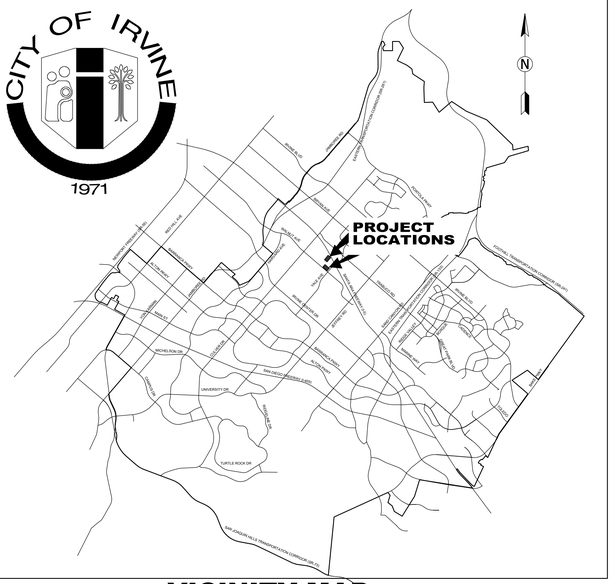
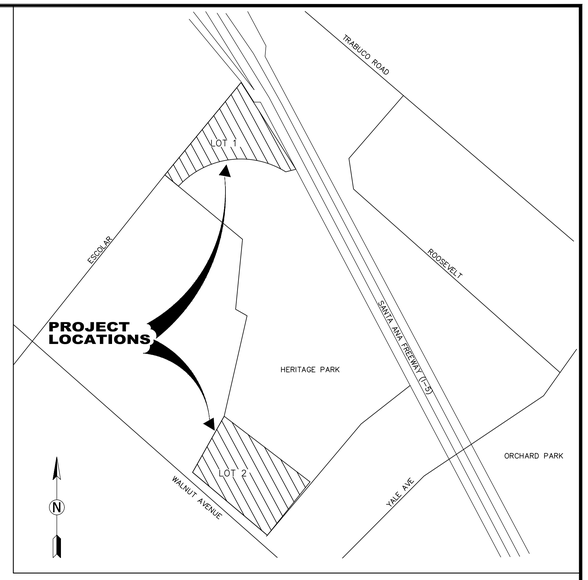
# THE CITY OF IRVINE

# CONSTRUCTION PLAN

CONSTRUCTION PLANS FOR THE IMPROVEMENT OF
TWO HERITAGE PARK PARKING LOTS
14301 YALE AVENUE, IRVINE, CA 92604
CIP NO. 361618




## VICINITY MAP




## LOCATION MAP

## GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE MOST CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CITY OF IRVINE STANDARD DRAWINGS, CITY OF IRVINE STANDARD SPECIFICATIONS, THE UNIFORM BUILDING CODE, THE WORK AREA TRAFFIC CONTROL HANDBOOK (W.A.T.C.H. MANUAL), CALTRANS STANDARD SPECIFICATIONS, ADA, CALIFORNIA MUTCD AND TITLE 24.
2. THE CONTRACTOR SHALL TELEPHONE THE CITY OF IRVINE INSPECTIONS (949) 724-6500 AND THE CITY OF IRVINE PUBLIC WORKS & TRANSPORTATION (949) 724-7365, AT LEAST TWO WORKING DAYS (48 HOURS) PRIOR TO STARTING CONSTRUCTION.
3. ALL UNDERGROUND FACILITIES SHALL BE INSTALLED PRIOR TO SURFACING OF STREETS. THE INSTALLATION OF ALL UNDERGROUND FACILITIES CROSSING EXISTING ARTERIAL STREETS REQUIRES BORING OR JACKING, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
4. ANY EXISTING PAVEMENT DISTURBED BY THE CONSTRUCTION OF UNDERGROUND INSTALLATIONS SHALL BE COVERED BY A PERMIT ISSUED BY THE CITY OF IRVINE.
5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR AND COORDINATE THE RELOCATION OF ANY EXISTING UTILITIES DEEMED NECESSARY BY THE PROPOSED IMPROVEMENT.
6. WHENEVER IT BECOMES NECESSARY TO TUNNEL UNDER EXISTING IMPROVEMENTS, THE CONTRACTOR SHALL SUPPORT THOSE IMPROVEMENTS IN A MANNER APPROVED BY THE CITY ENGINEER, OR THE CONTRACTOR SHALL SAWCUT, REMOVE AND REPLACE THOSE IMPROVEMENTS IN ACCORDANCE WITH THE CITY OF IRVINE STANDARD DRAWINGS.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE NEW SEWER LATERALS CONSTRUCTED AND TO STAMP THE CURB WITH AN "S" ABOVE THE NEW LATERAL. INDIVIDUAL SEWER AND WATER SERVICES SHALL NOT BE LOCATED UNDER A DRIVEWAY.
8. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND STAMP THE CURB ON EACH SIDE OF THE STREET WITH THE APPROPRIATE LETTER: "E" FOR EDISON, "T" FOR TELEPHONE, ETC., WHEREVER UNDERGROUND FACILITIES CROSS A STREET.
9. PRIOR TO PLACING OF UNDERGROUND UTILITIES, THE LOCATION OF ALL UNDERGROUND FACILITIES (ELECTRICAL, TELEPHONE, CABLE TV, GAS, ETC.) SHALL BE ADDED TO IMPROVEMENT PLANS.
10. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES (BY POTHOLING OR OTHER MEANS). CONTRACTORS SHALL NOTIFY UNDERGROUND SERVICE ALERT (U.S.A.) 811 AT LEAST TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION TO LOCATE EXISTING UTILITIES.
11. ALL CONCRETE WORK AS SHOWN ON PLANS (CURB & GUTTER, STORM DRAIN, PIPE, MANHOLES, SIDEWALK, ETC.) SHALL BE EXTRA STRENGTH CONCRETE WITH 7 SACK TYPE II CEMENT OR 6 SACK TYPE V CEMENT, UNLESS DEEMED UNNECESSARY BY SULPHATE CONTENT TESTS AS APPROVED BY THE CITY OF IRVINE.
12. CONTRACTOR SHALL OBTAIN ANY REQUIRED O.S.H.A. PERMITS PRIOR TO ANY EXCAVATIONS.
13. ARROW BOARDS SHALL BE USED ON ANY LANE CLOSURES ON ARTERIAL STREETS.
14. SLURRY BACKFILL SHALL BE REQUIRED WHEN TUNNELING UNDER CURB AND GUTTER. SLURRY BACKFILL IS REQUIRED AROUND ALL MANHOLE CONSTRUCTION WITHIN PAVED STREETS.
15. STREET CONSTRUCTION AND IMPROVEMENTS SHALL NOT BE OPENED FOR PUBLIC USE UNTIL ACCEPTED BY THE CITY.
16. ALL IMPROVEMENTS AND TRAFFIC SIGNAL WORK WITHIN THE STATE RIGHT-OF-WAY SHALL CONFORM TO CURRENT CALTRANS STANDARD SPECIFICATIONS.
17. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE STARTING WORK. SHOULD CONDITIONS EXIST WHICH ARE CONTRARY TO THOSE SHOWN ON PLANS, THE DESIGN ENGINEER SHALL BE NOTIFIED BEFORE PROCEEDING WITH WORK.
18. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THAT ALL PIPES WALLS, ETC. ARE ADEQUATELY BRACED DURING CONSTRUCTION.
19. ALL WORK SHALL CONFORM TO THE PLANS AND SPECIFICATIONS IN ALL RESPECTS AND SHALL BE SUBJECT TO APPROVAL BY THE CITY'S INSPECTOR.
20. PURSUANT TO SECTION 8771 OF THE BUSINESS AND PROFESSIONS CODE, EXISTING SURVEY MONUMENTS SHALL BE NOTED AND DOCUMENTED BEFORE CONSTRUCTION. IF MONUMENTS ARE DISTURBED DURING CONSTRUCTION, THE CONTRACTOR SHALL PAY A LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER TO RESET SUCH MONUMENTS, UNLESS OTHERWISE SPECIFIED OR DESIGNATED.

## GENERAL NOTES CONTINUED:

21. CONSTRUCTION ACTIVITIES MAY OCCUR BETWEEN 7:00 A.M. AND 7:00 P.M. MONDAYS THROUGH FRIDAYS, AND 9:00 A.M. AND 6:00 P.M. ON SATURDAYS. CONTRACTOR TO COORDINATE WITH THE HIGH SCHOOL ON DROP-OFF AND PICK-UP TIMES AS TO NOT CAUSE ANY CONFLICT DURING THOSE TIMES. NO DELIVERIES SHALL BE SCHEDULED MONDAY THROUGH FRIDAYS DURING PICK UP AND DROP OFF TIMES. NO CONSTRUCTION ACTIVITIES SHALL BE PERMITTED OUTSIDE OF THESE HOURS OR ON SUNDAYS AND FEDERAL HOLIDAYS UNLESS A TEMPORARY WAIVER IS GRANTED BY THE CHIEF BUILDING OFFICIAL OR HIS OR HER AUTHORIZED REPRESENTATIVE.
22. NO WORK MAY OCCUR ON ARTERIAL STREETS BEFORE 9:00 A.M. OR CONTINUE AFTER 3:00 P.M. UNLESS A TEMPORARY WAIVER IS GRANTED BY THE CHIEF BUILDING OFFICIAL OR HIS OR HER AUTHORIZED REPRESENTATIVE.
23. IF THE CONTRACTOR WISHES TO ENGAGE IN CRUSHING OPERATIONS AT THE PROJECT SITE, HE OR SHE MUST PROVIDE A WRITTEN REQUEST AND OBTAIN THE CITY'S WRITTEN APPROVAL PRIOR TO AWARD OF THE CONSTRUCTION CONTRACT. THE WRITTEN REQUEST MUST STATE THE PROPOSED LOCATION OF THE CRUSHER AND THE SOURCE OF RUBBLE TO BE CRUSHED. THE CITY HAS THE OPTION TO PERMIT OR PROHIBIT CRUSHING OPERATIONS FOR UNTREATED BASE MATERIAL IN THE IMMEDIATE VICINITY OF THE PROJECT SITE. IF ALLOWED, THE CRUSHING OPERATION MUST BE IN COMPLIANCE WITH SECTION 200-2 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

## STORM DRAIN NOTES:

1. STATION SHOWN AS (0 + 00) ARE STORM DRAIN STATIONS AND ARE INDEPENDENT OF ALL CENTERLINE STATIONS.
2. ALL WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CITY OF IRVINE STANDARD DRAWINGS, CITY OF IRVINE STANDARD SPECIFICATIONS, ALL APPLICABLE GENERAL NOTES AND THE STANDARD SPECIFICATIONS OF THE STATE OF CALIFORNIA WHERE APPLICABLE.
3. ALL TRENCH EXCAVATIONS SHALL CONFORM TO STATE OF CALIFORNIA CONSTRUCTION SAFETY ORDERS.
4. ALL PIPES SHALL BE BEDDED IN ACCORDANCE WITH DETAILS SHOWN ON STD PLAN 318 UNLESS OTHERWISE NOTED.
5. THE CITY OF IRVINE INSPECTION DEPARTMENT SHALL BE NOTIFIED AT LEAST TWO WORKING DAYS (48 HOURS) PRIOR TO START OF WORK AT (949) 724-6500. A PRE-CONSTRUCTION CONFERENCE IS REQUIRED PRIOR TO START OF CONSTRUCTION.
6. R.C.P. SHALL CONFORM TO APPLICABLE A.S.T.M. STANDARDS.
7. ALL FILL MATERIAL SHALL BE COMPACTED TO 90% RELATIVE COMPACTION AS DETERMINED BY CALIFORNIA TEST METHODS 216F.
8. ALL MATERIAL TESTING FOR THE DRAINAGE FACILITIES SHALL BE PROVIDED BY THE CONTRACTOR OR DEVELOPER IN ACCORDANCE WITH THE NUMBER, LOCATION, AND FREQUENCY REQUESTED BY THE CITY INSPECTOR.

## BENCH MARK:

BENCHMARKS PER ORANGE COUNTY SURVEY DEPARTMENT
3ZZ-3-01 (158.942 FEET NAVD 88 2012 ADJUSTMENT)
LOCATION: SW'LY CORNER OF REMINGTON AND TRABUCO
PROJECT COMBINATION FACTOR = 0.99997143

## BASIS OF BEARINGS:

COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83), ZONE 6, NAD83 (2017.50 EPOCH) BASED ON TIES TO CSRS WEBSITE (OEOC, SDACY AND LGWD.)

NOTICE TO CONTRACTOR

PURSUANT TO CALIFORNIA GOVERNMENT CODE SECTION 4216, NO EXCAVATION PERMIT IS VALID UNLESS THE FOLLOWING IS PERFORMED:

1. UNDERGROUND SERVICES ALERT HAS BEEN CONTACTED AND HAS PROVIDED INQUIRY I.D. # _____
2. THE UNDERSIGNED AGREES TO CONTACT AND OBTAIN AN INQUIRY I.D.# FROM UNDERGROUND SERVICES ALERT (800) 422-4133 AT LEAST TWO (2) WORKING DAYS PRIOR TO THE COMMENCEMENT OF EXCAVATION.

SIGNED _____ DATE _____

*CITY OF IRVINE*

**This set of plans and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations on the same without written permission from the City of Irvine. The stamping of this plan and specifications SHALL NOT be held to permit or be an approval of the violation of any provisions of any City Ordinance or State law.**

## SCOPE OF WORK

- DEMOLITION OF EXISTING ITEMS/UTILITIES
- GRADING OF THE SITE
- CONSTRUCTION OF NEW PARKING LOTS (2)
- CONSTRUCTION OF CURBS/GUTTER/ADA RAMPS
- CONSTRUCTION OF NEW UTILITY LINES
- UTILITY COORDINATION
- SIGNAGE AND STRIPING
- SITE EROSION CONTROL AND TEMPORARY BMP

**AREA OF DISTURBANCE LOT 1: 142,992 S.F. (ADD ALT)**
**AREA OF DISTURBANCE LOT 2: 100,445 S.F.**

REVIEWED FOR GEOTECHNICAL ASPECTS ONLY, AND FOUND TO BE IN GENERAL CONFORMANCE WITH THE INTENT OF OUR DESIGN RECOMMENDATIONS CONTAINED IN OUR GEOTECHNICAL REPORT DATED NOVEMBER 12, 2025

SIGNED _____ DATE _____

## GEOTECHENICAL ENGINEER

DIAZ YOURMAN & ASSOCIATES
ENGINEER: BRITTON HOWAY
(714) 245-2920
1616 EAST 17TH STREET,
SANTA ANA, CA 92705
PROJECT NO. 2023-018

LOT 1 (ADD ALT) SITE INFORMATION:
AREA: 3.39 ACRES
PROPOSED STALLS: 317

LOT 2 SITE INFORMATION:
AREA: 2.44 ACRES
PROPOSED STALLS: 158

## INDEX OF DRAWINGS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| 6–7 | PRECISE GRADING PLAN |
| 8–9 | STORM DRAIN PLAN |
| 10–11 | STORM DRAIN PROFILE |
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| 4 | PHOTOMETRIC SITE PLAN LOT 1 (ADD ALT) |
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| 8 | GROUNDING DETAILS, POWER SYSTEM STUDY, TRANSFORMER SCHEDULE AND SPECIFICATIONS |
| 9 | LIGHTING FIXTURE SCHEDULE |
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811 Know what's below. Call before you dig.

| NO. | DATE | REVISIONS | APP. | DATE |
|---|---|---|---|---|
| 7 | 11/25/2025 | 100% SUBMITTAL | CITY OF IRVINE | |
| 6 | 09/23/2025 | 100% SUBMITTAL | | |
| 5 | 08/05/2025 | 100% SUBMITTAL | | |
| 4 | 06/03/2025 | 100% SUBMITTAL | | |
| 3 | 3/24/2025 | 90% SUBMITTAL | | |
| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

***PLANS PREPARED BY:***
**P S O M A S**
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2025
LICENSE NO. EXP. DATE

SEAL — REGISTERED PROFESSIONAL ENGINEER — No. 87228 — CIVIL — STATE OF CALIFORNIA

***DATE***

***DRAWN BY:*** RC
DESIGNED BY: DL
***CHECKED BY:*** DL
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**

**CITY OF IRVINE**
**PUBLIC WORKS & SUSTAINABILITY**
**APPROVED**
These plans and/or specifications are signed by the City of Irvine Public Works & Sustainability Department for administrative approval only as prescribed in California Government Code 830.6 and as delegated by City Council pursuant to Resolution 23-64. The City is not responsible for the design, assumptions, or accuracy. All revisions must receive City approvals prior to construction.
Lincoln Lo, P.E.
City Engineer

LINCOLN LO R.C.E. NO. 66116 DATE

***TRACT/PARCEL MAP.NO.*** _____
***DEVELOPMENT CASE NO.*** _____
***GRADING PERMIT*** _____
***WDID NO.*** 594017

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER
SERVICE

DATE

**TWO HERITAGE PARK PARKING LOTS**
**TITLE SHEET**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. ***00946134-PARK***
LANDSCAPE PERMIT NO. _____ ***- LCE***
**SHEET 1 OF 26**
**JOB NO. CIP NO. 361618**

## GRADING NOTES

1. All work shall be in accordance with the latest adopted edition of
   a. The Irvine Grading and Excavation Regulations and Grading Manual
   b. The City of Irvine Standard Plans
   c. Special requirements of the Grading Permit
   d. The California Building Code
   e. Standard Specifications for Public Works Construction (Green Book).
   f. Manual of Uniform Traffic Control Devices (MUTCD) 2014 California supplement
   Whenever special requirements conflict on any subject matter, the Chief Building Official will determine which special requirement and/or code will govern.
   g. Geotechnical Report dated 11/12/2025
2. No grading shall be started without first notifying Grading Inspection. A pre-grading meeting at the site is required before start of clearing and grading with the following people present: Owner, Grading Contractor, Design Civil Engineer, Geotechnical Engineer, Engineering Geologist, City Grading Inspectors, City Maintenance Representative, Archaeologist, Paleontologist or their representatives.
3. The Permittee or his agent shall notify Grading Inspection when the grading operation is ready for each of the following inspections: (Phone (949) 724-6329)
   a. Initial Inspection. When the permittee is ready to begin work, but not less than two days before any clearing or grading is started.
   b. Toe Inspection. After the natural ground or bedrock is exposed and prepared to receive fill, but before fill is placed.
   c. Excavation Inspection. After the excavation is started, but before the vertical depth of the excavation exceeds ten feet.
   d. Fill Inspection. After the fill placement is started, but before the vertical height of the fill exceeds ten feet.
   e. Drainage Device Inspection. After forming of terrace drains, down-drains or after placement of pipe in subdrains, but before any concrete or filler material is placed.
   f. Rough Grading Inspection. When all rough grading has been completed. This inspection may be called for at the completion of rough grading without the inspector necessarily having previously reviewed and approved the required reports.
   g. Final Grading and Improvement Inspection. When all work (including installation of all drainage structures, other protective devices and all other improvements which include landscaping and irrigation systems) has been completed and the as-graded plan, professional certifications and the required reports have been
4. Cut and fill slopes shall be no steeper than two horizontal to one vertical.
5. Fills shall be compacted throughout to a minimum of 90% of the maximum density as determined by ASTM D1557. Compacted fills shall be certified by the Geotechnical Engineer of Record (GEOR).
6. Areas to receive fill shall be properly prepared and approved by the Chief Building Official and Geotechnical Engineer of Record prior to placing of fill.
7. Fills shall be benched into approved material as deemed suitable by the Geotechnical Engineer of Record.
8. All existing fills shall be approved by the Geotechnical Engineer of Record and Chief Building Official
9. Any existing irrigation lines and cisterns shall be removed or crushed in place and back filled and approved by the Grading Inspector and Geotechnical Engineer of Record.
10. Slopes exceeding five feet in height must be planted with an approved irrigation system. All slopes more than three feet in height shall be permanently protected against damage from erosion by planting with grass or ground cover plants.
11. The stockpiling of excess material shall be approved by the Chief Building Official prior to excavation.
12. The Design Civil Engineer, prior to rough grade approval, shall provide a minimum of one blue top per finished pad, set at the highest point in the finished drainage swale. For precise grade approval, the elevation of the floor shall also be provided to insure proper clearance and fall to drainage swale. These elevations shall be noted on the
13. All trench back fills shall be tested and approved by the site Geotechnical Engineer of Record per the Grading and Excavation Regulations.
14. Not Applicable
15. Subdrain outlets shall be completed at the beginning of the subdrain construction.
16. Subdrain and backdrain locations shall be surveyed in the field for line and grade, and the locations shall be shown on the as-graded plans.
17. All cut slopes shall be evaluated both during and after grading by an Engineering Geologist to determine if any slope stability problem exists. Should excavation disclose any geological hazards or potential geological hazards, the Engineering Geologist shall recommend necessary treatment to the City Grading Engineer for approval.
18. Where support or buttressing of cut and natural slopes is determined to be necessary by the Engineering Geologist and/or GEOR, the Geotechnical Engineer will submit design calculations to the Chief Building Official prior to construction. The Engineering Geologist and GEOR will inspect and control the construction of the buttressing and certify the stability of the slope and adjacent structures upon completion.
19. When cut pads are brought to near grade, the Engineering Geologist shall determine if the bedrock is extensively fractured or faulted and will readily transmit water. If considered necessary by the Engineering Geologist and Geotechnical Engineer of Record, a compacted fill blanket will be placed.
20. The Geotechnical Engineer of Record (GEOR) shall perform periodic inspections and submit a complete report and map upon completion of the rough grading.
21. The final compaction report and approval from the GEOR shall contain the type of field-testing performed. The method of obtaining the in-place density, whether sand cone, nuclear gauge, or drive ring shall be so noted for each test. Sufficient maximum density determinations shall be performed to verify the accuracy of the maximum density curves used by the field technician.
22. Notification of Noncompliance: If, in the course of fulfilling their responsibility, the Civil Engineer, the GEOR, the Engineering Geologist or the Testing Agency finds that the work is not being done in conformance with the approved grading plans, the discrepancies shall be reported immediately in writing to the person in charge of the grading work and to the Chief Building Official. Recommendation for corrective measures, if necessary, shall be submitted to the Chief Building Official for approval.
23. The Design Civil Engineer shall provide written approval that the grading operation is in compliance with the approved plans, specifications and applicable codes at completion of the grading operation.
24. Dust shall be controlled by watering using an approved method without creating any runoff from the area.
25. Sanitary facilities shall be maintained on the site.
26. The location and protection of all utilities is the responsibility of the permittee.
27. All existing drainage courses on the project site must continue to function, while protected, especially during storm conditions. Approved protective measures and temporary drainage provisions must be used to protect adjoining properties during the grading project. In all cases, the Contractor and/or Developer shall be held liable for any damage due to obstructing natural or manmade drainage patterns.
28. All water wells shall be abandoned in compliance with the City of Irvine Code of Ordinances Title VI; Division H, Chapter II, Section 6-4-216.
29. All existing sewers, cesspools and septic tanks or other sewage disposal facilities shall be abandoned in compliance with the Uniform Plumbing Code and to the approval of the Geotechnical Engineer and Grading Inspector.
30. Prior to final approval, the Design Civil Engineer shall certify to the Grading Inspector the number of cubic yards of cut, fill, import, or export moved during the grading operation.
31. The Permittee shall comply with Section 5-10-127 of the Grading Code when an excess of 5,000 cubic yards of earth is moved on public roadways from the site of an earth grading operation.
32. Whenever there is an existing catch basin along the construction site frontage, the on-site storm drain system shall be designed to convey water directly to the basin. Exceptions shall require approval by the City Engineer.
33. All concrete structures that come in contact with the on-site soils shall be designed for exposure class S1 from the American Concrete Institute 318 in accordance with the Geotechnical Report.
34. All planters adjacent to the foundations shall be sealed along side of the foundation footing and extended under the planter area to a minimum of 12" to prevent moisture from reaching the foundation subgrade soils. All concrete planter curbs adjacent to pavement areas shall be constructed with weep holes through the curb face.
35. Export soils must go to a legal dumpsite or to a legal permitted site approved by the Chief Building Official.
36. The geotechnical report and all subsequent geotechnical reports as approved by the Community Development Department are considered a part of the approved grading plan.
37. Provide weakened plane joints in concrete curbs 10' on centers.
38. All walkways, landings, and other finished surfaces at doorways shall be finished to within one-half inch or less of the doorway threshold with a 2:1 bevel (single family detached are exempt).
39. No dirt, rock or construction material may be tracked or dropped within the public rights-of-way during the transportation of said material or equipment associated with the project. Any debris in the public right-of-way shall be removed immediately and/or as deemed necessary by the grading inspector.
40. Dirt access ramps over curb and gutter to construction sites are not allowed. When necessary for entrance to such construction sites, asphalt ramps with a minimum 3" diameter pipe will be constructed per City standard 217. All base, gravel, soil or other material carried into the roadway by contractor's personnel or equipment will be cleaned immediately as necessary to prevent pollutants from getting into the storm drain system. Trucks hauling base, gravel, fill or export materials within City limits shall be tarped as necessary to prevent material from spilling into the roadway.
41. Prior to any construction that involves hazardous conditions, the Contractor shall first obtain a permit from the State Division of Occupational Safety and Health (DOSH).
42. Proposed revisions to the grading plan shall be drawn in red pencil on bluelines of the approved plan. These bluelines are then to be submitted to the Community Development Department for review and approval. Only after the blueline approval is given should the originals be changed by the Engineer/Architect.
43. Prior to Final Approval from Inspection Services, the Engineer or Architect shall submit two sets of individual PDF files and AutoCAD files of the "AS-BUILT" plan. The grading permit number and the words "RECORD DRAWING" shall appear on all of the sheets.
44. A minimum of 6" aggregate base will be required under concrete valley gutters. All valley gutters shall be a minimum 3'-0" wide.
45. Rule 403, Air Quality Control Management District, must be implemented during construction.
   a. A person shall not cause or allow the emissions of fugitive dust from any transport, handling, construction or storage activity so that the presence of such dust remains visible in the atmosphere beyond the property line of the emission source. (Does not apply to emission emanating from unpaved roadways open to public travel or farm roads. This exclusion shall not apply to industrial or commercial facilities).
   b. A person shall take every reasonable precaution to minimize fugitive dust emissions from wrecking, excavation, grading, clearing of land and solid waste disposal operations.
   c. A person shall not cause or allow particulate matter to exceed 100 micrograms per cubic meter when determined as the difference between upwind and downwind samples collected on high volume samplers at the property line for a minimum of five hours.
   d. A person shall take every reasonable precaution to prevent visible particulate matter from being deposited upon public roadways, including, but not limited to, the removal of particulate matter from equipment prior to movement on paved street.
   e. Subsections a. and b. shall not be applicable when the wind speed instantaneously exceeds 40 kilometers (25 miles) per hour, or when the average wind speed is greater than 24 kilometers (15 miles) per hour. The average wind speed determinations shall be on a 15-minute average at the nearest official air-monitoring station or by wind instrument located at the site being checked.
   f. The provisions of this rule shall not apply to agricultural operations.
46. Grading operations shall occur only between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. Saturdays. Construction activities shall take into account School drop-off and pick-up hours with Irvine Unified School District as to not impede or negatively affect school activities. No construction activities shall be permitted outside of these permitted hours or on Sundays and federal holidays, unless a temporary waiver has been granted by the Chief Building Official. Any waivers shall take into account the impact upon the community. Irvine Municipal Code Section 6-8-205.
47. Where an excess of five thousand (5,000) cubic yards of earth per project site is moved on public roads from or to the site of an earth grading operation, City of Irvine Building and Safety enforces the section of the grading code, which contains requirements to curtail impacts to adjacent properties. Such requirements include, but are not limited to; application of water to truck loads, sweeping of access roads to the site and use of approved truck haul routes.
48. Prior to approval of grading permit, the Design Engineer shall submit drawings on DXF or Auto/CAD .dwg file to the City. Minimum information that will be required: Tract Boundary, Lot Lines, Curb Lines, Storm Drains and Building Footprints. Call (949) 724-6343 for details.
49. Curved storm drains shall be constructed in accordance with Section 306 – 1.2.4b, Standard Specifications for Public Works Construction, latest approved edition.
50. A separate Landscape Permit will be required for any landscaping associated with this project.

## PAVING NOTES

1. A pre-paving meeting is required 48 hours prior to paving,
2. The aggregate base section shall be compacted to a minimum of 95% of maximum density. Maximum and field density are to be determined in accordance with ASTM D1557.
3. A "tack coat" (paint binder) shall be applied between pavement layers, and on existing pavement to be resurfaced at a rate of 0.10 gal./sq.yd. The tack coat shall be a type SSI asphalt emulsion.
4. The asphalt concrete for parking lots shall be type III, Class C-3 as specified in Section 400-4.3, Standard Specifications for Public Works Construction, latest approved edition. The paving asphalt to be mixed with aggregate shall conform to the provisions of Section 203.1 and shall be steamed refined asphalt with a viscosity grade of AR-4000 minimum and AR-8000 maximum to the satisfaction of the City Engineer. Hot mix asphalt (HMA) should satisfy the requirement of Greenbook Sections 203 and 302. Base course, crushed miscellaneous base (CMB), shall be in accordance with Greenbook Section 200-2.4 and compacted fill shall be per Geotechnical recommendations and City approval.
5. Pavement section recommendations shall be submitted to the City for approval prior to issuance of rough grade release of parking and drive areas. The recommendations submitted by the GEOR shall be based on "R" value analysis of the site subgrade soils and traffic indices approved by the City of Irvine. Pavement design shall be based on a minimum T.I. of 4.0 (for parking stall areas) and a minimum T.I. of 5.5 (for all traveled ways and drive aisles) and shall be designed in accordance with the County of Orange E.M.A. Materials Lab method.
6. A City Certified Deputy Paving Inspector is required during operations at the job site and at the asphalt plant.

## PRIVATE ENGINEER'S NOTICE TO CONTRACTOR(S)

1. The existence and location of any underground utilities and/or structures shown on these plans were obtained by a search of the available records. Approval of these plans by the City of Irvine does not constitute a representation as to the accuracy or completeness of the location or the existence or non-existence of any utility and/or structure within the limits of this project. The Contractor is required to take all due precautionary means to protect the utilities of record or not of record or not shown on these plans.
2. Relocation or removal of any existing utilities shall be performed by the respective Utility Owners, at the expense of the Developer.
3. The Grading Contractor shall satisfy himself as to the grading quantity as shown on this plan as part of his bid.
4. It is requested that the Grading Contractor notify this private Engineer by calling at least 48 hours before completion of the grading operation in order that this office may perform a final inspection with our grade certification commitment to the City of Irvine.
5. Contractor shall be responsible for obtaining all required permits prior to commencement of grading operations.
6. Unauthorized changes and uses: The Engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans and the City of Irvine.

| NO. | DATE | REVISIONS | APP. | DATE |
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CITY OF IRVINE

**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373
RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

**SEAL**
REGISTERED PROFESSIONAL ENGINEER
RAFAEL CHAVEZ
No. 87228
CIVIL
STATE OF CALIFORNIA
**DATE**

**DRAWN BY:** RC
DESIGNED BY: DL
**CHECKED BY:** DL
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**
**DATE**

**TWO HERITAGE PARK PARKING LOTS**
**GRADING NOTES**
CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO.
**00948134-PARK**
LANDSCAPE PERMIT NO.
**_____ - LCE**
**SHEET 2 OF 26**
**JOB NO. CIP NO. 361618**

QUANTITIES

## GRADING CONSTRUCTION NOTES

1. CONSTRUCT 6" CURB TYPE "B-6" PER CITY OF IRVINE STD. PLAN 200, SEE DETAIL 1 ON SHEET 21.....4,736 LF
2. CONSTRUCT CONCRETE CURB AND GUTTER TYPE "D" PER CITY OF IRVINE STD. PLAN 200, SEE DETAIL 1 ON SHEET 21.....2,148 LF
3. CONSTRUCT 0" CONCRETE CURB TYPE "C-6" PER CITY OF IRVINE STD. PLAN 200, SEE DETAIL 1 ON SHEET 21.....217 LF
4. CONSTRUCT 0-INCH TO 6-INCH CONCRETE CURB TRANSITION PER DETAIL 4 ON SHEET 21.....24 LF
5. CONSTRUCT 4" CONCRETE SIDEWALK PER CITY OF IRVINE STD. PLAN 201, SEE DETAIL 5 ON SHEET 21.....8,175 S.F.
6. CONSTRUCT CONCRETE WHEELSTOP PER DETAIL 6 ON SHEET 21.....315 EA
7. CONSTRUCT 3-FOOT WIDE, UNLESS NOTED OTHERWISE, V-GUTTER PER DETAIL 7 ON SHEET 21.....1,037 LF
8. CONSTRUCT ACCESS CURB RAMP WITH YELLOW TRUNCATED DOME PER CITY OF IRVINE STD. PLAN 202, SEE DETAIL 8 ON SHEET 22.....702 SF
9. CONSTRUCT LOCAL DEPRESSION PER CITY OF IRVINE STD. PLAN 303.....8 EA
10. CONSTRUCT VARIABLE HEIGHT CURB PER DETAIL 10 ON SHEET 21.....395 LF
11. CONSTRUCT CONCRETE BLOCK SLOUGH WALL PER SPPWC 622-3.....216 LF
12. CONSTRUCT NON-TYPICAL LOCAL DEPRESSION PER MODIFIED DETAIL ON SHEET 22.....1 EA
13. CONSTRUCT U-CHANNEL PER DETAIL 13 ON SHEET 21.....18 LF

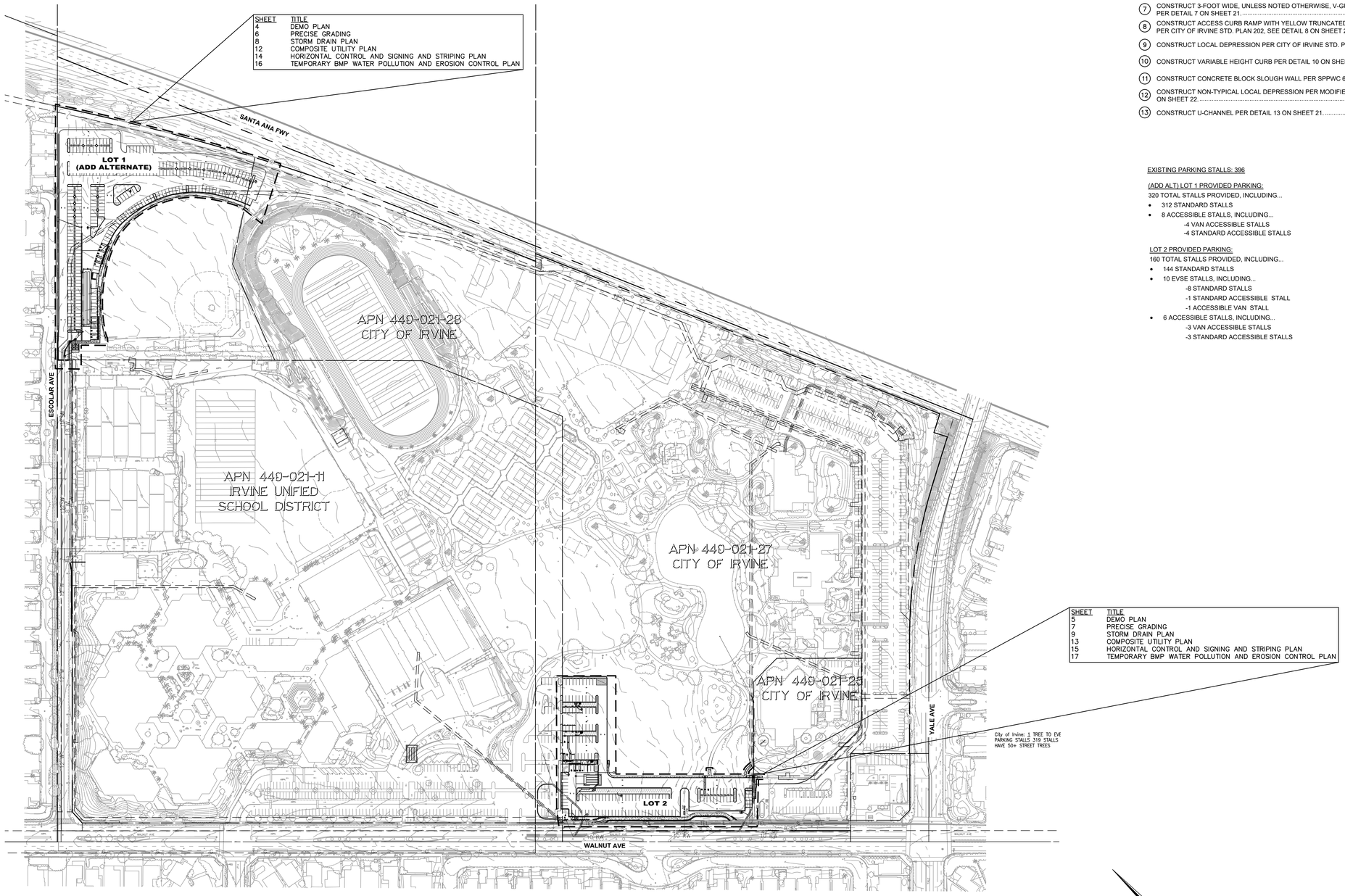
EXISTING PARKING STALLS: 396

(ADD ALT) LOT 1 PROVIDED PARKING:

320 TOTAL STALLS PROVIDED, INCLUDING...
- 312 STANDARD STALLS
- 8 ACCESSIBLE STALLS, INCLUDING...
  - -4 VAN ACCESSIBLE STALLS
  - -4 STANDARD ACCESSIBLE STALLS

LOT 2 PROVIDED PARKING:

160 TOTAL STALLS PROVIDED, INCLUDING...
- 144 STANDARD STALLS
- 10 EVSE STALLS, INCLUDING...
  - -8 STANDARD STALLS
  - -1 STANDARD ACCESSIBLE STALL
  - -1 ACCESSIBLE VAN STALL
- 6 ACCESSIBLE STALLS, INCLUDING...
  - -3 VAN ACCESSIBLE STALLS
  - -3 STANDARD ACCESSIBLE STALLS

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PLANS PREPARED BY:
**PSOMAS**
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

SEAL
REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA
DATE

DRAWN BY: RC
DESIGNED BY: DL
CHECKED BY: DL
RECOMMENDED:

APPROVED BY:
CITY ENGINEER

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER
SERVICE

DATE

**TWO HERITAGE PARK PARKING LOTS**
**SHEET INDEX**

CITY OF IRVINE
PUBLIC WORKS & SUSTAINABILITY DEPARTMENT

PLAN CHECK NO.
**00948134-PARK**

LANDSCAPE PERMIT NO.
_____ **- LCE**

SHEET 3 OF 26

JOB NO. CIP NO. 361618

## LEGEND

- APPROXIMATE LIMIT OF WORK (REMAIN WITHIN PROPERTY LINE)
- LIMITS OF CONCRETE DEMOLITION. (APPROX. REMOVAL = 0 S.F.)
- LIMITS OF ASPHALT DEMOLITION. (APPROX. REMOVAL = 10,500 S.F.)
- LIMITS OF UTILITY DEMOLITION

## DEMOLITION CONSTRUCTION NOTES

1. PROTECT IN PLACE, ITEM NOTED.
2. REMOVE, ITEM NOTED.
3. REMOVE AND RELOCATE, ITEM NOTED.
4. ADJUST TO GRADE, ITEM NOTED.
5. INSTALL UTILITY PLUG/CAP ON EXISTING LATERAL TO BE REMOVED.
6. REMOVE TREE AND ROOT MASS.

SANTA ANA FWY

ESCOLAR AVE

APN 440-021-28
CITY OF IRVINE

APN 440-021-11
IRVINE UNIFIED
SCHOOL DISTRICT

SCALE: 1"=40'

0 20 40 80 120

| NO. | DATE | REVISIONS | APP. | DATE |
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| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

CITY OF IRVINE

**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

SEAL — REGISTERED PROFESSIONAL ENGINEER — RAFAEL CHAVEZ — No. 87228 — CIVIL — STATE OF CALIFORNIA

DATE

DRAWN BY: RC
DESIGNED BY: DL
CHECKED BY: DL
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER
SERVICE

DATE

**TWO HERITAGE PARK PARKING LOTS**
**LOT 1 DEMOLITION PLAN**
**(ADD ALTERNATE)**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. **00948134-PARK**

LANDSCAPE PERMIT NO. _____ **- LCE**

SHEET 4 OF 26

JOB NO. CIP NO. 361618

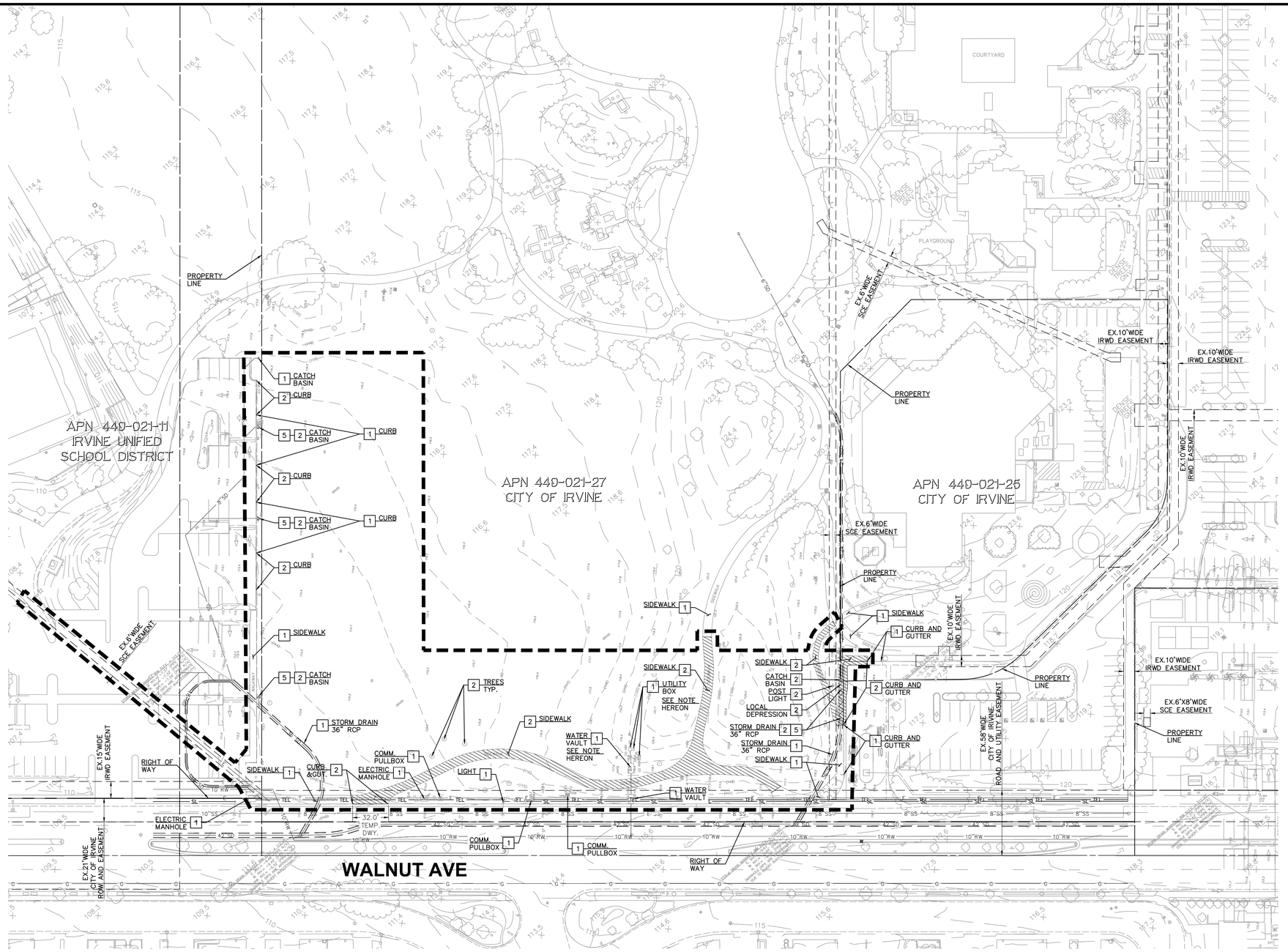
## LEGEND

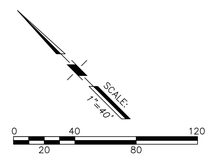
- APPROXIMATE LIMIT OF WORK (REMAIN WITHIN PROPERTY LINE)
- LIMITS OF CONCRETE DEMOLITION. (APPROX. REMOVAL = 5,544 S.F.)
- LIMITS OF ASPHALT DEMOLITION. (APPROX. REMOVAL = 0 S.F.)
- LIMITS OF UTILITY DEMOLITION

## DEMOLITION CONSTRUCTION NOTES

1. PROTECT IN PLACE, ITEM NOTED.
2. REMOVE, ITEM NOTED.
3. REMOVE AND RELOCATE, ITEM NOTED.
4. ADJUST TO GRADE, ITEM NOTED.
5. INSTALL UTILITY PLUG/CAP ON EXISTING LATERAL TO BE REMOVED.
6. REMOVE TREE AND ROOT MASS.

NOTE:
CONTRACTOR TO RE-ROUTE EXISTING IRRIGATION PER IRRIGATION PLANS PRIOR TO DEMOLITION SCOPE TO MAINTAIN IRRIGATION TO REST OF SITE DURING CONSTRUCTION.

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CITY OF IRVINE

**PLANS PREPARED BY:**
PSOMAS
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373
RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

SEAL
REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA
DATE

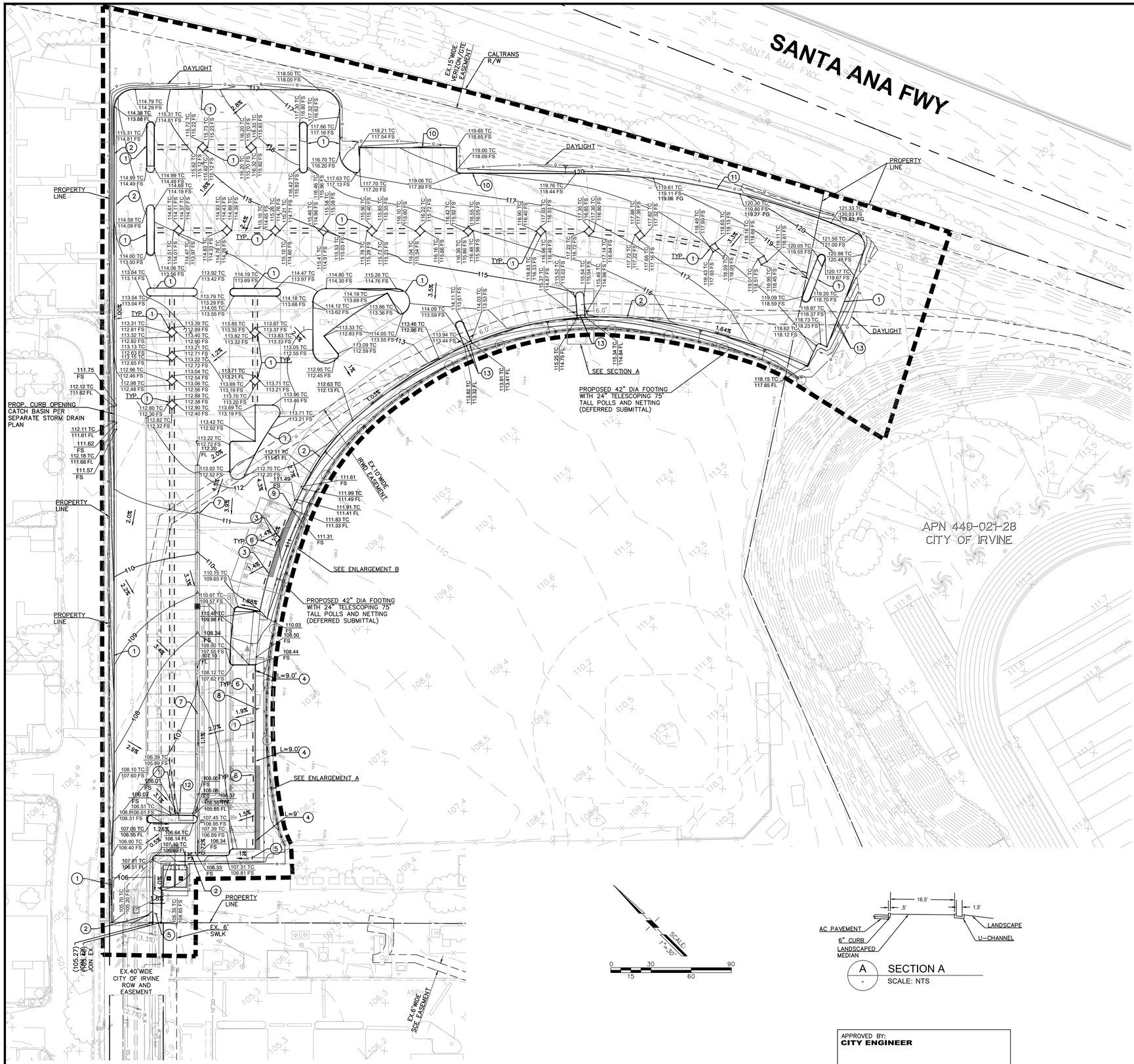
**DRAWN BY:** RC
DESIGNED BY: DL
**CHECKED BY:** DL
RECOMMENDED:

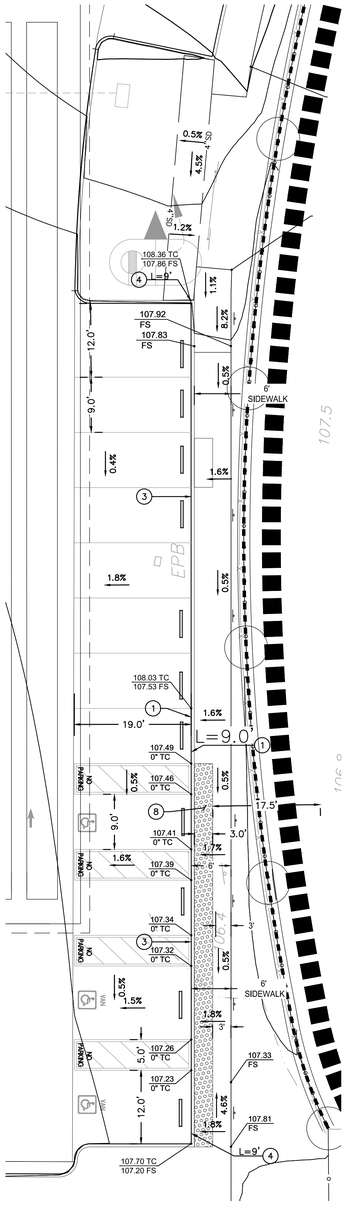
APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE
DATE

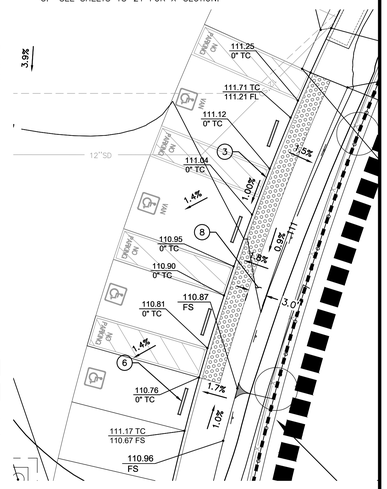
**TWO HERITAGE PARK PARKING LOTS**
**DEMOLITION PLAN**
**LOT 2**
CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. ***00948134-PARK***
LANDSCAPE PERMIT NO. ***- LCE***
**SHEET 5 OF 26**
JOB NO. CIP NO. 361618




A ENLARGEMENT
SCALE: 1"=10'




B ENLARGEMENT
SCALE: 1"=10'







A SECTION A
SCALE: NTS

## LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| - - - - | APPROXIMATE LIMIT OF WORK (REMAIN WITHIN PROPERTY LINE) |
| — —GB— — | GRADE BREAK. |
| ——···——→—— | FLOWLINE. |
| | LANDSCAPE. |

## GRADING CONSTRUCTION NOTES

1. CONSTRUCT 6" CURB TYPE "B-6" PER CITY OF IRVINE STD. PLAN 200, SEE DETAIL 1 ON SHEET 21.
2. CONSTRUCT CONCRETE CURB AND GUTTER TYPE "D" PER CITY OF IRVINE STD. PLAN 200, SEE DETAIL 1 ON SHEET 21.
3. CONSTRUCT 0" CONCRETE CURB TYPE "C-6" PER CITY OF IRVINE STD. PLAN 200, SEE DETAIL 1 ON SHEET 21.
4. CONSTRUCT 0-INCH TO 6-INCH CONCRETE CURB TRANSITION PER DETAIL 4 ON SHEET 21.
5. CONSTRUCT 4" CONCRETE SIDEWALK PER CITY OF IRVINE STD. PLAN 201, SEE DETAIL 5 ON SHEET 21.
6. CONSTRUCT CONCRETE WHEELSTOP PER DETAIL 6 ON SHEET 21.
7. CONSTRUCT 3-FOOT WIDE, UNLESS NOTED OTHERWISE, V-GUTTER PER DETAIL 7 ON SHEET 21.
8. CONSTRUCT ACCESS CURB RAMP WITH YELLOW TRUNCATED DOME PER CITY OF IRVINE STD. PLAN 202, SEE DETAIL 8 ON SHEET 22.
9. CONSTRUCT LOCAL DEPRESSION PER CITY OF IRVINE STD. PLAN 303.
10. CONSTRUCT VARIABLE HEIGHT CURB PER DETAIL 10 ON SHEET 21.
11. CONSTRUCT CONCRETE BLOCK SLOUGH WALL PER SPPWC 622-3.
12. CONSTRUCT NON-TYPICAL LOCAL DEPRESSION PER MODIFIED DETAIL ON SHEET 22.
13. CONSTRUCT U-CHANNEL PER DETAIL 13 ON SHEET 21.

## EARTHWORK QUANTITIES:

| | CUT (C.Y.) | FILL (C.Y.) |
|---|---|---|
| RAW CUT/FILL | 4,245 | 1,756 |
| SHRINKAGE (10%) | | 1,084 |
| PAVING SPOILS | 3,667 | |
| TOTAL | 7,912 | 2,840 |
| EXPORT | 5,072 C.Y. | |

NOTES:

1. EARTHWORK QUANTITIES DO NOT INCLUDE ANY FOUNDATION FOOTING SPOILS OR TRENCHING SPOILS, UNLESS NOTED ABOVE.
2. EARTHWORK QUANTITIES ARE FOR DESIGN AND BONDING PURPOSES ONLY, AND NOT FOR CONTRACT PURPOSES. THE CONTRACTOR IS RESPONSIBLE FOR COMPUTING HIS OR HER OWN QUANTITIES.
3. SEE SHEETS 18–21 FOR X-SECTION.

**NOTE:**
1. CONTRACTOR TO ENSURE PROPER COVER OVER EXISTING IRWD WATER MAIN PER IRWD STANDARDS. IF COVER FALLS BETWEEN 2.5'–3.5' BACKFILL WITH 1-SACK SLURRY PER IRWD SECTION 02223–6 (G.SAND–CEMENT SLURRY REFILL MATERIAL FOR FOUNDATION STABILIZATION IN PIPE BASE AND PIPE ZONES). 2.5' MINIMUM COVER TO BE PROVIDED.
2. CONTRACTOR TO ENSURE 0.5' MINIMUM VERTICAL CLEARANCE BETWEEN EXISTING IRWD UTILITIES AND PROPOSED UTILITIES. IF MINIMUM CLEARANCE CANNOT BE MAINTAINED CONTACT IRWD PROMPTLY.
PROJECT CONTACT: ABIGAIL KUAN – ENGINEER – (949)–453–5646

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE

DATE

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
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**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

SEAL — REGISTERED PROFESSIONAL ENGINEER — RAFAEL CHAVEZ — No. 87228 — CIVIL — STATE OF CALIFORNIA

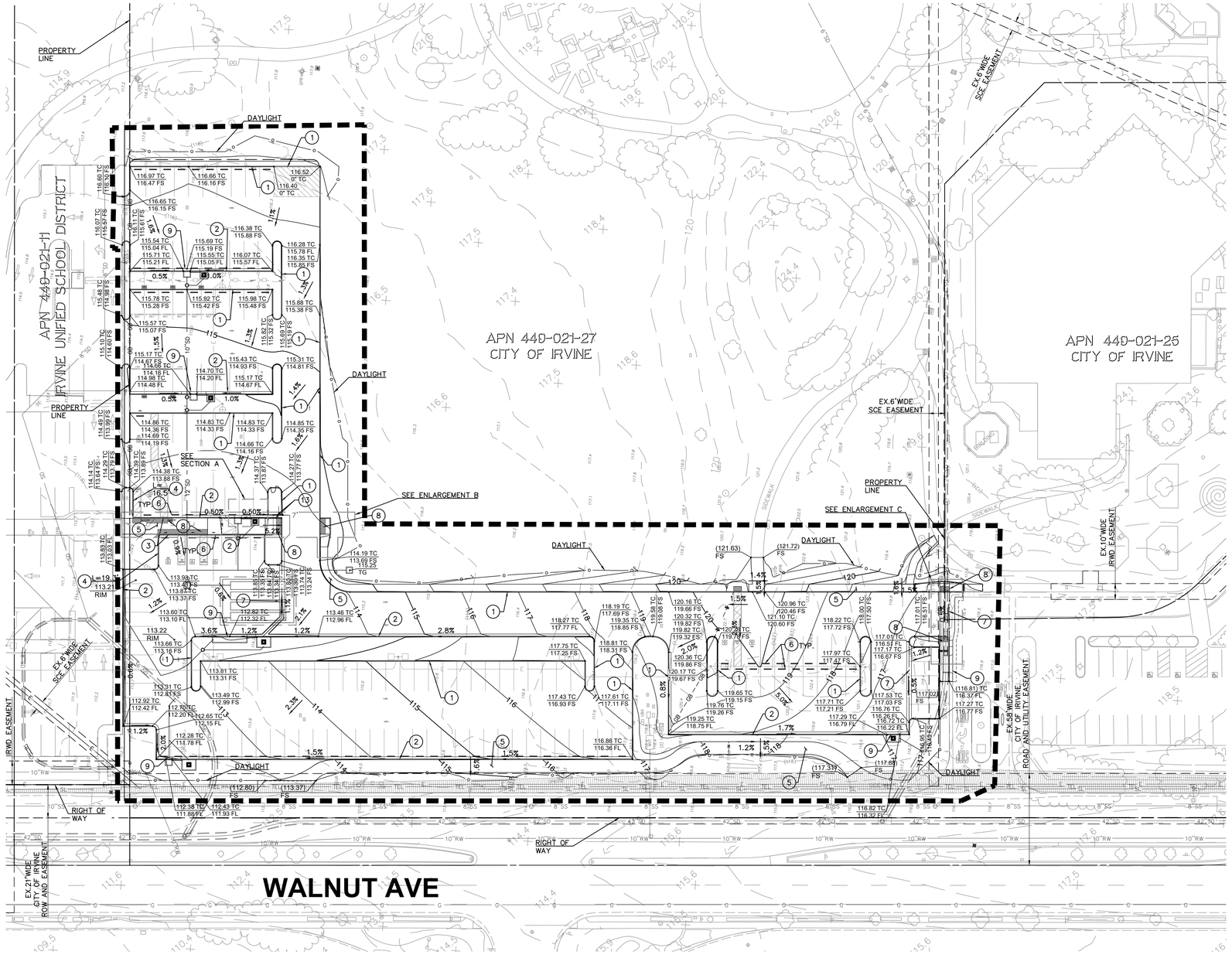
DATE

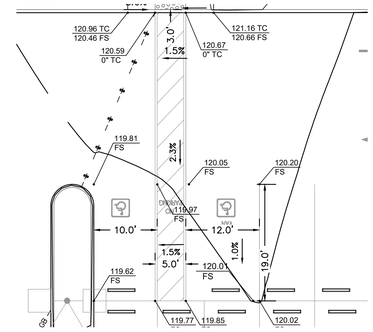
DRAWN BY: RC
DESIGNED BY: DL
CHECKED BY: DL
RECOMMENDED:

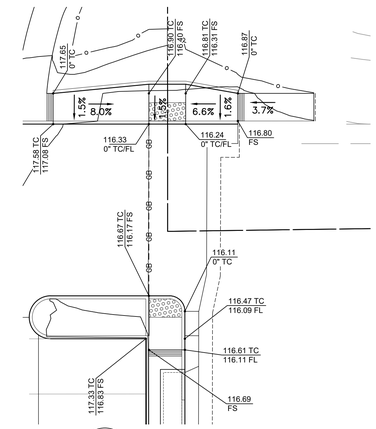
# TWO HERITAGE PARK PARKING LOTS
# LOT 1 PRECISE GRADING PLAN
# (ADD ALTERNATE)

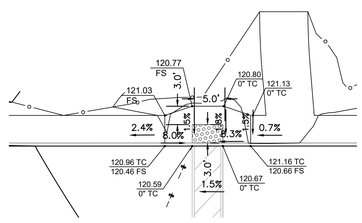
CITY OF IRVINE
PUBLIC WORKS & SUSTAINABILITY DEPARTMENT

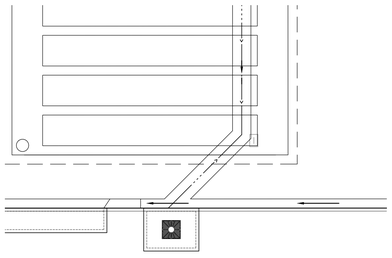
PLAN CHECK NO. **00948134-PARK**
LANDSCAPE PERMIT NO. **- LCE**
SHEET 6 OF 26
JOB NO. CIP NO. 361618

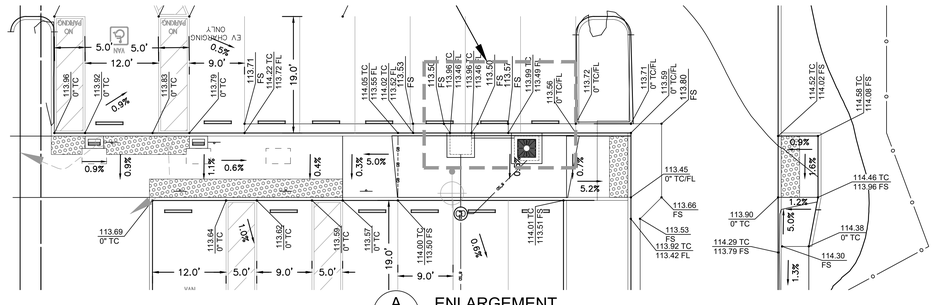


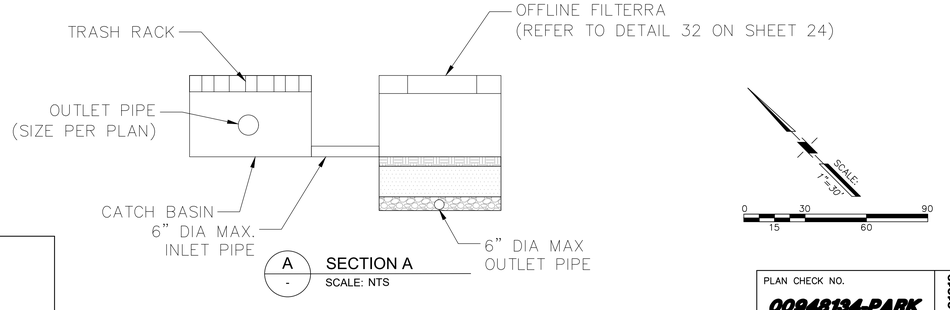





GUTTER CONFLUENCE DETAIL




## LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| | APPROXIMATE LIMIT OF WORK (REMAIN WITHIN PROPERTY LINE) |
| —GB— | GRADE BREAK. |
| | FLOWLINE. |
| | LANDSCAPE. |

## GRADING CONSTRUCTION NOTES

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12. CONSTRUCT NON-TYPICAL LOCAL DEPRESSION PER MODIFIED DETAIL ON SHEET 22.
13. CONSTRUCT U-CHANNEL PER DETAIL 13 ON SHEET 21.

## EARTHWORK QUANTITIES:

| | | CUT (C.Y.) | FILL (C.Y.) |
|---|---|---|---|
| RAW CUT/FILL | | 3,182 | 202 |
| SHRINKAGE (10%) | | | 551 |
| PAVING SPOILS | | 2,379 | |
| | TOTAL | 5,561 | 753 |
| | EXPORT | 4,808 C.Y. | |

NOTES:

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3. SEE SHEETS 18–20 FOR X-SECTION.

| NO. | DATE | REVISIONS | APP. | DATE |
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CITY OF IRVINE

**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373
RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

SEAL — REGISTERED PROFESSIONAL ENGINEER — RAFAEL CHAVEZ — No. 87228 — CIVIL — STATE OF CALIFORNIA
DATE

DRAWN BY: RC
DESIGNED BY: DL
CHECKED BY: DL
RECOMMENDED:

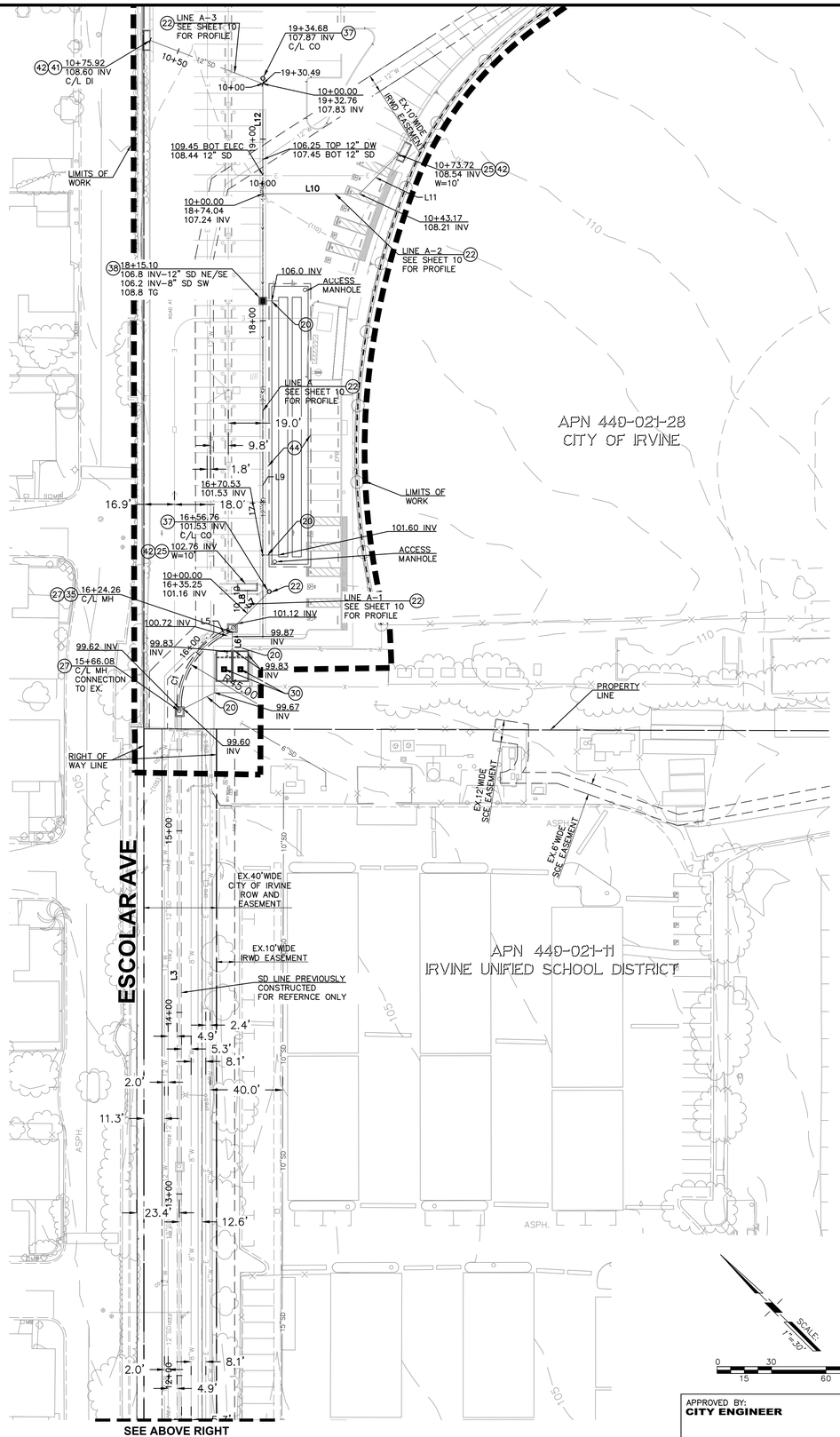
APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

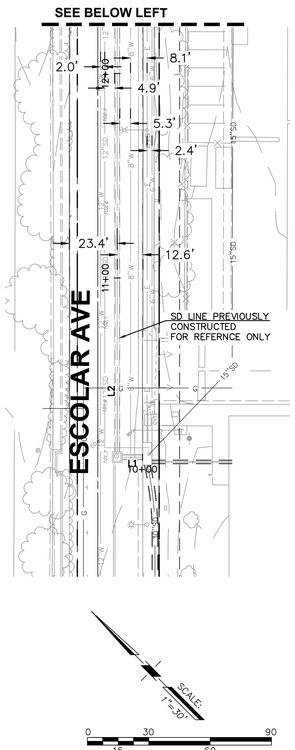
APPROVED BY:
IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE
DATE

**TWO HERITAGE PARK PARKING LOTS**
**PRECISE GRADING PLAN**
**LOT 2**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. ***00948194-PARK***
LANDSCAPE PERMIT NO. ***- LCE***
**SHEET 7 OF 26**
JOB NO. CIP NO. 361618




## STORM DRAIN CONSTRUCTION NOTES

20. INSTALL 8" HDPE DOUBLE-WALLED PIPE WITH BEDDING PER DETAIL 40 ON SHEET 23.
21. INSTALL 10" HDPE DOUBLE-WALLED PIPE WITH BEDDING PER DETAIL 40 ON SHEET 23.
22. INSTALL 12" HDPE DOUBLE-WALLED PIPE WITH BEDDING PER DETAIL 40 ON SHEET 23.
23. INSTALL 15" HDPE DOUBLE-WALLED PIPE WITH BEDDING PER DETAIL 40 ON SHEET 23.
24. INSTALL 24" RCP PIPE WITH BEDDING PER CITY OF IRVINE STD. 318. SEE PROFILE FOR D-LOAD.
25. INSTALL CATCH BASIN TYPE II PER CITY OF IRVINE STD. 301, SEE DETAIL 25 ON SHEET 23 AND DETAIL 46/47 ON SHEET 24.
26. INSTALL JUNCTION STRUCTURE NO. V PER CITY OF IRVINE STD. 309B, SEE DETAIL 26 ON SHEET 23.
27. INSTALL JUNCTION STRUCTURE NO. I PER CITY OF IRVINE STD. 306, SEE DETAIL 27 ON SHEET 23.
28. CONNECT TO EXISTING 24" STORM DRAIN WITH CONCRETE COLLAR PER CITY OF IRVINE STD. 310, SEE DETAIL 28 ON SHEET 23.
29. INSTALL CATCH BASIN TYPE I PER CITY OF IRVINE STD. 300, SEE DETAIL 29 ON SHEET 23.
30. INSTALL 8'X12.5' FILTERRA (FTPD08125) PEAK DIVERSION SYSTEM, SEE DETAIL 30 ON SHEET 23.
31. INSTALL 6'X4' FILTERRA (FTIBC0406) INTERNAL BYPASS SYSTEM, SEE DETAIL 31 ON SHEET 24.
32. INSTALL 4'X4' FILTERRA (FT0404) OFFLINE SYSTEM, SEE DETAIL 32 ON SHEET 24.
33. INSTALL 8'X6' FILTERRA (FT0806) OFFLINE SYSTEM, SEE DETAIL 32 ON SHEET 24.
34. INSTALL 8'X8' FILTERRA (FTIBC0804) INTERNAL BYPASS SYSTEM, SEE DETAIL 31 ON SHEET 24.
35. INSTALL STORMGATE HIGH FLOW BYPASS SYSTEM SEE DETAIL ON SHEET 25.
36. NOT USED.
37. CONSTRUCT STORM DRAIN CLEAN OUT SEE DETAIL ON SHEET 25.
38. CONSTRUCT 4'X4' DROP INLET PER DETAIL 38 ON SHEET 23.
39. INSTALL 6" HDPE PIPE WITH BEDDING PER CITY OF IRVINE STD. 318.
40. CONNECT TO EXISTING 30" STORM DRAIN WITH CONCRETE COLLAR PER CITY OF IRVINE STD. 310, SEE DETAIL 28 ON SHEET 23.
41. INSTALL CURB OPENING CATCH BASIN PER IRVINE STD. PLAN 302A.
42. INSTALL OLDCASTLE FLOWGARD CATCH BASIN FILTER INSERT (OR APPROVED EQUAL) PER DETAIL ON SHEET 24.
43. INSTALL 6'X4' FILTERRA (FT0604) OFFLINE SYSTEM, SEE DETAIL 32 ON SHEET 24.
44. INSTALL 5' DIAMETER UNDERGROUND DETENTION SYSTEM PER DETAIL 44 ON SHEET 25.
45. INSTALL 4" HDPE DOUBLE-WALLED PIPE WITH BEDDING PER DETAIL 40 ON SHEET 23.

### CONSTRUCTION NOTES

1. UTILITIES TO CROSS OVER OR UNDER OTHER UTILITIES TO MAINTAIN 12" MINIMUM CLEARANCE AT UTILITY CROSSINGS, UNLESS NOTED OTHERWISE.
2. CONTRACTOR SHALL VERIFY SIZE AND LOCATION (HORIZONTAL AND VERTICAL) OF EXISTING CROSSING AND JOINING UTILITIES PRIOR TO CONSTRUCTION AND IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICT.
3. CONTRACTOR SHALL CONSTRUCT GRAVITY UTILITIES (SEWER AND STORM DRAIN) BEFORE OTHER UTILITIES. CONSTRUCTION OF THESE GRAVITY UTILITIES TO START FROM THE DOWNSTREAM ENDS.
4. EXISTING UTILITIES ARE COMPILED BASED ON PREVIOUS BASE FILES, FIELD SURVEY AND FIELD VERIFICATION. POTHOLING IS RECOMMENDED TO VERIFY ANY AND ALL UTILITIES KNOWN OR UNKNOWN WHICH MAY BE IN CONFLICT WITH PROPOSED CONSTRUCTION.
5. PRIOR TO THE REMOVAL OF ANY WET OR DRY UTILITY LINES, THE CONTRACTOR SHALL CONFIRM WITH OWNER REPRESENTATIVE WHETHER THESE UTILITY LINES ARE STILL ACTIVE OR NOT. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICT.
6. CONTRACTOR TO ADJUST TO FINISHED GRADE ALL EXISTING UTILITY BOXES, STORM DRAIN CLEANOUT COVERS, PULL BOXES AND VALVE COVERS NOT SPECIFICALLY SHOWN WITHIN THE LIMITS OF WORK.
7. SAWCUT, REMOVE AND REPLACE EXISTING CURB AS REQUIRED FOR TRENCHING. MATCH EXISTING CURB.

| Line Table | | |
|---|---|---|
| Line # | Length | Direction |
| L3 | 245.351 | N40° 37' 28.32"E |
| L5 | 8.241 | S79° 13' 21.68"E |
| L6 | 6.466 | S40° 46' 38.32"W |
| L7 | 22.973 | N85° 36' 47.32"E |
| L8 | 9.262 | N40° 46' 38.32"E |
| L9 | 222.691 | N40° 38' 32.92"E |
| L10 | 43.174 | S49° 21' 27.08"E |
| L11 | 30.547 | N85° 38' 32.92"E |
| L12 | 60.562 | N40° 38' 32.92"E |
| L1 | 9.972 | N49° 22' 31.68"W |
| L2 | 295.271 | N40° 37' 28.32"E |

| Curve Table | | | |
|---|---|---|---|
| Curve # | Length | Radius | Delta |
| C1 | 45.49' | 45.0 | 057°55'25" |

**NOTE:**
PORTION OF ESCOLAR UP TO THE SITE LIMITS TO BE SLURRY SEALED AND RESTRIPPED BY THE CONTRACTOR DURING IRVINE HIGH SCHOOL WINTER BREAK (DEC. 22, 2025 THROUGH JAN. 2, 2026)

**NOTE:**
1. CONTRACTOR TO ENSURE PROPER COVER OVER EXISTING IRWD WATER MAIN PER IRWD STANDARDS. IF COVER FALLS BETWEEN 2.5'-3.5' BACKFILL WITH 1-SACK SLURRY PER IRWD SECTION 02223-6 (G.SAND-CEMENT SLURRY REFILL MATERIAL FOR FOUNDATION STABILIZATION IN PIPE BASE AND PIPE ZONES). 2.5' MINIMUM COVER TO BE PROVIDED.
2. CONTRACTOR TO ENSURE 0.5' MINIMUM VERTICAL CLEARANCE BETWEEN EXISTING IRWD UTILITIES AND PROPOSED UTILITIES. IF MINIMUM CLEARANCE CANNOT BE MAINTAINED CONTACT IRWD PROMPTLY.
PROJECT CONTACT: ABIGAIL KUAN – ENGINEER – (949)-453-5646

| NO. | DATE | REVISIONS | APP. | DATE |
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CITY OF IRVINE

PLANS PREPARED BY:
PSOMAS
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373
RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

SEAL
REGISTERED PROFESSIONAL ENGINEER
RAFAEL CHAVEZ
No. 87228
CIVIL
STATE OF CALIFORNIA
DATE

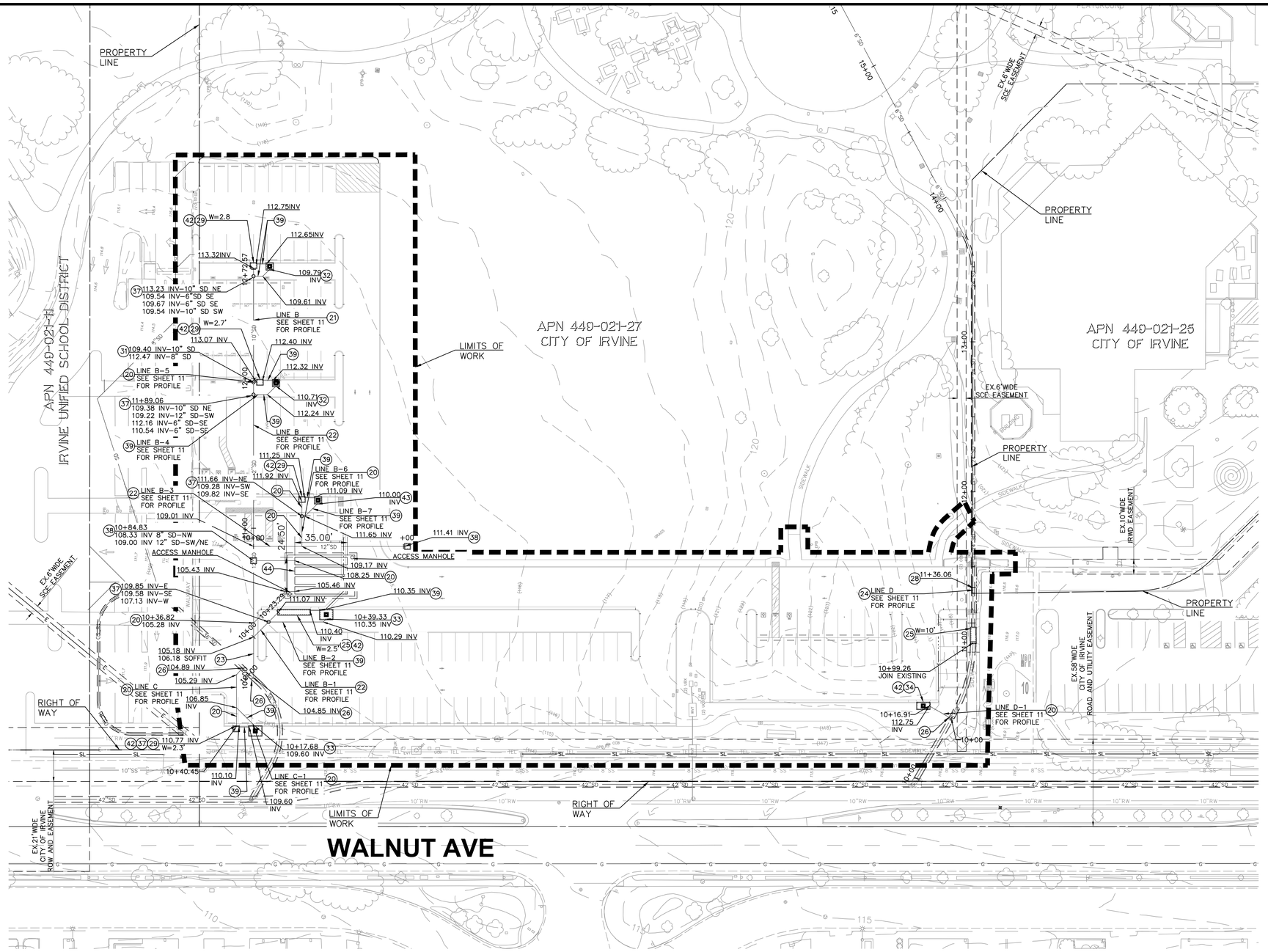
DRAWN BY: RC
DESIGNED BY: DL
CHECKED BY: DL
RECOMMENDED:

APPROVED BY:
CITY ENGINEER
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER
SERVICE
DATE

**TWO HERITAGE PARK PARKING LOTS**
**LOT 1 STORM DRAIN PLAN**
**(ADD ALTERNATE)**
CITY OF IRVINE
PUBLIC WORKS & SUSTAINABILITY DEPARTMENT

PLAN CHECK NO.
00948134-PARK
LANDSCAPE PERMIT NO.
- LCE
SHEET 8 OF 26
JOB NO. CIP NO. 361618




## STORM DRAIN CONSTRUCTION NOTES

(20) INSTALL 8" HDPE DOUBLE-WALLED PIPE WITH BEDDING PER DETAIL 40 ON SHEET 23.

(21) INSTALL 10" HDPE DOUBLE-WALLED PIPE WITH BEDDING PER DETAIL 40 ON SHEET 23.

(22) INSTALL 12" HDPE DOUBLE-WALLED PIPE WITH BEDDING PER DETAIL 40 ON SHEET 23.

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(35) INSTALL STORMGATE HIGH FLOW BYPASS SYSTEM SEE DETAIL ON SHEET 25.

(36) NOT USED.

(37) CONSTRUCT STORM DRAIN CLEAN OUT SEE DETAIL ON SHEET 25.

(38) CONSTRUCT 4'X4' DROP INLET PER DETAIL 38 ON SHEET 23.

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(41) INSTALL CURB OPENING CATCH BASIN PER IRVINE STD. PLAN 302A.

(42) INSTALL OLDCASTLE FLOWGARD CATCH BASIN FILTER INSERT (OR APPROVED EQUAL) PER DETAIL ON SHEET 24.

(43) INSTALL 6'X4' FILTERRA (FT0604) OFFLINE SYSTEM, SEE DETAIL 32 ON SHEET 24.

(44) INSTALL 5.5' DIAMETER UNDERGROUND DETENTION SYSTEM PER DETAIL 45 ON SHEET 26.

(45) INSTALL 4" HDPE DOUBLE-WALLED PIPE WITH BEDDING PER DETAIL 40 ON SHEET 23.

**CONSTRUCTION NOTES**

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| Line Table | | |
|---|---|---|
| Line # | Length | Direction |

SCALE: 1"=30'

0 30 90
15 60

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CITY OF IRVINE

**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

**SEAL**
REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA

**DATE**

**DRAWN BY:** RC
DESIGNED BY: DL
**CHECKED BY:** DL
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**
**DATE**

**TWO HERITAGE PARK PARKING LOTS**
**STORM DRAIN PLAN**
**LOT 2**

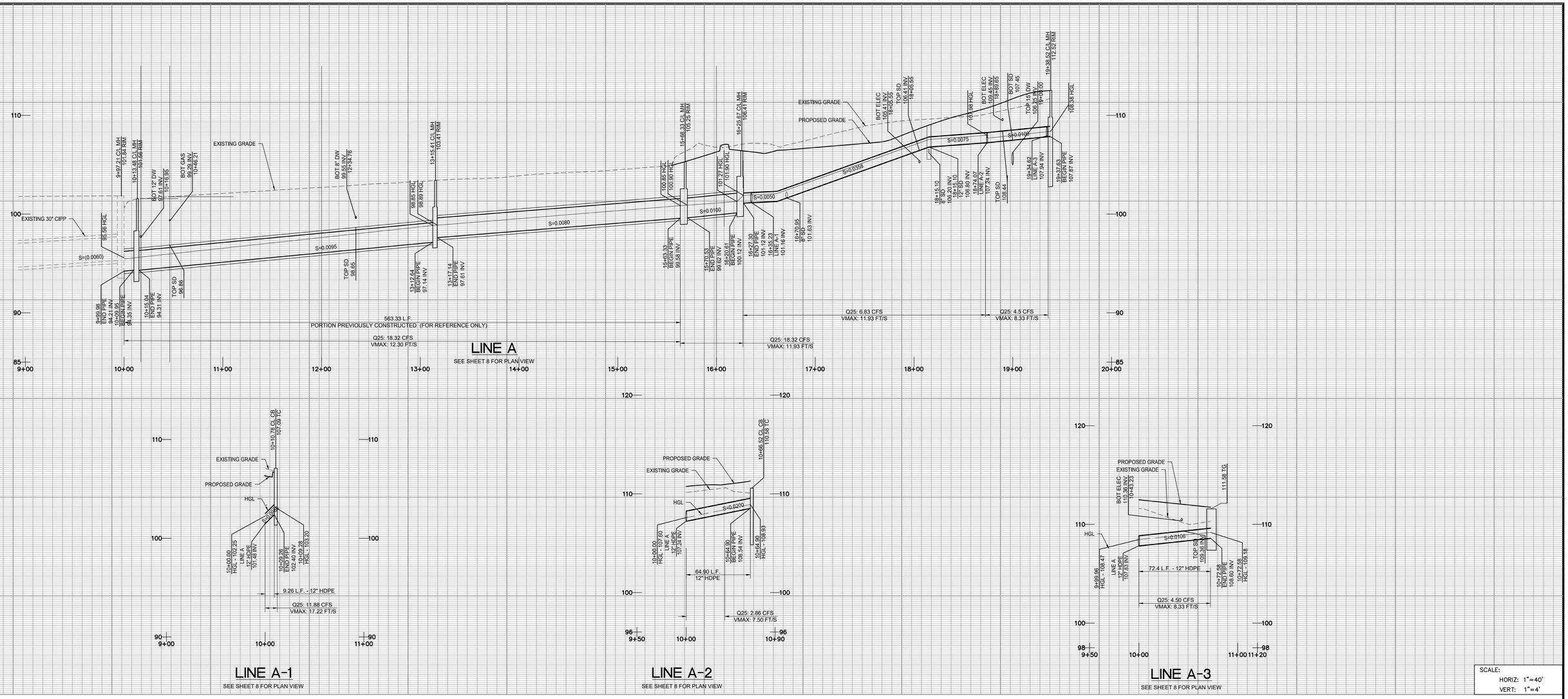
CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO.
**00948134-PARK**

LANDSCAPE PERMIT NO.
**_____ - LCE**

**SHEET 9 OF 26**

JOB NO. CIP NO. 361618




## LINE A

SEE SHEET 8 FOR PLAN VIEW




## LINE A-1

SEE SHEET 8 FOR PLAN VIEW




## LINE A-2

SEE SHEET 8 FOR PLAN VIEW




## LINE A-3

SEE SHEET 8 FOR PLAN VIEW

SCALE:
HORIZ: 1"=40'
VERT: 1"=4'

**NOTE:**
1. CONTRACTOR TO ENSURE PROPER COVER OVER EXISTING IRWD WATER MAIN PER IRWD STANDARDS. IF COVER FALLS BETWEEN 2.5'–3.5' BACKFILL WITH 1–SACK SLURRY PER IRWD SECTION 02223–6 (G.SAND–CEMENT SLURRY REFILL MATERIAL FOR FOUNDATION STABILIZATION IN PIPE BASE AND PIPE ZONES). 2.5' MINIMUM COVER TO BE PROVIDED.
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PROJECT CONTACT: ABIGAIL KUAN – ENGINEER – (949)–453–5646

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| 1 | | CITY OF IRVINE | | |

**PLANS PREPARED BY:**
PSOMAS
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373
DAVID LUZURIAGA RCE. NO. 56734 JUNE 30, 2025
LICENSE NO. EXP. DATE

SEAL
REGISTERED PROFESSIONAL ENGINEER
No. 87228
CIVIL
STATE OF CALIFORNIA

DATE

DRAWN BY: RC
DESIGNED BY: DL
CHECKED BY: DL
RECOMMENDED:

APPROVED BY:
CITY ENGINEER

LINCOLN LO R.C.E. NO. 66116 DATE

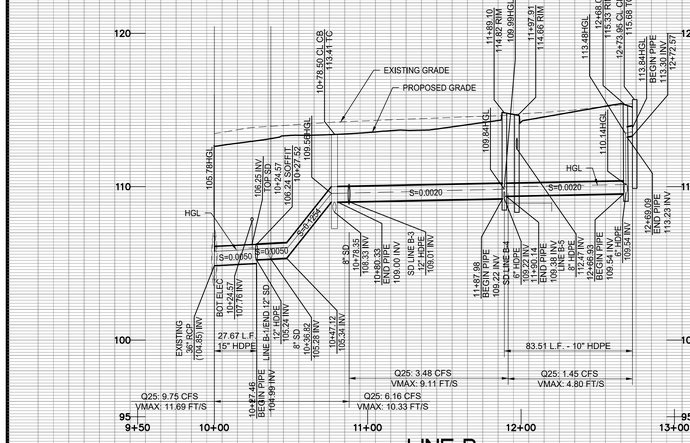
APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER
SERVICE

DATE

**TWO HERITAGE PARK PARKING LOTS**
LOT 1 STORM DRAIN PROFILE
(ADD ALTERNATE)

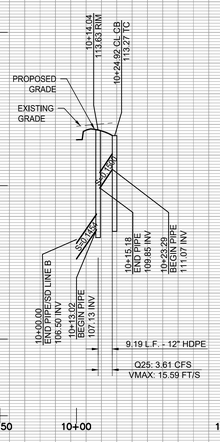
CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. - ELC
LANDSCAPE PERMIT NO. - LCE
SHEET 10 OF 23
JOB NO. CIP NO. 361618



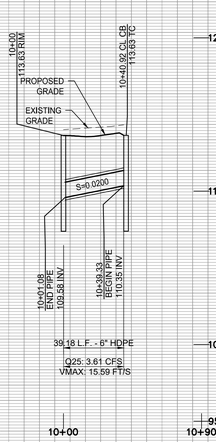

## LINE B

SEE SHEET 9 FOR PLAN VIEW



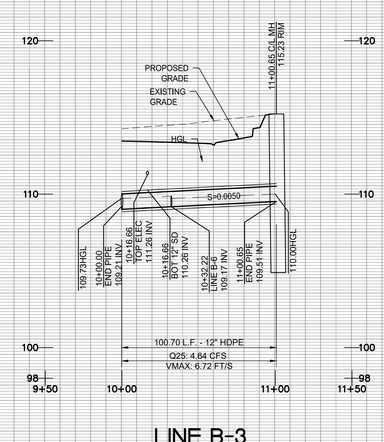

## LINE B-1

SEE SHEET 9 FOR PLAN VIEW



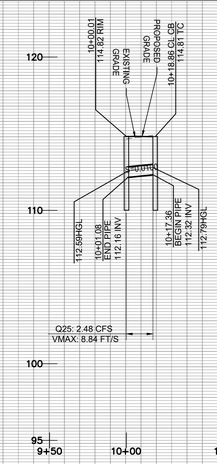

## LINE B-2

SEE SHEET 9 FOR PLAN VIEW



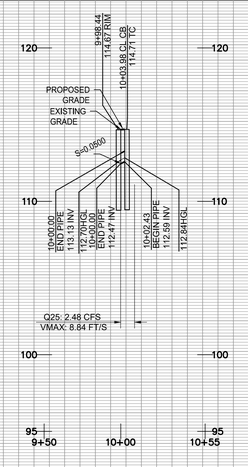

## LINE B-3

SEE SHEET 9 FOR PLAN VIEW



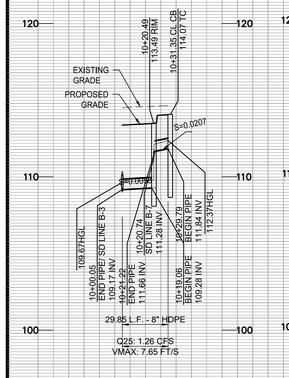

## LINE B-4

SEE SHEET 9 FOR PLAN VIEW



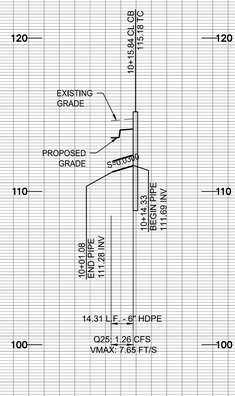

## LINE B-5

SEE SHEET 9 FOR PLAN VIEW



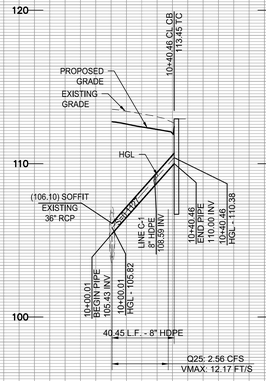

## LINE B-6

SEE SHEET 9 FOR PLAN VIEW



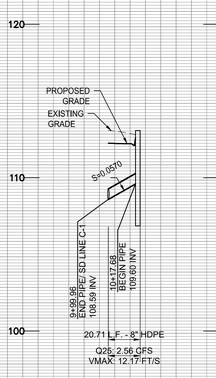

## LINE B-7

SEE SHEET 9 FOR PLAN VIEW



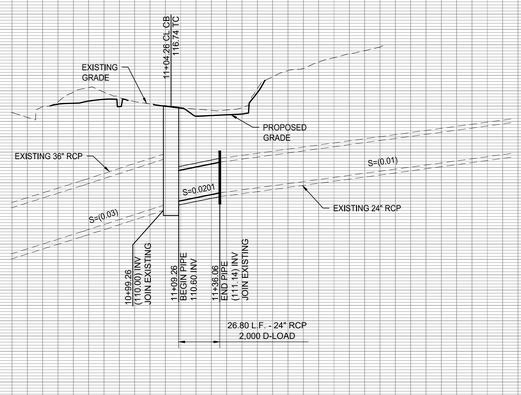

## LINE C

SEE SHEET 9 FOR PLAN VIEW



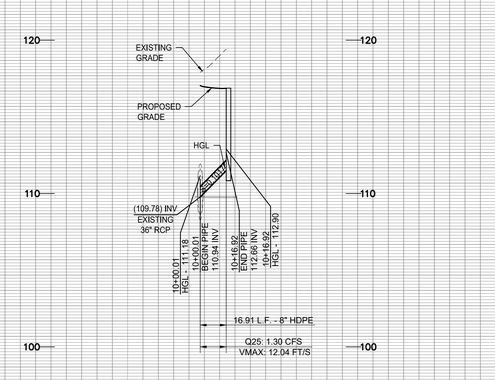

## LINE C-1

SEE SHEET 9 FOR PLAN VIEW




## LINE D

SEE SHEET 9 FOR PLAN VIEW




## LINE D-1

SEE SHEET 9 FOR PLAN VIEW

SCALE:
HORIZ: 1"=40'
VERT: 1"=4'

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CITY OF IRVINE

**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373

DAVID LUZURAGA RCE. NO. 56734 JUNE 30, 2025
LICENSE NO. EXP. DATE

**SEAL**
REGISTERED PROFESSIONAL ENGINEER
No. 87228
CIVIL
STATE OF CALIFORNIA

**DATE**

**DRAWN BY:** RC
DESIGNED BY: DL
**CHECKED BY:** DL
RECOMMENDED:

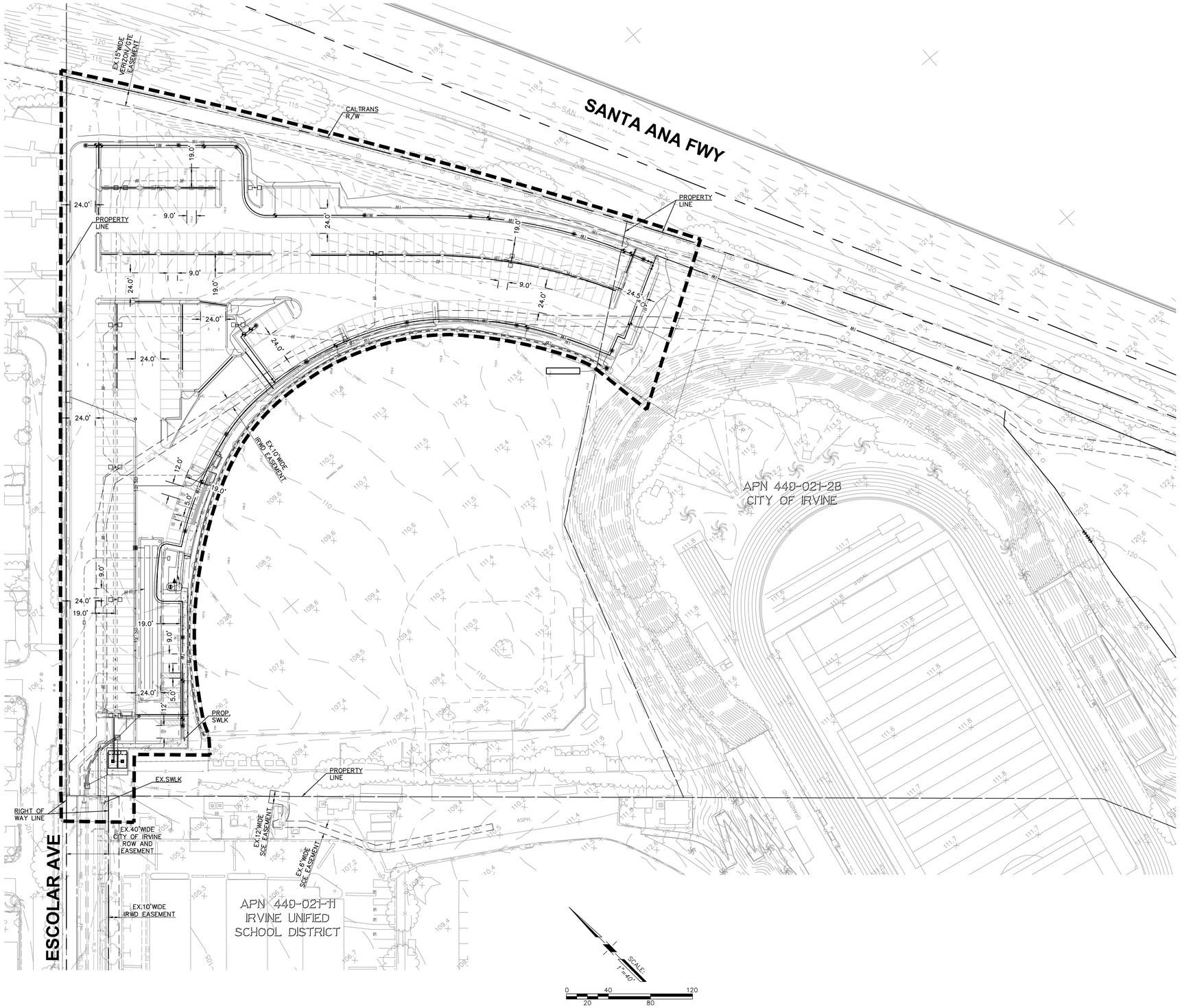
APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**
DATE

**TWO HERITAGE PARK PARKING LOTS**
STORM DRAIN PROFILE

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. _____ - ELC
LANDSCAPE PERMIT NO. _____ - LCE
**SHEET 11 OF 23**
JOB NO. CIP NO. 361618

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4. EXISTING UTILITIES ARE COMPILED BASED ON PREVIOUS BASE FILES, FIELD SURVEY AND FIELD VERIFICATION. POTHOLING IS RECOMMENDED TO VERIFY ANY AND ALL UTILITIES KNOWN OR UNKNOWN WHICH MAY BE IN CONFLICT WITH PROPOSED CONSTRUCTION.
5. PRIOR TO THE REMOVAL OF ANY WET OR DRY UTILITY LINES, THE CONTRACTOR SHALL CONFIRM WITH OWNER REPRESENTATIVE WHETHER THESE UTILITY LINES ARE STILL ACTIVE OR NOT. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICT.
6. CONTRACTOR TO ADJUST TO FINISHED GRADE ALL EXISTING UTILITY BOXES, STORM DRAIN CLEANOUT COVERS, PULL BOXES AND VALVE COVERS NOT SPECIFICALLY SHOWN WITHIN THE LIMITS OF WORK.
7. SAWCUT, REMOVE AND REPLACE EXISTING CURB AS REQUIRED FOR TRENCHING. MATCH EXISTING CURB.

LEGEND

| | |
|---|---|
| 8"SD | 8" STORM DRAIN |
| 12"SD | 12" STORM DRAIN |
| 42"SD | 42" STORM DRAIN |
| 10"RW | 10" STORM DRAIN |
| 8"SS | 8" SANITARY SEWER |
| IW | IRRIGATION WATER |
| E | ELECTRICAL LINE |
| TEL | TELECOMMUNICATION LINE |
| SL | STREET LIGHT ELECTRICAL LINE |

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CITY OF IRVINE

**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

**SEAL**
REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA
**DATE**

**DRAWN BY:** RC
DESIGNED BY: DL
**CHECKED BY:** DL
RECOMMENDED:

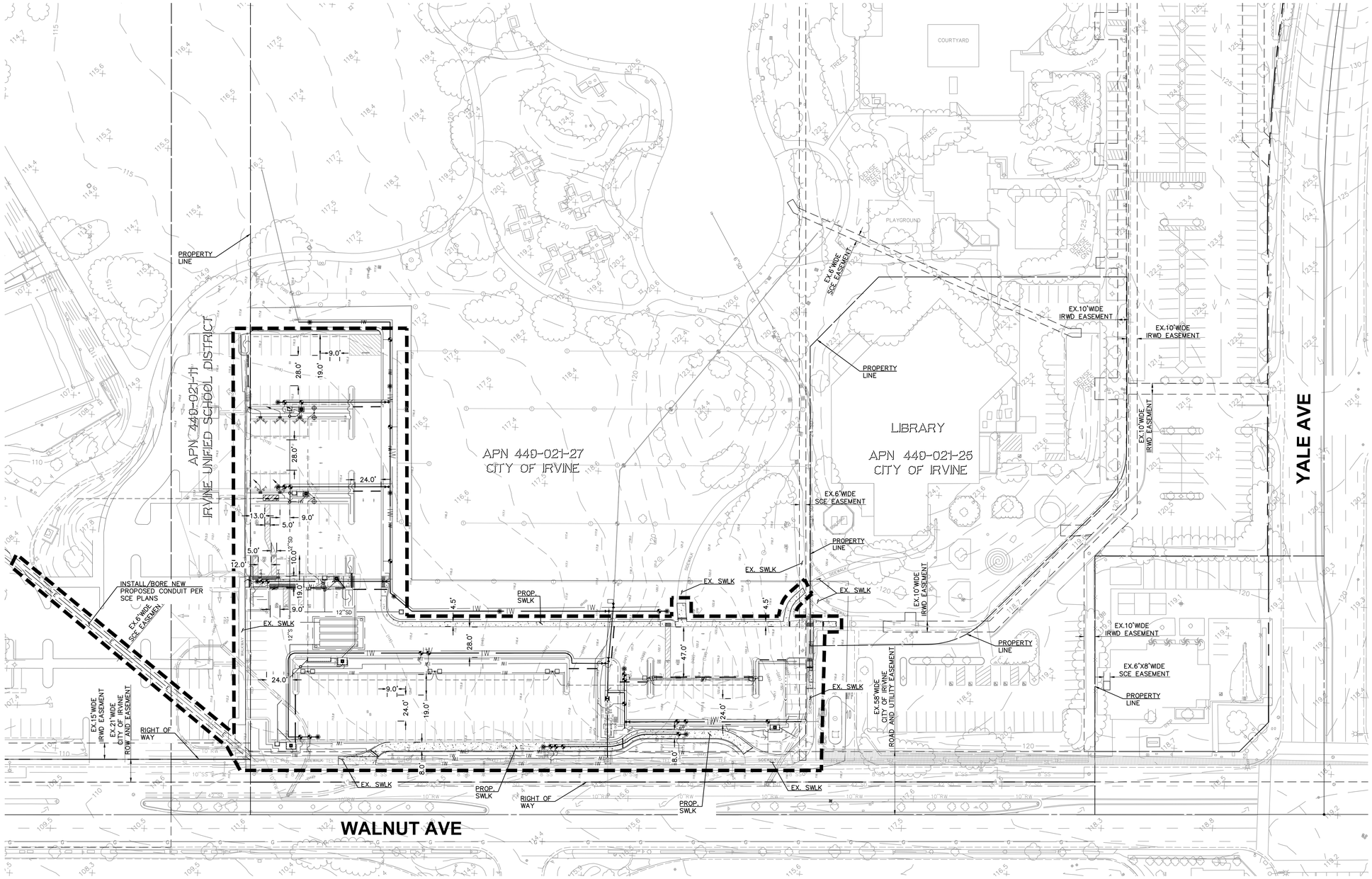
APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
DATE

**TWO HERITAGE PARK PARKING LOTS**
**LOT 1 COMPOSITE UTILITY PLAN**
**(ADD ALTERNATE)**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. ***00948134-PARK***
LANDSCAPE PERMIT NO. ***- LCE***
**SHEET 12 OF 26**
JOB NO. CIP NO. 361618




**CONSTRUCTION NOTES**

1. UTILITIES TO CROSS OVER OR UNDER OTHER UTILITIES TO MAINTAIN 12" MINIMUM CLEARANCE AT UTILITY CROSSINGS, UNLESS NOTED OTHERWISE.
2. CONTRACTOR SHALL VERIFY SIZE AND LOCATION (HORIZONTAL AND VERTICAL) OF EXISTING CROSSING AND JOINING UTILITIES PRIOR TO CONSTRUCTION AND IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICT.
3. CONTRACTOR SHALL CONSTRUCT GRAVITY UTILITIES (SEWER AND STORM DRAIN) BEFORE OTHER UTILITIES. CONSTRUCTION OF THESE GRAVITY UTILITIES TO START FROM THE DOWNSTREAM ENDS.
4. EXISTING UTILITIES ARE COMPILED BASED ON PREVIOUS BASE FILES, FIELD SURVEY AND FIELD VERIFICATION. POTHOLING IS RECOMMENDED TO VERIFY ANY AND ALL UTILITIES KNOWN OR UNKNOWN WHICH MAY BE IN CONFLICT WITH PROPOSED CONSTRUCTION.
5. PRIOR TO THE REMOVAL OF ANY WET OR DRY UTILITY LINES, THE CONTRACTOR SHALL CONFIRM WITH OWNER REPRESENTATIVE WHETHER THESE UTILITY LINES ARE STILL ACTIVE OR NOT. IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICT.
6. CONTRACTOR TO ADJUST TO FINISHED GRADE ALL EXISTING UTILITY BOXES, STORM DRAIN CLEANOUT COVERS, PULL BOXES AND VALVE COVERS NOT SPECIFICALLY SHOWN WITHIN THE LIMITS OF WORK.
7. SAWCUT, REMOVE AND REPLACE EXISTING CURB AS REQUIRED FOR TRENCHING. MATCH EXISTING CURB.

LEGEND

| | |
|---|---|
| 8"SD | 8" STORM DRAIN |
| 12"SD | 12" STORM DRAIN |
| 42"SD | 42" STORM DRAIN |
| 10"RW | 10" STORM DRAIN |
| 8"SS | 8" SANITARY SEWER |
| IW | IRRIGATION WATER |
| E | ELECTRICAL LINE |
| TEL | TELECOMMUNICATION LINE |
| SL | STREET LIGHT ELECTRICAL LINE |

SCALE: 1"=40'

0 40 120
20 80

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE

DATE

**TWO HERITAGE PARK PARKING LOTS**
**COMPOSITE UTILITY PLAN**
**LOT 2**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. **00948134-PARK**

LANDSCAPE PERMIT NO. **- LCE**

**SHEET 13 OF 26**

JOB NO. CIP NO. 361618

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
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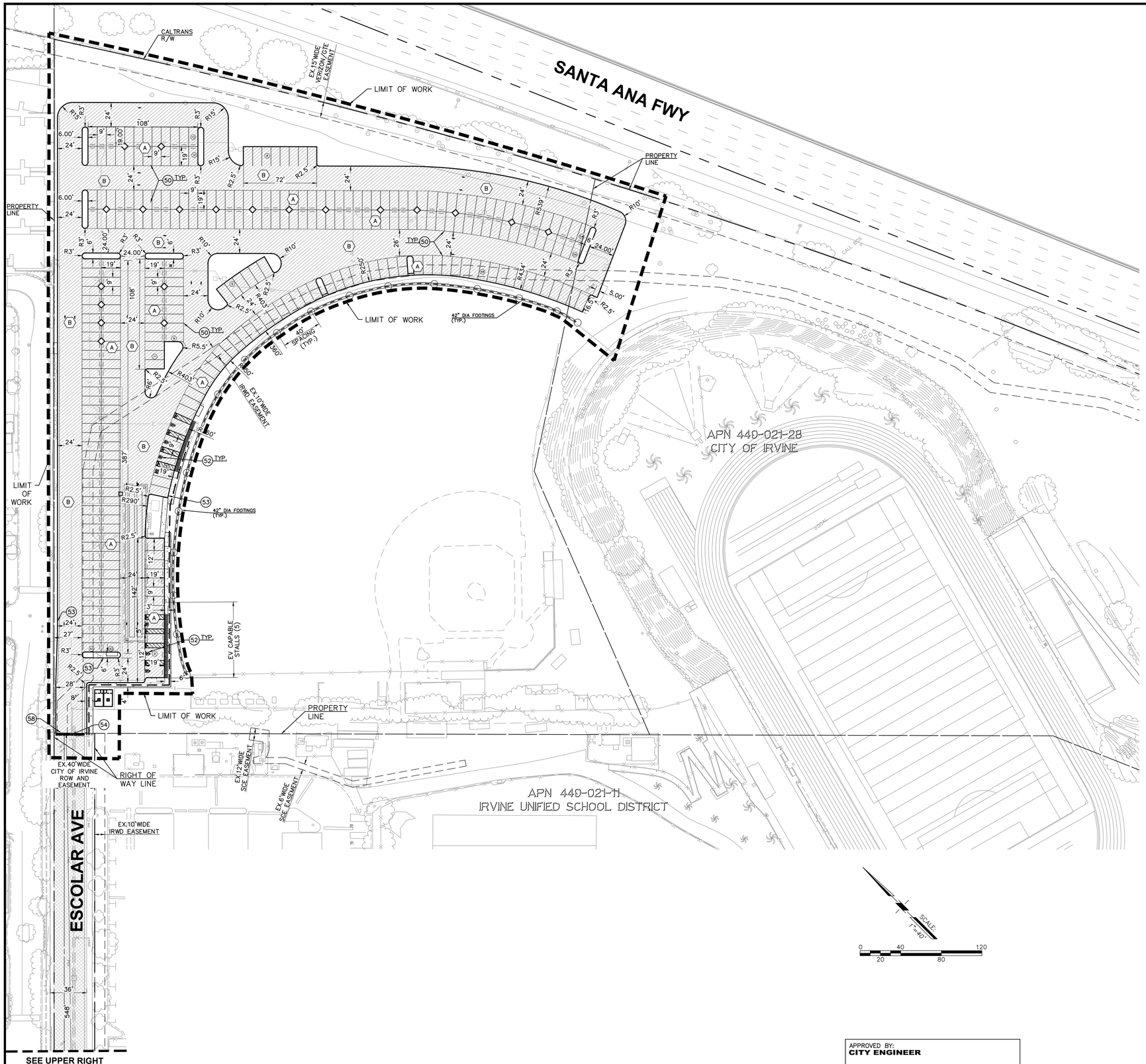
*PLANS PREPARED BY:*
**PSOMAS**
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

*SEAL*
REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA

*DATE*

*DRAWN BY:* RC
DESIGNED BY: DL
*CHECKED BY:* DL
RECOMMENDED:




## PAVING LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| A | PARKING STALL AC PAVEMENT (TI = 4.5) 4" HMA OVER 5" AB OVER 18" COMPACTED BASEMENT SOIL PER GEOTECHNICAL ENGINEER'S RECOMMENDATION. |
| B | DRIVE AISLE AC PAVEMENT (TI = 5.0) 5" HMA OVER 5.5" AB 18" COMPACTED BASEMENT SOIL PER GEOTECHNICAL ENGINEER'S RECOMMENDATION. |
| | SLURRY SEAL |
| | PEDESTRIAN CONCRETE PAVEMENT |

## LINE TYPE LEGEND

- APPROXIMATE LIMIT OF WORK (REMAIN WITHIN PROPERTY LINE)
- ADA PATH OF TRAVEL

## STRIPING CONSTRUCTION NOTES

50. PAINT PARKING STALLS AS SHOWN WITH 4" WHITE STRIPES.
51. CONTRACTOR TO SLURRY SEAL STREET.
52. PAINT BLUE ACCESSIBILITY EMBLEMS AND NO PARKING ZONES SHOWN, PER CALIFORNIA BUILDING CODE REQUIREMENTS, DETAIL 52 SHEET 22.
53. STORM DRAIN INLET PLACARD PER DETAIL 53 ON SHEET 22.
54. CONSTRUCT PAVEMENT SLOT REPAIR PER DETAIL 54 ON SHEET 22.
55. COLD PLANE 2' WIDTH OF EXISTING ASPHALT AND OVELAY PROVIDE 0.12' MINIMUM AC OVERLAY.
56. NOT USED.
57. INSTALL 4" DIAMETER BOLLARD PER DETAIL 57 ON SHEET 22.
58. INSTALL GATE PER DETAIL 58 ON SHEET 21.

**NOTE:**
**PORTION OF ESCOLAR FROM CONSTRUCTION OF NEW STORM DRAIN LINE UP TO THE SITE LIMITS TO BE SLURRY SEALED AND RESTRIPPED BY THE CONTRACTOR DURING IRVINE HIGH SCHOOL WINTER BREAK (DEC. 22, 2025 THROUGH JAN. 2, 2026)**

PROVIDED PARKING:
320 TOTAL STALLS PROVIDED, INCLUDING...
- 312 STANDARD STALLS
- 8 ACCESSIBLE STALLS, INCLUDING...
  - -4 VAN ACCESSIBLE STALLS
  - -4 STANDARD ACCESSIBLE STALLS

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CITY OF IRVINE

**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373
RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

**SEAL**
REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA
**DATE**

**DRAWN BY:** RC
DESIGNED BY: DL
**CHECKED BY:** DL
RECOMMENDED:

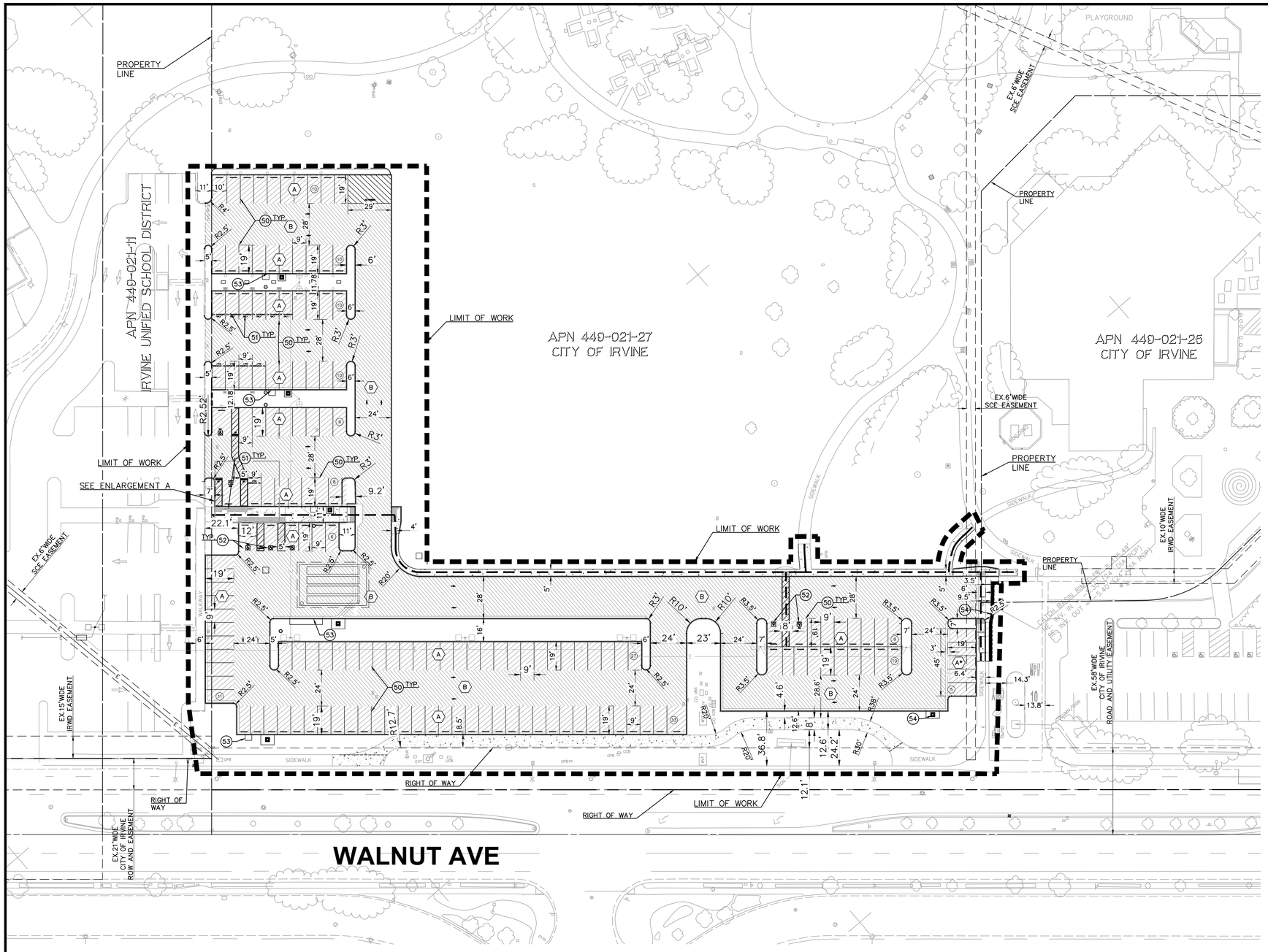
APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
DATE

**TWO HERITAGE PARK PARKING LOTS**
**LOT 1 HORIZONTAL CONTROL, SIGNING AND STRIPING**
**(ADD ALTERNATE)**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. **00948134-PARK**
LANDSCAPE PERMIT NO. _____ **- LCE**
**SHEET 14 OF 26**
**JOB NO. CIP NO. 361618**




## PAVING LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| A | PARKING STALL AC PAVEMENT (TI = 4.5) 4" HMA OVER 5" AB OVER 18" COMPACTED FILL SOIL WITH MIN. R-VALUE OF 20 PER GEOTECHNICAL ENGINEER'S RECOMMENDATION. |
| B | DRIVE AISLE AC PAVEMENT (TI = 5.0) 5" HMA OVER 5.5" AB 18" COMPACTED FILL SOIL WITH MIN. R-VALUE OF 20 PER GEOTECHNICAL ENGINEER'S RECOMMENDATION. |
| | SLURRY SEAL |
| | PEDESTRIAN CONCRETE PAVEMENT |

## LINE TYPE LEGEND

APPROXIMATE LIMIT OF WORK (REMAIN WITHIN PROPERTY LINE)

## STRIPING CONSTRUCTION NOTES

(50) PAINT PARKING STALLS AS SHOWN WITH 4" WHITE STRIPES USING THERMO PAINT.

(51) INSTALL 12" HIGH "EV CHARGING ONLY" PAVEMENT MARKING AND INSTALL "EV CHARGING ONLY" SIGN AND POST.

(52) PAINT BLUE ACCESSIBILITY EMBLEMS AND NO PARKING ZONES SHOWN, PER CALIFORNIA BUILDING CODE REQUIREMENTS, DETAIL 52 SHEET 22.

(53) STORM DRAIN INLET PLACARD PER DETAIL 53 ON SHEET 22.

(54) NOT USED.

(55) COLD PLANE 2' WIDTH OF EXISTING ASPHALT AND OVELAY PROVIDE 0.12' MINIMUM AC OVERLAY.

(56) NOT USED.

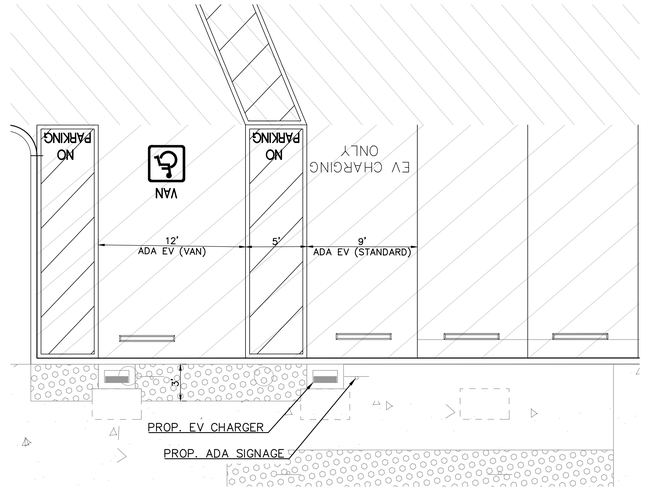
(57) INSTALL 4" DIAMETER BOLLARD PER DETAIL 57 ON SHEET 22.

(58) NOT USED.

PROVIDED PARKING:

160 TOTAL STALLS PROVIDED, INCLUDING...

- 142 STANDARD STALLS
- 12 EVSE STALLS, INCLUDING...
  - -10 STANDARD STALLS
  - -1 STANDARD ACCESSIBLE STALL
  - -1 ACCESSIBLE VAN STALL
- 6 ACCESSIBLE STALLS, INCLUDING...
  - -3 VAN ACCESSIBLE STALLS
  - -3 STANDARD ACCESSIBLE STALLS




A ENLARGEMENT
SCALE: 1"=5'

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
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PLANS PREPARED BY:
**PSOMAS**
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

SEAL: REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA
DATE

DRAWN BY: RC
DESIGNED BY: DL
CHECKED BY: DL
RECOMMENDED:

APPROVED BY:
CITY ENGINEER

LINCOLN LO R.C.E. NO. 66116 DATE

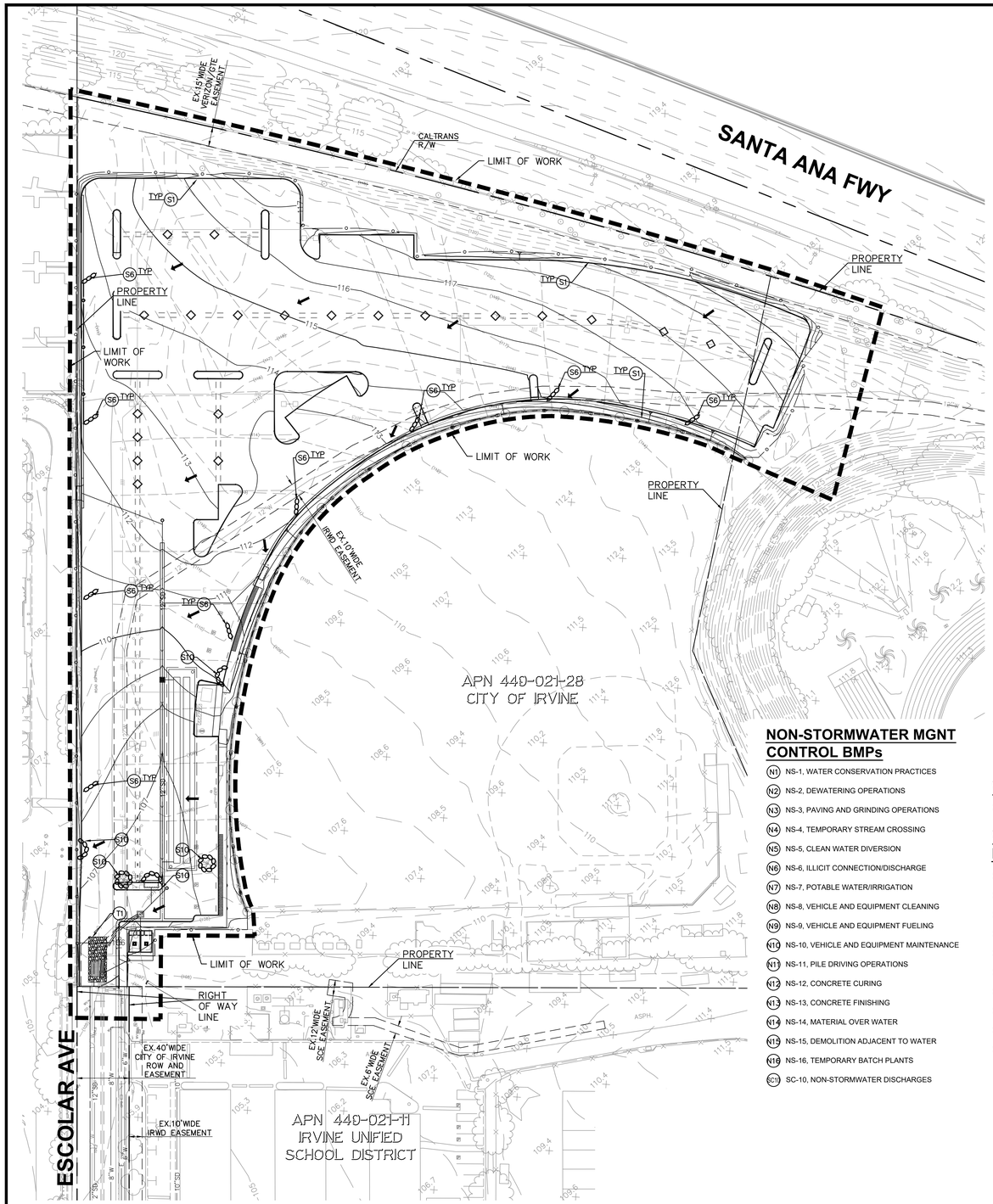
APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE

DATE

**TWO HERITAGE PARK PARKING LOTS**
**HORIZONTAL CONTROL AND SIGNING AND STRIPING PLAN**

CITY OF IRVINE
PUBLIC WORKS & SUSTAINABILITY DEPARTMENT

PLAN CHECK NO. 00948134-PARK
LANDSCAPE PERMIT NO. _____ - LCE
SHEET 15 OF 26
JOB NO. CIP NO. 361618




## LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| | GRAVEL BAGS AND/OR SANDBAGS PER BMP KEYNOTES |
| | FIBER ROLL |
| | SILT FENCE |
| | APPROXIMATE LIMIT OF GRADING (REMAIN WITHIN PROPERTY LINE) |
| | FLOW DIRECTION |

**EROSION CONTROL NOTES**

- ALL BMPS PER CALIFORNIA STORMWATER QUALITY ASSOCIATION (CASQA)(UNLESS NOTED OTHERWISE) AND ARE AVAILABLE AT www.casqa.org.
- BMPS "NOT" CALLED OUT PER PLAN, ARE SHOWN FOR REFERENCE AS BMP OPTIONS PER QSP (QUALIFIED SWPPP PRACTITIONER) FIELD RECOMMENDATIONS.
- AT THE COMPLETION OF PROJECT, CONTRACTOR SHALL REMOVE ALL CONSTRUCTION BMPS FROM SITE AND DISPOSE IN A LEGAL MANNER.

## EROSION CONTROL BMPs

- (40) EC-1, SCHEDULING
- (41) EC-2, PRESERVATION OF EXISTING VEGETATION
- (42) EC-3, HYDRAULIC MULCH
- (43) EC-4, HYDROSEEDING
- (44) EC-5, SOIL BINDERS
- (45) EC-6, STRAW MULCH
- (E7) EC-7, GEOTEXTILES AND MATS
- (E8) EC-8, WOOD MULCHING
- (E9) EC-9, EARTH DIKES AND DRAINAGE SWALES

## SEDIMENT CONTROL BMPs

- (S1) SE-1, SILT FENCE
- (S2) SE-2, SEDIMENT BASIN
- (S3) SE-3, SEDIMENT TRAP
- (S4) SE-4, CHECK DAMS
- (S5) SE-5, FIBER ROLLS
- (S6) SE-6, GRAVEL BAG BERM
- (S7) SE-7, STREET SWEEPING AND VACUUMING
- (S8) SE-8, SANDBAG BARRIER
- (S9) SE-9, STRAW BALE BARRIER
- (S10) SE-10, STORM DRAIN INLET PROTECTION

## TRACKING CONTROL BMPs

- (T1) TC-1, STABILIZED CONSTRUCTION ENTRANCE/EXIT
- (T2) TC-2, STABILIZED CONSTRUCTION ROADWAY
- (T3) TC-3, ENTRANCE/OUTLET TIRE WASH

## WIND EROSION CONTROL BMPs

- (WE) WE-1, WIND EROSION CONTROL

## WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs

- (W1) WM-1, MATERIAL DELIVERY AND STORAGE
- (W2) WM-2, MATERIAL USE
- (W3) WM-3, STOCKPILE MANAGEMENT
- (W4) WM-4, SPILL PREVENTION AND CONTROL
- (W5) WM-5, SOLID WASTE MANAGEMENT
- (W6) WM-6, HAZARDOUS WASTE MANAGEMENT
- (W7) WM-7, CONTAMINATED SOIL MANAGEMENT
- (W8) WM-8, CONCRETE WASTE MANAGEMENT
- (W9) WM-9, SANITARY/SEPTIC WASTE MANAGEMENT
- (W10) WM-10, LIQUID WASTE MANAGEMENT

## NON-STORMWATER MGNT CONTROL BMPs

- (N1) NS-1, WATER CONSERVATION PRACTICES
- (N2) NS-2, DEWATERING OPERATIONS
- (N3) NS-3, PAVING AND GRINDING OPERATIONS
- (N4) NS-4, TEMPORARY STREAM CROSSING
- (N5) NS-5, CLEAN WATER DIVERSION
- (N6) NS-6, ILLICIT CONNECTION/DISCHARGE
- (N7) NS-7, POTABLE WATER/IRRIGATION
- (N8) NS-8, VEHICLE AND EQUIPMENT CLEANING
- (N9) NS-9, VEHICLE AND EQUIPMENT FUELING
- (N10) NS-10, VEHICLE AND EQUIPMENT MAINTENANCE
- (N11) NS-11, PILE DRIVING OPERATIONS
- (N12) NS-12, CONCRETE CURING
- (N13) NS-13, CONCRETE FINISHING
- (N14) NS-14, MATERIAL OVER WATER
- (N15) NS-15, DEMOLITION ADJACENT TO WATER
- (N16) NS-16, TEMPORARY BATCH PLANTS
- (EC11) SC-10, NON-STORMWATER DISCHARGES

## POLLUTION PREVENTION NOTES

*In order to meet the requirements of the National Pollutant Discharge Elimination System (NPDES) program for construction, construction contractors shall install and maintain appropriate Best Management Practices (BMPs), as shown in the Erosion and Sediment Control Plan, on all construction projects. BMPs shall be installed in accordance with industry recommended standards, and/or in accordance with any General Construction Permit issued by the state for the project to prevent any discharges from the project site or into any storm drain facilities. All sediments, construction materials, debris and wastes, and other pollutants must be retained on site and may not be transported from the site via sheet flow, swales, area drains, natural drainage courses, wind, or vehicle tracking. Under direction of the Engineer of Record, erosion and/or sediment control devices shall be modified as needed as the project progresses to ensure effectiveness.*

### Erosion and Sediment Control Requirements

| *Requirements* | *SPECIFIED BMPs BMP Detail(s)/ Sheet Number* |
|---|---|
| *A. Wind erosion BMPs (dust control) shall be implemented.* | *16* |
| *B. Sediment control BMPs shall be implemented at the site perimeter, at all operational storm drain inlets and at all non-active slopes.* | *16* |
| *C. BMPs to control off-site sediment tracking shall be implemented and maintained.* | *16* |
| *D. Appropriate waste management and material pollution control BMPs shall be implemented to prevent the contamination of stormwater by wastes and construction materials.* | *16* |
| *E. Appropriate non-stormwater BMPs shall be implemented to prevent the contamination of stormwater from construction activities.* | *16* |
| *F. Adequate physical or vegetation erosion control BMPs (temporary or permanent) shall be installed and established for all completed slopes. If a selected BMP fails, it must be repaired and improved, or replaced with an acceptable alternate as soon as it is safe to do so. The failure of a BMP may indicate that the BMP, as installed, was not adequate for the circumstances in which it was used. Repairs or replacements must result in a more robust BMP, or additional BMPs should be installed to provide adequate protection.* | *16* |
| *G. Adequate erosion and sediment controls must be implemented prior to the onset of a storm event for all actively graded areas.* | *16* |
| *H. A disturbed area that is not completed but that is not being actively graded (non-active area) shall be fully protected from erosion with the referenced temporary and/or permanent BMPs (erosion and sediment control). The ability to deploy standby BMP materials is not sufficient for these areas. Erosion and sediment control BMPs must actually be deployed. This includes all building pads, unfinished roads and slopes.* | *16* |
| *I. Sufficient materials needed to install referenced standby erosion and sediment control BMPs necessary to completely protect the exposed portions of the site from erosion and to prevent sediment discharges shall be stored on site. Areas that have already been protected from erosion using permanent physical stabilization or established vegetation stabilization BMPs are not considered "exposed" for purposes of this requirement.* | *16* |

NOTE: For Risk Level 2 and 3 sites, there shall be a "Rain Event Action Plan" and the ability to deploy standby erosion and sediment control BMPs as needed to completely protect the exposed portions of the site within 48 hours of a predicted storm event (a predicted storm event is defined as a forecasted 50% chance of rain).

I hereby certify that I have read and understand the requirements in the Construction General Permit and that the erosion control plans and BMPs shown hereon are in compliance with these requirements.

SCALE: 1"=40'

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CITY OF IRVINE

**PLANS PREPARED BY:**
PSOMAS
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373
RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

**SEAL**
REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA
DATE

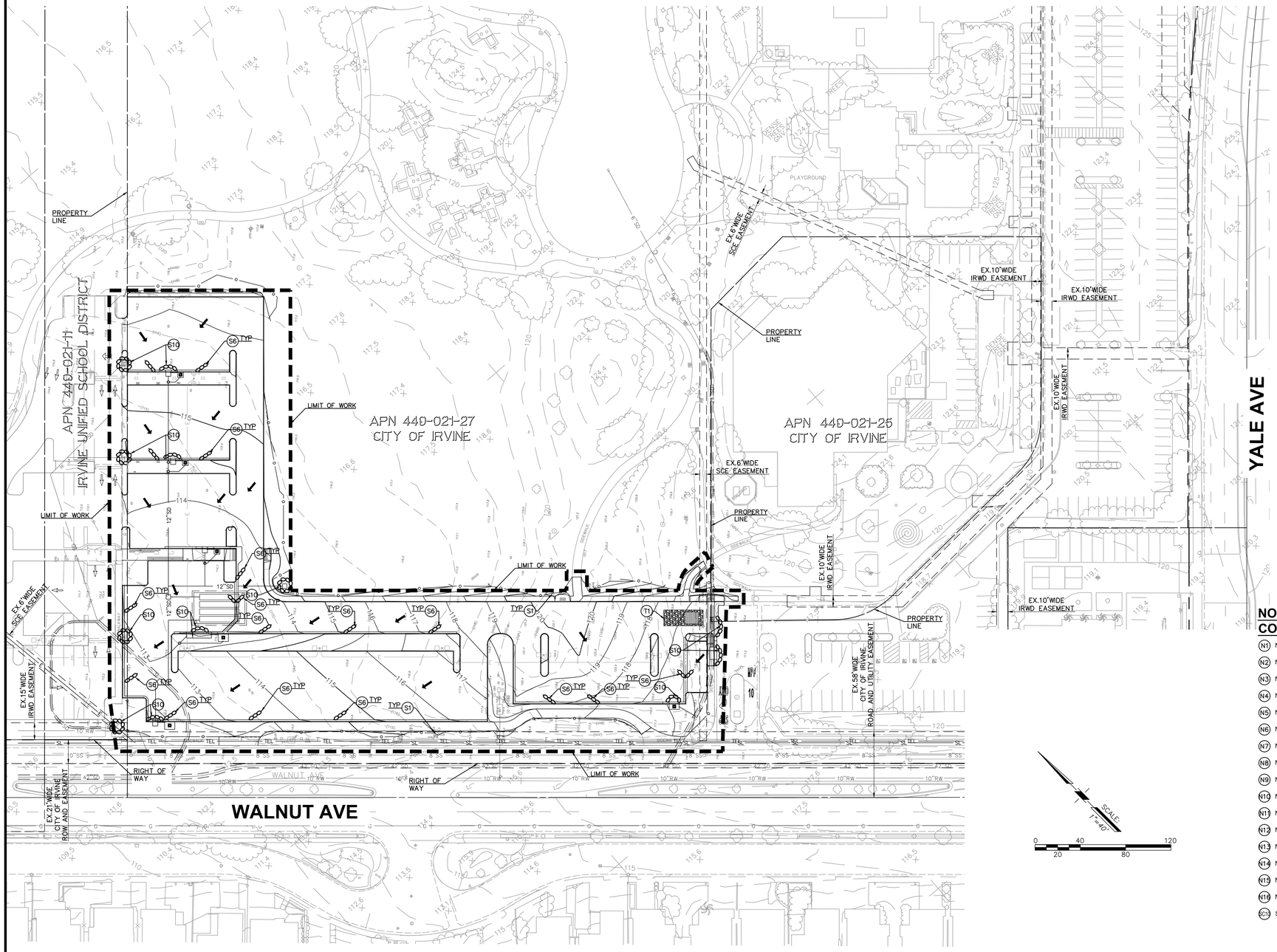
**DRAWN BY:** RC
DESIGNED BY: DL
**CHECKED BY:** DL
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**
DATE

**TWO HERITAGE PARK PARKING LOTS**
**LOT 1 TEMPORARY BMP WATER POLLUTION AND EROSION CONTROL PLAN**
**(ADD ALTERNATE)**
CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. **00948134-PARK**
LANDSCAPE PERMIT NO. _____ **- LCE**
**SHEET 16 OF 26**
JOB NO. CIP NO. 361618




## LEGEND

| SYMBOL | DESCRIPTION |
|---|---|
| | GRAVEL BAGS AND/OR SANDBAGS PER BMP KEYNOTES |
| | FIBER ROLL |
| | SILT FENCE |
| | APPROXIMATE LIMIT OF GRADING (REMAIN WITHIN PROPERTY LINE) |
| | FLOW DIRECTION |

**EROSION CONTROL NOTES**

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## EROSION CONTROL BMPs

- (40) EC-1, SCHEDULING
- (41) EC-2, PRESERVATION OF EXISTING VEGETATION
- (42) EC-3, HYDRAULIC MULCH
- (43) EC-4, HYDROSEEDING
- (44) EC-5, SOIL BINDERS
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- (E7) EC-7, GEOTEXTILES AND MATS
- (E8) EC-8, WOOD MULCHING
- (E9) EC-9, EARTH DIKES AND DRAINAGE SWALES

## SEDIMENT CONTROL BMPs

- (S1) SE-1, SILT FENCE
- (S2) SE-2, SEDIMENT BASIN
- (S3) SE-3, SEDIMENT TRAP
- (S4) SE-4, CHECK DAMS
- (S5) SE-5, FIBER ROLLS
- (S6) SE-6, GRAVEL BAG BERM
- (S7) SE-7, STREET SWEEPING AND VACUUMING
- (S8) SE-8, SANDBAG BARRIER
- (S9) SE-9, STRAW BALE BARRIER
- (S10) SE-10, STORM DRAIN INLET PROTECTION

## TRACKING CONTROL BMPs

- (T1) TC-1, STABILIZED CONSTRUCTION ENTRANCE/EXIT
- (T2) TC-2, STABILIZED CONSTRUCTION ROADWAY
- (T3) TC-3, ENTRANCE/OUTLET TIRE WASH

## NON-STORMWATER MGNT CONTROL BMPs

- (N1) NS-1, WATER CONSERVATION PRACTICES
- (N2) NS-2, DEWATERING OPERATIONS
- (N3) NS-3, PAVING AND GRINDING OPERATIONS
- (N4) NS-4, TEMPORARY STREAM CROSSING
- (N5) NS-5, CLEAN WATER DIVERSION
- (N6) NS-6, ILLICIT CONNECTION/DISCHARGE
- (N7) NS-7, POTABLE WATER/IRRIGATION
- (N8) NS-8, VEHICLE AND EQUIPMENT CLEANING
- (N9) NS-9, VEHICLE AND EQUIPMENT FUELING
- (N10) NS-10, VEHICLE AND EQUIPMENT MAINTENANCE
- (N11) NS-11, PILE DRIVING OPERATIONS
- (N12) NS-12, CONCRETE CURING
- (N13) NS-13, CONCRETE FINISHING
- (N14) NS-14, MATERIAL OVER WATER
- (N15) NS-15, DEMOLITION ADJACENT TO WATER
- (N16) NS-16, TEMPORARY BATCH PLANTS
- (SC1) SC-10, NON-STORMWATER DISCHARGES

## WIND EROSION CONTROL BMPs

- (WE) WE-1, WIND EROSION CONTROL

## WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs

- (W1) WM-1, MATERIAL DELIVERY AND STORAGE
- (W2) WM-2, MATERIAL USE
- (W3) WM-3, STOCKPILE MANAGEMENT
- (W4) WM-4, SPILL PREVENTION AND CONTROL
- (W5) WM-5, SOLID WASTE MANAGEMENT
- (W6) WM-6, HAZARDOUS WASTE MANAGEMENT
- (W7) WM-7, CONTAMINATED SOIL MANAGEMENT
- (W8) WM-8, CONCRETE WASTE MANAGEMENT
- (W9) WM-9, SANITARY/SEPTIC WASTE MANAGEMENT
- (W10) WM-10, LIQUID WASTE MANAGEMENT

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 6 | | | | |
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| 3 | | | | |
| 2 | | | | |
| 1 | | | | |

**PLANS PREPARED BY:**
PSOMAS
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373
RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

SEAL: REGISTERED PROFESSIONAL ENGINEER, RAFAEL CHAVEZ, No. 87228, CIVIL, STATE OF CALIFORNIA
DATE

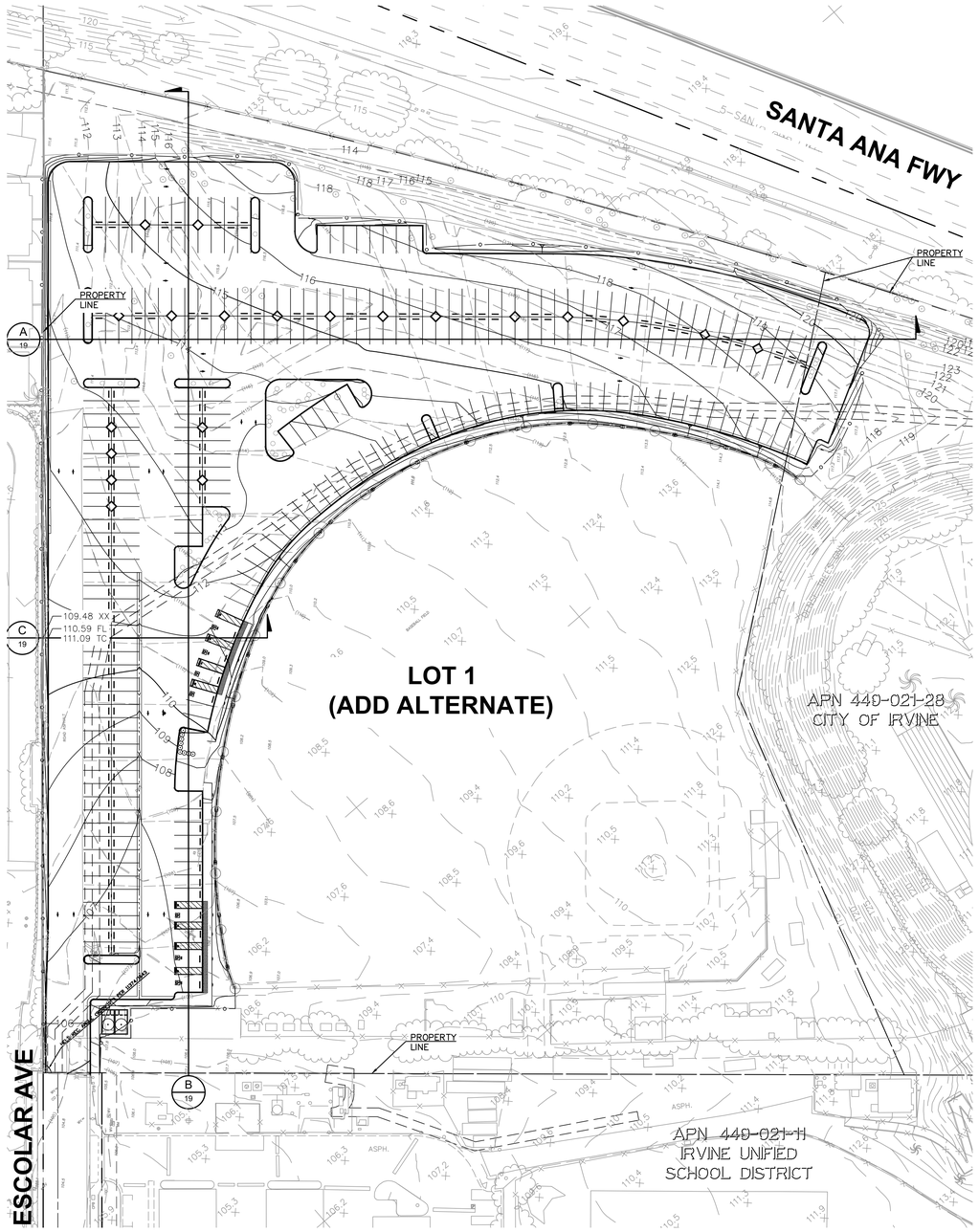
DRAWN BY: RC
DESIGNED BY: DL
CHECKED BY: DL
RECOMMENDED:

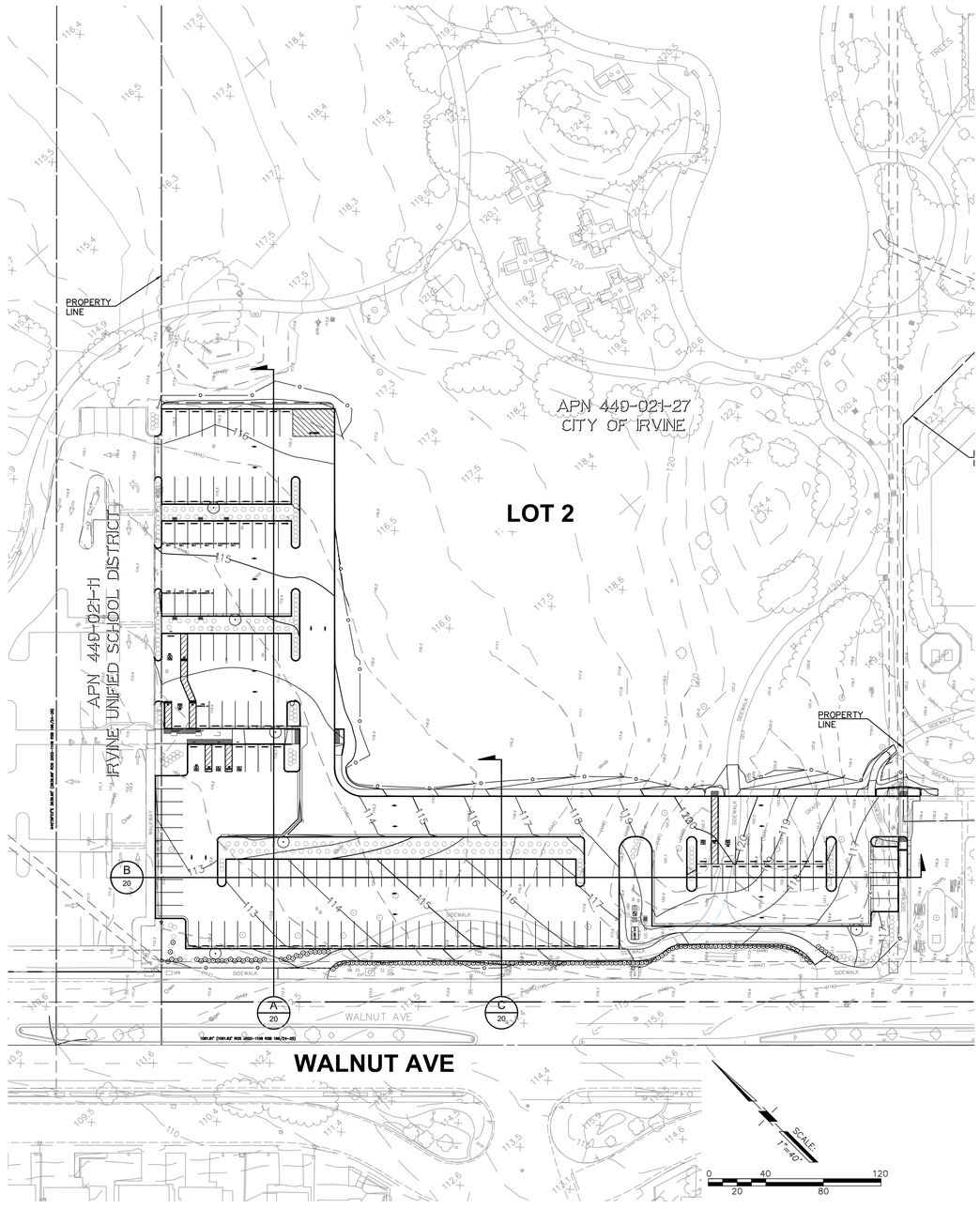
APPROVED BY:
CITY ENGINEER
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
DATE

**TWO HERITAGE PARK PARKING LOTS**
**TEMPORARY BMP WATER POLLUTION AND EROSION CONTROL PLAN**
**LOT 2**
CITY OF IRVINE
PUBLIC WORKS & SUSTAINABILITY DEPARTMENT

PLAN CHECK NO. 00948134-PARK
LANDSCAPE PERMIT NO. _____ - LCE
SHEET 17 OF 26
JOB NO. CIP NO. 361618




| NO. | DATE | REVISIONS | APP. | DATE |
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| 1 | | | CITY OF IRVINE | |

**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373
RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

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REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA
**DATE**

**DRAWN BY:** RC
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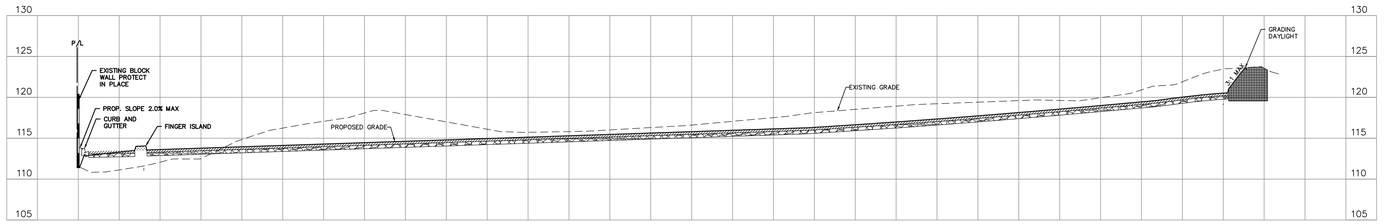
APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER
SERVICE
DATE

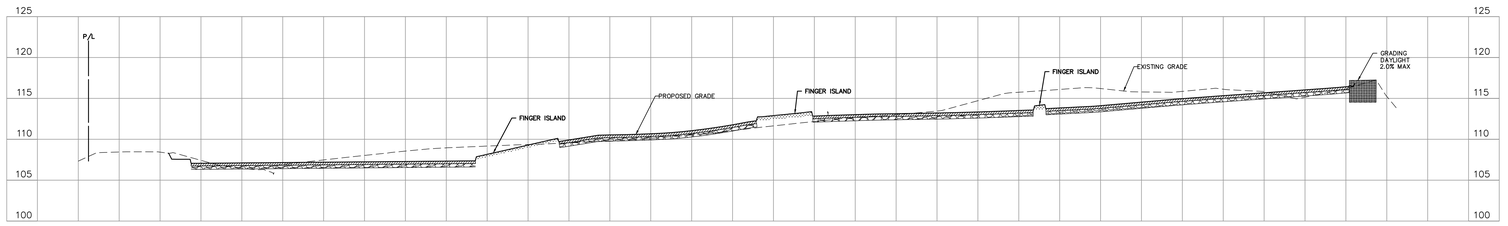
**TWO HERITAGE PARK PARKING LOTS**
**SECTION**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO.
**00948134-PARK**
LANDSCAPE PERMIT NO.
**- LCE**
**SHEET 18 OF 26**
JOB NO. CIP NO. 361618




A SECTION
SCALE: H: 1"=30' V: 1"=7.5




B SECTION
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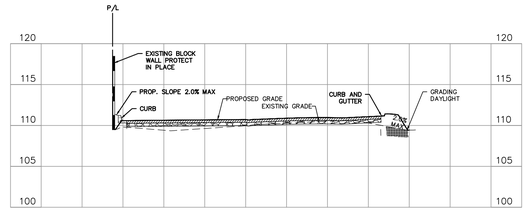



C SECTION
SCALE: H: 1"=30' V: 1"=7.5'

| NO. | DATE | REVISIONS | APP. | DATE |
|---|---|---|---|---|
| 6 | | | | |
| 5 | | | | |
| 4 | | | | |
| 3 | | | | |
| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

CITY OF IRVINE

**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

**SEAL**
REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA
**DATE**

**DRAWN BY:** RC
DESIGNED BY: DL
**CHECKED BY:** DL
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**
DATE

**TWO HERITAGE PARK PARKING LOTS**
**LOT 1 SECTIONS**
**(ADD ALTERNATE)**

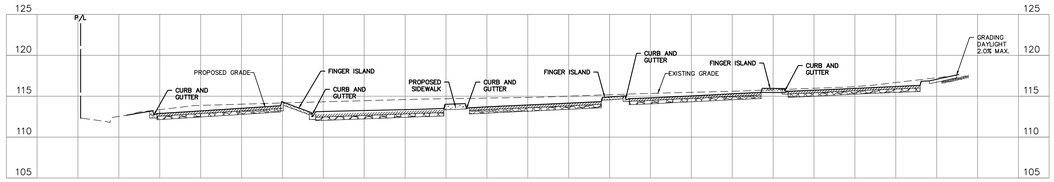
CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO.
***00948134-PARK***

LANDSCAPE PERMIT NO.
_____ ***- LCE***

**SHEET 19 OF 26**

**JOB NO. CIP NO. 361618**




A SECTION
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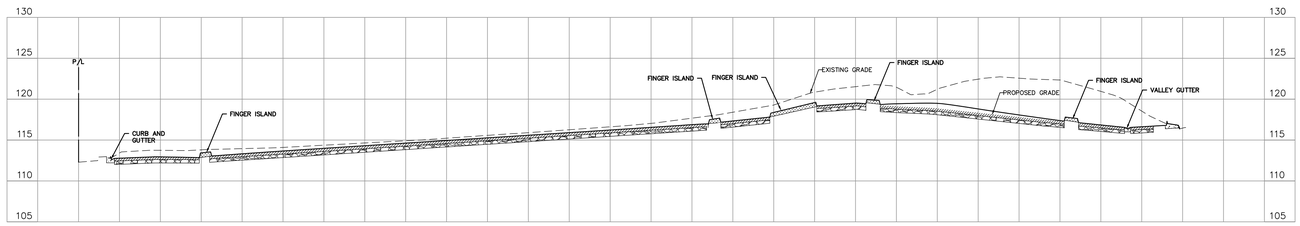


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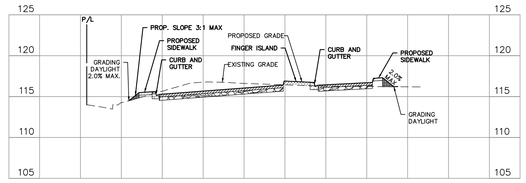


C SECTION
SCALE: H: 1"=30' V: 1"=7.5'

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
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| 6 | | | | |
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**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373
RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

**SEAL**
REGISTERED PROFESSIONAL ENGINEER
RAFAEL CHAVEZ
No. 87228
CIVIL
STATE OF CALIFORNIA

**DATE**

**DRAWN BY:** RC
DESIGNED BY: DL
**CHECKED BY:** DL
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER
SERVICE
DATE

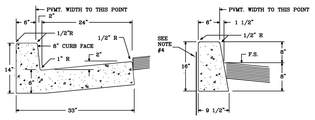
**TWO HERITAGE PARK PARKING LOTS**
**LOT 2 SECTIONS**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO.
***00948134-PARK***
LANDSCAPE PERMIT NO.
_____ ***- LCE***
**SHEET 20 OF 26**

**JOB NO. 361618 CIP NO.**

CITY OF IRVINE
**PUBLIC WORKS**




## CONCRETE CURBS AND GUTTERS

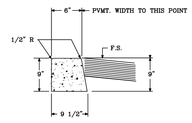
STD. PLAN 200
SHEET 1 OF 2

MARK CARROLL, R.C.E. 31515
CITY OF IRVINE - CITY ENGINEER

AUGUST 2013
DATE

1 CONCRETE CURB & GUTTERS
NTS

CITY OF IRVINE
**PUBLIC WORKS**




NOTES :
1. ALL CURBS AND GUTTERS SHALL BE PORTLAND CEMENT CONCRETE. CONTROL
2. WEAKENED PLANE JOINTS PURSUANT TO SECTION 303-5.4.3 OF THE GREENBOOK (EXCEPTION: MAX. 10 FOOT INTERVALS)
3. PAVEMENT SHALL BE 3/8 INCH HIGHER THAN EDGE OF GUTTER ON TYPE "A-2" AND TYPE "D".
4. MOISTURE BARRIERS SHALL BE REQUIRED IN ACCORDANCE WITH STD. PLAN No. 222.

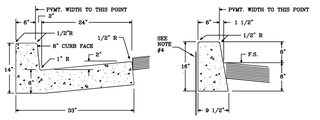
## CONCRETE CURBS AND GUTTERS

STD. PLAN 200
SHEET 2 OF 2

MARK CARROLL, R.C.E. 31515
CITY OF IRVINE - CITY ENGINEER

AUGUST 2013
DATE

CITY OF IRVINE
**PUBLIC WORKS**




## CONCRETE CURBS AND GUTTERS

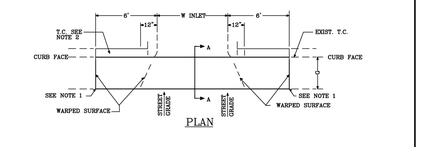
STD. PLAN 200
SHEET 1 OF 2

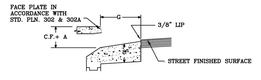
MARK CARROLL, R.C.E. 31515
CITY OF IRVINE - CITY ENGINEER

AUGUST 2013
DATE

2 CONCRETE CURB AND GUTTER
NTS

CITY OF IRVINE
**PUBLIC WORKS**




NOTE:
1. WHERE NO CURB EXISTS, CURB SHALL BE CONSTRUCTED BETWEEN ENDS OF LOCAL DEPRESSION.
2. G = WIDTH OF EXISTING GUTTER.
3. 1/2 INCH FOR G = 1 FOOT AND 2 INCHES FOR G GREATER THAN 1 FOOT.
4. CONCRETE SHALL HAVE COMPRESSIVE STRENGTH OF 3250 P.S.I. AT 28 DAYS.
5. DEPRESSION SHALL BE MONOLITHIC PLACEMENT.

## LOCAL DEPRESSION

STD. PLAN 303
SHEET 1 OF 1

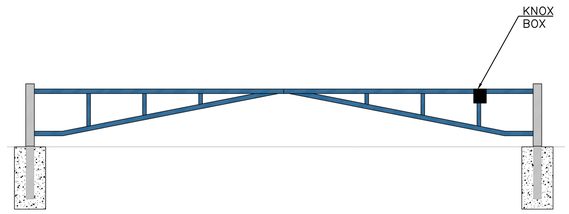
MARK CARROLL, R.C.E. 31515
CITY OF IRVINE - CITY ENGINEER

AUGUST 2013
DATE

9 LOCAL DEPRESSION DETAIL
NTS

*FABRICATED FROM SCH 40 PIPE*
*BLACK POLY POWDER COAT FINISH*
***QTY: 1***

| REVISIONS | | | |
|---|---|---|---|
| REV | DATE | DESCRIPTION | BY |
| 0 | 2/26/2025 | SUBMTL | JPH |




A **BARRIER GATE**

ALL DRAWINGS ARE VIEWED FROM THE OUTSIDE UNLESS OTHERWISE STATED

ACCEPTED AS IS- CHECK BOX AND SIGN
OR
RESUBMIT WITH CHANGES- CHECK BOX & ***DO NOT SIGN***

ALL DRAWINGS ARE VIEWED FROM OUTSIDE UNLESS OTHERWISE STATED

*BY SIGNING YOU HAVE DETERMINED THAT ALL INFORMATION IS ACCURATE AND READY TO BE BUILT PER CAPITOL STEEL'S SUBMITTED CAD DRAWING. THE SIGNING PARTY TAKES FULL RESPONSIBILITY FOR ACCURATE INFORMATION PROVIDED. ANY CHANGES, ALTERATIONS OR MODIFICATIONS WILL RESULT IN ADDITIONAL CHARGES. *THIS ORDER WILL NOT BE PROCESSED UNTIL SIGNED DRAWINGS ARE RECEIVED*

Approved By: _____ Date: _____ 2024

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**NOT TO BE REPRODUCED**

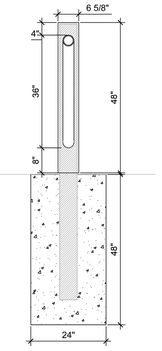

CAPITOL STEEL PRODUCTS
A DIVISION OF SECURITY CONTRACTOR SERVICES
PHONE: 909-906-5564 | FAX: 909-906-5573
CUSTOMER: VALLEY CITIES
JOB NAME: BARRIER GATE
SALES: SC | DATE: 2/26/2025
DRAWN: JPH | SHEET: A1-3



©2025 SoCalCad JPH2025 Valley Cities Fence\Barrier Gate\#070 BARRIER GATE_VALLEY CITIES_SC.dwg


*FABRICATED FROM SCH 40 PIPE*
*BLACK POLY POWDER COAT FINISH*
***QTY: 2 EA(1 PER LEAF)***

| REVISIONS | | | |
|---|---|---|---|
| REV | DATE | DESCRIPTION | BY |
| 0 | 2/26/2025 | SUBMTL | JPH |




A **BARRIER GATE LEAF SECTION**

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Approved By: _____ Date: _____ 2024

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PHONE: 909-906-5564 | FAX: 909-906-5573
CUSTOMER: VALLEY CITIES
JOB NAME: BARRIER GATE
SALES: SC | DATE: 2/26/2025
DRAWN: JPH | SHEET: A1-2



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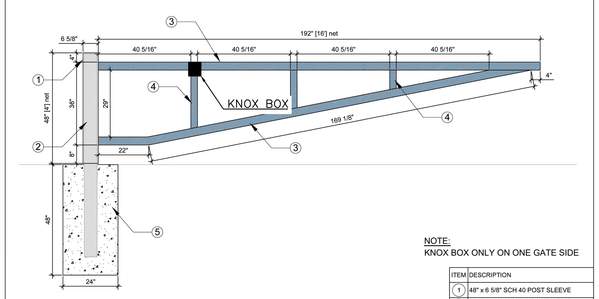
*FABRICATED FROM SCH 40 PIPE*
*BLACK POLY POWDER COAT FINISH*
***QTY: 2 EA(1 PER LEAF)***

| REVISIONS | | | |
|---|---|---|---|
| REV | DATE | DESCRIPTION | BY |
| 0 | 2/26/2025 | SUBMTL | JPH |




NOTE:
KNOX BOX ONLY ON ONE GATE SIDE

| ITEM | DESCRIPTION |
|---|---|
| 1 | 48" x 6 5/8" SCH 40 POST SLEEVE |
| 2 | 78" x 5 9/16" SCH 40 POST (VERIFY HEIGHT) |
| 3 | 3 1/2" SCH 40 HOR. RAILS |
| 4 | 2 7/8" SCH 40 VERITCALS @ 40 5/16" BETWEEN |
| 5 | 48" x 24" FOOTING |

A **48" H net x 192" W net BARRIER GATE LEAF**

ALL DRAWINGS ARE VIEWED FROM THE OUTSIDE UNLESS OTHERWISE STATED

ACCEPTED AS IS- CHECK BOX AND SIGN
OR
RESUBMIT WITH CHANGES- CHECK BOX & ***DO NOT SIGN***

ALL DRAWINGS ARE VIEWED FROM OUTSIDE UNLESS OTHERWISE STATED

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Approved By: _____ Date: _____ 2024

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A DIVISION OF SECURITY CONTRACTOR SERVICES
PHONE: 909-906-5564 | FAX: 909-906-5573
CUSTOMER: VALLEY CITIES
JOB NAME: BARRIER GATE
SALES: SC | DATE: 2/26/2025
DRAWN: JPH | SHEET: A1-1



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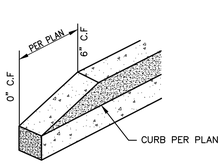
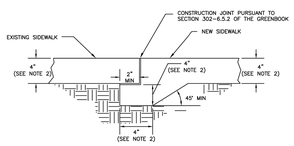
58 GATE
NTS



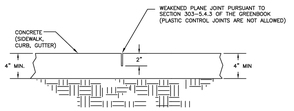

CITY OF IRVINE
**PUBLIC WORKS**

SIDEWALK CONSTRUCTION JOINT DETAIL




NOTES:
1. All applicable notes from sheet 1 shall apply.
2. New sidewalk section shall be keyed under existing sidewalk. Match existing sidewalk thickness and finish.
3. PER GEOTECHNICAL REPORT, CONCRETE FLATWORK SHOULD BE UNDERLAIN BY A MINIMUM OF 12 INCHES OF NON-EXPANSIVE STRUCTURE BACKFILL OR ON-SITE COMPACTED FILL SOILS CONDITIONED TO AT LEAST 2% ABOVE OPTIMUM MOISTURE CONTENT. STRUCTURE BACKFILL OR ON-SITE COMPACTED FILL SOIL SHOULD BE COMPACTED TO AT LEAST 90% AND 95% RELATIVE COMPACTION, RESPECTIVELY.

WEAKENED PLANE JOINT DETAIL



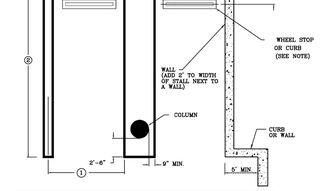

## SIDEWALK DETAIL

STD. PLAN 201
SHEET 2 OF 2

MARK CARROLL, R.C.E. 31515
CITY OF IRVINE - CITY ENGINEER

AUGUST 2013
DATE

CITY OF IRVINE
**PUBLIC WORKS**




| ** PARKING STALL DIMENSIONS | | | | |
|---|---|---|---|---|
| | OFFICE USE | | RESIDENTIAL USE | |
| STALL TYPE | ① STALL WIDTH | ② STALL DEPTH | ① STALL WIDTH | ② STALL DEPTH |
| FULL-SIZED SPACE | 9.0' | 18.0' | 9.0' | 18.0' |
| LONG-TERM SPACE | 8.5' | 18.0' | 8.5' | 18.0' |
| *COMPACT SPACE | 8.0' | 16.0' | 8.0' | 16.0' |

WHEEL STOPS:
AUTOMOBILE AND HANDICAPPED SPACES SHALL HAVE WHEEL STOPS NO LESS THAN 5 INCHES IN HEIGHT IN SITUATIONS WHERE THE DIRECTOR OF COMMUNITY DEVELOPMENT DETERMINES WHEEL STOPS ARE NECESSARY TO PREVENT ENCROACHMENT INTO LANDSCAPED OR PEDESTRIAN AREAS.

* COMPACT SPACES ARE ONLY PERMITTED IN PARKING STRUCTURES FOR OFFICE USE AREAS. SEE CITY OF IRVINE ZONING ORDINANCE CHAPTER 4-4-4.B
** PARKING STALL DIMENSIONS SHALL BE IN ACCORDANCE WITH ZONING ORDINANCE SECTION 4-4-4.

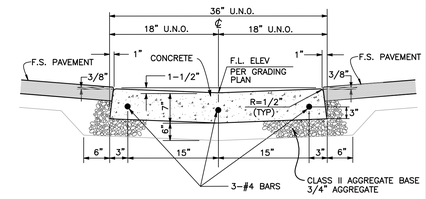
PARKING STALL DIMENSIONS AND COLUMN PLACEMENT IN PARKING STRUCTURES

## OFF-STREET PARKING

STD. PLAN 411
SHEET 4 OF 5

MARK CARROLL, R.C.E. 31515
CITY OF IRVINE - CITY ENGINEER

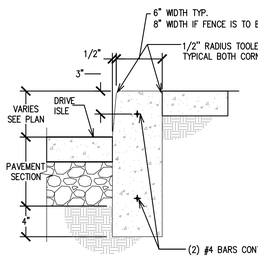
AUGUST 2013
DATE




NOTES:

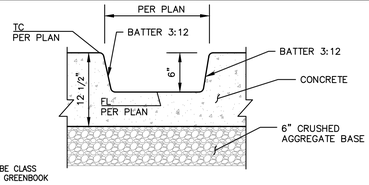
1. PROVIDE 1/4 " EXPANSION JOINTS WITH PREFORMED JOINT FILLER AT ALL ANGLE POINTS
2. PROVIDE CONTRACTION JOINTS CONSISTING OF ONE INCH DEEP CUT SCORES AT 10' o.c. MAX.
3. CRUSHED CLASS II AGGREGATE BASE, 6" THICK, SHALL BE PLACED UNDER ALL CURB, CURB & GUTTER, CURB OPENINGS, AND U-CHANNELS. MINIMUM COMPACTION OF 90% ON SUBGRADE AND 95% ON MISCELLANEOUS BASE IS REQUIRED.

7 3' CONCRETE RIBBON GUTTER
NTS




NOTE:
1. CURB SHALL BE FORMED & POURED IN PLACE
2. PROVIDE CONTROL JOINTS AT 10'-0" O.C.

10 VARIABLE HEIGHT CURB
NTS




NOTES

1. CONCRETE SHALL BE CLASS 560-C-3250 PER GREENBOOK
2. CRUSHED AGGREGATE BASE, 6" THICK, SHALL BE PLACED UNDER ALL CURB, CURB & GUTTER, CURB OPENINGS, AND U-CHANNELS. MINIMUM COMPACTION OF 90% ON SUBGRADE AND 95% ON AGGREGATE BASE IS REQUIRED.
3. 1/4" EXPANSION JOINTS SHALL BE PLACED AT 40' INTERVALS AND AT ALL BCR'S AND ECR'S. 1/8" x 2" WEAKENED PLANE JOINTS SHALL BE PLACED AT 10' INTERVALS. FOR JOINT DETAILS, SEE CITY OF COSTA MESA STD DRAWING 314.
4. ALL EXPOSED EDGES SHALL HAVE A 1/2" RADIUS EXCEPT THE GUTTER FLOW LINE SHALL BE 1 1/2" RADIUS.

13 U-CHANNEL
NTS

4 CURB TRANSITION
NTS

5 4" SIDEWALK
NTS

6 OFF-STREET PARKING/ WHEEL STOP
NTS

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**

DATE

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 6 | | | | |
| 5 | | | | |
| 4 | | | | |
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |

***PLANS PREPARED BY:***
**PSOMAS**
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

***SEAL***
REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA
***DATE***

***DRAWN BY:*** RC
DESIGNED BY: DL
***CHECKED BY:*** DL
RECOMMENDED:

**TWO HERITAGE PARK PARKING LOTS DETAILS**

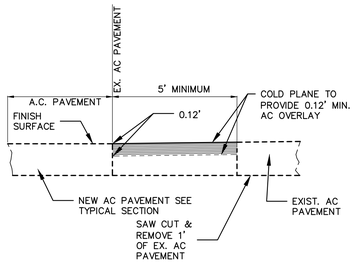
CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO.
***00948134-PARK***

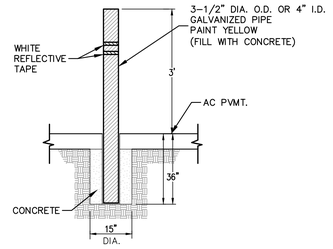
LANDSCAPE PERMIT NO.
***- LCE***

SHEET 21 OF 26

JOB NO. CIP NO. 361618

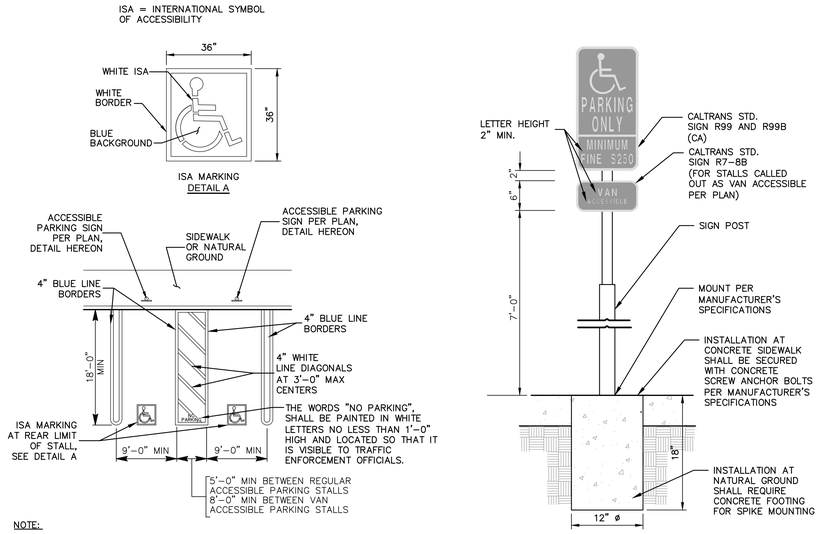



55 GRIND AND OVERLAY DETAIL
NOT TO SCALE



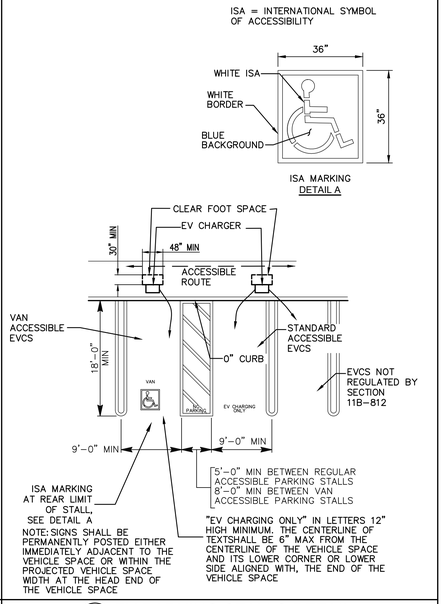

NOTE:
1. CONCRETE fc'=3000 PSI @ 28 DAYS
2. PLACE BOLLARDS AT 3.5-FT O.C. (MAX).
3. APPLY PROTECTIVE SLEEVE OVER BOLLARD

57 CONCRETE BOLLARD DETAIL
NOT TO SCALE



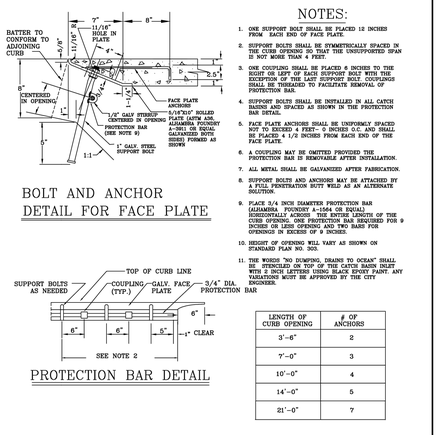

NOTE:
ALL STRIPING SHALL BE RETRO-REFLECTIVE PAINT, NO THERMOPLASTIC.

52 ACCESSIBLE PARKING STALLS AND SIGNS
NTS




56 EV PARKING STALLS DETAIL
NTS

CITY OF IRVINE
PUBLIC WORKS




BOLT AND ANCHOR
DETAIL FOR FACE PLATE

NOTES:
1. ONE SUPPORT BOLT SHALL BE PLACED 12 INCHES FROM EACH END OF FACE PLATE.
2. SUPPORT BOLTS SHALL BE SYMMETRICALLY SPACED IN THE CURB OPENING SO THAT THE UNSUPPORTED SPAN IS NOT MORE THAN 4 FEET.
3. ONE COUPLING SHALL BE PLACED 6 INCHES TO THE RIGHT OR LEFT OF EACH SUPPORT BOLT WITH THE EXCEPTION OF THE LAST SUPPORT BOLT. COUPLINGS SHALL BE BRAZED TO FACILITATE REMOVAL OF PROTECTION BAR.
4. SUPPORT BOLTS SHALL BE INSTALLED IN ALL CATCH BASINS AND SPACED AS SHOWN IN THE PROTECTION BAR DETAIL.
5. FACE PLATE ANCHORS SHALL BE UNIFORMLY SPACED NOT TO EXCEED 4 FEET- 0 INCHES O.C. AND SHALL BE PLACED A 1/2 INCHES FROM EACH END OF THE FACE PLATE.
6. A COUPLING MAY BE OMITTED PROVIDED THE PROTECTION BAR IS REMOVABLE AFTER INSTALLATION.
7. ALL METAL SHALL BE GALVANIZED AFTER FABRICATION.
8. SUPPORT BOLTS AND ANCHORS MAY BE ATTACHED BY A FULL PENETRATION BUTT WELD AS AN ALTERNATE SOLUTION.
9. PLACE 3/4 INCH DIAMETER PROTECTION BAR (ALHAMBRA FOUNDRY A-1564 OR EQUAL) HORIZONTALLY ACROSS THE ENTIRE LENGTH OF THE CURB OPENING. ONE PROTECTION BAR REQUIRED FOR 9 INCHES OR LESS OPENING AND TWO BARS FOR OPENINGS IN EXCESS OF 9 INCHES.
10. HEIGHT OF OPENING WILL VARY AS SHOWN ON STANDARD PLAN NO. 203.
11. THE WORDS "NO DUMPING, DRAINS TO OCEAN" SHALL BE STENCILED ON THE FACE OF THE CATCH BASIN INLET WITH 2 INCH LETTERS USING BLACK EPOXY PAINT. ANY VARIATIONS MUST BE APPROVED BY THE CITY ENGINEER.




PROTECTION BAR DETAIL

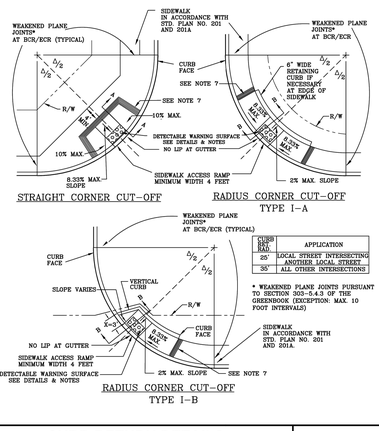
| LENGTH OF CURB OPENING | # OF ANCHORS |
|---|---|
| 3'-6" | 2 |
| 7'-0" | 3 |
| 10'-0" | 4 |
| 14'-0" | 5 |
| 21'-0" | 7 |

CATCH BASIN DETAILS (FOR TYPE "D" CURB & GUTTER)

MARK CARROLL, R.C.E. 31515
CITY OF IRVINE - CITY ENGINEER
AUGUST 2013
DATE

STD. PLAN 302A
SHEET 1 OF 1

CITY OF IRVINE
PUBLIC WORKS




STRAIGHT CORNER CUT-OFF

RADIUS CORNER CUT-OFF
TYPE I-A




| CURB RET. RAD. | APPLICATION |
|---|---|
| 25' | LOCAL STREET INTERSECTING ANOTHER LOCAL STREET |
| 35' | ALL OTHER INTERSECTIONS |

* WEAKENED PLANE JOINTS PURSUANT TO SECTION 303-5.4.3 OF THE GREENBOOK (EXCEPTION: MAX. 10 FOOT INTERVALS)

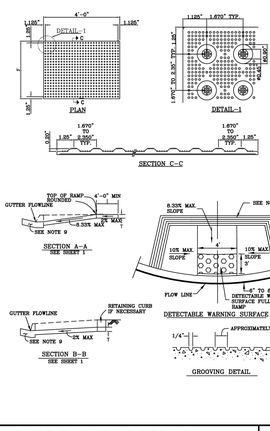
RADIUS CORNER CUT-OFF
TYPE I-B

CURB RETURN DETAILS

MARK CARROLL, R.C.E. 31515
CITY OF IRVINE - CITY ENGINEER
AUGUST 2013
DATE

STD. PLAN 202
SHEET 1 OF 3

CITY OF IRVINE
PUBLIC WORKS




CURB RETURN DETAILS

MARK CARROLL, R.C.E. 31515
CITY OF IRVINE - CITY ENGINEER
AUGUST 2013
DATE

STD. PLAN 202
SHEET 2 OF 3

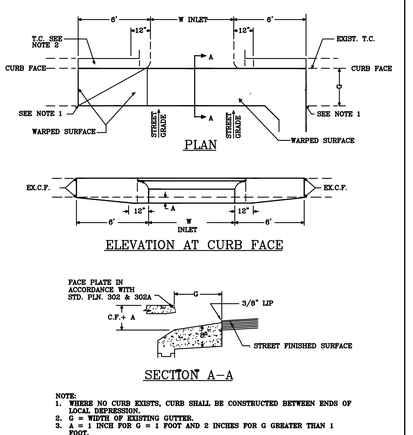
CITY OF IRVINE
PUBLIC WORKS

NOTES:
1. STRAIGHT CORNER CUT-OFF CURB RETURN TYPE SHALL BE USED AT ANY ARTERIAL INTERSECTION OR STREET/DRIVEWAY INTERSECTION WITH AN ARTERIAL HIGHWAY OR ANY INTERSECTION THAT IS SIGNALIZED.
2. STRAIGHT OR RADIUS CORNER CUT-OFF MAY BE USED AT LOCAL TO LOCAL STREET INTERSECTIONS.
3. ALTERNATIVE DESIGNS FOR SIDEWALK RETURN RAMPS MAY BE CONSIDERED FOR APPROVAL BY THE CITY ENGINEER.
4. SEE STANDARD NO. 201 AND 201A FOR SIDEWALK DETAIL.
5. APPROVED DETECTABLE WARNING SURFACE IS AS FOLLOWS:
   A) NEW INSTALLATIONS:
      CAST IN PLACE DETECTABLE WARNING SURFACE - MANUFACTURED BY ACCESS TILE (562) 942-9934, www.accesstile.com (Part #: ACC-R3x4-BK), OR MANUFACTURED BY ADA SOLUTIONS (800) 372-0519, www.adatile.com (Part #: 3848SEP 'BLACK') OR MANUFACTURED BY ARMORCAST PRODUCTS COMPANY (818) 882-3600, www.armorcastprod.com (Part #: A6003660RADA-BLACK) OR APPROVED EQUAL.
   B) RETROFIT INSTALLATIONS
      FLEXIBLE DETECTABLE WARNING SURFACE - MANUFACTURED BY DETECTABLE WARNING SYSTEMS INC., (866) 999-7452, www.detectable-warning.com, OR APPROVED EQUAL.
   C) COLOR SHALL BE BLACK OR APPROVED EQUAL.
   D) DETECTABLE WARNING SURFACE SHALL BE FULL WIDTH OF RAMP AND 3 FOOT IN DEPTH.
   E) THE DETECTABLE WARNING SURFACE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS AND INSTRUCTIONS.
   F) THE MANUFACTURER SHALL PROVIDE A MINIMUM 5-YEAR WARRANTY, GUARANTEEING REPLACEMENT WHEN THERE IS A DEFECT IN THE DOME SHAPE, COLOR FASTNESS, SOUND ON CANE ACOUSTIC QUALITY, OR DETERIORATION OF THE DETECTABLE WARNING SURFACE. THE WARRANTY SHALL COMMENCE ON THE DATE OF ACCEPTANCE BY CITY OF IRVINE.
6. THE EDGE OF THE DETECTABLE WARNING SURFACE NEAREST THE STREET SHALL BE BETWEEN 6" AND 8" FROM THE GUTTER FLOWLINE.
7. THE CURB RAMP SHALL BE OUTLINED, AS SHOWN, WITH A 1'-0" WIDE BORDER WITH 1/4" GROOVES APPROXIMATELY 3/4" ON CENTERS. SEE GROOVE DETAIL.
8. UTILITY PULL BOXES, MANHOLES, VAULTS AND ALL OTHER UTILITY FACILITIES WITHIN THE BOUNDARIES OF THE CURB RAMP SHALL BE RELOCATED OR ADJUSTED TO GRADE PRIOR TO, OR IN CONJUNCTION WITH, CURB RAMP CONSTRUCTION. UTILITY PULL BOXES, MANHOLES, VAULTS AND ALL OTHER FACILITIES SHALL NOT BE LOCATED WITHIN THE ACCESS RAMP.
9. MAXIMUM SLOPES OF ADJOINING GUTTERS, THE ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP OR ACCESSIBLE ROUTE SHALL NOT EXCEED 5 PERCENT GRADE WITHIN 4'-0" OF THE TOP AND BOTTOM OF THE CURB RAMP.
10. THERE SHALL BE NO LIP FROM RAMP TO GUTTER OR STREET.
11. WEAKENED PLANE JOINTS SHALL BE PURSUANT TO SECTION 303-5.4.3 OF THE GREENBOOK. PLASTIC CONTROL JOINTS ARE NOT ALLOWED.

CURB RETURN DETAILS

MARK CARROLL, R.C.E. 31515
CITY OF IRVINE - CITY ENGINEER
AUGUST 2013
DATE

STD. PLAN 202
SHEET 3 OF 3




NOTE:
1. WHERE NO CURB EXISTS, CURB SHALL BE CONSTRUCTED BETWEEN ENDS OF LOCAL DEPRESSION.
2. G = WIDTH OF EXISTING GUTTER.
3. A = 1 INCH FOR G = 1 FOOT AND 2 INCHES FOR G GREATER THAN 1 FOOT.
4. CONCRETE SHALL HAVE COMPRESSIVE STRENGTH OF 3250 P.S.I. AT 28 DAYS.
5. DEPRESSION SHALL BE MONOLITHIC PLACEMENT.

12 NON-TYPICAL LOCAL DEPRESSION DETAIL
NTS




54 ASPHALT PAVEMENT JOINT DETAIL
NTS

53 DRAIN INLET SYMBOL
NTS

8 CURB RAMP
NTS

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE

DATE

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 6 | | | | |
| 5 | | | | |
| 4 | | | | |
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |

PLANS PREPARED BY:
**PSOMAS**
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

SEAL
REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA
DATE

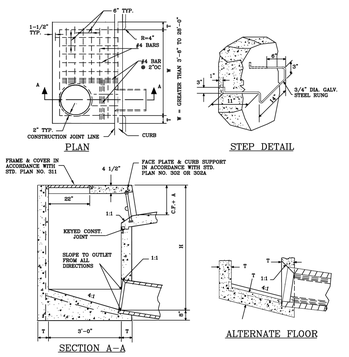
DRAWN BY: RC
DESIGNED BY: DL
CHECKED BY: DL
RECOMMENDED:

**TWO HERITAGE PARK PARKING LOTS**
**DETAILS**

CITY OF IRVINE
PUBLIC WORKS & SUSTAINABILITY DEPARTMENT

PLAN CHECK NO. **00948134-PARK**
LANDSCAPE PERMIT NO. **- LCE**
SHEET 22 OF 26
JOB NO. CIP NO. 361618

CITY OF IRVINE
PUBLIC WORKS




NOTES:
1. CURB OPENING SHALL CONFORM TO ADJACENT CURB ALIGNMENT.
2. REINFORCING STEEL FOR WALLS AND FLOOR SHALL BE #4 BARS @ 18 INCHES O.C. BOTH WAYS, PLACED 1-1/2 INCHES CLEAR TO INSIDE OF CATCH BASIN.
3. STEPS:
   a. 'H' IS 3 FEET- 6 INCHES OR LESS. NO STEPS REQUIRED
   b. 'H' IS GREATER THAN 3 FEET- 6 INCHES. INSTALL LOWEST STEP 24 INCHES ABOVE FLOOR AND OTHER STEP(S) AT 16 INCH INTERVALS TO WITHIN 18 INCHES OF THE TOP OF THE BOX.
   c. PLACE STEPS IN A WALL THAT DOES NOT CONTAIN THE PIPE PENETRATION.
4. PIPES MAY BE PLACED IN ANY WALL.
5. CATCH BASIN FLOORS SHALL BE SLOPED FROM ALL DIRECTIONS TOWARDS OUTLET PIPE AND SHALL HAVE A WOOD TROWEL FINISH
6. DIMENSIONS:
   H = 4 FEET- 0 INCHES UNLESS OTHERWISE SHOWN.
   T = 6 INCHES FOR H = 8 FEET- 0 INCHES OR LESS.
   T = 8 INCHES FOR H = 8 FEET - 1 INCH TO 20 FEET - 0 INCHES.
7. CURB FACE AT CATCH BASIN OPENING SHALL BE EQUAL TO EXISTING C.V. + DEPTH OF LOCAL DEPRESSION (A). SEE STD. PLAN No. 303.
8. CONCRETE: f'c = 3250 psi AT 28 DAYS.
9. TREMIES OR OTHER SUITABLE CONVEYANCE FOR CONCRETE SHALL BE REQUIRED WHEN CONCRETE FALLS MORE THAN 6-FEET.

| CATCH BASIN TYPE II | STD. PLAN 301 SHEET 1 OF 2 |
|---|---|
| MARK CARROLL, R.C.E. 31515 CITY OF IRVINE - CITY ENGINEER — AUGUST 2013 DATE | |

CITY OF IRVINE
PUBLIC WORKS

NOTES:
1. CURB OPENING SHALL CONFORM TO ADJACENT CURB ALIGNMENT.
2. REINFORCING STEEL FOR WALLS AND FLOOR SHALL BE #4 BARS @ 18 INCHES O.C. BOTH WAYS, PLACED 1-1/2 INCHES CLEAR TO INSIDE OF CATCH BASIN.
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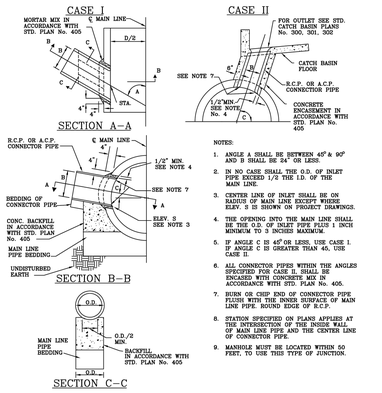
8. CONCRETE: f'c = 3250 psi AT 28 DAYS.
9. TREMIES OR OTHER SUITABLE CONVEYANCE FOR CONCRETE SHALL BE REQUIRED WHEN CONCRETE FALLS MORE THAN 6-FEET.

| CATCH BASIN TYPE II | STD. PLAN 301 SHEET 2 OF 2 |
|---|---|
| MARK CARROLL, R.C.E. 31515 CITY OF IRVINE - CITY ENGINEER — AUGUST 2013 DATE | |

25 CATCH BASIN TYPE II
NTS

CITY OF IRVINE
PUBLIC WORKS

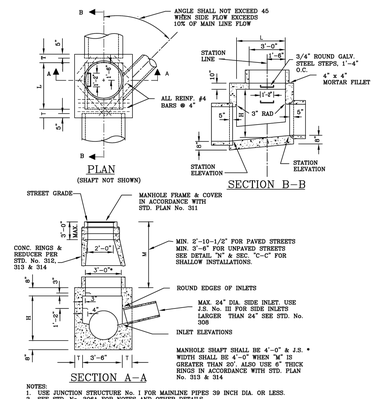



NOTES:
1. ANGLE A SHALL BE BETWEEN 45° & 90° AND B SHALL BE 24" OR LESS.
2. IN NO CASE SHALL THE O.D. OF INLET PIPE EXCEED 1/2 THE I.D. OF THE MAIN LINE.
3. CENTER LINE OF INLET SHALL BE ON RADIUS OF MAIN LINE EXCEPT WHERE ELEV. S IS SHOWN ON PROJECT DRAWINGS.
4. THE OPENING INTO THE MAIN LINE SHALL BE THE O.D. OF INLET PIPE PLUS 1 INCH MINIMUM TO 3 INCHES MAXIMUM.
5. IF ANGLE C IS 45° OR LESS, USE CASE I. IF ANGLE C IS GREATER THAN 45, USE CASE II.
6. ALL CONNECTOR PIPES WITHIN THE ANGLES SPECIFIED FOR CASE II, SHALL BE ENCASED WITH CONCRETE MIX IN ACCORDANCE WITH STD. PLAN No. 405.
7. BURR OR CHIP END OF CONNECTOR PIPE FLUSH WITH THE INNER SURFACE OF MAIN LINE PIPE. ROUND EDGE OF R.C.P.
8. STATION SPECIFIED ON PLANS APPLIES AT THE INTERSECTION OF THE INSIDE WALL OF MAIN LINE PIPE AND THE CENTER LINE OF CONNECTOR PIPE.
9. MANHOLE MUST BE LOCATED WITHIN 50 FEET, TO USE THIS TYPE OF JUNCTION.

| JUNCTION STRUCTURE No. V | STD. PLAN 309B SHEET 1 OF 1 |
|---|---|
| MARK CARROLL, R.C.E. 31515 CITY OF IRVINE - CITY ENGINEER — AUGUST 2013 DATE | |

26 JUNCTION STRUCTURE NO. V
NTS

CITY OF IRVINE
PUBLIC WORKS

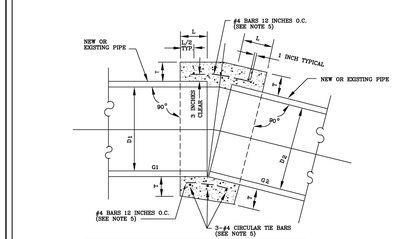



NOTES:
1. USE JUNCTION STRUCTURE No. I FOR MAINLINE PIPES 39 INCH DIA. OR LESS.
2. SEE STD. No. 308A FOR NOTES AND OTHER DETAILS.

| JUNCTION STRUCTURE No. I | STD. PLAN 306 SHEET 1 OF 1 |
|---|---|
| MARK CARROLL, R.C.E. 31515 CITY OF IRVINE - CITY ENGINEER — AUGUST 2013 DATE | |

27 JUNCTION STRUCTURE NO. I
NTS

CITY OF IRVINE
PUBLIC WORKS




| D | 12" | 18" | 24" | 30" | 36" | 42" | 48" | 54" | 60" | 66" |
|---|---|---|---|---|---|---|---|---|---|---|
| L | 1.0' | 1.0' | 1.0' | 1.25' | 1.5' | 1.5' | 1.5' | 1.75' | 1.75' | 1.75' |
| T | 4" | 5" | 6" | 7" | 8" | 9" | 10" | 10" | 11" | 11" |
| A | .06 | .067 | .052 | .042 | .036 | .040 | .036 | .032 | .028 | .026 |

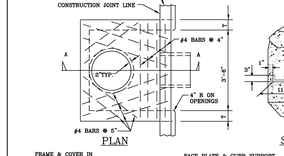
G = SLOPE OF PIPE FT./FT.

NOTES:
1. A CONCRETE COLLAR IS REQUIRED WHERE $G_B - G_I > A$
2. WHERE PIPES OF DIFFERENT DIAMETERS ARE JOINED WITH A CONCRETE COLLAR, L AND T SHALL BE THOSE OF THE LARGER PIPE. $D = D_1$ OR $D_2$, WHICHEVER IS GREATER.
3. FOR PIPE LARGER THAN 66 INCHES A SPECIAL COLLAR DETAIL IS REQUIRED.
4. FOR PIPE SIZE NOT LISTED USE NEXT SIZE LARGER.
5. OMIT REINFORCING ON PIPES 24 INCHES AND LESS IN DIAMETER AND ON ALL PIPES WHERE $G_B - G_I < 3 \times A$.
6. WHERE REINFORCING IS REQUIRED THE DIAMETER OF THE CIRCULAR TIES SHALL BE $D+(2 \times$ WALL THICKNESS$)+T$
7. WHEN $D_B$ IS EQUAL TO OR LESS THAN $D_I$, JOIN INVERTS AND WHEN D IS GREATER THAN D , JOIN SOFFITS.
8. BEVELED PIPE MAY BE USED IN LIEU OF CONCRETE COLLAR.
9. THIS CONCRETE COLLAR DETAIL SHALL NOT BE USED WHEN $G_B - G_I > 10\%$.

| CONCRETE COLLAR | STD. PLAN 310 SHEET 1 OF 1 |
|---|---|
| MARK CARROLL, R.C.E. 31515 CITY OF IRVINE - CITY ENGINEER — AUGUST 2013 DATE | |

28 CONCRETE COLLAR
NTS

CITY OF IRVINE
PUBLIC WORKS




NOTES:
1. CURB OPENING SHALL CONFORM TO ADJACENT CURB ALIGNMENT.
2. REINFORCING STEEL FOR WALLS AND FLOOR SHALL BE #4 BARS @ 18 INCHES O.C. BOTH WAYS, PLACED 1-1/2 INCHES CLEAR TO INSIDE OF CATCH BASIN.
3. STEPS:
   a. 'H' IS 3 FEET- 6 INCHES OR LESS. NO STEPS REQUIRED
   b. 'H' IS GREATER THAN 3 FEET- 6 INCHES. INSTALL LOWEST STEP 24 INCHES ABOVE FLOOR AND OTHER STEP(S) AT 16 INCH INTERVALS TO WITHIN 18 INCHES OF THE TOP OF THE BOX.
   c. PLACE STEPS IN A WALL THAT DOES NOT CONTAIN THE PIPE PENETRATION.
4. PIPES MAY BE PLACED IN ANY WALL.
5. CATCH BASIN FLOORS SHALL BE SLOPED FROM ALL DIRECTIONS TOWARDS OUTLET PIPE AND SHALL HAVE A WOOD TROWEL FINISH
6. DIMENSIONS:
   H = 4 FEET- 0 INCHES UNLESS OTHERWISE SHOWN.
   T = 6 INCHES FOR H = 8 FEET- 0 INCHES OR LESS.
   T = 8 INCHES FOR H = 8 FEET - 1 INCH TO 20 FEET - 0 INCHES.
7. CURB FACE AT CATCH BASIN OPENING SHALL BE EQUAL TO EXISTING C.V. + DEPTH OF LOCAL DEPRESSION (A). SEE STD. PLAN No. 303.
8. CONCRETE: f'c = 3250 psi AT 28 DAYS.
9. TREMIES OR OTHER SUITABLE CONVEYANCE FOR CONCRETE SHALL BE REQUIRED WHEN CONCRETE FALLS MORE THAN 6-FEET.

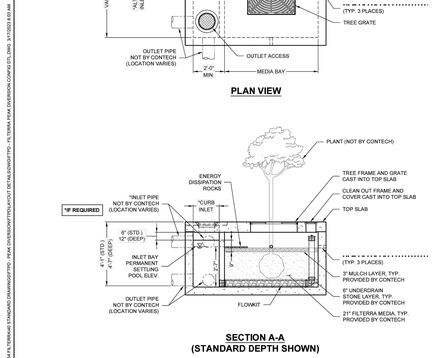
| CATCH BASIN TYPE I | STD. PLAN 300 SHEET 1 OF 2 |
|---|---|
| MARK CARROLL, R.C.E. 31515 CITY OF IRVINE - CITY ENGINEER — AUGUST 2013 DATE | |

CITY OF IRVINE
PUBLIC WORKS

NOTES:
1. CURB OPENING SHALL CONFORM TO ADJACENT CURB ALIGNMENT.
2. REINFORCING STEEL FOR WALLS AND FLOOR SHALL BE #4 BARS @ 18 INCHES O.C. BOTH WAYS, PLACED 1-1/2 INCHES CLEAR TO INSIDE OF CATCH BASIN.
3. STEPS:
   a. 'H' IS 3 FEET- 6 INCHES OR LESS. NO STEPS REQUIRED
   b. 'H' IS GREATER THAN 3 FEET- 6 INCHES. INSTALL LOWEST STEP 24 INCHES ABOVE FLOOR AND OTHER STEP(S) AT 16 INCH INTERVALS TO WITHIN 18 INCHES OF THE TOP OF THE BOX.
   c. PLACE STEPS IN A WALL THAT DOES NOT CONTAIN THE PIPE PENETRATION.
4. PIPES MAY BE PLACED IN ANY WALL.
5. CATCH BASIN FLOORS SHALL BE SLOPED FROM ALL DIRECTIONS TOWARDS OUTLET PIPE AND SHALL HAVE A WOOD TROWEL FINISH
6. DIMENSIONS:
   H = 4 FEET- 0 INCHES UNLESS OTHERWISE SHOWN.
   T = 6 INCHES FOR H = 8 FEET- 0 INCHES OR LESS.
   T = 8 INCHES FOR H = 8 FEET - 1 INCH TO 20 FEET - 0 INCHES.
7. CURB FACE AT CATCH BASIN OPENING SHALL BE EQUAL TO EXISTING C.V. + DEPTH OF LOCAL DEPRESSION (A). SEE STD. PLAN No. 303.
8. CONCRETE: f'c = 3250 psi AT 28 DAYS.
9. TREMIES OR OTHER SUITABLE CONVEYANCE FOR CONCRETE SHALL BE REQUIRED WHEN CONCRETE FALLS MORE THAN 6-FEET.

| CATCH BASIN TYPE I | STD. PLAN 300 SHEET 2 OF 2 |
|---|---|
| MARK CARROLL, R.C.E. 31515 CITY OF IRVINE - CITY ENGINEER — AUGUST 2013 DATE | |

29 CATCH BASIN TYPE I
NTS




**FTPD CONFIGURATION**
(OPTIONS: DEEP "-D", THROAT INLET "-T", PIPE INLET "-P", PIPE AND THROAT INLET "-PT")

| MODEL NAME | PART NUMBER | AVAILABILITY | MEDIA AREA (SF) | MEDIA BAY SIZE | VAULT SIZE (W x L) | WEIR LENGTH/ MAX. CURB OPENING | *MAX. BYPASS FLOW (CFS) STD / DEEP | INLET/ OUTLET ACCESS DIA | TREE GRATE QTY. AND SIZE |
|---|---|---|---|---|---|---|---|---|---|
| FTPD 4x4 (4x6 VAULT) | FTPD0404 | ALL | 16 | 4 x 4 | 4 x 6 | 1'-8" | 1.4 / 4.6 | 12"/12" | (1) 3' x 3' |
| FTPD 4x6 (4x8 VAULT) | FTPD0406 | ALL (EXCEPT DE, MD, NJ, PA, VA, WV) | 24 | 4 x 6 | 4 x 8 | 1'-8" | 1.4 / 4.6 | 12"/12" | (1) 3' x 3' |
| FTPD 6x4 (6x6 VAULT) | FTPD0604 | ALL (EXCEPT CA, TX) | 24 | 6 x 4 | 6 x 6 | 1'-8" | 1.4 / 4.6 | 12"/12" | (1) 3' x 3' |
| FTPD 4.5x5.8 (4.5x7.8 VAULT) | FTPD045058 | DE, MD, NJ, PA, VA, WV ONLY | 26 | 4.5 x 5.83 | 4.5 x 7.83 | 1'-8" | 1.4 / 4.6 | 12"/12" | (1) 3' x 3' |
| FTPD 6x6 (6x8 VAULT) | FTPD0606 | ALL | 36 | 6 x 6 | 6 x 8 | 1'-8" | 1.4 / 4.6 | 12"/12" | (1) 3' x 3' |
| FTPD 6x8 (6x10 VAULT) | FTPD0608 | ALL (EXCEPT CA, TX) | 48 | 6 x 8 | 6 x 10 | 1'-8" | 1.4 / 4.6 | 12"/12" | (1) 4' x 4' |
| FTPD 8x7 (8x10 VAULT) | FTPD0807 | CA, TX ONLY | 56 | 8 x 7 | 8 x 10 | 2'-8" | 2.1 / 6.8 | 24"/24" | (1) 4' x 4' |
| FTPD 8x10 (8x12 VAULT) | FTPD0810 | ALL (EXCEPT CA, TX) | 60 | 6 x 10 | 6 x 12 | 1'-8" | 1.4 / 4.6 | 12"/12" | (1) 4' x 4' |
| FTPD 7x10 (7x13 VAULT) | FTPD0710 | ALL (EXCEPT CA, TX) | 70 | 7 x 10 | 7 x 13 | 2'-8" | 2.1 / 6.8 | 24"/24" | (1) 4' x 4' |
| FTPD 8x9 (8x12 VAULT) | FTPD0809 | CA, TX ONLY | 72 | 8 x 9 | 8 x 12 | 2'-8" | 2.1 / 6.8 | 24"/24" | (1) 4' x 4' |
| FTPD 8x10.5 (8x14 VAULT) | FTPD08105 | ALL | 84 | 8 x 10.5 | 8 x 14 | 3'-0" | 2.5 / 8.2 | 24"/24" | (1) 4' x 4' |
| FTPD 8x12.5 (8x16 VAULT) | FTPD08125 | ALL (EXCEPT DE, MA) | 100 | 8 x 12.5 | 8 x 16 | 3'-0" | 2.5 / 8.2 | 24"/24" | (2) 4' x 4' |
| FTPD 9x11.5 (9x15 VAULT) | FTPD09115 | OR, WA ONLY | 103 | 9 x 11.5 | 9 x 15 | 3'-0" | 2.5 / 8.2 | 24"/24" | (2) 4' x 4' |

*MAX BYPASS FLOW IS INTERNAL WEIR FLOW. CAPACITIES SHOWN ARE FOR STANDARD DEPTH AND DEEP (-D), RESPECTIVELY. SITE SPECIFIC ANALYSIS IS REQUIRED TO DETERMINE CURB INLET FLOW CAPACITY.

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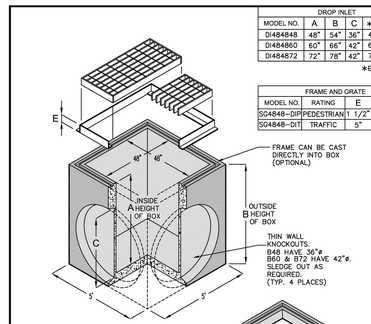
FILTERRA PEAK DIVERSION (FTPD) CONFIGURATION DETAIL

INTERNAL PIPE CONFIGURATION MAY VARY DEPENDING UPON OUTLET LOCATION

30 PEAK DIVERSION DETAIL
NTS




| DROP INLET | | | | |
|---|---|---|---|---|
| MODEL NO. | A | B | C | *WEIGHT |
| DI484848 | 48" | 54" | 36" | 4995 LBS. |
| DI484860 | 60" | 66" | 42" | 6433 LBS. |
| DI484872 | 72" | 78" | 42" | 7872 LBS. |

*BOX ONLY

| FRAME AND GRATE | | | |
|---|---|---|---|
| MODEL NO. | RATING | E | WEIGHT |
| SG4848-DIP | PEDESTRIAN | 1 1/2" | 242 LBS. |
| SG4848-DIT | TRAFFIC | 5" | 1000 LBS. |

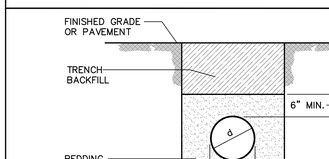
| EXTENSION | | |
|---|---|---|
| MODEL NO. | D | WEIGHT |
| RS484806 | 6" | 675 LBS. |
| RS484812 | 12" | 1350 LBS. |

- FRAME AND GRATE ASSEMBLY AVALIABLE IN TRAFFIC OR PEDESTRIAN MODELS.
- FRAME AND SOLID COVER ASSEMBLY AVALIABLE IN TRAFFIC OR PEDESTRIAN MODELS.
- DESIGN FOR H-20-44 BRIDGE LOADING.
- ASSEMBLY TO BE PLACED ON A 6" BASE OF CRUSHER RUN FOR EASE OF INSTALLATION AND EVEN LOAD DISTRIBUTION.
- FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN PRECAST.
- ILLUSTRATION IS TYPICAL ONLY OF GENERAL SERIES CONFIGURATION. FOR SPECIFIC CONFIGURATION, CALL JENSEN PRECAST.

48" X 48" DRAIN INLET — JENSEN PRECAST — DI4848

8.07

38 DROP INLET DETAIL
NTS




BEDDING: CLEAN COURSE SAND IN ACCORDANCE WITH GREENBOOK SPECIFICATIONS 306-5

TRENCH BACKFILL: NATIVE MATERIAL, 90% COMPACTION

CLEAN COARSE SAND:
SHALL CONFORM TO THE REQUIREMENTS OF SAND FOR PORTLAND CEMENT CONCRETE AS SPECIFIED IN SECTION 200-1.5.5 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION.

NATIVE MATERIAL:
UP TO CLASS IV SOILS, TYPE ML, CL. FINE GRAINED, LL < 50, MEDIUM TO NO PLASTICITY.

*NOTE: IF CLASS IV SOIL, TYPE MH OR ALL CLASS V SOILS, THEN USE CLEAN COURSE SAND.

COMPACTION:
PIPE EMBEDMENT AND TRENCH BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 306-1.3 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION. WATER DENSIFIED BACKFILL SHALL NOT BE USED UNLESS APPROVED BY THE SOILS ENGINEER.

NOTE 1: EXCAVATE FOR BELLS OR HUBS SO FULL LOAD IS CARRIED BY PIPE BARREL.

40 TRENCH BACKFILL
NTS

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 6 | | | | |
| 5 | | | | |
| 4 | | | | |
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |

PLANS PREPARED BY:
PSOMAS
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373
RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

SEAL — REGISTERED PROFESSIONAL ENGINEER — RAFAEL CHAVEZ No. 87228 — CIVIL — STATE OF CALIFORNIA
DATE

DRAWN BY: RC
DESIGNED BY: DL
CHECKED BY: DL
RECOMMENDED:

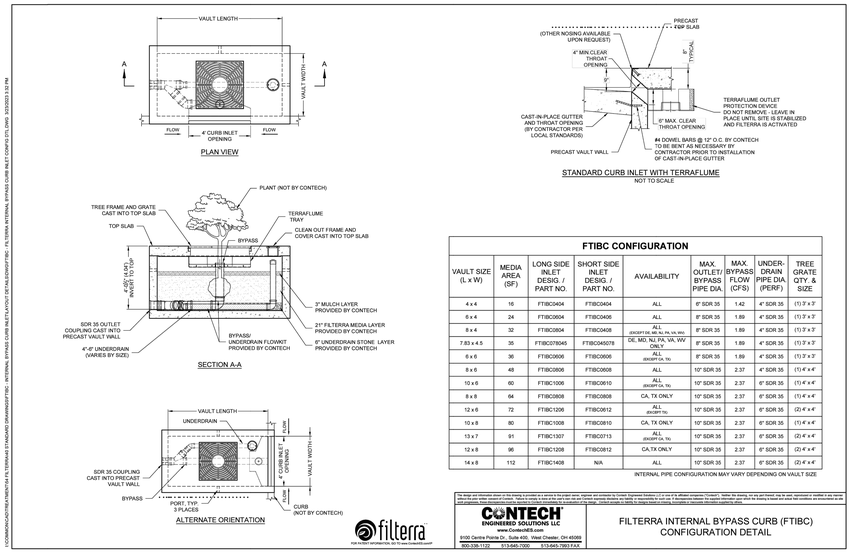
APPROVED BY: CITY ENGINEER
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY: IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE
DATE

**TWO HERITAGE PARK PARKING LOTS DETAILS**

CITY OF IRVINE
PUBLIC WORKS & SUSTAINABILITY DEPARTMENT

PLAN CHECK NO. 00948134-PARK
LANDSCAPE PERMIT NO. _____-LCE
SHEET 23 OF 26
JOB NO. CIP NO. 361618




**FTIBC CONFIGURATION**

| VAULT SIZE (L x W) | MEDIA AREA (SF) | LONG SIDE INLET DESIG. / PART NO. | SHORT SIDE INLET DESIG. / PART NO. | AVAILABILITY | MAX. OUTLET/ BYPASS PIPE DIA. | MAX. BYPASS FLOW (CFS) | UNDER-DRAIN PIPE DIA. (PERF.) | TREE GRATE QTY & SIZE |
|---|---|---|---|---|---|---|---|---|
| 4 x 4 | 16 | FTIBC0404 | FTIBC0404 | ALL | 6" SDR 35 | 1.42 | 4" SDR 35 | (1) 3' x 3' |
| 6 x 4 | 24 | FTIBC0604 | FTIBC0406 | ALL | 8" SDR 35 | 1.89 | 4" SDR 35 | (1) 3' x 3' |
| 8 x 4 | 32 | FTIBC0804 | FTIBC0408 | ALL (EXCEPT DE, MD, NJ, PA, VA, WV) | 8" SDR 35 | 1.89 | 4" SDR 35 | (1) 3' x 3' |
| 7.83 x 4.5 | 35 | FTIBC078045 | FTIBC045078 | DE, MD, NJ, PA, VA, WV ONLY | 8" SDR 35 | 1.89 | 4" SDR 35 | (1) 3' x 3' |
| 6 x 6 | 36 | FTIBC0606 | FTIBC0606 | ALL (EXCEPT CA, TX) | 8" SDR 35 | 1.89 | 4" SDR 35 | (1) 3' x 3' |
| 8 x 6 | 48 | FTIBC0806 | FTIBC0608 | ALL | 10" SDR 35 | 2.37 | 4" SDR 35 | (1) 4' x 4' |
| 10 x 6 | 60 | FTIBC1006 | FTIBC0610 | ALL (EXCEPT CA, TX) | 10" SDR 35 | 2.37 | 6" SDR 35 | (1) 4' x 4' |
| 8 x 8 | 64 | FTIBC0808 | FTIBC0808 | CA, TX ONLY | 10" SDR 35 | 2.37 | 6" SDR 35 | (1) 4' x 4' |
| 12 x 6 | 72 | FTIBC1206 | FTIBC0612 | ALL (EXCEPT TX) | 10" SDR 35 | 2.37 | 6" SDR 35 | (2) 4' x 4' |
| 10 x 8 | 80 | FTIBC1008 | FTIBC0810 | CA, TX ONLY | 10" SDR 35 | 2.37 | 6" SDR 35 | (1) 4' x 4' |
| 13 x 7 | 91 | FTIBC1307 | FTIBC0713 | ALL (EXCEPT CA, TX) | 10" SDR 35 | 2.37 | 6" SDR 35 | (2) 4' x 4' |
| 12 x 8 | 96 | FTIBC1208 | FTIBC0812 | CA, TX ONLY | 10" SDR 35 | 2.37 | 6" SDR 35 | (2) 4' x 4' |
| 14 x 8 | 112 | FTIBC1408 | N/A | ALL | 10" SDR 35 | 2.37 | 6" SDR 35 | (2) 4' x 4' |

INTERNAL PIPE CONFIGURATION MAY VARY DEPENDING ON VAULT SIZE

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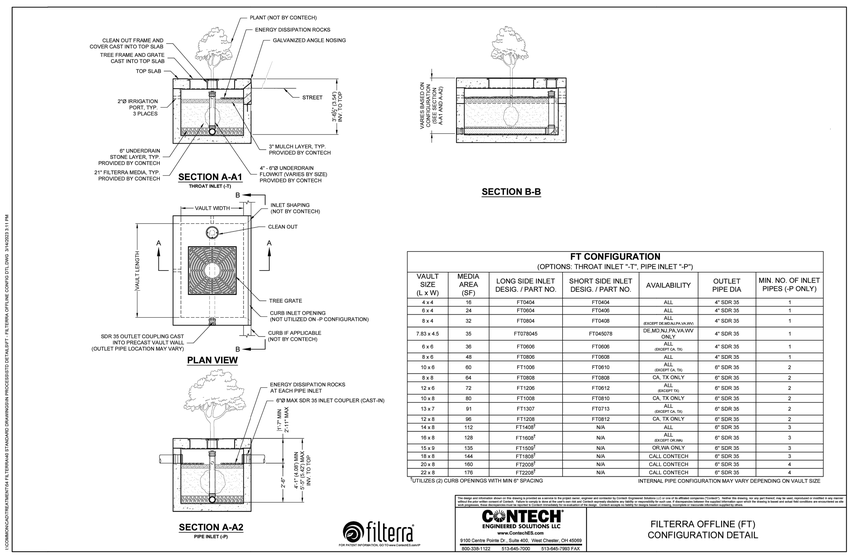
FILTERRA INTERNAL BYPASS CURB (FTIBC) CONFIGURATION DETAIL

filterra® is a registered trademark of Contech Engineered Solutions LLC

## 31 INTERNAL BYPASS SYSTEM DETAIL
NTS




**FT CONFIGURATION**
(OPTIONS: THROAT INLET "-T", PIPE INLET "-P")

| VAULT SIZE (L x W) | MEDIA AREA (SF) | LONG SIDE INLET DESIG. / PART NO. | SHORT SIDE INLET DESIG. / PART NO. | AVAILABILITY | OUTLET PIPE DIA | MIN. NO. OF INLET PIPES (-P ONLY) |
|---|---|---|---|---|---|---|
| 4 x 4 | 16 | FT0404 | FT0404 | ALL | 4" SDR 35 | 1 |
| 6 x 4 | 24 | FT0604 | FT0406 | ALL (EXCEPT DE, MD, NJ, PA, VA, WV) | 4" SDR 35 | 1 |
| 8 x 4 | 32 | FT0804 | FT0408 | ALL (EXCEPT DE, MD, NJ, PA, VA, WV) | 4" SDR 35 | 1 |
| 7.83 x 4.5 | 35 | FT078045 | FT045078 | DE, MD, NJ, PA, VA, WV ONLY | 4" SDR 35 | 1 |
| 6 x 6 | 36 | FT0606 | FT0606 | ALL (EXCEPT CA, TX) | 4" SDR 35 | 1 |
| 8 x 6 | 48 | FT0806 | FT0608 | ALL (EXCEPT CA, TX) | 4" SDR 35 | 1 |
| 10 x 6 | 60 | FT1006 | FT0610 | ALL (EXCEPT CA, TX) | 6" SDR 35 | 2 |
| 8 x 8 | 64 | FT0808 | FT0808 | CA, TX ONLY | 6" SDR 35 | 2 |
| 12 x 6 | 72 | FT1206 | FT0612 | ALL (EXCEPT TX) | 6" SDR 35 | 2 |
| 10 x 8 | 80 | FT1008 | FT0810 | CA, TX ONLY | 6" SDR 35 | 2 |
| 13 x 7 | 91 | FT1307 | FT0713 | ALL (EXCEPT CA, TX) | 6" SDR 35 | 2 |
| 12 x 8 | 96 | FT1208 | FT0812 | CA, TX ONLY | 6" SDR 35 | 2 |
| 14 x 8 | 112 | FT1408[1] | N/A | ALL | 6" SDR 35 | 3 |
| 16 x 8 | 128 | FT1608[1] | N/A | ALL (EXCEPT OR,WA) | 6" SDR 35 | 3 |
| 10 x 8 | 135 | FT1502[1] | N/A | OR,WA ONLY | 6" SDR 35 | 3 |
| 18 x 8 | 144 | FT1808[1] | N/A | CALL CONTECH | 6" SDR 35 | 3 |
| 20 x 8 | 160 | FT2008[1] | N/A | CALL CONTECH | 6" SDR 35 | 4 |
| 22 x 8 | 176 | FT2208[1] | N/A | CALL CONTECH | 6" SDR 35 | 4 |

[1]UTILIZES (2) CURB OPENINGS WITH MIN 8" SPACING

INTERNAL PIPE CONFIGURATION MAY VARY DEPENDING ON VAULT SIZE

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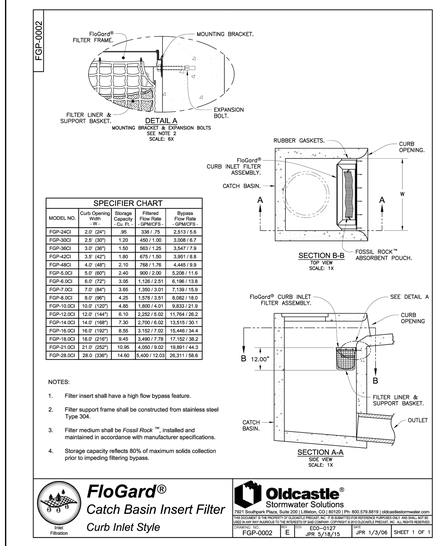
FILTERRA OFFLINE (FT) CONFIGURATION DETAIL

filterra® is a registered trademark of Contech Engineered Solutions LLC

## 32 OFFLINE SYSTEM DETAIL
NTS




FGP-0002

**SPECIFIER CHART**

| MODEL NO. | Curb Opening Width -W- | Storage Capacity - Cu. Ft. - | Filtered Flow Rate - GPM/CFS - | Bypass Flow Rate - GPM/CFS - |
|---|---|---|---|---|
| FGP-24CI | 2.0' (24") | 95 | 338 / .75 | 2,513 / 5.6 |
| FGP-30CI | 2.5' (30") | 1.20 | 450 / 1.00 | 3,008 / 6.7 |
| FGP-36CI | 3.0' (36") | 1.50 | 563 / 1.25 | 3,547 / 7.9 |
| FGP-42CI | 3.5' (42") | 1.80 | 675 / 1.50 | 3,951 / 8.8 |
| FGP-48CI | 4.0' (48") | 2.10 | 788 / 1.76 | 4,445 / 9.9 |
| FGP-5.0CI | 5.0' (60") | 2.40 | 900 / 2.00 | 5,206 / 11.6 |
| FGP-6.0CI | 6.0' (72") | 3.05 | 1,126 / 2.51 | 6,196 / 13.8 |
| FGP-7.0CI | 7.0' (84") | 3.85 | 1,350 / 3.01 | 7,139 / 15.9 |
| FGP-8.0CI | 8.0' (96") | 4.25 | 1,576 / 3.51 | 8,082 / 18.0 |
| FGP-10.5CI | 10.5' (126") | 4.85 | 1,892 / 4.21 | 9,633 / 21.9 |
| FGP-12.0CI | 12.0' (144") | 6.10 | 2,252 / 5.02 | 11,764 / 26.2 |
| FGP-14.0CI | 14.0' (168") | 7.30 | 2,700 / 6.02 | 13,515 / 30.1 |
| FGP-16.0CI | 16.0' (192") | 8.55 | 3,152 / 7.02 | 15,446 / 34.4 |
| FGP-18.0CI | 18.0' (216") | 9.45 | 3,490 / 7.78 | 17,152 / 38.2 |
| FGP-21.0CI | 21.0' (252") | 10.95 | 4,050 / 9.02 | 19,881 / 44.3 |
| FGP-28.0CI | 28.0' (336") | 14.60 | 5,400 / 12.03 | 26,311 / 58.6 |

NOTES:
1. Filter insert shall have a high flow bypass feature.
2. Filter support frame shall be constructed from stainless steel Type 304.
3. Filter medium shall be *Fossil Rock* ™, installed and maintained in accordance with manufacturer specifications.
4. Storage capacity reflects 80% of maximum solids collection prior to impeding filtering bypass.

FloGard® Catch Basin Insert Filter
Curb Inlet Style

Oldcastle® Stormwater Solutions
7301 Shadeland Place, Suite 250 | Atlanta, GA | 30350 | Ph: 800.579.6819 | oldcastlestormwater.com
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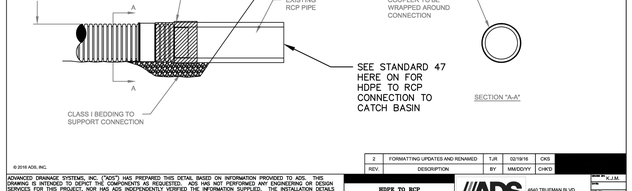
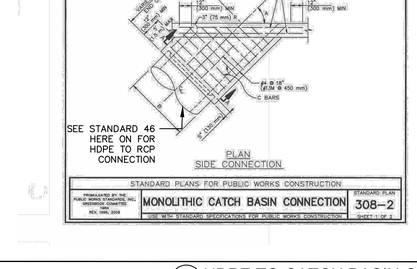
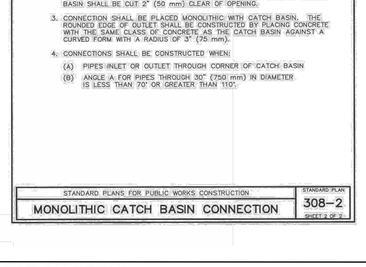
| DRAWING NO. | REV. | SCALE | SHEET |
|---|---|---|---|
| FGP-0002 | E | JPR 1/3/06 | SHEET 1 OF 1 |

## 42 CURB INLET FILTER
NTS




## 46 HDPE TO RCP CONNECTION DETAIL
NTS




## 47 HDPE TO CATCH BASIN CONNECTION DETAIL
NTS

HP STORM DUAL WALL FABRICATED END CAPS
12" - 60" (PLAIN END)

| PART # | PIPE SIZE | A |
|---|---|---|
| 1201ANP | 12 in (300 mm) | 11.8 in (299 mm) |
| 1501ANP | 15 in (375 mm) | 13.1 in (333 mm) |
| 1801ANP | 18 in (450 mm) | 13.2 in (336 mm) |
| 2401ANP | 24 in (600 mm) | 12.7 in (323 mm) |
| 3001ANP | 30 in (750 mm) | 11.9 in (303 mm) |
| 3601ANP | 36 in (900 mm) | 15.7 in (400 mm) |
| 4201ANP | 42 in (1050 mm) | 15.4 in (391 mm) |
| 4801ANP | 48 in (12000 mm) | 15.7 in (399 mm) |
| 6001ANP | 60 in (1500 mm) | 18.0 in (457 mm) |




NOTE: ALL DIMENSIONS ARE NOMINAL

© 2021 Advanced Drainage Systems, Inc.

ADS Advanced Drainage Systems, Inc.

| DRAWING #: | HP 14300 | |
|---|---|---|
| DRAWN BY: | TJR | 8/24/2010 |
| APPROVED BY: | | |
| REVISIONS: | TJR | 7/20/2016 |
| | | |
| | | |

## END CAP DETAIL
NTS

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 6 | | | | |
| 5 | | | | |
| 4 | | | | |
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |

**PLANS PREPARED BY:**
PSOMAS
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373
RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

SEAL: REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA

DATE

DRAWN BY: RC
DESIGNED BY: DL
CHECKED BY: DL
RECOMMENDED:

APPROVED BY:
CITY ENGINEER
LINCOLN LO R.C.E. NO. 66116 DATE

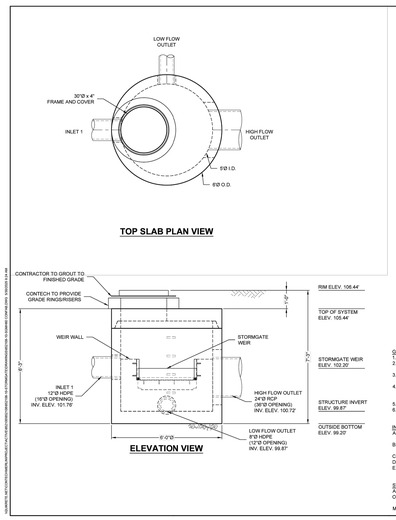
APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
DATE

**TWO HERITAGE PARK PARKING LOTS**
**DETAILS**

CITY OF IRVINE
PUBLIC WORKS & SUSTAINABILITY DEPARTMENT

PLAN CHECK NO.
00948134-PARK
LANDSCAPE PERMIT NO.
- LCE
SHEET 24 OF 26

JOB NO. CIP NO. 361618




GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE, www.ContechES.com.
3. BYPASS STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 5', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTSIDE BOTTOM ELEV. SHOWN. CONTACT CONTECH FOR ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. BYPASS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ENGINEER OF RECORD RESPONSIBLE FOR CONFIRMING ELEVATION OF ADJUSTABLE WEIR PANEL AND PRECAST WALL ACCORDING TO PRODUCTS TO BE INSTALLED ON THE PROJECT.

INSTALLATION NOTES
A. CAST SLAB AND BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO REMOVE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S).
E. CONTRACTOR TO INSTALL GRADE RINGS/RISERS OR BLOCK REQUIRED BETWEEN THE TOP OF THE STRUCTURE AND THE BASE OF THE MANHOLE FRAMES.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = 10000 LBS.
OF 2 PIECES

MAX FOOTPRINT = 0'6"

| SITE DESIGN DATA | |
|---|---|
| WATER QUALITY FLOW RATE | 0.63 CF |
| PEAK FLOW RATE | 18.32 CFS |
| RETURN PERIOD OF PEAK FLOW | 0 YRS |

CONTECH PROPOSAL DRAWING 000000 LAYOUT 1A SOQS / PVRSD

| NO. | DATE | REVISIONS |
|---|---|---|
| A | 10/30/25 | PER CITY COMMENTS |
| B | 11/10/25 | PER CITY COMMENTS |

DRAWN: AWW CHECKED: AWW
PROJECT No.: 852108 DESIGNER No.: 10
SHEET: 1 OF 1

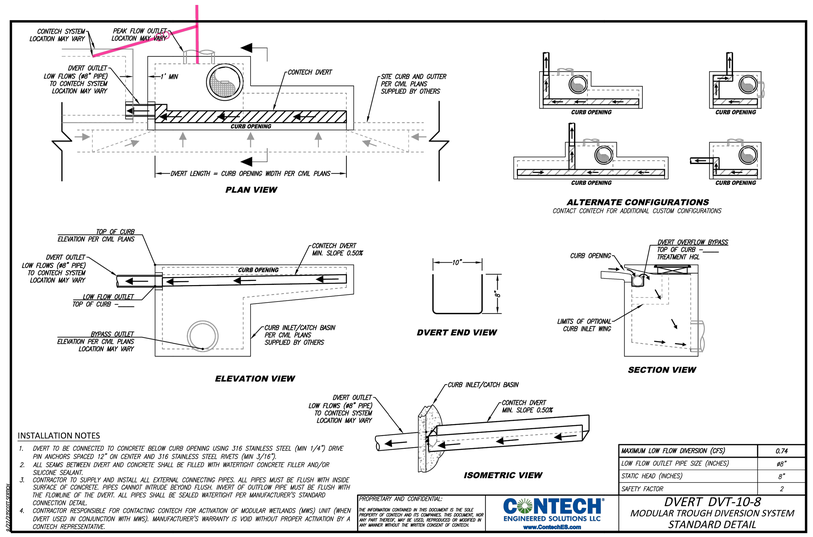
DIVERSION BYPASS SGMH60 - 852108-10
HERITAGE PARK
IRVINE, CA

CONTECH ENGINEERED SOLUTIONS LLC
A QUIKRETE COMPANY
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX
www.ContechES.com

StormGate

ALL DIMENSIONS, ELEVATIONS AND DETAILS MUST BE VERIFIED BY CUSTOMER PRIOR TO FABRICATION. CONTECH ASSUMES NO RESPONSIBILITY FOR ERRORS OR OMISSIONS IN CUSTOMER SUPPLIED INFORMATION.

## 35 STORMGATE HIGH FLOW BYPASS SYSTEM DETAIL
NTS




INSTALLATION NOTES
1. DVERT TO BE CONNECTED TO CONCRETE BELOW CURB OPENING USING 316 STAINLESS STEEL (MIN 1/4") DRIVE PIN ANCHORS SPACED 12" ON CENTER AND 316 STAINLESS STEEL RIVETS (MIN 3/16").
2. ALL SEAMS BETWEEN DVERT AND CONCRETE SHALL BE FILLED WITH WATERTIGHT CONCRETE FILLER AND/OR SILICONE SEALANT.
3. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. PIPES CANNOT INTRUDE BEYOND FLUSH. INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH THE FLOWLINE OF THE DVERT. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
4. CONTRACTOR RESPONSIBLE FOR CONTACTING CONTECH FOR ACTIVATION OF MODULAR WETLANDS (MWS) UNIT (WHEN DVERT USED IN CONJUNCTION WITH MWS). MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A CONTECH REPRESENTATIVE.

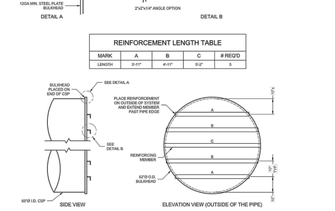
| MAXIMUM LOW FLOW DIVERSION (CFS) | 0.74 |
|---|---|
| LOW FLOW OUTLET PIPE SIZE (INCHES) | #8" |
| STATIC HEAD (INCHES) | 8" |
| SAFETY FACTOR | 2 |

PROPRIETARY AND CONFIDENTIAL:
THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE SOLE PROPERTY OF CONTECH ENGINEERED SOLUTIONS LLC. ANY USE OR COPYING OF THIS DOCUMENT WITHOUT THE WRITTEN PERMISSION OF CONTECH IS STRICTLY PROHIBITED. THE RECEIPT OR POSSESSION OF THIS DOCUMENT DOES NOT CONVEY ANY RIGHTS TO REPRODUCE, DISCLOSE OR USE ITS CONTENT OR THE PHYSICAL OR INTELLECTUAL PROPERTY EMBODIED OR DESCRIBED THEREIN IN WHOLE OR IN PART UNLESS SUCH USE IS SPECIFICALLY AUTHORIZED BY CONTECH IN WRITING OR BY A CONTECH QUOTATION UNDER WHICH THIS DOCUMENT IS SUBMITTED. IF THE RECIPIENT IS NOT AUTHORIZED BY CONTECH IN WRITING TO RECEIVE CONFIDENTIAL INFORMATION, RECIPIENT SHALL RETURN THIS DOCUMENT TO CONTECH IMMEDIATELY UPON REQUEST.

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com

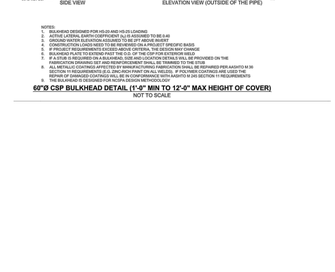
DVERT DVT-10-8
MODULAR TROUGH DIVERSION SYSTEM
STANDARD DETAIL

## 36 MODULAR DIVERSION DETAIL
NTS




REINFORCEMENT LENGTH TABLE

| MARK | A | B | C | # REQ'D |
|---|---|---|---|---|
| LENGTH | 3'-11" | 4'-11" | 5'-2" | 5 |




NOTES:
1. BULKHEADS DESIGNED FOR HS-20 AND HS-25 LOADING
2. ASTHE LATERAL EARTH COEFFICIENT (k) IS ASSUMED TO BE 0.40
3. GROUND WATER ELEVATION ASSUMED TO BE DTT ABOVE INVERT
4. BULKHEADS DESIGNED FOR SOIL PRESSURES ONLY. NOT SPECIFIC BASIS
5. IF PROJECT REQUIREMENTS EXCEED ABOVE CRITERIA, THE DESIGN MAY CHANGE
6. BULKHEAD PLATE TO EXTEND PAST THE O.D. OF THE CSP FOR EXTERIOR WELD
7. ALL WELDS SHALL BE CONTINUOUS FILLET WELDS AND SHALL BE PERFORMED ON BOTH SIDES ON THE FABRICATION DRAWING SET AND REINFORCEMENT SHALL BE TRIMMED TO THE STEM
8. ALL WELDING SHALL BE PERFORMED BY WELDERS AND WELDING PROCEDURES QUALIFIED PER AASHTO M 36 SECTION 10 REQUIREMENTS (E.G. ZINC-RICH PAINT ON ALL WELDS). IF PDO WIRES COATINGS ARE USED THE MANUFACTURER SHALL BE QUALIFIED IN ACCORDANCE WITH AASHTO M 243 SECTION 11 REQUIREMENTS
9. THE BULKHEAD IS DESIGNED FOR INSTALLATION METHODS SHOWN

**60"Ø CSP BULKHEAD DETAIL (1'-0" MIN TO 12'-0" MAX HEIGHT OF COVER)**
NOT TO SCALE

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| A | 10/30/25 | PER CITY COMMENTS | JP |
| B | 11/10/25 | PER CITY COMMENTS | JP |

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800-338-1122 513-645-7000 513-645-7993 FAX
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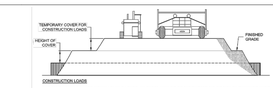
CONTECH CMP DETENTION SYSTEMS
PROPOSAL DRAWING

60"Ø UNDERGROUND DETENTION SYSTEM
HERITAGE PARK
IRVINE, CA
SITE DESIGNATION: UNDERGROUND DETENTION

PROJECT No.: 852108 | DES. by: GS | DATE: 11/10/2025
DRAWN: JTEN | CHECKED: JP
DESIGNER: JTEN | PM APPR.: JTEN
SHEET: P2

ALL DIMENSIONS, ELEVATIONS AND DETAILS MUST BE VERIFIED BY CUSTOMER PRIOR TO FABRICATION. CONTECH ASSUMES NO RESPONSIBILITY FOR ERRORS OR OMISSIONS IN CUSTOMER SUPPLIED INFORMATION.




CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT OF COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE TABLE IS BASED ON AASHTO LRFD CONSTRUCTION LOADING SPECIFICATIONS WITH GREATER PROTECTION FOR THE PIPE THAN FWHA-RD-89-043 EARTH COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

| PIPE SPAN, INCHES | AXLE LOADS (kips) | | | |
|---|---|---|---|---|
| | 16.00 | 32.00 | 72-128 | 130-150 |
| | MINIMUM COVER (FT) | | | |
| 12-42 | 2.0 | 3.5 | 3.0 | 3.0 |
| 48-72 | 3.0 | 3.5 | 3.5 | 4.0 |
| 78-120 | 3.5 | 3.5 | 4.0 | 4.0 |
| 126-144 | 3.5 | 4.0 | 4.5 | 4.5 |

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

**CONSTRUCTION LOADING DIAGRAM**
NOT TO SCALE

SPECIFICATION FOR CORRUGATED STEEL PIPE-ALUMINIZED TYPE 2 STEEL

SCOPE
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE CORRUGATED STEEL PIPE (CSP) DETAILED IN THE PROJECT PLANS.

MATERIAL
THE ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M274 OR ASTM A929.

PIPE
THE CSP SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M36 OR ASTM A760. PIPE SIZES, GAUGES AND CORRUGATIONS SHALL BE AS SHOWN ON THE PROJECT PLANS.

ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.

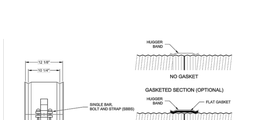
HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE CORRUGATED STEEL PIPE ASSOCIATION (RCSPA).

INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II OR ASTM A798 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS, CONTACT ENGINEER FOR SHOULD DISCUSS AND RESOLVE WITH THE SITE OWNERS.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

ANTI-FLOTATION PROVISIONS DUE TO HIGH GROUNDWATER OR OTHER FLOTATION CONCERNS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.

**MATERIAL SPECIFICATION**
NOT TO SCALE




2 2/3"x1/2" RE-ROLLED END HEL-COR PIPE

GENERAL NOTES:
1. JOINT TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
2. BAND MATERIALS AND/OR COATING CAN VARY BY LOCATION. CONTACT YOUR CONTECH REPRESENTATIVE FOR AVAILABILITY.
3. BANDS ARE SHAPED TO MATCH THE PIPE-ARCH WHEN APPLICABLE.
4. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
   - 12" THRU 48" 1-PIECE
   - 54" THRU 72" 2-PIECES
   - 102" THRU 144" 3-PIECES
5. BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS.
6. ALL CMP IS REROLLED TO HAVE ANNULAR END CORRUGATIONS OF 2 2/3"x1/2"
7. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
8. ORDER SHALL DESIGNATE GASKET OPTION, IF REQUIRED (SEE DETAILS ABOVE).

**H-12 HUGGER BAND DETAIL**
NOT TO SCALE

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| A | 10/30/25 | PER CITY COMMENTS | JP |
| B | 11/10/25 | PER CITY COMMENTS | JP |

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800-338-1122 513-645-7000 513-645-7993 FAX
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CONTECH CMP DETENTION SYSTEMS
PROPOSAL DRAWING

60"Ø UNDERGROUND DETENTION SYSTEM
HERITAGE PARK
IRVINE, CA
SITE DESIGNATION: UNDERGROUND DETENTION

PROJECT No.: 852108 | DES. by: GS | DATE: 11/10/2025
DRAWN: JTEN | CHECKED: JP
DESIGNER: JTEN | PM APPR.: JTEN
SHEET: P3

ALL DIMENSIONS, ELEVATIONS AND DETAILS MUST BE VERIFIED BY CUSTOMER PRIOR TO FABRICATION. CONTECH ASSUMES NO RESPONSIBILITY FOR ERRORS OR OMISSIONS IN CUSTOMER SUPPLIED INFORMATION.

TABLE 1:
DIAMETER, D
MIN. COVER
CORR. PROFILE
4'<D<5'
12"
1 1/2" x 1/4"
5'<D<6'
12"
2 2/3" x 1/2"
6'<D<8'
12"
3" x 1", 5" x 1"
8'<D
DS
3" x 1", 5" x 1"
NOTES:
• IN SEDIMENTATION, BACKFILL MUST EXTEND TO DIRECTION FLOW.
• TOTAL HEIGHT OF COMPACTED COVER FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT OR TOP OF RIGID PAVEMENT
• ULTIMATE SUBGRADE AVAILABLE FOR SIZES 18" - 120" WITH 2/3"x 1/2" 2 2/3"x1/2" CORRUGATION
IN GEOGRAPHIES WITH SALTING, SEE INSTALLATION NOTE 4
IN SITU
SOURCE ZONE
CMP
DIAMETER, D
ABOVE DETAIL IS A RECOMMENDATION. CONSULT GEOTECHNICAL EOR FOR PROJECT SPECIFIC BACKFILL REQUIREMENTS.
TRENCH
FILL ENVELOPE
EMBANKMENT
MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGEMENT
INSTALLATION NOTES
1. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT THAT THE HAUNCH ZONE (SOURCE) IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES.
2. OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY ENGINEER OF RECORD.
3. BACKFILL USING CONTROLLED LOW-STRENGTH MATERIAL (CLSM) "FLUID-FILL" OR FLOWABLE FILL") MAY BE USED WHEN THE SPACING BETWEEN THE PIPES WILL NOT ALLOW FOR COMPACTION EQUIPMENT TO BE USED FOR STANDARD BACKFILL. CONTACT CONTECH FOR FURTHER EVALUATION.
4. IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED OVER THE UPPER HALF OF THE PIPE. THIS BARRIER WILL PREVENT THE SALTS FROM ENTERING THE SOIL SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT DUE A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.
TABLE 2:
CMP DETENTION AND CMP DRAINAGE STANDARD BACKFILL SPECIFICATIONS

| | MATERIAL LOCATION | MATERIAL SPECIFICATION | DESCRIPTION | |
|---|---|---|---|---|
| | | | MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF THE SUGGESTED MINIMUM TRENCH WIDTH, OR EOR RECOMMENDATION. | MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE: PIPE < 24": 3 DIA. PIPE 24" - 144": D + 4'0" PIPE > 144": D + 10" |
| 1 | FILL ENVELOPE WIDTH | PER ENGINEER OF RECORD | | |
| 2 | FOUNDATION | AASHTO (M) 57 OR PER ENGINEER OF RECORD | PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, THE ENGINEER OF RECORD SHOULD BE CONSULTED TO DETERMINE SUITABLE MATERIAL APPROVED BY THE ENGINEER OF RECORD. | |
| 3 | BEDDING | AASHTO M 43: 3, 357, 4, 467, 5, 56, 57 (APPROVED REGIONAL EQUIVALENTS INCLUDE CA-7) | ENGINEER OF RECORD TO DETERMINE IF BEDDING IS REQUIRED. PIPE MAY BE PLACED ON THE TRENCH BOTTOM OF A RELATIVELY LOOSE, NATIVE SUITABLE FOUNDATION SOILS CONFORMING TO AASHTO M145, CLASSIFICATIONS A1, A2, OR A3 WITH MAXIMUM PARTICLE SIZE OF 3" PER AASHTO M 43.3.1 | |
| 4 | CORRUGATED METAL PIPE | | | |
| 5A | CRITICAL BACKFILL | AASHTO M 145: A-1, A-2, A-3 * | HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR DAYCEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION WITHOUT SOFT SPOTS. THE MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8" AND COMPACTED TO ACHIEVE 90% DENSITY AT 2% OF OPTIMUM MOISTURE OR LESS THAT THERE IS NO MORE THAN A THREE LIFT (24") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHOULD BE ADVANCED ALONG THE LENGTH OF THE SYSTEM TO AVOID DIFFERENTIAL LOADING. | |
| 5B | BACKFILL | AASHTO M 145: A-1, A-2, A-3 | WELL GRADED GRANULAR MATERIAL WITHIN MAY CONTAIN SMALL AMOUNTS OF CLAY AND MAXIMUM PARTICLE SIZE OF 3" (PER AASHTO 26.5.6.1 AND 12.4.1.5) | |
| 6 | COVER MATERIAL | SP TO MIN. COVER - SEE 5A AND 5B ABOVE ABOVE MIN. COVER - PER ENGINEER OF RECORD | COVER MATERIAL MAY INCLUDE NON-BITUMINOUS, GRANULAR ROAD BASE MATERIAL WITHIN MIN COVER LIMITS | |
| 7 | RIGID OR FLEXIBLE PAVEMENT (IF APPLICABLE) | PER ENGINEER OF RECORD | FLEXIBLE PAVEMENT SHOULD NOT BE COUNTED AS PART OF THE FILL HEIGHT OVER THE CMP. FINAL BACKFILL, MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD. | |
| 8 | OPTIONAL SIDE GEOTEXTILE | NONE | GEOTEXTILE LAYER IS RECOMMENDED ON SIDES OF EXCAVATION TO PREVENT SOIL MIGRATION. | |
| 9 | OPTIONAL GEOTEXTILE BETWEEN LAYERS | NONE | IF SOIL TYPES DIFFER AT ANY POINT ABOVE PIPE HAUNCH, A GEOTEXTILE LAYER IS RECOMMENDED TO BE PLACED BETWEEN THE LAYERS TO PREVENT SOIL MIGRATION. | |
NOTES:
• FOR MULTIPLE BARREL INSTALLATIONS, THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE THE DIAMETER (D BUT NO LESS THAN 12" FOR DIAMETERS <72", FOR 72" AND LARGER DIAMETERS, THE MINIMUM SPACING IS 36". CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING.
* APPROVED REGIONAL EQUIVALENTS FOR SECTION 5A INCLUDE CA-7, CDOT #67, MSOT #8, OR CALTRANS 37.

**MANUFACTURER RECOMMENDED BACKFILL**
NOT TO SCALE



| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| A | 10/30/25 | PER CITY COMMENTS | JP |
| B | 11/10/25 | PER CITY COMMENTS | JP |

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CONTECH CMP DETENTION SYSTEMS
PROPOSAL DRAWING

60"Ø UNDERGROUND DETENTION SYSTEM
HERITAGE PARK
IRVINE, CA
SITE DESIGNATION: UNDERGROUND DETENTION

PROJECT No.: 852108 | DES. by: GS | DATE: 11/10/2025
DRAWN: JTEN | CHECKED: JP
DESIGNER: JTEN | PM APPR.: JTEN
SHEET: P4

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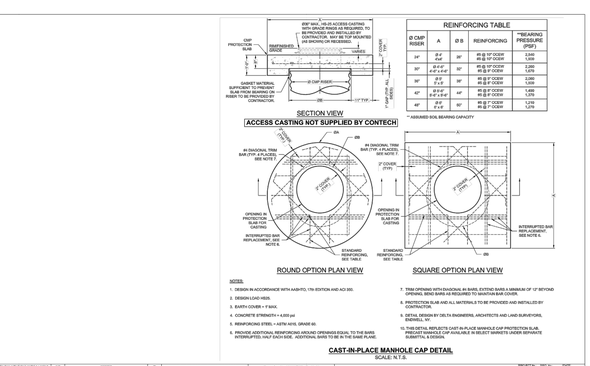


REINFORCING TABLE

| Ø CMP RISER | A | Ø B | REINFORCING | *BEARING PRESSURE (PSF) |
|---|---|---|---|---|
| 24" | 8'-6" x 8'-6" | 39" | #5 @ 12" OCEW #5 @ 12" OCEW | 2,948 |
| 30" | 8'-6" x 8'-6" | 51" | #5 @ 10" OCEW #5 @ 9" OCEW | 2,289 1,879 |
| 36" | 8'-6" x 8'-6" | 64" | #5 @ 8" OCEW #5 @ 8" OCEW | 2,289 1,559 |
| 42" | 8'-6" x 8'-6" | 77" | #5 @ 7" OCEW #5 @ 7" OCEW | 1,955 1,559 |
| 48" | 8'-6" x 8'-6" | 90" | #5 @ 7" OCEW #5 @ 7" OCEW | 1,716 1,716 |

*ASSUMED SOIL BEARING CAPACITY

NOTES:
1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION AND ACI 350.
2. DESIGN LOAD H20S.
3. EARTH COVER = 0' MAX.
4. CONCRETE STRENGTH = 4,000 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING. BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERS, ARCHITECTS AND LAND SURVEYORS, DATED 10/2025.
10. THIS DETAIL REPLACES CAST-IN-PLACE MANHOLE CAP PROTECTION SLAB. PRECAST MANHOLE CAP AVAILABLE IN SELECT MARKETS UNDER SEPARATE SUBMITTAL & DESIGN.

**CAST-IN-PLACE MANHOLE CAP DETAIL**
SCALE: N.T.S.

| NO. | DATE | DESCRIPTION | BY |
|---|---|---|---|
| A | 10/30/25 | PER CITY COMMENTS | JP |
| B | 11/10/25 | PER CITY COMMENTS | JP |

CONTECH ENGINEERED SOLUTIONS LLC
A QUIKRETE COMPANY
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX
www.ContechES.com

CONTECH CMP DETENTION SYSTEMS
PROPOSAL DRAWING

60"Ø UNDERGROUND DETENTION SYSTEM
HERITAGE PARK
IRVINE, CA
SITE DESIGNATION: UNDERGROUND DETENTION

PROJECT No.: 852108 | DES. by: GS | DATE: 11/10/2025
DRAWN: JTEN | CHECKED: JP
DESIGNER: JTEN | PM APPR.: JTEN
SHEET: P5

ALL DIMENSIONS, ELEVATIONS AND DETAILS MUST BE VERIFIED BY CUSTOMER PRIOR TO FABRICATION. CONTECH ASSUMES NO RESPONSIBILITY FOR ERRORS OR OMISSIONS IN CUSTOMER SUPPLIED INFORMATION.

## 44 UNDERGROUND DETENTION SYSTEM
NTS

## 37 STORM DRAIN CLEAN OUT DETAIL
NTS




| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
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| 3 | | | | |
| 2 | | | | |
| 1 | | | | |

**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

**SEAL**
REGISTERED PROFESSIONAL ENGINEER RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA
**DATE**

**DRAWN BY:** RC
DESIGNED BY: DL
**CHECKED BY:** DL
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**

DATE

**TWO HERITAGE PARK PARKING LOTS**

**DETAILS**

CITY OF IRVINE
**PUB

COMMUNITY DEVELOPMENT
Building and Safety

Print Form

# POST CONSTRUCTION STRUCTURAL STANDARD NOTES

This document shall be completed by the design professional of record and shall be incorporated, in its entirety, into the Water Quality Management Plan (WQMP). The completed document as shown in the approved WQMP shall be also incorporated, in its entirety, into the grading plans submitted for approval prior to issuance of the grading permit.

**INSTRUCTIONS:** Any best management practices that are applicable shall be indicated with an "A" under the "Applicability" column; if not, enter "N/A". For any applicable best management practices, the associated sheet number(s) from the submitted plans shall be listed under the "Specified BMP (CASQA) BMP Detail(s)/Sheet Number" column.

Those best management practices that are applicable shall be depicted in the grading plans via notes, details, plan, and/or elevation views in a manner that clearly demonstrates compliance to the requirements.

## STRUCTURAL SOURCE CONTROL REQUIREMENTS

| STRUCTURAL SOURCE CONTROL REQUIREMENTS | APPLICABILITY | SPECIFIED BMP (CASQA) BMP DETAIL(S)/ SHEET NUMBER | INSTALLATION VERIFIED |
|---|---|---|---|
| A. All storm drain inlets and catch basins, constructed or modified, within the project area shall be stenciled or labeled with prohibitive language ("NO DUMPING DRAINS TO OCEAN") and/or graphical icons to discourage illegal dumping. | A | SD-13, STORM DRAIN SIGNAGE<br>Sheet Number(s):<br>8 & 9 | |
| B. All Trash Container Areas shall be paved with an impervious surface, designed not to allow run-on from adjoining areas, designed to divert drainage from adjoining roofs and pavements diverted around the area, screened or walled to prevent off-site transport of trash. | N/A | SD-32, TRASH STORAGE AREAS<br>Sheet Number(s): | |
| C. Discharge from Vehicle Wash Areas shall be equipped with a clarifier or other pretreatment facility and discharged to sanitary sewer. | N/A | SD-33, VEHICLE WASHING AREAS<br>Sheet Number(s): | |
| D. Fuel dispensing areas shall contain the following:<br>· At a minimum, the fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may operate plus 1 foot (0.3 meters), whichever is less.<br>· The fuel dispensing areas shall be paved with Portland cement concrete (or equivalent smooth impervious surface). The use of asphalt concrete shall be prohibited. | N/A | SD-30, FUELING AREAS<br>Sheet Number(s): | |



## POST CONSTRUCTION STRUCTURAL STANDARD NOTES

| STRUCTURAL SOURCE CONTROL REQUIREMENTS | APPLICABILITY | SPECIFIED BMP (CASQA) BMP DETAIL(S)/ SHEET NUMBER | INSTALLATION VERIFIED |
|---|---|---|---|
| D. CONTINUED<br>· The fuel dispensing area shall be constructed in such a manner as to eliminate ponding, and must be separated from the rest of the site by a grade break that prevents run-on of stormwater.<br>· An overhanging roof structure or canopy shall be provided. The cover's minimum dimensions must be equal to or greater than the area of the fuel dispensing area. The cover must not drain onto the fuel dispensing area and the downspouts must have a positive connection to the area drain system to prevent drainage across the fueling area. The fueling area shall drain to the Project's Treatment Control BMP(s) prior to discharging to the storm drain system. | N/A | SD-30, FUELING AREAS<br>Sheet Number(s): | |

## TREATMENT CONTROL REQUIREMENTS

| TREATMENT CONTROL REQUIREMENTS | APPLICABILITY | SPECIFIED BMP (CASQA) BMP DETAIL(S)/ SHEET NUMBER | INSTALLATION VERIFIED |
|---|---|---|---|
| E. Contech Stormfilter shall be constructed per details on grading plans and WQMP. | N/A | Sheet Number(s): | |
| F. Kristar FloGard Perk Filter shall be constructed per details on the grading plans and WQMP. | N/A | Sheet Number(s): | |
| G. Americast Filterra shall be constructed per details on the grading plans and WQMP. | A | Sheet Number(s):<br>GRADING PLAN SHEET: 8 & 9<br>WQMP PLAN SHEET: 1& 2 | |
| H. Modular wetland system shall be constructed per details on the grading plans and WQMP. | N/A | Sheet Number(s): | |
| I. BioPod Biofilter shall be constructed per details on the grading plans and WQMP. | N/A | Sheet Number(s): | |
| J. Hydrodynamic Separators shall be constructed per details on the grading plans and WQMP. | N/A | MP-51, VORTEX SEPARATOR<br>Sheet Number(s): | |
| K. Drain Inserts shall be constructed per details on the grading plans and WQMP. | N/A | MP-52, DRAIN INLET<br>Sheet Number(s): | |



## POST CONSTRUCTION STRUCTURAL STANDARD NOTES

| TREATMENT CONTROL REQUIREMENTS | APPLICABILITY | SPECIFIED BMP (CASQA) BMP DETAIL(S)/ SHEET NUMBER | INSTALLATION VERIFIED |
|---|---|---|---|
| L. Biofilters (vegetated strips or swales) shall be designed per details on the grading plans and WQMP. | N/A | TC-30, VEGETATED SWALE<br>TC-31, VEGETATED BUFFER STRIP<br>Sheet Number(s): | |
| M. Bioretention shall be constructed per details on the grading plans and WQMP. | N/A | TC-32, BIORETENTION<br>Sheet Number(s): | |
| N. Dry Detention Basins shall be designed per details on the grading plans and WQMP. | N/A | TC-22, EXTENDED DETENTION BASIN<br>Sheet Number(s): | |
| O. Infiltration Trench or Basins shall be designed per details on the grading plans and WQMP. | N/A | TC-10, INFILTRATION TRENCH<br>TC-11, INFILTRATION BASIN<br>Sheet Number(s): | |
| P. Dry well shall be designed per details on the grading plans and WQMP. | N/A | Sheet Number(s): | |
| Q. Wet ponds or wetlands shall be designed per details on the grading plans and WQMP. | N/A | TC-21, CONSTRUCTED WETLANDS MP-20, WETLAND<br>Sheet Number(s): | |
| R. Filtration systems shall be designed per details on the grading plans and WQMP. | N/A | MP-40, MEDIA FILTER<br>Sheet Number(s): | |
| S. Green Roof shall be designed per details on the grading plans and WQMP. | N/A | Sheet Number(s): | |
| T. Pervious Pavement shall be designed per details on the grading plans and WQMP. | N/A | Sheet Number(s): | |
| U. Cistern or other retention system shall be designed per details on the grading plans and WQMP. | N/A | Sheet Number(s): | |

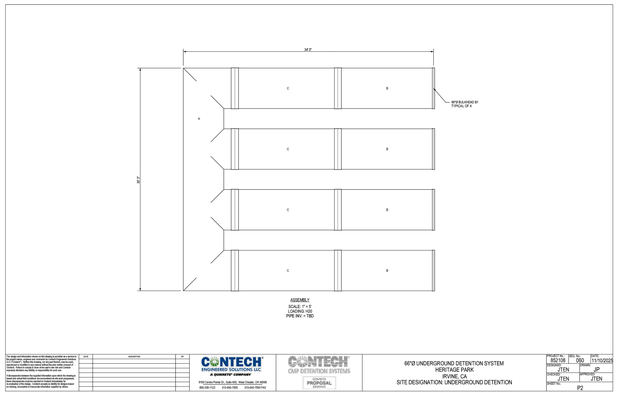


## POST CONSTRUCTION STRUCTURAL STANDARD NOTES

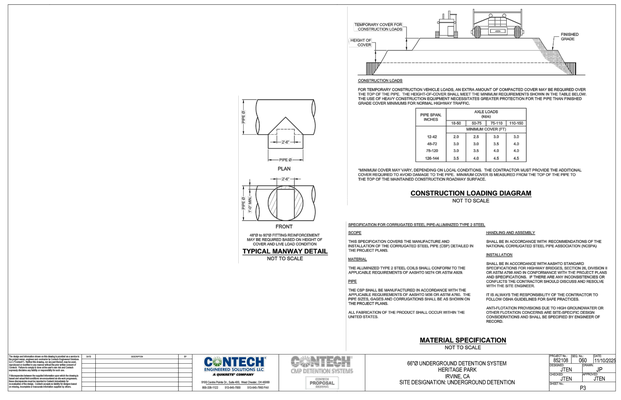
| TREATMENT CONTROL REQUIREMENTS | APPLICABILITY | SPECIFIED BMP (CASQA) BMP DETAIL(S)/ SHEET NUMBER | INSTALLATION VERIFIED |
|---|---|---|---|
| V. Natural Treatment System (NTS)<br>· Certification of Construction and Planting by the NTS Engineer of the Records.<br>· (Prior to Occupancy) Documentation from Irvine Ranch Water District (IRWD) that the NTS has been accepted into the Establishment Period.<br>· (Post Occupancy) Documentation from IRWD for NTS Final Acceptance and responsibility of Maintenance. | N/A | Sheet Number(s): | |

| TREATMENT CONTROL REQUIREMENTS | APPLICABILITY | SPECIFIED BMP (CASQA) BMP DETAIL(S)/ SHEET NUMBER | INSTALLATION VERIFIED |
|---|---|---|---|
| W. Certified Trash Full Capture System shall be designed per details on the grading plans and WQMP. | A - bioclean filter | Sheet Number(s):<br>24 | |
| X. Other | N/A | Sheet Number(s): | |

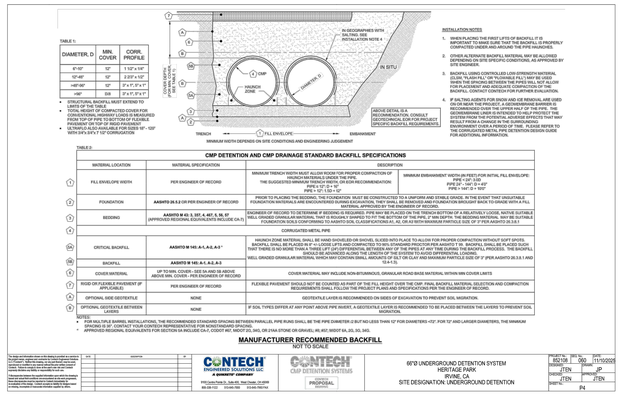




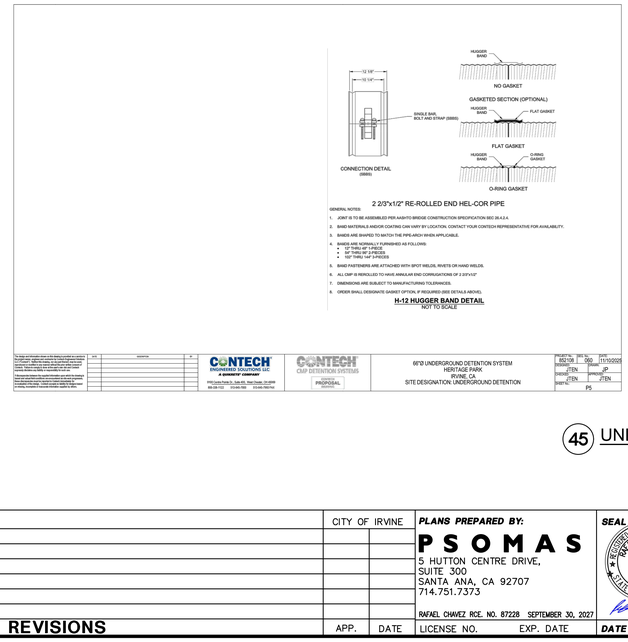


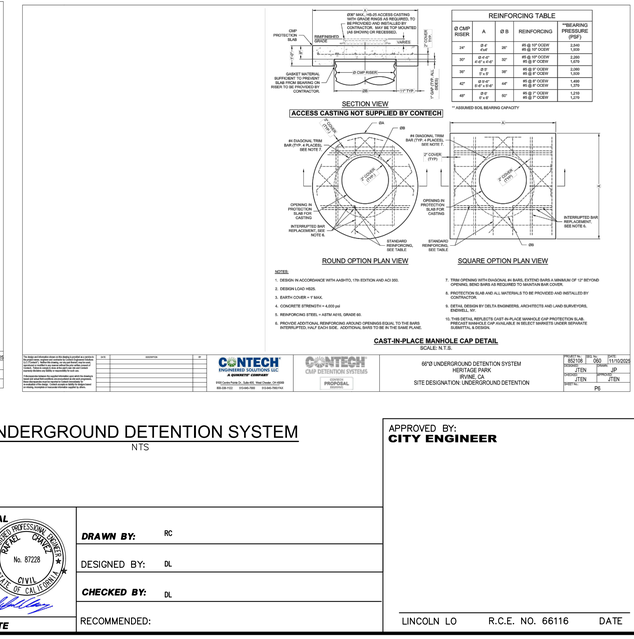


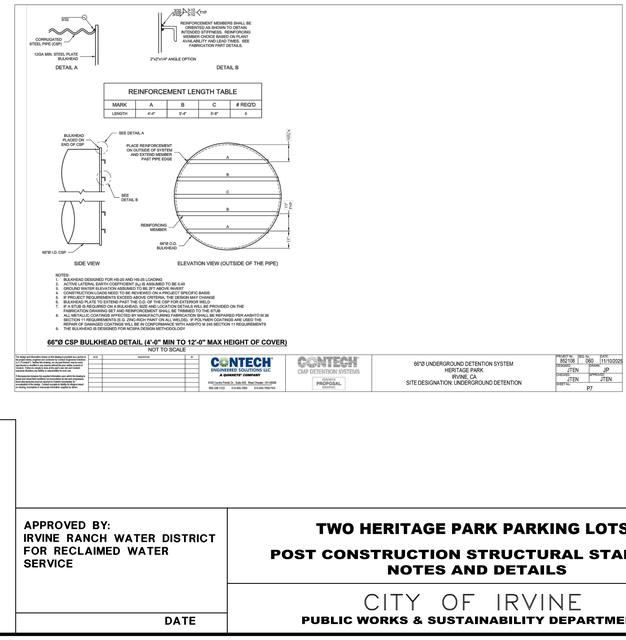









45 UNDERGROUND DETENTION SYSTEM
NTS

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE

DATE

| NO. | DATE | REVISIONS | APP. | DATE |
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CITY OF IRVINE

**PLANS PREPARED BY:**
**PSOMAS**
5 HUTTON CENTRE DRIVE,
SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2027
LICENSE NO. EXP. DATE

SEAL
RAFAEL CHAVEZ No. 87228 CIVIL STATE OF CALIFORNIA PROFESSIONAL ENGINEER
DATE

DRAWN BY: RC
DESIGNED BY: DL
CHECKED BY: DL
RECOMMENDED:

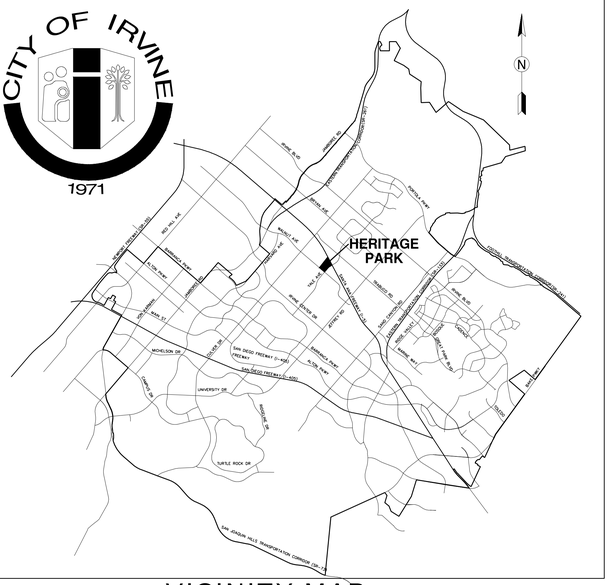
**TWO HERITAGE PARK PARKING LOTS**
**POST CONSTRUCTION STRUCTURAL STANDARD NOTES AND DETAILS**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

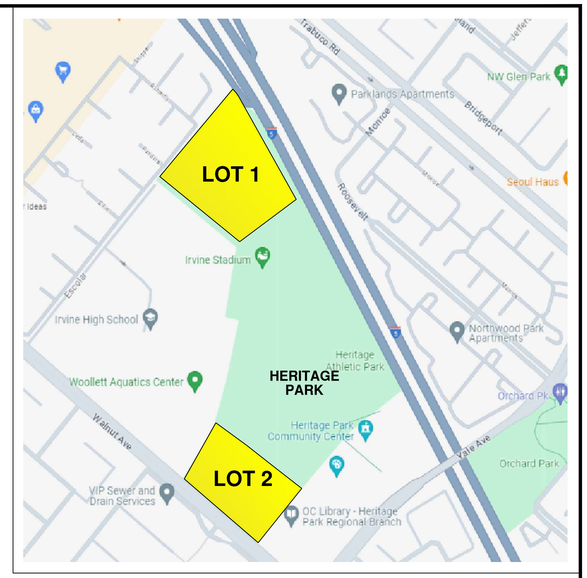
PLAN CHECK NO. **00948134-PARK**
LANDSCAPE PERMIT NO. **- LCE**
SHEET 26 OF 26
JOB NO. CIP NO. 361618

# THE CITY OF IRVINE

# LANDSCAPE PLAN




VICINITY MAP




LOCATION MAP

## GENERAL NOTES

1. All work shall be in accordance with the latest edition of the Standard Specifications for Public Works Construction, The City of Irvine Landscape Manual and Standard Plans, The City of Irvine Street Design Manual, Standard Encroachment Conditions, special requirements of the Construction Permit, California MUTCD and the Work Area Traffic Control Handbook (W.A.T.C.H Manual). Whenever special requirements conflict on any subject matter, the City Engineer or his representative shall determine which special requirement or code will govern.

2. The City of Irvine Inspection Services Division must be notified before starting any work. The Contractor shall request a pre-job meeting and submit required items at lease 48 hours in advance of the meeting. The City Inspector, Contractor, Landscape Architect, Engineer, and Developer's Representative shall be present to review grading, irrigation, planting and related items.

3. All inspections shall be made by the City Inspection Services Division. The Contractor shall request inspection and deliver required submittals at least 48 hours in advance of the time inspection is required. No item shall be covered or enclosed until it has been inspected and approved by the City Inspector. Each item shall be inspected for conformance to the plans and specifications. Any substitutions shall be approved by the City Engineer prior to installation. Installation and warranty of any approved substitution shall be Contractor's responsibility. Any changes required for installation of any approved substitution must be made to the satisfaction of the City.

4. The Contractor shall maintain record drawings on the job site at all times. He shall record accurately on one set of record drawings all changes in the work constituting departures from the original record drawings. The changes and dimensions shall be recorded in a legible and workmanlike manner to to the satisfaction of the City Inspector. Dimensions shall be from two permanent points of reference (buildings, monuments, sidewalks, curbs, pavements, etc.) Data to be shown on record drawings shall be recorded day to day as the project is being installed.

5. It shall be the Contractor's responsibility to verify the location and to protect all existing underground utilities. The Contractor shall notify Underground Service Alert (U.S.A.) 811 at least 72 hours prior to any excavation to locate existing utilities.

6. The Contractor shall obtain all necessary O.S.H.A. permits.

7. After completion of rough grading and prior to soil preparation, the Contractor shall provide the testing of planting soils and composted organic humus materials by an independent agronomic soils testing laboratory (member of the California Association of Agricultural Labs). Representative soil samples shall be taken in the field and a written report shall be prepared by the soil scientist and shall include recommendations for soil amendments, pre-plant and fertilization, planting backfill mix, hydromulch slurry, and auger hole requirements, and post-maintenance fertilization program. Test results and recommendations shall be approved by the City Engineer prior to soil preparation.

8. The Contractor shall not store any equipment or materials on the street.

9. The Contractor shall not store materials or equipment, permit burning, operate or park equipment under the branches of any existing tree. The Contractor shall provide fences or other barriers as necessary at the drip line to protect existing trees from damage during construction.

10. Trees shall be planted a minimum distance of: a. b. Three feet from any city maintenance limit line. Four feet from utility installations including, but not limited to sewers, gas, c. water lines, meter vaults, catch basins, etc. d. Four feet from fire hydrants. Twenty feet from light standards.

11. Tree limbs must have a clearance of 14.5 feet over streets, 8 feet over bicycle trails, and 7 feet over pedestrian-traveled ways. Revisions made on the plans after approval by the City Engineer shall be approved by the City Engineer and so noted on the title sheet to implementation in the field.

12. Notification of Noncompliance: If, in the course of fulfilling their responsibility the Design Landscape Architect finds that the work is not being done in conformance with the approved plans, the discrepancies shall be reported immediately in writing to the person in charge of the work and to the City Inspector. Recommendations for corrective measures, if necessary, shall be submitted to the City Engineer for approval.

13. The Design Landscape Architect shall provide a certificate of compliance to the City Inspection Services Division prior to beginning the maintenance period.

14. All concrete work shown on plans shall be constructed with type 5, seven (7) sack cement unless deemed unnecessary by the sulphate content tests conducted by the soils engineer and approved by the City.

15. Permanent power to automatic controllers shall be continuous and established prior to the beginning of the maintenance period.

16. The Contractor shall provide full maintenance of all landscape areas for a minimum of 90 days after initial field approval. The maintenance period shall commence when all elements of the project are completed in accordance with the approved plans and written approval from the City Inspection Division has been obtained. Partial acceptance of improvements within the scope of work of approved plans will not be authorized without approval by the City Engineer.

17. Utility costs incurred during the maintenance period shall not be the responsibility of the City.

18. The project improvements will be accepted by the City on the 1st or 15th day of the month following completion of the maintenance period. The Contractor shall notify the City Inspection Services Division and submit turnover items 10 days prior to completion of the 90 day maintenance period. Deficiencies noted during inspection shall extend the maintenance period until noted deficiencies are corrected.

## IRVINE RANCH WATER DISTRICT
### Recycled and Potable Water Notes

The Following special on-site water notes are to be shown on all on-site water system construction plans:

A. The installation of the irrigation water system shall conform to the regulations for the construction of Irrigation water systems within the Irvine Ranch Water District (IRWD) and the accompanying plans And specifications.

B. All onsite recycled and potable water piping installed on this project shall be identified in accordance With IRWD's regulations and the irrigation specifications.

C. Recycled water piping shall be purple PVC manufactured for recycled water systems. Recycled water piping shall be purple PVC manufactured for recycled water systems. Constant pressure mainline piping 2" and larger: rubber-joint ring, purple class 200; solvent weld joint: purple class 315. constant pressure mainline piping 1 1/2" and smaller; purple PVC SCH 40. Intermittent pressure lateral line piping: solvent weld joint, purple PVC class 200, purple SCH 40.

D. Marking on the purple PVC shall include the following:

Caution recycled water, nominal pipe size; PVC-1120; pressure rating in pounds per square inch at 73 degrees; ASTM designations such as 1785, 2241, 2672, 3139. Printing shall be placed continuously on two sides of the pipe.

E. All recycled water sprinkler box covers and control valves, isolation valves, quick couplers, and all Appurtenances shall be tagged with identification tags.

1. Tags shall be weatherproof plastic, 3" X 4", purple in color with the words "Warning Recycled Water - Do Not Drink" imprinted on one side, and "Aviso Agua Impura - No Tomar" on the Other side. Imprinting shall be permanent and black in color. Use tags as manufactured by T. Christy Enterprises or approved equal.

2. One tag shall be attached to each appurtenance as follow, or;

Identification shall be affixed to each irrigation valve lid cover and valve as follow:
(a) Identify valve cover with label or branded hot stamp that reads "Recycled Water Do Not Drink" or use purple cover with same identification.
(b) Attach tag to control valve stem directly or with plastic tie-wrap
(c) Attach tag to control valve solenoid wire directly or with plastic tie-wrap
(d) Attach to body of the relative appurtenance with a plastic tie-wrap

F. Warning tapes shall be used on all constant pressure main line piping carrying potable water.

G. Warning tapes shall be minimum of 3 inches wide and shall run continuously for the entire length Of the constant pressure main line piping. The tape shall be attached to the top of the pipe with plastic Tape banded around the warning tape and the pipe every 5 feet on center.

H. Warning tape for the constant pressure potable water piping shall be blue in color with the words "Caution Buried Waterline Below" imprinted on minimum 1 - inch high letters black in color. Imprinting shall be continuous and permanent.

I. IRWD shall be notified two days prior to the start of irrigation construction at (949) 453-5300 and Each work day thereafter until completion of project.

J. All pressure main line piping from the recycled water system shall be installed to maintain 10 feet Minimum horizontal separation from all potable water piping. Where recycled water and potable Water pressure main line piping cross, the recycled water piping shall be installed always below the Potable water piping in a class 200 purple PVC sleeve which extends a minimum of 5 feet on either Side of the potable water piping. Provide a minimum vertical distance of 6 inches. Conventional (white) PVC pipe may be used for sleeving material if it is taped with 3-inch wide purple warning tape which reads "Caution Recycled Water".

K. The irrigation system has been designed to operate between the hours of 9:00 pm to 6:00 am unless Otherwise directed by the district engineer.

L. All new common areas where recycled water is used and that are accessible to the general public Shall be posted with conspicuous signs that include the following wording in a size no less than 4 inches high by 8 inches wide: "RECYCLED WATER - DO NOT DRINK". Each sign shall also display an international symbol conveying the same warning.

M. Adjust spray heads to eliminate overspray onto areas not under the control of the customer. For Example pool decks, private patios, streets, and sidewalks.

N. Contact the IRWD office two days prior to the irrigation system coverage / and cross connection Test at (949) 453-5300 and arrange a walk-through of the system.

O. Failure to comply with any or all of the above guidelines will place the system in violation of IRWD Rules and regulations, and will result in termination of service until the appropriate corrective Measures have been taken.

P. Warning tape on recycled water constant pressure main line piping is only allowed on project-by Project approval from the district engineer. If approved, it must follow these installation specs:
1. Warning tape shall be used on all constant pressure mains.
2. Warning tape shall be minimum of 3-inches wide and shall run continuously for the entire length of the pipe. The tape shall be attached to the top of the pipe with plastic tape banded around the warning tape and the pipe every 5 feet on center.
3. Warning tape for the constant pressure recycled water piping shall be purple in color with the words "Caution - Recycled Water" imprinted a minimum of 1-inch high and black in color. Imprinting shall be continuous and permanent.

Q. On-site systems maintenance-all repairs and modifications must be reviewed and approved by the District's On-site Water Systems Group in a manner consistent with the requirements herein.

FOR SINGLE FAMILY RESIDENCES

R. All potable water piping outside of the structure shall be copper. See notes F, G & H.
S. All recycled water piping shall be purple colored PVC pipe.
T. An approved RP backflow device shall be installed downstream of the potable water meter.

## COMPUTERIZED IRRIGATION CONTROL SYSTEM SPECIFICATIONS

1. All materials furnished and installed shall be new and shall conform to the Standard Specifications for Public Works construction, current edition, as adopted by the City.

2. All materials except interconnect conductors shall have a five-year warranty. The contractor shall submit proof of warranty to the City Inspector prior to the start of the maintenance period. It is the contractor's responsibility to obtain the necessary warranty inspections from the equipment supplier. No installations will be accepted without proof of warranty.

3. All incidental parts which are not shown on the plans or specified herein and are necessary to complete or modify the existing systems shall be furnished and installed as though such parts were shown on plans or specified. All systems shall be in satisfactory operation at the time of completion.

4. Existing interconnect systems shall be maintained in effective operation by the Contractor for the duration of the work. The contractor shall notify the City Inspector 48 hours prior to performing any work on an existing system.

5. The Contractor shall coordinate with Pacific Bell for connections to the telephone service and/or installations of conduit, telephone conductors, jacks, and modems at the locations shown on the drawings. Minor changes caused by actual site conditions shall be made at no cost to the City. All changes to the plans shall be approved by the City Engineer.

6. A functional test for each new or modified electrical system shall consist of not less than 5 days of continuous, satisfactory operation. If unsatisfactory performance of the system develops, the condition shall be corrected and the test shall be repeated until the 5 days of continuous satisfactory operation are obtained.

## CITY OF IRVINE

This set of plans and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations on the same without written permission from the City of Irvine. The stamping of this plan and specifications SHALL NOT be held to permit or be an approval of the violation of any provisions of any City Ordinance or State law.

## AB Compliance Calculations

Maximum allowable water allowance
MAWA = 48.2 x .8 x sq. ft. x .62 Gallons per year
MAWA = 1,276,047 Gallons per Year

Estimated applied water use:
EAWU = 48.2 x KL x Sq. Ft. x .62 / IE =Gallons per year
EAWU = 1,701,396 Gallons per Year


## LANDSCAPE ARCHITECT

LYNN CAPOUYA INC.
17992 Mitchell South, Suite 110
Irvine, CA 92614
(949) 756-0150 EX. 207
CONTACT: Patricia Lear, PLA,ISACA

## ENGINEER

PSOMAS
5 Hutton Centre Drive, Suite 300
Santa Ana, CA 92707
(714) 481-7934
CONTACT: RAFAEL CHAVEZ, PE


## MAINTENANCE SUMMARY

| | City-Maintained | Association Maintained | Other Maintained | Total |
|---|---|---|---|---|
| Turf* | 6,255 SF | —— | —— | 6,255 SF |
| Shrub & GroundCover | 39,445 SF | —— | —— | 39,445 SF |
| Hardscape | 220,050 SF | —— | —— | 220,050 SF |
| Total | 265,750 SF | —— | —— | 265,750 SF |

* Turf is Existing and will be damaged and repaired with new sod as a part of construction activities.

## INDEX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|---|---|
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| LANDSCAPE IRRIGATION LEGEND AND NOTES | 2 |
| LOT 2 - LANDSCAPE IRRIGATION MAINLINE REMOVAL AND RELOCATION PLAN | 3 |
| LOT 1 - LANDSCAPE IRRIGATION PLAN | 4 |
| LOT 1 - LANDSCAPE IRRIGATION PLAN | 5 |
| LOT 2 - LANDSCAPE IRRIGATION PLAN | 6 |
| LANDSCAPE IRRIGATION DETAILS | 7 |
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| LANDSCAPE IRRIGATION MAWA CALCULATIONS | 9 |
| LANDSCAPE PLANTING LEGEND AND NOTES | 10 |
| LOT 1 - LANDSCAPE PLANTING PLAN | 11 |
| LOT 2 - LANDSCAPE PLANTING PLAN | 12 |
| LANDSCAPE PLANTING DETAILS | 13 |


## TOTAL LANDSCAPE AREA

LOT 1 = 17,862 SF
LOT 2 = 24,838 SF
TOTAL = 42,700 SF

| Recycled Water Meter Information | |
|---|---|
| Address: Walnut Avenue , Irvine, CA 92604 (x Yale Avenue) Civil St #: 79678081 | |
| Area served (acres or sq./ft) | 42,700 |
| Est. Annual Water use (acre feet./year) | 1,701,396.00 |
| Max. GPM | 97 |
| Meter Size | 4" |
| Static Pressure | 95 PSI |
| Designer Pressure | PL#1 = 55, PL#2= 80 |

**APPROVAL FOR ONSITE RECYCLED WATER SYSTEM ONLY**

**WATER METER AND ALL CONNECTIONS TO IRVINE RANCH WATER DISTRICT(IRWD) FACILITIES MUST BE APPLIED FOR AND/OR APPROVED THROUGH THE IRWD DEVELOPMENT SERVICE GROUP. FOR SPECIFIC REQUIREMENTS FOR OBTAINING SERVICE CAL (949) 453-5300**

ONSITE APPROVAL: _____ 4/11/25

TRACT/PARCEL MAP.NO. _____
DEVELOPMENT CASE NO. _____
GRADING PERMIT _____

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

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 6 | | | | |
| 5 | 5/23/2025 | 100% SUBMITTAL | | |
| 4 | 3/25/2025 | 90% SUBMITTAL | | |
| 3 | 11/25/2024 | 80% SUBMITTAL | | |
| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

PLANS PREPARED BY:
LYNN CAPOUYA INC. LANDSCAPE ARCHITECTS
17992 MITCHELL SOUTH, SUITE 110
IRVINE, CA 92614
PHONE: 949-756-0150 WWW.LCAPOUYA.COM
LICENSE NO. 2314 EXP. 12/31/24

SEAL — DATE

DRAWN BY: A. SARAVIA
DESIGNED BY: P.LEAR/C.PHUI.
CHECKED BY: P.LEAR/C.PHUI.
RECOMMENDED:

CITY ENGINEER
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
APPROVED BY DATE 4/11/25

TWO HERITAGE PARK PARKING LOTS
LANDSCAPE TITLE SHEET

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. 00948134-PARK
LANDSCAPE PERMIT NO. _____ - LCE
SHEET 1 OF 13
JOB NO.

Irvine Ranch WATER DISTRICT

***On-Site Inspector New Construction RW Inspections***

October 20, 2021

**PLAN CHECKING:**

1. Inspector receives 2 hard copies of the irrigation plans prior to the construction of the project from the Landscape Architect or Owner of the site.
2. Inspector will assign a Plan Check number to the new plans by accessing the On-Site Plan check chart located in the (O) Drive.
3. Inspector reviews the plans and makes certain that all the notes that are included in the "Plan Check Checklist" are imbedded on the new plans, if not will provide copies to the Architect so he can add the notes to the plans.
4. Inspector verifies on the plans that the recycled water system is not being used for other uses other than the intended use.
5. Once the plans are revised and ready for signature, the Inspector will sign the plans and will request two hard copies of the signed plan and one (CD/PDF) file for our records.
6. The Inspector is responsible to provide the copy (CD/ PDF) of the plans to the On-site Designee to upload those signed plans into Map-library for our records.

**PRE-CONSTRUCTION AND INTROS:**

7. The Inspector is responsible to visit the site to introduce himself to the Developer or Builder before the project begins to explain the items that the IRWD On-Site group inspector will be looking at.
8. Inspector will request a Pre-construction meeting with the Developer, Landscape company, Plumbers and all Personnel involved on the installation of the new RW system prior to the construction to go over the details and requirements of the inspections.
9. Inspector will explain the IRWD Meter application process to Developer and Landscaper to make sure he knows and understands the process and what entails beforehand.

**FIELD INSPECTIONS:**

10. The Inspector will inspect the complete installation of the entire recycled water system to make sure that the installation matches what is shown on the plans, and that the following items are also being completed..

- Purple Colored PVC pipe is being used
- Correct pipe rating is being used (SCH40 v.s CL315)
- Correct depth of the main line
- Proper installation of the P.O.C assembly for the RW meter as shown on plans.
- Proper separation between recycled water and domestic water main lines
- Proper identification of domestic water lines within the area of the recycled water system.
- Proper backflow placement for DW systems as needed (or will include Cross Connection group as needed)
- And any other requirements as noted on the IRWD Procedural Guidelines Section 6.

**MONITORING OF AREAS:**

11. During the Construction of the recycled water system, the Inspector must monitor the area in a weekly basis at minimum to make sure that the recycled water system is not being installed without inspections, and to make sure there are no un-authorized recycled water uses within the project.

**METER RELEASE:**

12. The recycled water angle stop must be locked off prior to the construction of the new recycled water system.
13. The Developer or owner must contact Development Services to obtain the requirements for meter applications including the fees.
14. Once the application process is completed and the application is received by the On-site inspector, the Inspector will make sure to perform an EC test on the Recycled water service and will also make certain that all information noted on the application is correct including meter size, acreage, region & plan check number and will forward to Cross Connection Control Group when completed.
15. While in CC&B, the inspector will also categorize the site according to the Site Type, and will add the Site Type number on the Service Point Characteristics.

**FINAL APPROVAL:**

16. Once all the Recycled Water System and Meter have been installed, the IRWD On-site Inspector will Perform a Final inspection of the entire system and Cross Connection test to verify that no cross connections exist, and also to verify that the following items have been installed or have been completed.

- RW purple tags inside all valve boxes.
- All irrigation valve box lids must have the "Recycled water Do-not drink logo and the international do-not drink symbol imbedded on the lid.
- Two recycled water signs have been installed
- Controller label

- All P.O.C equipment installed as per IRWD Procedural Guidelines.
- No Overspray, run off or misting

The inspector will fill out a Final Inspection form for IRWD files and if requested will provide a copy of the report to the Owner of the site.

The inspector will create and complete a "RW Inspection and Testing Field Activity" in CC&B. indicating the date of the initial inspection and test.

## IRWD INSPECTION INFORMATION

a) The average number of people at this use site on a daily basis.
**2 PARKING LOTS WITHIN HERITAGE PARK.**

b) Boundaries to the proposed use site, footprint of any facilities on the premises, drinking water fountains, and any recycled water or potable water impoundment to be used.
**40,212 SQUARE FEET**

c) The person or persons responsible for the operation of the recycled water system at each use area.
**CITY OF IRVINE**

d) The specific use to be made of the recycled water at each use area.
**IRRIGATION FOR PLANTING.**

e) The methods to be used to assure that the installation and operation of the recycled water system will not result in cross connections between the recycled water and the potable water piping systems. Describe the pressure test done before the installation of the meter.
**PRESSURE TEST PER CITY OF IRVINE GREENBOOK SPECIFICATIONS.**

f) Pipe locations of both recycled water and potable systems, or brief explanation for the exclusion of system not shown.
**ONLY RECLYCLED WATER METER AND PIPE SHOWN.**

## IRWD RWQCB REQUIRED INFORMATION

## IRRIGATION NOTES:

1. CONTRACTOR IS TO REVIEW SHEET 3, IRRIGATION MAINLINE REMOVAL AND RELOCATION PLAN AND THE REQUIREMENTS AND TIME CONSTRAINTS REQUIRED. THERE IS ONE RECLAIMED WATER METER / POINT OF CONNECTION LOCATED IN THE PARKWAY IN FRONT OF THE NEW PARKING LOT 2 SERVICING THE ENTIRE HERITAGE PARK AND LIBRARY. THE EXISTING IRRIGATION EQUIPMENT AND MAINLINE ARE LOCATED WITHIN THE PROJECT BOUNDARIES. IT IS VITAL THE MAINLINE REROUTING BE COMPLETED BEFORE GRADING OPERATION BEGIN TO RESTORE THREE (3) CONNECTION POINTS THAT SERVICE WATER TO IRRIGATION SYSTEMS LOCATED IN THE PARK AREAS AND LIBRARY BEYOND THE THE PROJECTS LIMITS. ONCE DISCONNECTED THE CONTRACTOR HAS ONE (1) WEEK TO RECONNECT AND BRING THE IRRIGATION SYSTEMS OUTSIDE THE CONSTRUCTION ZONE BACK ON LINE.
2. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE AND THE MAXIMUM FLOW DEMAND SHOWN ON THE IRRIGATION DRAWINGS AT EACH POINT OF CONNECTION. THE IRRIGATION CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION.
3. UTILIZE EXISTING 120-VOLT ELECTRICAL SERVICE. THE IRRIGATION CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR TO MAKE FINAL ELECTRICAL CONNECTIONS TO THE AUTOMATIC CONTROLLERS. VERIFY SERVICE BEFORE INSTALLATION
4. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ETC. SHOWN WITHIN PAVED AREAS IS FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS. AVOID ANY CONFLICTS WITH ABOVE GROUND UTILITY BOXES AND CABINETS, TREES, AND ARCHITECTURAL FEATURES.
5. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL DRIP EMITTERS, BUBBLER HEADS, & SPRAY HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT WATERING ONTO WALKS, ROADWAYS AND/OR BUILDINGS. THIS SHALL INCLUDE SELECTING THE BEST LOCATION TO FIT THE EXISTING SITE CONDITIONS AND TO THROTTLE THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH SYSTEM.
6. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE.
7. INSTALL PIPE MATERIALS AND EQUIPMENT AS SHOWN IN THE PLAN AND DETAILS. USE TEFLON TAPE ON ALL PVC MALE PIPE THREADS ON SPRINKLER SWING JOINT AND VALVE ASSEMBLIES.
8. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH LOCATION OF WALLS, RETAINING WALLS, ETC. HE SHALL COORDINATE HIS WORK WITH THE GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR THE LOCATION AND THE INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADWAYS, PAVING STRUCTURES, ETC. IN ADDITION TO THE CONTROL WIRE SLEEVES SHOWN ON THE DRAWINGS.
9. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF CONTROL WIRE SLEEVES OF SUFFICIENT SIZE UNDER PAVED AREAS.
10. WHEN CERTAIN OBSTRUCTIONS (FIRE HYDRANTS, TREES, LIGHTS, BOULDERS, ETC.) INTERFERE WITH THE SPRAY PATTERN OF THE IRRIGATION HEADS SO AS TO PREVENT PROPER COVERAGE, THE IRRIGATION CONTRACTOR SHALL FIELD ADJUST THE SPRINKLER SYSTEM ON EACH SIDE OF THE OBSTRUCTION TO PROVIDE PROPER COVERAGE. ALL ADJUSTMENTS SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.

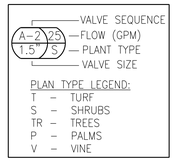
## IRRIGATION EQUIPMENT LEGEND

| SYMBOL | MANUFACTURER | MODEL NO. | DESCRIPTION | DETAILS | SHEET |
|---|---|---|---|---|---|
| | BARRETT | IBAMS3/ENCL | 3" AUTOMATIC SELF-CLEANING STYLE SCREEN FILTER<br>CONTACT DARYL GREEN @ (949) 584-7311 | | 7 |
| | NIBCO | MJ-619-RWS-SON | GATE VALVE - DUCTILE IRON RESILIENT WEDGE - MATCH MAINLINE SIZE | 507 | 7 |
| | NELSON | 7645 | QUICK COUPLER-LOCKING PURPLE HINGED COVER | 508 | 8 |
| | GRISWOLD | 2000 SERIES | REMOTE CONTROL VALVE ASSEMBLY - SIZE PER PLAN | 510 | 8 |
| #3001 | #3001 CONTROLLER FOR PARKING LOT 1 LANDSCAPE ONLY:<br>(PARKING LOT 2 WILL UTILIZED EXISTING CONTROLLER #399)<br><br>NEW DEDICATED CONTROLLER FOR PL1<br>CALSENSE CS-3000 SERIES<br>CONTROLLER: 3001<br>CS3-24-S1/CS3-SR-KIT/CS3-FL<br>/SR-YAGI-6/LMR-400-DB/ANT-PROT (SR)<br><br>SET MAXIMUM FLOW CAPACITY TO 60 GPM<br><br>**THE EXISTING AND PROPOSED IRRIGATION SYSTEMS ARE DESIGNED ONLY FOR MULTI-WIRE.** | | CONTROLLER SHALL BE INSTALLED IN STAINLESS STEEL ENCLOSURE WITH ON/ OFF SWITCH.<br><br>CONTRACTOR TO VERIFY 120V ELECTRICAL POWER SERVICE WITH THE OWNER PRIOR START OF WORK. EXACT CONTROLLER LOCATION SHALL BE DETERMINED BY OWNER'S. CONTRACTOR SHALL OBTAIN CERTIFICATION FROM CALSENSE AND PROVIDE A COPY TO THE OWNER AND LANDSCAPE ARCHITECT PRIOR TO TURN OVER OF MAINTENANCE.<br><br>CONTROLLER SHALL BE ASSEMBLED BY: CALSENSE<br>CONTACT: RAMON TORRES @ 714-553-3681<br><br>CONTRACTOR SHALL PROGRAM EACH CONTROLLER TO RUN ON MAXIMUM FLOW CAPACITY SETTING. REFER TO CS-3000 CONTROLLER PROGRAMMING GUIDE. CALL RAMON TORRES TO COORDINATE NO CHARGE APPOINTMENT FOR CONTROLLER PROGRAMMING TRAINING.<br><br>WIRE CONNECTOR:<br>3M SCOTCHCAST 3570G-N (PER CONTROLLER MANUFACTURER)<br><br>VALVE WIRE:<br>IRRIGATION CONTROL, COMMON AND FLOW SENSOR WIRE SHALL BE PAIGE ELECTRIC SERIES # P7079D DIRECT BURIAL 12 GAUGE - MULTI-WIRE.<br><br>GROUNDING REQUIREMENTS:<br>5/8" X 8' COPPER GROUNDING ROD PER IRRIGATION CONTROLLER . USE #6 AWG SOLID COPPER WIRE FROM THE COPPER ROD TO THE CONTROLLER. | | 8 |
| SB | MAINLINE AND VALVE WIRE STUB OUT BOX | | | | |
| | MAINLINE PIPE - TO BE INSTALLED PRIOR TO START OF GRADING<br>PURPLE P.V.C. CLASS 315 BURY 18" BELOW FINISH GRADE - SIZE PER PLAN. CONTRACTOR SHALL MARK ALL NEW MAINLINES AND SLEEVES WITH 3" DETECTABLE UNDERGROUND WARNING TAPE OF THE APPROPRIATE COLOR AS IDENTIFIED IN THE APWA UNIFORM COLOR CODE. BY T-CHRISTY MODEL #TA-DT-3-BIRR<br><br>INSTALL MAINLINE WITH LEEMCO JOINT RESTRAIN FITTING. INSTALL PER MANUFACTURE'S INSTRUCTION. | 500 | 7 |
| | MAINLINE PIPE<br>PURPLE P.V.C. CLASS 315 BURY 18" BELOW FINISH GRADE - SIZE PER PLAN. CONTRACTOR SHALL MARK ALL NEW MAINLINES AND SLEEVES WITH 3" DETECTABLE UNDERGROUND WARNING TAPE OF THE APPROPRIATE COLOR AS IDENTIFIED IN THE APWA UNIFORM COLOR CODE. BY T-CHRISTY MODEL #TA-DT-3-BIRR<br><br>INSTALL MAINLINE WITH LEEMCO JOINT RESTRAIN FITTING. INSTALL PER MANUFACTURE'S INSTRUCTION. | 500 | 7 |
| | PURPLE P.V.C. SCHEDULE 40 LATERAL LINE PIPE, BURY 12" BELOW FINISH GRADE - SIZE PER PLAN | 500 | 7 |
| | SLEEVING<br>PURPLE SCH 40 PVC PIPING SHALL BE MINIMUM 2X THE DIAMETER OF THE INSERTED MAINLINE OR LATERAL PIPING SIZE OTHERWISE NOTED ON PLAN. BURY 24" BELOW FINISH GRADE FOR MAINLINE AND WIRE SLEEVE. BURY 18" BELOW FINISH GRADE FOR LATERAL LINE.<br>WIRE SLEEVE SHALL BE 2" SCH 40 BURY 24" BELOW FINISH GRADE<br>ALL MAINLINE SLEEVES SHALL BE ACCOMPANIED BY A WIRE SLEEVE | 501 | 7 |
| | CONTROL AND COMMON WIRE SHALL BE #12 AWG-UF SOLID COPPER WIRE (BURY WITH MAINLINE) UL APPROVED. WIRE SHALL BE PAIGE ELECTRIC MULTI-WIRE SERIES # 7079D<br>WIRE CONNECTOR: USE 3M SCOTCHCAST 3570G-N ONLY | | | | |
| | EXISTING CONTROLLER | | | | |
| M | EXISTING WATER METER | | | | |
| | EXISTING BASKET STRAINER | | | | |
| | EXISTING MASTER VALVE | | | | |
| F | EXISTING FLOW SENSOR | | | | |

| SLEEVE SIZING LEGEND | |
|---|---|
| USE SCH 40 PVC | |
| SLEEVE SIZE | INSERTED PIPE SIZE |
| 2" | 1/2" TO 1" |
| 3" | 1 1/4" TO 1 1/2" |
| 4" | 2" |
| 6" | 2 1/2" TO 3" |
| MAINLINE AND WIRE SLEEVE COMBO | |
| ONE-8 + TWO-4" PER SET | |
| SLEEVE SIZE<br>NUMBER OF OR SETS<br>OF SLEEVES | |

## SPRINKLER HEAD LEGEND

| SYMBOL | MANUF. | MODEL | NOZZLE | RADIUS | PRESS. | FLOW RATE F | FLOW RATE V | FLOW RATE H | FLOW RATE Q | PRECIP. in/hr | DETAILS | SHEET |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHRUB POP UP | | BODY | | FEET | PSI | | | | | | | |
| | RAINBIRD | RD12-S-P-30-F | SQ | 2-4 | 30 | .4 | - | .2 | .12 | .70 | 521 | 8 |
| | RAINBIRD | RD12-S-P-30-F | R-VAN14 | 8-13 | 30 | 1.10 | .65 | .56 | .28 | .76 | | |
| | RAINBIRD | RD12-S-P-30-F | R-VAN18 | 13-16 | 30 | 1.65 | .98 | .85 | .42 | .75 | | |
| | RAINBIRD | RD12-S-P-30-F | R-VAN24 | 16-19 | 30 | 2.35 | 1.4 | 1.2 | .60 | .74 | | |
| TURF ROTOR POP-UP | | | | | | | | | | | | |
| | RAINBIRD | 8005-SS | NOZ. 12 | 57' | 50 | - | - | 11.1 | - | .66 | 522 | 8 |
| BUBBLER | | | | | | | | | | | | |
| | RAINBIRD | RWS-M-B-1401 MINI (TREE) 2 PER TREE | | - | 30 | .25 | - | - | - | - | 519 | 8 |




| PIPE SIZING LEGEND | | |
|---|---|---|
| LATERAL LINE SCH 40 | | |
| PIPE SIZE | | GPM |
| B | 3/4" | 5 – 8 |
| C | 1" | 9 – 13 |
| D | 1 1/4" | 14 – 23 |
| E | 1 1/2" | 24 – 30 |
| F | 2" | 31 – 50 |
| LATERAL LINE CLASS 315 | | |
| G | 2 1/2" | 50 – 70 |
| MAINLINE CLASS 315 | | |
| H | 4" | 101 – 200 |
| I | 6" | 200 – 430 |
| J | 8" | 430 – 730 |

Irvine Ranch Water District

**GUIDELINE FOR RECYCLED WATER USE**

## IRWD GUIDELINES TO RECYCLED WATER USE

The following guidelines have been established by Irvine Ranch Water District in conjunction with the Orange County Health Department and the Santa Ana Regional Water Quality Control Board. They are to provide the basic parameters for the use of recycled water in landscape irrigation. To operate your system in compliance with these guidelines you must:

1. Irrigate between the hours of 9:00 p.m. to 6:00 am only. Watering outside this time Frame must be done manually with qualified supervisory personnel onsite. No system shall at any time be left unattended during use outside the normal schedule.
2. Irrigate in a manner that will minimize runoff, pooling and ponding. The Application rate shall not exceed the infiltration rate of the soil. Timers must be adjusted so as to be compatible with the lowest soil infiltration rate present. This procedure may be facilitated by the efficient scheduling of the automatic control clocks, (i.e., employing the repeat function to break up the total irrigation time into cycles that will promote maximum soil absorption).
3. Adjust spray heads to eliminate overspray onto areas not under the control of the customer For example, pool decks, private patios, streets and sidewalks.
4. **Do not use quick couplers for wash down of hardscape**.
5. Monitor and maintain the system to minimize equipment and material failure broken sprinkler heads, leaks, unreliable valves, etc., should be repaired as soon as they become apparent.
6. Educate all maintenance personnel, on a continuous basis, of the presence of recycled water, and the fact that it is not approved for drinking purposes. Given the high turnover rate of employees in the landscape industry, it is important that this information be disseminated on an almost daily basis. It is you, the landscape contractor, who is responsible for educating each and every one of your employees.
7. Obtain prior approval for all proposed changes and modifications to any onsite Facilities such changes must be submitted to, and approved by, the District Engineering office and designed in accordance with District standards.

Failure to comply with any or all of the above guidelines puts your system in violation to the District's Rules and Regulations, and will result in termination of service until the appropriate corrective steps have been taken.

Irvine Ranch Water District feels that the benefits to be derived from the successful application off recycled water merit the operating requirements that have been established. If you have any questions, or if we can be of any assistance, please do not hesitate to call our Irrigation Water Group at (949) 453-5300.

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

APPROVED BY:
CITY ENGINEER

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE

DATE 4/11/25

| NO. | DATE | REVISIONS | APP. | DATE |
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CITY OF IRVINE

PLANS PREPARED BY:
LYNN CAPOUYA INC.
LANDSCAPE ARCHITECTS
17992 MITCHELL SOUTH, SUITE 110
IRVINE, CA 92614
PHONE: 949-756-0150 WWW.LCAPOUYA.COM
LICENSE NO. 2314 EXP.DATE: 12/31/24

SEAL — LICENSED LANDSCAPE ARCHITECT LYNN CAPOUYA NO. 2314 12-31-2026 REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT STATE OF CALIFORNIA

DATE

DRAWN BY: A. SARAVIA
DESIGNED BY: P.LEAR/C. PHUI.
CHECKED BY: P.LEAR/C. PHUI.
RECOMMENDED:

PLAN CHECK NO. 00948134-PARK

LANDSCAPE PERMIT NO. _____ – LCE

# TWO HERITAGE PARK PARKING LOTS
## LANDSCAPE IRRIGATION LEGEND & NOTES

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

SHEET 2 OF 13

JOB NO.

EXISTING MAINLINE SERVICES PARK SYSTEMS BEYOND THIS POINT

CONNECTION POINT #1
CONNECT NEW MAINLINE AND VALVE WIRES TO EXISTING

PROJECT LIMIT

PROJECT HARDSCAPE BOUNDARY

EXISTING MAINLINE LOCATED IN EX. TURF AREA (LOCATION IS DIAGRAMMATIC - CONTRACTOR TO LOCATE IN FIELD) - TO BE REMOVED DURING DEMOLITION

PROJECT LIMIT

PROJECT HARDSCAPE BOUNDARY

PROJECT LIMIT

ATTENTION: SEE IRRIGATION GENERAL NOTE 1 FOR IMPORTANT INFORMATION. THERE ARE THREE (3) MAINLINE CONNECTION POINTS SHOWN THAT ARE BEING REROUTED ON THIS PLAN. THESE CONNECTIONS SERVICE THE GREATER PARK AND LIBRARY IRRIGATION SYSTEMS.

SEE SHEET L-5 FOR COMPLETE PARKING LOT 2 IRRIGATION PLAN FOR NEW MAINLINE AND IRRIGATION SYSTEMS LOCATED INSIDE PARKING ISLANDS AND THE NEW PARKWAY PLANTER.

ALL EXISTING AND PROPOSED IRRIGATION IS DIAGRAMMATIC AND LOCATED AS CLOSE TO PICTURED AS POSSIBLE.

EX PARKING LOT

EX. PARK TURF TO REMAIN

EX. MAINLINE SERVICES PARK IRRIGATION SYSTEMS BEYOND THIS POINT

EX. PARK TURF TO REMAIN

PROJECT LIMIT

MAINLINE AND VALVE WIRES STUB OUT BOX

CONNECTION POINT #2
CONNECT NEW MAINLINE AND VALVE WIRES TO EXISTING

ALL VALVES, LATERAL LINES, AND HEAD LOCATED WITH IN THE HATCHED AREA ARE TO BE REMOVED AND GIVEN TO PUBLIC WORKS LANDSCAPE MAINTENANCE DEPARTMENT.

PROJECT HARDSCAPE BOUNDARY

EXISTING MAINLINE IN TURF AREA TO BE REMOVED UP TO NEW GATE VALVE

FUTURE PARKING LOT 2
CURRENTLY EX. TURF AREA

FUTURE PARKING LOT 2
CURRENTLY EX. TURF AREA

FUTURE CURB

PROJECT LIMIT

EXISTING MAINLINE LOCATED IN EX. TURF AREA -TO BE REMOVED DURING DEMOLITION (LOCATION IS DIAGRAMMATIC CONTRACTOR TO LOCATE IN FIELD)

CONNECT NEW MAINLINE AND VALVE WIRES TO EXISTING

EXISTING CONTROLLER TO REMAIN PROTECT IN PLACE

ALL EXISTING P.O.C. EQUIPMENTS TO REMAIN AND PROTECT IN PLACE

EX. MAINLINE SERVICES PARK IRRIGATION SYSTEMS BEYOND THIS POINT

CONNECTION POINT #3
CONNECT NEW MAINLINE & VALVE WIRES TO EXISTING

EXISTING MAINLINE LOCATED IN EX. TURF AREA -TO BE REMOVED DURING DEMOLITION (LOCATION IS DIAGRAMMATIC CONTRACTOR TO LOCATE IN FIELD)

PROJECT HARDSCAPE BOUNDARY

(NEW SIDEWALK LOCATION)

PROJECT HARDSCAPE BOUNDARY

EXISTING MAINLINE CURRENTLY LOCATED IN EX.FRONT PARKWAY TURF AREA - TO BE REMOVED DURING DEMOLITION (LOCATION IS DIAGRAMMATIC - CONTRACTOR TO LOCATE IN FIELD)

DURING SITE DEMOLITION, A TURF KILL PROGRAM SHALL BEGIN AS SEEN IN LANDSCAPE SPEC. ALL EXISTING TURF IN FRONT PARKWAY TO BE REMOVED TURF GRASS+ 4" BELOW SURFACE COMPLETE.

WATER METER (POC) FOR ENTIRE PARK IRRIGATION

WALNUT AVENUE

PROJECT LIMIT

WALNUT AVE

42"SD

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

N

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

FOR IRRIGATION LEGEND AND NOTES SEE SHEET 2

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 7 | | | | |
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DRAWN BY: A. SARAVIA
DESIGNED BY: P.LEAR/C. PHUI.
CHECKED BY: P.LEAR/C. PHUI.
RECOMMENDED:

APPROVED BY:
CITY ENGINEER

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE

4/11/25
DATE

# TWO HERITAGE PARK PARKING LOTS
## PARKING LOT 2- IRRIGATION MAINLINE REMOVAL AND REROUTING PLAN

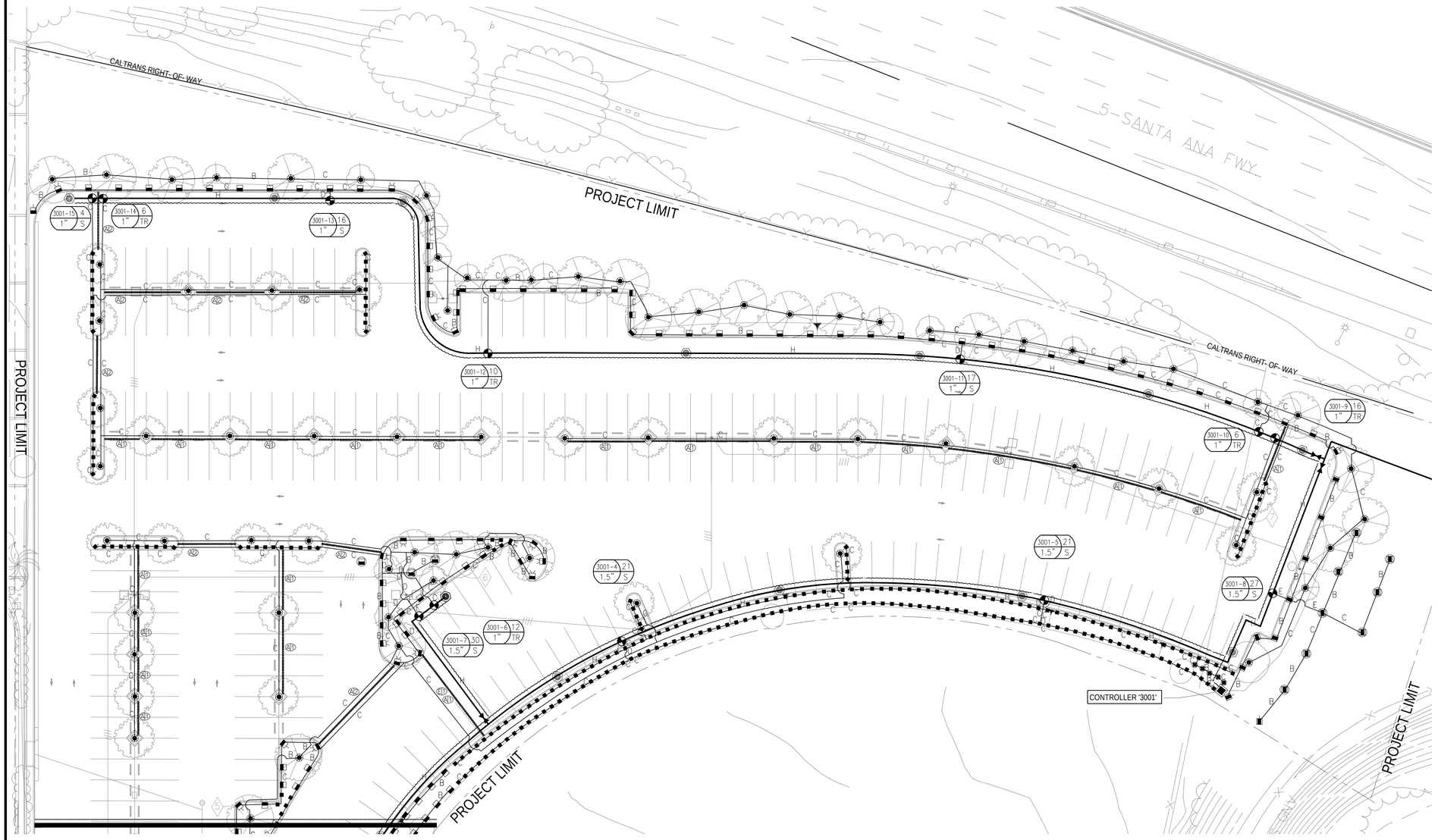
CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

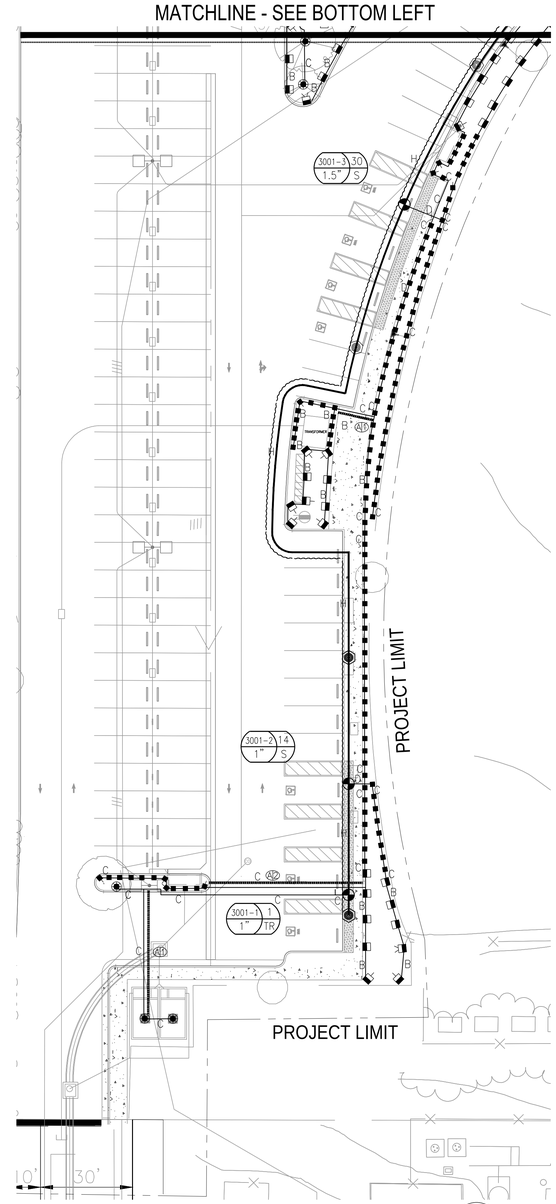
PLAN CHECK NO. 00948134-PARK

LANDSCAPE PERMIT NO. _____ – LCE

SHEET 3 OF 13

JOB NO.




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

FOR IRRIGATION LEGEND AND NOTES SEE SHEET 2

PLAN CHECK NO. 00948134-PARK

LANDSCAPE PERMIT NO. _____ – LCE

JOB NO.

APPROVED BY: CITY ENGINEER

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY: IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE

DATE 4/11/25

# TWO HERITAGE PARK PARKING LOTS
## LOT 1 - IRRIGATION PLAN

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

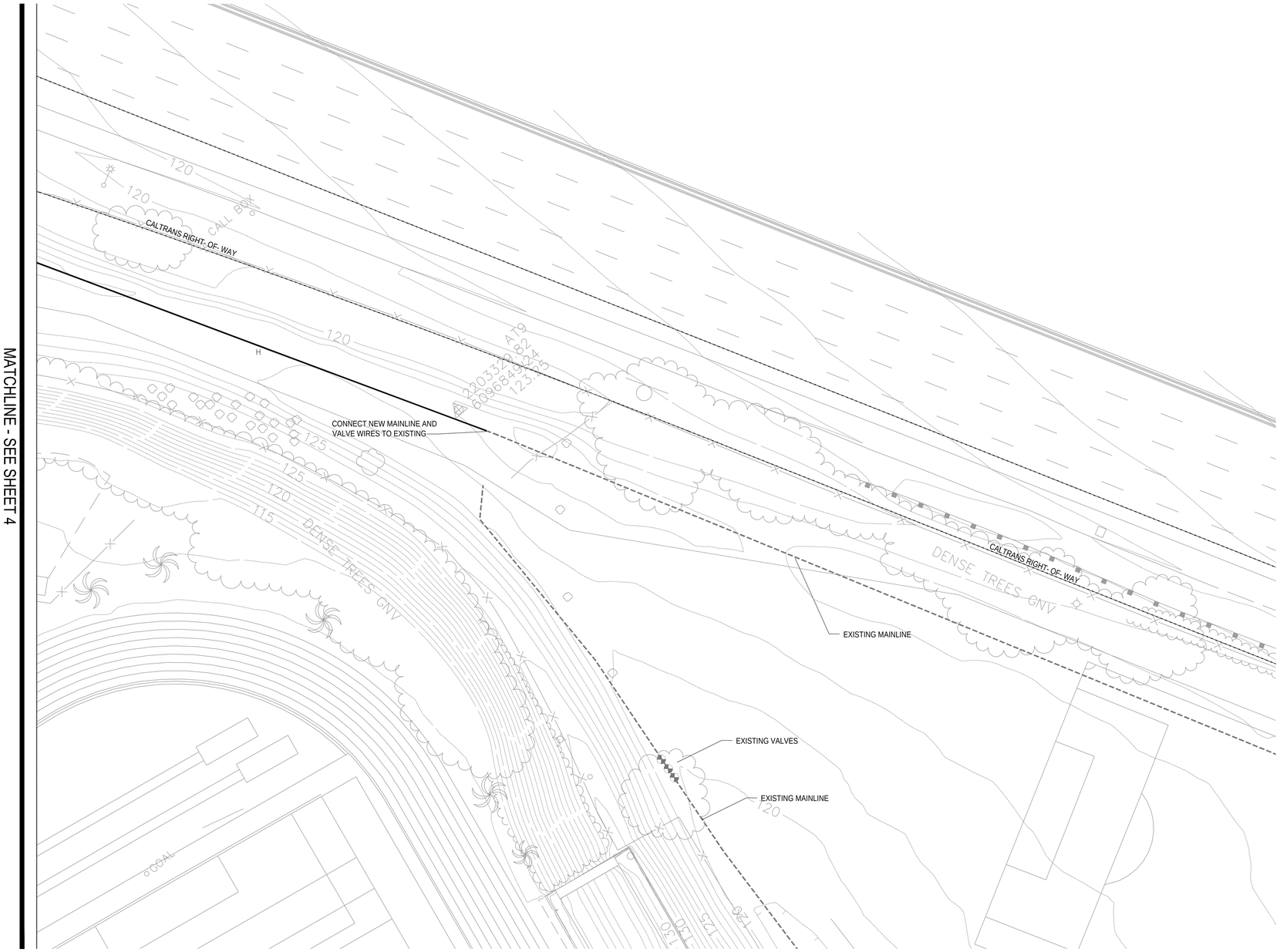
SHEET 4 OF 13

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 7 | | | | |
| 6 | | | | |
| 5 | 5/23/2025 | 100% SUBMITTAL | | |
| 4 | 3/25/2025 | 90% SUBMITTAL | | |
| 3 | 11/25/2024 | 80% SUBMITTAL | | |
| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

PLANS PREPARED BY:
LYNN CAPOUYA INC.
LANDSCAPE ARCHITECTS
17992 MITCHELL SOUTH, SUITE 110
IRVINE, CA 92614
PHONE: 949-756-0150 WWW.LCAPOUYA.COM
LICENSE NO. 2314 EXP.DATE: 12/31/24 DATE

SEAL
LICENSED LANDSCAPE ARCHITECT LYNN CAPOUYA No. 2314 REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

DRAWN BY: A. SARAVIA
DESIGNED BY: P.LEAR/C. PHUI.
CHECKED BY: P.LEAR/C. PHUI.
RECOMMENDED:




Know what's below. Call before you dig.

FOR PLANTING LEGEND AND NOTES SEE SHEET 8

APPROVED BY:
CITY ENGINEER

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE

DATE 4/11/25

PLAN CHECK NO. 00948134-PARK

LANDSCAPE PERMIT NO. _____ - LCE

# TWO HERITAGE PARK PARKING LOTS
## LOT 1 - IRRIGATION PLAN

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

SHEET 5 OF 13

JOB NO.

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 7 | | | | |
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| 5 | 5/23/2025 | 100% SUBMITTAL | | |
| 4 | 3/25/2025 | 90% SUBMITTAL | | |
| 3 | 11/25/2024 | 80% SUBMITTAL | | |
| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

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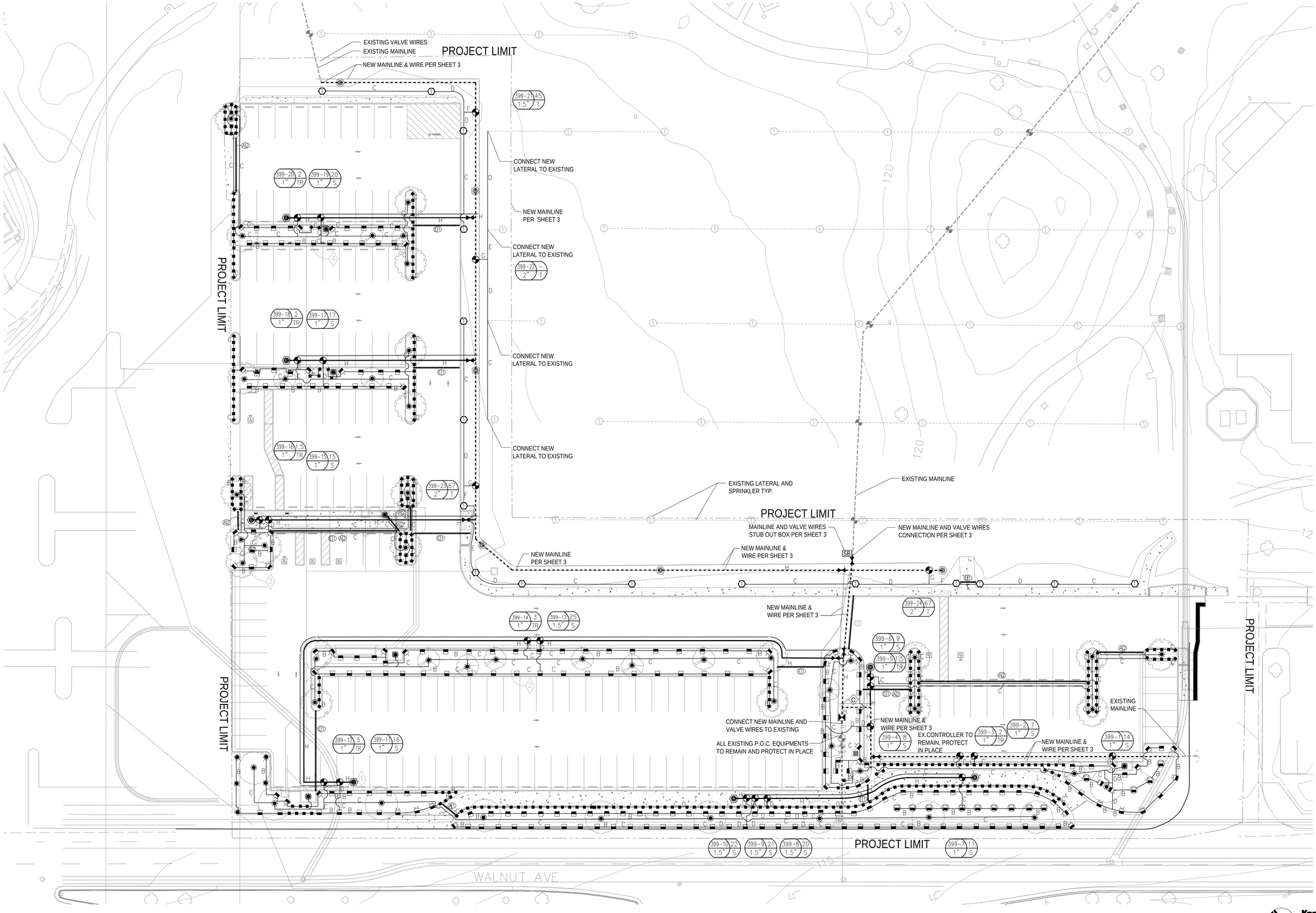
17992 MITCHELL SOUTH, SUITE 110
IRVINE, CA 92614
PHONE: 949-756-0150 WWW.LCAPOUYA.COM
LICENSE NO. 2314 EXP.DATE: 12/31/24 DATE

SEAL
LICENSED LANDSCAPE ARCHITECT
LYNN CAPOUYA
No. 2314
Signature
12-31-2025
Date
STATE OF CALIFORNIA

DRAWN BY: A. SARAVIA
DESIGNED BY: P.LEAR/C. PHUI.
CHECKED BY: P.LEAR/C. PHUI.
RECOMMENDED:




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

N

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

FOR IRRIGATION LEGEND AND NOTES SEE SHEET 2

PLAN CHECK NO. 00948134-PARK

LANDSCAPE PERMIT NO. _____ - LCE

JOB NO.

APPROVED BY:
CITY ENGINEER

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE

4/11/25
DATE

# TWO HERITAGE PARK PARKING LOTS

## PARKING LOT 2- IRRIGATION PLAN

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

SHEET 6 OF 13

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 7 | | | | |
| 6 | | | | |
| 5 | 5/23/2025 | 100% SUBMITTAL | | |
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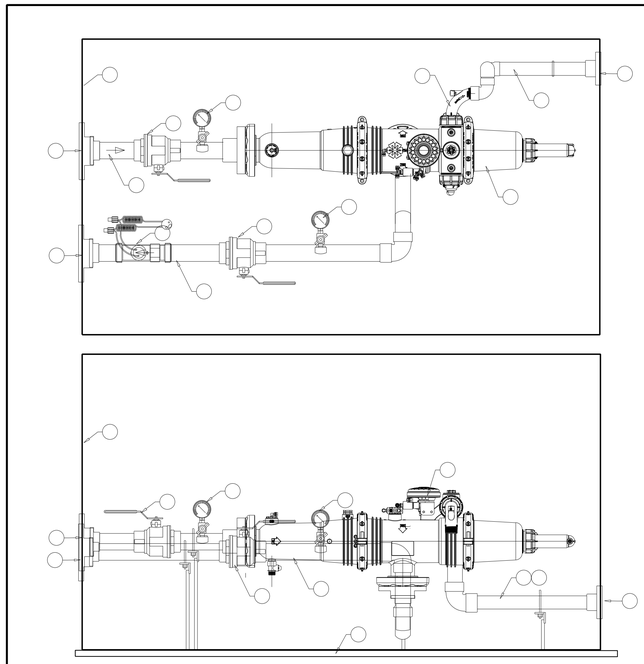
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

PLANS PREPARED BY:
LYNN CAPOUYA INC.
LANDSCAPE ARCHITECTS
17992 MITCHELL SOUTH, SUITE 110
IRVINE, CA 92614
PHONE: 949-756-0150 WWW.LCAPOUYA.COM
LICENSE NO. 2314 EXP.DATE: 12/31/24 DATE

SEAL
REGISTERED LANDSCAPE ARCHITECT LYNN CAPOUYA NO. 2314 12-31-2026 RENEWAL DATE STATE OF CALIFORNIA

DRAWN BY: A. SARAVIA
DESIGNED BY: P.LEAR/C. PHUI.
CHECKED BY: P.LEAR/C. PHUI.
RECOMMENDED:

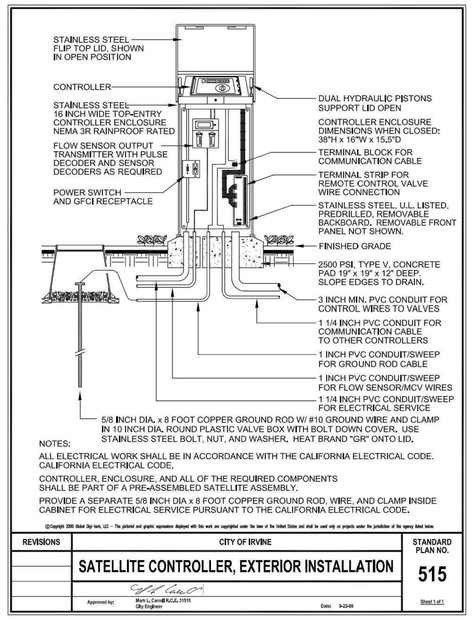


KEYNOTE LEGEND

1. MARINE GRADE ENCLOSURE 42" X 60"
2. STAINLESS STEEL 3" - ¼ TURN BALL VALVE
3. 3" INCH TYPE 304 STAINLESS STEEL.
4. PRESSURE GAUGE, 2 1/2" DIAL, LIQUID FILLED, STAINLESS CASE, 0 - 200 PSI.
5. INLET PIPING/ CONNECTION BY CONTRACTOR
6. OUTLET PIPING/ CONNECTION BY CONTRACTOR
7. FLUSH PORT TO DRAIN
8. FLUSH PORT CONNECTION BY CONTRACTOR
9. FABRICATED STRUCTURAL ALUMINUM BASEPLATE.
10. AUTOMATIC SELF CLEANING FILTER

| | | | |
|---|---|---|---|
| BARRETT ENGINEERED PUMPS | SIZE | DWG NO. HERITAGE PARK - IRVINE | REV |
| | SCALE | | SHEET |

AUTOMATIC FILTRATION SYSTEM ASSEMBLY




NOTES:

ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE CALIFORNIA ELECTRICAL CODE. CALIFORNIA ELECTRICAL CODE.

CONTROLLER, ENCLOSURE, AND ALL OF THE REQUIRED COMPONENTS SHALL BE PART OF A PRE-ASSEMBLED SATELLITE ASSEMBLY.

PROVIDE A SEPARATE 5/8 INCH DIA x 8 FOOT COPPER GROUND ROD, WIRE, AND CLAMP INSIDE CABINET FOR ELECTRICAL SERVICE PURSUANT TO THE CALIFORNIA ELECTRICAL CODE.

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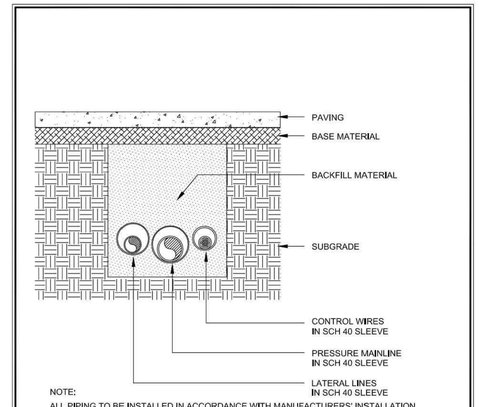
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | SATELLITE CONTROLLER, EXTERIOR INSTALLATION | 515 |
| | Approved by: Mark L. Cerrell R.C.E. 31015 City Engineer — Date: 6-22-09 | Sheet 1 of 1 |

CALSENSE CONTROLLER




NOTE:

ALL PIPING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' INSTALLATION SPECIFICATIONS.

ALL MAINLINE, LATERAL LINES, AND CONTROL WIRES SHALL BE SLEEVED BELOW ALL HARDSCAPE ELEMENTS WITH SCH 40 PVC, 2 TIMES THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN.

DEPTH OF SLEEVES, BACKFILL, AND COMPACTION OF TRENCH SHALL BE IN ACCORDANCE WITH STANDARD PLAN NO. 223 FOR CROSSINGS OF STREETS AND SHALL BE IN ACCORDANCE WITH STANDARD PLAN NO. 500 FOR CROSSINGS OF PARKING LOTS, SIDEWALKS, OR OTHER HARDSCAPE ELEMENTS.

HORIZONTAL DIMENSION BETWEEN SLEEVES SHALL BE A MINIMUM OF 4 INCHES.

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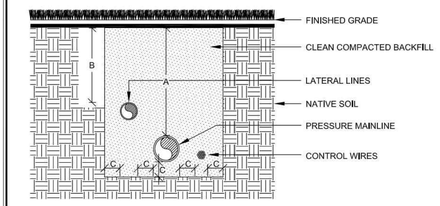
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | SLEEVE TRENCHING | 501 |
| | Approved by: Mark L. Cerrell R.C.E. 31015 City Engineer — Date: 6-22-09 | Sheet 1 of 1 |

SLEEVE TRENCHING - CITY OF IRVINE DETAIL# 501




| DIMENSION | A | B | C |
|---|---|---|---|
| 1/2" TO 2 1/2" IN SIZE | 18" | 12" | 4" |
| 3" TO 6" IN SIZE | 24" | | 4" |

SECTION VIEW - N.T.S.

NOTE:

ALL PLASTIC PIPING SHALL BE SNAKED WITHIN TRENCH.

BUNDLE WIRING AND WRAP WITH TAPE AT TEN FOOT INTERVALS.

ALL MAINLINE PIPING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' INSTALLATION SPECIFICATIONS.

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| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | PIPE AND WIRE TRENCHING | 500 |
| | Approved by: Mark L. Cerrell R.C.E. 31015 City Engineer — Date: 6-22-09 | Sheet 1 of 1 |

PIPE AND WIRE TRENCHING - CITY OF IRVINE DETAIL# 500

BARRETT ENGINEERED PUMPS

SPECIALISTS IN PUMPS AND PUMPING SYSTEMS

**PROJECT: HERITAGE PARK - IRVINE** **March 24, 2025**

***SYSTEM DESIGN PARAMETERS***

| | | | |
|---|---|---|---|
| IBAMS3/ENCL<br>System Model Number | 200 GPM<br>Flow Capacity (GPM) | 80 PSI<br>System Design Pressure | 100 Micron<br>Filter Micron Size |
| 3 INCH<br>Filter Connection Size | 9-12 VDC<br>System Electrical Voltage | 38.3 GPM / 6.3 GPM<br>Flushing Flow Rate / Reject per Flush Cycle | |
| 22-116 PSI<br>Pressure Range for Backflush Volume | 220 GPM<br>Filter Capacity (GPM) | | |

***ASSEMBLY***

Assembly shall include the following option(s):

1.1 **(AMS3)** Where specified by the System Design Parameters, a **3" Automatic Self-Cleaning Style Screen Filter** rated 1-220 GPM unit with 100-micron filtration. The automatic multi-disc filtration unit shall be thermoplastic construction and outfitted with necessary valves and fittings for automatic backflush capability via booster system supplied 9 VDC electrical power. The backflush discharge will operate for approximately 10 seconds or 6-9 total gallons of water. Filter shall be mounted on pipe support inside enclosure and ported, with isolation valves provided, to edges of skid, including inlet port, outlet port, and drain port. **The installing contractor shall be responsible for connecting to an exhaust line to designated discharge location.**

1.2 Backflush Filter Controller shall be via ADI-P Application on any Smart Phone device. Communication is via Bluetooth. Data available shall include flush logs, flush frequency, current DP, current inlet and outlet pressure, flush quality (measuring DP on the filter before and after flush cycle, and battery status and low battery alerts.

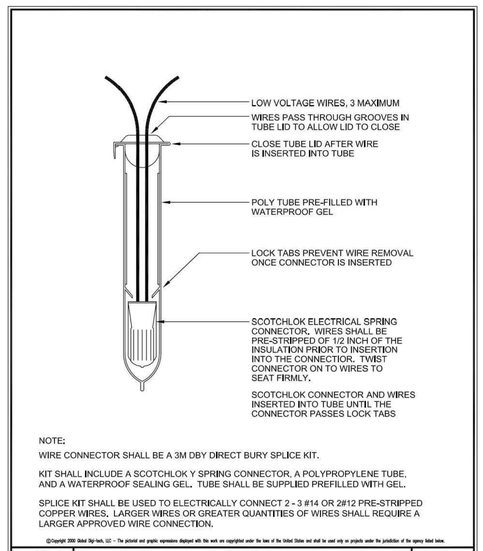
1.3 The system enclosure shall be vandal and weather resistant, marine grade aluminum alloy 5052-H32 construction with rectangular punch-outs for viewing and heat dissipation. The enclosure shall be low profile hinged top design with padlock provision. The cover shall be secured to the concrete pad with stainless steel hardware. The enclosure shall measure 42D" x 60W" x 48H" and concrete pad dimensions shall be 54" x 72" x 4". The enclosure shall be manufactured by V.I.T. Products, Inc.

1.4 The services of a factory representative or trained service professional shall be made available on the job site to check installation and perform the startup and instruct the operating personnel. A startup report containing voltage and amperage readings, suction and discharge pressure readings, estimated flow conditions, and general operating characteristics shall be submitted to the Owner.

1.5 One electronic set of operating and maintenance manual shall be provided to the owner after startup and shall include parts manuals for major components, performance curve for pump, general sequence of operation, and electrical schematic for control panel.

1.6 The warranty period shall be a non-prorated period of 36 months from date of purchase.

1695 National Ave. San Diego CA 92113
Phone (619) 232-7867 • FAX (619) 232-3029
Represented by: Green Product Sales • (949)584-7311 • dgreen@gps-10.com




NOTE:

WIRE CONNECTOR SHALL BE A 3M DBY DIRECT BURY SPLICE KIT.

KIT SHALL INCLUDE A SCOTCHLOK Y SPRING CONNECTOR, A POLYPROPYLENE TUBE, AND A WATERPROOF SEALING GEL. TUBE SHALL BE SUPPLIED PREFILLED WITH GEL.

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.

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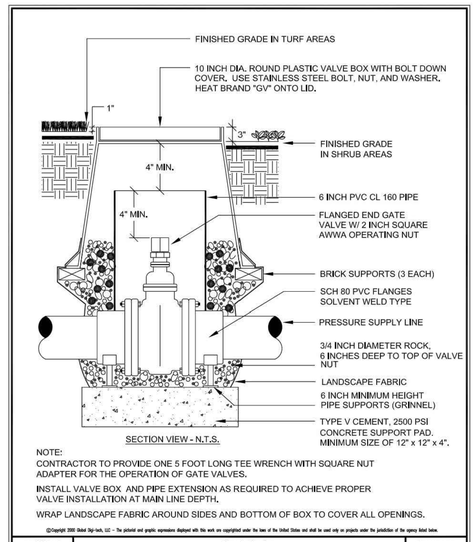
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | WIRE CONNECTOR | 516 |
| | Approved by: Mark L. Cerrell R.C.E. 31015 City Engineer — Date: 6-22-09 | Sheet 1 of 1 |




SECTION VIEW - N.T.S.

NOTE:

CONTRACTOR TO PROVIDE ONE 5 FOOT LONG TEE WRENCH WITH SQUARE NUT ADAPTER FOR THE OPERATION OF GATE VALVES.

INSTALL VALVE BOX AND PIPE EXTENSION AS REQUIRED TO ACHIEVE PROPER VALVE INSTALLATION AT MAIN LINE DEPTH.

WRAP LANDSCAPE FABRIC AROUND SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.

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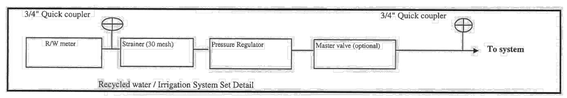
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | GATE VALVE 2 1/2 INCHES AND LARGER | 507 |
| | Approved by: Mark L. Cerrell R.C.E. 31015 City Engineer — Date: 6-22-09 | Sheet 1 of 1 |

GATE VALVE 2 1/2" AND LARGER - CITY OF IRVINE DETAIL# 507




Recycled water / Irrigation System Set Detail

IRWD POINT OF CONNECTION (P.O.C.) INFORMATION

APPROVED BY:
CITY ENGINEER

LINCOLN LO R.C.E. NO. 66116 DATE

**IRRIGATION CONTROLLER NOTE:**

LATEST AS-BUILT IRRIGATION PLANS AND IRRIGATION CONTROLLER CHARTS SHALL BE PLACED INSIDE OF IRRIGATION CONTROLLER ENCLOSURE FOR SITE WHEN SITE IS FINALIZED BY IRWD.

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE

4/11/25
DATE

Know what's below. Call before you dig.

PLAN CHECK NO. 00948134-PARK

LANDSCAPE PERMIT NO. _____ – LCE

JOB NO.

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 7 | | | | |
| 6 | | | | |
| 5 | 5/23/2025 | 100% SUBMITTAL | | |
| 4 | 3/25/2025 | 90% SUBMITTAL | | |
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| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

PLANS PREPARED BY:
LYNN CAPOUYA INC.
LANDSCAPE ARCHITECTS
17992 MITCHELL SOUTH, SUITE 110
IRVINE, CA 92614
PHONE: 949-756-0150 WWW.LCAPOUYA.COM
LICENSE NO. 2314 EXP. DATE: 12/31/24

SEAL — DATE

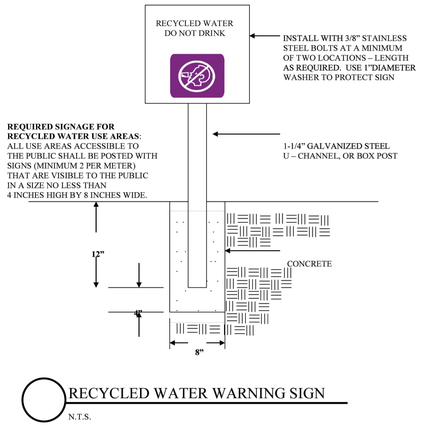
DRAWN BY: A. SARAVIA
DESIGNED BY: P.LEAR/C. PHUI.
CHECKED BY: P.LEAR/C. PHUI.
RECOMMENDED:

TWO HERITAGE PARK PARKING LOTS
IRRIGATION DETAILS

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

SHEET 7 OF 13

IRWD RECYCLED WATER TAGS PER SPECIFICATIONS

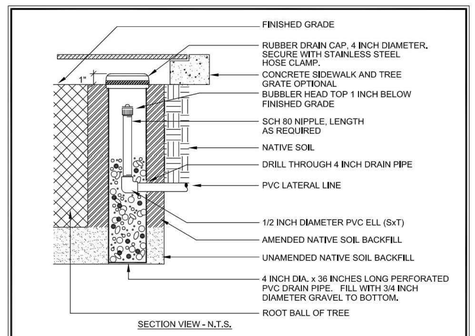



RECYCLED WATER WARNING SIGN

N.T.S.

**FOR MINIMUM WORDING REQUIRED ON SIGNAGE REFERENCE THE ON-SITE NOTES LETTER "L".**

IRWD RECYCLED WATER SIGNS

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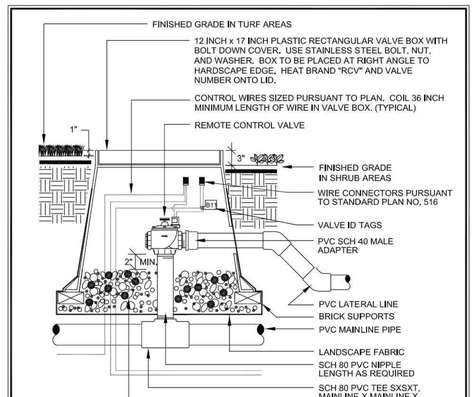
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | TREE BUBBLER | 519 |
| | Approved by: Mark L. Carroll R.C.E. 51515 City Engineer Date: 6-23-09 | Sheet 1 of 1 |

TREE BUBBLER - CITY OF IRVINE DETAIL# 519




NOTE:
INSTALL CONTROL VALVES A MINIMUM OF TWO FEET APART IN SHRUB AREAS UNLESS OTHERWISE NOTED.

INSTALL CHRISTY'S MODEL #3800 RECLAIMED WATER IDENTIFICATION NAME PLATES TO THE LID OF EACH RECLAIMED WATER VALVE BOX.

USE TEFLON TAPE ON THREADED FITTINGS.

WRAP LANDSCAPE FABRIC AROUND SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.

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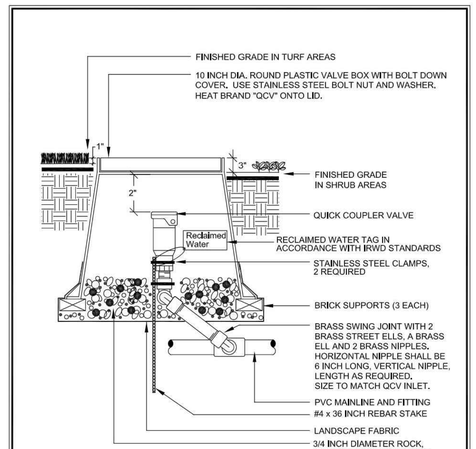
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | ANGLE REMOTE CONTROL VALVE | 510 |
| | Approved by: Mark L. Carroll R.C.E. 51515 City Engineer Date: 6-23-09 | Sheet 1 of 1 |

ANGLE REMOTE CONTROL VALVE - CITY OF IRVINE DETAIL# 510




NOTE:
USE TEFLON TAPE ON ALL THREADED FITTINGS.

QUICK COUPLER KEY MUST CLEAR VALVE BOX.

WRAP LANDSCAPE FABRIC AROUND SIDES AND BOTTOM OF BOX TO COVER ALL OPENINGS.

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| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | QUICK COUPLER VALVE IN BOX | 508 |
| | Approved by: Mark L. Carroll R.C.E. 51515 City Engineer Date: 6-23-09 | Sheet 1 of 1 |

QUICK COUPLER VALVE IN BOX - CITY OF IRVINE DETAIL# 508

Irvine Ranch Water District

**GUIDELINE FOR RECYCLED WATER USE**

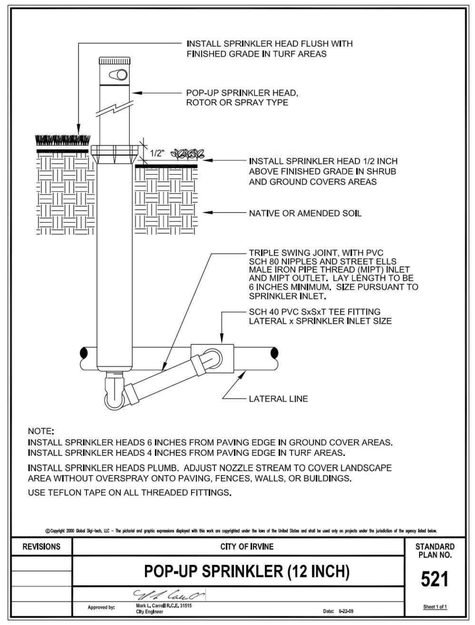
The following guidelines have been established by Irvine Ranch Water District in conjunction with the Orange County Health Department and the Santa Ana Regional Water Quality Control Board. They are to provide the basic parameters for the use of recycled water in landscape irrigation. To operate your system in compliance with these guidelines you must:

1. Irrigate between the hours of 9:00 p.m. to 6:00 am only. Watering outside this time Frame must be done manually with qualified supervisory personnel onsite. No system shall at any time be left unattended during use outside the normal schedule.
2. Irrigate in a manner that will minimize runoff, pooling and ponding. The Application rate shall not exceed the infiltration rate of the soil. Timers must be adjusted so as to be compatible with the lowest soil infiltration rate present. This procedure may be facilitated by the efficient scheduling of the automatic control clocks, (i.e., employing the repeat function to break up the total irrigation time into cycles that will promote maximum soil absorption).
3. Adjust spray heads to eliminate overspray onto areas not under the control of the customer For example, pool decks, private patios, streets and sidewalks.
4. **Do not use quick couplers for wash down of hardscape**.
5. Monitor and maintain the system to minimize equipment and material failure broken sprinkler heads, leaks, unreliable valves, etc., should be repaired as soon as they become apparent.
6. Educate all maintenance personnel, on a continuous basis, of the presence of recycled water, and the fact that it is not approved for drinking purposes. Given the high turnover rate of employees in the landscape industry, it is important that this information be disseminated on an almost daily basis. It is you, the landscape contractor, who is responsible for educating each and every one of your employees.
7. Obtain prior approval for all proposed changes and modifications to any onsite Facilities such changes must be submitted to, and approved by, the District Engineering office and designed in accordance with District standards.

Failure to comply with any or all of the above guidelines puts your system in violation to the District's Rules and Regulations, and will result in termination of service until the appropriate corrective steps have been taken.

Irvine Ranch Water District feels that the benefits to be derived from the successful application off recycled water merit the operating requirements that have been established. If you have any questions, or if we can be of any assistance, please do not hesitate to call our Irrigation Water Group at (949) 453-5300.

IRWD GUIDELINES TO RECYCLED WATER USE




NOTE:
INSTALL SPRINKLER HEADS 6 INCHES FROM PAVING EDGE IN GROUND COVER AREAS.
INSTALL SPRINKLER HEADS 4 INCHES FROM PAVING EDGE IN TURF AREAS.

INSTALL SPRINKLER HEADS PLUMB. ADJUST NOZZLE STREAM TO COVER LANDSCAPE AREA WITHOUT OVERSPRAY ONTO PAVING, FENCES, WALLS, OR BUILDINGS.

USE TEFLON TAPE ON ALL THREADED FITTINGS.

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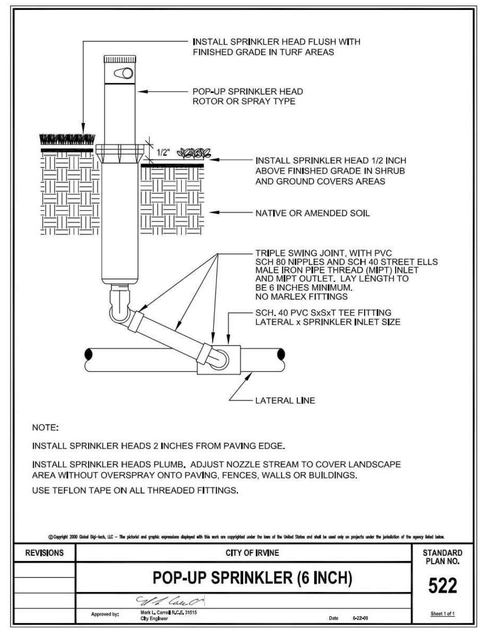
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | POP-UP SPRINKLER (12 INCH) | 521 |
| | Approved by: Mark L. Carroll R.C.E. 51515 City Engineer Date: 6-23-09 | Sheet 1 of 1 |

POP-UP SPRINKER (12 INCH) - CITY OF IRVINE DETAIL# 521




NOTE:

INSTALL SPRINKLER HEADS 2 INCHES FROM PAVING EDGE.

INSTALL SPRINKLER HEADS PLUMB. ADJUST NOZZLE STREAM TO COVER LANDSCAPE AREA WITHOUT OVERSPRAY ONTO PAVING, FENCES, WALLS OR BUILDINGS.

USE TEFLON TAPE ON ALL THREADED FITTINGS.

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| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | POP-UP SPRINKLER (6 INCH) | 522 |
| | Approved by: Mark L. Carroll R.C.E. 51515 City Engineer Date: 6-23-09 | Sheet 1 of 1 |

POP-UP SPRINKER (6 INCH) - CITY OF IRVINE DETAIL# 522

Know what's below. Call before you dig.

| NO. | DATE | REVISIONS | APP. | DATE |
|---|---|---|---|---|
| 7 | | | | |
| 6 | | | | |
| 5 | 5/23/2025 | 100% SUBMITTAL | | |
| 4 | 3/25/2025 | 90% SUBMITTAL | | |
| 3 | 11/25/2024 | 80% SUBMITTAL | | |
| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

CITY OF IRVINE

PLANS PREPARED BY:
LYNN CAPOUYA INC. LANDSCAPE ARCHITECTS
17992 MITCHELL SOUTH, SUITE 110
IRVINE, CA 92614
PHONE: 949-756-0150 WWW.LCAPOUYA.COM
LICENSE NO. 2314 EXP.DATE: 12/31/24 DATE

SEAL

DRAWN BY: A. SARAVIA
DESIGNED BY: P.LEAR/C. PHUI.
CHECKED BY: P.LEAR/C. PHUI.
RECOMMENDED:

APPROVED BY:
CITY ENGINEER

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE

4/11/25
DATE

# TWO HERITAGE PARK PARKING LOTS
## IRRIGATION DETAILS

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. 00948134-PARK

LANDSCAPE PERMIT NO. _____ – LCE

SHEET 8 OF 13

JOB NO.

## APPENDIX E

### Point of Connection # 1 — Controller 399 and 3001 Combined

***Estimated Applied Water Use***

*EAWU* = ETo x $K_L$ x LA x *0.62* ÷ *IE* = Gallons per year

where:
*EAWU = Estimated Applied Water Use* (gallons per year)
ETo = Reference Evapotranspiration **Appendix A** (inches per year)
$K_L$ = *Landscape Coefficient*
LA = Landscaped Area (square feet)
*0.62 = Conversion factor* (to gallons per square foot)
*IE = Irrigation Efficiency = IME x DU*
*IME = Irrigation Management Efficiency (90%) DU = Distribution Uniformity of irrigation head*

$K_L = K_s \times K_d \times K_{mc}$
$K_s$ = species factor (range = 0.1-0.9) (s ee *WUCOLS* list for values)
$K_d$ = density factor (range = 0.5-1.3) (s ee *WUCOLS* for density value ranges)
$K_{mc}$ = microclimate factor (range = 0.5-1.4) (s ee *WUCOLS*)
*WUCOLS* – https://ccuh.ucdavis.edu/wucols

*EAWU* Calculation:

| | ETo | | $K_L$ | | LA | | Conversion | | *IE* | | *EAWU* (Gallons Per Year) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Special Landscape Area | 48.2 | x | 1 | x | 42,700 | x | *0.62* | ÷ | 0.75 | = | 1,701,396 |
| Cool Season Turf | 48.2 | x | 0.65 | x | | x | *0.62* | ÷ | | = | |
| Warm Season Turf | 48.2 | x | 0.7 | x | | x | *0.62* | ÷ | | = | |
| High Water Using Shrub | 48.2 | x | 0.5 | x | | x | *0.62* | ÷ | | = | |
| Medium Water Using Shrub | 48.2 | x | 0.3 | x | | x | *0.62* | ÷ | | = | |
| Low Water Using Shrubs | 48.2 | x | 0.2 | x | | x | *0.62* | ÷ | | = | |
| Very Low Water Using Shrubs | 48.2 | x | 0.5 | x | | x | *0.62* | ÷ | | = | |
| Medium Water using Tree | 48.2 | x | 0.5 | x | | x | *0.62* | ÷ | | = | |
| Total *EAWU* = | | | | | 42,700 | | | | | | 1,701,396 |

List *sprinkler heads*, microspray and drip *emitters* here along with average *precipitation rate* and *Distribution Uniformity of Irrigation Head*.

| ***Sprinkler Head* Types** | ***Average Precipitation Rate*** | ***Distribution Uniformity of Irrigation Head*** |
|---|---|---|
| Drip | | |
| Microspray | 0.70 | 0.70 |
| Bubbler | 2.41 | 0.80 |
| Low precipitation rotating nozzles | 0.75 | 0.70 |
| Stream rotors | 0.66 | 0.70 |

## APPENDIX E

### Point of Connection # 1 — Controller 399 and 3001 Combined

***Maximum Applied Water Allowance***

Total *MAWA* = (ETo x 0.7 x LA in Sq. Ft. x *0.62*) + (ETo x 1.0 x *SLA* in Sq. Ft. x *0.62*) = Gallons per year for LA+*SLA*

where:
*MAWA = Maximum Applied Water Allowance* (gallons per year) ETo = Reference Evapotranspiration **Appendix A** (inches per year)
0.7 = ET Adjustment Factor (ETAF)
1.0 = ET Adjustment Factor (ETAF) for *Special Landscape Area*
LA = Landscaped Area (square feet)
*0.62 = Conversion factor* (to gallons per square foot)
*SLA = Special Landscape Area* (square feet)

Example Calculation: a hypothetical landscape project in Santa Ana, CA with an irrigated landscape area of 40,000 square feet with 10,000 square feet of *Special Landscape Area*. To calculate *MAWA*, the annual reference evapotranspiration value for Santa Ana is 48.2 inches as listed in the Reference Evapotranspiration Table in **Appendix A**.

| | ETo | | ETAF | | LA or *SLA* (ft²) | | Conversion | | *MAWA* (Gallons Per Year) |
|---|---|---|---|---|---|---|---|---|---|
| *MAWA* for LA = | 48.2 | x | 0.7 | x | | x | *0.62* | = | |
| *MAWA* for *SLA* = | 48.2 | x | 1.0 | x | 42,700 | x | *0.62* | = | 1,276,047 |
| Total *MAWA* = | | | | | 42,700 | | | | 1,276,047 Gallons per year for *SLA* |

## APPENDIX D

### Point of Connection # 1 — Controller 399

CONTROLLER DATA SHEET
Architect & Contractor Data

Project Name: Heritage Park Parking Lots | Meter Address Walnut Ave x Walnut Ave | Design Flow 67 GPM | Design Pressure 80PSI
Meter # 79678081 | Meter Size 4" | Meter Type: Reclaimed | Irrigated Area in Sq Ft

| Valve # | RCV Size | RCV GPM | Sprinkler Type | Sprinkler GPM | Sprinkler Spacing | Sprinkler Count | Sprinkler precip rate | Turf or Shrubs/groundcover | Cool or Warm | Soil Type | Topography | Plan Page | Area Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 399-1 | 1" | 14 | Low precipitation rotating nozzles | Vary | Vary | 21 | 0.75 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-2 | 1" | 7 | Microspray | Vary | Vary | 33 | 0.70 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-3 | 1" | 2 | Bubbler | Vary | Vary | 14 | 2.41 | Tree | | | Flat | 6 | New parking lot #2 |
| 399-4 | 1" | 8 | Low precipitation rotating nozzles | Vary | Vary | 23 | 0.75 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-5 | 1" | 1.5 | Bubbler | Vary | Vary | 10 | 2.41 | Tree | | | Flat | 6 | New parking lot #2 |
| 399-6 | 1" | 9 | Microspray | Vary | Vary | 46 | 0.70 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-7 | 1" | 11 | Low precipitation rotating nozzles | Vary | Vary | 10 | 0.75 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-8 | 1.5" | 23 | Microspray | Vary | Vary | 114 | 0.70 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-9 | 1.5" | 21 | Low precipitation rotating nozzles | Vary | Vary | 39 | 0.75 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-10 | 1.5" | 22 | Low precipitation rotating nozzles | Vary | Vary | 39 | 0.75 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-11 | 1" | 16 | Low precipitation rotating nozzles / Microspray | Vary | Vary | 56 | 0.73 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-12 | 1" | 1.5 | Bubbler | Vary | Vary | 22 | 2.41 | Tree | | | Flat | 6 | New parking lot #2 |
| 399-13 | 1.5" | 25 | Low precipitation rotating nozzles | Vary | Vary | 40 | 0.75 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-14 | 1" | 3 | Bubbler | Vary | Vary | 10 | 2.41 | Tree | | | Flat | 6 | New parking lot #2 |
| 399-15 | 1" | 13 | Low precipitation rotating nozzles / Microspray | Vary | Vary | 40 | 0.73 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-16 | 1" | 1.5 | Bubbler | Vary | Vary | 12 | 2.41 | Tree | | | Flat | 6 | New parking lot #2 |
| 399-17 | 1" | 17 | Low precipitation rotating nozzles / Microspray | Vary | Vary | 48 | 0.73 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-18 | 1" | 2 | Bubbler | Vary | Vary | 16 | 2.41 | Tree | | | Flat | 6 | New parking lot #2 |
| 399-19 | 1" | 20 | Low precipitation rotating nozzles / Microspray | Vary | Vary | 62 | 0.73 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-20 | 1" | 2 | Bubbler | Vary | Vary | 16 | 2.41 | Tree | | | Flat | 6 | New parking lot #2 |
| 399-21 | 1.5" | 45 | Low precipitation rotating nozzles | Vary | Vary | 4 | 0.75 | S/G | | | Flat | 6 | New parking lot #2 |
| 399-22 | 2" | Existing | Stream rotors | Vary | Vary | | Existing | T | W | | Flat | 6 | Adjacent to new sidewalk |
| 399-23 | 2" | 67 | Stream rotors | Vary | Vary | 6 | 0.66 | T | W | | Flat | 6 | Adjacent to new sidewalk |
| 399-24 | 2" | 67 | Stream rotors | Vary | Vary | 6 | 0.66 | T | W | | Flat | 6 | Adjacent to new sidewalk |

City Staff Data

Controller type | Controller ID # | Controller Serial #
Maxicom channel # | Site Description | Date

## APPENDIX D

### Point of Connection # 1 — Controller 3001

CONTROLLER DATA SHEET
Architect & Contractor Data

Project Name: Heritage Park Parking Lots | Meter Address Walnut Ave x Walnut | Design Flow: 30 GPM | Design Pressure: 55 psi
Meter #79678081 | Meter Size: 4 | Meter Type:Reclaimed | Irrigated Area in Sq Ft: 17,862

| Valve # | RCV Size | RCV GPM | Sprinkler Type | Sprinkler GPM | Sprinkler Spacing | Sprinkler Count | Sprinkler precip rate | Turf or Shrubs/groundcover | Cool or Warm | Soil Type | Topography | Plan Page | Area Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3001-1 | 1" | 1 | Bubbler | Vary | Vary | 6 | 2.41 | Tree | | | Flat | 4 | New parking lot #1 |
| 3001-2 | 1" | 13 | Low precipitation rotating nozzles / Microspray | Vary | Vary | 57 | 0.73 | S/G | | | Flat | 4 | New parking lot #1 |
| 3001-3 | 1.5" | 30 | Low precipitation rotating nozzles / Microspray | Vary | Vary | 95 | 0.73 | S/G | | | Flat | 4 | New parking lot #1 |
| 3001-4 | 1.5" | 21 | Microspray | Vary | Vary | 103 | 0.70 | S/G | | | Flat | 4 | New parking lot #1 |
| 3001-5 | 1.5" | 21 | Microspray | Vary | Vary | 96 | 0.70 | S/G | | | Flat | 4 | New parking lot #1 |
| 3001-6 | 1" | 12 | Bubbler | Vary | Vary | 46 | 2.41 | Tree | | | Flat | 4 | New parking lot #1 |
| 3001-7 | 1.5" | 30 | Low precipitation rotating nozzles / Microspray | Vary | Vary | 68 | 0.73 | S/G | | | Flat | 4 | New parking lot #1 |
| 3001-8 | 1.5" | 27 | Low precipitation rotating nozzles | Vary | Vary | 18 | 0.75 | S/G | | | Flat | 4 | New parking lot #1 |
| 3001-9 | 1" | 16 | Bubbler | Vary | Vary | 24 | 2.41 | Tree | | | Flat | 4 | New parking lot #1 |
| 3001-10 | 1" | 6 | Bubbler | Vary | Vary | 18 | 2.41 | Tree | | | Flat | 4 | New parking lot #1 |
| 3001-11 | 1" | 17 | Low precipitation rotating nozzles | Vary | Vary | 37 | 0.75 | S/G | | | Flat | 4 | New parking lot #1 |
| 3001-12 | 1" | 10 | Bubbler | Vary | Vary | 38 | 2.41 | Tree | | | Flat | 4 | New parking lot #1 |
| 3001-13 | 1" | 16 | Low precipitation rotating nozzles | Vary | Vary | 28 | 0.75 | S/G | | | Flat | 4 | New parking lot #1 |
| 3001-14 | 1" | 6 | Bubbler | Vary | Vary | 24 | 2.41 | Tree | | | Flat | 4 | New parking lot #1 |
| 3001-15 | 1" | 4 | Microspray | Vary | Vary | 32 | 0.70 | S/G | | | Flat | 4 | New parking lot #1 |

City Staff Data

Controller type | Controller ID # | Controller Serial #
Maxicom channel # | Site Description | Date

| NO. | DATE | REVISIONS | APP. | DATE |
|---|---|---|---|---|
| 7 | | | | |
| 6 | | | | |
| 5 | 5/23/2025 | 100% SUBMITTAL | | |
| 4 | 3/25/2025 | 90% SUBMITTAL | | |
| 3 | 11/25/2024 | 80% SUBMITTAL | | |
| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

CITY OF IRVINE

PLANS PREPARED BY:
LCI LYNN CAPOUYA INC. LANDSCAPE ARCHITECTS
17992 MITCHELL SOUTH, SUITE 110
IRVINE, CA 92614
PHONE: 949-756-0150 WWW.LCAPOUYA.COM
LICENSE NO. 2314 EXP.DATE: 12/31/24 DATE

SEAL
LICENSED LANDSCAPE ARCHITECT — LYNN CAPOUYA — No. 2314 — REGISTERED PROFESSIONAL — 6-28-2026 — STATE OF CALIFORNIA

DRAWN BY: A. SARAVIA
DESIGNED BY: P.LEAR/C. PHUI.
CHECKED BY: P.LEAR/C. PHUI.
RECOMMENDED:

APPROVED BY:
CITY ENGINEER
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
4/11/25
DATE

TWO HERITAGE PARK PARKING LOTS
LANDSCAPE IRR. MAWA CALCULATIONS
CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

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

PLAN CHECK NO. 00948134–PARK
LANDSCAPE PERMIT NO. _____– LCE
SHEET 9 OF 13
JOB NO.

## PLANTING NOTES

1. VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES PRIOR TO START OF WORK.
2. WHERE IT IS OBVIOUS IN THE FIELD THAT CONDITIONS DEVIATE FROM WHAT IS INDICATED ON THE PLANS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE LANDSCAPE ARCHITECT OF THESE DISCREPANCIES. IN THE EVENT THIS NOTIFICATION IS NOT PERFORMED, THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY NECESSARY REVISIONS.
3. ALL NEWLY PLANTED AREAS SHALL BE IRRIGATED BY MEANS OF A FULLY AUTOMATIC IRRIGATION SYSTEM. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF THE IRRIGATION SYSTEM & COMPLETE 100% FULL COVERAGE TO ALL PLANTED AREAS. SEE IRRIGATION PLAN AND DETAILS.
4. ONLY ONE (1) SUBMITTAL FOR PLANTING MATERIALS AND ONE SUBMITTAL FOR IRRIGATION MATERIALS SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT FOR REVIEW. FAILURE TO SUBMIT AS NOTED WILL RESULT IN AN IMMEDIATE REJECTION AND RETURN OF SUBMITTAL. ALL REJECTED ITEMS MUST BE RESUBMITTED FOR REVIEW OR THE INSTALLED ITEMS WILL BE FORMALLY REJECTED AND REQUESTED TO BE REMOVE AND REPLACEMENT WITH MATERIAL SHOWN IN CONTRACT DOCUMENTS.
5. ALL TREE & SHRUB MATERIAL SPECIFIED MUST MEET STANDARD INDUSTRY SPECIFICATIONS FOR THE CONTAINER SIZE INDICATED. IF CONTRACTOR CANNOT LOCATE MATERIAL OF ACCEPTABLE SIZE AT THE TIME OF INSTALLATION, CONTACT LANDSCAPE ARCHITECT FOR SPECIES SUBSTITUTION. DOWN-SIZING OR SUBSTITUTION OF PLANT MATERIAL WITHOUT PRIOR APPROVAL OF LANDSCAPE ARCHITECT WILL NOT BE ALLOWED.
6. LANDSCAPE ARCHITECT SHALL HAVE THE OPPORTUNITY TO INSPECT AND APPROVE ALL SPECIMEN AND BOX (24" BOX AND LARGER) MATERIALS AT THE NURSERY PRIOR TO PLANTING.
7. LANDSCAPE ARCHITECT SHALL HAVE THE OPPORTUNITY TO INSPECT ALL PLANT MATERIALS AT THE JOB SITE PRIOR TO PLANTING.
8. A REPRESENTATIVE SAMPLE OF THE BOTANICAL NAME TAGS FURNISHED BY THE NURSERY STOCK SUPPLIER SHALL REMAIN ATTACHED TO THE PLANTS UNTIL FINAL INSPECTION.
9. REFER TO AGRONOMIC SOILS TESTING REPORT FOR PREPARATION, AMENDMENTS AND MAINTENANCE RECOMMENDATIONS.
10. FINISH GRADE IN ALL PLANTER AREAS SHALL BE 2 INCHES FOR SHRUB 1 INCH FOR TURF BELOW FINISH SURFACE OF SURROUNDING HARDSCAPE AND/OR UTILITY BOXES.
11. A DEEPROOT BARRIER IS REQUIRED ON ALL TREES WHEN THE TREE TRUNK IS 5' OR LESS FROM ANY SIDEWALK, CURBING, ASPHALT CONCRETE SURFACE, WALL OR FENCE.
12. AFTER IRRIGATION SYSTEM INSTALLATION AND FINISH GRADES HAVE BEEN ESTABLISHED, PERFORM WEED CONTROL PER PLANTING SPECIFICATIONS.
13. INSTALL 3 INCHES OF SHREDDED WOOD MULCH OR AS NOTED PER DRAWINGS IN ALL NEWLY PLANTED AREAS UPON COMPLETION OF PLANTING. REFER TO SPECIFICATIONS FOR MULCH MATERIAL.
14. AREAS WITH 3:1 OR STEEPER SLOPES SHALL RECEIVE JUTE NETTING AND MULCH.
15. UPON COMPLETION OF PLANTING, THE CONTRACTOR SHALL ARRANGE FOR A SUBSTANTIAL COMPLETION INSPECTION BY THE LANDSCAPE ARCHITECT. CONTRACTOR SHALL CORRECT ANY DISCREPANCIES FOUND PRIOR TO FINAL INSPECTION AND ACCEPTANCE OF THE PROJECT.
16. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILED INFORMATION. THE GENERAL REQUIREMENTS FOR THE SPECIFICATIONS SHALL BECOME PART OF PLANTING WORK.

NOTE:
AGRONOMICS SOIL TESTING SHALL BE PERFORMED ON THE SITE FROM LOCATIONS INDICATED PRIOR TO PLANTING. SEVEN (7) TESTING SITES HAVE BEEN IDENTIFIED AND ALL RESULTS SHALL BE INCORPORATED INTO THE WORK ON THIS PROJECT.

TESTING TO BE PERFORMED SHALL BE DETERMINED BY AN APPROVED SOIL LABORATORY. REPORT IS TO BE OBTAINED AND PAID FOR BY THE CONTRACTOR. AMEND SOIL PER TEST RESULT RECOMMENDATION. FOR ADDITIONAL SOIL TESTING INFORMATION REFER TO SPECIFICATIONS.

## PLANTING LEGEND

### TREES

| SYMBOL | PLANT NAME | SIZE | QTY. | REMARK | WUCOL | DET. | SHT |
|---|---|---|---|---|---|---|---|
| | LAGERSTROEMIA I. 'MUSKOGEE'<br>MUSKOGEE CRAPE MYRTLE | 24" BOX | 55 | STANDARD TRUNK, DECIDIOUS, PER CITY COMMENT. LAVANDER FLOWER. VARIETY SEEN AT ADJACENT LIBRARY PARKING LOT | M | 604<br>606<br>607<br>608 | 15 |
| | CERCIS OCCIDENTALIS<br>WESTERN REDBUD | 24" BOX | 33 | STANDARD TRUNK, DECIDIOUS, SMALL CALIFORNIA NATIVE TREE, FLOWERING | L | | |
| | EUCALYPTUS POLYANTHEMUS<br>RED BOX | 15 GAL | 25 | STANDARD TRUNK, EVERGREEN, EUCALYPTUS POPULNEA NOT AVAILABLE | L | | |
| | GIEJERA PARVIFLORA<br>AUSTRALIAN WILLOW | 24" BOX | 12 | STANDARD TRUNK, DECIDIOUS, WALNUT AVE STREET TREE PER CITY OF IRVINE | L | ↓ | ↓ |

### SHRUBS AND GROUND COVERS

| SYMBOL | PLANT NAME | SIZE | QTY. | REMARK | WUCOL | DET. | SHT |
|---|---|---|---|---|---|---|---|
| | ACACIA REDOLINS 'LOW BOY'<br>LOW BOY ACACIA | 1 GAL | 1,210 | 9,275 SF PLANTED AT 3' O.C. | VL | 601<br>602<br>609 | 13 |
| | CARISSA MACROCARPA 'GREEN CARPET'<br>GREEN CARPET NATAL PLUM | 1 GAL | 6,440 | 22,300 SF PLANTED AT 2.5' O.C. | L | 601<br>602 | |
| | RHAPHIOLEPIS INDICA 'BALLERINA'<br>BALLERINA INDIAN HAWTHORN | 5 GAL | 345 | | L | 601<br>602 | |
| | RHAPHIOLEPIS INDICA 'SPRINGTIME'<br>SPRINGTIME INDIAN HAWTHORN | 15 GAL | 165 | | L | 601<br>602 | |
| | HESPERALOE PARVIFLORA 'PERPA'<br>BRAKELIGHTS RED YUCCA | 15 GAL | 195 | SHORT FLOWERING STALK | L | 601<br>602 | ↓ |
| | LIGUSTRUM JAPONICUM<br>JAPANESE PRIVET | 15 GAL | 8 | TO BE USED IN THE FILTERRA BOXES | L | 601<br>602 | |

### TURF REPAIR

| SYMBOL | PLANT NAME | SIZE | REMARK | WUCOL |
|---|---|---|---|---|
| | KIKUYU SOD<br>(AS REQUIRED BY CITY OF IRVINE) | SOD | REPAIR EXISTING TURF, REMOVED DUE TO NEW GRADING, NEW CURBS AND IRRIGATION TRENCHING: 7,550 SF | M-H |

### ROOTBARRIER

SYMBOL

— — SEE CITY OF IRVINE DETAIL 609 ON SHEET 13 AND PROJECT GREEN BOOK SPECIFICATIONS.

Know what's below. Call before you dig.

| NO. | DATE | REVISIONS | APP. | DATE |
|---|---|---|---|---|
| 7 | | | | |
| 6 | | | | |
| 5 | 5/23/2025 | 100% SUBMITTAL | | |
| 4 | 3/25/2025 | 90% SUBMITTAL | | |
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| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

CITY OF IRVINE

PLANS PREPARED BY:
LYNN CAPOUYA INC.
LANDSCAPE ARCHITECTS
17992 MITCHELL SOUTH, SUITE 110
IRVINE, CA 92614
PHONE: 949-756-0150 WWW.LCAPOUYA.COM
LICENSE NO. 2314 EXP.DATE: 12/31/24 DATE

SEAL: LICENSED LANDSCAPE ARCHITECT, LYNN CAPOUYA, No. 2314, REGISTERED 12-31-2026, PROFESSIONAL LANDSCAPE ARCHITECT, STATE OF CALIFORNIA

DRAWN BY: A. SARAVIA
DESIGNED BY: P.LEAR/C. PHUI.
CHECKED BY: P.LEAR/C. PHUI.
RECOMMENDED:

APPROVED BY:
CITY ENGINEER
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
4/11/25
DATE

# TWO HERITAGE PARK PARKING LOTS
## LANDSCAPE PLANTING LEGEND & NOTES

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. 00948134-PARK
LANDSCAPE PERMIT NO. _____ - LCE
SHEET 10 OF 13
JOB NO.

## PLANTING LEGEND

### TREES

| SYMBOL | PLANT NAME |
|---|---|
| | LAGERSTROEMIA INDICA 'MUSKOGEE' MUSKOGEE CRAPE MYRTLE |
| | CERCIS OCCIDENTALIS WESTERN REDBUD |
| | EUCALYPTUS POLYANTHEMUS RED BOX |
| | GIEJERA PARVIFLORA AUSTRALIAN WILLOW |

### SHRUBS & GROUND COVERS

| SYMBOL | PLANT NAME |
|---|---|
| | ACACIA REDOLINS 'LOW BOY' LOW BOY ACACIA |
| | CARISSA M. 'GREEN CARPET' GREEN CARPET NATAL PLUM |
| | RHAPHIOLEPIS INDICA 'BALLERINA' BALLERINA INDIAN HAWTHORN |
| | RHAPHIOLEPIS INDICA 'SPRINGTIME' SPRINGTIME INDIAN HAWTHORN |
| | HESPERALOE PARVIFLORA 'PERPA' BRAKELIGHTS RED YUCCA |
| | LIGUSTRUM JAPONICUM JAPANESE PRIVET |

FOR FULL PLANTING LEGEND SEE SHEET 10

Know what's below. Call before you dig.

FOR PLANTING LEGEND AND NOTES SEE SHEET 8

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 7 | | | | |
| 6 | | | | |
| 5 | 5/23/2025 | 100% SUBMITTAL | | |
| 4 | 3/25/2025 | 90% SUBMITTAL | | |
| 3 | 11/25/2024 | 80% SUBMITTAL | | |
| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

PLANS PREPARED BY:
LCI LYNN CAPOUYA INC. LANDSCAPE ARCHITECTS
17992 MITCHELL SOUTH, SUITE 110
IRVINE, CA 92614
PHONE: 949-756-0150 WWW.LCAPOUYA.COM
LICENSE NO. 2314 EXP. DATE: 12/31/24

SEAL — LICENSED LANDSCAPE ARCHITECT LYNN CAPOUYA No. 2314 — STATE OF CALIFORNIA — DATE

DRAWN BY: A. SARAVIA
DESIGNED BY: P.LEAR/C. PHUI.
CHECKED BY: P.LEAR/C. PHUI.
RECOMMENDED:

APPROVED BY:
CITY ENGINEER

LINCOLN LO R.C.E. NO. 66116 DATE

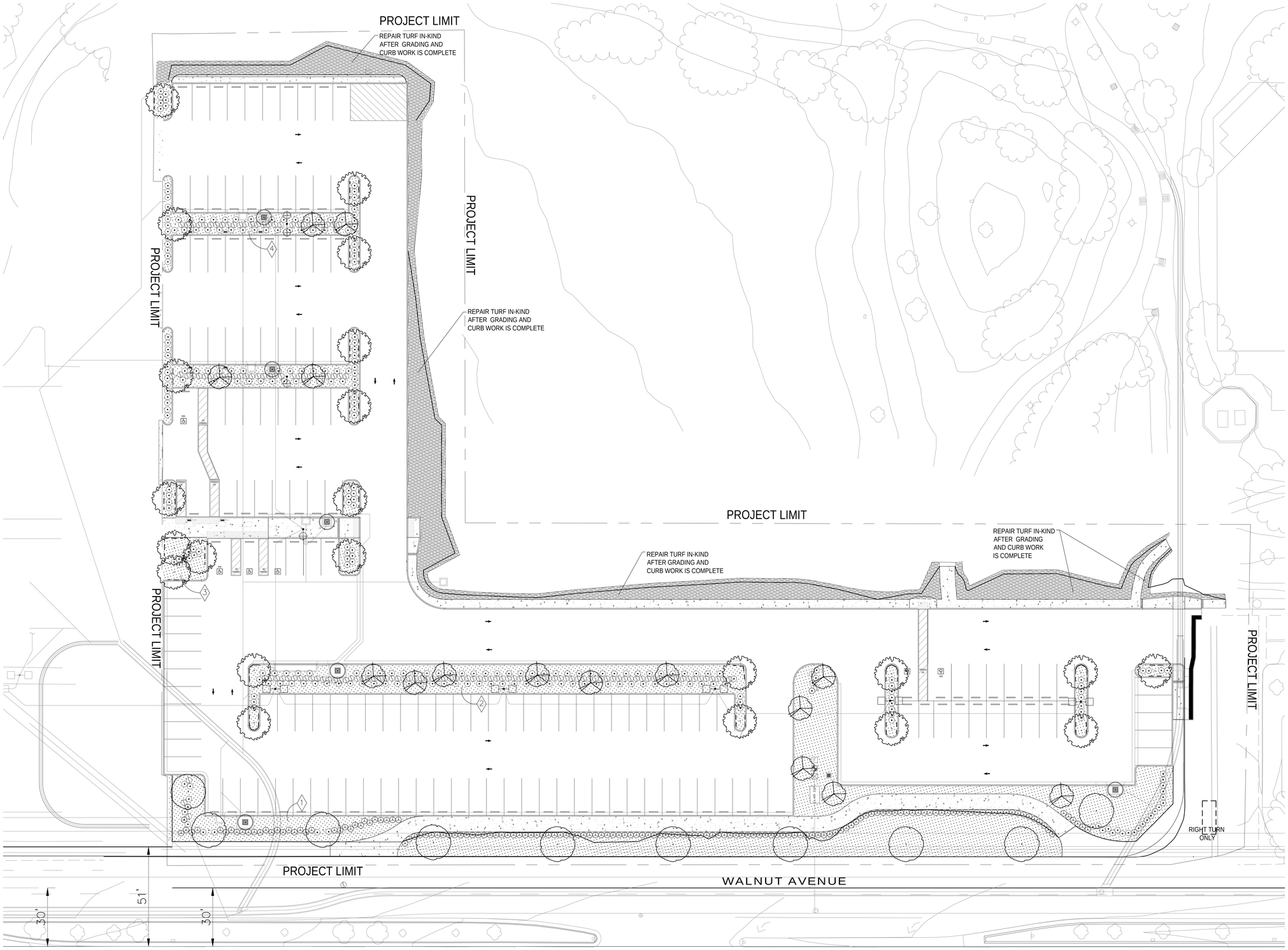
APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE

4/11/25
DATE

# TWO HERITAGE PARK PARKING LOTS
## LOT 1 - LANDSCAPE PLANTING PLAN

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. 00948134-PARK
LANDSCAPE PERMIT NO. _____ – LCE
SHEET 11 OF 13
JOB NO.




## PLANTING LEGEND

### TREES

| SYMBOL | PLANT NAME |
|---|---|
| | LAGERSTROEMIA INDICA 'MUSKOGEE'<br>MUSKOGEE CRAPE MYRTLE |
| | CERCIS OCCIDENTALIS<br>WESTERN REDBUD |
| | EUCALYPTUS POLYANTHEMUS<br>RED BOX |
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### SHRUBS & GROUND COVERS

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| | RHAPHIOLEPIS INDICA 'SPRINGTIME'<br>SPRINGTIME INDIAN HAWTHORN |
| | HESPERALOE PARVIFLORA 'PERPA'<br>BRAKELIGHTS RED YUCCA |
| | LIGUSTRUM JAPONICUM<br>JAPANESE PRIVET |

### TURF REPAIR

| SYMBOL | PLANT NAME |
|---|---|
| | KIKUYU SOD<br>(AS REQUIRED BY CITY OF IRVINE) |

FOR FULL PLANTING LEGEND
SEE SHEET 10

N

0' 20' 40' 80'

SCALE: 1" = 20'

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

FOR PLANTING LEGEND
AND NOTES SEE SHEET 8

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 7 | | | | |
| 6 | | | | |
| 5 | 5/23/2025 | 100% SUBMITTAL | | |
| 4 | 3/25/2025 | 90% SUBMITTAL | | |
| 3 | 11/25/2024 | 80% SUBMITTAL | | |
| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

PLANS PREPARED BY:
LCI LYNN CAPOUYA INC. LANDSCAPE ARCHITECTS
17992 MITCHELL SOUTH, SUITE 110
IRVINE, CA 92614
PHONE: 949-756-0150 WWW.LCAPOUYA.COM
LICENSE NO. 2314 EXP.DATE: 12/31/24 DATE

SEAL

LICENSED LANDSCAPE ARCHITECT LYNN CAPOUYA No. 2314 Registered 12-31-2026 LANDSCAPE ARCHITECT STATE OF CALIFORNIA Date

DRAWN BY: A. SARAVIA

DESIGNED BY: P.LEAR/C. PHUI.

CHECKED BY: P.LEAR/C. PHUI.

RECOMMENDED:

APPROVED BY:
CITY ENGINEER

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE

4/11/25
DATE

# TWO HERITAGE PARK PARKING LOTS
## LOT 2 - LANDSCAPE PLANTING PLAN

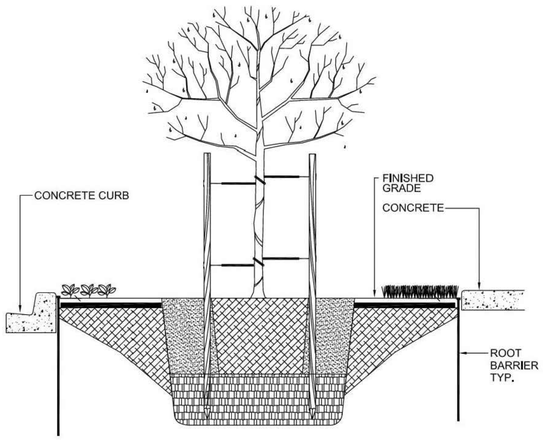
CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

PLAN CHECK NO. 00948134-PARK

LANDSCAPE PERMIT NO. _____ – LCE

SHEET 12 OF 13

JOB NO.




NOTE:
1. TOP OF ROOT CONTROL BARRIER MUST BE AT GRADE.
2. POSITION ROOT CONTROL BARRIER ADJACENT TO STRUCTURE.
3. RAISED ROOT DEFLECTORS MUST BE FACING PLANTED AREA.
4. PROVIDE A MIN. OF 12 FEET OF ROOT BARRIER EACH SIDE OF TREE TRUNK.
5. ROOT BARRIER SHALL EXTEND A MIN. OF 18 INCHES BELOW GRADE ON WALK SIDE.
6. ROOT BARRIER SHALL EXTEND A MIN. OF 24 INCHES BELOW GRADE ON CURB SIDE.
7. TREE PLANTING AND STAKING SHALL BE PERFORMED IN ACCORDANCE WITH STANDARD PLAN NOS. 604 THROUGH 607.

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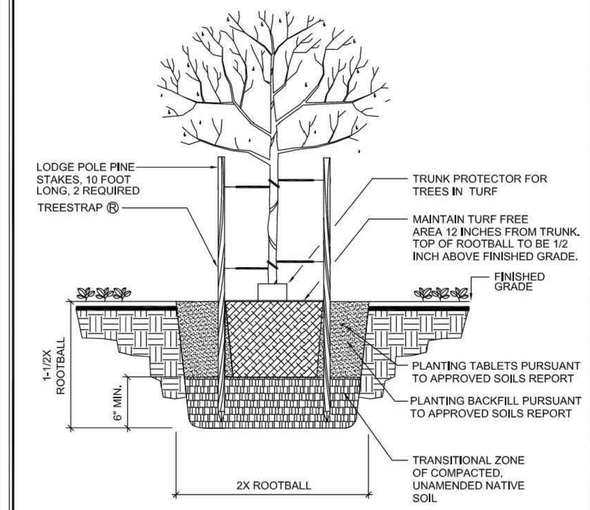
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | ROOT BARRIER | 608 |
| | Approved by: Mark L. Carroll R.C.E. 31515 City Engineer Date 6-22-09 | Sheet 1 of 1 |

ROOTBARRIER - CITY OF IRVINE DETAIL# 608




NOTE: ALL PLANT BASINS SHALL RECEIVE A 2 INCH LAYER OF APPROVED MULCH. MULCH TO BE 6 INCHES AWAY FROM THE TREE TRUNK.

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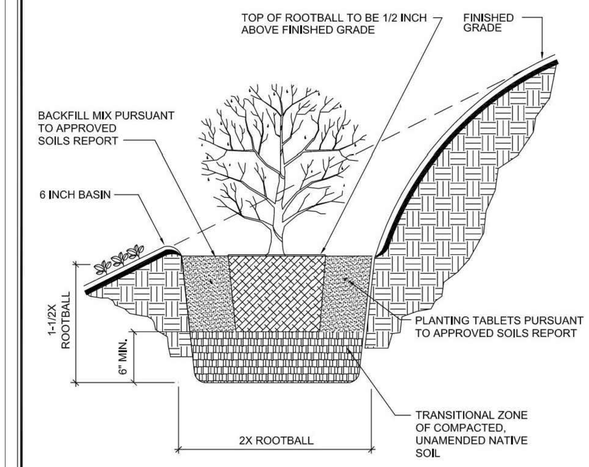
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | DOUBLE STAKE TREE, 15 GAL. & 24 INCH BOX | 606 |
| | Approved by: Mark L. Carroll R.C.E. 31515 City Engineer Date 6-22-09 | Sheet 1 of 1 |

DOUBLE STAKE TREE - CITY OF IRVINE DETAIL# 606




NOTE: ALL PLANT BASINS SHALL RECEIVE A 2 INCH LAYER OF APPROVED MULCH. MULCH TO BE 6 INCHES AWAY FROM THE SHRUB STEM.

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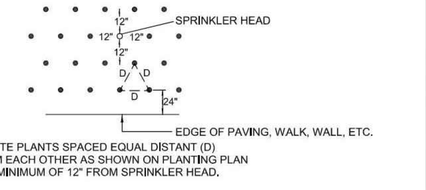
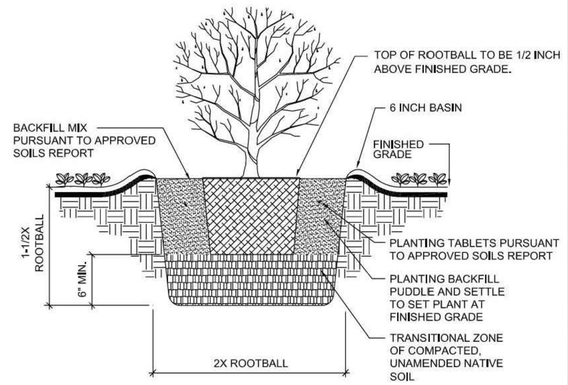
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | SHRUB PLANTING ON SLOPE | 602 |
| | Approved by: Mark L. Carroll R.C.E. 31515 City Engineer Date 6-22-09 | Sheet 1 of 1 |

SHRUB PLANTING ON SLOPE - CITY OF IRVINE DETAIL# 602




NOTE: LOCATE PLANTS SPACED EQUAL DISTANT (D) FROM EACH OTHER AS SHOWN ON PLANTING PLAN AND MINIMUM OF 12" FROM SPRINKLER HEAD.




NOTE: ALL PLANT BASINS SHALL RECEIVE A 2 INCH LAYER OF APPROVED MULCH. MULCH TO BE 6 INCHES AWAY FROM THE SHRUB STEM.

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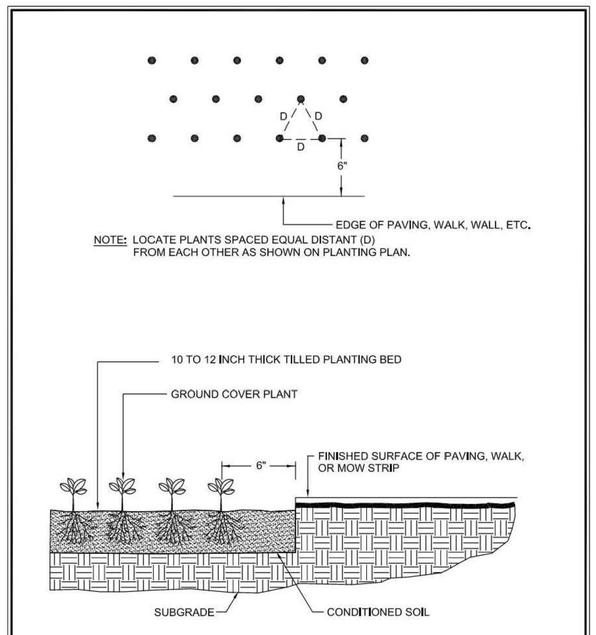
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | SHRUB PLANTING | 601 |
| | Approved by: Mark L. Carroll R.C.E. 31515 City Engineer Date 6-22-09 | Sheet 1 of 1 |

SHRUB PLANTING - CITY OF IRVINE DETAIL# 601




NOTE: LOCATE PLANTS SPACED EQUAL DISTANT (D) FROM EACH OTHER AS SHOWN ON PLANTING PLAN.

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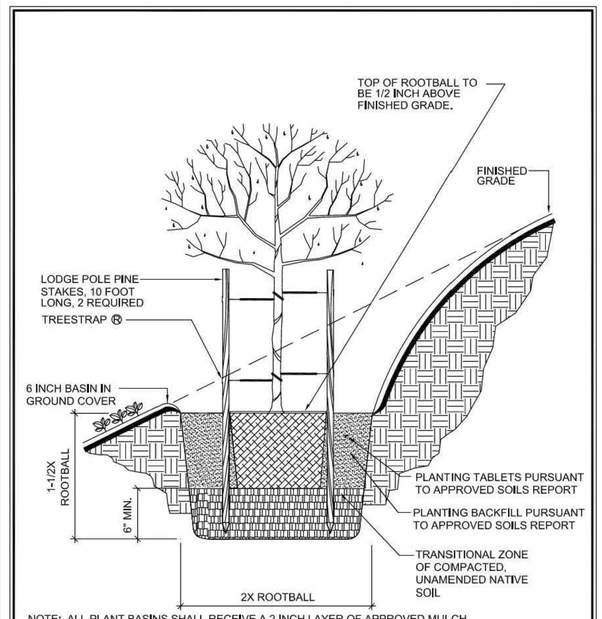
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | GROUND COVER PLANTING | 609 |
| | Approved by: Mark L. Carroll R.C.E. 31515 City Engineer Date 6-22-09 | Sheet 1 of 1 |

GROUND COVER PLANTING - CITY OF IRVINE DETAIL# 609




NOTE: ALL PLANT BASINS SHALL RECEIVE A 2 INCH LAYER OF APPROVED MULCH. MULCH TO BE 6 INCHES AWAY FROM TREE TRUNK.

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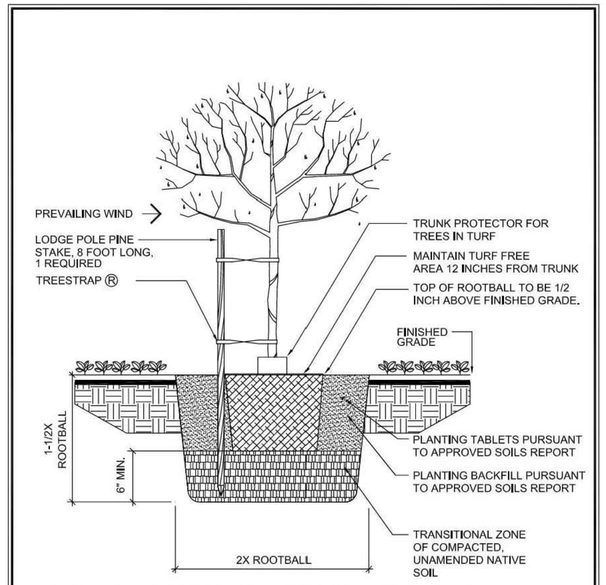
| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | DOUBLE STAKE TREE ON SLOPE, 15 GAL. & 24" BOX | 607 |
| | Approved by: Mark L. Carroll R.C.E. 31515 City Engineer Date 6-22-09 | Sheet 1 of 1 |

DOUBLE STAKE TREE ON SLOPE - CITY OF IRVINE DETAIL# 607




NOTE: ALL PLANT BASINS SHALL RECEIVE A 2 INCH LAYER OF APPROVED MULCH. MULCH TO BE 6 INCHES AWAY FROM THE TREE TRUNK.

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| REVISIONS | CITY OF IRVINE | STANDARD PLAN NO. |
|---|---|---|
| | SINGLE STAKE TREE, 5 GALLON ONLY | 604 |
| | Approved by: Mark L. Carroll R.C.E. 31515 City Engineer Date 6-22-09 | Sheet 1 of 1 |

SHRUB PLANTING - CITY OF IRVINE DETAIL# 604

| NO. | DATE | REVISIONS | APP. | DATE |
|---|---|---|---|---|
| 7 | | | | |
| 6 | | | | |
| 5 | 5/23/2025 | 100% SUBMITTAL | | |
| 4 | 3/25/2025 | 90% SUBMITTAL | | |
| 3 | 11/25/2024 | 80% SUBMITTAL | | |
| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

CITY OF IRVINE

PLANS PREPARED BY:
LYNN CAPOUYA INC.
LANDSCAPE ARCHITECTS
17992 MITCHELL SOUTH, SUITE 110
IRVINE, CA 92614
PHONE: 949-756-0150 WWW.LCAPOUYA.COM
LICENSE NO. 2314 EXP. DATE: 12/31/24 DATE

SEAL
LICENSED LANDSCAPE ARCHITECT LYNN CAPOUYA No. 2314 6-26-2025 STATE OF CALIFORNIA

DRAWN BY: A. SARAVIA
DESIGNED BY: P.LEAR/C. PHUI.
CHECKED BY: P.LEAR/C. PHUI.
RECOMMENDED:

APPROVED BY:
CITY ENGINEER
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
4/11/25
DATE

# TWO HERITAGE PARK PARKING LOTS
## LANDSCAPE PLANTING DETAILS

CITY OF IRVINE
PROJECT DELIVERY & SUSTAINABILITY DEPARTMENT
PUBLIC WORKS & TRANSPORTATION DEPARTMENT

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

PLAN CHECK NO.
00948134–PARK

LANDSCAPE PERMIT NO.
_____ – LCE

SHEET 13 OF 13

JOB NO.

## ABBREVIATIONS

| | | | | | |
|---|---|---|---|---|---|
| 4S/DP | 4" SQUARE BY 2-1/8" DEEP BOX | GFCI | GROUND FAULT CIRCUIT INTERRUPTER | NO | NORMALLY OPENED |
| ADA | AMERICAN WITH DISABILITIES ACT | GFP | GROUND FAULT PROTECTION | NF | NON-FUSED |
| A.F.F. | ABOVE FINISH FLOOR | GE or GEC | GROUNDING ELECTRODE CONDUCTOR | NIC | NOT IN CONTRACT |
| A.F.G. | ABOVE FINISH GRADE | HACR | HEATING AIR CONDITIONING | N.T.S. | NOT TO SCALE |
| AWG | AMERICAN WIRE GAUGE | | REFRIGERATION | NL | NIGHT LIGHT |
| AMP, A | AMPERE | HOA | HAND-OFF-AUTO | NO. or # | NUMBER |
| A.I.C. or AIC | AMPERES INTERRUPTING CAPACITY (SYMMETRICAL) | HVAC | HEATING, VENTILATING AND AIR CONDITIONING | OFCI | OWNER FURNISHED, CONTRACTOR INSTALLED |
| A.F.C. or AFC | AVAILABLE FAULT CURRENT | H.,W.,D.,L. | HEIGHT, WIDTH, DEPTH, LENGTH | %Z | PERCENT IMPEDANCE |
| AF/AT | AMP FRAME, AMP TRIP | HID | HIGH INTENSITY DISCHARGE | PH. or ø | PHASE |
| AHJ | AUTHORITY HAVING JURISDICTION | HP | HORSEPOWER | PC | PHOTOCELL |
| AS/AF | AMP SWITCH, AMP FUSE | HPS | HIGH PRESSURE SODIUM | P.C. | PLUMBING CONTRACTOR |
| ATS | AUTOMATIC TRANSFER SWITCH | IN. or " | INCHES | P | POLE |
| AVG | AVERAGE | I/G | ISOLATED GROUND | PVC | POLY VINYL CHLORIDE |
| BJ | BONDING JUMPER | IBC | INTERNATIONAL BUILDING CODE | PDU | POWER DISTRIBUTION UNIT |
| BDF | BUILDING DISTRIBUTION FRAME | I.D.C.S. | INTEGRATED DIMMING CONTROL PANEL | PRIMARY | OVER 600 VOLTS |
| BR | BRANCH | IDF | INTERMEDIATE DISTRIBUTION FRAME | PROVIDE | FURNISH, INSTALL AND CONNECT |
| BLDG | BUILDING | JBOX | JUNCTION BOX | PT | POTENTIAL TRANSFORMER |
| CBC | CALIFORNIA BUILDING CODE | K | DEGREE KELVIN | PA | PUBLIC ADDRESS |
| CEC | CALIFORNIA ELECTRICAL CODE | KCMIL | THOUSAND CIRCULAR MILS | (R) | DENOTES RELOCATED DEVICE |
| CIRC., CKT. | CIRCUIT | KVA | KILOVOLT AMPERES | | LOCATION. |
| CB | CIRCUIT BREAKER | KW | KILOWATT | REC, RECEPT | RECEPTACLE |
| CSFD | COMBINATION SMOKE FIRE DAMPER | KWH | KILOWATT HOUR | REF | REFRIGERATOR |
| C | CONDUIT | LCL | LONG CONTINUOUS LOAD | RGS | RIGID GALVANIZED STEEL |
| C.O. | CONDUIT ONLY, COMPLETE WITH PULLSTRING | LF, L.F. | LINEAR FEET | RMS | ROOT MEAN SQUARE |
| | | LTG, LTS | LIGHTING | SCC | SHORT CIRCUIT CURRENT |
| CONN | CONNECTED | LPS | LOW PRESSURE SODIUM | SCCR | SHORT CIRCUIT CURRENT RATING |
| CPT | CONTROL POWER TRANSFORMER | MAX. | MAXIMUM | SCS | STRUCTURED CABLING SYSTEM |
| CLCB | CURRENT LIMITING CIRCUIT BREAKER | MBJ | MAIN BONDING JUMPER | SFD | SMOKE FIRE DAMPER |
| CLF | CURRENT LIMITING FUSE | MDF | MAIN DISTRIBUTION FRAME | SECONDARY | 600 VOLTS AND LESS |
| CT | CURRENT TRANSFORMER | MOCP | MAXIMUM OVERCURRENT PROTECTION | SMACNA | SHEET METAL AND AIR COND. |
| (D) | EXISTING DEVICE TO BE DEMOLISHED | MCB | MAIN CIRCUIT BREAKER | | CONTRACTOR'S NAT'L ASSOC. |
| DAS | DISTRIBUTED ANTENNA SYSTEM | MLO | MAIN LUGS ONLY | SQ. | SQUARE |
| DIA | DIAMETER | M.C. | MECHANICAL CONTRACTOR | SSBJ | SUPPLY SIDE BONDING JUMPER |
| DISC | DISCONNECT | M | METER | SBJ | SYSTEM BONDING JUMPER |
| DIST | DISTRIBUTION | M/M | METER MAIN | TC | TIMECLOCK |
| D.P.C.S. | DIMMING PANEL CONTROL STATION | MV | MERCURY VAPOR | TEL/DATA | TELEPHONE AND DATA |
| E.C. | ELECTRICAL CONTRACTOR | MH | METAL HALIDE | TV | TELEVISION |
| EMS | ENERGY MANAGEMENT CONTROL SYSTEM | MIN. | MINIMUM | T.V.S.S. | TRANSIENT VOLTAGE SURGE SUPPRESSION |
| EMT | ELECTRICAL METALLIC TUBING | MCA | MINIMUM CIRCUIT AMPS | | |
| ENT | ELECTRICAL NON-METALLIC TUBING | MCC | MOTOR CONTROL CENTER | TYP | TYPICAL |
| EWC | ELECTRIC WATER COOLER | MCM | THOUSAND CIRCULAR MILS | U.G.P.S. | UNDERGROUND PULL SECTION |
| E.P.O. | EMERGENCY POWER OFF | MCP | MOTOR CIRCUIT PROTECTOR | U.O.N. | UNLESS OTHERWISE NOTED |
| E-O-L | END-OF-LINE CIRCUIT TERMINATOR | MFR. | MANUFACTURER | U.P.S. or UPS | UNINTERRUPTABLE POWER SYSTEM |
| EF | EXHAUST FAN | MTD | MOUNTED | VAV | VARIABLE AIR VOLUME |
| EGC or EG or E/G | EQUIPMENT GROUND (GREEN) | MW | MICROWAVE | V | VOLTS |
| (E) | EXISTING DEVICE TO REMAIN | NATS | NON AUTOMATIC DISCONNECT | VA | VOLT AMPERES |
| EP | EXPLOSION PROOF | NEC | NATIONAL ELECTRICAL CODE | VD | VOLTAGE DROP |
| (ER) | EXISTING DEVICE TO BE RELOCATED | NEMA | NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION | WP | WEATHERPROOF |
| FT or ' | FEET | NC | NORMALLY CLOSED | W | WIRE |
| FA or F.A. | FIRE ALARM | | | XFMR | TRANSFORMER |
| FLA | FULL LOAD AMPS | | | | |
| GRD | GROUND | | | | |

## PROJECT SPECIFIC SYMBOLS

NONE

## 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.

WYE CONFIGURATION  DELTA CONFIGURATION  GROUND

## 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 (DLCS) SPECIFICATIONS AND SEQUENCE OF OPERATIONS (SOO) FOR MORE INFORMATION.

LOW VOLTAGE WIRING INTERCONNECTING DLCS COMPONENTS AS REQUIRED. SEE DLCS SPECIFICATIONS FOR MORE INFORMATION.

$H\$_{y}^{x}$ — 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.

$H\$_{y}$ — WALL MOUNTED STAND ALONE OCCUPANCY SENSOR.

$H\$_{y}^{H}$ — WALL MOUNTED SYSTEM-BASED OCCUPANCY SENSOR.

$\$_{y}^{H,AV,DM,P}$ — 1-WAY DIRECTIONAL CEILING MOUNTED, SYSTEM-BASED OCCUPANCY SENSOR.

$\$_{y}^{H,AV,DM,P}$ — 2-WAY DIRECTIONAL CEILING MOUNTED, SYSTEM-BASED OCCUPANCY SENSOR.

$H\$_{y}^{K,V}$ — LOW VOLTAGE MOMENTARY SWITCHES, WALL MOUNTED, FOR MANUAL ON/OFF SWITCHING, DIMMING, AND OVERRIDE CONTROL OF LIGHTING.

$\$_{y+}$ — AUTOMATIC SWITCHING/STEP-DIMMING DAYLIGHTING CONTROLLER USED TO SWITCH OFF LIGHTS WHEN SUFFICIENT NATURAL LIGHT IS PRESENT. REFER TO THE DLCS SOO FOR TARGET ILLUMINATION VALUE.

$\$_{y+}$ — AUTOMATIC CONTINUOUS DIMMING DAYLIGHTING CONTROLLER USED TO DIM LIGHTS WHEN SUFFICIENT NATURAL LIGHT IS PRESENT. REFER TO THE DLCS SOO FOR TARGET ILLUMINATION VALUE.

LIGHTING CONTROL SYMBOL SUPERSCRIPT & SUBSCRIPT KEY:

1. "y" INDICATES THAT SWITCH LEG "y" TO BE CONFIGURED PER THE SOO. ADJACENT LOWER CASE LETTERS INDICATES QUANTITY OF SWITCHLEGS TO BE CONTROLLED. EXACT CONTROL FUNCTION IS DETERMINED BY THE BALLAST/DRIVER/FIXTURE TYPE.
2. ADJACENT UPPER CASE LETTER(S) INDICATE THE FOLLOWING:
   - AV INDICATES CONNECTION TO A/V CONTROL SYSTEM.
   - DM INDICATES DUAL MODE CONTROL AT CORRIDORS, STAIRWELLS AND WAREHOUSE AISLEWAYS
   - H INDICATES CONNECTION TO HVAC SYSTEM CONTROLS VIA CONTROLLED DRY-CONTACT CLOSURE.
   - K INDICATES LOCKING SWITCH FOR THE SUBSEQUENT LOWER CASE LETTER.
   - P INDICATES CONNECTION TO MOVEABLE PARTITION INTERFACE, SENSOR AND STATUS INDICATOR.
   - V INDICATES VANDAL RESISTANT SWITCH.
3. ADJACENT LOWER CASE LETTER(S) INDICATE SWITCH LEG(S) CONTROLLED EXCEPT WHERE "DM" INDICATES DUAL MODE CONTROL SWITCH.
4. 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.

## 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 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.

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.

## ELECTRICAL SCOPE OF WORK:

1. THE CONSTRUCTION OF TWO NEW PARKING LOTS INCLUDING SWITCHBOARDS, PANELBOARDS, LIGHTING, LIGHTING CONTROLS, AND POWER ASSOCIATED WITH BRANCH CIRCUITING. A NEW ELECTRICAL SERVICE WILL BE PROVIDED IN LOT #1 COORDINATED WITH SOUTHERN CALIFORNIA EDISON. POWER FOR LOT #2 WILL BE DERIVED FROM AN EXISTING SWITCHBOARD BEING INSTALLED FOR ANOTHER PROJECT ON SITE.

## S.C.E. UTILITY DEFERRED NOTE:

1. THE UTILITY COMPANY SERVICE REPORT INDICATING THE AVAILABLE FAULT CURRENT, VOLTAGE, AMPERES, AND PHASE AT THE SERVICE IS NOT READY AT THIS TIME.

## CITY OF IRVINE SPECIFIC NOTES:

1. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION. TESTING LABORATORY SHALL BE A CITY OF IRVINE RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.
2. ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST ADOPTED CITY OF IRVINE ELECTRICAL CODE, 2022 CALIFORNIA ELECTRICAL CODE, 2020 NATIONAL ELECTRICAL CODE, AND TITLE 24 - 2022 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS.
3. THE MAXIMUM COMBINED VOLTAGE DROP ON BOTH INSTALLED FEEDER CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS TO THE FARTHEST CONNECTED LOAD OR OUTLET SHALL NOT EXCEED 5 PERCENT.
4. APPROVAL OF AN EMPTY CONDUIT IS NOT A WARRANTY OF FUTURE APPROVAL FOR USING THE SAME CONDUIT FOR PARTICULAR WIRES.
5. NO PIPING, DUCTS, OR OTHER EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE ABOVE THE ELECTRICAL EQUIPMENT.
6. ALL LOW VOLTAGE SYSTEMS, PHONE/DATA DEVICES AND CONDUIT PROVISIONS SHOWN ON THE ELECTRICAL DRAWINGS ARE FOR REFERENCE ONLY AND ARE NOT REVIEWED AS PART OF CITY OF IRVINE'S BUILDING AND SAFETY PLAN CHECK REVIEW AND ARE NOT PART OF PLAN CHECK, PERMIT ONLY.

## 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.

$\$_{a}$ — 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 6-INCHES ABOVE COUNTER OR SPLASH, 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. OR CEC, WHERE ADOPTED.

J — JUNCTION BOX, MOUNTED IN ACCESSIBLE CEILING FOR APPLICATION DENOTED ON PLAN. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C. OR CEC, WHERE ADOPTED.

J — JUNCTION BOX, WALL MOUNTED AT 6-INCHES ABOVE COUNTER OR SPLASH. 4S/DP MINIMUM OR AS REQUIRED BY N.E.C., OR CEC, WHERE ADOPTED.

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.

E — 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
- 3 - THREE WAY
- 4 - FOUR WAY
- K - KEY OPERATED
- LV - LOW VOLTAGE
- P - PILOT LIGHT
- R - REMOTE CONTROL
- M - MOTOR STARTING
- RL - ROTARY LOCK KEY TYPE
- PB - PUSHBUTTON
- S - PROJECTION SCREEN

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.

| NO. | DATE | REVISIONS | APP. | DATE |
|---|---|---|---|---|
| 6 | | | | |
| 5 | | | | |
| 4 | | | | |
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |

CITY OF IRVINE

**PLANS PREPARED BY:**
WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-BZ306548.000
LICENSE NO. E15610 EXP. DATE: 12/31/25

**SEAL**
REGISTERED PROFESSIONAL ENGINEER — RAYMOND W. SWARTZ — No. E15610 — 12/31/2025 — ELECTRICAL — STATE OF CALIFORNIA

**DATE: 09/18/25**

DRAWN BY: RC
DESIGNED BY: JL
CHECKED BY: RS
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

**APPROVED BY:**
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**
DATE

**E-001**

**TWO HERITAGE PARK PARKING LOTS**
**SYMBOLS LIST**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. 00948134-PARK
LANDSCAPE PERMIT NO. _____- LCE
SHEET 1 OF 19
JOB NO. CIP NO. 361618

## 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 1" - 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.

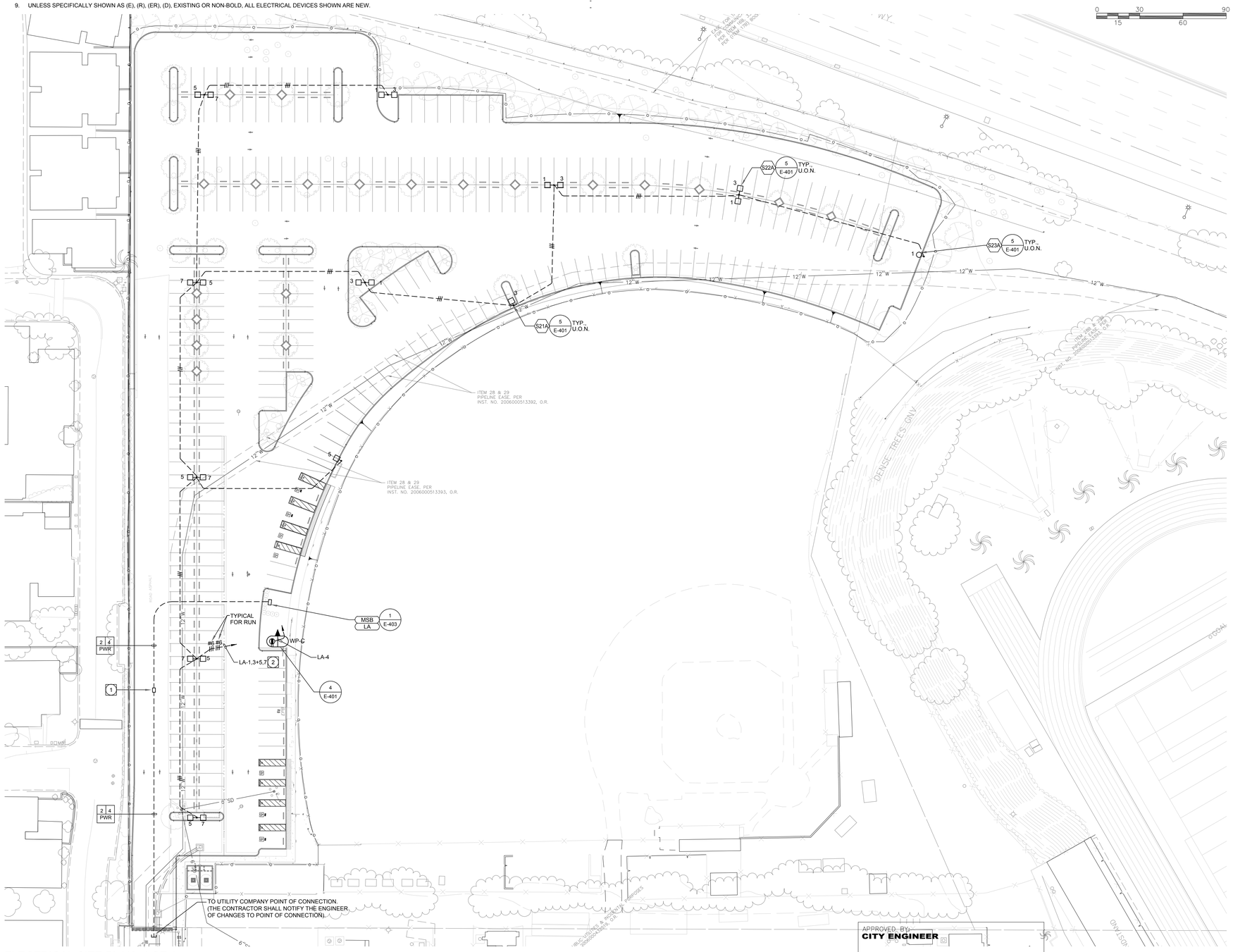
## SITE UTILITY PLAN NOTES:

1. UTILITY POINTS OF SERVICE AND WORK/MATERIAL SHOWN ARE BASED UPON PRELIMINARY INFORMATION ONLY BY THE UTILITY COMPANIES AND ARE FOR BID PURPOSES ONLY.
2. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK/MATERIAL REQUIREMENTS AND CONSTRUCT TO UTILITY COMPANY ENGINEERING PLANS AND SPECIFICATIONS ONLY. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT, PULL WIRES, CABLES, PULLBOXES, CONCRETE ENCASEMENT OF CONDUITS, TRANSFORMER PAD, BARRIERS, POLE RISERS, TRENCHING AND BACKFILL, AND PAY ALL UTILITY CO. FEES AND INCLUDE ALL REQUIREMENTS IN SCOPE OF WORK.
3. LOCATIONS OF UTILITIES SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING ON THIS SITE TO AVOID EXISTING DUCTS, PIPING, OR CONDUITS, ETC., AND TO PREVENT HAZARD 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.
4. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.
5. UTILITY CONTACTS:

   POWER:
   -
   -
   -
   -
   -

SCALE: 1"=30'

0 15 30 60 90




1 ELECTRICAL SITE PLAN - LOT 1
SCALE: 1" = 30'-0"

## PLAN NOTES:

1. PULLBOXES TO BE PROVIDED AND LOCATED PER UTILITY COMPANY REQUIREMENTS.
2. ROUTE LIGHTING BRANCH CIRCUITING THROUGH LIGHTING CONTROL PANEL AS REQUIRED. PROVIDE T24 COMPLIANT 24 HOUR PROGRAMMABLE TIME CLOCK WITH PHOTOCELL. CONTRACTOR SHALL COORDINATE THE ON/OFF FUNCTION WITH THE CITY AND PROGRAM THE LIGHTING CONTROL SYSTEM AS REQUIRED.

## LEGEND OF CONDUIT SYMBOLS

NO. OF CONDUIT REQUIRED — SIZE OF CONDUIT

PWR = UTILITY COMPANY POWER CONDUIT SYMBOL.

GEN = GENERATOR CONDUIT SYMBOL.

ATS = ATS CONDUIT SYMBOL.

## SITE UTILITY PLAN CONSTRUCTION NOTES:

THESE NOTES ESTABLISH MINIMUM QUALITY LEVELS AND COORDINATION REQUIREMENTS. RESPECTIVE UTILITY COMPANY PLANS AND REQUIREMENTS TAKE PRECEDENCE OVER THESE NOTES WITH REGARD TO RESPECTIVE UTILITY COMPANY CONDUIT AND UNDERGROUND STRUCTURE SYSTEMS.

1. CALL UNDERGROUND SERVICE ALERT (USA) AT (800) 422-4133 OR APPLICABLE STATE AND LOCAL DIG SAFE OR UNDERGROUND ALERT HOTLINES PRIOR TO CONSTRUCTION START.
2. 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.
3. VAULTS, MAINTENANCE HOLES (MH's), FORMERLY KNOWN AS MANHOLES, AND CONDUITS SHALL MAINTAIN A MINIMUM COVER OF 24" BELOW FINAL SURFACE AT ALL CONDITIONS. INCLUDE ALL COSTS IN BASE BID TO MEET UTILITY COMPANY REQUIREMENTS WHICH MAY REQUIRE GREATER MINIMUM CONDUIT DEPTHS.
4. VAULTS, MH's AND PULLBOXES (PB's) SHALL BE EQUIPPED WITH KNOCKOUT PANELS OR PRE-CAST INDIVIDUAL CONDUIT OPENINGS. CONDUITS SHALL ONLY ENTER AND EXIT ON END/SHORT WALLS. CONDUITS MAY NOT ENTER AND EXIT ON SIDE/LONG WALLS, CEILINGS OR FLOORS UNLESS OTHERWISE NOTED.
5. CUT DUCTS FLUSH WITH INTERIOR VAULT/MH/PB WALL.
6. GROUT AROUND DUCT ENTRANCES ON VAULT/MH/PB WALLS.
7. SLURRY BACKFILL AROUND DUCTS WITHIN 5 FEET OF VAULT/MH/PB TO PREVENT SHEARING.
8. CONDUITS PASSING UNDER THE BUILDING PERIMETER SHALL BE ENCASED IN LIGHTWEIGHT CONCRETE OR WATER-IMPERVIOUS CLAY TO PREVENT WATER INFILTRATION. SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
9. CONDUIT BEND RADIUS FOR BUILDING ENTRANCES AND AT POLES SHALL BE A MINIMUM OF 24" FOR CONDUITS WITH LESS THAN 2" INTERNAL DIAMETER AND A MINIMUM OF 48" FOR CONDUITS WITH MORE THAN 2" INTERNAL DIAMETER.
10. PREFERRED CONDUIT SWEEP RADIUS BETWEEN VAULTS IS 25 FEET. UNDER NO CIRCUMSTANCES SHALL THE CONDUIT SWEEP RADIUS BE LESS THAN 12.5 FEET. MAXIMUM OF 90 DEGREES PER SWEEP AND LIMITED TO NO MORE THAN (2) 90 DEGREE SWEEPS BETWEEN VAULTS.
11. VAULTS/MH's/PB's ARE TO BE EQUIPPED WITH RACKING, GROUNDING LUGS, AND BOLT-DOWN LIDS UNLESS OTHERWISE NOTED.
12. VAULTS AND MH's TO BE EQUIPPED WITH ROUND COVERS, EXTENSION RINGS AS REQUIRED, LADDERS AND (3) SEGMENTS OF 6 FOOT HIGH CABLE RACKING PER EACH LONG WALL.
13. LABEL ALL NON-UTILITY COMMUNICATION VAULT/MH/PB COVERS WITH "COMMUNICATIONS" UNLESS OTHERWISE NOTED ON PLANS.
14. COORDINATE FINAL VAULT/MH/PB OPENING HEIGHT WITH G.C. PRIOR TO ROUGH-IN TO ENSURE FINAL GRADE DOES NOT SLOPE INTO VAULT/MH/PB OPENING.
15. CONTRACTOR TO PROVIDE A MINIMUM OF 8" DEEP COMPACTED 1/2" DIAMETER GRAVEL, UNDER ALL VAULTS, MH's OR PB's TO ENSURE UNIFORM DISTRIBUTION OF SOIL PRESSURE ON THE FLOOR AND BE ABLE TO DISSIPATE WATER OUT OF THE VAULT, MH OR PB.
16. ALL VAULTS/MH's/PB's WITHOUT GROUNDING LUGS SHALL HAVE AN 8' x 3/4" COPPER GROUND ROD DRIVEN THRU THE FLOOR TO ALLOW GROUNDING OF ITEMS WITHIN.
17. ALL VAULTS/MH's/PB's SHALL BE PROVIDED WITH TRAFFIC RATED COVERS WHEN LOCATED IN PAVED AREAS UTILIZED FOR VEHICLE TRAFFIC.
18. IF THE WATER OR MOISTURE BARRIER ON OR NEAR THE FOUNDATION OF A BUILDING IS DISTURBED IN ANY MANNER BY EXCAVATION OR OTHER CONSTRUCTION WORK, THE MOISTURE BARRIER MUST BE REPAIRED FOLLOWING THE RECOMMENDATIONS OF THE MANUFACTURER OF THE ORIGINAL BARRIER PRODUCT.
19. THE CONTRACTOR SHALL INCLUDE IN BASE BID ALL COSTS TO COMPLY WITH ALL REQUIREMENTS FOR CONFINED SPACE ENTRY PER THE OSHA REQUIREMENTS 29 CFR-1910.146, 29 CFR-1910.268, ETC. DURING ANY CONFINED SPACE ENTRY.
20. ANY DUCTS LEAVING A VAULT, MH OR PB ROUTED INTO A FACILITY SHALL BE PLUGGED AT EACH END USING REMOVABLE MECHANICAL PLUGS DESIGNED TO PREVENT WATER AND GAS FROM ENTERING THE FACILITY.
21. SEE ELECTRICAL SPECIFICATIONS AND PLAN DETAILS FOR ADDITIONAL REQUIREMENTS REGARDING UNDERGROUND CONDUITS AND IN-GRADE VAULT/MH/PB/JUNCTION BOXES.

## CITY OF IRVINE PLANNING DIVISION NOTE:

PER SECTION 3-20-1(B) IRVINE ZONING CODE (IRVINE, CA), SCREENING SHALL BE PROVIDED SO THAT MATERIALS STORED IN ANY OUTDOOR STORAGE AREAS AND/OR EQUIPMENT AT GRADE OR ON ROOF ARE SCREENED FROM VIEW FROM ALL ADJACENT STREETS, NO MATTER THE STREET GRADE, AND ALL PROPERTIES AT THE SAME GRADE.

NOTE:
EXISTING UNDERGROUND SYSTEMS, INCLUDING BUT NOT LIMITED TO IRRIGATION, SIGNAGE AND SITE LIGHTING BRANCH CIRCUITING, ARE TO REMAIN AND ARE NOT INCLUDED IN SCOPE OF WORK, UNLESS NOTED OTHERWISE. PROTECT IN PLACE ALL EXISTING SYSTEMS TO REMAIN. USE EXTREME CAUTION DURING EXCAVATION AND TRENCHING OF NEW WORK SO AS NOT TO DISRUPT EXISTING SYSTEMS. ALL EXISTING SYSTEMS THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AS REQUIRED TO PROVIDE COMPLETE AND OPERATIONAL SYSTEMS AT NO ADDITIONAL COST TO THE OWNER. ALL EXISTING LANDSCAPE AND HARDSCAPE MATERIAL THAT IS DISRUPTED AND/OR DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AND/OR REPLACED TO MATCH EXISTING CONDITION AT NO ADDITIONAL COST TO THE OWNER.

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

**APPROVED BY:**
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**

**DATE**

| NO. | DATE | REVISIONS | APP. | DATE |
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CITY OF IRVINE


**PLANS PREPARED BY:**
WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-B2306548.000
LICENSE NO. E15610 EXP. DATE: 12/31/25


**SEAL**
REGISTERED PROFESSIONAL ENGINEER RAYMOND W. GRAUTZ No. E15610 12/31/2025 ELECTRICAL STATE OF CALIFORNIA

**DATE: 09/18/25**

**DRAWN BY:** RC
DESIGNED BY: JL
**CHECKED BY:** RS
RECOMMENDED:

**TWO HERITAGE PARK PARKING LOTS**
**SITE ELECTRICAL PLANS**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

E-181

PLAN CHECK NO. *00948134-PARK*

LANDSCAPE PERMIT NO. _____ - *LCE*

SHEET 2 OF 19

JOB NO. CIP NO. 361618

## EV SUPPLY EQUIPMENT SPECIFICATION:

1. ALL MATERIAL SHALL BE NEW, OF CURRENT DESIGN, AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF NEMA, UL, ANSI AS WELL AS LOCAL JURISDICTION REQUIREMENTS. THE LATEST PUBLISHED EDITION OF THE FOLLOWING DOCUMENTS SHALL APPLY TO THE MANUFACTURING AND INSTALLATION OF THE ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE):
   Underwriters Laboratories Standard, UL 2202, 2231, 2251, AND 2594
   CALIFORNIA ELECTRICAL CODE ARTICLE 625
   NEMA 250 - ENCLOSURES FOR ELECTRICAL EQUIPMENT
2. MANUFACTURER SHALL PROVIDE WARRANTY FOR 3 YEARS FROM DATE ON PURCHASE ON MATERIALS AND WORKMANSHIP.
3. CHARGEPOINT CT4000 EVSE AS DESCRIBED BELOW HAS BEEN USED AS THE BASIS OF DESIGN FOR THIS PROJECT. NO SUBSTITUTES ALLOWED UNLESS APPROVED BY OWNER.
4. 3G GSM, 3G CDMA WIRELESS CONNECTIVITY
5. INTEGRATED GROUND FAULT PROTECTION.
6. CONTRACTOR SHALL VERIFY AND TROUBLESHOOT APPROPRIATE CONNECTIVITY TO CELLULAR NETWORK BEFORE PROJECT HANDOFF.
7. CORROSION RESISTANT MATERIAL AND FINISH.
8. EVSE SUPPLIER SHALL PROVIDE A CLOUD BASED WEB INTERFACE THAT ALLOWS MANAGEMENT OF THE CHARGEPOINT BOLLARD CHARGING UNITS, USERS, AND PAYMENTS. THE INTERFACE SHALL BE AVAILABLE AS A WEB INTERFACE FOR CHARGING STATION OWNERS. CONTRACTOR TO VERIFY PERSONAL COMPUTER WITH COMPATIBLE BROWSER AVAILABLE ON SITE.
9. BEFORE INSTALLATION, EXAMINE AREA TO ENSURE COMPLIANCE WITH EQUIPMENTS UL LISTINGS.
10. INSTALLATION SHALL BE PERFORMED BY THE CONTRACTOR FOLLOWING MANUFACTURERS INSTRUCTIONS. CONTRACTOR SHALL BE RESPONSIBLE OF INSTALLING ALL SAFETY LABELS REQUIRED.
11. COORDINATE ANY ADDITIONAL HARDWARE REQUIRED TO DELIVER A FULLY FUNCTIONAL SYSTEM AT PROJECT HANDOFF.

## 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 1" - 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.

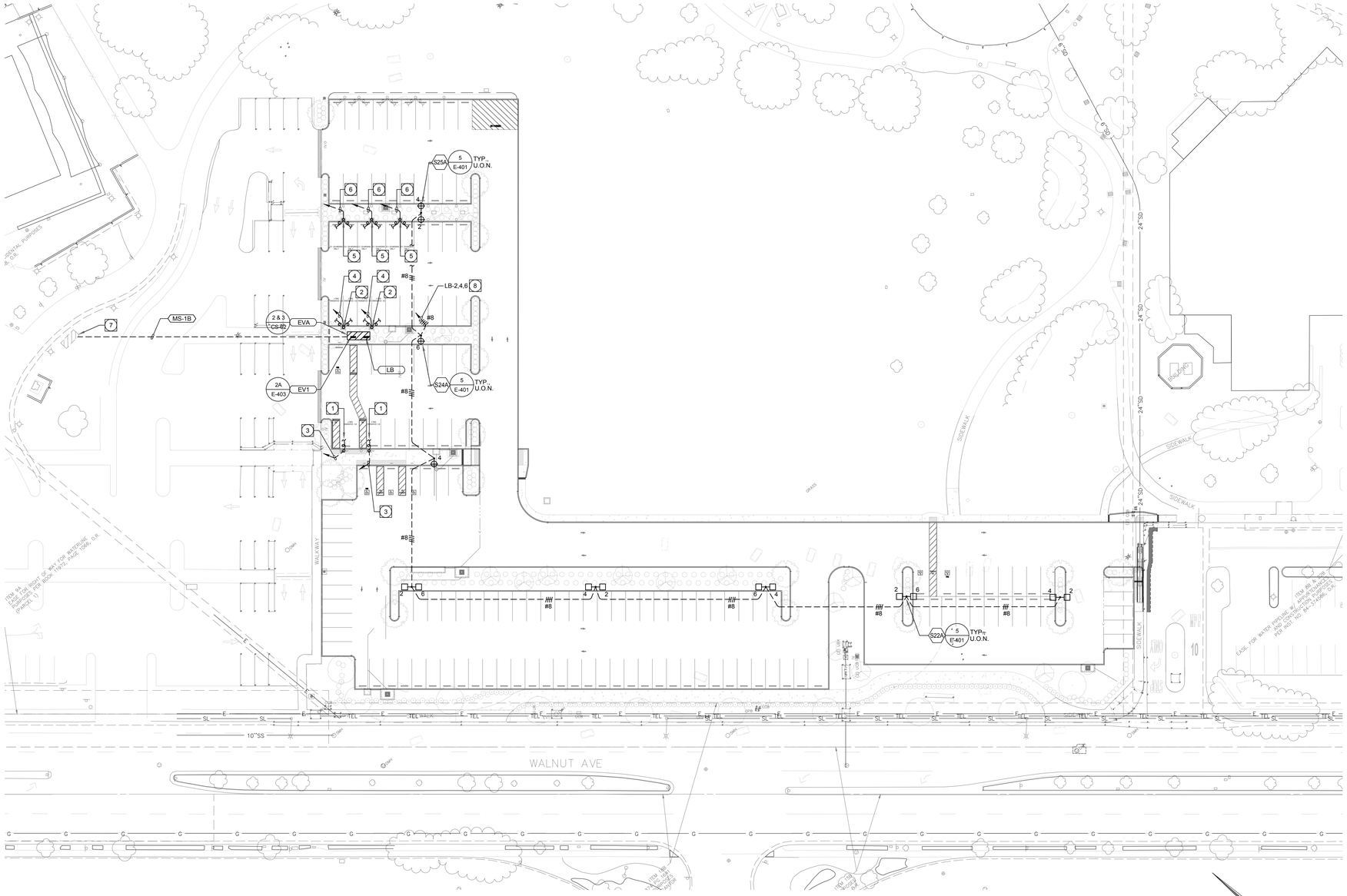
## CITY OF IRVINE PLANNING DIVISION NOTE:

PER SECTION 3-20-1(B) IRVINE ZONING CODE (IRVINE, CA), SCREENING SHALL BE PROVIDED SO THAT MATERIALS STORED IN ANY OUTDOOR STORAGE AREAS AND/OR EQUIPMENT AT GRADE OR ON ROOF ARE SCREENED FROM VIEW FROM ALL ADJACENT STREETS, NO MATTER THE STREET GRADE, AND ALL PROPERTIES AT THE SAME GRADE.

NOTE:
EXISTING UNDERGROUND SYSTEMS, INCLUDING BUT NOT LIMITED TO IRRIGATION, SIGNAGE AND SITE LIGHTING BRANCH CIRCUITING, ARE TO REMAIN AND ARE NOT INCLUDED IN SCOPE OF WORK, UNLESS NOTED OTHERWISE. PROTECT IN PLACE ALL EXISTING SYSTEMS TO REMAIN. USE EXTREME CAUTION DURING EXCAVATION AND TRENCHING OF NEW WORK SO AS NOT TO DISRUPT EXISTING SYSTEMS. ALL EXISTING SYSTEMS THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AS REQUIRED TO PROVIDE COMPLETE AND OPERATIONAL SYSTEMS AT NO ADDITIONAL COST TO THE OWNER. ALL EXISTING LANDSCAPE AND HARDSCAPE MATERIAL THAT IS DISRUPTED AND/OR DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AND/OR REPLACED TO MATCH EXISTING CONDITION AT NO ADDITIONAL COST TO THE OWNER.

## PLAN NOTES:

1. EV SINGLE PORT CHARGING STATION TO BE OWNER PROVIDED, CONTRACTOR INSTALLED. CONNECT COMPLETE TO EV CHARGING STATION AS REQUIRED. COORDINATE ALL REQUIREMENTS WITH EV CHARGER STATION SUPPLIER PRIOR TO ROUGH-IN. STUB UP CONDUIT AT EV CHARGING STATION(S) AS REQUIRED, VERIFY EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN. SEE DETAIL 1/E-402. CHARGEPOINT #CT4011
2. EV DUAL PORT CHARGING STATION TO BE OWNER PROVIDED, CONTRACTOR INSTALLED. CONNECT COMPLETE TO EV CHARGING STATION AS REQUIRED. COORDINATE ALL REQUIREMENTS WITH EV CHARGER STATION SUPPLIER PRIOR TO ROUGH-IN. STUB UP CONDUIT AT EV CHARGING STATION(S) AS REQUIRED, VERIFY EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN. SEE DETAIL 1/E-402. CHARGEPOINT #CT4021
3. 1"C. PVC -2#6 AND 1#10 E/G. CONTRACTOR SHALL VERIFY EXACT ROUTING OF BRANCH CIRCUITING IN FIELD PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING/ TRENCHING TO LIMIT DISRUPTION OF EXISTING LANDSCAPING AND ANY BELOW GRADE STRUCTURES. ALL EXCAVATING/TRENCHING SHALL BE AS FAR AS FEASIBLE FROM TREE TRUNKS.
4. 1"C. PVC -4#8 AND 1#10 E/G. CONTRACTOR SHALL VERIFY EXACT ROUTING OF BRANCH CIRCUITING IN FIELD PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING/ TRENCHING TO LIMIT DISRUPTION OF EXISTING LANDSCAPING AND ANY BELOW GRADE STRUCTURES. ALL EXCAVATING/TRENCHING SHALL BE AS FAR AS FEASIBLE FROM TREE TRUNKS.
   ADJUSTMENT FACTOR CALCULATION PER TABLE 310.15(B)(3):
   AMPACITY OF #8 THHN, CU, 90°C. = 55A
   ADJUSTMENT FACTOR (4-6 CONDUCTORS) = 80%
   DE-RATED CONDUCTORS AMPACITY = 44A
   DE-RATED CONDUCTORS ARE ADEQUATELY SIZED FOR A 40A CIRCUIT
5. EV DUAL PORT CHARGING STATION TO BE OWNER PROVIDED, CONTRACTOR INSTALLED. CONNECT COMPLETE TO EV CHARGING STATION AS REQUIRED. COORDINATE ALL REQUIREMENTS WITH EV CHARGER STATION SUPPLIER PRIOR TO ROUGH-IN. STUB UP CONDUIT AT EV CHARGING STATION(S) AS REQUIRED, VERIFY EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN. SEE DETAIL 1/E-402. CHARGEPOINT #CPF50-L18-PEDMNT-CMK6-DUAL-GW (6FT)
6. 1"C. PVC - 4#4 AND 1#8 E/G. CONTRACTOR SHALL VERIFY EXACT ROUTING OF BRANCH CIRCUITING IN FIELD PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING/ TRENCHING TO LIMIT DISRUPTION OF EXISTING LANDSCAPING AND ANY BELOW GRADE STRUCTURES. ALL EXCAVATING/TRENCHING SHALL BE AS FAR AS FEASIBLE FROM TREE TRUNKS.
   ADJUSTMENT FACTOR CALCULATION PER TABLE 310.15(B)(3):
   AMPACITY OF #4 THHN, CU, 90°C. = 95A
   ADJUSTMENT FACTOR (4-6 CONDUCTORS) = 80%
   DE-RATED CONDUCTORS AMPACITY = 76A
   DE-RATED CONDUCTORS ARE ADEQUATELY SIZED FOR A 70A CIRCUIT
7. EXISTING SWITCHBOARD "MS". VERIFY EXACT LOCATION IN FIELD.
8. ROUTE LIGHTING BRANCH CIRCUITING THROUGH LIGHTING CONTROL PANEL AS REQUIRED. PROVIDE T24 COMPLIANT 24 HOUR PROGRAMMABLE TIME CLOCK WITH PHOTOCELL. CONTRACTOR SHALL COORDINATE THE ON/OFF FUNCTION WITH THE CITY AND PROGRAM THE LIGHTING CONTROL SYSTEM AS REQUIRED.




1 ELECTRICAL SITE PLAN - LOT 2
SCALE: 1" = 30'-0"

## SITE UTILITY PLAN CONSTRUCTION NOTES:

THESE NOTES ESTABLISH MINIMUM QUALITY LEVELS AND COORDINATION REQUIREMENTS. RESPECTIVE UTILITY COMPANY PLANS AND REQUIREMENTS TAKE PRECEDENCE OVER THESE NOTES WITH REGARD TO RESPECTIVE UTILITY COMPANY CONDUIT AND UNDERGROUND STRUCTURE SYSTEMS.

1. CALL UNDERGROUND SERVICE ALERT (USA) AT (800) 422-4133 OR APPLICABLE STATE AND LOCAL DIG SAFE OR UNDERGROUND ALERT HOTLINES PRIOR TO CONSTRUCTION START.
2. 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.
3. VAULTS, MAINTENANCE HOLES (MH's), FORMERLY KNOWN AS MANHOLES, AND CONDUITS SHALL MAINTAIN A MINIMUM COVER OF 24" BELOW FINAL SURFACE AT ALL CONDITIONS. INCLUDE ALL COSTS IN BASE BID TO MEET UTILITY COMPANY REQUIREMENTS WHICH MAY REQUIRE GREATER MINIMUM CONDUIT DEPTHS.
4. VAULTS, MH's AND PULLBOXES (PB's) SHALL BE EQUIPPED WITH KNOCKOUT PANELS OR PRE-CAST INDIVIDUAL CONDUIT OPENINGS. CONDUITS SHALL ONLY ENTER AND EXIT ON END/SHORT WALLS. CONDUITS MAY NOT ENTER AND EXIT ON SIDE/LONG WALLS, CEILINGS OR FLOORS UNLESS OTHERWISE NOTED.
5. CUT DUCTS FLUSH WITH INTERIOR VAULT/MH/PB WALL.
6. GROUT AROUND DUCT ENTRANCES ON VAULT/MH/PB WALLS.
7. SLURRY BACKFILL AROUND DUCTS WITHIN 5 FEET OF VAULT/MH/PB TO PREVENT SHEARING.
8. CONDUITS PASSING UNDER THE BUILDING PERIMETER SHALL BE ENCASED IN LIGHTWEIGHT CONCRETE OR WATER-IMPERVIOUS CLAY TO PREVENT WATER INFILTRATION. SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
9. CONDUIT BEND RADIUS FOR BUILDING ENTRANCES AND AT POLES SHALL BE A MINIMUM OF 24" FOR CONDUITS WITH LESS THAN 2" INTERNAL DIAMETER AND A MINIMUM OF 48" FOR CONDUITS WITH MORE THAN 2" INTERNAL DIAMETER.
10. PREFERRED CONDUIT SWEEP RADIUS BETWEEN VAULTS IS 25 FEET. UNDER NO CIRCUMSTANCES SHALL THE CONDUIT SWEEP RADIUS BE LESS THAN 12.5 FEET. MAXIMUM OF 90 DEGREES PER SWEEP AND LIMITED TO NO MORE THAN (2) 90 DEGREE SWEEPS BETWEEN VAULTS.
11. VAULTS/MH's/PB's ARE TO BE EQUIPPED WITH RACKING, GROUNDING LUGS, AND BOLT-DOWN LIDS UNLESS OTHERWISE NOTED.
12. VAULTS AND MH's TO BE EQUIPPED WITH ROUND COVERS, EXTENSION RINGS AS REQUIRED, LADDERS AND (3) SEGMENTS OF 6 FOOT HIGH CABLE RACKING PER EACH LONG WALL.
13. LABEL ALL NON-UTILITY COMMUNICATION VAULT/MH/PB COVERS WITH "COMMUNICATIONS" UNLESS OTHERWISE NOTED ON PLANS.
14. COORDINATE FINAL VAULT/MH/PB OPENING HEIGHT WITH G.C. PRIOR TO ROUGH-IN TO ENSURE FINAL GRADE DOES NOT SLOPE INTO VAULT/MH/PB OPENING.
15. CONTRACTOR TO PROVIDE A MINIMUM OF 8" DEEP COMPACTED 1/2" DIAMETER GRAVEL, UNDER ALL VAULTS, MH's OR PB's TO ENSURE UNIFORM DISTRIBUTION OF SOIL PRESSURE ON THE FLOOR AND BE ABLE TO DISSIPATE WATER OUT OF THE VAULT, MH OR PB.
16. ALL VAULTS/MH's/PB's WITHOUT GROUNDING LUGS SHALL HAVE AN 8' x 3/4" COPPER GROUND ROD DRIVEN THRU THE FLOOR TO ALLOW GROUNDING OF ITEMS WITHIN.
17. ALL VAULTS/MH's/PB's SHALL BE PROVIDED WITH TRAFFIC RATED COVERS WHEN LOCATED IN PAVED AREAS UTILIZED FOR VEHICLE TRAFFIC.
18. IF THE WATER OR MOISTURE BARRIER ON OR NEAR THE FOUNDATION OF A BUILDING IS DISTURBED IN ANY MANNER BY EXCAVATION OR OTHER CONSTRUCTION WORK, THE MOISTURE BARRIER MUST BE REPAIRED FOLLOWING THE RECOMMENDATIONS OF THE MANUFACTURER OF THE ORIGINAL BARRIER PRODUCT.
19. THE CONTRACTOR SHALL INCLUDE IN BASE BID ALL COSTS TO COMPLY WITH ALL REQUIREMENTS FOR CONFINED SPACE ENTRY PER THE OSHA REQUIREMENTS 29 CFR-1910.146, 29 CFR-1910.268, ETC. DURING ANY CONFINED SPACE ENTRY.
20. ANY DUCTS LEAVING A VAULT, MH OR PB ROUTED INTO A FACILITY SHALL BE PLUGGED AT EACH END USING REMOVABLE MECHANICAL PLUGS DESIGNED TO PREVENT WATER AND GAS FROM ENTERING THE FACILITY.
21. SEE ELECTRICAL SPECIFICATIONS AND PLAN DETAILS FOR ADDITIONAL REQUIREMENTS REGARDING UNDERGROUND CONDUITS AND IN-GRADE VAULT/MH/PB/JUNCTION BOXES.

SCALE: 1" = 30'
0 30 90
15 60

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

**APPROVED BY:**
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**

DATE

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CITY OF IRVINE

**PLANS PREPARED BY:**
WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-B2306548.000
LICENSE NO. E15610 EXP. DATE: 12/31/25

**SEAL**
REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

**DATE: 09/18/25**

**DRAWN BY:** RC
DESIGNED BY: JL
**CHECKED BY:** RS
RECOMMENDED:

**TWO HERITAGE PARK PARKING LOTS**
**SITE ELECTRICAL PLANS**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

**E-102**

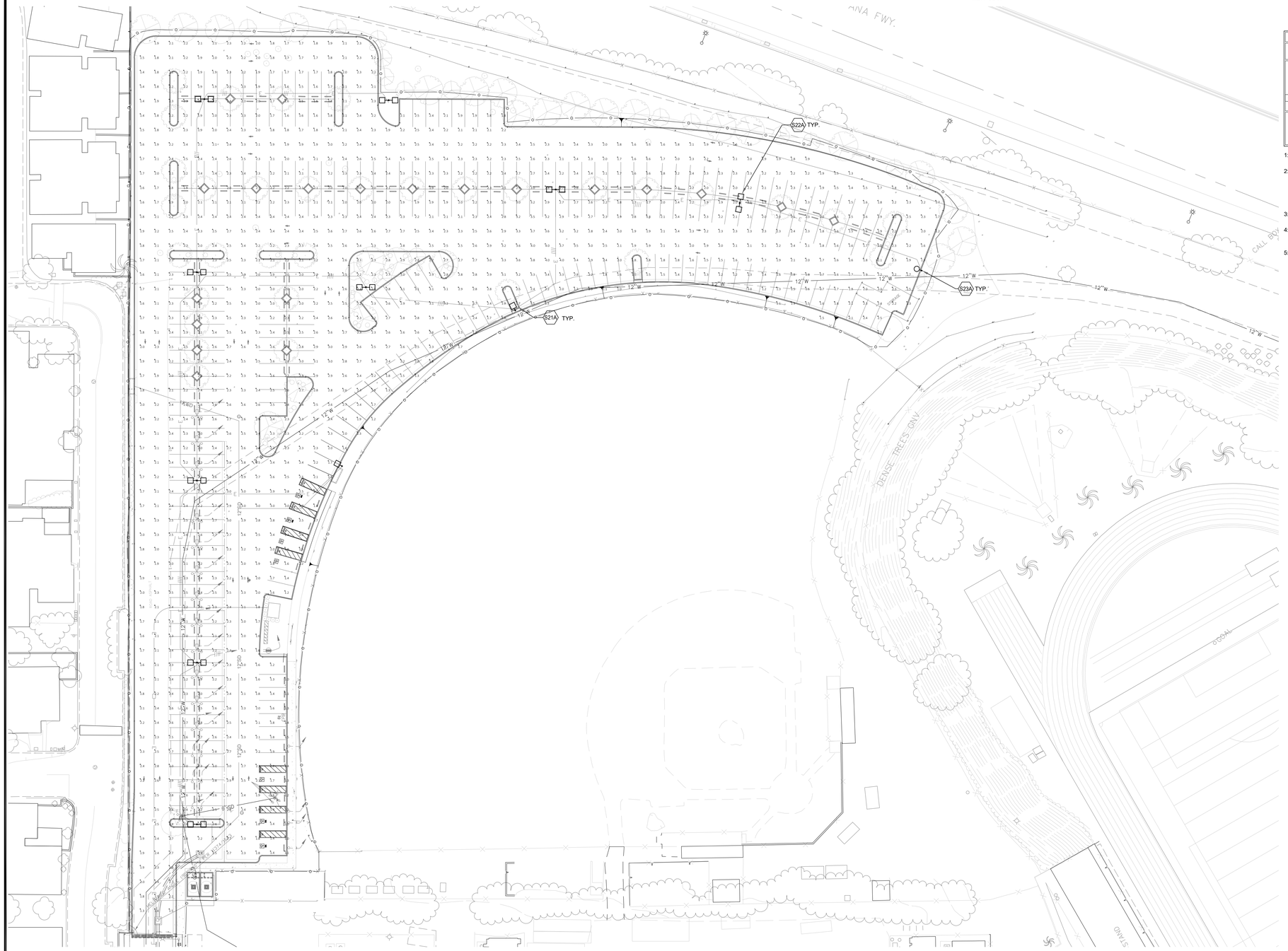
PLAN CHECK NO. *00948134-PARK*
LANDSCAPE PERMIT NO. _____ - *LCE*
SHEET 3 OF 19
JOB NO. CIP NO. 361618

| Luminaire Schedule | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Symbol | Qty | Label | Arrangement | Description | LLF | Luminaire Lumens | Luminaire Watts | Total Watts | BUG Rating |
| | 21 | P5-2 | Back-Back | LITHONIA- RSX1 LED P4 40K R5 | 0.900 | 16793 | 133.14 | 5591.88 | B4-U0-G2 |
| | 10 | P4-1 | Single | LITHONIA- RSX1 LED P4 40K R4 | 0.900 | 16573 | 133.14 | 1331.4 | B2-U0-G3 |
| | 4 | P4-1 HS | Single | LITHONIA- RSX1 LED P4 40K R4 HS | 0.900 | 10892 | 133.14 | 532.56 | B1-U0-G2 |
| | 3 | P5-1 | Single | LITHONIA- RSX1 LED P4 40K R5 | 0.900 | 16793 | 133.14 | 399.42 | B4-U0-G2 |

| Calculation Summary | | | | | | | |
|---|---|---|---|---|---|---|---|
| Label | CalcType | Units | Avg | Max | Min | Avg/Min | Max/Min |
| LOT1 | Illuminance | Fc | 2.23 | 4.1 | 1.0 | 2.23 | 4.10 |
| LOT2 | Illuminance | Fc | 2.42 | 4.4 | 1.0 | 2.42 | 4.40 |

NOTE:

THIS LIGHTING CALCULATION REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY (IES) APPROVED METHODS.




| CALGREEN MAXIMUM ALLOWABLE BACKLIGHT, UPLIGHT AND GLARE (BUG) RATINGS (SEE NOTE 1,2) | | | | | |
|---|---|---|---|---|---|
| RATING DESCRIPTIONS | FIXTURE LOCATION (MULTIPLES OF HEIGHT FROM PROPERTY LINE) | LIGHTING ZONE | | | |
| | | LZ1 | LZ2 | LZ3 | LZ4 |
| BACKLIGHT RATING (SEE NOTE 3) | > 2 (SITE FIXTURES) | No Limit | No Limit | No Limit | No Limit |
| | > 1 BUT <= 2 (SITE FIXTURES) | B2 | B3 | B4 | B4 |
| | >= 0.5 BUT <= 1 (SITE FIXTURES) | B1 | B2 | B3 | B3 |
| | < 0.5 (SITE FIXTURES) | B0 | B0 | B1 | B2 |
| UPLIGHTING RATING | FOR AREA LIGHTING (SEE NOTE 4) | U0 | U0 | U0 | U0 |
| | FOR OTHER OUTDOOR LIGHTING, INCLUDING DECORATIVE | U1 | U2 | U3 | U4 |
| GLARE RATING (SEE NOTE 5) | > 2 (BUILDING MOUNTED) | G1 | G2 | G3 | G4 |
| | > 1 BUT <= 2 (BUILDING MOUNTED) | G0 | G1 | G1 | G2 |
| | >= 0.5 BUT <= 1 (BUILDING MOUNTED) | G0 | G0 | G1 | G1 |
| | < 0.5 (BUILDING MOUNTED) | G0 | G0 | G0 | G1 |

1: IESNA LIGHTING ZONES 0 ARE NOT APPLICABLE; REFER TO LIGHTING ZONES AS DEFINED IN THE CALIFORNIA ENERGY CODE AND CHAPTER 10 OF THE CALIFORNIA ADMINISTRATIVE CODE.

2: FOR PROPERTY LINES THAT ABUT PUBLIC WALKWAYS, BIKEWAYS, PLAZAS AND PARKING LOTS, THE PROPERTY LINE MAY BE CONSIDERED TO BE 5 FEET BEYOND THE ACTUAL PROPERTY LINE FOR PURPOSE OF DETERMINING COMPLIANCE WITH THIS SECTION. FOR PROPERTY LINES THAT ABUT PUBLIC ROADWAYS AND PUBLIC TRANSIT CORRIDORS, THE PROPERTY LINE MAY BE CONSIDERED TO BE THE CENTERLINE OF THE PUBLIC ROADWAY OR PUBLIC TRANSIT CORRIDOR FOR THE PURPOSE OF DETERMINING COMPLIANCE WITH THIS SECTION.

3: IF THE NEAREST PROPERTY LINE IS LESS THAN OR EQUAL TO TWO MOUNTING HEIGHTS FROM THE BACK HEMISPHERE OF THE LUMINAIRE DISTRIBUTION, THE APPLICABLE REDUCED BACKLIGHT RATING SHALL BE MET.

4: GENERAL LIGHTING LUMINAIRES IN AREAS SUCH AS OUTDOOR PARKING, SALES OR STORAGE LOTS SHALL MEET THESE REDUCED RATINGS. DECORATIVE LUMINAIRES LOCATED IN THESE AREAS SHALL MEET U-VALUE LIMITS FOR "ALL OTHER OUTDOOR LIGHTING."

5: IF THE NEAREST PROPERTY LINE IS LESS THAN OR EQUAL TO TWO MOUNTING HEIGHTS FROM THE FRONT HEMISPHERE OF THE LUMINAIRE DISTRIBUTION, THE APPLICABLE REDUCED GLARE RATING SHALL BE MET.

1 PHOTOMETRIC SITE PLAN - LOT 1
SCALE: 1" = 30'-0"

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PLANS PREPARED BY:
WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-B2306548.000
LICENSE NO. E15610 EXP. DATE: 12/31/25


SEAL
REGISTERED PROFESSIONAL ENGINEER RAYMOND W. GRAUE No. E15610 12/31/2025 ELECTRICAL STATE OF CALIFORNIA
DATE: 09/18/25

DRAWN BY: RC
DESIGNED BY: JL
CHECKED BY: RS
RECOMMENDED:

APPROVED BY:
CITY ENGINEER
LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER SERVICE
DATE

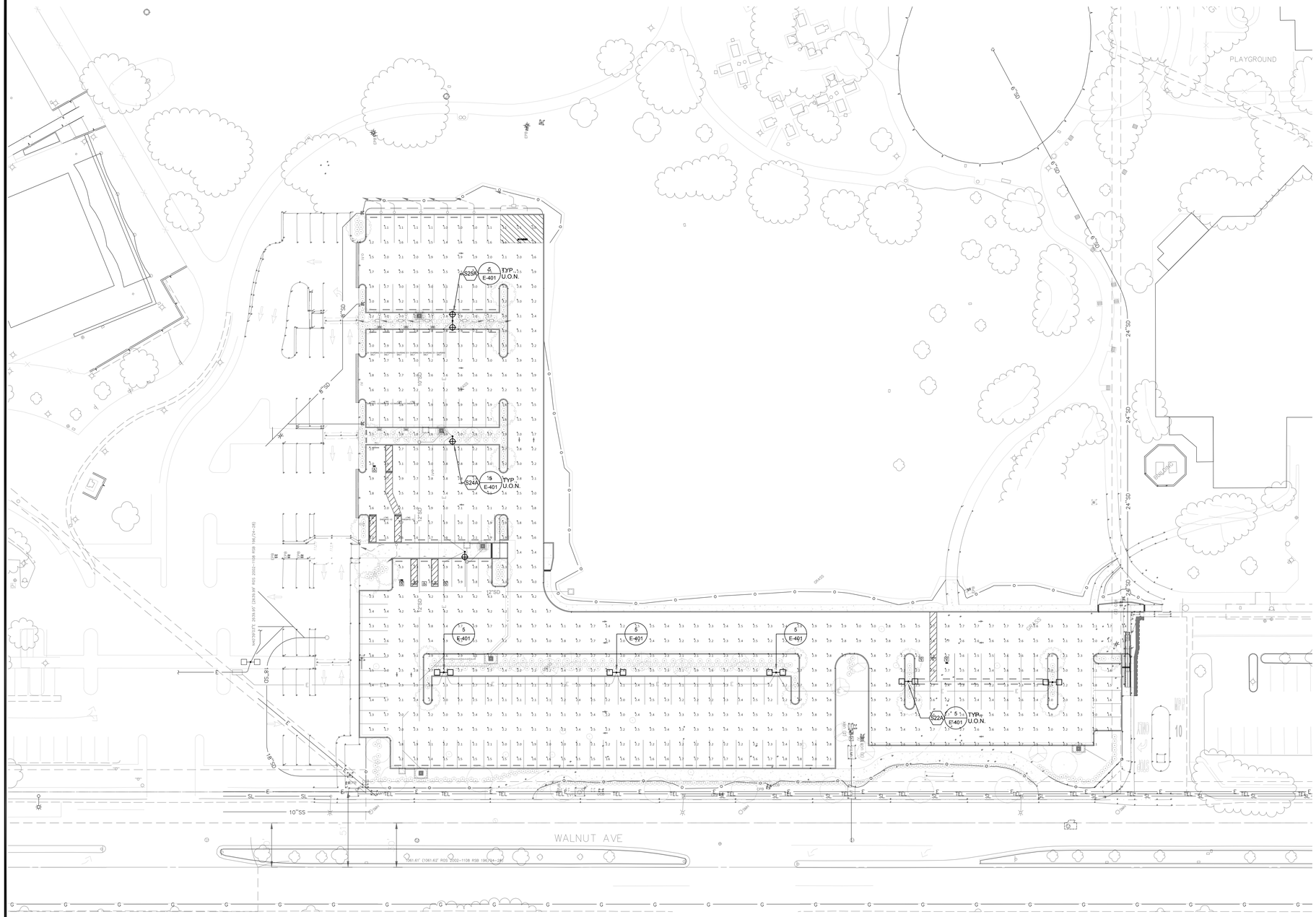
TWO HERITAGE PARK PARKING LOTS
SITE PHOTOMETRIC PLANS

CITY OF IRVINE
PUBLIC WORKS & SUSTAINABILITY DEPARTMENT

E-103

PLAN CHECK NO. 00948134-PARK
LANDSCAPE PERMIT NO. _____- LCE
SHEET 4 OF 19

JOB NO. CIP NO. 361618




1 PHOTOMETRIC SITE PLAN - LOT 2
SCALE: 1" = 30'-0"

SCALE: 1"=30'

0 15 30 60 9

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
IRVINE RANCH WATER DISTRICT
FOR RECLAIMED WATER
SERVICE

DATE

**TWO HERITAGE PARK PARKING LOTS**
**SITE PHOTOMETRIC PLANS**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

E-104

PLAN CHECK NO. *00948134-PARK*

LANDSCAPE PERMIT NO. _____- *LCE*

SHEET 5 OF 19

JOB NO. CIP NO. 361618

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
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| 6 | | | | |
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| 4 | | | | |
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |


***PLANS PREPARED BY:***
WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-B2306548.000


***SEAL***
REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. GRANDE
No. E15610
12/31/2025
STATE OF CALIFORNIA

LICENSE NO. E15610 EXP. DATE: 12/31/25 ***DATE: 09/18/25***

***DRAWN BY:*** RC
DESIGNED BY: JL
***CHECKED BY:*** RS
RECOMMENDED:

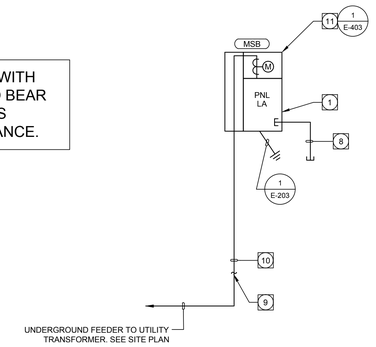
# FEEDER SCHEDULE

| FEEDER | CONDUIT AND CONDUCTORS | LOAD (A) | DISTANCE (FT) | V.D. (%) | AVAIL.FAULT CURRENT (A) | NOTES |
|---|---|---|---|---|---|---|
| MS-1A | 2-1/2"C. 3#4/0 & 1#8 GRD | (180) | 10 | 0.0 | - | NEW CONDUCTORS IN EXISTING CONDUIT |
| MS-1B | 2-1/2"C. 3#4/0 & 1#8 GRD | (180) | 185 | 0.8 | 15,160 | - |

## 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.

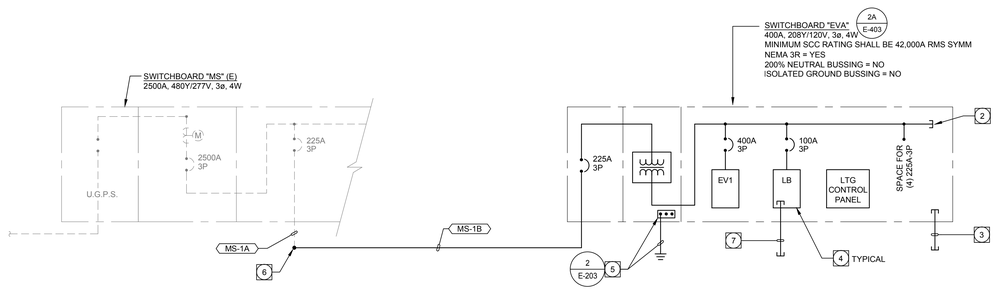
CONTRACTOR SHALL COORDINATE WITH SCE FOR METER INSTALLATION AND BEAR RESPONSIBILITY FOR POWER COSTS THROUGH FINAL PROJECT ACCEPTANCE.




## SINGLE LINE DIAGRAM (LOT 1)

SCALE: NTS

1




## SINGLE LINE DIAGRAM (LOT 2)

SCALE: NTS

2

## GENERAL SINGLE LINE DIAGRAM NOTES:

1. ALL SWITCHGEAR SHALL TO MATCH EXISTING ON CAMPUS.
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 UL IN COMBINATION WITH THE END USE EQUIPMENT AND IN THE EQUIPMENT IN WHICH THESE DEVICES ARE USED 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. NON-SERVICE ENTRANCE SWITCHBOARDS AND DISTRIBUTION BOARDS LARGER THAN 600A SHALL BE PROVIDED WITH A SOLID STATE MAIN OVERCURRENT DEVICE, IF SHOWN ON PLANS, AND WITH BUSSING RATED AT 100% OPERATION. 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, 690.64(B)(5). SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING CIRCUIT BREAKERS.
7. 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(B) & (C), 692.56, 700.8, 701.9, AND 702.8 DENOTING THE PRESENCE OF ADDITIONAL SERVICES, PHOTOVOLTAIC SYSTEMS, FUEL CELLS, EMERGENCY OR STAND-BY POWER SOURCES AS APPLICABLE.
8. 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.
9. 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.
10. 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.
11. UNLESS SPECIFICALLY SHOWN AS (E), (R), (ER), (D), EXISTING OR NON-BOLD, ALL ELECTRICAL DEVICES SHOWN ARE NEW.
12. 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.
13. SEE POWER SYSTEMS STUDY SPECIFICATION, SHEET E-203, FOR ADDITIONAL REQUIREMENTS. ALL REQUIRED POWER SYSTEMS STUDIES MUST BE COMPLETED AND SUBMITTED WITH SWITCHGEAR SUBMITTAL. FAILURE TO DO SO WILL PREVENT THE ENGINEER FROM EFFECTIVELY EVALUATING THE SUBMITTAL AND SHALL RESULT IN REJECTION OF THE SWITCHGEAR SUBMITTAL AS INCOMPLETE.

## SPECIFIC SINGLE LINE NOTES:

1. CONTRACTOR TO SUPPLY AN ARC FLASH LABEL FOR THIS INDIVIDUAL PIECE OF EQUIPMENT. USE THE "ARC FLASH PPE CATEGORIES METHOD" IN DEVELOPING THE ARC FLASH LABEL. THE SELECTION OF ARC FLASH PPE METHOD SHALL FOLLOW THE REQUIREMENTS OF NFPA 70E 2015 SECTIONS 130.7(C)(15) AND 130(C)(16). TABLE 130.7(C)(16) SHALL BE USED IN LIEU OF TABLE H.3(b) FOR THE SELECTION OF ARC-RATED CLOTHING.
2. BUSSING SHALL BE PROVIDED FOR FUTURE BUS EXTENSION TO FUTURE DISTRIBUTION SYSTEM.
3. PROVIDE (1) 4" C.O. FOR EVERY 800 AMPS OF SERVICE SIZE (MINIMUM OF ONE) STUBBED OUTSIDE OF THE SWITCHBOARD TO THE NEAREST PLANTER AREA. CAP AND MARK.
4. PANELBOARDS SHALL BE INTEGRATED INTO THE SWITCHBOARD.
5. PROVIDE GROUNDING PER NEC, OR CEC WHERE ADOPTED, 250.30. SEE TRANSFORMER SCHEDULE FOR GEC/BJ SIZING INFORMATION. SEE SEPARATELY DERIVED SYSTEM GROUNDING DETAIL FOR MORE INFORMATION.
6. INTERCEPT EXISTING CONDUIT AND EXTEND AS REQUIRED. VERIFY INTERCEPT POINT IN FIELD.
7. PROVIDE (4) 1" C.O. STUBBED OUTSIDE OF THE SWITCHBOARD TO THE NEAREST PLANTER AREA. CAP AND MARK.
8. PROVIDE (3) 1"C.O. STUBBED OUTSIDE THE PEDESTAL TO THE NEAREST PLANTER AREA. CAP AND MARK.
9. SEE SITE PLAN FOR ROUTING AND TERMINATION REQUIREMENTS.
10. INCOMING UTILITY POWER. SEE SITE PLAN FOR ADDITIONAL INFORMATION.
11. METER PEDESTAL. COORDINATE ALL WORK WITH SCE.

## LOAD CALCULATIONS:

**MSB LOAD CALCUALTIONS:**

| PANEL | CONNECTED LOAD W/LCL(VA) | FUTURE LOAD W/LCL(VA) | TOTAL LOAD W/LCL(VA) |
|---|---|---|---|
| LA | #REF! | 0 | 2702 |
| | | TOTAL LOAD = | 2702 |
| | | | 8A @ 208V, 3 PHASE |

**EVA LOAD CALCUALTIONS:**

| PANEL | CONNECTED LOAD W/LCL(VA) | FUTURE LOAD W/LCL(VA) | TOTAL LOAD W/LCL(VA) |
|---|---|---|---|
| EV1 | 112864 | 0 | 112864 |
| LB | 2873 | 0 | 2873 |
| | | TOTAL LOAD = | 115736.5 |
| | | | 322A @ 208V, 3 PHASE |
| | | | 140A @ 480V, 3 PHASE |

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
|---|---|---|---|---|
| 6 | | | | |
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| 4 | | | | |
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |


**PLANS PREPARED BY:**
WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-B2306548.000
LICENSE NO. E15610 EXP. DATE: 12/31/25


**SEAL**
REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. GRANDE
No. E15610
12/31/2025
STATE OF CALIFORNIA

**DATE: 09/18/25**

**DRAWN BY:** RC
DESIGNED BY: JL
**CHECKED BY:** RS
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

**APPROVED BY:**
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**

DATE

**E-201**

**TWO HERITAGE PARK PARKING LOTS**
**SINGLE LINE DIAGRAM**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. *00948134-PARK*

LANDSCAPE PERMIT NO. _____- *LCE*

SHEET 6 OF 19

JOB NO. CIP NO. 361618

## PANEL LA

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MOUNTING | PEDESTAL | DOUBLE LUG | NO | VOLTS | 120/240 | MAIN | 100A-2P |
| NEMA 3R | YES | 200% NEUTRAL | NO | PHASE | 1 | BUS | 100A-2P |
| FEED THRU | NO | I/G BUS | NO | WIRE | 3 | A.I.C. | 10,000 |

| NOTES | LOCATION | A | B | LTG | CONV | KIT | RECP | MISC | BKR | CIRC | | CIRC | BKR | MISC | RECP | KIT | CONV | LTG | A | B | LOCATION | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SITE LIGHTING | 789 | | 5 | | | | | 20/1 | 1 | | 2 | 20/1 | | | | | | | | SPARE | |
| | SITE LIGHTING | | 789 | 5 | | | | | 20/1 | 3 | | 4 | 20/1 | 1 | | | | | | 180 | SITE RECEPT | |
| | SITE LIGHTING | 947 | | 6 | | | | | 20/1 | 5 | | 6 | 20/1 | | | | | | | | SPARE | |
| | SITE LIGHTING | | 789 | 5 | | | | | 20/1 | 7 | | 8 | 20/1 | | | | | | | | SPARE | |
| | SPARE | | | | | | | | 20/1 | 9 | | 10 | 20/1 | | | | | | | | SPARE | |
| | SPARE | | | | | | | | 20/1 | 11 | | 12 | 20/1 | | | | | | | | SPARE | |

A= 1736 VA
PHASE A LCL= 434 VA
PHASE A W/LCL= 2170 VA

B= 1758 VA
PHASE B LCL= 395 VA
PHASE B W/LCL= 2153 VA

TOTAL VA= 3494 | TOTAL LCL= 829 | TOTAL VA W/LCL= 4323
AMPS= **18** | HIGH PHASE AMPS= **18**

## PANEL LB

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MOUNTING | SURFACE | DOUBLE LUG | NO | VOLTS | 120/208 | MAIN | 100A-3P |
| NEMA 3R | NO | 200% NEUTRAL | NO | PHASE | 3 | BUS | 100A |
| FEED THRU | NO | I/G BUS | NO | WIRE | 4 | A.I.C. | SERIES |

| NOTES | LOCATION | A | B | C | LTG | CONV | KIT | RECP | MISC | BKR | CIRC | | CIRC | BKR | MISC | RECP | KIT | CONV | LTG | A | B | C | LOCATION | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SPARE | | | | | | | | | 20/1 | 1 | 2 | 20/1 | | | | | | 5 | 768 | | | PARKING LOT LIGHTING | |
| | SPARE | | | | | | | | | 20/1 | 3 | 4 | 20/1 | | | | | | 5 | | 842 | | PARKING LOT LIGHTING | |
| | SPARE | | | | | | | | | 20/1 | 5 | 6 | 20/1 | | | | | | 4 | | | 688 | PARKING LOT LIGHTING | |
| | SPARE | | | | | | | | | 20/1 | 7 | 8 | 20/1 | | | | | | | | | | SPARE | |
| | SPARE | | | | | | | | | 20/1 | 9 | 10 | 20/1 | | | | | | | | | | SPARE | |
| | SPARE | | | | | | | | | 20/1 | 11 | 12 | 20/1 | | | | | | | | | | SPARE | |
| | SPARE | | | | | | | | | 20/1 | 13 | 14 | 20/1 | | | | | | | | | | SPARE | |
| | SPARE | | | | | | | | | 20/1 | 15 | 16 | 20/1 | | | | | | | | | | SPARE | |
| | SPARE | | | | | | | | | 20/1 | 17 | 18 | 20/1 | | | | | | | | | | SPARE | |

A= 768 VA
PHASE A LCL= 192 VA
PHASE A W/LCL= 960 VA

B= 842 VA
PHASE B LCL= 211 VA
PHASE B W/LCL= 1053 VA

C= 688 VA
PHASE C LCL= 172 VA
PHASE C W/LCL= 860 VA

TOTAL VA= 2296 | TOTAL LCL= 575 | TOTAL VA W/LCL= 2873
AMPS= **3** | HIGH PHASE AMPS= **4**

## PANEL EV1

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MOUNTING | SWBRD EVA | DOUBLE LUG | NO | VOLTS | 120/208 | MAIN | M.L.O. |
| NEMA 3R | YES | 200% NEUTRAL | NO | PHASE | 3 | BUS | 400A |
| FEED THRU | NO | I/G BUS | NO | WIRE | 4 | A.I.C. | 10,000 |

| NOTES | LOCATION | A | B | C | LTG | CONV | KIT | RECP | MISC | BKR | CIRC | | CIRC | BKR | MISC | RECP | KIT | CONV | LTG | A | B | C | LOCATION | NOTES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EV CHARGER | 5800 | | | | | | | | 70/2 | 1 | 2 | 40/2 | | | | | | | 3328 | | | EV CHARGER | |
| | ----- | | 5800 | | | | | | | -- | 3 | 4 | -- | | | | | | | | 3328 | | ----- | |
| | EV CHARGER | | | 5800 | | | | | | 70/2 | 5 | 6 | 40/2 | | | | | | | | | 3328 | EV CHARGER | |
| | ----- | 5800 | | | | | | | | -- | 7 | 8 | -- | | | | | | | 3328 | | | ----- | |
| | EV CHARGER | | 5800 | | | | | | | 70/2 | 9 | 10 | 40/2 | | | | | | | | 3328 | | EV CHARGER | |
| | ----- | | | 5800 | | | | | | -- | 11 | 12 | -- | | | | | | | | | 3328 | ----- | |
| | EV CHARGER | 5800 | | | | | | | | 70/2 | 13 | 14 | 40/2 | | | | | | | 3328 | | | EV CHARGER | |
| | ----- | | 5800 | | | | | | | -- | 15 | 16 | -- | | | | | | | | 3328 | | ----- | |
| | EV CHARGER | | | 5800 | | | | | | 70/2 | 17 | 18 | 40/2 | | | | | | | | | 3328 | EV CHARGER | |
| | ----- | 5800 | | | | | | | | -- | 19 | 20 | -- | | | | | | | 3328 | | | ----- | |
| | EV CHARGER | | 5800 | | | | | | | 70/2 | 21 | 22 | 40/2 | | | | | | | | 3328 | | EV CHARGER | |
| | ----- | | | 5800 | | | | | | -- | 23 | 24 | -- | | | | | | | | | 3328 | ----- | |
| | SPACE | | | | | | | | | | 25 | 26 | | | | | | | | | | | SPACE | |
| | SPACE | | | | | | | | | | 27 | 28 | | | | | | | | | | | SPACE | |
| | SPACE | | | | | | | | | | 29 | 30 | | | | | | | | | | | SPACE | |
| | SPACE | 3328 | | | | | | | | | 31 | 32 | | | | | | | | | | | SPACE | |
| | SPACE | | | | | | | | | | 33 | 34 | | | | | | | | | | | SPACE | |
| | SPACE | | | | | | | | | | 35 | 36 | | | | | | | | | | | SPACE | |
| | SPACE | | | | | | | | | | 37 | 38 | | | | | | | | | | | SPACE | |
| | SPACE | | | | | | | | | | 39 | 40 | | | | | | | | | | | SPACE | |
| | SPACE | | | | | | | | | | 41 | 42 | | | | | | | | | | | SPACE | |

A= 39840 VA
PHASE A LCL= 0 VA
PHASE A W/LCL= 39840 VA

B= 36512 VA
PHASE B LCL= 0 VA
PHASE B W/LCL= 36512 VA

C= 36512 VA
PHASE C LCL= 0 VA
PHASE C W/LCL= 36512 VA

TOTAL VA= 112864 | TOTAL LCL= 0 | TOTAL VA W/LCL= 112864
AMPS= **314** | HIGH PHASE AMPS= **332**

## 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, 240.86(B).
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), OR FURNITURE SYSTEM NEC OR CEC WHERE ADOPTED, 605.5 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 PERMANENT LOCK-OFF DEVICE THAT SHALL REMAIN IN PLACE WITH OR WITHOUT THE LOCK INSTALLED, PER NEC, OR CEC WHERE ADOPTED, SECTION 110.25.

"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),(C).

## PANEL SCHEDULE INDEX

| | | |
|---|---|---|
| LA | LB | - |
| EV1 | - | - |
| - | - | |

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

APPROVED BY:
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**

DATE

| NO. | DATE | REVISIONS | CITY OF IRVINE APP. | DATE |
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**PLANS PREPARED BY:**
WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-B2306548.000

LICENSE NO. E15610 EXP. DATE: 12/31/25

**SEAL**
REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SPRATT
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

**DATE: 09/18/25**

**DRAWN BY:** RC
DESIGNED BY: JL
**CHECKED BY:** RS
RECOMMENDED:

**TWO HERITAGE PARK PARKING LOTS**
**PANEL SCHEDULES**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

**E-202**

PLAN CHECK NO. *00948134-PARK*
LANDSCAPE PERMIT NO. _____- *LCE*
SHEET 7 OF 19
JOB NO. CIP NO. 361618

## 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 SPECIFICATIONS 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 COORDINATION 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 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/CM²) 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/CM². 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/CM²), 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/CM²) 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.

## TRANSFORMER SCHEDULE

| NAME | KVA | WINDING MATERIAL | INPUT | | | OUTPUT | | | MIN %Z | A.I.C. VALUE | K VAL. | GEC/BJ SIZE | REDUCED SOUND LEVEL | NEMA/ MNTG. | DIMENSIONS | | | WGT. | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | V | P | W | V | P | W | | | | | | | H | W | D | | |
| EVA | 150 | ALUMINUM | 480 | 3 | 3 | 120/208 | 3 | 4 | 4 | 10,408 | N/A | 3/4"C, #2/0 | 3R | - | 51 | 38 | 33 | 1239 | - |

## TRANSFORMER SYSTEM SPECIFICATIONS:

1. TRANSFORMERS SHALL BE DRY TYPE, INTEGRAL, SELF-COOLED, ENCLOSED DISTRIBUTION, TWO-WINDING TYPE PER UL 506. TRANSFORMERS SHALL BE PROVIDED WITH WINDINGS AS SPECIFIED IN THE TRANSFORMER SCHEDULE. EACH TRANSFORMER MUST UNDERGO RESISTANCE, IMPEDANCE AND RATIO TESTING, THE RESULTS OF WHICH SHALL BE PROVIDED AS PART OF THE TRANSFORMER SUBMITTAL PACKAGE.

2. TRANSFORMERS SHALL BE EQUIPPED WITH TWO (2) 2 1/2% FCAN AND TWO (2) 2 1/2% FCBN TAPS. TAP LEADS SHALL BE TERMINATED ON AN INTERNAL BLOCK WITH LUGS FOR CONNECTION OF INCOMING CONDUCTORS. THE TERMINAL COMPARTMENT SHALL BE LOCATED BELOW THE LEVEL OF THE TRANSFORMER WINDINGS. PROVIDE ACCESS TO TERMINALS FROM THE FRONT FOR WALL AND FLOOR MOUNTED TRANSFORMERS, AND FROM THE FRONT AND BOTTOM FOR SUSPENDED TRANSFORMERS.

3. VENTILATION OPENINGS SHALL BE LOCATED TO PERMIT PLACING THE TRANSFORMER IN A CORNER WITHIN 6" OF THE TWO ADJACENT WALLS. ENCLOSURE SHALL BE CONSTRUCTED OF HEAVY GAUGE STEEL, COATED INSIDE AND OUT WITH ZINC-CHROMATE OR IRON OXIDE RUST INHIBITING PRIMER. ENCLOSURE SHALL THEN BE FINISHED IN GRAY ENAMEL. EACH TRANSFORMER SHALL BE FURNISHED WITH A MANUFACTURER'S NAMEPLATE LOCATED ON THE FRONT OF THE UNIT. THE NAMEPLATE SHALL BE ANODIZED ALUMINUM STENCILED WITH VOLTAGE, KVA RATING, K-RATING, PHASE, TAP ADJUSTMENTS AND WIRING DIAGRAMS.

4. SEISMICALLY-RATED VIBRATION ISOLATORS (KORFUND COMPANY, MASON INDUSTRIES, CALDYN OR EQUAL) SHALL BE LOCATED AT EACH CORNER OF THE TRANSFORMER. ELASTOMER PADS MAY BE USED FOR ISOLATION OF TRANSFORMERS 1) WEIGHTING LESS THAN 1000 LBS AND 2) THAT ARE NOT SPECIFIED WITH REDUCED SOUND LEVELS PER THE TRANSFORMER SCHEDULE. ELASTOMER PADS SHALL BE EQUIPPED WITH SHOULDERED BUSHINGS PREVENTING METAL-TO-METAL CONTACT BETWEEN ANCHOR BOLT AND THE TRANSFORMER. NEOPRENE ISOLATORS SHALL BE USED FOR TRANSFORMERS WEIGHING 1000 LBS OR MORE OR ANY TRANSFORMER SPECIFIED WITH REDUCED SOUND LEVEL OUTPUT PER THE TRANSFORMER SCHEDULE. NEOPRENE ISOLATORS SHALL HAVE CAPTIVE STEEL OR DUCTILE IRON HOUSINGS AS REQUIRED BY SEISMIC CONDITIONS AND WEIGHT OF THE TRANSFORMER. NEOPRENE ELEMENTS SHALL BE ARRANGED IN OPPOSITION TO PROVIDE POSITIVE MECHANICAL RESTRAINT IN ALL DIRECTIONS. NEOPRENE ISOLATORS SHALL BE SELECTED TO PROVIDE NOMINAL 0.2" OF NOMINAL STATIC DEFLECTION IN COMPRESSION (0.15" MINIMUM DEFLECTION) AND LESS THAN 70 DUROMETER (BASED ON SHORE SCALE A AND IN COMPLIANCE WITH ASTM D2240 TYPE A) TO LIMIT SOUND/VIBRATION TRANSMISSION TO THE STRUCTURE - SUBMIT ISOLATOR DEFLECTION CALCULATIONS FOR SELECTED ISOLATORS WITH TRANSFORMER SUBMITTAL. TRANSFORMER SHALL BE BOLTED, VIA VIBRATION ISOLATORS, TO THE FLOOR, HOUSEKEEPING PAD, CEILING OR WALL MOUNTING BRACKETS AT ALL FOUR CORNERS. WHEN SHOWN AS WALL-MOUNTED, PROVIDE EITHER MANUFACTURER'S STANDARD TRANSFORMER WALL MOUNTING BRACKETS OR FIELD-FABRICATED MOUNTING SYSTEMS. TRANSFORMER INSTALLATIONS SHALL, AT MINIMUM, MEET THE SEISMIC BRACING AND ANCHORAGE REQUIREMENTS MANDATED BY GOVERNING BUILDING CODES. SEE GENERAL ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

5. STANDARD TRANSFORMERS SHALL HAVE CLASS 220 INSULATION, HAVING A 150 DEGREE CELSIUS TEMPERATURE RISE ABOVE 30 DEGREE CELSIUS AVERAGE AND 40 DEGREE CELSIUS MAXIMUM, WHEN OPERATING AT FULL LOAD - WITHOUT A LOSS OF LIFE. STANDARD TRANSFORMERS SHALL COMPLY WITH NEMA ENERGY EFFICIENCY STANDARD "TP-1". WHERE TRANSFORMER STOCKS BECOME DEPLETED, INCLUDE ALL COSTS IN BASE BID TO PROVIDE 2016 DEPARTMENT OF ENERGY (DOE) TRANSFORMER EFFICIENCY STANDARD-COMPLIANT TRANSFORMERS.

6. K RATED TRANSFORMERS SHALL HAVE CLASS 220 INSULATION, HAVING A 115 DEGREE CELSIUS TEMPERATURE RISE ABOVE 30 DEGREE CELSIUS AVERAGE AND 40 DEGREE CELSIUS MAXIMUM, WHEN OPERATING AT FULL LOAD - WITHOUT A LOSS OF LIFE. K RATED TRANSFORMERS SHALL COMPLY WITH NEMA ENERGY EFFICIENCY STANDARD "TP-1". WHERE TRANSFORMER STOCKS BECOME DEPLETED, INCLUDE ALL COSTS IN BASE BID TO PROVIDE 2016 DEPARTMENT OF ENERGY (DOE) TRANSFORMER EFFICIENCY STANDARD-COMPLIANT TRANSFORMERS.

7. USE FLEXIBLE CONDUIT FOR PRIMARY AND SECONDARY CONNECTIONS WITH A SEPARATE EQUIPMENT GROUND CONDUCTOR.

8. THE "MIN. %Z" COLUMN INDICATES THE MINIMUM ALLOWED TRANSFORMER IMPEDANCE.

9. THE "A.I.C. VALUE" COLUMN INDICATES THE INTERRUPTING CURRENT AT THE SECONDARY TERMINALS BASED UPON AN INTERRUPTING CURRENT OF INFINITY AT THE PRIMARY TERMINALS.

10. THE "K VALUE" COLUMN INDICATES THE MINIMUM UL APPROVED K RATING. K RATED TRANSFORMERS SHALL BE PROVIDED WITH DOUBLE SIZE NEUTRAL TERMINALS, ADDITIONAL COIL CAPACITY, AN ELECTROSTATIC SHIELD, AND SHALL BE U.L. LISTED FOR NON-LINEAR LOADS.

11. THE "GEC/BJ SIZE" COLUMN INDICATES THE MINIMUM CONDUIT AND COPPER GROUNDING ELECTRODE CONDUCTOR AND BONDING JUMPER SIZES. THE G.E.C. AND CONDUIT SIZE SHALL BE INCREASED PER NEC OR CEC WHERE ADOPTED, TABLE 250.66 BY THE CONTRACTOR BASED ON EQUIVALENT SIZE OF THE TRANSFORMER SECONDARY CONDUCTORS.

12. WHEN THE TRANSFORMER SCHEDULE INDICATES A "REDUCED SOUND LEVEL" TRANSFORMER, PROVIDE A TRANSFORMER THAT PRODUCES 3 DECIBELS LESS SOUND AS COMPARED TO NEMA STANDARD SOUND LEVELS. WHEN REDUCED SOUND LEVEL TRANSFORMER IS NOT INDICATED, PROVIDE A TRANSFORMER THAT MEETS NEMA STANDARD SOUND LEVELS, WHICH ARE:

10-50 KVA - 45 DECIBELS.
51-150 KVA - 50 DECIBELS.
151-300 KVA - 55 DECIBELS.
301-500 KVA - 60 DECIBELS.

13. THE "NEMA/MNTG" COLUMN INDICATES THE NEMA RATED ENCLOSURE TYPE AS WELL AS THE MOUNTING METHOD:

"1" - INDICATES AN INDOOR TYPE.
"3" - INDICATES AN NEMA 3R, OUTDOOR TYPE WITH VENTILATED OPENINGS AND RODENT/TAMPER SCREENS.
"F" - INDICATES FLOOR MOUNTED.
"W" - INDICATES WALL MOUNTED.
"RF" - INDICATES RAISED FLOOR MOUNTING WHICH REQUIRES A CUSTOM MOUNTING FRAME SUCH THAT THE RAISED FLOOR DOES NOT SUPPORT THE TRANSFORMER(S). SUGGESTED SOURCE: MASON WEST INC. (www.masonwest.com)

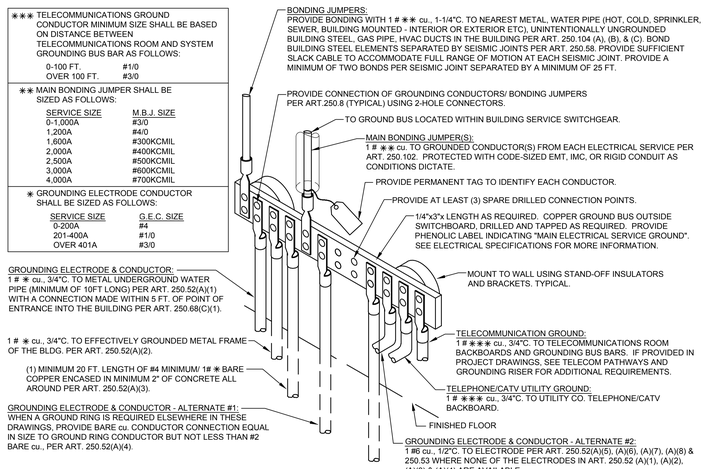
14. THE "DIMENSIONS" COLUMN INDICATES "H" HEIGHT, "W" WIDTH, AND "D" DEPTH. ALL DIMENSIONS AND WEIGHTS ARE BASED UPON SQUARE D PRODUCTS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST IMPACTS OF LARGER DIMENSIONS FROM AN ALTERNATE MANUFACTURER.

15. TRANSFORMERS SHALL BE GROUNDED TO A CODE APPROVED GROUND SOURCE PER NEC, OR CEC WHERE ADOPTED, ARTICLE 250.30.

16. IF THE SINGLE LINE DIAGRAM INDICATES TWO (2) SECONDARY FEEDERS THE TRANSFORMER SHALL BE PROVIDED WITH A DOUBLE LUG KIT.

17. SHOP DRAWINGS SHALL BE SUBMITTED PER THE ELECTRICAL SUBMITTAL REQUIREMENTS SHOWING CONFORMANCE TO THESE SPECIFICATIONS.

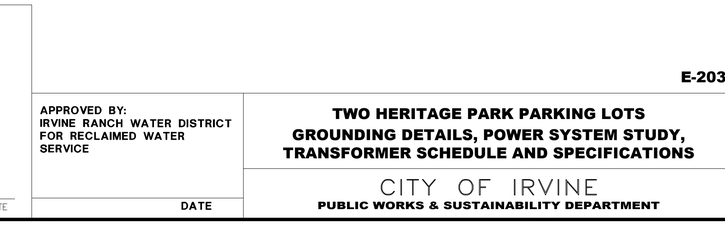
18. TRANSFORMERS SHALL BE MANUFACTURED BY GE, CUTLER-HAMMER, SIEMENS, SQUARE D, MGM, HAMMOND POWER SOLUTIONS, OR OLSEN.




## MAIN SERVICE SYSTEM GROUNDING DETAIL

SCALE: NTS

1


✱ GROUNDING ELECTRODE CONDUCTOR/BONDING JUMPER SHALL BE SIZED AS FOLLOWS:
SEE RESPECTIVE SYSTEM/DEVICE SCHEDULE FOR G.E.C. SIZE.
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).
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) 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).
NEUTRAL BUS WITHIN EQUIPMENT.
PROVIDE CONNECTION OF GROUNDING CONDUCTORS/BONDING JUMPERS PER ART.250.8.
EQUIPMENT GROUNDING CONDUCTOR (EGC):
EGC, SIZED PER TABLE 250.122. INCLUDED IN FEEDER TO NEXT DEVICE. SEE FEEDER SCHEDULE.
WHEN SEPARATELY DERI

## 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 NOTIFY THE ELECTRICAL ENGINEER AND/OR LIGHTING CONSULTANT OF ANY PROVISIONS OF THE SPECIFICATION THAT IS IN CONFLICT WITH LOCALLY ENFORCED CODES.
4. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY REQUIRED MODIFICATIONS THAT ARE NOT SHOWN ON THE DRAWINGS.
5. ALL ELECTRICAL MATERIAL SHALL BE IN NEW & UNDAMAGED CONDITION WHEN INSTALLED. ALL EQUIPMENT SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
6. 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.
7. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND ELEVATION OF ALL LIGHTING FIXTURES AND ASSOCIATED DEVICES AND EQUIPMENT.
8. 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 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 TO INCLUDE AIMING/ADJUSTING LABOR 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.
6. 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. AIMING/ADJUSTING LABOR SHALL BE PREPARED FOR WORK WITH COMMON HAND TOOLS TO MAKE ADJUSTMENTS AND MINOR REPAIRS DURING AIMING.
7. 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. PROVIDE COMPLETE MANUFACTURER SHOP DRAWINGS OF BUILT-IN COVE OR LINEAR LIGHTING SYSTEMS.
8. CONTRACTOR TO REPLACE ALL INOPERATIVE LAMPS, LED ARRAYS OR SYSTEMS AT THE END OF THE CONSTRUCTION PHASE PRIOR TO THE FOCUS AND PROGRAMMING PHASE AND AGAIN PRIOR TO OWNER OCCUPANCY OR PROJECT OPENING.
9. 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.
10. 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(S). 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) TRANSFORMER(S), AND INTEGRAL EMERGENCY BATTERIES AND TEST SWITCHES. ANY LIGHTING FIXTURE SUBMITTAL PROVIDED WITHOUT SPECIFIC LIGHTING FIXTURE'S ACCESSORIES, BALLAST, POWER SUPPLY, DRIVER, TRANSFORMER OR BATTERY 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 OR LED 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 PHOTOMETRIC CALCULATION 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 PHOTOMETRIC CALCULATION 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. DURING THE BIDDING PROCESS, THE CONTRACTOR SHALL REFER TO THE LIGHTING FIXTURE SCHEDULES ON THE ARCHITECTURAL PLANS (IF PROVIDED ON PROJECT), LIGHTING DESIGN PLANS/SPECIFICATIONS (IF PROVIDED ON PROJECT), AND THE ELECTRICAL PLANS. ANY DISCREPANCIES BETWEEN THEM INCLUDING, BUT NOT LIMITED TO, PART NUMBERS AND FIXTURE DESCRIPTIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT, ELECTRICAL ENGINEER, AND LIGHTING DESIGNER WITH PRE-BID RFI(S). WHERE DISCREPANCIES ARE DISCOVERED WHEN THERE IS INSUFFICIENT TIME TO ISSUE PRE-BID RFI(S), THE BASE BID SHALL INCORPORATE THE MOST COSTLY VERSION OF THE DISCREPANCY AND SHALL BE MEMORIALIZED IN AN RFI OR AS A BID CLARIFICATION. PROVIDING A VOLUNTARY DEDUCTIVE ALTERNATE BID CLARIFYING FIXTURE SCHEDULE DISCREPANCIES IS ALSO AN ACCEPTABLE FORM OF DISCREPANCY DOCUMENTATION.
5. FIXTURE FINISHES:
   a. ALL FIXTURE FINISHES AND COLORS, UNLESS NOTED AS PREMIUM OR CUSTOM, SHALL BE SELECTED FROM THE MANUFACTURERS STANDARD COLOR OPTIONS AS LISTED ON THE FIXTURE SPECIFICATION SHEET. STANDARD FINISH SHALL BE SELECTED BY THE ARCHITECT, INTERIOR DESIGNER OR OWNER. THIS DIRECTION WILL BE PROVIDED IN THE SHOP DRAWING REVIEW PROCESS.
   b. ALL FIXTURES INDICATED WITH A PREMIUM OR CUSTOM COLOR SHALL BE ASSIGNED A CUSTOM COLOR REFERENCE NUMBER (SUCH AS RAL#) OR PROVIDE FIVE (5) PAINT CHIPS FOR MANUFACTURER TO USE TO MATCH COLOR. PREMIUM OR CUSTOM FINISH SHALL BE SELECTED BY THE ARCHITECT, INTERIOR DESIGNER OR OWNER. THIS DIRECTION WILL BE PROVIDED IN THE SHOP DRAWING REVIEW PROCESS.
6. THE LIGHTING FIXTURE MODEL NUMBER MAY 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. GENERALLY, CONTRACTOR-SELECTED OPTIONS ARE DENOTED IN THE PART NUMBER WITH BRACKETS EX: [VOLTS7]
   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 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.

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.
   b. PRIOR TO BID CONTRACTOR TO VERIFY DRIVER COMPATIBILITY WITH DIMMERS, DIMMING CONTROL SYSTEM(S) AND DISTRIBUTED 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.
   c. CONTINUOUS LED DIMMING DRIVERS SHALL BE AT MINIMUM 4-WIRE 0-10V 10% DIMMING (HOT, NEUTRAL, DIM+, DIM-).

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 / CHARGE LIGHT OPTION FOR ALL EMERGENCY BATTERY PACKS INSTALLED IN LIGHT FIXTURES.
   b. 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.
   c. ALL BATTERY PACKS AND ALL COMBINATION LED BATTERY PACK/EMERGENCY DRIVERS SHALL BE UL924 LISTED.
   d. PRIOR TO BID, CONTRACTOR SHALL VERIFY WITH FIXTURE MANUFACTURER(S) THAT EMERGENCY BATTERY PACKS ARE MANUFACTURED TO BE INTEGRAL TO FIXTURE HOUSINGS.
   e. SHOULD THE SPECIFIED LED EMERGENCY BATTERY PACK(S) NOT FIT WITHIN A GIVEN FIXTURE(S) OR SHOULD THE FIXTURE NOT BE MANUFACTURED TO ACCOMMODATE A BATTERY PACK, CONTRACTOR SHALL INCLUDE ALL COSTS IN BASE BID TO LOCATE/CONNECT SELF-TESTING MINI INVERTER(S) (IOTA #ILS SERIES OF BODINE#ELI-S-[WATT?]) REMOTELY FROM THE FIXTURE(S) IN THE NEAREST ELECTRICAL ROOM OR TO LOCATE EMERGENCY BATTERY PACK(S) REMOTELY FROM THE FIXTURE ABOVE THE NEAREST ACCESSIBLE CEILING.
   f. LED BATTERY PACKS SHALL PROVIDE A MINIMUM OF 90 MINUTES OF EMERGENCY ILLUMINATION, AND SHALL BE RATED AT A MINIMUM OF 10 WATTS, OR AS SPECIFIED. WHERE A FIXTURE TYPE IS UNAVAILABLE WITH A 10W BATTERY PACK OR WHERE THE WATTAGE IS NOT SPECIFIED ON THE PLANS, INCLUDE ALL COST IN BASE BID TO PROVIDE THE HIGHEST WATTAGE AVAILABLE ON THE FIXTURE CUTSHEET. ANY LISTED EQUAL FIXTURE OR ANY SUBSTITUTION OFFERED BY THE CONTRACTOR MUST ALSO HAVE BATTERY PACKS CAPABLE OF PRODUCING THE SAME OR MORE LUMENS WHEN ON BATTERY AS OUTLINED ABOVE. ACCEPTABLE MANUFACTURES: BODINE OR IOTA.
   g. TO MAINTAIN UL LISTING OF LED FIXTURE, FIXTURE MANUFACTURER(S) SHALL INSTALL LED EMERGENCY BATTERY PACKS AT THE FACTORY AND OBTAIN A UL LISTING FOR THE FIXTURE WITH EMERGENCY BATTERY PACK. FIELD-INSTALLATION OF LED EMERGENCY BATTERY PACK(S) IS PROHIBITED.
   h. PROVIDE DAMP LOCATION VERSION IN ALL DAMP LABEL INSTALLATIONS.

## LIGHTING FIXTURE SCHEDULE

| SYMBOL | TYPE | MANUFACTURER AND MODEL NUMBER | FIXTURE VA/ WATTS | LAMP/ LAMP OPTION | GENERAL DESCRIPTION |
|---|---|---|---|---|---|
| | S21A | BEACON SINGLE HEAD<br>RAR2-320L-165-4K7-4W-UNV-ASQ-PSS<br>POLE: SSS-B-30-50-B-1-PSS-B3-EHH<br>EQUAL BY:<br>NONE - CITY STANDARD | 153.6 | LED/4000 | SINGLE LED LUMINAIRE, POLE MOUNTED AT 32'-6" AFF, WITH EXTRUDED ALUMINUM HOUSING AND BI-LEVEL MOTION SENSOR. 21,310 RATED LUMENS.<br>PROVIDE 30' SQUARE STEEL POLE. PLATINUM SILVER FINISH.<br>SEE DETAIL 5/E-401 FOR MOUNTING REQUIREMENTS.<br>- |
| | S22A | BEACON TWIN 180 ARM MOUNT<br>RAR2-320L-165-4K7-4W-UNV-ASQ-PSS<br>POLE: SSS-B-30-50-B-1-PSS-B3-EHH<br>EQUAL BY:<br>NONE - CITY STANDARD | 153.6 EACH | LED/4000 | DOUBLE LED LUMINAIRE, POLE MOUNTED AT 32'-6" AFF, WITH EXTRUDED ALUMINUM HOUSING AND BI-LEVEL MOTION SENSOR. 21,310 RATED LUMENS EACH.<br>PROVIDE 30' SQUARE STEEL POLE. PLATINUM SILVER FINISH.<br>SEE DETAIL 5/E-401 FOR MOUNTING REQUIREMENTS.<br>- |
| | S23A | BEACON SINGLE HEAD<br>RAR2-480L-165-4K7-4W-UNV-ASQ-PSS<br>POLE: SSS-B-30-50-B-1-PSS-B3-EHH<br>EQUAL BY:<br>NONE - CITY STANDARD | 174.5 | LED/4000 | SINGLE LED LUMINAIRE, POLE MOUNTED AT 32'-6" AFF, WITH EXTRUDED ALUMINUM HOUSING AND BI-LEVEL MOTION SENSOR. 26,636 RATED LUMENS.<br>PROVIDE 30' SQUARE STEEL POLE. PLATINUM SILVER FINISH.<br>SEE DETAIL 5/E-401 FOR MOUNTING REQUIREMENTS.<br>- |
| | S24A | BEACON SINGLE HEAD<br>RAR2-480L-240-4K7-4W-UNV-ASQ-PSS<br>POLE: SSS-B-30-50-B-1-PSS-B3-EHH<br>EQUAL BY:<br>NONE - CITY STANDARD | 226.9 | LED/4000 | SINGLE LED LUMINAIRE, POLE MOUNTED AT 32'-6" AFF, WITH EXTRUDED ALUMINUM HOUSING AND BI-LEVEL MOTION SENSOR. 29,840 RATED LUMENS.<br>PROVIDE 30' SQUARE STEEL POLE. PLATINUM SILVER FINISH.<br>SEE DETAIL 5/E-401 FOR MOUNTING REQUIREMENTS.<br>- |
| | S25A | BEACON TWIN180 ARM MOUNT<br>RAR2-480L-240-4K7-4W-UNV-ASQ-PSS<br>POLE: SSS-B-30-50-B-1-PSS-B3-EHH<br>EQUAL BY:<br>NONE - CITY STANDARD | 226.9 EACH | LED/4000 | DOUBLE LED LUMINAIRE, POLE MOUNTED AT 32'-6" AFF, WITH EXTRUDED ALUMINUM HOUSING AND BI-LEVEL MOTION SENSOR. 29,840 RATED LUMENS.<br>PROVIDE 30' SQUARE STEEL POLE. PLATINUM SILVER FINISH.<br>SEE DETAIL 5/E-401 FOR MOUNTING REQUIREMENTS.<br>- |
| SEE GENERAL LIGHTING FIXTURE SCHEDULE NOTES FOR CRITICAL FIXTURE SPECIFICATION AND ORDERING INFORMATION. | | | | | |

| NO. | DATE | REVISIONS | APP. | DATE |
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CITY OF IRVINE

**PLANS PREPARED BY:**
WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-B2306548.000
LICENSE NO. E15610 EXP. DATE: 12/31/25

**SEAL**
REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWARTZ
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

**DATE: 09/18/25**

**DRAWN BY:** RC
DESIGNED BY: JL
**CHECKED BY:** RS
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

**APPROVED BY:**
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**
**DATE**

**E-301**

**TWO HERITAGE PARK PARKING LOTS**
**LIGHTING FIXTURE SCHEDULE**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. 00948134-PARK
LANDSCAPE PERMIT NO. _____-LCE
SHEET 9 OF 19

JOB NO. CIP NO. 361618

| AREA TYPE | OCC SENSOR | | | | | INTERIOR DAYLIGHT SENSOR | | | EXTERIOR PHOTOCELL | | ASTRONOMICAL TIME CLOCK CONTROLS | | | LOCAL CONTROL | | | SYSTEM | | NOTES | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL VALUES ARE BASED ON CALIFORNIA TITLE 24 2022 LIGHTING CONTROLFOR NON-RESIDENTIAL BUILDINGS | AUTO ON WHEN OCCUPANCY DETECTED (PERCENTAGE OF NOMINAL CL) | MANUAL ON (WHEN SWITCH / BUTTON IS PRESSED) | PRIMARY OCCUPANCY SENSOR ZONE REDUCED OUTPUT OR OFF | REDUCED OUTPUT OR OFF DURING NORMAL HOURS | REDUCED OUTPUT OR OFF AFTER NORMAL HOURS | AUTO OFF AT TARGET FC FIXTURES DIM TO OFF | AUTO DIM AT TARGET FC FIXTURES REMAIN ON AT LOWEST LEVEL | TARGET ILLUMINATION LEVEL NOMINAL FOOTCANDLE & METER HEIGHT | EXTERIOR PHOTOCELL ON | EXTERIOR PHOTOCELL OFF | BEGIN NORMAL OPERATING HOURS (ASTRONOMICAL TIME CLOCK TURN ON) | END NORMAL OPERATING HOURS (ASTRONOMICAL TIME CLOCK TURN OFF) | AFTER NORMAL HOURS OVERRIDE CANNOT EXCEED 2 HOURS PER §130.1(c)3.B | ON / OFF | ON / OFF / RAISE / LOWER DIMMING | SCENE SELECTOR SCENE REQUIREMENTS: (1) SCENE GEN. LTG ONLY "NO DECORATIVE (1) SCENE ALL OFF OR "CLOSED" | PLUG LOAD CONTROL MUST BE CAPABLE OF TURNING OFF IN RESPONSE TO DEMAND RESPONSE SIGNAL | DEMAND RESPONSE LIGHTING REDUCTION FOR SYSTEMS HAVING >4.0000W LIGHTING POWER REFER TO TITLE 24 DOCUMENTATION TO CONFIRM IF REQ'D | PROGRAMMING NOTES PLEASE SEE BELOW | PLEASE REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.<br><br>O = INDICATES OPTIONAL COMPLIANCE, NOT REQ'D.<br>● = INDICATES REQUIRED COMPLIANCE<br><br>ALL LIGHTING WITHIN DAYLIGHTING ZONES SHALL BE COMMISSIONED AT NIGHT, WITH NO DAYLIGHT CONTRIBUTION, IN ORDER TO ESTABLISH BASELINE ILLUMINATION LEVELS.<br><br>"NORMAL HOURS" REFERS TO OWNER-DETERMINED OPERATING HOURS.<br><br>"AFTER HOURS" REFERS TO ANY TIME PERIOD BEFORE OR AFTER OWNER-DETERMINED OPERATING HOURS.<br><br>WHERE EXTERIOR PHOTOCELL CONTROL IS INDICATED, PLEASE PROVIDE EXTERIOR NORTH FACING DAYLIGHT SENSOR. |
| EXTERIOR LIGHTING, TIMECLOCK / PHOTOCELL CONTROL | | | | | | | | | | | | | | | | | | | | |
| EXTERIOR LIGHTING >24 FT TALLER THAN 24 FT | - | - | - | - | - | - | - | - | ● | - | PERIOD 1: ON 100% AT DUSK - PERIOD 2: DIM 80% AT 24:00 | OFF AT DAWN | ● | - | - | - | - | - | J, L, M | §130.2(c) LIGHTS SHALL BE OFF DURING DAYTIME; LIGHTS SHALL BE AUTOMATICALL CONTROLLED BY TIME-BASED SCHEDULING CONTROLS. §130.2(c)2B - AUTOMATIC SCHEDULING CONTROLS SHALL ALLOW SCHEDULING OF MIN. OF TWO NIGHTTIME PERIODS WITH INDEPENDENT LIGHTING LEVELS....<br><br>OCCUPANCY SENSOR NOT REQUIRED |
| EXTERIOR LIGHTING ≤24 FT & >40W 24 FT OR SHORTER 40W OR MORE | ON AT 100% | ON AT 100% | PERIOD 1: 50% 10 MIN. PERIOD 2: 40% 10 MIN. | - | - | - | - | - | ● | - | PERIOD 1: ON 100% AT DUSK - PERIOD 2: DIM 40% AT 24:00 | OFF AT DAWN | ● | - | - | - | - | - | B,J, M | §130.2(c) LIGHTS SHALL BE OFF DURING DAYTIME; LIGHTS SHALL BE AUTOMATICALL CONTROLLED BY TIME-BASED SCHEDULING CONTROLS. §130.2(c)2B - AUTOMATIC SCHEDULING CONTROLS SHALL ALLOW SCHEDULING OF MIN. OF TWO NIGHTTIME PERIODS WITH INDEPENDENT LIGHTING LEVELS....<br>§130.2(c)3Di - FACADE, ORNAMENTAL HARDSCAPE, OUTDOOR DINING AND SALES FRONTAGE LIGHTING ARE EXEMPT FROM MOTION SENSOR REQUIREMENT.<br><br>OCCUPANCY SENSOR REQUIRED; LIGHTING SHALL REMAIN ON FROM DUSK UNTIL DAWN, REDUCED OUTPUT BETWEEN 40% AND 80% WHEN VACANT OR AFTER LOCAL CURFEW, IF REQUIRED. NO MORE THAN 1,500W OF LIGHTING CONTROLLED TOGETHER. |
| LANDSCAPE LIGHTING, ORNAMENTAL HARDSCAPE LIGHITNG | - | - | - | - | - | - | - | - | ● | ● | PERIOD 1: ON 100% AT DUSK - PERIOD 2: DIM 50% AT 24:00 | OFF AT DAWN | - | - | - | - | - | - | J,M | §130.2(C) LIGHTS SHALL BE OFF DURING DAYTIME; LIGHTS SHALL BE AUTOMATICALLY CONTROLLED BY TIME-BASED SCHEDULING CONTROLS. §130.2(c) 3 NO MORE THAN 1,500W OF LIGHTING CONTROLLED FROM A SINGLE SENSOR. §130.2(c)3 - LUMINAIRES WITH A MAXIMUM RATED WATTAGE OF 40W EACH ARE NOT REQUIRED TO HAVE MOTION SENSING CONTROLS. |
| EXTERIOR SIGNAGE | - | - | - | - | | - | - | - | ● | - | ON AT DUSK | OFF AT DAWN | - | - | - | - | - | - | J | §130.3(a)2 PHOTO CONTROL PLUS TIME SWITCH OR ASTRONOMICAL CLOCK ARE REQ'D; SIGNS ILLUMINATED 24/7/365 MUST DIM MIN. 65% DURING DAYLIGHT HOURS |

## PROGRAMMING NOTES

**NOTES:** A. PROVIDE DAYLIGHTING CONTROL FOR PRIMARY AND SECONDARY DAYLIT OR SKYLIT ZONES WERE REQUIRED. DAYLIGHTING IS NOT NECESSARY WHEN AREAS DO NOT INCLUDE SKYLIGHTS OR GLAZING < 24 SQ FT OR SKYLIT+PRIMARY SIDELIT ZONE IS LESS THAN 120W. LUMINAIRES IN OR AT LEAST 50% WITHIN DAYLIGHTING ZONES MUST BE CONTROLLED.

B. CONTROLLED BY OCCUPANCY SENSOR: AUTO AND / OR MANUAL ON UNLESS OVERRIDDEN BY DAYLIGHTING SENSORS.
C. MANUAL CONTROL WALL STATIONS FOR THESE AREAS SHALL BE LOCATED IN THE NEAREST BACK OF HOUSE CLOSET, CONTROL BOOTH, ELECTRICAL ROOM, ETC. TO PREVENT UNAUTHORIZED USERS FROM ADJUSTING LIGHTING LEVELS.

D. CONFIGURE LIGHTING CONTROL TO PROVIDE PROPORTIONATE RAISE / LOWER OF ALL ROOM LIGHTING TOGETHER, REGARDLESS OF LOCATION IN DAYLIGHTING AND NON-DAYLIGHTING ZONES WHERE THEY OCCUR.
E. PROVIDE RS-232 OR ETHERNET CONNECTION TO AV SYSTEM TO ALLOW RECALL OF LIGHTING PRESETS BY AV SYSTEM WITHIN THIS ROOM, IF REQUESTED BY OWNER.
F. PROVIDE CONTROLLED RECEPTACLES IN THIS ROOM AS REQUIRED. CONTROLLED RECEPTACLE MUST BE WITHIN 6'-0" OF UNCONTROLLED RECEPTACLE.
G. PROVIDE AUTOMATIC TRANSFER RELAY, BRANCH CIRCUIT ELTS OR OTHER APPROVED METHOD WITH FACP INPUT TO FORCE LIGHTS ON TO FULL DURING LOSS OF NORMAL POWER OR DURING A FIRE ALARM EVENT. UNLESS SPECIFIED WITH A MANUAL EMERGENCY CONDITION RELEASE, LIGHTING SHALL RESTORE TO NORMAL OPERATION WHEN POWER IS RESTORED OR ALARM CONDITION IS CLEARED.

H. LIGHTING IN THIS SPACE MAY BE CONTROLLED FROM A STAGE LIGHTING SYSTEM. THE STAGE LIGHTING SYSTEM SHALL BE PROVIDED WITH A TITLE 24 COMPLIANT LIGHTING CONTROL PROCESSOR AND COMPATIBLE OCCUPANCY AND DAYLIGHT SENSORS AS REQUIRED FOR COMPLIANCE.
I. NOT USED
J. CONFIRM OPERATING HOURS WITH OWNER PRIOR TO FINAL PROGRAMMING.
K. REQUIRES CONNECTION TO BUILDING AUTOMATION SYSTEM (BAS) WHEN SUCH SYSTEM IS PRESENT.
L. FIXTURES WITHOUT OCCUPANCY SENSORS SHALL HAVE LOW END TRIM ADJUSTED TO MAINTAIN MINIMUM ILLUMINATION LEVELS.
M. LIGHTING CONTROL SYSTEM SHALL HAVE ASTRONOMICAL TIME CLOCK AND DUAL MODE CAPABILITY FOR "AFTER HOURS" CONTROL OF LIGHTING.
N. PERFORMANCE SPACE, NO DAYLIGHTING REQUIRED. TARGET ILLUMINATION LISTED ONLY FOR REFERENCE IN THIS COLUMN.

| NO. | DATE | REVISIONS | APP. | DATE |
|---|---|---|---|---|
| 6 | | | | |
| 5 | | | | |
| 4 | | | | |
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| 1 | | | | |

CITY OF IRVINE

**PLANS PREPARED BY:**
WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-B2306548.000
LICENSE NO. E15610 EXP. DATE: 12/31/25

**SEAL**
REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SPANGLER No. E15610 12/31/2025 ELECTRICAL STATE OF CALIFORNIA
**DATE: 09/18/25**

**DRAWN BY:** RC
DESIGNED BY: JL
**CHECKED BY:** RS
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

**APPROVED BY:**
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**
**DATE**

**E-302**

**TWO HERITAGE PARK PARKING LOTS**
**SEQUENCE OF OPERATIONS**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. *00948134-PARK*
LANDSCAPE PERMIT NO. _____- LCE
SHEET 10 OF 19
JOB NO. CIP NO. 361618

STATE OF CALIFORNIA
**Outdoor Lighting** CALIFORNIA ENERGY COMMISSION

| CERTIFICATE OF COMPLIANCE | NRCC-LTO-E |
|---|---|
| *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 for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e)6, 180.1(a) and 180.2(b)4Bv for outdoor lighting scopes using the prescriptive path for multifamily and mixed-use occupancies. Multifamily includes dormitory and senior living facilities.* | |
| **Project Name:** Heritage Park Parking Lots | **Report Page:** **(Page 1 of 7)** |
| **Project Address:** 14301 Yale Ave | **Date Prepared:** 3/12/2025 |

**A. GENERAL INFORMATION**

| | | | | | |
|---|---|---|---|---|---|
| 01 | Project Location (city) | Irvine | 04 | Total Illuminated Hardscape Area (ft²) | 214445 |
| 02 | Climate Zone | 8 | | | |
| 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 - Urban Clusters | ☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval | | |
| ☐ | LZ-1: Low - Rural Areas | ☐ LZ-3: Moderately High - Urban Areas | | | |
| 05 | Occupancy Types within Project | | | | |
| • All Other Occupancies | | | | | |

**B. PROJECT SCOPE**

*This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4Bv for alterations.*

**My Project Consists of:**

| 01 | 02 | | |
|---|---|---|---|
| ☒ New Lighting System | Must Comply with Allowances from 140.7 / 170.2(e)6 | | |
| ☐ Altered Lighting System | Is your alteration increasing the connected lighting load (Watts)? | ○ Yes | ○ No |
| 03 | 04 | 05 | |
| % of Existing Luminaires Being Altered[1] | Sum Total of Luminaires Being Added or Altered | Calculation Method | |
| ☐ < 10% ☐ >= 10% and < 50% ☐ >= 50% | | | |

***Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.***

*[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.*



STATE OF CALIFORNIA
**Outdoor Lighting** CALIFORNIA ENERGY COMMISSION

| CERTIFICATE OF COMPLIANCE | NRCC-LTO-E |
|---|---|
| **Project Name:** Heritage Park Parking Lots | **Report Page:** **(Page 2 of 7)** |
| | **Date Prepared:** 3/12/2025 |

**C. COMPLIANCE RESULTS**

*Results in this table are automatically calculated from data input and calculations in Tables F through N. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.*

| Calculations of Total Allowed Lighting Power (Watts) 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4Bv | | | | | | | | | | | | | | | Compliance Results | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | | 02 | | 03 | | 04 | | 05 | | 06 | | 07 | | 08 | | 09 | |
| General Hardscape Allowance 140.7(d)1 / 170.2(e)6 (See Table I) | + | Per Application 140.7(d)2 / 170.2(e)6 (See Table J) | + | Sales Frontage 140.7(d)2 (See Table K) | + | Ornamental 140.7(d)2 / 170.2(e)6 (See Table L) | + | Per Specific Area 140.7(d)2 / 170.2(e)6 (See Table M) | OR | Existing Power Allowance 141.0(b)2L / 180.2(b)4Bv (See Table N) | = | **Total Allowed** (Watts) | ≥ | **Total Actual** (Watts) | | **07 must be >= 08** | |
| 4,940 | + | --- | + | --- | + | --- | + | --- | OR | --- | = | 4,940 | ≥ | 4,768 | | COMPLIES | |
| **Shielding Compliance (See Table G for Details)** | | | | | | | | | | | | | | | | N/A | |
| **Controls Compliance (See Table H 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.*

**E. ADDITIONAL REMARKS**

*This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.*



STATE OF CALIFORNIA
**Outdoor Lighting** CALIFORNIA ENERGY COMMISSION

| CERTIFICATE OF COMPLIANCE | NRCC-LTO-E |
|---|---|
| **Project Name:** Heritage Park Parking Lots | **Report Page:** **(Page 3 of 7)** |
| | **Date Prepared:** 3/12/2025 |

**F. OUTDOOR LIGHTING FIXTURE SCHEDULE**

*For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(e)6 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per 141.0(b)2L only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included). Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.*

**Designed Wattage:**

| 01 | 02 | | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Name or Item Tag | Complete Luminaire Description | | Watts per luminaire[1, 2] | How is Wattage determined | Total Number Luminaires[2] | Luminaire Status[3] | Excluded per 140.7(a) / 170.2(e)6A | Design Watts | Cutoff Req. > 6,200 initial lumen output 130.2(b) / 160.5(c)1[4] | Field Inspector | |
| | | | | | | | | | | Pass | Fail |
| S21A | S21A - SINGLE POLE MOUNTED LED | ☐ Linear | 153.6 | Mfr. Spec | 2 | New | ☐ | 307.2 | NA: < 6200 lumens | ☐ | ☐ |
| S22A | S22A - DOUBLE POLE MOUNTED LED | ☐ Linear | 153.6 | Mfr. Spec | 22 | New | ☐ | 3,379.2 | NA: < 6200 lumens | ☐ | ☐ |
| S23A | S23A -SINGLE POLE MOUNTED LED | ☐ Linear | 174.5 | Mfr. Spec | 1 | New | ☐ | 174.5 | NA: < 6200 lumens | ☐ | ☐ |
| S24A | S24A - SINGLE POLE MOUNTED LED | ☐ Linear | 226.9 | Mfr. Spec | 2 | New | ☐ | 453.8 | NA: < 6200 lumens | ☐ | ☐ |
| S25A | S25A - DOUBLE POLE MOUNTED LED | ☐ Linear | 226.9 | Mfr. Spec | 2 | New | ☐ | 453.8 | NA: < 6200 lumens | ☐ | ☐ |
| | | | | | | | **Total Design Watts:** | 4768 | | | |

* 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)*

*[1] FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b)*
*[2] For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.*
*[3] Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.*
*[4] Compliance with mandatory shielding requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by 130.2(b)/ 160.5(c)*



STATE OF CALIFORNIA
**Outdoor Lighting** CALIFORNIA ENERGY COMMISSION

| CERTIFICATE OF COMPLIANCE | NRCC-LTO-E |
|---|---|
| **Project Name:** Heritage Park Parking Lots | **Report Page:** **(Page 4 of 7)** |
| | **Date Prepared:** 3/12/2025 |

**G. SHIELDING REQUIREMENTS (BUG)**

*This section does not apply to this project.*

**H. OUTDOOR LIGHTING CONTROLS**

*This table demonstrates 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.*
*Outdoor lighting for nonresidential buildings, parking garages and common service areas in multifamily buildings must be documented separately from outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit*

**Mandatory Controls for Nonresidential Occupancies, Parking Garages & Common Areas in Multifamily Buildings**

| 01 | 02 | 03 | 04 | 05 | |
|---|---|---|---|---|---|
| Area Description | Shut-Off 130.2(c)1 / 160.5(c) | Auto-Schedule 130.2(c)2 / 160.5(c) | Motion Sensor 130.2(c)3 / 160.5(c) | Field Inspector | |
| | | | | Pass | Fail |

*[1] FOOTNOTE: Text has been abbreviated, please refer to Table 160.5-A to confirm compliance with the specific light source technologies listed.*
*[2] Authority having jurisdiction may ask for cutsheets or other documentation to confirm compliance of light source.*
*[3] Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings are excepted from ii and iii.*



STATE OF CALIFORNIA
**Outdoor Lighting** CALIFORNIA ENERGY COMMISSION

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|---|---|
| **Project Name:** Heritage Park Parking Lots | **Report Page:** **(Page 5 of 7)** |
| | **Date Prepared:** 3/12/2025 |

**I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(e))**

*This table includes areas using allowance calculations per 140.7 / 170.2(e). General Hardscape Allowance is per Table 140.7-A/Table 170.2-R while "Use it or lose it" Allowances are per Table 140.7-B /Table 170.2-S. 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.*
*Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.*

| | 01 | | | | |
|---|---|---|---|---|---|
| | "Use it or lose it" Allowance (select all that apply) (select all that apply) | | | | |
| ☒ General Hardscape Allowance Table I (below) | ☐ Per Application Table J | ☐ Sales Frontage Table K | ☐ Ornamental Table L | ☐ Per Specific Area Table M | |

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A for Nonresidential & Hotel/Motel

| 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 |
|---|---|---|---|---|---|---|---|
| Area Description | Area Wattage Allowance (AWA) | | | Linear Wattage Allowance (LWA) | | | Total General AWA + LWA (Watts) |
| | Illuminated Area (ft²) | Allowed Density (W/ft²) | Area Allowance (Watts) | Perimeter Length (lf) | Allowed Density (W/lf) | Linear Allowance (Watts) | |
| Parking Lot 1 | 129951 | 0.019 | 2469.1 | 2256 | 0.2 | 338.5 | 2808 |
| Parking Lot 2 | 84494 | 0.019 | 1605.4 | 2183 | 0.2 | 327.4 | 1933 |
| | | | | | **Initial Wattage Allowance for Entire Site (Watts):** | | 200 |
| | | | | | **Instances of Initial Wattage Allowance (LZ 0 only)[1]** | | |
| | | | | | **Total General Hardscape Allowance (Watts):** | | 4940 |

**J. LIGHTING ALLOWANCE: PER APPLICATION**

*This section does not apply to this project.*

**K. LIGHTING ALLOWANCE: SALES FRONTAGE**

*This section does not apply to this project.*

**L. LIGHTING ALLOWANCE: ORNAMENTAL**

*This section does not apply to this project.*



STATE OF CALIFORNIA
**Outdoor Lighting** CALIFORNIA ENERGY COMMISSION

| CERTIFICATE OF COMPLIANCE | NRCC-LTO-E |
|---|---|
| **Project Name:** Heritage Park Parking Lots | **Report Page:** **(Page 6 of 7)** |
| | **Date Prepared:** 3/12/2025 |

**M. LIGHTING ALLOWANCE: PER SPECIFIC AREA**

*This section does not apply to this project.*

**N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)**

*This section does not apply to this project.*

**O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION**

*Selections have been made based on information provided in this document. If any selection has been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online*

| Form/Title |
|---|
| NRCI-LTO-E - Must be submitted for all buildings |

**P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE**

*There are no NRCA forms required for this project.*



STATE OF CALIFORNIA
**Outdoor Lighting** CALIFORNIA ENERGY COMMISSION

| CERTIFICATE OF COMPLIANCE | NRCC-LTO-E |
|---|---|
| **Project Name:** Heritage Park Parking Lots | **Report Page:** **(Page 7 of 7)** |
| **Project Address:** 14301 Yale Ave | **Date Prepared:** 3/12/2025 |

**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**

**I certify that this Certificate of Compliance documentation is accurate and complete.**

| | |
|---|---|
| Documentation Author Name: Ray Swartz | Documentation Author Signature: |
| Company: WSP USA | Signature Date: 2025-03-12 |
| Address: 15231 Laguna Canyon Rd, Ste 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: Ray Swartz | Responsible Designer Signature: |
| Company: WSP USA | Date Signed: 2025-03-12 |
| Address: 15231 Laguna Canyon Rd, Ste 100 | License: E15610 |
| City/State/Zip: Irvine CA 92618 | Phone: 949-751-5800 |



## 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 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTION 14.1.2.

SEE STATE OF CALIFORNIA 2022 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 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL CHAPTER 14 FOR MORE DETAILED REQUIREMENTS / INFORMATION.

SEE STATE OF CALIFORNIA 2022 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.

## TITLE 24 PROCEDURES FOR TESTING AND ADJUSTING

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 2022 BUILDING ENERGY EFFICIENCY STANDARDS NONRESIDENTIAL COMPLIANCE MANUAL SECTIONS 13.1.2.2 AND 13.1.2.3.

LIGHTING CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-02-A DOCUMENTS.

AUTOMATIC DAYLIGHT CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-03-A DOCUMENTS.

DEMAND RESPONSE LIGHTING CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-04-A DOCUMENTS.

INSTITUTIONAL TUNING PAF ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTI-05-A DOCUMENTS.

OUTDOOR LIGHTING CONTROL ACCEPTANCE TESTING AND ADJUSTING PROCEDURES - REFER TO NRCA-LTO-02-A DOCUMENTS.

ALL LIGHTING CONTROLS TESTING AND ADJUSTING DOCUMENTS NOTED ABOVE ARE AVAILABLE FROM THE CALIFORNIA ENERGY COMMISSION WEB SITE AT:
https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency-5

| NO. | DATE | REVISIONS | APP. | DATE |
|---|---|---|---|---|
| 6 | | CA Building Energy Efficiency Standards - 2022 Nonresidential Compliance | | |
| 5 | | | | |
| 4 | | | | |
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |

CITY OF IRVINE

**PLANS PREPARED BY:**
WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-B2306548.000
LICENSE NO. E15610 EXP. DATE: 12/31/25

**SEAL**
REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 12/31/2025 ELECTRICAL STATE OF CALIFORNIA
**DATE: 09/18/25**

***DRAWN BY:*** RC
DESIGNED BY: JL
***CHECKED BY:*** RS
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

**APPROVED BY:**
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**

DATE

**TWO HERITAGE PARK PARKING LOTS**
**TITLE 24**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. 00948134-PARK
**E-303**
LANDSCAPE PERMIT NO. _____ - LCE
SHEET 11 OF 19
JOB NO. CIP NO. 361618

BEACON design · performance · technology

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

# RATIO Series

AREA/SITE LIGHTER

## FEATURES

- Low profile LED area/site luminaire with a variety of IES distributions for lighting applications such as retail, commercial and campus parking lots
- Featuring Micro Strike Optics which maximizes target zone illumination with minimal losses at the house-side, reducing light trespass issues
- Visual comfort standard
- Compact and lightweight design with low EPA
- 3G rated for high vibration applications including bridges and overpasses
- Control options including photo control, occupancy sensing, NX Distributed Intelligence® and 7-Pin with networked controls
- Best in class surge protection available

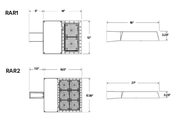
IP66 · DLC LISTED · DLC LISTED PREMIUM · BAA · TAA · kids

## CONTROL TECHNOLOGY

NX WIRELESS · NX

## SERVICE PROGRAMS

STOCK · QS10




| | Weight | EPA at 0° |
|---|---|---|
| RAR1 | 13.5 lbs / 6.1 kg | .458ft² / .13m² |
| RAR2 | 24 lbs / 10.9 kg | .658ft² / .17m² |

## SPECIFICATIONS

**CONSTRUCTION**
- Rectilinear form mimics the traditional shoebox form factor keeping a similar but updated style and appearance, ideal for retrofit applications
- Die-cast housing with hidden vertical heat fins that are optimal for heat dissipation while keeping a clean smooth outer surface
- Corrosion resistant, die-cast aluminum housing with powder coat paint finish

**OPTICS**
- Entire optical aperture illuminates to create a larger luminous surface area resulting in a low glare appearance without sacrificing optical performance
- 80, 160, 320 or 480 midpower LEDs
- 3000K, 4000K or 5000K (70 CRI) CCT
- Zero uplight at 0 degrees of tilt
- Field rotatable optics

**INSTALLATION**
- Standard square arm mount, compatible with B3 drill pattern
- Optional universal mounting block for ease of installation during retrofit applications. Available as an option or accessory for square and round poles.
- Knuckle arm fitter option available for 2-3/8" OD tenon. Max tilt of 60 degrees with 4 degree adjustable increments. (Restrictions apply for 7-pin options)

**ELECTRICAL**
- Universal 120-277 VAC or 347-480 VAC input voltage, 50/60 Hz
- Ambient operating temperature -40°C to 40°C
- Drivers have greater than 90% power factor and less than 20% THD
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- Field replaceable surge protection device provides 20kA protection meeting ANSI/ IEEE C62.41.2 Category C High and Surge Location Category C3; Automatically takes fixture off-line for protection when device is compromised

**CONTROLS**
- Photo control, occupancy sensor and wireless available for complete on/off and dimming control
- 7-pin ANSI C136.41-2013 photocontrol receptacle option available for twist lock photocontrols or wireless control modules (control accessories sold separately)
- 0- 10 V Dimming Drivers are standard and dimming leads are extended out of the luminaire unless control options require connection to the dimming leads. Must specify if wiring leads are to be greater than the 6" standard
- NX Distributed Intelligence® available with in fixture wireless control module, features dimming and occupancy sensor

**CERTIFICATIONS**
- DLC® (DesignLights Consortium Qualified), with some Premium Qualified configurations. Not all product/cct variations on this page are DLC Qualified. Refer to www.designlights.org for the most up-to-date list.
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40°C ambient temperatures
- 3G rated for ANSI C136.31 high vibration applications
- Fixture is IP66 rated
- Meets IDA recommendations using 3K CCT configuration at 0 degrees of tilt
- This product meets federal procurement law requirements under the Buy American Act (FAR 52.225-9) and Trade Agreements Act (FAR 52.225-11). See Buy America(n) Solutions (link to https://www.currentlighting.com/resources/america-solutions)

**WARRANTY**
- 5 year limited warranty
- See HLI Standard Warranty for additional information

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Grip Shading = Service Program Limit of 10 Luminaires QS10

## ORDERING GUIDE

CATALOG #

**Example:** RAR1-80L-25-3K7-2-UNV-ASQ-BL-NXW-BC

## ORDERING INFORMATION

| Series | # LEDs - Wattage | CCT/CRI | Distribution | Optics Rotation | Voltage |
|---|---|---|---|---|---|
| RAR1 Ratio Area Size 1 | 80L-25 25W - 3,000 Lumens | 3K7 3000K, 70 CRI | 2 IES TYPE II | Blank for no rotation | UNV Universal 120-277V [1] |
| | 80L-38 39W - 5,200 Lumens | 4K7 4000K, 70 CRI | 3 IES TYPE III | L Optic rotation left | 120 120V |
| | 80L-50 50W - 6,000 Lumens | 5K7 5000K, 70 CRI | 4W IES TYPE IV | R Optic rotation right | 208 208V |
| | 160L-70 70W - 9,000 Lumens | | 4F IES TYPE IV Forward | | 240 240V |
| | 160L-100 100W - 12,000 Lumens | | 5QW IES TYPE V | | 277 277V |
| | 160L-115 115W - 15,000 Lumens | | | | 347 347V |
| | 160L-135 135W - 18,000 Lumens | | | | 480 480V |
| RAR2 Ratio Area Size 2 | 320L-110 110W - 15,000 Lumens | | | | |
| | 320L-140 140W - 18,000 Lumens | | | | |
| | 320L-165 165W - 21,000 Lumens | FIXTURE TYPE S21A AND S22A | | | |
| | 480L-185 185W - 24,000 Lumens | FIXTURE TYPE S23A | | | |
| | 480L-210 210W - 27,000 Lumens | FIXTURE TYPE S22A AND S25A | | | |
| | 480L-240 240W - 30,000 Lumens | | | | |
| | 480L-255 255W - 36,000 Lumens | | | | |
| | 480L-295 295W - 42,000 Lumens | | | | |
| | 480L-340 340W - 48,000 Lumens | | | | |

| Mounting | Color | Control Options Network | Options |
|---|---|---|---|
| ASQ Arm mount for square pole/flat surface | BLT Black Matte Textured | NXWS1GF NX Networked Wireless Enabled Integral NXSMT2-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [4] | BC Backlight control [9] |
| ASQU Universal arm mount for square pole/flat surface. Does not include round pole adapt or B3 drill pattern | BLS Black Gloss Smooth | NXWS4OF NX Networked Wireless Enabled Integral NXSMT2-HMO PIR Occupancy Sensor with Automatic Dimming Photocell and Bluetooth Programming [4,7] | F Fusing [1] |
| **Mounting Round Poles** | DBT Dark Bronze Matte Textured | NXW NX Networked Wireless Radio Module NXRM2 and Bluetooth Programming, without Sensor [4] | TB Terminal block |
| A_ Arm mount for round pole/ B3 drill pattern | DBS Dark Bronze Gloss Smooth | **Control Options Other** | 2PF 2 power feed with 2 drivers [1] |
| A_U Universal arm mount for round pole/ | GTT Graphite Matte Textured | SCP_F Programmable occupancy sensor [3,4] | |
| **Mounting Other** | LGS Light Grey Gloss Smooth | 7PR 7-Pin twist lock receptacle | |
| WB Wall bracket | PSS Platinum Silver Smooth | 7PR-SC 7-Pin receptacle with shorting cap | |
| MAF Mast arm fitter for 2-3/8" OD horizontal arm | WHT White Matte Textured | 7PR-MD40F Low voltage sensor for 7PR | |
| K Knuckle | WHS White Gloss Smooth | 7PR-TL 7-Pin PCR with photocontrol | |
| | VGT Verde Green Textured | ADD Auto:Dim Timer Based Dimming | |
| | **Color Option** | ADT Auto:Dim Time of Day Dimming | |
| | CC Custom Color | BTS-14F Bluetooth® Programmable, BTSMP-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens [4] | |
| | | BTS-40F Bluetooth® Programmable, BTSMP-LMO PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens [4] | |
| | | BTSO-12F Bluetooth® Programmable, BTSMP-OMNI-O PIR Occupancy Sensor with Automatic Dimming Photocell and 360° Lens [4] | |

Notes:
1 Replace "_" with "3" for 3.5"-4.13" OD pole, "4" for 4.18"-5.25" OD pole, "5" for 5.5"-6.5" OD pole
2 Not available with 25, 50, 255, 295 & 340W configurations
3 At least one SCPREMOTE required to program SCP motion sensor
4 Replace "_" with BF or 40F if lens
5 Must specify voltage
6 Networked Controls cannot be combined with other control options
7 Not available with 2PF option
8 BC not available on 4F distributions
9 BTS and BTSO available for 50 Watts or higher and only on 120-277 voltage




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RATIO Series

AREA/SITE LIGHTER


## PERFORMANCE DATA

| Description | Nominal Wattage | System Watts | Dist. Type | 5K (5000K NOMINAL 70 CRI) Lumens | LPW | B | U | G | 4K (4000K NOMINAL 70 CRI) Lumens | LPW | B | U | G | 3K (3000K NOMINAL 80 CRI) Lumens | LPW | B | U | G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RAR1 | 110 | 100.3 | 2 | 15326 | 153 | 2 | 0 | 3 | 15357 | 153 | 2 | 0 | 3 | 14442 | 144 | 2 | 0 | 3 |
| | | | 3 | 15421 | 154 | 2 | 0 | 3 | 15452 | 154 | 2 | 0 | 3 | 14531 | 145 | 2 | 0 | 3 |
| | | | 4W | 15180 | 151 | 2 | 0 | 2 | 15210 | 152 | 2 | 0 | 2 | 14304 | 143 | 2 | 0 | 2 |
| | | | 5QW | 15525 | 155 | 4 | 0 | 2 | 15556 | 155 | 4 | 0 | 2 | 14629 | 146 | 4 | 0 | 2 |
| | 140 | 133.2 | 2 | 19395 | 146 | 2 | 0 | 3 | 19434 | 146 | 2 | 0 | 3 | 18276 | 137 | 2 | 0 | 3 |
| | | | 3 | 19515 | 147 | 2 | 0 | 3 | 19554 | 147 | 2 | 0 | 3 | 18389 | 138 | 2 | 0 | 3 |
| | | | 4W | 19210 | 144 | 2 | 0 | 3 | 19248 | 145 | 2 | 0 | 3 | 18101 | 136 | 2 | 0 | 3 |
| | | | 5QW | 19647 | 148 | 5 | 0 | 3 | 19686 | 148 | 5 | 0 | 3 | 18513 | 139 | 5 | 0 | 3 |
| | 165 | 153.6 | 2 | 21651 | 141 | 3 | 0 | 3 | FIXTURE TYPE S21A AND S22A | | | | | 0402 | 133 | 3 | 0 | 3 |
| | | | 3 | 21785 | 142 | 3 | 0 | 3 | 21828 | 142 | 3 | 0 | 3 | 20527 | 134 | 3 | 0 | 3 |
| | | | 4W | 21444 | 140 | 3 | 0 | 3 | 21487 | 140 | 3 | 0 | 3 | 20206 | 132 | 3 | 0 | 3 |
| | | | 5QW | 21832 | 143 | 5 | 0 | 3 | 21876 | 143 | 5 | 0 | 3 | 20666 | 135 | 5 | 0 | 3 |
| | 185 | 174.5 | 2 | 26046 | 149 | 3 | 0 | 3 | FIXTURE TYPE S23A | | | | | 24543 | 141 | 3 | 0 | 3 |
| | | | 3 | 26207 | 150 | 3 | 0 | 3 | 26259 | 150 | 3 | 0 | 3 | 24694 | 142 | 3 | 0 | 3 |
| | | | 4W | 25797 | 148 | 3 | 0 | 4 | 25849 | 148 | 3 | 0 | 4 | 24308 | 139 | 3 | 0 | 4 |
| | | | 5QW | 26384 | 151 | 5 | 0 | 3 | 26437 | 152 | 5 | 0 | 3 | 24861 | 143 | 5 | 0 | 3 |
| | 210 | 198.2 | 2 | 28848 | 145 | 3 | 0 | 4 | 28906 | 146 | 3 | 0 | 4 | 27184 | 137 | 3 | 0 | 4 |
| | | | 3 | 29027 | 146 | 3 | 0 | 4 | 29085 | 147 | 3 | 0 | 4 | 27351 | 138 | 3 | 0 | 4 |
| | | | 4W | 28572 | 144 | 3 | 0 | 4 | 28630 | 144 | 3 | 0 | 4 | 26924 | 136 | 3 | 0 | 4 |
| | | | 5QW | 29222 | 147 | 5 | 0 | 4 | 29281 | 148 | 5 | 0 | 4 | 27536 | 139 | 5 | 0 | 4 |
| | 240 | 226.9 | 2 | 32087 | 141 | 3 | 0 | 4 | 32151 | 142 | 3 | 0 | 4 | 30235 | 133 | 3 | 0 | 4 |
| | | | 3 | 32285 | 142 | 3 | 0 | 4 | 32350 | 143 | 3 | 0 | 4 | 30422 | 134 | 3 | 0 | 4 |
| | | | 4W | 31780 | 140 | 3 | 0 | 4 | 31844 | 140 | 3 | 0 | 4 | 29946 | 132 | 3 | 0 | 4 |
| | | | 5QW | 32503 | 143 | 5 | 0 | 4 | 32568 | 144 | 5 | 0 | 4 | 30627 | 135 | 5 | 0 | 4 |
| | 255 | 257.0 | 2 | 37040 | 144 | 3 | 0 | 4 | FIXTURE TYPE S24A AND S25A | | | | | 5373 | 138 | 3 | 0 | 4 |
| | | | 3 | 37660 | 147 | 3 | 0 | 4 | 37472 | 146 | 3 | 0 | 4 | 35966 | 140 | 3 | 0 | 4 |
| | | | 4W | 36347 | 141 | 3 | 0 | 5 | 36166 | 140 | 3 | 0 | 5 | 34782 | 135 | 3 | 0 | 5 |
| | | | 5QW | 37420 | 146 | 5 | 0 | 4 | 37233 | 145 | 5 | 0 | 4 | 35736 | 139 | 5 | 0 | 4 |
| | 295 | 294.0 | 2 | 41733 | 142 | 3 | 0 | 4 | 41524 | 141 | 3 | 0 | 4 | 39855 | 136 | 3 | 0 | 4 |
| | | | 3 | 42432 | 144 | 3 | 0 | 4 | 42220 | 144 | 3 | 0 | 4 | 40523 | 138 | 3 | 0 | 4 |
| | | | 4W | 40953 | 139 | 3 | 0 | 5 | 40748 | 139 | 3 | 0 | 5 | 39190 | 133 | 3 | 0 | 5 |
| | | | 5QW | 42162 | 143 | 5 | 0 | 4 | 41951 | 143 | 5 | 0 | 4 | 40264 | 137 | 5 | 0 | 4 |
| | 340 | 347.1 | 2 | 48392 | 139 | 4 | 0 | 5 | 48150 | 139 | 4 | 0 | 5 | 46215 | 133 | 4 | 0 | 5 |
| | | | 3 | 49203 | 142 | 3 | 0 | 4 | 48957 | 141 | 3 | 0 | 4 | 46989 | 135 | 3 | 0 | 4 |
| | | | 4W | 47488 | 137 | 4 | 0 | 5 | 47261 | 136 | 4 | 0 | 5 | 45443 | 131 | 4 | 0 | 5 |
| | | | 5QW | 48889 | 141 | 5 | 0 | 5 | 48645 | 140 | 5 | 0 | 5 | 46689 | 135 | 5 | 0 | 5 |

* Lumen values are from photometric test performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.




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# LIGHT FIXTURE CUT SHEETS

SCALE: N.T.S.

1


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DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

SSS-B Series Poles

SQUARE STRAIGHT STEEL


## SPECIFICATIONS

**CONSTRUCTION**
- Shaft: One-piece straight steel with square cross section, flat sides and minimum 0.23" radius on all corners; Minimum yield of 46,000 psi (ASTM-A500, Grade B); Longitudinal weld seam to appear flush with shaft side wall; Steel base plate with axial bolt circle slots welded flush to pole shaft having minimum yield of 36,000 psi (ASTM A36)
- Base cover: Two-piece square aluminum base cover included standard
- Pole cap: Pole shaft supplied with removable cover when applicable; Tenon and post-top configurations also available
- Hand hole: Rectangular 3x5 steel hand hole frame (2.38" x 4.38" opening); Mounting provisions for grounding lug located behind gasketed cover
- Anchor bolts: Four galvanized anchor bolts provided per pole with minimum yield of 55,000 psi (ASTM F1554). Galvanized hardware with two washers and two nuts per bolt for leveling
  - Anchor bolt part numbers: 3/4 x 30 x 3 — TAB-30-MS38
    1 x 36 x 4 — TAB-36-MS38
- Durable thermoset polyester powder coat paint finish with nominal 3.0 mil thickness
- Powder paint prime applied over "white metal" steel substrate cleaned via mechanical shot blast method
- Decorative finish coat available in multiple standard colors; Custom colors available; RAL number preferable

**INSTALLATION**
- Lighting installations for side and top mounting of luminaires with effective projected area (EPA) not exceeding maximum allowable loading of the specified pole in its installed geographic location

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DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

SSS-B Series Poles

SQUARE STRAIGHT STEEL


## ORDERING INFORMATION

**Example:** SSS-B-25-40-A-2L-S2-DBT-UL

| SSS-B | 30 | 50 | B | 1 OR 2 | | PSS | EIH4 |
|---|---|---|---|---|---|---|---|
| Series | Height | Shaft | Thickness | Mounting | Drill Pattern | Finish | Options |
| SSS-B Square Straight Steel Pole Beacon | Reference page 3 Ordering matrix | Reference page 3 Ordering matrix | Reference page 3 Ordering matrix: A - .105" Wall B - .188" Wall C - .250" Wall | 1 Single arm mount<br>2 Two fixtures at 180°<br>2L Two fixtures at 90°<br>3T Three fixtures at 90°<br>4 Four fixtures at 90°<br>TA Tenon (2.38" OD x 4" Tall)<br>TB Tenon (2.88" OD x 4" Tall)<br>TC Tenon (3.5" OD x 6" Tall)<br>TR[1] Removable Tenon (2.375" x 4.25")<br>OT Open Top (includes pole cap) | B1 Cruze, "AM" arm<br>B3 2 bolt (3-1/2" spacing). Viper "R" arm.<br>S2 2 bolt (3-1/2" spacing). Viper "AD" arm.<br>UDP Universal Drill Pattern | BLT Black Matte Textured<br>BLS Black Gloss Smooth<br>DBT Dark Bronze Matte Textured<br>DBS Dark Bronze Gloss Smooth<br>GTT Graphite Matte Textured<br>LGT Light Grey Matte Textured<br>LGS Light Grey Gloss Smooth<br>PSS Platinum Silver Smooth<br>WHT White Matte Textured<br>WHS White Gloss Smooth<br>VGT Verde Green Textured<br>**Color Option**<br>CC Custom Color[4] | QF[1] 20 Amp GFCI Receptacle and Cover<br>EIH4[1] Extra Handhole<br>COS[1] 5" Coupling<br>CO7[1] .75" Coupling<br>C20[1] 2" Coupling<br>MPB[1] Mid-pole Luminaire Bracket<br>VM1[1] Mode vibration dampener<br>VM2[1] 2nd mode vibration dampener<br>LAB Less Anchor Bolts<br>UL UL Certified |

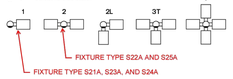
**Accessories (Order Separately)**

- ☐ VM2508 Field-installed 2nd mode vibration dampener - 8 ft
- ☐ VM2512 Field-installed 2nd mode vibration dampener - 12 ft
- ☐ VM2516 Field-installed 2nd mode vibration dampener - 16 ft
- ☐ VM2520 Field-installed 2nd mode vibration dampener - 20 ft
- ☐ VM2525 Field-installed 2nd mode vibration dampener - 25 ft

1 Removable tenon used in conjunction with side arm mounting. First specify desired arm configuration followed by the "TR" notation. Example: SSS-B-25-40-A-1-BF-TR-BBT.
2 Custom colors available; RAL number preferable
3 Specify option location using high found on page 3 (Option Orientation).
4 Mfr recommended on poles 20' and taller with EPA of less than 1.
5 There will be a weld witness mark on the side of the pole with the Factory Installed VM2.

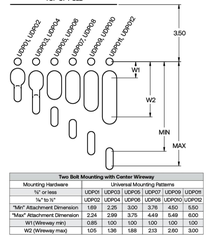
## MOUNTING ORIENTATION

Denotes handhole location




## DRILL PATTERNS

**UNIVERSAL DRILL PATTERN (UDP)**




**Two Bolt Mounting with Center Wireway**

| Mounting Hardware | Universal Mounting Patterns | | | | | |
|---|---|---|---|---|---|---|
| ¾" or less | UDP01 | UDP02 | UDP05 | UDP07 | UDP09 | UDP08 |
| ¾" to ¼" | UDP01 | UDP03 | UDP06 | UDP08 | UDP09 | UDP10 |
| *Min* Attachment Dimension | 1.89 | 2.25 | 3.00 | 3.76 | 4.50 | 5.50 |
| *Max* Attachment Dimension | 2.24 | 2.99 | 3.75 | 4.49 | 5.49 | 6.00 |
| W1 (Wireway min) | 0.85 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| W2 (Wireway max) | 1.05 | 1.36 | 1.88 | 2.13 | 2.60 | 3.00 |

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# LIGHT POLE CUT SHEETS

SCALE: N.T.S.

2


BEACON design · performance · technology

DATE: LOCATION:

TYPE: PROJECT:

CATALOG #:

SSS-B Series Poles

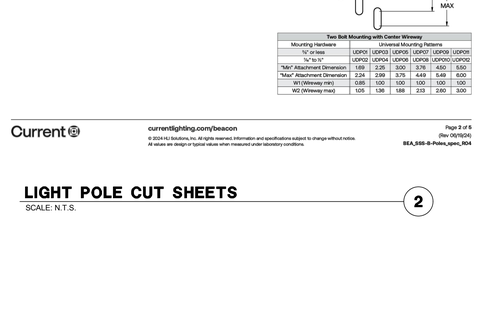
SQUARE STRAIGHT STEEL


## ORDERING INFORMATION (CONTINUED)

| CATALOG NUMBER | HEIGHT FEET | HEIGHT METERS | NOMINAL SHAFT DIMENSIONS | WALL THICKNESS | BOLT CIRCLE (SQUARE/SIDE) | BOLT CIRCLE (RANGE) | BASE PLATE SQUARE | ANCHOR BOLT SIZE | BOLT PROJECTION | POLE WEIGHT (LBS) |
|---|---|---|---|---|---|---|---|---|---|---|
| SSS-8-10-40-A-XX-XX | 10 | 3.0 | 4" square | .025" | 9" | 8" - 10" | 9" | 3/4" x 30" x 3" | 3.5 | 77 |
| SSS-8-12-40-A-XX-XX | 12 | 3.7 | 4" square | .025" | 9" | 8" - 10" | 9" | 3/4" x 30" x 3" | 3.5 | 90 |
| SSS-8-14-40-A-XX-XX | 14 | 4.3 | 4" square | .025" | 9" | 8" - 10" | 9" | 3/4" x 30" x 3" | 3.5 | 103 |
| SSS-8-16-40-A-XX-XX | 16 | 4.9 | 4" square | .025" | 9" | 8" - 10" | 9" | 3/4" x 30" x 3" | 3.5 | 116 |
| SSS-8-18-40-A-XX-XX | 18 | 5.5 | 4" square | .025" | 9" | 8" - 10" | 9" | 3/4" x 30" x 3" | 3.5 | 129 |
| SSS-8-20-40-A-XX-XX | 20 | 6.1 | 4" square | .025" | 9" | 8" - 10" | 9" | 3/4" x 30" x 3" | 3.5 | 142 |
| SSS-8-25-40-A-XX-XX | 25 | 7.6 | 4" square | .025" | 9" | 8" - 10" | 9" | 3/4" x 30" x 3" | 3.5 | 175 |
| | | | | | | | | | | |
| SSS-8-14-50-B-XX-XX | 14 | 4.3 | 4" square | .188" | 11" | 10" - 12" | 10.50" | 3/4" x 30" x 3" | 3.5 | 152 |
| SSS-8-16-50-B-XX-XX | 16 | 4.9 | 4" square | .188" | 11" | 10" - 12" | 10.50" | 3/4" x 30" x 3" | 3.5 | 171 |
| SSS-8-18-50-B-XX-XX | 18 | 5.5 | 4" square | .188" | 11" | 10" - 12" | 10.50" | 3/4" x 30" x 3" | 3.5 | 190 |
| SSS-8-20-40-B-XX-XX | 20 | 6.1 | 4" square | .188" | 11" | 10" - 12" | 10.50" | 3/4" x 30" x 3" | 3.5 | 209 |
| SSS-8-25-40-B-XX-XX | 25 | 7.6 | 4" square | .188" | 11" | 10" - 12" | 10.50" | 3/4" x 30" x 3" | 3.5 | 257 |
| SSS-8-30-40-B-XX-XX | 30 | 9.1 | 4" square | .188" | 11" | 10" - 12" | 10.50" | 3/4" x 30" x 3" | 3.5 | 304 |
| | | | | | | | | | | |
| SSS-8-16-50-B-XX-XX | 16 | 4.9 | 5" square | .188" | 11" | 10.25" - 13.25" | 11.50" | 1" x 36" x 4" | 4.5 | 219 |
| SSS-8-18-50-B-XX-XX | 18 | 5.5 | 5" square | .188" | 11" | 10.25" - 13.25" | 11.50" | 1" x 36" x 4" | 4.5 | 243 |
| SSS-8-20-50-B-XX-XX | 20 | 6.1 | 5" square | .188" | 11" | 10.25" - 13.25" | 11.50" | 1" x 36" x 4" | 4.5 | 267 |
| SSS-8-25-50-A-XX-XX | 25 | 7.6 | 5" square | .188" | 11" | 10.25" - 13.25" | 11.50" | 1" x 36" x 4" | 4.5 | 327 |
| SSS-8-30-50-B-XX-XX | 30 | 9.1 | 5" square | .188" | 11" | 10.25" - 13.25" | 11.50" | 1" x 36" x 4" | 4.5 | 387 |
| | | | | | | | | | | |
| SSS-8-25-60-A-XX-XX | 25 | 7.6 | 5" square | .219" | 11" | 10.25" - 13.25" | 11.50" | 1" x 36" x 4" | 4.5 | 427 |
| SSS-8-30-50-C-XX-XX | 30 | 9.1 | 5" square | .219" | 11" | 10.25" - 13.25" | 11.50" | 1" x 36" x 4" | 4.5 | 507 |
| | | | | | | | | | | |
| SSS-9-20-60-B-XX-XX | 20 | 6.1 | 6" square | .188" | 12" | 11.00" - 13.25" | 12.25" | 1" x 36" x 4" | 4.5 | 329 |
| SSS-8-25-60-B-XX-XX | 25 | 7.6 | 6" square | .188" | 12" | 11.00" - 13.25" | 12.25" | 1" x 36" x 4" | 4.5 | 404 |
| SSS-8-30-60-B-XX-XX | 30 | 9.1 | 6" square | .188" | 12" | 11.00" - 13.25" | 12.25" | 1" x 36" x 4" | 4.5 | 479 |
| SSS-8-35-60-B-XX-XX | 35 | 10.7 | 6" square | .188" | 12" | 11.00" - 13.25" | 12.25" | 1" x 36" x 4" | 4.5 | 554 |
| SSS-8-40-60-B-XX-XX | 40 | 12.2 | 6" square | .188" | 12" | 11.00" - 13.25" | 12.25" | 1" x 36" x 4" | 4.5 | 629 |

Notes:
- Factory supplied template must be used when setting anchor bolts. Current will deny any claim for incorrect anchorage placement resulting from failure to use factory supplied template and anchor bolts.
- For more information about pole vibration and vibration dampeners, please consult factory.
- Unwrap poles immediately upon receipt to avoid condensation build up and possible corrosion.
- There will be a weld witness mark on the side of the pole with the Factory Installed VM2.

LIGHT POLE INFORMATION







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BEACON design · performance · technology

DATE: LOCATION:

TYPE: PROJECT:

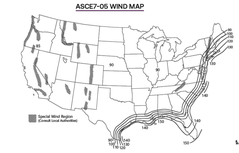
CATALOG #:

SSS-B Series Poles

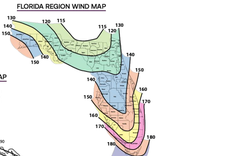
SQUARE STRAIGHT STEEL


## WIND MAPS

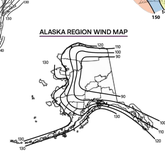
ASCE7-05 WIND MAP




FLORIDA REGION WIND MAP



ALASKA REGION WIND MAP

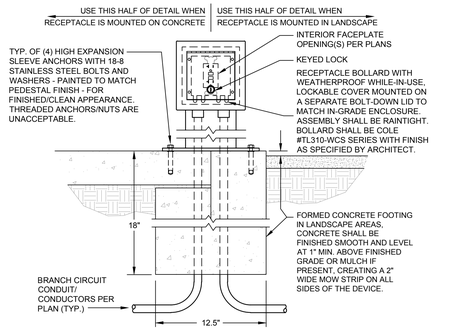


**HAWAII** – 105 mph
**PUERTO RICO** – 145 mph

*Printed with permission from ASCE

Florida region wind map above is based upon 3-second gust vehicle and the 2017 Florida Building Code.

| ASCE 7-05 wind map ERA Load Rating - 3 second gust wind speeds (Use for all locations except Florida) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Catalog Number | 85 | 90 | 100 | 105 | 110 | 120 | 130 |
| SSS-8-10-40-A | 25.0 | 25.0 | 25.0 | 22.8 | 20.9 | 17.0 | 14.2 |
| SSS-8-12-40-A | 25.0 | 25.0 | 20.0 | 18.0 | 16.1 | 13.2 | 10.8 |
| SSS-8-14-40-A | 23.1 | 20.4 | 16.1 | 14.3 | 12.8 | 10.2 | 8.2 |
| SSS-8-16-40-A | 19.0 | 16.7 | 13.0 | 11.5 | 10.1 | 7.9 | 6.2 |
| SSS-8-18-40-A | 15.6 | 13.6 | 10.5 | 9.0 | 7.8 | 5.9 | 4.4 |
| SSS-8-20-40-A | 12.7 | 10.9 | 7.9 | 6.9 | 5.9 | 4.2 | 2.8 |
| SSS-8-25-40-A | 7.3 | 5.9 | 3.8 | 2.9 | 2.3 | 0.8 | NR |
| | | | | | | | |
| SSS-8-14-40-B | 25.0 | 25.0 | 23.3 | 20.8 | 18.6 | 15.1 | 12.3 |
| SSS-8-16-40-B | 25.0 | 24.9 | 19.4 | 17.3 | 15.4 | 12.3 | 9.9 |
| SSS-8-18-40-B | 24.0 | 20.8 | 16.1 | 14.2 | 12.5 | 9.8 | 7.7 |
| SSS-8-20-40-B | 20.2 | 17.5 | 13.2 | 11.6 | 10.1 | 7.7 | 5.9 |
| SSS-8-25-40-B | 12.8 | 11.0 | 7.9 | 6.7 | 5.5 | 3.7 | 2.3 |
| SSS-8-30-40-B | 8.0 | 6.6 | 4.1 | 3.1 | 2.2 | 0.8 | NR |
| | | | | | | | |
| SSS-8-16-50-B | 25.0 | 25.0 | 25.0 | 25.0 | 24.8 | 20.1 | 16.5 |
| SSS-8-18-50-B | 25.0 | 25.0 | 25.0 | 22.9 | 20.4 | 16.4 | 13.2 |
| SSS-8-20-50-B | 25.0 | 25.0 | 25.3 | 19.9 | 16.7 | 13.2 | 10.4 |
| SSS-8-25-50-B | 20.7 | 17.8 | 13.3 | 11.5 | 9.9 | 7.2 | 5.1 |
| SSS-8-30-50-B | 13.5 | 11.3 | 7.7 | 6.2 | 4.9 | 2.8 | 1.1 |
| | | | | | | | |
| SSS-8-25-50-C | 25.0 | 25.0 | 18.4 | 17.1 | 15.1 | 11.7 | 9.0 |
| SSS-8-30-50-C | 20.1 | 17.3 | 12.7 | 10.9 | 9.3 | 6.8 | 4.5 |
| | | | | | | | |
| SSS-9-20-60-B | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 | 20.2 | 16.1 |
| SSS-8-25-60-B | 25.0 | 25.0 | 25.0 | 20.6 | 18.0 | 15.6 | 11.8 |
| SSS-8-30-60-B | 21.4 | 18.1 | 12.9 | 10.7 | 8.8 | 5.7 | 3.3 |
| SSS-8-35-60-B | 14.0 | 11.3 | 6.9 | 5.2 | 3.6 | 1.0 | NR |
| SSS-8-40




## SINGLE SERVICE "WP-C" SITE RECEPTACLE DETAIL

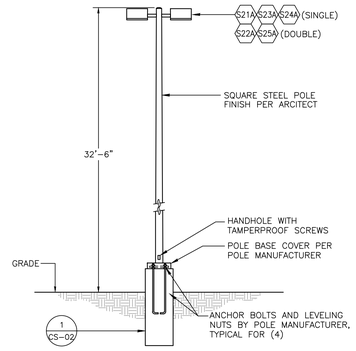
SCALE: N.T.S.

4

## NOT USED

SCALE: NTS

1




## POLE MOUNTED FIXTURE DETAIL

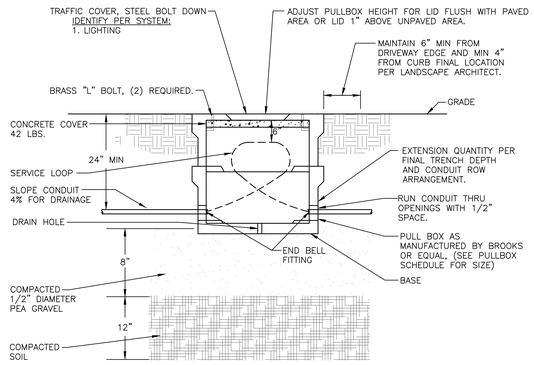
SCALE: N.T.S.

5

## NOT USED

SCALE: N.T.S.

2




### PULL BOX NOTES

1. ALL BOXES SHALL BE SET ON A MINIMUM 8" GRAVEL BASE WITH 1/2" DIAMETER PEA GRAVEL.
2. ALL INCIDENTAL CONCRETE SHALL BE REMOVED FROM BOXES.
3. PROVIDE WATERTIGHT SPLICES AND CAPS FOR POWER CONDUCTORS.
4. PROVIDE SEALING GEL IN ALL CONDUITS (BOTH W/ CONDUCTORS AND IN EMPTY SPARE CONDUITS.) THE GEL SHALL BE INSERTED IN THE CONDUIT TO A DEPTH OF 6" AND FLUSH W/ THE END OF THE CONDUIT. THE GEL SHALL BE MANUFACTURED BY 3M #4442 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.

## PULL BOX DETAIL

SCALE: N.T.S.

3

## NOT USED

SCALE: N.T.S.

6

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

| NO. | DATE | REVISIONS | APP. | DATE |
|---|---|---|---|---|
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| 2 | | | | |
| 1 | | | | |

CITY OF IRVINE

**PLANS PREPARED BY:**
WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-B2306548.000

LICENSE NO. E15610 EXP. DATE: 12/31/25

**SEAL**
REGISTERED PROFESSIONAL ENGINEER
RAYMOND W. SWOLLEY
No. E15610
12/31/2025
ELECTRICAL
STATE OF CALIFORNIA

**DATE: 09/18/25**

**DRAWN BY:** RC
DESIGNED BY: JL
**CHECKED BY:** RS
RECOMMENDED:

APPROVED BY:
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**

DATE

**TWO HERITAGE PARK PARKING LOTS DETAILS**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

**E-401**

PLAN CHECK NO. *00948134-PARK*

LANDSCAPE PERMIT NO. _____ - *LCE*

SHEET 13 OF 19

JOB NO. CIP NO. 361618

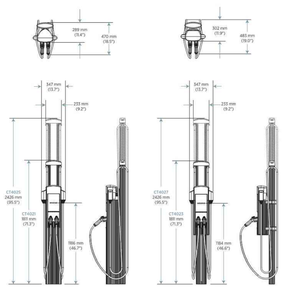
**NOTE: E.V. CHARGERS ARE SHOWN FOR REFERENCE ONLY. E.V. CHARGERS WILL BE PROVIDED AND INSTALLED BY OTHERS.**



## Architectural Drawings (Dimensions)

CT4021 1830 mm (6')
CT4025 2440 mm (8')
Bollard

CT4023 1830 mm (6')
CT4027 2440 mm (8')
Wall Mount








## General Specifications

### Electrical Input

| Electrical Input | Single Port (AC Voltage 208 / 240V AC) | | | Dual Port (AC Voltage 208 / 240V AC) | | |
|---|---|---|---|---|---|---|
| | Input Current | Input Power Connection | Required Service Panel Breaker | Input Current | Input Power Connection | Required Service Panel Breaker |
| Standard | 30A | One 40A branch circuit | 40A dual pole (non-GFCI type) | 30A x 2 | Two independent 40A branch circuits | 40A dual pole (non-GFCI type) x 2 |
| Standard Power Share | n/a | n/a | n/a | 32A | One 40A branch circuit | 40A dual pole (non-GFCI type) |
| Power Select 24A | 24A | One 30A branch circuit | 30A dual pole (non-GFCI type) | 24A x 2 | Two independent 30A branch circuits | 30A dual pole (non-GFCI type) x 2 |
| Power Select 24A Power Share | n/a | n/a | n/a | 24A | One 30A branch circuit | 30A dual pole (non-GFCI type) |
| Power Select 16A | 16A | One 20A branch circuit | 20A dual pole (non-GFCI type) | 16A x 2 | Two independent 20A branch circuits | 20A dual pole (non-GFCI type) |
| Power Select 16A Power Share | n/a | n/a | n/a | 16A | One 20A branch circuit | 20A dual pole (non-GFCI type) |
| Service Panel GFCI | Do not provide external GFCI as it may conflict with internal GFCI (CCID) | | | | | |
| Wiring – Standard | 3-wire (L1, L2, Earth) | | | 5-wire (L1, L1, L2, L2, Earth) | | |
| Wiring – Power Share | n/a | | | 3-wire (L1, L2, Earth) | | |
| Station Power | 8 W typical (standby), 15 W maximum (operation) | | | | | |

### Electrical Output

| Electrical Output | Single Port (AC Voltage 208 / 240V AC) | Dual Port (AC Voltage 208 / 240V AC) |
|---|---|---|
| Standard | 7.2 kW (240V AC @ 30A) | 7.2 kW (240V AC @ 30A) x 2 |
| Standard Power Share | n/a | 7.2 kW (240V AC @ 30A) x 1<br>or<br>3.8 kW (240V AC @ 16A) x 2 |





| | | |
|---|---|---|
| Power Select 24A | 5.8 kW (240V AC @ 24A) | 5.8 kW (240V AC @ 24A) x 2 |
| Power Select 24A Power Share | n/a | 5.8 kW (240V AC @ 24A) x 1<br>Or<br>2.9 kW (240V AC @ 12A) x 2 |
| Power Select 16A | 3.8 kW (240V AC @ 16A) | 3.8 kW (240V AC @ 16A) x 2 |
| Power Select 16A Power Share | n/a | 3.8 kW (240V AC @ 16A) x 1<br>Or<br>1.9 kW (240V AC @ 8A) x 2 |

### Functional Interfaces

| | Single Port (AC Voltage 208 / 240V AC) | Dual Port (AC Voltage 208 / 240V AC) |
|---|---|---|
| Connector Types | SAE J1772™ | SAE J1772™ x 2 |
| Cable Length — 1.8 m (6 ft) Cable Management | 5.5 m (18 ft) | 5.5 m (18 ft) x 2 |
| Cable Length — 2.4 m (8 ft) Cable Management | n/a | 7 m (23 ft) |
| Overhead Cable Management System | Yes | |
| LCD Display | 145 mm (5.7 in) full color, 640 x 480, 30 fps full motion video, active matrix, UV protected | |
| Card Reader | ISO 15693, ISO 14443, NFC | |
| Locking Holster | Yes | Yes x 2 |

### Safety and Connectivity Features

| | |
|---|---|
| Ground Fault Detection | 20 mA CCID with auto retry |
| Open Safety Ground Detection | Continuously monitors presence of safety (green wire) ground connection |
| Plug-Out Detection | Power terminated per *SAE J1772™* specifications |
| Power Measurement Accuracy | +/- 2% from 2% to full scale (30A) |
| Power Report/Store Interval | 15 minute, aligned to hour. Vehicle to grid connected and responsive to TOU signals |
| Local Area Network | 2.4 GHz WiFi (802.11 b/g/n) |
| Wide Area Network | LTE Category 4 |





## Safety and Operational Ratings

| | |
|---|---|
| Station Enclosure Rating | Type 3R per UL 50E |
| Safety and Compliance | UL and cUL listed; complies with UL 2594, UL 2231-1, UL 2231-2, and NEC Article 625 |
| Station Surge Protection | 6 kV @ 3,000A. In geographic areas subject to frequent thunder storms, supplemental surge protection at the service panel is recommended. |
| EMC Compliance | FCC Part 15 Class A |
| Operating Temperature | -40°C to 50°C (-40°F to 122°F) |
| Non-Operating Temperature | -40°C to 60°C (-40°F to 140°F) |
| Terminal Block Temperature Rating | 105°C (221°F) |
| Operating Humidity | Up to 85% @ 50°C (122°F) non-condensing |
| Non-Operating Humidity | Up to 95% @ 50°C (122°F) non-condensing |
| Network | All stations include integral LTE modem and will be automatically configured to operate as gateway or non-gateway as needed. |

ChargePoint, Inc. reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document

-chargepoint+

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Call +1.408.705.1992
Email sales@chargepoint.com

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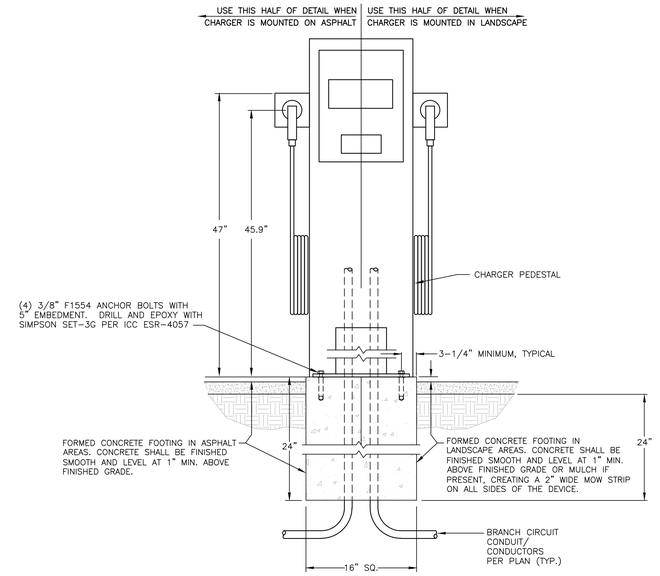
Listed by Underwriters Laboratories Inc.






## TYPICAL EV CHARGER MOUNTING DETAIL

SCALE: N.T.S.

1

-chargepoint+

## ChargePoint® CPF50 Level 2 Charging Stations for Fleet

Specifications and Ordering Information

## Ordering Information

The order codes below represent specific product configurations. Other product options are available. Please contact ChargePoint Sales for information and order codes

### Hardware

| Description | | Order Code |
|---|---|---|
| USA Models | Single Port, J1772, Wall, 5.4 m (18 ft) Cable | CPF50-L18-GW-USA |
| | Single Port, J1772, Pedestal, 5.4 m (18 ft) Cable | CPF50-L18-PEDMNT-GW-USA |
| | Single Port, J1772, Pedestal 5.4 m (18 ft) Cable with 6' Cable Management Kit | CPF50-L18-PEDMNT-CMK6-GW-USA |
| | Dual Port, J1772, Pedestal, 5.4 m (18 ft) Cable | CPF50-L18-PEDMNT-DUAL-GW-USA |
| | Dual Port, J1772, Pedestal, 5.4 m (18 ft) Cable with 6' Cable Management Kit | CPF50-L18-PEDMNT-CMK6-DUAL-GW-USA |
| | Single Port, J1772, Wall, 5.4 m (18 ft) Cable with 6' Cable Management Kit | CPF50-L18-WALLMNT-CMK6-GW-USA |
| | Single Port, J1772, Wall, 7.0 m (23 ft) Cable | CPF50-L23-GW-USA |
| | Single Port, J1772, Pedestal, 7.0 m (23 ft) Cable | CPF50-L23-PEDMNT-GW-USA |
| | Single Port, J1772, Pedestal, 7.0 m (23 ft) Cable with 8' Cable Management Kit | CPF50-L23-PEDMNT-CMK8-GW-USA |
| | Dual Port, J1772, Pedestal, 7.0 m (23 ft) Cable | CPF50-L23-PEDMNT-DUAL-GW-USA |
| | Dual Port, J1772, Pedestal, 7.0 m (23 ft) Cable with 8' Cable Management Kit | CPF50-L23-PEDMNT-CMK8-DUAL-GW-USA |

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| | | |
|---|---|---|
| | Single Port, J1772, Wall, 7.0 m (23 ft) Cable with 8' Cable Management Kit | CPF50-L23-WALLMNT-CMK8-GW-USA |
| | Single Port, NACS, Wall, 7.0 m (23 ft) Cable | CPF50-L23-GW-NACS-USA |
| | Single Port, NACS, Pedestal, 7.0 m (23 ft) Cable | CPF50-L23-PEDMNT-GW-NACS-USA |
| | Dual Port, J1772, Pedestal, 7.0 m (23 ft) Cable | CPF50-L23-PEDMNT-Dual-GW-NACS-USA |
| | Dual Port, J1772, Pedestal, 7.0 m (23 ft) Cable with 8' Cable Management Kit | CPF50-L23-PEDMNT-CMK8-Dual-GW-NACS-USA |
| | Single Port, J1772, Wall, 5.4 m (18 ft) Cable | CPF50-L18-GW-CAN |
| Canada Models | Single Port, Pedestal 5.4 m (18 ft) Cable | CPF50-L18-PEDMNT-GW-CAN |
| | Single Port, Pedestal 5.4 m (18 ft) Cable with 6' Cable Management Kit | CPF50-L18-PEDMNT-CMK6-GW-CAN |
| | Dual Port, Pedestal, 5.4 m (18 ft) Cable | CPF50-L18-PEDMNT-DUAL-GW-CAN |
| | Dual Port, Pedestal, 5.4 m (18 ft) Cable with 6' Cable Management Kit | CPF50-L18-PEDMNT-CMK6-DUAL-GW-CAN |
| | Single Port, Wall, 5.4 m (18 ft) Cable with 6' Cable Management Kit | CPF50-L18-WALLMNT-CMK6-GW-CAN |
| | Single Port, J1772, Wall, 7.0 m (23 ft) Cable | CPF50-L23-GW-CAN |
| | Single Port, Pedestal, 7.0 m (23 ft) Cable | CPF50-L23-PEDMNT-GW-CAN |
| | Single Port, Pedestal, 7.0 m (23 ft) Cable with 8' Cable Management Kit | CPF50-L23-PEDMNT-CMK8-GW-CAN |
| | Dual Port, Pedestal, 7.0 m (23 ft) Cable | CPF50-L23-PEDMNT-DUAL-GW-CAN |
| | Dual Port, Pedestal, 7.0 m (23 ft) Cable with 8' Cable Management Kit | CPF50-L23-PEDMNT-CMK8-DUAL-GW-CAN |

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## General Specifications

### Electrical Input

CPF50 supports flexible current settings up to 50 A to fit your needs.

Power Select allows CPF50 stations to be installed and software-configured for current input/output lower than the maximum 50 A rating depending on your electrical and charging requirements. CPF50 Power Select current input/output options include 16 A, 24 A, 32 A, 40 A, and 48 A.

Power Share allows two stations to share power from a single circuit dynamically across the stations, adjusting each station's power output depending on whether one or both are actively charging. Standard wiring uses an independent circuit for each station. Power Share can be used in combination with Power Select.

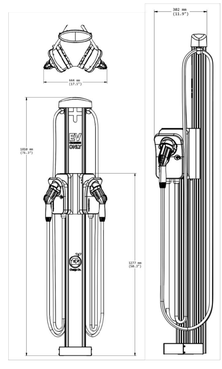
| Electrical Input | One Station (AC Voltage 208 / 240V AC) | | | Two Stations (AC Voltage 208 / 240V AC) | | |
|---|---|---|---|---|---|---|
| | Input Current | Input Power Connection | Required Service Panel Breaker | Input Current | Input Power Connection | Required Service Panel Breaker |
| Maximum 50 A (Standard) | 50 A | One 70 A branch circuit | 70 A dual pole (non-GFCI) | 50 A x 2 | Two independent 70 A branch circuits | 70 A dual pole (non GFCI) x 2 |
| Maximum 50 A (Power Share) | N/A | N/A | N/A | 50 A | One 70 A branch circuit split to two | 70 A dual pole (non GFCI) |
| Power Select 16 A – 48 A (Standard) | 16 A – 48 A | One branch circuit rated 125% of input current (20 A – 60 A) | Dual pole (non-GFCI) rated 125% of input current (20 A-60 A) | 16 A – 48 A x 2 | Two independent branch circuits rated 125% of input current (20 A – 60 A) | Dual pole (non-GFCI) rated 125% of input current x 2 |
| Power Select 16A - 48A (Power Share) | N/A | N/A | N/A | 16 A – 48 A | One branch circuit rated 125% of input current (20 A | Dual pole (non-GFCI) rated 125% of input current (20 A- 60 A) |

ChargePoint, Inc. reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.



### Dual Pedestal Mount with Cable Management Kit

CPF50-L18-PEDMNT-CMK6-Dual-GW (6 ft)



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| 1 | | | | | |
| NO. | DATE | REVISIONS | APP. | DATE | |

**PLANS PREPARED BY:**
WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-B2306548.000
LICENSE NO. E15610 EXP. DATE: 12/31/25

**SEAL**
REGISTERED PROFESSIONAL ENGINEER RAYMOND W. GRAVES No. E15610 12/31/2025 STATE OF CALIFORNIA
**DATE: 09/18/25**

**DRAWN BY:** RC
DESIGNED BY: JL
**CHECKED BY:** RS
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**
LINCOLN LO R.C.E. NO. 66116 DATE

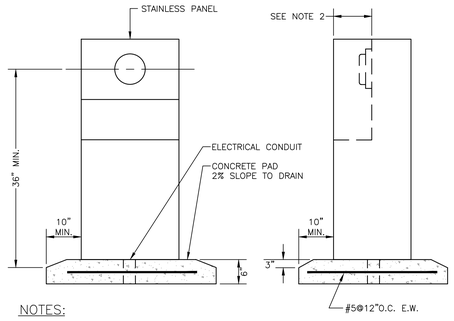
**APPROVED BY:**
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**
**DATE**

**TWO HERITAGE PARK PARKING LOTS**
**DETAILS**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

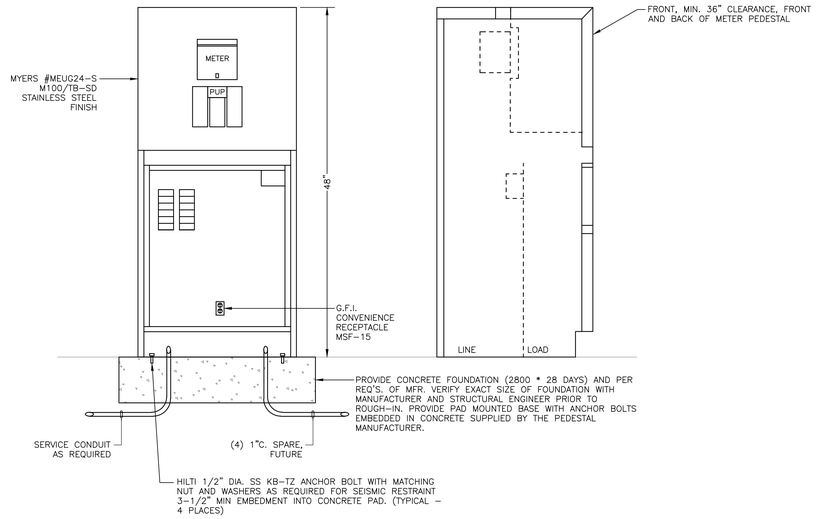
**E-402**

PLAN CHECK NO. *00948134-PARK*
LANDSCAPE PERMIT NO. _____- *LCE*
SHEET 14 OF 19
JOB NO. CIP NO. 361618




NOTES:

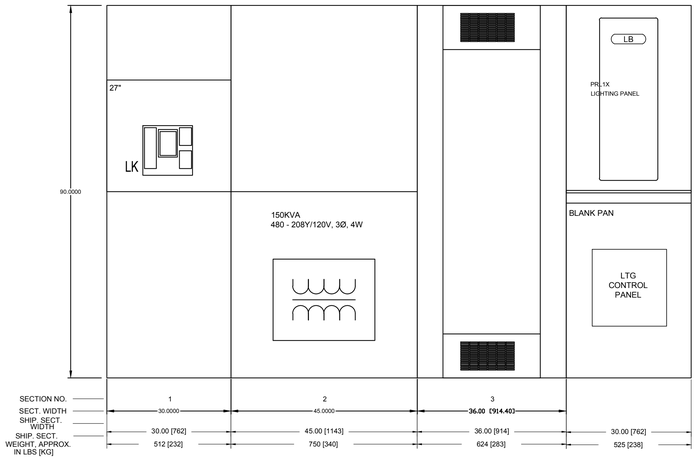
1. ALL ELECTRICAL INSTALLATION SHALL CONFORM TO CITY CODES, ORDINANCES, SOUTHERN CALIFORNIA EDISON COMPANY SPECIFICATIONS, AND REQUIRE SEPARATE ELECTRICAL PERMIT AND INSPECTION. ALL ELECTRICAL EQUIPMENT SHALL BE NEMA, TYPE 3R. WATERPROOFED FOR EXTERIOR INSTALLATION.
2. THE ENCLOSING COVER SHALL BE HINGED OR REMOVABLE FOR METER TESTING AND INSPECTION AND SHALL HAVE A READING WINDOW. FOR SINGLE PHASE SERVICES, THE MINIMUM METER RECESS IS NINE INCHES. FOR THREE PHASE SERVICES, THE MINIMUM METER RECESS IS ELEVEN INCHES.
3. WHERE IRRIGATION CONTROLLER AND ELECTRIC METER PEDESTAL ARE ADJACENT, THEY MAY BE INSTALLED ON SAME CONCRETE PAD.
4. ELECTRICAL CONDUITS MUST BE INSTALLED THROUGH THE BOTTOM OF CONCRETE PAD.
5. METER PEDESTAL SHALL HAVE VANDAL RESISTANT LOCKING DEVICE. LOCKING HARWARE SHALL BE MANUFACTURED BY BEST ACCESS SYSTEMS WITH BEST 7-PIN INTERCHANGEABLE CORE ONLY. NO SUBSTITUTIONS WILL BE ACCEPTED.




## METER PEDESTAL ELEVATION

SCALE: N.T.S.

1

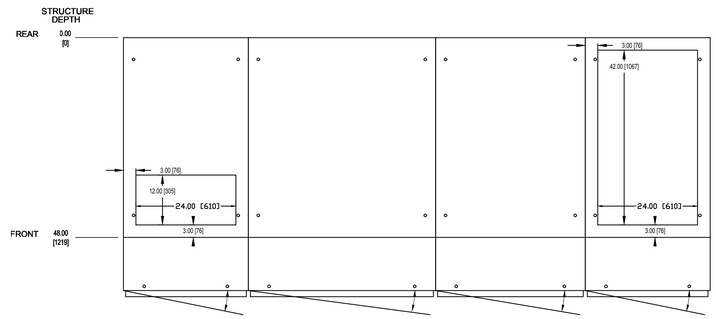



SEE DETAIL 02/CS-02 FOR FOUNDATION, AND 03/CS-02 FOR ANCHORAGE.

## SWITCHBOARD "EVA" ELEVATION

SCALE: NTS

2A




SEE DETAIL 02/CS-02 FOR FOUNDATION, AND 03/CS-02 FOR ANCHORAGE.

## SWITCHBOARD "EVA" PLAN

SCALE: NTS

2B

## ELEVATION NOTES:

1. PROVIDE A 1-1/2" HIGH HOUSEKEEPING PAD FOR SERVICE EQUIPMENT LOCATED INDOORS - SEE SPECIFICATIONS REGARDING OTHER INSTALLATION CONDITIONS. PAD SHALL BE FLUSH WITH FACE OF SWITCHGEAR WHEN LOCATED INDOORS AND EXTEND 4' FROM THE FACE OF THE SWITCHGEAR WHEN LOCATED OUTDOORS. PRIOR TO PAD ROUGH-IN, CONTRACTOR SHALL:
   A. VERIFY SERVING UTILITY COMPANY'S MAXIMUM METER HEIGHT REQUIREMENTS AND, IF NECESSARY, ADJUST HEIGHT OF HOUSEKEEPING PAD TO COMPLY WITH THOSE REQUIREMENTS.
   B. CONFIRM PAD DIMENSIONS WITH LOCAL INSPECTOR PRIOR TO FORMING PAD(S) TO ENSURE ANY LOCAL CODE INTERPRETATIONS/CONDITIONS REGARDING HOUSEKEEPING PADS ARE MET.
2. THIS ELEVATION IS FOR SCHEMATIC INFORMATION ONLY. ORIENTATION MAY BE REVERSE. REFERENCE PLANS AND COORDINATE WITH LOCAL UTILITY COMPANY.
3. ALLOWABLE DIMENSIONS IN MAIN ELECTRICAL YARD 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.
4. SERVICE ENTRANCE EQUIPMENT DIMENSIONS ARE BASED UPON EATON EQUIPMENT. CONTACT JOHN JANSEN, TEL. (951) 316-5242. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL COST TO THE JOB DUE TO THE USE OF ALTERNATE EQUIPMENT.

## NOT USED

SCALE: NTS

3

| NO. | DATE | REVISIONS | APP. | DATE |
|---|---|---|---|---|
| 6 | | | | |
| 5 | | | | |
| 4 | | | | |
| 3 | | | | |
| 2 | | | | |
| 1 | | | | |

CITY OF IRVINE

**PLANS PREPARED BY:**

WSP USA
11870 Pierce Street, Suite 160
Riverside, California 92505
951.299.4160 wsp.com
JERRY LEONHARDT
Electrical Lead
WSP Job #: US-WSP-BZ306548.000

LICENSE NO. E15610 EXP. DATE: 12/31/25

**SEAL**

REGISTERED PROFESSIONAL ENGINEER RAYMOND W. SWARTZ No. E15610 12/31/2025 ELECTRICAL STATE OF CALIFORNIA

**DATE: 09/18/25**

**DRAWN BY:** RC
DESIGNED BY: JL
**CHECKED BY:** RS
RECOMMENDED:

APPROVED BY:
**CITY ENGINEER**

LINCOLN LO R.C.E. NO. 66116 DATE

**APPROVED BY:**
**IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE**

DATE

**E-403**

**TWO HERITAGE PARK PARKING LOTS**
**DETAILS**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

PLAN CHECK NO. 00948134-PARK

LANDSCAPE PERMIT NO. _____- LCE

SHEET 15 OF 19

JOB NO. CIP NO. 361618

SECTION 16010

PART 1 - GENERAL ELECTRICAL SPECIFICATIONS

1.1 WORK INCLUDED:

A. This specification shall apply to all phases of work hereinafter specified, shown on drawings, or as required to provide a complete installation of electrical systems for this project. Work required under this specification is not limited to just the Electrical drawings. Refer to Architectural, Structural, Landscape, and Mechanical/Plumbing drawings as well as all other drawings applicable to this project, which designate the scope of work to be accomplished. The intent of the Drawings and Specifications is to provide a complete and operable electrical system that includes all documents that are a part of the Contract.

1. Work Included: Furnish labor, material, services and skilled supervision necessary for the construction, erection, installation, connections, testing, and adjustment of all circuits and electrical equipment specified herein, or shown or noted on Drawings, and its delivery to the Owner complete in all respects ready for use.

2. The electrical Work includes installation or connection of certain materials and equipment furnished by others. Verify installation details, installation and rough-in locations from the actual equipment or from the equipment shop drawings.

B. Electrical Drawings: Electrical Drawings are diagrammatic, and are intended to convey the scope of work, indicating intended general arrangement of equipment, conduit and outlets. Follow Drawings in laying out Work and verify spaces for installation of materials and equipment based on actual dimensions of equipment furnished.

1.2 QUALITY ASSURANCE

A. Design, manufacture, testing and method of installation of all apparatus and materials furnished under requirements of these specifications shall conform to latest publications or standard rules of the following:

1. Institute of Electrical and Electronic Engineers - IEEE
2. National Electrical Manufacturers' Association - NEMA
3. Underwriter's Laboratories, Inc. - UL
4. National Fire Protection Association - NFPA
5. Federal Specifications - Fed. Spec.
6. American Society for Testing and Materials - ASTM
7. American National Standards Institute - ANSI
8. National Electrical Code - NEC
9. National Electrical Safety Code - NESC
10. Insulated Cable Engineers Association - ICEA
11. American Institute of Steel Construction - AISC
12. State and Municipal Codes In Force In The Specific Project Area
13. Occupational Safety and Health Administration (OSHA)
14. Electronics Industries Association/Telecommunications Industry Association (EIA/TIA)
15. California Electrical Code (where adopted)
16. Local Authority Having Jurisdiction (AHJ) Published Electrical Standards and Codes (as applicable).

B. Perform Work in accordance with the National Electrical Code, applicable building ordinances, and other applicable codes, hereinafter referred to as the "Code." The Contractor shall comply with the Code including local amendments and interpretations without added cost to the Owner. Where Contract Documents exceed minimum requirements, the Contract Documents take precedence. Where code conflicts occur, the most stringent shall apply unless variance is approved.

1. Comply with all requirements for permits, licenses, fees and codes. The Contractor, at Contractor's expense, shall obtain all permits, licenses, fees, special service costs, inspections and arrangements required for Work under this contract, unless otherwise specified.

2. Comply with requirements of the applicable utility companies serving this Project. Make all arrangements with utility companies for proper coordination of Work.

1.3 GENERAL REQUIREMENTS

A. Guarantee: Furnish a written guarantee for a period of one-year from date of acceptance.

B. Wherever a discrepancy in quantity or size of conduit, wire, equipment, devices, circuit breakers, etc., (all materials), arises on the Drawings and/or in the Specifications, the Contractor shall be responsible for providing and installing all material and services required by the strictest condition noted on Drawings and/or in Specifications to ensure complete and operable systems as required by the Owner and Engineer.

C. All Core Cutting, Drilling, and Patching:

1. For the installation of work under this Section, the aforementioned shall be performed under this Section of the Specifications and the Concrete section of the Specifications.
2. No holes will be allowed in any structural members without the written approval of the Project's Structural Engineer.
3. For penetrations of concrete slabs or concrete footings, the work shall be as directed in the Concrete Section of Specifications.
4. The Contractor shall be responsible for patching and repairing surfaces where he is required to penetrate for work under this contract.
5. Penetrations shall be sealed to meet the rated integrity of the surface required to be patched and repaired. The patched surface shall be painted or finished to match the existing surface.

D. Verifying Drawings and Job Conditions:

1. The Contractor shall examine all Drawings and Specifications in a manner to be fully cognizant of all work required under this Section.
2. The Contractor shall visit the site and verify existing conditions. Where existing conditions differ from Drawings, adjustment(s) shall be made and allowances included for all necessary equipment to complete all parts of the Drawings and Specifications.

1.4 WORK IN COOPERATION WITH OTHER TRADES

A. Examine the Drawings and Specifications and determine the work to be performed by the electrical, mechanical and other trades. Provide the type and amount of electrical materials and equipment necessary to place this work in proper operation, completely wired, tested and ready for use. This shall include all conduit, wire, disconnects, relays, and other devices for the required operation sequence of all electrical, mechanical and other systems or equipment.

B. Provide a conduit-only system for low voltage wiring required for control of mechanical and plumbing equipment described in this or other parts of the Contract Documents. Install all control housings, conduits, and backboxes required for installing conduit to the controls.

C. Install separate conduits between each heating, ventilating and air conditioning sensing device and its control panel and/or control motor. Before installing any conduit for heating, ventilating and air conditioning control wiring, verify the exact requirements from the control diagrams provided with the equipment manufacturer's shop drawings.

1.5 TESTING AND ADJUSTMENT

A. Upon completion of all electrical work, the Contractor shall test all circuits, switches, light fixtures, lighting control and dimming systems including distributed systems, UPSs, generators, SPDs, lighting inverters, transfer switches, motors, circuit breakers, motor starter(s) and their auxiliary circuits and any other electrical items to ensure perfect operation of all electrical equipment.

B. Equipment and parts in need of correction, and discovered during such testing, shall be immediately repaired or replaced with all new equipment and that part of the system shall then be retested. All such replacement or repair shall be done at no additional cost to the Owner.

C. All circuit(s) shall be tested for continuity and circuit integrity. Adjustments shall be made for circuits not complying with testing criteria.

D. All test reports, including copies of any required Energy Code Acceptance Forms (e.g. CA Title 24 Acceptance For Code Compliance Forms) should be submitted to the Engineer at completion of project.

1.6 IDENTIFICATION

A. Nameplates shall be provided for unit substations, switchgear, switchboards, distribution boards, distribution panels, panel boards, motor control centers, transformers, transfer switches, contactors, starters, disconnect switches, enclosed circuit breakers/switches, Inverters, UPSs, PDUs, RDCs, SPDs, lighting control panels, dimming panels, door releasing system panels, fire alarm/central monitoring terminal cabinets/power supplies/control panels, and all low voltage system terminal and control cabinets.

1. Nameplate inscriptions shall be identical to the equipment designations indicated in plans and specifications. Nameplates shall be engraved with the device designation/identification on the top line, source identification for the device on the 2nd line per NEC, or CEC where adopted, Art 408.4 and load designation for the device on the bottom line. Where load designation consists of a branch circuit, omit bottom line. Where device designation is not indicated on plans/specifications, Contractor shall submit a written clarification request to the Engineer.

   Example: Transformer 1TA
   Source Disconnecting Location: Switchboard MSA located in RM 110
   Load: Panels 1LA & 1LB

2. All circuit breakers/fuses in switchgear, switchboards, distribution boards, distribution panels, UPS output circuit breakers, PDU sub-feed circuit breakers and motor control centers shall have individual nameplates located immediately adjacent to the respective device. Nameplate inscription shall identify the downstream equipment or device served by the circuit breaker or fuse.

B. Identification nameplates, unless otherwise noted (UON), shall be laminated/extruded modified acrylic that is 3/32" thick, UV-stabilized, matte finish, suitable for use in 180 deg F ambient, with beveled edges and engraved white letters 3/8" high, minimum, on 1-1/2" high black background (utility/normal and optional standby power systems) for single line of text. Where two lines of text are required, provide min. 2" high nameplate. Where three lines of text are required, provide min. 2.5" high nameplate. Provide white letters on red background for all NEC, or CEC where adopted, Article 517 essential power systems, Article 700 Emergency Systems, Article 701 Legally required standby systems and Article 708 COPS.

C. Identification nameplates for new switchgear, switchboards, distribution boards, distribution panels, panelboards and motor control centers shall be attached with switchgear manufacturer-provided screws via switchgear manufacturer factory pre-drilled holes. A factory option to rivet identification nameplates to the equipment is only acceptable if screw-fastened nameplates are not an available option from the switchgear manufacturer. Field drilling or other mechanical attachment methods that change/void the NEMA or NTRL rating of the enclosure are strictly forbidden.

D. Identification nameplates for transformers, transfer switches, disconnect switches, enclosed circuit breakers/switches, inverters, UPSs, PDUs, RDCs, SPDs, lighting control panels, dimming panels, door-releasing system panels, terminal cabinets and all circuit breakers/fuses in switchgear, switchboards, distribution boards, distribution panels, UPS output circuit breakers, PDUs, PDU sub-feed circuit breakers, and motor control centers shall be attached to the equipment by self-adhesive backing integral to the nameplates. When equipment is located outdoors, provide nameplates without self-adhesive backing and attach to equipment using weather-rated, UV-resistant epoxy. In all cases, clean surfaces before applying identification nameplates parallel to equipment lines.

E. Warning Placards, as required by General Single Line Diagram Notes for multiple power sources, or instruction placards, as required for all kirk-key interlock schemes, all UPS bypass procedures or as required elsewhere in the plans/specifications shall be engraved 1/2" high with white lettering on a red background using the same material specified for identification nameplates with a self-adhesive backing. Warning/instruction placards shall be attached to the face of the equipment directly related to the placards. Provide a formal placard submittal for review by the Engineer prior to ordering any warning/instruction placards. In all cases, clean surfaces before applying warning/instruction placards parallel to equipment lines.

F. Receptacles that are part of a UL-listed under floor computer room whip assembly, ceiling and/or cable/ladder tray-mounted receptacles used in lab, manufacturing, commercial kitchen environments or that are serving telcom/data/AV racks and cabinets shall have identification nameplates located on the wiring device plate cover. Nameplates shall be self-adhesive, 3/32" thick Micarta with beveled edges, engraved 1/4" high white lettering on black background with serving power source, circuit identification and NEMA/IEC receptacle type. Use of two (2) separate nameplates per device plate cover is acceptable. Affix nameplates to be visible when plugs are occupying receptacles.

G. See wiring device section of this specification for additional wiring device plate cover labeling requirements.

H. See drawings for panel board schedule directory installation requirements.

I. See conduit installation section of this specification for conduit labeling requirements.

1.7 FINAL INSPECTION AND ACCEPTANCE

A. After all requirements of the Specifications and/or the Drawings have been fully completed, representatives of the Owner will inspect the work. Contractor shall provide competent personnel to demonstrate the operation of any item or system to the full satisfaction of each representative.

B. Final acceptance of the work will be made by the Owner after receipt of approval and recommendation of acceptance from each representative.

1.8 RECORD DRAWINGS

A. Drawings of Record: The Contractor shall provide and keep up-to-date, a complete record set of drawings. These shall be corrected daily and show every change from the original Drawings. This set of prints shall be kept on the job site and shall be used only as a record set. This shall not be construed as authorization for the Contractor to make changes in the layout without definite instruction in each case. Upon completion of the work, a set of reproducible Contract Drawings shall be obtained from the General Contractor and all changes as noted on the record set of prints shall be incorporated thereon with black ink in a neat, legible, understandable and professional manner. Refer to the Supplementary General Conditions for complete requirements.

1.9 APPROVALS, EQUALS, SUBSTITUTIONS, ALTERNATIVES, NO KNOWN EQUAL

A. Approvals: Where the words (or similar terms) "approved", "approval", "acceptable", and "acceptance" are used, it shall be understood that acceptance by the Owner, Architect and Engineer are required.

B. Equal: Where the words (or similar terms) "equal", "approved equal", "equal to", "or equal by", "or equal" and "equivalent" are used, it shall be understood that these words are followed by the expression "in the opinion of the Owner, Architect, and Engineer". For the purposes of specifying products, the above words shall indicate the same size, made of the same construction materials, manufactured with equivalent life expectancy, having the same aesthetic appearance/style (includes craftsmanship, physical attributes, color and finish), and the same performance.

C. Substitution: For the purposes of specifying products, "substitution" shall refer to the submittal of a product not explicitly approved by the construction documents/specifications.

1. Substitutions of specified equipment shall be submitted and received by the Engineer ten (10) days prior to the bid date for review and written approval. Regulatory Agency approval for all substitutions will be the sole responsibility of the contractor. To receive consideration, requests for substitutions must be accompanied by documentary proof of its equality with the specified material. Documentary proof shall be in letter form and identify the specified values/materials alongside proposed equal values/materials. In addition, catalog brochures and samples, if requested, must be included with submittal. ONLY PRE-BID APPROVED PRODUCTS, ISSUED VIA A FORMAL BID ADDENDUM TO ALL BIDDERS, WILL BE ALLOWED ON THE PROJECT. REGARDLESS OF THE APPROVAL ON ANY SUBSTITUTION, ALL BIDS SHALL BE BASED ON THE PRODUCTS EXACTLY AS SPECIFIED. PRICING FOR EACH APPROVED SUBSTITUTION SHALL BE INCLUDED IN THE BID SUBMITTAL AS A SEPARATE LINE ITEM.

2. In the event that written authorization is given for a substitution after award of contract, the Contractor shall submit to the Engineer quotations from suppliers/distributors of both the specified and proposed equal material for price comparison, as well as a verification of delivery dates that conform to the project schedule.

3. In the event of cost reduction, the Owner will be credited with 100 percent of the reduction, arranged by change order.

4. The Contractor warrants that substitutions proposed for specified items will fully perform the functions required.

D. Alternates/Alternatives: For the purposes of specifying products, "alternatives/alternates" may be established to enable the Owner/Architect/Engineer to compare costs where alternative materials or methods might be used. An alternate price shall be submitted in addition to the base bid for consideration. If the alternate is deemed acceptable, written authorization will be issued.

E. No Known Equal: For the purposes of specifying products, "No Known Equal" shall mean that the Owner/Architect/Engineer is not aware of an equivalent product. The Contractor will need to submit a "Substitution" item, per the requirements listed above, if a different product is proposed to be utilized.

1.10 SHOP DRAWINGS/SUBMITTALS

A. Shop Drawings/Submittals, unless required otherwise by general project specifications or instructions to bidders, shall be submitted in electronic format (PDF) to include a Letter of Transmittal (PDF), which shall give a list of the drawings submitted with dates and/or sytem(s) components contained within the submittal. Drawings and material cut sheets shall be complete in every respect and edited/marked to indicate specific items being provided. Printed/Hard copies are not acceptable.

B. The shop drawings/submittals shall be marked with the name of the project, numbered consecutively, and bear the approval of the Contractor as evidence that the Contractor has checked the drawings. Any drawings submitted without this approval will be returned to the Contractor for resubmittal.

C. If the shop drawings show variations from the requirements of the Contract because of standard shop practice or other reasons, the Contractor shall make specific mention of such variations in the Contractor's letter of transmittal. If the substitution is accepted, the Contractor shall be responsible for proper adjustment that may be caused by the substitution. Samples shall be submitted when requested.

D. Only products listed as "Equal" within the contract documents, along with formally approved "Substitutions" will be reviewed. Products not conforming to these items will not be reviewed and will be returned to the Contractor for re-submittal.

E. Review comments used in response to shop drawings/submittals are:

| | |
|---|---|
| 1. "No Exception Taken" | Product approved as submitted. |
| 2. "Furnish as Corrected" | Re-submittal not required, although the Contractor shall provide the submitted product with corrections as noted. |
| 3. "Revise and Resubmit" | Re-submittal required with corrections as noted. |
| 4. "Rejected" | Re-submittal required based upon the originally specified product. |

F. Shop drawings shall be submitted on the following, but not limited to:

1. Lighting fixtures, lamps and ballasts.
2. Switchgear, switchboards, distribution boards, motor control centers, panelboards, and bus ducts; complete with overcurrent device information.
3. Transformers.
4. Fire Alarm System/Central Monitoring System.
5. Wiring Devices.
6. Lighting control products/dimming system products.
7. Pull boxes and underground vaults.
8. Terminal cabinets.
9. Lighting inverters, UPSs, RDCs, PDUs, generators, transfer switches, SPD systems.
10. Cable tray, flexible cable tray and cable runway.
11. Power poles and floor boxes.
12. Arc flash, short-circuit, and coordination studies.
13. All other products called out on drawings that call for shop drawing submittal.

1.11 MAINTENANCE, SERVICING, INSTRUCTION MANUALS AND WIRING DIAGRAMS

A. Prior to final acceptance of the job, the Electrical Contractor shall furnish to the Owner at least four (4) copies of operating and maintenance and servicing instructions, as well as four (4) complete wiring diagrams for the following items or equipment:

1. Lighting control systems/dimming systems.
2. Fire Alarm System.
3. Transformers.
4. Switchgear, switchboards, distribution boards, motor control centers, panel boards, and bus ducts; complete with overcurrent device information.
5. Lighting inverters, UPSs, PDUs, generators, transfer switches, SPD systems.

B. All wiring diagrams shall specifically cover the system supplied. Typical drawings will not be accepted. Four (4) copies shall be presented to the Owner.

1.12 INTERRUPTION OF SERVICES/SERVICE SHUTDOWN

A. Any interruption of electrical services, electrical circuits, electrical feeders, signal systems, communication systems, fire alarm systems, etc., required to perform work shall meet the specific prior-approval requirements of the Owner. Such work shall be scheduled with the Owner to be performed at the Owner's convenience.

B. Interruptions/outages of any of the Owner's systems and services mentioned above shall be scheduled to occur during other than the Owner's normal business hours. Any overtime costs shall be borne by the Contractor.

C. See drawings for any additional requirements regarding outages, interruption and any temporary services required.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials and Equipment: All electrical materials and equipment, including custom-made equipment, shall be new and shall be listed by Underwriter's Laboratories (UL) and bear their label or be listed and certified by a Nationally Recognized Testing Lab (NRTL) that is also recognized by the local Authority-Having-Jurisdiction (AHJ).

B. Switchgear/Switchboards/Distribution Boards/Motor Control Centers:

1. See general single line diagram notes on drawings for more information.

C. Panelboards - Branch Circuit:

1. See drawings for panel board schedules and specifications.

D. Transformers:

1. See drawings for transformer schedules and specifications.

E. Lighting Fixtures:

1. See drawings for lighting fixture and lamp schedules and additional specifications. Furnish, install, and connect a lighting fixture at each outlet where a lighting fixture type symbol (designated on plans) is shown as being installed. Each fixture shall be complete with all required accessories including sockets, glassware, boxes, spacers, mounting devices, fire rating enclosure and lamps.
2. Ballasts: See lighting fixture schedule notes. All noisy ballasts shall be replaced at no cost to the Owner.
3. Lamps: See lamp/fixture schedule and lamp/lighting fixture schedule notes.

F. Wiring Devices:

1. Provide wiring devices indicated per plan. Devices shall be specification grade. Acceptable manufacturers are Leviton, Pass & Seymour and Hubbell. Provide all similar devices of same manufacturer, unless indicated otherwise. All device colors shall be selected from the full range of manufacturer standard color options as selected by the Architect. This direction will be provided in the shop drawing review process.

   a. Wiring Devices (Decora)

| | |
|---|---|
| 1) Convenience Receptacle | #16252-COLOR |
| 2) Dedicated Receptacle | #16352-COLOR |
| 3) Convenience I.G. Receptacle | #16262-IG-COLOR |
| 4) Dedicated IG Receptacle | #16362-IG-COLOR |
| 5) Convenience G.F.C.I. Receptacle | #GFNT1-COLOR |
| 6) Dedicated G.F.C.I. Receptacle | #GFNT2-COLOR |
| 7) Convenience Hospital Grade Receptacle | #16252-HG?-COLOR |
| 8) Dedicated Hospital Grade Receptacle | #16352-HG?-COLOR |
| 9) Convenience G.F.C.I. Hospital Grade Receptacle | #GFNT1-HG? |
| 10) Dedicated G.F.C.I. Hospital Grade Receptacle | #GFNT2-HG? |
| 11) Tamper Resistant Convenience Receptacle | #TDR15-COLOR |
| 12) Tamper Resistant Dedicated Receptacle | #TDR20-COLOR |
| 13) Tamper Resistant GFCI Receptacle | #GFTR2-COLOR |
| 14) Tamper Res. Conv. G.F.C.I. Hospital Grade Receptacle | #GFTR1-HG COLOR |
| 15) Tamper Res. Ded. G.F.C.I. Hospital Grade Receptacle | #GFTR2-HG COLOR |
| 16) Weather/Tamper Resistant GFCI Receptacle | #GFWT2-COLOR |
| 17) Convenience Simplex Receptacle | #16251-COLOR |
| 18) Dedicated Simplex Receptacle | #16351-COLOR |
| 19) Recessed Clock Receptacle | #5361-CH-COLOR (Non-Decora) |
| 20) Single Pole Switch | #5621-2-COLOR |
| 21) Double Pole Switch | #5622-2-COLOR |
| 22) Three Way Switch | #5623-2-COLOR |
| 23) Four Way Switch | #5624-2-COLOR |
| 24) Pilot Light Switch "On" | #5628-2-COLOR |
| 25) Pilot Light Switch "Off" | #5631-2-COLOR |
| 26) Projection Screen Switch | #5657-2-COLOR |
| 27) Low Voltage Momentary Switch | #5657-2-COLOR |
| 28) Keyed Switch | #1221-2L-COLOR |
| 29) Door Jam Switch | #1865-COLOR (Non-Decora) |

   b. Use of dedicated receptacles is required where plans depict a branch circuit supplying only a single simplex or duplex receptacle. Use of controlled receptacles is required where depicted on plans - See controlled receptacle specifications for additional information.

2. I.G. (isolated ground) receptacle bodies shall be of a basic color specified above with an orange triangle to symbolize isolated ground.
3. H.G. (hospital grade) receptacle bodies shall be of a basic color specified above with a green circle to symbolize hospital grade.
4. When shown circuited with an I.G. conductor, all receptacles shall be of the I.G. type. As an example, a NEMA L6-30R denoted on the plans and shown circuited with an I.G. conductor shall be an I.G. version of the receptacle.
5. Wiring devices located in wood finished areas shall generally be black unless otherwise indicated by the Architect.
6. Wiring devices located in mirrors shall generally be white with stainless steel cover plates unless otherwise indicated by the architect.
7. In addition to other device requirements listed elsewhere in this specification and NEC, or CEC where adopted, Articles 406.12 & 517.18, all 125V & 250V, 15A and 20A, non-locking receptacles shall be Tamper-Resistant when located in the following locations:

   a. In dwelling units per NEC, or CEC where adopted, Article 210.52
   b. In guest rooms and guest suites of hotels and motels
   c. In child care or daycare facilities.
   d. In preschool and elementary education facilities
   e. In business offices, corridors, waiting rooms and the like in clinics, medical and dental offices and outpatient facilities.
   f. In a subset of Assembly Areas outlined in NEC, or CEC where adopted, Article 518.2 including transportation waiting areas, gymnasiums, skating rinks, and auditoriums.
   g. In dormitories.
   h. In pediatric care areas per NEC, or CEC where adopted, Article 517.18 (C).

8. Wiring devices shall be listed "hospital grade", and so identified, in the following locations:

   a. Patient bed locations within general care areas per NEC, or CEC where adopted, Article 517.18(B).
   b. Patient bed locations within critical care areas per NEC, or CEC where adopted, Article 517.19(B).
   c. In "other-than-hazardous" anesthetizing locations per NEC, or CEC where adopted, Article 517.61(C)(2).

9. Wiring device cover plates located on recessed boxes shall be commercial grade nylon. Plate color shall match wiring device color UON on plans. Cover plates utilized on surface mounted boxes shall be metal. Plastic cover plates are unacceptable.
10. Except as otherwise noted, all wiring device plates on the project shall be labeled with panel and circuit number(s) utilizing a Brother P-Touch labeling system with 1/2" tape (yellow on black) or equal by Herman-Tellerman or Panduit. Locate label on the concealed side of the wiring device plate. Handwritten labels are unacceptable.
11. The Contractor shall provide duplex receptacle outlets in the appropriate configurations necessary to comply with applicable energy code requirements for controlled receptacles and as shown on plans. All wiring devices indicated to be controlled receptacles shall be NEMA-approved, electrical code-compliant with factory markings on the face of the receptacle(s) with the word "Controlled" or utilize further markings and symbols to indicate which receptacles on each outlet is/are controlled. Stickers, field-applied markings or other non-permanent markings are not acceptable. Where a GFCI receptacle outlet is required to be controlled, provide an adjacent controlled duplex receptacle outlet connected on the load side of the GFCI outlet. Generally, one receptacle in a duplex receptacle outlet is required to be controlled. It may be the lower receptacle or upper receptacle based on manufacturer offering. However, the controlled receptacle location within a controlled receptacle outlet shall remain consistent throughout the project. Where an existing duplex receptacle outlet is required to be controlled, provide a new wiring device with the appropriate control configuration necessary to comply with plans. All controlled receptacles shall be connected to a branch circuit controlled by an occupancy sensor-based or relay panel lighting control system. Acceptable manufacturers are Leviton, Pass and Seymour & Hubbell.
12. The following wiring device plates shall have custom engraving:

   a. Key operated switches, switches with pilot lights, and switches for the control of motors, heaters and ventilators. Engraving shall be black and occur on the exposed side of the plate indicating the motor, heater, or ventilator controlled.
   b. Receptacles on optional standby generator and/or UPS power shall have custom engraved plates with the words "Generator" or "UPS" in black letters. In addition, where located in telecommunications closets, IDFs, server rooms, data centers, labs (wet, dry or electronic) indicating panel board and circuit number.
   c. For Health Care Facilities, provide custom engraved device cover plates, for all devices, indicating panel board and circuit number. Devices served by normal/utility power circuits shall have black lettering, devices served by essential electrical system power circuits shall have red lettering.
   d. All stainless steel and nylon device plates shall be engraved using a rotary engraving process except for black lettering on stainless steel device plates which may be accomplished via laser etching process. All lettering shall be 3/16" high. Provide a dimensioned submittal drawing detailing a typical device faceplate with engraving.

G. Weatherproof Outlet Covers/Assemblies: All Receptacles identified as weatherproof on the drawings shall be weather-resistant, tamper-resistant, GFCI type and equipped as follows:

1. Type WP-A: Recessed wall box with a hinged, lockable, cast aluminum, self-closing, gasket-equipped door that is wet location-listed raintight while "in use". Unit shall comply with NEC, or CEC where adopted, Article 406.9(A) and (B). UON on drawings, provide a minimum of 2 separate compartments suitable for installation of power receptacles, AV or communications outlets. Additionally, unless otherwise noted on drawings, provide the following:

   a. A 20A Weather-resistant, tamper-resistant, GFCI duplex receptacle in the first compartment. Provide branch circuiting per plans.
   b. A blank metal plate suitable for field installation of power, AV or communications devices in the second compartment.
   c. Where indicated on plans as requiring data, AV, or other low voltage service outlet, provide min. 3/4" C.O. with pull string routed from the second compartment to nearest low voltage pull box. Where shown mounted in a building wall, any blank/unused compartment shall be equipped minimum 3/4" C.O. with pull string routed to the nearest accessible ceiling space.
   d. See wiring device section of this specification for additional wiring device plate cover labeling requirements.
   e. (1) key minimum per device (minimum of (2) per project) to the Owner's project manager upon completion of project.
   f. Custom color powder coat finish as selected by Architect - Include all costs in base bid for same.
   g. In locations with sufficient wall depth, provide 6" wide x 6" tall x 5-1/2" deep recessed wall box (C.W. Cole #TL310-WCS-K1-CUSTOM COLOR).
   h. In locations utilizing shallow stud walls construction or other walls of insufficient depth, provide 10-3/4" wide x 7-3/8" tall x 3-7/8" deep recessed wall box (C.W. Cole #TL310-WCS-SH-K1-CUSTOM COLOR).
   i. See drawings for additional details.

2. Type/Subscript WP-B: Wet location-listed raintight while "in use" cast copper-free aluminum, extra-duty, lockable cover with baked aluminum lacquer finish and one-gang, weather-resistant, tamper-resistant GFCI receptacle. Hubbell WP26E series. Polycarbonate covers are unacceptable. Unit shall comply with NEC, or CEC where adopted, Article 406.9(A) and (B). Contractor shall powder coat cover assembly to a custom color where receptacle locations are deemed by the Architect to be in aesthetically sensitive or public spaces. Custom color as selected by Architect.
3. Type WP-C: (C.W. Cole #TL310-WCS-PED-ADA-K1-CUSTOM COLOR or #TL310-WCS -PED-K1-CUSTOM COLOR) pedestal box with a hinged, lockable, cast aluminum, self-closing, gasket-equipped door that is wet location - listed raintight while "in use". Unit shall comply with NEC, or CEC where adopted, Article 406.9(A) and (B). UON on drawings, provide a minimum of 2 separate compartments suitable for installation power receptacles, AV or communications outlets. Additionally, unless otherwise noted on drawings, provide the following:

   a. A 20A weather-resistant, tamper-resistant, GFCI duplex receptacle in the first compartment. Provide branch circuiting per plans.
   b. A blank metal plate suitable for field installation of power, AV or communications devices in the second compartment.
   c. Where indicated on plans as requiring data, AV or other LV outlet, provide min. 3/4" C.O. with pull string routed from the second compartment to nearest low voltage pull box.
   d. See wiring device section of this specification for additional wiring device plate cover labeling requirements.
   e. 1 key minimum per device (minimum of 2 per project) to the Owner's project manager upon completion of project.
   f. Include all costs in base bid for ADA version (22.5" tall) of pedestal box. Prior to ordering material, contractor shall coordinate with architect and/or AHJ to determine which pedestal box locations do not require ADA compliance and may be changed to the standard (11.5" tall) version of the pedestal box.
   g. Custom color powder coat finish as selected by Architect. Include all costs in base bid for same.
   h. See drawings for additional details.

4. Type/Subscript WP-D: Damp location-listed (not-raintight-in-use) cast copper-free, pad lockable, die-cast aluminum cover with baked aluminum lacquer finish and one gang GFCI receptacle. Hubbell/rayco 5027/5037 Series. Polycarbonate covers are unacceptable. Unit shall comply with NEC, or CEC where adopted, article 406.9(A) and (B). Custom color powder coat finish as selected by Architect. Include all costs in base bid for same.

H. Motor Controllers/Starters: See drawings for motorized equipment schedules and specifications.

I. Circuit Breakers.

1. Service entrance circuit breakers smaller than 400A frame shall be thermal-magnetic trip with inverse time current characteristics unless otherwise indicated below. Service entrance main circuit breakers and main circuit breakers, 400A frame and larger shall be 100% rated, solid-state type as outlined in this specification. All other service entrance circuit breakers, 400A frame and larger, shall be 100% rated, solid-state type as outlined in this specification.
2. All non-service entrance circuit breakers 225A and larger shall be thermal magnetic type and have continuously adjustable instantaneous pick-ups of approximately 5 to 10 times trip rating. Breakers shall have either tamper-resistant rating dials or easily changed trip rating plugs with trip ratings as indicated on the Drawings. Rating plugs shall be interlocked so they are not interchangeable between frames. Additionally, all non-service entrance circuit breakers, 600A frame and larger, located in 480V 3 phase, 3-wire or 277/480V, 3 phase 4-wire switchgear, distribution boards, panel boards or busway plugs, shall be solid state, 100% rated. Breaker shall have built-in test points for testing long delay, short delay and instantaneous, and ground fault (where shown) functions of the breaker by means of a 120V operated test kit. Contractor shall utilize a test kit capable of testing all breakers 400A and above - at the Engineer's request.
3. All non-service entrance circuit breakers less than 225A shall be molded plastic case, air circuit breakers conforming to UL 489. Provide breakers with thermal magnetic trip units, and a common trip bar for two- or three-pole breakers, connected internally to each pole so tripping of one pole will automatically trip all poles of each breaker. Provide breakers of trip-free and trip-indicating bolt-on type, with quick-make, quick-break contacts. Provide single two- or three-pole breaker interchangeability. Provide padlocking device for circuit breakers as shown on the Drawings.
4. Where a Current Limiting Circuit Breaker (CLCB) is indicated on drawings or as required elsewhere in this specification, provide a UL listed current limiting thermal magnetic circuit breaker(s) UON. An independently operating limiter section within a molded case is not allowed. Coordinate CLCB ratings as required to protect electrical system components on the load side of the CLCB to include, but not limited to, protecting automatic transfer switches, panel boards and lighting control panels.
5. Where a solid state circuit breaker is indicated on drawings or as required elsewhere in this specification, provide a solid state circuit breaker with minimum five function complete with built-in current transformers. The five functions shall be independently adjustable and consist of Overload/Long Time Amp Rating, Long Time Delay, Short Time Delay, Short Circuit/Instantaneous Pick-up, but may also include Shunt Trip and/or Ground Fault if so indicated on the Drawings. Rating plugs shall be interlocked so they are not interchangeable between frames. Breaker shall have built-in test points for testing long delay and instantaneous, and ground fault (where shown) functions of the breaker by means of a 120V operated test kit. Contractor shall utilize a test kit capable of testing all breakers 400A and above, at the Engineer's request.
6. Circuit breakers, 1200A Frame or larger, or circuit breakers with sensors or adjustable trip settings, 1200A or larger, shall be equipped with an Energy Reducing Maintenance Switch that complies with NEC, or CEC where adopted, 240.87 (B) (3) unless specified elsewhere with an alternate arc energy reduction method allowed by this same code section.
7. Ground Fault Interrupting Breakers: Provide with molded plastic case, air circuit breakers, similar to above with ground fault circuit interrupt capability, conforming to UL Class A, Group 1.
8. Arc Fault Interrupting Breakers: Provide with molded plastic case, air circuit breakers, similar to above with arc fault circuit interrupt capability, conforming to UL 1699. Provide on all dwelling-unit circuits supplying bedrooms, sleeping quarters, etc., as required to comply with NEC, or CEC where adopted, Article 210.12.
9. Tandem or half-sized circuit breakers are not permitted.
10. Series-Rated Breakers: UL listed series-rated combinations of breakers can be used to obtain panelboard-interrupting ratings shown on Drawings. If series-rated breakers are used, switchboards, distribution boards and panelboards shall be appropriately labeled to indicate the use of series rated breakers. Shop drawing submittal shall include chart of UL listed devices which coordinate to provide series rating.
11. Circuit breakers shall be standard interrupting construction. Panelboards shall accept standard circuit breakers up to 100A.
12. Circuit breaker handle accessories shall provide provisions for locking handle in the on or off position.
13. Shunt trip equipped circuit breakers shall be provided on all elevator feeders.
14. Temperature compensating circuit breaker(s) shall be provided when located in outdoor enclosure(s) or when located in an enclosure subject to high ambient heat due to nearby industrial processes, etc.
15. Provide 75 degree Celsius-rated conductor lugs/lug kits as required on all circuit breakers to accept conductor quantities and sizes shown on drawings.
16. All circuit breaker terminations shall be suitable for use with 75 degree Celsius ampacity conductors. Listed, dual-rated pin terminals, straight or offset, are acceptable for use to in accommodating oversized or parallel conductor installations.
17. Circuit breakers serving Fire Alarm or Central Monitoring panels and power supplies shall be red in color and lockable in the "ON" position.

J. Disconnect Switches:

1. Non-fusible or fusible, heavy-duty, externally operated horsepower-rated, 600V A.C: Provide NEMA 3R, lockable enclosures for all switches located on roof tops, in wet or damp areas and in any area exposed to the elements.
2. Fusible switches shall be Class "R" when 600A or less, and Class "L" when greater than 600A.
3. Amperage, horsepower, voltage, and number of poles per drawings: All shall be clearly marked on the switch nameplate.
4. Provide the Owner's project manager with one (1) spare set of fuses and two (2) sets of fuse clips/fuses for every set of fuses on the project.

K. Fuses:

1. Provide fuses at all locations shown on the Drawings and as required for supplemental protection:

   a. Fuses shall be manufactured by Bussmann, Shawmut or equal.
   b. All fuses shall be the product of a single manufacturer.

2. Main and Feeder Protection:

   a. Protective devices rated greater than 600A: Provide Bussman Hi-Cap fuses, Class L, current-limiting, having an interrupting rating of 200,000A RMS.
   b. Protective devices rated 600A or less: Provide Bussman Class R fuses, Class RK series current-limiting fuses, having an interrupting rating of 200,000A RMS.

3. Motor Protection:

   a. Where rating of protective device is greater than 600A: Provide Bussman Hi-Cap fuses, Class L, current-limiting, having an interrupting rating of 200,000A RMS.
   b. Where rating of protective device is 600A or less: Provide Bussman Class RK series current-limiting fuses, having an interrupting rating of 200,000A RMS.
   c. Where fuses feeding motors are indicated, but not sized: It shall be the responsibility of the Contractor to coordinate the fuse size with the motor to provide proper motor running protection.
   d. When rejection type fuses are specified (Class RK series) the fuse holder of all switches (specified in other Sections) shall be suitable for the fuses provided.

L. Cable Tray, Flexible Cable Tray and/or Cable Runway:

1. See drawings for Cable Tray, Flexible Cable Tray and/or Cable Runway specifications.

M. Uninterruptible Power Systems (UPS):

1. See drawings for UPS schedules and specifications.

N. Power Distribution Units (PDU):

1. See drawings for PDU schedules and specifications.

O. Generator Systems:

1. See drawings for Generator schedules and specifications.

P. Transfer Switches:

1. See drawings for Transfer Switch schedules and specifications.

Q. Lighting Control/Dimming Systems:

1. See drawings for Lighting Control and/or Dimming Systems schedules and specifications.
2. Wall box dimmers shall be rocker-type as manufactured by Lutron (no known equal except as noted below). Dimmers and dimmer faceplates shall match the color of adjacent switches and faceplates. Dimmers and dimmer faceplates in wood finished areas shall generally be black unless otherwise indicated by the Architect. The Contractor shall obtain written approval of the Architect regarding final dimmer and dimmer faceplate color selection prior to ordering material. Multiple dimmers/switches shall be ganged together with a common cover plate. Provide dimmers as follows:

| | | |
|---|---|---|
| a. | Incandescent: | Lutron DIVA DV-10P or DV-103P (3-way) (1000 Watt max.) |
| b. | Electronic Low Voltage: | Lutron DIVA DVELV-300P or DVELV-303P-(3-way) (300 Watt) |
| c. | Magnetic Low Voltage: | Lutron DIVA DVLV-10P or DVLV-103p (3-way) (600 Watt max.) |
| d. | Fluorescent (3

U. Fittings:

1. Conduit type fittings shall be smooth inside and out, taper threaded with integral insulating bushing and of the shapes, sizes and types required to facilitate installation or removal of wires and cables from the conduit and tubing system. These fittings shall be of metal, smooth inside and out, thoroughly galvanized, and sherardized cadmium plated.

2. Metallic conduit covers shall have the same finish as the fitting and shall be provided for the opening of each fitting where conductors do not pass through the cover.

3. Connector, coupling, locknut, bushings and caps used with rigid conduit shall be steel, threaded and thoroughly galvanized. Bushings shall be insulated.

4. UON all interior EMT fittings, connectors and couplings installed in concealed locations, areas not considered to be wet or damp locations by the AHJ, or areas not subject to physical damage, shall be steel, zinc or cadmium plated, threadless, compression, steel locking ring type with insulated throat. Where suitable for use, steel set screw fittings are allowed for trade sizes of 2" and smaller. Insulated throat is not required for fittings, connectors and couplings 1" and smaller.

5. All interior and exterior EMT fittings, connectors and couplings, 2" and smaller, installed in exposed or concealed locations that are considered by the AHJ to be wet or damp locations, shall be raintight-listed, steel, zinc or cadmium plated, threadless, compression, steel locking ring type with insulated throat. If raintight-listed, EMT fittings, connectors and couplings are unavailable for a given trade size or if conduit is installed in an area subject to damage - provide rigid metallic or intermediate metallic conduits, fittings, connectors and couplings as required.

6. Flexible steel conduit connectors shall be a malleable iron clamp or squeeze type or steel twist-in type with insulated throat. The finish shall be zinc or cadmium plating.

7. Conduit unions shall be "Erickson" couplings, or approved equal. The use of running threads will not be permitted.

V. 600V Conductors - Wire and Cable:

1. All conductors shall be copper. Provide stranded conductor for #10 AWG and larger or when making flexible connections to vibrating machinery. Use compression "fork" type connectors or transition to solid conductors when connecting to switches, receptacles, etc.

2. Type THHN/THWN-2 thermoplastic, 600V, UL approved, dry and wet locations rated at 90 degrees Celsius, for conductors of all sizes from #12 AWG up to and including 1000 kcmil. RHH/RHW insulation is allowed only to provide an Electrical Circuit Protective System to comply with NEC, or CEC where adopted. Articles 695 and 700.

3. Wire and cable shall be new, manufactured not more than six (6) months prior to installation, shall have size, type of insulation, voltage rating and manufacturer's name permanently marked on outer covering at regular intervals.

4. Wire and cable shall be factory color-coded by integral pigmentation with a separate color for each phase and neutral. Each system shall be color-coded and it shall be maintained throughout.

5. Systems Conductor Color Coding:

   a. Power 208/120V, 3PH, 4W:
      1) Phase A = Black
      2) Phase B = Red
      3) Phase C = Blue
      4) Neutral = White or White with Phase Color Tracer
      5) Switchlegs = Purple (Switchlegs shall also be identified separately by numerical tags)
      6) Travelers = Purple with Black stripe or Pink

   b. Power 480/277V, 3PH, 4W:
      1) Phase A = Brown
      2) Phase B = Orange
      3) Phase C = Yellow
      4) Neutral = Grey or Grey with Phase Color Tracer
      5) Switchlegs = Purple (Switchlegs shall also be identified separately by numerical tags).
      6) Travelers = Purple with Black stripe or Pink.

   c. Ground Conductors: Green

   d. Isolated Ground Conductors: Green with continuous Yellow stripe

   e. Fire Alarm System: As recommended by the manufacturer

6. All color-coding for #12 through #6 AWG conductor shall be as identified above. Conductors #4 AWG and larger shall be identified by utilizing phase tape at each termination.

7. No conductors carrying 120V or more shall be smaller than #12 AWG.

8. Aluminum conductors shall not be used.

9. Wire-pulling compounds used as lubricants in installing conductors in raceways shall only be "Polywater J". No oil, grease, graphite, or similar substances may be used. Pulling of #1/0 or larger conductors shall be done with an approved cable pull machine. Other methods; e.g. using vehicles or block and tackle to install conductors are not acceptable.

W. Medium Voltage Conductors (greater than 600V):

1. See drawings for Medium Voltage Cable Schedule and Specifications.

X. Junction and Pullboxes:

1. For interior dry locations, boxes shall be NEMA 1 galvanized one-piece drawn steel, knockout type, with removable, machine screw secured covers.

2. For outside, damp or surface locations, boxes shall be NEMA 3R heavy cast aluminum or cast iron with removable, gasketed, non-ferrous machine screw secured covers.

3. For in-grade applications, junction and pull boxes shall be pre-cast concrete or molded fiberglass manufactured by Christy, Brooks-Jensen, or Utility Vault Co. Fiberglass boxes shall:

   a. Be used only in landscape planter areas that are not subject to damage from lawnmowers, tractors and other machinery.

   b. Not be used in lawn or turf areas.

   c. Not exceed 11" W x 17" L in size unless required to be larger to meet code requirements.

4. All boxes shall be sized for the number and sizes of conductors and conduits entering the box and equipped with plaster rings where required.

5. All boxes located in traffic areas shall be traffic rated.

Y. Outlet Boxes:

1. For fixtures, boxes shall be galvanized, one-piece drawn steel, knockout type equipped with 3/8" fixture studs and plaster rings where required.

2. For convenience outlets, wall switches, or other devices, outlet boxes shall be galvanized one-piece drawn steel, knockout type 4" x 4" x 2-1/8" minimum size with plaster rings as required.

3. For locations where standard boxes are not suitable due to number and size of conduit to be terminated, special boxes shall be designed to fit space or meet other requirements and submitted for approval.

4. For exposure to weather, damp locations, or surface mounting, outlet boxes shall be heavy cast aluminum or cast iron with threaded hubs; covers shall be watertight with gaskets and non-ferrous screws.

5. Outlet boxes used for support of ceiling fans shall be galvanized, one-piece drawn steel, knockout type equipped with bracing bars and plaster rings where required and listed for ceiling fan support use. Such boxes shall be labeled and capable of supporting ceiling fan weights up to 70 pounds.

6. See drawings for floor box installation notes and specifications.

Z. Plywood Backboards: Where indicated for telephone or communications system terminals or other equipment assemblies, provide backboards of size indicated. Use 3/4" thick x 8' tall (length per plans), Douglas Fir, void-free, kiln-dried, fire-rated plywood finished on one side and prime coat painted on all surfaces with finish coat of enamel paint, color by architect. Leave one (1) fire-rating stamp/sheet exposed for inspection.

AA. Terminal Cabinets:

1. Terminal cabinets shall be fabricated of hot dipped galvanized code gauge sheet metal for flush or surface mounting, complete with barriered sections, a door for each vertically barriered section, and sizes as indicated on plan. Doors shall be hinged and lockable. Locks shall be keyed to match the branch circuit panelboards. Terminal cabinet trims shall match the branch circuit panels.

2. Provide each terminal cabinet with a full size mounting backplate.

3. Terminal cabinets shall be installed complete with full-length skirts of the same construction and finish as the terminal cabinet.

4. Where mounted outdoors, terminal cabinets shall be NEMA 3R, weatherproof complete with gaskets and required sealant to prevent moisture from entering the terminal cabinet.

5. All terminal cabinets and terminal cabinet barriered sections shall be labeled by the cabinet or cabinet section use (i.e. CATV, Security, etc.). Labels shall be Micarta type as specified elsewhere in these specifications. Unless otherwise noted, all termination blocks and cables shall be labeled per ANSI/EIA 606 standard.

BB. Painting: Terminal cabinets, panels, junction boxes, pull boxes, etc., and conduit installed in public view shall be painted with colors selected by the Architect to match the subject surface. Refer to painting section of the specifications for additional requirements.

CC. Seismic Design, Certification, and Anchoring of Electrical Equipment:

1. Contractor shall include all costs in the base bid for labor, materials, all special inspections and structural engineering design necessary to meet the Seismic Design Requirements for Non-structural Components (Chapter 13, ASCE/SEI 7-16 Minimum Design loads for Buildings and Other Structures) as required by IBC, or CBC where adopted, Section 1617A and as related to the installation of all electrical equipment furnished under this contract. See Specific Project Site Seismic Criteria on architectural and/or structural plans which include Building Occupancy Category, Seismic Design Category, Design Spectral Response Acceleration ($S_{DS}$), Height factor ratio (z/h) and Site Class. Non-structural Component Importance Factor ($I_p$) for a particular component shall be determined based on the following criteria:

   a. $I_p$=1.0: Non-life safety, Non-structural Components in an Occupancy Category IV Facility not required for continued operations of the facility or in any other Occupancy Category Facility where component failure will not impair continued operation of the facility.

   b. $I_p$=1.5: Designated Seismic Systems are those non-structural components in any Occupancy Category IV facility (except as noted above) or that are a part of any code-defined Critical, Life Safety, Emergency and Legally Required Standby Electrical System. Additionally, those non-structural components containing hazardous materials shall be classified as Designated Seismic Systems. While Designated Seismic Systems are generally identified on the plans, they may include items such as Generators, Automatic Transfer Switches, UPS units and all associated electrical distribution equipment and components necessary for the designated seismic system to form a complete and operable system. The Contractor shall ultimately be responsible for identifying Designated Seismic Systems. For any electrical component either identified on the plans or determined by the contractor to be a Designated Seismic System, all line and load side electrical distribution systems supporting that Designated Seismic System (including, but not limited to, feeders, panel boards switchboards, transformers, all related component supports and attachments, etc.) shall be considered a part of the designated seismic system for the purposes of code-compliance and seismic certification.

   c. z/h - Height factor ratio: See plans for respective equipment locations.

2. Provide a delegated-design submittal for each of the following seismic-restraint systems to be used as required:

   a. Restraint Channel Bracings consisting of MFMA-4, shop-or field-fabricated bracing assembly made of slotted steel channels with accessories for attachment to braced component at one end and to building structure at the other end, with other matching components, and with corrosion-resistant coating; rated in tension, compression, and torsion forces.

   b. Restraint Cables consisting of ASTM A 603 galvanized-steel cables. End connections made of steel assemblies with thimbles, brackets, swivel, and bolts designed for restraining cable service, with a minimum of two clamping bolts for cable engagement.

   c. Seismic-Restraint Accessories consisting of hanger rod/hanger rod stiffener assemblies, multifunctional steel connectors for attaching hangers to rigid channel bracings and/or restraint cables, bushings for floor and wall-mounted equipment, anchor bolts, and resilient isolation washers and bushings.

   d. Mechanical Anchor Bolts consisting of drilled-in and stud-wedge or female-wedge type in zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.

   e. Adhesive Anchor Bolts consisting of drilled-in and capsule anchor system containing resin and accelerator, or injected polymer or hybrid mortar adhesive. Provide specific LEED-compatible, environmentally-friendly resins and adhesives on all LEED projects. Provide anchor bolts and hardware with zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.

3. Submittal shall include design calculations and details for selecting seismic restraints complying with performance requirements, design criteria, and analysis data signed and sealed by the contractor's structural engineer responsible for their preparation. Calculations shall include, but not be limited to, static and dynamic loading caused by equipment weight, operation, and seismic and, if applicable, wind forces required to select seismic and, if applicable, wind restraints and for designing vibration isolation bases. Provide seismic and wind-restraint detailing to support system selection, arrangement of restraints, attachment locations, methods, and spacings with all components identified to include their strengths, directions and values of forces transmitted to the structure during seismic events and association with vibration isolation devices. Sizes of components shall be selected so strength will be adequate to carry present static and seismic loads to accommodate 25% spare future capacity within specified loading limits.

4. Any pre-approval and evaluation documentation shall have a California Office of Statewide Health Planning and Development (OSHPD) Special Seismic Certification Preapproval (OSP) demonstrating horizontal and vertical load testing and analysis showing maximum seismic-restraint ratings, by ICC-ES or another agency acceptable to authorities having jurisdiction. Ratings based on independent testing are preferred to ratings based on calculations. If preapproved ratings are not available, submittals based on independent testing are preferred. Calculations (including combining shear and tensile loads) that support seismic-restraint designs must be signed and sealed by a qualified professional engineer.

5. Coordinate the location of embedded connection hardware with supported equipment attachment and mounting points and with requirements for concrete reinforcement and formwork specified elsewhere in the project specifications.

6. Install flexible connections in runs of raceways, cables, wireways, cable trays, and busways where they cross seismic joints, where adjacent sections or branches are supported by different structural elements, and where connection is terminated to equipment that is anchored to a different structural element from the one supporting them as they approach equipment. Flexible connection limitations of the NEC, or CEC where adopted, shall apply.

7. Install seismic-restraint devices using methods approved by OSHPD or an agency acceptable to authorities having jurisdiction providing required submittals for component.

8. Multiple Raceways or Cables: Secure raceways and cables to trapeze member with clamps approved for application by OSHPD or an agency acceptable to authorities having jurisdiction.

9. The contractor shall engage a qualified testing agency to perform tests and inspections as listed in other Project Specifications, but as a minimum shall include at least four of each type and size of installed anchors and fasteners selected by Architect. Schedule tests with Owner, through Architect, before connecting anchorage device to restrained component (unless post connection testing has been approved), and with at least seven days' advance notice. Obtain Architect's approval before transmitting test loads to structure. Provide temporary load-spreading members as required. Test to 90 percent of rated proof load of device. Prepare and submit test and inspections reports.

DD. Trenching and Backfilling: Contractor shall be responsible for trenching and backfilling. Refer to applicable trenching and backfilling specifications for complete requirements.

PART 3 - EXECUTION

3.1 PREPARATION AND INSTALLATION

A. Installation of Conduit and Outlet Boxes:

1. All conduit installed in the dry walls or ceilings of a building shall be steel tube (EMT), aluminum tube (EMT), or intermediate Metal Conduit (IMC). Flexible conduit shall not be used in lieu of EMT, IMC or rigid conduit except as noted herein.

2. Galvanized rigid conduit (GRC) or intermediate metal conduit (IMC) shall be used as follows:

   a. When noted on the drawings.

   b. When considered exposed to damage by the local AHJ.

   c. When installed in wet or damp locations and of a trade size where listed-raintight fittings, connectors, couplings, etc. are unavailable.

   d. When required by NEC or CEC Article 517.13

   e. When installed in concrete and masonry. The use of ENT in CMU walls and parking structures may be allowed only as directed in writing by the Engineer. Request for ENT substitution must be made prior to bid and in accordance with pre-bid substitution request requirements of these specifications.

3. Intermediate metal conduit (IMC), is approved for use in all locations as approved for GRC or EMT and in accordance with NEC, or CEC where adopted, Article 342.

4. Flexible steel conduit shall only be permitted to be used at light fixture outlets and connections to vibrating electrical equipment. All flexible steel conduit runs shall be less than 6'-0". Except when concealed in walls or other structural elements, all outdoor installation shall be made using liquid-tight flex with approved fittings. Include a separate insulated green ground conductor sized per NEC in each conduit. Other uses of flexible conduit shall be allowed only as approved in writing by the Engineer.

5. Flexible liquid-tight conduit shall be installed in lieu of the flexible steel where required by NEC, or CEC where adopted, in damp and wet location, where exposed to weather, in refrigerated area (65 Deg. F or less), and/or between seismic joints. All rotating electrical equipment shall be supplied with flexible, liquid-tight conduit with appropriate slack and shall not exceed thirty-six (36) inches. Include a separate insulated green ground conductor sized per NEC in each conduit. Other uses of liquid-tight flexible conduit shall be allowed as approved in writing by the Engineer on a case by case basis.

6. Rigid metallic conduit installed underground or embedded in concrete shall be 1" trade size minimum and shall be wrapped with 20 mil polyvinyl chloride plastic tape. PVC conduit installed underground or imbedded in concrete shall be 3/4" minimum trade size.

7. Where required for providing an Electrical Circuit Protective System to comply with NEC, or CEC where adopted, Articles 695 and 700, utilize UL Listed 2-hour fire-rated, MC cable or UL Listed 2-hour fire-rated RHH/RHW conductors in conduit.

8. Conduit shall be run so as not to interfere with other piping, fixtures or equipment.

9. The ends of all conduits shall be cut square, carefully reamed out to full size and shall be shouldered in fitting.

10. No running threads will be permitted in locations exposed to the weather, in concrete or underground. Special union fittings shall be used in these locations.

11. Where conduit is underground, under slabs or grade, exposed to the weather, or in wet locations, make joints liquid tight and gas tight.

12. All metal conduit in masonry and concrete and where concealed under floor slabs shall have joints painted with thread compound prior to makeup.

13. PVC conduit shall not be run in walls except where approved by the Engineer prior to bid in limited instances that may include concrete or CMU walls used in site retaining, parking structures, or exterior equipment yard or enclosure walls, etc.

14. Where conductors enter a raceway or a raceway in a cabinet, pull box, junction box, or auxiliary gutter, the conductors shall be protected by a plastic bushing type fitting providing a smoothly rounded insulating surface.

15. Where conduit extends through roof to equipment on roof area, the Contractor shall provide flashing material compatible with the roofing system as required by the roofing specifications or as required by the Owner's roof warranty. This flashing shall be delivered to the roofing Contractor for installation. The actual location of all such roof penetrations and outlets shall be verified by the Architect/Owner. Contractor to verify type of flashing prior to bid and include all costs.

16. All conduit shall be supported at intervals not less than 6'-0" and within 12" from any outlet and at each side of bends and elbows. Conduit supports shall be galvanized, heavy stamped, two-hole conduit clamp properly secured.

17. Where conduit racks are used, the rack shall consist of two piece conduit clamps attached to galvanized steel slotted channels, properly secured via threaded rods attached directly to the building structure.

18. Nail-in conduit supports, one-piece set screw type conduit clamps or perforated iron for supporting conduit shall not be used.

19. Seismic Conduit Support:

   a. All conduit shall be supported in such a manner that it is securely attached to the structure of the building. Attachment is to be capable of supporting the tributary weight of conduit and contents in any direction. Maximum spacing of support and braces are to be as follows:

| CONDUIT SIZE | MAXIMUM SPACING |
|---|---|
| 1/2" to 3" | 6'-0" |
| 3-1/2" to 4" | 8'-0" |

20. All conduit runs shall be installed parallel or perpendicular to walls, structural members, or intersection of vertical planes and ceilings. Field made bends and offset shall be avoided where possible. Crushed or deformed raceway shall not be installed.

21. Open knockouts in outlet boxes only where required for inserting conduit.

22. Locate wall outlet of the same type at same level in all rooms, except where otherwise noted.

23. Outlet boxes on metal studs shall be attached to metal hangers, tack welded or screwed to studs; On wood studs attachment shall be with wood screws, nails are not acceptable.

24. Recessed boxes shall not be mounted back-to-back in any wall; minimum offset shall be 24 inches.

25. Junction Boxes that do not contain any device(s) shall be located in storage rooms, electrical closets or above accessible ceilings, not in hard lid ceilings or other forms of inaccessible ceilings. Place boxes which must be exposed to public view in a location approved by the Owner's Project Manager. Provide covers or plates to match adjacent surfaces as approved by the Owner's Project Manager.

26. Surface mounted pull boxes, terminal cabinets, junction boxes, panel boards etc., shall be attached to walls using appropriate screws, fasteners, backing plates, stud blocking, etc., as detailed on architectural and/or structural drawings. If architectural and/or structural drawings are not provided on the project, Contractor shall provide all necessary mounting hardware and backing support to comply with local building code requirements and any additional requirements imposed by the local Authority-Having-Jurisdiction.

27. Except where below grade, sleeves shall be installed where conduit passes through masonry or concrete walls and shall be 24 gauge galvanized steel no more than 1/2" greater in diameter than the outside diameter of the conduit. When located in non-rated structures, caulk conduit sleeve with stone wool. When located in fire rated structures, provide UL listed fire stopping system. See fire stopping section of this specification for additional requirements.

28. All boxes shall be covered with outlet box protector, Appleton SB-CK, or similar device/method to keep dirt/debris from entering box, conduit or panels. If dirt/debris does get in, it shall be removed prior to pulling wires.

29. All boxes installed outdoors shall be suitable for outdoor installations, gasketed, screw cover, and painted as directed by the Architect with weatherproof paint to match building.

30. All conduit entries to outdoor mounted panels, cabinets, boxes, etc., shall be made using Myers "SCRU-TITE" hubs Series ST.

31. Provide nylon or a 1/8-inch O.D. polyethylene rope, rated at 250 pounds tensile strength, in all conduits more than 5 feet in length left empty for future use. Not less than 5 feet of rope shall be left at each end of the conduit. Tag all lines with a plastic tag at each end indicating the termination/stub location of the opposite end of the conduit.

32. All multiple conduit runs within suspended ceilings shall be suspended from building structure by means of unistrut hangers/racks. Conduit shall not be allowed to lay on ceiling or be supported from ceiling suspension wires or other suspension system. Support conduit to structure above suspended ceilings 8" minimum above ceiling to allow removal of ceiling tile. Maintain two inch clearance above recessed light fixtures.

33. All exposed conduits and support hardware shall be painted to match the finish of the wall or ceiling to which it is supported.

34. Where conduits or wireways cross seismic joints, provide approved flexible conduit connection or approved expansion/deflection fitting to allow for displacement of conduit in all three axes. Connection shall allow for movement in accordance with design of seismic joint. Non-flexible raceways crossing expansion joints or other areas of possible structural movement shall make provision for 3-way movement at such points by means of expansion/deflection fittings. Fittings shall be installed in the center of their axes of movement and shall not be deflected to make part of a conduit bend, or compressed or extended to compensate for incorrect conduit length. Install flexible conduit connection(s) or approved expansion/deflection fitting(s) complete with ground jumpers. Where necessary, provide approved expansion joints to allow for thermal expansion and contraction of conduit(s). Install expansion joints complete with ground jumpers.

35. Seal all conduits where termination is subject to moisture or where conduit penetrates exterior wall, floor or roof, in refrigerated areas, classified (hazardous areas) and as indicated on the drawings.

36. Except as otherwise indicated on the drawings or elsewhere in these specifications, bends in feeder and branch circuit conduit 2 inches or larger shall have a radius or curvature of the inner edge, equal to not less than ten (10) times the internal diameter of the conduit. Except where sweeping vertically into a building where seven equals ten (10) times conduit diameter, underground communications and building interconnect conduits 3 inches or larger shall have a minimum 12'-6" radius or curvature of the inner edge. For the serving utilities, radius bends shall be made per their respective specifications.

37. Tag all empty conduits at each accessible end with a permanent tag identifying the purpose of the conduit, footage end-to-end, and the location of the other end. In wet, corrosive outdoor or underground locations, use brass, bronze, or copper 16 gauge tags secured to conduit ends with #16 or larger galvanized wire. Inscribe on the tags, with steel punch dies, clear and complete identifying information.

38. The following additional requirements shall apply to underground conduits:

   a. Underground conduit shall be Schedule 40 PVC (polyvinyl chloride) unless otherwise indicated elsewhere in these specifications or as required per NEC, or CEC where adopted, Article 517.13.

   b. For all communications conduits 2" and larger, and feeders 100A or greater, provide with a minimum 3", (2,000 LB) concrete envelope, 2" minimum separation between conduits, installed at depth of not less than 24" below grade. (Provide concrete encasement and/or greater minimum conduit depth as required by the Utility Companies.) Conduit separation within a duct bank shall be maintained using plastic spacers located at 5'-0" intervals. Where power and communication conduits are run in a common trench, a 12" minimum separation shall be maintained between power and communication conduits or as required by Utility Companies. Where concrete encasement is not required by serving utilities for a utility-only duct bank, provide free draining sand bedding suitable to acheive 95% relative compaction based on ASTM D1557 using 6" lifts or directed by Utility Company Standards.

   c. In all cases, where any conduit(s) pass under a building slab or footing, the electrical contractor will provide a Bentonite clay or concrete barrier that conforms to the height and width of the trench excavation extending a minimum of 24" on either side of the foundation. In all cases, where conduit(s) pass through a sleeve in a footing or other foundation element, the electrical contractor will provide a Bentonite clay or concrete barrier between the sleeve and the conduit(s) surrounding the conduit(s) for the entire depth of the sleeve. The barrier is required to prevent passage of moisture under or through the slab or footing via the trench or sleeve.

   d. Where underground conduit passes under a building slab, concrete encasement may not be required, except as required above, contact the Engineer for written direction prior to omitting any encasement.

   e. Underground conduits, which terminate inside building(s) below grade, such as in a basement level, or which slope so that water might flow into interior building spaces, shall be sealed at the point of penetration with a modular conduit seal (Link-Seal or equal by Rox Systems). Conduit/conduit sealing system penetrations of waterproofing membranes/systems on existing structures shall be completely restored as required to maintain membrane/system manufacturer and installer warrantee for the installation. All conduits shall be provided with a 4% slope away from buildings. All conduits shall be installed such that the water cannot accumulate in the conduit and such that water drains into the nearest manhole, pull box or vault and not into the facility. In instances where grade changes or elevation differences prevent sloping of conduit away from a building into the nearest manhole, pull box or vault or where accumulation of water in a manhole, pull box or vault may result in water traveling into the facility, conduits shall be sealed internally at each end of each conduit using conduit sealing bushing, sized as required for the conductors contained within the conduit (O-Z Gedney #CSBG 100psig withstand or equal). In all cases, install plugs or caps in spare (empty) conduits at both ends of each conduit (Jackmoon or equal) preventing both water and gas from entering the facility via the conduits.

   f. Include a separate insulated green ground conductor sized per NEC, or CEC where adopted, in each underground electrical feeder/branch circuit.

   g. All underground conduits with circuits rated at 40A or greater and all underground communications conduits shall be provided with a metallic marker tape located 12" below the finished grade.

   h. Where underground conduits sweep into/through slabs, utilize PVC 90 degree sweeps that transition, via female PVC adapter to GRC coupling mounted flush in slab. GRC couplings shall be 1/2 lap taped with 20 mil tape. If the distance of the conduit run between a sweep and the next connecting sweep, pullbox, vault or manhole exceeds 150 ft then the sweep shall be concrete encased. Exceptions:
      1) Communications conduits shown terminating at a finished floor shall have an additional 4" high GRC nipple equipped with a bushing, removable conduit plug, labeling tag and pull rope. Tie off pull rope to conduit plug.
      2) Utility conduit sweeps shall be installed per the requirements of the respective utility company.

   i. All PVC conduit shall be glued for a water and gas tight installation. The Contractor shall use appropriate solvent on all joints prior to gluing conduit and fittings together.

   j. All underground conduit work shall conform to the Federal, State and Local Safety Orders or Rules regarding excavations, trenches and related earthwork. For projects in California, refer to the California Code of Regulations, Title 8, Construction Code Sections 1540 and 1541 for additional requirements.

39. Installation of Metal Clad (MC) Cable (when use is permitted in the Allowed Specification Deviations Section or Deductive/Additive Alternate Pricing Section generally located on the symbols list drawing).

   a. Provide J-box above accessible ceiling prior to running MC cable within partitions or walls. J-box shall be permanently labeled with panel identification and circuit numbers contained within.

   b. Overhead MC cable runs shall generally follow building lines to provide a neat and workmanlike installation.

   c. Provide code-sized J-boxes to accommodate MC cable splicing in general. For systems furniture poke-through feeds utilizing MC cable, transition from MC cables to conduit and wire near the panelboard in the TI accessible ceiling space on the floor below the panel board via code-sized gutter(s). Utilize UL listed, insulated barrier strips with recessed screw heads (Ideal #89-67? series or equal) fastened within the gutter(s), terminate MC conductors on one side of the strip(s) and individual conductors in conduit from the panel board(s) on the other side of the strip(s). Label each terminal strip(s) with panel designation. Label each phase conductor with circuit number using wire markers (ideal or equal). Wire nuts are not an acceptable alternative to the terminal strips in these underfloor transition locations. Provide (1) spare 3/4" conduit from each gutter to its respective panelboard.

   d. MC cable shall not run directly into panelboards, distribution boards or electrical rooms.

   e. MC cabling shall be provided with its own code-approved ceiling support wires, cable hangers, individual spring steel clamps, bolts, steel trapeze hangers, threaded rods or dedicated #10 AWG drop wire. Cable supports shall be fastened to concrete slabs, beams, joists or other structural members of the building. In no case shall MC cable rest on ceilings, suspended ceilings or structures. Do not support MC cable using ceiling support wires. The use of nylon cable ties to support MC cable is not allowed.

   f. Use lock or spring nut MC cable fittings.

   g. Cable runs shall be continuous from wiring device to wiring device - no intermediate splicing J-boxes allowed.

   h. When terminating or splicing at a junction, outlet, or switch box, cut the cable with an armored cable rotary cutter such that 6" of free conductors remain for connections or splices. Use screw-in or spring lock connector and ensure a proper bonding by firmly tightening the connector to both the box and cable. Insert an anti-short bushing at cable ends to protect conductors from abrasion and use insulated connectors.

   i. MC Cable bend radius shall not be less than seven (7) times the external diameter of the cable.

   j. MC cables passing through fire-rated walls or floors shall be firestopped as required with a UL listed system. See firestopping requirements outlined elsewhere in this specification for additional requirements.

   k. Installation shall not exceed code requirements for total current carrying conductors in multiple MC cable runs bundled together into a single MC cable hanger or strap, unless support device is specifically listed for such purpose. Neutrals shall be counted as current-carrying conductors.

   l. Maintain MC cable clearance of at least 6" from hot water and any other high temperature pipes. Maintain at least 12" clearance between MC cable(s) and telecommunication conduits and cables. MC cable shall cross telecommunication cables and conduits at right angles.

   m. MC cabling shall not be run through exposed ceilings, where open grid conditions exist, exposed on walls, or exposed to view. See Power Plan and Lighting Plan General Notes for additional requirements.

   n. Use of MC-AP, "MC All Purpose" or MC cabling where the interlocked armor sheath forms all or a portion of the equipment grounding conductor is expressly prohibited.

40. Installation of Electrical Nonmetallic Tubing (ENT) Cable (when use is permitted in the Allowed Specification Deviations Section or Deductive/Additive Alternate Pricing Section generally located on the symbols list drawing).

   a. When approved for use in the Allowed Specification Deviations Section or Deductive/Additive Alternate Pricing Section, generally located on the symbols list drawing, 1/2" and 3/4" trade size ENT shall be allowed for concealed lighting branch circuits, receptacle branch circuits and miscellaneous signal system circuits within concrete floors, walls and columns within parking structures.

   b. ENT conduit shall meet the requirements of Underwriters Laboratories Standards 1479 and 1653, NEMA TC-13, and be UL-listed.

   c. All ENT conduit, ENT fittings, ENT boxes and ENT accessories shall be UL listed and manufactured by the same manufacturer so as to form a complete ENT system. ENT systems shall only be used if they are listed for use in fire resistance rated concrete floors and ceilings with resistance ratings as indicated elsewhere in the project plans. ENT System shall comply with NEC, or CEC where adopted, Article 362.

   d. All ENT fittings and ENT boxes shall be concrete-tight listed without the use of tape. Additionally, ENT fittings shall be constructed of high-impact PVC and able to resist ENT conduit pull forces of a minimum of 175 lbs. ENT fittings with fewer than 6 locking tabs for ENT connection shall utilize manufacturer-approved glue as additional protection from fitting/conduit separation. ENT conduit to rigid conduit transition fittings shall be equipped with set screw fittings on the rigid conduit side of the fitting. ENT to metal box fittings shall be equipped with a threaded end and lock washer.

   e. Where tubing enters a box, fitting or other enclosure provide a bushing or adapter to protect conductors from abrasion unless the box, fitting, or enclosure design provides equivalent protection.

   f. ENT junction boxes shall have brass screw inserts and shall be rated to support lighting fixtures weighing less than 50 lbs.

   g. Concrete tight metal boxes shall be used to support pendant hung fixtures or fixtures over 50 lbs.

   h. ENT shall be provided in continuous lengths between junction boxes without use of in-line splices or connectors and shall be clearly marked/labeled at least every 10-feet.

   i. All ENT conduit containing electrical branch circuits shall contain a code-sized equipment ground conductor.

   j. ENT shall transition to EMT, IMC, RMC, or rigid PVC, as appropriate or as called out elsewhere in this specification, for all exposed conduits within/on/under a parking structure.

   k. ENT shall transition to appropriately sized PVC expansion joint(s) at all structure expansion or seismic joints.

   l. ENT shall be securely fastened and supported every 2 - 3 ft. and within 1 ft. of every junction box and fitting to prevent movement and sag.

   m. ENT shall be routed straight without sags, or excessive bending. Where bends are required, comply with Table 362.24 of the NEC for minimum radius of bends. Number of bends shall not exceed quantity allowed by code where used for power and lighting branch circuit and/or feeder conductors. Where utilized for communications system conductors (phones, data cabling, etc.) number of bends shall not exceed the equivalent of (2) 90 degree bends with conduit length no more than 100 feet without installation of a TIA 569-compliant pull box.

   n. Separation of ENT from fitting(s), excessive sags or deflections in ENT runs that prevent pulling of wire, and other ENT system product or system installation failures/errors, shall be corrected by saw cutting and patching as necessary at no additional cost to the Owner. Use of surface mounted conduits and junction boxes as a repair method is unacceptable.

   o. Empty ENT runs shall be provided with a nylon pull string.

   p. Coordinate installation of raceway with structural steel and other structural members. Do not cut, notch or otherwise alter structural members without obtaining approval in writing from the Structural Engineer of Record.

   q. No more than (2) 3/4" ENT conduits may cross each other within a horizontal concrete slab without obtaining approval in writing from the Structural Engineer of Record.

B. Installation of 600V Conductors:

1. All electrical wire, including signal circuits, shall be installed in conduit.

2. All circuits and feeder wires for all systems shall be continuous from overcurrent protective device or switch to terminal or farthest outlet. No joints shall be made except in pull, junction or outlet boxes, or in panel or switchboard gutters.

   a. Utilize pre-insulated "winged" spring type connectors, 3M Company "Performance Plus" #O/B or #R/Y or equal and as required for splices and taps in conductors #6 AWG and smaller. When a spring connector is used in an underground environment or when subject to moisture, utilize a 3M Company Scotchcast 3507G epoxy resin connector sealing pack to seal the spring connector. THE USE OF PUSH-WIRE CONNECTORS (e.g. "WAGO" OR EQUIVALENT) IS STRICTLY PROHIBITED.

   b. Wires #4 AWG and larger AWG shall be joined together as follows:
      1) When located in an underground environment or when subject to moisture, the splice shall be made with compression connector and sealed by a 3M, or equal, PST cold shrink connector insulator.
      2) When located in an interior environment, the splice shall be made with an ILSCO or equal dual rated, insulated splicer-reducer connector or multi-tap connector listed for use with 75/90 degree Celsius rated conductors.

   c. Connections to busbar shall be made with dual-rated copper/aluminum one-piece compression lugs. Paralleled conductor connections shall be by mechanical lugs.

3. Thoroughly clean all conduit and wire-ways and see that all parts are perfectly dry before pulling any wires.

4. Install UL approved fixture wire from all lighting fixture lamp sockets into fixture outlet or junction box.

5. For 20A branch circuit wiring, increase #12 conductors to #10 for 120V circuits longer than 100 feet and for 277V circuits longer than 150 feet.

6. Conductor Support: Provide conductor supports as required by codes and recommended by cable manufacturer. Where required, provide cable supports in vertical conduits and provide lower end of conduit with a ventilator.

C. Grounding/Bonding:

1. Provide grounding and bonding for entire electric installation as shown on plans, as listed herein, and as required by applicable codes. Included, but not limited to, are items that require grounding/bonding:

   a. Conduit, raceways and cable trays.

   b. Neutral or identified conductors of interior wiring system.

   c. Panel boards, Distribution boards, Switchgear and Switchboards.

   d. Non-current carrying metal parts of fixed equipment.

   e. Telephone distribution equipment.

   f. Transformers, Inverters, UPS, PDU, RDC, Transfer Switch and Generator Systems.

   g. Raised Flooring.

   h. Exposed metal in maintenance holes, hand holes.

   i. Lightning Protection Systems and antennas.

   j. Metal piping installed in or attached to a building/structure.

   k. Metallically isolated structural steel.

   l. Metallically isolated underground metal water piping.

   m. Elevator hydraulic piston/lift case.

2. In multi-occupancy buildings, Contractor shall bond metal water piping systems installed in, under or attached to a building and/or structure serving individual occupancies where the piping system(s) are metallically isolated from each other. Per NEC, or CEC where adopted, ART. 250.104(A)(2) and (3), the bonding conductor shall be sized per Table 250.122 and connected to the switchboard/panelboard serving that suite/occupancy.

3. Use of Ground Rods: Furnish and install required number of 3/4" x 10' copper clad ground rods to meet specified resistance, all required grounding wires, conduit and clamps. The size of the grounding conductors shall be not less than that set forth in the latest edition of the California Code of Regulations, Title 24, State of California and NEC (or CEC where adopted), unless otherwise indicated. Rods shall be installed such that at least 10 feet of length is in contact with the soil. Where rock bottom is encountered, the electrode shall be driven at an oblique angle not to exceed 45 degrees from vertical or shall be buried in a trench that is at least 30 inches deep. The upper end of the electrode shall be flush with or below ground level unless the above ground end and the grounding electrode conductor attachments are protected against physical damage. Unless otherwise noted, connection to the grounding electrode conductor may be by compression type or exothermic process connector. Mechanical connectors shall not be used.

4. Grounding System Connection:

   a. Compression connectors shall be unplated copper, manufactured by Burndy, or approved equal, designed specifically for the intended connection.

   b. Exothermic weld-type connectors shall be 'Cadweld' manufactured by Erico Products, or approved equal, designed specifically for the intended connection.

   c. Mechanical connectors shall not be used.

5. Isolated Ground Receptacles shall have an insulated ground wire connected between the receptacle and the panelboard isolated ground bus. Unless otherwise noted, this ground wire shall not be grounded at any other point, and shall be insulated from other ground wires by a continuous yellow stripe.

6. Provide separate green equipment ground conductor in all electrical raceways to effectively ground all fixtures, panels, controls, motors, disconnect switches, exterior lighting standards, and non current-carrying metallic enclosures. Use bonding jumpers, grounding bushings, lugs, busses, etc., for this purpose. Connect the equipment ground to the building system ground. Use the same size equipment ground conductors as phase conductors, up through #10 AWG. Use NEC (or CEC where adopted) Table 250.122 for conductor size with ph

GENERAL NOTES:

1. SPECIFICATIONS, CODES AND STANDARDS NOTED IN THE CONTRACT DOCUMENTS SHALL BE OF THE LATEST EDITION UNLESS OTHERWISE NOTED.
2. DIMENSIONS SHALL NOT BE SCALED OFF OF THE DRAWINGS.
3. ALL WORK SHALL CONFORM TO MINIMUM STANDARDS OF THE 2022 CALIFORNIA BUILDING CODE, OF ANY CODES LISTED IN THE DRAWINGS OR SPECIFICATIONS AND OF ANY REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK INCLUDING THE CALIFORNIA HEALTH AND SAFETY CODE.
4. PRIOR TO SUBMITTING SHOP DRAWINGS AND PRODUCT DATA, THE CONTRACTOR SHALL VERIFY THAT THE SUBMITTALS MEET THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL SPECIFICALLY NOTE ANY EXCEPTIONS TO THESE REQUIREMENTS WITH THE SUBMITTAL.
5. OPENINGS, POCKETS, ETC. SHALL NOT BE PLACED IN STRUCTURAL MEMBERS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS. NOTIFY THE ENGINEER WHEN WORK REQUIRES OPENINGS, POCKETS, ETC. IN STRUCTURAL MEMBERS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS AND HOLES AND OPENINGS REQUIRED IN STRUCTURAL MEMBERS. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT/ENGINEER AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
7. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, BRACING AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT AND MATERIALS. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

DESIGN DATA:

1. CODE: 2022 CALIFORNIA BUILDING CODE.
2. EARTHQUAKE DESIGN DATA:

   RISK CATEGORY: II
   $I_E$: 1.0
   SITE CLASS: D
   $S_{DS}$: 1.008g
   SEISMIC DESIGN CATEGORY: D
3. WIND DESIGN DATA (FOR FENCES AND RAILINGS):

   DESIGN METHOD: ASCE 7-16 CHAPTER 29 DIRECTIONAL PROCEDURE
   BASIC WIND SPEED (3-SEC GUST): 95 mph
   WIND EXPOSURE: C
   DESIGN WIND PRESSURE: 28.34 PSF (LIGHT POLE), 16.69 PSF (EQUIPMENT)
   RISK CATEGORY: II

GEOTECHNICAL DESIGN RECOMMENDATIONS

1. THE CONTRACTOR SHALL CONFORM TO THE RECOMMENDATIONS AND THE GENERAL EARTHWORK AND GRADING SPECIFICATIONS OF THE GEOTECHNICAL REPORT REGARDING SITE PREPARATION AND FOUNDATION CONSTRUCTION. COPIES OF THE REPORT ARE AVAILABLE FROM THE ARCHITECT/ENGINEER.
2. FOUNDATION EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER OF RECORD (GEOR) PRIOR TO PLACEMENT OF ANY REINFORCING STEEL OR CONCRETE.
3. LIGHT POLE STRUCTURES TO BE DESIGNED AS EMBEDDED POSTS BASED ON SECTION 1807.3 OF THE 2022 CALIFORNIA BUILDING CODE (SEE TABLE 1806.2).

FOUNDATION TYPE: SLAB ON GRADE AND EMBEDDED POSTS

CONCRETE AND REINFORCING STEEL:

1. MINIMUM CONCRETE F'C = 4000 PSI
2. FINISH CONCRETE PAD SURFACES TO THE FOLLOWING TOLERANCES, MEASURED WITHIN 24 HOURS ACCORDING TO ASTM E 1155/E 1155M FOR A RANDOMLY TRAFFICKED FLOOR SURFACE:
   FOR EXTERIOR AND INTERIOR PADS, HOUSEKEEPING PADS, GENERATOR PADS AND ELECTRICAL PADS THE MAXIMUM VARIATION FROM LEVEL SHALL BE $\frac{1}{8}$" IN 3 FEET, $\frac{1}{4}$" IN 10 FEET, AND THE MAXIMUM ELEVATION DIFFERENCE BETWEEN HIGH POINT AND LOW POINT SHALL BE $\frac{1}{2}$".
3. INSERTS: ALL ITEMS TO BE CAST IN CONCRETE, SUCH AS REINFORCING DOWELS, BOLTS, ANCHORS, PIPES, SLEEVES, ETC., SHALL BE POSITIONED IN THE FORMS BEFORE PLACING THE CONCRETE.
4. CONSTRUCTION JOINTS: PROVIDE AS DETAILED ON DRAWINGS. EXPOSE CLEAN COARSE AGGREGATE SOLIDLY EMBEDDED IN MORTAR MATRIX BY SANDBLASTING, BUSHAMMER, OR OTHER APPROVED METHOD. LOCATION OF CONSTRUCTION JOINTS SHALL BE APPROVED BY THE ENGINEER.
5. REINFORCING STEEL: ASTM A615 GRADE 60.
   ASTM A706 WHERE WELDED.
6. ALL REINFORCEMENT SHALL BE CONTINUOUS. STAGGER SPLICES WHERE POSSIBLE. LAP LENGTHS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED.
   #4: 24"
   #5: 30"
   #6: 36"
   #7: 53"
   #8: 60"
7. ALL BARS SHALL BE CLEAN OF LOOSE FLAKY RUST, GREASE OR OTHER MATERIALS LIKELY TO IMPAIR BOND.
8. ALL REINFORCING BARS HALL BE ACCURATELY AND SECURELY PLACED BEFORE POURING CONCRETE.
9. MINIMUM CLEAR CONCRETE COVER FOR REINFORCEMENT, UNLESS OTHERWISE NOTED:

| | |
|---|---|
| CAST AGAINST EARTH: | 3 INCHES |
| CAST IN FORMS AND EXPOSED TO EARTH OR WEATHER: | |
| #6 BAR AND LARGER | 2 INCHES |
| #5 BAR AND SMALLER | 1 ½ INCHES |
| NOT EXPOSED TO EARTH OR WEATHER: | |
| SLABS, WALLS AND JOISTS: | |
| #11 BAR AND SMALLER | ¾ INCH |
| #14 BAR AND LARGER | 1 ½ INCHES |

   CLEARANCES ARE TO CLOSEST REINFORCEMENT.
10. ALL CEMENT SHALL CONFORM TO ASTM C-150.
11. FINE AND COURSE AGGREGATE SHALL CONFORM TO ASTM C-33 FOR STANDARD WEIGHT CONCRETE. ALL AGGREGATE SHALL BE PER ASTM C-157 WITH THE AVERAGE DRY SHRINKAGE AT 28 DAYS NOT EXCEEDING 0.04%.
12. DRYPACK SHALL BE COMPOSED OF ONE PART PORTLAND CEMENT TO NOT MORE THAN THREE PARTS SAND.
13. ALL CONCRETE SHALL BE CURED BY KEEPING CONTINUOUSLY WET FOR 10 DAYS OR BY AN APPROVED CURING COMPOUND.
14. ALL CONCRETE WITH f'c GREATER THAN 2500 PSI SHALL HAVE SPECIAL INSPECTION PER SECTION 1704 OF THE 2022 CBC UNLESS NOTED OTHERWISE.
15. ACI 318-19 TABLE 19.3.2.1-REQUIREMENTS SHALL BE FOLLOWED FOR CONCRETE EXPOSURE CLASS S1:
    MAXIMUM W/CM RATIO: 0.50
    MINIMUM f'c, PSI: 4000
    CEMENTIOUS MATERIALS TYPES: ASTM C150 TYPE II, ASTM C595 TYPES MS, ASTM C1157 TYPES MS
    CALCIUM CHLORIDE ADMIXTURE: NO RESTRICTION

STRUCTURAL INSPECTION AND TESTING:

1. SPECIAL INSPECTION AND TESTING ARE REQUIRED IN SECTIONS 1704 AND 1705 OF THE CBC. THE "STATEMENT OF SPECIAL INSPECTIONS" SUBMITTED WITH THE PERMIT APPLICATION INDICATES THE SPECIFIC INSPECTIONS AND TESTS THAT ARE REQUIRED AS WELL AS THE PERSONS OR FIRMS RESPONSIBLE FOR THIS WORK.
2. ALL TESTS AND INSPECTIONS SHALL BE PERFORMED BY A CERTIFIED SPECIAL INSPECTOR FROM AN INDEPENDENT TESTING AGENCY WHO IS EMPLOYED BY THE OWNER (OR AGENT OF THE OWNER) AND NOT THE CONTRACTOR.
   A. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.
   B. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ARCHITECT, THE ENGINEER AND OTHER DESIGNATED PERSONS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, AND IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.
   C. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND APPLICABLE STANDARDS OF QUALITY AND WORKMANSHIP OF THE CBC.
3. THE CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING INVOLVING THE ARCHITECT, THE ENGINEER, AND THE SPECIAL INSPECTOR TO DISCUSS THE SPECIFIC REQUIREMENTS OF THIS PROJECT.
4. MATERIAL TESTING REQUIREMENTS ARE INDICATED IN THE SPECIFICATIONS AND/OR THE GENERAL NOTES.

STATEMENT OF SPECIAL INSPECTIONS:

THE FOLLOWING TESTS AND INSPECTIONS ARE REQUIRED FOR THIS PROJECT. THE TESTS AND INSPECTIONS INDICATED HERE ARE THE RESPONSIBILITIES OF THE OWNER'S SPECIAL INSPECTOR, AS REQUIRED BY SECTION 1704A OF THE CBC.

EARTHWORK:

1. VERIFY EXCAVATIONS ARE EXTENDED TO THE PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.
2. INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.

CAST-IN-PLACE CONCRETE:

1. PROVIDE PERIODIC INSPECTION OF REINFORCING STEEL AND PLACEMENT.
2. VERIFY THE USE OF THE REQUIRED CONCRETE DESIGN MIX.
3. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM CONTINUOUS TESTING FOR SLUMP AND AIR CONTENT, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.
4. PROVIDE PERIODIC INSPECTION OF THE MAINTENANCE OF THE SPECIFIED CURING TEMPERATURE AND TECHNIQUES.
5. PROVIDE PERIODIC INSPECTION OF THE FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.
6. INSPECT INSTALLATION OF POST-INSTALLED ANCHORS.

| NO. | DATE | REVISIONS | APP. | DATE |
|---|---|---|---|---|
| 6 | | | | |
| 5 | | | | |
| 4 | | | | |
| 3 | | | | |
| 2 | 8/27/2024 | 65% SUBMITTAL | | |
| 1 | 3/20/2024 | 35% SUBMITTAL | | |

CITY OF IRVINE

PLANS PREPARED BY:
PSOMAS
5 HUTTON CENTRE DRIVE, SUITE 300
SANTA ANA, CA 92707
714.751.7373

RAFAEL CHAVEZ RCE. NO. 87228 SEPTEMBER 30, 2025
LICENSE NO. EXP. DATE

SEAL: REGISTERED PROFESSIONAL ENGINEER — DOUGLAS M. FREDERICKS — No. C50863 — 6-30-27 — CIVIL — STATE OF CALIFORNIA
DATE

DRAWN BY: YP
DESIGNED BY: YP
CHECKED BY: DF
RECOMMENDED:

APPROVED BY: CITY ENGINEER
LINCOLN LO R.C.E. NO. 66116 DATE

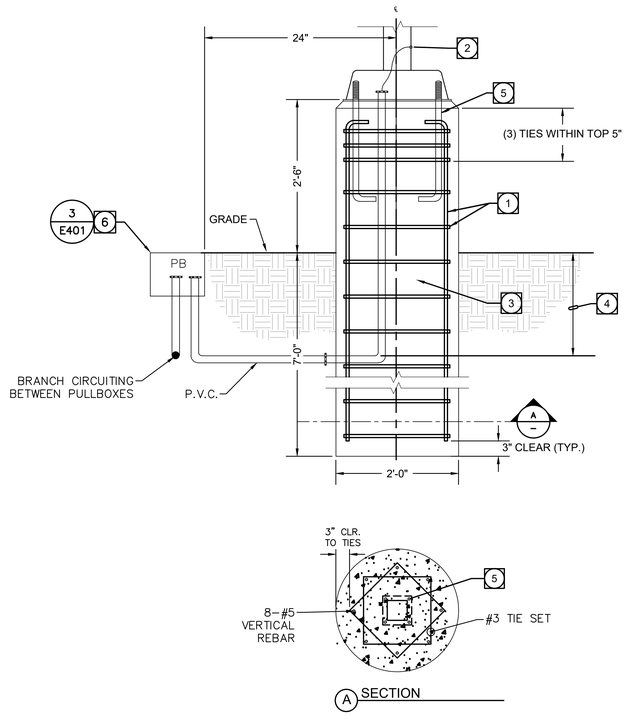
APPROVED BY: IRVINE RANCH WATER DISTRICT FOR RECLAIMED WATER SERVICE
DATE

TWO HERITAGE PARK PARKING LOTS
STRUCTURAL NOTES

CITY OF IRVINE
PUBLIC WORKS & SUSTAINABILITY DEPARTMENT

CS-01

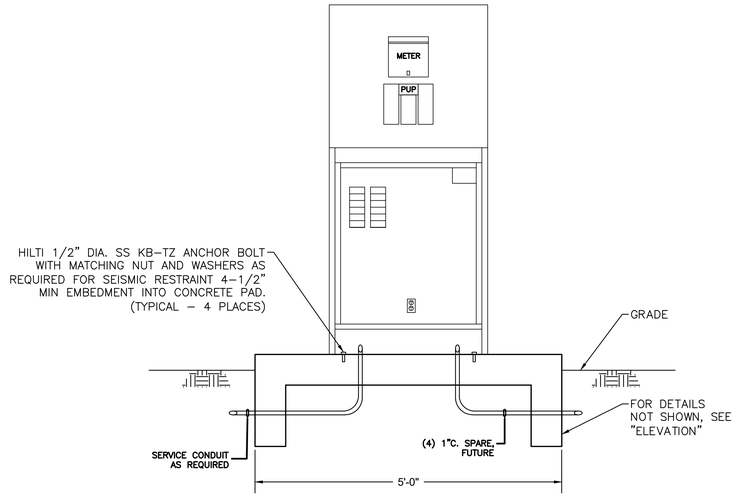
PLAN CHECK NO. 00948134-PARK
LANDSCAPE PERMIT NO. - LCE
SHEET 19 OF 19
JOB NO. CIP NO. 361618



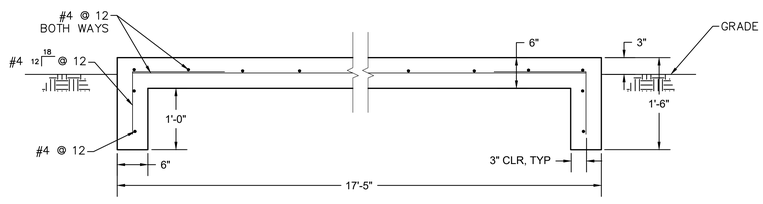

NOTE: MAX HEIGHT OF LIGHT POLE = 30'-0". MAX WEIGHT OF LIGHT FIXTURE = 35 LBS.

1. 8-#5 VERTS WITH #3 TIES AT 6"O.C.
2. BOND EQUIPMENT GROUND TO POLE.
3. BRANCH CIRCUIT CONDUIT PER SITE PLAN.
4. PROVIDE MINIMUM CONDUIT COVER OF 24" FROM FINISH GRADE.
5. 3/4" x 25" POLE ANCHOR BOLTS, SPACING TO MATCH MANUFACTURER'S BASE PLATE.
6. PROVIDE PULL BOX AT EACH POLE (WHETHER INDICATED ON PLANS OR NOT) AND FUSING PER CITY OF IRVINE ELECTRICAL REQUIREMENTS. BRANCH CIRCUIT SHALL NOT BE ROUTED THROUGH POLE.

## 1 RAISED POLE FOUNDATIOIN DETAIL
NTS

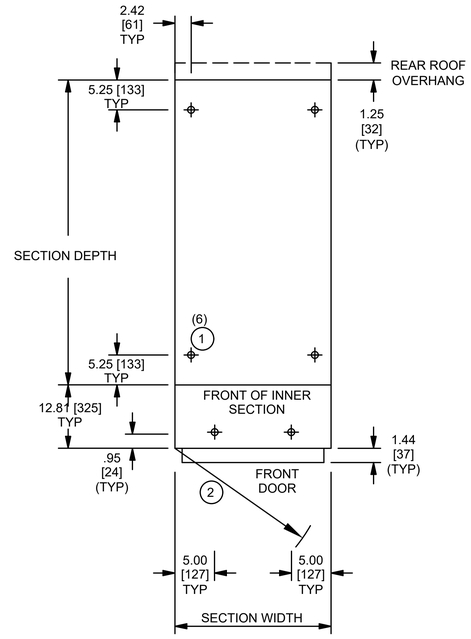



SECTION




ELEVATION

## 2 SWITCHGEAR FOUNDATION DETAIL
1" = 1'-0"




1. HILTI KWIK-BOLT TZ2 (KB-TZ2) 1/2" NOMINAL DIAMETER 4-1/2" NOMINAL EMBEDMENT. SEE ICC-ES EVALUATION ESR-4266 OR EQUAL. USE EQUIVALENT STAINLESS STEEL ANCHOR AT EXTERIOR LOCATIONS
2. DOOR SWING EQUALS SECTION WIDTH AT 90 DEGREES.
3. FINISHED FOUNDATION'S SURFACE SHALL BE LEVEL WITHIN 0.125 INCH IN 36 INCHES LEFT-TO-RIGHT, FRONT-TO-BACK, AND DIAGONALLY, AS MEASURED BY A LASER LEVEL.
4. CLEARANCE FROM WALLS (NOT REAR ACCESSIBLE) SHOULD BE A MINIMUM OF 6 INCHES FOR OUTDOOR OR WET LOCATIONS.

## 3 SWITCHGEAR ANCHORAGE PLAN
NTS

| NO. | DATE | REVISIONS | APP. | DATE |
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**PLANS PREPARED BY:**
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**TWO HERITAGE PARK PARKING LOTS**
**STRUCTURAL DETAILS**

CITY OF IRVINE
**PUBLIC WORKS & SUSTAINABILITY DEPARTMENT**

**CS-02**

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**SHEET 52 OF 19**
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