

APPENDIX D
Hydrology/Water Quality Documentation



6080 Center Drive, Suite 700
Los Angeles, CA 90045
(310) 665-2800 Civil Fax (310) 665-9075

DATE: November 21, 2014
TO:
FROM:
SUBJECT: Carson and Avalon Mixed-Use: Hydrology and Water Quality Impacts

This memo summarizes the potential hydrology and water quality impacts of the Carson Avalon Project. It addresses each item in Section IX. Hydrology and Water Quality of the *City of Carson Planning Division Appendix N: Infill Environmental Checklist*.

Introduction / General Site Description

Existing Conditions

The project site consists multiple lots located at 21521 N. Avalon Blvd and 625-655 East Carson Street in the city of Carson. The total project area is approximately 5.49 acres, and is situated on the northwest corner of Carson Street and Avalon Blvd. The project site consists of existing buildings, parking lots, and dirt fields. All existing buildings, structures, and site features will be removed as part of the demolition phase for the proposed project.

Several existing easements run within the project limits as well as around the adjacent public right of way. All easements will be identified and addressed as necessary early in the project design schedule. See the ALTA/ASCM Land Title Survey in Appendix A.

Existing public utilities gathered from available as-built and record drawings are shown on the Civil Exhibit in Appendix A of the Civil Engineering Initial Study.

Proposed Conditions

The proposed development consists of a residential building (west) and mixed use building (east). The residential building abutting E Carson Street consists of four above grade levels of residential housing and parking. The mixed use building on the corner of E Carson Street and N Avalon Blvd consists of one level of subterranean parking and between 2 and 5 above ground mixed use levels. The retail space will open out to East Carson Street and N. Avalon Blvd. The development will span approximately to the property line. Site improvements include a central courtyard and pool area, landscape and hardscape features throughout, and a fire lane which wraps around the north and west boundaries of the site.

A. Water Quality Standards and Waste Discharge Requirements

This project will be subject to water quality management practices both during construction and after the project's completion.

Proposed Water Quality Management – Construction

Within the State of California, the National Pollutant Discharge Elimination System (NPDES) requirements mandate that storm water Best Management Practices (BMPs) be implemented during Project construction including Storm Water Pollution Prevention Plan (SWPPP). The SWPPP document and all related attachments and calculations will be submitted to the State's Waterboard Website.

The Project SWPPP will identify potential pollutant sources that may affect the quality of discharge associated with construction activity, identify non-storm water discharges, and recommend means and methods to effectively prohibit the entry of pollutants into the public storm drain system during construction.

Examples of Erosion and Sediment Control BMPs include sandbags, storm drain inlet protection, stabilized construction entrances, street sweeping, and sediment basins. A detailed Erosion Control Plan will be created during the design phase of the project.

Proposed Water Quality Management-Project Implementation

Permanent post-construction stormwater management mitigation will be implemented per the County of Los Angeles Department of Public Works Low Impact Development Standards Manual, dated February 14, 2014.

LID (Low Impact Development) is a storm water management strategy with goals to mitigate the impacts of increased runoff and storm water pollution as close to its source as possible. Per the latest LID guidelines new construction developments must treat stormwater through infiltration, capture and reuse, or biofiltration.

LA County standards require the flow and volume generated from the 85th percentile 24-hour rainfall depth to be captured and treated onsite. The proposed development will generate a peak mitigated flow of approximately 1.14 CFS, and mitigated volume of approximately 13,000 CF.

Infiltration may be feasible via buried perforated pipes or a drywell system, depending on recommendations from the geotechnical engineer

Capture and reuse may be feasible to treat a portion of the stormwater. This option should be explored with the Architect and Landscape Architect.

Biofiltration planter boxes are a viable stormwater treatment solution that may be used solely, or in combination with infiltration and capture and reuse. These planter boxes will be contained hard bottom planters with layers of mulch, soil, and gravel which filter water before discharging into the street. Based on preliminary calculations, if the entire proposed project were treated with only planter boxes, the required planter area would be approximately 8,300 SF. Planter boxes can be located at grade level or on upper podium decks.

After a geotechnical investigation report is obtained, it is recommended that the design team meet and work together to achieve a stormwater treatment strategy that works with the existing parameters and design intent.

B. Groundwater Supplies and Groundwater Recharge

The Carson Avalon Project is not expected to significantly impact the groundwater supplies or significantly interfere with groundwater recharge. It is anticipated that infiltration will be used as a method of stormwater management pending recommendations from the project Geotechnical Investigation Report. Impacts on groundwater due to subterranean parking excavation, including temporary and permanent dewatering will also be confirmed pending the completion of the project Geotechnical Investigation Report.

Our initial study shows that, based on available historic groundwater well data, groundwater depth ranged from 55' deep to 140' deep between 1884 and 2007. The current site plan shows one level of subterranean parking which would be approximately 10-feet below ground surface. Refer to Appendix B.

C. Erosion and Siltation

A detailed Erosion Control Plan will be created during the design phase of the project. This plan will be implemented during lifetime of the construction phase as a means of mitigating both erosion and siltation both on- and off-site. Examples of Erosion and Sediment Control BMPs include sandbags, storm drain inlet protection, stabilized construction entrances, street sweeping, and sediment basins. Construction BMPs will be outlined in the project specific SWPPP, which will be uploaded to the State Waterboard Website.

Drainage paths for the completed project will be closely controlled to prevent the likelihood of erosion or siltation both on- and off-site upon completion of construction. Site and roof runoff will be conveyed via non-erosive storm drain devices. The project team is pursuing on-site infiltration to comply with stormwater mitigation requirements (Low Impact Development). In the event of heavy rainfall, overflow runoff will mimic existing drainage pattern of conveyance to adjacent streets.

D. On- and Off-Site Flooding Potential

Urban runoff drainage paths for the completed project will be closely controlled to prevent the likelihood of both on- and off-site flooding. On-site storm drain features will be sized to accommodate the rainfall associated with a 50 year storm. Hydrology calculations for pre- and

post-site conditions evaluating the peak flow and 24-hour volumes associated with a 50 year storm provided in Appendix C of the Civil Engineering Initial Study.

	Pre Construction	Post Construction
50-year peak flow	17.69 cfs	17.69 cfs
50-year volume	52,700 cf	96,268 cf

The increased runoff volume is due to the reduction of pervious area. The design team will work with the City of Carson and Los Angeles County to ensure the existing public infrastructure can handle the increased runoff volume

The 50-year peak flow is not expected to increase. Due to the clayey nature of the existing soils, during a heavy rain event the soil will become saturated and generate similar runoff to impervious surfaces.

E. Existing and Planned Stormwater Drainage Systems

Existing

The existing on-site runoff for the developed gas station, retail buildings, and parking lot at the southeast corner of the site appear to be conveyed via concrete ribbon gutter to a 24" x 24" private catch basin adjacent to the driveway on Avalon. This catch basin outlets through several curb drains into Avalon Blvd.

The small parking lot east of the stand along building on Carson Street appears to sheet flow into Carson Street. The private drive aisle west of this building appears to drain into a private catch basin, which outlets through the curb into Carson St.

There is no storm drain system in the dirt lot north of the gas station development. Runoff in this area currently sheet flows onto Avalon Blvd.

There is a catch basin located on the northwest corner of the large dirt lot on the western portion of the property. This catch basin appears to be located outside of the property limits. The outlet path of this catch basin is unknown.

Proposed

The proposed on-site storm drain system will be designed to handle the runoff generated from a 50-year design storm. Any proposed connections to the existing public storm drain line owned and maintained by the Los Angeles County Flood Control District (LACFCD) will be designed to limit the discharge per LACFCD requirements.

Los Angeles County Low Impact Development standards require the flow and volume generated from the 85th percentile 24-hour rainfall depth to be captured and treated onsite. The proposed development will generate a peak mitigated flow of approximately 1.14 CFS, and mitigated volume of approximately 13,000 CF. Storm drain systems will be sized to capture, retain, and treat the runoff associated with an 85th percentile 24-hour rainfall through either infiltration, capture and reuse, or biofiltration planters pending recommendations from the project Geotechnical Investigation Report.

F. Degradation of Water Quality

The during- and post-construction BMPs will ensure no decrease in water quality due to the project (see sections A and E herein). At this point, the Project Team does not foresee any additional sources of water quality degradation.

G. - J. Flood Hazard Areas

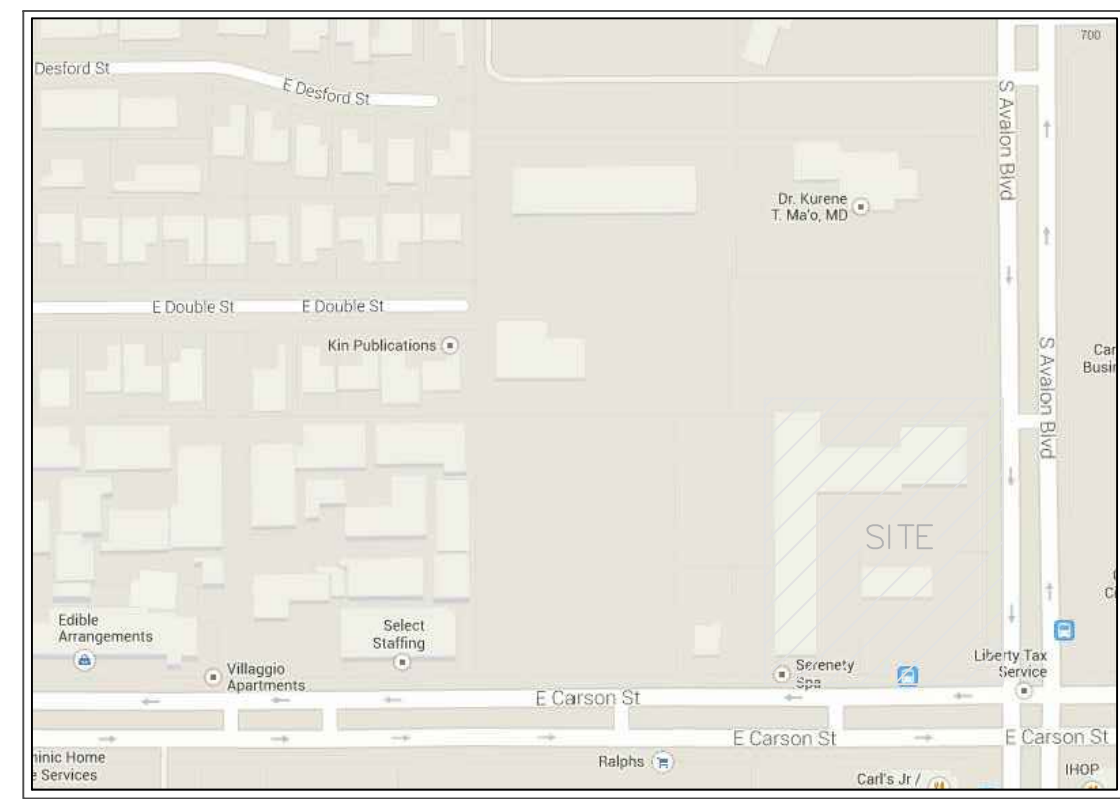
FEMA Map 060371935F shows the project at the boundary between two FEMA Flood Zones, one being the 0.2% annual chance, or 50-year flood hazard and the other being outside of the 0.2% annual chance of flood. This map with project location has been provided in Appendix C.

Because the project site is not considered a flood zone it is not expected to affect, impede, or redirect flood flows. Furthermore, it is not anticipated that this project will expose people or structures to injury or death caused by potential flooding, inundation, or mudflows.

APPENDIX A

ALTA/ASCM LAND TITLE SURVEY

CIVIL EXHIBIT



VICINITY MAP
NOT TO SCALE



LEGAL DESCRIPTION

ALL THAT CERTAIN REAL PROPERTY SITUATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCEL 1:

PARCEL 1, IN THE CITY OF CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON PARCEL MAP NO. 1372, AS PER MAP FILED IN BOOK 26, PAGE 91, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL 2:

PARCEL 2, IN THE CITY OF CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON PARCEL MAP NO. 14207, AS PER MAP FILED IN BOOK 142, PAGE 28, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

TITLE REPORT NOTES

THE EFFECTS OF EASEMENT SHOWN IN COMMONWEALTH LAND TITLE COMPANY POLICY NO. 08011341 DATED JANUARY 30, 2014 ARE SHOWN UNLESS OTHERWISE NOTED.

- ② AN EASEMENT FOR PIPELINE PURPOSES RECORDED IN BOOK 1515, PAGE 265 OF OFFICIAL RECORDS. (SAID EASEMENT IS INDETERMINATE)
- ③ AN EASEMENT FOR PUBLIC UTILITY PURPOSES RECORDED IN BOOK 5502, PAGE 354 OF OFFICIAL RECORDS.
- ④ AN EASEMENT FOR CONDUITS PURPOSES RECORDED IN BOOK 6754, PAGE 22 OF OFFICIAL RECORDS.
- ⑥ AN EASEMENT FOR PUBLIC UTILITY PURPOSES RECORDED IN BOOK 20682, PAGE 238 OF OFFICIAL RECORDS.
- ⑧ COVENANT, CONDITIONS AND RESTRICTIONS RECORDED IN BOOK M734, PAGE 47 OF OFFICIAL RECORDS. (SAID DOCUMENT DOES NOT AFFECT PROPERTY).
- ⑨ AN EASEMENT FOR TELEPHONE CONDUIT SYSTEM AND UNDERGROUND TELEPHONE SERVICES IN FAVOR OF PACIFIC TELEPHONE AND TELEGRAPH COMPANY RECORDED AUGUST 22, 1961 IN BOOK M834, PAGE 739 OF OFFICIAL RECORDS. (SAID DOCUMENT DOES NOT AFFECT PROPERTY).
- ⑩ AN EASEMENT IN FAVOR OF COUNTY OF LOS ANGELES RECORDED MAY 13, 1965 AS INSTRUMENT NO. 4182 OF OFFICIAL RECORDS.
- ⑪ AN EASEMENT IN FAVOR OF COUNTY OF LOS ANGELES RECORDED APRIL 16, 1968 AS INSTRUMENT NO. 3366, IN BOOK D3972, PAGE 561 OF OFFICIAL RECORDS.
- ⑬ AN EASEMENT FOR PUBLIC UTILITIES PURPOSES RECORDED OCTOBER 27, 1981 AS INSTRUMENT NO. 81-1059480 OF OFFICIAL RECORDS.
- ⑭ COVENANT, CONDITIONS AND RESTRICTIONS RECORDED NOVEMBER 29, 1982 AS INSTRUMENT NO. 82-1188569 OF OFFICIAL RECORDS. (SAID EASEMENT IS BLANKET IN NATURE).
- ⑮ COVENANT, CONDITIONS AND RESTRICTIONS RECORDED JANUARY 5, 1983 AS INSTRUMENT NO. 83-12718 OF OFFICIAL RECORDS. (SAID EASEMENT IS BLANKET IN NATURE).
- ⑳ AN EASEMENT DEDICATION FOR SIDEWALK ACCESSIBILITY AND BUS SHELTER RECORDED FEBRUARY 8, 2011 AS INSTRUMENT NO. 20110211206 OF OFFICIAL RECORDS.

THE EFFECT OF PROPERTY TAXES, LIEN OF SUPPLEMENTAL OR ESCAPED ASSESSMENTS OF PROPERTY TAXES, WATER RIGHTS, CLAIMS OR TITLE TO WATER WHETHER OR NOT DISCLOSED BY THE PUBLIC RECORD, COVENANT, CONDITIONS AND RESTRICTIONS, COVENANT AND AGREEMENT, LEASE, AGREEMENT ACCEPTING CONDITIONS OF THE CITY OF CARSON PLANNING COMMISSION RESOLUTION NO. 88-1088, NOTICE OF CONDITIONS OF APPROVAL OF DISCRETIONARY PERMITS, LAND DESCRIBED HEREIN IS INCLUDED WITHIN A PROJECT AREA OF THE REDEVELOPMENT AGENCY OF THE CITY OF CARSON, ANY RIGHTS OF THE PARTIES IN POSSESSION OF A PORTION OF, OR ALL OF, SAID LAND, WHICH RIGHTS ARE NOT DISCLOSED BY THE PUBLIC RECORDS, DISCREPANCIES, CONFLICTS IN BOUNDARY LINES, SHORTAGE IN AREA, ENCROACHMENTS, OR ANY OTHER MATTERS WHICH A CORRECT SURVEY WOULD DISCLOSE AND WHICH ARE NOT SHOWN BY THE PUBLIC RECORDS, ANY EASEMENTS NOT DISCLOSED BY THE PUBLIC RECORDS AS TO MATTERS AFFECTING TITLE TO REAL PROPERTY WHETHER OR NOT SAID EASEMENTS ARE VISIBLE AND APPARENT, MATTERS WHICH MAY BE DISCLOSED BY AN INSPECTION AND/OR BY A CORRECT ALTA/ACSM LAND TITLE SURVEY OF SAID LAND THAT IS SATISFACTORY TO THE COMPANY, AND/OR BY INQUIRY OF THE PARTIES IN POSSESSION THEREOF, DEED OF TRUST AS DISCLOSED BY ITEMS A, B, C, D, 1, 5, 7, 12, 16 THROUGH 21 INCLUSIVE, AND 23 THROUGH 27 INCLUSIVE OF THE TITLE REPORT REFERENCED HEREON ARE NOT A PART OF THIS A.L.T.A. SURVEY.

UTILITY NOTE

UTILITY INFORMATION SHOWN HEREON WAS COMPILED FROM PUBLIC RECORDS. NO LIABILITY IS ASSUMED OR INFERRED BY CRC ENTERPRISES AS TO THE ACCURACY OF SAID INFORMATION.

BASIS OF BEARING

THE BEARINGS SHOWN HEREON ARE BASED ON THE CENTERLINE OF CARSON STREET, SHOWN AS NORTH 89°40'10" EAST PER PARCEL MAP 14207, RECORDED IN M.B. 142, PAGE 28 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

A.L.T.A. STATEMENT

I, THE UNDERSIGNED, A DULY LICENSED AND QUALIFIED SURVEYOR IN THE STATE OF CALIFORNIA, DO HEREBY STATE TO BEVERLY WILSHIRE MEDICAL CENTER, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY, AS TO AN UNDIVIDED 50% INTEREST AND REFOUA L.L.C., A CALIFORNIA LIMITED LIABILITY COMPANY, AS TO AN UNDIVIDED 12.5% INTEREST AND ETEHAD, L.L.C., A CALIFORNIA LIMITED LIABILITY COMPANY, AS TO AN UNDIVIDED 37.5% INTEREST, IVY PROPERTY GROUP AND COMMONWEALTH LAND TITLE COMPANY THAT I OR OTHERS UNDER MY DIRECT SUPERVISION HAVE ACCURATELY SURVEYED THE ABOVE DESCRIBED PARCELS OF LAND AND THAT THIS SURVEY FULLY AND ACCURATELY REPRESENTS THE REAL PROPERTY DESCRIBED ABOVE AS PER THE LEGAL DESCRIPTION HEREON. I FURTHER CERTIFY THAT THIS SURVEY IS IN COMPLIANCE WITH THE "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS". JOINTLY ESTABLISHED BY THE ALTA AND ACSM IN 2011, (THE MINIMUM STANDARDS) AND INCLUDES ITEMS 2, 3, 4, 6(a)(b), 7(a)(b)(c), 8, 9, 11(a), 13, 14, 16, 17, 18, AND 19 OF TABLE A THEREOF. I FURTHER CERTIFY THAT THIS SURVEY CORRECTLY SHOWS THE LOCATIONS OF ALL BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS SITUATED UPON THE DESCRIBED PREMISES, AND RIGHTS OF WAY, NO PARTY WALLS, NO ENCROACHMENTS UNTO ADJOINING PREMISES, NO STREET OR ALLEYS, AND NO ENCROACHMENTS UPON SAID PREMISES BY BUILDINGS, STRUCTURES OR IMPROVEMENTS LOCATED UPON ADJOINING PREMISES, EXCEPT AS SHOWN. SAID MAP COMPLES WITH THE ACCURACY STANDARDS OF AN URBAN SURVEY. THIS PRINT OF SURVEY REFLECTS BOUNDARY LINES OF THE DESCRIBED LAND WHICH "CLOSE" BY ENGINEERING CALCULATIONS.



PLANS PREPARED UNDER THE DIRECTION OF

RON KOESTER LS 5930

13 FEB. 2014

DATE

NOTES

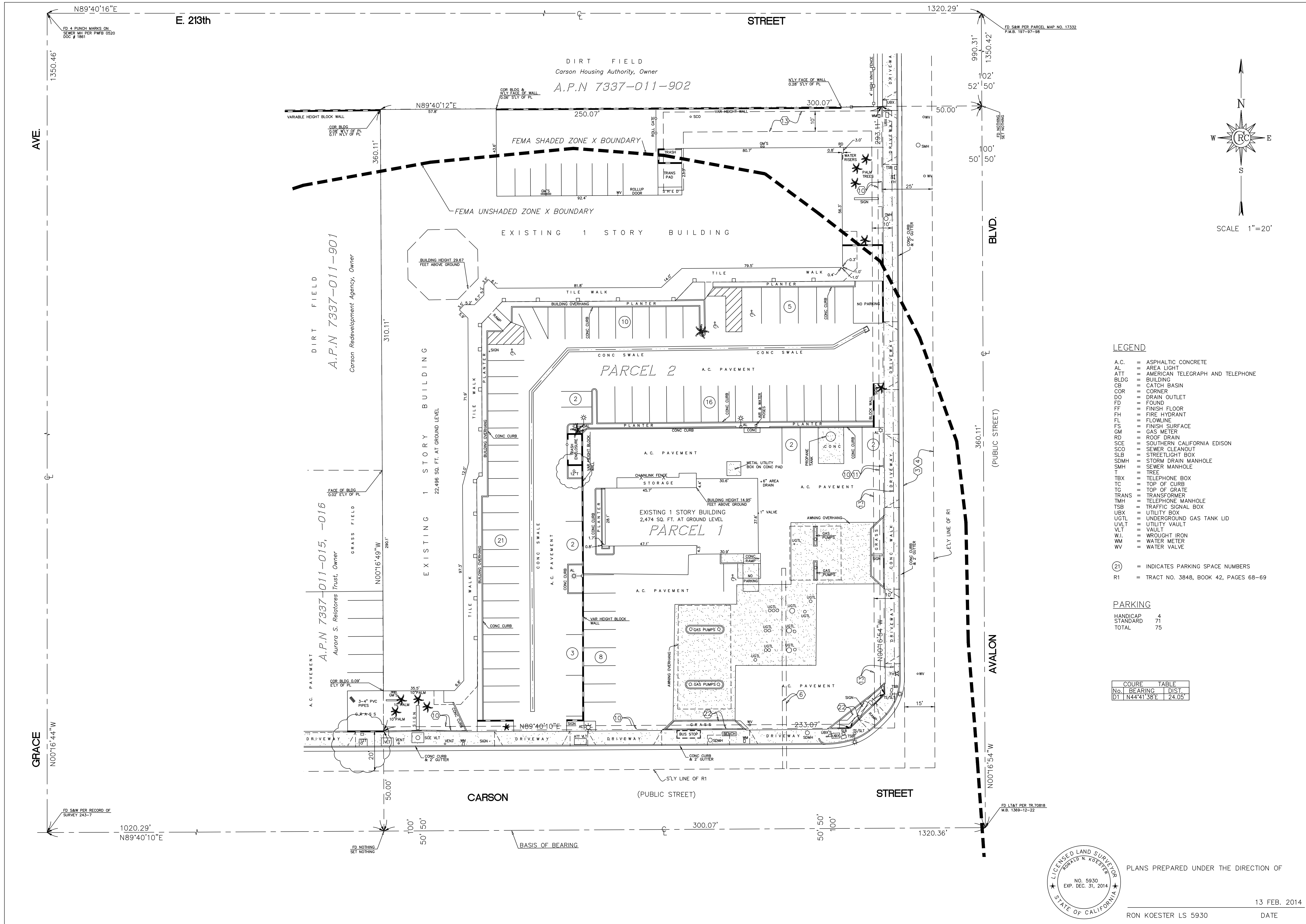
1. THE OVERALL SITE IS:
GROSS: 77,405 sq.ft. (1.78 acres)
2. THE PROPERTY IS CURRENTLY ZONED:
REGIONAL COMMERCIAL
CARSON STREET MIXED-USE DISTRICT (MU-CS) UNDERLAY ZONE.
3. THERE WAS NO OBSERVABLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS AT THE PROPERTY.
4. THERE WAS NO CHANGES IN STREET RIGHT OF WAY LINES FROM THE CONTROLLING JURISDICTION OR ANY OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS AT THE PROPERTY.
5. THERE WAS NO OBSERVABLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.
6. THERE WAS NO OBSERVABLE EVIDENCE OF SITE IS A WETLAND AREA.
7. SETBACKS REQUIREMENTS PER CITY OF CARSON MIXED USE - CARSON STREET (MU-CS), SECTION 9138-17, D-5a.

FRONT YARD = 10'

SIDE AND REAR YARD = SEE CITY OF CARSON MIXED USE - CARSON STREET (MU-CS), SECTION 9138-17, D-5b.
8. HEIGHT RESTRICTIONS REQUIREMENTS PER CITY OF CARSON MIXED USE - CARSON STREET (MU-CS), SECTION 9138-17, D-6.

NO COMMERCIAL BUILDING OR STRUCTURE SHALL EXCEED A HEIGHT OF THIRTY (30) FEET.
FOR ADDITIONAL REQUIREMENTS SEE SECTIONS 9138.17 D-6 b-e
9. SAID DESCRIBED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION OF SHADED AND UNSHADED "X" ON FLOOD INSURANCE RATE MAP No. 06037C1605F WITH A DATE OF IDENTIFICATION OF SEPTEMBER 26, 2008, IN THE CITY OF CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PROPERTY IS SITUATED.
10. SITE ADDRESS:
21601 AVALON BLVD.
655 E. CARSON STREET
CARSON, CA.
11. ASSESSORS PARCEL NUMBERS:
7337-011-032, -046

REVISIONS									
DATE									
A. L. T. A. / ACSM LAND TITLE SURVEY									
PREPARED FOR IVY PROPERTY GROUP 8687 MELROSE AVENUE, SUITE B130 LOS ANGELES, CA 90069 c/o Jason Iloulian									
CRC Enterprises 27600 Bouquet Canyon Road Suite 200 Santa Clarita Ca. 91350 Telephone (661) 297-2336 FAX (661) 297-2331									
SHEET 1 OF 2 SHEET CRC 2916-C									



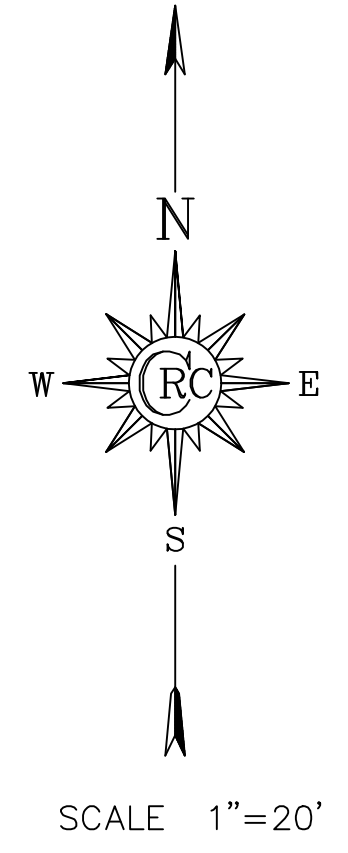
LEGEND

- A.C. = ASPHALTIC CONCRETE
 - AL = AREA LIGHT
 - ATT = AMERICAN TELEGRAPH AND TELEPHONE
 - BLDG = BUILDING
 - CB = CATCH BASIN
 - COR = CORNER
 - DO = DRAIN OUTLET
 - FO = FOUND
 - FF = FINISH FLOOR
 - FH = FIRE HYDRANT
 - FL = FLOWLINE
 - FS = FINISH SURFACE
 - GM = GAS METER
 - RD = ROOF DRAIN
 - SCE = SOUTHERN CALIFORNIA EDISON
 - SCO = SEWER CLEANOUT
 - SLB = STREETLIGHT BOX
 - SDMH = STORM DRAIN MANHOLE
 - SMH = SEWER MANHOLE
 - T = TREE
 - TBX = TELEPHONE BOX
 - TC = TOP OF CURB
 - TG = TOP OF GRATE
 - TRANS = TRANSFORMER
 - TMH = TELEPHONE MANHOLE
 - TSB = TRAFFIC SIGNAL BOX
 - UBX = UTILITY BOX
 - UGTL = UNDERGROUND GAS TANK LID
 - UVLT = UTILITY VAULT
 - VLT = VAULT
 - W.I. = WROUGHT IRON
 - WM = WATER METER
 - WV = WATER VALVE
- (21) = INDICATES PARKING SPACE NUMBERS
 R1 = TRACT NO. 3848, BOOK 42, PAGES 68-69

PARKING

HANDICAP	4
STANDARD	71
TOTAL	75

NO.	BEARING	DIST.
DT	N44°41'38"E	24.05'



PLANS PREPARED UNDER THE DIRECTION OF

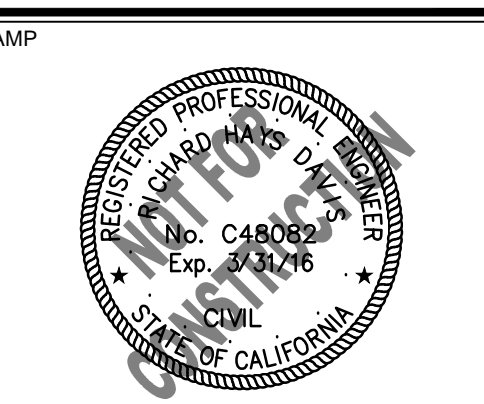
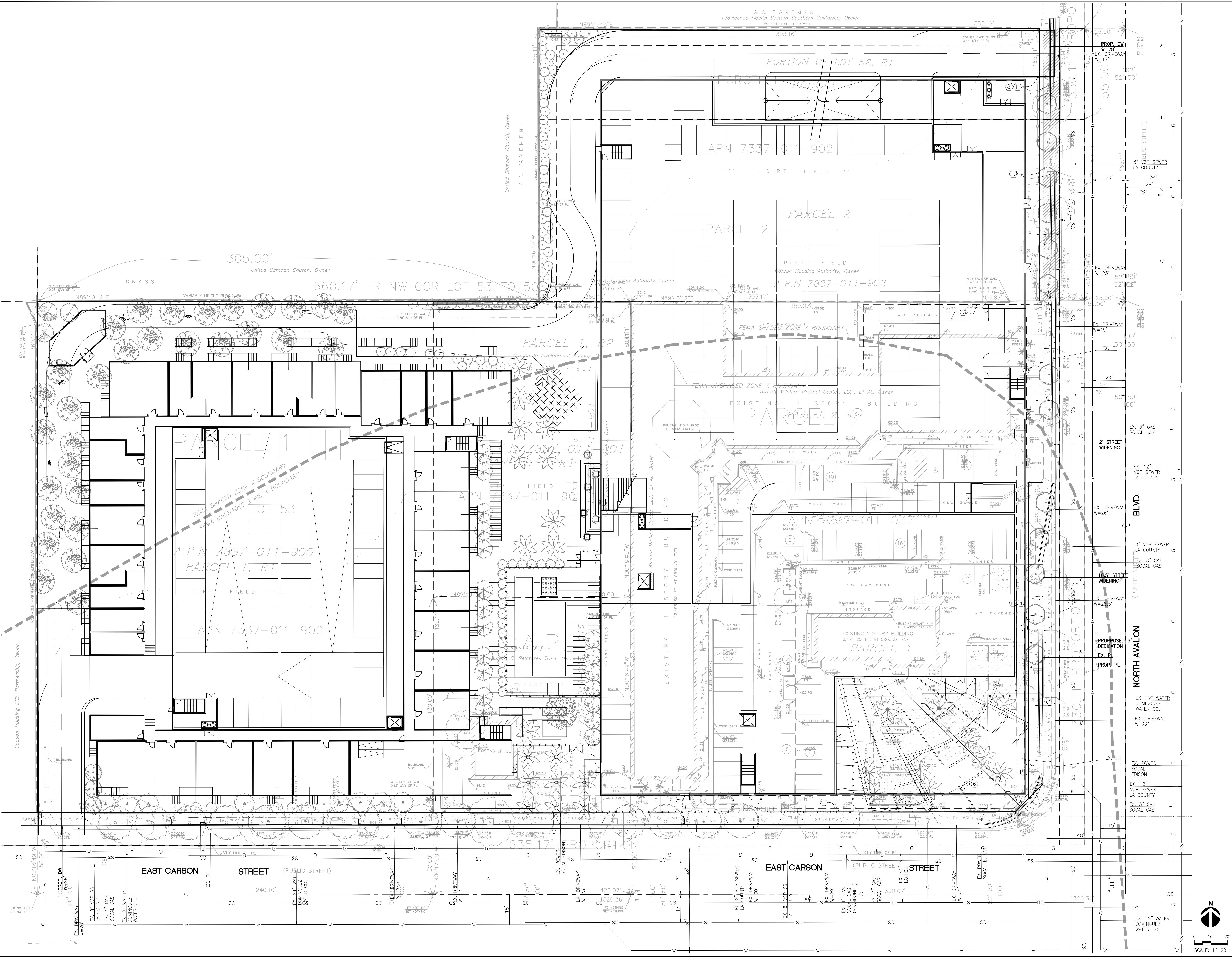
RON KOESTER LS 5930 DATE 13 FEB. 2014

A.L.T.A./ACSM LAND TITLE SURVEY

PREPARED FOR
IVY PROPERTY GROUP
 8687 MELROSE AVENUE, SUITE B130
 LOS ANGELES, CA 90069
 c/o Jason Illoulian

SHEET 2 OF 2 SHEET
 CRC 2916-C

CRC Enterprises
 27600 Bouquet Canyon Road Suite 200 Santa Clarita Ca. 91350
 Telephone (661) 297-2336 FAX (661) 297-2331



REVISIONS	
DATE	ISSUED FOR
XXXXXX	DESCRIPTION

DATE	07.29.2014
PROJECT NUMBER	114135
DESIGNED BY	RR
DRAWN BY	MN
CHECKED BY	DK
SCALE	AS SPECIFIED
KEY MAP	

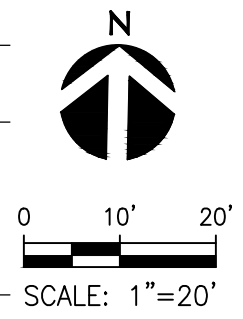
PROJECT DESCRIPTION
CARON AND AVALON MIXED USE

CARON AND AVALON
 CARSON, CA 90745

DRAWING TITLE
CIVIL EXHIBIT

SHEET NUMBER

EX A



APPENDIX B

ROUGH GRADING EXHIBIT

ROUGH GRADING SECTIONS

GROUNDWATER WELL DATA

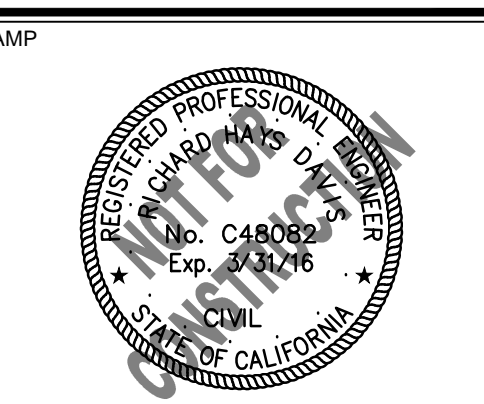
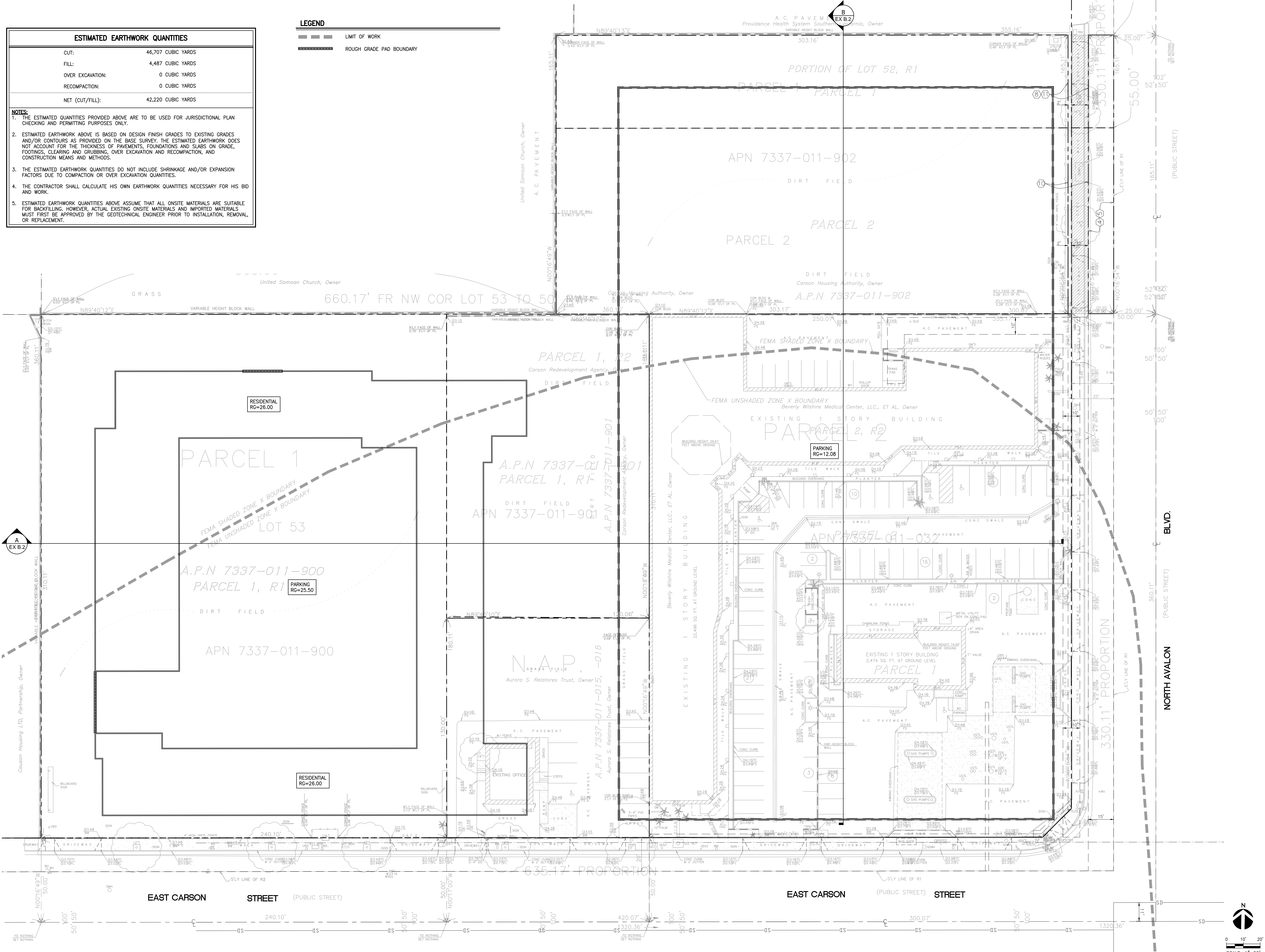
ESTIMATED EARTHWORK QUANTITIES	
CUT:	46,707 CUBIC YARDS
FILL:	4,487 CUBIC YARDS
OVER EXCAVATION:	0 CUBIC YARDS
RECOMPACTION:	0 CUBIC YARDS
NET (CUT/FILL):	42,220 CUBIC YARDS

NOTES:

- THE ESTIMATED QUANTITIES PROVIDED ABOVE ARE TO BE USED FOR JURISDICTIONAL PLAN CHECKING AND PERMITTING PURPOSES ONLY.
- ESTIMATED EARTHWORK ABOVE IS BASED ON DESIGN FINISH GRADES TO EXISTING GRADES AND/OR CONTOURS AS PROVIDED ON THE BASE SURVEY. THE ESTIMATED EARTHWORK DOES NOT ACCOUNT FOR THE THICKNESS OF PAVEMENTS, FOUNDATIONS AND SLABS ON GRADE, FOOTINGS, CLEARING AND GRUBBING, OVER EXCAVATION AND RECOMPACTION, AND CONSTRUCTION MEANS AND METHODS.
- THE ESTIMATED EARTHWORK QUANTITIES DO NOT INCLUDE SHRINKAGE AND/OR EXPANSION FACTORS DUE TO COMPACTION OR OVER EXCAVATION QUANTITIES.
- THE CONTRACTOR SHALL CALCULATE HIS OWN EARTHWORK QUANTITIES NECESSARY FOR HIS BID AND WORK.
- ESTIMATED EARTHWORK QUANTITIES ABOVE ASSUME THAT ALL ONSITE MATERIALS ARE SUITABLE FOR BACKFILLING. HOWEVER, ACTUAL EXISTING ONSITE MATERIALS AND IMPORTED MATERIALS MUST FIRST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION, REMOVAL, OR REPLACEMENT.

LEGEND

	LIMIT OF WORK
	ROUGH GRADE PAD BOUNDARY



STAMP

DATE	ISSUED FOR
XXXXXX	1
	DESCRIPTION

DATE	ISSUED FOR
07.29.2014 <td>114135</td>	114135
	RR
	MN
	DK
	AS SPECIFIED

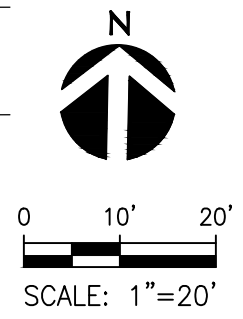
PROJECT DESCRIPTION
CARSON AND AVALON MIXED USE

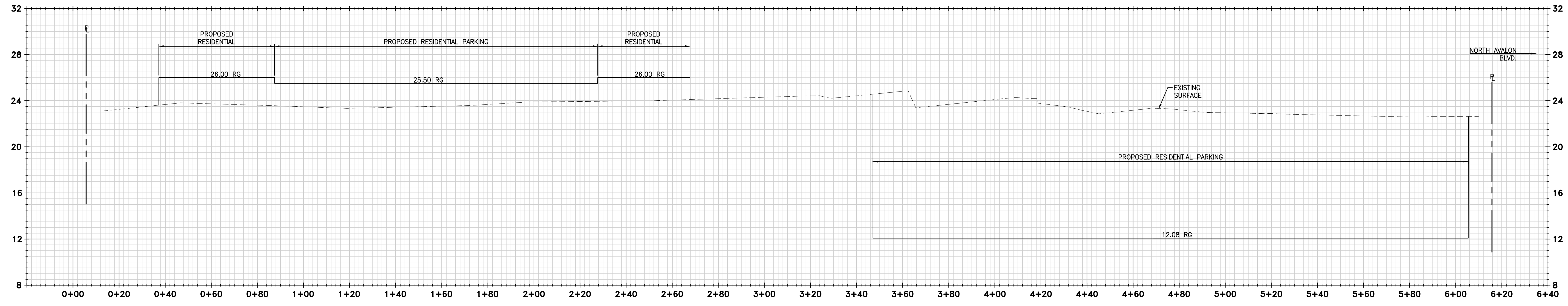
CARSON AND AVALON
 CARSON, CA 90745

DRAWING TITLE
ROUGH GRADING PLAN

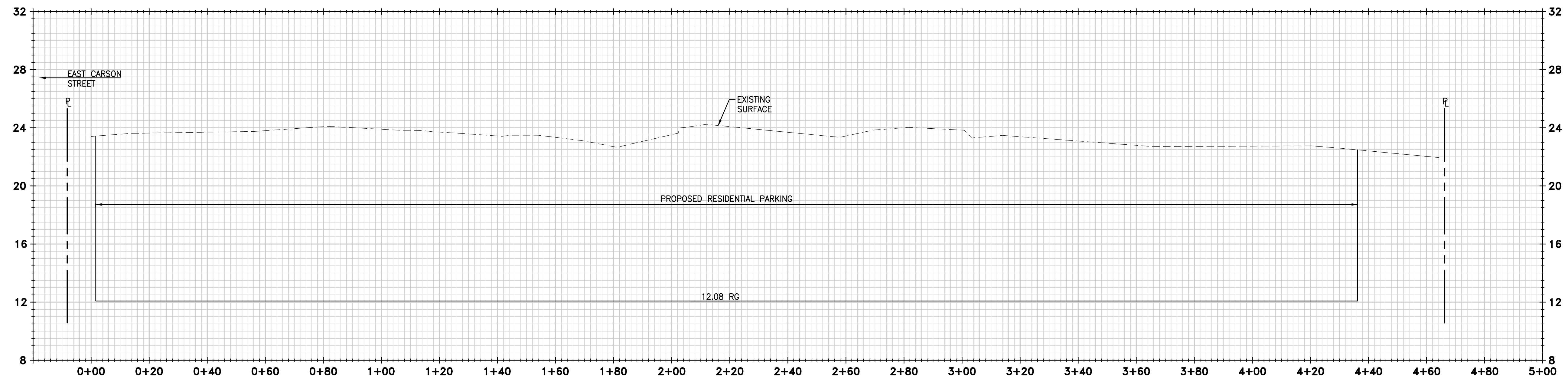
SHEET NUMBER

EX B.1





SECTION A
 HORIZONTAL SCALE: 1"=20'
 VERTICAL SCALE: 1"=4'



SECTION B
 HORIZONTAL SCALE: 1"=20'
 VERTICAL SCALE: 1"=4'

STAMP



REVISIONS	
DATE	ISSUED FOR
XX/XX/XX	DESCRIPTION
1	

DATE	07.29.2014
PROJECT NUMBER	114135
DESIGNED BY	RR
DRAWN BY	MN
CHECKED BY	DK
SCALE	AS SPECIFIED

KEY MAP

PROJECT DESCRIPTION
CARSON AND AVALON MIXED USE

CARSON AND AVALON
 CARSON, CA 90745

DRAWING TITLE
ROUGH GRADING SECTIONS

SHEET NUMBER

EX B.2

Los Angeles County Groundwater Well Data

Department of Public Works
 dpw.lacounty.gov

Businesses Gallery Online Services Newsroom About Us Contact Us

Historical Well Measurement Data

EXPORT

Well ID: 837 State #: 4S13W17D02 RP Elev:27.70
 High Measure: 140 ON 08/14/2003
 Low Measure: 55 ON 07/15/1999

Measure Date	RP to WS (Depth)	Water Surface Elevation
09/10/2007	60	-32.30
08/31/2005	89	-61.30
08/31/2005	89	-61.30
03/15/2005	63	-35.30
11/09/2004	63	-35.30
08/14/2003	140	-112.30
04/02/2003	70	-42.30
07/15/1999	55	-27.30
04/15/1999	56.50	-28.80
04/15/1999	56.50	-28.80
04/10/1995	68	-40.30
11/01/1994	71	-43.30
05/12/1994	69	-41.30

Well Number: 837
 Well Status: Active
 Well Measurement Data
 Last Measure Date: 09/10/2007
 Last Measurement: 60
 Thomas Page T64 D6

APPENDIX C

EXISTING HYDROLOGY EXHIBIT

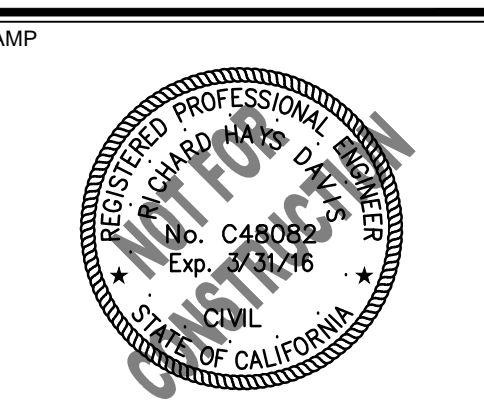
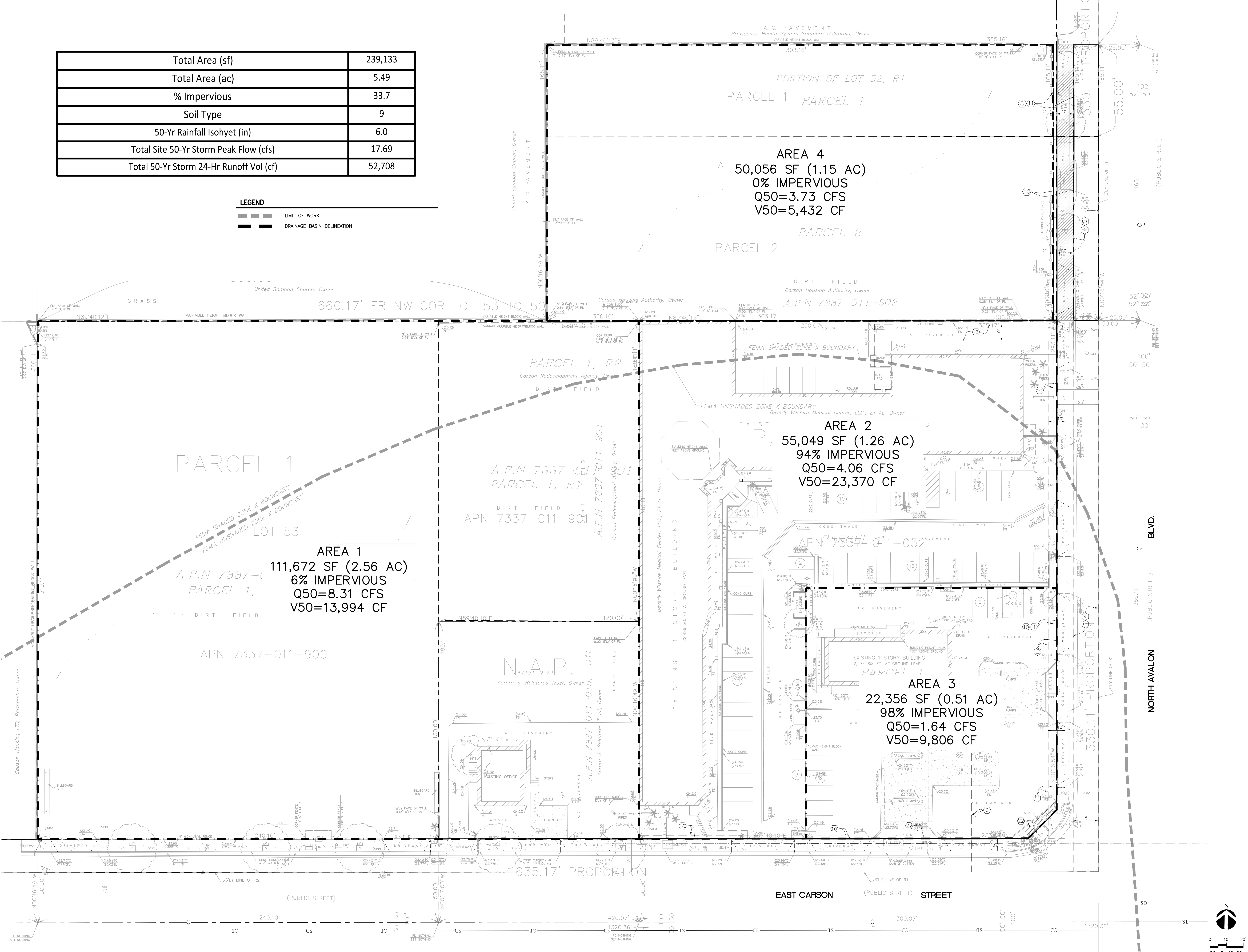
PROPOSED HYDROLOGY EXHIBIT

FEMA FLOOD MAP

Total Area (sf)	239,133
Total Area (ac)	5.49
% Impervious	33.7
Soil Type	9
50-Yr Rainfall Isohyet (in)	6.0
Total Site 50-Yr Storm Peak Flow (cfs)	17.69
Total 50-Yr Storm 24-Hr Runoff Vol (cf)	52,708

LEGEND

	LIMIT OF WORK
	DRAINAGE BASIN DELINEATION



STAMP

REVISIONS	DATE	ISSUED FOR
XXXXXX	1	DESCRIPTION

DATE	07.29.2014
PROJECT NUMBER	114135
DESIGNED BY	RR
DRAWN BY	MN
CHECKED BY	DK
SCALE	AS SPECIFIED
KEY MAP	

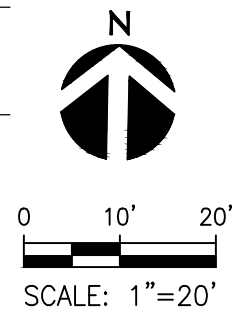
PROJECT DESCRIPTION
CARSON AND AVALON MIXED USE

CARSON AND AVALON
 CARSON, CA 90745

DRAWING TITLE
EXISTING HYDROLOGY EXHIBIT

SHEET NUMBER

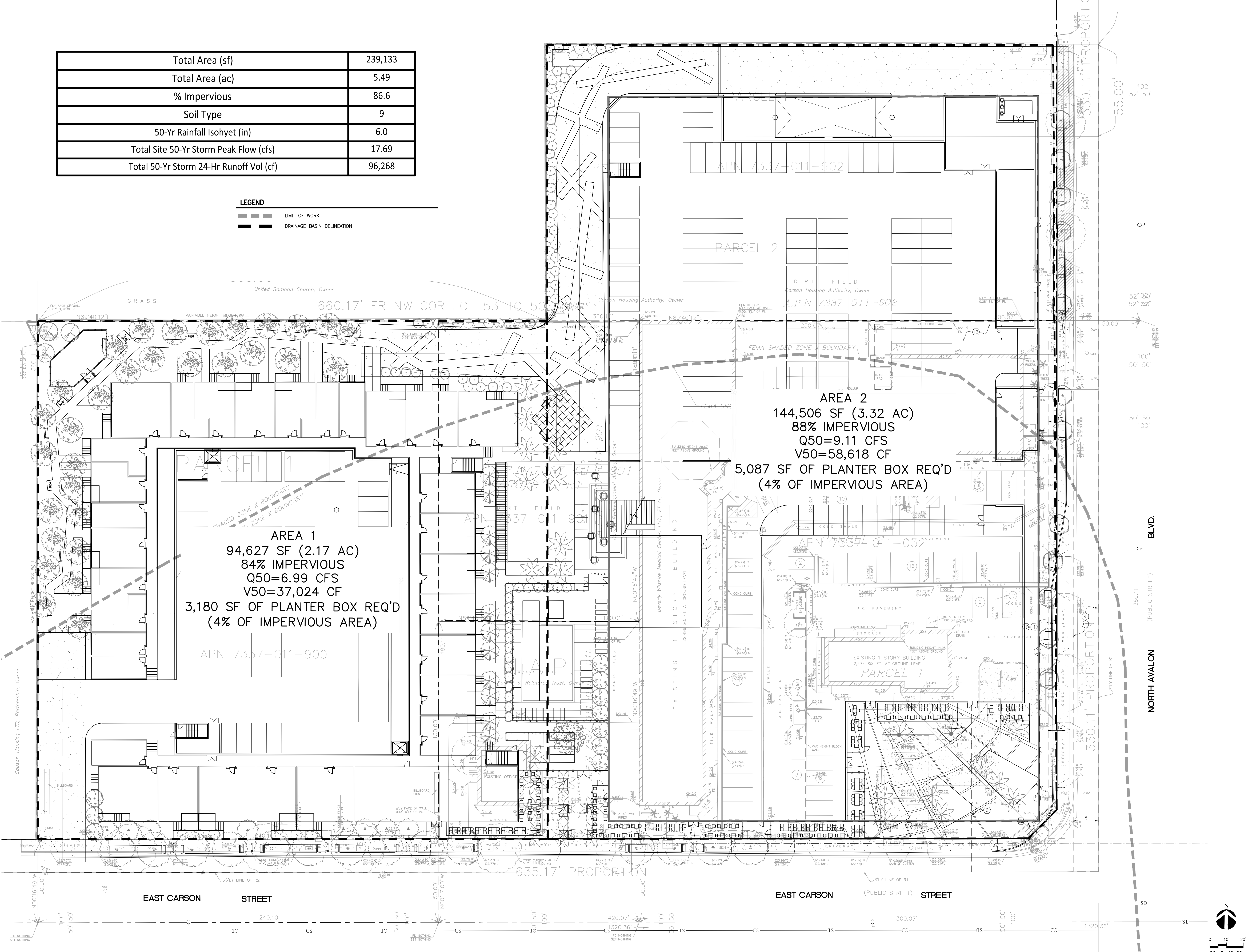
EX C.1



Total Area (sf)	239,133
Total Area (ac)	5.49
% Impervious	86.6
Soil Type	9
50-Yr Rainfall Isohyet (in)	6.0
Total Site 50-Yr Storm Peak Flow (cfs)	17.69
Total 50-Yr Storm 24-Hr Runoff Vol (cf)	96,268

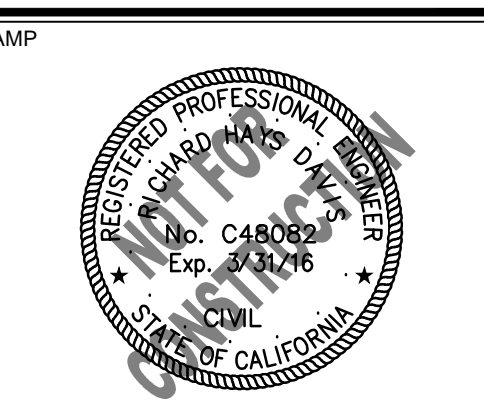
LEGEND

	LIMIT OF WORK
	DRAINAGE BASIN DELINEATION



AREA 1
 94,627 SF (2.17 AC)
 84% IMPERVIOUS
 Q50=6.99 CFS
 V50=37,024 CF
 3,180 SF OF PLANTER BOX REQ'D
 (4% OF IMPERVIOUS AREA)

AREA 2
 144,506 SF (3.32 AC)
 88% IMPERVIOUS
 Q50=9.11 CFS
 V50=58,618 CF
 5,087 SF OF PLANTER BOX REQ'D
 (4% OF IMPERVIOUS AREA)



REVISIONS

DATE	ISSUED FOR	DESCRIPTION
XXXXXX	1	

PROJECT INFORMATION

DATE	07.29.2014
PROJECT NUMBER	114135
DESIGNED BY	RR
DRAWN BY	MN
CHECKED BY	DK
SCALE	AS SPECIFIED

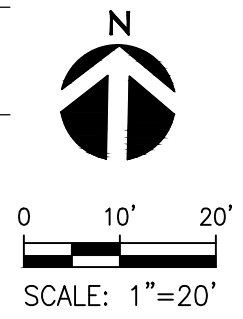
PROJECT DESCRIPTION
CARSON AND AVALON MIXED USE

CARSON AND AVALON
 CARSON, CA 90745

DRAWING TITLE
PROPOSED HYDROLOGY EXHIBIT

SHEET NUMBER

EX C.2






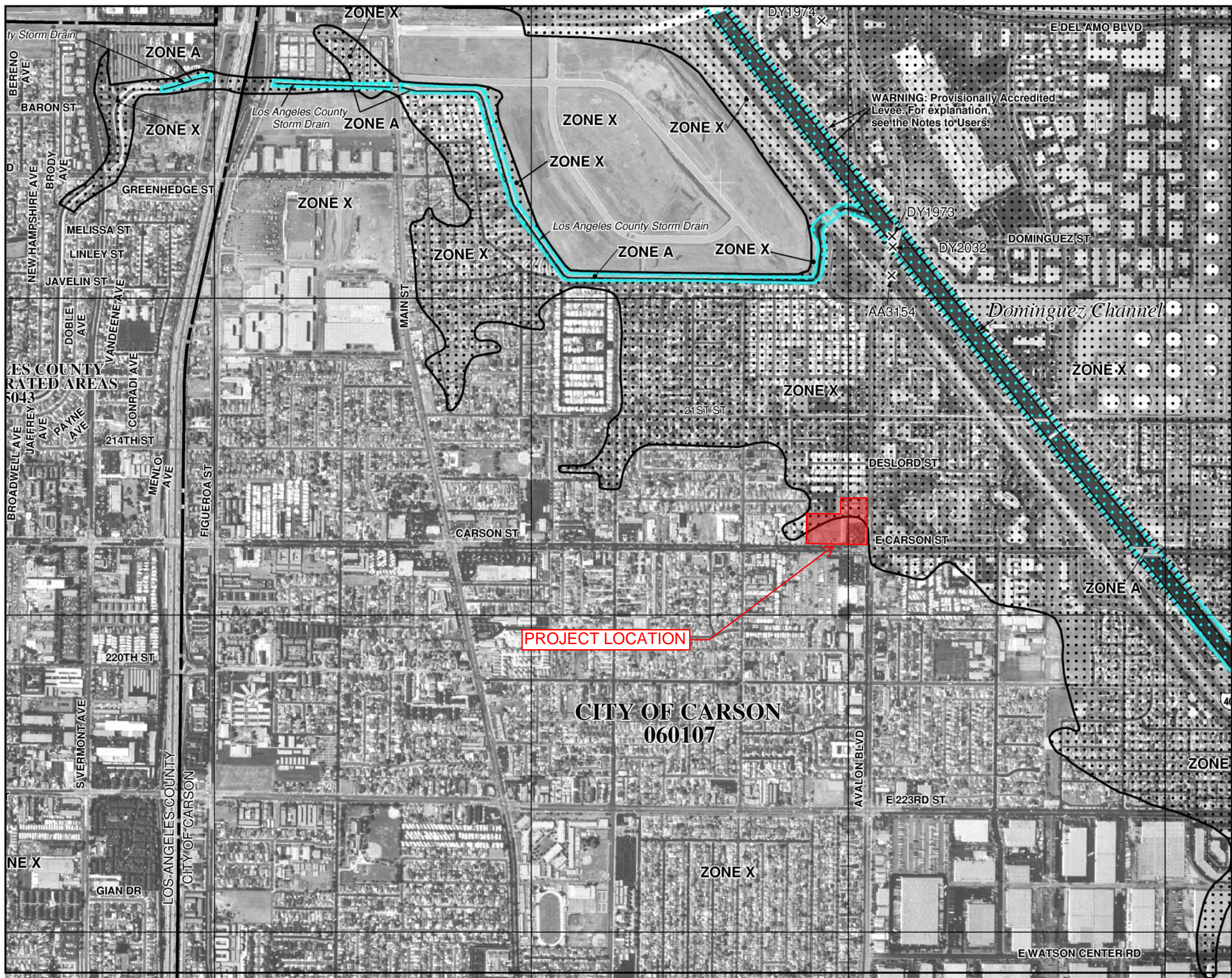
If insurance is available in this community, contact your local Flood Insurance Program at 1-800-638-6620.



MAP SCALE 1" = 1000'
 500 0 1000 2000 FEET

LEGEND

-  SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
- The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
-  OTHER FLOOD AREAS
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
-  OTHER AREAS
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.



PROJECT LOCATION

**CITY OF CARSON
060107**

PANEL 1935F

**FIRM
FLOOD INSURANCE RATE MAP
LOS ANGELES COUNTY,
CALIFORNIA
AND INCORPORATED AREAS**

PANEL 1935 OF 2350
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
LOS ANGELES COUNTY	065043	1935	F
CARSON, CITY OF	060107	1935	F
GARDENA, CITY OF	060119	1935	F
LOS ANGELES, CITY OF	060137	1935	F
TORRANCE, CITY OF	060165	1935	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



**MAP NUMBER
06037C1935F
EFFECTIVE DATE
SEPTEMBER 26, 2008**

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov