

PRELIMINARY HYDROLOGY CALCULATIONS

FOR

**COMMERCE LOGISTICS CENTER
5200 SHEILA STREET
COMMERCE, CA**

PREPARED FOR

**LINK INDUSTRIAL PROPERTIES
3401 ETIWANDA AVENUE
JURUPA VALLEY, CA 91752
P. (909) 223-9035**

OCTOBER 28, 2019

JOB NO. 3827

PREPARED BY

**THIENES ENGINEERING
14349 FIRESTONE BLVD.
LA MIRADA, CALIFORNIA 90638
P. (714) 521-4811
FAX (714) 521-4173**

PRELIMINARY HYDROLOGY CALCULATIONS

FOR

**COMMERCE LOGISTICS CENTER
5200 SHEILA STREET**

**PREPARED UNDER
THE SUPERVISION OF**

**REINHARD STENZEL
R.C.E. 56155
EXP. 12/31/2020**

DATE:

INTRODUCTION

A: PROJECT LOCATION

The project site is located on 5200 Sheila Street along Sheila Street in the City of Commerce. Please see the next page for a vicinity map.

B: STUDY PURPOSE

The purpose of this study is to determine proposed condition 50-year peak flow rate from the site that will ultimately drain to the public drain in Sheila Street.

C: PROJECT STAFF:

Thienes Engineering staff involved in this study include:

Reinhard Stenzel
Matthew Cruz

DISCUSSION

The project site encompasses approximately 5.65 acres. Proposed improvements include construction of one commercial type building approximately 114,898 square feet. Additionally the site will have paved drive aisles, paved parking, truck yard, and landscaping along the perimeter.

Existing Conditions

The existing site is developed with 2 office buildings and associated parking lots. The site appears to be part of the larger development to the west, south, and east of the project site. The site drains to several on site catch basins on site as part of a larger private storm drain system.

County Hydrology

The project site is located within the county drainage location 162M. The allowable flow rate provided by the county is 0.665 cfs/acre, which equates to 3.75 cfs for the project. The site ultimately drains to the existing 30" Shelia Street Drain. Shelia Street Drain plans and allowable flow rate information are provided in appendix A.

Proposed Condition

The project will be developed with several low spots along the east and west drive aisles, in the truck yard to the south, and additional low spots in the northern vehicle parking. A private storm drain system will be constructed to convey the runoff to the existing storm drain in Sheila Street. The 50-year peak flow rate from the project is approximately 16.3 cfs.

The existing public storm drain in Shelia will be extended to provide a lateral to the project site. The proposed extension will be 18" RCP will connect to the proposed on-site storm drain system.

See appendix B for hydrology calculations.

Off-Site Run On

The site receives a small area of run on along the northern property line from the adjoining parking area. This area is also being redeveloped and the cross lot drainage will be removed.

Along the southwesterly property line there is run-on from the existing truck yard. A proposed catch basin will be installed at the southern edge and will connect to the existing storm drain collecting the runoff. The run-on will continue to the off-site storm drains as in the existing condition.

Detention

The site has an allowable Q of 0.665 cfs per acre. The total peak discharge from the site is 3.60 cfs (5.40 acres x 0.665 cfs/acre). The southwesterly truck yard will detain the peak flow from the southern portion of the site (Subareas 10A, 11A, and 12A). The truck yard will limit the discharge to a peak flow rate of 2 cfs. This will require approximately 5,780 cfs of storage, which is provided with approximately 6" of ponding.

The northeastern vehicle parking and a small portion of the building will drain to 2 proposed catch basin in the car parking. The peak flow from this area (Subareas 30C and 31C) will be detain in underground retention chambers. The peak flow will be limited to 0.5 cfs. The chambers will provide approximately 1,518 cf of storage for the peak flow.

The eastern drive aisle (Subarea 20B) will be allowed to discharge undetained.

See appendix C for Detention Calculations.

Methodology

Hydrology calculations were calculated using Los Angeles County Hydro-Calc spreadsheet. The site is composed of soil type "006" and rainfall zone 5.8 per the Los Angeles County Hydrology Manual

APPENDIX

DESCRIPTION

A

REFERENCE MATERIALS

B

HYDROLOGY CALCULATIONS

C

DETENTION CALCULATIONS

D

HYDROLOGY MAP

APPENDIX A

REFERENCE MATERIALS



LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN DIVISION – HYDRAULIC ANALYSIS UNIT

Office Use Only	
☐ Sent	Initials: _____
☐ Fax	☒ Email ☐ Other: _____
Date: _____	Time: _____

INFORMATION REQUEST SUMMARY

INFORMATION REQUESTED BY

*Requester's Name: Angie Maldonado

Company: Thienes Engineering, Inc

*Phone Number: (714) 521-4811 Fax Number: (714) 521-4173

*Email: Angie@ThienesEng.com

Method of Contact: ☐ Walk-in ☐ Phone ☐ Fax ☒ Email ☐ Prelim. Mtg. Date: 5/30/2019

Intended Use: Research

Proposed Project Type: Industrial Acreage Involved: _____

*Will information be used in any litigation? ☐ YES ☒ NO

Case Info. Name: _____ No: _____ Location: _____

INFORMATION REQUESTED (Attach Assessor Map)

LACFCD Facility: Name: SHEILA STREET DRAIN

Unit: _____ Line: _____ Station: _____

City: Commerce

*Street/Cross-street: Sheila St & Strong Ave

*Thomas Guide: Page: 675 Grid: G3 ☒ Site Map/Plans Submitted

Info. Requested:
• Hydrology Map

*Required Information. See Page 2 of 2 for Instructions.

BELOW SECTION TO BE COMPLETED BY THE HYDRAULIC ANALYSIS UNIT

INFORMATION PROVIDED:

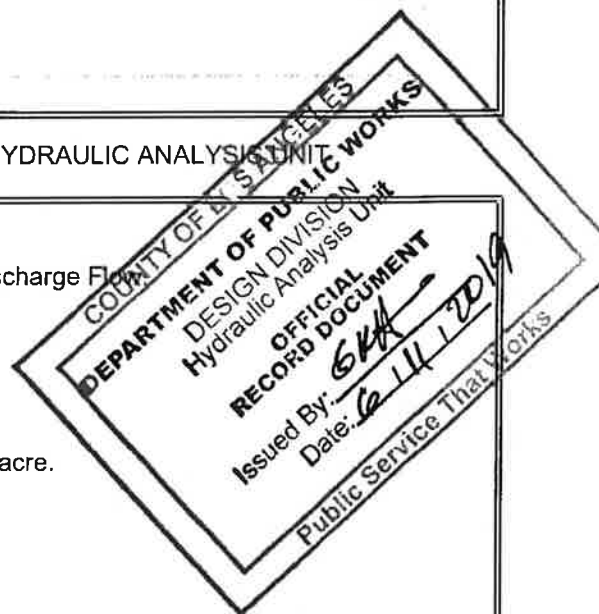
Hydrology Data, Drainage Map, As Built Drawing, and Allowable Discharge Flow

REFERENCES SEARCHED:

Project Files.

COMMENTS, ETC:

Sub area No. 162M Allowable Discharge Flow $Q=21/33.1=0.665\text{cfs/acre}$.
Hydraulic Grade Line shown on As Built Drawing.



INFORMATION PROVIDED BY: George K Aintablian

Date: 06/11/2019

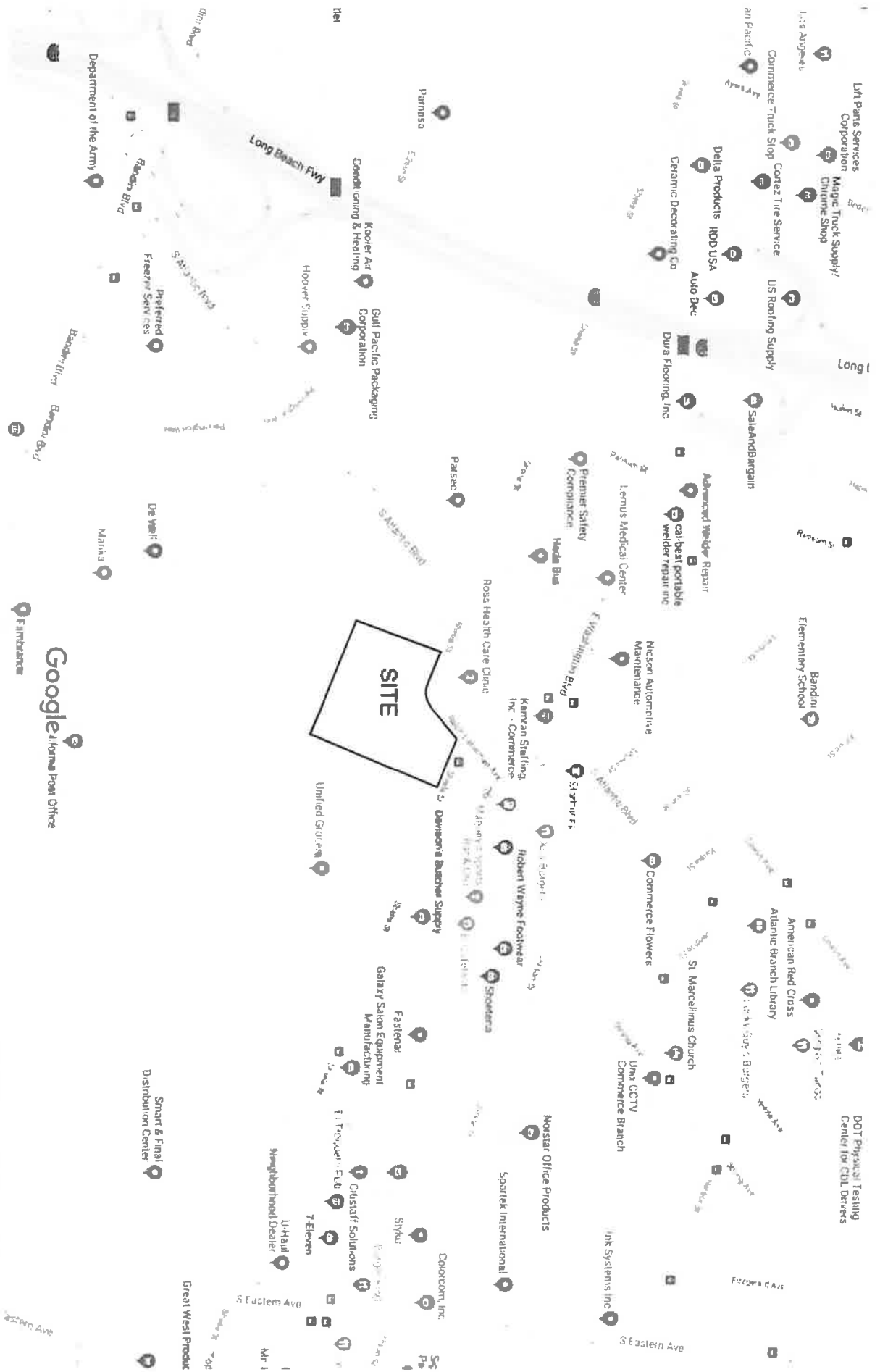
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Date:

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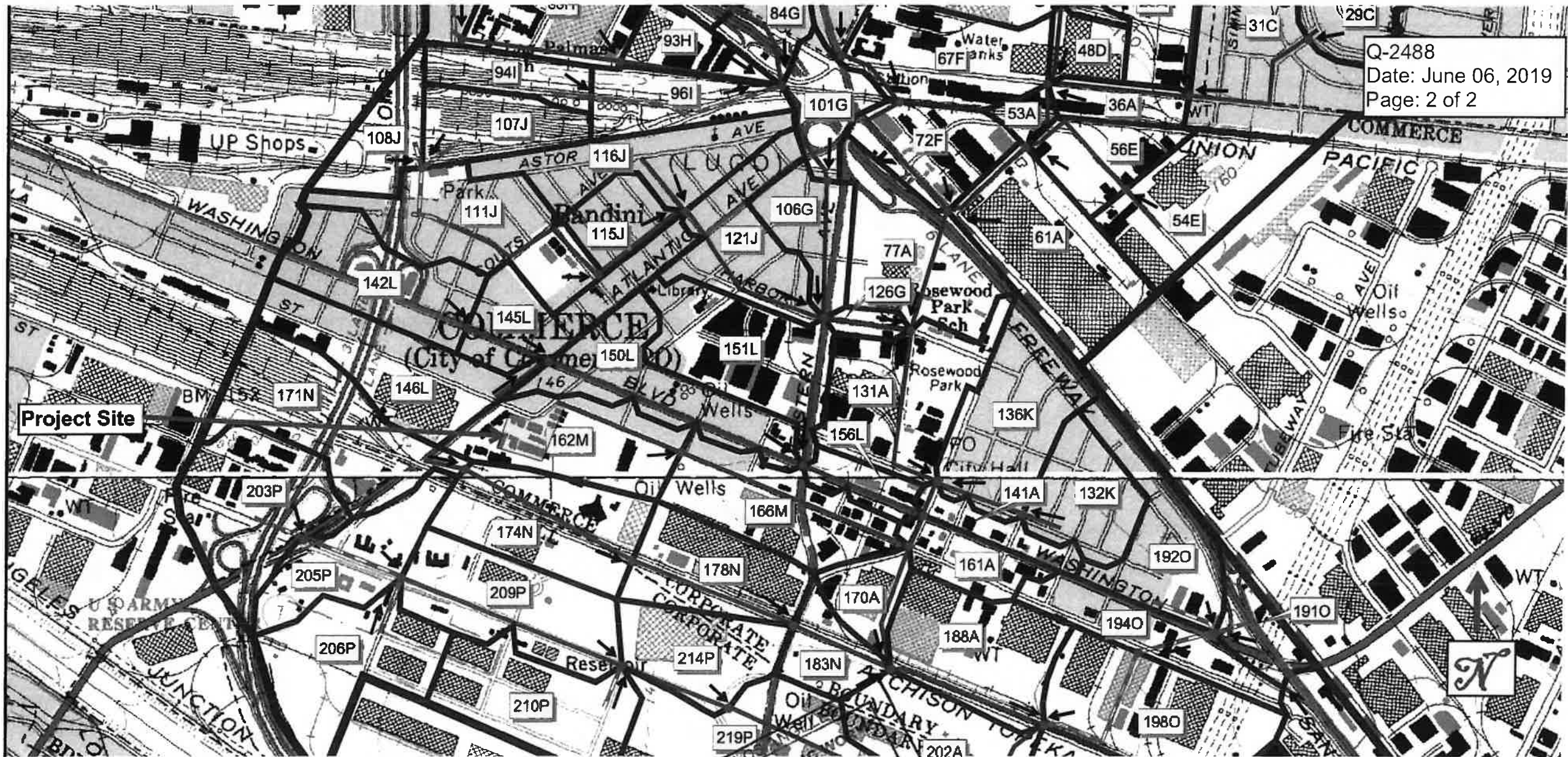
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Q-2488

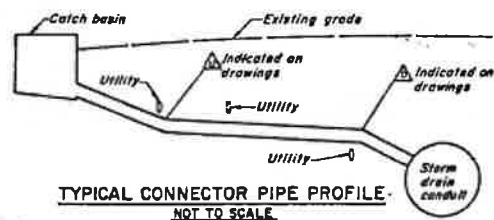
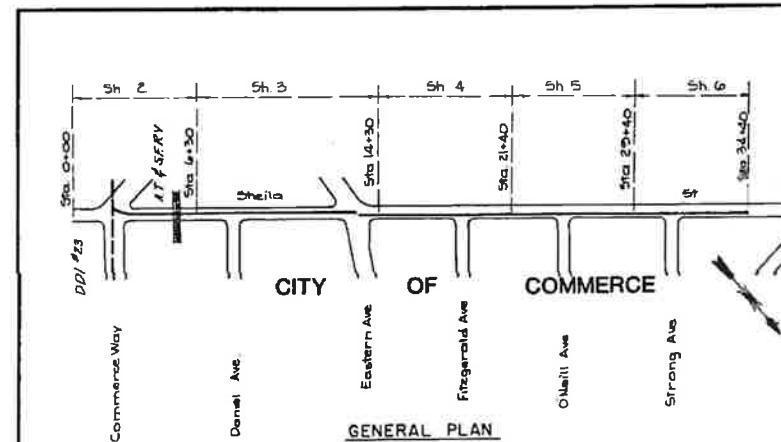
Date: 06/06/2019

COUNTY OF LOS ANGELES
 DEPARTMENT OF PUBLIC WORKS
 DESIGN DIVISION
 Hydraulic Analysis Unit
 OFFICIAL
 RECORD DOCUMENT
 Issued By: *SKA*
 Date: *6/11/09*
 Public Service



Q-2488
Date: June 06, 2019
Page: 2 of 2

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC
DESIGN DIVISION
Hydraulic Analysis Unit
OFFICIAL
RECORD DOCUMENT
Issued By: *[Signature]*
Date: *6/11/2019*
Public Service That Works



NOTES

- THE CHANGE IN GRADE OF THE CONNECTOR PIPE MAY OCCUR EITHER OVER OR UNDER AN EXISTING UTILITY. THE PARTICULAR UTILITY AT WHICH THE CHANGE IN GRADE OCCURS, IS NOTED ON THE PROJECT DRAWINGS. AT LOCATIONS WHERE UTILITY CROSSINGS ARE MARKED "A", THE CONNECTOR PIPE GRADE WILL BREAK OVER THE UTILITY. AT LOCATIONS WHERE UTILITY CROSSINGS ARE MARKED "B", THE CONNECTOR PIPE GRADE WILL BREAK UNDER THE UTILITY.
- ON THOSE CONNECTOR PIPES WHERE CHANGE IN GRADE IS NOT INDICATED, IT IS ASSUMED THAT THE CONNECTOR PIPE CAN BE LAID ON A STRAIGHT GRADE FROM THE CATCH BASIN TO THE STORM DRAIN WITHOUT INTERFERENCE WITH UTILITIES. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS TO DETERMINE THE EXACT LOCATION AND DEPTH OF UTILITIES, EXCEPT SANITARY SEWER, WHICH ARE MARKED "C" OR "D". AFTER THE EXACT LOCATION OF A UTILITY HAS BEEN DETERMINED, THE GRADE AND ALIGNMENT OF THE CONNECTOR PIPE WILL BE STAKED SO AS TO CLEAR THE UTILITY.
- WHERE CONNECTOR PIPE HAS A GRADE CHANGE EXCEEDING 0.10 FT./FT. OR DIFFERS IN DIAMETER FROM THAT OF EXISTING PIPE, USE CONCRETE COLLAR AS PER STANDARD DRAWING NO. 2-D-383.

INDEX TO STANDARD DRAWINGS

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

DWG. NO.	DESCRIPTION
2-D-18	STANDARD DROP STEP
2-D-19	MANHOLE NO. 1
2-D-20	CONCRETE RINGS, REDUCER & PIPE FOR MANHOLE SHAFT
2-D-21	JUNCTION STRUCTURE NO. 3
2-D-22	MANHOLE FRAME & COVER FOR CATCH BASIN
2-D-23	CATCH BASIN REINFORCEMENT FOR ROUND MANHOLES
2-D-24	CATCH BASIN NO. 1
2-D-25	CATCH BASIN NO. 2
2-D-26	STANDARD A-415 REINFORCEMENT BARS
2-D-27	CATCH BASIN REINFORCEMENT
2-D-28	PIPE SUPPORTS ACROSS TRENCHES
2-D-29	REMOVABLE PROTECTION BAR FOR CATCH BASIN
2-D-30	CATCH BASIN REINFORCEMENT
2-D-31	MANHOLE NO. 2
2-D-32	JUNCTION STRUCTURE NO. 1
2-D-33	JUNCTION STRUCTURE NO. 4
2-D-34	CONNECTION TO CATCH BASIN FOR PIPES 12" THROUGH 18"
2-D-35	DETAIL OF CATCH BASIN OPENING
2-D-36	TRANSITION STRUCTURE NO. 1
2-D-37	PROTECTION FOR MAIN LINE AND HOUSE CONNECTIONS
2-D-38	ADJUSTABLE PROTECTION HAT STIRRUPS
2-D-39	CONCRETE COLLAR FOR PIPES 12 INCHES THROUGH 36 INCHES
2-D-40	SAMPLE SHEET FOR USE AS A GUIDE IN PREPARING CALCULATIONS FOR SHORING OF EXCAVATIONS
2-D-41	UNIFIED SOIL CLASSIFICATION SYSTEM
2-D-42	LOCAL DEPRESSION NO. 4
2-D-43	"D" LOAD TABLE FOR DESIGN OF ASPHALT CEMENT PAVEMENT
2-D-44	MODIFICATIONS FOR SIDE OPENING CATCH BASIN
2-D-45	CRITERIA FOR THE DESIGN OF SHORING FOR EXCAVATION
2-D-46	STANDARD 34-INCH MANHOLE FRAME AND COVER
2-D-47	PORTABLE SECURITY FENCE FOR OPEN TRENCHES
2-D-48	MANHOLE NO. 4

LOS ANGELES COUNTY ROAD DEPARTMENT

M37-308	PARTIAL REPLACEMENT FOR CONCRETE CROSS
28-01	GUTTERS AND SPANDRELS
40-05	CURB AND GUTTER
40-06	SIDEWALK AND DRIVEWAY REPLACEMENT

LOS ANGELES COUNTY ENGINEER

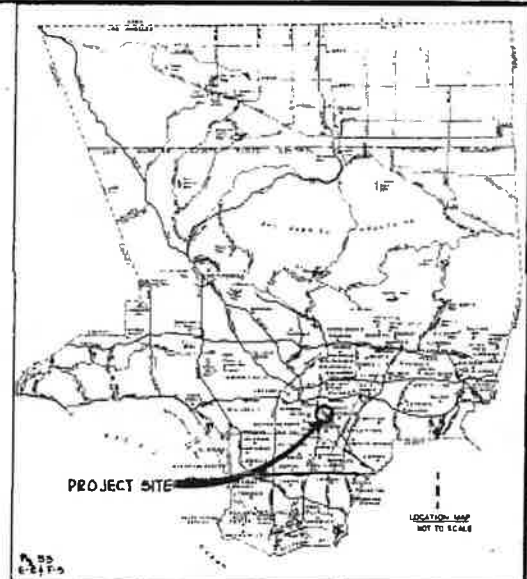
3-17	STANDARD MANHOLE STEP
3-21	BEDDING FOR SEWER PIPE
3-22	RECONSTRUCTION OF SANITARY SEWER HOUSE LATERALS
3-23	LOCKING MANHOLE FRAME AND COVER
3-24	NON-REINFORCED PRECAST CONCRETE MANHOLE

INDEX TO DRAWINGS

SHEET	DESCRIPTION
1	LOCATION MAP, GENERAL PLAN, INDEX TO DRAWINGS AND GENERAL NOTES.
2	PLAN AND PROFILE STA. 0+00.00 TO STA. 0+50.00
3	PLAN AND PROFILE STA. 0+50.00 TO STA. 14+30.00
4	PLAN AND PROFILE STA. 14+30.00 TO STA. 21+40.00
5	PLAN AND PROFILE STA. 21+40.00 TO STA. 29+40.00
6	PLAN AND PROFILE STA. 29+40.00 TO STA. 34+50.00
7	LOGS OF BORINGS
8	STREET RESURFACING PLAN AND STRUCTURAL DETAILS
9	SINGLE R.C. BOX SCHEDULE AND DETAILS
10	PLAN AND PROFILE SANITARY SEWER CONSTRUCTION

GENERAL NOTES

- NUMBERS IN CIRCLES INDICATED ITEMS UNDER WHICH PAYMENT WILL BE MADE.
- ELEVATIONS SHOWN ARE IN FEET ABOVE THE U.S.C. & G.S. MEAN SEA LEVEL DATUM, BASED ON LOS ANGELES COUNTY ENGINEER DATUM NO. 83MD 3110, 1962 ADJUSTMENT.
- STATIONS SHOWN ON THE DRAWINGS ARE ALONG CENTER LINE OF CONSTRUCTION.
- STATIONS AND INVERT ELEVATIONS OF PIPE INLETS SHOWN ON THE PROFILES ARE AT THE INSIDE FACE OF THE CONDUIT, UNLESS OTHERWISE SHOWN.
- PIPE CONNECTIONS TO STORM DRAIN SHALL CONFORM TO STANDARD DRAWING NO. 2-D-193, UNLESS OTHERWISE SHOWN.
- ALL PIPE IN OPEN TRENCH SHALL BE BEDDED ACCORDING TO STANDARD DRAWING NO. 2-D-197, CASE III, EXCEPT BELL AND SPIGOT PIPE WHICH SHALL BE CASE II BEDDING, UNLESS OTHERWISE SHOWN. "W" VALUES SHALL BE AS SPECIFIED ON STANDARD DRAWING NO. 2-D-197 FOR CASE II BEDDING, NOTES 3(A), 3(B), AND 3(C). IF THE "W" VALUE AT THE TOP OF THE PIPE IS EXCEEDED, THE BEDDING SHALL BE MODIFIED, AND/OR PIPE OF ADDITIONAL STRENGTH SHALL BE PROVIDED. THE PROPOSED MODIFICATION SHALL BE APPROVED BY THE DISTRICT.
- CONCRETE BACKFILL SHALL BE PROVIDED AROUND PIPE 21 INCHES IN DIAMETER OR LESS WHERE THE COVER IS EQUAL TO OR LESS THAN 2'-0". AROUND PIPE GREATER THAN 21 INCHES IN DIAMETER BUT 36 INCHES OR LESS WHERE THE COVER IS LESS THAN 1'-0". AND FOR PIPE 36 INCHES OR GREATER WHERE THE COVER IS LESS THAN 1'-0". THE CONCRETE BACKFILL SHALL BE AS SPECIFIED ON STANDARD DRAWING NO. 2-D-197, NOTE 3.
- TIES FOR CATCH BASINS AS SHOWN ON THE DRAWINGS ARE FROM CURB RETURN TO CENTER LINE ON THE LINE OF CATCH BASIN, UNLESS OTHERWISE SHOWN.
- THE DEPTH AT THE UPSTREAM END OF CATCH BASINS 10 FEET OR MORE IN LENGTH SHALL BE CURB FACE PLUS 12 INCHES, UNLESS OTHERWISE SHOWN.
- LOCATIONS OF CATCH BASIN CONNECTOR PIPE JUNCTIONS WITH CATCH BASINS AS SHOWN ON THE DRAWINGS ARE SCHEMATIC. IT IS INTENDED THAT SUCH JUNCTIONS BE LOCATED AT THE DOWNSTREAM ENDS OF THE CATCH BASINS, UNLESS SPECIFICALLY INDICATED OTHERWISE. IN ALL CASES, THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER TO MEET FIELD CONDITIONS.
- MONOLITHIC CATCH BASIN CONNECTIONS SHALL BE CONSTRUCTED WHERE APPLICABLE, PER STANDARD DRAWING NO. 2-D-194.
- CURB FACE (C.F.) SHOWN ON THE GENERAL PLAN PERTAINS TO THE CURB FACE AT THE CATCH BASIN OPENING UNLESS OTHERWISE NOTED. FOR LOCAL DEPRESSION NO. 4, REFER TO STANDARD DRAWING NO. 2-D-412.
- LOCATIONS SHOWN ON THE PLANS FOR EXISTING SANITARY SEWER HOUSE CONNECTIONS ARE APPROXIMATE ONLY.
- SANITARY SEWER HOUSE CONNECTION RECONSTRUCTION SHALL BE ACCORDANCE WITH STANDARD DRAWING NO. 2-D-350.
- SANITARY SEWERS AND HOUSE CONNECTIONS CROSSING OVER THE STORM DRAIN TRENCH SHALL BE SUPPORTED IN ACCORDANCE WITH STANDARD DRAWING NO. 2-D-172.1 TO 3 AND ENCASED PER GENERAL NOTE 1 ON STANDARD DRAWING NO. 2-D-172.1.
- WHEN INDICATED ON THE DRAWINGS, SANITARY SEWERS AND HOUSE CONNECTIONS SHALL BE ENCASED OR BLANKETED IN ACCORDANCE WITH STANDARD DRAWING NO. 2-D-351, UNLESS OTHERWISE SHOWN.
- ALL EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE THE PROPERTY OF THE APPLICABLE AGENCY LISTED UNDER UTILITIES ON SHEET 1, UNLESS OTHERWISE NOTED.
- EXISTING UTILITIES SHALL BE MAINTAINED IN PLACE BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.
- ALL OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES SHALL BE SEALED WITH 6 INCHES OF BRICK AND MORTAR OR 4 INCHES OF CONCRETE, UNLESS OTHERWISE SHOWN.
- ALL RESURFACING, CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS, AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED SHALL BE CONSTRUCTED AT THE SAME ELEVATION AND LOCATION AS THE EXISTING IMPROVEMENTS, UNLESS OTHERWISE NOTED.
- REFER TO SHEET 1 FOR TYPICAL CATCH BASIN CONNECTOR PIPE PROFILES.
- STREET RESURFACING PLANS ARE SHOWN ON SHEET 8.
- SOIL TEST BORINGS FOR THIS PROJECT WERE MADE IN JUNE 1961.
- ASBESTOS CEMENT PIPE MAY BE USED IN LIEU OF REINFORCED OR NON-REINFORCED CONCRETE PIPE 42 INCHES OR LESS IN DIAMETER, THE REQUIRED D-LOAD FOR THE ASBESTOS CEMENT PIPE SHALL BE 1.5 TIMES THAT SPECIFIED ON THE PLANS FOR THE REINFORCED CONCRETE PIPE.
- STRUCTURAL NOTES WILL BE FOUND ON SHEETS 8 AND 9.
- EXISTING TREES SHALL BE REMOVED ONLY IF SO DESIGNATED. ALL OTHER TREES SHALL BE PROTECTED IN PLACE.
- NUMBERS AND LETTERS IN BRACKETS, SUCH AS (3) OR (A-3), IDENTIFY STRUCTURES FOR CONTRACT ADMINISTRATION PURPOSES.
- ELEVATION OF THE TOP OF MANHOLES SHALL BE AT THE FINISHED GRADE ELEVATION, UNLESS OTHERWISE SHOWN.
- REMOVAL AND REPLACEMENT OF CROSS GUTTERS AND SPANDRELS MAY BE PERFORMED IN ACCORDANCE WITH COUNTY ROAD DEPARTMENT STANDARD DRAWING NO. M37-308 AND MODIFIED IN THE SPECIFICATIONS IN LIEU OF COMPLETE REMOVAL AND REPLACEMENT.
- THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS TO DETERMINE THE DEPTH AND LOCATION OF EXISTING UTILITIES WHERE SO INDICATED BY THE SYMBOL "A".
- UTILITIES DESIGNATED BY THE SYMBOL "B" WILL BE ABANDONED IN PLACE AND THE OWNER WILL INSTALL A NEW SECTION OF THE AFFECTED UTILITY AT A LOCATION IN CLOSE PROXIMITY TO, BUT WHICH DOES NOT PHYSICALLY INTERFERE WITH, THE PROPOSED STORM DRAIN CONDUIT AND APPURTENANT STRUCTURES.
- UTILITIES DESIGNATED BY THE SYMBOL "C" WILL BE REMOVED BY THE OWNER AND THE OWNER WILL REINSTALL A NEW SECTION OF THE AFFECTED UTILITY AT A LOCATION IN CLOSE PROXIMITY TO, BUT WHICH DOES NOT PHYSICALLY INTERFERE WITH, THE PROPOSED STORM DRAIN CONDUIT AND APPURTENANT STRUCTURES.



REFERENCE

REFERENCE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT D.O.J. - 23

UTILITIES

SANITARY SEWER LINES:
GAS SERVICE LINES:
OIL LINES:
POWER SERVICE LINES:
TELEPHONE SERVICE LINES:
WATER SERVICE LINES:
TRAFFIC SIGNALS AND CONDUITS:

LOS ANGELES COUNTY ENGINEER (SANITARY DIVISION)
SOUTHERN CALIFORNIA GAS COMPANY
FOUR CORNERS PIPELINE COMPANY
SOUTHERN CALIFORNIA Edison COMPANY
PACIFIC TELEPHONE COMPANY
CALIFORNIA WATER SERVICE COMPANY
CITY OF COMMERCE

GENERAL NOTES CONT'D

- THE CONTRACTOR SHALL MAINTAIN 12" CLEARANCE BETWEEN 26" HIGH RISK GAS LINE AND CONNECTOR PIPE.

"AS BUILT DWGS."

REVISIONS	DATE	BY	CHKD
1	10-20-65	W. J. R. /	W. J. R. /
2	10-20-65	W. J. R. /	W. J. R. /
3	10-20-65	W. J. R. /	W. J. R. /
4	10-20-65	W. J. R. /	W. J. R. /
5	10-20-65	W. J. R. /	W. J. R. /
6	10-20-65	W. J. R. /	W. J. R. /
7	10-20-65	W. J. R. /	W. J. R. /
8	10-20-65	W. J. R. /	W. J. R. /
9	10-20-65	W. J. R. /	W. J. R. /
10	10-20-65	W. J. R. /	W. J. R. /

PREPARED IN THE OFFICE OF

Boulton Engineering Corporation

1501 Quail Street
P.O. Box 3030
Newport Beach, California 92663

714 / 752-0505

VICTOR E. OPHIMIA RCE 16026

PROJECT MANAGER

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

SHEILA STREET DRAIN

COMMERCE WAY TO WILMA AVENUE

REINFORCED CONCRETE CONDUIT

GENERAL PLAN, LOCATION MAP, INDEX TO

DRAWINGS AND GENERAL NOTES

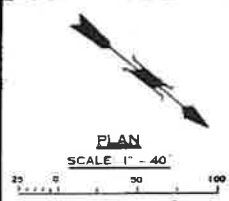
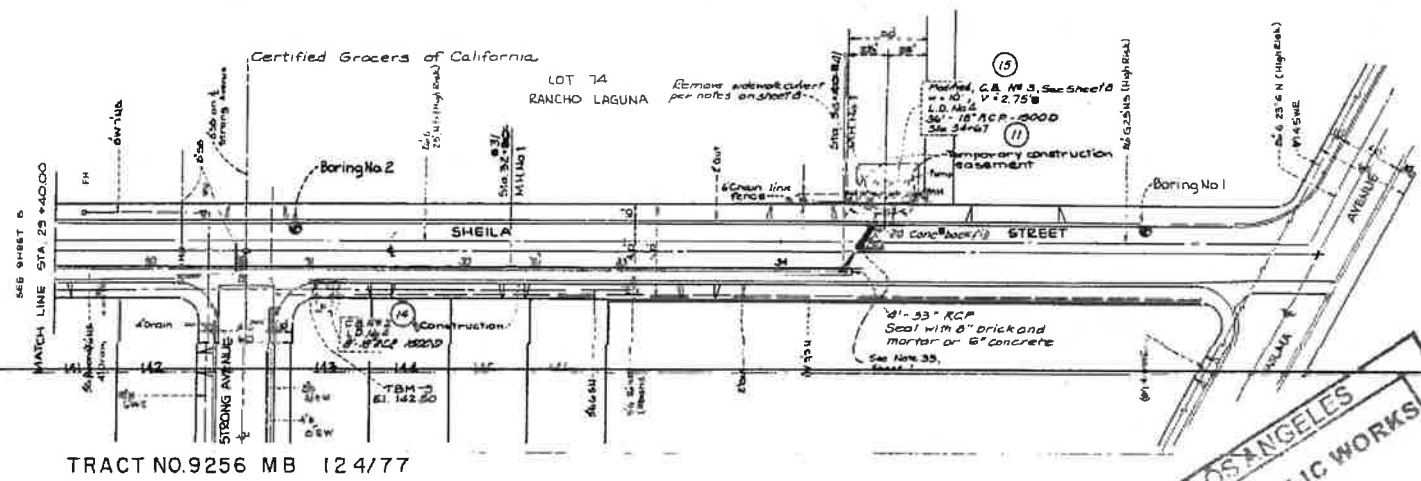
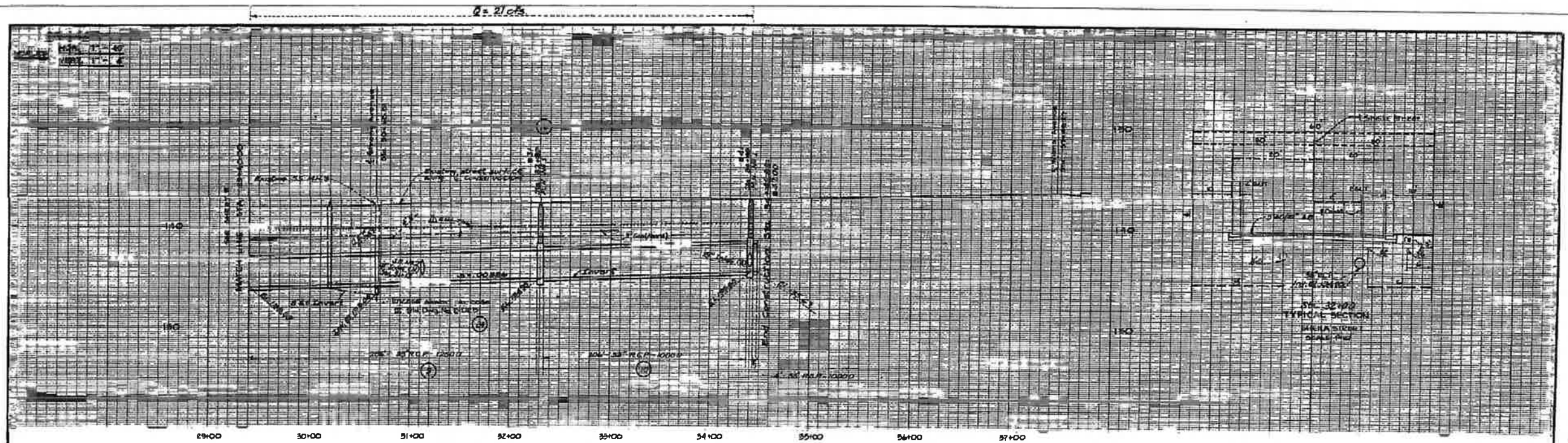
DATE Feb. 63 SCALE 4" = 1'

NO 581-D2.1

SHEET 1 OF 10

"AS BUILT DRAWINGS"

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
DESIGN DIVISION
Hydraulic Analysis Unit
OFFICE OF THE
RECORDING CLERK
Issued By
Date
Public Service



TRACT NO. 9256 MB 124/77

Junction Structure No. 2				
36	A	D	D	D
31+12	61'	18'	22'	33'

PREPARED IN THE OFFICE OF
BOYLE ENGINEERING CORPORATION
 1301 QUAIL STREET
 P.O. BOX 3030
 NEWPORT BEACH, CALIFORNIA 92683
 714 / 782-0505

Philip E. Stone
 PHILIP E. STONE, R.C.E., P.E.
 PROJECT ENGINEER

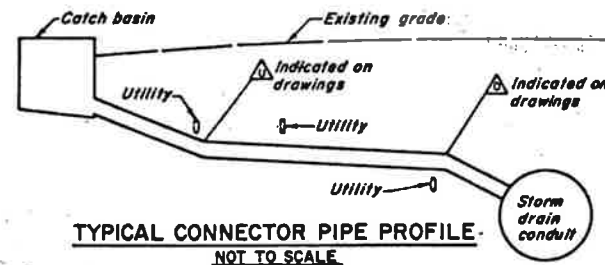
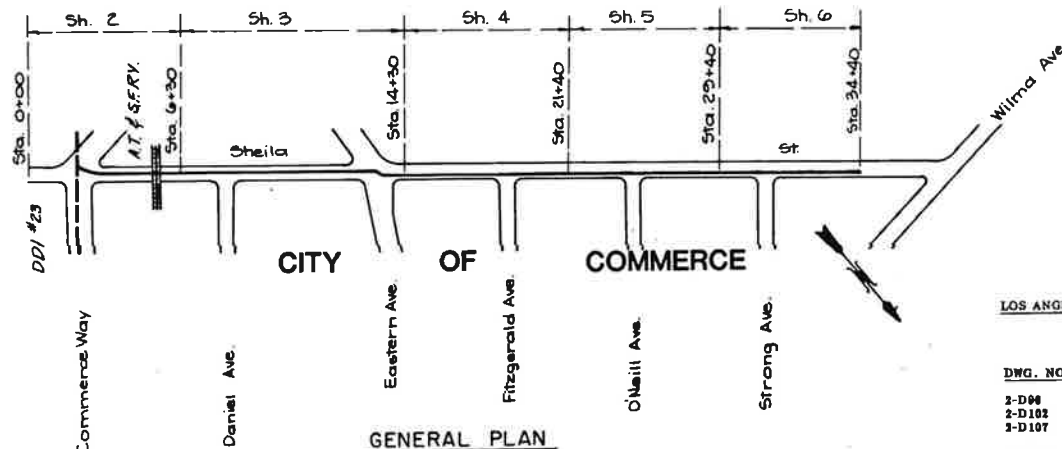
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
SHEILA STREET DRAIN
 COMMENCE WAY TO WILMA AVENUE
 REINFORCED CONCRETE CONDUIT

PLAN AND PROFILE
 STA 29+40.00 TO STA 34+45.83

DATE FEB 83 SCALE 1"=40'
 NO. 581-D2.6
 SHEET C OF 10

"AS BUILT DRAWINGS"

COUNTY OF LOS ANGELES
 DEPARTMENT OF PUBLIC WORKS
 DESIGN DIVISION
 Hydraulic Analysis Unit
 OFFICIAL
 RECORD DOCUMENT
 Issued By: *CPH*
 Date: *10-11-2019*
 Public Service That Works



- NOTES**
1. THE CHANGE IN GRADE OF THE CONNECTOR PIPE MAY OCCUR EITHER OVER OR UNDER AN EXISTING UTILITY. THE PARTICULAR UTILITY AT WHICH THE CHANGE IN GRADE OCCURS, IS NOTED ON THE PROJECT DRAWINGS. AT LOCATIONS WHERE UTILITY CROSSINGS ARE MARKED Δ , THE CONNECTOR PIPE GRADE WILL BREAK OVER THE UTILITY. AT LOCATIONS WHERE UTILITY CROSSINGS ARE MARKED Δ , THE CONNECTOR PIPE GRADE WILL BREAK UNDER THE UTILITY.
 2. ON THOSE CONNECTOR PIPES WHERE CHANGE IN GRADE IS NOT INDICATED, IT IS ASSUMED THAT THE CONNECTOR PIPE CAN BE LAID ON A STRAIGHT GRADE FROM THE CATCH BASIN TO THE STORM DRAIN WITHOUT INTERFERENCE WITH UTILITIES.
 3. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS TO DETERMINE THE EXACT LOCATION AND DEPTH OF UTILITIES, EXCEPT SANITARY SEWER, WHICH ARE MARKED Δ , OR Δ AFTER THE EXACT LOCATION OF A UTILITY HAS BEEN DETERMINED THE GRADE AND ALIGNMENT OF THE CONNECTOR PIPE WILL BE STAKED SO AS TO CLEAR THE UTILITY.
 4. WHERE CONNECTOR PIPE HAS A GRADE CHANGE EXCEEDING 0.10 FT./FT. OR DIFFERS IN DIAMETER FROM THAT OF EXISTING PIPE, USE CONCRETE COLLAR AS PER STANDARD DRAWING NO. 2-D-285.

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

DWG. NO.	DESCRIPTION
2-D-96	STANDARD DROP STEP
2-D-102	MANHOLE NO. 1
2-D-107	CONCRETE RINGS, REDUCER & PIPE FOR MANHOLE SHAFT
2-D-112	JUNCTION STRUCTURE NO. 3
2-D-156	MANHOLE FRAME & COVER FOR CATCH BASIN
2-D-157	CATCH BASIN REINFORCEMENT FOR ROUND MANHOLES
2-D-162	CATCH BASIN NO. 1
2-D-163	CATCH BASIN NO. 3
2-D-171	STANDARD A-615 REINFORCEMENT BARS
2-D-173	CATCH BASIN REINFORCEMENT
2-D-173.1 to .3	PIPE SUPPORTS ACROSS TRENCHES
2-D-175	REMOVABLE PROTECTION BAR FOR CATCH BASIN
2-D-177	PIPE BEDDING IN TRENCHES
2-D-184	MANHOLE NO. 2
2-D-189	JUNCTION STRUCTURE NO. 1
2-D-193	JUNCTION STRUCTURE NO. 4
2-D-234	CONNECTION TO CATCH BASIN FOR PIPES 12" THROUGH 18"
2-D-232	DETAIL OF CATCH BASIN OPENING
2-D-235	TRANSITION STRUCTURE NO. 1
2-D-251	PROTECTION FOR MAIN LINE AND HOUSE CONNECTION SEWERS
2-D-264	ADJUSTABLE PROTECTION BAR STIRRUP
2-D-265	CONCRETE COLLAR FOR PIPES 12 INCHES THROUGH 66 INCHES
2-D-400	SAMPLE SHEET FOR USE AS A GUIDE IN PREPARING CALCULATIONS FOR SHORING OF EXCAVATIONS
2-D-413	UNIFIED SOIL CLASSIFICATION SYSTEM
2-D-418	LOCAL DEPRESSION NO. 4
2-D-431	"D" LOAD TABLE FOR DESIGN OF ASBESTOS CEMENT PIPE
2-D-441	MODIFICATIONS FOR SIDE OPENING CATCH BASIN
2-D-446	CRITERIA FOR THE DESIGN OF SHORING FOR EXCAVATION
2-D-472	STANDARD 34-INCH MANHOLE FRAME AND COVER
2-D-476	PORTABLE SECURITY FENCE FOR OPEN TRENCHES
2-D-483	MANHOLE NO. 4

LOS ANGELES COUNTY ROAD DEPARTMENT

M57-30R	PARTIAL REPLACEMENT FOR CONCRETE CROSS GUTTERS AND SPANDRELS
28-01	CURB AND GUTTER
40-03	SIDEWALK AND DRIVEWAY REPLACEMENT

LOS ANGELES COUNTY ENGINEER

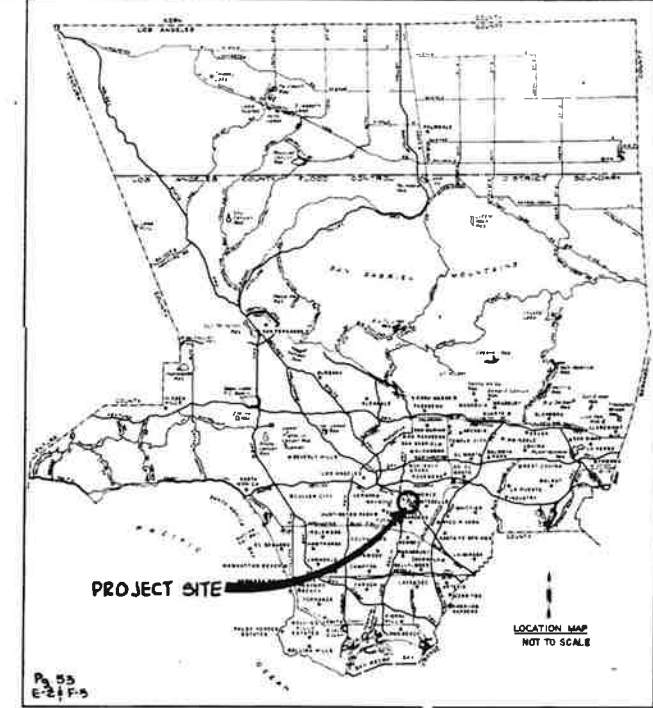
S-17	STANDARD MANHOLE STEP
S-21	BEDDING FOR SEWER PIPE
S-29	RECONSTRUCTION OF SANITARY SEWER HOUSE LATERALS
S-35	LOCKING MANHOLE FRAME AND COVER
S-36	NON-REINFORCED PRECAST CONCRETE MANHOLE

INDEX TO DRAWINGS

SHEET	DESCRIPTION
1	LOCATION MAP, GENERAL PLAN, INDEX TO DRAWINGS AND GENERAL NOTES.
2	PLAN AND PROFILE STA. 0+00.00 TO STA. 6+30.00
3	PLAN AND PROFILE STA. 6+30.00 TO STA. 14+30.00
4	PLAN AND PROFILE STA. 14+30.00 TO STA. 21+40.00
5	PLAN AND PROFILE STA. 21+40.00 TO STA. 29+40.00
6	PLAN AND PROFILE STA. 29+40.00 TO STA. 34+5.83
7	LOGS OF BORINGS
8	STREET RESURFACING PLAN AND STRUCTURAL DETAILS
9	SINGLE R.C. BOX SCHEDULE AND DETAILS
10	PLAN AND PROFILE SANITARY SEWER CONSTRUCTION

GENERAL NOTES

1. NUMBERS IN CIRCLES INDICATED ITEMS UNDER WHICH PAYMENT WILL BE MADE.
2. ELEVATIONS SHOWN ARE IN FEET ABOVE THE U.S.G.S. MEAN SEA LEVEL DATUM, BASED ON LOS ANGELES COUNTY ENGINEER DATUM NO. B5MD 3170, 1962 ADJUSTMENT.
3. STATIONS SHOWN ON THE DRAWINGS ARE ALONG CENTER LINE OF CONSTRUCTION.
4. STATIONS AND INVERT ELEVATIONS OF PIPE INLETS SHOWN ON THE PROFILES ARE AT THE INSIDE FACE OF THE CONDUIT, UNLESS OTHERWISE SHOWN.
5. PIPE CONNECTIONS TO STORM DRAIN SHALL CONFORM TO STANDARD DRAWING NO. 2-D-183, UNLESS OTHERWISE SHOWN.
6. ALL PIPE IN OPEN TRENCH SHALL BE BEDDED ACCORDING TO STANDARD DRAWING NO. 2-D-177, CASE III, EXCEPT BELL AND SPIGOT PIPE WHICH SHALL BE CASE II BEDDING, UNLESS OTHERWISE SHOWN. "W" VALUES SHALL BE AS SPECIFIED ON STANDARD DRAWING NO. 2-D-177 FOR CASE II BEDDING, NOTES 3(a), 3(b), AND 3(c). IF THE "W" VALUE AT THE TOP OF THE PIPE IS EXCEEDED, THE BEDDING SHALL BE MODIFIED, AND/OR PIPE OF ADDITIONAL STRENGTH SHALL BE PROVIDED. THE PROPOSED MODIFICATION SHALL BE APPROVED BY THE DISTRICT.
7. CONCRETE BACKFILL SHALL BE PROVIDED AROUND PIPE 21 INCHES IN DIAMETER OR LESS WHERE THE COVER IS EQUAL TO OR LESS THAN 2'-0", AROUND PIPE GREATER THAN 21 INCHES IN DIAMETER BUT LESS THAN 36 INCHES WHERE THE COVER IS LESS THAN 1'-3", AND FOR PIPE 36 INCHES OR GREATER WHERE THE COVER IS LESS THAN 1'-0". THE CONCRETE BACKFILL SHALL BE AS SPECIFIED ON STANDARD DRAWING NO. 2-D-177, NOTE 3.
8. TIES FOR CATCH BASINS AS SHOWN ON THE DRAWINGS ARE FROM CURB RETURN TO CENTER LINE OR TIE LINE OF CATCH BASIN, UNLESS OTHERWISE SHOWN.
9. THE DEPTH AT THE UPSTREAM END OF CATCH BASINS 10 FEET OR MORE IN LENGTH SHALL BE CURB FACE PLUS 12 INCHES, UNLESS OTHERWISE SHOWN.
10. LOCATIONS OF CATCH BASIN CONNECTOR PIPE JUNCTIONS WITH CATCH BASINS AS SHOWN ON THE DRAWINGS ARE SCHEMATIC. IT IS INTENDED THAT SUCH JUNCTIONS BE LOCATED AT THE DOWN-STREAM ENDS OF THE CATCH BASINS, UNLESS SPECIFICALLY INDICATED OTHERWISE. IN ALL CASES, THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER TO MEET FIELD CONDITIONS.
11. MONOLITHIC CATCH BASIN CONNECTIONS SHALL BE CONSTRUCTED WHERE APPLICABLE, PER STANDARD DRAWING NO. 2-D-224.
12. CURB FACE (C.F.) SHOWN ON THE GENERAL PLAN PERTAINS TO THE CURB FACE AT THE CATCH BASIN OPENING UNLESS OTHERWISE NOTED. FOR LOCAL DEPRESSION NO. 4, REFER TO STANDARD DRAWING NO. 2-D-415.
13. LOCATIONS SHOWN ON THE PLANS FOR EXISTING SANITARY SEWER HOUSE CONNECTIONS ARE APPROXIMATE ONLY.
14. SANITARY SEWER HOUSE CONNECTION RECONSTRUCTION SHALL BE ACCORDANCE WITH STANDARD DRAWING 2-D-250.
15. SANITARY SEWERS AND HOUSE CONNECTIONS CROSSING OVER THE STORM DRAIN TRENCH SHALL BE SUPPORTED IN ACCORDANCE WITH STANDARD DRAWING NO. 2-D-173.1 TO .3 AND ENCASED PER GENERAL NOTE 1 ON STANDARD DRAWING NO. 2-D-173.1.
16. WHEN INDICATED ON THE DRAWINGS, SANITARY SEWERS AND HOUSE CONNECTIONS SHALL BE ENCASED OR BLANKETED IN ACCORDANCE WITH STANDARD DRAWING NO. 2-D-251, UNLESS OTHERWISE SHOWN.
17. ALL EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE THE PROPERTY OF THE APPLICABLE AGENCY LISTED UNDER UTILITIES ON SHEET 1, UNLESS OTHERWISE NOTED.
18. EXISTING UTILITIES SHALL BE MAINTAINED IN PLACE BY THE CONTRACTOR, UNLESS OTHERWISE NOTED.
19. ALL OPENINGS RESULTING FROM THE CUTTING OR PARTIAL REMOVAL OF EXISTING CULVERTS, PIPES OR SIMILAR STRUCTURES SHALL BE SEALED WITH 8 INCHES OF BRICK AND MORTAR OR 6 INCHES OF CONCRETE, UNLESS OTHERWISE SHOWN.
20. ALL RESURFACING, CURBS, GUTTERS, SIDEWALKS, DRIVEWAYS, AND OTHER EXISTING IMPROVEMENTS TO BE RECONSTRUCTED SHALL BE CONSTRUCTED AT THE SAME ELEVATION AND LOCATION AS THE EXISTING IMPROVEMENTS, UNLESS OTHERWISE NOTED.
21. REFER TO SHEET 1 FOR TYPICAL CATCH BASIN CONNECTOR PIPE PROFILE.
22. STREET RESURFACING PLANS ARE SHOWN ON SHEET 8.
23. SOIL TEST BORINGS FOR THIS PROJECT WERE MADE IN JUNE 1983.
24. ASBESTOS CEMENT PIPE MAY BE USED IN LIEU OF REINFORCED OR NON-REINFORCED CONCRETE PIPE 42 INCHES OR LESS IN DIAMETER. THE REQUIRED D-LOAD FOR THE ASBESTOS CEMENT PIPE SHALL BE 1.5 TIMES THAT SPECIFIED ON THE PLANS FOR THE REINFORCED CONCRETE PIPE.
25. STRUCTURAL NOTES WILL BE FOUND ON SHEETS 8 AND 9.
26. EXISTING TREES SHALL BE REMOVED ONLY IF SO DESIGNATED. ALL OTHER TREES SHALL BE PROTECTED IN PLACE.
27. NUMBERS AND LETTERS IN BRACKETS, SUCH AS [3] OR [A-3], IDENTIFY STRUCTURES FOR CONTRACT ADMINISTRATION PURPOSES.
28. ELEVATION OF THE TOP OF MANHOLES SHALL BE AT THE FINISHED GRADE ELEVATION, UNLESS OTHERWISE SHOWN.
29. REMOVAL AND REPLACEMENT OF CROSS GUTTERS AND SPANDRELS MAY BE PERFORMED IN ACCORDANCE WITH COUNTY ROAD DEPARTMENT STANDARD DRAWING NO. M57-30R AND MODIFIED IN THE SPECIFICATIONS IN LIEU OF COMPLETE REMOVAL AND REPLACEMENT.
30. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS TO DETERMINE THE DEPTH AND LOCATION OF EXISTING UTILITIES WHERE SO INDICATED BY THE SYMBOL Δ .
31. UTILITIES DESIGNATED BY THE SYMBOL Δ WILL BE ABANDONED IN PLACE AND THE OWNER WILL INSTALL A NEW SECTION OF THE AFFECTED UTILITY AT A LOCATION IN CLOSE PROXIMITY TO, BUT WHICH DOES NOT PHYSICALLY INTERFERE WITH, THE PROPOSED STORM DRAIN CONDUIT AND APPURTENANT STRUCTURES.
32. UTILITIES DESIGNATED BY THE SYMBOL Δ WILL BE REMOVED BY THE OWNER AND THE OWNER WILL REINSTALL A NEW SECTION OF THE AFFECTED UTILITY AT A LOCATION IN CLOSE PROXIMITY TO, BUT WHICH DOES NOT PHYSICALLY INTERFERE WITH, THE PROPOSED STORM DRAIN CONDUIT AND APPURTENANT STRUCTURES.



REFERENCE

REFERENCE LOS ANGELES COUNTY FLOOD CONTROL CHANNEL D.D.1. - 23



UTILITIES

SANITARY SEWER LINES:
GAS SERVICE LINES:
OIL LINES:
POWER SERVICE LINES:
TELEPHONE SERVICE LINES:
WATER SERVICE LINES:
TRAFFIC SIGNALS AND CONDUITS:

LOS ANGELES COUNTY ENGINEER (SANITATION DIVISION)
SOUTHERN CALIFORNIA GAS COMPANY
FOUR CORNERS PIPELINES COMPANY
SOUTHERN CALIFORNIA Edison COMPANY
PACIFIC TELEPHONE COMPANY
CALIFORNIA WATER SERVICE COMPANY
CITY OF COMMERCE

GENERAL NOTES CONT'D

33. THE CONTRACTOR SHALL MAINTAIN A 12" CLEARANCE BETWEEN 28" HIGH RISK GAS LINE AND CONNECTOR PIPE.

"AS BUILT DWGS."

REV.	DATE	DESCRIPTION
1	9-26-85	"AS BUILT"

DESIGNED BY Consultant	CHECKED BY Consultant	DRAWN BY Consultant
PROJECT MANAGER R. Hashima	DATE Feb 83	SCALE A.B.
SHEET 1 OF 10		

PREPARED IN THE OFFICE OF

Boule Engineering Corporation

1501 Quail Street
P.O. Box 3030
Newport Beach, California 92663

714 / 752-0505

VICTOR E. OPINAR RCE 20026
PROJECT MANAGER

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

SHEILA STREET DRAIN

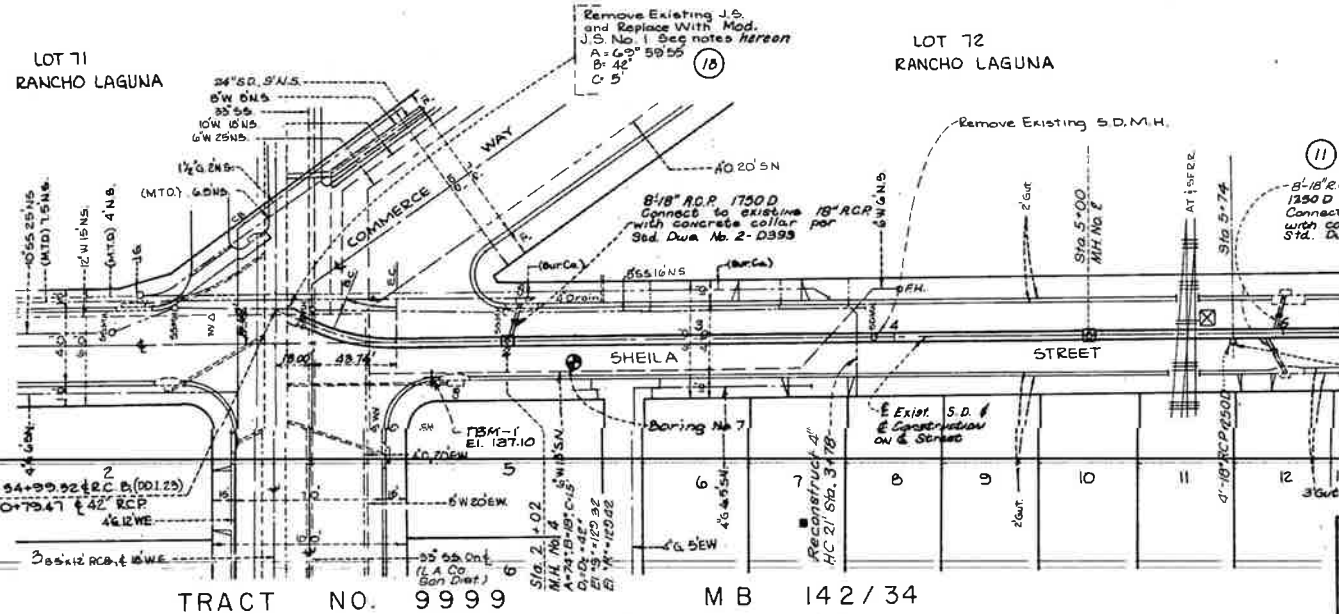
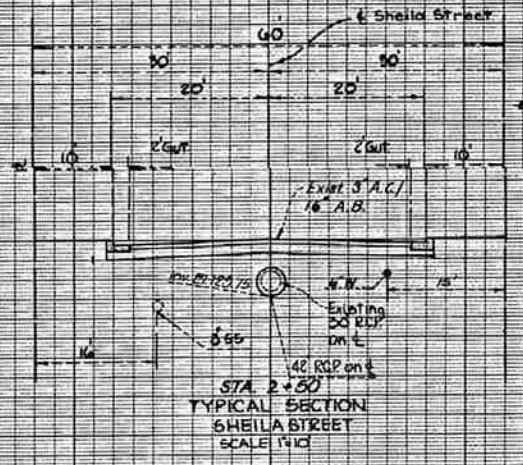
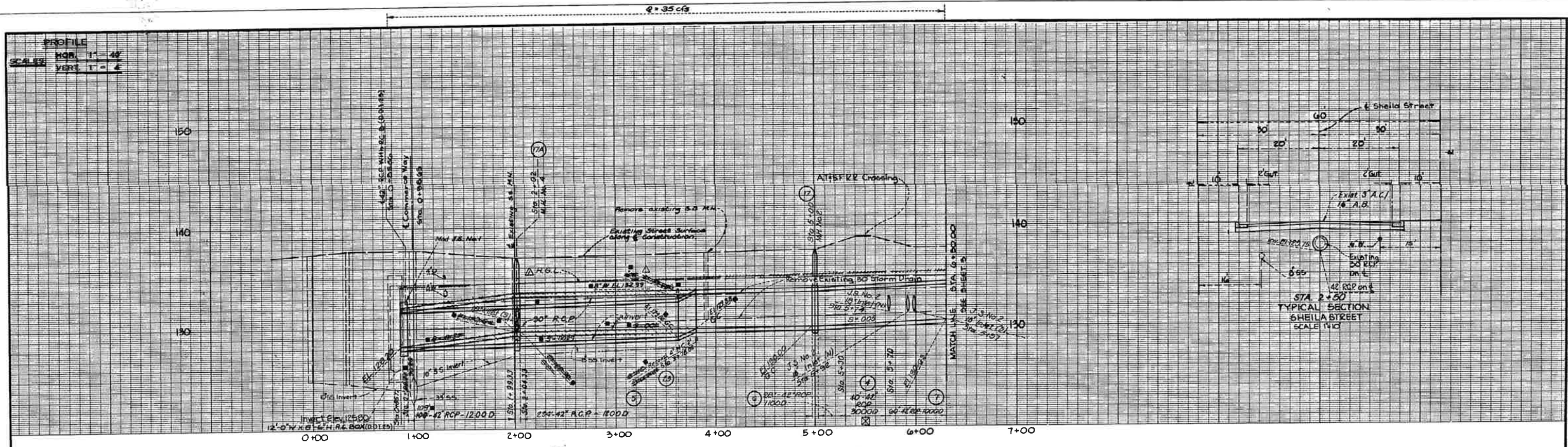
COMMERCE WAY TO WILMA AVENUE

REINFORCED CONCRETE CONDUIT

GENERAL PLAN, LOCATION MAP, INDEX TO DRAWINGS AND GENERAL NOTES

"AS BUILT DRAWINGS"

PROFILE
 HORIZ. 1" = 40'
 VERT. 1" = 4'

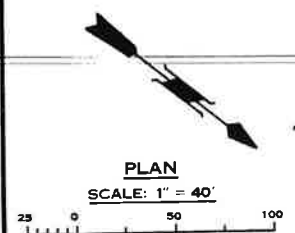


See specifications for
 special time restrictions

BENCH MARK

LOS ANGELES COUNTY ENGINEER
 DATUM NO.
 BOAT SPIKE 1 FOOT WEST OF THE WEST BEGINNING CURB RETURN
 AT THE NORTHWEST CORNER OF WASHINGTON BOULEVARD AND COMMERCE WAY.
 ELEVATION: 137.87
 1962 ADJUSTMENT

- NOTES FOR MODIFIED BOX STRUCTURE NO. 1 (SJA-1115-86)
- EXISTING BOX CONDUIT SHALL BE SUPPORTED INSIDE PRIOR TO BREAKING OUT OPENING. SUPPORT SHALL BE DESIGNED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER AND SUBMITTED TO THE DISTRICT FOR APPROVAL. THE SUPPORTS SHALL NOT BE REMOVED UNTIL CONCRETE HAS REACHED SPECIFIED 28-DAY STRENGTH.
 - OPENING SHALL BE BROKEN OUT 24 INCHES WIDER THAN FINISH OPENING SIZE TO INSTALL HORIZONTAL REINFORCING STEEL.
 - ALL EXISTING REINFORCING STEEL SHALL BE CUT AT CENTER OF OPENING ONLY AND BENT INTO NEW CONCRETE.
 - FOR ADDITIONAL STRUCTURAL NOTES, SEE SHEET 8.



TRACT NO. 9999

M B 142 / 34

Construction

Sta.	A	B	C	D
5+74	50"	18"	14"	42"
5+92	70"	18"	18"	42"
5+97	70"	18"	18"	42"

PREPARED IN THE OFFICE OF
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 1501 QUAIL STREET
 P.O. BOX 3030
 NEWPORT BEACH, CALIFORNIA 92663
 714 / 752-0505
 Philip E. Stone
 PHILIP E. STONE R.C.E. 17714
 PROJECT ENGINEER

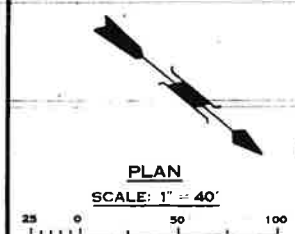
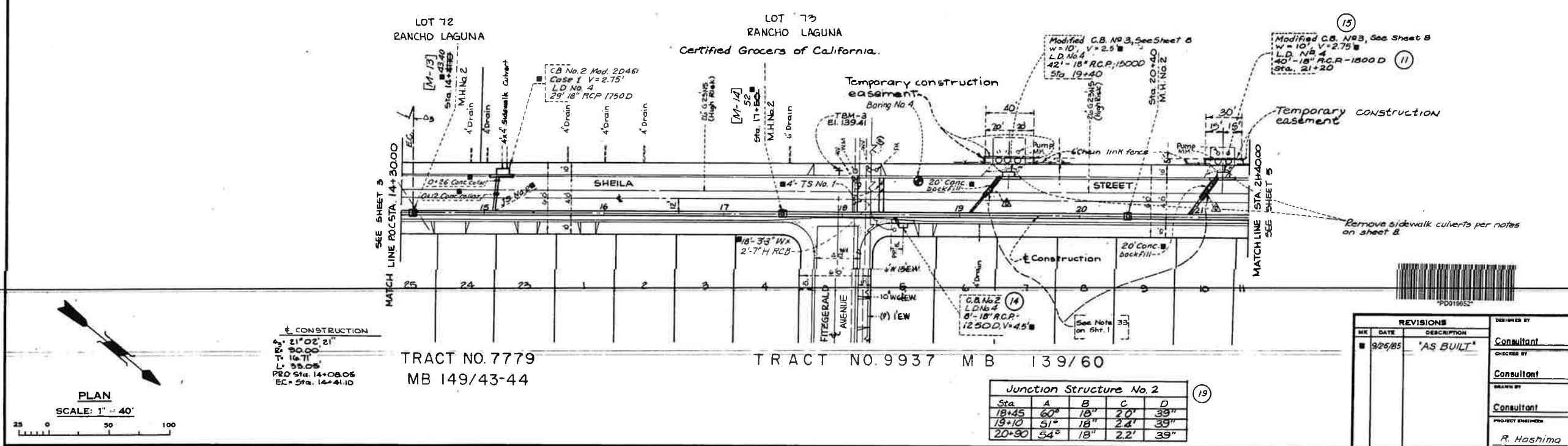
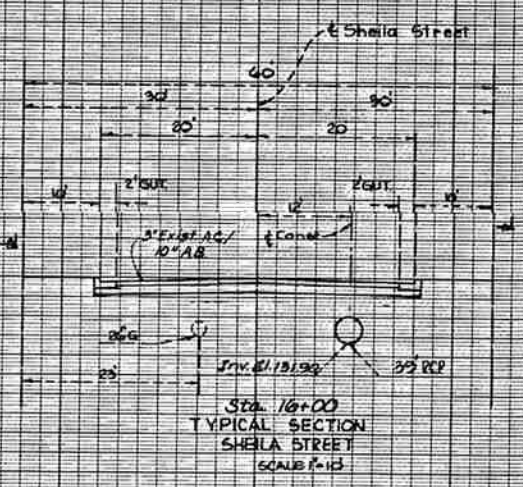
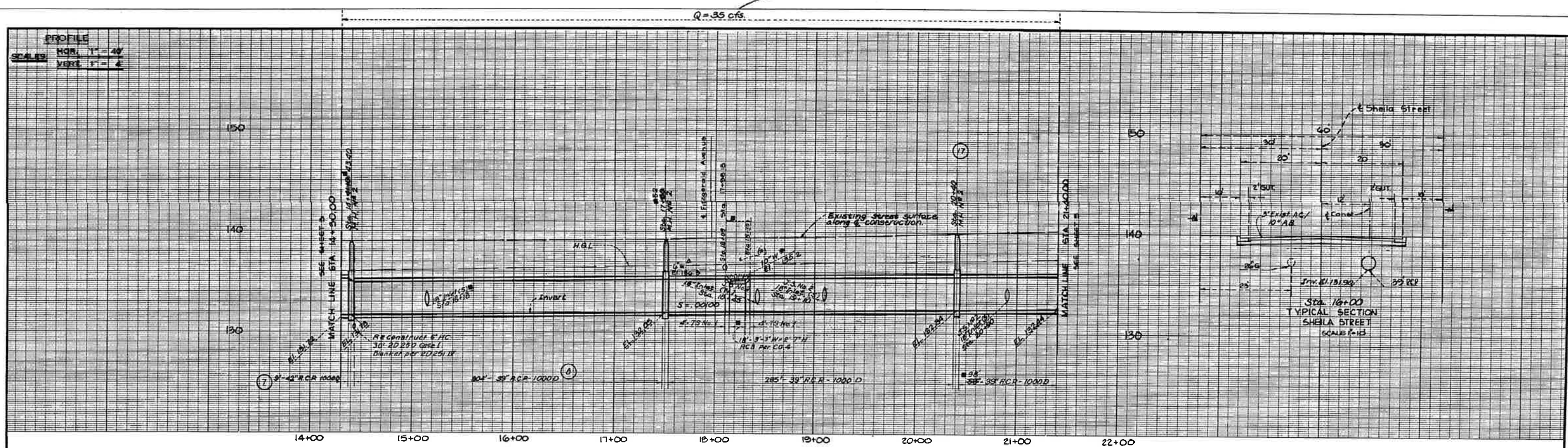
NO.	DATE	DESCRIPTION
1	5-1-83	Revised. H.A.B.
2	9-25-85	"AS BUILT"

DESIGNED BY
 Consultant
 CHECKED BY
 Consultant
 DRAWN BY
 Consultant
 PROJECT ENGINEER
 R. Hashima

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
SHEILA STREET DRAIN
 COMMERCE WAY TO WILMA AVENUE
 REINFORCED CONCRETE CONDUIT
 PLAN AND PROFILE
 STA. 0+00.00 TO STA. 6+30.00
 DATE Feb 83 SCALE AS
 NO. 581-D2.2
 SHEET 2 OF 10

"AS BUILT DRAWINGS"

PROFILE
 HGR. 1" = 40'
 VERT. 1" = 4'



CONSTRUCTION
 1. 21' 02" 21"
 2. 30.00
 3. 16.71
 4. 55.05
 PEO STA 14+08.05
 EC STA 14+41.10

TRACT NO. 7779
 MB 149/43-44

TRACT NO. 9937 MB 139/60

Junction Structure No. 2

Sta	A	B	C	D
18+45	60"	18"	20"	39"
19+10	51"	18"	24"	39"
20+90	54"	18"	22"	39"

REVISIONS		
NO.	DATE	DESCRIPTION
1	9/26/85	"AS BUILT"

DESIGNED BY	Consultant
CHECKED BY	Consultant
DRAWN BY	Consultant
PROJECT ENGINEER	R. Hashima

PREPARED IN THE OFFICE OF
BOYLE ENGINEERING CORPORATION
 1501 QUAIL STREET
 P.O. BOX 3030
 NEWPORT BEACH, CALIFORNIA 92663
 714 / 752-0505
 Philip E. Stone
 PHILIP E. STONE R.C.E. 17714
 PROJECT ENGINEER

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
SHEILA STREET DRAIN
 COMMERCE WAY TO WILMA AVENUE
 REINFORCED CONCRETE CONDUIT
 PLAN AND PROFILE
 STA. 14 + 30.00 TO STA. 21 + 40.00
 DATE Feb. 83 SCALE 1" = 40'
 NO. 581-D2.4
 SHEET 4 OF 10

"AS BUILT DRAWINGS"

BORING NO.1

STATION 36+35
 OFFSET 15' S. CENTERLINE
 ELEVATION 143.2
 DATE DRILLED 6/10/82

TEST BORING LOG									
TYPE	12" Bucket								
81	96	9.4	7	2.5	2	5	1	3" AC with 8" base (GRAVELLY SAND)	
								SM Tan fine SILTY SAND	
								ML Brown SANDY SILT with thin layers of CLAYEY SILT	
94	111	17.5	9	2.5	4	10	3	ML Dark brown SANDY SILT	
								CL Dark brown SANDY CLAY	
								...color change to orange-brown	
98	115	17.2	9	2.5	5	15	4	CL Dark brown SILTY CLAY	
NOTES: 1. No caving. 2. No groundwater encountered. 3. Hole tamped and capped with asphalt. *Obtained from Boyle Engineering Corp.									
THESE BORING LOG SUMMARIES APPLY ONLY AT THE TIME AND LOCATION INDICATED. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND TIMES. LOGGED BY YHS DATE 6/10/82									

BORING NO.2

STATION 30+97
 OFFSET 15' S. CENTERLINE
 ELEVATION 142.2
 DATE DRILLED 6/10/82

TEST BORING LOG									
TYPE	12" Bucket								
7	87	27.9	3	2.5	2	5	1	3" AC with 8" base (GRAVELLY SAND)	
								SM Tan fine SILTY SAND	
								ML Green-brown SANDY SILT	
								...color change to dark brown	
75	94	33.0	7	2.5	4	10	3	CL Black SILTY CLAY	
								CL Dark brown SILTY CLAY	
93	109	19.0	9	2.5	5	15	4		
NOTES: 1. No caving. 2. No groundwater encountered. 3. Hole tamped and capped with asphalt.									
THESE BORING LOG SUMMARIES APPLY ONLY AT THE TIME AND LOCATION INDICATED. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND TIMES. LOGGED BY YHS DATE 6/10/82									

BORING NO.3

STATION 24+76
 OFFSET 15 S. CENTERLINE
 ELEVATION 140.6
 DATE DRILLED 6/10/82

TEST BORING LOG									
TYPE	12" Bucket								
80	89	27.2	5	2.5	2	5	1	3" AC with 16" base (GRAVELLY SAND)	
								SM Tan fine SILTY SAND	
								ML Tan SANDY SILT with thin layers of CLAYEY SILT	
								...color change to dark brown	
75	88	34.4	4	2.5	4	10	3	ML Tan SANDY SILT	
								CL Black SILTY CLAY	
96	113	17.2	7	2.5	5	15	4	CL Mottled orange-brown fine SANDY CLAY	
NOTES: 1. No caving. 2. No groundwater encountered. 3. Hole tamped and capped with asphalt.									
THESE BORING LOG SUMMARIES APPLY ONLY AT THE TIME AND LOCATION INDICATED. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND TIMES. LOGGED BY YHS DATE 6/10/82									

BORING NO.4

STATION 18+64
 OFFSET 17' S. CENTERLINE
 ELEVATION 139
 DATE DRILLED 6/10/82

TEST BORING LOG									
TYPE	12" Bucket								
91	107	11.0	5	2.5	2	5	1	3" AC with 10" base (GRAVELLY SAND)	
								SM Tan fine SILTY SAND	
								ML Brown CLAYEY SILT to SILTY CLAY	
99	116	15.3	9	2.5	4	10	3	CL Brown SANDY and SILTY CLAY	
								CL Brown SILTY CLAY with SAND	
101	120	14.3	9	2.5	5	15	4	CL Brown fine SANDY CLAY	
NOTES: 1. No caving. 2. No groundwater encountered. 3. Hole tamped and capped with asphalt.									
THESE BORING LOG SUMMARIES APPLY ONLY AT THE TIME AND LOCATION INDICATED. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND TIMES. LOGGED BY YHS DATE 6/10/82									

BORING NO.5

STATION 13+30
 OFFSET 68' N. CENTERLINE
 ELEVATION 139.0
 DATE DRILLED 6/11/82

TEST BORING LOG									
TYPE	12" Bucket								
88	103	23.2	3	2.5	2	5	1	3" AC with 10" base (GRAVELLY SAND)	
								SM Tan fine SILTY SAND	
								ML Dark brown CLAYEY SILT	
98	115	17.1	7	2.5	4	10	3	CL Reddish brown SILTY CLAY	
								ML Reddish brown fine SANDY SILT	
95	112	19.0	5	2.5	3	15	4		
NOTES: 1. No caving. 2. No groundwater encountered. 3. Hole tamped and capped with asphalt.									
THESE BORING LOG SUMMARIES APPLY ONLY AT THE TIME AND LOCATION INDICATED. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND TIMES. LOGGED BY YHS DATE 6/11/82									

BORING NO.6

STATION 8+73
 OFFSET 105' N. CENTERLINE
 ELEVATION 138
 DATE DRILLED 6/11/82

TEST BORING LOG									
TYPE	12" Bucket								
95	112	11.5	4	2.5	2	5	1	2.5" AC with 10" base (GRAVELLY SAND)	
								ML Tan SANDY SILT	
								CL Reddish brown SANDY CLAY	
101	121	13.8	5	2.5	4	10	3		
84	99	22.5	6	2.5	5	15	4	ML Interlayered CLAYEY SILT and SANDY SILT	
NOTES: 1. No caving. 2. No groundwater encountered. 3. Hole tamped and capped with asphalt.									
THESE BORING LOG SUMMARIES APPLY ONLY AT THE TIME AND LOCATION INDICATED. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND TIMES. LOGGED BY YHS DATE 6/11/82									

BORING NO.7

STATION 2+33
 OFFSET 13' N. CENTERLINE
 ELEVATION 137
 DATE DRILLED 6/11/82

TEST BORING LOG									
TYPE	12" Bucket								
104	118	15.6	7	2.5	2	5	1	3" AC with 15" base (GRAVELLY SAND)	
								SC Reddish brown fine to medium CLAYEY SAND and SANDY CLAY	
								CL Reddish brown SILTY CLAY	
92	106	18.9	7	2.5	4	10	3	ML Brown CLAYEY SILT	
								ML Tan SANDY SILT	
82	97	13.8	8	2.5	5	15	4	ML Tan fine SANDY SILT	
Note: No groundwater encountered.									
THESE BORING LOG SUMMARIES APPLY ONLY AT THE TIME AND LOCATION INDICATED. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND TIMES. LOGGED BY YHS DATE 6/11/82									

NOTES

- BORINGS WERE DRILLED WITH A 12" DIAMETER BUCKET AUGER TO A DEPTH OF 15 FEET.
- SOILS ARE IDENTIFIED IN ACCORDANCE WITH THE UNIFIED SOIL CLASSIFICATION SYSTEM. (DRAWING NO. D-413). LABORATORY CRITERIA WERE USED, UNLESS OTHERWISE INDICATED.



SYMBOL

DEPTH OF SUBGRADE CONDUIT

MOORE AND TABER

Boyle Engineering Corporation

REVISIONS

NO.	DATE	DESCRIPTION

LOGGED BY

Consultant

REVIEWED BY

Consultant

SUBMITTED BY

Consultant

PROJECT ENGINEER

R. Hashima

PREPARED IN THE OFFICE OF

BOYLE ENGINEERING CORPORATION
 1501 QUAIL STREET
 P.O. BOX 3030
 NEWPORT BEACH, CALIFORNIA 92663
 714 / 752-0505

Philip E. Stone
 PHILIP E. STONE, P.E.
 PROJECT ENGINEER

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

SHEILA STREET DRAIN
 COMMERCE WAY TO WILMA AVENUE
 REINFORCED CONCRETE CONDUIT
 LOGS OF BORINGS

RECOMMENDED BY

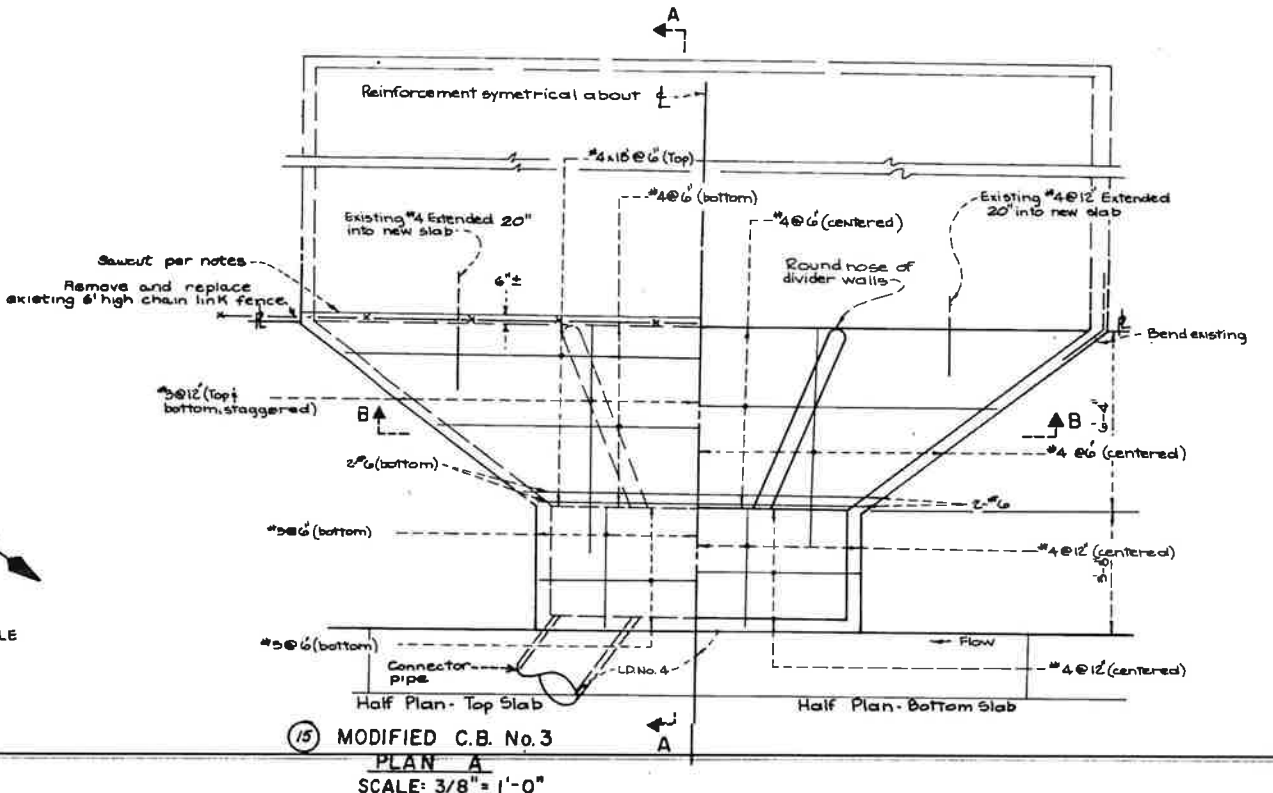
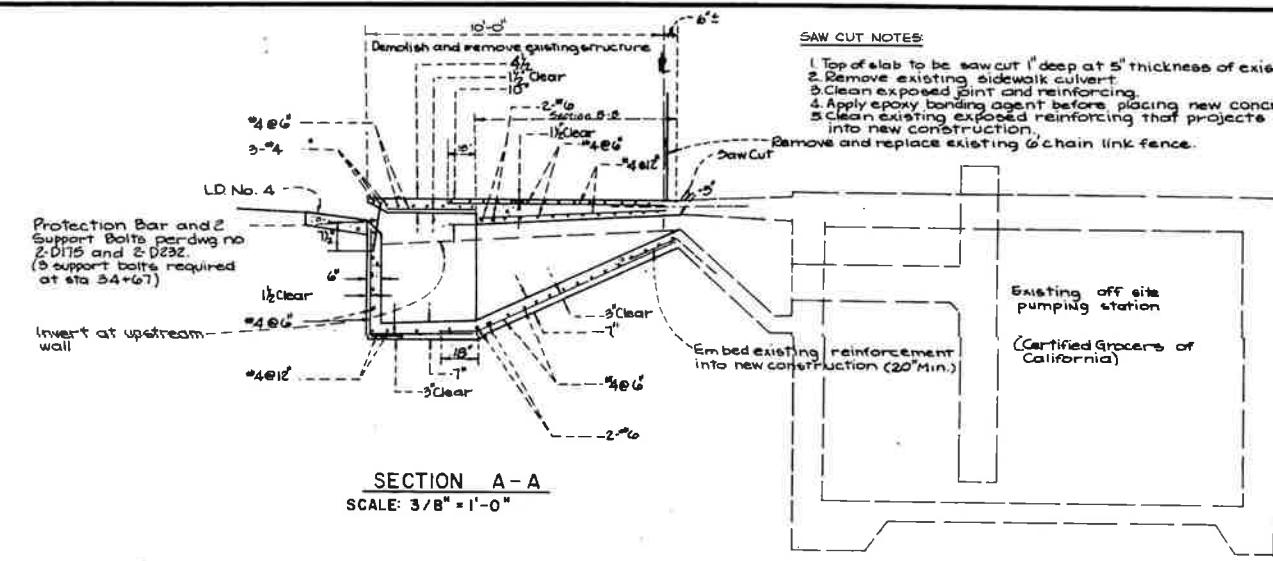
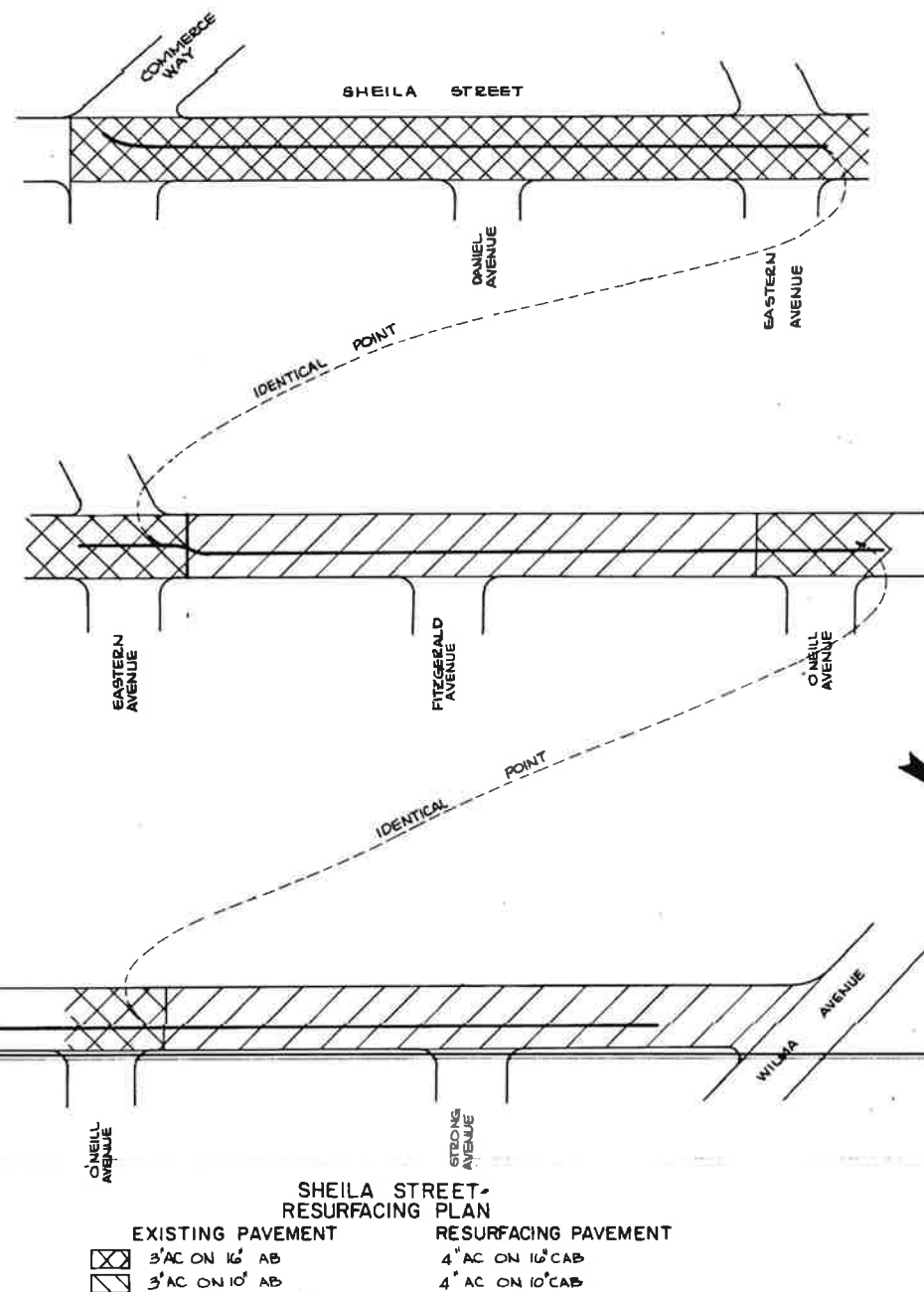
Boyle Engineering Corporation

DATE Feb. 83 SCALE 1"=6'

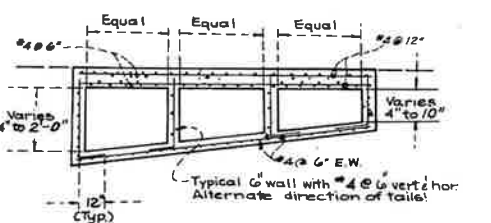
NO. 581-D2.7

SHEET 7 OF 10

"AS BUILT DRAWINGS"



Existing pumping stations are the property of Certified Grocers of California LTD. For coordination of modifications contact Harry J. Miller, Plant Services Manager of C.G.C., 2601 South Eastern Avenue, P.O. Box 5306 Terminal Annex, Los Angeles, California Telephone 1-213-786-2601



- STRUCTURAL NOTES**
1. DIMENSIONS FROM FACE OF CONCRETE TO STEEL ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN.
 2. CONCRETE DIMENSIONS SHALL BE MEASURED HORIZONTALLY OR VERTICALLY ON THE PROFILE, AND PARALLEL TO OR AT RIGHT ANGLES (OR RADIAL) TO CENTERLINE OF CONDUIT ON THE PLAN EXCEPT AS OTHERWISE SHOWN.
 3. ALL BAR BENDS AND HOOKS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" SECTION 801.
 4. PLACING OF REINFORCEMENT SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" SECTION 803.
 5. THE TRANSVERSE REINFORCING STEEL SHALL TERMINATE ONE AND ONE-HALF INCHES FROM THE CONCRETE SURFACES UNLESS OTHERWISE SHOWN ON THE STRUCTURAL DETAILS.
 6. EXPOSED EDGES OF CONCRETE MEMBERS SHALL BE ROUNDED OR BEVELED.
 7. NO SPLICES IN TRANSVERSE STEEL REINFORCEMENT WILL BE PERMITTED OTHER THAN SHOWN ON THE DRAWING WITHOUT APPROVAL OF THE ENGINEER. NO MORE THAN TWO SPLICES WILL BE PERMITTED IN ANY LONGITUDINAL BAR BETWEEN TRANSVERSE JOINTS. SPLICES SHALL BE STAGGERED.
 8. LONGITUDINAL STEEL SHALL BE LAPPED 30 BAR DIAMETERS AT SPLICES. TRANSVERSE STEEL SHALL BE LAPPED 30 BAR DIAMETERS AT SPLICES.
 9. LONGITUDINAL STEEL SHALL BE CONTINUOUS AND EXTEND THROUGH ALL CONSTRUCTION JOINTS.

MODIFIED CATCH BASIN NOTES:

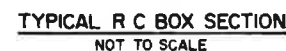
1. CATCH BASIN SIDEWALK CULVERTS AT STA. 19+40 AND STA. 23+62 SHALL HAVE 2 DIVIDER WALLS WITH EQUAL SPACES AS SHOWN ON SECTION B-B. CATCH BASIN SIDEWALK CULVERT AT STA. 34+67 SHALL HAVE 3 DIVIDER WALLS WITH EQUAL SPACES. CATCH BASIN SIDEWALK CULVERT AT STA. 31+20 SHALL HAVE 1 DIVIDER WALL WITH EQUAL SPACES.
2. ALL DETAILS OF CATCH BASINS SHALL BE AS SHOWN FOR CATCH BASIN No. 3 AS SHOWN ON STD. DWS. NO. 2-D103 EXCEPT AS MODIFIED HEREON.
3. UPSTREAM $V = CF + 12"$ DOWNSTREAM $V = 3'-3"$
4. A CLEARANCE OF 12" SHALL BE MAINTAINED BETWEEN THE CONNECTOR PIPE AND THE 24" GAS LINE.
5. EXISTING SIDEWALK CULVERTS SHALL BE REMOVED. REPLACE SIDEWALK PER L.A. CO. RD. DEPT. STD. PLAN 40-05. REPLACE CURB & OUTER BETWEEN EXIST. C. & G. AND LOCAL DEPRESSION PER L.A. CO. RD. DEPT. STD. PLAN 28-01.

PREPARED IN THE OFFICE OF
BOYLE ENGINEERING CORPORATION
 1501 QUAIL STREET
 P.O. BOX 3030
 NEWPORT BEACH, CALIFORNIA 92663
 714 / 752-0505
Philip E. Stone
 PHILIP E. STONE R.C.E. 17714
 PROJECT ENGINEER

REVISIONS		DESIGNED BY
NO.	DATE	DESCRIPTION

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
SHEILA STREET
 COMMERCE WAY TO WILMA AVENUE
 REINFORCED CONCRETE CONDUIT
 STRUCTURAL DETAILS AND
 STREET RESURFACING PLAN
 RECOMMENDED BY
Dr. Carson
 DIVISION ENGINEER (DR-44)
 DATE Feb. 83 SCALE A.B.
 NO. 581-D2.8
 SHEET 5 OF 10

"AS BUILT DRAWINGS"



1. DIMENSIONS FROM FACE OF CONCRETE TO STEEL ARE TO CENTER OF BAR, UNLESS OTHERWISE SHOWN.
2. CONCRETE DIMENSIONS SHALL BE MEASURED HORIZONTALLY OR VERTICALLY ON THE PROFILE, AND PARALLEL TO OR AT RIGHT ANGLES (OR RADIAL) TO CENTERLINE OF CONDUIT ON THE PLAN EXCEPT AS OTHERWISE SHOWN.
3. ALL BAR BENDS AND HOOKS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", 1971 EDITION, SECTION 7-1.
4. PLACING OF REINFORCEMENT SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", 1971 EDITION, SECTION 7-3.
5. TRANSVERSE CONSTRUCTION JOINTS SHALL NOT BE PLACED WITHIN 30 INCHES OF MANHOLE OR JUNCTION STRUCTURE OPENINGS.
6. TRANSVERSE CONSTRUCTION JOINTS IN WALLS AND SLABS SHALL BE IN THE SAME PLANE. NO STAGGERED JOINTS WILL BE PERMITTED. TRANSVERSE CONSTRUCTION JOINTS SHALL BE NORMAL OR RADIAL TO THE CENTERLINE OF CONSTRUCTION.
7. THE TRANSVERSE REINFORCING STEEL SHALL TERMINATE ONE AND ONE-HALF INCHES FROM THE CONCRETE SURFACES UNLESS OTHERWISE SHOWN ON THE STRUCTURAL DETAILS.
8. EXPOSED EDGES OF CONCRETE MEMBERS SHALL BE ROUNDED OR BEVELED.
9. NO SPLICES IN TRANSVERSE STEEL REINFORCEMENT WILL BE PERMITTED OTHER THAN SHOWN ON THE DRAWING WITHOUT APPROVAL OF THE ENGINEER. NO MORE THAN TWO SPLICES WILL BE PERMITTED IN ANY LONGITUDINAL BAR BETWEEN TRANSVERSE JOINTS. SPLICES SHALL BE STAGGERED.
10. LONGITUDINAL STEEL SHALL BE LAPPED 20 BAR DIAMETERS AT SPLICES. TRANSVERSE STEEL SHALL BE LAPPED 30 BAR DIAMETERS AT SPLICES.
11. LONGITUDINAL STEEL SHALL BE CONTINUOUS AND EXTEND THROUGH ALL CONSTRUCTION JOINTS.
12. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, TRANSVERSE CONSTRUCTION JOINTS (IN SLABS AND WALLS), SHALL BE PLACED AT THE END OF EACH POUR, BUT THE SPACING OF JOINTS SHALL NOT EXCEED 50 FEET OR BE LESS THAN 10 FEET.
13. UNLESS OTHERWISE SHOWN ON THE DETAILS, IN CURVED SECTIONS TRANSVERSE BARS SHALL BE PLACED RADIALLY. THE SPACING OF STRAIGHT TRANSVERSE BARS IN TOP AND BOTTOM SLABS SHALL BE MEASURED AT THE CENTERLINE OF CONSTRUCTION. THE SPACING OF STRAIGHT BARS AND L-BARS IN WALLS SHALL BE MEASURED BETWEEN THE VERTICAL LEGS OF BARS.
14. AT THE BEGINNING AND ENDING OF ALL POURS, A CERTAIN OF REINFORCEMENT COMPOSED OF P, C, C2, D, F, G, AND H BARS SHALL BE PLACED THREE INCHES FROM THE TRANSVERSE CONSTRUCTION JOINT.
15. D-BARS MAY BE SPLICED 20 BAR DIAMETERS AT THE LOWER LONGITUDINAL CONSTRUCTION JOINT, AT CONTRACTOR'S OPTION.
16. IN ALL SECTIONS LAP C AND C2 BARS. THE VERTICAL LENGTH OF C AND C2 HAS BEEN CALCULATED FOR A FOUR INCH STARTER WALL. IF THE HEIGHT OF THE STARTER WALL IS VARYED, THE VERTICAL LENGTH OF THE C AND C2 BARS SHALL BE VARYED PROPORTIONATELY SO AS TO MAINTAIN A 30 DIAMETER LAP BETWEEN THE TWO POURS. THE LAPS SHALL BE PLACED IN THE SMALLER BAR.
17. CONCRETE DIMENSIONS SHALL BE AS SHOWN ON THE DRAWINGS. THE STEEL DIMENSIONS DO NOT INCLUDE ANY OPTIONAL SPLICES.
18. IF WALL THICKNESS IS SIX INCHES, PLACE REINFORCEMENT AT THE CENTERLINE OF THE WALL.
19. THE DESIGN OF BOX SECTIONS IDENTIFIED BY A NUMERICAL VALUE ONLY IS BASED ON A WIDTH OF TRENCH EQUAL TO THE OUTSIDE WIDTH OF THE CONDUIT PLUS 3 FEET. WHEN THE COVER IS EQUAL TO 10 FEET OR LESS THE TRENCH WIDTH IS UNRESTRICTED. WHEN THE COVER IS GREATER THAN 10 FEET AND THE TRENCH WIDTH IS GREATER THAN THE OUTSIDE WIDTH OF THE CONDUIT PLUS 3 FEET FOR A DISTANCE IN EXCESS OF 10 FEET AN ALTERNATE SECTION SHALL BE USED AS INDICATED BELOW:
 - A. WHEN THE DEPTH OF COVER IS LESS THAN 18 FEET SECTIONS WITH THE SUFFIX "A" SHALL BE USED.
 - B. WHEN THE DEPTH OF COVER IS GREATER THAN 18 FEET AND:
 1. THE TRENCH WIDTH IS LESS THAN THE OUTSIDE WIDTH OF CONDUIT PLUS 6 FEET, SECTIONS WITH SUFFIX "A" SHALL BE USED.
 2. THE TRENCH WIDTH IS GREATER THAN THE OUTSIDE WIDTH OF CONDUIT PLUS 6 FEET SECTIONS WITH THE SUFFIX "B" SHALL BE USED.

[illegible]

LIVE LOAD
H2O-Si6-44 unless otherwise noted

DEAD LOAD

Earth load per Marston's formula: $w = 120 p \text{ c f}$
 $K_u = K_u' \cdot 0.150$
 $B_d = \text{Outside width of box plus 3 feet}$
Side earth 40 p sf per foot of depth
Internal water pressure: 62.4 p pf per foot of depth
Weight of concrete: 150 p c f

ALLOWABLE STRESSES

$f_c' = 4000 \text{ psi}$ at 7 days
 $f_c = 1800 \text{ psi}$
 $f_s = 24,000 \text{ psi}$
 $n = 8$
Shear and bond stresses per A.C.I. 318-63

[illegible]

P0019657

REVISIONS			DESIGNED BY
NO.	DATE	DESCRIPTION	
			<u>Consultant</u>
			CHECKED BY
			<u>Consultant</u>
			DRAWN BY
			<u>Consultant</u>
			PROJECT ENGINEER
			<u>R. Haghighi</u>

PREPARED IN THE OFFICE OF
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NEWPORT BEACH CALIFORNIA 92663
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Philip E. Stone
PHILIP E. STONE R.C.E. 17714
PROJECT ENGINEER

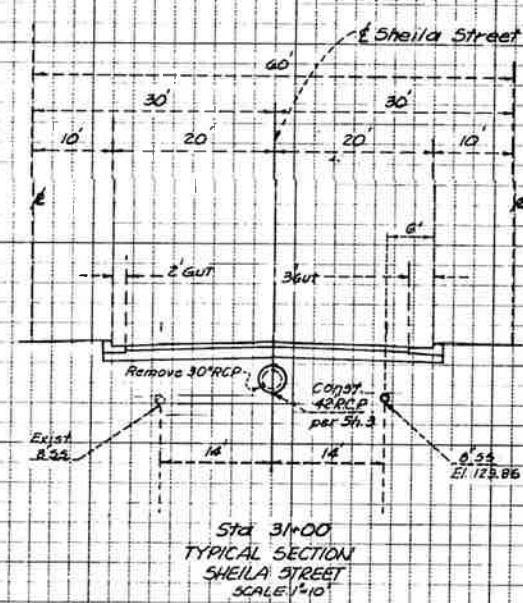
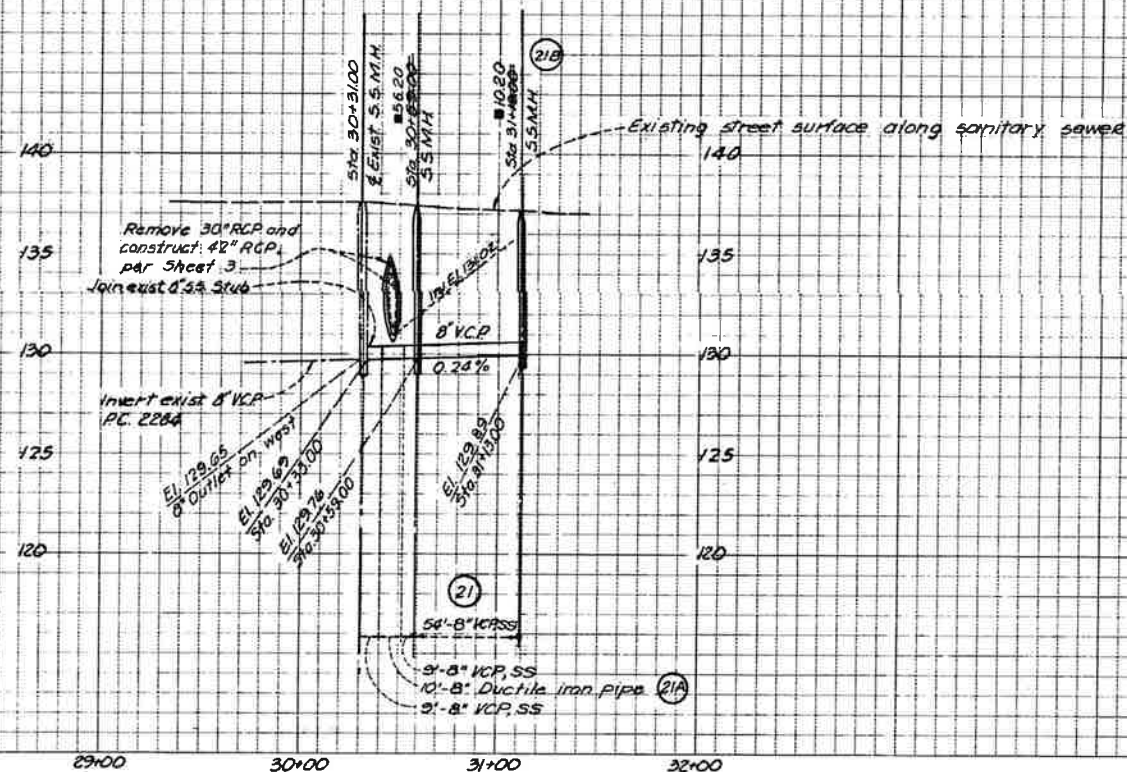
LOS ANGELES COUNTY, FLOOD CONTROL DISTRICT

SHEILA STREET DRAIN
COMMERCE WAY TO WILMA AVENUE
REINFORCED CONCRETE CONDUIT
SINGLE R C BOX
STRUCTURAL SCHEDULE, NOTES AND DETAILS

DATE: Feb 83	SCALE: A.S.
NO. 581-D2.9	
SHEET 2 OF 10	

"AS BUILT DRAWINGS"

PROFILE
 SCALES: HOR. 1" = 40'
 VERT. 1" = 4'



GENERAL NOTES

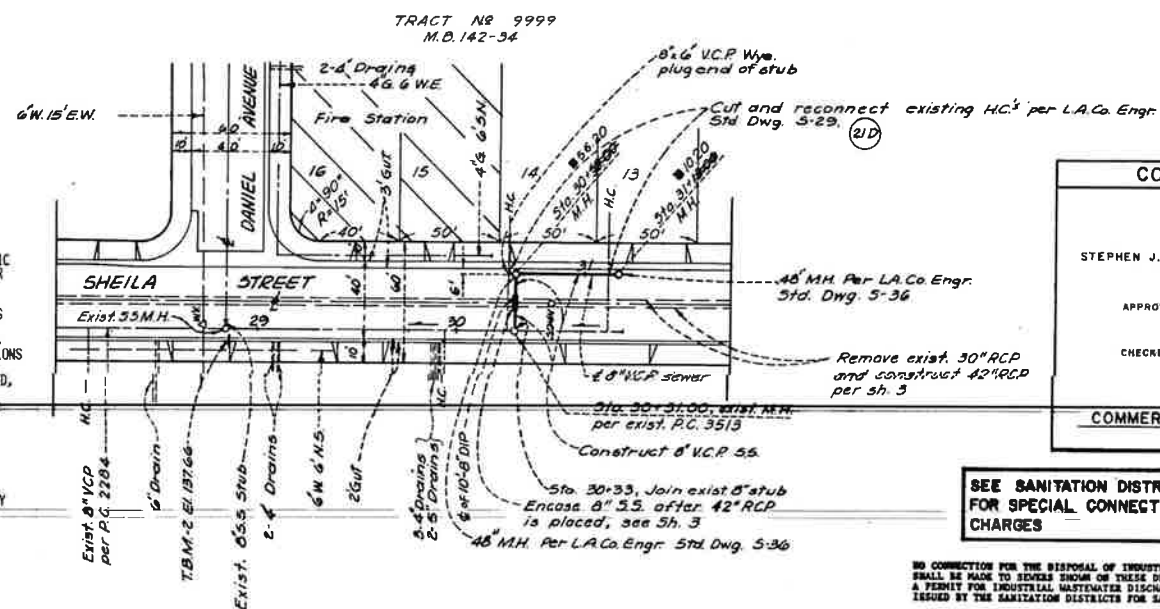
1. NO REVISIONS SHALL BE MADE IN THESE PLANS WITHOUT THE APPROVAL OF THE CITY ENGINEER.
2. NO REPRESENTATIVE OF THE CITY ENGINEER WILL SURVEY OR LAY OUT ANY PORTION OF THE SEWER WORK.
3. APPROVAL OF THIS PLAN BY THE CITY ENGINEER DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OF THE LOCATION OF OR THE EXISTENCE OR NON-EXISTENCE OF ANY UNDERGROUND UTILITY PIPE, OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. THIS NOTE APPLIES TO THIS SHEET ONLY.
4. PRIOR TO THE ISSUANCE OF THE REQUIRED SEWER CONSTRUCTION PERMIT, THE CONTRACTOR SHALL OBTAIN AND FILE WITH THE COUNTY ENGINEER COPIES OF A PERMIT TO EXCAVATE IN CITY STREETS FROM THE LOS ANGELES COUNTY ROAD DEPARTMENT.

SEWER SERVICE TO BE MAINTAINED AT ALL TIMES

Note:
 Sewer stationing per L.A. Co. Engr. Dwg. PC 2284

CONSTRUCTION NOTES

1. WORK SHALL BE CONSTRUCTED ACCORDING TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (1982 EDITION) AND COUNTY ENGINEER SPECIAL PROVISIONS FOR THE CONSTRUCTION OF SANITARY SEWERS DATED SEPTEMBER 21, 1976, AND SHALL BE PROSECUTED ONLY IN THE PRESENCE OF THE CITY ENGINEER.
2. WYE TO TEE BRANCHES MAY BE USED FOR CONNECTIONS TO MAINLINE SEWERS EXCEPT AS NOTED.
3. ALL STRUCTURES SHALL BE PRECAST CONCRETE MANHOLES PER S-36, EXCEPT AS NOTED. VITRIFIED CLAY PIPE JOINTS SHALL BE TYPE "D" OR "B" PER STANDARD SPECIFICATIONS SECTION 208-2.
4. IF A POWER POLE IS WITHIN THREE FEET OF THE SEWER, THE SEWER SHALL BE ENCASED, PER S-23, CASE 11, TWO FEET ON EACH SIDE FROM THE POINT OF INTERFERENCE.
5. ALL JOINTS BETWEEN CAST IRON PIPE AND VITRIFIED CLAY PIPE SHALL BE MADE WITH A RUBBER SLEEVE JOINT, TYPE "A" OR "D" (WITH BRUSHING IF NECESSARY) PER STANDARD SPECIFICATIONS, SECTION 208-2.
6. SEWERS TO BE TESTED FOR LEAKAGE PER SECTION 306-1.4 OF THE STANDARD SPECIFICATIONS AND COUNTY ENGINEER SPECIAL PROVISIONS.
7. FULL COMPLIANCE WITH SECTION 306-1.5.5 OF THE COUNTY ENGINEER SPECIAL PROVISIONS WILL BE REQUIRED FOR BACKFILL IN STREETS. CERTIFICATION OF BACKFILL COMPACTION AND SAND EQUIVALENTS BY A QUALIFIED, REGISTERED TESTING LABORATORY SHALL BE PROVIDED BY THE PERMITTEE PRIOR TO THE ISSUANCE OF A CERTIFICATE OF PARTIAL ACCEPTANCE.



BENCH MARK

LOS ANGELES COUNTY ENGINEER DATUM NO. BMSD 3170
 BOAT SPIKE 1 FOOT WEST OF THE WEST BEGINNING CURB RETURN
 AT THE NORTHWEST CORNER OF WASHINGTON BOULEVARD AND COMMERCE WAY.
 ELEVATION 137.87
 1962 ADJUSTMENT

COMMERCE PRIVATE CONTRACT NO. 83-1

CITY OF COMMERCE
 COUNTY OF LOS ANGELES, CALIFORNIA

STEPHEN J. KOONCE, CITY ENGINEER WALTER E. GARRISON, CHIEF ENGINEER

APPROVED *George D. Smith* (DATE) 9/26/85 APPROVED *Ray Hagan* (DATE) 9/26/85

CHECKED *Ralph David* (DATE) 9/26/85

AFB C.E. NO. 1683

COMMERCE BLDG. DIST. 6.01

SEE SANITATION DISTRICT
 FOR SPECIAL CONNECTION
 CHARGES

NO CONNECTION FOR THE DISPOSAL OF INDUSTRIAL WASTES
 SHALL BE MADE TO SEWERS SHOWN ON THESE DRAWINGS UNTIL
 A PERMIT FOR INDUSTRIAL WASTEWATER DISCHARGE HAS BEEN
 ISSUED BY THE SANITATION DISTRICTS FOR SAID CONNECTION.

BEFORE BREAKING INTO OR CONSTRUCTION ON A COUNTY
 SANITATION DISTRICT SEWERAGE PRIOR TO FINAL
 ACCEPTANCE OF THE PROJECT, SANITATION DISTRICT
 INSPECTOR SHALL BE NOTIFIED BY PHONE - 942-6886,
 638-1161 SO THAT REQUIRED INSPECTION CAN BE MADE.

REVISIONS

NO.	DATE	DESCRIPTION
1	9/26/85	"AS BUILT"

DESIGNED BY

Consultant

CHECKED BY

Consultant

DRAWN BY

Consultant

PROJECT ENGINEER

R. Hashima

PREPARED IN THE OFFICE OF

BOYLE ENGINEERING CORPORATION

1501 QUAIL STREET
 P.O. BOX 3030
 NEWPORT BEACH, CALIFORNIA 92663
 714/752-0505

Philip E. Stone
 PHILIP E. STONE R.C.E. 17714
 PROJECT ENGINEER

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

SHEILA STREET DRAIN
 COMMERCE WAY TO WILMA AVENUE
 REINFORCED CONCRETE CONDUIT
 PLAN AND PROFILE

SANITARY SEWER CONSTRUCTION

RECOMMENDED BY *McGowan*
 DATE OCT. 85 SCALE A.S.
 NO. 581-D2.10
 SHEET 10 OF 10

"AS BUILT DRAWINGS"

APPENDIX B

HYDROLOGY CALCULATIONS

Peak Flow Hydrologic Analysis

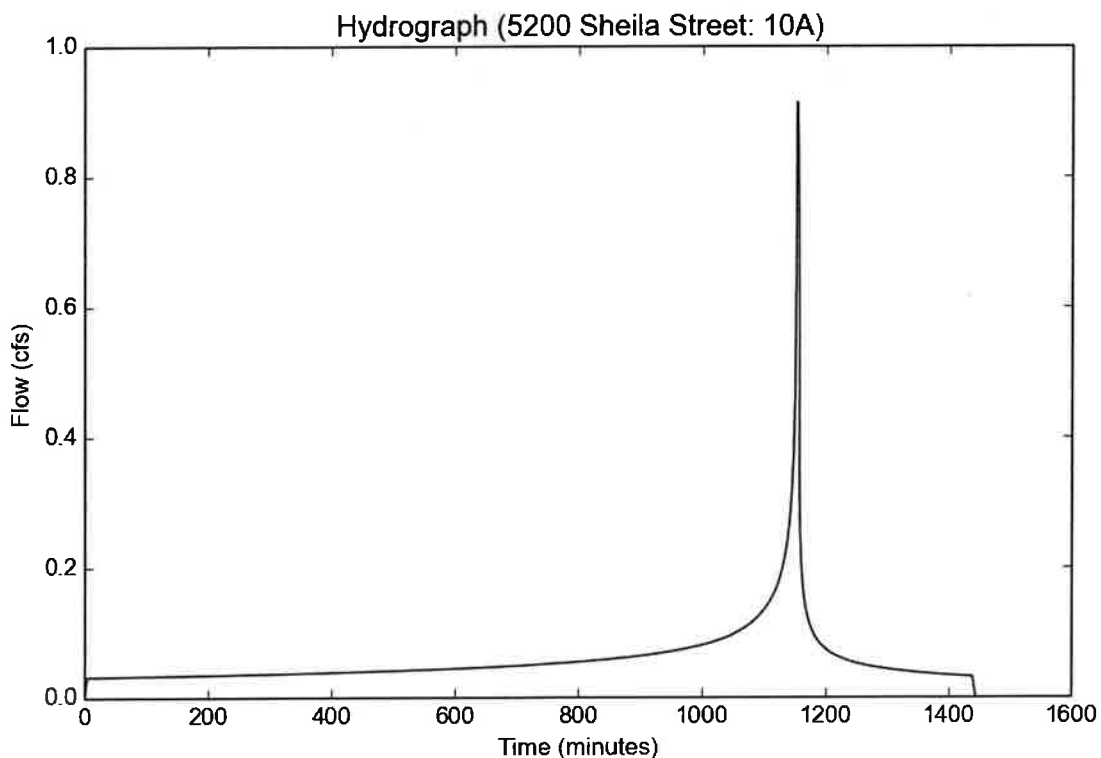
File location: O:/3800-3899/3827/HYDROLOGY/HYDROCALC/5200 Sheila Street Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	5200 Sheila Street
Subarea ID	10A
Area (ac)	0.3
Flow Path Length (ft)	160.0
Flow Path Slope (vft/hft)	0.006
50-yr Rainfall Depth (in)	5.7
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)	5.7
Peak Intensity (in/hr)	3.4008
Undeveloped Runoff Coefficient (Cu)	0.8504
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	0.9132
Burned Peak Flow Rate (cfs)	0.9132
24-Hr Clear Runoff Volume (ac-ft)	0.1174
24-Hr Clear Runoff Volume (cu-ft)	5115.5755



Peak Flow Hydrologic Analysis

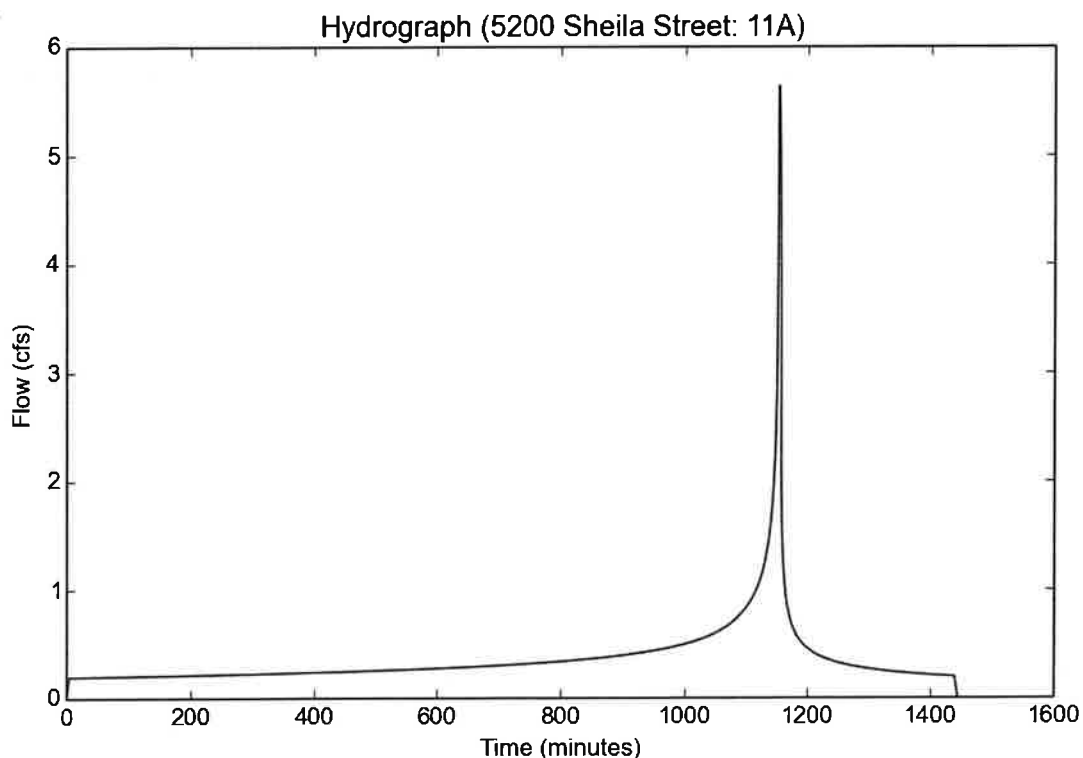
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	5200 Sheila Street
Subarea ID	11A
Area (ac)	1.85
Flow Path Length (ft)	204.0
Flow Path Slope (vft/hft)	0.011
50-yr Rainfall Depth (in)	5.7
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)	5.7
Peak Intensity (in/hr)	3.4008
Undeveloped Runoff Coefficient (Cu)	0.8504
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	5.6311
Burned Peak Flow Rate (cfs)	5.6311
24-Hr Clear Runoff Volume (ac-ft)	0.7242
24-Hr Clear Runoff Volume (cu-ft)	31546.0487



Peak Flow Hydrologic Analysis

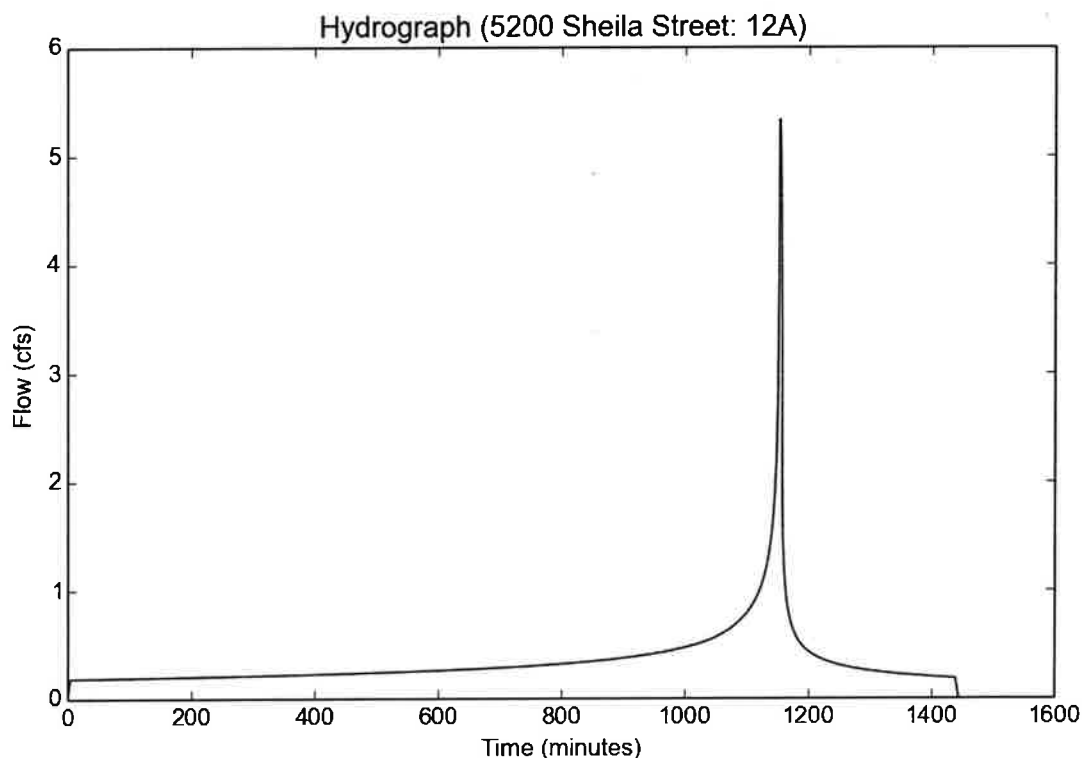
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	5200 Sheila Street
Subarea ID	12A
Area (ac)	1.75
Flow Path Length (ft)	202.0
Flow Path Slope (vft/hft)	0.0043
50-yr Rainfall Depth (in)	5.7
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)	5.7
Peak Intensity (in/hr)	3.4008
Undeveloped Runoff Coefficient (Cu)	0.8504
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	5.3267
Burned Peak Flow Rate (cfs)	5.3267
24-Hr Clear Runoff Volume (ac-ft)	0.6851
24-Hr Clear Runoff Volume (cu-ft)	29840.8568



Peak Flow Hydrologic Analysis

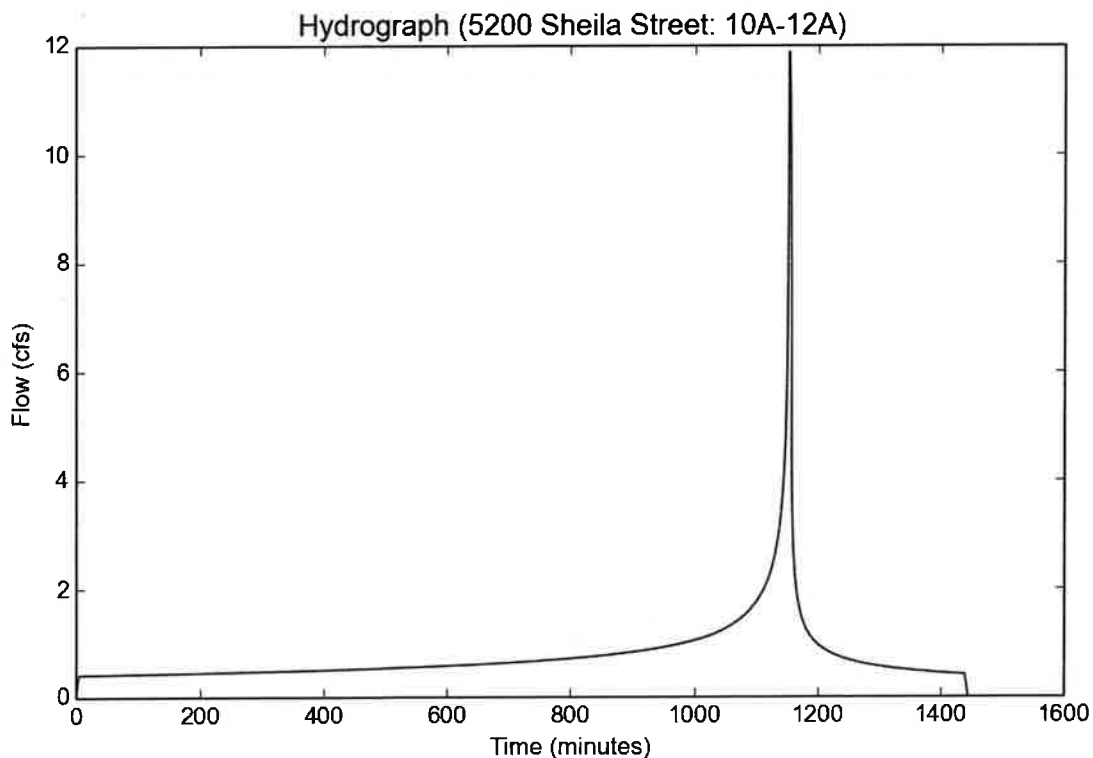
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	5200 Sheila Street
Subarea ID	10A-12A
Area (ac)	3.9
Flow Path Length (ft)	202.0
Flow Path Slope (vft/hft)	0.0043
50-yr Rainfall Depth (in)	5.7
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)	5.7
Peak Intensity (in/hr)	3.4008
Undeveloped Runoff Coefficient (Cu)	0.8504
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	11.871
Burned Peak Flow Rate (cfs)	11.871
24-Hr Clear Runoff Volume (ac-ft)	1.5267
24-Hr Clear Runoff Volume (cu-ft)	66502.481



Peak Flow Hydrologic Analysis

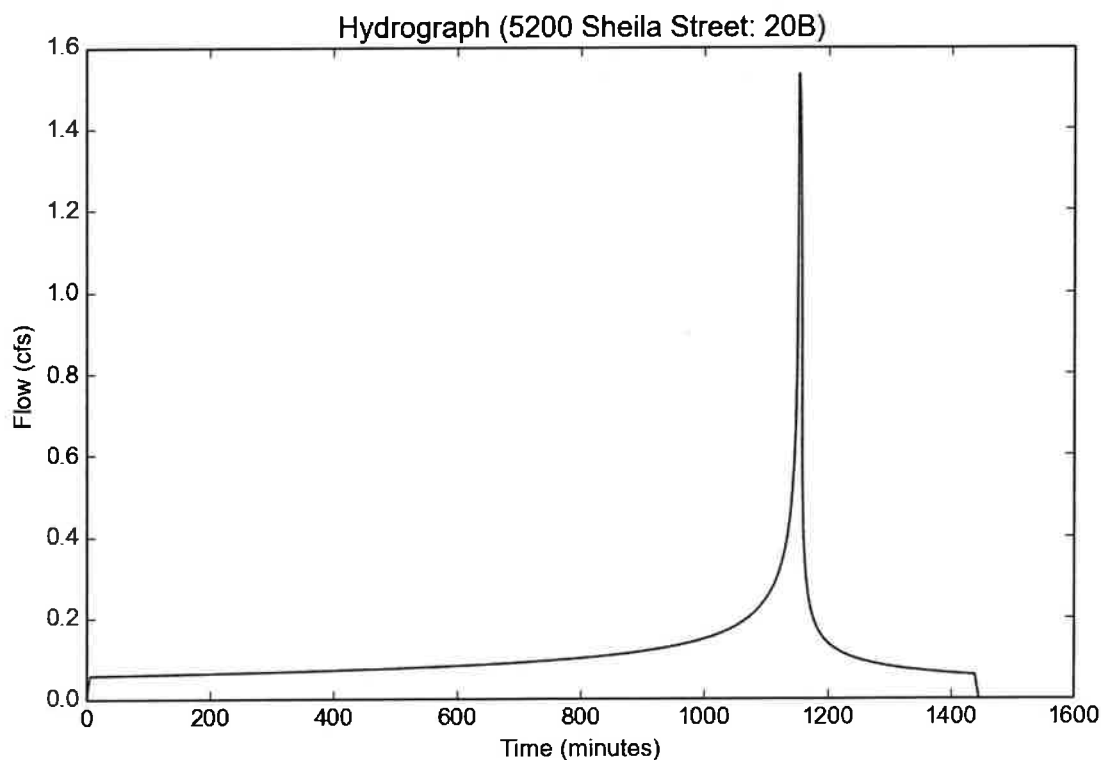
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	5200 Sheila Street
Subarea ID	20B
Area (ac)	0.55
Flow Path Length (ft)	323.0
Flow Path Slope (vft/hft)	0.0071
50-yr Rainfall Depth (in)	5.7
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)	5.7
Peak Intensity (in/hr)	3.1215
Undeveloped Runoff Coefficient (Cu)	0.8308
Developed Runoff Coefficient (Cd)	0.8931
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	1.5333
Burned Peak Flow Rate (cfs)	1.5333
24-Hr Clear Runoff Volume (ac-ft)	0.2153
24-Hr Clear Runoff Volume (cu-ft)	9378.1762



Peak Flow Hydrologic Analysis

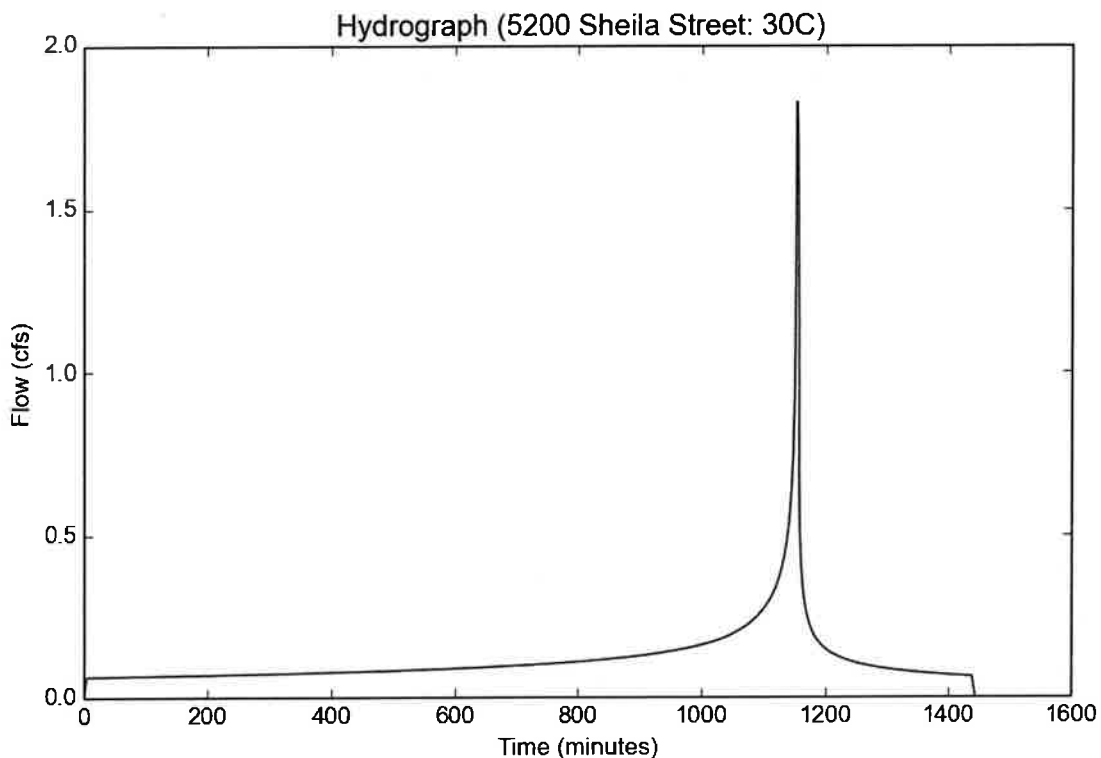
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	5200 Sheila Street
Subarea ID	30C
Area (ac)	0.6
Flow Path Length (ft)	137.0
Flow Path Slope (vft/hft)	0.022
50-yr Rainfall Depth (in)	5.7
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)	5.7
Peak Intensity (in/hr)	3.4008
Undeveloped Runoff Coefficient (Cu)	0.8504
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.8263
Burned Peak Flow Rate (cfs)	1.8263
24-Hr Clear Runoff Volume (ac-ft)	0.2349
24-Hr Clear Runoff Volume (cu-ft)	10231.1509



Peak Flow Hydrologic Analysis

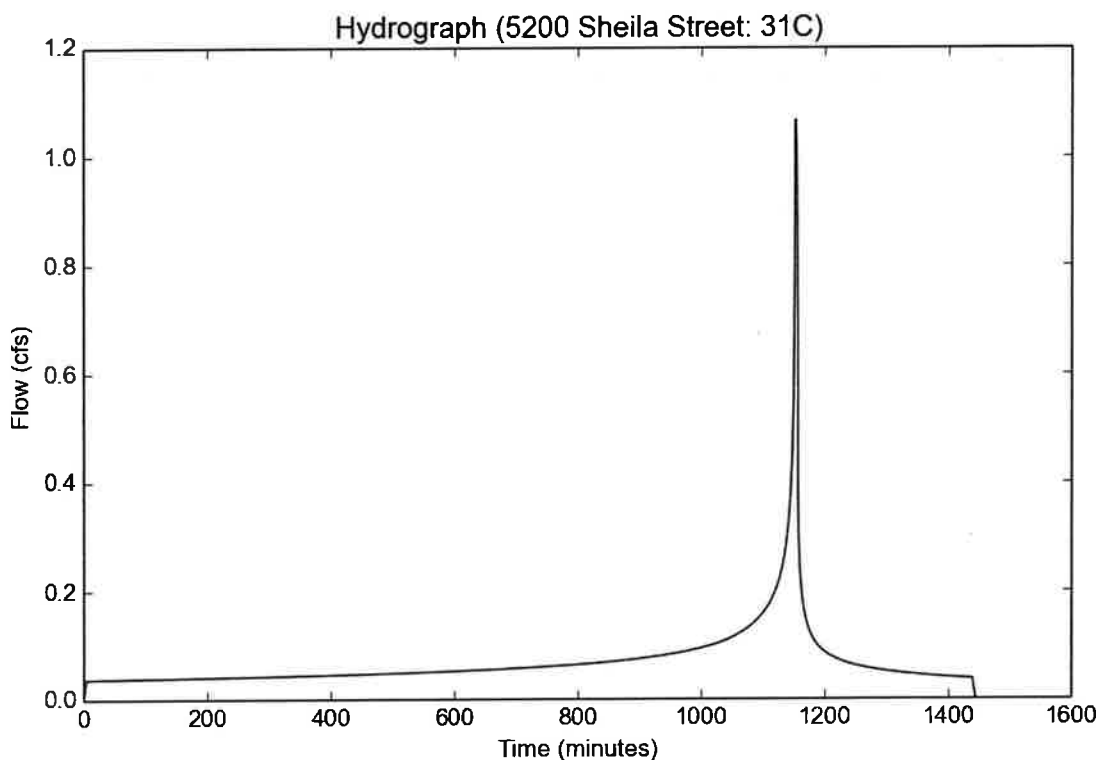
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	5200 Sheila Street
Subarea ID	31C
Area (ac)	0.35
Flow Path Length (ft)	110.0
Flow Path Slope (vft/hft)	0.032
50-yr Rainfall Depth (in)	5.7
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)	5.7
Peak Intensity (in/hr)	3.4008
Undeveloped Runoff Coefficient (Cu)	0.8504
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.0653
Burned Peak Flow Rate (cfs)	1.0653
24-Hr Clear Runoff Volume (ac-ft)	0.137
24-Hr Clear Runoff Volume (cu-ft)	5968.1714



Peak Flow Hydrologic Analysis

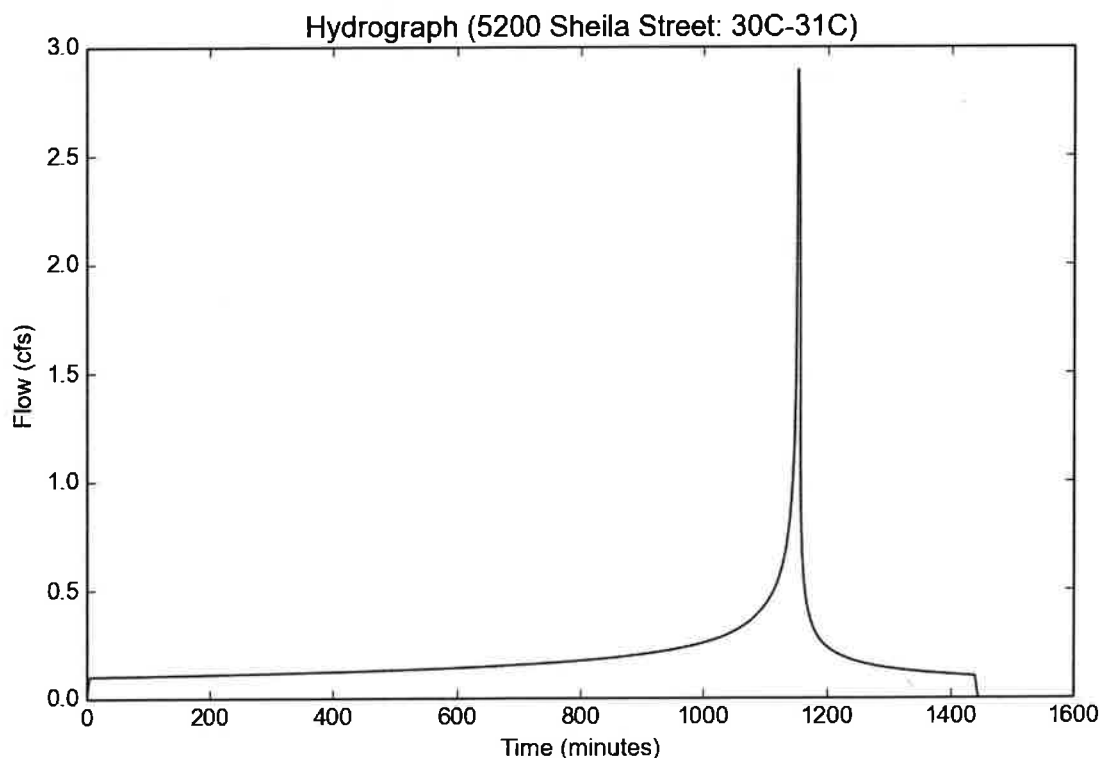
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	5200 Sheila Street
Subarea ID	30C-31C
Area (ac)	0.95
Flow Path Length (ft)	137.0
Flow Path Slope (vft/hft)	0.022
50-yr Rainfall Depth (in)	5.7
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)	5.7
Peak Intensity (in/hr)	3.4008
Undeveloped Runoff Coefficient (Cu)	0.8504
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.8916
Burned Peak Flow Rate (cfs)	2.8916
24-Hr Clear Runoff Volume (ac-ft)	0.3719
24-Hr Clear Runoff Volume (cu-ft)	16199.3223



Peak Flow Hydrologic Analysis

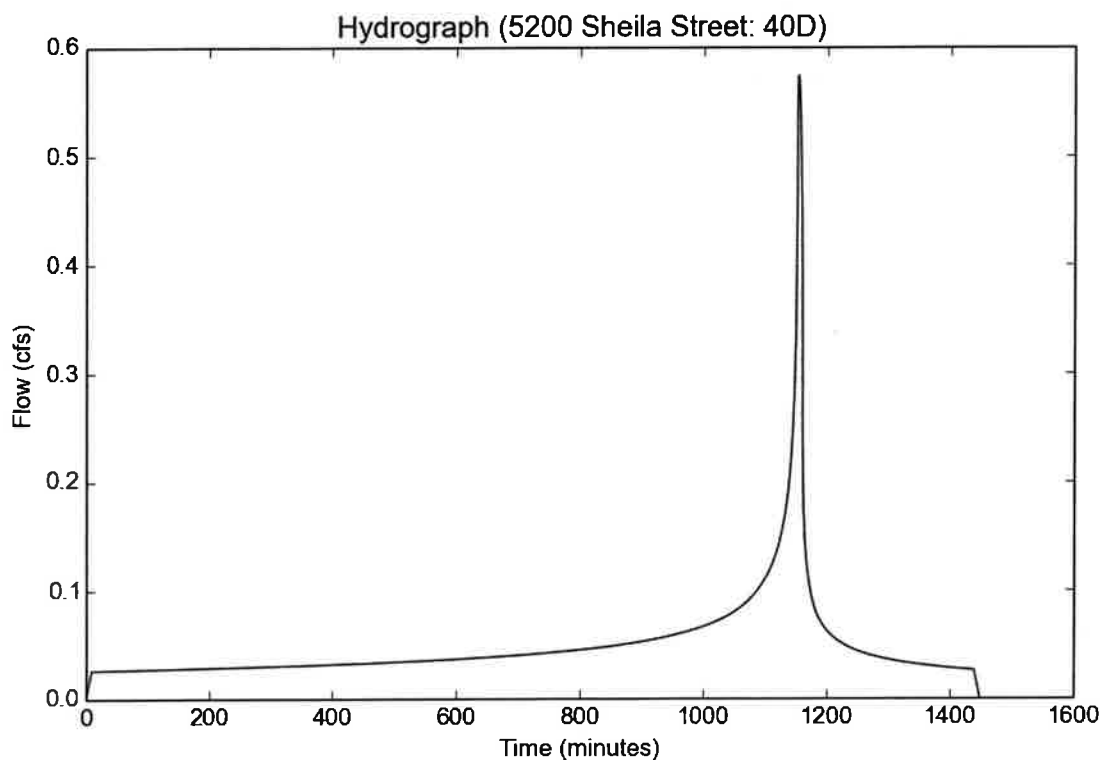
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Version: HydroCalc 1.0.3

Input Parameters

Project Name	5200 Sheila Street
Subarea ID	40D
Area (ac)	0.25
Flow Path Length (ft)	429.0
Flow Path Slope (vft/hft)	0.0013
50-yr Rainfall Depth (in)	5.7
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)	5.7
Peak Intensity (in/hr)	2.5799
Undeveloped Runoff Coefficient (Cu)	0.7928
Developed Runoff Coefficient (Cd)	0.8893
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	0.5736
Burned Peak Flow Rate (cfs)	0.5736
24-Hr Clear Runoff Volume (ac-ft)	0.0979
24-Hr Clear Runoff Volume (cu-ft)	4262.4404



Peak Flow Hydrologic Analysis

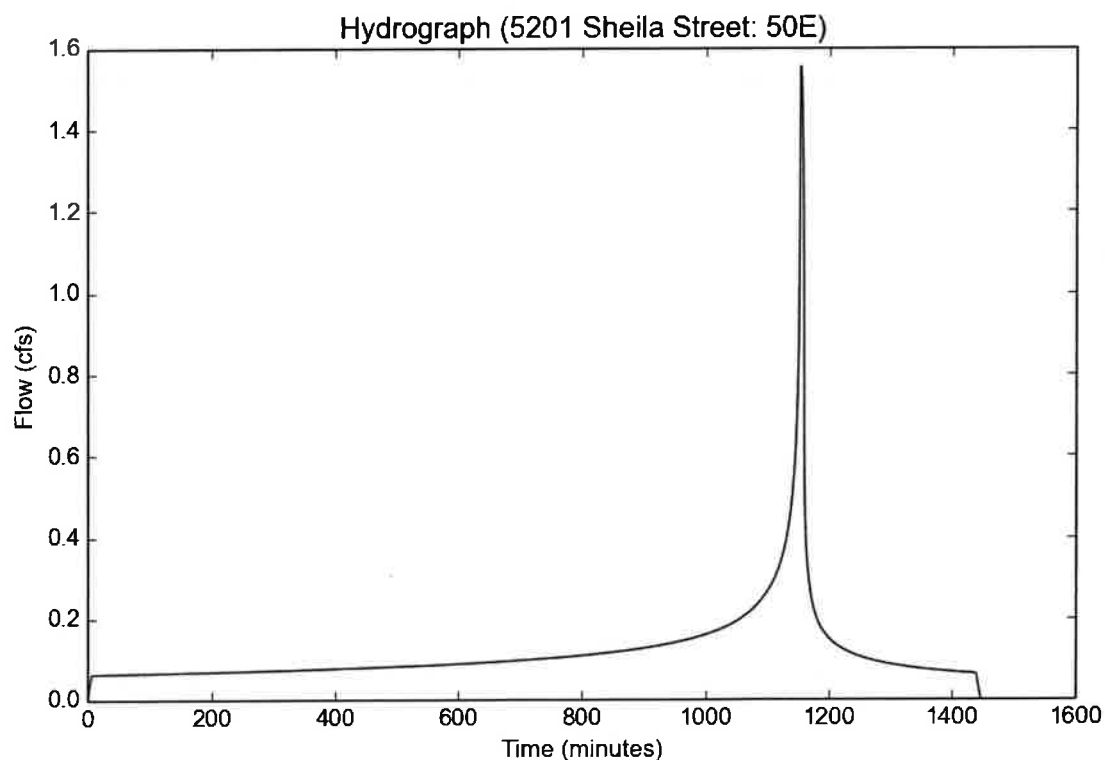
File location: O:/3800-3899/3827/HYDROLOGY/HYDROCALC/5200 Sheila Street Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	5201 Sheila Street
Subarea ID	50E
Area (ac)	0.6
Flow Path Length (ft)	379.0
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	5.7
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)	5.7
Peak Intensity (in/hr)	2.9033
Undeveloped Runoff Coefficient (Cu)	0.8155
Developed Runoff Coefficient (Cd)	0.8915
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	1.5531
Burned Peak Flow Rate (cfs)	1.5531
24-Hr Clear Runoff Volume (ac-ft)	0.2349
24-Hr Clear Runoff Volume (cu-ft)	10230.4052



APPENDIX C

DETENTION CALCULATIONS

TEI JOB #3827
SOUTHERLY TRUCKYARD

Elevation	Depth (feet)	Area (sq. ft.)	Volume (c.f.)	Σ .Volume (c.f.)	Σ Volume (ac-ft)
144.94	0.00	33			
			747	747	0.02
145.20	0.26	5712			
			2207	2953	0.07
145.40	0.46	16354			
			4515	7468	0.17
145.6	0.66	28793			

Peak Flow Hydrologic Analysis

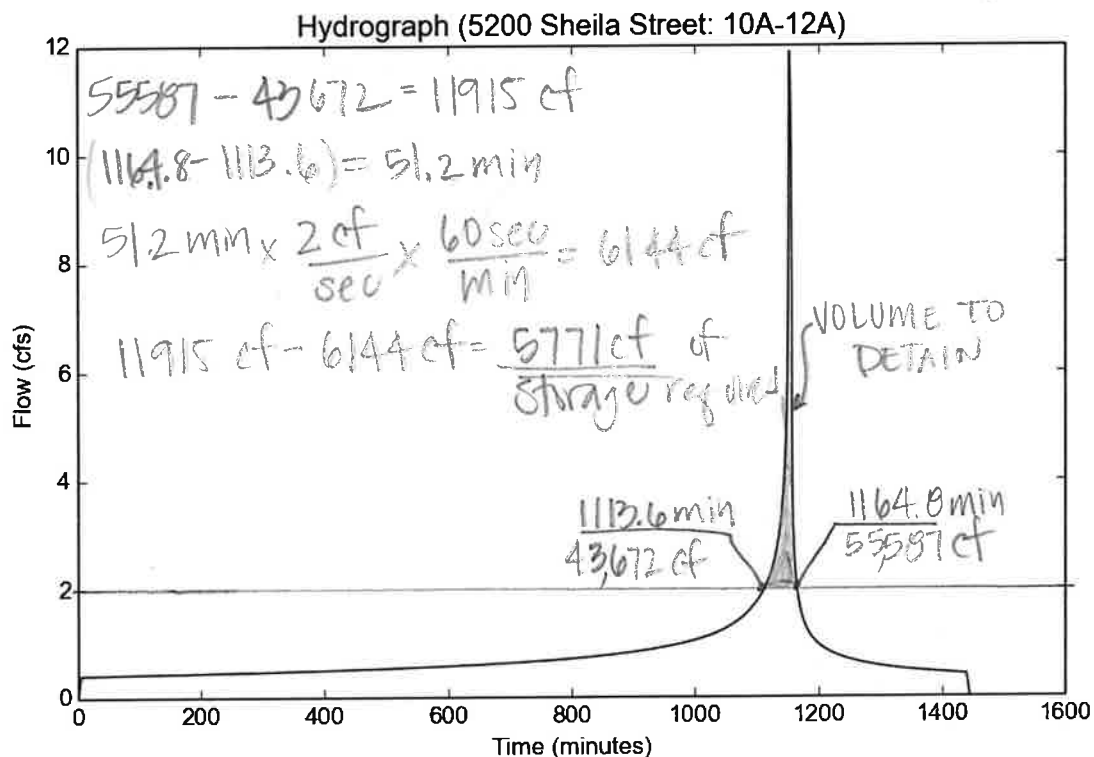
File location: O:/3800-3899/3827/HYDROLOGY/HYDROCALC/5200 Sheila Street Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	5200 Sheila Street
Subarea ID	10A-12A
Area (ac)	3.9
Flow Path Length (ft)	202.0
Flow Path Slope (vft/hft)	0.0043
50-yr Rainfall Depth (in)	5.7
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)	5.7
Peak Intensity (in/hr)	3.4008
Undeveloped Runoff Coefficient (Cu)	0.8504
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	11.871
Burned Peak Flow Rate (cfs)	11.871
24-Hr Clear Runoff Volume (ac-ft)	1.5267
24-Hr Clear Runoff Volume (cu-ft)	66502.481



Peak Flow Hydrologic Analysis

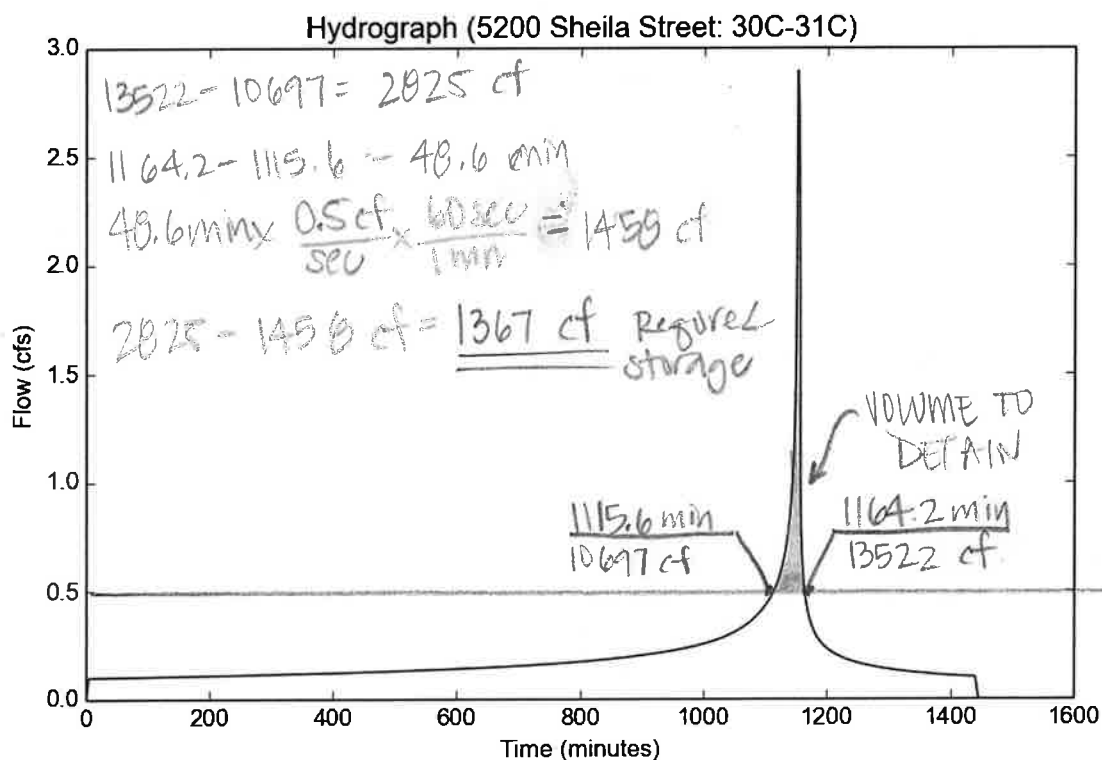
File location: O:/3800-3899/3827/HYDROLOGY/HYDROCALC/5200 Sheila Street Report.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	5200 Sheila Street
Subarea ID	30C-31C
Area (ac)	0.95
Flow Path Length (ft)	137.0
Flow Path Slope (vft/hft)	0.022
50-yr Rainfall Depth (in)	5.7
Percent Impervious	0.9
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

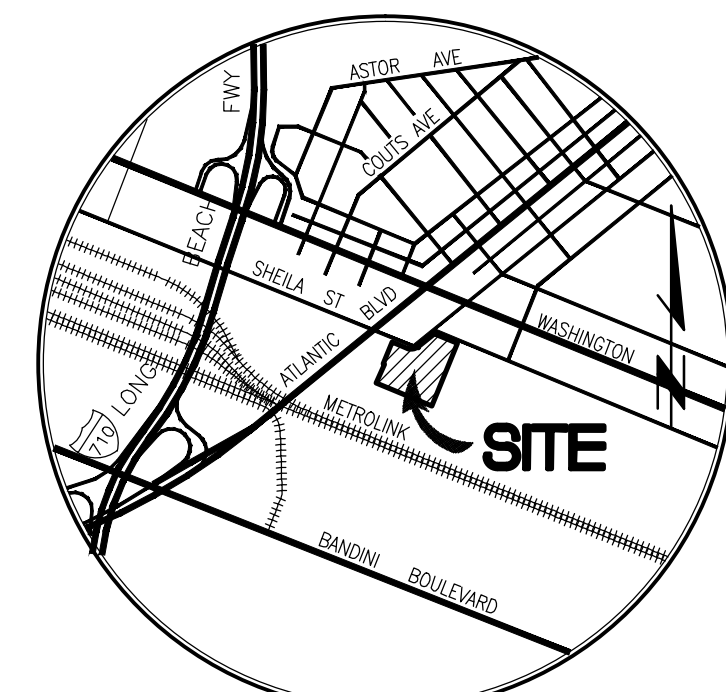
Output Results

Modeled (50-yr) Rainfall Depth (in)	5.7
Peak Intensity (in/hr)	3.4008
Undeveloped Runoff Coefficient (Cu)	0.8504
Developed Runoff Coefficient (Cd)	0.895
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.8916
Burned Peak Flow Rate (cfs)	2.8916
24-Hr Clear Runoff Volume (ac-ft)	0.3719
24-Hr Clear Runoff Volume (cu-ft)	16199.3223

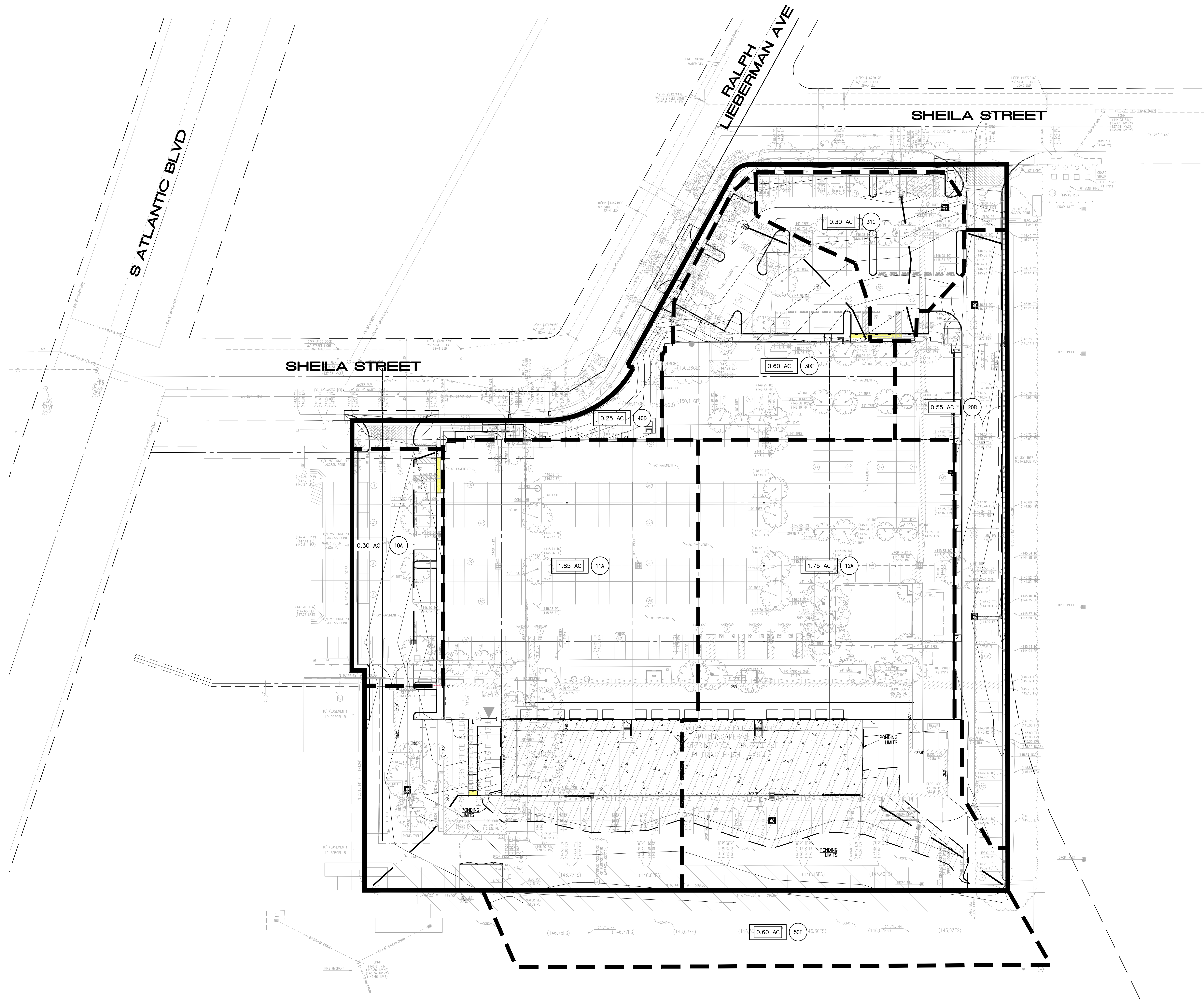


APPENDIX D

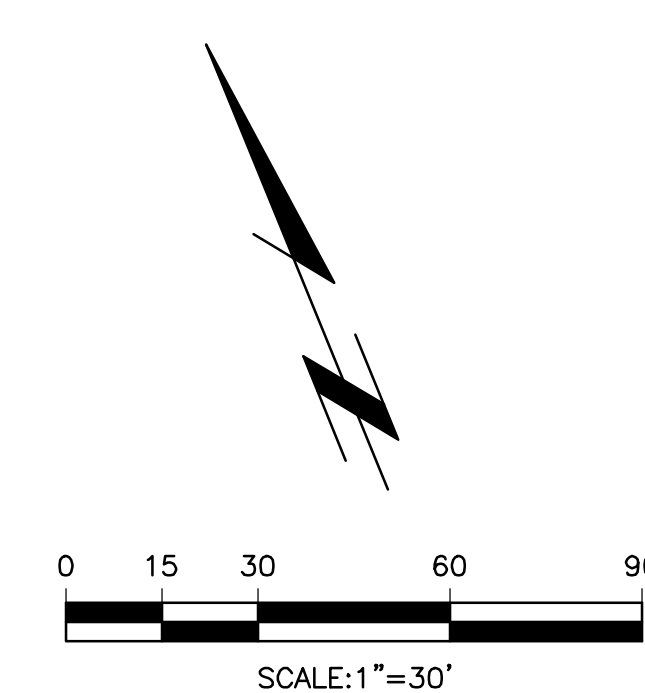
HYDROLOGY MAP



VICINITY MAP
N.T.S.



LEGEND	
	PROJECT BOUNDARY
	SUBAREA BOUNDARY
	FLOW PATH
	SUBAREA AREA
	FLOW DIRECTION
	PONDING LIMITS



Last Update: 10/25/19
0:\3800-3899\3827\3827HYD.dwg

CITY OF COMMERCE
PUBLIC WORKS DEPARTMENT
PROPOSED HYDROLOGY MAP
COMMERCE LOGISTICS CENTER
5200 SHEILA STREET

PREPARED FOR:

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CIVIL ENGINEERING • LAND SURVEYING
14145 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
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Designed by _____	Approved by _____	Date _____
Checked by _____		
Date _____		
Designed by _____	Public Works Director _____	R.C.E. XXXXX
Date _____		
Checked by _____		
Date _____		
Sheet 1 of 1 Sheets		3827/1 OF 1 SHEET