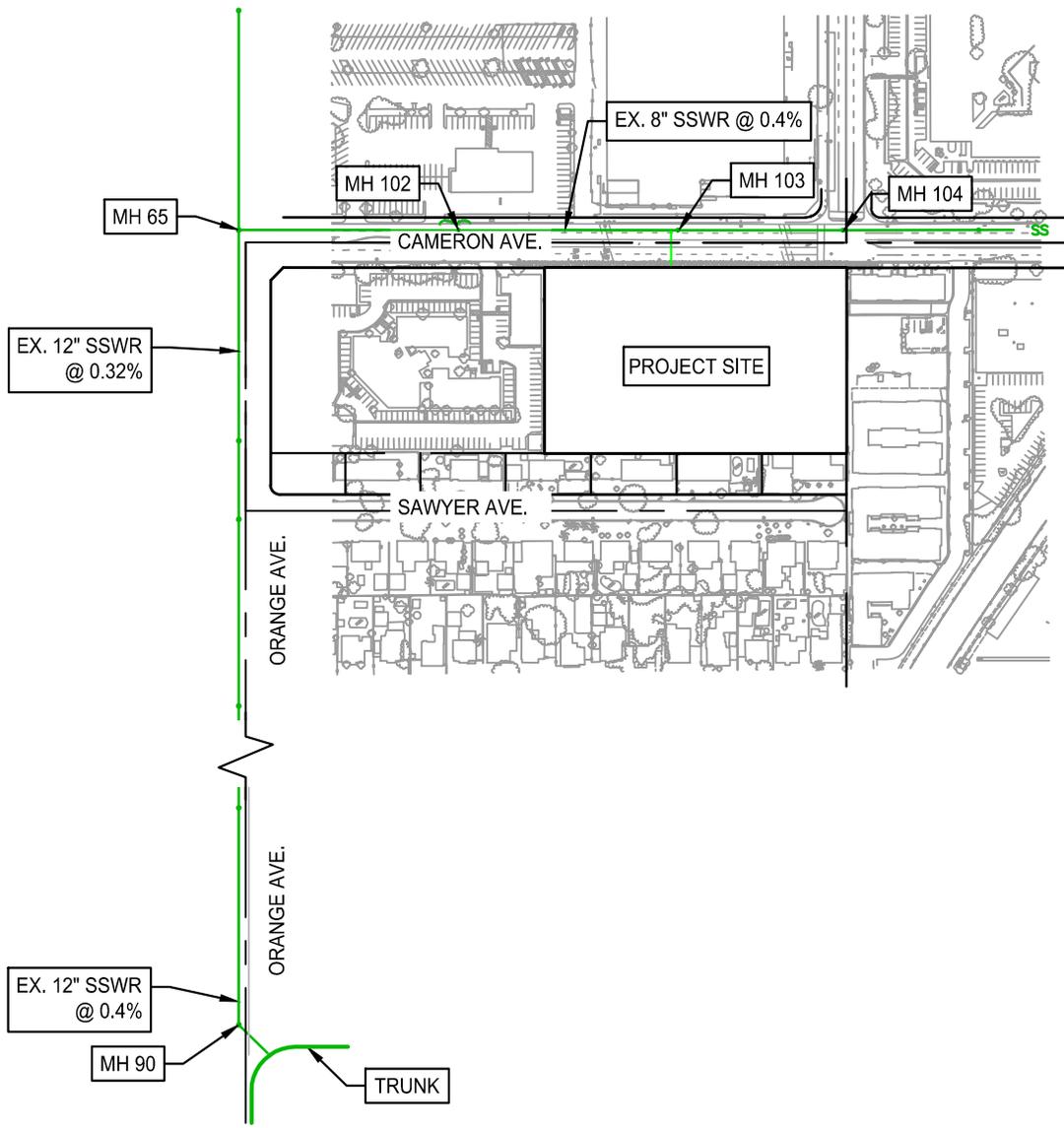




SITE PLAN

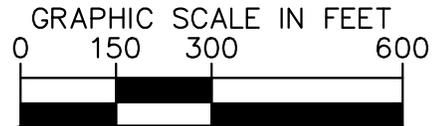
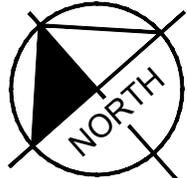
SHEET S-2

EXHIBIT 2: Conceptual Sanitary Sewer Layout



LEGEND

- EXISTING SANITARY SEWER MAIN
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER LATERAL
- PROPOSED SANITARY SEWER MANHOLE



APPENDIX A: Sewer Capacity Analysis

Existing Pipe Sizing

Street Name	Segment		Pipe		*Capacity		Calculated Flow (cfs)	**Cumulative Calculated Flow (cfs)	Cumulative Depth (in)	PC orCI Construction Plan #	% Full	Comment	Jurisdiction
	M.H. #	M.H. #	Size (in.)	Slope (%)	1/2 Full(<12")	3/4 Full(>12")					Cumulative Flow / Capacity		
Toluca Avenue	110	104	8	0.40	0.38		0.72	0.72	6.2	SP 230	191%	Upstream of Project	City of West Covina
Cameron Avenue	104	103	8	0.40	0.38		0.07	0.79	6.8	SP 230	208%	Requires Mitigation	City of West Covina
Cameron Avenue	103	102	8	0.40	0.38		0.03	0.82	7.3	SP 230	216%	Project Discharge Point; Requires Mitigation	City of West Covina
Cameron Avenue	102	65	8	0.40	0.38		0.05	0.87	>8	SP 230	229%	Requires Mitigation	City of West Covina
Orange Avenue	65	63	12	0.32	1.01		0.05	0.92	5.7	SP 144	91%		City of West Covina
Orange Avenue	63	66	12	0.32	1.01		0.06	0.98	5.9	SP 144	97%		City of West Covina
Orange Avenue	66	68	12	0.32	1.01		0.02	0.99	5.9	SP 144	98%		City of West Covina
Orange Avenue	68	70	12	0.32	1.01		0.00	0.99	5.9	SP 144	98%		City of West Covina
Orange Avenue	70	79	12	0.40	1.01		0.01	1.00	6	SP 144	99%		City of West Covina
Orange Avenue	79	85	12	0.40	1.01		0.03	1.04	6.1	SP 144	103%		City of West Covina
Orange Avenue	85	86	12	0.40	1.01		0.01	1.05	6.1	SP 144	104%		City of West Covina
Orange Avenue	86	90	12	0.40	1.01		0.01	1.06	6.2	SP 144	105%		City of West Covina

* Calculated using Kutter's Formula with n=0.013 (as in S-C4 graph in PC Procedural Manual)

** Based on coefficients per LA County in Table 1.

Proposed Pipe Sizing

Street Name	Segment		Pipe		*Capacity		Calculated Flow (cfs)	**Cumulative Calculated Flow (cfs)	Cumulative Depth (in)	PC orCI Construction Plan #	% Full	Comment	Jurisdiction
	M.H. #	M.H. #	Size (in.)	Slope (%)	1/2 Full(<12")	3/4 Full(>12")					Cumulative Flow / Capacity		
Toluca Avenue	110	104	8	0.40	0.38		0.72	0.72	6.2	SP 230	191%	Upstream of Project	City of West Covina
Cameron Avenue	104	103	8	0.40	0.38		0.07	0.79	6.8	SP 230	208%	Requires Mitigation	City of West Covina
Cameron Avenue	103	102	12	0.40	1.13		0.09	0.88	5.2	SP 230	78%	Project Discharge Point	City of West Covina
Cameron Avenue	102	65	12	0.40	1.13		0.05	0.93	5.4	SP 230	83%		City of West Covina
Orange Avenue	65	63	12	0.32	1.01		0.05	0.98	5.9	SP 144	97%		City of West Covina
Orange Avenue	63	66	12	0.32	1.01		0.06	1.04	6.1	SP 144	103%		City of West Covina
Orange Avenue	66	68	12	0.32	1.01		0.02	1.06	6.2	SP 144	105%		City of West Covina
Orange Avenue	68	70	12	0.32	1.01		0.00	1.06	6.2	SP 144	105%		City of West Covina
Orange Avenue	70	79	12	0.40	1.01		0.01	1.07	6.2	SP 144	106%		City of West Covina
Orange Avenue	79	85	12	0.40	1.01		0.03	1.10	6.3	SP 144	109%		City of West Covina
Orange Avenue	85	86	12	0.40	1.01		0.01	1.11	6.4	SP 144	110%		City of West Covina
Orange Avenue	86	90	12	0.40	1.01		0.01	1.12	6.4	SP 144	111%		City of West Covina

* Calculated using Kutter's Formula with n=0.013 (as in S-C4 graph in PC Procedural Manual)

** Based on coefficients per LA County in Table 1.

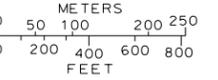
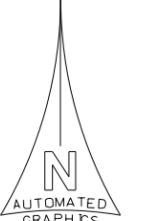
APPENDIX B: Consolidated Sewer Maintenance District Map

SEE SHT. NO. E-2214

U-68
U-69
U-70
U-77

THIS MAP IS INTENDED FOR USE ONLY AS OPERATIONS MAP BY LOS ANGELES COUNTY SEWER MAINTENANCE DISTRICTS. LOS ANGELES COUNTY EXPRESSLY DISCLAIMS ANY LIABILITY FOR ANY INACCURACIES WHICH MAY BE PRESENT IN THIS MAP.

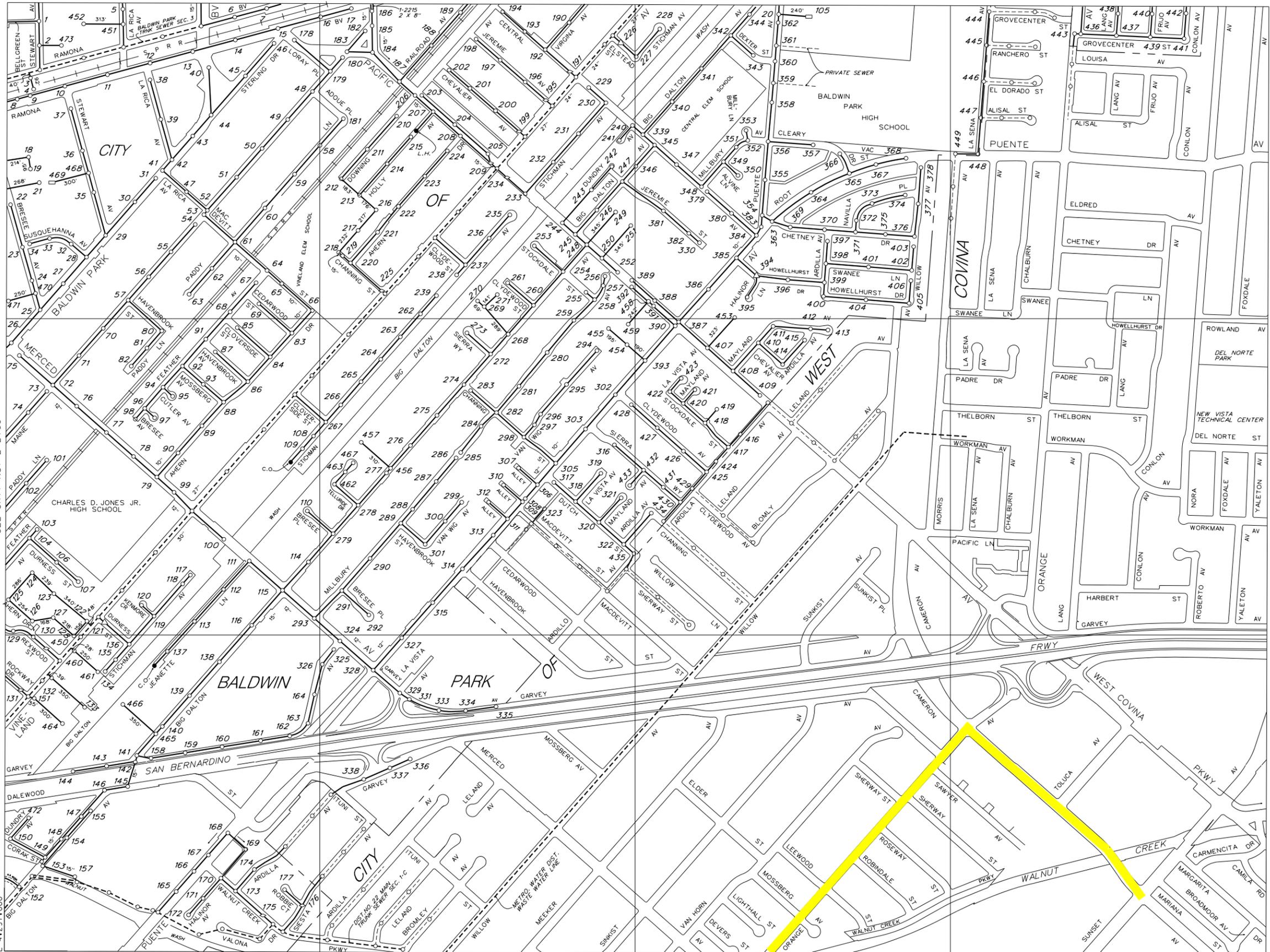
SEE SHT. NO. E-2258



LEGEND

- CLAY SEWERS MAINTAINED BY SMD, 8" UNLESS OTHERWISE NOTED
- PLASTIC SEWERS
- CONCRETE SEWERS
- CLAY SEWERS, LINED
- CEMENT SEWERS, LINED
- FORCE MAINS
- SEWERS NOT MAINTAINED BY SMD
- TRUNK SEWERS
- CITY BOUNDARY
- STANDARD MANHOLE
- DROP MANHOLE
- SHALLOW MANHOLE
- TRAP MANHOLE
- WEIR MANHOLE
- CLEANOUT
- LAMP HOLE
- PUMP STATION

TOTAL MH'S THIS MAP: 471



SEE SHT. NO. E-2169

E 4,297,000
N 4,136,500

SEE SHT. NO. E-2216

MAP REV
05-18-15
DATA BASE REV
11-18-92

APPENDIX C: Los Angeles County Sewer Loading Table

Estimated Average Daily Sewage Flows for Various Occupancies

Occupancy	Abbreviation	*Average daily flow
Apartment Buildings:		
Bachelor or Single dwelling units	Apt	150 gal/D.U.
1 bedroom dwelling units	Apt	200 gal/D.U.
2 bedroom dwelling units	Apt	250 gal/D.U.
3 bedroom or more dwelling units	Apt	300 gal/D.U.
Auditoriums, churches, etc.	Aud	5 gal/seat
Automobile parking	P	25 gal/1000 sq ft gross floor area
Bars, cocktails lounges, etc.	Bar	20 gal/seat
Commercial Shops & Stores	CS	100 gal/1000 sq ft gross floor area
Hospitals (surgical)	HS	500 gal/bed
Hospitals (convalescent)	HC	85 gal/bed
Hotels	H	150 gal/room
Medical Buildings	MB	300 gal/1000 sq ft gross floor area
Motels	MB	150 gal/unit
Office Buildings	Off	200 gal/1000 sq ft gross floor area
Restaurants, cafeterias, etc.	R	50 gal/seat
Schools:		
Elementary or Jr. High	S	10 gal/student
High Schools	HS	15 gal/student
Universities or Colleges	U	20 gal/student
College Dormitories	CD	85 gal/student

*Multiply the average daily flow by 2.5 to obtain the peak flow

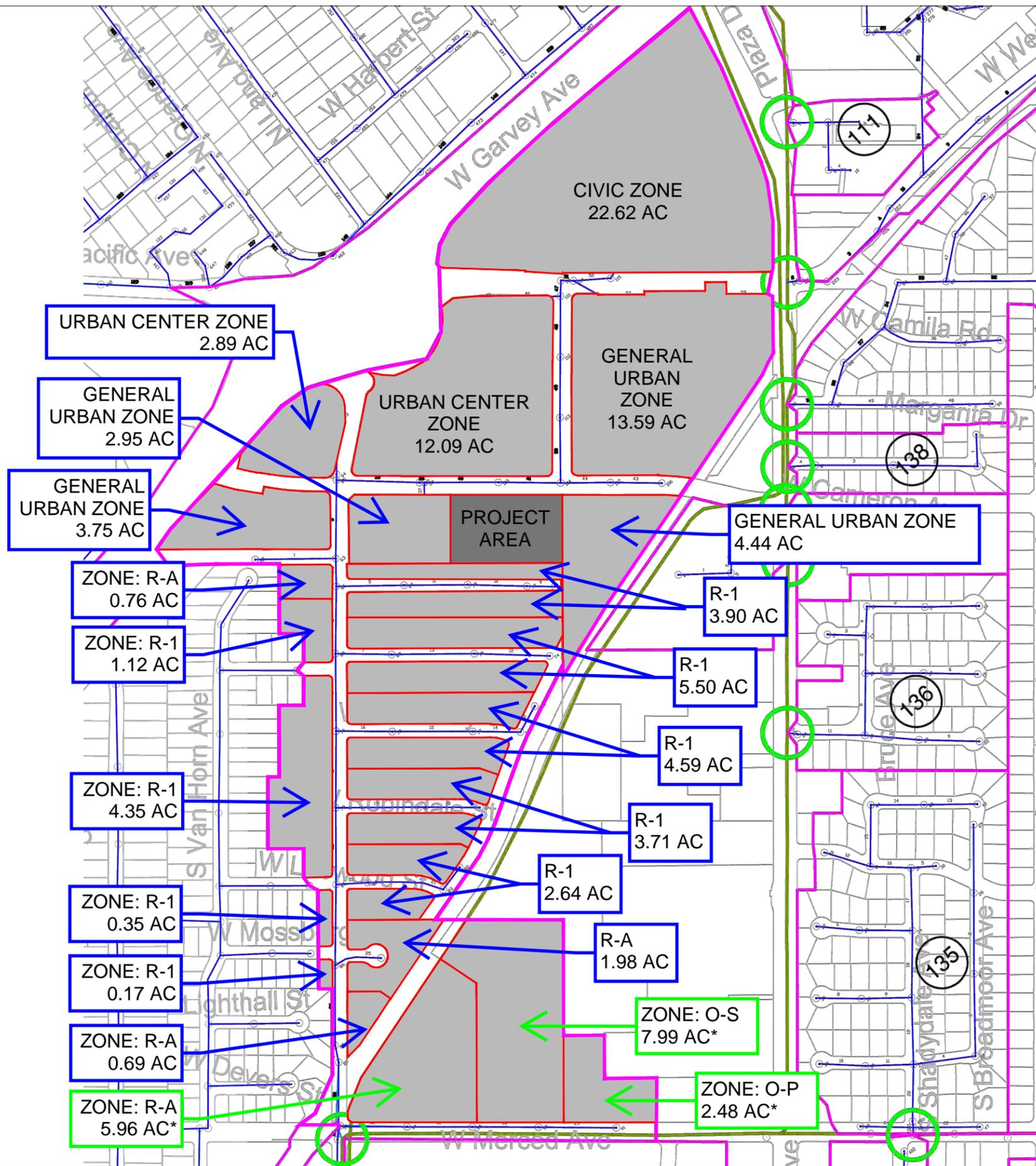
Zoning Coefficients

Zone	Coefficient (cfs/Acre)
Agriculture -----	0.001
Residential*:	
R-1 -----	0.004
R-2 -----	0.008
R-3 -----	0.012
R-4 -----	0.016*
Commercial:	
C-1 through C-4 -----	0.015*
Heavy Industrial:	
M-1 through M-4 -----	0.021*

* Individual building, commercial or industrial plant capacities shall be the determining factor when they exceed the coefficients shown

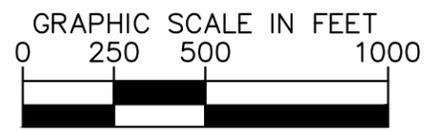
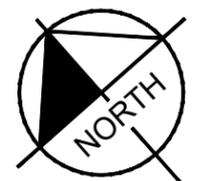
* Use 0.001 (cfs/unit) for condominiums only

APPENDIX D: Sewer Area Map



LEGEND:

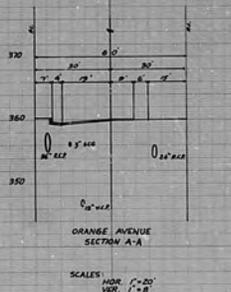
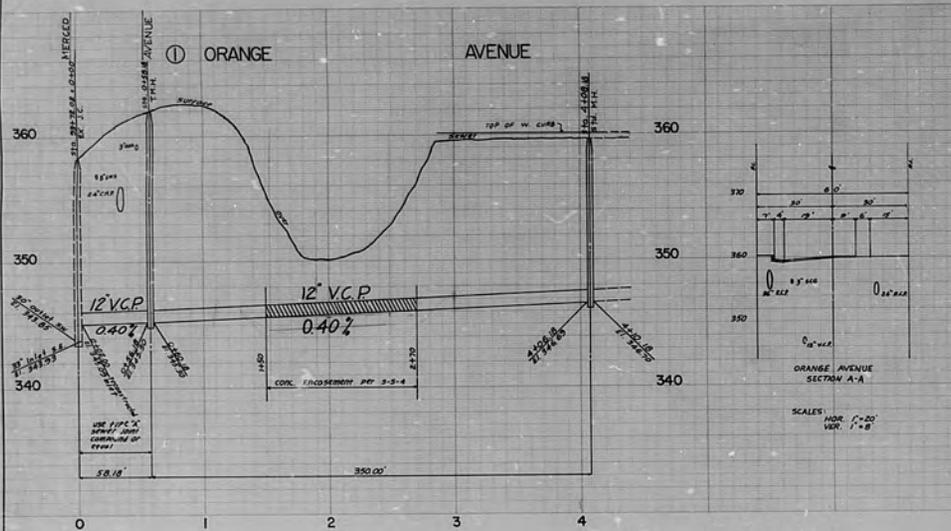
-  EXISTING CSD TRUNK SEWERS
-  SANITARY SEWER PIPE
-  CITY BOUNDARY
-  SEWER DRAINAGE AREA BORDER
-  SEWER MAINTENANCE ZONE
-  SEWAGE DELIVERY POINTS
-  FLOW MONITORING LOCATIONS (PENDING)



*Zone Areas were omitted due to their pipes connecting at a different upstream point of the trunk.

APPENDIX E: As-Builts

90



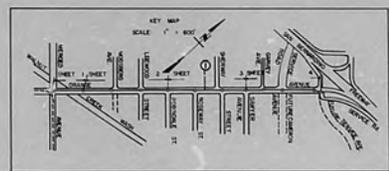
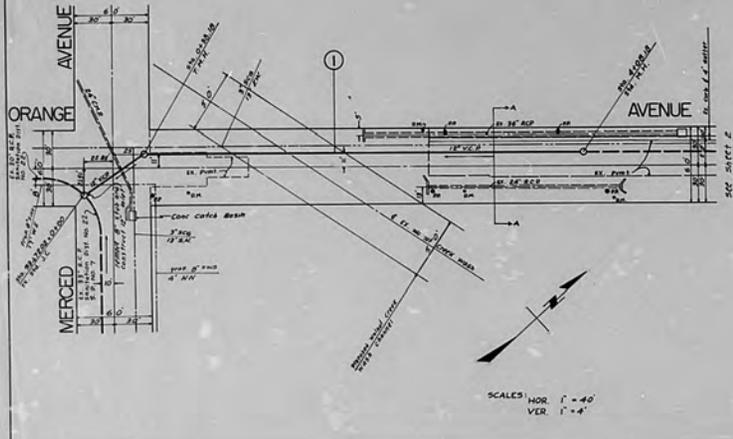
- NOTICE TO CONTRACTORS
- SPECIFICATIONS: ALL WORK DETAILED ON THESE PLANS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIAL SEWER SPECIFICATIONS AND ORDINANCE NOS. 365, 394 & 506 INCLUDING ALL AMENDMENTS ADOPTED THERETO PRIOR TO THE DATE OF APPROVAL OF THESE PLANS.
 - BEFORE WORK CAN BE STARTED THE CONTRACTOR MUST OBTAIN A PERMIT TO EXCAVATE IN CITY STREETS FROM THE CITY ENGINEER.
 - ALL SEWERS SHALL BE CONSTRUCTED OF EXTRA STRENGTH VITRIFIED CLAY PIPE UNLESS OTHERWISE SPECIFIED ON THE PLANS.
 - BEFORE BREAKING INTO ANY EXISTING STRUCTURE, AND BEFORE FINAL ACCEPTANCE OF THIS WORK, COUNTY SANITATION DISTRICT SHOULD BE NOTIFIED IN ORDER THAT REQUIRED INSPECTION MAY BE MADE.
 - THE ENGINEER HAS INVESTIGATED ALL AVAILABLE RECORDS OF THE CITY AND THE UTILITY COMPANIES INVOLVED AND ALL KNOWN SUBSTRUCTURES ARE SHOWN HEREON. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE SUBSTRUCTURE SHOWN HEREON AND PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR THE TOTAL EXPENSE OF REPAIR OR REPLACEMENT OF SAID SUBSTRUCTURES DAMAGED BY HIS OPERATION IN CONNECTION WITH THE PROCEEDURE OF THIS WORK.
 - ALL ELEVATIONS SHOWN HEREON ARE ABOVE USGS DATUM.
 - BENCH MARK DATA: B.M. ELEV. 360.58 L.B.T. ON TOP OF 3" CONC. WALL (S.N. OF B.C.) S.E. CORNER OF ORANGE AVENUE & MERCED AVENUE.
 - THE CONTRACTOR MUST OBTAIN THE REQUIRED PERMIT FROM THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT.
 - STANDARD PLANS SPECIFIED FOR THIS PROJECT:

STD. M.H. & J.C.	S-5-1
STD. FRAME & COVER	S-5-2
STD. T.M.H.	S-5-7
CONC. ENGAGEMENT	S-5-4
 - ALL RESURFACING SHALL BE DONE IN ACCORDANCE WITH THE STANDARD STREET SPECIFICATIONS AND EXCAVATION ORDINANCE OF THE CITY OF WEST COVINA.

PLAN AND PROFILE
OF SANITARY SEWERS IN
① ORANGE AVENUE BETWEEN SAN BERNARDINO FREEWAY AND MERCED AVENUE.

II. SCHEDULE OF RESURFACING:

LINE NO.	STREET	STATION	TYPE
1	ORANGE AVE	0+00 TO 1+00	4" AC
1	ORANGE AVE	2+77 TO 3+50	3" A.C. WS ON CASE III BASE
1	ORANGE AVE	17+80 TO 21+62	CASE III BASE
1	ORANGE AVE	21+62 TO 33+89	3" A.C. WS ON 8" BASE



ORANGE AVENUE SEWER DISTRICT
CITY OF WEST COVINA

R.E. PONTOW CITY ENGINEER

DESIGNED BY: <i>H. Gauthier</i>	APPROVED <i>Sept. 12, 1957</i>
DRAWN BY: <i>H. Gauthier</i>	<i>W.M. Miller</i> 8413
CHECKED BY: <i>H. Gauthier</i>	SANITATION ENGINEER R.E.
APPROVED LOS ANGELES COUNTY SANITATION DISTRICT NO. 22	APPROVED <i>Sept. 12, 1957</i>
A.M. RAYBURN, CHIEF ENGINEER.	<i>R.E. Pontow</i> 7875
BY: <i>R.E. Pontow</i>	CITY ENGINEER R.E.
DATE: <i>10/2/57</i>	

SHEET 1 OF 4 SHEETS PLAN NO. S.P. 144

44192

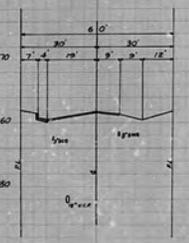
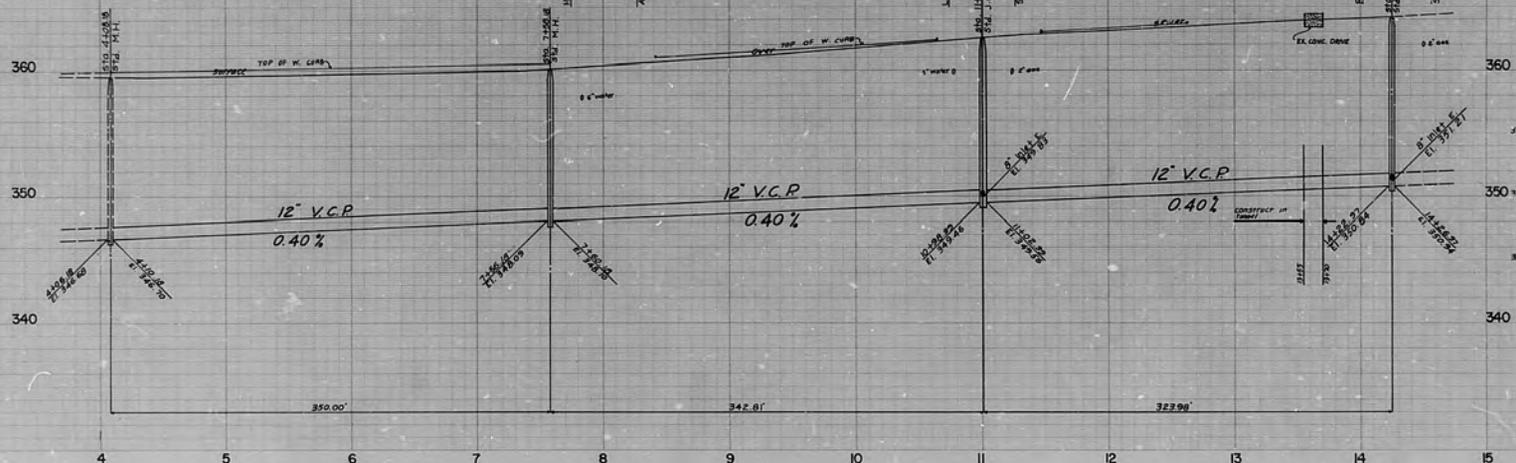
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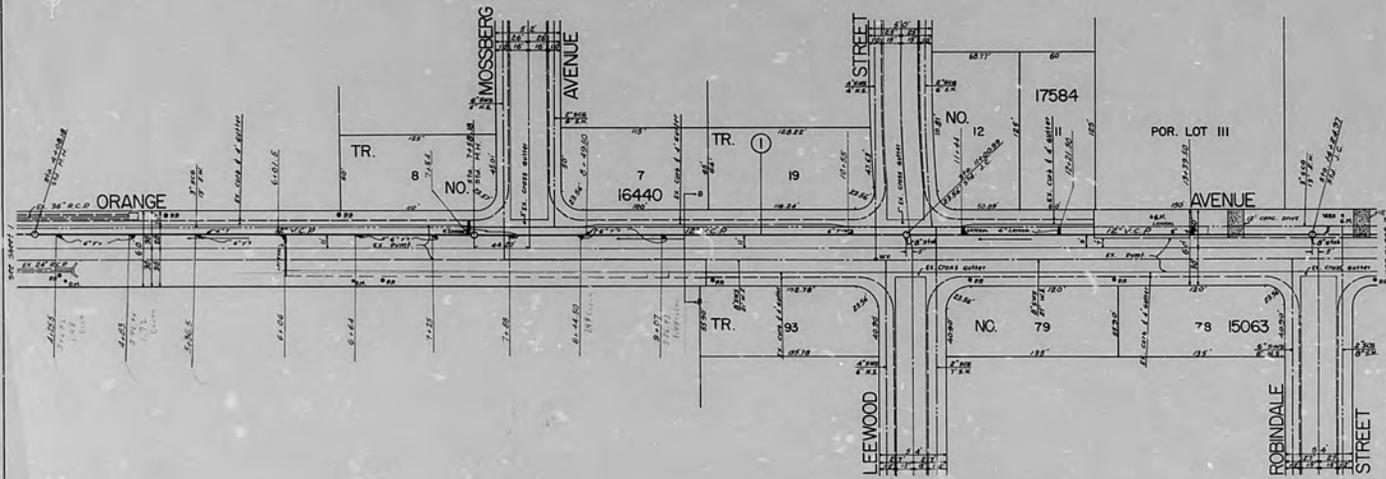
79

① ORANGE

ORANGE AVENUE



ORANGE AVENUE
SECTION 98
SCALES:
HOR 1"=40'
VER 1"=4'



SCALES:
HOR 1"=40'
VER 1"=4'

ORANGE AVENUE SEWER DISTRICT
CITY OF WEST COVINA
R.E. POWDOW CITY ENGINEER

PLAN AND PROFILE
OF SANITARY SEWER IN
① ORANGE AVENUE

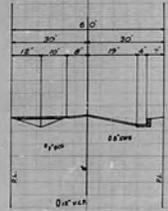
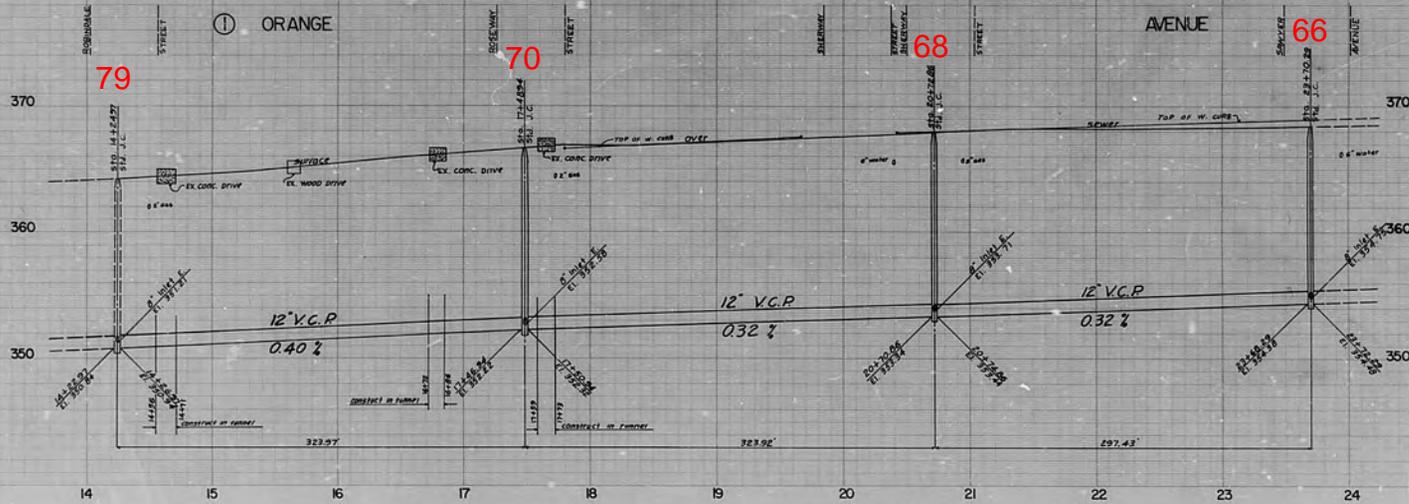
APPROVED <i>Sept. 18</i> 19 <i>57</i> <i>W.M. Miller</i> S.E. SANITATION ENGINEER	APPROVED <i>Sept. 18</i> 19 <i>57</i> <i>R.E. Powdow</i> R.E. CITY ENGINEER
SHEET 2 OF 4 SHEETS	PLAN NO. S.P. 144

251142

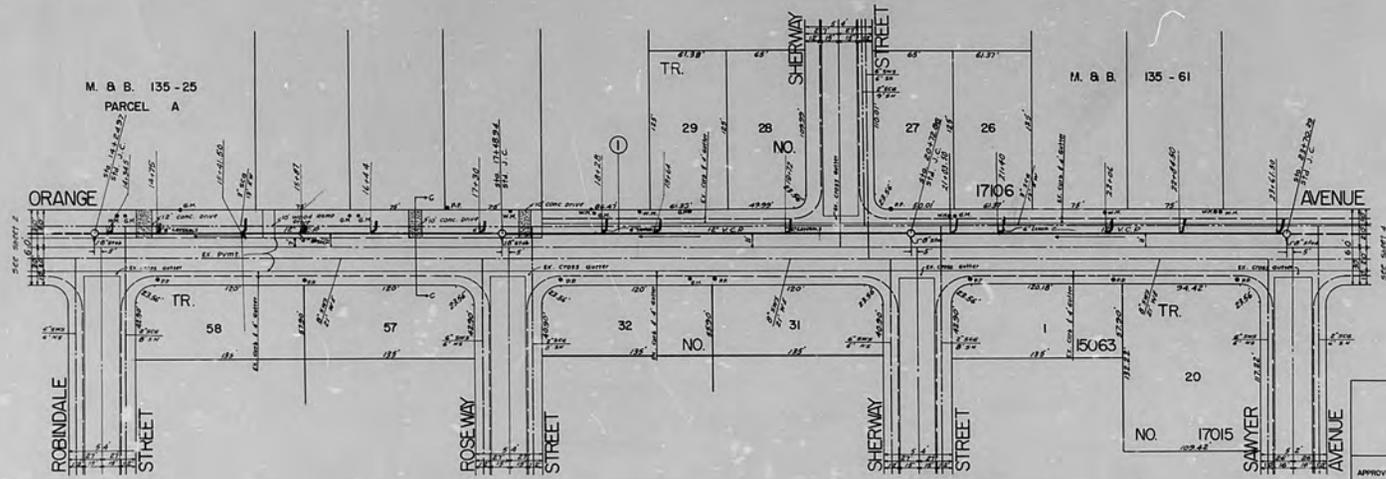
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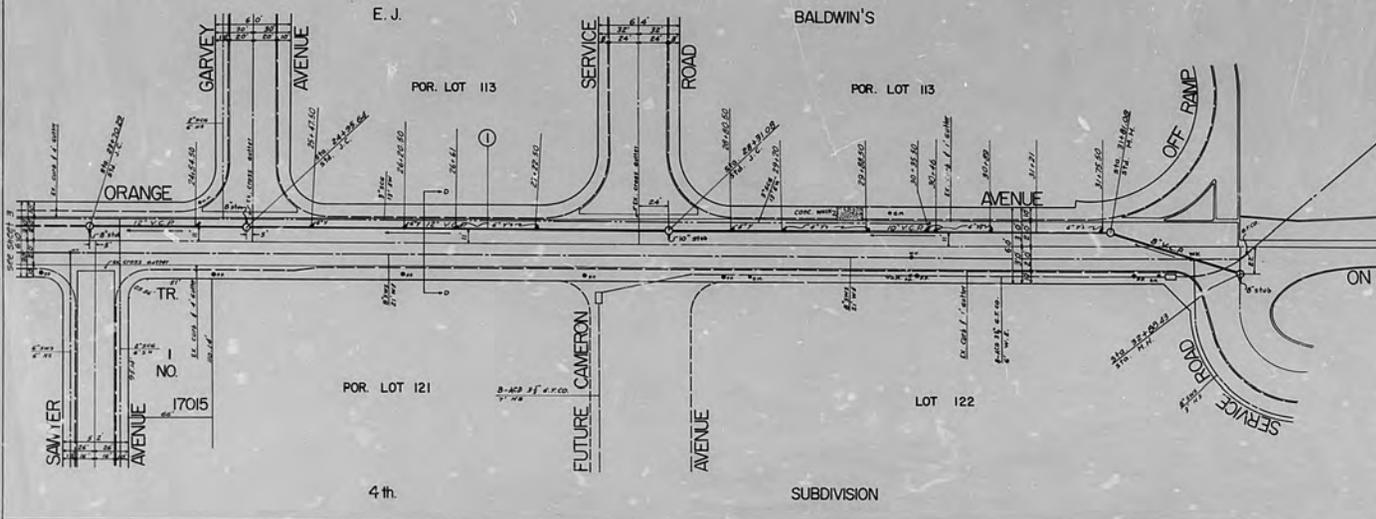
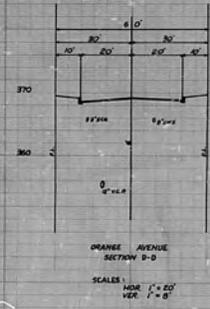
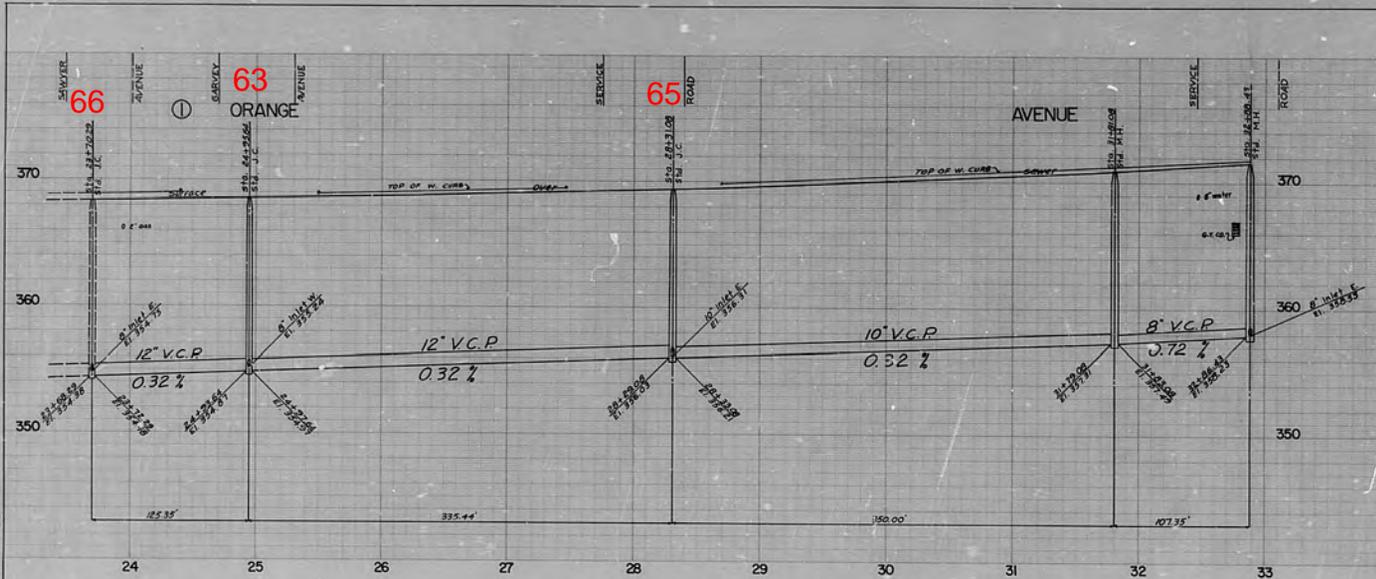
ORANGE AVENUE
SECTION C-C
SCALES
HOR. 1" = 50'
VER. 1" = 8'



SCALES
HOR. 1" = 40'
VER. 1" = 4'

ORANGE AVENUE SEWER DISTRICT
CITY OF WEST COVINA
R.E. PONTOW CITY ENGINEER

PLAN AND PROFILE OF SANITARY SEWER IN ① ORANGE AVENUE	
APPROVED <i>Sept 10 1952</i> SANTON ENGINEER	APPROVED <i>Sept 10 1952</i> R.E. Pontow CITY ENGINEER
SHEET 3 OF 4 SHEETS	PLAN NO. S.P. 144



ORANGE AVENUE SEWER DISTRICT
CITY OF WEST COVINA
R.E. FORTSON CITY ENGINEER

① ORANGE AVENUE	
APPROVED <u>Sept 18</u> 19 <u>57</u> R.E. Fortson S.E. SANITATION ENGINEER	APPROVED <u>Sept 18</u> 19 <u>57</u> R.E. Fortson S.E. CITY ENGINEER
SHEET 4 OF 4 SHEETS	PLAN NO. S.P. 144

4419.2

4419.2

