

Appendix J: Utilities and Service Systems Supporting Information

THIS PAGE INTENTIONALLY LEFT BLANK

TECHNICAL MEMORANDUM

Date: June 11, 2018
Revised February 14, 2019
BKF Job Number: 20180503

To: Kristen Gates, P.E.
Due Diligence Manager
The Hanover Company
5847 San Felipe, Suite 3600
Houston, Texas 77057
Transmitted via email

From: Janine Watson, P.E.
Project Engineer
BKF Engineers

Subject: Del Hombre Wet Utilities Due Diligence

SUMMARY:

Pursuant to your request, we have completed our preliminary infrastructure due diligence review for water, sewer, and storm drain utilities. The purpose of this review is to identify any unusual site specific utility issues that would add cost beyond the "normal" development costs for a similar project on a different site. In accordance with our scope of work dated March 2, 2018, we have completed the following:

- Collect and review background documents
- Request will serve letters
- Contact utility providers
- Review the existing utilities adjacent to the site
- Prepare exhibit showing the existing utilities adjacent to the site, based on record information as well as a topographic survey of surface structures. This is included in Appendix A.
- Prepare exhibit showing preliminary locations of proposed utilities. This is included in Appendix A.

The site is located at Del Hombre Lane and Roble Road in unincorporated Contra Costa County. The proposed project includes a one level subterranean garage with 202 spaces, 132 spaces of ground floor parking and leasing approximately 284 residential units. The proposed building will be four levels of Type IIIA construction over two levels of Type IA construction.

Our detailed findings from our preliminary infrastructure due diligence review are included below.

This report does not address solid waste, electrical, communication, or natural gas utilities.

SANITARY SEWER SYSTEM:

Central Contra Costa Sanitary District (CCCSD) owns and maintains the sanitary sewer system adjacent to the site. CCCSD performed a capacity study and confirmed that there is sufficient capacity in the system to handle the increased load due to the project. CCCSD has provided a will serve letter. The capacity study confirmation and will serve letter are included in Appendix B.

There is an existing 30 inch sewer main in Del Hombre Lane adjacent to the site. CCCSD does not permit 8 inch tee or wye connections directly to the 30 inch sewer main; all connections to this main must be made at manholes. Manholes are located near the center of the site on Del Hombre Lane and in the intersection of Del Hombre Lane and Roble Road. There is also an existing 10 inch sewer main in Roble road adjacent to the site. The sewer base maps are included in Appendix B.

Sewage generation demands are based on the following water demands:

- 238 units
- 2.2 persons per unit average
- 49 gallons per day per person

This yields an average daily water demand of 25,656 gallons per day and 9.4 MG annually. The sewage demands can be taken as 95% of the average daily water demand. Therefore, the average daily sewage generation is 24,373 gallons per day and the average annual demand is 8.9 MG per year.

STORM DRAIN SYSTEM:

Contra Costa County Public Works owns and maintains unincorporated county drainage facilities. There is a private 18-inch storm drain line in Roble Road on the north side of the street. The storm drain line is not located in a public utility easement, so we will not be able to connect to that line in Roble Road, but it connects to a manhole in the intersection of Roble Road and Del Hombre where we would be able to connect our building storm drain lateral. This line connects to an 84" storm drain pipe in the Iron Horse Trail. The storm drain base maps are included in Appendix C.

The project is located in Drainage Area 44, which is an "unformed" drainage area. This means that the site is not served by any storm drainage infrastructure. To connect to a storm drain pipe or manhole, we will be required to join the associated drainage area. The 84" pipe in the Iron Horse Trail is in Drainage Area 44B. Given the size of the line, it likely has capacity to serve the project, but we are working to confirm that with the Flood Control District. The fee associated with joining a Drainage Area is based on the square footage of impervious area the project is proposing to construct on the site. For Drainage Area 44B, the fee is \$1.07/sf of additional impervious area. The site is proposing around 84,000 sf of impervious area, so the fee will be around \$90,000.

STORMWATER QUALITY:

The site is larger than 1 acre and will therefore be required to treat stormwater runoff and design facilities for hydromodification (flow control) management as outlined in Provision C.3 of the Contra Costa Clean Water Program and the San Francisco Bay Regional Municipal Stormwater NPDES Permit (MRP). The MRP

requires Low Impact Development (LID) techniques to treat stormwater runoff. LID techniques include infiltration, stormwater re-use, and landscape based LID techniques such as bioretention areas. Stormwater treatment strategies often compete with other functions within the building footprint and therefore it is important to coordinate treatment areas early in the design process.

Per the Municipal Regional Stormwater Permit Order No. R2-0074, certain "Special Projects" are eligible for Low Impact Design Treatment Reduction Credits. The LID Treatment Reduction Credit is the maximum percentage of the amount of runoff that may be treated with non-LID treatment measures such as tree-box-type high flowrate biofilters or vault-based high flowrate media filters. The site is classified as a Category C Special Project (transit-oriented development).

Location Credit

The project qualifies for a 50% Location Credit because it is within ¼ mile of a transit hub.

Density Credit

The project qualifies for a 30% Density Credit because it is a residential project with greater than 100 Dwelling Units per acre (118 DU/acre)

Minimized Parking Credit

The project qualifies for a 20% Minimized Parking Credit because it has zero surface parking.

Total Potential LID Treatment Reduction Credit = 100%. Potentially 100% of the runoff may be treated with mechanical treatment. However, to use non-LID treatment options, a site must establish the infeasibility of implemented LID techniques on the site and include in the Stormwater Control Plan an explanation of how routing of drainage has been optimized so that as much runoff as possible goes to LID features and facilities. Therefore, some LID treatment facilities may be required on the site where feasible, such as providing Flow-Through Planters along the project frontage.

In order to meet hydromodification management requirements, the project will be required to provide flow control so that post-project runoff does not exceed estimated pre-project rates and durations. One method to control runoff rates is to construct a cistern or series of detention pipes to detain the additional runoff created by the project, keeping flows at the same rate as pre-project flows. Based on preliminary calculations, a 5,000 cubic foot cistern will be required. The preliminary calculations are included in Appendix C.

WATER DISTRIBUTION SYSTEM:

The potable water distribution system is owned and operated by the Contra Costa Water District. There is an 8 inch PVC water line in Roble Road north of the site, an 8 inch ACP water line in Del Hombre Lane west of the site, and 6 inch and 8 inch ACP water lines in Honey Trail south of the site. The site is currently served by one connection to the 8 inch line in Roble Road and three connections to the 8 inch line in Del Hombre Lane. We have received water flow information from the Contra Costa Fire Department. This is included in Appendix D.

The Contra Costa water district requires that the finished floor elevation for the lowest residential story of the building must be less than 80 feet above sea level. If that is not possible, or if the project requires a booster pump internal to the building, a Modified Pressure Service Agreement will be required, and the Agreement must be approved before water service can be confirmed. We have requested a will serve letter but have not yet received a written response. Based on our conversations with the CCCWD, approval of the Modified Service Pressure Agreement does not appear to be an issue because a MSPA was recently approved for the adjacent Avalon project. According to CCCWD, the adjacent Avalon development did not require any off-site improvements so it is unlikely that off-site improvements will be required for this development. Confirmation of water supply availability and off-site improvements will be completed as part of the Modified Service Pressure Agreement process.

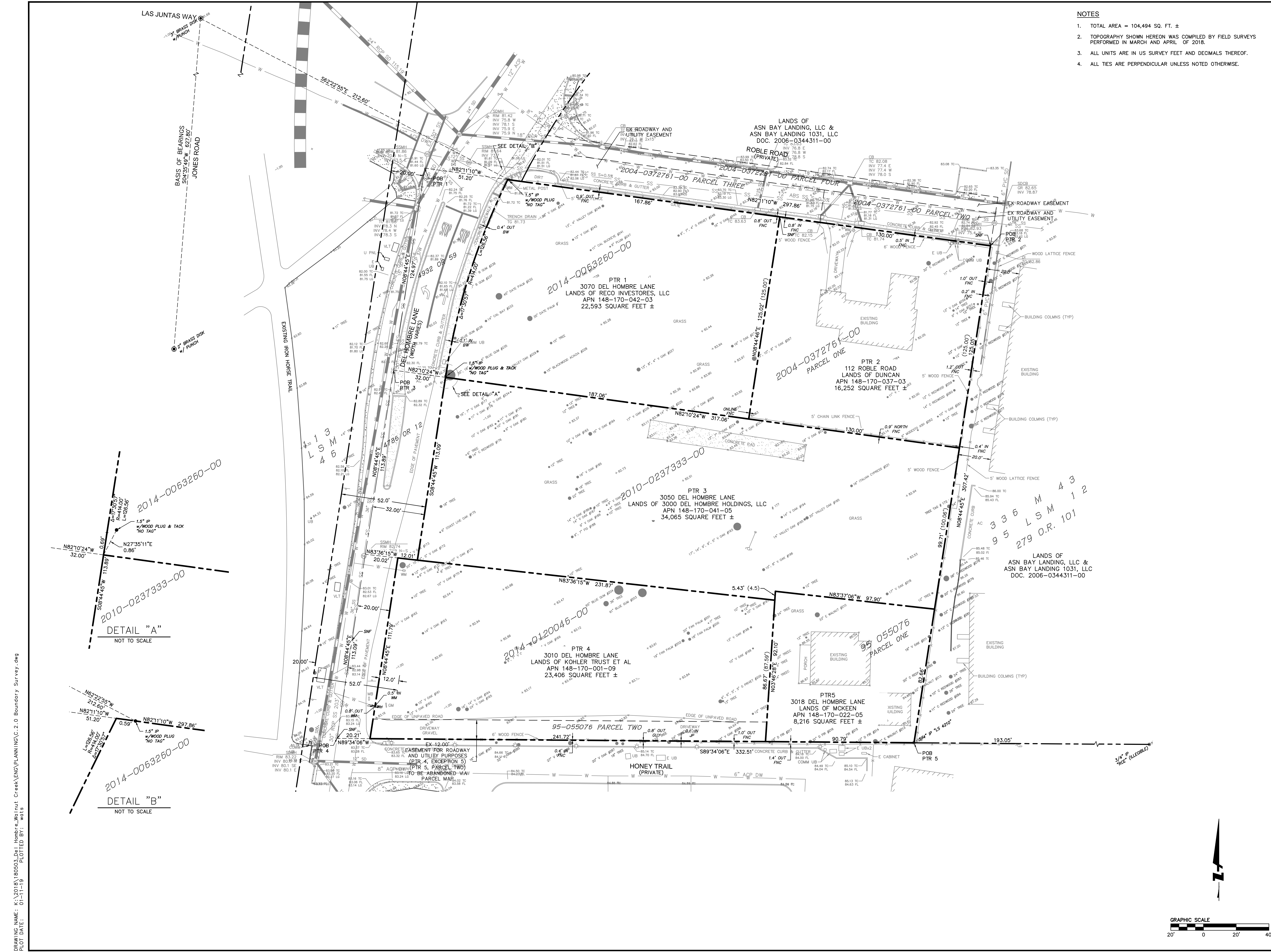
There are two existing fire hydrants serving the site: one on the northeast corner of the intersection of Roble Road and Del Hombre Lane and one on the northeast corner of the intersection of Honey Trail and Del Hombre Lane. Based on the building size and construction type, six total fire hydrants will be required to serve the building. The project should anticipate installing four new fire hydrants adjacent to the project. Potential locations for the new fire hydrants are included in Appendix A. The fire flow calculations are included in Appendix D. The fire flow demand for the project is 3,000 GPM based on Appendix B of the California Fire Code, the building construction types, and a 50% reduction because the building will have an automatic sprinkler system as amended by the Contra Costa County Fire Protection District.

As mentioned under the Sanitary Sewer section, the average daily water demand is 25,656 GPD and the average annual demand is 9.4 MG per year.

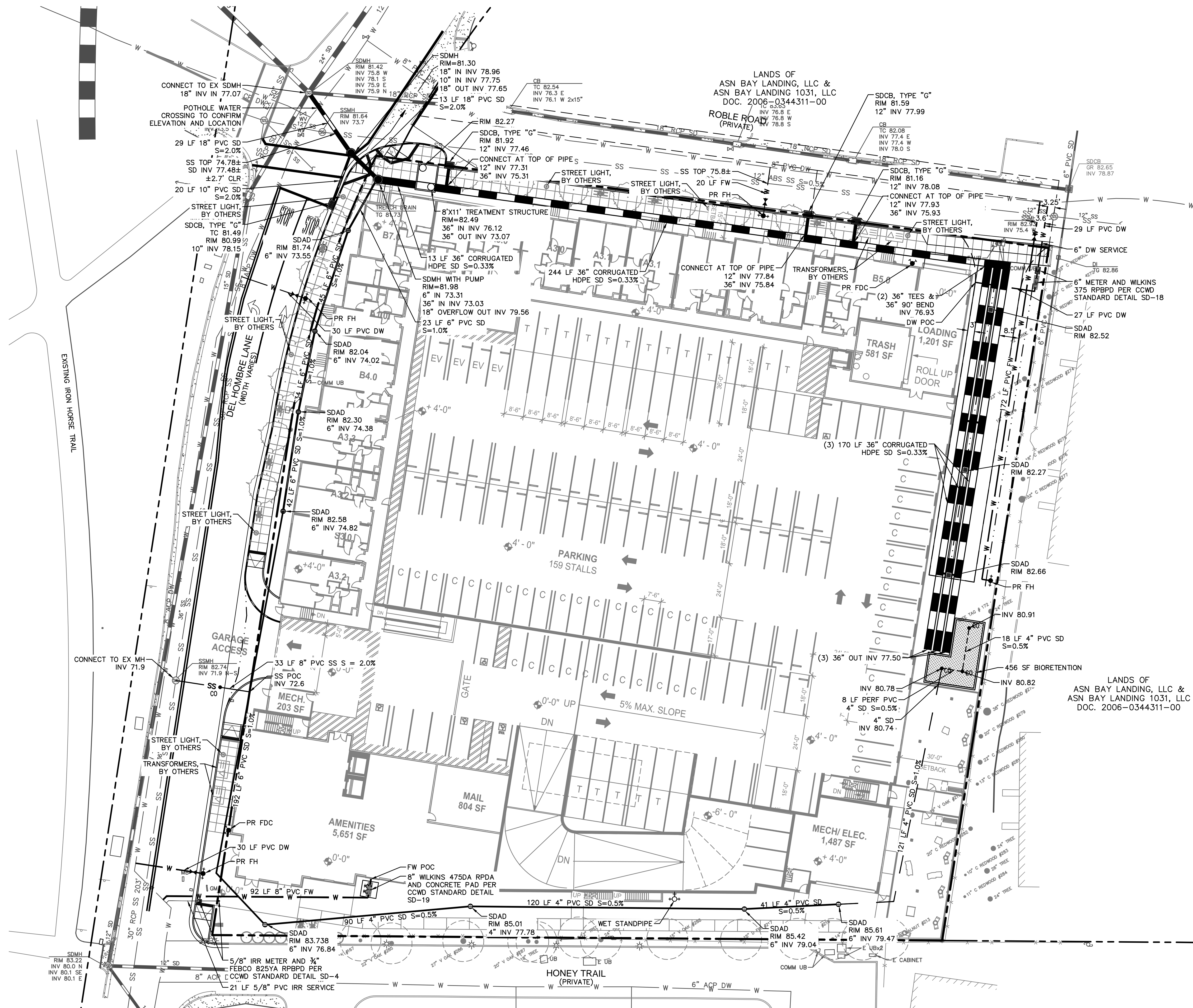
APPENDIX A – SITE UTILITIES

- Existing Utility Exhibit
- Preliminary Proposed Utility Exhibit

- NOTES
- TOTAL AREA = 104,494 SQ. FT. ±
 - TOPOGRAPHY SHOWN HEREON WAS COMPILED BY FIELD SURVEYS PERFORMED IN MARCH AND APRIL OF 2018.
 - ALL UNITS ARE IN US SURVEY FEET AND DECIMALS THEREOF.
 - ALL TIES ARE PERPENDICULAR UNLESS NOTED OTHERWISE.



DRAWING NAME: K:\2018\180503 Del Hombre Apartments\2.0 Boundary Survey.dwg
PLOT DATE: 01-11-19 PLOTTED BY: wats



UTILITY NOTES

1. ALL UTILITY TRENCHING AND BACKFILLING MUST CONFORM TO THE PROJECT GEOTECHNICAL REPORT.
2. CONTRACTOR SHALL MAINTAIN 12\"/>



APPENDIX B – SANITARY SEWER

- Contra Costa County Sewer District Correspondence
- Sanitary Sewer Base Maps
- Contra Costa County Sewer District Will Serve Letter

Shante Stowell

From: Permits Permits <permits@centralsan.org>
Sent: Thursday, April 05, 2018 4:33 PM
To: Shante Stowell
Subject: FW: Del Hombre Utility Base Maps

Please see email below from Richard Foss.
Have a great evening!

Rachel Gay
Central Contra Costa Sanitary District
5019 Imhoff Place . Martinez . CA . 94553
Phone: (925) 229-7371 . Fax: (925) 689-7259

Please take a moment to fill out a customer service survey
at: <https://www.surveymonkey.com/r/permitexperience>

From: Richard Foss
Sent: Thursday, April 05, 2018 11:31 AM
To: Permits Permits <permits@centralsan.org>
Cc: Justin Waples <JWaples@centralsan.org>; Dan Frost <dfrost@centralsan.org>
Subject: RE: Del Hombre Utility Base Maps

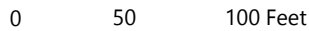
Rachael,

I have performed the requested capacity study for the proposed development of 240MFR's discharging into 49C3-M88. The model predicts that there is sufficient capacity to handle this development and there is no surcharging expected in a 10-year storm event.

Regards,

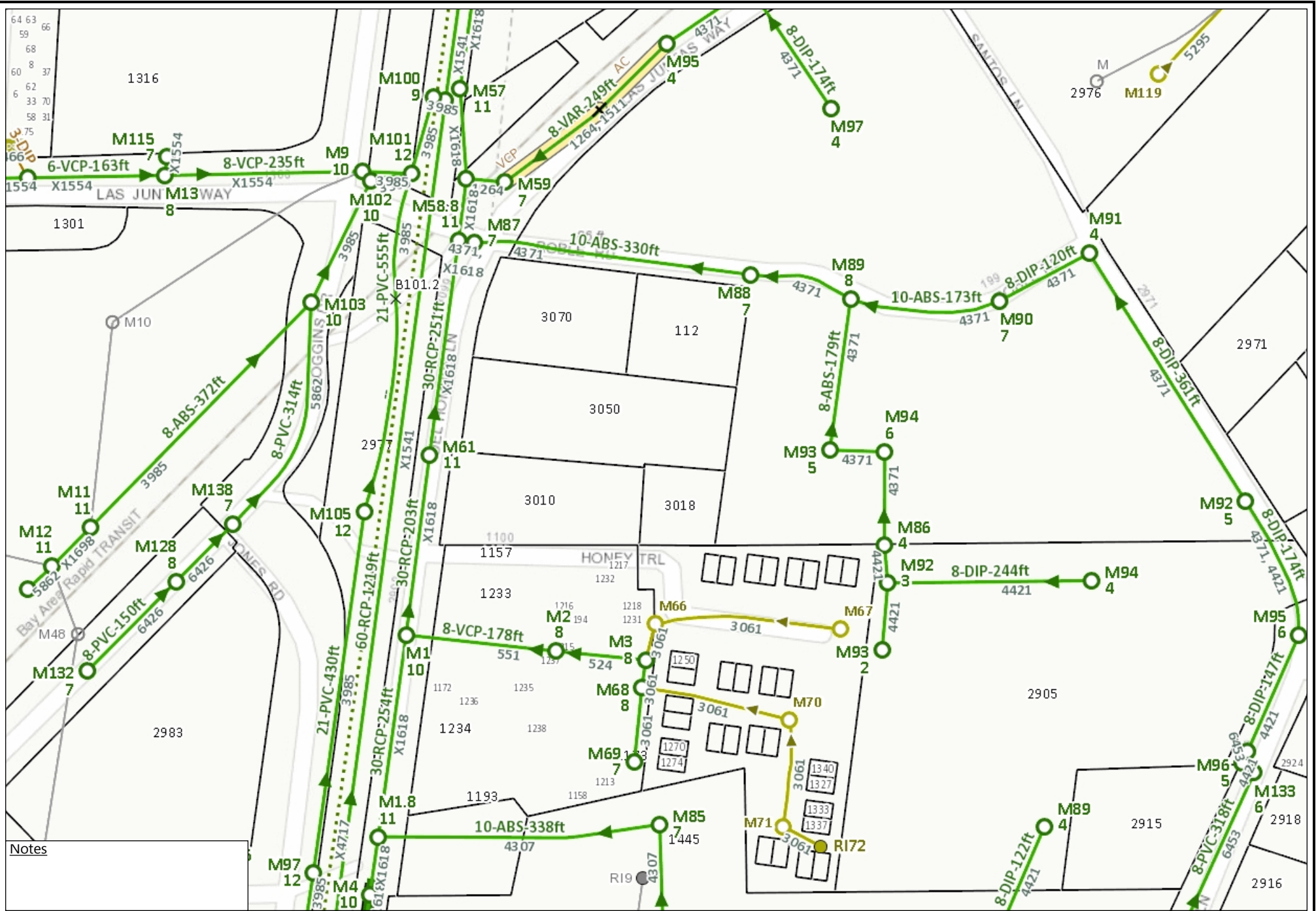


From: Permits Permits
Sent: March 30, 2018 08:51 AM
To: Dan Frost <dfrost@centralsan.org>
Cc: Justin Waples <JWaples@centralsan.org>
Subject: FW: Del Hombre Utility Base Maps



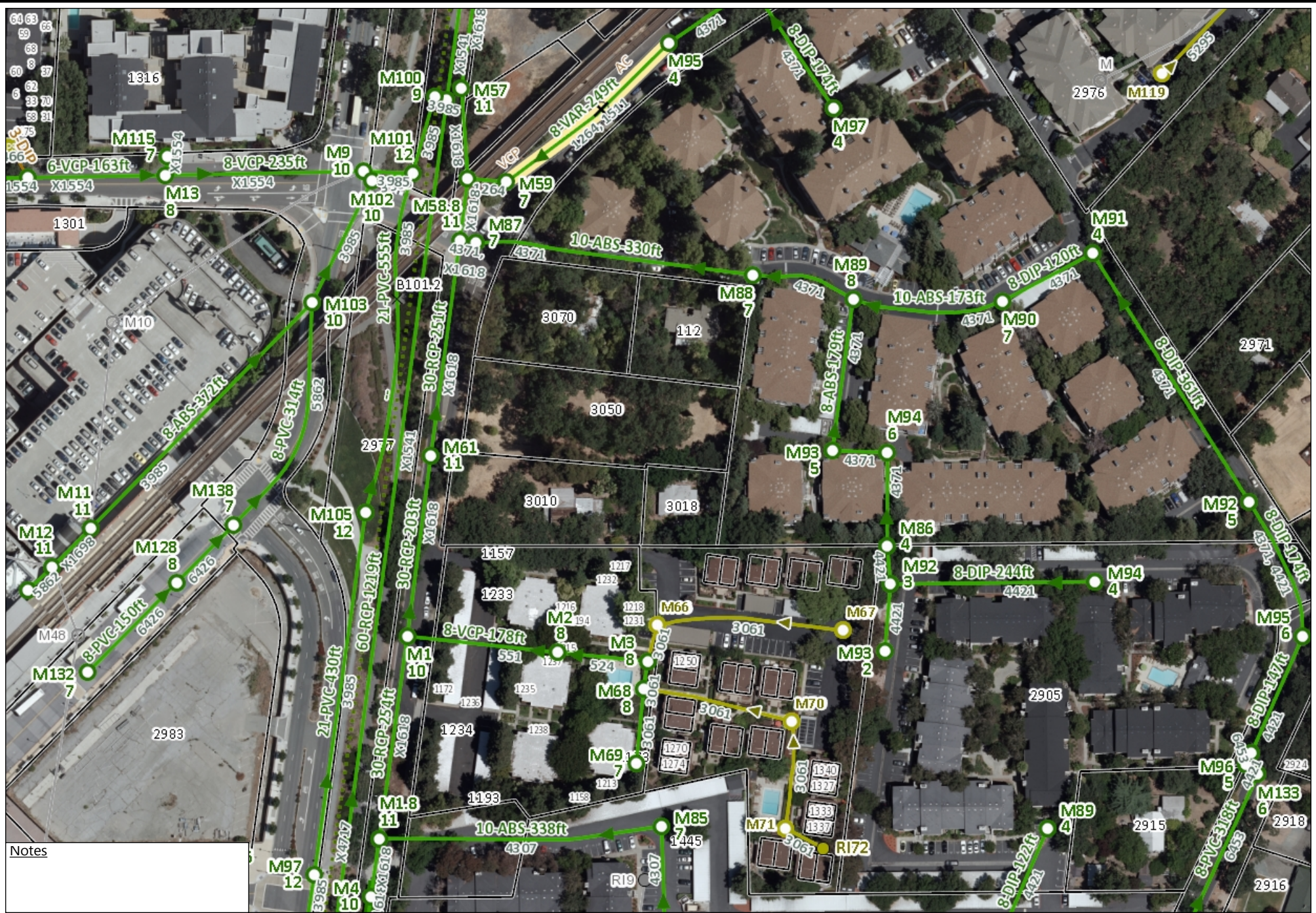
Map Created On:3/15/2018 Map Projection: WGS84

CCCSD Map



Notes





Notes



GENERAL NOTES

1. BASIS OF ELEVATION ARE BASED ON CONTRA COSTA COUNTY DATUM: BENCHMARK C.C.CO.B.M. NO. 3686 ELEVATION 89.518 FEET. FOUND CHISELED "4" ON BOLT HEAD ON SOUTHWEST CORNER OF BASE OF A STREET POWER POLE AT NORTHWEST CORNER OF INTERSECTION OF TREAT BOULEVARD AND DEL HOMBRE LANE.
2. ALL STREET IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF TITLE 9 OF THE CURRENT COUNTY ORDINANCE CODE, COUNTY STANDARD SPECIFICATIONS, AND STANDARD PLANS. THE IMPROVEMENTS ARE SUBJECT TO THE INSPECTION AND APPROVAL OF THE PUBLIC WORKS DEPARTMENT. CONTACT PUBLIC WORKS CONSTRUCTION INSPECTION AT 372-4480 AT LEAST 48 HOURS PRIOR TO THE START OF ANY WORK TO ARRANGE FOR INSPECTION.
3. APPROVAL OF SITE DRAINAGE SHALL BE OBTAINED FROM THE BUILDING INSPECTION DEPARTMENT UNDER THE PROVISIONS OF TITLE 7, DIVISION 716, OF THE COUNTY ORDINANCE CODE AND VERIFIED BY PUBLIC WORKS.
4. ALL REVISIONS TO THIS PLAN MUST BE REVIEWED BY THE PUBLIC WORKS DEPARTMENT PRIOR TO CONSTRUCTION AND SHALL BE ACCURATELY SHOWN ON REVISED PLANS STAMPED AND DISTRIBUTED BY THE ENGINEERING SERVICES DIVISION PRIOR TO ACCEPTANCE OF THE WORK AS COMPLETE.
5. SHOULD IT APPEAR THAT THE WORK TO BE DONE, OR ANY MATTER RELATIVE THEREOF, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS, THE CONTRACTOR SHALL CONTACT ALIQUOT ASSOCIATES, INC. (930-7078) FOR SUCH FURTHER EXPLANATION AS MAY BE NECESSARY.
6. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT, (800) 642-2444, 48 HOURS PRIOR TO ANY EXCAVATION. THE USA AUTHORIZATION NUMBER SHALL BE KEPT AT THE JOB SITE.
7. PRIOR TO PLACING CURB, SIDEWALK, ASPHALT CONCRETE, OR BASE MATERIAL, ALL UNDERGROUND UTILITIES WITHIN THE RIGHT OF WAY SHALL BE INSTALLED, BACKFILL COMPLETED, AND THE PUBLIC WORKS DEPARTMENT'S CONSTRUCTION DIVISION NOTIFIED BY EACH OF THE UTILITY COMPANIES HAVING FACILITIES WITHIN THE WORK AREA, THAT THE UTILITY INSTALLATION HAS SATISFACTORILY PASSED ACCEPTANCE TESTS.
8. ALL NEW UTILITY DISTRIBUTION SERVICES SHALL BE PLACED UNDERGROUND.
9. AN ENCROACHMENT PERMIT SHALL BE OBTAINED FROM THE PUBLIC WORKS DEPARTMENT, LAND DEVELOPMENT DIVISION, FOR ALL DRIVEWAY CONSTRUCTION WITHIN COUNTY ROAD RIGHT OF WAY.
10. IF ARCHAEOLOGIC MATERIALS ARE UNCOVERED DURING GRADING, TRENCHING OR OTHER ON-SITE EXCAVATION, EARTHWORK WITH 100 FEET OF THESE MATERIALS SHALL BE STOPPED UNTIL A PROFESSIONAL ARCHAEOLOGIST WHO IS CERTIFIED BY THE SOCIETY OF CALIFORNIA ARCHAEOLOGY (SCA) AND/OR THE SOCIETY OF PROFESSIONAL ARCHAEOLOGY (SOPA) HAS HAD AN OPPORTUNITY TO EVALUATE THE SIGNIFICANCE OF THE FIND AND SUGGEST APPROPRIATE MITIGATION MEASURES, IF THEY ARE DETERMINED NECESSARY.
11. NO TREES SHALL BE REMOVED UNLESS THEY ARE SHOWN AND NOTED TO BE REMOVED ON THE IMPROVEMENT PLANS. ALL TREES CONFLICTING WITH GRADING, UTILITIES, OR OTHER IMPROVEMENTS, OR OVERHANGING THE SIDEWALK OR PAVEMENT SO AS TO FORM A NOISANCE OR HAZARD, SHALL BE TRIMMED AND PROPERLY TREATED AND SEALED.
12. THE EXCAVATION TRENCH WIDTH FOR ALL PIPES (WITH THE EXCEPTION OF CIPP) SHALL BE A MINIMUM OF 24 INCHES GREATER THAN THE OUTSIDE DIAMETER OF THE PIPE. ONE-HALF OF THE MINIMUM DIMENSION SHALL BE AVAILABLE ON EITHER SIDE OF THE PIPE. THE SAFETY REQUIREMENTS OF THE OCCUPATION AND HEALTH ACT FOR TRENCH SHORING AND BRACING SHALL BE COMPLIED WITH WHERE APPLICABLE.
13. RCP DESIGNATES CIRCULAR OR ELLIPTICAL REINFORCED CONCRETE PIPE CONFORMING TO THE COUNTY ORDINANCE SPECIFICATIONS, AND SHALL BE CLASS III UNLESS OTHERWISE NOTED ON THESE PLANS.
14. EXISTING CURB, GUTTER AND SIDEWALK THAT IS DAMAGED OR DISPLACED, AND IS TO REMAIN, SHALL BE REPAIRED OR REPLACED EVEN IF DAMAGE OR DISPLACEMENT OCCURRED PRIOR TO ANY WORK PERFORMED BY THE CONTRACTOR.
15. PEDESTRIAN RAMPS FOR THE HANDICAPPED SHALL BE PROVIDED AT ALL SIDEWALK CURB RETURNS PER SS NB5-CASE E
16. THE THICKNESS OF SUBBASE, BASE AND SURFACING TO BE DETERMINED BY THE COUNTY PUBLIC WORKS DEPARTMENT BASED ON TRAFFIC INDEX AND SOIL TEST FOR "R" VALUE.
17. WHEN WIDENING THE PAVEMENT ON AN EXISTING ROAD, THE EXISTING PAVEMENT SHALL BE CUT TO A NEAT LINE AND REMOVED BACK TO AN EXISTING ADEQUATE STRUCTURAL SECTION, OR TO THE ORIGINAL ROAD SECTION. AN EXPLORATORY TRENCH, OR POtholing, MAY BE REQUIRED TO DETERMINE THE LIMITS OF PAVEMENT REMOVAL.
18. ALL CURBS WITH GRADES LESS THAN 1% SHALL BE STAKED AT 25-FOOT INTERVALS.
19. PRIOR TO STREET PAVING, "AS-BUILT" GUTTER PROFILES FOR CURB GRADES LESS THAN 0.7% SHALL BE TAKEN AT INTERVALS NOT TO EXCEED 25 FEET AND SUBMITTED TO PUBLIC WORKS, CONSTRUCTION FOR APPROVAL. WHERE, IN A 20-FOOT SECTION, THE "AS-BUILT" GUTTER PROFILES VARY MORE THAN 0.2% FROM THE DESIGNED GRADE, OR IN ANY CASE, SHOW GRADES LESS THAN 0.4%, THE CURBS AND SIDEWALK SHALL BE REMOVED AND RECONSTRUCTED TO THE CORRECT GRADE. ALL CURB RE-CONSTRUCTION SHALL BE COMPLETED AND APPROVED PRIOR TO STREET PAVING.
20. PAVING CONFORMS SHALL BE MADE AT A SMOOTHLY TRIMMED BUTT JOINT.
21. PRIME COAT SHALL BE REQUIRED FOR FULL-DEPTH AC SECTIONS.
22. RECLAMITE WILL BE REQUIRED ON ALL ROADS PROPOSED FOR ACCEPTANCE INTO THE COUNTY MAINTAINED ROAD SYSTEM (LAS JUNTAS WAY WIDENING).
23. IF PAVING AND STORM DRAIN IMPROVEMENTS ARE NOT COMPLETED BY OCTOBER 15, TEMPORARY SILT AND DRAINAGE CONTROL FACILITIES SHALL BE INSTALLED TO CONTROL AND CONTAIN EROSION-CAUSED SILT DEPOSITS AND TO PROVIDE FOR THE SAFE DISCHARGE OF STORM WATER INTO EXISTING STORM WATER FACILITIES. DESIGN OF THESE FACILITIES MUST BE APPROVED BY THE BUILDING INSPECTION DEPARTMENT.
24. ALL TRAFFIC STRIPING AND MARKINGS SHALL BE THERMOPLASTIC UNLESS THE PLANS DESIGNATE THE USE OF "TRAFFIC PAINT".
25. ASBESTOS CEMENT PIPE (ACP) SHALL NOT BE USED IN THE CONSTRUCTION OF ANY STORM DRAINAGE FACILITIES.

REFLECTIONS APARTMENTS CONTRA COSTA COUNTY, CALIFORNIA

26. ALL STRIPING ON MAJOR ROADS SHALL BE CAT TRACKED PRIOR TO FINAL INSTALLATION. FINAL INSTALLATION OF STRIPING WILL BE ALLOWED ONLY AFTER APPROVAL OF THE STRIPING LAYOUT BY THE CONSTRUCTION INSPECTOR.
27. 6" "P" TRAPS SHALL BE PLACED ON SANITARY SEWER LATERALS WHERE SEWER GASES ARE DETECTED.
28. DRIVEWAYS SHALL BE 2.5" AC, 4.5 AB & 8 ABS W/6" STANDARD CONC. CURB.

29. APPLICABLE PUBLIC WORKS DEPARTMENT STANDARD DRAWINGS:
- | | |
|---------|--|
| CC 105 | SURVEY MONUMENTS |
| CC 306 | CURBS, SIDEWALKS, DRIVEWAYS, CONCRETE DITCHES, VALLEY GUTTERS AND CURBED MEDIANS |
| CC 310 | STANDARD FENCES |
| CC 3010 | INLET FRAMES, GRATE AND COVER PLATE |
| CC 3011 | TYPE A INLET |
| CC 3015 | MOD. SIDEWALK CROSS DRAIN (FOR NEW CURB) |
| CC 3020 | PRECAST M.H. COVER AND TYPE I BASE |
| CC 3023 | CIRCULAR GRATE AND FRAME |
| CC 3024 | MANHOLE FRAME AND COVER |
| CC 3050 | PAVEMENT MARKERS TYPICAL DETAILS |
| CC 3051 | SIGNING, STRIPING, AND INSTALLATION DETAILS |
| SS | NB5-CASE E HANDICAPPED RAMP |

29:22

LEGEND

- 55MH-1 FIRE HYDRANT
- 55MH-1 STORM DRAIN, MANHOLE & INLET, CCC STANDARD
- ELECTROLIER w/ 10' ARM
- STREET NAME & STOP SIGN
- STREET MONUMENT
- CHRISTY V&A DRAIN BOX
- GRATE ELEVATION
- TOP OF CURB ELEVATION
- BUILDING PERIMETER ELEVATION
- FINISH SLAB ELEVATION
- TREE SIZE & TYPE TO BE REMOVED
- TREE SIZE & TYPE TO REMAIN
- 8" CURB & GUTTER (SEE SHEET 5)
- LAGOON (SEE LANDSCAPE PLAN)
- SWALE (2% MIN. UNLESS OTHERWISE NOTED)
- 8" CURB (SEE SHEET 5 FOR DETAIL)
- 10' SANITARY SEWER EASEMENT
- SPEEDY-BASIN

SEWER PLAN

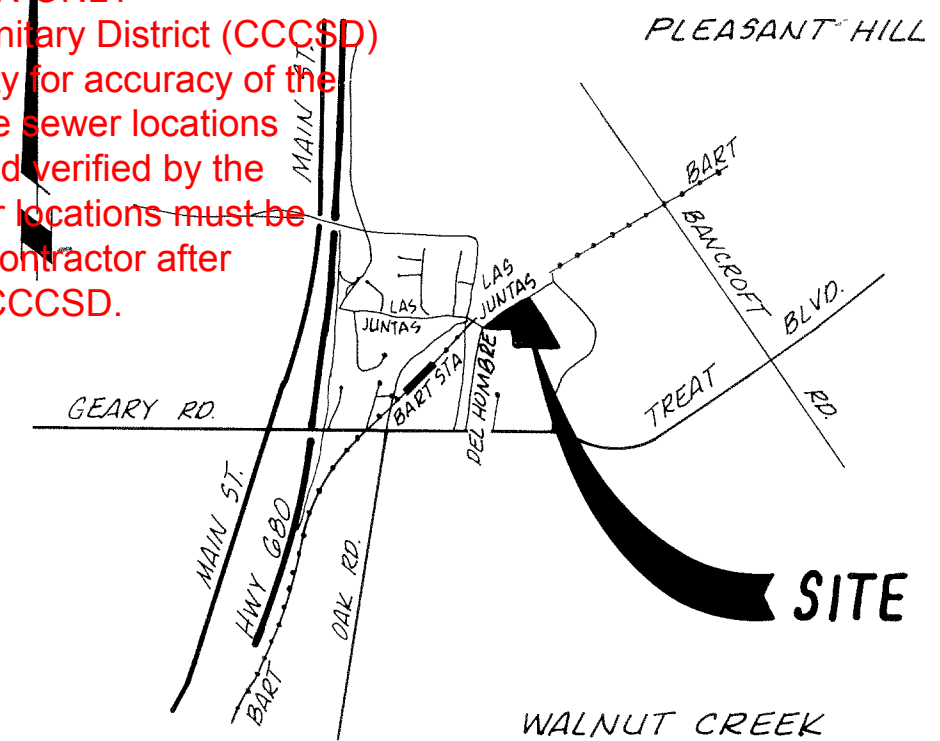
ACRES = 7.95

SHEET INDEX	
SHEET	DESCRIPTION
1	COVER SHEET (NOTES & QUANTITIES)
2	GRADING PLAN (NORTH)
3	GRADING PLAN (SOUTH)
4	SANTOS LANE - PLAN & PROFILE
5	ROBLE ROAD - PLAN & PROFILE
6	OFF-SITE SD - PLAN & PROFILE
7	OFF-ROAD PROFILES
8	LAS JUNTAS WAY WIDENING
9	LAS JUNTAS WAY SECTIONS
10	BUILDING LOCATION & CURVE DATA PLAN

STORM DRAIN SCHEDULE					
STRUCTURE TYPE	QUANTITY	STRUCTURE #	TYPE & SIZE	QUANTITY	UNIT
TYPE A INLET	12	12, 13, 14, 15, 16	PVC 6"	1521	LF
TYPE A INLET w/ M.H. BASE II	4	7, 12, 13, 14	PVC 8"	220	LF
TYPE C INLET	4	4, 13, 14, 22	RCP 12"	487	LF
TYPE C INLET w/ M.H. BASE I	5	18, 19, 20, 21, 17	RCP 18"	649	LF
TYPE I MANHOLE	2	SDMH 1 & 3	RCP 24"	651	LF
3' VALLEY GUTTER	780	LF	RCP 30"	709	LF
TYPE A INLET w/ BASE I	1	5	RCP 15"	77	LF
TYPE II MANHOLE	1	SDMH 2	RCP 18" CL. IV	147	LF
TYPE C w/ M.H. BASE II	4	6, 11, 12, 16, 3			
TYPE III MODIFY MH	1	SDMH 4			

RIGHT-OF-WAY LOG			
PARCEL NO.	NAME	TYPE	DATE REC'D
1	C.C. COUNTY	E.P.	
2	SUBD. 6382	RESERVE	

RECORD INFORMATION ONLY
Central Contra Costa Sanitary District (CCCSD)
Assumes no responsibility for accuracy of the information provided. The sewer locations shown have not been field verified by the District, and actual sewer locations must be verified in the field by a contractor after obtaining a permit from CCCSD.



VICINITY MAP

NTS

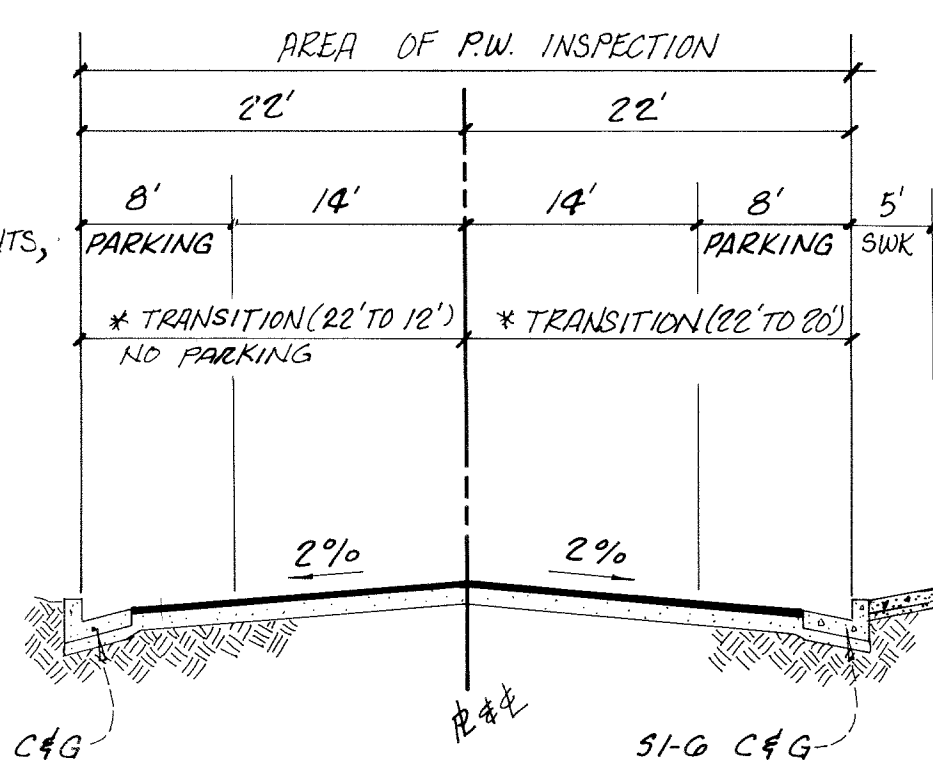
SANITARY SEWER SYSTEM MAP

SCALE: 1" = 600'

FIRE DEPT. APPROVAL FOR HYDRANT LOCATIONS & EQUIPMENT ACCESS:

OWNER/DEVELOPER

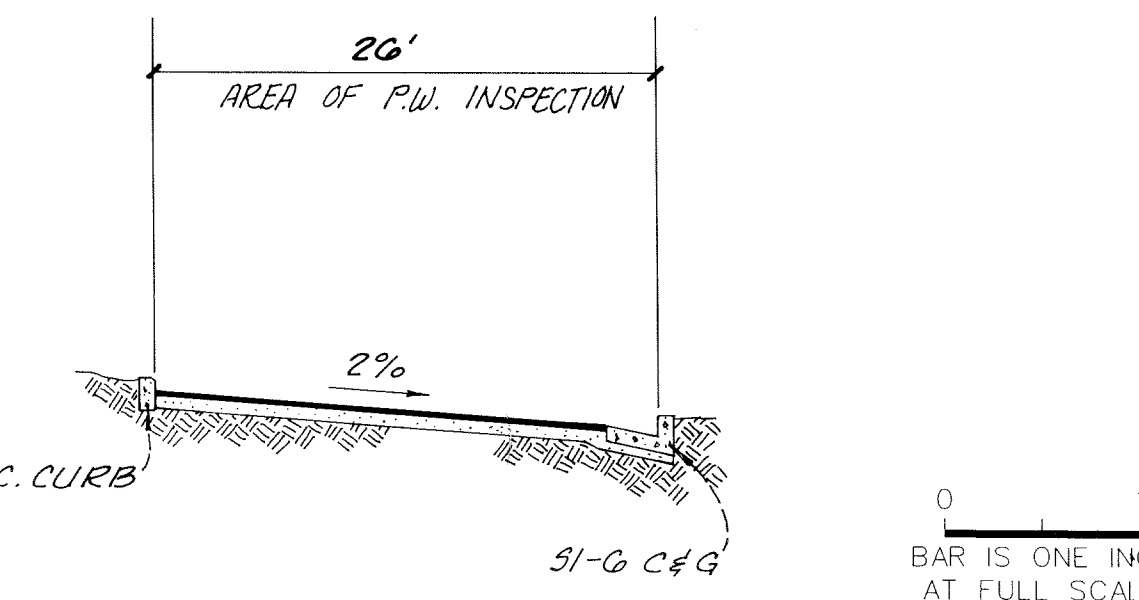
OXFORD DEVELOPMENT ENTERPRISES, INC.
55 GREEN STREET - 3RD FLOOR
SAN FRANCISCO, CALIFORNIA 94111
(415) 966-3813



STRUCTURAL SECTION TO BE DETERMINED BY TRAFFIC INDEX AND "R" VALUE.

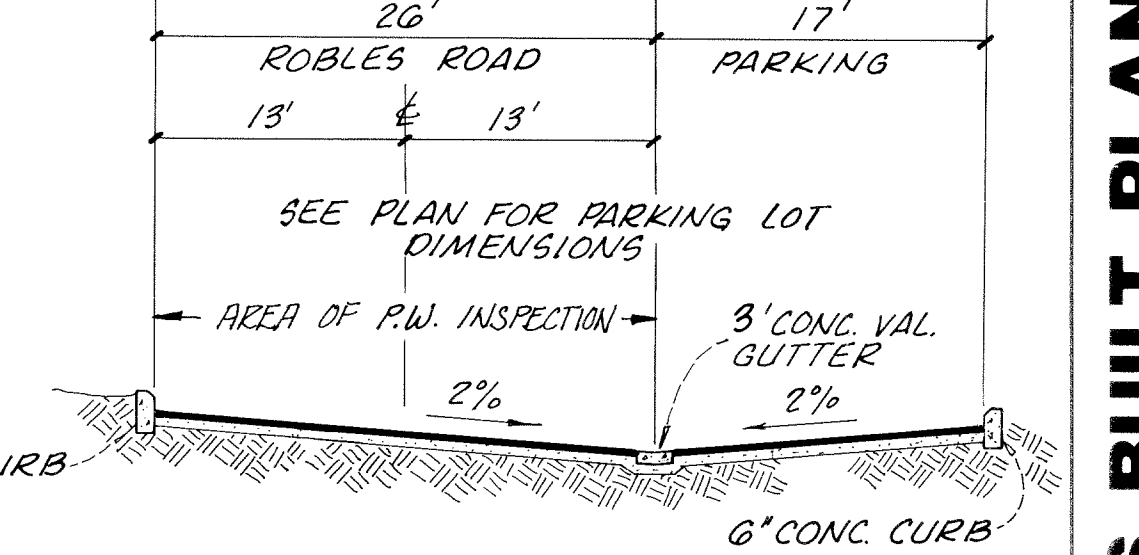
SANTOS LANE STA 0+00 TO 4+90.72

NTS NO PARKING STA. 0+00 TO 1+80
* STA. 3+22.42 TO 4+90.72



ROBLE ROAD

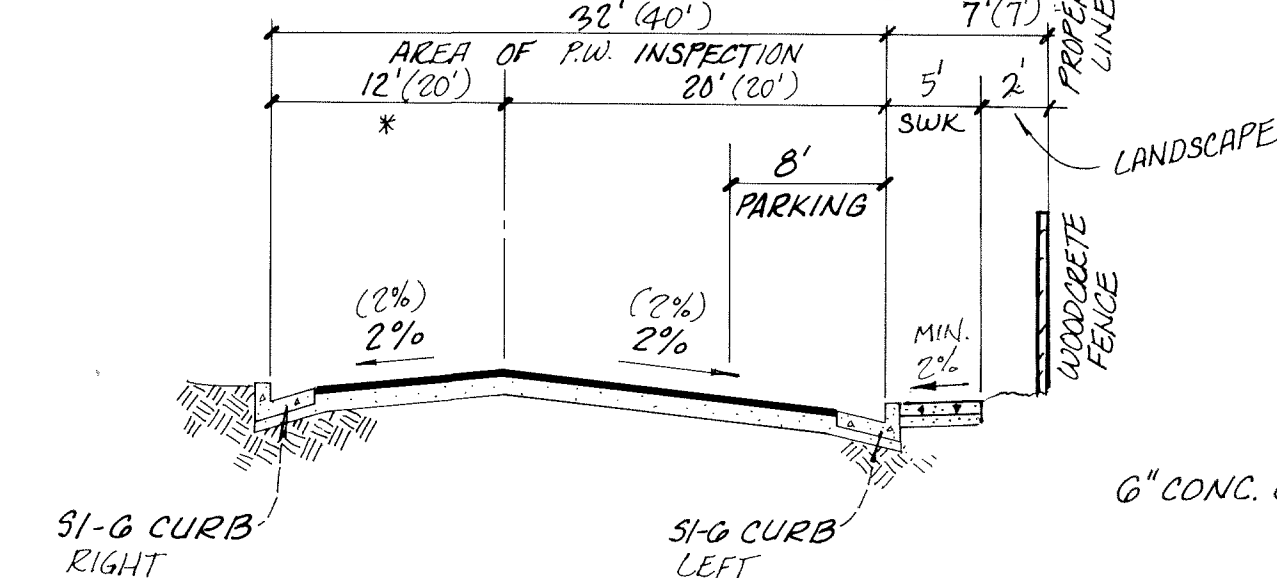
NTS



ROBLE ROAD @ PARKING LOTS

NTS & PARKING LOTS

PAVEMENT DESIGN CHART					
ROAD NAME	A.C.	A.B.	A.S.B.	R-VALUE	T.I.
SANTOS LANE					6.0
ROBLE ROAD					6.0
DWY. ALONG PARK AREAS	2.5	4.5	8	8	5.0
PARKING AREAS	2.0	4.0	6	8	4.0
LAS JUNTAS WAY					6.0



SANTOS LANE STA 4+90.72 TO 8+17.23

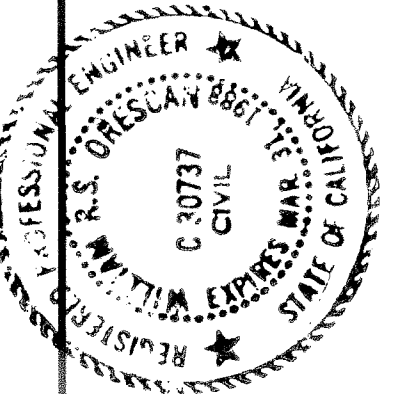
NTS
() = STA. 8+45 TO 8+80
* = TRANSITION 12' TO 20' (STA. 8+17.23 TO 8+45)



CIVIL/STRUCTURAL
ENGINEERS
PLANNERS
SURVEYORS

1535 OLYMPIC BLVD
WALNUT CREEK, CA
94596
(415) 930-7078

NO.	BY	DATE
1	AL	9/29/87
2	AL	
3	AL	
4	AL	
5	AL	
6	AL	
7	AL	
8	AL	
9	AL	
10	AL	



GRADING & IMPROVEMENT PLANS

DP N° 3004-87
SUBD. 6382

JOB NO. 850492	SCALE:	DATE: JUNE 10 87	DESIGN: FCW	DRAWN: WU	ENG: WU	FB
----------------	--------	------------------	-------------	-----------	---------	----

1
SHEET 1 OF 10 SHEETS



CIVIL/STRUCTURAL
ENGINEERS
PLANNERS
SURVEYORS

1535 OLYMPIC BLVD
WALNUT CREEK, CA
94596
(415) 930-7078

NO.	BY	DATE
1	REDA	10/15/87
2	REDA	10/15/87
3	REDA	10/15/87
4	REDA	10/15/87
5	REDA	10/15/87
6	REDA	10/15/87
7	REDA	10/15/87
8	REDA	10/15/87
9	REDA	10/15/87
10	REDA	10/15/87
11	REDA	10/15/87
12	REDA	10/15/87
13	REDA	10/15/87
14	REDA	10/15/87
15	REDA	10/15/87
16	REDA	10/15/87
17	REDA	10/15/87



William B. Dillman 9/29/87

REFLECTIONS APTS IMPROVEMENT PLAN

CONTRA COSTA COUNTY, CALIFORNIA

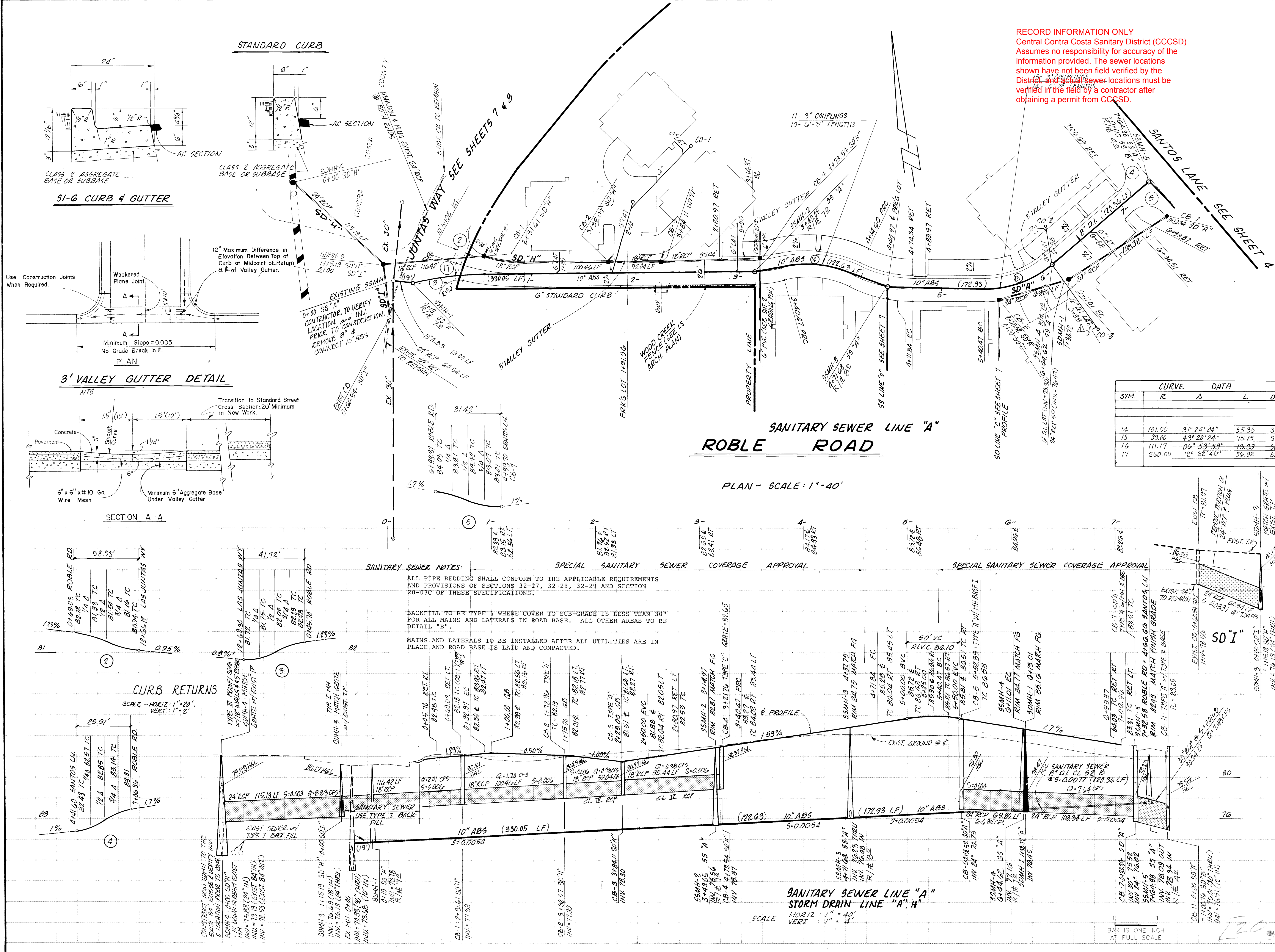
DP # 3004-87

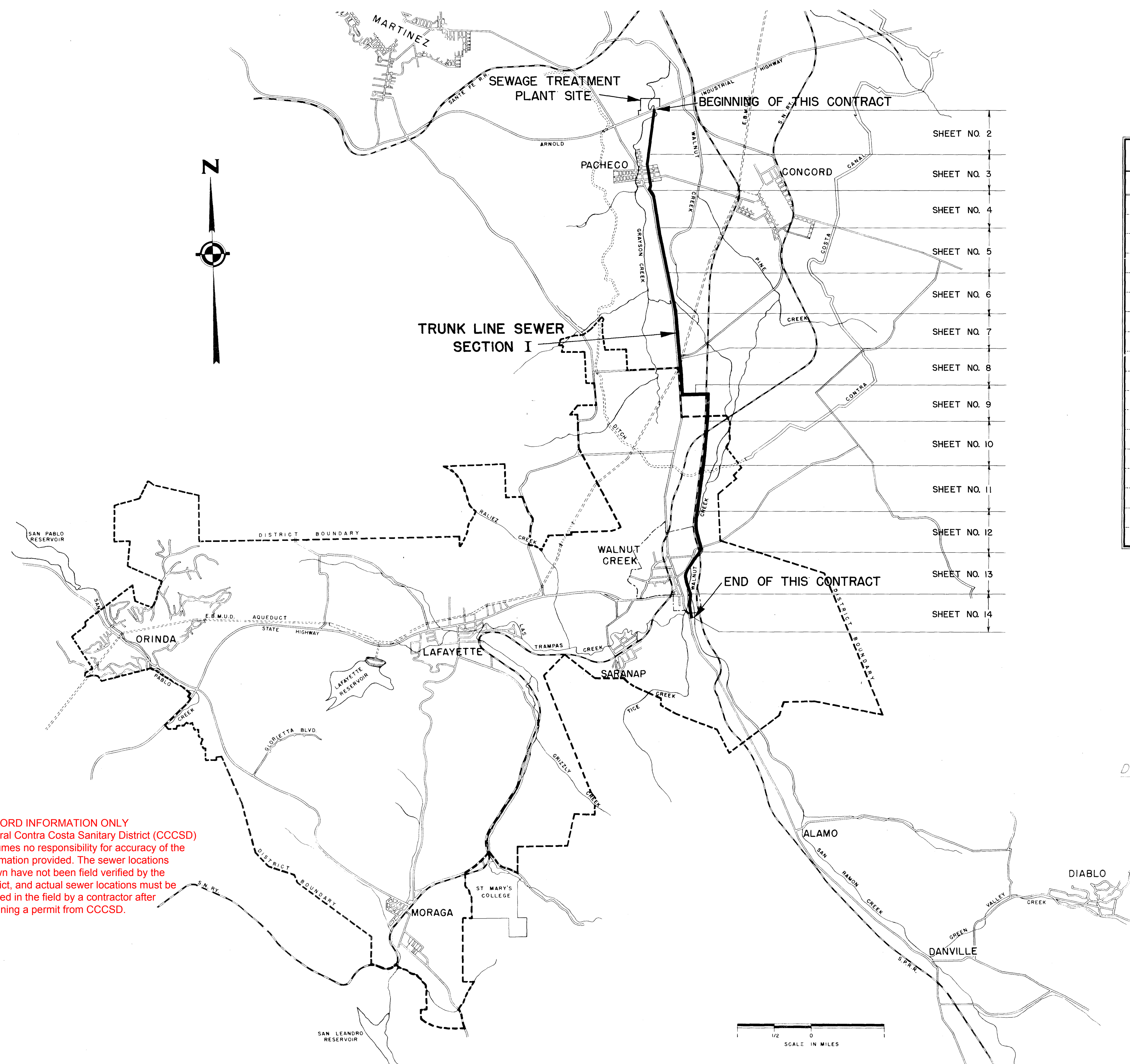
JOB NO. 850092	SCALE: AS SHOWN	DATE: JUNE 10 '87	DESIGN: COW	DRAWN: VLM	ENG: WDW	FB
----------------	-----------------	-------------------	-------------	------------	----------	----

5

SHEET 5 OF 10 SHEETS

RECORD INFORMATION ONLY
Central Contra Costa Sanitary District (CCCSD)
Assumes no responsibility for accuracy of the
information provided. The sewer locations
shown have not been field verified by the
District, and actual sewer locations must be
verified in the field by a contractor after
obtaining a permit from CCCSD.





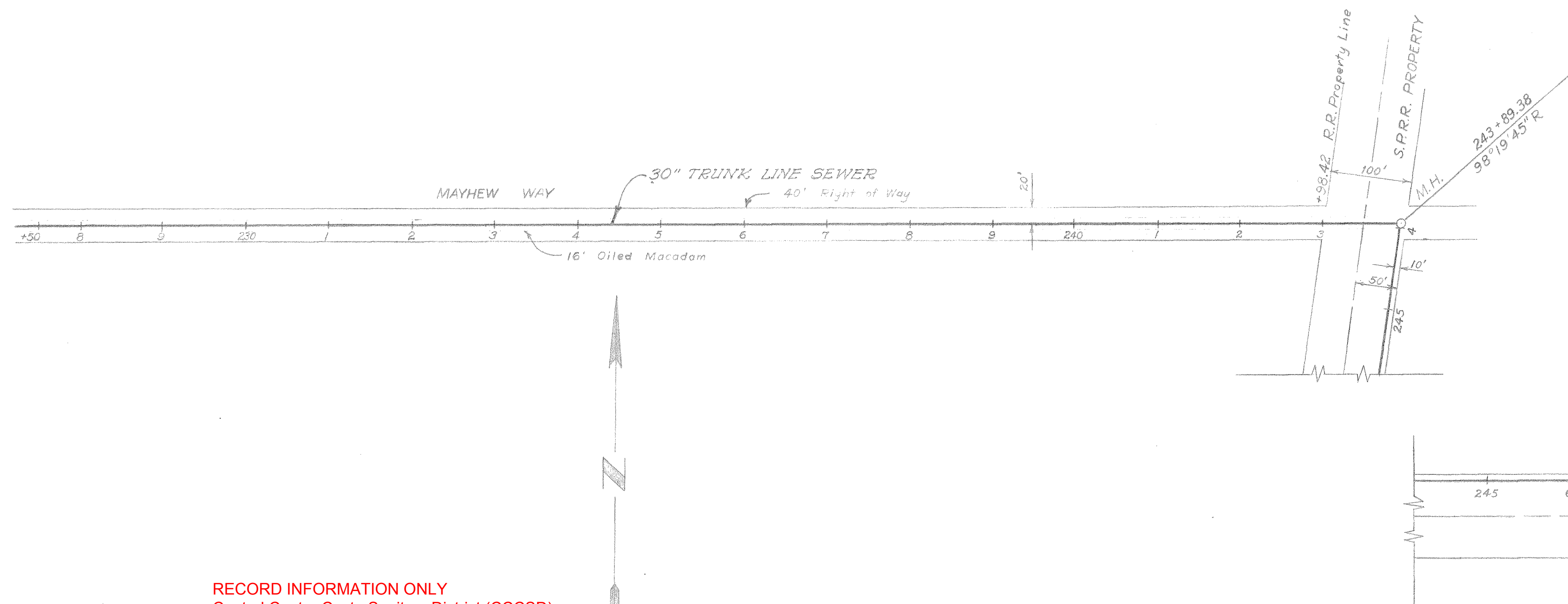
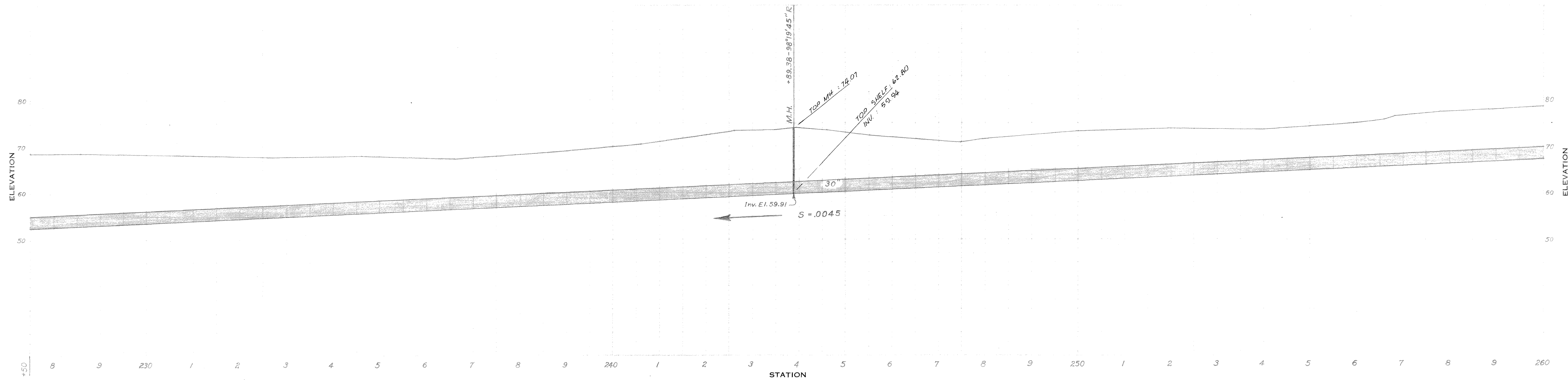
RECORD INFORMATION ONLY
Central Contra Costa Sanitary District (CCCSD)
Assumes no responsibility for accuracy of the
information provided. The sewer locations
shown have not been field verified by the
District, and actual sewer locations must be
verified in the field by a contractor after
obtaining a permit from CCCSD.

LIST OF DRAWINGS	
NUMBER	TITLE
1	GENERAL PLAN AND LIST OF DRAWINGS.
2	PLAN AND PROFILE STA. 0+00 TO 32+50
3	PLAN AND PROFILE STA. 32+50 TO 65+00
4	PLAN AND PROFILE STA. 65+00 TO 97+50
5	PLAN AND PROFILE STA. 97+50 TO 130+00
6	PLAN AND PROFILE STA. 130+00 TO 162+50
7	PLAN AND PROFILE STA. 162+50 TO 195+00
8	PLAN AND PROFILE STA. 195+00 TO 227+50
9	PLAN AND PROFILE STA. 227+50 TO 260+00
10	PLAN AND PROFILE STA. 260+00 TO 292+50
11	PLAN AND PROFILE STA. 292+50 TO 325+00
12	PLAN AND PROFILE STA. 325+00 TO 357+37.32
13	PLAN AND PROFILE STA. 360+67.19 TO 390+00
14	PLAN AND PROFILE STA. 390+00 TO 417+95.05
15	BRIDGES OVER SAN RAMON AND WALNUT CREEK
16	BRIDGE DETAILS
17	BRIDGE AND MISCELLANEOUS DETAILS

GENERAL NOTE:
ELEVATION DATUM-U.S.G.S. SEA LEVEL DATUM OF 1929

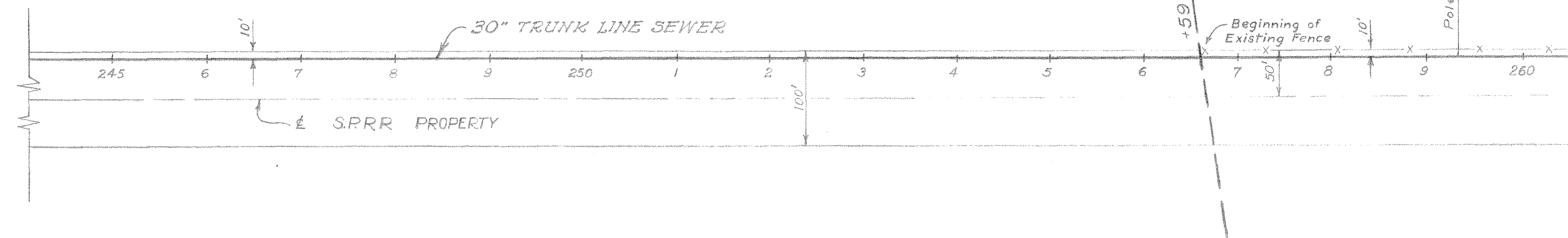
*Drawings revised to constructed Stations and Elevations
of Trunk Line Sewer.*

SEWERAGE SYSTEM FOR THE CENTRAL CONTRA COSTA SANITARY DISTRICT		
TRUNK LINE SEWERS		
TREATMENT PLANT TO WALNUT CREEK GENERAL PLAN AND LIST OF DRAWINGS		
ENGINEERING OFFICE OF CLYDE C. KENNEDY 604 MISSION STREET SAN FRANCISCO		
DRAWN F.L.C. TRACED F.L.C. CHECKED H.M. DATE AUG. 7, 1947.	SUBMITTED <i>Clyde C. Kennedy</i> DISTRICT ENGINEER APPROVED <i>Lawson H. Hines</i> PRESIDENT OF SANITARY BOARD	SHEET NO. 1 OF 17



Note:

Extra Strength Reinf. Concrete Pipe with Collar Joints to be used from Sta. 242+98 to Sta. 243+89.38

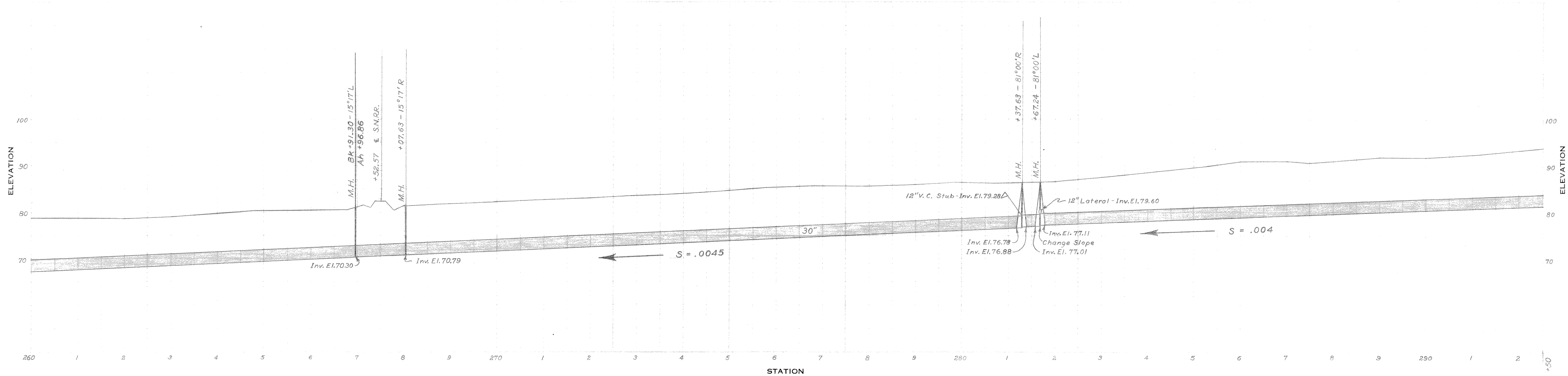


RECORD INFORMATION ONLY
Central Contra Costa Sanitary District (CCCSD)
Assumes no responsibility for accuracy of the information provided. The sewer locations shown have not been field verified by the District, and actual sewer locations must be verified in the field by a contractor after obtaining a permit from CCCSD.

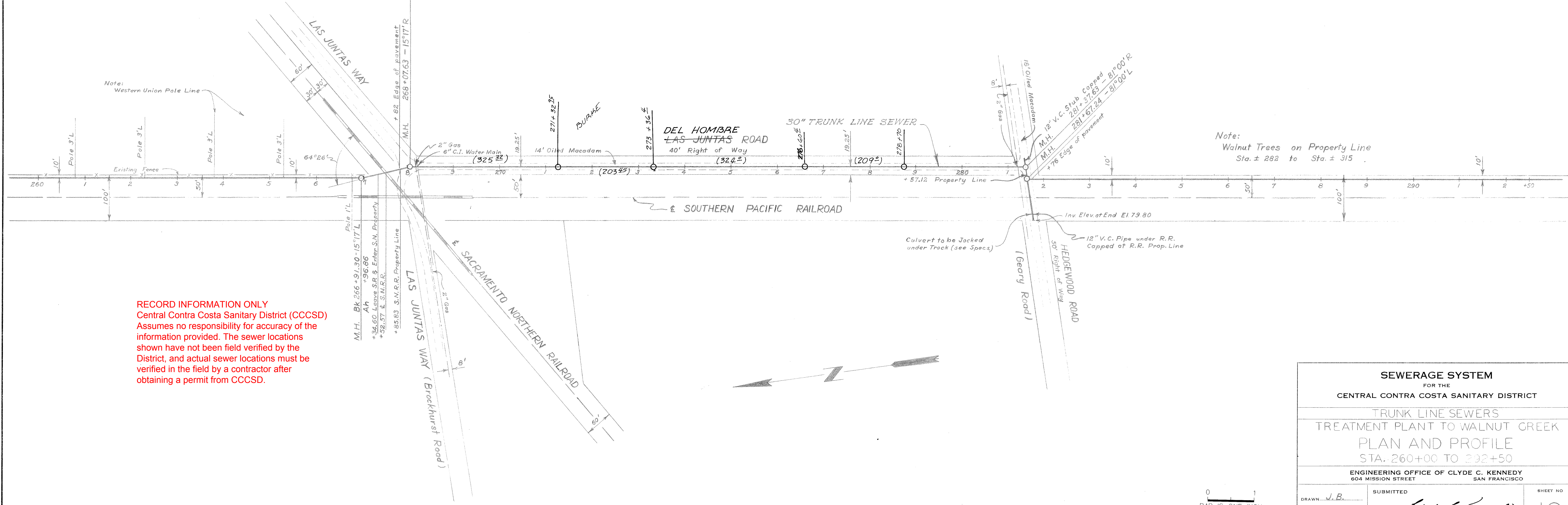
0 1
BAR IS ONE INCH
AT FULL SCALE

Scale: 1"=100' Horizontal
1"=10' Vertical

SEWERAGE SYSTEM FOR THE CENTRAL CONTRA COSTA SANITARY DISTRICT		
TRUNK LINE SEWERS TREATMENT PLANT TO WALNUT CREEK PLAN AND PROFILE STA. 227+50 TO 260+0		
ENGINEERING OFFICE OF CLYDE C. KENNEDY 604 MISSION STREET SAN FRANCISCO		
DRAWN <u>J.R.</u>	SUBMITTED <u>C.M.H.</u>	SHEET NO. <u>9</u>
TRACED <u>C.M.H.</u>	APPROVED <u>Clyde C. Kennedy</u>	DISTRICT ENGINEER
CHECKED <u>J.H.M.</u>	DATE <u>AUG 7 1947</u>	PRESIDENT OF SANITARY BOARD



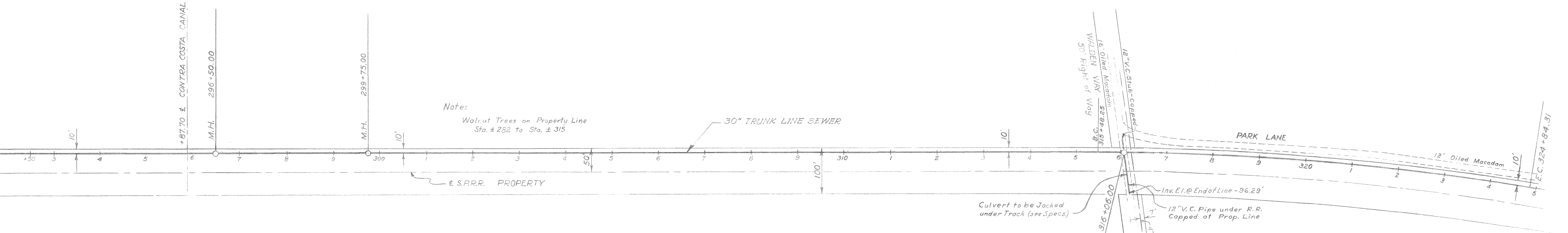
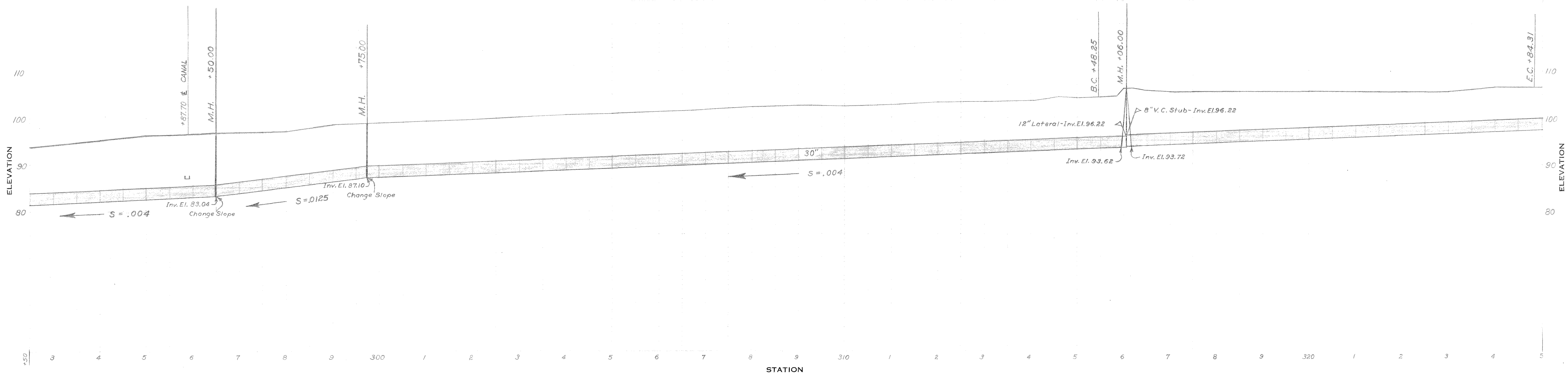
Note:
Extra Strength Reinf. Conc. Pipe with Collar Joints
used from Sta. 267+34 to Sta. 267+86



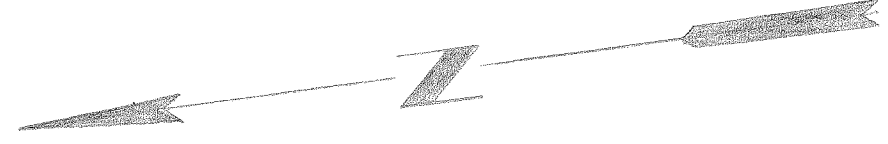
RECORD INFORMATION ONLY
Central Contra Costa Sanitary District (CCCSD)
Assumes no responsibility for accuracy of the
information provided. The sewer locations
shown have not been field verified by the
District, and actual sewer locations must be
verified in the field by a contractor after
obtaining a permit from CCCSD.

Scale: 1"=100' Horizontal
1"=10' Vertical

SEWERAGE SYSTEM FOR THE CENTRAL CONTRA COSTA SANITARY DISTRICT		
TRUNK LINE SEWERS TREATMENT PLANT TO WALNUT CREEK PLAN AND PROFILE STA. 260+00 TO 292+50		
ENGINEERING OFFICE OF CLYDE C. KENNEDY 604 MISSION STREET SAN FRANCISCO		
DRAWN J.B. TRACED C.M.H. CHECKED J.L.M. DATE AUG 7 1947	SUBMITTED APPROVED DISTRICT ENGINEER PRESIDENT OF SANITARY BOARD	SHEET NO 10 OF 17



RECORD INFORMATION ONLY
 Central Contra Costa Sanitary District (CCCSD)
 Assumes no responsibility for accuracy of the
 information provided. The sewer locations
 shown have not been field verified by the
 District, and actual sewer locations must be
 verified in the field by a contractor after
 obtaining a permit from CCCSD.



Scale: 1" = 100' Horizontal
 1" = 10' Vertical

SEWERAGE SYSTEM		
FOR THE		
CENTRAL CONTRA COSTA SANITARY DISTRICT		
TRUNK LINE SEWERS		
TREATMENT PLANT TO WALNUT CREEK		
PLAN AND PROFILE		
STA. 292+50 TO 325+00		
ENGINEERING OFFICE OF CLYDE C. KENNEDY 604 MISSION STREET SAN FRANCISCO		
DRAWN <u>J.B.</u>	SUBMITTED	SHEET NO.
TRACED <u>C.M.H.</u>	APPROVED <u>Clyde C. Kennedy</u> DISTRICT ENGINEER	17
CHECKED <u>J.W.H.</u>	PRESIDENT OF SANITARY BOARD	
DATE <u>AUG. 7, 1947</u>		



Central Contra Costa Sanitary District

Protecting public health and the environment

5019 Imhoff Place, Martinez, CA 94553-4392

PHONE: (925) 228-9500

FAX: (925) 228-4624

[www.centralsan.org](http://www centralsan.org)

May 29, 2018

ROGER S. BAILEY
General Manager

KENTON L. ALM
Counsel for the District
(510) 808-2000

KATIE YOUNG
Secretary of the District

Shante Stowell, Project Engineer
BKF Engineers
1500 California Street, Suite 600
San Francisco, CA 94111

REQUEST FOR SERVICE AVAILABILITY; 284 MFR; 3050 DEL HAMBRE LANE, UNINC.
WALNUT CREEK; APNS 148-170-42, -037, -041, -001, -022; MAP 49C3; JOBS 1618 & 4371

Dear Ms. Stowell:

In response to your request for Central Contra Costa Sanitary District's (Central San) willingness to provide wastewater utility service to this project, I am confirming that the project site is within Central San's boundaries and service is currently being provided to it. In Del Hambre Lane, there is an existing, 30-inch diameter public trunk sewer and in Roble Road there is an existing, 10-inch diameter public main sewer. There is sufficient capacity in the existing, downstream sewer system to accommodate the proposed project.

The project would not interfere with existing facilities. Several residences on the project site are currently connected to the sewer system by private laterals. These laterals would be inadequate to serve the proposed project and would need to be properly abandoned. A Central San permit is required to cap an existing sewer line which shall be done prior to demolition.

Project improvement plans must be submitted to Central San's Plan Review Section to determine compliance with Central San's regulations and the applicability of fees and charges prior to obtaining building permits. For more information, contact the Plan Review Section at 925-229-7371.

If you have any questions regarding these comments, please contact me at 925-229-7255.

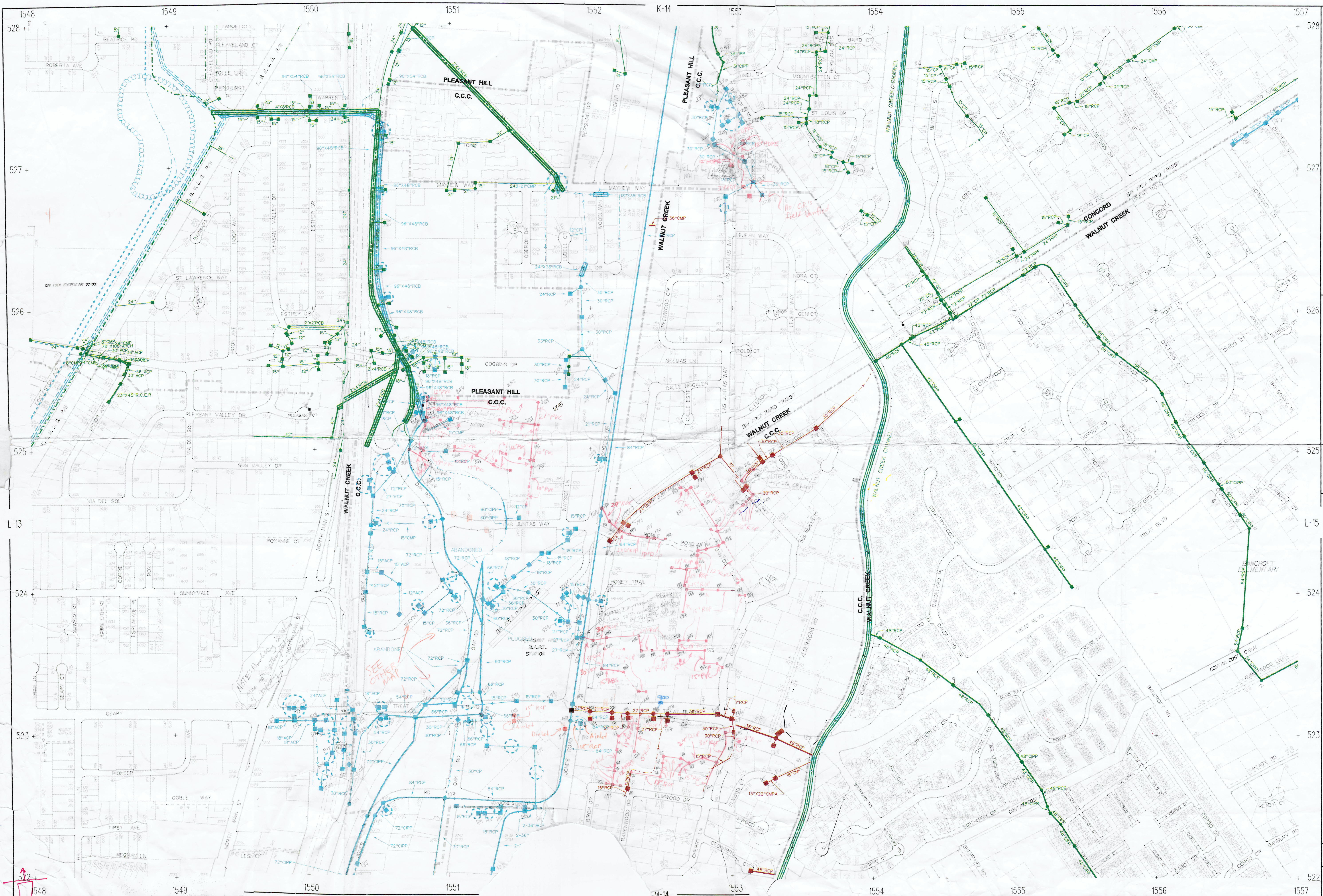
Sincerely,

Russell B. Leavitt
Engineering Assistant III

RBL/sdh

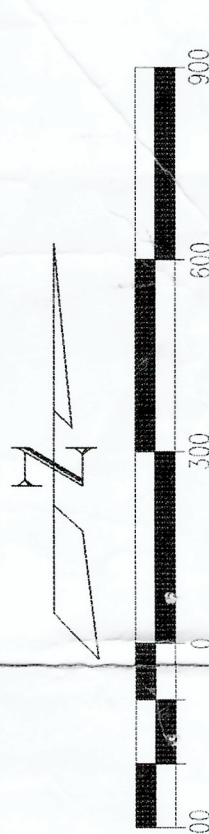
APPENDIX C – STORM DRAIN

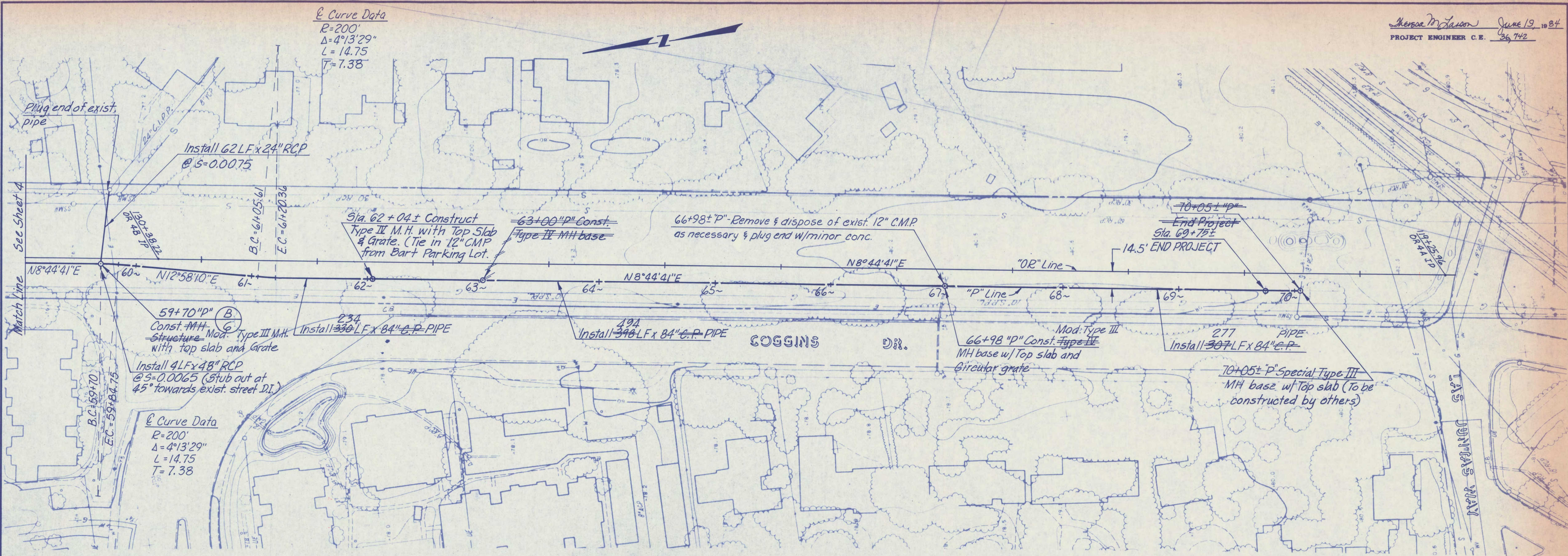
- Storm Drain Base Maps
- Preliminary Storm Drainage Calculations



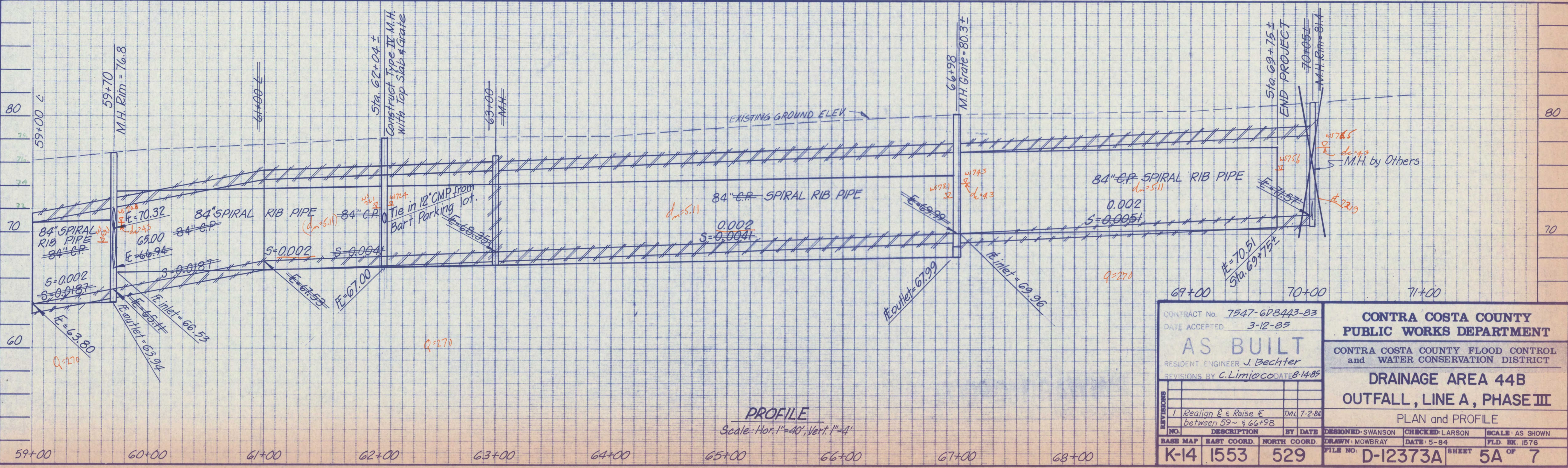
Copyright and Disclaimer
This map contains copyrighted information. Reproducing all or
any part of this map without the written permission of Contra
Costa County is prohibited. Users of this map agree to hold and accept Contra
Costa County of liability and warranties provided hereafter.

Contra Costa County
This map is a product of Contra Costa
County's Geographic Information System
(GIS) Program. For further information
about membership or other GIS products,
contact the GIS Manager 510/335-2353.





PLAN
Scale: 1"=40'



PROFILE
Scale: Hor. 1"=40', Vert. 1"=4'

CONTRACT No. 7547-678443-B3 DATE ACCEPTED 3-12-85		CONTRA COSTA COUNTY PUBLIC WORKS DEPARTMENT	
AS BUILT RESIDENT ENGINEER J. Bechter REVISIONS BY C. Limjoco DATE 8-14-85		CONTRA COSTA COUNTY FLOOD CONTROL and WATER CONSERVATION DISTRICT	
		DRAINAGE AREA 44B OUTFALL, LINE A, PHASE III	
		PLAN and PROFILE	
DESIGNED: SWANSON	CHECKED: LARSON	SCALE: AS SHOWN	FILE NO. D-12373A
DRAWN: MOWBRAY	DATE: 5-84	FLD. RK 1576	SHEET 5A OF 7

Date: October 10, 2018

BKF Job Number: 20180503

Deliver To: Jon Suemnick, Contra Costa County Public Works

From: Janine Watson, Project Engineer

Subject: Del Hombre Apartment Project – Annexation to Drainage Area 44B

The purpose of this memorandum is to provide calculations regarding our impact to the Drainage Area 44B storm drain system.

BACKGROUND

The site is located in unincorporated Contra Costa County near Walnut Creek, in Drainage Area 44 which is “unformed.” The project is proposing to connect to the Drainage Area 44B storm drain system, via an existing 24-inch storm drain pipe which connects to the 84-inch storm drain line in the Iron Horse Trail.

The existing 2.37-acre site comprises five separate lots, two of which contain small single family homes. The project proposes to construct one 5-story apartment building, across all five parcels.

EXISTING STORM DRAIN FLOW

The existing HGL in the 84-inch storm drain line was provided to BKF by the Contra Costa County Flood Control District (Attachment A). The storm drain plan indicates the HGL in the pipe at the existing manhole is at elevation 75.6, and the flow rate is 270 CFS. We have calculated the flow rate based on the HGL and flow line elevations, and confirmed this flow rate, (Attachment B).

EXISTING AND PROPOSED PROJECT STORM DRAIN DEMAND

It is our understanding that the HGL provided to us by the Contra Costa County Flood Control District does not account for storm runoff flow from the site, though based on the existing grades and storm drain infrastructure in the vicinity, it does appear that the site currently drains to Drainage Area 44B.

Based on an analysis of the proposed site, using the Rational Method, we have determined that the unmitigated runoff flow will be approximately 6.00 CFS, see calculations on Tables 1 and 2.

Based on comments received from Contra Costa County Public Works, it is our understanding that detention pipes may not be used for “collect and convey” purposes,



ENGINEERS / SURVEYORS / PLANNERS

only for compliance with C3 flow control requirements. Therefore, while the project does propose a series of detention pipes which will reduce the flow into the existing storm drain system, those are not considered in the calculations of runoff flow from the site.

CAPACITY OF EXISTING STORM DRAIN

Per the Contra Costa County design standards, the storm drain infrastructure must maintain 15 inches of freeboard below the top of any inlet grate or manhole. The existing 84-inch pipe has around 3 feet of cover, so the pipe is allowed to flow full during the design storm. Based on our calculations, when the pipe is full, the capacity is 310 CFS.

CONCLUSION

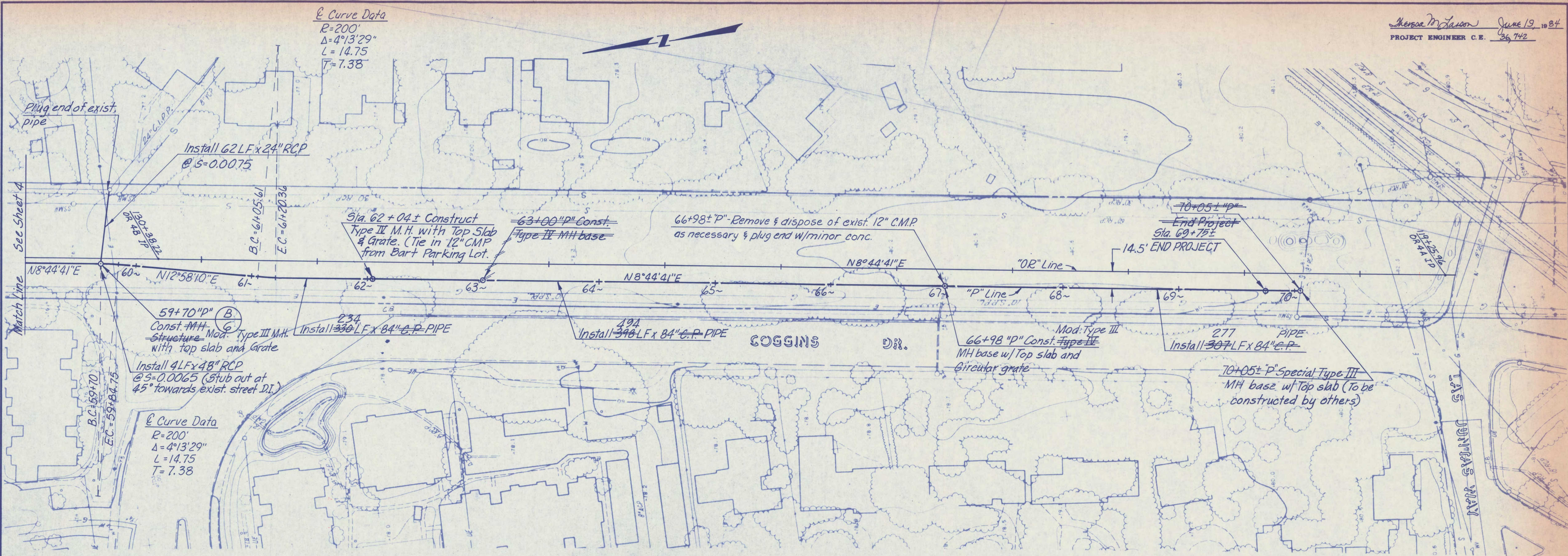
Comparing the existing flow rate (270 CFS) to the flow rate when full (310 CFS), it would indicate that the storm drain pipe can accept the additional flow from the site (6.00 CFS).

ATTACHMENTS

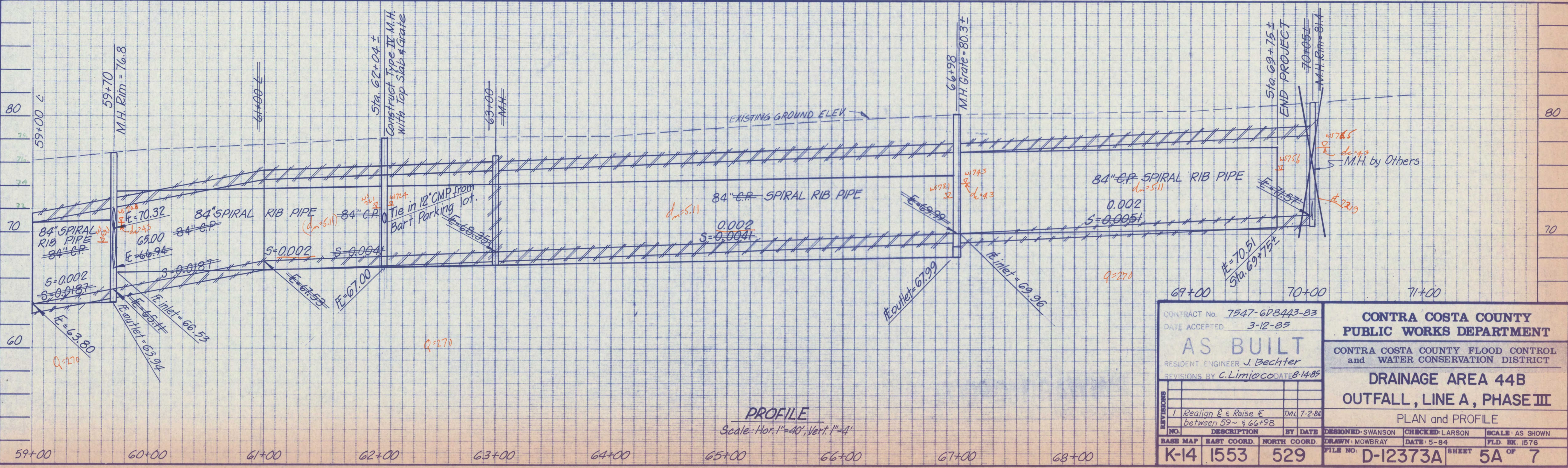
- Attachment A: Iron Horse Trail Storm Drain Plan with HGL
- Attachment B: Existing Pipe Flow Calculations

- Table 1 – Post-Development Hydrology Calculations
- Table 2 – Post-Development 10-Year Storm Intensity Calculations

E Curve Data
 $R = 200'$
 $\Delta = 4^\circ 13' 29''$
 $L = 14.75$
 $\overline{T} = 7.38$



PLAN
Scale: 1" = 40'



PROFILE
Scale: Hor. 1" = 40', Vert. 1" = 4'

CONTRACT No. 7547-6DB443-83 DATE ACCEPTED 3-12-85 <div style="text-align: center; font-size: 2em; font-weight: bold; margin: 10px 0;">AS BUILT</div> RESIDENT ENGINEER J. Bechter REVISIONS BY C. Limjoco DATE 8-14-85	<div style="text-align: center; font-weight: bold; font-size: 1.2em;">CONTRA COSTA COUNTY PUBLIC WORKS DEPARTMENT</div> <hr/> <div style="text-align: center; font-weight: bold;">CONTRA COSTA COUNTY FLOOD CONTROL and WATER CONSERVATION DISTRICT</div> <hr/> <div style="text-align: center; font-weight: bold; font-size: 1.5em;">DRAINAGE AREA 44B</div> <div style="text-align: center; font-weight: bold; font-size: 1.5em;">OUTFALL , LINE A , PHASE III</div> <div style="text-align: center; font-weight: bold; font-size: 1.2em;">PLAN and PROFILE</div>
--	---

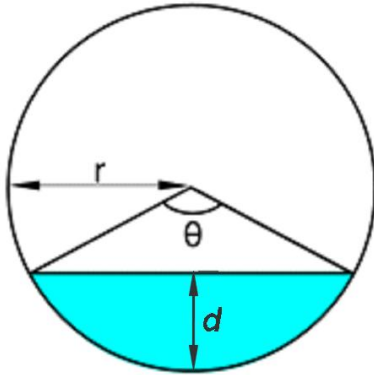
NO.	DESCRIPTION	BY	DATE
1	Realign @ & Raise E between 59~ & 66+98	TML	7-2-84

DESIGNED: SWANSON	CHECKED: LARSON	SCALE: AS SHOWN
DRAWN: MOWBRAY	DATE: 5-84	PLD. BK. 1576

FILE NO: D-19373A	SHEET 5A	OF 7
-------------------	----------	------

Attachment B
Existing Pipe Flow Calculation

Existing Flow of 84-inch Storm Drain Pipe in Iron Horse Trail



$$A = \text{Cross Sectional Area, } ft^2 = \frac{r^2(\theta - \sin(\theta))}{2}$$

$$r = \text{Radius} = 42in = 3.5 \text{ ft}$$

$$d = \text{Depth of Flow} = HGL - inv = 75.6 - 70.51 = 5.09 \text{ ft}$$

$$\theta = 2 * \arccos\left(1 - \frac{d}{r}\right) = 2 * \arccos\left(1 - \frac{5.09}{3.5}\right)$$

$$\theta = 4.08 \text{ rad}$$

$$A = \frac{r^2(\theta - \sin(\theta))}{2} = 29.98 \text{ ft}^2$$

$$P = \text{Wetted Perimeter, } ft = r\theta = 14.3 \text{ ft}$$

$$R = \text{Hydraulic Radius, } ft = \frac{A}{P} = \frac{29.98 \text{ ft}^2}{14.3 \text{ ft}} = 2.10 \text{ ft}$$

$$S = \text{Slope} = 0.002$$

$$Q = \text{flow, cfs} = \frac{1.49 A R^{\frac{2}{3}} S^{\frac{1}{2}}}{n}$$

$$n = \text{Manning Roughness Coefficient} = 0.012 \text{ (Spiral Rib Pipe)}$$

$$Q = \frac{1.49(29.98 \text{ ft}^2)(2.10 \text{ ft})^{\frac{2}{3}}(0.002)^{\frac{1}{2}}}{0.012} = 273 \text{ cfs}$$

Capacity of 84-inch Storm Drain Pipe in Iron Horse Trail Flowing Full

$$d = \text{Depth of Flow} = 7.0 \text{ ft}$$

$$\theta = 2 * \arccos\left(1 - \frac{d}{r}\right) = 2 * \arccos\left(1 - \frac{7.0}{3.5}\right)$$

$$\theta = 6.28 \text{ rad}$$

$$A = \frac{r^2(\theta - \sin(\theta))}{2} = 38.48 \text{ ft}^2$$

$$P = \text{Wetted Perimeter, } ft = r\theta = 21.99 \text{ ft}$$

$$R = \text{Hydraulic Radius, } ft = \frac{A}{P} = \frac{38.48 \text{ ft}^2}{21.99 \text{ ft}} = 1.75 \text{ ft}$$

$$Q = \frac{1.49(38.48 \text{ ft}^2)(1.75 \text{ ft})^{\frac{2}{3}}(0.002)^{\frac{1}{2}}}{0.012} = 310 \text{ cfs}$$

DEL HOMBRE
STORM DRAIN CALCULATIONS

TABLE 1. POST-DEVELOPMENT HYDROLOGY (TOTAL SITE)			
Surface	Area (sf)	Coeff.	C*A (sf)
Building Roofs	77,020	1.00	77,020
Concrete/Asphalt Pavement	9,157	1.00	9,157
Landscape	17,117	0.50	8,559
Total	103,294	0.92	94,736
C _{pr} =		0.92	
I ₁₀ (see Table 4)=		2.76 in/hr	
A =		2.37 acres	
Q_{pr} = C_{pr} * i * A=		6.00 cfs	

TABLE 4. POST-DEVELOPMENT 10-YEAR STORM INTENSITY (i)	
Time of Concentration, typical value for buildings (t _c)	5.0 minutes
Mean Seasonal Precipitation (per Contra Costa County Isohytal Map)	18 inches
Precipitation Depth per Contra Costa County 10-year Duration-Frequency-Depth Curves	0.23 inches
Intensity (i) = Precipitation depth/t_c	2.76 inches/hour

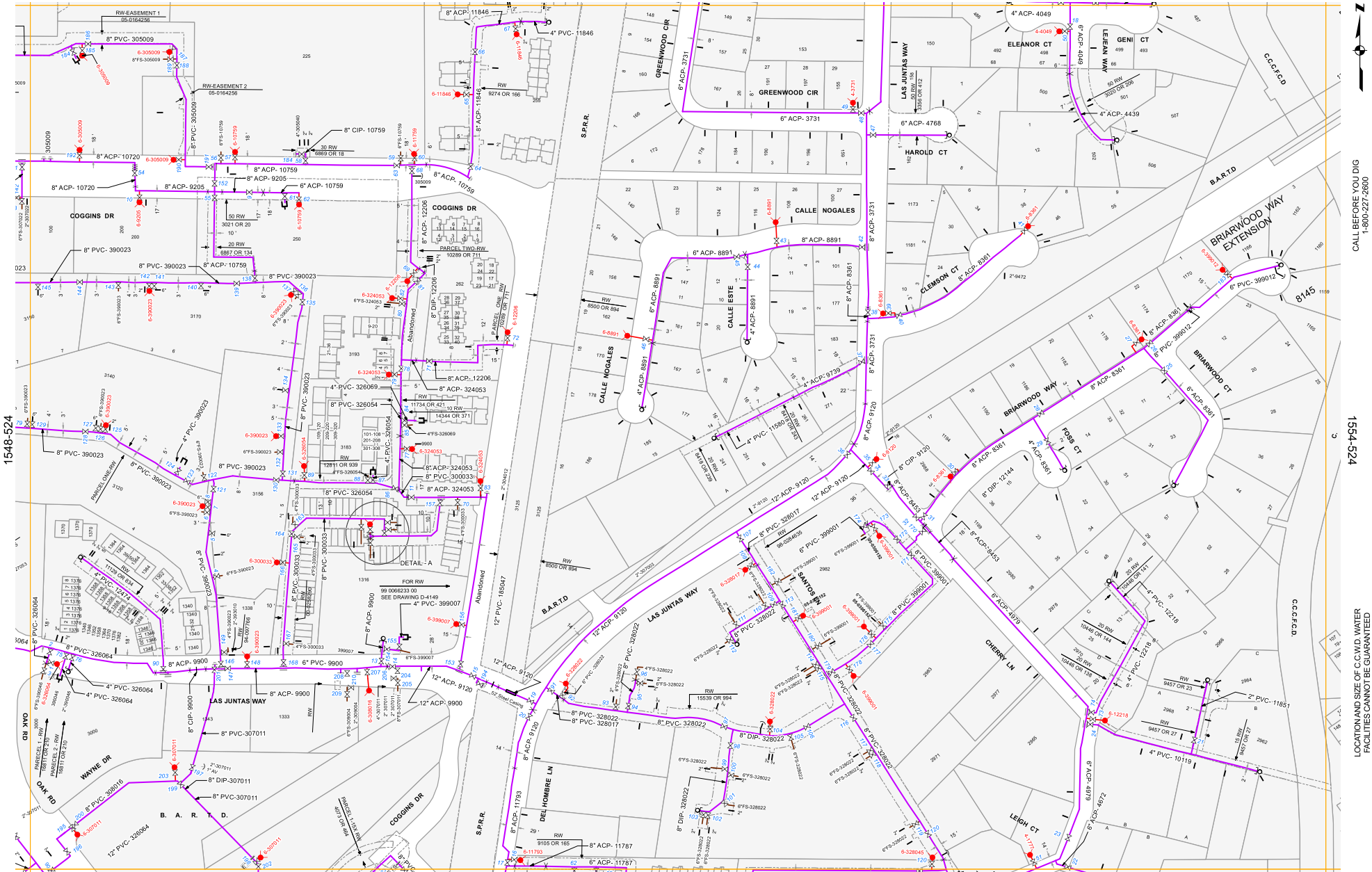
APPENDIX D – POTABLE AND FIRE WATER

- Contra Costa Water District Base Maps
- Fire Flow Information
- Preliminary Fire Water Calculations

1548-526

1551-526

1554-526



1548-522

PRINT DATE	UPDATE DATE	CO. BASE MAP	THOS. BROS.	ZONE (S)
12/23/15	11/20/2015	L-14	592, 612	I

1551-522

200 Feet

1551-524 1554-522

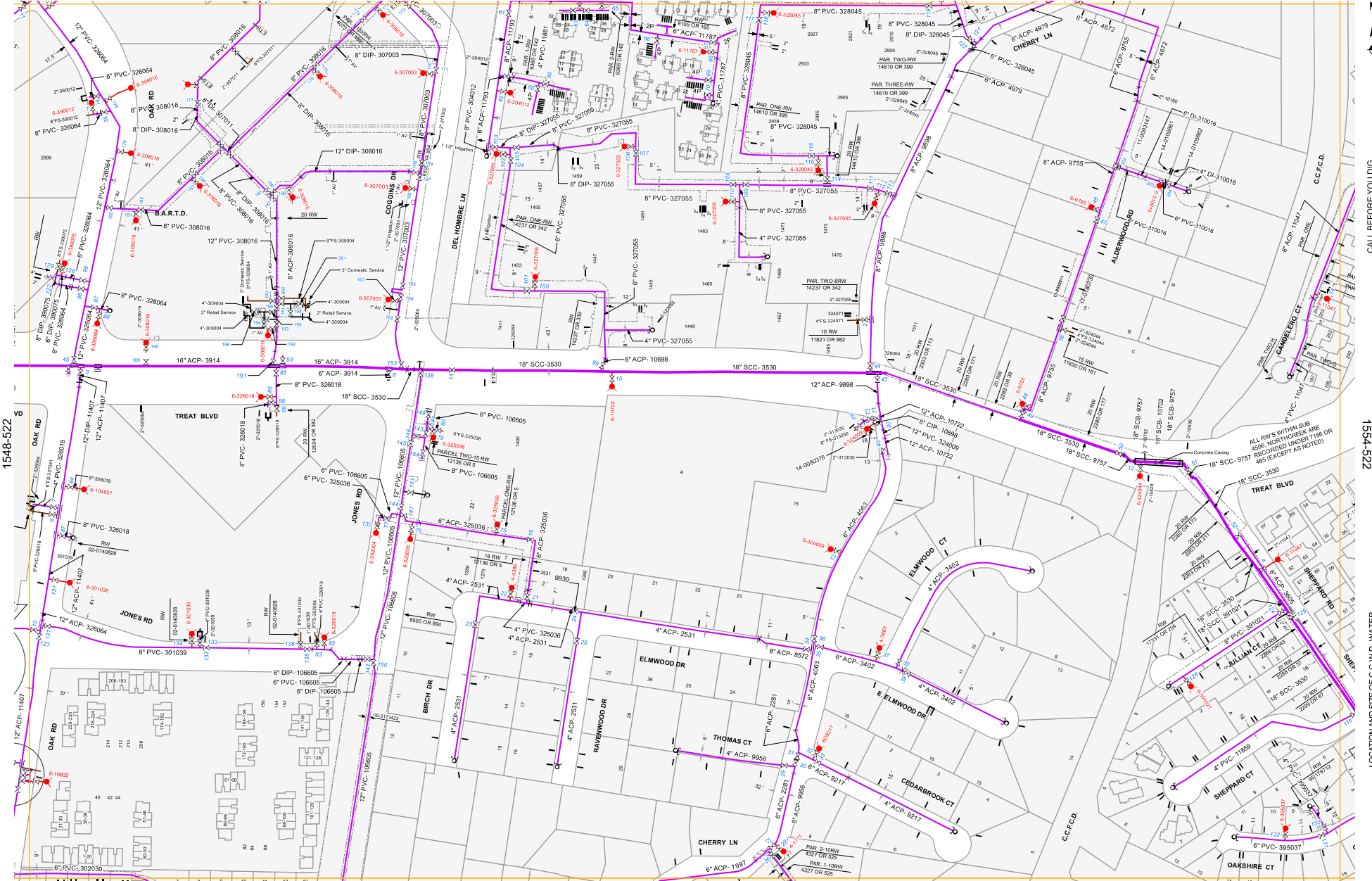
0800-227-080-1
CALL BEFORE YOU DIG

LOCATION AND SIZE OF C.C.M.D. WATER
FACILITIES CANNOT BE GUARANTEED

1548-524

1551-524

1554-524



1548-520

1551-520

1551-522 1554-520

PRINT DATE	UPDATE DATE	CO. BASE MAP	THOS. BROS.	ZONE (S)
2/13/18	2/13/2017	L-14	612	I

200 Feet



080-227-2800
CALL BEFORE YOU DIG

1554-522

LOCATION AND SIZE OF C.C.W.D. WATER FACILITIES CANNOT BE GUARANTEED



Contra Costa County



Fire Protection District

FIRE FLOW TEST RESULTS

Date: 4/17/18

TO: SHANTE STOWELL

150 CALIFORNIA ST. SUITE 600

SAN FRANCISCO, CA.

SITE: DEL HOMBRE x ROBLE RD..

WALNUT CREEK, CA

X-ST.: HONEY TRAIL.

ATTN: SHANTE STOWELL

CCCFPD NO. : P-2018-01554

THE FOLLOWING FIRE FLOW RESULTS INCLUDE THE REQUIRED 10% REDUCTION FOR SYSTEM DESIGN:

STATIC 49.5 RESIDUAL 34.5 GPM 2772 MAIN SIZE 8" WATER DISTRICT CCWD

Conducted on: 4/17/18 at 1130 hours

A handwritten signature in blue ink, appearing to read "Tad Sch", is written over the text.

If you have any questions, please contact the undersigned.



NOTE: Contact the local water district for detector check valve and backflow prevention requirements.
All such devices shall be shown on underground plans and included in sprinkler calculations.

All sprinkler calculations shall be done in the HASS format or similar

4005 Port Chicago Highway • Concord, California 94520 • Telephone (925) 941-3300 • Fax (925) 941-3309

East County • Telephone (925) 757-1303 • Fax (925) 941-3329

West County • Telephone (510) 374-7070

www.cccfpd.org

Contra Costa County



Fire Protection District

P-2018-01554

F. D. Permit Number

4/10/18

Date

Description of Work: Flow test

Project Name: Del Hombre

Address: Intersection of Del Hombre Ln and Roble Rd Suite

City: near Walnut Creek

Zip

Additional Info: Project site is located East of Del Hombre Ln, South of Roble Road and North of Honey Trail.

Applicant: Shanté Stowell

Address: 150 California St, Suite 600

Contact Person: Shanté Stowell

Phone No. (415) 930-7910

Lic# / Type

City: San Francisco

State: CA

Zip: 94111

Email sstowell@bkf.com

APPLICATION SECTION: DO NOT MARK BELOW THIS LINE

Comments:



Contact the Fire District at **925-941-3300 ext. 3902** (minimum **two** working days notice required) to schedule final inspection available Monday through Thursday excluding holidays.

On the morning of the inspection, a confirmation telephone call made to the Fire District at 925-941-3300 is necessary between 8:00 and 8:30 AM. Otherwise, the inspection will be cancelled.

Final acceptance is subject to field inspections and necessary tests.

Approval does not relieve the designer / contractor from complying with all applicable fire code requirements, nor does it abrogate the requirements of other authorities having jurisdiction.



Approved as submitted.



Approved with Comments.



Denied, Resubmittal Required.

Reviewed by:

Date:

Fee computed by:

Am

Amount Due:

486⁰⁰

Received by:

Am

Amount Received:

486⁰⁰

☐ Cash ☐ Credit

☒ Check No.

121718

Invoice No.

18-1598



Board of Directors

Lisa M. Borba, AICP
President

Connstance Holdaway
Vice President

Ernesto A. Avila, P.E.

Bette Boatman

John A. Burgh

General Manager

Jerry Brown

June 11, 2018

The Hanover Company
Attn: Scott Youdall
150 California Street, Ste 600
San Francisco, CA 94612

Subject: Conceptual Cost Estimate for Del Hombre Apartments, Walnut Creek, Project Number 51831500

Dear Mr. Youdall:

The Contra Costa Water District (District) appreciates the opportunity to provide a conceptual review and estimate of your project. Attached is a summary of the likely design and implementation costs and list of project components based on the information that was provided to the District. (Attachment 1)

Conceptual cost estimates are prepared based on the information provided by the requestor and assumptions made by the District, including the following: layout, building pad elevations, anticipated water demands, pipeline alignment, permit costs, and utility locations. In addition to these general assumptions, your attention is directed to the notes listed at the bottom of the attached estimate, which describe specific assumptions made about the project.

Requested water services for the Del Hombre Apartments project will include the following:

- A new 6-inch domestic service with a 6-inch meter and a reduced pressure backflow prevention device (RP);
- A new 1-inch irrigation service with a 5/8-inch meter and a RP;
- A new 8-inch fire service with RP;
- Four (4) new Fire Hydrants;

Both the 6-inch domestic service and the 8-inch fire service will be tapped off the existing 8-inch water main in Honey Trail and placed at a suitable location along the property boundary. The 1-inch irrigation service will be tapped off the existing 8-inch water main on Del Hombre and placed at a suitable location along the property boundary. The District will install the domestic service, the fire service, and the irrigation service facilities up to and including the RP device. You will be responsible for making the connection from the RP devices to the proposed development. In addition, all four (4) of the required fire hydrants will be tapped off of the surrounding water mains in the area and installed separately at various locations along the property boundary. An easement may be required for the new meters, backflow devices, and fire hydrants. If an easement is required, you will be responsible to sign and have notarized a standard District Easement Agreement and provide a plat and legal description of each easement area, prepared by a licensed surveyor.

The conceptual evaluation has assumed the maximum flow rate for a 6-inch meter of 1,500 gallons per minute (GPM). Under this condition and the need for a RP device, water service

Mr. Youdall
Conceptual Cost Estimate – Del Hombre Apartments
June 11, 2018
Page 2

cannot be provided from existing infrastructure within the District's standard pressure range of 40-79psi. Pursuant to the District's Code of Regulations, when water pressure within the standard pressure range cannot be provided District Board of Directors approval of a conditional Modified Pressure Service Agreement (MPSA) is required. If approved, the MPSA would be for a single service to the building and would require you to install a private pressure boosting pump to increase service pressure to within the District's standard pressure range.

The State Water Resource Control Board (SWRCB) mandates certain separation requirements for water mains that are parallel to and/or crossing sewer and storm drains. Grading and/or utility plans should be developed to comply with all separation criteria mandated in SWRCB Section 64572. New water mains MUST cross over sewer and storm drains with a minimum of 1-foot vertical clearance while maintaining a minimum of 3 feet of cover. All efforts to maintain these regulatory requirements as well as public health will be prioritized above construction costs in determining an acceptable alternative.

By providing this review and estimate the District makes absolutely no warranty whatsoever, whether expressed or implied, that the District will be able to install and supply water for this parcel, or that the District supports or endorses the further development of this project. The District recommends the applicant fully investigate all City requirements and resolves any issues that may impact the installation of proposed water services prior to submitting the project to the District for design.

Should you decide to continue the pursuit of receiving water from the District, you will be required to file an Application for Service (Attachment 2) and a \$30,000 project deposit to initiate design. As determined, the requested services cannot meet the District's standard pressure range of 40-79psi, an Application for Low Pressure Service (Attachment 3) and \$10,000 deposit will be required to move forward with the processing and approval of the Modified Pressure Agreement.

If you have any questions, please call me at (925) 688-8014.

Sincerely,


Cindy Sweeney
Engineering Services Coordinator

CS:aj

Attachments: 1) Conceptual Cost Estimate for Project Number 51831500
2) Application for Service
3) Application for Low Pressure Service

File: 51831500 – 3.0

Attachment 1

Conceptual Cost Estimate for Del Hombre Apartments – Walnut Creek – PN 51831500

Description	Estimated Cost
Install new 6-inch service w/ a 6-inch meter and 6-inch RPBPD for domestic service. Including labor, materials, overhead and Facility Reserve Charge (FRC)	\$1,075,000
Install new 1-inch service w/ 5/8-inch meter and 3/4-inch RPBPD for irrigation service. Including labor, materials, overhead and Facility Reserve Charge (FRC)	\$25,000
Install new 8-inch fire service w/ an 8-inch RPBPD including pad and cage. Including labor, materials, and overhead	\$35,000
Install four (4) fire hydrants	\$75,000
Abandon existing services	\$25,000
Facility Reserve Charge (FRC) Credit for existing services	(\$96,038)
Utility investigation	\$10,000
District design	\$30,000
Modified Pressure Service Agreement Processing	\$10,000
Permit Costs (encroachment permit)	\$5,000
Total Estimated Cost (rounded to the nearest \$5K) (Actual cost may vary +/- 30%)	\$1,200,000

NOTES:

Assumptions:

1. Applicant will provide all necessary land rights, rights-of-ways, or easements required for this water distribution system, the cost of which have not been included in this estimate. Any required land rights will be identified in the "Developer Redline" drawings during Preliminary Design.
2. FRC is based on April 1, 2018 rates.

APPLICATION FOR SERVICE / RELOCATION

Name of Project: _____

Project Address: _____ Zip Code: _____

Name of Applicant: _____

Contact Person: _____

Address: _____

Phone: _____ Cell Phone: _____ Email: _____

Description of Project: _____

DATE SERVICE REQUESTED: _____

Service Type	Meter Size Requested	Number of Meters Requested
Domestic		
Fire		
Irrigation*		

*Note: District Regulation 5.32.020 requires a separate irrigation service and meter for any commercial building with a landscaped area over 200 square feet.

Engineering Firm (if applicable): _____

Contact Person: _____

Phone: _____ Cell Phone: _____ Fax: _____

Amount of Deposit: \$ _____ CCWD Receipt # _____

The State Water Resource Control Board (SWRCB) mandates certain separation requirements for water mains that are parallel to and/or crossing sewer and storm drains. Grading and/or utility plans should be developed to comply with all separation criteria mandated in SWRCB Section 64572. New water lines MUST cross over sewer and storm drains with a minimum of 1 foot vertical clearance while maintaining a minimum of 3 feet of cover. All efforts to maintain these regulatory requirements as well as public health will be prioritized above construction costs in determining an acceptable alternative.

As of January 1, 2011 all new residential construction will require fire sprinklers to be installed per the 2010 California Residential Code. Per the California Department of Health Services (Code 17, Sections 7588 and

7594) a backflow prevention device will also be required. Applicant acknowledges and agrees that, as specified in sections 5.08.070.C and 5.16.050.D of the District's Code of Regulations, the District may terminate service at any time for non-compliance with any regulation of the District or default in any payment due to the District and understands that termination of service will also terminate any fire suppression system connected to the terminated service. Applicant further acknowledges and agrees that, in the event of such termination for non-compliance with any regulation of the District or default in any payment due to the District, the District shall not be liable for any loss, damage, or inconvenience to any person or property by reason of any interruption, suspension, or termination of water service and/or fire service. Applicant further acknowledges the provisions of section 5.04.060 of the District's Code of Regulations, which provide in part that the District shall not be liable for any loss, damage, or inconvenience to any person by reason of any shortage, reduction, interruption, or discontinuance of water service or the increase or decrease of water pressure, when the same is caused by an act of God, drought, an unavoidable accident, a shutdown, a disturbance or condition of any kind beyond the reasonable control of the District, or when the same is reasonably necessary for the repair, maintenance, alteration, or extension of any facility of the District or of the Contra Costa Canal System of the United States Bureau of Reclamation.

Effective January 1, 2018 all newly constructed multi-family or mixed use residential and commercial structures, require each residential unit to be individually sub-metered per Water Code Section 537. The Applicant acknowledges and agrees that the District's provision of water service to these types of projects is conditioned upon satisfactory compliance with this regulation.

INFORMATION REQUIRED FOR DESIGN (additional information may be required):

- _____ Assessor's Parcel Number and Subdivision/Parcel Number APN: _____
- _____ Subdivision or Parcel Map ☐ Preliminary, ☐ Final*, ☐ Recorded
- _____ Improvement Plans ☐ Preliminary, ☐ Approved**
- _____ Joint Trench Plans
- _____ Private utility information from property owner or provide confirmation that owners have no additional utility information.
- _____ Electronic Files (CAD) [email to rbroad@ccwater.com]
- _____ Environmental Documentation (determination page and geotechnical report)
- _____ Letter and map from Fire District defining fire protection requirements

- _____ Fire Service Size and Hydraulic Calcs (at point of connection - if applicable; please note a RP device will result in between 7-15 psi loss)
- _____ Fire Sprinkler information: Will chemicals such as hydrofluorocarbon, anti-corrosion chemicals or booster pumps be used as part of the fire system? ☐ No ☐ Yes If yes, please provide detail
- _____ Landscape Plans (if applicable), including total square footage (sq. ft.) of all planted area, subset of turf sq. ft. and open water sq. ft. (ponds, pools, fountains, etc.); C.3 stormwater mitigation plans & calculations.

*** Final Subdivision/Parcel map required for Agreement Design**

****Improvement Plans must be approved prior to start of Agreement Design only.**

Water Meter Sizing Worksheet

Does this project have multiple models? ☐ No ☐ Yes If yes, please provide the number of models and complete a worksheet for each one. Refer to attached example for meter sizing calculations.

FIXTURE UNIT COUNTS

Bathroom:	Number to be Installed
Tub/ Shower Combined	
Shower only	
Tub only	
Sinks	
Double Sinks	
Toilets	
Kitchen:	
Sinks	
Dishwasher	
Laundry Room:	
Sinks	
Clothes Washer	
Other:	
Garage Sinks	
Hose bibs	
Total Fixture Unit Count	

I hereby certify that my answers to the questions in this form are complete and true to the best of my knowledge. I understand that misrepresentation of the foregoing information may result in additional payment of installation and capacity charges as described in the District's Code of Regulations.

By signing this application, the Applicant hereby grants to the District and its employees, consultants, and contractors the right to enter its property to undertake such activities that the District determines are necessary for the design of the facilities. Applicant agrees to grant to the District, in District approved format, all land rights that the District determines are necessary for its facilities, to provide all information the District determines is necessary for the District to perform design (including information necessary to determine whether service is a "modified pressure service" per Section 5.08.010 and 5.08.020 of the District's Code of Regulations), to pay the District for all water delivered to the service(s) in accordance with the District's schedule of rates which shall from time to time be legally modified by the District Board of Directors, to pay all District's costs related to the project, and to abide by all rules and regulations as approved by the District Board of Directors. **At the time of Application, the Applicant shall pay the appropriate deposit and all applicable fees and District's estimated costs, including service connection fees in effect on the official date of application (Section 5.08.040 of District's Code of Regulations).**

Important Information: Pursuant to section 5.08.035 of the District's Code of Regulations, each applicant for new treated water service shall be charged the applicable fees, including without limitation those charged under Section 5.08.040, in effect on the date a complete water service application is received by the District. Among the applicable fees is the District's Facility Reserve Charge (FRC), which is subject to annual adjustment, typically on April 1 each year. Payment of the FRC in effect on the date a complete water service application is received by the District is not a permanent reservation of capacity or a commitment by the District to hold capacity for a proposed connection or development in perpetuity. Pursuant to Section 5.08.070 of the District's

Code of Regulations, to avoid incurring an obligation to pay additional sums toward an adjusted FRC in order to maintain the capacity reservation, each Applicant must install, set and activate all water meters within 12 months after the District executes the Service Agreement or Water Main Extension Agreement, whichever is applicable, and must pay a monthly Service and Demand fee thereafter (or a minimum meter maintenance fee) to maintain the capacity reserved for each meter. Failure to meet these requirements may result in the need for reconnection per section 5.52.050 of the District's Code of Regulations. **FRC payment is acknowledgement by the Applicant that they have reviewed any and all relevant information related to existing services and their applicability towards this project and are satisfied that the meter sizes and number requested are necessary. Once paid, the FRC will "run with the land" and will not be refundable.**

If at any time the District's actual costs (described above and in Section 5.28.060 of the District's Code of Regulations) exceed the deposit, the Applicant shall promptly pay the difference between the current estimated costs and the current deposit upon receipt of an invoice from the District for such costs. All work will stop until this payment is received. Construction drawings and other design documents and project deliverables will not be released to Applicant until they have been completed and signed by the District's engineer and the Applicant has paid District all applicable fees, the total actual costs incurred by District to date and all estimated costs that will be incurred by the District to complete design and construction.

FOR APPLICANT INSTALLED PROJECT:

Applicant acknowledges that they have received and reviewed the *Contract Insurance Requirements Checklist for Compliance* form (attached) and that prior to the release of construction documents, Applicant and their Contractor shall **each** procure one (1) comprehensive builder's risk and public liability policies as conditioned in the Compliance form and as further described in Section 820-2.0, **INSURANCE REQUIREMENTS**. Insurance forms should be faxed directly to EBIX at (888) 700-1891 for review and a copy submitted to the District. Initial _____

Applicant agrees to submit a Site Health and Safety Plan to the District for District approval prior to the release of construction documents (see Section 00830 – 3.0). Initial _____

The Official Date of Application is the date of District acceptance of a complete and correct submittal of all required information. This Application and any water service is subject to and governed by the District's Code of Regulations Section 5.

Official Date of Application

Signature of Applicant or Authorized Representative
Responsible for Payment

CONTRA COSTA WATER DISTRICT
APPLICATION FOR LOW PRESSURE WATER SERVICE

Name of Applicant: _____

Address of property to be served: _____

Address for billing, if different: _____

Size of meter: _____

Street adjacent to main: _____

The undersigned applicant hereby applies to Contra Costa Water District ("District") for water service as stated above.

THE APPLICANT ACKNOWLEDGES AND REPRESENTS AS FOLLOWS:

1. The elevation of all or a portion of the property to be served is higher than the maximum elevation of the District's service zone, consequently the water pressure will be lower than the normal pressure range.
2. The District makes no warranty whatever as to the adequacy or dependability of the water service that will be provided. The District shall not be responsible for low water pressure or any deficiency, interruption or failure of water service and shall not be liable to any person for any damage or claim of damage in any manner arising therefrom.
3. Water service will be subject to the applicant's compliance with the regulations of the District from time to time in effect.
4. The applicant shall not sell, lease or rent the property served without first notifying the buyer, lessee or tenant that the water service to the property will be at reduced pressure and subject to the conditions stated herein.

Dated: _____

Applicant

PRELIMINARY FIRE WATER CALCULATIONS

The following Fire Flow Calculations are based upon Planning Submittal documents prepared by BDE Architects dated 4/30/18, California Fire Code (2016 editions) – Section 507, App. B & C, and based upon the Fire Flow test performed on 4/17/18.

Building Area by Construction Type:

Type IA – Basement and 1 st Floor	=	14,980 GSF
Type IIIA – Residential Floors 2 – 6	=	218,594 GSF
Total Building Gross SF (basis of Fire Flow)	=	233,574 GSF

Fire Flow by Construction Type- CFC Section B104.1, B104.3, & Table B105.1:

Type IA	=	14,980 GSF	=	6,000 GPM (Max. Flow)
Type IIIA	=	218,594 GSF	=	6,000 GPM (Max. Flow)

Percentage of Building Area by Construction Type:

Type IA	14,980 / 233,574 X 100	=	6.4%
Type IIIA	218,594 / 233,574 X 100	=	93.6%

Fire Flow by Construction Type as Percentage of Building:

0.064 X 6,000 GPM + 0.936 X 6,000 GPM	=	6,000 GPM Combined Fire Flow*
*prior to fire sprinkler reduction		

Fire Flow Reduction – CFC App. B – Table B105.1(2), & B105.2

Fire Flow Reduction – Sprinkler System 903.3.1.1	
6,000 GPM * 0.50	= 3,000 GPM Net Required Fire Flow (CFC)

Fire Hydrant Locations & Distribution – Appendix C – Table C102.1:

Fire Flow Required	=	3,000 GPM @ 20 psi
Fire Flow Available	=	3,594.6 GPM @ 20 psi Residual
Number of hydrants required (based on full flow)	=	6
Average Hydrant Spacing (with Spacing Increase)	=	375 FT (250 + 50% increase – C102.1(f))
Max Distance from Hydrant (with Spacing Increase)	=	225 FT (150 + 50% increase – C102.1(f))