Trenton Hansen, Ph.D.
Superintendent
4850 Pedley Road, Jurupa Valley, CA 92509 T (951) 360-4100

Date: June 17, 2026

Re: 25-26-21MO - Del Sol Turf Installation – Addendum #3

TO ALL BIDDERS:

The following changes, omissions, and/or additions to the Bid Documents and/or Project Manual and/or Drawings shall apply to proposals made for and to the execution of the various parts of the work affected thereby, and all other conditions shall remain the same. All parties of interest shall take careful note of the addendum so that the proper allowances may be made in strict accordance with the Addendum.

Bidder shall acknowledge receipt of this addendum in the space provided on the Bid Form. Failure to do so may subject Bidder disqualification.

In case of conflict between Drawings, bid documents and this addendum, this addendum shall govern.

ITEM #1 The Bid Bond Form has been replaced in its entirety. The REVISED Bid Bond Form is attached.

ITEM #2 **Question:** Is the engineer's estimate amount of $200,000.00, correct? It seems to be a lot less as there is 13,500 sf of synthetic turf.

Answer: The engineers' estimate will remain $200,000.

ITEM #3 **Question:** Please confirm this job does not require Skilled and Trained Workforce (STW), Owner-Controlled Insurance Program (OCIP), Project Labor Agreement (PLA), or Project Stabilization Agreement (PSA).

Answer: Correct, this project does not have any STW, OCIP, PLA, or PSA requirements.

ITEM #4 **Question:** What is the DVBE participation rate?

Answer: Per Attachment No. 11 to the Bid Form, the Contractor needs to make reasonable efforts to secure DVBE participation. The district does not have a participation rate set for this project.

ITEM #5 **Question:** Please provide the project milestone schedule and geotechnical report.

Answer: The project is scheduled for 30 calendar days. Please see attached geotechnical report.

ITEM #6 **Question:** Please provide logistics plan which shows staging area.

Answer: Please see attached map with staging area.

ITEM #7 **Question:** Please provide full irrigation as-built plan.

Answer: Please see attached as-builts.

ITEM #8 **Question:** Please confirm that no new irrigation or cool down system required for artificial turf areas.

Answer: Existing irrigation will be used for this area.

ITEM #9 **Question:** Scope of work item 1.3 – Irrigation modifications indicate reconnecting existing tree irrigation line to a new dedicated tree irrigation valve. Please confirm that there is existing irrigation mainline for new valve connected to, that is adjacent to the new trees installed.

Answer: Irrigation connection will be made to existing valve already controlled by existing irrigation controller. Exiting valve will need to be replaced with drip configuration for trees. Please refer to RCV Details.

ITEM #10 **Question:** Is controller new or existing? Where is the controller location on plan? Please advise wire path running for new valve required in scope of work item 1.3

Answer: Existing Controller will be used with existing wire.

ITEM #11 **Question:** Please confirm whether the irrigation system is a two-wire system or a conventional wire system.

Answer: Conventional

ITEM #12 **Question:** Please provide material for decomposed granite under synthetic turf as shown on scope of work item 2.1.

Answer: Stabilized Decomposed Granite

ITEM #13 **Question:** Please recommend the manufacturers for artificial turf that has the product required on scope of work item 3.1 & has minimum 8-year manufacturer warranty on artificial turf as required on scope of work item 7.2.

Answer: PRO-Trade PT-TURF-50-1.

ITEM #14 **Question:** Please provide the material for 4-inch storm drain piping as specified in scope of work item 5.

Answer: PVC Schedule 40

ITEM #15 **Question:** Please provide the manufacturer or model of 12" x 12" concrete catch basins as required in scope of work item 5.

Answer: Brooks 1212CB

ITEM #16 **Question:** Please confirm that excavated material can be used for backfilling of storm drainpipe installation.

Answer: Yes, excavated materials can be used for back filling.

ITEM #17 **Question:** Please be more specific about ground protection mats as required in scope of work item 6.2.

Answer: Ground Protection Mats will not be required

ITEM #18 **Question:** Please confirm whether the spoils can be stockpiled on site or hauled off site.

Answer: Yes, Spoils can be stock piled onsite.

ITEM #19 **Question:** Please provide sheet A1.2 for enlarged plans as mentioned in Plan Notes #1 on sheet A1.1.

Answer: Please see attached

ITEM #20 **Question:** Please confirm the anticipated start date of the project.

Answer: We anticipate a start date in the first half of July.

ITEM #21

Question: In the south turf area, please clarify how the nailer board is to be fastened on the west side of the area next to the portables. The other sides have curbs for the nailer board to be fastened to but that side only has a fence line.

Answer: 2x4 pressure treated nailer board along chain link fence leveled to the bottom of the fence line.

ITEM #22

Question: In the south turf area, on the west side next to the portables, there is an incline in slope up to the fence line. Please clarify if this area is to removed down to grade with the rest of the field and exported or if the incline is staying and the turf will be placed on top of it.

Answer: Incline will remain in place.

ITEM #23

Question: The scope of work shows a 4-inch solid pipe with catch basins going underneath the turf. It does not show how the water is supposed to drain from underneath the turf into the pipe and carried away into the catch basins and out to the storm drain tie-in. It is recommended to put flat drains underneath the turf and use a perforated 4-inch storm drainpipe instead so the flat drains can tie into the perforated pipe and allow the water to be carried away in the most effective manner without the turf getting flooded.

Answer: Water will sheet flow south with existing grade. Maintain current slope with artificial turf.

ITEM #24

Question: The scope of work calls for 1-inch DG over 3-inch Class II Road Base as the subbase for the artificial turf. It is recommended to use a permeable rock (such as Class II Perm/#57 stone) at 4-inches instead as this will allow water to drain most effectively. If flat drains are elected to be used as well, this is the recommended rock as Class II Road Base/DG has fines and will clog the drainage pipe over time.

Answer: Class II Road Base will be required. Storm drain pipe will not be perforated for Artificial Turf drainage. Artificial Turf should sheet flow south towards storm drains in planter. Final grade will sheet flow south of property into adjacent planters.

REVISED
BID BOND FORM

ATTACHMENT NO. 1 TO BID FORM

KNOW ALL MEN BY THESE PRESENT that we, the undersigned, (hereafter called "Principal"), and _____ (hereafter called "Surety"), are hereby held and firmly bound unto the Jurupa Unified School District (hereafter called "District") in the sum of _____ ($_____) for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors, and assigns.

SIGNED this _____ day of _____, 20___.

The condition of the above obligation is such that whereas the Principal has submitted to the District a certain Bid, attached hereto and hereby made a part hereof, to enter into a Contract in writing for the construction of 25-26-21MO – Del Sol Turf Installation.

NOW, THEREFORE,

a. If said Bid is rejected, or

b. If said Bid is accepted and the Principal executes and delivers a Contract or the attached Agreement form within five (5) calendar days after acceptance (properly completed in accordance with said Bid), and furnishes bonds for his faithful performance of said Contract and for payment of all persons performing labor or furnishing materials in connection therewith,

Then this obligation shall be void; otherwise, the same shall remain in force and effect.

Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract, or the call for bids, or the work to be performed thereunder, or the specifications accompanying the same, shall in anyway affect its obligation under this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of said Contract, or the call for bids, or the work, or to the specifications.

In the event suit is brought upon this bond by the District and judgment is recovered, the Surety shall pay all costs incurred by the District in such suit, including without limitation, attorneys' fees to be fixed by the court.

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, on the day and year first set forth above.

By _____
(Corporate Seal) Principal's Signature

_____
Typed or Printed Name

_____
Principal's Title

By _____
(Corporate Seal) Surety's Signature

_____
Typed or Printed Name

_____
Title

_____
(Attached Attorney in Fact Certificate) Surety's Name

_____
Surety's Address

_____
Surety's Phone Number

IMPORTANT:

Surety companies executing bonds must possess a certificate of authority from the California Insurance Commissioner authorizing them to write surety insurance defined in California Insurance Code section 105, and if the work or project is financed, in whole or in part, with federal, grant, or loan funds, it must also appear on the Treasury Department's most current list (Circular 570 as amended).

THIS IS A REQUIRED FORM.

Any claims under this bond may be addressed to:

(Name and Address of Surety)

_____

_____

_____

(Name and Address of agent or representative for
service of process in California if different from above)

_____

_____

_____

(Telephone Number of Surety and agent or
representative for service of process in California).

_____

_____

_____


Artificial Turf with 3 Tree Wells Each
Staging Area
Artificial Turf

GEOTECHNICAL EXPLORATION
PROPOSED CLASSROOM BUILDING ADDITION
DEL SOL ACADEMY
11626 FORSYTHIA STREET
JURUPA VALLEY, CALIFORNIA

Prepared For **JURUPA UNIFIED SCHOOL DISTRICT**
4850 PEDLEY ROAD
JURUPA VALLEY, CALIFORNIA 92509

Prepared By **LEIGHTON CONSULTING, INC.**
10532 ACACIA STREET, SUITE B-6
RANCHO CUCAMONGA, CA 91730

Project No. 10757.005

December 16, 2021

December 16, 2021
Project No. 10757.005

Jurupa Unified School District
4850 Pedley Road
Jurupa Valley, California 92509

Attention: Robin Griffin, ALEP
Director, Planning & Development

Subject: Geotechnical Exploration
Proposed Classroom Building Addition, Del Sol Academy
11626 Forsythia Street, Jurupa Valley, California

In accordance with your authorization, Leighton Consulting, Inc. (Leighton) has conducted a geotechnical exploration for the proposed classroom building addition at Del Sol Academy, located at 11626 Forsythia Street in the City of Jurupa Valley, California. The purpose of our study has been to evaluate geologic and geotechnical conditions, including potential geologic hazards, within the area of and as they relate to the proposed improvements, and to provide geotechnical recommendations for design and construction of the proposed improvements.

Leighton previously conducted a geotechnical exploration for the main school campus (referred to as K-8 School No. 5 at that time) and provided recommendations for design and construction (Leighton, 2015) and pavement design (Leighton, 2016). The school proposed at the time of our previous exploration contained approximately 68,000 square feet of buildings. Geotechnical exploration in 2015 included 14 borings ranging in depths from approximately 6½ feet to 51½ feet below the ground surface and were performed to evaluate site subsurface conditions.

We understand that the District currently proposes to construct a new 7,704-square-foot classroom building in an area currently occupied by the running track and field, directly south of the main campus building. This report updates our previous geotechnical exploration report with respect to the proposed classroom addition.

This report presents our findings and conclusions regarding this project. Based upon our geotechnical exploration, the proposed improvements are feasible from a geotechnical viewpoint, provided our recommendations are incorporated into the design and construction of the project. The most significant geotechnical issues at the site are compressible soils and strong seismic shaking. These and other geotechnical issues are discussed in this report.

We appreciate the opportunity to be of service to the Jurupa Unified School District. If you have any questions, or if we can be of further service, please call us at your convenience at (909) 484-2205.

Respectfully submitted,

LEIGHTON CONSULTING, INC.

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JAT/SGO/JDH

Distribution: (1) Addressee (PDF via email)

TABLE OF CONTENTS

Section Page

1.0 INTRODUCTION 1
1.1 Site Location and Description 1
1.2 Proposed Improvements 1
1.3 Purpose of Exploration 2
1.4 Scope 2
2.0 GEOLOGICAL FINDINGS 5
2.1 Geologic Hazards Review 5
2.2 Regional Geologic Setting 5
2.3 Subsurface Soil Conditions 6
2.3.1 Compressibility and Collapse 6
2.3.2 Expansive Soil 7
2.3.3 Sulfate Content 7
2.3.4 Resistivity, Chloride and pH 7
2.4 Groundwater 8
2.5 Faulting and Seismicity 8
2.5.1 Surface Faulting 8
2.5.2 Seismic Design Parameters 8
2.5.3 Historical Seismicity 10
2.6 Secondary Seismic Hazards 11
2.6.1 Liquefaction Potential 11
2.6.2 Lateral Spreading 12
2.6.3 Structural Damage Due to Liquefaction (Surface Manifestations) 12
2.6.4 Seismically Induced Settlement 12
2.7 Seiches and Tsunamis 13
2.8 Slope Stability and Landslides 13
2.9 Flooding and Dam Breach Inundation Potential 14
2.10 Other Potential Hazards Listed on CGS Note 48 14
3.0 CONCLUSIONS AND RECOMMENDATIONS 15
3.1 General Conclusions 15
3.2 Earthwork and Grading 15
3.2.1 Site Preparation 15
3.2.2 Overexcavation and Recompaction 16
3.2.3 Fill Placement 17
3.2.4 Import Fill Soil 17
3.2.5 Oversized Materials and Rippability 18
3.2.6 Shrinkage and Subsidence 18
3.3 Foundations 19
3.3.1 Minimum Embedment and Width 19
3.3.2 Allowable Bearing 19

3.3.3 Lateral Load Resistance 19
3.3.4 Increase in Bearing and Friction – Short Duration Loads 20
3.3.5 Settlement Estimates 20
3.4 Recommendations for Slabs-On-Grade 20
3.4.1 Slab Underlayment for Moisture Vapor Retarding 21
3.5 Seismic Design Parameters 22
3.6 Lateral Earth Pressures 22
3.7 Cement Type and Corrosion Protection 24
3.8 Temporary Excavations 25
3.9 Trench Backfill 25
3.10 Drainage and Site Conditions 26
3.11 Limitations and Additional Geotechnical Services 26
REFERENCES 8

Figures

Figure 1 – Site Location Map
Figure 2 – Geotechnical Map
Figure 3 – Regional Geology Map
Figure 4A/B – Geologic Cross Sections A-A and B-B'
Figure 5 – Regional Fault Map
Figure 6 – Historical Seismicity Map
Figure 7 – Regional Dam Inundation Map
Figure 8 – Flood Hazard Zone Map
Figure 9 – Retaining Wall Backfill and Subdrain Detail

Appendices

Appendix A – Geotechnical Boring Logs
Appendix B – Geotechnical Laboratory Test Results
Appendix C – Summary of Seismic Analysis
Appendix D – Earthwork and Grading Guide Specification
Appendix E – CGS Note 48 Checklist with References to this Report

1.0 INTRODUCTION

1.1 Site Location and Description

The campus of Del Sol Academy is located at 11626 Forsythia Street in the city of Jurupa Valley, California. The site is bounded on the east by Avenida del Ranchos, Camino Jamacha on the north, Forsythia Street on the west, and Firebrush Street on the southwest (see **Error! Reference source not found.**, *Site Location Map*). The campus is relatively flat; areas have been graded for existing classroom buildings, field, and court areas within the campus.

The proposed classroom building addition will be located directly south of the main campus building within the northeastern portion of existing running track and northwestern portion of the existing turf field.

1.2 Proposed Improvements

Based on the provided Overall Site Plan prepared by PBK-WLC, and dated January 14, 2021, we understand that the proposed improvements include construction of a new approximately 7,704-square-foot classroom building, flatwork, and associated grading improvements. The approximate proposed building location is depicted on Figure 2, *Geotechnical Map*.

Grading plans were not available at the time of this study. However, based on the relatively flat and level topography currently onsite, we anticipate the grading for the new classroom building to consist of minor cuts and fills (less than 3 feet) to achieve design grades for the proposed improvements. This is a public school project under the jurisdiction of the Division of the State Architect (DSA), to be designed and constructed in accordance with the 2019 California Building Code (CBC).

1.3 Site History

The site, prior to grading, was used for dairy and pasture land since circa 1967. Prior to 1967, the site was vacant and undeveloped, based on review of aerial imagery dating back to 1938. The school site was mass (contour) graded under the observation and testing of Leighton during rough grading of Tracts 33461 and 37768 (Leighton and Associates, 2013, 2014). Prior to contour grading, manure

and organic rich soils were hauled offsite; however, overexcavation was not completed. Onsite and import material was used to as fill to reach rough grade elevations. Grading of Tract 33461 (eastern portion of school site) took place between the periods of August 2013 to September 2013.

Rough grading of the western portion of the school as part of Tract 37786 took place between the periods of October 2013 and January 2014. During rough grading, construction of a temporary erosion control basin located on the southwestern portion took place. The basin was later backfilled between the periods of late September 2014 and early October 2014. Onsite material was used to reach rough grade elevations and fill was generally on the order of 1 to 3 feet with approximately 9 feet of fill required to backfill the temporary erosion control basin area.

The proposed building is mostly within the western tract, though the eastern portion appears to be within the eastern tract.

We do not have documentation of grading or construction of the existing school campus. Based on review of aerial imagery, it appears the school was constructed between the periods of March 2017 and August 2018 and maintains the same site layout to present day.

1.4 Purpose of Exploration

The purposed of our study has been to evaluate geologic and geotechnical conditions, including potential geologic hazards, within the area of and as they relate to the proposed improvements, and to provide recommendations for design and construction of the proposed improvements.

1.5 Scope

The scope of our geotechnical exploration has included the following tasks:

- **Geologic Hazards Review**: We reviewed pertinent, readily available geologic literature covering the site. Our review included published geologic maps and reports available from our library as well as historical aerial photographs covering the site. Documents reviewed are listed in the attached

References and include the previous geotechnical reporting for the school campus provided by Leighton (Leighton, 2015 and 2016).

- **Pre-field Exploration Activities**: Leighton contacted Underground Service Alert (USA) at least 48 hours prior to drilling and coordinated with school representatives to have existing underground utilities located and marked prior to our subsurface exploration. Leighton also subcontracted a private utility locator to scan the boring locations prior to our subsurface exploration.
- **Field Exploration**: Our field exploration included two (2) hollow-stem auger borings, logging earth materials encountered, and collecting soil samples. On November 10, 2021, we advanced the hollow-stem auger borings (LB-1 and LB-2) at representative locations to depths ranging from approximately 26½ to 51½ feet below the existing ground surface (bgs). Encountered earth materials were logged by our technical staff under the supervision of a State licensed Professional Engineer and described in accordance with the Unified Soil Classification System (USCS). Representative bulk soil samples were collected from the borings at shallow depths of 5 feet bgs and less. Relatively undisturbed soil samples were obtained at select interval depths within these borings using a Modified California ring-lined sampler. An unlined, 2-inch outside diameter Standard Penetration Test (SPT) split-spoon sampler was also used in collecting samples, which had room for a liner, but no liner was used, as is customary in this area. Both sampling methods generally followed respective ASTM D3550 and ASTM D1586 procedures. Sampling resistance blow counts were obtained by dropping a 140-pound automatic hammer through a 30-inch free fall onto a sampling rod anvil. The number of blows was recorded for each 6 inches of penetration (ASTM D1586).

  Drilled borings were backfilled with soil cuttings up to existing surface to approximately match the surrounding ground surface. The logs of the geotechnical borings are presented in Appendix A. The approximate boring locations are shown on the accompanying Figure 2, *Geotechnical Map*.

- **Laboratory Tests**: Laboratory tests were conducted on selected relatively undisturbed and bulk soil samples obtained during our field exploration. Our geotechnical laboratory testing program was directed toward a quantitative and qualitative evaluation of physical and mechanical properties of sampled soils at this site, and to aid in evaluating soil classification.

Tests were performed at our in-house geotechnical laboratory. Tests performed include:

- In-situ moisture and dry density
- Maximum dry density and optimum moisture content
- Grain Size Analyses
- Atterberg Limits
- Expansion Potential
- Collapse/Swell Potential
- Soil corrosivity screening of resistivity, sulfate content, chloride content and pH

Results of the in-situ moisture density tests are provided on the boring logs presented in Appendix A, *Geotechnical Boring Logs*. The results of remaining tests are provided in Appendix B, *Geotechnical Laboratory Test Results*.

- **Engineering Analysis**: Data obtained from background review and field exploration was evaluated and analyzed to provide the geotechnical conclusions and recommendations presented in Section 3.0 of this report.

- **Report Preparation**: Results of our geologic hazards review and geotechnical exploration have been summarized in this report, presenting our findings, conclusions and recommendations for the project.

2.0 GEOLOGICAL FINDINGS

2.1 Geologic Hazards Review

We have reviewed pertinent, readily available geologic and geotechnical literature covering the site. Our review included regional geologic maps and reports available from our library and online. Documents reviewed are listed in the *References* at the end of this report. Potential geologic hazards are discussed in the following sections. Our review has also considered California Geological Survey's Note 48, *Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings*. A copy of the Note 48 checklist is included in Appendix E of this report and has been annotated indicating the applicable sections of this report that address each checklist item.

2.2 Regional Geologic Setting

The site is located in the northern Peninsular Ranges geomorphic province of southern California in the Chino Basin. Cretaceous batholithic rock provide the basement and at places crop out in this area of the Peninsular Ranges. Northwest-trending, right-lateral, strike-slip faults dominate the structure of the Peninsular Ranges. These structural features include the Whittier-Elsinore fault zone and the Santa Ana Mountains to the southwest and the San Jacinto fault zone to the northeast. In addition, this is an area of crustal disturbance as the relatively northwestward migrating Peninsular Ranges Province interacts with the Transverse Ranges Province (which include the San Gabriel and San Bernardino Mountains) to the north. Several active or potentially active faults have been mapped in the region and are believed to accommodate compression associated with this interaction (Morton 2002). The site is located approximately 8.9 miles northeast of the Chino fault, approximately 11.6 miles to the Elsinore fault, and approximately 11.8 miles to the Cucamonga fault (see Figure 5, *Regional Fault Map*). In addition to these, fault traces relating to the San Andreas fault zone are as close as approximately 18.3 miles to the northeast.

The site is mapped as being underlain by Holocene and Late Pleistocene young aeolian deposits generally consisting of unconsolidated fine-to-medium-grained sand (Morton, 2002). General regional geologic conditions are shown on the Figure 3, *Regional Geology Map*.

2.3 Subsurface Soil Conditions

Based upon our current subsurface exploration, earth materials encountered were generally consistent with previous exploration onsite. The site was observed to be underlain by young aeolian or alluvial soil mantled by artificial fill. Artificial fill associated with previous site grading was observed to be present within the upper 4 feet in our two borings at the site of the proposed classroom building. Artificial fill encountered generally consisted of medium dense to dense silty sand. The underlying native aeolian/alluvial soil below the artificial fill generally consisted of silty sand, sandy silt, and clay to depths reaching approximately 32 feet bgs, and were underlain by coarser-grained soils consisting of sand with silt and gravel and silty gravel with sand. Based on field sampling blow counts, the fill soil was typically described as medium dense to dense. The native soils were characterized as moist, loose to dense, and stiff to very stiff. Dry densities ranged from 97 to 129 pounds per cubic foot (pcf) with moisture contents between 4 and 17 percent by weight.

More detailed descriptions of the subsurface conditions are presented on the boring logs. Surficial mapping of geologic units is depicted on Figure 2, *Geotechnical Map*. Cross-section representations of the materials encountered during Leighton's exploration are shown in Figure 4 – Geotechnical Cross-Section A-A' (Figure 4a) and B-B' (Figure 4b).

2.3.1 Compressibility and Collapse

Soil compressibility refers to a soil's potential for settlement when subjected to increased loads as from a new structure or fill surcharge. Based on our exploration, the near-surface materials encountered were typically stiff to very stiff for fine soils and loose to medium dense for granular soils, which are considered slightly to moderately compressible. Partial removal and recompaction of this soil as recommended later in this report will reduce the potential for adverse differential settlement of the proposed improvements to acceptable levels.

Collapse potential (moisture sensitivity, sometimes referred to as 'hydrocollapse') refers to the potential settlement of a soil under existing stresses upon being wetted. Based on laboratory testing results from our current and previous (Leighton 2015), explorations, the onsite soils are anticipated to have negligible collapse potential.

2.3.2 Expansive Soil

Expansive soils contain significant amounts of clay particles that swell considerably when wetted and shrink when dried. Foundations constructed on these soils are subjected to large uplifting forces caused by the swelling. Without proper measures taken, cracking of both building foundations and slabs-on-grade could result.

Based on the results of our laboratory testing of representative soil samples from our current and previous (Leighton, 2015) exploration, the onsite soils have an Expansion Index ranging from 5 to 19. Based on this, and our experience in the area, the soils are expected to have a low to very low expansion potential at shallow depths.

2.3.3 Sulfate Content

Water-soluble sulfates in soil can react adversely with concrete. However, concrete in contact with soil containing sulfate concentrations of less than 0.1 percent by weight is considered to have negligible sulfate exposure based on the American Concrete Institute (ACI) provisions, adopted by the 2019 CBC (CBC. 2019 and ACI, 2014).

Based on the results of our laboratory testing of representative soil samples during our current and previous (Leighton, 2015) exploration, near-surface soil samples were tested for soluble sulfate content. The results of these tests indicated sulfate contents less than 0.1 percent by weight, indicating negligible sulfate exposure (Exposure Class S0). As such, the soils exposed at pad grade are not expected to pose a significant potential for sulfate reaction with concrete.

2.3.4 Resistivity, Chloride and pH

Soil corrosivity to ferrous metals can be estimated by the soil's electrical resistivity, chloride content and pH. In general, soil having a minimum resistivity between 1,000 and 2,000 ohm-cm is considered corrosive, and soil having a minimum resistivity less than 1,000 ohm-cm is considered severely corrosive. Soil with a chloride content of 500 parts-per-million (ppm) or more is considered corrosive to ferrous metals.

As a screening for potentially corrosive soil, a representative sample tested near surface sample collected during our current exploration indicated a minimum resistivity of 1,998 ohm-cm, a chloride content of 91 ppm, and a pH of 8.6. Laboratory testing in 2015 of nearby soils indicated a minimum resistivity of 657 ohm-cm. Based on these results, the onsite soil is considered severely corrosive to ferrous metals.

2.4 Groundwater

Groundwater was not encountered in any of our hollow-stem auger borings, excavated to depths reaching 51.5 feet bgs. Groundwater in 1933 was approximately 60 feet below the existing ground surface onsite (CDWR, 1970). Groundwater may have been as shallow as 30 to 40 below the existing ground surface in the early 1900's (Mendenhall, 1905). Recent groundwater data from a well (CDWR Master Site Code 339868N1175279W001) maintained by the Chino Basin Watermaster (CDWR, 2021a) located approximately 0.9 mile southeast of the site indicated its historically shallowest groundwater at a depth of approximately 113 feet bgs in June, 2017, based on measurements taken from 2010 through 2021. Based on the above, we have considered the historically highest groundwater level at the project site to be 30 feet bgs.

2.5 Faulting and Seismicity

In general, the primary seismic hazards for this region include surface rupture along active faults and strong ground shaking.

2.5.1 Surface Faulting

Based upon our review of available literature, no known active faults have been on or trending toward the site mapped (see Figure 5, *Regional Fault Map*). The site is not located near a pressure ridge and is not located within a current State of California (Bryant and Hart, 2007) or Riverside County designated Earthquake Fault Zones (Riverside County, 2021). Based on our understanding of the current geologic framework, the potential for future surface rupture of active faults onsite is considered low.

2.5.2 Seismic Design Parameters

The site is anticipated to experience strong ground shaking after the proposed project is developed resulting from an earthquake occurring along one or more of the major active or potentially active faults in southern

California. Accordingly, the project should be designed in accordance with all applicable current codes and standards utilizing the appropriate seismic design parameters to reduce seismic risk as defined by California Geological Survey (CGS) Chapter 2 of Special Publication 117a (CGS, 2008). Through compliance with these regulatory requirements and the utilization of appropriate seismic design parameters selected by the design professionals, potential effects relating to seismic shaking can be reduced.

The project falls under Seismic Design Category D, because S_1 is less than 0.75 (see table below), in accordance with CBC Section 1613A.3.5. The following parameters should be considered for design under the 2019 CBC:

2019 CBC Parameters (CBC or ASCE 7-16 reference)	Value 2019 CBC
Site Latitude and Longitude: 33.9971, -117.5366	
Site Class Definition (1613.2.2, ASCE 7-16 Ch 20)	D
Mapped Spectral Response Acceleration at 0.2s Period (1613A.2.1), S_S	1.595 g
Mapped Spectral Response Acceleration at 1s Period (1613A.2.1), S_1	0.579 g
Short Period Site Coefficient at 0.2s Period (T1613A.2.3(1)), F_a	1.000
Long Period Site Coefficient at 1s Period (T1613A.2.3(2)), F_v	*1.721**
Adjusted Spectral Response Acceleration at 0.2s Period (1613A.2.3), S_{MS}	1.595 g
Adjusted Spectral Response Acceleration at 1s Period (1613A.2.3), S_{M1}	*0.996** g
Design Spectral Response Acceleration at 0.2s Period (1613A.2.4), S_{DS}	1.063 g
Design Spectral Response Acceleration at 1s Period (1613A.2.4), S_{D1}	*0.664** g
Mapped MCE_G peak ground acceleration (11.8.3.2, Fig 22-9 to 13), ***PGA***	0.662 g
Site Coefficient for Mapped MCE_G *PGA* (11.8.3.2), F_{PGA}	1.100
Site-Modified Peak Ground Acceleration (1803.5.12; 11.8.3.2), PGA_M	0.728 g
Is S_1 greater than or equal to 0.75?	No
Seismic Design Category =“D” if S_1<0.75 (1613A.2.5)	D

* Per Table 11.4-2 of Supplement 1 of ASCE 7-16, this value of F_v may only be used to calculate T_s [that note is not included in Table 1613A.2.3(2)]; note that S_{D1} and S_{M1} are functions of F_v. In addition, per Exception 2 of 11.4.8 of ASCE 7-16, special equations for C_s are required. This is in lieu of a site-specific ground motion hazard analysis per ASCE 7-16 Chapter 21.2.

** Site Class D, and all of the resulting parameters in this table, may only be used for structures without seismic isolation or seismic damping systems.

Based on the 2019 CBC Table 1613.2.3(2) footnote c., Fv should be determined in accordance with Section 11.4.8 of ASCE 7-16, since the mapped spectral response acceleration at 1 second is greater than 0.2g for Site Class D; in accordance with Section 11.4.8 of ASCE 7-16, a site-specific seismic analysis is required. However, the values provided in the table above may be utilized if design is performed in accordance with Exception (2) in Section 11.4.8 of ASCE 7-16, with special requirements for the seismic response coefficient (Cs), and Fv is only used for calculation of Ts. This exception does not apply (and the values in the table above would not be applicable) for proposed structures with seismic isolation or seismic damping systems. The project structural engineer should review the seismic parameters. A site-specific seismic ground motion analysis can be performed upon request.

Hazard deaggregation was estimated using the USGS Interactive Deaggregations Utility. The result of this analysis indicated that the predominant modal earthquake has a magnitude of approximately 8 (MW) at a distance on the order of 24 kilometers for the maximum Considered Earthquake (2% probability of exceedance in 50 years).

Until reviewed and accepted by the California Geologic Survey (CGS), these parameters should not be used for design, as they may be subject to change. Changes may be required as part of the CGS review process.

2.5.3 Historical Seismicity

Figure 6, *Regional Seismicity Map* shows locations of recorded historical regional seismic events (those that have been recorded since the mid-1700s) with respect to the site. Based on this map, it appears that the site has been exposed to relatively significant seismic events; however, this site does not appear to have experienced more severe seismicity than compared to much of southern California in general. We are unaware of documentation that indicates that past earthquake damage in the site vicinity has been significantly worse than for the majority of southern California. In addition, we are unaware of damage in the site vicinity as the result of liquefaction, lateral spreading, or other related phenomenon.

2.6 Secondary Seismic Hazards

In general, secondary seismic hazards for sites in the region could include soil liquefaction, earthquake-induced settlement, lateral displacement, surface manifestations of liquefaction, lateral spreading, landsliding, seiches and tsunamis. These potential secondary seismic hazards are discussed below.

2.6.1 Liquefaction Potential

Liquefaction is the loss of soil strength or stiffness due to a buildup of pore-water pressure during severe ground shaking. Liquefaction is associated primarily with loose (low density), saturated, fine- to medium-grained, cohesionless soils. Effects of liquefaction can include sand boils, settlement, and bearing capacity failures below structural foundations.

Based on the *Riverside County, Map My County*, on-line GIS system (accessed November 16, 2021), the proposed classroom building addition is located within a County-mapped zone considered moderately susceptible to liquefaction. The State of California has not evaluated the site for liquefaction hazards.

We have evaluated liquefaction potential of the soil encountered in our borings assuming a design/historic high groundwater depth of 30 feet below the existing ground surface. Our analysis was based on the modified Seed Simplified Procedure as detailed by Youd et al. (2001) and Martin and Lew (1999), which compares the seismic demand on a soil layer (Cyclic Stress Ratio, or CSR) to the capacity of the soil to resist liquefaction (Cyclic Resistance Ratio, or CRR), (Youd et al., 2001). A minimum required factor of safety of 1.3 was used in our analysis, with factor of safety defined as CRR/CSR. As required, our analysis assumes that the design earthquake would occur while the groundwater is at its estimated historically highest level. In the SPT method, soil resistance to liquefaction is estimated based on several factors, including SPT sampling blow counts normalized and corrected for several factors including fines content, and overburden pressure. Soil plasticity and moisture content are also considered in an evaluation of liquefaction. Parameters utilized in our analysis include Standard Penetration Test (SPT) results from the borings, visual descriptions of soil samples retrieved, and geotechnical laboratory test results.

Based on our analysis, when considering a historic high groundwater depth of 30 feet and peak ground acceleration, one potentially liquefiable layer consisting of silt with sand was encountered between 47 feet to the explored depth of 51.5 feet.

A key aspect of liquefaction is what effect it may have on the proposed improvements, in terms of surface manifestations, lateral spreading, and seismic settlement. These are addressed in the following sections. A summary of our liquefaction hazard analysis is included Appendix C.

2.6.2 Lateral Spreading

Based on the $(N_1)_{60cs}$ blow counts, depth to potentially liquefiable soils, and relatively flat site, the potential for lateral spread is anticipated to be negligible, due to the lack of $(N_1)_{60cs}$ values less than 15, assuming a design/historical high groundwater of 30 feet below the ground surface. As such, mitigation of lateral spreading or flow failure potential is not warranted.

2.6.3 Structural Damage Due to Liquefaction (Surface Manifestations)

We performed an analysis of the potential for structural damage due to liquefaction (surface manifestations) based on the work of Ishihara (1995). This method is based on empirical data and considers the thickness of non-liquefiable soil below the ground surface and foundations, compared to the thickness of underlying liquefiable soils. Our analysis based on this method indicates that there is negligible potential for structural damage due to liquefaction. As such, mitigation of liquefaction potential is not warranted.

2.6.4 Seismically Induced Settlement

Seismically induced settlement consists of dry dynamic settlement (above groundwater) and liquefaction-induced settlement (below groundwater). During a strong seismic event, seismically induced settlement can occur within loose to moderately dense sandy soil due to reduction in volume during and shortly after an earthquake event. Settlement caused by ground shaking is often nonuniformly distributed, which can result in differential settlement.

We have performed analyses to estimate the potential for seismically induced settlement using the method of Tokimatsu and Seed (1987), and based on Martin and Lew (1999), considering the maximum considered earthquake (MCE) peak ground acceleration (PGA_M). Design/historic high groundwater levels of 30 feet below ground surface were used in the analysis. Based on our analysis, a potential for approximately 2.5 inches of seismic settlement is estimated at the site; however, based on our overexcavation recommendations presented later in this report, the estimated potential seismic settlement is reduced to approximately 2.3 inches. Results of our seismic settlement analysis is presented in Appendix D.

If the potential differential settlement is estimated as half of the total seismic settlement over a horizontal distance of 30 feet, this would result in a maximum of 1.2 inches of differential settlement in 30 feet (with overexcavation), or angular distortion of 0.0032L. This is below the differential settlement threshold of 0.010L for "other single-story structures" of Risk Category III, as listed in Table 12.13-3 of ASCE 7-16. "Other" buildings are those not constructed with concrete or masonry wall systems (i.e. wood- or steel-framed). The structural engineer should determine Structure Type and Risk Category and evaluate whether the differential settlement estimates described above are tolerable.

2.7 Seiches and Tsunamis

Seiches are waves generated in enclosed bodies of water in response to passing seismic waves. Tsunamis are waves generated in large bodies of water by fault displacement or major ground movement. Based on the inland location of the site and its distance from confined bodies of water or contained water facilities, seiches and tsunamis are not a hazard to the site.

2.8 Slope Stability and Landslides

No significant slopes are present or planned near the planned improvements. As such, slope stability evaluation (including development of static and dynamic strength parameters, pseudostatic slope stability coefficients, dynamic site conditions evaluation, and slope stability mitigation) is not warranted for this project.

2.9 Flooding and Dam Breach Inundation Potential

The site is not located within a 100-year flood zone or a 500-year flood zone on the Federal Emergency Management Agency (FEMA) Flood Map for the site (see Figure 7, *Flood Hazard Zone Map*).

Flooding can also result from the failure of dams or other water-retaining structures. Based on our review of dam inundation data provided by the California Department of Water Resource's Dam Breach Inundation Map Web Viewer (CDWR, 2021b) the site is not located in an area shown as susceptible to dam breach inundation (see Figure 8, *Regional Dam Inundation Map*). As a result, the risk for flooding and dam breach inundation at the site is considered to be low.

2.10 Other Potential Hazards Listed on CGS Note 48

The following naturally occurring hazards are not believed to exist at the site nor in the region: methane gas, hydrogen-sulfide gas, tar seeps, volcanic eruption, radon-22 gas, and naturally occurring asbestos in geologic formations associated with serpentine.

Subsidence refers to ground settlement due to withdrawal of liquid from the underlying earth materials (such as water or oil). Although the County of Riverside Map My County (2021a) notes the site is located in an area susceptible to subsidence, the U.S. Geological Society (2021b) has mapped the site to be outside of areas of land subsidence caused by groundwater pumping, peat loss, or oil extraction. Additionally, we are unaware of subsidence that has been documented in the area (Riverside County, 2003). As such, the potential for ground cracking or damage due to subsidence onsite is considered to be low.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 General Conclusions

Based on this exploration, construction of the proposed building is feasible from a geotechnical standpoint. No severe geological or geotechnical issues were identified that would preclude construction of the proposed improvements. The most significant geotechnical issues at the site are those related to the potential for strong seismic shaking. Good planning and design of the project can limit the impact of these constraints. Remedial recommendations for these and other geotechnical issues are provided in the following sections.

There are existing utilities onsite. We assume these will be avoided or rerouted; if so, these pose no special consideration, provided the excavations are properly backfilled in accordance with our recommendations below. If any existing utilities within or immediately adjacent to the proposed building (such as within the limits of overexcavation as recommended below) are to remain, these should be further evaluated on a case-by-case basis.

3.2 Earthwork and Grading

Grading should be performed in accordance with the General Earthwork and Grading Specifications presented in Appendix D, unless specifically revised or amended below or by future recommendations based on final development plans.

3.2.1 Site Preparation

Prior to construction, the areas of the proposed improvements should be cleared of vegetation, asphalt pavement, and debris, which should be disposed of offsite. Any underground obstructions onsite should be removed. Resulting cavities should be properly backfilled and compacted. In addition, any uncontrolled fill should be removed and replaced as compacted fill. Efforts should be made to locate any existing utility lines. Those lines should be removed or rerouted if they interfere with the proposed construction, and the resulting cavities should be properly backfilled and compacted as recommended in Sections 3.2.3 and 3.9.

3.2.2 Overexcavation and Recompaction

To reduce the potential for adverse total and differential settlement of the proposed structures, the underlying subgrade soil should be prepared in such a manner that a uniform response to the applied loads is achieved.

For the proposed building, we recommend that the onsite soils be overexcavated a minimum depth of 5 feet below the existing ground surface or 3 feet below the bottom of the proposed footings, whichever is deeper. Where possible, the removal bottom should extend horizontally beyond the proposed structure a minimum of 5 feet from the outside edges of the footings, or a distance equal to the depth of overexcavation below the footings, whichever is farther. During overexcavation, the soil conditions should be observed by Leighton to further evaluate these recommendations based on actual field conditions encountered. If additional poor soils are encountered, additional overexcavation should be conducted.

A firm removal bottom should be established across the building footprint to provide uniform foundation support for the proposed building. Leighton should observe and test the removal bottom prior to placing fill. Deeper overexcavation and recompaction may be recommended locally until a firm removal bottom is achieved.

Areas outside of the proposed structures planned for asphalt or concrete pavement (such as parking areas or fire lanes), flatwork (such as sidewalks), site walls and low retaining walls (walls retaining less than 4 feet, while taller walls should be overexcavated per the recommendations for buildings above), and areas to receive fill should be overexcavated to a minimum depth of 24 inches below existing grade or 18 inches below proposed subgrade (including footing subgrade), whichever is deeper.

After completion of the overexcavation, and prior to fill placement, the exposed surfaces should be scarified to a minimum depth of 6 inches, moisture conditioned to at least 2 percent above optimum moisture content, and recompacted to a minimum 90 percent relative compaction, relative to the ASTM D1557 laboratory maximum density.

3.2.3 Fill Placement

The onsite soil is suitable for use as compacted structural fill, provided it is free of debris and oversized material (greater than 8 inches in largest dimension). Any soil to be placed as fill, whether onsite or imported material, should be accepted by Leighton Consulting.

All fill soil should be placed in thin, loose lifts, moisture-conditioned, if necessary, to a minimum of 2 percentage points above optimum, and compacted to a minimum 90 percent relative compaction as determined by ASTM Test Method D1557. Aggregate base for pavement should be compacted to a minimum of 95 percent relative compaction.

3.2.4 Import Fill Soil

If import soil is to be placed as fill, it should be geotechnically accepted by Leighton. Preferably at least 3 working days prior to proposed import to the site, the contractor should provide Leighton pertinent information of the proposed import soil, such as location of the soil, whether stockpiled or native in place, and pertinent geotechnical reports if available. We recommend that a Leighton representative visit the proposed import site to observe the soil conditions and obtain representative soil samples. Potential issues may include soil that is more expansive than onsite soil, soil that is too wet, soil that is too rocky or too dissimilar to onsite soils, oversize material, organics, debris, etc.

The owner should require proper documentation that soils imported to the project site are suitable for use at the school site from an environmental standpoint. The import soils should be evaluated and/or tested, as appropriate, for environmental suitability based on the Information Advisory - Clean Imported Fill (Department of Toxic Substances Control, October 2001 or more current edition). The documentation indicating the soils are suitable for use should be provided to the project construction manager prior to intended import to the site. Leighton can provide these services to the District, but the contractor must give Leighton adequate time to properly evaluate the material prior to import--a minimum of 3 working days (laboratory rush charges would apply), but preferably 5 working days or more. The contractor should provide Leighton pertinent information, such as the amount and location of the soil, whether stockpiled or native in

place, soil owner contact information, and pertinent environmental reports, if available.

3.2.5 Oversized Materials and Rippability

While not typically anticipated, material greater than 8 inches in size should be disposed of either as landscape material or by removal from the site. The onsite soils are expected to be rippable with heavy equipment in good working order.

3.2.6 Shrinkage and Subsidence

The change in volume of excavated and recompacted soil varies according to soil type and location. This volume change is represented as a percentage increase (bulking) or decrease (shrinkage) in volume of fill after removal and recompaction. Field and laboratory data used in our calculations included laboratory-measured maximum dry densities for soil types encountered at the subject site and the measured in-place densities of soils encountered. We preliminarily estimate the following earth volume changes will occur during grading. These are rough estimates:

Shrinkage (Approximate)	12 ±3 percent
Subsidence (Approximate)	0.15 foot

These estimates do not account for any removal of oversize material. The level of fill compaction, variations in the dry density of the existing soils and other factors influence the amount of volume change.

It should be noted that subsidence, as referred to above, is settlement of in-place earth materials due to heavy equipment processing. It does not refer to potential settlement due to placement of additional loads from new fill (i.e., rising of grades).

These shrinkage values are general guide values. Actual values will vary, due to the varying soil conditions and varying construction techniques. It is not possible to estimate exact values. Therefore, as with any grading project, some earthwork volume adjustments should be anticipated during grading.

3.3 Foundations

Shallow foundations may be used to support the loads of the proposed construction. Overexcavation and Recompaction of the footing subgrade soil should be performed as detailed in Section 3.2.2.

3.3.1 Minimum Embedment and Width

Based on our exploration, footings for the proposed structure should have a minimum embedment of 18 inches, with a minimum width of 24 and 15 inches for isolated and continuous footings, respectively.

3.3.2 Allowable Bearing

An allowable bearing pressure of 2,000 pounds-per-square-foot (psf) may be used, based on the minimum embedment depth and width above. This allowable bearing value may be increased by 250 psf per foot increase in depth or width to a maximum allowable bearing pressure of 4,000 psf. These allowable bearing pressures are for total dead load and sustained live loads. Footing reinforcement should be designed by the structural engineer.

3.3.3 Lateral Load Resistance

Soil resistance available to withstand lateral loads on a shallow foundation is a function of the frictional resistance along the base of the footing and the passive resistance that may develop as the face of the structure tends to move into the soil. The frictional resistance between the base of the foundation and the subgrade soil may be computed using an allowable coefficient of friction of 0.35. The passive resistance may be computed using an allowable (factor of safety of 1.5 applied) equivalent fluid pressure of 260 pounds per cubic foot (pcf), assuming there is constant contact between the footing and undisturbed soil. Friction and passive pressure may be combined without reduction, provided the footings can move laterally sufficiently to develop passive pressure (approximately ¼ inch); otherwise, friction alone should be assumed.

3.3.4 Increase in Bearing and Friction – Short Duration Loads

For the case of short term loading (seismic and wind loading), an increase of 1/3 would apply to the bearing pressure and friction values. The ultimate bearing pressure is assumed to be roughly three times the allowable bearing pressure. However, this ultimate pressure only considers structural failure/collapse (life safety) and not structural damage or significant cosmetic damage. Excessive settlement is anticipated to occur before the ultimate bearing pressure is attained.

3.3.5 Settlement Estimates

The recommended overexcavation, relative compaction and allowable bearing pressure are based on a total allowable, post construction settlement of 1 inch. Differential settlement due to static loading is estimated at approximately 1/2 inch over a horizontal distance of 30 feet between or along similarly loaded footings. Since settlement is a function of footing sustained load, size and contact bearing pressure, differential settlement can be expected between adjacent columns or walls where a large differential loading condition exists.

Seismic differential settlement is estimated to be a maximum of approximately 1.2 inches over 30 feet for the design-level earthquake, or angular distortion of 0.0032L. The structural engineer should determine the Structure Type and Risk Category and evaluate whether the differential settlement estimates described above are tolerable.

3.4 Recommendations for Slabs-On-Grade

Concrete slabs-on-grade should be designed by the structural engineer in accordance with the current CBC for a soil with a low expansion potential. Observation and possibly testing to confirm the expansion potential of the near surface soil should be conducted during site grading.

The following minimum slab recommendations should be used. More stringent requirements may be required by agencies, the structural engineer, the architect, or the CBC. Slabs-on-grade should have the following minimum recommended components:

Subgrade Moisture Conditioning: The subgrade soil should be moisture conditioned to at least 2 percentage points above optimum moisture content to a minimum depth of 12 inches prior to placing steel or concrete.

Concrete Thickness and Structural Design: Thickness of slabs-on-grade should be designed by the structural engineer, but should be at least 5 inches thick (this is referring to the actual minimum thickness, not the nominal thickness). Reinforcing steel should be designed by the structural engineer, but as a minimum (for conventionally reinforced slabs) should be No. 4 rebar placed at 18 inches on center, each direction, mid-depth in the slab. A weighted plasticity index of 15 should be assumed for the underlying soil.

Minor cracking of the concrete as it cures, due to drying and shrinkage is normal and should be expected. However, cracking is often aggravated by a high water/cement ratio, high concrete temperature at the time of placement, small nominal aggregate size, aggregate that is not sufficiently clean, and rapid moisture loss due to hot, dry, and/or windy weather conditions during placement and curing. Cracking due to temperature and moisture fluctuations can also be expected. Low slump concrete can reduce the potential for shrinkage cracking. Additionally, reinforcement in slabs and foundations can generally reduce the potential for shrinkage cracking. The structural engineer should consider these and other pertinent concrete design and construction considerations in slab design and specifications.

3.4.1 Slab Underlayment for Moisture Vapor Retarding

Because moisture vapor from the underlying soils will be transmitted through slabs-on-grade without preventive measures, slab underlayment for moisture vapor retarding should be designed by qualified professionals (such as the structural engineer and/or architect) where control of moisture vapor transmission through slabs is considered important to this project (such as where moisture-sensitive floor coverings or equipment are planned). Slab underlayment typically includes a moisture vapor retarder membrane (such as 15-mil thick or greater) underlain by a capillary break consisting of 4 inches of clean ½-inch-minimum gravel, and provisions for protection of the vapor retarder during construction. The structural engineer

and/or architect should specify pertinent slab and concrete design parameters, such as whether a sand blotter layer should be placed over the vapor retarder.

Moisture retarders can reduce, but not eliminate moisture vapor rise from the underlying soils up through the slab. Moisture retarders should be designed and constructed in accordance with applicable American Concrete Institute, Portland Cement Association, Post-Tensioning Institute, ASTM International, and California Building Code requirements and guidelines.

Leighton does not practice in the field of moisture vapor transmission evaluation/mitigation, since this does not fall under the geotechnical discipline. Therefore, we recommend that a qualified person, such as the flooring subcontractor, structural engineer, and/or architect, be consulted to evaluate the general and specific moisture vapor transmission paths and any impact on the proposed construction. That person (or persons) should provide recommendations for mitigation of potential adverse impact of moisture vapor transmission on various components of the structures as deemed appropriate. In addition, the recommendations in this report and our services in general are not intended to address mold prevention, since we, along with geotechnical consultants in general, do not practice in the area of mold prevention. If specific recommendations are desired, a professional mold prevention consultant should be contacted.

3.5 Seismic Design Parameters

Seismic parameters presented in this report should be considered during preliminary project design. In order to reduce the effects of ground shaking produced by regional seismic events, seismic design should be performed in accordance with the 2019 CBC. The 2019 seismic design parameters are presented in Section 2.5.2 of this report should be considered for the seismic analysis of the subject site.

3.6 Lateral Earth Pressures

We recommend that retaining walls be backfilled with very low expansive soil and constructed with a backdrain in accordance with the recommendations provided on Figure 9 - Retaining Wall Backfill and Subdrain Detail. Using onsite

expansive soil as retaining wall backfill will result in higher lateral earth pressures exerted on the wall and are, therefore, not recommended. Based on these recommendations, the following parameters may be used for the design of conventional retaining walls.

Retaining Wall Design Parameters

Static Equivalent Fluid Pressure (pcf)	
Condition	Level Backfill
Active	40
At-Rest	62
Passive (allowable)	260 (Maximum 3,000 psf)

The above active and at-rest values do not contain an appreciable factor of safety, so the structural engineer should apply the applicable factors of safety and/or load factors during design.

Cantilever walls that are designed to yield at least 0.001H, where H is equal to the wall height, may be designed using the active condition. Rigid walls and walls braced at the top should be designed using the at-rest condition.

Passive pressure is used to compute soil resistance to lateral structural movement. In addition, for sliding resistance, a frictional resistance coefficient of 0.35 may be used at the concrete and soil interface. The lateral passive resistance should be taken into account only if it is ensured that the soil providing passive resistance, embedded against the foundation elements, will remain intact with time. A soil unit weight of 120 pcf may be assumed for calculating the actual weight of the soil over the wall footing.

In addition to the above lateral forces due to retained earth, surcharge due to improvements, such as an adjacent structure or traffic loading, should be considered in the design of the retaining wall. Loads applied within a 1:1 projection from the surcharging structure on the stem of the wall should be considered in the design. A third of uniform vertical surcharge-loads should be applied at the surface as a horizontal pressure on cantilever (active) retaining walls, while half of uniform vertical surcharge-loads should be applied as a horizontal pressure on braced (at-rest) retaining walls. To account for automobile parking surcharge, we suggest that a uniform horizontal pressure of

100 psf (for restrained walls) or 70 psf (for cantilever walls) be added for design, where autos are parked within a horizontal distance behind the retaining wall less than the height of the retaining wall stem.

For walls with a retained height over 6 feet, or where otherwise required by Code or deemed appropriate by the structural engineer, we recommend that the wall designs be checked seismically using an additive seismic Equivalent Fluid Pressure (EFP) of 38 pcf, which is added to the active EFP. Such walls that are to be designed in the static case assuming the at-rest condition should be checked seismically using this additive seismic EFP added to the active condition (i.e., the additive seismic EFP is not added to the at-rest EFP). The additive seismic EFP should be applied with a standard EFP pressure distribution (i.e., it is not an inverted triangle).

Conventional retaining wall footings should have a minimum width of 24 inches and a minimum embedment of 12 inches below the lowest adjacent grade. An allowable bearing pressure of 2,000 psf may be used for retaining wall footing design, based on the minimum footing width and depth. This bearing value may be increased by 250 psf per foot increase in width or depth to a maximum allowable bearing pressure of 3,000 psf.

3.7 Cement Type and Corrosion Protection

Based on the results of current laboratory testing, concrete structures in contact with the onsite soil will have negligible exposure to water-soluble sulfates in the soil. Therefore, common Type II cement may be used for concrete construction. Concrete should be designed in accordance with ACI 318-14, Section 4.2 (ACI, 2014), adopted by the 2019 CBC (Section 1904A.2).

Based on laboratory testing from our current exploration, onsite soil is considered severely corrosive to ferrous metals. Use of non-ferrous buried pipe may be prudent, or ferrous pipe can be protected by dielectric tape, polyethylene sleeves and/or other methods, with recommendations from a corrosion engineer. Corrosion information presented in this report should be provided to your underground utility subcontractors.

3.8 Temporary Excavations

All temporary excavations, including utility trenches, retaining wall excavations and other excavations should be performed in accordance with project plans, specifications and all OSHA requirements, and the current edition of the California Construction Safety Orders, latest edition.

No surcharge loads should be permitted within a horizontal distance equal to the height of cut or 5 feet, whichever is greater from the top of the slope, unless the cut is shored appropriately. Excavations that extend below an imaginary plane inclined at 45 degrees below the edge of any adjacent existing site foundation should be properly shored to maintain support of the adjacent structures.

Cantilever shoring should be designed based on the active fluid pressure presented in the retaining wall section. If excavations are braced at the top and at specific design intervals, the active pressure may then be approximated by a rectangular soil pressure distribution with the pressure per foot of width equal to 22H, where H (feet) is equal to the depth of the excavation being shored.

During construction, the soil conditions should be regularly evaluated to verify that conditions are as anticipated. The contractor should be responsible for providing the "competent person" required by OSHA, standards to evaluate soil conditions. Close coordination between the competent person and Leighton Consulting should be maintained to facilitate construction while providing safe excavations.

3.9 Trench Backfill

Utility-type trenches onsite can be backfilled with onsite material, provided it is free of debris, significant organic material and oversized material (greater than 3 inches for trench backfill within 3 feet of a pipe, and 6 inches for trench backfill above). Prior to backfilling the trench, pipes should be bedded and shaded in a granular material that has a sand equivalent of 30 or greater. We recommend that open-graded crushed rock or similar material not be used as bedding material, unless special provisions are implemented to limit the migration of surrounding soil into the open-graded material, such as the use of filter fabric around the open-graded material. The bedding material should extend 12 inches above the top of the pipe. The bedding/shading sand should be densified in-place by mechanical means, or in areas where the trench walls and bottom soil

have a minimum sand equivalent of 15, the bedding sand may be jetted. Bedding sand should be placed in accordance with the Standard Specifications for Public Works Construction (Greenbook). The native soil fill should be placed in loose layers, moisture conditioned, as necessary, and mechanically compacted using a minimum standard of 90 percent relative compaction based on ASTM D1557. The thickness of layers should be based on the compaction equipment used in accordance with the Standard Specifications for Public Works Construction (Greenbook).

3.10 Drainage and Site Conditions

Positive surface drainage should be provided to direct surface water away from structures and towards suitable collective drainage facilities. Surface drainage should be provided to prevent ponding of water adjacent to the structures. In general, the area around the buildings should slope away from the buildings. Care should be taken to avoid heavy irrigation, and under-irrigation should also be avoided.

3.11 Limitations and Additional Geotechnical Services

The geotechnical recommendations presented in this report are based on subsurface conditions as interpreted from limited subsurface explorations and limited laboratory testing. Our geotechnical recommendations provided in this report are based on information available at the time the report was prepared and may change as plans are developed. However, additional geotechnical study and analysis may be required based on final development plans. Leighton Consulting should review the site and grading plans when available and comment further on the geotechnical aspects of the project. Geotechnical observation and testing should be conducted during excavation and all phases of grading operations. Our conclusions and preliminary recommendations should be reviewed and verified by Leighton Consulting during construction and revised accordingly if geotechnical conditions encountered vary from our findings and interpretations. Changes in subsurface conditions can and do occur over time. Therefore, our findings, conclusions, and recommendations presented in this report are based on the assumption that Leighton Consulting will provide geotechnical observation and testing during construction. Please refer to the GBA “Important Information about Your Geotechnical Engineering Report” presented at the end of this report.

Environmental services were not included as part of this study. This report was prepared for the sole use of Jurupa Unified School District for application to the design of the proposed project in accordance with generally accepted geotechnical engineering practices at this time in California.

Geotechnical observation and testing should be provided:

- After completion of site demo/clearing.
- During overexcavation of compressible soil.
- During compaction of all fill materials.
- After excavation of all footings and prior to placement of concrete.
- During utility trench backfilling and compaction.
- During pavement subgrade and base preparation.
- When any unusual conditions are encountered.

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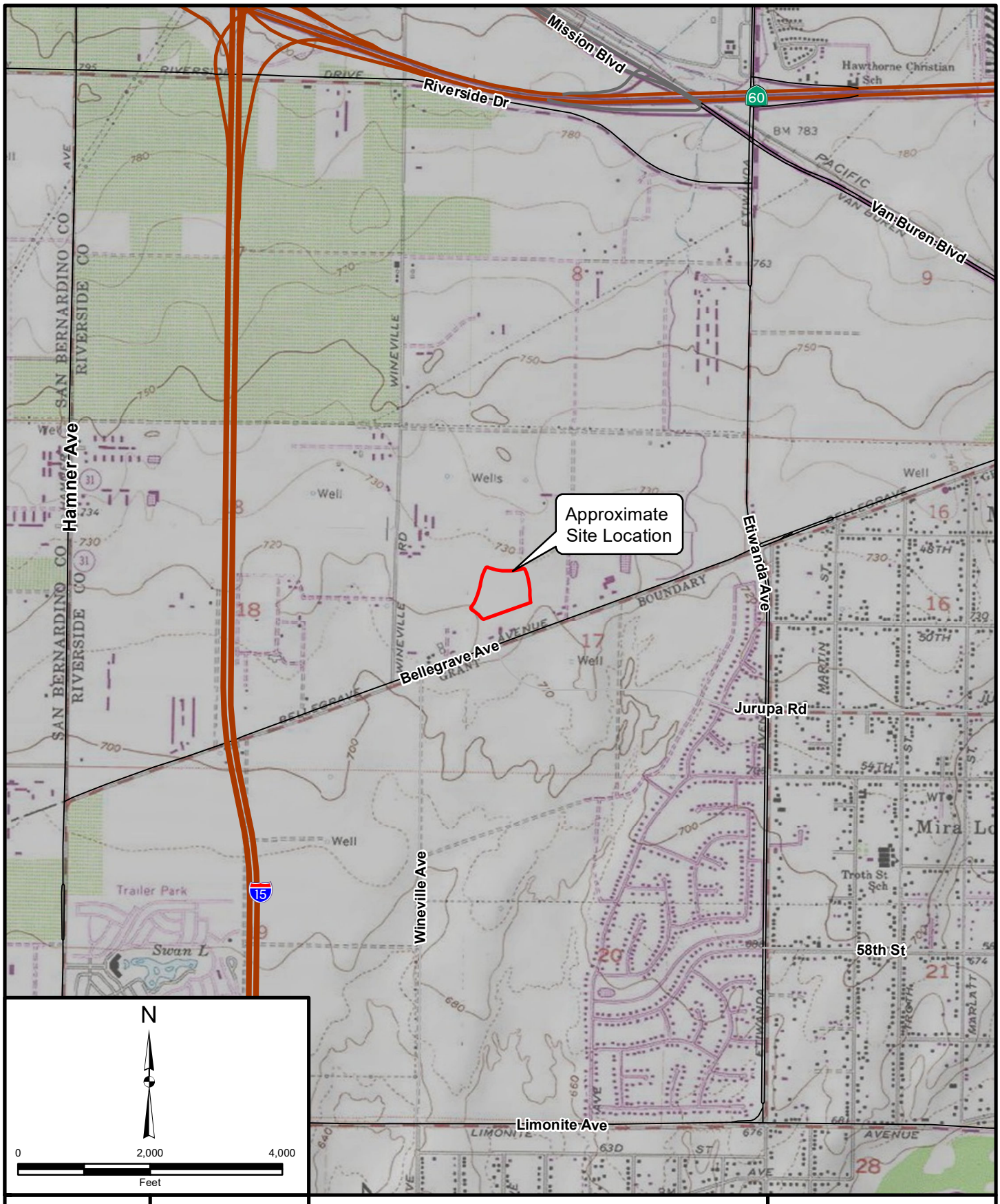


Project: 10757.005	Eng/Geol: JDH/SGO
Scale: 1 " = 2,000 '	Date: December 2021
Base Map: ESRI ArcGIS Online 2021	

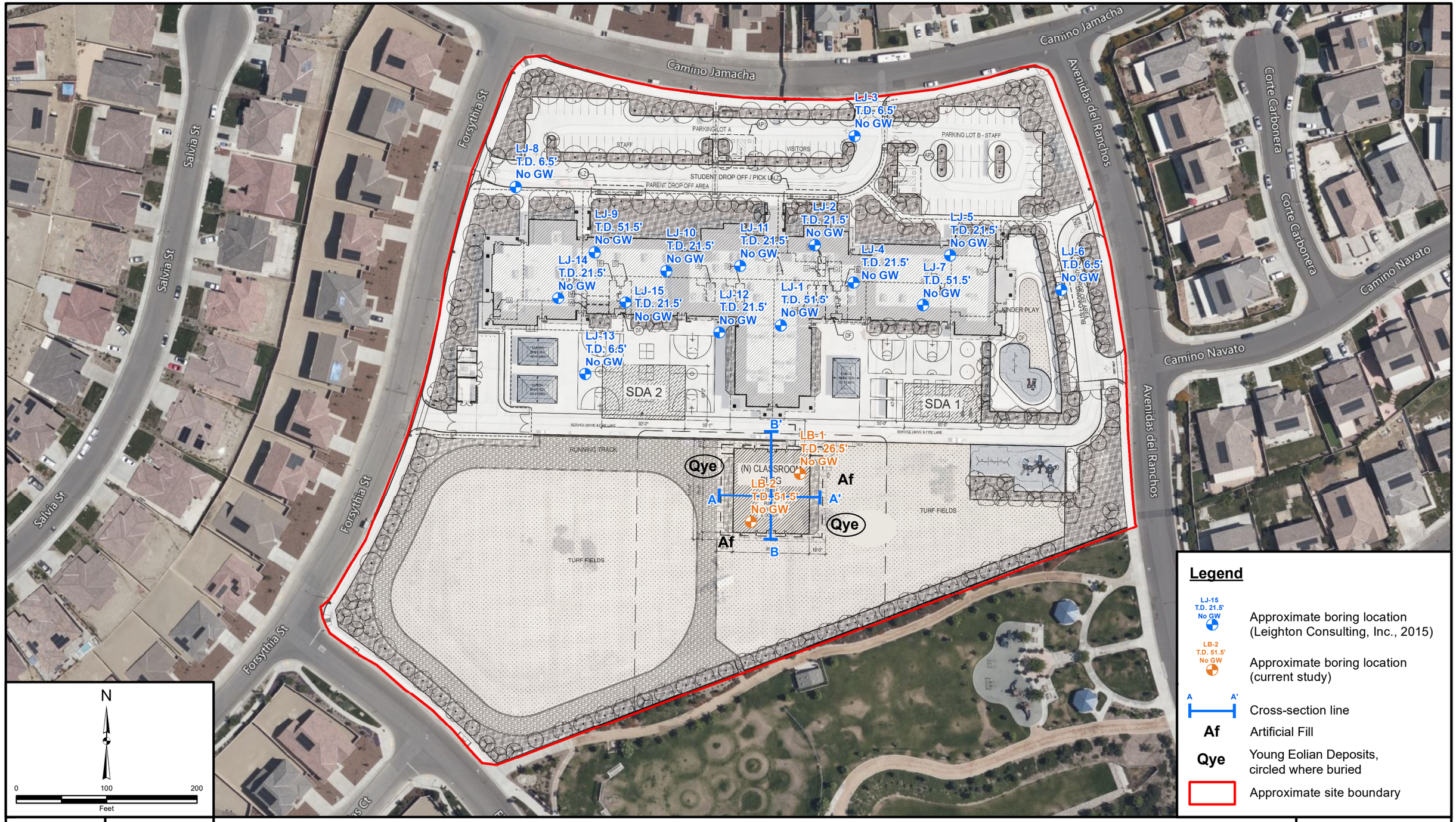
SITE LOCATION MAP

Proposed Classroom Building
Jurupa Unified School District - Del Sol Academy
11626 Forsythia Street, Jurupa Valley, California

FIGURE 1

Leighton

Map Saved as V:\Drafting\10757\005\10757-005_F01_SLM_2021-11-22.mxd on 11/30/2021 11:08:28 AM Author: KVM (kmanchikanti)



N

0 100 200

Feet

Legend

- LJ-15 T.D. 21.5' No GW — Approximate boring location (Leighton Consulting, Inc., 2015)
- LB-2 T.D. 51.5' No GW — Approximate boring location (current study)
- A — A' — Cross-section line
- Af — Artificial Fill
- Qye — Young Eolian Deposits, circled where buried
- Approximate site boundary

Project: 10757.005	Eng/Geol: JDH/SGO
Scale: 1 " = 100 '	Date: December 2021
Base Map: ESRI ArcGIS Online 2021	

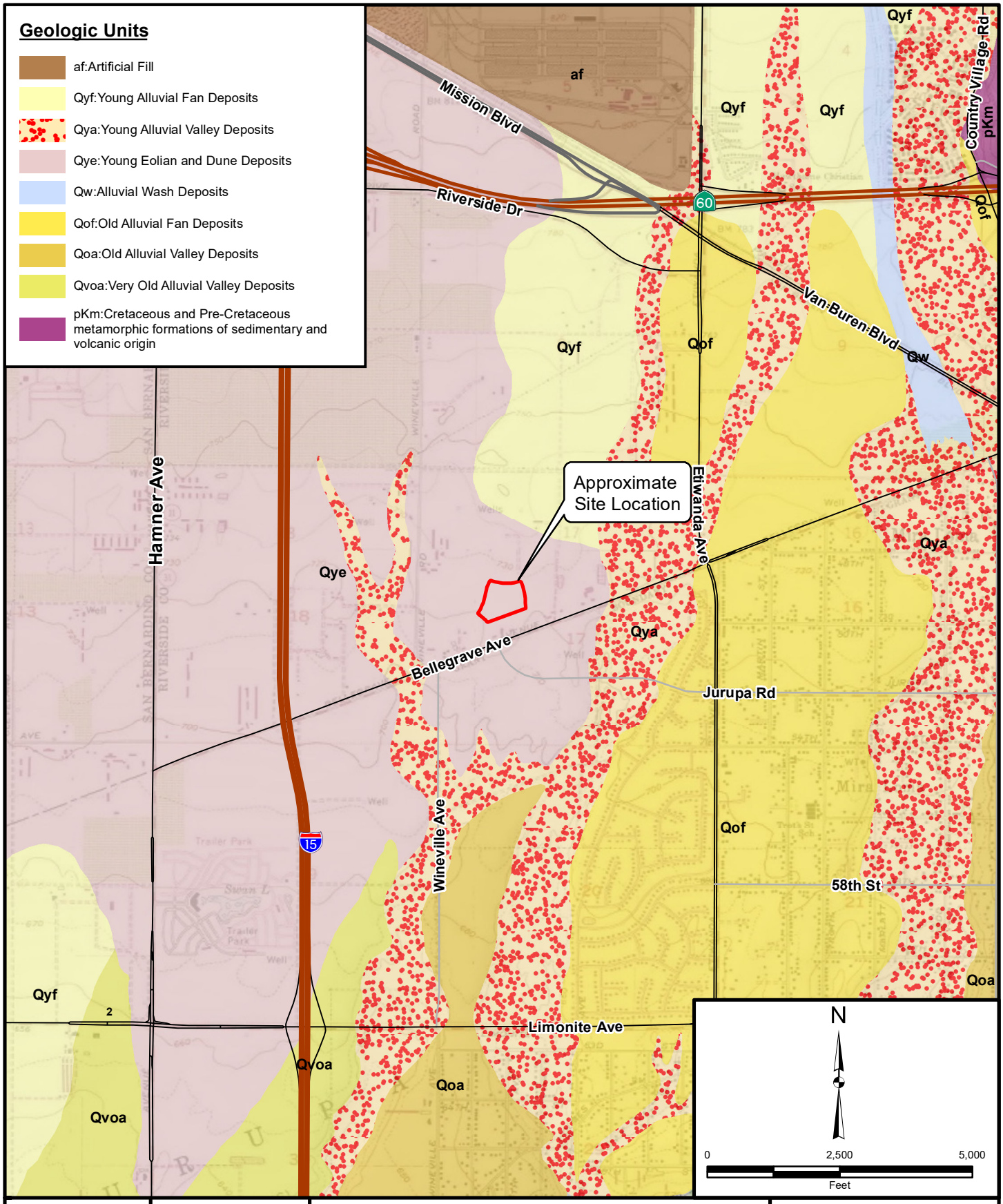
EXPLORATION LOCATION MAP

Proposed Classroom Building
Jurupa Unified School District - Del Sol Academy
11626 Forsythia Street, Jurupa Valley, California

FIGURE 2

Leighton

Map Saved as V:\Drafting\10757\005\10757-005_F02_ELM_2021-11-22.mxd on 12/9/2021 1:25:02 PM Author: KVM (kmanchikanti)



Project: 13325.001	Eng/Geol: JDH/SGO
Scale: 1 " = 2,500 '	Date: November 2021

Basemap: USGS Topo Map Service from Esri, 2021
Reference: USGS Geologic Maps in GIS format by CGS

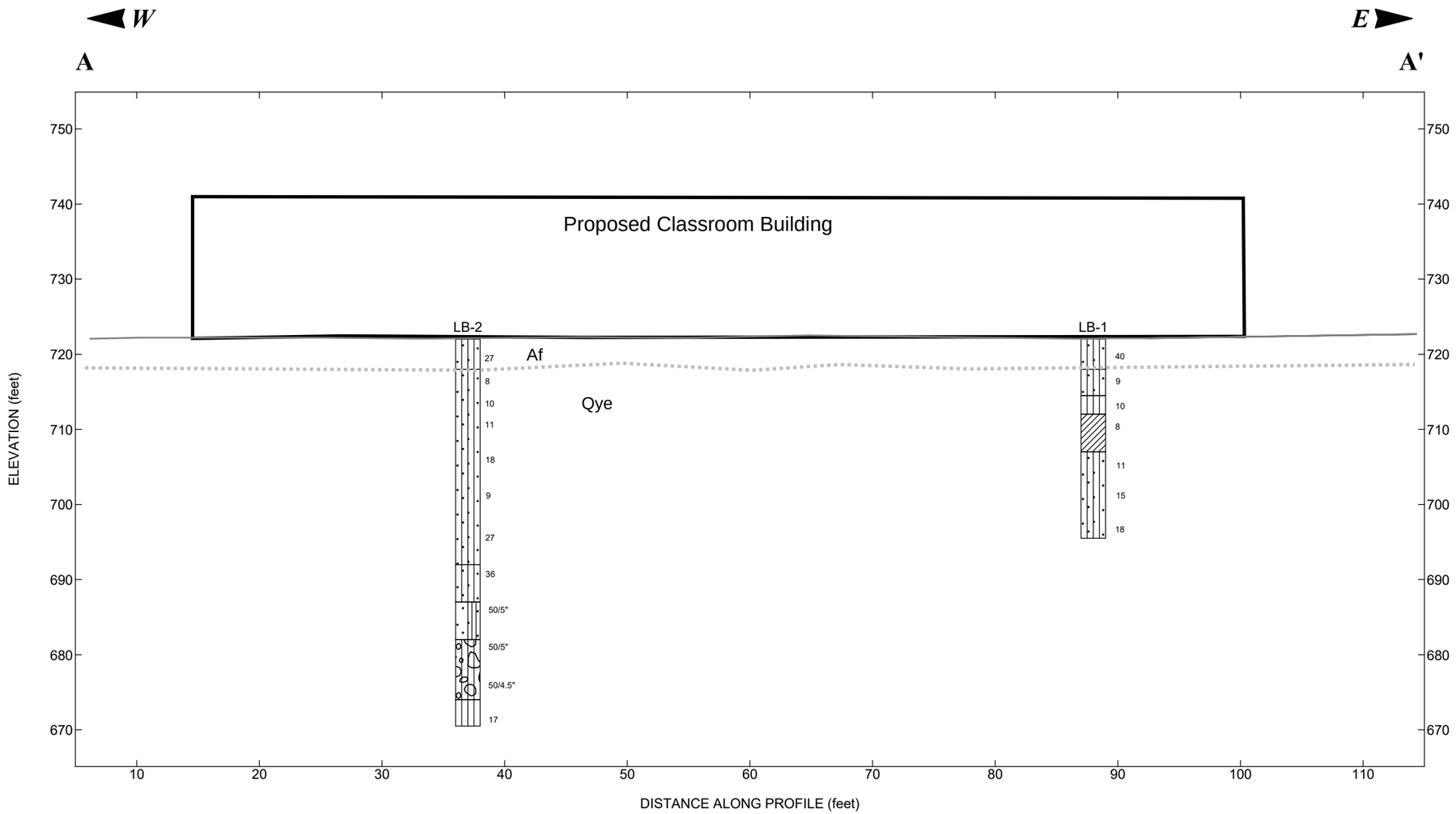
REGIONAL GEOLOGY MAP

Proposed Classroom Building
Jurupa Unified School District - Del Sol Academy
11626 Forsythia Street, Jurupa Valley, California

FIGURE 3

Leighton

Map Saved as V:\Drafting\10757\005\10757-005_F03_RGM_2021-11-22.mxd on 11/30/2021 12:07:45 PM Author: KVM (kmanchikanti)

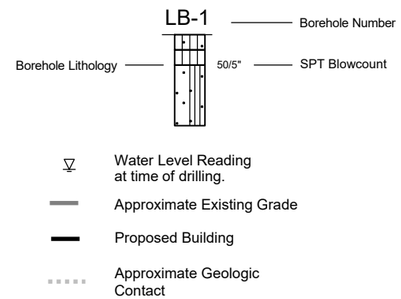


Lithology Graphics

- USCS Silty Sand
- USCS Silt
- USCS Low Plasticity Clay
- USCS Poorly-graded Sand with Silt
- USCS Silty Gravel

See Figure 2 for Cross-Section Location

Explanation:



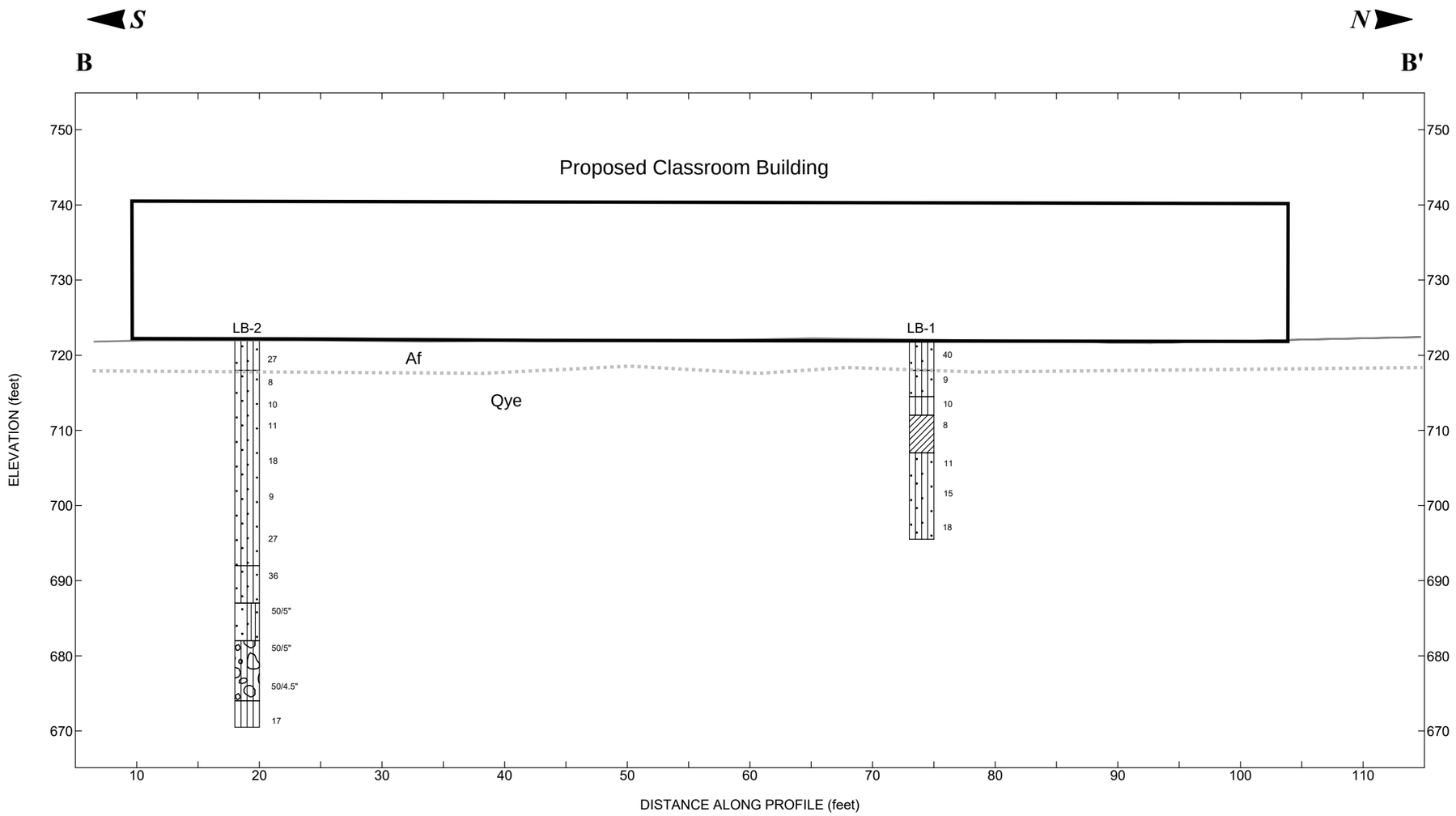
Vertical Exaggeration: 0.5x

Leighton Consulting , Inc.

Section A-A'
GEOLOGIC CROSS SECTION

Del Sol Academy
Classroom Addition

JOB NUMBER	FIGURE NUMBER
10757.005	Figure 4A



Lithology Graphics

- USCS Silty Sand
- USCS Silt
- USCS Low Plasticity Clay
- USCS Poorly-graded Sand with Silt
- USCS Silty Gravel

See Figure 2 for Cross-Section Location

Explanation:

LB-1 — Borehole Number
Borehole Lithology — 50/5" — SPT Blowcount

- Water Level Reading at time of drilling.
- Approximate Existing Grade
- Proposed Building
- Approximate Geologic Contact

0 — 10
Horizontal Scale (feet)

Vertical Exaggeration: 0.5x

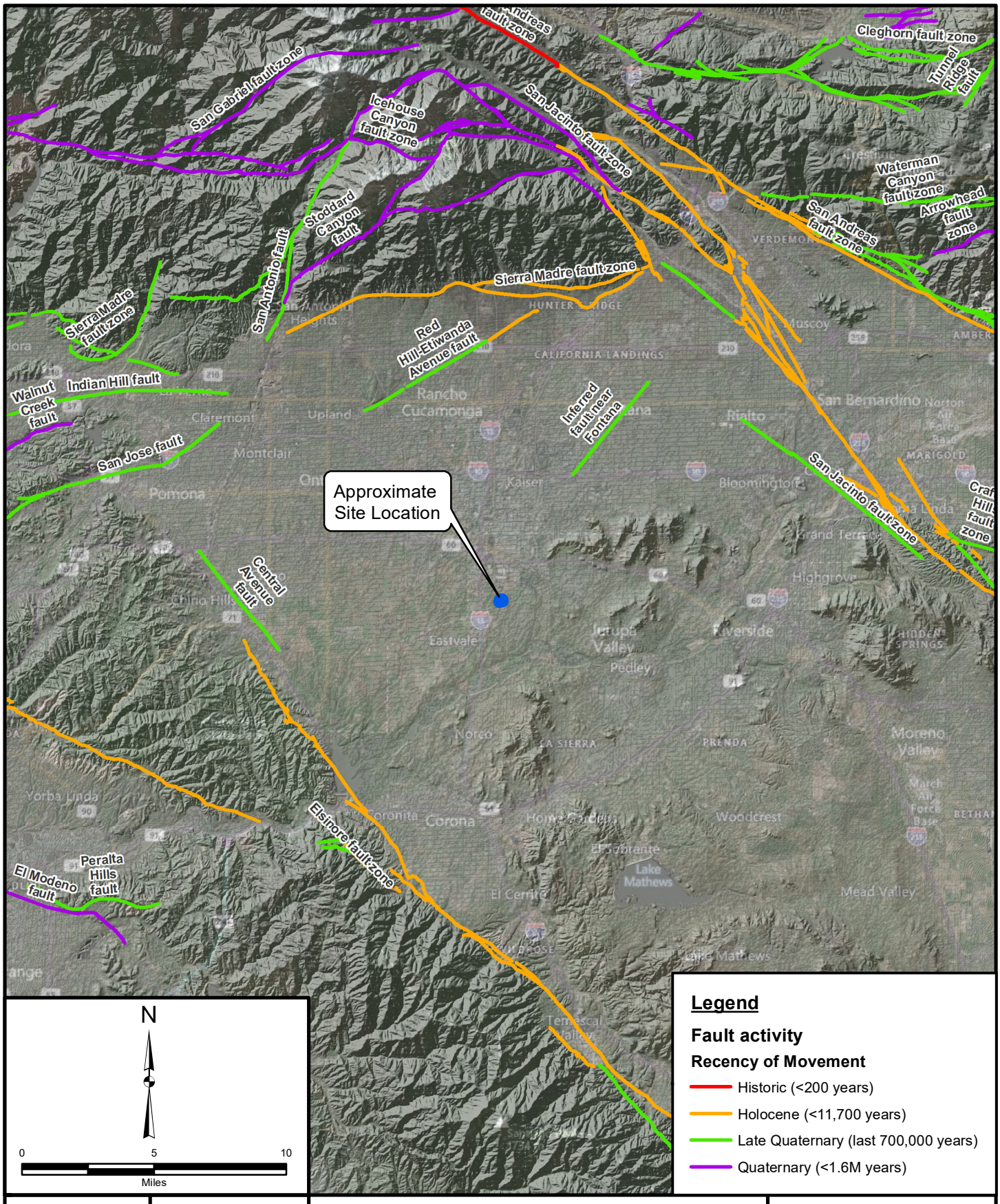
Leighton Consulting , Inc.

Section B-B'
GEOLOGIC CROSS SECTION

Del Sol Academy
Classroom Addition

JOB NUMBER	FIGURE NUMBER
10757.005	Figure 4B

FNC AB NWNL01 - B SIZE 10757.005 BORING LOGS.GPJ ROCKLOG2012.GDT 12/2/21



Legend

Fault activity

Recency of Movement

- Historic (<200 years)
- Holocene (<11,700 years)
- Late Quaternary (last 700,000 years)
- Quaternary (<1.6M years)

Project: 10757.005	Eng/Geol: JDH/SGO
Scale: 1 " = 5 miles	Date: November 2021

Base Map: ESRI ArcGIS Online 2021
Reference: maps.conservation.ca.gov

REGIONAL FAULT MAP

Proposed Classroom Building
Jurupa Unified School District - Del Sol Academy
11626 Forsythia Street, Jurupa Valley, California

FIGURE 5

Leighton

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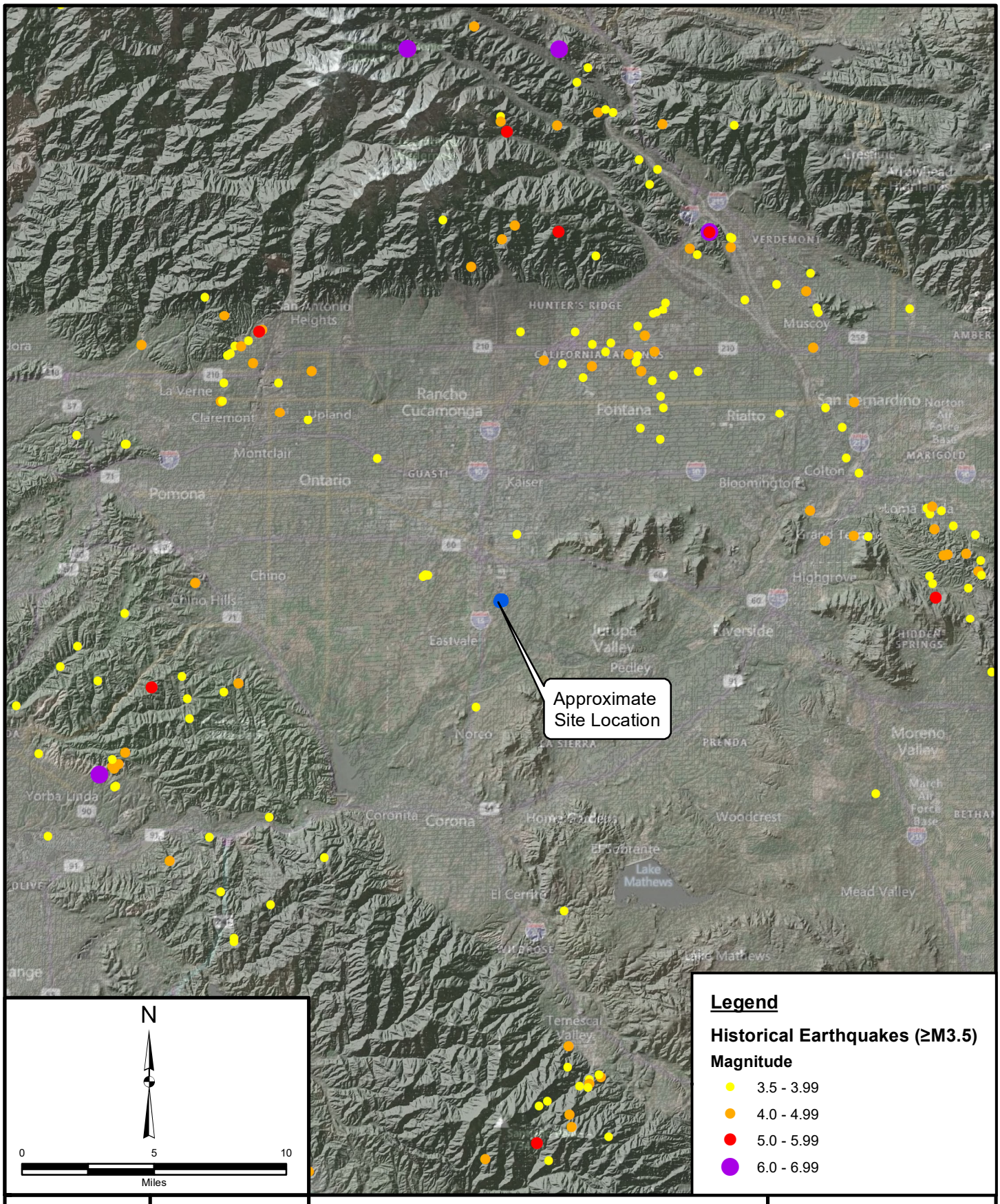

Project: 10757.005	Eng/Geol: JDH/SGO
Scale: 1 " = 5 miles	Date: November 2021

Base Map: ESRI ArcGIS Online 2021
Reference: maps.conservation.ca.gov

HISTORICAL SEISMICITY MAP

Proposed Classroom Building
Jurupa Unified School District - Del Sol Academy
11626 Forsythia Street, Jurupa Valley, California

FIGURE 6

Leighton

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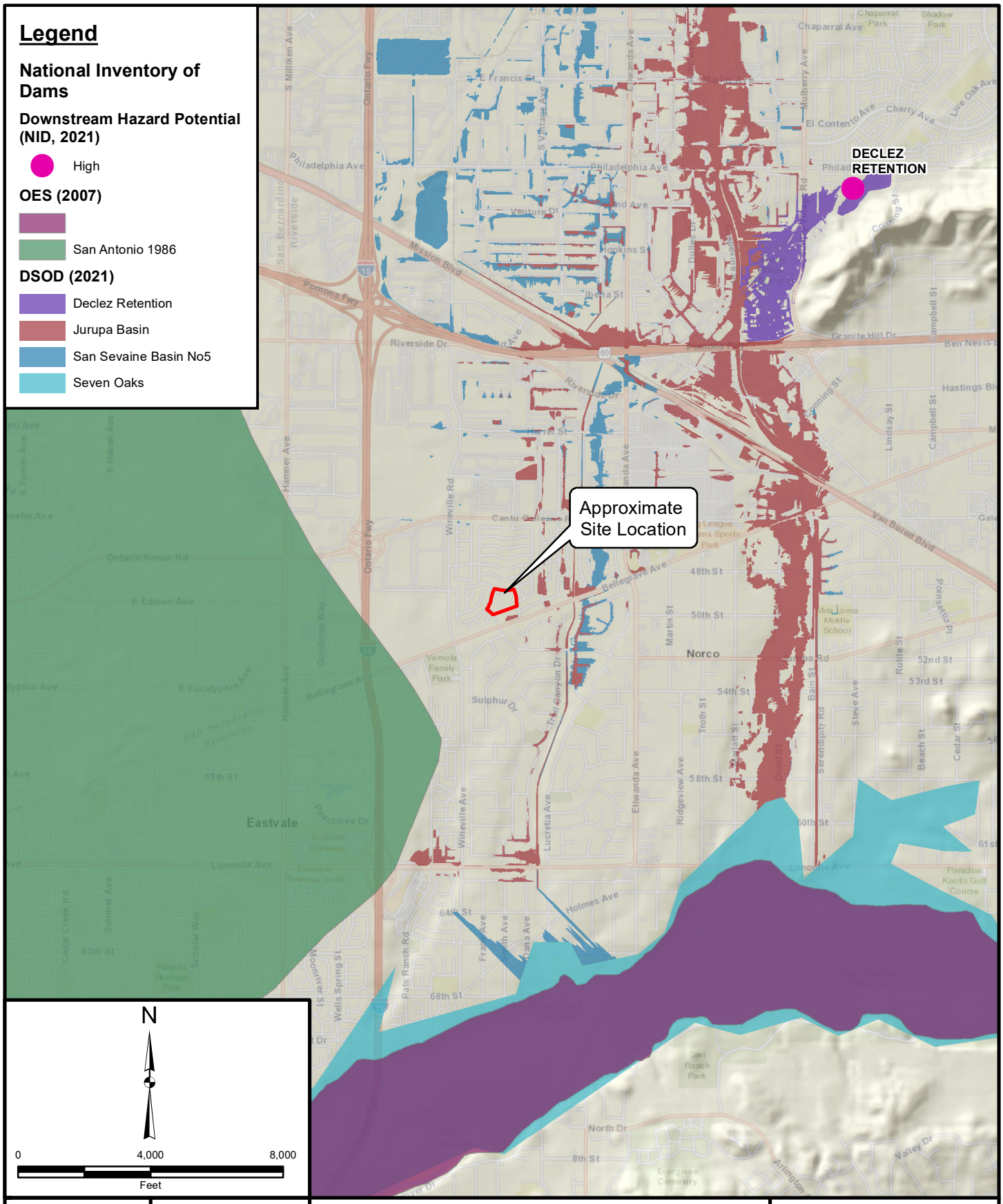

Project: 10757.005	Eng/Geol: JDH/SGO
Scale: 1 " = 4,000 '	Date: November 2021

Base Map: ESRI ArcGIS Online 2021
Reference: Office of Emergency Services (2007),
Dept of Safety of Dams (2021)
National Inventory of Dams, Army Corps of Engrs (2021)

REGIONAL DAM INUNDATION MAP

Proposed Classroom Building
Jurupa Unified School District - Del Sol Academy
11626 Forsythia Street, Jurupa Valley, California

FIGURE 7

Leighton

Map Saved as V:\Drafting\10757\005\10757-005_F07_DIM_2021-11-22.mxd on 11/30/2021 12:27:28 PM Author: KVM (kmanchikanti)

Project: 10757.005	Eng/Geol: JDH/SGO
Scale: 1 " = 4,000 '	Date: November 2021

Base Map: ESRI ArcGIS Online 2021
Reference: FEMA, DWR

FLOOD HAZARD ZONE MAP

Proposed Classroom Building
Jurupa Unified School District - Del Sol Academy
11626 Forsythia Street, Jurupa Valley, California

FIGURE 8

Leighton

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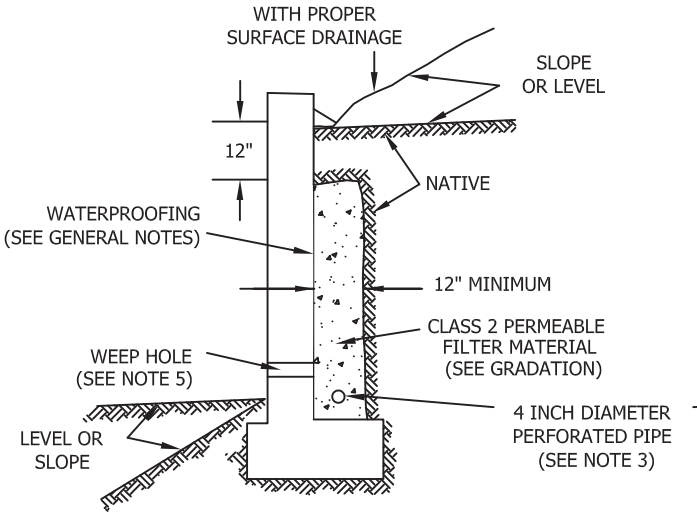
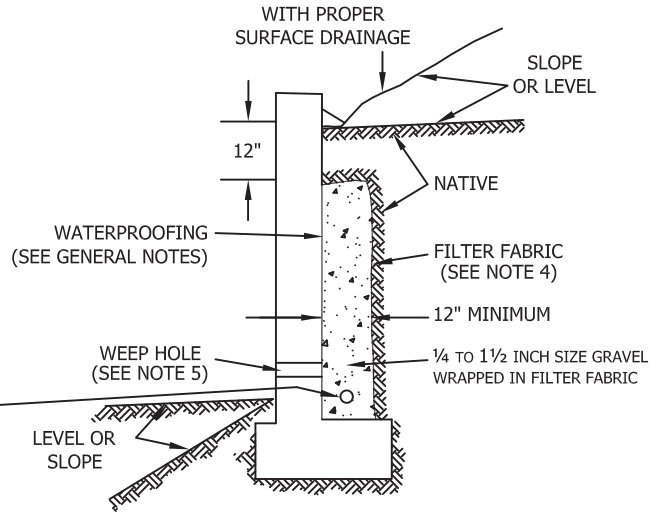
SUBDRAIN OPTIONS AND BACKFILL WHEN NATIVE MATERIAL HAS EXPANSION INDEX OF ≤50

OPTION 1: PIPE SURROUNDED WITH CLASS 2 PERMEABLE MATERIAL



OPTION 2: GRAVEL WRAPPED IN FILTER FABRIC



Class 2 Filter Permeable Material Gradation
Per Caltrans Specifications

Sieve Size	Percent Passing
1"	100
3/4"	90-100
3/8"	40-100
No. 4	25-40
No. 8	18-33
No. 30	5-15
No. 50	0-7
No. 200	0-3

GENERAL NOTES:

* Waterproofing should be provided where moisture nuisance problem through the wall is undesirable.
* Water proofing of the walls is not under purview of the geotechnical engineer
* All drains should have a gradient of 1 percent minimum
*Outlet portion of the subdrain should have a 4-inch diameter solid pipe discharged into a suitable disposal area designed by the project engineer. The subdrain pipe should be accessible for maintenance (rodding)
*Other subdrain backfill options are subject to the review by the geotechnical engineer and modification of design parameters.

Notes:
1) Sand should have a sand equivalent of 30 or greater and may be densified by water jetting.
2) 1 Cu. ft. per ft. of 1/4- to 1 1/2-inch size gravel wrapped in filter fabric
3) Pipe type should be ASTM D1527 Acrylonitrile Butadiene Styrene (ABS) SDR35 or ASTM D1785 Polyvinyl Chloride plastic (PVC), Schedule 40, Armco A2000 PVC, or approved equivalent. Pipe should be installed with perforations down. Perforations should be 3/8 inch in diameter placed at the ends of a 120-degree arc in two rows at 3-inch on center (staggered)
4) Filter fabric should be Mirafi 140NC or approved equivalent.
5) Weephole should be 3-inch minimum diameter and provided at 10-foot maximum intervals. If exposure is permitted, weepholes should be located 12 inches above finished grade. If exposure is not permitted such as for a wall adjacent to a sidewalk/curb, a pipe under the sidewalk to be discharged through the curb face or equivalent should be provided. For a basement-type wall, a proper subdrain outlet system should be provided.
6) Retaining wall plans should be reviewed and approved by the geotechnical engineer.
7) Walls over six feet in height are subject to a special review by the geotechnical engineer and modifications to the above requirements.

RETAINING WALL BACKFILL AND SUBDRAIN DETAIL FOR WALLS 6 FEET OR LESS IN HEIGHT

WHEN NATIVE MATERIAL HAS EXPANSION INDEX OF ≤50

Leighton

Figure 9

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APPENDIX A

GEOTECHNICAL BORING LOGS

APPENDIX A

GEOTECHNICAL BORING LOGS

The field exploration consisted of a surface reconnaissance and a subsurface exploration program. Encountered soils were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D2488). The log of this subsurface exploration is included as part of this appendix.

The borings were drilled with a truck-mounted hollow-stem drill rig. Relatively undisturbed soil samples were obtained at selected intervals within the borings using a modified California Ring Sampler. A bulk sample of representative soil types were also obtained from the borings. These samples were transported to our geotechnical laboratory for evaluation and appropriate testing. Borings were backfilled with the excavated earth materials after logging and sampling was completed.

The attached subsurface exploration log and related information depict subsurface conditions only at the location indicated and at the particular date designated on the log. Subsurface conditions at other locations may differ from conditions occurring at this location. The passage of time may result in altered subsurface conditions due to environmental changes. In addition, any stratification lines on the logs represent the approximate boundary between soil types and the transition may be gradual.

GEOTECHNICAL BORING LOG LB-1

Project No.	10757.005	**Date Drilled**	11-10-21
Project	Del Sol Academy Classroom Addition	**Logged By**	JP
Drilling Co.	2R	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140lb - Autohammer - 30" Drop	**Ground Elevation**	722'
Location	See Figure 2 - Geotechnical Map	**Sampled By**	JP

Elevation Feet	Depth Feet	Graphic Log (N / S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	0			B-1					**Artificial Fill (Af):** @Surface: Grass over SILTY SAND (SM), brown, moist, fine to medium sand, non-plastic	
720				R-1	6 24 38	129	7	SM	@2.5': SILTY SAND (SM), dense, brown and gray, moist, fine sand, non-plastic, micaceous	
	5			R-2	4 7 7			SM	**Young Eolian Deposits (Qye):** @5': SILTY SAND (SM), loose, brown and gray, moist, fine sand, non-plastic, 20% fines (lab)	-200
715				R-3	4 6 8			ML	@7.5': SANDY SILT (ML), stiff, yellowish olive brown, moist, trace medium sand	CO
	10			R-4	4 5 8	111	17	CL	@10': CLAY with sand (CL), stiff, brown to grayish brown, moist, fine sand, micaceous, 74% fines (lab)	-200, AL
710										
	15			S-1	3 5 6			SM	@15': SILTY SAND (SM), medium dense, brown and grayish brown, moist, fine sand, micaceous, iron oxide specs, 20 to 25% fines (field estimate)	
705										
	20			R-5	7 11 12	97	9	SM	@20': SILTY SAND (SM), medium dense, variegated brown and grayish brown, moist, fine sand, 10-15% fines (field estimate)	
700										
	25			S-2	4 9 9				@25': Same as above, 35% fines (lab)	-200
695									**TOTAL DEPTH = 26.5 FEET** **NO GROUNDWATER ENCOUNTERED DURING DRILLING** **BACKFILLED WITH SOIL CUTTINGS**	
	30									

This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:
- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:
- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

Leighton

*** * * This log is a part of a report by Leighton and should not be used as a stand-alone document. * * ***

GEOTECHNICAL BORING LOG LB-2

Project No.	10757.005	**Date Drilled**	11-10-21
Project	Del Sol Academy Classroom Addition	**Logged By**	JP
Drilling Co.	2R	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140lb - Autohammer - 30" Drop	**Ground Elevation**	722'
Location	See Figure 2 - Geotechnical Map	**Sampled By**	JP

Elevation Feet	Depth Feet	Graphic Log (N / S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	0			B-1				SM	**Artificial Fill (Af):** @Surface: Grass over SILTY SAND (SM), brown, dry to moist, fine to medium sand, non-plastic	MD, EI, CR
720				R-1	11 22 20				@2.5': SILTY SAND (SM), medium dense, brown and gray, moist, fine sand, non-plastic, micaceous	
									Young Eolian Deposits (Qye):	
	5			R-2	3 6 7	114	8	SM	@5': As above, loose, moist, 25% fines (field estimate)	
715				R-3	4 6 9				@7.5': As above, loose, moist	
	10			R-4	4 7 10	104	8		@10': Medium dense, higher concrentration of sand, 34% fines (lab)	-200
710										
	15			R-5	4 11 16	100	4	SM	@15': SILTY SAND (SM), medium dense, brown and grayish brown, moist, fine sand, micaceous, iron oxide specs, 20 to 25% fines (field estimate)	
705										
	20			S-1	3 4 5			SM	@20': SILTY SAND (SM), loose, brown and grayish brown, moist, fine sand, micaceous, iron oxide specs, 36% fines (lab)	-200
700										
	25			R-6	10 12 30	111	12	SM	@25': SILTY SAND (SM), medium dense, brown and grayish brown, moist, fine sand, micaceous, iron oxide specs, rock fragments in matrix, 20 to 25% fines (field estimate)	
695									@27': Auger grinding on cobbles	
	30									

SOIL DESCRIPTION: This Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

Leighton

*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG LB-2

Project No.	10757.005	**Date Drilled**	11-10-21
Project	Del Sol Academy Classroom Addition	**Logged By**	JP
Drilling Co.	2R	**Hole Diameter**	8"
Drilling Method	Hollow Stem Auger - 140lb - Autohammer - 30" Drop	**Ground Elevation**	722'
Location	See Figure 2 - Boring Location Map	**Sampled By**	JP

Elevation Feet	Depth Feet	Graphic Log (N / S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
	30			S-2	10 27 28			SM	@30': SILTY SAND with gravel (SM), dense, moist, grayish brown, fine to medium sand, poor recovery, fragments of cobbles in matrix	
690										
	35			R-7	24 50/5"			SP-SM	@35': SAND with silt and gravel (SP-SM), dense, grayish brown, fine to coarse sand, fine to coarse gravel, subangular, up to 2", 5 to 10% fines (field estimate)	
685										
	40			S-3	11 22 50/5"			GM	@40': SILTY GRAVEL with sand (GM), dense, grayish brown, moist, fine to coarse sand, rock fragments in sample up to 1.5"	
680										
	45			R-8	20 50/4.5"				@45': Same as above	
675										
	50			S-4	5 7 10			ML	@50': SANDY SILT (ML), very stiff, orangish brown, moist, fine sand, micaceous, low to medium plasticity, 55% fines (field estimate)	
670									**TOTAL DEPTH = 51.5 FEET** **NO GROUNDWATER ENCOUNTERED DURING DRILLING** **BACKFILLED WITH SOIL CUTTINGS**	
	55									
665										
	60									

Soil Description applies only to a location of the exploration at the time of sampling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

- B BULK SAMPLE
- C CORE SAMPLE
- G GRAB SAMPLE
- R RING SAMPLE
- S SPLIT SPOON SAMPLE
- T TUBE SAMPLE

TYPE OF TESTS:

- -200 % FINES PASSING
- AL ATTERBERG LIMITS
- CN CONSOLIDATION
- CO COLLAPSE
- CR CORROSION
- CU UNDRAINED TRIAXIAL
- DS DIRECT SHEAR
- EI EXPANSION INDEX
- H HYDROMETER
- MD MAXIMUM DENSITY
- PP POCKET PENETROMETER
- RV R VALUE
- SA SIEVE ANALYSIS
- SE SAND EQUIVALENT
- SG SPECIFIC GRAVITY
- UC UNCONFINED COMPRESSIVE STRENGTH

Leighton

APPENDIX B

GEOTECHNICAL LABORATORY TEST RESULTS

MODIFIED PROCTOR COMPACTION TEST

ASTM D 1557

Project Name:	Del Sol Academy Addition	Tested By:	J. Gonzalez	Date:	11/24/21
Project No.:	10757.005	Checked By:	A. Santos	Date:	12/01/21
Boring No.:	LB-2	Depth (ft.):	0-5		
Sample No.:	B-1				
Soil Identification:	Olive brown silty sand (SM)				

Preparation Method: [X] Moist [ ] Dry

[X] Mechanical Ram [ ] Manual Ram

Mold Volume (ft³) 0.03330 *Ram Weight = 10 lb.; Drop = 18 in.*

TEST NO.	1	2	3	4	5	6
Wt. Compacted Soil + Mold (g)	3838	3938	3916			
Weight of Mold (g)	1850	1850	1850			
Net Weight of Soil (g)	1988	2088	2066			
Wet Weight of Soil + Cont. (g)	502.3	512.2	517.4			
Dry Weight of Soil + Cont. (g)	473.8	474.3	468.4			
Weight of Container (g)	38.3	39.3	39.2			
Moisture Content (%)	6.54	8.71	11.42			
Wet Density (pcf)	131.6	138.2	136.8			
Dry Density (pcf)	123.5	127.2	122.8			

Maximum Dry Density (pcf) **127.2** **Optimum Moisture Content (%)** **9.0**

PROCEDURE USED

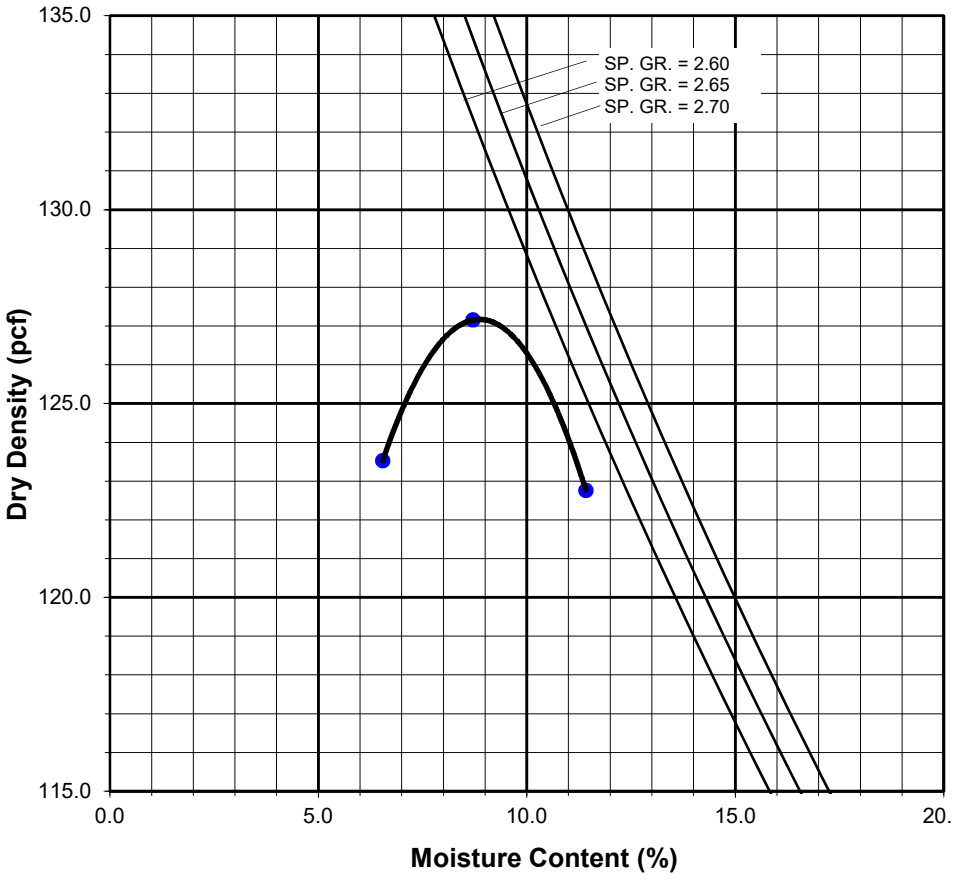
[X] **Procedure A**
Soil Passing No. 4 (4.75 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)
May be used if +#4 is 20% or less

[ ] **Procedure B**
Soil Passing 3/8 in. (9.5 mm) Sieve
Mold : 4 in. (101.6 mm) diameter
Layers : 5 (Five)
Blows per layer : 25 (twenty-five)
Use if +#4 is >20% and +3/8 in. is 20% or less

[ ] **Procedure C**
Soil Passing 3/4 in. (19.0 mm) Sieve
Mold : 6 in. (152.4 mm) diameter
Layers : 5 (Five)
Blows per layer : 56 (fifty-six)
Use if +3/8 in. is >20% and +¾ in. is <30%

Particle-Size Distribution:
GR:SA:FI

Atterberg Limits:
LL,PL,PI



Boring No.	LB-1	LB-1	LB-1	LB-2	LB-2			
Sample No.	R-2	R-4	S-2	R-4	S-1			
Depth (ft.)	5.0	10.0	25.0	10	20			
Sample Type	Ring	Ring	SPT	Ring	SPT			
Soil Identification	Olive brown silty sand (SM)	Light olive brown lean clay with sand (CL)s	Light olive brown silty sand (SM)	Olive brown silty sand (SM)	Light olive brown silty sand (SM)			
Moisture Correction								
Wet Weight of Soil + Container (g)	0.00	0.00	0.00	0.00	0.00			
Dry Weight of Soil + Container (g)	0.00	0.00	0.00	0.00	0.00			
Weight of Container (g)	1.00	1.00	1.00	1.00	1.00			
Moisture Content (%)	0.00	0.00	0.00	0.00	0.00			
Sample Dry Weight Determination								
Weight of Sample + Container (g)	632.18	517.16	795.84	628.61	643.25			
Weight of Container (g)	107.73	111.05	107.29	108.14	108.23			
Weight of Dry Sample (g)	524.45	406.11	688.55	520.47	535.02			
Container No.:								
After Wash								
Method (A or B)	A	A	A	A	A			
Dry Weight of Sample + Cont. (g)	525.20	218.00	552.88	450.33	450.00			
Weight of Container (g)	107.73	111.05	107.29	108.14	108.23			
Dry Weight of Sample (g)	417.47	106.95	445.59	342.19	341.77			
% Passing No. 200 Sieve	**20.4**	**73.7**	**35.3**	**34.3**	**36.1**			
% Retained No. 200 Sieve	79.6	26.3	64.7	65.7	63.9			

Leighton

PERCENT PASSING
No. 200 SIEVE
ASTM D 1140

Project Name: Del Sol Academy Addition

Project No.: 10757.005

Tested By: J. Domingo Date: 11/24/21

EXPANSION INDEX of SOILS
ASTM D 4829

Project Name:	Del Sol Academy Addition	Tested By:	ACS/OHF	Date:	11/29/21
Project No.:	10757.005	Checked By:	G. Bathala	Date:	11/30/21
Boring No.:	LB-2	Depth (ft.):	0-5		
Sample No.:	B-1				
Soil Identification:	Olive brown silty sand (SM)				

Dry Wt. of Soil + Cont.	(g)	1000.00
Wt. of Container No.	(g)	0.00
Dry Wt. of Soil	(g)	1000.00
Weight Soil Retained on #4 Sieve		0.00
Percent Passing # 4		100.00

MOLDED SPECIMEN		Before Test	After Test
Specimen Diameter	(in.)	4.01	4.01
Specimen Height	(in.)	1.0000	1.0040
Wt. Comp. Soil + Mold	(g)	633.50	450.10
Wt. of Mold	(g)	204.20	0.00
Specific Gravity (Assumed)		2.70	2.70
Container No.		O	O
Wet Wt. of Soil + Cont.	(g)	854.90	654.30
Dry Wt. of Soil + Cont.	(g)	795.20	603.55
Wt. of Container	(g)	0.00	204.20
Moisture Content	(%)	7.51	12.71
Wet Density	(pcf)	129.5	135.2
Dry Density	(pcf)	120.5	120.0
Void Ratio		0.400	0.405
Total Porosity		0.286	0.288
Pore Volume	(cc)	59.1	59.9
Degree of Saturation (%) [S_{meas}]		**50.7**	84.7

SPECIMEN INUNDATION in distilled water for the period of 24 h or expansion rate < 0.0002 in./h

Date	Time	Pressure (psi)	Elapsed Time (min.)	Dial Readings (in.)
11/29/21	15:25	1.0	0	0.5670
11/29/21	15:35	1.0	10	0.5660
Add Distilled Water to the Specimen				
11/29/21	15:37	1.0	2	0.5670
11/30/21	8:30	1.0	1015	0.5710
11/30/21	10:00	1.0	1105	0.5710

Expansion Index (EI_{meas}) = ((Final Rdg - Initial Rdg) / Initial Thick.) x 1000	**5**

ATTERBERG LIMITS
ASTM D 4318

Project Name:	Del Sol Academy Addition	Tested By:	Y. Nguyen	Date:	11/29/21
Project No. :	10757.005	Input By:	G. Bathala	Date:	12/01/21
Boring No.:	LB-1	Checked By:	A. Santos		
Sample No.:	R-4	Depth (ft.)	10.0		
Soil Identification:	Light olive brown lean clay with sand (CL)s				

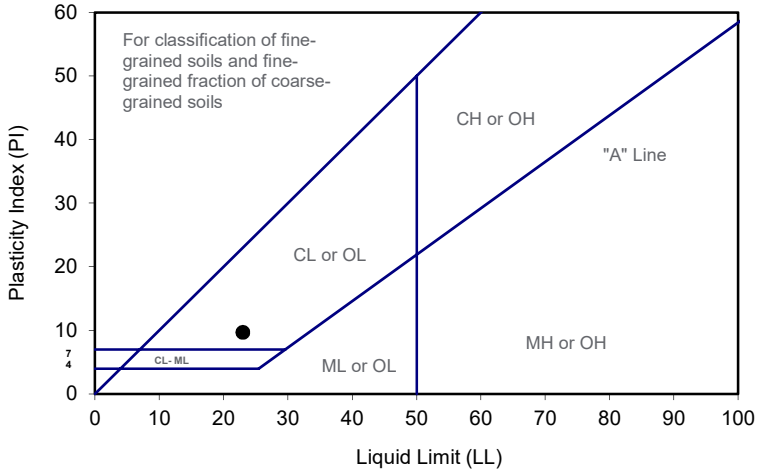
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			26	20	15	
Wet Wt. of Soil + Cont. (g)	9.54	9.42	19.40	20.72	21.34	
Dry Wt. of Soil + Cont. (g)	8.55	8.43	16.03	17.00	17.29	
Wt. of Container (g)	1.02	1.10	0.99	1.10	1.06	
Moisture Content (%) [Wn]	13.15	13.51	22.41	23.40	24.95	

Liquid Limit	**23**
Plastic Limit	**13**
Plasticity Index	**10**
Classification	**CL**

PI at "A" - Line = 0.73(LL-20) 2.19

One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$



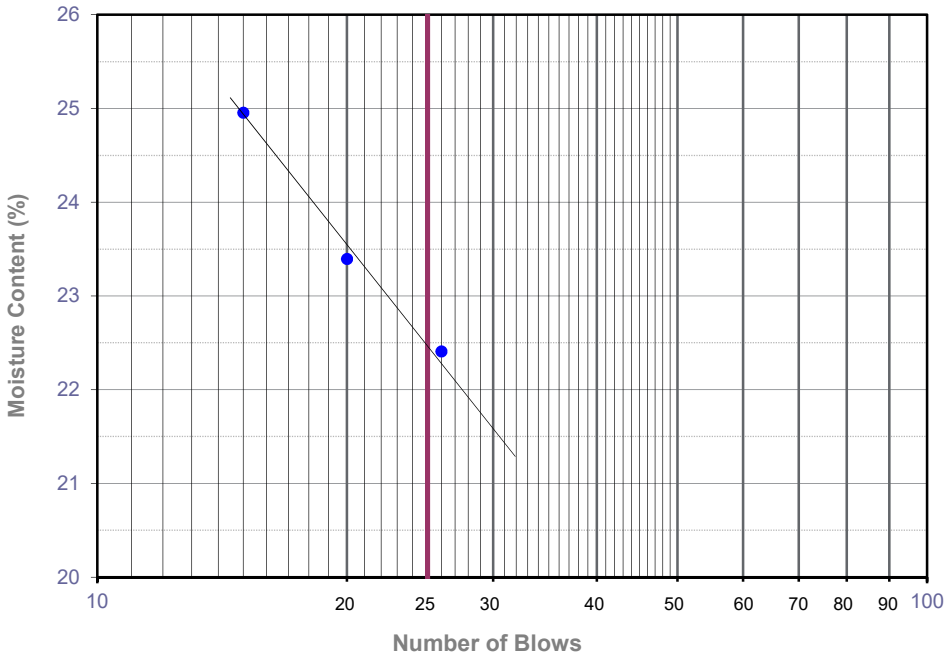
PROCEDURES USED

☐ Wet Preparation
Multipoint - Wet

☒ Dry Preparation
Multipoint - Dry

☒ Procedure A
Multipoint Test

☐ Procedure B
One-point Test



ONE-DIMENSIONAL SWELL OR SETTLEMENT POTENTIAL OF COHESIVE SOILS

ASTM D 4546

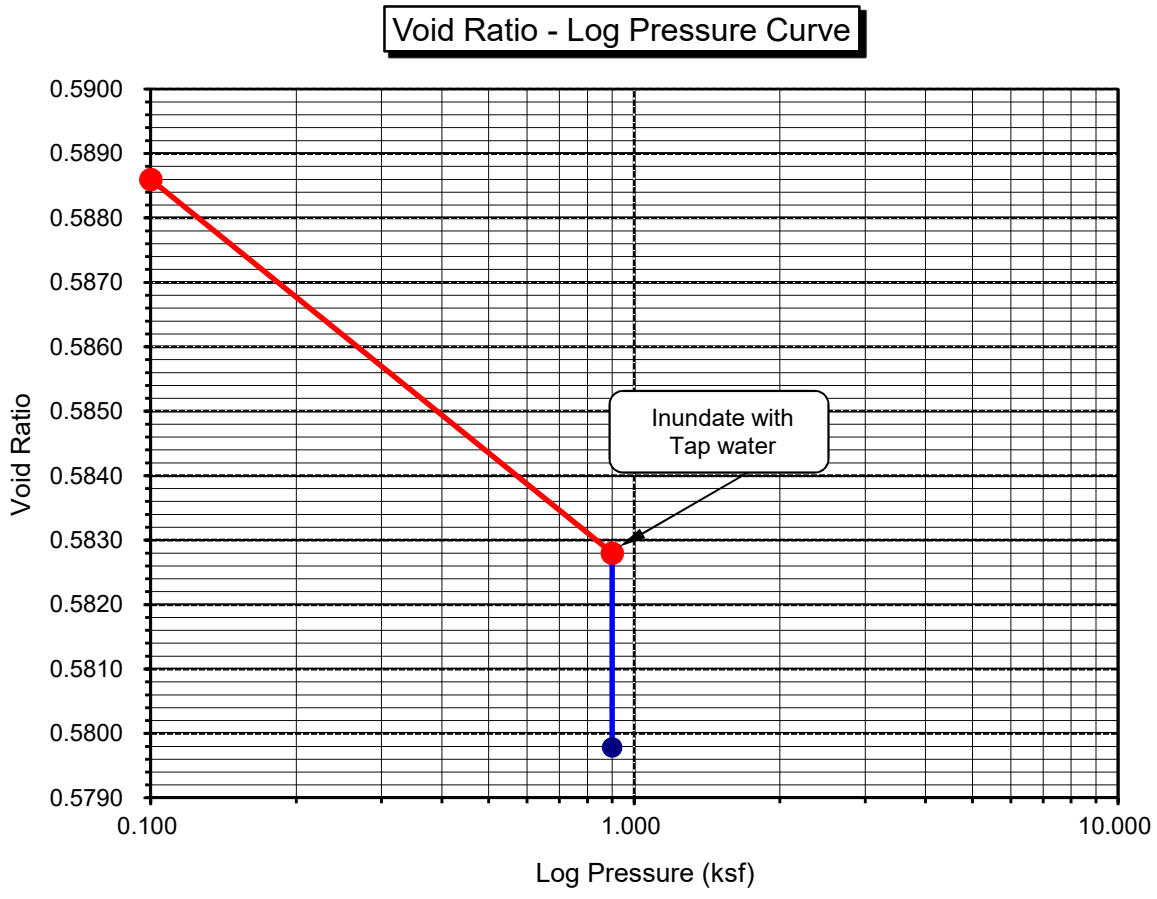
Project Name:	Del Sol Academy Addition		Tested By:	G.Bathala	Date: 11/30/21
Project No.:	10757.005		Checked By:	A. Santos	Date: 12/01/21
Boring No.:	LB-1		Sample Type:	Ring	
Sample No.:	R-3		Depth (ft.)	7.5	
Sample Description:	Light olive brown sandy silt s(ML)				

Initial Dry Density (pcf):	106.1
Initial Moisture (%):	6.03
Initial Length (in.):	1.0000
Initial Dial Reading:	0.3314
Diameter(in):	2.415

Final Dry Density (pcf):	106.7
Final Moisture (%) :	19.2
Initial Void Ratio:	0.5887
Specific Gravity(assumed):	2.70
Initial Saturation (%)	27.7

Pressure (p) (ksf)	Final Reading (in)	Apparent Thickness (in)	Load Compliance (%)	Swell (+) Settlement (-) % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.100	0.3314	1.0000	0.00	0.00	0.5886	0.00
0.900	0.3251	0.9937	0.26	-0.63	0.5828	-0.37
H2O	0.3232	0.9918	0.26	-0.82	0.5798	-0.56

Percent Swell (+) / Settlement (-) After Inundation = -0.19



TESTS for SULFATE CONTENT
CHLORIDE CONTENT and pH of SOILS

Project Name: Del Sol Academy Addition | Tested By : OF/JD | Date: 11/24/21

Project No. : 10757.005 | Checked By: A. Santos | Date: 12/01/21

Boring No.	LB-2			
Sample No.	B-1			
Sample Depth (ft)	0-5			
Soil Identification:	Light olive brown (SM)			
Wet Weight of Soil + Container (g)	122.95			
Dry Weight of Soil + Container (g)	122.05			
Weight of Container (g)	53.29			
Moisture Content (%)	1.31			
Weight of Soaked Soil (g)	100.17			

SULFATE CONTENT, DOT California Test 417, Part II

Beaker No.	307			
Crucible No.	21			
Furnace Temperature (°C)	860			
Time In / Time Out	8:00/8:45			
Duration of Combustion (min)	45			
Wt. of Crucible + Residue (g)	22.1722			
Wt. of Crucible (g)	22.1697			
Wt. of Residue (g) (A)	0.0025			
PPM of Sulfate (A) x 41150	102.88			
PPM of Sulfate, Dry Weight Basis	**104**			

CHLORIDE CONTENT, DOT California Test 422

ml of Extract For Titration (B)	30			
ml of AgNO3 Soln. Used in Titration (C)	1.1			
PPM of Chloride (C -0.2) * 100 * 30 / B	90			
PPM of Chloride, Dry Wt. Basis	**91**			

pH TEST, DOT California Test 643

pH Value	**8.59**			
Temperature °C	21.6			

SOIL RESISTIVITY TEST

DOT CA TEST 643

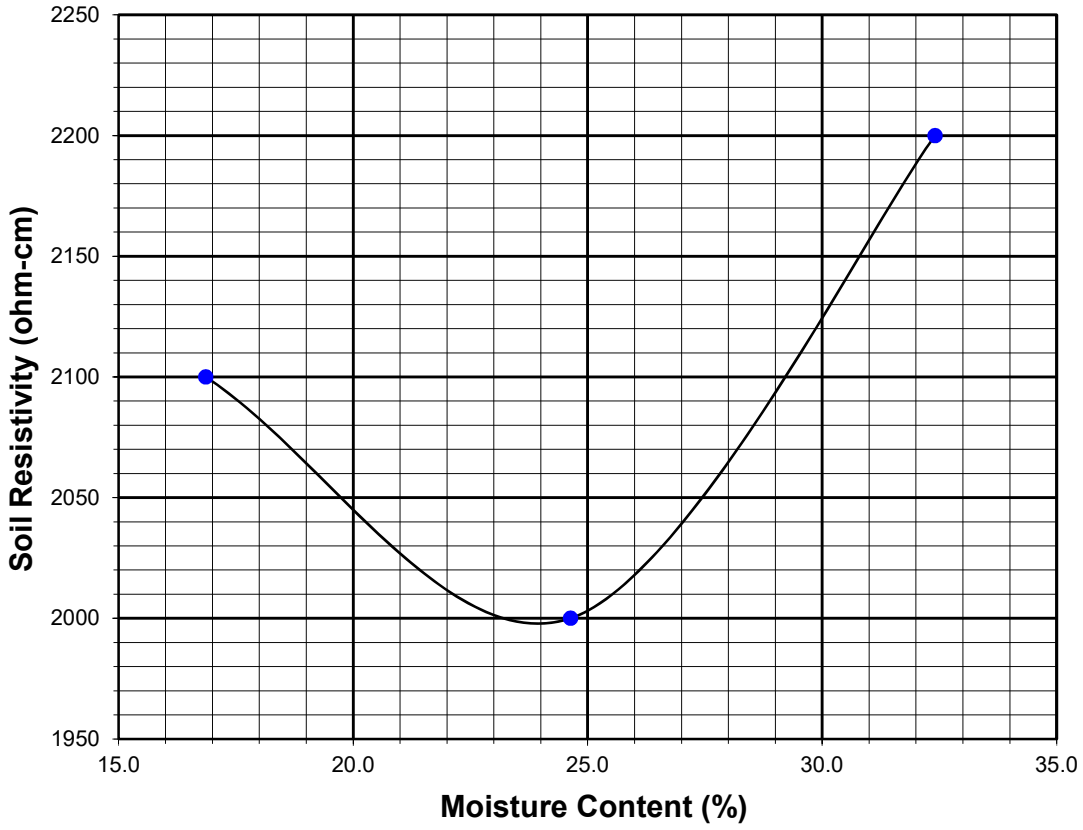
Project Name:	Del Sol Academy Addition		Tested By :	O. Figueroa	Date: 12/01/21
Project No. :	10757.005		Checked By:	A. Santos	Date: 12/01/21
Boring No.:	LB-2		Depth (ft.) :	0-5	
Sample No. :	B-1				
Soil Identification:*	Light olive brown (SM)				

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	20	16.86	2100	2100
2	30	24.63	2000	2000
3	40	32.41	2200	2200
4				
5				

Moisture Content (%) (MCi)	1.31
Wet Wt. of Soil + Cont. (g)	122.95
Dry Wt. of Soil + Cont. (g)	122.05
Wt. of Container (g)	53.29
Container No.	
Initial Soil Wt. (g) (Wt)	130.30
Box Constant	1.000
MC =(((1+Mci/100)x(Wa/Wt+1))-1)x100	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 643		DOT CA Test 417 Part II	DOT CA Test 422	DOT CA Test 643	
1998	**24.0**	**104**	**91**	**8.59**	**21.6**



APPENDIX C

SUMMARY OF SEISMIC ANALYSIS

Del Sol Academy

Latitude, Longitude: 33.9971, -117.5366

Date	11/15/2021, 10:39:06 AM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.595	MCE_R ground motion. (for 0.2 second period)
S_1	0.579	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.595	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1.063	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.662	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	0.728	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	1.595	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.692	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.954	Factored deterministic acceleration value. (0.2 second)
S1RT	0.579	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.631	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.647	Factored deterministic acceleration value. (1.0 second)
PGAd	0.799	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.943	Mapped value of the risk coefficient at short periods
C_{R1}	0.918	Mapped value of the risk coefficient at a period of 1 s

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U.S. Geological Survey - Earthquake Hazards Program

Unified Hazard Tool

Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the U.S. Seismic Design Maps web tools (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

Input

Edition

Dynamic: Conterminous U.S. 2014 (u…

Spectral Period

Peak Ground Acceleration

Latitude

Decimal degrees

33.9971

Time Horizon

Return period in years

2475

Longitude

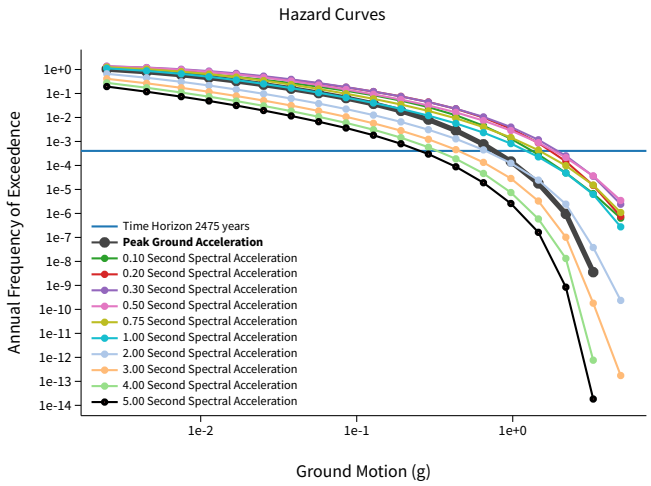
Decimal degrees, negative values for western longitudes

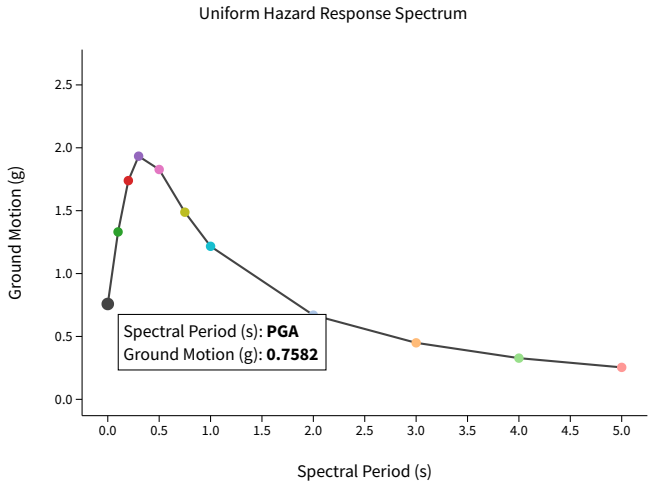
-117.5366

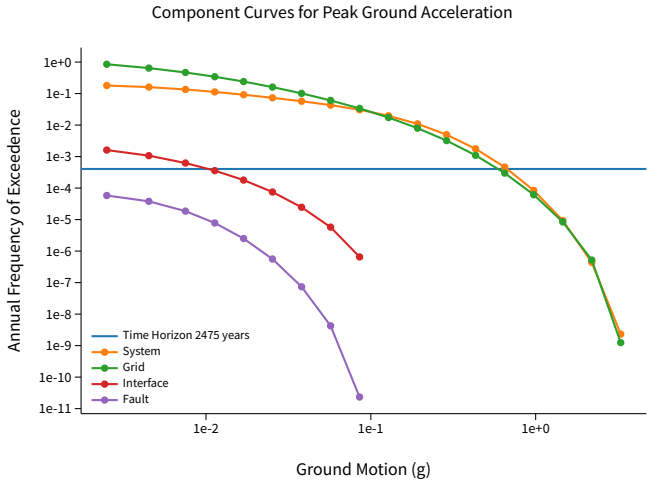
Site Class

259 m/s (Site class D)

Hazard Curve





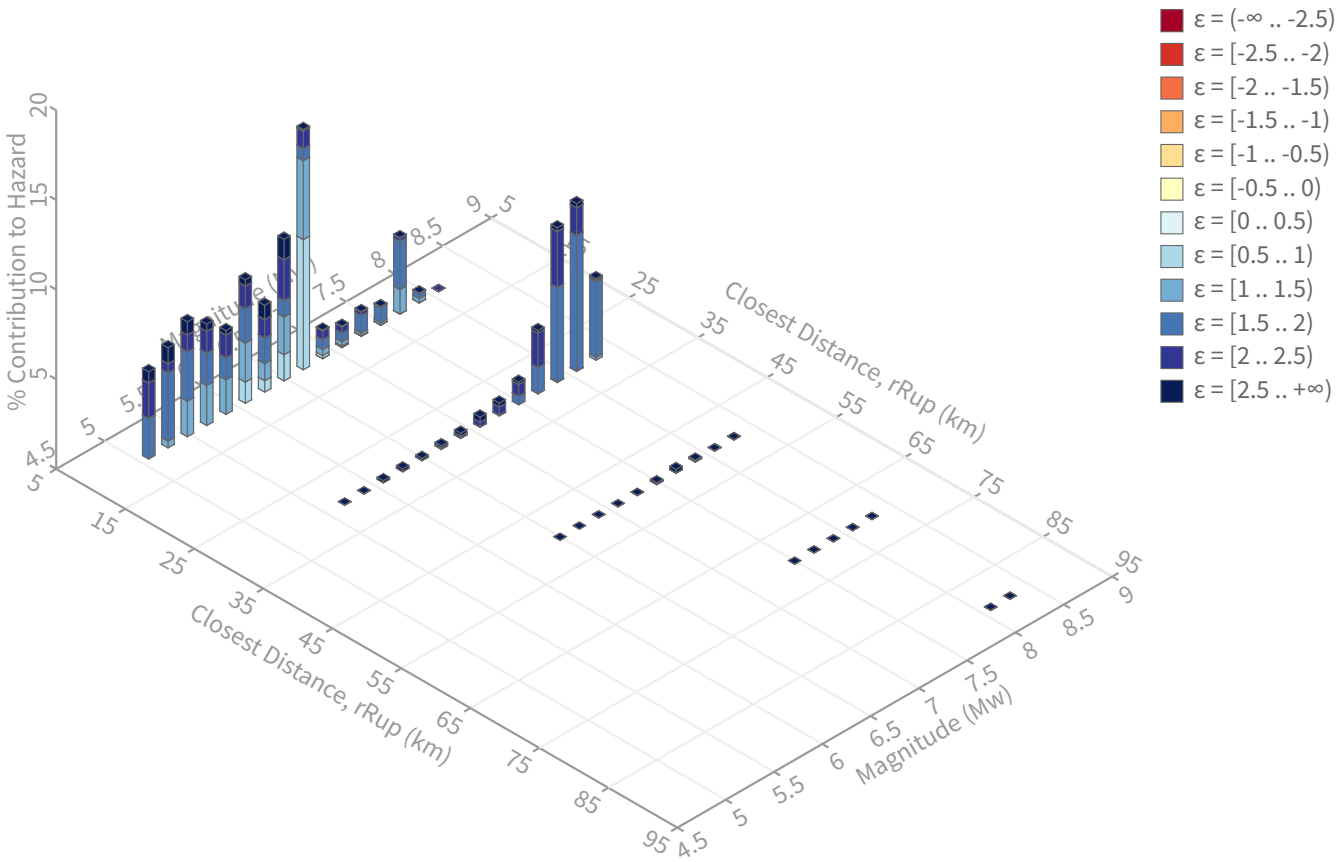


View Raw Data

Deaggregation

Component

Total



Summary statistics for, Deaggregation: Total

Deaggregation targets

Return period: 2475 yrs
Exceedance rate: 0.0004040404 yr^{-1}
PGA ground motion: 0.75818224 g

Recovered targets

Return period: 3059.6495 yrs
Exceedance rate: 0.00032683482 yr^{-1}

Totals

Binned: 100 %
Residual: 0 %
Trace: 0.07 %

Mean (over all sources)

m: 6.72
r: 14.26 km
ε_0: 1.74 σ

Mode (largest m-r bin)

m: 6.65
r: 4.76 km
ε_0: 1.14 σ
Contribution: 13.39 %

Mode (largest m-r-ε_0 bin)

m: 8.1
r: 24.32 km
ε_0: 1.76 σ
Contribution: 7.56 %

Discretization

r: min = 0.0, max = 1000.0, Δ = 20.0 km
m: min = 4.4, max = 9.4, Δ = 0.2
ε: min = -3.0, max = 3.0, Δ = 0.5 σ

Epsilon keys

ε0: [-∞ .. -2.5)
ε1: [-2.5 .. -2.0)
ε2: [-2.0 .. -1.5)
ε3: [-1.5 .. -1.0)
ε4: [-1.0 .. -0.5)
ε5: [-0.5 .. 0.0)
ε6: [0.0 .. 0.5)
ε7: [0.5 .. 1.0)
ε8: [1.0 .. 1.5)
ε9: [1.5 .. 2.0)
ε10: [2.0 .. 2.5)
ε11: [2.5 .. +∞]

Deaggregation Contributors

Source Set ↳ Source	Type	r	m	ε_0	lon	lat	az	%
UC33brAvg_FM31	System							29.85
Fontana (Seismicity) [2]		3.20	6.61	1.00	117.558°W	34.015°N	315.13	6.99
San Jacinto (San Bernardino) [3]		22.70	8.08	1.77	117.328°W	34.106°N	57.82	5.05
San Andreas (San Bernardino N) [3]		29.44	7.96	2.06	117.369°W	34.222°N	31.66	4.91
Whittier alt 1 [0]		17.53	7.50	1.70	117.633°W	33.854°N	209.33	2.96
Elsinore (Glen Ivy) rev [0]		19.39	6.59	2.45	117.590°W	33.829°N	194.78	1.86
Chino alt 1 [3]		15.08	6.92	2.03	117.662°W	33.910°N	230.20	1.66
Cucamonga [0]		20.39	7.70	1.86	117.520°W	34.180°N	4.29	1.39
San Jacinto (Lytle Creek connector) [2]		21.36	8.06	1.73	117.390°W	34.145°N	39.40	1.19
UC33brAvg_FM32	System							28.12
Fontana (Seismicity) [2]		3.20	6.61	1.00	117.558°W	34.015°N	315.13	5.72
San Andreas (San Bernardino N) [3]		29.44	7.96	2.06	117.369°W	34.222°N	31.66	5.01
San Jacinto (San Bernardino) [3]		22.70	8.07	1.78	117.328°W	34.106°N	57.82	4.96
Whittier alt 2 [0]		18.02	7.58	1.69	117.633°W	33.853°N	209.00	2.94
Elsinore (Glen Ivy) rev [0]		19.39	6.57	2.46	117.590°W	33.829°N	194.78	1.88
Chino alt 2 [2]		15.00	7.01	1.98	117.664°W	33.914°N	231.94	1.49
Cucamonga [0]		20.39	7.72	1.85	117.520°W	34.180°N	4.29	1.43
San Jacinto (Lytle Creek connector) [2]		21.36	8.06	1.74	117.390°W	34.145°N	39.40	1.15
UC33brAvg_FM31 (opt)	Grid							21.19
PointSourceFinite: -117.537, 34.029		6.25	5.61	1.50	117.537°W	34.029°N	0.00	4.10
PointSourceFinite: -117.537, 34.029		6.25	5.61	1.50	117.537°W	34.029°N	0.00	4.10
PointSourceFinite: -117.537, 34.047		7.24	5.76	1.62	117.537°W	34.047°N	0.00	3.00
PointSourceFinite: -117.537, 34.047		7.24	5.76	1.62	117.537°W	34.047°N	0.00	3.00
PointSourceFinite: -117.537, 34.110		11.73	6.07	2.05	117.537°W	34.110°N	0.00	1.64
PointSourceFinite: -117.537, 34.110		11.73	6.07	2.05	117.537°W	34.110°N	0.00	1.64
PointSourceFinite: -117.537, 34.101		11.51	5.89	2.10	117.537°W	34.101°N	0.00	1.14
PointSourceFinite: -117.537, 34.101		11.51	5.89	2.10	117.537°W	34.101°N	0.00	1.14
UC33brAvg_FM32 (opt)	Grid							20.85
PointSourceFinite: -117.537, 34.029		6.25	5.61	1.50	117.537°W	34.029°N	0.00	4.10
PointSourceFinite: -117.537, 34.029		6.25	5.61	1.50	117.537°W	34.029°N	0.00	4.10
PointSourceFinite: -117.537, 34.047		7.25	5.75	1.62	117.537°W	34.047°N	0.00	2.93
PointSourceFinite: -117.537, 34.047		7.25	5.75	1.62	117.537°W	34.047°N	0.00	2.93
PointSourceFinite: -117.537, 34.110		11.83	6.04	2.07	117.537°W	34.110°N	0.00	1.57
PointSourceFinite: -117.537, 34.110		11.83	6.04	2.07	117.537°W	34.110°N	0.00	1.57
PointSourceFinite: -117.537, 34.101		11.50	5.89	2.10	117.537°W	34.101°N	0.00	1.13
PointSourceFinite: -117.537, 34.101		11.50	5.89	2.10	117.537°W	34.101°N	0.00	1.13

Determination of Site Class and Estimation of Shear Wave Velocity

Project: 10757.005 Del Sol Academy

Depth (ft)	di, Layer Thick (ft)	Field Blow Counts, Ni Corrected for Cs and sampler type Blows per foot (bpf) LB-1	LB-2		Average Ni (bpf)	Ni Hammer Corr: 1.3	di / Ni
5	7.5	8	8		8	10	0.72
10	5	8	10		9	12	0.43
15	5	11	16		14	18	0.28
20	5	13	9		11	14	0.35
25	5	18	25		22	28	0.18
30	5		55		55	72	0.07
35	5		60		60	78	0.06
40	5		82		82	100	0.05
45	5		60		60	78	0.06
50	7.5		17		17	22	0.34
60	10		17	*Assumed based on blowcount at 50'	17	22	0.45
70	10		17		17	22	0.45
80	10		17		17	22	0.45
90	10		17		17	22	0.45
100	5		17		17	22	0.23
Summatio	100						4.59
						Navg = Sum(di) / Sum(di / Ni) =	**22**

Extract of ASCE 7-16 Table 20.3-1 Site Classification (2019 CBC 1613A.2.2):

Site Class	Soil Profile Name	Avg. N upper 100' from	to	Vs30 (ft/sec) from	to	Vs30 (m/s) from	to	Site Avg N	Interpolated vs30 (ft/s)
A	Hard Rock	-		5000	10000	1524	3048		
B	Rock	-		2500	5000	762	1524		
C	VD soil & soft rock	50.001	100	1200	2500	366	762		
D	Stiff Soil	**15**	**50**	600	1200	183	366	22	717
E	Soft Soil	0	14.999	0	600	0	183		
F		-	-			0	0		

SITE CLASS, Table 20.3-1: **D**

Estimation of Average Shear Wave Velocity in upper 100 ft (Vs30):

	ft/s	m/s
Approx. Vs30 (interpolation of Table 20.3-1) =	717	218
Approx. Vs30 sands (Imai and Tonouchi, 1982) =	921	281
Approx. Vs30 sands (Sykora and Stokoe, 1983) =	804	245
Approx. Vs30 (Maheswari, Boominathan, Dodagoudar, 2009) =	760	232

Summary of Seismic Settlement Scenarios

Leighton

Project: Del Sol Academy Classroom Addition Dec-21
Project No.: 10757.005

Case	PGA Ground Motion (g)		Assumed Groundwater Depth During EQ (ft)		Overexcavation Depth (ft)		Estimated Potential Seismic Settlement (in.)					
							Total		Angular Distortion (Differential Settlment/Horiz Distance)			
	Description	Value	Description	Value	Description	Value	Minimum	Maximum	max [(diff sett btwn 2 explorations) /(distance btwn those expl)]	**Considering single boring (over 30')**	Minimum	Maximum
						formulas:	*a**	*b**	*c**	*d=0.5b/12/30*	*=min(c,d)*	*=max(c,d)*
						Method Described in Text:			**1**	**2**		
	No Overexcavation:											
1	PGAm	0.73	design GW	30	No overex	0	1.3	**2.5**	0.0012	0.0035	0.0012	0.0035
2	PGAm	0.73	existing GW	160	No overex	0	1.3	2.0	0.0007	0.0028	0.0007	0.0028
	With Overexcavation:											
3	PGAm	0.73	design GW	30	Overex./scarif	5	1.2	**2.3**	0.0011	0.0032	0.0011	0.0032
4	PGAm	0.73	existing GW	160	Overex.	5	1.2	1.8	0.0006	0.0025	0.0006	0.0025

*values from analysis, see attached pages

Liquefaction Susceptibility Analysis: SPT Method

Leighton

Youd and Idriss (2001), Martin and Lew (1999)

Description: Del Sol Academy Classroom Addition; Case 3; PGAm 0.73; design GW 30; Overex./scarify 5

Project No.: 10757.005

Dec 2021

General Boring Information:

Boring No.	Existing GW Depth (ft)	Design GW Depth (ft)	Design Fill Height (ft)	Overex. depth bgs (ft)	Ground Surface Elev (ft)	design gw elve
LB-1	160	30		5	722	692
LB-2	160	30		5	722	692
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0

Boring Location Coordinates	
X (ft)	Y (ft)
-294.1	-12.95
-347.3	-81.32

General Parameters:

a_{max} = 0.73g

M_W = 8.1

MSF eq: 1

MSF = 0.82

Hammer Efficiency = 84

C_E = 1.40

C_B = 1

C_S for SPT? TRUE

Unlined, but room for liner

Rod Stickup (feet) = 3

Ring sample correction = 0.65

Summary of Liquefaction Susceptibility Analysis: SPT Method

Leighton

Liquefaction Method: Youd and Idriss (2001). Seismic Settlement Method: Tokimatsu and Seed (1987) and Martin and Lew (1999).

Project: Del Sol Academy Classroom Addition; Case 3; PGAm 0.73; design GW 30; Overex./scarify 5

Project No.: 10757.005

Boring No.	Approx. Layer Depth (ft)	SPT Depth (ft)	Approx Layer Thick-ness (ft)	Plasticity ("n"=non susc. to liq.)	Estimated Fines Cont (%)	γ_t (pcf)	N_m or B (blows/ft)	Sampler Type (enter 2 if mod CA Ring)	Cs	N_m (corrected for Cs and ring->SPT) (blows/ft)	Exist σ_{vo}' (psf)	$(N_1)_{60}$	$(N_1)_{60CS}$	**$CRR_{7.5}$**	Design σ_{vo}' (psf)	$CSR_{7.5}$	CSR_M	**Liquefaction Factor of Safety**	$(N_1)_{60CS}$ (for Settle-ment) (blows/ft)	Dry Sand Strain (%) (Tok/ Seed 87) (%)	Sat Sand Strain (%) (Tok/ Seed 87) (%)	Seismic Sett. of Layer (in.)	**Cummulative Seismic Settlement** (in.)
LB-1	0 to 3.8	2.5	3.8	OX	25	120	50	1	1.3	65.0	300	116.0	133.7	>Range	300	0.47	0.57	**NonLiq**	133.7	0.00		0.00	1.2
LB-1	3.8 to 5.0	5	1.3	OX	**20**	120	50	1	1.3	65.0	600	116.0	128.9	>Range	600	0.47	0.57	**NonLiq**	128.9	0.00		0.00	1.2
LB-1	5.0 to 6.3	5	1.3		**20**	120	14	2	1	9.1	600	16.2	21.1	0.230	600	0.47	0.57	**NonLiq**	21.1	0.70		0.11	1.2
LB-1	6.3 to 8.8	7.5	2.5		65	120	14	2	1	9.1	900	15.5	23.6	0.267	900	0.47	0.57	**NonLiq**	23.6	0.37		0.11	1.1
LB-1	8.8 to 12.5	10	3.8		**74**	120	13	2	1	8.5	1200	13.3	20.9	0.227	1200	0.46	0.56	**NonLiq**	20.9	0.61		0.27	0.9
LB-1	12.5 to 17.5	15	5.0		25	120	11	1	1.16	12.8	1800	16.4	22.6	0.251	1800	0.46	0.56	**NonLiq**	22.6	0.36		0.22	0.7
LB-1	17.5 to 22.5	20	5.0		35	120	23	2	1	15.0	2400	18.5	27.3	0.346	2400	0.45	0.55	**NonLiq**	27.3	0.49		0.29	0.5
LB-1	22.5 to 27.0	25	4.5		**35**	120	18	1	1.25	22.5	3000	24.9	34.9	>Range	3000	0.45	0.54	**NonLiq**	34.9	0.30		0.16	0.2
LB-2	0 to 3.8	2.5	3.8	OX	25	120	50	1	1.3	65.0	300	116.0	133.7	>Range	300	0.47	0.57	**NonLiq**	133.7	0.00		0.00	2.3
LB-2	3.8 to 5.0	5	1.3	OX	20	120	50	1	1.3	65.0	600	116.0	128.9	>Range	600	0.47	0.57	**NonLiq**	128.9	0.00		0.00	2.3
LB-2	5.0 to 6.3	5	1.3		20	120	13	2	1	8.5	600	15.1	19.9	0.214	600	0.47	0.57	**NonLiq**	19.9	1.16		0.17	2.3
LB-2	6.3 to 8.8	7.5	2.5		20	120	15	2	1	9.8	900	16.6	21.6	0.236	900	0.47	0.57	**NonLiq**	21.6	0.42		0.13	2.1
LB-2	8.8 to 12.5	10	3.8		**34**	120	17	2	1	11.1	1200	17.3	25.5	0.303	1200	0.46	0.56	**NonLiq**	25.5	0.52		0.23	2.0
LB-2	12.5 to 17.5	15	5.0		34	120	27	2	1	17.6	1800	22.5	31.7	>Range	1800	0.46	0.56	**NonLiq**	31.7	0.13		0.08	1.8
LB-2	17.5 to 22.5	20	5.0		**36**	120	9	1	1.13	10.1	2400	12.6	20.1	0.216	2400	0.45	0.55	**NonLiq**	20.1	0.74		0.45	1.7
LB-2	22.5 to 27.5	25	5.0		22	120	32	2	1	20.8	3000	23.1	29.2	0.418	3000	0.45	0.54	**NonLiq**	29.2	0.70		0.42	1.3
LB-2	27.5 to 30.0	30	2.5		22	120	55	1	1.3	71.5	3600	76.2	87.3	>Range	3600	0.44	0.54	**NonLiq**	87.3	0.02		0.01	0.8
LB-2	30.0 to 32.5	30	2.5		22	120	55	1	1.3	71.5	3600	76.2	87.3	>Range	3600	0.44	0.54	**NonLiq**	87.3			0.00	0.8
LB-2	32.5 to 37.5	35	5.0		10	120	100	2	1	65.0	4200	64.2	66.4	>Range	3888	0.46	0.56	**NonLiq**	66.4			0.00	0.8
LB-2	37.5 to 42.5	40	5.0		20	120	82	1	1.3	106.6	4800	98.4	109.9	>Range	4176	0.46	0.56	**NonLiq**	109.9			0.00	0.8
LB-2	42.5 to 47.5	45	5.0		20	120	100	2	1	65.0	5400	56.6	64.7	>Range	4464	0.46	0.56	**NonLiq**	64.7			0.00	0.8
LB-2	47.5 to 52.0	50	4.5		55	120	17	1	1.16	19.8	6000	16.3	24.6	0.284	4752	0.46	0.56	**0.51**	20.3		1.54	0.83	0.8

Liquefaction Susceptibility Analysis: SPT Method

Leighton

Youd and Idriss (2001), Martin and Lew (1999)

Description: Del Sol Academy Classroom Addition; Case 4; PGAm 0.73; existing GW 160; Overex. 5
Project No.: 10757.005
Dec 2021

General Boring Information:

Boring No.	Existing GW Depth (ft)	Design GW Depth (ft)	Design Fill Height (ft)	Overex. depth bgs (ft)	Ground Surface Elev (ft)	design gw elve
LB-1	160	160		5	722	562
LB-2	160	160		5	722	562
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0
						0

Boring Location Coordinates	
X (ft)	Y (ft)
-294.1	-12.95
-347.3	-81.32

General Parameters:

a_{max} = 0.73g
M_W = 8.1
MSF eq: 1
MSF = 0.82
Hammer Efficiency = 84
C_E = 1.40
C_B = 1
C_S for SPT? TRUE
Unlined, but room for liner
Rod Stickup (feet) = 3
Ring sample correction = 0.65

Summary of Liquefaction Susceptibility Analysis: SPT Method

Leighton

Liquefaction Method: Youd and Idriss (2001). Seismic Settlement Method: Tokimatsu and Seed (1987) and Martin and Lew (1999).

Project: Del Sol Academy Classroom Addition; Case 4; PGAm 0.73; existing GW 160; Overex. 5

Project No.: 10757.005

Boring No.	Approx. Layer Depth (ft)	SPT Depth (ft)	Approx Layer Thick-ness (ft)	Plasticity ("n"=non susc. to liq.)	Estimated Fines Cont (%)	γ_t (pcf)	N_m or B (blows/ft)	Sampler Type (enter 2 if mod CA Ring)	Cs	N_m (corrected for Cs and ring->SPT) (blows/ft)	Exist σ_{vo}' (psf)	$(N_1)_{60}$	$(N_1)_{60CS}$	**$CRR_{7.5}$**	Design σ_{vo}' (psf)	$CSR_{7.5}$	CSR_M	**Liquefaction Factor of Safety**	$(N_1)_{60CS}$ (for Settle-ment) (blows/ft)	Dry Sand Strain (%) (Tok/ Seed 87) (%)	Sat Sand Strain (%) (Tok/ Seed 87) (%)	Seismic Sett. of Layer (in.)	**Cummulative Seismic Settlement** (in.)
LB-1	0 to 3.8	2.5	3.8	OX	25	120	50	1	1.3	65.0	300	116.0	133.7	>Range	300	0.47	0.57	**NonLiq**	133.7	0.00		0.00	1.2
LB-1	3.8 to 5.0	5	1.3	OX	**20**	120	50	1	1.3	65.0	600	116.0	128.9	>Range	600	0.47	0.57	**NonLiq**	128.9	0.00		0.00	1.2
LB-1	5.0 to 6.3	5	1.3		**20**	120	14	2	1	9.1	600	16.2	21.1	0.230	600	0.47	0.57	**NonLiq**	21.1	0.70		0.11	1.2
LB-1	6.3 to 8.8	7.5	2.5		65	120	14	2	1	9.1	900	15.5	23.6	0.267	900	0.47	0.57	**NonLiq**	23.6	0.37		0.11	1.1
LB-1	8.8 to 12.5	10	3.8		**74**	120	13	2	1	8.5	1200	13.3	20.9	0.227	1200	0.46	0.56	**NonLiq**	20.9	0.61		0.27	0.9
LB-1	12.5 to 17.5	15	5.0		25	120	11	1	1.16	12.8	1800	16.4	22.6	0.251	1800	0.46	0.56	**NonLiq**	22.6	0.36		0.22	0.7
LB-1	17.5 to 22.5	20	5.0		35	120	23	2	1	15.0	2400	18.5	27.3	0.346	2400	0.45	0.55	**NonLiq**	27.3	0.49		0.29	0.5
LB-1	22.5 to 27.0	25	4.5		**35**	120	18	1	1.25	22.5	3000	24.9	34.9	>Range	3000	0.45	0.54	**NonLiq**	34.9	0.30		0.16	0.2
LB-2	0 to 3.8	2.5	3.8	OX	25	120	50	1	1.3	65.0	300	116.0	133.7	>Range	300	0.47	0.57	**NonLiq**	133.7	0.00		0.00	1.8
LB-2	3.8 to 5.0	5	1.3	OX	20	120	50	1	1.3	65.0	600	116.0	128.9	>Range	600	0.47	0.57	**NonLiq**	128.9	0.00		0.00	1.8
LB-2	5.0 to 6.3	5	1.3		20	120	13	2	1	8.5	600	15.1	19.9	0.214	600	0.47	0.57	**NonLiq**	19.9	1.16		0.17	1.8
LB-2	6.3 to 8.8	7.5	2.5		20	120	15	2	1	9.8	900	16.6	21.6	0.236	900	0.47	0.57	**NonLiq**	21.6	0.42		0.13	1.6
LB-2	8.8 to 12.5	10	3.8		**34**	120	17	2	1	11.1	1200	17.3	25.5	0.303	1200	0.46	0.56	**NonLiq**	25.5	0.52		0.23	1.5
LB-2	12.5 to 17.5	15	5.0		34	120	27	2	1	17.6	1800	22.5	31.7	>Range	1800	0.46	0.56	**NonLiq**	31.7	0.13		0.08	1.3
LB-2	17.5 to 22.5	20	5.0		**36**	120	9	1	1.13	10.1	2400	12.6	20.1	0.216	2400	0.45	0.55	**NonLiq**	20.1	0.74		0.45	1.2
LB-2	22.5 to 27.5	25	5.0		22	120	32	2	1	20.8	3000	23.1	29.2	0.418	3000	0.45	0.54	**NonLiq**	29.2	0.70		0.42	0.7
LB-2	27.5 to 32.5	30	5.0		22	120	55	1	1.3	71.5	3600	76.2	87.3	>Range	3600	0.44	0.54	**NonLiq**	87.3	0.02		0.01	0.3
LB-2	32.5 to 37.5	35	5.0		10	120	100	2	1	65.0	4200	64.2	66.4	>Range	4200	0.42	0.51	**NonLiq**	66.4	0.03		0.02	0.3
LB-2	37.5 to 42.5	40	5.0		20	120	82	1	1.3	106.6	4800	98.4	109.9	>Range	4800	0.40	0.49	**NonLiq**	109.9	0.02		0.01	0.3
LB-2	42.5 to 47.5	45	5.0		20	120	100	2	1	65.0	5400	56.6	64.7	>Range	5400	0.38	0.47	**NonLiq**	64.7	0.03		0.02	0.3
LB-2	47.5 to 52.0	50	4.5		55	120	17	1	1.16	19.8	6000	16.3	24.6	0.284	6000	0.36	0.44	**NonLiq**	24.6	0.48		0.26	0.3

Surface Manifestations of Liquefaction and Liquefaction Bearing Capacity Analysis

Del Sol Academy Classroom Addition; Case 1; PGAm 0.73; design GW 30; No overex 0

10757.005 **Leighton**

Leighton

Ishihara, 1995, Surface Manifestisations of Liquefaction Analysis:

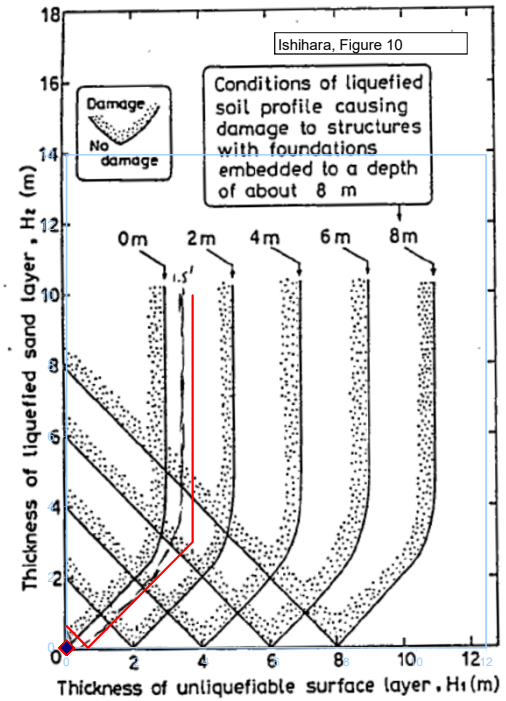
Boring No.	New Fill (raise grade) (ft)	Footing Depth (ft)	Bot. Depth of Nonliq and Liq Layers Z1 (non) (ft)	Za (liq) (ft)	Zb (non) (ft)	Zc (liq) (ft)	Thickness H1 (ft)	Thickness H2 (ft)	Thickness H1 (m)	Thickness H2 (m)	Struct Damage/ Surface Manifestations? (Ishihara, 1995)	Amount of New Fill needed to mitigate (ft)	Or, Amount of Overex. needed to mitigate (ft)
LB-1	0	2	3000.0				3000.0		914.4		**no**	0	0
LB-2	0	2	5400.0	52.0			5400.0		1645.9		**no**	0	0

Karamitros et al., 2013, Liqufaction Bearing Capacity:

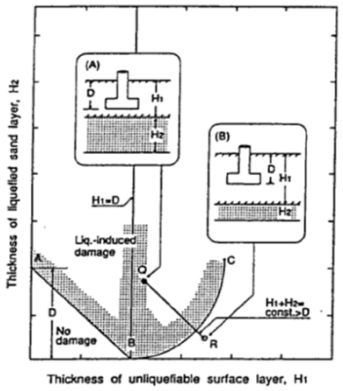
Assumed maximum Footing Width: Square ftg (ft)	Strip ftg (ft)	In order to achieve critical thickness of Non-liquefiable upper clay crust (where additional thickness does not further increase FSliq of bearing capacity): Amount of New Fill Needed (ft): square ftg	Strip ftg	Or, Amount of Overex. Needed (ft): square ftg	Strip ftg
11	5	0.0	0.0	0.0	0.0
11	5	0.0	0.0	0.0	0.0

Juang (2005) based on Iwasaki (1982), as presented in Tonkin & Taylor (2013), Liquefaction Potential Index (LPI):

LPI = Sum[F1*W(z)*dz]	Risk of Liquefaction Damage Based on LPI
0.0	Very Low
0.0	Very Low



Footing Depth= 2 ft
0.61 m



LPI range:	Liquefaction Risk:
LPI=0	Very low
0<LPI<=5	Low
5<LPI<=15	High
LPI>15	Very High

References:

Ishihara, K., 1995, Effects of At-Depth Liquefaction on Embedded Foundations During Earthquakes, Proceedings of 11th Asian Regional Conference on Soil Mechanics and Foundation Engineering, Vol. 2, 1995.

Iwasaki, T., Arakawa, T., and Tokida, K., 1982, Simplifed Procedures for Assessing Soil Liquefaction During Earthquakes Proc. Conference on Soil Dynamics and Earthquake Engineering. Southampton, 925-939

Juang, C.H, Yang, S.H, Yuan, H., and Fang, S.Y., 2005, Liquefaction in the Chi-Chi earthquake – effect of fines and capping non-liquefiable layers Journal of the Japanese Geotechnical Society of Soils and Foundations, Vol. 45 No. 6 pp 89-101

Karamitros, Bouckovalas, Chaloulos, and Andrianopoulos, 2013, Numerical analysis of liquefaction-induced bearing capacity degradation of shallow foundations on a two-layered soil profile, Soil Dynamics and Earthquake Engineering, Vol 44.

Tonkin & Taylor Ltd, 2013, Liquefaction Vulnerability Study, Earthquake Commission, T&T Ref

APPENDIX D

EARTHWORK AND GRADING GUIDE SPECIFICATIONS

LEIGHTON CONSULTING, INC.

GENERAL EARTHWORK AND GRADING SPECIFICATIONS FOR ROUGH GRADING

Table of Contents

Section			Page
1.0	GENERAL		1
	1.1	Intent	1
	1.2	The Geotechnical Consultant of Record	1
	1.3	The Earthwork Contractor	2
2.0	PREPARATION OF AREAS TO BE FILLED		2
	2.1	Clearing and Grubbing	2
	2.2	Processing	3
	2.3	Overexcavation	3
	2.4	Benching	3
	2.5	Evaluation/Acceptance of Fill Areas	3
3.0	FILL MATERIAL		4
	3.1	General	4
	3.2	Oversize	4
	3.3	Import	4
4.0	FILL PLACEMENT AND COMPACTION		4
	4.1	Fill Layers	4
	4.2	Fill Moisture Conditioning	4
	4.3	Compaction of Fill	5
	4.4	Compaction of Fill Slopes	5
	4.5	Compaction Testing	5
	4.6	Frequency of Compaction Testing	5
	4.7	Compaction Test Locations	5
5.0	SUBDRAIN INSTALLATION		6
6.0	EXCAVATION		6
7.0	TRENCH BACKFILLS		6
	7.1	Safety	6
	7.2	Bedding and Backfill	6
	7.3	Lift Thickness	6
	7.4	Observation and Testing	6

1.0 General

1.1 Intent: These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these more general Specifications. Observations of the earthwork by the project Geotechnical Consultant during the course of grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

1.2 The Geotechnical Consultant of Record: Prior to commencement of work, the owner shall employ the Geotechnical Consultant of Record (Geotechnical Consultant). The Geotechnical Consultants shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of the grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During the grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required. Subsurface areas to be geotechnically observed, mapped, elevations recorded, and/or tested include natural ground after it has been cleared for receiving fill but before fill is placed, bottoms of all "remedial removal" areas, all key bottoms, and benches made on sloping ground to receive fill.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to determine the attained level of compaction. The Geotechnical Consultant shall provide the test results to the owner and the Contractor on a routine and frequent basis.

1.3 The Earthwork Contractor: The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The

Contractor shall be solely responsible for performing the grading in accordance with the plans and specifications.

The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of "spreads" of work and the estimated quantities of daily earthwork contemplated for the site prior to commencement of grading. The Contractor shall inform the owner and the Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate observations and tests can be planned and accomplished. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified.

2.0 Preparation of Areas to be Filled

2.1 Clearing and Grubbing: Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant.

The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1 percent of organic materials (by volume). No fill lift shall contain more than 5 percent of organic matter. Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area.

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed.

2.2 Processing: Existing ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Existing ground that is not satisfactory shall be overexcavated as specified in the following section. Scarification shall continue until soils are broken down and free of large clay lumps or clods and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

2.3 Overexcavation: In addition to removals and overexcavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be overexcavated to competent ground as evaluated by the Geotechnical Consultant during grading.

2.4 Benching: Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), the ground shall be stepped or benched. Please see the Standard Details for a graphic illustration. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise overexcavated to provide a flat subgrade for the fill.

2.5 Evaluation/Acceptance of Fill Areas: All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

3.0 Fill Material

3.1 General: Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

3.2 Oversize: Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 8 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or underground construction.

3.3 Import: If importing of fill material is required for grading, proposed import material shall meet the requirements of Section 3.1. The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before importing begins so that its suitability can be determined and appropriate tests performed.

4.0 Fill Placement and Compaction

4.1 Fill Layers: Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

4.2 Fill Moisture Conditioning: Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM Test Method D1557-91).

4.3 Compaction of Fill: After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557-91). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

4.4 Compaction of Fill Slopes: In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepsfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557-91.

4.5 Compaction Testing: Field tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

4.6 Frequency of Compaction Testing: Tests shall be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill soils embankment. In addition, as a guideline, at least one test shall be taken on slope faces for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

4.7 Compaction Test Locations: The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of each test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than 5 feet apart from potential test locations shall be provided.

5.0 Subdrain Installation

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan, and the Standard Details. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed by a land surveyor/civil engineer for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys.

6.0 Excavation

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical plans are estimates only. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

7.0 Trench Backfills

7.1 Safety: The Contractor shall follow all OHSA and Cal/OSHA requirements for safety of trench excavations.

7.2 Bedding and Backfill: All bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum of 90 percent of maximum from 1 foot above the top of the conduit to the surface.

The Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill.

7.3 Lift Thickness: Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

7.4 Observation and Testing: The jetting of the bedding around the conduits shall be observed by the Geotechnical Consultant.

APPENDIX E

CGS NOTE 48 CHECKLIST WITH REFERENCES TO THIS REPORT

California Geological Survey - Note 48

Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings
October 2013

Note 48 is used by the California Geological Survey (CGS) to review the geology, seismology, and geologic hazards evaluated in reports that are prepared under California Code of Regulations (CCR), Title 24, California Building Code. CCR Title 24 applies to California Public Schools, Hospitals, Skilled Nursing Facilities, and Essential Services Buildings. The Building Official for public schools is the Division of the State Architect (DSA). Hospitals and Skilled Nursing Facilities in California are under the jurisdiction of the Office of Statewide Health Planning & Development (OSHPD). The California Geological Survey serves under contract with these two state agencies.

Project Name:
OSHPD or DSA File #: N/A
Date Reviewed:
Location:
Reviewed By:
California Certified Engineering Geologist #:

Checklist Item or Topic Within Consulting Report NA = not applicable NR = not addressed by consultant and therefore not reviewed at this time	**Section of this Report Addressed in**	
Project Location		
1. Site Location Map, Street Address, County Name: Correctly plot site on a 7½-minute USGS quadrangle base-map.	Figure 1, Cover letter	
2. Plot Plan with Exploration Data and Building Footprint: One boring or exploration shaft per 5000 ft^2, with minimum of two for any one building. Exploratory trench locations.	Figure 2; Sec 1.2	
3. Site Coordinates (Latitude & Longitude):	Sec 2.5.2	
Engineering Geology/Site Characterization		
4. Regional Geology and Regional Fault Maps: Concise page-sized illustrations with site plotted.	Figure 3; Figure 5	
5. Geologic Map of Site: Detailed (large-scale) geologic map with proper symbols and geologic legend.	Figure 3	
6. Subsurface Geology: Engineering geologic description summarized from boreholes or trench logs. Summarize ground water conditions.	Sec. 2.3; 2.4	
7. Geologic Cross Sections: Two or more detailed geologic sections with pertinent foundations and site grading.	Figure 4a; Figure 4b	
8. Active Faulting & Coseismic Deformation Across Site: Show proposed structures in relation to Alquist-Priolo Earthquake Fault Zones and/or any potential fault rupture hazard identified from the Safety Element of the local agency (city or county); show location of fault investigation trenches; 50-foot setbacks perpendicular from fault plane and proposed building footprints.	Sec. 2.5.1	
9. Geologic Hazard Zones (Liquefaction & Landslides): (*If applicable*) Show proposed structures in relation to CGS official map showing zones of required investigation for liquefaction and landslide, and/or any pertinent geologic hazard map from the Safety Element of the local agency (city or county).	Sec. 2.6	
10. Geotechnical Testing of Representative Samples: Broad suite of appropriate geotechnical tests.	Appendix A, Appendix B	
11. Consideration of Geology in Geotechnical Engineering Recommendations: Discuss engineering geologic aspects of excavation/grading/fill activities, foundation and support of structures. Include geologic and geotechnical inspections and problems anticipated during grading. Special design and construction provisions for bearing capacity failure and/or footings or foundations founded on weak or expansive soils. Consideration of seismic compression of fills; cut/fill differential settlement.	Sec. 3.2; 3.3	
Seismology & Calculation of Earthquake Ground Motion		
12. Evaluation of Historical Seismicity: Prepare a short description of how historical earthquakes have affected the site.	Sec. 2.5.3; Figure 5	
13. Classify the Geologic Subgrade (Site Class): ASCE 7, Chapter 20.	Sec. 2.5.2	
14. General Procedure Ground Motion Analysis: Follows CBC §1613A.5. Report parameters S_S, S_1, S_{DS} and S_{D1}. Recommended method for establishing map values found at: http://earthquake.usgs.gov/designmaps/us/application.php.	Sec. 2.5.2, 3.5	
15. Seismic Design Category: Report if $S_1 > 0.75$	Sec. 2.5.2	
16. Site-Specific Ground Motion Analysis: (*If applicable*) Required for sites where Seismic Design Category is E or F (CBC §1616A.1.3), and where required by ASCE 7 §11.47. See requirements in CBC §1803A.6.2. CGS suggests a table showing (a) 2%-in-50-years probabilistic spectrum, (b) risk coefficients if using ASCE 7 §21.2.1, Method 1), (c) probabilistic MCE_R, (d) 84% deterministic spectrum, (e) deterministic lower limit, (f) site-specific MCE_R (ASCE 7 §21.2.3), (g) 80% of map-based General Response Spectrum, (h) design response spectrum (ASCE 7 §21.3). Also	Sec. 2.5.2	

Checklist Item or Topic Within Consulting Report NA = not applicable NR = not addressed by consultant and therefore not reviewed at this time	Section of this Report Addressed in	
17. Deaggregated Seismic Source Parameters: (*If applicable*) If needed for liquefaction, slope stability analysis or for earthquake record selection, provide controlling magnitude (M) and fault distance (R). Might be either deterministic or deaggregate for modal M and R.	Sec. 2.5.2	
18. Time Histories of Earthquake Ground Motion: (*If applicable*) Identify target spectra (MCE or design); justify selected earthquake records; scale to target to meet ASCE 7 §16.1.3 or §17.3 and CBC §1616A.1.32; and show initial and scaled time histories and response spectra.	NA	

Liquefaction/Seismic Settlement Analysis

19. Geologic Setting for Occurrence of Liquefaction: Perform screening analysis to identify where the following conditions apply: depth of highest historical ground water surface <50 ft. low-density, non-plastic alluvium, typically *SPT* $(N_1)_{60}$<30.	Sec. 2.4; 2.6.1	
20. Seismic Settlement Calculations: (*If applicable*) Evaluate both saturated and unsaturated layers of the entire soil column; based on several detailed geologic cross sections. Provide calculations (no estimates) including all input parameters. Evaluate liquefaction using highest historical ground water elevation. Evaluate using PGA_M (CBC §1803A.5.12), and calculate liquefaction settlement for each layer where FS<1.3 (CGS SP117A).	Sec. 2.6.4	
21. Other Liquefaction Effects (*If applicable*) Bearing capacity failure and/or lateral spread	Sec. 2.6.2	
22. Mitigation Options for Liquefaction: (*If applicable*) Discuss effectiveness of options to mitigate liquefaction effects. Acceptance criteria for ground-improvement schemes.	Sec. 2.6.1, 2.6.2	

Slope Stability Analysis

23. Geologic Setting for Occurrence of Landslides: Characterize the potential for landsliding both on and off-site affecting proposed project.	Sec. 2.8	
24. Determination of Static And Dynamic Strength Parameters: (*If applicable*) Conduct appropriate laboratory tests to determine material strength for both static and dynamic conditions.	Sec. 2.8	
25. Determination of Pseudo-Static Coefficient (K_{eq}): (*If applicable*) Recommended procedure available from http://www.conservation.ca.gov/cgs/shzp/webdocs/Documents/sp117.pdf. Recommend using design-level ground motion based on geometric mean and without risk coefficient (ie, $(PGA_M)/1.5$), or discuss with CGS.	Sec. 2.8	
26. Identify Critical Slip Surfaces for Static and Dynamic Analyses: (*If applicable*) Failure surfaces should be modeled to include existing slip surfaces, discontinuities, geologic structure and stratigraphy; include appropriate ground water conditions.	Sec. 2.8	
27. Dynamic Site Conditions: (*If applicable*) Site response analysis and topographic effects should be considered, if appropriate.	Sec. 2.8	
28. Mitigation Options for Landsliding/Other Slope Failure: (*If applicable*) Discuss effectiveness of options to mitigate landsliding/slope failure effects. Acceptance criteria for ground-improvement schemes.	Sec. 2.8	

Other Geologic Hazards or Adverse Site Conditions

These exceptional geologic hazards do not occur statewide; however, they may be pertinent to a particular site. Where these conditions exist relevant information should be communicated to the design team.

29. Expansive Soils	Sec. 2.3.2, 3.4	
30. Corrosive/Reactive Geochemistry of Geologic Subgrade: soluble sulfates and corrosive soils.	Sec. 2.3.3, 2.3.4	
31. Conditional Geologic Assessment: Including but not limited to - **A. Hazardous materials** methane gas, hydrogen-sulfide gas, tar seeps; **B. Volcanic eruption**; **C. Flooding** Riverine (FEMA FIRMs or local zoning for 100-year flood); see CBC §1612A. Also consider alluvial fan and dam inundation. Is the site elevated or protected from hazard; **D. Tsunami and seiche inundation**; **E. Radon-222 gas**; **F. Naturally occurring asbestos** in geologic formations associated with serpentine; refer to CGS SP 124; **G. Hydrocollapse** of alluvial fan soils due to anthropic use of water; **H. Regional subsidence**; **I. Clays and cyclic softening**.	Sec. 2.3.1 (hydrocollapse), 2.7 (seiches/tsunamis), 2.9 (flooding/dam inundation), 2.10 (others)	

Report Documentation

32. Geology, Seismology, and Geotechnical References	References	
33. Certified Engineering Geologist: (CBC §1803A.1)	Cover Letter	
34. Registered Geotechnical Engineer: (CBC §1803A.1)	Cover Letter	

NOTES (TYPICAL):
1) 3" AND LARGER USE RUBBER GASKETED PIPE WITH CAST IRON FITTINGS AND MECHANICAL JOINT RESTRAINTS.
2) 2 1/2" AND SMALLER USE SOLVENT WELD PIPE WITH PVC SCHEDULE 80 FITTINGS.
4) THE CONTRACTOR SHALL USE VARIABLE ARC NOZZLES (VAN) TO OBTAIN BETTER COVERAGE.
5) WHEN VERTICAL OBSTRUCTIONS (FIRE HYDRANTS, STREET LIGHTS, TREES, ETC.) INTERFERE WITH THE SPRAY PATTERN OF THE SPRINKLER HEADS SO AS TO PREVENT PROPER COVERAGE, THE CONTRACTOR SHALL FIELD ADJUST THE SPRINKLER SYSTEM BY INSTALLING A QUARTER CIRCLE OR HALF CIRCLE SPRINKLER HEAD ON EACH SIDE OF THE OBSTRUCTION SO AS TO PROVIDE PROPER COVERAGE. ALL ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
6) MAINLINE, VALVES, IRRIGATION METERS, ETC., ARE SHOWN ON THE STREET AND/OR SIDEWALK FOR CLARIFICATION ONLY. INSTALL IN PLANTER AREA THROUGHOUT THE SITE.
7) ADJUST ALL SPRINKLERS FOR 100% COVERAGE.
8) ALL IRRIGATION EQUIPMENT SHALL BE MARKED AND/OR COLORED FOR USE WITH RECLAIMED WATER.
9) AFTER ESTABLISHMENT OF ALL PLANT MATERIAL, CONTROLLERS SHALL BE PROGRAMMED TO IRRIGATE SOLELY DURING THE HOURS OF 9 P.M. AND 5 A.M.

YARROW ST.

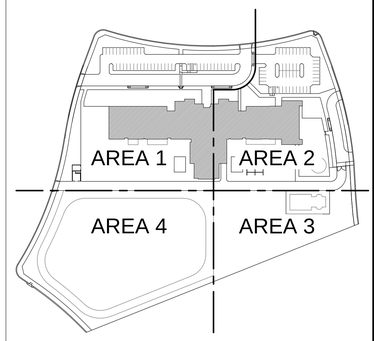
FORSYTHIA ST.

REF SHT IP-1
REF SHT IP-2
REF SHT IP-3
REF SHT IP-4

EXIT ONLY

4" PIPE SLEEVE AND 2" WIRE SLEEVE

1	32.9	1½"	
2	20.0	1"	
3	10.2	1"	
4	21.0	1"	
5	39.3	1½"	
6	31.8	1½"	
7	36.0	1½"	
8	30.0	1½"	
9	16.0	1"	
10	21.3	1½"	
11	28.0	1½"	
12	32.6	1½"	
13	38.1	1½"	
14	19.6	1"	
15	21.8	1½"	
31	4.00	1"	
32	11.6	1"	



LEGEND

REFER TO SHEET ID-2
FOR IRRIGATION LEGEND

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

IRRIGATION PLAN AREA 1 | 1" = 20'-0" | 1 | REFERENCE NOTES

0' 20' 40' 60'

ARCHITECTS
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JURUPA UNIFIED SCHOOL DISTRICT

PTN 67090-80

LICENSED LANDSCAPE ARCHITECT
GEORGE M. IMENS
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8/31/19
STATE OF CALIFORNIA

LICENSED LANDSCAPE ARCHITECT
DOUGLAS GROVE NO. 5791
Renewal Date
1/29/19
STATE OF CALIFORNIA

CONSULTANT
RHA LANDSCAPE ARCHITECTS PLANNERS, INC.
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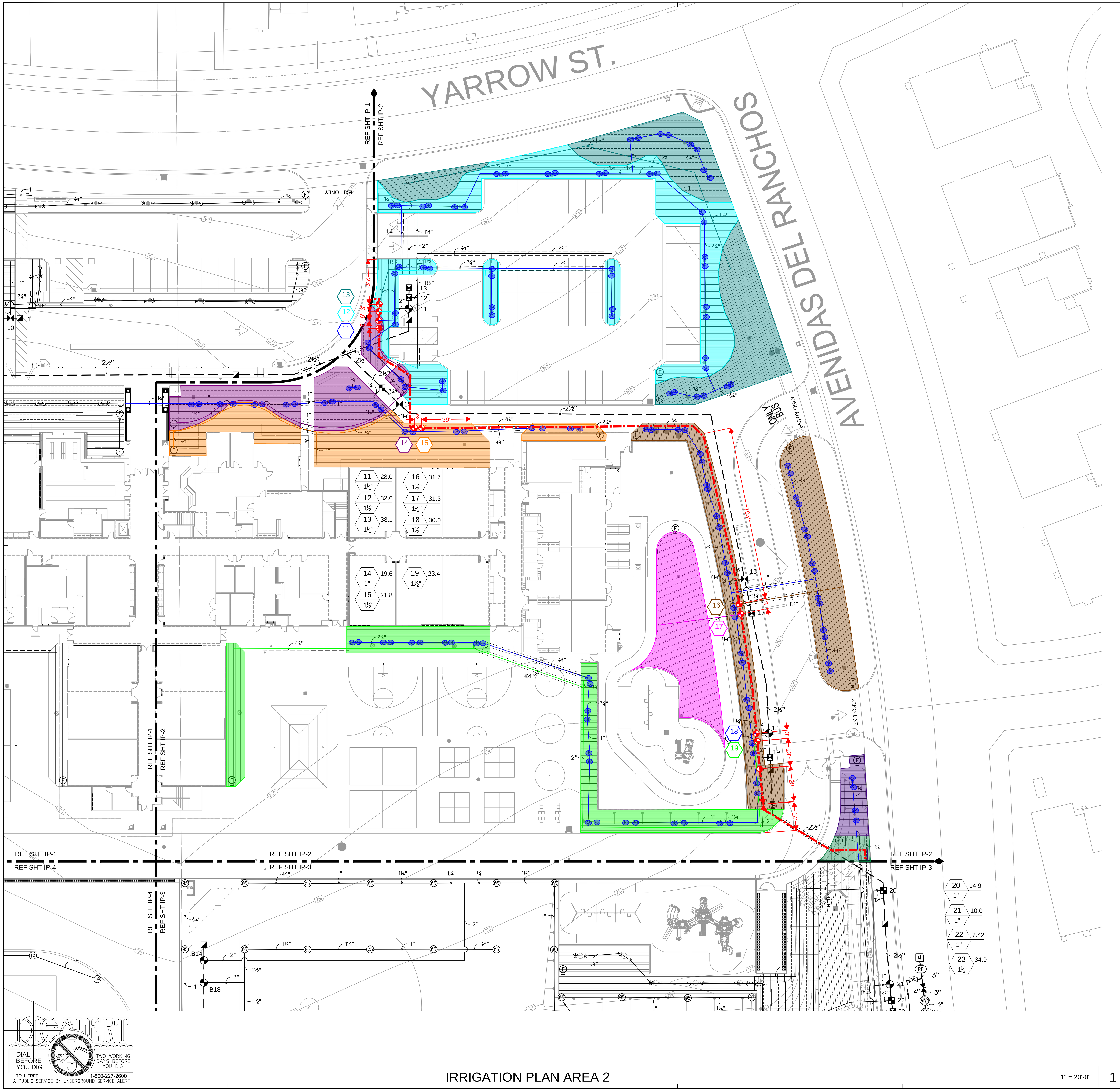
Suite 245
Riverside, CA 92506
(951) 781.1930 ph
(951) 686.8091 fax
Lic 1512
www.rhala.com

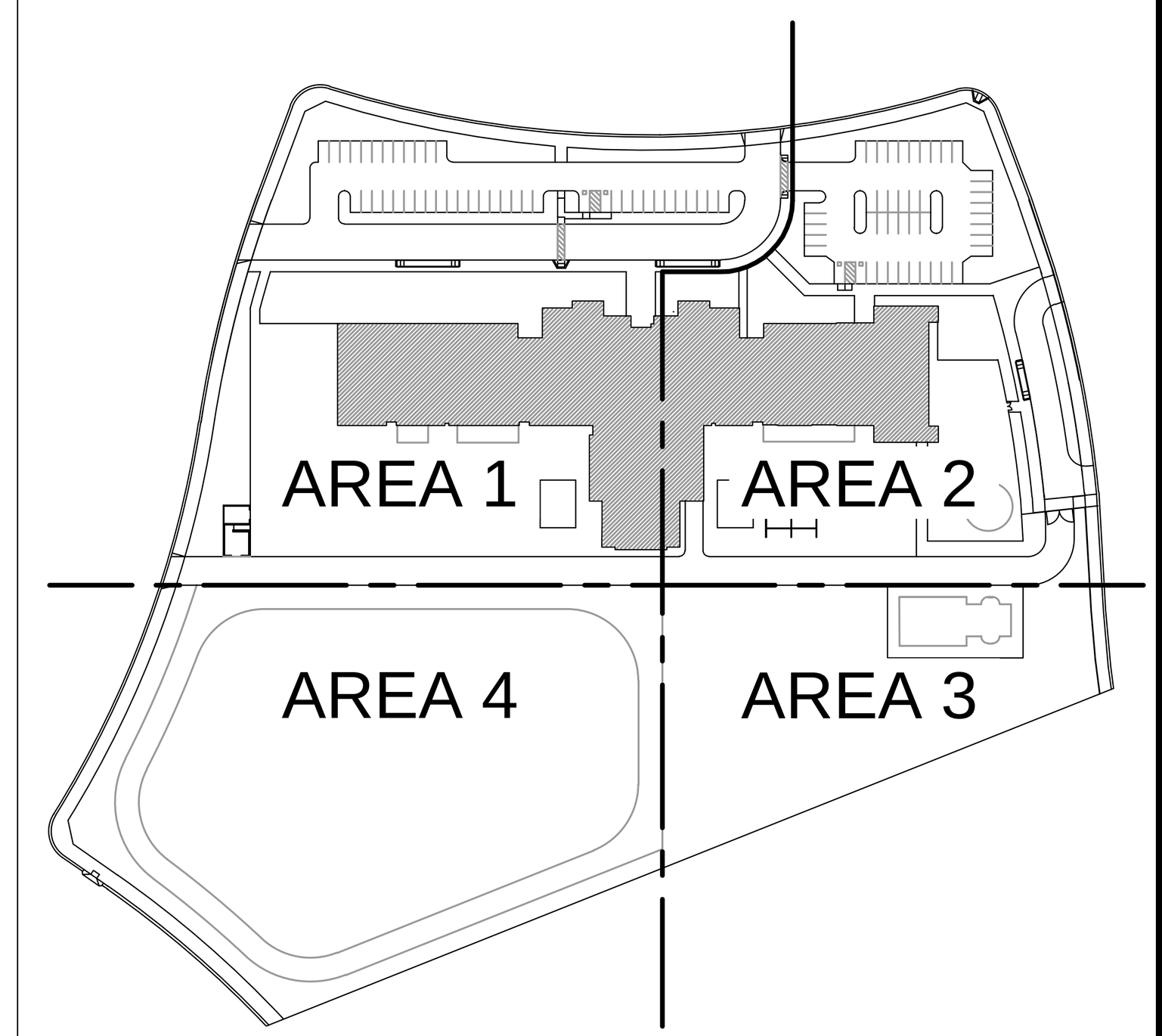
NO	DATE	BY	DESCRIPTION
2	10/19/16	DB	ADDENDUM 2
1	9/6/17	DB	INSTRUCTION BULLETIN 4
			REVISIONS

DRAWN:
CHECKED:
DATE: 09/06/2016
SCALE: 1" = 20'-0"
PROJECT NUMBER: 1321200

IRRIGATION PLAN AREA 1

DRAWING NUMBER: IP - 1





LEGEND

REFER TO SHEET ID-2 FOR IRRIGATION LEGEND

IRRIGATION PLAN AREA 2 | 1" = 20'-0" | 1

REFERENCE NOTES

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(951) 686.8091 fax
Lic 1512
www.rhala.com

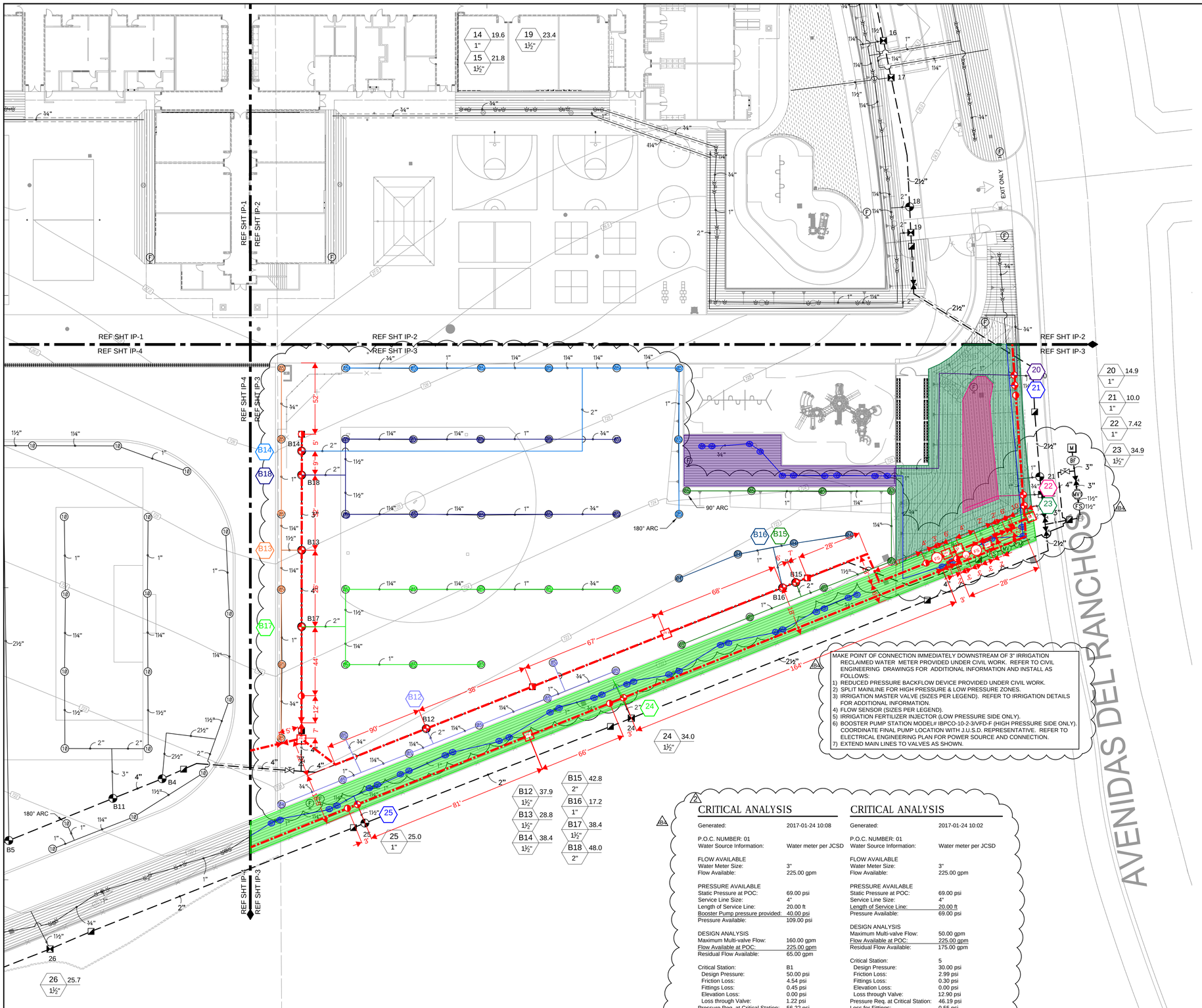
NO	DATE	BY	DESCRIPTION

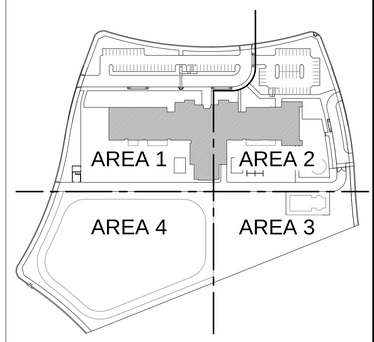
REVISIONS

DRAWN: | CHECKED:
DATE: 09/06/2016 | SCALE: 1" = 20'-0"
PROJECT NUMBER: 1321200

IRRIGATION PLAN AREA 2

DRAWING NUMBER: IP - 2





LEGEND

REFER TO SHEET ID-2
FOR IRRIGATION LEGEND

NOTES (TYPICAL):

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MAKE POINT OF CONNECTION IMMEDIATELY DOWNSTREAM OF 3" IRRIGATION RECLAIMED WATER METER PROVIDED UNDER CIVIL WORK. REFER TO CIVIL ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION AND INSTALL AS FOLLOWS:
1) REDUCED PRESSURE BACKFLOW DEVICE PROVIDED UNDER CIVIL WORK.
2) SPLIT MAINLINE FOR HIGH PRESSURE & LOW PRESSURE ZONES.
3) IRRIGATION MASTER VALVE (SIZES PER LEGEND). REFER TO IRRIGATION DETAILS FOR ADDITIONAL INFORMATION.
4) FLOW SENSOR (SIZES PER LEGEND).
5) IRRIGATION FERTILIZER INJECTOR (LOW PRESSURE SIDE ONLY).
6) BOOSTER PUMP STATION MODEL# IBPCO-10-2-3/VFD-F (HIGH PRESSURE SIDE ONLY). COORDINATE FINAL PUMP LOCATION WITH J.U.S.D. REPRESENTATIVE. REFER TO ELECTRICAL ENGINEERING PLAN FOR POWER SOURCE AND CONNECTION.
7) EXTEND MAIN LINES TO VALVES AS SHOWN.

CRITICAL ANALYSIS

Generated:	2017-01-24 10:08
P.O.C. NUMBER: 01	
Water Source Information:	Water meter per JCSD
FLOW AVAILABLE	
Water Meter Size:	3"
Flow Available:	225.00 gpm
PRESSURE AVAILABLE	
Static Pressure at POC:	69.00 psi
Service Line Size:	4"
Length of Service Line:	20.00 ft
Booster Pump pressure provided:	40.00 psi
Pressure Available:	109.00 psi
DESIGN ANALYSIS	
Maximum Multi-valve Flow:	160.00 gpm
Flow Available at POC:	225.00 gpm
Residual Flow Available:	65.00 gpm
Critical Station:	B1
Design Pressure:	50.00 psi
Friction Loss:	4.54 psi
Fittings Loss:	0.45 psi
Elevation Loss:	0.00 psi
Loss through Valve:	1.22 psi
Pressure Req. at Critical Station:	56.22 psi
Loss for Fittings:	0.71 psi
Loss for Main Line:	7.13 psi
Loss for Backflow:	15.10 psi
Loss for Master Valve:	9.50 psi
Loss for Water Meter:	5.80 psi
Critical Station Pressure at POC:	94.46 psi
Pressure Available:	109.00 psi
Residual Pressure Available:	14.54 psi

CRITICAL ANALYSIS

Generated:	2017-01-24 10:02
P.O.C. NUMBER: 01	
Water Source Information:	Water meter per JCSD
FLOW AVAILABLE	
Water Meter Size:	3"
Flow Available:	225.00 gpm
PRESSURE AVAILABLE	
Static Pressure at POC:	69.00 psi
Service Line Size:	4"
Length of Service Line:	20.00 ft
Pressure Available:	69.00 psi
DESIGN ANALYSIS	
Maximum Multi-valve Flow:	50.00 gpm
Flow Available at POC:	225.00 gpm
Residual Flow Available:	175.00 gpm
Critical Station:	5
Design Pressure:	30.00 psi
Friction Loss:	2.99 psi
Fittings Loss:	0.30 psi
Elevation Loss:	0.00 psi
Loss through Valve:	12.90 psi
Pressure Req. at Critical Station:	46.19 psi
Loss for Fittings:	0.55 psi
Loss for Main Line:	5.50 psi
Loss for Backflow:	13.41 psi
Loss for Master Valve:	2.32 psi
Loss for Water Meter:	1.00 psi
Critical Station Pressure at POC:	68.97 psi
Pressure Available:	69.00 psi
Residual Pressure Available:	0.03 psi

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0' 20' 40' 60'

IRRIGATION PLAN AREA 3 | 1" = 20'-0" | 1 | REFERENCE NOTES

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SOUTHERN CALIFORNIA
8163 ROCHESTER AVENUE, SUITE 100
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TEL: 909-987-0909
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JURUPA UNIFIED SCHOOL DISTRICT

K-8 SCHOOL NO. 5
11626 FORSYTHIA
JURUPA VALLEY, CA 91752

JURUPA UNIFIED SCHOOL DISTRICT

PTN 67090-80

LICENSED ARCHITECT
GEORGE M. MIENS
C-14546
Re-Issue: 08/31/16
STATE OF CALIFORNIA

LICENSED LANDSCAPE ARCHITECT
DOUGLAS GROVE NO. 2799
Signature
Type or Print Name
Renewal Date
1/26/16
Date
STATE OF CALIFORNIA

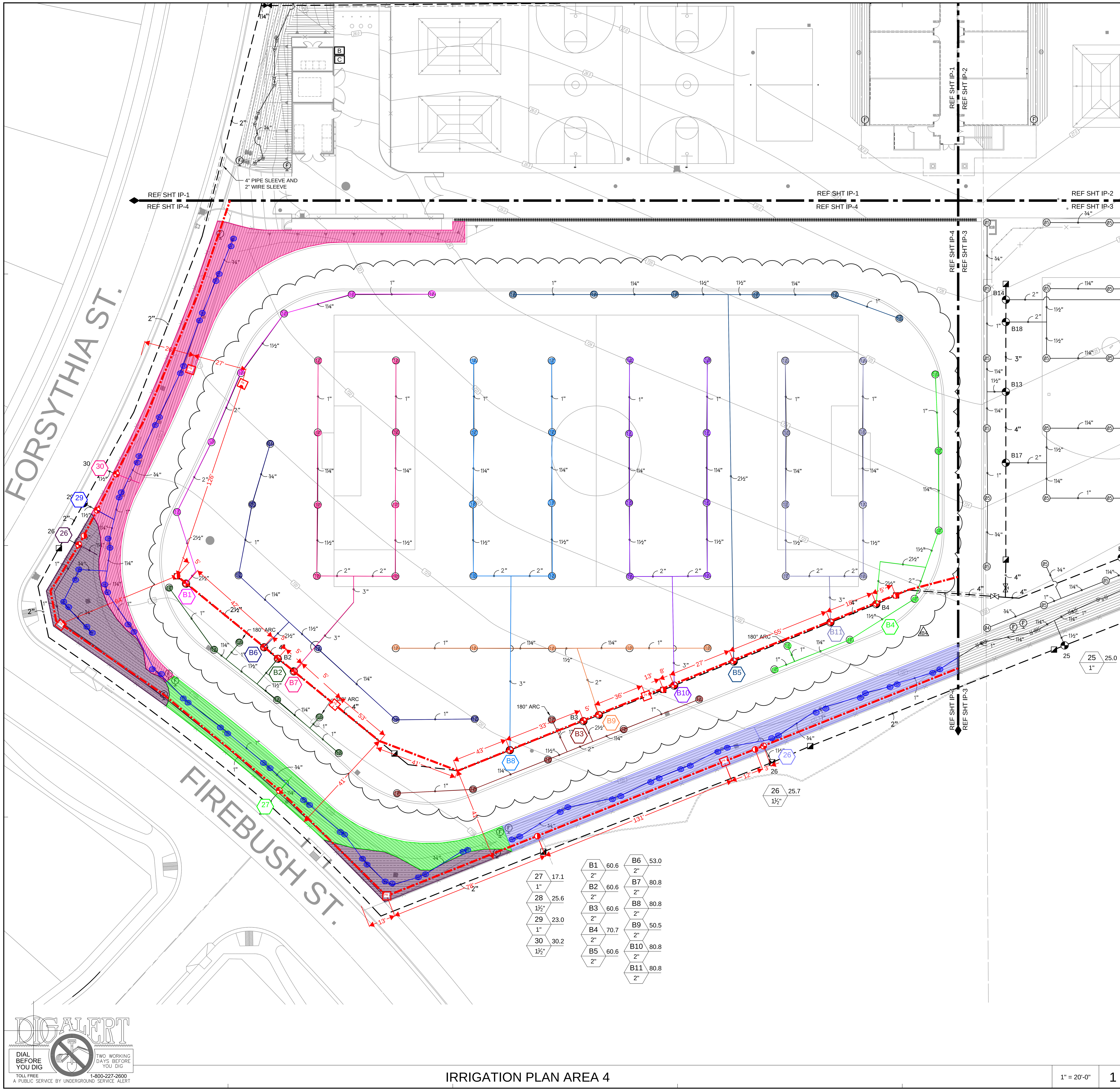
CONSULTANT
RHA LANDSCAPE ARCHITECTS PLANNERS, INC.
6800 Indiana Ave, Suite 245
Riverside, CA 92506
(951) 781.1930 ph
(951) 686.8091 fax
Lic 1512
www.rhala.com

NO	DATE	BY	DESCRIPTION
2	10/19/16	DB	ADDENDUM 2
1	9/6/17	DB	INSTRUCTION BULLETIN 4
#1			REVISIONS

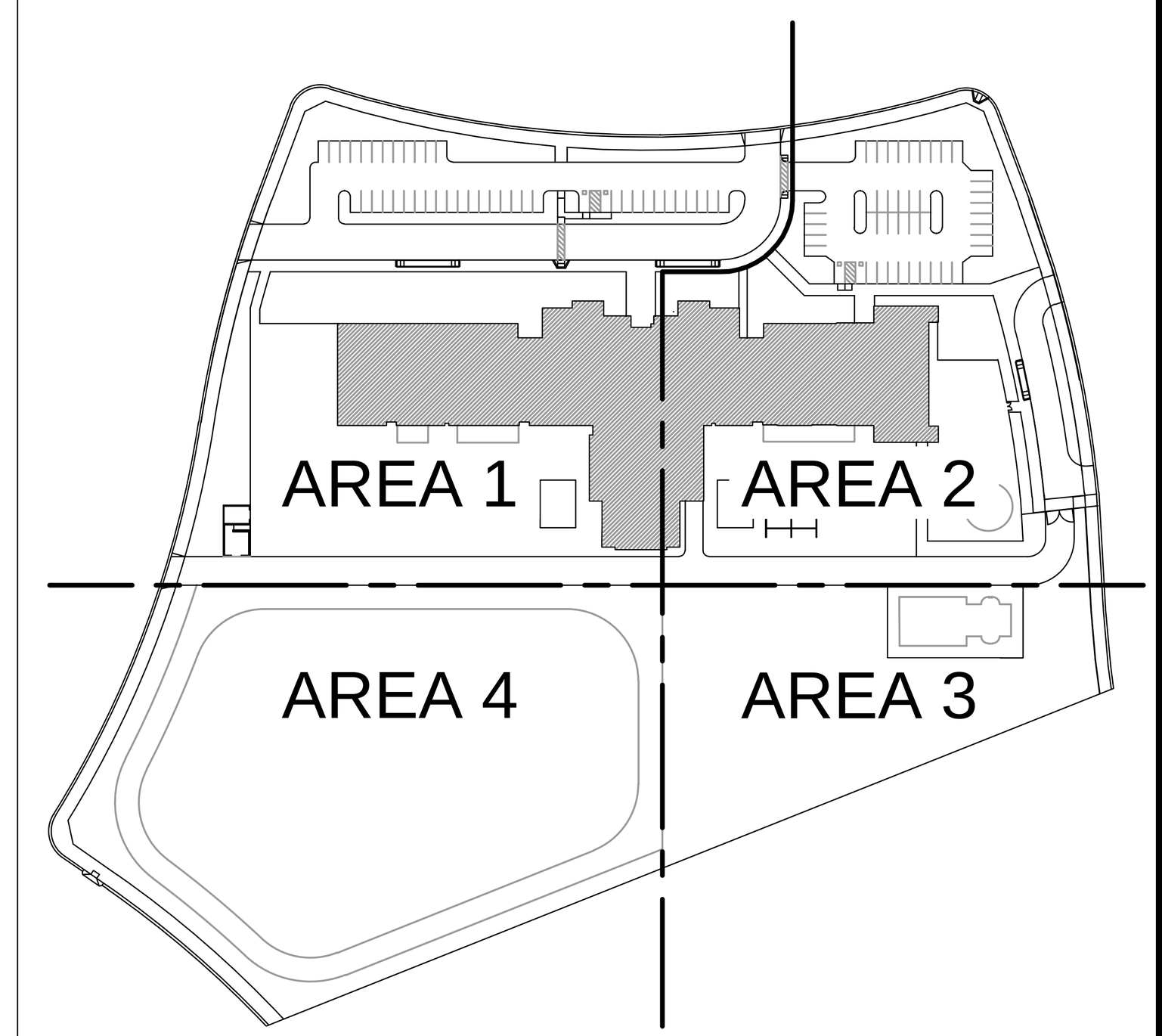
DRAWN: CHECKED:
DATE: 09/06/2016 SCALE: 1" = 20'-0"
PROJECT NUMBER: 1321200

IRRIGATION PLAN AREA 3

DRAWING NUMBER: IP - 3



27	1"	17.1
28	1½"	25.6
29	1"	23.0
30	1½"	30.2
B1	2"	60.6
B2	2"	60.6
B3	2"	60.6
B4	2"	70.7
B5	2"	60.6
B6	2"	53.0
B7	2"	80.8
B8	2"	80.8
B9	2"	50.5
B10	2"	80.8
B11	2"	80.8
25	1"	25.0
26	1½"	25.7



LEGEND

REFER TO SHEET ID-2
FOR IRRIGATION LEGEND

IRRIGATION PLAN AREA 4

1" = 20'-0" | 1

REFERENCE NOTES

WLC ARCHITECTS
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SOUTHERN CALIFORNIA
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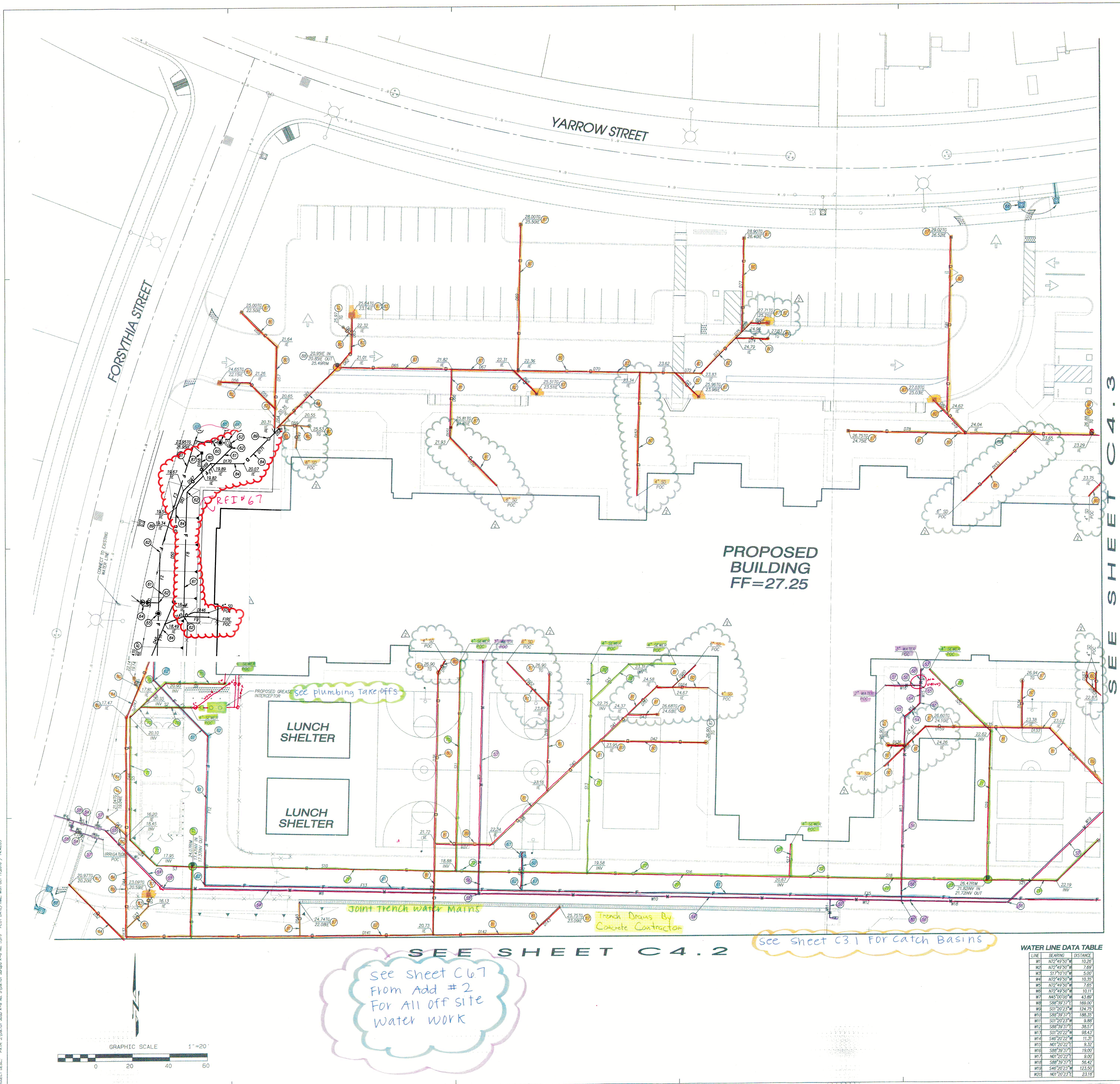
NO	DATE	BY	DESCRIPTION
4	9/6/17	DB	INSTRUCTION BULLETIN 4

REVISIONS

DRAWN: | CHECKED:
DATE: 09/06/2016 | SCALE: 1" = 20'-0"
PROJECT NUMBER: 1321200

IRRIGATION PLAN AREA 4

DRAWING NUMBER: IP - 4



UTILITY CONSTRUCTION NOTES

DOMESTIC WATER & IRRIGATION

- (50) FURNISH AND INSTALL 1" SCHEDULE 80 PVC WATER LINE
- (51) FURNISH AND INSTALL 2" SCHEDULE 80 PVC WATER LINE
- (52) FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC WATER LINE
- (53) FURNISH AND INSTALL 3" SCHEDULE 80 PVC WATER LINE
- (54) FURNISH AND INSTALL 4" CLASS 150 C900 WATER LINE
- (55) FURNISH AND INSTALL MECHANICALLY RESTRAINED JOINT PER DETAIL "A" ON SHEET C4.4
- (56) FURNISH AND INSTALL RSGV VALVE PER DETAIL "B" ON SHEET C4.4, VALVE SIZE TO MATCH PIPE
- (57) FURNISH AND INSTALL REDUCED PRESSURE BACKFLOW DEVICE PER JCSD STD H-2. SEE SHEET C4.5
- (58) FURNISH AND INSTALL, 3" WATER SERVICE METER PER JCSD STD D-4. SEE SHEET C4.5
- (59) CONNECT TO EXISTING WATER LINE

FIRE

- (60) FURNISH AND INSTALL 6" CLASS 200 C900 PVC WATER LINE
- (61) FURNISH AND INSTALL 8" CLASS 200 C900 PVC WATER LINE
- (62) FURNISH AND INSTALL MECHANICALLY RESTRAINED JOINT PER DETAIL "A" ON SHEET C4.4
- (63) FURNISH AND INSTALL SUPER FIRE HYDRANT PER JCSD STD G-2A. SEE SHEET C4.3
- (64) FURNISH AND INSTALL 8" DOUBLE DETECTOR CHECK VALVE ASSY PER JCSD STD H-1. SEE SHEET C4.5
- (65) FURNISH AND INSTALL POST INDICATOR VALVE (MUELLER A-20808 OR APPROVED EQUAL)
- (66) FURNISH AND INSTALL FIRE DEPARTMENT CONNECTION (CROKER 6512 OR APPROVED EQUAL)
- (67) FURNISH AND INSTALL RSGV VALVE PER DETAIL "B" ON SHEET C4.4, VALVE SIZE TO MATCH PIPE
- (68) EXISTING PUBLIC FIRE HYDRANT TO BE RELOCATED OUT OF PROPOSED DRIVEWAY WITH NEW LATERAL. SEE OFFSITE WATER PLANS FOR ADDITIONAL INFORMATION

SEWER

- (70) FURNISH AND INSTALL 4" SDR 35 PVC SEWER LINE
- (71) FURNISH AND INSTALL 6" SDR 35 PVC SEWER LINE
- (72) CONSTRUCT PVC SEWER/STORM DRAIN CLEANOUT PER DETAIL "C" ON SHEET C4.4
- (73) CONSTRUCT 4' SEWER MANHOLE PER JCSD STD S-7. SEE SHEET C4.5

STORM DRAIN

- (80) FURNISH AND INSTALL 4" SDR 35 PVC STORM DRAIN PIPE
- (81) FURNISH AND INSTALL 6" SDR 35 PVC STORM DRAIN PIPE
- (82) FURNISH AND INSTALL 8" SDR 35 PVC STORM DRAIN PIPE
- (83) FURNISH AND INSTALL 12" SDR 35 PVC STORM DRAIN PIPE
- (84) FURNISH AND INSTALL 15" SDR 35 PVC STORM DRAIN PIPE
- (85) FURNISH AND INSTALL 15" HDPE WT STORM DRAIN PIPE
- (86) FURNISH AND INSTALL 24" HDPE WT STORM DRAIN PIPE
- (87) FURNISH AND INSTALL DRAIN PER GRADING PLAN
- (88) CONSTRUCT STORM DRAIN MANHOLE PER RCFCWCD STANDARD MANHOLE NO. 1 STD. DWG. NO. MH251 SEE SHEET C4.5
- (89) CONSTRUCT PVC SEWER/STORM DRAIN CLEANOUT PER DETAIL "C" ON SHEET C4.4
- (90) FURNISH AND INSTALL PERFORATED 6" SDR 35 PVC STORM DRAIN PIPE, SEE DETAIL "D" ON SHEET C4.4 FOR ADDITIONAL INFORMATION
- (91) FURNISH AND INSTALL STORMTECH MC-4500 SUBSURFACE CHAMBERS AND INSPECTION PORTS PER MANUFACTURER'S SHOP DRAWINGS DETAILS & SPECS. SEE DETAIL "E" ON SHEET C4.4 FOR ADDITIONAL INFORMATION
- (92) CONSTRUCT 48" CONTECH STORMGATE MANHOLE OR APPROVED EQUAL (HS20-44 TRAFFIC LOAD RATED). MANHOLE COVERS IN TRAFFIC AREAS SHALL BE HS20-44 TRAFFIC LOAD RATED AND MARKED AS SUCH. SEE DETAIL "F" ON SHEET C4.4 FOR ADDITIONAL INFORMATION.

FIRE LINE DATA TABLE

LINE	BEARING	DISTANCE
F1	N88°39'37"W	10.58'
F2	N01°20'23"E	28.29'
F3	S17°10'10"W	65.65'
F4	S72°49'50"E	3.52'
F5	N88°39'37"W	16.87'
F6	S01°20'23"W	21.83'
F7	N45°00'00"E	18.83'
F8	N01°20'23"E	62.31'
F9	S88°39'37"E	3.00'
F10	N01°20'23"E	38.90'
F11	N43°39'37"W	41.66'
F12	N01°20'23"E	80.43'
F13	N88°39'37"W	169.96'
F14	S01°20'23"W	19.38'
F15	N88°39'37"W	370.50'
F16	S01°20'23"W	19.39'
F17	N88°39'37"W	77.53'
F18	S01°20'23"W	114.86'
F19	N09°54'37"W	96.62'
F20	N01°20'23"E	22.38'
F21	S88°39'37"E	34.77'
F22	N01°20'23"E	14.00'
F23	S01°20'23"W	25.09'
F24	S72°46'17"W	77.42'

SEWER LINE DATA TABLE

LINE	BEARING	DISTANCE
S1	N46°20'23"E	46.09'
S2	S01°20'23"W	297.21'
S3	S88°39'37"E	19.38'
S4	S45°00'00"E	19.78'
S5	N00°00'00"W	65.95'
S6	S46°20'23"W	8.37'
S7	N88°39'37"W	26.62'
S8	N46°20'23"E	18.38'
S9	S88°39'37"E	31.81'
S10	N88°39'37"W	141.10'
S11	S01°20'23"W	112.75'
S12	N88°39'37"W	70.33'
S13	S01°20'23"W	92.75'
S14	S01°20'23"W	20.00'
S15	S46°20'23"W	28.28'
S16	N88°39'37"W	109.00'
S17	S01°20'23"W	17.25'
S18	N88°39'37"W	105.75'
S19	S01°20'23"W	80.01'
S20	S43°39'37"E	46.31'
S21	S88°39'37"E	36.82'
S22	S46°20'23"W	93.60'
S23	S01°20'23"W	32.32'

STORM DRAIN LINE DATA TABLE

LINE	BEARING	DISTANCE
D1	S45°00'00"E	105.07'
D2	S00°00'00"W	74.19'
D3	S45°00'00"W	27.03'
D4	S00°00'00"W	64.64'
D5	S45°00'00"E	57.74'
D6	S45°00'00"W	79.36'
D7	S45°00'00"E	34.53'
D8	N90°00'00"W	25.01'
D9	N90°00'00"W	5.82'
D10	N00°00'00"W	56.67'
D11	N90°00'00"E	5.82'
D12	N90°00'00"W	5.82'
D13	N90°00'00"E	5.82'
D14	N90°00'00"E	5.82'
D15	N90°00'00"E	5.82'
D16	N00°00'00"E	7.39'
D17	N90°00'00"E	49.10'
D18	N00°00'00"E	20.91'
D19	N00°00'00"E	36.87'
D20	N90°00'00"E	5.00'
D21	N90°00'00"E	5.00'
D22	N90°00'00"W	5.00'
D23	N90°00'00"W	5.00'
D24	N90°00'00"E	5.00'
D25	N00°00'00"W	25.24'
D26	N45°00'00"E	23.80'
D27	S45°00'00"W	6.54'
D28	N45°00'00"E	21.67'
D29	S45°00'00"E	61.24'
D30	S45°00'00"W	30.60'
D31	S00°00'00"E	86.70'
D32	S45°00'00"E	43.52'
D33	S45°00'00"W	16.37'
D34	N01°20'23"E	7.05'
D35	S01°20'23"W	49.13'
D36	S01°20'23"W	92.01'
D37	S88°39'37"E	30.91'
D38	N46°20'23"E	40.92'
D39	S01°20'23"W	63.47'
D40	S46°20'23"W	39.54'
D41	S46°20'23"W	20.62'
D42	N88°39'37"W	56.49'
D43	S88°39'37"E	15.33'
D44	S00°00'00"E	49.53'
D45	N45°00'00"W	14.66'
D46	N00°00'00"W	64.03'
D47	N22°30'00"E	17.04'
D48	S22°30'00"W	46.52'
D49	N22°30'00"W	5.88'
D50	S01°20'23"W	40.30'
D51	N45°00'00"E	19.35'
D52	N01°20'23"E	30.08'
D53	S45°00'00"W	58.67'
D54	N01°20'23"E	11.29'
D55	N45°00'00"W	19.56'
D56	N88°39'37"W	16.11'
D57	N01°20'23"E	33.08'
D58	S45°00'00"E	26.88'
D59	N88°39'37"W	16.15'
D60	N45°00'00"E	3.26'
D61	S45°00'00"W	44.03'
D62	N45°00'00"E	10.47'
D63	N01°20'23"E	20.43'
D64	N45°00'00"W	6.23'
D65	N88°39'37"W	61.46'
D66	N01°20'23"E	31.52'
D67	N88°39'37"W	32.46'
D68	N45°00'00"W	18.38'
D69	S01°20'23"W	78.33'
D70	N88°39'37"W	84.00'
D71	N45°00'00"W	18.38'
D72	N88°39'37"W	14.13'
D73	S45°00'00"W	28.78'
D74	S88°39'37"E	16.98'
D75	S45°00'00"W	4.77'
D76	S45°00'00"W	6.63'
D77	S01°20'23"W	50.30'
D78	N88°39'37"W	63.28'
D79	S43°39'37"E	14.39'
D80	N43°39'37"W	10.20'
D81	S01°20'23"W	94.85'
D82	N88°39'37"W	67.62'
D83	S88°39'37"E	13.73'
D84	S01°20'23"W	25.31'
D85	S88°39'37"E	60.85'
D86	S01°20'23"W	17.70'
D87	S88°39'37"E	38.11'
D88	N88°39'37"W	4.92'
D89	S01°20'23"W	2.41'
D90	S01°20'23"W	31.57'
D91	N88°39'37"W	48.10'
D92	N01°20'23"E	90.61'
D93	S46°20'23"W	19.16'
D94	S88°39'37"E	15.37'
D95	N43°39'37"W	15.39'
D96	N21°09'37"W	8.58'
D97	S68°50'23"W	8.77'
D98	N21°09'37"W	11.16'
D99	S68°50'23"W	29.62'
D100	N21°09'37"W	7.54'
D101	S68°50'23"W	38.97'
D102	N21°09'37"W	44.94'
D103	N68°50'23"E	47.41'
D104	S21°09'37"E	71.59'
D105	S23°50'23"W	5.35'
D106	N21°09'37"W	7.51'
D107	S68°50'23"W	15.73'
D108	N21°09'37"W	25.95'
D109	S01°20'23"W	14.78'
D110	S46°20'23"W	12.78'
D111	N01°20'23"E	13.10'
D112	S43°39'37"E	5.68'
D113	S01°20'23"W	24.01'
D114	S01°20'23"W	37.06'
D115	N02°48'53"E	39.69'
D116	S88°39'37"E	34.09'
D117	N01°20'23"E	21.42'
D118	S88°39'37"E	13.25'
D119	N01°20'23"E	71.27'
D120	S88°39'37"E	4.40'
D121	N01°20'23"E	15.26'
D122	N01°20'23"E	40.74'
D123	N88°39'37"W	4.40'
D124	N01°20'23"E	11.98'
D125	N69°28'07"E	161.68'
D126	S88°39'37"E	42.85'
D127	N01°20'23"E	47.43'
D128	N43°01'44"E	11.72'
D129	N88°39'37"W	73.17'
D130	S43°39'37"E	56.94'
D131	S01°20'23"W	53.37'
D132	S43°39'37"E	39.89'
D133	S88°39'37"E	15.32'
D134	S01°20'23"W	25.29'
D135	N88°39'37"W	36.00'
D136	N88°39'37"W	9.60'
D137	S00°00'00"W	4.53'
D138	N00°00'00"E	2.81'
D139	N90°00'00"E	92.64'
D140	S00°00'00"E	18.03'
D141	N90°00'00"W	71.45'
D142	N90°00'00"W	52.42'
D143	N46°20'23"E	21.40'
D144	N90°00'00"W	54.46'
D145	S45°00'00"W	25.71'
D146	N90°00'00"W	54.68'
D147	S67°30'00"W	17.49'
D148	N88°39'37"W	8.39'
D149	N01°20'23"E	11.91'
D150	S43°39'37"E	35.79'
D151	S01°20'23"W	5.19'
D152	S01°20'23"W	66.18'
D153	S46°20'23"W	51.78'
D154	N01°20'23"E	5.25'
D155	N01°20'23"E	32.20'
D156	S41°49'06"W	40.55'
D157	S01°20'23"W	5.00'
D158	N01°20'23"E	10.25'
D159	S88°39'37"E	15.25'
D160	S46°20'23"W	16.97'
D161	N46°20'23"E	20.98'
D162	N43°39'37"W	32.65'
D163	N29°53'17"E	7.16'
D164	N88°39'41"W	27.62'
D165	S43°39'37"E	12.31'
D166	N46°20'23"E	30.90'
D167	S46°20'23"W	20.30'
D168	N88°39'37"W	9.00'

WATER LINE DATA TABLE

LINE	BEARING	DISTANCE
W1	N72°49'50"W	10.26'
W2	N72°49'50"W	7.69'
W3	S17°10'10"W	5.00'
W4	N72°49'50"W	10.35'
W5	N72°49'50"W	7.65'
W6	N72°49'50"W	10.11'
W7	N45°00'00"W	43.89'
W8	S88°39'37"E	169.00'
W9	S01°20'23"W	124.75'
W10	S88°39'37"E	188.35'
W11	S01°20'23"W	9.88'
W12	S88°39'37"E	38.57'
W13	S01°20'22"W	98.43'
W14	S46°20'22"W	11.31'
W15	N01°20'22"E	9.32'
W16	S88°39'37"E	19.00'
W17	N01°20'22"E	9.00'
W18	S88°39'37"E	56.42'
W19	S46°20'23"W	123.50'
W20	N01°20'23"E	23.18'

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JURUPA UNIFIED SCHOOL DISTRICT

K-8 SCHOOL NO. 5

JURUPA UNIFIED SCHOOL DISTRICT
JURUPA VALLEY, CA
ASBuilt set

P/N 67090-80

LICENSED ARCHITECT — GEORGE M. WIENS — C-14548 — STATE OF CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER — D. MOLANO — No. C-61118 — CIVIL — STATE OF CALIFORNIA

CONSULTANT
EPIC ENGINEERS
CIVIL ENGINEERING · LAND SURVEYING · PLANNING · STORMWATER MANAGEMENT
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FAX 909-792-1889

FILE 33-19
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL 04-114869
AC ___ FLS ___ SS ___
DATE ___

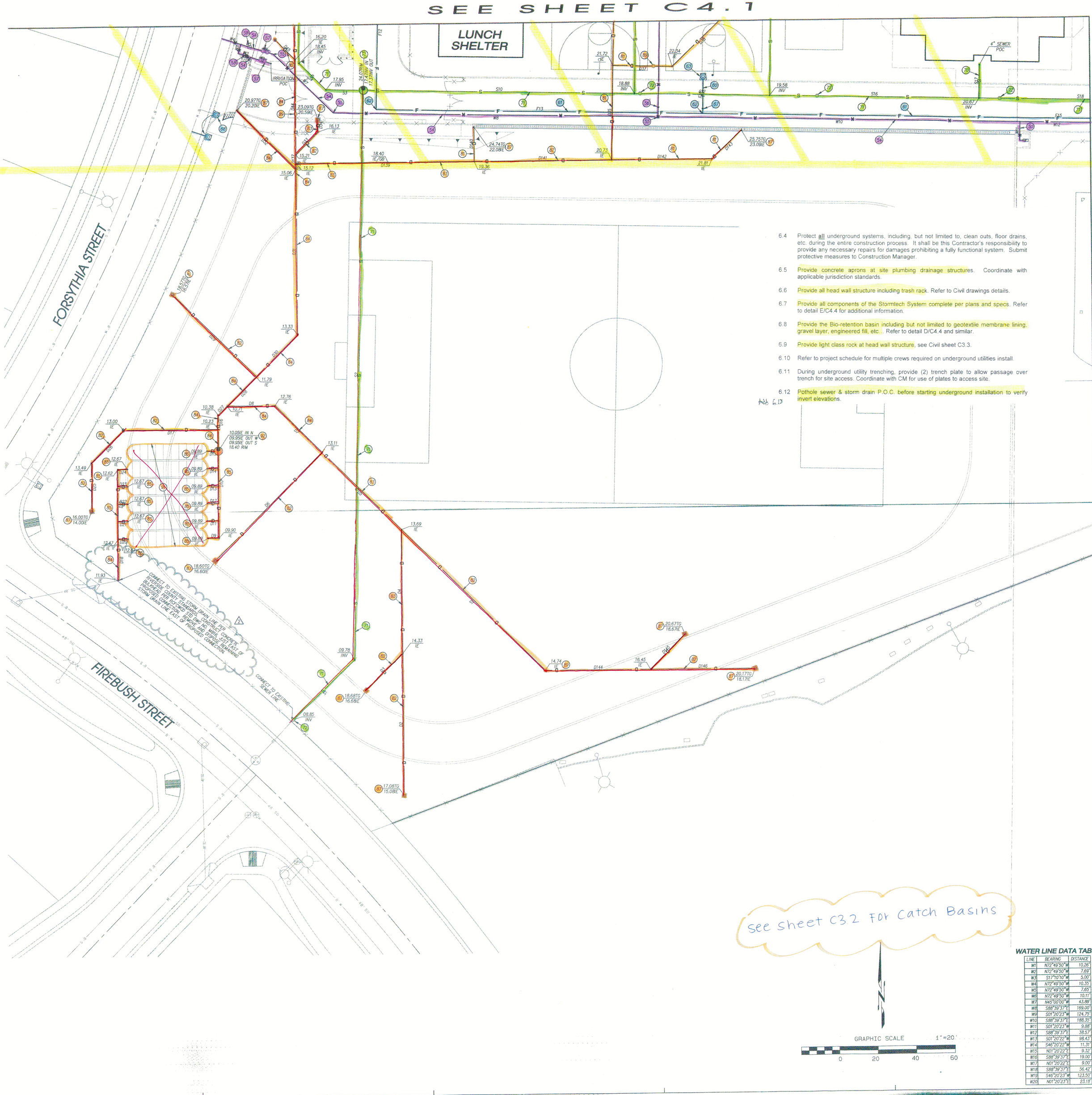
NO	DATE	BY	DESCRIPTION
2	10/17/16	CAW	ADDENDUM 2

REVISIONS

DRAWN: CAW	CHECKED: RAR
DATE: 9/06/2016	SCALE: 1" = 20'
PROJECT NUMBER:	09.101

COMPOSITE UTILITY PLAN

DRAWING NUMBER: C4.1



6.4 Protect all underground systems, including, but not limited to, clean outs, floor drains, etc. during the entire construction process. It shall be this Contractor's responsibility to provide any necessary repairs for damages prohibiting a fully functional system. Submit protective measures to Construction Manager.

6.5 Provide concrete aprons at site plumbing drainage structures. Coordinate with applicable jurisdiction standards.

6.6 Provide all head wall structure including trash rack. Refer to Civil drawings details.

6.7 Provide all components of the Stormtech System complete per plans and specs. Refer to detail E/C4.4 for additional information.

6.8 Provide the Bio-retention basin including but not limited to geotextile membrane lining, gravel layer, engineered fill, etc.. Refer to detail D/C4.4 and similar.

6.9 Provide light class rock at head wall structure, see Civil sheet C3.3.

6.10 Refer to project schedule for multiple crews required on underground utilities install.

6.11 During underground utility trenching, provide (2) trench plate to allow passage over trench for site access. Coordinate with CM for use of plates to access site.

6.12 Pothole sewer & storm drain P.O.C. before starting underground installation to verify invert elevations.

UTILITY CONSTRUCTION NOTES

DOMESTIC WATER & IRRIGATION

(50) FURNISH AND INSTALL 1" SCHEDULE 80 PVC WATER LINE
(51) FURNISH AND INSTALL 2" SCHEDULE 80 PVC WATER LINE
(52) FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC WATER LINE
(53) FURNISH AND INSTALL 3" SCHEDULE 80 PVC WATER LINE
(54) FURNISH AND INSTALL 4" CLASS 150 C900 WATER LINE
(55) FURNISH AND INSTALL MECHANICALLY RESTRAINED JOINT PER DETAIL "A" ON SHEET C4.4
(56) FURNISH AND INSTALL RSGV VALVE PER DETAIL "B" ON SHEET C4.4, VALVE SIZE TO MATCH PIPE
(57) FURNISH AND INSTALL REDUCED PRESSURE BACKFLOW DEVICE PER JCSD STD H-2. SEE SHEET C4.5
(58) FURNISH AND INSTALL, 3" WATER SERVICE METER PER JCSD STD D-4. SEE SHEET C4.5
(59) CONNECT TO EXISTING WATER LINE

FIRE

(60) FURNISH AND INSTALL 6" CLASS 200 C900 PVC WATER LINE
(61) FURNISH AND INSTALL 8" CLASS 200 C900 PVC WATER LINE
(62) FURNISH AND INSTALL MECHANICALLY RESTRAINED JOINT PER DETAIL "A" ON SHEET C4.4
(63) FURNISH AND INSTALL SUPER FIRE HYDRANT PER JCSD STD D-2A. SEE SHEET C4.3
(64) FURNISH AND INSTALL 8" DOUBLE DETECTOR CHECK VALVE ASSY PER JCSD STD H-1. SEE SHEET C4.5
(65) FURNISH AND INSTALL POST INDICATOR VALVE (MUELLER A-20808 OR APPROVED EQUAL)
(66) FURNISH AND INSTALL FIRE DEPARTMENT CONNECTION (CRIKER 6512 OR APPROVED EQUAL)
(67) FURNISH AND INSTALL RSGV VALVE PER DETAIL "B" ON SHEET C4.4, VALVE SIZE TO MATCH PIPE
(68) EXISTING PUBLIC FIRE HYDRANT TO BE RELOCATED OUT OF PROPOSED DRIVEWAY WITH NEW LATERAL. SEE OFFSITE WATER PLANS FOR ADDITIONAL INFORMATION

SEWER

(70) FURNISH AND INSTALL 4" SDR 35 PVC SEWER LINE
(71) FURNISH AND INSTALL 6" SDR 35 PVC SEWER LINE
(72) CONSTRUCT PVC SEWER/STORM DRAIN CLEANOUT PER DETAIL "C" ON SHEET C4.4
(73) CONSTRUCT 4' SEWER MANHOLE PER JCSD STD S-7. SEE SHEET C4.5

STORM DRAIN

(80) FURNISH AND INSTALL 4" SDR 35 PVC STORM DRAIN PIPE
(81) FURNISH AND INSTALL 6" SDR 35 PVC STORM DRAIN PIPE
(82) FURNISH AND INSTALL 8" SDR 35 PVC STORM DRAIN PIPE
(83) FURNISH AND INSTALL 12" SDR 35 PVC STORM DRAIN PIPE
(84) FURNISH AND INSTALL 15" SDR 35 PVC STORM DRAIN PIPE
(85) FURNISH AND INSTALL 15" HDPE WT STORM DRAIN PIPE
(86) FURNISH AND INSTALL 24" HDPE WT STORM DRAIN PIPE
(87) FURNISH AND INSTALL DRAIN PER GRADING PLAN
(88) CONSTRUCT STORM DRAIN MANHOLE PER RCFCWCD STANDARD MANHOLE NO. 1 STD. DWG. NO. MH251 SEE SHEET C4.5
(89) CONSTRUCT PVC SEWER/STORM DRAIN CLEANOUT PER DETAIL "C" ON SHEET C4.4
(90) FURNISH AND INSTALL PERFORATED 6" SDR 35 PVC STORM DRAIN PIPE, SEE DETAIL "D" ON SHEET C4.4 FOR ADDITIONAL INFORMATION
(91) FURNISH AND INSTALL STORMTECH MC-4500 SUBSURFACE CHAMBERS AND INSPECTION PORTS PER MANUFACTURER'S SHOP DRAWINGS DETAILS & SPECS. SEE DETAIL "E" ON SHEET C4.4 FOR ADDITIONAL INFORMATION
(92) CONSTRUCT 48" CONTECH STORMGATE MANHOLE OR APPROVED EQUAL (H20-44 TRAFFIC LOAD RATED). MANHOLE COVERS IN TRAFFIC AREAS SHALL BE H20-44 TRAFFIC LOAD RATED AND MARKED AS SUCH. SEE DETAIL "F" ON SHEET C4.4 FOR ADDITIONAL INFORMATION.

FIRE LINE DATA TABLE

LINE	BEARING	DISTANCE
F1	N88°39'37"W	10.58'
F2	N01°20'23"E	28.20'
F3	S17°10'10"W	65.65'
F4	S72°49'50"E	3.52'
F5	N88°39'37"W	16.87'
F6	S01°20'23"W	21.63'
F7	N45°00'00"E	18.61'
F8	N01°20'23"E	62.31'
F9	S88°39'37"E	3.00'
F10	N01°20'23"E	38.00'
F11	N43°39'37"W	41.66'
F12	N01°20'23"E	80.43'
F13	N88°39'37"W	169.96'
F14	S01°20'23"W	19.39'
F15	N88°39'37"W	370.56'
F16	S01°20'23"W	19.39'
F17	N88°39'37"W	77.53'
F18	S01°20'23"W	114.86'
F19	N09°54'37"W	96.62'
F20	N01°20'23"E	23.38'
F21	S88°39'37"E	34.71'
F22	N01°20'23"E	14.00'
F23	S01°20'23"W	86.09'
F24	S72°49'50"E	77.42'

SEWER LINE DATA TABLE

LINE	BEARING	DISTANCE
S1	N46°20'23"E	46.09'
S2	S01°20'23"W	297.21'
S3	S88°39'37"E	19.38'
S4	S45°00'00"E	19.78'
S5	N00°20'00"W	65.90'
S6	S46°20'23"W	8.37'
S7	N88°39'37"W	26.62'
S8	N46°20'23"E	18.38'
S9	S88°39'37"E	31.81'
S10	N88°39'37"W	141.10'
S11	S01°20'23"W	112.75'
S12	N88°39'37"W	70.33'
S13	S01°20'23"W	92.75'
S14	S01°20'23"W	20.00'
S15	S46°20'23"W	28.28'
S16	N88°39'37"W	105.00'
S17	S01°20'23"W	17.25'
S18	N88°39'37"W	105.75'
S19	S01°20'23"W	80.01'
S20	S43°39'37"E	46.31'
S21	S88°39'37"E	36.82'
S22	S46°20'23"W	93.60'
S23	S01°20'23"W	30.40'
S24		

STORM DRAIN LINE DATA TABLE

LINE	BEARING	DISTANCE
D1	S45°00'00"E	105.07'
D2	S00°00'00"W	74.19'
D3	S45°00'00"W	27.03'
D4	S00°00'00"W	64.64'
D5	S45°00'00"E	57.74'
D6	S45°00'00"W	79.36'
D7	S45°00'00"E	34.53'
D8	N90°00'00"W	25.01'
D9	N90°00'00"W	5.82'
D10	N00°00'00"W	56.67'
D11	N90°00'00"E	5.82'
D12	N90°00'00"W	5.82'
D13	N90°00'00"E	5.82'
D14	N90°00'00"E	5.82'
D15	N90°00'00"E	5.82'
D16	N00°00'00"E	7.39'
D17	N90°00'00"E	49.10'
D18	N00°00'00"E	20.91'
D19	N00°00'00"E	36.87'
D20	N90°00'00"E	5.00'
D21	N90°00'00"E	5.00'
D22	N90°00'00"E	5.00'
D23	N90°00'00"W	5.00'
D24	N90°00'00"E	5.00'
D25	N00°00'00"E	25.24'
D26	N45°00'00"E	23.82'
D27	S45°00'00"W	6.54'
D28	N45°00'00"E	21.67'
D29	S45°00'00"E	61.24'
D30	S45°00'00"W	30.60'
D31	S00°00'00"E	86.70'
D32	S45°00'00"E	43.52'
D33	S45°00'00"W	16.37'
D34	N01°20'23"E	7.05'
D35	S01°20'23"W	48.13'
D36	S01°20'23"W	92.01'
D37	S88°39'37"E	30.91'
D38	N46°20'23"E	40.92'
D39	S01°20'23"W	63.47'
D40	S46°20'23"W	39.54'
D41	S46°20'23"W	20.62'
D42	N88°39'37"W	56.49'
D43	S88°39'37"E	15.33'
D44	S00°00'00"E	49.53'
D45	N45°00'00"W	14.66'
D46	N00°00'00"W	64.03'
D47	N22°30'00"E	17.04'
D48	S22°30'00"W	46.52'
D49	N22°30'00"W	5.88'
D50	S01°20'23"W	40.30'
D51	N45°00'00"E	19.35'
D52	N01°20'23"E	30.08'
D53	S45°00'00"W	58.67'
D54	N01°20'23"E	11.29'
D55	N45°00'00"W	19.56'
D56	N88°39'37"W	16.11'
D57	N01°20'23"E	33.08'
D58	S45°00'00"E	26.88'
D59	N88°39'37"W	16.15'
D60	N45°00'00"E	3.26'
D61	S01°20'23"W	44.03'
D62	N45°00'00"E	10.47'
D63	N01°20'23"E	20.43'
D64	N45°00'00"W	6.23'
D65	N88°39'37"W	61.46'
D66	N01°20'23"E	31.52'
D67	N88°39'37"W	32.46'
D68	N45°00'00"W	18.38'
D69	S01°20'23"W	78.33'
D70	N88°39'37"W	84.00'
D71	N45°00'00"W	18.38'
D72	N88°39'37"W	14.13'
D73	S45°00'00"W	26.78'
D74	S88°39'37"E	16.98'
D75	S45°00'00"W	4.79'
D76	S45°00'00"W	6.63'
D77	S01°20'23"W	50.30'
D78	N88°39'37"W	63.28'
D79	S43°39'37"E	14.39'
D80	N43°39'37"W	10.20'
D81	S01°20'23"W	94.85'
D82	N88°39'37"W	51.62'
D83	S88°39'37"E	13.73'
D84	S01°20'23"W	25.31'
D85	S88°39'37"E	60.85'
D86	S01°20'23"W	17.70'
D87	S88°39'37"E	38.11'
D88	N88°39'37"W	4.92'
D89	S01°20'23"W	2.41'
D90	S01°20'23"W	31.57'
D91	N88°39'37"W	48.10'
D92	N01°20'23"E	90.61'
D93	S46°20'23"W	19.16'
D94	S88°39'37"E	15.37'
D95	N43°39'37"W	15.39'
D96	N21°09'37"W	8.55'
D97	S68°50'23"W	8.77'
D98	N21°09'37"W	11.16'
D99	S68°50'23"W	29.62'
D100	N21°09'37"W	7.54'
D101	S68°50'23"W	38.97'
D102	N21°09'37"W	44.94'
D103	N68°50'23"E	47.41'
D104	S21°09'37"E	71.59'
D105	S23°50'23"W	5.35'
D106	N21°09'37"W	7.51'
D107	S68°50'23"W	15.73'
D108	N21°09'37"W	25.95'
D109	S01°20'23"W	14.78'
D110	S46°20'23"W	12.78'
D111	N01°20'23"E	13.10'
D112	S43°39'37"E	5.68'
D113	S01°20'23"W	24.01'
D114	S01°20'23"W	37.06'
D115	N32°48'53"E	39.69'
D116	S88°39'37"E	34.09'
D117	N01°20'23"E	21.42'
D118	S88°39'37"E	13.25'
D119	N01°20'23"E	71.27'
D120	S88°39'37"E	4.40'
D121	N01°20'23"E	15.26'
D122	N01°20'23"E	40.74'
D123	N88°39'37"W	4.40'
D124	N01°20'23"E	11.98'
D125	N69°28'07"E	161.68'
D126	S88°39'37"E	42.85'
D127	N01°20'23"E	47.43'
D128	N43°01'44"E	11.72'
D129	N88°39'37"W	73.17'
D130	S43°39'37"E	56.94'
D131	S01°20'23"W	53.37'
D132	S43°39'37"E	39.89'
D133	S88°39'37"E	15.32'
D134	S01°20'23"W	25.29'
D135	N88°39'37"W	36.00'
D136	N88°39'37"W	9.60'
D137	S00°00'00"W	4.53'
D138	N00°00'00"E	2.81'
D139	N90°00'00"E	92.64'
D140	S00°00'00"E	18.63'
D141	N90°00'00"W	71.45'
D142	N90°00'00"W	52.42'
D143	N46°20'23"E	21.40'
D144	N90°00'00"W	54.46'
D145	S45°00'00"W	25.71'
D146	N90°00'00"W	54.68'
D147	S67°30'00"W	17.46'
D148	N88°39'37"W	8.39'
D149	N01°20'23"E	11.91'
D150	S43°39'37"E	35.79'
D151	S01°20'23"W	3.19'
D152	S01°20'23"W	66.18'
D153	S46°20'23"W	51.78'
D154	N01°20'23"E	5.25'
D155	N01°20'23"E	32.20'
D156	S41°49'06"W	40.55'
D157	S01°20'23"W	5.00'
D158	N01°20'23"E	10.25'
D159	S88°39'37"E	15.25'
D160	S46°20'23"W	16.97'
D161	N46°20'23"E	20.98'
D162	N43°39'37"W	32.65'
D163	N29°53'17"E	7.16'
D164	N88°39'41"W	27.82'
D165	S43°39'37"E	12.31'
D166	N46°20'23"E	30.90'
D167	S46°20'23"W	20.30'
D168	N88°39'37"W	9.00'

WATER LINE DATA TABLE

LINE	BEARING	DISTANCE
W1	N72°49'50"W	10.26'
W2	N72°49'50"W	7.69'
W3	S17°10'10"W	5.00'
W4	N72°49'50"W	10.35'
W5	N72°49'50"W	7.65'
W6	N72°49'50"W	10.11'
W7	N45°00'00"W	43.89'
W8	S88°39'37"E	169.00'
W9	S01°20'23"W	124.75'
W10	S88°39'37"E	185.35'
W11	S01°20'23"W	9.88'
W12	S88°39'37"E	38.57'
W13	S01°20'23"W	98.43'
W14	S46°20'23"W	11.31'
W15	N01°20'23"E	9.32'
W16	S88°39'37"E	19.00'
W17	N01°20'23"E	9.00'
W18	S88°39'37"E	56.42'
W19	S46°20'23"W	123.50'
W20	N01°20'23"E	23.18'

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JURUPA UNIFIED SCHOOL DISTRICT

K-8 SCHOOL NO. 5

JURUPA UNIFIED SCHOOL DISTRICT
JURUPA VALLEY, CA

PTN 67090-80

LICENSED ARCHITECT
GEORGE M. WIENS
C-14648
Ren Date: 08/31/17
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
TROY D. MOLANDER
No. C-59119
Exp. 6-30-17
CIVIL
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FILE 33-19
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
APPL 04-114869
AC ____ FLS ____ SS ____
DATE ____

NO	DATE	BY	DESCRIPTION
2	10/17/16	CAW	ADDENDUM 2

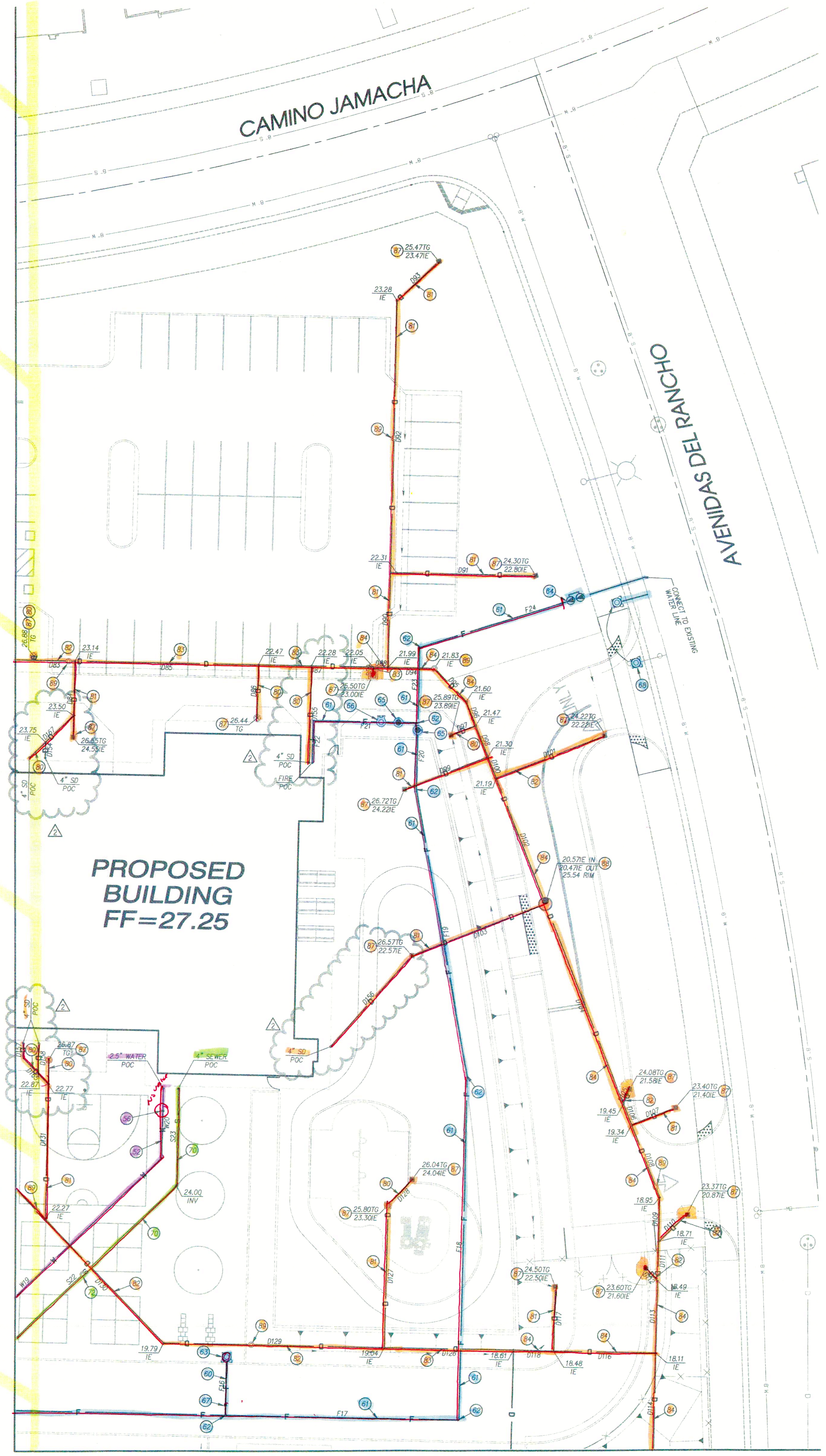
REVISIONS

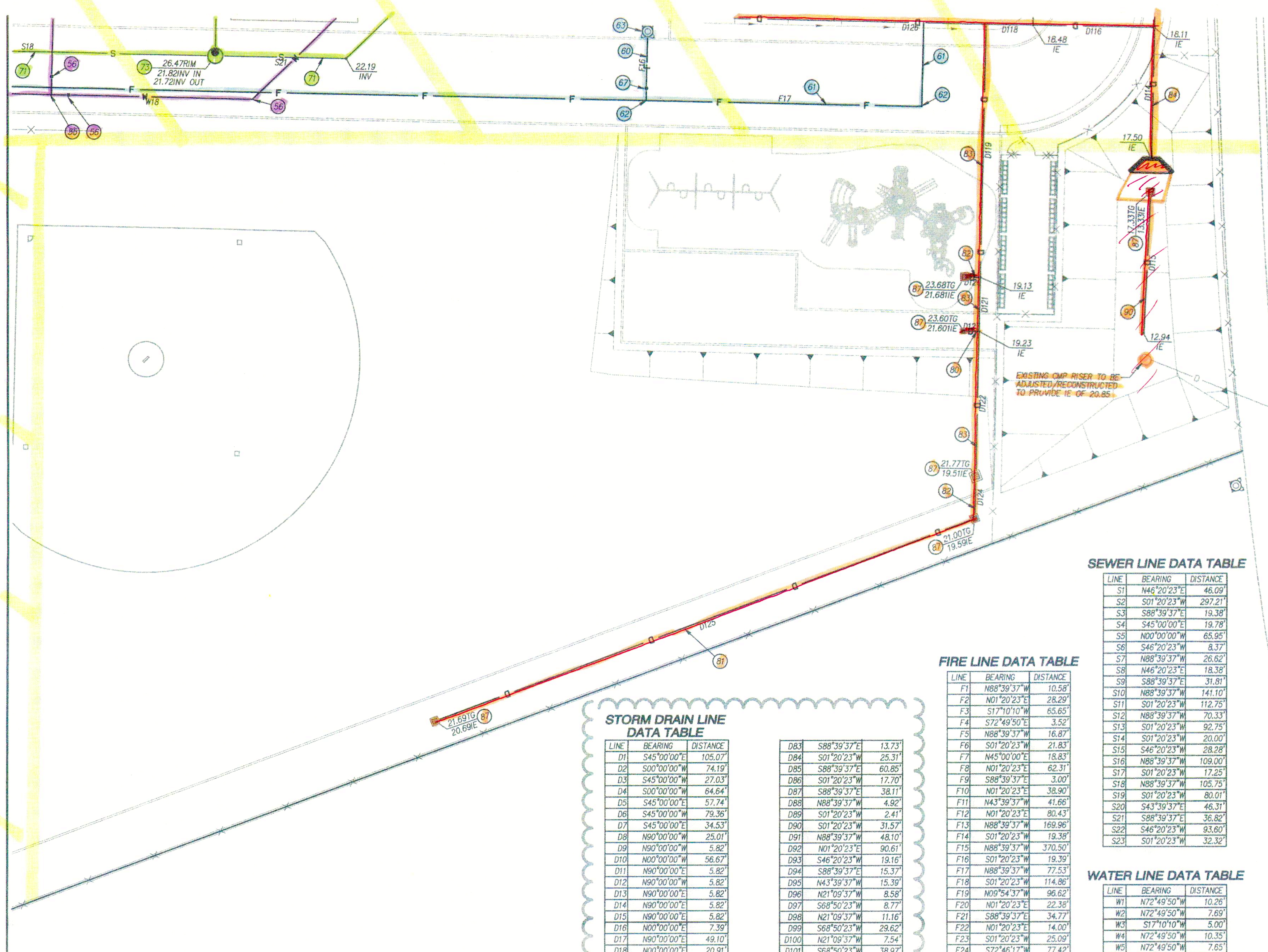
DRAWN: CAW	CHECKED: RAR
DATE: 9/06/2016	SCALE: 1" = 20'
PROJECT NUMBER: 09.101	

COMPOSITE UTILITY PLAN

DRAWING NUMBER: C4.2

PROJECT DESC: PATH: J:\09.101 JUSD K-8 No. 3\09.101 Jurupa K-8 No. 3.pro PLOT DATE/TIME: Mon Oct 17,2016 / 15:48:17

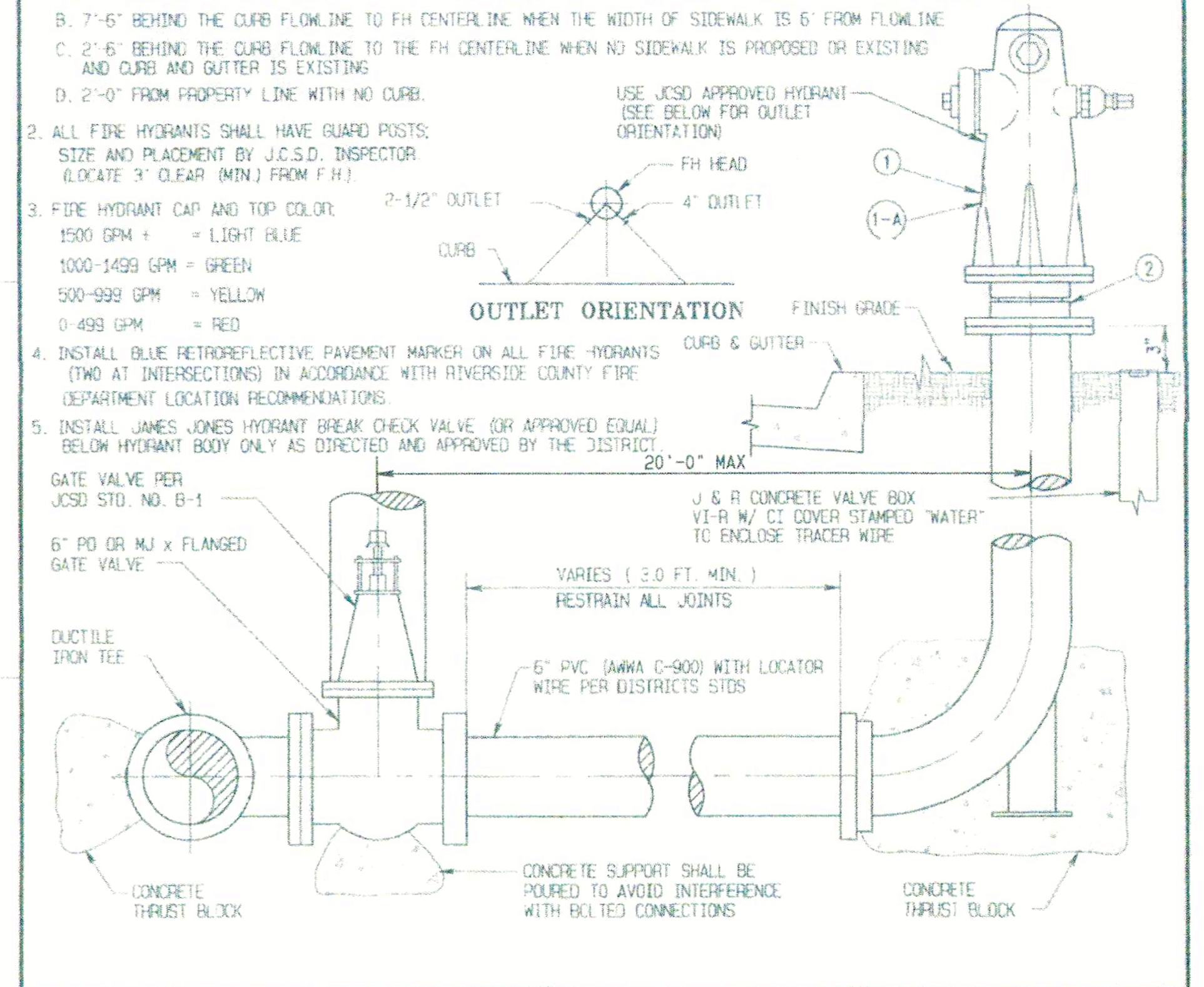




corrected By Add #2

06/06/2011

1. FIRE HYDRANT SHALL BE PLACED:
   A. 2'-6" BEHIND THE CURB FLOWLINE TO THE FH CENTERLINE WHEN THE SIDEWALK IS ADJACENT TO R/W OR MEANDERS
   B. 7'-6" BEHIND THE CURB FLOWLINE TO FH CENTERLINE WHEN THE WIDTH OF SIDEWALK IS 6' FROM FLOWLINE
   C. 2'-6" BEHIND THE CURB FLOWLINE TO THE FH CENTERLINE WHEN NO SIDEWALK IS PROPOSED OR EXISTING AND CURB AND GUTTER IS EXISTING
   D. 2'-0" FROM PROPERTY LINE WITH NO CURB.
2. ALL FIRE HYDRANTS SHALL HAVE GUARD POSTS; SIZE AND PLACEMENT BY J.C.S.D. INSPECTOR. (LOCATE 3' CLEAR (MIN.) FROM F.H.)
3. FIRE HYDRANT CAP AND TOP COLOR:
   1500 GPM + = LIGHT BLUE
   1000-1499 GPM = GREEN
   500-999 GPM = YELLOW
   0-499 GPM = RED
4. INSTALL BLUE RETROREFLECTIVE PAVEMENT MARKER ON ALL FIRE HYDRANTS (TWO AT INTERSECTIONS) IN ACCORDANCE WITH RIVERSIDE COUNTY FIRE DEPARTMENT LOCATION RECOMMENDATIONS.
5. INSTALL JAMES JONES HYDRANT BREAK CHECK VALVE (OR APPROVED EQUAL) BELOW HYDRANT BODY ONLY AS DIRECTED AND APPROVED BY THE DISTRICT.



ITEM	DESCRIPTION
* (1)	STANDARD FIRE HYDRANT, HEAD & FLUTED SPOOL COMPLETE. 1-4" STEAMER HOSE OUTLET & 1-2 1/2 HOSE OUTLET, 6 HOLE PATTERN, JAMES JONES MODEL J-3700, W/BRONZE OR PLASTIC CAPS AND CHAIN.
(1-A)	SUPER FIRE HYDRANT, COMPLETE; 1-4" STEAMER HOSE OUTLET AND 2-2 1/2" HOSE OUTLETS, 8 HOLE PATTERN, JAMES JONES MODEL J-3765, W/BRONZE OR PLASTIC CAPS AND CHAIN.
(2)	6" DIA. C.I. BREAK-OFF SPOOL, 6" LONG, ONE END FLG'D. TO MATE W/6" A.S.A. 150# SLIP-ON FLG., OTHER END FLG'D. TO MATE HYDRANT SPOOL. (SHOP FABRICATED).

* UNLESS A "SUPER" FIRE HYDRANT IS DESIGNATED ON THE DRAWINGS, FIRE HYDRANT SHALL BE "STANDARD" PER (1) ITEM WHERE A "SUPER" FIRE HYDRANT IS SPECIFIED, HYDRANT SHALL BE PER ITEM. (1-A)

JURUPA COMMUNITY SERVICES DISTRICT

SCALE: NONE
DATE: JULY, 2010
APPROVED BY: R.C.E. 26979
REV.

TYPICAL 6" FIRE HYDRANT INSTALLATION - PVC, DI PIPE

ALBERT A. WEBB ASSOCIATES
CONSULTING ENGINEERS
RIVERSIDE CALIFORNIA

DRAWING NO. G-2 G-2A
W.O. 04-0358

see sheet C6.1 From Add #2 For All offsite water work

STORM DRAIN LINE DATA TABLE

LINE	BEARING	DISTANCE
D1	S45°00'00"E	105.07'
D2	S00°00'00"W	74.19'
D3	S45°00'00"W	27.03'
D4	S00°00'00"W	64.64'
D5	S45°00'00"E	57.74'
D6	S45°00'00"W	79.36'
D7	S45°00'00"E	34.53'
D8	N90°00'00"W	25.01'
D9	N90°00'00"W	5.82'
D10	N00°00'00"W	56.67'
D11	N90°00'00"E	5.82'
D12	N90°00'00"W	5.82'
D13	N90°00'00"E	5.82'
D14	N90°00'00"E	5.82'
D15	N90°00'00"E	5.82'
D16	N00°00'00"E	7.39'
D17	N90°00'00"E	49.10'
D18	N00°00'00"E	20.91'
D19	N00°00'00"E	36.87'
D20	N90°00'00"E	5.00'
D21	N90°00'00"E	5.00'
D22	N90°00'00"W	5.00'
D23	N90°00'00"W	5.00'
D24	N90°00'00"E	5.00'
D25	N00°00'00"W	25.24'
D26	N45°00'00"E	23.80'
D27	S45°00'00"W	6.54'
D28	N45°00'00"E	21.67'
D29	S45°00'00"E	61.24'
D30	S45°00'00"W	30.60'
D31	S00°00'00"E	86.70'
D32	S45°00'00"E	43.52'
D33	S45°00'00"W	16.37'
D34	N01°20'23"E	7.05'
D35	S01°20'23"W	49.13'
D36	S01°20'23"W	92.01'
D37	S88°39'37"E	30.91'
D38	N46°20'23"E	40.92'
D39	S01°20'23"W	63.47'
D40	S46°20'23"W	39.54'
D41	S46°20'23"W	20.62'
D42	N88°39'37"W	56.49'
D43	S88°39'37"E	15.33'
D44	S00°00'00"E	49.53'
D45	N45°00'00"W	14.66'
D46	N00°00'00"W	64.03'
D47	N22°30'00"E	17.04'
D48	S22°30'00"W	46.52'
D49	N22°30'00"W	5.88'
D50	S01°20'23"W	40.30'
D51	N45°00'00"E	19.35'
D52	N01°20'23"E	30.08'
D53	S45°00'00"W	58.67'
D54	N01°20'23"E	11.29'
D55	N45°00'00"W	19.56'
D56	N88°39'37"W	16.11'
D57	N01°20'23"E	33.08'
D58	S45°00'00"E	26.88'
D59	N88°39'37"W	16.15'
D60	N45°00'00"E	3.26'
D61	S45°00'00"W	44.03'
D62	N45°00'00"E	10.47'
D63	N01°20'23"E	20.43'
D64	N45°00'00"W	6.23'
D65	N88°39'37"W	61.46'
D66	N01°20'23"E	31.52'
D67	N88°39'37"W	32.46'
D68	N45°00'00"W	18.38'
D69	S01°20'23"W	78.33'
D70	N88°39'37"W	84.00'
D71	N45°00'00"W	18.38'
D72	N88°39'37"W	14.13'
D73	S45°00'00"W	26.78'
D74	S88°39'37"E	16.98'
D75	S45°00'00"W	4.77'
D76	S45°00'00"W	6.63'
D77	S01°20'23"W	50.30'
D78	N88°39'37"W	63.28'
D79	S43°39'37"E	14.39'
D80	N43°39'37"W	10.20'
D81	S01°20'23"W	94.85'
D82	N88°39'37"W	67.62'
D83	S88°39'37"E	13.73'
D84	S01°20'23"W	25.31'
D85	S88°39'37"E	60.85'
D86	S01°20'23"W	17.70'
D87	S88°39'37"E	38.11'
D88	N88°39'37"W	4.92'
D89	S01°20'23"W	2.41'
D90	S01°20'23"W	31.57'
D91	N88°39'37"W	48.10'
D92	N01°20'23"E	90.61'
D93	S46°20'23"W	19.16'
D94	S88°39'37"E	15.37'
D95	N43°39'37"W	15.39'
D96	N21°09'37"W	8.58'
D97	S68°50'23"W	8.77'
D98	N21°09'37"W	11.16'
D99	S68°50'23"W	29.62'
D100	N21°09'37"W	7.54'
D101	S68°50'23"W	38.97'
D102	N21°09'37"W	44.94'
D103	N68°50'23"E	47.41'
D104	S21°09'37"E	71.59'
D105	S23°50'23"W	5.35'
D106	N21°09'37"W	7.51'
D107	S68°50'23"W	15.73'
D108	N21°09'37"W	25.95'
D109	S01°20'23"W	14.78'
D110	S46°20'23"W	12.78'
D111	N01°20'23"E	13.10'
D112	S43°39'37"E	5.68'
D113	S01°20'23"W	24.01'
D114	S01°20'23"W	37.06'
D115	N02°48'53"E	39.69'
D116	S88°39'37"E	34.09'
D117	N01°20'23"E	21.42'
D118	S88°39'37"E	13.25'
D119	N01°20'23"E	71.27'
D120	S88°39'37"E	4.40'
D121	N01°20'23"E	15.26'
D122	N01°20'23"E	40.74'
D123	N88°39'37"W	4.40'
D124	N01°20'23"E	11.98'
D125	N69°28'07"E	161.68'
D126	S88°39'37"E	42.85'
D127	N01°20'23"E	47.43'
D128	N43°01'44"E	11.72'
D129	N88°39'37"W	73.17'
D130	S43°39'37"E	56.94'
D131	S01°20'23"W	53.37'
D132	S43°39'37"E	39.89'
D133	S88°39'37"E	15.32'
D134	S01°20'23"W	25.29'
D135	N88°39'37"W	36.00'
D136	N88°39'37"W	9.60'
D137	S00°00'00"W	4.53'
D138	N00°00'00"E	2.81'
D139	N90°00'00"E	92.64'
D140	S00°00'00"E	18.03'
D141	N90°00'00"W	71.45'
D142	N90°00'00"W	52.42'
D143	N46°20'23"E	21.40'
D144	N90°00'00"W	54.46'
D145	S45°00'00"W	25.71'
D146	N90°00'00"W	54.68'
D147	S67°30'00"W	17.49'
D148	N88°39'37"W	8.39'
D149	N01°20'23"E	11.91'
D150	S43°39'37"E	35.79'
D151	S01°20'23"W	5.19'
D152	S01°20'23"W	66.18'
D153	S46°20'23"W	51.78'
D154	N01°20'23"E	5.25'
D155	N01°20'23"E	32.20'
D156	S41°49'06"W	40.55'
D157	S01°20'23"W	5.00'
D158	N01°20'23"E	10.25'
D159	S88°39'37"E	15.25'
D160	S46°20'23"W	16.97'
D161	N46°20'23"E	20.98'
D162	N43°39'37"W	32.65'
D163	N29°53'17"E	7.16'
D164	N88°39'41"W	27.62'
D165	S43°39'37"E	12.31'
D166	N46°20'23"E	30.90'
D167	S46°20'23"W	20.30'
D168	N88°39'37"W	9.00'

see sheet C3.3 For catch Basins

FIRE LINE DATA TABLE

LINE	BEARING	DISTANCE
F1	N88°39'37"W	10.58'
F2	N01°20'23"E	28.29'
F3	S17°10'10"W	65.65'
F4	S72°49'50"E	3.52'
F5	N88°39'37"W	16.87'
F6	S01°20'23"W	21.83'
F7	N45°00'00"E	18.83'
F8	N01°20'23"E	62.31'
F9	S88°39'37"E	3.00'
F10	N01°20'23"E	38.90'
F11	N43°39'37"W	41.66'
F12	N01°20'23"E	80.43'
F13	N88°39'37"W	169.96'
F14	S01°20'23"W	19.38'
F15	N88°39'37"W	370.50'
F16	S01°20'23"W	19.39'
F17	N88°39'37"W	77.53'
F18	S01°20'23"W	114.86'
F19	N09°54'37"W	96.62'
F20	N01°20'23"E	22.38'
F21	S88°39'37"E	34.77'
F22	N01°20'23"E	14.00'
F23	S01°20'23"W	25.09'
F24	S72°46'17"W	77.42'

SEWER LINE DATA TABLE

LINE	BEARING	DISTANCE
S1	N46°20'23"E	46.09'
S2	S01°20'23"W	297.21'
S3	S88°39'37"E	19.38'
S4	S45°00'00"E	19.78'
S5	N00°00'00"W	65.95'
S6	S46°20'23"W	8.37'
S7	N88°39'37"W	26.62'
S8	N46°20'23"E	18.38'
S9	S88°39'37"E	31.81'
S10	N88°39'37"W	141.10'
S11	S01°20'23"W	112.75'
S12	N88°39'37"W	70.33'
S13	S01°20'23"W	92.75'
S14	S01°20'23"W	20.00'
S15	S46°20'23"W	28.28'
S16	N88°39'37"W	109.00'
S17	S01°20'23"W	17.25'
S18	N88°39'37"W	105.75'
S19	S01°20'23"W	80.01'
S20	S43°39'37"E	46.31'
S21	S88°39'37"E	36.82'
S22	S46°20'23"W	93.60'
S23	S01°20'23"W	32.32'

WATER LINE DATA TABLE

LINE	BEARING	DISTANCE
W1	N72°49'50"W	10.26'
W2	N72°49'50"W	7.69'
W3	S17°10'10"W	5.00'
W4	N72°49'50"W	10.35'
W5	N72°49'50"W	7.65'
W6	N72°49'50"W	10.11'
W7	N45°00'00"W	43.89'
W8	S88°39'37"E	169.00'
W9	S01°20'23"W	124.75'
W10	S88°39'37"E	188.35'
W11	S01°20'23"W	9.88'
W12	S88°39'37"E	38.57'
W13	S01°20'22"W	98.43'
W14	S46°20'22"W	11.31'
W15	N01°20'22"E	9.32'
W16	S88°39'37"E	19.00'
W17	N01°20'22"E	9.00'
W18	S88°39'37"E	56.42'
W19	S46°20'23"W	123.50'
W20	N01°20'23"E	23.18'

UTILITY CONSTRUCTION NOTES

DOMESTIC WATER & IRRIGATION

(50) FURNISH AND INSTALL 1" SCHEDULE 80 PVC WATER LINE
(51) FURNISH AND INSTALL 2" SCHEDULE 80 PVC WATER LINE
(52) FURNISH AND INSTALL 2-1/2" SCHEDULE 80 PVC WATER LINE
(53) FURNISH AND INSTALL 3" SCHEDULE 80 PVC WATER LINE
(54) FURNISH AND INSTALL 4" CLASS 150 C900 WATER LINE
(55) FURNISH AND INSTALL MECHANICALLY RESTRAINED JOINT PER DETAIL "A" ON SHEET C4.4
(56) FURNISH AND INSTALL RSGV VALVE PER DETAIL "B" ON SHEET C4.4, VALVE SIZE TO MATCH PIPE
(57) FURNISH AND INSTALL REDUCED PRESSURE BACKFLOW DEVICE PER JCSD STD H-2. SEE SHEET C4.5
(58) FURNISH AND INSTALL, 3" WATER SERVICE METER PER JCSD STD D-4. SEE SHEET C4.5
(59) CONNECT TO EXISTING WATER LINE

FIRE

(60) FURNISH AND INSTALL 6" CLASS 200 C900 PVC WATER LINE
(61) FURNISH AND INSTALL 8" CLASS 200 C900 PVC WATER LINE
(62) FURNISH AND INSTALL MECHANICALLY RESTRAINED JOINT PER DETAIL "A" ON SHEET C4.4
(63) FURNISH AND INSTALL SUPER FIRE HYDRANT PER JCSD STD G-2A. SEE SHEET C4.3
(64) FURNISH AND INSTALL 8" DOUBLE DETECTOR CHECK VALVE ASSY PER JCSD STD H-1. SEE SHEET C4.5
(65) FURNISH AND INSTALL POST INDICATOR VALVE (MUELLER A-20808 OR APPROVED EQUAL)
(66) FURNISH AND INSTALL FIRE DEPARTMENT CONNECTION (CROKER 6512 OR APPROVED EQUAL)
(67) FURNISH AND INSTALL RSGV VALVE PER DETAIL "B" ON SHEET C4.4, VALVE SIZE TO MATCH PIPE
(68) EXISTING PUBLIC FIRE HYDRANT TO BE RELOCATED OUT OF PROPOSED DRIVEWAY WITH NEW LATERAL. SEE OFFSITE WATER PLANS FOR ADDITIONAL INFORMATION

SEWER

(70) FURNISH AND INSTALL 4" SDR 35 PVC SEWER LINE
(71) FURNISH AND INSTALL 6" SDR 35 PVC SEWER LINE
(72) CONSTRUCT PVC SEWER/STORM DRAIN CLEANOUT PER DETAIL "C" ON SHEET C4.4
(73) CONSTRUCT 4' SEWER MANHOLE PER JCSD STD S-7. SEE SHEET C4.5

STORM DRAIN

(80) FURNISH AND INSTALL 4" SDR 35 PVC STORM DRAIN PIPE
(81) FURNISH AND INSTALL 6" SDR 35 PVC STORM DRAIN PIPE
(82) FURNISH AND INSTALL 8" SDR 35 PVC STORM DRAIN PIPE
(83) FURNISH AND INSTALL 12" SDR 35 PVC STORM DRAIN PIPE
(84) FURNISH AND INSTALL 15" SDR 35 PVC STORM DRAIN PIPE
(85) FURNISH AND INSTALL 15" HDPE WT STORM DRAIN PIPE
(86) FURNISH AND INSTALL 24" HDPE WT STORM DRAIN PIPE
(87) FURNISH AND INSTALL DRAIN PER GRADING PLAN
(88) CONSTRUCT STORM DRAIN MANHOLE PER RCFCWCD STANDARD MANHOLE NO. 1 STD. DWG. NO. MH251 SEE SHEET C4.5
(89) CONSTRUCT PVC SEWER/STORM DRAIN CLEANOUT PER DETAIL "C" ON SHEET C4.4
(90) FURNISH AND INSTALL PERFORATED 6" SDR 35 PVC STORM DRAIN PIPE, SEE DETAIL "D" ON SHEET C4.4 FOR ADDITIONAL INFORMATION
(91) FURNISH AND INSTALL STORMTECH MC-4500 SUBSURFACE CHAMBERS AND INSPECTION PORTS PER MANUFACTURER'S SHOP DRAWINGS DETAILS & SPECS. SEE DETAIL "E" ON SHEET C4.4 FOR ADDITIONAL INFORMATION
(92) CONSTRUCT 48" CONTECH STORMGATE MANHOLE OR APPROVED EQUAL (HS20-44 TRAFFIC LOAD RATED). MANHOLE COVERS IN TRAFFIC AREAS SHALL BE HS20-44 TRAFFIC LOAD RATED AND MARKED AS SUCH. SEE DETAIL "F" ON SHEET C4.4 FOR ADDITIONAL INFORMATION.

GRAPHIC SCALE 1"=20'
0 20 40 60

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K-8 SCHOOL NO. 5
JURUPA UNIFIED SCHOOL DISTRICT
JURUPA VALLEY, CA

PTN 67090-80

LICENSED ARCHITECT GEORGE M. WIENS C-14546 Ren Date 08/31/17 STATE OF CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER ROY O. MCLAIN No. C46116 Exp. 6-30-17 CIVIL STATE OF CALIFORNIA

CONSULTANT
EPIC ENGINEERS
CIVIL ENGINEERING PLANNING LAND SURVEYING STORMWATER MANAGEMENT
101 E. REDLANDS BOULEVARD SUITE 146 REDLANDS, CA 92373
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DATE ___

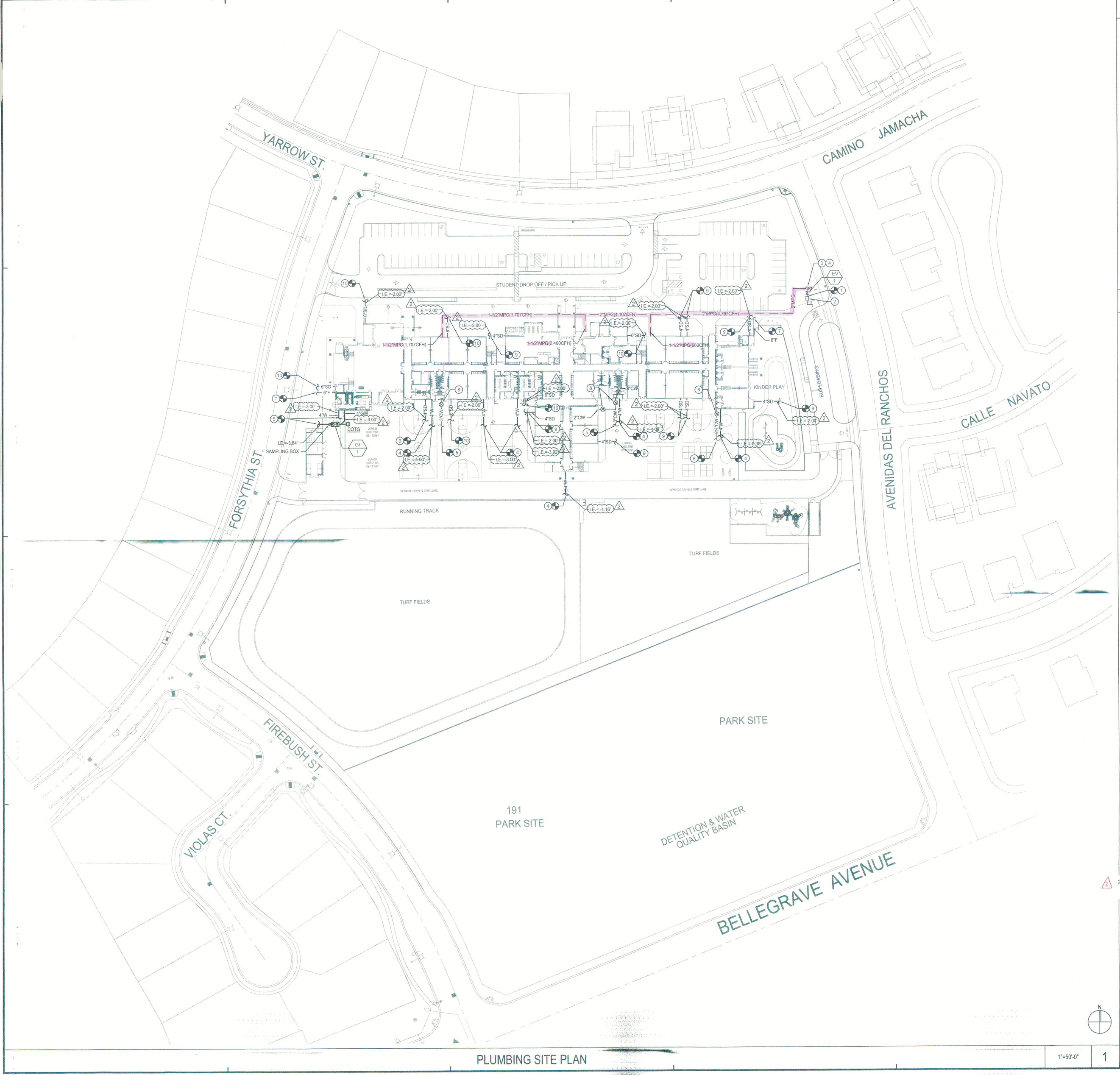
NO	DATE	BY	DESCRIPTION
2	10/17/16	CAW	ADDENDUM 2

REVISIONS

DRAWN: CAW CHECKED: RAR
DATE: 9/06/2016 SCALE: 1" = 20'
PROJECT NUMBER: 09.101

COMPOSITE UTILITY PLAN

DRAWING NUMBER: C4.3



PLUMBING SITE PLAN 1"=50'-0" 1

KEYNOTES

1. P.O.C 5"MPG (4,843 CFH) TO GAS COMPANY PROVIDED METER.
   TOTAL LOAD = 4,843 CFH.
   TOTAL DEVELOPED LENGTH = 1,000 LF
   MEDIUM PRESSURE GAS PIPE SIZING IS BASED ON 2013 CPC TABLE 1216.2(b).
2. NEW GAS METER AND SERVICE BY SOUTHERN CALIFORNIA GAS COMPANY.
3. 2" MPG PSI (4,843 CFH) DOWN TO BELOW GRADE. CONTRACTOR SHALL PROVIDE SHUT-OFF PLUG VALVE ON DROP ABOVE GRADE.
4. P.O.C 4"W WITH CIVIL, SEE CIVIL DRAWINGS FOR CONTINUATION.
5. P.O.C 3"CW WITH CIVIL, SEE CIVIL DRAWINGS FOR CONTINUATION.
6. P.O.C 2-1/2"CW WITH CIVIL, SEE CIVIL DRAWINGS FOR CONTINUATION.
7. P.O.C 6"F WITH CIVIL, SEE CIVIL DRAWINGS FOR CONTINUATION.
8. PROVIDE SHUT-OFF BALL VALVE IN CONCRETE YARD BOX WITH CAST IRON TRAFFIC COVER.
9. P.O.C. 4"SD WITH CIVIL, SEE CIVIL DRAWINGS FOR CONTINUATION.
10. P.O.C. 6"SD WITH CIVIL, SEE CIVIL DRAWINGS FOR CONTINUATION.

GENERAL NOTES

1. ALL PIPES SHALL BE TERMINATED AT 5'-0" FROM BUILDING EXCEPT GAS PIPING, CONTINUATION SHALL BE BY CIVIL.
2. SEE PLUMBING FLOOR PLANS FOR BUILDING UTILITY LATERAL.
3. MEDIUM PRESSURE GAS PIPE SIZE BASED ON 2013 C.P.C., TABLE 12-11
4. THESE DRAWINGS ARE DIAGRAMMATIC TO THE EXTENT THAT SOME ITEMS ARE SHOWN ON PLANS IN A MANNER TO PROVIDE CLARITY. ACTUAL FIELD ROUTING AND INSTALLATION SHALL BE PROVIDED IN COORDINATION WITH ALL OTHER TRADES. FIELD CONDITIONS AND AS REQUIRED TO PROPERLY INTERFACE WITH STRUCTURE AND OTHER SYSTEMS TO ACCOMPLISH THE INTENT OF THIS DESIGN. FIELD VERIFY ALL DIMENSIONS, LOCATIONS AND CONDITIONS PRIOR TO COMMENCEMENT OF WORK AND ORDERING OF MATERIALS. MAKE ALL ACCOMMODATIONS NECESSARY TO PROVIDE COMPLETE AND FULLY FUNCTIONING SYSTEMS AS INTENDED BY THESE DRAWINGS AND SPECIFICATIONS.
5. CONTRACTOR SHALL COORDINATE NEW GAS PIPING SHOWN WITH NEW SITE UTILITIES. CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY PIPING, TRANSITIONS, FITTINGS AND COMPONENTS TO AVOID ALL NEW SITE UTILITIES AT NO EXTRA COST TO THE OWNER.
6. MEDIUM PRESSURE GAS IS BASED ON 5 PSI. PIPING SHALL BE INSTALLED A MIN. OF 18" BELOW GRADE. CONTRACTOR TO PROVIDE TRACER WIRE AND WARNING.
7. REFER TO CIVIL DRAWING PLAN FOR A COMPLETE NEW UNDERGROUND UTILITIES PLANS FOR COORDINATION AND ADDITIONAL INFORMATION.
8. REFER TO CIVIL FOR UNDERGROUND FIRE LINE, PIV, FIRE DEPT. CONNECTION AND DETECTOR CHECK.
9. CONTRACTOR SHALL COORDINATE ALL INVERT ELEVATIONS SHOWN ON PLUMBING SITE PLAN WITH CIVIL PLANS. WHERE INVERT ELEVATIONS ARE INDICATED AT A HIGHER LEVEL THAN THOSE INDICATED ON CIVIL PLANS, CONTRACTOR SHALL PROVIDE ALL NECESSARY TRANSITIONS, ELBOWS, ETC. FOR JOINING BOTH SYSTEMS.
10. CONTRACTOR SHALL PROVIDE TRENCHING FOR GAS SERVICE BY GAS CO. PER GAS CO. STD SPECIFICATIONS. LOCATIONS OF TRENCHES SHALL BE AS DESIGNATED BY GAS CO. CONTACT, GAS CO., TO COORDINATE REQUIREMENTS.

2.135 DRAWING P1.1

A. Revise as indicated in the clouded area labeled Delta 2 on the attached P1.1.

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JURUPA UNIFIED SCHOOL DISTRICT

PTN 67090-80

LICENSED ARCHITECT — GEORGE M. MIENO — C-14546 — Ren. Date: 08/31/17 — STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER — MECHANICAL — STATE OF CALIFORNIA

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FILE: 33-19

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DATE ____

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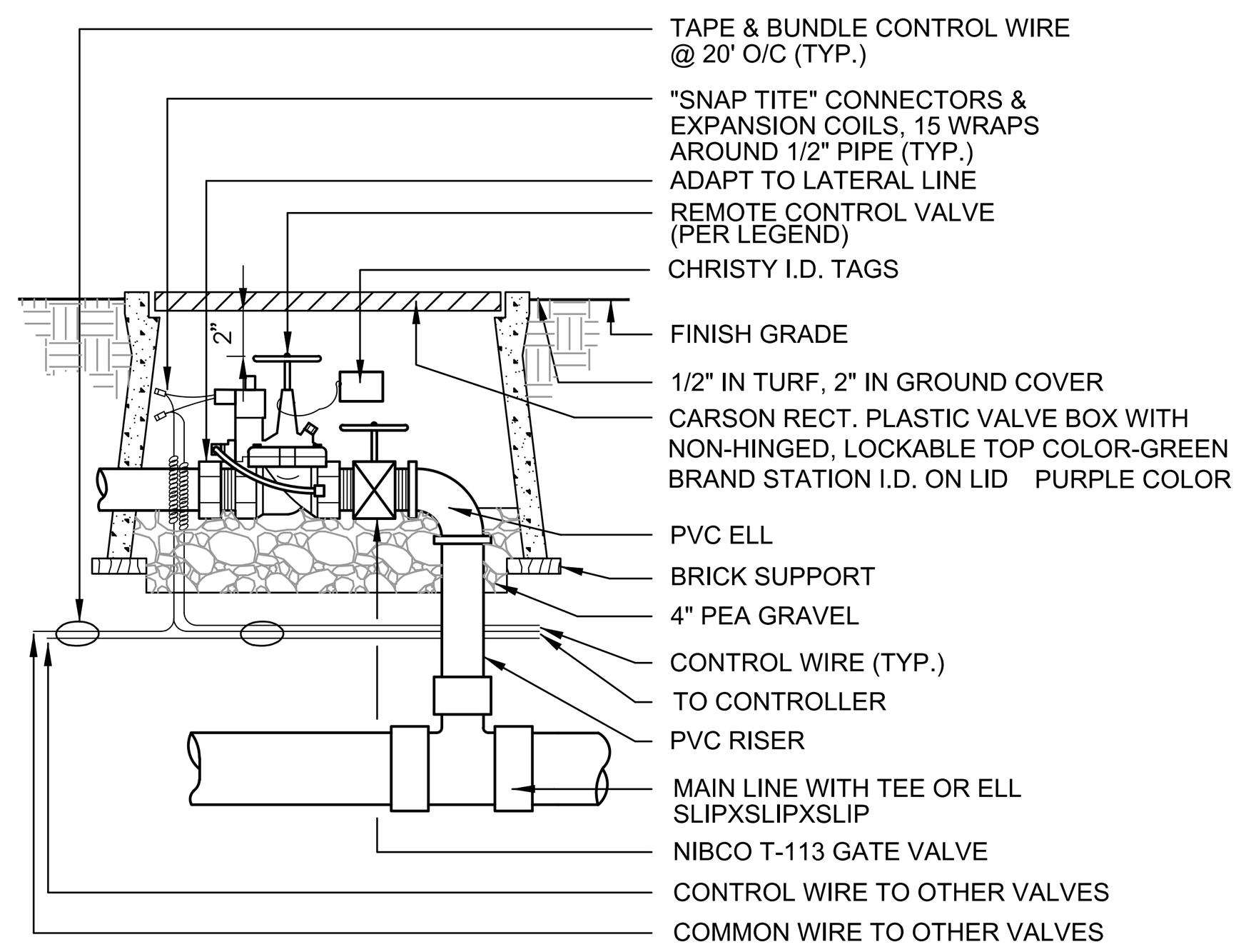
1	10-18-16		ADDENDUM 2
2	REVISIONS		

DRAWN:	CHECKED:
DATE: 09/06/2016	SCALE: 1/8"=1'-0"
PROJECT NUMBER: 1321200	

PLUMBING SITE PLAN

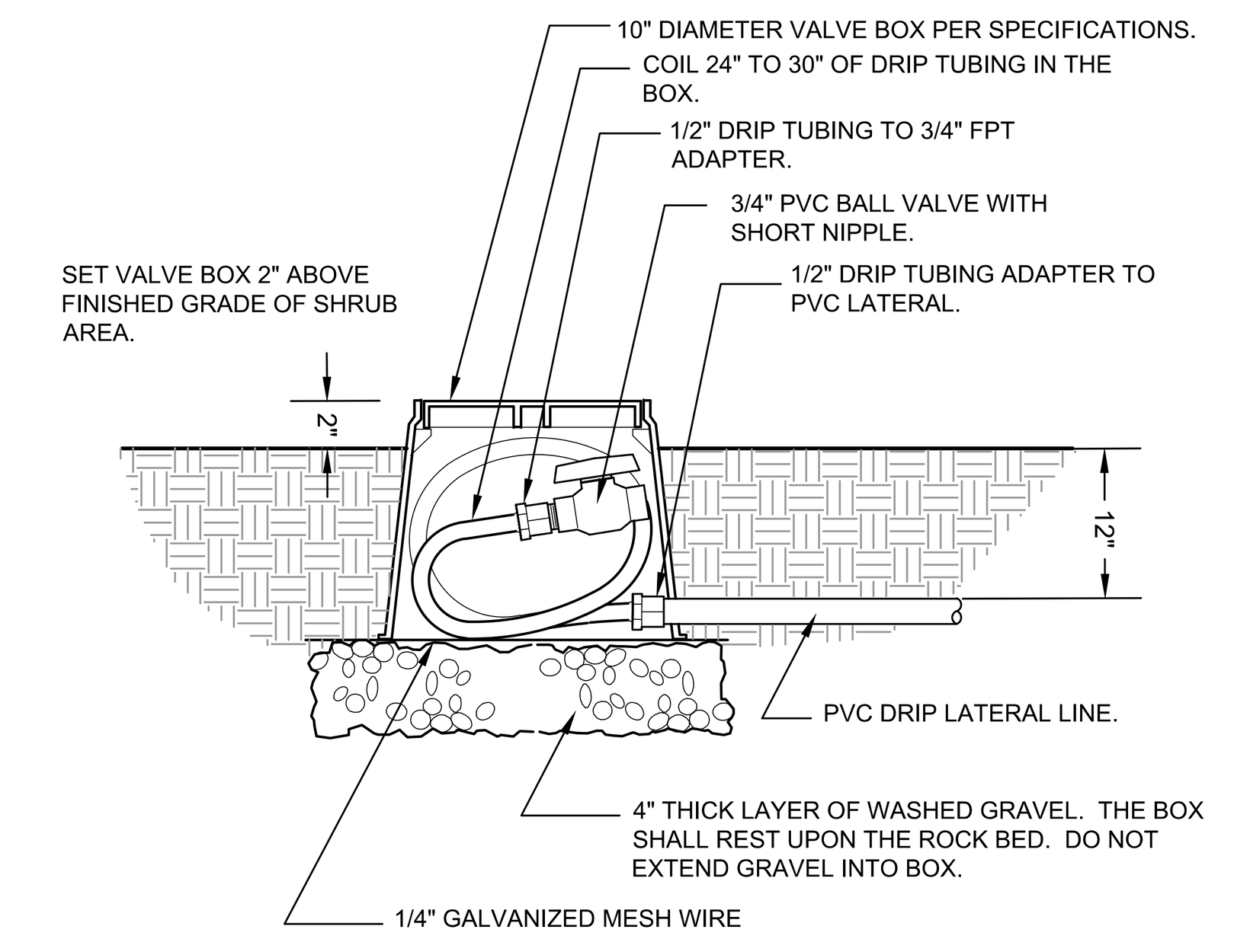
DRAWING NUMBER: P1.1



7 REMOTE CONTROL VALVE WITH GATE VALVE

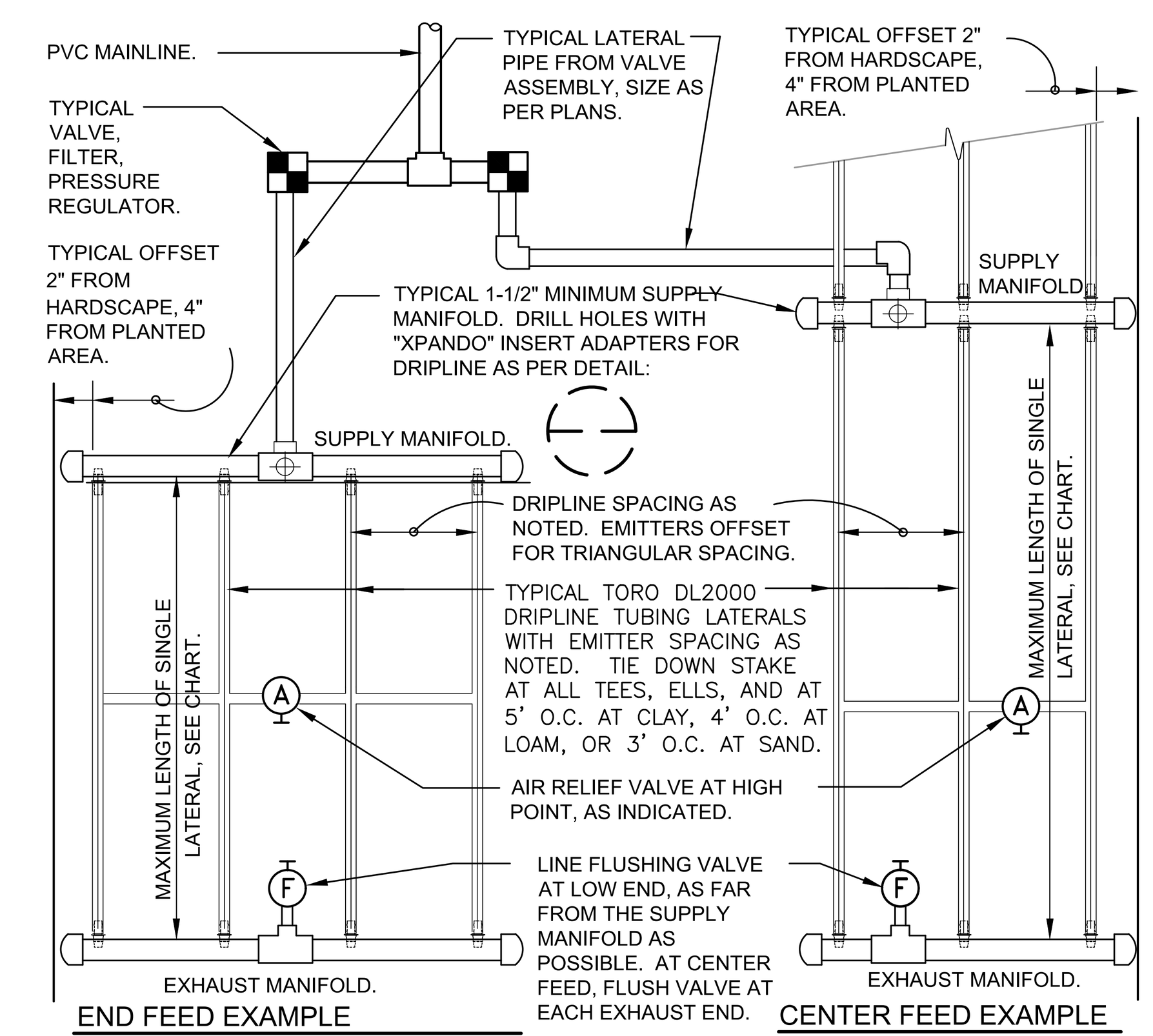
NTS 328406.13-25

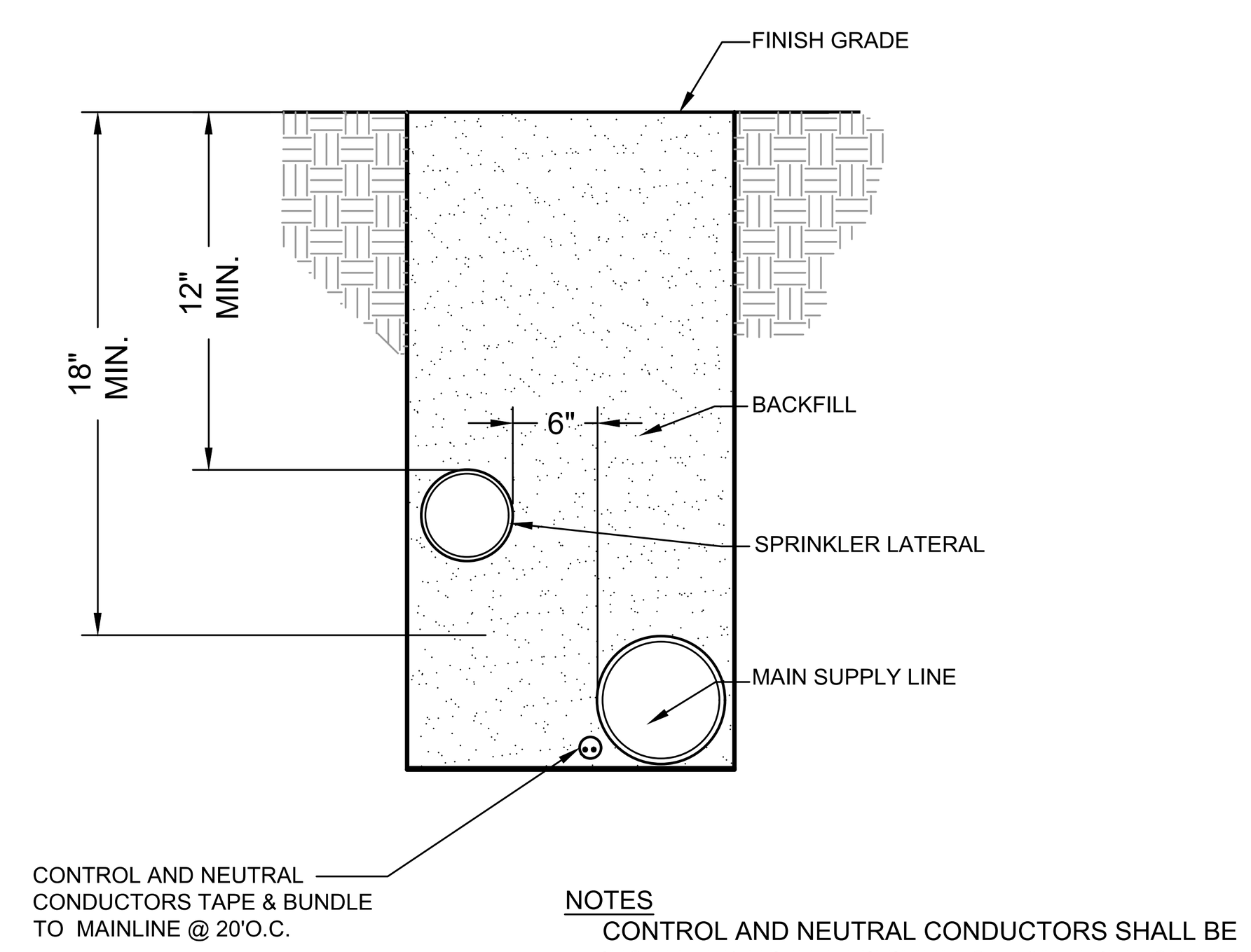
ALL VALVE BOXES SHALL BE CARSON SPEC GRADE MODELS. PURPLE COLOR



3 DRIP FLUSH VALVE

1 1/2" = 1'-0"

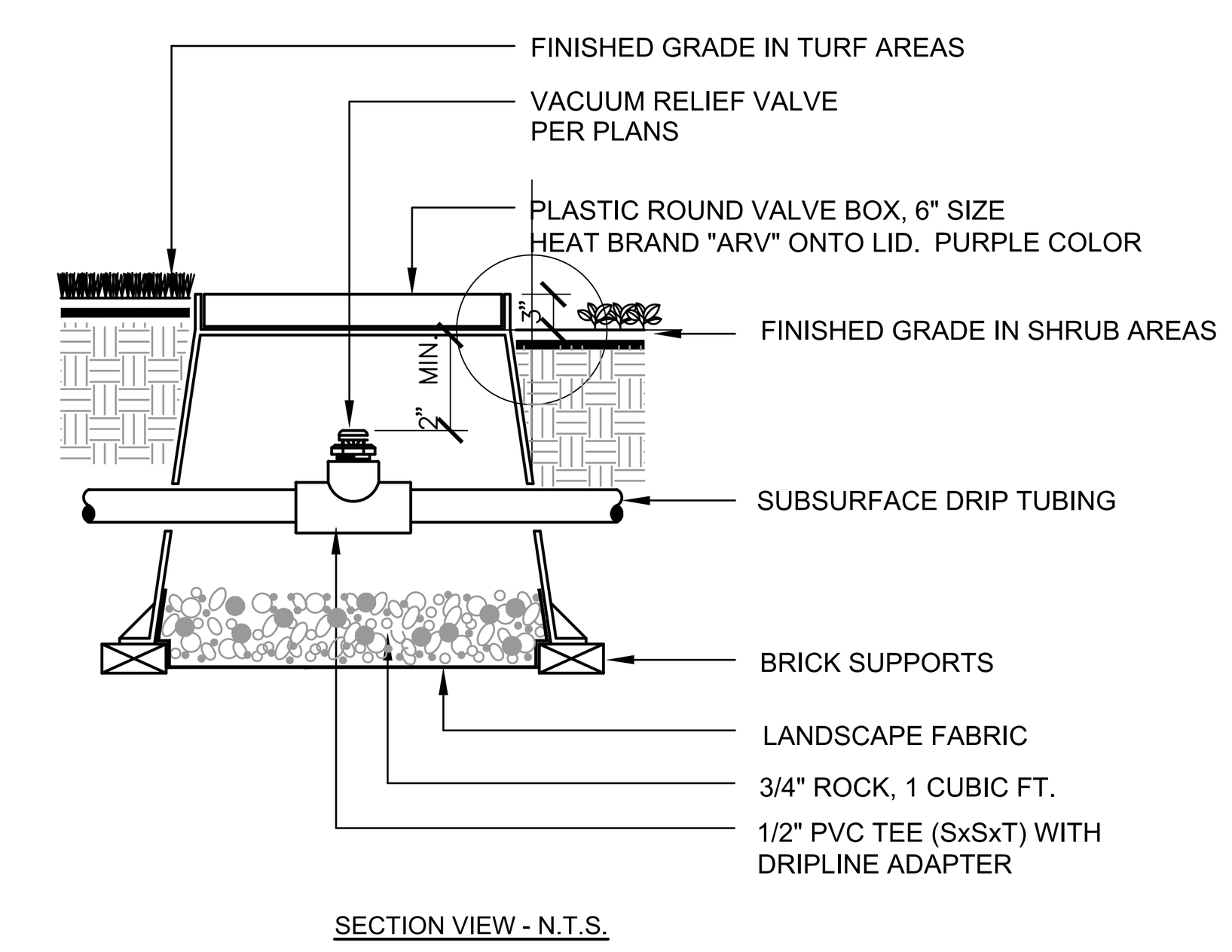




NOTES
CONTROL AND NEUTRAL CONDUCTORS SHALL BE INSTALLED WITH A MINIMUM OF 18" EARTH COVER

8 PIPE AND WIRE TRENCH

NTS 328409.76-06

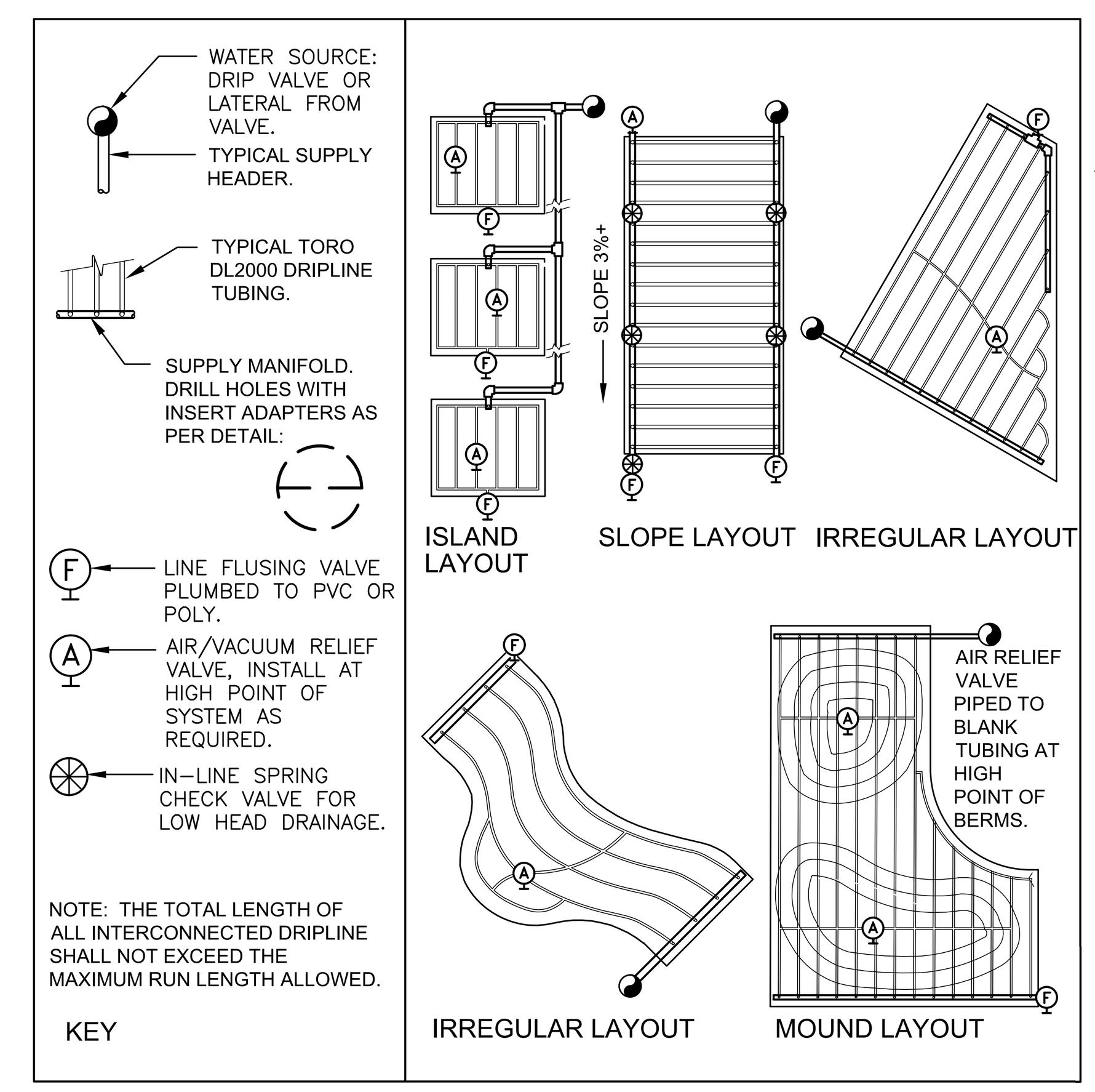


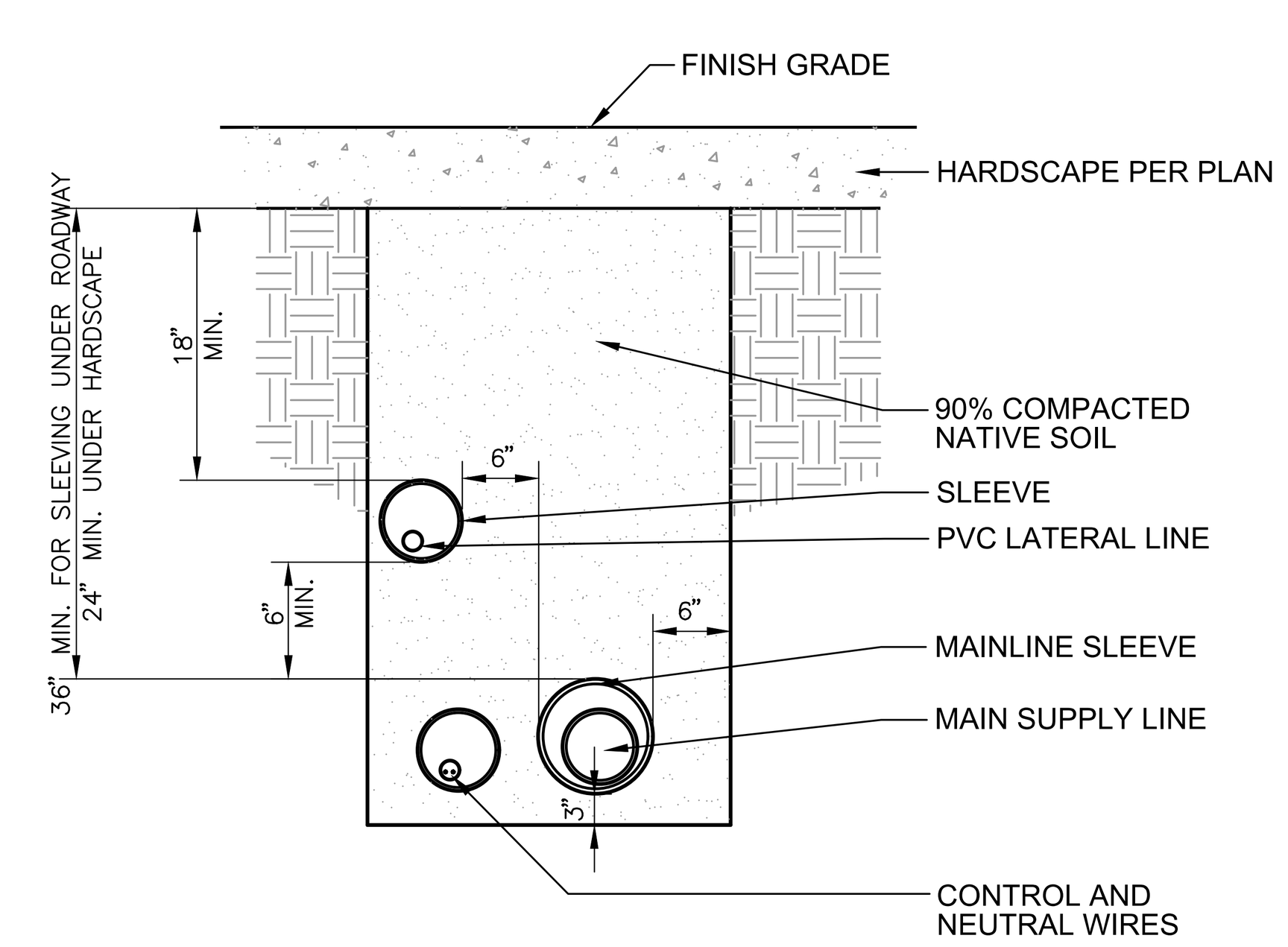
4 DRIP AIR RELIEF VALVE

NTS 328413.53-02

MAXIMUM RECOMMENDED LENGTH OF RUN AT 0% SLOPE						
DRIPLINE TYPE	FLOW RATE	EMITTER SPACING	15 PSI	25 PSI	30 PSI	40 PSI
RPG212	0.53 GPH	12"	250'	360'	400'	460'
RPG218	0.53 GPH	18"	350'	515'	565'	650'
RPG412	1.0 GPH	12"	160'	240'	260'	300'
RPG418	1.0 GPH	18"	240'	340'	375'	430'

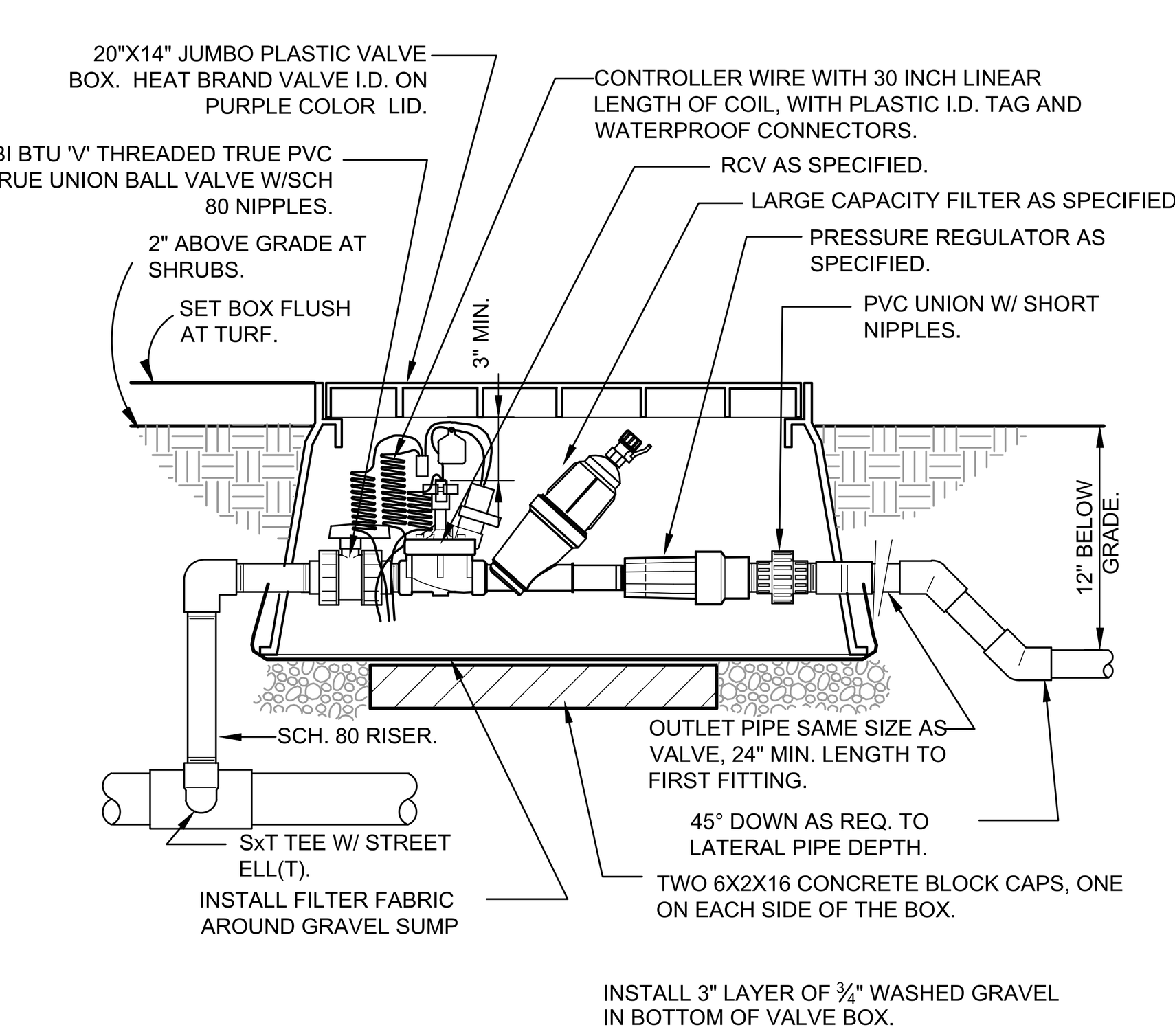
FLOW RATE PER 100 LINEAR FEET @ 20 PSI				
DRIPLINE TYPE	FLOW RATE	EMITTER SPACING	ACTUAL FLOW / 100 FT. GPH	GPM
RPG212	0.53 GPH	12"	53.00	0.88
RPG218	0.53 GPH	18"	35.33	0.59
RPG412	1.0 GPH	12"	102.00	1.70
RPG418	1.0 GPH	18"	67.99	1.13





9 SLEEVING

1" = 1" 328409.76-05

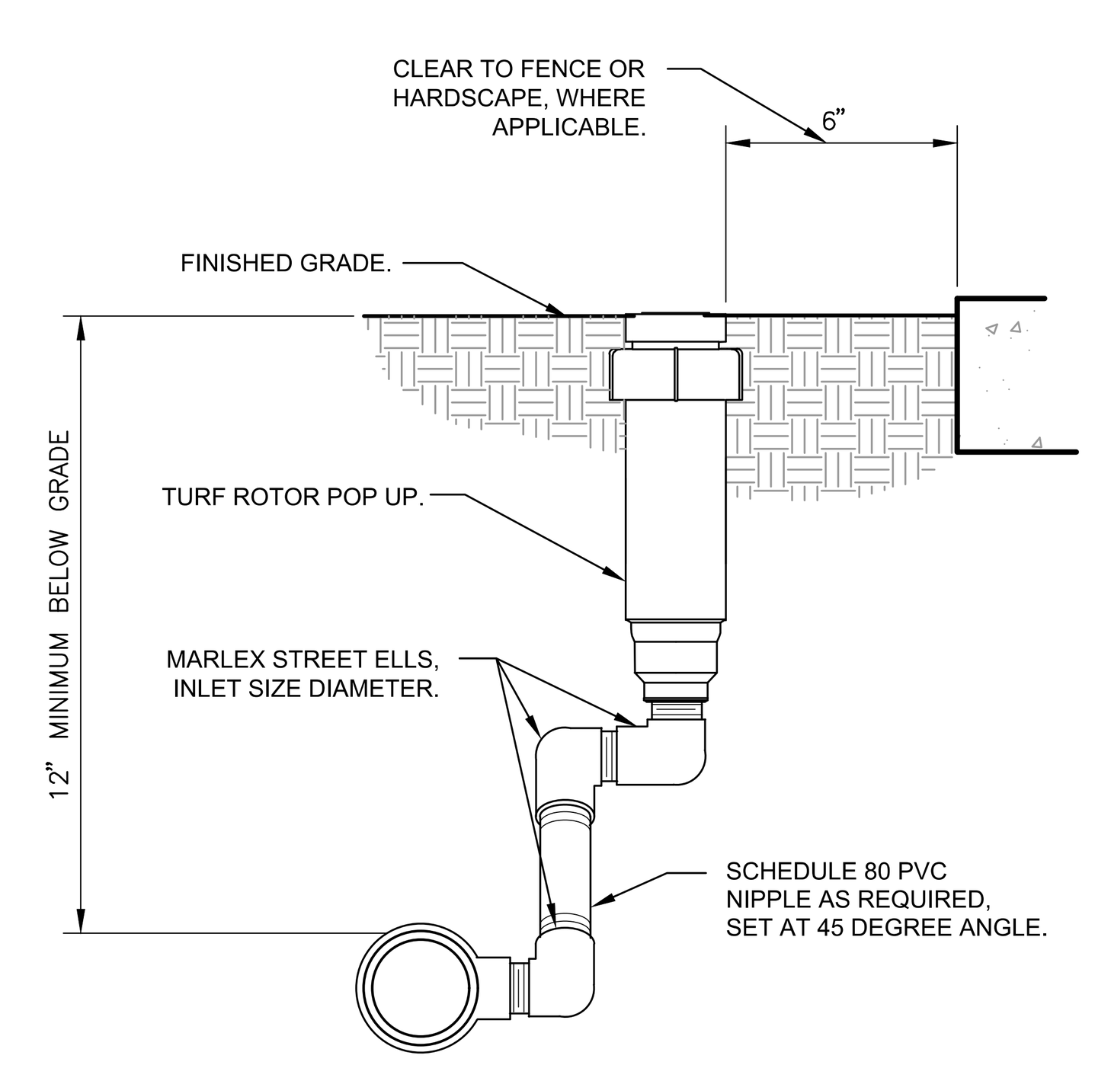


5 DRIP VALVE ASSEMBLY

NTS 328413.76-15

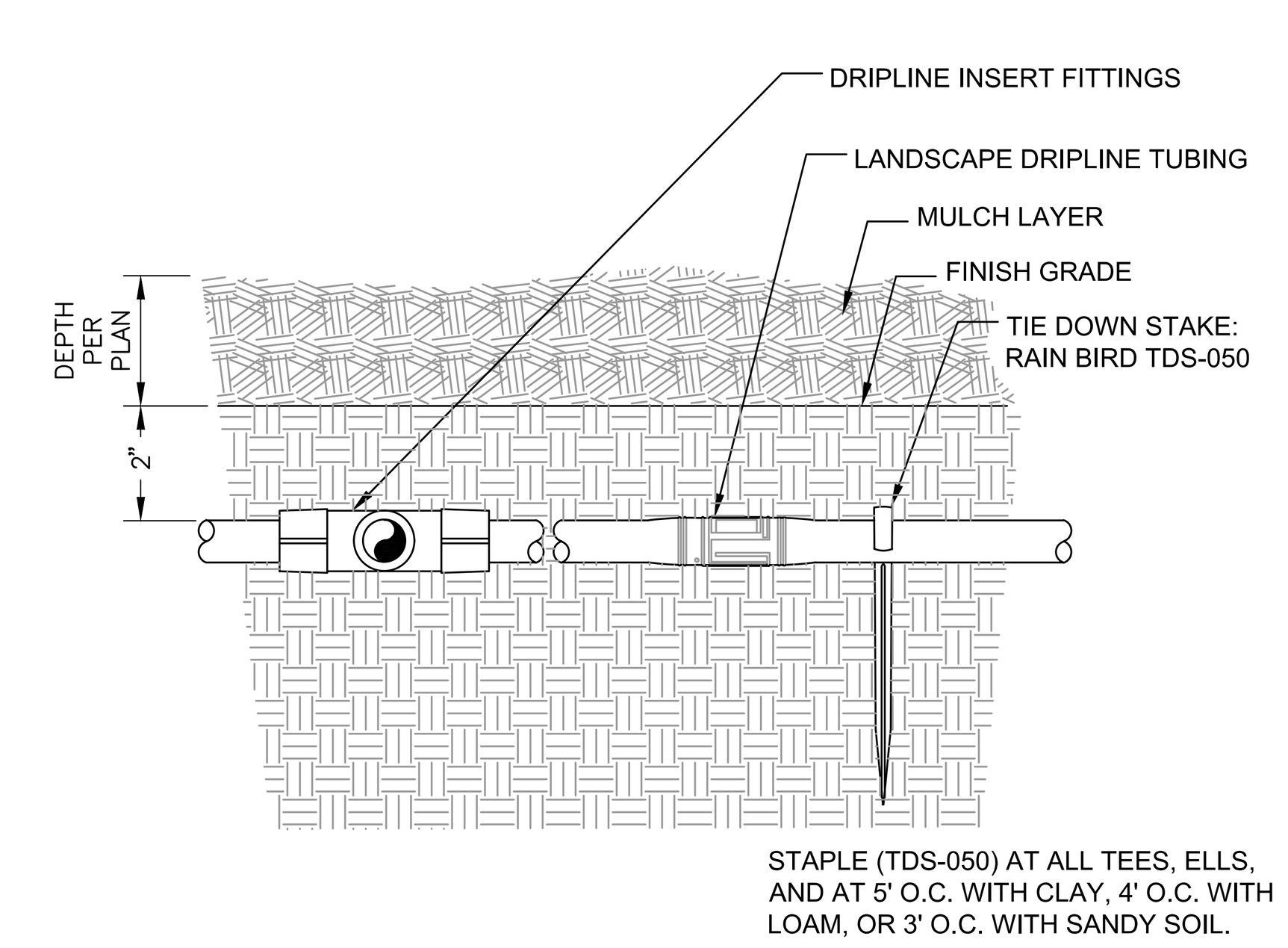
1 TORO DL2000 DRIPLINE W/ XPANDO MANIFOLD

N.T.S. 328413.56-37



6 TURF ROTOR MARLEX ASSEMBLY

3" = 1'-0" 328403.16-01



NOTE:
IF PUTTING LANDSCAPE DRIPLINE UNDER SOIL, DO NOT BURY MORE THAN 2" BELOW GRADE AND INCLUDE AIR RELIEF VALVE.

2 LANDSCAPE DRIPLINE BELOW GRADE

NTS 328413.56-10

IRRIGATION SYSTEM IS DESIGNED FOR USE WITH RECLAIMED WATER

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

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-120669 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/20/2022

PBK WLC
RANCHO CUCAMONGA
8163 ROCHESTER AVENUE, SUITE 100
RANCHO CUCAMONGA, CA 91730
909-987-0909 P

JURUPA UNIFIED SCHOOL DISTRICT

DEL SOL ACADEMY
CLASSROOM BUILDING ADDITION
11626 FORSYTHIA SKYWAY
JURUPA VALLEY, CA 91752
JURUPA UNIFIED SCHOOL DISTRICT

LICENSED ARCHITECT
LISA COX
C-29158
STATE OF CALIFORNIA

LICENSED LANDSCAPE ARCHITECT
STATE OF CALIFORNIA

CONSULTANT
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Riverside, CA 92506
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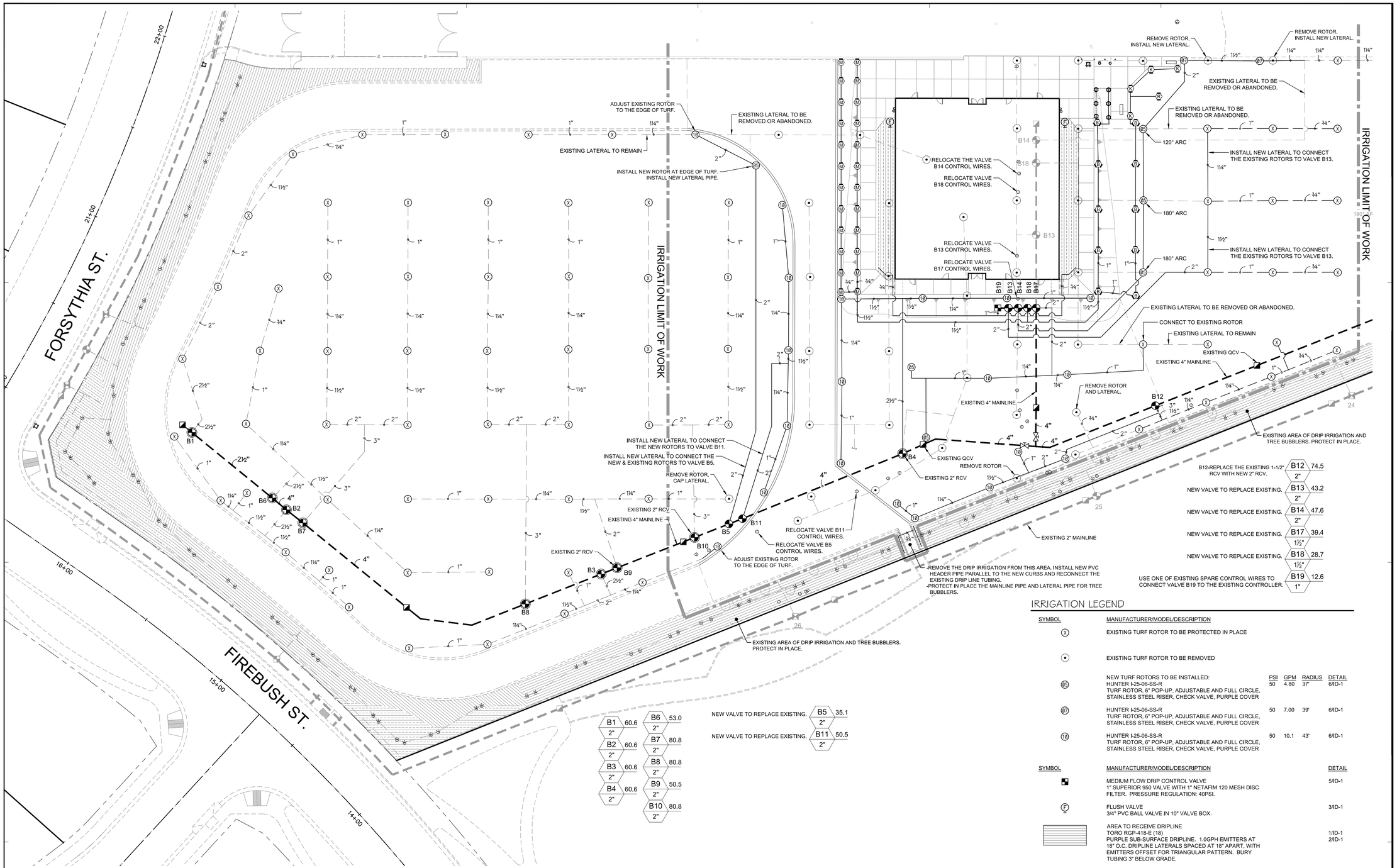
Lic 1512
www.rhala.com

NO	DATE	BY	DESCRIPTION
#			REVISIONS

DRAWN: CHECKED:
DATE: 11/30/2021 SCALE: 1" = 20'-0"
PROJECT NUMBER: A#04-120669

IRRIGATION DETAILS

DRAWING NUMBER: ID - 1



IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	GPM	RADIUS	DETAIL
X	EXISTING TURF ROTOR TO BE PROTECTED IN PLACE				
⊙	EXISTING TURF ROTOR TO BE REMOVED				
05	NEW TURF ROTORS TO BE INSTALLED: HUNTER I-25-06-SS-R TURF ROTOR, 6" POP-UP, ADJUSTABLE AND FULL CIRCLE, STAINLESS STEEL RISER, CHECK VALVE, PURPLE COVER	50	4.80	37'	6/ID-1
07	HUNTER I-25-06-SS-R TURF ROTOR, 6" POP-UP, ADJUSTABLE AND FULL CIRCLE, STAINLESS STEEL RISER, CHECK VALVE, PURPLE COVER	50	7.00	39'	6/ID-1
10	HUNTER I-25-06-SS-R TURF ROTOR, 6" POP-UP, ADJUSTABLE AND FULL CIRCLE, STAINLESS STEEL RISER, CHECK VALVE, PURPLE COVER	50	10.1	43'	6/ID-1

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	MEDIUM FLOW DRIP CONTROL VALVE. 1" SUPERIOR 950 VALVE WITH 1" NETAFIM 120 MESH DISC FILTER. PRESSURE REGULATION: 40PSI.	5/ID-1
F	FLUSH VALVE 3/4" PVC BALL VALVE IN 10" VALVE BOX.	3/ID-1
	AREA TO RECEIVE DRIPLINE TORO RGP-418-E (18) PURPLE SUB-SURFACE DRIPLINE. 1.0GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. BURY TUBING 3" BELOW GRADE.	1/ID-1 2/ID-1

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	SUPERIOR 950-DW-RW BRASS AUTOMATIC CONTROL VALVE. PURPLE CROSS HANDLE FOR RECLAIMED WATER.	7/ID-1
	EXISTING BRASS AUTOMATIC CONTROL VALVE	
	EXISTING ISOLATION VALVE, PROTECT IN PLACE	
	EXISTING IRRIGATION LATERAL LINE, PROTECT IN PLACE	
	EXISTING IRRIGATION LATERAL LINE TO BE REMOVED.	
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40 PVC SCHEDULE 40 IRRIGATION PIPE. ONLY LATERAL TRANSITION PIPE SIZES 1" AND ABOVE ARE INDICATED ON THE PLAN, WITH ALL OTHERS BEING 3/4" IN SIZE.	7/ID-1
	EXISTING IRRIGATION MAINLINE, PROTECT IN PLACE.	
	PIPE SLEEVE: PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE OR WIRE. PIPE SLEEVE SIZE SHALL BE TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE. EXTEND SLEEVES 12 INCHES BEYOND EDGES OF PAVING OR CONSTRUCTION.	8/ID-1

Valve Callout
Valve Number
Valve Flow
Valve Size

0' 20' 40' 60'

IRRIGATION NOTES:

1. USE PVC SCHEDULE 80 FITTINGS ON ALL MAINLINE CONNECTIONS.
2. USE PVC SCHEDULE 40 FITTINGS ON ALL LATERAL PIPE CONNECTIONS.
3. WHEN VERTICAL OBSTRUCTIONS (FIRE HYDRANTS, STREET LIGHTS, TREES, ETC.) INTERFERE WITH THE SPRAY PATTERN OF THE SPRINKLER HEADS SO AS TO PREVENT PROPER COVERAGE, THE CONTRACTOR SHALL FIELD ADJUST THE SPRINKLER SYSTEM BY INSTALLING A QUARTER CIRCLE OR HALF CIRCLE SPRINKLER HEAD ON EACH SIDE OF THE OBSTRUCTION SO AS TO PROVIDE PROPER COVERAGE. ALL ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
4. MAINLINE, VALVES, IRRIGATION METERS, ETC., ARE SHOWN ON THE STREET AND/OR SIDEWALK FOR CLARIFICATION ONLY. INSTALL IN PLANTER AREA THROUGHOUT THE SITE.
5. ADJUST ALL SPRINKLERS FOR 100% COVERAGE.
6. ALL IRRIGATION EQUIPMENT SHALL BE MARKED AND/OR COLORED FOR USE WITH RECLAIMED WATER
7. IRRIGATION SYSTEM IS DESIGNED FOR USE WITH RECLAIMED WATER.
8. EXISTING IRRIGATION HEADS AND LATERAL LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATIONS IN FIELD PRIOR TO START OF WORK. COORDINATE WITH J.U.S.D. REPRESENTATIVE BEFORE STATING THE LANDSCAPE IRRIGATION CONSTRUCTION.
9. CONTRACTOR SHALL INCLUDE IN BID THE RELOCATION OF TEN (10) ADDITIONAL EXISTING HEADS AS A SEPARATE LINE ITEM TO BE USED AS NEEDED.
10. RELOCATE THE EXISTING CONTROL WIRES AND MAINLINE AS NECESSARY TO AVOID DAMAGE DURING CONSTRUCTION.
11. THE EXISTING TURF FIELD IRRIGATION SYSTEM SHALL BE KEPT OPERATIONAL DURING THE CONSTRUCTION PERIOD. THE EXISTING ROTORS, VALVES AND PIPES SHALL BE RELOCATED AS NECESSARY TO AVOID DAMAGE AND INTERFERENCE WITH THE NEW IMPROVEMENTS.
12. TURNOVER ALL VALVES AND ROTORS THAT ARE REMOVED DURING DEMOLITION TO J.U.S.D.

IRRIGATION PLAN

1" = 20'-0"

1

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
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REVIEWED FOR
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DATE: 01/20/2022

PBKWLC
RANCHO CUCAMONGA
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RANCHO CUCAMONGA, CA 91730
909-987-0909 P

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JURUPA UNIFIED SCHOOL DISTRICT

LICENSED ARCHITECT
LISA COX
C-29158
Re-Lic 07/31/2021
STATE OF CALIFORNIA

REGISTERED LANDSCAPE ARCHITECT
DOUGLAS GROVE NO. 5758
Signature
Douglas Grove
Renewal Date
11/30/21
Date
STATE OF CALIFORNIA

CONSULTANT
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NO	DATE	BY	DESCRIPTION
1			REVISIONS

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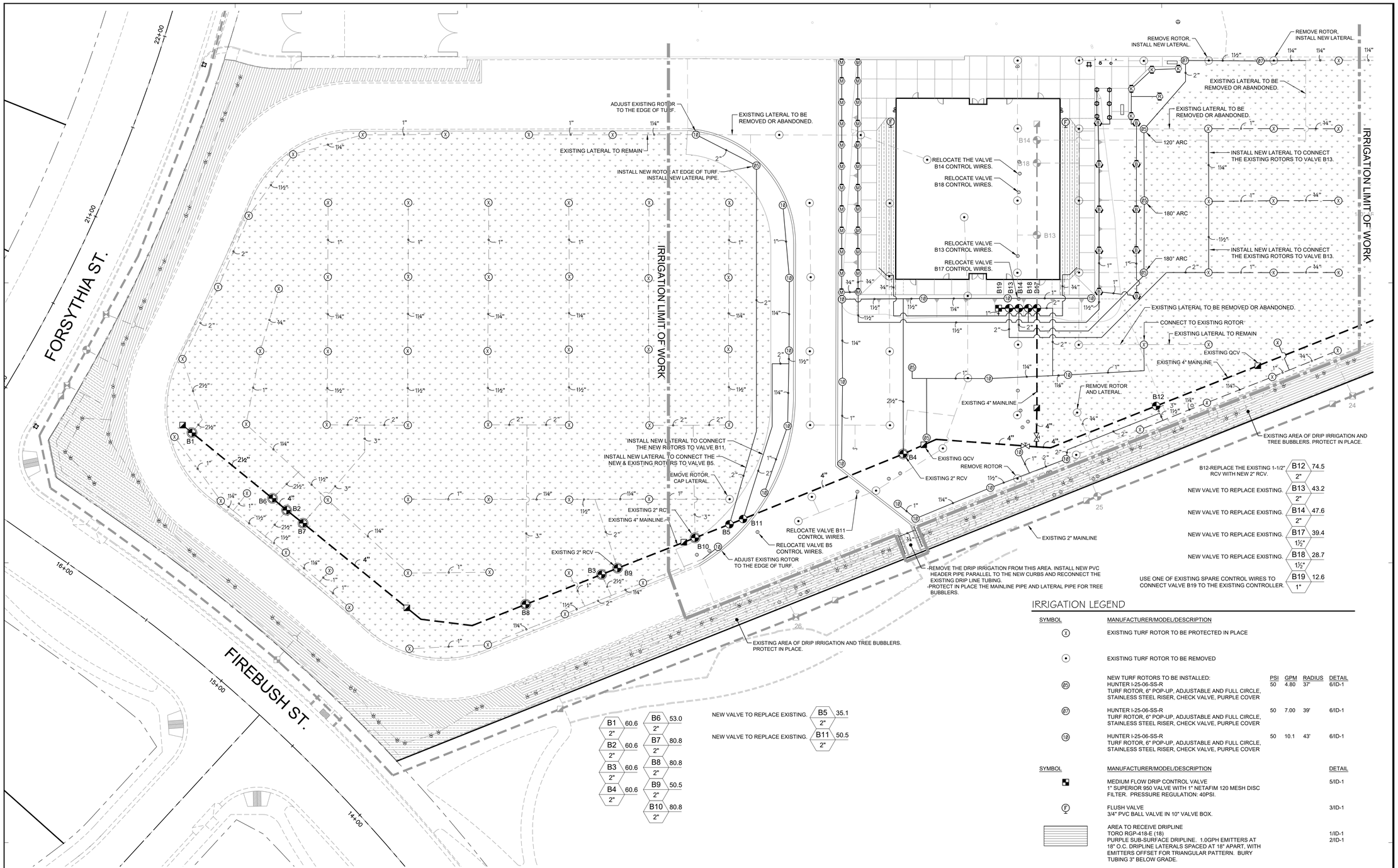
IRRIGATION PLAN

DRAWING NUMBER: IP - 1



IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	GPM	RADIUS	DETAIL
X	EXISTING TURF ROTOR TO BE PROTECTED IN PLACE				
⊙	EXISTING TURF ROTOR TO BE REMOVED				
05	NEW TURF ROTORS TO BE INSTALLED: HUNTER I-25-06-SS-R TURF ROTOR, 6" POP-UP, ADJUSTABLE AND FULL CIRCLE, STAINLESS STEEL RISER, CHECK VALVE, PURPLE COVER	50	4.80	37'	6/ID-1
07	HUNTER I-25-06-SS-R TURF ROTOR, 6" POP-UP, ADJUSTABLE AND FULL CIRCLE, STAINLESS STEEL RISER, CHECK VALVE, PURPLE COVER	50	7.00	39'	6/ID-1
10	HUNTER I-25-06-SS-R TURF ROTOR, 6" POP-UP, ADJUSTABLE AND FULL CIRCLE, STAINLESS STEEL RISER, CHECK VALVE, PURPLE COVER	50	10.1	43'	6/ID-1

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	MEDIUM FLOW DRIP CONTROL VALVE 1" SUPERIOR 950 VALVE WITH 1" NETAFIM 120 MESH DISC FILTER. PRESSURE REGULATION: 40PSI.	5/ID-1
F	FLUSH VALVE 3/4" PVC BALL VALVE IN 10" VALVE BOX.	3/ID-1
	AREA TO RECEIVE DRIPLINE TORO RGP-418-E (18) PURPLE SUB-SURFACE DRIPLINE. 1.0GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. BURY TUBING 3" BELOW GRADE.	1/ID-1 2/ID-1

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	SUPERIOR 950-DW-RW BRASS AUTOMATIC CONTROL VALVE. PURPLE CROSS HANDLE FOR RECLAIMED WATER.	7/ID-1
	EXISTING BRASS AUTOMATIC CONTROL VALVE	
	EXISTING ISOLATION VALVE, PROTECT IN PLACE	
	EXISTING IRRIGATION LATERAL LINE, PROTECT IN PLACE	
	EXISTING IRRIGATION LATERAL LINE TO BE REMOVED.	
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40 PVC SCHEDULE 40 IRRIGATION PIPE. ONLY LATERAL TRANSITION PIPE SIZES 1" AND ABOVE ARE INDICATED ON THE PLAN, WITH ALL OTHERS BEING 3/4" IN SIZE.	7/ID-1
	EXISTING IRRIGATION MAINLINE, PROTECT IN PLACE. USE PVC SCHEDULE 40 FOR 1-1/2", PVC CLASS 315 SDR 13.5 FOR PIPES 2" AND LARGER WHEN NEW PIPE IS REQUIRED.	
	PIPE SLEEVE: PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE OR WIRE. PIPE SLEEVE SIZE SHALL BE TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE. EXTEND SLEEVES 12 INCHES BEYOND EDGES OF PAVING OR CONSTRUCTION.	8/ID-1

Valve Callout
Valve Number
Valve Flow
Valve Size

0' 20' 40' 60'

IRRIGATION LEGEND - ROTARY NOZZLES

SYMBOL	MANUFACTURER/MODEL	ARC	PSI	GPM	RADIUS	DETAIL
M	HUNTER MP1000 PROS-06-PRS40-CV-R	90-210	40	.18-.36	11'	6/ID-1
X	HUNTER MP2000 PROS-06-PRS40-CV-R	90-210	40	.36-.54	16'	6/ID-1
A	HUNTER MP2000 PROS-06-PRS40-CV-R	360	40	1.47	16'	6/ID-1
B	HUNTER MP3000 PROS-06-PRS40-CV-R	90-210	40	.91-1.8	25'	6/ID-1
D	HUNTER MP800SR PROS-06-PRS40-CV-R	ADJ	40	.21-.42	8'	6/ID-1
	EXISTING TREE BUBBLERS, PROTECT IN PLACE					

IRRIGATION NOTES:

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3. WHEN VERTICAL OBSTRUCTIONS (FIRE HYDRANTS, STREET LIGHTS, TREES, ETC.) INTERFERE WITH THE SPRAY PATTERN OF THE SPRINKLER HEADS SO AS TO PREVENT PROPER COVERAGE, THE CONTRACTOR SHALL FIELD ADJUST THE SPRINKLER SYSTEM BY INSTALLING A QUARTER CIRCLE OR HALF CIRCLE SPRINKLER HEAD ON EACH SIDE OF THE OBSTRUCTION SO AS TO PROVIDE PROPER COVERAGE. ALL ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
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IRRIGATION PLAN

1" = 20'-0"

1

PBKWLC
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RANCHO CUCAMONGA, CA 91730
909-987-0909 P

JURUPA UNIFIED SCHOOL DISTRICT

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CLASSROOM BUILDING ADDITION
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JURUPA UNIFIED SCHOOL DISTRICT

LICENSED ARCHITECT
LISA COX
C-29156
STATE OF CALIFORNIA

REGISTERED LANDSCAPE ARCHITECT
DOUGLAS GROVE NO. 2799
STATE OF CALIFORNIA

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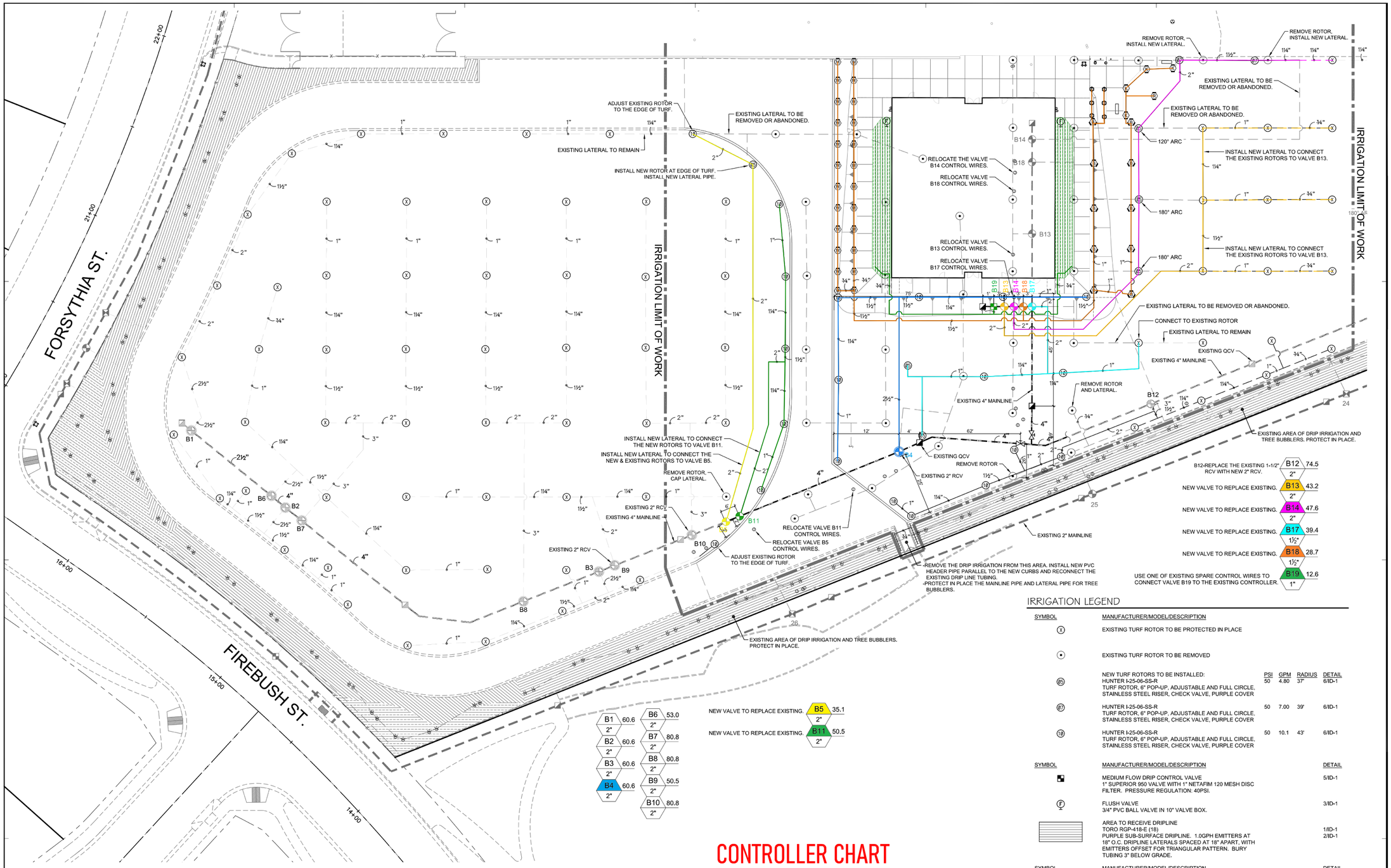
NO	DATE	BY	DESCRIPTION
1	02/17/22	DB	Addendum 01
#			REVISIONS

DRAWN:
CHECKED:
DATE: 11/30/2021
SCALE: 1" = 20'-0"
PROJECT NUMBER: A#04-120669

IRRIGATION PLAN

DRAWING NUMBER: IP - 1



IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	GPM	RADIUS	DETAIL
X	EXISTING TURF ROTOR TO BE PROTECTED IN PLACE				
⊙	EXISTING TURF ROTOR TO BE REMOVED				
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07	HUNTER I-25-06-SS-R TURF ROTOR, 6" POP-UP, ADJUSTABLE AND FULL CIRCLE, STAINLESS STEEL RISER, CHECK VALVE, PURPLE COVER	50	7.00	39'	6/ID-1
18	HUNTER I-25-06-SS-R TURF ROTOR, 6" POP-UP, ADJUSTABLE AND FULL CIRCLE, STAINLESS STEEL RISER, CHECK VALVE, PURPLE COVER	50	10.1	43'	6/ID-1

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	MEDIUM FLOW DRIP CONTROL VALVE 1" SUPERIOR 950 VALVE WITH 1" NETAFIM 120 MESH DISC FILTER. PRESSURE REGULATION: 40PSI.	5/ID-1
F	FLUSH VALVE 3/4" PVC BALL VALVE IN 10" VALVE BOX.	3/ID-1
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SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	SUPERIOR 950-DW-RW BRASS AUTOMATIC CONTROL VALVE. PURPLE CROSS HANDLE FOR RECLAIMED WATER.	7/ID-1
	EXISTING BRASS AUTOMATIC CONTROL VALVE	
	EXISTING ISOLATION VALVE, PROTECT IN PLACE	
	EXISTING IRRIGATION LATERAL LINE, PROTECT IN PLACE	
	EXISTING IRRIGATION LATERAL LINE TO BE REMOVED.	
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40 PVC SCHEDULE 40 IRRIGATION PIPE. ONLY LATERAL TRANSITION PIPE SIZES 1" AND ABOVE ARE INDICATED ON THE PLAN. WITH ALL OTHERS BEING 3/4" IN SIZE.	7/ID-1
	EXISTING IRRIGATION MAINLINE, PROTECT IN PLACE.	
	PIPE SLEEVE: PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE OR WIRE. PIPE SLEEVE SIZE SHALL BE TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE. EXTEND SLEEVES 12 INCHES BEYOND EDGES OF PAVING OR CONSTRUCTION.	8/ID-1

Valve Callout
— Valve Number
— Valve Flow
— Valve Size

0' 20' 40' 60'

CONTROLLER CHART

IRRIGATION NOTES:

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12. TURNOVER ALL VALVES AND ROTORS THAT ARE REMOVED DURING DEMOLITION TO J.U.S.D.

IRRIGATION PLAN | 1" = 20'-0" | 1

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LICENSED ARCHITECT — LISA COX C-29158 — STATE OF CALIFORNIA

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NO	DATE	BY	DESCRIPTION
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IRRIGATION PLAN

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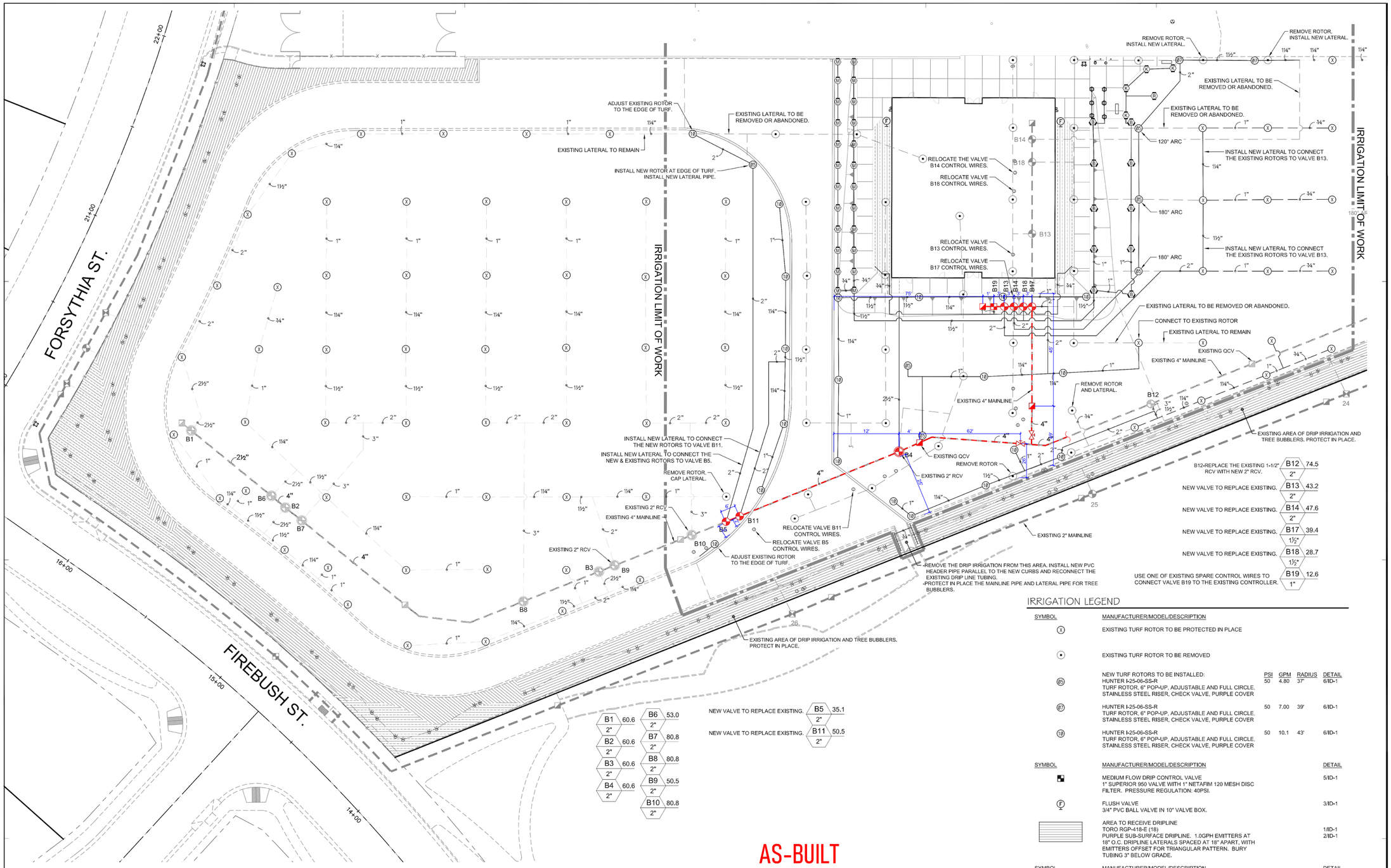

IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	GPM	RADIUS	DETAIL
X	EXISTING TURF ROTOR TO BE PROTECTED IN PLACE				
⊙	EXISTING TURF ROTOR TO BE REMOVED				
(R5)	NEW TURF ROTORS TO BE INSTALLED: HUNTER I-25-06-SS-R TURF ROTOR, 6" POP-UP, ADJUSTABLE AND FULL CIRCLE, STAINLESS STEEL RISER, CHECK VALVE, PURPLE COVER	50	4.80	37'	6/ID-1
(R7)	HUNTER I-25-06-SS-R TURF ROTOR, 6" POP-UP, ADJUSTABLE AND FULL CIRCLE, STAINLESS STEEL RISER, CHECK VALVE, PURPLE COVER	50	7.00	39'	6/ID-1
(R8)	HUNTER I-25-06-SS-R TURF ROTOR, 6" POP-UP, ADJUSTABLE AND FULL CIRCLE, STAINLESS STEEL RISER, CHECK VALVE, PURPLE COVER	50	10.1	43'	6/ID-1

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	MEDIUM FLOW DRIP CONTROL VALVE 1" SUPERIOR 950 VALVE WITH 1" NETAFIM 120 MESH DISC FILTER. PRESSURE REGULATION: 40PSI.	5/ID-1
F	FLUSH VALVE 3/4" PVC BALL VALVE IN 10" VALVE BOX.	3/ID-1
	AREA TO RECEIVE DRIPLINE TORO RGP-418-E (18) PURPLE SUB-SURFACE DRIPLINE. 1.0GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. BURY TUBING 3" BELOW GRADE.	1/ID-1 2/ID-1

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	SUPERIOR 950-DW-RW BRASS AUTOMATIC CONTROL VALVE. PURPLE CROSS HANDLE FOR RECLAIMED WATER.	7/ID-1
	EXISTING BRASS AUTOMATIC CONTROL VALVE	
	EXISTING ISOLATION VALVE, PROTECT IN PLACE	
	EXISTING IRRIGATION LATERAL LINE, PROTECT IN PLACE	
	EXISTING IRRIGATION LATERAL LINE TO BE REMOVED.	
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40 PVC SCHEDULE 40 IRRIGATION PIPE, ONLY LATERAL TRANSITION PIPE SIZES 1" AND ABOVE ARE INDICATED ON THE PLAN. WITH ALL OTHERS BEING 3/4" IN SIZE.	7/ID-1
	EXISTING IRRIGATION MAINLINE, PROTECT IN PLACE.	
	PIPE SLEEVE: PVC SCHEDULE 40 TYPICAL PIPE SLEEVE FOR IRRIGATION PIPE OR WIRE. PIPE SLEEVE SIZE SHALL BE TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE. EXTEND SLEEVES 12 INCHES BEYOND EDGES OF PAVING OR CONSTRUCTION.	8/ID-1

Valve Callout
— Valve Number
— Valve Flow
— Valve Size

0' 20' 40' 60'

IRRIGATION NOTES:

1. USE PVC SCHEDULE 80 FITTINGS ON ALL MAINLINE CONNECTIONS.
2. USE PVC SCHEDULE 40 FITTINGS ON ALL LATERAL PIPE CONNECTIONS.
3. WHEN VERTICAL OBSTRUCTIONS (FIRE HYDRANTS, STREET LIGHTS, TREES, ETC.) INTERFERE WITH THE SPRAY PATTERN OF THE SPRINKLER HEADS SO AS TO PREVENT PROPER COVERAGE, THE CONTRACTOR SHALL FIELD ADJUST THE SPRINKLER SYSTEM BY INSTALLING A QUARTER CIRCLE OR HALF CIRCLE SPRINKLER HEAD ON EACH SIDE OF THE OBSTRUCTION SO AS TO PROVIDE PROPER COVERAGE. ALL ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
4. MAINLINE, VALVES, IRRIGATION METERS, ETC., ARE SHOWN ON THE STREET AND/OR SIDEWALK FOR CLARIFICATION ONLY. INSTALL IN PLANTER AREA THROUGHOUT THE SITE.
5. ADJUST ALL SPRINKLERS FOR 100% COVERAGE.
6. ALL IRRIGATION EQUIPMENT SHALL BE MARKED AND/OR COLORED FOR USE WITH RECLAIMED WATER
7. IRRIGATION SYSTEM IS DESIGNED FOR USE WITH RECLAIMED WATER.
8. EXISTING IRRIGATION HEADS AND LATERAL LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATIONS IN FIELD PRIOR TO START OF WORK. COORDINATE WITH J.U.S.D. REPRESENTATIVE BEFORE STATING THE LANDSCAPE IRRIGATION CONSTRUCTION.
9. CONTRACTOR SHALL INCLUDE IN BID THE RELOCATION OF TEN (10) ADDITIONAL EXISTING HEADS AS A SEPARATE LINE ITEM TO BE USED AS NEEDED.
10. RELOCATE THE EXISTING CONTROL WIRES AND MAINLINE AS NECESSARY TO AVOID DAMAGE DURING CONSTRUCTION.
11. THE EXISTING TURF FIELD IRRIGATION SYSTEM SHALL BE KEPT OPERATIONAL DURING THE CONSTRUCTION PERIOD. THE EXISTING ROTORS, VALVES AND PIPES SHALL BE RELOCATED AS NECESSARY TO AVOID DAMAGE AND INTERFERENCE WITH THE NEW IMPROVEMENTS.
12. TURNOVER ALL VALVES AND ROTORS THAT ARE REMOVED DURING DEMOLITION TO J.U.S.D.

AS-BUILT

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IRRIGATION PLAN | 1" = 20'-0" | 1

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APP: 04-120669 INC:
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DATE: 01/20/2022

PBK WLC
RANCHO CUCAMONGA
8163 ROCHESTER AVENUE, SUITE 100
RANCHO CUCAMONGA, CA 91730
909-987-0909 P

JURUPA UNIFIED SCHOOL DISTRICT

DEL SOL ACADEMY
CLASSROOM BUILDING ADDITION
11626 FORSYTHIA SKYWAY
JURUPA VALLEY, CA 91752
JURUPA UNIFIED SCHOOL DISTRICT

LICENSED ARCHITECT — LISA COX C-29158 — STATE OF CALIFORNIA
LICENSED LANDSCAPE ARCHITECT — Richard Toth — STATE OF CALIFORNIA

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1			REVISIONS

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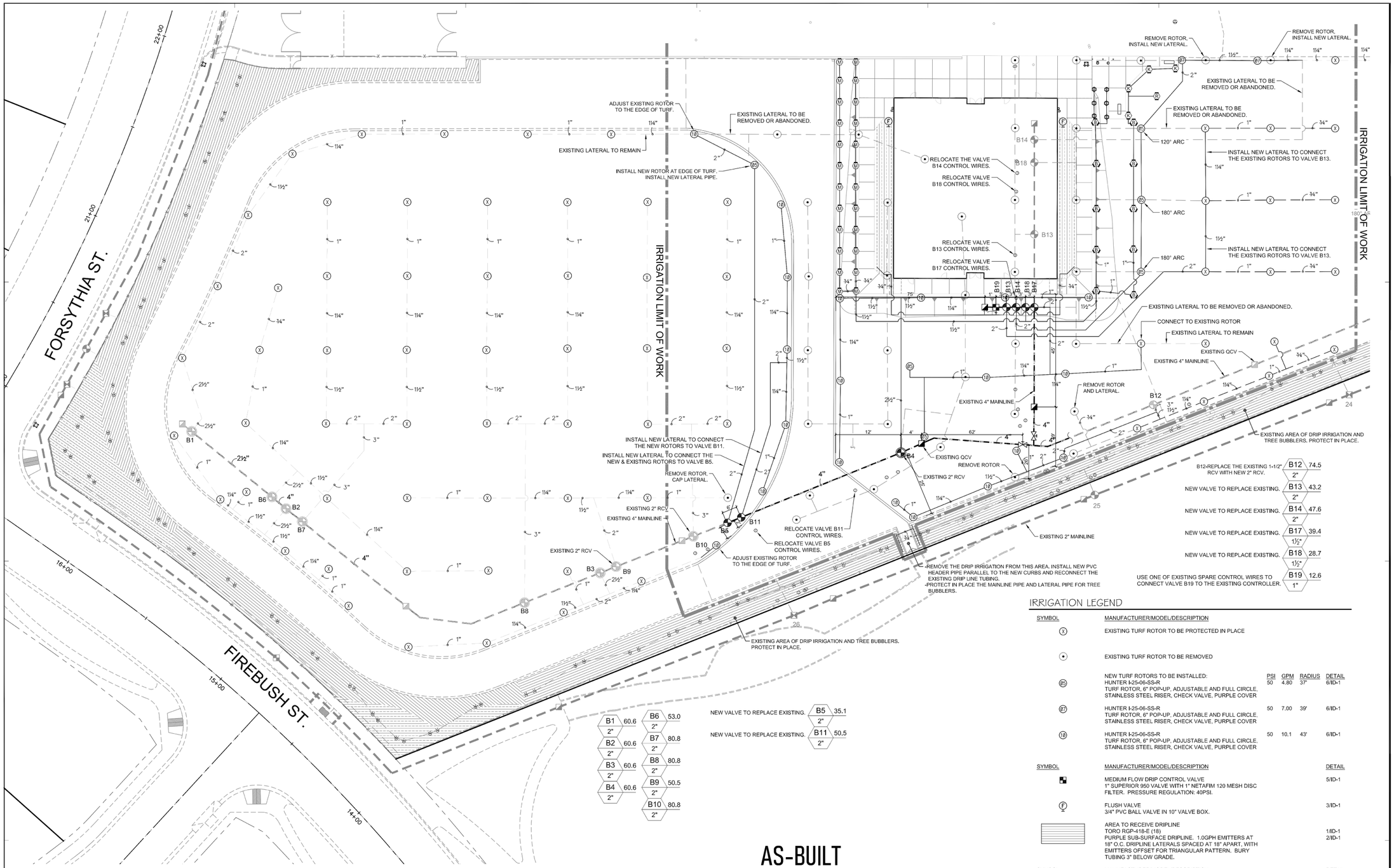
IRRIGATION PLAN

DRAWING NUMBER: IP - 1



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12. TURNOVER ALL VALVES AND ROTORS THAT ARE REMOVED DURING DEMOLITION TO J.U.S.D.

IRRIGATION LEGEND

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	GPM	RADIUS	DETAIL
X	EXISTING TURF ROTOR TO BE PROTECTED IN PLACE				
⊙	EXISTING TURF ROTOR TO BE REMOVED				
B5	NEW TURF ROTORS TO BE INSTALLED: HUNTER I-25-06-SS-R TURF ROTOR, 6" POP-UP, ADJUSTABLE AND FULL CIRCLE, STAINLESS STEEL RISER, CHECK VALVE, PURPLE COVER	50	4.80	37'	6/ID-1
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Exp. 6/31/23
STATE OF CALIFORNIA

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No. 2394
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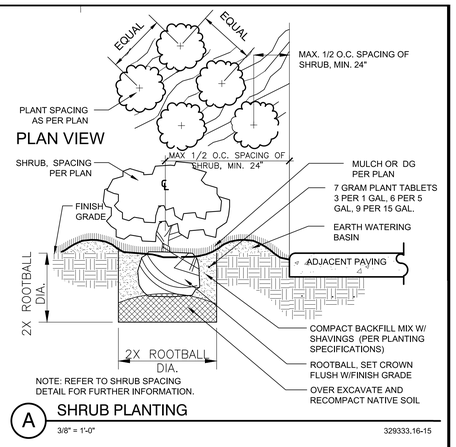
IRRIGATION PLAN

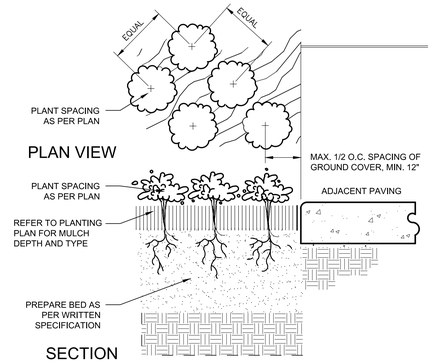
DRAWING NUMBER: IP - 1



NOTE: REFER TO SHRUB SPACING DETAIL FOR FURTHER INFORMATION.

A SHRUB PLANTING

3/8" = 1'-0" 329333.16-15



B GROUND COVER SPACING

1" = 1" 329313-03

1. AFTER MASS GRADING, THE CONTRACTOR SHALL AT HIS OWN EXPENSE:
   A. PERFORM A PRELIMINARY SITE INSPECTION;
   B. DETERMINE THE APPROPRIATE LEVEL OF SOIL SAMPLING AND SAMPLING METHOD NEEDED TO OBTAIN REPRESENTATIVE SOIL SAMPLE(S);
   C. CONDUCT A SOIL PROBE TEST TO DETERMINE IF THE SOIL IN THE LANDSCAPE AREA HAS SUFFICIENT DEPTH TO SUPPORT THE INTENDED PLANTS; AND
   D. OBTAIN APPROPRIATE SOIL SAMPLE(S).
2. THE PROJECT APPLICANT SHALL SUBMIT SOIL SAMPLE(S) TO A LABORATORY FOR AGRONOMIC ANALYSIS AND RECOMMENDATION ON THE TYPE OF SOIL AMENDMENTS AND METHODS OF APPLICATION FOR PRE-PLANTING AND POST-PLANTING. THE ANALYSIS SHALL INCLUDE AT MINIMUM:
   A. SOIL TEXTURE;
   B. INFILTRATION RATE DETERMINED BY LABORATORY TEST OR SOIL TEXTURE INFILTRATION RATE TALES;
   C. pH;
   D. TOTAL SOLUBLE SALTS;
   E. SODIUM; AND
   F. RECOMMENDATIONS.
3. THE PROJECT APPLICANT SHALL PREPARE DOCUMENTATION DESCRIBING THE FOLLOWING;
   A. SOIL TYPE;
   B. IDENTIFICATION OF LIMITING SOIL CHARACTERISTICS;
   C. IDENTIFICATION OF PLANNED SOIL MANAGEMENT ACTIONS TO REMEDIATE LIMITING SOIL CHARACTERISTICS; AND
   D. SUBMIT THE SOIL ANALYSIS REPORT AND DOCUMENTATION VERIFYING IMPLEMENTATION OF SOIL ANALYSIS REPORT RECOMMENDATIONS TO THE COUNTY PURSUANT TO THE REQUIREMENTS OF SECTION 7.C.

C SOIL MANAGEMENT PLAN REQUIREMENTS

N.A. DETAIL-FILE

PLANTING NOTES

NOTES :
1. CONTRACTOR IS RESPONSIBLE FOR CLEARING AND GRUBBING ALL PLANT MATERIAL (GROUNDCOVER, SHRUBS, VINES, AND TREES) WITHIN THE LIMIT OF WORK AREA, UNLESS OTHERWISE NOTED.PRIOR TO TREE REMOVAL CONTRACTOR TO TAG ALL TREES TO BE REMOVED AND CONTACT LANDSCAPE ARCHITECT FOR ONSITE REVIEW AND APPROVAL.
2. CONTRACTOR SHALL TAKE SPECIAL CARE DURING CONSTRUCTION TO LOCATE AND PROTECT ALL EXISTING PLANT MATERIAL AND IRRIGATION LOCATED OUTSIDE OF LIMIT OF WORK AREA.
3. CONTRACTOR SHALL AMEND SOILS PER AGRONOMIC SOILS REPORT TO BE COMMISSIONED BY CONTRACTOR. CONTRACTOR TO SUBMIT A COPY OF THE SOILS REPORT TO THE OWNER.
4. ALL PLANT MATERIAL TO BE 'RETAIL NURSERY' SIZE AND QUALITY.
5. CONTRACTOR SHALL SUBMIT PHOTOS OF PLANT MATERIAL TO OWNER'S REPRESENTATIVE AT LEAST 90 DAYS PRIOR TO DELIVERY AND INSTALLATION.
6. THE INDIVIDUAL SYMBOLS AND/OR QUANTITIES ARE SHOW FOR REFERENCE ONLY, THE ON-CENTER SPACING SHOWN SHALL TAKE PRECEDENCE OVER THE ACTUAL SYMBOLS SHOWN. CONTRACTOR TO VERIFY QUANTITIES BASED ON SPACING AND ADD ADDITIONAL PLANT MATERIAL, AT NO ADDITIONAL COST TO THE OWNER, AS REQUIRED TO MAINTAIN DESIGN INTENT DUE TO FINAL SITE DESIGN CONDITIONS NOT ANTICIPATED DURING DESIGN.CONTRACTOR TO SPOT PLANT MATERIAL AND LANDSCAPE ARCHITECT TO APPROVE FINAL LAYOUT IN FIELD PRIOR TO INSTALLATION.
7. CONTRACTOR SHALL INSTALL A 4" LAYER OF MULCH IN ALL NEW SHRUB AREAS (1-1/2" IN GROUNDCOVER AREAS). MULCH SHALL BE MEDIUM BARK WOOD FIBER MATERIAL RANGING IN 1"-2" IN SIZE AS MADE BY SO CAL MULCH INC, MENIFEE, CA. (951) 246-8081 (OR EQUAL). SUBMIT SAMPLE OF ANY ALTERNATIVE EQUAL MATERIAL PRIOR TO PURCHASE AND/OR PLACEMENT FOR LANDSCAPE ARCHITECT'S APPROVAL.

SOILS REPORT NOTES :
* REFER TO SOILS REPORT PER SPECIFICATIONS FOR SOIL TEST REQUIREMENTS. BID DOCUMENT SOILS REPORT RECOMMENDATIONS TO TAKE PRECEDENCE OVER PLANTING SPECIFICATION CALLOUTS.
* REFER TO PLANTING DETAIL SHEET PD-1 DETAIL 'C' FOR SOIL MANAGEMENT PLAN REQUIREMENTS.
* CONTRACTOR SHALL CONDUCT ADDITIONAL AGRONOMIC SOILS REPORT PRIOR TO SOIL AMENDMENT BUT AFTER BUILDING CONSTRUCTION HAS REACHED SUBSTANTIAL COMPLETION. RECOMMENDATIONS FROM POST-CONSTRUCTION SOILS REPORT SHALL TAKE PRECEDENCE OVER BID DOCUMENT REPORT.

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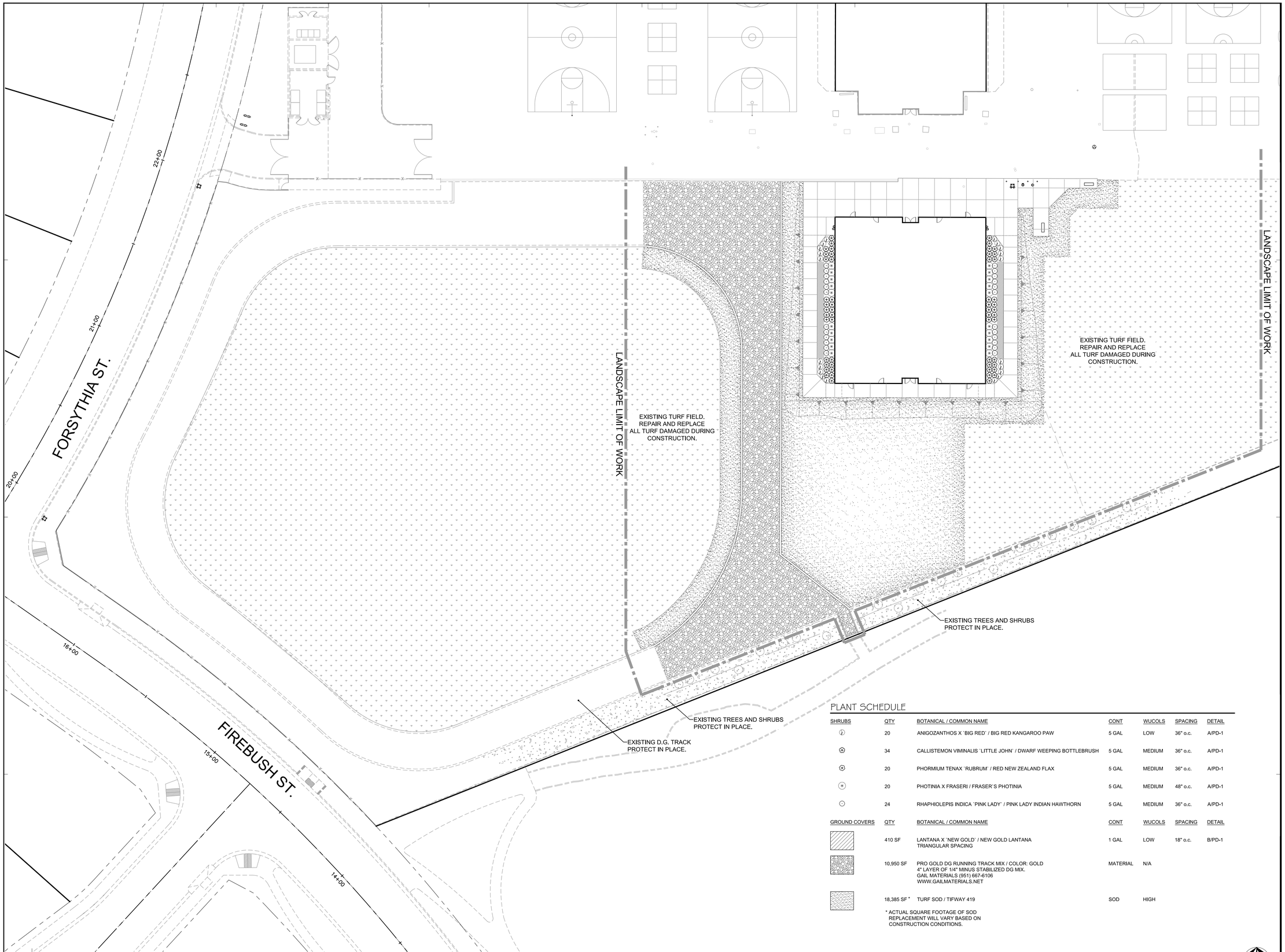
PLANTING DETAILS AND NOTES

DRAWING NUMBER: PD - 1



PLANT SCHEDULE

SHRUBS	QTY	BOTANICAL / COMMON NAME	CONT	WUCOLS	SPACING	DETAIL
	20	ANIGOZANTHOS X `BIG RED` / BIG RED KANGAROO PAW	5 GAL	LOW	36" o.c.	A/PD-1
	34	CALLISTEMON VIMINALIS `LITTLE JOHN` / DWARF WEEPING BOTTLEBRUSH	5 GAL	MEDIUM	36" o.c.	A/PD-1
	20	PHORMIUM TENAX `RUBRUM` / RED NEW ZEALAND FLAX	5 GAL	MEDIUM	36" o.c.	A/PD-1
	20	PHOTINIA X FRASERI / FRASER`S PHOTINIA	5 GAL	MEDIUM	48" o.c.	A/PD-1
	24	RHAPHIOLEPIS INDICA `PINK LADY` / PINK LADY INDIAN HAWTHORN	5 GAL	MEDIUM	36" o.c.	A/PD-1

GROUND COVERS	QTY	BOTANICAL / COMMON NAME	CONT	WUCOLS	SPACING	DETAIL
	410 SF	LANTANA X `NEW GOLD` / NEW GOLD LANTANA TRIANGULAR SPACING	1 GAL	LOW	18" o.c.	B/PD-1
	10,950 SF	PRO GOLD DG RUNNING TRACK MIX / COLOR: GOLD 4" LAYER OF 1/4" MINUS STABILIZED DG MIX. GAIL MATERIALS (951) 667-6106 WWW.GAILMATERIALS.NET	MATERIAL	N/A		
	18,385 SF *	TURF SOD / TIFWAY 419	SOD	HIGH		

* ACTUAL SQUARE FOOTAGE OF SOD REPLACEMENT WILL VARY BASED ON CONSTRUCTION CONDITIONS.

0' 20' 40' 60'

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LISA COX
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Re-Sts: 6/30/23
STATE OF CALIFORNIA

LICENSED LANDSCAPE ARCHITECT
DOUGLAS GROVE NO. 5756
Signature
Douglas Grove
Name (Print)
Renewal Date
11/16/21
Date
STATE OF CALIFORNIA

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PLANTING PLAN

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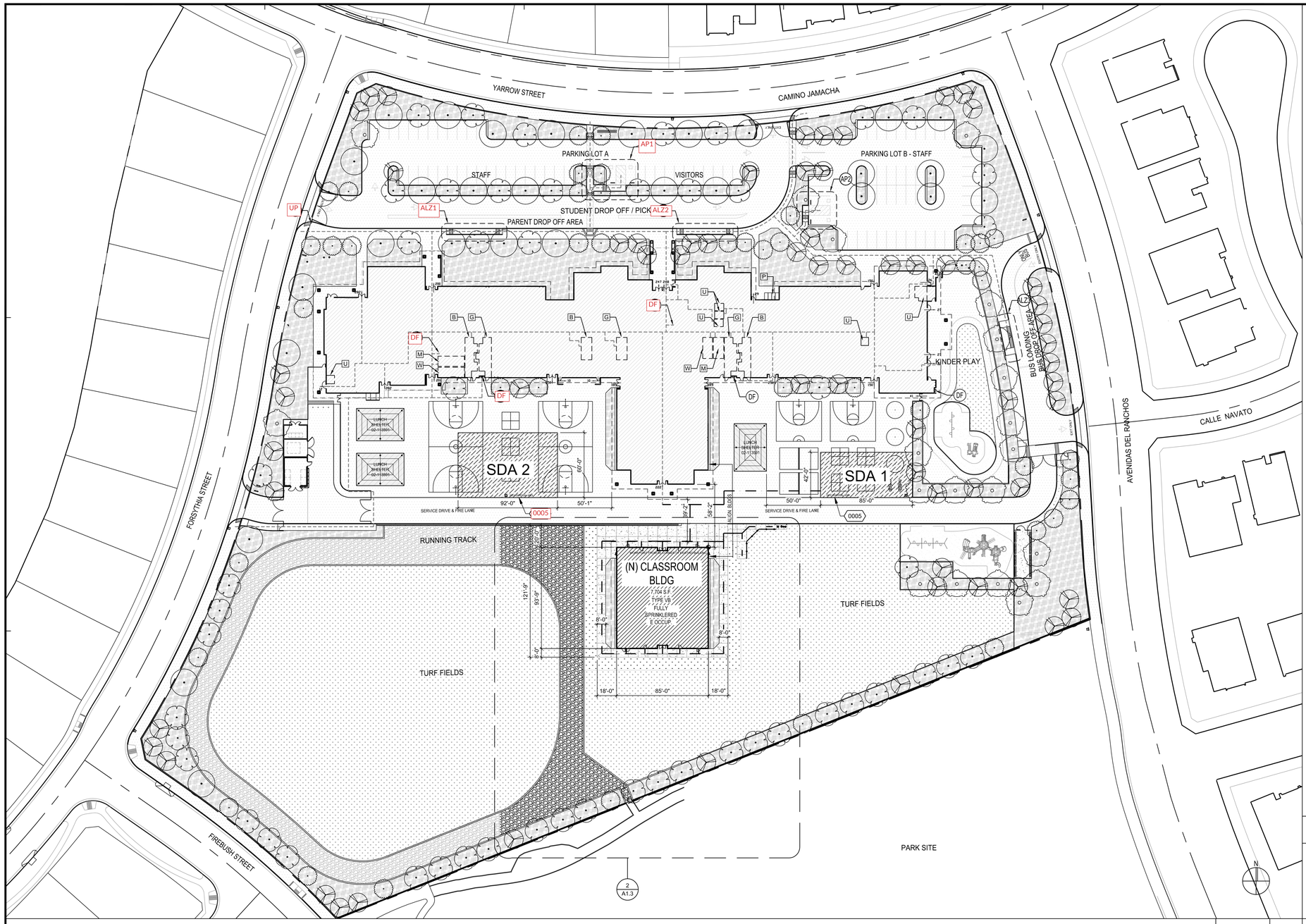


OVERALL SITE PLAN

1" = 40'-0"

1

- PROPERTY LINE
- NEW BUILDING - SITE BUILT
- (E) DECOMPOSED GRANITE
- (E) LANDSCAPING
- (E) TURF
- (N) CONCRETE PAVING
- (E) CONC PAVING
- (E) RESILIENT PLAY AREA SURFACING
- (E) SHADE STRUCTURE (02-113591)

- (UP) (E) UNAUTHORIZED PARKING SIGNAGE PER CBC 11B-502.8, A#04-114869
- (AP) (E) ACCESSIBLE PARKING PER A#04-114869
- (ALZ) (E) ACCESSIBLE LOADING ZONE PER A#04-114869
- (AR) (E) ACCESSIBLE RAMP PER A#04-114869
- (DF) (E) ACCESSIBLE HI/LO DRINKING FOUNTAIN PER A#04-114869
- (B) (E) ACCESSIBLE BOYS RESTROOM PER A#04-114869
- (G) (E) ACCESSIBLE GIRLS RESTROOM PER A#04-114869
- (M) (E) ACCESSIBLE MENS RESTROOM PER A#04-114869
- (W) (E) ACCESSIBLE WOMENS RESTROOM A#04-114869
- (U) (E) ACCESSIBLE UNISEX RESTROOM PER A#04-114869
- (P) (E) BICYCLE PARKING PER A#04-114869

(E) P.O.T. A#04-114869

(N) P.O.T.

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT:

THE POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NONCOMPLIANT 1) HAVE BEEN IDENTIFIED AND 2) THE CORRECTIVE WORK NECESSARY TO BRING DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE SO INDICATED IN THE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION, IF POT ITEMS WITHIN SCOPE OF THE PROJECT REPRESENTED AS CODE COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THEY SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF CONSTRUCTION CHANGE DOCUMENT.

LEGEND

1. REFER TO A1.3 FOR ENLARGED PLANS FOR ADDITIONAL INFORMATION ON SITE ELEMENTS.
2. FOR UNDERGROUND UTILITIES THAT CROSS OVER EXIST CONCRETE PAVEMENT, PATCH AND REPAIR ALL (E) PAVEMENT
3. SCOPE OF WORK IS NOT LIMITED TO ENLARGED DETAIL CALLOUT AREA

PLAN NOTES

0005 (N) 12" LETTERS "SAFE DISPERSAL AREA" PAINTED WHITE

REFERENCE NOTES

SDA1:
1,187 OCC X 3 SF = 3,561 SF REQUIRED
85'-0" X 41'-11" = 3,562 SF PROVIDED

SDA2
1,832 OCC X 3 SF = 5,496 SF REQUIRED
92'-0" X 60'-0" = 5,520 SF PROVIDED

SDA TOTAL:
3,019 OCC x 3 SF = 9,057 SF TOTAL REQUIRED
3,562 SF + 5,520 SF = 9,082 SF TOTAL PROVIDED

SAFE DISPERSAL AREA: OK

SAFE DISPERSAL AREA

PARKING LOT A
QUANTITY OF PARKING SPACES:
41 STANDARD
1 STANDARD ACCESSIBLE
1 VAN ACCESSIBLE
= 43 TOTAL PARKING SPACES

ACCESSIBLE PARKING SPACES REQUIRED: 2
(PER 2013 CBC TABLE 11B 208.2)

PARKING LOT B
QUANTITY OF PARKING SPACES:
44 STANDARD
1 STANDARD ACCESSIBLE
1 VAN ACCESSIBLE
= 46 TOTAL PARKING SPACES

ACCESSIBLE PARKING SPACES REQUIRED: 2
(PER 2013 CBC TABLE 11B 208.2)

PARKING SUMMARY

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-120669 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/20/2022

PBK WLC
RANCHO CUCAMONGA
8163 ROCHESTER AVENUE, SUITE 100
RANCHO CUCAMONGA, CA 91730
909-987-0909 P

JURUPA UNIFIED SCHOOL DISTRICT

DEL SOL ACADEMY
CLASSROOM BUILDING
11626 FORSYTHIA SKYWAY
JURUPA VALLEY, CA 91752

JURUPA UNIFIED SCHOOL DISTRICT

LICENSED ARCHITECT
LISA COX
C-29158
STATE OF CALIFORNIA

CONSULTANT

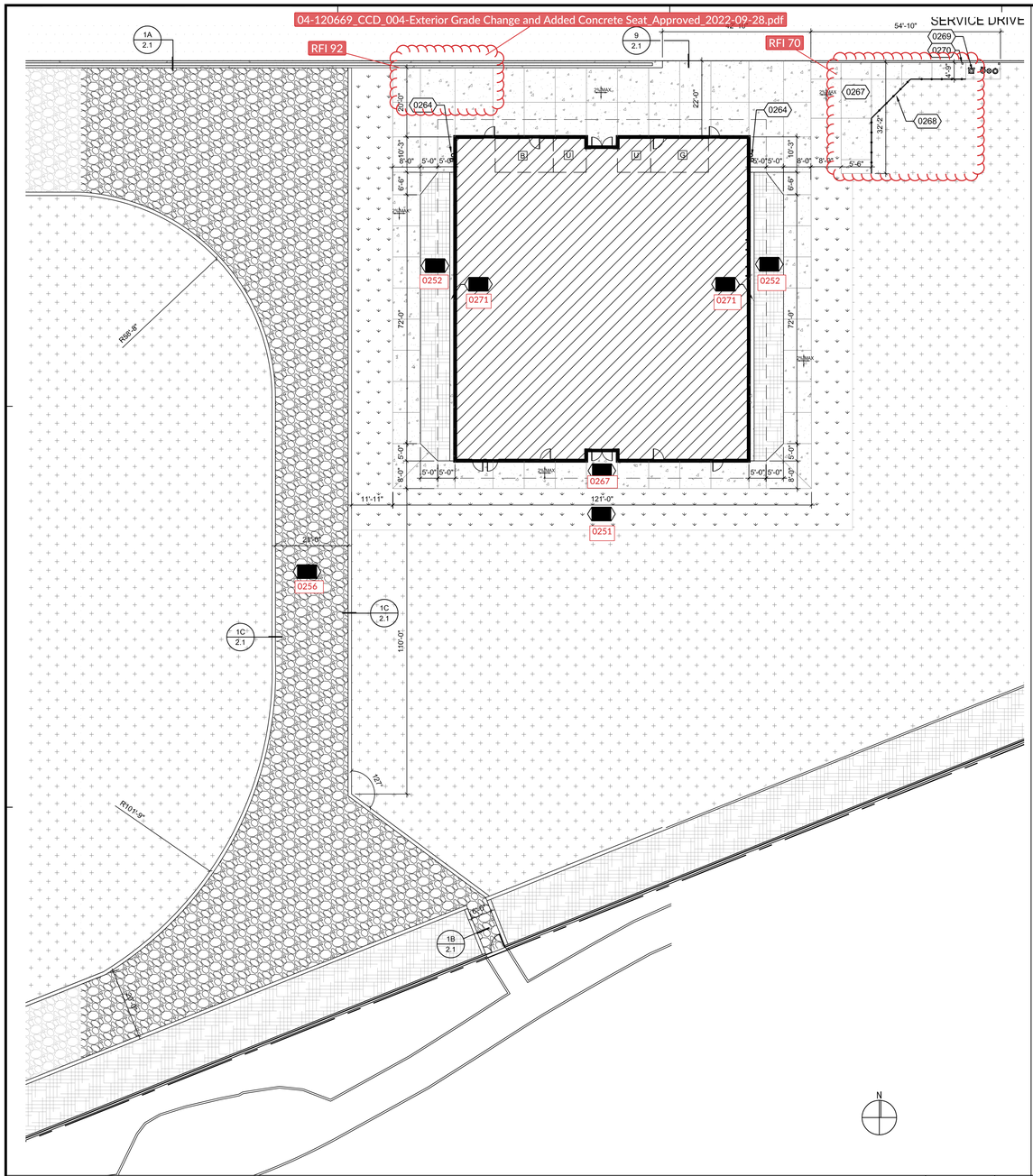
NO	DATE	BY	DESCRIPTION
1			REVISIONS

DRAWN:	CHECKED:
DATE: 1/18/2022	SCALE: 1" = 40'-0"
PROJECT NUMBER: A#04-120669	

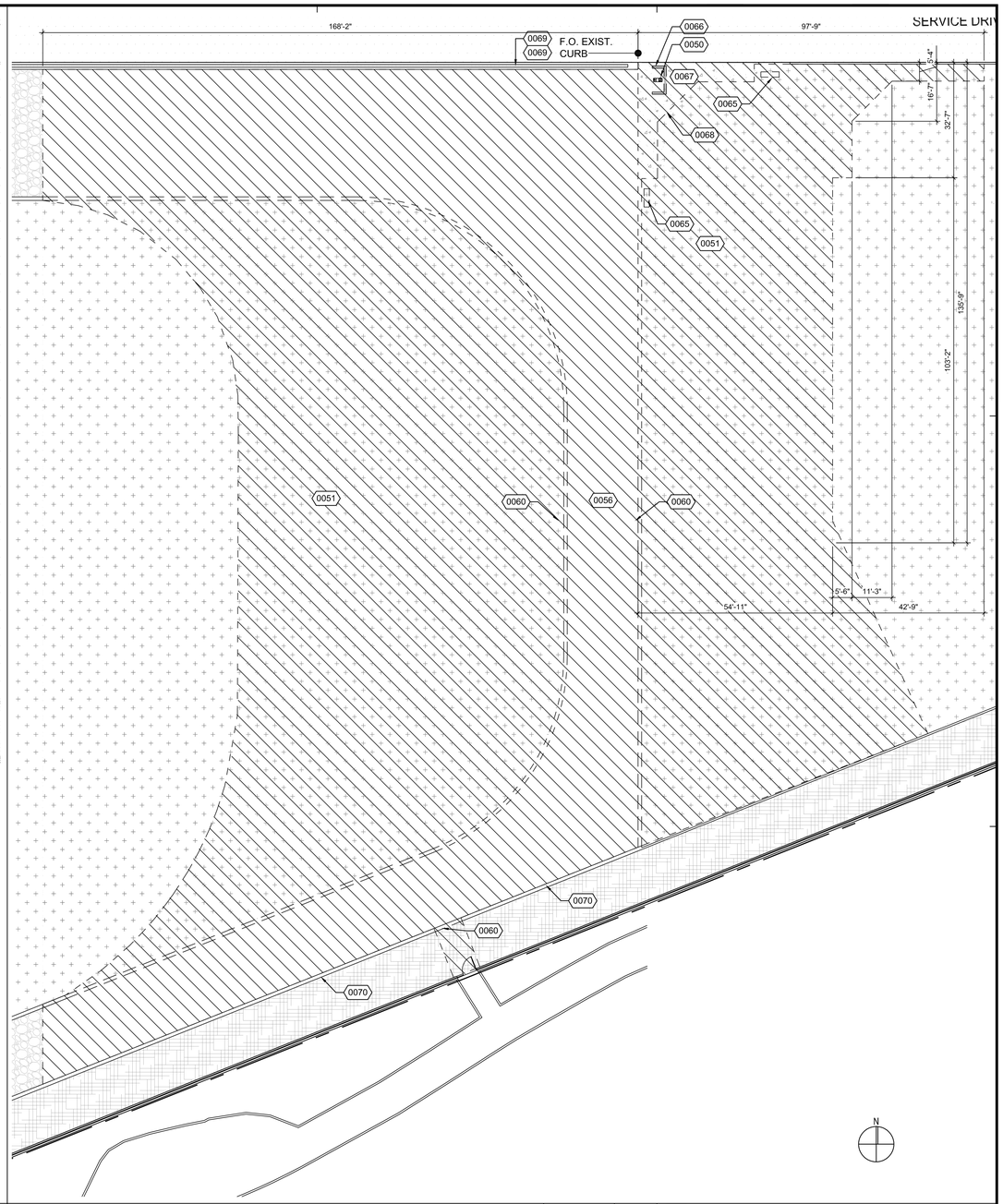
OVERALL SITE PLAN

DRAWING NUMBER: A1.2

04-120669_CCD_004-Exterior Grade Change and Added Concrete Seat_Approved_2022-09-28.pdf



ENLARGED SITE PLAN - NEW | 1" = 16'-0" | 2



ENLARGED SITE PLAN - DEMO | 1" = 16'-0" | 1

NEW BUILDING - SITE BUILT, REF A2.1
(E) DECOMPOSED GRANITE
(N) DECOMPOSED GRANITE
(N) LANDSCAPING
(E) TURF
(N) TURF
(N) CONCRETE PAVING PER DET 14/2.1
(E) CONC PAVING
DEMO AREA, REF DEMO NOTES A1.1
OVERHANG ABOVE
B (E) ACCESSIBLE BOYS RESTROOM
G (E) ACCESSIBLE GIRLS RESTROOM
U (E) ACCESSIBLE STAFF RESTROOM

LEGEND

0050 REMOVE (E) DRINKING FOUNTAIN
0051 REMOVE (E) TURF
0056 REMOVE (E) DECOMPOSED GRANITE
0060 REMOVE (E) CONC CURB
0065 REMOVE AND SALVAGE (E) BENCH. REMOVE CONCRETE FOOTING AND RETURN BENCH TO OWNER
0066 REMOVE (E) CMU WALL
0067 REMOVE (E) CONC PAVING
0068 REMOVE (E) CL FENCE BACKSTOP
0069 PROTECT IN PLACE (E) TRENCH DRAIN
0070 PROTECT IN PLACE (E) CONC CURB
0251 (N) TURF WHERE OCCURS, REF LANDSCAPE DWGS
0252 (N) LANDSCAPE, REF LANDSCAPE DWGS
0256 (N) DECOMPOSED GRANITE TRACK & CONC CURBS, 1/2.1
0264 (N) ACCCESSIBLE DRINKING FOUNTAIN W/ BOTTLE FILLER, REF DET 20/2.1
0267 (N) CONC PAVING, REF DET 14/2.1
0268 (N) CL FENCE BACKSTOP, REF DET 2/2.1
0269 (N) FIRE HYDRANT, REF CIVIL DWGS
0270 (N) PIPE BOLLARDS, REF DET 3/2.1
0271 (N) 12" CONC MOW STRIP, REF DET 1/9.7

REFERENCE NOTES

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
APP: 04-120669 INC:
REVIEWED FOR
SS ☑ FLS ☑ ACS ☑
DATE: 01/20/2022

PBKWLC
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8163 ROCHESTER AVENUE, SUITE 100
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JURUPA VALLEY, CA 91752
JURUPA UNIFIED SCHOOL DISTRICT

LICENSED ARCHITECT
LISA COX
C-29158
Exp. 08/31/2023
STATE OF CALIFORNIA

CONSULTANT

NO	DATE	BY	DESCRIPTION
1			REVISIONS

DRAWN:
CHECKED:
DATE: 1/18/2022
SCALE:
PROJECT NUMBER: A#04-120669

ENLARGED SITE PLAN - DEMO & NEW

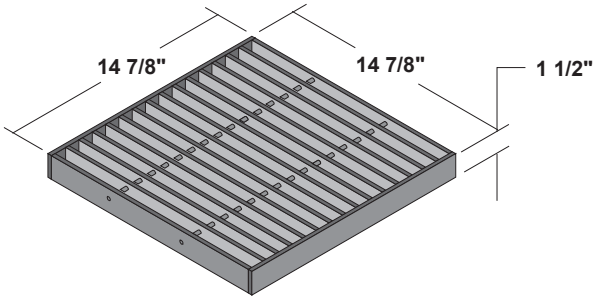
DRAWING NUMBER: A1.3

1212 CAST IRON GRATE

PARKWAY ONLY 28 lbs.

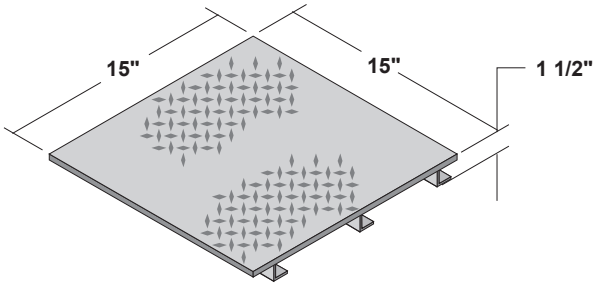
1212 STEEL GRATES

PARKWAY 16 lbs.
TRAFFIC 18 lbs.

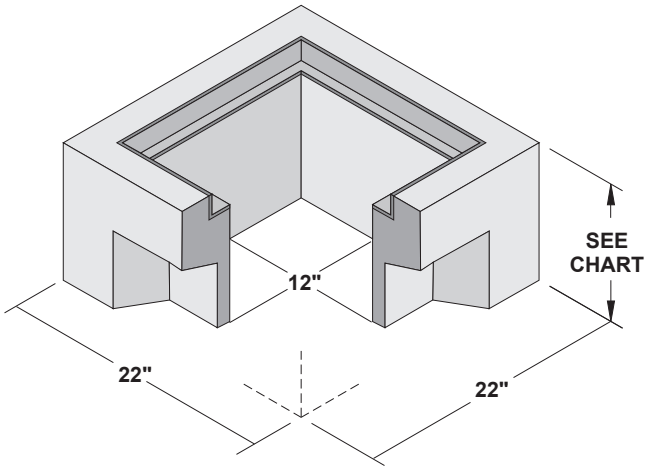


1212 STEEL COVER

PARKWAY 22 lbs.
TRAFFIC 25 lbs.

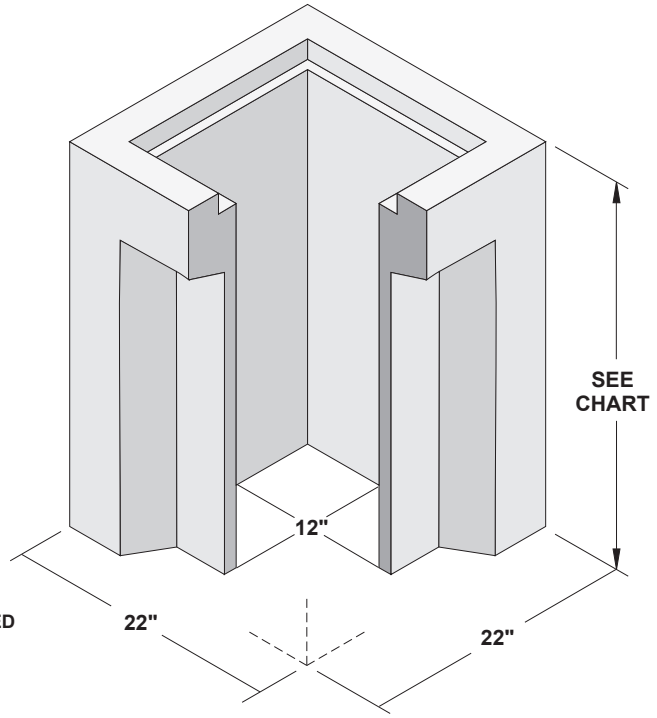


1212 TOP SECTION (*WITH GALVANIZED FRAME*)



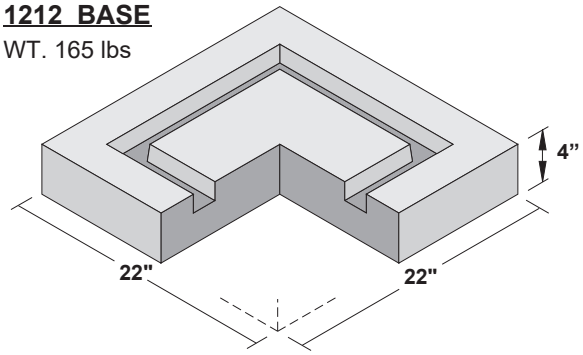
1212 LOWER SECTION (*NO FRAME*)

NOTE: USE 12", 18", 24", 28" LOWERS TO INCREASE DEPTH UP TO A MAXIMUM OF 72"



1212 BASE

WT. 165 lbs



NOTES:

1. GRATES AND COVERS AVAILABLE PAINTED BLACK OR GALVANIZED
2. "ADA" GRATES AVAILABLE IN PARKWAY & TRAFFIC
3. "HEEL PROOF" GRATES AVAILABLE IN PARKWAY & TRAFFIC
4. A TOP SECTION WITH FRAME MUST BE USED IF BOLT DOWN REQUIRED

TOP SECTION	HT.	LBS	KNOCK-OUT
1212 T6	6"	170	NONE
1212 T12	12"	275	(4) 5" x 10"
1212 T18	18"	270	(4) 8" x 12"
1212 T24	24"	430	(4) 8" x 15"
1212 T28	28"	380	(4) 8" x 22"

EXTENSION SECTION	HT.	LBS	KNOCK-OUT
1212 E6	6"	170	NONE

LOWER SECTION	HT.	LBS	KNOCK-OUT
1212 L12	12"	275	(4) 5" x 10"
1212 L18	18"	270	(4) 8" x 12"
1212 L24	24"	430	(4) 8" x 15"
1212 L28	28"	380	(4) 8" x 22"

12" x 12" CATCH BASIN

JENSEN PRECAST EST. 1968

BROOKS 1212 CB

ORG. DWG. DATE	REV. DWG. DATE
04-20-95	02-14-20

PRO-TRADE® SYNTHETIC TURF

DWARF FESCUE LIGHT

THIS GRASS IS ALWAYS GREENER

Pro-Trade® Synthetic Turf performs year after year, offering unmatched durability backed by an industry-leading 16-year warranty. With SiteOne's expert product knowledge, custom cutting and a wide range of installation tools and accessories, we provide all you need for your project. Choose Pro-Trade Synthetic Turf for unparalleled quality and performance.

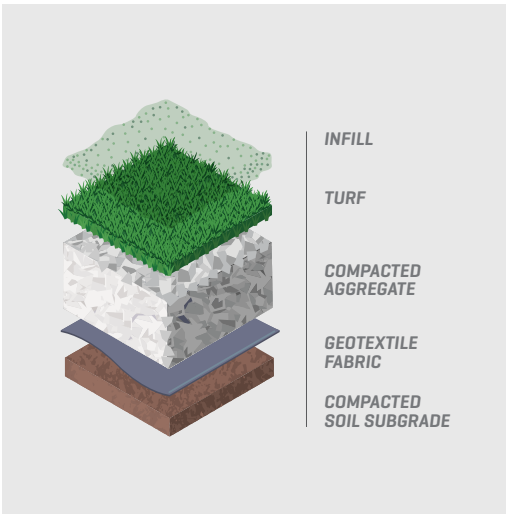
Don't Forget Installation Tools & Accessories

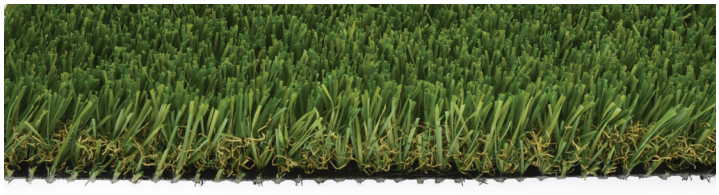
Exclusively at SiteOne LANDSCAPE SUPPLY

PRO-TRADE® SYNTHETIC TURF

DWARF FESCUE LIGHT

Item #	PT-TURF1-50-1.5
Pile Height	1.5 in.
Face Weight	50 oz.
Total Weight	75 oz.
Blade Color	Deep Green / Deep Olive
Thatch Color	Green / Brown
Yarn Type	Polyethylene - C Shape
Denier	PE 11,250 + PP 2,970
Turf Gauge	3/8 in.
Grab Strength	10.5 lb.
Water Permeability	190 in. / hr.
Approx. Infill Amount	2 lb. / sf.



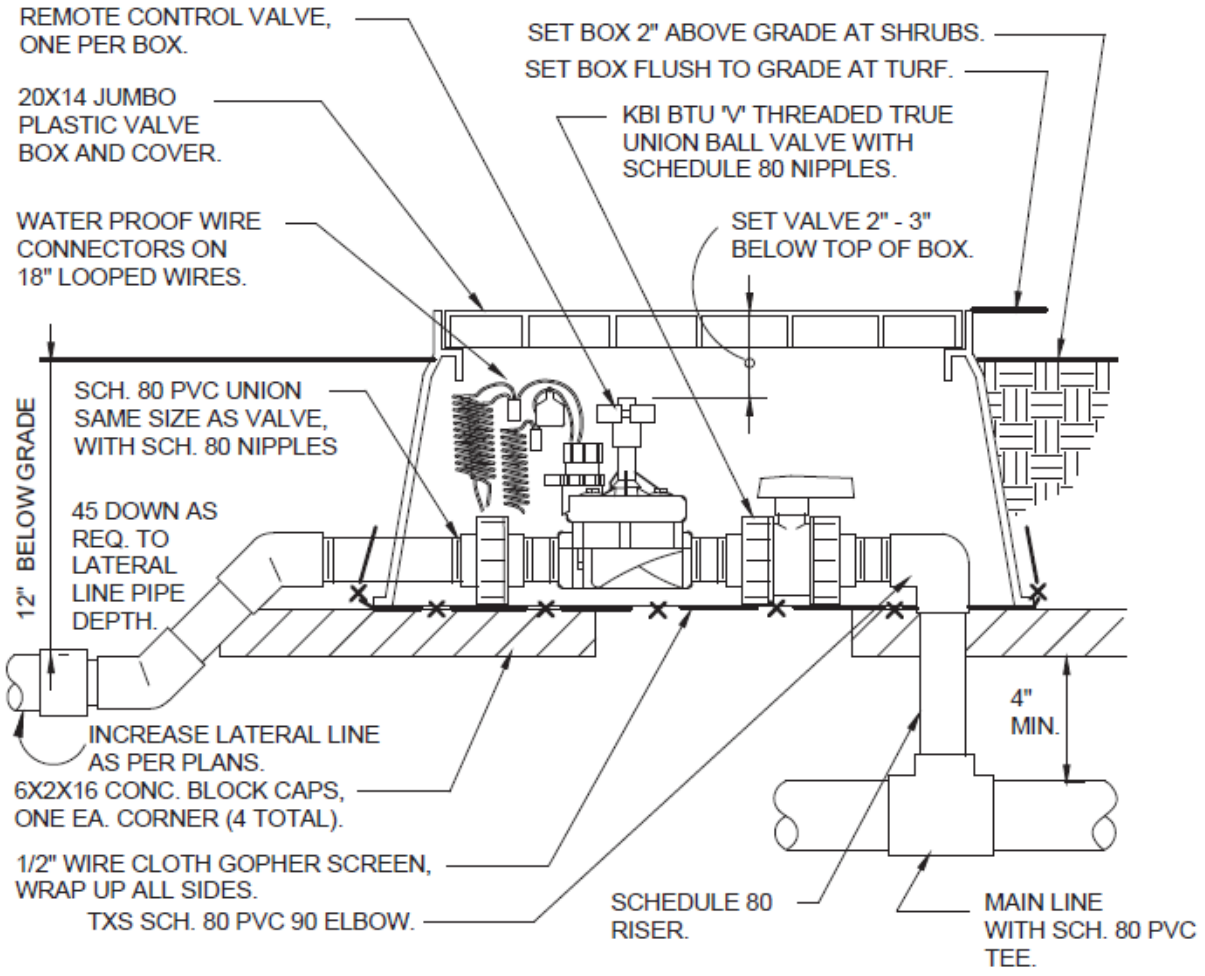


16-Year Warranty

Lead-Free

www.SiteOne.com/ProTradeTurf

Illustration for educational purposes only. Read and follow manufacturer instructions when installing any hardscape or synthetic turf materials.



B

RCV WITH UNION S.O.V.

1 1/2" = 1'-0"

328406.13-21