DEXTER WILSON ENGINEERING, INC.

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CONSULTING ENGINEERS

OVERVIEW OF SEWER SERVICE
FOR THE
OTAY RANCH TOWN CENTER
REDEVELOPMENT

June 22, 2023

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OVERVIEW OF SEWER SERVICE
FOR THE
OTAY RANCH TOWN CENTER
REDEVELOPMENT

June 22, 2023

Prepared by:
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Job No. 509-127

June 15, 2023 509-127

Hunsaker & Associates San Diego, Inc.
9707 Waples Street
San Diego, CA 92121

Attention: Chuck Cater, Vice President

Subject: Overview of Sewer Service for the Otay Ranch Town Center Redevelopment

Introduction

This report provides an overview of sewer service for the Otay Ranch Town Center Redevelopment project. The project is located east of State Route 125, north of Birch Road, west of Eastlake Parkway, and south of Olympic Parkway in the City of Chula Vista. A vicinity map for the project is presented on Figure 1.

The existing Otay Ranch Town Center site includes five lots (Lots 1, 2, 3, 4, and 5) on approximately 87.25 acres and comprises commercial space. The project proposes to redevelop the northwest portion of the existing Otay Ranch Town Center site. The redevelopment will affect Lots 1 and 4, which make up 58.49 acres of the overall site. Within the 58.49 acres, 16.57 acres will be redeveloped with 840 residential dwelling units; there will be no change in commercial square footage as 37,200 square feet of existing commercial will be removed and replaced with 37,200 square feet of new commercial. The remaining area will consist of private streets and plaza improvements. The Tentative Map title sheet for the Otay Ranch Town Center Redevelopment project is provided in Appendix A for reference. The title sheet includes tabulated land use breakdowns of the affected lots and shows the location of existing Lots 1, 2, 3, 4, and 5.

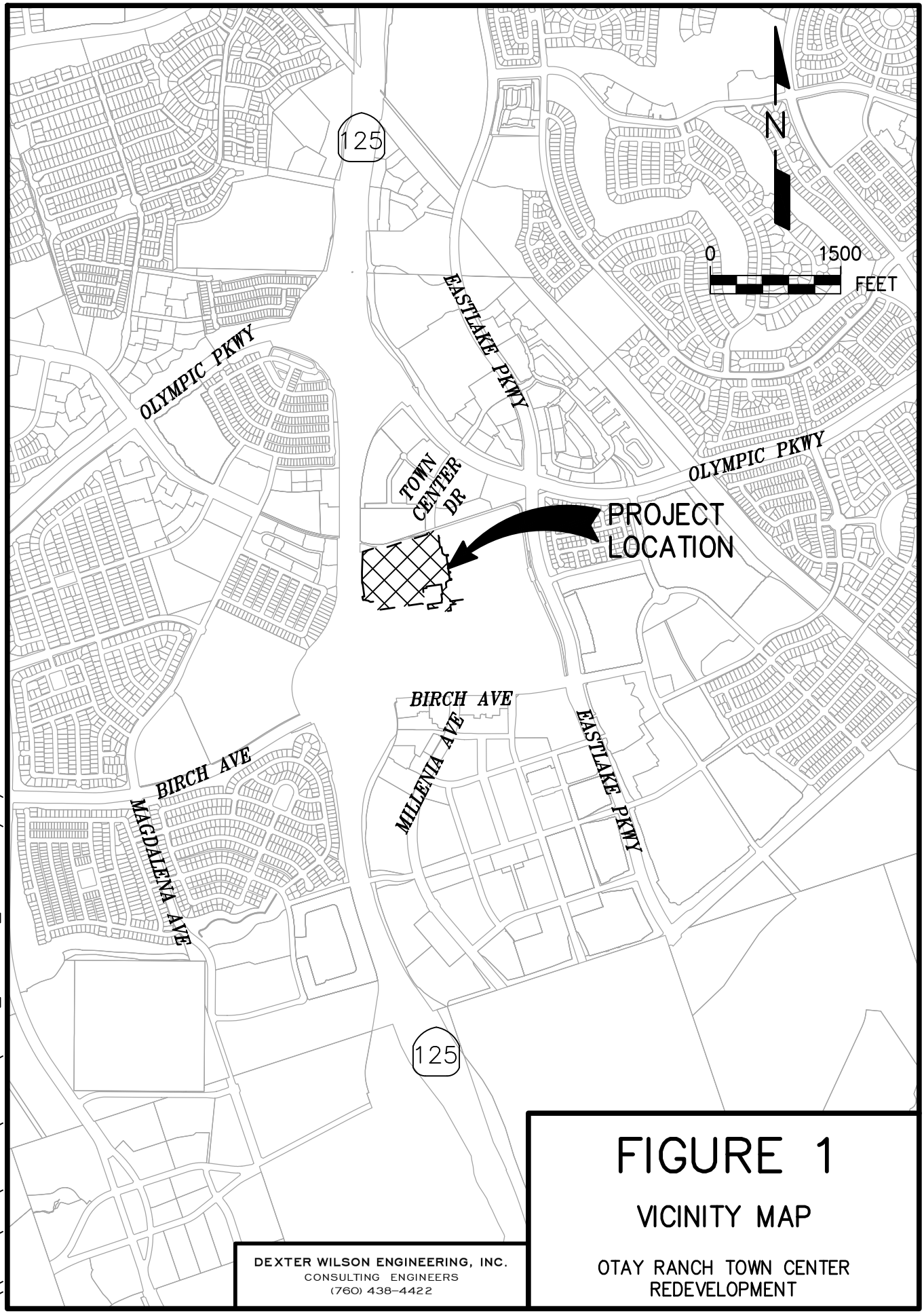

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FIGURE 1

VICINITY MAP

OTAY RANCH TOWN CENTER
REDEVELOPMENT

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Sewer service for the existing Otay Ranch Town Center site is provided by the City of Chula Vista.

Background

The backbone sewer system for the existing Otay Ranch Town Center (previously referred to as Freeway Commercial or FC-1) site was identified in the May 2001 Freeway Commercial Conceptual Sewer Study prepared by Powell/PBS&J (May 2001 Study). This study projected sewer flows for the project based on a generation factor of 2,500 gpd/acre and established recommended sewer system projects required to provide sewer service to the project.

Sewer Planning Criteria

The planning criteria used to evaluate the sewer system requirements for the Otay Ranch Town Center Redevelopment project are in accordance with the City of Chula Vista 2014 Wastewater Collection System Master Plan. The 2014 Wastewater Collection System Master Plan outlines velocity and depth-to-diameter (d/D) requirements for existing and new sewer lines. Table 1 lists the sewer planning criteria for the project.

TABLE 1
OTAY RANCH TOWN CENTER REDEVELOPMENT
SEWER SYSTEM CRITERIA

Item[1]	Criteria
New Pipes 12-inches in diameter and smaller [2]	0.50 (50%) full at peak wet weather flow
Minimum Velocity	2 feet per second (½ full or full)
Maximum Velocity	10 feet per second
Manning's n	0.013
New Pipe Minimum pipe diameter	8-inch

1. Gravity main requirements.
2. Design plans will be required when d/D reaches 0.60 for existing 12-inch diameter pipes or smaller, and improvements will be required once d/D reaches 0.70 at peak wet weather flows.

The gravity sewer analyses in this report were performed using a computer spreadsheet which uses the Manning Equation for all of its calculations. Per Table 1, the value of Manning's "n" used is 0.013.

Sewage Generation

As previously mentioned, the May 2001 Study projected sewer flows for the current Otay Ranch Town Center site. The sewage generation factor used in the sewer study was 2,500 gpd/acre. Sewage generation for the proposed Otay Ranch Town Center Redevelopment project was estimated using sewage generation factors provided in the City of Chula Vista 2014 Wastewater Collection System Master Plan. The decrease in sewer generation factors compared to the May 2001 Study is due to water conservation efforts in recent years. The sewage generation factors are summarized in Table 2.

TABLE 2
OTAY RANCH TOWN CENTER
SEWAGE GENERATION FACTORS

Land Use	Sewage Generation Factor
May 2001 Study Sewage Generation Factor	
Commercial	2,500 gpd/acre
Current Sewage Generation Factors	
Commercial	1,401 gpd/acre
Multi-Family Residential	182 gpd/DU

To convert average sewage generation to peak dry weather flow (PDWF) a peaking factor of 1.41 was used. To convert average sewage generation to peak wet weather flow (PWWF) a peaking factor of 1.85 was used. Backup data for these peaking factors is presented in Appendix B.

Existing Otay Ranch Town Center Sewage Generation. Table 3 summarizes the average sewage generation for the existing Otay Ranch Town Center site based on the sewage generation factor presented in the May 2001 Study.

TABLE 3
EXISTING OTAY RANCH TOWN CENTER
AVERAGE SEWAGE GENERATION

Land Use	Quantity	Sewage Generation Factor[2]	Average Sewage Generation, gpd
Commercial[1]	87.25 acres	2,500 gpd/acre	218,125
TOTAL			**218,125**

1. Acreage reflects entire Otay Ranch Town Center site. The redevelopment will only affect 16.57 acres of Lots 1 and 4 which have a total area of 58.49 acres.
2. Based on sewage generation factor presented in the May 2001 Study.

Based on Table 3, it is estimated that the existing Otay Ranch Town Center site generates sewage as follows:

Average Sewage Generation: 218,125 gpd

PDWF: 218,125 gpd x 1.41 = 307,556 gpd

PWWF: 218,125 gpd x 1.85 = 403,531 gpd

Proposed Otay Ranch Town Center Redevelopment Sewage Generation. Table 4 summarizes the projected average sewage generation for the proposed Otay Ranch Town Center Redevelopment project based on current sewage generation factors.

TABLE 4
OTAY RANCH TOWN CENTER REDEVELOPMENT
AVERAGE SEWAGE GENERATION

Land Use	Quantity	Sewage Generation Factor	Average Sewage Generation, gpd
Existing Development to Remain			
Existing Commercial[1]	70.68 acres	1,401 gpd/acre	99,023
Proposed Development[2]			
Multi-Family Residential	840 DU	182 gpd/DU	152,880
Proposed Commercial	0.85 acres	1,401 gpd/acre	1,191
TOTAL			**253,094**

1. Acreage of existing Otay Ranch Town Center site (87.25 acres) reduced by 16.57 acres (redevelopment area).
2. Acreage excludes private street area (2.93 acres) and park/plaza area (2.73 acres) as no sewer generation is expected.

Based on Table 4, it is estimated that the redevelopment of the existing Otay Ranch Town Center site will generate sewage flows as follows:

Average Sewage Generation: 253,094 gpd
PDWF: 253,094 gpd x 1.41 = 356,863 gpd
PWWF: 253,094 gpd x 1.85 = 468,224 gpd

In comparing the average sewage generation estimates shown on Table 3 and Table 4, the proposed redevelopment will increase existing average sewage generation by 34,969 gpd from 218,125 gpd to 253,094 gpd.

Existing Sewer System

As previously mentioned, the Otay Ranch Town Center Redevelopment project is within the City of Chula Vista and will receive sewer service from the City of Chula Vista public sewer system.

Sewer service to the existing Otay Ranch Town Center site is currently provided by 8-inch and 10-inch sewer lines onsite. The onsite sewer facilities convey sewage south to Birth Road by gravity to an existing 10-inch gravity sewer line. The 10-inch gravity sewer line in Birth Road conveys flow west across State Route 125 and increases to a 12-inch line before reaching La Media Road. A 12-inch gravity sewer in La Media Road conveys flow north to the Poggi Canyon Interceptor in Olympic Parkway. The existing sewer system in the vicinity of the project is presented on Figure 2.

Proposed Sewer System

Figure 3 presents the proposed sewer system for the Otay Ranch Town Center Redevelopment project. The existing 8-inch gravity sewer line in the northwest corner of the existing Otay Ranch Town Center site will be removed to accommodate the proposed redevelopment. The two northernmost buildings proposed within the redevelopment area will receive sewer service by installing two new reaches of sewer to serve the two northernmost proposed buildings within the project. Per the design criteria in Table 1, these new reaches of sewer will be required to have a minimum diameter of 8 inches.

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LEGEND

PROJECT BOUNDARY

EXISTING GRAVITY SEWER LINE

N

0 300 FEET

OLYMPIC PARKWAY

CENTERPARK RD

TOWN CENTER DR

EASTLAKE PKWY

SR-125

BIRCH ROAD

MILLENIA AVE

EXISTING AREA TO BE REDEVELOPED

EX. 8" SEWER LINE TO BE REMOVED

OTAY RANCH TOWN CENTER

EXISTING DEVELOPMENT

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FIGURE 2

EXISTING SEWER SYSTEM

OTAY RANCH TOWN CENTER REDEVELOPMENT

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LEGEND

PROJECT BOUNDARY

EXISTING GRAVITY SEWER LINE

PROPOSED GRAVITY SEWER LINE

N

0 300 FEET

OLYMPIC PARKWAY

CENTERPARK RD

TOWN CENTER DR

EASTLAKE PKWY

SR-125

PROPOSED GRAVITY SEWER LINE

REDEVELOPMENT AREA

OTAY RANCH TOWN CENTER

EXISTING DEVELOPMENT

EX.8", S=0.5% (SEE ONSITE ANALYSIS)

EX.10", S=0.77% (SEE ONSITE ANALYSIS)

BIRCH ROAD

MILLENIA AVE

EASTLAKE PKWY

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FIGURE 3
PROPOSED SEWER SYSTEM
OTAY RANCH TOWN CENTER REDEVELOPMENT

Onsite Public Sewer System Analysis

To evaluate the available capacity in the existing sewer lines within the Otay Ranch Town Center site, the sewer generation estimates in Table 4 were used.

Using the sewer generation numbers presented in Table 4, a calculation was performed for the worst-case 8-inch segment of public sewer line within the project site that is impacted by the redevelopment. The worst-case 8-inch segment that is impacted by the redevelopment serves the west side of the site and has a 0.5 percent slope (see Figure 3). The calculation shows that an 8-inch sewer line at 0.5 percent slope can convey a maximum of 276,610 gpd at a depth-to-diameter (d/D) ratio of 0.5. The projected sewer flow for this 8-inch sewer line is 169,948 gpd at PWWF (91,864 gpd x 1.85 = 169,948 gpd) and is based on serving 320 residential units and 24 commercial acres (conservatively assumed to be approximately 1/3 of entire site acreage). Thus, the projected sewer flow for the worst-case 8-inch segment onsite is well under its available capacity.

A second calculation was performed for the worst-case 10-inch segment of public sewer line within the project site that is impacted by the redevelopment. The minimum slope for any 10-inch sewer line onsite is 0.77 percent (see Figure 3). A 10-inch sewer line onsite at 0.77 percent slope can convey a maximum of 622,380 gpd at a depth-to-diameter (d/D) ratio of 0.5. This is well above the PWWF of 468,224 gpd projected for the entire Otay Ranch Town Center site post-redevelopment (PWWF = ADWF x 1.85 = 253,094 gpd x 1.85 = 468,224 gpd). Thus, all other onsite lines meet City of Chula Vista sewer criteria and onsite sewer line upgrades are not required for the redevelopment.

Offsite Public Sewer System Analysis

The offsite public sewer analysis consists of two parts: the first part addresses the public sewer lines from the project to Olympic Parkway (Birch Road and La Media Road) and the second part address the capacity of the Poggi Canyon Interceptor.

Birch Road and La Media Road Public Sewer Analysis. To evaluate the available capacity in the existing sewer lines downstream of the Otay Ranch Town Center site (west in Birch Road and north in La Media Road) to Olympic Parkway, hydraulic modeling data from the City of Chula Vista 2014 Wastewater Collection System Master Plan was used (see Appendix 2 of 2014 Wastewater Collection System Master Plan). The modeling data in the 2014 Wastewater Collection System Master Plan provides sewer pipeline diameters, slopes, and Year 2050 peak wet weather flows for the sewer system downstream of the project.

The data provided in the 2014 Wastewater Collection System Master Plan was used to create a computer model spreadsheet to analyze the existing sewer system. The critical reach of sewer downstream of the project is a 10-inch sewer line in Birch Road that has a slope of 0.5 percent. The sewer slope for the critical reach of sewer was confirmed using an as-built drawing which is included in Appendix C for reference.

At the time of the preparation of the 2014 Wastewater Collection System Master Plan, the following two assumptions were made related to manhole sewer flow loading:

1. It was assumed that the Otay Ranch Town Center (previously referred to as Freeway Commercial) site would flow north into Olympic Parkway; however, that is not the case as the existing Otay Ranch Town Center site flows south into Birch Road.

2. It was assumed that 982 EDUs (modeling data shows ADWF = 260,329 gpd / 265 gpd/EDU = 982 EDUs) would flow into the existing 10-inch sewer line in Birch Road upstream of the intersection of Birch Road and Millenia Avenue; however, that is not the case as the only project contributing sewer flow to this portion of the sewer line is the Eastern Urban Center project which contributes a maximum of 580 EDUs to the sewer line in Birch Road per the project's approved EIR (see Appendix D).

Based on the changes to the assumptions in the 2014 Wastewater Collection System Master Plan outlined above, the following two changes were made to the modeling data pulled from the 2014 Wastewater Collection System Master Plan for the sewer analysis.

1. The PWWF determined for the Otay Ranch Town Center site under existing and proposed conditions was added to the PWWF at Birch Road presented in the 2014 Wastewater Collection System Master Plan to evaluate the available capacity in the existing sewer system.

2. The PWWF presented in the 2014 Wastewater Collection System Master Plan for the Eastern Urban Center was reduced from 371,483 gpd (982 EDUs at 265 gpd/EDU with 1.44 peaking factor) to 246,790 gpd (580 EDUs at 230 gpd/EDU with 1.85 peaking factor) to evaluate the available capacity in the existing sewer system.

Appendix E presents the computer model results for the existing sewer system under Year 2050 flows plus the existing Otay Ranch Town Center site. Exhibit A at the back of this report presents a Manhole Diagram for the modeling data. The results in Appendix E indicate that the maximum d/D in the existing public sewer system downstream of the project is 0.59 d/D at Computer Model Pipe 16648 (10-inch sewer line just downstream of the project). Flow velocities in the existing sewer system range from 3.0 fps to 7.6 fps.

Appendix F presents the computer model results for the existing sewer system under Year 2050 flows plus the proposed Otay Ranch Town Center redevelopment. Exhibit A presents a Manhole Diagram for the system. The results indicate that the maximum d/D in the existing public sewer system downstream of the project increases from 0.59 d/D to 0.63 d/D. Flow velocities in the existing sewer system range from 3.0 fps to 7.7 fps.

As described in Footnote 2 of Table 1 in this report, the maximum allowable d/D for existing sewer lines 12-inches in diameter and smaller is 0.70 d/D before a sewer system upgrade is required. Thus, no public sewer improvements are required to accommodate the proposed project as the existing public sewer system can accommodate the proposed project based on Year 2050 flows.

Poggi Canyon Interceptor Analysis. The available capacity in the Poggi Canyon Interceptor was evaluated using data from the April 2009 Poggi Canyon Basin Gravity Sewer Development Impact Fee Update prepared by PMC (2009 Poggi DIF Study). Data from this report includes existing permitted EDUs in the Poggi Canyon basin as well as committed EDUs based on previous project approvals.

Since the time of the 2009 Poggi DIF Study a few projects have been approved that have increased the amount of units to the Poggi Interceptor. The projects accounted for are the following:

1. **JPB Village 2 SPA Amendment.** The JPB Village 2 SPA Amendment increased the unit count in Village 2 by 197 units. Per the November 21, 2011 Sewer System Evaluation that was done for this project, the net effect of this land use change was the addition of 160 EDUs to the Poggi Basin. These additional EDUs have been considered in this sewer system analysis.

2. **Village 2 Comprehensive SPA Amendment.** The Village 2 Comprehensive SPA Amendment increased the unit count in Village 2 by 1,562 units. Per the March 4, 2014 Sewer System Evaluation that was done for this project, the net effect of this land use change was the addition of 938 EDUs to the Poggi Basin. These additional EDUs have been considered in this sewer system analysis.

3. **Eastern Urban Center (EUC).** The EUC was approved in September 2009, shortly after the 2009 PMC Study was prepared. The PMC Study did, however, anticipate the EUC project and included 429 EDUs from the EUC (Table 3-2) in the calculation of the Poggi Interceptor Fee. These units include 189 EDUs within the Poggi Basin and 240 EDUs that are proposed to be permanently diverted from the Salt Creek Basin to the Poggi Basin. Since the 2009 PMC Study already accounts for units from the EUC, no additional EDUs from the EUC have been considered as part of this sewer system analysis.

Because the analysis of the Poggi Canyon Interceptor will be largely based on the 2009 Poggi DIF Study, a comparison of the proposed redevelopment versus the assumptions in the 2009 Poggi DIF Study is necessary. Table 5 provides the sewer flow projections from the 2009 Poggi DIF Study compared to the current land use plan with the redevelopment. As shown in Table 5, the Poggi Basin projections in the 2009 Poggi DIF Study would be increased by 132 EDUs based on the proposed Otay Ranch Town Center Redevelopment project.

TABLE 5
OTAY RANCH TOWN CENTER REDEVELOPMENT
POGGI BASIN EDU SUMMARY

Description	Quantity	Unit Flow Factor	Average Flow, gpd	EDUs[1]
2009 DIF Study				
Commercial – Otay Ranch Town Center	87.25 acres[2]	2,500 gpd/ac	218,125	823.1
Subtotal 2009 DIF Study				**823.1**
Current Plan with Redevelopment				
Existing Commercial[3]	70.68 acres	1,401 gpd/acre	99,023	373.7
Multi-Family Residential	840 DU	182 gpd/DU	152,880	576.9
Retail	0.85 acres	1,401 gpd/acre	1,191	4.5
Subtotal Current Plan with Redevelopment				**955.1**
Increase				**132**

1. Based on the sewer generation factor of 265 gpd/unit used in the 2009 Poggi DIF Study.
2. Acreage of the Otay Ranch Town Center site was presented as 81.92 acres in the 2009 DIF Study. Current numbers show the site has a total area of 87.25 acres. Therefore, the acreage was increased from 81.92 acres to 87.25 acres for this analysis.
3. Acreage of existing Otay Ranch Town Center site (87.25 acres) reduced by 16.57 acres (redevelopment area).

Table G-7 in Appendix G summarizes the impact that adding 132 EDUs would have on permitted and committed remaining capacity in the Poggi Canyon Interceptor. Exhibits B-1 and B-2 identifies Poggi Interceptor reach locations and indicate where the Otay Ranch Town Center flows ultimately enter the Poggi Interceptor.

As shown in Table G-7 in Appendix G, the two reaches already identified in the 2009 Poggi DIF Study for future replacement are shown as being over capacity and one additional reach, P345 to P365, reach is shown to be slightly over capacity. This additional reach was identified as over capacity in the March 4, 2014 Sewer System Evaluation that was done for Village 2 Comprehensive SPA Amendment. Thus, the limits of the required DIF improvements for the Otay Ranch Town Center Redevelopment project are the same as those presented in the March 4, 2014 Sewer System Evaluation that was done for Village 2 Comprehensive SPA Amendment. The Poggi Basin Gravity Sewer Development Impact Fee is currently being updated and should reflect the additional units and additional improvement identified in Table G-7 in Appendix G.

Thank you for the opportunity to assist you with the sewer system planning for this project. If you have any questions regarding the information presented in this report, please do not hesitate to call.

Dexter Wilson Engineering, Inc.

Fernando Fregoso, P.E.

FF:ru

Attachments

APPENDIX A

TENTATIVE MAP
TITLE SHEET

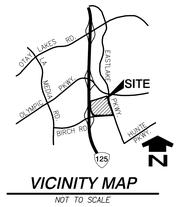
TENTATIVE MAP/CVT 22-0002 FOR:

OTAY RANCH TOWN CENTER FC-1

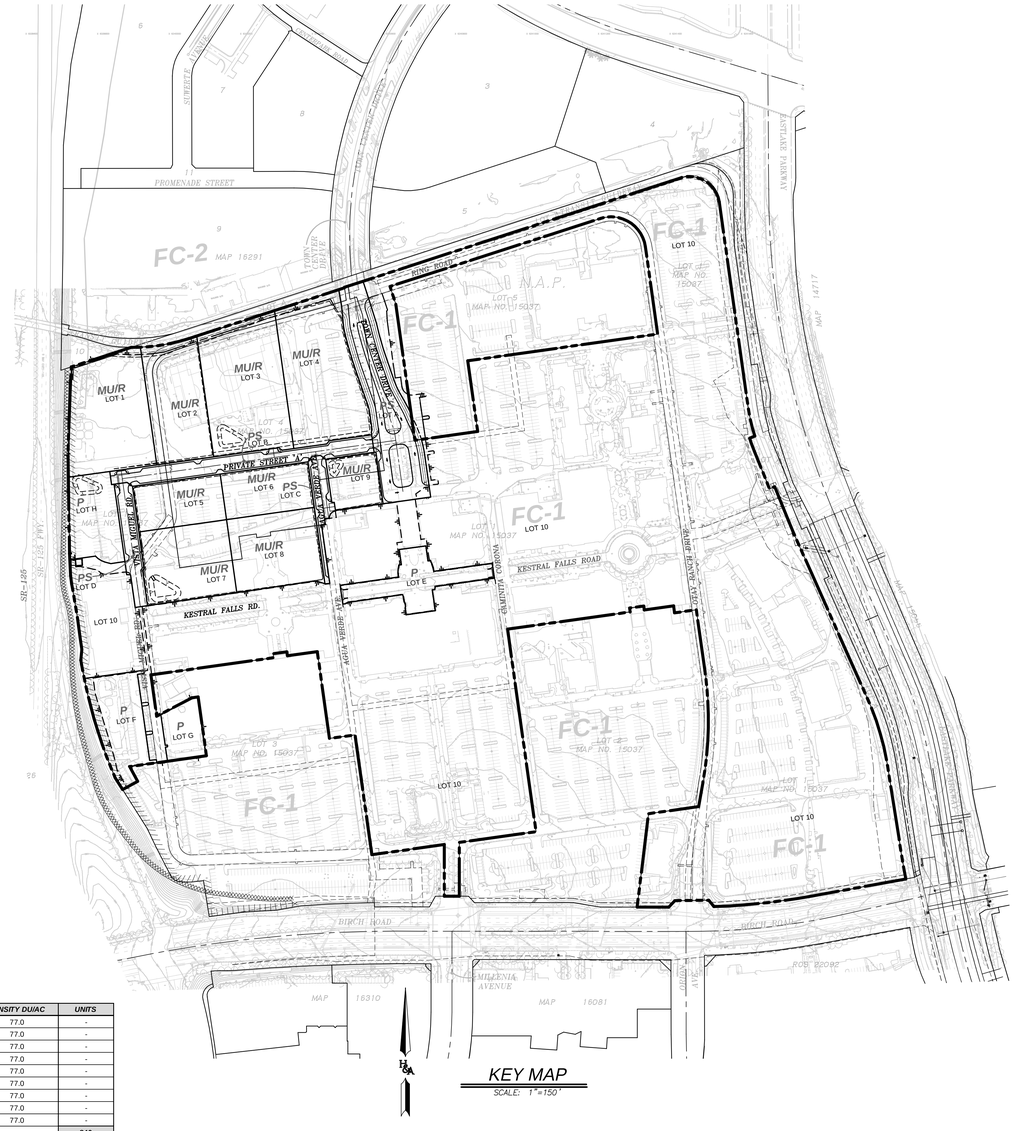
CITY OF CHULA VISTA, CALIFORNIA

LEGEND

- SUBDIVISION BOUNDARY
- PROPOSED LOT LINE
- EXISTING LOT LINE
- EXISTING ASSESSOR'S MAP OR PARCEL NO. — LOT 1 MAP 105037
- PROPOSED RESIDENTIAL NEIGHBORHOOD — MU/R
- PROPOSED RESIDENTIAL LOT (NUMBERED) — LOT 1
- PROPOSED PRIVATE STREET OR PARK LOT (LETTERED) — LOT A
- EXISTING ZONING — FC-1
- PROPOSED EASEMENT LINE
- EXISTING EASEMENT LINE
- EXISTING SEWER MAIN WITH MANHOLE
- PROPOSED PUBLIC SEWER MAIN WITH MANHOLE (8" PVC UNLESS OTHERWISE NOTED)
- EXISTING WATER MAIN WITH FIRE HYDRANT
- PROPOSED PUBLIC WATER MAIN (8" PVC UNLESS OTHERWISE NOTED)
- EXISTING RECLAIMED WATER MAIN
- PROPOSED PUBLIC RECLAIMED WATER MAIN (8" PVC UNLESS OTHERWISE NOTED)
- EXISTING GAS MAIN
- EXISTING STORM DRAIN SYSTEM
- PROPOSED PRIVATE STORM DRAIN SYSTEM
  - A. INLET OR CATCH BASIN
  - B. HEADWALL
  - C. CLEANOUT
  - D. CATCH BASIN
  - E. MODULAR WETLANDS UNIT — RIP RAP
- PROPOSED STREET CENTERLINE ELEVATION — 618.0
- PROPOSED STREET GRADE — 2.0%
- STREET LIGHT
- CUT/FILL LINE — F / C
- PROPOSED SLOPE — 2: 1 MAX
- PROPOSED PRIVATE RETAINING WALL
- NUMBER OF PARKING STALLS IN A BLOCK — ⑤
- ACCESS RIGHTS RELINQUISHED PER DOC. NO. 2003-0604607 REC. 5/22/2003, O.R.
- ACCESS RIGHTS RELINQUISHED PER DOC. NO. 2005-0181417 REC. 3/4/2005, O.R.
- ACCESS RIGHTS RELINQUISHED PER DOC. NO. 2005-0181409 REC. 3/4/2005, O.R.
- INDICATES FOUND MONUMENT AS NOTED.
- INDICATES FOUND 3/4" IRON PIPE WITH DISC STAMPED "LS 7696" PER CERTIFICATE OF CORRECTION FOR MAP NO. 15037 RECORDED 8/10/2009 AS DOC NO. 2009-0446488.
- INDICATES FOUND 2" IRON PIPE WITH DISC STAMPED "LS 7969" PER MAP NO. 15037 AND THE CERTIFICATE OF CORRECTION THERETO.
- INDICATES FOUND LEAD & DISC STAMPED "LS 7696" PER MAP NO. 15037 AND CERTIFICATES OF CORRECTION THERETO.
- INDICATES FOUND LEAD & DISC STAMPED "LS 6922" PER OR 43680, 43681 OR 43682, UNLESS OTHERWISE NOTED.
- INDICATES FOUND 2" IRON PIPE WITH DISC STAMPED "LS 6187" IN STANDARD STREET WELL MONUMENT PER ROS 19985, UNLESS OTHERWISE NOTED.
- INDICATES FOUND STANDARD STREET WELL MONUMENT MARKED "L.S. 7322" PER MAP NO. 14780 OR CERTIFICATE OF CORRECTION THEREOF, UNLESS OTHERWISE NOTED.
- INDICATES FOUND STANDARD STREET WELL MONUMENT MARKED "L.S. 7322" AS SHOWN ON ROS 19985, UNLESS OTHERWISE NOTED.
- INDICATES SEARCHED FOR NOTHING FOUND. — S.F.N.F.
- EXISTING IRRIGATION LINE TO REMAIN
- EXISTING IRRIGATION LINE TO BE RELOCATED
- EXISTING METER



VICINITY MAP
NOT TO SCALE



KEY MAP
SCALE: 1"=150'

GENERAL NOTES

1. GROSS SITE AREA EXISTING: 78.291 ACRES (EXCLUDING NAP PARCEL 3 8.955 ACRES)
   GROSS REDEVELOPMENT SITE AREA PROPOSED: 16.57 ACRES (REMAINDER OF 58.49 ACRES TO REMAIN AS CURRENTLY DEVELOPED)
2. TOTAL NUMBER OF LOTS: 19, BROKEN DOWN AS FOLLOWS
   MULTI-FAMILY RESIDENTIAL: 9 LOTS
   PARKS/PLAZA: 5 LOTS
   PRIVATE STREETS: 4 LOTS
   COMMERCIAL/RETAIL: 1 LOT
3. MAXIMUM NUMBER UNITS ALLOWED: 840 UNITS
4. ASSESSOR'S PARCEL NUMBERS 643-061-08-00 AND 643-061-04-00
5. EXISTING GENERAL PLAN DESIGNATIONS: COMMERCIAL RETAIL
   PROPOSED GENERAL PLAN LAND USES: COMMERCIAL RETAIL, URBAN CORE
6. EXISTING ZONING: COMMERCIAL RETAIL (FC-1)
   PROPOSED ZONING: MIXED-USE
7. PRESENT LAND USE: RETAIL

GENERAL DESIGN NOTES

1. WATER SYSTEM TO BE INSTALLED IN ACCORDANCE WITH THE STANDARDS OF THE OTAY WATER DISTRICT AND SHALL BE MAINTAINED AND OPERATED BY THE DISTRICT.
2. SPECIFIC METHODS OF HANDLING STORM WATER ARE SUBJECT TO DETAILED APPROVAL BY THE DEVELOPMENT SERVICES DEPARTMENT AT THE TIME OF SUBMISSION OF IMPROVEMENT AND GRADING PLANS. DESIGN SHALL BE ACCOMPLISHED ON THE BASIS OF THE REQUIREMENTS OF THE SUBDIVISION MANUAL. DRAINAGE EASEMENTS SHALL BE PROVIDED AS REQUIRED BY THE CITY DEVELOPMENT SERVICES DEPARTMENT.
3. SANITARY SEWER TO BE PROVIDED AND CONNECTED TO CITY OF CHULA VISTA SEWERS. SEWER MAINS ARE 8" MINIMUM P.V.C. UNLESS SHOWN OTHERWISE.
4. EVIDENCE SHALL BE PROVIDED OF HAVING OBTAINED GRADING RIGHTS UPON ADJACENT PROPERTY WHERE REQUIRED DURING FINAL ENGINEERING.
5. STREET TREE DEPOSITS SHALL BE PAID IN ACCORDANCE WITH ORDINANCE NUMBER 1369 AND NO. 1687 OF THE CITY OF CHULA VISTA.
6. UTILITIES SHALL BE UNDERGROUND AND EASEMENTS PROVIDED AS NECESSARY.
7. SUBDIVIDER TO PROVIDE AND INSTALL APPROVED STREET LIGHT STANDARDS AND FIXTURES IN THE TYPE AND NUMBER APPROVED BY THE DEVELOPMENT SERVICES DEPARTMENT FOR PUBLIC RIGHT-OF-WAY.
8. SLOPE PLANTING SHALL BE IN ACCORDANCE WITH THE CITY OF CHULA VISTA LANDSCAPE MANUAL, AND/OR THE OTAY RANCH VILLAGE DESIGN PLAN.
9. GRADING SHALL BE CONSTRUCTED IN ACCORDANCE WITH TITLE 15 OF THE CITY OF CHULA VISTA MUNICIPAL CODE.
10. ALL WORK IN THE PUBLIC RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, THE SAN DIEGO AREA REGIONAL STANDARD DRAWINGS AND THE DESIGN AND CONSTRUCTION STANDARDS OF THE CITY OF CHULA VISTA.
11. THE STREET SYSTEM SHOWN HEREON SHALL COMPLY WITH CHULA VISTA FIRE DEPARTMENT GUIDELINES, INCLUDING THE AUTOTURN DETAIL. FIRE HYDRANTS TO BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHULA VISTA DESIGN STANDARD NO. 8. FIRE HYDRANTS AS SHOWN ON THIS MAP SHALL BE USED AS A GUIDE ONLY.
12. ONE FOOT CONTROL LOTS TO BE GRANTED TO THE CITY OF CHULA VISTA BY SEPARATE DEED WHERE DETERMINED NECESSARY BY THE DEVELOPMENT SERVICES DEPARTMENT.
13. GRADING AND MODEL HOMES MAY BE BUILT, AFTER CITY APPROVAL, PRIOR TO FINAL MAP RECORDATION.
14. GRADING SHOWN HEREON IS PRELIMINARY AND SUBJECT TO MODIFICATION IN FINAL DESIGN SUBJECT TO SUBSTANTIAL CONFORMANCE APPROVAL BY THE CITY OF CHULA VISTA DEVELOPMENT SERVICES DEPARTMENT.
15. STORM DRAIN AND SEWER SHOWN HEREON IS PRELIMINARY AND SUBJECT TO MODIFICATION IN FINAL DESIGN.
16. TEMPORARY AND PERMANENT STRUCTURAL BEST MANAGEMENT PRACTICES WILL BE INCORPORATED IN THE DESIGN AND IMPLEMENTATION OF THE DEVELOPMENT.
17. PRELIMINARY GEOTECHNICAL REPORT PREPARED BY: GEOCON, INC. DATED FEBRUARY 4, 2022.
18. REFER TO THE "WATER QUALITY TECHNICAL REPORT SWQMP" FEBRUARY 28, 2022 PREPARED BY HUNSAKER & ASSOCIATES FOR COMPLIANCE WITH THE REGIONAL WATER QUALITY CONTROL BOARD JURISDICTIONAL PERMIT.
19. TEMPORARY TURNAROUNDS SHALL BE PROVIDED AT ALL DEAD END STREETS DURING FINAL ENGINEERING AS REQUESTED BY THE DEVELOPMENT SERVICES DEPARTMENT.
20. A FUEL MODIFICATION ZONE IS NOT PROPOSED AS THE PROJECT IS SURROUNDED BY EXISTING PAVEMENT AND DEVELOPMENT.
21. SPEED BUMPS FOR TRAFFIC CALMING PURPOSES ARE PROHIBITED ON STREETS TO BE BUILT FOR THIS PROJECT.

CONDOMINIUM NOTES

THIS IS A MAP OF A RESIDENTIAL CONDOMINIUM PROJECT AS DEFINED IN SECTION 4125 OF THE CIVIL CODE OF THE STATE OF CALIFORNIA AND IS FILED PURSUANT TO THE SUBDIVISION MAP ACT. PLANNING NEIGHBORHOODS INCLUDED WITHIN THE RESIDENTIAL CONDOMINIUM PROJECT DESIGNATION ARE (R-1, R-2, R-3A, R-3B, R-4, R-5), FOR A MAXIMUM NUMBER OF (840) DWELLING UNITS.

THIS IS ALSO A MAP OF A COMMERCIAL CONDOMINIUM PROJECT AS DEFINED IN SECTION 6531 OF THE CIVIL CODE OF THE STATE OF CALIFORNIA AND IS FILED PURSUANT TO THE SUBDIVISION MAP ACT. PLANNING NEIGHBORHOOD INCLUDED WITHIN THE COMMERCIAL CONDOMINIUM PROJECT DESIGNATION IS MU/R-3A AND MU/R-3B FOR A MAXIMUM OF 37,200 SF.

SOURCE OF TOPOGRAPHY

THE INFORMATION SHOWN HEREON IS BASED ON AERIAL PHOTOGRAMMETRY FLOWN BY R.J. LUNG AND ASSOCIATES ON AUGUST 5, 2020, TOGETHER WITH FIELD SURVEY MEASUREMENTS PERFORMED BY HUNSAKER & ASSOCIATES SAN DIEGO, INC. ON AUGUST 5, 2016.

BENCHMARK:

VERTICAL RELIEF SHOWN HEREON WAS PRODUCED BY FIELD METHODS COMBINED WITH AERIAL TOPOGRAPHY BY R.J. LUNG AND ASSOCIATES FLOWN ON AUGUST 5, 2020. VERTICAL DATUM BASED ON CITY OF CHULA VISTA BENCHMARK NO. NUMBER 2375 (4057) NAVD 88

ELEV. 639.072.

EARTHWORK/GRADING QUANTITIES

CUT: 19,490 C.Y.
FILL: 8,405 C.Y.
EXPORT: 11,085 C.Y.

GRADING QUANTITIES SHOWN ARE RAW QUANTITIES ONLY AND DO NOT INCLUDE THE EFFECT OF REMEDIAL GRADING SHOWN IN THE PRELIMINARY SOILS REPORT.
A TRANSPORTATION PERMIT AND A LETTER FROM THE SITE ACCEPTING EXPORTED MATERIAL IS REQUIRED PRIOR TO ISSUANCE OF PERMIT.

EASEMENT & ENCUMBRANCE NOTES

SEE SHEETS 7 & 8

APPLICANT/OWNER

GGP-OTAY RANCH L.P.
350 N. ORLEANS ST. SUITE 300, CHICAGO, IL 60654

JAMES VARSAMIS
VICE PRESIDENT - RETAIL
(312) 835-4764

LEGAL DESCRIPTION:

REAL PROPERTY IN THE CITY OF CHULA VISTA, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCEL A:

LOTS 1 AND 4 OF CHULA VISTA TRACT NO. 05-02, OTAY RANCH FREEWAY COMMERCIAL SECTIONAL PLANNING AREA, IN THE CITY OF CHULA VISTA, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE MAP THEREOF NO. 15037, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JUNE 30, 2005, AND AS CORRECTED BY A CERTIFICATE OF CORRECTION RECORDED JANUARY 3, 2008 AS INSTRUMENT NO. 2008- 0003099, AND FURTHER CORRECTED BY A CERTIFICATE OF CORRECTION RECORDED AUGUST 10, 2009 AS INSTRUMENT NO. 2009-0446488, BOTH OF OFFICIAL RECORDS.

EXCEPTING THEREFROM FROM LOT 1 THAT PORTION OF LAND CONVEYED TO SAN DIEGO ASSOCIATION OF GOVERNMENTS, A CALIFORNIA LEGISLATIVELY-CREATED REGIONAL PLANNING AGENCY, IN GRANT DEED RECORDED DECEMBER 29, 2016 AS INSTRUMENT NO. 2016-0714265 AND 2016-0714266, BOTH OF OFFICIAL RECORDS.

PARCEL B:

EASEMENTS FOR COMMON AREA, UNDERGROUND SUPPORTS AND MINOR ENCROACHMENTS, ACCESS, SIGNAGE, UTILITIES, DRAINAGE AND INCIDENTAL PURPOSES AS SET FORTH IN INSTRUMENT ENTITLED "CONSTRUCTION, OPERATION AND RECIPROCAL EASEMENT AGREEMENT", EXECUTED BY GGP-OTAY RANCH, L.P., A DELAWARE LIMITED PARTNERSHIP AND MACY'S DEPARTMENT STORES, INC., AN OHIO CORPORATION, RECORDED NOVEMBER 21, 2008 AS INSTRUMENT NO. 2008-0604340 OF OFFICIAL RECORDS.

APN(S): 643-061-08-00 (AFFECTS: LOT 1) AND 643-061-04-00 (AFFECTS: LOT 4)

PUBLIC UTILITIES

SEWER	CITY OF CHULA VISTA
WATER	OTAY WATER DISTRICT
STORM DRAIN	CITY OF CHULA VISTA
TELEPHONE	AT&T
GAS AND ELECTRIC	SDG&E
CABLE T.V.	COX COMMUNICATIONS
POLICE & FIRE	CITY OF CHULA VISTA
SCHOOLS	CHULA VISTA ELEMENTARY SCHOOL DISTRICT SWEETWATER UNION HIGH SCHOOL DISTRICT

ABBREVIATIONS

FP	FLOOD PLAIN
FPP	FIRE PROTECTION PLAN
LSVC	LIGHTED SAG VERTICAL CURVE
MH	MANHOLE
NSF	NET SQ. FT.
NTS	NOT TO SCALE
PI	POINT OF INTERSECTION (V.C.)
PL	PROPERTY LINE
RCP	REINFORCED CONCRETE PIPE
RW	RECLAIMED WATER
R/W	RIGHT OF WAY
S	SEWER
SD	STORM DRAIN
SF	GROSS SQ. FT.
W	WATER

LAND USE SUMMARY

A. PROPOSED LAND USE

LOT	LAND USE	AREA AC	COMMERCIAL	DENSITY DU/AC	UNITS
MUIR LOT 1	Urban Core	1.65	-	77.0	-
MUIR LOT 2	Urban Core	1.23	-	77.0	-
MUIR LOT 3	Urban Core	1.88	-	77.0	-
MUIR LOT 4	Urban Core	1.86	*37,200 SF	77.0	-
MUIR LOT 5	Urban Core	0.73	-	77.0	-
MUIR LOT 6	Urban Core	0.73	-	77.0	-
MUIR LOT 7	Urban Core	1.19	-	77.0	-
MUIR LOT 8	Urban Core	1.17	-	77.0	-
MUIR LOT 9	Urban Core	0.47	-	77.0	-
SUBTOTAL MUIR		10.91	-	-	840
PS LOT A	Private St.	1.50	-	-	-
PS LOT B	Private St.	0.80	-	-	-
PS LOT C	Private St.	0.26	-	-	-
PS LOT D	Private St.	0.37	-	-	-
SUBTOTAL PS		2.93	-	-	-
P LOT E	Park/Plaza	0.72	-	-	-
P LOT F	Park	0.87	-	-	-
P LOT G	Park	0.38	-	-	-
P LOT H	Park	0.76	-	-	-
SUBTOTAL PARK		2.73	-	-	-
SUBTOTAL REDEVELOPMENT		16.57	-	-	-
LOT 10	Commercial Retail	41.93	-	-	-
TOTAL		58.49	*37,200	-	840

Note: Acreages rounded to the nearest hundredth of an acre
*37,200 sf of existing commercial to be replaced with 37,200 sf of new commercial

B. EXISTING LOTS

LOT	LAND USE	AREA AC
** LOT 1	Commercial Retail	** 50.791
LOT 4	Commercial Retail	7.699
TOTAL		58.490

** THE BOUNDARY AND ACREAGE OF LOT 1 OF FINAL MAP 15037 WAS CORRECTED PURSUANT TO CERTIFICATE OF CORRECTION REC. 1/03/2008 AS INST. NO. 2008-0003099 AND CERTIFICATE OF CORRECTION REC. 8/10/2009 AS INST. NO. 2009-0446488. THE ACREAGE REFLECTED HEREON IS ACCORDANCE WITH THESE CORRECTIONS.

SHEET INDEX

REGISTERED PROFESSIONAL ENGINEER — ALISA S. VIALPANDO — C 47945 — CIVIL — STATE OF CALIFORNIA

ALISA S. VIALPANDO R.C.E. 47945 DATE

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC
PLANNING 5707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500 FX(858)558-1414

NO.	REVISIONS	DATE	BY
1	FIRST SUBMITTAL	01/26/21	H&A
2	SECOND SUBMITTAL	03/09/22	H&A
3	THIRD SUBMITTAL	10/13/22	H&A
4	FOURTH SUBMITTAL	02/15/23	H&A
5			
6			
7			

TENTATIVE MAP/CVT 22-0002
OTAY RANCH TOWN CENTER FC-1
City Of Chula Vista, California

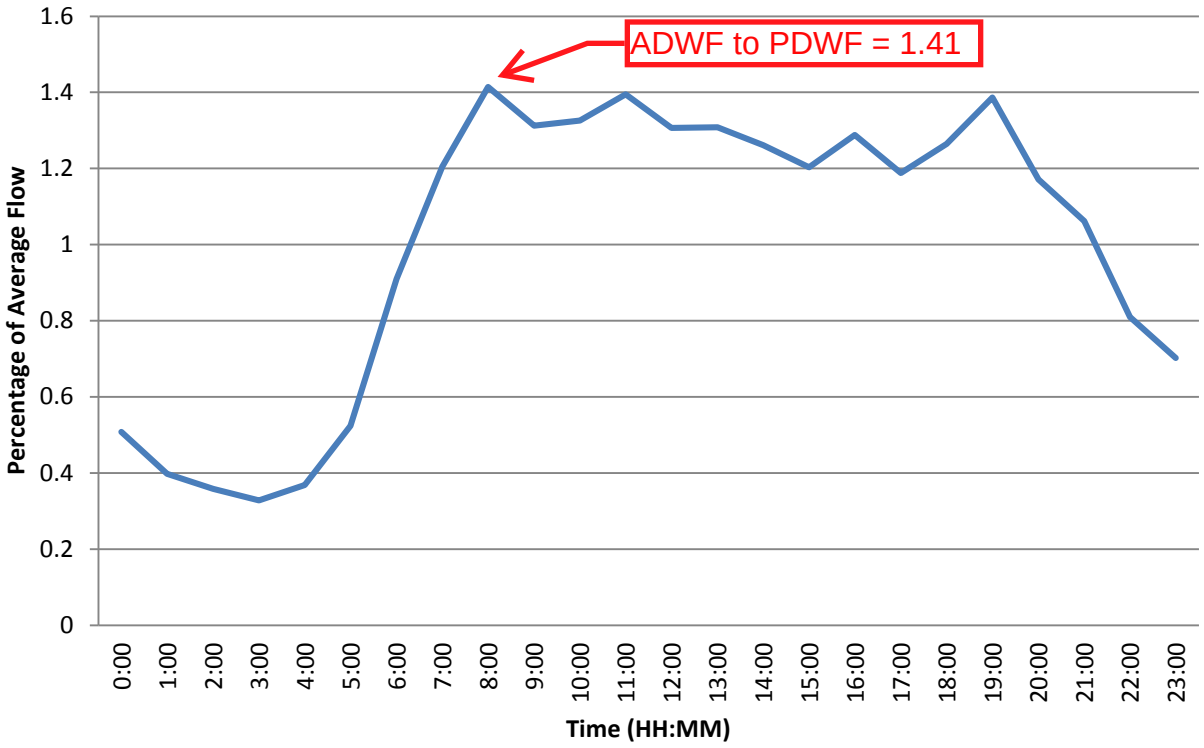
SHEET 1 OF 8

W.O. 3553-0002

APPENDIX B

PEAKING FACTOR
BACKUP DATA

Figure 3-5: Normalized Diurnal Curve (Non-Residential)



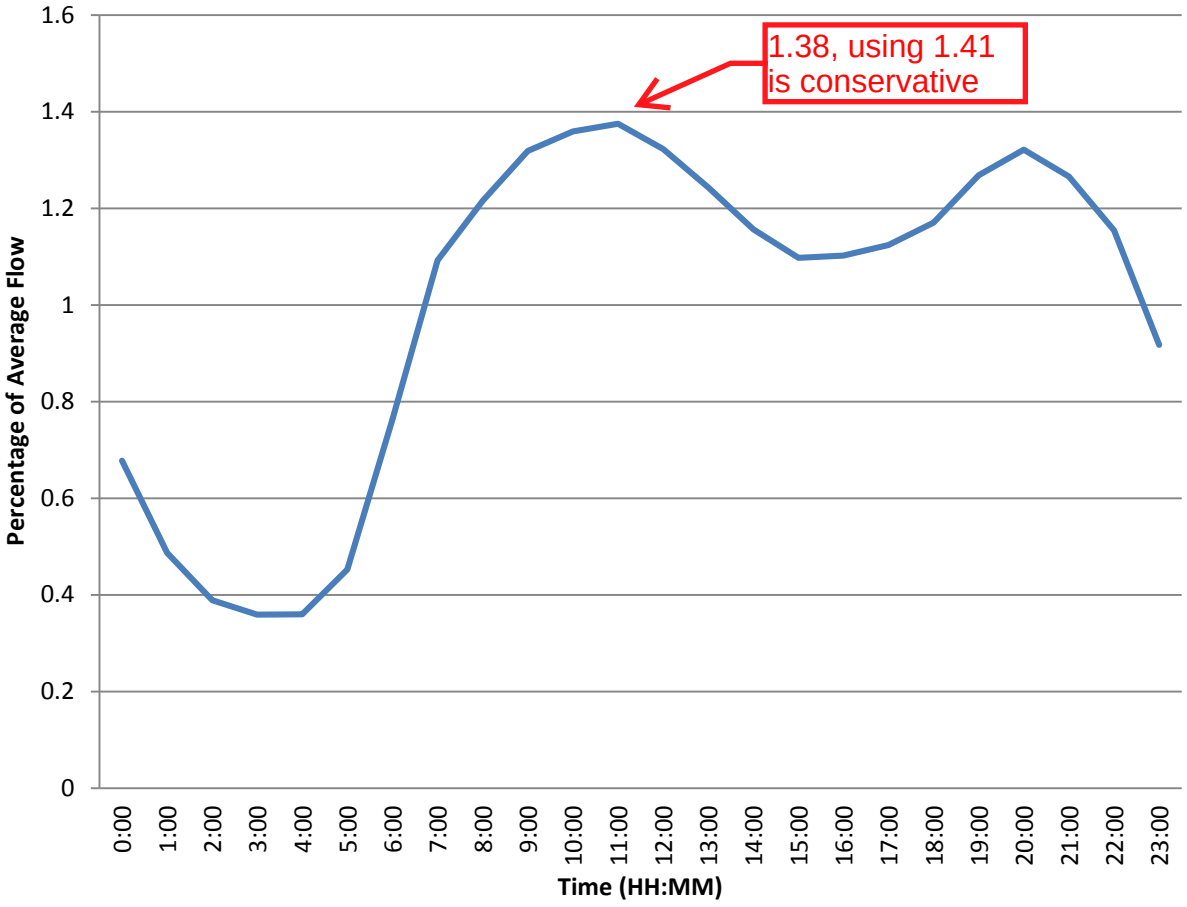
3.3.6 Peak Wet Weather Wastewater Flow (PWWF)

Peak Wet Weather Wastewater Flow (PWWF) is estimated as Peak Dry Weather Flow (PDWF) plus Rainfall Dependent Infiltration/Inflow (RDI/I) and BWI, combined as Inflow/Infiltration (I/I) for this master plan due to the data available. RDI/I is storm water that enters the wastewater collection system in direct response to the intensity and duration of individual rainfall events. RDI/I may recede gradually after a storm; however, any residual flow is considered to be a general increase in GWI.

To create the PWWF scenarios, the model was loaded using PDWF values, and Rainfall Dependent Inflow and Infiltration (RDI/I), combined as I/I was added to the PDWF. Peak values were then evaluated based on consistency throughout the year from data gathered from the City's main outfalls, removing any inconsistent peaks, resulting in an average peaking factor for I/I of 1.85. The total volume of I/I was then averaged out across the city and multiplied accordingly to each pipeline based on its length-diameter. The respective I/I value was then added to the calculated BWF per time period for PWWFs.

ADWF to PWWF = 1.85

Figure 3-4: Normalized Diurnal Curve (Residential)



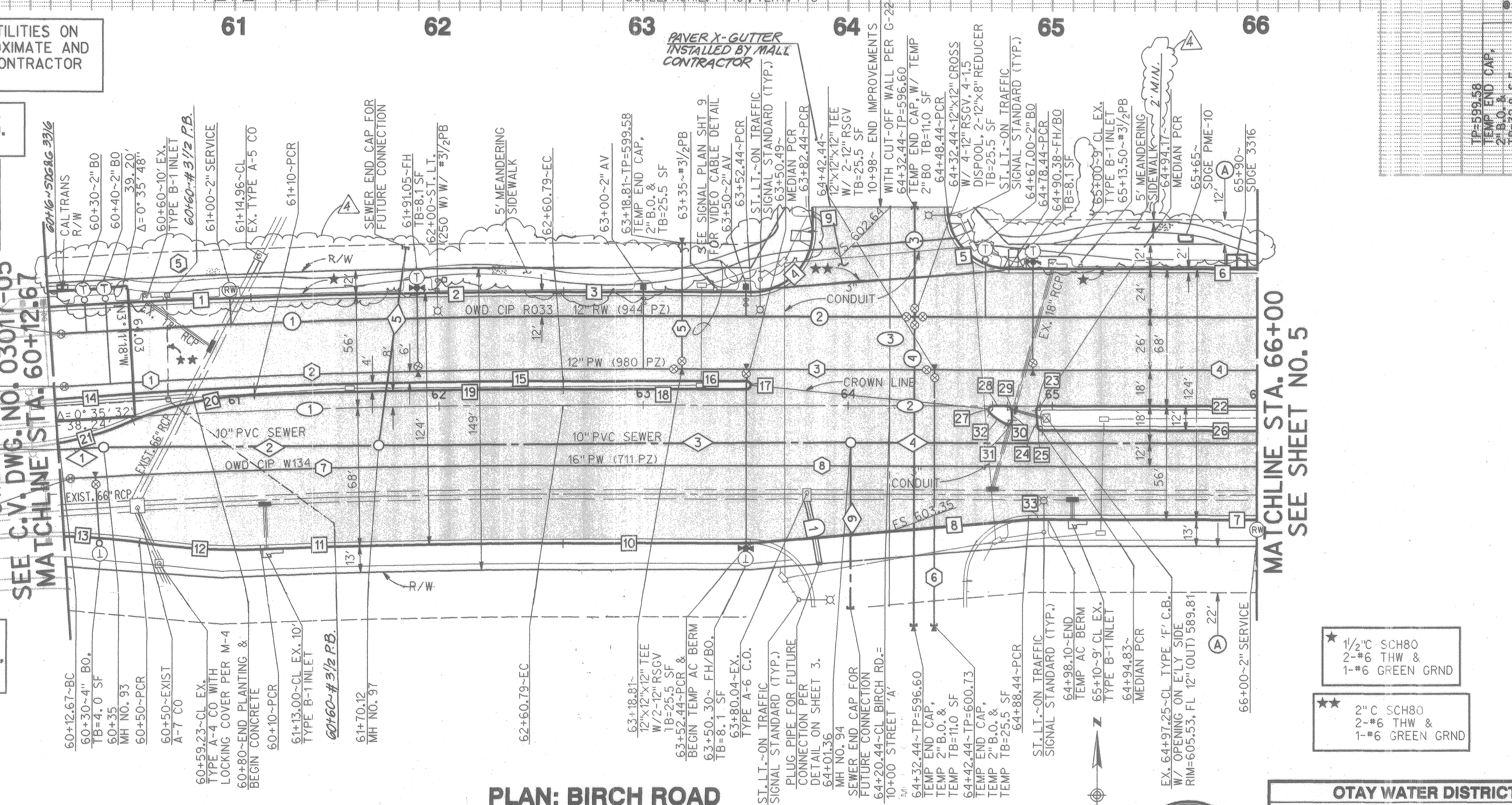
APPENDIX C

SEWER SYSTEM AS-BUILT DRAWING

CAUTION! LOCATION OF EXISTING UTILITIES ON THESE PLANS ARE APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.

FOR GRADING & STORM DRAIN PLANS SEE CITY OF CHULA VISTA DWG'S. NO. 03070-01 THRU 03070-14

(A) ASSIGNABLE AND IRREVOCABLE GENERAL UTILITY AND ACCESS, LANDSCAPE BUFFER, SIDEWALK & MAINTENANCE EASEMENT PER DOCUMENT NUMBER 2005-0317713.



CONNECTION NOTE: CONTRACTOR TO EXCAVATE, PROVIDE ALL MATERIALS, REMOVE END CAP AND THRUST BLOCK, MAKE CONNECTION AND BACKFILL TO OWD SPECIFICATIONS AND INSPECTION

★ 1½"C SCH80 2-#6 THW & 1-#6 GREEN GRND

★★ 2"C SCH80 2-#6 THW & 1-#6 GREEN GRND

SEWER DATA				
NO.	DELTA OR BRG.	RADIUS	LENGTH	REMARKS
1	Δ= 0° 18' 25"	3686.00'	19.74'	10" PVC
2	N89° 32' 05"E		129.60'	10" PVC
3	N89° 38' 52"E		225.78'	10" PVC
4	N89° 56' 34"W		196.15'	10" PVC
5	N7° 39' 23"E		95.98'	10" PVC
6	N0° 00' 00"E		78.26'	10" PVC

RECLAIMED WATER DATA				
NO.	DELTA OR BRG.	RADIUS	LENGTH	REMARKS
1	Δ= 3° 45' 55"	3743.46'	246.02'	12" PVC *
2	N89° 56' 34"W		339.17'	12" PVC *
3	N0° 03' 26"E		54.00'	8" PVC ****
4	N0° 03' 26"E		151.00'	8" PVC ****

* 12" RW (944 PZ) PVC C900 CL200 DR14 (OWD CIP R033)
**** 8" RW (944 PZ) PVC C900 CL200 DR14

WATER DATA				
NO.	DELTA OR BRG.	RADIUS	LENGTH	REMARKS
1	Δ= 0° 50' 22"	4000.00'	58.60'	12" PVC **
2	Δ= 2° 39' 34"	4000.00'	185.66'	12" PVC **
3	N89° 56' 34"W		181.66'	12" PVC **
4	N89° 56' 34"W		157.54'	12" PVC **
5	N0° 04' 18"E		61.93'	12" PVC **
6	N0° 03' 26"E		125.00'	12" PVC **
7	Δ= 3° 27' 17"	4000.00'	241.18'	16" PVC ***
8	N89° 56' 34"W		339.24'	16" PVC ***

** 12" PW (980 PZ) PVC C900 CL200 DR14
*** 16" PW (711 PZ) PVC C905 CL165 DR25 (OWD CIP W134)

STORM DRAIN DATA				
NO.	DELTA OR BRG.	RADIUS	LENGTH	REMARKS
1	Δ= 5° 58' 55"	300.00'	31.32'	30" RCP

CENTERLINE DATA				
NO.	DELTA OR BRG.	RADIUS	LENGTH	REMARKS
1	Δ= 3° 50' 32"	3700.00'	248.11'	
2	N89° 56' 34"W		339.21'	
3	N0° 03' 26"E		196.00'	

CURB DATA				
NO.	DELTA OR BRG.	RADIUS	LENGTH	REMARKS
1	Δ= 1° 49' 35"	3100.00'	98.81'	6" TYPE 'H' C&G
2	Δ= 2° 20' 06"	3756.00'	153.07'	6" TYPE 'H' C&G
3	N89° 56' 34"W		91.66'	6" TYPE 'H' C&G
4	Δ= 90° 00' 00"	30.00'	47.12'	6" TYPE 'H' C&G
5	Δ= 89° 00' 00"	30.00'	47.12'	6" TYPE 'H' C&G
6	N89° 56' 34"W		121.49'	6" TYPE 'H' C&G
7	N89° 56' 34"W		101.96'	6" TYPE 'H' C&G
8	N85° 00' 53"E		136.53'	6" AC BERM
9	N0° 03' 26"E		12.00'	6" TYPE 'H' C&G
10	N89° 56' 34"W		91.66'	6" TYPE 'H' C&G
11	Δ= 2° 20' 06"	3632.00'	148.02'	6" TYPE 'H' C&G
12	SEE THIS SHEET FOR DETAIL		59.36'	6" TYPE 'H' C&G
13	SEE THIS SHEET FOR DETAIL		37.10'	6" TYPE 'H' C&G
14	Δ= 1° 48' 16"	3100.00'	97.64'	B-1 MEDIAN CURB
15	Δ= 2° 20' 06"	3712.00'	151.28'	B-1 MEDIAN CURB
16	N89° 56' 34"W		89.70'	B-1 MEDIAN CURB
17	Δ= 179° 00' 00"	2.00'	6.28'	B-1 MEDIAN CURB
18	N89° 56' 34"W		89.70'	B-1 MEDIAN CURB
19	Δ= 2° 20' 06"	3708.00'	151.11'	B-1 MEDIAN CURB
20	SEE SHEET 3 FOR DETAIL		61.14'	B-1 MEDIAN CURB
21	SEE SHEET 3 FOR DETAIL		38.38'	B-1 MEDIAN CURB
22	N89° 56' 34"W		105.83'	B-1 MEDIAN CURB
23	Δ= 94° 45' 49"	2.00'	3.31'	B-1 MEDIAN CURB
24	N4° 42' 23"W		8.03'	B-1 MEDIAN CURB
25	Δ= 85° 14' 11"	2.00'	2.98'	B-1 MEDIAN CURB
26	N89° 56' 34"W		105.18'	B-1 MEDIAN CURB
27	Δ= 136° 54' 33"	2.00'	4.78'	B-1 MEDIAN CURB
28	N89° 56' 35"W		7.28'	B-1 MEDIAN CURB
29	Δ= 86° 03' 56"	2.00'	3.00'	B-1 MEDIAN CURB
30	N3° 52' 39"W		5.19'	B-1 MEDIAN CURB
31	Δ= 119° 05' 44"	2.00'	4.16'	B-1 MEDIAN CURB
32	Δ= 17° 53' 22"	31.66'	9.89'	B-1 MEDIAN CURB
33	N89° 56' 34"W		9.65'	6" AC BERM

RICK ENGINEERING COMPANY
5620 FRIARS ROAD
SAN DIEGO, CA 92110
619.291.0707
(FAX)619.291.4165
rickengineering.com
San Diego Riverside Sacramento Orange Phoenix Tucson

AS BUILT
SIGNED [signature] DATE: 6/1/07
PRINT NAME: JOHN D. GODDARD, JR. P.E. NO. 33037
DISCIPLINE: CIVIL REGISTRATION EXPIRES: 6/30/08

GRAPHIC SCALE 1" = 40'

REGISTERED PROFESSIONAL ENGINEER — JOHN D. GODDARD JR. — No. 33037 Exp. 6/30/08 — CIVIL — STATE OF CALIFORNIA

OTAY WATER DISTRICT
PROJECT # D0171-XX9637
PERMIT # PLP-04-007 P.Z. 711/980/944
REVIEWED BY [signature] DATE 7/26/05

O.W.D. "AS-BUILT"
(SIGNATURE) [signature] DATE 6/1/07
JOHN D. GODDARD, JR. (PRINTED NAME) P.E. NO.: 33037
MY REGISTRATION EXPIRES: 6/30/08 DISCIPLINE CIVIL

CONSTRUCTION RECORD	REFERENCES	By	REVISIONS	Date	App'd
Contractor HAZARD CONSTRUCTION		REC	(4) REVISE MEANDERING SIDE-	10/12/06	BFS
Inspector JOSELITO CASTILLO	03070-01 THRU 03070-14		WALK		
Date Completed 12/28/06		REC	AS BUILT		

BENCH MARK: CITY CHULA VISTA VERTICAL CONTROL BENCHMARK, INDEX NO. 2105. DESCRIPTION: BRASS DISK @ CENTER OF CURB DRAIN INLET ON SE CORNER NER EASTLAKE PKWY ELEV = 608.582, NAVD 88

SCALE: Horizontal AS SHOWN; Vertical AS SHOWN

Designed By TBG | Drawn By TBG | Checked By JDG
Plans Prepared Under Supervision Of [signature] ENGINEER Date 7/20/05 R.C.E. No. 33037

Submitted 7/29/05 By [signature] Office
Approved 8/1/05 By [signature] City Engineer

CITY OF CHULA VISTA — ENGINEERING DEPARTMENT
PLANS FOR THE IMPROVEMENT OF:
BIRCH ROAD ~ PHASE 3
McMILLIN OTAY RANCH - VILLAGE 12
Drawing No. 04109-04
WO. No. OR-2511

McMILLIN OTAY RANCH, VILLAGE 12, BIRCH ROAD - PHASE 3

© 2000 Rick Engineering Company
R:\d_14190\d_14190c\4190brls04.dgn
\\srv_rlbl\RickStandards\Iplotv10\Pen\calcomp.pen
19-JUL-2005 16:21

WATER **AS-BUILT**

PROJECT # D0171-XX9637
PERMIT PLP-04-007

APPENDIX D

EASTERN URBAN CENTER
EIR EXCERPT

CITY OF
CHULA VISTA

Otay Ranch Eastern Urban Center (EUC) Sectional Planning Area (SPA) Plan

Final Second Tier Environmental Impact Report

Second Tier EIR #07-01

SCH No. 2007041074

September 2009

276 Fourth Ave. • Chula Vista • California • 91910

proposed on-site system would be required to comply with the existing Subdivision Manual, Section 3 (General Design Criteria) and would be subject to review by the City's Engineering Department. Compliance with regulatory design criteria would ensure that on-site lines would not exceed 75 percent of pipe capacity for pipes greater than 12 inches in diameter or 50 percent for pipes 12 inches or less in diameter. Therefore, the project would be less-than-significant with respect to this threshold requirement.

B. Off-Site Sewage Collection System

(1) Off-Site Poggi Canyon Sewer Improvement Area

Detailed analysis of the off-site sewage collection system and potential impacts to each sewer drainage basis are provided in the TSS attached in Appendix J of this EIR.

The current preliminary Grading Analysis of the proposed project shows that the northern blocks of the EUC (Blocks 2 through 6 and Park P1), would drain north to an existing 10-inch gravity sewer in Birch Road, where wastewater would be conveyed to the Poggi Canyon Trunk Sewer (PCTS) The *Poggi Canyon Sewer Basin Plan Update and Pumped Flow Analysis* (PBS&J, May 2002), which determined the number of committed and future EDUs in the PCTS found that Reaches P205 and P270 were the most critical in the PCST system. Since the study, Reach P205 has been replaced, leaving Reach P270, located at the intersection of Olympic Parkway and Brandywine Avenue, as the remaining critical reach. Based on the City's Subdivision Manual Criteria of 265 gpd/EDU and a flow of 75 percent of system capacity, a 21-inch replacement for Reach 270 is determined sufficient to serve the interim and ultimate worst case flow conditions for the maximum land use plan in the north sector of the EUC, including the potential for shifts in land use densities and ultimate flow conditions for the maximum land use plan.[57] As demonstrated in the Technical Sewer Study, the maximum condition, which includes 464 EDUs (122,960 gpd) from Village Seven and 580 EDUs (153,700 gpd) from the EUC, would increase tributary units to 14,236 EDUs. The resulting rate of 6,262,416 gpd would increase the flow in the Poggi Canyon system to 67.6 percent of capacity, which would be less than the 75 percent threshold. Reach P270 (the PCSI) is proposed to be replaced as part of the EUC project with design plans to be complete prior to the approval of any Final Maps for any areas in the EUC within the Poggi Canyon Basin, and construction to be completed prior to first occupancy of units that would utilize the PCTS. Mitigation measures are recommended to ensure that improvements would be completed in a manner acceptable to the City Engineer. With the completion of the proposed improvement, the proposed project would have a less-than-significant impact with respect to the capacity of the PCTS. Therefore, the project would not exceed the threshold capacity in this system.

[57] *PBS&J, op. cit., page 13.*

APPENDIX E

SEWER SYSTEM ANALYSIS
YEAR 2050 CITY FLOWS
PLUS
EXISTING OTAY RANCH TOWN CENTER FLOWS

DATE: 6/20/2023

SEWER STUDY SUMMARY

FOR: Otay Ranch Town Center Redevelopment - City Year 2050 Flows

SHT 1 OF 1

JOB NUMBER: 509-127

BY: Dexter Wilson Engineering, Inc.

REFER TO PLAN SHEET:

LINE	FROM	TO	CITY YEAR 2050 PWWF (gpd)	EXISTING ORTC PROJECT PEAK FLOW (gpd)	COMBINED PEAK FLOW (gpd)	PEAK FLOW (DESIGN FLOW)		LINE SIZE (inches)	DESIGN SLOPE (%)	DEPTH K' (1)	dn (feet)	dn/D(2)	C_a for Velocity(3)	VELOCITY (f.p.s.)	COMMENTS
						M.G.D.	C.F.S.								
16648 A	15191	15190	251,048	403,531	654,579	0.655	1.013	10	0.50	0.302799	0.49146	0.59	0.4817	3.03	EXIST. ORTC PWWF = 403,531 gpd
16647	15190	15189	253,052	403,531	656,583	0.657	1.016	10	2.50	0.135831	0.30911	0.37	0.2651	5.52	
16646	15189	15188	254,712	403,531	658,243	0.658	1.019	10	4.10	0.106334	0.27155	0.33	0.2222	6.60	
16645	15188	15187	256,368	403,531	659,899	0.660	1.021	10	2.20	0.145527	0.32087	0.39	0.2788	5.27	
16644	15187	15186	258,592	403,531	662,123	0.662	1.025	10	1.20	0.197709	0.38027	0.46	0.3491	4.23	
16643	15186	15185	260,393	403,531	663,924	0.664	1.027	10	1.00	0.217168	0.40125	0.48	0.3742	3.95	
16642	15185	15184	262,615	403,531	666,146	0.666	1.031	10	1.00	0.217895	0.40202	0.48	0.3751	3.96	
16641	15184	15183	264,411	403,531	667,942	0.668	1.034	10	1.20	0.199446	0.38218	0.46	0.3513	4.24	
16640	15183	15181	265,983	403,531	669,514	0.670	1.036	10	2.60	0.135816	0.30909	0.37	0.2651	5.63	
16638	15181	15180	268,018	403,531	671,549	0.672	1.039	10	1.20	0.200523	0.38336	0.46	0.3527	4.24	
16637	15180	15179	269,563	403,531	673,094	0.673	1.042	10	3.60	0.116039	0.28428	0.34	0.2366	6.34	
16636	15179	15178	271,379	403,531	674,910	0.675	1.044	10	4.10	0.109026	0.27516	0.33	0.2262	6.65	
16776	15178	15243	350,354	403,531	753,885	0.754	1.167	10	1.30	0.216278	0.40030	0.48	0.3731	4.50	
16765	15243	15244	352,977	403,531	756,508	0.757	1.171	12	4.30	0.073385	0.26920	0.27	0.1704	6.87	
16766	15244	15245	355,743	403,531	759,274	0.759	1.175	12	3.70	0.079401	0.28018	0.28	0.1802	6.52	
16767	15245	15246	357,773	403,531	761,304	0.761	1.178	12	2.50	0.096854	0.31042	0.31	0.2078	5.67	
16770	15246	9161	357,773	403,531	761,304	0.761	1.178	12	2.50	0.096854	0.31042	0.31	0.2078	5.67	
9146	9161	15248	374,963	403,531	778,494	0.778	1.205	12	0.60	0.202166	0.46216	0.46	0.3549	3.39	
16772	15248	15250	376,682	403,531	780,213	0.780	1.207	12	0.60	0.202612	0.46274	0.46	0.3554	3.40	
16773	15250	15251	379,025	403,531	782,556	0.783	1.211	12	0.60	0.203221	0.46353	0.46	0.3562	3.40	
16774	15251	15252	380,839	403,531	784,370	0.784	1.214	12	0.60	0.203692	0.46415	0.46	0.3568	3.40	
16775	15252	15242	383,075	403,531	786,606	0.787	1.217	12	0.60	0.204272	0.46490	0.46	0.3576	3.40	
16764	15242	13388	406,107	403,531	809,638	0.810	1.253	12	4.00	0.081431	0.28381	0.28	0.1834	6.83	
15531	13388	13389	408,761	403,531	812,292	0.812	1.257	12	0.50	0.231076	0.49887	0.50	0.3918	3.21	
15530	13389	13387	411,514	403,531	815,045	0.815	1.261	12	5.20	0.071897	0.26634	0.27	0.1679	7.51	
15529	13387	13386	509,234	403,531	912,765	0.913	1.412	12	1.00	0.183606	0.43761	0.44	0.3304	4.27	
15528	13386	12844	511,194	403,531	914,725	0.915	1.415	12	1.90	0.133488	0.36748	0.37	0.2618	5.41	

Min Slope
0.50

Max dn/D
0.59

A. City model shows slope of 0.7% for Line 16648. As-built drawing presented in Appendix C shows slope of 0.5% for Line 16648; thus, a sewer slope of 0.5% is used for the analysis.

1 K' based on n = 0.013
2 dn/D using K' in Brater King Table 7-14
3 From Brater King Table 7-4 based on dn/D

APPENDIX F

SEWER SYSTEM ANALYSIS
YEAR 2050 CITY FLOWS
PLUS
PROPOSED OTAY RANCH TOWN CENTER FLOWS

DATE: 6/20/2023

JOB NUMBER: 509-127

SEWER STUDY SUMMARY

FOR: Otay Ranch Town Center Redevelopment - City Year 2050 plus Project Flows

BY: Dexter Wilson Engineering, Inc.

SHT 1 OF 1

REFER TO PLAN SHEET:

LINE	FROM	TO	CITY YEAR 2050 PWWF (gpd)	PROPOSED ORTC PROJECT PEAK FLOW (gpd)	COMBINED PWWF (gpd)	PEAK FLOW (DESIGN FLOW)		LINE SIZE (inches)	DESIGN SLOPE (%)	DEPTH K' (1)	dn (feet)	dn/D(2)	C_a for Velocity(3)	VELOCITY (f.p.s.)	COMMENTS
						M.G.D.	C.F.S.								
16648 A	15191	15190	251,048	468,224	719,272	0.719	1.113	10	0.50	0.332726	0.52263	0.63	0.5184	3.09	PROP. ORTC PWWF = 468,224 gpd
16647	15190	15189	253,052	468,224	721,276	0.721	1.116	10	2.50	0.149214	0.32525	0.39	0.2839	5.66	
16646	15189	15188	254,712	468,224	722,936	0.723	1.119	10	4.10	0.116785	0.28524	0.34	0.2377	6.78	
16645	15188	15187	256,368	468,224	724,592	0.725	1.121	10	2.20	0.159794	0.33761	0.41	0.2984	5.41	
16644	15187	15186	258,592	468,224	726,816	0.727	1.125	10	1.20	0.217026	0.40110	0.48	0.3740	4.33	
16643	15186	15185	260,393	468,224	728,617	0.729	1.127	10	1.00	0.238329	0.42420	0.51	0.4020	4.04	
16642	15185	15184	262,615	468,224	730,839	0.731	1.131	10	1.00	0.239056	0.42506	0.51	0.4031	4.04	
16641	15184	15183	264,411	468,224	732,635	0.733	1.134	10	1.20	0.218764	0.40295	0.48	0.3762	4.34	
16640	15183	15181	265,983	468,224	734,207	0.734	1.136	10	2.60	0.148939	0.32493	0.39	0.2835	5.77	
16638	15181	15180	268,018	468,224	736,242	0.736	1.139	10	1.20	0.219841	0.40410	0.48	0.3776	4.34	
16637	15180	15179	269,563	468,224	737,787	0.738	1.142	10	3.60	0.127191	0.29847	0.36	0.2528	6.50	
16636	15179	15178	271,379	468,224	739,603	0.740	1.144	10	4.10	0.119477	0.28869	0.35	0.2416	6.82	
16776	15178	15243	350,354	468,224	818,578	0.819	1.267	10	1.30	0.234837	0.42004	0.50	0.3971	4.59	
16765	15243	15244	352,977	468,224	821,201	0.821	1.271	12	4.30	0.079661	0.28064	0.28	0.1806	7.04	
16766	15244	15245	355,743	468,224	823,967	0.824	1.275	12	3.70	0.086166	0.29218	0.29	0.1910	6.67	
16767	15245	15246	357,773	468,224	825,997	0.826	1.278	12	2.50	0.105084	0.32385	0.32	0.2203	5.80	
16770	15246	9161	357,773	468,224	825,997	0.826	1.278	12	2.50	0.105084	0.32385	0.32	0.2203	5.80	
9146	9161	15248	374,963	468,224	843,187	0.843	1.305	12	0.60	0.218966	0.48380	0.48	0.3765	3.47	
16772	15248	15250	376,682	468,224	844,906	0.845	1.307	12	0.60	0.219412	0.48437	0.48	0.3771	3.47	
16773	15250	15251	379,025	468,224	847,249	0.847	1.311	12	0.60	0.220021	0.48515	0.49	0.3779	3.47	
16774	15251	15252	380,839	468,224	849,063	0.849	1.314	12	0.60	0.220492	0.48576	0.49	0.3785	3.47	
16775	15252	15242	383,075	468,224	851,299	0.851	1.317	12	0.60	0.221072	0.48650	0.49	0.3792	3.47	
16764	15242	13388	406,107	468,224	874,331	0.874	1.353	12	4.00	0.087937	0.29524	0.30	0.1938	6.98	
15531	13388	13389	408,761	468,224	876,985	0.877	1.357	12	0.50	0.249480	0.52310	0.52	0.4161	3.26	
15530	13389	13387	411,514	468,224	879,738	0.880	1.361	12	5.20	0.077603	0.27691	0.28	0.1773	7.68	
15529	13387	13386	509,234	468,224	977,458	0.977	1.512	12	1.00	0.196619	0.45489	0.45	0.3476	4.35	
15528	13386	12844	511,194	468,224	979,418	0.979	1.515	12	1.90	0.142929	0.38133	0.38	0.2752	5.51	

Min Slope
0.50

Max dn/D
0.63

A. City model shows slope of 0.7% for Line 16648. As-built drawing presented in Appendix C shows slope of 0.5% for Line 16648; thus, a sewer slope of 0.5% is used for the analysis.

1 K' based on n = 0.013
2 dn/D using K' in Brater King Table 7-14
3 From Brater King Table 7-4 based on dn/D

APPENDIX G

TABLE G-7
POGGI CANYON INTERCEPTOR SUMMARY

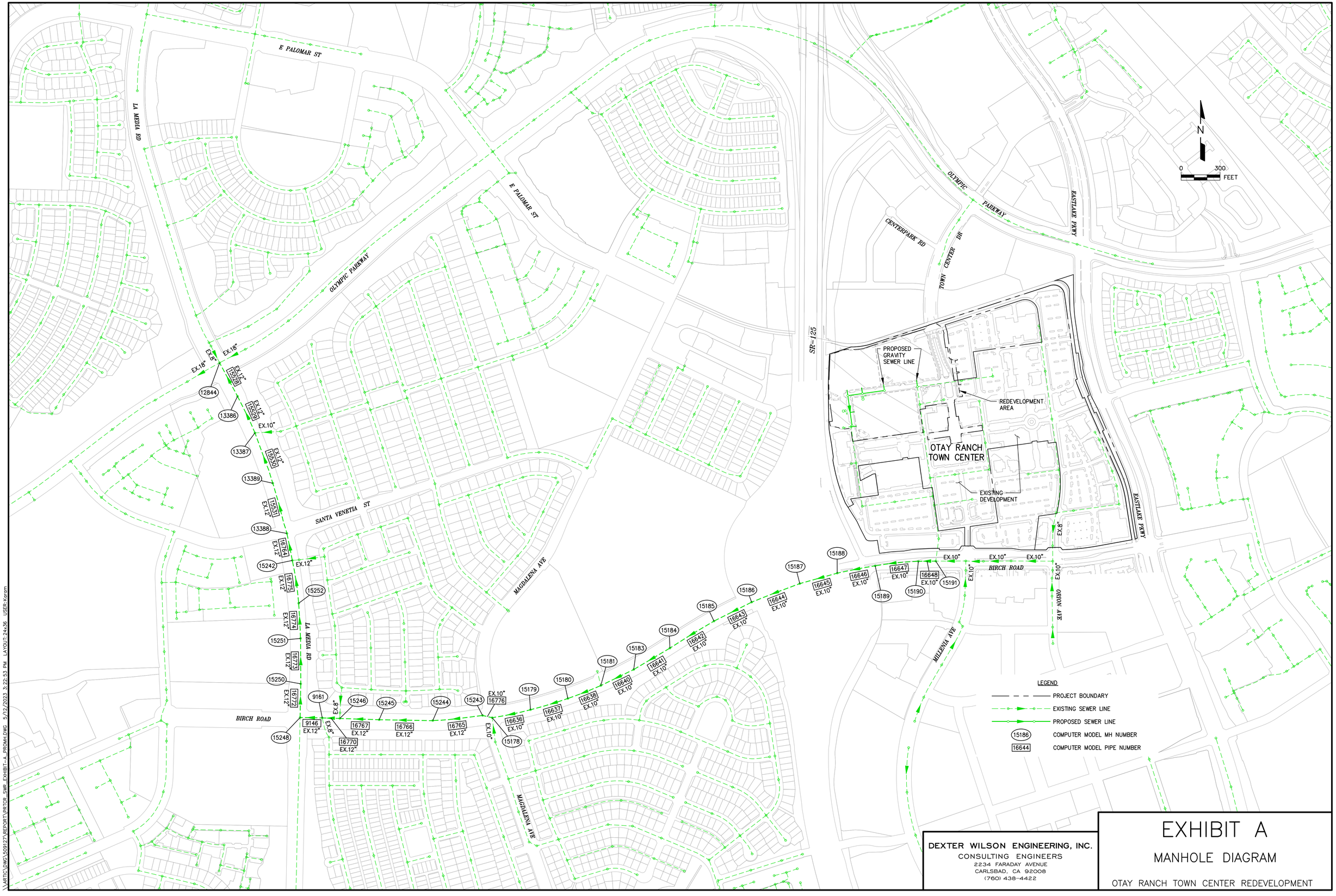
TABLE G-7
POGGI CANYON INTERCEPTOR SUMMARY

Reach	Capacity at d/D=0.85 EDUs	2009 Poggi DIF Study Permitted EDUs		2009 Poggi DIF Study[1] Committed EDU's		Additional EDUs[2]	Net EDUs Permitted Remaining	Net Committed Remaining EDUs
		Current	Remaining Capacity	Current	Remaining Capacity			
P102 to P140	18,367	11,602	6,765	16,204	2,163	1,230	5,535	933
P140 to P175R	22,192	11,602	10,591	16,204	5,988	1,230	9,361	4,758
P175R to P195	35,898	11,602	24,296	16,204	19,694	1,230	23,066	18,464
P195 to P230	18,367	10,726	7,640	15,328	3,039	1,230	6,410	1,809
P230 to P240	16,427	10,053	6,374	14,655	1,772	1,230	5,144	542
P240 to P253R	16,427	10,053	6,374	14,655	1,772	1,230	5,144	542
P253R to P270[3]	12,175	9,763	2,412	14,365	(2,190)	1,230	1,182	(3,420)
P270 to P305[3]	12,175	8,587	3,589	13,125	(950)	1,230	2,359	(2,180)
P305 to P310	38,503	8,587	29,916	12,609	25,894	1,230	28,686	24,664
P310 to P345	17,047	8,447	8,600	12,469	4,578	1,230	7,370	3,348
P345 to P365[4]	13,339	8,289	5,049	12,312	1,027	1,230	3,819	(203)
P365 to P405	17,305	8,289	9,016	11,590	5,715	1,230	7,786	4,485
P405 to P410	13,339	7,770	5,569	11,070	2,269	1,230	4,339	1,039
u/s P410 to SR125	13,339	6,605	6,733	9,906	3,433	1,230	5,503	2,203

1. Committed EDUs do not include interim 464 EDUs from Village 7, 281 EDUs from EUC.
2. Includes 160 EDUs from the JPB Village 2 SPA Amendment, 938 EDUs from the Village 2 Comprehensive SPA Amendment, and 132 EDUs from the Otay Ranch Town Center Redevelopment project (160 EDUs + 938 EDUs +132 EDUs = 1,230 EDUs).
3. Identified for future replacement in 2009 Poggi DIF Study.
4. Identified for future replacement in March 4, 2014 Sewer System Evaluation prepared for the Village 2 Comprehensive SPA Amendment.

EXHIBIT A

MANHOLE DIAGRAM
FOR
BIRCH ROAD AND LA MEDIA ROAD ANALYSIS



DEXTER WILSON ENGINEERING, INC.
CONSULTING ENGINEERS
2234 FARADAY AVENUE
CARLSBAD, CA 92008
(760) 438-4422

EXHIBIT A

MANHOLE DIAGRAM

OTAY RANCH TOWN CENTER REDEVELOPMENT

\\ARTIC\DWG\509127\REPORT\PRTCR_SWR_EXHIBIT-A_PROMH.DWG 5/12/2023 3:22:53 PM LAYOUT:24x36 USER:Karam

EXHIBIT B

POGGI INTERCEPTOR MAP

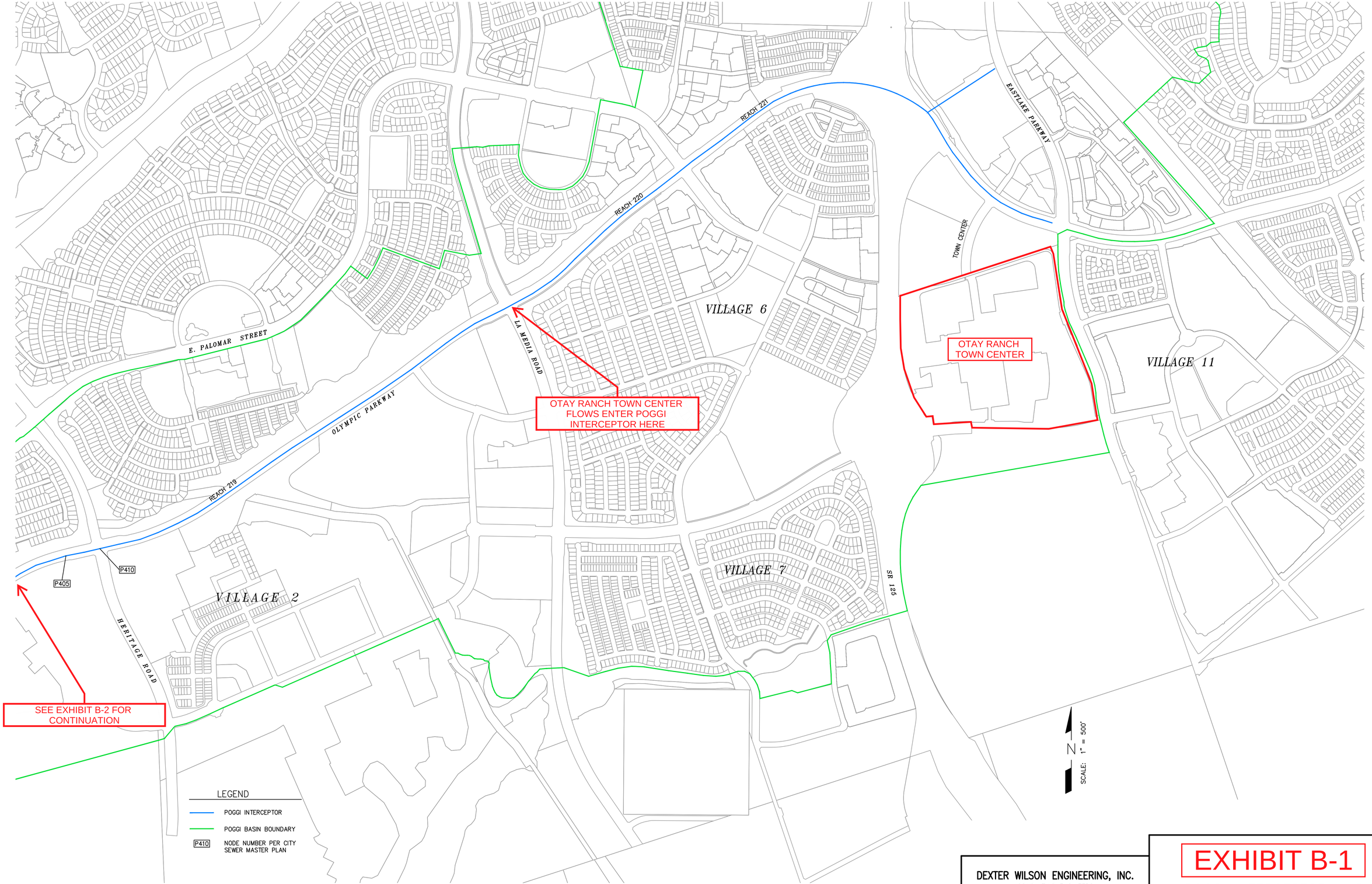


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EXHIBIT B-1

POGGI INTERCEPTOR MAP

\\PACIFIC\DWG\605828\EXHIBIT_A.DWG 01-28-13 09:11:04 LAYOUT: LAYOUT

E. PALOMAR STREET

BRANDYWHINE AVE.

E. PALOMAR STREET

OLYMPIC PARKWAY

SEE EXHIBIT B-1 FOR CONTINUATION

P219

P410

P405

VILLAGE 2

HERITAGE ROAD

P365

P345

217–218

VILLAGE 2 FLOWS

P305

P310

P270

P295

214–216

OLYMPIC PARKWAY

P275

P250R

P245R

P253R

200–213

P240

P230

206–209

SEWER REACH P345 TO P365 IDENTIFIED AS OVER CAPACITY IN THE MARCH 4, 2014 SEWER SYSTEM EVALUATION FOR THE VILLAGE 2 COMPREHENSIVE SPA AMENDMENT AND IN THIS REPORT, SEE TABLE G-7 IN APPENDIX G.

LEGEND

- POGGI INTERCEPTOR
- 205 REACH NUMBER
- P365 NODE NUMBER PER WWMP
- POGGI BASIN BOUNDARY

N

SCALE: 1" = 500'

\\PACIFIC\VWS\609825\EXHIBIT_A.DWG 04-26-11 16:17:59 LAYOUT: LAYOUT

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EXHIBIT B-2

POGGI INTERCEPTOR MAP