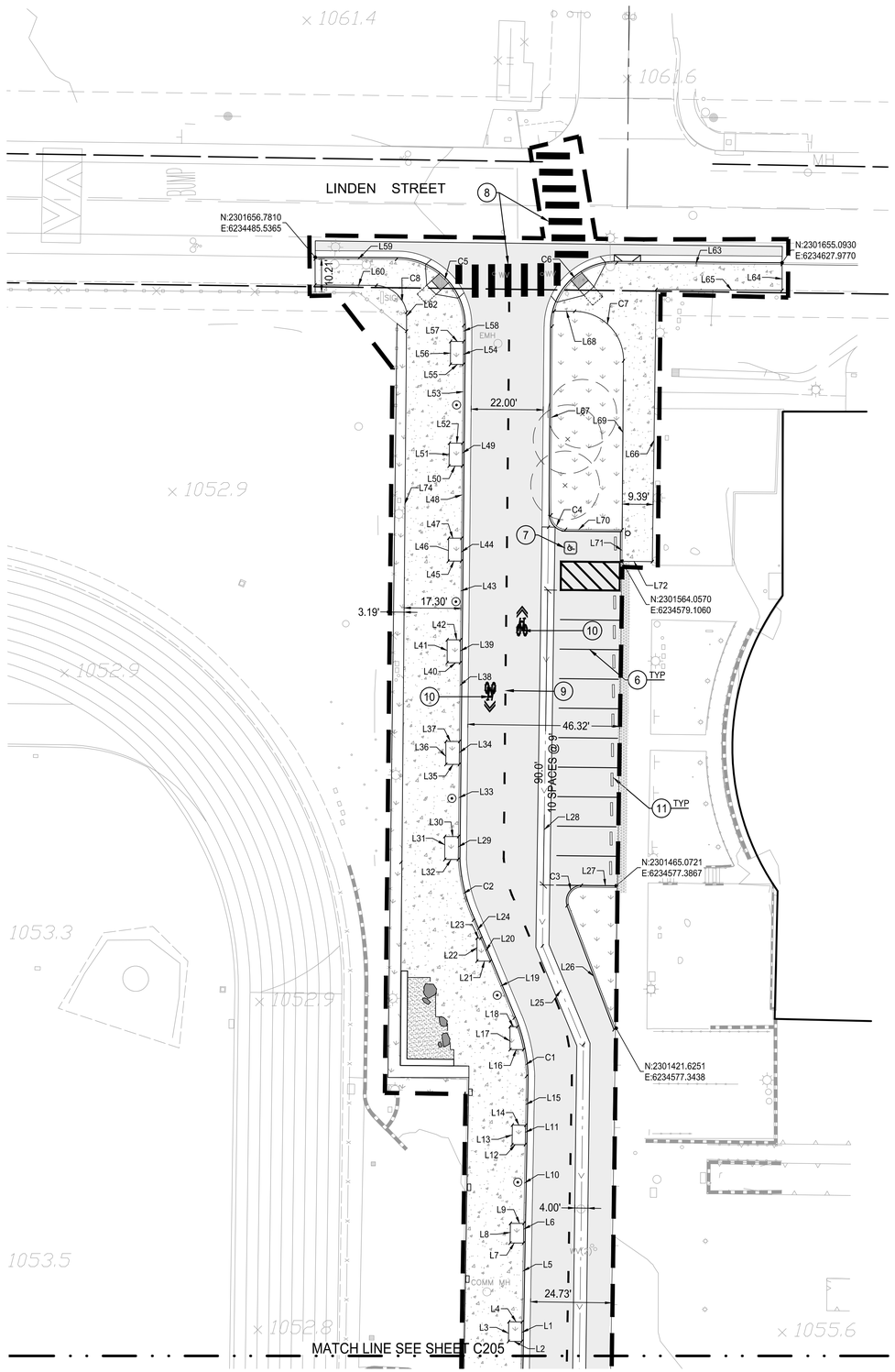
BASE FILE NAMES	C205.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

HORIZONTAL CONTROL AND STRIPING PLAN

SHEET TITLE

C205

SHEET NO.



CONSTRUCTION NOTES:

- CONSTRUCT
- EXISTING TO REMAIN -PROTECT IN PLACE
- EXISTING TO REMOVE
- REMOVE & RELOCATE
- ADJUST TO GRADE
- BY OTHERS

1. 6" WHITE LINE WITH BLACK BORDER PAINT AND LEGEND
2. ADA PARALLEL PARKING STALL PER CALTRANS REVISED STANDARD PLAN RSP A90B.
3. TYPE I PAVEMENT ARROW PER CALTRANS STD PLAN A24A
4. TYPE IV (R) PAVEMENT ARROW PER CALTRANS STD PLAN A24A
5. SEE SHEET S100 FOR STOP BAR
6. PARKING SPACE STRIPING PER DETAIL 3/SHEET C902
7. ACCESSIBLE PARKING PER DETAIL 5/ SHEET C902.
8. INSTALL 24" CONTINENTAL CROSSING PER CA MUTCD, FIG 3B-19
9. INSTALL 6" YELLOW CENTER LINE PER CALTRANS STANDARD PLAN A20A.
10. INSTALL PAVEMENT MARKING PER CA MUTCD.
11. WHEEL STOP PER DETAIL 9/ SHEET C901.
12. PASSENGER LOADING ONLY, 5 MINUTE LIMIT SIGN PER DETAIL5/ SHEET C904 TYPE PER PLAN.
13. NOT USED
14. 4" WIDE BLUE PAINTED DIAGONAL STRIPE, 3' ON CENTER, PROVIDE 12" HIGH WHITE PAINTED LETTERS WHICH READ "NO PARKING".

SIGNING AND STRIPING NOTES

1. ALL STRIPING, MARKINGS, AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC UNLESS OTHERWISE NOTED.

LEGEND:

- WORK LIMITS
- MATCH LINE
- PROPERTY LINE
- FIRE LANE
- CONCRETE PAVEMENT (PER DETAIL 2/ SHEET C901)
- ASPHALT PAVEMENT (PER DETAIL 1/ SHEET C901)
- PLANTING AREA (PER PLANTING PLANS)
- GRADED DIRT (PER PLANTING PLANS)
- CONCRETE SIDEWALK (PER HARDSCAPE PLANS)

Line Table		
Line #	Length	Direction
L2	4.07	N89° 59' 24.17"W
L3	6.00	N1° 10' 56.64"E
L4	4.06	S89° 19' 33.75"E
L9	4.09	N89° 59' 30.12"E
L8	6.00	N1° 08' 03.53"E
L7	4.10	S89° 59' 30.12"W
L14	4.03	S88° 49' 16.02"E
L13	6.00	N1° 04' 07.71"E
L12	4.04	N89° 59' 23.67"W
L18	2.24	S89° 35' 15.21"E
L17	7.00	N0° 00' 29.88"W
L16	4.11	N89° 59' 48.57"W
L23	1.20	S89° 59' 43.99"E
L22	7.00	N0° 00' 29.88"W
L21	4.11	S89° 59' 43.50"W
L32	4.11	S89° 52' 36.40"W
L31	7.00	N0° 00' 03.11"W
L30	4.18	N89° 59' 30.12"E
L37	4.15	S89° 58' 43.30"E
L36	7.00	N0° 00' 00.00"E

Line Table		
Line #	Length	Direction
L35	4.08	S89° 59' 44.78"W
L42	4.07	N89° 59' 59.47"E
L41	7.00	N0° 00' 02.73"W
L40	4.00	N90° 00' 00.00"W
L47	3.95	N89° 59' 30.12"E
L46	7.00	N0° 57' 18.45"E
L45	4.00	S89° 59' 56.00"W
L52	4.02	N89° 59' 30.12"E
L51	7.00	N1° 00' 48.90"E
L50	4.07	S89° 59' 30.12"W
L57	3.99	N89° 55' 31.14"E
L56	7.00	N0° 19' 01.35"E
L55	3.96	S89° 45' 50.13"W
L62	5.75	S0° 00' 00.01"E
L60	18.65	S89° 33' 58.32"E
L74	162.08	S0° 36' 03.16"W
L59	24.85	S89° 40' 42.21"E
L58	6.27	S0° 17' 40.84"W
L54	6.00	S0° 35' 48.23"W
L53	24.00	S0° 35' 17.53"W

Line Table		
Line #	Length	Direction
L49	6.00	S0° 35' 33.89"W
L48	24.00	S0° 35' 33.89"W
L44	6.00	S0° 35' 33.89"W
L43	24.02	S0° 35' 33.89"W
L39	6.01	S0° 35' 33.89"W
L38	23.98	S0° 35' 33.89"W
L34	6.00	S0° 35' 33.89"W
L33	23.99	S0° 35' 33.89"W
L29	6.00	S0° 35' 33.89"W
L24	6.47	S22° 36' 16.19"E
L20	12.48	S22° 36' 16.19"E
L19	19.88	S22° 36' 16.19"E
L15	14.40	S1° 00' 53.18"W
L11	6.00	S1° 01' 02.93"W
L10	24.01	S1° 00' 50.75"W
L6	6.00	S1° 00' 49.78"W
L5	24.01	S1° 00' 54.04"W
L1	6.00	S1° 00' 42.56"W
L71	9.56	N0° 26' 21.81"E
L70	17.23	N89° 33' 38.19"W

Line Table		
Line #	Length	Direction
L67	51.43	N0° 32' 19.54"E
L63	50.44	S89° 29' 57.46"E
L69	51.68	N0° 26' 22.17"E
L72	9.29	S89° 11' 02.81"E
L66	83.01	N0° 47' 48.08"E
L65	38.43	S89° 36' 06.00"E
L64	7.94	N0° 00' 00.00"E
L27	10.64	N89° 20' 39.05"W
L26	40.44	S20° 45' 39.75"E
L28	127.79	N0° 51' 00.35"E
L25	32.58	N22° 36' 16.19"W

Curve Table			
Curve #	Length	Radius	Delta
C1	8.87	50.88	9.99
C2	19.19	49.51	22.20
C3	8.79	4.78	105.40
C4	6.95	4.50	88.54
C5	31.93	20.33	89.98
C6	30.62	19.50	89.96
C7	23.45	14.99	89.63
C8	13.30	9.94	76.67

20' 10' 0' 20' 40'

GRAPHIC SCALE
SCALE: 1" = 20'

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		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	C206.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

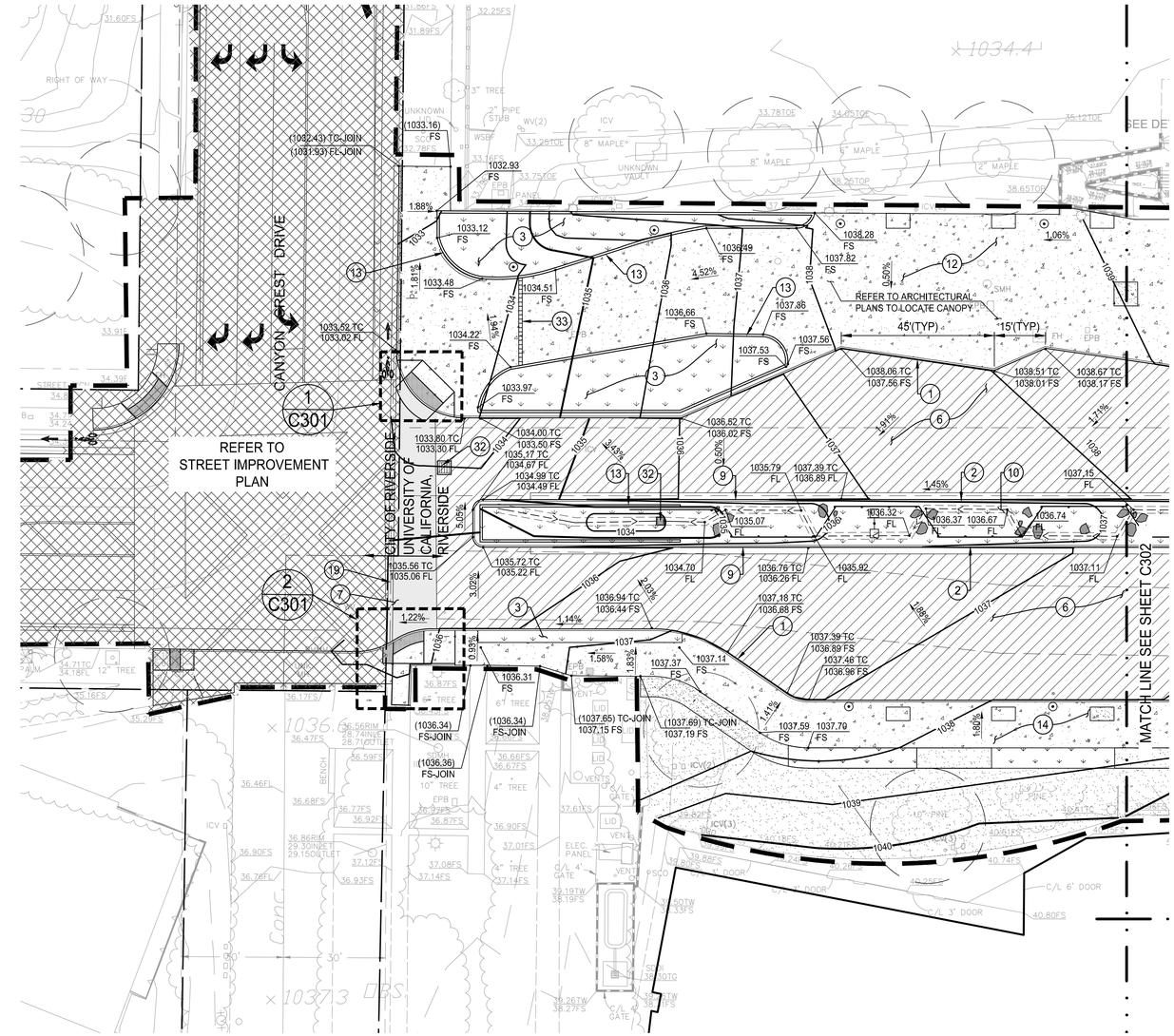
HORIZONTAL CONTROL AND STRIPING PLAN

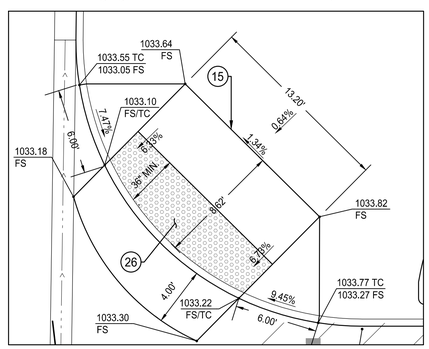
SHEET TITLE

C206

SHEET NO.

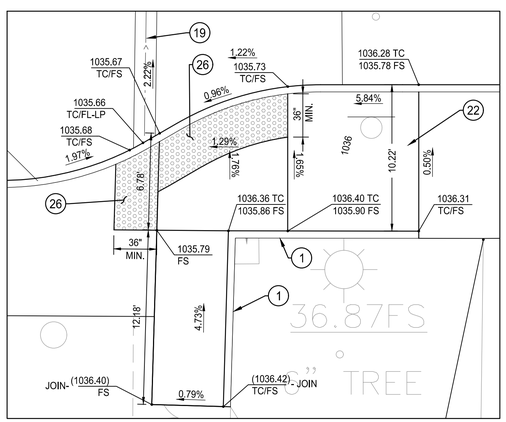
Plotted – 1/9/2019 11:32:28 AM :: Saved – 1/8/2019 1:36:35 PM :: W:\UCR\GRU013201\ENGR\SHEETS\C206.dwg :: Benjamin.vazquez





1 CURB RAMP DETAIL

REF. C301 SCALE: 1"=5'



2 CURB RAMP DETAIL

REF. C301 SCALE: 1"=5'

20' 10' 0' 20' 40'

GRAPHIC SCALE

SCALE: 1" = 20'

CONSTRUCTION NOTES:

CONSTRUCT
EXISTING TO REMAIN -PROTECT IN PLACE
EXISTING TO REMOVE
REMOVE & RELOCATE
ADJUST TO GRADE
BY OTHERS

1. MODIFIED 6" CONCRETE CURB PER CITY OF RIVERSIDE DRAWING STD. NO. 200, TYPE 2
2. 6" CURB AND GUTTER PER CITY OF RIVERSIDE DRAWING STD. NO. 200, TYPE 1
3. PLANTING AREA PER PLANTING PLANS
4. CURB RAMP, PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE I, DETAIL 1 / SHEET C903
5. CURB RAMP, PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE II A, DETAIL 1 / SHEET C903
6. VEHICULAR CONCRETE PAVEMENT (8" CONCRETE ON 12" COMPACTED SUBGRADE) PER DETAIL 2/SHEET C901
7. ASPHALT CONCRETE PAVEMENT(4" ASPHALT CONCRETE OVER 11.5" CLASS 2 BASE ON 12" COMPACTED SUBGRADE) PER DETAIL 1 / SHEET C901
8. DRIVEWAY PER CITY OF RIVERSIDE DRAWING STD. NO 302. WIDTH PER PLAN, DETAIL 3/ SHEET C903
9. CURB CUT PER DETAIL 3/ SHEET C901
10. BIO-SWALE PER DETAIL 6/ SHEET C901
11. CONCRETE PAD FOR KIOSK PER STRUCTURAL PLANS. FF = 1039.50
12. HARDSCAPE PER HARDSCAPE PLANS
13. LANDSCAPE WALLS PER HARDSCAPE PLANS
14. CONCRETE SIDEWALK PER CITY OF RIVERSIDE DRAWING STD. NO 325, DETAIL 4 / SHEET C903
15. MODIFIED CURB RAMP PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE II A, DETAIL 1 / SHEET C903
16. KIOSK BUILDING PER ARCHITECTURAL PLANS
17. SEAT WALL PER HARDSCAPE PLANS
18. RETAINING VARIABLE WALL, HEIGHT PER PLAN
19. LONGITUDINAL GUTTER PER SPPWC STD. PLAN 122-2 WIDTH = 4 FT, DETAIL 2 / SHEET C904
20. CURB AND GUTTER PER SPPWC STD. PLAN 120-2, TYPE A3-6(150), DETAIL 3 / SHEET C904
21. FENCE PER ARCHITECTURAL PLANS
22. MODIFIED CURB RAMP PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE III , DETAIL 1 / SHEET C903
23. ROLLED CURB PER DETAIL 5/SHEET C901
24. 12" RETAINING CURB
25. LOCAL DEPRESSION PER SPPWC STD. PLANS 313-3, CASE E AND DETAIL 1/SHEET C904.
26. TRUNCATED DOMES PER CITY OF RIVERSIDE STD 304, DETAIL 1 / SHEET C903
27. RAISED CROSSWALK PER DETAIL 8/ SHEET C901.
28. NOT USED
29. EXISTING CURB
30. AREA DRAIN PER UTILITY SHEETS C401-C406
31. EXISTING MANHOLE
32. STORM DRAIN INLET WITH GRATE PER UTILITY PLAN.
33. TRENCH DRAIN PER UTILITY PLAN
34. NOT USED
35. CONCRETE STAIRS PER SPPWC STD. PLAN 640-4, TREAD AND RISER PER PLAN, DETAIL 4 / SHEET C904
36. NOT USED

LEGEND:

WORK LIMITS
MATCH LINE
SAWCUT LINE
235 PROPOSED CONTOUR LINE
280 EXISTING CONTOUR LINE
PROPERTY LINE
DAYLIGHT LINE
NEW RETAINING WALL
GB GRADE BREAK
R RIDGE LINE
SWALE FLOW LINE
FIRE LANE

CONCRETE PAVEMENT (PER DETAIL 2/ SHEET C901)
ASPHALT PAVEMENT (PER DETAIL 1/ SHEET C901)
PLANTING AREA (PER PLANTING PLANS)
GRADED DIRT (PER PLANTING PLANS)
CONCRETE SIDEWALK (PER HARDSCAPE PLANS)

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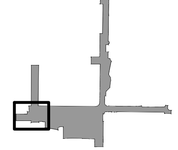
CONSULTANT

ARCHITECT/ENGINEER SEAL



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KEY PLAN

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		01/10/19 100% CD-BID SET	
		11/27/18 90% CD SET	
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		05/01/18 100% DD SET	

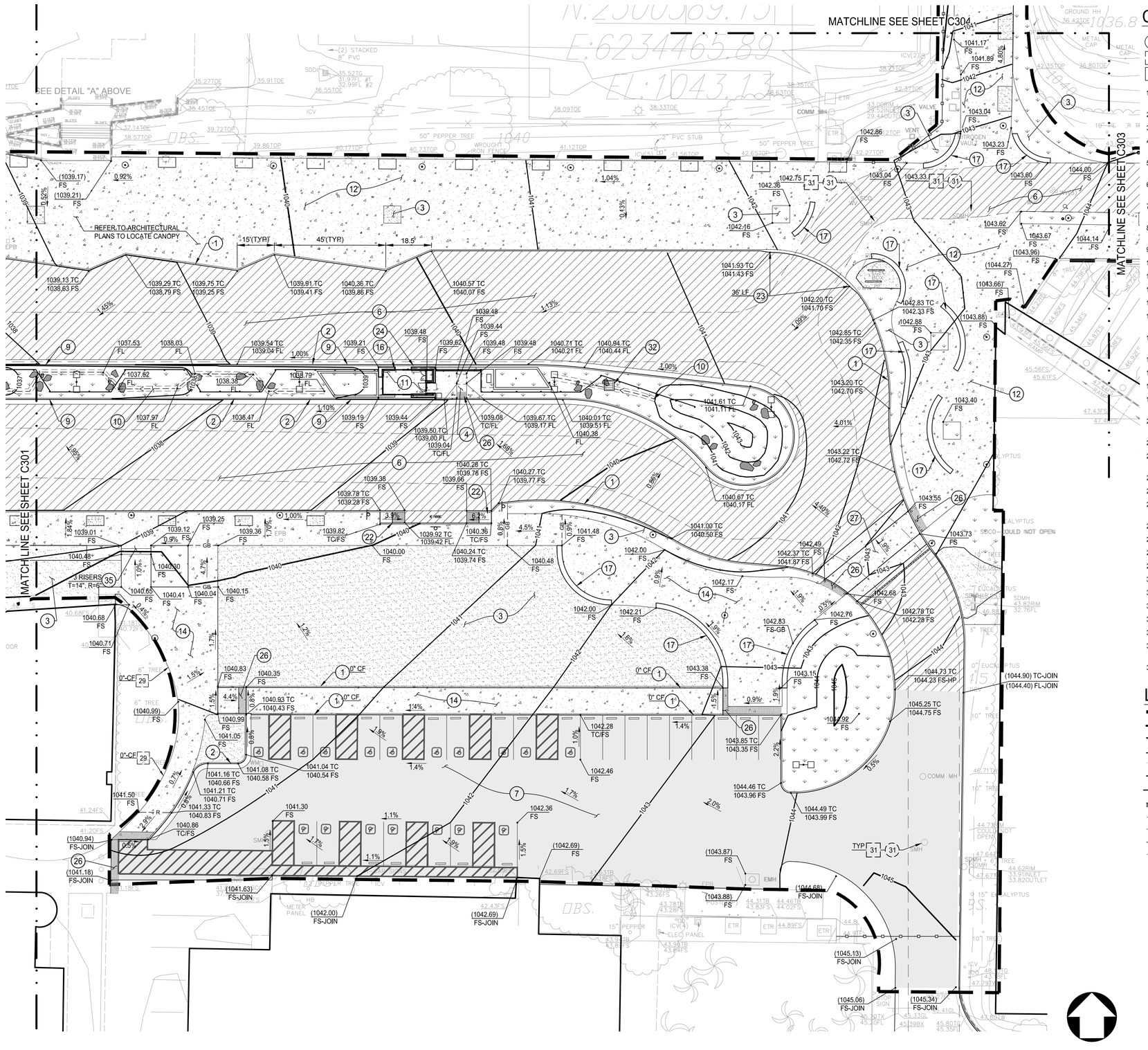
BASE FILE NAMES	C301.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

GRADING AND PAVING PLAN

SHEET TITLE

C301

SHEET NO.



CONSTRUCTION NOTES:

- CONSTRUCT
- EXISTING TO REMAIN -PROTECT IN PLACE
- EXISTING TO REMOVE
- REMOVE & RELOCATE
- ADJUST TO GRADE
- BY OTHERS

1. MODIFIED 6" CONCRETE CURB PER CITY OF RIVERSIDE DRAWING STD. NO. 200, TYPE 2
2. 6" CURB AND GUTTER PER CITY OF RIVERSIDE DRAWING STD. NO. 200, TYPE 1
3. PLANTING AREA PER PLANTING PLANS
4. CURB RAMP, PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE I, DETAIL 1 / SHEET C903
5. CURB RAMP, PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE II A, DETAIL 1 / SHEET C903
6. VEHICULAR CONCRETE PAVEMENT (8" CONCRETE ON 12" COMPACTED SUBGRADE) PER DETAIL 2/SHEET C901
7. ASPHALT CONCRETE PAVEMENT(4" ASPHALT CONCRETE OVER 11.5" CLASS 2 BASE ON 12" COMPACTED SUBGRADE) PER DETAIL 1 / SHEET C901
8. DRIVEWAY PER CITY OF RIVERSIDE DRAWING STD. NO 302. WIDTH PER PLAN, DETAIL 3/ SHEET C903
9. CURB CUT PER DETAIL 3/ SHEET C901
10. BIO-SWALE PER DETAIL 6/ SHEET C901
11. CONCRETE PAD FOR KIOSK PER STRUCTURAL PLANS. FF = 1039.50
12. HARDSCAPE PER HARDSCAPE PLANS
13. LANDSCAPE WALLS PER HARDSCAPE PLANS
14. CONCRETE SIDEWALK PER CITY OF RIVERSIDE DRAWING STD. NO 325, DETAIL 4 / SHEET C903
15. MODIFIED CURB RAMP PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE II A, DETAIL 1 / SHEET C903
16. KIOSK BUILDING PER ARCHITECTURAL PLANS
17. SEAT WALL PER HARDSCAPE PLANS
18. RETAINING VARIABLE WALL, HEIGHT PER PLAN
19. LONGITUDINAL GUTTER PER SPPWC STD. PLAN 122-2 WIDTH = 4 FT, DETAIL 2 / SHEET C904
20. CURB AND GUTTER PER SPPWC STD. PLAN 120-2, TYPE A3-6(150), DETAIL 3 / SHEET C904
21. FENCE PER ARCHITECTURAL PLANS
22. MODIFIED CURB RAMP PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE III , DETAIL 1 / SHEET C903
23. ROLLED CURB PER DETAIL 5/SHEET C901
24. 12" RETAINING CURB
25. LOCAL DEPRESSION PER SPPWC STD. PLANS 313-3, CASE E AND DETAIL 1/SHEET C904.
26. TRUNCATED DOMES PER CITY OF RIVERSIDE STD 304, DETAIL 1 / SHEET C903
27. RAISED CROSSWALK PER DETAIL 8/ SHEET C901.
28. NOT USED
29. EXISTING CURB
30. AREA DRAIN PER UTILITY SHEETS C401-C406
31. EXISTING MANHOLE
32. STORM DRAIN INLET WITH GRATE PER UTILITY PLAN.
33. TRENCH DRAIN PER UTILITY PLAN
34. NOT USED
35. CONCRETE STAIRS PER SPPWC STD. PLAN 640-4, TREAD AND RISER PER PLAN, DETAIL 4 / SHEET C904
36. NOT USED

LEGEND:

- WORK LIMITS
- MATCH LINE
- SAWCUT LINE
- 235 PROPOSED CONTOUR LINE
- 280 EXISTING CONTOUR LINE
- PROPERTY LINE
- DAYLIGHT LINE
- NEW RETAINING WALL
- GB — GRADE BREAK
- R — RIDGE LINE
- SWALE FLOW LINE
- FIRE LANE

- CONCRETE PAVEMENT (PER DETAIL 2/ SHEET C901)
- ASPHALT PAVEMENT (PER DETAIL 1/ SHEET C901)
- PLANTING AREA (PER PLANTING PLANS)
- GRADED DIRT (PER PLANTING PLANS)
- CONCRETE SIDEWALK (PER HARDSCAPE PLANS)

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ARCHITECT/ENGINEER SEAL

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KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD-BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES	C302.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

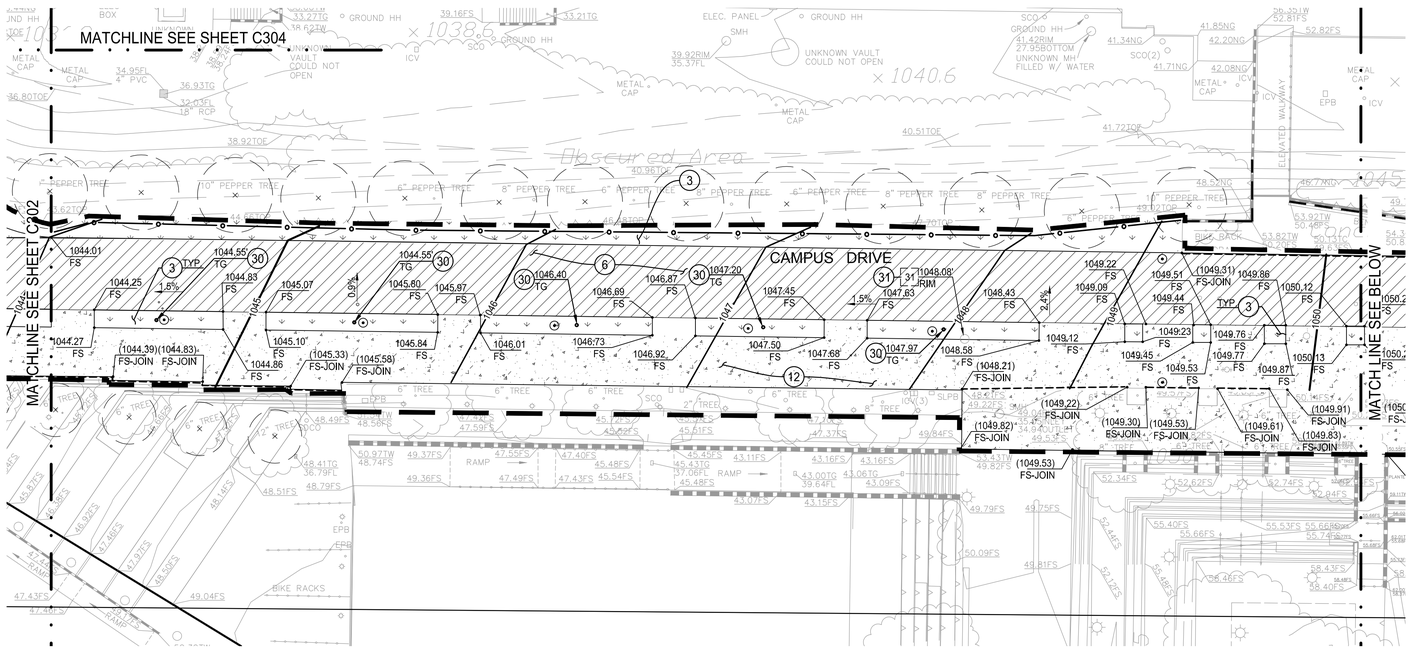
GRADING AND PAVING PLAN

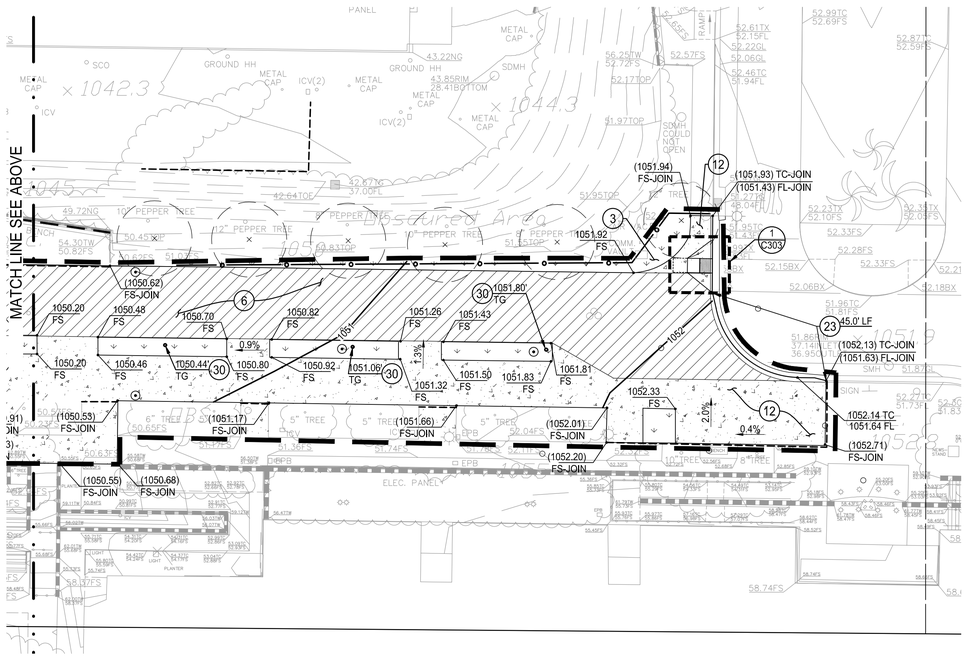
SHEET TITLE

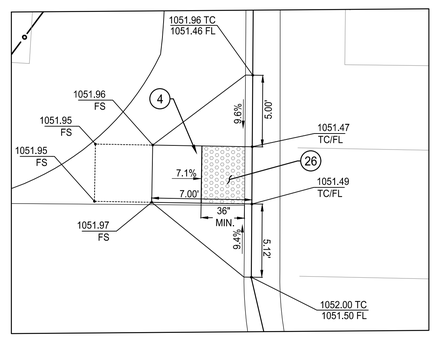
C302

SHEET NO.

Plotted - 1/9/2019 12:35:35 PM :: Saved - 1/9/2019 12:35:05 PM :: Y:\UCR\1GRU01320\1ENGR\SHEETS\C302.dwg :: celeste.solano

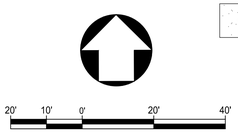






1 CURB RAMP DETAIL

REF. C303 SCALE: N.T.S.



GRAPHIC SCALE
SCALE: 1" = 20'

CONSTRUCTION NOTES:

CONSTRUCT
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EXISTING TO REMOVE
REMOVE & RELOCATE
ADJUST TO GRADE
BY OTHERS

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3. PLANTING AREA PER PLANTING PLANS
4. CURB RAMP, PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE I, DETAIL 1 / SHEET C903
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9. CURB CUT PER DETAIL 3/ SHEET C901
10. BIO-SWALE PER DETAIL 6/ SHEET C901
11. CONCRETE PAD FOR KIOSK PER STRUCTURAL PLANS. FF = 1039.50
12. HARDSCAPE PER HARDSCAPE PLANS
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18. RETAINING VARIABLE WALL, HEIGHT PER PLAN
19. LONGITUDINAL GUTTER PER SPPWC STD. PLAN 122-2 WIDTH = 4 FT, DETAIL 2 / SHEET C904
20. CURB AND GUTTER PER SPPWC STD. PLAN 120-2, TYPE A3-6(150), DETAIL 3 / SHEET C904
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27. RAISED CROSSWALK PER DETAIL 8/ SHEET C901.
28. NOT USED
29. EXISTING CURB
30. AREA DRAIN PER UTILITY SHEETS C401-C406
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32. STORM DRAIN INLET WITH GRATE PER UTILITY PLAN.
33. TRENCH DRAIN PER UTILITY PLAN
34. NOT USED
35. CONCRETE STAIRS PER SPPWC STD. PLAN 640-4, TREAD AND RISER PER PLAN, DETAIL 4 / SHEET C904
36. NOT USED

LEGEND:

WORK LIMITS
MATCH LINE
SAWCUT LINE
235 PROPOSED CONTOUR LINE
280 EXISTING CONTOUR LINE
PROPERTY LINE
DAYLIGHT LINE
NEW RETAINING WALL
GB GRADE BREAK
R RIDGE LINE
SWALE FLOW LINE
FIRE LANE

CONCRETE PAVEMENT (PER DETAIL 2/ SHEET C901)
ASPHALT PAVEMENT (PER DETAIL 1/ SHEET C901)
PLANTING AREA (PER PLANTING PLANS)
GRADED DIRT (PER PLANTING PLANS)
CONCRETE SIDEWALK (PER HARDSCAPE PLANS)

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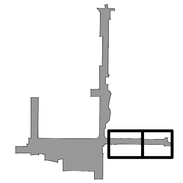

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KEY PLAN

NO.	DATE	ISSUED FOR	B
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		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	C303.DW
DRAWN BY	G
CHECKED BY	Al
SCALE	AS SHOW
DATE	01-10-201
PROJECT NO.	GRUEN # 834

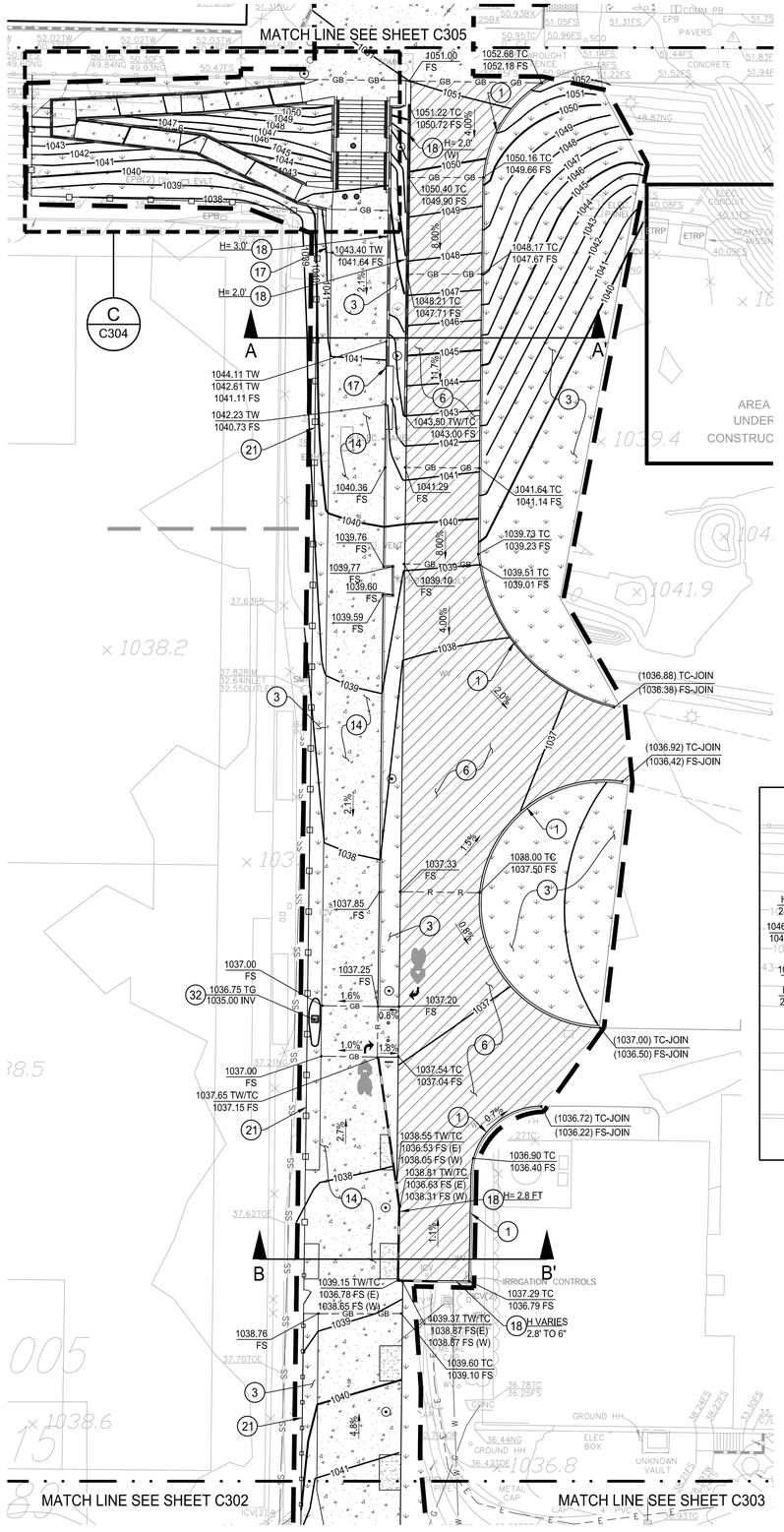
GRADING AND PAVING PLAN

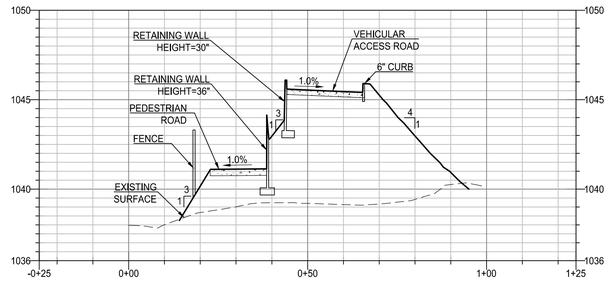
SHEET TITLE

C303

SHEET NO.

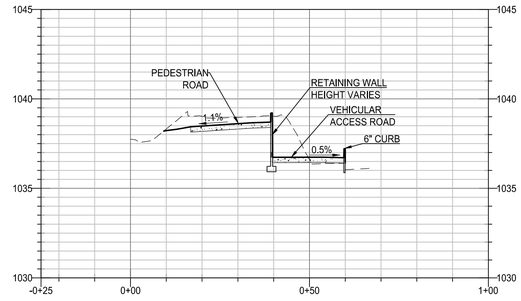
Plotted — 1/9/2019 12:37:27 PM :: Saved — 1/9/2019 12:36:26 PM :: Y:\UCR\1GRU01301\ENGR\SHEETS\C303.dwg :: celeste.solano





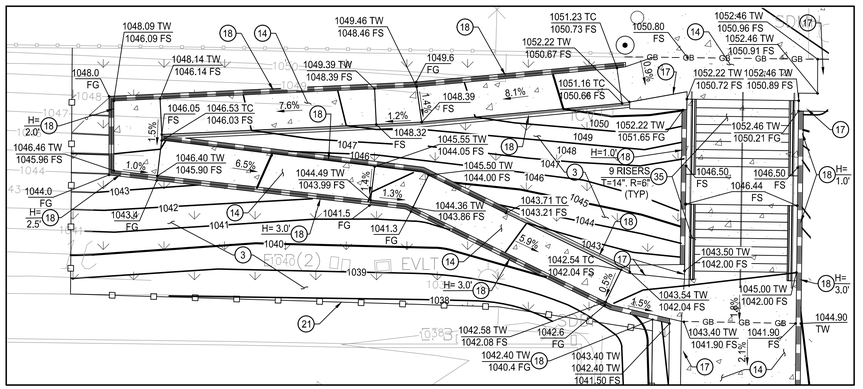
A-A' | SECTION VIEW

C304 REF. C304 SCALE: H: 1"=20' V: 1"=4'



B-B' | SECTION VIEW

C304 REF. C304 SCALE: H: 1"=20' V: 1"=4'



C | RAMP / STAIR DETAIL

C304 REF. C304 SCALE: 1"=10'

NOTE:

1. REFER TO HARDSCAPE PLANS FOR RAMP AND STAIR DIMENSIONS.

20' 10' 0' 20' 40'

GRAPHIC SCALE

SCALE: 1" = 20'

CONSTRUCTION NOTES:

- CONSTRUCT
- EXISTING TO REMAIN -PROTECT IN PLACE
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20. CURB AND GUTTER PER SPPWC STD. PLAN 120-2, TYPE A3-6(150), DETAIL 3 / SHEET C904
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26. TRUNCATED DOMES PER CITY OF RIVERSIDE STD 304, DETAIL 1 / SHEET C903
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28. NOT USED
29. EXISTING CURB
30. AREA DRAIN PER UTILITY SHEETS C401-C406
31. EXISTING MANHOLE
32. STORM DRAIN INLET WITH GRATE PER UTILITY PLAN.
33. TRENCH DRAIN PER UTILITY PLAN
34. NOT USED
35. CONCRETE STAIRS PER SPPWC STD. PLAN 640-4, TREAD AND RISER PER PLAN, DETAIL 4 / SHEET C904
36. NOT USED

LEGEND:

- WORK LIMITS
- MATCH LINE
- SAWCUT LINE
- 235 PROPOSED CONTOUR LINE
- 280 EXISTING CONTOUR LINE
- PROPERTY LINE
- DAYLIGHT LINE
- NEW RETAINING WALL
- GB GRADE BREAK
- R RIDGE LINE
- SWALE FLOW LINE
- FIRE LANE
- CONCRETE PAVEMENT (PER DETAIL 2/ SHEET C901)
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- CONCRETE SIDEWALK (PER HARDSCAPE PLANS)

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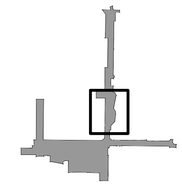

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KEY PLAN

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		01/10/19 100% CD-BID SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	C304.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

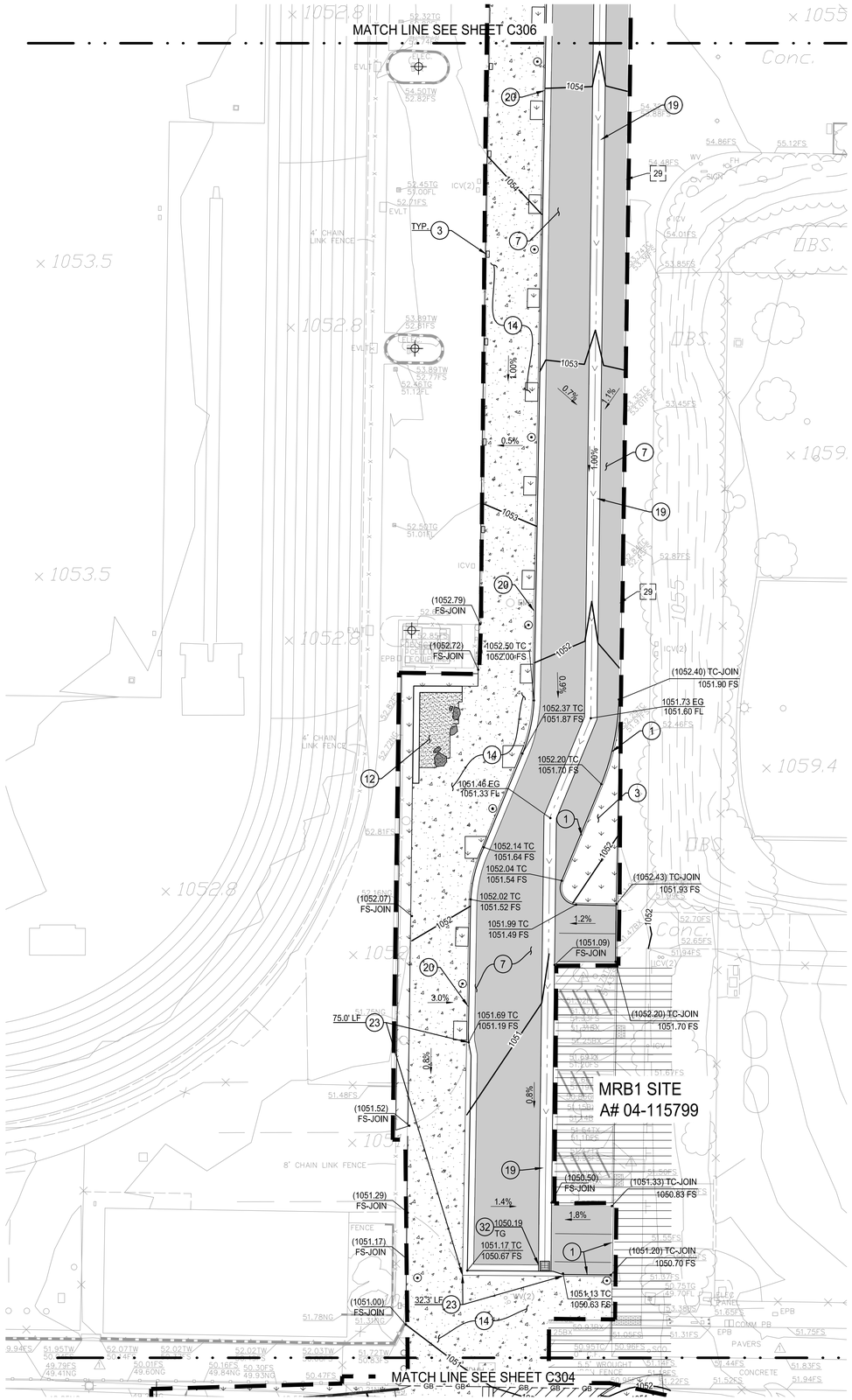
GRADING AND PAVING PLAN

SHEET TITLE

C304

SHEET NO.

Plotted -- 1/9/2019 11:44:15 AM :: Saved -- 1/8/2019 3:00:15 PM :: W:\UCR\GRU01320\ENGR\SHEETS\C304.dwg :: Benjamin.vazquez



CONSTRUCTION NOTES:

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- ASPHALT PAVEMENT (PER DETAIL 1/ SHEET C901)
- PLANTING AREA (PER PLANTING PLANS)
- GRADED DIRT (PER PLANTING PLANS)
- CONCRETE SIDEWALK (PER HARDSCAPE PLANS)

20' 10' 0' 20' 40'

GRAPHIC SCALE
SCALE: 1" = 20'

UNIVERSITY OF CALIFORNIA RIVERSIDE — LET THERE BE LIGHT

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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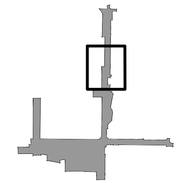
ARCHITECT/ENGINEER SEAL



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KEY PLAN

NO.	DATE	ISSUED FOR	BY
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		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	C305.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

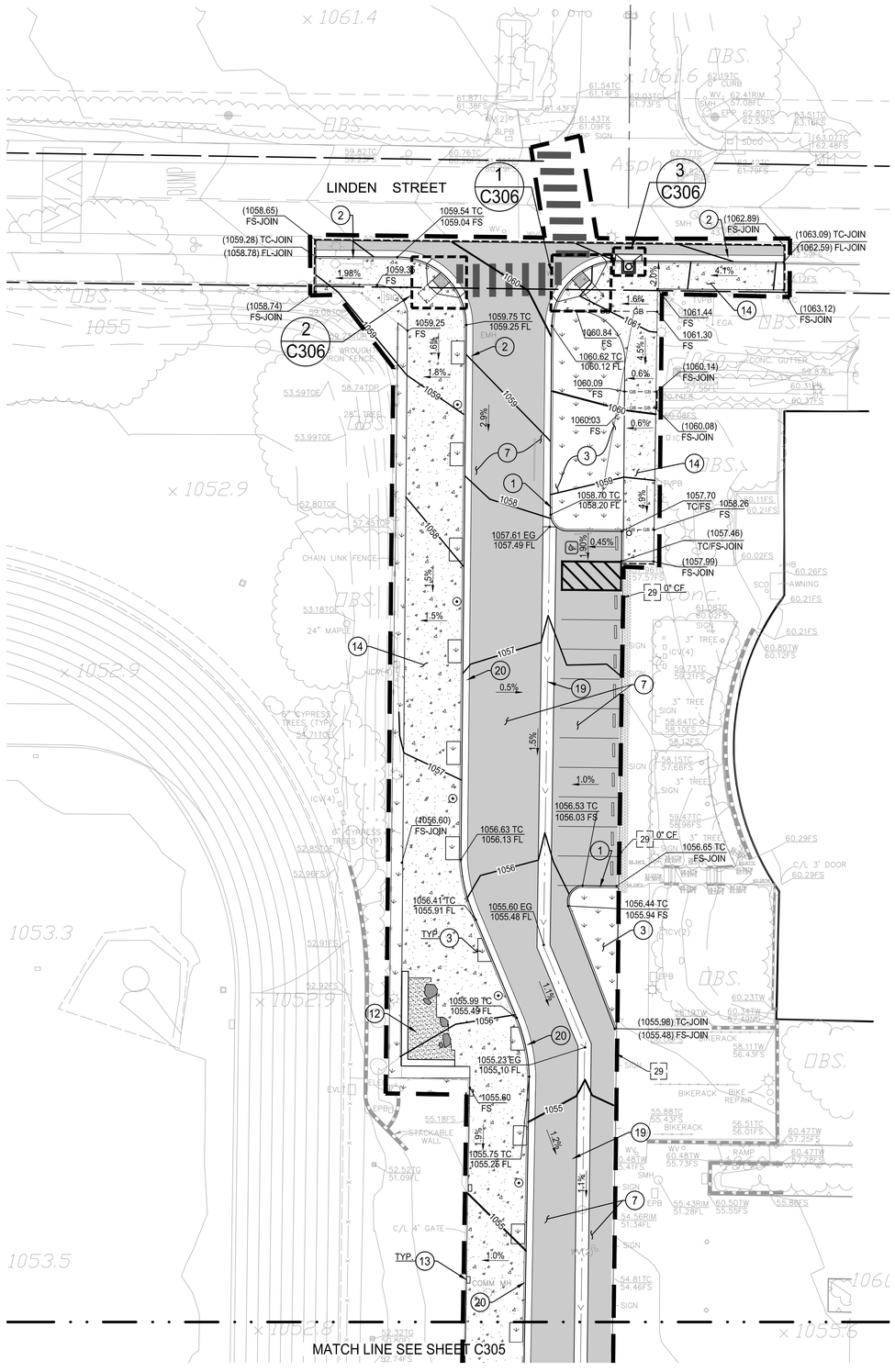
GRADING AND PAVING PLAN

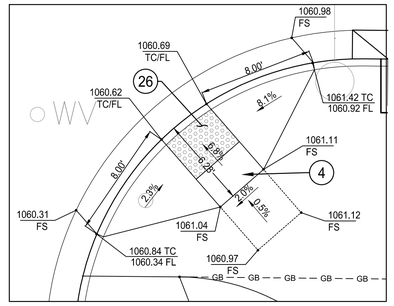
SHEET TITLE

C305

SHEET NO.

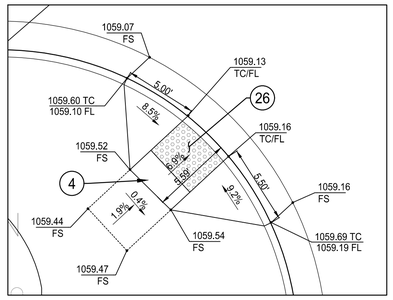
Plotted -- 1/9/2019 11:44:47 AM :: Saved -- 1/8/2019 1:44:55 PM :: W:\UCR\1GRU013201\ENGR\SHEETS\C305.dwg :: Benjamin.vazquez





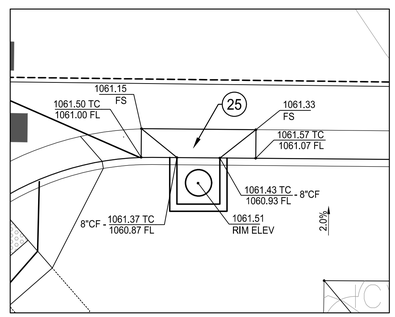
1 CURB RAMP DETAIL

REF. C306 SCALE: N.T.S.



2 CURB RAMP DETAIL

REF. C306 SCALE: N.T.S.



3 LOCAL DEPRESSION

REF. C306 SCALE: N.T.S.

20' 10' 0' 20' 40'

GRAPHIC SCALE

SCALE: 1" = 20'

CONSTRUCTION NOTES:

- CONSTRUCT
- EXISTING TO REMAIN -PROTECT IN PLACE
- EXISTING TO REMOVE
- REMOVE & RELOCATE
- ADJUST TO GRADE
- BY OTHERS

1. MODIFIED 6" CONCRETE CURB PER CITY OF RIVERSIDE DRAWING STD. NO. 200, TYPE 2
2. 6" CURB AND GUTTER PER CITY OF RIVERSIDE DRAWING STD. NO. 200, TYPE 1
3. PLANTING AREA PER PLANTING PLANS
4. CURB RAMP, PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE I, DETAIL 1 / SHEET C903
5. CURB RAMP, PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE II A, DETAIL 1 / SHEET C903
6. VEHICULAR CONCRETE PAVEMENT (8" CONCRETE ON 12" COMPACTED SUBGRADE) PER DETAIL 2/SHEET C901
7. ASPHALT CONCRETE PAVEMENT(4" ASPHALT CONCRETE OVER 11.5" CLASS 2 BASE ON 12" COMPACTED SUBGRADE) PER DETAIL 1 / SHEET C901
8. DRIVEWAY PER CITY OF RIVERSIDE DRAWING STD. NO 302. WIDTH PER PLAN, DETAIL 3/ SHEET C903
9. CURB CUT PER DETAIL 3/ SHEET C901
10. BIO-SWALE PER DETAIL 6/ SHEET C901
11. CONCRETE PAD FOR KIOSK PER STRUCTURAL PLANS. FF = 1039.50
12. HARDSCAPE PER HARDSCAPE PLANS
13. LANDSCAPE WALLS PER HARDSCAPE PLANS
14. CONCRETE SIDEWALK PER CITY OF RIVERSIDE DRAWING STD. NO 325, DETAIL 4 / SHEET C903
15. MODIFIED CURB RAMP PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE II A, DETAIL 1 / SHEET C903
16. KIOSK BUILDING PER ARCHITECTURAL PLANS
17. SEAT WALL PER HARDSCAPE PLANS
18. RETAINING VARIABLE WALL, HEIGHT PER PLAN
19. LONGITUDINAL GUTTER PER SPPWC STD. PLAN 122-2 WIDTH = 4 FT, DETAIL 2 / SHEET C904
20. CURB AND GUTTER PER SPPWC STD. PLAN 120-2, TYPE A3-6(150), DETAIL 3 / SHEET C904
21. FENCE PER ARCHITECTURAL PLANS
22. MODIFIED CURB RAMP PER CITY OF RIVERSIDE DRAWING STD. NO 304, TYPE III , DETAIL 1 / SHEET C903
23. ROLLED CURB PER DETAIL 5/SHEET C901
24. 12" RETAINING CURB
25. LOCAL DEPRESSION PER SPPWC STD. PLANS 313-3, CASE E AND DETAIL 1/SHEET C904.
26. TRUNCATED DOMES PER CITY OF RIVERSIDE STD 304, DETAIL 1 / SHEET C903
27. RAISED CROSSWALK PER DETAIL 8/ SHEET C901.
28. NOT USED
29. EXISTING CURB
30. AREA DRAIN PER UTILITY SHEETS C401-C406
31. EXISTING MANHOLE
32. STORM DRAIN INLET WITH GRATE PER UTILITY PLAN.
33. TRENCH DRAIN PER UTILITY PLAN
34. NOT USED
35. CONCRETE STAIRS PER SPPWC STD. PLAN 640-4, TREAD AND RISER PER PLAN, DETAIL 4 / SHEET C904
36. NOT USED

LEGEND:

- WORK LIMITS
- MATCH LINE
- SAWCUT LINE
- 235 PROPOSED CONTOUR LINE
- 280 EXISTING CONTOUR LINE
- PROPERTY LINE
- DAYLIGHT LINE
- NEW RETAINING WALL
- GB — GB GRADE BREAK
- R — R — R RIDGE LINE
- SWALE FLOW LINE
- FIRE LANE

- CONCRETE PAVEMENT (PER DETAIL 2/ SHEET C901)
- ASPHALT PAVEMENT (PER DETAIL 1/ SHEET C901)
- PLANTING AREA (PER PLANTING PLANS)
- GRADED DIRT (PER PLANTING PLANS)
- CONCRETE SIDEWALK (PER HARDSCAPE PLANS)

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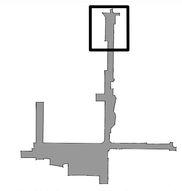


IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD-BID SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

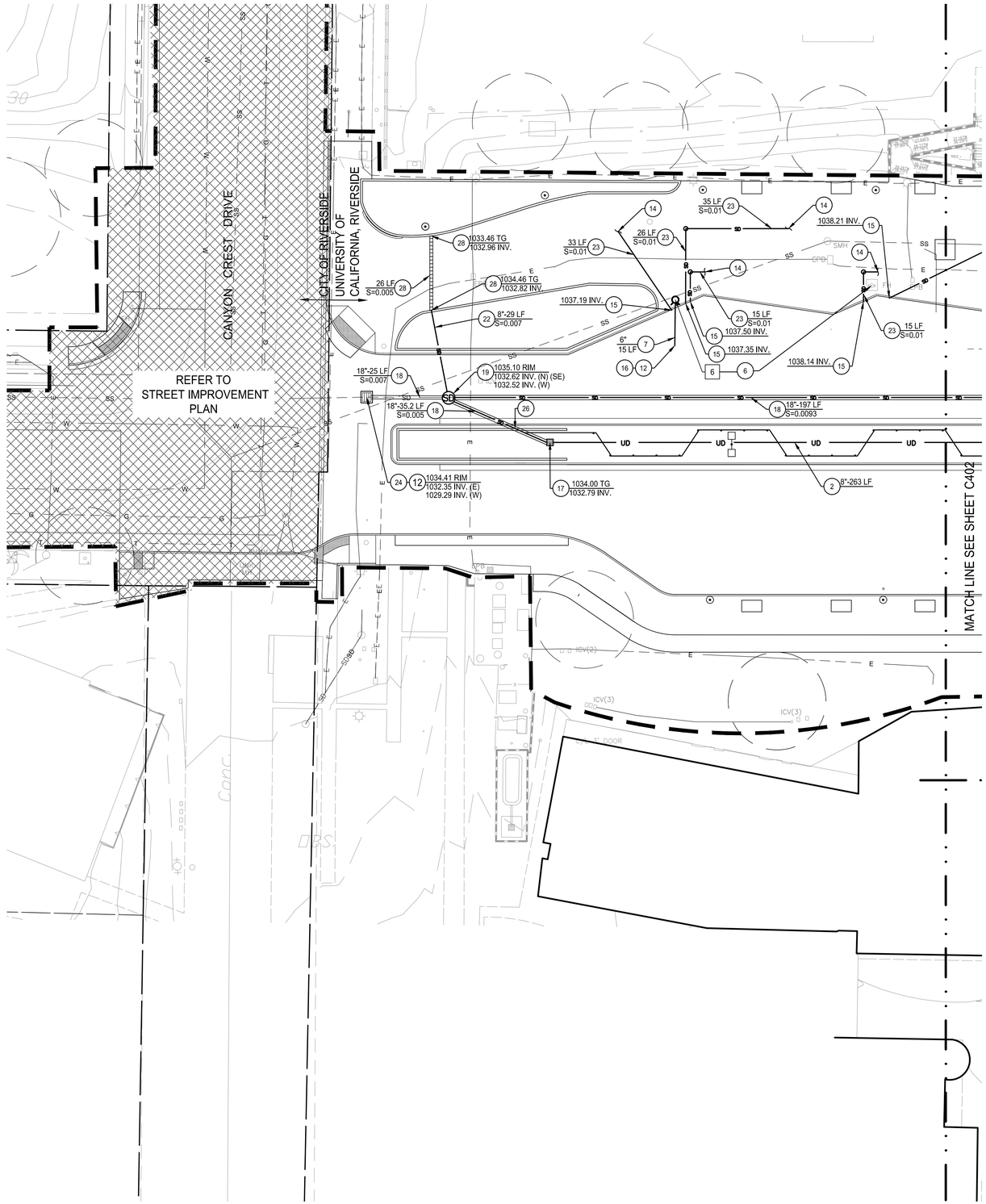
BASE FILE NAMES	C306.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

GRADING PLAN

SHEET TITLE

C306

SHEET NO.



CONSTRUCTION NOTES:

CONSTRUCT
EXISTING TO REMAIN -PROTECT IN PLACE
EXISTING TO REMOVE
REMOVE & RELOCATE
ADJUST TO GRADE
BY OTHERS

1. STUB OUT FOR DRINKING FOUNTAIN PER ARCHITECTURE PLAN
2. PERFORATED PIPE- HDPE (DR 17) PER SPPWC SECTION 207-18. SIZE AND LENGTH PER PLANS.
3. REINSTALL RELOCATED FIRE DEPARTMENT CONNECTION (FDC).
4. REINSTALL RELOCATED BACKFLOW PREVENTOR DEVICE.
5. WATER LINE-(PVC C-900, CL 200). SIZE AND LENGTH PER PLAN. PIPE BEDDING AND TRENCH PER DETAIL 4/C901.
6. REINSTALL RELOCATED FIRE HYDRANT AND INSTALL NEW PIPING AND GATE VALVE PER DETAIL 4/C902.
7. FIRE WATER SERVICE LINE,(PVC-900, CL 200) SIZE AND LENGTH PER PLAN. REFER TO PLUMBING PLANS FOR CONTINUATION AND DETAILS.
8. SANITARY SEWER LINE-PVC. SIZE, LENGTH AND SLOPE PER PLAN. CONNECT TO EXISTING 15" SEWER PER CITY OF RIVERSIDE DRAWING STD. 562. PIPE BEDDING AND TRENCH PER DETAIL 4/C901.
9. EXISTING FIRE HYDRANT
10. HDPE FITTING, TYPE PER PLAN, SIZE PER ADJOINING PIPE
11. CONNECT TO EXISTING UTILITY. CONTRACTOR TO FIELD VERIFY LOCATION, DEPTH, SIZE, AND CONDITION PRIOR TO CONSTRUCTION.
12. CONNECT TO EXISTING UTILITY. UTILITY LOCATION PER MASTER PLAN AND NOT IDENTIFIED IN SURVEY. CONTRACTOR TO FIELD VERIFY UTILITY LOCATIONS, SIZES, AND DEPTHS PRIOR TO CONSTRUCTION.
13. CLEANOUT PER SPPWC STANDARD PLAN 204-2.
14. STUB OUT FOR CANOPY.
15. PARKWAY DRAIN PER CITY OF RIVERSIDE DRAWING STD. 410.
16. THRUST BLOCK, CLASS 350 RATED WORKING PRESSURE, PER AWWA C110 WITH RESTRAINED JOINTS (U.N.O.). SIZE PER ADJOINING PIPE OR PER PLAN, ANGLE PER PLAN. SEE DETAIL 6/C902.
17. C.S.P. INLET PER CITY OF RIVERSIDE DRAWING STD. NO.412.
18. RCP STORM DRAIN (1300 D-LOAD) SIZE, LENGTH AND SLOPE PER PLAN. CASE III BEDDING.
19. STORM DRAIN MANHOLE PER CITY OF RIVERSIDE DRAWING STD. NO.430.
20. CATCH BASIN PER CITY OF RIVERSIDE DRAWING STD. NO. 408.
21. 24" X 24" CATCH BASIN. BROOKS PRODUCT 3636CB WITH PEDESTRIAN RATED STEEL GRATE, OR APPROVED EQUAL.
22. HDPE STORM DRAIN LINE. SIZE, LENGTH, AND SLOPE PER PLAN. PIPE BEDDING AND TRENCH PER DETAIL 4/C901.
23. 3" PVC (SDR-35) STORMDRAIN WITH 3" MINIMUM COVER. SLOPE PER PLAN
24. STORM DRAIN INLET WITH GRATE PER SPPWC STD 304-3.
25. LANDSCAPE AREA DRAIN PER LANDSCAPE PLAN.
26. RETAINING WALL UTILITY OPENING PER SPPWC STD. PLAN 617-3.
27. 36" X 36" CATCH BASIN. BROOKS PRODUCT 3636CB WITH PEDESTRIAN RATED STEEL GRATE, OR APPROVED EQUAL.
28. TRENCH DRAIN PER DETAIL 7/ SHEET C901.

LEGEND:

- MATCH LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED DOMESTIC WATER LINE
- PROPOSED STORM DRAIN LINE(<18")
- PROPOSED STORM DRAIN LINE (≥18")
- PROPOSED UNDER DRAIN LINE
- VEGETATED SWALE FLOW LINE
- EXISTING STORM DRAIN
- EXISTING WATER
- EXISTING SANITARY SEWER
- EXISTING FIRE WATER LINE
- EXISTING FIBER OPTICS LINE
- EXISTING ELECTRIC LINE
- EXISTING TELECOMMUNICATION LINE
- EXISTING INDUSTRIAL WASTE LINE
- PROPOSED SEWER MANHOLE
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED CLEANOUT STRUCTURE
- GATE VALVE
- POINT OF CONNECTION
- NEW FIRE HYDRANT

NOTES:

1. MAINTAIN 10' MINIMUM CLEARANCE BETWEEN DOMESTIC WATER AND SANITARY SEWER PIPES, OUTSIDE EDGE TO OUTSIDE EDGE.
2. MAINTAIN 10' CLEARANCE BETWEEN DOMESTIC AND RECLAIMED WATER PIPES, OUTSIDE EDGE TO OUTSIDE EDGE.
3. NOT USED.
4. EXISTING UTILITY LOCATIONS, SIZES, AND DEPTHS SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
5. PROVIDE PEDESTRIAN AND TRAFFIC RATED RIMS AND COVERS FOR RELOCATED OR ADJUSTED UTILITY STRUCTURES
6. NEW UTILITY STRUCTURES AND MANHOLES SHALL INCLUDE TRAFFIC AND PEDESTRIAN RATED COVERS.
7. REFERENCE MECHANICAL, ELECTRICAL AND TELECOMMUNICATION PLANS FOR DEMOLITION AND INSTALLATION OF M, E, & T UTILITIES AND STRUCTURES.
8. REFERENCE LANDSCAPE PLANS FOR DEMOLITION AND INSTALLATION OF IRRIGATION LINES.

811 Know what's below. Call before you dig.

20' 10' 0' 20' 40'
GRAPHIC SCALE
SCALE: 1" = 20'

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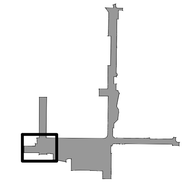

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KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD-BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES	C401.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

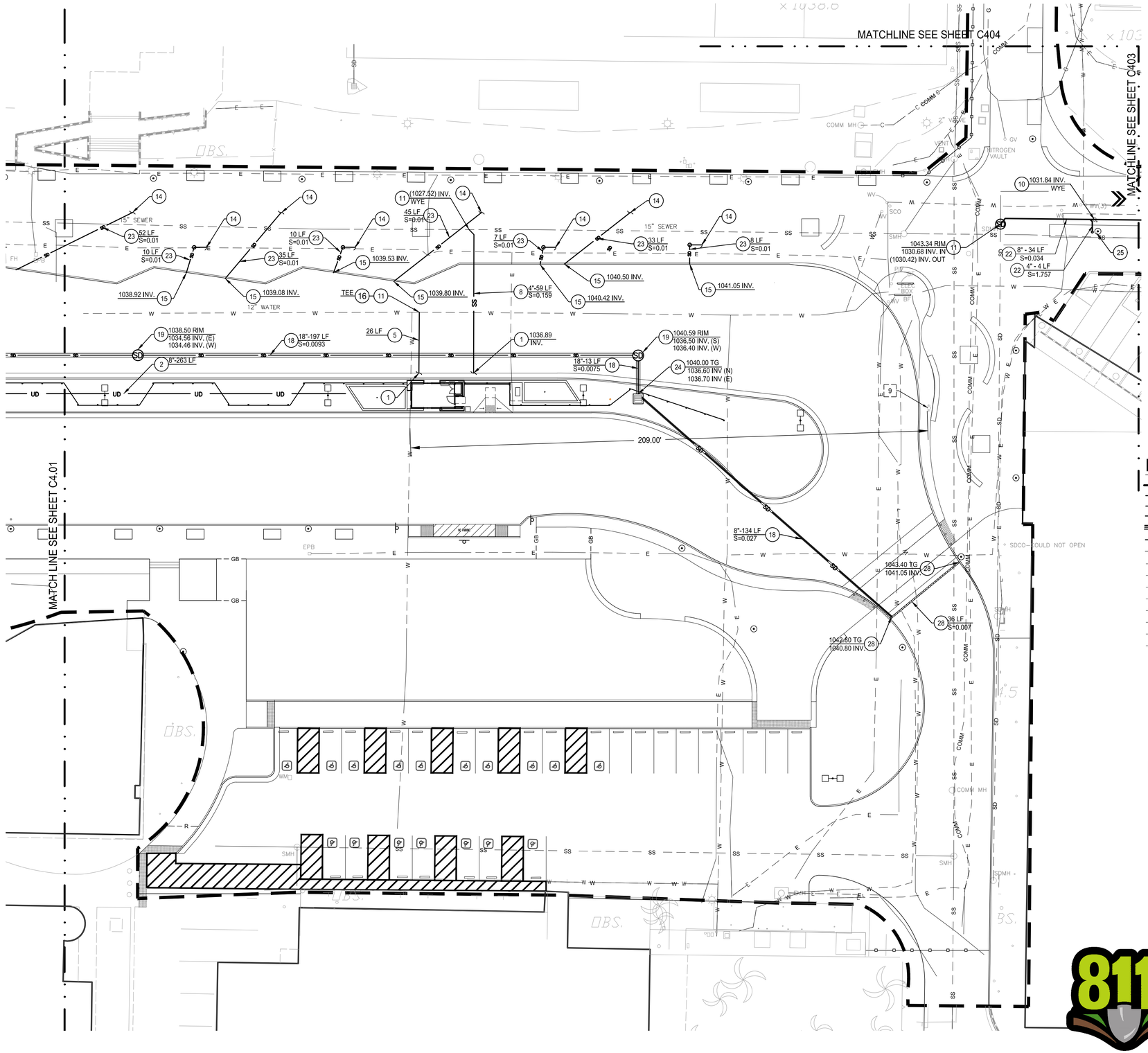
CIVIL UTILITY PLAN

SHEET TITLE

C401

SHEET NO.

Plotted - 1/9/2019 11:46:17 AM :: Saved - 1/8/2019 1:45:38 PM :: W:\UCR\1GRU013201\ENGR\SHEETS\C401.dwg :: Benjamin.vazquez



CONSTRUCTION NOTES:

- CONSTRUCT
- EXISTING TO REMAIN -PROTECT IN PLACE
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- ADJUST TO GRADE
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1. STUB OUT FOR DRINKING FOUNTAIN PER ARCHITECTURE PLAN
2. PERFORATED PIPE- HDPE (DR 17) PER SPPWC SECTION 207-18. SIZE AND LENGTH PER PLANS.
3. REINSTALL RELOCATED FIRE DEPARTMENT CONNECTION (FDC).
4. REINSTALL RELOCATED BACKFLOW PREVENTOR DEVICE.
5. WATER LINE-(PVC C-900, CL 200). SIZE AND LENGTH PER PLAN. PIPE BEDDING AND TRENCH PER DETAIL 4/C901.
6. REINSTALL RELOCATED FIRE HYDRANT AND INSTALL NEW PIPING AND GATE VALVE PER DETAIL 4/C902.
7. FIRE WATER SERVICE LINE.(PVC-900, CL 200) SIZE AND LENGTH PER PLAN. REFER TO PLUMBING PLANS FOR CONTINUATION AND DETAILS.
8. SANITARY SEWER LINE-PVC. SIZE, LENGTH AND SLOPE PER PLAN. CONNECT TO EXISTING 15" SEWER PER CITY OF RIVERSIDE DRAWING STD. 562. PIPE BEDDING AND TRENCH PER DETAIL 4/C901.
9. EXISTING FIRE HYDRANT
10. HDPE FITTING, TYPE PER PLAN. SIZE PER ADJOINING PIPE
11. CONNECT TO EXISTING UTILITY. CONTRACTOR TO FIELD VERIFY LOCATION, DEPTH, SIZE, AND CONDITION PRIOR TO CONSTRUCTION.
12. CONNECT TO EXISTING UTILITY. UTILITY LOCATION PER MASTER PLAN AND NOT IDENTIFIED IN SURVEY. CONTRACTOR TO FIELD VERIFY UTILITY LOCATIONS, SIZES, AND DEPTHS PRIOR TO CONSTRUCTION.
13. CLEANOUT PER SPPWC STANDARD PLAN 204-2.
14. STUB OUT FOR CANOPY.
15. PARKWAY DRAIN PER CITY OF RIVERSIDE DRAWING STD. 410.
16. THRUST BLOCK, CLASS 350 RATED WORKING PRESSURE, PER AWWA C110 WITH RESTRAINED JOINTS (U.N.O.). SIZE PER ADJOINING PIPE OR PER PLAN. ANGLE PER PLAN. SEE DETAIL 6/C902.
17. C.S.P. INLET PER CITY OF RIVERSIDE DRAWING STD. NO.412.
18. RCP STORM DRAIN (1300 D-LOAD) SIZE, LENGTH AND SLOPE PER PLAN. CASE III BEDDING.
19. STORM DRAIN MANHOLE PER CITY OF RIVERSIDE DRAWING STD. NO.430.
20. CATCH BASIN PER CITY OF RIVERSIDE DRAWING STD. NO. 408.
21. 24" X 24" CATCH BASIN. BROOKS PRODUCT 3636CB WITH PEDESTRIAN RATED STEEL GRATE, OR APPROVED EQUAL.
22. HDPE STORM DRAIN LINE, SIZE, LENGTH, AND SLOPE PER PLAN, PIPE BEDDING AND TRENCH PER DETAIL 4/C901.
23. 3" PVC (SDR-35) STORMDRAIN WITH 3" MINIMUM COVER. SLOPE PER PLAN
24. STORM DRAIN INLET WITH GRATE PER SPPWC STD 304-3.
25. LANDSCAPE AREA DRAIN PER LANDSCAPE PLAN.
26. RETAINING WALL UTILITY OPENING PER SPPWC STD. PLAN 617-3.
27. 36" X 36" CATCH BASIN. BROOKS PRODUCT 3636CB WITH PEDESTRIAN RATED STEEL GRATE, OR APPROVED EQUAL.
28. TRENCH DRAIN PER DETAIL 7/ SHEET C901.

LEGEND:

- MATCH LINE
- SS — PROPOSED SANITARY SEWER LINE
- W — PROPOSED DOMESTIC WATER LINE
- SD — PROPOSED STORM DRAIN LINE(<18")
- SD — PROPOSED STORM DRAIN LINE (≥18")
- UD — PROPOSED UNDER DRAIN LINE
- VEGETATED SWALE FLOW LINE
- SD — EXISTING STORM DRAIN
- W — EXISTING WATER
- SS — EXISTING SANITARY SEWER
- FW — EXISTING FIRE WATER LINE
- FO — EXISTING FIBER OPTICS LINE
- E — EXISTING ELECTRIC LINE
- T — EXISTING TELECOMMUNICATION LINE
- IWL — EXISTING INDUSTRIAL WASTE LINE
- PROPOSED SEWER MANHOLE
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED CATCH BASIN
- PROPOSED CLEANOUT STRUCTURE
- GATE VALVE
- POINT OF CONNECTION
- NEW FIRE HYDRANT

NOTES:

1. MAINTAIN 10' MINIMUM CLEARANCE BETWEEN DOMESTIC WATER AND SANITARY SEWER PIPES, OUTSIDE EDGE TO OUTSIDE EDGE.
2. MAINTAIN 10' CLEARANCE BETWEEN DOMESTIC AND RECLAIMED WATER PIPES, OUTSIDE EDGE TO OUTSIDE EDGE.
3. NOT USED.
4. EXISTING UTILITY LOCATIONS, SIZES, AND DEPTHS SHALL BE FIELD VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
5. PROVIDE PEDESTRIAN AND TRAFFIC RATED RIMS AND COVERS FOR RELOCATED OR ADJUSTED UTILITY STRUCTURES
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811 Know what's below. Call before you dig.

20' 10' 0' 20' 40'
GRAPHIC SCALE
SCALE: 1" = 20'

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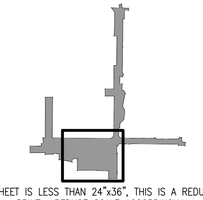

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KEY PLAN

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	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES	C402.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

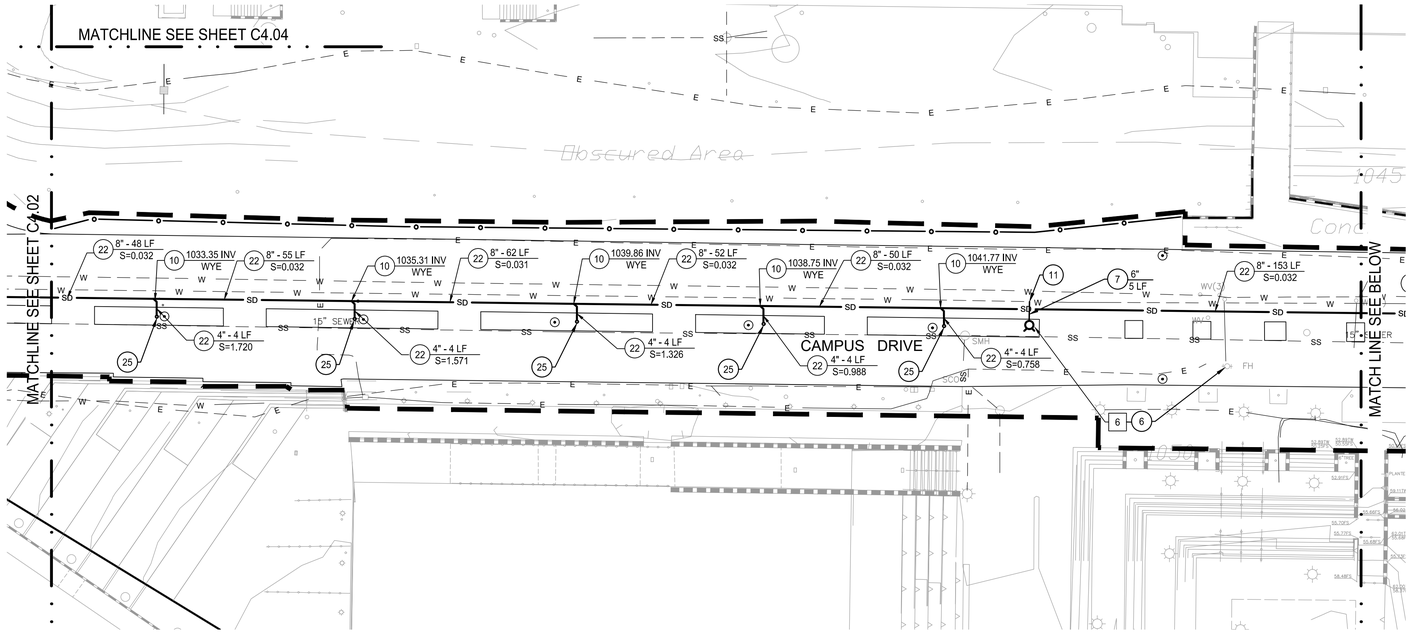
CIVIL UTILITY PLAN

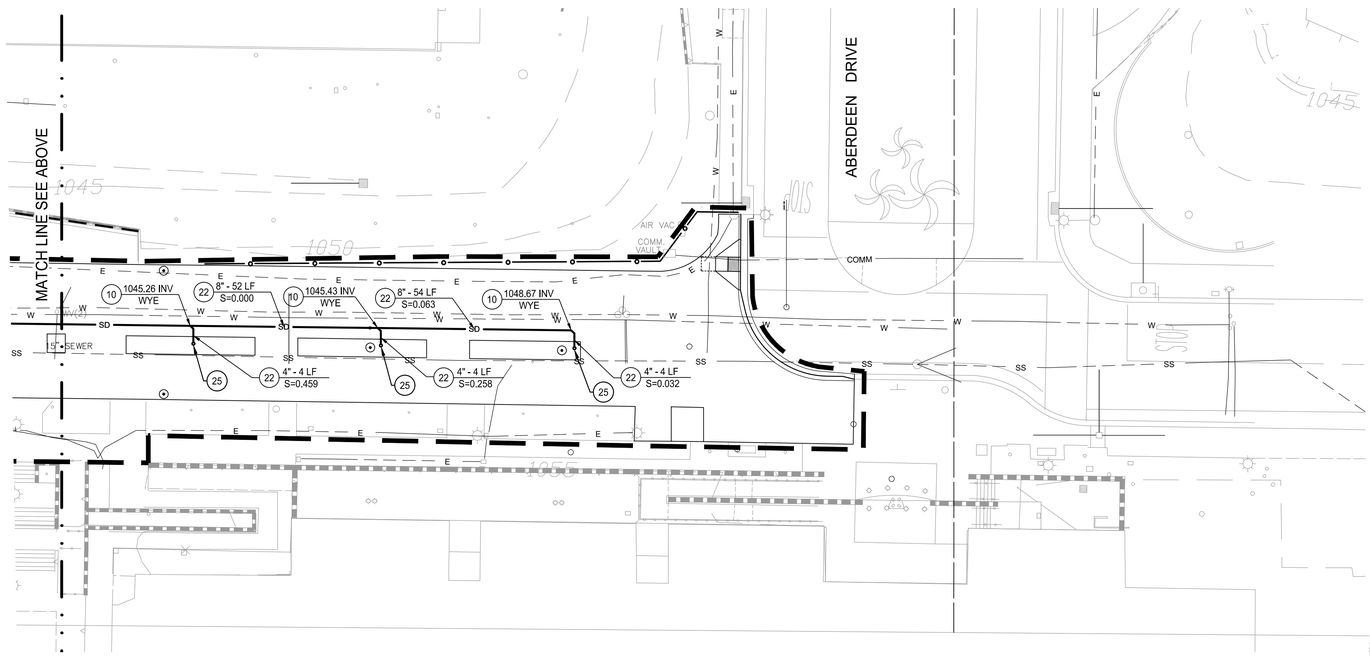
SHEET TITLE

C402

SHEET NO.

Plotted — 1/9/2019 11:46:46 AM :: Saved — 1/9/2019 11:09:16 AM :: W:\UCR\GRU01320\ENGR\SHEETS\C402.dwg :: Benjamin.vazquez





CONSTRUCTION NOTES:

CONSTRUCT
EXISTING TO REMAIN -PROTECT IN PLACE
EXISTING TO REMOVE
REMOVE & RELOCATE
ADJUST TO GRADE
BY OTHERS

1. STUB OUT FOR DRINKING FOUNTAIN PER ARCHITECTURE PLAN
2. PERFORATED PIPE- HDPE (DR 17) PER SPPWC SECTION 207-18. SIZE AND LENGTH PER PLANS.
3. REINSTALL RELOCATED FIRE DEPARTMENT CONNECTION (FDC).
4. REINSTALL RELOCATED BACKFLOW PREVENTOR DEVICE.
5. WATER LINE-(PVC C-900, CL 200). SIZE AND LENGTH PER PLAN. PIPE BEDDING AND TRENCH PER DETAIL 4/C901.
6. REINSTALL RELOCATED FIRE HYDRANT AND INSTALL NEW PIPING AND GATE VALVE PER DETAIL 4/C902.
7. FIRE WATER SERVICE LINE,(PVC-900, CL 200) SIZE AND LENGTH PER PLAN. REFER TO PLUMBING PLANS FOR CONTINUATION AND DETAILS.
8. SANITARY SEWER LINE-PVC. SIZE, LENGTH AND SLOPE PER PLAN. CONNECT TO EXISTING 15" SEWER PER CITY OF RIVERSIDE DRAWING STD. 562. PIPE BEDDING AND TRENCH PER DETAIL 4/C901.
9. EXISTING FIRE HYDRANT
10. HDPE FITTING, TYPE PER PLAN, SIZE PER ADJOINING PIPE
11. CONNECT TO EXISTING UTILITY. CONTRACTOR TO FIELD VERIFY LOCATION, DEPTH, SIZE, AND CONDITION PRIOR TO CONSTRUCTION.
12. CONNECT TO EXISTING UTILITY. UTILITY LOCATION PER MASTER PLAN AND NOT IDENTIFIED IN SURVEY. CONTRACTOR TO FIELD VERIFY UTILITY LOCATIONS, SIZES, AND DEPTHS PRIOR TO CONSTRUCTION.
13. CLEANOUT PER SPPWC STANDARD PLAN 204-2.
14. STUB OUT FOR CANOPY.
15. PARKWAY DRAIN PER CITY OF RIVERSIDE DRAWING STD. 410.
16. THRUST BLOCK, CLASS 350 RATED WORKING PRESSURE, PER AWWA C110 WITH RESTRAINED JOINTS (U.N.O.). SIZE PER ADJOINING PIPE OR PER PLAN, ANGLE PER PLAN. SEE DETAIL 6/C902.
17. C.S.P. INLET PER CITY OF RIVERSIDE DRAWING STD. NO.412.
18. RCP STORM DRAIN (1300 D-LOAD) SIZE, LENGTH AND SLOPE PER PLAN. CASE III BEDDING.
19. STORM DRAIN MANHOLE PER CITY OF RIVERSIDE DRAWING STD. NO.430.
20. CATCH BASIN PER CITY OF RIVERSIDE DRAWING STD. NO. 408.
21. 24" X 24" CATCH BASIN. BROOKS PRODUCT 3636CB WITH PEDESTRIAN RATED STEEL GRATE, OR APPROVED EQUAL.
22. HDPE STORM DRAIN LINE. SIZE, LENGTH, AND SLOPE PER PLAN. PIPE BEDDING AND TRENCH PER DETAIL 4/C901.
23. 3" PVC (SDR-35) STORMDRAIN WITH 3" MINIMUM COVER. SLOPE PER PLAN
24. STORM DRAIN INLET WITH GRATE PER SPPWC STD 304-3.
25. LANDSCAPE AREA DRAIN PER LANDSCAPE PLAN.
26. RETAINING WALL UTILITY OPENING PER SPPWC STD. PLAN 617-3.
27. 36" X 36" CATCH BASIN. BROOKS PRODUCT 3636CB WITH PEDESTRIAN RATED STEEL GRATE, OR APPROVED EQUAL.
28. TRENCH DRAIN PER DETAIL 7/ SHEET C901.

LEGEND:

- MATCH LINE
- SS — PROPOSED SANITARY SEWER LINE
- W — PROPOSED DOMESTIC WATER LINE
- SD — PROPOSED STORM DRAIN LINE(<18")
- SD — PROPOSED STORM DRAIN LINE (≥18")
- UD — PROPOSED UNDER DRAIN LINE
- > — VEGETATED SWALE FLOW LINE
- SD — EXISTING STORM DRAIN
- W — EXISTING WATER
- SS — EXISTING SANITARY SEWER
- FW — EXISTING FIRE WATER LINE
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- PROPOSED CLEANOUT STRUCTURE
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UNIVERSITY OF CALIFORNIA RIVERSIDE

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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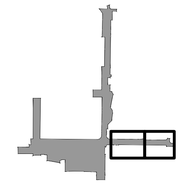

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KEY PLAN

NO.	DATE	ISSUED FOR	BY
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		11/27/18 90% CD SET	
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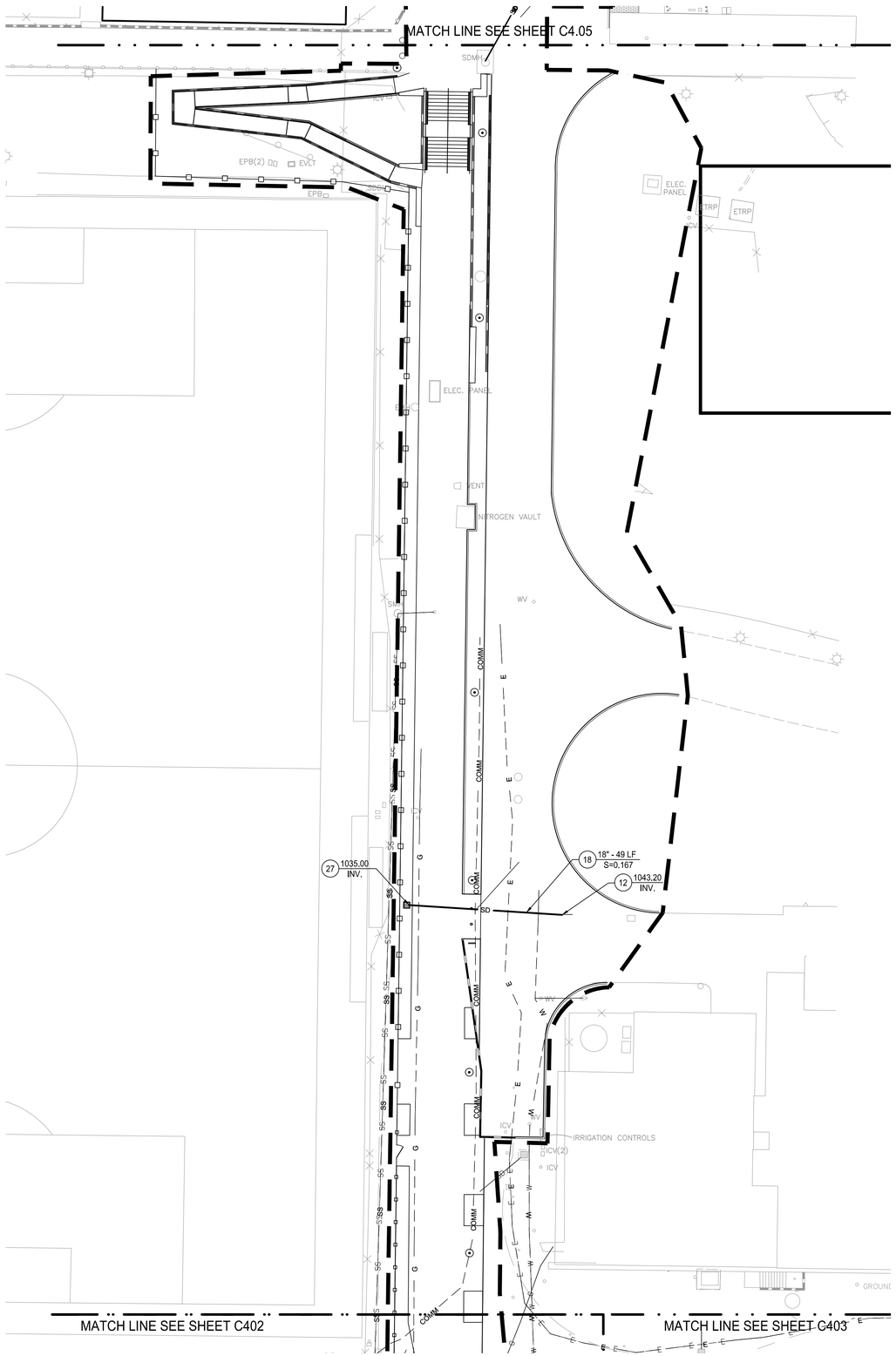
BASE FILE NAMES	C403.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

CIVIL UTILITY PLAN

SHEET TITLE

C403

SHEET NO.



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16. THRUST BLOCK, CLASS 350 RATED WORKING PRESSURE, PER AWWA C110 WITH RESTRAINED JOINTS (U.N.O.). SIZE PER ADJOINING PIPE OR PER PLAN, ANGLE PER PLAN. SEE DETAIL 6/C902.
17. C.S.P. INLET PER CITY OF RIVERSIDE DRAWING STD. NO.412.
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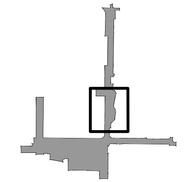

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CIVIL UTILITY PLAN

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C404

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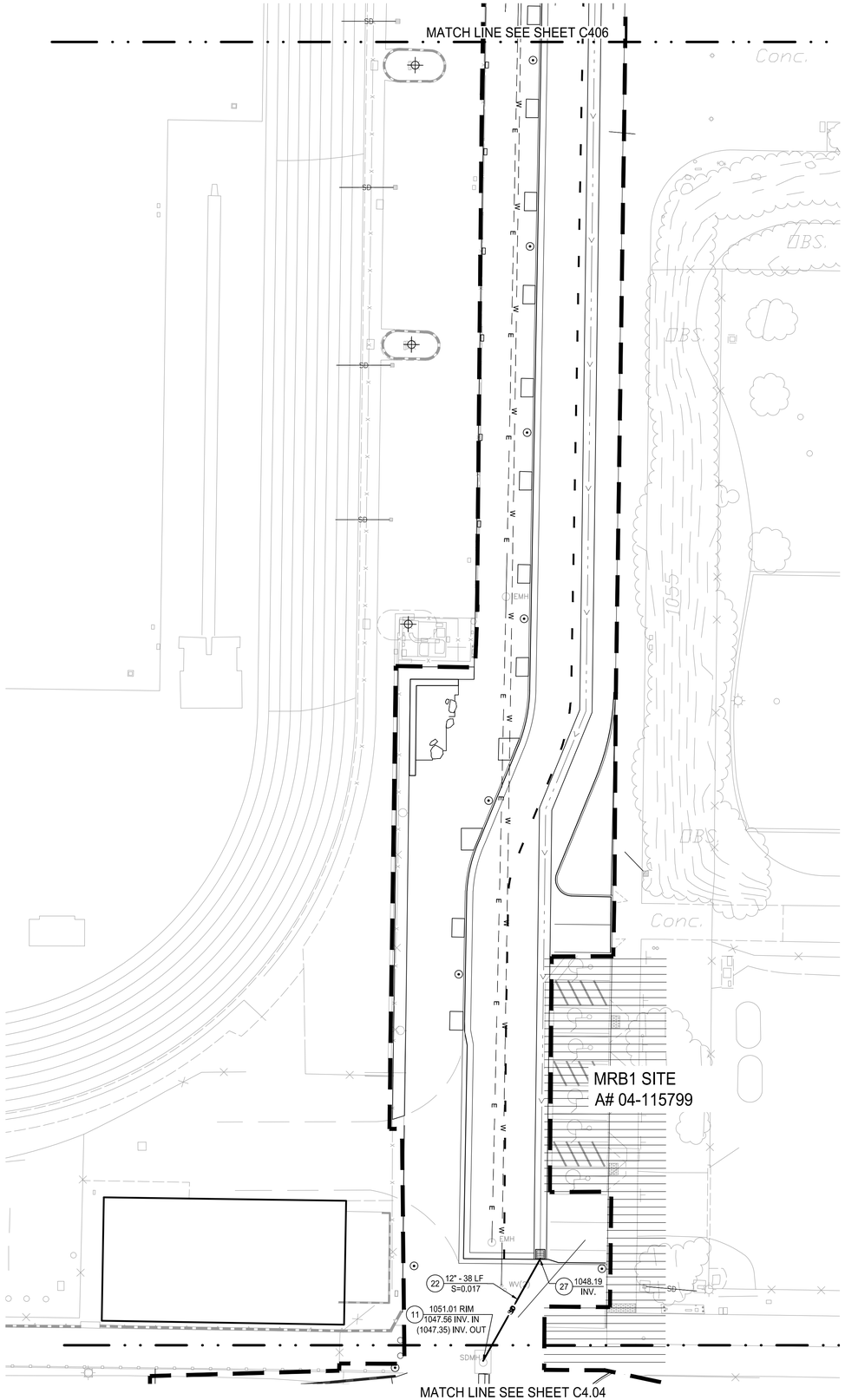

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BASE FILE NAMES	C405.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01-10-2019
PROJECT NO.	GRUEN # 8345

CIVIL UTILITY PLAN

SHEET TITLE

C405

SHEET NO.

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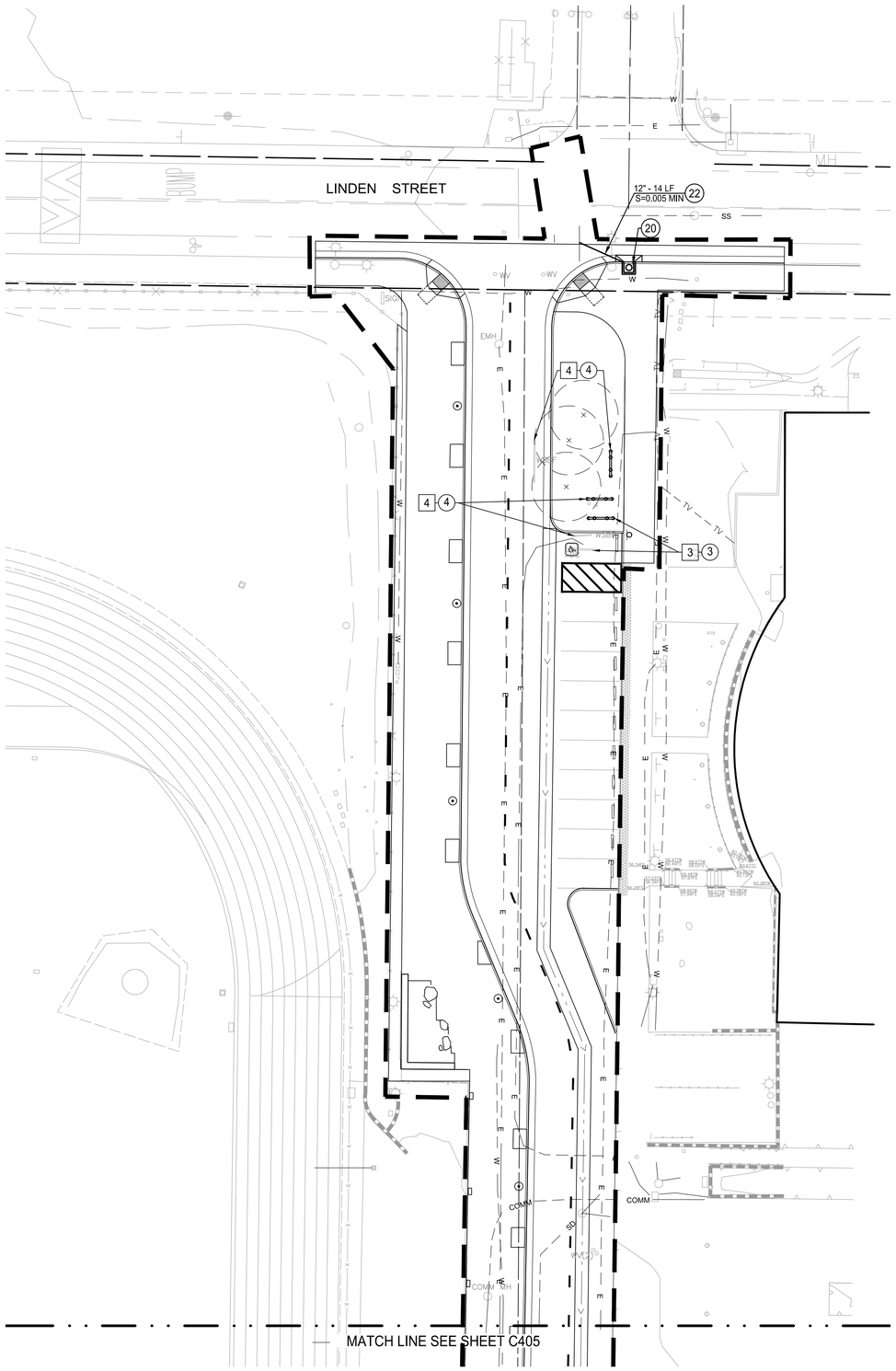

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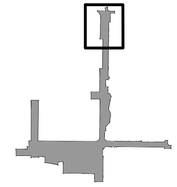

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CIVIL UTILITY PLAN

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C406

SHEET NO.

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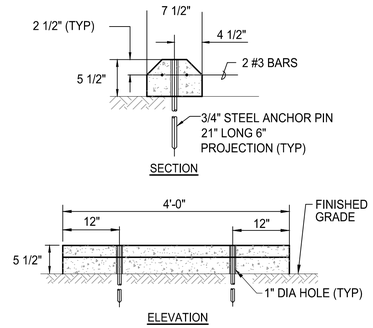


NOTES:

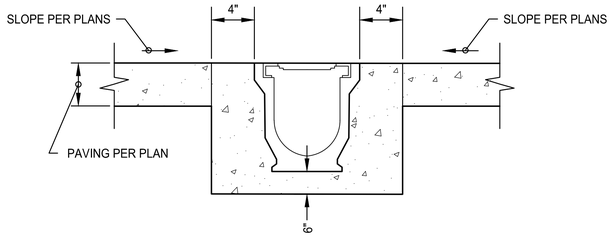
1. PREFABRICATED PORTLAND CEMENT CONCRETE - 3500 PSI.

9 CONCRETE WHEEL STOP DETAIL

REF. C202 SCALE: N.T.S.

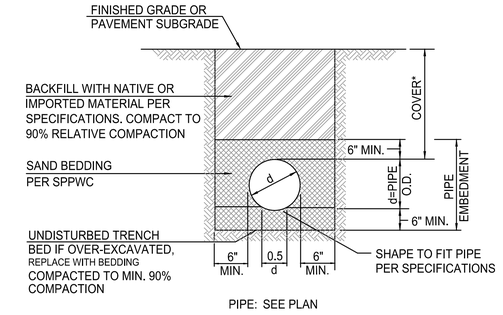
NOTES:

1. TRENCH DRAIN SHALL BE 4" WIDE PRE-SLOPED PVC TRENCH DRAIN WITH GRATE. (NDS SPEE D CHANNEL GRATE OR APPROVED EQUAL) INSTALL PER MANUFACTURER'S INSTRUCTIONS.



7 TRENCH DRAIN

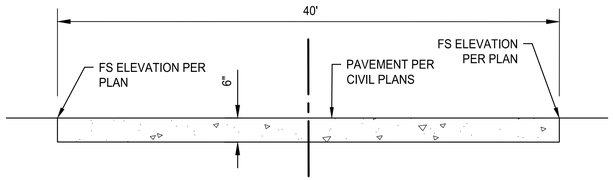
REF. C401–C406 SCALE: N.T.S.



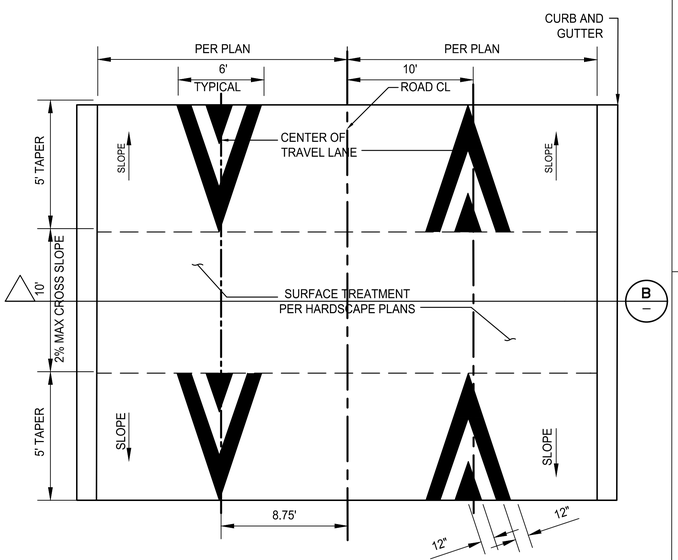
* FOR WATER PIPES, COVER SHALL BE 36" MIN.
* FOR STORM DRAIN AND SANITARY SEWER PIPES, SEE PLAN.

4 PIPE BEDDING AND TRENCH DETIALS

REF. C401–C406 SCALE: N.T.S.

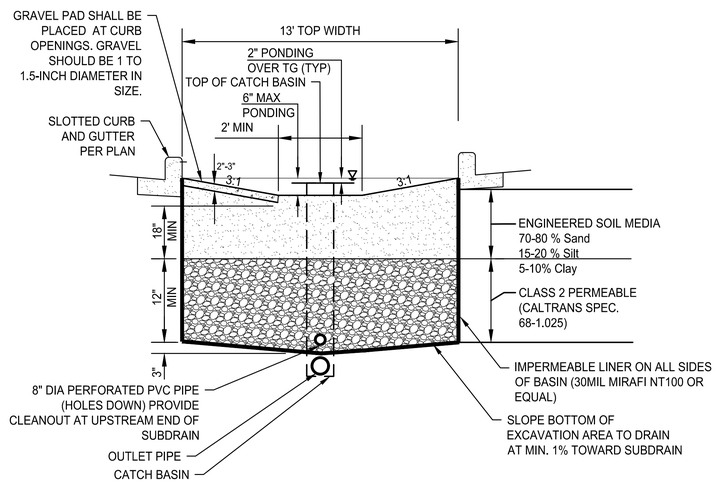


SECTION B — NOT TO SCALE



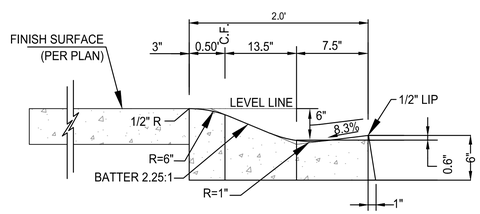
8 RAISED CROSSWALK PAVEMENT MARKING DETAIL

REF. C302 SCALE: N.T.S.



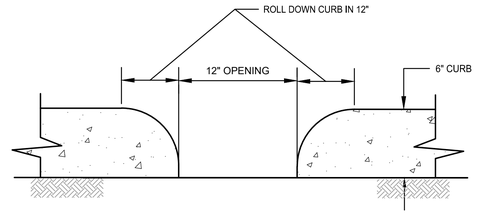
6 BIO-SWALE DETAIL

REF. C301–C302 SCALE: N.T.S.



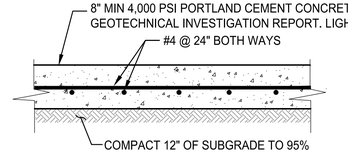
5 ROLLED CURB

REF. C302, C305 SCALE: N.T.S.



3 CURB OPENING

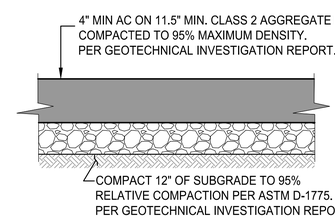
REF. C302 SCALE: N.T.S.



NOTES:
1. CONCRETE PAVEMENT ON COMPACTED SUBGRADE PER GEOTECHNICAL RECOMMENDATIONS

2 VEHICULAR CONCRETE PAVEMENT

REF. C301–C304 SCALE: N.T.S.



1 ASPHALT CONCRETE PAVEMENT

REF. C301–C306 SCALE: N.T.S.

MOBILITY HUB
AND CENTRAL CAMPUS
LINKAGES

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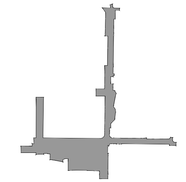
www.psomas.com

CONSULTANT

ARCHITECT/ENGINEER SEAL



IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD–BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

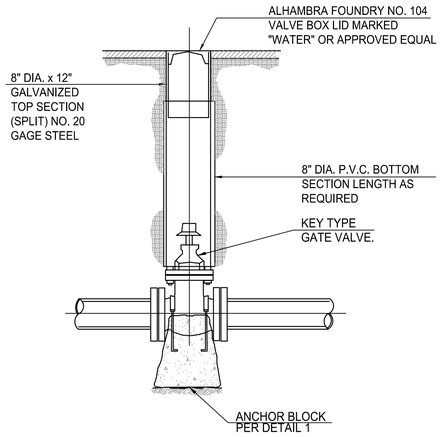
BASE FILE NAMES	C901.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01–10–2019
PROJECT NO.	GRUEN # 8345

CIVIL DETAILS

SHEET TITLE

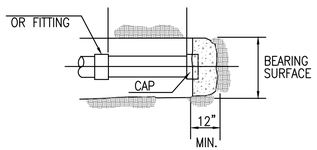
C901

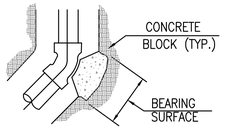
SHEET NO.



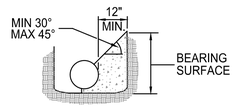
5 GATE VALVE AND COVER DETAL

REF. C401–C406 SCALE: N.T.S.

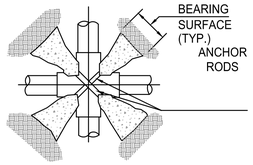




CAPPED END

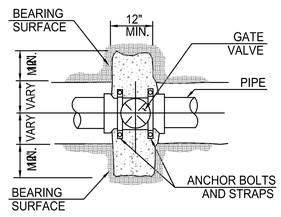


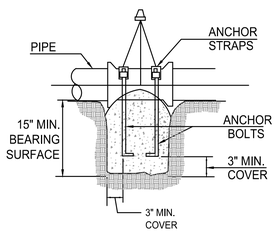
HORIZONTAL BEND



TYPICAL SECTION OF THRUST BLOCK

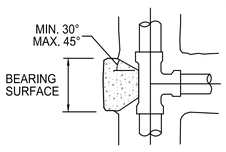
CROSS





PLAN **ELEVATION**

VALVE ANCHORS



TEE

THRUST BLOCK BEARING AREAS - S.F.

MAIN SIZE	TEE *	90° BEND	45° BEND	22.5° BEND	11.25° BEND
4"	2	2	1	1	1
6"	1	2	3	4	3
8"	1	2	4	8	5
12"	3	5	9	16	12

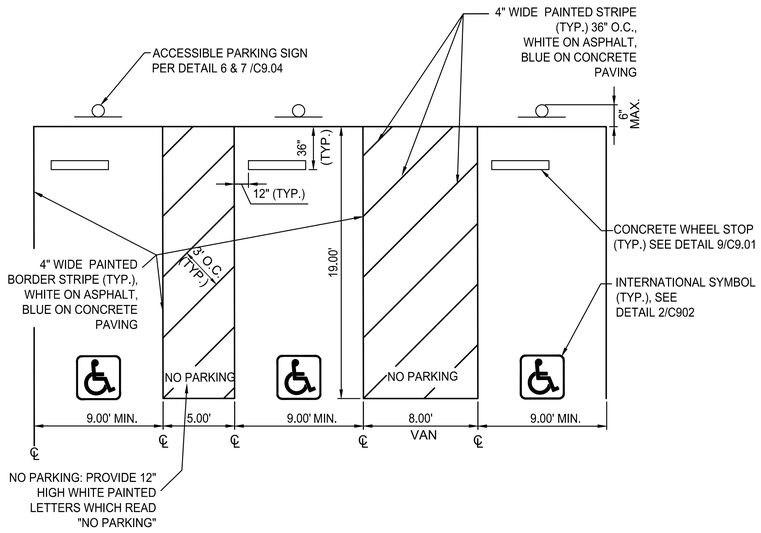
* INCLUDES TEES, PLUGS, CAPS, HYDRANTS & VALVES.

GENERAL NOTES:

1. ALL THRUST/ANCHOR BLOCKS SHALL BEAR AGAINST UNDISTURBED SOIL.
2. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 2000 P.S.I. AT 28 DAYS.
3. ALL ANCHOR RODS AND ANCHOR BOLTS SHALL BE MINIMUM 1/2" DIA. & ANCHOR STRAPS SHALL BE 1/2" X 2" BAR.
4. THRUST BLOCK DESIGN IS BASED ON A WATER PRESSURE OF 200 P.S.I., AND A MAXIMUM ALLOWABLE SOIL BEARING VALUE OF 2000 P.S.F. FOR MAXIMUM SOIL BEARING VALUES OF 1000 P.S.F. INCREASE BEARING VALUES BY A FACTOR OF 2.
5. THE RATIO OF WIDTH TO HEIGHT OF THRUST BLOCKS SHALL NOT EXCEED 1.5 TO 1.
6. ANCHOR BLOCKS FOR VERTICAL BENDS SHALL BE CONSTRUCTED PER SPECIAL DETAIL.

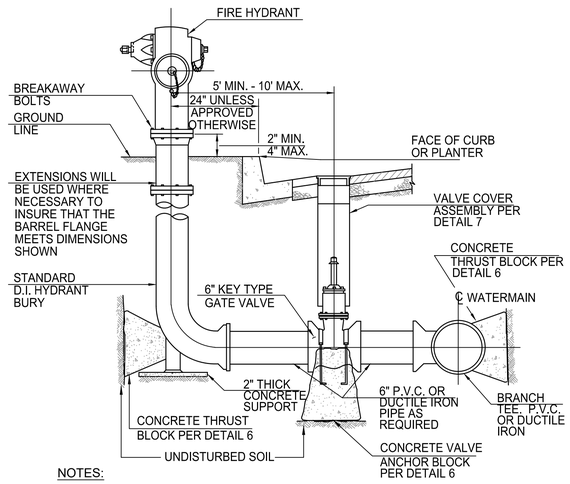
6 THRUST AND ANCHOR BLOCK DETAILS

REF. C401–C406 SCALE: N.T.S.



5 TYPICAL ACCESSIBLE PARKING

REF. C201–C206 SCALE: N.T.S.

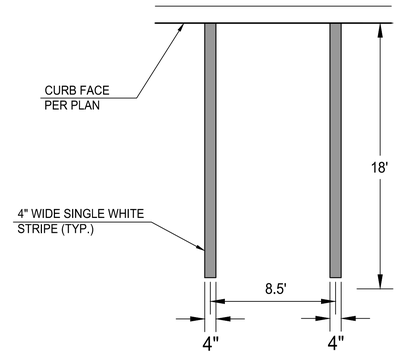


NOTES:

1. BARRICADES, FENCES, WALLS, LANDSCAPING, ETC. SHALL NOT BE INSTALLED OR PLANTED WITHIN 3 FEET OF A HYDRANT.
2. HYDRANT SHALL BE PAINTED WITH ONE COAT OF RED PAINT AND TWO FINISHING COATS OF PAINT OF THE COLOR AND TYPE PER CULVER CITY STANDARDS.
3. HYDRANT BURY, VALVE AND TEE SHALL HAVE EITHER RING-TITE JOINTS OR MECHANICAL JOINTS COMPATIBLE WITH PIPE MATERIAL USED.
4. HYDRANTS SHALL HAVE 6 HOLE FLANGE AND A 1-1/8" OPERATING NUT.
5. ALL PIPE AND FITTINGS FOR HYDRANT INSTALLATION SHALL CONFORM TO THE RATED WORKING PRESSURE OF SITE WATER PIPING.
6. HYDRANT SHALL MEET CULVER CITY FIRE DEPARTMENT REQUIREMENTS.

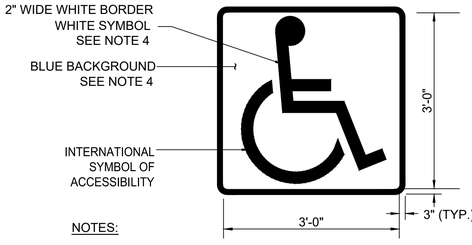
4 FIRE HYDRANT CONNECTION DETAIL

REF. C401–C406 SCALE: N.T.S.



3 PARKING SPACE STRIPING

REF. C201–C206 SCALE: N.T.S.

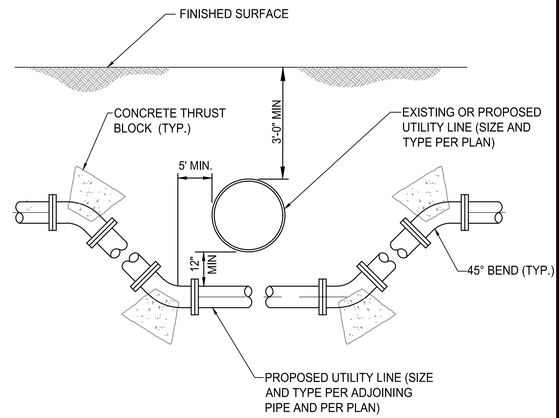


NOTES:

1. ALL STRIPES TO BE 3" WIDE. BLUE BACKGROUND. (SEE NOTE 4)
2. PROVIDE TWO COATS OF PAINT. DRY BETWEEN COATS.
3. LOCATE SYMBOL AT CENTER OF STALL WHERE SHOWN ON DETAIL.
4. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL COMPLY WITH FIGURE 11B-703.7.2.1 THE SYMBOL SHALL CONSIST OF A WHITE FIGURE ON A BLUE BACKGROUND. THE COLOR BLUE SHALL APPROXIMATE FS 15090 IN FEDERAL STANDARD 595C.

2 VEHICULAR INTERNATIONAL ACCESSIBILITY SIGN

REF. C202 SCALE: N.T.S.



1 UTILITY CROSSING DETAIL

REF. C401–C406 SCALE: N.T.S.

MOBILITY HUB
AND CENTRAL CAMPUS
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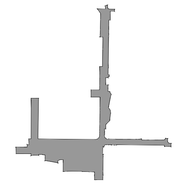

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KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD–BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES	C902.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01–10–2019
PROJECT NO.	GRUEN # 8345

CIVIL DETAILS

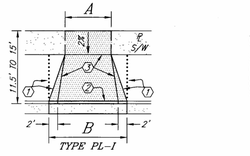
SHEET TITLE

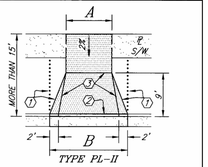
C902

SHEET NO.

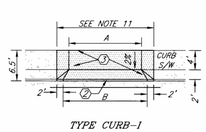
Plotted — 1/9/2019 11:48:58 AM :: Saved — 1/8/2019 5:55:52 PM :: W:\UCR\1GRU\01320\1ENGR\SHEETS\C902.dwg :: Benjamin.vazquez

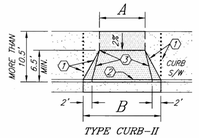
DRIVEWAY APPROACH WITH PROPERTY–LINE SIDEWALK





DRIVEWAY APPROACH WITH CURB SIDEWALK



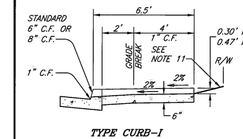


- CONCRETE IN THE SHADED AREA SHALL BE AT LEAST 6" THICK.
- (1) DOTTED LINE SHOWS OPTIONAL DRIVEWAY/SIDEWALK CONFIGURATION. WHEN THE OPTIONAL CONFIGURATION IS CHOSEN, THE ADDITIONAL CONCRETE SHALL BE AT LEAST 6" THICK.
- (2) SCORE LINE OR COLD JOINT.
- (3) GRADE BREAK LINES SHALL BE PRECISE AND STRAIGHT. SCREEDS AND/OR FALSE FORMS MUST BE USED TO ACHIEVE PRECISE CONSTRUCTION.

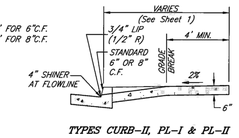
APPROVED BY		
CITY ENGINEER	DATE	5/18/11

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT
DRIVEWAY APPROACH
STANDARD DRAWING NO. 302
Sheet 1 of 4

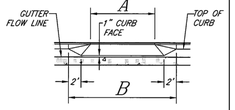
MARK	REVISIONS	APPR	DATE



TYPE CURB–I



TYPES CURB–II, PL–I & PL–II



ELEVATION

DRIVEWAY APPROACH DIMENSIONS

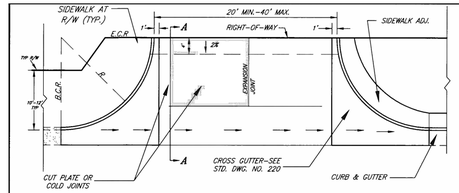
LAND USE AND DRIVEWAY TYPE		A	B	B*
RESIDENTIAL (SINGLE OR DUPLEX)	SINGLE GARAGE	10' (MIN.)	(A+7')	A+14'
	DOUBLE GARAGE	20' (MAX.)		
	TRIPLE GARAGE	28'		
COMMERCIAL OR APARTMENT		30'	A+14'	A+18'
COMMERCIAL (JOINT)		36'		

* USE THIS "B" DIMENSION WHEN THE DRIVEWAY APPROACH IS ON A MAJOR STREET OR WHEN A DRIVING LANE IS ADJACENT TO THE CURB.

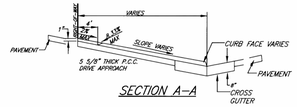
APPROVED BY		
CITY ENGINEER	DATE	5/18/11

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT
DRIVEWAY APPROACH
STANDARD DRAWING NO. 302
Sheet 2 of 4

MARK	REVISIONS	APPR	DATE



PLAN VIEW



SECTION A–A

NOTES:
1. CURB RETURN RADII VARIES ACCORDING TO PARKWAY WIDTHS OR AS RECOMMENDED BY THE TRAFFIC ENGINEER.
2. SPECIAL DRIVE APPROACH SHALL BE USED FOR ALLEY ENTRANCE UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
3. CONCRETE SHALL BE CLASS 560–C–3250 PER SECTION 201 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CURED WITH TYPE 1–D CURING COMPOUND.
4. "R" DIMENSIONS SHALL BE ADEQUATE TO ACCOMMODATE TRUCK TURNING AS APPROVED BY CITY ENGINEER.
5. RIGHT OF WAY OR EASEMENT SHALL BE DEDICATED AS NECESSARY TO PROVIDE ADA ACCESS ACROSS DRIVEWAY.

APPROVED BY		
CITY ENGINEER	DATE	5/18/11

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT
DRIVEWAY APPROACH
STANDARD DRAWING NO. 302
Sheet 3 of 4

MARK	REVISIONS	APPR	DATE

NOTES

1. A CONSTRUCTION PERMIT IS REQUIRED PRIOR TO CONSTRUCTION OF A DRIVEWAY APPROACH. AS A PREREQUISITE TO THE CONSTRUCTION PERMIT, THE PERMITTEE SHALL SUBMIT FOR REVIEW AND APPROVAL OF THE CITY ENGINEER A DETAILED PLOT PLAN SHOWING THE LOCATION OF THE PROPERTY TO BE SERVED BY THE DRIVEWAY APPROACH, THE STREET RIGHT–OF–WAY, THE PROPERTY LINES, THE EXISTING AND PROPOSED GARAGES, DRIVEWAY, CURB AND GUTTERS, SIDEWALKS, TREES, FIRE HYDRANTS, UTILITY VAULTS AND POLES AND OTHER IMPROVEMENTS WHICH MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION. THE PLOT PLAN SHALL SPECIFY THE TYPE AND LOCATION OF THE PROPOSED DRIVEWAY APPROACH WITH ITS DIMENSIONS "A" AND "B".
2. A DRIVEWAY APPROACH REQUIRING RELOCATION OR REMOVAL OF TREES, POLES, UTILITIES OR OTHER APPURTENANCES SHALL BE APPROVED BY THE AFFECTED UTILITY COMPANY AND/OR CITY DEPARTMENTS PRIOR TO ISSUANCE OF THE CONSTRUCTION PERMIT. ALL SUCH WORK SHALL BE DONE AT THE EXPENSE OF THE PERMITTEE.
3. NO PORTION OF A DRIVEWAY APPROACH SHALL BE LOCATED WITHIN A CURB RETURN.
4. ANY UNUSED DRIVEWAY OPENINGS SERVING THE PROPERTY ON WHICH A NEW DRIVEWAY IS BEING BUILT SHALL BE CLOSED WITH FULL HEIGHT CURB; SEE STD. DWG. 303 FOR REMOVAL OF CURB ONLY.
5. THE EDGE OF THE DRIVEWAY APPROACH AT THE CURB SHALL BE AT LEAST 5' FROM THE EXTENSION OF THE NEAREST PROPERTY LINE AT THE CURB.
6. WHEN A JOINT DRIVEWAY APPROACH IS PERMITTED, A RECORDED EASEMENT ALLOWING FOR MUTUAL ACCESS ON THE ADJOINING PROPERTIES IS REQUIRED.
7. CONCRETE SHALL BE CLASS 560–C–3250.
8. A CONSTRUCTION JOINT OR A WEAKENED PLANE JOINT SHALL BE INSTALLED BETWEEN THE DRIVEWAY APPROACH AND THE ADJACENT SIDEWALK AND DRIVEWAY.
9. A WEAKENED PLANE JOINT SHALL BE CONSTRUCTED THROUGH THE CENTER OF THE DRIVEWAY APPROACH WHEN "A" EXCEEDS 15'.
10. WHEN A DRIVEWAY APPROACH IS TO JOIN AN ALLEY, THE DRIVEWAY APPROACH AND THE ALLEY SHALL BE CONSTRUCTED TO ALLOW FOR PROPER DRAINAGE.
11. FOR TYPE CURB–I, A POSITIVE SLOPE BEYOND THE DRIVEWAY APPROACH AS WELL AS TRANSITION CURBS BEHIND THE SIDEWALK AND ADJACENT TO THE DRIVEWAY MAY BE REQUIRED TO CONTAIN 100–YEAR STORM RUNOFF WITHIN THE RIGHT–OF–WAY.
12. WHEN DRIVEWAY APPROACH IS TO BE USED AS A MIDBLOCK WHEELCHAIR RAMP USE STANDARD DRAWING 304, TYPE VII.

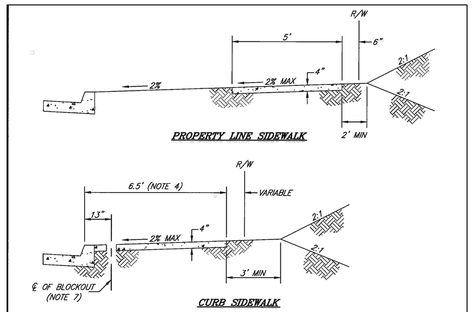
FOR ANY VARIATION FROM THIS STANDARD, APPROVAL MUST BE OBTAINED FROM THE CITY ENGINEER.

APPROVED BY		
CITY ENGINEER	DATE	5/18/11

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT
DRIVEWAY APPROACH
STANDARD DRAWING NO. 302
Sheet 4 of 4

MARK	REVISIONS	APPR	DATE

3 DRIVEWAY
CITY OF RIVERSIDE STD.NO.302
REF. C301–C306 SCALE: N.T.S.



TYPICAL SECTIONS

NOTES

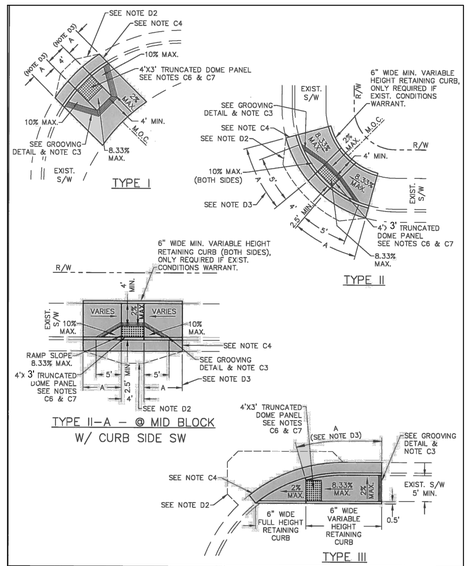
1. CONCRETE SHALL BE PER CURRENT EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION." (560–C–3250)
2. HALF INCH THICK TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT ALL CURB RETURNS. QUARTER INCH THICK EXPANSION JOINTS SHALL BE INSTALLED BETWEEN THE SIDEWALK AND THE BACK OF CURB AT CURB RETURNS AND AROUND DRAINAGE STRUCTURES, POLES, AND PIPES WHICH ARE IN THE SIDEWALK. CURB SIDEWALKS SHALL HAVE THE EXPANSION JOINTS AT THE SAME LOCATIONS AS THOSE IN THE CURB.
3. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT 10 FOOT MAXIMUM INTERVALS THROUGHOUT THE LENGTH OF THE SIDEWALK AND AT LOCATIONS WHERE THE SIDEWALK SECTION IS INTERRUPTED BY TREEWELLS, UTILITY VAULTS, BLOCKOUTS FOR STREET LIGHTS AND SIMILAR OBJECTS.
4. A SIDEWALK WIDER THAN 6.5 FEET MAY BE REQUIRED IN COMMERCIAL AREAS AND AREAS WITH HIGH PEDESTRIAN TRAFFIC.
5. FOR TYPICAL CURB RETURN SIDEWALK SEE STANDARD DRAWING NO. 120.
6. WHEN A STREET LIGHT STANDARD IS TO BE PLACED IN THE SIDEWALK, BLOCK OUT A THREE FOOT SQUARE AROUND THE STANDARD AND BRING THE STREET LIGHT FOUNDATION TO GRADE AFTER THE STANDARD IS PLUMB.
7. IN RESIDENTIAL AREAS 6" X 6" OR 6" DIAMETER BLOCKOUTS FOR MAILBOXES ARE REQUIRED IN CURB SIDEWALK 13" FROM CURB FACE AT THE PROPERT LINE BETWEEN ADJACENT RESIDENCES. FOR MAILBOXES FOR BUSINESS, MOBILEHOME PARKS OR APARTMENT HOUSES, DEVELOPER TO CHECK WITH U.S.P.S. FOR THE NUMBER AND LOCATION OF MAILBOXES.
8. 4 FEET WIDTH OF SIDEWALK IS THE MINIMUM WIDTH BETWEEN EDGE OF SIDEWALK AND ANY OBJECTS THAT INTERFERE WITH PEDESTRIAN R/W (TREEWELLS, FIRE HYDRANTS, ETC.).

APPROVED BY		
CITY ENGINEER	DATE	5/18/11

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT
SIDEWALK
STANDARD DRAWING NO. 325
Sheet 1 of 1

MARK	REVISIONS	APPR	DATE

2 CONCRETE SIDEWALK
CITY OF RIVERSIDE STD.NO.325
REF. C301–C306 SCALE: N.T.S.

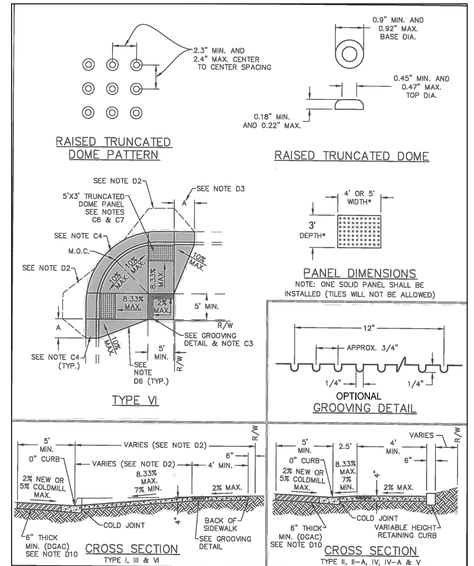


APPROVED BY		
CITY ENGINEER	DATE	11/14/2014

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT
PEDESTRIAN RAMP
STANDARD DRAWING NO. 304
Sheet 1 of 4

MARK	REVISIONS	APPR	DATE

1 CURB RAMP
CITY OF RIVERSIDE STD.NO.304
REF. C301–C306 SCALE: N.T.S.



APPROVED BY		
CITY ENGINEER	DATE	11/14/2014

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT
PEDESTRIAN RAMP
STANDARD DRAWING NO. 304
Sheet 3 of 4

MARK	REVISIONS	APPR	DATE

CONSTRUCTION NOTES:

C1. CONCRETE SHALL BE PER CURRENT EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION." (560–C–3250)

C2. THE RAMP SHALL BE POURED MONOLITHICALLY WITH THE ADJACENT SIDEWALK AND ALSO POURED SEPARATE FROM THE CURB/GUTTER AND SPANDREL.

C3. THE RAMP SHALL HAVE A 12" WIDE BORDER WITH 1/4" GROOVES APPROXIMATELY 3/4" O.C. SEE GROOVING DETAIL SHEET 3. THE SURFACE OF THE RAMP SHALL HAVE A TRANSVERSE BROOMED SURFACE TEXTURE ROUGHER THAN THE SURROUNDING SIDEWALK.–OPTIONAL

C4. GUTTER CROSS SLOPE SHALL BE TRANSITIONED FROM THE STANDARD OR EXISTING AT THE FULL HEIGHT CURB THROUGH THE "A" DISTANCE TO 5% AT THE BOTTOM OF THE RAMP WHERE THE 0" CURB FACE.

C5. CROSSWALKS SHALL BE ALIGNED PER THE LATEST EDITION OF THE CALIFORNIA MUTCD. THE CHAMFER SHALL BE 4" FROM THE GUTTER FLOWLINE TO THE NEAREST EDGE OF THE 12" STRIPE.

C6. ALL RAMPS SHALL HAVE A YELLOW TRUNCATED DOME PANEL, THAT EXTENDS THE FULL WIDTH OF THE RAMP AND PER THE DEPTH INDICATED FOR EACH RAMP TYPE. SEE DETAIL SHEET 3 OF 4. FOR NEW CONSTRUCTION, TRUNCATED DOMES SHALL BE SET IN WET CONCRETE (CAST–IN–PLACE TYPE).

C7. THE EDGE OF THE TRUNCATED DOME PANEL NEAREST THE STREET SHALL BE 6"–8" FROM THE GUTTER FLOWLINE.

C8. A MINIMUM OF 1 TO 2 EXISTING SIDEWALK PANELS ADJACENT TO NEW RAMPS SHALL BE REPLACED IF THE CROSSFALL EXCEEDS 2%.

DESIGN NOTES:

D1. TYPE I RAMP SHALL BE USED FOR ALL NEW CONSTRUCTION OR WHEREVER EXISTING CONDITIONS PERMIT. RAMP TYPES II THROUGH V ARE TO BE USED WHEREVER EXISTING CONDITIONS RESTRICT THE USE OF A TYPE I RAMP. VARIABLE HEIGHT RETAINING CURB SHALL BE USED ONLY ADJACENT TO NON–TRAVERSIBLE AREAS. ALL RAMP TYPES SHALL BE LOCATED AT THE MIDDLE OF THE CURB RETURN (M.O.C.) EXCEPT TYPE II–A, III AND VI.

D2. VARIABLE DEPTH COLDMILL AND DGAC OVERLAY AS NECESSARY TO ACHIEVE 5% MAX. GRADE AT LANDING. GRADE SHALL NOT EXCEED 14% BEYOND LANDING TO JOIN EXISTING.

D3. RAMP LENGTHS AND "A" DIMENSIONS SHALL BE ADJUSTED TO MEET THE SLOPE REQUIREMENTS AS SHOWN, EXCEPT THE "A" DIM. MUST NOT EXTEND BEYOND THE END OF THE CURB RETURN. (TYPE III & VI EXEMPT)

D4. RAMPS SHALL BE INSTALLED AT EACH CORNER OF AN INTERSECTION INCLUDING MIDBLOCK "T" LOCATIONS.

D5. RAMPS IN MID–BLOCK (AT "T" INTERSECTIONS) SHALL BE PLACED IN LINE WITH RAMPS ON THE OPPOSITE SIDE OF THE STREET. IF NO OPENING IS PROVIDED IN A MEDIAN (ON DIVIDED STREETS), THE RAMPS SHALL BE OMITTED IN THE MID–BLOCK LOCATION.

D6. WHERE THE GUTTER CAN BE RAISED TO THE TOP OF THE CURB (NO DRAINAGE IN THE RETURN AREA BECAUSE OF CATCH BASINS OR HIGH POINT IN GRADE) THE RAMP MAY BE ELIMINATED BY RAISING THE GUTTER GRADE AND DECREASING THE CURB FACE TO 0". THE 12" WIDE BORDER AS DESCRIBED IN NOTE C3 SHALL BE PLACED ALONG THE BACK OF CURB THROUGH THE WIDTH OF THE 0" CURB FACE.

D7. RAMPS SHALL BE LOCATED AS SHOWN ON SHEETS 1, 2 & 3 EXCEPT UNDER THE FOLLOWING:

(A) WHEN LOCATION CONFLICTS WITH EXISTING STORM DRAIN, TRAFFIC SIGNAL OR UTILITY FACILITIES, THE RAMP SHALL BE RELOCATED TO AN APPROPRIATE POSITION WITHIN OR ADJACENT TO THE CURB RETURN AREA AS APPROVED BY THE CITY ENGINEER. HOWEVER, IF THE RAMP CANNOT BE POSITIONED IN A SAFE LOCATION, THE CONFLICTING FACILITY IS TO BE RELOCATED.

(B) WHEN THE RAMP IS TO BE CONSTRUCTED IN A RETURN THAT IS DOWNSTREAM OF A CROSS GUTTER AND THE RAMP MAY CAUSE A DRAINAGE PROBLEM, THE RAMP SHALL BE RELOCATED TO AN APPROPRIATE AREA DOWNSTREAM OF THE M.O.C.

(C) IN EXISTING CURB RETURNS WITH RIGHT–OF–WAY LIMITATIONS, THE RAMP SHALL BE LOCATED WITHIN THE CURB RETURN AREA WHERE THE RIGHT–OF–WAY WIDTH IS SUFFICIENT.

D8. WHEELCHAIR RAMP WINGS OR RETAINING CURBS:

(A) WHERE ADJACENT AREAS ARE PAVED, WHEELCHAIR RAMP WINGS (10% SLOPE) SHALL BE INSTALLED.

(B) WHERE ADJACENT AREAS ARE LANDSCAPED OR RAMP CONSTRUCTION IS ADJACENT TO EXISTING FACILITIES (AS LISTED IN D7–A) VARIABLE HEIGHT RETAINING CURB SHALL BE INSTALLED.

D9. THE RAMP MUST BE LOCATED TO BE ALIGNED COMPLETELY WITHIN A STRIPED CROSSWALK.

APPROVED BY		
CITY ENGINEER	DATE	11/14/2014

CITY OF RIVERSIDE
PUBLIC WORKS DEPARTMENT
PEDESTRIAN RAMP
STANDARD DRAWING NO. 304
Sheet 4 of 4

MARK	REVISIONS	APPR	DATE

UNIVERSITY OF CALIFORNIA RIVERSIDE

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

GRUENASSOCIATES
ARCHITECTURE PLANNING INTERIORS LANDSCAPE

6330 San Vicente Blvd, Suite 200 Los Angeles, California 90048
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Los Angeles, CA 90071
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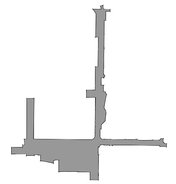
CONSULTANT

ARCHITECT/ENGINEER SEAL



IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD–BID SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

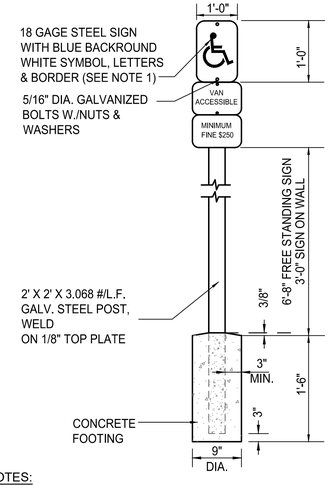
BASE FILE NAMES	C903.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01–10–2019
PROJECT NO.	GRUEN # 8345

CIVIL DETAILS

SHEET TITLE

C903

SHEET NO.

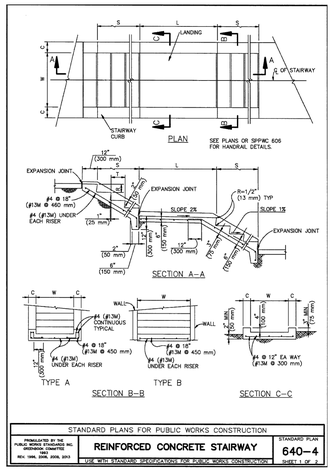


NOTES:

1. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL COMPLY WITH FIGURE 11B-703.7.2.1 THE SYMBOL SHALL CONSIST OF A WHITE FIGURE ON A BLUE BACKGROUND. THE COLOR BLUE SHALL APPROXIMATE FS 15090 IN FEDERAL STANDARD 595C.

7 ACCESSIBLE PARKING SIGN DETAIL

REF. C902 SCALE: N.T.S.

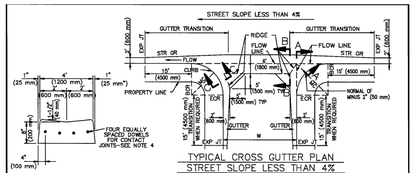


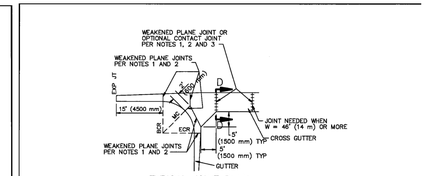
NOTES:

1. SEE THE PLANS FOR THE FOLLOWING INFORMATION:
   TYPE OF STAIRWAY AND LOCATION
   W = WIDTH OF STAIRWAY
   L = LENGTH OF LANDINGS
   R = LENGTH OF TREAD, 11" (280 mm) MIN.
   H = HEIGHT OF RISER, 4" TO 7" (100 TO 180 mm)
   C = WIDTH OF CURB
   S = LENGTH OF STAIRWAY FLIGHT
2. CONCRETE FINISH FOR EXPOSED SURFACES SHALL BE CLASS 1 EXCEPT THAT TREADS AND LANDINGS SHALL BE TROWELLED SMOOTH AND GIVEN A FINE BROOM FINISH IN A DIRECTION PERPENDICULAR TO THE CENTERLINE OF THE STAIRWAY. THE BROOM FINISH SHALL BE BROUGHT TO THE NOSE OF THE TREADS AND LANDINGS.
3. ONE HANDRAIL ON EACH SIDE IS REQUIRED FOR STAIRWAYS 4' (1.22 m) WIDE OR LESS. THREE HANDRAILS ARE REQUIRED FOR WIDER STAIRWAYS.
4. REFER TO ARCHITECTURAL PLANS SHEET L206 FOR CONTRASTING STRIPING.

4 CONCRETE STAIRS SPPWC STD. PLAN 640-4

REF. C301–C306 SCALE: N.T.S.





NOTES:

1. WEAKENED PLANE AND/OR CONTACT JOINTS SHALL BE PLACED IN CURB AND GUTTER AT LOCATIONS SHOWN ON THE TYPICAL JOINT PLAN HEREON.
2. WEAKENED PLANE JOINTS SHALL BE PLASTIC CONTROL JOINTS OR 1–1/2" (40 mm) DEEP SAW CUTS. CONCRETE SAWING SHALL TAKE PLACE WITHIN 24 HOURS AFTER CONCRETE IS PLACED.
3. DOWELS FOR CONTACT JOINTS SHALL BE #4 BARS 18" LONG (#13M BARS 450 mm LONG).
4. PLACE A WEAKENED PLANE OR CONTACT JOINT WHERE LONGITUDINAL ALLEY GUTTER JOINS CONCRETE ALLEY INTERSECTION.
5. ALL EXPOSED CORNERS ON PCC GUTTERS SHALL BE ROUNDED WITH 1/2" (15 mm) RADIUS.
6. CONCRETE SHALL BE INTEGRAL WITH CURB UNLESS OTHERWISE SPECIFIED.

2 CROSS GUTTER SPPWC STD. PLAN 122-2

REF. C301–C306 SCALE: N.T.S.

UNIVERSITY OF CALIFORNIA RIVERSIDE

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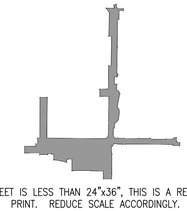


IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD–BID SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	C904.DWG
DRAWN BY	GA
CHECKED BY	AW
SCALE	AS SHOWN
DATE	01–10–2019
PROJECT NO.	GRUEN # 8345

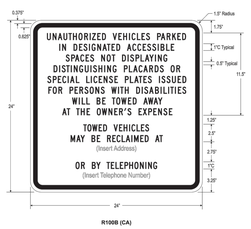
CIVIL DETAILS

SHEET TITLE

C904

SHEET NO.

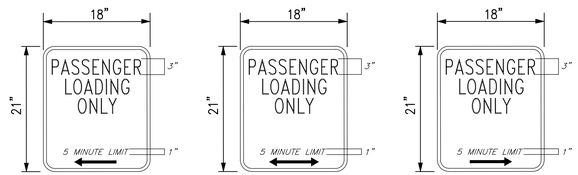
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION



COLORS: BORDER & LEGEND - BLACK
BACKGROUND - WHITE (RETROREFLECTIVE)
R100B

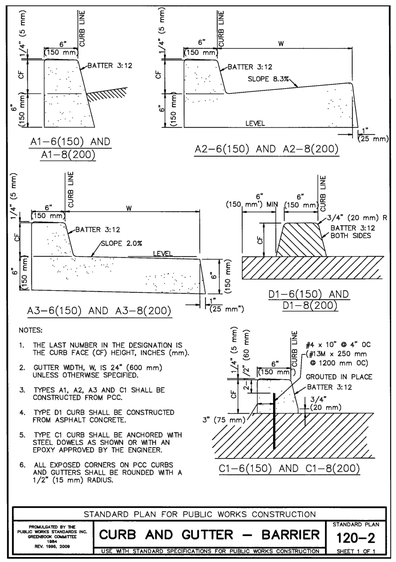
6 DISABLE TOW AWAY CAL TRANS - R100B SIGN DETAIL

REF. C902 SCALE: N.T.S.



5 PASSENGER LOADING SIGN DETAIL

REF. C302 SCALE: N.T.S.

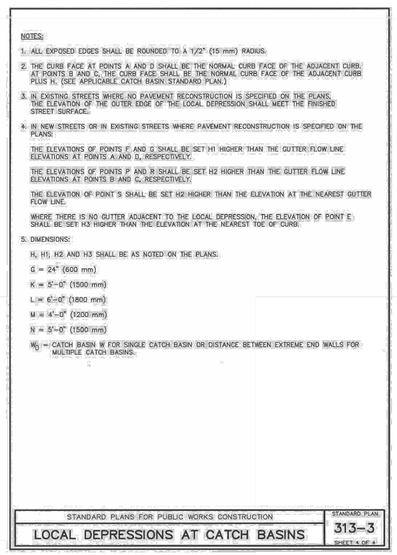


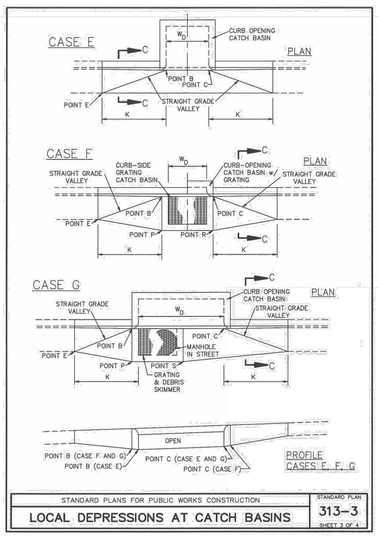
NOTES:

1. THE LAST NUMBER IN THE DESIGNATION IS THE CURB FACE (CF) HEIGHT, INCHES (mm).
2. GUTTER WIDTH, W, IS 24" (600 mm) UNLESS OTHERWISE SPECIFIED.
3. TYPES A1, A2, A3 AND C1 SHALL BE CONSTRUCTED FROM PCC.
4. TYPE D1 CURB SHALL BE CONSTRUCTED FROM ASPHALT CONCRETE.
5. TYPE C1 CURB SHALL BE ANCHORED WITH STEEL DOWELS AS SHOWN OR WITH AN EPOXY APPROVED BY THE ENGINEER.
6. ALL EXPOSED CORNERS ON PCC CURBS AND GUTTERS SHALL BE ROUNDED WITH A 1/2" (15 mm) RADIUS.

3 CURB AND GUTTER SPPWC STD. PLAN 120-2

REF. C301–C306 SCALE: N.T.S.





1 LOCAL DEPRESSIONS AT CATCH BASINS SPPWC STD. PLAN 313-3

REF. C902 SCALE: N.T.S.

CITY OF RIVERSIDE
STREET IMPROVEMENT PLAN
UNIVERSITY AVE. & CANYON CREST DR.

GENERAL NOTES:

1. NO PERSON SHALL PERFORM ANY CONSTRUCTION ACTIVITY OR INSTALL ANY OBJECTS WITHIN THE PUBLIC RIGHTS-OF-WAY OR EASEMENTS OF THE CITY OF RIVERSIDE WITHOUT A VALID CONSTRUCTION PERMIT OR, A STREET OPENING PERMIT OR AN ENCROACHMENT PERMIT ISSUED BY THE CITY'S PUBLIC WORKS DEPARTMENT.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAR THE RIGHT OF WAY IN ACCORDANCE WITH THE PROVISIONS OF LAW AS IT AFFECTS EACH UTILITY INCLUDING IRRIGATION LINES AND APPURTENANCES AND AT NO COST TO THE CITY.
3. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF RIVERSIDE DEPARTMENT OF PUBLIC WORKS, STANDARD DRAWINGS, ITS SUPPLEMENTAL NOTES AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CURRENT EDITION.
4. THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE WORK HEREON. IN THE EVENT OF DISCREPANCIES ARISING DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE CITY.
5. QUANTITIES SHOWN ARE FOR INFORMATION ONLY AND THE CITY OF RIVERSIDE IS NOT RESPONSIBLE FOR THEIR ACCURACY.
6. THE DEVELOPER SHALL BE RESPONSIBLE FOR PRESERVING OR RE-ESTABLISHING AND REFERENCING SURVEY MONUMENTS DESTROYED, DISTURBED, OR BURIED AS A RESULT OF CONSTRUCTION SHOWN HEREON.
7. SEE "STREET LIGHTING PLANS" FOR QUANTITY AND LOCATION OF REQUIRED STREET LIGHTS.
8. ALL FLAGGED ELEVATIONS SHALL BE STAKED IN THE FIELD BY THE PRIVATE ENGINEER.
9. WHERE NEW PAVEMENT IS TO JOIN EXISTING PAVEMENT, THE EDGE OF THE EXISTING PAVEMENT SHALL BE TRIMMED IN A SMOOTH STRAIGHT LINE. CONSTRUCT MATCH-UP PAVING AS SHOWN ON THE PLANS AND OVERLAY PAVING AS DIRECTED IN THE FIELD TO PRODUCE A SMOOTH SECTION.
10. CONSTRUCT DRIVEWAY APPROACHES PER STANDARD DRAWING 302. EXACT SIZE AND LOCATION TO BE STAKED AS SHOWN PRIOR TO CONSTRUCTION OF THE CURB AND GUTTER.
11. ALL OVERHANGING TREE LIMBS THAT ARE LESS THAN 14' ABOVE THE STREET GRADE SHALL BE TRIMMED BACK.
12. ON ALL AREAS WITHIN THE PUBLIC RIGHT-OF-WAY WHERE THE FILL IS ONE (1) FOOT OR GREATER, A LETTER WILL BE REQUIRED FROM THE SOILS ENGINEER, CERTIFYING THE COMPACTION OF THE FILL BELOW SUB-GRADE, PRIOR TO ISSUANCE OF THE CONSTRUCTION PERMIT/CUT SHEETS.
13. ANY TRAFFIC CONTROL STRIPING OBLITERATED AND/OR BADLY WORN DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR WITHIN FIVE DAYS AFTER NOTIFICATION FROM THE CITY INSPECTORS.
14. FINAL STRIPING FOR TRAFFIC CONTROL AND/OR PAVEMENT MARKING TO BE THE RESPONSIBILITY OF THE DEVELOPER.
15. THE CONTRACTOR SHALL CALL IN A LOCATION REQUEST TO UNDERGROUND SERVICE ALERT (USA), PHONE # 1-800-227-2600, TWO WORKING DAYS BEFORE DIGGING. NO CONSTRUCTION PERMIT WILL BE ISSUED BY THE PUBLIC WORKS DEPARTMENT INVOLVING EXCAVATION FOR UNDERGROUND FACILITIES UNLESS THE APPLICANT HAS BEEN PROVIDED AN INQUIRY IDENTIFICATION NUMBER BY USA.
16. THE CONTRACTOR SHALL ARRANGE FOR A SOIL TEST TO BE MADE BY A SOILS ENGINEER AFTER THE STREETS HAVE BEEN PREPARED TO ROUGH GRADE AND PRIOR TO CURB AND GUTTER CONSTRUCTION. DEPTH OF BASE MATERIAL AND A.C. PAVING SHALL BE DETERMINED BY THE CITY OF RIVERSIDE DESIGN STANDARDS AND TEST PROCEDURES.
17. ALL TRAFFIC SIGNS SHALL BE INSTALLED PRIOR TO OPENING THE STREETS TO TRAFFIC.
18. IN PAVEMENT OVERLAY AREAS, ANY DISTRESSED EXISTING PAVEMENT SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE INSPECTOR PRIOR TO OVERLAY WITH A.C. PAVING.
19. SEE PLAN X-559 FOR TRAFFIC SIGNAL IMPROVEMENTS.

PRIVATE ENGINEER'S NOTES:

1. UNLESS SPECIFIED IN THE PROJECT SPECIFIC CONSTRUCTION DOCUMENTS, ALL CONSTRUCTION SHOWN HEREON SHALL BE IN ACCORDANCE WITH THE GOVERNING AGENCY ADOPTED VERSION OF THE UNIFORM BUILDING CODE, THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (CURRENT EDITION) AND THE "STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION" (CURRENT EDITION).
2. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OF STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. THESE LOCATIONS ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR, SO THAT ANY NECESSARY ADJUSTMENTS CAN BE MADE IN ALIGNMENT AND/OR GRADE OF THE PROPOSED IMPROVEMENTS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ANY UTILITY LINES SHOWN AND ANY OTHER LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL POSITION OF ALL POINTS OF CONNECTION TO EXISTING STRUCTURES. THIS SHALL INCLUDE BOTH ABOVE GROUND AND BELOW GROUND POINTS OF CONNECTION. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES PRIOR TO BEGINNING CONSTRUCTION.
4. THICKNESS OF PAVEMENT AND BASE MATERIAL SHOWN HEREON IS PRELIMINARY ONLY. FINAL PAVEMENT SECTION TO BE DETERMINED BY SOILS TEST AND RECOMMENDED BY THE SOILS ENGINEER UPON COMPLETION OF ROUGH GRADING.
5. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
6. THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS ACCORDINGLY.

DIGALERT
DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 1-800-227-2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

TELEPHONE NUMBERS

EMERGENCY

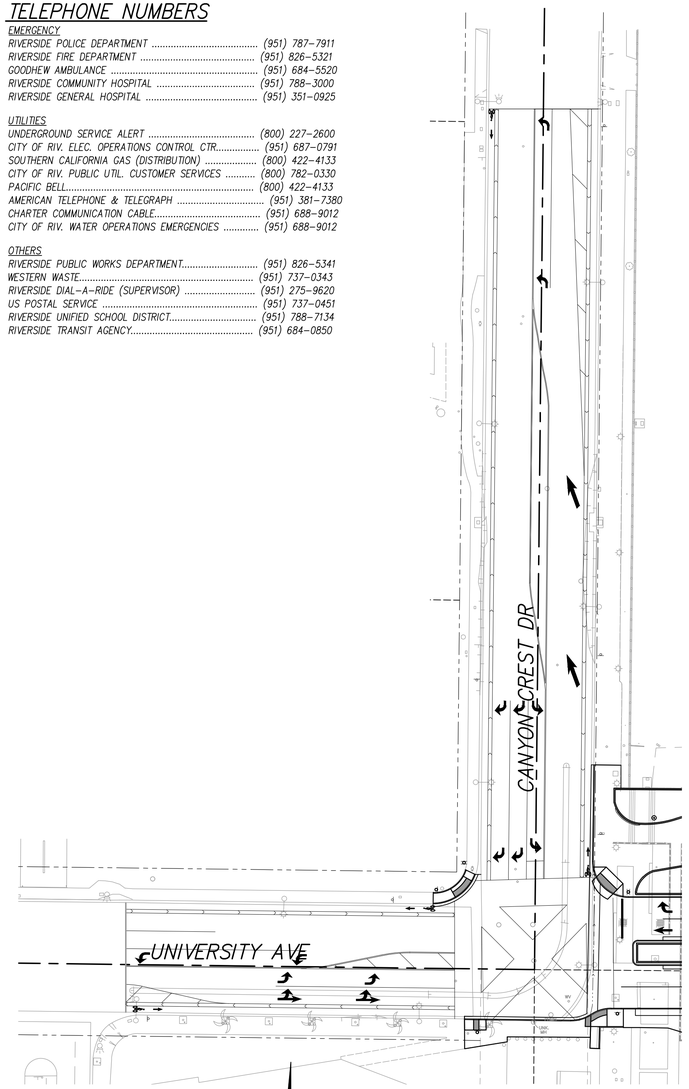
RIVERSIDE POLICE DEPARTMENT	(951) 787-7911
RIVERSIDE FIRE DEPARTMENT	(951) 826-5321
GOODHEW AMBULANCE	(951) 684-5520
RIVERSIDE COMMUNITY HOSPITAL	(951) 788-3000
RIVERSIDE GENERAL HOSPITAL	(951) 351-0925

UTILITIES

UNDERGROUND SERVICE ALERT	(800) 227-2600
CITY OF RIV. ELEC. OPERATIONS CONTROL CTR.	(951) 687-0791
SOUTHERN CALIFORNIA GAS (DISTRIBUTION)	(800) 422-4133
CITY OF RIV. PUBLIC UTIL. CUSTOMER SERVICES	(800) 782-0330
PACIFIC BELL	(800) 422-4133
AMERICAN TELEPHONE & TELEGRAPH	(951) 381-7380
CHARTER COMMUNICATION CABLE	(951) 688-9012
CITY OF RIV. WATER OPERATIONS EMERGENCIES	(951) 688-9012

OTHERS

RIVERSIDE PUBLIC WORKS DEPARTMENT	(951) 826-5341
WESTERN WASTE	(951) 737-0343
RIVERSIDE DIAL-A-RIDE (SUPERVISOR)	(951) 275-9620
US POSTAL SERVICE	(951) 737-0451
RIVERSIDE UNIFIED SCHOOL DISTRICT	(951) 788-7134
RIVERSIDE TRANSIT AGENCY	(951) 684-0850



INDEX MAP

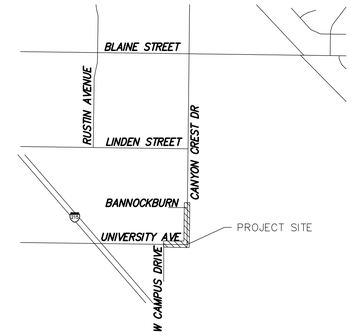
40' 20' 0 40' 80'
GRAPHIC SCALE
SCALE: 1" = 40'

LEGEND

XXX	EXISTING CONTOUR MAJOR
XXX	PROPOSED CONTOUR MAJOR
XXX	EXISTING CONTOUR MINOR
XXX	PROPOSED CONTOUR MINOR
	EXISTING LOT LINE
	EXISTING RIGHT OF WAY
	CENTERLINE EXISTING
	EXISTING CURB
	PROPOSED CURB
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	PROPOSED FLOW LINE
	EXISTING TREE
SD	EXIST. STORM DRAIN MANHOLE
S	EXIST. SEWER MANHOLE
	EXIST. STREET LIGHT
M.H.	MANHOLE
F.L.	FLOW LINE ELEVATION
F.S.	FINISH SURFACE ELEVATION
F.G.	FINISH GRADE ELEVATION
C/L	CENTERLINE
R/W	RIGHT OF WAY
P/L	PROPERTY LINE
T.C.	TOP OF CURB
S/W	SIDEWALK
E.G.	EDGE OF GUTTER
T.B.R.	TO BE REMOVED
P.I.P.	PROTECT IN PLACE
C.F.	CURB FACE
ADJ.	ADJUST
SSPWC	STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION
SPPWC	STANDARD PLANS FOR PUBLICS WORKS CONSTRUCTION

HATCH LEGEND

	PROPOSED AC PAVEMENT
	PROPOSED CONCRETE
	PROPOSED 1/4" SLURRY SEAL



VICINITY MAP

SCALE: 1"=1000'

OWNER

UNIVERSITY OF CALIFORNIA, RIVERSIDE.
900 UNIVERSITY AVE, RIVERSIDE, CA 92521
(951) 827-1012
CONTACT: DREW A. HECHT

ENGINEER

PSOMAS
555 S FLOWER ST., LOS ANGELES, CA 90071
(213) 223-1525
CONTACT: ALYSEN WEILAND

TOPOGRAPHY SOURCE

EXISTING TOPOGRAPHY IS BASED ON FIELD SURVEY DONE BY HILLWIG-GOODROW INC. IN NOVEMBER, 2017.

LEGAL DESCRIPTION

PARCELS 1 THROUGH 8 IN THE CITY OF RIVERSIDE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA. AS SHOWN BY MAP ON FILE ON BOOK 8, PAGE 70 OF MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

BASIS OF COORDINATES

COORDINATES ARE CALIFORNIA STATE PLANE COORDINATES, ZONE 6, NAD83(2009.00 EPOCH) TIED TO CONTINUOUS GPS STATIONS "MLFP", "CRFP", "NOCO", AND "RTHS," AS PER VALUES PUBLISHED BY THE CALIFORNIA SPATIAL REFERENCE CENTER (CSRC.) EXISTING CAMPUS CONTROL POINTS 1, 5, 10, 12, AND 13, AS WELL AS EXISTING CONTROL POINTS 101, 103, 105, AND 106 BY JOHNSON & FRANK, WERE CONSTRAINED TO FOR ESTABLISHING POSITIONS AT CONTROL POINTS 301 THROUGH 319.

GROUND COORDINATES WERE OBTAINED BY SCALING ABOUT CONTROL POINT #1 BY A COMBINATION FACTOR OF 1.0000274014.

CONTROL POINTS 315 AND 316 WERE USED FOR THIS SURVEY. SEE TOP OF SHEET 2 FOR CONTROL POINT VALUES.

BENCHMARK INFORMATION

ELEVATIONS ARE DERIVED FROM THE ELLIPSOID HEIGHTS OF THE CONTINUOUS GPS STATIONS "MLFP", "CRFP", "NOCO", AND "RTHS", AS PUBLISHED BY THE CALIFORNIA SPATIAL REFERENCE CENTER, NAVD 88, AN TRANSFORMED TO ORTHOMETRIC HEIGHTS USING GEOID MODEL 2009 OF THE NATIONAL GEODETIC SURVEY. EXISTING CAMPUS CONTROL POINTS 1, 5, 10, 12, AND 13, AS WELL AS EXISTING CONTROL POINTS 101, 103, 105, AND 106 BY JOHNSON & FRANK, WERE CONSTRAINED TO FOR ESTABLISHING ELEVATIONS AT CONTROL POINTS 301 THROUGH 319.

SHEET INDEX

REGISTERED PROFESSIONAL ENGINEER — ARIEF NAFTALI — No. 64286 — CIVIL — STATE OF CALIFORNIA

CITY BUSINESS CERTIFICATE NO. 0021337, EXP. 10/31/2019
PSOMAS
555 SOUTH FLOWER STREET, SUITE 4400
LOS ANGELES, CA 90071
(213) 223-1400 WWW.PSOMAS.COM

PREPARED BY: _____ R.C.E. NO. _____ DATE: _____

MARK	REVISIONS	APPR.	DATE

DESIGNED BY____ DRAWN BY____ CHECKED BY____

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
ENGINEERING MANAGER		
TRAFFIC ENGINEERING		
PRINCIPAL ENGINEER		

APPROVED BY
CITY ENGINEER/PW DIRECTOR
DATE _____

CITY OF RIVERSIDE
TITLE SHEET
HORIZ. SCALE: 1"=20' VERT. SCALE: N/A

PW15-0924
R-4473
SHEET 1 OF 2
J.N. 1GRU013201

CONSTRUCTION NOTES

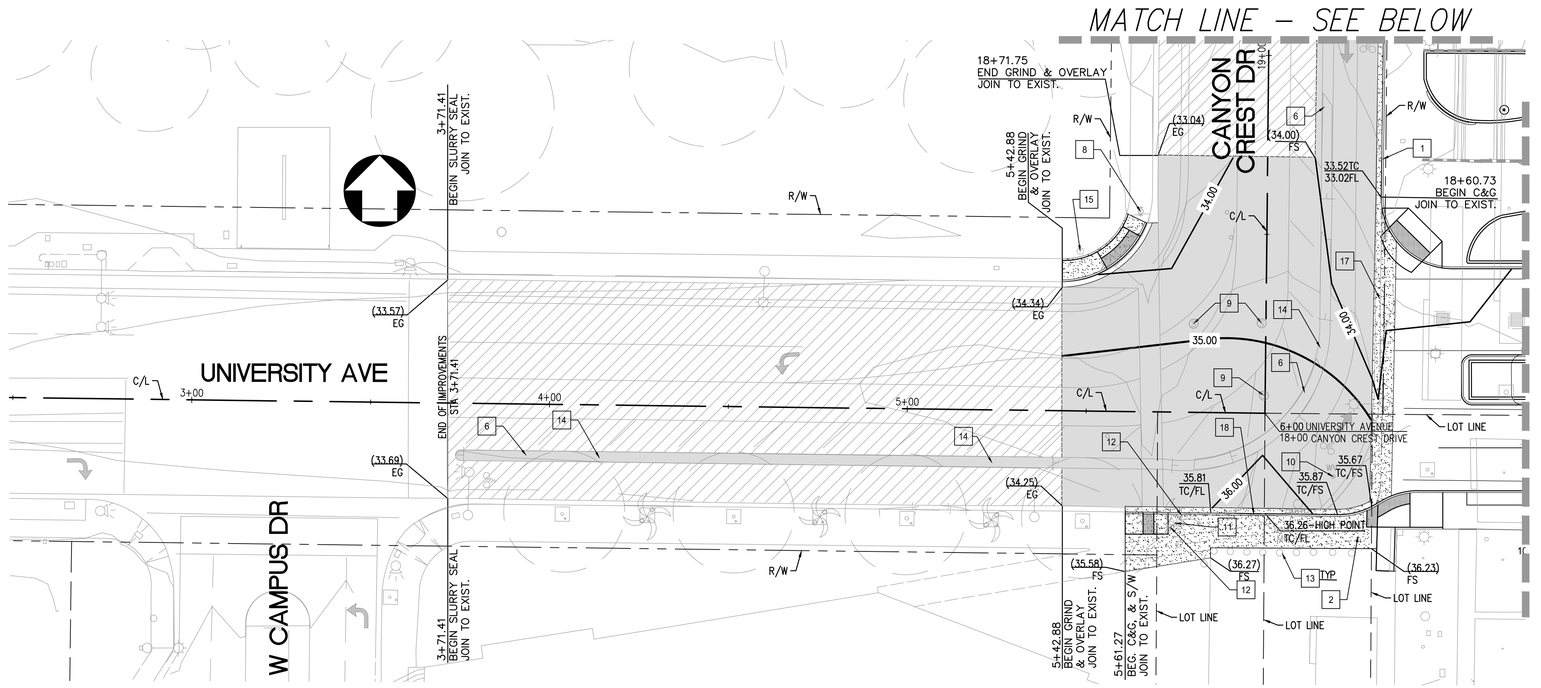
1. CONSTRUCT 6" CURB & GUTTER PER CITY OF RIVERSIDE STD. DWG. NO. 200 TYPE I.
2. CONSTRUCT CONCRETE SIDEWALK PER CITY OF RIVERSIDE STD. DWG. NO. 325.
3. CONSTRUCT 6" CURB PER CITY OF RIVERSIDE STD. DWG. NO. 200 TYPE II.
4. CONSTRUCT PEDESTRIAN RAMP PER CITY OF RIVERSIDE STD. DWG. NO. 304 MODIFIED TYPE 3 PER ENLARGEMENT.
5. MATCH EXISTING CURB HEIGHT.
6. REMOVE EXISTING CYCLE TRACK CURB.
7. STREET LIGHT PER TRAFFIC SIGNAL PLANS.
8. PROTECT IN PLACE EXISTING FIRE HYDRANT.
9. PROTECT IN PLACE EXISTING SANITARY SEWER MANHOLE.
10. PROTECT IN PLACE EXISTING WATER VALVE.
11. EXISTING TREE TO BE REMOVED
12. EXISTING LIGHT POLE TO BE REMOVED
13. REMOVE EXISTING BOLLARDS
14. CONSTRUCT 4"A.C. OVER 11.5" CLASS 2 AGGREGATE BASE
15. PROTECT IN PLACE EXISTING STREET SIGN.
16. GRIND 4" OF EXISTING ASPHALT PAVEMENT AND PROVIDE ASPHALT PAVEMENT OVERLAY, 1" MINIMUM. MATCH FINISH GRADES SHOWN ON PLAN.
17. CONSTRUCT CROSS GUTTER PER CITY OF RIVERSIDE STD. DWG. NO 220.
18. REMOVE EXISTING CURB

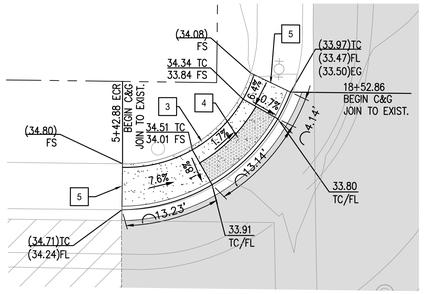
LEGEND

- XXX — EXISTING CONTOUR MAJOR
- XXX — PROPOSED CONTOUR MAJOR
- XXX — EXISTING CONTOUR MINOR
- XXX — PROPOSED CONTOUR MINOR
- EXISTING LOT LINE
- EXISTING RIGHT OF WAY
- CENTERLINE EXISTING
- EXISTING CURB
- PROPOSED CURB
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED FLOW LINE

HATCH LEGEND

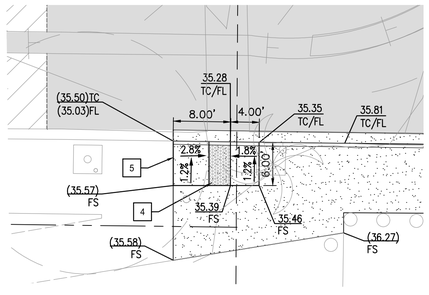
- PROPOSED AC PAVEMENT (REFER CONSTRUCTION NOTE 14)
- PROPOSED CONCRETE
- PROPOSED 1/4" SLURRY SEAL





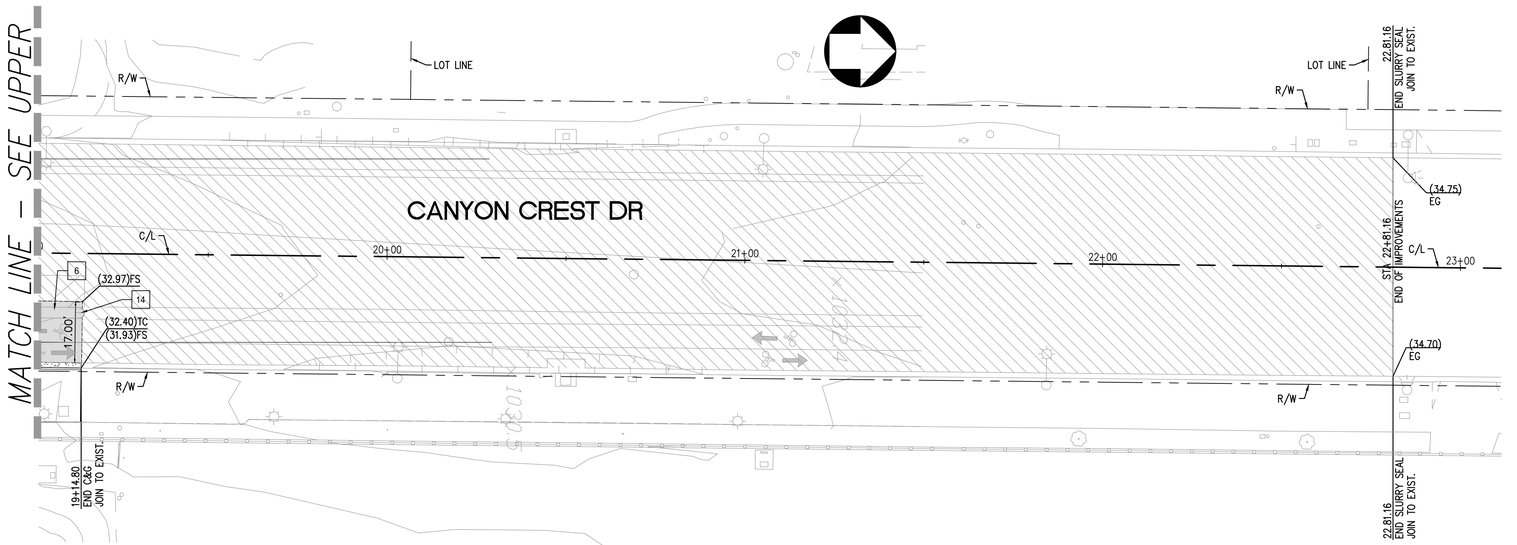
ENLARGEMENT– CURB RAMP 1

SCALE: 1" = 10'



ENLARGEMENT– CURB RAMP 1

SCALE: 1" = 10'



DIGALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

CITY BUSINESS CERTIFICATE NO. 0021337, EXP. 10/31/2019

PSOMAS

555 SOUTH FLOWER STREET, SUITE 4400
LOS ANGELES, CA 90071
(213) 223-1400 WWW.PSOMAS.COM

PREPARED BY: _____ R.C.E. NO. _____ DATE: _____

MARK	REVISIONS	APPR. DATE

DESIGNED BY____ DRAWN BY____ CHECKED BY____

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
ENGINEERING MANAGER		
TRAFFIC ENGINEERING		
PRINCIPAL ENGINEER		

APPROVED BY _____ CITY ENGINEER/PW DIRECTOR

DATE _____

CITY OF RIVERSIDE

UNIVERSITY AVENUE & CANYON CREST DRIVE

HORIZ. SCALE: 1"=20' VERT. SCALE: N/A

R-4473

SHEET 2 OF 2

J.N. 1GRU013201

SIGNING AND STRIPING GENERAL NOTES:

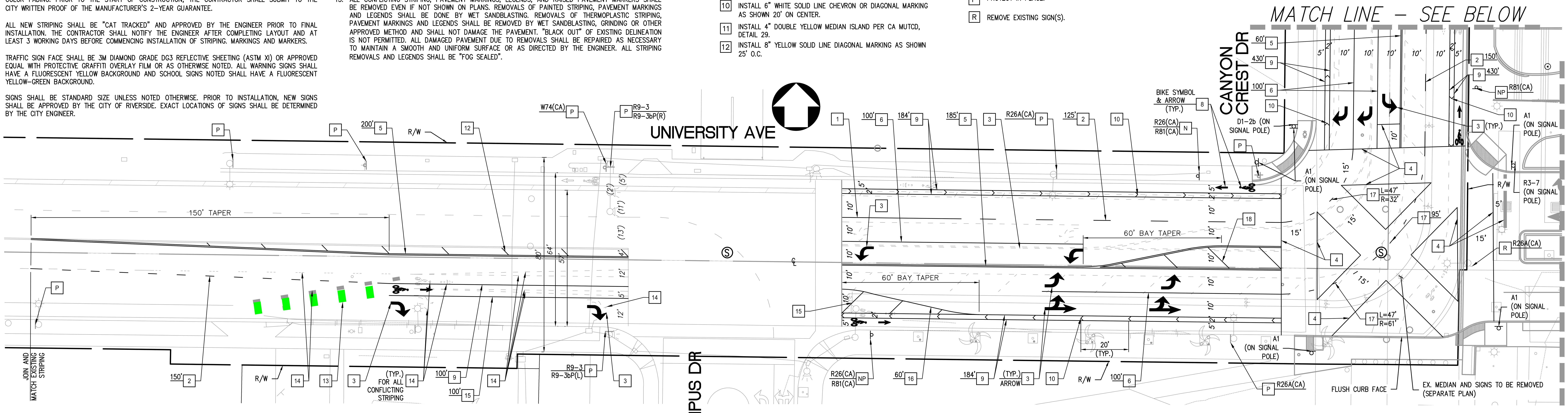
1. SIGNING AND STRIPING INSTALLATIONS SHALL CONFORM TO THE 2014 CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICE (CA MUTCD). THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD PLANS AND SPECIFICATIONS DATED 2010, AND ALL ADDENDUMS THERETO, AND THE CITY OF RIVERSIDE PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS, CURRENT EDITION.
2. ALL STRIPING, MARKINGS, AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC UNLESSOTHERWISE NOTED. THE CONTRACTOR SHALL PROVIDE AND INSTALL RAISED PAVEMENT MARKERS FOR ALL STRIPING. STRIPING, MARKINGS AND LEGENDS SHALL CONFORM TO THE LATEST CALTRANS STANDARD PLANS A20A THRU A20D AND A24A THRU A24E.
3. PRIOR TO FINAL ACCEPTANCE OF STREET IMPROVEMENTS, ALL PAVEMENT STRIPING AND STENCILING WITHIN THE PERIMETER OF THE CONSTRUCTION AREA SHALL BE RESTORED TO LIKE NEW CONDITION, IN A MANNER MEETING THE APPROVAL OF THE CITY OF RIVERSIDE
4. THE CONTRACTOR SHALL BE RE-STRIPE EXISTING STRIPING AND CUR MARKINGS OBLITERATED BY NEW CONSTRUCTION, WETHER OR NOT SHOWN ON THE PLANS FOR REPLACEMENT, AT NO COST TO THE CITY.
5. AT LOCATIONS WHERE EXISTING PAINTED CURB IS TO BE RECONSTRUCTED, THE CONTRACTOR SHALL PAINT THE NEW AS SHOWN ON THE PLANS WITHIN 10 WORKING DAYS OF CURB CONSTRUCTION OR AS DIRECTED BY ENGINEER. THE PAINT SHALL BE WATER-BASED WITH 2-YEAR GUARANTEE AGAINST COLOR FADING. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE CITY WRITTEN PROOF OF THE MANUFACTURER'S 2-YEAR GUARANTEE.
6. ALL NEW STRIPING SHALL BE "CAT TRACKED" AND APPROVED BY THE ENGINEER PRIOR TO FINAL INSTALLATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AFTER COMPLETING LAYOUT AND AT LEAST 3 WORKING DAYS BEFORE COMMENCING INSTALLATION OF STRIPING. MARKINGS AND MARKERS.
7. TRAFFIC SIGN FACE SHALL BE 3M DIAMOND GRADE DG3 REFLECTIVE SHEETING (ASTM XI) OR APPROVED EQUAL WITH PROTECTIVE GRAFFITI OVERLAY FILM OR AS OTHERWISE NOTED. ALL WARNING SIGNS SHALL HAVE A FLUORESCENT YELLOW BACKGROUND AND SCHOOL SIGNS NOTED SHALL HAVE A FLUORESCENT YELLOW-GREEN BACKGROUND.
8. SIGNS SHALL BE STANDARD SIZE UNLESS NOTED OTHERWISE. PRIOR TO INSTALLATION, NEW SIGNS SHALL BE APPROVED BY THE CITY OF RIVERSIDE. EXACT LOCATIONS OF SIGNS SHALL BE DETERMINED BY THE CITY ENGINEER.
9. ALL EXISTING SIGNS AND POSTS TO BE REMOVED SHALL BE DELIVERED TO THE CITY OF RIVERSIDE SIGN DEPARTMENT.
10. WHEN PAINT IS SPECIFIED, TRAFFIC STRIPES AND MARKINGS SHALL BE APPLIED IN TWO COATS. A MINIMUM OF SEVEN DAYS SHALL BE PROVIDED BETWEEN FIRST AND SECOND COATS.
11. STRIPING SHALL BE APPLIED WITHIN 48 HOURS OF SURFACE COURSE REPLACEMENT ON STREETS OPEN TO THE PUBLIC BE LEFT UNSTRIPED OVER A WEEKEND OR HOLIDAY.
12. CONTRACTOR SHALL INSTALL NEW SIGN(S) AND/OR POST(S) PER CITY OF RIVERSIDE STANDARD DRAWING No. 664, SEE SPECIFICATIONS. 13. CONTRACTOR SHALL INSTALL NEW STREET NAME SIGNS AND POST PER CITY OF RIVERSIDE STANDARD DRAWING No. 662, SEE SPECIFICATIONS.
13. CONTRACTOR SHALL INSTALL NEW SIGN(S) AND/OR POST(S) PER CITY OF RIVERSIDE STANDARD DRAWING No. 664, SEE SPECIFICATIONS. 13. CONTRACTOR SHALL INSTALL NEW STREET NAME SIGNS AND POST PER CITY OF RIVERSIDE STANDARD DRAWING No. 662, SEE SPECIFICATIONS.
14. WHERE APPLICABLE, OUTBOUND LANE LINE DETAILS SHALL COMMENCE AT THE CROSSWALK, MEANING THE PAINTED PORTION OF THE DETAIL SHALL JOIN THE CROSSWALK.
15. ALL CONFLICTING STRIPING, PAVEMENT MARKINGS, LEGENDS, AND RAISED PAVEMENT MARKERS SHALL BE REMOVED EVEN IF NOT SHOWN ON PLANS. REMOVALS OF PAINTED STRIPING, PAVEMENT MARKINGS AND LEGENDS SHALL BE DONE BY WET SANDBLASTING. REMOVALS OF THERMOPLASTIC STRIPING, PAVEMENT MARKINGS AND LEGENDS SHALL BE REMOVED BY WET SANDBLASTING, GRINDING OR OTHER APPROVED METHOD AND SHALL NOT DAMAGE THE PAVEMENT. "BLACK OUT" OF EXISTING DELINEATION IS NOT PERMITTED. ALL DAMAGED PAVEMENT DUE TO REMOVALS SHALL BE REPAIRED AS NECESSARY TO MAINTAIN A SMOOTH AND UNIFORM SURFACE OR AS DIRECTED BY THE ENGINEER. ALL STRIPING REMOVALS AND LEGENDS SHALL BE "FOG SEALED".

SIGNING AND STRIPING NOTES:

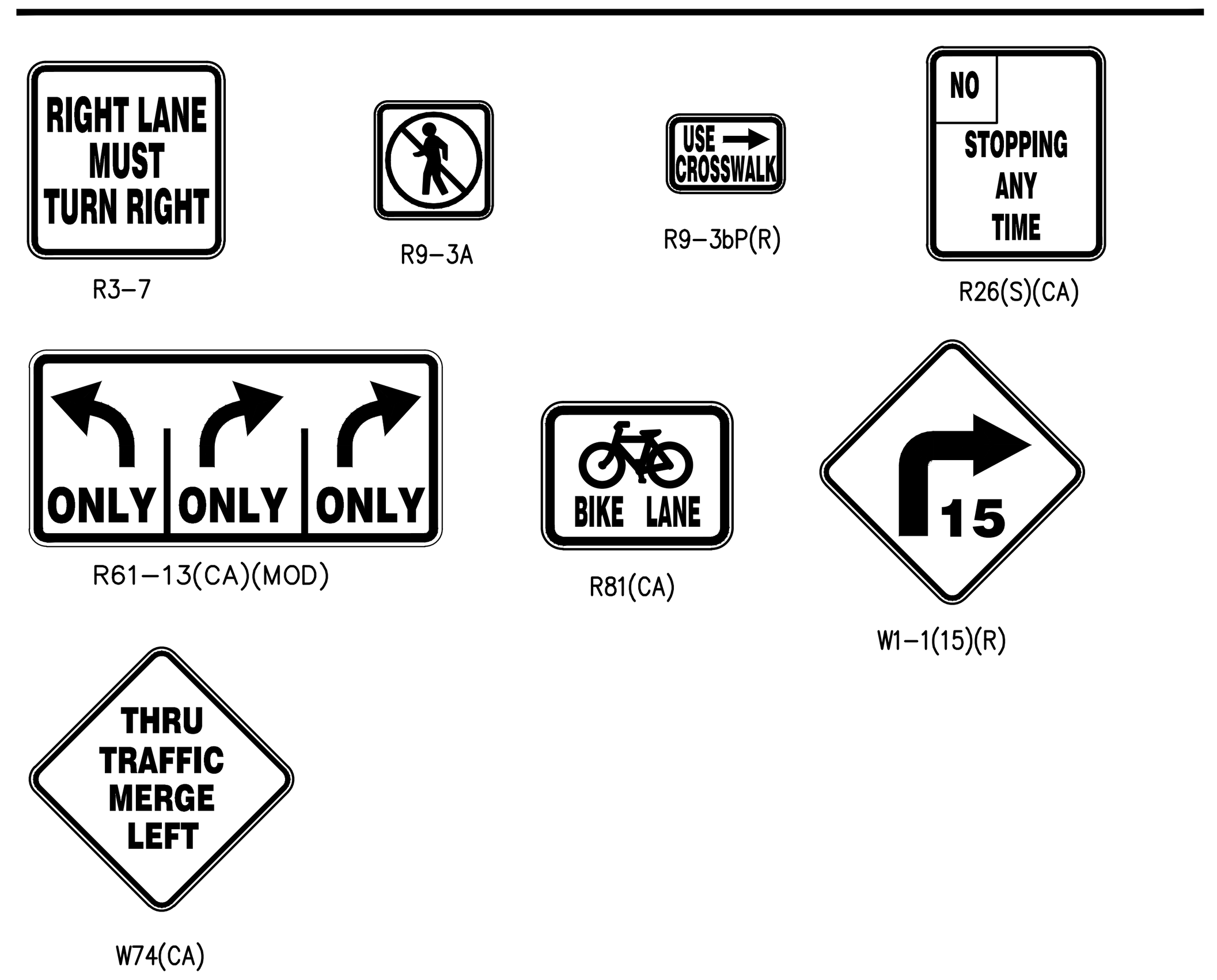
1	INSTALL 50 L.F. 4" SOLID WHITE LANE LINE WITH TYPE "G" RPM'S AT EACH END OF LINE, UNLESS OTHERWISE SHOWN.
2	INSTALL 4" WHITE LANE LINE PER CA MUTCD, DETAIL 9.
3	INSTALL ARROW PAVEMENT MARKING PER CA MUTCD.
4	INSTALL 12" WHITE CROSSWALK OR LIMIT LINE PER CA MUTCD.
5	INSTALL 4" DOUBLE YELLOW CENTER LINE PER CA MUTCD, DETAIL 22.
6	INSTALL 8" WHITE CHANNELIZING LINE PER CA MUTCD, DETAIL 38. LINE LENGTH AS SHOWN.
7	INSTALL 4" WHITLE LANE LINE PER CA MUTCD, DETAIL 37B.
8	INSTALL PAVEMENT MARKING AS SHOWN PER CA MUTCD.
9	INSTALL 6" WHITE BIKE LANE LINE PER CA MUTCD, DETAIL 39.
10	INSTALL 6" WHITE SOLID LINE CHEVRON OR DIAGONAL MARKING AS SHOWN 20' ON CENTER.
11	INSTALL 4" DOUBLE YELLOW MEDIAN ISLAND PER CA MUTCD, DETAIL 29.
12	INSTALL 8" YELLOW SOLID LINE DIAGONAL MARKING AS SHOWN 25' O.C.
13	INSTALL CALTRANS STRIPING DETAIL 39A PER STANDARD PLAN A20D WITH GREEN PAINT PREMARK VIZIGRIP MATERIAL IN THE SPACE WITHIN EACH PAIR OF DASHED LINES PER MUTCD INTERIM APPROVAL 13. SEE DETAIL A.
14	CONTRACTOR SHALL SANDBLAST CONFLICTING EXISTING STRIPING AS INDICATED.
15	INSTALL 8" WHITE CHANNELIZING LINE PER CA MUTCD, DETAIIL 38A. LINE LENGTH AS SHOWN.
16	INSTALL 4" WHITE RIGHT EDGE LINE PER CA MUTCD, DETAIIL 27B.
17	INSTALL 4" WHITE LANE LINE EXTENSION PER CA MUTCD, DETAIIL 40.
18	INSTALL 12" DIAGONAL YELLOW LINE AT 15' O.C.
NP	FURNISH AND INSTALL NEW SIGN AND POST, AS NOTED.
N	FURNISH AND INSTALL NEW SIGN AS NOTED.
P	PROTECT IN PLACE.
R	REMOVE EXISTING SIGN(S).

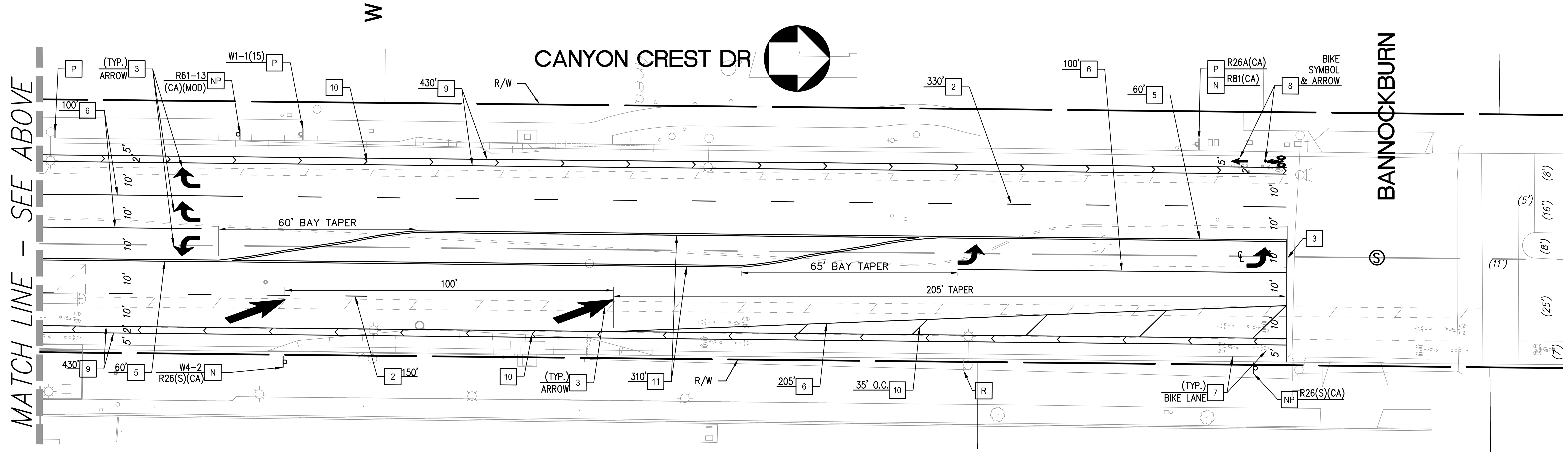
LEGEND:

1. = EXISTING STRIPING & MARKINGS TO REMAIN.
   = EXISTING STRIPING & MARKINGS TO BE REMOVED.
   = PROPOSED STRIPING & MARKINGS.
2. = EXISTING SIGN TO REMAIN.
3. = EXISTING SIGN TO BE REMOVED.
4. = PROPOSED SIGN.
5. Ⓢ = SIGNALIZED INTERSECTION.
6. XX' = LANE WIDTH FROM CETER OF STRIP TO CENTER OF STRIPE OR TO FACE OF CURB.



TRAFFIC SIGNS ON THIS SHEET:





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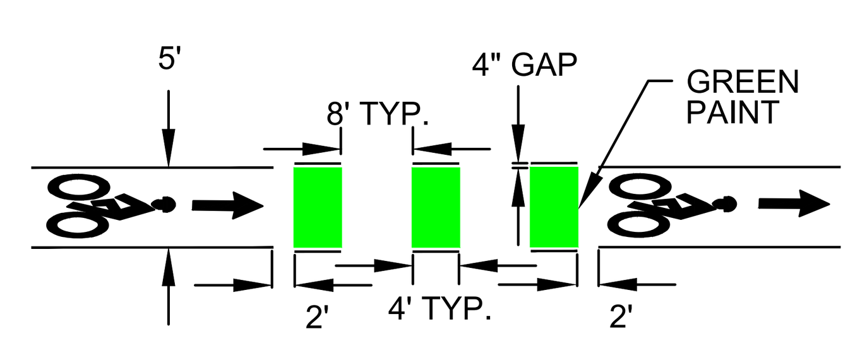


DETAIL A
N.T.S.

GRAPHIC SCALE
SCALE: 1" = 20'

REGISTERED PROFESSIONAL ENGINEER ARIEF NAFTALI No. 64286 CIVIL STATE OF CALIFORNIA

CITY BUSINESS CERTIFICATE NO. 0021337, EXP. 10/31/2019

P S O M A S
555 SOUTH FLOWER STREET, SUITE 4400
LOS ANGELES, CA 90071
(213) 223-1400 WWW.PSOMAS.COM

PREPARED BY: R.C.E. NO. ______ DATE: ______

MARK | REVISIONS | APPR. | DATE
DESIGNED BY____ DRAWN BY____ CHECKED BY____

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
ENGINEERING MANAGER		
TRAFFIC ENGINEERING		
CONSTRUCTION MANAGEMENT		

APPROVED BY
CITY ENGINEER/PW DIRECTOR
DATE ______

CITY OF RIVERSIDE
SIGNING AND STRIPING
UNIVERSITY AVENUE & CANYON CREST DRIVE

HORIZ. SCALE: 1" = 20'

XL-780
SHEET 1 OF 1
J.N. 1GRU013201

EQUIPMENT SCHEDULE

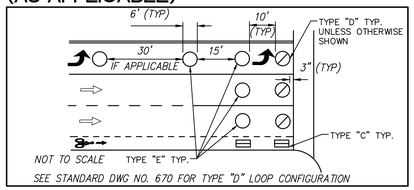
SIGNAL STANDARD				LUMINAIRE		I.I.S.N.S.	SIGNAL MOUNTING			APS*
No.	TYPE	HEIGHT	M.A.	L.A.	LED	LEGEND	M.A.	POLE	PED.	PHASE
Ⓐ	17-3-100	30'	20'	15'	250W	Canyon Crest Dr 3600	MAS	SV-1-T	SP-1-T	-
Ⓑ	PPB	40"	-	-	-	-	-	-	-	4
Ⓒ	1A	10'	-	-	-	-	-	TV-1-T	SP-2-T	4
Ⓓ	15TS	30'	-	15'	250W	-	-	SV-2-T	SP-2-T	4
Ⓔ	17-3-100	30'	20'	15'	250W	University Ave 900	MAS	SV-2-T	SP-2-T	4
Ⓕ	19-4-100	30'	30'	15'	250W	Canyon Crest Dr 3600	2-MAS	SV-1-T	SP-2-T	4

ALL SIGNAL EQUIPMENT IS NEW
* POLARA 2-WIRE ACCESSIBLE PEDESTRIAN SIGNALS (APS), OR CITY APPROVED EQUAL.
((P)) = PEEP PEEP SOUND

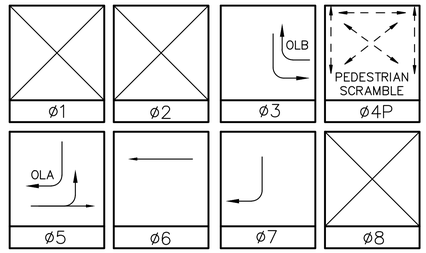
TRAFFIC SIGNAL GENERAL NOTES:

1. ALL ITEMS FURNISHED AND ALL WORK TO BE DONE SHALL CONFORM TO THE REQUIREMENTS OF: THE STATE OF CALIFORNIA OF TRANSPORTATION (CALTRANS) STANDARD PLANS AND SPECIFICATIONS, DATED 2015; THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES ADOPTED 2014; AND THE SPECIAL PROVISIONS.
2. UTILITIES SHOWN ON THE PLAN ARE CORRECT AND ACCURATE TO THE EXTENT OF AVAILABLE RECORDS. THE CONTRACTOR IS REQUIRED TO TAKE STEPS TO ASCERTAIN THE EXACT LOCATION OF ALL KNOWN SUBSTRUCTURES PRIORS TO DOING WORK THAT MAY DAMAGE OR INTERFERE WITH SUCH FACILITIES ("UNDERGROUND SERVICE ALERT" (800) 227-2600).
3. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS TO NOTIFY ALL AFFECTED AGENCIES AND THE RIVERSIDE UTILITY COMPANIES A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION.
4. UNLESS SHOWN OTHERWISE, INDUCTIVE LOOPS SHALL BE MODIFIED TYPE "D" & TYPE "E" WITH 10', 15' AND 30' SPACING IN THE DIRECTION OF TRAVEL. NECESSARY STRIPPING SHALL BE LOCATED PRIOR TO POSITIONING LOOPS. LOOPS SHALL BE SEALED WITH HOT MELT SEALANT. SEE DETAIL.
5. CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.
6. CONDUIT BETWEEN ADJOINING PULL BOXES SHALL BE 2" UNLESS SHOWN OTHERWISE. ALL CONDUIT AND FITTINGS SHALL BE RIGID METAL, UNLESS SHOWN OTHERWISE (BURIED IN MINIMUM OF 30" OF COVER IN THE STREET AND PARKWAY).
7. TRAFFIC SIGNAL INTERCONNECT (SIC) SHALL BE 2" UNLESS SHOWN OTHERWISE, BURIED IN A MINIMUM OF 30" OF COVER IN THE STREET AND PARKWAY. No. 6 PULL BOXES WITH LIDS LABELED "COMMUNICATIONS", SHALL BE SPACED AT 400' AND THE MAXIMUM SIC BENDING RADIUS SHALL NOT EXCEED 45 DEGREE. SIC CONDUIT SHALL ONLY INCLUDE SIGNAL INTERCONNECT CONDUCTORS.
8. UNDERGROUND SIGNAL CONDUCTORS SHALL NOT BE SPLICED.
9. PULL BOXES SHALL BE No. 6 WITH FIBRELITE LIDS LABELED "TRAFFIC SIGNAL" UNLESS OTHERWISE NOTED ON THE PLAN.
10. PULL BOXES SHALL NOT BE LOCATED IN OR WITHIN 1' OF ANY CURB ACCESS RAMP OR DRIVEWAY.
11. THE CONTRACTOR SHALL VERIFY WITH THE ENGINEER THE PRECISE FIELD LOCATIONS OF ALL TRAFFIC SIGNAL EQUIPMENT PRIOR TO THE INSTALLATION.
12. ALL LANDSCAPING WHICH IS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE CITY AND THE PROPERTY OWNER.
13. NEW MAST ARM MOUNTED SIGN SHALL BE FABRICATED WITH 3M DIAMOND GRADE DG3 REFLECTIVE SHEETING (ASTM TYPE XI) OR APPROVED EQUAL. SIGNS SHALL BE STANDARD SIZE AND HAVE A MINIMUM SIDE DIMENSION OF 30".
14. VEHICLE HEADS SHALL BE 12" LED TYPE. THE HOUSING, BACKPLATES AND VISORS SHALL BE METAL.
15. INTERNALLY ILLUMINATED STREET NAME SIGNS (IISNS) SHALL BE TYPE A STREET NAME LEGENDS SHALL BE UPPER/LOWER CASE AND SHALL INCLUDE BLOCK NUMBERS AND ROAD NAME SUFFIXES.
16. DAMAGED SIDEWALK CONCRETE SHALL BE REPLACED PER CITY OF RIVERSIDE STANDARD.
17. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH AND INSTALL ANY ADDITIONAL LOAD SWITCHES AND/OR DETECTOR CARDS, IF NECESSARY, FOR THE PROPOSED OPERATION.
18. ALL CONTRACTORS WORKING ON OR AROUND THE CITY OF RIVERSIDE'S UNDERGROUND ELECTRICAL FACILITIES MUST HAVE THE PROPERLY QUALIFIED PERSONNEL AND EQUIPMENT TO PERFORM THE SPECIFIED WORK. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE TO ESTABLISH AND MAINTAIN A SAFE WORKING ENVIRONMENT INCLUDING, BUT NOT LIMITED TO WORK AROUND ENERGIZED HIGH VOLTAGE FACILITIES, GAS TESTING OF CONFINED SPACES, TRAFFIC AND PROTECTION.

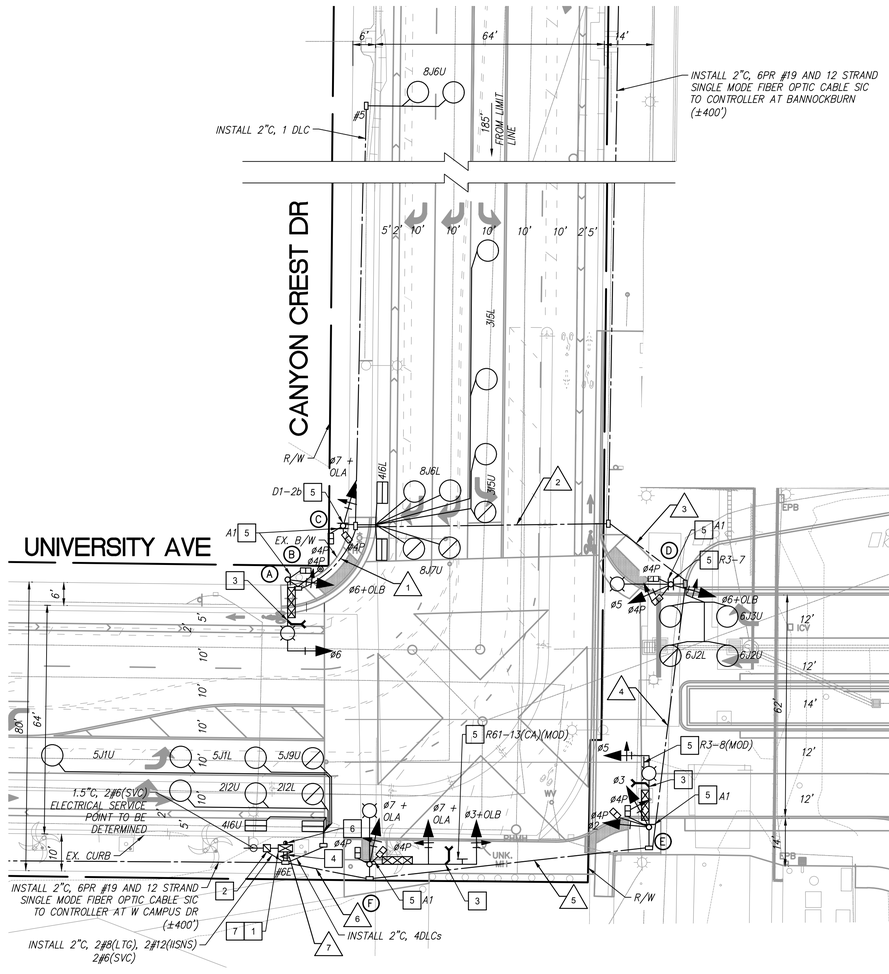
TYPICAL LOOP DETECTOR LAYOUT (AS APPLICABLE)



PHASE DIAGRAM



B = BICYCLE PHASING
P = PEDESTRIAN PHASING (EXCLUSIVE)



CONDUCTOR TABLE ■

CONTROL FUNCTION	CONDUCTORS	RUN No. 1	2	3	4	5	6	7
VEHICLE & PEDESTRIAN HEADS, PED PUSH BUTTONS, SPARES & COMMONS	12 WIRE IMSA	1	2	2	3	4	5	5
	3 WIRE IMSA	1	2	2	3	4	5	5
DETECTOR CABLE	#16/2							
PHASE 1		-	-	-	-	-	-	-
PHASE 2		-	-	-	-	-	-	2
PHASE 3		-	2	2	2	2	2	2
PHASE 4		-	1	1	1	1	1	2
PHASE 5		-	-	-	-	-	-	3
PHASE 6		-	-	-	3	3	3	3
PHASE 7		-	-	-	-	-	-	-
PHASE 8		-	3	3	3	3	3	3
I.I.S.N.S	#12	2	2	2	2	2	2	-
LUMINAIRES	#8	2	2	2	2	2	2	-
SIGNAL SERVICE	#6	-	-	-	-	-	-	2
VEHICLE PRE-EMPTION	#20/4	1	1	1	1	2	3	3
INTERCONNECT	#19	-	-	1	1	1	1	2
SMFOC (12-STRAND) SLC		-	-	1	1	1	1	2

CONDUIT SIZE	2"	3"	3"	3"	4"	4"	2-4"

ALL CONDUCTORS AND CONDUITS ARE NEW.

■ CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION. ALL NEW CONDUCTORS SHALL BE CONTINUOUS FROM TERMINAL COMPARTMENTS TO CONTROLLER CABINET.

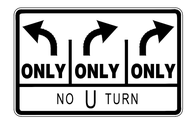
CONSTRUCTION NOTES:

1. CONTRACTOR SHALL CONSTRUCT (TYPE 332 CABINET) FOUNDATION. CONTRACTOR SHALL FURNISH AND INSTALL MODEL 2070 CONTROLLER ASSEMBLY IN MODEL 332 ANODIZED ALUMINUM CABINET, COMPLETE WITH DETECTION SHOWN AND AUXILIARY EQUIPMENT PER CITY OF RIVERSIDE SPECIFICATIONS. FURNISH AND INSTALL IN-SYNC TRANSIT SIGNAL PRIORITY SYSTEM WITH FUSION MODULE, DIN RELAY, PEDESTRIAN INTEGRATION AND OPTICOM 768 PHASE SELECTOR, AS WELL AS APPURTENANT EQUIPMENT TO MAKE AN OPERABLE SYSTEM. CONTACT REPRESENTATIVE FROM RHYTHM ENGINEERING AT (816) 289-5180 FOR PROCUREMENT AND DETAILS.
2. FURNISH AND INSTALL ELECTRICAL SERVICE PER CITY OF RIVERSIDE STANDARD DRAWING No. 667. CONTRACTOR SHALL COORDINATE WITH THE CITY OF RIVERSIDE ELECTRICAL UTILITY DEPARTMENT AT (951)826-5452 FOR ELECTRICAL SERVICE A MINIMUM THREE WEEKS PRIOR TRAFFIC SIGNAL TURN-ON.
3. FURNISH AND INSTALL ONE (1) GTT MODEL 711 (OR CITY APPROVED EQUAL) EMERGENCY VEHICLE PRE-EMPTION DETECTOR ASSEMBLY (INCLUDING MOUNTING HARDWARE AND CABLE) FOR EACH DIRECTION AS SHOWN ON PLAN. EVP DETECTOR SHALL BE MOUNTED PER DETAIL ON PLAN.
4. FURNISH AND INSTALL NEW P48 VAULT. CONDUITS SHALL BE SIDE ENTRY. 6PR #19 AND 12-STRAND SINGLE MODE FIBER OPTIC CABLE SIC ENTERING VAULT SHALL HAVE A MINIMUM OF 30 FEET OF SLACK AND BE COILED NEATLY ON THE SIDE OF THE VAULT. REPLACE SIDEWALK JOINT TO JOINT.
5. FURNISH AND INSTALL SIGN(S) AS SHOWN
6. CONTRACTOR SHALL PROVIDE AND INSTALL UNINTERRUPTED POWER SUPPLY (UPS) UNIT PER THE SPECIAL PROVISIONS. THE UPS UNIT AND BATTERIES SHALL BE INSTALLED IN CABINET, EXTERNALLY MOUNTED TO THE CONTROLLER CABINET.
7. CONTRACTOR SHALL PROVIDE F.O.C SPLICE RACK, CISCO 8 PORTS FIBER-ENABLED SWITCH AND NECESSARY APPURTENANCES AT THE CONTROLLER CABINETS AT: BANNOCKBURN, W CAMPUS DR, AND UNIVERSITY AVE AT CANYON CREST DR TO PROVIDE A FULLY FUNCTIONAL AND OPERATIONAL SIGNAL INTERCONNECT SYSTEM USING 12 STRAND SINGLE MODE FIBER OPTIC COMMUNICATIONS.

NEW SIGN LEGEND:

A1

R3-7



R61-13(CA)(MOD)

R3-8(MOD)

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GRAPHIC SCALE
20' 10' 0' 20' 40'
SCALE: 1" = 20'

REGISTERED PROFESSIONAL ENGINEER ARIEF NAFTALI No. 64286 CIVIL STATE OF CALIFORNIA

CITY BUSINESS CERTIFICATE NO. 0021337, EXP. 10/31/2019
PSOMAS
555 SOUTH FLOWER STREET, SUITE 4400
LOS ANGELES, CA 90071
(213) 223-1400 WWW.PSOMAS.COM

PREPARED BY: _____ R.C.E. NO. _____ DATE: _____

MARK	REVISIONS	APPR.	DATE

DESIGNED BY____ DRAWN BY____ CHECKED BY____

CITY OF RIVERSIDE, CALIFORNIA
PUBLIC WORKS DEPARTMENT

APPROVED BY	BY	DATE
ENGINEERING MANAGER/ TRAFFIC ENGINEERING/ CONSTRUCTION MANAGEMENT		

APPROVED BY
CITY ENGINEER/PW DIRECTOR
DATE _____

CITY OF RIVERSIDE
TRAFFIC SIGNAL PLAN
UNIVERSITY AVENUE & CANYON CREST DRIVE

HORIZ. SCALE: 1" = 20'

X-559
SHEET 1 OF 1
J.N. 1GRU013201

STRUCTURAL STEEL

1. STRUCTURAL STEEL: Material, Fabrication, and Erection

A. Materials

1. Provide structural steel complying with the following ASTM Standard Specifications, unless noted otherwise:
   - All structural steel unless noted below
     - ASTM A572 Grade 50 or ASTM A992
   - Plates, channels, angles
     - ASTM A36
   - Pipes
     - ASTM A53, Grade B (35 ksi)
   - Hollow structural section
     - ASTM A500, Grade C (50 ksi - Rectangular Section, 46 ksi - Round Section)
     - ASTM A1085 (50 ksi)
   - Anchor rods
     - ASTM F1554, Grade 55, unless noted otherwise
   - Threaded round stock
     - ASTM A36
   - Reinforcing steel
     - See Reinforcing Steel Section.
   - Furnish readily identifiable structural steel in compliance with CBC 2203.

B. High Strength Bolts

1. Provide high strength bolts, nuts and washers complying with ASTM A325 unless noted otherwise. All high strength bolts shall be bearing type with threads included in shear plane (A325-N), unless noted otherwise.
2. Assemble high strength bolts in compliance with Specification for Structural Joints Using ASTM A325 or A490 Bolts.
3. Tighten A325-N bolts to a snug tight condition. Tighten A325 pretensioned bolts (where specified) to at least the minimum tension specified in the referenced standard using one of the following tightening methods: turn-of-nut, calibrated wrench or direct tension indicator tightening.

C. Fabricate and erect structural steel in compliance with 2010 Specification for Structural Steel Buildings and CBC Chapter 22.

D. Building structural steel is designed for unshored construction unless noted otherwise.

E. Submit shop drawings to the University Representative for review and, upon request, to Building Official.

F. AISC Quality Certified licensed fabricator is required for Structural Steel.

2. Welding

A. Basic Requirements

1. Weld structural steel in compliance with ANSI/AWS D1.1 and AISC Specification, Chapter J. Welders shall be certified as required in the plans and by Governing Code Authority. Welding shall be done by electric arc process using low-hydrogen electrodes whose specified tensile strength is not less than 70 ksi unless noted otherwise, and 80 ksi for all ASTM 913 steel. Welding may be performed using submerged arc process with automatic welding (SAW-1).
2. Unless a larger size fillet weld is indicated, provide minimum size of weld per AISC Specification, Section J2 and Table J2.4.
3. No attempt has been made to differentiate between shop and field welded connections.

B. Project Welding Requirements

1. The project welding requirements shall apply to all shop and field welds.
2. A meeting shall be held with the University Representative, the Inspector, and the contractor's personnel supervising the shop and field welding activities prior to any fabrication to review connection details, welding procedures, and inspection requirements.
3. The Inspector shall verify compliance with the approved project welding requirements. Any deviation or lack of compliance with the approved requirements shall be reported immediately to the University Representative and Contractor.
4. Project welding requirements shall be submitted to the University Representative for review prior to the commencement of any welding.
5. In addition to requirements described elsewhere in the contract documents, the approved project welding requirements shall, at a minimum, consist of the following, (refer to AWS D1.1):
   a. Welding Procedure Specification (WPS) for each weld and position as required by AWS D1.1 and signed by a registered professional engineer in California retained by the Contractor.
   b. Supplemental welding procedure.
   c. Shop drawings that reference the appropriate WPS for each weld required for each connection and required supplemental welding procedure.
   d. Welder performance qualifications approved by the Deputy Inspector.
   e. Qualification by testing of any welding procedure that is not pre-qualified per AWS D1.1.

C. Inspections

1. Inspection: The following requirements shall apply to welding inspections performed for the project.
   a. The lead welding inspector shall be a Certified Welding Inspector (CWI) per AWS-QC1 Standards, shall be approved by the University Representative as a registered deputy inspector for structural steel welding (ICC-ES Certification) and shall possess a minimum level of UT Level II Certification. Other welding inspectors performing visual inspection under the supervision of the lead welding inspector shall possess ICC-ES Certification, and persons performing nondestructive testing shall possess UT Level II Certification. Not more than four non-CWI inspectors shall be under the supervision of a CWI. Certification by ICC-ES is not an acceptable substitute for CLA Certification.
   b. All inspection requirements shall be required by AWS D1.1 and the Quality Assurance section including inspection tables.

FOUNDATIONS

1. Foundation design is based on recommendations in Geotechnical Letter no. 10-17447PW prepared by United-Heider Inspection Group, dated November 13, 2017, and subsequent addenda letters. Perform foundation work complying with report and addenda. Geotechnical Letter and addenda hereby become part of these contract documents and shall be kept on the job site at all times.

2. Foundation design is based on a bearing capacity of 1,500 psf with a 33% increase for seismic or wind loading.

3. Design lateral bearing pressure is 100 psf/ft with a 33% increase for seismic or wind loading and a 200% increase for isolated pole type footings.

4. Design lateral sliding resistance is 130 psf with a 33% increase for seismic or wind loading.

5. Found footings a minimum of 2'-0" below adjacent grade or finish floor, whichever is lower.

6. Found footings and building slab-on-grade on compacted fill per CBC 1804.6 or undisturbed natural grade as listed in CBC Table 1806.2.

7. Foundation excavations are to be observed by and acceptable to a Geotechnical Engineer or University Representative prior to placement of fill, reinforcing steel, or concrete.

8. Perform filling, backfilling, compaction, etc., as indicated in Geotechnical Report and only under supervision of a Geotechnical Engineer or University Representative.

9. Do not place backfill behind retaining walls prior to completion and inspection of waterproofing. Adequately shore retaining walls during backfill operation. Unless adequately shored, do not place backfill behind building structure retaining walls (excluding site retaining walls) until concrete at elevated floor levels adjacent to walls has been completely poured (in area) and has cured for at least 7 days.

CAST-IN-PLACE CONCRETE

1. All concrete work to conform to CBC Chapter 19.

2. Provide normal weight aggregates of natural sand and rock complying with ASTM C33 (aggregate size).

3. Provide Portland Cement conforming to ASTM C150, Type II.

4. Provide normal weight concrete (145 pcf), with proven shrinkage characteristics not to exceed 0.05% for foundation, 0.045% for conventionally reinforced slabs/beams, walls and columns, attaining minimum compressive strengths at 28 days (f'c) as follows, unless noted otherwise:

Piles/caissons	3000 psi
Retaining walls	3000 psi
Continuous footings	3000 psi
Spread footings	3000 psi
Slabs on grade	3000 psi
Slabs on metal deck	3000 psi
Other concrete UNO	3000 psi

4a. Provide normal weight concrete (145 pcf) attaining a minimum compressive strength of 3000 psi at 28 days unless noted otherwise.

5. Submit concrete design mix data for each type and compressive strength of concrete required signed by and bearing the seal of a registered civil engineer in state to University Representative. Concrete mix design shall be per ACI 318-14 Section 26.4.3.

6. Submit shop drawings to University Representative indicating locations of concrete construction joints for review prior to placing concrete. Locate joints at locations to minimize effects of shrinkage as well as being placed at points of low stress and shall conform to ACI 318, Section 26.5.6.

7. Slump not to exceed 4 (+/- 1) inches. For slab on grade, walls, slab on metal deck and suspended slabs, slump not to exceed 4" (+0", -1") inches.

8. Do not use concrete or grout containing chlorides.

9. Form exposed corners of columns, beams, walls, etc., with 3/4 inch chamfers unless detailed otherwise.

10. Provide keys in construction joints unless detailed otherwise. Thoroughly clean, remove laitance and thoroughly wet and remove standing water in construction joints before placing new concrete.

11. Roughen concrete surface to a full amplitude of 1/16 inch where masonry walls intersect concrete.

12. Roughen existing concrete surface to a full amplitude of 1/16 inch where existing concrete abuts new concrete.

13. Perform concrete work in compliance with ACI 301.

14. Maintain concrete above 50 degrees Fahrenheit and in a moist condition for a minimum of 7 days after placement unless otherwise accepted by University Representative.

GENERAL (CONTINUED)

C. Shop drawings are not a part of contract documents. Therefore, University Representative's review does not constitute an authorization to deviate from terms and conditions of the contract.

D. Shop drawings will be rejected for incompleteness, lack of coordination with other portions of contract documents, lack of calculations (if required), or where modifications or substitutions are indicated without prior review per paragraph above.

E. Maintain a copy of all shop drawings accepted by University Representative at site during construction period.

F. University Representative requires 10 working days after receipt of shop drawings and calculations for processing.

G. Only three copies of each structural shop drawing submittal will be accepted for review and marked with comments, if any. Additional copies submitted will be not be returned.

12. Submit deferred submittal items to the University Representative for review. After review, submit deferred submittal items to the University Representative for approval prior to installation. The following is a list of deferred approval items:

    a. Canopy fabric covering - design canopy fabric covering and their connections for the wind presure loading of 40 psf, and a live load of 5 psf.

13. All abbreviations of referenced standards are per CBC Chapter 35.

14. Contractors responsible for the construction of wind or seismic force resisting system/component listed in the "Statement of Special Inspection" shall submit a written statement of responsibility to the University Representative prior to the commencement of work on such system or component per Section 1704.4.

REINFORCING STEEL

1. Provide reinforcing steel and reinforcing steel to be welded complying with ASTM A615, Grade 60 steel.

2. Provide smooth welded wire fabric complying with ASTM A185. Lap fabric 1-1/2 spaces (12" minimum). Provide deformed wire stirrups, size D4 and larger only, complying with ASTM A497.

3. Splice reinforcing steel where indicated. If splice locations are not specifically shown or indicated, verify splice locations with University Representative prior to developing reinforcing steel shop drawings.

4. Lap reinforcing steel at splices to the following minimum lengths, unless noted otherwise (applicable to 3,000 psi, normal weight concrete only):

Bar Size	top bars	other bars	bar size	top bars	other bars
#3	2'-4"	1'-10"	#8	7'-9"	6'-0"
#4	3'-1"	2'-5"	#9	8'-9"	6'-9"
#5	3'-11"	3'-0"	#10	9'-10"	7'-7"
#6	4'-8"	3'-7"	#11	10'-11"	8'-5"
#7	6'-9"	5'-3"			

"Top bars" are horizontal bars with more than 12 inches of concrete cast below bars. "Other bars" are horizontal bars with less than 12 inches of concrete cast below bars and all vertical bars. Splice lengths indicated above only apply when clear distances between reinforcing steel, including spliced reinforcing steel, are 2 bar diameters or greater. Increase splice lengths by 43% if clear distances are less than 2 bar diameters, but never less than minimum clear distances indicated below.

5. Minimum clear distances between reinforcing steel, including spliced reinforcing steel, shall be 1" or 1 bar diameter, whichever is greater. Minimum clear distance at columns shall be 1-1/2" or 1-1/2 bar diameters, whichever is greater. For bundled bars, minimum clear distances between units of bundled bars shall be same as single bars except bar diameter is derived from equivalent total area of bundle.

6. Minimum concrete coverage: maintain the following minimum clear distances between reinforcing steel and face of concrete unless noted otherwise:

slabs on grade (center of slab)	
concrete below grade, formed	2"
concrete below grade, unformed	3"

7. Provide dowels for walls and columns matching vertical reinforcing size and spacing, unless noted otherwise.

8. Weld reinforcing steel complying with AWS D1.4. If welding of reinforcing steel other than A706 is desired, submit proposed procedure, indicating conformance to code and requirements of the University, to the University Representative for acceptance, and to the University for approval prior to execution. Welders shall be certified as required by the University.

9. Bend reinforcing steel cold unless otherwise accepted by the University Representative. Provide special inspection of all cold bent reinforcing.

10. Securely tie anchor bolts, reinforcing steel, inserts, etc., in place prior to pouring concrete or grout.

11. Submit reinforcing steel shop drawings indicating reinforcing placement, including splice locations and lengths, to the University Representative for review and acceptance. Promptly notify the University Representative prior to developing reinforcing steel shop drawings if insufficient clear distances between reinforcing steel or other congestion is encountered. Prepare shop drawings in compliance with ACI 315, Part B.

12. Prior to drilling into existing concrete, locate existing rebar and adjust hole locations to avoid interference. Obtain approval from the University Representative for revised rebar locations shifted more than 2" from location shown on the drawings.

GENERAL

1. Perform construction and workmanship in compliance with contract documents and 2016 California Building Code (CBC). Building Risk Category is II.

2. Governing Code Authority: University of California, Riverside.

3. Design Criteria:
   Roof Live Loads = 20 psf (Reducible)

   Wind Design Data:
   Basic Wind Speed (Vult) = 110 mph (Vasd) = 85 mph
   Design Velocity Pressure qh = 18.43 psf
   Internal pressure coefficient: (GCpi) = 0.0 for Canopy
   (GCpi) = ±0.18 for Kiosk
   Risk Category: II
   Wind Exposure = C

   Earthquake Design Data:
   Risk Category: II
   Seismic Importance Factor = 1.00
   Mapped Spectral Acceleration
   Ss = 1.50g
   S1 = 0.609g
   Site Class = D
   Spectral Response Coefficients
   S_DS = 1.00g
   S_D1 = 0.609g
   Seismic Design Category = D
   Superstructure
   1. Kiosk
   Basic Seismic-Force Resisting System = special cantilever column system
   Design Base Shear = 3.4 kips
   Seismic Response Coefficient, Cs = 0.4g
   Response Modification Factor, R = 2.5
   Analysis Procedure used = equivalent lateral force procedure
   Maximum inelastic story drift = 2.4"

   2. Canopy
   Basic Seismic-Force Resisting System = special cantilever column system
   Design Base Shear = 18.3 kips
   Seismic Response Coefficient, Cs = 0.4g
   Response Modification Factor, R = 2.5
   Analysis Procedure used = equivalent lateral force procedure
   Maximum inelastic story drift = 4.68"

   Special Loads:
   Soil Loads

   Unrestrained Walls:
   a. Active Pressure: 35 psf/ft
   b. Loading Pattern: Triangular
   c. Surcharge: None

4. Structural drawings, as part of contract documents, indicate information sufficient to convey design intent. If errors, inconsistencies or omissions are discovered, promptly notify University Representative before proceeding with work.

5. When performing work, including shop drawing development, consider requirements of contract documents in their entirety (e.g., size and location of openings, penetrations and embedment for ducts, piping, vents, conduits, etc.).

6. Details and schedules indicated as "typical" may not be specifically referenced on drawings. Determine where each typical detail or schedule applies before proceeding with work. If conditions are found which are not specifically detailed and no typical detail or schedule applies, promptly notify University Representative.

7. Verify field measurements and conditions with contract documents. If errors, inconsistencies or omissions are discovered, promptly notify University Representative before proceeding with work.

8. Contract documents represent the finished structure. Unless otherwise shown, they do not indicate method of construction. Provide construction means, methods, techniques, sequences and procedures as required. Provide adequate excavation procedures, shoring, bracing and erection procedures complying with national, state and local safety ordinances. No allowance has been made for construction equipment, cranes, hoists and similar items to be supported off the structure.

9. Observation visits to site by field representatives of University Representative do not include inspections of construction means and methods and are not special and continuous inspections. Observations are solely for the purpose of determining if Contractor understands design intent conveyed in contract documents. Observations do not guarantee Contractor's performance and are not to be construed as supervision or inspection of construction.

10. Modifications or substitutions may be considered provided a written request, subject to review, is submitted to University Representative prior to its use, installation in the field, or inclusion on any shop drawing or in the work. Costs associated with review, approval and installation shall be borne by contractor.

11. Shop drawing submittals:
    A. Review and stamp shop drawings prior to submission to University Representative. Review for completeness and compliance with contract documents.
    B. When an engineer is required to sign and stamp shop drawings and calculations, ensure seal indicates engineer as registered in state of California.

UNIVERSITY OF CALIFORNIA RIVERSIDE

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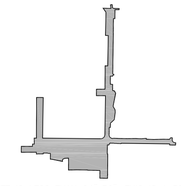
REGISTERED PROFESSIONAL ENGINEER RUSSELL TAMAYE No. 2850 STRUCTURAL STATE OF CALIFORNIA

01/09/19

ARCHITECT/ENGINEER SEAL



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KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD–BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES	–
DRAWN BY	–
CHECKED BY	–
SCALE	AS NOTED
DATE	03/23/2018
PROJECT NO.	GRUEN # 8345

GENERAL NOTES

SHEET TITLE

S001

SHEET NO.

QUALITY ASSURANCE (CONTINUED)

	CONCRETE INSPECTIONS & VERIFICATION (TABLE 1705.3)		
1.	Inspect reinforcement and verify placement. (ACI 318: Ch. 20, 25.2, 25.3, 26.5.1-26.5.3)		X
2.	Reinforcing bar welding:		
	a. Verify weldability of reinforcing bars other than ASTM A706. (AWS D1.4, ACI 318: 26.5.4)		X
	b. Inspect single-pass fillet welds, maximum 5/16"; (AWS D1.4, ACI 318: 26.5.4)		X
	c. Inspect all other welds. (AWS D1.4, ACI 318: 26.5.4)	X	
3.	Inspect anchors cast in concrete. (ACI 318: 17.8.2)		X
4.	Inspect anchors post-installed in hardened concrete members. (ACI 318:17.8.2.4)		
	a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads. (ACI 318: 17.8.2.4)	X	
	b. Mechanical anchors and adhesive anchors not defined in 4.a. (ACI 318: 17.8.2)		X
5.	Verify use of required design mix. (ACI 318: Ch. 19, 26.4.3, 26.4.4) (IBC 1904.1, 1904.2, 1908.2, 1908.3)		X
6.	Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete. (ASTM C172, ASTM C31, ACI 318: 26.4.5, 26.12) (IBC 1908.10)	X	
7.	Inspect concrete placement for proper application techniques. (ACI 318: 26.4.5, 26.12) (IBC 1908.6, 1908.7, 1908.8)	X	
8.	Verify maintenance of specified curing temperature and techniques. (ACI 318: 26.4.7-26.4.9) (IBC 1908.9)		X
9.	Inspect formwork for shape, location and dimensions of the concrete member being forced. (ACI 318: 26.10.1(b))		X
	SPECIAL PROVISIONS FOR SEISMIC RESISTANCE		
10.	Verify submittal of certified mill test reports for each shipment of reinforcing steel used to resist flexural, shear and axial forces in reinforced concrete intermediate frames, special moment frames and boundary elements of special reinforced concrete or reinforced masonry shear walls. (ACI 318: 3.5.2, AWS D1.4)		X
11.	Test ASTM A 615 reinforcing steel is used to resist earthquake-induced flexural and axial forces in special moment frames and in wall boundary elements of shear walls in structures assigned to Seismic Design Category D, E or F, per ACI 318.		X
12.	Test ASTM A 615 reinforcing steel that is to be welded, chemical tests shall be performed to determine weldability in accordance with Section 3.5.2 of ACI 318.		X
13.	Installation of (chemical/epoxy) adhesive anchors, rods and dowels.	X	
14.	Installation and torque testing expansion anchors.	X	
	FOUNDATION INSPECTIONS & VERIFICATION		
	SOILS - TABLE 1705.6	**See Note #4**	
1.	Verify materials below shallow foundations are adequate to achieve the design bearing capacity.		X
2.	Verify excavations are extended to proper depth and have reached proper material/s.		X
3.	Perform classification and testing of compacted fill materials.		X
4.	Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X	
5.	Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.		X

Notation:
X Denotes either continuous or periodic inspections.
--- Denotes an activity that is either a one-time activity or one where the frequency is defined in some other manner

Notes:
1. Additional detail regarding inspections and tests are provided in the project specifications and/or notes on the drawings.
2. Refer to design build drawings for design and project specific inspection requirements.
3. Special inspection is not required where design wind speed is less than 110 mph.
4. See Geotechnical Consultant for more information.

QUALITY ASSURANCE

1. Testing laboratory shall submit reports indicating results and observations of tests and inspections and stating compliance or noncompliance with contract documents to the University Representative. Contractor shall reimburse University for costs related to tests and inspections of unidentifiable materials or materials furnished without certified laboratory test reports, materials found deficient after initial tests and inspections, or materials replacing deficient materials. See Specifications for additional test and inspection requirements.
2. Provide cement, aggregates, reinforcing steel, structural steel, high-strength bolts, etc., from identifiable tested stock. Submit certified laboratory test reports to the University Representative. If materials cannot be identified or if certified laboratory test reports cannot be made available, testing laboratory will perform tests to determine conformance with contract documents as directed by to the University Representative.
3. Testing laboratory shall provide special inspection, complying with CBC Section 1701 (unless otherwise noted), for the following:
   A. Concrete and reinforcing steel where specified concrete compressive strength is greater than 2500 psi.
   B. Bolts installed in concrete.
   C. High-strength bolts.
4. Testing laboratory shall review concrete mix design data and shall perform the following concrete tests at frequency indicated in as indicated in Required Inspections of Reinforced Concrete in Quality Assurance Section.
5. Testing laboratory shall perform the following tests in structural steel as indicated in Required Inspections of Structural Steel in Quality Assurance Section.

Project: University of California, Riverside – Mobility Hub
Location: Riverside, California

ITEM	TESTING, INSPECTION & VERIFICATION TASKS	FREQUENCY	
		CONTINUOUS	PERIODIC
	STRUCTURAL STEEL INSPECTIONS & VERIFICATION (TABLE 1705A.2.1)		
1.	Material verification of high-strength bolts, nuts and washers:		
	a. Identification markings to conform to ASTM standards specified in the approved construction documents. (AISC 360 Section A3.3 and applicable ASTM Material Standards.)		X
	b. Manufacturer's certificate of compliance required.		X
2.	Inspection of high-strength bolting:		
	a. Snug-tight joints. (AISC 360 Section M2.5)		X
	b. Pretensioned and slip-critical joints using turn-of-nut with matchmarking, twist-off bolt or direct tension indicator methods of installation. (AISC 360 Section M2.5)		X
	c. Pretensioned and slip-critical joints using turn-of-nut without matchmarking or calibrated wrench methods of installation. (AISC 360 Section M2.5)	X	
3.	Material verification of structural steel and cold-formed steel deck:		
	a. For structural steel, identification markings to conform to AISC 360. (AISC 360, Section A3.1)		X
	b. For other steel, identification markings to conform to ASTM standards specified in the approved construction documents. (Applicable ASTM material standards)		X
	c. Manufacturers' certified test reports.		X
4.	Material verification of weld filler materials:		
	a. Identification markings to conform to AWS specification in the approved construction documents. **(ANSI/AISC 360 Section A3.5 and applicable AWS A5 documents)**		X
	b. Manufacturer's certificate of compliance required.		X
5.	Inspection of welding:		
	a. Structural steel and cold-formed steel deck:		
	1) Complete and partial penetration groove welds. (AWS D1.1, AWS D1.8)	X	
	2) Multi-pass fillet welds. (AWS D1.1, AWS D1.8)	X	
	3) Single-pass fillet welds > 5/16" (AWS D1.1, AWS D1.8)	X	
	4) Plug and slot welds. (AWS D1.1, AWS D1.8)	X	
	5) Single-pass fillet welds ≤ 5/16" (AWS D1.1, AWS D1.8)		X
	6) Floor and roof deck welds. (AWS D1.3)		X
	b. Reinforcing steel:		
	1) Verification of weldability of reinforcing steel other than ASTM A 706. (AWS D1.4, ACI 318: Sections 26.6.4.1, 18.2.8, 25.5.7.4)		X
	2) Reinforcing steel-resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement. (AWS D1.4, ACI 318: Sections 26.6.4.1, 18.2.8, 25.5.7.4)	X	
	3) Shear reinforcement. (AWS D1.4, ACI 318: Sections 26.6.4.1, 18.2.8, 25.5.7.4)	X	
	4) Other reinforcing steel. (AWS D1.4, ACI 318: Sections 26.6.4.1, 18.2.8, 25.5.7.4)		X
6.	Inspection of steel frame joint details for compliance with approved construction documents:		
	a. Details such as bracing and stiffening.		X
	b. Member locations.		X
	c. Application of joint details at each connection.		X
	SPECIAL PROVISIONS FOR SEISMIC RESISTANCE		
7.	The testing shall be as required by AISC 341.	---	---
8.	Base metal thicker than 1.5 inches (38 mm), where subject to through-thickness weld shrinkage strains, shall be ultrasonically tested for discontinuities behind and adjacent to such welds after joint completion.	---	---
9.	The acceptance criteria for nondestructive testing shall be as required in AWS D1.1. Any material discontinuities shall be accepted or rejected on the basis of ASTM A 435 or ASTM A 898 (Level 1 criteria).		
10.	Continuous special inspection is required for structural welding in accordance with AISC 341		

STRUCTURAL OBSERVATION

1. Structural observation is required for the structural system in accordance with CBC Section 1704.6. Structural observation is the visual observation of the elements and connections of the structural system at significant construction stages and the completed structure for general conformance to the approved plans and specifications. Structural observation does not waive the responsibility for the inspections required of the University Inspector or the Special Inspector.
2. The University shall employ a registered design professional to perform the structural observation. The design professional shall be registered or licensed in the State of California.
3. The University shall coordinate and call for a meeting between the University Representative, Structural Observer, Contractor, affected Subcontractors and Deputy Inspectors. The purpose of the meeting shall be to identify the major structural elements and connections that affect the vertical and lateral load systems of the structure and to review scheduling of the required observations. A record of the meeting shall be included in the first Observation Report submitted to the University Representative.
4. The Structural Observer shall perform site visits at those steps in the progress of the work that allow for correction of deficiencies without substantial effort or uncovering of the work involved. At a minimum, the following significant construction stages require a site visit and an Observation Report from the Structural Observer:

CONSTRUCTION STAGES	ELEMENTS/CONNECTIONS TO BE OBSERVED
A. Foundations	First canopy foundation.
B. Structural Steel	Completion of canopy framing.

5. The Structural Observer shall prepare a report for each significant stage of construction observed. The original of the Observation Report shall be sent to the University and shall be signed and sealed (wet stamp) by the responsible Structural Observer. One copy of the Observation Report shall be attached to the approved plans. Copies of the report shall also be given to the University, Contractor, and University Inspector.
6. A final Observation Report must be submitted to the University, which states that the site visits have been made and that all report deficiencies to the best of the structural observer's knowledge has been corrected and that the structural system generally conforms with the approved plans and specifications.

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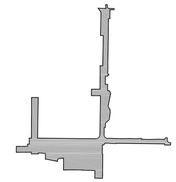
01/09/19

ARCHITECT/ENGINEER SEAL



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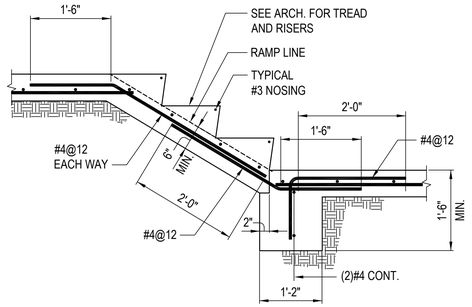
BASE FILE NAMES	–
DRAWN BY	–
CHECKED BY	–
SCALE	AS NOTED
DATE	03/23/2018
PROJECT NO.	GRUEN # 8345

GENERAL NOTES

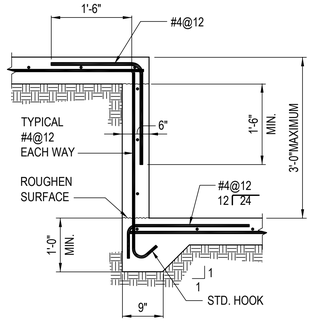
SHEET TITLE

S002

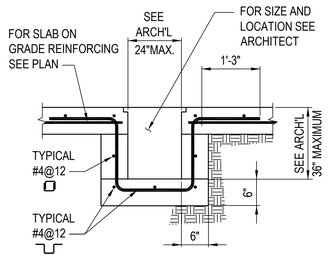
SHEET NO.



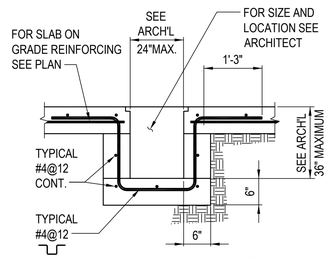
STAIR OR RAMP ON GRADE (D)



CONCRETE RETAINING WALL (C)



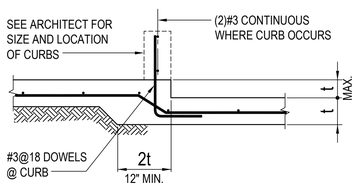
SUMP PIT (B)



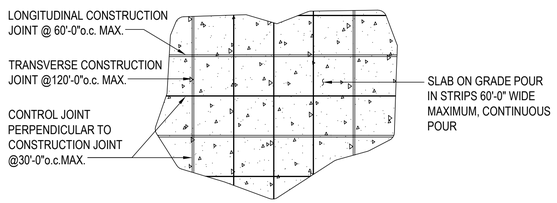
TRENCH DRAIN (A)

TYPICAL SLAB ON GRADE DETAILS 3

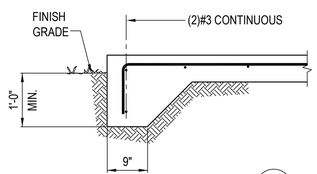
TC302



CURB AND SLAB DEPRESSION (E)

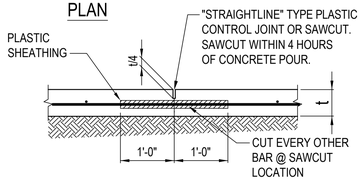


PLAN

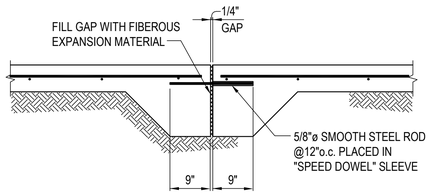


EDGE OF SLAB (D)

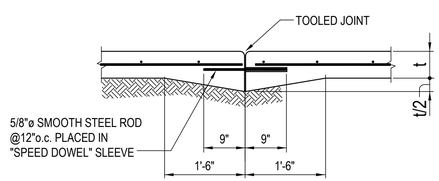
NOTES:
1. FOR SLAB ON GRADE THICKNESS, REINFORCING AND SUBGRADE PREPARATION SEE PLAN.
2. FOR LOCATION OF EXPANSION JOINTS SEE ARCHITECTURAL.



CONTROL JOINT (B)



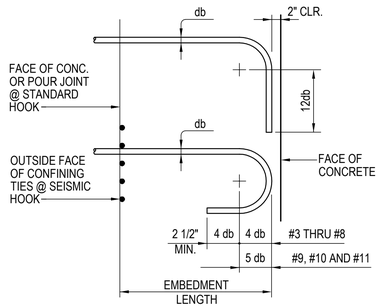
EXPANSION JOINT (C)



CONSTRUCTION JOINT (A)

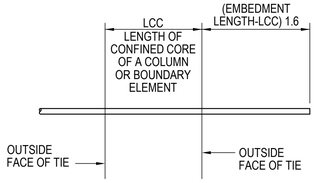
TYPICAL SLAB ON GRADE DETAILS 2

TC301



NOTES:
1. ALL HOOKED BARS SHALL EXTEND AS FAR AS POSSIBLE TO THE OPPOSITE FACE WITH A MINIMUM 2" END COVER AND EMBEDMENT NOT LESS THAN THE SCHEDULE.
2. MINIMUM SIDE COVER = 2 1/2"
3. FOR WALL FOOTING DOWEL EMBEDMENT LENGTHS SEE "TYPICAL CONCRETE WALL DOWEL EMBEDMENT AND LAP SCHEDULE"

STANDARD HOOK DETAILS



NOTES:
1. STRAIGHT BARS TERMINATED AT A JOINT SHALL PASS THROUGH THE CONFINED CORE OF A SEISMIC COLUMN OR BOUNDARY ELEMENT. ANY PORTION OF THE STRAIGHT EMBEDMENT NOT WITHIN THE CONFINED CORE SHALL BE INCREASED BY A FACTOR OF 1.6.

STRAIGHT BARS AT A JOINT
(FOR MOMENT FRAME ONLY)

REINFORCING EMBEDMENT NOTES

1. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS.
2. BOTTOM BARS ARE ALL VERTICAL BARS AND HORIZONTAL BARS WITH LESS THAN 12" OF CONCRETE CAST BELOW HORIZONTAL BARS.
3. FOR LIGHTWEIGHT CONCRETE MULTIPLY THE LENGTHS IN THE SCHEDULE BY 1.3.
4. FOR GRADE 75 REINFORCING MULTIPLY THE LENGTHS IN THE SCHEDULE BY 1.25.
5. FOR GRADE 80 REINFORCING MULTIPLY THE LENGTHS IN THE SCHEDULE BY 1.33.
6. FOR 3 BAR BUNDLE MULTIPLY THE LENGTHS IN THE SCHEDULE BY 1.20. FOR 4 BAR BUNDLE MULTIPLY THE LENGTHS IN THE SCHEDULE BY 1.33.
7. FOR BUNDLED BARS, AN EFFECTIVE BAR DIAMETER SHALL BE USED FOR DETERMINING COVER AND SPACING LIMITATIONS.
   A. FOR 2 BAR BUNDLE dbe= 1.60 ($\sqrt{\text{(BAR AREA)}}$)
   B. FOR 3 BAR BUNDLE dbe= 1.95 ($\sqrt{\text{(BAR AREA)}}$)
   C. FOR 4 BAR BUNDLE dbe= 2.26 ($\sqrt{\text{(BAR AREA)}}$)

DEVELOPMENT TYPE	CATEGORY	DESCRIPTION	BAR	AREA (sq.in.)	0.11		0.20		0.31		0.44		0.60		0.79		1.00		1.27		1.56	
				DIAMETER db	0.375		0.500		0.625		0.750		0.875		1.000		1.128		1.270		1.410	
			NORMAL WEIGHT CONCRETE f'c PSI		#3		#4		#5		#6		#7		#8		#9		#10		#11	
					TOP	BOT.	TOP	BOT.	TOP	BOT.	TOP	BOT.	TOP	BOT.	TOP	BOT.	TOP	BOT.	TOP	BOT.	TOP	BOT.
STRAIGHT TENSION EMBEDMENT (CLASS A)	1	COVER ≥2db AND CLEAR SPACING ≥4db	3000		16	12	18	14	22	17	26	20	38	29	43	33	49	37	55	42	61	47
			4000		16	12	16	12	19	15	23	18	33	25	37	29	42	33	47	37	53	41
			5000		16	12	16	12	17	13	20	16	29	23	34	26	38	29	43	33	47	36
			6000		16	12	16	12	16	12	19	14	27	21	31	24	34	27	39	30	43	33
	2	ALL OTHERS	3000		22	17	29	22	36	28	43	33	63	48	72	55	81	62	91	70	101	78
			4000		19	15	25	19	31	24	37	29	54	42	62	48	70	54	79	61	87	67
			5000		17	13	23	17	28	22	34	26	49	38	56	43	63	48	71	54	78	60
			6000		16	12	21	16	26	20	31	24	45	34	51	39	57	44	64	50	71	55
	3	COVER <db OR CLEAR SPACING <2db	3000						54	42	65	50	94	72	107	83	121	93	136	105	151	116
			4000						47	36	56	43	81	63	93	72	105	81	118	91	131	101
			5000						42	32	50	39	73	56	83	64	94	72	106	81	117	90
			6000						38	30	46	35	67	51	76	59	85	66	96	74	107	82
	SEISMIC	STRAIGHT BAR ANCHORED IN SEISMIC FRAME COLUMN	3000		23	16	30	22	37	27	45	32	52	37	59	43	67	48	75	54	84	60
			4000		21	15	26	19	32	23	39	28	45	32	52	37	58	42	65	47	73	52
			5000		21	15	23	17	29	21	35	25	40	29	46	33	52	37	59	42	65	47
			6000		21	15	21	15	27	19	32	23	37	27	42	30	47	34	53	38	59	43
HOOK EMBEDMENT	STANDARD	ALL OTHERS	3000		6		8		10		12		14		16		18		20		22	
			4000		6		7		9		10		12		14		16		17		19	
			5000		6		6		8		9		11		12		14		16		17	
			6000		6		6		7		9		10		11		13		14		16	
	SEISMIC	HOOK ANCHORED IN SEISMIC FRAME COLUMN	3000		7		9		11		13		15		17		19		22		24	
			4000		6		8		10		11		13		15		17		19		21	
			5000		6		7		9		10		12		14		15		17		19	
			6000		6		6		8		9		11		12		14		16		17	

TYPICAL STRAIGHT AND HOOKED EMBEDMENT LENGTH SCHEDULE 1

TC201

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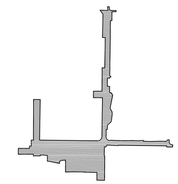

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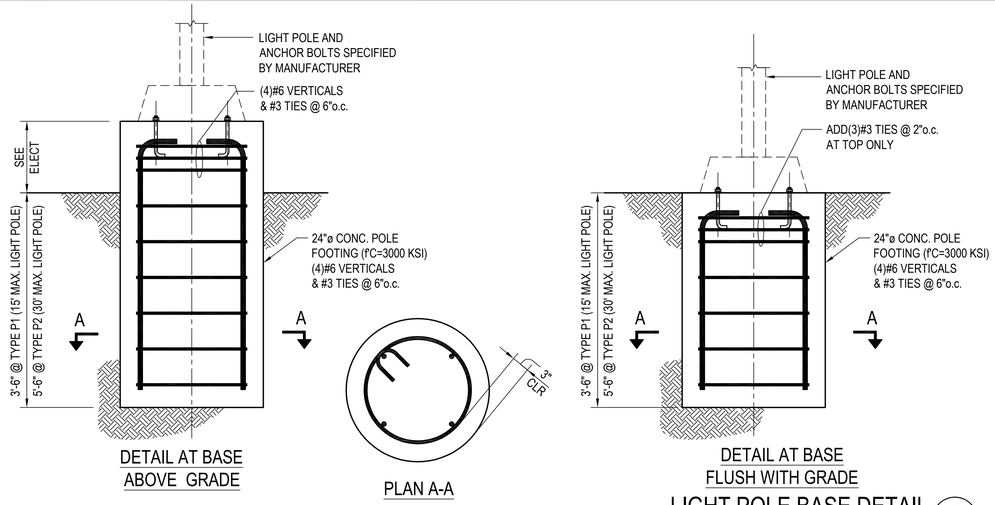
BASE FILE NAMES	–
DRAWN BY	–
CHECKED BY	–
SCALE	AS NOTED
DATE	03/23/2018
PROJECT NO.	GRUEN # 8345

TYPICAL CONCRETE DETAILS

SHEET TITLE

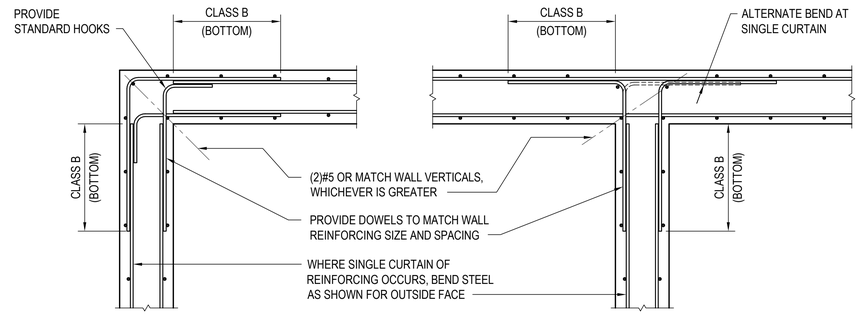
S100

SHEET NO.



LIGHT POLE BASE DETAIL 6

1'=1'-0"

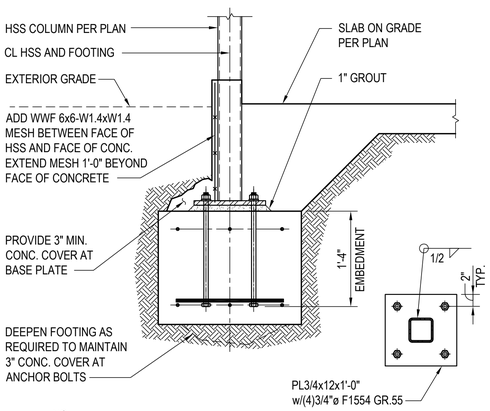


NOTES:

1. PROVIDE THE FOLLOWING MINIMUM REINFORCING IN CONCRETE WALLS THAT ARE EQUAL TO OR LESS THAN THE THICKNESS INDICATED UNLESS NOTED OTHERWISE.
   - A. ≤ 6" CONCRETE WALLS #4 @ 12 EACH WAY
   - B. > 6" ≤ 8" CONCRETE WALLS #5 @ 18 EACH WAY
   - C. > 8" ≤ 10" CONCRETE WALLS #5 @ 15 EACH WAY
   - D. > 10" ≤ 12" CONCRETE WALLS #4 @ 16 EACH WAY EACH FACE
2. FOR DOWEL REINFORCING FROM FOUNDATION INTO WALLS, SEE TYPICAL CONCRETE WALL DOWEL EMBEDMENT AND LAP SCHEDULE.

TYPICAL CONCRETE WALL REINFORCING AT INTERSECTION DETAIL 3

TCW101

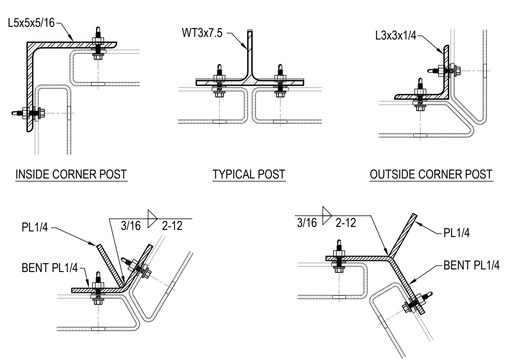


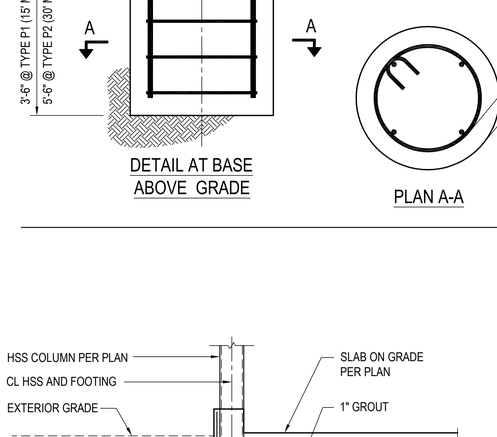
NOTE:
FOR BALANCE OF INFO SEE 7/-.

BASE PLATE PLAN

KIOSK FOOTING AT COLUMN DETAIL 8

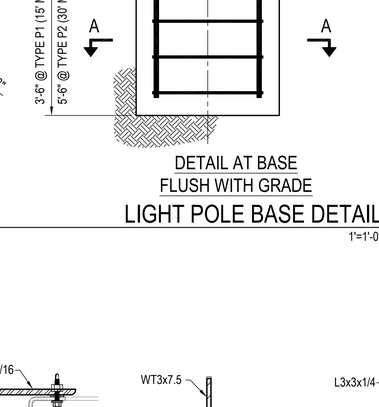
1'=1'-0"





KIOSK FOOTING DETAIL 7

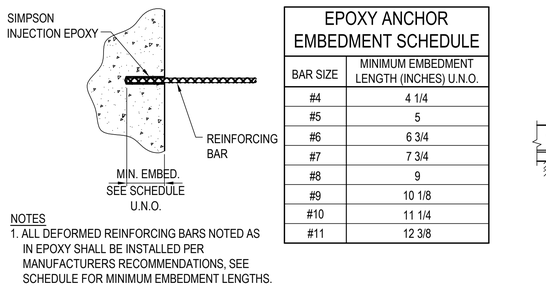
1'=1'-0"



NOTE: SEE ARCHITECTURAL PLAN FOR POST LOCATIONS.

4'-0" FENCE POST DETAIL 5

1'=1'-0"



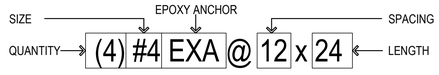
NOTES

1. ALL DEFORMED REINFORCING BARS NOTED AS IN EPOXY SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS, SEE SCHEDULE FOR MINIMUM EMBEDMENT LENGTHS.
2. TO BE USED ONLY WHERE INDICATED ON DRAWINGS.

EPOXY ANCHOR EMBEDMENT SCHEDULE	
BAR SIZE	MINIMUM EMBEDMENT LENGTH (INCHES) U.N.O.
#4	4 1/4
#5	5
#6	6 3/4
#7	7 3/4
#8	9
#9	10 1/8
#10	11 1/4
#11	12 3/8

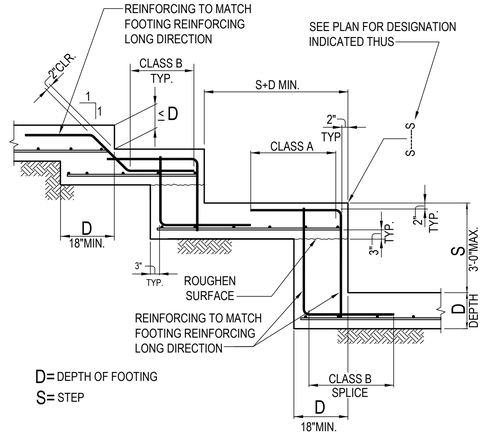
SIMPSON "SET" ADHESIVE ANCHORS DESIGNATION

(I.C.B.O. REPORT ESR-2508)



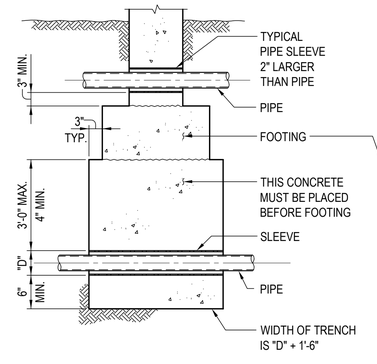
TYPICAL
SIMPSON EPOXY ANCHOR SCHEDULE 4

TC107_16

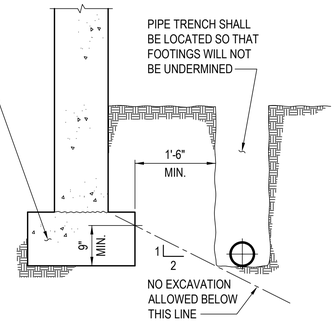


TYPICAL STEPPED FOOTING DETAIL 2

TCF201



PIPES THRU FOUNDATION



PIPE AND TRENCH AT FOUNDATION

TYPICAL PIPE THRU FOUNDATION DETAILS 1

TCF101

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No. 2850
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STATE OF CALIFORNIA

01/09/19

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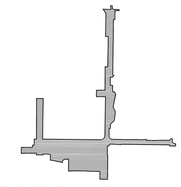

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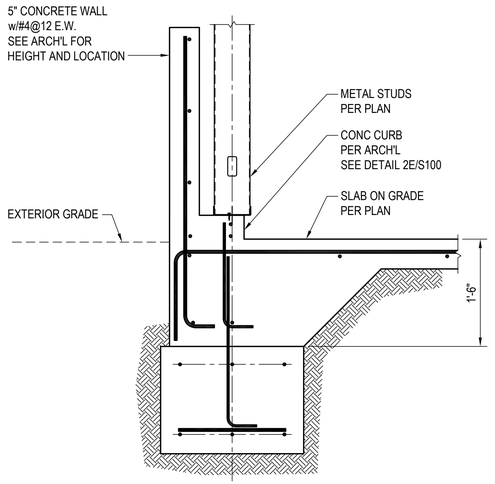
PROJECT NO.	GRUEN # 8345

TYPICAL
CONCRETE DETAILS

SHEET TITLE

S101

SHEET NO.



NOTE:
FOR BALANCE OF INFORMATION NOT SHOWN SEE 7/S101.

KIOSK FOOTING DETAIL 1
1"=1'-0"

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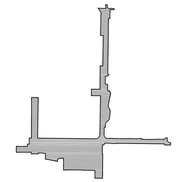

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CHECKED BY	–
SCALE	AS NOTED
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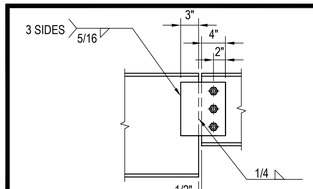
PROJECT NO.	GRUEN # 8345

TYPICAL
CONCRETE DETAILS

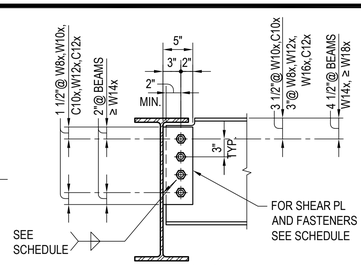
SHEET TITLE

S102

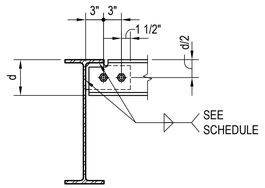
SHEET NO.



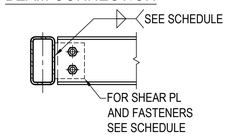
TYPICAL
BEAM SPLICE



TYPICAL
BEAM CONNECTION



TYPICAL W6x&C6x
BEAM CONNECTION

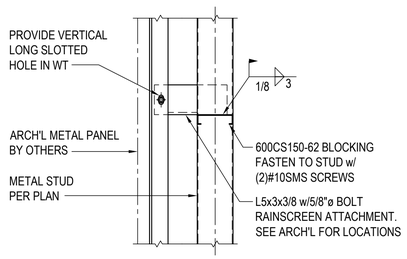


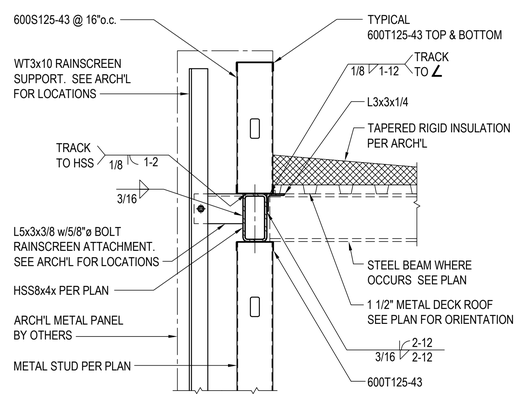
TYPICAL BEAM TO HSS
BEAM CONNECTON

CONNECTION SCHEDULE

BEAM SIZE	A325-N	SHEAR PLATE "t"	WELD BOTH SIDES	ASD AVAILABLE STRENGTH	LFRD AVAILABLE STRENGTH
W6x, C6x	(2)3/4"ø	3/8	5/16	4.9k	7.4k
W8x, W10x C8x, C10x	(2)3/4"ø	3/8	5/16	8.8k	13.1k
W12x, W14x C12x	(3)7/8"ø	3/8	5/16	23.9k	35.8k
W16x, W18x	(4)7/8"ø	3/8	5/16	45.5k	68.3k
W21x	(5)7/8"ø	3/8	5/16	63.2k	94.8k
W24x	(6)7/8"ø	3/8	5/16	80.7k	121.0k
W27x	(7)7/8"ø	1/2	5/16	98.2k	147.3k
W30x	(8)7/8"ø	1/2	5/16	115.3k	173.0k
W33x	(9)7/8"ø	1/2	5/16	132.4k	198.5k
W36x	(10)1"ø	1/2	5/16	166.7k	250.0k

TYPICAL BEAM CONNECTION SCHEDULE 7
TS101 MOD.

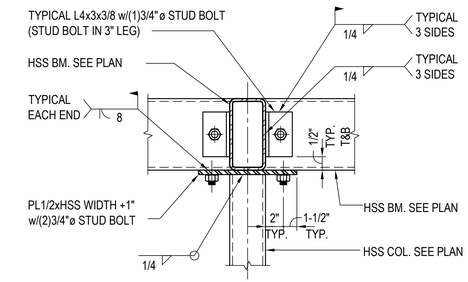




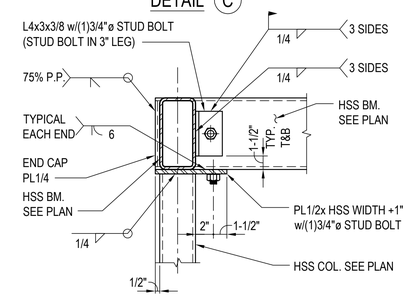
NOTE:
FOR SCREEN LOWER SUPPORT,
SEE DETAIL 8/S120

LOWER SCREEN ATTACHMENT DETAIL 8
1"=1'-0"

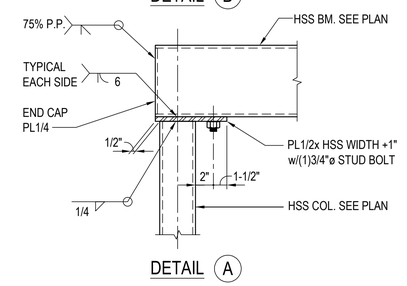
SECTION AT KIOSK ROOF 6
1"=1'-0"



DETAIL (C)

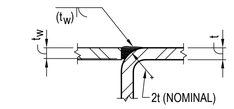


DETAIL (B)



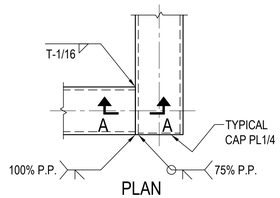
DETAIL (A)

TYPICAL HSS BEAM TO COLUMN CONNECTION DETAIL 4
TSC302



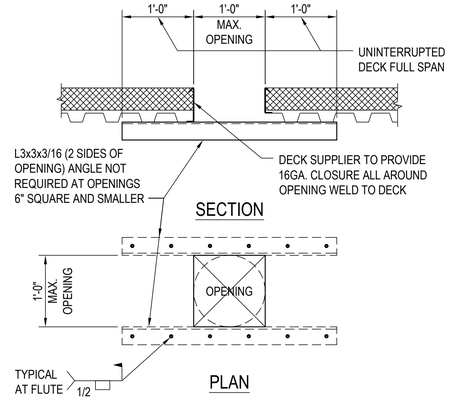
NOTE:
ALL WELDS SHALL BE FLARE-BEVEL AND (t_w) SHALL BE 1/16" LESS THAN THE THINNEST PART JOINED.

SECTION A-A



PLAN

TYPICAL HSS TO HSS CONNECTION DETAIL 3
TSG602

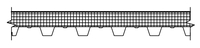


SECTION

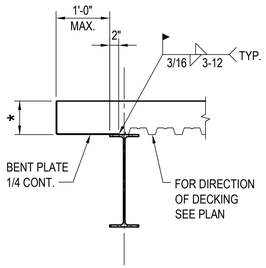
PLAN

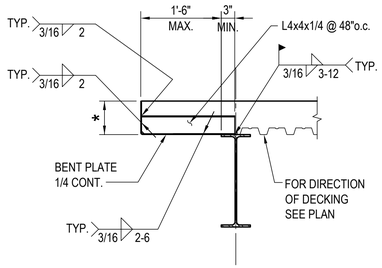
TYPICAL OPENINGS IN ROOF UP TO 1'-0" SQUARE 2
TSD403

STEEL DECK NOTES:
1. ALL STEEL DECKING SHALL CONFORM TO IAPMO REPORT #0217.
2. DEPUTY INSPECTOR SHALL BE REQUIRED FOR LIGHT GAGE WELDING ON STEEL DECK.
3. DEPUTY INSPECTOR SHALL BE REQUIRED FOR STUDS USED ON STEEL DECK.
4. ALL STEEL DECKING SHALL BE 38 KSI. MINIMUM.
5. SLABS EXPOSED TO WEATHER OR MOISTURE SENSITIVE COVERINGS SHALL BE PROVIDED WITH POSITIVE VENTED STEEL DECK.



D1





* VERIFY HEIGHT OF BENT PLATE w/ARCHITECT.

MARK	STEEL DECK TYPE	GAGE	TOTAL SLAB "t"	SLAB DESCRIPTION	STEEL DECK ATTACHMENT PATTERN				MAXIMUM UNSHORED SPAN			REMARKS
					PERPENDICULAR TO SUPPORT		PARALLEL TO SUPPORT	SEAMS				
					ENDS	INTERMEDIATE			SINGLE	DOUBLE	TRIPLE	
D1	VERCO PLB OR EQUAL	18	VARIES	TAPERED RIGID INSULATION OVER VENTED STEEL ROOF DECK	#12 SCREWS @ 36/7/4	#12 SCREWS @ 36/7/4	#12 SCREWS @ 36/7/4	VSC2 @24"o.c.	9'-0"	11'-6"	11'-6"	

TYPICAL PERIMETER OF NON-CONCRETE ROOF EDGE 5
TSD306

TYPICAL SLAB AND STEEL DECK SCHEDULE 1
TSD101_12

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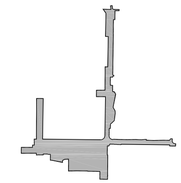

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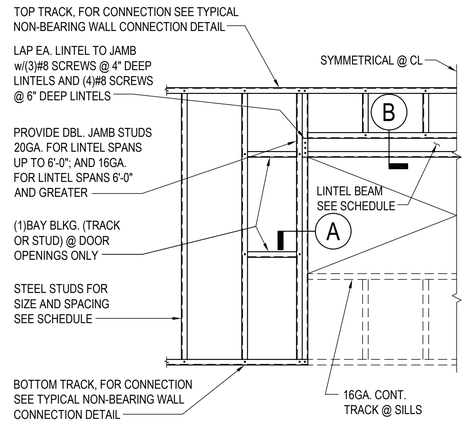
TYPICAL
STEEL DETAILS

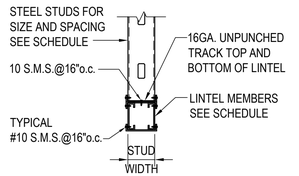
SHEET TITLE

S120

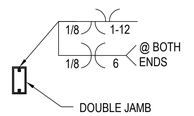
SHEET NO.



ELEVATION



DETAIL B



DETAIL A

LINTEL SCHEDULE U.N.O.	
SPAN	LINTEL SIZE
≤ 6'-0"	(2)4"x16 GA. METAL CEE STUDS
< 6'-0" ≤ 8'-0"	(2)6"x18 GA. METAL CEE STUDS
< 8'-0" ≤ 10'-0"	(2)6"x16 GA. METAL CEE STUDS

TYPICAL METAL STUD WALL FRAMING AT OPENING DETAIL 1

TSW103

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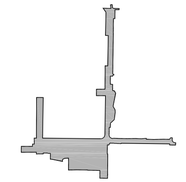

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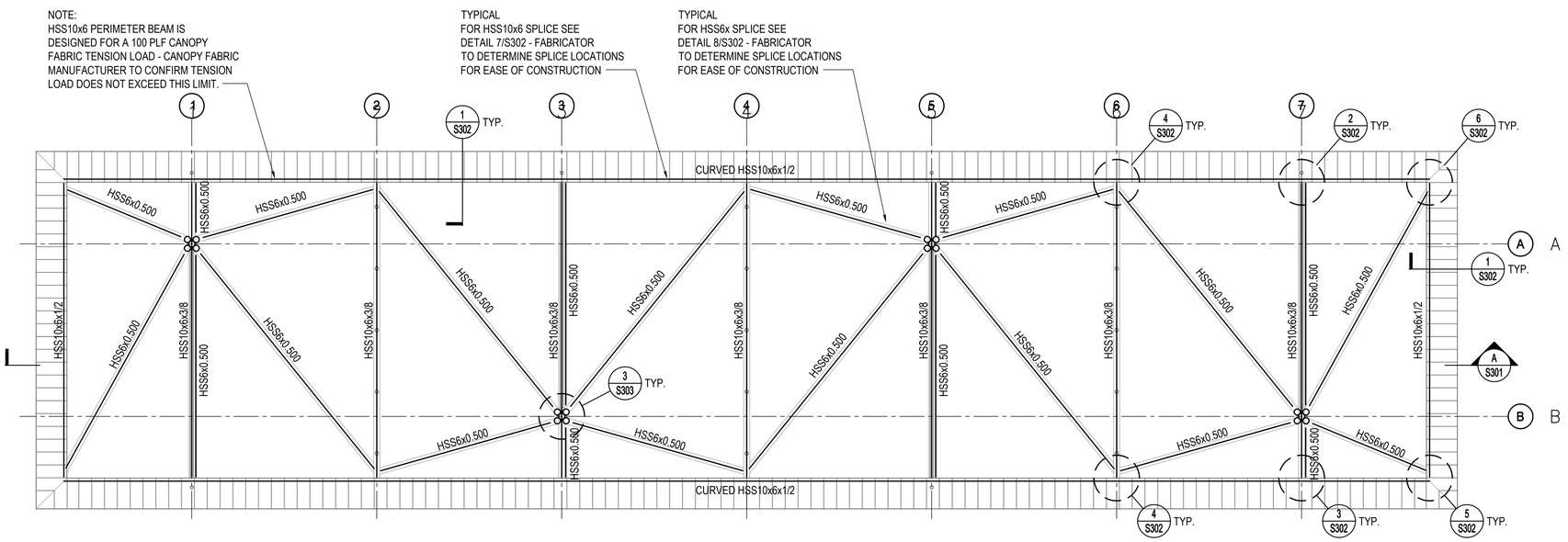
TYPICAL STEEL DETAILS

SHEET TITLE

S121

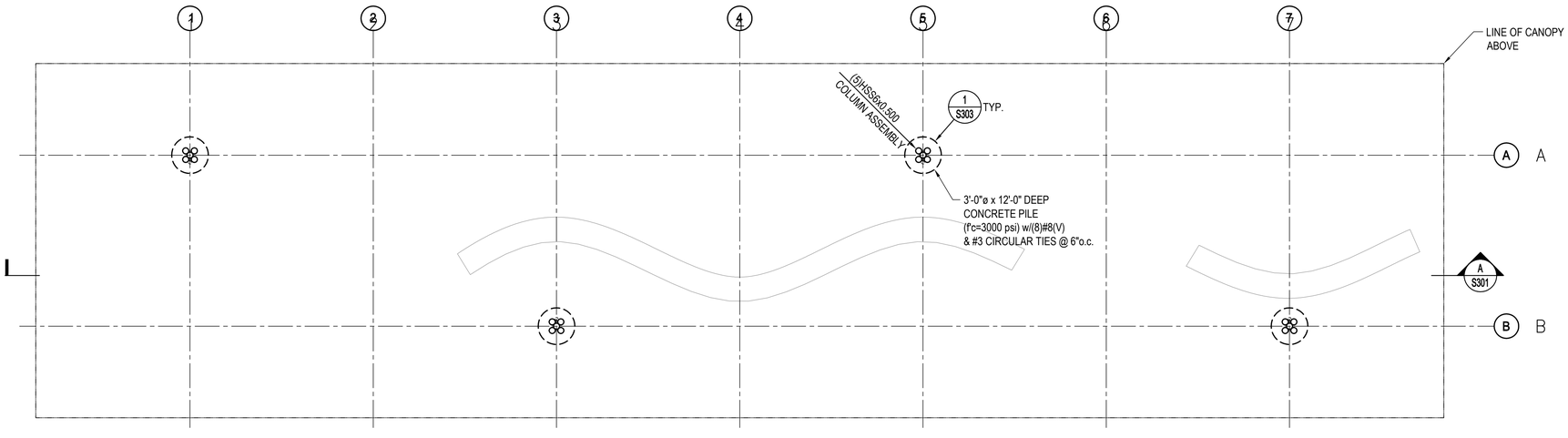
SHEET NO.



NOTES:
1. SEE ARCHITECTURAL FOR DIMENSIONS, ELEVATIONS, ETC. NOT SHOWN ON STRUCTURAL PLANS.
2. SEE ARCHITECTURAL FOR AESS STEEL SPECIFICATIONS AND FINISHES.
3. STRUCTUCTURAL PLANS REPRESENTS THE REQUIRED STRUCTURAL FRAMEWORK
   SEE ARCHITECTURAL PLANS FOR ALL SUPPLEMENTARY STEEL, BOLTS, WELDS, CONNECTIONS ETC.
   NEEDED FOR NON-STRUCTURAL ELEMENTS.
4. CANOPY FABRIC CONNECTIONS ARE THE DESIGN AND DETAILING RESPONSIBILITY OF THE FABRIC MANUFACTURER
   SUBMIT SHOP DRAWINGS AND STRUCTURAL CALCULATIONS FOR REVIEW.

CANOPY ROOF FRAMING PLAN (B)

3/16"=1'-0"



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   SEE ARCHITECTURAL PLANS FOR ALL SUPPLEMENTARY STEEL, BOLTS, WELDS, CONNECTIONS ETC.
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CANOPY FOUNDATION PLAN (A)

3/16"=1'-0"

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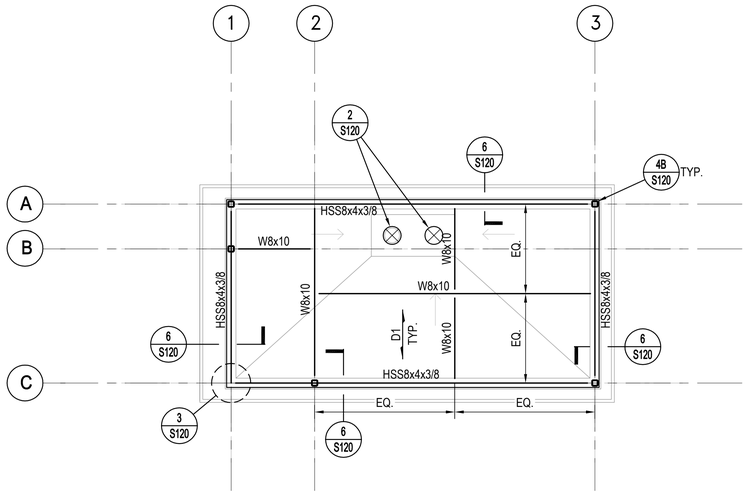
CANOPY FOUNDATION AND ROOF FRAMING PLANS

SHEET TITLE

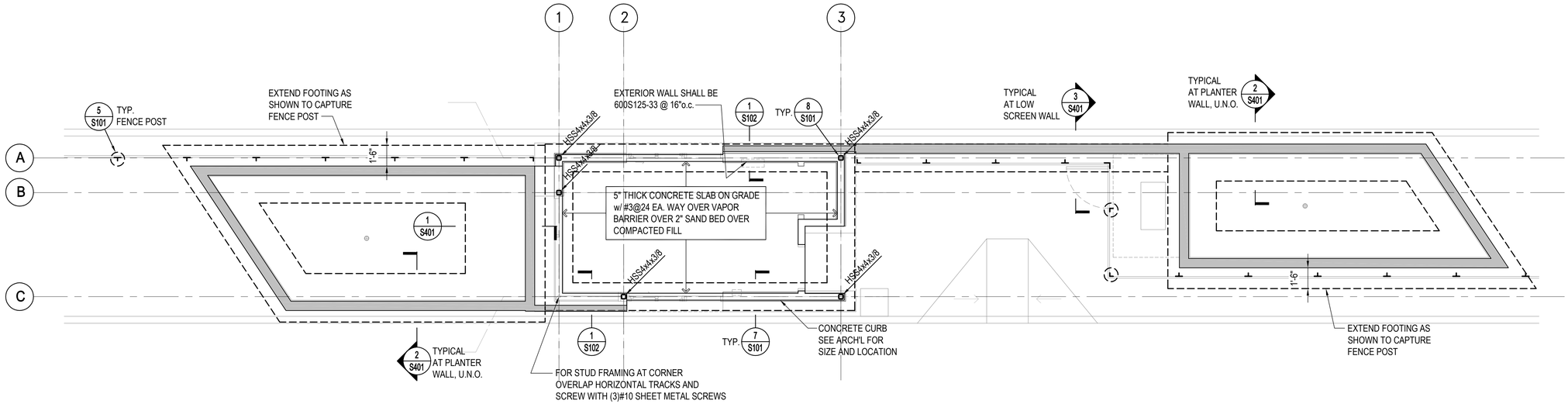
S200

SHEET NO.



NOTE:
TOP OF STEEL SHALL BE +10'-6" ABOVE FINISH FLOOR (CONFIRM WITH ARCH'L).
ADD TAPERED INSULATION OVER TOP OF DECKING
TO ACHIEVE ROOF SLOPES.

KIOSK ROOF PLAN B
1/4"=1'-0"



KIOSK FOUNDATION PLAN A
1/4"=1'-0"

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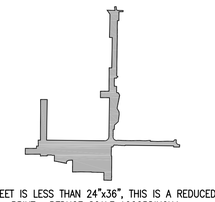

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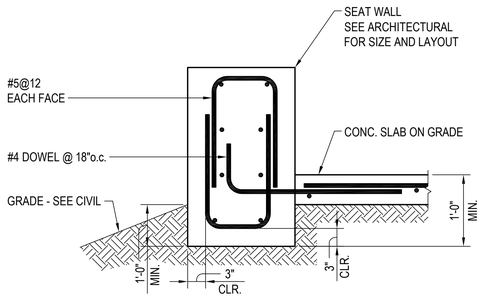
KIOSK FOUNDATION AND ROOF FRAMING PLANS

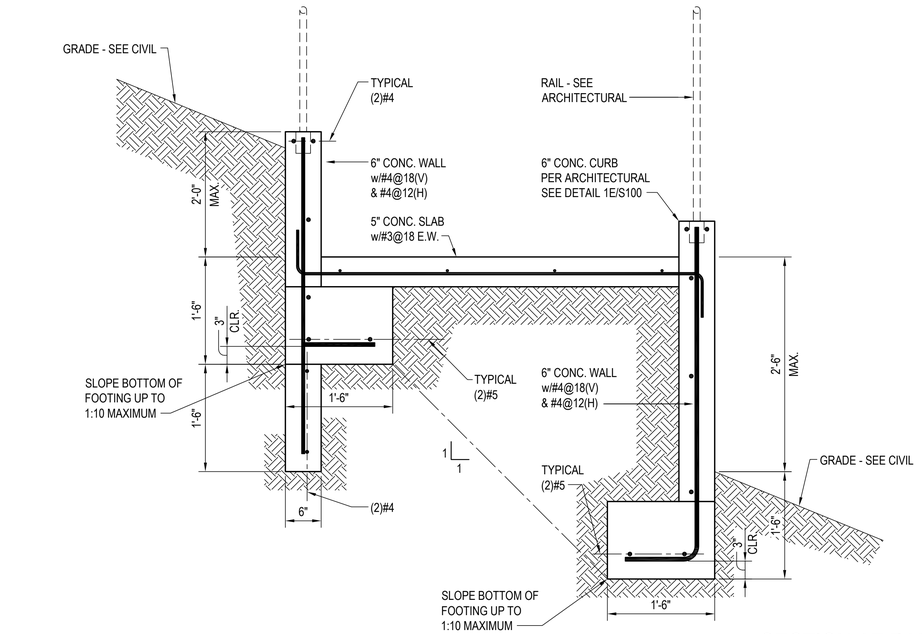
SHEET TITLE

S201

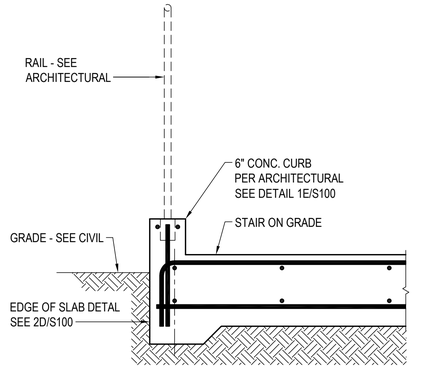
SHEET NO.



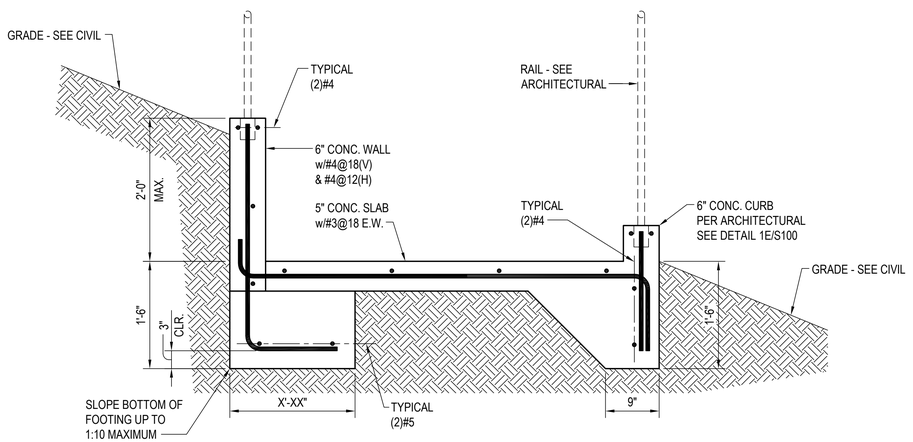
SEAT WALL AT SLOPED GRADE 4
1"=1'-0"



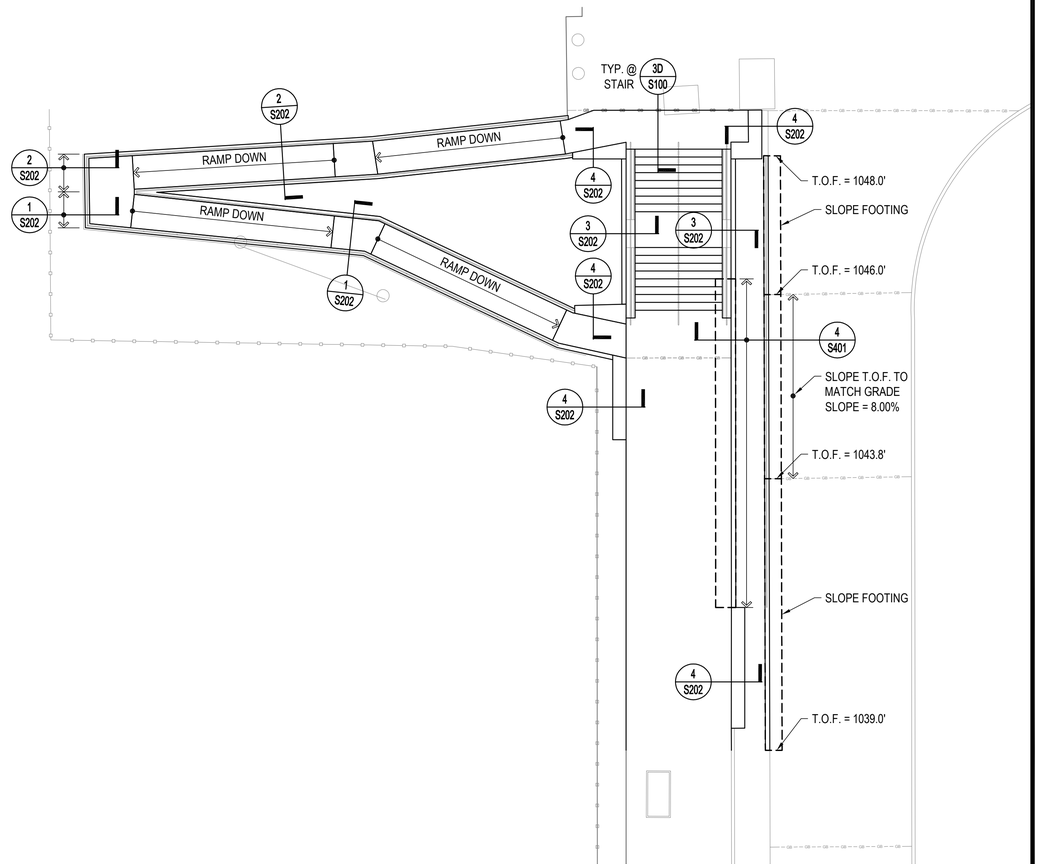
SECTION AT RAMP 1
1"=1'-0"



DETAIL AT STAIR 3
1"=1'-0"



SECTION AT RAMP 2
1"=1'-0"



PLAN AR STAIR/RAMP A
3/32"=1'-0"

MOBILITY HUB
AND CENTRAL CAMPUS
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No. 2850
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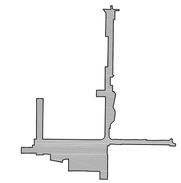

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BASE FILE NAMES	–
DRAWN BY	–
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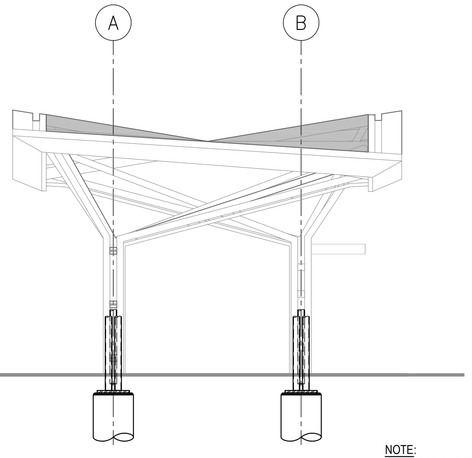
SCALE	AS NOTED
DATE	03/23/2018
PROJECT NO.	GRUEN # 8345

HARDSCAPE FRAMING
PLAN AND DETAILS

SHEET TITLE

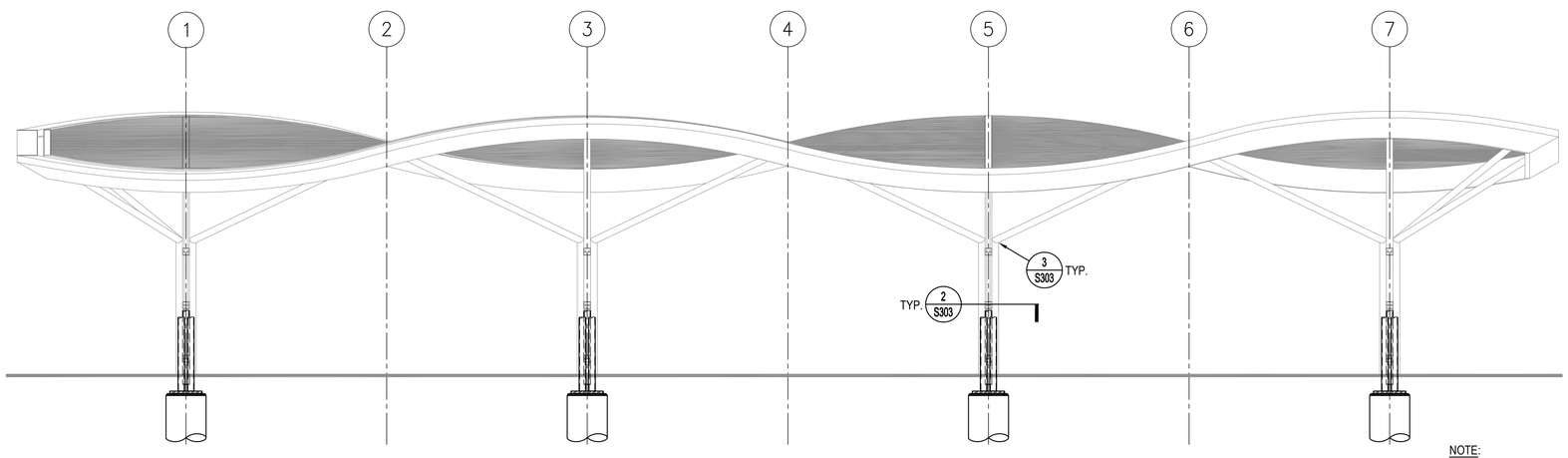
S202

SHEET NO.



NOTE:
TYPICAL SEE PLAN FOR CANOPY SIZES.

CANOPY SECTION B
3/16"=1'-0"



NOTE:
TYPICAL SEE PLAN FOR CANOPY SIZES.

CANOPY ELEVATION A
3/16"=1'-0"

MOBILITY HUB
AND CENTRAL CAMPUS
LINKAGES

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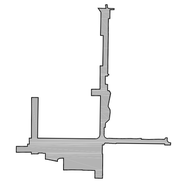

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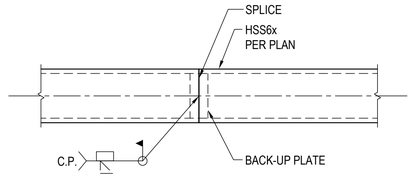
DATE	03/23/2018
PROJECT NO.	GRUEN # 8345

CANOPY ELEVATION
AND SECTIONS

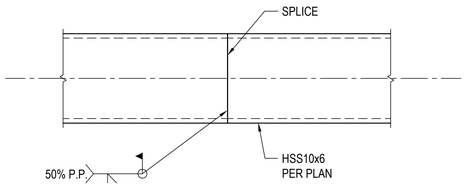
SHEET TITLE

S301

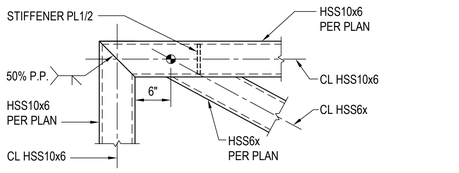
SHEET NO.



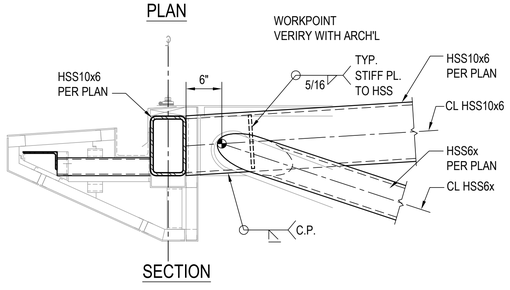
HSS6x SPICE DETAIL 8
1 1/2"=1'-0"



HSS10x6 SPICE DETAIL 7
1 1/2"=1'-0"



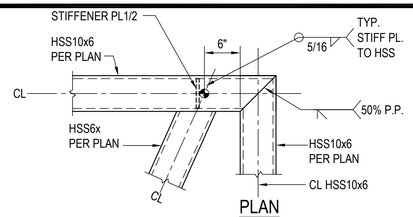
PLAN



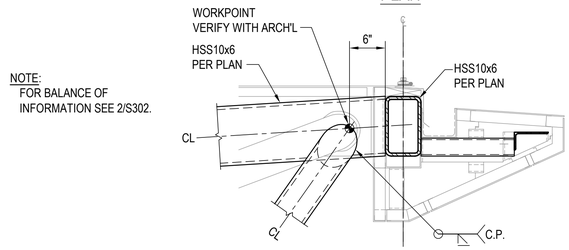
SECTION

NOTE:
FOR BALANCE OF INFORMATION SEE 2/S302.

CANOPY BEAM DETAIL 6
1"=1'-0"



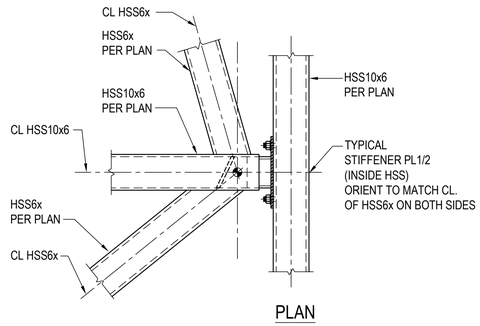
PLAN



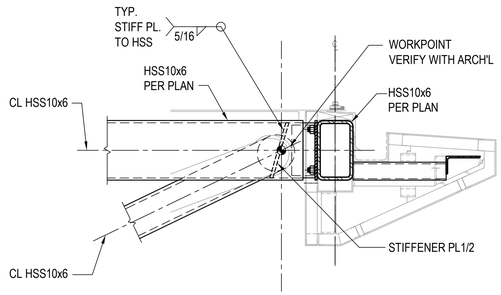
SECTION

NOTE:
FOR BALANCE OF
INFORMATION SEE 2/S302.

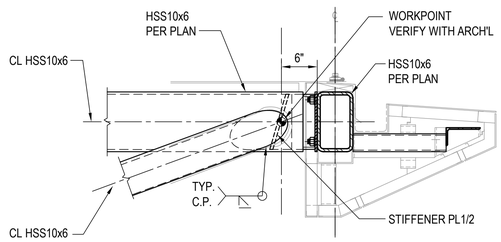
CANOPY BEAM DETAIL 5
1"=1'-0"



PLAN



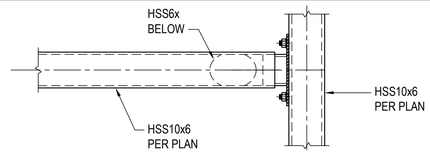
SECTION



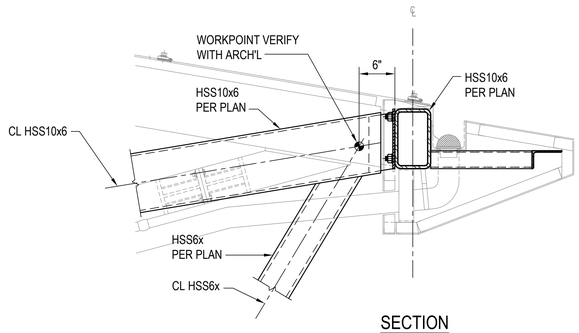
SECTION

NOTE:
FOR BALANCE OF INFORMATION SEE 2/S302.

CANOPY BEAM DETAIL 4
1"=1'-0"



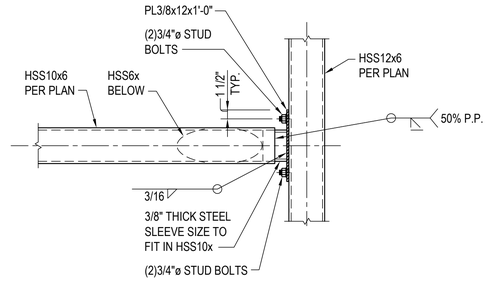
PLAN



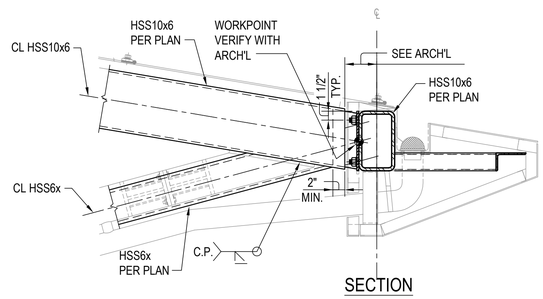
SECTION

NOTE:
FOR BALANCE OF INFORMATION SEE 2/S302.

CANOPY BEAM DETAIL 3
1"=1'-0"



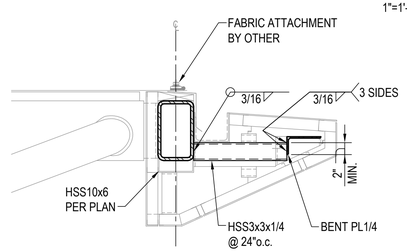
PLAN



SECTION

NOTE:
FOR BALANCE OF INFORMATION SEE 1/S302.

CANOPY BEAM DETAIL 2
1"=1'-0"



CANOPY EDGE BEAM DETAIL 1
1"=1'-0"

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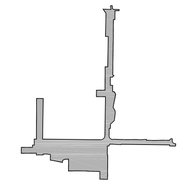

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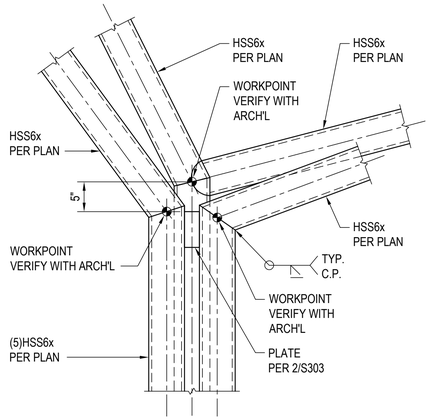
PROJECT NO.	GRUEN # 8345

CANOPY DETAILS

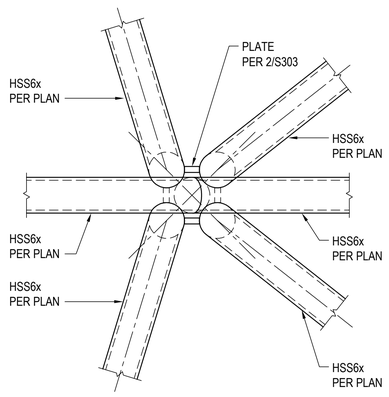
SHEET TITLE

S302

SHEET NO.



ELEVATION

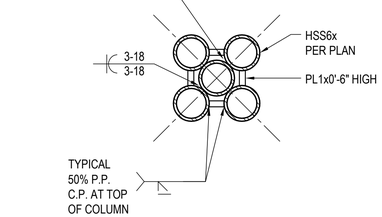


PLAN

CANOPY COLUMN DETAIL 3

1"=1'-0"

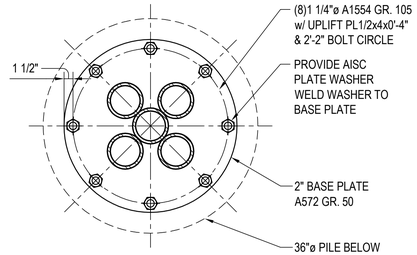
TYPICAL
APPLY FILLER AS REQUIRED
BETWEEN WELDS TO ACHIEVE
ARCH'L PROFILE OF JOINT



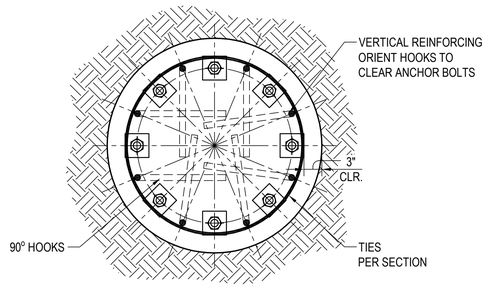
NOTE:
COORDINATE CONNECTION LOCATIONS WITH ARCHITECTURE.

CANOPY COLUMN DETAIL 2

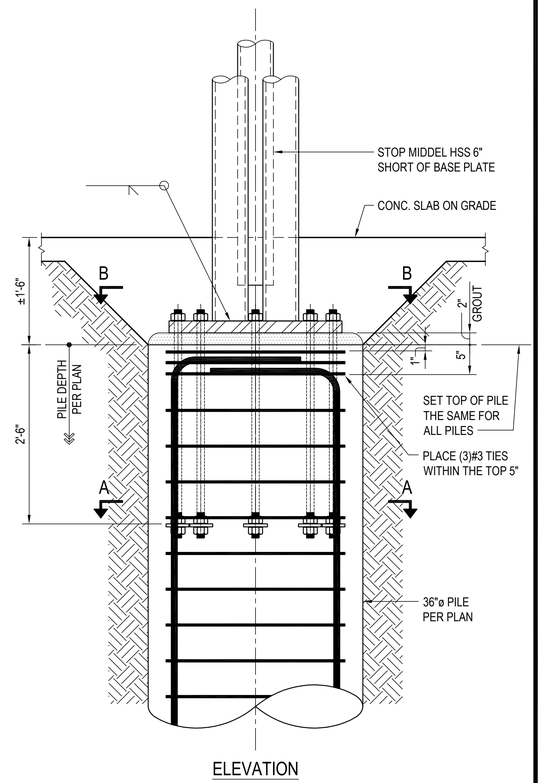
1"=1'-0"



BASE PLATE PLAN B-B



PILE SECTION A-A



ELEVATION

CANOPY BASE PLATE DETAIL 1

1"=1'-0"

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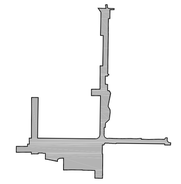

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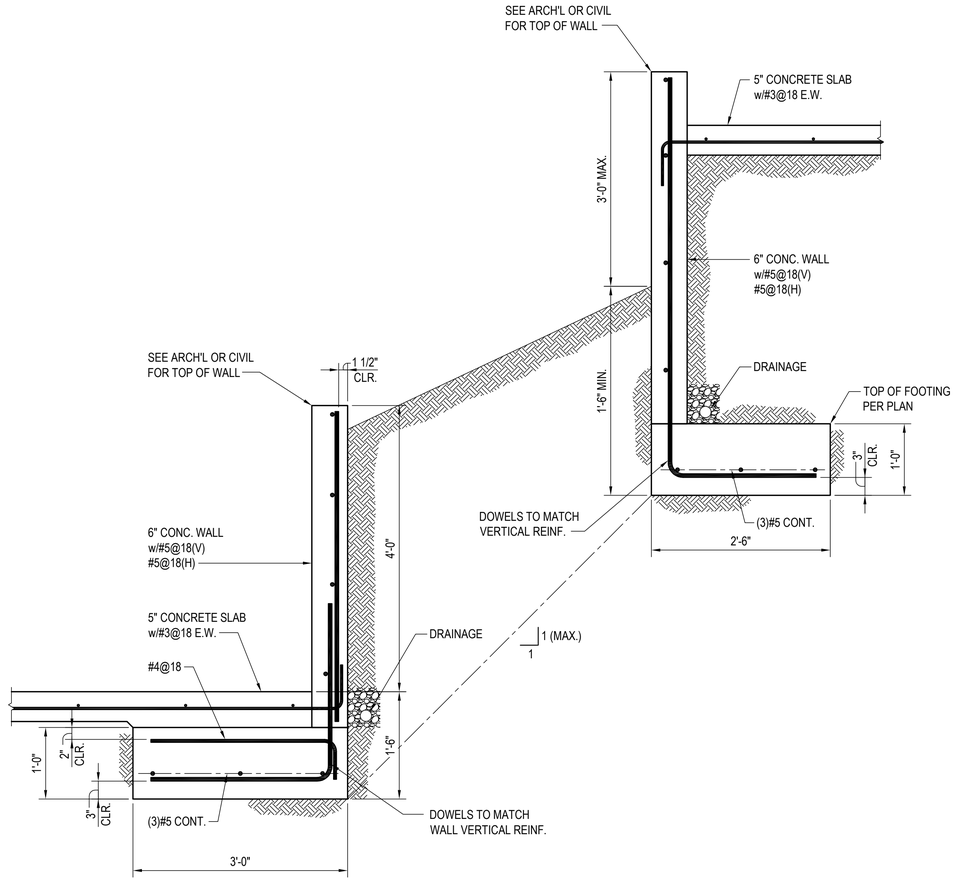
CANOPY DETAILS

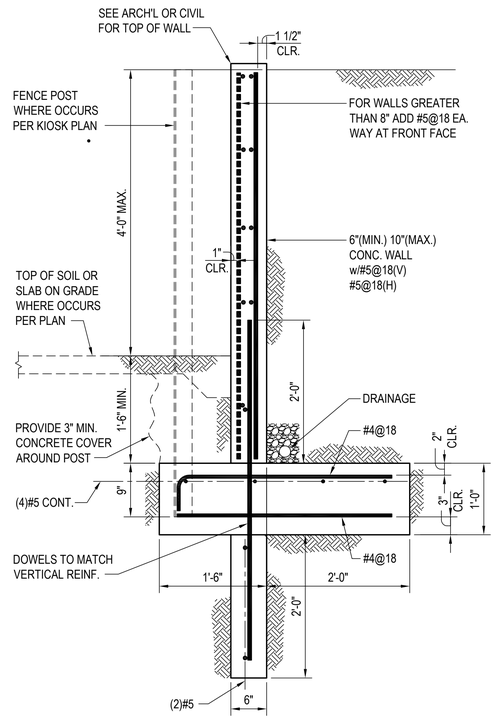
SHEET TITLE

S303

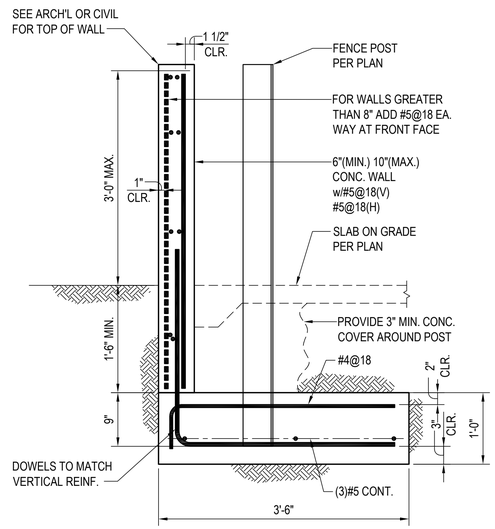
SHEET NO.



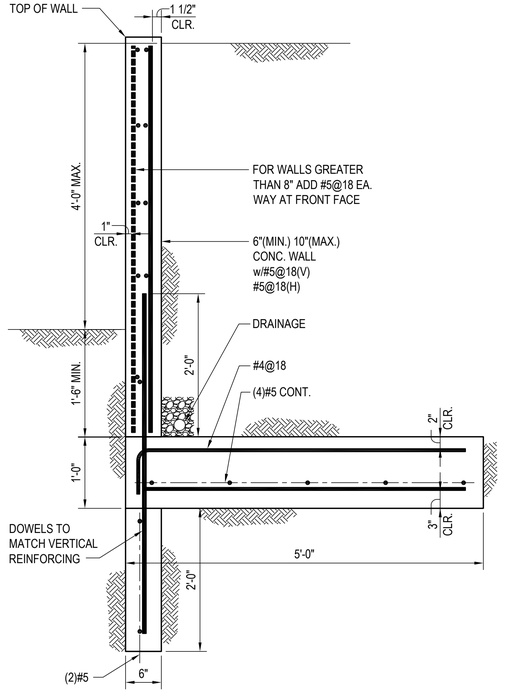
SECTION 4
1"=1'-0"



4'-0" SITE RETAINING WALL
1"=1'-0" 2



WALL AT KIOSK
1"=1'-0" 3



4'-0" SITE RETAINING WALL
1"=1'-0" 1

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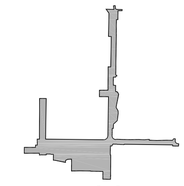

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SCALE	AS NOTED
DATE	03/23/2018
PROJECT NO.	GRUEN # 8345

RETAINING WALLS

SHEET TITLE

S401

SHEET NO.

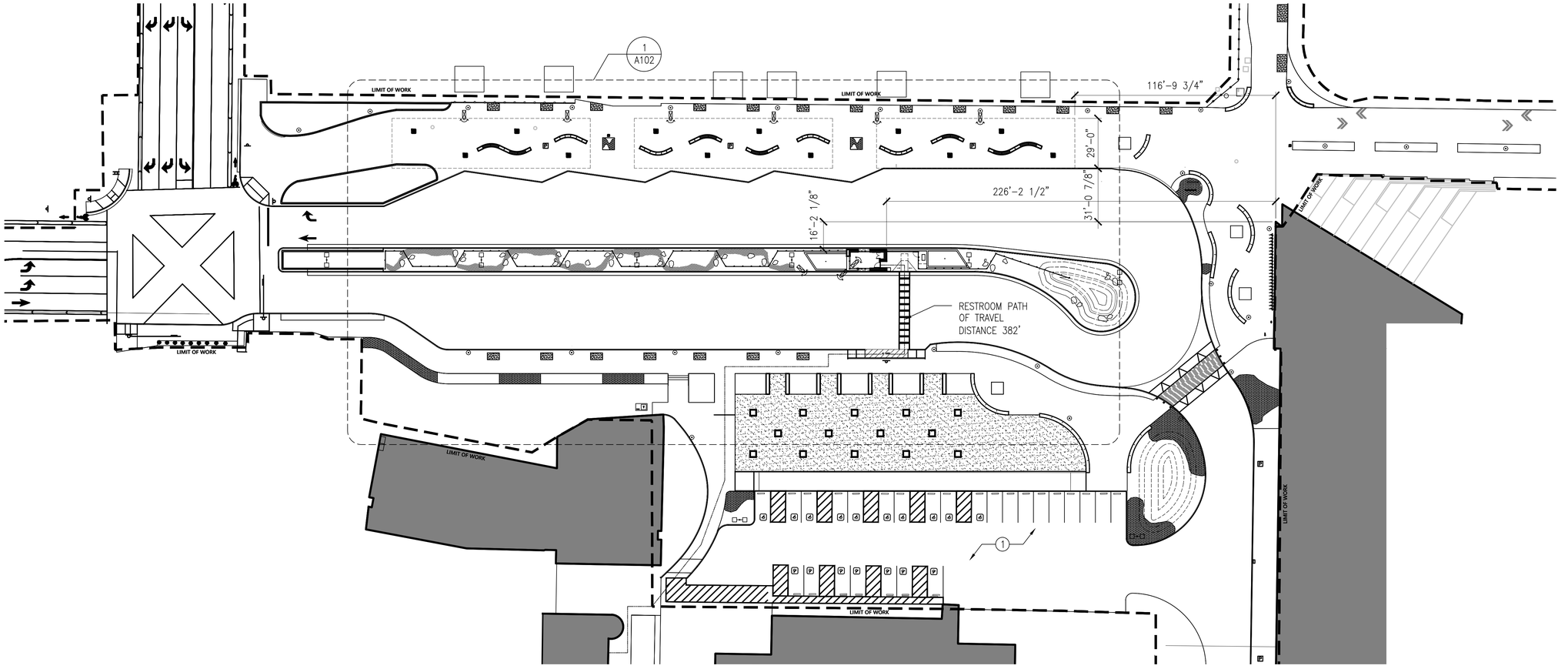
KEYNOTES:

1. NEW PARKING LOT, SEE CIVIL

LEGEND:

RESTROOM PATH OF TRAVEL

EXISTING BUILDING



1 SITE PLAN

SCALE: 1/32" = 1'-0"

NORTH

MOBILITY HUB
AND CENTRAL CAMPUS
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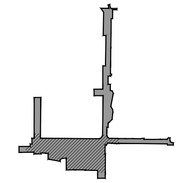

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	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES

DRAWN BY

CHECKED BY

SCALE SHEET

DATE

PROJECT NO. GRUEN # 8345

SITE PLAN

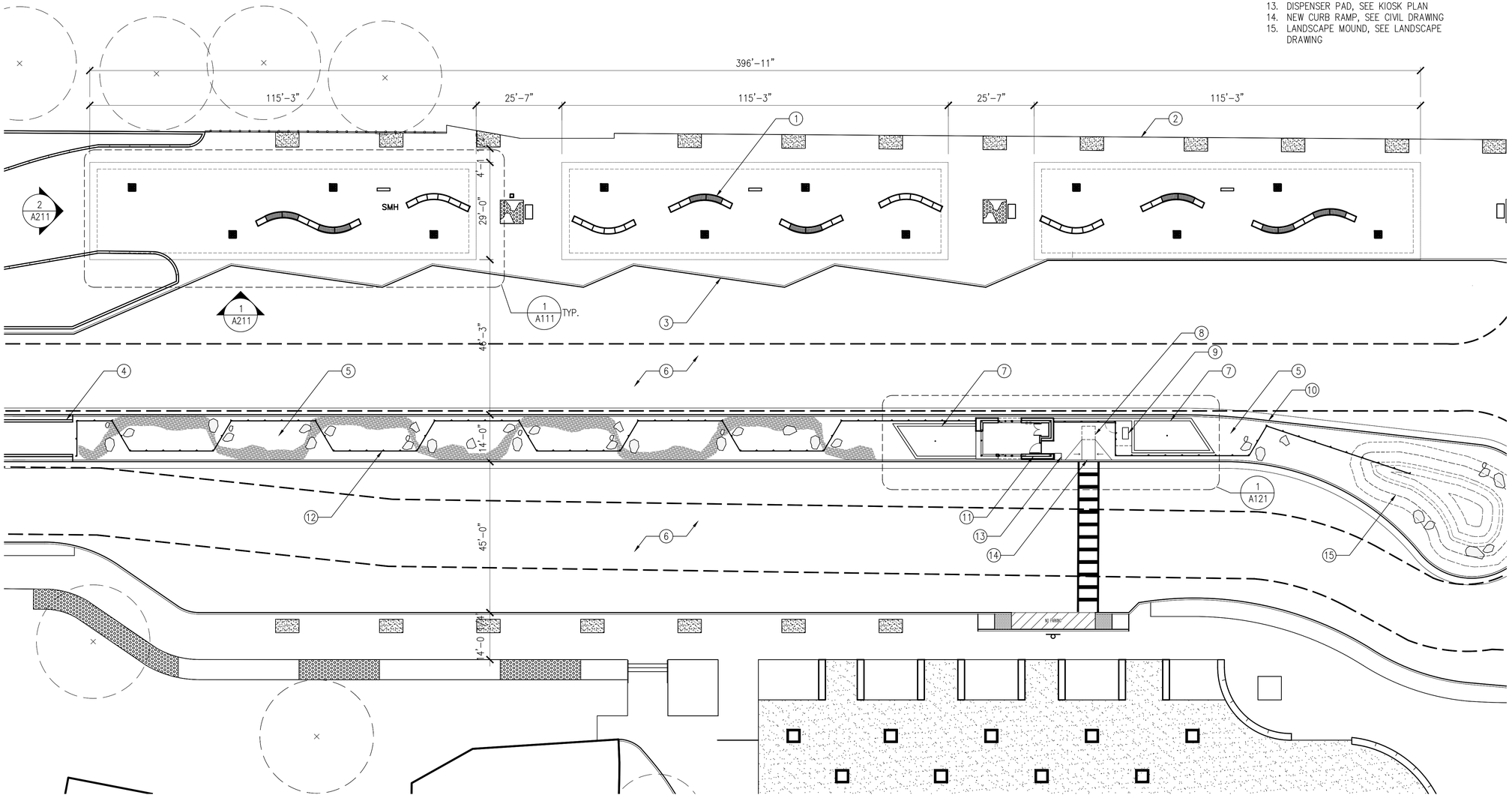
SHEET TITLE

A101

SHEET NO.

KEYNOTES:

1. SITE SEATING, SEE LANDSCAPE DRAWING
2. SIDEWALK, SEE CIVIL DRAWING
3. TYPICAL BUS BAYS, SEE CIVIL DRAWING
4. LANDSCAPE WALL, SEE LANDSCAPE DRAWING
5. PLANTED AREA, SEE LANDSCAPE DRAWING
6. TRAVEL LANES, SEE CIVIL DRAWING
7. PLANTER, SEE LANDSCAPE DRAWING
8. CONCRETE, SEE LANDSCAPE DRAWING
9. CONDENSER PAD, SEE KIOSK PLAN
10. 6" CONCRETE CURB, SEE LANDSCAPE DRAWING
11. KIOSK, SEE ENLARGED PLANS
12. MEDIAN FENCE AND POSTS, SEE LANDSCAPE DRAWING
13. DISPENSER PAD, SEE KIOSK PLAN
14. NEW CURB RAMP, SEE CIVIL DRAWING
15. LANDSCAPE MOUND, SEE LANDSCAPE DRAWING



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

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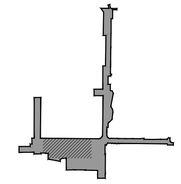

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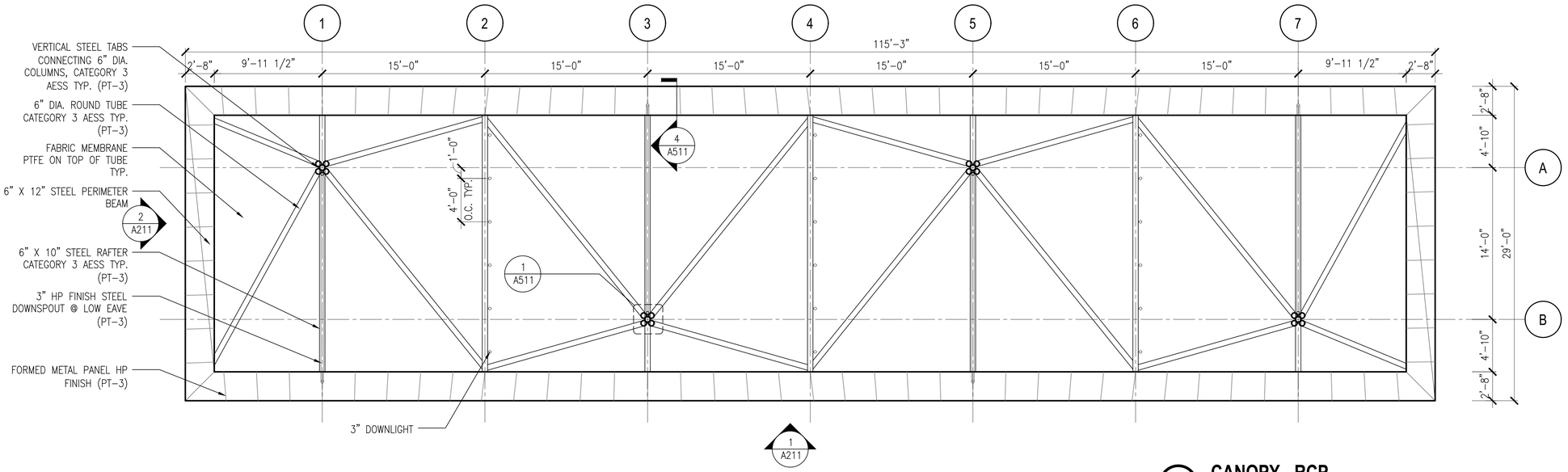
SCALE	SHEET
DATE	
PROJECT NO.	GRUEN # 8345

SITE PLAN

SHEET TITLE

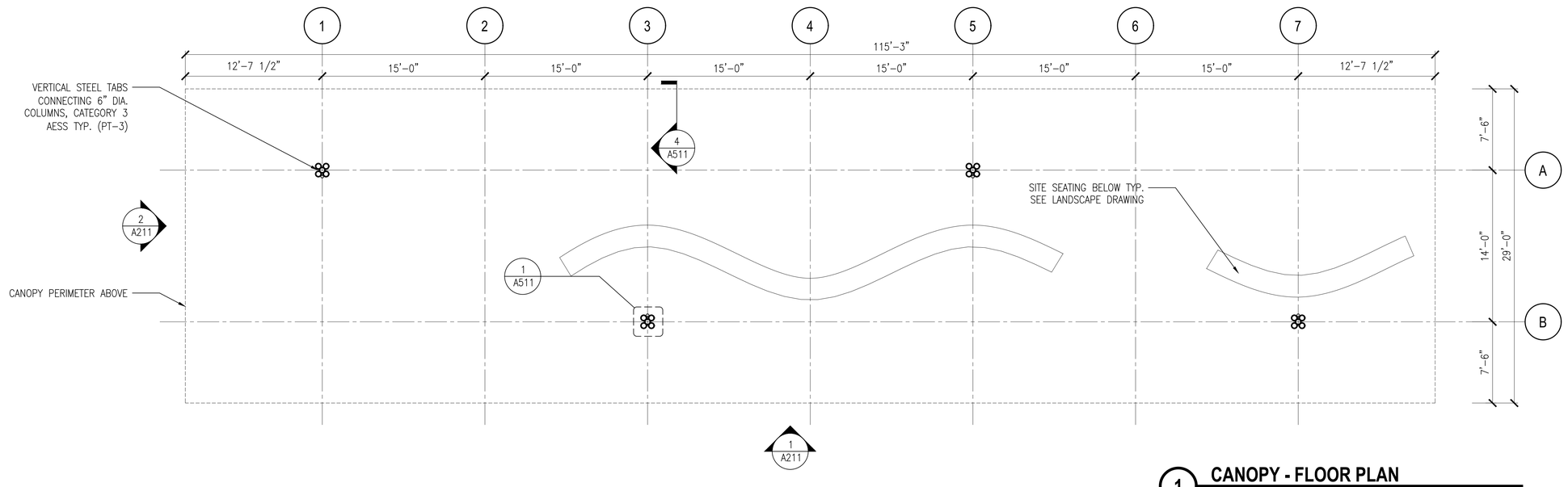
A102

SHEET NO.



2 CANOPY - RCP

SCALE: 3/16" = 1'-0"



1 CANOPY - FLOOR PLAN

SCALE: 3/16" = 1'-0"

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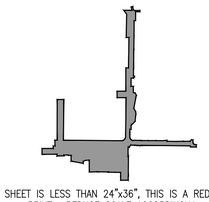

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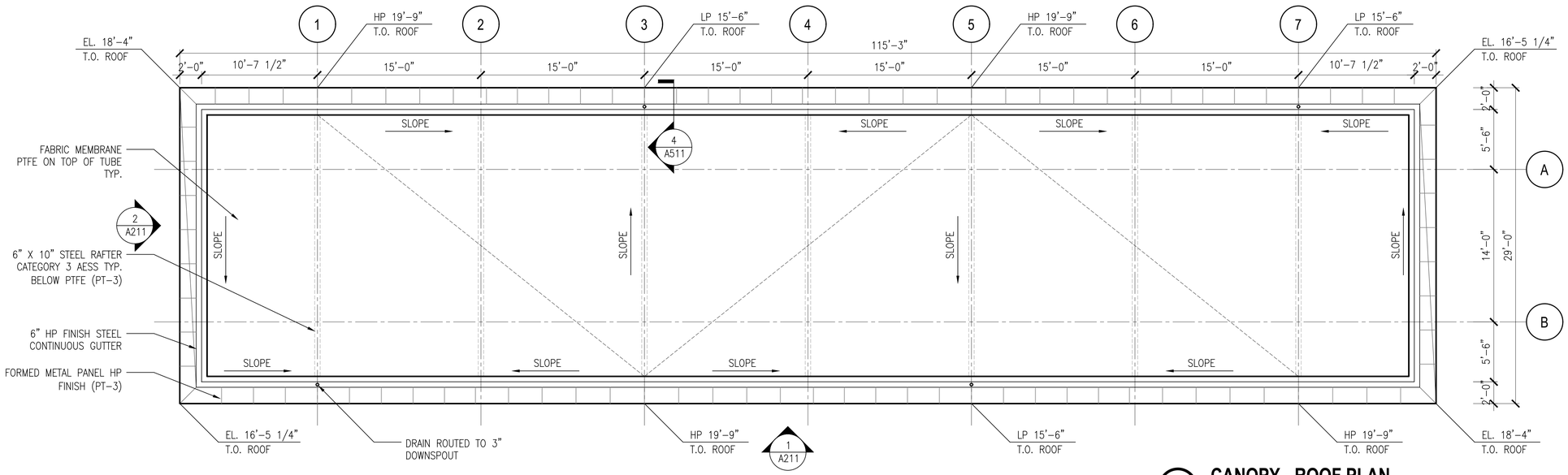
PROJECT NO. GRUEN # 8345

CANOPY - PLAN

SHEET TITLE

A111

SHEET NO.



1 CANOPY - ROOF PLAN

SCALE: 3/16" = 1'-0"

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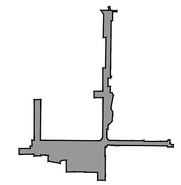

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PROJECT NO. GRUEN # 8345

CANOPY - PLAN

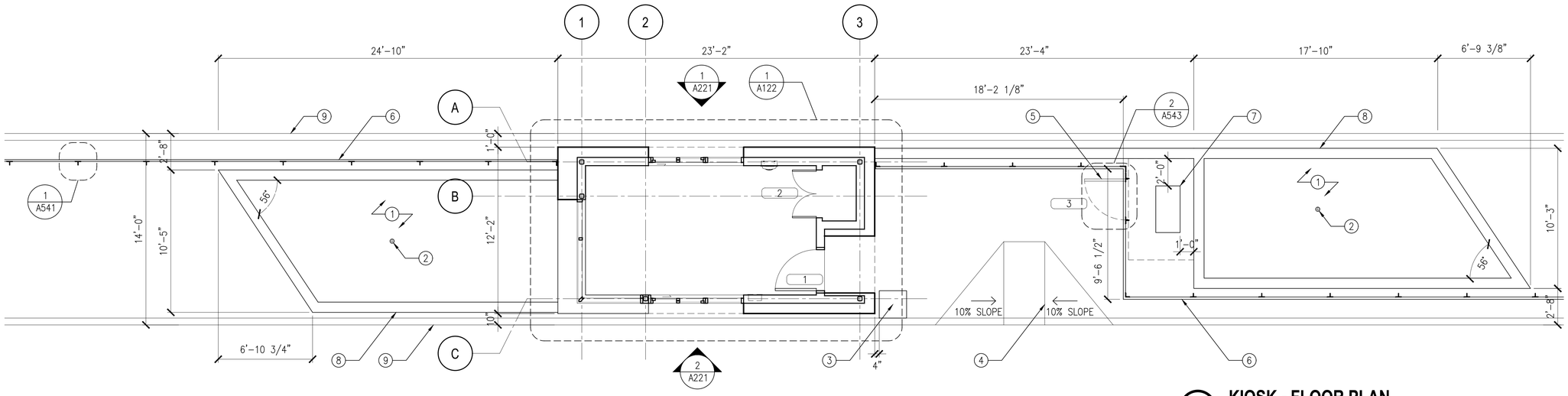
SHEET TITLE

A112

SHEET NO.

KEYNOTES:

1. PLANTER , SEE LANDSCAPE
2. DRAIN, SEE CIVIL
3. 24"x24" CONCRETE PAD FOR TICKET DISPENSER
4. ACCESSIBLE CURB RAMP
5. PERFORATED METAL GATE
6. PERFORATED METAL FENCE
7. 41"x22" CONCRETE CONDENSER UNIT PAD
8. CONCRETE PLANTER WALL
9. CONCRETE CURB FACE



1 KIOSK - FLOOR PLAN

SCALE: 1/2" = 1'-0"

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BASE FILE NAMES

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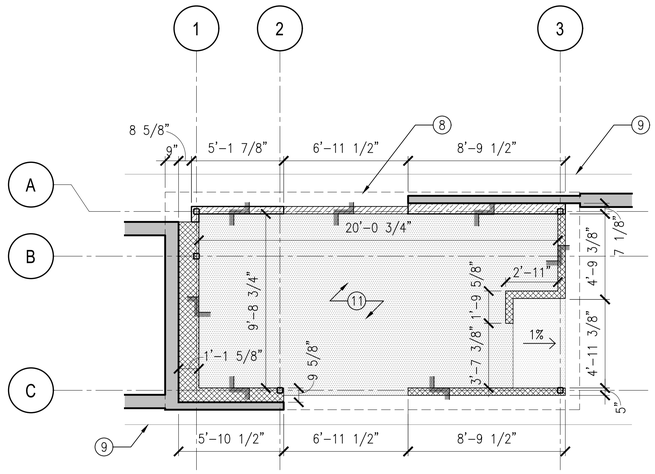
PROJECT NO. GRUEN # 8345

KIOSK PLAN

SHEET TITLE

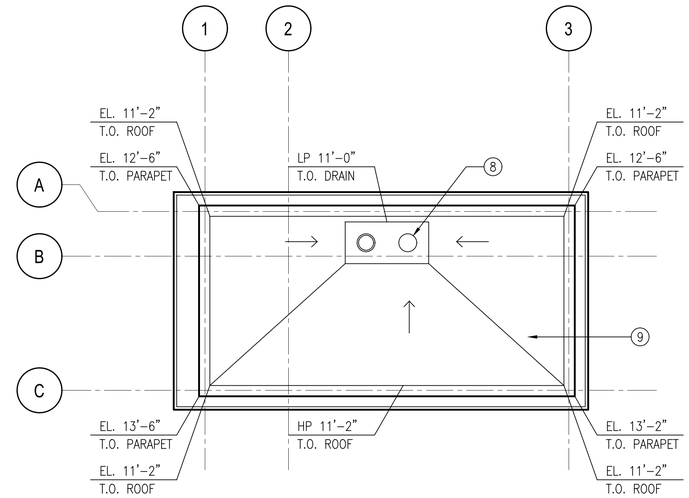
A121

SHEET NO.



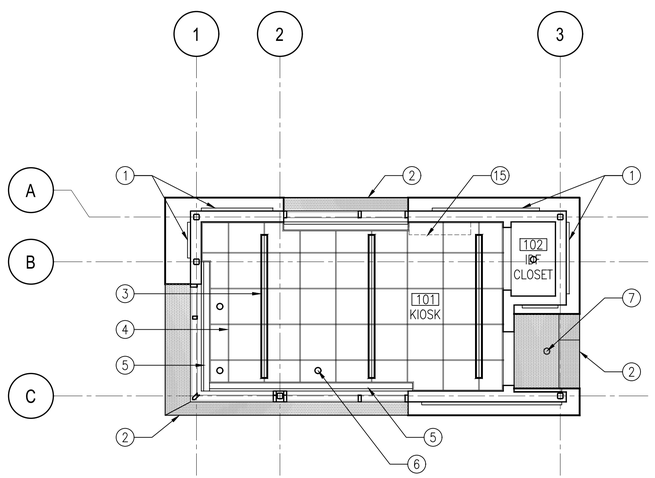
4 KIOSK - FOUNDATION PLAN

SCALE: 1/4" = 1'-0"



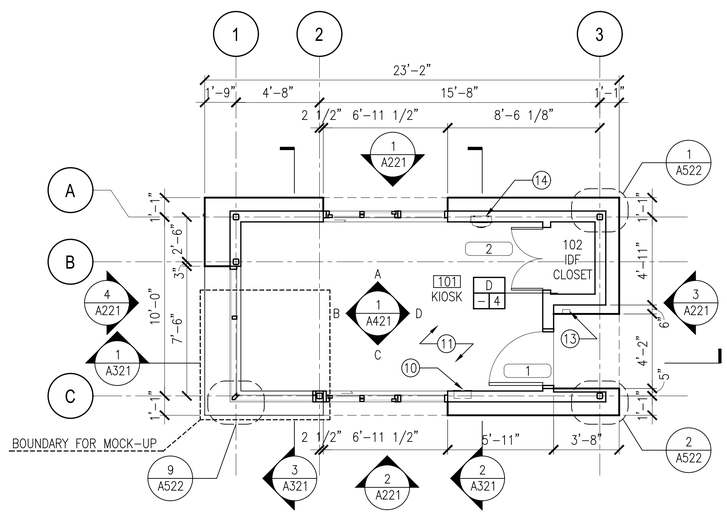
3 KIOSK - ROOF PLAN

SCALE: 1/4" = 1'-0"



2 KIOSK - REFLECTED CEILING PLAN

SCALE: 1/4" = 1'-0"



1 KIOSK - FLOOR PLAN

SCALE: 1/4" = 1'-0"

KEYNOTES:

1. LED EXTERIOR LIGHT
2. PERFORATED METAL PANEL SOFFIT
3. 8" LONG PENDANT LIGHT FIXTURES
4. 2X2 ACOUSTICAL PANEL CEILING
5. ROLLER SHADE POCKET
6. DOWNLIGHT, TYP.
7. EXTERIOR DOWN LIGHT
8. ROOF DRAIN AND OVERFLOW
9. ROOFING, SINGLE PLY MEMBRANE, SLOPE 1/4" PER 1'-0" TYP.
10. RECESSED FEC
11. POLISHED CONCRETE FLOOR
12. BUILDING PERIMETER
13. KNOX BOX
14. BOTTLE REFILLING STATION
15. HVAC UNIT

LEGEND:

- CONCRETE WALL EL.+2'-10"
- CURB HEIGHT: S.S. EL.+1'-0"
- CURB HEIGHT: S.S. EL.+0'-9"
- CURB HEIGHT: S.S. EL.+0'-3"
- SLAB HEIGHT: S.S. EL.+0'-0"

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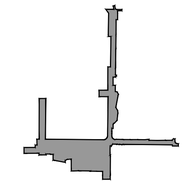

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PROJECT NO. CITY # 1493 / GRUEN # 3365

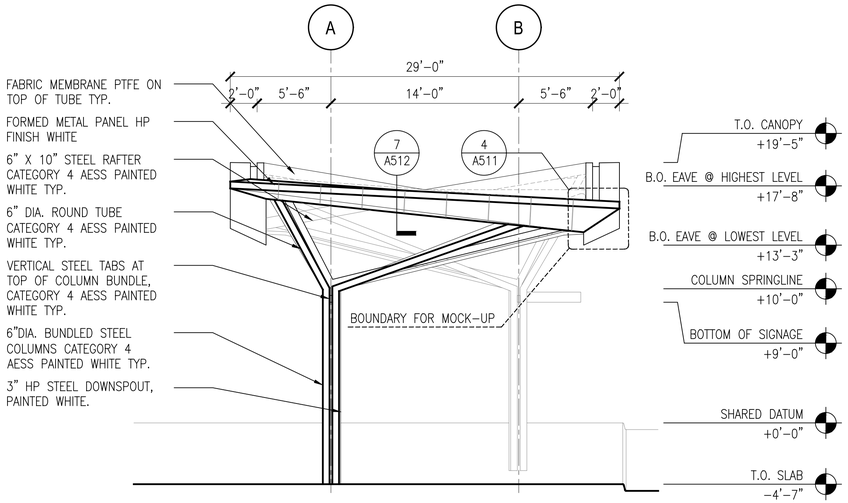
NORTH

KIOSK - PLANS

SHEET TITLE

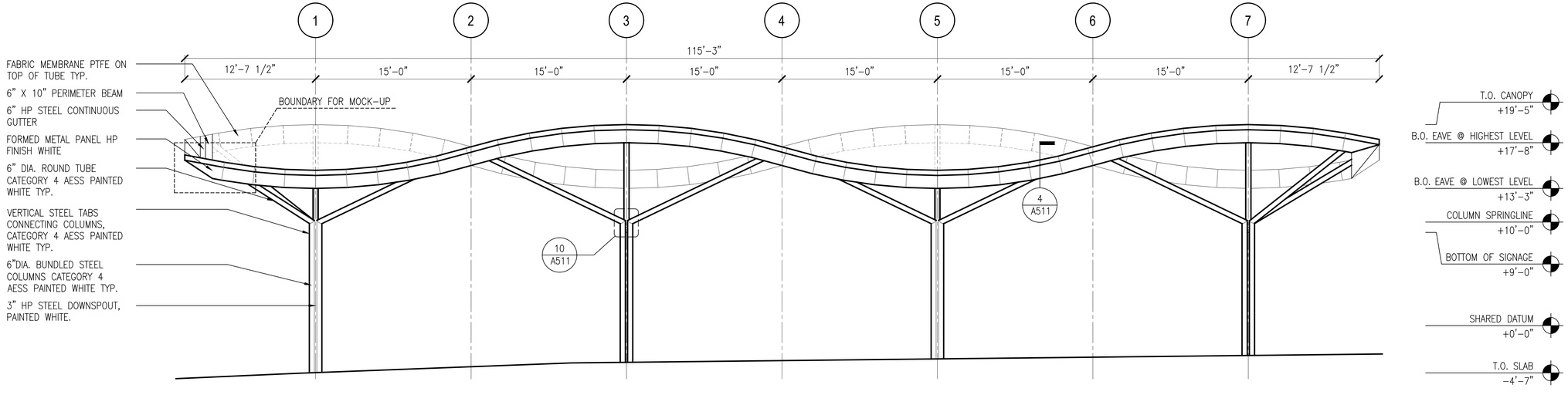
A122

SHEET NO.



2 CANOPY - EAST ELEVATION

SCALE: 3/16" = 1'-0"



1 CANOPY - NORTH ELEVATION

SCALE: 3/16" = 1'-0"

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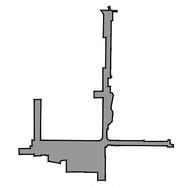

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PROJECT NO. GRUEN # 8345

CANOPY -
ELEVATIONS

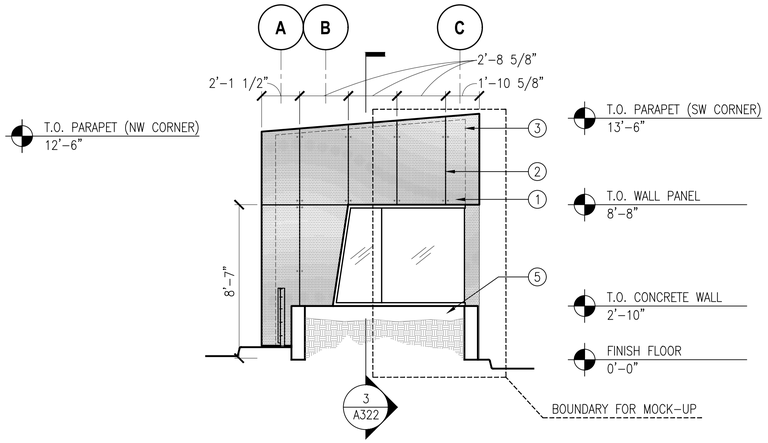
SHEET TITLE

A211

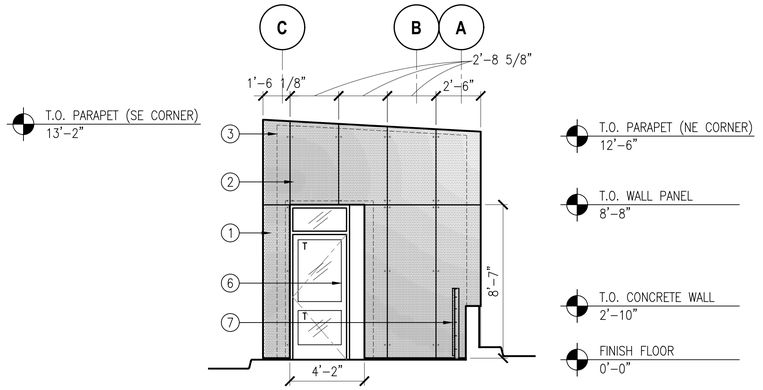
SHEET NO.

KEYNOTES:

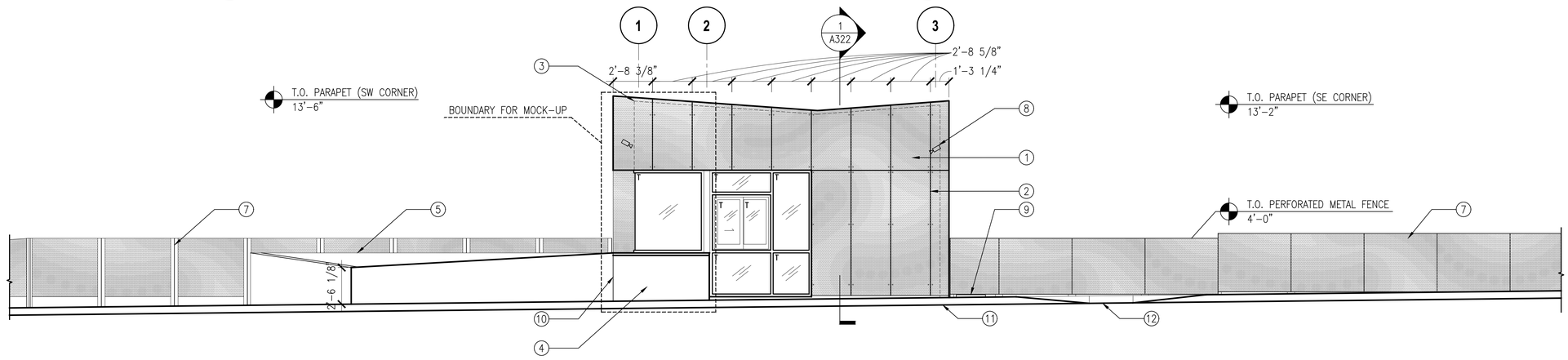
1. PERFORATED METAL PANEL/BACKLIT
2. PANEL JOINT, TYP.
3. WALL BEYOND RAIN SCREEN
4. CONCRETE WALL
5. CONCRETE PLANTER WALL
6. ALUMINUM STOREFRONT DOOR
7. PERFORATED METAL FENCE
8. SECURITY CAMERA, TYP. SEE ELECTRICAL
9. CONCRETE DISPENSER PAD 24"x24"
10. COLD JOINT, SEE STRUCTURAL
11. CONCRETE CURB, SEE CIVIL
12. CURB RAMP



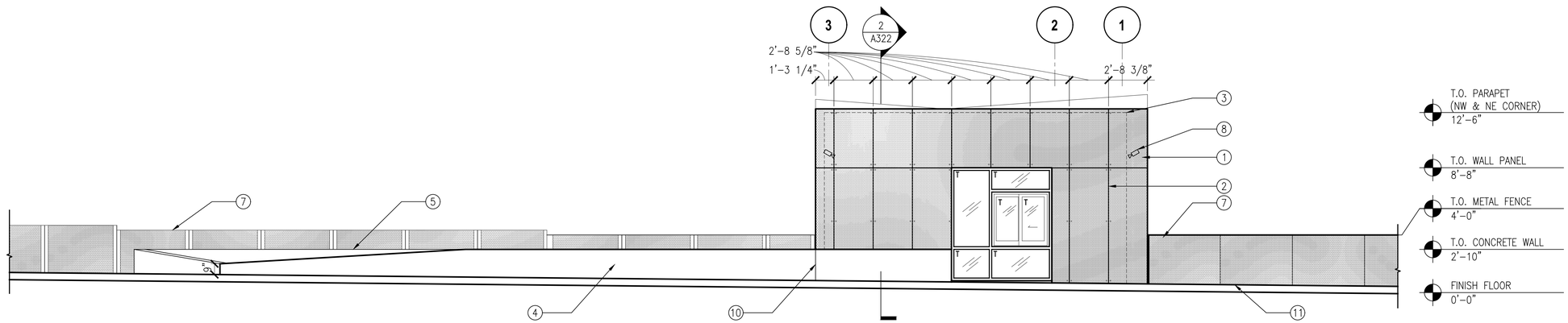
4 KIOSK - EAST ELEVATION
SCALE: 1/4" = 1'-0"



3 KIOSK - WEST ELEVATION
SCALE: 1/4" = 1'-0"



2 KIOSK - SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



1 KIOSK - NORTH ELEVATION
SCALE: 1/4" = 1'-0"

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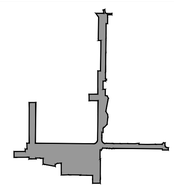

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PROJECT NO. GRUEN # 8345

KIOSK ELEVATIONS

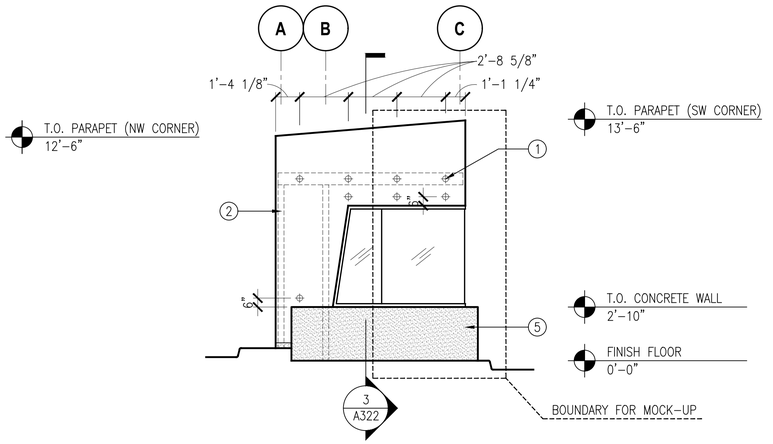
SHEET TITLE

A221

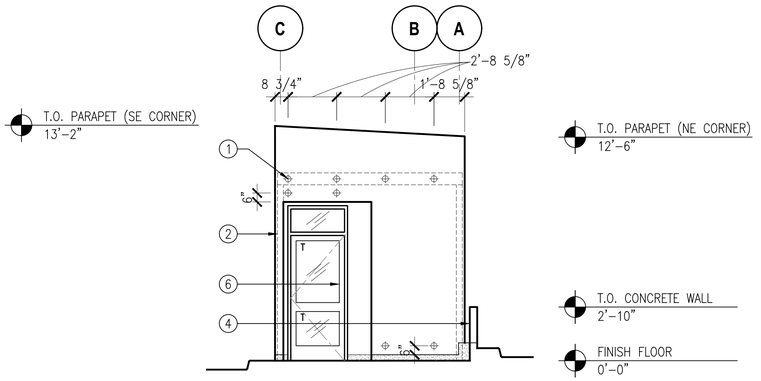
SHEET NO.

KEYNOTES:

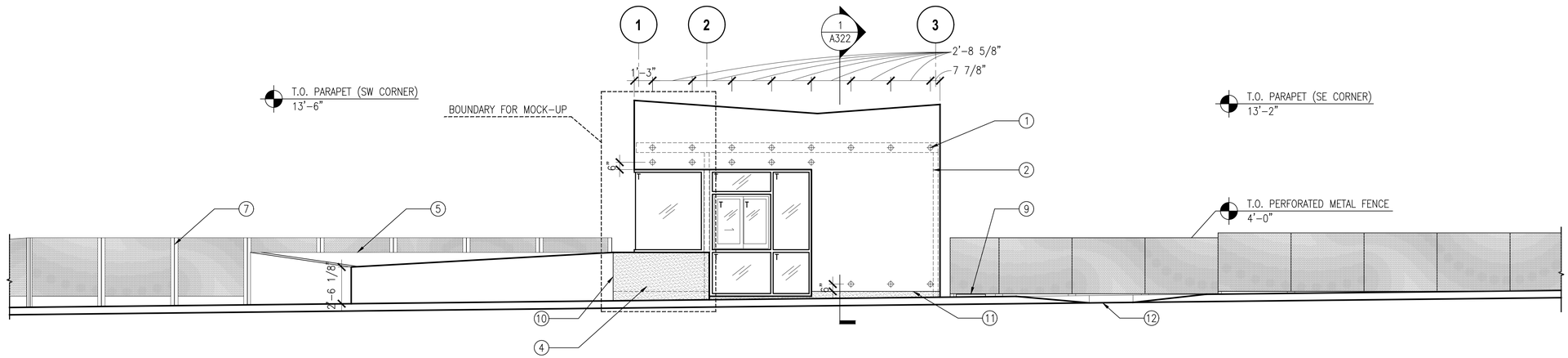
1. RAINSCREEN FRAME ATTACHMENT POINT
2. STRUCTURAL MEMBER BEYOND
3. NOT USED
4. CONCRETE WALL
5. CONCRETE PLANTER WALL
6. ALUMINUM STOREFRONT DOOR
7. PERFORATED METAL FENCE
8. NOT USED
9. CONCRETE DISPENSER PAD 24"x24"
10. COLD JOINT, SEE STRUCTURAL
11. CONCRETE CURB
12. CURB RAMP



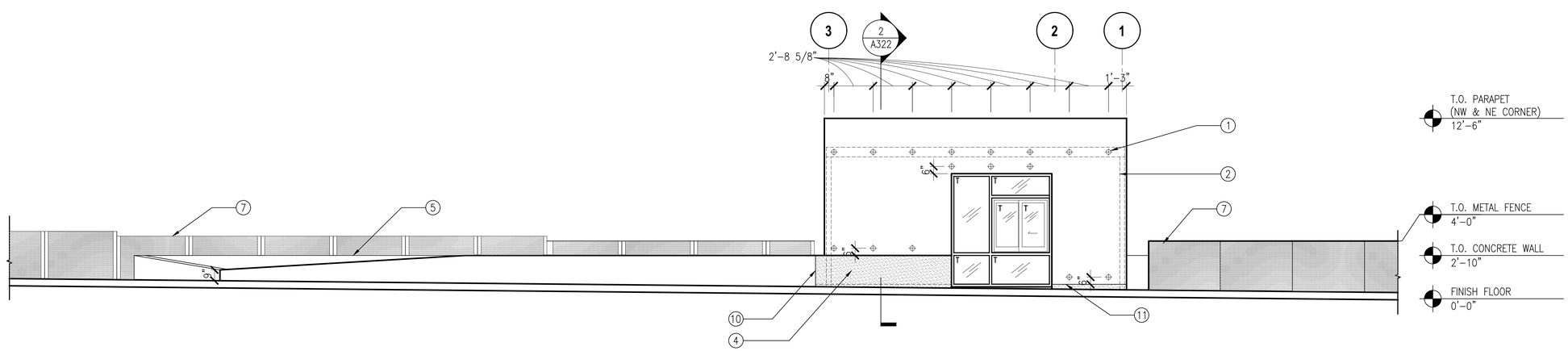
4 KIOSK - EAST ELEVATION
SCALE: 1/4" = 1'-0"



3 KIOSK - WEST ELEVATION
SCALE: 1/4" = 1'-0"



2 KIOSK - SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



1 KIOSK - NORTH ELEVATION
SCALE: 1/4" = 1'-0"

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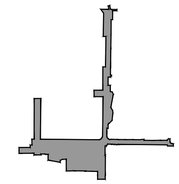

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PROJECT NO. GRUEN # 8345

KIOSK ELEVATIONS BEYOND RAIN SCREEN

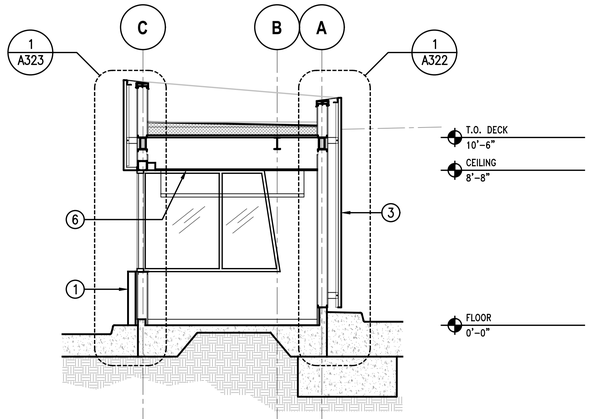
SHEET TITLE

A222

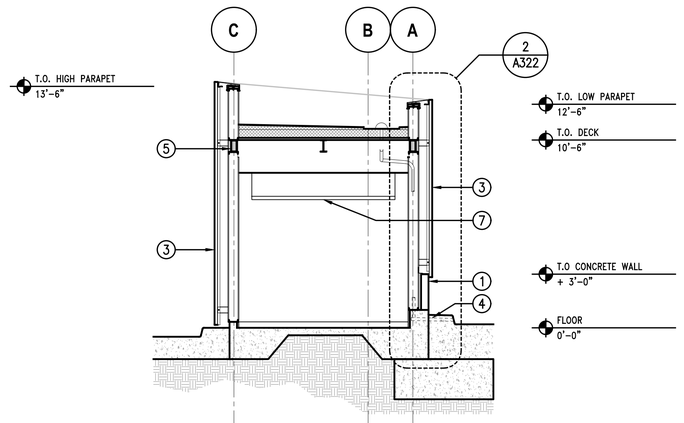
SHEET NO.

KEYNOTES:

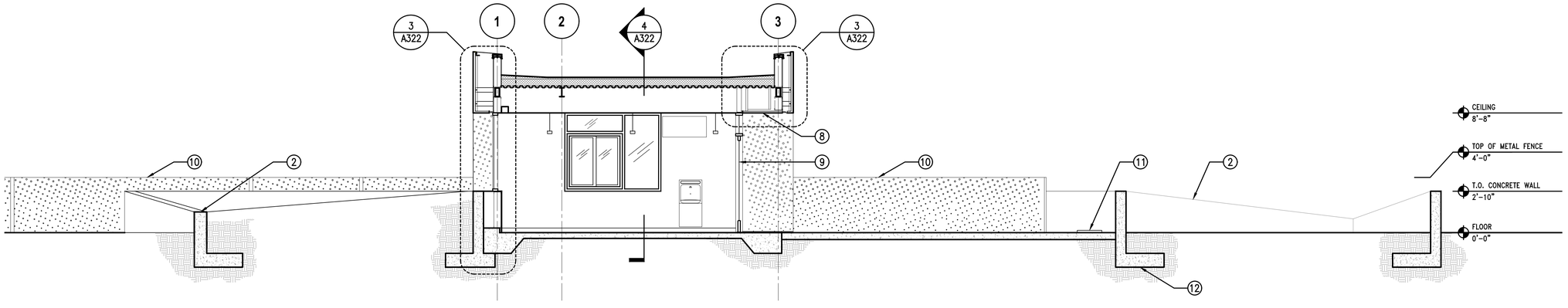
1. CONCRETE WALL
2. CONCRETE PLANTER WALL
3. PERFORATED METAL WALL, BACKLIT
4. ROOF DRAIN/OVERFLOW OUTLET
5. STRUCTURAL BEAM
6. SUSPENDED CEILING
7. PENDANT LIGHT FIXTURE, 7'–2" A.F.F. (BOTTOM)
8. PERFORATED METAL SOFFIT
9. DOOR
10. PERFORATED METAL FENCE
11. CONCRETE PAD
12. SEE STRUCTURAL FOR FOUNDATION INFORMATION



3 KIOSK - WEST SECTION
SCALE: 1/4" = 1'–0"



2 KIOSK - WEST SECTION
SCALE: 1/4" = 1'–0"



1 KIOSK - NORTH SECTION
SCALE: 1/4" = 1'–0"

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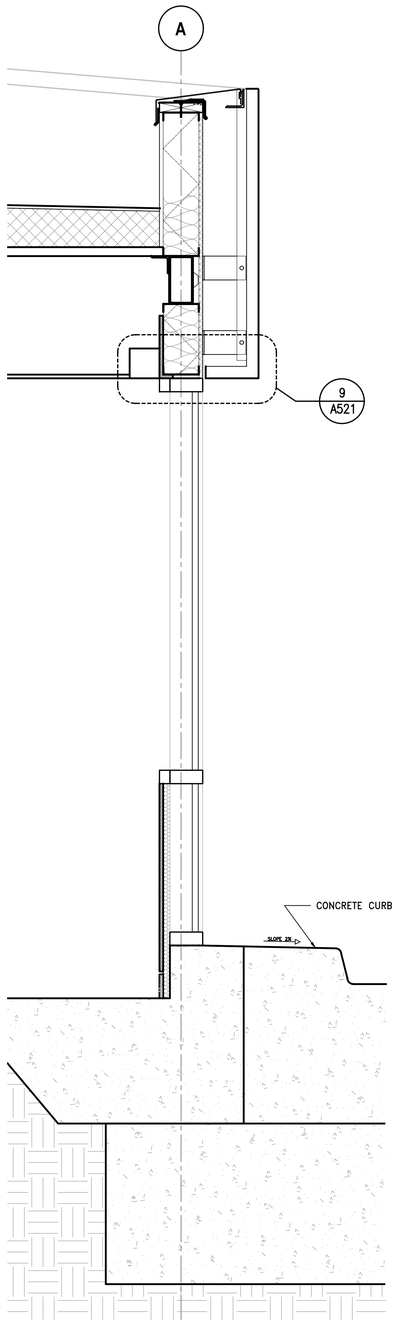
KIOSK - SECTIONS

SHEET TITLE

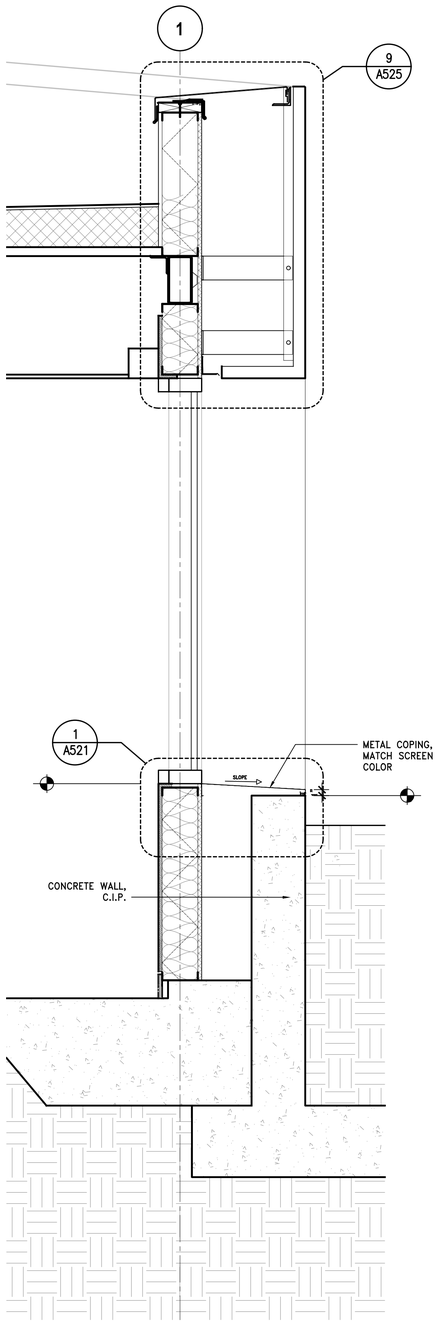
A321

SHEET NO.



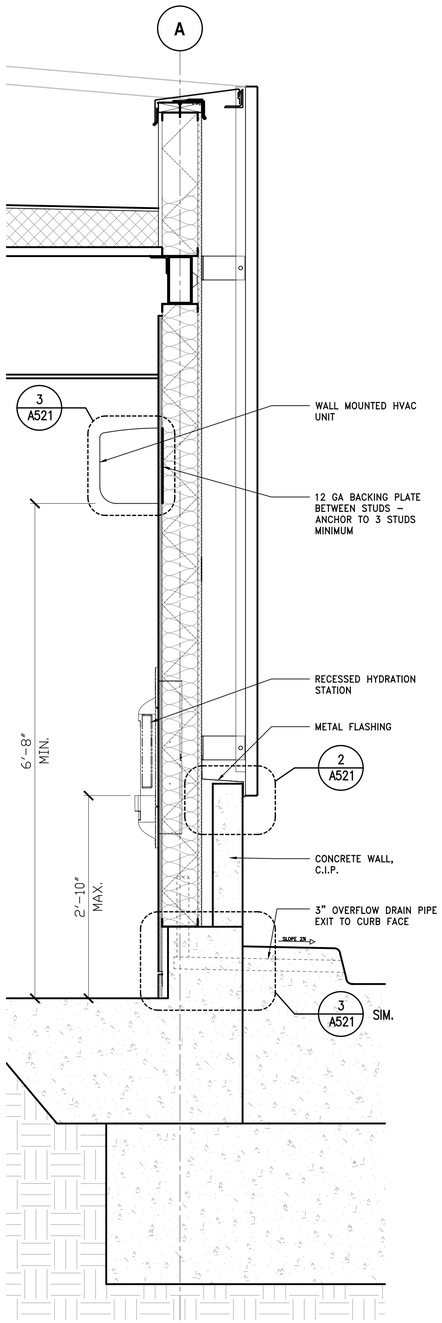
4 KIOSK - WALL SECTION

SCALE: 1" = 1'-0"



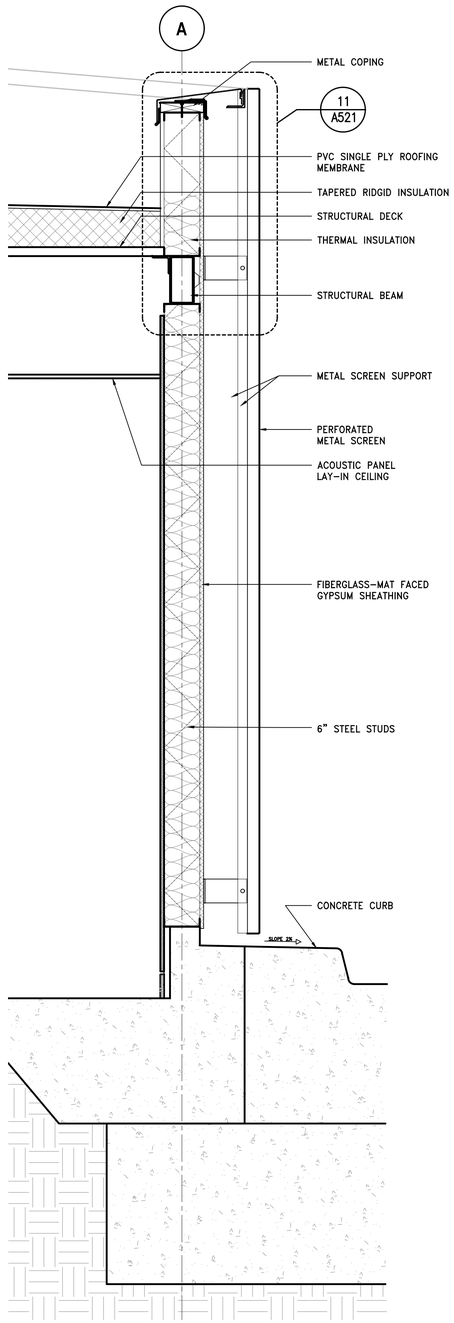
3 KIOSK - WALL SECTION

SCALE: 1" = 1'-0"



2 KIOSK - WALL SECTION

SCALE: 1" = 1'-0"



1 KIOSK - WALL SECTION

SCALE: 1" = 1'-0"

MOBILITY HUB
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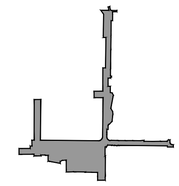

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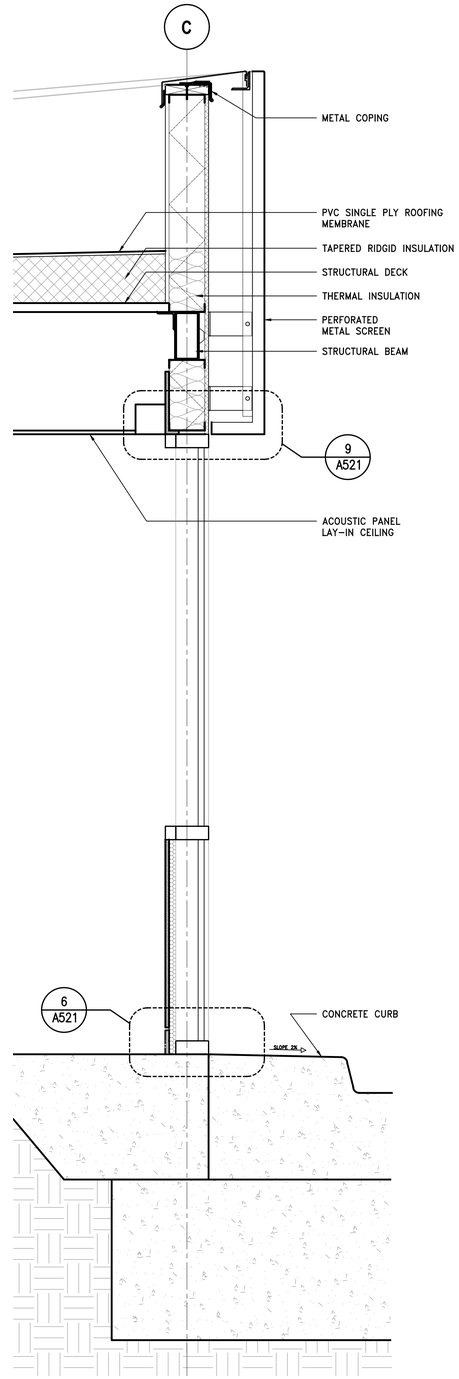
PROJECT NO. GRUEN # 8345

KIOSK -
WALL SECTIONS

SHEET TITLE

A322

SHEET NO.



1 KIOSK - WALL SECTION
SCALE: 1" = 1'-0"

MOBILITY HUB
AND CENTRAL CAMPUS
LINKAGES

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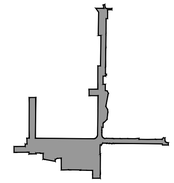

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PROJECT NO. GRUEN # 8345

KIOSK -
WALL SECTIONS

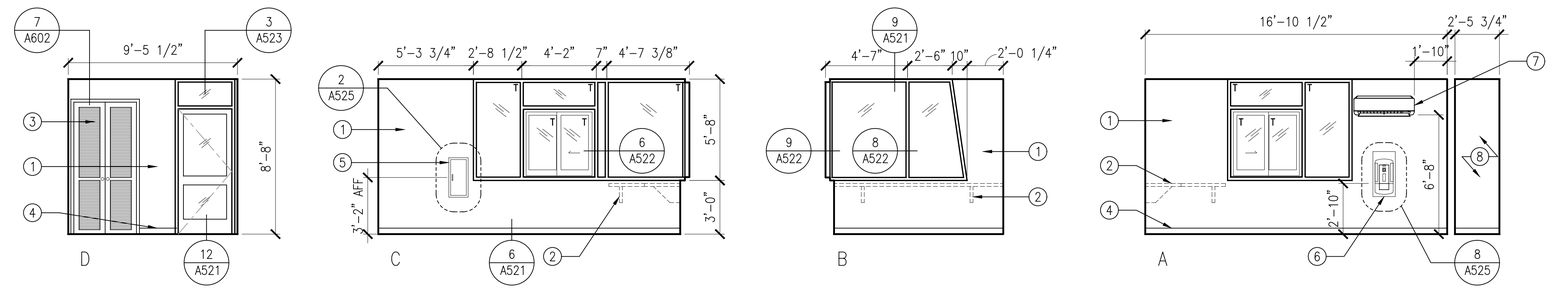
SHEET TITLE

A323

SHEET NO.

KEYNOTES:

1. GYPSUM WALLBOARD (PT-3)
2. IN-WALL BACKING PLATES FOR FUTURE COUNTERTOPS
3. IDF CLOSET WITH LOUVERED DOORS
4. 4" BASEBOARD, TYP.
5. RECESSED FIRE EXTINGUISHER CABINET
6. RECESSED HYDRATION STATION
7. FAN COIL UNIT
8. IDF CLOSET



1 KIOSK - INTERIOR ELEVATIONS

SCALE: 1/4" = 1'-0"

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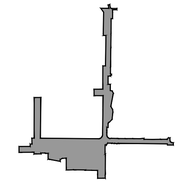

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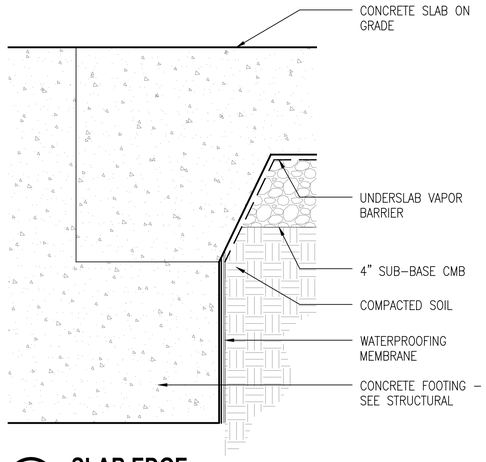
PROJECT NO. GRUEN # 8345

KIOSK - INTERIOR ELEVATIONS

SHEET TITLE

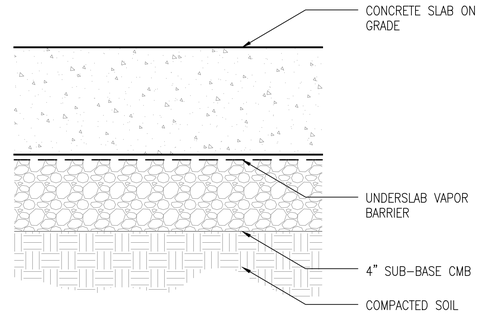
A421

SHEET NO.



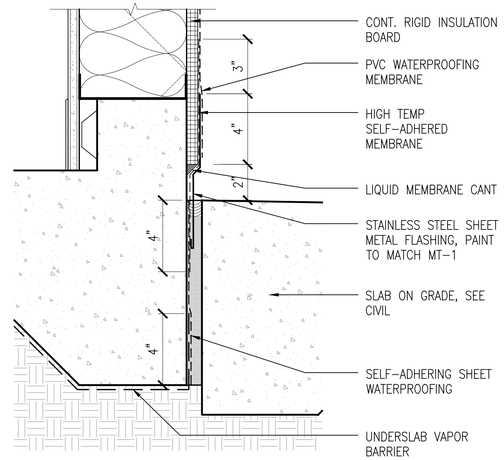
4 SLAB EDGE

SCALE: 3" = 1'-0"



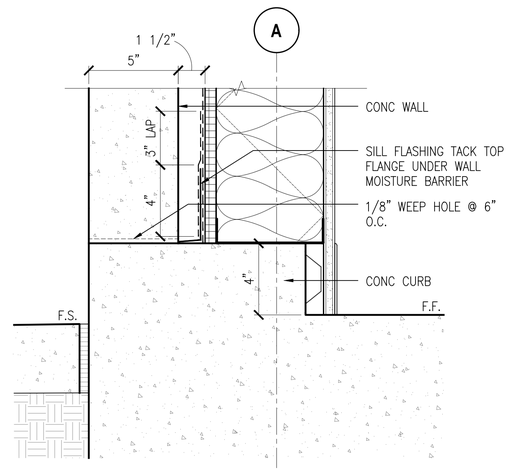
1 TYP. SLAB ON GRADE WATERPROOFING

SCALE: 3" = 1'-0"



2 CONCRETE SLAB - SECTION

SCALE: 3" = 1'-0"



3 CONCRETE WALL BASE

SCALE: 3" = 1'-0"

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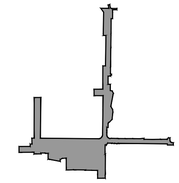

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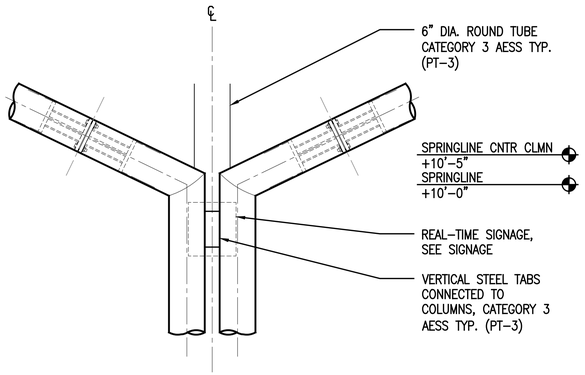
PROJECT NO. GRUEN # 8345

KIOSK -
WATERPROOFING

SHEET TITLE

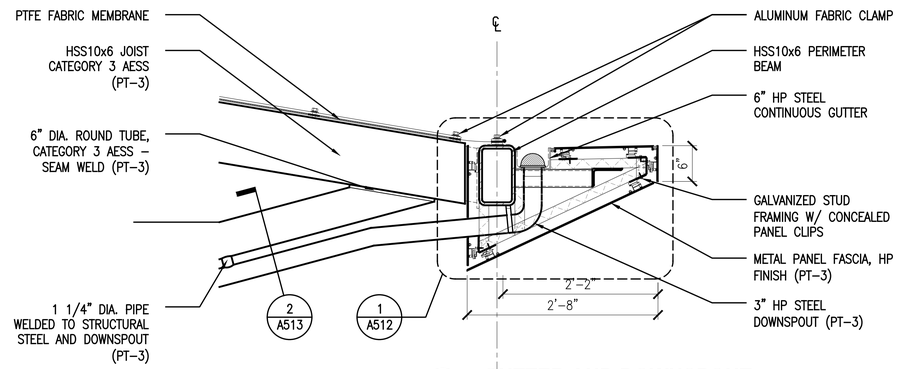
A501

SHEET NO.



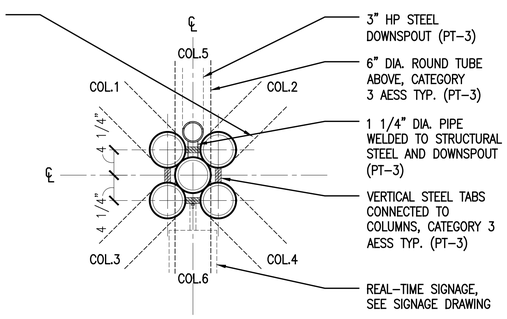
10 CONNECTION AT COLUMN

SCALE: 1" = 1'-0"



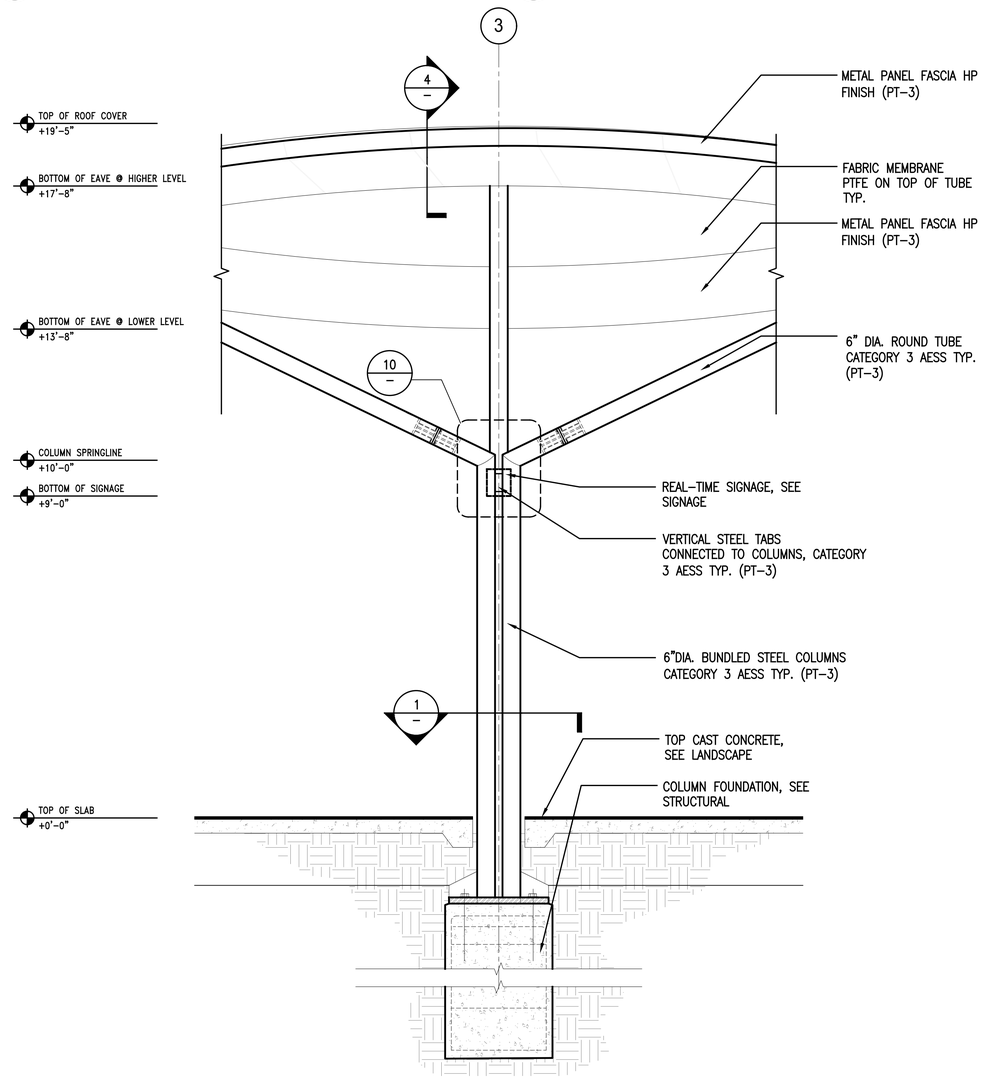
4 GUTTER AND DOWNSPOUT

SCALE: 1" = 1'-0"



1 TYP. BUNDLED COLUMN

SCALE: 1" = 1'-0"



3 ENLARGED SECTION

SCALE: 1/2" = 1'-0"

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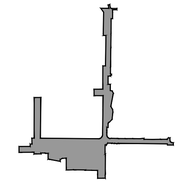

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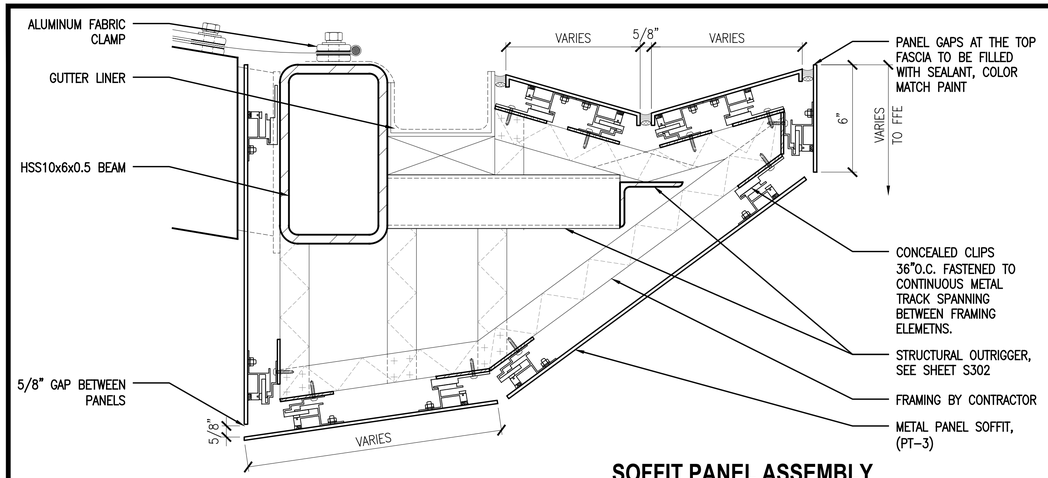
PROJECT NO. GRUEN # 8345

CANOPY - DETAILS

SHEET TITLE

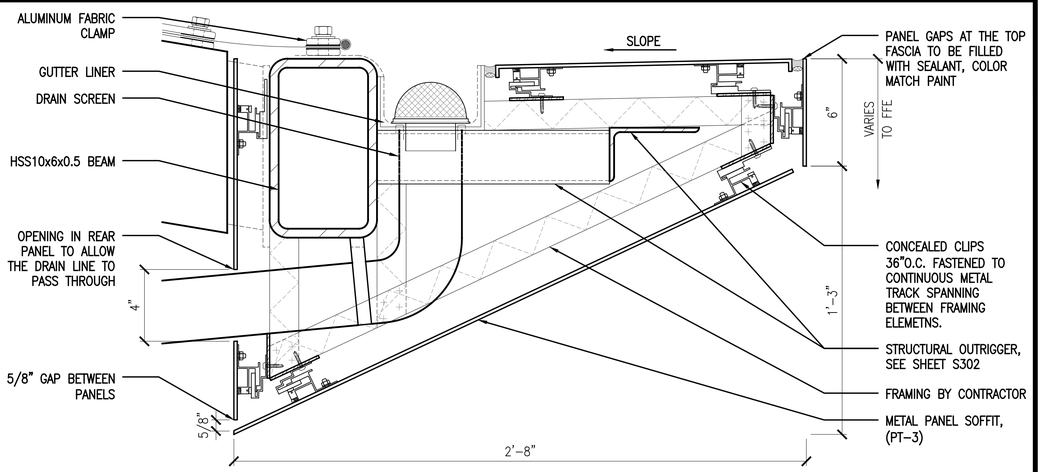
A511

SHEET NO.



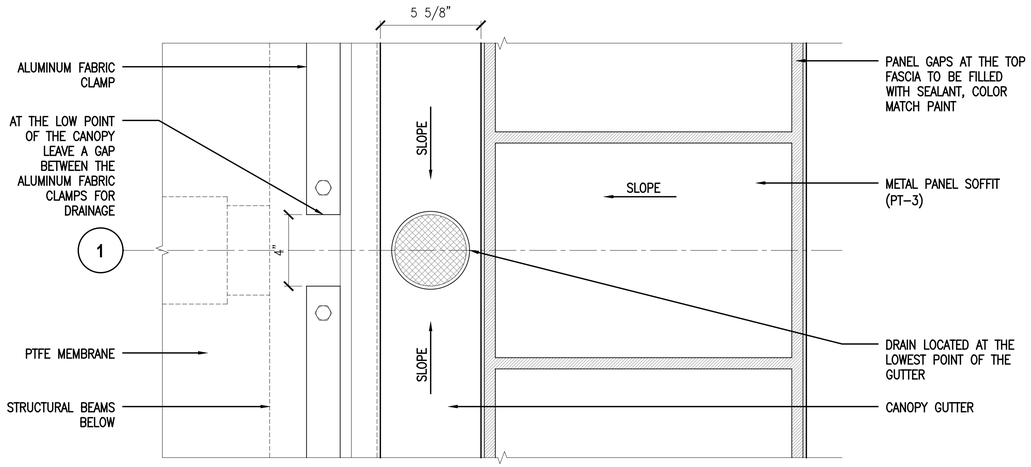
7 SOFFIT PANEL ASSEMBLY AT CANOPY END CONDITION

SCALE: 3" = 1'-0"



1 SOFFIT PANEL ASSEMBLY

SCALE: 3" = 1'-0"



2 CANOPY PERMIETER PLAN

SCALE: 3" = 1'-0"

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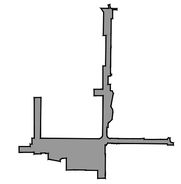

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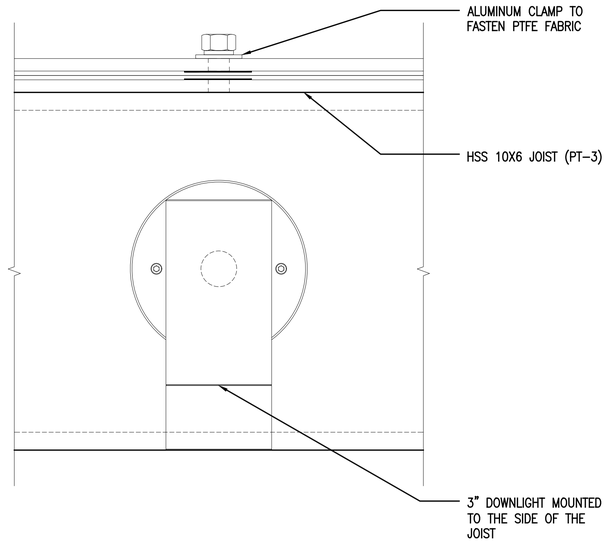
SCALE	SHEET
DATE	12/18/18
PROJECT NO.	GRUEN # 8345

CANOPY - DETAILS

SHEET TITLE

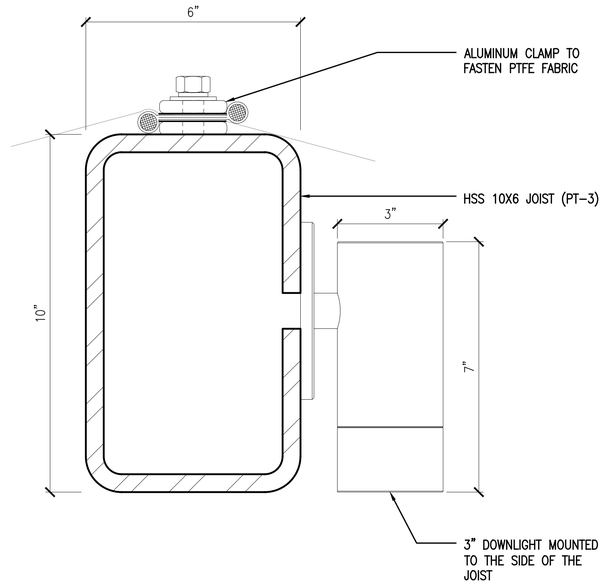
A512

SHEET NO.



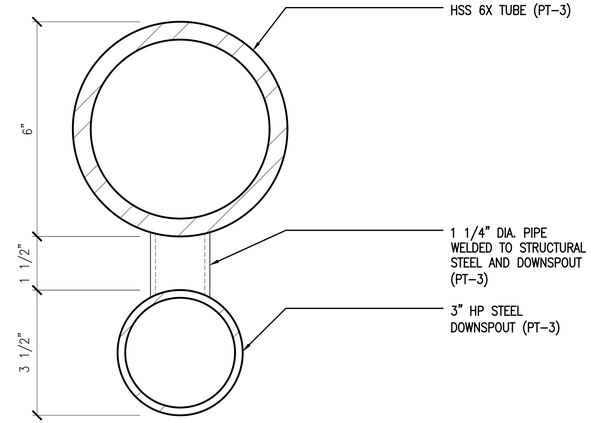
3 LIGHT FIXTURE AT JOIST - ELEVATION

SCALE: 6" = 1'-0"



1 LIGHT FIXTURE AT JOIST - SECTION

SCALE: 6" = 1'-0"



2 DOWNSPOUT @ DIAGONAL COLUMN - SECTION

SCALE: 6" = 1'-0"

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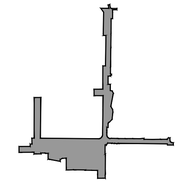

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SCALE	SHEET
DATE	12/18/18
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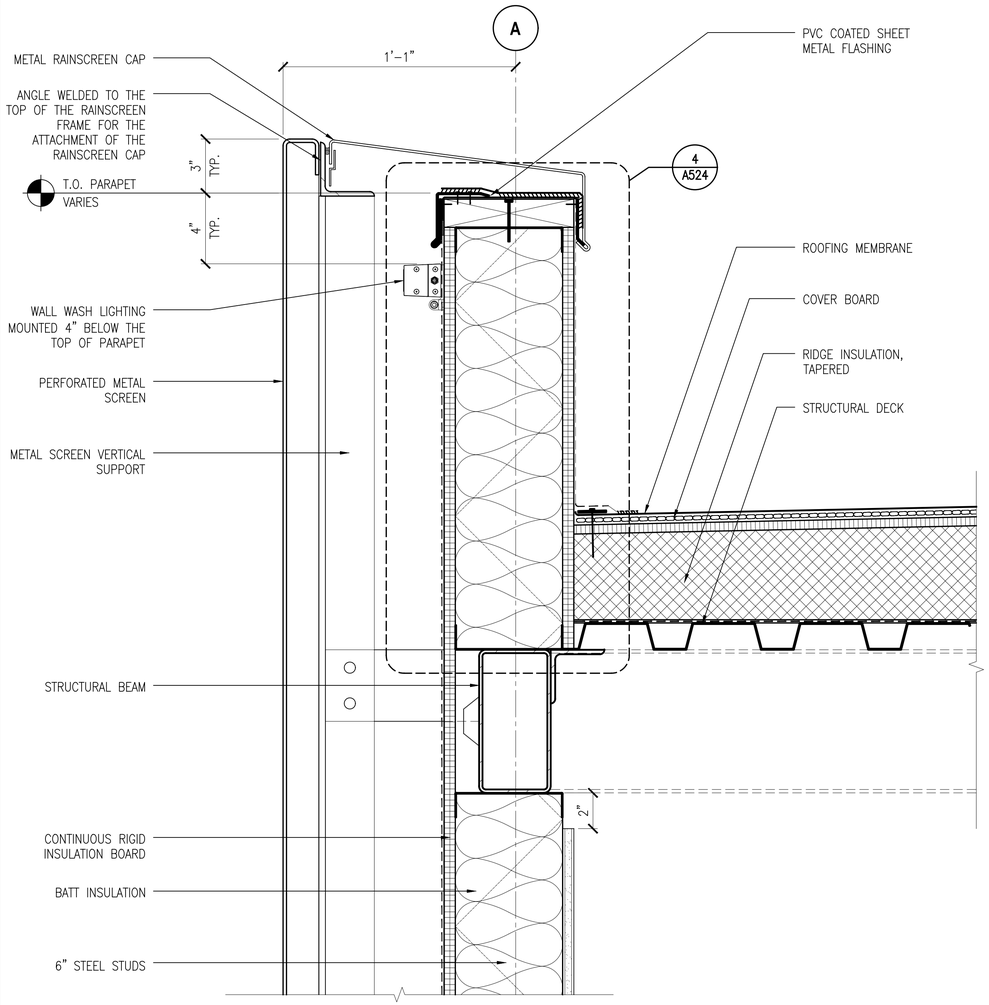
CANOPY - DETAILS

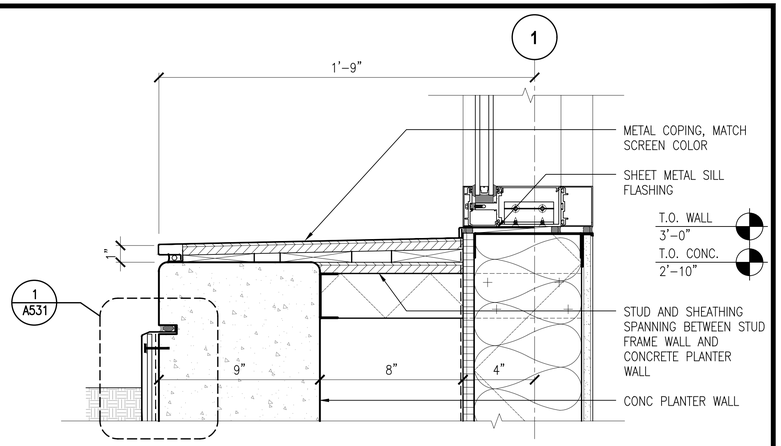
SHEET TITLE

A513

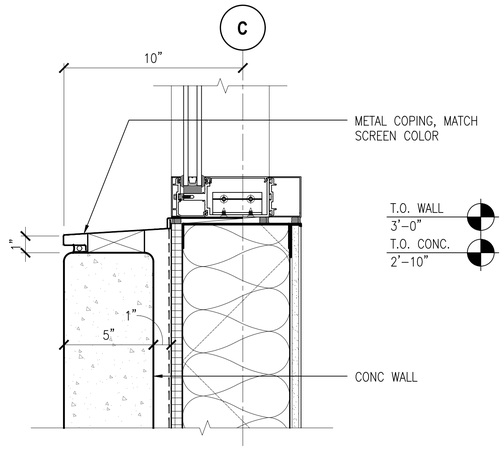
SHEET NO.



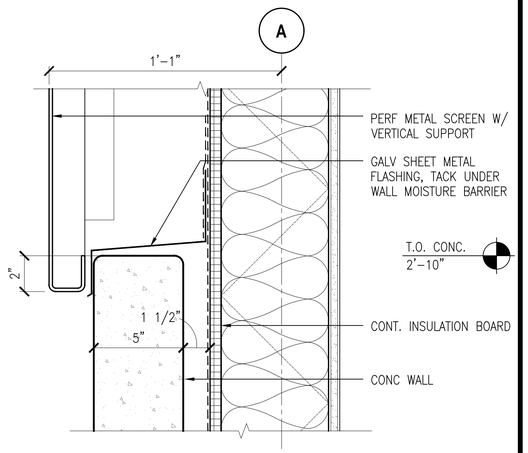
11 PARAPET
SCALE: 3" = 1'-0"



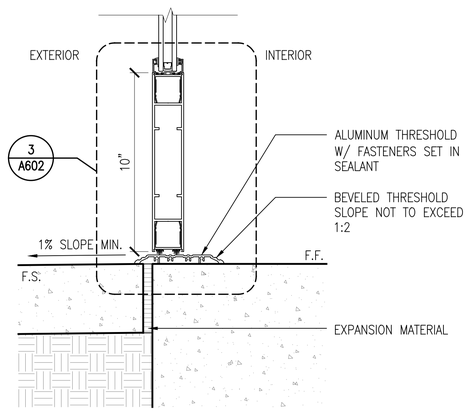
1 WINDOW SILL AT CONCRETE PLANTER WALL
SCALE: 3" = 1'-0"



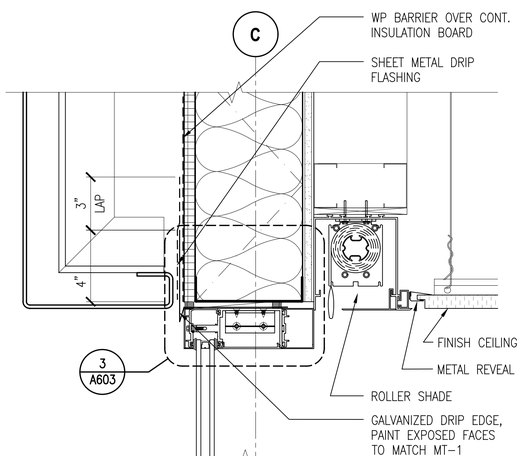
5 WINDOW SILL AT CONCRETE WALL
SCALE: 3" = 1'-0"



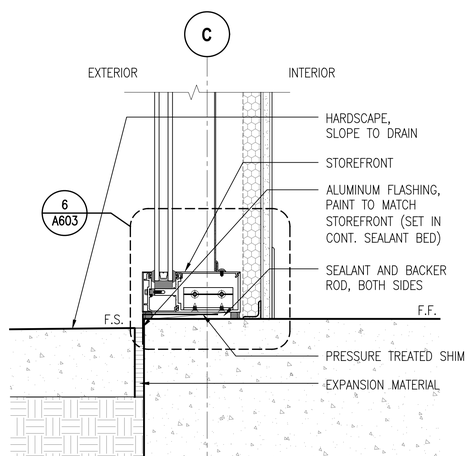
2 PERFORATED SCREEN AT CONCRETE WALL
SCALE: 3" = 1'-0"



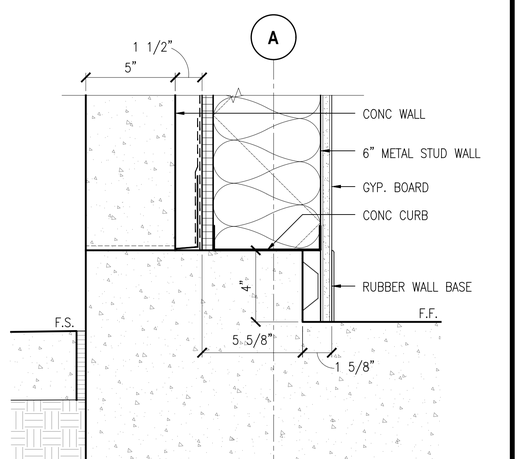
12 DOOR SILL
SCALE: 3" = 1'-0"



9 ROLLER SHADE POCKET
SCALE: 3" = 1'-0"



6 STOREFRONT WINDOW SILL
SCALE: 3" = 1'-0"



3 CONCRETE WALL BASE
SCALE: 3" = 1'-0"

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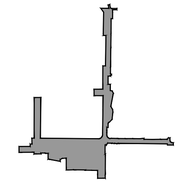

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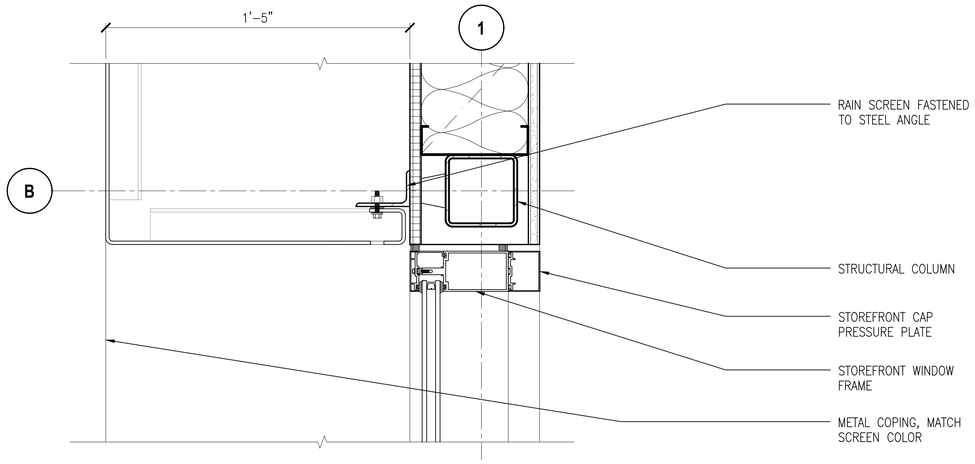
KIOSK - DETAILS

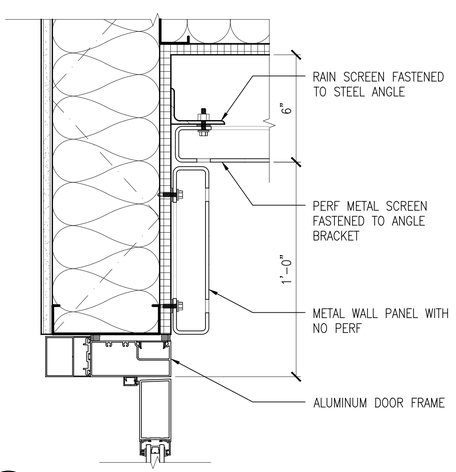
SHEET TITLE

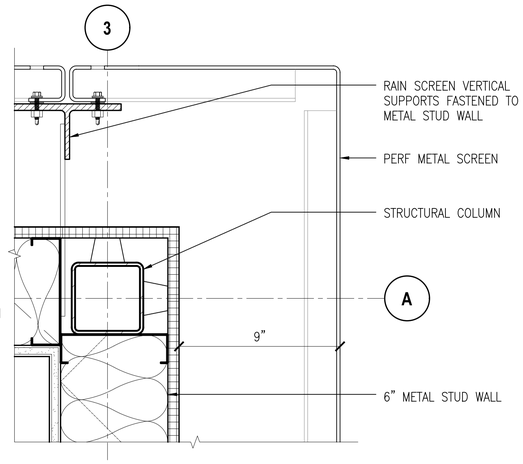
A521

SHEET NO.

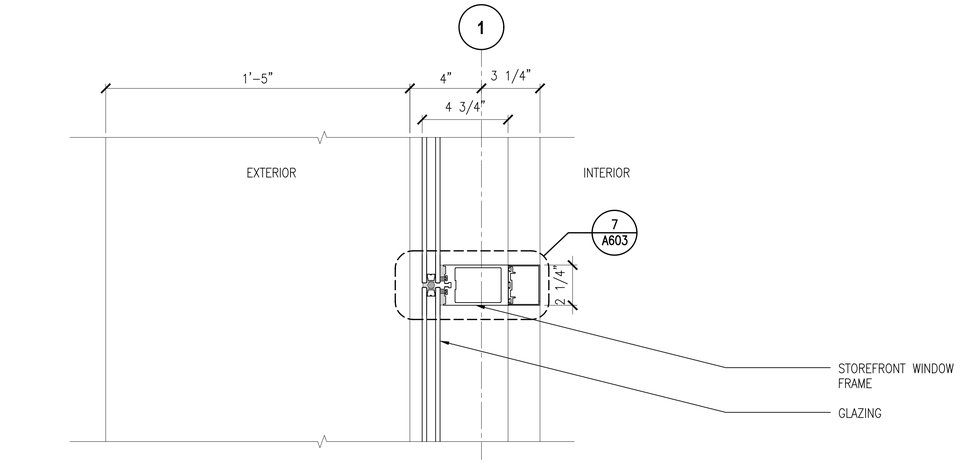


7 MULLION
SCALE: 3" = 1'-0"

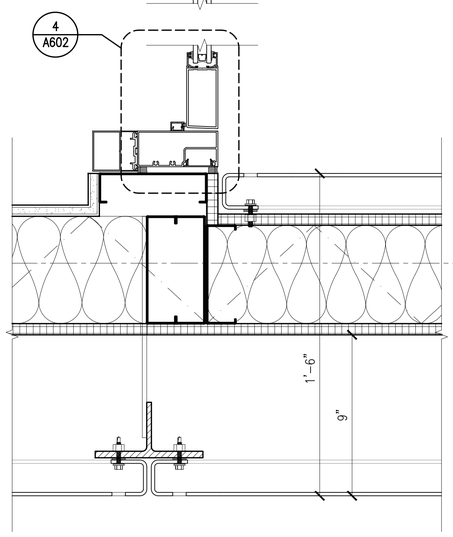




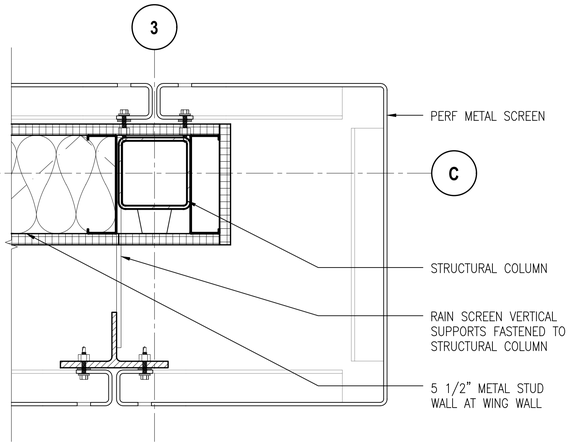
1 PERF PANEL CORNER CONDIDTION
SCALE: 3" = 1'-0"



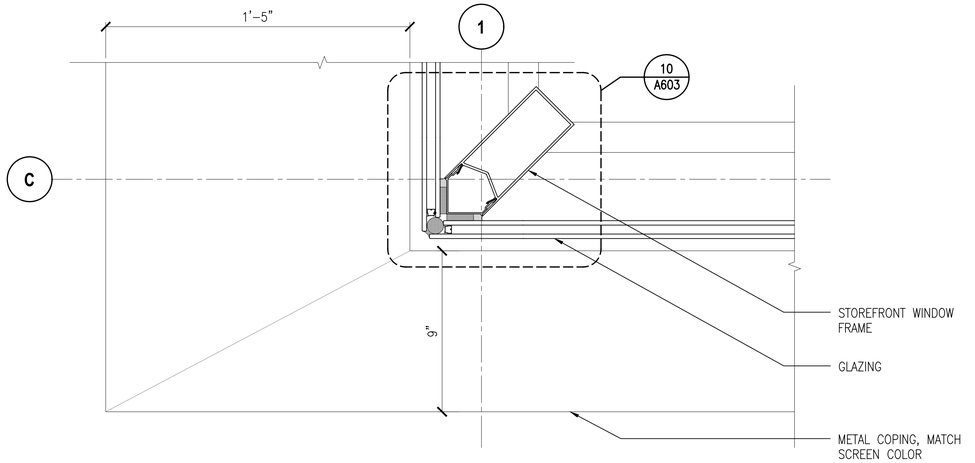
8 CAPLESS VERTICAL MULLION
SCALE: 3" = 1'-0"



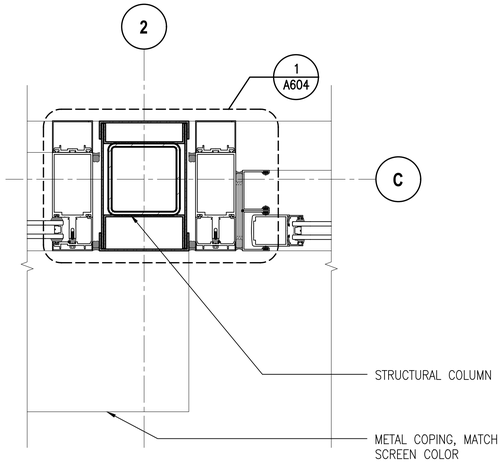
5 DOOR FRAME
SCALE: 3" = 1'-0"



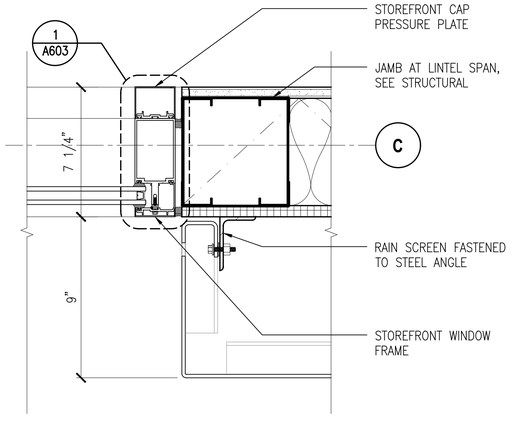
2 PERF PANEL CORNER CONDIDTION
SCALE: 3" = 1'-0"



9 CAPLESS CORNER MULLION
SCALE: 3" = 1'-0"



6 MULLION AT COLUMN
SCALE: 3" = 1'-0"



3 MULLION
SCALE: 3" = 1'-0"

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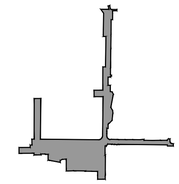

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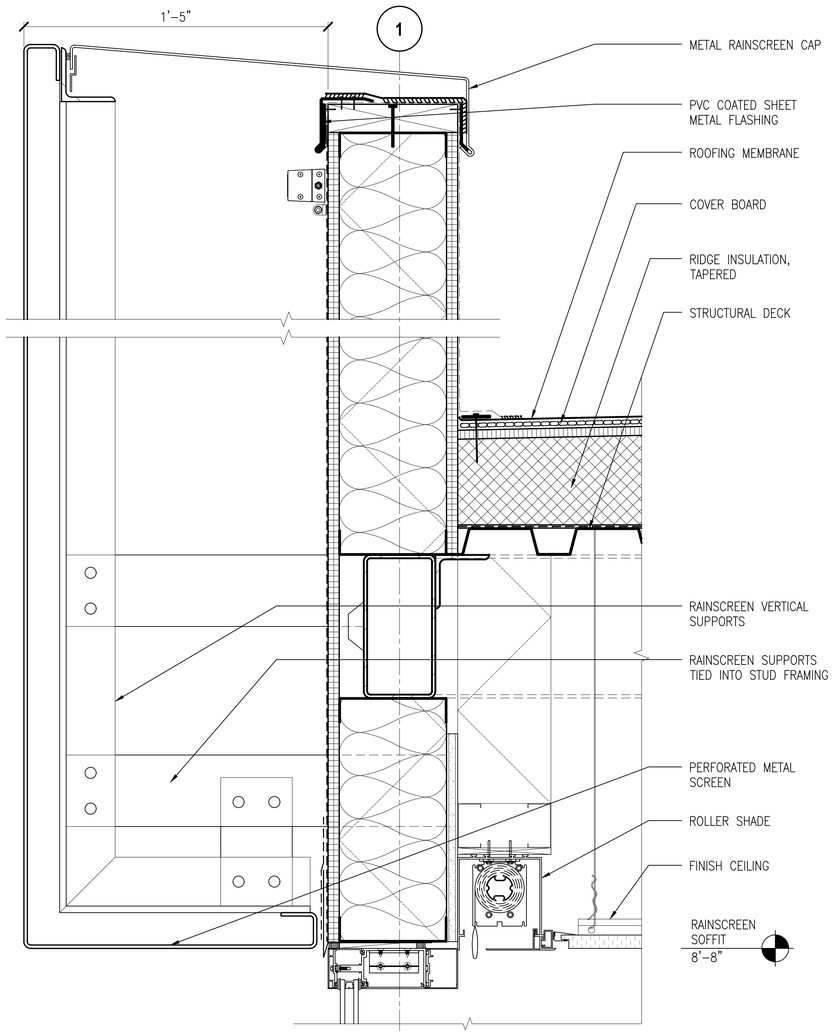
PROJECT NO. GRUEN # 8345

KIOSK - DETAIL PLANS

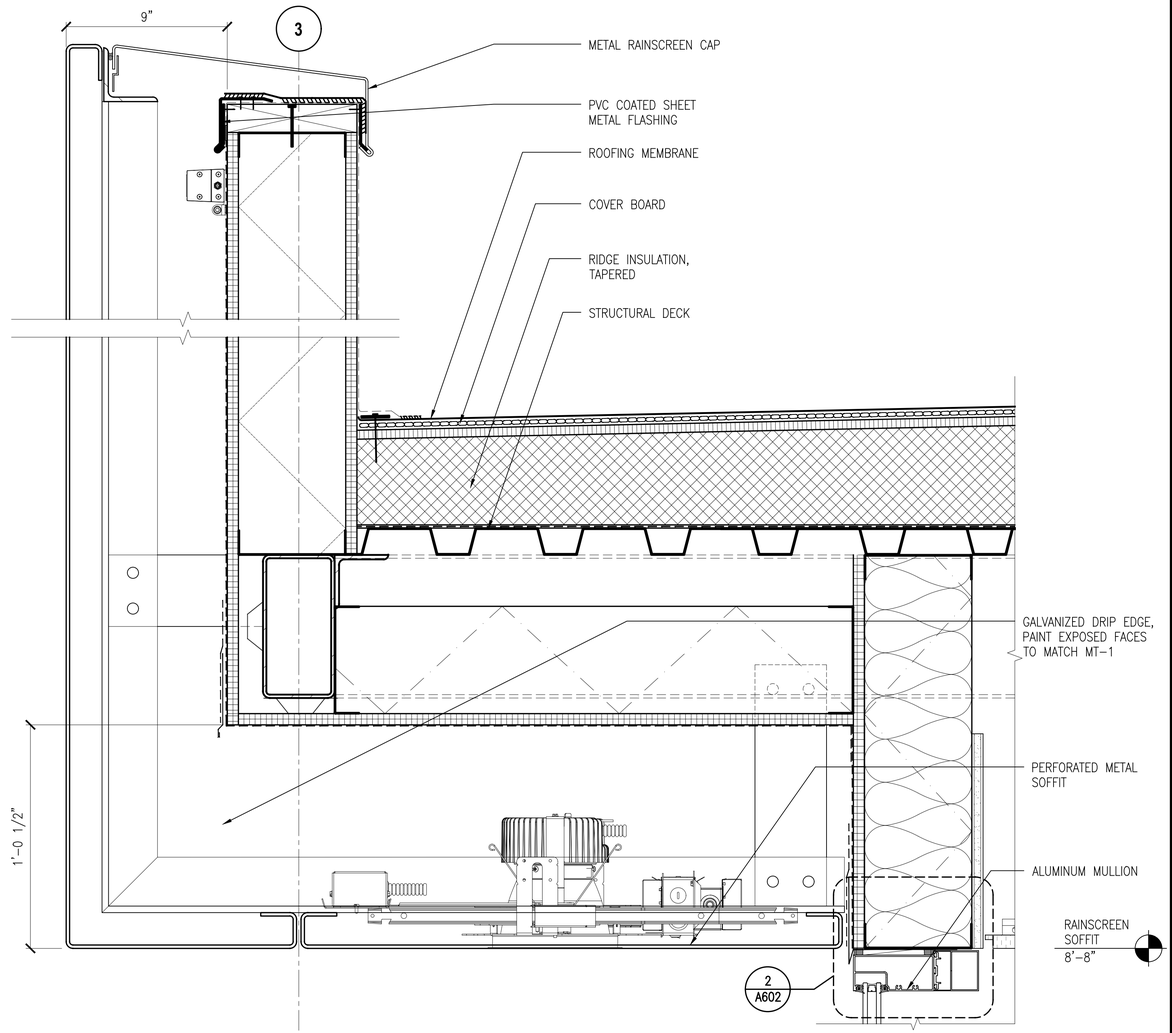
SHEET TITLE

A522

SHEET NO.



9 **SOFFIT @ GRIDLINE 1**
SCALE: 3" = 1'–0"



3 **SOFFIT @ DOOR WAY**
SCALE: 3" = 1'–0"

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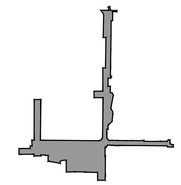

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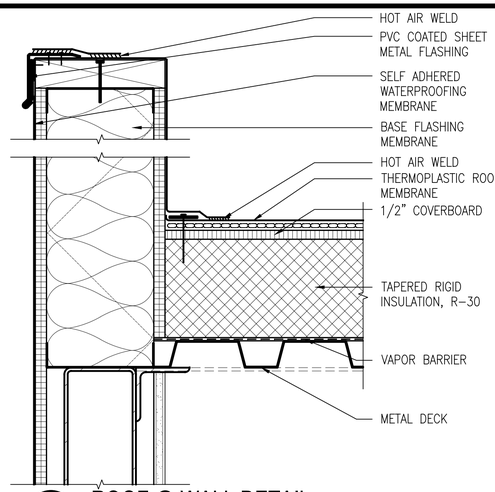
KIOSK - DETAILS

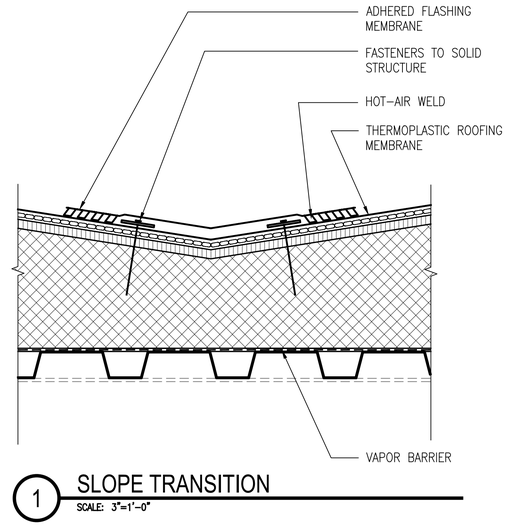
SHEET TITLE

A523

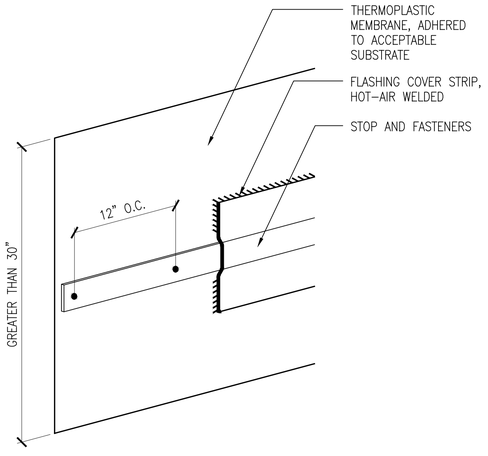
SHEET NO.



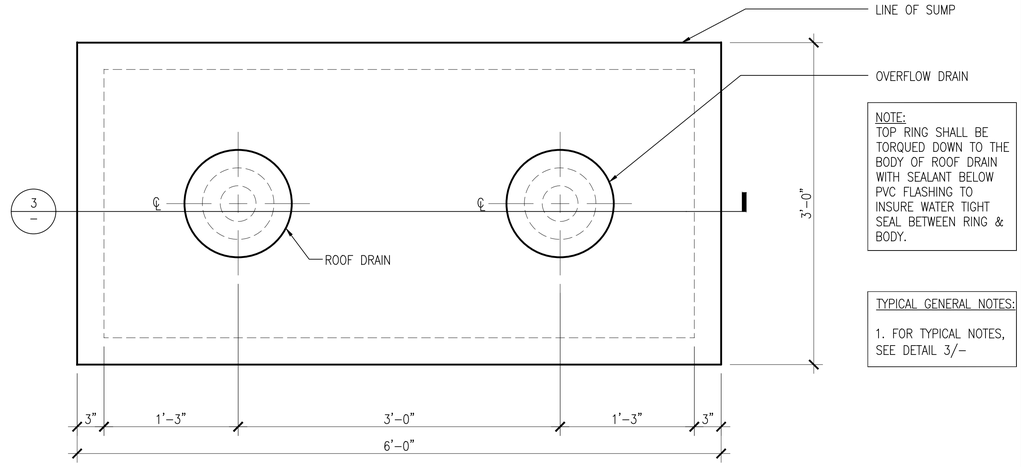
4 ROOF @ WALL DETAIL
SCALE: 3" = 1'-0"



1 SLOPE TRANSITION
SCALE: 3"=1'-0"



11 ADHERE HIGH WALL FLASHING
SCALE: NTS

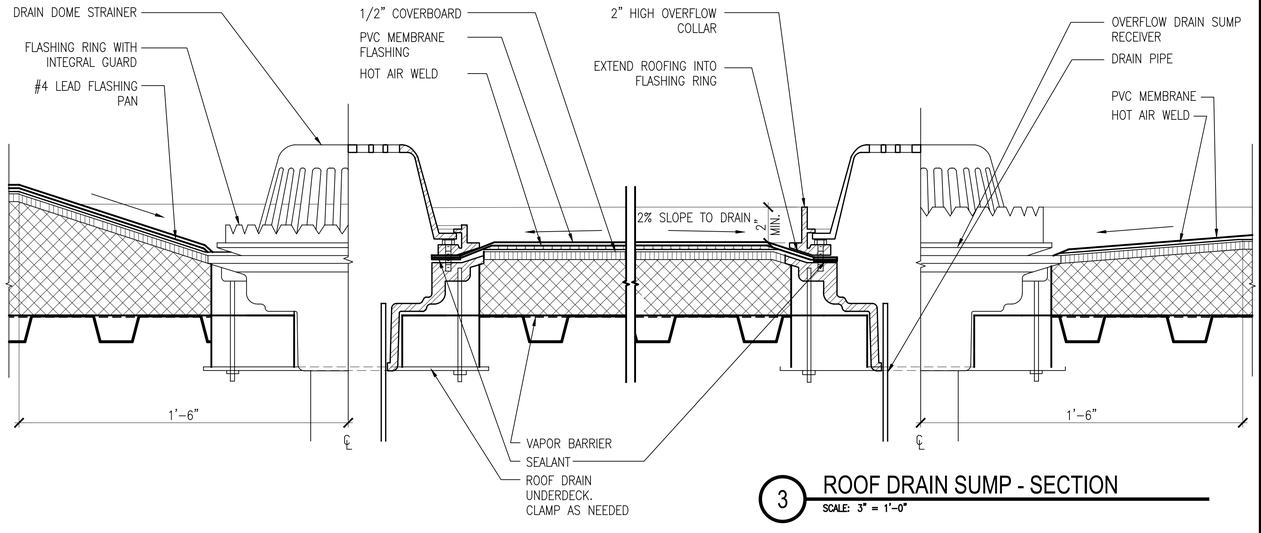


NOTE:
TOP RING SHALL BE TORQUED DOWN TO THE BODY OF ROOF DRAIN WITH SEALANT BELOW PVC FLASHING TO INSURE WATER TIGHT SEAL BETWEEN RING & BODY.

TYPICAL GENERAL NOTES:

1. FOR TYPICAL NOTES, SEE DETAIL 3/-

2 ROOF DRAIN SUMP - PLAN
SCALE: 1 1/2" = 1'-0"



3 ROOF DRAIN SUMP - SECTION
SCALE: 3" = 1'-0"

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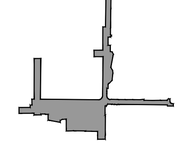

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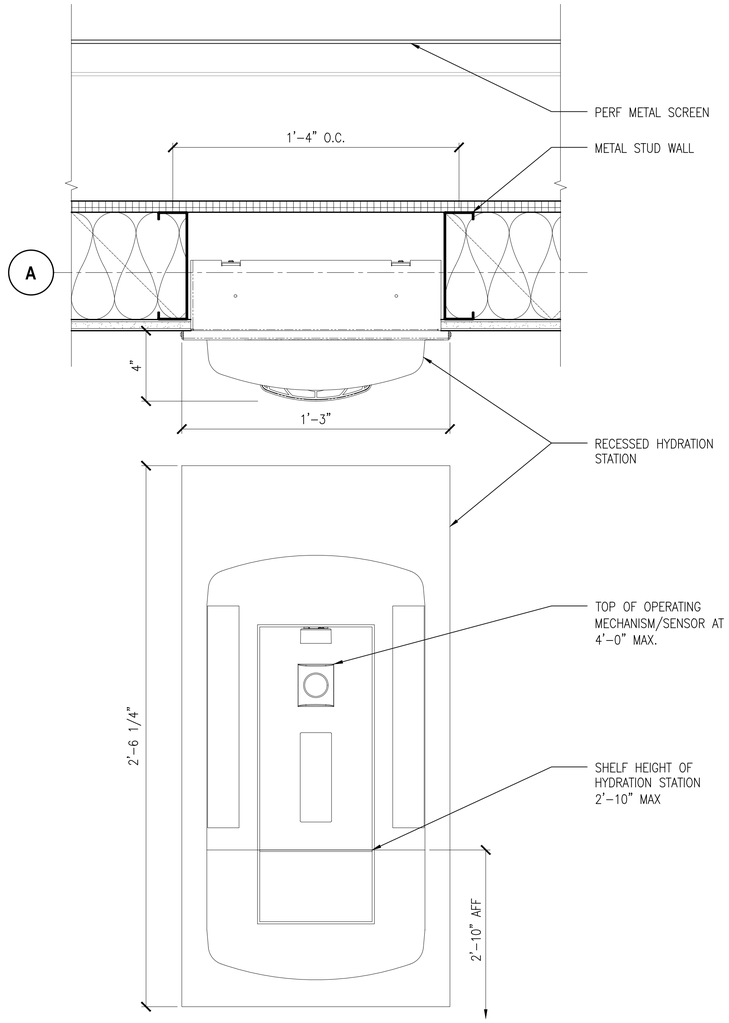
KIOSK -
ROOF DETAILS

SHEET TITLE

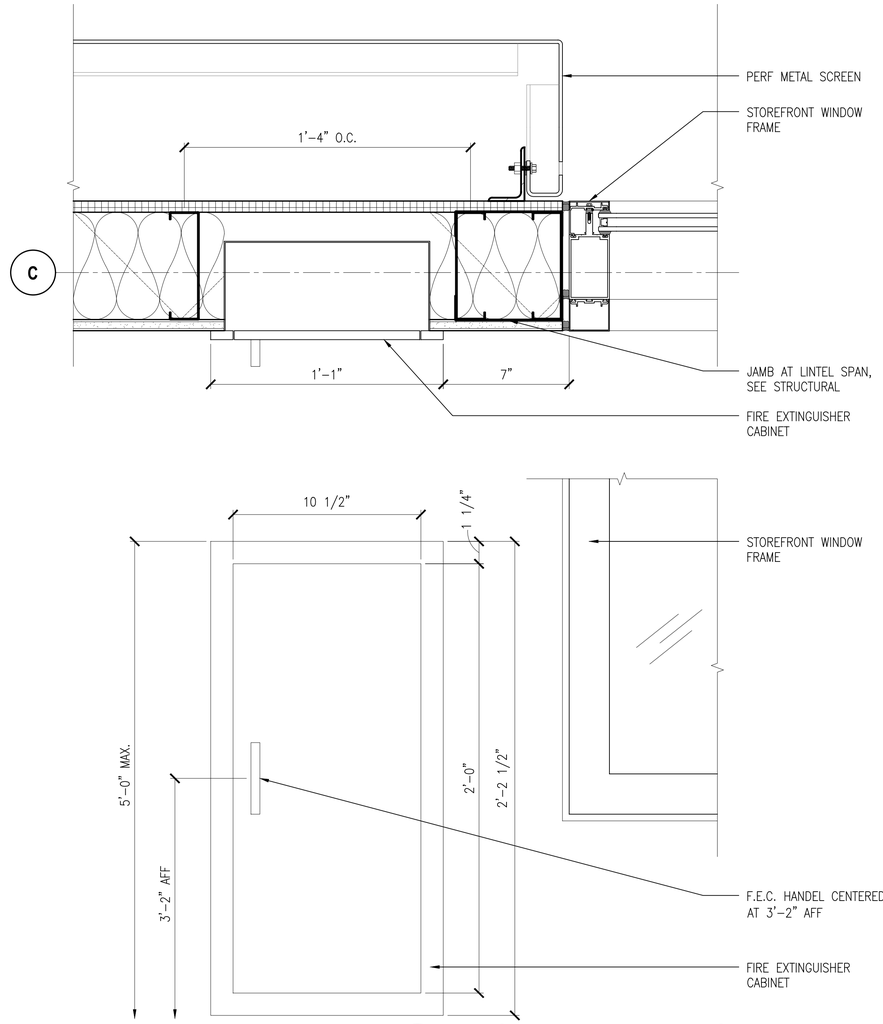
A524

SHEET NO.



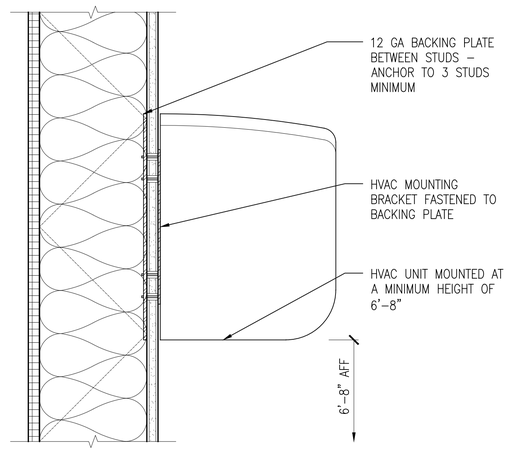
8 HYDRATION STATION

SCALE: 3" = 1'-0"



2 F.E.C. PLAN AND ELEVATION

SCALE: 3" = 1'-0"



3 HVAC UNIT MOUNTING

SCALE: 3" = 1'-0"

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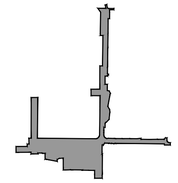

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KIOSK - DETAILS

SHEET TITLE

A525

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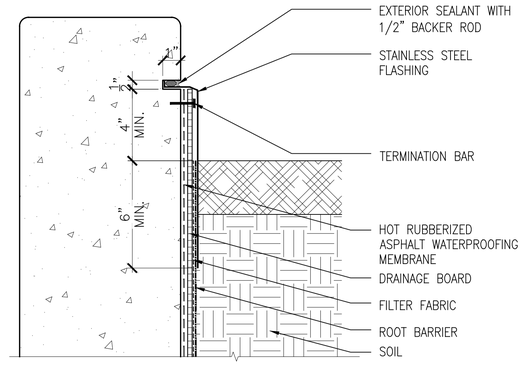

WATERPROOFING TERMINATION @ PLANTER WALL

1 SCALE: 3" = 1'-0"

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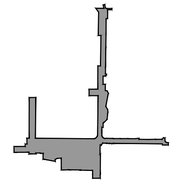

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PLANTER DETAILS

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A531

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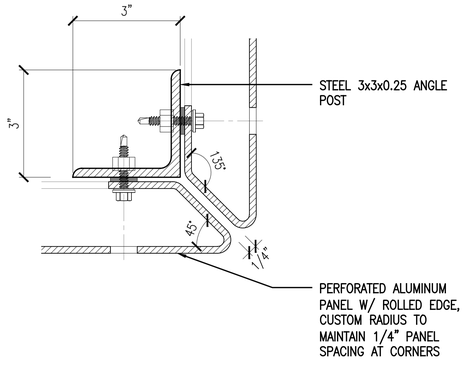
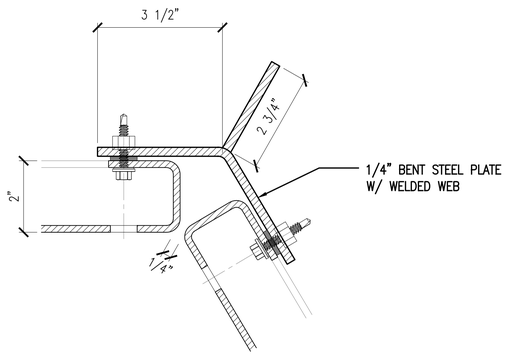


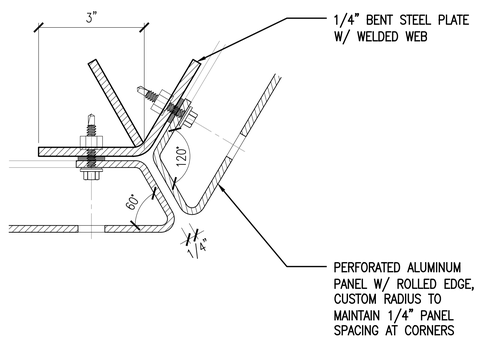
10 FENCE - 90 DEGREE CORNER

SCALE: 6" = 1'-0"



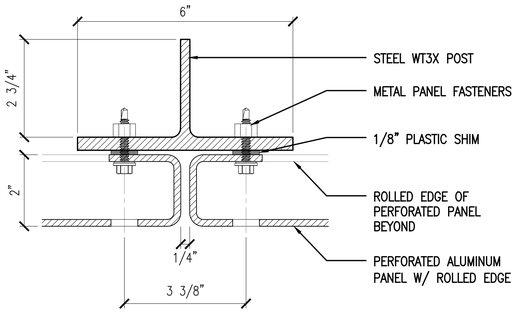
7 FENCE - INSIDE CORNER

SCALE: 6" = 1'-0"



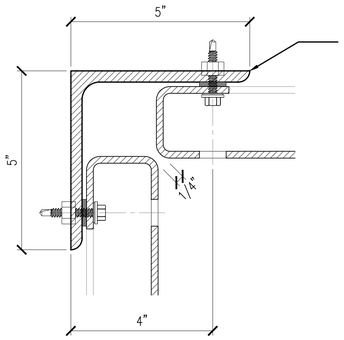
4 FENCE - OUTSIDE CORNER

SCALE: 6" = 1'-0"



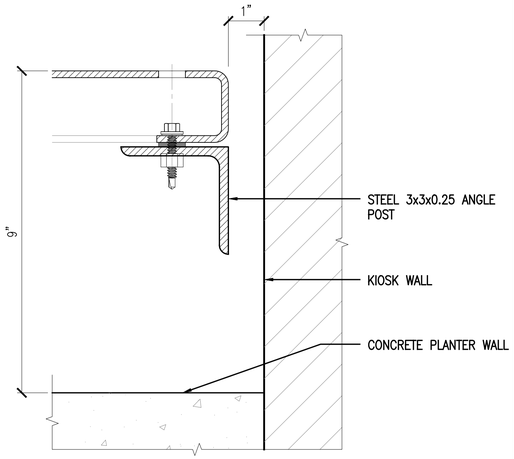
1 FENCE - "T" POST CONNECTION

SCALE: 6" = 1'-0"



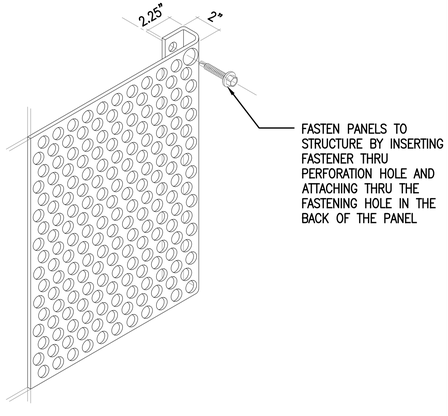
11 FENCE - 90 DEGREE CORNER

SCALE: 6" = 1'-0"



2 FENCE TO KIOSK TRANSITION

SCALE: 6" = 1'-0"



3 PERFORATED PANEL

SCALE: NTS

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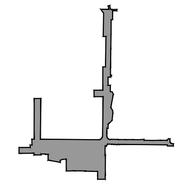

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FENCE DETAILS

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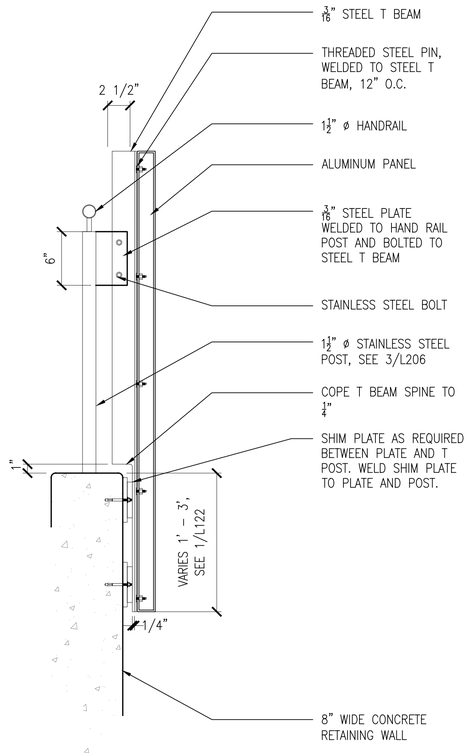
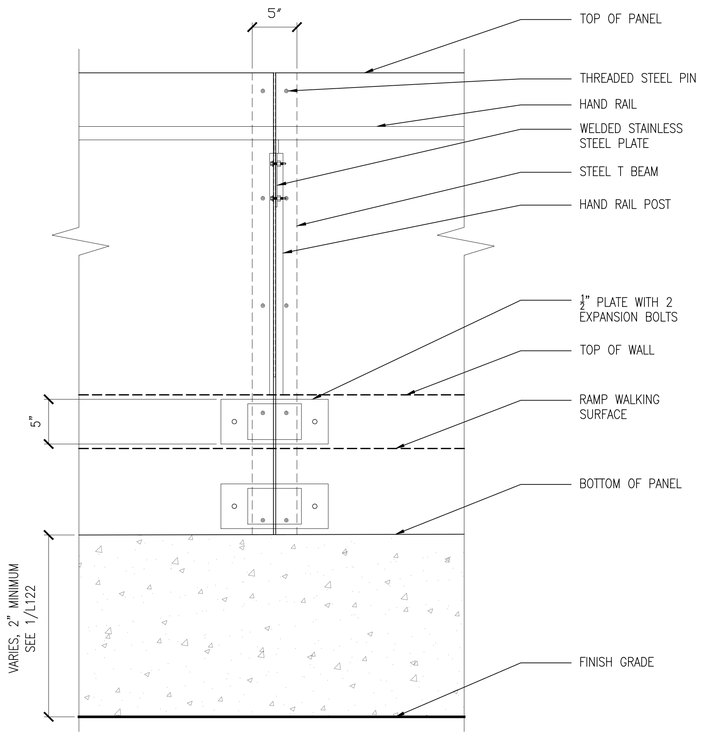
A541

SHEET NO.



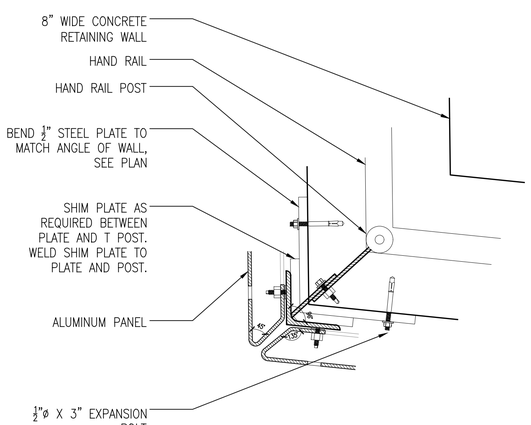
3 RAMP PANEL STRUCTURE SECTION

SCALE: 1-1/2"=1'-0"



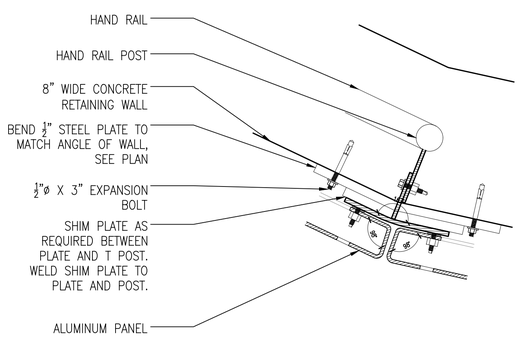
1 RAMP PANEL STRUCTURE ELEVATION

SCALE: 1-1/2"=1'-0"



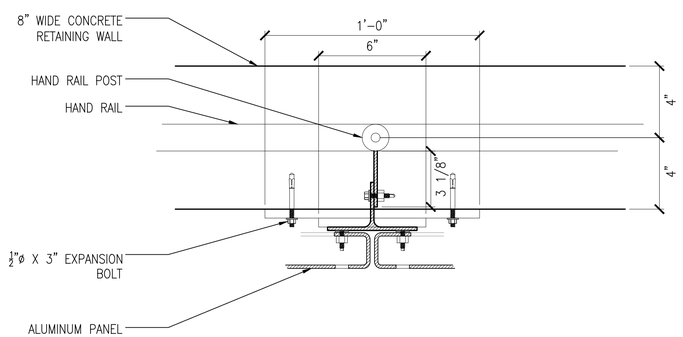
5 RAMP PANEL ATTACHMENT, SQUARE ANGLE

SCALE: 3"=1'-0"



4 RAMP PANEL ATTACHMENT, WIDE ANGLE

SCALE: 3"=1'-0"



2 RAMP PANEL ATTACHMENT, TYP.

SCALE: 3"=1'-0"

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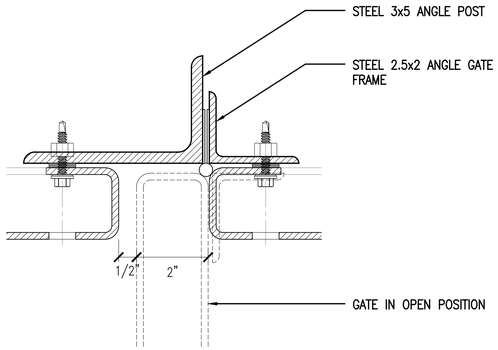
DATE	12/19/2018
PROJECT NO.	GRUEN # 8345

REC. MALL ALTERNATIVE SECTIONS AND ELEVATIONS

SHEET TITLE

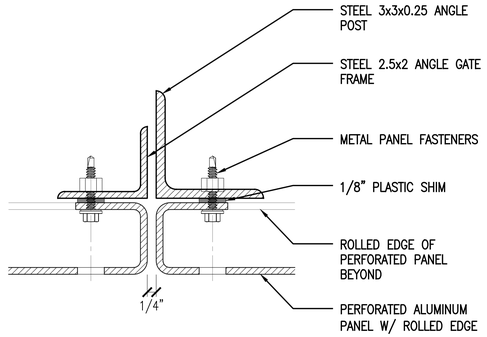
A542

SHEET NO.



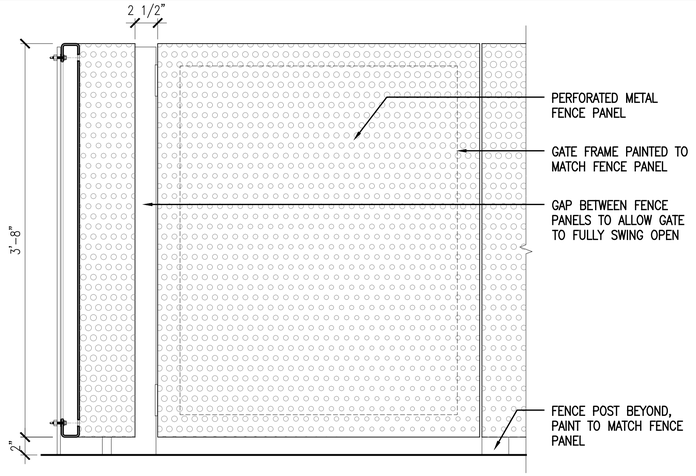
10 GATE AT HINGE

SCALE: 6" = 1'-0"



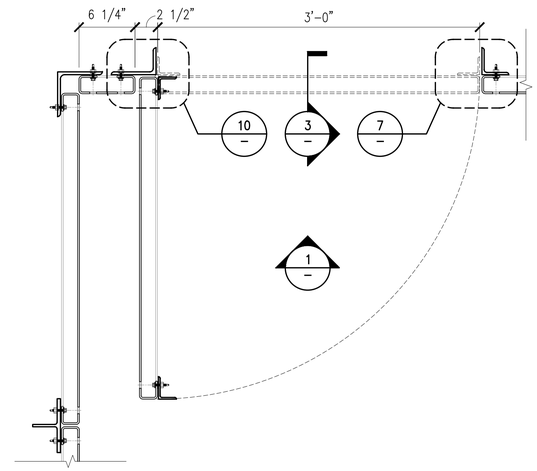
7 GATE TO FENCE TRANSITION

SCALE: 6" = 1'-0"



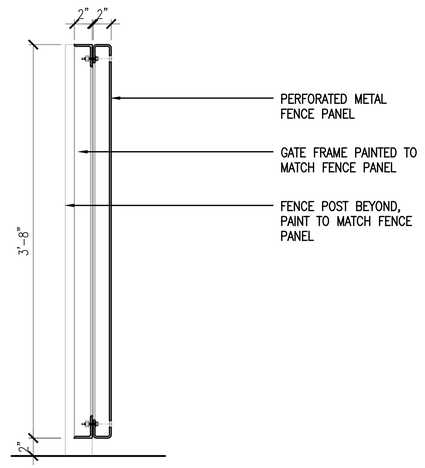
1 GATE ELEVATION

SCALE: 1 1/2" = 1'-0"



2 GATE PLAN

SCALE: 1 1/2" = 1'-0"



3 GATE SECTION

SCALE: 1 1/2" = 1'-0"

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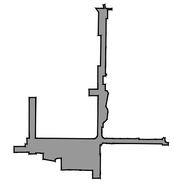

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GATE DETAILS

SHEET TITLE

A543

SHEET NO.

LEGEND

GL – GLASS
CLR – CLEAR
HM – HOLLOW METAL
PT – PAINTED
AL – ALUMINUM
ST – STEEL
WD – WOOD

REMARKS

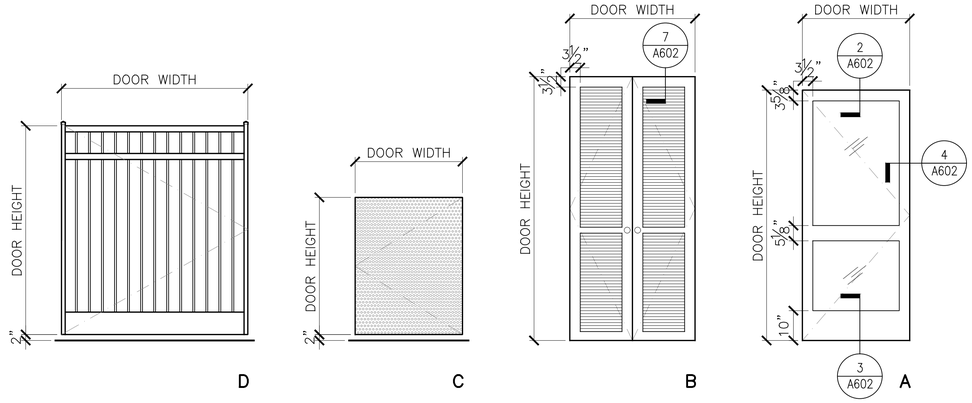
1. OVERHEAD ROLL DOWN SHADE
2. SEE SPECS FOR DOOR MATERIAL FINISHES

DOOR SCHEDULE

DOOR NO.	DOOR TYPE	LOCATION	DOOR SIZE			MATERIAL/FINISH				DETAIL				HDW SET	RATING	GLAZING	REMARKS
			WIDTH	HEIGHT	THICKNESS	DOOR		FRAME		HEAD	JAMB	SILL	OTHER				
1	A	KIOSK	3'–0"	7'–0"	1–3/4"	AL/GL	PT	AL/GL	PT	2/A602	4/A602	3/A602		1	–	YES	
2	B	KIOSK – IDF CLOSET	3'–6"	7'–4 1/2"	1–3/4"	WD	PT	WD	PT	7/A602	7/A602	8/A602		2	–	–	
3	C	KIOSK –CONDENSER PAD	3'–0"	3'–8"	4"	ST	PT	ST	PT	3/A543	7&10/A543	3/A543	1/A543	3	–	–	
4	D	SOUTH RECREATION MALL	5'–2 1/2"	6'–0"	2"	ST	PT	ST	PT				1/L204	4	–	–	

1 DOOR SCHEDULE

SCALE: N/A



2 DOOR TYPES

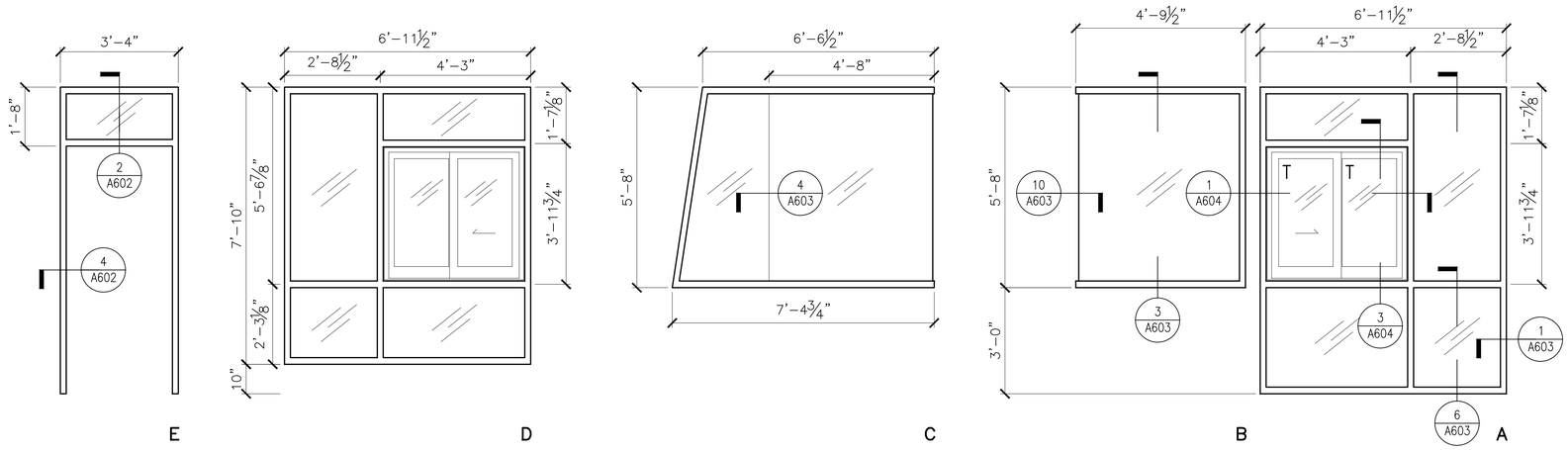
SCALE: 1/2"=1'–0"

WINDOW SCHEDULE

WINDOW NO.	WINDOW TYPE	LOCATION	WINDOW SIZE			MATERIAL/FINISH		DETAIL				
			WIDTH	HEIGHT	SILL HEIGHT	GLASS	FRAME	HEAD	JAMB	SILL	OTHER	REMARKS
1	A	KIOSK	6'–11 1/2"	8'–8"	0'–0"	GL–1/GL–2	AL	9/A521		6/A521		1
2	B	KIOSK	4'–9 1/2"	5'–8"	3'–0"	GL–1	AL	9/A521		5/A521	9/A522	1
3	C	KIOSK	7'–4 3/4"	5'–8"	3'–0"	GL–1	AL	9/A521		5/A521	8&9/A522	1
4	D	KIOSK	6'–11 1/2"	7'–10"	0'–10"	GL–1/GL–2	AL	9/A521		6/A521		1
5	E	KIOSK	3'–4"	1'–8"	7'–0"	GL–1	AL	2/A602		2/A602		

3 WINDOW SCHEDULE

SCALE: N/A



4 WINDOW TYPES

SCALE: 1/2"=1'–0"

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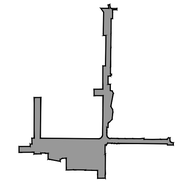

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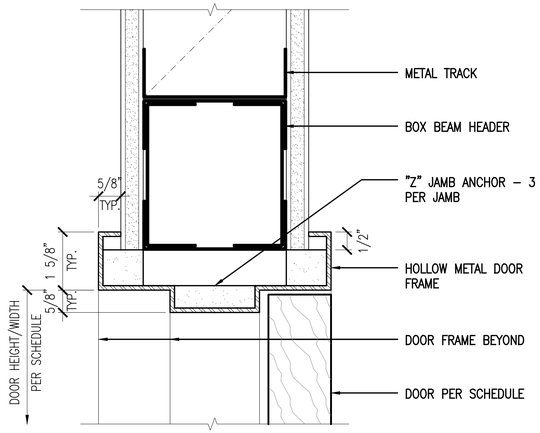
DOOR & WINDOW SCHEDULE

SHEET TITLE

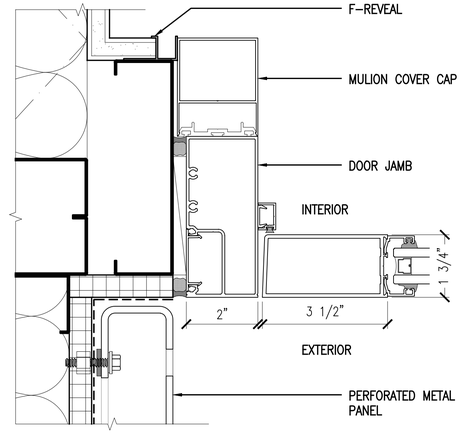
A601

SHEET NO.



7 CLOSET DOOR HEAD (JAMB SIM.)

SCALE: 6" = 1'-0"

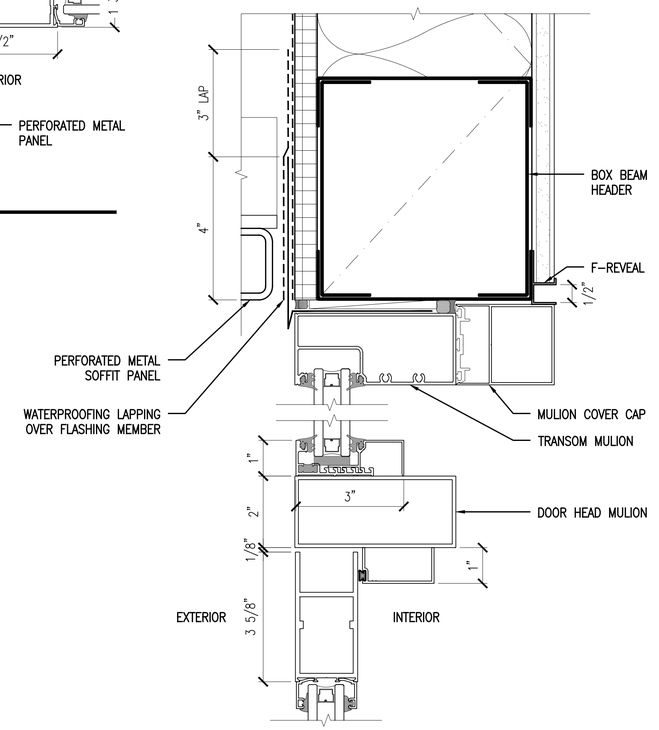


4 DOOR JAMB

SCALE: 6" = 1'-0"

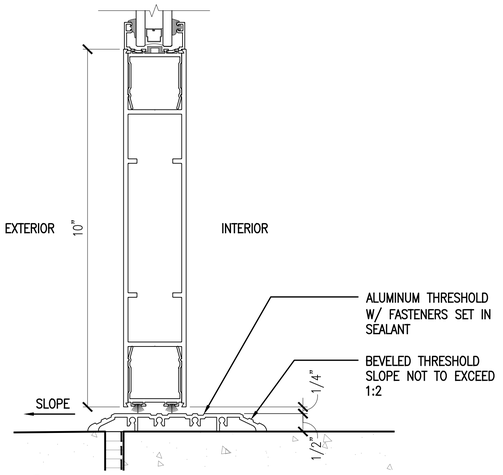
8 CLOSET DOOR SILL

SCALE: 6" = 1'-0"



2 DOOR HEAD & TRANSOM

SCALE: 6" = 1'-0"



3 DOOR SILL

SCALE: 6" = 1'-0"

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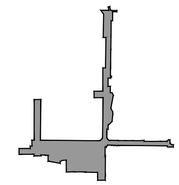

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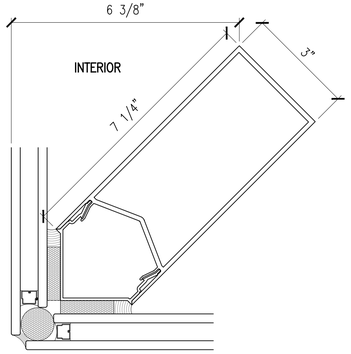
DOOR DETAILS

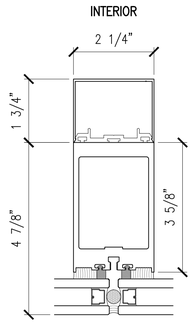
SHEET TITLE

A602

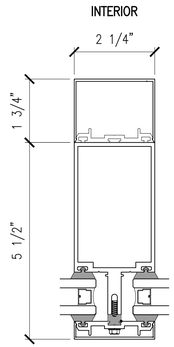
SHEET NO.



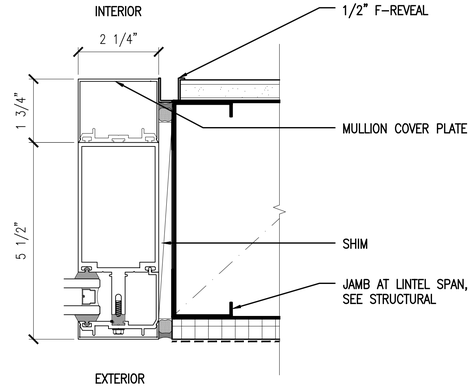
10 VERTICAL MULLION - CORNER
SCALE: 6" = 1'-0"



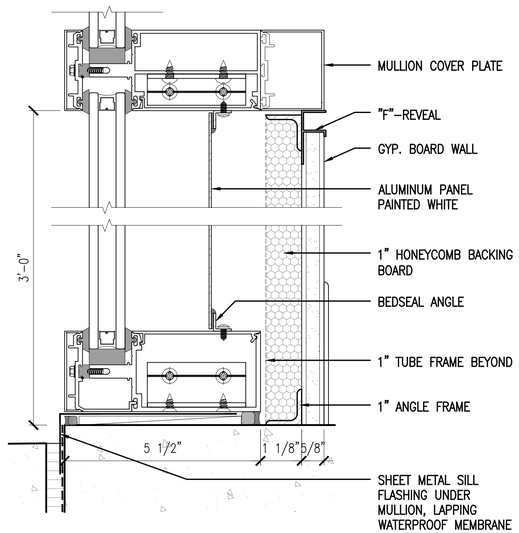
7 VERTICAL MULLION - BUTT JOINT
SCALE: 6" = 1'-0"



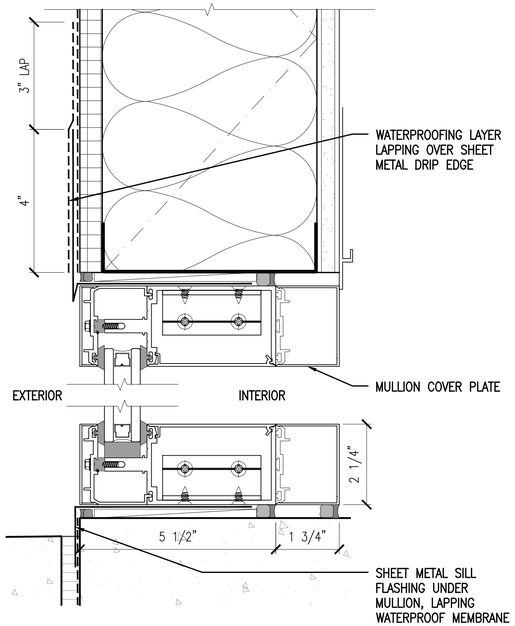
4 VERTICAL MULLION - INTERMEDIATE
SCALE: 6" = 1'-0"



1 VERTICAL MULLION - JAMB
SCALE: 6" = 1'-0"



6 SHADOW BOX SPANDREL
SCALE: 6" = 1'-0"



3 HORIZONTAL MULLION SECTION
SCALE: 6" = 1'-0"

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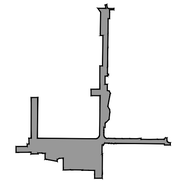

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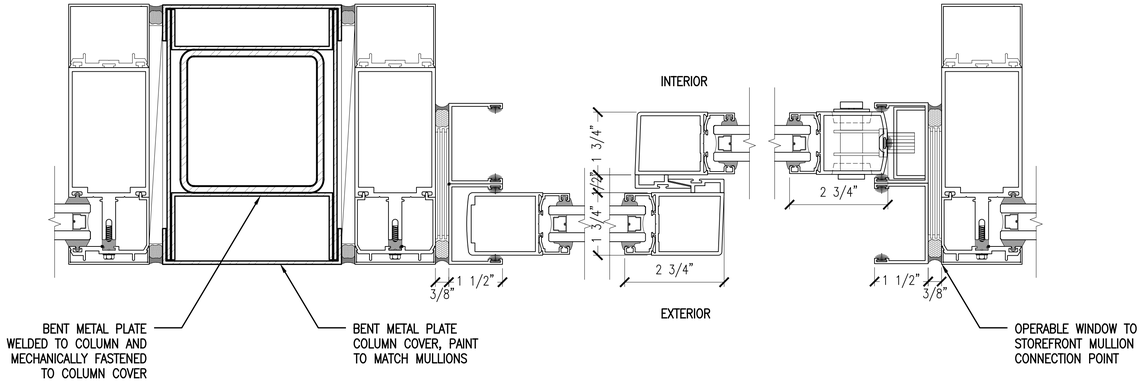
WINDOW DETAILS

SHEET TITLE

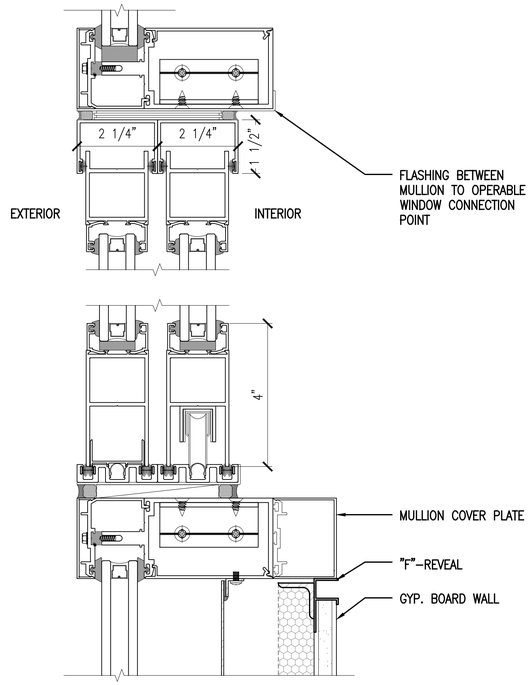
A603

SHEET NO.



1 OPERABLE WINDOW PLAN

SCALE: 6" = 1'-0"



3 OPERABLE WINDOW SECTION

SCALE: 6" = 1'-0"

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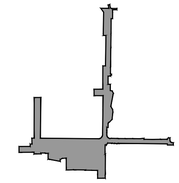

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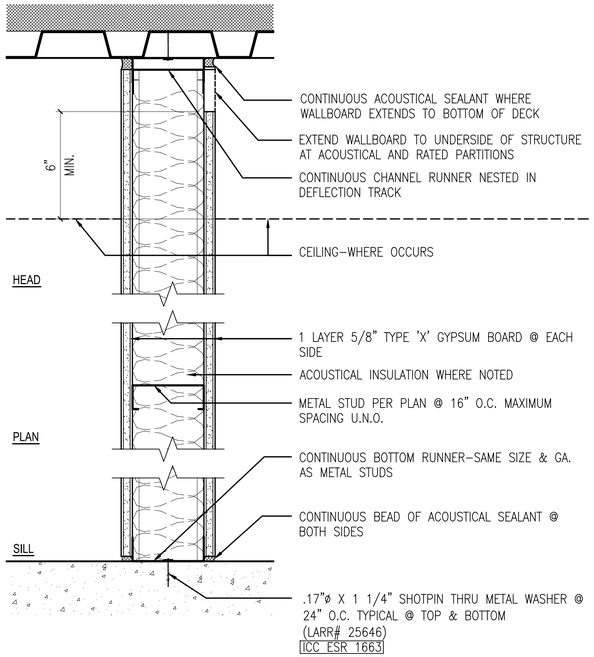
WINDOW DETAILS

SHEET TITLE

A604

SHEET NO.



KEY	STUD SIZE	BATT INSUL.	FIRE RATING	UL LISTING	REMARKS
D / –4	4"	NO	NONE	N/A	

D PARTITION TYPE D

SCALE: 3"=1'-0"

PARTITION TYPE LEGEND

PARTITION KEY

DA / 1 4

PARTITION TYPE
(ACOUSTICAL OR NON ACOUSTICAL TYPE)

FRAMING/UNIT SIZE
0 = 7/8"
1 = 1 5/8"
2 = 2 1/2"
3 = 3 5/8"
4 = 4"
6 = 6"
8 = 8"
12 = 12"

HEAD CONDITION / FIRE RATING
– = NON FIRE RATED AND NON ACOUSTICAL PARTITION ENDS 6" ABOVE FINISH CEILING
0 = NON FIRE RATED PARTITION TO UNDERSIDE OF STRUCTURE
1 = 1–HOUR FIRE RATED
2 = 2–HOUR FIRE RATED
* = PARTIAL HEIGHT PARTITION, SEE PLAN OR ELEVATION FOR HEIGHT
3 = 3–HOUR FIRE RATED
4 = 4–HOUR FIRE RATED
S = SMOKE RATED PARTITION

PARTITION NOTES

A. ALL PENETRATIONS IN FIRE RATED WALLS AND PARTITIONS SHALL BE FIRE STOPPED WITH APPROVED MATERIALS.

B. ALL ACOUSTIC PARTITIONS SHALL BE CAULKED AT PERIMETER AND AT ALL PENETRATIONS WITH ACOUSTIC SEALANT. USE ACOUSTICAL SEALANT TO FORM AIRTIGHT SEALS AT THE INTERSECTIONS OF ACOUSTICAL PARTITIONS WITH ALL SURROUNDING AND INTERSECTING CONSTRUCTIONS.

C. ACOUSTICALLY PROTECT ALL PENETRATIONS THROUGH ACOUSTIC WALLS. USE ACOUSTICAL SEALANT TO FORM AIRTIGHT SEALS AT ALL PENETRATIONS THROUGH ACOUSTICAL PARTITIONS.

D. ALL PARTITIONS WITH INSULATION BATTS IN THEIR STUD CAVITIES SHALL BE CONSIDERED "ACOUSTICAL PARTITIONS" AND SHALL CONFORM TO THE ACOUSTICAL REQUIREMENTS ON THIS SHEET, ALL PARTITION DETAIL SHEETS, AND THE SPECIFICATIONS. BOTH SIDES OF A DOUBLE–STUDDED WALL SHALL BE CONSIDERED AN "ACOUSTICAL PARTITION", EVEN IF ONLY ONE OF ITS STUD CAVITY ROWS IS SPECIFIED TO CONTAIN INSULATION BATTS.

E. ALL ACOUSTICAL PARTITIONS SHALL USE 25 GAUGE STUDS, EXCEPT WHERE THE PRESENCE OF WALL–HUNG ITEMS REQUIRES STIFFER STUDS. PARTITIONS REQUIRING STIFFER STUDS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION FOR ACOUSTICAL MITIGATION.

F. THICKNESS OF ACOUSTIC BATT SHOULD BE ACCORDING TO STUD SIZE (I.E., FOR A 4" STUD USE 3" BATT, FOR A 6" STUD USE 5" BATT, ETC.) INSULATION BATT THICKNESS IN ACOUSTICAL PARTITIONS SHALL BE WITHIN 1/2" OF THE STUD WIDTH.

G. A DOUBLE–STUDDED ACOUSTICAL PARTITION IS ESSENTIALLY A PAIR OF "HALF WALLS" THAT ARE TO REMAIN INDEPENDENT OF EACH OTHER. THERE SHALL BE NO BRIDGING OF ANY TYPE BETWEEN THE STUD ROWS AND NO TRADE'S WORK MAY ENTER THE GAP BETWEEN THE STUD ROWS.

H. GAUGE AND BRACING REQUIREMENTS FOR LIGHT AND COLD ROLLED METAL FRAMING SYSTEMS SHALL BE DETERMINED BY THE CONTRACTOR BASED ON STUD SIZE (AS INDICATED ON DRAWING) AND STUD HEIGHT. (SEE ALSO NOTE 'E' ABOVE)

I. PARTITION TYPE ABOVE & BELOW OPENINGS IN PARTITIONS SUCH AS DOORS, GLAZED OPENINGS, LOUVERS, RECESSED CABINETS, ETC. SHALL BE SAME AS FOR THE PARTITION INTERRUPTED BY THE OPENING.

J. WHERE WALL MOUNTED ITEMS OCCUR AS INDICATED ON THE PLANS AND ELEVATIONS, PARTITIONS SHALL INCLUDE STEEL BACKING PLATES. 12GA BACKING PLATE ANCHORED TO 3 STUDS MINIMUM.

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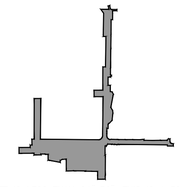

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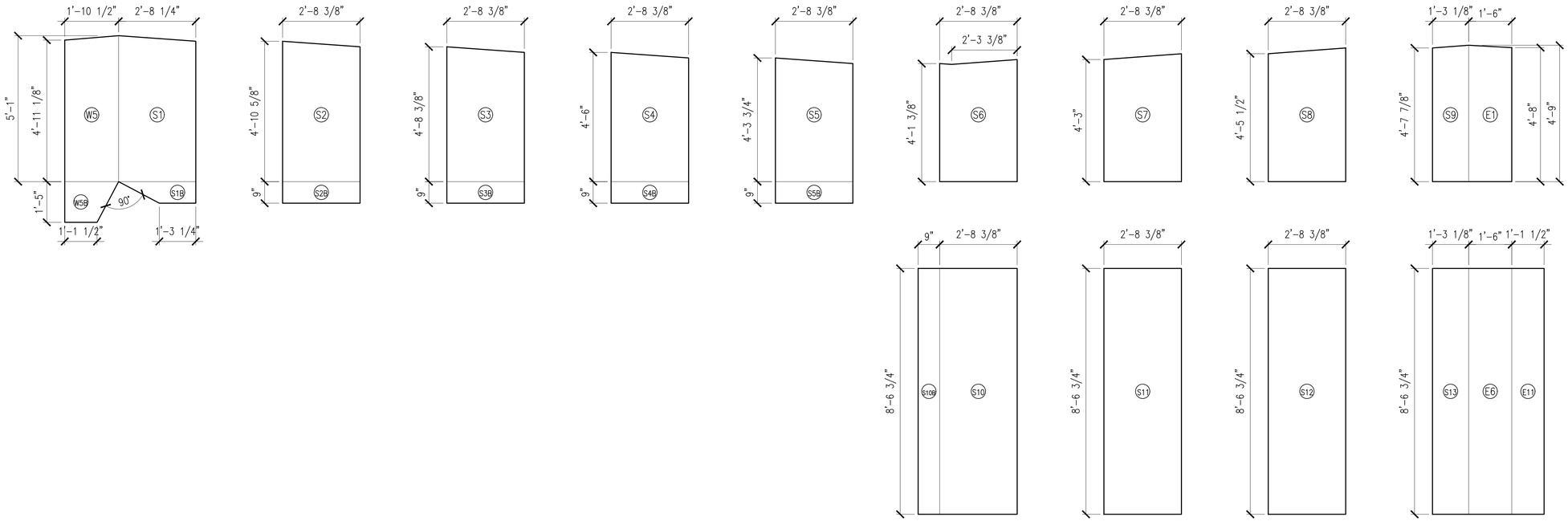
PARTITION TYPES

SHEET TITLE

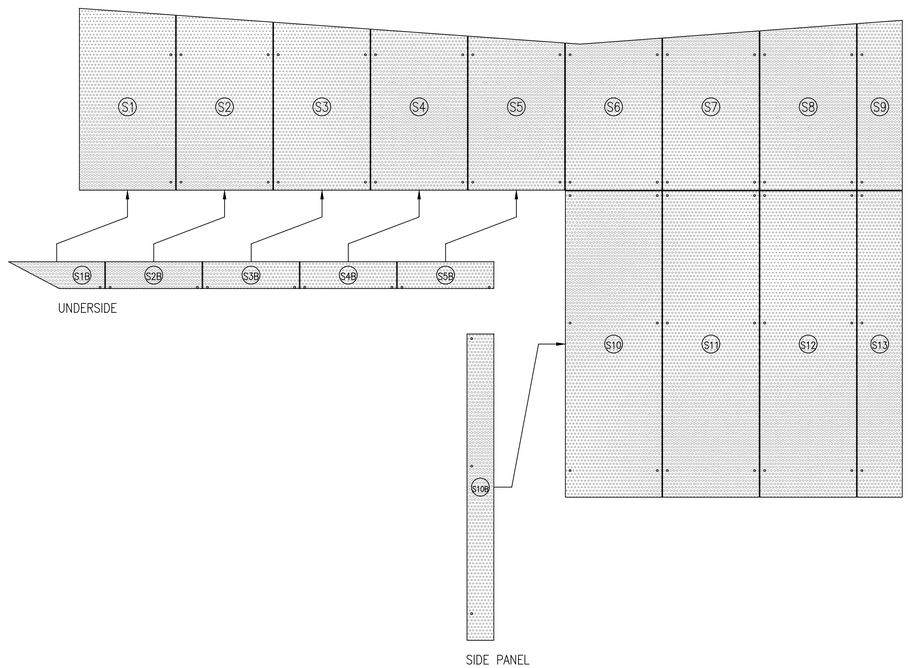
A611

SHEET NO.



2 SOUTH ELEVATION PANEL SIZES

SCALE: 1/2" = 1'-0"



1 SOUTH ELEVATION PANEL LAYOUT

SCALE: 1/2" = 1'-0"

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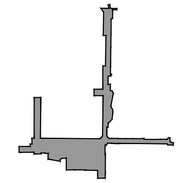

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DATE

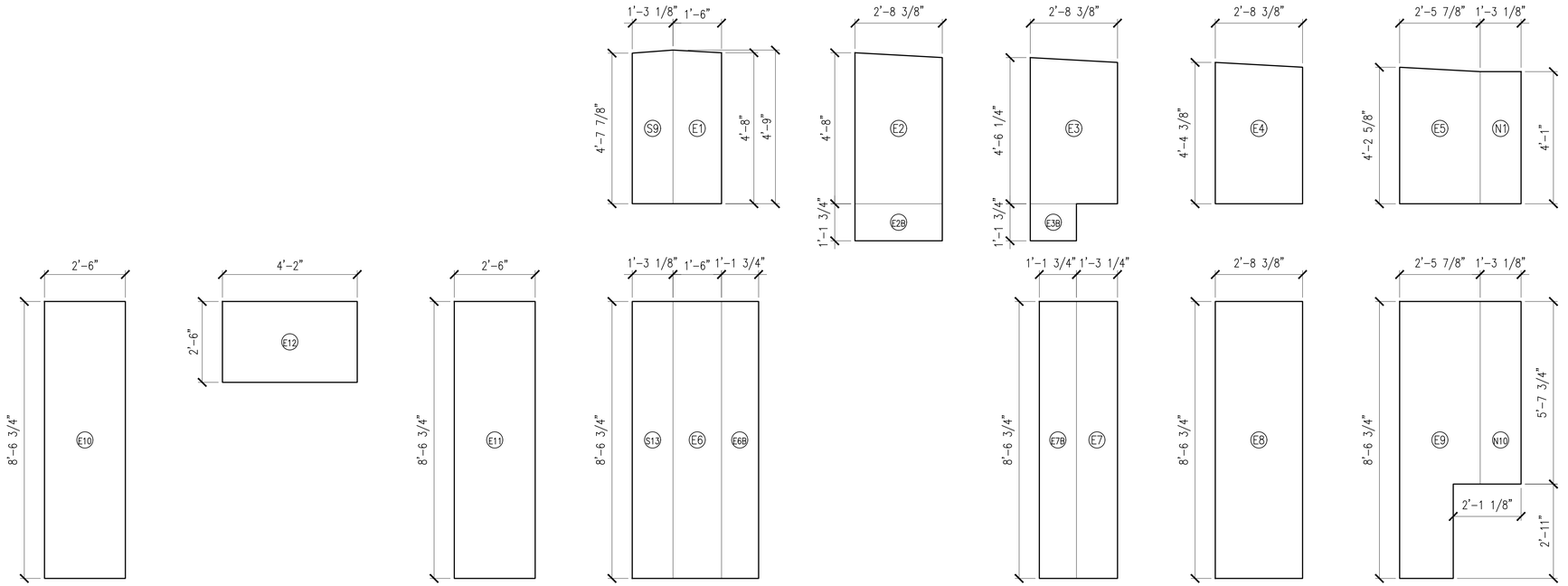
PROJECT NO. GRUEN # 8345

KIOSK -
PANEL PATTERNS

SHEET TITLE

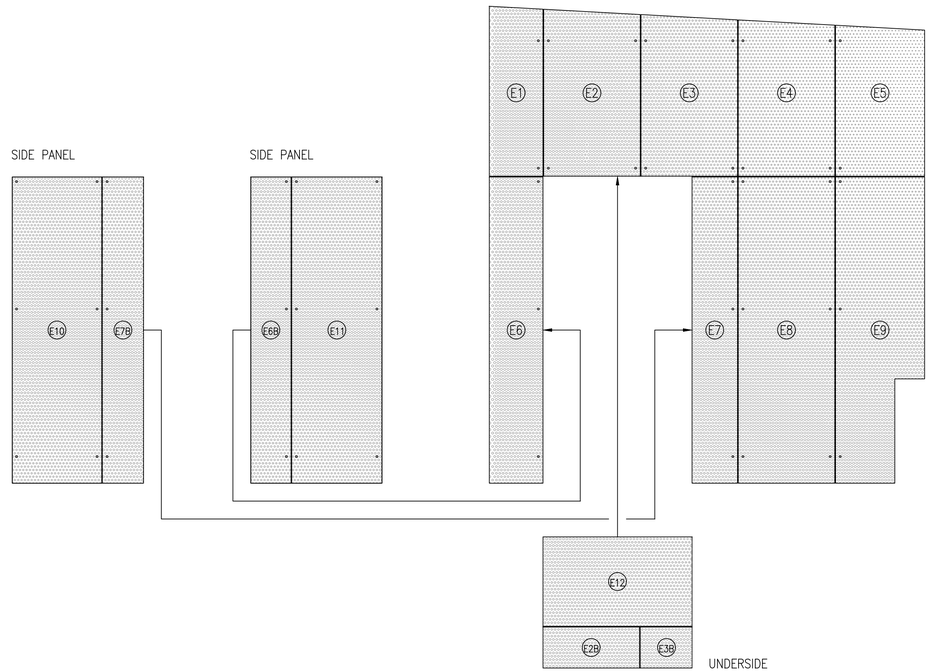
A621

SHEET NO.



2 EAST ELEVATION PANEL SIZES

SCALE: 1/2" = 1'-0"



1 EAST ELEVATION PANEL LAYOUT

SCALE: 1/2" = 1'-0"

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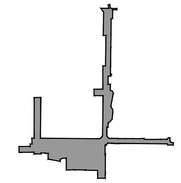

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	05/01/18	100% DD SET	

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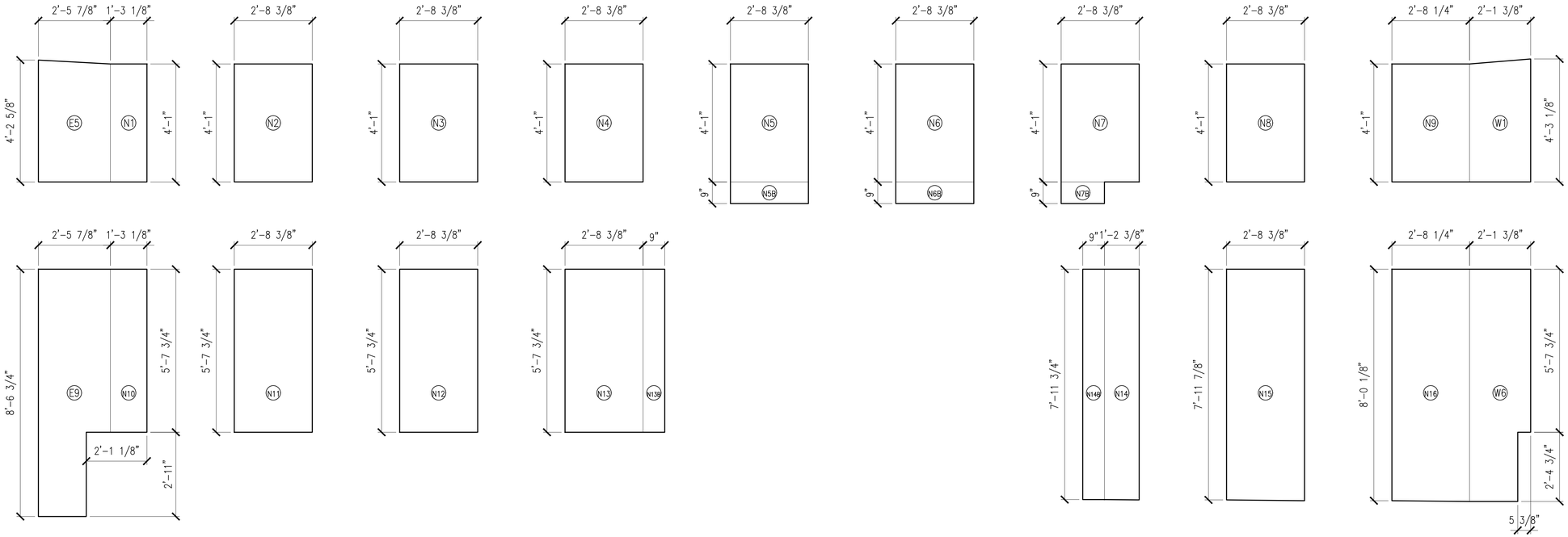
PROJECT NO. GRUEN # 8345

KIOSK -
PANEL PATTERNS

SHEET TITLE

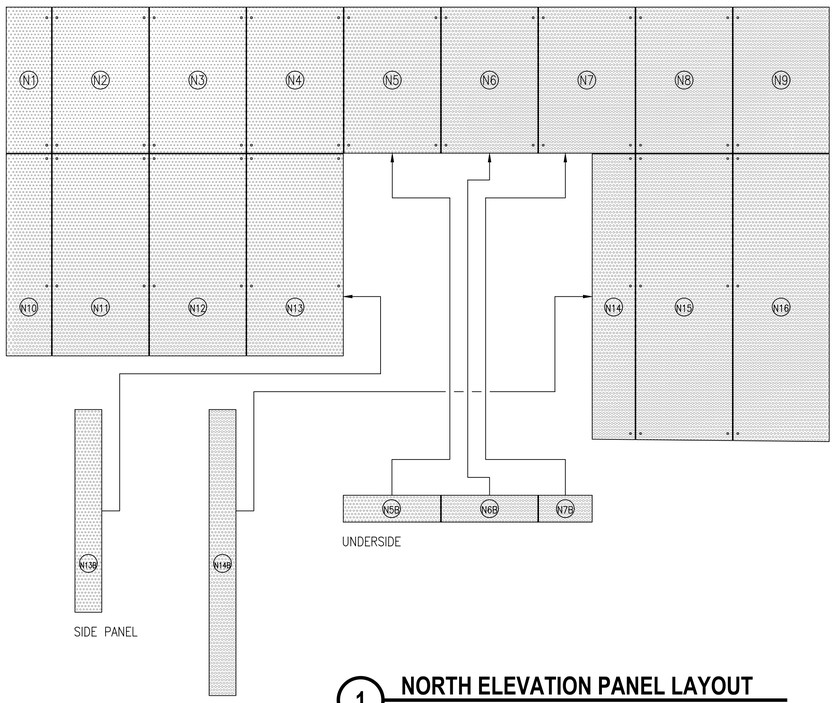
A622

SHEET NO.



2 NORTH ELEVATION PANEL SIZES

SCALE: 1/2" = 1'-0"



1 NORTH ELEVATION PANEL LAYOUT

SCALE: 1/2" = 1'-0"

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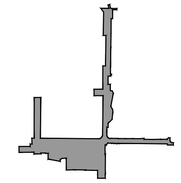

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DATE

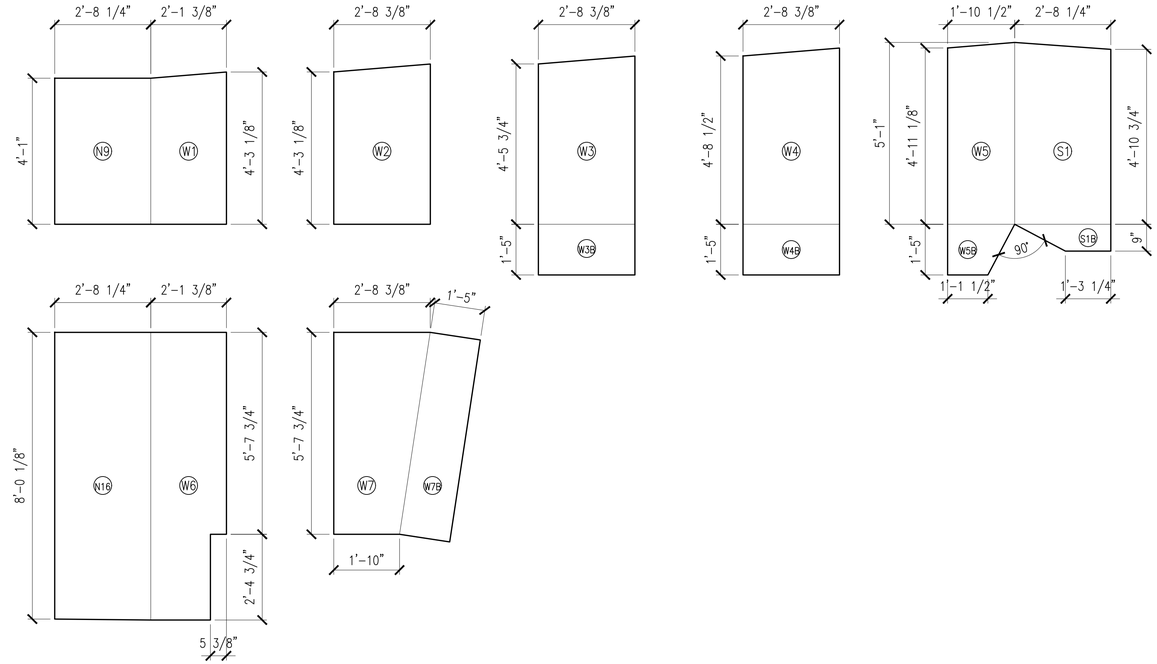
PROJECT NO. GRUEN # 8345

KIOSK -
PANEL PATTERNS

SHEET TITLE

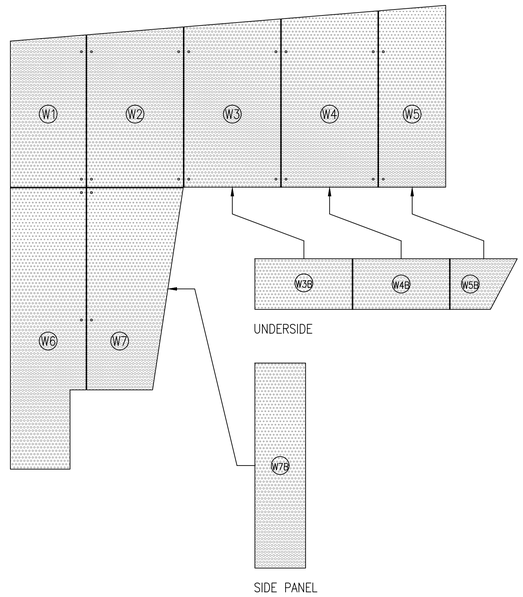
A623

SHEET NO.



2 WEST ELEVATION PANEL SIZES

SCALE: 1/2" = 1'-0"



1 WEST ELEVATION PANEL LAYOUT

SCALE: 1/2" = 1'-0"

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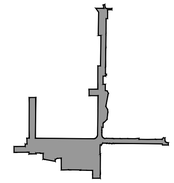

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PROJECT NO. GRUEN # 8345

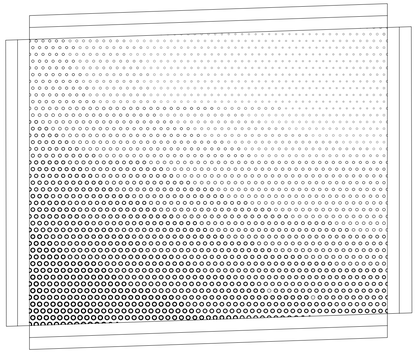
KIOSK -
PANEL PATTERNS

SHEET TITLE

A624

SHEET NO.

PANEL TYPE A– (ANGLED)



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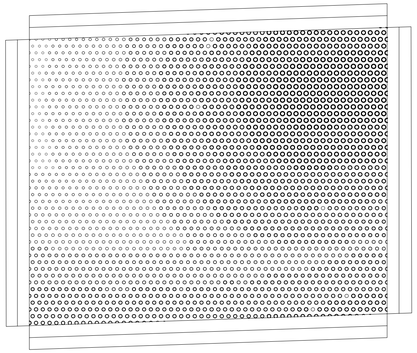
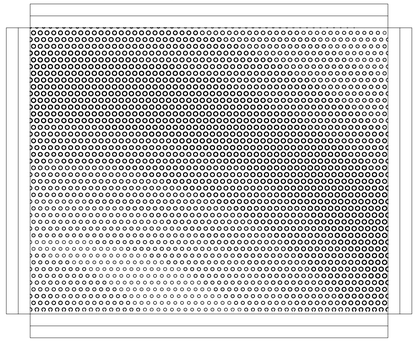
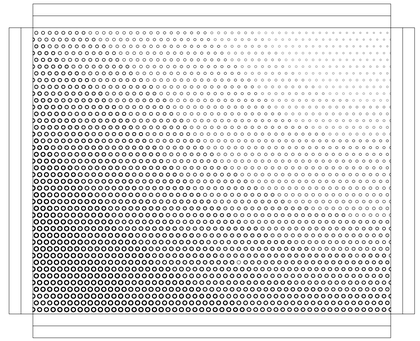


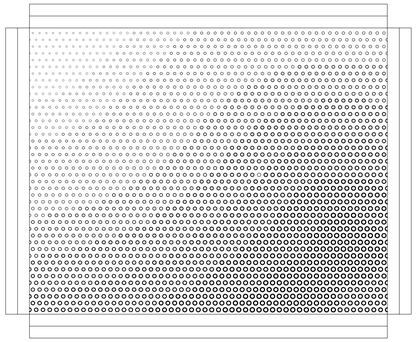
PANEL TYPE C– (NORTH SIDE)



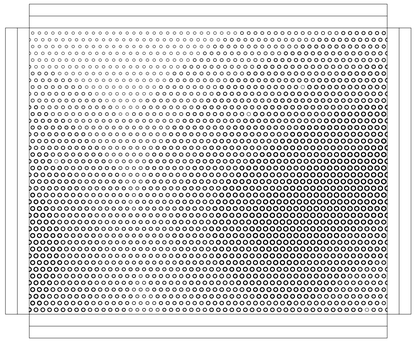
PANEL TYPE D– (NORTH SIDE)



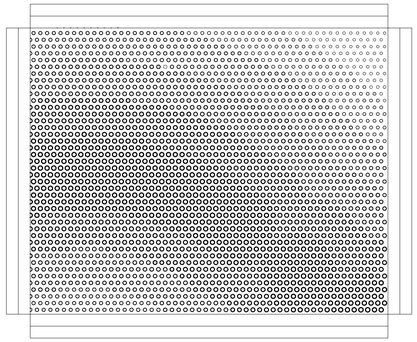
PANEL TYPE E– (NORTH SIDE)



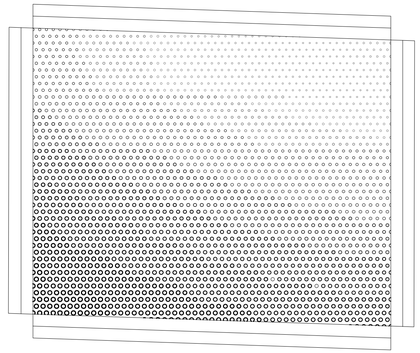
PANEL TYPE F– (NORTH SIDE)



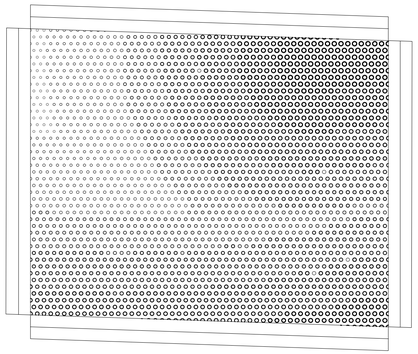
PANEL TYPE G– (NORTH SIDE)



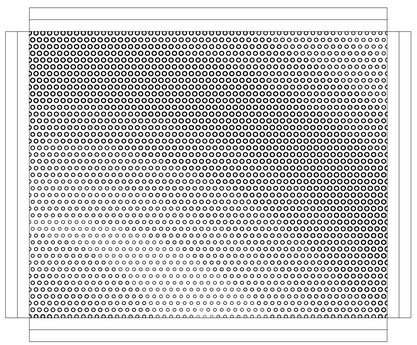
PANEL TYPE H– (ANGLED)



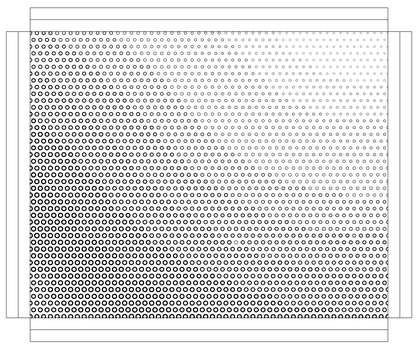
PANEL TYPE I– (ANGLED)



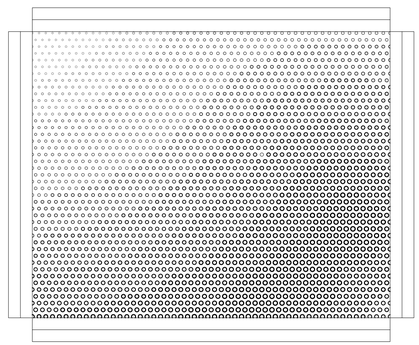
PANEL TYPE J– (SOUTH SIDE)



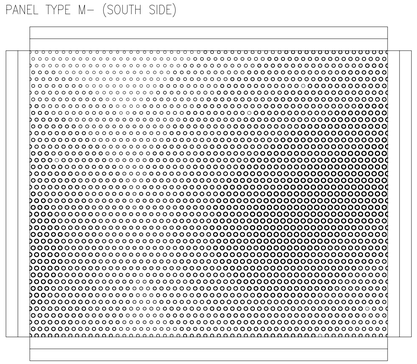
PANEL TYPE K– (SOUTH SIDE)



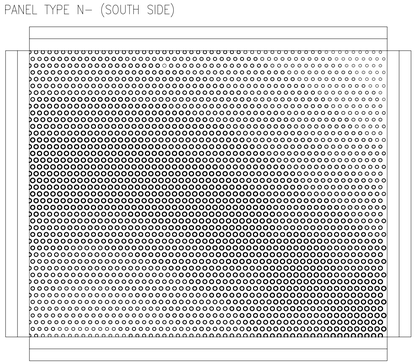
PANEL TYPE L– (SOUTH SIDE)



PANEL TYPE M– (SOUTH SIDE)



PANEL TYPE N– (SOUTH SIDE)



NOTES:

1. PATTERN CONSISTS OF TEN (10) HOLE SIZES.
2. HOLE SIZES RANGE FROM 0.25" TO 0.75" AT INCREMENTS OF 0.05".
3. EACH BAND WIDTH IS APPROXIMATELY 6" TO 12" WIDE.
4. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL BY CLIENT REPRESENTATIVE PRIOR TO FABRICATION.

1 PERFORATED PANELS (UNFOLDED)

SCALE: 1"= 1'-0"

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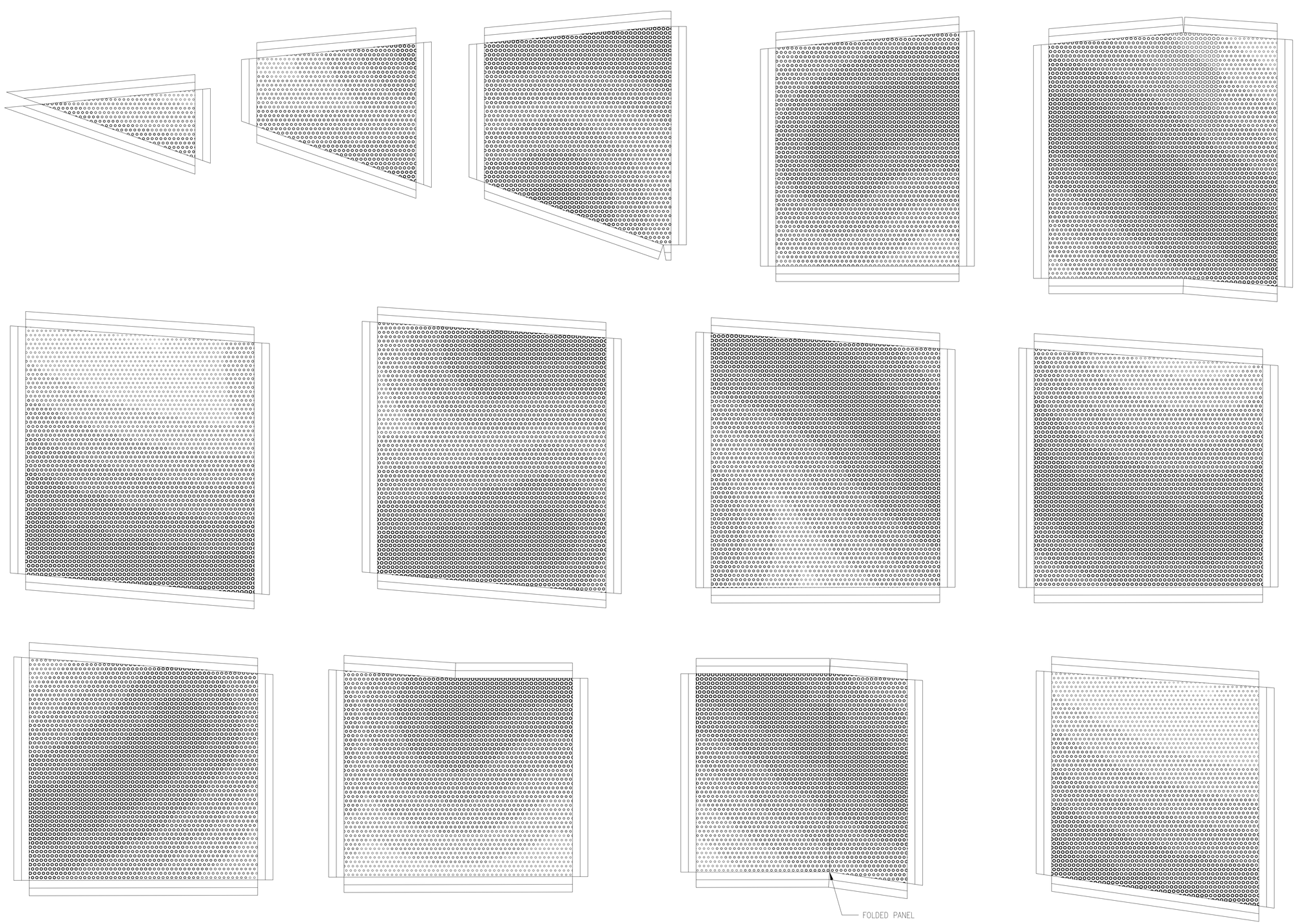
DATE	12/19/2018
PROJECT NO.	GRUEN # 8345

MEDIAN FENCE
PERFORATION
PATTERN

SHEET TITLE

A625

SHEET NO.



NOTES:

1. PATTERN CONSISTS OF EIGHT (8) HOLE SIZES.
2. HOLE SIZES RANGE FROM 0.375" TO 0.75" AT INCREMENTS OF 0.05".
3. EACH BAND WIDTH IS APPROXIMATELY 6" TO 12" WIDE.
4. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL BY CLIENT REPRESENTATIVE PRIOR TO FABRICATION.

1 PERFORATED PANELS (UNFOLDED)
SCALE: 1"= 1'-0"

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BASE FILE NAMES	XL_HARDSCAPE
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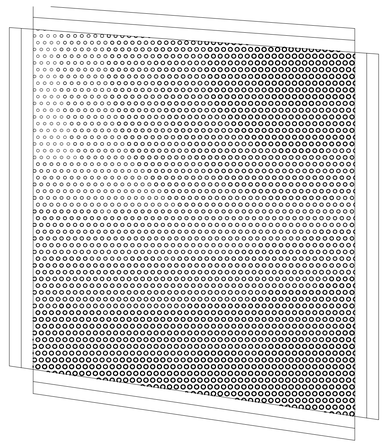
SCALE	N/A
DATE	12/19/2018
PROJECT NO.	GRUEN # 8345

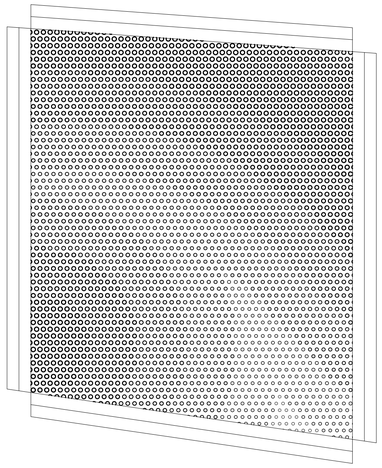
RAMP GUARD PERFORATION PATTERN

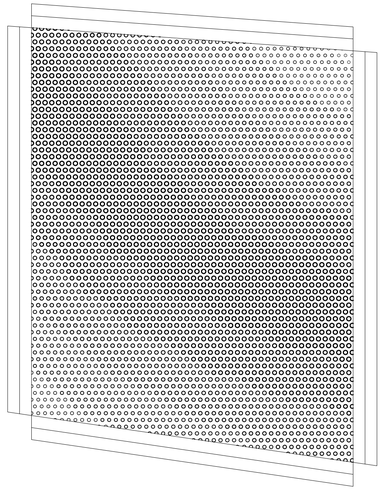
SHEET TITLE

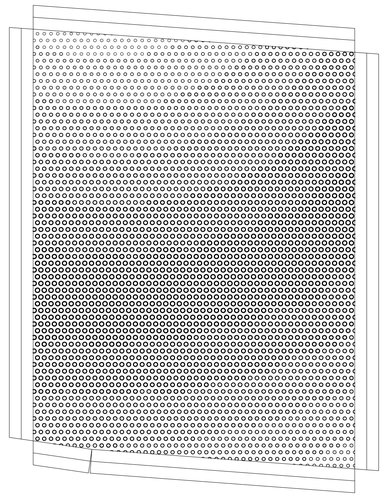
A626

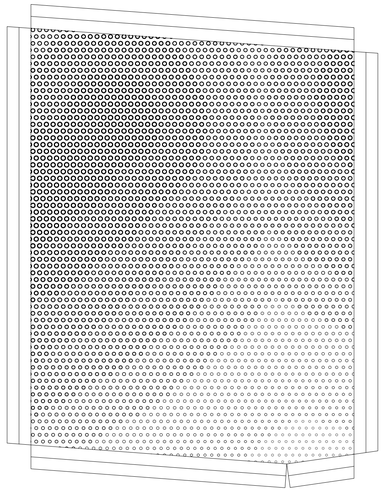
SHEET NO.

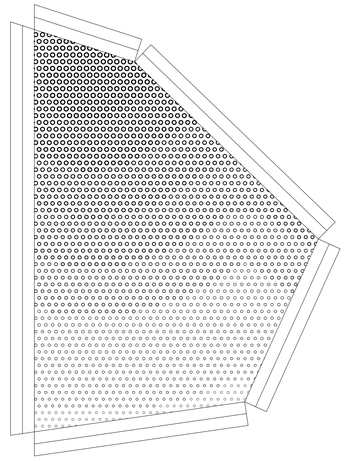












NOTES:

1. PATTERN CONSISTS OF EIGHT (8) HOLE SIZES.
2. HOLE SIZES RANGE FROM 0.375" TO 0.75" AT INCREMENTS OF 0.05".
3. EACH BAND WIDTH IS APPROXIMATELY 6" TO 12" WIDE.
4. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL BY CLIENT REPRESENTATIVE PRIOR TO FABRICATION.

1 PERFORATED PANELS (UNFOLDED)

SCALE: 1"= 1'-0"

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BASE FILE NAMES	XL_HARDSCAPE
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SCALE	N/A
DATE	12/19/2018
PROJECT NO.	GRUEN # 8345

RAMP GUARD PERFORATION PATTERN

SHEET TITLE

A627

SHEET NO.

FINISH	MATERIAL	BASIS OF DESIGN MANUFACTURER / DESCRIPTION
CLG-1	2x2 ACOUSTIC CEILING TILE	ARMSTRONG ULTIMA TEGULAR W/ SILHOUETTE XL 9/16" BOLT SLOT – 1/8" REVEAL WHITE FINISH
CLG-2	GYPSUM BOARD	
GL-1	TEMPERED CLEAR GLASS	CLEAR INSULATING GLASS
GL-2	TEMPERED FRITTED GLASS	STARPHIRE INSULATED LAMINATED HS/HS/HS SILKSCREEN WITH SIMULATED ACID ETCH
C-1	CONCRETE	POLISHED CONCRETE
P-1	PAINT	CLEAR ANODIZED CLASS 1 (SAFINISH-SAFC204)
P-2	PAINT	KYNAR, XL FAWN METALLIC (UC106710)
P-3	PAINT	PPG, BONE WHITE (UC43350)
P-4	PAINT	BENJAMIN MOORE, EGGSHELL SEMI MATE WHITE (2021-70)
B-1	RUBBER BASE	ALLSTATE – STRAIGHT WALLBASE, COLOR A91
F-1	ROLLER SHADE	SEE SPECS FOR MANUFACTURER – FABRIC COLOR – WHITE

2 MATERIALS LIST

SCALE: N/A

ROOM NUMBER	ROOM	FLOOR FINISH	FLOOR BASE	WALL FINISH NORTH	WALL FINISH WEST	WALL FINISH SOUTH	WALL FINISH EAST	CEILING FINISH	CEILING HEIGHT	REMARKS
FIRST FLOOR										
101	KIOSK	C-1	B-1	P-4	P-4	P-4	P-4	CLG-1	8'-8"	1,2,3
102	IDF CLOSET	C-1	B-1	P-4	P-4	P-4	P-4	CLG-2	8'-8"	1,2,3

REMARKS:

1. SEE CEILING PLAN FOR EXTENT OF CEILING MATERIAL
2. SEE INTERIOR ELEVATIONS FOR EXTENT OF WALL FINISHES
3. SEE FINISH PLANS FOR EXTENT OF FLOOR BASE

1 ROOM SCHEDULE

SCALE: N/A

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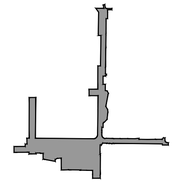

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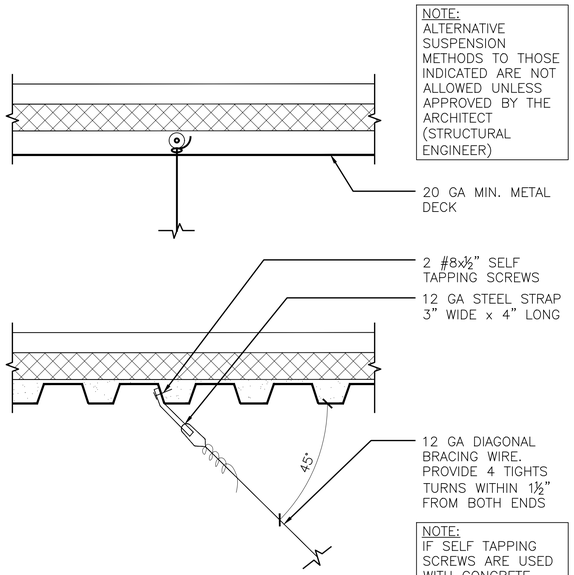
ROOM FINISH SCHEDULE

SHEET TITLE

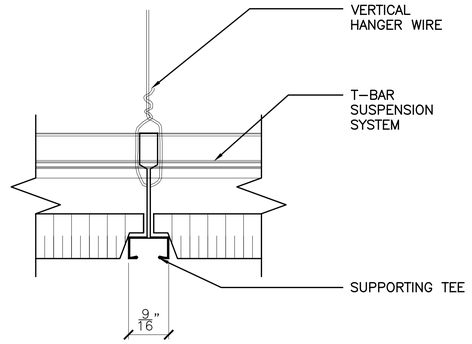
A641

SHEET NO.



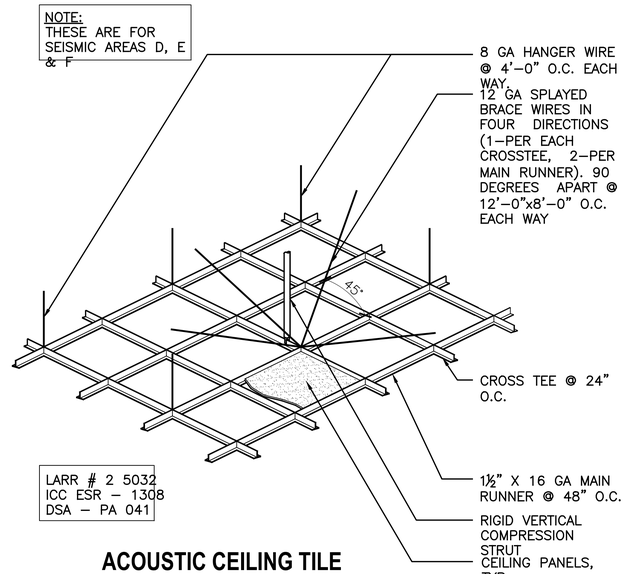
5 SUSPENDED CEILING HANGER & SWAY WIRE TO ROOF DECK CONNECTION

SCALE: 3"=1'-0"



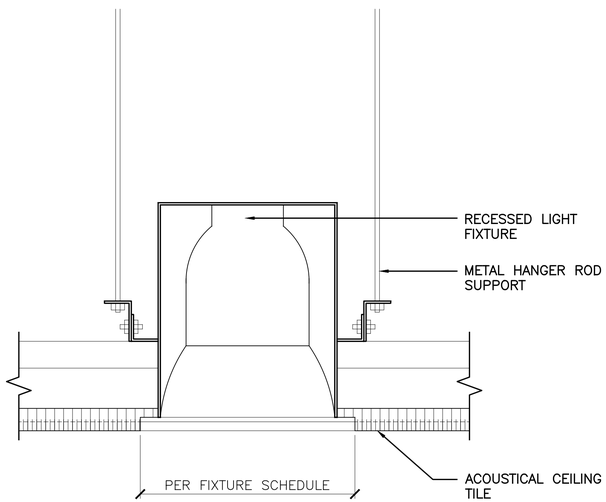
3 ACOUSTIC CEILING TILE TYPICAL TEGULAR

SCALE: FULL SCALE



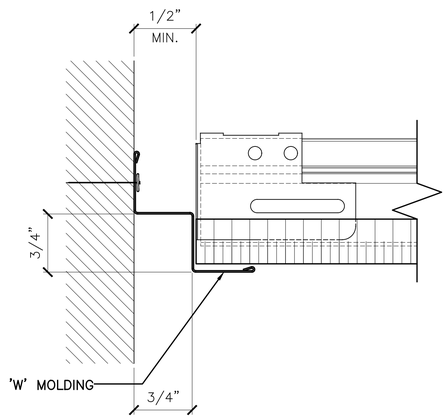
1 ACOUSTIC CEILING TILE SUSPENSION SYSTEM LAYOUT

SCALE: 1"=1'-0"



6 RECESSED LIGHT FIXTURE

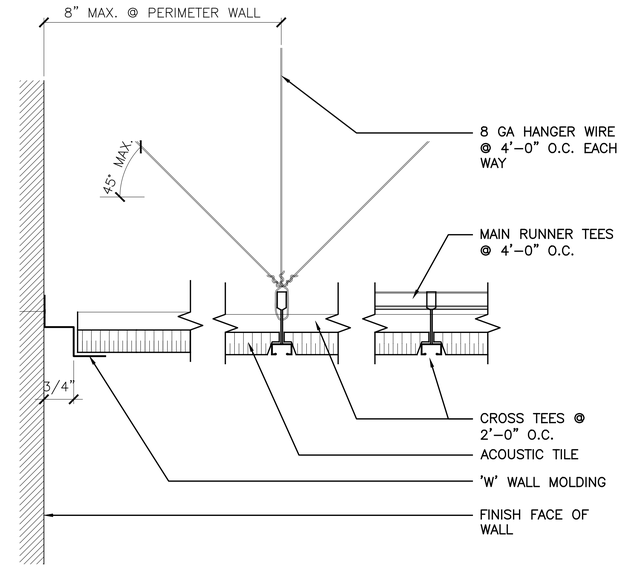
SCALE: 6"=1'-0"



4 ACOUSTIC CEILING TILE EDGE W/ REVEAL

SCALE: FULL SCALE

SEE DETAIL 2/- FOR TYPICAL NOTES



2 SUSPENDED ACOUSTIC TILE CEILING

SCALE: 6"=1'-0"

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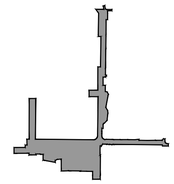

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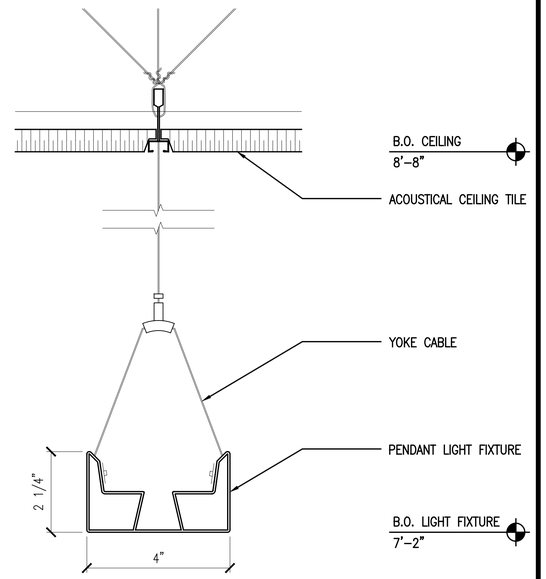
ACOUSTIC TILE CEILING DETAILS

SHEET TITLE

A872

SHEET NO.



1 PENDANT LIGHT FIXTURE

SCALE: 6"=1'–0"

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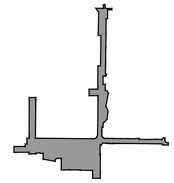

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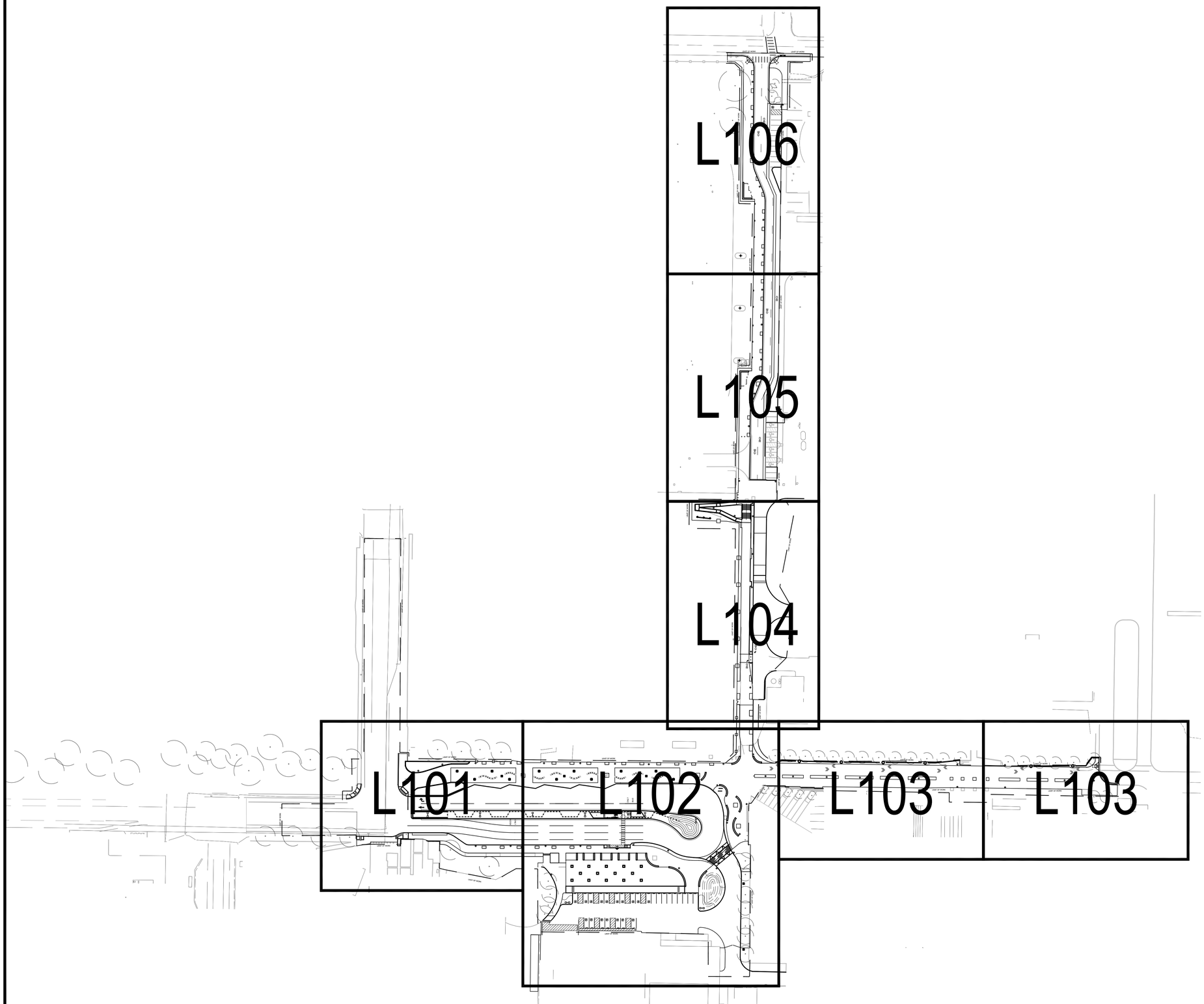
PROJECT NO. GRUEN # 8345

ACOUSTIC TILE CEILING DETAILS

SHEET TITLE

A873

SHEET NO.



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KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD-BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES	OVERALL SITE PLAN.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=80'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

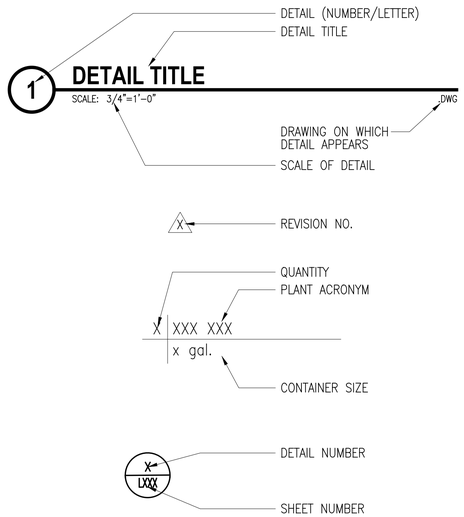
OVERALL SITE PLAN

SHEET TITLE

L001

SHEET NO.

SYMBOLS



ABBREVIATIONS

℄	CENTER LINE
DG	DECOMPOSED GRANITE
DIA.	DIAMETER
(E)	EXISTING
EQ.	EQUAL
FT OR ( ) '	FEET OR FOOT
IN OR ( ) "	INCHES OR INCH
(N)	NEW
MIN.	MINIMUM
NTS	NOT TO SCALE
O.C.	ON CENTER
ROW OR R/W	RIGHT-OF-WAY
TYP.	TYPICAL
WD	WIDTH
W/	WITH

HARDSCAPE & PLANTING NOTES

GENERAL

1. ALL WORK IN THE CITY OF RIVERSIDE SHALL CONFORM TO APPLICABLE CITY AND COUNTY STANDARD CODES.
2. ALL WORK SHALL CONFORM TO AB 1881, STATE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE (WELO) SEPTEMBER, 2009.
3. CONTRACTOR SHALL CAREFULLY INSPECT THE SITE AND VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH WORK. CONTRACTOR SHALL NOTIFY UCR REPRESENTATIVE IF ANY INCONSISTENCIES OCCUR.
4. CONTRACTOR SHALL MAINTAIN A QUALIFIED ENGLISH SPEAKING SUPERVISOR ON THE SITE AT ALL TIMES; DURING CONSTRUCTION THROUGH COMPLETION OF PUNCH LIST ITEMS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BACKFILL AND TRENCH COMPACTION FINISH GRADING DRAINAGE AT A MINIMUM OF 2% AND INSTALLATION OF ALL EQUIPMENT AND MATERIALS, AS SHOWN ON THE DRAWINGS AND PER THE SPECIFICATIONS.
6. THE CONTRACTOR SHALL REMOVE ALL WEEDS, ROCKS, DEBRIS, AND OTHER EXTRANEOUS MATERIALS LARGER THAN 1" FROM THE JOB SITE PRIOR TO PROCEEDING WITH ANY WORK. RIP ANY COMPACTED SOIL TO A DEPTH OF 12" AND AMEND ALL SOIL 24" DEEP FOR PLANT ROOTING AND ESTABLISHMENT. WEED CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR IN ALL PLANTING AREAS DURING CONSTRUCTION AND MAINTENANCE PERIODS.
7. ALL EXISTING UTILITIES TO BE RELOCATED PER CIVIL PLANS.
8. ALL NEW PAVING LAYOUT PER CIVIL PLANS. SEE LANDSCAPE DRAWINGS FOR MATERIALS, FINISHES AND COLORS.
9. VERIFY ABOVE AND BELOW GROUND UTILITY LOCATIONS AND COORDINATE INSTALLATION OF TREES AND LANDSCAPING WITH THEM..
10. UCR REPRESENTATIVE SHALL REVIEW ALL PLANTING WORK. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL CONTACT UCR REPRESENTATIVE AND COORDINATE ALL FIELD REVIEWS. UCR REPRESENTATIVE SHALL REVIEW THE LOCATION OF ALL PLANT MATERIALS PRIOR TO THE EXCAVATION OF PLANT PITS.
11. ALL PLANT MATERIALS SHALL BE HANDLED OR STORED SO THAT THEY ARE ADEQUATELY PROTECTED FROM DRYING OUT, FROM SUN OR WINDBURN, OR FROM ANY OTHER INJURY.
12. PLANTS ARE SUBJECT TO REVIEW AT PLACE OF GROWTH AND ON THE PROJECT SITE AT ANY TIME BEFORE OR DURING PROGRESS WORK.
13. PLANT SPECIES SUBSTITUTES NOT PERMITTED UNLESS SPECIFICALLY APPROVED BY UCR REPRESENTATIVE IN WRITING. ALL SUBSTITUTIONS MUST COMPLY WITH WELO.
14. CONTRACTOR SHALL SUPPLY OWNER'S REPRESENTATIVE WITH THE FOLLOWING:
    A. COPIES OF NURSERY INVOICES FOR THE PURPOSE OF VERIFYING PLANT QUANTITY AND TYPE AT THE TIME OF DELIVERY. NO PLANT MATERIALS WILL BE ACCEPTED WITHOUT THIS INFORMATION.
    ALL PATENT VARIETIES MUST HAVE PATENT TAGS ATTACHED.
    B. COPIES OF INVOICES FOR NITROHUMUS AND NITROGEN STABILIZED COMPOSTED WOOD PRODUCT. PHYSICAL AMENDMENTS WILL NOT BE APPROVED WITHOUT THIS INFORMATION.
    C. COPIES OF INVOICES FOR PROOF AND ANALYSIS AND AMOUNTS OF FERTILIZER AND HERBICIDES. PLANTING OPERATIONS SHALL NOT COMMENCE WITHOUT THIS INFORMATION.
19. THE MAINTENANCE PERIOD SHALL BEGIN AT THE ACCEPTANCE OF FINAL INSPECTION AND CONTINUE FOR NINETY (90) DAYS. MAINTENANCE PERIOD SHALL BE WEEKLY.
20. IF THE MAINTENANCE PERIOD IS EXTENDED DUE TO NON-COMPLETION OF WORK, THE CONTRACTOR SHALL BEAR THE EXPENSE OF ADDITIONAL COSTS.
21. THE CONTRACTOR SHALL GUARANTEE ALL NEW CONTAINER PLANT MATERIAL AND RELOCATED PLANT MATERIAL AND WORKMANSHIP FOR A PERIOD OF (1) ONE YEAR AFTER INSTALLATION.
22. ALL MITIGATION GRADING AND RETAINING WALLS PER CIVIL DRAWINGS.
23. ALL EXISTING PLANTS, INDICATED TO REMAIN IN PLACE SHALL BE PROTECTED PER SPECIFICATIONS DIVISION 1. IF ANY EXISTING SHRUBS ARE DAMAGED OR DESTROYED BECAUSE OF CONSTRUCTION, THE CONTRACTOR WILL REPLACE IN-KIND WITH SIMILAR SIZE OF DAMAGED OR DESTROYED MATERIAL TO MATCH SURROUNDING PLANTS. IN THE CASE OF TREES, REPLACEMENT TREES SHALL BE 36" BOX OR LARGER.
24. ALL PUBLIC PATHS OF TRAVEL ALTERED BY THIS PROJECT SHALL CONFORM TO ADA REQUIREMENTS. IF A CONFLICT ARISES BETWEEN THE PLANS AND AN IN-FIELD SITUATION DURING CONSTRUCTION, CONTACT OWNER'S REPRESENTATIVE FOR RESOLUTION.
25. PLANT QUANTITIES SHOWN FOR CONTRACTOR'S CONVENIENCE. CONTRACTOR TO VERIFY AND FULFILL DESIGN INTENT OF LANDSCAPE PLANS.

GRADING AND IMPORT SOIL

26. SEE SPECIFICATIONS FOR IMPORT SOIL. SEE NOTE #27 FOR IMPORT SOIL TESTING REQUIREMENTS
27. OBTAIN SOIL ANALYSIS FOR FINAL SPECIFICATION FROM SOIL AND PLANT LABORATORY INC. (714) 282-8777 OR APPROVED TESTING FACILITY. SITE SAMPLES SHALL BE GATHERED BY TESTING AGENCY. TEST SOIL PRIOR TO INSTALLING IRRIGATION.
28. SUBMIT SOILS ANALYSIS RESULTS UCR REPRESENTATIVE FOR REVIEW PRIOR TO INSTALLATION. CONTRACTOR SHALL OBTAIN AND PAY FOR AGRONOMICAL SOIL TESTS FOR THE IMPORTED TOP SOIL, ONE PER SOURCE. THE SOILS TEST SHALL BE SUBMITTED TO UCR REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO THE DELIVERY OF THE SOIL.
29. THE FOLLOWING AMENDMENT TREATMENT TO BE USED FOR BIDDING PURPOSES ONLY. FINAL SPECIFICATION BY CONTRACTOR PER RECOMMENDATION OF IMPORTED SOIL ANALYSIS. BROADCAST UNIFORMLY AND INCORPORATE THOROUGHLY, TO A DEPTH OF 12" SOIL THE FOLLOWING AMENDMENTS:
    AMT/1,000 SQUARE FEET
    4 CY NITROLIZED SHAVINGS
    10 LBS. SOIL SULFUR
    30 LBS. AGRICULTURAL GYPSUM
30. CONTRACTOR TO REMOVE 2' DEPTH OF SOIL AT ALL PROPOSED PLANTING AREAS CURRENTLY UNDER PAVING AND 4' DEPTH BY 2X WIDTH OF ROOTBALL AT TREE LOCATIONS; REPLACE WITH TOPSOIL. ALTERNATELY, CONTRACTOR MAY TEST, AMEND, AND ROTOTILL NATIVE SOIL PER SOILS ANALYSIS.
31. FERTILIZER AND AMENDMENT SHALL BE THOROUGHLY ROTOTILLED TO A DEPTH OF 1'. BACKFILL MIX: ALL PLANTING PITS SHALL BE BACKFILLED WITH NATIVE SOILS ONLY.
32. PLANTING TABLET CHART
    GRO POWER (7 GRAM) PLANTING TABLETS SHALL BE USED IN ALL PLANTING PITS AS FOLLOWS:
    1 GALLON – 3 EACH; 5 GALLON – 9 EACH; 15 GALLON – 15 EACH; 24" BOX – 18 EACH; 36" BOX – 20 EACH; 48" BOX – 24 EACH
33. ROUGH GRADING SHALL CONSIST OF, BUT NOT LIMITED TO, ESTABLISHING ALL GRADES AS SHOWN AND NOTED ON PLAN, ESTABLISH FLOWLINES, CONTOUR GRADING AND REMOVING ANY FOREIGN MATERIAL. SEE CIVIL DRAWINGS.
34. BRING ALL PLANTING AREAS TO FINISH GRADE AFTER SOIL PREP & MULCHING TO 1/2" BELOW PAVING AND CURBS, OR AS NOTED BY SPOT ELEVATIONS.
35. WATER SETTLE ALL LANDSCAPED AREAS WITH OVERHEAD WATER PRIOR TO FINE GRADING AND INSTALLATION OF PLANT MATERIAL.
36. DRAINAGE TESTING / DRAINAGE CHANNEL REQUIREMENTS.
    PRIOR TO PLANTING ALL PLANTING PITS SELECTED FOR TESTING SHALL BE TESTED IN THE FOLLOWING MANNER:
    A. DIG EACH PLANTING PIT TO THE MINIMUM SPECIFIED SIZE.
    B. FILL PLANTING PIT WITH TWELVE INCHES (12") OF WATER. IF THE WATER LEVEL DROPS FOUR INCHES (4") OR MORE WITHIN FOUR (4) HOURS, THE DRAINAGE IS SUFFICIENT AND DRAINAGE
    CHANNEL IS NOT REQUIRED.IF, HOWEVER, THE WATER LEVEL DROPS LESS THAN FOUR INCHES (4") WITHIN THE FOUR (4) HOUR PERIOD, A DRAINAGE CHANNEL IS REQUIRED.
    C. WHERE REQUIRED, THE DRAINAGE CHANNEL MUST EXTEND DOWN THROUGH THE NON-POROUS SOIL AND INTO POROUS SOIL.

PLANTING

37. NO WEED CONTROL MATERIAL OR METHOD SHALL AFFECT THE LANDSCAPE PLANTING OR ESTABLISHMENT AND MUST CONFORM TO FEDERAL, STATE AND LOCAL REGULATIONS.
38. TREES AND SHRUBS SHALL BE PLANTED IN ACCORDANCE AS FOLLOWS:
    TREE (24"/36"/48" BOX) SEE DETAIL SHEET. (PLUS GRO-POWER TABLETS PER CHART ABOVE).
    SHRUBS (15, 5 & 1 GAL) SEE DETAIL SHEET. (PLUS GRO-POWER TABLETS PER CHART ABOVE).
39. GROUNDCOVER PLANTING SHALL BE CONTINUOUS UNDER TREES AND SHRUBS. SEE LEGEND FOR THE VARIETY AND SPACING. SEE DETAIL SHEET FOR INSTALLATION.
40. PROVIDE AND INSTALL PLANT MATERIALS BASED ON COUNT OF PLANT SYMBOLS ON PLANS, OR ON THE SPACING DESCRIBED IN THE LEGEND.
41. ALL SHRUB AND GROUNDCOVER SPACING TO BE UNIFORM TRIANGULAR SPACING. SEE LEGEND FOR SPECIFIC SPACING.
42. COORDINATE TREE PLACEMENT WITH LOCATIONS OF BUBBLERS TO BEST PROVIDE FOR COMPLETE COVERAGE.
43. PRUNE TREES AND SHRUBS ONLY IF DIRECTED BY OWNER'S REPRESENTATIVE AND PER SPECIFICATION.
44. ANY ENCOUNTERED TREE THAT IS NOT SHOWN ON THESE PLANS THAT WILL BE AFFECTED BY CONSTRUCTION, SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE FOR RESOLUTION IN ACCORDANCE WITH THE DESIGN INTENT OF THESE DRAWINGS.

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		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	ABBRE. AND NOTES
DRAWN BY	SS
CHECKED BY	DH
SCALE	NTS
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

ABBREVIATION AND NOTES

SHEET TITLE

L002

SHEET NO.

SYMBOL	MATERIAL	SIZING / MODEL	COLOR / FINISH / ATTRIBUTE	MANUFACTURER / SUPPLIER	DETAIL	NOTES
	PAVING					
CO–1	INTEGRAL COLOR CONCRETE	SEE PLAN	MESA BUFF 5447 TOP CAST TEXTURE 05	DAVIS COLOR OR APPROVED EQUAL	5 – 6 / L201	ALSO REFER TO CIVIL PLAN FOR FIRE TRUCK RATED PAVING
CO–2	INTEGRAL COLOR CONCRETE	SEE PLAN	MESA BUFF 5447 TOP CAST TEXTURE 150	DAVIS COLOR OR APPROVED EQUAL	5 – 6 / L201	ALSO REFER TO CIVIL PLAN FOR FIRE TRUCK RATED PAVING
CO–3	PCC CONCRETE	SEE PLAN	STANDARD GRAY (NO INTEGRAL COLOR)TOP CAST TEXTURE 05		5 – 6 / L201	ALSO REFER TO CIVIL PLAN FOR FIRE TRUCK RATED PAVING
CO–4	PCC CONCRETE	SEE PLAN	STANDARD GRAY (NO INTEGRAL COLOR)TOP CAST TEXTURE 150		5 – 6 / L201	ALSO REFER TO CIVIL PLAN FOR FIRE TRUCK RATED PAVING
DG–1	DECOMPOSED GRANITE (DG)	1/8"–1/4" COURSE	DESERT GOLD / INTEGRAL ORGANIC BINDER	D.G.–SOUTHWEST BOULDER BINDER–STABILIZERSOLUTIONS	2/ L201	
LE–1	STEEL LANDSCAPE EDGING	3/8" X 5–1/2"	ANODIZED BLACK	SURELOC EDGING OR APPROVED EQUAL	3/ L201	
PV–1	BIKE LANE ARROWS – PRECAST CONCRETE	SEE PLANS AND DETAILS	MISSION WHITE, SMOOTH FINISH	QCP CORP. OR APPROVED EQUAL	5 – 6 / L201	SUBMIT SHOP DRAWINGS FOR APPROVAL
PV–2	THERMOPLASTIC ENHANCED CROSSWALK	SEE PLANS	KHAKI / LARGE STACKED TILE PATTERN	DURATHERM OR APPROVED EQUAL		
PV–3	TRUNCATED DOME PAVER	SEE PLANS AND DETAILS	CHARCOAL	STEPSTONE OR APPROVED EQUAL		
	WALL/FENCE SCHEDULE					
WA–1	RETAINING WALL	SEE PLAN	MESA BUFF 5447 TOP CAST TEXTURE 05	DAVIS COLOR OR APPROVED EQUAL	1–4 / S401	
WA–2	LANDSCAPE PLANTER WALL	SEE PLAN	MESA BUFF 5447 TOP CAST TEXTURE 05	DAVIS COLOR OR APPROVED EQUAL	1–3 / L121	
FE–2	DECORATIVE FENCING & GATES	SEE PLAN	SILVER / PAINTED / ALUMINUM	HENDRICK CORP OR APPROVED EQUAL	1/ A625 1–11 / A541	
FE–3	STEEL FENCING & GATES	SEE PLAN	BLACK/ POWDER–COATED/ STEEL	AMERISTAR FENCE OR APPROVED EQUAL	1,5 / L203 1–6 / L204	
FE–4	KEYPAD GATE ENTRY	EQUIPMENT CABINET – WIEGMANN MODEL4122420083 – PTC–24"TX20"WX8"D	CABINET WITH KEYED HANDLE. THE CONTROLS FOR THIS SYSTEM WILL NEED A DATA CONNECTION AND A 120 VOLT 15 AMP POWER CIRCUIT AT THIS CABINET.	CONTROLLER – VELOCITY HIRSCH M1 CONTROLLER BAR CODE READER – QSCAN OUTDOOR 2–D BARCODE SCANNER – WEIGAND OUTPUT 900 MHZ LONG RANGE READER – NEDAP UPASS REACH READER	–	CONDUIT RUN TO THE USER CONTROLLERS 20' PRIOR TO THE GATE.
	GRAVEL/STONE SCHEDULE					
GR–1	DECORATIVE GRAVEL– CRUSHED STONE	3/4" DIAMETER	PALM SPRINGS GOLD	SOUTHWEST BOULDER & STONE–OR APPROVED EQUAL	2/ L201	
GR–2	BIOSWALE COBBLE	4"–6" DIAMETER	SIERRA COBBLE	SOUTHWEST BOULDER & STONE–OR APPROVED EQUAL	1/ L126	
GR–3	LANDSCAPE BOULDER	24" – 60" DIAMETER	SIERRA COBBLE	SOUTHWEST BOULDER & STONE–OR APPROVED EQUAL	4/ L201	
	AMENITIES					
FR–1	PIP CONCRETE BENCH	SEE PLAN	MESA BUFF 5447 TOP CAST TEXTURE 05	SEE PLAN	1,2,3,4 / L205	SEE PLAN FOR LOCATIONS W/ EMBEDDED WOOD SEATS, BACKRESTS
FR–2	PIP CONCRETE BENCH WITH EMBEDDED WOOD SEATS AND BACK	SEE PLAN	MESA BUFF 5447 TOP CAST TEXTURE 05 IPE WOOD SLATS WITH STAINLESS STEEL ARMREST	SITECRAFT OR APPROVED EQUAL	2,4/ L205	SEE PLAN FOR LOCATIONS W/ EMBEDDED WOOD SEATS, BACKRESTS
FR–3	2 POST METAL BIKE RACK	45"L X 27.5"H X 30"W LRSS–P4	HOT–DIPPED GALVANIZED	SCH ENTERPRISES, LLC OR APPROVED EQUAL	3,6,8 / L203	
FR–4	3 POST METAL BIKE RACK	67.5"L x 27.5"H x 30"W LRSS–P6	HOT–DIPPED GALVANIZED	SCH ENTERPRISES, LLC OR APPROVED EQUAL	3,6,8 / L203	
FR–5	TRASH RECEPTACLE	49.8"H X 50.6"W X 26.8"D HC5/HC5 DOUBLE STATION	SOLAR POWERED, HIGH CAPACITY COMPACTING DUAL STREAM– LANDFILL WASTE AND RECYCLING	BIG BELLY OR APPROVED EQUAL	–	
FR–6	SECURITY BOLLARD	MODEL #SSF08040 STANDARD FLAT. SEE DETAIL	FIXED STAINLESS STEEL BOLLARDS	CALPIPE SECURITY BOLLARDS OR APPROVED EQUAL	3/ L202	HEAVY SECURITY. 8" SCH. 40
FR–7	BIKE–FIXIT STATION	SEE DETAIL	YELLOW POWDERCOAT (NO PUMP INCLUDED)	DERO OR APPROVED EQUAL	7/ L203	
FR–8	OUTDOOR BIKE AIR PUMP WITH GAUGE, LONG HOSE	MODEL #26246	STAINLESS STEEL / FLOOR MOUNT	BIKE FIXATION OR APPROVED EQUAL	4/ L203	
FR–9	EMERGENCY CALLBOX – CODE BLUE CB5 ECONOMY HELP PT	ANALOG MODEL #4100 STANDARD FACE PLATE	SAFETY BLUE / LETTERS IN WHITE REFLECTIVE TEXT	CODE BLUE OR APPROVED EQUAL	2/ L203	120VAC TO 24VAC POWER SUPPLY
FR–10	SKATE DETERRENT	SEE DETAIL	STAINLESS STEEL	SKATESTOPPERS OR APPROVED EQUAL	1/ L205	
FR–11	SITE TAPERED CORTEN STEEL PLANTER	24"H X 48"W X 1/4"THICK. SEE DETAIL	CORTEN STEEL / WEATHERED	PLANTERWORX, INC. OR APPROVED EQUAL	1/ L602	1 1/2" DRAIN HOLE PER MANUFACTURER'S SPECIFICATIONS
FR–12	ARMRESTS FOR CONCRETE BENCHES	SEE PLANS AND DETAILS	STAINLESS STEEL	CUSTOM FABRICATED	2/ L205	CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION AND INSTALLATION
FR–13	HANDRAIL WITH INTEGRATED LIGHTING	SEE PLAN	STAINLESS STEEL	WAGNER LUMENPOD OR APPROVED EQUAL	1,2,3,5/ L206	ALSO REFER TO LIGHTING PLAN AND DETAILS FOR LIGHT FIXTURE

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SCALE	NTS
DA□E	01/10/19
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MATERIALS SCHEDULE

SHEE□ □I□LE

L003

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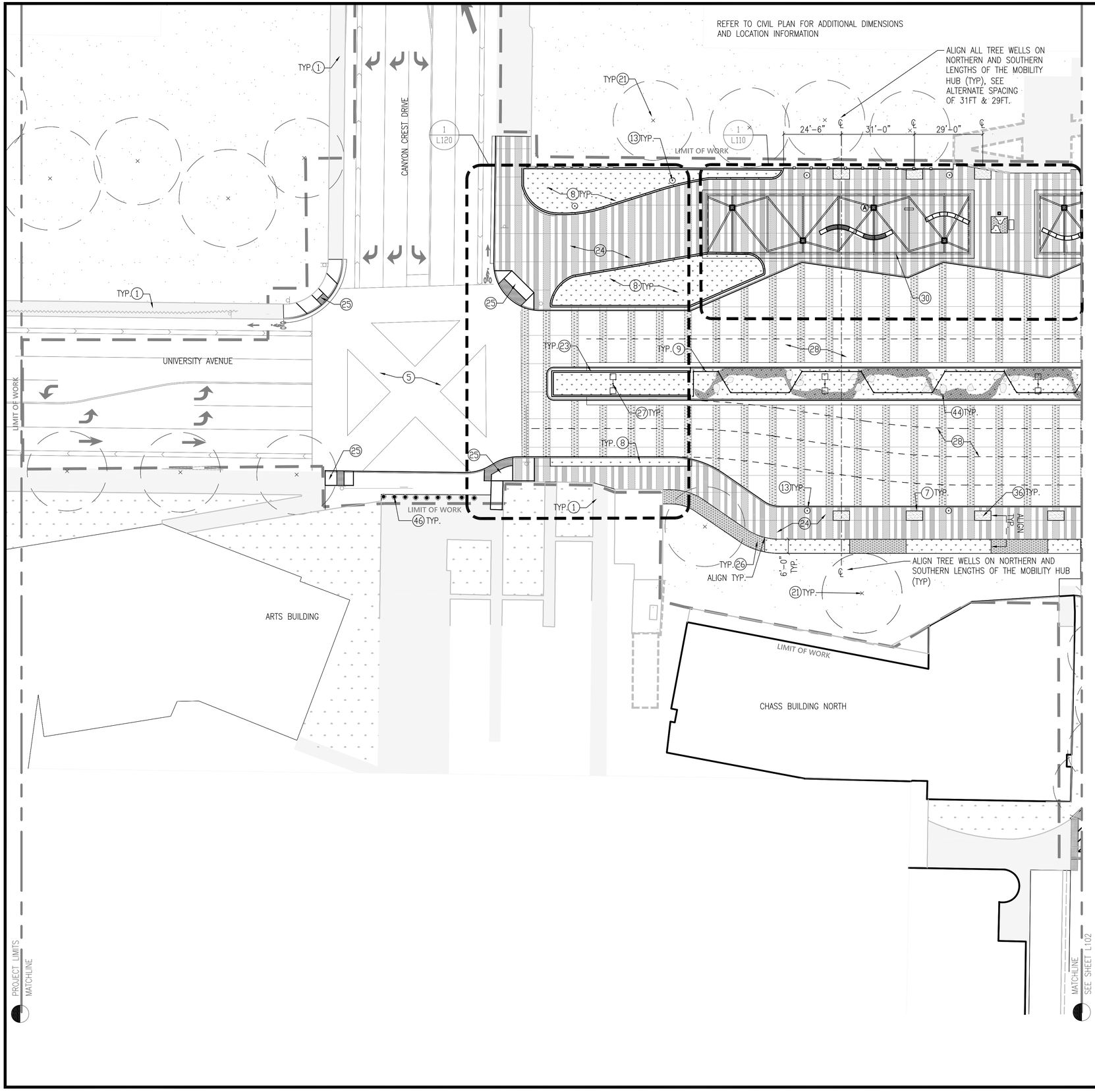

LEGEND

- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 05, SEE HARDSCAPE PLANS
- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 150, SEE HARDSCAPE PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 05; SEE CIVIL PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 150; SEE CIVIL PLANS
- PLANTING AREA, SEE PLANTING PLANS
- DECOMPOSED GRANITE, SEE HARDSCAPE PLANS
- DECORATIVE GRAVEL, SEE HARDSCAPE PLANS

KEYNOTES

NOTE: NOT ALL KEYNOTES ARE USED ON EVERY SHEET

1. EXISTING SIDEWALK/PAVING TO REMAIN IN PLACE
2. NEW SIDEWALK, SEE CIVIL PLANS
3. NEW CURB, SEE CIVIL PLANS
4. ROLLED CURB, SEE CIVIL PLANS
5. NEW CROSSWALK, SEE CIVIL PLANS AND MATERIAL SCHEDULE PV-2
6. RAISED CROSSWALK, SEE CIVIL PLANS AND HARDSCAPE DETAILS.
7. TREE WELL, SEE HARDSCAPE DETAILS
8. PLANTED AREA, SEE PLANTING PLAN
9. DECORATIVE FENCING, SEE MATERIALS SCHEDULE FE-2
10. VINE POCKETS, SEE PLANTING DETAILS.
11. TRASH RECEPTACLE, SEE MATERIALS SCHEDULE FR-5
12. 8'X5' CLEAR BUS BOARDING AND ALIGHTING AREA
13. PEDESTRIAN LIGHTING, SEE LIGHTING PLAN
14. BIKE FIXIT STATION AND PUMP, SEE MATERIALS SCHEDULE FR-7
15. RETAINING WALL. SEE CIVIL PLANS.
16. BIKE RACKS. SEE MATERIALS SCHEDULE FR-3,4
17. 4'x4' CLEAR DELINEATED WHEELCHAIR SPACE
18. DYNAMIC TRANSIT PYLON, SEE SIGNAGE AND WAYFINDING PLANS
19. INFORMATIONAL SIGNAGE, SEE SIGNAGE AND WAYFINDING PLANS
20. BIOSWALE. SEE LANDSCAPE DETAILS
21. EXISTING TREE. PROTECT IN PLACE
22. ARMRESTS, SEE MATERIALS SCHEDULE F-12
23. LANDSCAPE WALL, SEE HARDSCAPE DETAILS
24. SAWCUT SCORED TOP CAST CONCRETE, SEE LEGEND ON THIS SHEET AND MATERIALS SCHEDULE CO-1,2
25. NEW CURB RAMP, SEE CIVIL PLANS
26. DECORATIVE GRAVEL, TYP. SEE MATERIALS SCHEDULE GR-1
27. STREET LIGHT, SEE ELECTRICAL PLAN
28. TRAVEL LANES, SEE CIVIL PLANS
29. BUS BAY, SEE CIVIL PLANS
30. CANOPY STRUCTURE, SEE ARCHITECTURAL PLANS
31. DRIVE-UP INFORMATION KIOSK, SEE ARCHITECTURAL PLANS
32. MOTORIZED SERVICE GATE. SEE MATERIALS SCHEDULE FR-3
33. KEYPAD ENTRY FOR MOTORIZED SERVICE GATE, SEE MATERIAL SCHEDULE FE-4
34. CONCRETE BENCH, SEE MATERIALS SCHEDULE FR-1
35. CONCRETE BENCH WITH WOOD BACKREST AND SEAT, SEE MATERIALS SCHEDULE FR-2.
36. DECOMPOSED GRANITE. SEE MATERIALS SCHEDULE DG-1.
37. BLUE LIGHT STATION. SEE MATERIALS SCHEDULE FR-9.
38. SERVICE ROAD. SEE CIVIL PLANS
39. STEEL PICKET FENCING. SEE MATERIALS SCHEDULE FE-3.
40. STEEL PICKET PEDESTRIAN GATE. SEE HARDSCAPE DETAILS
41. STEEL PICKET GATED SERVICE ENTRY. SEE HARDSCAPE DETAILS
42. STAIRS, SEE CIVIL PLANS
43. BI-DIRECTIONAL BIKE PATH, SEE HARDSCAPE DETAILS.
44. LANDSCAPE BOULDER, TYP. SEE MATERIALS SCHEDULE GR-3.
45. BIKE RUNNEL, SEE HARDSCAPE DETAILS
46. METAL SECURITY BOLLARD, SEE MATERIALS SCHEDULE FR-6
47. CORTEN STEEL PLANTER, SEE MATERIALS SCHEDULE FR-11.
48. STAINLESS STEEL HANDRAIL, SEE MATERIALS SCHEDULE FR-13
49. SKATE DETERRENT, SEE MATERIAL SCHEDULE FR-10

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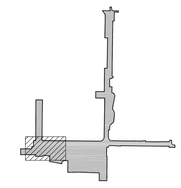
ARCHITECT/ENGINEER SEAL



IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD-BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

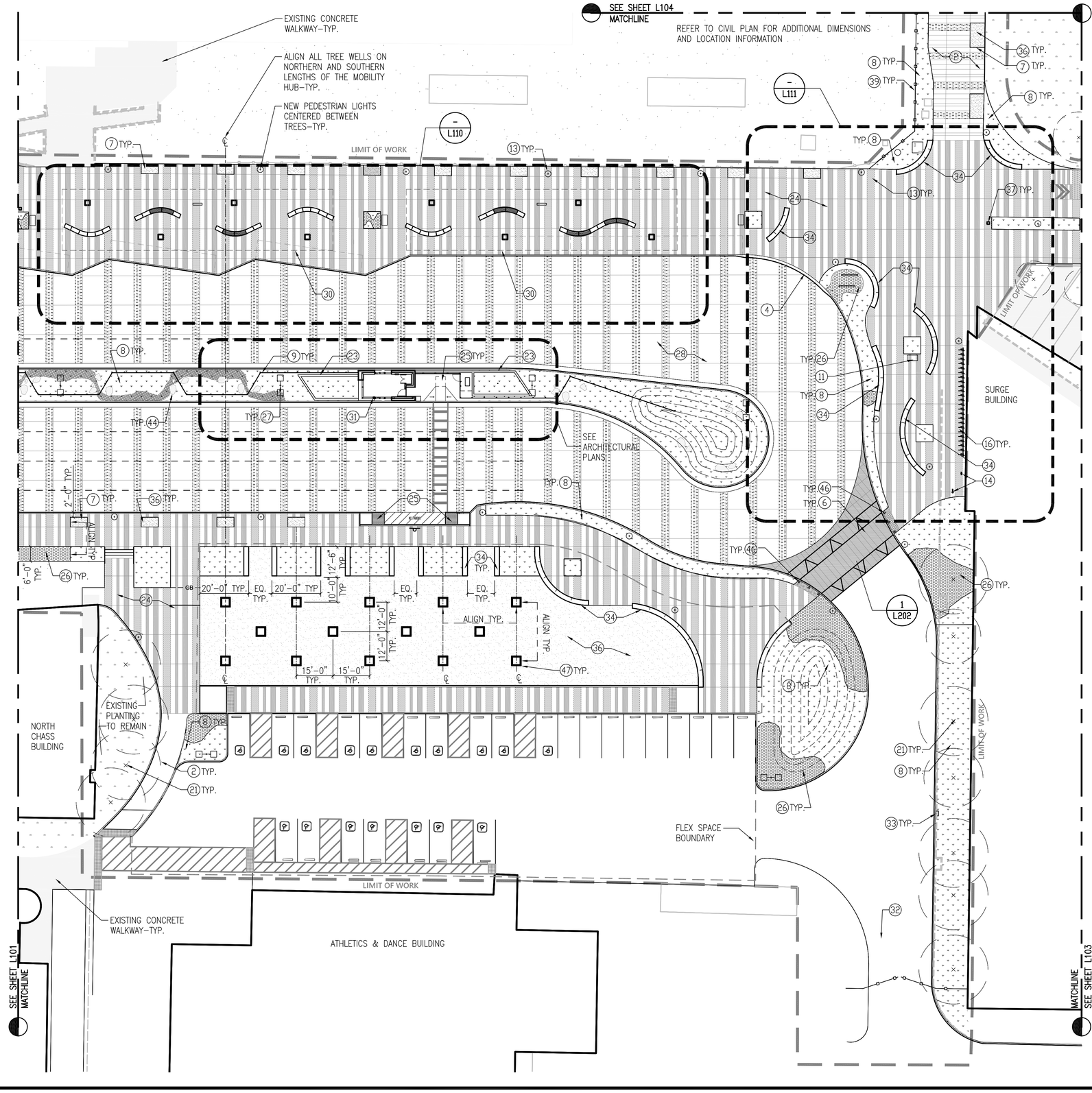
BASE FILE NAMES	XL_PLNT.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=20'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

MOBILITY HUB HARDSCAPE PLAN

SHEET TITLE

L101

SHEET NO.



LEGEND

- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 05, SEE HARDSCAPE PLANS
- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 150, SEE HARDSCAPE PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 05; SEE CIVIL PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 150; SEE CIVIL PLANS
- PLANTING AREA, SEE PLANTING PLANS
- DECOMPOSED GRANITE, SEE HARDSCAPE PLANS
- DECORATIVE GRAVEL, SEE HARDSCAPE PLANS

KEYNOTES

NOTE: NOT ALL KEYNOTES ARE USED ON EVERY SHEET

1. EXISTING SIDEWALK/PAVING TO REMAIN IN PLACE
2. NEW SIDEWALK, SEE CIVIL PLANS
3. NEW CURB, SEE CIVIL PLANS
4. ROLLED CURB, SEE CIVIL PLANS
5. NEW CROSSWALK, SEE CIVIL PLANS AND MATERIAL SCHEDULE PV–2
6. RAISED CROSSWALK, SEE CIVIL PLANS AND HARDSCAPE DETAILS.
7. TREE WELL, SEE HARDSCAPE DETAILS
8. PLANTED AREA, SEE PLANTING PLAN
9. DECORATIVE FENCING, SEE MATERIALS SCHEDULE FE–2
10. VINE POCKETS, SEE PLANTING DETAILS.
11. TRASH RECEPTACLE, SEE MATERIALS SCHEDULE FR–5
12. 8'X5' CLEAR BUS BOARDING AND ALIGHTING AREA
13. PEDESTRIAN LIGHTING, SEE LIGHTING PLAN
14. BIKE FIXIT STATION AND PUMP, SEE MATERIALS SCHEDULE FR–7
15. RETAINING WALL. SEE CIVIL PLANS.
16. BIKE RACKS. SEE MATERIALS SCHEDULE FR–3,4
17. 4'x4' CLEAR DELINEATED WHEELCHAIR SPACE
18. DYNAMIC TRANSIT PYLON, SEE SIGNAGE AND WAYFINDING PLANS
19. INFORMATIONAL SIGNAGE, SEE SIGNAGE AND WAYFINDING PLANS
20. BIOSWALE. SEE LANDSCAPE DETAILS
21. EXISTING TREE. PROTECT IN PLACE
22. ARMRESTS, SEE MATERIALS SCHEDULE F–12
23. LANDSCAPE WALL, SEE HARDSCAPE DETAILS
24. SAWCUT SCORED TOP CAST CONCRETE, SEE LEGEND ON THIS SHEET AND MATERIALS SCHEDULE CO–1,2
25. NEW CURB RAMP, SEE CIVIL PLANS
26. DECORATIVE GRAVEL, TYP. SEE MATERIALS SCHEDULE GR–1
27. STREET LIGHT, SEE ELECTRICAL PLAN
28. TRAVEL LANES, SEE CIVIL PLANS
29. BUS BAY, SEE CIVIL PLANS
30. CANOPY STRUCTURE, SEE ARCHITECTURAL PLANS
31. DRIVE–UP INFORMATION KIOSK, SEE ARCHITECTURAL PLANS
32. MOTORIZED SERVICE GATE. SEE MATERIALS SCHEDULE FR–3
33. KEYPAD ENTRY FOR MOTORIZED SERVICE GATE, SEE MATERIAL SCHEDULE FE–4
34. CONCRETE BENCH, SEE MATERIALS SCHEDULE FR–1
35. CONCRETE BENCH WITH WOOD BACKREST AND SEAT, SEE MATERIALS SCHEDULE FR–2.
36. DECOMPOSED GRANITE. SEE MATERIALS SCHEDULE DG–1.
37. BLUE LIGHT STATION. SEE MATERIALS SCHEDULE FR–9.
38. SERVICE ROAD. SEE CIVIL PLANS
39. STEEL PICKET FENCING. SEE MATERIALS SCHEDULE FE–3.
40. STEEL PICKET PEDESTRIAN GATE. SEE HARDSCAPE DETAILS
41. STEEL PICKET GATED SERVICE ENTRY. SEE HARDSCAPE DETAILS
42. STAIRS, SEE CIVIL PLANS
43. BI–DIRECTIONAL BIKE PATH, SEE HARDSCAPE DETAILS.
44. LANDSCAPE BOULDER, TYP. SEE MATERIALS SCHEDULE GR–3.
45. BIKE RUNNEL, SEE HARDSCAPE DETAILS
46. METAL SECURITY BOLLARD, SEE MATERIALS SCHEDULE FR–6
47. CORTEN STEEL PLANTER, SEE MATERIALS SCHEDULE FR–11.
48. STAINLESS STEEL HANDRAIL, SEE MATERIALS SCHEDULE FR–13
49. SKATE DETERRENT, SEE MATERIAL SCHEDULE FR–10

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BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=20'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

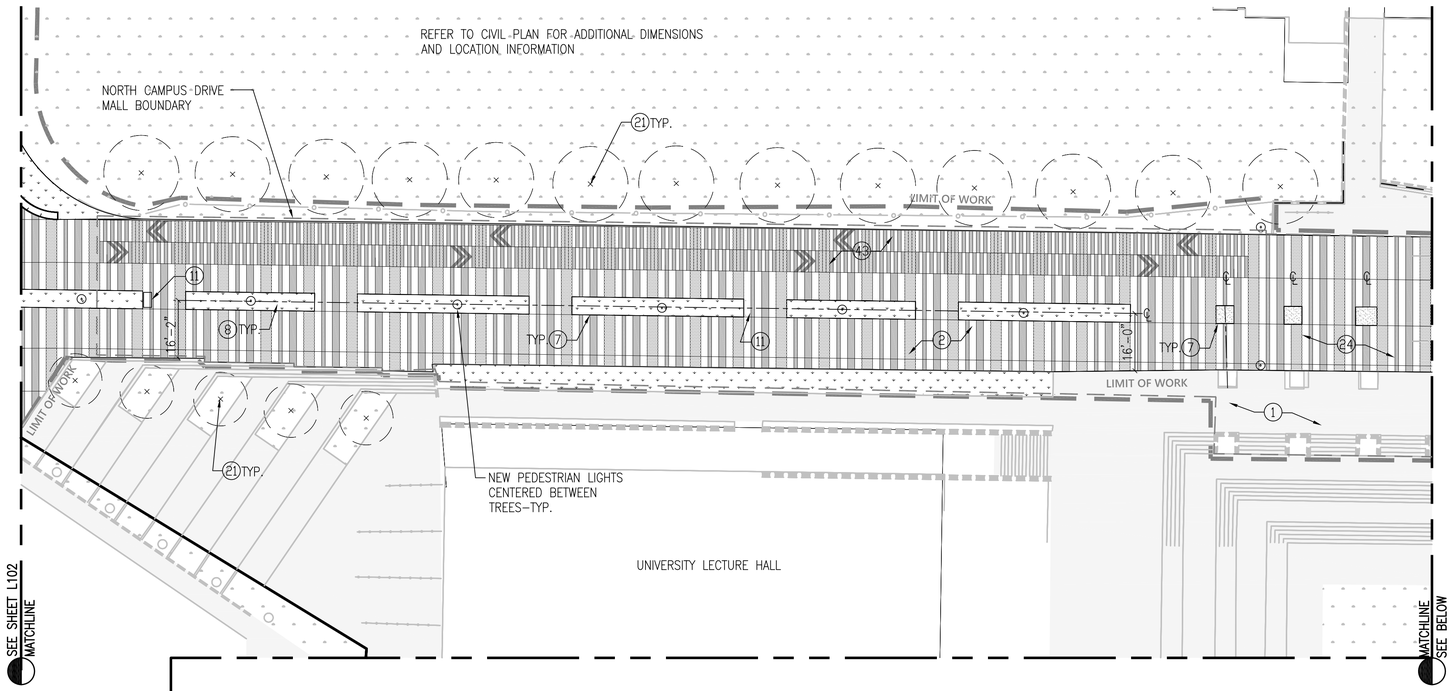
MOBILITY HUB

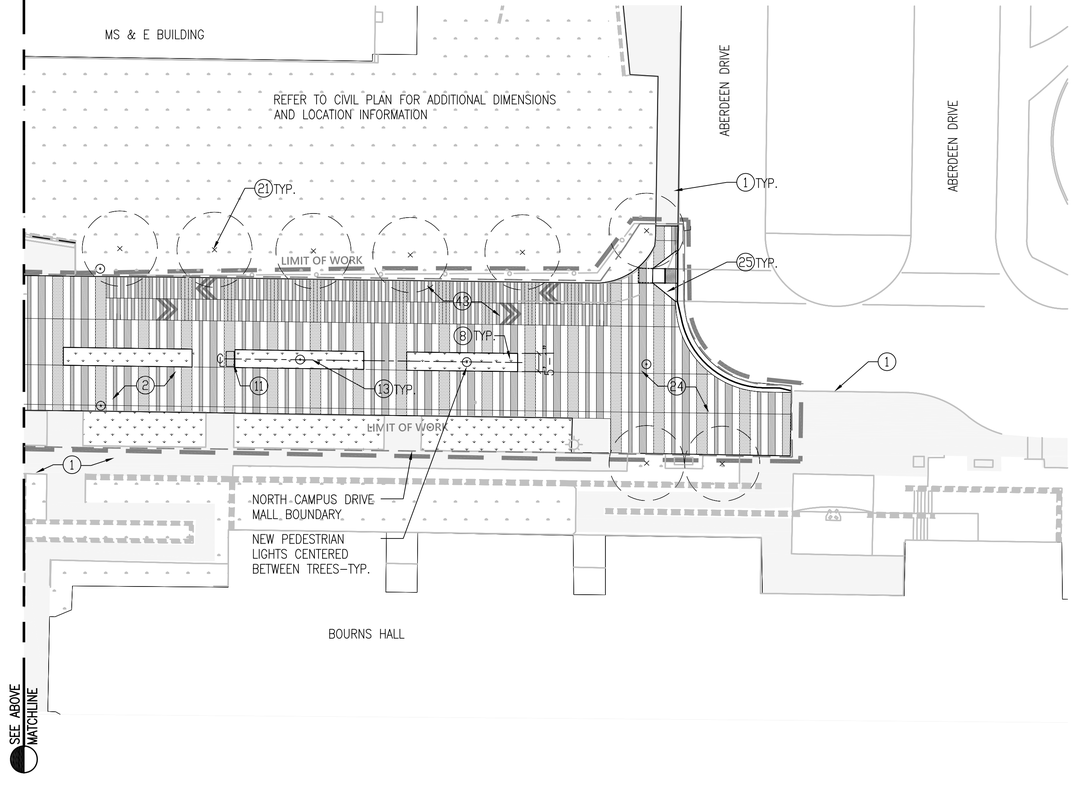
HARDSCAPE PLAN

SHEET TITLE

L102

SHEET NO.





LEGEND

- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 05, SEE HARDSCAPE PLANS
- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 150, SEE HARDSCAPE PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 05; SEE CIVIL PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 150; SEE CIVIL PLANS
- PLANTING AREA, SEE PLANTING PLANS
- DECOMPOSED GRANITE, SEE HARDSCAPE PLANS
- DECORATIVE GRAVEL, SEE HARDSCAPE PLANS

KEYNOTES

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3. NEW CURB, SEE CIVIL PLANS
4. ROLLED CURB, SEE CIVIL PLANS
5. NEW CROSSWALK, SEE CIVIL PLANS AND MATERIAL SCHEDULE PV–2
6. RAISED CROSSWALK, SEE CIVIL PLANS AND HARDSCAPE DETAILS.
7. TREE WELL, SEE HARDSCAPE DETAILS
8. PLANTED AREA, SEE PLANTING PLAN
9. DECORATIVE FENCING, SEE MATERIALS SCHEDULE FE–2
10. VINE POCKETS, SEE PLANTING DETAILS.
11. TRASH RECEPTACLE, SEE MATERIALS SCHEDULE FR–5
12. 8'X5' CLEAR BUS BOARDING AND ALIGHTING AREA
13. PEDESTRIAN LIGHTING, SEE LIGHTING PLAN
14. BIKE FIXIT STATION AND PUMP, SEE MATERIALS SCHEDULE FR–7
15. RETAINING WALL. SEE CIVIL PLANS.
16. BIKE RACKS. SEE MATERIALS SCHEDULE FR–3,4
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19. INFORMATIONAL SIGNAGE, SEE SIGNAGE AND WAYFINDING PLANS
20. BIOSWALE. SEE LANDSCAPE DETAILS
21. EXISTING TREE. PROTECT IN PLACE
22. ARMRESTS, SEE MATERIALS SCHEDULE F–12
23. LANDSCAPE WALL, SEE HARDSCAPE DETAILS
24. SAWCUT SCORED TOP CAST CONCRETE, SEE LEGEND ON THIS SHEET AND MATERIALS SCHEDULE CO–1,2
25. NEW CURB RAMP, SEE CIVIL PLANS
26. DECORATIVE GRAVEL, TYP. SEE MATERIALS SCHEDULE GR–1
27. STREET LIGHT, SEE ELECTRICAL PLAN
28. TRAVEL LANES, SEE CIVIL PLANS
29. BUS BAY, SEE CIVIL PLANS
30. CANOPY STRUCTURE, SEE ARCHITECTURAL PLANS
31. DRIVE–UP INFORMATION KIOSK, SEE ARCHITECTURAL PLANS
32. MOTORIZED SERVICE GATE. SEE MATERIALS SCHEDULE FR–3
33. KEYPAD ENTRY FOR MOTORIZED SERVICE GATE, SEE MATERIAL SCHEDULE FE–4
34. CONCRETE BENCH, SEE MATERIALS SCHEDULE FR–1
35. CONCRETE BENCH WITH WOOD BACKREST AND SEAT, SEE MATERIALS SCHEDULE FR–2.
36. DECOMPOSED GRANITE. SEE MATERIALS SCHEDULE DG–1.
37. BLUE LIGHT STATION. SEE MATERIALS SCHEDULE FR–9.
38. SERVICE ROAD. SEE CIVIL PLANS
39. STEEL PICKET FENCING. SEE MATERIALS SCHEDULE FE–3.
40. STEEL PICKET PEDESTRIAN GATE. SEE HARDSCAPE DETAILS
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44. LANDSCAPE BOULDER, TYP. SEE MATERIALS SCHEDULE GR–3.
45. BIKE RUNNEL, SEE HARDSCAPE DETAILS
46. METAL SECURITY BOLLARD, SEE MATERIALS SCHEDULE FR–6
47. CORTEN STEEL PLANTER, SEE MATERIALS SCHEDULE FR–11.
48. STAINLESS STEEL HANDRAIL, SEE MATERIALS SCHEDULE FR–13
49. SKATE DETERRENT, SEE MATERIAL SCHEDULE FR–10

NORTH

20' 0' 20' 40'

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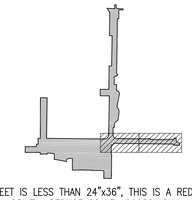

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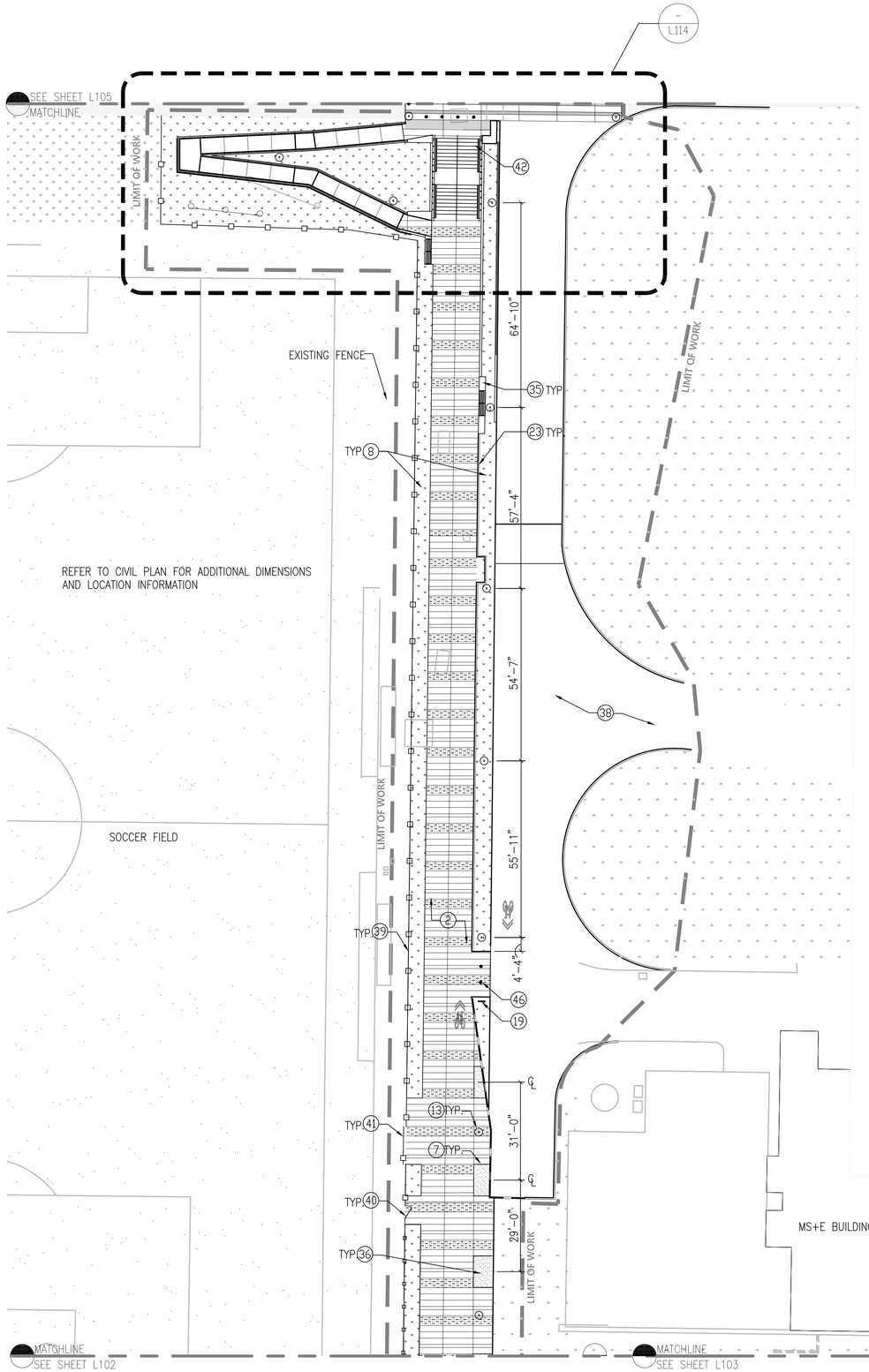
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=20'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

NORTH CAMPUS DRIVE MALL HARDSCAPE PLAN

SHEET TITLE

L103

SHEET NO.



LEGEND

- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 05, SEE HARDSCAPE PLANS
- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 150, SEE HARDSCAPE PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 05; SEE CIVIL PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 150; SEE CIVIL PLANS
- PLANTING AREA, SEE PLANTING PLANS
- DECOMPOSED GRANITE, SEE HARDSCAPE PLANS
- DECORATIVE GRAVEL, SEE HARDSCAPE PLANS

KEYNOTES

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9. DECORATIVE FENCING, SEE MATERIALS SCHEDULE FE-2
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16. BIKE RACKS. SEE MATERIALS SCHEDULE FR-3,4
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25. NEW CURB RAMP, SEE CIVIL PLANS
26. DECORATIVE GRAVEL, TYP. SEE MATERIALS SCHEDULE GR-1
27. STREET LIGHT, SEE ELECTRICAL PLAN
28. TRAVEL LANES, SEE CIVIL PLANS
29. BUS BAY, SEE CIVIL PLANS
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31. DRIVE-UP INFORMATION KIOSK, SEE ARCHITECTURAL PLANS
32. MOTORIZED SERVICE GATE. SEE MATERIALS SCHEDULE FR-3
33. KEYPAD ENTRY FOR MOTORIZED SERVICE GATE, SEE MATERIAL SCHEDULE FE-4
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36. DECOMPOSED GRANITE. SEE MATERIALS SCHEDULE DG-1.
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45. BIKE RUNNEL, SEE HARDSCAPE DETAILS
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49. SKATE DETERRENT, SEE MATERIAL SCHEDULE FR-10

NORTH

20' 0' 20' 40'

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AND CENTRAL CAMPUS
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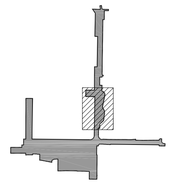

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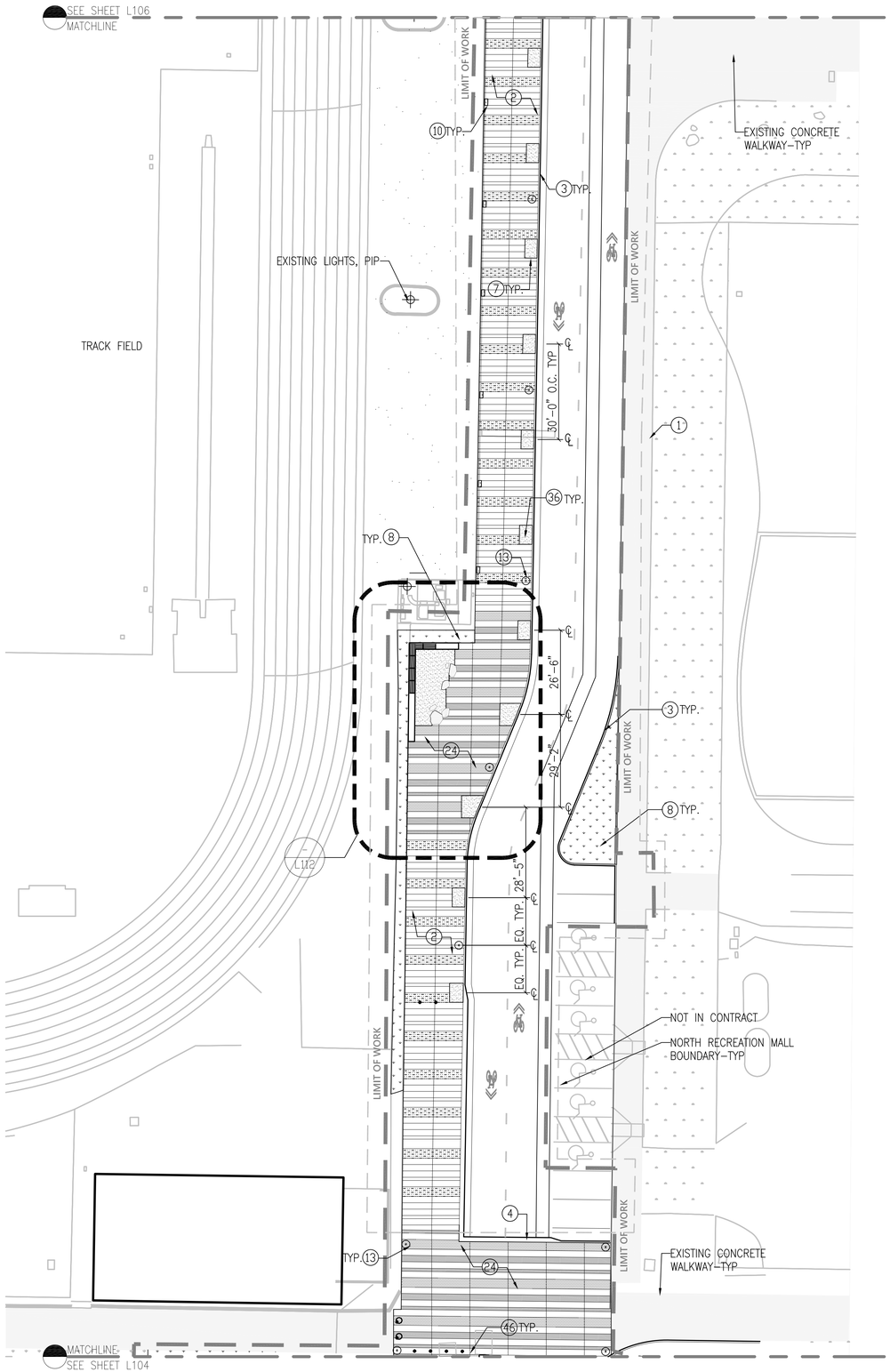
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=20'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

SOUTH
RECREATION MALL
HARDSCAPE
PLAN

SHEET TITLE

L104

SHEET NO.



REFER TO CIVIL PLAN FOR ADDITIONAL DIMENSIONS AND LOCATION INFORMATION

LEGEND

- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 05, SEE HARDSCAPE PLANS
- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 150, SEE HARDSCAPE PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 05; SEE CIVIL PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 150; SEE CIVIL PLANS
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- DECORATIVE GRAVEL, SEE HARDSCAPE PLANS

KEYNOTES

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20. BIOSWALE. SEE LANDSCAPE DETAILS
21. EXISTING TREE. PROTECT IN PLACE
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23. LANDSCAPE WALL, SEE HARDSCAPE DETAILS
24. SAWCUT SCORED TOP CAST CONCRETE, SEE LEGEND ON THIS SHEET AND MATERIALS SCHEDULE CO–1,2
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26. DECORATIVE GRAVEL, TYP. SEE MATERIALS SCHEDULE GR–1
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31. DRIVE–UP INFORMATION KIOSK, SEE ARCHITECTURAL PLANS
32. MOTORIZED SERVICE GATE. SEE MATERIALS SCHEDULE FR–3
33. KEYPAD ENTRY FOR MOTORIZED SERVICE GATE, SEE MATERIAL SCHEDULE FE–4
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35. CONCRETE BENCH WITH WOOD BACKREST AND SEAT, SEE MATERIALS SCHEDULE FR–2.
36. DECOMPOSED GRANITE. SEE MATERIALS SCHEDULE DG–1.
37. BLUE LIGHT STATION. SEE MATERIALS SCHEDULE FR–9.
38. SERVICE ROAD. SEE CIVIL PLANS
39. STEEL PICKET FENCING. SEE MATERIALS SCHEDULE FE–3.
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45. BIKE RUNNEL, SEE HARDSCAPE DETAILS
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47. CORTEN STEEL PLANTER, SEE MATERIALS SCHEDULE FR–11.
48. STAINLESS STEEL HANDRAIL, SEE MATERIALS SCHEDULE FR–13
49. SKATE DETERRENT, SEE MATERIAL SCHEDULE FR–10

NORTH

20' 0' 20' 40'

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MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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CONSULTANT

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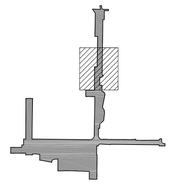

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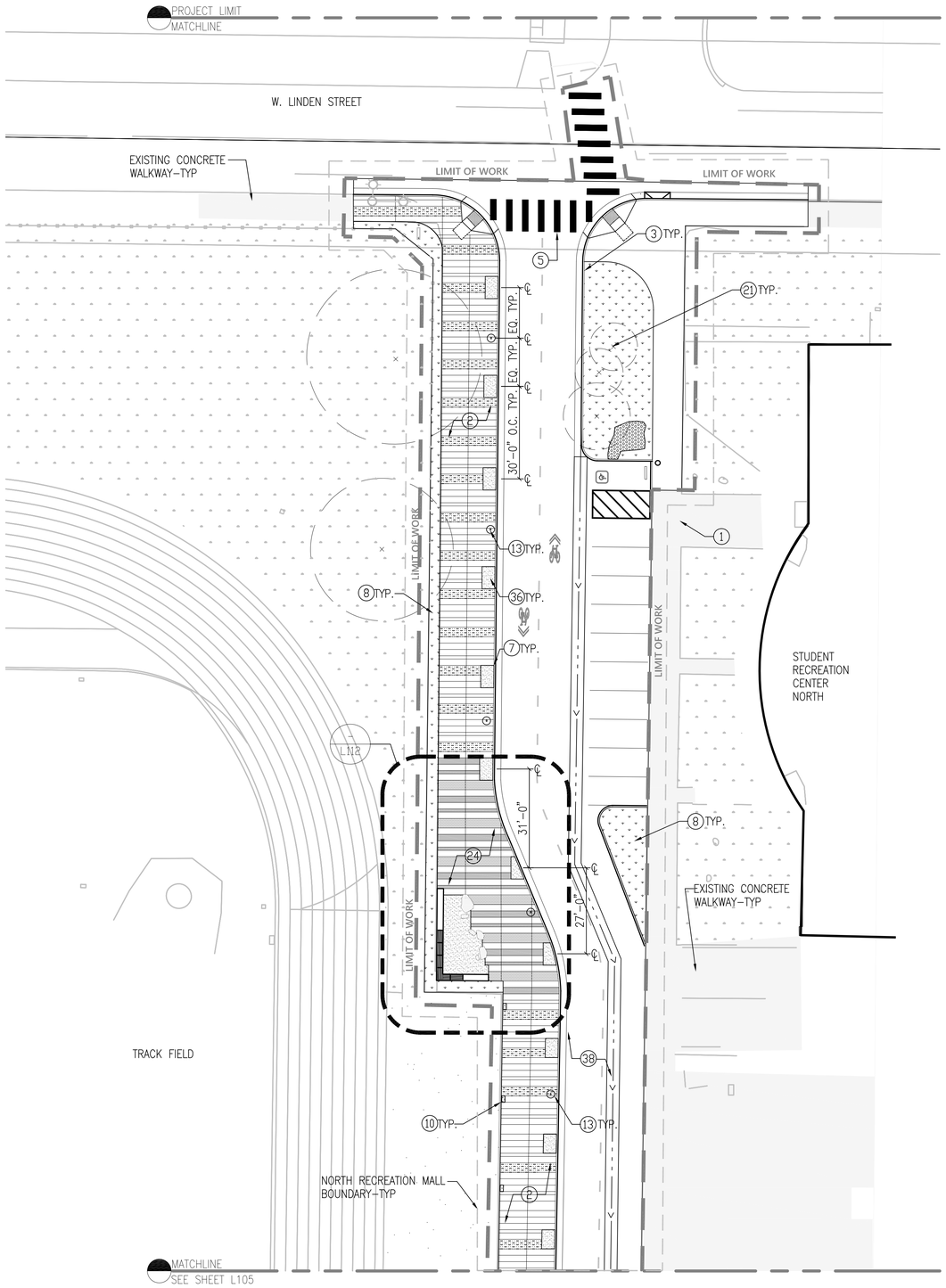
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=20'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

NORTH RECREATION MALL HARDSCAPE PLAN

SHEET TITLE

L105

SHEET NO.



LEGEND

- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 05, SEE HARDSCAPE PLANS
- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 150, SEE HARDSCAPE PLANS
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- DECORATIVE GRAVEL, SEE HARDSCAPE PLANS

KEYNOTES

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1. EXISTING SIDEWALK/PAVING TO REMAIN IN PLACE
2. NEW SIDEWALK, SEE CIVIL PLANS
3. NEW CURB, SEE CIVIL PLANS
4. ROLLED CURB, SEE CIVIL PLANS
5. NEW CROSSWALK, SEE CIVIL PLANS AND MATERIAL SCHEDULE PV–2
6. RAISED CROSSWALK, SEE CIVIL PLANS AND HARDSCAPE DETAILS.
7. TREE WELL, SEE HARDSCAPE DETAILS
8. PLANTED AREA, SEE PLANTING PLAN
9. DECORATIVE FENCING, SEE MATERIALS SCHEDULE FE–2
10. VINE POCKETS, SEE PLANTING DETAILS.
11. TRASH RECEPTACLE, SEE MATERIALS SCHEDULE FR–5
12. 8'X5' CLEAR BUS BOARDING AND ALIGHTING AREA
13. PEDESTRIAN LIGHTING, SEE LIGHTING PLAN
14. BIKE FIXIT STATION AND PUMP, SEE MATERIALS SCHEDULE FR–7
15. RETAINING WALL. SEE CIVIL PLANS.
16. BIKE RACKS. SEE MATERIALS SCHEDULE FR–3,4
17. 4'x4' CLEAR DELINEATED WHEELCHAIR SPACE
18. DYNAMIC TRANSIT PYLON, SEE SIGNAGE AND WAYFINDING PLANS
19. INFORMATIONAL SIGNAGE, SEE SIGNAGE AND WAYFINDING PLANS
20. BIOSWALE. SEE LANDSCAPE DETAILS
21. EXISTING TREE. PROTECT IN PLACE
22. ARMRESTS, SEE MATERIALS SCHEDULE F–12
23. LANDSCAPE WALL, SEE HARDSCAPE DETAILS
24. SAWCUT SCORED TOP CAST CONCRETE, SEE LEGEND ON THIS SHEET AND MATERIALS SCHEDULE CO–1,2
25. NEW CURB RAMP, SEE CIVIL PLANS
26. DECORATIVE GRAVEL, TYP. SEE MATERIALS SCHEDULE GR–1
27. STREET LIGHT, SEE ELECTRICAL PLAN
28. TRAVEL LANES, SEE CIVIL PLANS
29. BUS BAY, SEE CIVIL PLANS
30. CANOPY STRUCTURE, SEE ARCHITECTURAL PLANS
31. DRIVE–UP INFORMATION KIOSK, SEE ARCHITECTURAL PLANS
32. MOTORIZED SERVICE GATE. SEE MATERIALS SCHEDULE FR–3
33. KEYPAD ENTRY FOR MOTORIZED SERVICE GATE, SEE MATERIAL SCHEDULE FE–4
34. CONCRETE BENCH, SEE MATERIALS SCHEDULE FR–1
35. CONCRETE BENCH WITH WOOD BACKREST AND SEAT, SEE MATERIALS SCHEDULE FR–2.
36. DECOMPOSED GRANITE. SEE MATERIALS SCHEDULE DG–1.
37. BLUE LIGHT STATION. SEE MATERIALS SCHEDULE FR–9.
38. SERVICE ROAD. SEE CIVIL PLANS
39. STEEL PICKET FENCING. SEE MATERIALS SCHEDULE FE–3.
40. STEEL PICKET PEDESTRIAN GATE. SEE HARDSCAPE DETAILS
41. STEEL PICKET GATED SERVICE ENTRY. SEE HARDSCAPE DETAILS
42. STAIRS, SEE CIVIL PLANS
43. BI–DIRECTIONAL BIKE PATH, SEE HARDSCAPE DETAILS.
44. LANDSCAPE BOULDER, TYP. SEE MATERIALS SCHEDULE GR–3.
45. BIKE RUNNEL, SEE HARDSCAPE DETAILS
46. METAL SECURITY BOLLARD, SEE MATERIALS SCHEDULE FR–6
47. CORTEN STEEL PLANTER, SEE MATERIALS SCHEDULE FR–11.
48. STAINLESS STEEL HANDRAIL, SEE MATERIALS SCHEDULE FR–13
49. SKATE DETERRENT, SEE MATERIAL SCHEDULE FR–10

NORTH

20' 0' 20' 40'

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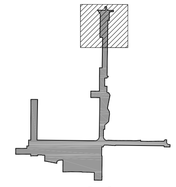

IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD–BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=20'
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

NORTH RECREATION MALL HARDSCAPE PLAN

SHEET TITLE

L106

SHEET NO.

REFER TO CIVIL PLAN FOR ADDITIONAL DIMENSIONS AND LOCATION INFORMATION

NORTH

20' 0' 20' 40'

LEGEND

- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 05, SEE HARDSCAPE PLANS
- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 150, SEE HARDSCAPE PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 05; SEE CIVIL PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 150; SEE CIVIL PLANS
- PLANTING AREA, SEE PLANTING PLANS
- DECOMPOSED GRANITE, SEE HARDSCAPE PLANS
- DECORATIVE GRAVEL, SEE HARDSCAPE PLANS

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6. RAISED CROSSWALK, SEE CIVIL PLANS AND HARDSCAPE DETAILS.
7. TREE WELL, SEE HARDSCAPE DETAILS
8. PLANTED AREA, SEE PLANTING PLAN
9. DECORATIVE FENCING, SEE MATERIALS SCHEDULE FE-2
10. VINE POCKETS, SEE PLANTING DETAILS.
11. TRASH RECEPTACLE, SEE MATERIALS SCHEDULE FR-5
12. 8'X5' CLEAR BUS BOARDING AND ALIGHTING AREA
13. PEDESTRIAN LIGHTING, SEE LIGHTING PLAN
14. BIKE FIXIT STATION AND PUMP, SEE MATERIALS SCHEDULE FR-7
15. RETAINING WALL. SEE CIVIL PLANS.
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20. BIOSWALE. SEE LANDSCAPE DETAILS
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25. NEW CURB RAMP, SEE CIVIL PLANS
26. DECORATIVE GRAVEL, TYP. SEE MATERIALS SCHEDULE GR-1
27. STREET LIGHT, SEE ELECTRICAL PLAN
28. TRAVEL LANES, SEE CIVIL PLANS
29. BUS BAY, SEE CIVIL PLANS
30. CANOPY STRUCTURE, SEE ARCHITECTURAL PLANS
31. DRIVE-UP INFORMATION KIOSK, SEE ARCHITECTURAL PLANS
32. MOTORIZED SERVICE GATE. SEE MATERIALS SCHEDULE FR-3
33. KEYPAD ENTRY FOR MOTORIZED SERVICE GATE, SEE MATERIAL SCHEDULE FE-4
34. CONCRETE BENCH, SEE MATERIALS SCHEDULE FR-1
35. CONCRETE BENCH WITH WOOD BACKREST AND SEAT, SEE MATERIALS SCHEDULE FR-2.
36. DECOMPOSED GRANITE. SEE MATERIALS SCHEDULE DG-1.
37. BLUE LIGHT STATION. SEE MATERIALS SCHEDULE FR-9.
38. SERVICE ROAD. SEE CIVIL PLANS
39. STEEL PICKET FENCING. SEE MATERIALS SCHEDULE FE-3.
40. STEEL PICKET PEDESTRIAN GATE. SEE HARDSCAPE DETAILS
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49. SKATE DETERRENT, SEE MATERIAL SCHEDULE FR-10

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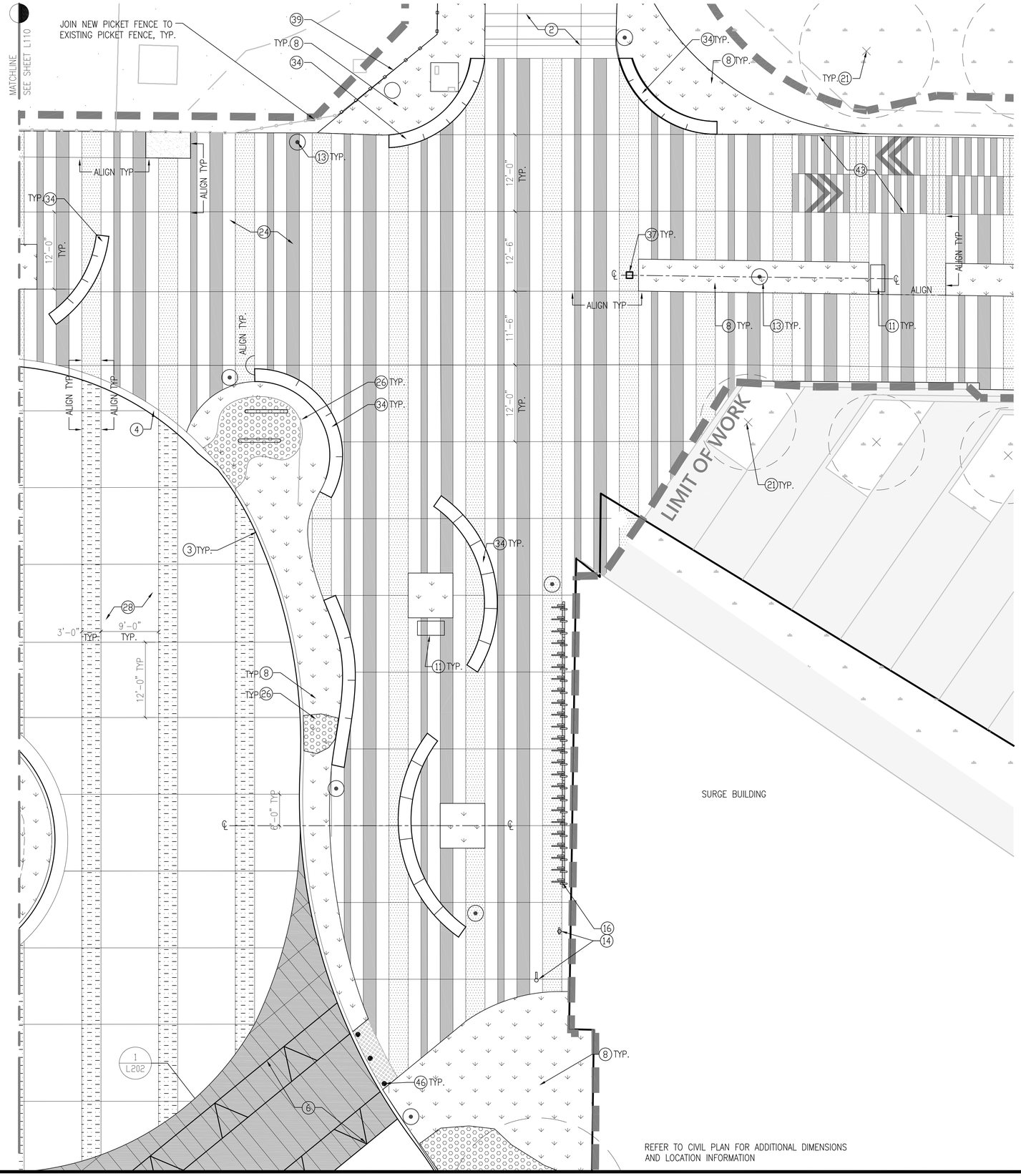
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1/8"= 1'-0"
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

ENLARGED PLAN

SHEET TITLE

L110

SHEET NO.



REFER TO CIVIL PLAN FOR ADDITIONAL DIMENSIONS AND LOCATION INFORMATION

LEGEND

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- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 05; SEE CIVIL PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 150; SEE CIVIL PLANS
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NORTH

8' 0' 8' 16'

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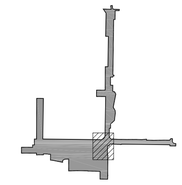

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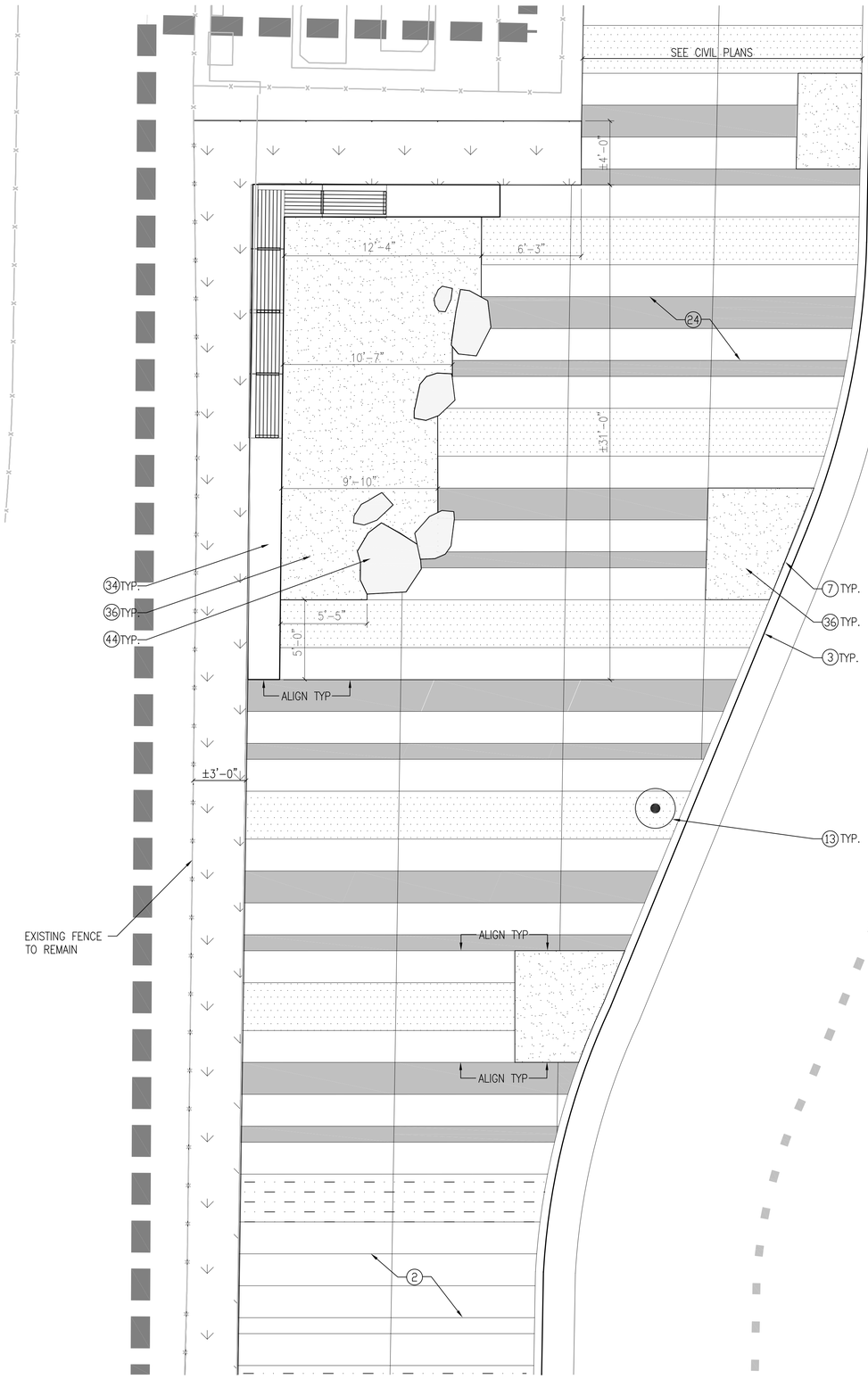
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1/8"= 1'-0"
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

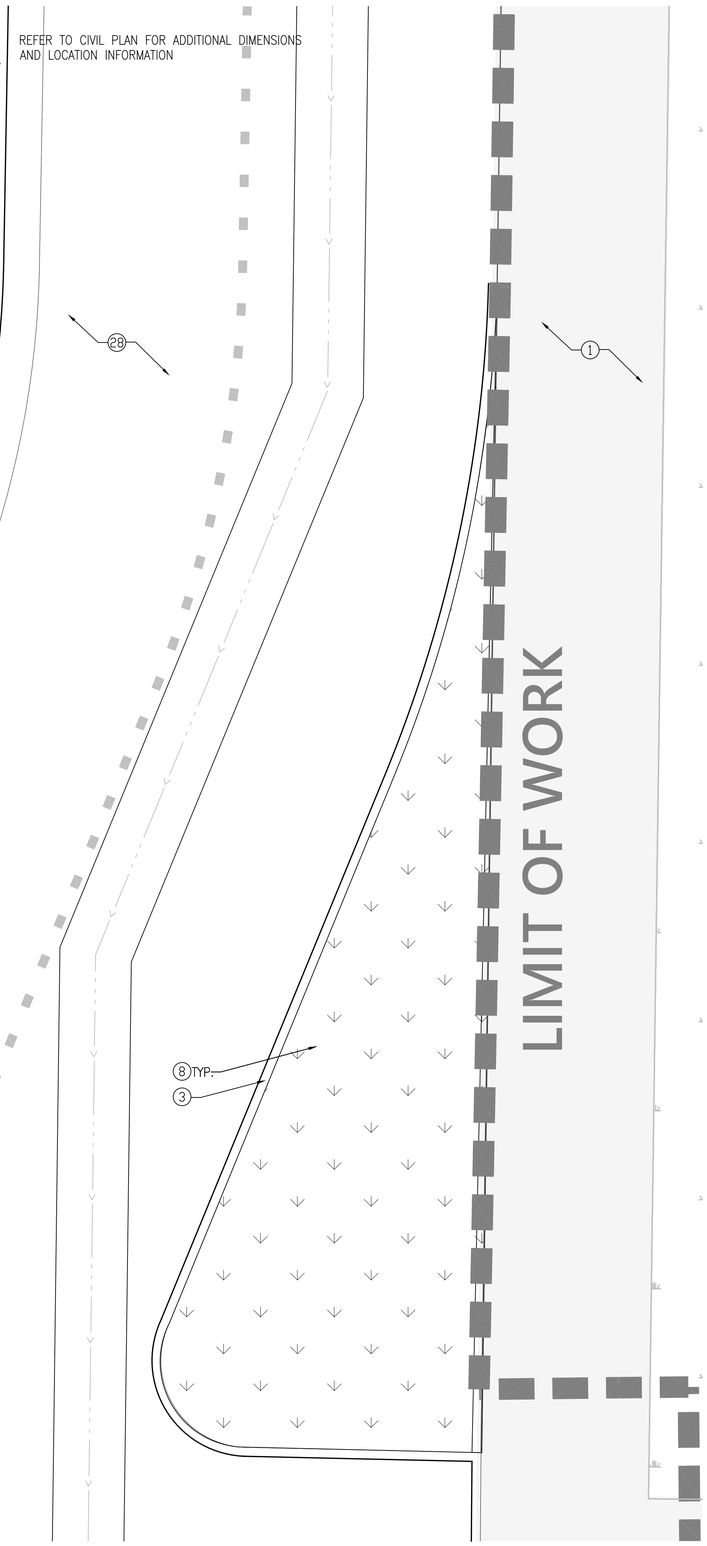
ENLARGED PLAN

SHEET TITLE

L111

SHEET NO.





LEGEND

- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 05, SEE HARDSCAPE PLANS
- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 150, SEE HARDSCAPE PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 05; SEE CIVIL PLANS
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NORTH

8' 0' 8' 16'

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AND CENTRAL CAMPUS
LINKAGES

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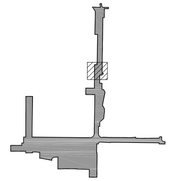

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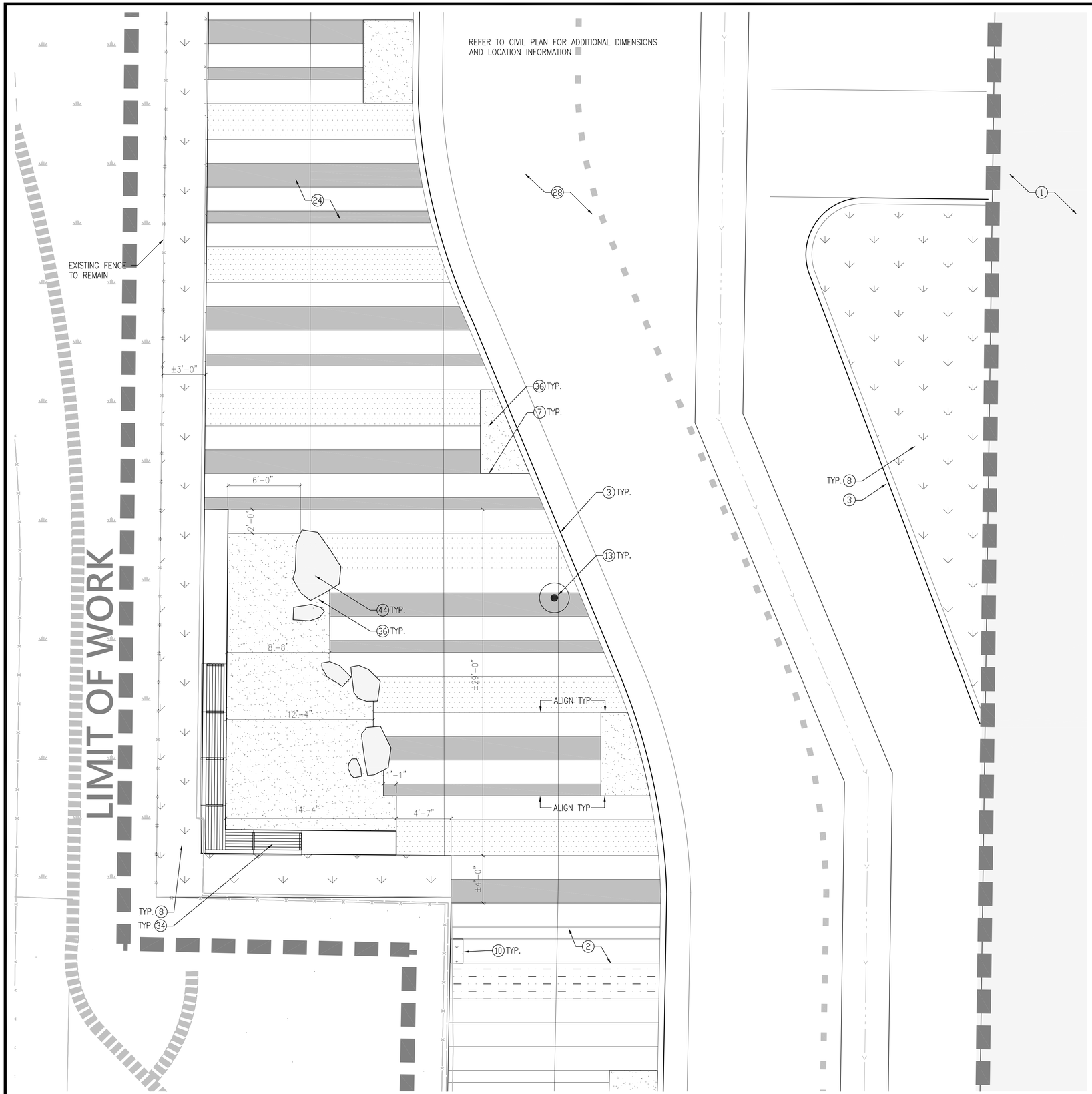
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1/4"= 1'-0"
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

ENLARGED SOUTH
PARKLET PLAN

SHEET TITLE

L112

SHEET NO.



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36. DECOMPOSED GRANITE. SEE MATERIALS SCHEDULE DG-1.
37. BLUE LIGHT STATION. SEE MATERIALS SCHEDULE FR-9.
38. SERVICE ROAD. SEE CIVIL PLANS
39. STEEL PICKET FENCING. SEE MATERIALS SCHEDULE FE-3.
40. STEEL PICKET PEDESTRIAN GATE. SEE HARDSCAPE DETAILS
41. STEEL PICKET GATED SERVICE ENTRY. SEE HARDSCAPE DETAILS
42. STAIRS, SEE CIVIL PLANS
43. BI-DIRECTIONAL BIKE PATH, SEE HARDSCAPE DETAILS.
44. LANDSCAPE BOULDER, TYP. SEE MATERIALS SCHEDULE GR-3.
45. BIKE RUNNEL, SEE HARDSCAPE DETAILS
46. METAL SECURITY BOLLARD, SEE MATERIALS SCHEDULE FR-6
47. CORTEN STEEL PLANTER, SEE MATERIALS SCHEDULE FR-11.
48. STAINLESS STEEL HANDRAIL, SEE MATERIALS SCHEDULE FR-13
49. SKATE DETERRENT, SEE MATERIAL SCHEDULE FR-10

NORTH

20' 0' 20' 40'

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MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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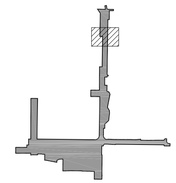
ARCHITECT/ENGINEER SEAL



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KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD-BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

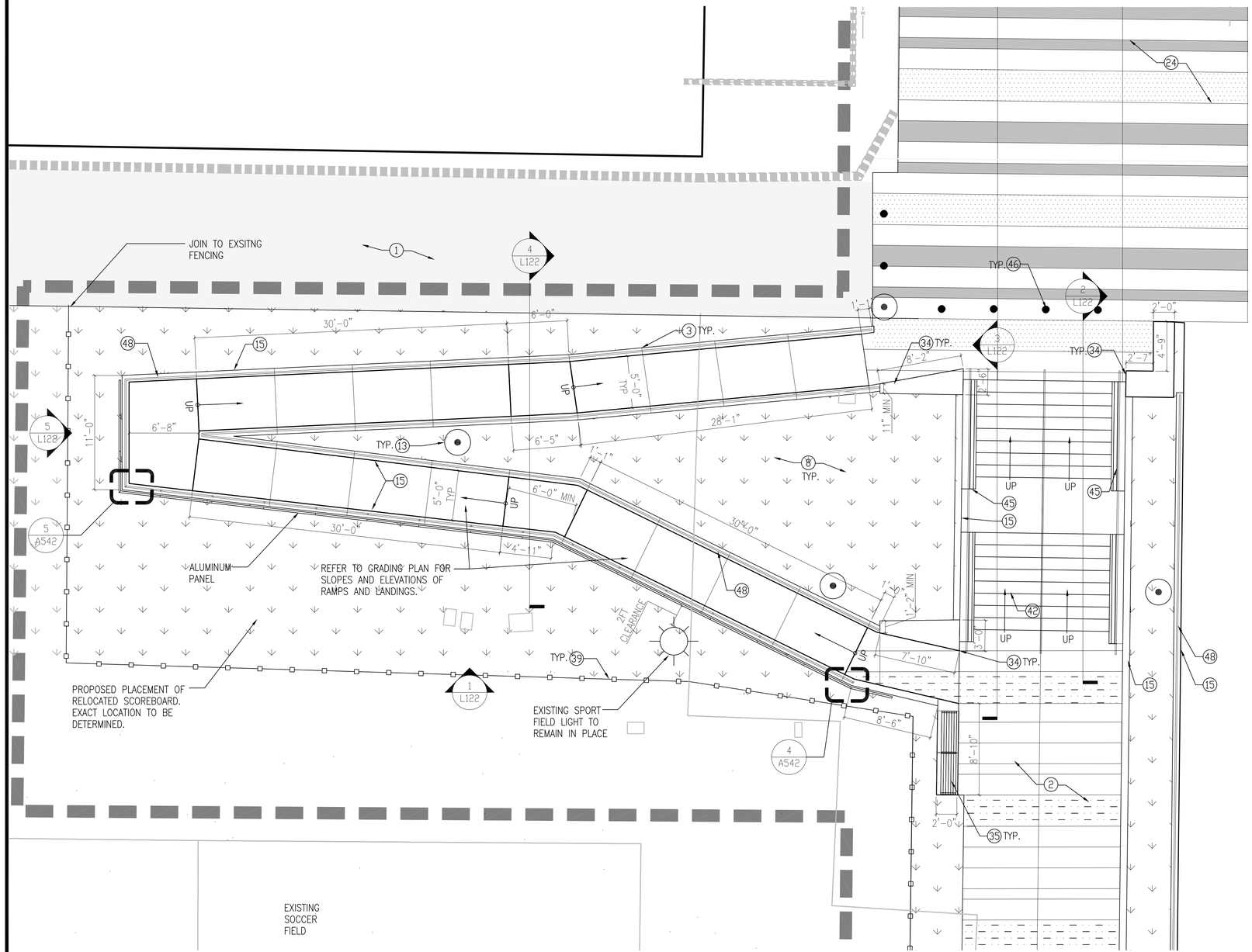
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1/4"= 1'-0"
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

ENLARGED NORTH PARKLET PLAN

SHEET TITLE

L113

SHEET NO.



LEGEND

- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 05, SEE HARDSCAPE PLANS
- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 150, SEE HARDSCAPE PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 05; SEE CIVIL PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 150; SEE CIVIL PLANS
- PLANTING AREA, SEE PLANTING PLANS
- DECOMPOSED GRANITE, SEE HARDSCAPE PLANS
- DECORATIVE GRAVEL, SEE HARDSCAPE PLANS

KEYNOTES

NOTE: NOT ALL KEYNOTES ARE USED ON EVERY SHEET

1. EXISTING SIDEWALK/PAVING TO REMAIN IN PLACE
2. NEW SIDEWALK, SEE CIVIL PLANS
3. NEW CURB, SEE CIVIL PLANS
4. ROLLED CURB, SEE CIVIL PLANS
5. NEW CROSSWALK, SEE CIVIL PLANS AND MATERIAL SCHEDULE PV-2
6. RAISED CROSSWALK, SEE CIVIL PLANS AND HARDSCAPE DETAILS.
7. TREE WELL, SEE HARDSCAPE DETAILS
8. PLANTED AREA, SEE PLANTING PLAN
9. DECORATIVE FENCING, SEE MATERIALS SCHEDULE FE-2
10. VINE POCKETS, SEE PLANTING DETAILS.
11. TRASH RECEPTACLE, SEE MATERIALS SCHEDULE FR-5
12. 8'X5' CLEAR BUS BOARDING AND ALIGHTING AREA
13. PEDESTRIAN LIGHTING, SEE LIGHTING PLAN
14. BIKE FIXIT STATION AND PUMP, SEE MATERIALS SCHEDULE FR-7
15. RETAINING WALL. SEE CIVIL PLANS.
16. BIKE RACKS. SEE MATERIALS SCHEDULE FR-3,4
17. 4'x4' CLEAR DELINEATED WHEELCHAIR SPACE
18. DYNAMIC TRANSIT PYLON, SEE SIGNAGE AND WAYFINDING PLANS
19. INFORMATIONAL SIGNAGE, SEE SIGNAGE AND WAYFINDING PLANS
20. BIOSWALE. SEE LANDSCAPE DETAILS
21. EXISTING TREE. PROTECT IN PLACE
22. ARMRESTS, SEE MATERIALS SCHEDULE F-12
23. LANDSCAPE WALL, SEE HARDSCAPE DETAILS
24. SAWCUT SCORED TOP CAST CONCRETE, SEE LEGEND ON THIS SHEET AND MATERIALS SCHEDULE CO-1,2
25. NEW CURB RAMP, SEE CIVIL PLANS
26. DECORATIVE GRAVEL, TYP. SEE MATERIALS SCHEDULE GR-1
27. STREET LIGHT, SEE ELECTRICAL PLAN
28. TRAVEL LANES, SEE CIVIL PLANS
29. BUS BAY, SEE CIVIL PLANS
30. CANOPY STRUCTURE, SEE ARCHITECTURAL PLANS
31. DRIVE-UP INFORMATION KIOSK, SEE ARCHITECTURAL PLANS
32. MOTORIZED SERVICE GATE. SEE MATERIALS SCHEDULE FR-3
33. KEYPAD ENTRY FOR MOTORIZED SERVICE GATE, SEE MATERIAL SCHEDULE FE-4
34. CONCRETE BENCH, SEE MATERIALS SCHEDULE FR-1
35. CONCRETE BENCH WITH WOOD BACKREST AND SEAT, SEE MATERIALS SCHEDULE FR-2.
36. DECOMPOSED GRANITE. SEE MATERIALS SCHEDULE DG-1.
37. BLUE LIGHT STATION. SEE MATERIALS SCHEDULE FR-9.
38. SERVICE ROAD. SEE CIVIL PLANS
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46. METAL SECURITY BOLLARD, SEE MATERIALS SCHEDULE FR-6
47. CORTEN STEEL PLANTER, SEE MATERIALS SCHEDULE FR-11.
48. STAINLESS STEEL HANDRAIL, SEE MATERIALS SCHEDULE FR-13
49. SKATE DETERRENT, SEE MATERIAL SCHEDULE FR-10

NORTH

5'-4" 0' 5'-4" 10'-8"

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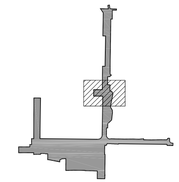

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	05/01/18	100% DD SET	

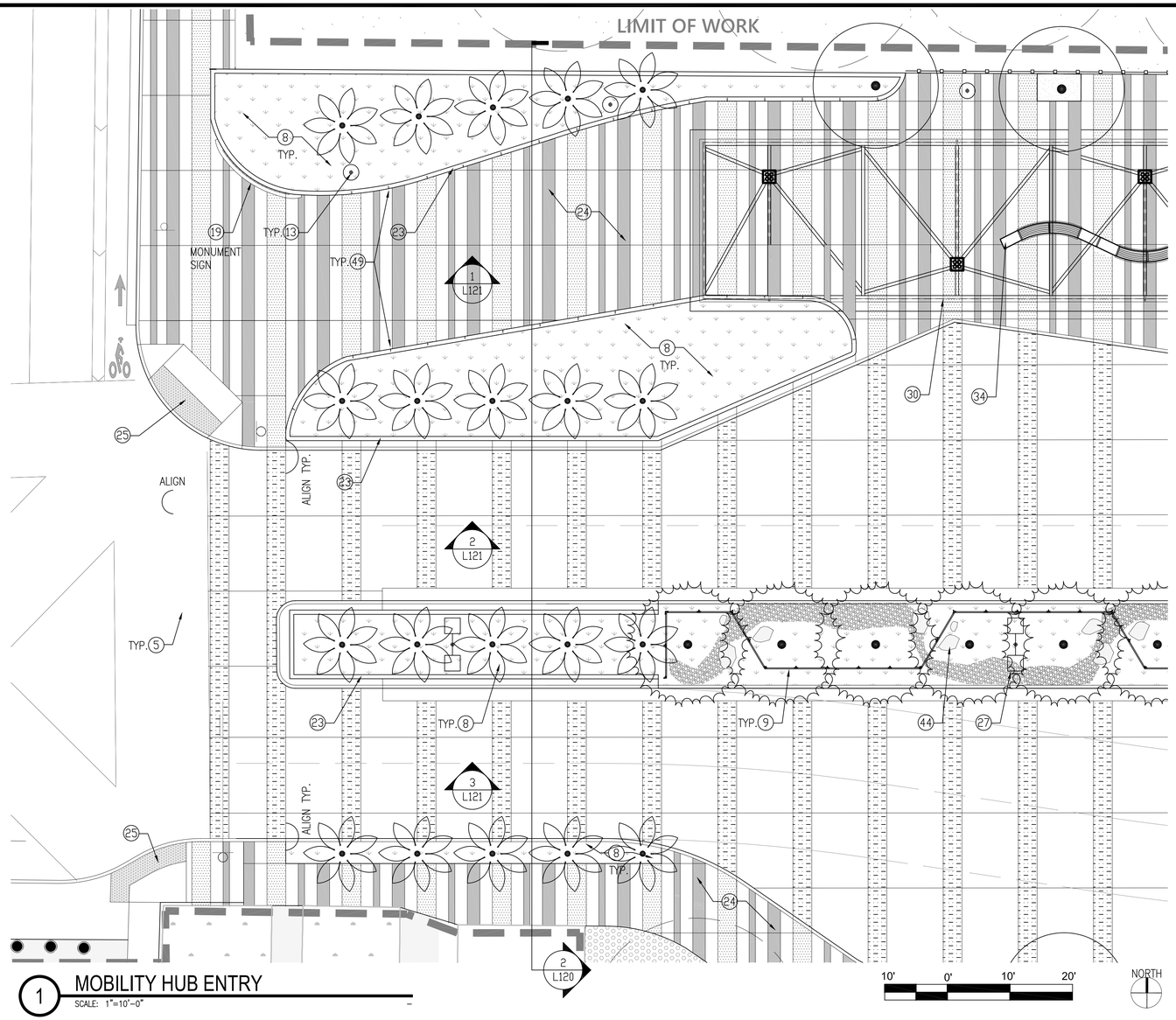
BASE FILE NAMES	XL_PAVE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	3/16"= 1'-0"
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

RAMP AND STAIRS ENLARGED PLAN

SHEET TITLE

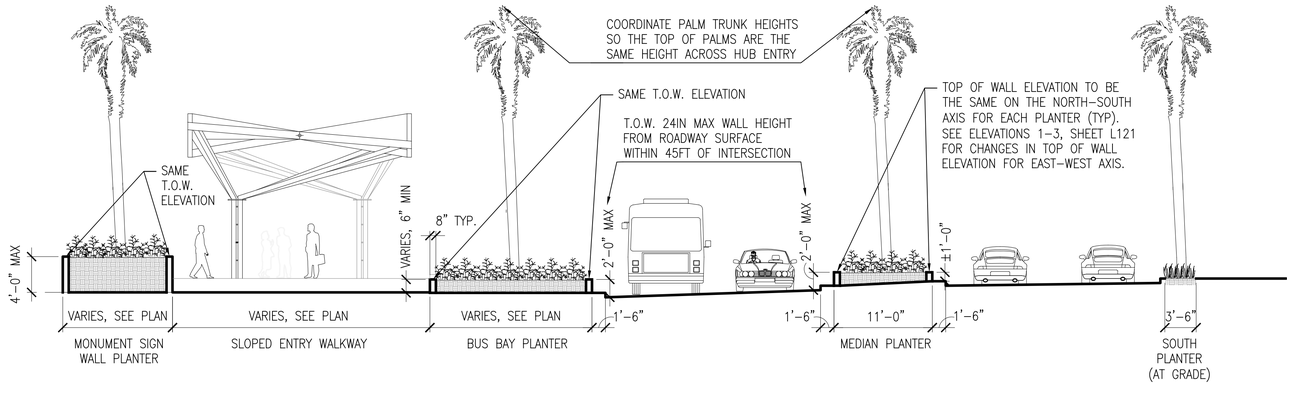
L114

SHEET NO.



1 MOBILITY HUB ENTRY

SCALE: 1"=10'-0"



2 MOBILITY HUB ENTRY SECTION ELEVATION - LOOKING EAST

SCALE: 1/8"=1'-0"

LEGEND

- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 05, SEE HARDSCAPE PLANS
- INTEGRAL COLOR CONCRETE; DAVIS COLOR: MESA BUFF 5447, TOPCAST TEXTURE 150, SEE HARDSCAPE PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 05; SEE CIVIL PLANS
- PCC CONCRETE, STANDARD GRAY (NO INTEGRAL COLOR); TOPCAST TEXTURE 150; SEE CIVIL PLANS
- PLANTING AREA, SEE PLANTING PLANS
- DECOMPOSED GRANITE, SEE HARDSCAPE PLANS
- DECORATIVE GRAVEL, SEE HARDSCAPE PLANS

KEYNOTES

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32. MOTORIZED SERVICE GATE. SEE MATERIALS SCHEDULE FR-3
33. KEYPAD ENTRY FOR MOTORIZED SERVICE GATE, SEE MATERIAL SCHEDULE FE-4
34. CONCRETE BENCH, SEE MATERIALS SCHEDULE FR-1
35. CONCRETE BENCH WITH WOOD BACKREST AND SEAT, SEE MATERIALS SCHEDULE FR-2.
36. DECOMPOSED GRANITE. SEE MATERIALS SCHEDULE DG-1.
37. BLUE LIGHT STATION. SEE MATERIALS SCHEDULE FR-9.
38. SERVICE ROAD. SEE CIVIL PLANS
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46. METAL SECURITY BOLLARD, SEE MATERIALS SCHEDULE FR-6
47. CORTEN STEEL PLANTER, SEE MATERIALS SCHEDULE FR-11.
48. STAINLESS STEEL HANDRAIL, SEE MATERIALS SCHEDULE FR-13
49. SKATE DETERRENT, SEE MATERIAL SCHEDULE FR-10

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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KEY PLAN

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	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

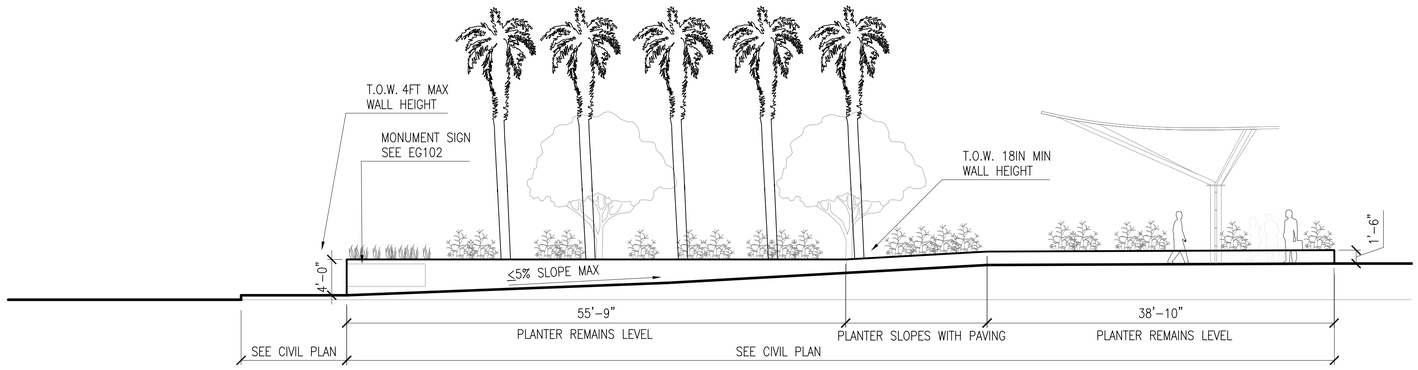
BASE FILE NAMES	XL_HARDSCAPE
DRAWN BY	MA
CHECKED BY	DH
SCALE	SHEET
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

MOBILITY HUB ENTRY SECTION AND ELEVATIONS

SHEET TITLE

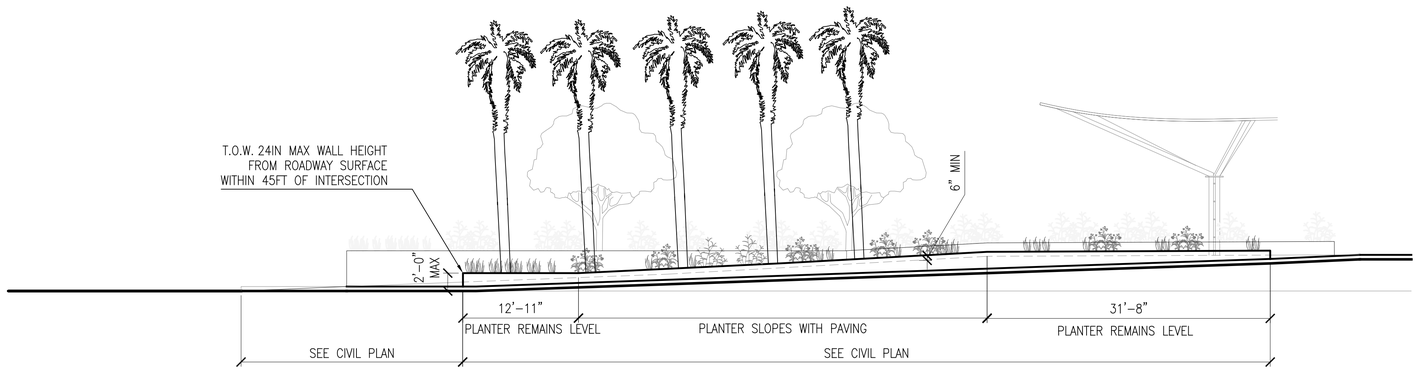
L120

SHEET NO.



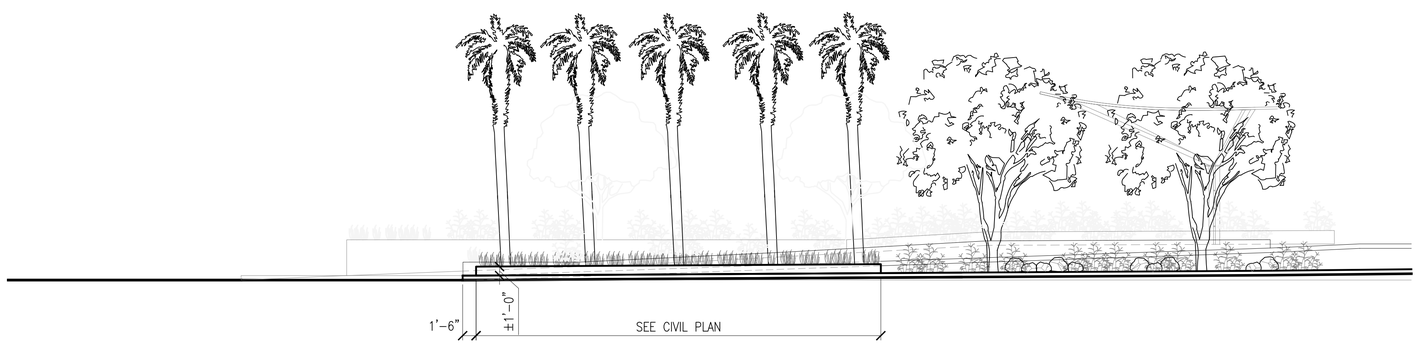
1 MOBILITY HUB ENTRY - MONUMENT SIGN PLANTER WALL ELEVATION

SCALE: 1/8"=1'-0"



2 MOBILITY HUB ENTRY - BUS BAY PLANTER WALL ELEVATION

SCALE: 1/8"=1'-0"



3 MOBILITY HUB ENTRY - MEDIAN PLANTER WALL ELEVATION

SCALE: 1/8"=1'-0"

MOBILITY HUB
AND CENTRAL CAMPUS
LINKAGES

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KEY PLAN

NO.	DATE	ISSUED FOR	BY
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		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

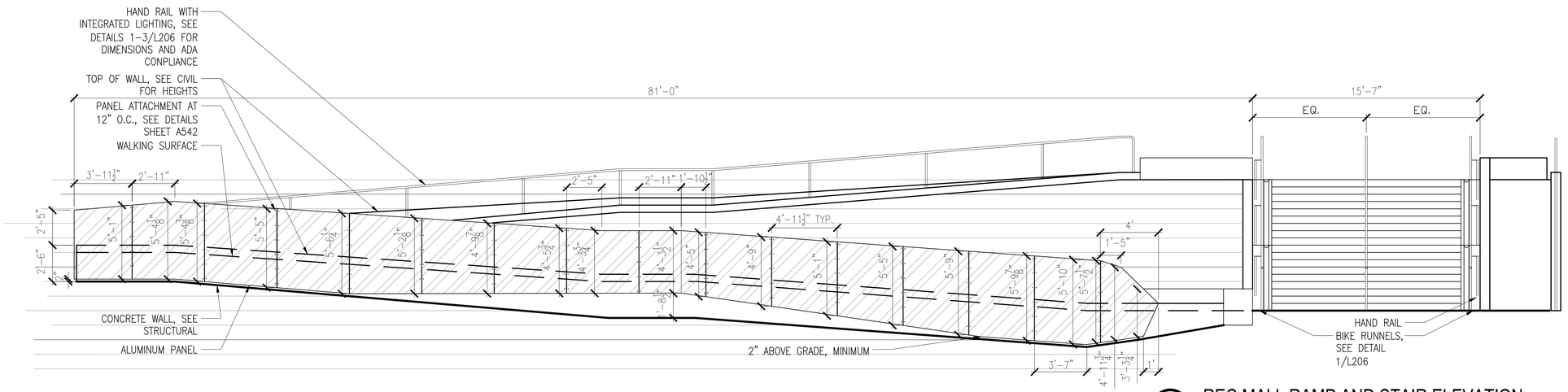
BASE FILE NAMES	XL_HARDSCAPE
DRAWN BY	MA
CHECKED BY	DH
SCALE	SHEET
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

MOBILITY HUB
ENTRY SECTION
AND ELEVATIONS

SHEET TITLE

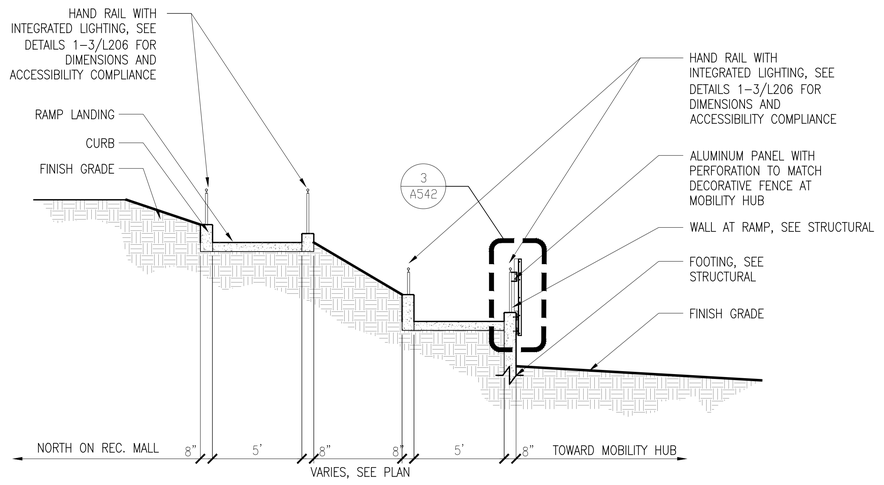
L121

SHEET NO.



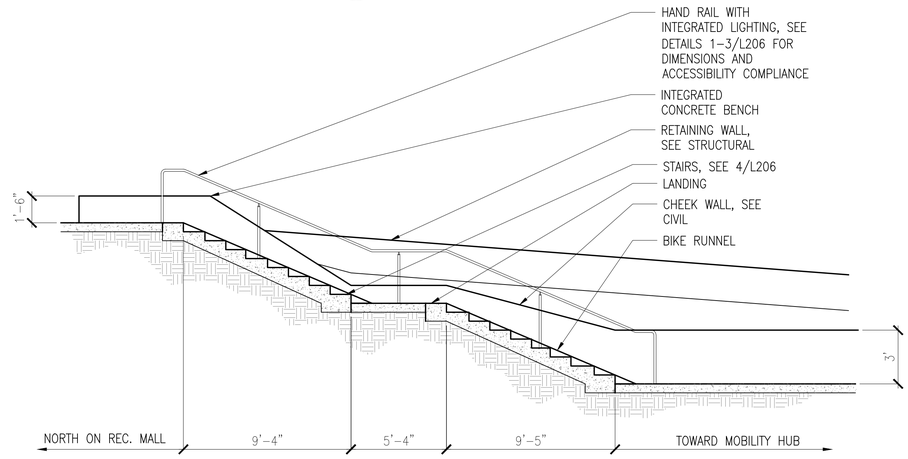
1 REC MALL RAMP AND STAIR ELEVATION

SCALE: 1/4"=1'–0"



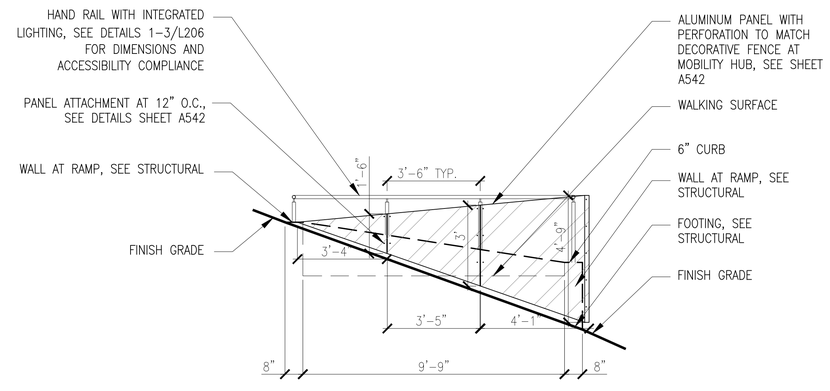
4 REC MALL RAMP LANDING SECTION

SCALE: 1/4"=1'–0"



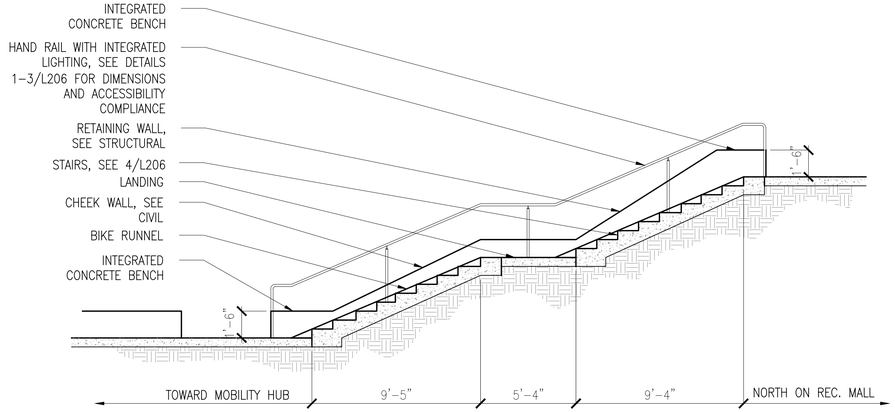
2 REC MALL STAIRCASE SECTION

SCALE: 1/4"=1'–0"



5 REC MALL RAMP TURNAROUND LANDING ELEVATION

SCALE: 3/8"= 1'–0"



3 REC MALL STAIRCASE SECTION

SCALE: 1/4"=1'–0"

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LET THERE BE LIGHT

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NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD–BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

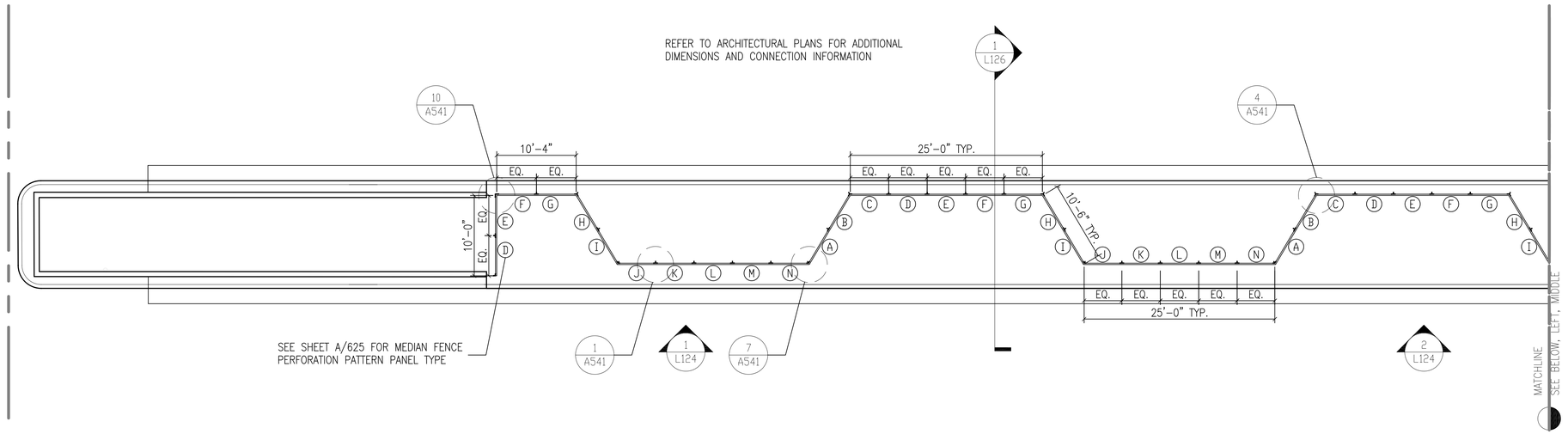
BASE FILE NAMES	XL_HARDSCAPE
DRAWN BY	ND
CHECKED BY	DH
SCALE	SHEET
DATE	1/10/2019
PROJECT NO.	GRUEN # 8345

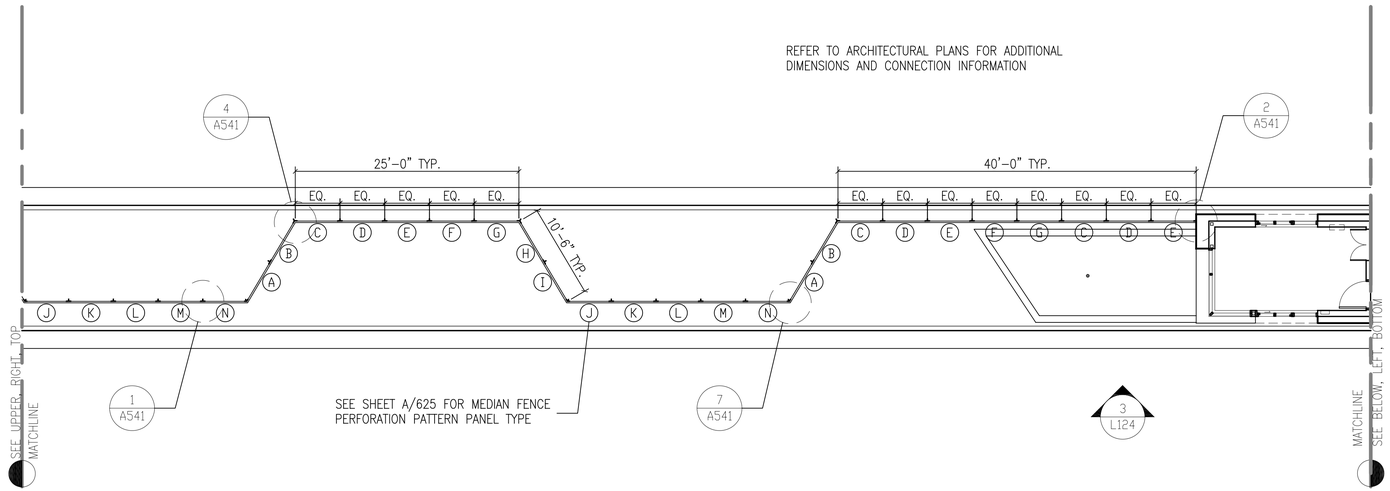
REC. MALL ALTERNATIVE SECTIONS AND ELEVATIONS

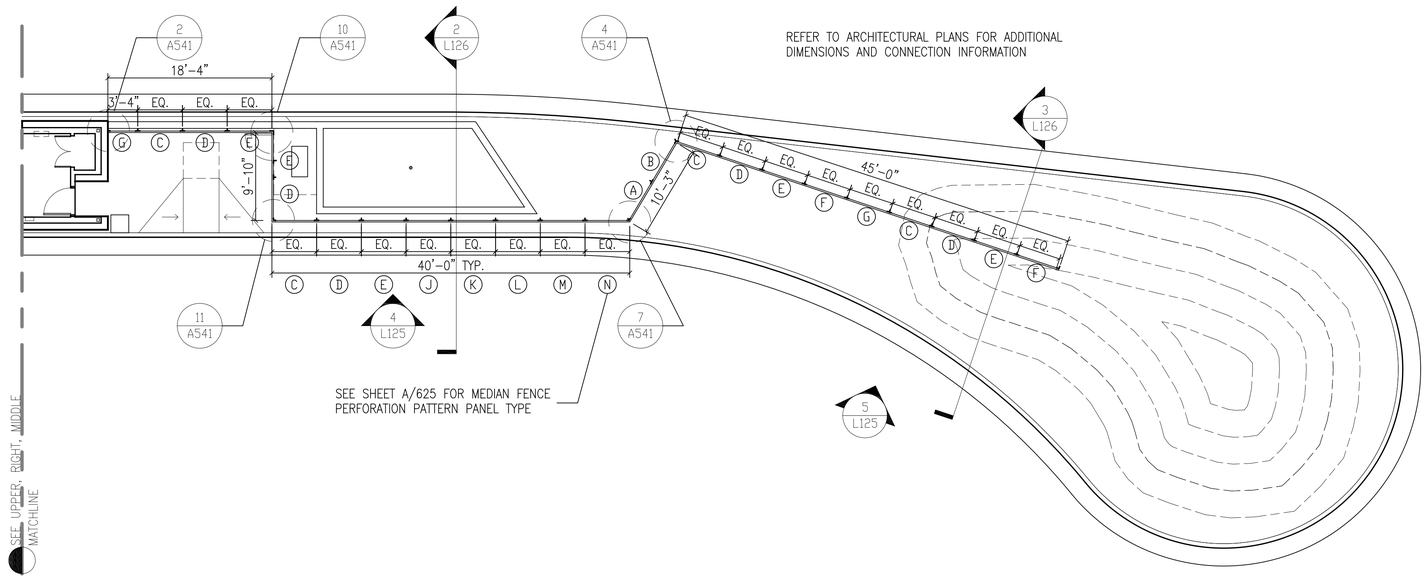
SHEET TITLE

L122

SHEET NO.







NORTH

8' 0' 8' 16'

MOBILITY HUB
AND CENTRAL CAMPUS
LINKAGES

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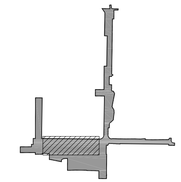

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KEY PLAN

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		01/10/19 100% CD-BID SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	XL_HARDSCAPE
DRAWN BY	SS
CHECKED BY	DH
SCALE	SHEET
DATE	1-10-20109
PROJECT NO.	GRUEN # 8345

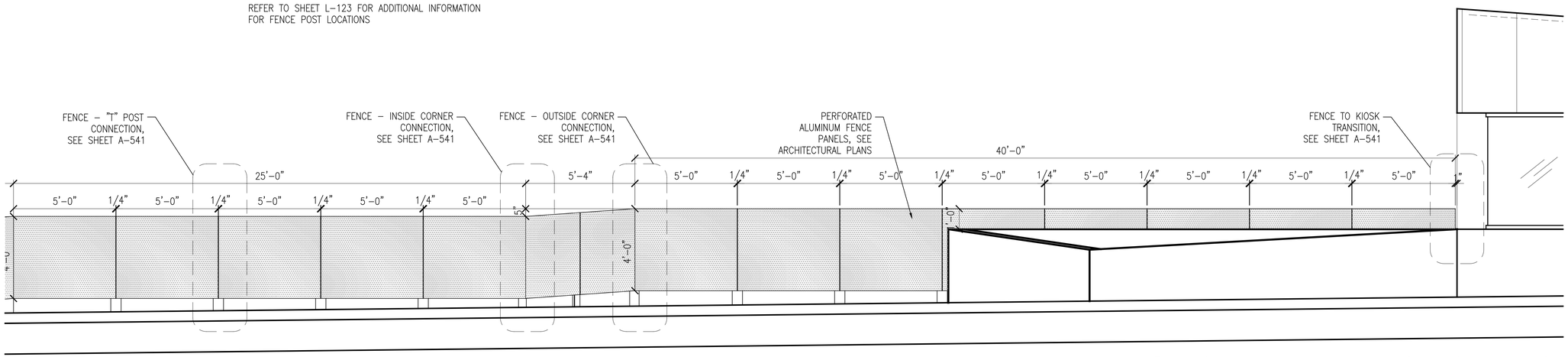
MOB. HUB - MEDIAN FENCE PLAN

SHEET TITLE

L123

SHEET NO.

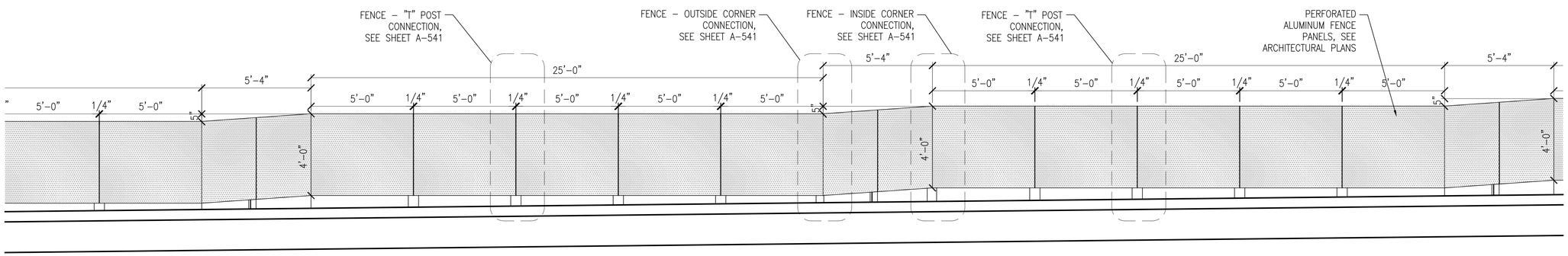
REFER TO SHEET L-123 FOR ADDITIONAL INFORMATION
FOR FENCE POST LOCATIONS



3 MOBILITY HUB - MEDIAN FENCE WEST ELEVATION

SCALE: 3/8"=1'-0"

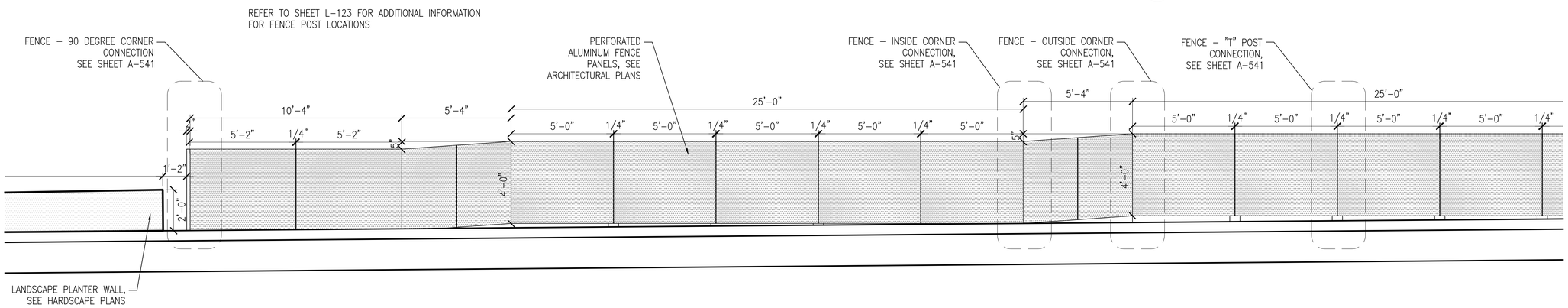
REFER TO SHEET L-123 FOR ADDITIONAL INFORMATION
FOR FENCE POST LOCATIONS



2 MOBILITY HUB - MEDIAN FENCE WEST ELEVATION

SCALE: 3/8"=1'-0"

REFER TO SHEET L-123 FOR ADDITIONAL INFORMATION
FOR FENCE POST LOCATIONS



1 MOBILITY HUB - MEDIAN FENCE WEST ELEVATION

SCALE: 3/8"=1'-0"

MOBILITY HUB
AND CENTRAL CAMPUS
LINKAGES

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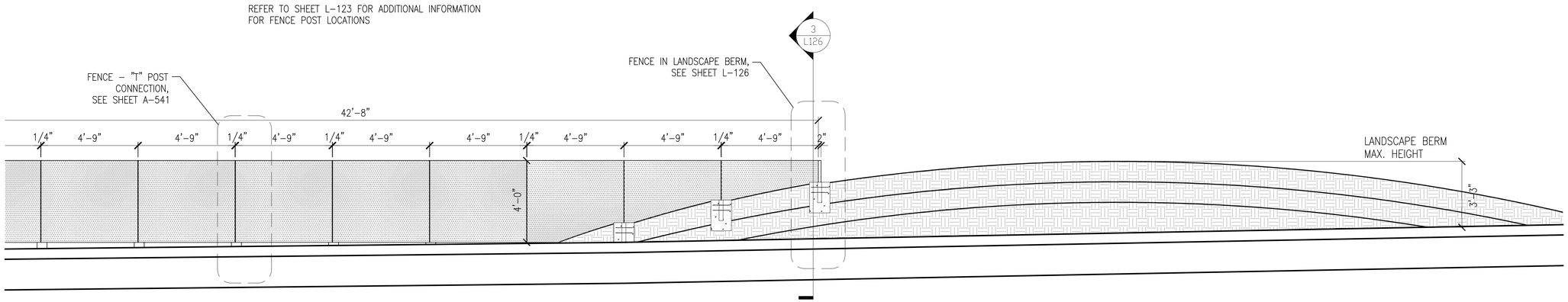
BASE FILE NAMES	XL_HARDSCAPE
DRAWN BY	SS
CHECKED BY	DH
SCALE	SHEET
DATE	1-10-2019
PROJECT NO.	GRUEN # 8345

MOB. HUB SECTION
AND ELEVATIONS

SHEET TITLE

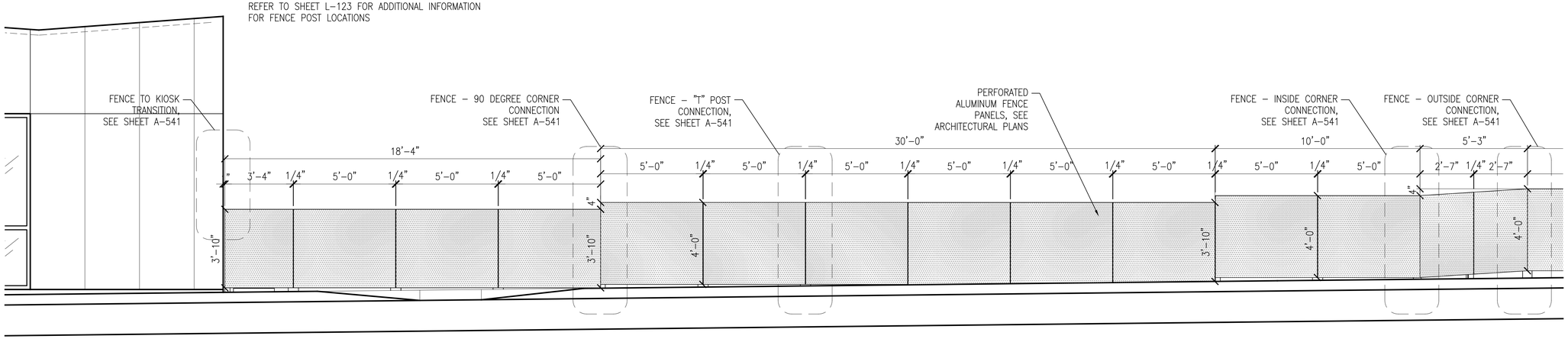
L124

SHEET NO.



5 MOBILITY HUB - MEDIAN FENCE EAST ELEVATION

SCALE: 3/8"=1'-0"



4 MOBILITY HUB - MEDIAN FENCE EAST ELEVATION

SCALE: 3/8"=1'-0"

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	05/01/18	100% DD SET	

BASE FILE NAMES	XL_HARDSCAPE
DRAWN BY	SS
CHECKED BY	DH
SCALE	SHEET
DATE	1-10-2019
PROJECT NO.	GRUEN # 8345

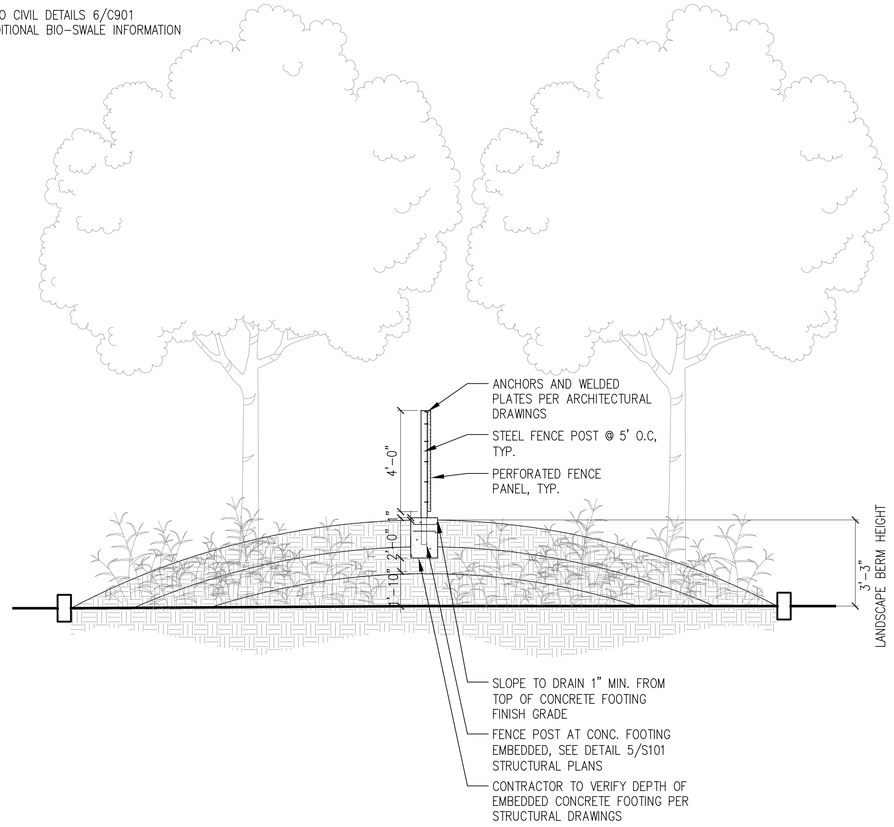
MOB. HUB SECTION AND ELEVATIONS

SHEET TITLE

L125

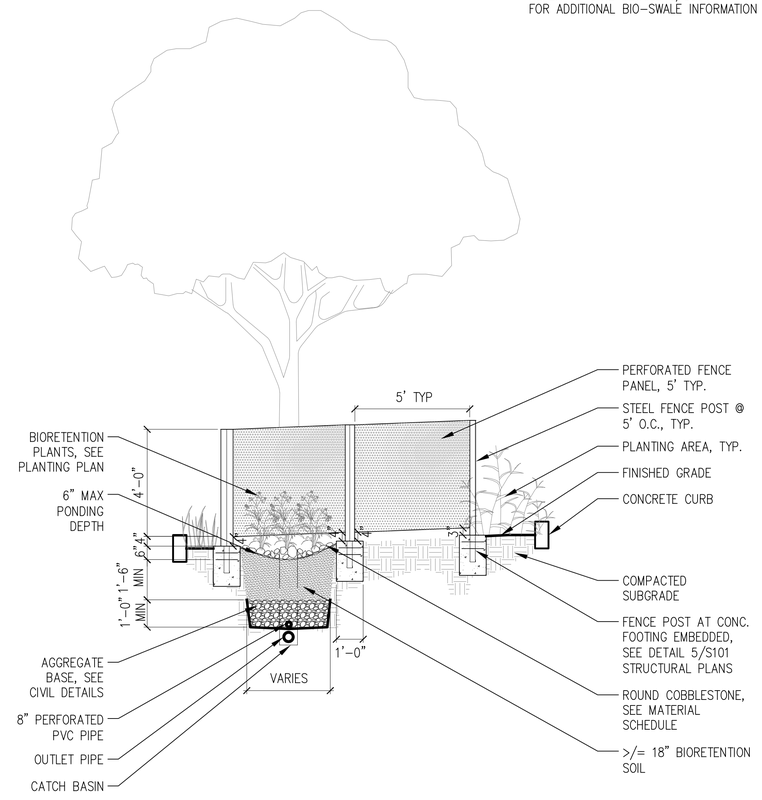
SHEET NO.

REFER TO CIVIL DETAILS 6/C901
FOR ADDITIONAL BIO-SWALE INFORMATION



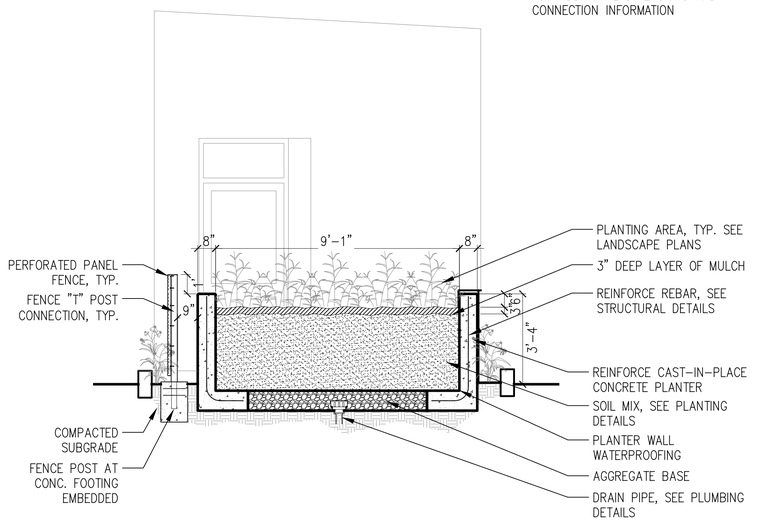
3 PERFORATED FENCE IN LANDSCAPE BERM SECTION
SCALE: 3/8"=1'-0"

REFER TO CIVIL DETAILS 6/C901
FOR ADDITIONAL BIO-SWALE INFORMATION



1 PERFORATED FENCE IN BIOSWALE SECTION
SCALE: 3/8"=1'-0"

REFER TO ARCHITECTURAL DETAILS 1/A531
FOR ADDITIONAL DIMENSIONS AND
CONNECTION INFORMATION



2 PLANTER WALL AT KIOSK SECTION
SCALE: 3/8"=1'-0"

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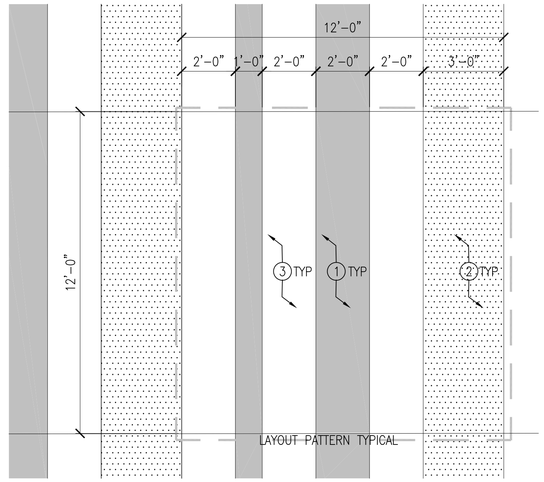
BASE FILE NAMES	XL_HARDSCAPE
DRAWN BY	SS
CHECKED BY	DH
SCALE	SHEET
DATE	1-10-2019
PROJECT NO.	GRUEN # 8345

MOB. HUB SECTION AND ELEVATIONS

SHEET TITLE

L126

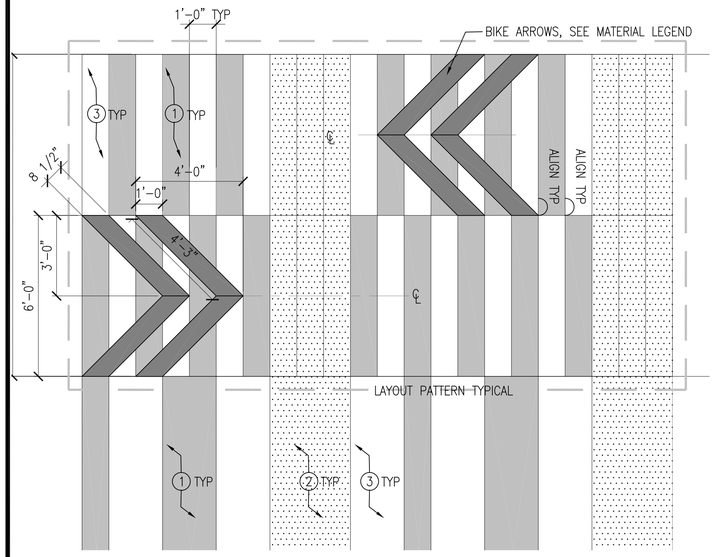
SHEET NO.



DETAIL KEYNOTES:
1. INTEGRAL COLOR CONCRETE CO-1; SEE MATERIAL SCHEDULE
2. INTEGRAL COLOR CONCRETE CO-2: SEE MATERIAL SCHEDULE
3. PCC CONCRETE CO-3: STANDARD GRAY (NO INTEGRAL COLOR) SEE MATERIAL SCHEDULE

NOTES:
1. LAYOUT PATTERN REPEATS IN 12'X12' MODULE
2. AT LOCATION ON PROJECT, PLACE AND FINISH 12 FEET BY 12 FEET AREA OF THE TEXTURED/COLORED CONCRETE MOCK-UP FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
3. CONCRETE CONTROL JOINTS SHOWN AS TYPICAL.
4. EXPANSION JOINTS TO BE PLACED WHERE CONCRETE PAVING MEETS VERTICAL STRUCTURES (E.G. LANDSCAPE WALLS, COLUMNS, CONCRETE BENCHES, ETC.).
5. EXPANSION JOINTS TO BE PLACED IN CONCRETE PAVING @ 40FT TO 50FT INTERVALS IN PLACE OF CONTROL JOINT.

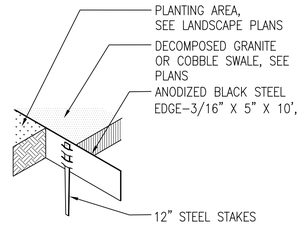
5 ENHANCED PAVING PATTERN
SCALE: 3/8"= 1'-0"

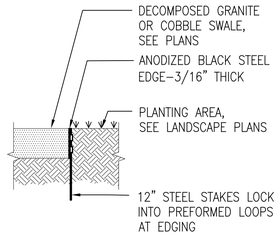


DETAIL KEYNOTES:
1. INTEGRAL COLOR CONCRETE CO-1; SEE MATERIAL SCHEDULE
2. INTEGRAL COLOR CONCRETE CO-2: SEE MATERIAL SCHEDULE
3. PCC CONCRETE CO-3: STANDARD GRAY (NO INTEGRAL COLOR) SEE MATERIAL SCHEDULE

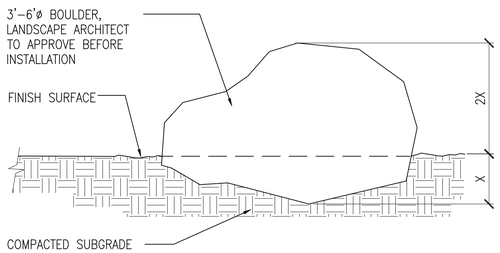
NOTES:
1. BIKE PATH INTEGRAL COLOR CONCRETE CO-1 REPEATS IN 2' OFFSET PATTERN
2. BIKE PATH PAVING ARROWS/MARKERS ARE COMPOSED OF TWO IDENTICAL PRECAST CONCRETE PIECES, SET FLUSH WITHIN CONCRETE
3. CONCRETE CONTROL JOINTS SHOWN AS TYPICAL.
4. EXPANSION JOINTS TO BE PLACED WHERE CONCRETE PAVING MEETS VERTICAL STRUCTURES (E.G. LANDSCAPE WALLS, COLUMNS, CONCRETE BENCHES, ETC.).
5. EXPANSION JOINTS TO BE PLACED IN CONCRETE PAVING @ 40FT TO 50FT INTERVALS IN PLACE OF CONTROL JOINT.
6. AT LOCATION ON PROJECT, PLACE AND FINISH 12 FEET BY 12 FEET AREA OF THE TEXTURED/COLORED CONCRETE MOCK-UP FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

6 BIKE DELINEATION PAVING PATTERN
SCALE: 3/8"= 1'-0"

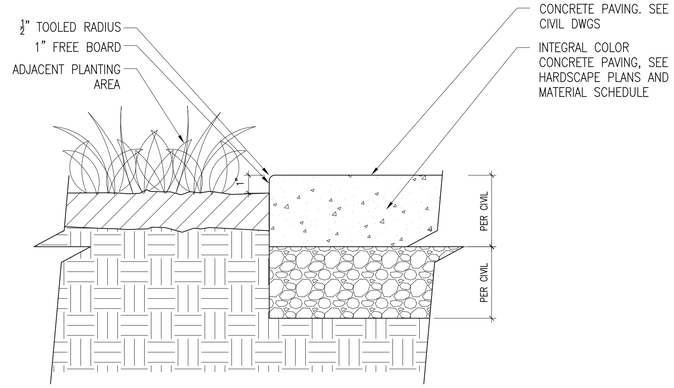




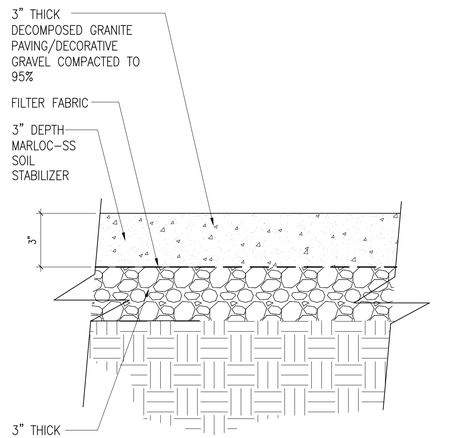
3 STEEL LANDSCAPE EDGING
SCALE: 1"= 1'-0"



4 LANDSCAPE BOULDER
SCALE: 1"= 1'-0"



1 PLANTED AREA TO SIDEWALK TYP.
SCALE: 3"= 1'-0"



NOTE: FOR AREAS WHERE THIS SURFACE IS USED AS A PEDESTRIAN WAY IT MUST BE FIRM, STABLE AND SLIP RESISTANT. IT SHALL BE COMPACTED 90-95% AND A STABILIZER ADDED TO THE MATERIAL, PER THE SPECIFICATIONS.

2 DECOMPOSED GRANITE PAVING
SCALE: 3"= 1'-0"

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BASE FILE NAMES	XL_HARDSCAPE
DRAWN BY	SS
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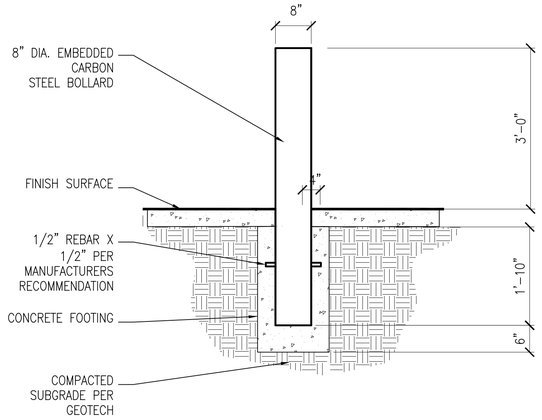
SCALE	SHEET
DATE	1/10/2019
PROJECT NO.	GRUEN # 8345

HARDSCAPE DETAILS

SHEET TITLE

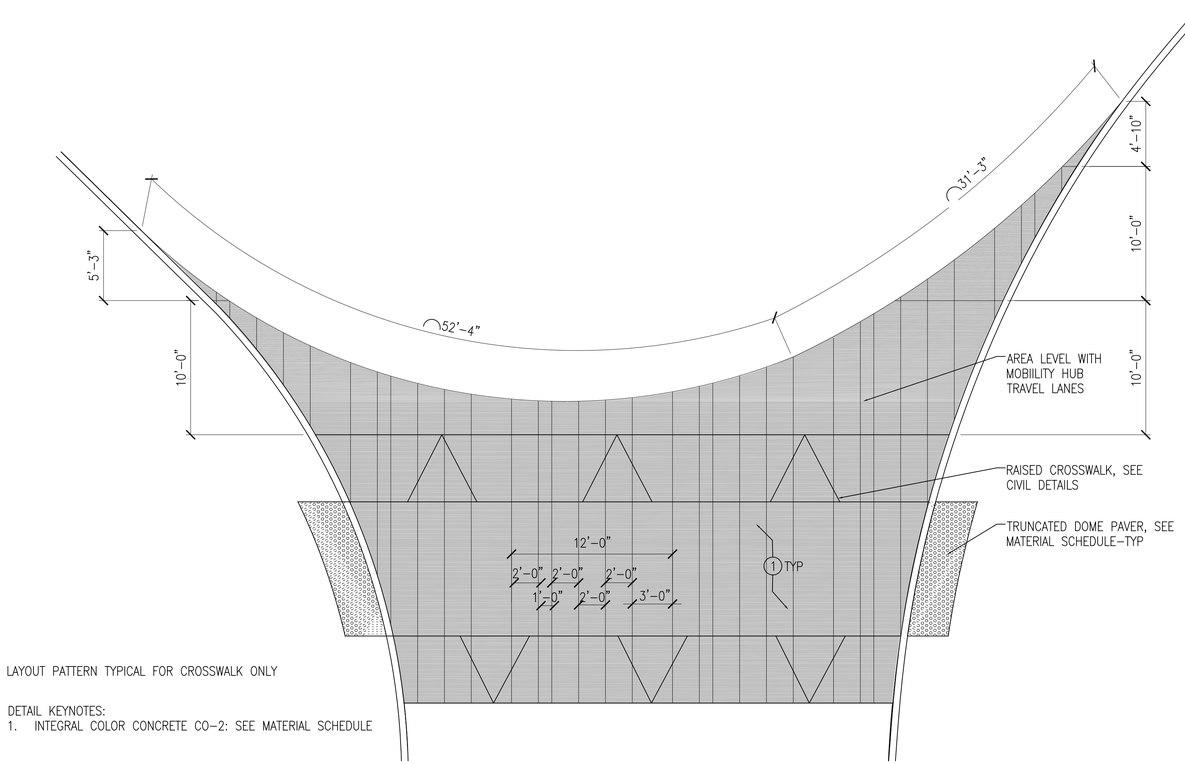
L201

SHEET NO.



3 BOLLARD

SCALE: 3/4"= 1'-0"



LAYOUT PATTERN TYPICAL FOR CROSSWALK ONLY

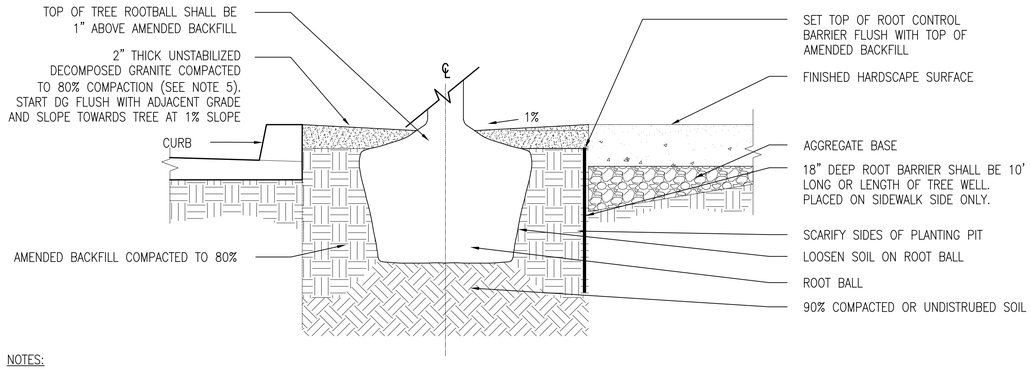
DETAIL KEYNOTES:
1. INTEGRAL COLOR CONCRETE CO-2: SEE MATERIAL SCHEDULE

1 CROSSWALK PAVING PATTERN

SCALE: 3/8"= 1'-0"

4 NOT IN USE

SCALE: 1"= 1'-0"



NOTES:

1. ROOT CONTROL BARRIER SHALL BE FABRICATED FROM A HIGH DENSITY AND HIGH IMPACT PLASTIC SUCH AS POLYVINYL CHLORIDE, ABS OR POLYETHYLENE AND HAVE A MINIUM THICKNESS OF 0.06 INCHES. THE PLASTIC SHALL HAVE 1/2 INCH HIGH RAISED VERTICAL RIBS ON THE INNER SURFACE SPACED NOT MORE THAN 8 INCHES APART, AND SHALL BE 18" DEEP.
2. AMENDED BACKFILL SHALL CONSIST OF A PREPARED SOIL MIX WITH 50% ON-SITE SOIL (OR CLASS A SOIL, SHOULD SOIL REPORT REOMMENDS SOIL REPLACEMENT) AND 50% TYPE 1,2,OR 3 ORGANIC SOIL AMENDMENT. COMPACT AMENDED BACKFILL TO 80% RELATIVE COMPACTION.
3. AFTER PLANTING, EACH TREE SHALL BE WATERED IMMEDIATELY WITH 10 O 20 GALLONS OF WATER AS NEEDED. REPEAT THE WATERING TWICE IN THE NEXT 3 DAYS; ALLOW TIME FOR WATER TO BE ABSORBED INTO THE SOIL, BY NOT WATERING TWICE IN THE SAME 24 HOUR PERIOD.
4. PLANTING PIT SHALL BE TWICE THE TREE CONTAINER SIZE IN PARKWAYS OR THE SIZE OF TREE WELL
5. INSTALL DG AFTER ALL WORK PERTINENT TO PLANTING HAS BEEN COMPLETED

2 TREE SECTION AND DG COVER

SCALE: 1"= 1'-0"

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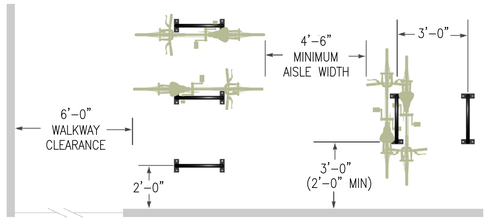
SCALE	SHEET
DATE	1/10/2019
PROJECT NO.	GRUEN # 8345

HARDSCAPE
DETAILS

SHEET TITLE

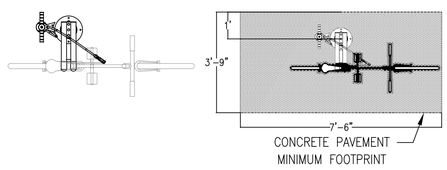
L202

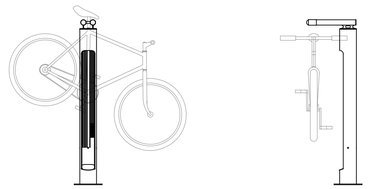
SHEET NO.



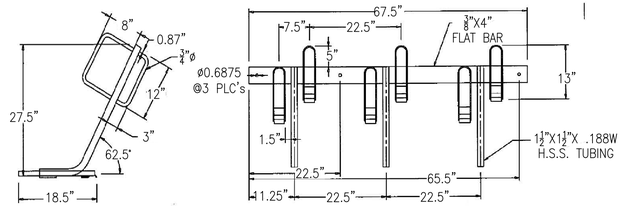
6 BICYCLE RACKS AND CLEARANCES

SCALE: NTS





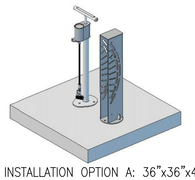
INSTALL PER MANUFACTURER'S INSTRUCTIONS.



SURFACE MOUNT PER MANUFACTURER'S INSTRUCTIONS.

3 BICYCLE RACKS - SURFACE MOUNT

SCALE: NTS



INSTALLATION OPTION A: 36"x36"x4"
CONCRETE PAD (W/ WHEEL CHOCK)

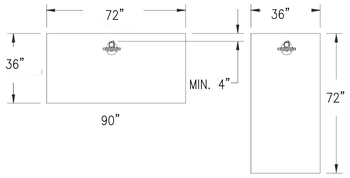


FIGURE 1: MINIMUM SPACE REQUIREMENTS

INSTALLATION OPTION B: 16"ø x36"
CONCRETE CYLINDER (NO WHEEL CHOCK)

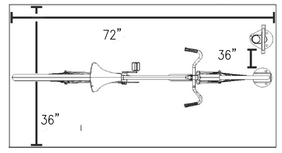
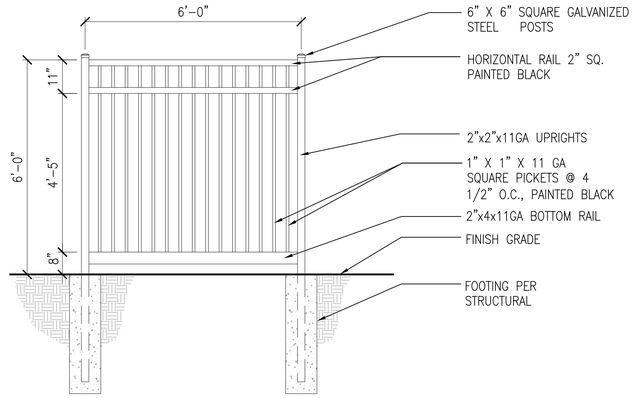


FIGURE 1: MINIMUM SPACE REQUIREMENTS W/ WHEEL CHOCK

INSTALL PER MANUFACTURER'S INSTRUCTIONS.

4 BICYCLE AIR PUMP AND CLEARANCES

SCALE: NTS

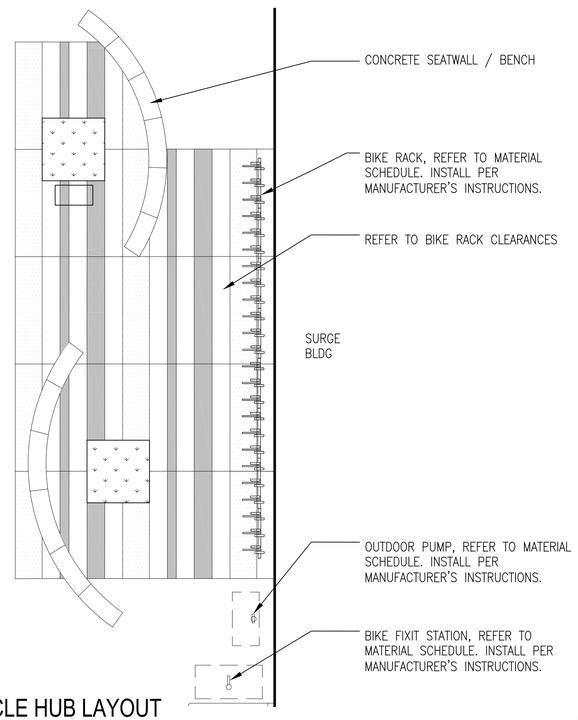


1 METAL FENCE

SCALE: 1/2"= 1'-0"

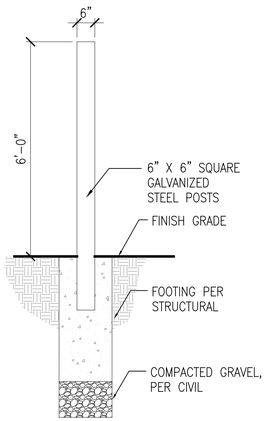
7 BICYCLE FIXIT STATION AND CLEARANCES

SCALE: NTS



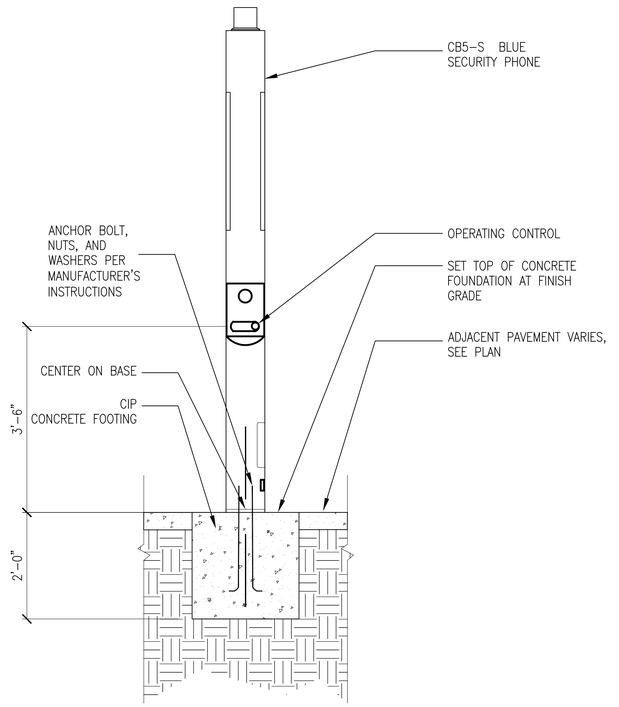
8 BICYCLE HUB LAYOUT

SCALE: NTS



5 FENCE POST FOOTING

SCALE: 1/2"= 1'-0"



2 BLUE LIGHT STATION

SCALE: 3/4"= 1'-0"

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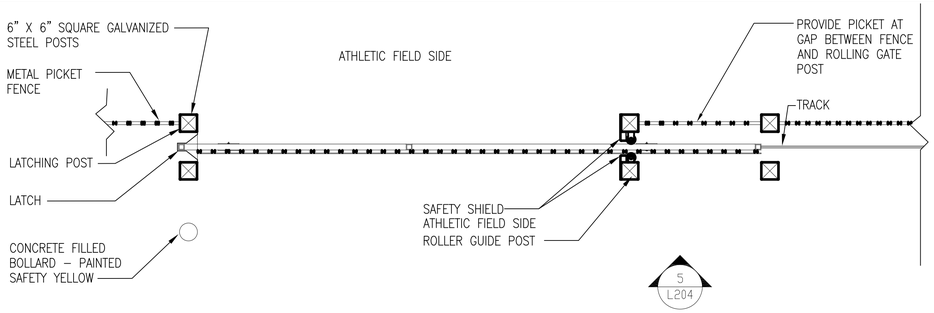
CHECKED BY	DH
SCALE	N/A
DATE	1/10/2019
PROJECT NO.	GRUEN # 8345

HARDSCAPE
DETAILS

SHEET TITLE

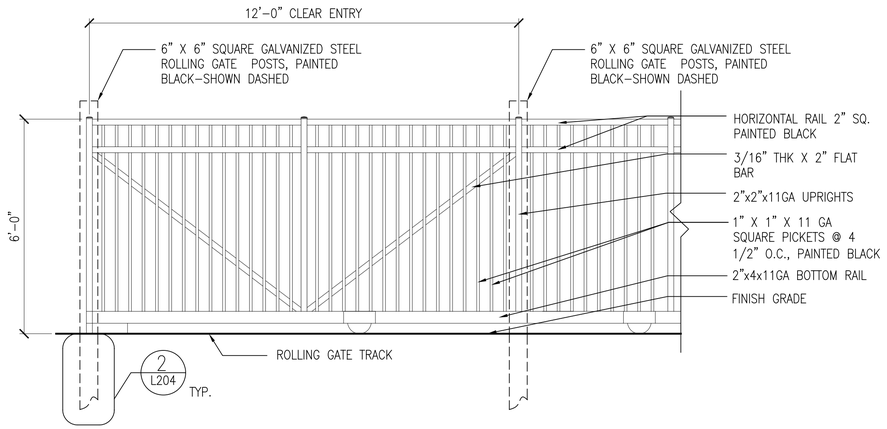
L203

SHEET NO.



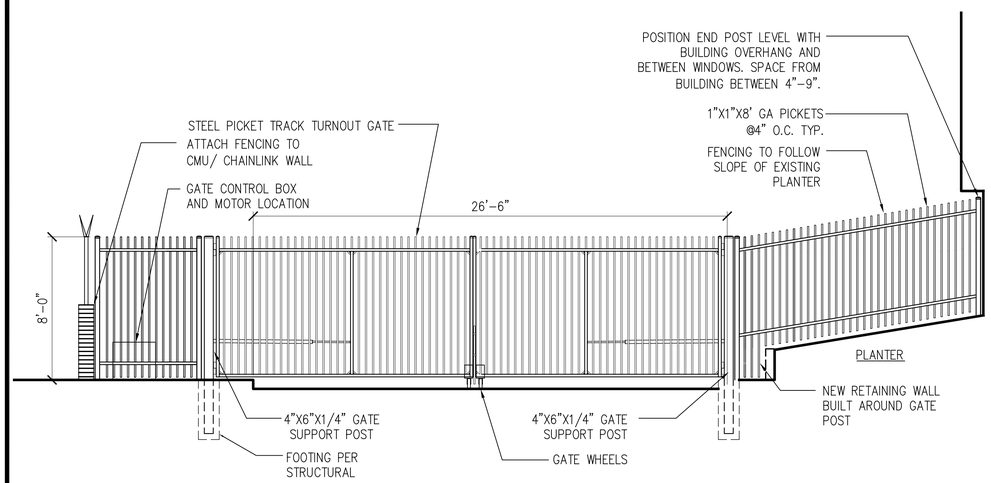
4 ROLL GATE - PLAN

SCALE: 1/2"= 1'–0"



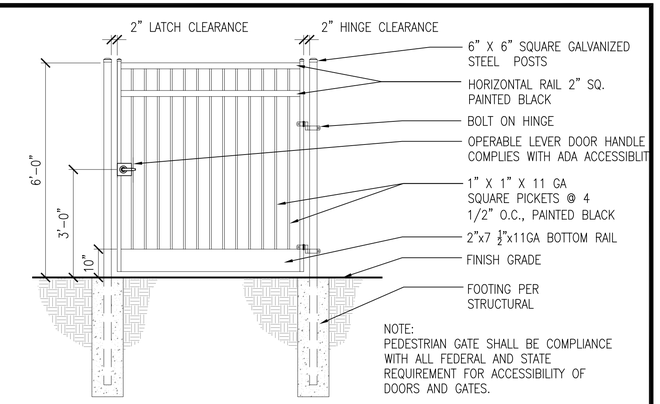
5 ROLL GATE - ELEVATION

SCALE: 1/2"= 1'–0"



6 SWING GATE WITH MOTOR- ELEVATION

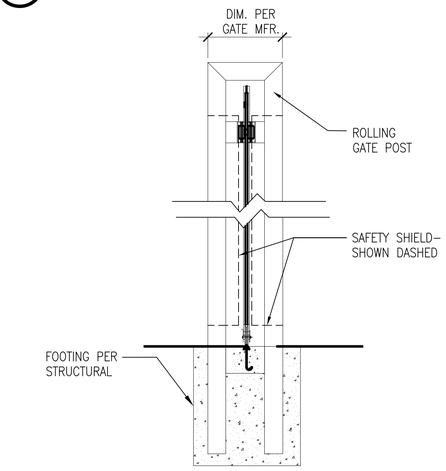
SCALE: 1/2"= 1'–0"



NOTE:
PEDESTRIAN GATE SHALL BE COMPLIANCE WITH ALL FEDERAL AND STATE REQUIREMENT FOR ACCESSIBILITY OF DOORS AND GATES.

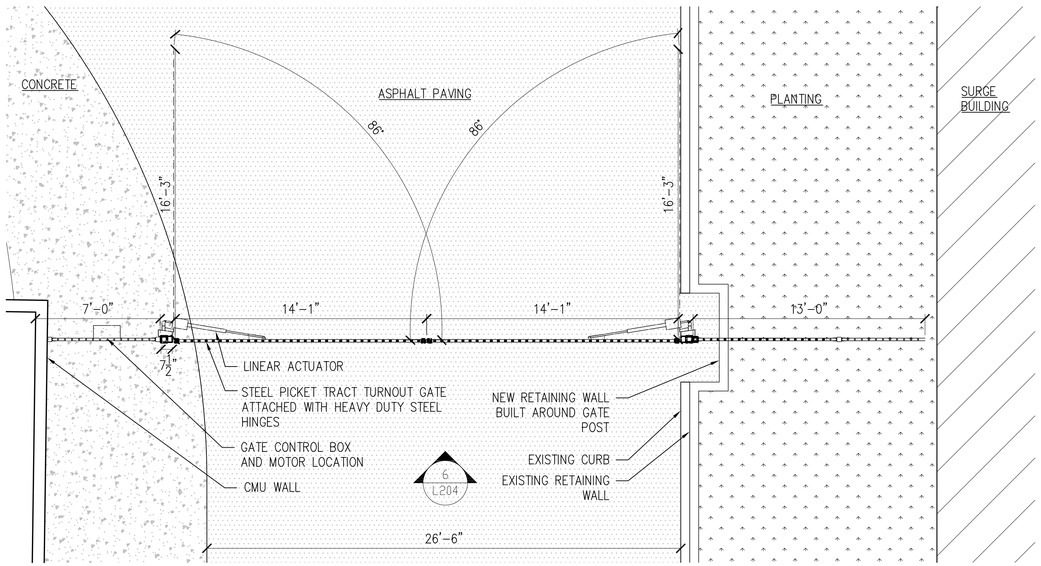
1 PEDESTRIAN GATE

SCALE: 1/2"= 1'–0"



2 ROLLER GUIDE DOUBLE POST DIAGRAM

SCALE: 1/2"= 1'–0"



3 SWING GATE WITH MOTOR- PLAN

SCALE: 1/4"= 1'–0"

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DRAWN BY	SS
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SCALE	N/A
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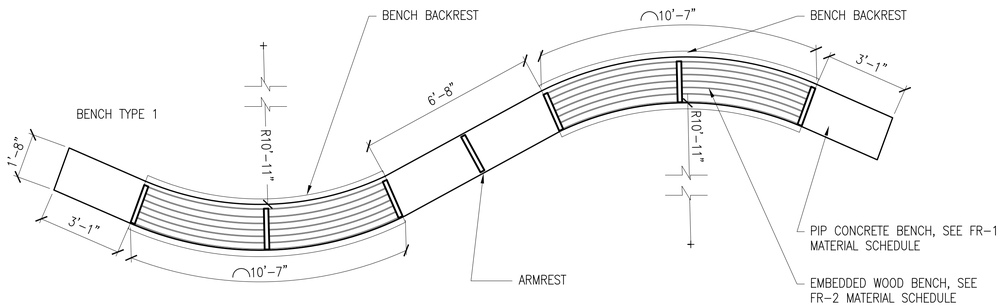
PROJECT NO.	GRUEN # 8345

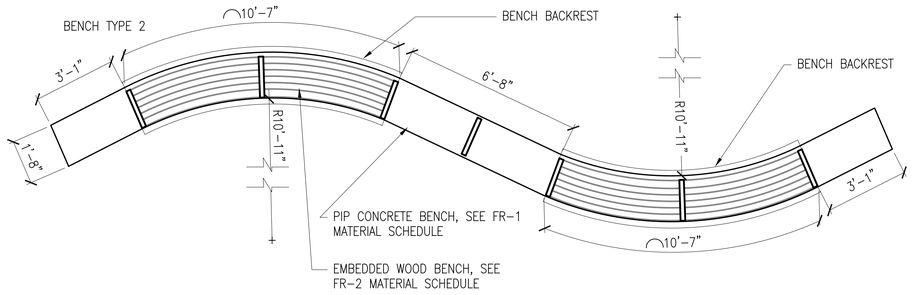
HARDSCAPE DETAILS

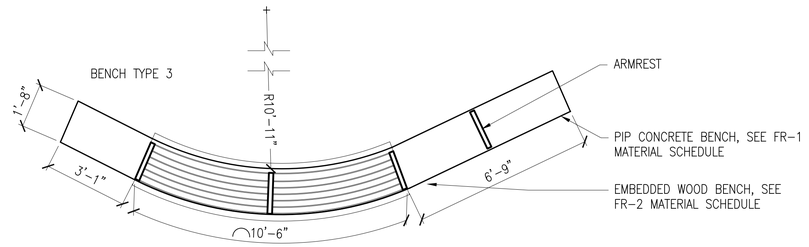
SHEET TITLE

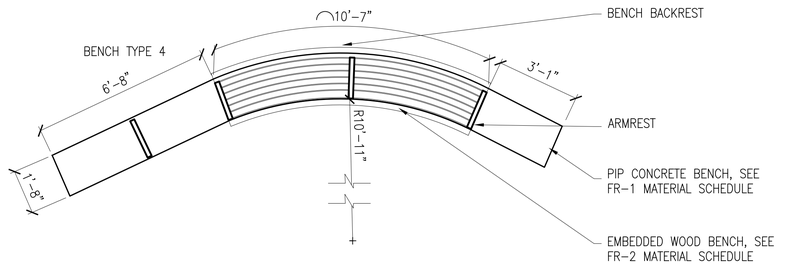
L204

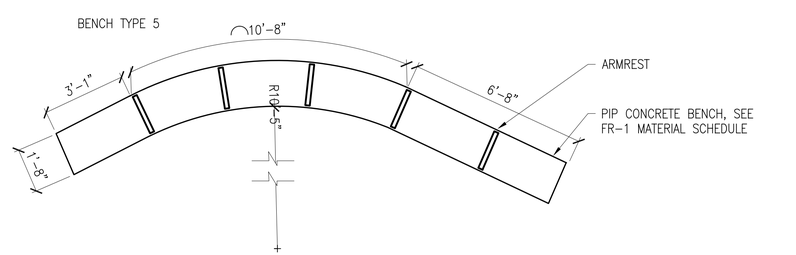
SHEET NO.



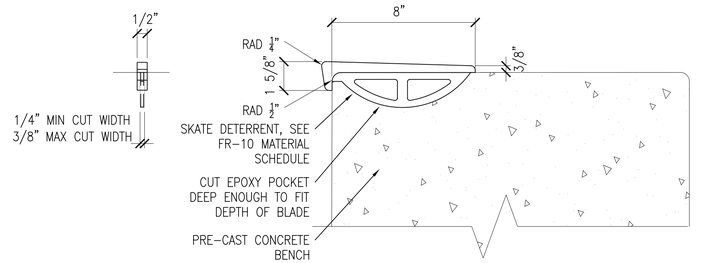






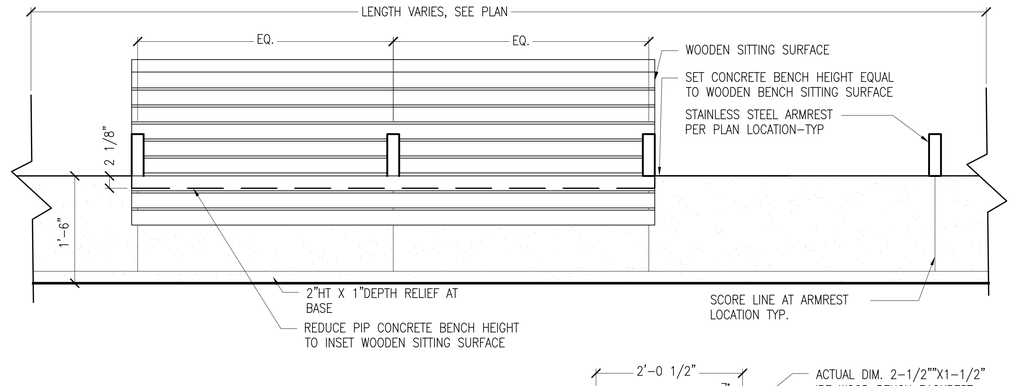


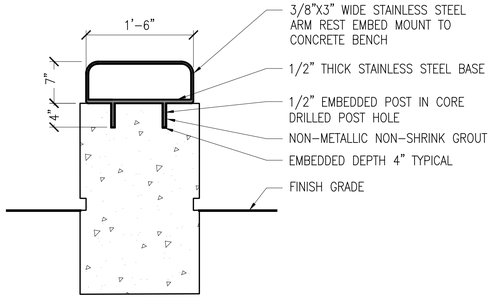
4 UNDER CANOPY BENCH PLAN ENLARGEMENT
SCALE: 1"= 1'-0"

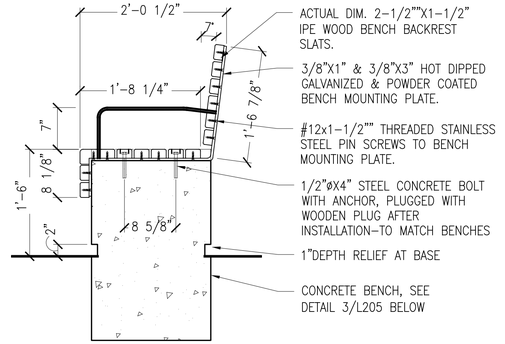


NOTE:
1. INSTALL SKATE DETERRENT ON CONCRETE PAVING SIDE OF BENCH AT EQUAL SPACING ALONG LENGTH OF BENCH.
2. TYPICAL SPACING TO BE A MINIMUM OF 4FT O.C. AND MAXIMUM OF 5FT O.C. UNLESS OTHERWISE NOTED.

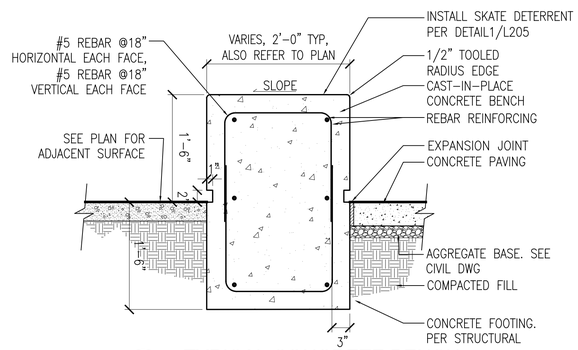
1 SKATE DETERRENT
SCALE: 3/4"= 1'-0"







2 BENCH BACK AND ARMREST DETAIL
SCALE: 1"= 1'-0"



3 TYPICAL CONCRETE BENCH
SCALE: 1"= 1'-0"

MOBILITY HUB
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KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD-BID SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

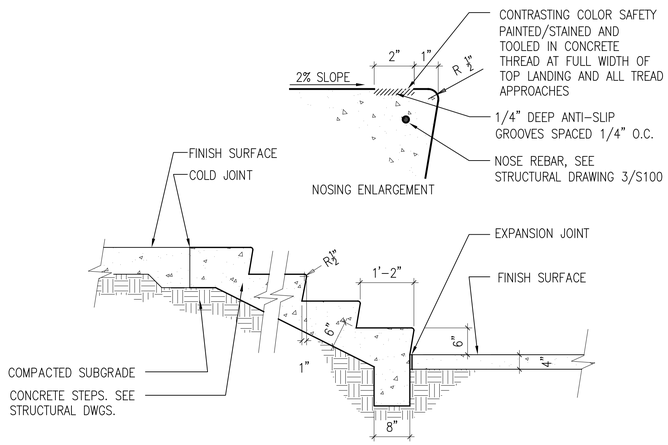
BASE FILE NAMES	XL_HARDSCAPE
DRAWN BY	ND
CHECKED BY	DH
SCALE	N/A
DATE	12/19/2018
PROJECT NO.	GRUEN # 8345

HARDSCAPE DETAILS

SHEET TITLE

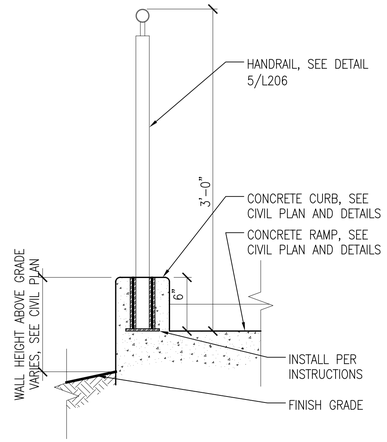
L205

SHEET NO.



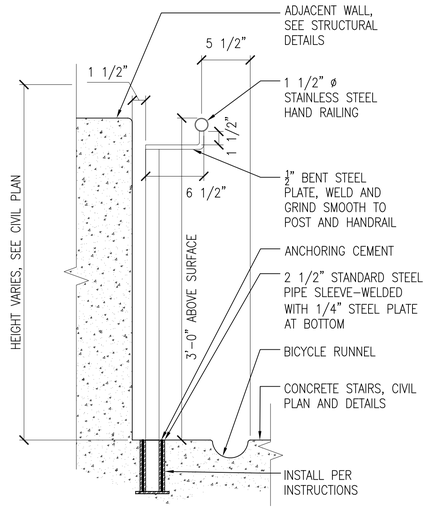
4 STAIR DETAIL

SCALE: 3/4"= 1'-0"



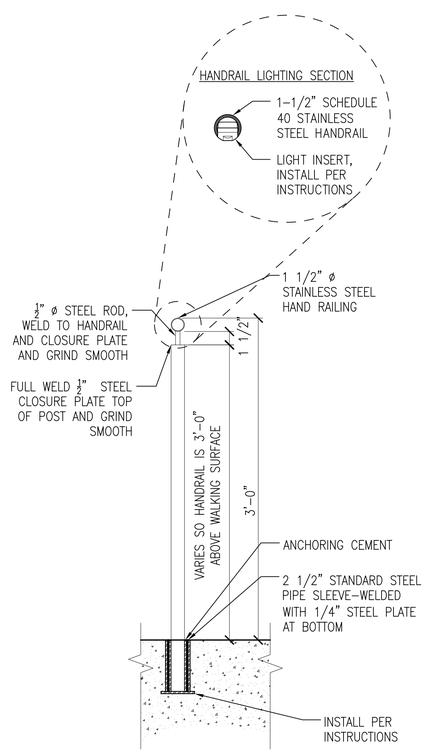
3 HANDRAIL SECTION AT RAMP

SCALE: 1-1/2"= 1'-0"



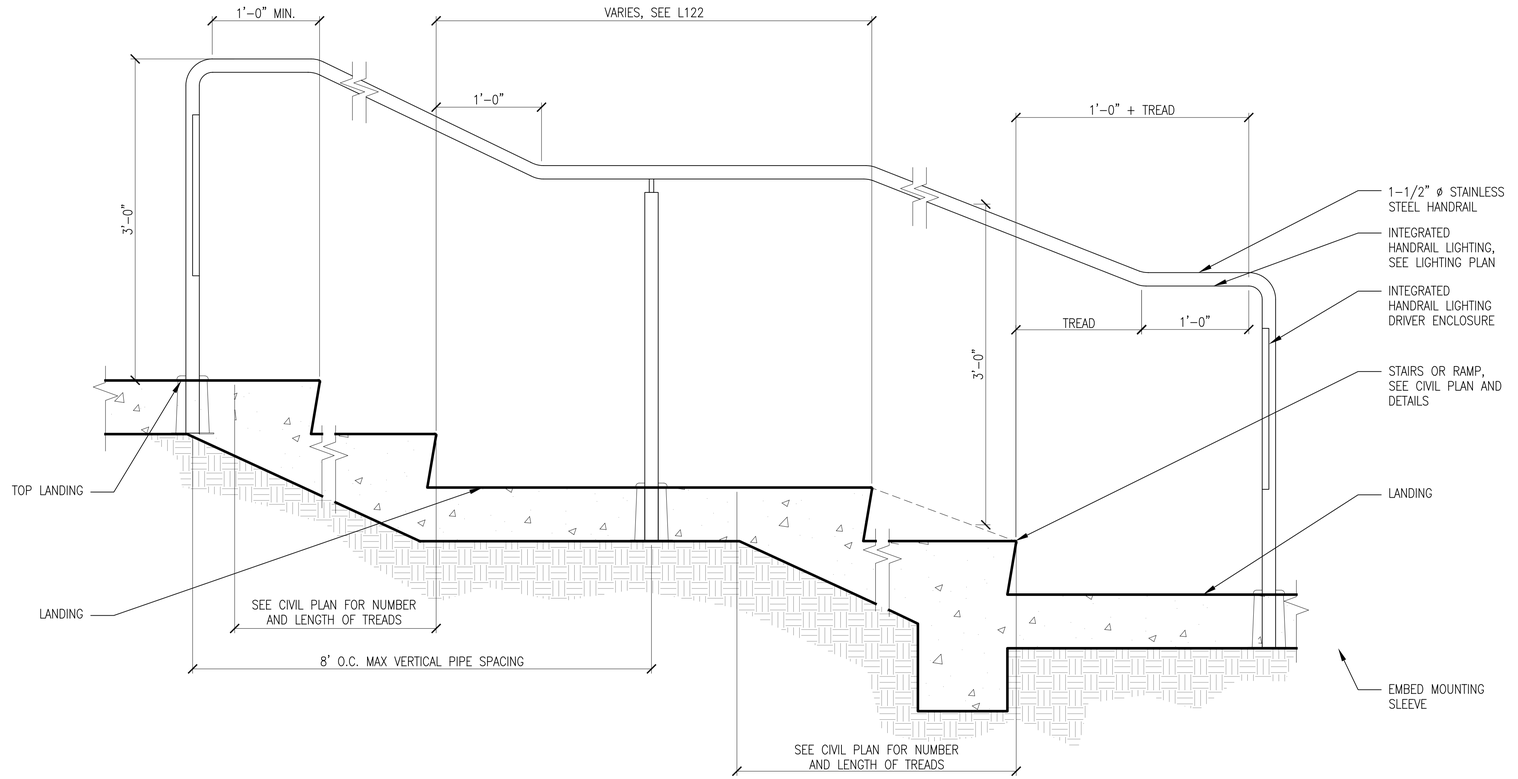
1 HANDRAIL AND BIKE RUNNEL SECTION

SCALE: 1-1/2"= 1'-0"



5 TYPICAL HANDRAIL DETAIL

SCALE: 1-1/2"= 1'-0"



2 HANDRAIL-TYPICAL SECTION

SCALE: 1-1/2"= 1'-0"

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	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

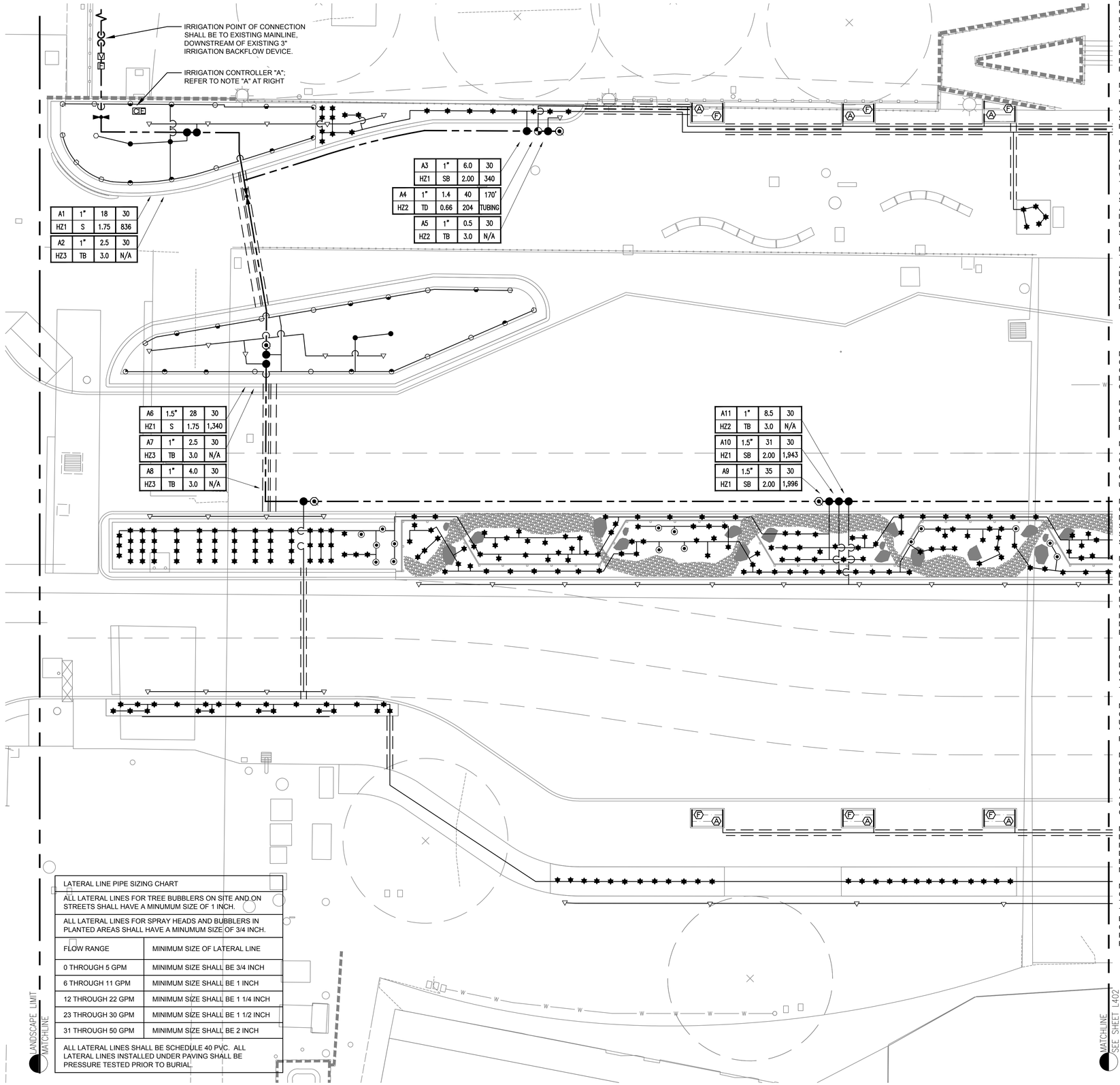
BASE FILE NAMES	XL_HARDSCAPE
DRAWN BY	ND
CHECKED BY	DH
SCALE	N/A
DATE	1/10/2019
PROJECT NO.	GRUEN # 8345

HARDSCAPE DETAILS

SHEET TITLE

L206

SHEET NO.



LATERAL LINE PIPE SIZING CHART	
ALL LATERAL LINES FOR TREE BUBBLERS ON SITE AND ON STREETS SHALL HAVE A MINUMUM SIZE OF 1 INCH.	
ALL LATERAL LINES FOR SPRAY HEADS AND BUBBLERS IN PLANTED AREAS SHALL HAVE A MINUMUM SIZE OF 3/4 INCH.	
FLOW RANGE	MINIMUM SIZE OF LATERAL LINE
0 THROUGH 5 GPM	MINIMUM SIZE SHALL BE 3/4 INCH
6 THROUGH 11 GPM	MINIMUM SIZE SHALL BE 1 INCH
12 THROUGH 22 GPM	MINIMUM SIZE SHALL BE 1 1/4 INCH
23 THROUGH 30 GPM	MINIMUM SIZE SHALL BE 1 1/2 INCH
31 THROUGH 50 GPM	MINIMUM SIZE SHALL BE 2 INCH
ALL LATERAL LINES SHALL BE SCHEDULE 40 PVC. ALL LATERAL LINES INSTALLED UNDER PAVING SHALL BE PRESSURE TESTED PRIOR TO BURIAL.	

NOTE A:
CONTROLLER "A" SHALL BE OF THE BRAND, MODEL AND STATION SIZE AS INDICATED ON THE IRRIGATION MATERIALS LEGEND. THE CONTROLLER SHALL BE INSTALLED IN THE APPROXIMATE LOCATION SHOWN. THE CONTRACTOR SHALL COORDINATE THE REQUIRED ELECTRICAL POWER SUPPLY AT THIS LOCATION WITH THE OWNER'S AUTHORIZED REPRESENTATIVE. FINAL LOCATION OF CONTROLLER AND ELECTRICAL POINT OF CONNECTION SHALL BE CONFIRMED WITH UCR'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK.

NOTE B:
THESE PLANS ARE DIAGRAMMATIC, THE MAINLINE AND RELATED IRRIGATION EQUIPMENT IS SHOWN WITHIN THE PAVING FOR CLARITY ONLY. THE ACTUAL LOCATION OF MAINLINE AND RELATED IRRIGATION EQUIPMENT SHALL BE WITHIN PLANTER AND A MINIMUM OF 18" OFF ADJACENT HARDSCAPE AND OTHER OBSTACLES, TYPICAL.

NOTE C:
CONTRACTOR SHALL ADJUST ALL HEADS AS REQUIRED TO ACCOMMODATE ANY VERTICAL OBSTRUCTIONS THAT MAY OCCUR IN THE LANDSCAPE, INCLUDING BUT NOT LIMITED TO LIGHT POLES, FIRE HYDRANTS, TREES, ETC. WHEN A SLIGHT RELOCATION OF THE HEAD IS NOT SUFFICIENT TO CLEAR THE OBSTACLE, OR IF IT NEGATIVELY AFFECTS THE COVERAGE, AN ADDITIONAL HEAD SHALL BE INSTALLED TO PLACE ONE HEAD ON EITHER SIDE OF THE OBSTACLE. THE NOZZLES OF THESE TWO HEADS SHALL HAVE ARC PATTERNS THAT ADD UP TO THE ORIGINAL ARC PATTERN OF THE HEAD INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY ALL HEAD LAYOUT WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK.

NOTE D:
THESE PLANS ARE DIAGRAMMATIC, TREE BUBBLERS AND LATERAL LINES ARE SHOWN WITHIN THE PAVING FOR CLARITY ONLY, THE ACTUAL LOCATIONS SHALL BE WITHIN THE PLANTER. THE TREE BUBBLERS SHALL BE ALIGNED WITH TREES AS SHOWN ON THE PLANTING PLANS, AND AS DIRECTED BY OWNER'S AUTHORIZED REPRESENTATIVE. THE CONTRACTOR SHALL CONFIRM ALL LAYOUT IN FIELD WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK.

EXISTING IRRIGATION NOTES

NOTE 1:
CONTRACTOR SHALL MAINTAIN EXISTING MAINLINES IN WORKING ORDER. COORDINATE ALL INTERRUPTIONS OF OPERATION OF THE EXISTING IRRIGATION TO A MINIMUM. COORDINATE ALL INTERRUPTIONS WITH THE OWNER'S REPRESENTATIVE.

NOTE 2:
CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING IRRIGATION EQUIPMENT DAMAGED DURING CONSTRUCTION AND IF DAMAGED, SHALL REPLACE WITH SAME MANUFACTURER AND MODEL.

NOTE 3:
ANY EXISTING IRRIGATION CONTROL VALVES CONNECTED TO EXISTING CONTROLLER SHALL BE RECONNECTED TO EXISTING CONTROLLER. CONFIRM PROPER CONTROLLER OPERATION AND INSTALLATION WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO STARTING WORK AND UPON COMPLETION OF WORK.

NOTE 4:
CONTRACTOR SHALL CONFIRM THE EXISTING CONTROLLER MAKE AND MODEL AND SHALL CONFIRM THAT SAID CONTROLLER HAS ADEQUATE OPEN STATIONS TO OPERATE ANY ADJUSTED AND ALL PROPOSED IRRIGATION SYSTEM MODIFICATIONS. NOTIFY OWNER'S AUTHORIZED REPRESENTATIVE SHOULD ANY DISCREPANCIES BE NOTED.

NOTE 5:
CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR/MODIFICATION/REROUTING OF ALL ADJACENT IRRIGATION SYSTEM EQUIPMENT THAT IS AFFECTED BY NEW CONSTRUCTION IMPROVEMENTS. CONTRACTOR SHALL REPAIR SAID SYSTEMS TO A LIKE NEW MANNER, PROVIDING NO LESS THAN 100% OF HEAD RADIUS COVERAGE IN ALL AREAS WITH SYSTEM LAYOUT AS APPROVED BY OWNER'S AUTHORIZED REPRESENTATIVE. CONTRACTOR SHALL CONFIRM ALL AREAS REQUIRING MODIFICATION WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO BIDDING WORK AND PRIOR TO STARTING WORK.

NOTE 6:
CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF ALL EXISTING IRRIGATION EQUIPMENT AFFECTED BY THE NEW CONSTRUCTION IMPROVEMENTS, IF NECESSARY. CONTRACTOR SHALL VERIFY ALL EQUIPMENT TO BE REMOVED AND DISPOSED OF IN FIELD PRIOR TO BIDDING WORK AND PRIOR TO STARTING WORK.

NOTE 7:
CONTRACTOR SHALL FIELD VERIFY DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO BIDDING WORK AND AGAIN PRIOR TO STARTING WORK. VERIFICATION SHALL BE DOCUMENTED AND DELIVERED TO OWNER'S REPRESENTATIVE.

NOTE 8:
CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ALL SCH 40 PVC SLEEVING UNDER PAVING, WALLS AND CURBS AT NO LESS THAN 24" BELOW GRADE AND NO LESS THAN 2X DIAMETER OF IRRIGATION PIPE IN AREAS WHERE PIPE CROSSING WILL OCCUR. WHEN PIPE SIZE IS NOT AVAILABLE USE 6" SLEEVING MATERIAL. CONFIRM CROSSINGS WITH OWNER'S REPRESENTATIVE PRIOR TO PAVING AND HARDSCAPE CONSTRUCTION.

NOTE 9:
EXISTING IRRIGATION IN ADJACENT AREAS SHALL BE PROTECTED IN PLACE FOR CONTINUED USE. CONTRACTOR SHALL VERIFY THE EXTENT OF THE EXISTING SYSTEMS AND MAKE ADJUSTMENTS TO CAP OFF OR MODIFY THE EXISTING SYSTEM TO MEET THE NEW LANDSCAPE CONDITION IF NECESSARY.

NOTE 10:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING WITHIN THE DRIPLINE OF EXISTING TREES. NO MECHANICAL TRENCHING WITHIN THE DRIPLINE OF THE EXISTING TREE WILL BE ALLOWED. AIR SPADE SHALL BE UTILIZED FOR ALL TRENCHING WITHIN THE DRIPLINE OF TREES. CONTRACTOR SHALL REFER TO ARBORIST REPORT FOR ADDITIONAL PRECAUTIONS REQUIRED FOR THE EXISTING TREES. VERIFY ALL LAYOUT IN FIELD WITH OWNER'S AUTHORIZED REPRESENTATIVE.

NORTH

10' 0' 10' 20'

I HAVE COMPLIED WITH THE CRITERIA OF THE IRRIGATION GUIDELINES AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN

811

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IRRIGATION DESIGN AND CONSULTING
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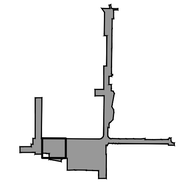

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	01/10/19	100% CD-BID SET	
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	05/01/18	100% DD SET	

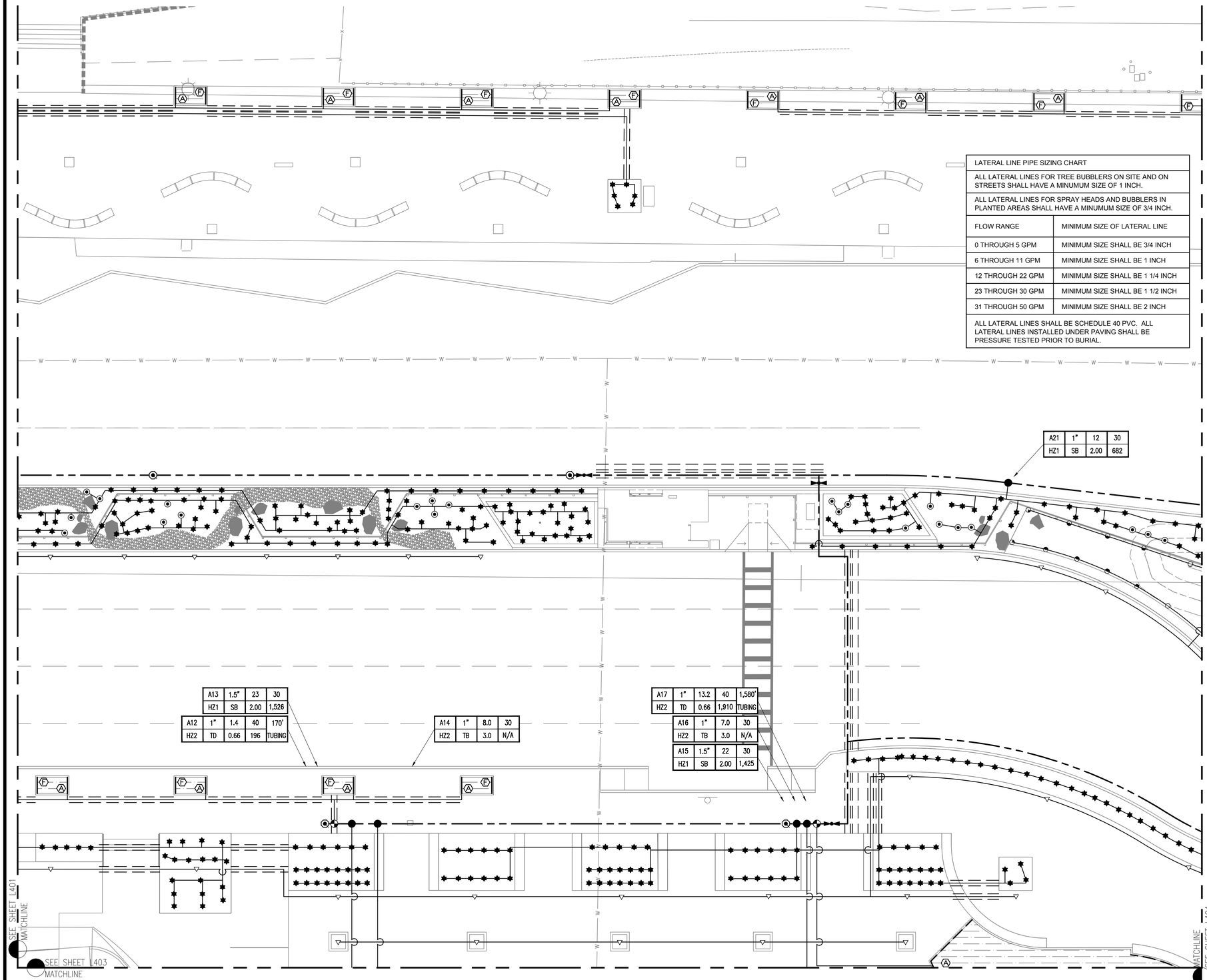
BASE FILE NAMES	XXX.DWG
DRAWN BY	GK
CHECKED BY	DZ
SCALE	SHEET
DATE	XX-XX-XXXX
PROJECT NO.	GRUEN # 8345

IRRIGATION PLAN

SHEET TITLE

L401

SHEET NO.



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31 THROUGH 50 GPM	MINIMUM SIZE SHALL BE 2 INCH
ALL LATERAL LINES SHALL BE SCHEDULE 40 PVC. ALL LATERAL LINES INSTALLED UNDER PAVING SHALL BE PRESSURE TESTED PRIOR TO BURIAL.	

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I HAVE COMPLIED WITH THE CRITERIA OF THE IRRIGATION GUIDELINES AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN

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BASE FILE NAMES	XXX.DWG
DRAWN BY	GK
CHECKED BY	DZ
SCALE	SHEET
DATE	XX-XX-XXXX
PROJECT NO.	GRUEN # 8345

IRRIGATION PLAN

SHEET TITLE

L402

SHEET NO.

LATERAL LINE PIPE SIZING CHART	
ALL LATERAL LINES FOR TREE BUBBLERS ON SITE AND ON STREETS SHALL HAVE A MINUMUM SIZE OF 1 INCH.	
ALL LATERAL LINES FOR SPRAY HEADS AND BUBBLERS IN PLANTED AREAS SHALL HAVE A MINUMUM SIZE OF 3/4 INCH.	
FLOW RANGE	MINIMUM SIZE OF LATERAL LINE
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6 THROUGH 11 GPM	MINIMUM SIZE SHALL BE 1 INCH
12 THROUGH 22 GPM	MINIMUM SIZE SHALL BE 1 1/4 INCH
23 THROUGH 30 GPM	MINIMUM SIZE SHALL BE 1 1/2 INCH
31 THROUGH 50 GPM	MINIMUM SIZE SHALL BE 2 INCH
ALL LATERAL LINES SHALL BE SCHEDULE 40 PVC. ALL LATERAL LINES INSTALLED UNDER PAVING SHALL BE PRESSURE TESTED PRIOR TO BURIAL.	

NOTE A:
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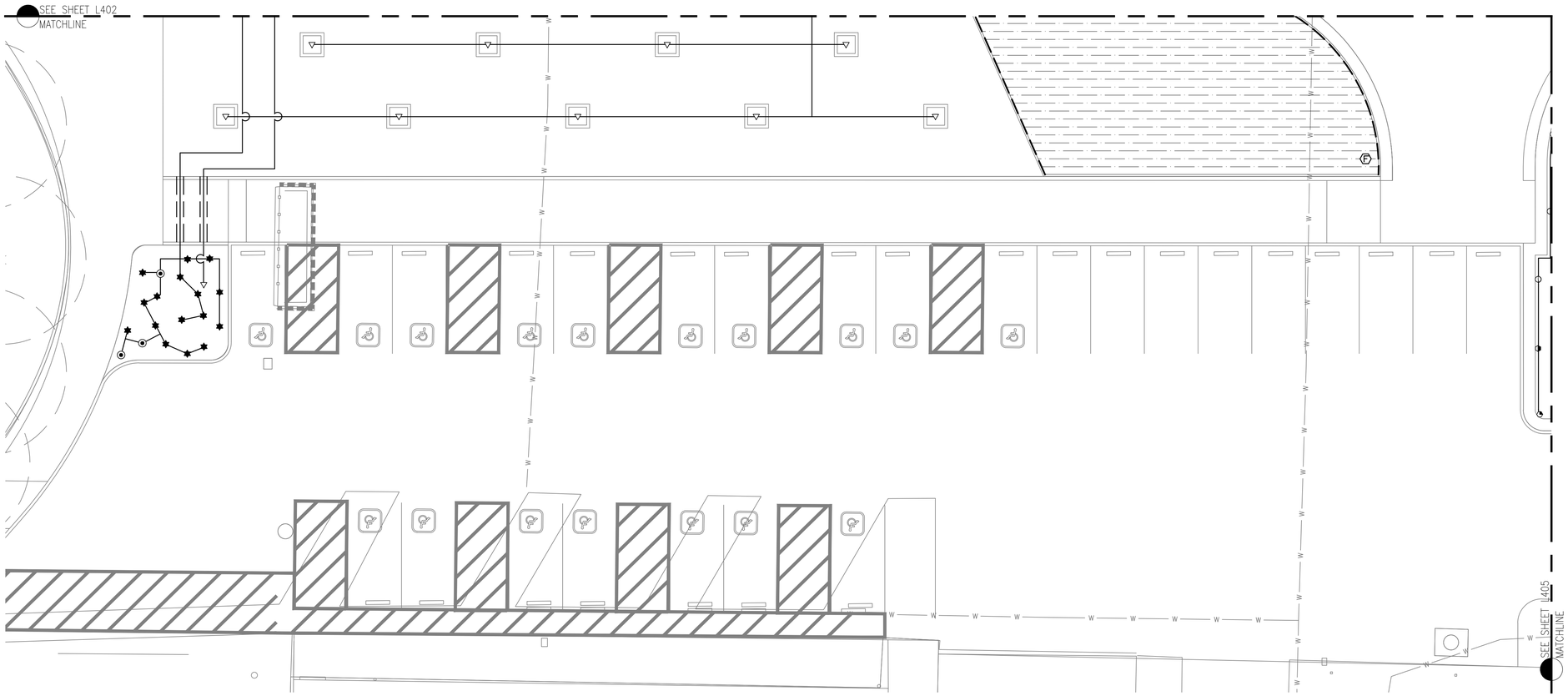

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SHEET TITLE

IRRIGATION PLAN

SHEET NO.

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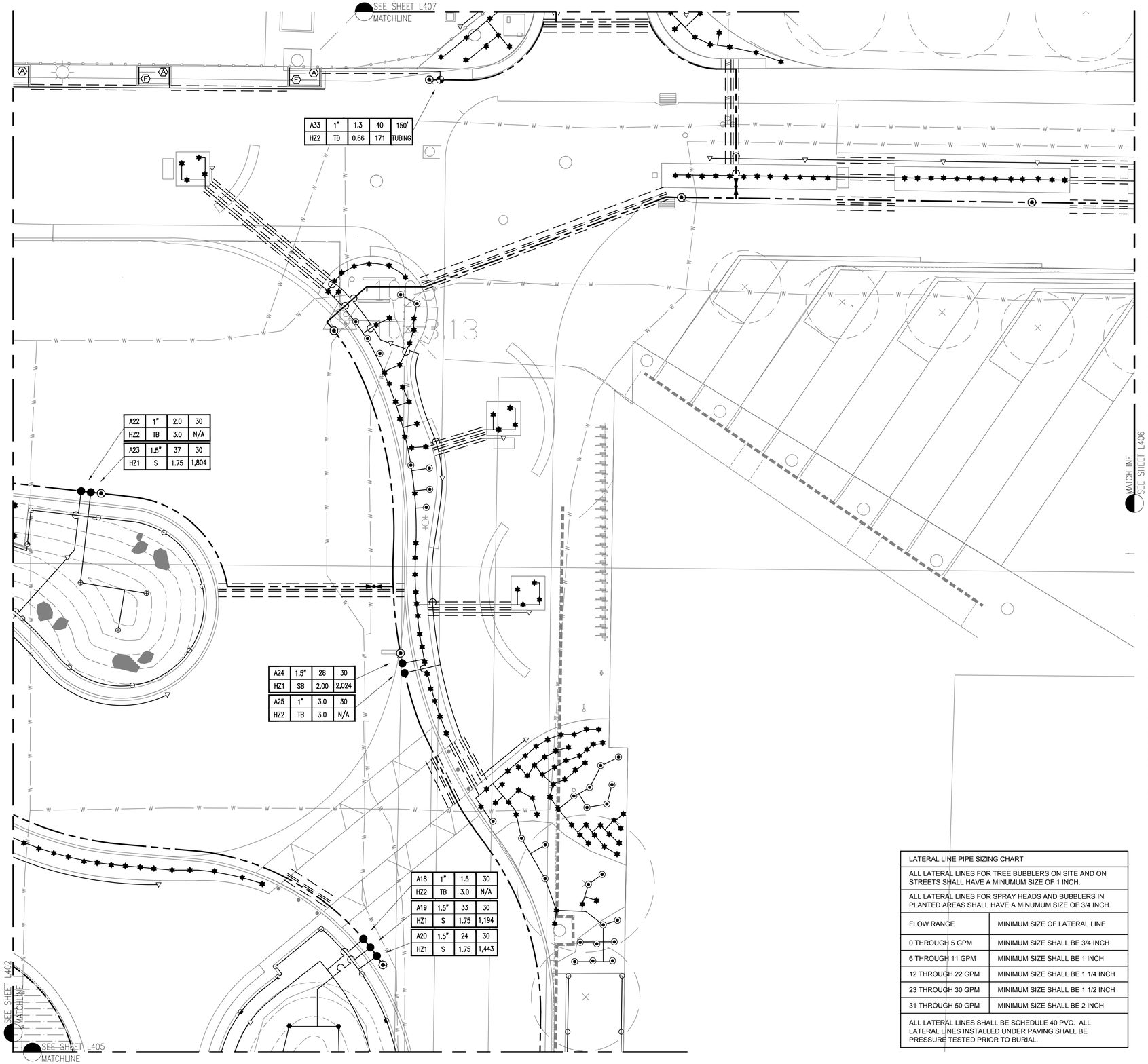

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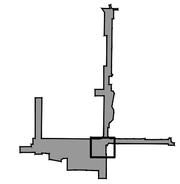

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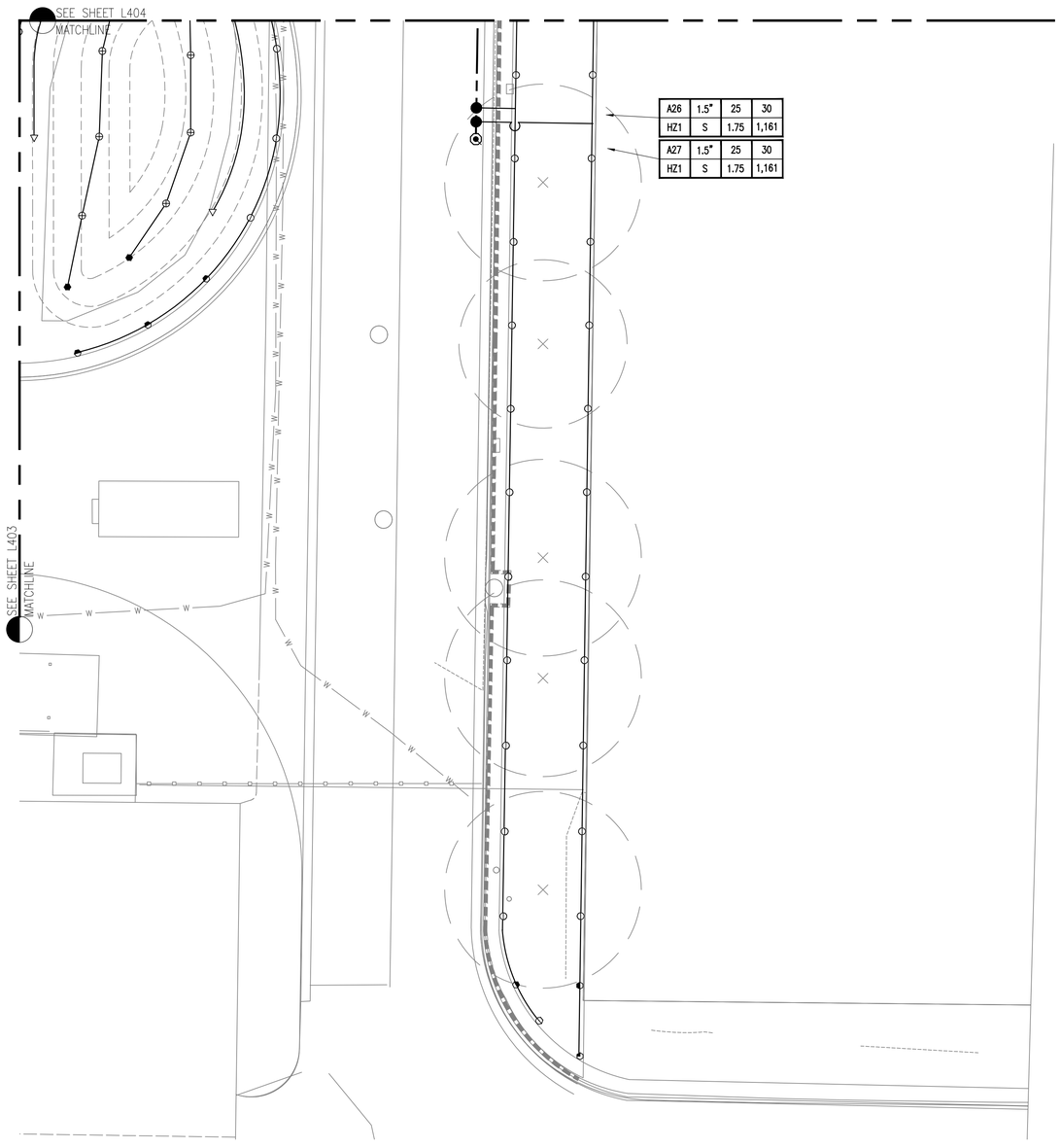

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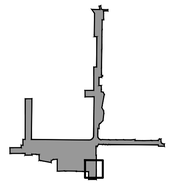

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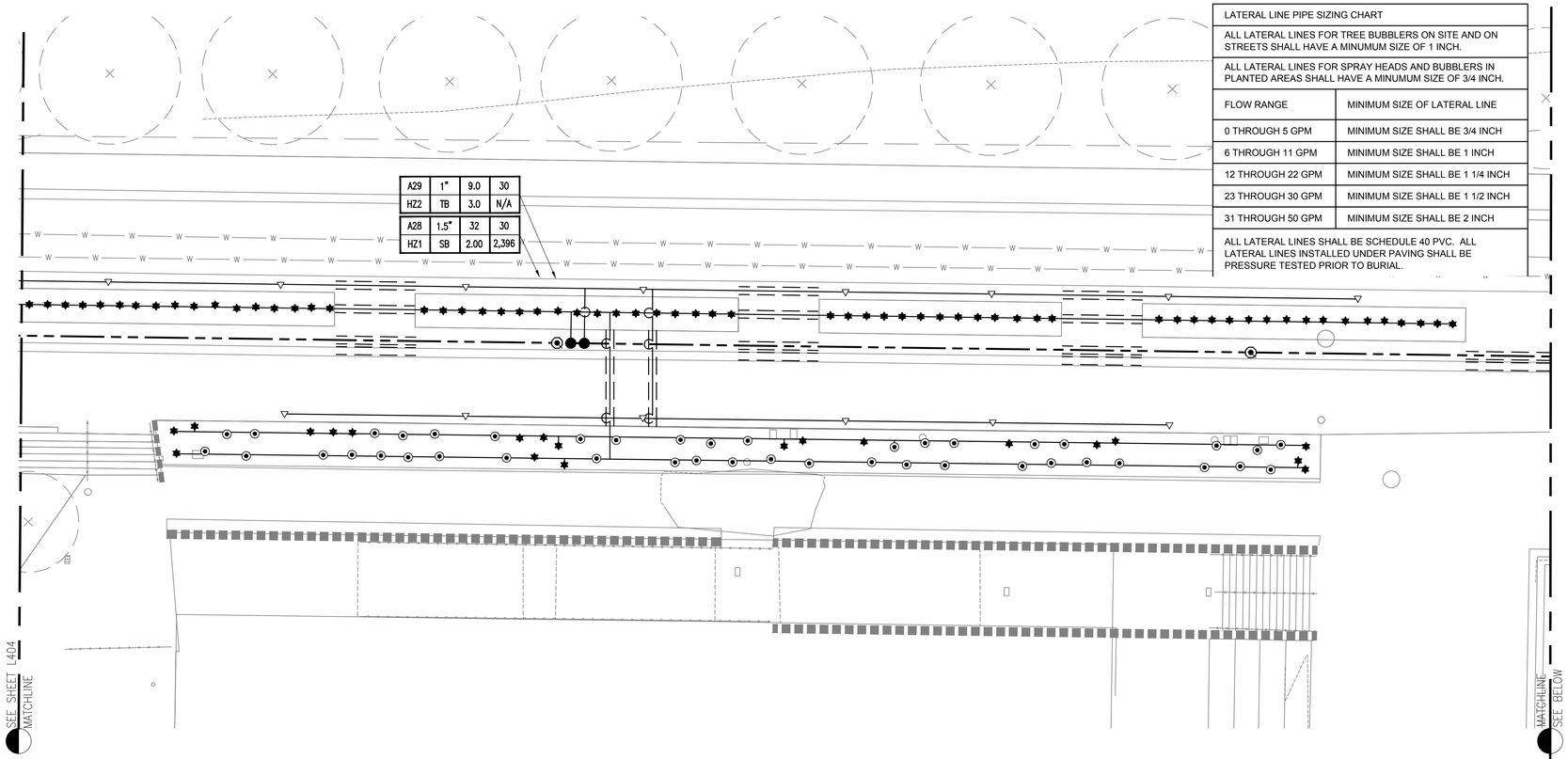

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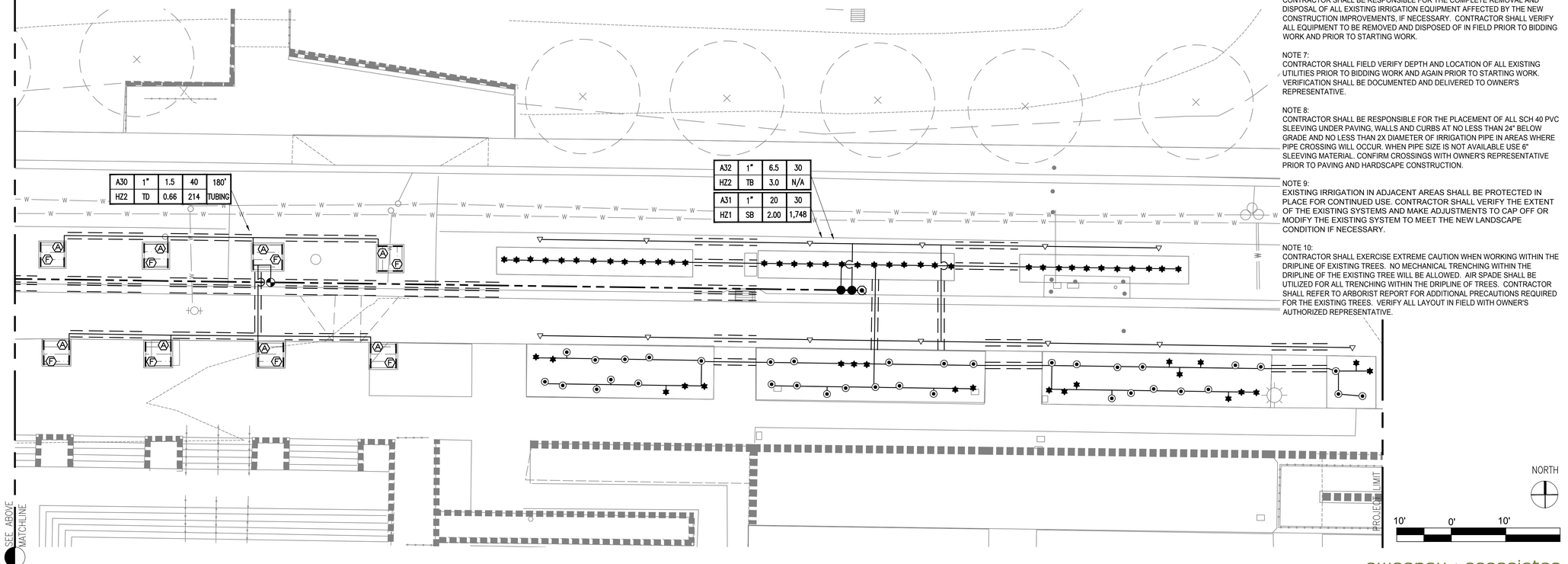

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CONSULTANT

ARCHITECT/ENGINEER SEAL

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KEY PLAN

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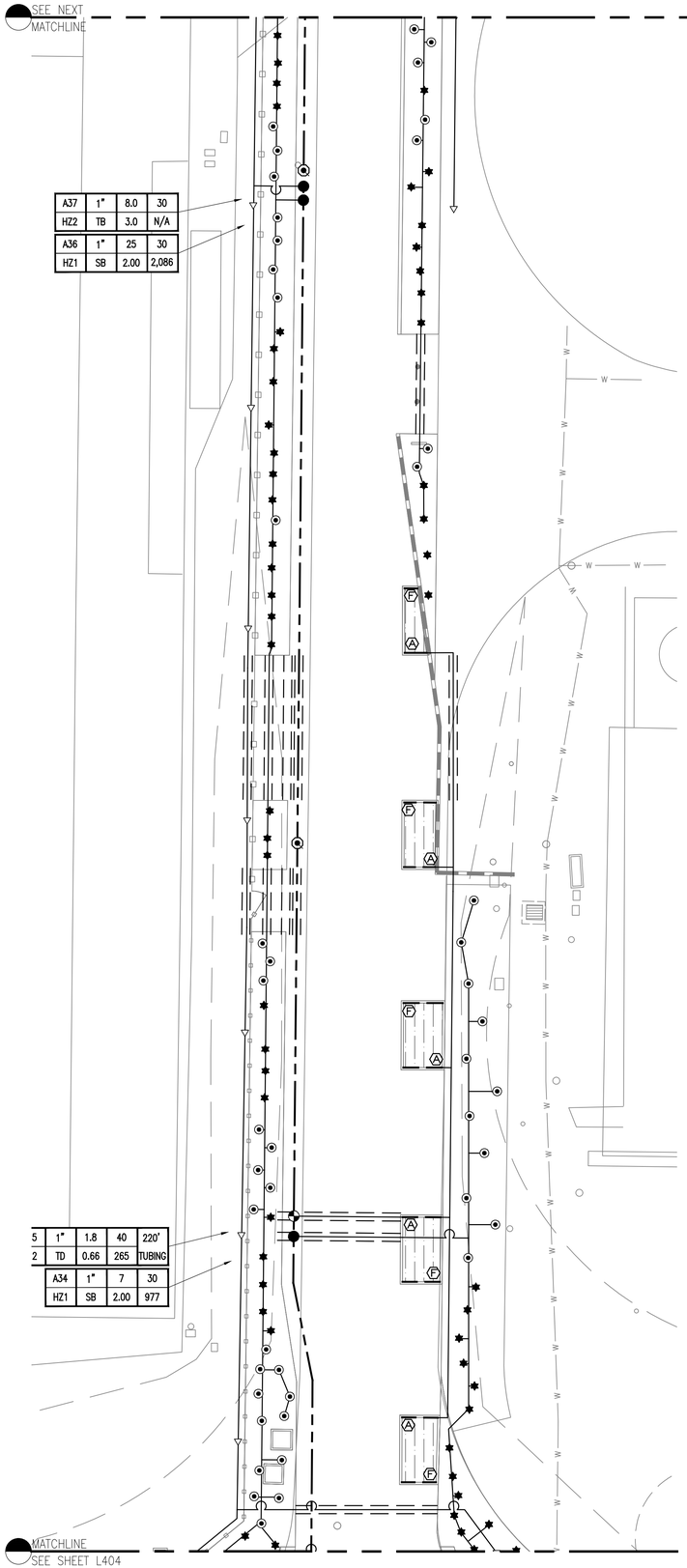
BASE FILE NAMES	XXX.DWG
DRAWN BY	GK
CHECKED BY	DZ
SCALE	SHEET
DATE	XX-XX-XXXX
PROJECT NO.	GRUEN # 8345

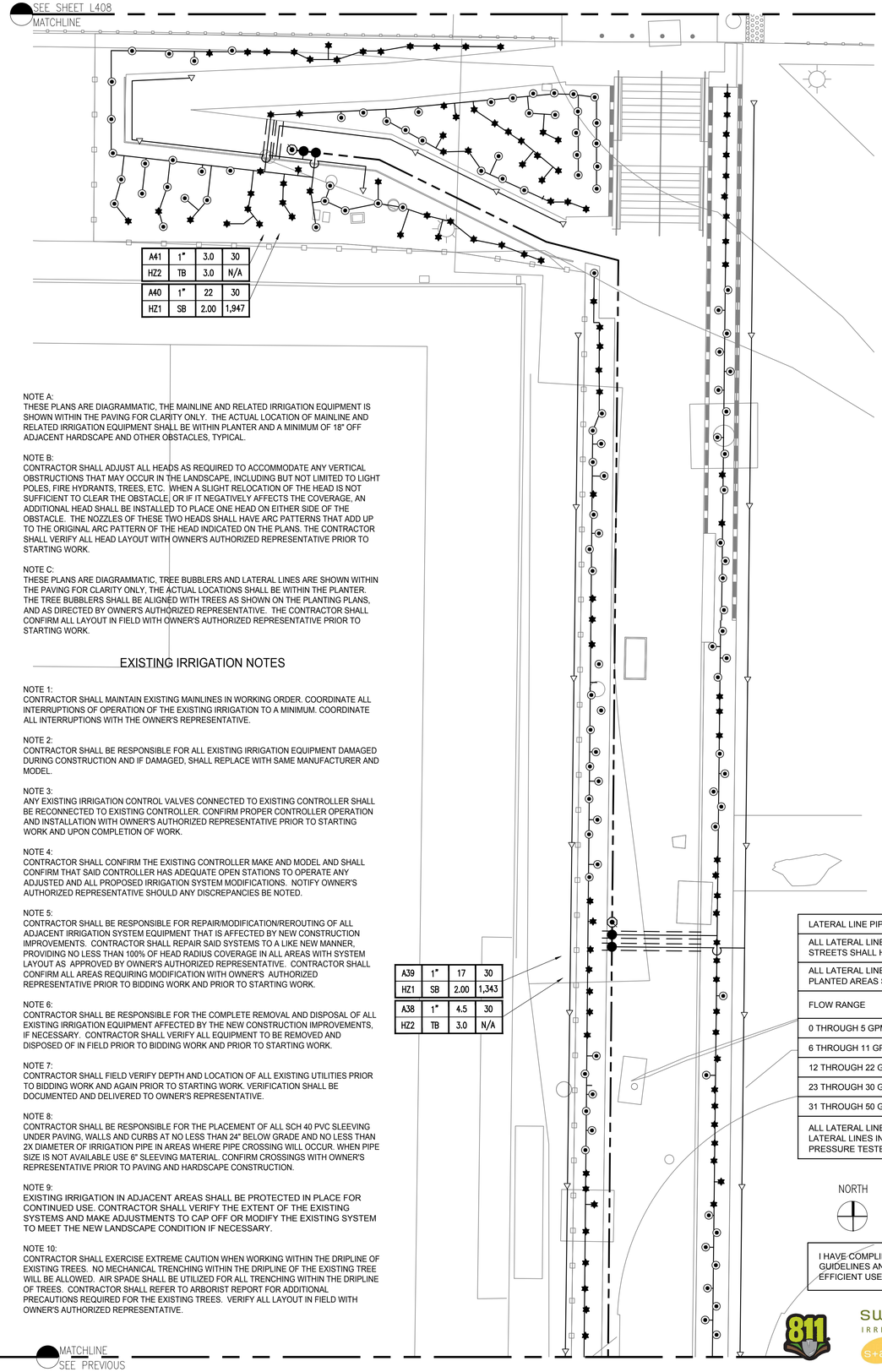
IRRIGATION PLAN

SHEET TITLE

L406

SHEET NO.





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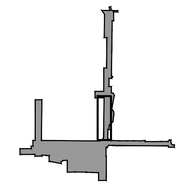

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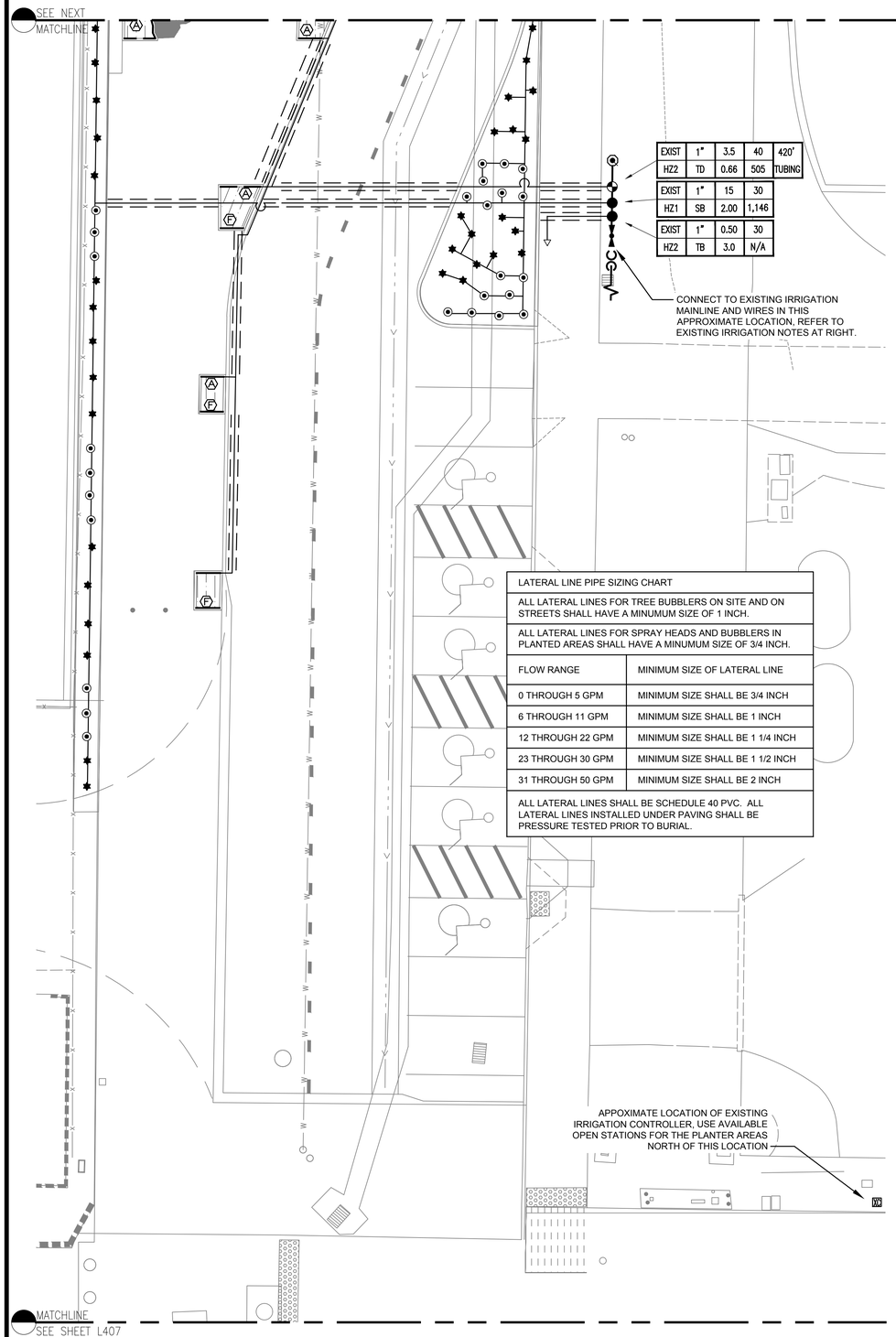
IRRIGATION PLAN

SHEET TITLE

L407

SHEET NO.



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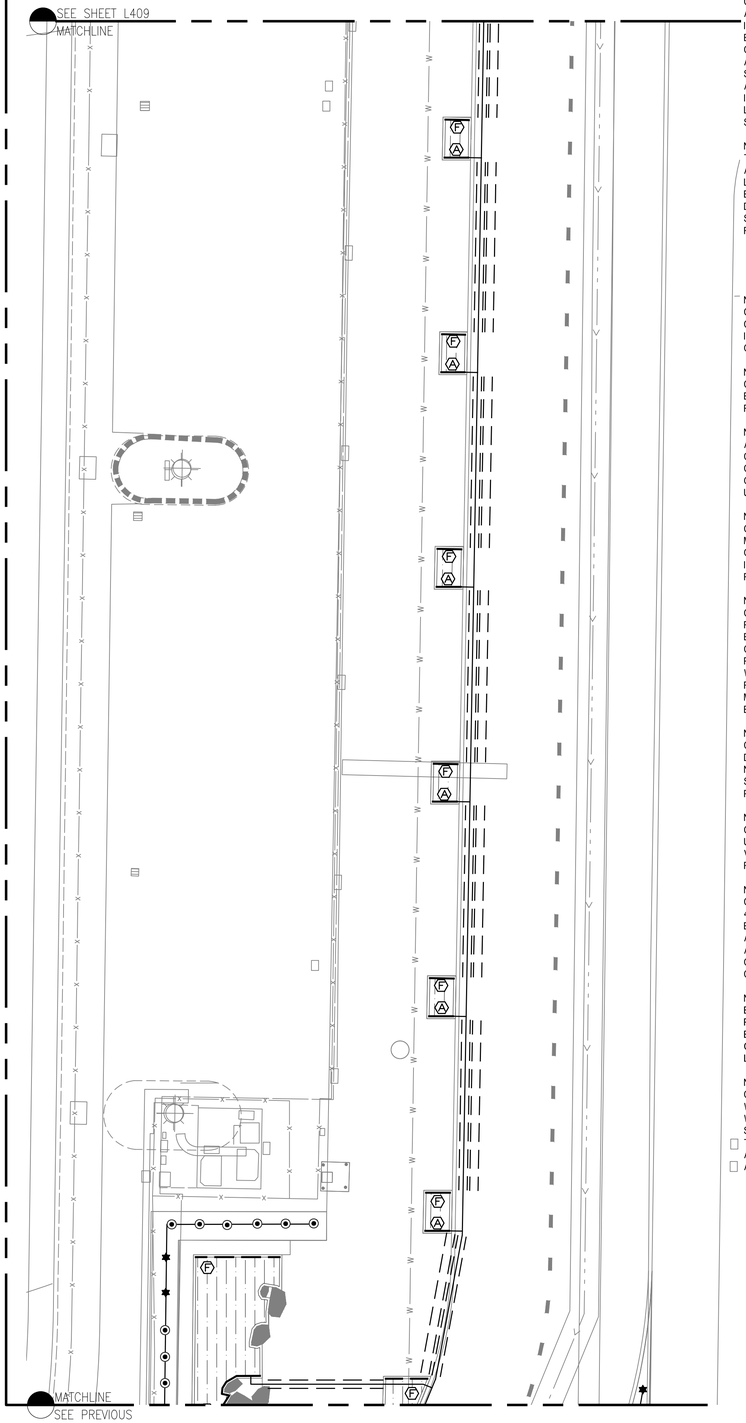

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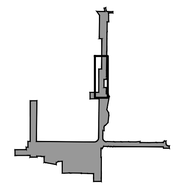

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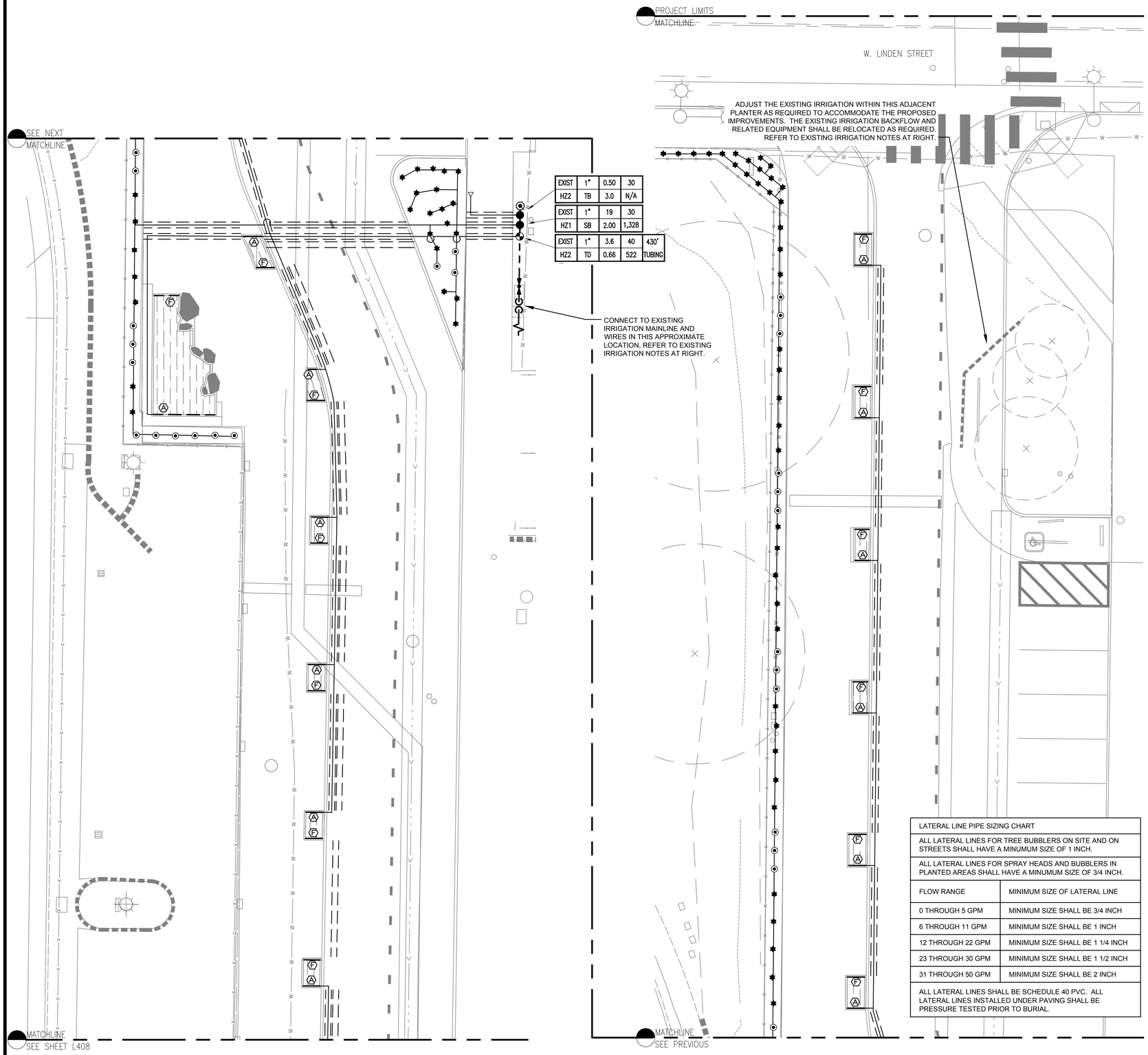
IRRIGATION PLAN

SHEET TITLE

L408

SHEET NO.



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CONTRACTOR SHALL FIELD VERIFY DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO BIDDING WORK AND AGAIN PRIOR TO STARTING WORK. VERIFICATION SHALL BE DOCUMENTED AND DELIVERED TO OWNER'S REPRESENTATIVE.

NOTE 8:
CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ALL SCH 40 PVC SLEEVING UNDER PAVING, WALLS AND CURBS AT NO LESS THAN 24" BELOW GRADE AND NO LESS THAN 2X DIAMETER OF IRRIGATION PIPE IN AREAS WHERE PIPE CROSSING WILL OCCUR. WHEN PIPE SIZE IS NOT AVAILABLE USE 6" SLEEVING MATERIAL. CONFIRM CROSSINGS WITH OWNER'S REPRESENTATIVE PRIOR TO PAVING AND HARDSCAPE CONSTRUCTION.

NOTE 9:
EXISTING IRRIGATION IN ADJACENT AREAS SHALL BE PROTECTED IN PLACE FOR CONTINUED USE. CONTRACTOR SHALL VERIFY THE EXTENT OF THE EXISTING SYSTEMS AND MAKE ADJUSTMENTS TO CAP OFF OR MODIFY THE EXISTING SYSTEM TO MEET THE NEW LANDSCAPE CONDITION IF NECESSARY.

NOTE 10:
CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING WITHIN THE DRIPLINE OF EXISTING TREES. NO MECHANICAL TRENCHING WITHIN THE DRIPLINE OF THE EXISTING TREE WILL BE ALLOWED. AIR SPADE SHALL BE UTILIZED FOR ALL TRENCHING WITHIN THE DRIPLINE OF TREES. CONTRACTOR SHALL REFER TO ARBORIST REPORT FOR ADDITIONAL PRECAUTIONS REQUIRED FOR THE EXISTING TREES. VERIFY ALL LAYOUT IN FIELD WITH OWNER'S AUTHORIZED REPRESENTATIVE.

NORTH
10' 0' 10' 20'

I HAVE COMPLIED WITH THE CRITERIA OF THE IRRIGATION GUIDELINES AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN

sweeney + associates
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MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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ARCHITECT/ENGINEER SEAL

IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD-BID SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	XXX.DWG
DRAWN BY	GK
CHECKED BY	DZ
SCALE	SHEET
DATE	XX-XX-XXXX
PROJECT NO.	GRUEN # 8345

IRRIGATION PLAN

SHEET TITLE

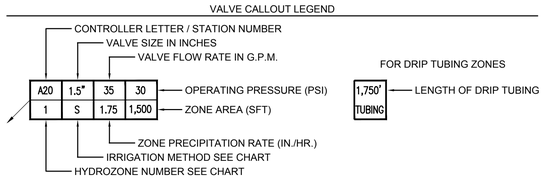
L409

SHEET NO.

IRRIGATION NOTES

1. ALL LOCAL MUNICIPAL AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE.
3. THE CONTRACTOR SHALL OBTAIN THE PERTINENT ENGINEERING OR ARCHITECTURAL PLANS BEFORE BEGINNING WORK.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK INDICATED HEREIN BEFORE BEGINNING WORK.
5. THIS DESIGN IS DIAGRAMMATIC. ALL EQUIPMENT SHOWN IN PAVED AREAS IS FOR DESIGN CLARITY ONLY AND IS TO BE INSTALLED WITHIN PLANTING AREAS.
6. THE CONTRACTOR SHALL NOT WILLFULLY INSTALL ANY EQUIPMENT AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN CONDITIONS EXIST THAT WERE NOT EVIDENT AT THE TIME THESE PLANS WERE PREPARED. ANY SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO ANY WORK OR THE IRRIGATION CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY FIELD CHANGES DEEMED NECESSARY BY THE OWNER.
7. INSTALL ALL EQUIPMENT AS SHOWN IN THE DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH LOCAL CITY, COUNTY AND STATE REQUIREMENTS FOR BOTH EQUIPMENT AND INSTALLATION.
8. ACTUAL LOCATION FOR THE INSTALLATION OF THE BACKFLOW PREVENTER AND THE AUTOMATIC CONTROLLER IS TO BE DETERMINED IN THE FIELD BY THE OWNER'S AUTHORIZED REPRESENTATIVE.
9. CONTRACTOR IS TO PROVIDE AN ADDITIONAL PILOT WIRE FROM CONTROLLER ALONG ENTIRETY OF MAIN LINE TO THE LAST RCV ON EACH AND EVERY LEG OF MAIN LINE. LABEL SPARE WIRES AT BOTH ENDS.
10. ALL PIPE UNDER PAVED AREAS TO BE INSTALLED IN SLEEVING TWICE THE DIAMETER OF THE PIPE CARRIED. SEE LEGEND FOR TYPE. ALL WIRE UNDER PAVED AREAS TO BE INSTALLED IN A SCH. 40 SLEEVE THE SIZE REQUIRED TO EASILY PULL WIRE THROUGH. ALL SLEEVES TO BE INSTALLED WITH A MINIMUM DEPTH AS SHOWN ON THE SLEEVING DETAILS. SLEEVES TO EXTEND AT LEAST 12" PAST THE EDGE OF THE PAVING.
11. ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED IN SHRUB OR GROUND COVER AREAS WHERE POSSIBLE. ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED AS SHOWN ON THE INSTALLATION DETAILS. INSTALL ALL QUICK COUPLER AND REMOTE CONTROL VALVES WITHIN 18" OF HARDSCAPE.
12. ALL HEADS ARE TO BE INSTALLED WITH THE NOZZLE, SCREEN AND ARCS SHOWN ON THE PLANS. ALL HEADS ARE TO BE ADJUSTED TO PREVENT OVERSPRAY ONTO BUILDINGS, WALLS, FENCES AND HARDSCAPE. THIS INCLUDES, BUT NOT LIMITED TO, ADJUSTMENT OF DIFFUSER PIN OR ADJUSTMENT SCREW, REPLACEMENT OF PRESSURE COMPENSATING SCREENS, REPLACEMENT OF NOZZLES WITH MORE APPROPRIATE RADIUS UNITS AND THE REPLACEMENT OF NOZZLES WITH ADJUSTABLE ARC UNITS.
13. CONTRACTOR SHALL INSTALL ADDITIONAL CHECK VALVES TO HEADS AND LATERALS AS REQUIRED TO PREVENT LOW HEAD DRAINAGE.
14. THE CONTRACTOR SHALL USE PROPER GROUNDING TECHNIQUES FOR GROUNDING THE CONTROLLER AND RELATED EQUIPMENT PER MANUFACTURERS SPECIFICATIONS. SWEENEY AND ASSOCIATES RECOMMENDS MEASURING FOR PROPER GROUND AT LEAST ONCE ANNUALLY, AND NECESSARY ADJUSTMENTS MADE TO COMPLY WITH MANUFACTURER SPECIFICATIONS.
15. THE CONTRACTOR IS REQUIRED TO CONTACT DIGALERT OR 811 A MINIMUM OF TWO (2) DAYS PRIOR TO THE START OF ANY EXCAVATIONS ON THE PROJECT AND SPECIFICALLY PRIOR TO THE INSTALLATION OF ANY GROUNDING RODS. DIAL 811 OR LOG ONTO WWW.DIGALERT.ORG TO START A PROJECT TICKET. DIGALERT AND 811 IS A FREE SERVICE PROVIDED TO THE PROJECT. FAILURE TO CONTACT AND HAVE THE EXISTING UTILITIES IDENTIFIED, LOCATED AND MARKED SHALL MAKE THE CONTRACTOR SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGES.

VALVE CALLOUT LEGEND



HYDROZONE DESCRIPTION CHART			
NUMBER	DESCRIPTION OF THE HYDROZONE	WUCOLS	PLANT FACTOR
HZ 1	LOW WATER USE PLANTINGS	L	0.20
HZ 2	LOW WATER USE TREES	L	0.30

IRRIGATION METHOD DESCRIPTION CHART			
LETTERS	DESCRIPTION OF THE IRRIGATION	TYPE	IR. EFFICIENCY
S	SPRAY HEADS	SPRAY	0.75
DT	DRIP TUBING	DRIP	0.81
TB	TREE BUBBLERS	DRIP	0.81

IRRIGATION CONTROLLER RUN TIMES

POC or Controller				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total / Avg.
A	ETo / Month (Inches):			2.50	2.90	4.20	5.30	5.90	6.60	7.20	6.90	5.40	4.10	2.90	2.60	**56.50**
	ETo / Day (Inches):			0.08	0.10	0.14	0.18	0.19	0.22	0.23	0.22	0.18	0.13	0.10	0.08	**0.15**
	Irrigation Days / Week:			7	7	7	7	7	7	7	7	7	7	7	7	
Plant / Irrig. Type	**AKc**	**Pr Rate**	**IE**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	
Low Shrubs	0.20	2.00	0.75	0.6	0.8	1.1	1.4	1.5	1.8	1.9	1.8	1.4	1.1	0.8	0.7	Min./Day/Zone
Bubblers	**Number of Zones:**		13	**8.4**	**10.8**	**14.1**	**18.4**	**19.8**	**22.9**	**24.2**	**23.1**	**18.7**	**13.8**	**10.1**	**8.7**	**Total Min./Day**
Low Shrubs	0.20	1.75	0.75	0.7	0.9	1.2	1.6	1.7	2.0	2.1	2.0	1.6	1.2	0.9	0.8	Min./Day/Zone
Sprays	**Number of Zones:**		7	**5.2**	**6.6**	**8.7**	**11.3**	**12.2**	**14.1**	**14.9**	**14.2**	**11.5**	**8.5**	**6.2**	**5.4**	**Total Min./Day**
Low Trees	0.30	0.66	0.81	2.7	3.5	4.6	5.9	6.4	7.4	7.8	7.5	6.1	4.5	3.3	2.8	Min./Day/Zone
Drip Tubing	**Number of Zones:**		6	**16.3**	**20.9**	**27.4**	**35.7**	**38.4**	**44.4**	**46.9**	**45.0**	**36.4**	**26.7**	**19.5**	**16.9**	**Total Min./Day**
Low Trees	0.30	3.00	0.75	0.6	0.8	1.1	1.4	1.5	1.8	1.9	1.8	1.4	1.1	0.8	0.7	Min./Day/Zone
Bubblers	**Number of Zones:**		15	**9.7**	**12.4**	**16.3**	**21.2**	**22.8**	**26.4**	**27.9**	**26.7**	**21.6**	**15.9**	**11.6**	**10.1**	**Total Min./Day**
	Total Number of Zones:		**41**	40	51	66	87	93	108	114	109	88	65	47	41	Total Min./Day
	Total Controller Run Time in Hours:			**0.66**	**0.85**	**1.11**	**1.44**	**1.55**	**1.80**	**1.90**	**1.82**	**1.47**	**1.08**	**0.79**	**0.68**	**Total Hrs./Day**
				JAN	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	

Note: These schedules are intended only for compliance with local municipal codes and the water efficient landscape ordinance. These calculations represent the MAXIMUM REASONABLE run times and are used to ensure that all irrigation may be completed during the specific watering window allowed. These schedules do not include rainfall, site soil types, specific exposures (shade versus sun), actual irrigation days, or specific slope position. It is solely the responsibility of the irrigation contractor to program the controller as required to apply the correct amount of irrigation water for the landscape. All smart controllers shall be programmed using the specified ET or weather sensing equipment, satellite provided ET data, soil moisture sensors, and rain shut off devices as required. Contractor shall provide a controller schedule inside the controller cabinet prior to final turnover of the project to the owner.

IRRIGATION MATERIAL LEGEND

SYMBOL Q	T	H	F	MANUFACTURER	MODEL NO. / DESCRIPTION	FLOW RATE (GPM)	PSI	RADIUS	P.R. (TRI.)	DETAIL
◔	◔	⊖	○	HUNTER	PROS-12-PRS30-CV 12" POP-UP SHRUB HEAD WITH 8Q/8T/8H/8F NOZZLES	.24, .32, .47, .97	30	8 FT	1.69 IN./HR.	A
◔	◔	◓	●	HUNTER	PROS-12-PRS30-CV 12" POP-UP SHRUB HEAD WITH 10Q/10T/10H/10F NOZZLES	.42, .57, .88, 1.59	30	10 FT	1.77 IN./HR.	A
◔	◔	◓	●	HUNTER	PROS-12-PRS30-CV 12" POP-UP SHRUB HEAD WITH 12Q/12T/12H/12F NOZZLES	.67, .89, 1.30, 2.70	30	12 FT	2.09 IN./HR.	A
◔	◔	⊖	⊕	HUNTER	PROS-12-PRS30-CV 12" POP-UP SHRUB HEAD WITH 15Q/15T/15H/15F NOZZLES	.97, 1.30, 1.86, 3.75	30	15 FT	1.85 IN./HR.	A
	▽			HUNTER	PROS-06-CV 6" POP-UP BUBBLER HEAD WITH A MSBN-25Q PRESSURE COMPENSATING STREAM BUBBLER NOZZLE. EACH SYMBOL REPRESENTS TWO (2) BUBBLERS TO PROVIDE TWO (2) BUBBLERS PER TREE. PLACE THE BUBBLER HEADS 6" FROM THE EDGE OF THE ROOT BALL OF THE TREE AND ON OPPOSITE SIDES OF THE TREE, TYPICAL. ADJUST BUBBLER STREAMS TO WET THE ROOT BALL AND ADJACENT AMENDED SOIL WITHOUT HITTING THE TRUNK OF THE TREE.	.25 (0.50 TOTAL)	30	1.5 FT	3.00 IN./HR.	A,B
	⊙			TORO	570Z-6P-PRX-COM 6" POP-UP BUBBLER HEAD WITH A TORO SB-2-180-PC2 STREAM BUBBLER NOZZLE, EACH SYMBOL REPRESENTS ONE (1) BUBBLER PER SHRUB.	.21	30	1.5 FT	2.00 IN./HR.	A
	✱			TORO	570Z-6P-PRX-COM 6" POP-UP BUBBLER HEAD WITH A TORO SB-90-PC2 STREAM BUBBLER NOZZLE, EACH SYMBOL REPRESENTS ONE (1) BUBBLER FOR EVERY TWO (2) SHRUBS.	.21	30	1.5 FT	2.00 IN./HR.	A
				TORO	RGP-2-12 SUBSURFACE DRIP TUBING (DL 2000) WITH 0.50 GPH, PRESSURE COMPENSATING EMITTERS INTERNALLY INSTALLED IN THE DRIP TUBING AT 12" O.C. SPACING. DRIP TUBING SHALL BE EQUIPPED WITH ROOTGARD PROTECTION TO PREVENT ROOT INTRUSION INTO THE DRIP EMITTER. DRIP TUBING SHALL BE INSTALLED 6" BELOW FINISHED SOIL GRADE (NOT COUNTING DG) AND IN PARALLEL ROWS A MAXIMUM OF 16" ON CENTER. THE PERIMETER ROW OF DRIP TUBING SHALL BE INSTALLED A MAXIMUM OF 4" FROM THE EDGE OF ANY HARDSCAPE OR TURF EDGE. ALL SUBSEQUENT INTERIOR ROWS SHALL BE ADJUSTED TO PROVIDE AN EVEN SPACING ACROSS THE PLANTER WITHOUT EXCEEDING 16" MAXIMUM SPACING. INSTALL 9" PVC COATED GALVANIZED TUBING STAKES A MAXIMUM OF FIVE (5) FEET ON CENTER ALONG THE LENGTH OF THE TUBING. TUBING STAKES SHALL BE MODEL #GDTS140900 AS MANUFACTURED BY GPH IRRIGATION PRODUCTS (866) 582-9684. THE HATCH PATTERN SYMBOLS ON THE PLANS REPRESENT THE APPROXIMATE DIRECTION AND SPACING OF THE DRIP TUBING ROWS, SEE ACTUAL SPACING REQUIREMENTS ABOVE AND IN DETAILS.					C,D,E
NO SYMBOL				TORO	CONNECTION BETWEEN THE DL 2000 DRIP TUBING AND PVC SUPPLY AND DISCHARGE HEADERS SHALL BE MADE USING LOC-EZE DRIP LINE FITTINGS, SCH. 40 PVC THREADED FITTINGS, SCH. 80 NIPPLES AND FLEXIBLE NIPPLES. WHEN THE CONNECTION IS AT THE END RUN OF THE TUBING USE A 1/2" SCH. 40 PVC THREADED 90° ELBOW, A 1/2" X LENGTH AS REQUIRED SCH. 80 PVC THREADED NIPPLE, A 1/2" X 6" MIPT X FIPT FLEXIBLE NIPPLE, AND A T-FAM-16 LOC-EZE X 1/2" MIPT ADAPTER FITTING. WHEN THE CONNECTION IS IN THE MIDDLE OF THE TUBING RUN USE A 1/2" SCH. 40 PVC THREADED TEE FITTING, A 1/2" X LENGTH AS REQUIRED SCH. 80 PVC THREADED NIPPLE, A 1/2" X 6" MIPT X FIPT FLEXIBLE NIPPLE, AND TWO (2) T-FAM-16 LOC-EZE X 1/2" MIPT ADAPTERS. ALL END RUNS OF TUBING SHALL BE CONNECTED WITH A PVC DISCHARGE HEADER. FLEXIBLE NIPPLES SHALL BE MODEL #GFN050600 AS MANUFACTURED BY GPH IRRIGATION PRODUCTS (866) 582-9684.					C,D,E
NO SYMBOL				TORO	16mm LOC-EZE FITTINGS FOR ALL CONNECTIONS BETWEEN DRIP TUBING (TUBING-TO-TUBING ONLY). NO HEATING OF TUBING SHALL BE ALLOWED.					C,D,E
— — — —				AS APPROVED	PVC SUPPLY AND DISCHARGE HEADERS SHALL BE PVC LATERAL LINE PIPE (AS SHOWN BELOW), 1" MINIMUM SIZE WITH SCH. 40 PVC FITTINGS.					C,D,E
	Ⓕ			GPH IRRIGATION/ HUNTER	GDFN DRIP FLUSH / INDICATOR NOZZLE, ORANGE IN COLOR, INSTALLED ONTO A HUNTER PROS-12 12" POP-UP SPRINKLER BODY (NO PRS OR CHECK VALVE). THE FLUSH NOZZLE SHALL BE CLOSED FOR NORMAL OPERATION OF THE DRIP SYSTEM.					C,F
	Ⓐ			TORO	T-YD-500-34 AIR/VACUUM RELIEF VALVE INSTALLED WITH A T-FTF-16 LOC-EZE X LOC-EZE X 1/2" FIPT TEE FITTING. INSTALL AIR RELIEF ASSEMBLY AT THE HIGH POINT OF EACH PLANTER. SEE PLANS FOR APPROXIMATE LOCATION AND QUANTITY OF ARV'S PER DRIP ZONE. USING AN AIR RELIEF LATERAL CONSTRUCTED OF T-EHW1645 "BLUE STRIPE" TUBING, CONNECT AIR RELIEF VALVE TO ALL DRIP LINE LATERALS WITHIN THE ELEVATED AREA. MULTIPLE ARV'S MAY BE REQUIRED PER DRIP TUBING ZONE, SEE PLANS. INSTALL INSIDE A 7" ROUND VALVE BOX.					C,G
	Ⓕ			TORO	TFS-150 1 1/2" PVC TEE, CST TYPE FLOW SENSOR, WIRE TO CONTROLLER USING TWO (2) #14UF AWG WIRES INSIDE A 1" SCH. 40 PVC (GRAY) ELECTRICAL CONDUIT. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND INSIDE A STANDARD					H
	▶◀			NIBCO	T-113-K CLASS 125, BRONZE GATE VALVE WITH BRONZE CROSS HANDLE , LINE SIZE WITH STANDARD LEVER HANDLE					I
	Ⓐ			CRISPIN	AR-10 LOW VOLUME, MAINLINE PRESSURE AIR RELEASE VALVE, 1" SIZE, INSTALL INSIDE A STANDARD RECTANGULAR VALVE BOX					J
	Ⓡ			RAIN BIRD	44RC 1" QUICK COUPLER VALVE WITH A NON LOCKING VINYL COVER AND SPEARS SWING JOINT, INSTALLED IN A 10" ROUND VALVE BOX. REFER TO DETAIL					K
	●			GRISWOLD	2000E, EPOXY COATED REMOTE CONTROL VALVE (RCV), SIZE AS SHOWN (1" AND 1 1/2" SIZES). INSTALL THE RCV INSIDE A STANDARD RECTANGULAR VALVE BOX.					L
	◔			GRISWOLD	2000RE, EPOXY COATED REMOTE CONTROL VALVE (RCV), SIZE AS SHOWN (1" AND 1 1/2" SIZES). INSTALL A RAIN BIRD LCRBY-100D DISC FILTER AND A SENNINGER 1" PMR-30-MF PRESSURE REGULATOR. INSTALL THE DRCV ASSEMBLY INSIDE A JUMBO RECTANGULAR VALVE BOX.					L,M
	Ⓒ			TORO	SSAK48S16NS1 48 STATION CONTROLLER INSTALLED WITH IN A LEMUR MODEL # SG-A/SS ENCLOSURE WITH OPTION "A"					N
	Ⓔ			N/A	120 VOLT ELECTRICAL POWER FOR CONTROLLER, PROVIDED BY ELECTRICIAN, VERIFY ACTUAL LOCATION IN FIELD					N/A
———				AS APPROVED	PVC PIPE 3/4" - 3" SCH. 40, SOLVENT WELD WITH SCH. 40 PVC FITTINGS, AS LATERAL LINES INSTALLED 12" BELOW FINISHED GRADE					O
— — — —				AS APPROVED	PVC PIPE 2" CL. 315, SOLVENT WELD WITH SCH. 80 PVC FITTINGS, AS MAINLINES INSTALLED 18" BELOW FINISHED GRADE					O,Q
— — — —				AS APPROVED	PVC PIPE SCH. 40 AS SLEEVING, 2 TIMES THE DIAMETER OF PIPE OR WIRE BUNDLE CARRIED (2" MINIMUM SIZE) INSTALL ALL PIPE AND WIRE UNDER PAVING, HARDSCAPE, ETC. (OR AS DIRECTED BY OWNER'S AUTHORIZED REPRESENTATIVE) INSIDE SLEEVES. SLEEVES UNDER PEDESTRIAN PAVING SHALL BE INSTALLED 24" BELOW FINISHED GRADE. SLEEVES UNDER VEHICULAR PAVING SHALL BE INSTALLED 36" BELOW FINISHED GRADE.					P
NO SYMBOL				LASCO	ALL FITTINGS USED WITH SOLVENT WELD MAINLINE PIPE SHALL BE SCH. 80 PVC FITTINGS, GRAY IN COLOR, AND SIZED TO MATCH THE MAINLINE PIPE. ALL FITTINGS USED WITH SOLVENT WELD LATERAL LINE PIPE SHALL BE SCH. 40 PVC, WHITE IN COLOR, AND SIZED TO MATCH THE LATERAL LINE PIPE. ALL THREADED PVC NIPPLES SHALL BE SCH. 80 PVC PIPE, DARK GRAY IN COLOR, WITH MOLDED THREADS.					N/A
NO SYMBOL				AS APPROVED	ALL SOLVENT WELD CONNECTIONS FOR BOTH MAINLINE AND LATERAL LINE SHALL BE MADE USING THE TWO-STEP PROCESS OF PRIMER AND SOLVENT CEMENT. PRIMER SHALL BE LOW VOC "PURPLE PRIMER". MAINLINE SOLVENT CEMENT SHALL BE LOW VOC, "GRAY-HEAVY BODY" CEMENT. LATERAL LINE SOLVENT CEMENT SHALL BE LOW VOC, GRAY OR BLUE COLORED MEDIUM BODIED CEMENT. USE DAUBERS SIZED AT LEAST ONE-HALF THE SIZE OF THE LARGEST PIPE BEING JOINED. ALL SOLVENT CEMENTED JOINTS SHALL BE MADE PER THE PIPE AND FITTING MANUFACTURER'S RECOMMENDATIONS.					N/A
NO SYMBOL				AS APPROVED	ALL SOLVENT WELD MAINLINES ABOVE 2" IN SIZE SHALL HAVE CONCRETE THRUST BLOCKING INSTALLED AT ALL DIRECTIONAL CHANGES INCLUDING ELBOWS (45° AND 90°) AND TEES. MAINLINE PIPES UNDER 2" SIZE AND ALL LATERAL LINES DO NOT REQUIRE THRUST BLOCKING.					Q
NO SYMBOL				AS APPROVED	1" SCH. 40 PVC, GRAY ELECTRICAL CONDUIT FOR FLOW SENSOR / MASTER VALVE WIRES, PROVIDE PULL BOX AT A MAXIMUM OF 200 FEET ON CENTER FOR A 3 FOOT WIRE LOOP OR ANY SPLICES. INSTALL INSIDE A STANDARD RECTANGULAR VALVE BOX.					N/A
NO SYMBOL				PAIGE ELECTRIC	P7079D POLYETHYLENE INSULATED, SOLID COPPER CONDUCTOR IRRIGATION CONTROL WIRE #14UF AWG DIRECT BURIAL (U.L. APPROVED). PILOT WIRES SHALL BE RED IN COLOR, COMMON GROUND WIRE SHALL BE WHITE IN COLOR, SPARE WIRES SHALL BE YELLOW IN COLOR. WHERE MULTIPLE CONTROLLERS ARE USED ON THE PROJECT, EACH CONTROLLER SHALL HAVE A DIFFERENT COLOR FOR PILOT WIRES. THE CONTRACTOR SHALL ROUTE TWO (2) SPARE CONTROL WIRES (YELLOW) FROM THE CONTROLLER ALONG THE MAINLINE IN ALL DIRECTIONS AWAY FROM THE CONTROLLER. LOOP SPARE WIRES UP AND INTO EACH VALVE BOX ALONG THE MAINLINE, PROVIDING A 3 FOOT MINIMUM LOOP.					O,P,R
NO SYMBOL				3M	DBR/Y-6 DIRECT BURIAL (I.L. APPROVED) WATER-PROOF WIRE CONNECTORS FOR USE ON ALL WIRE SPLICES AND CONNECTIONS					R
NO SYMBOL				NDS (K.B.I.)	KSC-XXX-S SWING CHECK VALVE, LATERAL LINE SIZE, INSTALL ONE (1) ON THE DOWNSTREAM SIDE OF EACH RCV WHEN THE RCV IS LOWER THAN THE SPRINKLERS, BUBBLERS OR DRIP EMITTERS. INSTALL WITHIN SPRINKLER / BUBBLER / DRIP ZONES AS REQUIRED TO PREVENT LOW HEAD DRAINAGE.					N/A
NO SYMBOL				NDS (K.B.I.)	KC-XXX-S SPRING CHECK VALVE, LATERAL LINE SIZE, INSTALL ONE (1) ON THE DOWNSTREAM SIDE OF EACH RCV WHEN THE RCV IS HIGHER THAN THE SPRINKLERS, BUBBLERS OR DRIP EMITTERS. INSTALL WITHIN SPRINKLER / BUBBLER / DRIP ZONES AS REQUIRED TO PREVENT LOW HEAD DRAINAGE.					N/A
NO SYMBOL				CARSON	VALVE BOXES, SIZE PER EQUIPMENT LEGEND, WITH T-COVER LIDS AND CAPTIVE BOLT AND LOC-KIT. FOR ROUND AIR RELIEF VALVES USE MODEL 708, 10" ROUND SHALL BE MODEL 910, 12" STANDARD RECTANGULAR. SHALL BE MODEL 1419, 12" JUMBO RECT. SHALL BE MODEL 1220, SUPER JUMBO SHALL BE MODEL 1324, AND SUPER JUMBO XL SHALL BE MODEL 1730. VALVE BOXES SHALL HAVE BLACK HDPE BODIES AND BLACK LIDS IN SHRUB BEDS. FOR USE IN NON-VEHICULAR TRAFFIC SITUATIONS ONLY. DO NOT INSTALL IN CONCRETE OR ASPHALT.					S

I HAVE COMPLIED WITH THE CRITERIA OF THE IRRIGATION GUIDELINES AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN

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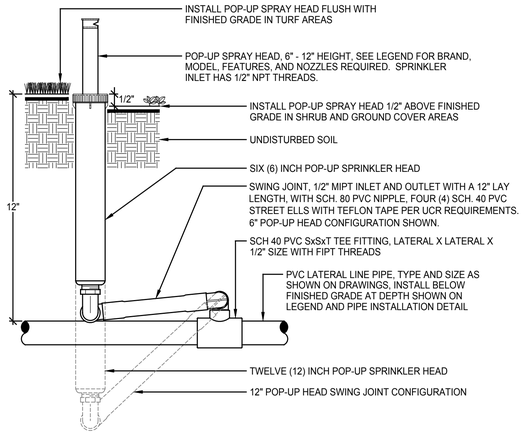
BASE FILE NAMES	XXX.DWG
DRAWN BY	GK
CHECKED BY	DZ
SCALE	SHEET
DATE	XX-XX-XXXX
PROJECT NO.	GRUEN # 8345

IRRIGATION
LEGEND & NOTES

SHEET TITLE

L410

SHEET NO.

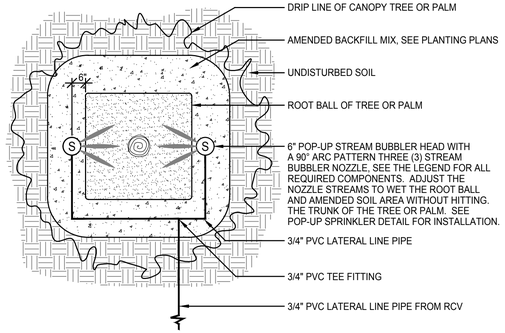


NOTE:
INSTALL SPRAY HEADS 4" FROM PAVING EDGE IN TURF AREAS.
INSTALL SPRAY HEADS 6" FROM PAVING EDGE IN SHRUB AND GROUND COVER AREAS.
INSTALL SPRAY HEADS 12" FROM THE FACE OF BUILDING WALLS OR WINDOWS.

INSTALL SPRAY HEADS PLUMB. ADJUST NOZZLE STREAM TO COVER THE LANDSCAPE AREA WITHOUT OVERSPRAY ONTO PAVING, FENCES, WALLS OR BUILDINGS.

SECTION VIEW - N.T.S.

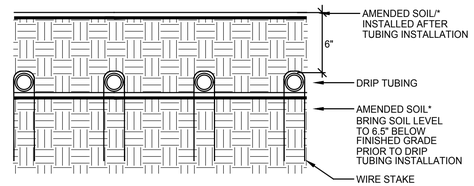
(A) POP-UP SPRINKLER/BUBBLER HEAD



NOTE:
POSITION SB-90-PC2 STREAM BUBBLER HEADS 6" FROM THE ROOT BALL.

PLAN VIEW - N.T.S.

(B) TREE BUBBLER LAYOUT



* AS PER LANDSCAPE DRAWINGS

RECOMMENDED INSTALLATION:

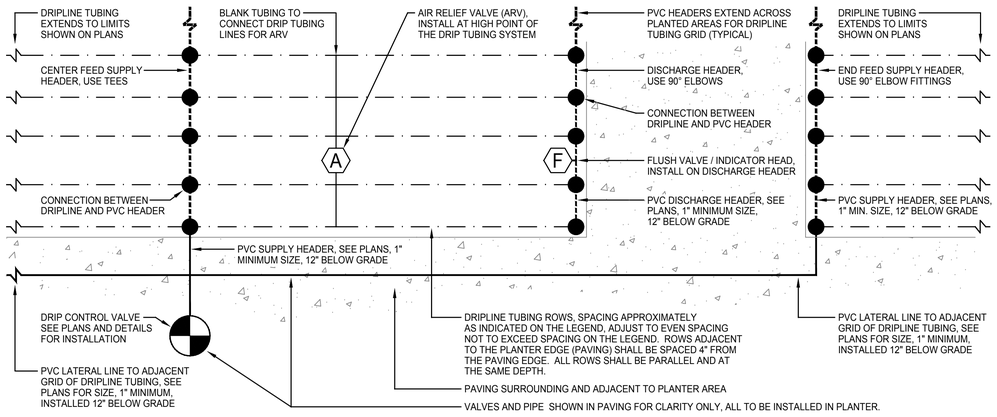
TO INSURE EVEN PARALLEL AND LEVEL TUBING ROWS IT IS RECOMMENDED THAT THE SOIL LEVEL IN THE PLANTER AREAS BE BROUGHT TO 4.5" BELOW FINISHED GRADE AND PROPERLY COMPACTED AS PER THE LANDSCAPED DRAWINGS PRIOR TO THE INSTALLATION OF THE TUBING.

INSTALL TUBING AS INDICATED ON THESE DRAWINGS AND SECURE TO GRADE USING WIRE HOOP STAKES AT 5 FEET ON CENTER SPACING.

BACKFILL FINAL 4.5" OF SOIL OVER THE TUBING AFTER INSTALLATION OF THE TUBING AND OBSERVATION BY THE OWNER'S AUTHORIZED REPRESENTATIVE.

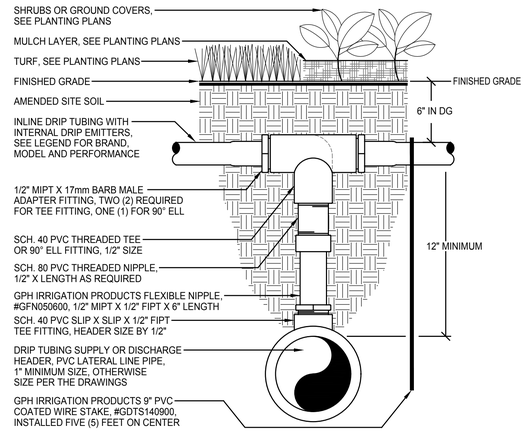
SECTION VIEW - N.T.S.

(C) DRIP TUBING LAYOUT (SECTION VIEW)



PLAN VIEW - N.T.S.

(D) DRIP TUBING LAYOUT (PLAN VIEW)



NOTE:
DRIP TUBING CONNECTION REQUIRED FOR ALL CONNECTIONS BETWEEN DRIP TUBING AND PVC HEADERS.
FOR CONNECTIONS AT END RUNS OF TUBING, USE A 90° ELL FITTING AND ONE ADAPTER FITTING FOR CONNECTION.
FOR CONNECTIONS IN THE MIDDLE OF RUNS OF TUBING, USE A TEE FITTING AND TWO ADAPTER FITTINGS FOR THE CONNECTION.

SECTION VIEW - N.T.S.

(E) DRIP TUBING CONNECTION

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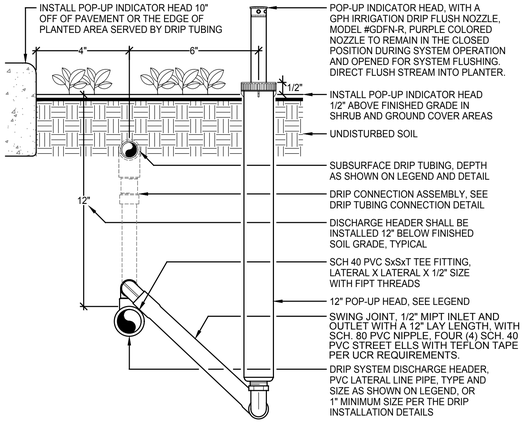
IRRIGATION DETAILS

SHEET TITLE

L411

SHEET NO.

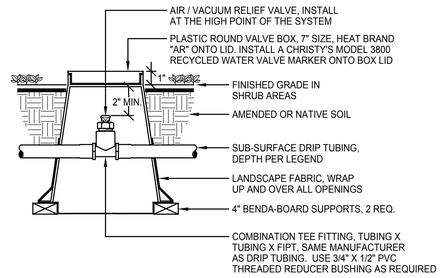


NOTE:
INSTALL INDICATOR HEAD 10" FROM THE EDGE OF PAVING OR THE PLANTER EDGE.

INSTALL ORANGE COLORED INDICATOR NOZZLE ON POP-UP HEAD AND ADJUST TO FULLY CLOSED.

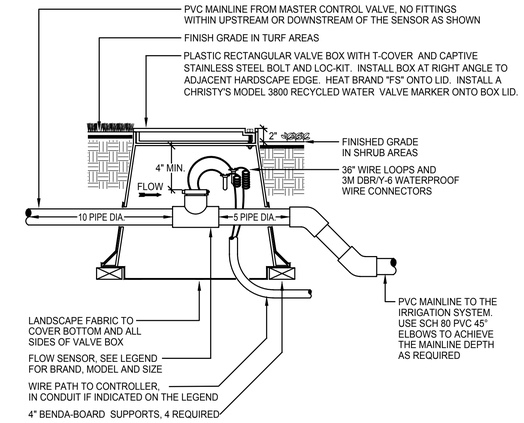
SECTION VIEW - N.T.S.

(F) DRIP FLUSH VALVE/INDICATOR HEAD



SECTION VIEW - N.T.S.

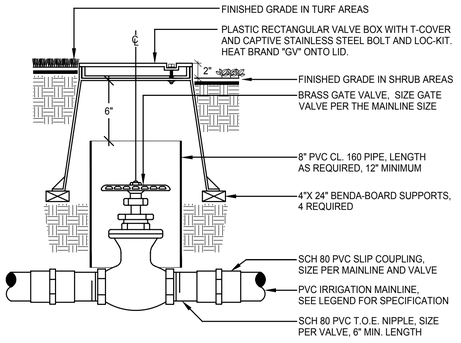
(G) DRIP AIR RELIEF VALVE



NOTE:
USE STANDARD OPENINGS PROVIDED IN VALVE BOX FOR PIPE, DO NOT CUT BOX.

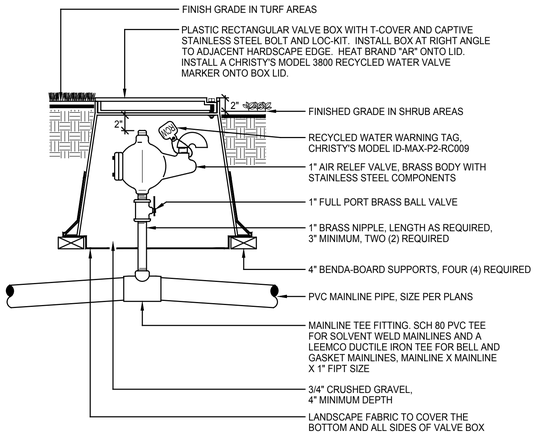
SECTION VIEW - N.T.S.

(H) FLOW SENSOR



SECTION VIEW - N.T.S.

(I) GATE VALVE

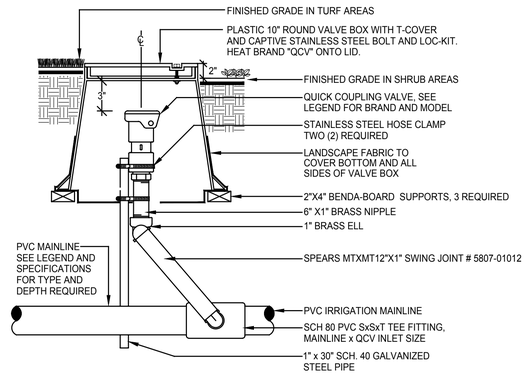


NOTE:
INSTALL AIR RELEIF VALVE AT HIGH POINT ON MAINLINE.

MAINLINE PIPE SLOPE SHOWN EXAGGERATED ON DETAIL FOR CLARITY.

SECTION VIEW - N.T.S.

(J) MAINLINE AIR RELIEF VALVE



NOTE:
USE AN APPROVED, NON-HARDENING, TEFLON ASSEMBLY PASTE ON ALL THREADED FITTINGS.

SECTION VIEW - N.T.S.

(K) QUICK COUPLER VALVE

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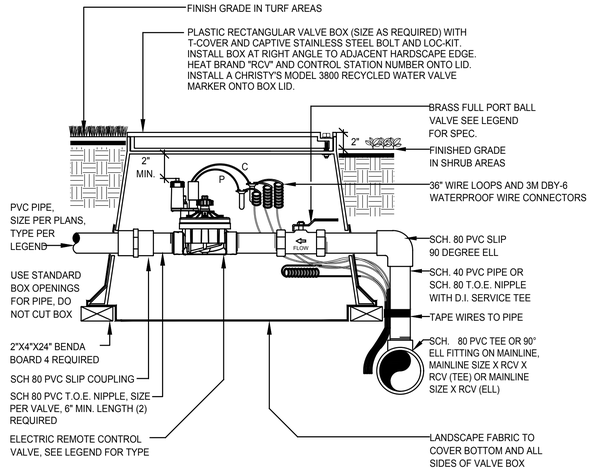
SHEET TITLE

IRRIGATION DETAILS

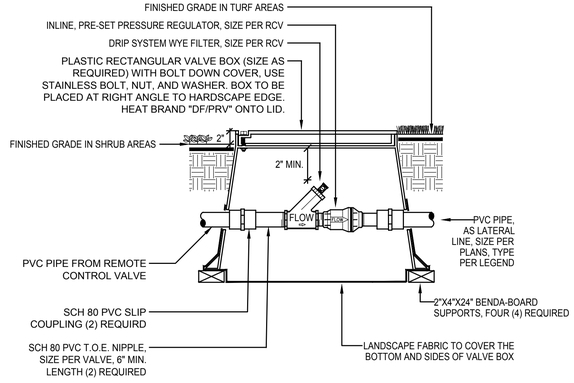
SHEET NO.

L412



SECTION VIEW - N.T.S.

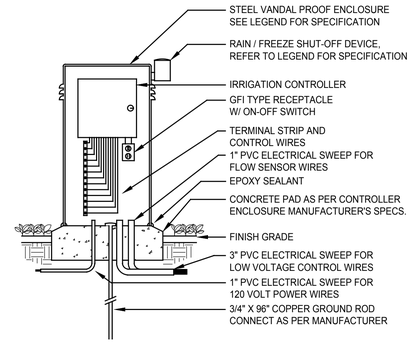
(L) REMOTE CONTROL VALVE



NOTE:
USE STANDARD BOX OPENINGS FOR ALL PIPING INTO THE BOX, DO NOT CUT THE BOX.

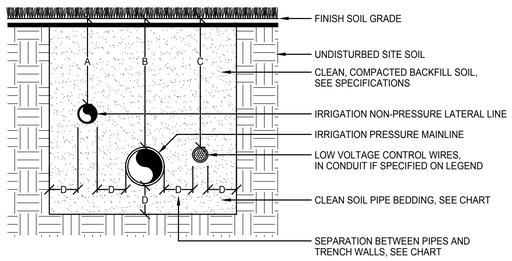
SECTION VIEW - N.T.S.

(M) WYE FILTER / PRESSURE REGULATOR



SECTION VIEW - N.T.S.

(N) CONTROLLER ASSEMBLY

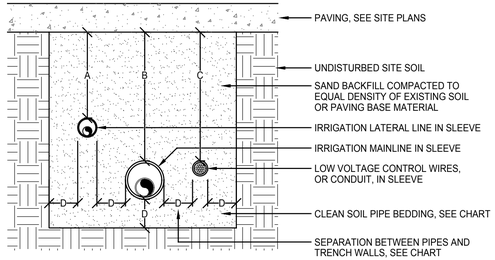


PIPE SIZES	A	B	C	D
SIZES 3/4" TO 2 1/2"	12"	18"	18"	4"
SIZES 3" AND 4"	18"	24"	24"	4"
SIZES 6" AND LARGER		30"	24"	6"

NOTE:
CONTRACTOR IS REQUIRED TO CONTACT 811 OR DIGALERT A MINIMUM OF TWO (2) DAYS PRIOR TO ANY EXCAVATION ON THE PROJECT. DIAL 811 OR LOG ONTO WWW.DIGALERT.ORG.

SECTION VIEW - N.T.S.

(O) PIPE INSTALLATION



PIPE SIZES	A	B	C	D
UNDER PEDESTRIAN PAVING	12"	24"	24"	4"
UNDER VEHICULAR PAVING	24"	36"	36"	6"

NOTE:
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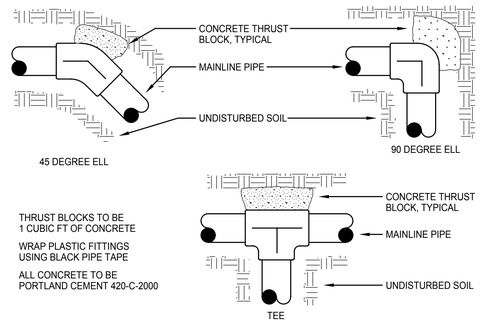
SLEEVES SHALL BE TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE CARRIED WITHIN, EXCEPT WHEN USING BELL AND GASKET PIPING WHERE MAINLINE SLEEVES SHALL BE 2.5 TIMES THE SIZE OF THE PIPE.

SLEEVES SHALL EXTEND 12" PAST THE EDGE OF PAVING INTO THE PLANTER.

SECTION VIEW - N.T.S.

(P) SLEEVE INSTALLATION



PLAN VIEW - N.T.S.

(Q) THRUST BLOCKS

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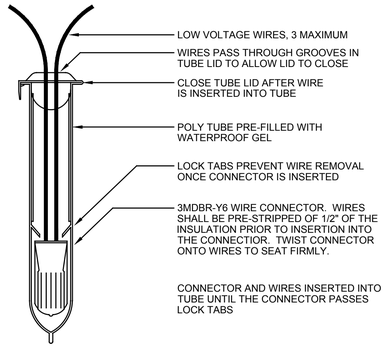
IRRIGATION DETAILS

SHEET TITLE

L413

SHEET NO.



NOTE:
WIRE CONNECTOR SHALL BE A 3M DBR/Y-6 DIRECT BURY SPLICE KIT (U.L. APPROVED).

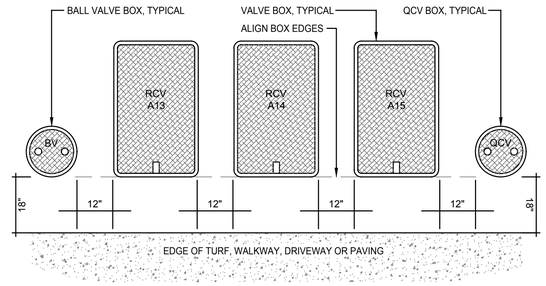
KIT SHALL INCLUDE A SCOTCHLOK Y SPRING CONNECTOR, A POLYPROPYLENE TUBE AND A WATERPROOF SEALING GEL. TUBE SHALL BE SUPPLIED PREFILLED WITH GEL.

DIRECT BURY SPLICE KIT SHALL BE USED TO ELECTRICALLY CONNECT 2 - 3 #14 OR 2 #12 PRE-STRIPPED COPPER WIRES. LARGER WIRES OR GREATER QUANTITIES OF WIRES SHALL REQUIRE A LARGER APPROVED WIRE CONNECTION.

SECTION VIEW - N.T.S.

(R) WIRE CONNECTION

NOTE:
1. CENTER VALVE BOX OVER REMOTE CONTROL VALVE OR DRIP ASSEMBLY TO FACILITATE SERVICING OF THE VALVE OR EQUIPMENT.
2. SET RCV AND VALVE BOX ASSEMBLY IN GROUND COVER OR SHRUB AREAS WHERE EVER POSSIBLE, VALVES IN TURF AREAS TO BE APPROVED BY LANDSCAPE ARCHITECT.
3. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO ADJACENT PAVING EDGE.
4. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT THE COLLAPSE AND / OR DEFORMATION OF VALVE BOXES.
5. BOX LOCATIONS SHALL BE STAKED IN THE FIELD PRIOR TO MAINLINE INSTALLATION FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT.



NOTE:
VALVE BOXES SHALL BE INSTALLED IN SHRUB AND GROUND COVER AREAS. NO VALVES SHALL BE INSTALLED IN TURF AREAS WITHOUT PRIOR APPROVAL BY THE LANDSCAPE ARCHITECT.

PLAN VIEW - N.T.S.

(S) VALVE BOX LAYOUT

WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package

Project Name:	UCR Mobility Hub
Project Address:	Riverside, CA

sweeney + associates — IRRIGATION DESIGN AND CONSULTING

Reference Evapotranspiration (ETo)	**56.5**	**In./Yr.**	**Residential Project?**	**No**	

Hydrozone # / Planting Description[a]	Plant Factor	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF / IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU)[d]
Regular Landscape Areas							
1. Low Water Use Plantings	0.20	Drip	0.81	0.25	29,372	7,343	257,225
2. Low Water Use Trees in DG	0.40	drip	0.81	0.50	1,313	657	22,997
				Totals:	**30,685**	**8,000**	
Special Landscape Areas							
				Totals:	**0**	**0**	
			Estimated Total Water Use (ETWU) Total:				**280,222**
			Maximum Applied Water Allowance (MAWA)[e]:				**483,703**

[a] Hydrozone # / Planting Description	[b] Irrigation Method	[c] Irrigation Efficiency
E.g.	*Overhead Spray of*	*0.75 for Spray*
1.) Front Lawn	*Drip*	*0.81 for Drip*
2.) Low Water Use Plantings		
3.) Medium Water Use Plantings		

***[d] ETWU (Annual Gallons Required)** = ETo x 0.62 x ETAF x Area*
Where 0.62 is a conversion factor that converts acre-inches/acre/year to gallons/square foot/year.

***[e] MAWA (Annual Gallons Allowed)** = ETo x 0.62 x [(ETAF x LA) + ((1 - ETAF) x SLA)]*
Where 0.62 is a conversion factor that converts acre-inches/acre/year to gallons/square foot/year, LA is the total landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is 0.55 for residential projects and 0.45 for non-residential projects.

Evapotranspiration Adjustment Factor (ETAF) Calculations

This non-residential project complies with the WELO and its average ETAF is less than** **0.45

Regular Landscape Areas	
Total ETAF x Area	8,000
Total Area	30,685
Average ETAF	**0.26**

All Landscape Areas	
Total ETAF x Area	8,000
Total Area	30,685
Average ETAF	**0.26**

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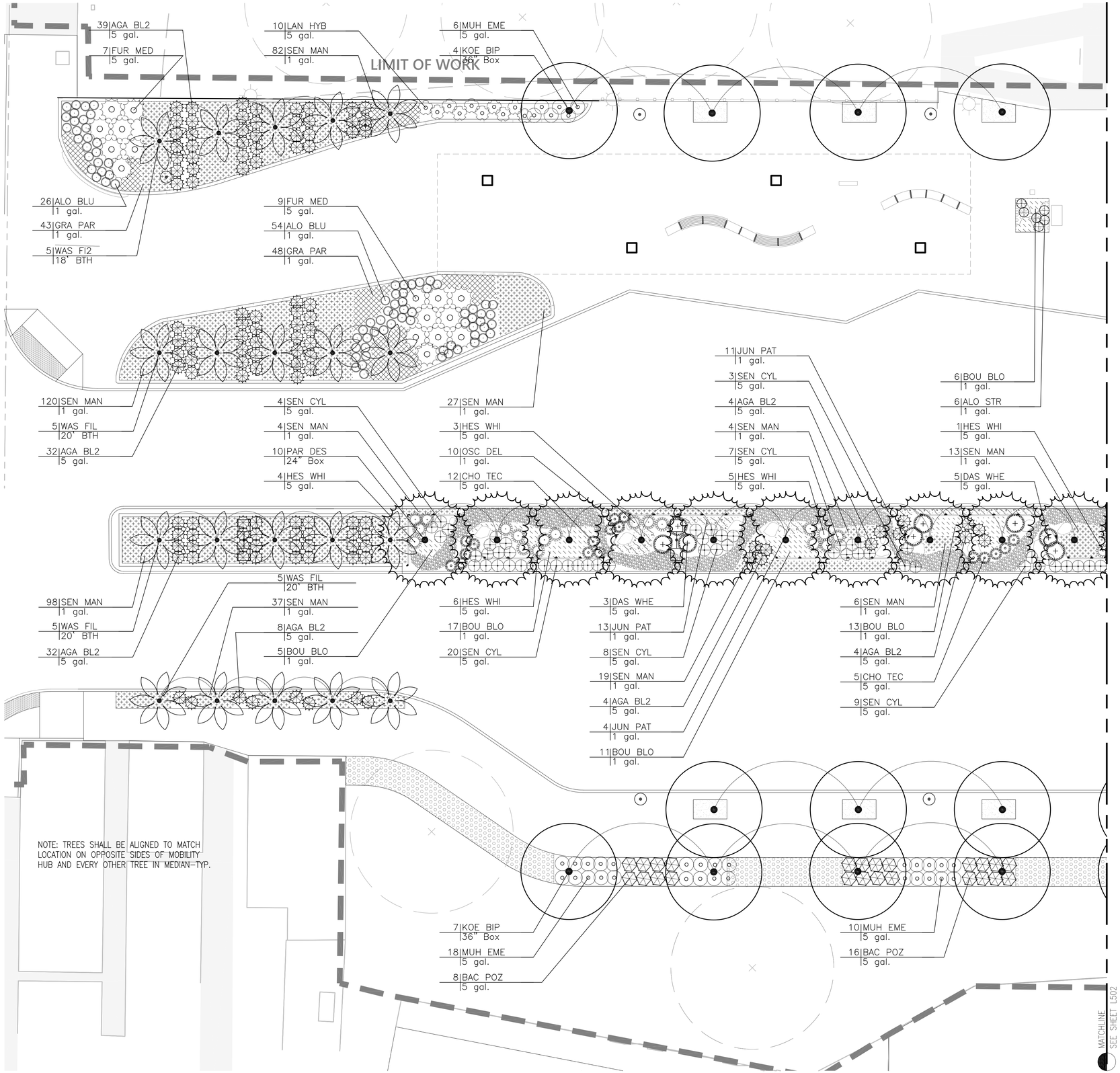

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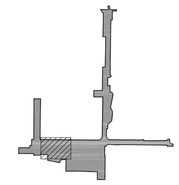

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CHECKED BY	DH
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DATE	01/10/19
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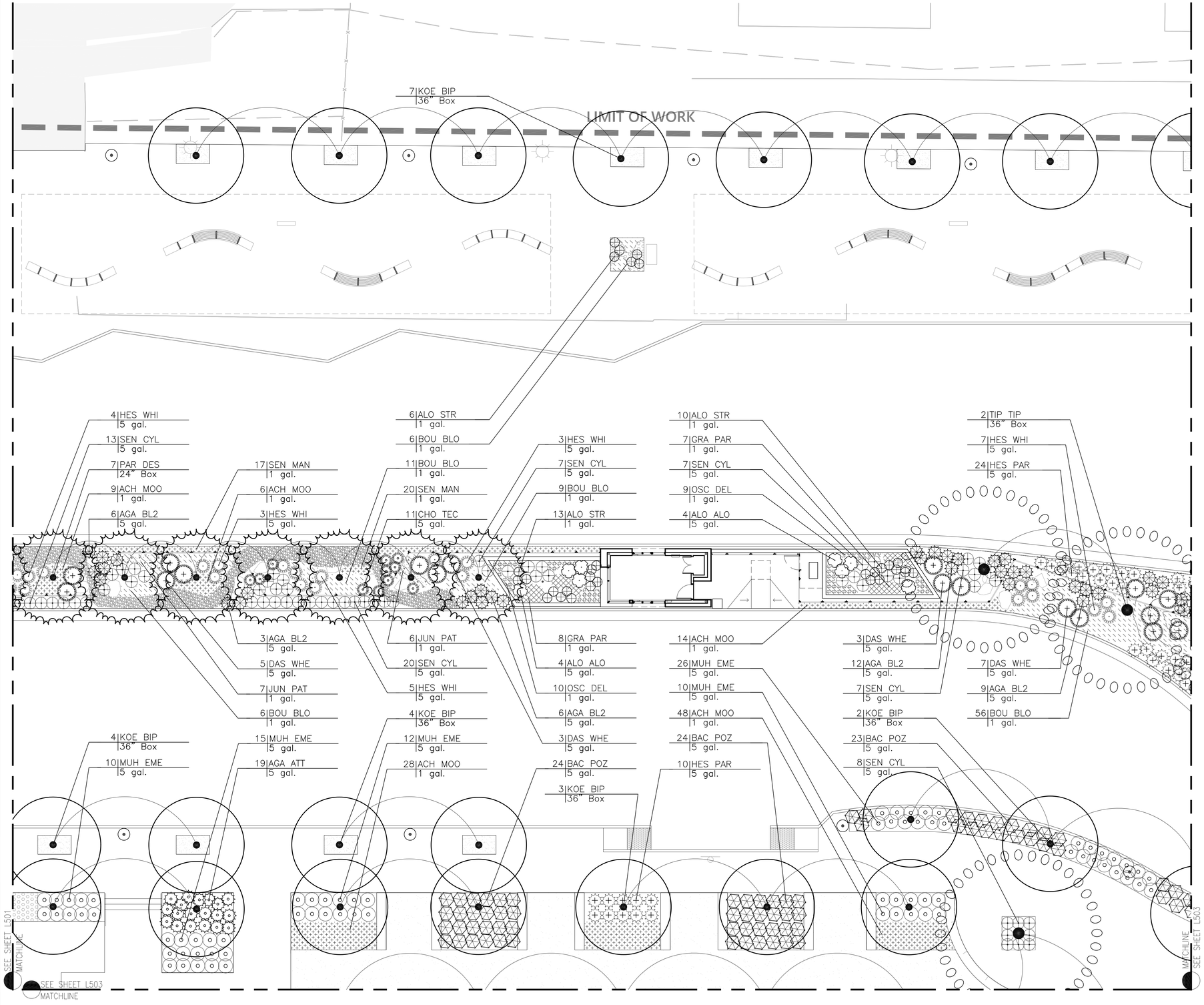
MOBILITY HUB PLANTING PLAN

SHEET TITLE

L501

SHEET NO.



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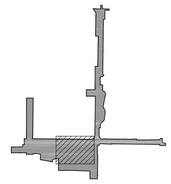

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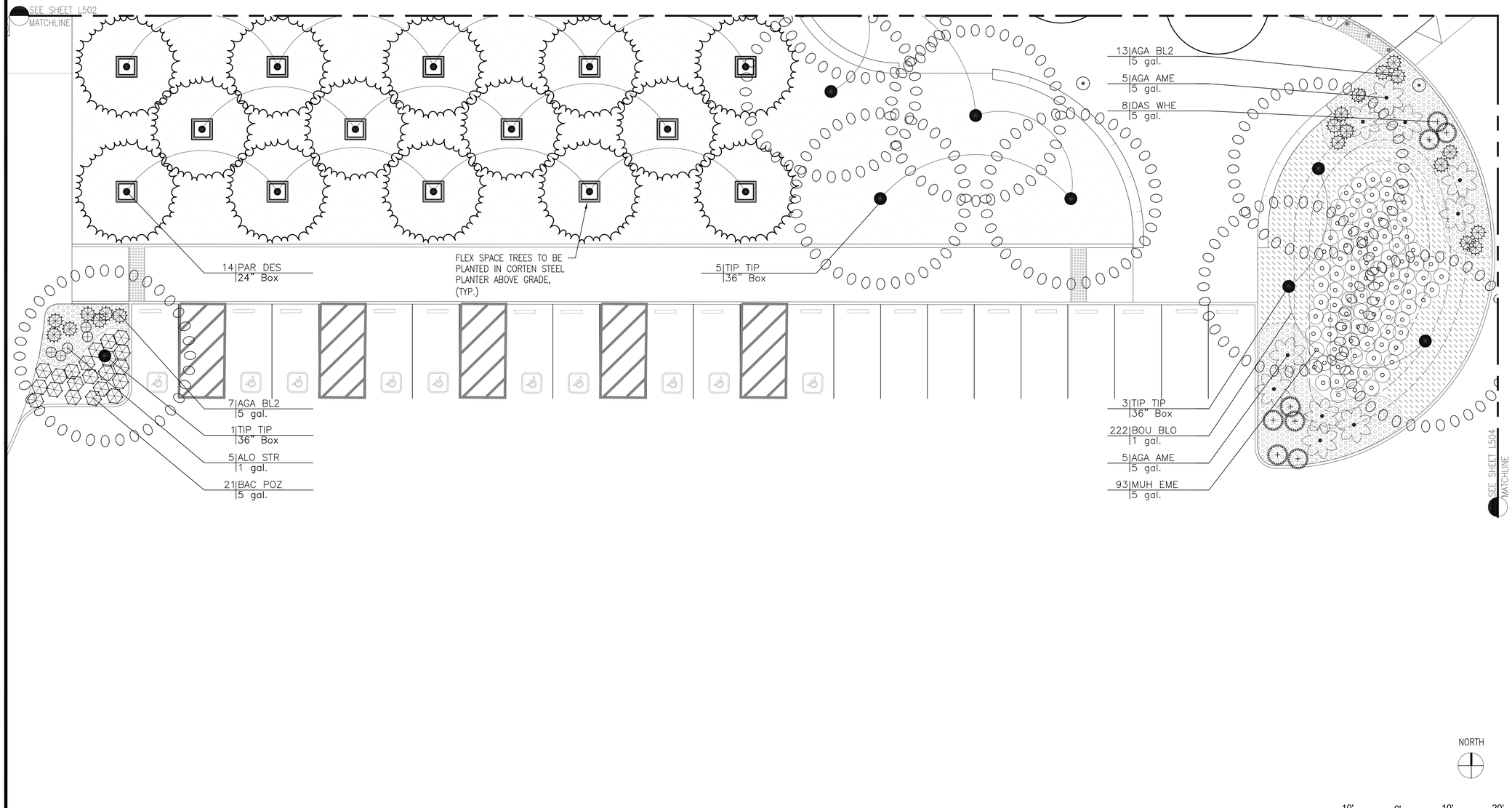
BASE FILE NAMES	XL_PLNT.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=10'-0"
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

MOBIILITY HUB PLANTING PLAN

SHEET TITLE

L502

SHEET NO.



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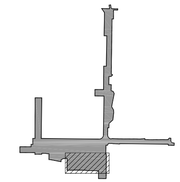

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KEY PLAN

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		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	XL_PLNT.DWG
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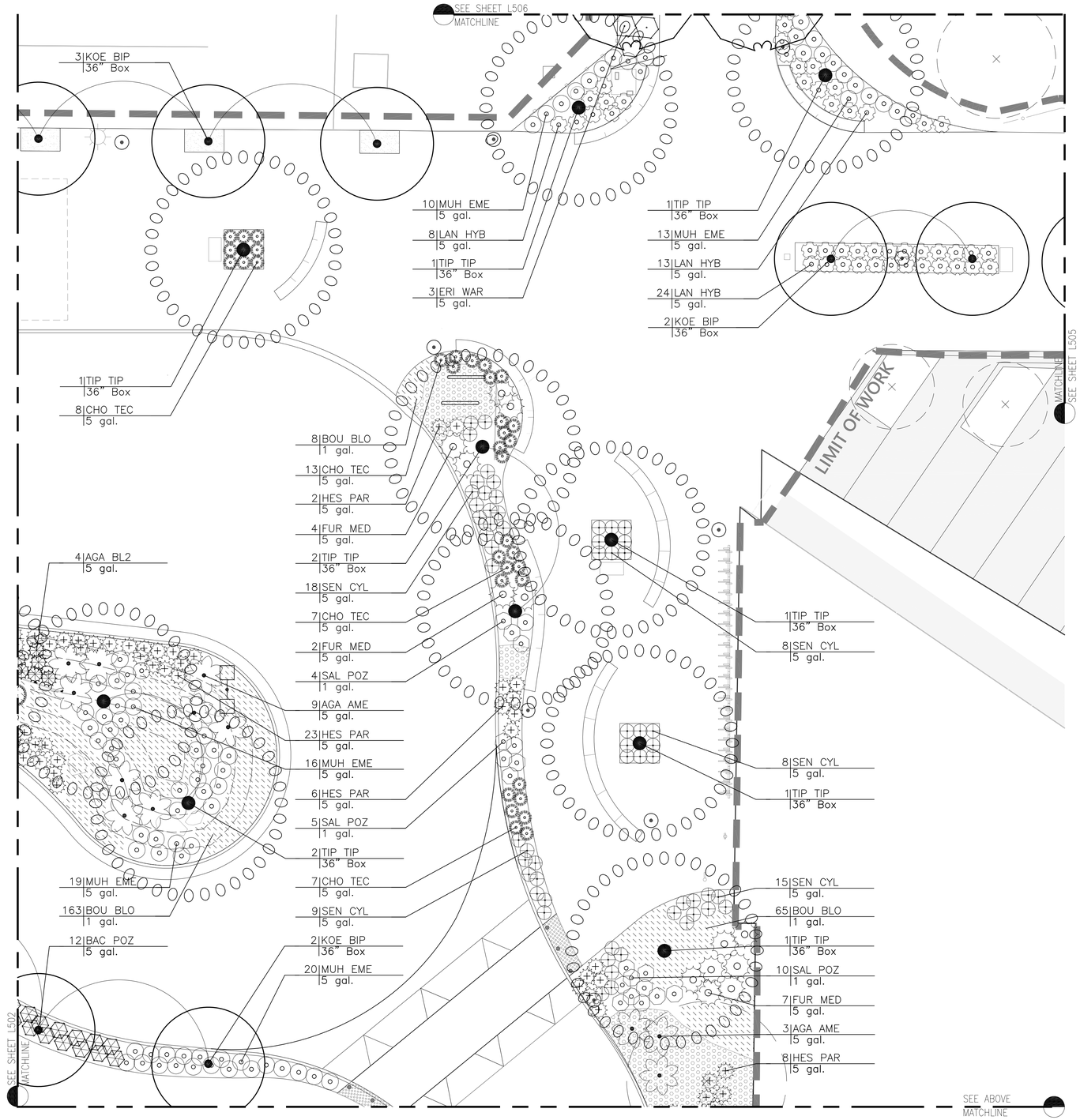
CHECKED BY	DH
SCALE	1"=10'-0"
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

FLEX SPACE PLANTING PLAN

SHEET TITLE

L503

SHEET NO.



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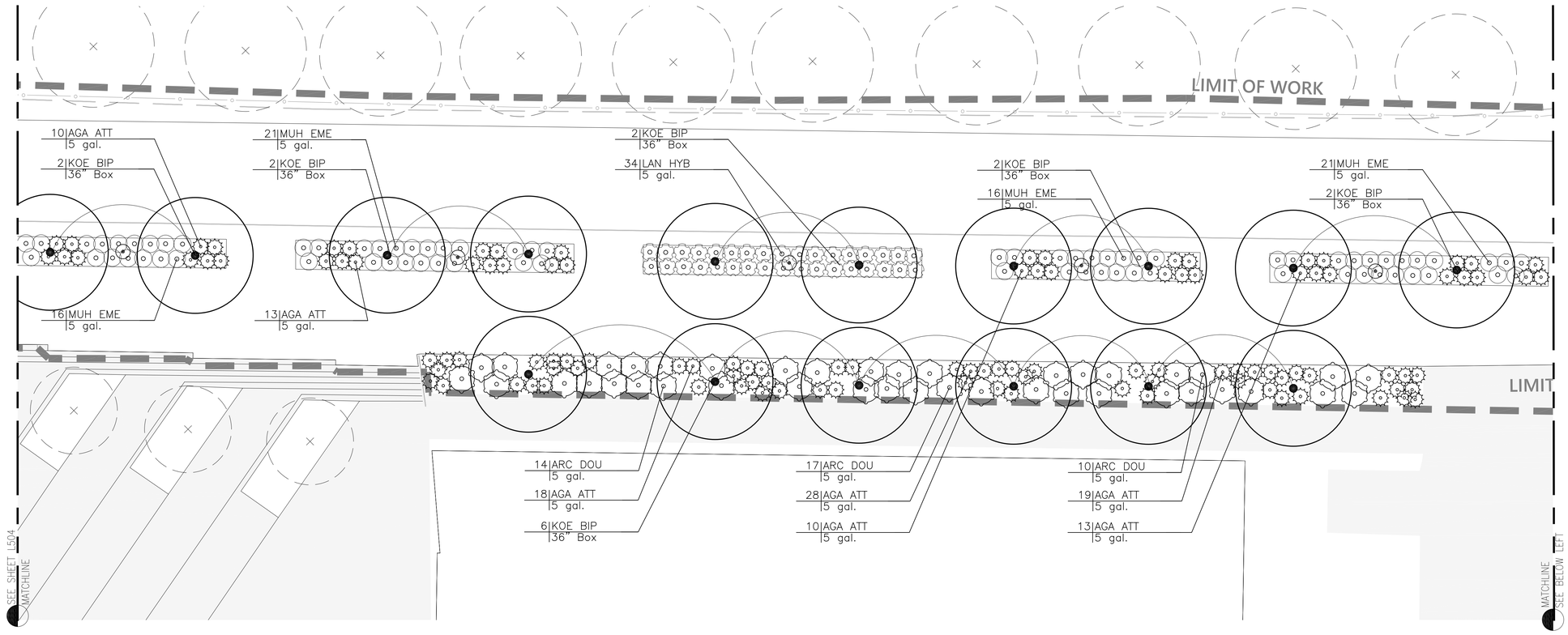
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

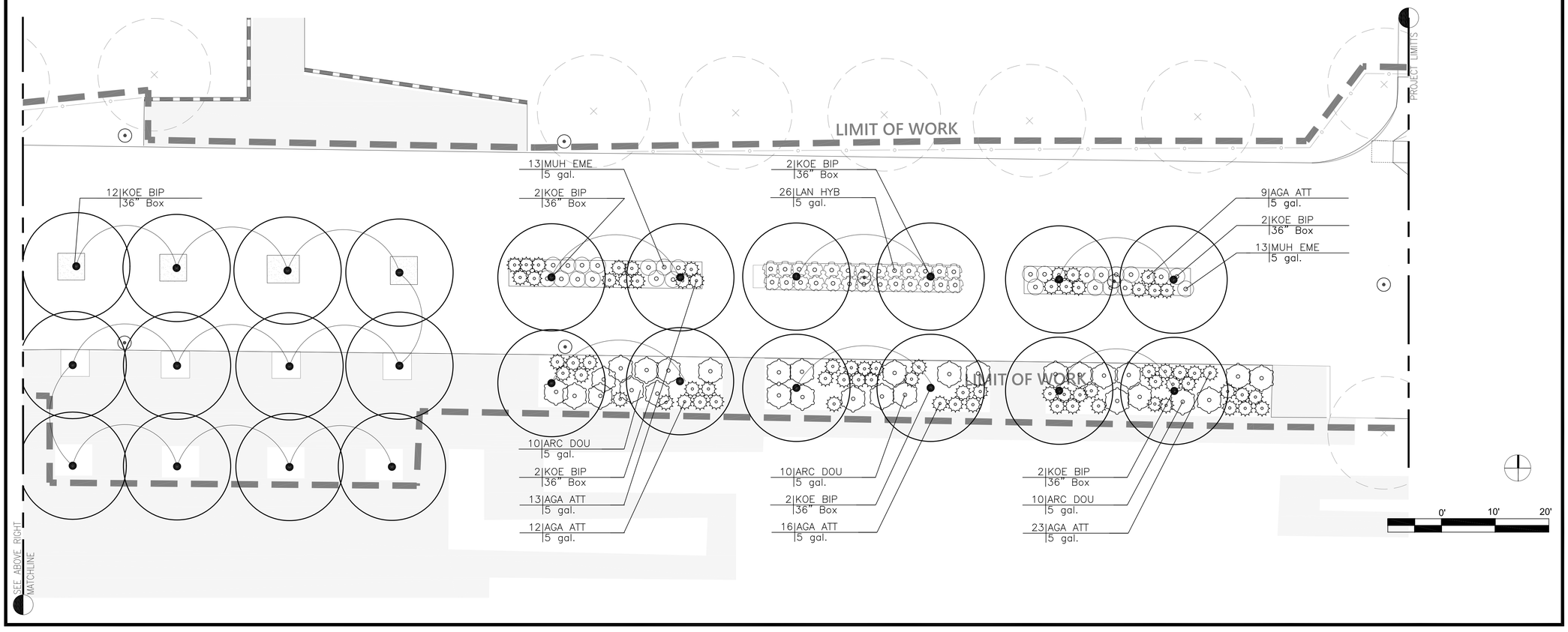
MOBILITY HUB
PLANTING
PLAN

SHEET TITLE

L504

SHEET NO.





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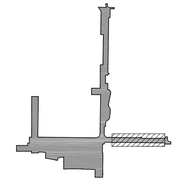

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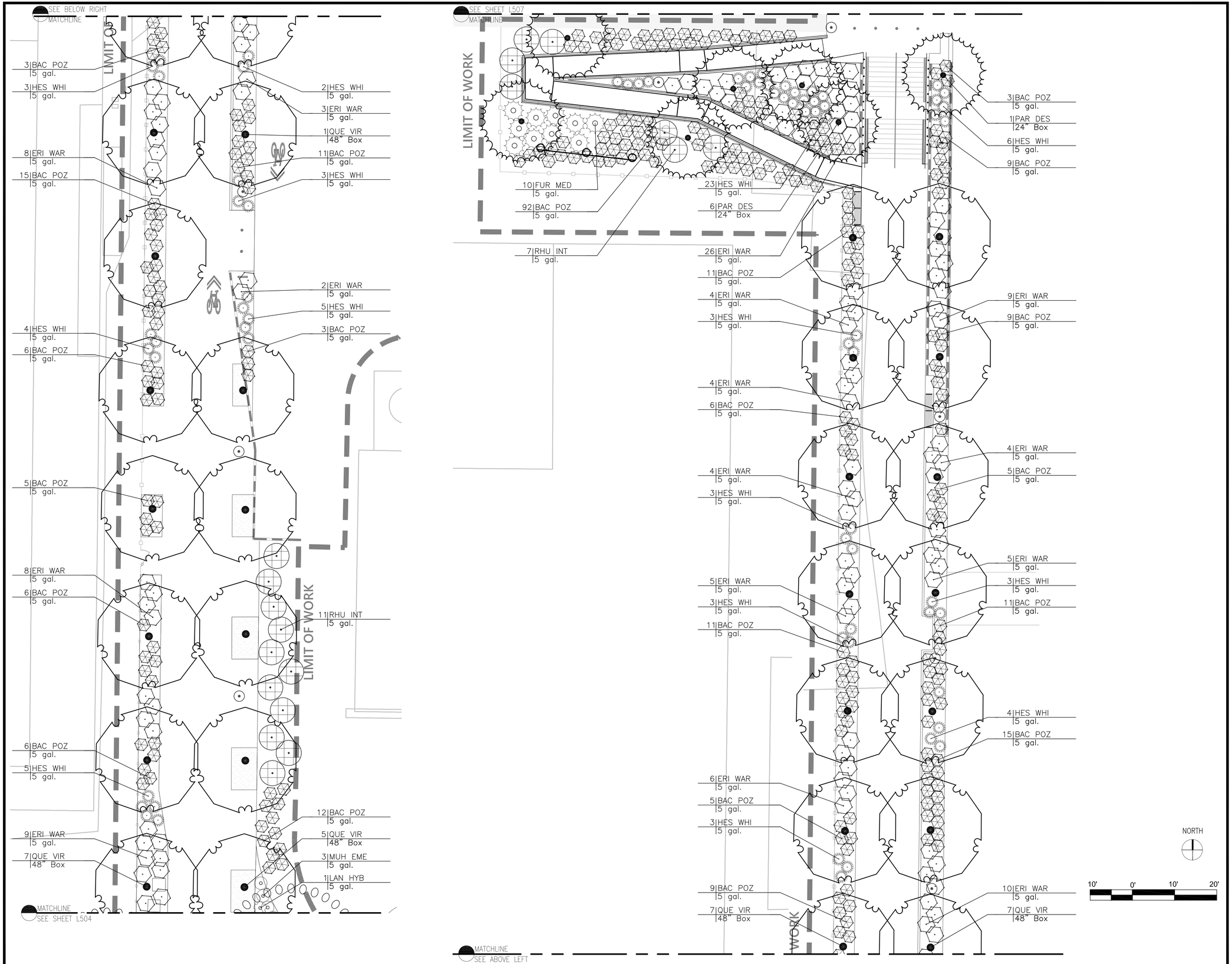
BASE FILE NAMES	XL_PLNT.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=10'-0"
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

NORTH CAMPUS
DRIVE MALL
PLANTING
PLAN

SHEET TITLE

L505

SHEET NO.



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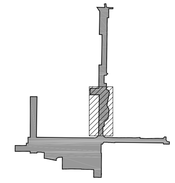

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CHECKED BY	DH
SCALE	1"=10'-0"
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

SOUTH RECREATION MALL PLANTING PLAN

SHEET TITLE

L506

SHEET NO.

SEE BELOW RIGHT
MATCHLINE

1|CIS PRO |5 gal.
4|ALO ALO |5 gal.
6|MUH EME |5 gal.
3|CIS PRO |5 gal.
4|ALO ALO |5 gal.
4|QUE VIR |48" Box
5|MUH EME |5 gal.
3|CIS PRO |5 gal.
8|MUH EME |5 gal.
4|ALO ALO |5 gal.
3|CIS PRO |5 gal.
9|AGA BL2 |5 gal.
6|ACA COG |5 gal.
3|ALO ALO |5 gal.
26|MUH EME |5 gal.
1|QUE VIR |48" Box
8|FUR MED |5 gal.

LIMIT OF WORK
LIMIT OF WORK
LIMIT OF WORK

MATCHLINE
SEE SHEET L506

SEE SHEET L508
MATCHLINE

3|TEC CAP |1 gal.
3|TEC CAP |1 gal.
3|TEC CAP |1 gal.
3|TEC CAP |1 gal.
3|TEC CAP |1 gal.
6|QUE VIR |48" Box
3|TEC CAP |1 gal.
6|RHU INT |5 gal.
4|ALO ALO |5 gal.
1|TIP TI2 |48" Box
2|CIS PRO |5 gal.

LIMIT OF WORK

MATCHLINE
SEE ABOVE LEFT

NORTH

10' 0' 10' 20'

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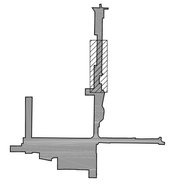

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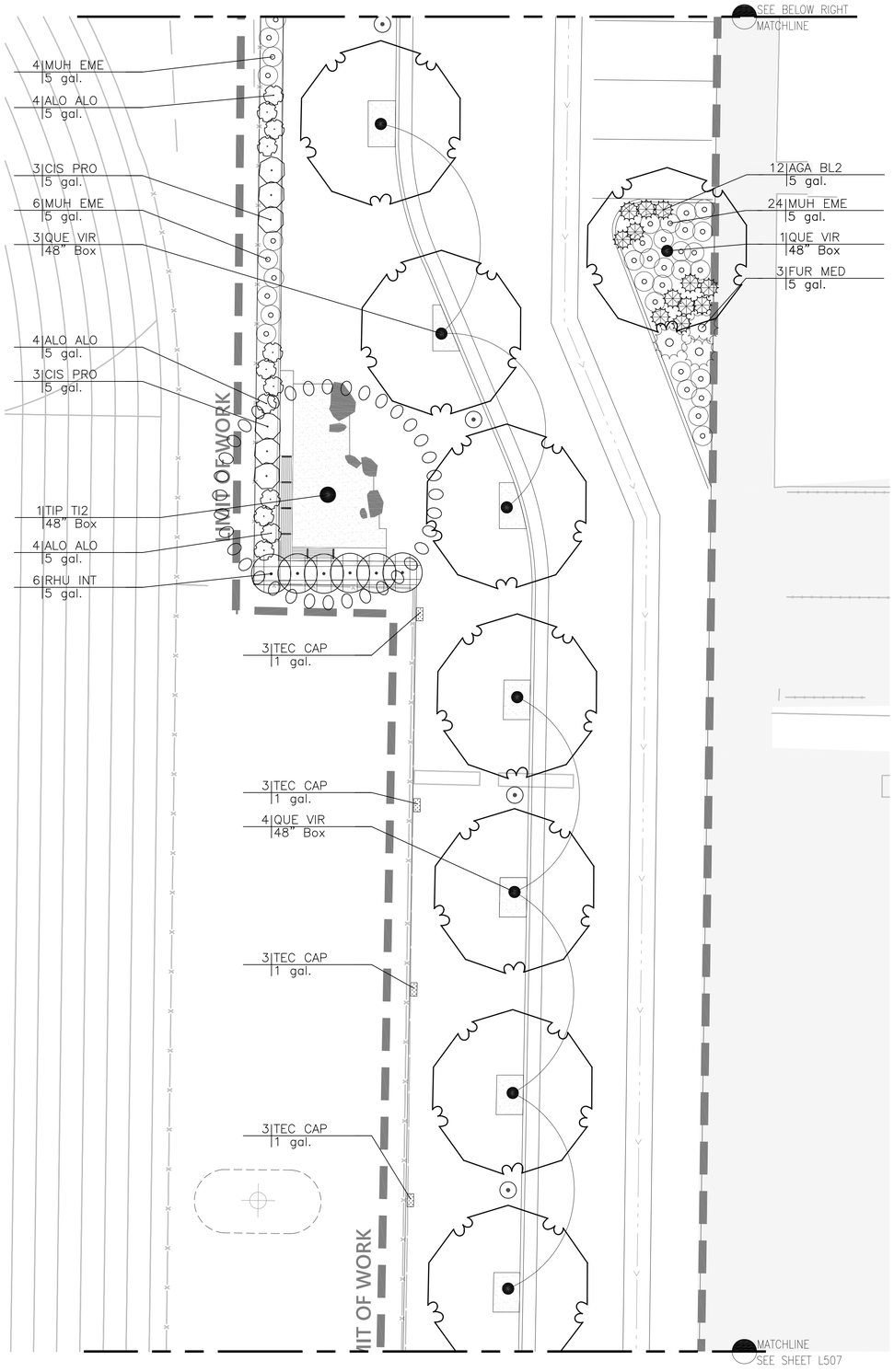
DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=10'–0"
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

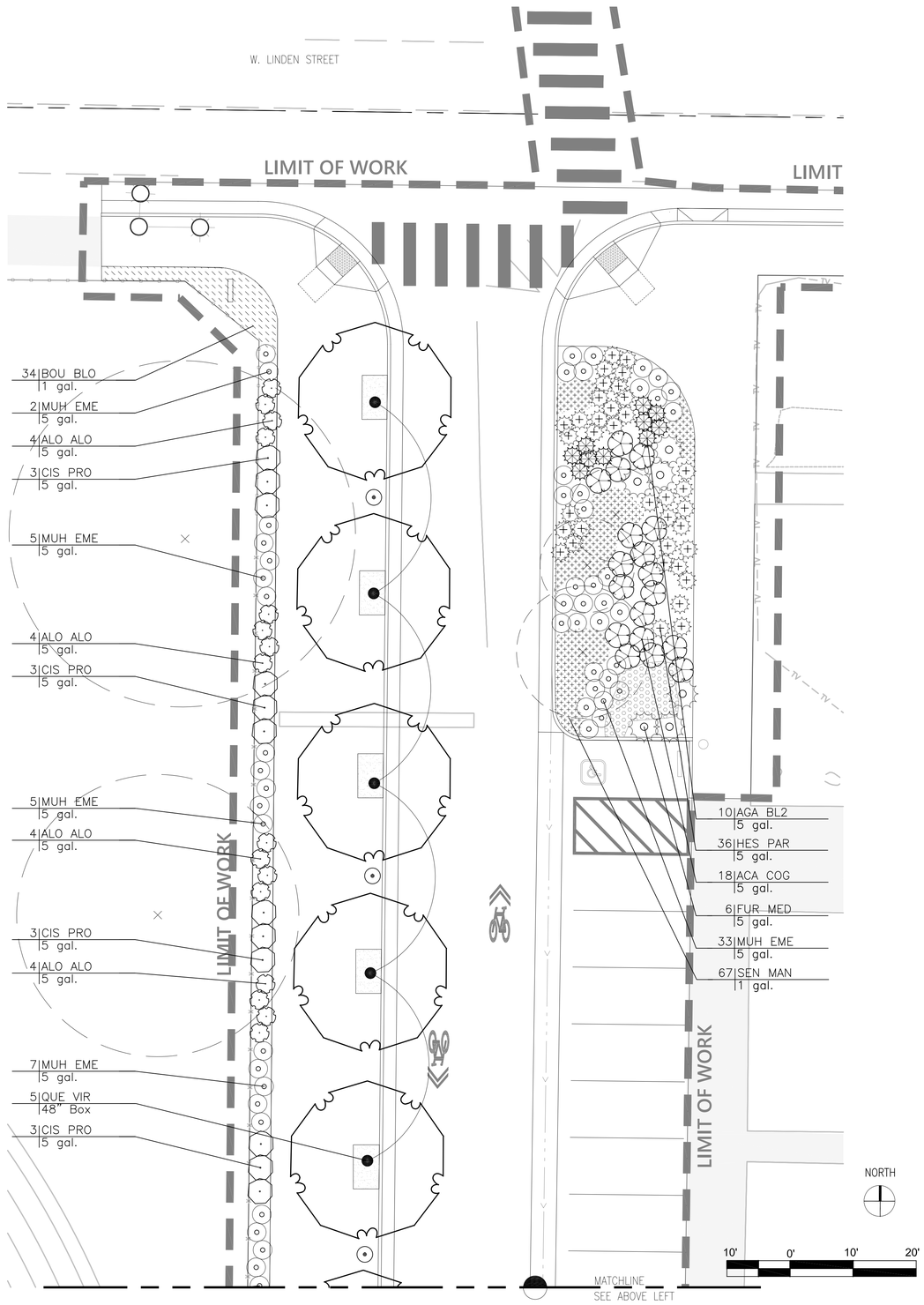
NORTH RECREATION MALL PLANTING PLAN

SHEET TITLE

L507

SHEET NO.





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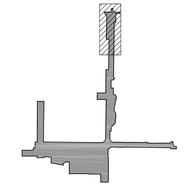

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		05/01/18 100% DD SET	

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DRAWN BY	SS
CHECKED BY	DH
SCALE	1"=10'-0"
DATE	01/10/19
PROJECT NO.	GRUEN # 8345

NORTH RECREATION MALL PLANTING PLAN

SHEET TITLE

L508

SHEET NO.

PLANT SCHEDULE UCR MOB HUB1

TREES	CODE	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
	KOE BIP	Koelreuteria bipinnata	Chinese Flame Tree	36" Box	
	PAR DES	Parkinsonia x 'Desert Museum'	Desert Museum Palo Verde	24" Box	
	QUE VIR	Quercus virginiana	Southern Live Oak	48" Box	
	TIP TIP	Tipuana tipu	Tipu Tree	36" Box	
	TIP TI2	Tipuana tipu	Tipu Tree	48" Box	
	WAS FI2	Washingtonia filifera	California Fan Palm	18' BTH	
	WAS FIL	Washingtonia filifera	California Fan Palm	20' BTH	

SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
	ACA COG	Acacia cognata 'Cousin Itt'	River Wattle	5 gal.	48" o.c.	
	AGA AME	Agave americana	Century Plant	5 gal.	84" o.c.	
	AGA ATT	Agave attenuata	Agave	5 gal.	36" o.c.	
	AGA BL2	Agave x 'Blue Flame'	Blue Flame Agave	5 gal.	36" o.c.	
	ALO STR	Aloe striata	Coral Aloe	1 gal.	24" o.c.	
	ALO BLU	Aloe x 'Blue Elf'	Aloe	1 gal.	24" o.c.	
	ALO ALO	Aloe x spinosissima	Aloe	5 gal.	36" o.c.	
	ARC DOU	Arctostaphylos x 'John Dourley'	John Dourley Manzanita	5 gal.	60" o.c.	
	BAC POZ	Baccharis pilularis consanguinea 'Pozo Surf'	Lowly Coyote Brush	5 gal.	36" o.c.	
	CHO TEC	Chondropetalum tectorum	Cape Rush	5 gal.	30" o.c.	
	CIS PRO	Cistus salviifolius 'Prostratus'	Sageleaf Rockrose	5 gal.	48" o.c.	
	DAS WHE	Dasylirion wheeleri	Grey Desert Spoon	5 gal.	48" o.c.	
	ERI WAR	Eriogonum fasciculatum 'Warriner Lytle'	Warriner Lytle Buckwheat	5 gal.	48" o.c.	
	FUR MED	Furcraea foetida 'Mediopicta'	Mauritius Hemp	5 gal.	60" o.c.	
	HES PAR	Hesperaloe parviflora	Red Yucca	5 gal.	36" o.c.	
	HES WHI	Hesperoyucca whipplei	Chaparral Yucca	5 gal.	36" o.c.	
	LAN HYB	Lantana x 'New Gold'	New Gold Lantana	5 gal.	36" o.c.	
	MUH EME	Muhlenbergia emersleyi 'El Toro'	Bullgrass	5 gal.	36" o.c.	
	RHU INT	Rhus integrifolia	Lemonade Berry	5 gal.	72" o.c.	
	SAL POZ	Salvia clevelandii 'Pozo Blue'	Cleveland Sage	1 gal.	36" o.c.	
	SEN CYL	Senecio cylindricus	Narrow-leaf Chalksticks	5 gal.	30" o.c.	

GROUND COVERS	CODE	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
	ACH MOO	Achillea millefolium	Common Yarrow	1 gal.	24" o.c.	
	BOU BLO	Bouteloua gracilis 'Blonde Ambition'	Blue Grama	1 gal.	24" o.c.	
	GRA PAR	Graptopetalum paraguayense	Ghost Plant	1 gal.	24" o.c.	
	JUN PAT	Juncus patens	California Gray Rush	1 gal.	24" o.c.	
	OSC DEL	Oscularia deltoides	Pink Iceplant	1 gal.	24" o.c.	
	SEN MAN	Senecio mandraliscae	Blue Finger	1 gal.	24" o.c.	
	TEC CAP	Tecomaria capensis 'Lutea'	Orange Cape Honeysuckle	1 gal.	12" o.c.	

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	05/01/18	100% DD SET	

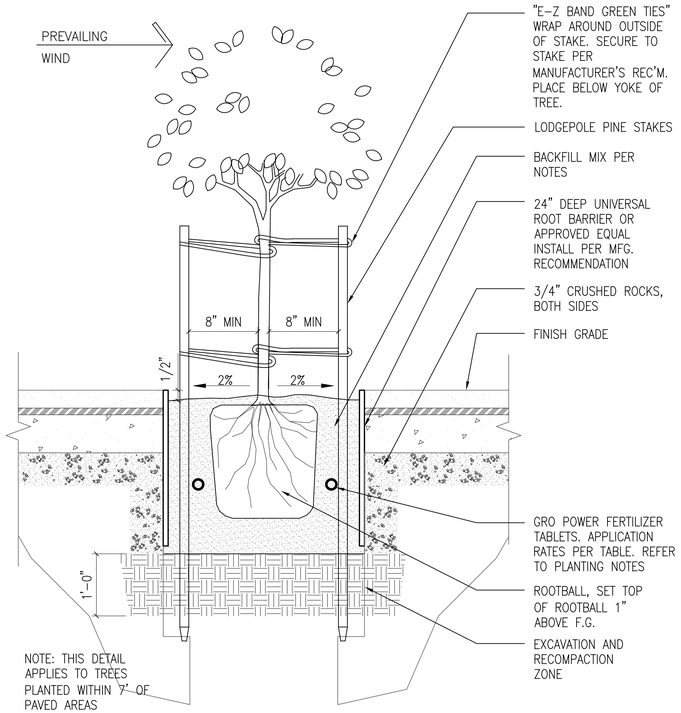
BASE FILE NAMES	PLANT SCHEDULE.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	N/A
DATE	1/10/2019
PROJECT NO.	GRUEN # 8345

PLANT
SCHEDULE

SHEET TITLE

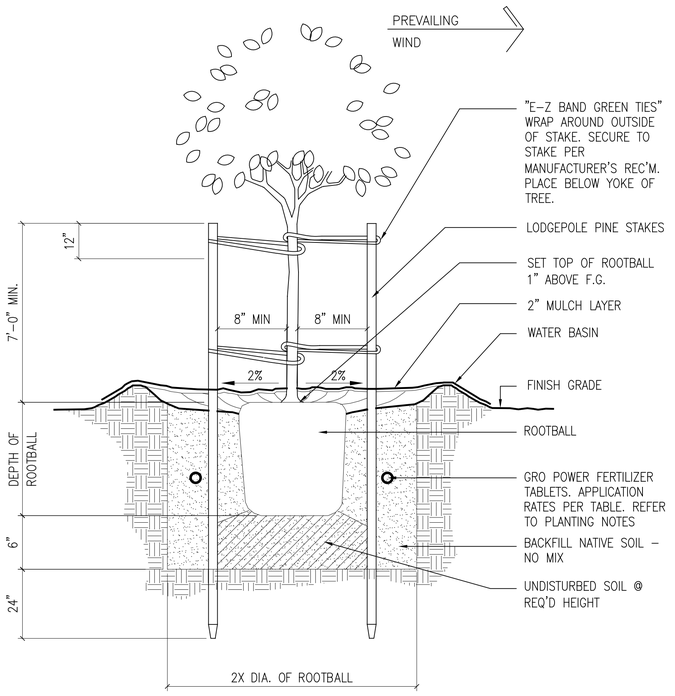
L600

SHEET NO.



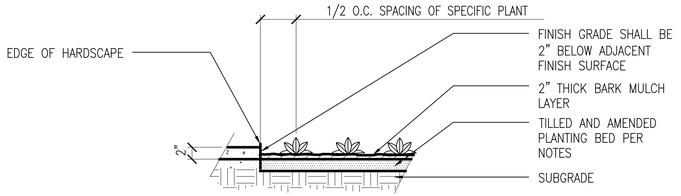
5 TREE PLANTING/STAKING AT PAVING

SCALE: 1 1/2"= 1'-0" XA-TREE WELL STAKING.dwg

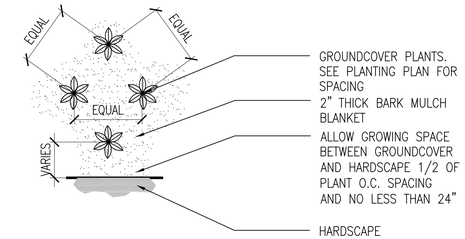


3 TREE STAKING

SCALE: 1 1/2" = 1'-0" XL-TREE STAKING.dwg

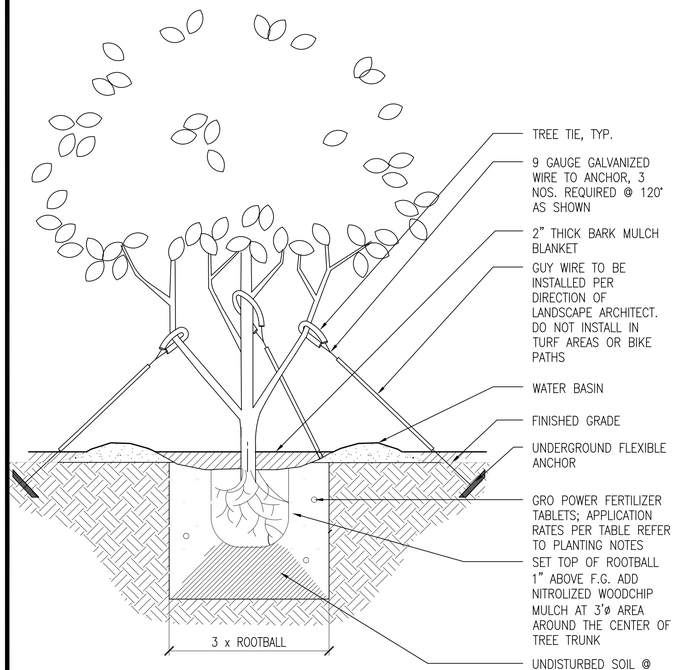


NOTE:
A. CROSS RIP AREAS TO RECEIVE SOIL AMENDMENTS TO A DEPTH OF 6". BLEND SOIL AMENDMENTS INTO NATIVE SOIL TO AVOID ANY DISTINCT SOIL PROFILE.



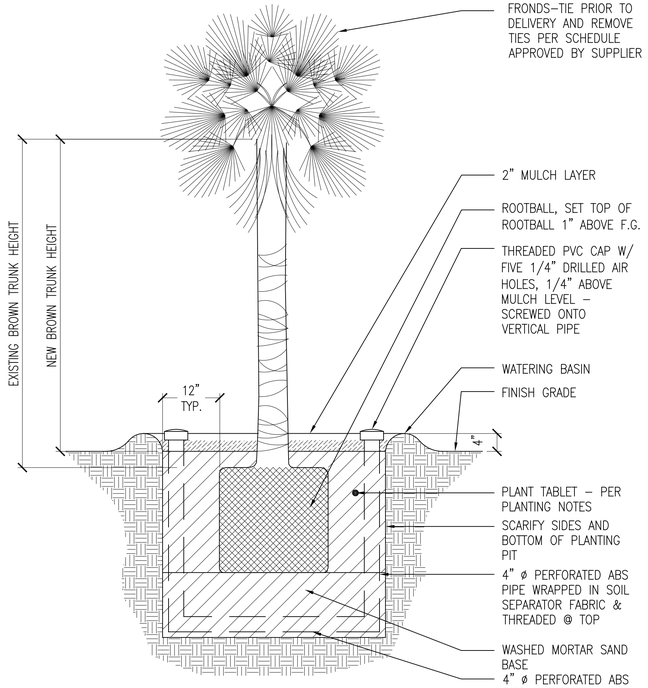
1 MASS PLANTING

SCALE: 1"=1'-0" XL-MASS PLANTING.dwg



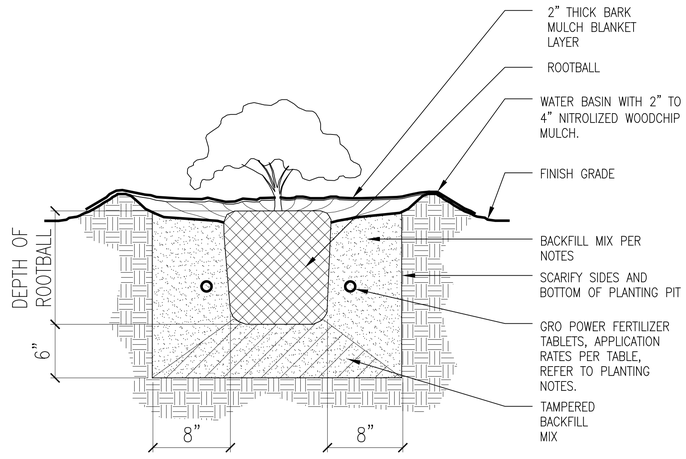
6 MULTI TRUNK TREE TIE

SCALE: 3/4"=1'-0" XL-MULTI TRUNK TREE



4 PALM TREE PLANTING

SCALE: 3/4"=1'-0" XL-MULTI TRUNK TREE



2 SHRUB PLANTING

SCALE: 1 1/2"=1'-0" XL-SHRUB PLANTING.dwg

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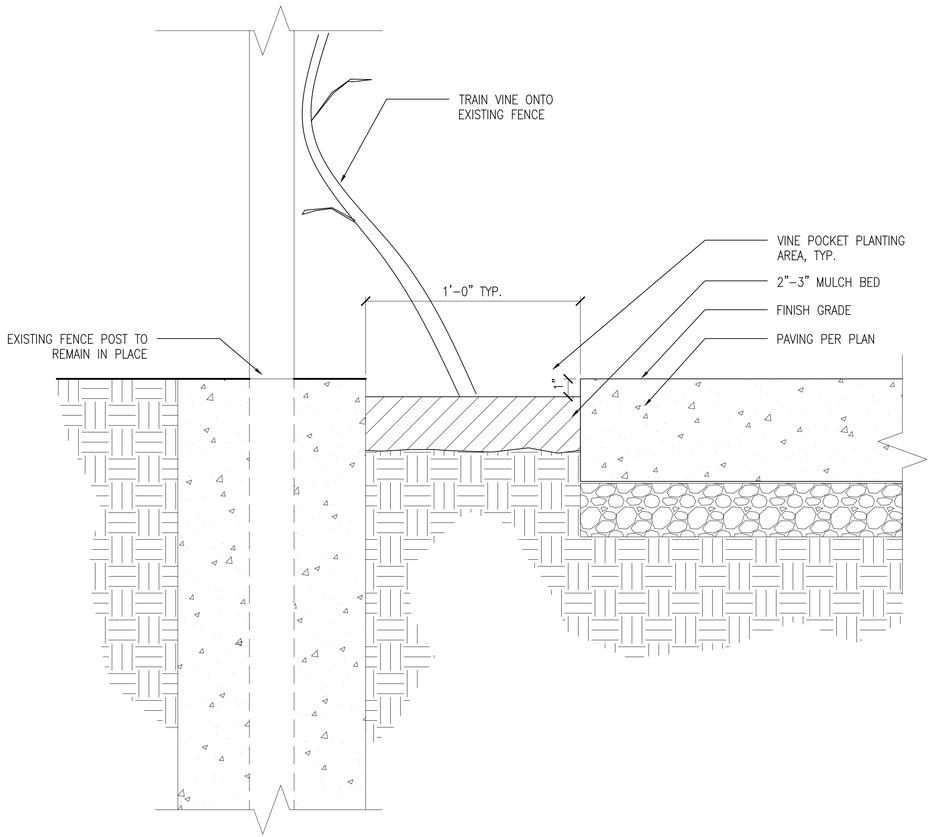
BASE FILE NAMES	XL_LANDSCAPE DETAILS.DWG
DRAWN BY	SS
CHECKED BY	DH
SCALE	N/A
DATE	1/10/2019
PROJECT NO.	GRUEN # 8345

LANDSCAPE DETAILS

SHEET TITLE

L601

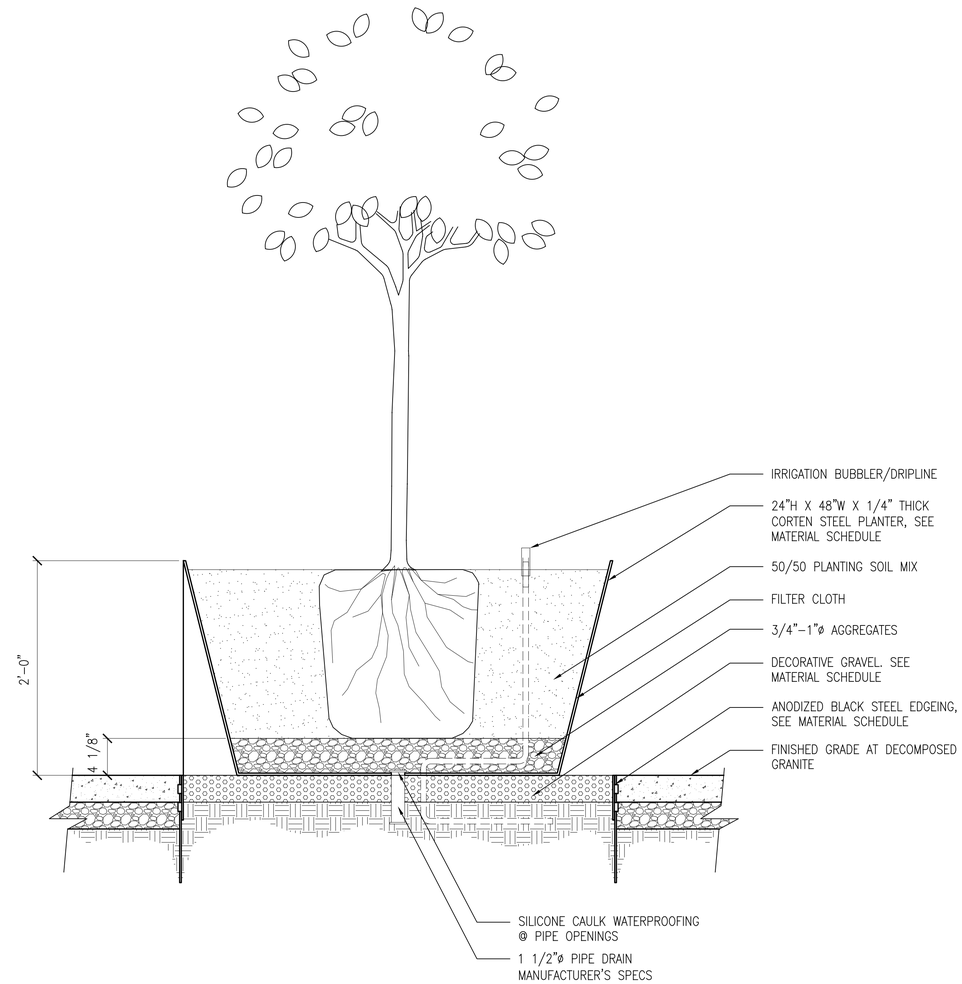
SHEET NO.



KEYNOTES:
1. VINE POCKETS ON REC MALL SIZE VARIES, SEE HARDSCAPE PLANS FOR DIMENSIONS AND LOCATIONS

3 VINE POCKET TYPICAL

SCALE: 3"= 1'–0"



1 CORTEN STEEL PLANTER

SCALE: 1–1/2"= 1'–0"

2 NOT IN USE

SCALE: 1–1/2"= 1'–0"

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DRAWN BY	SS
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DATE	1/10/2019
PROJECT NO.	GRUEN # 8345

LANDSCAPE
DETAILS

SHEET TITLE

L602

SHEET NO.

ABBREVIATIONS

4S/DP	4" SQUARE BY 2-1/8" DEEP BOX
ADA	AMERICAN WITH DISABILITIES ACT
A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
AWG	AMERICAN WIRE GAUGE
AMP, A	AMPERE
A.I.C. or AIC	AMPERES INTERRUPTING CAPACITY (SYMMETRICAL)
A.F.C. or AFC	AVAILABLE FAULT CURRENT
AF/AT	AMP FRAME, AMP TRIP
AHJ	AUTHORITY HAVING JURISDICTION
AS/AF	AMP SWITCH, AMP FUSE
ATS	AUTOMATIC TRANSFER SWITCH
AVG	AVERAGE
BJ	BONDING JUMPER
BDF	BUILDING DISTRIBUTION FRAME
BR	BRANCH
BLDG	BUILDING
CBC	CALIFORNIA BUILDING CODE
CEC	CALIFORNIA ELECTRICAL CODE
CIRC., CKT.	CIRCUIT
CB	CIRCUIT BREAKER
CSFD	COMBINATION SMOKE FIRE DAMPER
C	CONDUIT
C.O.	CONDUIT ONLY, COMPLETE WITH PULLSTRING
CONN	CONNECTED
CPT	CONTROL POWER TRANSFORMER
CLCB	CURRENT LIMITING CIRCUIT BREAKER
CLF	CURRENT LIMITING FUSE
CT	CURRENT TRANSFORMER
(D)	EXISTING DEVICE TO BE DEMOLISHED
DAS	DISTRIBUTED ANTENNA SYSTEM
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
D.P.C.S.	DIMMING PANEL CONTROL STATION
E.C.	ELECTRICAL CONTRACTOR
EMS	ENERGY MANAGEMENT CONTROL SYSTEM
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NON-METALLIC TUBING
EWC	ELECTRIC WATER COOLER
E.P.O.	EMERGENCY POWER OFF
E-O-L	END-OF-LINE CIRCUIT TERMINATOR
EF	EXHAUST FAN
EGC or EG or E/G	EQUIPMENT GROUND (GREEN)
(E)	EXISTING DEVICE TO REMAIN
EP	EXPLOSION PROOF
(ER)	EXISTING DEVICE TO BE RELOCATED
FT or '	FEET
FA or F.A.	FIRE ALARM
FLA	FULL LOAD AMPS
GRD	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GE or GEC	GROUNDING ELECTRODE CONDUCTOR
HACR	HEATING AIR CONDITIONING REFRIGERATION
HOA	HAND-OFF-AUTO
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
H.,W.,D.,L.	HEIGHT, WIDTH, DEPTH, LENGTH
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
IN. or "	INCHES
I/G	ISOLATED GROUND
IBC	INTERNATIONAL BUILDING CODE
I.D.C.S.	INTEGRATED DIMMING CONTROL PANEL
IDF	INTERMEDIATE DISTRIBUTION FRAME
JBOX	JUNCTION BOX
K	DEGREE KELVIN
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERES
KW	KILOWATT
KWH	KILOWATT HOUR
LCL	LONG CONTINUOUS LOAD
LF, L.F.	LINEAR FEET
LTG, LTS	LIGHTING
LPS	LOW PRESSURE SODIUM
MAX.	MAXIMUM
MBJ	MAIN BONDING JUMPER
MDF	MAIN DISTRIBUTION FRAME
MOCP	MAXIMUM OVERCURRENT PROTECTION
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
M.C.	MECHANICAL CONTRACTOR
M	METER
M/M	METER MAIN
MV	MERCURY VAPOR
MH	METAL HALIDE
MIN.	MINIMUM
MCA	MINIMUM CIRCUIT AMPS
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILS
MCP	MOTOR CIRCUIT PROTECTOR
MFR.	MANUFACTURER
MTD	MOUNTED
MW	MICROWAVE
NATS	NON AUTOMATIC DISCONNECT
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NC	NORMALLY CLOSED
NO	NORMALLY OPENED
NF	NON-FUSED
NIC	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NL	NIGHT LIGHT
NO. or #	NUMBER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
%Z	PERCENT IMPEDANCE
PH. or ø	PHASE
PC	PHOTOCELL
P.C.	PLUMBING CONTRACTOR
P	POLE
PVC	POLY VINYL CHLORIDE
PDU	POWER DISTRIBUTION UNIT
PRIMARY	OVER 600 VOLTS
PROVIDE	FURNISH, INSTALL AND CONNECT
PT	POTENTIAL TRANSFORMER
PA	PUBLIC ADDRESS
(R)	DENOTES RELOCATED DEVICE LOCATION.
REC, RECEPT	RECEPTACLE
REF	REFRIGERATOR
RGS	RIGID GALVANIZED STEEL
RMS	ROOT MEAN SQUARE
SCC	SHORT CIRCUIT CURRENT
SCCR	SHORT CIRCUIT CURRENT RATING
SCS	STRUCTURED CABLING SYSTEM
SFD	SMOKE FIRE DAMPER
SECONDARY	600 VOLTS AND LESS
SMACNA	SHEET METAL AND AIR COND. CONTRACTOR'S NAT'L ASSOC.
SQ.	SQUARE
SSBJ	SUPPLY SIDE BONDING JUMPER
SBJ	SYSTEM BONDING JUMPER
TC	TIMECLOCK
TEL/DATA	TELEPHONE AND DATA
TV	TELEVISION
T.V.S.S.	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
U.G.P.S.	UNDERGROUND PULL SECTION
U.O.N.	UNLESS OTHERWISE NOTED
U.P.S. or UPS	UNINTERRUPTABLE POWER SYSTEM
VAV	VARIABLE AIR VOLUME
V	VOLTS
VA	VOLT AMPERES
VD	VOLTAGE DROP
WP	WEATHERPROOF
W	WIRE
XFMR	TRANSFORMER

SIGNAL SYSTEM SYMBOLS

B	WALL MOUNTED CLOCK. FIELD VERIFY MOUNTING HEIGHT PRIOR TO INSTALLATION. "B" INDICATES BATTERY OPERATED CLOCK. "D" INDICATES DIGITAL CLOCK, "NO LETTER" INDICATES ANALOG CLOCK. REFER TO SPECIFICATIONS.
—C—	CONCEALED CLOCK CONDUIT RUN 1/2" CONDUIT, OR AS NOTED, WITH CONDUCTORS PER SPECIFICATIONS.
TV	TV OUTLET, WALL MOUNTED. STUB A 3/4" C.O. UP 6" ABOVE THE ACCESSIBLE CEILING AND PROVIDE BUSHING.
TV	TV OUTLET FLUSH CEILING MOUNTED.
—TV—	CONCEALED TELEVISION CONDUIT RUN, 3/4" CONDUIT, OR AS NOTED, WITH CONDUCTORS - REFER TO SPECIFICATIONS.
M	MICROPHONE OUTLET, WALL MOUNTED. PROVIDE 3/4" C.O. (WITH PULL ROPE) UP TO 6" ABOVE ACCESSIBLE CEILING SPACE. PROVIDE BUSHING AT EACH END.
M	MICROPHONE OUTLET, FLUSH CEILING MOUNTED.
—M—	CONCEALED MICROPHONE CONDUIT RUN, 3/4" CONDUIT, OR AS NOTED, WITH CONDUCTORS - REFER TO SPECIFICATIONS.
S V	SURFACE WALL MOUNTED SPEAKER, "V" INDICATES VOLUME CONTROL.
S V	SURFACE MOUNTED SPEAKER , "V" INDICATES VOLUME CONTROL.
S V	FLUSH WALL MOUNTED SPEAKER , "V" INDICATES VOLUME CONTROL.
S V	CEILING FLUSH MOUNTED SPEAKER , "V" INDICATES VOLUME CONTROL.
SM V	ABOVE CEILING MOUNTED SPEAKER , "V" INDICATES VOLUME CONTROL.
V	VOLUME CONTROL, WALL MOUNTED.
—S—	CONCEALED SPEAKER CONDUIT RUN 3/4" CONDUIT, OR AS NOTED, WITH CONDUCTORS - REFER TO SPECIFICATIONS.

PROJECT SPECIFIC SYMBOLS

REQUIRED SPECIFICATION DEVIATIONS

THE FOLLOWING ITEM(S) ARE REQUIRED DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS AND SHOULD BE INCLUDED AS PART OF THE BASE BID. THESE DEVIATIONS ARE AT THE DIRECTION OF THE OWNER:

NONE

ALLOWED SPECIFICATION DEVIATIONS

THE FOLLOWING ITEM(S) ARE ALLOWED DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS. THESE DEVIATIONS ARE AT THE DIRECTION OF THE OWNER:

NONE

DEDUCTIVE/ADDITIVE ALTERNATE PRICING

IN ADDITION TO ANY DEDUCTIVE OR ADDITIVE LINE ITEM PRICING CALLED FOR ON THE DRAWING OR IN THE SPECIFICATIONS, CONTRACTOR SHALL PROVIDE SEPARATE LINE ITEM DEDUCTIVE/ADDITIVE ALTERNATE PRICING FOR EACH OF THE FOLLOWING ITEM(S):

NONE

ANNOTATIONS

A	PANEL CALLOUT, "A" INDICATES PANELBOARD OR EQUIPMENT DESIGNATION.
AC 2	MECHANICAL EQUIPMENT CALLOUT, "AC" INDICATES UNIT TYPE AND "2" INDICATES UNIT NUMBER. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND ELECTRICAL REQUIREMENTS.
3 E-1	DETAIL CALLOUT, "3" INDICATES DETAIL NUMBER "E-1" INDICATES SHEET NUMBER.
2	PLAN NOTE REFERENCE, REFER TO NOTES ON SHEET, OR AS DIRECTED.
4	REVISION REFERENCE.
Y	WYE CONFIGURATION
△	DELTA CONFIGURATION
⏚	GROUND

CCTV SYSTEM SYMBOLS

CCVMS	VIDEO MANAGEMENT SYSTEM - CCTV HEADEND - SEE SPECIFICATIONS.
CCWS	CCTV WORKSTATION AND MONITOR - SEE SPECIFICATIONS.
⊠	CCTV FIXED POSITION CAMERA - SEE SPECIFICATIONS.
⊠	CCTV PAN/TILT CAMERA - SEE SPECIFICATIONS.
—CC—	CCTV SYSTEM BRANCH CIRCUIT PER CCTV SYSTEM RISER DIAGRAM AND/OR SPECIFICATIONS.

TELEPHONE/DATA SYMBOLS

◀	TELEPHONE OUTLET BOX, WALL MOUNTED. STUB A 1" C.O. UP 6" ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING. "W" = WALL MOUNTED PHONE "P" = PUBLIC (PAY) PHONE. VERIFY ALL REQUIREMENTS WITH THE TELEPHONE UTILITY COMPANY. PROVIDE 1" C.O. (MIN) TO THE MAIN TELEPHONE BACKBOARD. MOUNTING HEIGHT AS REQUIRED.
◁	DATA OUTLET BOX, WALL MOUNTED. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
◀	COMBINATION TELEPHONE AND DATA OUTLET BOX, WALL MOUNTED. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
◀	TELEPHONE OUTLET BOX, FLUSH MOUNTED IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
◁	DATA OUTLET BOX FLUSH MOUNTED IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
◁	COMBINATION TELEPHONE AND DATA OUTLET BOX FLUSH MOUNTED IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
◀	TELEPHONE OUTLET BOX, WALL MOUNTED 6-INCHES ABOVE COUNTER OR SPLASH. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
◁	DATA OUTLET BOX, WALL MOUNTED 6-INCHES ABOVE COUNTER OR SPLASH. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
◀	COMBINATION TELEPHONE AND DATA OUTLET BOX, WALL MOUNTED 6-INCHES ABOVE COUNTER OR SPLASH. STUB A 1" C.O. UP 6-INCHES ABOVE THE ACCESSIBLE CEILING AND PROVIDE A BUSHING. 4S/DP MINIMUM WITH SINGLE GANG RING.
▽	COMBINATION TELEPHONE AND DATA OUTLET BOX MOUNTED IN ACCESSIBLE CEILING SPACE OR IN FLOOR BOX PER PLAN FOR FLEXIBLE CONNECTION TO FURNITURE SYSTEM. VERIFY CONNECTION REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH-IN - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
◀	COMBINATION TELEPHONE AND DATA OUTLET, WALL MOUNTED AT +18-INCHES A.F.F. FOR FLEXIBLE CONNECTION TO FURNITURE SYSTEM. PROVIDE THE FOLLOWING: - IN A NON-RATED INSULATED WALL, OR NON-RATED UNINSULATED WALL, PROVIDE A 2-GANG MUD RING OR CADDY #RBS SERIES BOX MOUNTING BRACKET (EQUAL BY B-LINE OR RAYCO) WITH (2) 1-1/2"C.O. WITH PULL STRING TO ACCESSIBLE CEILING. PROVIDE 1-1/2" BUSHINGS AT CONDUIT ENDS. REFER TO ARCHITECTURAL PLANS FOR WALL CONSTRUCTION/TYPE AND CEILING CONDITIONS. - IN A RATED WALL, PROVIDE (1) 4S/DP BOX WITH (2) 1-1/4" C.O. AND (1) 4S/DP BOX WITH (1) 1-1/4" C.O. WITH PULL STRINGS IN EACH CONDUIT TO ACCESSIBLE CEILING. PROVIDE 1-1/4" BUSHINGS AT CONDUIT ENDS. UTILIZE CADDY #RBS SERIES BOX MOUNTING BRACKET TO MAINTAIN BOX ALIGNMENT (EQUAL BY B-LINE OR RAYCO). UTILIZE FIRESTOPPING SYSTEM PADS RATED FOR USE ON THE INSIDE OR OUTSIDE OF THE BOX (STI OR EQUAL) AS REQUIRED TO MAINTAIN RATING OF WALL OR MEMBRANE. REFER TO ARCHITECTURAL PLANS FOR WALL CONSTRUCTION/TYPE AND CEILING CONDITIONS.
—T1—	CONCEALED TELEPHONE/DATA CONDUIT RUN, 1-INCH CONDUIT ONLY (MIN). SEE TABLE FOR CONDUIT SIZE VARIATIONS. T2 = 1-1/4" C.O. T3 = 1-1/2" C.O. T4 = 2" C.O.
▬	FLUSH MOUNTED, LOCKABLE TERMINAL CABINET WITH TERMINAL STRIPS AS REQUIRED.
▬	SURFACE MOUNTED, LOCKABLE TERMINAL CABINET WITH TERMINAL STRIPS AS REQUIRED.
▨	TELEPHONE TERMINAL BACKBOARD SIZED AS NOTED, REFER TO SYSTEM GROUND DETAIL.

LIGHTING SYMBOLS

SITE LIGHTING FIXTURE SYMBOLS DEPICTED WITH CAPITAL LETTER(S) ADJACENT TO RESPECTIVE SYMBOL(S) INDICATE(S) LIGHT FIXTURE MOUNTING BASE DETAIL(S). SEE LIGHTING FIXTURE SCHEDULE FOR FIXTURE SYMBOL INFORMATION.

1a	LIGHTING FIXTURE CALL OUT, NUMBER(S) AND/OR UPPER CASE LETTER(S) (i.e. "1") INDICATES FIXTURE TYPE (REFER TO LIGHTING FIXTURE SCHEDULE). LOWER CASE LETTER (i.e. "a") ADJACENT TO FIXTURE TYPE INDICATES BALLAST OPTION (SEE GENERAL LIGHTING FIXTURE SCHEDULE NOTES).
J	INDICATES FINAL CONNECTION TO A LIGHTING FIXTURE, NUMBER OF CONDUCTORS AS REQUIRED.

LIGHTING CONTROL SYMBOLS

SEE THE DISTRIBUTED LIGHTING CONTROL SPECIFICATIONS FOR MORE INFORMATION.

—·—·—·—	LOW-VOLTAGE WIRING BETWEEN OCCUPANCY SENSORS, VACANCY SENSORS, DAY-LIGHTING CONTROLS, LOW-VOLTAGE SWITCHES, AND SWITCHPACKS. CONDUCTOR TYPE AND QUANTITY PER MANUFACTURER'S RECOMMENDATIONS AND WIRING DIAGRAMS.
D	WALL MOUNTED DIMMER. SEE SINGE POLE SWITCH SYMBOL FOR RELATED SUBSCRIPTS. QUANTITY OF ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF DIMMERS REQUIRED. PROVIDE DIMMER TYPE TO MATCH INDICATED BALLAST TYPE AND CONTROL REQUIREMENTS.
X_{y} $X_{(y)}$ $X_{(y,z)}$	WALL MOUNTED STAND ALONE OCCUPANCY SENSOR. QUANTITY OF ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF RELAYS CIRCUITS REQUIRED - SEE CONTROL CONFIGURATIONS BELOW FOR MORE INFORMATION. EXACT CONTROL FUNCTION IS DETERMINED BY THE BALLAST/FIXTURE TYPE.
$\odot^{H}_{y,(y)}$ $I^{H}_{y,(y)}$ $N^{H}_{y,(y)}$	WALL MOUNTED NON-NETWORKED/INTERCONNECTED/NETWORKED, SYSTEM-BASED OCCUPANCY SENSOR. QUANTITY OF ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF RELAYS/DIMMING CIRCUITS REQUIRED - SEE CONTROL CONFIGURATIONS BELOW FOR MORE INFORMATION. EXACT CONTROL FUNCTION IS DETERMINED BY THE BALLAST/FIXTURE TYPE. ADJACENT UPPER CASE LETTER ("H") INDICATES CONNECTION TO HVAC SYSTEM CONTROLS.
$\odot^{H,DM,AV,P}_{y,(y)}$ $\odot^{H,DM,AV,P}_{y,(y)}$ $I^{H,DM,AV,P}_{y,(y)}$ $I^{H,DM,AV,P}_{y,(y)}$ $N^{H,DM,AV,P}_{y,(y)}$ $N^{H,DM,AV,P}_{y,(y)}$	1-WAY/2-WAY DIRECTIONAL CEILING MOUNTED, NON-NETWORKED/INTERCONNECTED/NETWORKED, SYSTEM-BASED OCCUPANCY SENSOR. QUANTITY OF ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF RELAYS/DIMMING CIRCUITS REQUIRED - SEE CONTROL CONFIGURATIONS BELOW FOR MORE INFORMATION. EXACT CONTROL FUNCTION IS DETERMINED BY THE BALLAST/FIXTURE TYPE. ADJACENT UPPER CASE LETTER ("H") INDICATES CONNECTION TO HVAC SYSTEM CONTROLS VIA CONTROLLED DRY-CONTACT CLOSURE. ADJACENT UPPER CASE LETTERS ("DM") INDICATES DUAL MODE CONTROL AT CORRIDORS, STAIRWELLS AND WAREHOUSE AISLEWAYS. ADJACENT UPPER CASE LETTERS ("AV") INDICATES CONNECTION TO A/V CONTROL SYSTEM. ADJACENT UPPER CASE LETTER ("P") INDICATES CONNECTION TO MOVEABLE PARTITION INTERFACE, SENSOR AND STATUS INDICATOR.
L_{Ky} L_{Vy} L_{y} L_{DM}	LOW VOLTAGE MOMENTARY SWITCHES, WALL MOUNTED, FOR MANUAL "ON/OFF SWITCHING" AND "DIMMING" (STEPPED/CONTINUOUS) CONTROL OF LIGHTING WHICH IS CONTROLLED BY CEILING MOUNTED OCCUPANCY SENSORS. ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF SWITCHLEGS TO BE CONTROLLED. EXACT CONTROL FUNCTION IS DETERMINED BY THE BALLAST/FIXTURE TYPE. UPPER CASE SUBSCRIPT "K" INDICATES LOCKING SWITCH FOR THE SUBSEQUENT LOWER CASE LETTER. UPPER CASE SUBSCRIPT "V" INDICATES VANDAL RESISTANT SWITCH. UPPER CASE SUBSCRIPT "DM" INDICATES DUAL MODE CONTROL SWITCH.
$S^{(50)}_{y+}$	AUTOMATIC SWITCHING/STEP-DIMMING DAYLIGHTING CONTROLLER USED TO SWITCH OFF LIGHTS WHEN SUFFICIENT NATURAL LIGHT IS PRESENT. NUMBER IN PARENTHESIS INDICATES THE AVERAGE WORKPLANE "TARGET ILLUMINATION" SYMBOL VALUE. ADJACENT LOWER CASE LETTER(S) INDICATES SWITCH LEG(S) CONTROLLED. ADJACENT "+" INDICATES PORTION OF SWITCHLEG CONTROLLED BY SENSOR.
$D^{(50)}_{y+}$	AUTOMATIC CONTINUOUS DIMMING DAYLIGHTING CONTROLLER USED TO DIM LIGHTS WHEN SUFFICIENT NATURAL LIGHT IS PRESENT. NUMBER IN PARENTHESIS INDICATES THE AVERAGE WORKPLANE "TARGET ILLUMINATION" SYMBOL VALUE. ADJACENT LOWER CASE LETTER(S) INDICATES SWITCH LEG(S) CONTROLLED. ADJACENT "+, ++ AND *" INDICATES PORTION OF SWITCHLEG CONTROLLED BY SENSOR WHERE "+" INDICATES PRIMARY SIDELIT DAYLIT ZONE, "++" INDICATES SECONDARY SIDELIT DAYLIT ZONE, AND "*" INDICATES SKYLIT DAYLIT ZONE

CONTROL CONFIGURATIONS:

y	"y" INDICATES THAT SWITCH LEG "y" TO BE CONFIGURED IN A "AUTO ON 100% / AUTO OFF" AND BE CONTROLLED (CONTINUOUSLY DIMMED) BY THE ASSOCIATED CEILING SENSOR REMOTE SWITCH ON THE WALL.
y,(y)	"y,(y)" INDICATES THAT SWITCH LEG "y" TO BE CONFIGURED IN A "AUTO ON 50% / MANUAL ON 100% / AUTO OFF" AND BE CONTROLLED (CONTINUOUSLY DIMMED) BY THE ASSOCIATED DISTRIBUTED LIGHTING CONTROLS.
(y)	"(y)" INDICATES THAT SWITCH LEG "y" IS TO BE CONFIGURED IN A "MANUAL ON / AUTO OFF" (VACANCY SENSOR) AND BE CONTROLLED BY THE ASSOCIATED DISTRIBUTED LIGHTING CONTROLS.

MISCELLANEOUS SYSTEM SYMBOLS

ICP	INVERTER CONTROL PANEL - SEE INVERTER SPECIFICATIONS.
IAP	INVERTER ANNUNCIATOR PANEL - SEE INVERTER SPECIFICATIONS.
GAP	GENERATOR ANNUNCIATOR PANEL - SEE GENERATOR SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
IDCS	INTEGRATED DIMMING CONTROL STATION (IDCS) PANEL - WALL MOUNTED. SEE IDCS SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
DPCS	DIMMING PANEL CONTROL STATION (DPCS) PANEL - WALL MOUNTED. SEE DPCS SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
L	LIGHTING CONTROL SYSTEM LOCAL SWITCH - WALL MOUNTED. SEE LIGHTING CONTROL SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
O	LIGHTING CONTROL SYSTEM OVERRIDE SWITCH - WALL MOUNTED. SEE LIGHTING CONTROL SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
M	LIGHTING CONTROL SYSTEM MASTER SWITCH - WALL MOUNTED. SEE LIGHTING CONTROL SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
R	IDCS/DPCS SYSTEM REMOTE STATION SWITCH - WALL MOUNTED. SEE IDCS SYSTEM AND/OR DPCS SYSTEM SPECIFICATIONS FOR MORE INFORMATION.
P	IDCS/DPCS SYSTEM PARTITION STATION SWITCH - WALL MOUNTED. SEE IDCS SYSTEM AND/OR DPCS SYSTEM SPECIFICATIONS FOR MORE INFORMATION.

BRANCH CIRCUIT SYMBOLS

A-1,3,5	HOME RUN TO PANEL. LETTER DESIGNATES PANEL, NUMBERS INDICATE CIRCUITS. HASH MARKS INDICATE NUMBER OF CONDUCTORS IN CONDUIT RUN, #12 AWG MINIMUM UNLESS OTHERWISE NOTED.
A-1&3&5	HOME RUN TO PANEL. LETTER DESIGNATES PANEL, NUMBERS INDICATE CIRCUITS WITH SEPARATE NEUTRALS. "&" INDICATES SEPARATE NEUTRALS.
A-1+3+5	HOME RUN TO PANEL. LETTER DESIGNATES PANEL, NUMBERS INDICATE CIRCUITS. "+" INDICATES SEPARATE #10 NEUTRAL THROUGHOUT BRANCH CIRCUIT. HASH MARK " ⌡ " INDICATES AN ISOLATED GROUND CONDUCTOR.
———	CONCEALED CONDUIT OR BRANCH CIRCUIT UNLESS OTHERWISE NOTED. 1/2" CONDUIT MINIMUM, (2) #12 AWG CONDUCTORS MINIMUM.
— — —	CONDUIT OR BRANCH CIRCUIT CONCEALED BELOW GRADE, 3/4" CONDUIT MINIMUM WITH (2) 12 AWG CONDUCTORS MINIMUM AND A CODE SIZED EQUIPMENT GROUND.
—— – ——	SURFACE-MOUNTED CONDUIT OR BRANCH CIRCUIT UNLESS OTHERWISE NOTED. 1/2" CONDUIT MINIMUM, (2) #12 AWG CONDUCTORS MINIMUM.
∼	TANDEM WIRING CONNECTION.
——]	CONDUIT STUB OUT, CAP, MARK AND RECORD ON AS-BUILT DRAWINGS
——⌇	CONDUIT CONTINUATION.
∿	FLEXIBLE CONNECTION AS REQUIRED. NUMBER OF CONDUCTORS AS REQUIRED. VERIFY CONNECTION REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH-IN.
●	CONDUIT/ BRANCH CIRCUIT/FEEDER CONTINUATION DOWN WALL TO FLOOR BELOW
○	CONDUIT/ BRANCH CIRCUIT/FEEDER CONTINUATION UP WALL TO FLOOR ABOVE

FLOOR BOX / SPECIALTY WALL BOX / PEDESTAL BOX SYMBOLS

⊏⊐	SINGLE SERVICE IN FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
⊏⊥⊐	TWO SERVICE IN FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
⊏⊥⊥⊐	THREE SERVICE IN FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
⊞	FOUR SERVICE IN FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
⊞⊞	SIX SERVICE IN FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
AV	7-GANG AV FLOOR BOX. PROVIDE DEVICES PER PLAN. SEE FLOOR BOX DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
Φ AV ▼	RECESSED, ADJUSTABLE DEPTH, FLAT PANEL TV/DISPLAY WALL BOX WITH FLUSH GROMMETED COVER PANEL (CHIEF #PAC525F) AND MINIMUM OF (1) 1-1/4"C.O. FROM TOP-MOUNTED L.V. CONDUIT ENTRY BOX TO ACCESSIBLE CEILING. SEE PLANS FOR ANY ADDITIONAL CONDUIT REQUIREMENTS. PROVIDE ADDITIONAL L.V. AND LINE VOLTAGE CONDUIT ENTRY BOXES AS REQUIRED TO ACCOMPLISH WALL BOX CONFIGURATION DEPICTED ON PLANS. FLUSH GROMMETED COVER SHALL BE WHITE, BLACK OR CUSTOM COLOR PER ARCHITECT. WHEN FIELD CONDITIONS PROHIBIT INSTALLATION OF THIS DEVICE (SUCH AS WALL STUD/CAVITY DEPTH OF LESS THAN 2.5" ETC), CONFIRM VIA WRITTEN RFI THE INSTALLATION OF A TRADITIONAL POWER AND DATA RECEPTACLE INSTALLATION ALONG SIDE CCTV/AV JUNCTION BOX CONSISTING OF 2-GANG DEEP JUNCTION BOX/2-GANG RING WITH 1-1/4"C.O. TO ACCESSIBLE CEILING IN ADDITION TO ANY OTHER CONDUIT REQUIREMENTS DEPICTED ON PLANS. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR MOUNTING HEIGHT.
Φ	SINGLE OR DUAL SERVICE RECESSED EXTERIOR WALL BOX - TYPE "WP-A". PROVIDE DEVICES PER PLAN. EACH LV OR UNUSED COMPARTMENT SHALL BE EQUIPPED WITH A 1"C.O. TO THE NEAREST ACCESSIBLE CEILING SPACE U.O.N. SEE EXTERIOR DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.
Φ	SINGLE OR DUAL SERVICE EXTERIOR PEDESTAL - TYPE "WP-C". PROVIDE DEVICES PER PLAN. SEE EXTERIOR DETAILS AND SPECIFICATIONS FOR MORE INFORMATION. ARROW DENOTES DEVICE DOOR LOCATION.

MEDIUM VOLTAGE CABLE CONNECTOR SYMBOLS

⌐	15 KV, LOADBREAK ELBOWS WITH TEST POINT(S) AS REQUIRED TO TERMINATE MEDIUM VOLTAGE FEEDER CABLES. PROVIDE BUSHING INSERTS AS REQUIRED TO CONNECT LOADBREAK ELBOWS TO TRANSFORMER SWITCH AND/OR MEDIUM VOLTAGE SWITCH RESPECTIVELY. PROVIDE FOR ELBOWS/CABLES PER PHASE AS REQUIRED. PROVIDE INSULATED PARKING BUSHING FOR EACH LOAD BREAK ELBOW. INSTALL PARKING BUSHINGS IN TRANSFORMER/SWITCHES.
⊣	3-WAY, 15KV, SEPARABLE CABLE JOINT KIT WITH TEST POINTS AS REQUIRED. PROVIDE APPROPRIATE CABLE SHIELD GROUNDING AND SEALING KIT PER CABLE SUPPLIED. PROVIDE INSULATED CAP ON ANY UNUSED WAY(S).

POWER SYMBOLS

ALL RECEPTACLE OUTLETS SHOWN WITH A DIAGONAL SLASH SHALL BE CONTROLLED BY OCCUPANCY SENSOR OR LIGHTING CONTROL PANEL. SEE DISTRIBUTED LIGHTING CONTROLS FOR ADDITIONAL REQUIREMENTS. WHERE DOUBLE DUPLEX RECEPTACLE OUTLETS ARE INDICATED AS CONTROLLED, ONLY A SINGLE DUPLEX RECEPTACLE OUTLET (NON-IG, NON-GCFI TYPE) SHALL BE CONTROLLED. WITHIN ANY CONTROLLED DUPLEX RECEPTACLE OUTLET, ONLY ONE RECEPTACLE SHALL BE CONTROLLED. NOTE THAT FOR FLOOR BOXES OR POKE-THRU DEVICES, THE ASSOCIATED CONTROL RELAY MAY NEED TO BE LOCATED WITHIN THE ELECTRICAL ROOM WHERE THE CONTROLLED CIRCUIT ORIGINATES.

R_{a}	OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM CONTROLLED RECEPTACLE RELAY. WHERE LETTER DESIGNATION "a" REPRESENTS OCCUPANCY SENSOR/LIGHTING CONTROL SYSTEM CONTROL ZONE. SEE THE DISTRIBUTED LIGHTING CONTROL SPECIFICATION FOR MORE INFORMATION.
⊖ ⊘	DUPLEX RECEPTACLE, WALL MOUNTED.
⊕ ⊘	DOUBLE DUPLEX RECEPTACLE, WALL MOUNTED.
⊖	DUPLEX, GFCI RECEPTACLE, WALL MOUNTED. WP INDICATES WEATHERPROOF, A, B OR C INDICATES THE TYPE OF COVER, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
⊕ ⊘	DOUBLE DUPLEX, WALL MOUNTED, WITH (1) GFCI RECEPTACLE AND (1) DUPLEX RECEPTACLE CONNECTED ON LOAD SIDE OF GFCI. WP INDICATES WEATHERPROOF, A, B OR C INDICATES THE TYPE OF COVER, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
⊖ ⊘	DUPLEX RECEPTACLE, ONE HALF SWITCHED, WALL MOUNTED.
⊖ ⊘	DUPLEX, ISOLATED GROUND RECEPTACLE, WALL MOUNTED.
⊕ 1,3 ⊘ 1,3a	COMBINATION DOUBLE DUPLEX: ONE ISOLATED GROUND DUPLEX RECEPTACLE AND ONE DUPLEX RECEPTACLE, WALL MOUNTED.
⊕ ⊘	COMBINATION DOUBLE DUPLEX: TWO ISOLATED GROUND RECEPTACLES, WALL MOUNTED.
⊖	SIMPLEX RECEPTACLE, WALL MOUNTED.
⊜	SPECIAL RECEPTACLE, WALL MOUNTED. REFER TO PLAN NOTES.
⊖ ⊘	DUPLEX RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
⊕ ⊘	DOUBLE DUPLEX RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
⊖	DUPLEX RECEPTACLE, ONE HALF SWITCHED, FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
⊖ ⊘	DUPLEX, ISOLATED GROUND RECEPTACLE, FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
⊕ 1,3 ⊘ 1,3a	COMBINATION DOUBLE DUPLEX: ONE ISOLATED GROUND DUPLEX RECEPTACLE AND ONE DUPLEX RECEPTACLE, MOUNTED FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN FLOOR BOX SYMBOL.
⊕ ⊘	COMBINATION DOUBLE DUPLEX FLUSH IN CEILING: TWO ISOLATED GROUND RECEPTACLES - MOUNT FLUSH IN FLOOR WHEN INDICATED IN FLOOR BOX SYMBOL.
⊖	SIMPLEX RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
⊜	SPECIAL RECEPTACLE FLUSH IN CEILING - MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL.
⊟ ⊘	DUPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
⊞ ⊘	DOUBLE DUPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
⊟	DUPLEX, GFCI RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. WP INDICATES WEATHERPROOF, A, B OR C INDICATES THE TYPE OF COVER, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
⊞ ⊘	DOUBLE DUPLEX, WALL MOUNTED, WITH (1) GFCI RECEPTACLE AND (1) DUPLEX RECEPTACLE CONNECTED ON LOAD SIDE OF GFCI. WP INDICATES WEATHERPROOF, A, B OR C INDICATES THE TYPE OF COVER, REFER TO THE GENERAL PRODUCT SPECIFICATIONS.
⊟ ⊘	DUPLEX RECEPTACLE, BOTTOM HALF SWITCHED, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
⊟ ⊘	DUPLEX, ISOLATED GROUND RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
⊞ 1,3 ⊘ 1,3a	COMBINATION DOUBLE DUPLEX: ONE ISOLATED GROUND DUPLEX RECEPTACLE AND ONE DUPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
⊞ ⊘	COMBINATION DOUBLE DUPLEX: TWO ISOLATED GROUND DUPLEX RECEPTACLES, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
⊟	SIMPLEX RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH.
⊟	SPECIAL RECEPTACLE, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. REFER TO PLAN NOTES.
WP-B	WET LOCATION-LISTED (RAINTITE-IN-USE) RECEPTACLE - SEE ELECTRICAL SPECIFICATION FOR ADDITIONAL INFORMATION.
WP-D	DAMP LOCATION-LISTED (NOT-RAINTITE-IN-USE) RECEPTACLE - SEE ELECTRICAL SPECIFICATION FOR ADDITIONAL INFORMATION.
	DUPLEX RECEPTACLES WITH TWO 5V, 3.6A USB CHARGING PORTS. PROVIDE COLOR AS REQUIRED IN 15A OR 20A CONFIGURATION AND/OR TAMPER RESISTANT AND/OR HOSPITAL GRADE AS REQUIRED BY PLANS AND THE WIRING DEVICES SECTION OF THE GENERAL ELECTRICAL SPECIFICATIONS. (PASS & SEYMOUR OR EQUAL BY HUBBELL OR LEVITON.)
	QUAD RECEPTACLES WITH TWO 5V, 3.6A USB CHARGING PORTS. PROVIDE COLOR AS REQUIRED IN 15A OR 20A CONFIGURATION AND/OR TAMPER RESISTANT AND/OR HOSPITAL GRADE AS REQUIRED BY PLANS AND THE WIRING DEVICES SECTION OF THE GENERAL ELECTRICAL SPECIFICATIONS. (PASS & SEYMOUR OR EQUAL BY HUBBELL OR LEVITON.)
J	JUNCTION BOX, WALL MOUNTED AT +18-INCHES A.F.F. OR AS NOTED. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C..
J	JUNCTION BOX, MOUNTED IN ACCESSIBLE CEILING FOR APPLICATION DENOTED ON PLAN. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C..
J	JUNCTION BOX, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C..
J J	JUNCTION BOX MOUNTED IN ACCESSIBLE CEILING SPACE PER PLAN FOR FLEXIBLE CONNECTION TO PREWIRED FURNITURE SYSTEM. MOUNT FLUSH IN FLOOR WHEN INDICATED IN A FLOOR BOX SYMBOL. WHEN SHOWN WITH A DIAGONAL SLASH, THE LAST GENERAL RECEPTACLE CIRCUIT ON THE HOME-RUN CALLOUT SHALL BE CONTROLLED BY THE OCCUPANCY SENSOR. COORDINATE CONTROLLED CIRCUIT CONNECTION REQUIREMENTS WITH FURNITURE SYSTEM MANUFACTURER PRIOR TO ROUGH-IN. SEE DISTRIBUTED LIGHTING CONTROLS FOR ADDITIONAL REQUIREMENTS.
J J	JUNCTION BOX, WALL MOUNTED AT +18-INCHES A.F.F. FOR FLEXIBLE CONNECTION TO PREWIRED FURNITURE SYSTEM. WHEN SHOWN WITH A DIAGONAL SLASH, THE LAST GENERAL RECEPTACLE CIRCUIT ON THE HOME-RUN CALLOUT SHALL BE CONTROLLED BY THE OCCUPANCY SENSOR. COORDINATE CONTROLLED CIRCUIT CONNECTION REQUIREMENTS WITH FURNITURE SYSTEM MANUFACTURER PRIOR TO ROUGH-IN. SEE DISTRIBUTED LIGHTING CONTROLS FOR ADDITIONAL REQUIREMENTS.
▭	SURFACE MOUNTED MULTI-OUTLET ASSEMBLY. REFER TO GENERAL PRODUCT SPECIFICATIONS. PROVIDE ALL COMPONENTS NECESSARY FOR A COMPLETE INSTALLATION.
T	THERMOSTAT OUTLET BOX, PROVIDE 1/2" C.O. TO RESPECTIVE MECHANICAL UNIT.
○	EXHAUST FAN, OR MOTOR LOAD. REFER TO MECHANICAL, PLUMBING OR KITCHEN DRAWINGS FOR SPECIFIC LOAD REQUIREMENTS OR AS NOTED.
▬	FLUSH MOUNTED ELECTRICAL PANELBOARD OR LOAD CENTER. REFER TO PANEL SCHEDULE.
▬	SURFACE MOUNTED ELECTRICAL PANELBOARD OR LOAD CENTER. REFER TO PANEL SCHEDULE.
▨	DISTRIBUTION SWITCHBOARD. REFER TO SINGLE LINE DIAGRAM.
T	TRANSFORMER, REFER TO SINGLE LINE DIAGRAM.
F	FUSED DISCONNECT SWITCH, HP RATED, OR COMBINATION MOTOR STARTER/DISCONNECT SWITCH WITH FUSES PER EQUIPMENT MANUFACTURER AND WEATHERPROOF AS REQUIRED. PROVIDE FINAL CONNECTION TO UNIT EQUIPMENT. SEE MOTORIZED EQUIPMENT SCHEDULE FOR DISCONNECT AND STARTER SIZES.
☐	NON-FUSED DISCONNECT SWITCH, HP RATED AND WEATHERPROOF AS REQUIRED. PROVIDE FINAL CONNECTION TO UNIT EQUIPMENT. SEE MOTORIZED EQUIPMENT SCHEDULE FOR DISCONNECT SIZES.
M	UTILITY COMPANY METER. PROVIDE "CT's" AND "PT's" AS REQUIRED, REFER TO SINGLE LINE DIAGRAM.
A B C	CIRCUIT BREAKER: "A" REPRESENTS CIRCUIT BREAKER AMPERE RATING, "B" REPRESENTS NUMBER OF POLES AND "C" REPRESENTS MISCELLANEOUS BREAKER FEATURES. SHUNT= PROVIDE SHUNT TRIP MECHANISM GFP= GROUND FAULT PROTECTION CLCB= CURRENT LIMITING CIRCUIT BREAKER SS= PROVIDE SOLID STATE CIRCUIT BREAKER LO= PROVIDE PERMANENT LOCK-OPEN (OFF) HARDWARE LC= PROVIDE PERMANENT LOCK-CLOSED (ON) HARDWARE
A B C D	FUSIBLE SWITCH: "A" REPRESENTS SWITCH/FRAME AMPERE RATING, "B" REPRESENTS THE FUSE AMPERE RATING, "C" INDICATES NUMBER OF POLES AND "D" REPRESENTS MISCELLANEOUS FUSE/SWITCH FEATURES. SHUNT= PROVIDE SHUNT TRIP MECHANISM GFP= GROUND FAULT PROTECTION CLF= CURRENT LIMITING FUSE
⏚	GROUND CONNECTION, SIZE AS INDICATED OR AS REQUIRED.
$a,b	SINGLE POLE SWITCHES, WALL MOUNTED. SUBSCRIPTS AT SYMBOL INDICATE THE FOLLOWING: 2 - DOUBLE POLE LV - LOW VOLTAGE RL - ROTARY LOCK KEY TYPE 3 - THREE WAY P - PILOT LIGHT PB - PUSHBUTTON 4 - FOUR WAY R - REMOTE CONTROL S - PROJECTION SCREEN K - KEY OPERATED M - MOTOR STARTING a, b, c, ETC. - DESIGNATES QUANTITY OF SWITCHES AT EACH LOCATION. NOTE: ALL WALL SWITCHES CONTROLLING EMERGENCY CIRCUITS SHALL BE ENGRAVED WITH "EMERGENCY".
▣	EMERGENCY POWER OFF STATION, WALL MOUNTED PER EPO SYSTEM DETAIL.
PB, OR P	PULLBOX, SIZED PER N.E.C. OR AS NOTED.

WALL MOUNTED DEVICE MOUNTING HEIGHT NOTE:

ALL WALL-MOUNTED EQUIPMENT MOUNTING HEIGHTS SHALL BE VERIFIED PRIOR TO ROUGH-IN PER REQUIREMENTS OF THE DEVICE ALIGNMENT AND MOUNTING HEIGHT DETAILS AND SPECIFICATIONS.

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949.751.5800 www.tk1sc.com

CONSULTANT
Project Leader - Jonathan Lomibao
Electrical Lead - Jonathan Lomibao
tk1sc Job #: 2017-0591

RAYMOND W. SWARTZ
No. E15610
Ex. 12/31/2019

ARCHITECT/ENGINEER SEAL

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KEY PLAN

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01/10/19 100% CD SET
11/27/18 90% CD SET
10/29/18 50% CD SET
05/01/18 100% DD SET

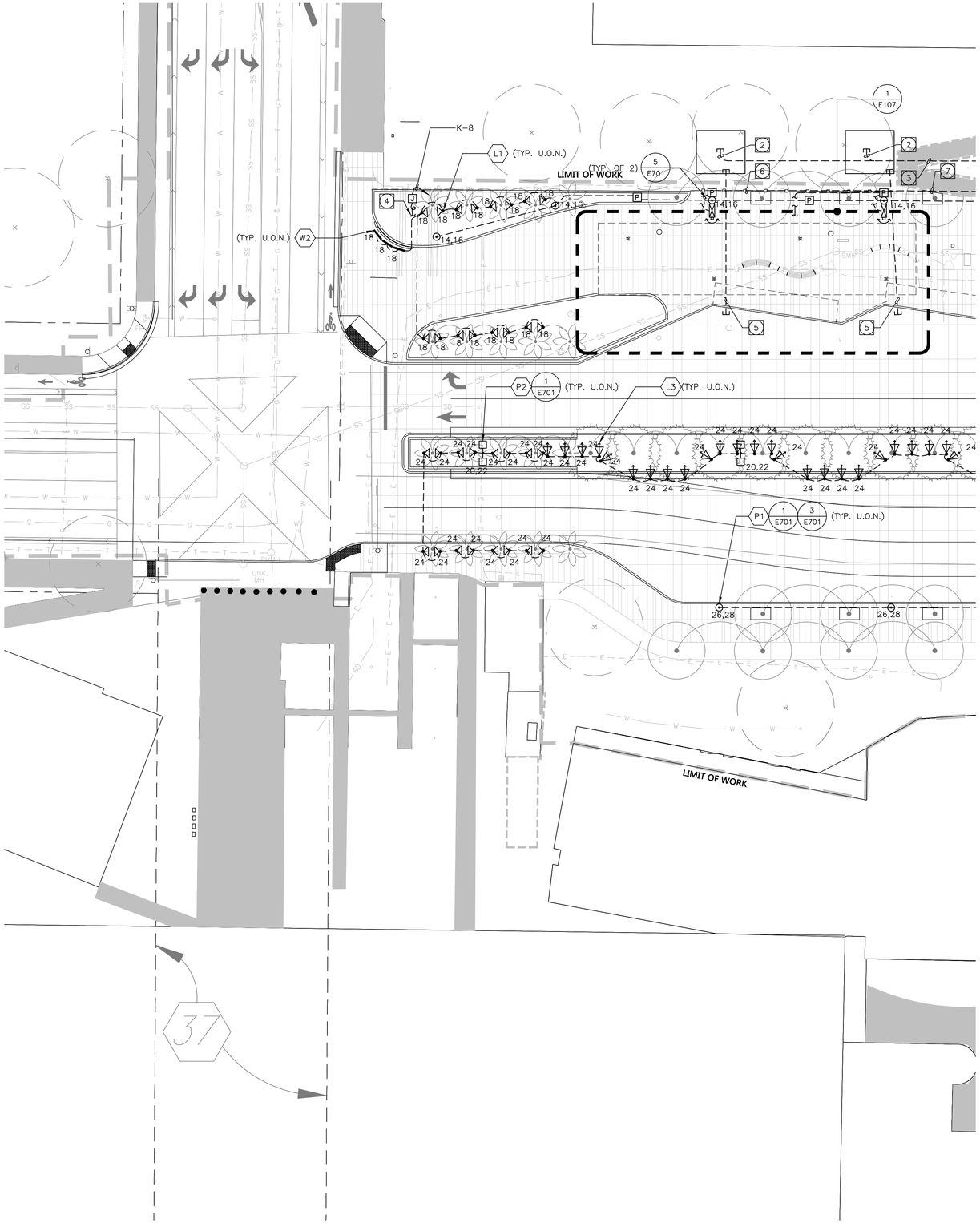
BASE FILE NAMES	
DRAWN BY	JL
CHECKED BY	RS
SCALE	–
DATE	
PROJECT NO.	GRUEN # 8345

SYMBOLS LIST

SHEET TITLE

E001

SHEET NO.



PLAN NOTES:

1. REFER TO SINGLE LINE DIAGRAM ON SHEET E401 FOR FEEDER REQUIREMENTS.
2. (1)4" C.O.
3. (2)4" C.O.
4. CONNECT AS REQUIRED TO IRRIGATION CONTROLLER. COORDINATE EXACT LOCATION WITH IRRIGATION CONTROLLER INSTALLER PRIOR TO ROUGH-IN.
5. PROVIDE 10" C.O. FOR FUTURE BUS CHARGER EQUIPMENT.
6. (1)3/4" C.O.
7. (2)3/4" C.O.

SITE PLAN GENERAL NOTES:

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING OR CONDUITS, ETC., AND TO PREVENT HAZARDS TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN AND INSTALLED BY ANY OTHER CONTRACTS. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY ELEMENTS FOR CONSTRUCTION SAFETY.
2. CALL UNDERGROUND SERVICE ALERT (USA) AT 1 (800) 422-4133 OR APPLICABLE STATE AND LOCAL DIG SAFE OR UNDERGROUND ALERT HOTLINES PRIOR TO CONSTRUCTION START.
3. MINIMUM CONDUIT SIZE SHALL BE 3/4" - U.O.N.
4. MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG. - U.O.N.
5. ALL SITE BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUND CONDUCTOR THAT, AT MINIMUM, MATCHES THE SIZE OF THE ASSOCIATED BRANCH CIRCUIT CONDUCTOR. WHERE MULTIPLE BRANCH CIRCUITS ARE ROUTED/GROUPED TOGETHER, THE EQUIPMENT GROUNDING CONDUCTOR SHALL MATCH THE SIZE OF THE LARGEST BRANCH CIRCUIT CONDUCTOR IN THE GROUP.
6. ALL ELECTRICAL EQUIPMENT MOUNTED OUTDOORS SHALL BE WEATHERPROOF (NEMA #3R).
7. ALL CONDUIT ONLY SHALL BE PROVIDED WITH A NYLON PULL STRING.
8. SEE ARCHITECTURAL/LANDSCAPE ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF FIXTURES, PULLBOXES, MANHOLES, OTHER ELECTRICAL DEVICES, ETC. COORDINATE ALL UNDERGROUND STRUCTURES AND CONDUIT ROUTING WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN TO ENSURE THAT SUCH ITEMS ARE NOT PLACED IN CRITICAL LANDSCAPE PLANTING/HARDSCAPE AREAS.
9. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.

NORTH

20' 0' 20' 40'

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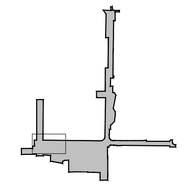
CONSULTANT Project Leader - Jonathan Lomibao
Electrical Lead - Jonathan Lomibao
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 EXP. 12/31/2019 ELECTRICAL STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL



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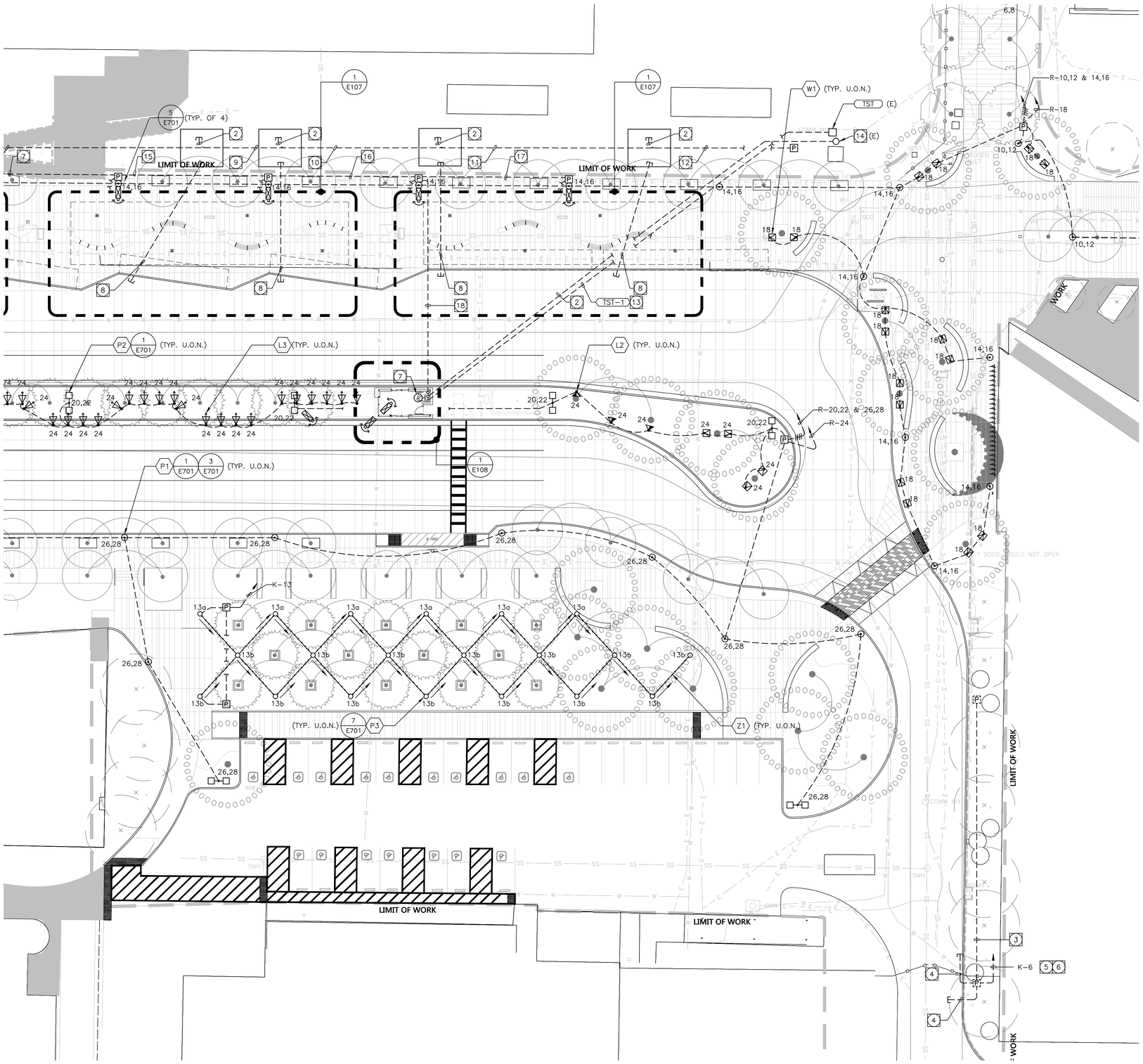
BASE FILE NAMES	
DRAWN BY	JL
CHECKED BY	RS
SCALE	AS NOTED
DATE	
PROJECT NO.	GRUEN # 8345

SITE ELECTRICAL PLAN

SHEET TITLE

E101

SHEET NO.



PLAN NOTES:

1. REFER TO SINGLE LINE DIAGRAM ON SHEET E401 FOR FEEDER REQUIREMENTS.
2. (1)4" C.O.
3. (1)3/4"C. (POWER) AND (1)3/4"C. (CONTROLS) FROM ROLLING GATE MOTOR TO CARD READER/KEY PAD CONTROLLER. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH GATE INSTALLER PRIOR TO ROUGH-IN. PROVIDE A COMPLETE AND OPERABLE INSTALLATION.
4. (1)3/4"C. (CONTROLS) TO LOOP SENSOR IN PAVEMENT.
5. 3/4"C., 2#10, 1#10(N) AND 1#10 E.G.
6. PROVIDE (1)3/4"C. (COMMUNICATION) FROM KIOSK IDF CLOSET TO ROLLING GATE.
7. PROVIDE WIFI ANTENNA FOR COVERAGE OF CANOPY AREA. PROVIDE CABLE AND CONDUIT INSTALLATION TO INFORMATION KIOSK ELECTRICAL CLOSET, ELECTRONICS, WIFI ANTENNA AND MOUNTING, CONNECTION TO OWNER'S SERVICE PROVIDER NETWORK. COORDINATE EXACT LOCATION AND MOUNTING SUITABILITY WITH ARCHITECT PRIOR TO ROUGH IN.
8. PROVIDE 10" C.O. FOR FUTURE BUS CHARGER EQUIPMENT.
9. (3)4" C.O.
10. (4)4" C.O.
11. (5)4" C.O.
12. (6)4" C.O.
13. REFER TO SINGLE LINE DIAGRAM ON SHEET E401.
14. EXISTING COMMUNICATIONS MANHOLE.
15. (3)3/4" C.O.
16. (4)3/4" C.O.
17. (1)3/4" C.O.
18. (6)3/4" C.O.

SITE PLAN GENERAL NOTES:

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING OR CONDUITS, ETC., AND TO PREVENT HAZARDS TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN AND INSTALLED BY ANY OTHER CONTRACTS. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY ELEMENTS FOR CONSTRUCTION SAFETY.
2. CALL UNDERGROUND SERVICE ALERT (USA) AT 1 (800) 422-4133 OR APPLICABLE STATE AND LOCAL DIG SAFE OR UNDERGROUND ALERT HOTLINES PRIOR TO CONSTRUCTION START.
3. MINIMUM CONDUIT SIZE SHALL BE 3/4" - U.O.N.
4. MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG. - U.O.N.
5. ALL SITE BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUND CONDUCTOR THAT, AT MINIMUM, MATCHES THE SIZE OF THE ASSOCIATED BRANCH CIRCUIT CONDUCTOR. WHERE MULTIPLE BRANCH CIRCUITS ARE ROUTED/GROUPED TOGETHER, THE EQUIPMENT GROUNDING CONDUCTOR SHALL MATCH THE SIZE OF THE LARGEST BRANCH CIRCUIT CONDUCTOR IN THE GROUP.
6. ALL ELECTRICAL EQUIPMENT MOUNTED OUTDOORS SHALL BE WEATHERPROOF (NEMA #3R).
7. ALL CONDUIT ONLY SHALL BE PROVIDED WITH A NYLON PULL STRING.
8. SEE ARCHITECTURAL/LANDSCAPE ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF FIXTURES, PULLBOXES, MANHOLES, OTHER ELECTRICAL DEVICES, ETC. COORDINATE ALL UNDERGROUND STRUCTURES AND CONDUIT ROUTING WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN TO ENSURE THAT SUCH ITEMS ARE NOT PLACED IN CRITICAL LANDSCAPE PLANTING/HARDSCAPE AREAS.
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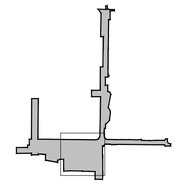
CONSULTANT Project Leader - Jonathan Lomibao
Electrical Lead - Jonathan Lomibao
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
EXP. 12/31/2019
ELECTRICAL
STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL



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CHECKED BY	RS
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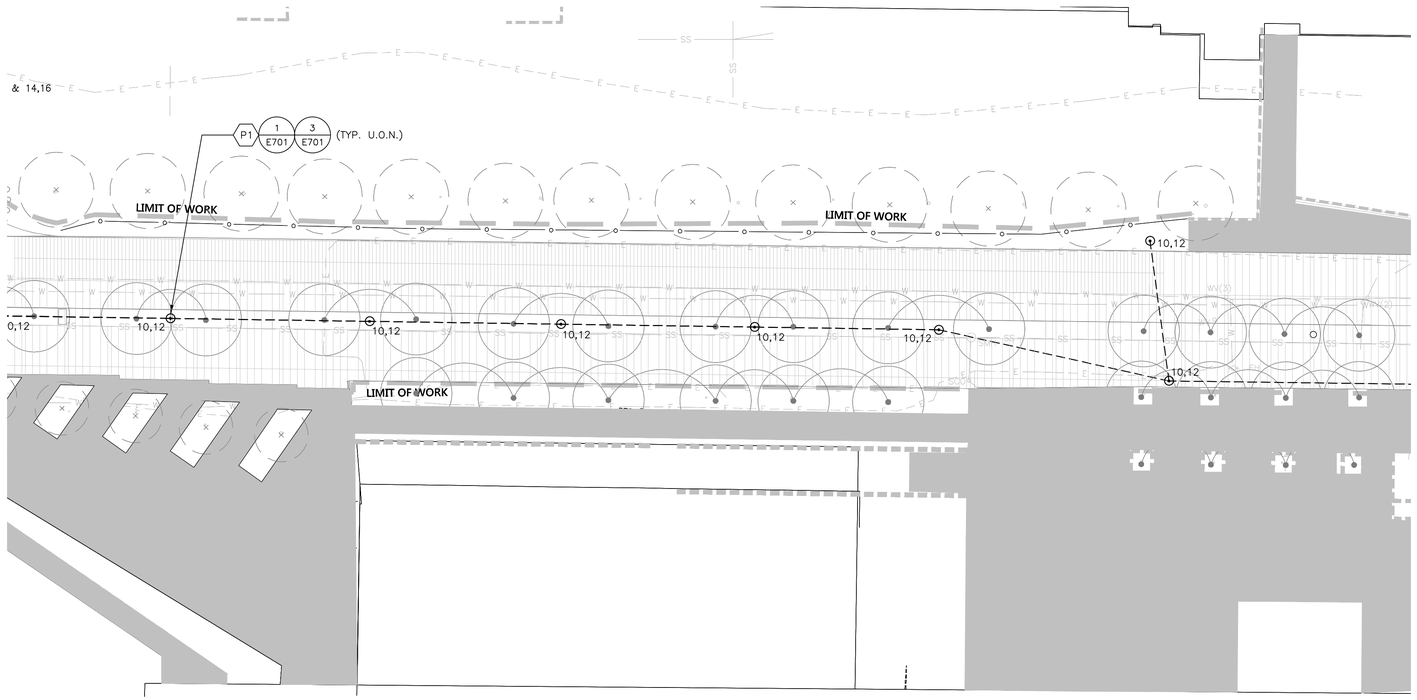
PROJECT NO.	GRUEN # 8345

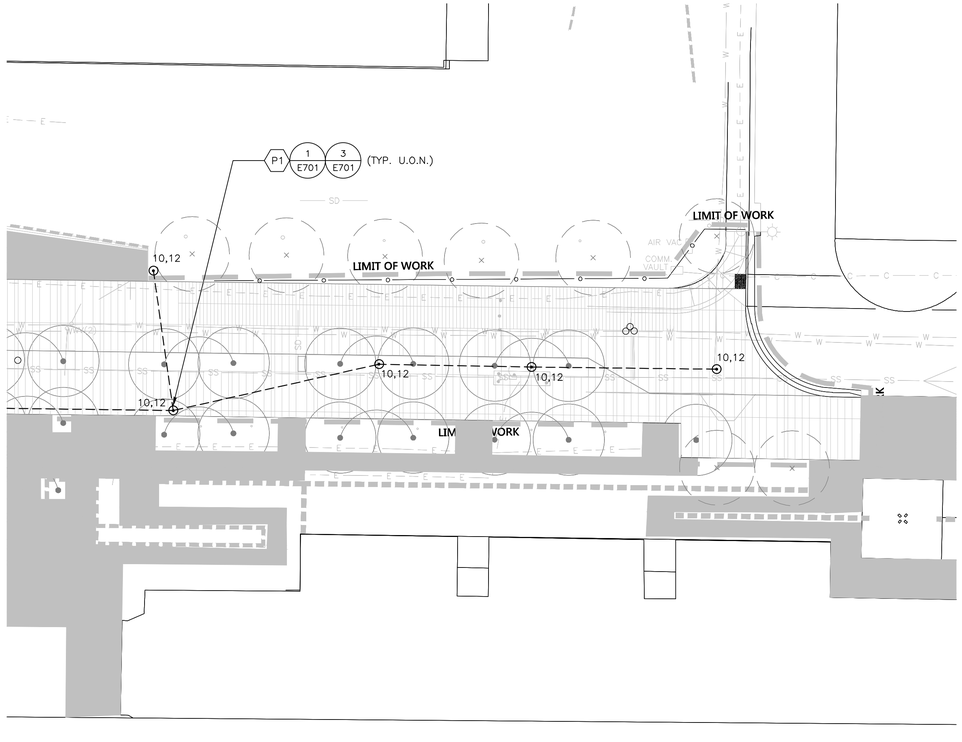
SITE ELECTRICAL PLAN

SHEET TITLE

E102

SHEET NO.





PLAN NOTES:

1 –

SITE PLAN GENERAL NOTES:

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4. MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG. – U.O.N.
5. ALL SITE BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUND CONDUCTOR THAT, AT MINIMUM, MATCHES THE SIZE OF THE ASSOCIATED BRANCH CIRCUIT CONDUCTOR. WHERE MULTIPLE BRANCH CIRCUITS ARE ROUTED/GROUPED TOGETHER, THE EQUIPMENT GROUNDING CONDUCTOR SHALL MATCH THE SIZE OF THE LARGEST BRANCH CIRCUIT CONDUCTOR IN THE GROUP.
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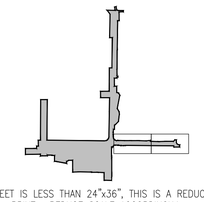

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CHECKED BY	RS
SCALE	AS NOTED
DATE	
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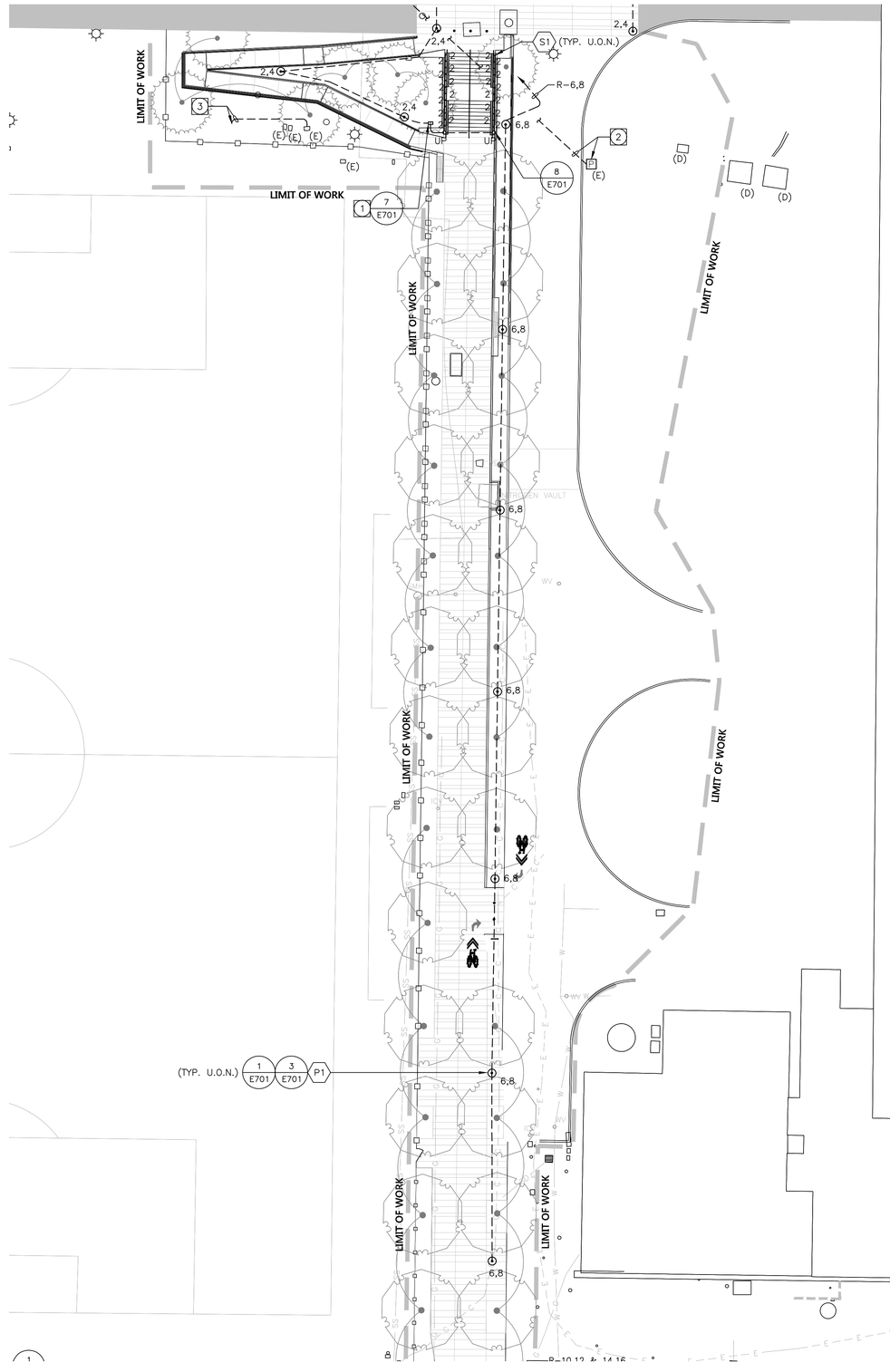
SITE ELECTRICAL PLAN

SHEET TITLE

E103

SHEET NO.



PLAN NOTES:

1. Q-TRAN #Q-TRIX-B160 HOUSING AND Q-HEX POWER SUPPLY OR EQUAL BY SEBCO. PROVIDE TRANSFORMER SIZE AND VOLTAGE TYPES AS REQUIRED FOR A COMPLETE AND OPERABLE INSTALLATION. PROVIDE GROUNDING/BONDING AS REQUIRED PER MANUFACTURER'S AND CEC REQUIREMENTS. FIELD VERIFY PRIOR TO ROUGH IN.
2. INTERCEPT ALL EXISTING LIVE CIRCUITS AND EXTEND CONDUIT AND CONDUCTORS AS SHOWN. FIELD VERIFY AND COORDINATE EXACT EXISTING PULL BOX LOCATION, CIRCUITS, AND ROUTING REQUIREMENTS WITH UCR HIGH VOLTAGE SPECIALIST, BRIAN HAMBLETON (951)827-3112.
3. INTERCEPT EXISTING SCORE BOARD CIRCUIT(S) AND EXTEND CONDUIT AND CONDUCTORS AS SHOWN TO CONNECT AS REQUIRED TO THE NEW SCORE BOARD LOCATION. FIELD VERIFY EXACT LOCATION AND REQUIREMENTS WITH THE SCORE BOARD INSTALLER PRIOR TO ROUGH-IN.

SITE PLAN GENERAL NOTES:

1. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING OR CONDUITS, ETC., AND TO PREVENT HAZARDS TO PERSONNEL AND/OR DAMAGE TO EXISTING UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN AND INSTALLED BY ANY OTHER CONTRACTS. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES WHETHER OR NOT SHOWN OR DETAILED AND INSTALLED BY ANY OTHER CONTRACTS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SHOULD SUCH UNIDENTIFIED CONDITIONS BE DISCOVERED. THESE DRAWINGS AND SPECIFICATIONS DO NOT INCLUDE THE NECESSARY ELEMENTS FOR CONSTRUCTION SAFETY.
2. CALL UNDERGROUND SERVICE ALERT (USA) AT 1 (800) 422-4133 OR APPLICABLE STATE AND LOCAL DIG SAFE OR UNDERGROUND ALERT HOTLINES PRIOR TO CONSTRUCTION START.
3. MINIMUM CONDUIT SIZE SHALL BE 3/4" - U.O.N.
4. MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG. - U.O.N.
5. ALL SITE BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUND CONDUCTOR THAT, AT MINIMUM, MATCHES THE SIZE OF THE ASSOCIATED BRANCH CIRCUIT CONDUCTOR. WHERE MULTIPLE BRANCH CIRCUITS ARE ROUTED/GROUPED TOGETHER, THE EQUIPMENT GROUNDING CONDUCTOR SHALL MATCH THE SIZE OF THE LARGEST BRANCH CIRCUIT CONDUCTOR IN THE GROUP.
6. ALL ELECTRICAL EQUIPMENT MOUNTED OUTDOORS SHALL BE WEATHERPROOF (NEMA #3R).
7. ALL CONDUIT ONLY SHALL BE PROVIDED WITH A NYLON PULL STRING.
8. SEE ARCHITECTURAL/LANDSCAPE ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF FIXTURES, PULLBOXES, MANHOLES, OTHER ELECTRICAL DEVICES, ETC. COORDINATE ALL UNDERGROUND STRUCTURES AND CONDUIT ROUTING WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN TO ENSURE THAT SUCH ITEMS ARE NOT PLACED IN CRITICAL LANDSCAPE PLANTING/HARDSCAPE AREAS.
9. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.

NORTH

20' 0' 20' 40'

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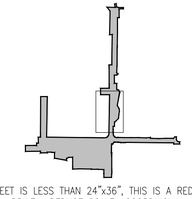
949.751.5800 www.tk1sc.com

CONSULTANT
Project Leader - Jonathan Lomibao
Electrical Lead - Jonathan Lomibao
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
12/31/2019
ELECTRICAL
STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL



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KEY PLAN

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	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

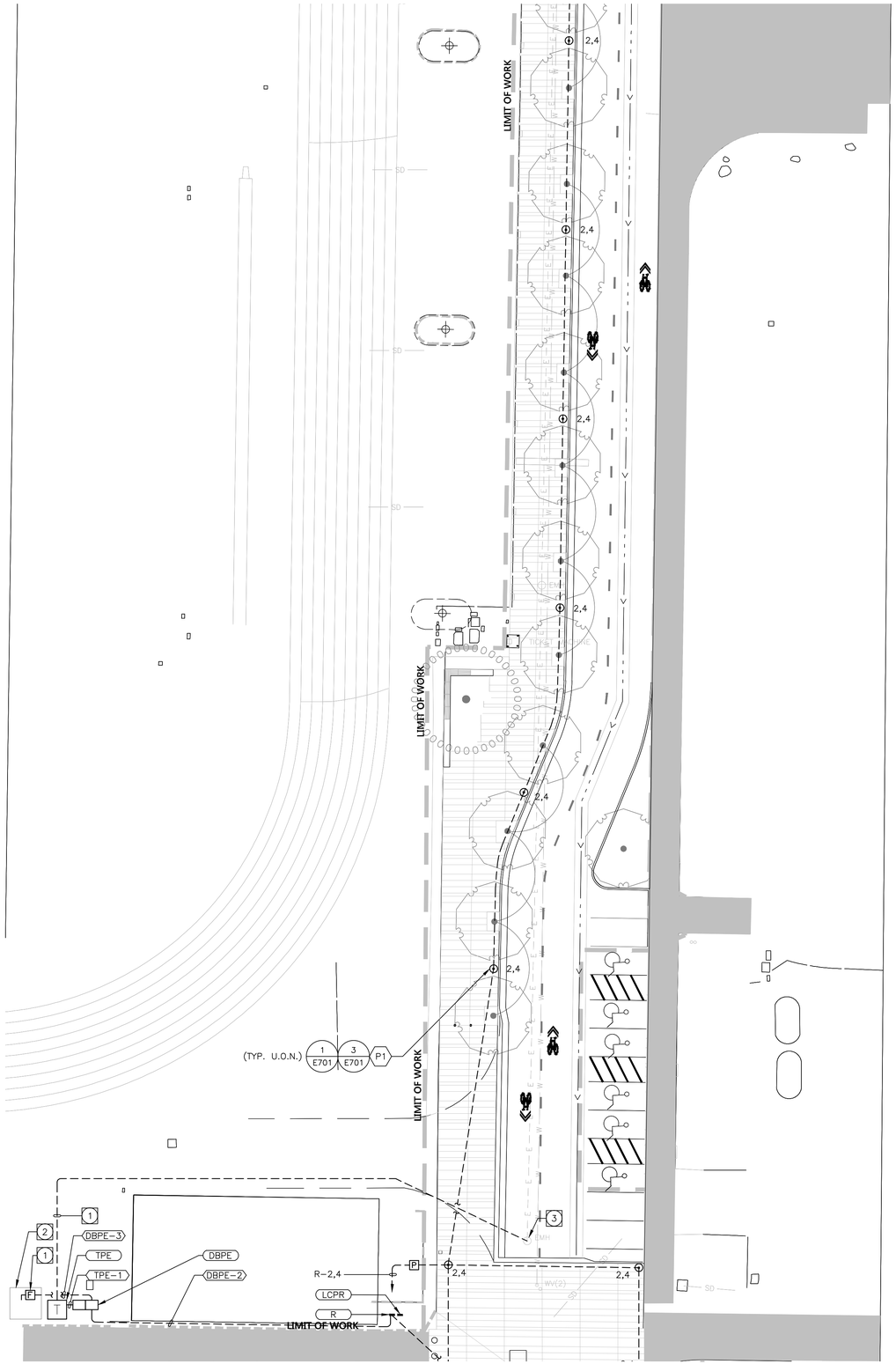
BASE FILE NAMES	
DRAWN BY	JL
CHECKED BY	RS
SCALE	AS NOTED
DATE	
PROJECT NO.	GRUEN # 8345

SITE ELECTRICAL PLAN

SHEET TITLE

E104

SHEET NO.



PLAN NOTES:

1. REFER TO SINGLE LINE DIAGRAM ON SHEET E401.
2. EXISTING PHYSICAL EDUCATION UTILITY BUILDING/TRACK VAULT. FIELD VERIFY EXACT LOCATION.
3. EXISTING ELECTRICAL MANHOLE 'V30'. REFER TO SINGLE LINE DIAGRAM ON SHEET E401. FIELD VERIFY EXACT LOCATION.

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3. MINIMUM CONDUIT SIZE SHALL BE 3/4" – U.O.N.
4. MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG. – U.O.N.
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7. ALL CONDUIT ONLY SHALL BE PROVIDED WITH A NYLON PULL STRING.
8. SEE ARCHITECTURAL/LANDSCAPE ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF FIXTURES, PULLBOXES, MANHOLES, OTHER ELECTRICAL DEVICES, ETC. COORDINATE ALL UNDERGROUND STRUCTURES AND CONDUIT ROUTING WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN TO ENSURE THAT SUCH ITEMS ARE NOT PLACED IN CRITICAL LANDSCAPE PLANTING/HARDSCAPE AREAS.
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NORTH

20' 0' 20' 40'

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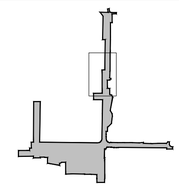

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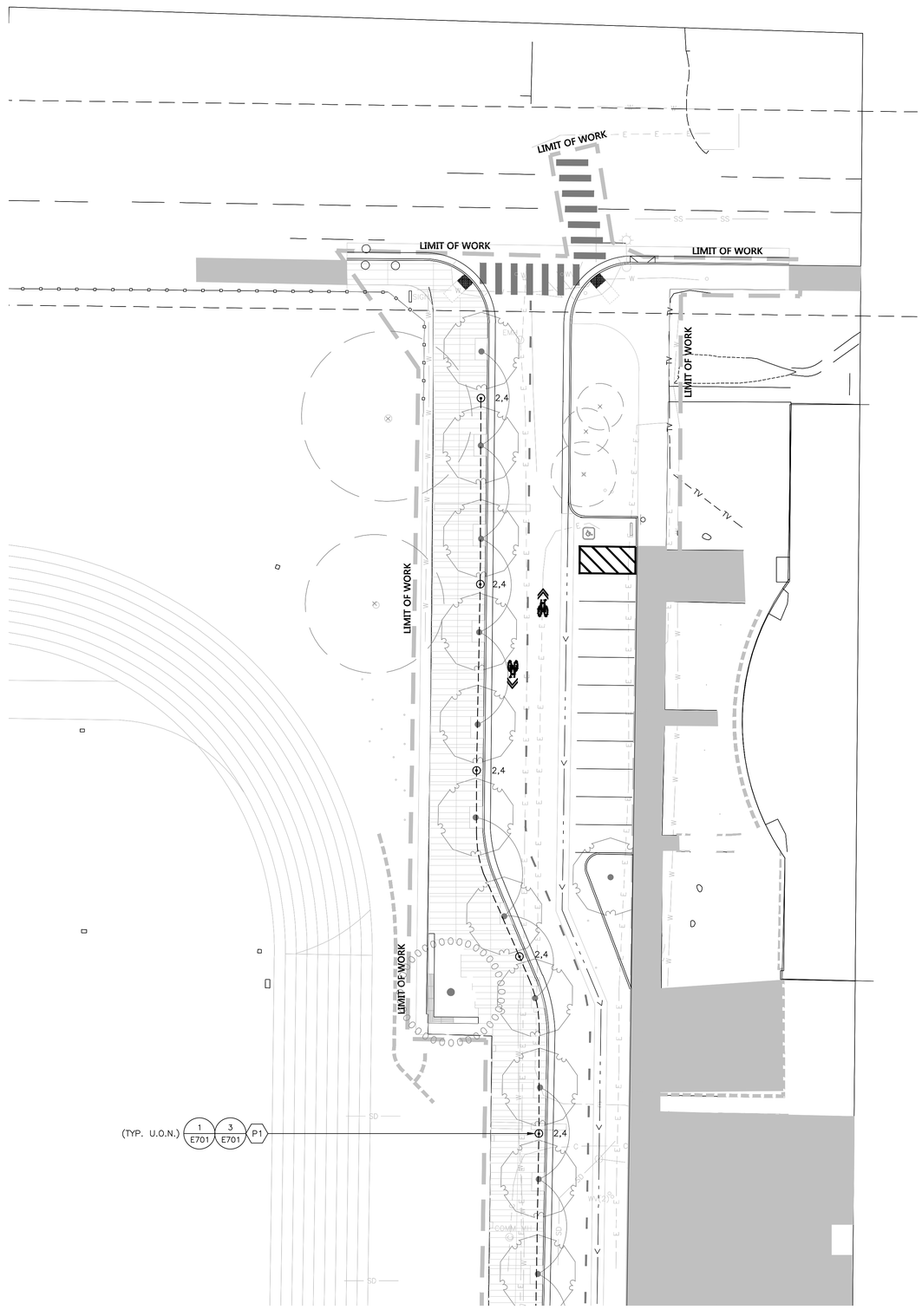
BASE FILE NAMES	
DRAWN BY	JL
CHECKED BY	RS
SCALE	AS NOTED
DATE	
PROJECT NO.	GRUEN # 8345

SITE ELECTRICAL PLAN

SHEET TITLE

E105

SHEET NO.



PLAN NOTES:

1 –

SITE PLAN GENERAL NOTES:

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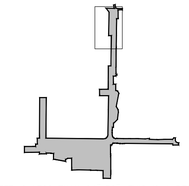

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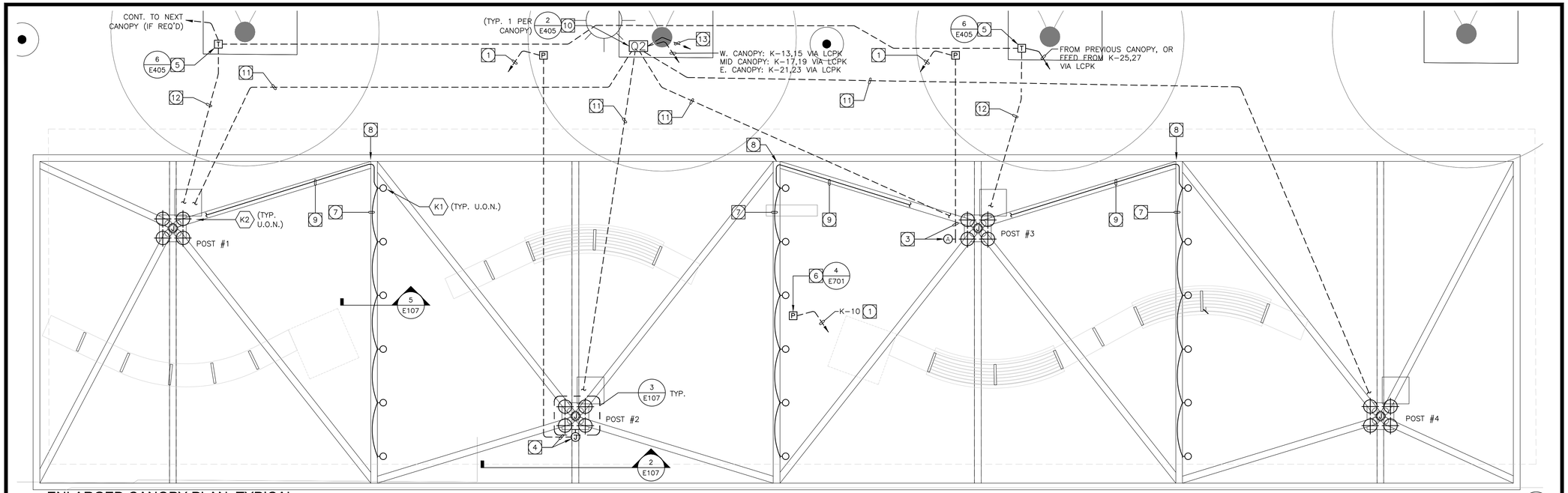
BASE FILE NAMES	
DRAWN BY	JL
CHECKED BY	RS
SCALE	AS NOTED
DATE	
PROJECT NO.	GRUEN # 8345

SITE ELECTRICAL PLAN

SHEET TITLE

E106

SHEET NO.



ENLARGED CANOPY PLAN, TYPICAL

SCALE: 1/4" = 1'-0" — 1

PLAN NOTES:

1. PROVIDE 1"C.O. TO KIOSK ELECTRICAL CLOSET.
2. NOT USED
3. PROVIDE WIFI ANTENNA FOR COVERAGE OF CANOPY AREA. PROVIDE CABLE AND CONDUIT INSTALLATION TO INFORMATION KIOSK ELECTRICAL CLOSET, ELECTRONICS, WIFI ANTENNA AND MOUNTING, CONNECTION TO OWNER'S SERVICE PROVIDER NETWORK. COORDINATE EXACT LOCATION AND MOUNTING SUITABILITY WITH ARCHITECT PRIOR TO ROUGH IN.
4. CONNECT AS REQUIRED TO DYNAMIC BUS BAY ID. COORDINATE EXACT MOUNTING AND LOCATION WITH DYNAMIC BUS BAY ID INSTALLER AND CANOPY ARCHITECT PRIOR TO ROUGH-IN.
5. REMOTE DRIVER FOR TYPE 'K1' DOWNLIGHTS. LOCATION MAY VARY AT EACH CANOPY. PLEASE PROVIDE: Q-TRAN DIRECT BURIAL Q-VAULT-5-BZ-[RING?] WITH QSET-360-240-12VAC WITH (2) 15A BREAKERS. CONTRACTOR TO SELECT RING OPTION FOR DRIVER HOUSING.
6. CONNECT AS REQUIRED TO INFORMATION KIOSK. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH INFORMATION KIOSK INSTALLER PRIOR TO ROUGH-IN.
7. CHASE L.V. POWER BETWEEN FIXTURES THROUGH T.S. ASSY., TYPICAL.
8. PROVIDE SMALL HAND HOLE OR OPENING AT STEEL INTERSECTION TO RE-DIRECT WIRE PULL THROUGH TRANSITION.
9. L.V. POWER CONTINUES DOWN T.S. ASSY. TO REMOTE DRIVER.
10. CONTRACTOR PROVIDED ABOVE GRADE UTILITY BOX TO HOUSE FIXTURE TYPE 'K2' DATA ENABLER. LOCATION MAY VARY AT EACH CANOPY. REFER TO E405 AND LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR MORE INFORMATION.
11. MIN. 1" C.O.: (5) STRANDED AWG CONT. FROM 'Q2' UTILITY BOX TO FIXTURE LOCATION. REFER TO E405 AND LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR EXACT WIRE TYPE.
12. MIN. 1" C.O.: L.V. CIRCUIT FROM REMOTE DRIVER TO 'K1' FIXTURES IN CANOPY STRUCTURE.
13. MIN. 3/4" C.O.: DMX SIGNAL HOMERUN TO 'Q1' PANEL IN KIOSK IDF ROOM. REFER TO E405 AND LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR EXACT WIRE TYPE.

SITE PLAN GENERAL NOTES:

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5. ALL SITE BRANCH CIRCUITS SHALL INCLUDE AN EQUIPMENT GROUND CONDUCTOR THAT, AT MINIMUM, MATCHES THE SIZE OF THE ASSOCIATED BRANCH CIRCUIT CONDUCTOR. WHERE MULTIPLE BRANCH CIRCUITS ARE ROUTED/GROUPED TOGETHER, THE EQUIPMENT GROUNDING CONDUCTOR SHALL MATCH THE SIZE OF THE LARGEST BRANCH CIRCUIT CONDUCTOR IN THE GROUP.
6. ALL ELECTRICAL EQUIPMENT MOUNTED OUTDOORS SHALL BE WEATHERPROOF (NEMA #3R).
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8. SEE ARCHITECTURAL/LANDSCAPE ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF FIXTURES, PULLBOXES, MANHOLES, OTHER ELECTRICAL DEVICES, ETC. COORDINATE ALL UNDERGROUND STRUCTURES AND CONDUIT ROUTING WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN TO ENSURE THAT SUCH ITEMS ARE NOT PLACED IN CRITICAL LANDSCAPE PLANTING/HARDSCAPE AREAS.
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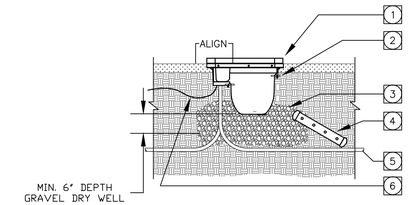
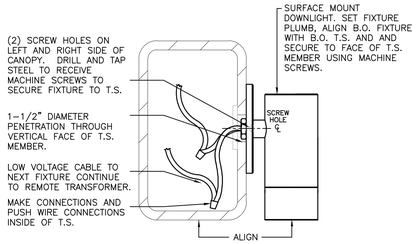


NOTE: REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR ADDITIONAL INSTALLATION INFORMATION, INCLUDING WARRANTY RESTRICTIONS.

1. INSTALL DIRECT-BURIAL DRIVER IN GRADE, ALIGN TOP OF ENCLOSURE SLIGHTLY PROUD OF GRADE. INSTALL SCHEDULED DRIVER CASSETTES (MAX. 2) IN ENCLOSURE. REFER TO MANUFACTURER INSTALLATION INSTRUCTIONS FOR CONDUIT ENTRY AND DRILLING INFORMATION.
2. HORIZONTAL STABILIZING BARS, (2) TOTAL.
3. MIN. 14" L X 30" W X 4" DEPTH PEA GRAVEL DRY WELL BELOW ENCLOSURE FOR DRAINAGE. ADDITIONAL GRAVEL OR DRAINAGE MAY BE REQUIRED IN LOCATIONS WITH POOR SOIL DRAINAGE.
4. PERFORATED DRAIN PIPE, PROVIDED WITH ENCLOSURE. SET AT 30-DEGREE ANGLE TOWARDS LOWEST SLOPE OF LAND FOR PROPER DRAINAGE.
5. CONDUIT INTO / THROUGH ENCLOSURE. PROVIDE WATER TIGHT CONDUIT SEAL. BRANCH CIRCUIT CONDUIT PER SITE PLAN. LOCATE POWER CONDUIT MIN. 18" BELOW GRADE, OR PER NEC TABLE 300.5.
6. CONDUIT OR DIRECT-BURIAL RATED LOW-VOLTAGE WIRE OUT TO LIGHTING LOADS. SEAL ALL LOW VOLTAGE CONNECTIONS INTO DIRECT-BURIAL ENCLOSURE.

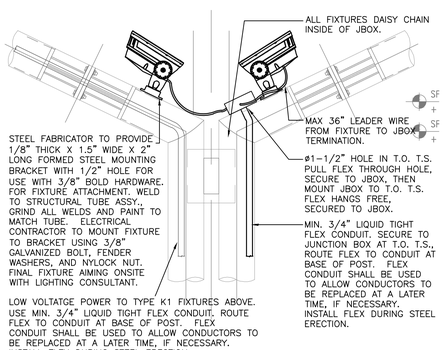
TYPE 'K1' REMOTE TRANSFORMER

SCALE: 3" = 1'-0" — 6



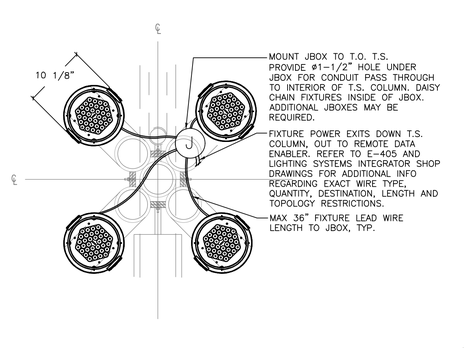
TYPE 'K1' INSTALLATION DETAIL

SCALE: 3" = 1'-0" — 5



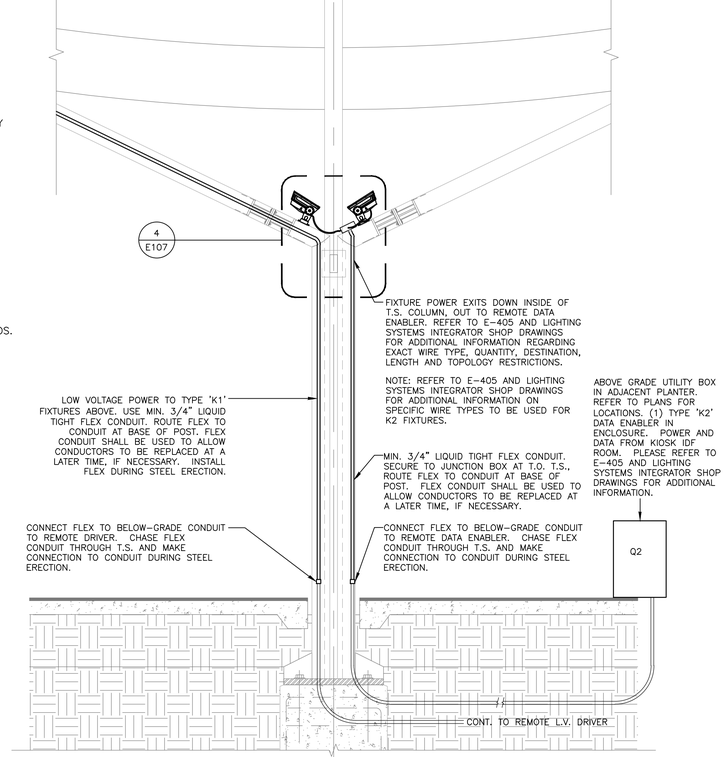
TYPE 'K2' INSTALLATION DETAIL, ELEV

SCALE: 1" = 1'-0" — 4



TYPE 'K2' INSTALLATION DETAIL, PLAN

SCALE: 1" = 1'-0" — 3



ENLARGED CANOPY SECTION, TYPICAL

SCALE: 1/2" = 1'-0" — 2

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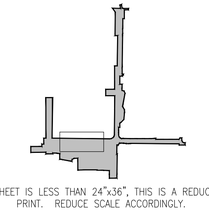

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BASE FILE NAMES

DRAWN BY JL

CHECKED BY RS

SCALE AS NOTED

DATE

PROJECT NO. GRUEN # 8345

CANOPY LIGHTING INSTALLATION DETAILS

SHEET TITLE

E107

SHEET NO.

MOTORIZED EQUIPMENT SCHEDULE SPECIFIC NOTES:

A. FUSED AS RECOMMENDED BY MANUFACTURER.

B. MAGNETIC MOTOR STARTER WITH CONTROL TRANSFORMER, AUXILIARY CONTACTS, INDICATOR LIGHT AND H.O.A. SWITCH. VERIFY CONTROL TRANSFORMER VOLTAGE WITH M.C. PRIOR TO ORDERING MATERIAL.

C. ROUTE THROUGH LINE VOLTAGE CONTROL. SEE MECHANICAL AND/OR PLUMBING PLANS FOR ADDITIONAL REQUIREMENTS.

D. VERIFY LOCATION WITH PLUMBING PLANS PRIOR TO ROUGH-IN. CONNECT TO AQUASTAT AND TIME CLOCK AS REQUIRED.

E. REMOTE VFD. PROVIDE EARLY BREAK CONTACTS ON ANY DISCONNECT SWITCHES REQUIRED BY CODE OR SHOWN ON PLANS THAT ARE DOWNSTREAM OF THE REMOTE VFD. PROVIDE CONDUIT AND CONDUCTORS AS REQUIRED TO INTERCONNECT THE CONTACT WITH VFD "ENABLE" TERMINALS. REFER TO MECHANICAL AND/OR PLUMBING PLANS FOR LOCATION. PROVIDE FEEDER(S) TO CONNECT REMOTE VFD AND MOTOR(S) AS REQUIRED.

F. INTEGRAL VFD PROVIDED WITH EQUIPMENT. REFER TO MECHANICAL AND/OR PLUMBING PLANS FOR LOCATION. CONNECT TO VFD AS REQUIRED.

G. INTEGRAL DISCONNECT PROVIDED WITH EQUIPMENT. REFER TO MECHANICAL AND/OR PLUMBING PLANS FOR LOCATION. CONNECT TO INTEGRAL DISCONNECT AS REQUIRED.

H. INTEGRAL DISCONNECT PROVIDED WITH VFD. REFER TO MECHANICAL AND/OR PLUMBING PLANS FOR LOCATION. CONNECT TO INTEGRAL DISCONNECT AS REQUIRED.

J. ROUTE 1 PHASE CONDUCTOR OF EACH UPS ROOM/DATA ROOM EXHAUST FAN BRANCH CIRCUIT THROUGH/AROUND A DEDICATED, CURRENT-OPERATED LOAD MONITORING SWITCH THAT DETECTS OVERLOADS AND UNDERLOADS (INCLUDING FAN BELT BREAKAGE) WITHIN +/- 15 PERCENT OF AVERAGE CURRENT DRAW. LOCATE IN BARRIERED PULL BOX – NEMA 3R FOR WET LOCATIONS – AND CONNECT N.O. CONTACT TO FIRE ALARM MONITORING MODULE (SUPERVISORY SIGNAL). LOCATE PULL BOX WITH DEVICES INDOORS WHERE POSSIBLE AND ADJACENT TO THE SERVING ELECTRICAL DISTRIBUTION EQUIPMENT. PROVIDE LABEL "USPA BATTERY EX. FAN MONITOR" PER LABELING SPECIFICATIONS. (NK TECHNOLOGIES #ASM-NOU-OU-FT – www.nktechnologies.com).

K. ROUTE THROUGH LINE VOLTAGE CONTROL FOR KITCHEN HOOD FIRE SUPPRESSION SYSTEM. SEE MECHANICAL, FIRE ALARM AND FOOD SERVICE PLANS FOR ADDITIONAL REQUIREMENTS.

MOTORIZED EQUIPMENT SCHEDULE GENERAL NOTES:

1. ALL BRANCH CIRCUIT DATA IS BASED UPON METALLIC CONDUITS. IF THE CONTRACTOR ELECTS TO USE NONMETALLIC CONDUITS, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED PER NEC, OR CEC WHERE ADOPTED, TABLE **250.122** AND THE CONDUIT SIZE SHALL BE INCREASED ACCORDINGLY.
2. ELECTRICAL CONTRACTOR SHALL REFER TO ALL DOCUMENTS RELATED TO THE EQUIPMENT (I.E. SHOP DRAWINGS, CONSTRUCTION DOCUMENTS, ETC.) IN REGARDS TO ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT LISTED IN THE SCHEDULE. ANY MODIFICATION AND/OR ADDITIONAL WORK NECESSARY SHALL BE INCLUDED IN THE BASE BID.
3. ELECTRICAL CONTRACTOR SHALL CHECK THE ROTATION OF ALL THREE PHASE MOTORS AND CORRECT THE ROTATION IF REVERSED.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE FUSES SIZED PER THE EQUIPMENT NAMEPLATE INFORMATION.
5. DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE, EXTERNALLY OPERATED, QUICK MAKE QUICK BREAK AND SHALL BE FUSIBLE OR NON FUSIBLE AS INDICATED. A MAXIMUM VOLTAGE, CURRENT AND HORSEPOWER SHALL BE CLEARLY MARKED ON SWITCH ENCLOSURE. SWITCHES HAVING DUAL RATINGS (HIGHER RATINGS WHEN USED WITH DUAL ELEMENT FUSES) SHALL HAVE RATINGS INDICATED ON METAL PLATES RIVETED OR OTHERWISE PERMANENTLY ATTACHED TO THE ENCLOSURE. WHEN INDICATED, TOGGLE SWITCHES SHALL BE MOTOR RATED FOR THE APPLICATION.
6. STARTERS SHALL BE FULL VOLTAGE, REDUCED VOLTAGE OR COMBINATION DISCONNECT AND STARTER, WITH CONTROL VOLTAGE AS REQUIRED, AS INDICATED ON THE DOCUMENTS RELATED TO THE EQUIPMENT, SUCH AS SHOP DRAWINGS, CONSTRUCTION DOCUMENTS, ETC. STARTERS SHALL INCLUDE MOTOR OVERLOAD PROTECTION, PHASE LOSS AND PHASE UNBALANCE PROTECTION AS REQUIRED.
7. ALL TERMINATIONS AND ENCLOSURES SHALL BE RATED FOR USE WITH 75 DEGREE C CONDUCTORS.
8. COMPLETE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF NEC (OR CEC WHERE ADOPTED) ARTICLES **430 AND 440.**
9. CONTRACTOR TO COORDINATE WITH ALL OTHER PROJECT TRADES AND WITH OWNER/ TENANT FOR TO OBTAIN RESPECTIVE EQUIPMENT SCCR AND PROVIDE APPROPRIATE PROTECTIVE DEVICES TO LIMIT AVAILABLE FAULT CURRENT TO LESS THAN THE EQUIPMENT NAMEPLATE SCCR PER NEC (OR CEC WHERE ADOPTED) **110.10.** SEE POWER SYSTEM STUDY SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
10. UNLESS OTHERWISE NOTED, MOCP VALUES FOR VFD-EQUIPPED DEVICE ARE SIZED PER NEC (OR CEC WHERE ADOPTED) **430.130(A).1.** CONTRACTOR SHALL COORDINATE WITH ALL OTHER PROJECT TRADES AND WITH OWNER/ TENANT (IF PROVIDING EQUIPMENT ON PROJECT) TO OBTAIN NAMEPLATE VFD-EQUIPPED DEVICE MOCP VALUE FROM MANUFACTURER INSTALLATION INSTRUCTIONS AND PROVIDE APPROPRIATE PROTECTIVE DEVICES TO COMPLY WITH NEC (OR CEC WHERE ADOPTED) **430.130(A).2.**

MOTORIZED EQUIPMENT SCHEDULE

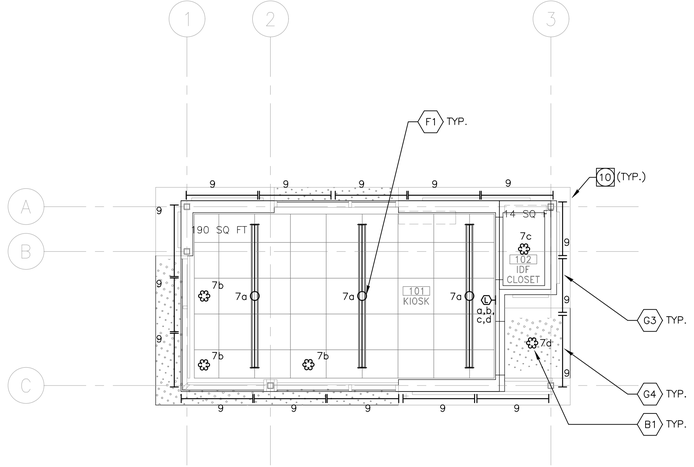
ITEM	DESCRIPTION	EQUIPMENT RATING								DISC. SW. SIZE	CIRCUIT DATA	SPECIFIC
				MOTOR		VFD						
		VOLTS	PH.	HP	FLA	FLA	MCA	MOCP	SCCR	STARTER SIZE	CONDUIT – WIRE	NOTES
SHP 1	SPLIT HEAT PUMP –	240	1	–	–	–	13	20	–	30A/2P Ø	K-2,4 1/2"C, 2#12, +1#12 E.G.	A,C
SFC 1	SPLIT FAN COIL –	–	–	–	–	–	–	–	–	– –	– –	C

PLAN GENERAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL REFER TO MECHANICAL/PLUMBING AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND CHARACTERISTICS OF ALL EQUIPMENT LISTED IN SCHEDULE. ANY MODIFICATIONS AND/OR ADDITIONAL WORK NECESSARY SHALL BE INCLUDED IN THE BASE BID.
2. ALL TEMPERATURE CONTROL AND INTERLOCK CONDUIT AND WIRING SHALL BE BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED. SEE MECHANICAL/PLUMBING DRAWINGS FOR ALL INFORMATION.
3. ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL CONNECTION POINTS WITH THE EQUIPMENT INSTALLER PRIOR TO ROUGH-IN.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE LOCAL REMOTE DISCONNECTING MEANS FOR ALL ELECTRIC HEATING EQUIPMENT IF REQUIRED BY THE LOCAL ELECTRICAL CODE.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE THE ROUTING OF CONDUIT/WIRING TO ROOF-MOUNTED EQUIPMENT WITH EQUIPMENT INSTALLER PRIOR TO ROUGH-IN. WHERE ROOF-MOUNTED EQUIPMENT IS MANUFACTURED TO BE FED FROM WITHIN MECHANICAL CURB ASSEMBLY – SEPARATE ROOF PENETRATIONS FOR WIRING CONNECTIONS SHALL NOT BE PERMITTED. ALL WIRING SHALL BE BELOW THE ROOF IN AN ACCESSIBLE CEILING SPACE LOCATION.
6. ALL ROOF MOUNTED EQUIPMENT SHALL BE NEMA 3R RATED.
7. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.

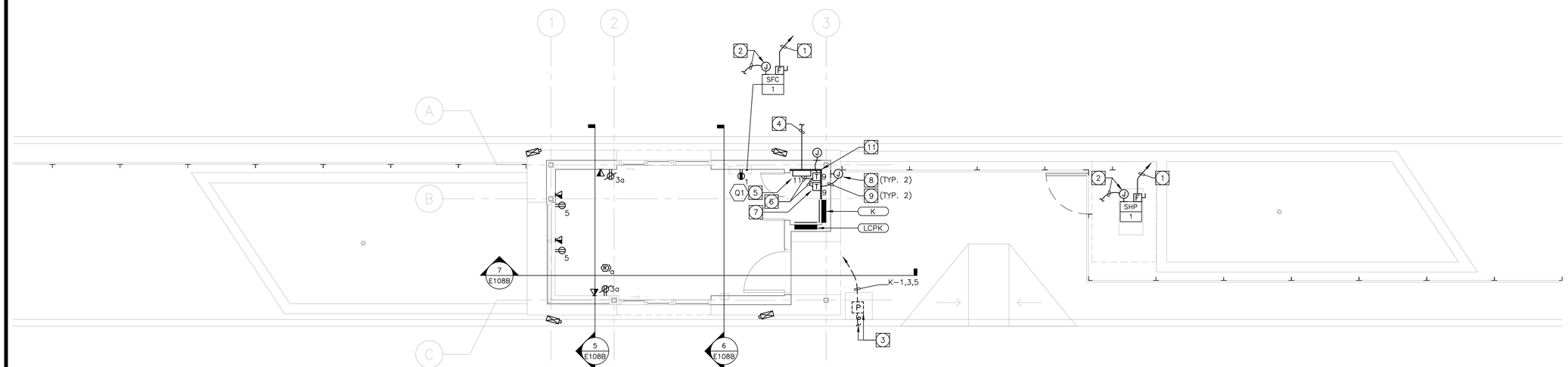
PLAN SPECIFIC NOTES:

1. REFER TO MOTORIZED EQUIPMENT SCHEDULE FOR MOTOR FEEDER/ BRANCH CIRCUIT INFORMATION.
2. PROVIDE 3/4" C.O.(S) TO RESPECTIVE CONTROL DEVICE(S) FOR CONTROL WIRING. REFER TO THE EQUIPMENT CONTROL WIRING DIAGRAMS FOR ADDITIONAL INFORMATION.
3. CONNECT AS REQUIRED TO TICKET DISPENSER. COORDINATE EXACT LOCATION W/TICKET DISPENSER INSTALLER REFER TO ROUGH-IN.
4. (3) DMX LIGHTING CONTROL SIGNAL TO COLOR CHANGING LIGHTS AT CANOPIES. REFER TO E-405 AND LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR EXACT WIRE TYPE, QUANTITY, DESTINATION, LENGTH AND TOPOLOGY RESTRICTIONS.
5. LIGHTING CONTROL PANEL. SURFACE MOUNT TO WALL, DIRECT CONDUIT CONNECTION TO PANEL FOR HARD WIRED POWER TO INTERNAL POWER SUPPLY. REFER TO E-405 AND LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR ADDITIONAL INFORMATION.
6. DMX LIGHTING CONTROL SIGNAL TO COLOR CHANGING LIGHTS KIOSK PERIMETER. REFER TO E-405 AND LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR EXACT WIRE TYPE, QUANTITY, DESTINATION, LENGTH AND TOPOLOGY RESTRICTIONS.
7. FIXTURE TYPE G3 & G4 REMOTE POWER SUPPLY / DATA ENABLERS. LOCATE IN IDF ROOM. ROUTE L.V. POWER TO JBOXES AT FIXTURE LOCATIONS.
8. LOCATE JUNCTION BOX FLUSH IN WALL AT START OF 'G' FIXTURE RUN. PROVIDE WET LOCATION BOX COVER WITH COMPRESSION CABLE GLAND FOR LEAD WIRE TO FIRST FIXTURE. REFER TO E-405 AND LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR ADDITIONAL INFORMATION.
9. L.V. CONDUCTORS FROM REMOTE POWER SUPPLY TO JBOX FIXTURE ROW START POINT. REFER TO E-405 AND LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR EXACT WIRE TYPE, QUANTITY, LENGTH AND TOPOLOGY RESTRICTIONS.
10. SEE POWER PLAN FOR JBOX FEED LOCATIONS. FIXTURES CONNECT WITH JUMPER CABLES. REFER TO E-405 AND LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR ADDITIONAL INFORMATION.
11. PROVIDE 8' H x 3/4" THICK x LENGTH PER PLAN FIRE-RATED PLYWOOD TELEPHONE BACKBOARD. SEE SPECIFICATIONS FOR MORE INFORMATION. MOUNT FROM THE CEILING DOWN. PAINT COLOR AS SELECTED BY ARCHITECT. ARCHITECT SHALL SPECIFY PAINT. LEAVE (1) FIRE RATING STAMP EXPOSED ON EACH PIECE OF PLYWOOD.



ENLARGED KIOSK LIGHTING PLAN — 2

SCALE: 1/4" = 1'-0"



ENLARGED KIOSK PLAN — 1

SCALE: 1/4" = 1'-0"

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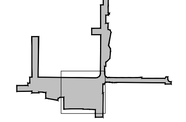

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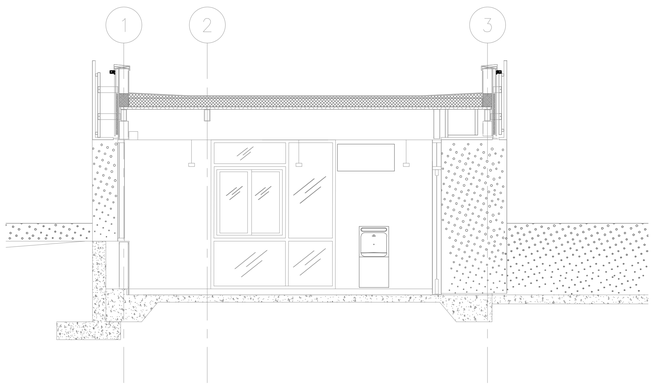
PROJECT NO.	GRUEN # 8345

SITE ELECTRICAL KIOSK PLANS

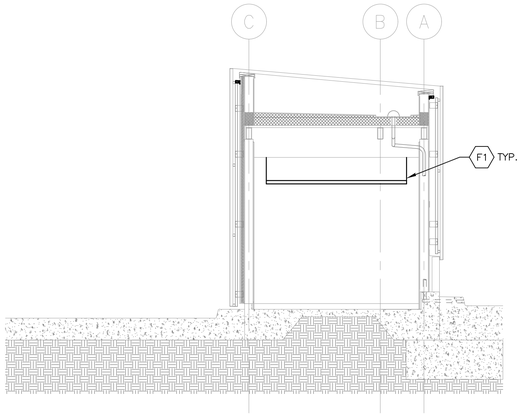
SHEET TITLE

E108A

SHEET NO.



KIOSK NORTH SECTION
SCALE: 1/4" = 1'-0" 7



KIOSK WEST SECTION
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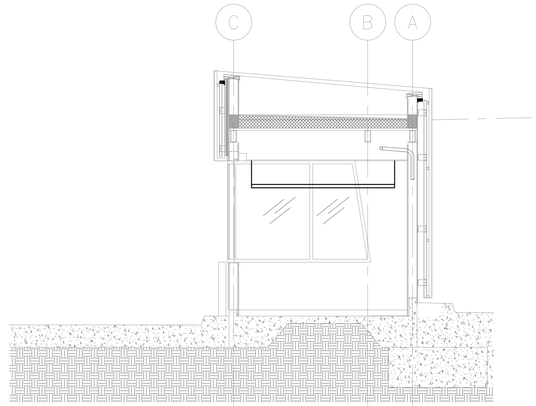

KIOSK WEST SECTION
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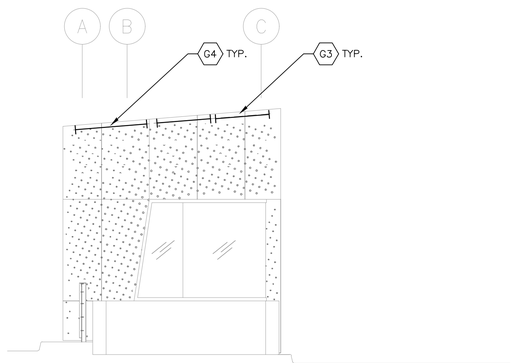
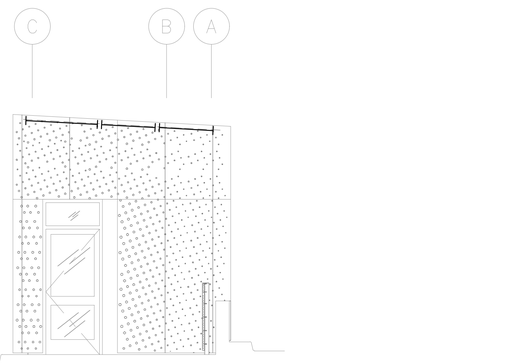
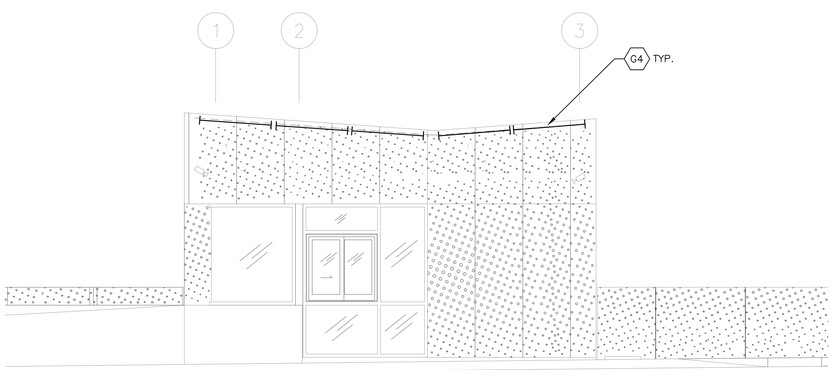


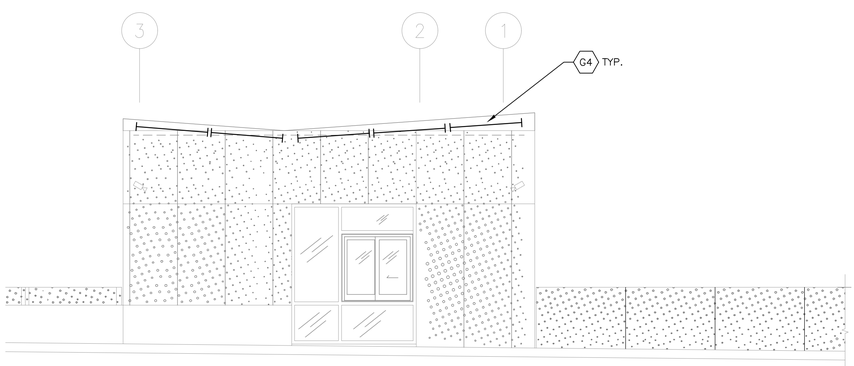
KIOSK EAST ELEVATION
SCALE: 1/4" = 1'-0" 4



KIOSK WEST ELEVATION
SCALE: 1/4" = 1'-0" 3



KIOSK SOUTH ELEVATION
SCALE: 1/4" = 1'-0" 2



KIOSK NORTH ELEVATION
SCALE: 1/4" = 1'-0" 1

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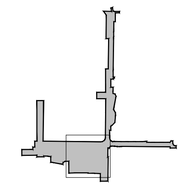

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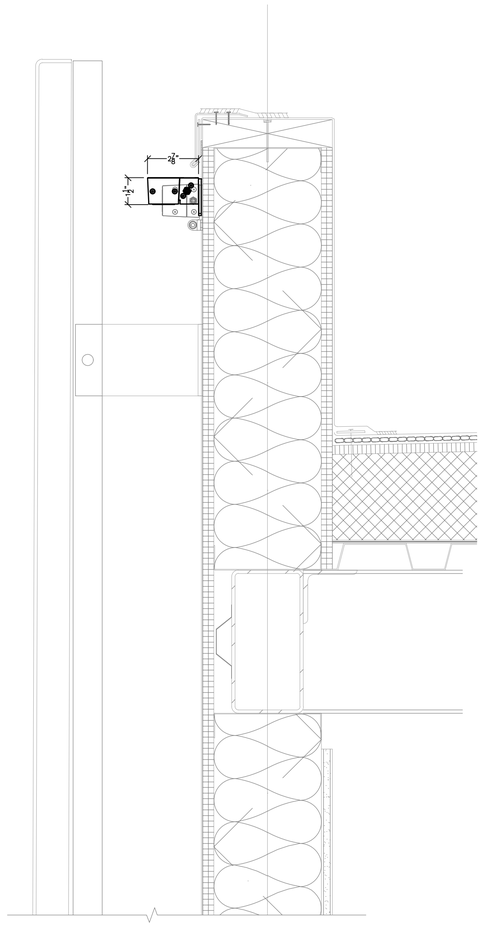
SITE ELECTRICAL
KIOSK ELEVATIONS
AND SECTIONS

SHEET TITLE

E108B

SHEET NO.



ELECTRICAL DETAILS AT PARAPET
SCALE: 1" = 1'-0"
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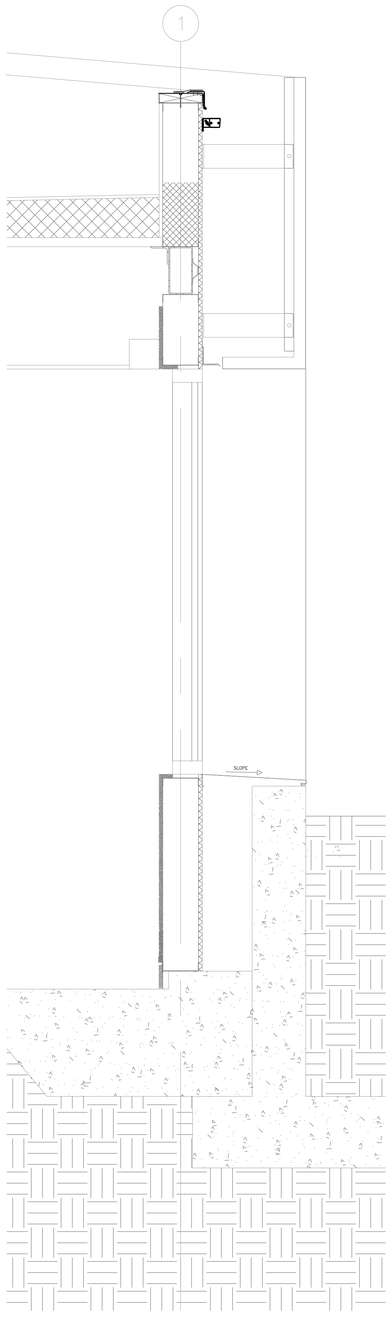
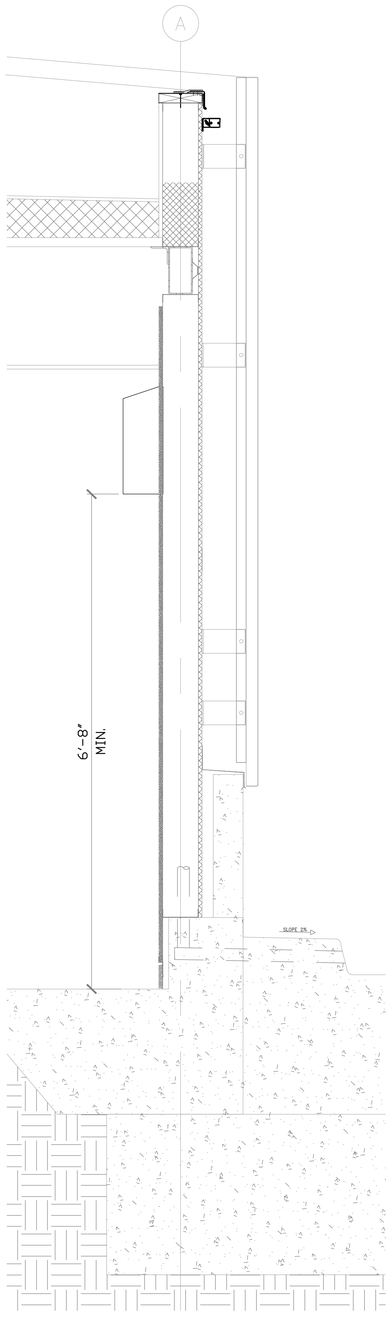
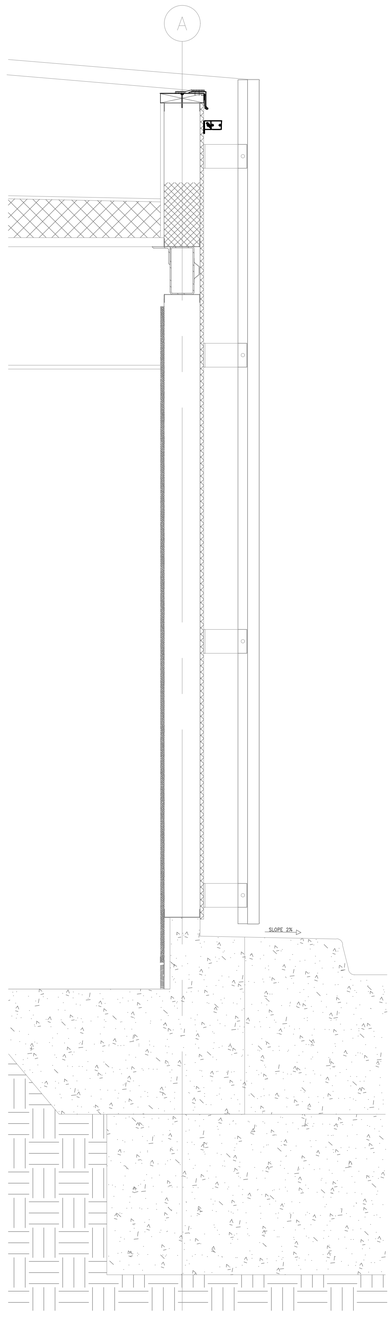


KIOSK WALL SECTION
SCALE: 1" = 1'-0"
3



KIOSK WALL SECTION
SCALE: 1" = 1'-0"
2



KIOSK WALL SECTION
SCALE: 1" = 1'-0"
1

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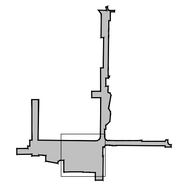

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SITE ELECTRICAL KIOSK SECTION DETAILS

SHEET TITLE

E108C

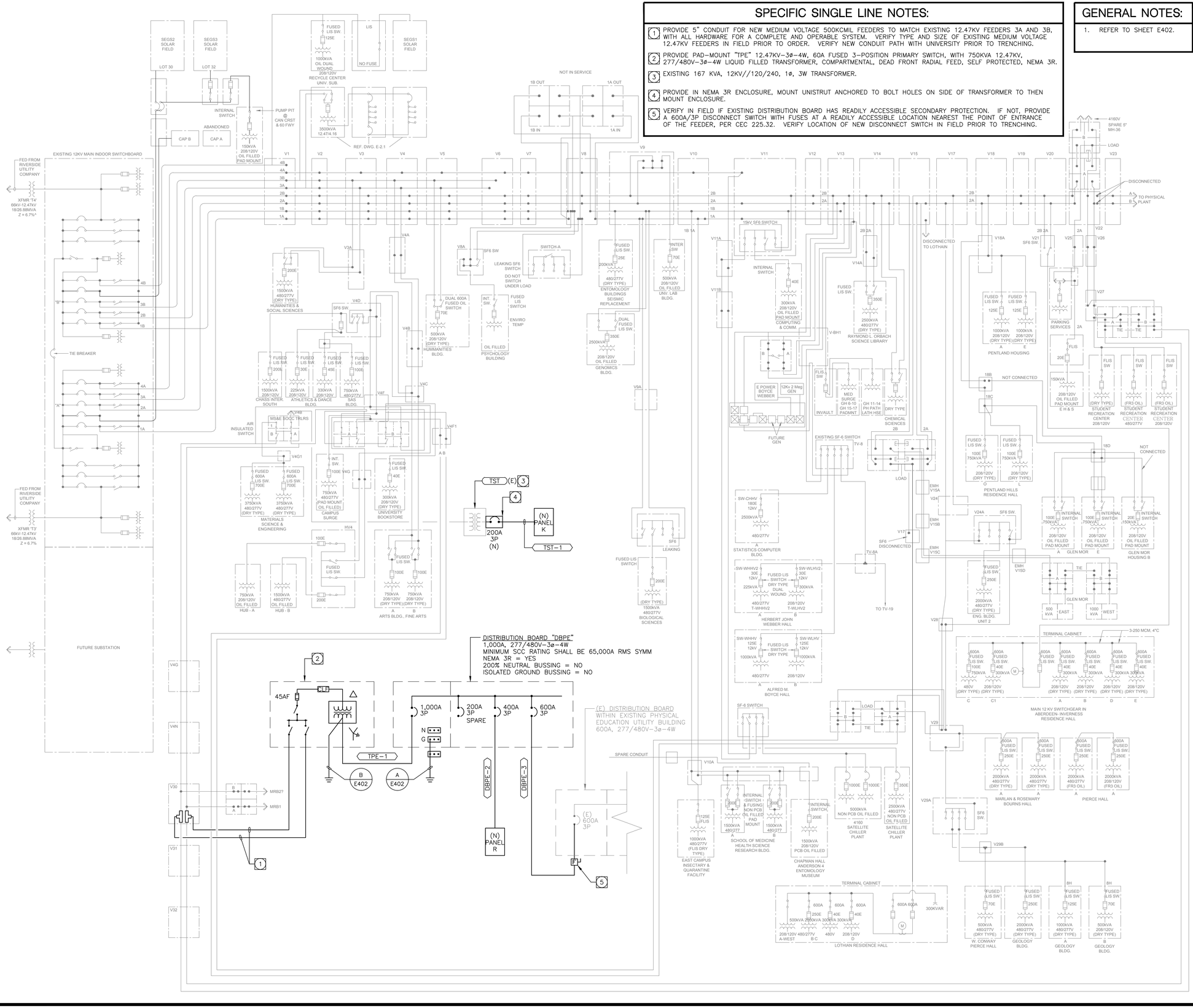
SHEET NO.

SPECIFIC SINGLE LINE NOTES:

1. PROVIDE 5" CONDUIT FOR NEW MEDIUM VOLTAGE 500KCMIL FEEDERS TO MATCH EXISTING 12.47KV FEEDERS 3A AND 3B, WITH ALL HARDWARE FOR A COMPLETE AND OPERABLE SYSTEM. VERIFY TYPE AND SIZE OF EXISTING MEDIUM VOLTAGE 12.47KV FEEDERS IN FIELD PRIOR TO ORDER. VERIFY NEW CONDUIT PATH WITH UNIVERSITY PRIOR TO TRENCHING.
2. PROVIDE PAD-MOUNT "TPE" 12.47KV-3ø-4W, 60A FUSED 3-POSITION PRIMARY SWITCH, WITH 750KVA 12.47KV, 277/480V-3ø-4W LIQUID FILLED TRANSFORMER, COMPARTMENTAL, DEAD FRONT RADIAL FEED, SELF PROTECTED, NEMA 3R.
3. EXISTING 167 KVA, 12KV//120/240, 1ø, 3W TRANSFORMER.
4. PROVIDE IN NEMA 3R ENCLOSURE, MOUNT UNISTRUT ANCHORED TO BOLT HOLES ON SIDE OF TRANSFORMER TO THEN MOUNT ENCLOSURE.
5. VERIFY IN FIELD IF EXISTING DISTRIBUTION BOARD HAS READILY ACCESSIBLE SECONDARY PROTECTION. IF NOT, PROVIDE A 600A/3P DISCONNECT SWITCH WITH FUSES AT A READILY ACCESSIBLE LOCATION NEAREST THE POINT OF ENTRANCE OF THE FEEDER, PER CEC 225.32. VERIFY LOCATION OF NEW DISCONNECT SWITCH IN FIELD PRIOR TO TRENCHING.

GENERAL NOTES:

1. REFER TO SHEET E402.



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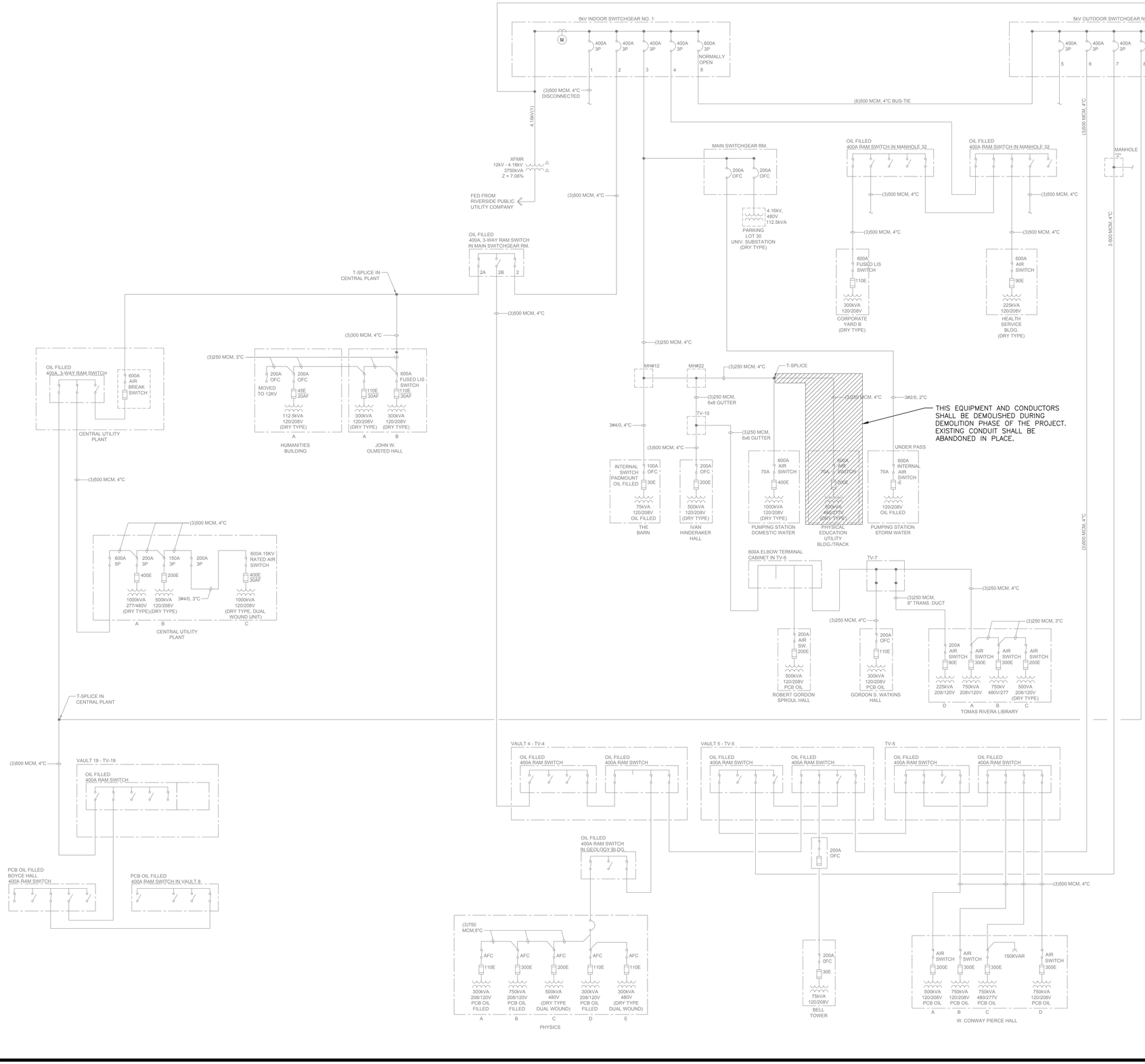
SINGLE LINE DIAGRAM

SHEET TITLE

E401

SHEET NO.



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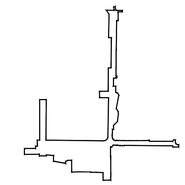

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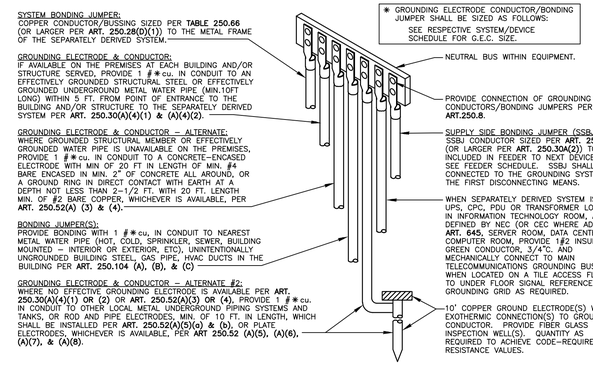
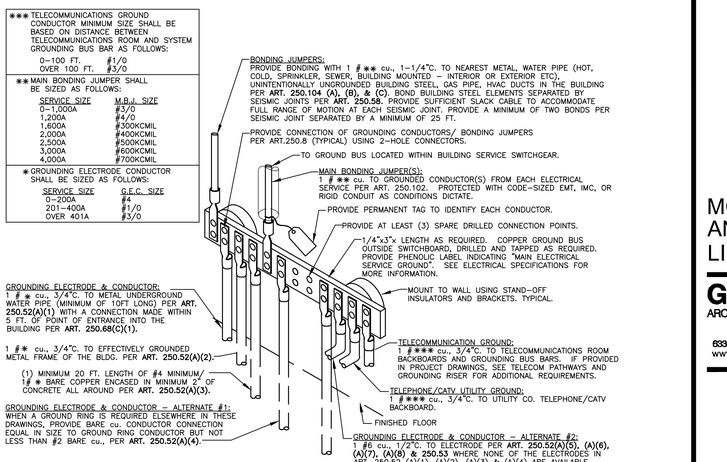
SINGLE LINE DIAGRAM

SHEET TITLE

E401A

SHEET NO.





POWER SYSTEMS STUDY SPECIFICATIONS:

THE CONTRACTOR SHALL PROVIDE, WITH THE ASSISTANCE OF THE SWITCHGEAR MANUFACTURER, POWER SYSTEMS STUDIES CONSISTING OF A SHORT CIRCUIT STUDY, A COORDINATION STUDY, AND AN ARC FLASH STUDY – ALL PER LATEST PUBLISHED EDITIONS OF THE FOLLOWING STANDARDS: ANSI C37, IEEE 141, IEEE 242, IEEE 399 – BROWN BOOK, NFPA 70E AND IEEE STD 1584/1584a. ADDITIONALLY:

a. CONTRACTOR SHALL PERFORM STUDY USING SKM "SYSTEMS ANALYSIS POWER TOOLS FOR WINDOWS" COMPUTER SOFTWARE PROGRAM – LATEST AVAILABLE VERSION OR EQUAL BY ETAP.

b. CONTRACTOR SHALL FURNISH/OBTAIN ALL DATA REQUIRED FOR POWER SYSTEMS STUDIES. DATA COLLECTION EFFORT SHALL BE PERFORMED IN AN EXPEDITIOUS MANNER AND AS SOON AS POSSIBLE AFTER CONTRACT AWARD TO ENSURE STUDY COMPLETION FOR SUBMISSION AS PART OF THE ELECTRICAL DISTRIBUTION EQUIPMENT SHOP DRAWINGS AND SUBMITTALS. DATA COLLECTION EFFORTS MAY INCLUDE, BUT ARE NOT LIMITED TO, CALCULATED UTILITY COMPANY FAULT VALUES, SERVICE TRANSFORMER PRIMARY PROTECTIVE DEVICE AND APPLIED VOLTAGE, ELECTRICAL CHARACTERISTICS AND FAULT CONTRIBUTION FROM EXISTING MOTORS/GENERATORS, EXISTING CONDUCTOR QUANTITIES, SIZE AND LENGTHS, EXISTING/ NEW OVERCURRENT PROTECTIVE DEVICE SPECIFICATIONS AND PART NUMBERS, TRANSFER SWITCH CHARACTERISTICS AND SHORT CIRCUIT CURRENT RATINGS IN ADDITION TO ANY OTHER DATA REQUIRED TO PERFORM COMPREHENSIVE POWER SYSTEM STUDIES. RANGES OF FAULT CURRENT VALUES OR GENERIC FAULT CURRENT VALUES PROVIDED BY THE UTILITY COMPANY ARE UNACCEPTABLE AS ARE ANY FAULT CURRENT VALUES SHOWN ON THE SINGLE LINE DIAGRAM OR FEEDER SCHEDULE.

DATA GATHERING SHALL BE CONDUCTED IN A SAFE MANNER WITH 1) EQUIPMENT COMPLETELY DE–ENGERIZED IN COORDINATION WITH THE OWNER DURING A SCHEDULED POWER SHUTDOWN OR 2) UTILIZING A LICENSED ELECTRICIAN WEARING APPROPRIATE PERSONNEL PROTECTIVE EQUIPMENT PER NFPA 70E STANDARDS.

CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING UTILITY DATA FROM THE UTILITY COMPANY – INCLUDE ALL COSTS IN BASE BID FOR ANY UTILITY COMPANY FEES FOR PROVIDING NECESSARY DATA. WHERE THE PROJECT IS LOCATED ON A CAMPUS WITH AN OWNER–FURNISHED ELECTRICAL DISTRIBUTION SYSTEM, CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN SUFFICIENT ELECTRICAL SYSTEM DATA TO DEMONSTRATE COORDINATION OF THE PROJECT'S ELECTRICAL SYSTEM WITH CAMPUS DISTRIBUTION SYSTEM. THIS DATA MAY BE AVAILABLE IN THE FORM OF AN OWNER–PROVIDED CAMPUS POWER SYSTEM STUDY. WHERE SUCH STUDIES ARE NOT AVAILABLE, THE CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO PERFORM NECESSARY FIELD INVESTIGATION OF CAMPUS DISTRIBUTION SYSTEM INCLUDING CAMPUS SERVICE ENTRANCE AND SERVING UTILITY DATA AS REQUIRED TO DEMONSTRATE COORDINATION OF THE PROJECT'S ELECTRICAL SYSTEM WITH CAMPUS DISTRIBUTION SYSTEM. INCLUDE ALL COSTS FOR RECOMMENDING ADJUSTMENTS TO EXISTING CAMPUS DISTRIBUTION SYSTEM SETTINGS DISCOVERED TO BE INCORRECT. OWNER SHALL BE RESPONSIBLE TO UNDERTAKE ANY PHYSICAL ADJUSTMENTS TO EXISTING MEDIUM OR HIGH VOLTAGE DISTRIBUTION EQUIPMENT WITH THE EXCEPTION OF FUSES, RELAYS OR OTHER CIRCUIT PROTECTIVE DEVICES LOCATED IN EXISTING DISTRIBUTION EQUIPMENT THAT ARE DEDICATED TO SERVE ONLY THIS PROJECT'S ELECTRICAL SYSTEM.

CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING EQUIPMENT SCCR RATING FROM ALL OTHER PROJECT TRADES AND FOR ANY OWNER–FURNISHED OR TENANT–FURNISHED EQUIPMENT CONNECTED TO THE ELECTRICAL SYSTEM IN ORDER TO VALIDATE AVAILABLE FAULT CURRENT AT THE EQUIPMENT CONNECTIONS IS LESS THAN THE RESPECTIVE EQUIPMENT SCCR.

c. THE SHORT CIRCUIT STUDY SHALL INCLUDE CALCULATED SHORT–CIRCUIT MOMENTARY AND INTERRUPTING DUTIES FOR 3–PHASE BOLTED FAULTS AND LINE–TO–GROUND FAULTS THROUGHOUT THE SINGLE LINE TO INCLUDE UTILITY SERVICE SUPPLY, GENERATORS AND TRANSFER SWITCHES, SUBSTATIONS, SWITCHGEAR, PANEL BOARDS ETC. STUDY SHALL EVALUATE ALL ELECTRICAL DISTRIBUTION EQUIPMENT AND PROTECTIVE DEVICES AGAINST SHORT CIRCUIT CURRENT RATINGS. THIS STUDY EFFORT SHALL EXTEND TO SCCR RATINGS OF EQUIPMENT, EQUIPMENT CONTROL PANELS, VARIABLE FREQUENCY DRIVES ETC PROVIDED BY OTHER TRADES THAT ARE CONNECTED TO THE ELECTRICAL SYSTEM. NOTE ANY EXISTING CIRCUIT PROTECTIVE DEVICE(S)/ELECTRICAL DISTRIBUTION THAT IS INADEQUATELY RATED TO WITHSTAND CALCULATED FAULT VALUES OR WHERE EQUIPMENT SCCR IS EXCEEDED. WHERE THE UTILITY COMPANY PROVIDES MULTIPLE FAULT CURRENT VALUES REFLECTING INITIAL TRANSFORMER CAPACITY AND WORST CASE TRANSFORMER CAPACITY, THE CONTRACTOR SHALL PROVIDE SHORT CIRCUIT ANALYSIS PRIMARILY BASED ON WORST CASE TRANSFORMER CAPACITY. ALL SERVICE EQUIPMENT SHALL BE LABELED WITH THE MAXIMUM AVAILABLE FAULT CURRENT AND FAULT CURRENT CALCULATION DATE PER NEC (OR CEC WHERE ADOPTED) **110.24**. SEE LABELING SPECIFICATION FOR ADDITIONAL REQUIREMENTS.

d. THE COORDINATION STUDY SHALL INCLUDE TIME–CURRENT CURVES (TCC) FOR OVER CURRENT PROTECTIVE DEVICES (OCPDs) ALONG WITH TRANSFORMER FULL–LOAD CURRENT, INRUSH CURRENT, AND THROUGH–FAULT PROTECTION CURVES, CONDUCTOR DAMAGE CURVES, GROUND FAULT PROTECTIVE DEVICE CURVES, MOTOR STARTING CURVE(S)/DAMAGE POINT(S), GENERATOR SHORT–CIRCUIT CURVE(S) /DAMAGE POINT(S) ETC. – CLEARLY IDENTIFIED AND PLOTTED ON LOG–LOG SCALE GRAPH(S). TCC GRAPH(S) SHALL INCLUDE A ONE–LINE DIAGRAM IDENTIFYING THE SPECIFIC PORTION COVERED BY THE GRAPH. DEMONSTRATE THAT ADEQUATE CLEARING TIME/SELECTIVE OPERATION EXISTS BETWEEN PROTECTIVE DEVICES WHILE PROVIDING PROPER SYSTEM PROTECTION & COORDINATION. STUDY SHALL INCLUDE ALL MAIN AND FEEDER OCPDs INCLUDING SECONDARY SIDE OF EACH TRANSFORMER DOWN TO BREAKERS IN PANEL BOARDS AND INDIVIDUAL BREAKERS IN DISTRIBUTION BOARDS. IN ALL CASES, SOLID STATE AND/OR ADJUSTABLE OCPDs SHALL BE ANALYZED WITH UPSTREAM AND DOWNSTREAM OCPDs AS REQUIRED TO ESTABLISH PROPER COORDINATION SETTINGS. SPECIAL EMPHASIS SHALL BE PLACED ON ANALYZING PORTIONS OF THE ELECTRICAL SYSTEM REQUIRING SELECTIVE COORDINATION WHICH INCLUDE, BUT ARE NOT LIMITED TO, NEC (OR CEC WHERE ADOPTED) **ARTICLES 517, 620, 700, 701 & 708**; ALONG WITH ANY **ARTICLE 702** OPTIONAL STANDBY SYSTEMS SERVING SERVER ROOMS/DATA CENTERS OR OTHER AREAS REQUIRING HIGH AVAILABILITY/PROPER COORDINATION SUCH AS MANUFACTURING, CLEAN ROOM OR LAB FACILITIES. CONTRACTOR SHALL BE RESPONSIBLE TO RECOMMEND SETTINGS OF ALL DEVICES, TO INCLUDE GROUND FAULT SETTINGS, TO ACHIEVE SYSTEM COORDINATION. THE CONTRACTOR SHALL FIELD ADJUST NEW AND EXISTING DEVICES ACCORDINGLY UTILIZING A QUALIFIED MANUFACTURER'S REPRESENTATIVE OR A THIRD–PARTY ELECTRICAL TESTING AGENCY.

e. THE ARC FLASH ANALYSIS SHALL BE BASED ON THE INCIDENT ENERGY ANALYSIS METHOD (NFPA 70E 130.5). THE ARC FLASH ANALYSIS SHALL DETERMINE THE FLASH BOUNDARY, THE WORKING DISTANCE, THE INCIDENT ENERGY AND MINIMUM ARC RATING OF CLOTHING(CAL/CM^2) AT LOCATIONS IN THE ELECTRICAL SYSTEM WHERE WORK CAN OR MIGHT BE PERFORMED ON ENERGIZED COMPONENTS WHERE MULTIPLE SYSTEM CONFIGURATION SCENARIOS ARE POSSIBLE, THE CONFIGURATION WITH GREATEST INCIDENT ENERGY MUST BE SHOWN. DECREMENT FAULT CONTRIBUTIONS FROM MOTOR(S) AND GENERATOR(S) BASED ON INDUSTRY STANDARDS. THE CONTRACTOR SHALL MAKE RECOMMENDATIONS WITH REGARD TO SYSTEM ADJUSTMENTS OR OTHER MITIGATION MEASURES TO OPTIMIZE THE RESULTS OF THE STUDY AS IT RELATES TO SAFE AND RELIABLE ELECTRICAL SYSTEM OPERATION (E.G. OVERCURRENT DEVICE SETTINGS, WORKING DISTANCES, CURRENT LIMITING DEVICES). THIS INCLUDES MITIGATION, WHERE POSSIBLE, OF INCIDENT ENERGY LEVELS THAT EXCEED 40 CAL/CM^2. PERFORM ITERATIVE CALCULATIONS TO DEMONSTRATE EFFECTS OF OPENING PROTECTIVE DEVICES UTILIZING A VARIETY OF DIFFERENT SETTINGS TO BEST MITIGATE ARC FLASH ENERGY WHILE MAINTAINING AN ACCEPTABLE LEVEL OF SYSTEM COORDINATION. WHERE SUCH RECOMMENDATIONS COMPROMISE SELECTIVE COORDINATION SETTINGS, SO STATE IN THE ANALYSIS.

INCLUDE INCIDENT ENERGY/FLASH PROTECTION BOUNDARY CALCULATIONS FOR BOTH LINE/LOAD SIDE OF ALL SEPARATELY ENCLOSED MAIN CIRCUIT BREAKERS. ALL CALCULATIONS SHALL BE BASED ON ACTUAL OVERCURRENT DEVICE CLEARING TIMES.

f. BASED ON THE RESULTS OF THE ARC FLASH ANALYSIS, THE CONTRACTOR SHALL PRODUCE AND INSTALL A WARNING LABEL (ORANGE <40 CAL/CM2) OR DANGER LABEL (RED > 40 CAL/CM2) FOR EACH PIECE OF EQUIPMENT PER NEC (OR CEC WHERE ADOPTED) **110.16** AND IN ACCORDANCE WITH ANSI Z535.4–2007 OR LATEST PUBLISHED EDITION. THE LABEL MUST BE READABLE IN BOTH INDOOR AND OUTDOOR ENVIRONMENTS FOR AT LEAST 3 YEARS AND CONTAIN THE FOLLOWING INFORMATION: NOMINAL SYSTEM VOLTAGE, ARC HAZARD BOUNDARY (INCHES), WORKING DISTANCE (INCHES), AVAILABLE ARC FLASH INCIDENT ENERGY AT THE WORKING DISTANCE (CAL/CM^2), MINIMUM ARC RATING OF CLOTHING, EQUIPMENT/BUS NAME, DATE PREPARED, SUPPLIER'S NAME AND ADDRESS. PROVIDE LABEL AS MANUFACTURED BY BRADY OR EQUAL. PRIOR TO PLACING ARC FLASH LABELS, CONTRACTOR SHALL SET ALL PROTECTIVE DEVICE SETTINGS PER THE APPROVED COORDINATION STUDY.

g. DURING THE CONSTRUCTION PHASE OF THE PROJECT, ALL GROUND FAULT RELAYS SHALL BE SET AT THE LOWEST AVAILABLE TIME DELAY AND PICK–UP SETTINGS.

h. POWER SYSTEMS STUDIES SHALL BE SUBMITTED AS PART OF THE OVERALL SWITCHGEAR SUBMITTAL. THE RESULTS OF THE POWER SYSTEMS STUDY SHALL BE PRESENTED IN A COMPREHENSIVE REPORT THAT INCLUDES:

- REPORT SUMMARY WITH ANALYSIS METHODOLOGY, FINDINGS AND RECOMMENDATIONS
- SUMMARY OF INPUT DATA FOR UTILITY SOURCE, EQUIPMENT AND CABLES
- AVAILABLE FAULT CURRENT AT EACH EQUIPMENT LOCATION WITH COMPARISON TO EQUIPMENT RATING
- OVERCURRENT DEVICE SETTINGS (E.G. PICK–UP, TIME DELAY, CURVE), "AS FOUND" AND "AS RECOMMENDED"
- OVERCURRENT DEVICE COORDINATION CURVES INCLUDING RELATED SECTION OF THE SINGLE–LINE DIAGRAM
- COMPLETE SYSTEM SINGLE–LINE DIAGRAM FOR THE SYSTEM ANALYZED
- INCIDENT ENERGY LEVEL (CAL/CM^2) FOR EACH EQUIPMENT LOCATION, RECOMMENDED PPE AND SAMPLE ARC FLASH WARNING LABELS
- A DVD OR CD CONTAINING ELECTRONIC PROJECT FILES USED TO DEVELOP THE STUDY TO INCLUDE SKM OR ETAP PROJECT AND REFERENCE LIBRARY FILES. ALL FILES SHALL BE AVAILABLE FOR REVIEW AND/OR FUTURE MODIFICATION WITHOUT LIMITATION. LOCKING OR SECURING FILES BY OTHER MEANS IS NOT ACCEPTABLE. FAILURE TO SUBMIT COMPLETE STUDIES AND FULLY ACCESSIBLE FILES SHALL RESULT IN THE REJECTION OF THE ENTIRE SWITCHGEAR SUBMITTAL.

i. AS A PART OF A CLOSEOUT SUBMITTAL TO BE SUBMITTED TO THE ENGINEER PRIOR TO FINAL PROJECT CONSTRUCTION OBSERVATIONS, CONTRACTOR SHALL PROVIDE PHOTOS OF ALL ADJUSTABLE CIRCUIT BREAKERS DEPICTING THEIR FINAL SETTINGS BASED ON THE POWER SYSTEMS STUDY. SUBMITTAL SHALL BE ORGANIZED WITH OCPD IDENTIFICATION, OCPD PHOTO IMAGE AND RESPECTIVE POWER SYSTEM STUDY OCPD SETTING REQUIREMENTS TO ALLOW EFFICIENT CONFIRMATION OF RECORD SETTINGS. PLEASE NOTE THAT IMAGES MAY NEED TO BE TAKEN PRIOR TO INSTALLATION OF EQUIPMENT COVERS/EQUIPMENT ENERGIZATION SINCE OCPD SETTINGS MAY BE OBSTRUCTED BY EQUIPMENT COVERS.

j. THE STUDY SHALL INCLUDE ALL PORTIONS OF ELECTRICAL SINGLE LINE DIAGRAM TO INCLUDE UPSTREAM OR DOWNSTREAM ELEMENTS THAT MAY NOT BE SHOWN INCLUDING, BUT NOT LIMITED TO, UTILITY SOURCE CONTRIBUTION, RELEVANT PORTIONS OF THE EXISTING ELECTRICAL DISTRIBUTION SYSTEM WITHIN A BUILDING AND/OR CAMPUS ELECTRICAL DISTRIBUTION SYSTEMS AS DESCRIBED ABOVE.

SYSTEM BONDING JUMPER:
COPPER CONDUCTOR/BUSSING SIZED PER **TABLE 250.66** (OR LARGER PER **ART. 250.28(D)(1)**) TO THE METAL FRAME OF THE SEPARATELY DERIVED SYSTEM.

GROUNDING ELECTRODE & CONDUCTOR:
IF AVAILABLE ON THE PREMISES AT EACH BUILDING AND/OR STRUCTURE SERVED, PROVIDE 1 #*cu. IN CONDUIT TO AN EFFECTIVELY GROUNDED STRUCTURAL STEEL OR EFFECTIVELY GROUNDED UNDERGROUND METAL WATER PIPE (MIN.10FT LONG) WITHIN 5 FT. FROM POINT OF ENTRANCE TO THE BUILDING AND/OR STRUCTURE TO THE SEPARATELY DERIVED SYSTEM PER **ART. 250.30(A)(4)(1) & (A)(4)(2)**.

GROUNDING ELECTRODE & CONDUCTOR – ALTERNATE:
WHERE GROUNDED STRUCTURAL MEMBER OR EFFECTIVELY GROUNDED WATER PIPE IS UNAVAILABLE ON THE PREMISES, PROVIDE 1 #*cu. IN CONDUIT TO A CONCRETE–ENCASED ELECTRODE WITH MIN OF 20 FT IN LENGTH OF MIN. #4 BARE ENCASED IN MIN. 2" OF CONCRETE ALL AROUND, OR A GROUND RING IN DIRECT CONTACT WITH EARTH AT A DEPTH NOT LESS THAN 2–1/2 FT. WITH 20 FT. LENGTH MIN. OF #2 BARE COPPER, WHICHEVER IS AVAILABLE, PER **ART. 250.52(A) (3) & (4).**

BONDING JUMPER(S):
PROVIDE BONDING WITH 1 #*cu, IN CONDUIT TO NEAREST METAL WATER PIPE (HOT, COLD, SPRINKLER, SEWER, BUILDING MOUNTED – INTERIOR OR EXTERIOR, ETC), UNINTENTIONALLY UNGROUNDED BUILDING STEEL, GAS PIPE, HVAC DUCTS IN THE BUILDING PER **ART. 250.104 (A), (B), & (C)**

GROUNDING ELECTRODE & CONDUCTOR – ALTERNATE #2:
WHERE NO EFFECTIVE GROUNDING ELECTRODE IS AVAILABLE PER **ART. 250.30(A)(4)(1) OR (2)** OR **ART. 250.52(A)(3) OR (4)**, PROVIDE 1 #*cu. IN CONDUIT TO OTHER LOCAL METAL UNDERGROUND PIPING SYSTEMS AND TANKS, OR ROD AND PIPE ELECTRODES, MIN. OF 10 FT. IN LENGTH, WHICH SHALL BE INSTALLED PER **ART. 250.52(A)(5)(a) & (b)**, OR PLATE ELECTRODES, WHICHEVER IS AVAILABLE, PER **ART 250.52 (A)(5), (A)(6), (A)(7), & (A)(8)**.

* GROUNDING ELECTRODE CONDUCTOR/BONDING JUMPER SHALL BE SIZED AS FOLLOWS:
SEE RESPECTIVE SYSTEM/DEVICE SCHEDULE FOR G.E.C. SIZE.

NEUTRAL BUS WITHIN EQUIPMENT.

PROVIDE CONNECTION OF GROUNDING CONDUCTORS/BONDING JUMPERS PER **ART.250.8**.

SUPPLY SIDE BONDING JUMPER (SSBJ):
SSBJ CONDUCTOR SIZED PER **ART. 250–66** (OR LARGER PER **ART. 250.30A(2)**) TO BE INCLUDED IN FEEDER TO NEXT DEVICE – SEE FEEDER SCHEDULE. SSBJ SHALL BE CONNECTED TO THE GROUNDING SYSTEM AT THE FIRST DISCONNECTING MEANS.

WHEN SEPARATELY DERIVED SYSTEM IS A UPS, CPC, PDU OR TRANSFORMER LOCATED IN INFORMATION TECHNOLOGY ROOM, AS DEFINED BY NEC (OR CEC WHERE ADOPTED) **ART. 645**, SERVER ROOM, DATA CENTER, OR COMPUTER ROOM, PROVIDE 1#2 INSULATED GREEN CONDUCTOR, 3/4"C. AND MECHANICALLY CONNECT TO MAIN TELECOMMUNICATIONS GROUNDING BUS AND, WHEN LOCATED ON A TILE ACCESS FLOOR, TO UNDER FLOOR SIGNAL REFERENCE OR GROUNDING GRID AS REQUIRED.

10' COPPER GROUND ELECTRODE(S) WITH EXOTHERMIC CONNECTION(S) TO GROUND CONDUCTOR. PROVIDE FIBER GLASS INSPECTION WELL(S). QUANTITY AS REQUIRED TO ACHIEVE CODE–REQUIRED RESISTANCE VALUES.

SEPARATELY DERIVED SYSTEM (SDS) GROUNDING DETAIL B

SCALE: NTS

(OCPD NOT A PART OF SDS)

*** TELECOMMUNICATIONS GROUND CONDUCTOR MINIMUM SIZE SHALL BE BASED ON DISTANCE BETWEEN TELECOMMUNICATIONS ROOM AND SYSTEM GROUNDING BUS BAR AS FOLLOWS:

0–100 FT.	#1/0
OVER 100 FT.	#3/0

** MAIN BONDING JUMPER SHALL BE SIZED AS FOLLOWS:

SERVICE SIZE	M.B.J. SIZE
0–1,000A	#3/0
1,200A	#4/0
1,600A	#300KCMIL
2,000A	#400KCMIL
2,500A	#500KCMIL
3,000A	#600KCMIL
4,000A	#700KCMIL

* GROUNDING ELECTRODE CONDUCTOR SHALL BE SIZED AS FOLLOWS:

SERVICE SIZE	G.E.C. SIZE
0–200A	#4
201–400A	#1/0
OVER 401A	#3/0

BONDING JUMPERS:
PROVIDE BONDING WITH 1 #** cu., 1–1/4"C. TO NEAREST METAL, WATER PIPE (HOT, COLD, SPRINKLER, SEWER, BUILDING MOUNTED – INTERIOR OR EXTERIOR ETC), UNINTENTIONALLY UNGROUNDED BUILDING STEEL, GAS PIPE, HVAC DUCTS IN THE BUILDING PER **ART. 250.104 (A), (B), & (C)**. BOND BUILDING STEEL ELEMENTS SEPARATED BY SEISMIC JOINTS PER **ART. 250.58.** PROVIDE SUFFICIENT SLACK CABLE TO ACCOMMODATE FULL RANGE OF MOTION AT EACH SEISMIC JOINT. PROVIDE A MINIMUM OF TWO BONDS PER SEISMIC JOINT SEPARATED BY A MINIMUM OF 25 FT.

PROVIDE CONNECTION OF GROUNDING CONDUCTORS/ BONDING JUMPERS PER ART.250.8 (TYPICAL) USING 2–HOLE CONNECTORS.

TO GROUND BUS LOCATED WITHIN BUILDING SERVICE SWITCHGEAR.

MAIN BONDING JUMPER(S):
1 #** cu. TO GROUNDED CONDUCTOR(S) FROM EACH ELECTRICAL SERVICE PER ART. 250.102. PROTECTED WITH CODE–SIZED EMT, IMC, OR RIGID CONDUIT AS CONDITIONS DICTATE.

PROVIDE PERMANENT TAG TO IDENTIFY EACH CONDUCTOR.

PROVIDE AT LEAST (3) SPARE DRILLED CONNECTION POINTS.

1/4"x3"x LENGTH AS REQUIRED. COPPER GROUND BUS OUTSIDE SWITCHBOARD, DRILLED AND TAPPED AS REQUIRED. PROVIDE PHENOLIC LABEL INDICATING "MAIN ELECTRICAL SERVICE GROUND". SEE ELECTRICAL SPECIFICATIONS FOR MORE INFORMATION.

MOUNT TO WALL USING STAND–OFF INSULATORS AND BRACKETS. TYPICAL.

GROUNDING ELECTRODE & CONDUCTOR:
1 # * cu., 3/4"C. TO METAL UNDERGROUND WATER PIPE (MINIMUM OF 10FT LONG) PER **ART. 250.52(A)(1)** WITH A CONNECTION MADE WITHIN 5 FT. OF POINT OF ENTRANCE INTO THE BUILDING PER **ART. 250.68(C)(1).**

1 #* cu., 3/4"C. TO EFFECTIVELY GROUNDED METAL FRAME OF THE BLDG. PER **ART. 250.52(A)(2).**

(1) MINIMUM 20 FT. LENGTH OF #4 MINIMUM/ 1# * BARE COPPER ENCASED IN MINIMUM 2" OF CONCRETE ALL AROUND PER **ART. 250.52(A)(3).**

GROUNDING ELECTRODE & CONDUCTOR – ALTERNATE #1:
WHEN A GROUND RING IS REQUIRED ELSEWHERE IN THESE DRAWINGS, PROVIDE BARE cu. CONDUCTOR CONNECTION EQUAL IN SIZE TO GROUND RING CONDUCTOR BUT NOT LESS THAN #2 BARE cu., PER **ART. 250.52(A)(4).**

TELECOMMUNICATION GROUND:
1 #*** cu., 3/4"C. TO TELECOMMUNICATIONS ROOM BACKBOARDS AND GROUNDING BUS BARS. IF PROVIDED IN PROJECT DRAWINGS, SEE TELECOM PATHWAYS AND GROUNDING RISER FOR ADDITIONAL REQUIREMENTS.

TELEPHONE/CATV UTILITY GROUND:
1 #*** cu., 3/4"C. TO UTILITY CO. TELEPHONE/CATV BACKBOARD.

FINISHED FLOOR

GROUNDING ELECTRODE & CONDUCTOR – ALTERNATE #2:
1 #6 cu., 1/2"C. TO ELECTRODE PER **ART. 250.52(A)(5), (A)(6), (A)(7), (A)(8) & 250.53** WHERE NONE OF THE ELECTRODES IN ART. 250.52 (A)(1), (A)(2), (A)(3) & (A)(4) ARE AVAILABLE.

MAIN SERVICE SYSTEM GROUNDING DETAIL A

SCALE: NTS

GENERAL SINGLE LINE DIAGRAM NOTES:

1. ALL SWITCHGEAR SHALL BE SQUARE D OR EQUAL BY CUTLER–HAMMER, RSE–SIERRA, G.E., SIEMENS, OR Z–POWER AND DISTRIBUTION.
2. ALL ITEMS DEPICTED ON THE SINGLE LINE DRAWINGS SHALL BE ASSUMED AS NEW U.O.N.
3. ALL OVERCURRENT DEVICES IN AN INDIVIDUAL PIECE OF EQUIPMENT SHALL HAVE AN AIC RATING EQUAL TO THE OVERALL RATING OF THE EQUIPMENT–SERIES RATING OF DEVICES WITHIN A PIECE OF EQUIPMENT IS NOT ALLOWED. SEE SPECIFICATIONS FOR MORE INFORMATION.
4. SERIES RATED DEVICES SHALL HAVE BEEN INVESTIGATED BY U.L. IN COMBINATION WITH THE END USE EQUIPMENT AND IN THE EQUIPMENT IN WHICH THESE DEVICES ARE USED AND SHALL BE MARKED WITH A SERIES RATING. ALL EQUIPMENT SHALL BE MARKED IN ACCORDANCE WITH NEC (OR CEC–WHERE ADOPTED) REQUIREMENTS. SEE SPECIFICATIONS FOR MORE INFORMATION. WHERE SERIES RATINGS ARE ALLOWED, THE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD TO INDICATE A SERIES COMBINATION RATING WHICH SHALL BE READILY VISIBLE AND STATE THE FOLLOWING:

   CAUTION – SERIES COMBINATION SYSTEM RATED AT ??,??? AMPERES. USE ONLY IDENTIFIED REPLACEMENT COMPONENTS IN THIS SYSTEM.

   WHERE ??,??? REPRESENTS AVAILABLE FAULT CURRENT. SEE SPECIFICATIONS FOR PLACARD REQUIREMENTS.
5. ALL TERMINATIONS AND ENCLOSURES SHALL BE RATED FOR USE WITH 75 DEGREE CELSIUS CONDUCTORS.
6. ALL SERVICE ENTRANCE EQUIPMENT RATED AT 400A OR GREATER SHALL BE PROVIDED WITH A BACKFEED–RATED, SOLID STATE MAIN OVERCURRENT DEVICE AND BUSSING RATED AT 100% OPERATION (1000A/sq.in. FOR CU, 750A/sq.in. FOR AL). NO HEAT RISE RATED BUSSING ALLOWED. NON–SERVICE ENTRANCE SWITCHBOARDS AND DISTRIBUTION BOARDS LARGER THAN 600A SHALL BE PROVIDED WITH BUSSING RATED FOR 100% OPERATION – SEE SPECIFICATION FOR CIRCUIT BREAKER REQUIREMENTS. ALL NON–SERVICE ENTRANCE SWITCHBOARDS AND DISTRIBUTION BOARD MAIN OVERCURRENT DEVICES SHALL BE BACKFEED–RATED. BACKFEED RATINGS SHALL COMPLY WITH NEC, OR CEC WHERE ADOPTED, **690.10 (E) AND 705.12(D)(4).** SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING CIRCUIT BREAKERS.
7. PROVIDE CIRCUIT BREAKER ARC ENERGY REDUCTION MAINTENANCE SWITCHING PER NEC, OR CEC WHERE ADPOPTED, **240.87(B)(3)** FOR ANY CIRCUIT BREAKER, 1200A FRAME AND LARGER. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
8. ALL SWITCHBOARDS AND DISTRIBUTION BOARDS SHALL HAVE:
   a. **TIN–PLATED ALUMINUM** BUSSING WITH RECTANGULAR CROSS SECTION. HORIZONTAL AND VERTICAL BUSSING SHALL BE FULL LENGTH AND SHALL HAVE PROVISIONS FOR FUTURE EXTENSIONS. ALL BUSSING SHALL HAVE MINIMUM WITHSTAND RATING EQUAL TO THE AVAILABLE FAULT CURRENT INDICATED. ALL VERTICAL AND HORIZONTAL BUSSING SHALL BE RATED AT FULL CAPACITY IN ALL SWITCHBOARD AND DISTRIBUTION BOARD SECTIONS. PROVIDE 100% NEUTRAL BUSSING MINIMUM UNLESS OTHERWISE NOTED. PROVIDE FULL LENGTH GROUND BUS AND, WHERE INDICATED ON PLANS, ISOLATED GROUND BUSSING. PROVIDE REAR WIRE WAY IN ALL SWITCHBOARD SECTIONS.

   b. LUGS SUITABLE FOR USE WITH COPPER OR ALUMINUM CONDUCTORS LISTED FOR USE WITH 75 DEGREE CELSIUS AMPACITY CONDUCTORS.

   c. PERMANENT PLACARD(S) MARKED PER THE SPECIFICATIONS AND PER NEC (OR CEC–WHERE ADOPTED) SECTIONS **225.37, 230.2(E), 690.56, 692.56, 700.7, 701.7, 702.7,** AND **705.10** DENOTING THE PRESENCE OF ADDITIONAL SERVICES, PHOTOVOLTAIC SYSTEMS, FUEL CELLS, EMERGENCY OR STAND–BY POWER SOURCES AS APPLICABLE.
9. CONTRACTOR SHALL SUBMIT SWITCHBOARD SHOP DRAWINGS TO THE SERVING UTILITY FOR APPROVAL PRIOR TO FABRICATION. CONTRACTOR SHALL SECURE CONFIRMATION THAT THE PROPOSED SWITCHBOARD COMPLIES WITH ELECTRIC UTILITY COMPANY REGULATIONS.
10. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PER THE SPECIFICATIONS FOR SWITCHBOARDS, DISTRIBUTION BOARDS, TRANSFORMERS, PANEL BOARDS, AND ALL OTHER DEVICES SHOWN ON THE SINGLE LINE, PRIOR TO FABRICATION.
11. ALLOWABLE DIMENSIONS IN MAIN ELECTRICAL ROOM ARE A CRITICAL COORDINATION ITEM. CONTRACTOR SHALL PROVIDE 1/4"= 1'–0" SCALE DRAWINGS WITH SWITCHGEAR SUBMITTALS SHOWING THAT ALL PROPOSED EQUIPMENT WILL FIT IN THE SPACE PROVIDED. SUBMITTALS WITHOUT THIS DRAWING SHALL BE REJECTED AS INCOMPLETE.
12. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON–BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.
13. WHERE REQUIRED BY THE LOCAL AUTHORITY HAVING JURISDICTION OR WHERE A NEW GROUND FAULT PROTECTIVE DEVICE IS BEING INSTALLED, A GROUND FAULT SYSTEM TEST SHALL BE CONDUCTED BY AN INDEPENDENT TESTING AGENCY PER NEC (OR CEC–WHERE ADOPTED) **230.95(C)**. THE GROUND FAULT SYSTEM TEST SHALL BE PERFORMED IN THE PRESENCE OF THE LOCAL AUTHORITY HAVING JURISDICTION. VERIFICATION OF DEVICE SETTINGS PER THE POWER SYSTEMS STUDY SPECIFICATION SHALL BE PERFORMED BY THE SAME INDEPENDENT TESTING AGENCY. THE GROUND FAULT TEST RESULTS SHALL BE DELIVERED TO THE ENGINEER OF RECORD. DURING THE CONSTRUCTION PHASE OF THE PROJECT, ALL NEW GROUND FAULT RELAYS SHALL BE SET AT THE LOWEST AVAILABLE TIME DELAY AND PICK–UP SETTINGS.
14. SEE POWER SYSTEMS STUDY SPECIFICATION FOR ADDITIONAL REQUIREMENTS. ALL REQUIRED POWER SYSTEMS STUDIES MUST BE COMPLETED AND SUBMITTED WITH ELECTRICAL POWER DISTRIBUTION EQUIPMENT SUBMITTAL. FAILURE TO DO SO WILL PREVENT THE ENGINEER FROM EFFECTIVELY EVALUATING THE SUBMITTAL AND SHALL RESULT IN REJECTION OF THE ELECTRICAL POWER DISTRIBUTION EQUIPMENT SUBMITTAL AS INCOMPLETE.

FEEDER SCHEDULE

FEEDER	CONDUIT AND CONDUCTORS	LOAD (A)	DISTANCE (FT)	V.D. (%)	AVAIL.FAULT CURRENT (A)	NOTES
TPE–1	(3)4"C–4#500KCMIL+1#3/0 GRD	(1,000)	10'	0.03	63,153	(N) DISTRIBUTION BOARD DBPE
DBPE–2	(2)2 1/2"C–4#3/0+1#2GRD	(400)	120'	0.69	31,881	(N) PANEL R –
DBPE–3	(2)4"C–4#350KCMIL+1#1GRD	(600)	50'	0.21	50,511	(E) DIST. BRD. WITHIN PHY. ED. UTILITY BLDG.
TST–1	2 1/2"C–3#3/0 + 1#6GRD	(200)	220'	2.93	6,800	(N) PANEL K –

GENERAL FEEDER SCHEDULE NOTES:

1. ALL FEEDERS SHOWN, UNLESS SPECIFICALLY NOTED OTHERWISE, ARE PRESUMED TO BE ROUTED IN METAL RACEWAYS. IF P.V.C. CONDUITS ARE UTILIZED, THE CONTRACTOR SHALL PROVIDE AN EQUIPMENT GROUND PER NEC, OR CEC WHERE ADOPTED, **TABLE 250.122** OR, WHERE REQUIRED, PROVIDE A MAIN BONDING JUMPER PER **TABLE 250.66** AND INCREASE THE CONDUIT SIZE ACCORDINGLY.
2. LOADS INDICATED WITH " ( ) " REPRESENT WORST CASE LOAD IN AMPS.
3. DISTANCE SHOWN IS FOR DESIGN PURPOSES ONLY. IT IS NOT A MATERIAL TAKEOFF.
4. VOLTAGE DROP VALUE INDICATED IS AT THE END OF THE FEEDER.
5. AVAILABLE FAULT CURRENT VALUE AT THE END OF THE FEEDER INDICATED. CALCULATIONS ARE BASED UPON INITIAL VALUES RECEIVED FROM THE SERVING UTILITY AND THE LENGTH AND IMPEDANCE OF THE FEEDER. THE SHORT CIRCUIT CURRENT RATING, EQUIPMENT BUS BRACING, AND/OR AMP INTERRUPTING CURRENT OF EQUIPMENT CONNECTED ON THE LOAD SIDE OF THE FEEDER SHALL BE GREATER THAN THE AVAILABLE FAULT CURRENT.

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CONSULTANT

RAYMOND W. SWARTZ
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Ex.12/31/2019
ELECTRICAL

ARCHITECT/ENGINEER SEAL

IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES	
DRAWN BY	JL
CHECKED BY	RS
SCALE	–
DATE	
PROJECT NO.	GRUEN # 8345

TRANSFORMER &
FEEDER SCHEDULES

SHEET TITLE

E402

SHEET NO.

PANEL R

MOUNTING PEDESTAL — DOUBLE LUG NO — VOLTS 277/480 — MAIN 400A, 3-POLE
NEMA 3R YES — 200% NEUTRAL NO — PHASE 3 — BUS 400A
FEED THRU NO — I/G BUS NO — WIRE 4 — A.I.C. 65,000

NOTES	LOCATION	A	B	C	LTG	CONV	KIT	RECP	MISC	BKR	CIRC		CIRC	BKR	MISC	RECP	KIT	CONV	LTG	A	B	C	LOCATION	NOTES
									1	20/1	1		2	20/1					41	824			EXTERIOR LGHTS	
										20/1	3		4	20/1					-		824		—	
										20/1	5		6	20/1					7			322	EXTERIOR LGHTS	
										20/1	7		8	20/1					-	322			—	
										20/1	9		10	20/1					13		598		EXTERIOR LGHTS	
										20/1	11		12	20/1					-			598	—	
										20/1	13		14	20/1					15	690			EXTERIOR LGHTS	
										20/1	15		16	20/1					-		690		—	
										20/1	17		18	20/1					16			416	EXTERIOR LGHTS	
										20/1	19		20	20/1					6	516			EXTERIOR LGHTS	
										20/1	21		22	20/1					-		516		—	
										20/1	23		24	20/1					67			1879	EXTERIOR LGHTS	
										20/1	25		26	20/1					11	586			EXTERIOR LGHTS	
										20/1	27		28	20/1					-		586		—	
										20/1	29		30	20/1										
										20/1	31		32	20/1										
										20/1	33		34	20/1										
										20/1	35		36	20/1										
										20/1	37		38	20/1										
										20/1	39		40	20/1										
										20/1	41		42	20/1										

A= 2938 VA — B= 3214 VA — C= 3215 VA
PHASE A LCL= 735 VA — PHASE B LCL= 804 VA — PHASE C LCL= 804 VA
PHASE A W/LCL= 3673 VA — PHASE B W/LCL= 4018 VA — PHASE C W/LCL= 4019 VA
TOTAL VA= 9367 — TOTAL LCL= 2342 — TOTAL VA W/LCL= 11709
AMPS= **14** — HIGH PHASE AMPS= **15**

PANEL K

MOUNTING FLUSH — DOUBLE LUG NO — VOLTS 120/240 — MAIN 200A,2-POLE
NEMA 3R NO — 200% NEUTRAL NO — PHASE 1 — BUS 225A
FEED THRU NO — I/G BUS NO — WIRE 3 — A.I.C 65,000

NOTES	LOCATION	A		B	LTG	CONV	KIT	RECP	MISC	BKR	CIRC		CIRC	BKR	MISC	RECP	KIT	CONV	LTG	A		B	LOCATION	NOTES
	GFI RECPT KIOSK	180				1				20/1	1		2	20/2	1					1560			SHP-1	
	RECEPT KIOSK			360		2				20/1	3		4	–	-							1560	—	
	CNTRLD RECPT KIOSK	360				2				20/1	5		6	20/1	1					500			GATE CONTROLLER	
	INTERIOR LTG KIOSK			135	7					20/1	7		8	20/1	1							100	IRRIG CONTROLLER	
	EXTRIOR LTGKIOSK	252			17					20/1	9		10	20/1	3					300			TRANSIT INFO	
	LTG CONTROLLER			100					1	20/1	11		12	20/1										
	CANOPY WEST LTG	400			16					20/2	13		14	20/1										
	CANOPY WEST LTG			400	16					-	15		16	20/1										
	CANOPY MDL LTG	400			16					20/2	17		18	20/1										
	CANOPY MDL LTG			400	16					-	19		20	20/1										
	CANOPY E LTG	400			16					20/2	21		22	20/1										
	CANOPY E LTG			400	16					-	23		24	20/1										
	CANOPY DNLTS	540								20/2	25		26	20/1										
	CANOPY DNLTS			540						20/1	27		28	20/1										
										20/1	29		30	20/1										
										20/1	31		32	20/1										
										20/1	33		34	20/1										
										20/1	35		36	20/1										
										20/1	37		38	20/1										
										20/1	39		40	20/1										
										20/1	41		42	20/1										

A= 4892 VA — B= 3995 VA
PHASE A LCL= 363 VA — PHASE B LCL= 334 VA
PHASE A W/LCL= 5255 VA — PHASE B W/LCL= 4329 VA

GENERAL PANEL SCHEDULE NOTES:

1. WHERE PANEL IS INDICATED TO INCLUDE FEED THRU LUGS, PROVIDE FEED THROUGH LUGS AT THE OPPOSITE END OF THE PANELBOARD FROM THE PANELBOARD MAIN LUGS.
2. WHERE PANEL IS INDICATED TO INCLUDE DOUBLE LUGS, PROVIDE A DOUBLE LUG KIT AT THE SAME END OF THE PANELBOARD AS THE PANELBOARD MAIN LUGS.
3. WHERE PANEL IS INDICATED TO INCLUDE 200% NEUTRAL, PROVIDE PANELBOARDS UL LISTED AS HAVING NEUTRAL BUSSES RATED TO CARRY 200 PERCENT OF THE CURRENT CARRYING CAPACITY OF THE PHASE BUSSING. OTHERWISE, NEUTRAL BUSSING TO BE FULL SIZE AND RECTANGULAR.
4. WHERE PANEL IS INDICATED TO INCLUDE AN I/G BUS, PROVIDE PANELBOARDS WITH AN ISOLATED GROUND BUS, DRILLED AND TAPPED FOR NUMBER OF ISOLATED GROUND CONDUCTORS SHOWN, AS WELL AS FOR ALL SPARES AND SPACES SHOWN ON THE PANELBOARD.
5. WHERE PANEL CIRCUIT BREAKER RATING IS SHOWN AS SERIES RATED, PROVIDE CIRCUIT BREAKERS IN PANELBOARD WHICH ARE SERIES RATED WITH THE UPSTREAM SYSTEM FOR THE AVAILABLE FAULT CURRENT. THE PANELBOARD SHALL BE MARKED WITH THE SERIES CONNECTED RATINGS, AS WELL AS ALL MARKING AS REQUIRED BY THE NEC, OR CEC WHERE ADOPTED, **240–83(C).**
6. WHERE PANEL IS INDICATED AS RECESSED OR FLUSH MOUNTED, PROVIDE SPARE CONDUITS STUBBED UP INTO THE ACCESSIBLE CEILING SPACE. PROVIDE ONE (1) 3/4" CONDUIT ONLY FOR EACH THREE (3) SPARES OR SPACES, MINIMUM OF TWO (2). EACH CONDUIT SHALL BE TAGGED, CAPPED AND MARKED FOR FUTURE USE.
7. ALL BUSSING SHALL BE **TIN PLATED ALUMINUM.**
8. ALL CIRCUIT BREAKERS USED AS SWITCHES SHALL BE UL LISTED AND LABELED "SWD" FOR SWITCHING DUTY.
9. PROVIDE BREAKER INTERLOCK WITH ADJACENT BREAKER(S) FOR ANY MULTI–WIRE BRANCH CIRCUIT. BREAKER INTERLOCK GROUPING SHALL BE BY BRANCH CIRCUIT GROUP (i.e. MULTIPLE CIRCUITS SHARING A COMMON NEUTRAL (NEC, OR CEC WHERE ADOPTED, **210.4(B)**,) COMMON YOKE (NEC, OR CEC WHERE ADOPTED, **210.7(B)**,) OR FURNITURE SYSTEM NEC OR CEC WHERE ADOPTED, **605.6** AND **605.7**). WHERE AN EXISTING PANEL IS BEING ALTERED OR MODIFIED IN ANY WAY, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO ADD BREAKER INTERLOCKS TO EXISTING MULTI–WIRE BRANCH CIRCUITS BASED ON CONTRACTOR'S INVESTIGATION OF EXISTING CONDITIONS.
10. PROVIDE BREAKER LOCK OFF DEVICE ON ANY CIRCUIT BREAKER FEEDING A TRANSFORMER AS REQUIRED, PER NEC, OR CEC WHERE ADOPTED, **450.14**. WHERE AN EXISTING PANEL IS BEING ALTERED OR MODIFIED IN ANY WAY, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO ADD BREAKER LOCK–OFF DEVICES TO EXISTING TRANSFORMER CIRCUIT BREAKERS BASED ON CONTRACTOR'S INVESTIGATION OF EXISTING CONDITIONS.
11. ALL CIRCUIT BREAKERS SHALL BE BOLT–ON TYPE AND SHALL BE SUITABLE FOR 75 DEGREE AMPACITY CONDUCTORS.
12. PANELS SHALL BE OF THE DEAD FRONT SAFETY TYPE. PANELS SHALL BE MINIMUM 20" WIDE AND 5–3/4" DEEP UNLESS OTHERWISE NOTED ON PLAN.
13. COORDINATE WITH APPLICABLE TRADE TO INSURE RECESSED MOUNTED PANELBOARDS WILL SEAT FLUSH IN THE WALLS PROVIDED. PANEL TRIMS SHALL HAVE CONCEALED DOORS AND FASTENERS WITH FLUSH TYPE COMBINATION LOCK AND CATCH, TWO MILLED TYPE KEYS SUPPLIED WITH EACH PANEL. ALL LOCKS SHALL BE KEYED ALIKE AND EACH DOOR SHALL HAVE A PLASTIC COVERED DIRECTORY FRAME WITH A TYPED IDENTIFICATION CARD OF ALL CIRCUIT AND PANEL NUMBERS FOR BRANCH CIRCUIT PANELBOARDS.
14. UPON PROJECT COMPLETION, CONTRACTOR SHALL INSTALL TYPED AS–BUILT PANEL DIRECTORIES IN EACH PANEL WITHIN THE MFGR–PROVIDED DIRECTORY HOLDER. THE DIRECTORY SHALL CLEARLY IDENTIFY EACH CIRCUIT TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE. EACH CIRCUIT IDENTITY SHALL INCLUDE SUFFICIENT DETAIL TO ALLOW EACH CIRCUIT TO BE DISTINGUISHED FROM ALL OTHERS PER NEC, OR CEC WHERE ADOPTED, ART **408.1** AND **408.4**. HANDWRITTEN DIRECTORIES ARE UNACCEPTABLE. COPIES OF AS–BUILT PANEL SCHEDULES SHALL BE PLACED IN PANEL DIRECTORIES. E.C. TO INCLUDE ALL COSTS REQUIRED FOR LARGER–THAN–STANDARD CUSTOM PANEL DIRECTORY HOLDERS TO ACCOMMODATE COPIES OF AS–BUILT PANEL SCHEDULES.
15. PANELBOARDS SHALL BE MANUFACTURED BY G.E., CUTLER–HAMMER, SIEMENS, OR SQUARE "D". FUSED PANEL BOARDS SHALL BE BY COOPER BUSSMANN.
16. PROVIDE SHOP DRAWING SUBMITTAL PER THE ELECTRICAL SPECIFICATION SUBMITTAL REQUIREMENTS FOR EACH PANEL DEPICTING CONFORMANCE WITH THE ABOVE NOTES AND SCHEDULES.

SPECIFIC PANEL SCHEDULE NOTES:

"A" PROVIDE LOCK–ON DEVICE.
"B" PROVIDE LOCK–OFF DEVICE.
"C" PROVIDE SHUNT TRIP DEVICE.
"D" PROVIDE GFCI TYPE DEVICE.
"E" PROVIDE A RED CIRCUIT BREAKER.
"F" PROVIDE A NEW BREAKER TO MATCH THE EXISTING IN PANEL.
"G" EXISTING BREAKER WITH NEW LOAD.
"H" PROVIDE AFCI TYPE DEVICE COMPLYING WITH NEC, OR CEC WHERE ADOPTED, **210.12(A) & (B).**

PANEL SCHEDULE INDEX

-	-	K
-	-	R
-	-	

AS–BUILT PANEL DIRECTORY NOTE:

BRANCH CIRCUIT LOCATIONS NOTED WITH "(E)" INDICATE EXISTING CIRCUIT(S). THE IDENTITIES OF THESE CIRCUITS ARE BASED ON EXISTING PANEL DIRECTORIES AND/OR LIMITED AS–BUILT INFORMATION. CONTRACTOR SHALL FIELD VERIFY EACH BRANCH CIRCUIT AND PROVIDE COMPLETE, TYPED AS–BUILT PANEL DIRECTORIES AS REQUIRED THAT DISTINGUISH EACH CIRCUIT PER NEC, OR CEC WHERE ADOPTED, ART **408.1** AND **408.4**. COMPLETED DIRECTORIES SHALL BE SUBMITTED TO THE ELECTRICAL INSPECTOR PRIOR TO FINAL ELECTRICAL INSPECTION. INCLUDE ALL COSTS IN BID.

EXISTING CIRCUIT BREAKER NOTE:

PROVIDE BREAKER INTERLOCK WITH ADJACENT BREAKER(S) FOR ANY MULTI–WIRE BRANCH CIRCUIT. BREAKER INTERLOCK GROUPING SHALL BE BY BRANCH CIRCUIT GROUP (i.e. MULTIPLE CIRCUITS SHARING A COMMON NEUTRAL (NEC, OR CEC WHERE ADOPTED, **210.4(B)**,) COMMON YOKE (NEC, OR CEC WHERE ADOPTED, **210.7(B)**,) OR FURNITURE SYSTEM NEC OR CEC WHERE ADOPTED, **605.6** AND **605.7**).
WHERE AN EXISTING PANEL IS BEING ALTERED OR MODIFIED IN ANY WAY, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO ADD BREAKER INTERLOCKS TO EXISTING MULTI–WIRE BRANCH CIRCUITS BASED ON CONTRACTOR'S INVESTIGATION OF EXISTING CONDITIONS.

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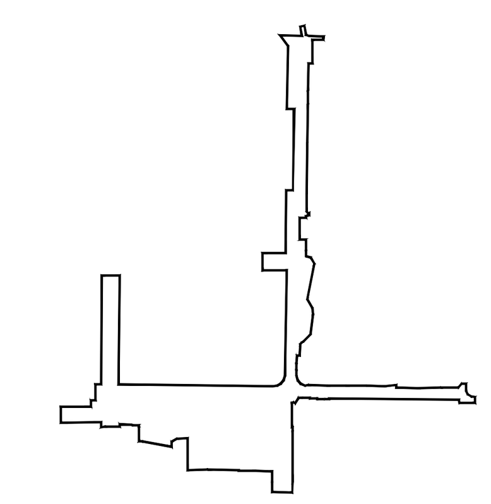
Project Leader - Jonathan Lomibao
Electrical Lead - Jonathan Lomibao
tk1sc Job #: 2017-0591
CONSULTANT

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 Ex.12/31/2019 ELECTRICAL STATE OF CALIFORNIA
ARCHITECT/ENGINEER SEAL



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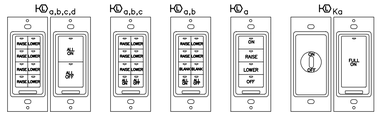
BASE FILE NAMES
DRAWN BY JL
CHECKED BY RS
SCALE –
DATE
PROJECT NO. GRUEN # 8345

PANEL SCHEDULES
SHEET TITLE

E403
SHEET NO.



DISTRIBUTED LIGHTING CONTROLS ACCEPTABLE MANUFACTURES:

WATTSTOPPER:

WALL BOX SENSORS:	STANDALONE SINGLE RELAY = #DW-100 STANDALONE 0-10V DIMMING WITH SINGLE RELAY = #PW-311 STANDALONE DUAL RELAY = #DW-200 SYSTEM-BASED DIMMING CONTROL = #LMDW-102
CEILING SENSORS:	ONE-WAY DIRECTIONAL = #LMDC-100 WITH MASKING AS REQUIRED. 360 DEGREE COVERAGE = #LMDC-100
DAYLIGHT SENSORS:	OPEN LOOP SENSOR = #LMLS-500 (1-3 ZONE) OR CLOSED LOOP SENSOR = #LMLS-400 (1 ZONE ONLY) REMOTE CONTROL = #LMCT-100 (HAND TO OWNER AT COMPLETION OF PROJECT.)
CONTROL UNITS:	SWITCHED = #LMRC-10? (NUMBER OF RELAYS AS REQUIRED). CONTINUOUS DIMMING (0-10V) = #LMRC-21? (NUMBER OF RELAYS AS REQUIRED). CONTINUOUS DIMMING (UNIVERSAL) = #LMRC-22? (NUMBER OF RELAYS AS REQUIRED). RECEPTACLE CONTROL = #LMPL-101 OR LMPL-201 WHERE MORE THAN 4 RECEPTACLE CONTROL UNITS ARE TIED TOGETHER. HVAC CONTROL = #LMRL-100 AV SYSTEM SERIAL INTERFACE = #LMDI-100 (SCREENS / AV SYSTEM INTEGRATION) MOVEABLE PARTITION INTERFACE & SENSOR = #LMIO-102 PARTITION INTERFACE, #LMPS-104 PARTITION SWITCH/STATUS INDICATOR, #BZ-50 POWER PACK (SENSOR POWER) & PARTITION SENSOR #ENTERTAINMENT NETWORKS SENSOR W/BOTTOM COVER (www.entertainmentworks.com). DUAL MODE CORRIDOR/STAIRWAY/AISLEWAY CONTROL INPUT = #LMZC-301, UNLESS OTHERWISE NOTED.
WALL CONTROLS:	DIMMING = #LMSW-101/102/103/104/108 (# OF SWITCHES AS REQUIRED 4/YOKE MAX). KEYED SWITCH = #LMIO-101 INPUT INTERFACE W/ LEVITON #1221-2L-? KEYED SWITCH
NETWORK COMPONENTS:	ZONE SEGMENT MANAGER = #LMSM-3E/#LMSM-6E W/#LMSM-ENC1 ENCLOSURE. NETWORK BRIDGE / ROUTER / SWITCH = #LMBC-300/#NB-ROUTER/#NB-SWITCH NETWORK WIRING = #LM-MSTP. NETWORK RELAY PANELS = LMCP8, 24 OR 48
INTERCONNECT COMPONENTS:	NETWORK BRIDGE / ROUTER / SWITCH = #LMBC-300/#NB-ROUTER/#NB-SWITCH PROVIDE TEMPORARY NB ROUTER AND LAPTOP TO DEMONSTRATE DEMAND RESPONSE CAPABILITY DURING ACCEPTANCE TESTING.
EMERGENCY POWER INTERFACE:	SWITCHING / STEP DIMMING = #ELCU-200 BYPASS DEVICE. CONTINUOUS DIMMING = #ELCU-200 BYPASS DEVICE.
LOAD INTERFACE DEVICE:	LUTRON COMPONENTS = LUTRON #BCI-0-10. REVERSE/FORWARD PHASE DIMMING COMPONENTS = LUTRON #PHPM-PA-DV-WH.

nLIGHT:

WALL BOX SENSORS:	STANDALONE SINGLE RELAY = #WSX-PDT STANDALONE DUAL RELAY = #WSX-PDT-2P SYSTEM-BASED DIMMING CONTROL = #nWSX-PDT-LV-DX
CEILING SENSORS:	ONE-WAY DIRECTIONAL = #NRM-PDT-9 W/MASKING AS REQUIRED. 360 DEGREE COVERAGE = #NRM-PDT-9 STANDARD RANGE, #NRM-PDT-10 EXTENDED RANGE/CORRIDOR
DAYLIGHT SENSORS:	CLOSED LOOP SENSOR = #NES-ADCX / #NRM-ADCX (ONLY IF REQUIRED BY CLG. TYPE). REMOTE CONTROL = N/A
CONTROL UNITS:	SWITCH / STEPPED DIMMING = #NPP-16/#NSP-16 (NUMBER OF RELAYS AS REQUIRED). CONTINUOUS DIMMING (0-10V) = #NPP16-D (NUMBER OF RELAYS AS REQUIRED). CONTINUOUS DIMMING (UNIVERSAL) = #NSP5-PCD (NUMBER OF RELAYS AS REQUIRED). AUXILIARY INPUT/ OUTPUT CONTROL = #NAR-40 RECEPTACLE CONTROL = #NPP20 PL HVAC CONTROL = #NAR-40 AV SYSTEM SERIAL INTERFACE = #nIO X (SCREENS / AV SYSTEM INTEGRATION) MOVEABLE PARTITION INTERFACE & SENSOR = #FRESCO TOUCH PANEL #NFCS-7TSN (PER SPACE) #NIO-1S POWER PACK (SENSOR POWER) & PARTITION SENSOR #ENTERTAINMENT NETWORKS SENSOR W/BOTTOM COVER (www.entertainmentworks.com). DUAL MODE CORRIDOR/STAIRWAY/AISLEWAY CONTROL INPUT = LC&D BLUE BOX, UNLESS OTHERWISE NOTED.
WALL CONTROLS:	DIMMING = #NPODM-DX SERIES (# OF DIMMERS AS REQUIRED - 4 / YOKE MAX) KEYED SWITCH = #NIO INPUT INTERFACE W/LEVITON #1221-2L-? KEYED SWITCH

NETWORK COMPONENTS:	GATEWAY = #NECY-120, NGWY2-GFX, 13.9"H x 10"W x 4.5"D ENCLOSURE TO BE PROVIDED BY CONTRACTOR
	BRIDGE = #NBRG-8-KIT
	NETWORK RELAY PANELS = ARP INTENCXX NLT XXFCR MVOLT, QTY AS REQUIRED, TO INCLUDE SPARE RELAYS SHOWN IN SCHEDULES.

INTERCONNECT COMPONENTS:	GATEWAY = #NECY-120, NGWY2-GFX, 13.9"H x 10"W x 4.5"D ENCLOSURE TO BE PROVIDED BY CONTRACTOR
	BRIDGE = #NBRG-8-KIT
	STANDARDS BASED ADR RECEIVER = NADR
	PROVIDE END USER CLIENT WITH (1) WIRELESS PROGRAMMING DEVICE (NIO-BT) FOR MAINTENANCE AND PROGRAMMING

EMERGENCY POWER INTERFACE:	SWITCHING / STEP DIMMING = NPP16-ER CONTINUOUS DIMMING = #NPP16-D-ER
LOAD INTERFACE DEVICE:	LUTRON COMPONENTS = LUTRON #BCI-0-10. REVERSE PHASE DIMMING COMPONENTS = #NSP5-PCD-ELV120/LUTRON #PHPM-PA-DV-WH. FORWARD PHASE DIMMING COMPONENTS = #NSP5-PCD-MLV/LUTRON #PHPM-PA-DV-WH. 2 & 3 WIRE DIMMING COMPONENTS = #NSP5-PCD-2W/3W OR LUTRON #PHPM-PA-DV-WH.

COOPER CONTROLS (GREENGATE):

WALL BOX SENSORS:	STANDALONE SINGLE RELAY = #ONW-D-1001-MV-N SERIES STANDALONE DUAL RELAY = #ONW-D-1001-DMV-N SERIES SYSTEM-BASED DIMMING CONTROL = NOT AVAILABLE
CEILING SENSORS:	ONE-WAY DIRECTIONAL = #OAC-DT-501 (500 S.F. MAXIMUM) 360 DEGREE COVERAGE = #OAC-DT-1000 (1,000 S.F. MAXIMUM) 360 DEGREE COVERAGE = #OAC-DT-2000
DAYLIGHT SENSORS:	OPEN LOOP SENSOR = #DSRC-FMOIR REMOTE CONTROL = #HHPRG-RC
CONTROL UNITS:	SWITCH / STEPPED DIMMING = #RC3D-PL PLENUM RATED SERIES (NUMBER OF RELAYS AS REQUIRED). CONTINUOUS DIMMING (0-10V) = #RC3D PLENUM RATED SERIES (NUMBER OF RELAYS AS REQUIRED). CONTINUOUS DIMMING (UNIVERSAL) = USE WITH LOAD INTERFACE DEVICE AUXILIARY INPUT / OUTPUT CONTROL = #OCC-RJ45 RECEPTACLE CONTROL = #SPRC-R-20-120 HVAC CONTROL = #-R OPTION ON OCCUPANCY SENSOR OR CONTACT CLOSURE VIA TERMINAL #5 ON RC CONTROL UNIT. AV SYSTEM SERIAL INTERFACE: REQUIRES NETWORKING TO PROVIDE SERIAL CONNECTION. MOVEABLE PARTITION INTERFACE & SENSOR: REQUIRES NETWORKING TO PROVIDE PARTITIONING. DUAL MODE COORDIDOR/STAIRWAY/AISLEWAY CONTROL INPUT = RC3 SERIES, UNLESS OTHERWISE NOTED.PROVIDE QTY OF CONTROLLERS AND SEPARATE DEMAND RESPONSE/INTERCONNECT CABLING AS REQUIRED.
WALL CONTROLS:	DIMMING = #RC SERIES DIMMERS (# OF DIMMERS AS REQUIRED - 4 / YOKE MAX) KEYED SWITCH = #OCC-RJ45 INPUT INTERFACE W/LEVITON #1221-2L-? KEYED SWITCH
NETWORK COMPONENTS:	NETWORK ADAPTER = RC3D-PL-N OR RC3DE-PL-N
INTERCONNECT COMPONENTS:	DEMAND RESPONSE INCLUDED STANDARD IN CONTROL UNITS. PROVIDE QTY OF CONTROLLERS AND SEPARATE DEMAND RESPONSE/INTERCONNECT CABLING AS REQUIRED.
EMERGENCY POWER INTERFACE:	SWITCHING / STEP DIMMING = PROVIDE THE #RC3E OPTION ON CONTROLLER. CONTINUOUS DIMMING = PROVIDE THE #RC3DE OPTION ON CONTROLLER.
LOAD INTERFACE DEVICE:	LUTRON COMPONENTS = LUTRON #BCI-0-10. REVERSE PHASE DIMMING COMPONENTS = LDCM-PL 2-WIRE DIMMING (FORWARD PHASE-ONLY) = GREENGATE #PD216 SERIES INTERFACE.
NETWORK INTERFACE:	NOT AVAILABLE

DISTRIBUTED LIGHTING CONTROLS SYSTEM SPECIFICATIONS (OCCUPANCY / VACANCY SENSORS AND DAYLIGHTING CONTROLS):

1. SEE LIGHTING PLAN DRAWINGS FOR DISTRIBUTED LIGHTING CONTROL SYSTEM (DLCS) SPECIFICS, SPACE SPECIFIC CONFIGURATIONS/REQUIREMENTS, AS WELL AS FIXTURE BALLAST/DRIVER CONFIGURATIONS.

2. ALL PRODUCTS SHALL BE BACKED BY A FIVE YEAR MANUFACTURER'S WARRANTY.

3. ALL PRODUCTS LISTED IN THIS SPECIFICATION ARE BASED UPON PRODUCTS LISTED ON THIS SHEET. THE FEATURES AND CHARACTERISTICS OF THE PRODUCT LITERATURE AND SPECIFICATION SHEETS AVAILABLE ON THE VARIOUS MANUFACTURER'S WEB-SITES ARE INCLUDED IN THE REQUIREMENT OF THESE SPECIFICATIONS. ALL DLCS NETWORKED/INTERCONNECTED/NON-NETWORKED SYSTEM-BASED AND STANDALONE COMPONENTS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.

4. DLCS COMPONENTS SHALL BE COMPLIANT WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL ENERGY CODES AND BE PROVIDED AS FOLLOWS:

   a. WALL MOUNTED OCCUPANCY SENSORS:

   STANDALONE: WALL MOUNTED OCCUPANCY SENSORS SHALL BE UL LISTED AND HAVE A MINIMUM LOAD CAPACITY OF 800 WATTS AT 120 VOLTS AND 1200 WATTS AT 277 VOLTS. WALL SENSORS SHALL ALSO BE DECORATOR STYLE, WITH A LOW-PROFILE APPEARANCE AND A HARD LENS FOR DURABILITY. SENSOR SHALL UTILIZE PASSIVE INFRARED TECHNOLOGY (PIR) AND ULTRASONIC/MICROPHONIC TECHNOLOGY. UNIT SHALL BE RATED FOR 120/277 VOLT WITH NO MINIMUM LOAD, COMPATIBLE WITH ALL THE SPECIFIED BALLASTS, PROVIDED WITH A NEUTRAL CONNECTION (NO LEAKAGE TO GROUND) AND NO LEAKAGE TO LOAD IN THE "OFF" MODE. SENSOR SHALL BE UTILIZED IN SPACES NOT EXCEEDING 150 SQ.FT. SINGLE RELAY SENSORS SHALL BE CONFIGURED WITH THE RELAY IN A "MANUAL ON/ AUTO OFF" SETTING. DUAL RELAY SENSORS SHALL BE CONFIGURED WITH THE FIRST RELAY IN A "AUTOMATIC ON/ AUTOMATIC OFF" SETTING AND THE SECOND RELAY IN A "MANUAL ON/ AUTOMATIC OFF" SETTING. FACTORY STANDARD COLOR TO BE APPROVED BY ARCHITECT.

   SYSTEM-BASED: WHEN INDICATED WITH A DOT SYMBOL, "I" , OR "N" IN THE OCCUPANCY SENSOR SYMBOL, A LOW VOLTAGE, WALL MOUNTED OCCUPANCY SENSOR SHALL BE PROVIDED AND CONNECTED TO A CONTROL UNIT AS REQUIRED. SENSOR SHALL BE DECORATOR STYLE WITH A LOW-PROFILE APPEARANCE, HAVE ON/OFF/RAISE/LOWER BUTTONS, AND A HARD LENS FOR DURABILITY. SENSOR SHALL UTILIZE PASSIVE INFRARED TECHNOLOGY (PIR) AND ULTRASONIC/MICROPHONIC TECHNOLOGY. FACTORY STANDARD COLOR TO BE APPROVED BY ARCHITECT.

   b. SYSTEM-BASED CEILING MOUNTED OCCUPANCY SENSORS INDICATED WITH A DOT SYMBOL, "I" , OR "N" IN THE OCCUPANCY SENSOR SYMBOL SHALL HAVE A LOW-PROFILE APPEARANCE AND SHALL BE CONFIGURED IN ONE OF THE FOLLOWING WAYS AS INDICATED ON THE DRAWINGS:

   - AUTO ON: a/b
   - SWITCHED: AUTO ON a / MANUAL ON b
   - CONTINUOUS DIMMED: AUTO ON 50% a / MANUAL ON 100% a

   SENSOR(S) SHALL UTILIZE DUAL TECHNOLOGY (PIR AND ULTRASONIC/MICROPHONIC TECHNOLOGY) WITH 360 DEGREE COVERAGE. IN SPACES WITH DESKTOP ACTIVITIES, THE COVERAGE SHALL BE "HAND MOTION" AND SHALL NOT EXCEED 500 SQ. FT. AT A MAXIMUM CEILING HEIGHT OF 10 FT. IN CORRIDORS, STORAGE ROOMS AND OTHER SPACES WITH NON-DESKTOP ACTIVITIES, COVERAGE SHALL BE "HALF-STEP, WALKING MOTION" AND SHALL NOT EXCEED 1200 SQ. FT. AT A MAXIMUM CEILING HEIGHT OF 10 FT.

   c. "H" AT THE OCCUPANCY SENSOR INDICATES CONNECTION TO AUXILIARY OUTPUT CONTROL DEVICE FOR CONTROL OF A THIRD PARTY DEVICE VIA LOW-VOLTAGE CONTACT CLOSURES - 1 AMP @ 24V AC/DC. NC/NO RELAYS SHALL BE CONNECTED TO A CONTROLLER TO PERFORM THE AUXILIARY CONTROL REQUIREMENTS INDICATED BY THE DRAWINGS.

   d. "DM" PREFIX AT AT THE OCCUPANCY SENSOR INDICATES A DUAL MODE CORRIDOR/STAIRWAY/WAREHOUSE AISLE CONTROL FUNCTIONALITY TO BE IMPLEMENTED AS FOLLOWS:

   - BUSINESS HOUR MODE
     - --UNOCCUPIED CORRIDOR/STAIRWAY/AISLE LIGHTING SHALL AUTOMATICALLY DIM TO ACHIEVE 50% LIGHTING POWER LEVEL.
     - --UPON OCCUPANCY, LIGHTING SHALL AUTOMATICALLY BE BROUGHT TO 100% LIGHTING POWER LEVEL.
   - AFTER BUSINESS HOUR MODE
     - --UNOCCUPIED CORRIDOR/STAIRWAY/AISLE LIGHTING SHALL AUTOMATICALLY TURN OFF BASED ON CEC-LISTED TIME CLOCK OUTPUT CONTACT POSTION/TIME CLOCK PROGRAMMING.
     - --UPON OCCUPANCY, LIGHTING SHALL BE BROUGHT TO 100% LIGHTING POWER LEVEL.
     - --ONCE OCCUPANCY IS DETECTED IN A CORRIDOR, STAIRWAY, OR AISLE, THAT RESPECTIVE AREA SHALL OPERATE IN BUSINESS HOUR MODE UNTIL THE NEXT AFTER BUSINESS HOUR MODE OCCURS.
     - --UNOCCUPIED CORRIDOR/STAIRWAY/AISLEWAY LIGHTING SHALL AUTOMATICALLY REVERT TO BUSINESS HOUR MODE OPERATION BASED ON CEC-LISTED TIME CLOCK CONTACT POSTION/TIME CLOCK PROGRAMMING.

   E.C. SHALL BE RESPONSIBLE FOR PROVIDING ALL DEVICES AND WIRING REQUIRED FOR DUAL MODE OPERATIONS AND ANY PROGRAMMING/CONFIGURATION OF TIME-BASED OPERATING PARAMETERS TO INCLUDE OUTPUT CONTACT CLOSURES FROM TIME CLOCKS OR NETWORK GATEWAYS. COORDINATE WITH OWNER TO DETERMINE BUSINESS HOUR/AFTER BUSINESS HOUR MODES. WHERE DIAL MODE CONTROL IS ACCOMPLISHED THROUGH NON-NETWORK TIME CLOCK DEVICES, LOCATE EACH OF THESE DEVICES ADJACENT TO THE CLOSEST RESPECTIVE STAIRWAY/CORRIDOR/AISLEWAY CONTROL UNIT. IF THE PLANS IDENTIFY A NEW OR EXISTING CEC LIGHTING CONTROL PANEL AS THE SOURCE OF DUAL MODE TIMING, E.C. SHALL INCLUDE ALL COSTS TO INSTALL ANY NECESSARY I/O TERMINALS, CARDS, ETC. TO MAKE THE SYSTEM FULLY FUNCTIONAL.

   e. WHEN INDICATED WITH AN "N" IN THE OCCUPANCY SENSOR SYMBOL, A NETWORKED SYSTEM SHALL BE PROVIDED AND INSTALLED. THIS NETWORK-BASED SYSTEM SHALL PROVIDE/RESULT IN "LADDERLESS COMMISSIONING" OF DAYLIGHT CONTROLS. AT A MINIMUM, NETWORK ACQUIRED DATA SHALL PROVIDE CT-BASED LIGHTING POWER (WATTS) MEASUREMENTS PER THE COMMISSIONING PORTION OF THESE REQUIREMENTS. PROVIDE NETWORKED CONTROL UNITS/POWER PACKS/INTERFACES AND MISCELLANEOUS EQUIPMENT AS FOLLOWS:

      1. NETWORK SEGMENT MANAGER WITH NATIVE BACnet IP - QUANTITY AS REQUIRED BASED UPON A MAXIMUM OF 100 LOCAL ROOM NETWORKS PER SEGMENT AND A MINIMUM OF ONE SEGMENT MANAGER PER FLOOR. THIS EQUIPMENT SHALL BE LOCATED IN THE TYPICAL FLOOR ELECTRICAL ROOM.
      2. NETWORK BRIDGE CONNECTING THE SEGMENT MANAGER TO THE CONTROLLER SUB/LOCAL NETWORK.
      3. SEGMENT NETWORK WIRING FROM NETWORK SEGMENT MANAGER TO FIRST NETWORK CONTROLLER DEVICE AS WELL AS ALL OTHER NETWORK CONTROLLER CONNECTIONS (VIA LINEAR TOPOLOGY) AS REQUIRED.
      4. ALL CORRIDORS AND STAIRWELLS SHALL BE PROVIDED WITH DUAL MODE CORRIDOR/STAIRWAY CONTROLS TO INCLUDE CEC-LISTED TIME CLOCK(S) OR SYSTEM GATEWAYS, INTERPOSING RELAYS (WHEN INTERFACING WITH EXISTING CEC-LISTED RELAY PANELS), WIRING, 120V POWER, PROGRAMMING, ETC. NECESSARY FOR A COMPLETE AND FUNCTIONING CONTROL SYSTEM.
      5. INCLUDE ALL COSTS IN BASE BID TO PROVIDE 120V CIRCUIT(S) AND RECEPTACLE(S) NECESSARY TO POWER ALL DEMAND RESPONSE EQUIPMENT.
      6. PROVIDE DATA OUTLET/PATHWAY, DATA CABLING (IF REQUIRED ELSEWHERE BY PROJECT DOCUMENTS), AND CONNECTION TO THE PROJECT'S LOCAL AREA NETWORK.
      7. INCLUDE ALL COSTS IN BASE BID TO PROVIDE 120V CIRCUIT(S) AND RECEPTACLE(S) NECESSARY TO POWER ALL NETWORK SEGMENT MANAGERS, SWITCHES AND ROUTERS.
      8. DEMONSTRATE DLCS RESPONSE TO A SIMULATED DEMAND RESPONSE REQUEST AS PART OF THE LIGHTING COMMISSIONING PROCESS. WHERE MORE THAN ONE WIRING TOPOLOGY AND/OR ZONE IS REQUIRED TO ACCOMPLISH DEMAND RESPONSE - ALL WIRING TOPOLOGIES AND ZONES SHALL BE TESTED ACCORDINGLY.

   f. WHEN INDICATED WITH AN "I" IN THE OCCUPANCY SENSOR SYMBOL, A INTERCONNECTED CONTROL SYSTEM SHALL BE PROVIDED AND INSTALLED. THIS INTERCONNECTED CONTROL SYSTEM SHALL PROVIDE/RESULT IN "DRY CONTACT CLOSURE DEMAND RESPONSE LOAD SHED" CONTROL FUNCTIONALITY. AT A MINIMUM, A CONTACT CLOSURE SHALL REDUCE THE LIGHTING POWER LOAD BY AT LEAST 15%. WHERE AN INTERCONNECTED CONTROL SYSTEM IS SERVING CORRIDORS AND/OR STAIRWAYS, THE SYSTEM SHALL ALSO PROVIDE DUAL MODE CORRIDOR/STAIRWAY CONTROL. PROVIDE CONTROL UNITS/POWER PACKS/INPUT INTERFACES/TIME CLOCK AND MISCELLANEOUS EQUIPMENT AS FOLLOWS:

      1. INPUT CONTROL UNIT INTERFACE DEVICE CAPABLE OF RECEIVING SEPARATE DRY CONTACT INPUTS ACTIVATING A DIMMED SCENE WITH AT LEAST A 15% LOAD REDUCTION AND, WHEN SERVING CORRIDORS AND/OR STAIRWELL CONTROLLERS, ACTIVATING EITHER MODE OF THE DUAL MODE CORRIDOR/STAIRWAY CONTROL SYSTEM.
      2. PLENUM-RATED INTERCONNECT WIRING MEETING ALL THE OTHER REQUIREMENTS OF THE DLCS MANUFACTURER SHALL BE RUN BETWEEN EACH INPUT CONTROL UNIT INTERFACE DEVICE TO A LOCATION IN THE ELECTRICAL ROOM CONTAINING THE LIGHTING BRANCH CIRCUIT PANEL. WHERE DUAL MODE CORRIDOR/STAIRWAY CONTROL IS ALSO REQUIRED - PROVIDE ADDITIONAL INTERCONNECT WIRING AND DEVICES AS REQUIRED TO ACCOMPLISH BOTH DEMAND RESPONSE AND DUAL MODE CONTROL.
      3. DEMONSTRATE DLCS RESPONSE TO A SIMULATED DEMAND RESPONSE REQUEST AS PART OF THE LIGHTING COMMISSIONING PROCESS. WHERE MORE THAN ONE WIRING TOPOLOGY AND/OR ZONE IS REQUIRED TO ACCOMPLISH DEMAND RESPONSE - ALL WIRING TOPOLOGIES AND ZONES SHALL BE TESTED ACCORDINGLY.

   g. WHERE INDICATED ON DRAWINGS, PROVIDE INTEGRATED DAYLIGHTING CONTROLS AS FOLLOWS:

      1. AUTOMATIC SWITCHING DAYLIGHTING CONTROLS SHALL BE PROVIDED TO SWITCH SELECTED FIXTURES AND/OR LAMPS OFF AND ON BASED UPON LIGHTING LEVELS PRESENT IN THE CONTROLLED SPACE. THE DAYLIGHTING CONTROLS SHALL BE CONNECTED TO THE CONTROL UNIT. THE SENSOR SHALL UTILIZE AN INTEGRAL PHOTO DIODE TO MEASURE AMBIENT LIGHT LEVELS. CONTROLS SHALL BE FULLY ADJUSTABLE FROM 1 TO 6,500 FOOTCANDLES AND SHALL BE PROVIDED WITH AN ADJUSTABLE TIME DELAY AND ADJUSTABLE DEAD BAND SETTINGS.
      2. AUTOMATIC DIMMING DAYLIGHTING CONTROLS SHALL BE PROVIDED TO CONTINUOUSLY DIM SELECTED FIXTURES/LAMPS UP AND DOWN BASED UPON LIGHTING LEVELS PRESENT IN THE CONTROLLED SPACE. THE SENSOR SHALL UTILIZE AN INTERNAL PHOTO DIODE TO MEASURE AMBIENT LIGHT LEVELS. 0-10 VOLT DIMMING CONTROLS SHALL RANGE FROM 0.2 VOLTS TO 10 VOLTS, WITH AMBIENT LIGHTING SET POINTS FROM 1-6,500 FOOTCANDLES.
      3. AUTOMATIC DAYLIGHTING CONTROLS SHALL BE CONNECTED TO CONTROL UNITS TO PERFORM THE FIXTURE SWITCHING/DIMMING REQUIREMENTS INDICATED BY THE DRAWINGS - CONNECTIONS DIRECTLY TO A BALLAST ARE NOT ALLOWED.
      4. DAYLIGHT SENSOR SHALL PROVIDE CONTROLS FOR UP TO THREE DISTINCT LIGHTING ZONES TO ALLOW SEPARATE CONTROL OF PRIMARY DAYLIT, SECONDARY DAYLIT, AND SKYLIT ZONES.

   h. PROVIDE CONTROL UNITS AND SYSTEM FUNCTIONALITY AS FOLLOWS:

      1. CONTINUOUS DIMMING CONTROLS: SYSTEM-BASED WALL OR CEILING MOUNTED OCCUPANCY SENSORS (CONTINUOUS DIMMED - AUTO ON 50%/MANUAL ON 100%) SHALL BE PROVIDED WITH CONTROL UNITS TO PERFORM THE FIXTURE DIMMING REQUIREMENTS INDICATED BY THE BALLAST AND FIXTURE TYPE. SWITCH LEG INDICATED OUTSIDE THE PARENTHESIS TO BE CONFIGURED AS "AUTO ON 50%/MANUAL ON 100%" FOR CONTINUOUS DIMMED. SWITCH LEGS INSIDE PARENTHESIS INDICATES A MANUAL ACTION REQUIRED TO INCREASE LIGHTING LEVELS ABOVE 50%. CONTROL UNITS WITH INTEGRAL TRANSFORMERS SHALL BE UTILIZED TO PROVIDE POWER TO OCCUPANCY SENSORS AND OTHER CONTROL DEVICES. CONTROL UNITS SHALL BE LOCATED WITHIN JUNCTION BOXES AND NOT EXPOSED IN THE CEILING SPACE. CONTROL UNIT SHALL BE 120/277 VOLT RATED WITH NO MINIMUM LOAD, COMPATIBLE WITH ALL THE SPECIFIED BALLASTS PROVIDED WITH A NEUTRAL CONNECTION (NO LEAKAGE TO GROUND) AND NO LEAKAGE TO LOAD IN THE "OFF" MODE. ADDITIONAL RELAY ZONES MAY BE REQUIRED FOR THE ADDITION OF PRIMARY DAYLIT, SECONDARY DAYLIT, AND PRIMARY SKYLIT UTILIZING THE SAME CONTROL CHANNEL. (I.E. EVEN THOUGH A SINGLE LETTER "a" IS INDICATED AT THE PRIMARY SENSOR), ADDITIONAL RELAYS WOULD BE REQUIRED FOR THE "a+" (PRIMARY SIDELIT DAYLIT ZONE), "a++" (SECONDARY SIDELIT DAYLIT ZONE), AND "a*" (SKYLIT DAYLIT ZONE). WHERE MORE THAN ONE CIRCUIT/THREE SWITCH LEGS/THREE RELAY ZONES ARE REQUIRED, PROVIDE ADDITIONAL FULL FEATURE CONTROL UNITS AS REQUIRED.
      2. WHERE ADDITIONAL 120/ 277 VOLT DEVICES, RECEPTACLES, OR BRANCH CIRCUITS ARE BEING CONTROLLED BY THE ROOM CONTROLLER, AN ADDITIONAL CONTROL UNIT SHALL BE PROVIDED AS REQUIRED.
      3. THE OCCUPANCY SENSOR CONTROLLED RECEPTACLE BRANCH CIRCUIT RELAY, CONNECTED TO THE SPACE'S DISTRIBUTED LIGHTING CONTROL OCCUPANCY SENSOR RELAY, SHALL TURN ON WHEN THE ROOM IS OCCUPIED, REGARDLESS OF THE CONFIGURATION OF THE LIGHTING CONTROL STATE - I.E. AUTO ON/MANUAL ON. SEE THE DISTRIBUTED LIGHTING CONTROL SPECIFICATION FOR MORE INFORMATION. EVEN THOUGH A SINGLE SYMBOL IS INDICATED, MULTIPLE RELAYS MAY BE REQUIRED TO CONTROL THE REQUIRED NUMBER OF SWITCHLEGS/CIRCUITS.
      4. LOW VOLTAGE WALL CONTROLS SHALL BE DECORA STYLE, LOW-VOLTAGE, MOMENTARY SWITCHES WITH COLOR TO MATCH OTHER WALL DEVICES/SWITCHES. LOWER CASE LETTERS INDICATE SWITCHING CONFIGURATION. PROVIDE SWITCHING OR DIMMING CONTROL DEVICES AS REQUIRED BY DRAWINGS.

         DIMMING - NUMBER OF SWITCHES AS REQUIRED - 4 ZONES/YOKE MAX. EACH CONTROL ZONE TO HAVE A DEDICATED RAISE AND LOWER BUTTONS. FACTORY STANDARD COLOR BY ARCHITECT. EACH MULTI-ZONE DIMMING CONTROL STATION SHALL BE PROVIDED WITH MASTER ON AND MASTER OFF BUTTON IN ADDITION TO THE INDIVIDUAL CONTROL ZONE BUTTONS.
      5. WHERE INDICATED, PROVIDE VANDAL RESISTANT, HIGH ABUSE SWITCH CONNECTED TO THE DLCS INPUT/OUTPUT INTERFACE DEVICE FOR ON/ OFF AND DIMMING CONTROLS. SWITCHES LOCATED IN HIGH ABUSE AREAS (EXTERIOR AREAS OR AREAS SUBJECT TO WASH-DOWN ETC.) OR IDENTIFIED ON PLANS AS HIGH-ABUSE SWITCHES SHALL BE VANDAL RESISTANT, STAINLESS STEEL, TOUCH SENSITIVE AND AVAILABLE WITH UP TO TWO BUTTONS IN A SINGLE GANG. EACH HIGH ABUSE SWITCH SHALL BE ABLE TO BE PROGRAMMED FOR ON, OFF, TOGGLE OR MAINTAIN OPERATION. SWITCHES MUST BE CAPABLE OF HANDLING ELECTROSTATIC DISCHARGES OF AT LEAST 30,000 VOLTS (1CMSPARK) WITHOUT ANY INTERRUPTION OR FAILURE IN OPERATION.
      6. WHERE INDICATED, PROVIDE A LOCKING SINGLE POLE SWITCH CONNECTED TO THE ROOM CONTROLLER VIA A INPUT/OUTPUT INTERFACE DEVICE FOR ON/OFF CONTROLS. DIRECT CONNECTION OF THE KEYED SWITCH ON THE LOAD SIDE OF THE CONTROLLER IS PROHIBITED. PROVIDE AT LEAST THREE (3) KEYS TO OWNER AT CONCLUSION OF PROJECT. ADJACENT SWITCH SHALL ONLY BRING LIGHTS FULL ON. KEYED SWITCH ALLOWS MANUAL OFF FUNCTIONALITY. DIMMER SWITCH ALLOWS AUTO-ON 50% OVERRIDE TO 100% ALL-ON AND SHALL NOT ALLOW LIGHTING LEVELS TO DECREASE IN ANY WAY.

SYMBOLS / REPRESENTATIVE GRAPHIC IMAGES

   i. WHEN LIGHTING SYSTEM IS INDICATED WITH A CONNECTION TO A REMOTE EMERGENCY POWER SOURCE (I.E. AN INVERTER OR GENERATOR) PROVIDE UL924 LISTED INTERFACE EQUIPMENT TO ALLOW THE OVERRIDE OF THE LOCAL SWITCHING AND/OR DIMMING CONTROLS DURING A POWER OUTAGE.

   j. WHEN LIGHTING FIXTURES/CONTROLS ARE PROVIDED WITH LUTRON 3-WIRE DIMMING BALLASTS, AN INTERFACE DEVICE SHALL BE PROVIDED TO ALLOW 0-10V CONTROL OF LUTRON 3-WIRE DIMMING BALLASTS. MOUNT INTERFACE IN A NEMA1 ENCLOSURE IN ACCESSIBLE CEILING SPACE ADJACENT TO ITS ASSOCIATED CONTROL UNIT.

   k. WHEN LIGHTING FIXTURES/CONTROLS ARE LINE VOLTAGE DIMMED OR PROVIDED ELECTRONIC LOW-VOLTAGE, MAGNETIC LOW-VOLTAGE, NEON/COLD CATHODE, LUTRON "TU-WIRE" DIMMING BALLASTS, AN INTERFACE DEVICE SHALL BE PROVIDED TO ALLOW LINE VOLTAGE CONTROL. MOUNT INTERFACE IN A NEMA1 ENCLOSURE IN ACCESSIBLE CEILING SPACE ADJACENT TO ITS ASSOCIATED CONTROL UNIT.

   l. WHEN AV SYSTEM INTERFACE IS INDICATED, PROVIDE TWO-WAY CAPABLE RS-232 COMMUNICATIONS INTERFACE TO ALLOW AV CONTROL SYSTEM TO CALL ADDRESSABLE LIGHTING/ROOM SCENES. COMMUNICATIONS INTERFACE SHALL PROVIDE FEEDBACK TO THE AV CONTROL SYSTEM FOR LIGHT LEVEL STATUS.

   m. WHEN MOVEABLE PARTITION INTERFACE IS INDICATED, PROVIDE ALL COMPONENTS, SENSORS, WIRING, POWER SUPPLIES AND PROGRAMMING NECESSARY TO MONITOR AND REPORT MOVEABLE PARTION(S) OPEN/CLOSED STATUS. DLCS SYSTEM SHALL AUTOMATICALLY ADOPT SINGLE ROOM OR MULTI-ROOM CONTROL PROFILES AS REQUIRED BY PARTITION STATUS.

   n. WHEN NETWORKED LIGHTING CONTROL RELAY PANEL(S) ARE INDICATED, PROVIDE ALL COMPONENTS, WIRING, AND PROGRAMMING NECESSARY TO INTEGRATE RELAY PANELS WITHIN THE DLCS SYSTEM.

5. GENERAL SYSTEM REQUIREMENTS:

   a. ALL EQUIPMENT SHALL FEATURE A PRE-SET DEFAULT OPERATION. UPON INITIAL POWER UP, THE SYSTEM SHALL AUTOMATICALLY IDENTIFY THE DEVICES ON THE LOCAL NETWORK, THEN ENTERS THE PRE-SET CONFIGURATION TO ALLOW BASIC OPERATION OF ALL DEVICES. IN MOST APPLICATIONS THE RELATIONSHIP BETWEEN QUANTITY OF LOADS, SWITCHES AND OCCUPANCY SENSORS WILL NOT REQUIRE ANY ADJUSTMENTS - ALTHOUGH AN ADJUSTMENT TO THE AUTOMATIC SETTINGS SHALL BE INCLUDED IN THE BASE BID.

   b. ALL EQUIPMENT SHALL FEATURE A CONFIGURATION (CONFIG) BUTTON ON MOST DEVICES THAT ALLOWS EASY ACCESS TO THE INTEGRATED AUTO-CONFIGURATION TECHNOLOGY TO MODIFY SYSTEM OPERATION. FUNCTIONALITY OF THE CONFIG BUTTON SHALL BE STANDARDIZED THROUGHOUT THE PRODUCT LINE, AS IS THE OPERATION OF THE CONFIG LED INDICATORS.

   c. NETWORK DLCS SYSTEM CONTROL/CONFIGURATION SOFTWARE SHALL BE PRE-CONFIGURED TO THE MAXIMUM EXTENT POSSIBLE OFF-SITE AT THE DLCS FACTORY OR ENGINEERING FACILITY. THE CONTRACTOR SHALL DOCUMENT EVERY NETWORK COMPONENT'S LOCATION (ROOM AND FLOOR NUMBER) AND ITS' RESPECTIVE SERIAL NUMBER OR OTHER DEVICE IDENTIFIER ON A FULL SIZE FLOOR PLAN IN PDF FORMAT. HANDWRITTEN DOCUMENTATION IS UNACCEPTABLE. THE PREFERRED ACCEPTABLE METHOD OF NETWORK COMPONENT DOCUMENTATION IS COLLECTION OF FACTORY-PROVIDED, SELF-ADHESIVE, BAR-CODE IDENTIFIERS DESIGNED TO BE REMOVED FROM NETWORK COMPONENTS AS THEY ARE INSTALLED IN THE FIELD. BAR CODES IDENTIFIERS SHALL BE APPLIED TO A PAPER COPY OF A FLOOR PLAN WHICH SHALL BE PROVIDED TO THE FACTORY FOR USE IN OFF-SITE DLCS NETWORK PROGRAMMING AND CONFIGURATION. THE RESULTS OF EITHER METHOD SHALL BE SCANNED AND SUBMITTED AS A PART OF THE PROJECT CLOSEOUT DOCUMENTATION.

   d. NETWORK SYSTEMS SHALL BE INSTALLED BY VENDOR-CERTIFIED CONTRACTOR FIELD PERSONNEL TO PERFORM NETWORK INSTALLATIONS INCLUDING ACCURATE, REPEATABLE COMMUNICATIONS CABLING TERMINATIONS (BOTH LAN AND MS/TP TYPE). INCLUDE CERTIFICATES FOR EACH CERTIFIED INSTALLER TO BE UTILIZED ON THE PROJECT AS A PART OF THE PROJECT SUBMITTALS. A CERTIFIED FIELD INSTALLER SHALL BE ON-SITE SUPERVISING COMMUNICATIONS CABLING AND CABLING TERMINATIONS AT ALL TIMES WHEN THIS WORK IS OCCURRING ON THE PROJECT.

   e. PRIOR TO NETWORK SYSTEM FACTORY START-UP, THE CONTRACTOR SHALL 1) TEST ALL COMMUNICATIONS CABLING FOR SHORTS, POLARITY REVERSALS AND BAD TERMINATIONS/CONNECTIONS AND MAKE NECESSARY REPAIRS AND 2) DEMONSTRATE FULL CONNECTIVITY TO ALL NETWORK AND LOCAL (IN-ROOM) DEVICES VIA MS/TP CAPTURE OR OTHER VENDOR SPECIFIC TESTING PROCESS. CONTRACTOR SHALL PROVIDE A TEST REPORT OUTLINING TEST COMPLETION AND ANY REPAIRS MADE AND CERTIFY THAT NETWORK DEVICE AND LOCAL DEVICE CONNECTIVITY HAS BEEN ACHIEVED PRIOR TO SCHEDULED FACTORY START-UP. BASED ON PAST PROJECT EXPERIENCE, FAILURE TO PERFORM ANY OF THE ABOVE STEPS HAS RESULTED IN BOTH VERY INEFFICIENT FACTORY START-UP AND PROJECT DELIVERY DELAY. ANY ADDITIONAL COSTS ARISING OUT OF A FAILURE TO COMPLETE THIS TESTING SHALL BE BORNE SOLELY BY THE CONTRACTOR.

   f. NETWORK SYSTEMS SHALL BE INSPECTED, STARTED UP, CONFIGURED AND PROGRAMMED BY FACTORY START-UP TECHNICIANS TO MEET THE INTENDED CONTROLS SCENARIOS AND FUNCTIONALITY DESIRED BY THE SYSTEM USER. WHERE NETWORK SYSTEMS ARE INTEGRATED WITH BUILDING MANAGEMENT SYSTEMS (BMS), THE FACTORY TECHNICIAN SHALL ASSIST THE CONTROLS INTEGRATOR WITH DLCS POINT INTEGRATION.

6. INSTALLATION OF CONTROL UNITS, OCCUPANCY/VACANCY SENSORS AND DAYLIGHTING CONTROLS:

   a. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND AIM SENSORS IN THE CORRECT LOCATION REQUIRED FOR COMPLETE AND PROPER VOLUMETRIC COVERAGE PER THE MANUFACTURER'S RECOMMENDATIONS. ROOMS SHALL HAVE NINETY (90) TO ONE HUNDRED (100) PERCENT COVERAGE AND SHALL ACCOMMODATE ALL HABITS OF SINGLE OR MULTIPLE OCCUPANTS AT ANY LOCATION WITHIN THE ROOM. THE LOCATIONS AND QUANTITIES OF SENSORS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE ONLY THE ROOMS THAT ARE TO BE PROVIDED WITH SENSORS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL SENSORS AS REQUIRED TO PROPERLY AND COMPLETELY COVER THE RESPECTIVE ROOM. ADDITIONALLY, IT MAY BE NECESSARY FOR THE CONTRACTOR TO MAKE ADJUSTMENTS, CHANGE THE LOCATION OR TYPE OF SENSOR TO OBTAIN PROPER OPERATION IN A SPECIFIC ROOM. THE USE OF FACTORY SUPPLIED INTERNAL MASKING (PIR) SHALL BE PROVIDED/INSTALLED AS REQUIRED TO LIMIT DETECTION TO WITHIN THE CONTROLLED SPACE ONLY. THE CONTRACTOR SHALL HAVE FINAL RESPONSIBILITY FOR PROPER OPERATION OF THE SYSTEM IN EACH ROOM AND SHOULD THEREFORE MAKE LABOR ALLOWANCES FOR CHANGES AND ADJUSTMENTS.

   b. CEILING MOUNTED SENSORS SHOULD BE LOCATED IN THE SPACE TO BE COVERED, A MINIMUM OF 4', PREFERABLY 5', AWAY FROM THE LATCH SIDE OF THE DOOR, 2" TO 3" AWAY FROM THE WALL AND 3' TO 4' FROM AN AIR SUPPLY REGISTER. DO NOT MOUNT SENSORS OVER A DOORWAY OR BEHIND A FULL HEIGHT DOOR. SENSORS SHALL BE AIMED IN THE DIRECTION OF THE SPACE TO BE COVERED. DO NOT AIM SENSORS TOWARD A DOORWAY. THE USE OF FACTORY SUPPLIED INTERNAL MASKING (PIR) SHALL BE PROVIDED/INSTALLED AS REQUIRED TO LIMIT DETECTION TO WITHIN THE CONTROLLED SPACE ONLY.

   c. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL SENSORS SHALL BE ADJUSTED FOR A TIME DELAY OF TWENTY (20) MINUTES.

   d. EACH DAYLIGHTING CONTROL SYSTEM/ZONE SHALL BE INSTALLED/ADJUSTED AS FOLLOWS:

      1. AUTOMATIC SWITCHING/DIMMING CONTROL PLACEMENT: IT IS IMPORTANT TO SELECT A LOCATION IN THE DAYLIGHTING ZONE WHERE THE DAYLIGHT CONTRIBUTION IS REPRESENTATIVE OF THE DAYLIGHTING THROUGHOUT THE ZONE. A GOOD LOCATION IS OFTEN BETWEEN THE WINDOW AND/OR DAYLIGHTING SOURCE AND THE FIRST ROW OF LIGHTING FIXTURES. AVOID INSTALLATIONS WITHIN 6'-0" OF A WINDOW, MORE THAN 15'-0" FROM A WINDOW, AND LESS THAN 4'-0" TO A LIGHTING FIXTURE WITH INDIRECT DISTRIBUTION.
      2. AUTOMATIC STEP-DIMMED/CONTINUOUS DIMMING CONTROLS SHALL NOT BE OPERATIONAL UNTIL THE LAMPS HAVE HAD AN OPPORTUNITY TO "BURN IN" - TYPICALLY A MINIMUM OF 10 HOURS - OR GREATER AS RECOMMENDED BY THE RESPECTIVE LAMP AND BALLAST MANUFACTURERS.
      3. AUTOMATIC SWITCHING/STEP-DIMMED CONTROL SETTINGS:

         CONTRACTOR TO UTILIZE THE PHOTOSENSOR AUTOMATIC CALIBRATION AND SETPOINT FUNCTIONS TO ESTABLISH THE OPTIMAL ON/OFF SETPOINTS, TIME DELAYS AND DEADBAND SETTINGS FOR EACH CONTROL ZONE INDICATED WITH DAYLIGHTING CONTROLS.
      4. AUTOMATIC CONTINUOUS DIMMING CONTROL SETTINGS SHALL BE SET USING AN ILLUMINANCE METER, AT A LOCATION FURTHEST FROM THE DAYLIGHT SOURCE, AS FOLLOWS:
         - NIGHT CONDITIONS/SETTING: SET AND ADJUST THE ILLUMINANCE LEVELS TO BE PER THE "TARGET ILLUMINATION" SYMBOL VALUE - SEE DRAWINGS. THE VALUE MUST BE AT OR BELOW THE "TARGET ILLUMINATION" SYMBOL VALUE.
         - DAY CONDITIONS/SETTING: WITH WINDOW COVERINGS IN THE "OPEN" POSITION AND THE DAYLIGHT CONTRIBUTION (LIGHTS OFF) AT A MAXIMUM OF 75% OF THE "TARGET ILLUMINATION" SYMBOL VALUE, SET AND ADJUST THE COMBINED ARTIFICIAL ILLUMINATION AND DAYLIGHTING ILLUMINATION TO MEET THE SYMBOL VALUE AT THE SAME LOCATION/POSITION OF THE NIGHT SETTINGS.
         - RAMP UP/DOWN RATES/CUT-OF TIME DELAY

   e. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A PRE-INSTALLATION MEETING WITH THE MANUFACTURER'S FACTORY AUTHORIZED REPRESENTATIVE, AT THE PROJECT, TO VERIFY PLACEMENT OF SENSORS AND INSTALLATION CRITERIA.

   f. PROPER JUDGMENT MUST BE EXERCISED IN EXECUTING THE INSTALLATION SO AS TO ENSURE THE BEST POSSIBLE INSTALLATION IN THE AVAILABLE SPACE AND TO OVERCOME LOCAL DIFFICULTIES DUE TO SPACE LIMITATIONS OR INTERFERENCE OF BUILDING STRUCTURAL COMPONENTS. THE CONTRACTOR SHALL ALSO PROVIDE, AT THE PROJECT, THE TRAINING NECESSARY TO FAMILIARIZE THE OWNER'S PERSONNEL WITH THE OPERATION, USE, MAINTENANCE, ADJUSTMENT, AND PROBLEM SOLVING DIAGNOSIS OF THE OCCUPANCY SENSING DEVICES AND SYSTEMS.

   g. CONNECT ALL DEVICES AS REQUIRED. UNLESS PROHIBITED BY LOCAL CODE, CONNECTIONS SHALL BE MADE WITH PLENUM-RATED CABLING ROUTED NEATLY INTO AND ABOVE THE ACCESSIBLE CEILING. CABLES SHALL BE SUPPORTED WITH DEDICATED SUPPORT WIRES AND J-HOOKS. WHERE LOCAL CODE REQUIRES LOW VOLTAGE CABLING TO BE ROUTED IN CONDUIT, INCLUDE ALL COSTS IN BASE BID TO PROVIDE APPROPRIATELY-SIZED SYSTEM OF CONDUITS AND JUNCTION BOXES TO ROUTE CONNECTION CABLING. J-BOXES/CONTROLLERS SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS AND NEVER IN HARD-LID CEILING AREAS. PRE-TERMINATED CABLING SHALL BE PROVIDED BY THE SYSTEM MANUFACTURER AND SHALL BE GREEN IN COLOR UNLESS IT IS ROUTED IN AN EXPOSED CEILING CONDITION WHERE IT SHALL BE BLACK, WHITE OR GREY AS DIRECTED BY THE ARCHITECT.

   h. INSTALL LINE VOLTAGE CONDUCTORS, LOW VOLTAGE CONDUCTORS AND COMMUNICATIONS CABLING BETWEEN LIGHTING FIXTURES AND DLCS COMPONENTS PER THE DLCS MANUFACTURER'S RECOMMENDATIONS REGARDING CONDUCTOR ROUTING, CONDUCTOR SEPARATION AND CONDUCTOR TERMINATIONS. CONTRACTOR SHALL UTILIZE INSTALLATION MEANS AND METHODS THAT DO NOT COMPROMISE THE DLCS SYSTEM WARRANTEE.

   i. WHERE CODE OR LOCAL AHJ REQUIREMENTS REQUIRE THE INSTALLATION OF ALL LOW-VOLTAGE CONDUCTORS TO BE INSTALLED IN CONDUIT - CONTRACTOR TO PROVIDE ALL REQUIRED MANUFACTURER SPECIFIC EQUIPMENT JUNCTION BOXES AND CONDUIT ADAPTERS AS REQUIRED.

   j. UNLESS PROHIBITED BY LOCAL CODE, ALL CONTROL UNITS SHALL BE PLENUM-RATED. WHERE CONTROL UNITS ARE LOCATED IN EXPOSED CEILING SPACES, INCLUDE ALL COSTS IN BASE BID TO PROVIDE APPROPRIATELY-SIZED VENTILATED CONTROL UNIT ENCLOSURES FOR CONCEALMENT. COLOR OF ENCLOSURE PER ARCHITECT.

   k. UPON COMPLETION OF THE INSTALLATION, THE SYSTEM SHALL BE COMPLETELY COMMISSIONED BY THE MANUFACTURER'S FACTORY AUTHORIZED TECHNICIAN WHO WILL VERIFY ALL ADJUSTMENTS AND SENSOR PLACEMENT TO ENSURE A TROUBLE-FREE INSTALLATION. THIS COMMISSIONING EFFORT SHALL BE PERFORMED IN A MANNER THAT MEETS ALL APPLICABLE FEDERAL, STATE, LOCAL ENERGY CODES AND/OR LEED CERTIFICATION PROGRAMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FILLING OUT ALL APPLICABLE PAPERWORK AND/OR FORMS. CONTRACTOR TO PROVIDE A COPY OF THE COMPLETED FORMS TO THE ENGINEER OF RECORD PRIOR TO THE PUNCH LIST SITE VISIT FOR REVIEW AND POSSIBLE RECOMMENDATION OF SETTING REVISIONS.

   CONTRACTOR SHALL INCLUDE ALL COST IN THE BASE BID AND PROVIDE THE FOLLOWING WORK FOR EVERY CONTROL ZONE:

   - INITIAL SETTINGS AS INDICATED ABOVE.
   - COMMISSIONING OF EACH LIGHTING CONTROL DEVICE/ZONE PER NOTES BELOW.
   - A FOLLOW UP SETTING(S) ADJUSTMENT, AS DICTATED BY THE ELECTRICAL ENGINEER, BASED UPON A REVIEW OF THE RESULTS OF THE CONTRACTOR'S COMMISSIONING EFFORT AND FINAL PUNCH LIST.

   l. REGARDLESS OF THE LESSER REQUIREMENTS OF ANY AHJ COMMISSIONING FORMS, THE FOLLOWING MINIMUM COMMISSIONING ITEMS MUST BE COMPLETED FOR EACH DEVICE/LIGHTING CONTROL ZONE:

   - MEASURED LIGHTING POWER (KW) AT THE FULLY DIMMED CONDITION.
   - MEASURED LIGHTING POWER (KW) AT FULL LIGHT OUTPUT.
   - ONLY LIGHTING FIXTURES IN THE DAYLIGHTING ZONE ARE AFFECTED BY THE DAYLIGHTING CONTROLS.
   - LIGHTING POWER IS REDUCED BY AT LEAST 50% IN WINDOW DAYLIT AREAS AND 65% IN SKYLIGHT DAYLIT AREAS.
   - DIMMING SYSTEMS PROVIDE FLICKER FREE OPERATION.
   - ILLUMINATION LEVELS, LOCATIONS OF MEASUREMENTS, SPECIFIC DEVICE SETTINGS ARE DOCUMENTED ON AS-BUILTS.

   m. AS PART OF THE "RECORD DRAWINGS", INDICATE ON THE REFLECTED CEILING PLAN THE EXACT LOCATION (CEILING TILE OR ACCESS PANEL) OF ANY ABOVE CEILING DEVICE.

   n. WHEN THE PROJECT REQUIRES TWENTY-FIVE (25) OR MORE CEILING MOUNTED SENSORS, CONTRACTOR TO PROVIDE A REMOTE CONTROL PROGRAMMING/CONTROL DEVICE, AND HAND IT TO THE OWNER AT THE END OF THE PROJECT.

   o. INCLUDE ALL COSTS TO PROVIDE USER-TRAINING AS OUTLINED ELSEWHERE IN ANY PROJECT SPECIFIC COMMISSIONING SPECIFICATION. WHERE A NETWORK DLCS IS SPECIFIED, MINIMUM TRAINING SHALL INCLUDE 6 HOURS OF ON-SITE USER TRAINING FOR A MINIMUM OF 3 PERSONNEL.

DISTRIBUTED LIGHTING CONTROL SYSTEM REQUIREMENTS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING OF ALL MATERIAL, LABOR, EQUIPMENT, AND SERVICES, IN CONNECTION WITH THE INSTALLATION OF A COMPLETE AND FULLY FUNCTIONING AND CODE COMPLIANT INSTALLATION.
2. IT IS THE INTENT OF THE CONTRACT DOCUMENTS, WHICH ARE PRESENTED IN A DIAGRAMMATIC FORMAT, TO PROVIDE CONTRACTOR INFORMATION THAT SUPPLEMENTS AND ENHANCES THE GENERALLY ACCEPTED CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES EMPLOYED IN CONNECTION WITH INSTALLATION OF THIS TYPE OF PRODUCT/SYSTEM.
3. THE CONTRACTOR SHALL ALSO INCORPORATE THE REQUIREMENTS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS/WARRANTY REQUIREMENTS AS PART OF THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. IN THE EVENT OF A CONFLICT BETWEEN THE CONTRACT DOCUMENT REQUIREMENTS AND THE MANUFACTURER'S INSTALLATION REQUIREMENTS, THE MORE STRINGENT REQUIREMENTS SHALL APPLY - UNLESS THE MORE STRINGENT REQUIREMENT VOIDS APPLICABLE WARRANTIES OR VIOLATES THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. ANY SUCH CONFLICT SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING THROUGH THE FORMAL RFI PROCESS.
4. REFER TO THE ASSOCIATED SCHEDULES, SCHEMATICS, DRAWINGS, AND SPECIFICATIONS FOR DETAILED INFORMATION/REQUIREMENTS ON THIS PRODUCT/SYSTEM.
5. SHOP DRAWINGS AND COMPONENT SUBMITTALS SHALL BE SUBMITTED PER THE GENERAL SPECIFICATION REQUIREMENTS SHOWING ALL COMPONENTS, WIRING CONFIGURATIONS AND PROGRAMMING SCHEDULES. SCALED SHOP DRAWINGS DEPICTING/IDENTIFYING ALL SYSTEM COMPONENT LOCATIONS SHALL BE PROVIDED. SUBMITTALS SHALL BE MADE SPECIFIC TO THE PROJECT - GENERIC SUBMITTALS AND SUBMITTALS WITHOUT SCALED SHOP DRAWINGS SHALL BE REJECTED.

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CONSULTANT

No. E15610
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RAYMOND W. SWARTZ

ARCHITECT/ENGINEER SEAL

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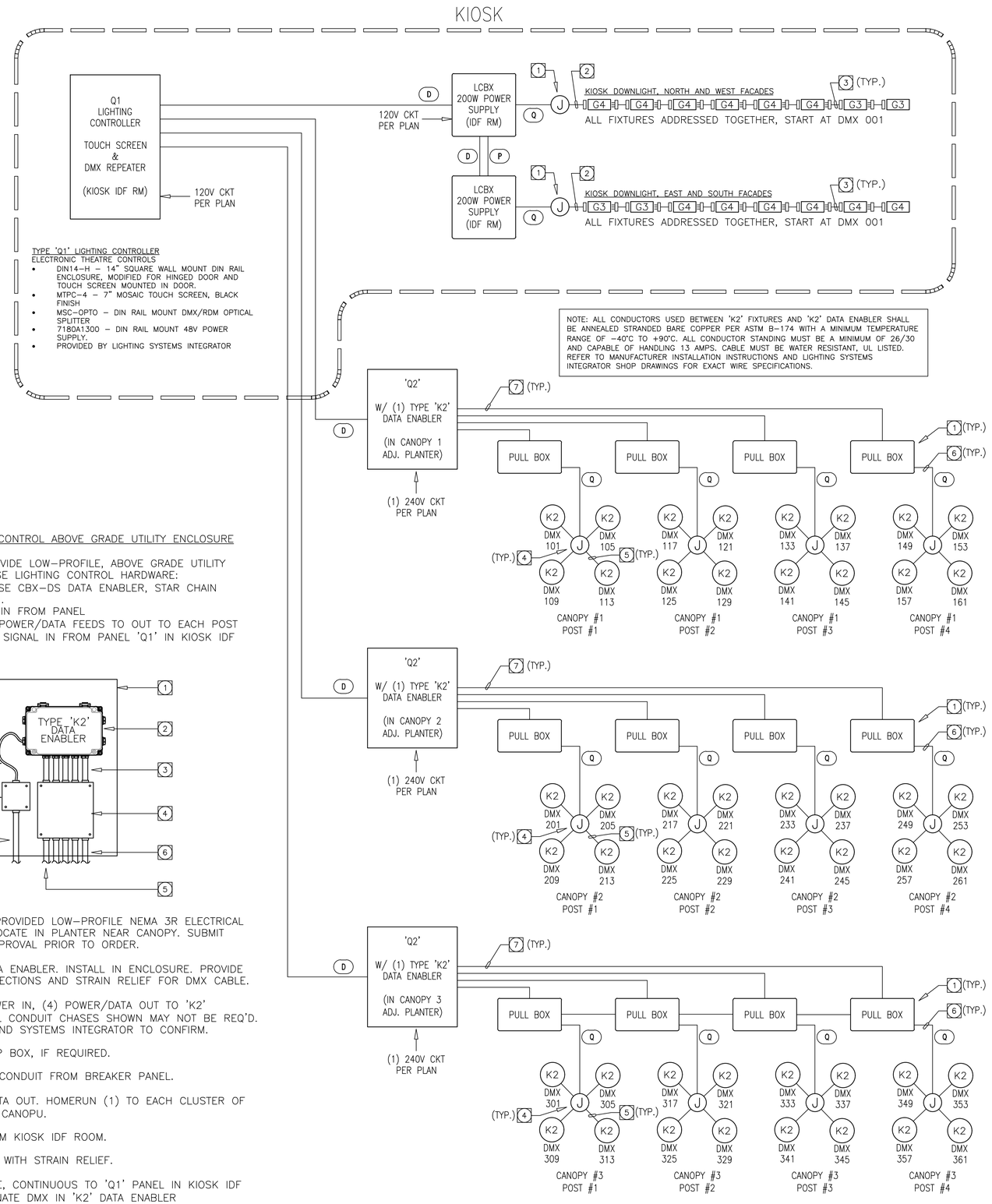
BASE FILE NAMES
DRAWN BY JL
CHECKED BY RS
SCALE –
DATE
PROJECT NO. GRUEN # 8345

DISTRIBUTED
LIGHTING
CONTROL
SPECIFICATIONS

SHEET TITLE

E404

SHEET NO.

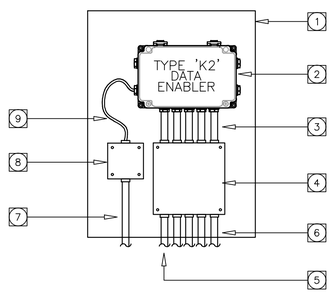


TYPE 'Q1' LIGHTING CONTROLLER
ELECTRONIC THEATRE CONTROLS

- DIN14-H – 14" SQUARE WALL MOUNT DIN RAIL ENCLOSURE, MODIFIED FOR HINGED DOOR AND TOUCH SCREEN MOUNTED IN DOOR.
- MTPC-4 – 7" MOSAIC TOUCH SCREEN, BLACK FINISH
- MSC-OPTO – DIN RAIL MOUNT DMX/RDM OPTICAL SPLITTER
- 7180A1300 – DIN RAIL MOUNT 48V POWER SUPPLY.
- PROVIDED BY LIGHTING SYSTEMS INTEGRATOR

TYPE 'Q2' LIGHTING CONTROL ABOVE GRADE UTILITY ENCLOSURE (TYPICAL (3))
CONTRACTOR TO PROVIDE LOW-PROFILE, ABOVE GRADE UTILITY ENCLOSURE TO HOUSE LIGHTING CONTROL HARDWARE:

- (1) LUMENPULSE CBX-DS DATA ENABLER, STAR CHAIN CONFIGURATION.
- MAINS POWER IN FROM PANEL
- (4) DISCRETE POWER/DATA FEEDS TO OUT TO EACH POST
- (1) DMX DATA SIGNAL IN FROM PANEL 'Q1' IN KIOSK IDF ROOM



1. CONTRACTOR-PROVIDED LOW-PROFILE NEMA 3R ELECTRICAL ENCLOSURE. LOCATE IN PLANTER NEAR CANOPY. SUBMIT PANEL FOR APPROVAL PRIOR TO ORDER.
2. TYPE 'K2' DATA ENABLER. INSTALL IN ENCLOSURE. PROVIDE CONDUIT CONNECTIONS AND STRAIN RELIEF FOR DMX CABLE.
3. (1) MAINS POWER IN, (4) POWER/DATA OUT TO 'K2' LOCATIONS. ALL CONDUIT CHASES SHOWN MAY NOT BE REQ'D. CONTRACTOR AND SYSTEMS INTEGRATOR TO CONFIRM.
4. WIRING MAKEUP BOX, IF REQUIRED.
5. MAINS POWER CONDUIT FROM BREAKER PANEL.
6. (4) POWER/DATA OUT. HOMERUN (1) TO EACH CLUSTER OF (4) LIGHTS AT CANOPU.
7. DMX DATA FROM KIOSK IDF ROOM.
8. JUNCTION BOX WITH STRAIN RELIEF.
9. (1) DMX CABLE, CONTINUOUS TO 'Q1' PANEL IN KIOSK IDF ROOM. TERMINATE DMX IN 'K2' DATA ENABLER

TYPE 'Q2' ABOVE GRADE ELEC ENCLOSURE (2)
SCALE: 1-1/2" = 1'-0"

DMX LIGHTING CONTROL SYSTEM RISER DIAGRAM (1)
SCALE: NOPE

PLAN SPECIFIC NOTES:

1. LOCATE JUNCTION BOX ON EXTERIOR OF BUILDING NEAR START OF FIXTURE RUN. PROVIDE WET LOCATION WIRE GLAND FOR LEADER ("MASTER") WIRE.
2. PRE-FABRICATED LEADER ("MASTER") WIRE FROM JBOX TO FIRST FIXTURE IN ROW. REFER TO FIXTURE SCHEDULE FOR ADDITIONAL PART NUMBER INFORMATION. CONTRACTOR TO DETERMINE LEADER WIRE LENGTH.
3. PRE-FABRICATED JUMPER WIRE BETWEEN FIXTURES. REFER TO FIXTURE SCHEDULE FOR ADDITIONAL PART NUMBER INFORMATION. CONTRACTOR TO DETERMINE JUMPER CABLES LENGHT(S) REQUIRED FOR FIXTURE INSTALLATION AND TO CONTINUE AROUND CORNERS.
4. MOUNT JBOX(ES) AT TOP OF POST. POWER AND DATA ENTER JBOX THROUGH T.S. STRUCTURE. PROVIDE CABLE GLANDS ON BOX TO RECEIVE FIXTURE LEAD WIRES. "DAISY CHAIN" POWER AND SIGNAL BETWEEN FIXTURES WITHIN THE JBOX. VERIFY WITH LIGHTING SYSTEMS INTEGRATOR THAT THIS WILL BE ACCEPTABLE PRIOR TO ROUGH-IN.
5. FIXTURE LEADER WIRE, MAX 36" LENGTH FROM FIXTURE TO JBOX TO AVOID DATA DISRUPTION. CONFIRM FINAL INSTALLATION DETAILS WITH LIGHTING SYSTEMS INTEGRATOR PRIOR TO ROUGH IN.
6. FIXTURE POWER AND DATA, PLEASE REFER TO LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR EXACT WIRE TYPE, QUANTITY, LENGTH AND TOPOLOGY RESTRICTIONS. CONTINUOUS CONDUIT CONNECTION TO PULL BOX. MAX 180° OF BENDS BETWEEN PULL BOXES. ROUTE UNDERGROUND CONDUIT INTO BASE OF T.S. SUPPORT POST; TRANSITION TO FLEX CONDUIT THROUGH THE POST THE JBOX AT FIXTURES. INSTALL FLEX CONDUIT DURING STEEL ERECTION IF NO HAND HOLES ARE PROVIDED IN T.S. STRUCTURE.
7. FIXTURE POWER AND DATA, PLEASE REFER TO LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR EXACT WIRE TYPE, QUANTITY, LENGTH AND TOPOLOGY RESTRICTIONS. UNDERGROUND CONDUIT CONNECTION TO PULL BOX (IF REQUIRED), CONTINUE ON TO DATA ENABLER IN ABOVE GRADE UTILITY BOX.

LIGHTING CONTROL NOTES

LIGHTING CONTROLS INSTALLATION NOTES:

1. MINIMUM LIGHTING CONTROL SIGNAL CONDUIT SIZE IS 3/4". ALL CONDUIT TO BE INSTALLED SHALL CONTAIN QUANTITY OF CONDUCTORS COMPLYING WITH 40% FILL AS OUTLINED BY NEC.
2. ALL DATA/SIGNAL/LOW VOLTAGE CONDUCTORS SHALL BE FURNISHED BY ELECTRICAL CONTRACTOR AS OUTLINED IN LIGHTING SYSTEM INTEGRATOR'S SHOP DRAWINGS; WITH 6'-0" MINIMUM TERMINATION SLACK AT BOTH ENDS.
3. CONTRACTOR SHALL VERIFY LOCATION & REQUIREMENTS OF ALL LIGHTING CONTROL DEVICES PRIOR TO BID, ROUGH-IN AND INSTALLATION.
4. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES AS REQUIRED TO INSTALL LIGHTING CONTROL SYSTEM. MAXIMUM 180° OF BEND BETWEEN PULL POINTS.
5. UNIQUELY LABEL ALL CABLES PER LIGHTING SYSTEM INTEGRATOR'S WIRE SCHEDULES.
6. ALL CONTROL/LOW VOLTAGE DATA TERMINATIONS SHALL BE PERFORMED BY THE LIGHTING SYSTEMS INTEGRATOR AS PART OF THE COMMISSIONING OF THE SYSTEM.

LIGHTING SYSTEMS INTEGRATOR:

1. LIGHTING SYSTEMS INTEGRATOR SHALL SUPPLY FULLY COORDINATED AND ENGINEERED LIGHTING CONTROL AND DIMMING SHOP DRAWINGS TO THE ELECTRICAL CONTRACTOR TO ASSIST IN INSTALLATION.
2. LIGHTING SYSTEMS INTEGRATOR SHALL COORDINATE INSTALLATION OF DIMMING AND CONTROL DEVICES, LUMINAIRES, AND ALL DATA, WITH ELECTRICAL CONTRACTOR. LIGHTING SYSTEMS INTEGRATOR SHALL PROVIDE INSTALLATION SUPERVISION FOR THE CONTROL PANEL,
3. LIGHTING SYSTEM INTEGRATOR SHALL CONFIGURE, ADDRESS AND TEST ALL LUMINAIRES PRIOR TO INSTALLATION. DIGITAL LIGHT FIXTURES SHALL BE ADDRESSED IN LOGICAL GROUPS TO MINIMZE DMX CHANNEL FOOTPRINT.
4. UPON COMPLETION OF THE INSTALLATION, THE LIGHTING SYSTEMS INTEGRATOR SHALL COMMISSION AND PROGRAM THE LIGHTING CONTROLLER. ALLOW FOR (2) 8-HOUR EVENINGS OF PROGRAMMING *AFTER* COMPLETE SYSTEM COMMISSIONING.
5. LIGHTING SYSTEMS INTEGRATOR SHALL PROVIDE ALL DMX LIGHTING CONTROL SYSTEM DEVICES,
6. LIGHTING SYSTEMS INTEGRATOR SHALL CONFIGURE AND PROGRAM LIGHTING CONTROL SYSTEM AS DIRECTED BY LIGHTING CONSULTANT AND OWNER.
7. LIGHTING SYSTEMS INTEGRATOR SHALL BE APPROVED BY LIGHTING CONSULTANT.

7.1. PRE-APPROVED LIGHTING SYSTEMS INTEGRATORS:
7.1.1. 4-WALL ENTERTAINMENT LIGHTING, WWW.4WALL.COM LOS ANGELES / (818) 252.7481 CONTACT: BRENT PRITCHETT / LAS VEGAS OFFICE 702.263.3858 / BPRITCHETT@4WALL.COM

OPERATIONAL NARRATIVE

EACH CANOPY AND KIOSK PERIMETER SHOULD BE A SEPARATE AREAS OF CONTROL; TOTAL OF 4 SEPARATE AREAS OF CONTROL..

STATIC PRESETS:

- COLOR CHANGING UPLIGHTS AND KIOSK PERIMETER COLOR CHANGING LUMINAIRES TO HAVE FOLLOWING STATIC PRESETS: 4000K WHITE, UCR BLUE, UCR GOLD, UCR GRAY, PRIMARY GREEN, PRIMARY RED, PINK.

KINETIC SEQUENCES SHOULD BE PROGRAMMED:

- SEQUENCE 1: CANOPIES AND KIOSK TO FADE TO UCR BLUE IN 5 MINUTES, HOLD FOR 5 MINUTES, FADE TO 4000K WHITE IN 5 MINUTES, HOLD FOR 5 MINUTES, FADE TO UCR GOLD IN 5 MINUTES, HOLD FOR 5 MINUTES, FADE TO 4000K WHITE IN 5 MINUTES, HOLD FOR 5 MINUTES AND REPEAT.
- SEQUENCE 2: CANOPIES TO "WAVE" FROM UCR GOLD TO UCR BLUE WITH KIOSK AS STATIC UCR BLUE, 3 SECOND FADES FROM NORTH TO SOUTH AND BACK AGAIN, ALL CANOPIES TO FADE TO UCR GOLD, HOLD FOR 5 MINUTES AND REVERSE "WAVE', HOLD FOR 5 MINUTES.
- SEQUENCE 3: CANOPY 1 AND 3 TO BE UCR BLUE, CENTER CANOPY AND KIOSK TO BE UCR GOLD, HOLD FOR 30 MINUTES, 5 MINUTE FADE TO ALL UCR BLUE, HOLD FOR 30 MINUTES, 5 MINUTE FADE TO ALL UCR GOLD, HOLD FOR 30 MINUTES, 5 MINUTE FADE TO UCR GRAY, HOLD FOR 30 MINUTES, REPEAT.
- SEQUENCES 4, 5, 6, 7, 8, 9, 10: TO BE DESIGNED AND PROGRAMMED WITH LIGHTING CONSULTANT AND / OR OWNER.

TIME CLOCK EVENTS:

- ALL LUMINAIRES AT CANOPY AND COLOR CHANGING LUMINAIRES AT KIOSK PERIMETER TO COME ON AT SUNSET AND TURN OFF 30 MINUTES AFTER SUNRISE.
- SUNDAY THRU THURSDAY ALL LUMINAIRES TO BE IN STATIC UCR BLUE BEGINNING AT SUNSET, EVERY HOUR, ON THE HOUR UNTIL MIDNIGHT SEQUENCE 2 WOULD BE ACTIVATED. AFTER MIDNIGHT UNTIL 30 MINUTES AFTER SUNRISE ALL FIXTURES TO RETURN TO STATIC UCR BLUE.
- FRIDAY AND SATURDAY BEGINNING AT SUNSET, UNTIL MIDNIGHT SEQUENCE 1 WOULD BE ACTIVATED. AFTER MIDNIGHT UNTIL 30 MINUTES AFTER SUNRISE ALL FIXTURES TO RETURN TO STATIC UCR BLUE.
- MANUAL OVERRIDES FOR STATIC COLORS FOR SEASONAL OR SPECIAL EVENTS COULD BE SELECTED AS DESIRED BY AUTHORIZED PERSONNEL AND WOULD REMAIN UNTIL OVERRIDDEN AGAIN OR AT 30 MINUTES PAST MIDNIGHT ALL ZONES WOULD AUTOMATICALLY BE RETURNED TO STATIC UCR BLUE UNTIL 30 MINUTES AFTER SUNRISE.
- ALL SEQUENCES SUBJECT TO MODIFICATION AS DETERMINED BY CLIENT.

TEST SEQUENCES:
MANUAL TRIGGER FROM TOUCH SCREEN:

- ALL ON WHITE
- ALL OFF. HOLD LIGHTS AT OFF UNTIL END OF NIGHT. RELEASE HOLD AND SYSTEM RETURNS TO NORMAL OPERATION THE NEXT NIGHT
- ALL LIGHTS STEP THROUGH COLORS IN 0 COUNT. HOLD COLORS FOR 5 SECONDS, STEP TO NEXT COLOR. REPEAT 60 MINS THEN RELEASE, OR UNTIL MANUALLY RELEASED AT TOUCH SCREEN.

CONTROL WIRING LEGEND

SYMBOL	WIRE TYPE(S)	SIGNAL
D	BELDEN 9729	DMX
N	COMMSCOPE CAT6A	NET
P	POWER CONT. BETWEEN DEVICES	–
Q	(5) #12 AWG FOR POWER AND DATA	DMX + POWER
K	COMMSCOPE CAT6A	KINET

PLEASE NOTE:
1) ALL CONTROL WIRING SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR.
2) REFER TO LIGHTING SYSTEM INTEGRATOR SHOP DRAWINGS FOR EXACT WIRE TYPE, QUANTITIES, DESTINATION, LENGTH AND TOPOLOGY RESTRICTIONS.

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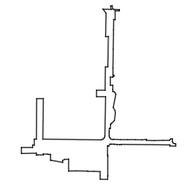
Electrical Lead - Jonathan Lomibao
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
12/31/2019
ELECTRICAL
STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL



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BASE FILE NAMES

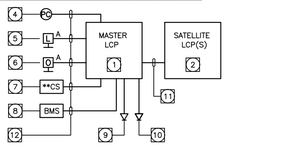
DRAWN BY JL
CHECKED BY RS
SCALE –
DATE
PROJECT NO. GRUEN # 8345

DMX LIGHTING CONTROL RISER DIAGRAM

SHEET TITLE

E405

SHEET NO.



LIGHTING CONTROL SYSTEM SCHEMATIC:

LIGHTING CONTROL SYSTEM SCHEMATIC PLAN NOTES:

① MASTER LIGHTING CONTROL PANEL. SEE PLANS FOR EXACT LOCATION. REFER TO MASTER LIGHTING CONTROL PANEL SCHEDULE FOR MORE INFORMATION. PROVIDE 120V POWER AS REQUIRED. DO NOT USE LIGHTING BRANCH CIRCUIT FOR CONTROL PANEL POWER.

② SATELLITE LIGHTING CONTROL PANEL(S). SEE PLANS FOR EXACT LOCATION AND QUANTITY. REFER TO SATELLITE LIGHTING CONTROL PANEL SCHEDULE(S) FOR MORE INFORMATION.DO NOT USE LIGHTING BRANCH CIRCUIT FOR CONTROL PANEL POWER.

③ NOT USED.

④ EXTERIOR PHOTOCELL MOUNTED AT EXTERIOR ROOFTOP LOCATION FACING NORTH. SEE LIGHTING CONTROL PANEL SCHEDULE(S) AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

⑤ LOCAL SWITCH(ES) UNDER A COMMON FACEPLATE. SEE LIGHTING CONTROL PANEL SCHEDULE(S) FOR EXACT QUANTITY AND SEE PLANS FOR EXACT LOCATION(S) AND LIGHTING CONTROL SWITCH FACEPLATE CONFIGURATION(S) FOR ADDITIONAL REQUIREMENTS.

⑥ OVERRIDE SWITCH(ES) UNDER A COMMON FACEPLATE. SEE LIGHTING CONTROL PANEL SCHEDULE(S) FOR EXACT QUANTITY AND SEE PLANS FOR EXACT LOCATION(S) AND CONFIGURATION(S).

⑦ WHEN "IDCS/DPCS" OPTION IS INDICATED IN LIGHTING CONTROL PANEL SCHEDULE PROVIDE 3/4" C. WITH REQUIRED CONDUCTORS TO EACH IDCS AND/OR DPCS PANEL OR INTERFACE DEVICES PER THEIR RESPECTIVE SCHEDULES, IF PROVIDED ON PROJECT. SEE LIGHTING CONTROL SCHEDULE AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

⑧ WHEN "BMS" OPTION IS INDICATED IN LIGHTING CONTROL PANEL SCHEDULE, PROVIDE 3/4" C. WITH REQUIRED CONDUCTORS TO NEAREST BMS GATEWAY/INTERFACE DEVICE. COORDINATE LOCATION, CONDUCTOR QUANTITIES/TYPES, AND TERMINATION LOCATIONS WITH MECHANICAL CONTROLS CONTRACTOR. PROVIDE 120V POWER/RECEPTACLE AS REQUIRED. SEE LIGHTING CONTROL PANEL SCHEDULE(S) AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

⑨ WHEN "MODEM" OPTION IS INDICATED IN LIGHTING CONTROL PANEL SCHEDULE, PROVIDE 3/4" C. WITH CATEGORY 5 ANALOG FAX/MODEM LINE FROM LCP TELEPHONE MODEM TO NEAREST TELEPHONE BACKBOARD. TERMINATE CABLE AS REQUIRED TO OBTAIN CONNECTION SERVICE PROVIDER DIAL TONE. TEST CONNECTION WITH LCP MANUFACTURER TO ENSURE MANUFACTURER CAN PROVIDE REMOTE TROUBLESHOOTING SUPPORT, ETC. PROVIDE 120V POWER/RECEPTACLE AS REQUIRED.

⑩ WHEN "SNMP" OPTION IS INDICATED IN LIGHTING CONTROL PANEL SCHEDULE, PROVIDE 3/4" C. WITH CATEGORY 6 DATA CABLE FROM LCP SNMP INTERFACE DEVICE TO NEAREST IDF CLOSET TO ALLOW COMMUNICATIONS PER THE LIGHTING CONTROL SYSTEM SCHEDULE AND SPECIFICATIONS. COIL 30' OF EXTRA CABLE WITHIN IDF CLOSET. COILED CABLE SHALL BE TAGGED NOTING FAR-END TERMINATION LOCATION AND "LIGHTING CONTROL SYSTEM LAN INTERFACE CABLE". ALL CONDUIT/PULL BOXES SHALL BE INSTALLED PER GENERAL COMMUNICATIONS PATHWAY NOTES. PROVIDE 120V POWER/RECEPTACLE AS REQUIRED.

⑪ PROVIDE 3/4" CONDUIT MINIMUM, OR LARGER AS REQUIRED, WITH QUANTITY AND TYPE OF CONDUCTORS, PER MANUFACTURER'S RECOMMENDATIONS, FOR INTERCONNECTION MASTER AND SLAVE PANELS. REFER TO MASTER RELAY SCHEDULE FOR NETWORKING TYPE.

⑫ PROVIDE 3/4" CONDUIT MINIMUM, OR LARGER AS REQUIRED, WITH QUANTITY AND TYPE OF CONDUCTORS PER MANUFACTURER'S RECOMMENDATIONS.

LIGHTING CONTROL SYSTEM REQUIREMENTS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING OF ALL MATERIAL, LABOR, EQUIPMENT, AND SERVICES, IN CONNECTION WITH THE INSTALLATION OF A COMPLETE AND FULLY FUNCTIONING AND CODE COMPLIANT INSTALLATION.
2. IT IS THE INTENT OF THE CONTRACT DOCUMENTS, WHICH ARE PRESENTED IN A DIAGRAMMATIC FORMAT, TO PROVIDE CONTRACTOR INFORMATION THAT SUPPLEMENTS AND ENHANCES THE GENERALLY ACCEPTED CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES EMPLOYED IN CONNECTION WITH INSTALLATION OF THIS TYPE OF PRODUCT/SYSTEM.
3. THE CONTRACTOR SHALL ALSO INCORPORATE THE REQUIREMENTS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS/WARRANTY REQUIREMENTS AS PART OF THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. IN THE EVENT OF A CONFLICT BETWEEN THE CONTRACT DOCUMENT REQUIREMENTS AND THE MANUFACTURERS INSTALLATION REQUIREMENTS, THE MORE STRINGENT REQUIREMENTS SHALL APPLY – UNLESS THE MORE STRINGENT REQUIREMENT VOIDS APPLICABLE WARRANTIES OR VIOLATES THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. ANY SUCH CONFLICT SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING THROUGH THE FORMAL RFI PROCESS.
4. REFER TO THE ASSOCIATED SCHEDULES, SCHEMATICS, DRAWINGS, AND SPECIFICATIONS FOR DETAILED INFORMATION/REQUIREMENTS ON THIS PRODUCT/SYSTEM.

LIGHTING CONTROL SYSTEM SPECIFICATIONS:

1. ALL EQUIPMENT SHALL BE NEW, OF CURRENT DESIGN, AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF IEEE, NEMA, UL, ANSI AS WELL AS LOCAL JURISDICTION REQUIREMENTS. ALL EQUIPMENT SHALL BE FACTORY ASSEMBLED AND TESTED. THE LATEST PUBLISHED EDITION OF THE FOLLOWING DOCUMENTS SHALL APPLY TO THE MANUFACTURING AND INSTALLATION OF THE LIGHTING CONTROL SYSTEM:
   - UL 916
   - UL 924
   - ASHRAE 90.1–2004
   - CALIFORNIA TITLE 24– WHERE ADOPTED
   - ALL OTHER APPLICABLE STATE AND LOCAL ENERGY CODES
   - NEC, OR CEC WHERE ADOPTED, **ART. 409**
   - NEC, OR CEC WHERE ADOPTED, **ART. 725**
   - NEC, OR CEC WHERE ADOPTED, **ART. 700.10(B)**
2. ALL COMPONENTS OF THE LIGHTING CONTROL SYSTEM SHALL BE MANUFACTURED BY A SINGLE MANUFACTURER. THE ENTIRE SYSTEM SHALL BE COVERED BY A TWO YEAR WARRANTY. TELEPHONE FACTORY SUPPORT SHALL BE AVAILABLE AT NO ADDITIONAL COST TO THE CONTRACTOR OR OWNER BOTH DURING AND AFTER THE WARRANTY PERIOD.
3. THE LIGHTING CONTROL PANELS SHALL BE FACTORY PRE-ASSEMBLED AND UL LISTED. PROVIDE COMPLETE WITH ALL REQUIRED CONTROL TRANSFORMERS AND REQUIRED VOLTAGE BARRIERS. WHEN DESIGNATED AS SURFACE MOUNTING, PROVIDE A SCREW-ON COVER. WHEN DESIGNATED AS FLUSH MOUNTING, PROVIDE A HINGED DOOR ASSEMBLY.
4. LIGHTING CONTROL RELAYS SHALL HAVE THE FOLLOWING CHARACTERISTICS:
   - RATED FOR FULL CIRCUIT LOAD AND SUITABLE FOR ALL TYPES OF LAMP LOADS TO A MINIMUM OF 20 AMPERES AT 347 VAC (SINGLE POLE) AND 600 VAC (DOUBLE POLE).
   - CONTAINED IN A MOLDED CASE CONTAINING BOTH HIGH AND LOW VOLTAGE TERMINALS AND SHALL HAVE A BUILT-IN OPERATING LEVER MARKED ON/OFF FOR MANUAL SWITCHING AT THE RELAY PANEL.
   - RELAY LOAD CONTACTS SHALL BE ABLE TO SUSTAIN AVAILABLE FAULT CURRENTS AT THE LOCATION OF THE RELAY WITHIN THE ELECTRICAL SYSTEM AS INDICATED IN THE LIGHTING CONTROL SCHEDULE(S). ALL RELAYS SHALL BE CONSPICUOUSLY MARKED WITH THEIR RESPECTIVE SHORT CIRCUIT CURRENT RATING (SCCR). IN NO CASE SHALL A RELAY HAVE AN SCCR LESS THAN 14,000 AMPS.
   - SHOULD A RELAY(S) INTERRUPTING CAPACITY BE INADEQUATE BASED ON AVAILABLE SYSTEM FAULT CURRENT, THE CONTRACTOR SHALL MAKE ONE OR MORE OF THE FOLLOWING MODIFICATIONS:
     a. EXTEND THE LENGTH OF THE BRANCH CIRCUIT WIRING TO REDUCE THE AVAILABLE FAULT CURRENT TO A LEVEL THAT IS BELOW THE SCCR RATING OF THE RELAY(S).
     b. RELOCATE LCP(S) IN ORDER TO EXTEND BRANCH CIRCUIT CONDUCTORS TO REDUCE THE AVAILABLE FAULT CURRENT TO A LEVEL THAT IS BELOW THE SCCR RATING OF THE RELAY(S).
     c. UTILIZE A MECHANICALLY-HELD LATCHING LIGHTING CONTACTOR(S) WITH SUFFICIENT SCCR-RATING(S) – MINIMUM SCCR SHALL BE 14,000A. CONTACTOR(S) SHALL BE OF THE TYPE THAT AUTOMATICALLY CLOSES UPON LOSS OF CONTROL POWER. CONTACTOR(S) SHALL CARRY CIRCUIT CURRENT WHICH, IN TURN, SHALL BE CONTROLLED BY THE LCP RELAY. NUMBER OF CONTACTOR POLES SHALL EQUAL NUMBER OF RELAY POLES SHOWN IN THE LIGHTING CONTROL PANEL SCHEDULE(S) FOR THAT PARTICULAR LOAD (EXAMPLE A 2-POLE RELAY REQUIRES USE OF A 2-POLE LIGHTING CONTACTOR). USING MULTI-POLE CONTACTORS TO COMBINE OUTPUTS/SWITCH LEGS OF DIFFERENT RELAYS IS EXPRESSLY PROHIBITED. EACH CONTACTOR SHALL BE LABELED WITH THE CONTROLLING RELAY LCP NAME AND CONTROLLING RELAY ID #. SEE LABELING REQUIREMENTS WITHIN THE GENERAL ELECTRICAL SPECIFICATION. CONTACTORS SHALL BE LOCATED IN A NEMA ENCLOSURE ABOVE OR ADJACENT TO THEIR SERVING LIGHTING CONTROL PANEL. CONTRACTOR SHALL INCLUDE CONTACTOR CABINET LOCATION ON 1/4" SCALE ELECTRICAL ROOM SHOP DRAWING SUBMITTAL(S).

LIGHTING CONTROL SYSTEM SPECIFICATIONS – CONT'D:

5. OVERRIDE AND LOCAL SWITCHES SHALL HAVE THE FOLLOWING CHARACTERISTICS:
   - INTEGRAL LED'S INDICATING BOTH LOCATION (GREEN LIGHT ALWAYS ON), ON (RED LIGHT ON), AND OFF POSITIONS (RED LIGHT OFF).
   - IDENTIFIED/LABELLED WITH A DESCRIPTION OF THE AREA CONTROLLED PER THE CONTROL PANEL SCHEDULE. SEE LCP FACE PLATE DETAILS FOR MORE INFORMATION.
   - EACH SWITCH BUTTON SHALL BE 100% FIELD PROGRAMMABLE VIA LIGHTING CONTROL PANEL OR REMOTELY VIA LIGHTING CONTROL SOFTWARE TO CONTROL ANY RELAY(S) IN ANY LIGHTING CONTROL PANEL(S).
   - EACH BUTTON SHALL BE CAPABLE OF BEING PROGRAMMED FOR ON ONLY, OFF ONLY, ON/OFF (TOGGLE), RAISE (DIM UP) AND LOWER (DIM DOWN). SWITCHES REQUIRING LOW VOLTAGE CONTROL WIRES TO BE MOVED FROM ONE INPUT TERMINAL TO ANOTHER TO ACCOMPLISH THESE FUNCTIONS ARE NOT ACCEPTABLE.
   - IN ADDITION, SWITCHES LOCATED IN HIGH ABUSE AREAS OR IDENTIFIED ON PLANS AS HIGH-ABUSE SWITCHES (GYMNASIUMS, MECHANICAL EQUIPMENT ROOMS, MACHINE ROOMS, EXTERIOR SPORT COURTS, KITCHENS, ETC.) SHALL BE VANDAL RESISTANT, CONTAIN NO MOVING PARTS, AND BE TOUCH SENSITIVE AND AVAILABLE WITH UP TO TWO BUTTONS IN A SINGLE GANG. MULTI GANG VERSIONS SHALL ALSO BE AVAILABLE. HIGH ABUSE SWITCHES SHALL BE STAINLESS STEEL AND CAPABLE OF HANDLING BOTH HIGH ABUSE AND WASH DOWN LOCATIONS. EACH HIGH ABUSE SWITCH SHALL BE ABLE TO BE PROGRAMMED FOR ON, OFF, TOGGLE OR MAINTAIN OPERATION. SWITCHES MUST BE CAPABLE OF HANDLING ELECTROSTATIC DISCHARGES OF AT LEAST 30,000 VOLTS (1CMSPARK) WITHOUT ANY INTERRUPTION OR FAILURE IN OPERATION.
   - KEYED SWITCHES, IF REQUIRED ON PLANS, SHALL BE PROGRAMMABLE WITH PILOT LIGHT, AVAILABLE AS MOMENTARY "ON/OFF" OR AS CAPTIVE AS REQUIRED BY CALIFORNIA TITLE 24.
6. THE LIGHTING CONTROL SYSTEM CONTROLLER(S) SHALL BE LOCATED IN EACH MASTER AND EACH EMERGENCY LIGHTING CONTROL PANEL AND HAVE THE FOLLOWING CHARACTERISTICS:
   - CONTAIN 1 OR MORE DIGITAL TIME CLOCK(S) (DTCs)THAT CONTROL AND PROGRAM THE ENTIRE LIGHTING CONTROL SYSTEM AND SUPPLY ALL TIME FUNCTIONS AND ACCEPT INTERFACE INPUTS AS DEFINED IN THE MASTER LIGHTING CONTROL SCHEDULE.
   - LOCAL PROGRAMMING SHALL BE USER-FRIENDLY VIA BUTTONS ON AN LED OR LCD DISPLAY WITH ALL NECESSARY INSTRUCTIONS PRINTED ON THE "CONTROLLER" LABEL. NO AUXILIARY INSTRUCTION MANUALS SHALL BE REQUIRED.
   - DIGITAL TIMECLOCK(S) FEATURES INCLUDE SEVEN DAY / HOLIDAY CONTROL, MINIMUM OF 32 DISCRETE SCHEDULES, EACH OF WHICH HAS ONE SET OF "ON" AND "OFF" TIMES PER DAY FOR EACH DAY OF THE WEEK AND FOR EACH OF TWO HOLIDAY LISTS, 15 YEAR NON-VOLATILE MEMORY TO MAINTAIN PROGRAMMING AND CLOCK TIME UPON LOSS OF POWER.
   - ALLOW FOR AUXILIARY INPUT OF A MAINTAINED OR A MOMENTARY PULSE FROM OTHER BUILDING SYSTEMS (SECURITY, HVAC, BMS, CCTV, ETC)
   - PROVIDE A FLICK WARN OPTION FOR ALL OF THE VARIOUS CONTROL ZONES. A LOCAL SWITCH SHALL BE CAPABLE OF OVERRIDING AN OFF SWEEP WITHIN ITS RESPECTIVE LIGHTING CONTROL ZONE(S) DURING THE 5 MINUTE WARNING PERIOD. FLICK-WARN OPTION SHALL NOT BE ENABLED ON CIRCUITS SUPPORTING HID LAMP TYPES.
   - SHALL CONTAIN PRE LOADED SOFTWARE CONFIGURED TO PRESENT A VISUAL REPRESENTATION OF EACH DEVICE ON THE SYSTEM, SHOW REAL TIME STATUS AND THE ABILITY TO CHANGE THE STATUS OF ANY INDIVIDUAL DEVICE, RELAY OR ZONE. THE SYSTEM SHALL BE CAPABLE OF RUNNING AN UPGRADED VECTOR-BASED GRAPHICS LIGHTING CONTROL SOFTWARE. THE SOFTWARE SHALL BE ACCESSIBLE TO A PC VIA MODEM AND/OR LOCAL AREA NETWORK CONNECTION.
7. THE PHOTOMETRIC SENSOR SHALL BE:
   - CAPABLE OF SENSING LIGHT LEVEL CHANGES AS FOLLOWS: 1 TO 10, 1 TO 100, 1 TO 1000, AND 1 TO 10,000 FOOTCANDLES.
   - UNITS USED FOR EXTERIOR LIGHT CONTROL SHALL PROVIDE MULTIPLE TRIPS POINT FROM 1 ROOF MOUNTED UNIT. ALL TRIPS POINTS SHALL BE ABLE TO BE CHANGED LOCALLY AT THE NEAREST LIGHTING CONTROL PANEL CONTROLLER OR REMOTELY VIA LAN OR MODEM.
8. WHEN THE MASTER LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES COPPER COMMUNICATIONS MEDIA, PROVIDE MULTICONDUCTOR #18 COPPER WIRE OR LARGER AS RECOMMENDED BY THE MANUFACTURER AS NECESSARY TO CONNECT ALL ELEMENTS OF THE LIGHTING CONTROL SYSTEM. WHEN THE MASTER LIGHTING CONTROL PANEL SCHEDULE INDICATES FIBER COMMUNICATIONS MEDIA, PROVIDE FIBER OPTIC TRANSCEIVERS AS REQUIRED TO CONNECT VARIOUS MASTER AND/OR SATELLITE LIGHTING CONTROL PANELS TOGETHER VIA FIBER OPTIC CABLING. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING/EXAMINING TERMINATION POINTS, ROUTING AND GRADE OF FIBER OPTIC CABLING ALLOCATED FOR USE BY THE LIGHTING CONTROL SYSTEM AND ACCOMMODATE SUCH IN THE DESIGN OF THE LIGHTING CONTROL SYSTEM. SHOULD ANY ASPECT OF THE NEW OR EXISTING FIBER OPTIC CABLING SYSTEM BE UNCLEAR, THE CONTRACTOR SHALL ISSUE PRE-BID RFIS AS NECESSARY TO GAIN A COMPLETE UNDERSTANDING OF THE SYSTEM IN ORDER TO MAKE A COMPLETE LIGHTING CONTROL SYSTEM BID.
9. WHEN THE LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES "IDCS/DPCS" INTERFACE, PROVIDE A DIGITAL INTERFACE OR CONTACT CLOSURE OUTPUTS(S) FOR "FLICK-WARN", SWEEP-OFF AND SWEEP-ON OPERATION OF ANY DPCS UNIT(S) AND/OR IDCS UNIT(S) AS INDICATED IN IDCS OR DPCS SCHEDULES.
10. WHEN THE LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES A "BMS" OPTION, PROVIDE ONE OR MORE OF DIRECT DIGITAL INTERFACES TO BUILDING AUTOMATION SYSTEMS:

    "BACNET", "METASYS (N2)", "LON WORKS" AND "MODBUS" INTERFACE OPTIONS SHALL ALLOW THE LCP SYSTEM TO ACCEPT ON/OFF COMMANDS, TIME SCHEDULES AND REPORT STATUS OF ALL RELAYS IN ALL PANELS IN REAL TIME VIA THE RESPECTIVE COMMUNICATIONS PROTOCOL(S). INTERFACE CARDS SHALL SELF POPULATE EACH INDIVIDUAL RELAY AND EACH GROUP TO THE BMS.

    "DMX512A" INTERFACES SHALL ALLOW THE LCP SYSTEM TO ACCEPT 14 GLOBAL DMX512A COMMANDS, EACH OF WHICH CAN BE MODIFIED LOCALLY OR REMOTELY USING LIGHTING CONTROLS MANUFACTURER SUPPLIED SOFTWARE. DMX INTERFACE CARD SHALL BE CONNECTED TO THE LIGHTING CONTROL SYSTEM IN SUCH A WAY AS TO PROVIDE REAL TIME RESPONSE FROM THE LIGHTING CONTROL SYSTEM TO DMX COMMANDS.

    "CONTACT" INTERFACES SHALL CONSIST OF DRY CONTACT INPUT INTERFACE CARD(S) THAT PROVIDES 14 PROGRAMMABLE DRY CONTACT CLOSURE INPUTS PER CARD. USE SHIELDED CABLE TO CONNECT INPUT DEVICES TO INTERFACE CARD(S). CONTACT CLOSURE INTERFACE CARDS SHALL ALLOW THE LCP SYSTEM TO ACCEPT ON/OFF COMMANDS FOR INDIVIDUAL RELAYS OR GROUPS OF RELAYS BASED ON BMS TIME SCHEDULES.

    CONTRACTOR SHALL PROVIDE PROTOCOL POINT ID/REGISTERS/BITMAPS FOR USE BY OTHERS TO ENABLE REPORTING/MONITORING/CONTROLLING/ADJUSTING OF THE LIGHTING CONTROL SYSTEM EQUIPMENT OPERATING PARAMETERS TO BUILDING MANAGEMENT SYSTEM (BMS) VIA BMS GATEWAY INTERFACE DEVICE AND OTHER REQUIRED ACCESSORIES. SEE BMS DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

    THE E.C. SHALL INCLUDE ALL COSTS IN THE BASE BID TO INTEGRATE THE LIGHTING CONTROL SYSTEM WITH THE SPECIFIED BMS SYSTEM AND SYSTEM PROTOCOL WHICH INCLUDES, BUT IS NOT LIMITED TO, COMMUNICATIONS INTERFACE MODULES, ALONG WITH POINT ID LISTS/REGISTERS, BITMAPS AND/OR CAD FILES OF EACH PIECE OF ELECTRICAL EQUIPMENT (PLAN VIEW AND ELEVATION VIEW), AND MAN-HOURS AS NECESSARY TO ASSIST THE BMS CONTRACTOR IN COMMISSIONING THE BMS SYSTEM AS IT RELATES TO THE LIGHTING CONTROL SYSTEM WITH WHICH IT COMMUNICATES.
11. WHEN THE LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES A "NETWORK INTERFACE" OPTION, PROVIDE ONE OR MORE OF THE FOLLOWING:
    - "SNMP" INTERFACE OPTION SHALL ALLOW THE LCP SYSTEM, VIA PRE INSTALLED LIGHTING CONTROL SYSTEM SOFTWARE, TO COMMUNICATE OVER THE LOCAL AREA NETWORK (LAN) TO ANY PC ON THE LAN USING LCP MANUFACTURER-FURNISHED CLIENT PC-COMPATIBLE SOFTWARE. CONTRACTOR SHALL INCLUDE ALL COSTS TO RETURN TO THE PROJECT SITE AFTER PROJECT COMPLETION TO INSTALL AND CONFIGURE 1 COPY OF SOFTWARE ON OWNER-FURNISHED PC OR SERVER AND MAKE FULLY FUNCTIONAL IN ALL ASPECTS.
    - "WEB" INTERFACE OPTION SHALL ALLOW THE LCP SYSTEM, VIA PRE INSTALLED LIGHTING CONTROL SYSTEM HMTL WEB SERVER SOFTWARE, TO COMMUNICATE OVER THE LOCAL AREA NETWORK (LAN) TO ANY PC ON THE LAN USING ANY WEB BROWSER. CONTRACTOR SHALL INCLUDE ALL COSTS TO RETURN TO THE PROJECT SITE AFTER PROJECT COMPLETION TO CONFIGURE SOFTWARE TO OPERATE ON OWNER-FURNISHED LOCAL AREA NETWORK AND MAKE FULLY FUNCTIONAL IN ALL ASPECTS.
12. WHEN THE LIGHTING CONTROL PANEL SCHEDULE(S) INDICATES "MODEM" COMMUNICATIONS ARE REQUIRED, PROVIDE A PROGRAMMABLE FAX MODEM TO REMOTELY COMMUNICATE WITH THE LIGHTING CONTROL SYSTEM AND ITS PRE-LOADED SOFTWARE DESCRIBED ELSEWHERE IN THIS SPECIFICATION. CONTRACTOR SHALL INCLUDE ALL COSTS TO PROVIDE AN ANALOG LINE/PHONE JACK AS REQUIRED FOR THIS CONNECTION. CONTRACTOR SHALL INCLUDE ALL COSTS TO RETURN TO THE PROJECT SITE AFTER PROJECT COMPLETION TO CONFIGURE SOFTWARE TO OPERATE ON INSTALL ONE COPY OF SOFTWARE ON OWNER-FURNISHED COMPUTER AND MAKE SYSTEM SOFTWARE FULLY FUNCTIONAL IN ALL ASPECTS.
13. THE LOW VOLTAGE LIGHTING CONTROL SYSTEM SHALL BE PROGRAMMED / APPROVED BY A MANUFACTURER'S REPRESENTATIVE. CONTRACTOR TO INCLUDE THREE (3) HOURS OF INSTRUCTION PER MASTER PANEL. INSTRUCTIONS SHALL BE BY THE MANUFACTURER'S REPRESENTATIVE IN THE PRESENCE OF THE OWNER. SET-UP, COMMISSIONING OF THE LIGHTING CONTROL SYSTEM, AND OWNER INSTRUCTION INCLUDES:
    - CONFIRMATION OF ENTIRE SYSTEM OPERATION AND COMMUNICATION TO EACH DEVICE.
    - CONFIRMATION OF OPERATION OF INDIVIDUAL RELAYS, SWITCHES, OCCUPANCY SENSORS AND DAYLIGHT SENSORS.
    - CONFIRMATION OF SYSTEM PROGRAMMING, PHOTOCELL SETTINGS, OVERRIDE SETTINGS, ETC.
    - PROVIDE TRAINING TO COVER INSTALLATION, MAINTENANCE, TROUBLESHOOTING, PROGRAMMING, AND REPAIR AND OPERATION OF THE LIGHTING CONTROL SYSTEM.
14. COMPLY WITH APPLICABLE ENERGY CODE LIGHTING CONTROL SYSTEM ACCEPTANCE REQUIREMENTS TO INCLUDE VERIFICATION THAT LIGHTING CONTROLS WERE INSTALLED AND CALIBRATED CORRECTLY. THESE TESTS MAY REQUIRE THAT A RESPONSIBLE PARTY CERTIFY THAT CONTROLS ARE INSTALLED AND CALIBRATED PROPERLY. THIS SHALL BE THE INSTALLING CONTRACTOR'S RESPONSIBILITY.
15. SHOP DRAWINGS SHALL BE SUBMITTED PER THE GENERAL SPECIFICATION REQUIREMENTS SHOWING ALL COMPONENTS, WIRING CONFIGURATIONS AND PROGRAMMING SCHEDULES. SUBMITTALS SHALL BE MADE SPECIFIC TO THE PROJECT – GENERIC SUBMITTALS SHALL BE REJECTED.
16. THE LOW VOLTAGE LIGHTING CONTROL SYSTEM SHALL BE MANUFACTURED BY LC&D OR EQUAL SYSTEM BY LUTRON OR WATTSTOPPER.

SATELLITE LIGHTING CONTROL PANEL SCHEDULE - LCPR

MOUNTING	MASTER PANEL
PEDESTAL	LCPK

PANEL#	CKT#	RELAY	DESCRIPTION	LOCAL SWITCH	OVERRIDE SWITCH	ZONE NUMBER	MISCELLANEOUS
R	2,4	1	EXTERIOR LIGHTING	–	–	1	–
R	6,8	2	EXTERIOR LIGHTING	–	–	1	–
R	10,12	3	EXTERIOR LIGHTING	–	–	1	–
R	14,16	4	EXTERIOR LIGHTING	–	–	1	–
R	18	5	EXTERIOR LIGHTING	–	–	1	–
R	20,22	6	EXTERIOR LIGHTING	–	–	1	–
R	24	7	EXTERIOR LIGHTING	–	–	1	–
R	26,28	8	EXTERIOR LIGHTING	–	–	1	–
–	–	9	SPARE	–	–	–	–
–	–	10	SPARE	–	–	–	–
–	–	11	SPARE	–	–	–	–
–	–	12	SPARE	–	–	–	–
–	–	13	SPARE	–	–	–	–
–	–	14	SPARE	–	–	–	–
–	–	15	SPARE	–	–	–	–
–	–	16	SPARE	–	–	–	–
–	–	17	SPARE	–	–	–	–
–	–	18	SPARE	–	–	–	–
–	–	19	SPARE	–	–	–	–
–	–	20	SPARE	–	–	–	–
–	–	21	SPARE	–	–	–	–
–	–	22	SPARE	–	–	–	–
–	–	23	SPARE	–	–	–	–
–	–	24	SPARE	–	–	–	–
–	–	25	SPARE	–	–	–	–
–	–	26	SPARE	–	–	–	–
–	–	27	SPARE	–	–	–	–
–	–	28	SPARE	–	–	–	–
–	–	29	SPARE	–	–	–	–
–	–	30	SPARE	–	–	–	–
–	–	31	SPARE	–	–	–	–
–	–	32	SPARE	–	–	–	–
–	–	33	SPARE	–	–	–	–
–	–	34	SPARE	–	–	–	–
–	–	35	SPARE	–	–	–	–
–	–	36	SPARE	–	–	–	–
–	–	37	SPARE	–	–	–	–
–	–	38	SPARE	–	–	–	–
–	–	39	SPARE	–	–	–	–
–	–	40	SPARE	–	–	–	–
–	–	41	SPARE	–	–	–	–
–	–	42	SPARE	–	–	–	–
–	–	43	SPARE	–	–	–	–
–	–	44	SPARE	–	–	–	–
–	–	45	SPARE	–	–	–	–
–	–	46	SPARE	–	–	–	–
–	–	47	SPARE	–	–	–	–
–	–	48	SPARE	–	–	–	–

MASTER LIGHTING CONTROL PANEL SCHEDULE - LCPK

MOUNTING	EXTERIOR PHOTO CELL	COMM. MEDIA	DPCS / IDCS INTERFACE	BMS INTERFACE	NETWORK INTERFACE	MODEM	AVAILABLE FAULT CURRENT	REMARKS
SURFACE	YES	COPPER	YES	CONTACT	SNMP	YES	6,800	– –

PANEL#	CKT#	RELAY	DESCRIPTION	LOCAL SWITCH	OVERRIDE SWITCH	ZONE NUMBER	MISCELLANEOUS
K	7	1	KIOSK INTERIOR LIGHTING	–	–	1	–
K	9	2	KIOSK EXTERIOR LIGHTING	–	–	1	–
K	13,15	3	CANOPY WEST LIGHTING	–	–	1	–
K	17,19	4	CANOPY MDL LIGHTING	–	–	1	–
K	21,23	5	CANOPY EAST LIGHTING	–	–	1	–
K	25	6	CANOPY DOWNLIGHTS	–	–	1	–
K	27	7	CANOPY DOWNLIGHTS	–	–	1	–
–	–	8	SPARE	–	–	–	–
–	–	9	SPARE	–	–	–	–
–	–	10	SPARE	–	–	–	–
–	–	11	SPARE	–	–	–	–
–		12	SPARE	–	–	–	–
–		13	SPARE	–	–	–	–
–		14	SPARE	–	–	–	–
–		15	SPARE	–	–	–	–
–	–	16	SPARE	–	–	–	–
–	–	17	SPARE	–	–	–	–
–	–	18	SPARE	–	–	–	–
–	–	19	SPARE	–	–	–	–
–	–	20	SPARE	–	–	–	–
–	–	21	SPARE	–	–	–	–
–	–	22	SPARE	–	–	–	–
–	–	23	SPARE	–	–	–	–
–	–	24	SPARE	–	–	–	–
–	–	25	SPARE	–	–	–	–
–	–	26	SPARE	–	–	–	–
–	–	27	SPARE	–	–	–	–
–	–	28	SPARE	–	–	–	–
–	–	29	SPARE	–	–	–	–
–	–	30	SPARE	–	–	–	–
–	–	31	SPARE	–	–	–	–
–	–	32	SPARE	–	–	–	–
–	–	33	SPARE	–	–	–	–
–	–	34	SPARE	–	–	–	–
–	–	35	SPARE	–	–	–	–
–	–	36	SPARE	–	–	–	–
–	–	37	SPARE	–	–	–	–
–	–	38	SPARE	–	–	–	–
–	–	39	SPARE	–	–	–	–
–	–	40	SPARE	–	–	–	–
–	–	41	SPARE	–	–	–	–
–	–	42	SPARE	–	–	–	–
–	–	43	SPARE	–	–	–	–
–	–	44	SPARE	–	–	–	–
–	–	45	SPARE	–	–	–	–
–	–	46	SPARE	–	–	–	–
–	–	47	SPARE	–	–	–	–
–	–	48	SPARE	–	–	–	–

ZONE NUMBER	TIME		PHOTO		DESCRIPTION	ZONE NUMBER	TIME		PHOTO		DESCRIPTION
	ON	OFF	ON	OFF			ON	OFF	ON	OFF	
1	–	–	X	X	SECURITY LIGHTING	5	–	–	–	–	–
2	0600	2100	–	–	NORMAL BUSINESS HOURS	6	–	–	–	–	–
3	–	2200	X	–	SITE SIGNAGE	7	–	–	–	–	–
4	–	–	–	–	–	8	–	–	–	–	–

MOBILITY HUB
AND CENTRAL CAMPUS
LINKAGES

GRUENASSOCIATES
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Ex.12/31/2019
ELECTRICAL
STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL

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KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES	
DRAWN BY	JL
CHECKED BY	RS
SCALE	–
DATE	
PROJECT NO.	GRUEN # 8345

LIGHTING
CONTROL
PANEL

SHEET TITLE

E406

SHEET NO.

LIGHTING FIXTURE SCHEDULE NOTES:

A. GENERAL NOTES:

1. THE LIGHTING FIXTURES, LAMPS, BALLASTS, POWER SUPPLIES, DRIVERS AND TRANSFORMERS FOR THIS PROJECT HAVE BEEN SPECIFIED TO ENSURE THAT SPECIFIC AESTHETIC AND PERFORMANCE REQUIREMENTS WILL BE SATISFIED. THESE PRODUCTS HAVE BEEN CAREFULLY RESEARCHED AND EACH SPECIFIED ITEM HAS UNIQUE QUALITIES WHICH WERE DETERMINED TO BE ESSENTIAL IN SATISFYING THE OWNER'S, ARCHITECT'S, ENGINEER'S AND LIGHTING CONSULTANT'S DESIGN CRITERIA.
2. CONTRACTOR SHALL PROVIDE ALL MATERIALS AS DETAILED ON DRAWINGS AND/OR SCHEDULES, AND LABOR AS REQUIRED TO ACHIEVE A COMPLETE AND OPERATING LIGHTING SYSTEM.
3. CONTRACTOR SHALL PERFORM ALL WORK IN STRICT ACCORDANCE WITH ALL LOCAL, NATIONAL AND SEISMIC GOVERNING CODES. WORK NOT IN CONFORMANCE WITH APPLICABLE CODES SHALL BE BROUGHT INTO COMPLIANCE AT NO ADDITIONAL COST TO THE OWNER.
4. ALL ELECTRICAL MATERIAL SHALL BE IN NEW & UNDAMAGED CONDITION WHEN INSTALLED. ALL EQUIPMENT SHALL BE LISTED, LABELED OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
5. ALL EQUIPMENT SHALL BE FACTORY TESTED TO ENSURE PROPER OPERATION PRIOR TO SHIPMENT TO JOB SITE.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL PERMITS AND INSPECTION FEES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE ALL ELECTRICAL INSPECTIONS REQUIRED BY THE BUILDING DEPARTMENT AND SERVING UTILITIES.
7. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP RELATED TO THE ELECTRICAL INSTALLATION FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE WHICH THE OWNER ACCEPTS THE FINISHED PROJECT. ANY DEFECTS IN MATERIALS OR WORKMANSHIP DURING THIS GUARANTEE PERIOD SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER OR TENANT.
8. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ELECTRICAL ENGINEER AND/OR LIGHTING CONSULTANT OF ANY REQUIRED MODIFICATIONS THAT ARE NOT SHOWN ON THE DRAWINGS.
9. ELECTRICAL CONTRACTOR SHALL BE LICENSED BY THE JURISDICTION WHERE THE PROJECT IS LOCATED AND CAPABLE OF EMPLOYING THE PROPER LABOR FORCE NECESSARY TO COMPLETE THE INSTALLATION.
10. DELIVERY OF EQUIPMENT TO THE JOB SITE SHALL BE IN CLEARLY IDENTIFIED CRATES, CARTONS, OR APPROPRIATE SHIPPING CONTAINERS AS TO ITEM, QUANTITY, AND INSTALLATION LOCATION.
11. CONTRACTOR SHALL NOTIFY THE ELECTRICAL ENGINEER AND/OR LIGHTING CONSULTANT OF ANY PROVISION OF THE SPECIFICATION THAT IS IN CONFLICT WITH LOCAL OR NATIONAL CODES.
12. ALL DIMENSIONS & MEASUREMENTS FOUND ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL VALIDATE ALL DIMENSIONS PRIOR TO ORDERING MATERIAL TO INCLUDE MAKING FIELD MEASUREMENTS BASED ON ACTUAL SITE CONDITIONS TO DEVELOP COMPLETE ORDERS AND INSTALL SYSTEMS PER DRAWINGS AND SPECIFICATIONS.
13. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND ELEVATION OF ALL LIGHTING FIXTURES AND ASSOCIATED DEVICES AND EQUIPMENT.
14. PRIOR TO AIMING/ADJUSTING ACTIVITIES, COMMISSIONING OR PUNCHWALK COMMENCEMENT, CONTRACTOR SHALL PROPERLY TEST AND VERIFY ALL CIRCUITRY AND CONTROL WIRING AND IMPLEMENT ALL CONTROLS PROGRAMMING.

B. INSTALLATION:

1. LOCATIONS OF THE FIXTURES SHALL BE PER THE ARCHITECTURAL REFLECTED CEILING PLAN(S) AND SHALL BE COORDINATED AT TIME OF ROUGH IN. CONFLICTS BETWEEN THE ARCHITECTURAL REFLECTED CEILING PLAN(S) AND THE ELECTRICAL/LIGHTING DESIGN PLAN(S) SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IN WRITING PRIOR TO ORDERING FIXTURES.
2. LIGHTING DRAWINGS REPRESENT THE DESIGN INTENT OF THE EQUIPMENT, DEVICES, ETC. TO BE CONNECTED AND THE CIRCUITS TO WHICH THEY ARE TO BE CONNECTED. CONTRACTOR SHALL INSTALL ALL CONDUIT, J–BOXES AND ADDITIONAL HARDWARE AND DEVICES AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.
3. ALL LIGHTING FIXTURES SHALL BE MOUNTED AND INDIVIDUALLY SUPPORTED IN ACCORDANCE WITH APPLICABLE INDUSTRY AND SAFETY STANDARDS AND ALL NATIONAL AND LOCAL ELECTRICAL AND SEISMIC CODES. FIXTURES SHALL BE FURNISHED AND INSTALLED WITH ALL REQUIRED MOUNTING DEVICES, HARDWARE AND ACCESSORIES.
4. CONTRACTOR TO VERIFY LIGHTING FIXTURE MOUNTING HARDWARE IS COMPATIBLE WITH APPROVED MOUNTING CONDITIONS. MOUNTING CONDITIONS MUST ALLOW FOR AIMING AND ADJUSTING OF LIGHTING FIXTURES ON SITE.
5. CONTRACTOR SHALL PROVIDE ALL LAMPS, POWER SUPPLIES, DRIVERS AND/OR TRANSFORMERS TO ENSURE A COMPLETE AND OPERATING SYSTEM.
8. CONTRACTOR TO INCLUDE AIMING/ADJUSTING TIME AFTER DARK AS REQUIRED FOR ANY ADJUSTABLE LIGHTING FIXTURE AND FOR EACH INDIVIDUAL LIGHTING FIXTURE HEAD OR LAMP HOLDER IN A MULTI–FIXTURE/MULTI–LAMP ASSEMBLY. LIGHTING FIXTURES TO BE AIMED/ADJUSTED PER THE DIRECTION OF OWNER, ARCHITECT AND/OR LIGHTING CONSULTANT.
9. ALL COVE MOUNTED LIGHTING FIXTURES SHALL EXTEND THE FULL LENGTH OF THE COVE. CONTRACTOR TO FIELD MEASURE COVE LENGTH AND ORDER QUANTITY OF LIGHTING FIXTURES AS REQUIRED.
10. CONTRACTOR TO PROVIDE AND INSTALL ALL ACCESSORIES AS SPECIFIED.
11. CONTRACTOR TO SUPPLY ADEQUATE SUPPORT INCLUDING LADDERS, LIFTS OR OTHER EQUIPMENT REQUIRED TO ACCESS LIGHTING FIXTURES AT THE TIME OF FOCUS, INCLUDING EVENING OR NIGHT WORK AS MAY BE REQUIRED DUE TO SCHEDULE CONFLICT OR DAYLIGHT IMPACT.
12. CONTRACTOR TO REPLACE ALL BURNED OUT OR INOPERATIVE LAMPS AT THE END OF THE CONSTRUCTION PHASE PRIOR TO THE FOCUS AND PROGRAMMING PHASE AND AGAIN PRIOR TO OWNER OCCUPANCY OR PROJECT OPENING.
13. ALL POLE MOUNTED FIXTURES, POST MOUNTED FIXTURES AND BOLLARDS SHALL BE PROVIDED WITH A STRUCTURAL FOOTING AS DETAILED ELSEWHERE IN THE DRAWINGS. FOOTING SIZE TO BE PROVIDED BY STRUCTURAL ENGINEER. REFERENCE FIXTURE SCHEDULE AND DETAILS FOR MORE INFORMATION.
14. ALL EXIT SIGNS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE LOCAL FIRE PREVENTION CODE AUTHORITY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY HARDWARE SUCH THAT ALL EXIT SIGNS ARE INSTALLED IN AN APPROVED VISIBLE LOCATION. THE CONTRACTOR SHALL VERIFY CHEVRONS AND NUMBER OF FACES PER EXIT SIGN WITH ARCHITECTURAL REFLECTED CEILING PLAN. ANY DISCREPANCIES BETWEEN EXIT SIGNS DEPICTED ON ARCHITECTURAL AND ELECTRICAL PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO ORDERING EXIT SIGNS.

C. SUBMITTALS AND SUBSTITUTIONS:

1. CONTRACTOR TO SUBMIT FOR APPROVAL ON THE PRODUCTS THEY INTEND TO FURNISH WITHIN TEN (10) DAYS OF AWARD OF CONTRACT. FAILURE TO SUBMIT WITHIN DEADLINE CONSTITUTES A GUARANTEE THAT ONLY THE BASE SPECIFIED PRODUCTS WILL BE SUPPLIED AND THAT NO OTHER PRODUCTS, WHETHER LISTED AS ALTERNATES OR NOT, WILL BE CONSIDERED.
2. CONTRACTOR TO PROVIDE A SUBMITTAL/SHOP DRAWING SUBMITTAL FOR EACH LIGHTING FIXTURE TYPE INCLUDING ACCESSORIES, BALLAST(S), POWER SUPPLIES, DRIVER(S) AND TRANSFORMER(S). ANY LIGHTING FIXTURE SUBMITTAL PROVIDED WITHOUT SPECIFIC LIGHTING FIXTURE'S ACCESSORIES, BALLAST, POWER SUPPLY, DRIVER OR TRANSFORMER INFORMATION SHALL BE REJECTED AS INCOMPLETE.
3. SUBSTITUTIONS OF THE SPECIFIED PRODUCTS ARE STRICTLY PROHIBITED – UNLESS APPROVED AS STATED HEREIN. LIGHTING FIXTURE SUBSTITUTIONS SHALL BE FORMALLY PRESENTED TO THE ELECTRICAL ENGINEER AND/OR LIGHTING CONSULTANT, BY APPOINTMENT ONLY, AT LEAST TEN (10) WORKING DAYS PRIOR TO BID TIME. THE SUBMITTAL MATERIAL SHALL INCLUDE THE FOLLOWING ITEMS.
   - a. A COMPLETE AND OPERATING SAMPLE, WIRED FOR 120V OPERATION, WITH LAMP, CORD AND PLUG.
   - b. A COMPLETE PHOTOMETRIC REPORT, FOR THE PROPOSED SUBSTITUTE PRODUCT, USING THE SPECIFIED LAMP TYPE AND WATTAGE, INCLUDING TABULATED CANDLEPOWER VALUES, COEFFICIENT OF UTILIZATION, AND AN ISO–FOOT–CANDLE DIAGRAM. PRORATED DATA WILL NOT BE ACCEPTABLE. THE PHOTOMETRIC REPORT MUST BE DONE IN ACCORDANCE WITH PUBLISHED I.E.S. TESTING PROCEDURES AND CERTIFIED BY A REGISTERED ELECTRICAL ENGINEER
   - c. A CURRENT ORIGINAL CATALOG DATA SHEET WITH LIGHTING FIXTURE CATALOG NUMBERS. MODIFIED DATA SHEETS WILL NOT BE ACCEPTABLE.
   - d. A SIGNED COPY OF THE "SUBSTITUTION COMPLIANCE FORM", LOCATED IN THE DIVISION 1 SPECIFICATION, STATING THAT IF THE PROPOSED SUBSTITUTION IS ACCEPTED, THE PROJECT SCHEDULE WILL NOT BE NEGATIVELY AFFECTED. IF THE COMPLETION OF THE PROJECT IS DELAYED BECAUSE OF THE APPROVED SUBSTITUTION, THE CONTRACTOR WILL BE RESPONSIBLE FOR PAYMENT OF ANY ESTABLISHED LIQUIDATED DAMAGES.
   - e. FOR SPECIFIC INTERIOR FIXTURE SUBSTITUTIONS, WHEN DIRECTED BY THE ELECTRICAL ENGINEER AND/OR LIGHTING CONSULTANT, A POINT–BY–POINT SCALED COMPUTER PRINTOUT SHALL BE PROVIDED VERIFYING THE ILLUMINATION LEVELS FOR THE SPECIFIC INTERIOR AREA. IF THE SUBSTITUTED FIXTURE IS AN EMERGENCY FIXTURE, THE REPORT SHALL BE RUN IN BOTH NORMAL AND EMERGENCY MODES. THIS REPORT SHALL BE CONFIGURED WITH SPECIFIC CONSTRAINTS, AS DIRECTED BY THE ENGINEER OF RECORD. THE REPORT MUST SHOW THAT THE SUBSTITUTED FIXTURE PROVIDES PERFORMANCE EQUAL TO OR BETTER THAN THE LIGHTING LEVELS OF THE SPECIFIED PRODUCT.
   - f. FOR ALL EXTERIOR FIXTURE SUBSTITUTIONS, A POINT–BY–POINT SCALED COMPUTER PRINTOUT SHALL BE PROVIDED VERIFYING THE ILLUMINATION LEVELS FOR THE ENTIRE SITE PLAN BASED ON USING THE PROPOSED ALTERNATIVE FIXTURES. THE REPORT MUST SHOW THAT THE SUBSTITUTED FIXTURE PROVIDES PERFORMANCE EQUAL TO, OR BETTER THAN THE LIGHTING LEVELS AND UNIFORMITY RATIOS (MAX:MIN AND AVG:MIN) OF THE SPECIFIED PRODUCT. THIS REPORT SHALL BE CONFIGURED WITH THE FOLLOWING CONSTRAINTS.
     - i. THE SPACING INCREMENT OR POINTS ON THE VERIFICATION REPORT SHALL NOT EXCEED TEN (10) FEET IN EITHER DIRECTION.
     - ii. THE PRINTOUT SHALL BE BASED ON PROVIDING MAINTAINED FOOT–CANDLE LEVELS USING MEAN LAMP LUMENS AND A LIGHT LOSS FACTOR, AS DIRECTED BY THE ENGINEER OF RECORD.
     - iii. THE PRINTOUT SHALL SHOW ANY ADDITIONAL ENERGY AND/OR ENERGY COSTS, FOR A TEN YEAR PERIOD, AS COMPARED TO THE ORIGINALLY SPECIFIED ITEM. THE TOTAL COSTS FOR THESE EXPENSES WILL BE DEDUCTED FROM THE CONTRACT COST.
4. CONFLICTS BETWEEN CATALOG NUMBERS AND LIGHTING FIXTURE DESCRIPTIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ELECTRICAL ENGINEER AND/OR LIGHTING CONSULTANT PRIOR TO BID TIME FOR CLARIFICATION.
5. ALL FIXTURE FINISHES AND COLORS, UNLESS NOTED AS CUSTOM, SHALL BE SELECTED FROM THE FULL RANGE OF MANUFACTURERS STANDARD COLOR OPTIONS, AS SELECTED BY THE ARCHITECT. THIS DIRECTION WILL BE PROVIDED IN THE SHOP DRAWING REVIEW PROCESS. ALL FIXTURES INDICATED WITH A CUSTOM COLOR SHALL BE PROVIDED WITH A CUSTOM COLOR PAINT PER THE ARCHITECTURAL REVIEW COMMENTS OF THE SUBMITTED SHOP DRAWINGS
6. [OPTION?] IN THE LIGHTING FIXTURE MODEL NUMBER INDICATE A FIXTURE OPTION THAT THE CONTRACTOR MUST IDENTIFY PRIOR TO ORDERING/PROVIDING SUBMITTALS, INCLUDING, BUT NOT LIMITED TO: VOLTAGE, MOUNTING CONDITION/HARDWARE, FINISH, DIMMING REQUIREMENTS/BALLAST INFORMATION.
   - a. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND PROVIDING ALL HANGERS, CLIPS AND NECESSARY HARDWARE TO INSTALL THE FIXTURE IN THE ENVIRONMENT AS SHOWN ON THE ARCHITECTURAL PLANS. ALL FIXTURES SHALL BE PROVIDED WITH ALL REQUIRED STRUCTURAL SUPPORTS AS REQUIRED BY THE CURRENTLY ADOPTED ISSUE OF THE UNIFORM BUILDING CODE, AS WELL AS ANY LOCAL CODES.
   - b. VOLTAGES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING – SEE ELECTRICAL DRAWINGS FOR BRANCH CIRCUIT INFORMATION. IT IS POSSIBLE THAT FIXTURES WILL BE REQUIRED IN VARIOUS VOLTAGES
7. "NO KNOWN EQUAL" LIGHTING FIXTURE PRICING/BIDDING NOTES:
   - a. EACH FIXTURE IDENTIFIED AS "NO KNOWN EQUAL" ON THIS PROJECT SHALL BE BID IN A "LINE ITEM" FORMAT. A PER UNIT MATERIAL COST SHALL BE PROVIDED FOR EACH "NO KNOWN EQUAL" FIXTURE. THIS PRICE SHALL INCLUDE LAMPS AS WELL AS ALL OTHER REQUIRED MATERIALS REQUIRED FOR INSTALLATION. THE FIXTURE PRICE QUOTED WILL BE UTILIZED, PRIOR TO SHOP DRAWING APPROVAL, FOR "ADDING" AND/OR "DELETING" ANY QUANTITY OF THE FIXTURE.
   - b. A UNIT COST SHALL BE SUBMITTED FOR EACH "NO KNOWN EQUAL" FIXTURE. SUBMIT THE PRICING AS PART OF THE BID FORM ON A SEPARATE 8 1/2" X 11" SHEET.
   - c. FAILURE TO SUBMIT A LINE ITEM FOR EACH "NO KNOWN EQUAL" FIXTURE MAY RESULT IN THE REJECTION, REFUSAL, OR NON–ACCEPTANCE OF THE CONTRACTOR'S BID.
8. FIXTURES IDENTIFIED AS "NO KNOWN EQUAL – OWNER STANDARD" OR "CAMPUS STANDARD" ARE TO BE PROVIDED AS SPECIFIED, WITH SUBSTITUTIONS STRICTLY PROHIBITED. SEE ADDITIONAL NOTES FOR "NO KNOW EQUAL" BIDDING REQUIREMENTS.

D. LIGHTING FIXTURE SPECIFICATIONS:

1. ALL EXTERIOR LIGHTING EQUIPMENT SHALL BE RATED FOR WET LOCATION AND THE IP RATING OF ALL EQUIPMENT, INCLUDING BALLAST, POWER SUPPLY AND TRANSFORMER ENCLOSURES SHALL CONFORM TO THE CONDITIONS IN WHICH THE LIGHTING FIXTURE IS MOUNTED.
2. ALL BALLASTS, POWER SUPPLIES, DRIVERS AND/OR TRANSFORMERS THAT ARE REMOTELY LOCATED SHALL BE INSTALLED AS NEAR TO THE LIGHTING FIXTURE(S) AS POSSIBLE, HIDDEN FROM PUBLIC VIEW IN AN ACCESSIBLE COMPARTMENT THAT IS WELL VENTILATED. CONTRACTOR TO COORDINATE LOCATION(S) WITH ARCHITECT PRIOR TO ROUGH–IN.
3. ALL TRANSFORMERS SHALL BE FUSED ON THE SECONDARY SIDE.
4. COLOR FILTERS SHALL BE GLASS OR DICHROIC UNLESS OTHERWISE INDICATED ON DRAWINGS.
5. CONTRACTOR TO PROVIDE 20% ADDITIONAL COLOR FILTERS FOR EACH COLOR AND SIZE.
6. CONTRACTOR TO VERIFY THAT ALL LIGHTING FIXTURES SPECIFIED WITH A COLOR FILTER ARE SUPPLIED WITH ANY AND ALL ATTACHMENT DEVICES FOR THE FILTER.
7. ALL TRACK LIGHTING FIXTURES SHALL BE PROVIDED WITH THE APPROPRIATE TRACK SYSTEM WHICH SHALL INCLUDE ALL MISCELLANEOUS COMPONENTS REQUIRED FOR A COMPLETE INSTALLATION. TRACK LENGTH(S) SHALL BE PER DRAWINGS.

E. DRIVERS / TRANSFORMERS:

1. [OPTION?] IN FIXTURE MODEL NUMBER INDICATE THAT THE FIXTURE DRIVER TYPE AND QUANTITY MUST BE VERIFIED BY THE CONTRACTOR – USING FIXTURE CALLOUT INFORMATION AND FIXTURE SWITCHING CONFIGURATION INFORMATION.
2. CONTINUOUS DIMMING AND CONTROLLABLE LED:
   - a. PROVIDE CONTROLLABLE LED DIMMING DRIVERS (INTEGRAL OR REMOTE) WITH POWER FACTOR GREATER THAN 0.85 AND MAXIMUM THD OF 20% AT FULL LOAD. PRIOR TO BID CONTRACTOR TO VERIFY DRIVER COMPATIBILITY WITH DIMMERS, DIMMING CONTROL SYSTEM(S) AND LIGHTING CONTROL SYSTEM(S) WITH RESPECTIVE LIGHTING MANUFACTURER(S) AND LIGHTING/DIMMING CONTROL SYSTEM MANUFACTURERS. IF COMPATIBILITY DOCUMENTATION IS UNAVAILABLE FOR A GIVEN LED FIXTURE/LIGHTING CONTROL SYSTEM COMBINATION, CONTRACTOR SHALL INCLUDE COSTS IN THE BASE BID FOR RESPECTIVE LIGHTING MANUFACTURER AND LIGHTING CONTROLS MANUFACTURER TO TEST/WARRANT COMPATIBILITY OF SAID COMBINATIONS.
   - b. CONTINUOUS LED DIMMING DRIVERS SHALL BE AT MINIMUM 4–WIRE 0–10V 10% DIMMING (NORMAL HOT, NEUTRAL, DIM+, DIM–). THE FIXTURE PART NUMBER SHOULD INDICATE THE TYPE OF DIMMING PROTOCOL REQUIRED.

F. EMERGENCY FIXTURES / BATTERY PACKS:

1. LIGHT FIXTURES INDICATED AS EMERGENCY SHALL BE IDENTIFIED / PROVIDED AS FOLLOWS:
   - a. INTEGRAL BATTERY PACK (EB):
     - 3a/3EB – FIXTURE CONNECTED TO CIRCUIT "3", CONTROL SWITCHLEG "a" – WITH THE BATTERY CHARGING LEAD CONNECTED TO A CONSTANT HOT CIRCUIT "3".
     - 3NL/3EB – FIXTURE CONNECTED TO A CONSTANT HOT CIRCUIT "#3". BATTERY CHARGING LEAD CONNECTED TO A CONSTANT HOT CIRCUIT "3".
   - b. REMOTE BACK–UP SOURCE (EM):
     - 3a/3EM – ROUTED THROUGH A U.L. LISTED TRANSFER RELAY (LC & D #GR–2001E/S) FOR SWITCHED CONTROLS OR A U.L. LISTED TRANSFER SWITCH (BODINE #GTD SERIES DEVICE) FOR DIMMING CONTROLS. CONNECTED TO A CONSTANT HOT EMERGENCY CIRCUIT "3". SEE DISTRIBUTED LIGHTING CONTROL SPECIFICATIONS FOR DEVICE REQUIREMENTS WHEN CONTROLLED BY OCCUPANCY SENSORS.
     - 3NL/3EM – FIXTURE CONNECTED TO A CONSTANT HOT EMERGENCY CIRCUIT "3".
   - c. REMOTE BACK–UP SOURCE (EM) NOTES:
     - ALL REMOTE BACK UP SOURCE (EM) FIXTURES SHALL BE PROVIDED WITH AN IN LINE FUSE. PROVIDE ADDITIONAL LABELING TO INDICATE FIXTURE IS PROTECTED BY A FUSE.
2. EMERGENCY BATTERY PACK NOTES:
   - a. PROVIDE INTEGRAL TEST SWITCH OPTION FOR ALL EMERGENCY BATTERY PACKS INSTALLED IN LIGHT FIXTURES.
   - b. CONTRACTOR TO VERIFY WITH FIXTURE MANUFACTURER(S) PRIOR TO BID THAT EMERGENCY BATTERY PACKS ARE INTEGRAL TO FIXTURE HOUSINGS. SHOULD A BATTERY PACK(S) NOT FIT WITHIN A GIVEN FIXTURE(S), CONTRACTOR SHALL INCLUDE ALL COSTS TO LOCATE EMERGENCY BATTERY PACK(S) REMOTELY FROM THE FIXTURE ABOVE THE NEAREST ACCESSIBLE CEILING.
   - c. PROVIDE "DL" OPTION IN ALL DAMP LABEL INSTALLATIONS.
   - d. EMERGENCY BATTERY PACKS SHALL PROVIDE NOT LESS THAN 90 MINUTES OF FIXTURE OPERATION.
   - e. ALL RECESSED DOWNLIGHTS SUPPLIED WITH A BATTERY PACK SHALL BE PROVIDED WITH AN INTEGRAL COMBINATION TEST SWITCH / CHARGING INDICATOR LIGHT– MOUNTED INSIDE THE REFLECTOR. REMOTE TEST SWITCH / CHARGING LIGHTS ARE NOT ALLOWED. THE TEST SWITCH / CHARGING INDICATOR LIGHT SHALL BE SECURELY ATTACHED TO THE REFLECTOR WITH 18" OF SLACK LEADS. FOR EASY REMOVAL OF THE REFLECTOR ASSEMBLY.
   - f. BATTERY PACKS ALL SHALL BE PROVIDED WITH A COMBINATION TEST SWITCH / CHARGE LIGHT.
   - g. EMERGENCY BATTERY PACKS SHALL BE PROVIDED AS FOLLOWS:

     LED MODULES:

     EMERGENCY OPERATION OF LED FIXTURE FOR MIN. 90 MINUTES. ACCEPTABLE MANUFACTURERS: BODINE OR IOTA

     TO MAINTAIN UL LISTING OF LED FIXTURE, FIXTURE MANUFACTURER(S) SHALL INSTALL LED EMERGENCY BATTERY PACKS AT THE FACTORY AND OBTAIN A UL LISTING OF THE FIXTURE WITH EMERGENCY BATTERY PACK. FIELD–INSTALLATION OF LED EMERGENCY BATTERY PACKS(S) IS PROHIBITED.

     SHOULD THE SPECIFIED LED EMERGENCY BATTERY PACK(S) NOT FIT WITHIN A GIVEN FIXTURE(S), CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO LOCATE/CONNECT SELF–TESTING MINI INVERTER(S) (IOTA #ILS SERIES OR BODINE # ELI–S– [WATT?] REMOTELY FROM THE FIXTURE(S) IN THE NEAREST ELECTRICAL ROOM.

LIGHTING FIXTURE SCHEDULE

SYMBOL	TYPE	MANUFACTURER & MODEL NO.	LAMP	CCT	VA|SYSTEM WATTS	GENERAL DESCRIPTION	NOTES
✿	B1	GOTHAM EVO–35/10–6AR–MWD–LSS–MVOLT–EZ1 OR APPROVED EQUAL	LED	3500	12|12	RECESSED DOWNLIGHT FOR USE WITH 11.8W, 1000 LUMEN LED MODULE. 6–INCH APERTURE. MEDIUM WIDE DISTRIBUTION. POLYCARBONATE LENS. SEMI–DIFFUSE REFLECTOR. SELF–FLANGED CLEAR TRIM. 0–10V DIMMING. SEMI–SPECULAR FINISH.	CONFIRM OPTIC.
⟍	F1	FINELITE S18LEDID–CS–8'–2E–S–835–O–[VOLT?]–SC–FA–FE–CX OR APPROVED EQUAL	LED	3500	29|29	PENDANT MOUNTED INDIRECT/DIRECT FIXTURE FOR USE WITH 3.6 WATTS PER FOOT AT 3500K. 8–FOOT LONG X 2.25–INCH H X 4–INCH W. STANDARD FLAT ENDCAP. WHITE FINISH.	CONFIRM STYLE AND CCT WITH ARCHITECT/CLIENT.
I	G3	LUMENPULSE LOGNH–4W–48V–36–RGBW–10X10–FR–UMPNH–WH–DMX/RDM–UL/[ACCESSORIES?] 200W PSU: LCBX–120/277–48V–DIM/DMX/RDM–200W–WH–UL LEAD WIRE: LOGNJC–[LENGTH?]–UL–WH–M JUMPER: LOGNJC–[LENGTH?]–UL–WH OR APPROVED EQUAL PROVIDED BY LIGHTING SYSTEMS INTEGRATOR AS PART OF AN ENGINEERED DMX LIGHTING CONTROL SYSTEM: 4WALL ENTERTAINMENT LIGHTING 818–252–7481 CONTACT: BRENT PRITCHET	LED	RGBW	12|12	EXTERIOR RATED HORIZONTAL LOW PROFILE LINEAR GRAZER FIXTURE FOR USE WITH 4W PER FOOT ADDITIVE RGB + 4000K WHITE LED MODULE. 10 DEGREE X 10 DEGREE GRAZER OPTICS. FROSTED LENS. 3–FOOT LONG, FIXED MOUNTING BRACKET. WHITE FINISH. PROVIDE LEAD WIRE AT START OF RUN, AND WITH POWER / DATA JUMPER TO/FROM ADJACENT FIXTURE. REQUIRES REMOTE POWER SUPPLY / DATA ENABLER.	PAINT INTERIOR OF LIGHT BOX MATTE WHITE, ENSURE THE PERF PANEL HAS SOLID PORTION TO CONCEAL LIGHT FIXTURE. COORDINATE MOUNTING DETAILS WITH ARCHITECT. LOCATE REMOTE POWER SUPPLY/DATA ENABLER IN ACCESSIBLE, CONCEALED LOCATION. FIXTURES, DATA ENABLERS AND JUMPER CABLES PROVIDED BY LIGHTING SYSTEMS INTEGRATOR.
I	G4	LUMENPULSE LOGNH–4W–48V–48–RGBW–10X10–FR–UMPNH–WH–DMX/RDM–UL/[ACCESSORIES?] 200W PSU: LCBX–120/277–48V–DIM/DMX/RDM–200W–WH–UL LEAD WIRE: LOGNJC–[LENGTH?]–UL–WH–M JUMPER: LOGNJC–[LENGTH?]–UL–WH OR APPROVED EQUAL PROVIDED BY LIGHTING SYSTEMS INTEGRATOR AS PART OF AN ENGINEERED DMX LIGHTING CONTROL SYSTEM: 4WALL ENTERTAINMENT LIGHTING 818–252–7481 CONTACT: BRENT PRITCHET	LED	RGBW	16|16	EXTERIOR RATED HORIZONTAL LOW PROFILE LINEAR GRAZER FIXTURE FOR USE WITH 4W PER FOOT ADDITIVE RGB + 4000K WHITE LED MODULE. 10 DEGREE X 10 DEGREE GRAZER OPTICS. FROSTED LENS. 4–FOOT LONG, FIXED MOUNTING BRACKET. WHITE FINISH. PROVIDE LEAD WIRE AT START OF RUN, AND WITH POWER / DATA JUMPER TO/FROM ADJACENT FIXTURE. REQUIRES REMOTE POWER SUPPLY / DATA ENABLER.	PAINT INTERIOR OF LIGHT BOX MATTE WHITE, ENSURE THE PERF PANEL HAS SOLID PORTION TO CONCEAL LIGHT FIXTURE. COORDINATE MOUNTING DETAILS WITH ARCHITECT. LOCATE REMOTE POWER SUPPLY/DATA ENABLER IN ACCESSIBLE, CONCEALED LOCATION. FIXTURES, DATA ENABLERS AND JUMPER CABLES PROVIDED BY LIGHTING SYSTEMS INTEGRATOR.
♀	K1	B–K LIGHTING CK–LED–X63–WFL–[FINISH?]–9–C OR APPROVED EQUAL TRANSFORMER: B–K LIGHTING TR150–[VOLT?]	LED	4000	20|20	WALL SURFACE MOUNTED CYLINDER DOWNLIGHT FOR USE WITH 20W, 1220–LUMEN LED AT 4000K. 3–INCH DIAMETER ROUND TRIM. 31–DEGREE FLOOD OPTIC. RECTILINEAR LENS. REMOTE DRIVER REQUIRED. FINISH TO BE DETERMINED BY ARCHITECT.	CLIENT TO CONFIRM CCT. ARCHITECT TO DETERMINE FINISH. COORDINATE MOUNTING TO STRUCTURES WITH ARCHITECT. REQUIRES REMOTE TRANSFORMER. REMOTE TRANSFORMER(S) TO BE LOCATED IN ACCESSIBLE LOCATIONS AND IN COORDINATION WITH ARCHITECT. CONTRACTOR TO VERIFY TRANSFORMER CAPACITIES AND QUANTITIES OF TO ENSURE COMPLETE WORKING SYSTEM.
⊕	K2	LUMENPULSE LBL–[240?]–RGBW–WFL–[FINISH?]–[DMX/RDM–SY–UL–3[CABLE LENGTH?] DATA ENABLER: CBX–ST–[240?]–DMX/RDM–SI–UL OR APPROVED EQUAL PROVIDED BY LIGHTING SYSTEMS INTEGRATOR AS PART OF AN ENGINEERED DMX LIGHTING CONTROL SYSTEM: 4WALL ENTERTAINMENT LIGHTING 818–252–7481 CONTACT: BRENT PRITCHET	LED	RGBW	50|50	YOKE MOUNTED FLOOD LIGHT FOR USE WITH ADDITIVE RGB + 4000K WHITE LED MODULE AT 50W. 60 DEGREE WIDE FLOOD OPTIC. DMX CONTROL. PROVIDE WITH SHORT YOKE. FINISH TO BE SELECTED BY ARCHITECT. PROVIDE WITH MIN. (1) DATA ENABLER ("CBX") FOR EACH CANOPY.	CONTRACTOR TO CONFIRM FIXTURE VOLTAGE PRIOR TO RELEASE OF ORDER. FIXTURES AND DATA ENABLERS PROVIDED BY LIGHTING SYSTEMS INTEGRATOR
▽	L1	VISTA PRO 1057–[FINISH?]–NS–30–C–MV–ND–HS OR APPROVED EQUAL	LED	3000	43|43	BRACKET MOUNT ADJUSTABLE FLOOD LIGHT FOR USE WITH 42.7W, 2825–LUMEN LED AT 3000K. NARROW SPOT OPTIC. HALF LIGHT SHIELD. 7–INCH DIAMETER BY 10.48–INCH HEIGHT. FINISH TO BE DETERMINED BY ARCHITECT.	ARCHITECT TO DETERMINE FINISH. COORDINATE MOUNTING WITH ARCHITECT.
▼	L2	VISTA PRO 1045–[FINISH?]–WF–30–C–MV–ND–HS– OR APPROVED EQUAL	LED	3000	26|26	BRACKET MOUNT ADJUSTABLE FLOOD LIGHT FOR USE WITH 25.7W, 2077–LUMEN LED AT 3000K. WIDE FLOOD OPTIC. HALF LIGHT SHIELD. 4.5–INCH DIAMETER BY 10.5–INCH HEIGHT. FINISH TO BE DETERMINED BY ARCHITECT.	ARCHITECT TO DETERMINE FINISH. COORDINATE MOUNTING WITH ARCHITECT.
⍒	L3	VISTA PRO YO–LED–X85–WW–[FINISH?]–9–11–CV/HP2–D23–MT–GM–R OR APPROVED EQUAL	LED	4000	23|23	FLOODLIGHT FOR USE WITH 23W LED MODULE AT 4000K WITH WALL WASH OPTICS. PROVIDE WITH HONEYCOMB BAFFLE AND CUTOFF VISOR. MOUNTS TO INGRADE DRIVER HOUSING WITH DIMMING DRIVER. FINISH TO BE DETERMINED BY ARCHITECT.	CLIENT TO CONFIRM CCT. ARCHITECT TO DETERMINE FINISH. COORDINATE MOUNTING WITH ARCHITECT.
⊙	P1	LUMENPULSE RS35–[VOLT?]–CSL–M110–40K–CRI80–5S–SI–DIM POLE: PL–S–4–AL–R–15–H–SI–P CAMPUS STANDARD	LED	4000	92|90	LIGHT POLE FIXTURE FOR USE WITH 120W, 12000–LUMEN LED AT 4000K AT 80CRI. TYPE V SQUARE DISTRIBUTION. ON/OFF CONTROL. 26–1/2–INCH DIAMETER BY 23–INCH HEIGHT FIXTURE DIMENSION. CUSTOM 15–FOOT OVERALL HEIGHT POLE WITH DECORATIVE BASE COVER. SILVER SANDTEX FINISH TO MATCH CAMPUS POLES.	CLIENT TO CONFIRM CCT. CONTRACTOR TO CONFIRM VOLTAGE PRIOR TO ORDERING. CONFIRM FINISH TO MATCH CAMPUS POLES. CONFIRM IF 15–FOOT HEIGHT THE OVERALL HEIGHT OR THE HEIGHT OF THE POLE.
□	P2	PHILIPS GARDCO GL13–2–3–85LA–8035–NW–UNV–[FINISH?]–[OPTIONS?] POLE: SRS–30–5–D2–[FINISH?] OR APPROVED EQUAL	LED	4000	172|172	AREA POLE FOR USE WITH 86W, 8064 LUMEN LED MODULE AT 4000K AT 70 CRI. TYPE 3 DISTRIBUTION. PROVIDE WITH 30'–0" ROUND STRAIGHT STEEL POLE. FINISH TO BE DETERMINED BY ARCHITECT.	CLIENT TO CONFIRM CCT.
°	P3	EATON RSA5T12N–[FINISH?]–X	–	–	N/A|N/A	STRAIGHT ROUND ALUMINUM POLE. 5–INCH SHAFT SIZE, 0.125–INCH WALL THICKNESS X 12–FOOT OVERALL HEIGHT. 3–BOLT BASE WITH BASE COVER. FINISH TO BE DETERMINED BY ARCHITECT.	STRING LIGHTS TO BE MOUNTED AT TOP OF POLE PER DETAIL. HEIGHT OF POLE TO BE CONFIRMED.
•	S1	WAGNER LULR–90–40K–A–5/REMOTE DRIVER	LED	4000	3.5|3.5	LED MODULE TO BE INTEGRATED INTO 1.90 DIA. SCHEDULE 40 PIPE HANDRAIL 3.5W / 500ma AT 4000K WITH ASYMMETRIC DISTRIBUTION. REQUIRES 24VDC CLASS 2 0–10V DIMMING DRIVER. STAINLESS STEEL FINISH.	CONFIRM RAIL SIZE PRIOR TO ORDERING. CLIENT TO CONFIRM CCT. COORDINATE LOCATION(S) OF REMOTE DRIVER WITH ARCHITECT. PROVIDE SHOP DRAWINGS SHOWING HANDRAIL, LIGHT FIXTURES AND REMOTE DRIVERS FOR REVIEW BY LIGHTING DESIGNER AND ARCHITECT.
⊠	W1	VISTA PRO 1188–[FINISH?]–WF–30–C–MV–CX–ND–[CONDUIT ENTRIES?]–DF OR APPROVED EQUAL	LED	3000	26|26	INGRADE ROUND UPLIGHT FOR USE WITH 25.9W, 1625–LUMEN LED AT 3000K. WIDE FLOOD OPTIC. CROWNED CLEAR LENS. DIFFUSE FILTER. 8–INCH DIAMETER BY 8–INCH HEIGHT. FINISH TO BE DETERMINED BY ARCHITECT.	–
▬	W2	LUMENPULSE LOI ASHRAE–100/277–48–40K–WW–TS2.5–INTL–DIM–ASL OR APPROVED EQUAL	LED	4000	20|20	LINEAR INGRADE FOR USE WITH 5W PER FOOT LED MODULE AT 4000K. ASYMMETRIC WALLWASH DISTRIBUTION WITH INTERNAL LOUVER. 0–10V DIMMING AND ANTI–SLIP LENS.	CLIENT TO CONFIRM CCT. MOUNT 18–INCHES FROM FACE OF SIGNAGE.
----	Z1	PRIMUS LIGHTING DSW–24–120V–PLED–G16.5–3.5W–27K–[LENGTH?]/[SHADE?] OR APPROVED EQUAL	LED	2700	1.75|1.75/FT	AIRCRAFT CABLE MOUNTED EXTERIOR RATED DECORATIVE LINE VOLTAGE LIGHT STRING FOR USE WITH 3.5W LED LAMPS AT 2700K WITH CLEAR GLOBE ON 24–INCH CENTERS. BLACK CABLE. SHADE TO BE SELECTED IF DESIRED.	120V. AIRCRAFT CABLE INCLUDED. MOUNTING EYE BY OTHERS. MOUNTS TO TYPE P3 POLE. ARCHITECT TO DETERMINE IF SHADE IS DESIRED.

LIGHTING CONTROL DEVICE SCHEDULE

SYMBOL	TYPE	MANUFACTURER & MODEL NO.	LAMP	CCT	VA|SYSTEM WATTS	GENERAL DESCRIPTION	NOTES
▭	Q1	ELECTRONIC THEATRE CONTROLS ENCLOSURE: DIN14–H – 14–MOD–HINGE TOUCH SCREEN: MTPC–4 DMX REPEATER: MSC–OPTO PSU: 7180A1300 PROVIDED BY LIGHTING SYSTEMS INTEGRATOR AS PART OF AN ENGINEERED DMX LIGHTING CONTROL SYSTEM: 4WALL ENTERTAINMENT LIGHTING 818–252–7481 CONTACT: BRENT PRITCHET	N/A	N/A	N/A	SEMI–CUSTOM 14" ENCLOSURE WITH (2) DIN RAIL MOUNTING CHANNELS. PROVIDE WITH 7" TOUCH SCREEN LIGHTING CONTROLLER, (1) DMX/RDM OPTICAL ISOLATED REPEATER, (1) 48V POWER SUPPLY.	MOUNT IN KIOSK IDF ROOM. REQUIRES (1) DMX DATA CONNECTION TO TYPE 'G3' AND 'G4' DATA ENABLERS IN KIOSK IDF ROOM, AND (3) DMX DATA CONNECTION TO TYPE 'K2' DATA ENABLERS, (1) AT EACH CANOPY. PLEASE SEE E405 AND LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR ADDITIONAL INFORMATION.
Q2	Q2	ABOVE GRADE ELECTRICAL UTILITY ENCLOSURE TO HOUSE 'K2' DATA ENABLERS.	N/A	N/A	N/A	COTRACTOR TO PROVIDE (1) LOW PROFILE, ABOVE GRADE ELECTRICAL UTILITY ENCLOSURE TO CONCEAL AND PROTECT DIXTURE TYPE 'K2' DATA ENABLER, POWER AND DATA CONDUITS.	INSTALL UTILITY ENCLOSURE ADJACENT TO EACH CANOPY. REQUIRES MAIN POWER INPUT AND (4) DISCRETE POWER/DATA OUTPUTS TO 'K2' FIXTURE LOCATIONS. ALSO REQUIRES DMX HOMERUN TO PANEL 'Q1' IN KIOSK IDF ROOM. PLEASE SEE E405 AND LIGHTING SYSTEMS INTEGRATOR SHOP DRAWINGS FOR ADDITIONAL INFORMATION.

MOBILITY HUB
AND CENTRAL CAMPUS
LINKAGES

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REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
Ex.12/31/2019
ELECTRICAL
STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL

IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES
DRAWN BY JL
CHECKED BY RS
SCALE –
DATE
PROJECT NO. GRUEN # 8345

LIGHTING FIXTURE SCHEDULES

SHEET TITLE

E501

SHEET NO.

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 9/17) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name: MOBILITY HUB AND CENTRAL CAMPUS LINKAGES		Report Page:	Page 6 of 9
Project Address:		Date Prepared:	1/9/2019

01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				
Area Description	Specific Area Type per Table 140.7-B	Specific Area (ft²)[1]	Allowed Density (W/ft²)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)
Building Facade	Bldg Façade	94	0.35	32.9	TYPE G3	12	2	24	
							Total Design Watts for this Area:	40	32.9

01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				
Area Description	Specific Area Type per Table 140.7-B	Specific Area (ft²)[1]	Allowed Density (W/ft²)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)
Building Facade	Bldg Façade	94	0.35	32.9	TYPE G4	16	1	16	
Building Facade	Bldg Façade	94	0.35	32.9	TYPE G3	12	2	24	
Building Facade	Bldg Façade	94	0.35	32.9	TYPE B1	12	1	12	
							Total Design Watts for this Area:	52	32.9

01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				
Area Description	Specific Area Type per Table 140.7-B	Specific Area (ft²)[1]	Allowed Density (W/ft²)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)
NON SALES CANOPY	Non-sales Canopies/Tunnels	2,771	0.408	1,130.568	TYPE K1	20	18	360	
NON SALES CANOPY	Non-sales Canopies/Tunnels	2,771	0.408	1,130.568	TYPE K2	50	16	800	
							Total Design Watts for this Area:	1,160	1,130.568

STATE OF CALIFORNIA
Outdoor Lighting
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CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name: MOBILITY HUB AND CENTRAL CAMPUS LINKAGES		Report Page:	Page 7 of 9
Project Address:		Date Prepared:	1/9/2019

01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				
Area Description	Specific Area Type per Table 140.7-B	Specific Area (ft²)[1]	Allowed Density (W/ft²)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)
NON SALES CANOPY	Non-sales Canopies/Tunnels	2,771	0.408	1,130.568	TYPE K1	20	18	360	
NON SALES CANOPY	Non-sales Canopies/Tunnels	2,771	0.408	1,130.568	TYPE K2	50	16	800	
							Total Design Watts for this Area:	1,160	1,130.568
							Total Allowance (Watts) All Areas:		**3,608.704**

[1] *FOOTNOTES: See Table 140.7-B for the rules for calculating the specific areas (ft²) for these additional lighting allowances.*

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This Section Does Not Apply

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at http://www.energy.ca.gov/2015publications/CEC-400-2015-033/appendices/forms/NRCI

YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
◉	○	NRCI-LTO-01-E - Must be submitted for all buildings.	☐	☐
◉	○	NRCI-LTO-02-E - Must be submitted for a lighting control system; or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 9/17) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name: MOBILITY HUB AND CENTRAL CAMPUS LINKAGES		Report Page:	Page 8 of 9
Project Address:		Date Prepared:	1/9/2019

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
◉	○	NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls area added to ≤ 20 luminaires.	☐	☐

STATE OF CALIFORNIA
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Project Address:		Date Prepared:	1/9/2019

G. CUTOFF REQUIREMENTS (BUG)

Table Instructions: Complete this table for fixtures >150W indicated on Table F as needing to comply with Cutoff Requirements. Maximum lumens can be found in Table 130.2-A for Uplight and Table 130.2-B for Glare by Lighting Zone.

01	02	03	04		05				06	
			Uplight Ratings (Lumens)		Glare Ratings (Lumens)				Field Inspector	
Name or Item Tag	Complete Luminaire Description	Luminaire Type[1]	High (UH)	Low (UL)	Forward Very High (FVH)	Backlight Very High (BVH)	Forward High (FH)	Backlight High (BH)	Pass	Fail
TYPE P2	TYPE P2-LED-POLE LIGHT	0	0	0	0	0	0	0	☐	☐
		Maximum Lumens Allowed for Type I-IV:	500	500	500	500	7,500	2,500		
		Maximum Lumens Allowed for Type V and V Square:	500	500	500	500	7,500	7,500		

H. OUTDOOR LIGHTING CONTROLS

Table Instructions: Complete this table demonstrating compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
*When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank. For each requirement in columns 02 through 07, do not leave the field blank, instead select NA or Exempt* from the dropdown list to indicate not applicable or an exemption.*

Mandatory Controls

01	02	03	04	05	06	07	08	
Area Description	Motion Sensor: Incandescent>100W §130.2(a)	Shut-Off §130.2(c)1	Auto-Schedule §130.2(c)2	Motion Sensor §130.2(c)3	Sales Frontage §130.2(c)4	Façade, Ornament, Outdoor Dining §130.2(c)5	Field Inspector Pass	Field Inspector Fail
ELECTRICAL ROOM	NA: No Incand>100W	Astronomical Time	Yes	NA: Poles75W	NA: No Sales Front Ltg	No Applicable Lt	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Not permitted by health & safety to be turned off; EXCEPTION 1 to §130.2(c).*

I. LIGHTING POWER ALLOWANCE (per §140.7)

Table Continued

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 9/17) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name: MOBILITY HUB AND CENTRAL CAMPUS LINKAGES		Report Page:	Page 4 of 9
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Table Continued

Table Instructions: Please complete this table for areas using the allowance calculations per §140.7. General Hardscape Allowance is per Table 140.7-A while "Use it or lost it" Allowances are per Table 140.7-B. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance.

	01				
	"Use it or lose it" Allowance (Watts)				
	☑ General Hardscape Allowance	☐ Per Application	☐ Sales Frontage	☐ Ornamental	☑ Per Specific Area
	Table I (below)	Table J	Table K	Table L	Table M

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A

02	03	04	05	06	07	08	09
	Area Wattage Allowance (AWA)			Linear Wattage Allowance (LWA)			Total General AWA + LWA (Watts)
Area Description	Illuminated Area (ft²)	Allowed Density (W/ft²)	Area Allowance (Watts)	Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)	
PEDESTRIAN HARDSCAPE	602,056	0.04	24,082.24	6,400	0.35	2,240	26,322.24
					Initial Wattage Allowance for Entire Site (Watts):		**520**
					Total General Hardscape Allowance (Watts):		**26,842.24**

J. LIGHTING ALLOWANCE: PER APPLICATION

This Section Does Not Apply

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This Section Does Not Apply

L. LIGHTING ALLOWANCE: ORNAMENTAL

This Section Does Not Apply

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

Table Instructions: Please complete this table for areas using the wattage allowance per specific area type from Table 140.7-B. More than one specific area allowance may be taken in a single project, if applicable. However, multiple specific area allowances may not be taken for the exact same area on the site.

01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				
Area Description	Specific Area Type per Table 140.7-B	Specific Area (ft²)[1]	Allowed Density (W/ft²)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)

Table Continued

STATE OF CALIFORNIA
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CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
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01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				
Area Description	Specific Area Type per Table 140.7-B	Specific Area (ft²)[1]	Allowed Density (W/ft²)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)
NON SALES CANOPY	Non-sales Canopies/Tunnels	2,771	0.408	1,130.568	TYPE K1	20	18	360	
NON SALES CANOPY	Non-sales Canopies/Tunnels	2,771	0.408	1,130.568	TYPE K2	50	16	800	
							Total Design Watts for this Area:	1,160	1,130.568

01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				
Area Description	Specific Area Type per Table 140.7-B	Specific Area (ft²)[1]	Allowed Density (W/ft²)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)
Building Facade	Bldg Façade	216	0.35	75.6	TYPE G4	16	5	80	
							Total Design Watts for this Area:	80	75.6

01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				
Area Description	Specific Area Type per Table 140.7-B	Specific Area (ft²)[1]	Allowed Density (W/ft²)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)
Building Facade	Bldg Façade	216	0.35	75.6	TYPE G4	16	5	80	
							Total Design Watts for this Area:	80	75.6

01	02	03	04	05	06	07	08	09	10
		CALCULATED ALLOWANCE (Watts)			DESIGN WATTS				
Area Description	Specific Area Type per Table 140.7-B	Specific Area (ft²)[1]	Allowed Density (W/ft²)	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	Additional Allowance (Watts)
Building Facade	Bldg Façade	94	0.35	32.9	TYPE G4	16	1	16	

STATE OF CALIFORNIA
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Project Address:		Date Prepared:	1/9/2019

This document is used to demonstrate compliance with requirements in §110.9, §130.0, §130.2, §140.7, and §141.0(b)2L for outdoor lighting scopes using the prescriptive path.

A. GENERAL INFORMATION

01	Project Location (city)	RIVERSIDE	04 Total Illuminated Hardscape Area (ft²) 602,056
02	Climate Zone	10	
03	Outdoor Lighting Zone per Title 24, Part 1 §10-114 or as designated by Authority Having Jurisdiction (AHJ):		
☐ LZ-0: Very Low - Undeveloped Parkland	☐ LZ-2: Moderate - Rural Areas	☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval	
☐ LZ-1: Low - Developed Parkland	☑ LZ-3: Moderately High - Urban Areas		

B. PROJECT SCOPE

Table Instructions: Include any outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7 or §141.0(b)2L for alterations.

My project consists of:

01	02
☑ New Lighting System	Must Comply with Allowances from §140.7.
☐ Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)? ○ Yes ○ No

[1] FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Calculation of Total Allowed Lighting Power (Watts) §140.7 or §141.0(b)2L												Compliance Results		
01		02		03		04		05	06		07	08	09
General Hardscape Allowance §140.7(d)1	+	Per Application §140.7(d)2	+	Sales Frontage §140.7(d)2	+	Ornamental §140.7(d)2	+	Per Specific Area §140.7(d)2	OR	Existing Power §141.0(b)2L	=	**Total Allowed** (Watts)	≥	**Total Actual** (Watts)	**07 Must be ≥ 08**
(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)		(See Table N)				(See Table F)	
26,842.24	+		+		+		+	3,608.704	OR		=	30,450.944	≥	10,816	**COMPLIES**
												Cutoff Compliance (See Table G for Details)		**COMPLIES**	
												Controls Compliance (See Table H for Details)		**COMPLIES**	

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 9/17) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE			NRCC-LTO-E
Project Name: MOBILITY HUB AND CENTRAL CAMPUS LINKAGES		Report Page:	Page 2 of 9
Project Address:		Date Prepared:	1/9/2019

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. OUTDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: For new or altered lighting systems demonstrating compliance with §140.7 (ie Table I has expanded for input), include all luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application in the Table below. For altered lighting systems using the Existing Power method per §141.0(b)2L (ie Table N has expanded for input), include only new luminaires being installed and replacement luminaires being installed as part of the project scope (ie, do not include existing luminaires remaining or existing luminaires being moved).

Designed Wattage:

01	02	03	04	05	06	07	08	09	10
Name or Item Tag	Complete Luminaire Description	Watts per luminaire[1]	How Wattage is determined	Total number luminaires	Luminaire Status[2]	Excluded per §140.7(a)	Design Watts	Cutoff Req. > 150W - §130.2(b)[3]	Field Inspector Pass	Field Inspector Fail
TYP1 S1	TYPE S1-LED-ROUND LIGHT	3.5	Mfr. Spec[1]	24	New	☐	84		☐	☐
TYPE B1	TYPE B1-LED-RECESSED DOWNLIGHT	12	Mfr. Spec[1]	1	New	☐	12		☐	☐
TYPE G3	TYPE G3-LED-PENDANT	12	Mfr. Spec[1]	4	New	☐	48		☐	☐
TYPE G4	TYPE G4-LED-GRAZER	16	Mfr. Spec[1]	12	New	☐	192		☐	☐
TYPE K1	TYPE K1-LED-RECESSED DOWNLIGHT	20	Mfr. Spec[1]	54	New	☐	1,080		☐	☐
TYPE K2	TYPE K2-LED-FLOOD LIGHT	50	Mfr. Spec[1]	48	New	☐	2,400		☐	☐
TYPE P1	TYPE P1-LED-POLE LIGHT	92	Mfr. Spec[1]	63	New	☐	5,796		☐	☐
TYPE P2	TYPE P2-LED-POLE LIGHT	172	Mfr. Spec[1]	7	New	☐	1,204	Yes	☐	☐
							Total Designed Watts:	**10,816**		

** NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.*
EX: Luminaire is lighting a statue; EXCEPTION 2 to §130.2(b).

TITLE 24 GENERAL NOTE

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES. INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONSTRUCTION INSPECTION, MEASUREMENTS, MONITORING, FUNCTIONAL TESTING, CALIBRATING, ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTION 13.2.2.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS SECTIONS 10-103(a)3A AND 10-103(a)3B AND SECTION 130.4 FOR MORE INFORMATION.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL CHAPTER 13 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS RESIDENTIAL COMPLIANCE MANUAL CHAPTER 2 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

PROVIDE COMPLETED INSTALLATION CERTIFICATE(S) AND CERTIFICATE(S) OF ACCEPTANCE AS REQUIRED TO THE SATISFACTION OF THE ENFORCEMENT AGENCY.

UNIVERSITY OF CALIFORNIA RIVERSIDE
LET THERE BE LIGHT

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

GRUENASSOCIATES
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949.751.5800 www.tk1sc.com
Project Leader - Jonathan Lomibao
CONSULTANT Electrical Lead - Jonathan Lomibao
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 12/31/2019 ELECTRICAL STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL

IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES

DRAWN BY JL

CHECKED BY RS

SCALE –

DATE

PROJECT NO. GRUEN # 8345

TITLE 24 EXTERIOR

SHEET TITLE

E502

SHEET NO.

STATE OF CALIFORNIA
Sign Lighting
NRCC-LTS-E (Created 9/17) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTS-E
Project Name: MOBILITY HUB AND CENTRAL CAMPUS LINKAGES	Report Page:	Page 2 of 4
Project Address:	Date Prepared:	1/10/2019

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. MAXIMUM ALLOWED LIGHTING POWER AND CONTROLS

Table Instructions: Complete this table for illuminated signs using the Maximum Allowed Lighting Power compliance method per §140.8(a) as indicated on Table B of this compliance document. Also demonstrate compliance with mandatory controls requirements from §130.3 by indicating control types for each sign.

01	02	03	04	05	06	07	08			09	
Name or Item Tag	Complete Sign Description	Illumination Method	Sign Area (ft²)	Allowed Density (W/ft²)	Allowance (Watts)	Design Watts	Mandatory Controls			Field Inspector	
							Shut-Off	Dimming	Demand Response[1]	Pass	Fail
Entry Sign	Entry Sign	Externally	68	2.3	156.4	60	Auto Timer	NA	NA	☐	☐
		10	11			12	13	14			
		Luminaire Name or Item Tag	Complete Luminaire Description			Watts per Luminaire	How Wattage is Determined	Total number luminaires			
		TYPE W2	TYPE W2			20	Mfr. Spec	3			

**NOTE: Controls with a * require a note in the space below explaining how compliance is achieved.*
EX: Sign within tunnel illuminated day & night; EXCEPTION to §130.3(a)2A.
[1]FOOTNOTE: Demand response controls are only required for an Electronic Message Center having a new connected lighting power load greater than 15 kW per §130.3(a)3.

G. LIGHT SOURCES AND CONTROLS

This Section Does Not Apply

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 9/17) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: MOBILITY HUB AND CENTRAL CAMPUS LINKAGES	Report Page:	Page 9 of 9
Project Address:	Date Prepared:	1/9/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

Documentation Author Name:	Ray Swartz	Documentation Author Signature:	
Company:	tk1sc	Signature Date:	1/11/2019
Address:	15231 Laguna Canyon Road Suite 100	CEA/ HERS Certification Identification (if applicable):	E15610
City/State/Zip:	Irvine, CA 92618	Phone:	949-751-5800

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Ray Swartz	Responsible Designer Signature:	
Company :	TK1SC	Date Signed:	1/11/2019
Address:	15231 Laguna Canyon Road Suite 100	License:	E15610
City/State/Zip:	Irvine, CA 92618	Phone:	949-751-5800

STATE OF CALIFORNIA
Sign Lighting
NRCC-LTS-E (Created 9/17) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTS-E
Project Name: MOBILITY HUB AND CENTRAL CAMPUS LINKAGES	Report Page:	Page 3 of 4
Project Address:	Date Prepared:	1/10/2019

H. ENERGY VERIFIED LABELED SIGNS AND CONTROLS

This Section Does Not Apply

I. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at http://www.energy.ca.gov/2015publications/CEC-400-2015-033/appendices/forms/NRCI

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
◉	○	NRCI-LTS-01-E - Must be submitted for all buildings.	☐	☐

J. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no Certificates of Acceptance applicable to sign lighting requirements.

STATE OF CALIFORNIA
Sign Lighting
NRCC-LTS-E (Created 9/17) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTS-E
Project Name: MOBILITY HUB AND CENTRAL CAMPUS LINKAGES	Report Page:	Page 1 of 4
Project Address:	Date Prepared:	1/10/2019

This document is used to demonstrate compliance with requirements in §110.9, §130.0, §130.3, §140.8, and §141.0(b)2M for sign lighting scopes using the prescriptive path. Exit signs and traffic signs are not required to comply with prescriptive requirements per exceptions to §140.8 and do not need to complete this compliance document.

A. GENERAL INFORMATION

01	Project Location (city)	RIVERSIDE
02	Climate Zone	10

B. PROJECT SCOPE

Table Instructions: Include any illuminated signs that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.8 or §141.0(b)2M for alterations. Exit signs and traffic signs are not required to comply with prescriptive requirements per exceptions to §140.8 and do not need to complete this compliance document. WARNING: Changing the Compliance Method in this table will result in the deletion of data previously input. If you need to change the compliance method, please open a new form or use "Save As".

01	02	03	04	05
Name or Item Tag	Complete Sign Description	Sign Status[1]	Location	Compliance Method[2]
Entry Sign	Entry Sign	New	Outdoor	Max Allowed Lighting Power

[1]FOOTNOTE: Sign alterations that increase the connected lighting load, replace and rewire more than 50% of the ballasts, or relocate the sign to a different location must comply with §140.8. See §141.0(b)2M for more details.
[2]The ENERGY VERIFIED Label compliance method is only applicable if the sign has a permanent, factory-installed, ENERGY VERIFIED label certified by UL or comparable, confirming the sign complies with §140.8. Note that using an ENERGY VERIFIED label is an optional compliance path, not a mandatory requirement. See the tool tips for this table for more details.

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

01	02	03		04		05		06	07
Name or Item Tag	Complete Sign Description	Total Allowed (Watts)	≥	Total Designed (Watts)	OR	Compliant Light Sources	OR	ENERGY VERIFIED Label	**Compliance Results**
(See Table B)	(See Table B)	(See Table F)		(See Table F)		(See Table G)		(See Table B)	
Entry Sign	Entry Sign	156.4	≥	60	OR		OR		**COMPLIES**
						Controls Compliance (See Table F/G/H for Details)			**COMPLIES**

TITLE 24 GENERAL NOTE

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES. INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONSTRUCTION INSPECTION, MEASUREMENTS, MONITORING, FUNCTIONAL TESTING, CALIBRATING, ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTION 13.2.2.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS SECTIONS 10-103(a)3A AND 10-103(a)3B AND SECTION 130.4 FOR MORE INFORMATION.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL CHAPTER 13 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS RESIDENTIAL COMPLIANCE MANUAL CHAPTER 2 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

PROVIDE COMPLETED INSTALLATION CERTIFICATE(S) AND CERTIFICATE(S) OF ACCEPTANCE AS REQUIRED TO THE SATISFACTION OF THE ENFORCEMENT AGENCY.

UNIVERSITY OF CALIFORNIA RIVERSIDE
LEAD FROM HERE

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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ARCHITECTURE PLANNING INTERIORS LANDSCAPE

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949.751.5800 www.tk1sc.com

CONSULTANT Project Leader - Jonathan Lomibao
Electrical Lead - Jonathan Lomibao
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
12/31/2019
ELECTRICAL
STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL

IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES

DRAWN BY JL
CHECKED BY RS
SCALE –
DATE
PROJECT NO. GRUEN # 8345

TITLE 24 EXTERIOR

SHEET TITLE

E503

SHEET NO.

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 9/17) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTI-E
Project Name: MOBILITY HUB AND CENTRAL CAMPUS LINKAGES	Report Page:	Page 6 of 6
Project Address:	Date Prepared:	1/8/2019

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

Documentation Author Name: Ray Swartz	Documentation Author Signature:
Company: tk1sc	Signature Date: 1/11/2019
Address: 15231 Laguna Canyon Road Suite 100	CEA/ HERS Certification Identification (if applicable): E15610
City/State/Zip: Irvine, CA 92618	Phone: 949-751-5800

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. **The information provided on this Certificate of Compliance is true and correct.**
2. **I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)**
3. **The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.**
4. **The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.**
5. **I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.**

Responsible Designer Name: Ray Swartz	Responsible Designer Signature:
Company : TK1SC	Date Signed: 1/11/2019
Address: 15231 Laguna Canyon Road Suite 100	License: E15610
City/State/Zip: Irvine, CA 92618	Phone: 949-751-5800

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Area Controls §130.1[a]	Multi-Level Controls §130.1(b)	Shut-Off Controls §130.1(c)	Primary/Skylit Daylighting §130.1(d)	Secondary Daylighting §140.6(d)	Interlocked Systems §140.6(a)1	Field Inspector Pass	Field Inspector Fail
Electrical Room		Manual ON/OFF	Exempt *	Occ Sensor	N/A	N/A	☐	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.

EX: Compliance 1: Primary/Skylight Daylighting: Exempt because less than 120 watts of general lighting;
EXCEPTION 1 to §130.1(d)2

13
Plan Sheet Showing Daylit Zones:

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Table Instructions: Complete the table for each area complying using the Complete Building or Area Category Methods per §140.6[b]. Indicate if additional lighting power allowances per §140.6[c] or adjustments per §140.6[a] are being used.

01	02	03	04	05	06		
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustments Footnotes	PAF	Portable Ltg
Whole Building	Office Building	0.8	204	163.2	☐	☐	☐
		TOTAL:	204	163.2	See Tables J, K, R for detail		

J. POWER ADJUSTMENT: PORTABLE LIGHTING IN OFFICES
This Section Does Not Apply

K. ADDITIONAL LIGHTING ALLOWANCE: AREA CATEGORY METHOD FOOTNOTES
This Section Does Not Apply

L. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE
This Section Does Not Apply

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED SPECIAL FUNCTION AREAS
This Section Does Not Apply

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY
This Section Does Not Apply

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING
This Section Does Not Apply

P. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS
This Section Does Not Apply

Q. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE
This Section Does Not Apply

R. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (PAF)
This Section Does Not Apply

S. RATED POWER REDUCTION COMPLIANCE BY SPACE
This Section Does Not Apply

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at http://www.energy.ca.gov/2015publications/CEC-400-2015-033/appendices/forms/NRCI

YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
◉	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
◉	○	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-03-E - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐	☐

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

YES	NO	Form/Title	Field Inspector Pass	Field Inspector Fail
◉	○	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐
◉	○	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐
○	◉	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐	☐
○	◉	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	☐	☐

A. GENERAL INFORMATION

01 Project Location (city)	RIVERSIDE	04 Total Conditioned Floor Area (ft²)	204
02 Climate Zone	10	05 Total Unconditioned Floor Area (ft²)	0
03 Occupancy Types Within Project (select all that apply):		06 # of Stories (Habitable Above Grade)	1

☑ Office ☐ Retail ☐ Warehouse ☐ Hotel/Motel ☐ School ☐ Support Areas
☐ Parking Garage ☐ High-Rise Residential ☐ Relocatable ☐ Other (write in):

B. PROJECT SCOPE

Table Instructions: Include any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations. WARNING: Changing the Calculation Method in this table will result in the deletion of data previously input. If you need to change the calculation method, please open a new form or use "Save As".

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☑ New Lighting System	Complete Building	204	Complete Building	0
☐ Altered Lighting System				
Total Area of Work (ft²)	204		0	

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1.	Allowed Lighting Power per §140.6(b) (Watts) 01 Complete Building §140.6(c)1 (See Table I)	02 Area Category §140.6(c)2 (See Table I)	03 Area Category Footnotes §140.6(c)2G (+) (See Table K)	04 Tailored §140.6(c)3 (+) (See Table L)	=	05 Total Allowed (Watts)	≥	Actual Lighting Power per §140.6(a) (Watts) 06 Total Designed (Watts) (See Table F)	Adjustments 07 Portable Lighting §140.6(a) (-) (See Table J)	08 PAF Control Credits §140.6(a)2 (-) (See Table R)	=	09 Total Actual (Watts) *Includes Adjustments	Compliance Results 10 05 Must be ≥ 09 §140.6
Conditioned:	163.2				=	163.2	≥	135			=	135	COMPLIES
Unconditioned:					=		≥				=		
Controls Compliance (See Table H for Details)													COMPLIES
Rated Power Reduction Compliance (See Table S for Details)													Not Applicable

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. INDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: Include all permanent designed lighting and all portable lighting in offices.

01 Name or Item Tag	02 Complete Luminaire Description	03 Specialized Luminaire Types Track	03 Specialized Luminaire Types Portable	04 Watts per luminaire[1]	05 How Wattage is determined	06 Total number luminaires	07 Exempt per §140.6(a)3	08 Design Watts	09 Field Inspector Pass	09 Field Inspector Fail
TYPE B1	TYPE B1-LED-RECESSED DOWNLIGHT	☐	☐	12	Mfr. Spec[1]	4	☐	48	☐	☐
TYPE F1	TYPE F1-LED-PENDANT	☐	☐	29	Mfr. Spec[1]	3	☐	87	☐	☐
						Total Designed Watts CONDITIONED SPACES:		135		

[1]*NOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. TRACK LIGHTING
This Section Does Not Apply

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

Table Instructions:
*Please include lighting controls for conditioned and unconditioned spaces in this table. When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank.*

Building Level Controls		
01	02	03
Mandatory Demand Response §130.1(e)	Shut-off Controls §130.1(c)	Field Inspector Pass / Fail
Not Required < 10,000 SF	Whole Building: Automatic Time Switch	☐ ☐

Area Level Controls
Table Continued

TITLE 24 GENERAL NOTE

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH FINAL INSPECTION AND APPLICABLE ACCEPTANCE REQUIREMENT PROCEDURES. INCLUDE ALL COSTS IN THE BASE BID. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONSTRUCTION INSPECTION, MEASUREMENTS, MONITORING, FUNCTIONAL TESTING, CALIBRATING, ETC. CONTRACTOR SHALL ASSUME THE ROLE OF "FIELD TECHNICIAN" AND "RESPONSIBLE PERSON" AS DEFINED IN STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTION 13.2.2.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS SECTIONS 10-103(a)3A AND 10-103(a)3B AND SECTION 130.4 FOR MORE INFORMATION.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL CHAPTER 13 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

SEE STATE OF CALIFORNIA 2016 BUILDING ENERGY EFFICIENCY STANDARDS RESIDENTIAL COMPLIANCE MANUAL CHAPTER 2 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

PROVIDE COMPLETED INSTALLATION CERTIFICATE(S) AND CERTIFICATE(S) OF ACCEPTANCE AS REQUIRED TO THE SATISFACTION OF THE ENFORCEMENT AGENCY.

UNIVERSITY OF CALIFORNIA RIVERSIDE

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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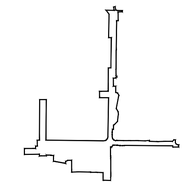
CONSULTANT Project Leader - Jonathan Lomibao
Electrical Lead - Jonathan Lomibao
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 12/31/2019 ELECTRICAL STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL



IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
	01/10/19	100% CD SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES

DRAWN BY JL

CHECKED BY RS

SCALE –

DATE

PROJECT NO. GRUEN # 8345

TITLE 24 INTERIOR

SHEET TITLE

E504

SHEET NO.

CAMERA DETAIL KEY NOTES:

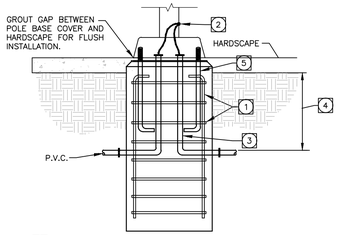
1. PELCO #PA402 MOUNT (WHEN MOUNTING TO ALUMINIUM POLES) PROVIDED BY SECURITY CONTRACTOR OR CUSTOM–FABRICATED STEEL VERSION OF PELCO MOUNTING PLATE (WHEN MOUNTING TO STEEL POLES) PROVIDED BY ELECTRICAL CONTRACTOR, WELDED TO POLE BY POLE MANUFACTURER. PLATE FINISH TO MATCH POLE FINISH. THIS IS A CRITICAL COORDINATION ITEM. NO ADDITIONAL COSTS WILL BE ACCEPTED BY THE OWNER FOR FAILURE OF THE SECURITY CONTRACTOR TO COORDINATE THIS EFFORT AS REQUIRED BY PROJECT SCHEDULE.
2. CUSTOM FABRICATED BEZEL PLATE. 7.5"H X 5.5"W X .125" WITH (4) 1/4" DIA. AND (2) 1/2" DIA. HOLES. PAINT TO MATCH POLE.
3. ROUND STRAIGHT STEEL POLE BY LIGHT FIXTURE MANUFACTURER TO MATCH SITE LIGHTING FIXTURE POLES IN ALL OTHER ASPECTS EXCEPT FOR ANY ADDITIONAL REINFORCEMENT AS REQUIRED BY LIGHT POLE MANUFACTURER TO SUPPORT CAMERA AND MOUNTING HARDWARE.
4. CAMERA MOUNT (PELCO #IWM24–XX CUSTOM) OR EQUAL. PROVIDE 120V/24VAC TRANSFORMER WITHIN CAMERA MOUNT. PROVIDE CUSTOM POWDERCOAT FINISH TO MATCH POLE. (BY SECURITY CONTRACTOR).
5. CAMERA ENCLOSURE. PROVIDE CUSTOM POWDERCOAT FINISH TO MATCH POLE. (BY SECURITY CONTRACTOR).
6. BARRIERED PULL BOX WITH BOLT–DOWN COVER EQUIPPED WITH TAMPER–PROOF BOLT HEADS. SEE SITE SECURITY PLAN FOR ACTUAL LOCATION.
7. TRANSITION FROM 3/4" PVC TO GREY 3/4" LIQUID TIGHT METAL CONDUIT VIA FEMALE PVC TO LIQUID TIGHT CONNECTORS. ROUTE UP POLE AND FASTEN TO CUSTOM BEZEL PLATE. ROUTE L.V. SIGNAL CONDUCTORS TO CAMERA IN THIS CONDUIT RUN.
8. PROVIDE 24" LONG GREY 3/4" LIQUID TIGHT METAL CONDUIT FASTENED AT CUSTOM BEZEL PLATE END PASSING THRU POLE FOR POWER CONDUCTORS.
9. PROVIDE SILICON BUSHING AROUND CONDUITS AT THE PASS THRU POLE. PROVIDE SILICON CAULKING AS REQUIRED TO SUPPLEMENT GASKETING.
10. HANDHOLE COVER WITH TAMPER PROOF SCREWS.
11. STUB/ROUTE SIGNAL CONDUITS AS FAR FROM POWER CONDUITS/CONDUCTORS AS POSSIBLE.
12. SIGNAL CONDUIT FOR CAMERA.
13. 120V. CONDUIT FOR CAMERA.
14. CONDUIT/WIRING FOR LIGHTING.
15. MOUNTING STUDS SHALL BE SHORT ENOUGH TO ALLOW USE OF CAP OR ACORN NUTS IN LIEU OF STANDARD NUTS.

CAMERA DETAIL SPECIFIC INSTALLATION REQUIREMENTS:

1. WHEN CAMERAS ARE SHOWN ADDED TO EXISTING POLE(S), CONTRACTOR TO INCLUDE ALL COSTS TO:
   a. COORDINATE ANY POLE MODIFICATIONS WITH ORIGINAL POLE MANUFACTURER TO DETERMINE SUITABILITY OF MODIFICATIONS PRIOR TO MAKING MODIFICATIONS. THIS EFFORT SHALL INCLUDE DETERMINATION OF POLE STRENGTH BASED ON 100 MPH WINDS OR HIGHER BASED LOCATION AND EFFECTIVE PROJECTED AREA OF ALL POLE MOUNTED DEVICES SUCH AS LIGHT FIXTURES, BANNERS AND CAMERAS, ETC.
      – SHOULD EXISTING POLES BE FOUND TO BE UNSUITABLE FOR MODIFICATION, CONTRACTOR SHALL INCLUDE ALL COST IN BASE BID TO REPLACE POLES WITH NEW POLES OF MATCHING STYLE – PAINT/FINISH TO MATCH EXISTING POLE FINISHES – CAPABLE OF SUPPORTING CAMERA INSTALLATION AND ANY EXISTING POLE–MOUNTED DEVICES. ADDITIONALLY, REFINISH ANY EXISTING POLE–MOUNTED DEVICES TO MATCH NEW POLE FINISH.
      – SHOULD EXISTING POLES BE FOUND TO BE SUITABLE FOR MODIFICATION, REMOVE POLES FROM BASES TO MAKE NECESSARY MODIFICATIONS TO POLE INCLUDING, BUT NOT LIMITED TO, WELDING CAMERA BRACKETS, CUTTING HOLES, ROUTING CONDUITS, ETC. POLE PAINT/FINISH TO MATCH EXISTING POLE FINISH. ADDITIONALLY, REFINISH ANY EXISTING POLE–MOUNTED DEVICES TO MATCH MODIFIED POLE FINISH.
   b. DEMOLISH/REPLACE (E) POLE BASES IN ORDER TO ROUTE ANY SECUIRTY CAMERA AND/OR CAMERA POWER CONDUITS THRU POLE BASE AND INTO POLE. NEW POLE BASES SHALL BE DESIGNED BY A LICENSED STRUCTURAL ENGINEER HIRED BY THE CONTRACTOR.
   c. INCLUDE ALL COST TO REPLACE/REPAIR/EXTEND EXISTING CONDUCTORS AS REQUIRED TO RESTORE SERVICE TO LIGHTING, POWER AND/OR SIGNAL SYSTEMS. CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS TO MAINTAINING SUCH SERVICES DURING CONSTRUCTION USING SUITABLE TEMPORARY WIRING/CONNECTIONS. WHERE REMOVAL OF LIGHT POLES REDUCES LIGHT LEVELS OUTSIDE CONSTRUCTION ZONE BOUNDARIES, CONTRACTOR SHALL INCLUDE ALL COSTS TO PROVIDE TEMPORARY LIGHTING TO MAINTAIN EXISTING LIGHT LEVELS TO THE SATIFACTION OF THE OWNER AND/OR LOCAL AHJ.
   d. INSTALL POLES AS REQUIRED TO INCLUDE ANY POLE–MOUNTED DEVICES SUCH AS LIGHT FIXTURES, BANNERS, SPEAKERS, CAMERAS, ETC.
2. CONTRACTOR SHALL SUPPLY A COMPLETELY COORDINATED SUBMITTAL DRAWING WITH POLE SUBMITTAL AND, IF APPLICABLE, LIGHTING FIXTURE SUBMITTAL, DEPICTING A COMPLETE AND USABLE LIGHT POLE – MOUNTED CAMERA MOUNTING DETAIL DEPICTING ALL POLE OPENINGS, MOUNTING HEIGHT OF CAMERA ABOVE GRADE, AND ORIENTATION OF CAMERA MOUNTING IN RELATIONSHIP TO LIGHTING FIXTURES. SUBMITTAL SHALL ALSO CONTAIN CAMERA ARM CUTSHEET(S), POLE MOUNTING HARDWARE CUTSHEET(S), CUSTOM COLORS SWATCHES, POWDERCOATING SOURCE, ETC. COORDINATE ENTIRE INSTALLATION WITH ALL OTHER REQUIRED TRADES. ADDITIONALLY, IF NEW POLE BASES ARE REQUIRED, SUBMITTAL SHALL CONTAIN POLE BASE DRAWINGS, DETAILS, AND CALCULATIONS STAMPED BY A LICENSED STRUCTURAL ENGINEER.

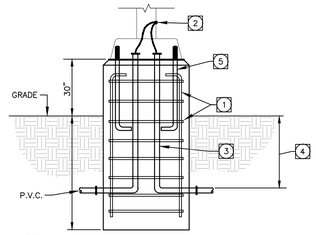
CAMERA DETAIL GENERAL INSTALLATION REQUIREMENTS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FURNISHING OF ALL MATERIAL, LABOR, EQUIPMENT, AND SERVICES, IN CONNECTION WITH THE INSTALLATION OF A COMPLETE AND FULLY FUNCTIONING AND CODE COMPLIANT INSTALLATION.
2. IT IS THE INTENT OF THE CONTRACT DOCUMENTS, WHICH ARE PRESENTED IN A DIAGRAMMATIC FORMAT, TO PROVIDE CONTRACTOR INFORMATION THAT SUPPLEMENTS AND ENHANCES THE GENERALLY ACCEPTED CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES EMPLOYED IN CONNECTION WITH INSTALLATION OF THIS TYPE OF PRODUCT / SYSTEM.
3. THE CONTRACTOR SHALL ALSO INCORPORATE THE REQUIREMENTS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS / WARRANTY REQUIREMENTS AS PART OF THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS. IN THE EVENT OF A CONFLICT BETWEEN THE CONTRACT DOCUMENT REQUIREMENTS AND THE MANUFACTURER'S INSTALLATION REQUIREMENTS, THE MORE STRINGENT REQUIREMENTS SHALL APPLY – UNLESS THE MORE STRINGENT REQUIREMENT VOIDS APPLICABLE WARRANTIES OR VIOLATES THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ). ANY SUCH CONFLICT SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING THROUGH THE FORMAL RFI PROCESS.
4. REFER TO THE ASSOCIATED SCHEDULES, SCHEMATICS, DRAWINGS, AND SPECIFICATIONS FOR DETAILED INFORMATION / REQUIREMENTS ON THIS PRODUCT / SYSTEM.



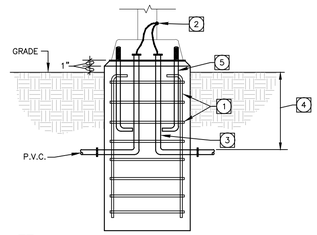
1. DETERMINED BY STRUCTURAL ENGINEER.
2. BOND EQUIPMENT GROUND TO POLE.
3. BRANCH CIRCUIT CONDUIT PER SITE PLAN.
4. PROVIDE MINIMUM COVER OF 24" FROM FINISH GRADE.
5. POLE ANCHOR BOLTS PER MANUFACTURER SPEC'S.

POLE BASE "C" DETAIL — 3
SCALE: N.T.S.



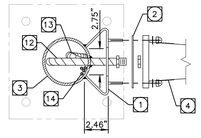
1. DETERMINED BY STRUCTURAL ENGINEER.
2. BOND EQUIPMENT GROUND TO POLE.
3. BRANCH CIRCUIT CONDUIT PER SITE PLAN.
4. PROVIDE MINIMUM COVER OF 24" FROM FINISH GRADE.
5. POLE ANCHOR BOLTS PER MANUFACTURER SPEC'S.

POLE BASE "B" DETAIL — 2
SCALE: N.T.S.

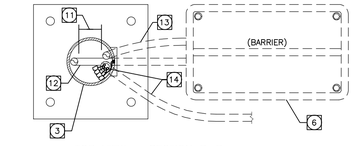


1. DETERMINED BY STRUCTURAL ENGINEER.
2. BOND EQUIPMENT GROUND TO POLE.
3. BRANCH CIRCUIT CONDUIT PER SITE PLAN.
4. PROVIDE MINIMUM COVER OF 24" FROM FINISH GRADE.
5. POLE ANCHOR BOLTS PER MANUFACTURER SPEC'S.

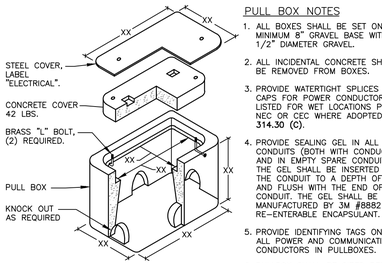
POLE BASE "A" DETAIL — 1
SCALE: N.T.S.



TOP VIEW – SECTION A–A



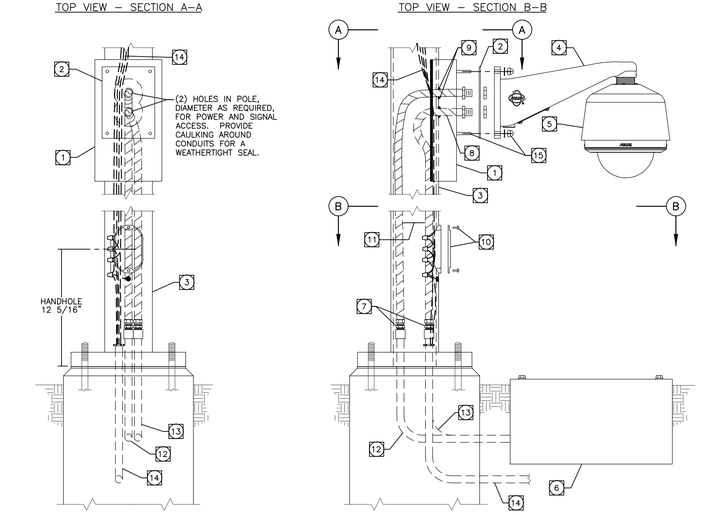
TOP VIEW – SECTION B–B



PULL BOX NOTES

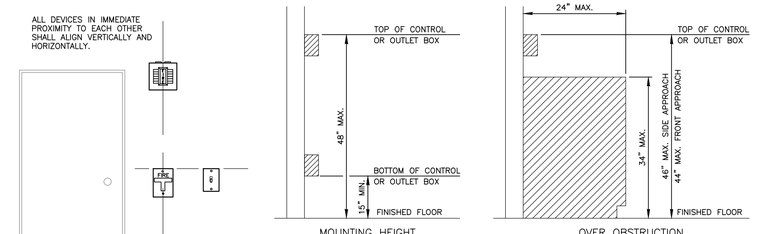
1. ALL BOXES SHALL BE SET ON A MINIMUM 8" GRAVEL BASE WITH 1/2" DIAMETER GRAVEL.
2. ALL INCIDENTAL CONCRETE SHALL BE REMOVED FROM BOXES.
3. PROVIDE WATERTIGHT SPLICES AND CAPS FOR POWER CONDUCTORS LISTED FOR WET LOCATIONS PER NEC OR CEC WHERE ADOPTED, 314.30 (C).
4. PROVIDE SEALING GEL IN ALL CONDUITS (BOTH WITH CONDUCTORS AND IN EMPTY SPARE CONDUITS). THE GEL SHALL BE INSERTED IN THE CONDUIT TO A DEPTH OF 6" AND FLUSH WITH THE END OF THE CONDUIT. THE GEL SHALL BE MANUFACTURED BY 3M #8882 RE–ENTERABLE ENCAPSULANT.
5. PROVIDE IDENTIFYING TAGS ON ALL POWER AND COMMUNICATION CONDUCTORS IN PULLBOXES.
6. PULLBOX SHALL BE SIZED PER N.E.C. REQUIREMENTS.

PULLBOX DETAIL — 4
SCALE: N.T.S.



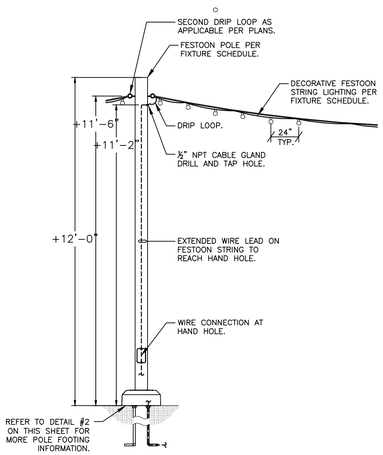
FRONT VIEW — SIDE VIEW

CAMERA POLE CAMERA MOUNT DETAIL — 5
SCALE: NTS



ALL DEVICE HEIGHTS DEPICTED SHALL BE MODIFIED AS REQUIRED BY GOVERNING BUILDING CODES. CONTRACTOR TO VERIFY/RECONCILE APPLICABLE CODE REQUIREMENTS AND ANY DEVICE HEIGHT REQUIREMENTS DEPICTED ON ARCHITECTURAL OR INTERIOR DESIGN PLANS AND SPECIFICATIONS PRIOR TO DEVICE ROUGH–IN. CONFLICTS OR LACK OF MOUNTING HEIGHT SPECIFICITY ON THE ARCHITECTURAL OR INTERIOR DESIGN PLANS AND SPECIFICATIONS SHALL BE CAUSE FOR THE CONTRACTOR TO ISSUE A FORMAL WRITTEN REQUEST FOR INFORMATION (RFI) FOR RESOLUTION. DEVICE MOUNTING HEIGHT CLARIFICATIONS/SPECIFICATIONS SHALL NOT RESULT IN AN ADDITIONAL COST TO THE OWNER – CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID.

DEVICE ALIGNMENT & MOUNTING HEIGHT DETAILS — 6
SCALE: NTS



REFER TO DETAIL #2 ON THIS SHEET FOR MORE POLE FOOTING INFORMATION.

FESTOON POLE DETAIL — 7
SCALE: N.T.S.

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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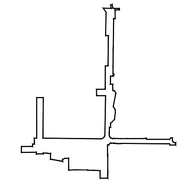
CONSULTANT Project Leader - Jonathan Lomibao
Electrical Lead - Jonathan Lomibao
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 12/31/2019 ELECTRICAL STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL



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KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	
DRAWN BY	JL
CHECKED BY	RS
SCALE	–
DATE	
PROJECT NO.	GRUEN # 8345

MISCELLANEOUS DETAILS (EXTERIOR)

SHEET TITLE

E701

SHEET NO.

SHEET INDEX

HVAC LEGEND

SYMBOL	DESCRIPTION
	GENERAL
	LIMIT OF DEMOLITION
	POINT OF CONNECTION
XY.ZZZ	KEYNOTE
M	FURNISHED & INSTALLED BY MECHANICAL
ME	FURNISHED BY MECHANICAL INSTALLED BY ELECTRICAL
EM	FURNISHED BY ELECTRICAL INSTALLED BY MECHANICAL
E	FURNISHED & INSTALLED BY ELECTRICAL
	SUPPLY, RETURN, & EXHAUST REGISTER TYPE AIR QUANTITY (C.F.M.)
	TRANSFER GRILLE TYPE NECK SIZE
	LINEAR SUPPLY & RETURN TYPE TOTAL CFM TOTAL LENGTH
	CONTROLS (PLAN)
CO2	CO2 SENSOR
NO2	NITROGEN DIOXIDE SENSOR
H	HUMIDITY SENSOR
O	OXYGEN SENSOR
T_x	ROOM THERMOSTAT & ZONE NUMBER
S	SWITCH (MANUAL WALL MOUNT OR DOOR INTERLOCK)
SD	SMOKE DETECTOR
CO	CARBON MONOXIDE SENSOR
SP	PRESSURE SENSOR (DUCT MOUNTED)
P	PRESSURE SENSOR (ROOM PRESSURE)
V	PURGE EXHAUST CONTROL SWITCH
HS	VISUAL STROBE AND AUDIBLE HORN
RS	REFRIGERANT LEAK DETECTION SENSOR
	PIPING
—#"–####—	PIPE TAG (E.G. 2"–CHWS)
	PIPE RISE
	PIPE DROP
	PIPE BRANCH
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CIRCUIT SETTER
	REDUCER
	STRAINER
	UNION
	AIR VENT VALVE
	PRESSURE GAUGE
	THERMOMETER
	CONTROL VALVE
	PIPE ANCHOR

EQUIPMENT ANCHORAGE AND SYSTEM BRACING

1. ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CALIFORNIA BUILDING CODE REQUIREMENTS IN ACCORDANCE WITH THE AMERICAN SOCIETY OF CIVIL ENGINEERS - ASCE 7-10, SECTION 13.6 AND TABLE 13.6-1.
   a. ALL PERMANENT EQUIPMENT AND COMPONENTS.
   b. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICE SUCH AS ELECTRICITY, GAS OR WATER.
   c. MOVABLE EQUIPMENT WHICH IS STATION IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.
2. THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT NEED NOT TO BE DETAILED ON PLAN. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT.
   a. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
   b. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR HUNG FROM WALL.
3. FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE INSTALLED PER SMACNA GUIDELINES AND/OR MANUFACTURER'S RECOMMENDATIONS.
4. SEISMIC ANCHORAGE OF EQUIPMENT AND BRACING OF PIPING/DUCTWORK SYSTEMS SHALL BE PROVIDED IN ACCORDANCE WITH THE AMERICAN SOCIETY OF CIVIL ENGINEERS - ASCE 7-10, SECTION 13.6 AND TABLE 13.6-1.

CAL GREEN BUILDING NOTES

TESTING AND ADJUSTING:

CONTRACTOR TO SUBMIT THE FINAL AIR BALANCE REPORT TO THE MECHANICAL ENGINEER FOR REVIEW AND TO SUBMIT TO THE CITY FOR GREEN BUILDING COMPLIANCE. THE HVAC SYSTEM SHALL BE BALANCED IN ACCORDANCE WITH APPROVED NATIONAL STANDARDS. CGBC 5.410.4.3.1

A FINAL REPORT SIGNED BY THE INDIVIDUAL RESPONSIBLE FOR PROVIDING SERVICES SHALL BE PROVIDED AFTER COMPLETION OF TESTING, AND BALANCING. CGBC 5.410.4.4

OPERATION AND MAINTENANCE (O&M) MANUAL:

OPERATION AND MAINTENANCE MANUAL WITH CONTENT PER CGBC 5.410.4.5, AND IN A FORMAT ACCEPTABLE TO THE ENFORCING AGENCY SHALL BE PLACED IN THE BUILDING AT THE TIME OF FINAL INSPECTION. CGBC 5.410.4.5

MECHANICAL EQUIPMENT AND DUCT PROTECTION:

TO REDUCE THE AMOUNT OF DUST AND DEBRIS COLLECTED IN MECHANICAL EQUIPMENT AND DUCTS, ALL DUCT OPENINGS AND OTHER RELATED AIR DISTRIBUTION EQUIPMENT COMPONENT OPENINGS SHALL BE COVERED FROM THE TIME OF DELIVERY AT THE JOBSITE THROUGH THE CONSTRUCTION UNTIL FINAL START UP WITH TAPE, PLASTIC, SHEET METAL, OR OTHER ACCEPTABLE METHODS. CGBC 5.504.3

VENTILATION FILTRATION:

OUTSIDE AND RETURN AIR SHALL PASS THROUGH FILTRATION MEDIA HAVING A RATING OF MERV 8 OR BETTER, SEE PLAN SHEET TAC-A, MECHANICAL EQUIPMENT SCHEDULES. PLEASE NOTE THAT THIS APPLIES IF THE HVAC IS OPERATIONAL DURING CONSTRUCTION. CGBC 5.504.5.3

OUTDOOR AIR QUALITY:

HVAC, REFRIGERATION, AND FIRE-SUPPRESSION EQUIPMENT SHALL NOT CONTAIN CFC'S OR HALON. CGBC 5.508

MECHANICAL GENERAL NOTES

1. ALL DRAWINGS ARE CONSIDERED TO BE PART OF THE CONTRACT DOCUMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO ANY CONSTRUCTION, INCLUDING STRUCTURAL, PLUMBING, AIR CONDITIONING AND ELECTRICAL. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENT SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE, AND AT NO EXPENSE TO THE OWNER.
2. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
3. DO NOT SCALE DRAWINGS. ALL DIMENSIONS AND JOB SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOB SITE PRIOR TO BID SUBMITTAL, START OF CONSTRUCTION AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.
4. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, TRANSPORTATION AND SERVICES NECESSARY FOR COMPLETION OF THE WORK AND PROVIDE A FULLY OPERATIONAL SYSTEM. ALL MATERIALS AND WORK SHALL COMPLY WITH APPLICABLE CODES AND GOVERNING REGULATIONS AND MEET THE APPROVAL OF THE CITY AND STATE FIRE MARSHALL.
5. CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED AS A RESULT OF DEMOLITION AND/OR NEW WORK.
6. VERIFY FINAL LOCATION OF THERMOSTATS WITH ARCHITECT AND/OR TENANT CONSTRUCTION COORDINATOR PRIOR TO ANY INSTALLATION WORK.
7. CONTRACTOR SHALL PROVIDE RECORD/AS BUILT DOCUMENTS TO CONSTRUCTION COORDINATOR, ARCHITECT AND ENGINEER AT COMPLETION OF CONSTRUCTION.
8. ROOM THERMOSTATS SHALL BE CAPABLE OF BEING SET TO MAINTAIN SPACE TEMPERATURE SET POINTS FOR 55° F TO 85° F AND SHALL BE CAPABLE OF OPERATING THE HEATING AND COOLING IN SEQUENCE. THERMOSTATS SHALL BE ADJUSTABLE TO PROVIDE A TEMPERATURE RANGE OF UP TO 5° F BETWEEN FULL HEATING AND FULL COOLING BEING SUPPLIED. TEMPERATURE CONTROL SYSTEM SHALL OPERATE IN ACCORDANCE WITH THE BASE BUILDING SEQUENCE OF OPERATION.
9. MECHANICAL SYSTEMS SHALL COMPLY WITH REQUIREMENTS OF 2016 CFC SECTION 606.
10. THE CONTRACTOR SHALL COORDINATE ALL CEILING ACCESS PANELS FOR SERVICING MECHANICAL EQUIPMENT/DEVICES WITH THE ARCHITECT AND INTERIOR DESIGNER AS APPLICABLE.
11. ALL CONTROL WIRING ROUTED IN CEILING PLENUM SHALL BE CLEARLY IDENTIFIED & SECURED TO DUCTWORK OR TIGHT TO STRUCTURE TO PREVENT DAMAGE DURING FUTURE TENTANT IMPROVEMENT PROJECTS.
12. ALL HVAC SYSTEMS INCLUDING HYDRONIC SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH AN APPROVED METHOD PER THE CMC SECTION 317.1, CALGREEN AND THE ENERGY EFFICIENCY STANDARDS.
13. THROUGH-PENETRATIONS AND MEMBRANE PENETRATIONS SHALL BE PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM OR MEMBRANE PENETRATION FIRESTOP SYSTEM INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E 814 OR UL 1479, WITH MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER OR AS OTHERWISE PERMITTED BY CBC, SECTION 714. LISTED THROUGH-PENETRATION FIRESTOP SYSTEMS AND MEMBRANE PENETRATIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE INSTALLATION FOR DETAILS LISTED SYSTEMS. LISTED THROUGH-PENETRATION FIRESTOP SYSTEMS, MEMBRANE PENETRATION PROTECTION AND OTHER PERMITTED MEANS AND METHODS OF PENETRATION PROTECTION SHALL BE SUBMITTED FOR OSHPD FDD REVIEW AND APPROVAL PRIOR TO INSTALLATION.
14. INSTALL DIELECTRIC INSULATION WHERE COPPER PIPES CONNECT TO FERROUS PIPES, COMPONENTS AND EQUIPMENT.

APPLICABLE CODES

2016 CALIFORNIA BUILDING CODE
2016 CALIFORNIA MECHANICAL CODE
2016 CALIFORNIA PLUMBING CODE
2016 CALIFORNIA ELECTRICAL CODE
2016 CALIFORNIA FIRE CODE
2016 CALIFORNIA ENERGY STANDARDS
2016 CAL GREEN CODE
ALL OTHER APPLICABLE LOCAL AND STATE LAWS AND REGULATIONS

GENERAL NOTES, LEGEND & SYMBOLS | 2

238126 SPLIT HEAT PUMP

TAG	#	MANUFACTURER	MODEL NUMBER	SERVICE	AMBIENT TEMPERATURE DB (°F)	COOLING		HEATING				ELECTRICAL CONNECTION							SFC TAG	DETAIL REFERENCE	CONTROL DIAGRAM	OPERATING WEIGHT (LBS)	REMARKS
						TOTAL CAPACITY (BTU/HR)	SEER/EER	OUTPUT CAPACITY (BTU/HR)	INTEGRATED HEATING CAPACITY @ 47°F OA (BTU/HR)	OUTPUT CAPACITY @ 17°F (BTU/HR)	HSPF	MCA (A)	MOCP (A)	VOLTAGE (V)	PHASE	HERTZ (HZ)	SCCR (KA)	EMERGENCY POWER (YES/NO)					
SHP	1	LG	LSU180HSV5	KIOSK	104	16710	21.5/12.58	17600	21600	13080	10.2	13	20	208-230	1	60	-	NO	SFC-1	1/M501	4/M501	120	

238126 SPLIT SYSTEM FAN COIL

TAG	#	MANUFACTURER	MODEL NUMBER	SERVICE	MIN OA (CFM)	SUPPLY FAN		COOLING COIL		ELECTRICAL CONNECTION					CONDENSATE CONNECTION		SHP TAG	DETAIL REFERENCE	CONTROL DIAGRAM	OPERATING WEIGHT (LBS)	REMARKS
						AIR FLOW (CFM)	EXTERNAL STATIC PRESSURE (IN WG)	TOTAL CAPACITY (BTU/HR)	SENSIBLE CAPACITY (BTU/HR)	MOTOR (HP)	VOLTAGE (V)	PHASE	HERTZ (HZ)	EMERGENCY POWER (YES/NO)	QTY	SIZE (IN)					
SFC	1	LG	LSN180HSV5	KIOSK	45	700	-	16710	13470	POWERED FROM CORRESPONDING OUTDOOR UNIT					1	5/8"	SHP-1	1/M501	4/M501	30	FURNISH WITH WIRED THERMOSTAT AND CONDENSATE DRAIN PUMP (ASPEN MINI AQUA, 1.6 GPH @ 33 FEET HEAD, POWERED FROM UNIT)

SCHEDULES | 1

UNIVERSITY OF CALIFORNIA RIVERSIDE

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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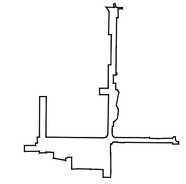
Irvine, California 92618
949.751.5800 www.tk1sc.com

CONSULTANT Project Leader - Jonathan Lomibao
Mechanical Lead - Jeff Halliwell
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER ROGER CARTER No. M30980 Exp. 06-30-19 MECHANICAL STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL



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KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD SET	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES
DRAWN BY --
CHECKED BY --
SCALE NONE
DATE
PROJECT NO. GRUEN # 8345

LEGEND,SCHEDULES & NOTES
SHEET TITLE

M001
SHEET NO.

STATE OF CALIFORNIA
MECHANICAL SYSTEMS
CEC-NRCC-MCH-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-01-E
Mechanical Systems	Page of
Project Name: UCR Mobility Hub	Date Prepared: 10/16/2018

A. MECHANICAL COMPLIANCE DOCUMENTS & WORKSHEETS (check box if worksheet is included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, refer to the 2016 Nonresidential Manual
Note: The Enforcement Agency may require all forms to be incorporated onto the building plans.

YES	NO	Comp. Doc./Worksheet #	Title
◉	○	NRCC-MCH-01-E (Part 1 of 3)	Certificate of Compliance, Declaration. Required on plans for all submittals.
◉	○	NRCC-MCH-01-E (Part 2 of 3)	Certificate of Compliance, Required Acceptance Tests (MCH-02-A to 11-A). Required on plans for all submittals.
◉	○	NRCC-MCH-01-E (Part 3 of 3)	Certificate of Compliance, Required Acceptance Tests (MCH-12-A to 18-A). Required on plans where applicable.
◉	○	NRCC-MCH-02-E (Part 1 of 2)	Mechanical Dry Equipment Summary is required for all submittals with Central Air Systems. It is optional on plans.
○	◉	NRCC-MCH-02-E (Part 2 of 2)	Mechanical Wet Equipment Summary is required for all submittals with chilled water, hot water or condenser water systems. It is optional on plans.
○	◉	NRCC-MCH-03-E	Mechanical Ventilation and Reheat is required for all submittals with multiple zone heating and cooling systems. It is optional on plans.
○	◉	NRCC-MCH-07-E (Part 1 of 2)	Power Consumption of Fans. Required on plans where applicable
○	◉	NRCC-MCH-07-E (Part 2 of 2)	Power Consumption of Fans, Declaration. Required on plans where applicable

B. MECHANICAL HVAC ACCEPTANCE FORMS (check box for required compliance documents)

Test Performed By:

Designer:
This compliance document is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for HVAC systems. The designer is required to check the applicable boxes for all acceptance tests that apply and list all equipment that requires an acceptance test. All equipment of the same type that requires a test, list the equipment description and the number of systems.

Installing Contractor:
The contractor who installed the equipment is responsible to either conduct the acceptance test themselves or have a qualified entity run the test for them. If more than one person has responsibility for the acceptance testing, each person shall sign and submit the Certificate of Acceptance applicable to the portion of the construction or installation for which they are responsible.

Enforcement Agency:
Plancheck - The NRCC-MCH-01-E compliance document is not considered a completed document and is not to be accepted by the building department unless the correct boxes are checked.

Test Description		MCH-02-A	MCH-03-A	MCH-04-A	MCH-05-A	MCH-06-A	MCH-07-A	MCH-08-A	MCH-09-A	MCH-10-A	MCH-11-A
Equipment Requiring Testing or Verification	# of Units	Outdoor Air	Single Zone Unitary	Air Distribution Ducts	Economizer Controls	Demand Controlled Ventilation (DCV)	Supply Fan VAV	Valve Leakage Test	Supply Water Temp. Reset	Hydronic System Variable Flow Control	Automatic Demand Shed Control
SFC-1/SHP-1	1	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐

Add Row | Remove Last

STATE OF CALIFORNIA
MECHANICAL SYSTEMS
CEC-NRCC-MCH-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-01-E
Mechanical Systems	Page of
Project Name: UCR Mobility Hub	Date Prepared: 10/16/2018

C. MECHANICAL HVAC ACCEPTANCE FORMS (check box for required compliance documents)

Test Performed By:

Designer:
This compliance document is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for HVAC systems. The designer is required to check the applicable boxes for all acceptance tests that apply and list all equipment that requires an acceptance test. All equipment of the same type that requires a test, list the equipment description and the number of systems.

Installing Contractor:
The contractor who installed the equipment is responsible to either conduct the acceptance test themselves or have a qualified entity run the test for them. If more than one person has responsibility for the acceptance testing, each person shall sign and submit the Certificate of Acceptance applicable to the portion of the construction or installation for which they are responsible.

Enforcement Agency:
Plancheck - The NRCC-MCH-01-E compliance document is not considered a completed document and is not to be accepted by the building department unless the correct boxes are checked.
Inspector - Before occupancy permit is granted all newly installed process systems must be tested to ensure proper operations.

Test Description		MCH-12-A	MCH-13-A	MCH-14-A	MCH-15-A	MCH-16-A	MCH-17-A	MCH-18-A
Equipment Requiring Testing or Verification	# of Units	Fault Detection & Diagnostics for DX Units	Automatic Fault Detection & Diagnostics for Air & Zone	Distributed Energy Storage DX AC Systems	Thermal Energy Storage (TES) Systems	Supply Air Temperature Reset Controls	Condenser Water Reset Controls	ECMS
SFC-1/SHP-1	1	☐	☐	☐	☐	☐	☐	☐

Add Row | Remove Last

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance — January 2016

STATE OF CALIFORNIA
MECHANICAL SYSTEMS
CEC-NRCC-MCH-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-01-E
Mechanical Systems	Page of
Project Name: UCR Mobility Hub	Date Prepared: 10/16/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Company: tk1sc	Signature Date: 10/16/2018
Address: 15231 Laguna Canyon Road, Suite 100	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Irvine, CA 92618	Phone: 949-751-5800

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Roger Carter	Responsible Designer Signature:
Company: tk1sc	Date Signed: 10/16/2018
Address: 15231 Laguna Canyon Road, Suite 100	License: M30980
City/State/Zip: Irvine, CA 92618	Phone: 949-751-5800

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance — January 2016

STATE OF CALIFORNIA
HVAC DRY & WET SYSTEM REQUIREMENTS
CEC-NRCC-MCH-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-02-E
HVAC Dry System Requirements	(Page 1 of 3)
Project Name: UCR Mobility Hub	Date Prepared: 10/16/2018

A. Equipment Tags and System Description[1]- Dry Systems — SFC-1/SHP-1

MANDATORY MEASURES	*T-24 Sections*	*Reference to the Requirements in the Contract Documents[2]*		
Heating Equipment Efficiency[3]	110.1 or 110.2(a)	M001		
Cooling Equipment Efficiency[3]	110.1 or 110.2(a)	M001		
HVAC or Heat Pump Thermostats	110.2(b), 110.2(c)	M001		
Furnace Standby Loss Control	110.2(d)	N/A		
Low Leakage AHUs	110.2(f)	N/A		
Ventilation[4]	120.1(b)	M201		
Demand Control Ventilation[5]	120.1(c)4	N/A		
Occupant Sensor Ventilation Control[6]	120.1(c)5, 120.2(e)3	N/A		
Shutoff and Reset Controls[7]	120.2(e)	N/A		
Outdoor Air and Exhaust Damper Control	120.2(f)	N/A		
Isolation Zones	120.2(g)	N/A		
Automatic Demand Shed Controls	120.2(h)	N/A		
Economizer FDD	120.2(i)	N/A		
Duct Insulation	120.4	N/A		
PRESCRIPTIVE MEASURES				
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	◉ Yes ○ No	○ Yes ○ No	○ Yes ○ No
Supply Fan Pressure Control	140.4(c)	N/A		
Simultaneous Heat/Cool[8]	140.4(d)	M501		
Economizer	140.4(e)	N/A		
Heat and Cool Air Supply Reset	140.4(f)	N/A		
Electric Resistance Heating[9]	140.4(g)	N/A		
Duct Leakage Sealing and Testing.[10]	140.4(l)	N/A		

Notes:

1. *Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together.*
2. *Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system.*
3. *The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq.*
4. *Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central unit schedules and sequences of operation. If one or more spaces is naturally ventilated identify where this is documented in the plans and specifications. Multiple zone central air systems must also provide a MCH-03-E compliance document.*
5. *If one or more spaces has demand controlled ventilation identify where it is specified including the sensor specifications and the sequence of operation.*
6. *If one or more space has occupant sensor ventilation control identify where it is specified including the sensor specifications and the sequence of operation*
7. *If the system is DDC identify the sequences for the system start/stop, optimal start, setback (if required) and setup (if required). For all systems identify the specification for the thermostats and time clocks (if applicable).*
8. *Identify where the heating, cooling and deadband airflows are scheduled for this system. Include a reference to the specification of the zone controls. Provide a MCH-03-E compliance document.*
9. *Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.*
10. *If duct leakage sealing and testing is required, a MCH-04-A compliance document must be submitted.*

CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance — January 2016

STATE OF CALIFORNIA
HVAC SYSTEM REQUIREMENTS
CEC-NRCC-MCH-02-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-MCH-02-E
HVAC Wet System Requirements	(Page 3 of 3)
Project Name: UCR Mobility Hub	Date Prepared: 10/16/2018

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Documentation Author Signature:
Company: tk1sc	Signature Date: 10/16/2018
Address: 15231 Laguna Canyon Road, Suite 100	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Irvine, CA 92618	Phone: 949-751-5800

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Responsible Designer Name: Roger Carter	Responsible Designer Signature:
Company: tk1sc	Date Signed: 10/16/2018
Address: 15231 Laguna Canyon Road, Suite 100	License: M30980
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CA Building Energy Efficiency Standards - 2016 Nonresidential Compliance — January 2016

UNIVERSITY OF CALIFORNIA RIVERSIDE

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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CONSULTANT
Project Leader - Jonathan Lomibao
Mechanical Lead - Jeff Halliwell
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER — ROGER CARTER — No. M30980 — Exp. 06-30-19 — MECHANICAL — STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL

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KEY PLAN

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	01/10/19	100% CD SET	
	11/27/18	90% CD SET	
	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES

DRAWN BY --

CHECKED BY --

SCALE NONE

DATE

PROJECT NO. GRUEN # 8345

TITLE 24 COMPLIANCE FORMS

SHEET TITLE

M002

SHEET NO.

STATE OF CALIFORNIA
ENVELOPE COMPONENT APPROACH
CEC-NRCC-ENV-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ENV-01-E
Envelope Component Approach	Page of
Project Name: UCR Mobility Hub	Date Prepared: 11/19/18

A. GENERAL INFORMATION

01	Project Location:	University of California Riverside	06	Compliance Method:	☑ Component ☐ Unconditioned (file Affidavit)
02	CA City and Zip Code:	Riverside, CA	07	Building Front Orientation (deg or cardinal):	North
03	Climate Zone:	10	08	Phase of Construction:	☑ New Construction ☐ Addition ☐ Alteration
04	Total Conditioned Floor Area:	170	09	Building Occupancy:	☑ Nonresidential ☐ High-Rise Residential ☐ Hotel/Motel Guest Room
05	Building Type:	☐ Schools (Public School) ☐ Relocatable Public School Bldg. ☑ Conditioned Spaces ☐ Unconditioned Spaces ☐ Skylight Area for Large Enclosed Space > 5000 ft² (If checked include the NRCC-ENV-04-E with submittal)			

B. ENVELOPE DETAILS - FRAMED

01 Tag/ID	02 Assembly Type	03 Frame Material	04 Frame Depth	05 Frame Spacing	06 Cavity R-value	07 Continuous Insulation R-value	08 Appendix JA4 Reference Table	08 Appendix JA4 Reference Cell	09 Proposed U-Factor	10 Required U-Factor from Tables 140.3-B, C, or D	11 Field Inspection Comments
N/A	Wall	Metal	6	16	19	12	4.3.3	I6	0.057	0.062	

Add Row | Remove Last

C. ENVELOPE DETAILS - NON-FRAMED

01 Tag/ID	02 Assembly Type	03 Assembly Materials	04 Thickness (inches)	05 Interior or Core Insulation R-Value	06 Continuous Insulation R-Value	07 Appendix JA4 Reference Table	07 Appendix JA4 Reference Cell	08 Proposed U-Factor	09 Required U-Factor from Tables 140.3-B, C, or D	10 Field Inspection Comments
N/A	Roof	Span Deck	N/A	N/A	30	4.2.6	J5	0.031	0.034	

Add Row | Remove Last

STATE OF CALIFORNIA
ENVELOPE COMPONENT APPROACH
CEC-NRCC-ENV-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCC-ENV-01-E
Envelope Component Approach Page of
Project Name: UCR Mobility Hub Date Prepared: 11/19/18

D. ENVELOPE DETAILS - MASS

01 Tag/ID	02 Mass Type	03 Density (lb/ft³)	04 Mass Thickness (inches)	05 Furring Strip Thickness (inches)	06 Interior Insulation R-Value	07 Exterior Insulation R-Value	08 Appendix JA4 Reference Table	08 Appendix JA4 Reference Cell	09 Proposed U-Factor	10 Required U-Factor from Tables 140.3-B, C, or D	11 Field Inspection Comments
N/A											

Add Row | Remove Last

E. ROOFING PRODUCTS (COOL ROOF)

01 Mass Roof 25 lb/ft or Greater	02 Roof Pitch	03 CRRC Product ID Number	04 Product Type	05 Proposed Aged Solar Reflectance[1]	06 Proposed Thermal Emittance	07 Proposed SRI[2] (Optional)	08 Minimum Required Aged Solar Reflectance	09 Minimum Required Thermal Emittance	10 Minimum Required SRI (Optional)	11 Comments
☐				☐						N/A

Add Row | Remove Last

STATE OF CALIFORNIA
ENVELOPE COMPONENT APPROACH
CEC-NRCC-ENV-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCC-ENV-01-E
Envelope Component Approach Page of
Project Name: UCR Mobility Hub Date Prepared: 11/19/18

- An aged solar reflectance less than 0.63 is allowed provided the maximum roof/ceiling U-factor in TABLE 140.3 is not exceeded
- High-rise residential buildings and Hotels and Motels with low-sloped roofs in Climate Zones 1 through 8, 12, and 16 are exempted from aged Solar Reflectance and thermal emittance requirements
- High-rise residential and Hotels/Motels with steep-sloped roofs in Climate Zones 1 and 16 are exempt from aged Solar Reflectance and thermal emittance requirements
- The roof area covered by building integrated photovoltaic panels and building integrated solar thermal panels are exempt from aged Solar Reflectance and thermal emittance requirements
- To apply Liquid Field Applied Coatings, the coating must be applied across the entire roof surface and meet the dry mil thickness or coverage recommended by the coatings manufacturer and meet minimum performance requirements listed in §110.8(i)4. Select the applicable coating:
☐ Aluminum-Pigmented Asphalt Roof Coating ☐ Cement-Based Roof Coating ☐ Other N/A

NOTES:
1. Check the box if the aged Solar Reflectance was not available in the Cool Roof Council's Rated Product Directory, then use the equation in Section 110.8(i)2: $p_{aged} = 0.2 + B(p_{initial} - 0.2)$ to obtain a calculated aged solar reflectance value. Where, $p_{initial}$ is the Initial Solar Reflectance found in the directory and B is either 0.65 for Field applied coatings or 0.70 for all other roofing products other than Field-Applied Coating.
2. Calculate the SRI Value by using the SRI-Worksheet and enter the resulting value in the SRI column above and attach a copy of the SRI-Worksheet (NRCC-ENV-03-E) to this compliance document.

STATE OF CALIFORNIA
ENVELOPE COMPONENT APPROACH
CEC-NRCC-ENV-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCC-ENV-01-E
Envelope Component Approach Page of
Project Name: UCR Mobility Hub Date Prepared: 11/19/18

F. AIR BARRIER

01 Name	02 Air Barrier Material Type	03 Air Barrier Assembly Type	04 Whole Building Air Leakage Testing	05 Comments
N/A				

Add Row | Remove Last

G. FENESTRATION PROPOSED AREAS AND EFFICIENCIES

01 Tag/ID	02 Fenestration Type	03 Surface Area	04 Orientation	05 # of Panes	06 Proposed Max U-Factor	07 Proposed Max (R)SHGC	08 Proposed Min VT	09 Proposed Label	10 Overhang	11 Condition Status	12 Comments
	Fixed Window Glazing	37	North	2	0.36	0.25	0.42	NFRC	N/A	New	
	Operable Window Glazing	14	North	2	0.46	0.22	0.32	NFRC	N/A	New	
	Fixed Window Glazing	67	South	2	0.36	0.25	0.42	NFRC	N/A	New	
	Operable Window Glazing	14	South	2	0.46	0.22	0.32	NFRC	N/A	New	
	Fixed Window Glazing	35	East	2	0.36	0.25	0.42	NFRC	N/A	New	
	Door Glazing	16	West	2	0.45	0.23	0.17	NFRC	N/A	New	

Add Row | Remove Last

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MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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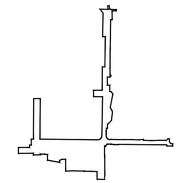
Irvine, California 92618
949.751.5800 www.tk1sc.com

CONSULTANT Project Leader - Jonathan Lomibao
Mechanical Lead - Jeff Halliwell
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER — ROGER CARTER — No. M30980 — Exp. 06-30-19 — MECHANICAL — STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL



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	05/01/18	100% DD SET	

BASE FILE NAMES
DRAWN BY --
CHECKED BY --
SCALE NONE
DATE
PROJECT NO. GRUEN # 8345

TITLE 24 COMPLIANCE FORMS
SHEET TITLE

M003
SHEET NO.

STATE OF CALIFORNIA
FENESTRATION WORKSHEET
CEC-NRCC-ENV-02-E (Revised 09/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ENV-02-E
Fenestration Worksheet	Page of
Project Name: UCR Mobility Hub	Date Prepared: 11/19/18

A. WINDOWS DETAILS WORKSHEET - §140.3(a)6B, C and D

NOTE: Newly installed fenestration shall have a certified NFRC Label Certificate or use the CEC default tables found in Table 110.6-A and Table 110.6-B. Site-built fenestration less than 1,000 ft², see Reference Nonresidential Appendix NA6.

Prescriptively, skylights shall have a glazing material or diffuser that has a measured haze value greater than 90%, determined according to ASTM D1003, or other test method approved by the Energy Commission.

01	02	03	04	05	06	07	08	09	10	11	12	13	14
			Fenestration						Overhang				
			U-Factor		SHGC		VT		Dimensions			Calculated	
Tag/ID	Window Type (e.g. Window-1)	Surface Area	Proposed	Allowed	Proposed	Allowed	Proposed	Allowed	H	V	H/V	(R)SHGC Proposed	Max (R)SHGC Allowed
	Fixed Window Glazing	555	0.36	0.36	0.25	0.25	0.42	0.42			NaN		
	Operable Window Glazing	112	0.46	0.46	0.22	0.22	0.32	0.32			NaN		
	Door Glazing	64	0.45	0.45	0.23	0.23	0.17	0.17			NaN		
											NaN		
											NaN		
											NaN		

Add Row | Remove Last

B. WEST WINDOW AREA CALCULATION - See §140.3(a)5A

01. **Gross West** Exterior Wall Area	90	ft² · 0.40 =	36	ft²	40% of **Gross West Facing** Exterior Wall Area; or
02. **West** Display Linear Perimeter	9	FT · 6 ft =	54	ft²	**West** Display Perimeter Area
03. Enter Larger of 01 or 02			54	ft²	Maximum Standard **West** Area
04. Enter Proposed **West** Window Area			16	ft²	Proposed **West** Window Area

*Note: If the PROPOSED **WEST** WINDOW AREA is greater than the MAXIMUM STANDARD **WEST** AREA then the envelope component approach may not be used.*

C. WINDOW AREA CALCULATION (for all other orientations other than West) See §140.3(a)5A

01. Gross Exterior Wall Area	440	ft² · 0.40 =	176	ft²	40% of Gross Exterior Wall Area or
02. Linear Display Perimeter	46	FT · 6 ft =	276	ft²	Display Perimeter Area
03. Enter The Larger of 01 or 02			276	ft²	Maximum Standard Area
04. Enter Proposed Window Area			167	ft²	Proposed Window Area

Note: If the PROPOSED WINDOW AREA is greater than the MAXIMUM STANDARD AREA then the envelope component approach may not be used.

STATE OF CALIFORNIA
FENESTRATION WORKSHEET
CEC-NRCC-ENV-02-E (Revised 09/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ENV-02-E
Fenestration Worksheet	Page of
Project Name: UCR Mobility Hub	Date Prepared: 11/19/18

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: tk1sc	Documentation Author Signature:
Company: tk1sc	Signature Date: 11/19/18
Address: 15231 Laguna Canyon Road, Suite 100	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Irvine, CA 92618	Phone: 949-751-5800

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Moore Ruble Yudell Architects & Planners	Responsible Designer Signature:
Company: Moore Ruble Yudell Architects & Planners	Date Signed:
Address: 933 Pico Boulevard	License:
City/State/Zip: Santa Monica, CA 90405	Phone: 310-450-1400

STATE OF CALIFORNIA
FENESTRATION WORKSHEET
CEC-NRCC-ENV-02-E (Revised 09/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ENV-02-E
Fenestration Worksheet	Page of
Project Name: UCR Mobility Hub	Date Prepared: 11/19/18

D. SKYLIGHT AREA CALCULATION - See §140.3(a)6A

	ACTUAL GROSS ROOF AREA		STANDARD ALLOWED SKYLIGHT AREA	
01. IF Atrium/Skylight Height is ≤ 55 ft; **or**		ft² · 0.05 =	0	ft²
02. IF Atrium/Skylight Height is > 55 ft		ft² · 0.10 =	0	ft²
03. Proposed Skylight Area (from plans)		ft²		
04. Skylight SSR%[1,2] = Proposed Skylight Area Divided by Actual Gross Roof Area =	#DIV/0! %			
05. Haze material value greater than 90% according to ASTM D1003, or other approved method by the Energy Commission			Yes ◉	No ○

1. If the SKYLIGHT SSR % is less than or equal to 5% then choose the appropriate column in Table 140.3-B and C and row in Table 140.3-D.
2. If the SKYLIGHT SSR % is greater than 5% then the Envelope Component Approach may not be used.

E. RELOCATABLE PUBLIC SCHOOL BUILDINGS - See §140.3(a)8

Option 1	
☐ For Specific Climate Zone, use Table 140.3-B - Prescriptive Envelope Criteria.	☐ Specific Climate Zone Metal Identification Label – Place two labels on each relocatable school building and indicate on the building plans. **Indicate location from the building plans:**
Option 2	
☐ For Any (All) Climate Zone, use Table 140.3-D - Prescriptive Envelope Criteria.	☐ Any (All) Climate Zone Metal Identification Label - Place two labels on each relocatable school building and indicate on the building plans. **Indicate location from the building plans:**

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL — ENV-MM

Project Name: *UCR Mobility Hub* — Date: *11/19/18*

DESCRIPTION

Building Envelope Measures:

§110.8(a):	Installed insulating material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.
§110.8(c):	All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.
§110.8(g):	Heated slab floors shall be insulated according to the requirements in Table 110.8-A.
§110.7(a):	All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.
§110.6(a):	Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft.² of window area, 0.3 cfm/ft.² of door area for residential doors, 0.3 cfm/ft.² of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft.² for nonresidential double doors (swinging).
§110.6(a):	Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.
§110.6(a) :	Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.
§110.6(b):	Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).
§120.7(a):	The opaque portions of the roof/ceiling that separates conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: **Metal Building-** The weighted average U-factor of the roof assembly shall not exceed 0.098. **Wood Framed and Others-** The weighted average U-factor of the roof assembly shall not exceed 0.075.
§120.7(b):	The opaque portions of walls that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-factor as follows: **Metal Building-** The weighted average U-factor of the wall assembly shall not exceed 0.113. **Metal Framed-** The weighted average U-factor of the wall assembly shall not exceed 0.151. **Light Mass Walls-** A 6 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.440. **Heavy Mass Walls-** An 8 inch or greater Hollow Core Concrete Masonry Unit shall have a U-factor not to exceed 0.690. **Wood Framed and Others-** The weighted average U-factor of the wall assembly shall not exceed 0.110. **Spandrel Panels and Opaque Curtain Wall-** The weighted average U-factor of the spandrel panels and opaque curtain wall assembly shall not exceed 0.280. **Demising Walls-**. The opaque portions of framed demising walls shall meet the requirements of Item A or B below: A. Wood framed walls shall be insulated to meet a U-factor not greater than 0.099. B. Metal Framed walls shall be insulated to meet a U-factor not greater than 0.151.
§120.7(c):	The opaque portions of floors and soffits that separate conditioned spaces from unconditioned spaces or ambient air shall meet the applicable U-Factor requirements as follows: **Raised Mass Floors-** Shall have a minimum of 3 inches of lightweight concrete over a metal deck or the weighted average U-factor of the floor assembly shall not exceed 0.269. **Other Floors-**The weighted average U-factor of the floor assembly shall not exceed 0.071.

STATE OF CALIFORNIA
ENVELOPE COMPONENT APPROACH
CEC-NRCC-ENV-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ENV-01-E
Envelope Component Approach	Page of
Project Name: UCR Mobility Hub	Date Prepared: 11/19/18

H. ENVELOPE MANDATORY MEASURES

Indicate location on building plans of Mandatory Envelope Measures Note Block: M004

INSTRUCTIONS TO APPLICANT ENVELOPE COMPLIANCE & WORKSHEETS (check box if worksheet are included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, please refer to the Energy Commission website.

☑	NRCC-ENV-01-E	Certificate of Compliance. Required on plans for all submittals.
☐	NRCC-ENV-04-E	Use when minimum skylight requirements for large enclosed spaces are required in climate zones 2 through 15. Optional on plans.

STATE OF CALIFORNIA
ENVELOPE COMPONENT APPROACH
CEC-NRCC-ENV-01-E (Revised 01/16) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-ENV-01-E
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Company: tk1sc	Signature Date: 11/19/18
Address: 15231 Laguna Canyon Road, Suite 100	CEA/ HERS Certification Identification (if applicable):
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Address: 933 Pico Boulevard	License:
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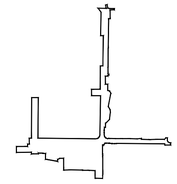

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CHECKED BY --

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DATE

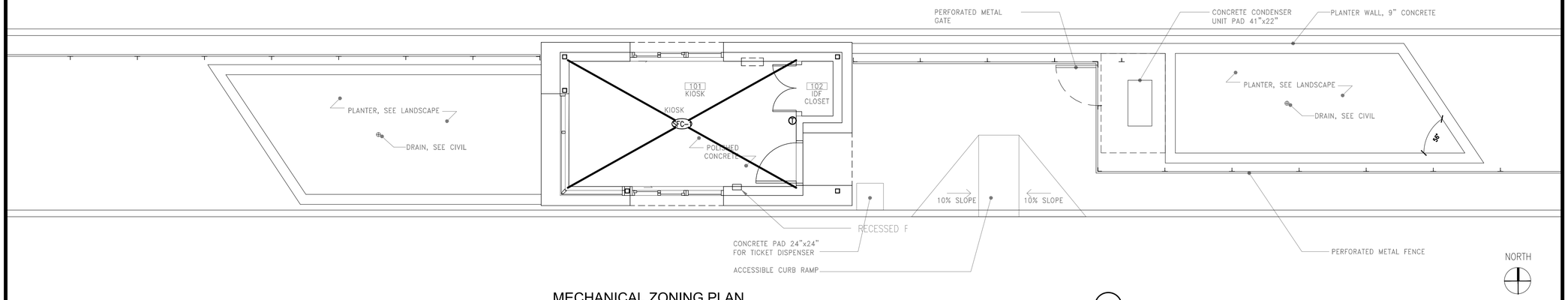
PROJECT NO. GRUEN # 8345

TITLE 24 COMPLIANCE FORMS

SHEET TITLE

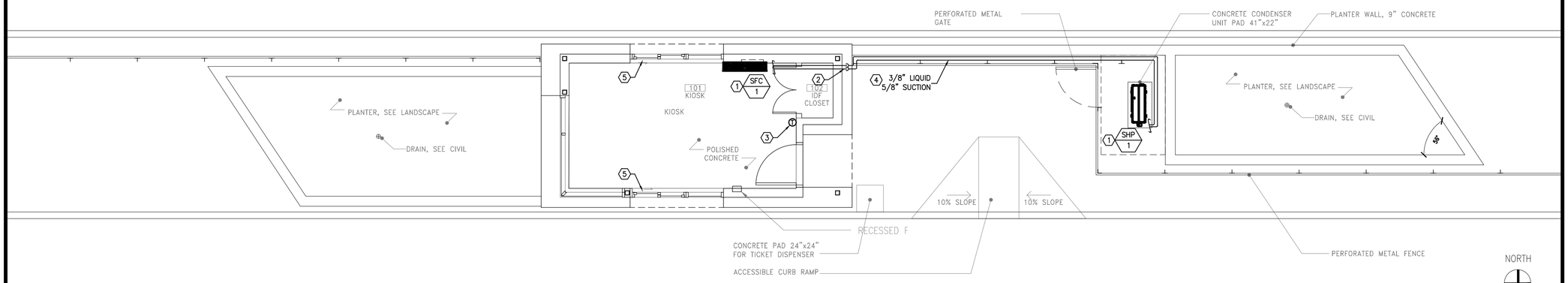
M004

SHEET NO.



MECHANICAL ZONING PLAN

SCALE: 1/4" = 1'-0" (2)



MECHANICAL FLOOR PLAN

SCALE: 1/4" = 1'-0" (1)

GENERAL NOTES:

1. COORDINATE PLACEMENT OF THE WALL MOUNTED FAN COIL UNIT WITH THE MOST CURRENT REVISION OF THE ARCHITECTURAL PLANS.

KEYNOTES:

1. WALL MOUNTED SPLIT SYSTEM. SEE DETAIL. — 1/M501
2. REFRIGERANT PIPE THROUGH WALL. SEE DETAIL. — 2/M501
3. WALL MOUNTED THERMOSTAT. SEE DETAIL. — 3/M501
4. REFRIGERANT PIPING BETWEEN PERFORATED FENCE AND WALL. SEE DETAIL. — 5/M501
5. MINIMUM 4 SQUARE FEET OF OPERABLE WINDOW OPENING FOR NATURAL VENTILATION PER CEC 120.1(b)1.

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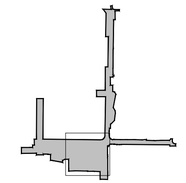

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CHECKED BY	–
SCALE	1/4"=1'-0"
DATE	
PROJECT NO.	GRUEN # 8345

MECHANICAL FLOOR PLAN

SHEET TITLE

M201

SHEET NO.

KEYNOTES:

(1) ROOM TEMPERATURE SENSOR FURNISHED BY EQUIPMENT MANUFACTURER, INSTALLED BY BAS CONTRACTOR.

SPLIT SYSTEM (HEAT PUMP):

THE FACTORY THERMOSTAT SHALL CONTROL THE SUPPLY FAN, COOLING & HEATING STAGES.

RUN CONDITIONS – SCHEDULED:

THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:
- OCCUPIED MODE: THE UNIT SHALL MAINTAIN A 75'F COOLING SETPOINT, A 70'F HEATING SETPOINT AND A DEADBAND OF 5'F BETWEEN COOLING AND HEATING. OCCUPIED MODE SHALL BE BETWEEN 6:00AM AND 6:00PM (ADJ.).
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN AN 85'F COOLING SETPOINT AND A 55'F HEATING SETPOINT.

SUPPLY FAN:

THE SUPPLY FAN SHALL RUN ANYTIME THE UNIT IS COMMANDED TO RUN, UNLESS SHUTDOWN ON SAFETIES. TO PREVENT SHORT CYCLING, THE SUPPLY FAN SHALL BE SUBJECT TO THE FACTORY MINIMUM RUNTIME SAFETIES.

COOLING STAGES:

THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE COOLING TO MAINTAIN ITS ZONE COOLING SETPOINT. TO PREVENT SHORT CYCLING, THE COMPRESSOR SHALL BE SUBJECT TO THE FACTORY PRESET MINIMUM RUNTIMES.

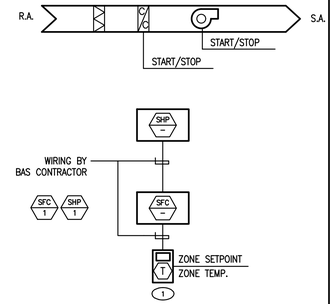
THE COOLING SHALL BE ENABLED WHENEVER:
- THE ZONE TEMPERATURE IS ABOVE THE COOLING SETPOINT.
- AND THE SUPPLY FAN STATUS IS ON.

HEATING STAGES:

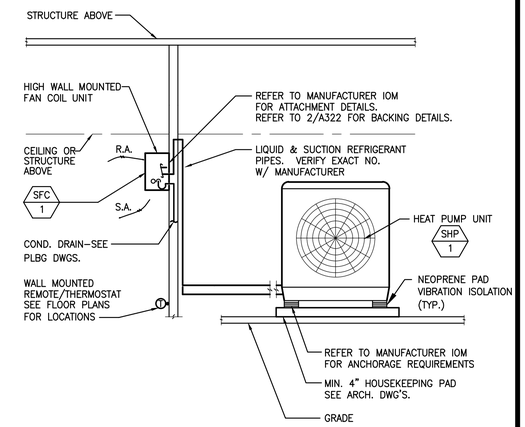
THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND STAGE THE HEATING TO MAINTAIN ITS ZONE HEATING SETPOINT. TO PREVENT SHORT CYCLING, THE HEATING SHALL BE SUBJECT TO THE FACTORY MINIMUM RUNTIME SAFETIES.

THE HEATING SHALL BE ENABLED WHENEVER:

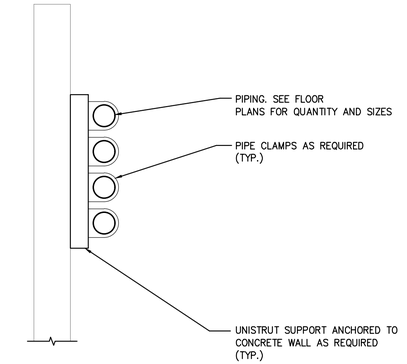
- THE ZONE TEMPERATURE IS BELOW THE HEATING SETPOINT.
- AND THE SUPPLY FAN STATUS IS ON.
- AND THE COOLING IS NOT ACTIVE.



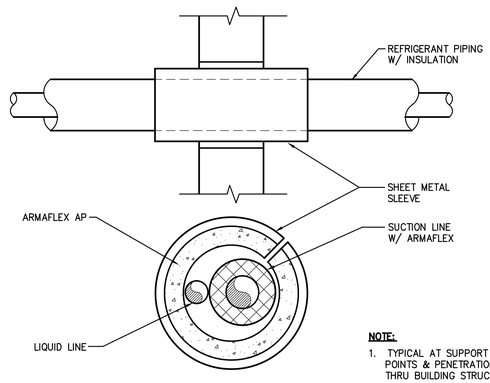
– 7 DUCTLESS SPLIT SYSTEM HEAT PUMP CONTROLS 4



WALL MOUNTED SPLIT SYSTEM 1

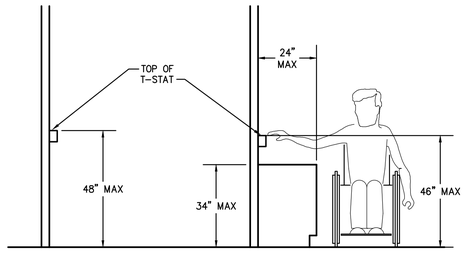


WALL MOUNTED PIPE SUPPORT 5



NOTE:
1. TYPICAL AT SUPPORT POINTS & PENETRATIONS THRU BUILDING STRUCTURE.

REFRIGERANT PIPE THROUGH WALL 2



NOTES:
1. PRIOR TO ROUGH–IN OF THERMOSTATS, CONTRACTOR SHALL PROVIDE DIMENSIONED SHOP DRAWINGS SHOWING ALL WALL DEVICES TO ARCHITECT FOR COORDINATION WITH FURNITURE LAYOUT.
2. ALL CONTROL DEVICES SHALL MATCH IN COLOR.
3. THERMOSTATS ON EXTERIOR WALLS/ COLUMN COVERS SHALL BE PROVIDED WITH INSULATED BACKING TO PREVENT FALSE READINGS.
4. UPON PROJECT COMPLETION, CALIBRATE THERMOSTATS AND ENSURE ACCURACY AND REPEATABILITY.
5. REFER TO ARCHITECTURAL DRAWINGS FOR KNEE CLEARANCES UNDER OBSTRUCTIONS.

– 9 WALL MOUNTED THERMOSTAT 3

MOBILITY HUB
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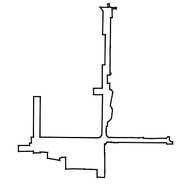

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	10/29/18	50% CD SET	
	05/01/18	100% DD SET	

BASE FILE NAMES	
DRAWN BY	--
CHECKED BY	--
SCALE	NONE
DATE	
PROJECT NO.	GRUEN # 8345

DETAILS

SHEET TITLE

M501

SHEET NO.

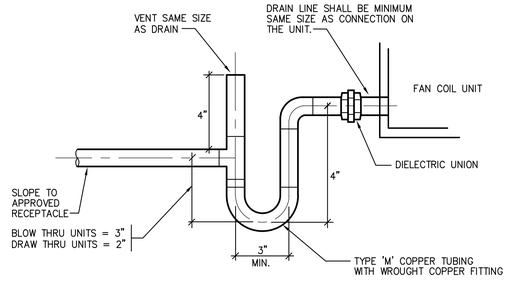
PIPING MATERIALS:

1. SANITARY SEWER, VENT & STORM DRAIN PIPING BELOW GROUND : NO-HUB CAST IRON PIPE & FITTINGS WITH STAINLESS STEEL NO-HUB COUPLINGS. WRAP ALL UNDERGROUND PIPE AS SPECIFIED.
2. SANITARY SEWER, VENT & STORM DRAIN PIPING ABOVE GROUND : NO-HUB CAST IRON PIPE & FITTINGS WITH STAINLESS STEEL NO-HUB COUPLINGS.
3. DOMESTIC WATER BELOW GROUND : TYPE 'K' COPPER WITH BRAZED JOINTS .
4. DOMESTIC WATER ABOVE GROUND : TYPE "L" COPPER TUBING WITH SOLDERED JOINTS. DOMESTIC WATER PIPING SHALL UTILIZE LEAD-FREE MATERIAL AND SOLDER.
5. CONDENSATE AND INDIRECT DRAIN PIPING : TYPE "M" COPPER PIPE & FITTINGS WITH SOLDERED JOINTS. CONDENSATE DRAIN PIPING ABOVE CEILINGS SHALL BE INSULATED WITH "AP ARMAFLEX" CLOSED-CELL ELASTOMERIC PLENUM RATED FOAM INSULATION. FLAME-SPREAD INDEX OF 25 OR LESS & SMOKE-DEVELOPED INDEX OF 50 OR LESS. ½" THICK FOR PIPING UP TO 1", AND 1" THICK FOR PIPING 1¼" AND LARGER.

PLUMBING FIXTURE SCHEDULE

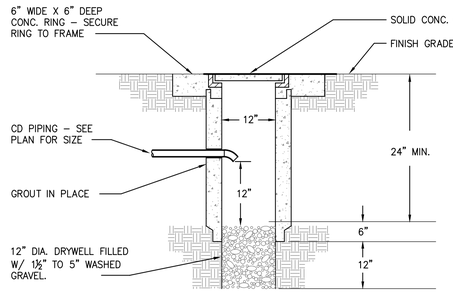
UNIT NO.	DESCRIPTION	CONNECTION SIZES					REMARKS
		TRAP	W	V	CW	HW	
DF-1	DRINKING FOUNTAIN	1½"	2"	2"	½"	-	RECESSED IN WALL BOTTLE FILLING STATION, NON-REFRIGERATED WITH FILTER. LAMINAR FLOW, ANTIMICROBIAL, VISUAL FILTER MONITOR. "HAWS" MODEL 2000SN
HB-1	HOSE BIB	-	-	-	¾"	-	CHROME FINISH WITH NON-REMOVABLE VACUUM BREAKER & LOOSE KEY HANDLE. "WOODFORD" MODEL 24, OR EQUAL.
RD-1	ROOF DRAIN	-	-	-	-	-	EQUAL TO "ZURN" MODEL Z125, 8" DIA. CAST-IRON DRAIN WITH CAST-IRON DOMED STRAINER, SUMP RECEIVER AND UNDERDECK CLAMP.
OD-1	OVERFLOW ROOF DRAIN	-	-	-	-	-	EQUAL TO "ZURN" MODEL Z125-89, 8" DIA. CAST-IRON DRAIN WITH CAST-IRON DOMED STRAINER, 2" HIGH SOLID WATER DAM, SUMP RECEIVER AND UNDERDECK CLAMP.

TONS	DRAIN SIZE
0-20	s"
21-40	1"
41-90	1r"
91-125	1i"
126-250	2"



CONDENSATE DRAIN TRAP 1

NO SCALE



CONDENSATE DRAIN TO DRYWELL 2

NO SCALE

LEGEND

SYMBOL	ABBR.	DESCRIPTION
	S OR W	SOIL OR WASTE ABOVE FLOOR OR GRADE
	S OR W	SOIL OR WASTE BELOW FLOOR OR GRADE
SD	SD	STORM DRAIN ABOVE FLOOR OR GRADE
SD	SD	STORM DRAIN BELOW FLOOR OR GRADE
OD	OD	OVERFLOW DRAIN ABOVE FLOOR OR GRADE
OD	OD	OVERFLOW DRAIN BELOW FLOOR OR GRADE
	V	SANITARY VENT
	CW	COLD WATER
ICW	ICW	INDUSTRIAL COLD WATER
	HW	HOT WATER
IHW	IHW	INDUSTRIAL HOT WATER
	HWR	HOT WATER RETURN
F	F	FIRE MAIN
D	D	INDIRECT DRAIN LINE
CD	CD	CONDENSATE DRAIN
PCD	PCD	PUMPED CONDENSATE DRAIN
SCD	SCD	SECONDARY CONDENSATE DRAIN
MG	MG	MEDIUM PRESSURE FUEL GAS
G	G	FUEL GAS
TP	TP	TRAP PRIMER
		DIRECTION OF FLOW
	P.G.	PRESSURE GAUGE W/PETE COCK
	G.C.	GAS COCK
	P.R.V.	PRESSURE REDUCING VALVE
	L.B.V.	LOCKING BALL VALVE
	G.V.	GATE VALVE
	FCO	FLOOR CLEANOUT
	WCO	WALL CLEANOUT
		DOWN
		RISE
		UNION
%		SLOPE IN DIRECTION OF FLOW
	W.H.A.	WATER HAMMER ARRESTOR
	P.O.C.	POINT OF CONNECTION
	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
	ABV.	ABOVE
	A.F.F.	ABOVE FINISHED FLOOR
	A.P.	ACCESS PANEL
	BEH.	BEHIND
	BEL.	BELOW
	CLG.	CEILING
	CONT.	CONTINUATION
	CO.	CLEAN OUT
(E)	EXIST. (E)	EXISTING
	FDC	FIRE DEPT. CONNECTION
	FIN.	FINISHED
	F.F.E.	FINISHED FLOOR ELEVATION
	FLR.	FLOOR
	FR.	FROM
	G.P.F.	GALLONS PER FLUSH
	GR	GRADE
	HDR	HEADER
	I.E.	INVERT ELEVATION
	O.S.&Y.	OUTSIDE SCREW & YOKE
	PIV	POST INDICATOR VALVE
	VTR	VENT THROUGH ROOF

UNIVERSITY OF CALIFORNIA RIVERSITY LET THERE BE LIGHT

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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ARCHITECTURE PLANNING INTERIORS LANDSCAPE

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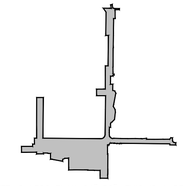
www.gruenassociates.com T 323 937 4270 F 323 937 6001

tk1sc COLLABORATIVE
15231 Laguna Canyon Road, Suite 100
Irvine, California 92618
949.751.5800 www.tk1sc.com

CONSULTANT Project Leader - Jonathan Lomibao
Plumbing Lead - Russell Gault
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER ROGER CARTER No. M32980 EXP 06-30-19 MECHANICAL STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL



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KEY PLAN

NO.	DATE	ISSUED FOR	BY
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		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES

DRAWN BY --

CHECKED BY --

SCALE 1/4"=1'-0"

DATE

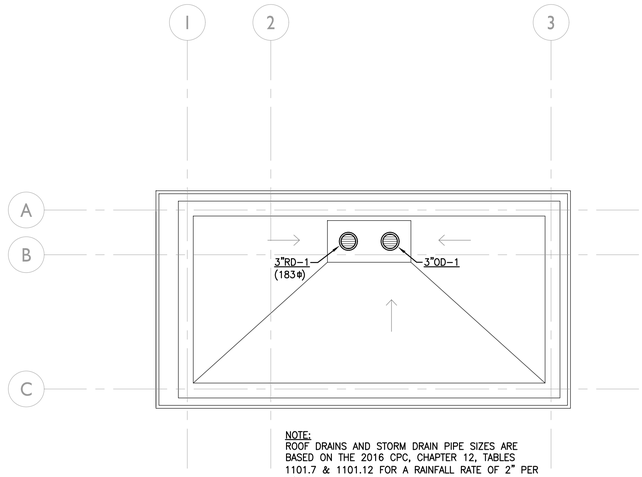
PROJECT NO. GRUEN # 8345

LEGEND,SCHEDULES & NOTES

SHEET TITLE

P001

SHEET NO.

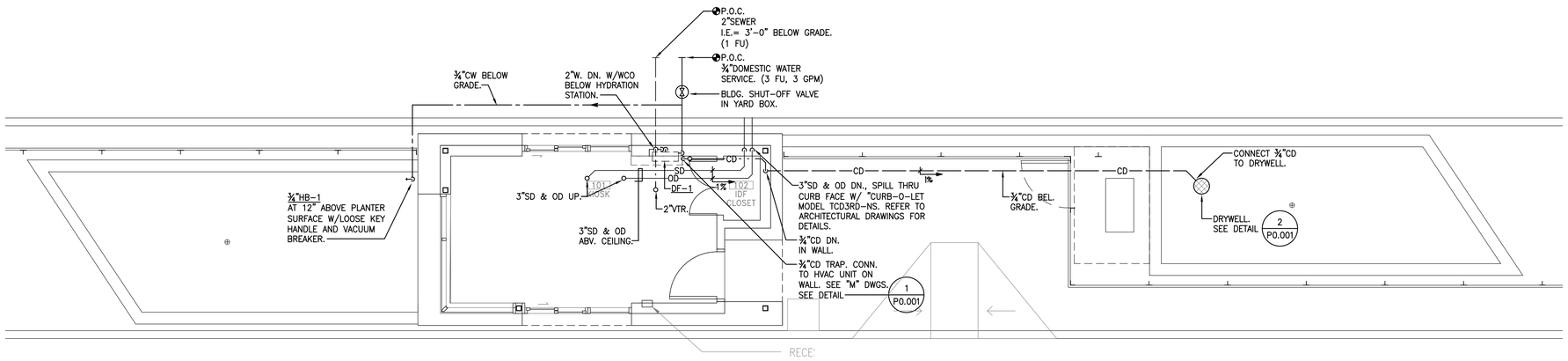


NOTE:
ROOF DRAINS AND STORM DRAIN PIPE SIZES ARE BASED ON THE 2016 CPC, CHAPTER 12, TABLES 1101.7 & 1101.12 FOR A RAINFALL RATE OF 2" PER HOUR.

PLUMBING ROOF PLAN

SCALE: 1/4" = 1'-0"

2



NORTH

PLUMBING FLOOR PLAN

SCALE: 1/4" = 1'-0"

1

MOBILITY HUB
AND CENTRAL CAMPUS
LINKAGES

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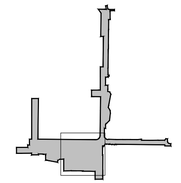
949.751.5800 www.tk1sc.com

CONSULTANT
Project Leader - Jonathan Lomibao
Plumbing Lead - Russell Gault
tk1sc Job #: 2017-0591

REGISTERED PROFESSIONAL ENGINEER
ROGER CARTER
No. M32080
EXP 06-30-19
MECHANICAL
STATE OF CALIFORNIA

ARCHITECT/ENGINEER SEAL



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		05/01/18 100% DD SET	

BASE FILE NAMES

DRAWN BY –

CHECKED BY –

SCALE 1/4"=1'-0"

DATE

PROJECT NO. GRUEN # 8345

PLUMBING
FLOOR PLAN

SHEET TITLE

P101

SHEET NO.

SEE SHEET EG-101
MATCHLINE

SIGN SUMMARY DIAGRAM

IDENTITY

A01 Identity Monument
A02 Dynamic Bus Bay ID
A03 Bike Parking Identity
A04 Drop-off Identity
A05 Kiosk Identity

DIRECTION

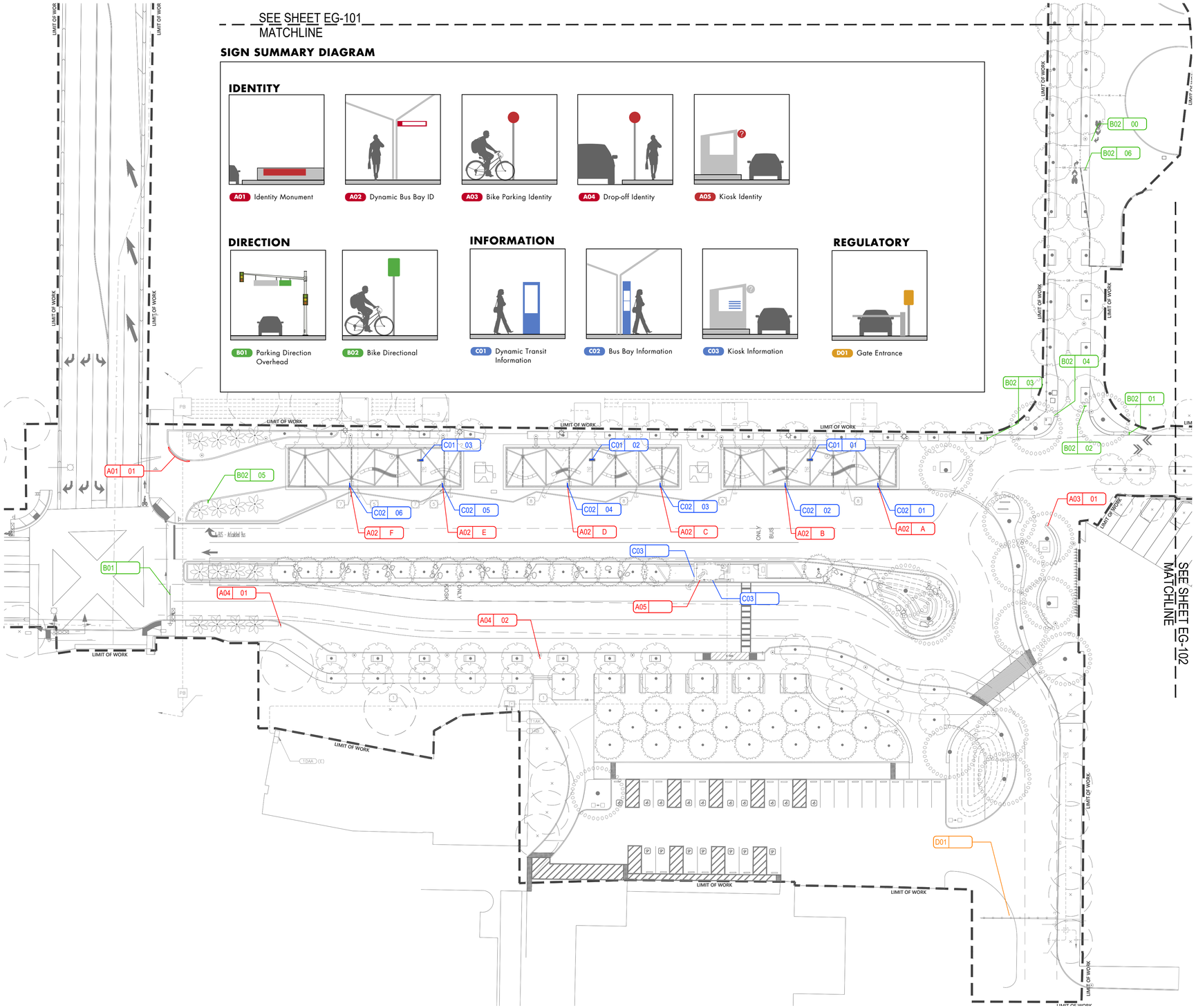
B01 Parking Direction Overhead
B02 Bike Directional

INFORMATION

C01 Dynamic Transit Information
C02 Bus Bay Information
C03 Kiosk Information

REGULATORY

D01 Gate Entrance



SIGN LEGEND

IDENTIFICATION

- A01 - IDENTITY MONUMENT
- A02 - DYNAMIC BUS BAY IDENTITY
- A03 - BIKE PARKING IDENTITY
- A04 - DROP-OFF IDENTITY
- A05 - KIOSK IDENTITY

DIRECTION

- B01 - PARKING DIRECTION OVERHEAD
- B02 - BIKE DIRECTIONAL

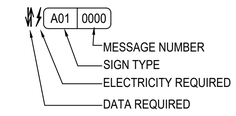
INFORMATION

- C01 - DYNAMIC TRANSIT INFORMATION
- C02 - BUS BAY INFORMATION
- C03 - KIOSK INFORMATION

REGULATION

- D01 - GATE ENTRANCE

DESCRIPTION:



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T 310 822 5223 www.selbertperkins.com

CONSULTANT

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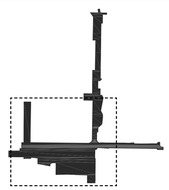

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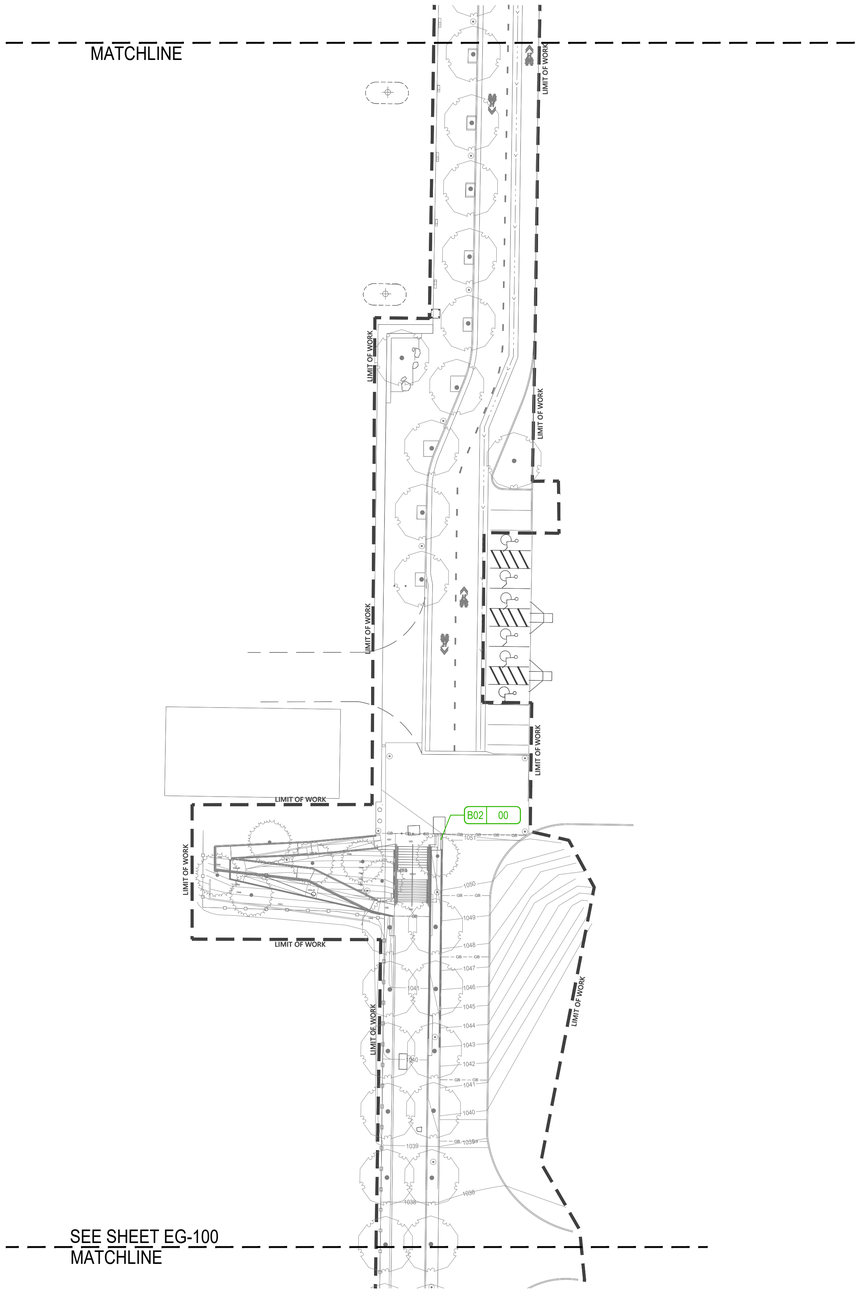
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

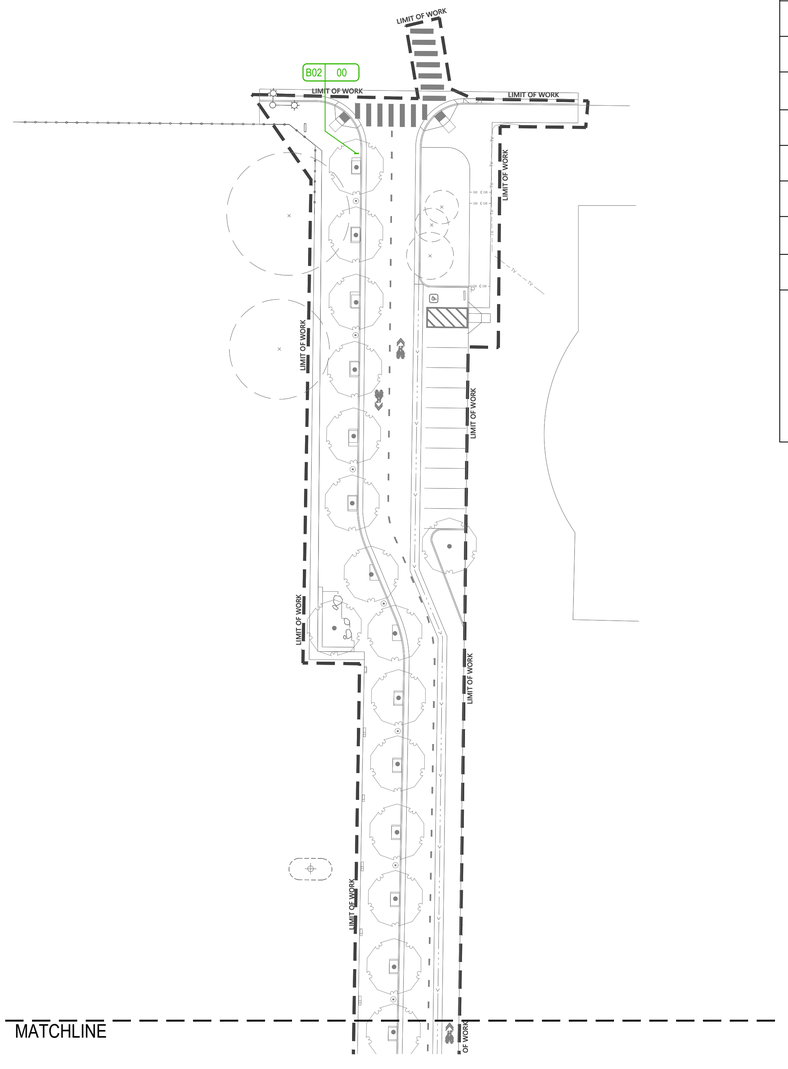
BASE FILE NAMES	
DRAWN BY	AD
CHECKED BY	AO
SCALE	AS NOTED
DATE	01/10/2019
PROJECT NO.	GRUEN # 8345

SIGN LOCATIONS

SHEET TITLE

SHEET NO. EG100





SIGN LEGEND

IDENTIFICATION

- A01 - IDENTITY MONUMENT
- A02 - DYNAMIC BUS BAY IDENTITY
- A03 - BIKE PARKING IDENTITY
- A04 - DROP-OFF IDENTITY
- A05 - KIOSK IDENTITY

DIRECTION

- B01 - PARKING DIRECTION OVERHEAD
- B02 - BIKE DIRECTIONAL

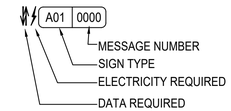
INFORMATION

- C01 - DYNAMIC TRANSIT INFORMATION
- C02 - BUS BAY INFORMATION
- C03 - KIOSK INFORMATION

REGULATION

- D01 - GATE ENTRANCE

DESCRIPTION:



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BASE FILE NAMES	
DRAWN BY	AD
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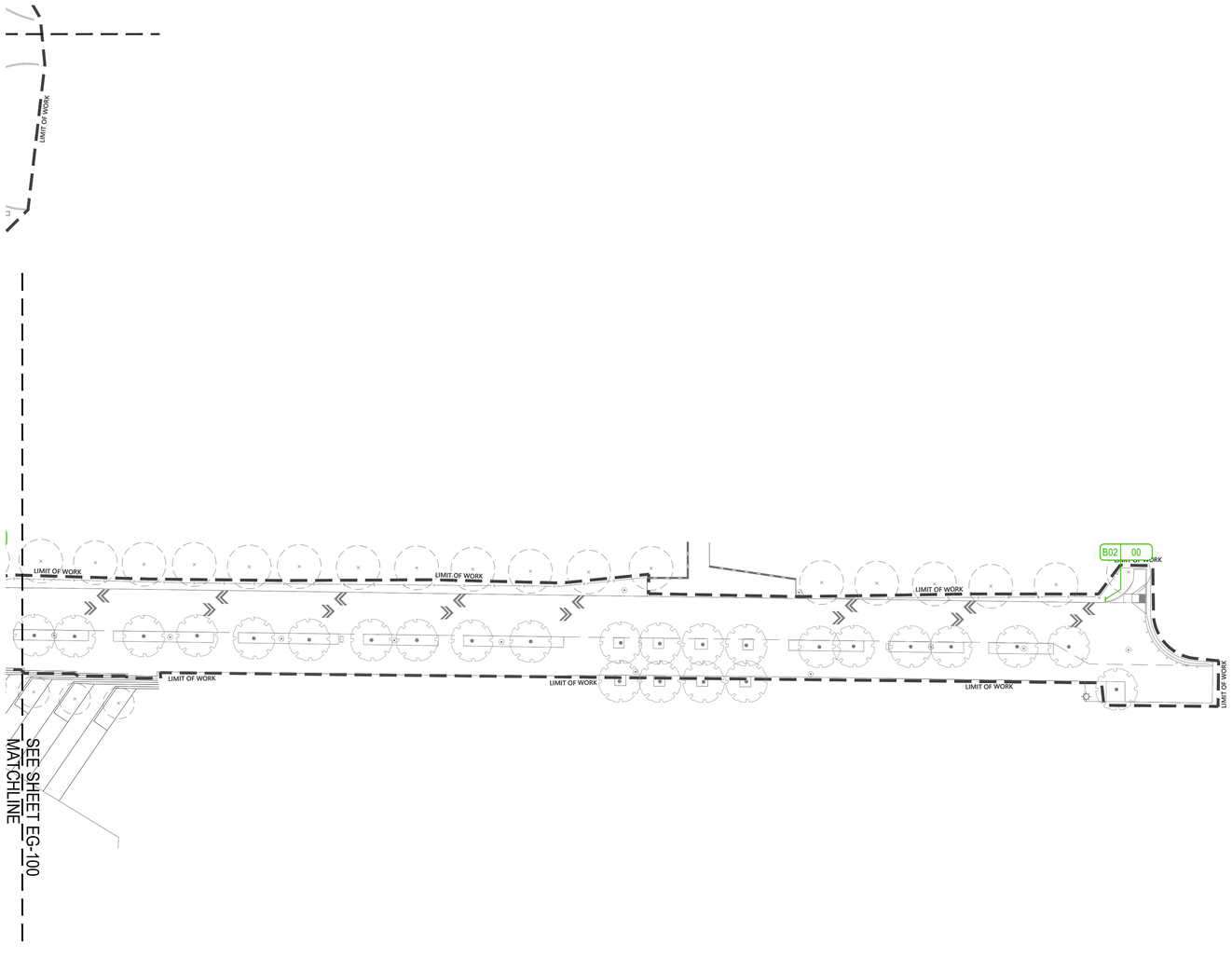
SCALE	AS NOTED
DATE	01/10/2019
PROJECT NO.	GRUEN # 8345

SIGN LOCATIONS

SHEET TITLE

SHEET NO. EG101



SIGN LEGEND

IDENTIFICATION

- A01 - IDENTITY MONUMENT
- A02 - DYNAMIC BUS BAY IDENTITY
- A03 - BIKE PARKING IDENTITY
- A04 - DROP-OFF IDENTITY
- A05 - KIOSK IDENTITY

DIRECTION

- B01 - PARKING DIRECTION OVERHEAD
- B02 - BIKE DIRECTIONAL

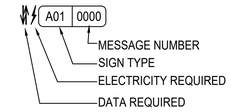
INFORMATION

- C01 - DYNAMIC TRANSIT INFORMATION
- C02 - BUS BAY INFORMATION
- C03 - KIOSK INFORMATION

REGULATION

- D01 - GATE ENTRANCE

DESCRIPTION:



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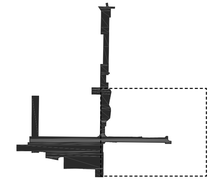

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KEY PLAN

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05/01/18 100% DD SET

BASE FILE NAMES	
DRAWN BY	AD
CHECKED BY	AO
SCALE	AS NOTED
DATE	01/10/2019
PROJECT NO.	GRUEN # 8345

SIGN LOCATIONS

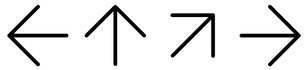
SHEET TITLE

SHEET NO. EG102

SYMBOLS

UCR

UC RIVERSIDE UNIVERSITY OF CALIFORNIA



COLORS

P1
UCR BLUE
PMS 660 C
90C 50M 0Y 0K

P2
NATURAL WHITE
MATHEWS PAINT
SOA202SP

P3
UCR GOLD
PMS 130 C
0C 30M 100Y 0K

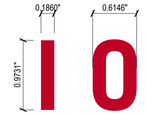
P4
UCR GRAY
PMS WARM GRAY 10
0C 15M 30Y 55K

P5
BLACK
100C 0M 0Y 100K

TYPOGRAPHY

Trade Gothic Bold
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

ADA Usage: Acceptable for use as visual characters only (not for use as ADA raised tactile characters)



STROKE THICKNESS:
11B-703.2.6 Test 1A- Raised Characters
Thickness divided by height
Maximum allowed is 15%

0.1860" / 0.9731" = **19.1%**

11B-703.5.7 Test 1B- Visual Characters
Thickness divided by height
Minimum 10% & Maximum 20%

0.1860" / 0.9731" = **19.1%**

CHARACTER PROPORTIONS:
11B-703.2.5 Test 2A- Raised Characters
Letter "O" Thickness divided by height
Minimum 60% & Maximum 110%

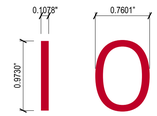
0.6146" / 0.9731" = **63.2%**

11B-703.5.4 Test 2B- Visual Characters
Letter "O" Thickness divided by height
Minimum 60% & Maximum 110%

0.6146" / 0.9731" = **63.2%**

Trade Gothic Medium
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

ADA Usage: Acceptable for use as visual characters and raised tactile characters



STROKE THICKNESS:
11B-703.2.6 Test 1A- Raised Characters
Thickness divided by height
Maximum allowed is 15%

0.1078" / 0.9730" = **11.1%**

11B-703.5.7 Test 1B- Visual Characters
Thickness divided by height
Minimum 10% & Maximum 20%

0.1078" / 0.9730" = **11.1%**

CHARACTER PROPORTIONS:
11B-703.2.5 Test 2A- Raised Characters
Letter "O" Thickness divided by height
Minimum 60% & Maximum 110%

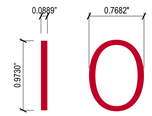
0.7601" / 0.9730" = **78.1%**

11B-703.5.4 Test 2B- Visual Characters
Letter "O" Thickness divided by height
Minimum 60% & Maximum 110%

0.7601" / 0.9730" = **78.1%**

Trade Gothic Light
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

ADA Usage: Acceptable for use as visual characters and raised tactile characters



STROKE THICKNESS:
11B-703.2.6 Test 1A- Raised Characters
Thickness divided by height
Maximum allowed is 15%

0.0889" / 0.9730" = **9.1%**

11B-703.5.7 Test 1B- Visual Characters
Thickness divided by height
Minimum 10% & Maximum 20%

0.0889" / 0.9730" = **9.1%**

CHARACTER PROPORTIONS:
11B-703.2.5 Test 2A- Raised Characters
Letter "O" Thickness divided by height
Minimum 60% & Maximum 110%

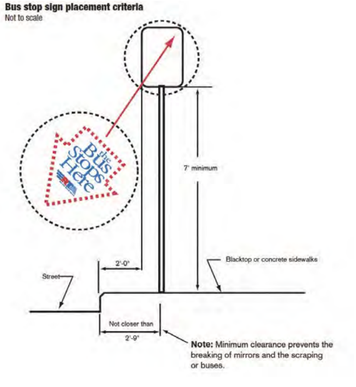
0.7682" / 0.9730" = **63.2%**

11B-703.5.4 Test 2B- Visual Characters
Letter "O" Thickness divided by height
Minimum 60% & Maximum 110%

0.7682" / 0.9730" = **63.2%**

TYPE, COLOR, SYMBOLS

Bus stop sign placement criteria
Not to scale



2015 BUS STOP DESIGN GUIDELINES OF THE RIVERSIDE TRANSIT AGENCY

6.2 Bus Stop Signs
There are several sign installation criteria that contribute to passenger and public safety, convenience, visibility, and comfort:

- The bottom of the sign must be seven feet above the sidewalk and its top must be no higher than ten feet.
- The sign post must be at least two feet, nine inches in from the curb face or road edge
- The outside edge of the sign must be no less than two feet from the curb or road edge
- Trees, building, and other structures should not obstruct the stop signs from view by oncoming buses and intending passengers
- Signs should be placed as a guide for passengers and operators as to where the front of the bus should stop
- Signs are usually mounted on square steel or aluminum posts. This consistency is particularly useful for visually impaired riders to locate, by means of touch, the exact location of the bus stop
- Check for existing utility lines (gas, water, etc.) prior to sign placement
- Signs should be visible from either direction
- Bus stop signs are placed independently and unattached to other street signs to clearly emphasize transit stop identity

Sign Content
Sign size and content can vary as transit marketing programs continue to improve the sign's graphic message. At a minimum, the sign confirms the location of a bus stop, identifies RTA routes stopping there, and displays the transit information telephone number. Additional informational signage boards or kiosks, and stop identification numbers are often attached to the signpost, as well as bus schedule and or route map displays. All sign content should be ADA-approved as to font and point size of lettering. Consistency across the network for RTA identity is critical, so any branding change must be promptly applied network-wide (within one service change or four months).

6.7 Electronic Messaging
Transit agencies are introducing advanced computer and communications technologies know as Intelligent Transportation Systems (ITS) for a variety of relatively new services that improve convenience and safety. ITS includes automated vehicle location technologies such as roadside sensors or satellite-assisted geographic positioning systems (GPS) to track the location of vehicles. GPS processing supports real-time electronic "next-vehicle" displays at transit stops, stations, and even aboard moving buses. Some "next stop" and "next arriving bus" information can be conveyed in the form of voice announcements. These systems can also display current traffic conditions and emergency notifications. These kinds of messages reduce anxiety of bus passengers by confirming the actual arrival times of their next bus and allow for better trip planning and connections. ITS also improves surveillance and security at stations and aboard vehicles.

6.8 Kiosk and Other Information Sources
Kiosks are an important convenience feature at major bus stops, transfer centers, other bus connections, or for rail or air service. The larger centers often have additional pedestrian or hardscape areas suitable for placement of a kiosk.

These multi-purpose structures can offer:
- Convenient storage racks for bus schedules and information
- On other transit providers
- Lighting aimed at benches and shelters, if wired
- Newspaper racks
- Public phones and ATM services
- Public service announcements and calendars
- Business announcements to offset cost of kiosk maintenance.

Generally, kiosks are placed in high-traffic areas, therefore reducing their exposure to vandalism and graffiti. Some extra expense may be taken to ensure the kiosk is integrated architecturally with the street-scape and placed in such a way as to reduce visual clutter near the bus stop. The kiosk must not obstruct sight lines near the bus stop. Placement standards for kiosks are similar to bus shelters as to clearance from the street, utility structures, benches, fire hydrants, etc. However, kiosks should have at least an eight foot clear area on all sides to allow several people to use the facility at the same time.

REAL-TIME INFORMATION AT CORONA TRANSIT CENTER

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KEY PLAN

NO.	DATE	ISSUED FOR	BY

01/10/19 100% CD Set
11/27/18 90% CD SET
10/29/18 50% CD SET
05/01/18 100% DD SET

BASE FILE NAMES	
DRAWN BY	AD
CHECKED BY	AO
SCALE	AS NOTED
DATE	01/10/2019
PROJECT NO.	GRUEN # 8345

DESIGN STANDARDS REFERENCE

SHEET TITLE

SHEET NO. EG103

11B-703 Signs

11B-703.1 General

Signs shall comply with *Section 11B-*703. Where both visual and tactile characters are required, either one sign with both visual and tactile characters , or two separate signs, one with visual, and one with tactile characters , shall be provided.

11B-703.1.1 Plan review and inspection
Signs as specified in Section 11B-703, or in ot her sections of this code, when included in the construction of new buildings or facilities , or when included, altered or replaced due to additions , alterations or renovations to existing buildings or facilities , and when a permit is required, shall comply with Sections 11B-703.1.1.1 and 11B-703.1.1.2.

11B-703.1.1.1 Plan review
Plans, specifications or other inform ation indicating compliance with these regulations shall be submitted to the enforcing agency for review and approval.

11B-703.1.1.2 Inspection
Signs and identification devices shall be field inspected after installation and approved by the enforcing agency prior to the issuance of a final certificate of occupancy per Chapter 1, Division II, Section 111 , or final approval where no certificate of occupancy is issued. The inspection shall include, but not be limited to, verification that Braille dots and cells are properly spaced and the size, proportion and type of raised characters are in compliance with these regulations.

11B-703.2 Raised characters

Raised characters shall comply with *Section 11B-*703.2 and shall be duplicated in Braille complying with *Section 11B-*703.3. Raised characters shall be installed in accordance with *Section 11B-*703.4.

11B-703.2.1 Depth
Raised characters shall be $^{1}/_{32}$ inch (0.8 mm) minimum above their background.

11B-703.2.2 Case
Characters shall be uppercase.

11B-703.2.3 Style
Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

11B-703.2.4 Character proportions
Characters shall be selected from fonts where the width of the uppercase letter "O" is *60* percent minimum and 110 percent maximum of the height of the uppercase letter "I".

11B-703.2.5 Character height
Character height measured vertically from the baseline of the character shall be $^{5}/_{8}$ inch (*15.9* mm) minimum and 2 inches (51 mm) maximum based on the height of the uppercase letter "I".
Exception: ***Reserved.***

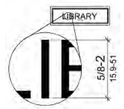


FIGURE *11B-*703.2.5
HEIGHT OF RAISED CHARACTERS

11B-703.2.6 Stroke thickness
Stroke thickness of the uppercase letter "I" shall be 15 percent maximum of the height of the character.

11B-703.2.7 Character spacing
Character spacing shall be measured between the two closest points of adjacent raised characters within a message, excluding word spaces. Where characters have rectangular cross sections, spacing between individual raised characters shall be $^{1}/_{8}$ inch (3.2 mm) minimum and 4 times the raised character stroke width maximum. Where characters have other cross sections, spac ing between individual raised characters shall be $^{1}/_{16}$ inch (1,6 mm) minimum and 4 times the raised character stroke width maximum at the base of the cross sections, and $^{1}/_{8}$ inch (3.2 mm) minimum and 4 times the raised character stroke width maximum at the top of the cross sections. Characters shall be separated from ra ised borders and decorative elements $^{3}/_{8}$ inch (9.5 mm) minimum.

11B-703.2.8 Line spacing
Spacing between the baselines of separate lines of raised characters within a message shall be 135 percent minimum and 170 percent maximum of the raised character height.

11B-703.2.9 Format
Text shall be in a horizontal format.

11B-703.3 Braille

Braille shall be contracted (Grade 2) and shall comply with *Sections 11B-*703.3 and *11B-*703.4.

11B-703.3.1 Dimensions and capitalization
Braille dots shall have a domed or round ed shape and shall comply with Table *11B-*703.3.1. The indication of an uppercase letter or letters shall only be used before the first word of sentences, proper nouns and names, individual letters of the alphabet, initials, and acronyms.

TABLE *11B-*703.3.1
BRAILLEDIMENSIONS

MEASUREMENT RANGE	MINIMUM IN INCH ES MAXIMUM IN INCHES
Dot base diameter	0.059 (1.5 mm) to 0.063 (1.6 mm)
Distance between two dots in the same cell[1]	*0.100 (2.5 mm)*
Distance between correspon ding dots in adjacent cells[1]	*0.300 (7.6 mm)*
Dot height	0.025 (0.6 mm) to 0.037 (0.9 mm)
Distance between corresp onding dots from one cell directly below[1]	0.395 (10 mm) to 0.400 (10.2 mm)

1. Measured center to center.

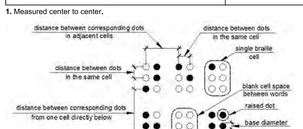


FIGURE *11B-*703.3.1
BRAILLE MEASUREMENT

11B-703.3.2 Position
Braille shall be positioned below the corresponding text *in a horizontal format, flush left or centered* . If text is multi-lined, Braille sha ll be placed below the entire text. Braille shall be separated $^{3}/_{8}$ inch (9,5 mm) minimum *and $^{1}/_{2}$ inch (12.7 mm) maximum* from any other tactile characters and 3/8 inch (9.5 mm) minimum from raised borders and decorative elements .
Exception: Braille provided on elevator car controls shall be separated $^{3}/_{16}$ inch (4.8 mm) minimum and shall be located di rectly below the corresponding raised characters or symbols.

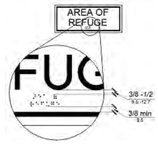


FIGURE *11B-*703.3.2
POSITION OF BRAILLE

11B-703.4 Installation height and location
Signs with tactile characters shall comply with *Section 11B-*703.4.

11B-703.4.1 Height above finish floor or ground
Tactile characters on signs shall be located 48 inches (*1219* mm) minimum above the finish floor or ground surface, measured from the baseline of the lowest *Braille cells* and 60 inches (*1524* mm) maximum above the finish floor or ground surface, measured from the baseline of the highest *line of raised characters*.

Exception: Tactile characters for elevator car controls shall not be required to comply with *Section 11B-*703.4.1.

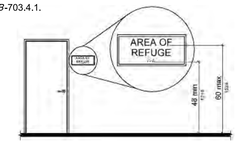


FIGURE *11B-*703.4.1
HEIGHT OF TACTILE CHARACTERS ABOVE FINISH FLOOR OR GROUND

11B-703.4.2 Location
Where a tactile sign is provided at a door, the sign shall be located alongside the door at the latch side. Where a tactile sign is provided at double doors with one active leaf, the sign shall be located on the inactive leaf. Where a tactile sign is provided at double doors with two active leafs, the sign shall be located to the right of the right hand door. Where there is no wall space at the latch side of a single door or at the right side of double doors, signs shall be located on the nearest adjacent wall. Signs containing tactile characters shall be located so that a clear floor space of 18 inches (*457* mm) minimum by 18 inches (*457* mm) minimum, centered on the tactile characters , is provided beyond the arc of any door swing between the closed position and 45 degree open position. *Where provided, signs identifying permanent rooms and spaces shall be located at the entrance to, and outside of the room or space. Where provided, signs identifying exits shall be located at the exit door when approached in the direction of egress travel.*
Exception: *In alterations where sign installation locations id entified in Section 11B-703.4.2 are obstructed or otherwise unavailable for sign installation, signs with tactile characters shall be permitted on the push side of doors with closers and without hold-open devices.*

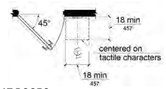


FIGURE *11B-*703.4.2
LOCATION OF TACTILE SIGNS AT DOORS

11B-703.5 Visual characters

Visual characters shall comply with *Section 11B-*703.5.
Exception: Where visual characters comply with *Section 11B-*703.2 and are accompanied by Braille complying with *Section 11B-*703.3, they shall not be required to comply with *Sections 11B-*703.5.2 through *11B-703.5.6*, *11B-703.5.8* and *11B-703.5.9*.

11B-703.5.1 Finish and contrast
Characters and their background shall have a nonglare finish. Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

11B-703.5.2 Case
Characters shall be uppercase or lowercase or a combination of both.

11B-703.5.3 Style
Characters shall be conventional in form. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

11B-703.5.4 Character proportions
Characters shall be selected from fonts where the width of the uppercase letter "O" is *60* percent minimum and 110 percent maximum of the height of the uppercase letter "I".

11B-703.5.5 Character height
Minimum character height shall comply with *Table 11B-*703.5.5. Viewing distance shall be measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign. Character height shall be based on the uppercase letter "I".
Exception: *Where provided, floor plans providing emergency procedures information in accordance with Title 19 shall not be required to comply with Section 11B-703.5.5.*

TABLE *11B-*703.5.5
VISUAL CHARACTER HEIGHT

HEIGHT TO FINISH FLOOR OR GROUND FROM BASELINE OF CHARACTER	HORIZONTAL VIEWING DISTANCE	MINIMUM CHARACTER HEIGHT
40 inches (*1016* mm) to less than or equal to 70 inches (*1778* mm)	less than 72 inches (*1829* mm)	$^{5}/_{8}$ inch (*15.9* mm)
	72 inches (*1829* mm) and greater	$^{5}/_{8}$ inch (*15.9* mm), plus $^{1}/_{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (*1829* mm)
Greater than 70 inches (*1778* mm) to less than or equal to 120 inches (*3048* mm)	less than 180 inches (*4572* mm)	2 inches (51 mm)
	180 inches (*4572* mm) and greater	2 inches (51 mm), plus $^{1}/_{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (*4572* mm)
greater than 120 inches (*3048* mm)	less than 21 feet (*6401* mm)	3 inches (76 mm)
	21 feet (*6401* mm) and greater	3 inches (*76* mm), plus $^{1}/_{8}$ inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (*6401* mm)

11B-703.5.6 Height from finish floor or ground
Visual characters shall be 40 inches (*1016* mm) minimum above the finish floor or ground.
Exceptions:
1. Visual characters indicating elevator car contro ls shall not be required to comply with *Section 11B-*703.5.6.
2. Floor-level exit signs complying with Chapter 10 , *Section 1013.7 shall not be required to comply* with *Section 11B-*703.5.6.
3. Where provided, floor plans providin g emergency procedures information in accordance with Title 19 shall not be required to comply with *Section 11B-*703.5.6.

11B-703.5.7 Stroke thickness
Stroke thickness of the uppercase letter "I" shall be 10 percent minimum and *20* percent maximum of the height of the character.

11B-703.5.8 Character spacing
Character spacing shall be measured between the two closest points of adjacent characters , excluding word spaces. Spacing between individual characters shall be 10 percent minimum and 35 percent maximum of character height.

11B-703.5.9 Line spacing
Spacing between the baselines of separate lines of characters within a message shall be 135 percent minimum and 170 percent maximum of the character height.

11B-703.5.10 Format
Text shall be in a horizontal format.

11B-703.6 Pictograms

Pictograms shall comply with *Section 11B-*703.6.

11B-703.6.1 Pictogram field
Pictograms shall have a field height of 6 inches (*152* mm) minimum. Characters and Braille shall not be located in the pictogram field.

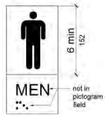


FIGURE *11B-*703.6.1
PICTOGRAM FIELD

11B-703.6.2 Finish and contrast
Pictograms and their field shall have a non –glare finish. Pictograms shall contrast with their field with either a light pictogram on a dark field or a dark pictogram on a light field.

11B-703.6.3 Text descriptors
Pictograms shall have text descriptors located directly below the pictogram field. Text descriptors shall comply with *Sections 11B-*703.2, *11B-*703.3 and *11B-*703.4.

11B-703.7 Symbols of accessibility

Symbols of accessibility shall comply with *Section 11B-*703.7.

11B-703.7.1 Finish and contrast
Symbols of accessibility and their background shall have a non –glare finish. Symbols of accessibility shall contrast with their background with either a light symbol on a dark background or a dark symbol on a light background.

11B-703.7.2 Symbols

11B-703.7.2.1 International Symbol of Accessibility
The International Symbol of Accessibility shall comply with Figure *11B-*703.7.2.1. *The symbol shall consist of a white figure on a blue background. The color blue shall approximate FS 15090 in Federal Standard 595C. A border may be provided inside or outside of the minimum required International Symbol of Accessibility dimension.*
Exceptions:
1. *The appropriate enforcement agency may approve other colors provided the symbol contrast is light on dark or dark on light.*
2. *On the accessibility function button on hall call consoles in a destination-oriented elevator system the International Symbol of Accessibility shall be a white symbol on a black background.*

FIGURE *11B-*703.7.2.1
INTERNATIONAL SYMBOL OF ACCESSIBILITY

11B-703.7.2.2 International Symbol of TTY
The International Symbol of TTY shall comply with Figure *11B-*703.7.2.2.

FIGURE *11B-*703.7.2.2
INTERNATIONAL SYMBOL OF TTY

11B-703.7.2.3 Volume control telephones
Telephones with a volume control shall be identified by a pictogram of a telephone handset with radiating sound waves on a square field such as shown in Figure *11B-*703.7.2.3.

FIGURE *11B-*703.7.2.3
VOLUME CONTROL TELEPHONE

11B-703.7.2.4 Assistive listening systems
Assistive listening systems shall be identified by the International Symbol of Access for Hearing Loss complying with Figure *11B-*703.7.2.4.

FIGURE *11B-*703.7.2.4
INTERNATIONAL SYMBOL OF ACCESS FOR HEARING LOSS

11B-703.7.2.5 Reserved

11B-703.7.2.6 Toilet and bathing facilities geometric symbols
Geometric symbols at entrances to toilet and bathing rooms shall be mounted at 58 inches (1473 mm) minimum and 60 inches (1524 mm) maximum above the finish floor or ground surface measured from the centerline of the symbol. Where a door is provided the symbol sh all be mounted within 1 inch (25 mm) of the vertical centerline of the door.

11B-703.7.2.6.1 Men's toilet and bathing facilities
A triangle symbol shall be located at entrances to men's toilet and bathing facilities . The triangle symbol shall be an equilateral triangle $^{1}/_{4}$ inch (6.4 mm) thick with edges 12 inches (305 mm) long and a vertex pointing upward. The color of the tria ngle symbol shall contrast with the color of the door or surface on which the triangle symbol is mounted, either light on a dark background or dark on a light background.
Exception: *Within secure perimeter of detention and correctional facilities , geometric symbols shall not be required to be $^{1}/_{4}$ inch (6.4 mm) thick.*

11B-703.7.2.6.2 Women's toilet and bathing facilities
A circle symbol shall be located at entrances to women's toilet and bathing facilities . The circle symbol shall be $^{1}/_{4}$ inch (6.4 mm) thick and 12 inches (305 mm) in diameter. The color of the circle symb ol shall contrast with the color of the door or surface on which the circle symbol is mounted, either light on a dark background or dark on a light background.
Exception: *Within secure perimeter of detention and correctional facilities , geometric symbols shall not be required to be $^{1}/_{4}$ inch (6.4 mm) thick.*

11B-703.7.2.6.3 Unisex toilet and bathing facilities
A combined circle and triangle symbol shall be located at entrances to unisex toilet and bathing facilities . The combined circle and triangle symbol shall consist of a circle symbol 1 /4 inch (6.4 mm) thick and 12 inches (305 mm) in diameter with a 1 /4 inch (6.4 mm) thick equilateral triangle symbol superimposed on and geometrically inscribed within the 12-inch (305 mm) diameter of the ci rcle symbol. The vertices of the triangle symbol shall be located $^{1}/_{4}$ inch (6.4 mm) maximum from the edge of the circle symbol with a vertex pointing upward. The color of the triangle symbol shall contrast with th e color of the circle symbol, either light on a dark background or dark on a light background. The color of the circle symbol shall contrast with the color of the door or surface on which the combined circle and triang le symbol is mounted, either light on a dark background or dark on a light background
Exception: *Within secure perimeter of detention and correctional facilities , geometric symbols shall not be required to be $^{1}/_{4}$ inch (6.4 mm) thick.*

11B-703.7.2.6.4 Edges and vert ices on geometric symbols
Edges shall be eased or rounded at $^{1}/_{16}$ inch (1.59 mm) minimum, or chamfered at $^{1}/_{8}$ inch (3.2 mm) maximum. Vertices shall be radiused between $^{1}/_{8}$ inch (3.2 mm) minimum and $^{1}/_{4}$ inch (6.4 mm) maximum.

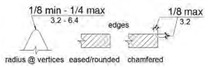


FIGURE *11B-*703.7.2.6.4
EDGES AND VERTICES ON GEOMETRIC SYMBOLS

11B-703.7.2.7 Pedestrian traffic-control buttons
Pole-supported pedestrian traffic-control buttons sha ll be identified with color coding consisting of a textured horizo ntal yellow band 2 inches (51 mm) in width encircling the pole, and a 1-inch-w ide (25 mm) dark border band above and below this yellow band. Color codi ng shall be placed immediately above the control button. Control buttons shall be located no higher than 48 inches (1219 mm) above the ground surf ace adjacent to the pole.

11B-703.8 Variable message signs

11B-703.8.1 General
High resolution variable message sign (VMS)characters shall comply with Sections 11B-703.5 and 11B-703.8.12 through 11B-703.8.14 . Low resolution variable message sign (VMS)characters shall comply with Section 11B-703.8.

11B-703.8.2 Case
Low resolution VMS characters shall be uppercase.

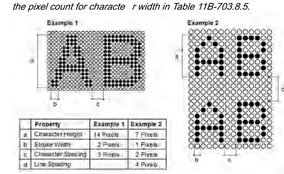
11B-703.8.3 Style
Low resolution VMS characters shall be conventional in form, shall be sans serif, and shall not be italic, oblique, script, highly decorative, or of other unusual forms.

11B-703.8.4 Character height
The uppercase letter "I" shall be used to determine the allowable height of all low resolution VMS characters of a font. Viewing distance shall be measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign. The uppercase letter "I" of th e font shall have a minimum height complying with Table 11B-703.8.4.
Exception: *In assembly seating where the ma ximum viewing distance is 100 feet (30.5 m) or greater, the height of the uppercase "I" of low resolution VMS fonts shall be permitted to be 1 inch (25 mm) for every 30 feet (9144 mm) of viewing distance, provided the character height is 8 inches (203 mm) minimum. Viewing distance shall be measured as the horizo ntal distance between the character and where someone is expected to view the sign.*

TABLE *11B-*703.8.4
LOW RESOLUTION VMS CHARACTER HEIGHT

HEIGHT ABOVE FLOOR TO BASELINE OF CHARACTER	HORIZONTAL VIEWING DISTANCE	MINIMUM CHARACTER HEIGHT
40 inches (1016 mm) to less than or equal to 70 inches (1778 mm)	*Less than 10 feet (3048 mm)*	*2 inches (51 mm)*
	10 feet (3048 mm) and greater	*2 inches (51 mm), plus $^{1}/_{8}$ inch (5.1 mm) per foot (305 mm) of viewing distance above 10 feet (3048 mm)*
Greater than 70 inches (1778 mm) to less than or equal to 120 inches (3048 mm)	*Less than 15 feet (4572 mm)*	*3 inches (76 mm)*
	15 feet (4572 mm) and greater	*3 inches (76 mm), plus $^{1}/_{8}$ inch (5.1 mm) per foot (305 mm) of viewing distance above 15 feet (4572 mm)*
Greater than 120 inches (3048 mm)	*Less than 20 feet (6096 mm)*	*4 inches (102 mm)*
	20 feet (6096 mm) and greater	*4 inches (102 mm), plus $^{1}/_{8}$ inch (5.1 mm) per foot (305 mm) of viewing distance above 20 feet (6096 mm)*

11B-703.8.5 Character width
The uppercase letter "O" shall be used to determine the allowable width of all low resolution VMS characters of a font. Low resolution VMS characters shall comply with the pixel count for characte r width in Table 11B-703.8.5.



	Property	Example 1	Example 2
a	Character Height	14 Pixels	7 Pixels
b	Stroke Width	2 Pixels	1 Pixels
c	Character Spacing	3 Pixels	2 Pixels
d	Line Spacing		4 Pixels

FIGURE 11B-703.8.5
LOW RESOLUTION VMSCHARACTERS

TABLE 11B-703.8.5
PIXEL COUNT FOR LOW RESOLUTION VMS

CHARACTER HEIGHT	*CHARACTER WIDTH RANGE*	*STROKE WIDTH RANGE*	*CHARACTER SPACING RANGE*
7	*5-6*	*1*	*2*
8	*6-7*	*1-2*	*2-3*
9	*6-8*	*1-2*	*2-3*
10	*7-9*	*2*	*2-4*
11	*8-10*	*2*	*2-4*
12	*8-11*	*2*	*3-4*
13	*9-12*	*2-3*	*3-5*
14	*10-13*	*2-3*	*3-5*
15	*11-14*	*2-3*	*3-5*

11B-703.8.6 Stroke width
The uppercase letter "I" shall be used to determine the allowable stroke width of all low resolution VMS characters of a font. Low resolution VMS characters shall comply with the pixel count for stroke width in Table 11B-703.8.5 .

11B-703.8.7 Character spacing
Spacing shall be measured between the two cl osest points of adjacent low resolution VMS characters within a message, excluding word spaces. Low resolution VMS character spacing shall comply with th e pixel count for character spacing in Table 11B-703.8.5.

11B-703.8.8 Line spacing
Low resolution VMS characters shall comply with Section 11B-703.5.9.

11B-703.8.9 Height above floor
Low resolution VMS characters shall be 40 inches (1016 mm) minimum above the floor of the viewing position, measured to the baseline of the character. Heights of low resolution variable message sign characters shall comply with Table 11B-703.8.4 , based on the size of the characters on the sign.

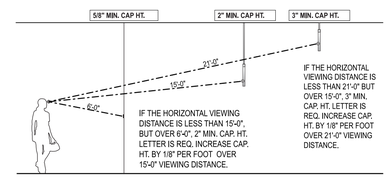
11B-703.8.10 Finish
The background of low resolution VMS characters shall have a nonglare finish.

11B-703.8.11 Contrast
Low resolution VMS characters shall be light characters on a dark background.

11B-703.8.12 Protective covering
Where a protective layer is placed over VMS characters through which the VMS characters must be viewed, the protective cove ring shall have a nonglare finish.

11B-703.8.13 Brightness
The brightness of variable message signs in exterior locations shall automatically adjust in response to change in ambient light levels.

11B-703.8.14 Rate of change
Where a VMS message can be displayed in its entirety on a single screen, it shall be displayed on a single screen and shall remain motionless on the screen for a minimum 3 seconds or 1 second minimum for every seven characters of the message including spaces, whichever is longer.



2 MOUNTING HEIGHTS

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KEY PLAN

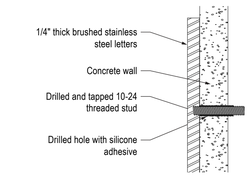
NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD Set	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

BASE FILE NAMES	
DRAWN BY	AD
CHECKED BY	AO
SCALE	AS NOTED
DATE	01/10/2019
PROJECT NO.	GRUEN # 8345

CODE COMPLIANCE REFERENCE

SHEET TITLE

SHEET NO. EG104



REFERENCE IMAGES

In-ground LED lighting example

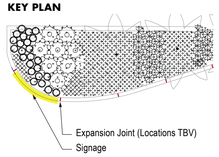
3 SECTION DETAIL - Letters on Concrete Wall
Scale: NTS

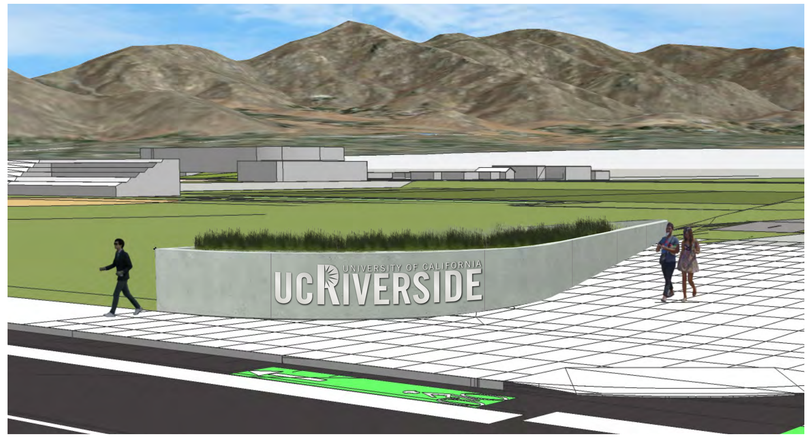
4 ILLUMINATION SIMULATION
Scale: 1/4" = 1'– 0"

2 PLAN VIEW
Scale: 1/2" = 1'– 0"

1 WALL FACE - FLATTENED
Scale: 1/2" = 1'– 0"

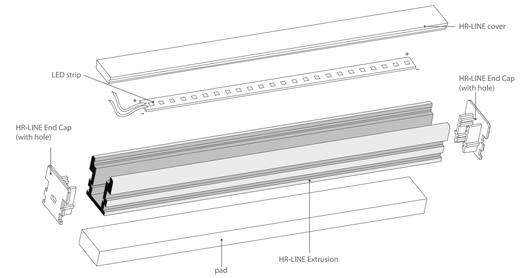
KEY PLAN



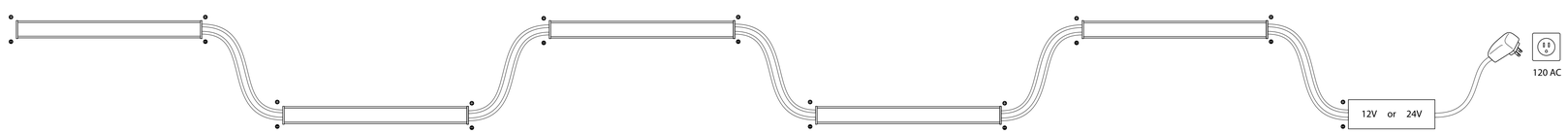


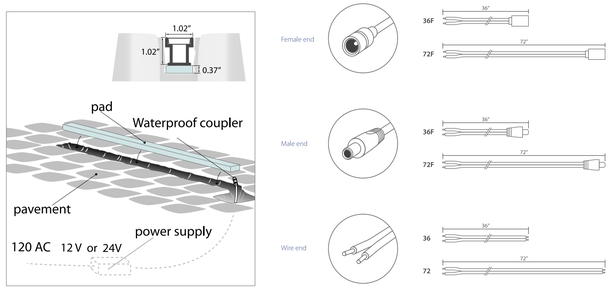
A01 - IDENTITY MONUMENT

Basic fixture components

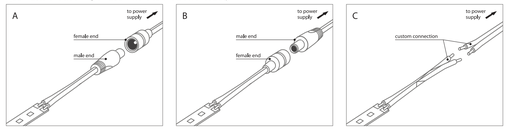


Wiring diagram





Examples of attaching a KLUS fixture to the power supply



Extrusion model	Finish	Cover	LED Color	LED Output	Length	Mounting	Wire Lead
B3579	NA	FC		MO		A	
	NA – Non-anodized	**FC** – Frosted Cover	**27** – 2700K **30** – 3000K **35** – 3500K **40** – 4000K **RGB**- Red, Green & Blue	**MO** – Medium output **XX**- RGB	Any up to 118"	**A** – Adhesives not provided	**36** – 36" **72** – 72" **36F** - 36" with WP female connector **72F** - 72" with WP female connector **36M** - 36" with WP male connector **72M** - 72" with WP male Connector

Output Type	Lumens at 3000k	Watts per foot
MO	135Lm/f	3 W/f
RGB	139 Lm/f	4.5 W/f

KLUS
Vero Beach, FL 32962 / United States / Customer Service: sophia@klusdesign.com / (Ph.) 772 321 2260, 772 569 6655
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A01 - LIGHTING DETAILS

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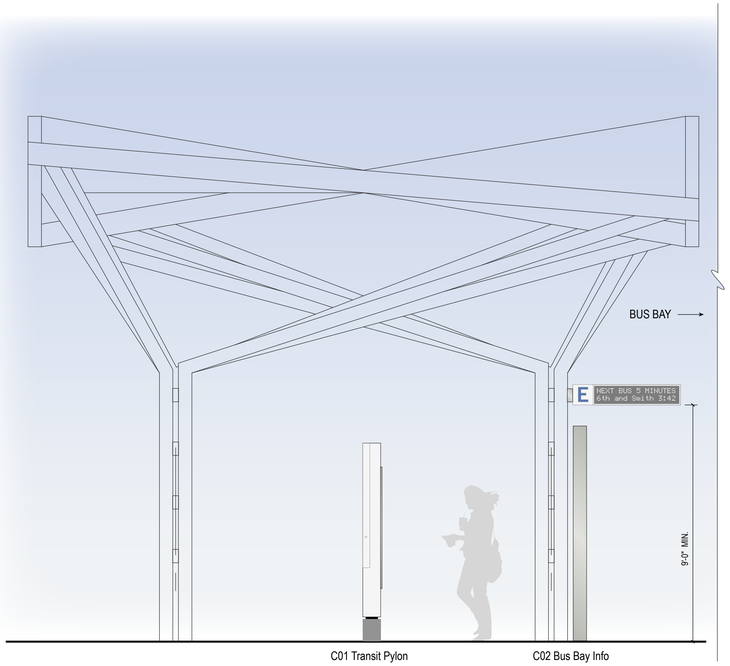
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

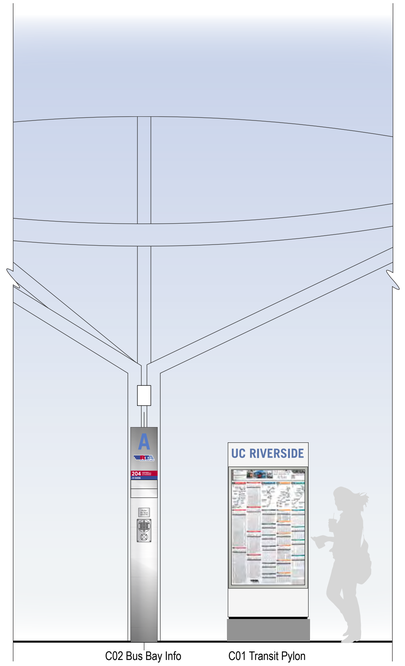
BASE FILE NAMES	
DRAWN BY	AD
CHECKED BY	AO
SCALE	AS NOTED
DATE	01/10/2019
PROJECT NO.	GRUEN # 8345

A01 DESIGN DETAILS
SHEET TITLE

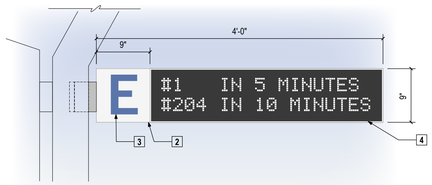
SHEET NO. EG105



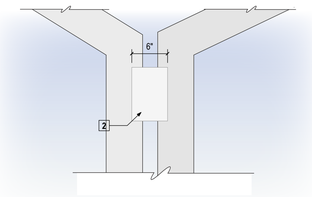
1 **FACE ELEVATION - LOOKING EAST**
SCALE: 3/8" = 1'-0"



2 **END VIEW - LOOKING NORTH**
SCALE: 3/8" = 1'-0"



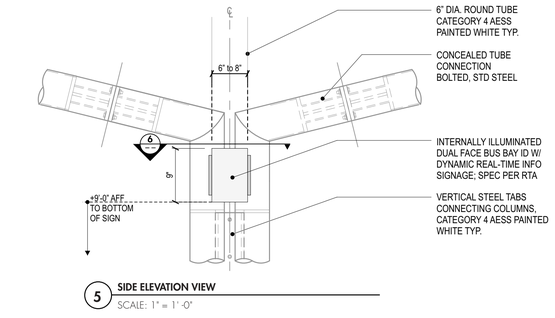
4 **FACE VIEW DETAIL W/ "COLLAR" CONNECTION**
SCALE: 1" = 1'-0"



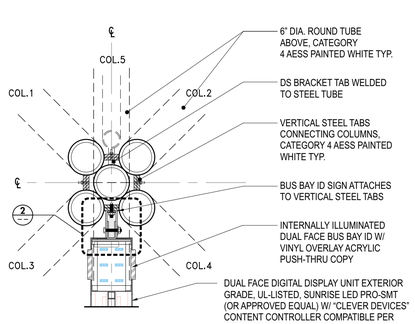
3 **END VIEW DETAIL**
SCALE: 1" = 1'-0"

NOTES

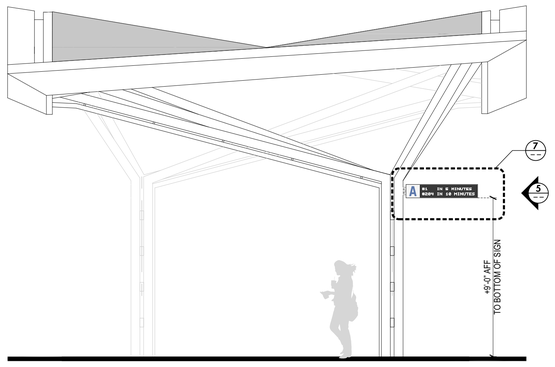
1. DESCRIPTION: Double-sided, suspended/projecting LED "Next Bus" digital dynamic display.
2. CABINET: Fabricated cabinet of 1/8" thick aluminum with minimal or no frame; no exposed fasteners through sign faces; painted; ease all edges and corners; provide security locking mechanism. Sign fabricator to verify screen and framing size prior production; UL listed.
3. DIMENSIONAL GRAPHICS: 3/8" thick translucent acrylic copy/graphics pushed through routed out sign face; internal illumination through faces by internal white LED array.
4. DIGITAL DISPLAY UNIT: Exterior-grade, UL listed, SunRise LED Pro-SMT LED Display (or approved equal). Digital media content by RTA/UCR & compatability with principle vendor Clever Devices tech required. Specification & requirements to be provided by Clever Devices.
   ADDITIONAL FEATURES TBD BY RTA: Audio system, proximity sensor.
5. POWER/DATA: Sign contractor to coordinate electrical connection from sign to local power conduit with UCR electrical representative; install per manufacturer's specifications; remote on/off controls.
6. MOUNTING: Cabinet structure secures to tubular steel canopy trunk with straps or bracket as req'd.
   Optional: Integrated bracket/flange at structural tube.
7. MESSAGES, MEASUREMENTS & LOCATIONS: Sign Contractor to confirm all messages, field verify all measurements, and determine final sign locations with owner prior to creating shop drawings.
8. See Canopy details at sheet _____



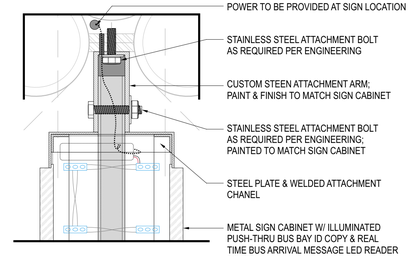
5 **SIDE ELEVATION VIEW**
SCALE: 1" = 1'-0"



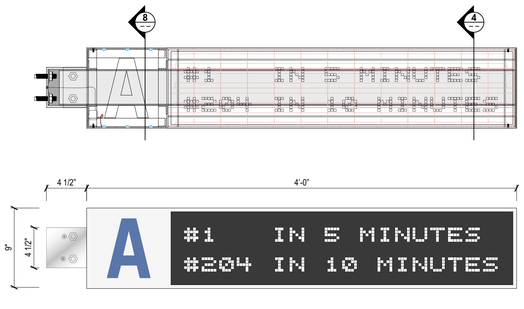
6 **CONNECTION SECTION VIEW**
SCALE: 1" = 1'-0"



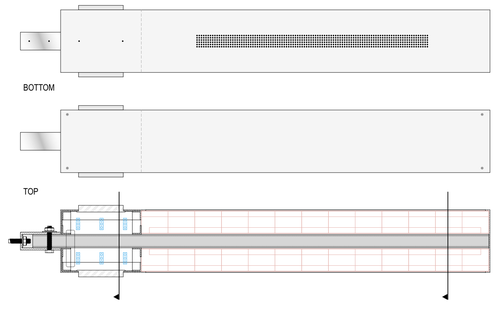
1 **FACE ELEVATION - LOOKING EAST**
SCALE: 1/4" = 1'-0"



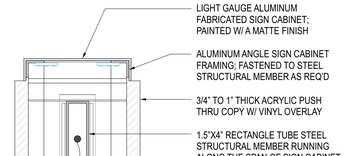
2 **ATTACHMENT DETAIL**
SCALE: 3" = 1'-0"



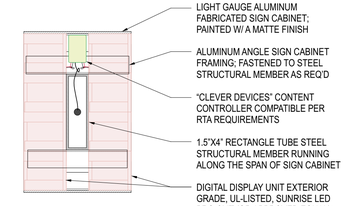
7 **SIDE "A" ELEVATION & SECTION VIEW**
SCALE: 1 1/2" = 1'-0"



3 **TOP/BOTTOM ELEVATION & SECTION VIEW**
SCALE: 1 1/2" = 1'-0"



8 **SECTION DETAIL AT PUSH-THRU**
SCALE: 1 1/2" = 1'-0"



4 **SECTION DETAIL AT LED READER BOARD**
SCALE: 1 1/2" = 1'-0"

A02 – DYNAMIC BUS BAY IDENTITY

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10/29/18 50% CD SET
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BASE FILE NAMES	
DRAWN BY	AD
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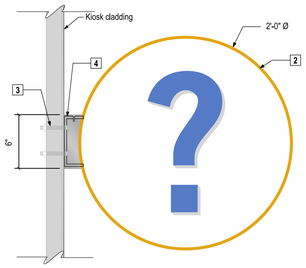
SCALE	AS NOTED
DATE	01/10/2019
PROJECT NO.	GRUEN # 8345

A02 DESIGN DETAILS

SHEET TITLE

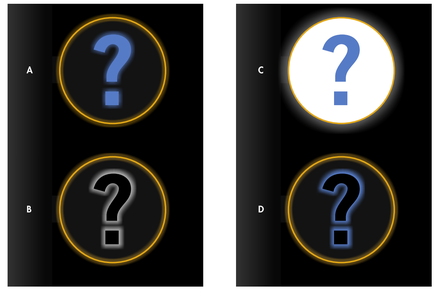
SHEET NO. EG106



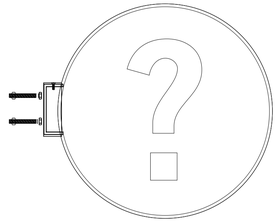
3 **DETAILS - FACE VIEW**
Scale: 1 1/2" = 1'-0"

4 **DETAILS - END VIEW**
Scale: 1 1/2" = 1'-0"

5 **ALTERNATE FACE LAYOUTS**
Scale: 1/2" = 1'-0"

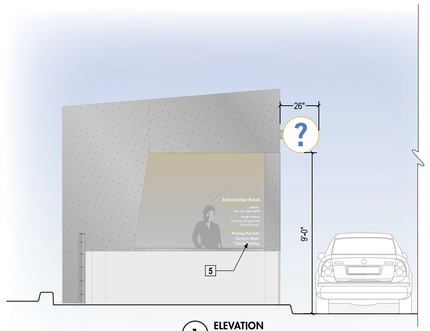


3 **ILLUMINATION RENDERING OPTIONS**
Scale: 3/4" = 1'-0"

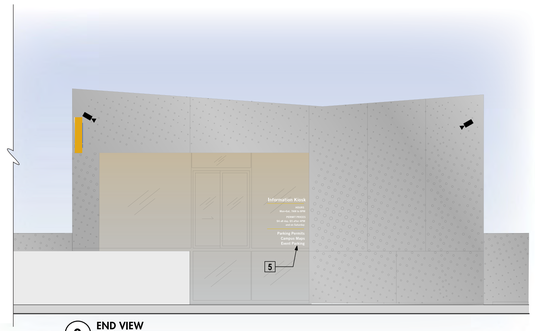


NOTES

1. Fabricated, double-sided, aluminum and acrylic sign cabinet; internally illuminated.
2. Aluminum retaining ring painted to match P3
3. 3/8" S/S threaded rod, attached to internal building structure
4. Sign Bracket and cover
5. **C03 Sign:** Reverse-cut white (P2) vinyl letters and numbers applied to inside of kiosk window (if tinting allows). Graphic rules are to match UCR Color Yellow (P3)

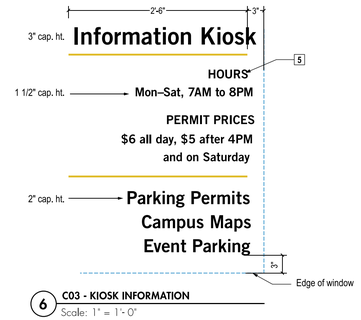


1 **ELEVATION**
Scale: 1/4" = 1'-0"



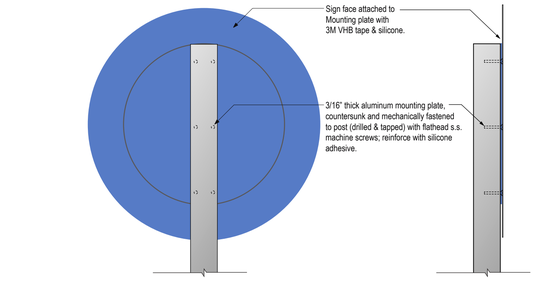
2 **END VIEW**
Scale: 1/4" = 1'-0"

A05 – INFORMATION KIOSK IDENTITY



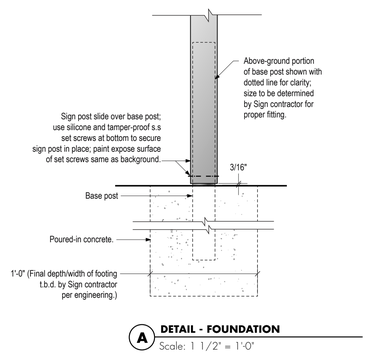
6 **C03 - KIOSK INFORMATION**
Scale: 1" = 1'-0"

C03 – KIOSK INFORMATION

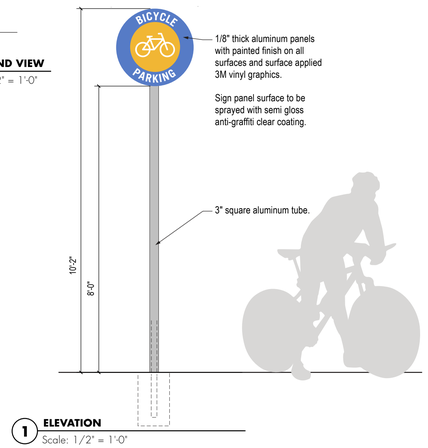


B **DETAIL - REAR VIEW**
Scale: 1 1/2" = 1'-0"

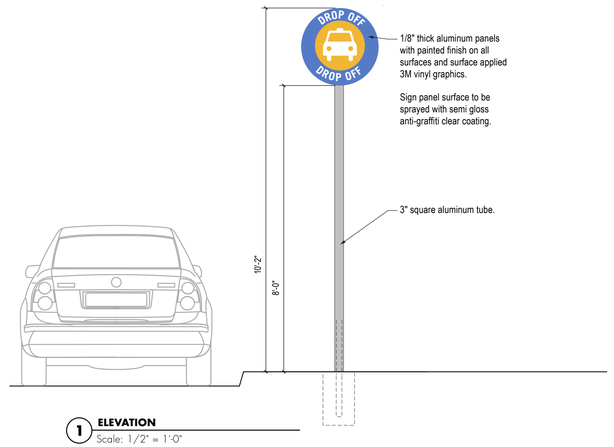
C **DETAIL - END VIEW**
Scale: 1 1/2" = 1'-0"



A **DETAIL - FOUNDATION**
Scale: 1 1/2" = 1'-0"



1 **ELEVATION**
Scale: 1/2" = 1'-0"



1 **ELEVATION**
Scale: 1/2" = 1'-0"

A03 – BICYCLE PARKING IDENTITY

A04 – DROP-OFF IDENTITY

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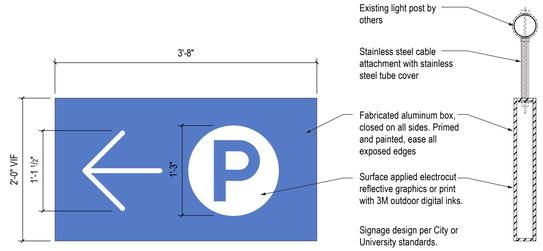
05/01/18 100% DD SET

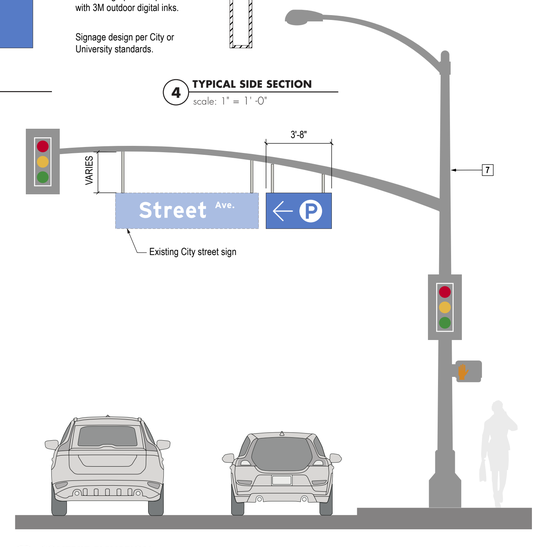
BASE FILE NAMES	
DRAWN BY	AD
CHECKED BY	AO
SCALE	AS NOTED
DATE	01/10/2019
PROJECT NO.	GRUEN # 8345

A03, A04, A05, C03
DESIGN DETAILS

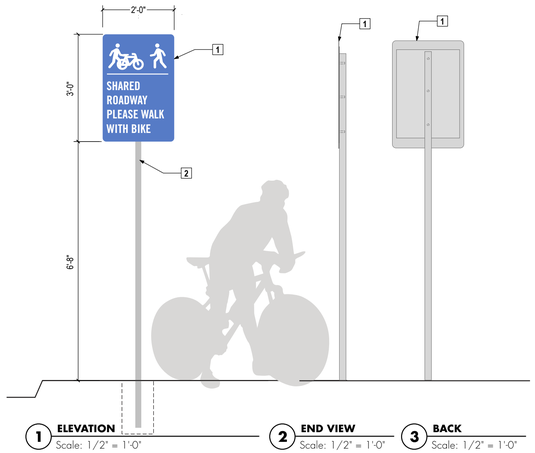
SHEET TITLE

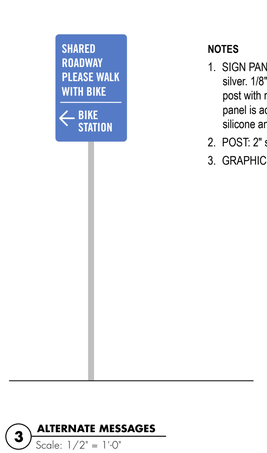
SHEET NO. EG107





B01 – PARKING DIRECTION OVERHEAD

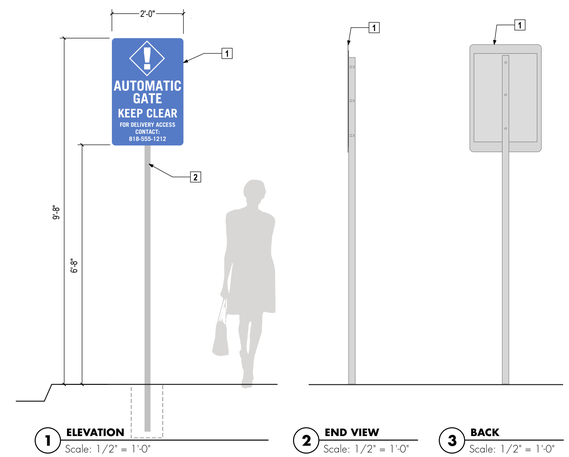




NOTES

1. SIGN PANEL: .080 aluminum panel painted silver. 1/8" aluminum base panel fastened to post with recessed S/S scews. Graphic sign panel is adhered to face of base panel with silicone and VHB tape as required.
2. POST: 2" square galvanized tube.
3. GRAPHICS: Digital print on reflective vinyl.

B02 – BIKE DIRECTIONAL



NOTES

1. SIGN PANEL: .080 aluminum panel painted silver. 1/8" aluminum base panel fastened to post with recessed S/S scews. Graphic sign panel is adhered to face of base panel with silicone and VHB tape as required.
2. POST: 2" square galvanized tube.
3. GRAPHICS: Digital print on reflective vinyl.
4. Messages and location to be verified with UCR prior to fabrication and installation.

D01 – GATE ENTRANCE

MOBILITY HUB
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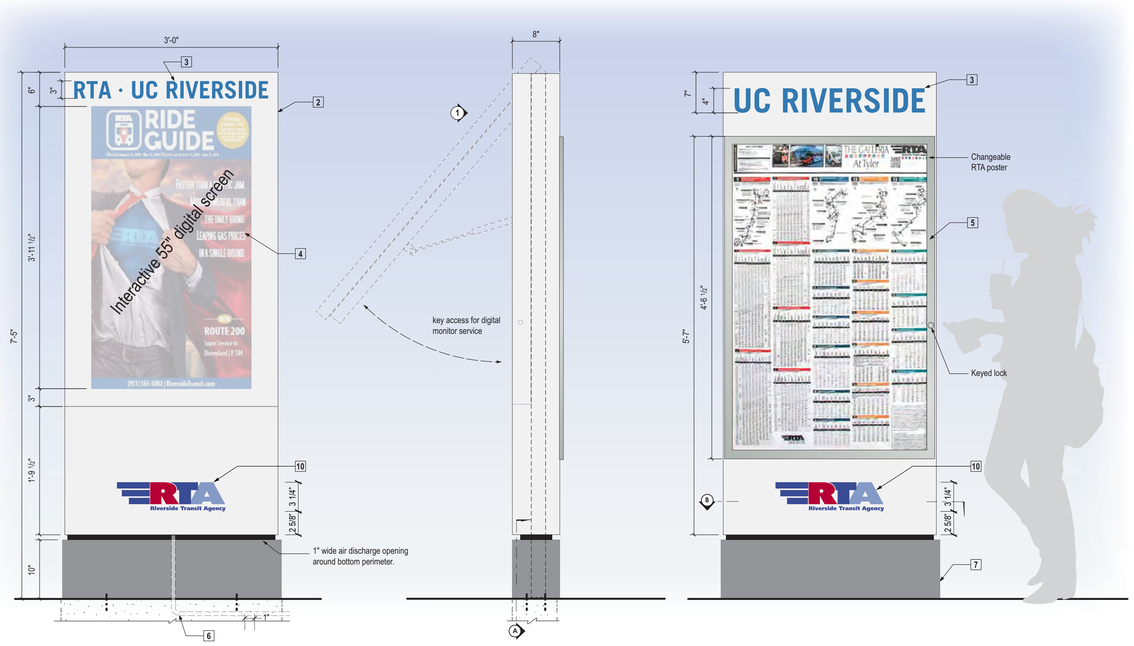
		05/01/18 100% DD SET	

BASE FILE NAMES	
DRAWN BY	AD
CHECKED BY	AO
SCALE	AS NOTED
DATE	01/10/2019
PROJECT NO.	GRUEN # 8345

B01, B02, D01
DESIGN DETAILS

SHEET TITLE

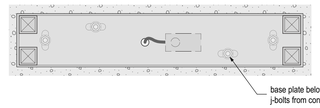
SHEET NO. EG108



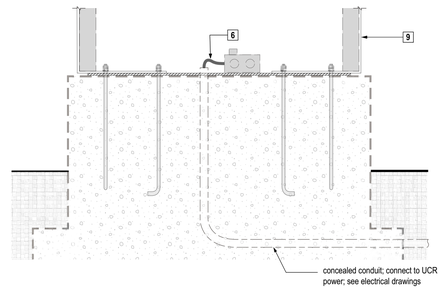
1 **FRONT ELEVATION**
SCALE: 1 1/2" = 1'-0"

2 **END VIEW**
SCALE: 1 1/2" = 1'-0"

3 **REAR VIEW**
SCALE: 1 1/2" = 1'-0"



B **SECTION PLAN VIEW – SUBGRADE CONDUIT**
SCALE: 1 1/2" = 1'-0"



A **TYPICAL SECTION DETAIL – SUBGRADE CONDUIT**
SCALE: 1 1/2" = 1'-0"

C01 – DYNAMIC TRANSIT INFORMATION

NOTES

1. DESCRIPTION: Freestanding dual faced interactive information and bus schedules kiosk. Fabricated of high quality durable & maintainable material.
2. CABINET: Fabricated cabinet of 1/8" thick aluminum with raised "frame"; no exposed fasteners through sign faces; painted; ease all edges and corners; provide removable face panel for maintenance; provide security locking mechanism; provide removable perforated top ventilation panel. Sign fabricator to verify LCD screen and framing size prior production; UL listed per UCR directive.
3. DIMENSIONAL GRAPHICS: 3/8" thick translucent acrylic copy/graphics pushed through-routed out sign face; internal illumination through faces by internal white LED array. Graphics/Colors to be provided & approved by UCR
4. DIGITAL SCREEN UNIT: Exterior-grade, UL listed, 55" touchscreen color system; (suggested BoldVu by Manufacturing Resources International or approved equal). Digital media content by RTA/UCR.

   ADDITIONAL FEATURES TBD BY RTA: Audio system, proximity sensor, tap to phone function, ADA button, headphone jack, camera.
5. POSTER CABINET: with polycarbonate face; sacrificial, anti-graffiti film; hinged and locking frame. Internally illuminated with white LED, back-lighting poster. Fabricator to provide prototype to demonstrate brightness and color temp.
6. POWER/DATA: Sign contractor to coordinate electrical connection from sign to local power conduit with UCR electrical representative; install per manufacturer's specifications; remote on/off controls.
7. MOUNTING: Cabinet structure secures to sub grade concrete footing with threaded stainless steel anchors per manufacturer's engineering specifications.
8. MESSAGES, MEASUREMENTS & LOCATIONS: Sign Contractor to confirm all messages, field verify all measurements, and determine final sign locations with owner prior to creating shop drawings.
9. RTA CONTENT MANAGEMENT: RTA needs to be able to remotely change/manage the content of the dynamic display from RTA's office
10. RTA LOGO: Provide digital printed logo on both sides of sign cabinet per layout & centered on each face; matching approved RTA colors (Dark Blue = PMS 293; Red = PMS 199; Light Blue = PMS 652)

MOBILITY HUB
AND CENTRAL CAMPUS
LINKAGES

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CONSULTANT

ARCHITECT/ENGINEER SEAL

IF SHEET IS LESS THAN 24"x36", THIS IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

KEY PLAN

NO.	DATE	ISSUED FOR	BY
		01/10/19 100% CD Set	
		11/27/18 90% CD SET	
		10/29/18 50% CD SET	
		05/01/18 100% DD SET	

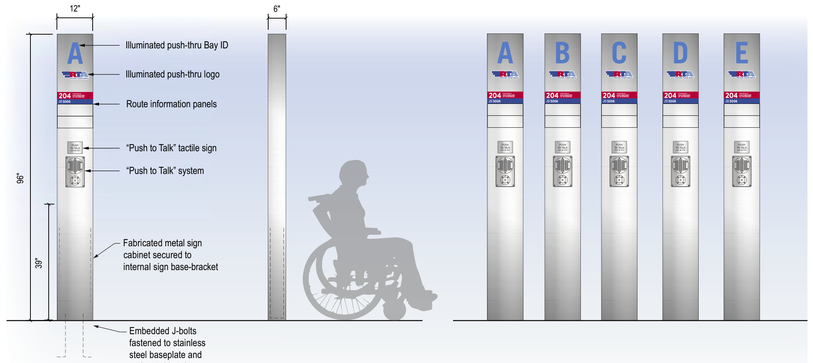
BASE FILE NAMES	
DRAWN BY	AD
CHECKED BY	AO
SCALE	AS NOTED
DATE	01/10/2019
PROJECT NO.	GRUEN # 8345

C01 DESIGN DETAILS

SHEET TITLE

SHEET NO. EG109

C02 – BUS BAY INFORMATION

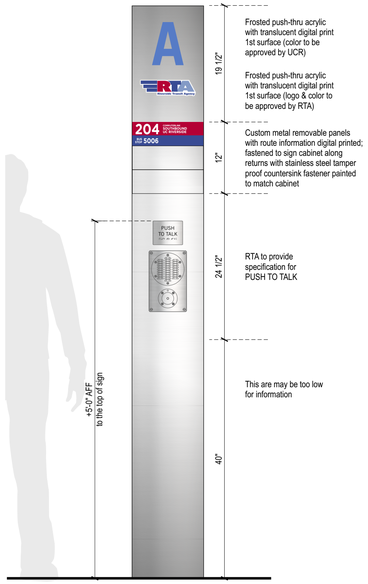


1 **ELEVATION**
Scale: 1/2" = 1'-0"

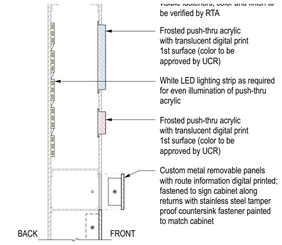
2 **END VIEW**
Scale: 1/2" = 1'-0"

3 **ADDITIONAL LAYOUTS**
Scale: 1/2" = 1'-0"

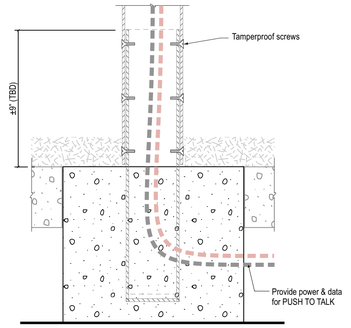
4 **NIGHT RENDERING**
Scale: 1/2" = 1'-0"



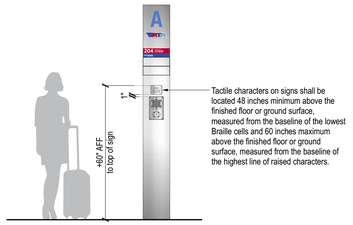
5 **ELEVATION DETAIL**
Scale: 1" = 1'-0"



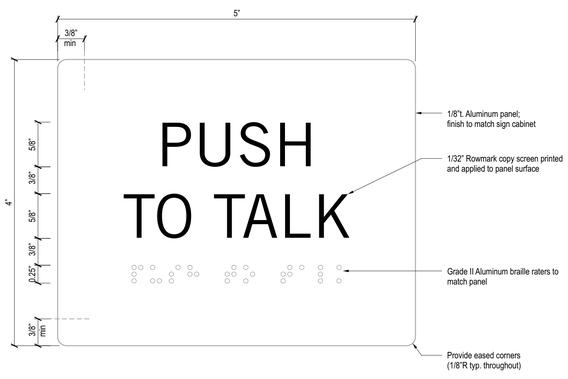
7 **TOP SECTION DETAIL**
Scale: 1 1/2" = 1'-0"



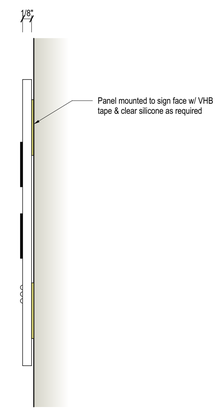
6 **FOOTING DETAIL**
Scale: 1 1/2" = 1'-0"



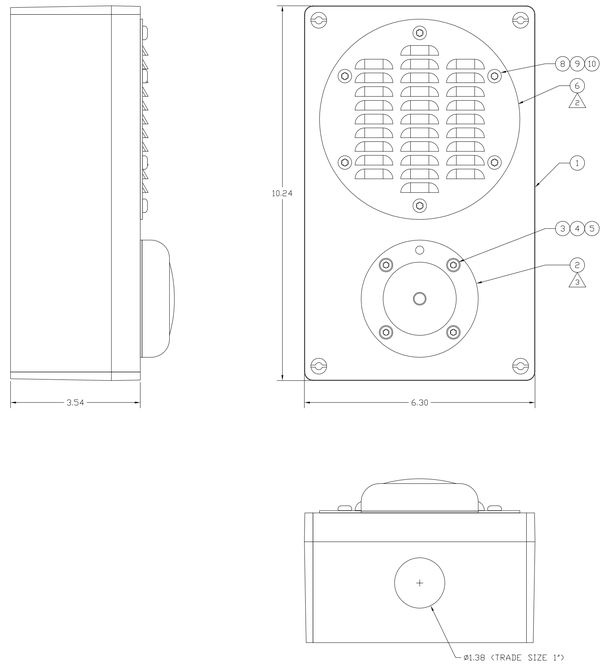
3 **CONTEXT ELEVATION**
Scale: 3/8" = 1'-0"



1 **ELEVATION**
Scale: Full Size



2 **SECTION VIEW**
Scale: Full Size



1 **PUSH TO TALK HARDWARE**
Scale: Half Size

MOBILITY HUB AND CENTRAL CAMPUS LINKAGES

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PROJECT NO.	GRUEN # 8345

C02 DESIGN DETAILS

SHEET TITLE

SHEET NO. EG110