



Thienes Engineering, Inc.

CIVIL ENGINEERING • LAND SURVEYING

PRELIMINARY HYDROLOGY CALCULATIONS

FOR

NELSON AVENUE INDUSTRIAL BUILDINGS
15010 AND 15100 NELSON AVENUE
CITY OF INDUSTRY, CALIFORNIA

PREPARED FOR

OVERTON MOORE PROPERTIES

19300 HAMILTON AVENUE
GARDENA, CA 90148
PHONE: (310) 323-9100
FAX: (310) 608-7997

MARCH 1, 2022
REVISED JULY 21, 2022

JOB NO. 4022

PREPARED BY

THIENES ENGINEERING
14349 FIRESTONE BLVD.
LA MIRADA, CALIFORNIA 90639
P. (714) 521- 4811
FAX. (714) 521- 4173

**PRELIMINARY HYDROLOGY
CALCULATIONS**

FOR

NELSON AVENUE INDUSTRIAL BUILDINGS

PREPARED UNDER
THE SUPERVISION OF

REINHARD STENZEL
R.C.E. 56155
EXP. 12/31/2022

DATE:

INTRODUCTION

A: PROJECT LOCATION

The project site is located at the northeast corner of Unruh Avenue and Nelson Avenue in the City of Industry, California. Please see the next page for a vicinity map.

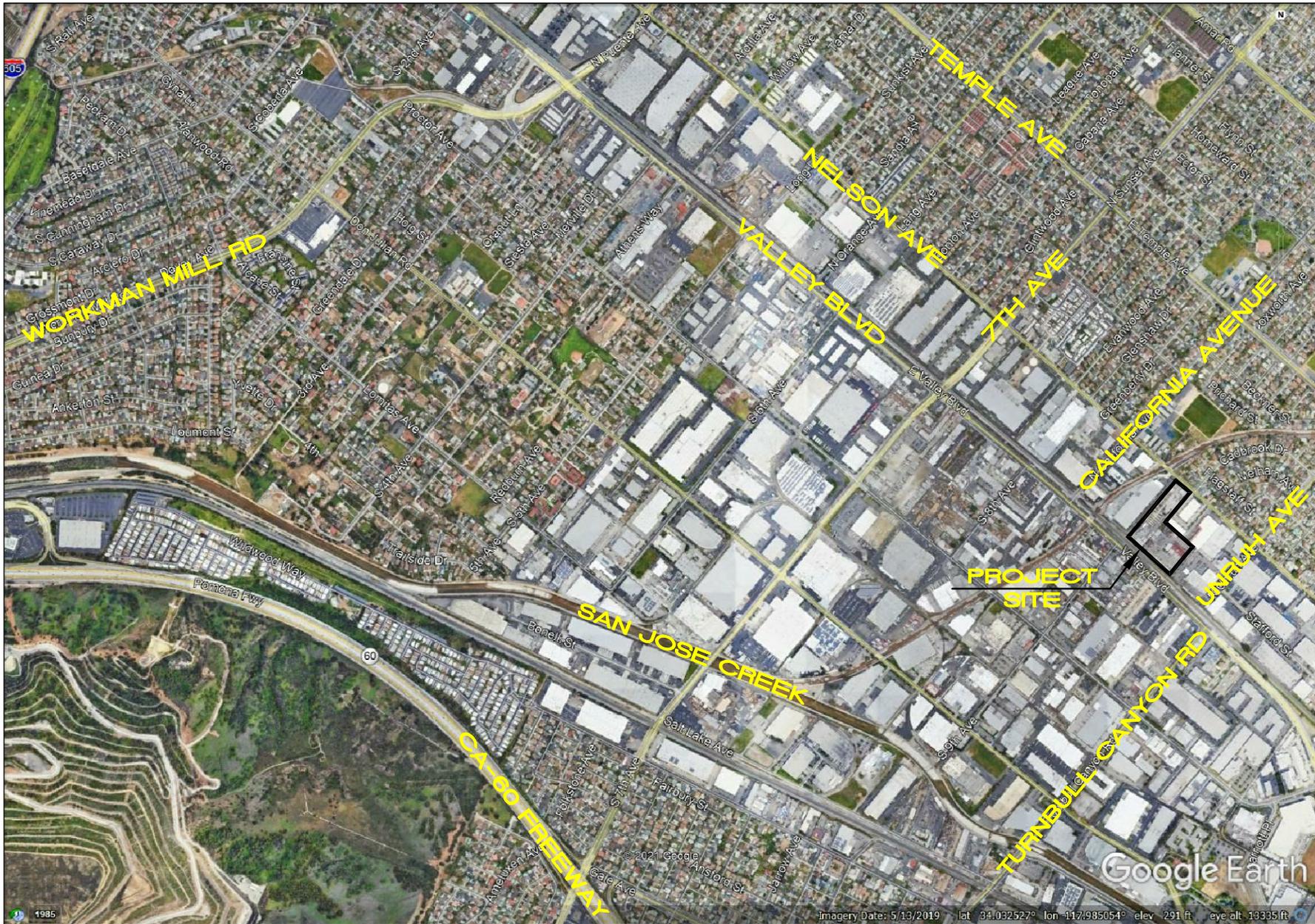
B: STUDY PURPOSE

The purpose of this study is to determine the 50-year peak flow rate for the project site that will ultimately discharge to Puente Creek.

C: PROJECT STAFF:

Thienes Engineering staff involved in this study include:

Reinhard Stenzel
Kristie Ferronato
Morgan Holve



DISCUSSION

Project Description

The project site encompasses approximately 8.60 acres. Proposed improvements include one warehouse-style building of approximately 151,00 square feet. The northwesterly portion of the site is a vehicle parking lot. There is landscaping located throughout the site.

Existing Condition

The site is currently developed with several existing buildings, vehicle parking and truck lots. The site generally drains southwesterly toward Puente Creek.

The northwesterly portion of the site (Area 3C) sheet flows offsite to Nelson Avenue. The 50-year peak flow rate is approximately 0.70 cfs.

The southwesterly truck area (Area 1A) flows southwesterly to an existing catch basin along the westerly property line. Runoff is conveyed through an existing 18" PVC storm drain and discharges into Puente Creek. The 50-year peak flow rate from this area is approximately 9.5 cfs.

The southeasterly area (Area 2B) flows southerly toward existing catch basins. Based on existing topography, it appears these catch basins direct flow southerly to the existing storm drain in Valley Boulevard or to an existing swale along the rail road tracks. In either case, flows from this area discharge into Puente Creek. Runoff from the neighboring easterly property will sheet flow on site and drain to the same existing catch basins. The 50-year peak flow rate from this area, including the offsite run-on, is approximately 13.7 cfs.

The total 50-year peak flow rate is approximately 23.9 cfs.

See Appendix "B" for existing condition hydrology calculations and Appendix "D" for existing condition hydrology map.

Proposed Condition

The site will continue to generally drain southwesterly toward the existing 18" PVC storm drain in the southwesterly corner of the site.

The landscaped area fronting Nelson Avenue (Area 1D) will continue to sheet flow offsite to Nelson Avenue. The 50-year peak flow rate from this area is approximately 0.5 cfs.

The easterly portion of the southerly drive (Area 4A) will drain to a catch basin located in the southerly drive aisle. A proposed on-site storm drain system will collect and convey

runoff easterly around the proposed building and into the truck yard. Runoff from the proposed building, truckyard and northeasterly offsite area (Areas 1A, 2A and 1C) will be captured in catch basins located in the truckyard and confluenced with the proposed on-site system. Flows will be conveyed westerly through the truck yard and into the westerly drive aisle. Runoff from the northwesterly vehicle parking area (Areas 1B and 2B) will drain to catch basins located in the parking area and confluenced with the proposed onsite system. The storm drain system will continue southerly through the westerly drive aisle. Flows from the westerly drive aisle (Area 3A) will drain to a catch basin located in the drive aisle and confluenced in the proposed system. The storm drain system will continue southerly and connect with the existing 18” PVC storm drain in the southwesterly corner of the site.

The 50-year peak flow rate to the existing storm drain is approximately 29.7 cfs.

See Appendix “B” for proposed condition hydrology calculations and Appendix “D” for proposed condition hydrology map.

Detention

The existing 18” existing storm drain has a designed 25-year peak flow rate of 19.5 cfs for both the site and the westerly adjacent property. The allowable discharge from the project site itself is 8.5 cfs. The westerly drive aisle (Area 3A) will leave the site undetained, with a peak flow rate of 2.9 cfs. Therefore, the allowable discharge from the site will be limited to 5.6 cfs (8.5 cfs-2.9 cfs). Remaining flows will be stored in the truck yard of the proposed building and vehicle parking area. The ponding in the vehicle parking area will be constrained to a maximum depth of 0.5’.

Hydrograph volumes were determined from the Hydro-Calc Excel spreadsheet. Cumulative volumes are shown up to the allowable peak flow rate before and after the peak occur. The difference in the volume before and after the peak (along with the volume of the allowable peak flow rate) is the volume to be temporarily detained. The following table summarizes the required volumes in each of the areas associated with the hydrology map:

Area	Required Volume (cubic feet)	Maximum Depth (feet)	Discharge (cfs)
Building Truckyard	20,257	1.16	2.5
Vehicle Parking	834	0.45	3.0

With on-site detention, the overall 50-year flow rate from the site can be limited to 8.4 cfs.

See Appendix “C” for detention calculations and Appendix “D” for proposed condition hydrology map.

Methodology

Hydrology calculations were computed using the Hydrocalc computer program (by County of Los Angeles). The site is soil type is “006” and “0017” per the Los Angeles County Hydrology Manual. See Appendix “A” for reference materials.

APPENDIX

DESCRIPTION

A

REFERENCE MATERIAL

B

HYDROLOGY CALCULATIONS

C

DETENTION ANALYSIS

D

HYDROLOGY MAPS

APPENDIX A

REFERENCE MATERIALS

34° 07' 30"

AZUSA 1-HI.31

-118° 00' 00"

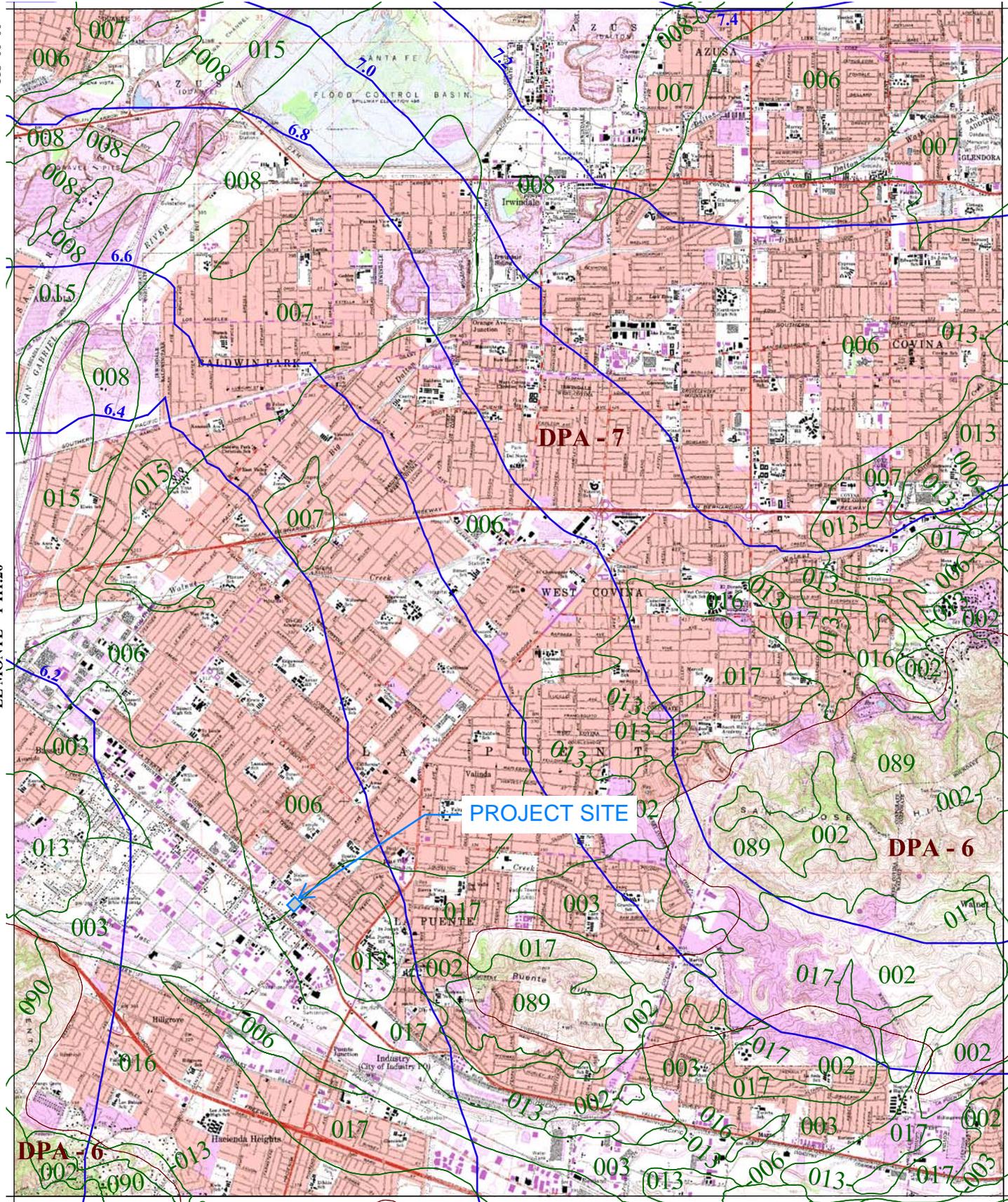
EL MONTE 1-HI.20

SAN DIMAS 1-HI.22

-117° 52' 30"

LA HABRA 1-HI.11

34° 00' 00"



016 SOIL CLASSIFICATION AREA

7.2 INCHES OF RAINFALL

DPA - 6 DEBRIS POTENTIAL AREA

1 0 1 2 Miles

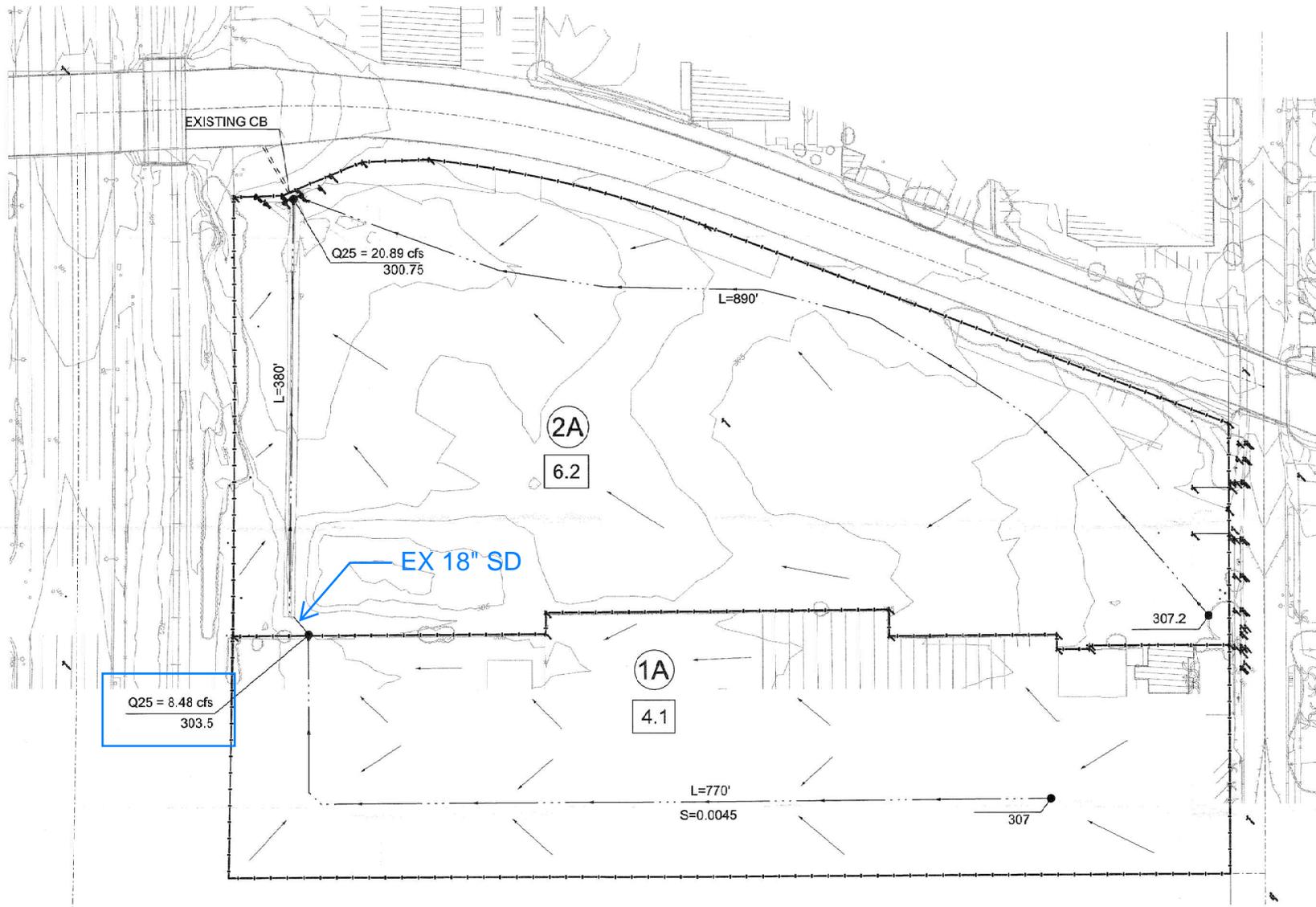
25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
 10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714

SOIL: 006 & 017
 RAIN: 6.3"

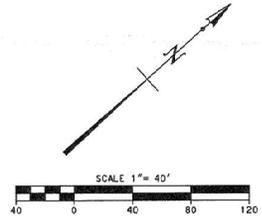
BALDWIN PARK 50-YEAR 24-HOUR ISOHYET

1-HI.21





- LEGEND
- 1A SUBAREA LABEL
 - 1.4 SUBAREA ACREAGE
 - DRAINAGE COURSE
 - SUBAREA BOUNDARY
 - 25-YEAR STORM PEAK FLOW
 - DRAINAGE COURSE TERMINUS
 - ELEVATION AT TERMINUS



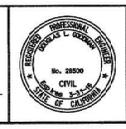
NOT FOR CONSTRUCTION

Underground Service Alert
 Call: TOLL FREE
 1-800
 227-2600
 TWO WORKING DAYS BEFORE YOU DIG

REV	REVISION DESCRIPTION	DATE	ENCL	CHK	DATE

CITY OF INDUSTRY
 APPROVED BY:

 JOHN C. BALLAS
 CITY ENGINEER RCE 343-1



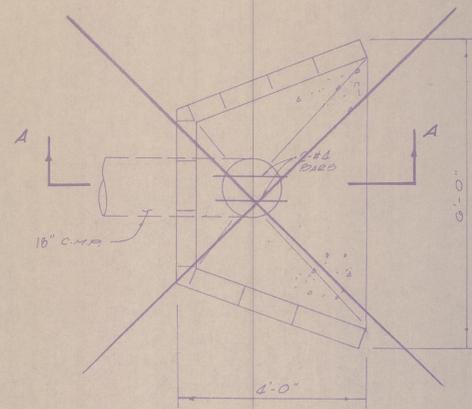
Goodman & ASSOCIATES
 2018 SKY VIEW DRIVE
 COLTON, CA 92324
 (909) 824-2773
 DOUGLAS L. GOODMAN
 RCE 2850, 3-31-2016

IN THE CITY OF INDUSTRY

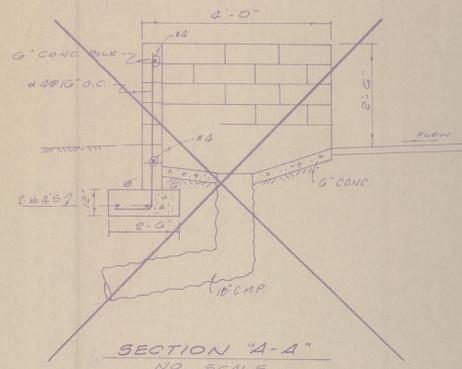
HYDROLOGY MAP - EXISTING CONDITION
 FOR: DONLON BUILDERS
 PROJECT: 15000 EAST NELSON AVE
 APN 8208-011-902

NOVEMBER 12, 2015
 DATE

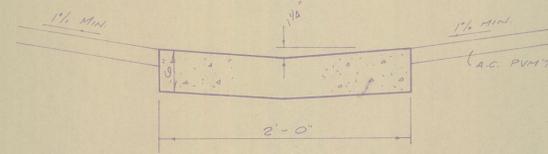
DATE 11/12/2015
 SHEET NO. 1/2



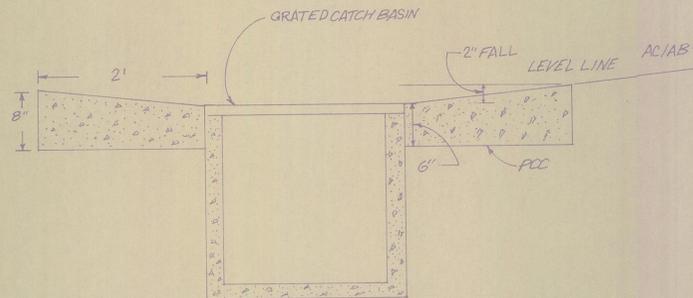
INLET DETAIL
NO SCALE



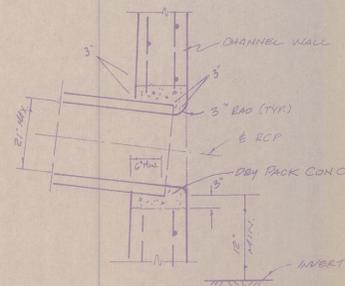
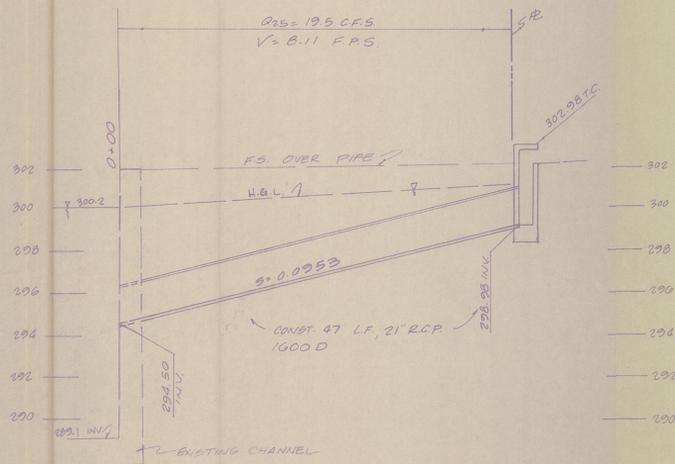
SECTION "A-A"
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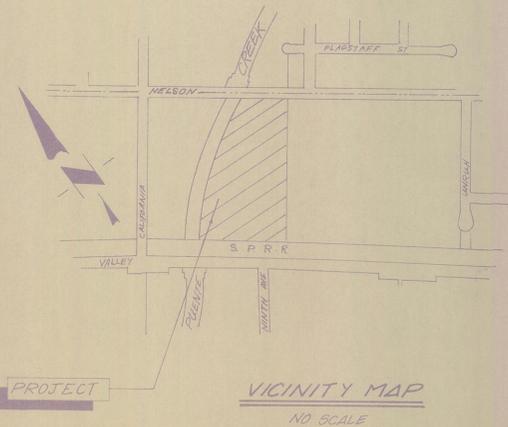
CONCRETE DRAIN-
DETAIL "A"
NO SCALE



CONCRETE APRON DETAIL
NO SCALE



FLOOD CONT. CHANNEL CONNECTION
(JUNCTION STRUCTURE "A")
NO SCALE



VICINITY MAP
NO SCALE

GENERAL NOTES

- SUPERVISION OF CONSTRUCTION SHOWN ON THIS PLAN, INCLUDING GRADES, EARTHWORK OPERATION, PAVING AND DRAINAGE FACILITIES, WILL BE PERFORMED BY CIVILTEC ENGINEERING NO. 2610 S. CALIFORNIA AVE. B, MONROVIA, CA.
- A REPORT OF SOILS INVESTIGATION, INCLUDING RECOMMENDATIONS FOR GRADING PROCEDURES BASED ON THE REQUIREMENTS OF CHAPTER 29, LOS ANGELES COUNTY BUILDING CODE (LATEST EDITION), AND PAVEMENT AND BASE THICKNESSES, HAS BEEN PREPARED BY THE FOLLOWING SOILS ENGINEER: EARTHWORK AND PAVING SHALL CONFORM TO THE RECOMMENDATIONS CONTAINED IN THE REPORT.
- THE SOILS ENGINEER SHALL OBSERVE, INSPECT AND TEST ALL EARTHWORK OPERATIONS INCLUDING, BUT NOT LIMITED TO, CLEARING AND GRUBBING, SUBGRADE PREPARATION, STRUCTURAL AND TRENCH EXCAVATION AND BACKFILL, AND PLACEMENT AND COMPACTION OF FILL.
- AFTER COMPLETION OF THE GRADING OPERATION AND PRIOR TO REQUEST FOR FINAL INSPECTION, THE SOILS ENGINEER SHALL SUBMIT TO THE CITY ENGINEER A COPY OF BONDITY REPORTS, TOGETHER WITH HIS WRITTEN VERIFICATION THAT THE COMPLETED WORK CONFORMS TO THE INTENT OF THE PLANS, SPECIFICATIONS AND SOIL REPORT RECOMMENDATIONS.
- PERMANENT CUT OR FILL SLOPES SHALL NOT EXCEED A SLOPE OF TWO HORIZONTAL TO ONE VERTICAL.
- ALL FILL SLOPE FACES SHALL BE COMPACTED, IF THE SLOPE IS TO BE LANDSCAPED, THE SURFACE SIX INCHES MAY BE LEFT UNCOMPACTED FOR PLANTING.
- CONTRACTOR SHALL PROVIDE PROTECTIVE MEASURES AND TEMPORARY DRAINAGE AND DESILTING FACILITIES TO PROTECT ADJOINING PROPERTIES FROM STORM WATERS ORIGINATING ON OR DIVERTED FROM THE CONSTRUCTION SITE.
- GRADE SHEETS FOR ALL CONCRETE CURB AND GUTTERS, CURBS, "V" GUTTERS, SLABS, STORM DRAIN AND SEWERS SHALL BE PREPARED BY THE UNDERSIGNED ENGINEER. COPIES OF THE GRADE SHEETS SHALL BE MAINTAINED AT THE JOB SITE FOR THE CITY ENGINEER'S REVIEW.
- GRADE STAKES SHALL BE SET AT 12.5' INTERVALS FOR ALL "V" GUTTERS, CURB AND GUTTER, AND DRAINAGE SYSTEMS WITH FLOW LINE SLOPES OF LESS THAN 1%. CONTRACTOR SHALL PROVIDE GRADE SHEETS TO CITY ENGINEER'S OFFICE 48 HOURS PRIOR TO POURING CONCRETE.
- EXISTING CONTOURS AND OTHER EXISTING TOPOGRAPHIC FEATURES ARE A TRUE REPRESENTATION OF SITE CONDITIONS ON.
- THE CONTRACTOR SHALL KEEP ALL ADJACENT STREETS AND HAUL ROUTES CLEAR OF DIRT AND DEBRIS ORIGINATING FROM THE CONSTRUCTION SITE OR RESULTING FROM THE PROJECT WORK.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING LOW LEVELS OF NOISE AND DUST.
- RETAINING WALLS REQUIRE A SEPARATE BUILDING PERMIT.
- THE UNDERSIGNED REGISTERED CIVIL ENGINEER CERTIFIES THAT THIS PLAN WAS PREPARED UNDER HIS SUPERVISION AND THAT THE PLAN DOES COMPLY WITH CITY OF INDUSTRY ORDINANCES. HE WILL, UPON COMPLETION OF THE PROJECT AND PRIOR TO REQUEST FOR FINAL ACCEPTANCE, SUBMIT TO THE CITY ENGINEER WRITTEN VERIFICATION THAT THE COMPLETED WORK DOES CONFORM TO THESE APPROVED PLANS.

Richard Shroads 35147 6-16-88
NAME RCE DATE

RICHARD SHROADS
PRINTED NAME

PRIVATE ENGINEER'S NOTICE TO CONTRACTORS

THE EXISTENCE AND APPROXIMATE LOCATION OF UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS WERE DETERMINED BY A SEARCH OF THE AVAILABLE PUBLIC RECORDS. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO EXISTING UNDERGROUND UTILITIES OR STRUCTURES EXCEPT AS SHOWN ON THESE PLANS.

THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

APPROX. YARDAGE:

CUT = 400 C.Y.
FILL = 2100 C.Y.

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
138-F-177
FILE COPY



15000 NELSON AVE.
CIVILTEC ENGINEERING, INC.
2610 S. CALIFORNIA AVE. SUITE B
MONROVIA, CA. 91016 (818) 359-5892

GRADING PLAN FOR
PARCEL MAP NO. 253,
IN THE CITY OF INDUSTRY

DESIGN: EB	DATE: 5-6-88	SCALE:
DRAWN: ER		SHEET 1 OF 2

APPENDIX B

HYDROLOGY CALCULATIONS

Peak Flow Hydrologic Analysis

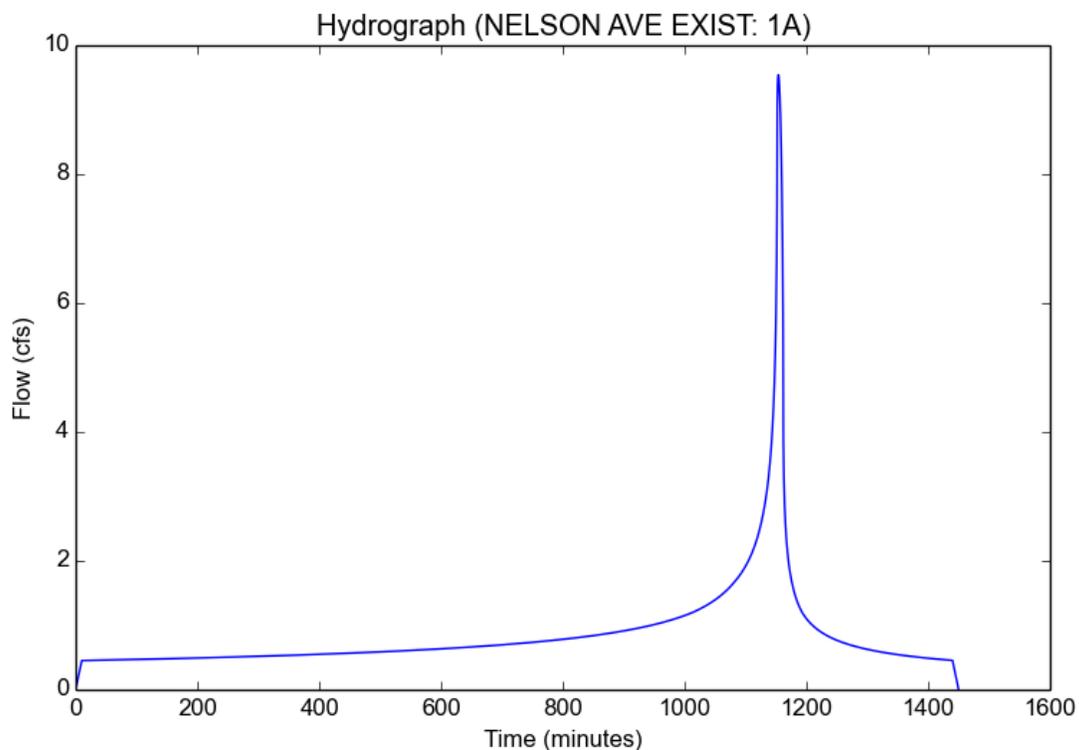
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	NELSON AVE EXIST
Subarea ID	1A
Area (ac)	3.95
Flow Path Length (ft)	794.0
Flow Path Slope (vft/hft)	0.0057
50-yr Rainfall Depth (in)	6.3
Percent Impervious	0.9
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.3
Peak Intensity (in/hr)	2.7137
Undeveloped Runoff Coefficient (Cu)	0.8022
Developed Runoff Coefficient (Cd)	0.8902
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	9.5423
Burned Peak Flow Rate (cfs)	9.5423
24-Hr Clear Runoff Volume (ac-ft)	1.7115
24-Hr Clear Runoff Volume (cu-ft)	74554.1968



Peak Flow Hydrologic Analysis

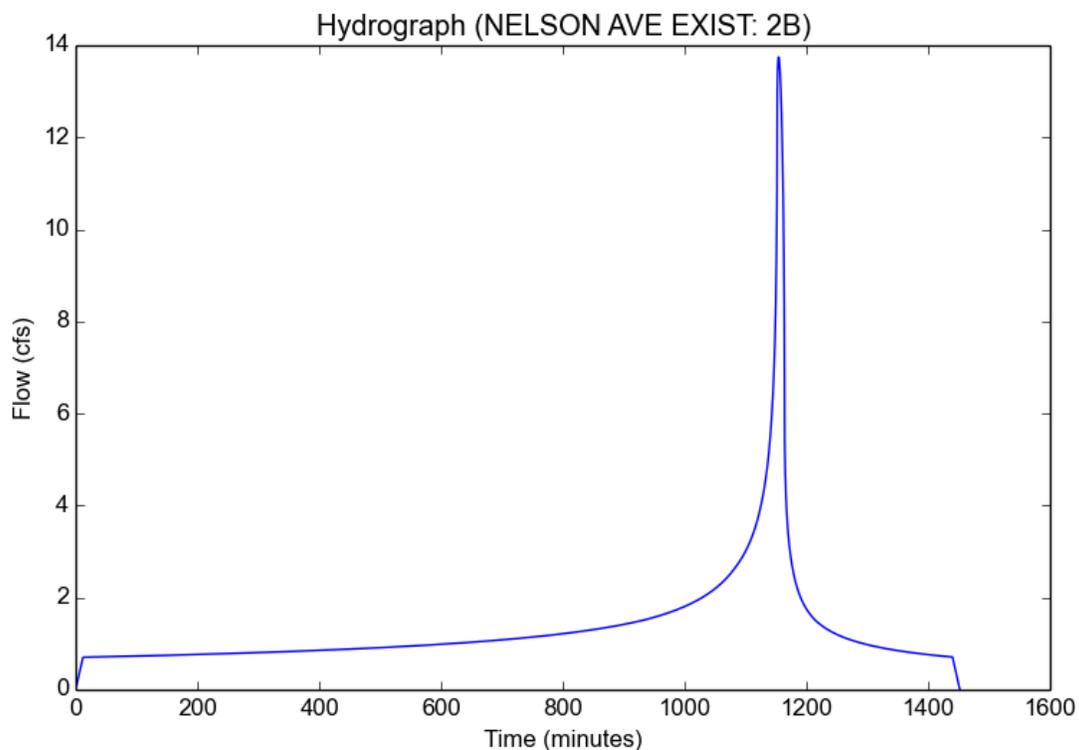
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	NELSON AVE EXIST
Subarea ID	2B
Area (ac)	6.15
Flow Path Length (ft)	920.0
Flow Path Slope (vft/hft)	0.003
50-yr Rainfall Depth (in)	6.3
Percent Impervious	0.9
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.3
Peak Intensity (in/hr)	2.4908
Undeveloped Runoff Coefficient (Cu)	0.8728
Developed Runoff Coefficient (Cd)	0.8973
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	13.7451
Burned Peak Flow Rate (cfs)	13.7451
24-Hr Clear Runoff Volume (ac-ft)	2.6791
24-Hr Clear Runoff Volume (cu-ft)	116701.1483



Peak Flow Hydrologic Analysis

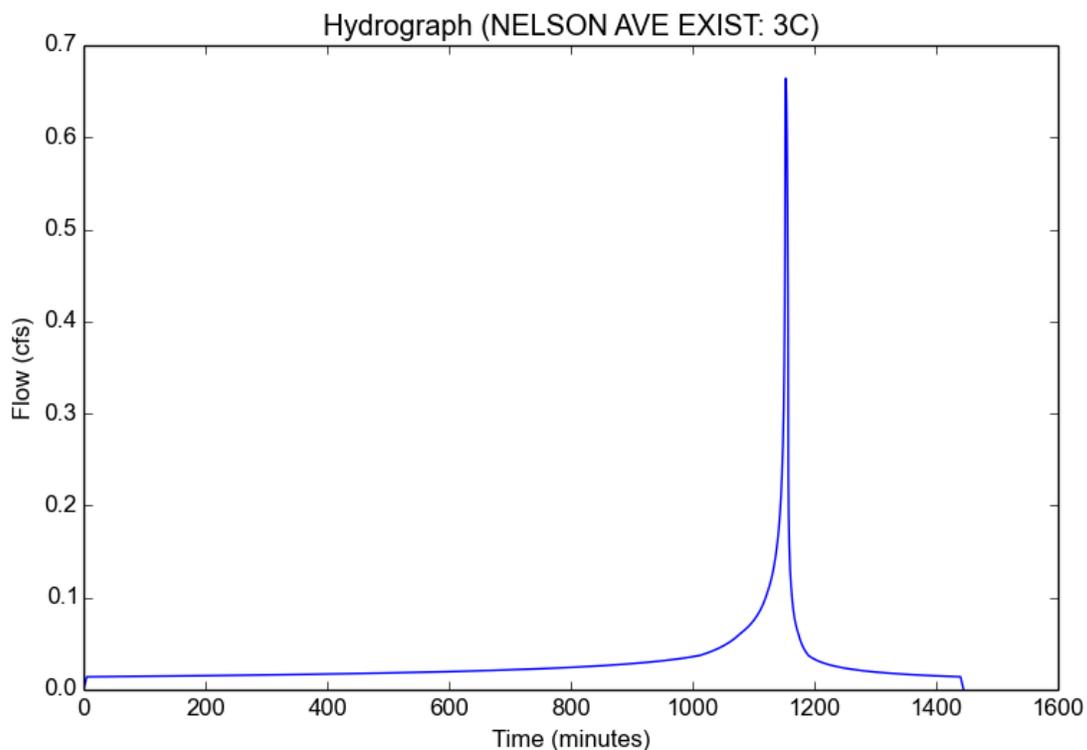
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	NELSON AVE EXIST
Subarea ID	3C
Area (ac)	0.2
Flow Path Length (ft)	164.0
Flow Path Slope (vft/hft)	0.0021
50-yr Rainfall Depth (in)	6.3
Percent Impervious	0.5
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.3
Peak Intensity (in/hr)	3.7588
Undeveloped Runoff Coefficient (Cu)	0.8673
Developed Runoff Coefficient (Cd)	0.8836
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.6643
Burned Peak Flow Rate (cfs)	0.6643
24-Hr Clear Runoff Volume (ac-ft)	0.0585
24-Hr Clear Runoff Volume (cu-ft)	2547.7522



Peak Flow Hydrologic Analysis

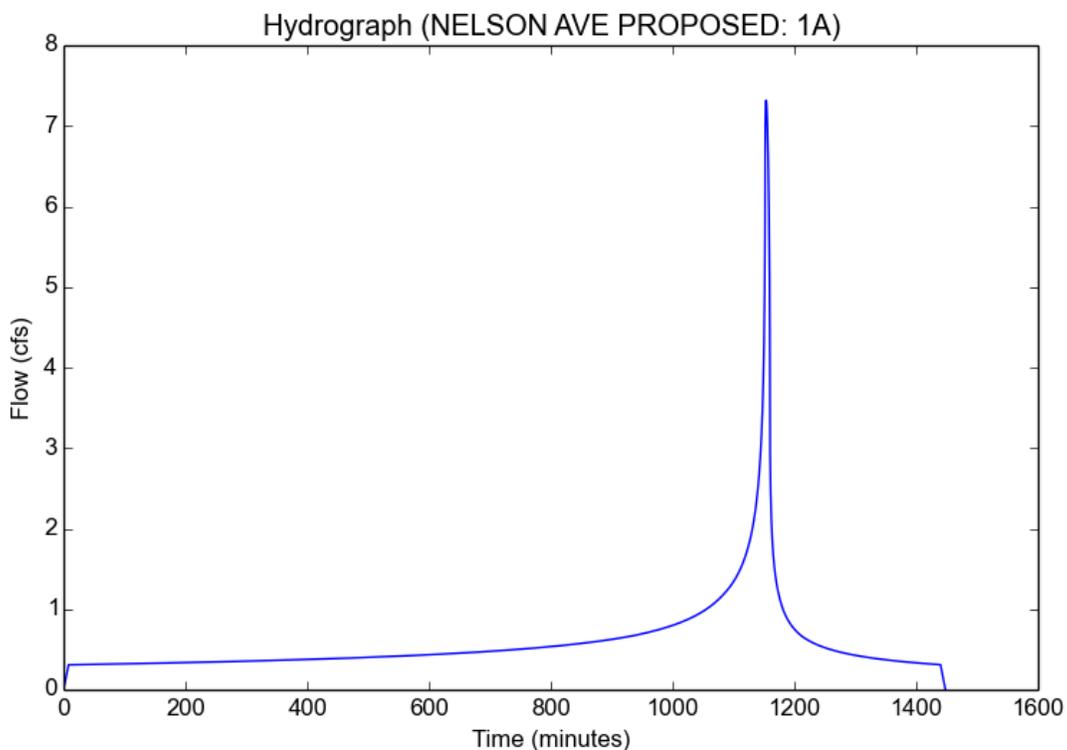
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Input Parameters

Project Name	NELSON AVE PROPOSED
Subarea ID	1A
Area (ac)	2.7
Flow Path Length (ft)	574.0
Flow Path Slope (vft/hft)	0.0074
50-yr Rainfall Depth (in)	6.3
Percent Impervious	0.9
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.3
Peak Intensity (in/hr)	3.0138
Undeveloped Runoff Coefficient (Cu)	0.8931
Developed Runoff Coefficient (Cd)	0.8993
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	7.3178
Burned Peak Flow Rate (cfs)	7.3178
24-Hr Clear Runoff Volume (ac-ft)	1.1762
24-Hr Clear Runoff Volume (cu-ft)	51235.2103



Peak Flow Hydrologic Analysis

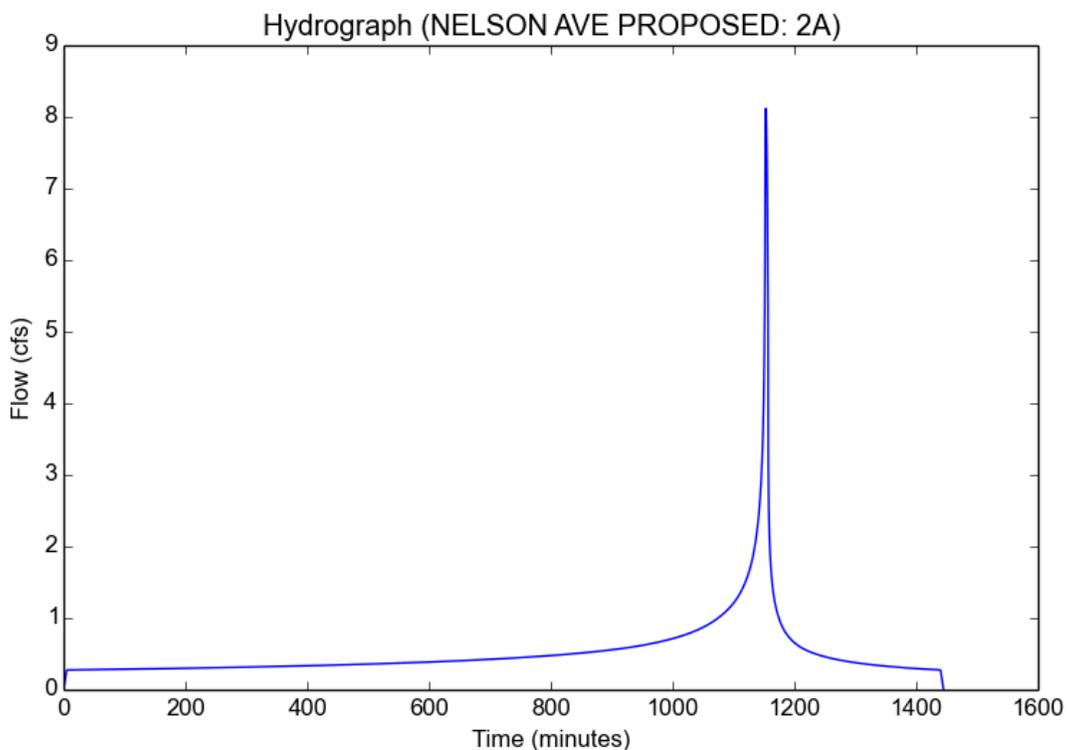
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	NELSON AVE PROPOSED
Subarea ID	2A
Area (ac)	2.4
Flow Path Length (ft)	121.0
Flow Path Slope (vft/hft)	0.0214
50-yr Rainfall Depth (in)	6.3
Percent Impervious	0.9
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.3
Peak Intensity (in/hr)	3.7588
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	8.1189
Burned Peak Flow Rate (cfs)	8.1189
24-Hr Clear Runoff Volume (ac-ft)	1.0455
24-Hr Clear Runoff Volume (cu-ft)	45540.8747



Peak Flow Hydrologic Analysis

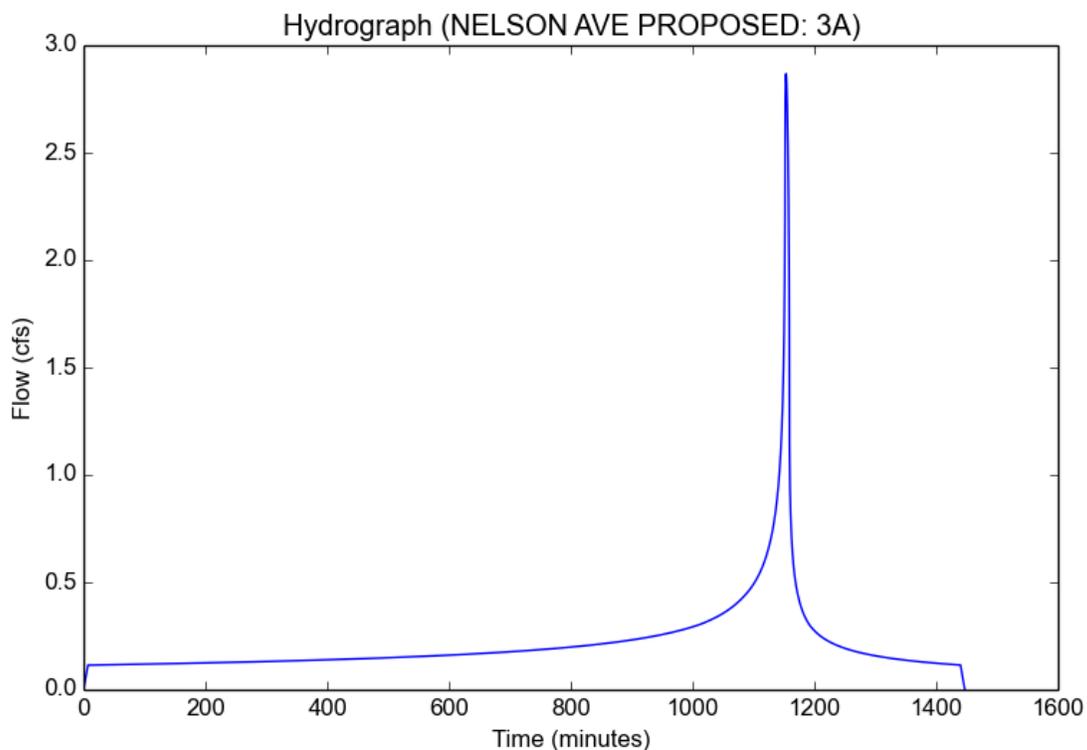
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	NELSON AVE PROPOSED
Subarea ID	3A
Area (ac)	1.0
Flow Path Length (ft)	494.0
Flow Path Slope (vft/hft)	0.0099
50-yr Rainfall Depth (in)	6.3
Percent Impervious	0.9
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.3
Peak Intensity (in/hr)	3.209
Undeveloped Runoff Coefficient (Cu)	0.8369
Developed Runoff Coefficient (Cd)	0.8937
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	2.8678
Burned Peak Flow Rate (cfs)	2.8678
24-Hr Clear Runoff Volume (ac-ft)	0.4333
24-Hr Clear Runoff Volume (cu-ft)	18876.0594



Peak Flow Hydrologic Analysis

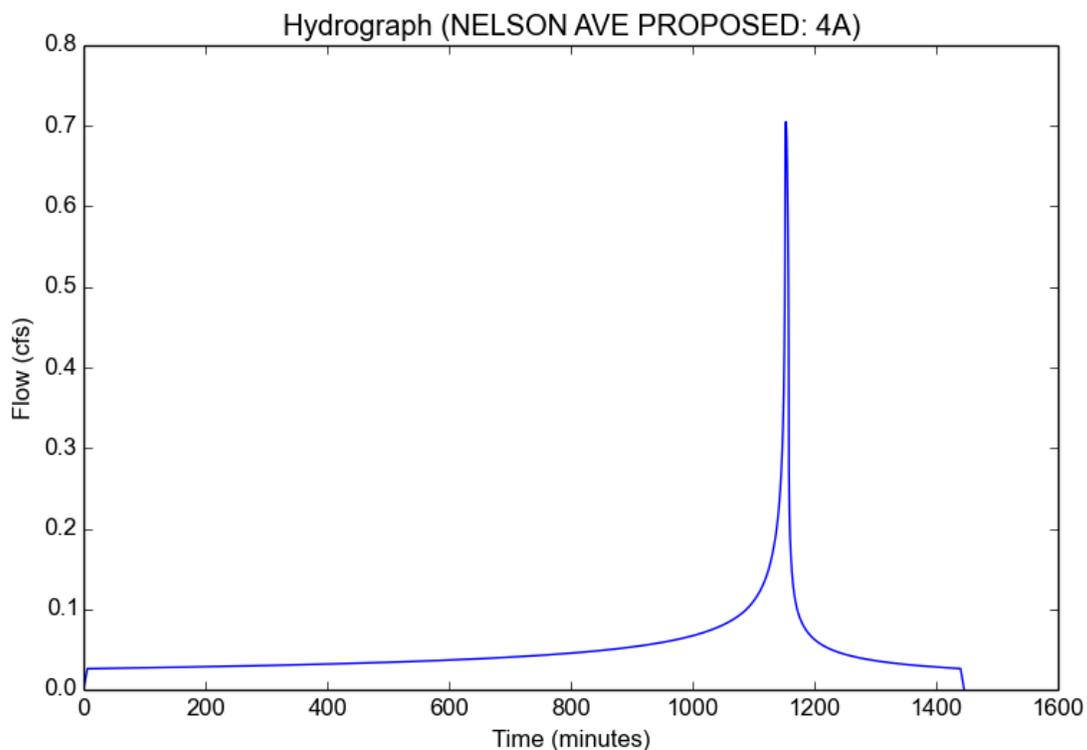
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	NELSON AVE PROPOSED
Subarea ID	4A
Area (ac)	0.4
Flow Path Length (ft)	233.0
Flow Path Slope (vft/hft)	0.0112
50-yr Rainfall Depth (in)	3.6
Percent Impervious	0.9
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	3.6
Peak Intensity (in/hr)	1.9715
Undeveloped Runoff Coefficient (Cu)	0.8386
Developed Runoff Coefficient (Cd)	0.8939
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	0.7049
Burned Peak Flow Rate (cfs)	0.7049
24-Hr Clear Runoff Volume (ac-ft)	0.0986
24-Hr Clear Runoff Volume (cu-ft)	4296.7451



Peak Flow Hydrologic Analysis

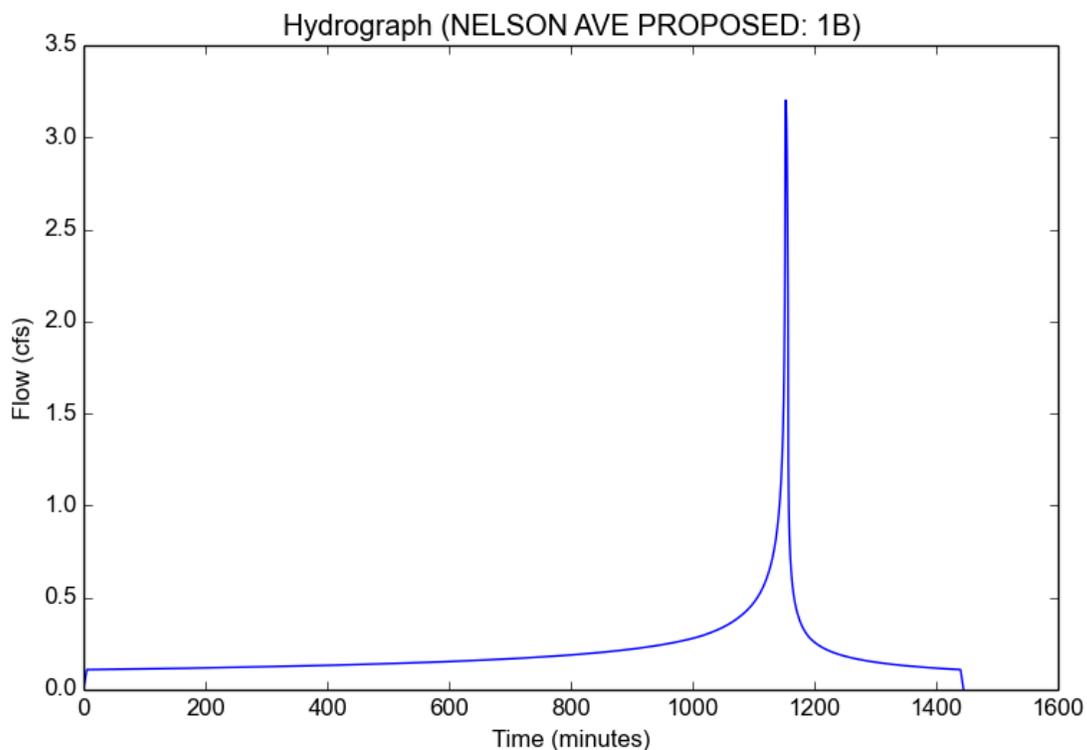
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	NELSON AVE PROPOSED
Subarea ID	1B
Area (ac)	0.95
Flow Path Length (ft)	134.0
Flow Path Slope (vft/hft)	0.0136
50-yr Rainfall Depth (in)	6.3
Percent Impervious	0.9
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.3
Peak Intensity (in/hr)	3.7588
Undeveloped Runoff Coefficient (Cu)	0.8673
Developed Runoff Coefficient (Cd)	0.8967
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	3.202
Burned Peak Flow Rate (cfs)	3.202
24-Hr Clear Runoff Volume (ac-ft)	0.4117
24-Hr Clear Runoff Volume (cu-ft)	17933.4895



Peak Flow Hydrologic Analysis

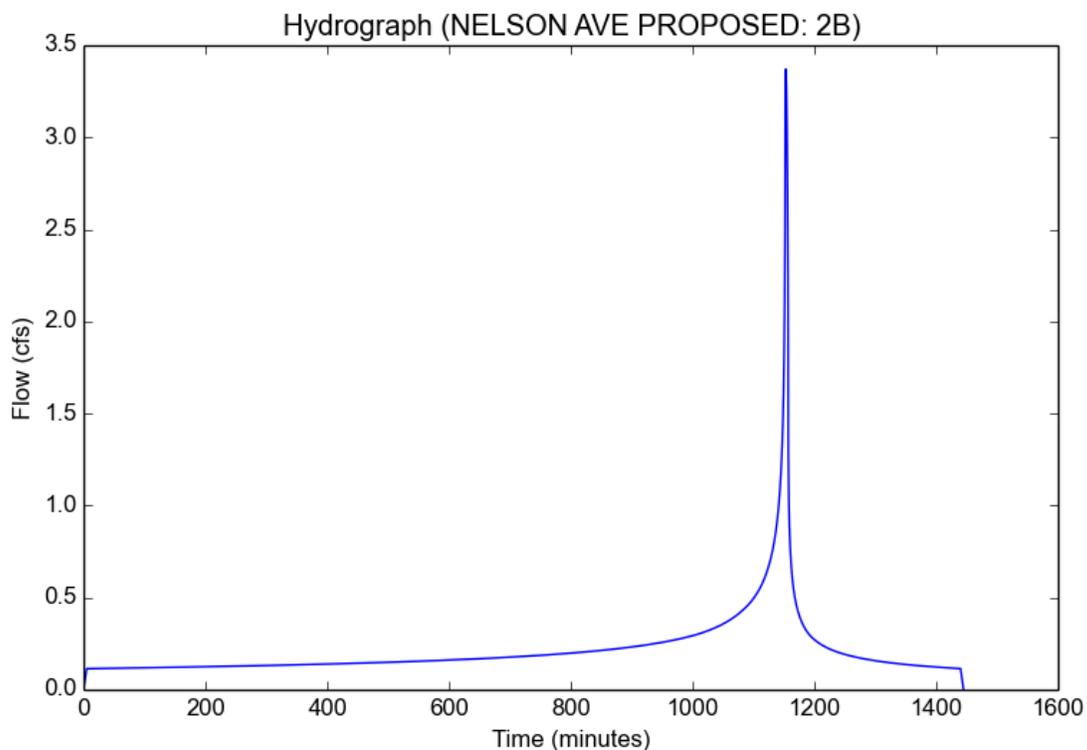
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	NELSON AVE PROPOSED
Subarea ID	2B
Area (ac)	1.0
Flow Path Length (ft)	130.0
Flow Path Slope (vft/hft)	0.014
50-yr Rainfall Depth (in)	6.3
Percent Impervious	0.9
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.3
Peak Intensity (in/hr)	3.7588
Undeveloped Runoff Coefficient (Cu)	0.8673
Developed Runoff Coefficient (Cd)	0.8967
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	3.3706
Burned Peak Flow Rate (cfs)	3.3706
24-Hr Clear Runoff Volume (ac-ft)	0.4334
24-Hr Clear Runoff Volume (cu-ft)	18877.3573



Peak Flow Hydrologic Analysis

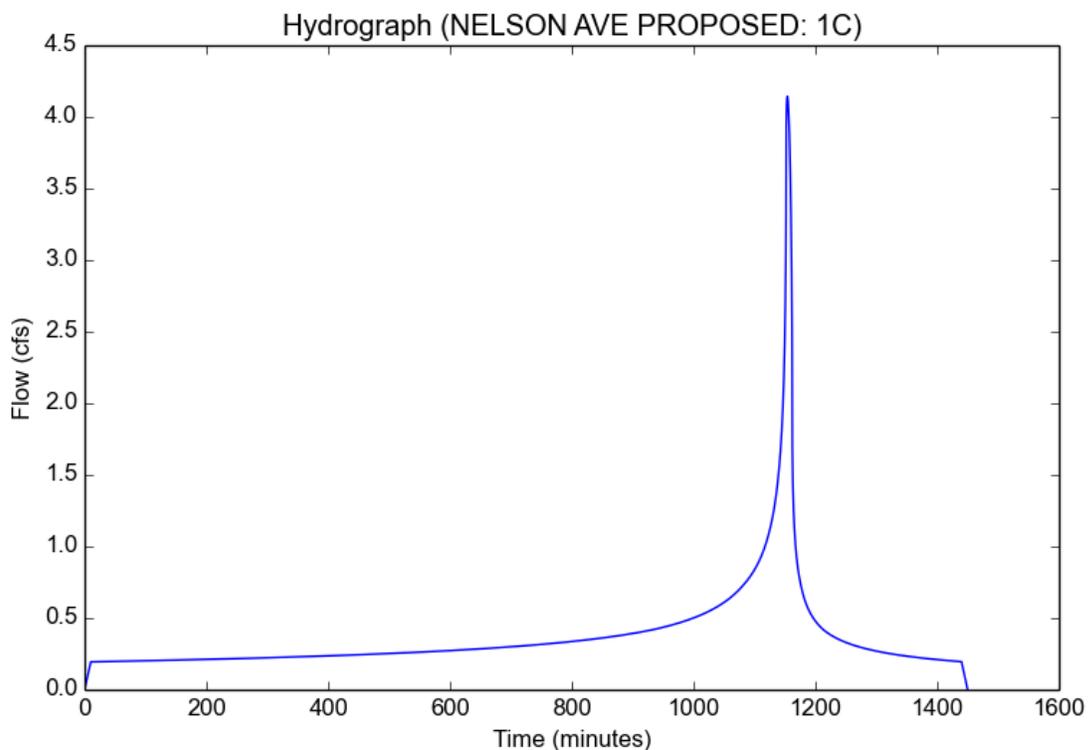
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	NELSON AVE PROPOSED
Subarea ID	1C
Area (ac)	1.7
Flow Path Length (ft)	655.0
Flow Path Slope (vft/hft)	0.0029
50-yr Rainfall Depth (in)	6.3
Percent Impervious	0.9
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.3
Peak Intensity (in/hr)	2.7137
Undeveloped Runoff Coefficient (Cu)	0.8816
Developed Runoff Coefficient (Cd)	0.8982
Time of Concentration (min)	10.0
Clear Peak Flow Rate (cfs)	4.1434
Burned Peak Flow Rate (cfs)	4.1434
24-Hr Clear Runoff Volume (ac-ft)	0.7406
24-Hr Clear Runoff Volume (cu-ft)	32259.0599



Peak Flow Hydrologic Analysis

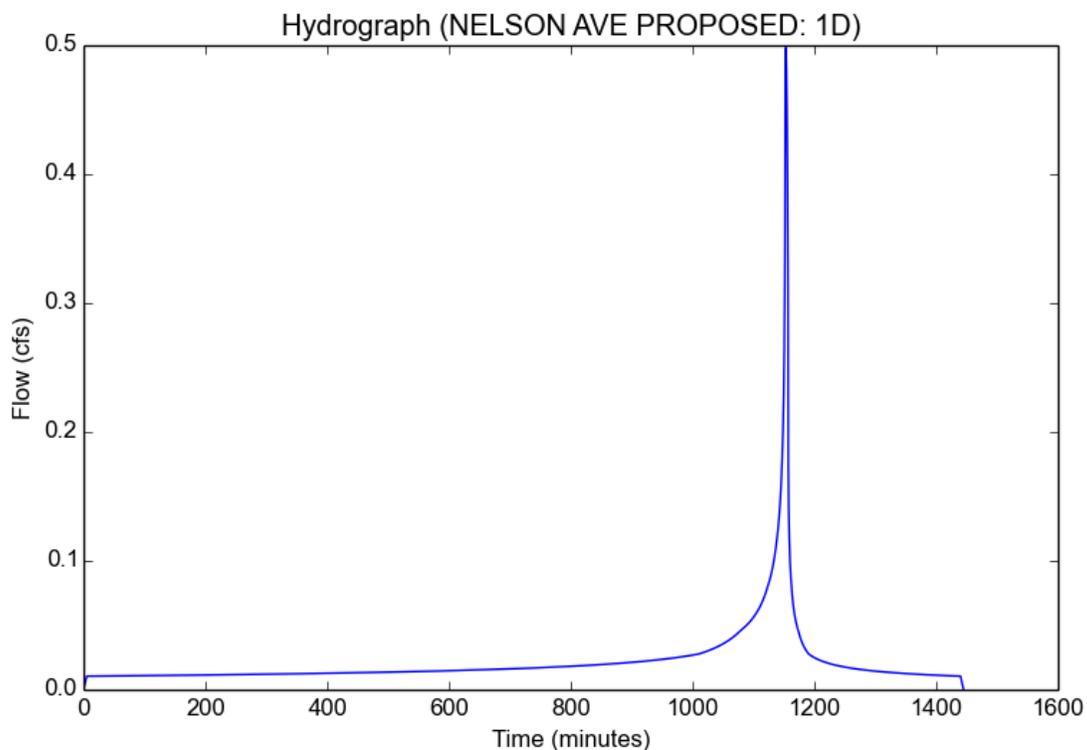
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	NELSON AVE PROPOSED
Subarea ID	1D
Area (ac)	0.15
Flow Path Length (ft)	27.0
Flow Path Slope (vft/hft)	0.013
50-yr Rainfall Depth (in)	6.3
Percent Impervious	0.5
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.3
Peak Intensity (in/hr)	3.7588
Undeveloped Runoff Coefficient (Cu)	0.8673
Developed Runoff Coefficient (Cd)	0.8836
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.4982
Burned Peak Flow Rate (cfs)	0.4982
24-Hr Clear Runoff Volume (ac-ft)	0.0439
24-Hr Clear Runoff Volume (cu-ft)	1910.8142



APPENDIX C

DETENTION CALCULATIONS

NELSON AVENUE INDUSTRIAL DEVELOPMENT
PONDING AT TRUCK YARD

Elevation	Depth (feet)	Area (sq. ft.)	Volume (c.f.)	Σ Volume (c.f.)	Σ Volume (ac-ft)
307.84	0.00	0	7	7	0.00
307.90	0.06	247	103	110	0.00
308.00	0.16	1806	330	440	0.01
308.10	0.26	4786	422	862	0.02
308.20	0.36	3654	912	1,774	0.04
308.30	0.46	14588	1717	3,491	0.08
308.40	0.56	19757	2211	5,702	0.13
308.50	0.66	24454	2567	8,269	0.19
308.60	0.76	26889	2768	11,037	0.25
308.70	0.86	28467	2926	13,962	0.32
308.80	0.96	30045	3083	17,046	0.39
308.90	1.06	31623	3241	20,287	0.47
309.00	1.16	33206			

Peak Flow Hydrologic Analysis

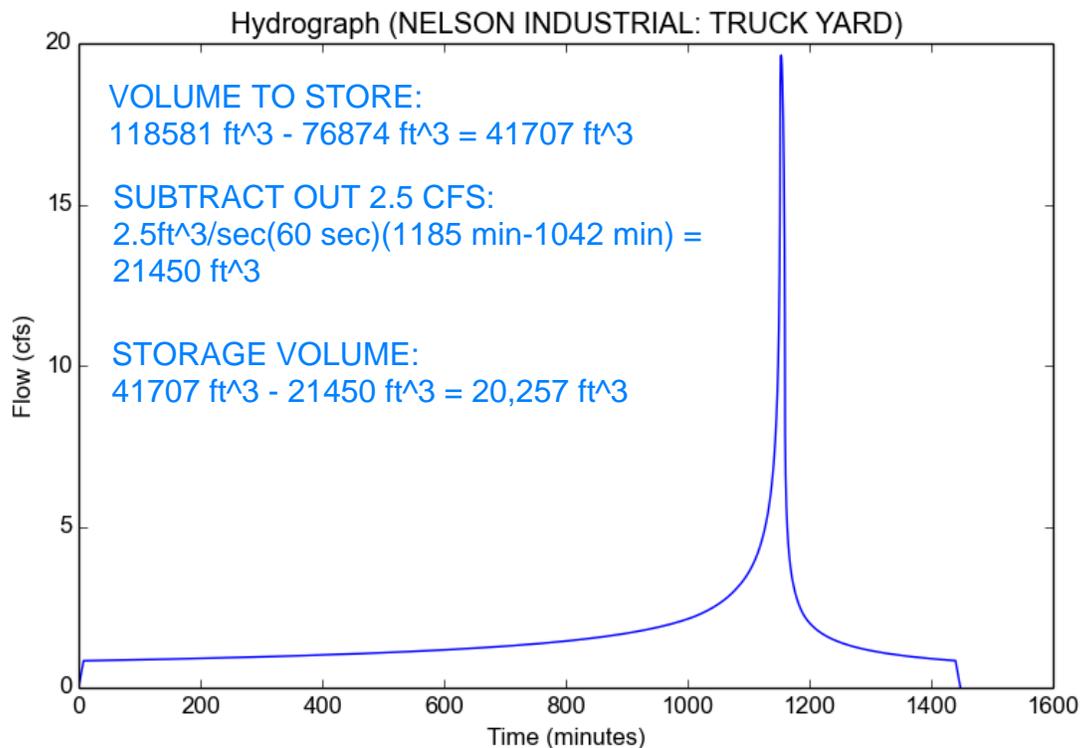
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	NELSON INDUSTRIAL
Subarea ID	TRUCK YARD
Area (ac)	7.3
Flow Path Length (ft)	574.0
Flow Path Slope (vft/hft)	0.0074
50-yr Rainfall Depth (in)	6.3
Percent Impervious	0.9
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.3
Peak Intensity (in/hr)	3.0138
Undeveloped Runoff Coefficient (Cu)	0.8232
Developed Runoff Coefficient (Cd)	0.8923
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	19.6315
Burned Peak Flow Rate (cfs)	19.6315
24-Hr Clear Runoff Volume (ac-ft)	3.1632
24-Hr Clear Runoff Volume (cu-ft)	137790.7733



NELSON AVENUE INDUSTRIAL DEVELOPMENT
PONDING AT VEHICLE PARKING

Elevation	Depth (feet)	Area (sq. ft.)	Volume (c.f.)	Σ Volume (c.f.)	Σ Volume (ac-ft)
308.49	0.00	0	24	24	0.00
308.60	0.11	441	102	127	0.00
308.70	0.21	1607	255	382	0.01
308.80	0.31	3502	481	864	0.02
308.90	0.41	6127	795	1,659	0.04
309.00	0.51	9781			

Peak Flow Hydrologic Analysis

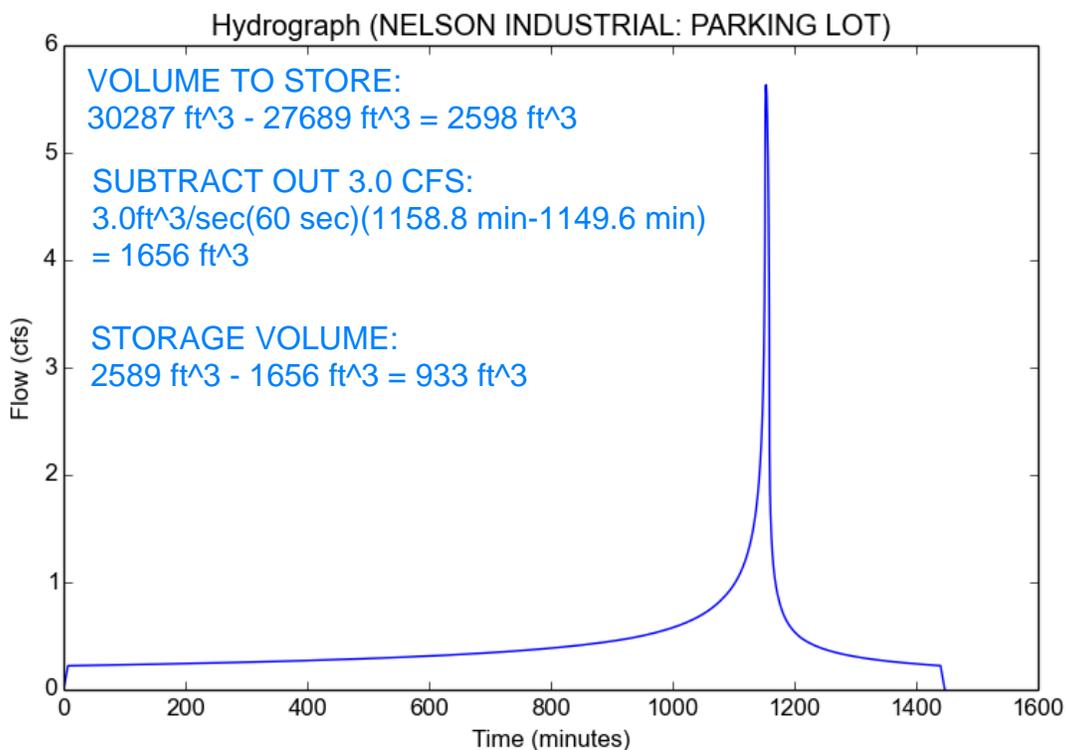
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	NELSON INDUSTRIAL
Subarea ID	PARKING LOT
Area (ac)	1.95
Flow Path Length (ft)	406.0
Flow Path Slope (vft/hft)	0.00293
50-yr Rainfall Depth (in)	6.3
Percent Impervious	0.9
Soil Type	17
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.3
Peak Intensity (in/hr)	3.209
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	5.6317
Burned Peak Flow Rate (cfs)	5.6317
24-Hr Clear Runoff Volume (ac-ft)	0.8495
24-Hr Clear Runoff Volume (cu-ft)	37003.4215

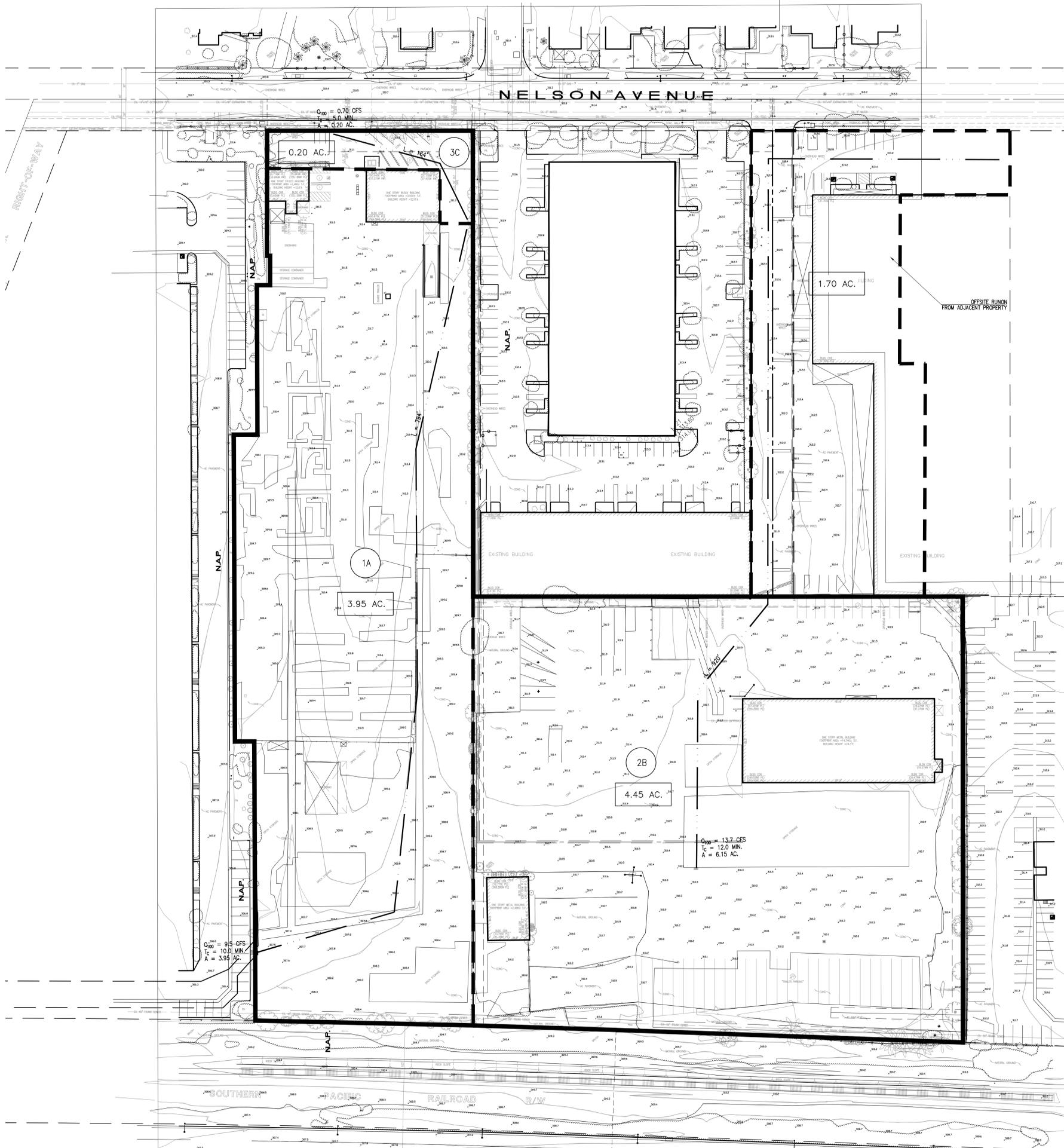


APPENDIX D

HYDROLOGY MAPS



VICINITY MAP
N.T.S.

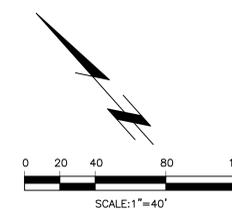


SUBAREA DATA SUMMARY

SUBAREA	AREA (ACRES)	LENGTH (FEET)	SLOPE	IMPERVIOUS (%)	T _c (MINUTES)	Q ₅₀ (CFS)
1A	3.95	794	0.0057	90	10.0	9.5
2B	4.45	920	0.0030	90	12.0	13.7
3C	0.20	164	0.0021	90	5.0	0.70

50-YEAR FREQUENCY
SOIL TYPE 6 & 17
ISOHYET 6.3
BURN FACTOR 0
BULKING FACTOR 0

LEGEND	
	PROJECT BOUNDARY
	SUBAREA BOUNDARY
	FLOW PATH
	SUBAREA AREA
	NODE NUMBER



Last Update: 10/8/21
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CITY OF INDUSTRY
PUBLIC WORKS DEPARTMENT

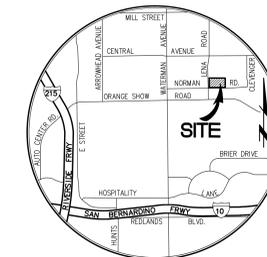
**EXISTING CONDITION
HYDROLOGY MAP**

**NELSON AVENUE INDUSTRIAL
NELSON AVENUE**

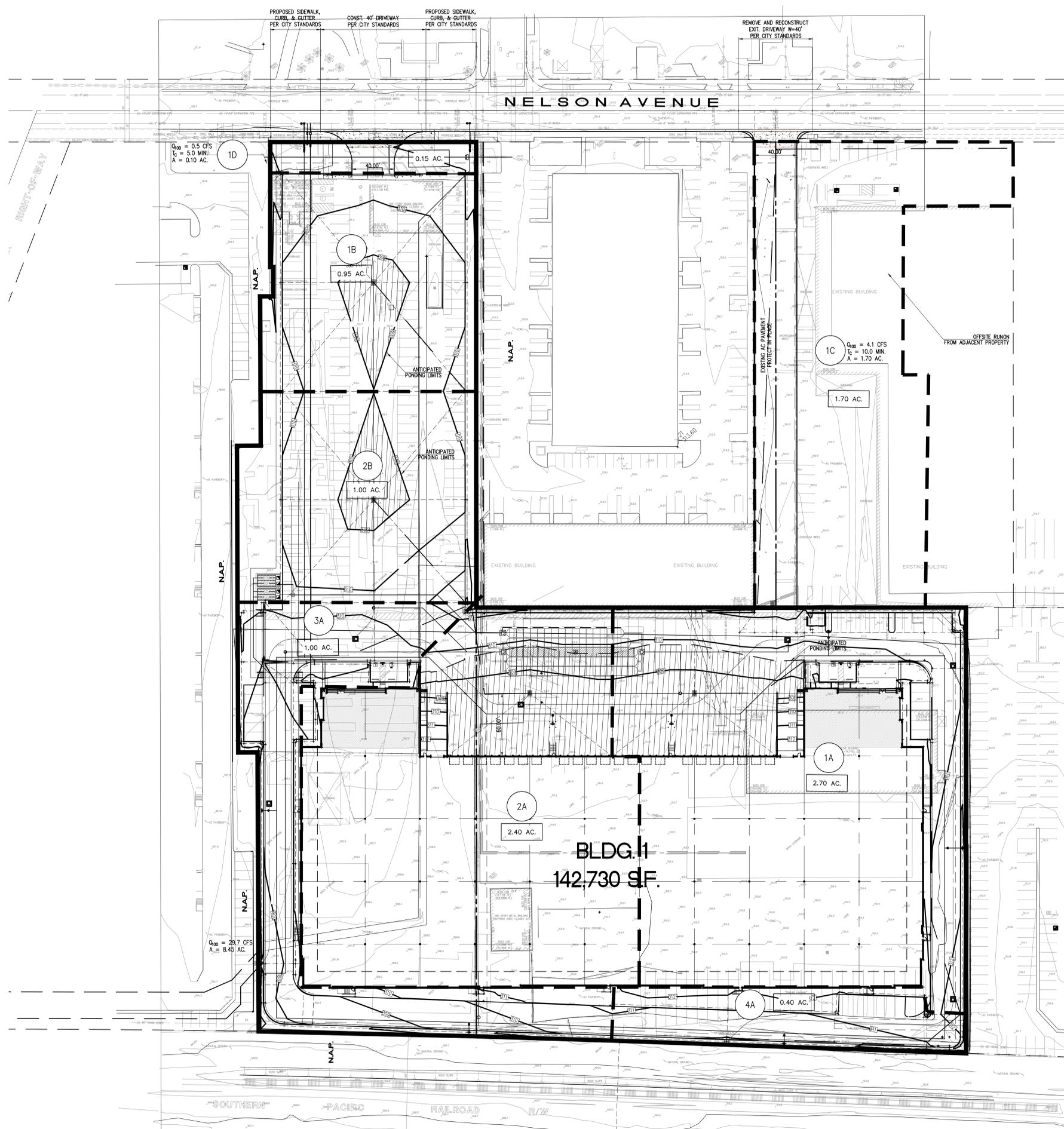
PREPARED FOR:
OVERTON MOORE PROPERTIES
19300 HAMILTON AVENUE
GARDENA, CA 90428
PHONE: (310) 323-9100
FAX: (310) 608-7997

Tai Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14344 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH: (714) 521-4811 FAX: (714) 521-4123

Designed by _____	Approved by _____	Date _____
Checked by _____	Public Works Director _____	R.C.E. XXXX
Date _____	Sheet 1 Of 1 Sheets	



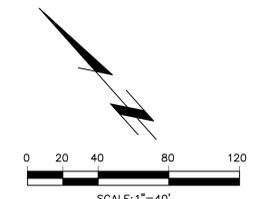
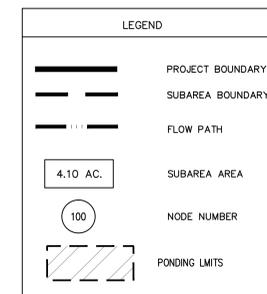
VICINITY MAP
N.T.S.



SUBAREA DATA SUMMARY

SUBAREA	AREA (ACRES)	LENGTH (FEET)	SLOPE	IMPERVIOUS (%)	Tc (MINUTES)	Q50 (CFS)
1A	2.70	574	0.0074	90	8.0	7.3
2A	2.40	121	0.0214	90	5.0	8.1
3A	1.0	494	0.0099	90	6.0	2.9
4A	0.40	233	0.0112	90	6.0	0.7
1B	0.95	134	0.0091	90	5.0	3.2
2B	1.00	130	0.0110	90	5.0	3.4
1C	1.70	655	0.0029	90	10.0	4.1
1D	0.15	27	0.0130	50	5.0	0.5

50-YEAR FREQUENCY
SOIL TYPE 6 & 17
ISOHYET 6.3
BURN FACTOR 0
BULKING FACTOR 0



City of Industry
Public Works Department

**PROPOSED CONDITION
HYDROLOGY MAP
NELSON AVENUE INDUSTRIAL
NELSON AVENUE**

Designed by _____	Approved by _____	Date _____
Checked by _____	Public Works Director	R.C.E. XXXX
Designed by _____		
Date _____		
Checked by _____		
Date _____		

Sheet **1** of **1** Sheets

PREPARED FOR:
OVERTON MOORE PROPERTIES
19300 HAMILTON AVENUE
GARDENA, CA 90428
PHONE: (310) 323-9100
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Last Update: 3/1/22
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