Appendix I

Hydrology and Water Quality Report

JOHN ANSON FORD THEATRES PROJECT
2580 Cahuenga Boulevard East
Hollywood, CA 90068

Hydrology & Water Quality Technical Report
(Based on 50-Year Storm Design)

Project No. LA30163

June 5, 2014

Prepared For:

Ford Theatres Foundation
2580 Cahuenga Boulevard East
Hollywood, CA 90068
Tel: (323) 856-5793

Prepared by:

Civil Engineering
Survey + Mapping
3D Laser Scanning
Subdivision Mapping
Construction Surveying
MOLLENHAUER

316 W. 2nd Street, Fifth Floor
Los Angeles, CA 90012
Tel: (213) 624-2661
Fax: (213) 614-1863

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JOHN ANSON FORD THEATRES PROJECT
2580 Cahuenga Boulevard East
Hollywood, CA 90068

Project Introduction and Description

Introduction:

The John Anson Ford Theatres is a historic, open air amphitheatre that is located in the Cahuenga Pass and built into the Hollywood Hills. Opened in 1931, it is one of the oldest performing arts venues in Los Angeles that is still in use today. The Ford Theatres are owned and operated by the County of Los Angeles.

This Hydrology-Water Quality Technical Report has been prepared to provide a summary of existing and proposed water resource conditions as well as to provide an evaluation of how the proposed Ford Theatres project may impact future conditions. The intent is to determine potential impacts the proposed project will have on water resource conditions per the California Environmental Quality Act (CEQA)[1].

The report summarizes construction techniques, Best Management Practices (BMPs), permit requirements, and construction monitoring that will be implemented to minimized impacts to hydrology and water quality.

Project Location and Overview of Existing Conditions:

The project site comprises an approximately 32-acre County of Los Angeles regional park, located at 2580 Cahuenga Boulevard East within the City of Los Angeles, California. The area surrounding the project site includes a mix of residential uses and open space. The vicinity map located in Appendix 'A' shows the location of the project site.

Project Description:

The project site comprises approximately 32-acres of which approximately 3.5 acres is comprised of existing, impervious area. This includes the historic amphitheatre which has a footprint of roughly 0.5 acres.

The proposed project will disturb portions of the existing 3.5-acres of existing development, as well as expand into undeveloped parts of the site for a total impervious area of 4.46-acres.p This proposed work will consist of the following activities: removal of existing buildings, concrete structures, retaining

[1] http://ceres.ca.gov/ceqa/

walls, concrete sidewalks and pavement areas, as well as landscaping areas and trees; grading activities including fill to provide final graded surface and new subterranean buildings; installation of new storm drainage systems, sewer lines, and domestic water, and fire service lines; construction of new concrete sidewalks, pavement areas and hardscaping; and construction of parking structures and buildings with new stage area as well as new adjacent landscaping and hardscaping.

For the pre and post development hydrology, the 32.0 acre site was broken into respective tributary areas based on their drainage pattern. Each tributary area has a high point, collector point, and a critical path that connects the two. The flow rate (Q) and volume (V) was calculated for both, see Appendix E.

For both the pre and post development conditions, Subareas 'H' and 'I' (pre development) as well as 'O' and 'P' (post development) include portions of the neighboring site since their respective critical paths crossover from the adjacent site. This additional run-on area of 5.9 acres has been included into the calculated areas, which is the reason for the 37.9 total acres calculated.

JOHN ANSON FORD THEATRES PROJECT

MOLLENHAUER GROUP
214 WEST 2nd STREET, FIFTH FLOOR
LOS ANGELES, CA 90012
213 624 2661 TEL
213 614 1863 FAX
CIVIL ENGINEERING
SURVEYING+MAPPING
LAND DEVELOPMENT

EXISTING SITE PLAN
SCALE: 1" = 50'
MARCH 6, 2014

LEGEND

1. HISTORIC AMPHITHEATRE
2. EXISTING EDISON PLAZA
3. EXISTING STAIRS AND PICNIC AREA
4. EXISTING BOX OFFICE - REPURPOSED TO MUSEUM
5. EXISTING FIRE PUMP RELOCATED
6. NEW POWER SHED
7. EXISTING STAGE IMPROVEMENTS
8. EXISTING LIGHTING INFRASTRUCTURE
9. HISTORIC LIGHTING POSITIONS
10. EXISTING UPSLOPE AUDIO VISUAL POSITIONS
11. EXISTING ELEVATOR
12. NEW PARKING STRUCTURE 1 AND FORD PLAZA
13. NEW CIRCULATION - ELEVATORS TO PARKING
14. NEW 299-SEAT THEATRE
15. NEW RESTUARANT
16. NEW BOX OFFCIE
17. NEW OFFICE AND AMENITIES
18. NEW MEETING ROOM
19. NEW FORD TERRACE
20. NEW SOUND WALL AT FORD TERRACE
21. NEW ARTIST PERFORMANCE ENTRANCE
22. NEW SERVICE COURT
23. NEW CONTROL BOOTH
24. NEW SOUND WALL AT EXISTING AMPHITHEATRE
25. NEW TWO-STORY CONCESSIONS/OFFICE
26. NEW TRANSIT CENTER
27. NEW TRANSIT PLAZA
28. NEW FLEX SPACE
29. NEW PARKING STRUCTURE 2
30. NEW TRAIL AND TRAIL HEAD
31. NEW CENTRAL PLANT
32. NEW TRANSFORMER(S)
33. NEW GENERATOR
34. NEW MAINTENANCE AREA
35. NEW CELL TOWER
36. NEW SIGNAL
37. NEW UNDERGROUND UTILITIES

DWP TRANSFORMER CLEARANCE

DWP STAGING AREA (10% MAX CROSS SLOPE)

PROPERTY LINE

ALTERNATE TRAIL

(E) POWER SHED

STORAGE +15 FROM 595 — 595 — 34 YARD

MAINTENANCE +15 FROM 595

PS2 RAMP DOWN

PS2

PS2 EXIT

ACCESS ROAD 15% GRADE

PS2 INGRESS/EGRESS 550

LINE OF PARKING LEVEL ABOVE +28 CLR.

TRANSIT CENTER 550 — 26

CELL TOWER — 35

(E) CURB CUT

DWP/WS

C A H U E N G A B L V D. E A S T

595 — 591 — 590 — 583 — 550

+61 FROM 590 — 25

+20 FROM 590 — 19

610 FORD TERRACE — 20

603 — 24

571 EDISON PLAZA — 2

22 SERVICE COURT 590

PS1 — 12 — 550 FORD PLAZA

TICKETING PERIMETER — 4

+15 FROM 550 — 16

+56 FROM 550 — 17

+60 FROM 550 — 14

+25 FROM 550 — 15

535 INGRESS/EGRESS

LINE OF PARKING BELOW

EXIT 525

ENTRY 515

(N) CURB CUT

DRAFT

DWP UTILITIES

FORD THEATRES PROJECT

Levin & Associates Architects

N

SCALE: 1" = 40'
FEBRUARY 12, 2014

K:\13200 Ford Elf\f02-working\01-dwg\20140206 MASTER PLAN for DWP.dwg, 2/13/2014 3:47:15 PM, lisamiss

JOHN ANSON FORD THEATRES PROJECT
2580 Cahuenga Boulevard East
Hollywood, CA 90068

State and Local Regulations

Construction Stormwater Permitting:

According to the State Water Resources Control Board (SWRCB)'s Division of Water Quality, the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, this project is subject to the general permit and therefore requires a Storm Water Pollution Prevention Plan (SWPPP) report.[2] This is because the proposed construction or demolition activity, including, but not limited to: clearing, grading, grubbing, excavation, or any other activity results in a land disturbance of equal to or greater than one acre.

As a part of this SWPPP, the owner must submit a Notice of Intent (NOI) to the SWRCB prior to commencement of construction and the report must be prepared and implemented at the project site. Any amendments must be made as needed.

The Los Angeles Regional Water Quality Control Board (RWQCB) has the regulatory authority to review compliance of this permit for the project's region. In addition, the project will be subject to the Los Angeles County Municipal Waste Discharge Requirements for Storm Water and Urban Runoff Discharges.[3] This permit applies to all municipal discharges of storm water and non-storm water by the Los Angeles County Flood Control District and 84 incorporated cities within the coastal watersheds of Los Angeles County, including the city that this project is located in. This permit requires all permittees to ensure construction projects incorporate measures into project plans to reduce or eliminate stormwater impacts. These measures include, but are not limited to: retaining sediments generated on the project site by the use of Best Management Practices (BMPs), retaining construction-related materials, wastes, spills, and residues on-site, containing stormwater runoff from the site, containing non-stormwater runoff from construction activities, and limiting erosion around the site by implementing BMPs. These practices will be identified in the SWPPP.

In addition, the project will be required to comply with the County of Los Angeles' Green Building Standards Code, Title 31, Section 4.106.4 Low Impact Development (LID), and NPDES permit[4]. This project triggers the NPDES report since it is a project that falls under the category of "industrial/commercial developments with one acre of more of impervious surface area."[5]

[2] National Pollutant Discharge Elimination System (NPDES) General Permit Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-009-DWQ, NPDES No. CAS000002
[3] Order No. R4-2012-0175, NPDES Permit No. CAS004001 Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except those Discharges Originating from the City of Long Beach MS4.
[4] http://file.lacounty.gov/bos/supdocs/57378.pdf
[5] http://www.lastormwater.org/green-la/standard-urban-stormwater-mitigation-plan/

The County of Los Angeles states that under the NPDES permit (LACBC Section 106.4.3), proposed developments are required to prohibit the discharge of pollutants from the property. Preventing these pollutants from entering stormwater discharge systems are accomplished by the implementation and maintenance of post-construction Best Management Practices (BMPs). See “Impact Analysis” section for more information on the regulations and the BMPs required for compliance.

JOHN ANSON FORD THEATRE
2580 Cahuenga Boulevard East
Hollywood, CA 90068

Existing Conditions

The John Anson Ford Theatres site is located within the City of Los Angeles, in the Cahuenga Pass and nestled into the Hollywood Hills. The site extends along a hillside with a base elevation of roughly 509 feet, up to elevations as high as roughly 851 feet. The ridgeline for the hill dissects the property so that a majority of the site slopes towards Cahuenga Boulevard to the west, while other portions of the site, slope into private properties to the east. To the north-east of the project is the Hollywood Reservoir but since it is divided by the hillside and at a lower elevation than the ridgeline, it has a different tributary area than the project.

As described above, the existing site consists of a historic amphitheatre, a series of plazas, office building, and asphalt parking/access roads. The total imperviousness of the pre-development condition is roughly 3.5 acres (11% impervious ratio), with the remaining portions of the site being landscaping and undeveloped hillside.

According to the Geotechnical Report, project number 10296.001, dated September 10, 2013 by Leighton Consulting, Inc., there is bedrock that underlines the existing amphitheatre and adjacent structures/retaining walls. Around the ampitheatre are hillside slopes that are inclined from 50-65 degrees and consist of exposed, severely weathered basald bedrock with thick accumulations of colluvium forming on the slopes. In other portions of the site, the upper 3 to 5 feet of soil consists primarily of colluvial sediments in the form of angular sands and gravel sized basal rock fragments that are intermixed with organic debris from hillside vegetation.

The existing site was split into fourteen (14) tributary (sub) areas based on their runoff collection points, see Appendix F – Hydrology Plans.

Generally, the project site slopes towards Cahuenga Boulevard but there is an existing hilltop ridgeline that divides the site into two watersheds. Sub-areas ‘A’ through ‘I’ follow the drainage pattern of sheet flowing towards Cahuenga and are collected by a series of storm drain inlets but resurface through the use of curb drains and bubbler catch basins. This runoff was calculated to be 76.3 cubic feet per second (cfs) and makes it’s way via surface flow along Cahuenga to a series of existing storm drain mains that are owned by the City of Los Angeles.

Sub-areas ‘J’, ‘K’, ‘L’, ‘M’, and ‘N’, were divided by existing ridgelines which divert runoff opposite of the proposed construction. These areas are entirely undeveloped and will remain undeveloped after construction. The runoff for these combined sub-areas was calculated to be 43.6 cfs.

The total flow rate (Q) for the entire existing site was found to be 119.9 cfs, while the total collected volume (V) was 381,586 cubic feet (cf).

Flooding:

Flood hazard area information can be found via Federal Emergency Management Agency (FEMA) and is shown on FIRM Map 06037C1605F.

The John Anson Ford Theatres project is designated as flood hazard area – Zone X, which per the Legend is defined as "Areas determined to be outside the 0.2% annual chance floodplain." This means that the site is not located with a 100-year floodplain, however adjacent to the project site is the Hollywood Reservoir and the reservoir is considered to be within a 100-year floodplain. Based on the topography of the project site and its surrounding area, the reservoir has a runoff direction that is opposite of the project site so even if the reservoice were to flood, it should have less than significant impact on the project, pending an extremely high water level.

Existing Storm Drain System:

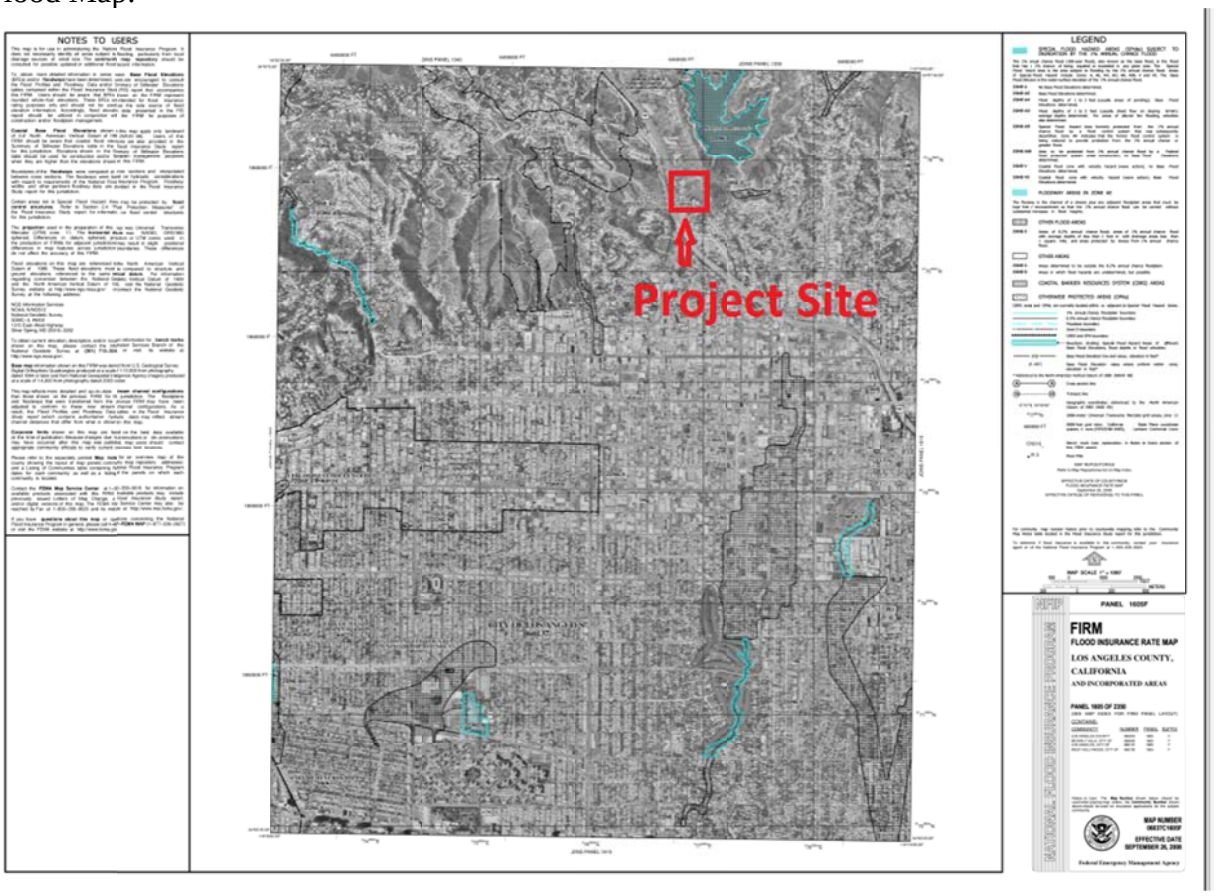
As described above, the majority of the project site slopes towards Cahuenga Boulevard where the site's runoff sheet flows into the street via a series of bubbler catch basins and curb drains. The existing flow for a 50-year storm was calculated as being 76.3 cfs, which enters into the existing City of Los Angeles storm drain main via curb-opening catch basins in Cahuenga Boulevard. Per City of Los Angeles plan, D-19081, the existing storm drain main, adjacent to the project site, was built in 1975 and varies from a 27" to a 39" pipe. This storm drain main flows to the south-west and eventually makes it's way to Ballona Creek and then to the Pacific Ocean, see below. The Ballona Creek is listed on the California State's list of impaired waterbodies where the pollutant standards are not met.[6]

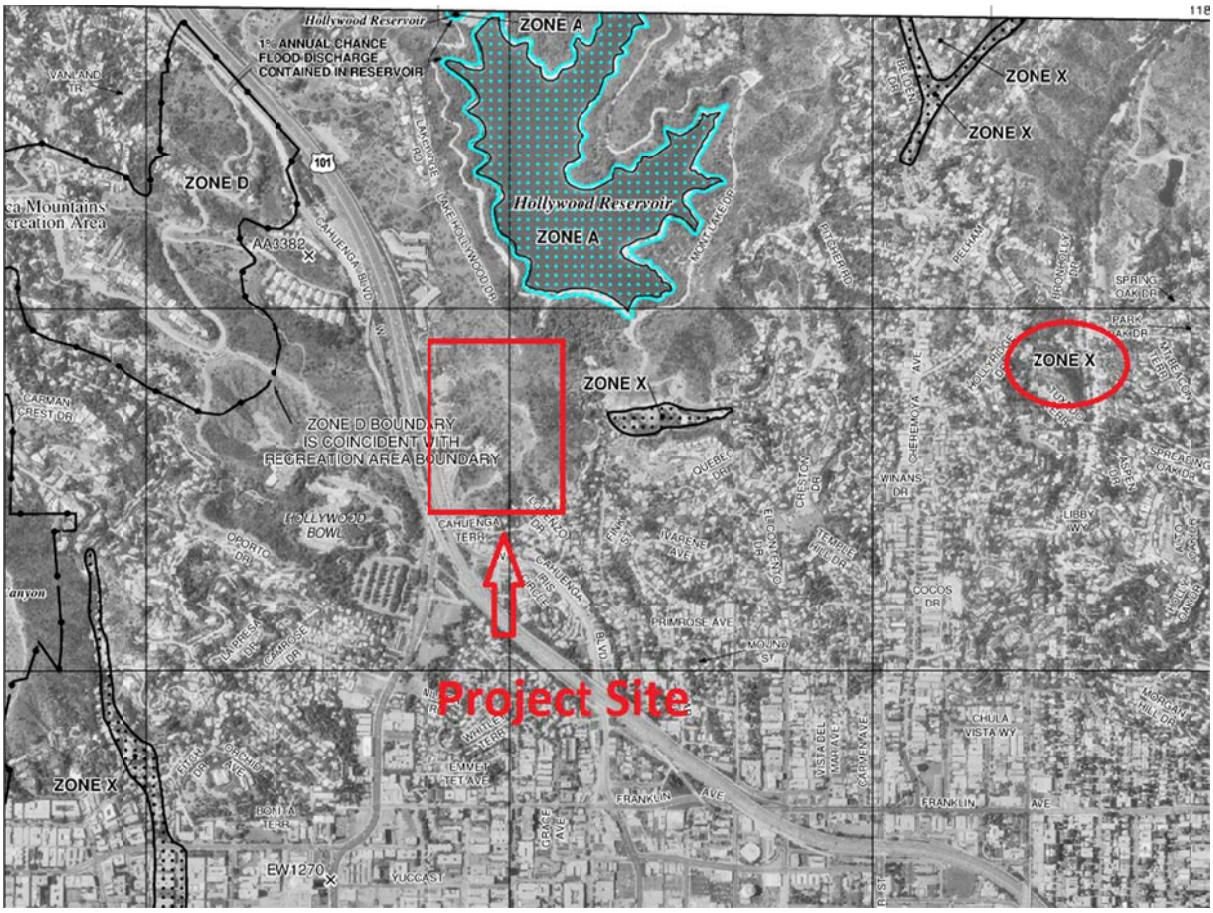
Best Management Practices (BMPs):

The existing site does not have any BMP's but per the local jurisdiction's requirements, the proposed work will require a National Pollutant Discharge Elimination System (NPDES) report with corresponding BMP's to filter and retain the project's runoff on-site. See "Impact Analysis" section for more information.

[6] http://www.waterboards.ca.gov/water_issues/programs/tmdl/2010state_ir_reports/category5_report.shtml

FIRM Flood Map:




Hollywood Reservoir
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN RESERVOIR
ZONE A
ZONE X
ZONE X
ZONE D
Hollywood Reservoir
ZONE A
ZONE X
ZONE X
ZONE D BOUNDARY IS COINCIDENT WITH RECREATION AREA BOUNDARY
HOLLYWOOD BOWL
Project Site
ZONE X
EW1270
CAHUENGA BLVD
FRANKLIN AVE
PRIMROSE AVE
CAHUENGA TERR
LAKE HOLLYWOOD DR
PARK OAK DR
SPRING OAK DR
SPRUCE OAK DR
WINANS DR
LIBBY WY
COCOS DR
CHULA VISTA WY
MORGAN HILL DR
EMMET AVE
BONITA TERR
YUCCA ST
101

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.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

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.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513 — Base Flood Elevation line and value; elevation in feet*

(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A — A — Cross section line

23 — 23 — Transect line

97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

4275000mN — 1000-meter Universal Transverse Mercator grid values, zone 11

6000000 FT — 5000-foot grid ticks: California State Plane coordinate system, V zone (FIPSZONE 0405), Lambert Conformal Conic

DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)

M1.5 — River Mile

MAP REPOSITORIES

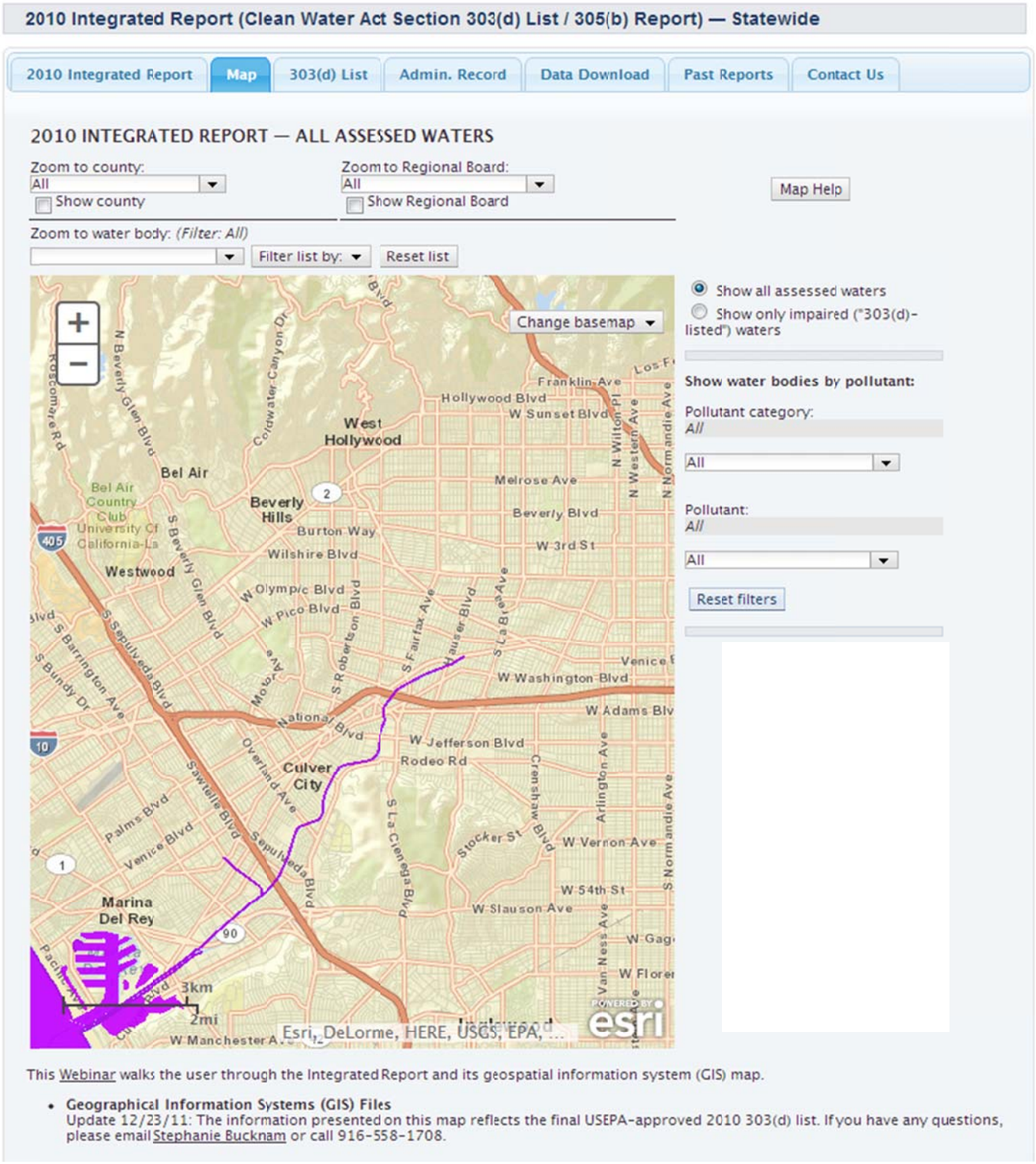
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

September 26, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

Ballona Creek[7]:



[7] Information provided by the State Water Resources Control Board: Impaired Water Bodies
http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml?wbid=CAR405130001998091814230 2

Proposed Conditions:

As described above, the project would maintain the historic amphitheatre and corresponding plaza and would also expand the site's amenities by constructing new theatre expansions, parking structures, plazas, offices, commercial buildings, central utility plant(s), as well series of walk paths and access roads.

The proposed improvements increase the overall footprint of impervious area on-site and therefore increase the amount of stormwater flow and volume, as shown in the post-development hydrology calculations. The imperviousness of the post-development condition is roughly 4.15 acres (13% impervious ratio), compared to the 3.5 acres (11% impervious ratio) for the existing condition.

Stormwater Runoff and Erosion Control Management:

To comply with SWRCB requirements, a SWPPP report will be prepared prior to construction of the project. During construction, BMPs stated in the SWPPP will be implemented to address and manage stormwater runoff and erosion control.

Best Management Practices – Erosion Control:

During construction, the proposed project will include standard Best Management Practices (BMP's) consistent with the California Stormwater Quality Association (CASQA) handbook for erosion control[8]. These practices will minimize soil, wind, runoff, erosion, and other construction-related pollutions during construction. The required BMP's will be included in the SWPPP.

To control erosion and stormwater runoff, construction activities will be scheduled to minimize the amount of time that soil is exposed. Also, BMP's such as silt fences, fiber rolls, gravel or sand bags, and other sediment barriers will be installed around the perimeter of construction activity as necessary to prevent run-on and run-off from the site. BMPs will also have to address locations of stockpiles and disturbed slopes. The timing/phasing of the installation of these BMPs will be stated in the SWPPP.

Storm drain inlets encountered in or around the project scope will be protected with BMPs such as fiber rolls, gravel bag berms, sandbag barriers, or a combination of. This is to prevent construction influenced sediment from entering into the storm drain system.

[8] https://www.casqa.org/

Hydrology Results:

All storm water runoff will be collected on-site through a series of planter drains, catch basins, area drains, deck drains, roof drains, etc. This collected runoff will then be sent to the adjacent City of Los Angeles storm drain main under Cahuenga Blvd. Water flow rate calculations are prepared for this project and are included in Appendix E. The Los Angeles County Department of Public Works 2006 methodology was used.

The proposed site was split into twenty one (21) tributary areas based on their runoff collection points, see Appendix F – Hydrology Plans. The total flow rate, Q was found to be 123.44 cfs, while the total collected volume, V was 392,476 cf. This increase in Q and V is due to the increase in imperviousness.

Like with the pre-development condition, sub-areas 'Q', 'R', 'S', 'T', and 'U', are divided by existing ridgelines which divert runoff opposite of the proposed construction. These areas are entirely undeveloped and will remain undeveloped after construction.

The flow rate, Q increased from 75.98 cfs to 79.49 cfs in the pre to post-development conditions and this was expected due to various site changes, including the increase in impervious area from 3.5 acres to 4.15 acres, respectively.

As shown on the post-development Hydrology Plan – H2, see Appendix F, due to the increase in site improvements and impervious areas, the number of subareas were expanded from nine to sixteen. Each subarea represents a tributary area where the runoff will be contained and collected. The increase in the number of collection points, along with improvements in the site's storm drain system, allows for proper handling of the increase in the post-development runoff flow rate and volume.

LID/NPDES Requirements:

Per the County of Los Angeles requirements, "all development projects equal to 1 acre or greater of disturbed area and adding more than 10,000 square feet of impervious area" must comply with its NPDES requirements. This means that the project must control its site's runoff through the use of BMPs for infiltration, bioretention, and/or rainfall harvesting. The project must also retain the 0.75-inch, 24-hour rain event volume on-site. The total disturbed area of the John Anson Ford Theatre project is 5.04 acres.

Best Management Practices – Water Quality:

Based on the County of Los Angeles Hydrology manual, the amount of runoff volume that will have to be retained for this total disturbed area is roughly 12,600 cf. Since the surrounding soil is layered with bedrock, infiltration will be difficult. The remaining options would be bioretention, through the use of underground retention tanks, detaining the water through use of tanks, or rainwater harvesting, which will require tanks and pumps to reuse the water for irrigation. These on-site BMPs will need to be addressed during the planning phases on the proposed project.

A list of other potential BMPs can be found in the County of Los Angeles LID Manual[9].

The proposed site has the ability to add new storm drain connections to the public main. This would reduce runoff from the site and allow all excess filtered water to go directly in the storm drain main rather than via surface flow.

In-terms of water quality impact, the proposed project will have little to no impact to its surroundings because of the use of BMPs to meet NPDES requirements. Erosion and stormwater runoff from construction related items will be filtered and contained on-site. Any overflow will have the same watershed and drainage pattern as the existing conditions.

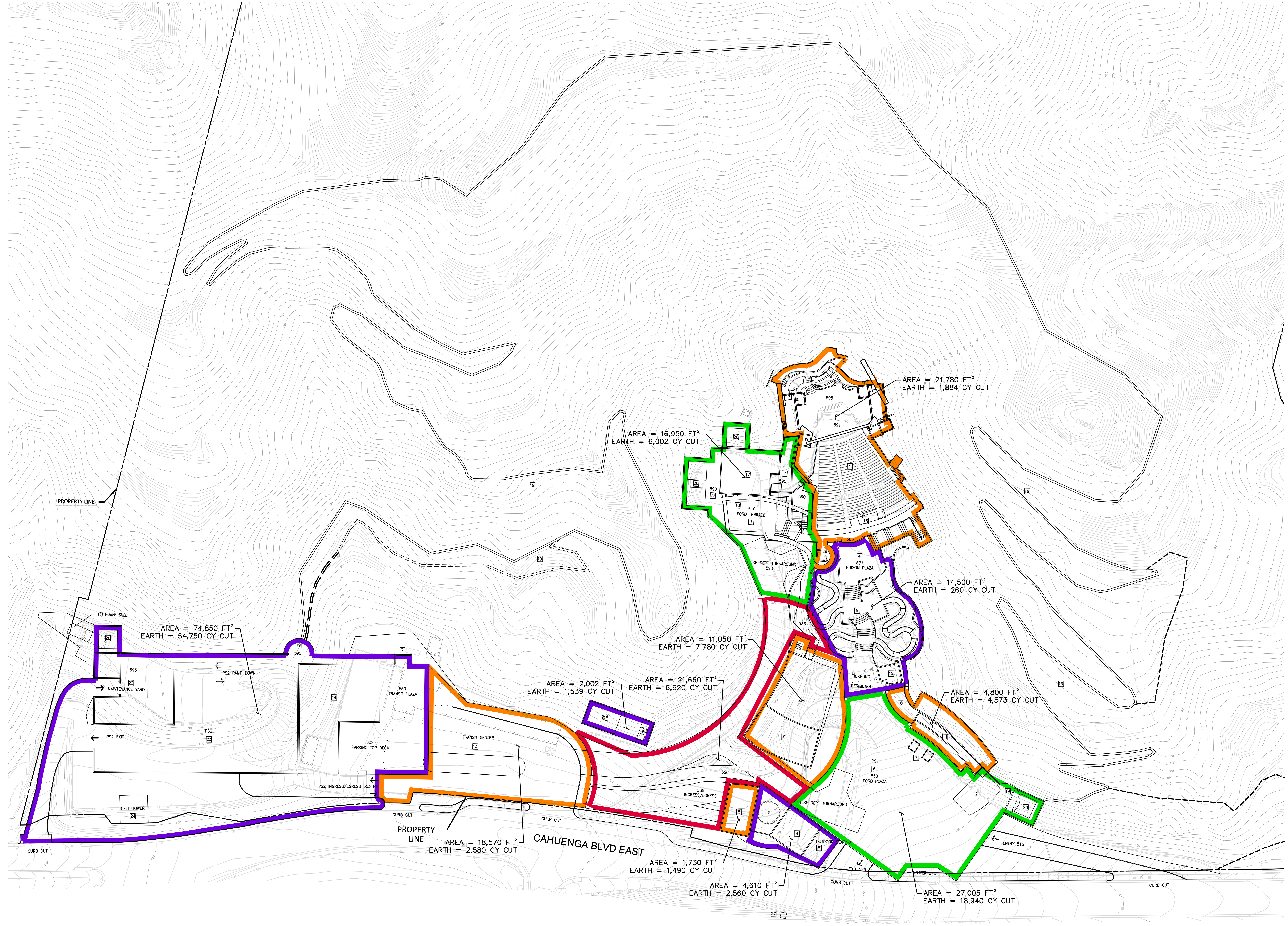
[9] http://dpw.lacounty.gov/wmd/LA_County_LID_Manual.pdf

OFF-SEASON TWO IMPROVEMENTS

John Anson Ford Theatres
2580 Cahuenga Boulevard East
Hollywood, California 90068

Levin & Associates Architects
811 West Seventh Street, Suite 900
Los Angeles, California 90017
213.623.8141 Fax 213.623.9207

CIVIL ENGINEERING
SURVEYING+MAPPING
LAND DEVELOPMENT
MOLLENHAUER GROUP
213 624 2661 TEL
213 614 1863 FAX
316 WEST 2nd STREET – FIFTH FLOOR
LOS ANGELES CALIFORNIA 90012



LEGEND

1. EXISTING HISTORIC AMPHITHEATRE
2. NEW ARTIST PERFORMANCE ENTRY
3. NEW FORD TERRACE
4. EXISTING EDISON PLAZA
5. EXISTING STAIRS AND PICNIC AREA
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7. NEW CIRCULATION - ELEVATORS TO PARKING
8. NEW RESTAURANT
9. NEW 299 SEAT THEATRE
10. NEW BOX OFFICE
11. NEW PLAZA OFFICES & AMENITIES
12. NEW MEETING HALL
13. NEW TRANSIT PLAZA
14. NEW FLEX SPACE
15. EXISTING BOX OFFICE -REPURPOSED TO MUSEUM
16. NEW SOUND WALL AT EXISITING AMPHITHEATRE
17. NEW 4 STORY CONCESSION/OFFICE
18. NEW SOUND WALL AT FORD TERRACE
19. NEW TRAIL & TRAILHEADS
20. NEW TRANSFORMERS
21. NEW CENTRAL PLANT
22. NEW MAINTENANCE AREA
23. NEW PARKING STRUCTURE 2
24. NEW CELL TOWER
25. EXISTING FIRE PUMP - RELOCATED FROM BASELINE PROJECT
26. NEW GENERATOR
27. NEW SERVICE YARD
28. NEW SIGNAL

Issued For:

Sheet Title

EIR MASTER PLAN EARTHWORK QUANTITIES

Scale:

Date | Project Number 12210

CAD File

Sheet Number

JOHN ANSON FORD THEATRES PROJECT
2580 Cahuenga Boulevard East
Hollywood, CA 90068

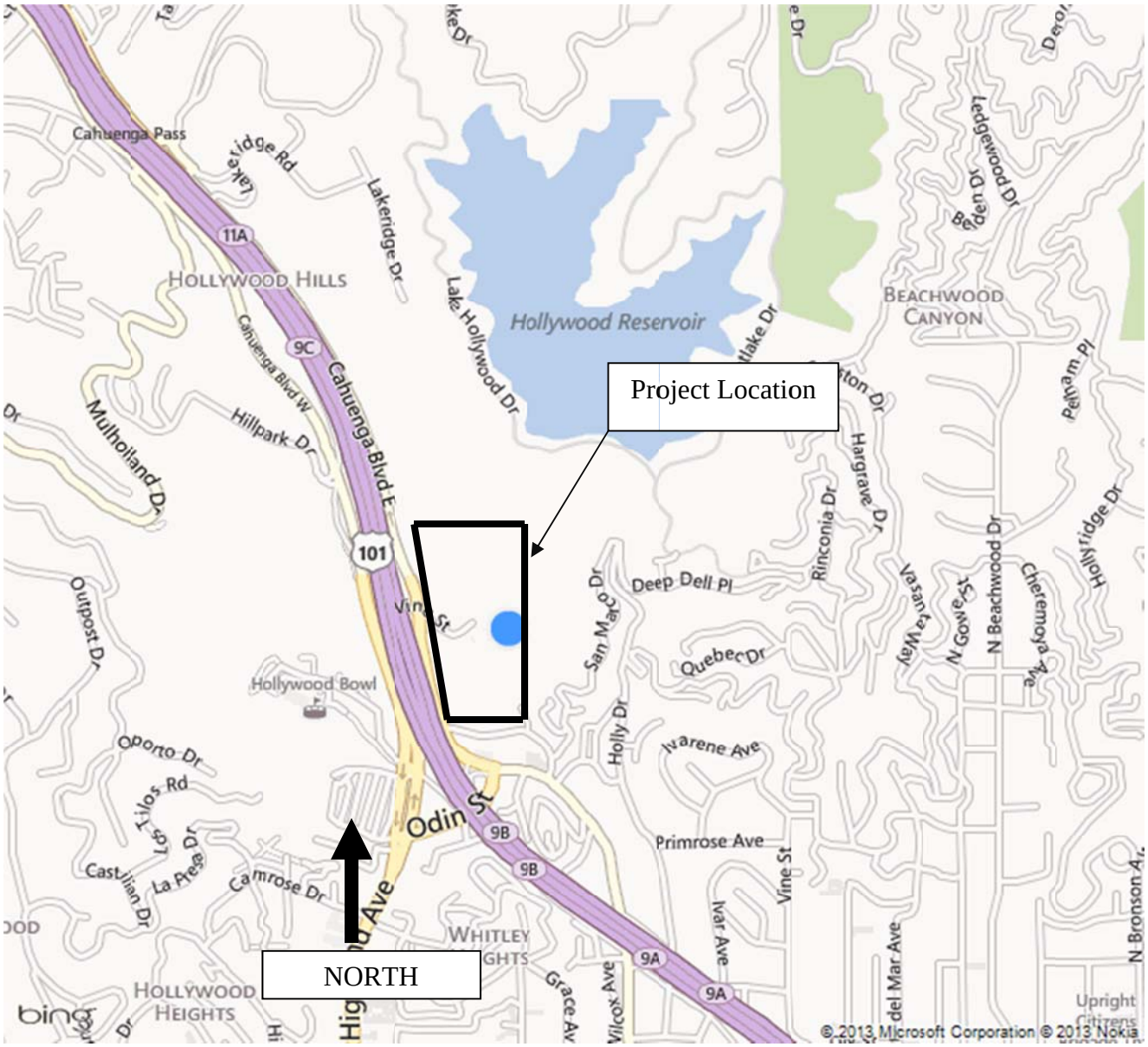
Appendix Index

Appendix:

A) Vicinity Map
B) Los Angeles County Hydrologic Map 1-H1.18
C) Runoff Coefficient Curve – Soil Type 002
D) Hydrology Design Criteria
E) Time of Concentration Calculator Calculations
F) Pre & Post Development Hydrology Plans

JOHN ANSON FORD THEATRES PROJECT
2580 Cahuenga Boulevard East
Hollywood, CA 90068

Appendix A - Vicinity Map

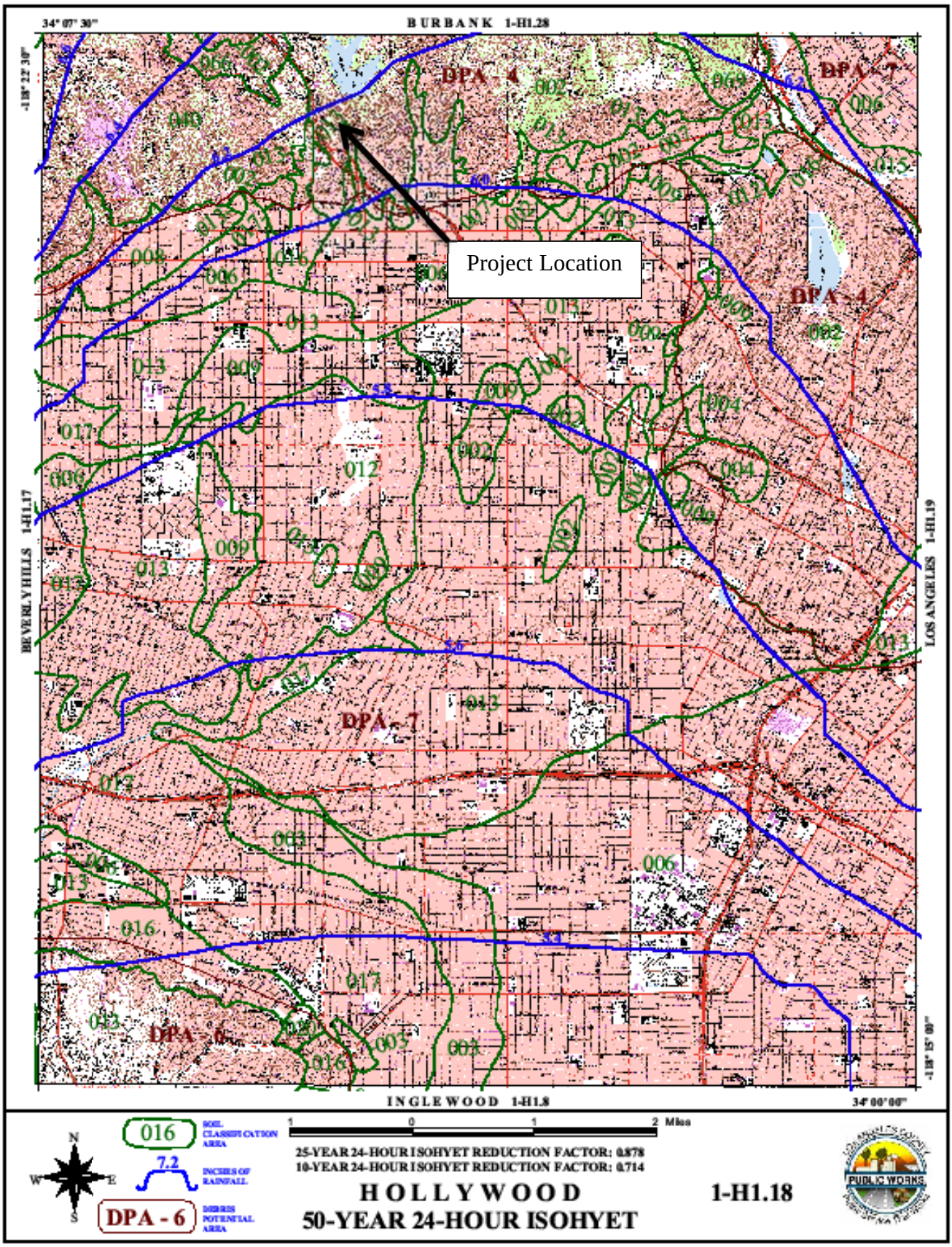


Vicinity Map
Microsoft Bing Maps
Not to Scale

JOHN ANSON FORD THEATRES PROJECT
2580 Cahuenga Boulevard East
Hollywood, CA 90068

Appendix B - Los Angeles County Hydrologic Map

- The project site falls between a 6.0 and 6.2 isohyet lines so an isohyet of 6.1 inches of rainfall was taken for a 50-Year, 24-Hour storm.
- The project site falls in a soil classification of 002.


34° 07' 30"
BURBANK 1-H1.28
-118° 22' 30"
DPA - 4
DPA - 7
Project Location
DPA - 4
DPA - 7
DPA - 6
BEVERLY HILLS 1-H1.17
LOS ANGELES 1-H1.19
INGLEWOOD 1-H1.8
34° 00' 00"
-118° 15' 00"
016
SOIL CLASSIFICATION AREA
7.2
INCHES OF RAINFALL
DPA - 6
DEBRIS POTENTIAL AREA
N
W
E
S
1 0 1 2 Miles
25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714
HOLLYWOOD
50-YEAR 24-HOUR ISOHYET
1-H1.18
PUBLIC WORKS

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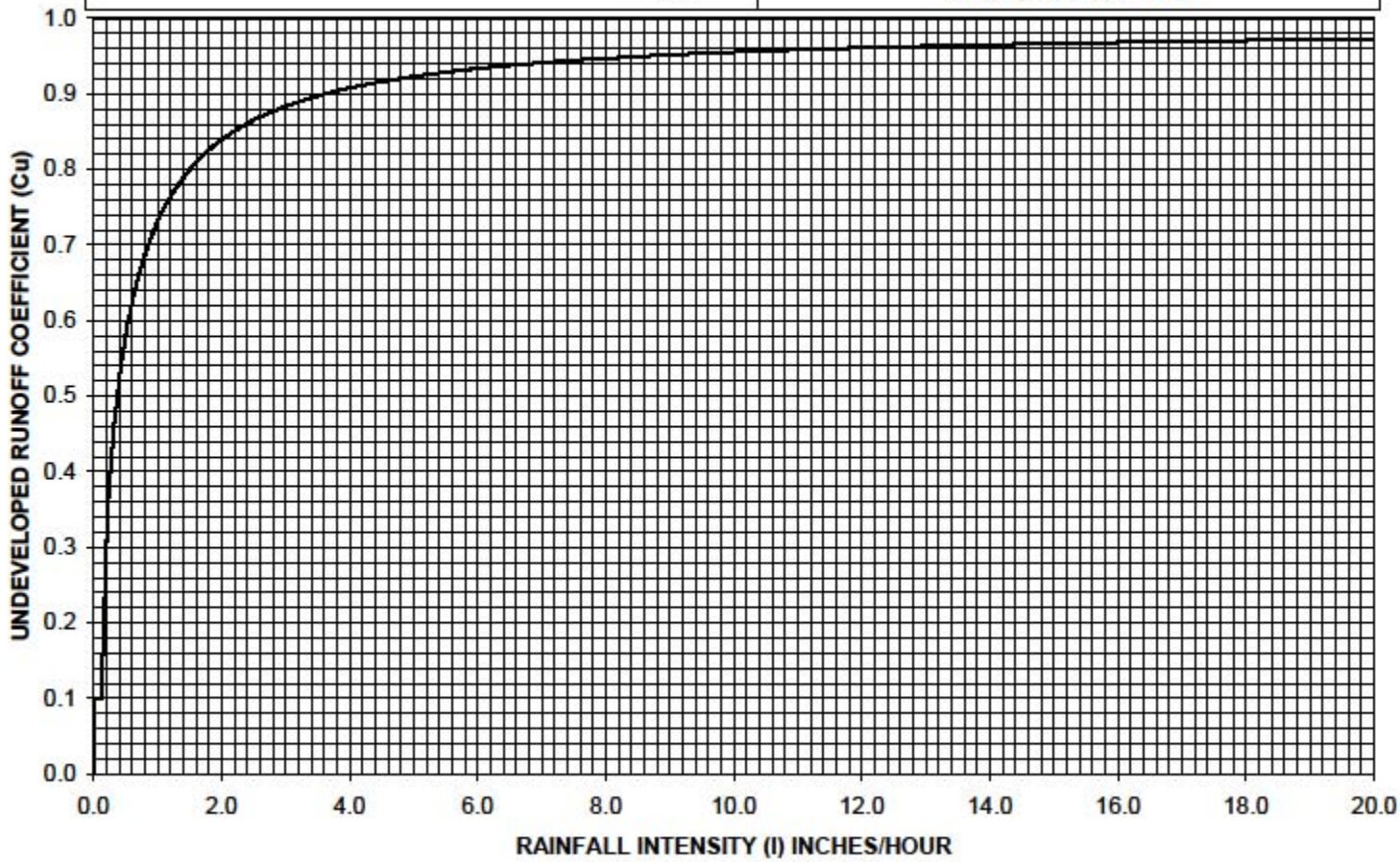
Appendix C – Runoff Coefficient Curve – Soil Type 002

$C_D = (0.9 * IMP) + (1.0 - IMP) * C_U$

Where: C_D = Developed Runoff Coefficient
IMP = Proportion Impervious
C_U = Undeveloped runoff coefficient

Los Angeles County Department of Public Works

RUNOFF COEFFICIENT CURVE
SOIL TYPE NO. 002



File:Soil Curve Data and Graphs 0-24 Tab:GN2 HYDROLOGY APPENDIX C BJW: 06/14/2004

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Appendix D – Hydrology Design Criteria

HYDROLOGY METHOD: Los Angeles County Public Works Department
Hydrology Manual (January 2006)
Runoff Calculation Method: Time of Concentration Calculator

DESIGN STORM: 50 Year Storm

SOIL TYPE: 002 (See attached Hydrologic Map 1-H1.18)

AREAS: A = Area of drainage for each sub area is shown on the hydrology map)

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Appendix E – Time of Concentration Calculator Calculations

50-Year Storm Design: Pre-Development

- An isohyet of 6.1 inches was found using the Los Angeles Hydrologic Map: 1-H1.18
- The Time of Concentration (Tc) was found using the Los Angeles County Runoff Calculation Method: Time of Concentration Calculator.

Input Info										
	Subarea	Area (Ac)	Imperv. (decimal)	Perv. Area (Ac)	Imperv. Area (Ac)	Design Storm	Soil Type	Length (ft)	Slope	Isohyet (in)
Exist.	A	2.36	0.26	1.74	0.62	50	2	590	0.3415	6.1
	B	1.84	0.28	1.32	0.52	50	2	450	0.4384	6.1
	C	1.51	0.33	1.01	0.50	50	2	260	0.5338	6.1
	D	0.79	0.03	0.77	0.02	50	2	340	0.6324	6.1
	E	2.04	0.00	2.04	0.00	50	2	390	0.5944	6.1
	F	1.53	0.11	1.36	0.17	50	2	550	0.4455	6.1
	G	0.57	0.35	0.37	0.20	50	2	410	0.239	6.1
	H	6.41	0.13	5.57	0.84	50	2	1040	0.3596	6.1
	I	7.51	0.08	6.88	0.63	50	2	1020	0.3897	6.1
	J	3.58	0.00	3.58	0.00	50	2	510	0.7663	6.1
	K	1.80	0.00	1.80	0.00	50	2	420	0.4971	6.1
	L	4.04	0.00	4.04	0.00	50	2	600	0.3693	6.1
	M	2.72	0.00	2.72	0.00	50	2	460	0.5217	6.1
	N	1.18	0.00	1.18	0.00	50	2	390	0.4772	6.1
	Total	37.90		34.40	3.50					

Output Info								
	Subarea	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Volume (acre-ft)	Volume (cf)
Exist.	A	5	3.64	0.9	0.90	7.743	0.640	27878.40
	B	5	3.64	0.9	0.90	6.032	0.510	22215.60
	C	5	3.64	0.9	0.90	4.961	0.440	19166.40
	D	5	3.64	0.9	0.90	2.601	0.170	7405.20
	E	5	3.64	0.9	0.90	6.681	0.430	18730.80
	F	5	3.64	0.9	0.90	5.013	0.360	15681.60
	G	5	3.64	0.9	0.90	1.870	0.170	7405.20
	H	6	3.34	0.89	0.89	19.049	1.540	67082.40
	I	6	3.34	0.89	0.89	22.332	1.710	74487.60
	J	5	3.64	0.9	0.90	11.717	0.750	32670.00
	K	5	3.64	0.9	0.90	5.906	0.380	16552.80
	L	5	3.64	0.9	0.90	13.237	0.840	36590.40
	M	5	3.64	0.9	0.90	8.906	0.570	24829.20
	N	5	3.64	0.9	0.90	3.877	0.250	10890.00

See Appendix F for pre-development hydrology areas

Project Area Total Results	
	Flow rate* (cfs)
Exist.	**119.92**
	Volume** (cf)
Exist.	**381,586**
	Volume (acre-ft)
Exist.	**8.76**

*The calculated flow rate is the amount of flow that occurs, spread across the site, during a 50-year storm event

**The calculated volume is the amount of runoff that is collected from all tributary areas during a 50-year storm event

50-Year Storm Design: Post-Development

- An isohyet of 6.1 inches was found using the Los Angeles Hydrologic Map: 1-H1.18
- The Time of Concentration (Tc) was found using the Los Angeles County Runoff Calculation Method: Time of Concentration Calculator.

Input Info										
	Subarea	Area (Ac)	Imperv. (decimal)	Perv. Area (Ac)	Imperv. Area (Ac)	Design Storm	Soil Type	Length (ft)	Slope	Isohyet (in)
Prop.	A	0.24	0.89	0.03	0.22	50	2	250	0.062	6.1
	B	0.43	0.54	0.20	0.23	50	2	120	0.110	6.1
	C	0.71	1.00	0.00	0.71	50	2	280	0.020	6.1
	D	1.47	0.09	1.34	0.13	50	2	425	0.449	6.1
	E	1.34	0.27	0.97	0.37	50	2	390	0.474	6.1
	F	1.31	0.31	0.91	0.40	50	2	260	0.637	6.1
	G	0.94	0.07	0.88	0.07	50	2	340	0.624	6.1
	H	2.05	0.00	2.05	0.00	50	2	390	0.595	6.1
	I	1.32	0.00	1.32	0.00	50	2	550	0.468	6.1
	J	0.28	1.00	0.00	0.28	50	2	180	0.092	6.1
	K	0.55	0.27	0.40	0.15	50	2	410	0.263	6.1
	L	2.26	0.00	2.26	0.00	50	2	690	0.111	6.1
	M	0.79	0.80	0.16	0.64	50	2	390	0.043	6.1
	N	1.08	1.00	0.00	1.08	50	2	190	0.020	6.1
	O	2.98	0.00	2.98	0.00	50	2	690	0.521	6.1
	P	6.82	0.03	6.63	0.19	50	2	890	0.439	6.1
	Q	3.58	0.00	3.58	0.00	50	2	510	0.409	6.1
	R	1.80	0.00	1.80	0.00	50	2	420	0.528	6.1
	S	4.04	0.00	4.04	0.00	50	2	600	0.400	6.1
	T	2.72	0.00	2.72	0.00	50	2	460	0.405	6.1
	U	1.18	0.00	1.18	0.00	50	2	390	0.449	6.1
	Total	37.89		33.43	4.46					

See Appendix F for post-development hydrology areas

Output Info								
	Subarea	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Volume (acre-ft)	Volume (cf)
Prop.	A	5	3.64	0.9	0.90	0.800	0.100	4356.00
	B	5	3.64	0.9	0.90	1.409	0.150	6534.00
	C	5	3.64	0.9	0.90	2.333	0.320	13939.20
	D	5	3.64	0.9	0.90	4.802	0.340	14810.40
	E	5	3.64	0.9	0.90	4.382	0.370	16117.20
	F	5	3.64	0.9	0.90	4.301	0.370	16117.20
	G	5	3.64	0.9	0.90	3.095	0.210	9147.60
	H	5	3.64	0.9	0.90	6.701	0.430	18730.80
	I	5	3.64	0.9	0.90	4.314	0.280	12196.80
	J	5	3.64	0.9	0.90	0.915	0.130	5662.80
	K	5	3.64	0.9	0.90	1.794	0.150	6534.00
	L	6	3.34	0.89	0.89	6.714	0.470	20473.20
	M	5	3.64	0.9	0.90	2.602	0.320	13939.20
	N	5	3.64	0.9	0.90	3.538	0.490	21344.40
	O	5	3.64	0.9	0.90	9.761	0.620	27007.20
	P	5	3.64	0.89	0.90	22.345	1.470	64033.20
	Q	5	3.64	0.90	0.90	11.715	0.75	32670.00
	R	5	3.64	0.90	0.90	5.905	0.38	16552.80
	S	5	3.64	0.90	0.90	13.235	0.84	36590.40
	T	5	3.64	0.90	0.90	8.905	0.57	24829.20
	U	5	3.64	0.90	0.90	3.876	0.25	10890.00

Project Area Total Results	
	Flow rate* (cfs)
Prop.	**123.44**
	Volume** (cf)
Prop.	**392,476**
	Volume (acre-ft)
Prop.	**9.01**

*The calculated flow rate is the amount of flow that occurs, spread across the site, during a 50-year storm event

**The calculated volume is the amount of runoff that is collected from all tributary areas during a 50-year storm event

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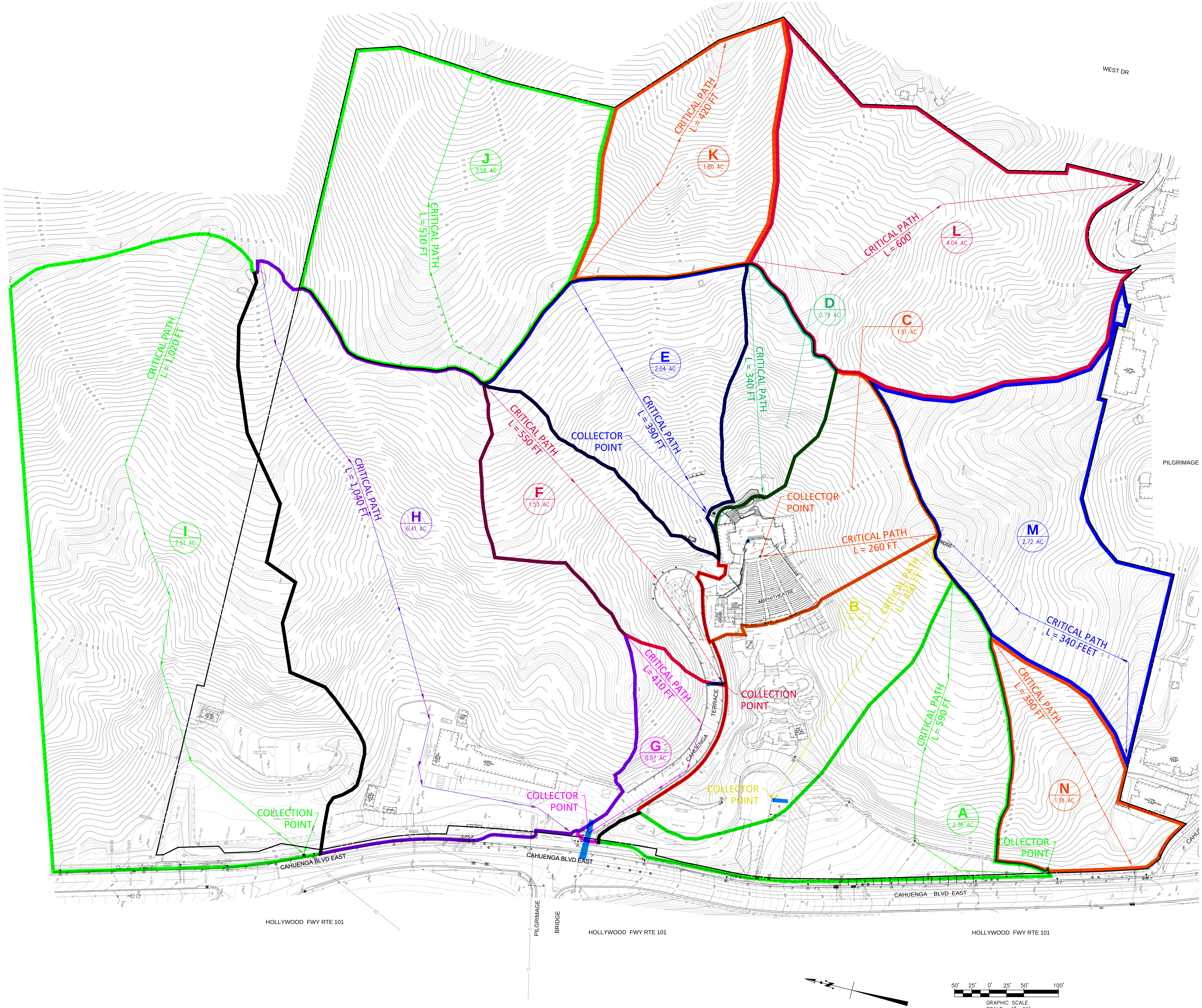
Appendix F – Hydrology Plan

- **Pre-Development Hydrology Plan – H1**
- **Post-Development Hydrology Plan – H2**



OFF-SEASON TWO IMPROVEMENTS

John Anson Ford Theatres
2580 Cahuenga Boulevard East
Hollywood, California 90068

Levin & Associates Architects
811 West Seventh Street, Suite 900
Los Angeles, California 90017
213.623.8141 Fax 213.623.9207

MOLLENHAUER GROUP
CIVIL ENGINEERING
SURVEYING+MAPPING
LAND DEVELOPMENT
213 624 2661 TEL
213 614 1863 FAX
316 WEST 2nd STREET - FIFTH FLOOR
LOS ANGELES CALIFORNIA 90012

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HYDROLOGY REPORT 6/7/2013

Sheet Title

PRE-DEVELOPMENT HYDROLOGY

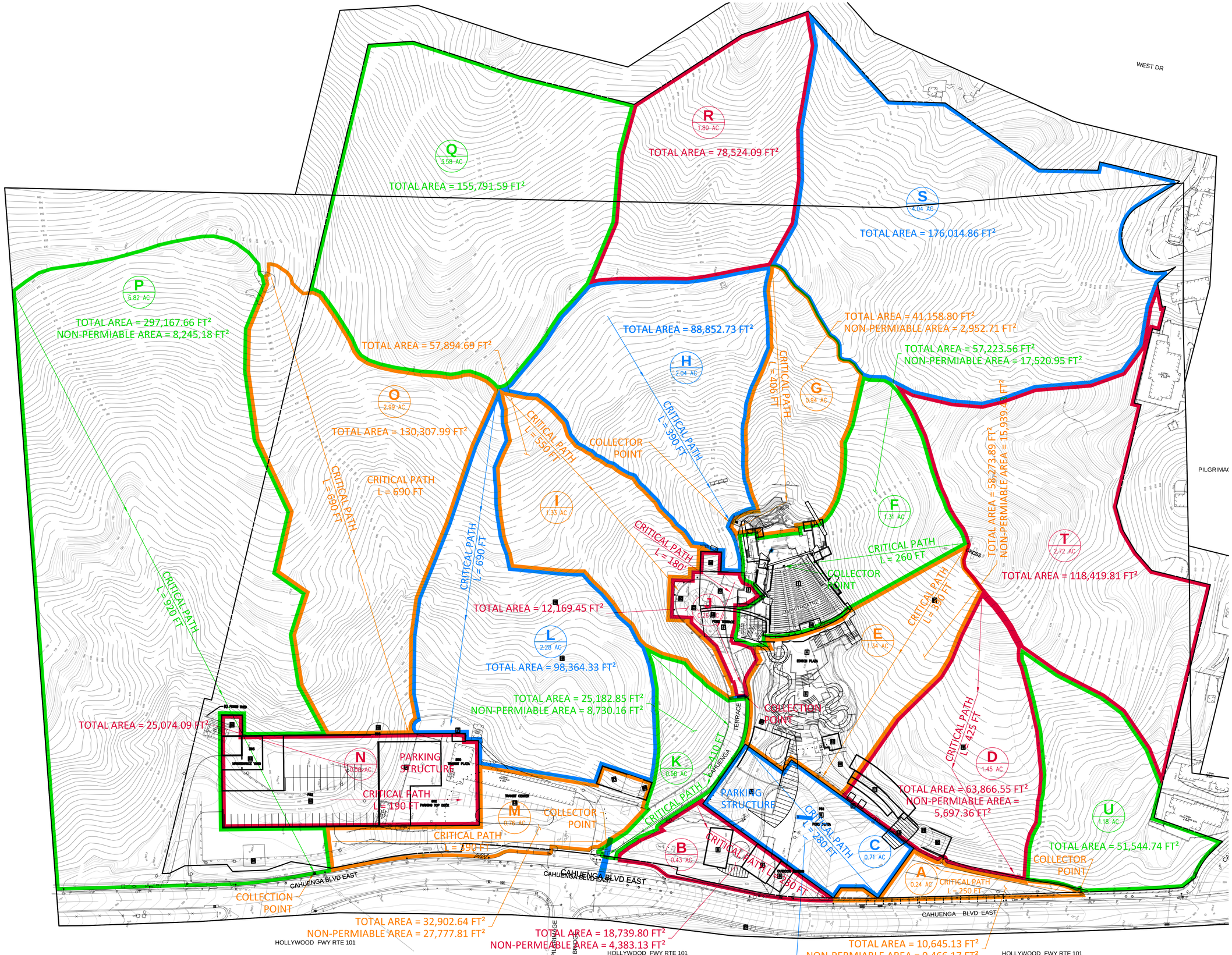
Scale: 1" = 50'

Date | Project Number 12210

CAD File
LA30163_H1_2013-04-04.DWG

Sheet Number

H1



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811 West Seventh Street, Suite 900
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HYDROLOGY REPORT	6/7/2013

Sheet Title

POST-DEVELOPMENT HYDROLOGY

Scale: 1" = 50'

Date	Project Number
	12210

CAD File
LA30163_H1_2013-04-04.DWG

Sheet Number

H2

MOLLENHAUER

Grant Kai, PE, LEED AP, QSD/QSP
Senior Project Manager

Education

University of California, Los Angeles
Bachelor of Science, Civil Engineering

Professional Experience and Credentials

Mr. Kai is a senior project manager in the civil engineering group of Mollenhauer's Los Angeles office. During his tenure at Mollenhauer, Mr. Kai responsibilities have increased in a natural and logical progression to allow him to fulfill his desire to serve the firm's clients in the area of project management, utility design and precise grading.

Relevant Projects Experience

Recent projects of note for which Mr. Kai has served as project manager are as follows:

- Burbank Water and Power Magnolia Service/Control Building–LEED Platinum Certified
  Burbank, CA
  Design of grading, paving drainage and utilities for Service Center/Warehouse and adjacent structure. $11.8 million construction cost.

- Palm Desert Sheriff's Station- LEED Gold Certified
  Palm Desert, CA
  Developed a previously vacant 10-acre site located in Palm Desert into a sheriff station complete with roadways and parking lot improvements. Prepared all site grading and utility (domestic water, fire water, sewer and storm drain) plans as well as a large Best Management Practice infiltration system. Prepared the LEED submittal for the civil engineering aspects of the project.

- Martin Luther King Jr. Medical Center Ancillary – LEED Gold Certified
  Los Angeles, CA
  Design of grading, paving drainage and utilities for the New Pediatrics and Trauma Center. The design included the realignment of a fire water line and storm drain lines to clear the site for this 5 story with basement seismic tower constructed in two phases. $173.4 million construction cost.

- El Cariso Community Regional Park Gym / Community Center – LEED Silver Certified
  Sylmar, CA
  Design-Build Los Angeles County project consisting of 16,000 square foot includes a gymnasium, classroom, multipurpose room, office area, restrooms, full kitchen and exterior surface parking lot. $10 million construction cost.

Professional Registrations

- State of California Professional Engineer License No. 73252
- Leadership in Energy and Environmental Design Accredited Professionals (LEED AP)
- Qualified SWPPP Developer (QSD) and Practitioner (QSP)

Robert J. Poppe
Senior Project Manager

Education

University of Oklahoma, School of Environmental Design
California State University, Los Angeles, Computer Technology

Professional Experience and Credentials

Mr. Poppe has over 28 years of experience in all aspects of Civil Engineering Design and Management. He has served as the Senior Project Manager for numerous multi-million dollar projects ranging from flagship OSHPD hospital and medical facilities, governmental projects including police, fire and sheriff's facilities, senior housing projects, mixed-use housing and retail centers, professional and collegiate sports arenas and fields, education projects ranging from elementary school projects, school site rehabilitations and high school campuses.

Mr. Poppe has extensive Civil Engineering experience in all areas of site development including grading, paving as well as utility design and storm water management and mitigation designs. In addition, he has designed and managed street plan projects for numerous local city and county agencies and acts as a mentor to the younger engineers in the firm in utilizing the numerous aspects of AutoCAD as it relates to the civil engineering profession.

Recent Projects of Note

Recent completed projects of note for which Mr. Poppe has served as the senior project manager are as follows:

- Kaiser Ontario Valley Medical Center
  A new $550 million medical center located on a 27-acre campus included a new 386,000-square foot hospital, service building expansion and a new HSB hospital support building. This green projects civil designs provided several stages of storm water filtration and retention on site with creative bio-swales and retention ponds that were incorporated into the campus landscaping and architecture.

- University of Southern California, Galen Center
  This 10,258 seat, $147 million collegiate multipurpose arena and athletic facility on the campus of USC was one of the first facilities in Los Angeles to incorporate stormwater filtering measures and was awarded the Engineering Project of the Year by the Los Angeles Council of Engineers and Scientists.

- Los Angeles Dodgers 2013 and 2014 Stadium Renovations
  Stadium and site improvements were designed and implemented within an extremely tight off-season schedule that concluded each year's developments by opening day. Improvements included stadium additions, site grading renovations, LID stormwater mitigation features.