Appendix M Sewer Report (November 12, 2020)

SEWER REPORT

For

Encompass Health Hospital
517 Shinohara Lane
Chula Vista, CA 91911



Encompass Health

9001 Liberty Parkway
Birmingham, Alabama 35242



Boulder Associates, Inc.

26 O'Farrell Street, Seventh Floor

San Francisco, CA 94108

(415) 796-6720

&

Nexus Engineering

1400 Lone Palm Avenue, Suite A

Modesto, CA 95351

(209) 572-7399

Prepared date: 08/03/2020

Revision Date: November 12, 2020







Section 1 – Executive Summary

1.1 Project Description

Encompass is proposing a single story 80-bed, 72,768 sq ft inpatient rehabilitation hospital to be constructed in two phases, the first phase includes the construction of a 55,579 sqft structure (building 1) with 30 beds. The second phase includes the demolition of a portion of building 1 (1,040 sf) to add an 18,228 sqft addition, resulting in the ultimate building of the 80-bed, 72,768 sf structure.

Site development will include a landscaped therapy courtyard, enclosures for trash and recycling, an emergency power generator, and a bulk oxygen system, along with 143 parking spaces for staff and visitors during the construction of building 1 and 144 parking spaces when the addition is constructed. This will be a licensed acute care hospital under OSHPD-1 jurisdiction.

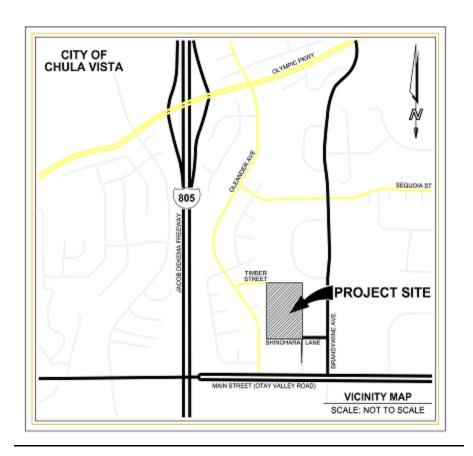
1.2 <u>Summary of Existing Condition</u>

Project site is undeveloped. Figure 1 presents the project site and location of the site. Figure 2 presents the existing condition of the site and the existing site condition surrounding the project site.

Existing 8" VCP sewer line is located in a 10' wide sewer and drainage easement at the end of Shinohara Lane going south towards Main Street.

Proposed 8" PVC sewer line will be connected to an existing sewer manhole located at the upstream end of the existing 8" sewer line just southeast of the property line. See attached Sheet C-13, Sewer and Water Plan, in the Preliminary Grading set, and as-built City of Chula Vista plans 86-481.

Figure 1



Vicinity Map

Figure 2



City of Chula Vista

1.3 Summary of Proposed Condition

Attached calculations, d/D ratio calculations for existing 8" VCP pipe and proposed 8" PVC pipe, Table 702.1 (Drainage Fixture Unit Values, DFU), and Table 702.2 (Maximum Unit Loading and Maximum Length of Drainage And vent piping) show proposed 8" PVC sewer line is sufficient to handle future demand of the proposed building for Phase 1 and Phase 2 construction.

Attached d/D ratio calculations show that existing 8" VCP sewer line and proposed 8" PVC line meet City of Chula Vista Gravity Main Design Criteria, as mentioned in Chapter 4 of the Wastewater Collection System Master Plan, by having d/D ratio less than 0.50 and minimum velocity above 2 ft/sec.

The City's collection facilities convey wastewater flow generated within 8 main drainage basins to connections to regional sewerage facilities located along San Diego Bay to the west and Sweetwater River to the north. This project is located in Main Street Basin Area 27.

Per Chapter 6 of the City of Chula Vista Wastewater Collection System Master Plan "Hydraulic Analysis and Results", some of the existing gravity mains are unable to satisfy the City's design and accommodate peak flows by 2050 and will be part of a CIP gravity main replacement projects at a later date and time. See attached portion of Table 6-6 for segments of the existing 10" VCP sewer lines on Main Street to be upsized to 12" diameter mains. Attached also for reference, "Tech Memo for Area 27" showing manholes and pipe ID numbers along Main Street and Figure 6-1 showing Recommended Manhole/Pipeline Improvements by Year.

Encompass Health Chula Vista

Equivalent Dwelling Unit Calculation (EDU)	46.6 EDU	
Per City of Chulca Vista Code (Form 5509)	230 GPD / EDU	
Total Sewage Generated	10,718 GPD	= 0.017 CFS
Peaking Factor per City Peak to Average Sewer Flow (CVD-SW01) =		2.5
Total Peak Flow Generated		= 0.0425 CFS
existing sewer = 8" VCP (n=0.014)		
slope = 0.0259 normal depth of flow, d (in)		0.07
q/D =		0.07 /0.67 = 0.1045
proposed sewer = 8" PVC (n=0.013)		
slope = 0.0304		0
normal depth of now, d (m)		0.07 0.07 /0.67 = 0.1045
		2007 - 1000 / 1000

HYDRAULIC ELEMENTS - I PROGRAM PACKAGE
(C) Copyright 1982-2016 Advanced Engineering Software (aes)
Ver. 23.0 Release Date: 07/01/2016

```
TIME/DATE OF STUDY: 11:46 11/08/2020
 Problem Descriptions:
  Encompass Health existing 8" VCP sewer
******************
>>>PIPEFLOW HYDRAULIC INPUT INFORMATION<
    PIPE DIAMETER(FEET) = 0.670
PIPE SLOPE(FEET/FEET) = 0.0259
PIPEFLOW(CFS) = 0.04
    MANNINGS FRICTION FACTOR = 0.014000
______
    CRITICAL-DEPTH FLOW INFORMATION:
    CRITICAL DEPTH(FEET) = 0.09
    CRITICAL DEPTH(FEET) = 0.09

CRITICAL FLOW AREA(SQUARE FEET) = 0.463

CRITICAL FLOW TOP-WIDTH(FEET) = 0.463

CRITICAL FLOW PRESSURE + MOMENTUM(POUNDS) = CRITICAL FLOW VELOCITY(FEET/SEC.) = 1.45

CRITICAL FLOW VELOCITY HEAD(FEET) = CRITICAL FLOW HYDRAULIC DEPTH(FEET) = CRITICAL FLOW SPECIFEC ENERGY(FEET) = CRITICAL FLOW SPECIFEC ENERGY(FEET) = 0.09
                                                                      0.19
                                                            0.03
                                                       0.06
                                                               0.12
    CRITICAL FLOW SPECIFIC ENERGY(FEET) =
    NORMAL-DEPTH FLOW INFORMATION:
                                       _____
    NORMAL DEPTH(FEET) =
    FLOW AREA(SQUARE FEET) = 0.02
FLOW TOP-WIDTH(FEET) = 0.411
    FLOW PRESSURE + MOMENTUM(POUNDS) =
                                                           0.21
    FLOW VELOCITY(FEET/SEC.) =
                                                2.150
    FLOW VELOCITY HEAD (FEET) =
                                                0.072
    HYDRAULIC DEPTH(FEET) = FROUDE NUMBER = 1.728
                                       0.05
    FROUDE NUMBER =
                                             0.14
    SPECIFIC ENERGY(FEET) =
______
```

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HYDRAULIC ELEMENTS - I PROGRAM PACKAGE (C) Copyright 1982-2016 Advanced Engineering Software (aes) Ver. 23.0 Release Date: 07/01/2016

```
TIME/DATE OF STUDY: 11:44 11/08/2020
            ______
 Problem Descriptions:
  Encompass Health proposed 8" PVC sewer
**************
>>>PIPEFLOW HYDRAULIC INPUT INFORMATION<
     PIPE DIAMETER(FEET) = 0.670
     PIPE SLOPE(FEET/FEET) = 0.0304
PIPEFLOW(CFS) = 0.04
     MANNINGS FRICTION FACTOR = 0.013000
     CRITICAL-DEPTH FLOW INFORMATION:
     CRITICAL DEPTH(FEET) =
    CRITICAL DEPTH(FEET) = 0.09

CRITICAL FLOW AREA(SQUARE FEET) = 0.030

CRITICAL FLOW TOP-WIDTH(FEET) = 0.463

CRITICAL FLOW PRESSURE + MOMENTUM(POUNDS) =

CRITICAL FLOW VELOCITY(FEET/SEC.) = 1.45

CRITICAL FLOW VELOCITY HEAD(FEET) =

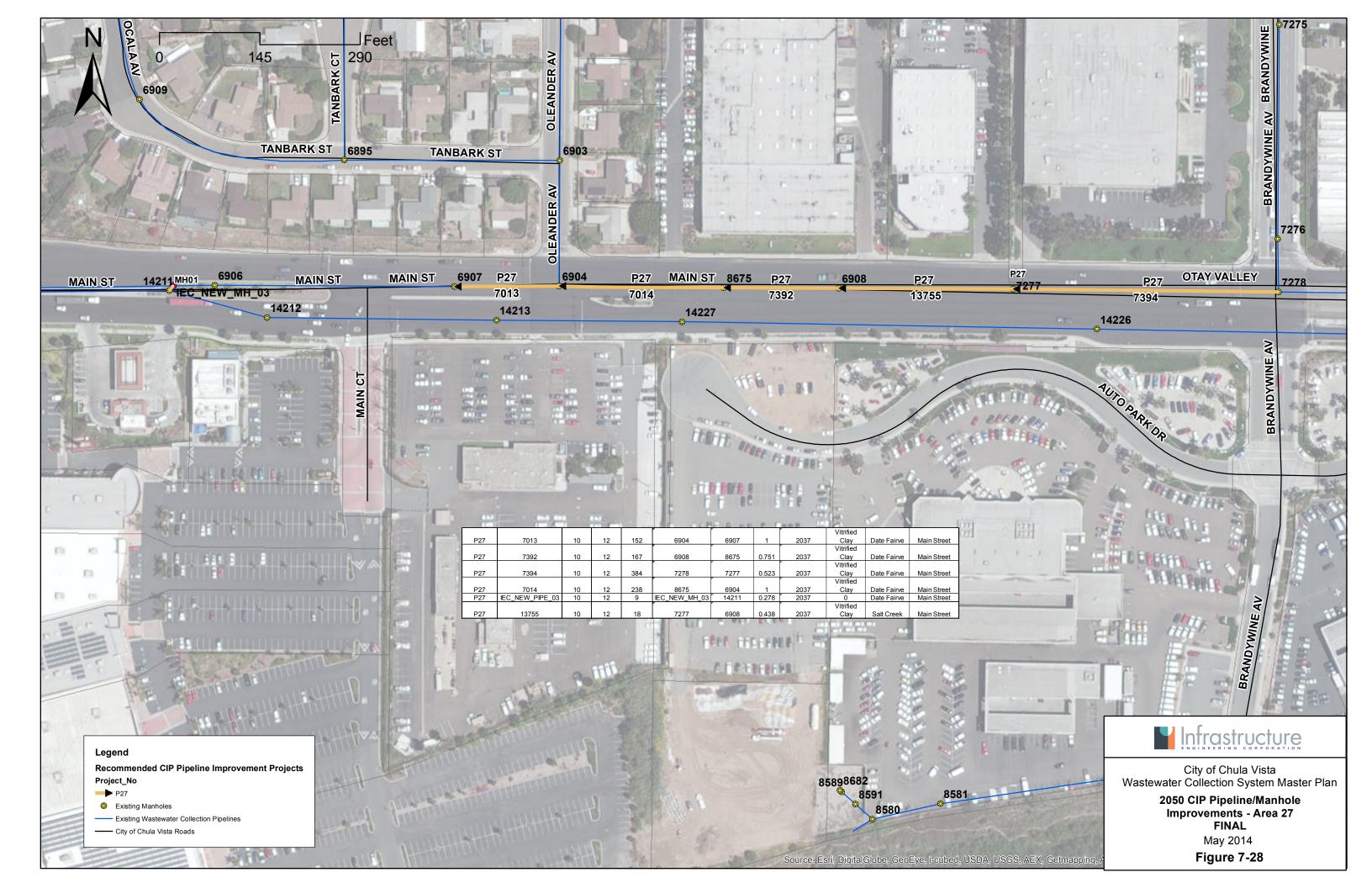
CRITICAL FLOW HYDRAULIC DEPTH(FEET) = (
CRITICAL FLOW SPECIFIC ENERGY(FEET) =
                                                                           0.19
                                                     1.435
0.03
                                                            0.06
                                                                   0.12
______
     NORMAL-DEPTH FLOW INFORMATION:
     NORMAL DEPTH(FEET) =
     NORMAL DEPIN(FELL) = 0.0
FLOW AREA(SQUARE FEET) = 0.398
                                          0.02
     FLOW TOP-WIDTH(FEET) = 0.398
FLOW PRESSURE + MOMENTUM(POUNDS) =
FLOW VELOCITY(FEET/SEC.) =
                                                                0.23
                                                    2.395
     FLOW VELOCITY HEAD(FEET) = HYDRAULIC DEPTH(FEET) = FROUDE NUMBER = 1.998
                                                    0.089
                                          0.04
     FROUDE NUMBER =
     SPECIFIC ENERGY(FEET) =
                                                  0.15
```

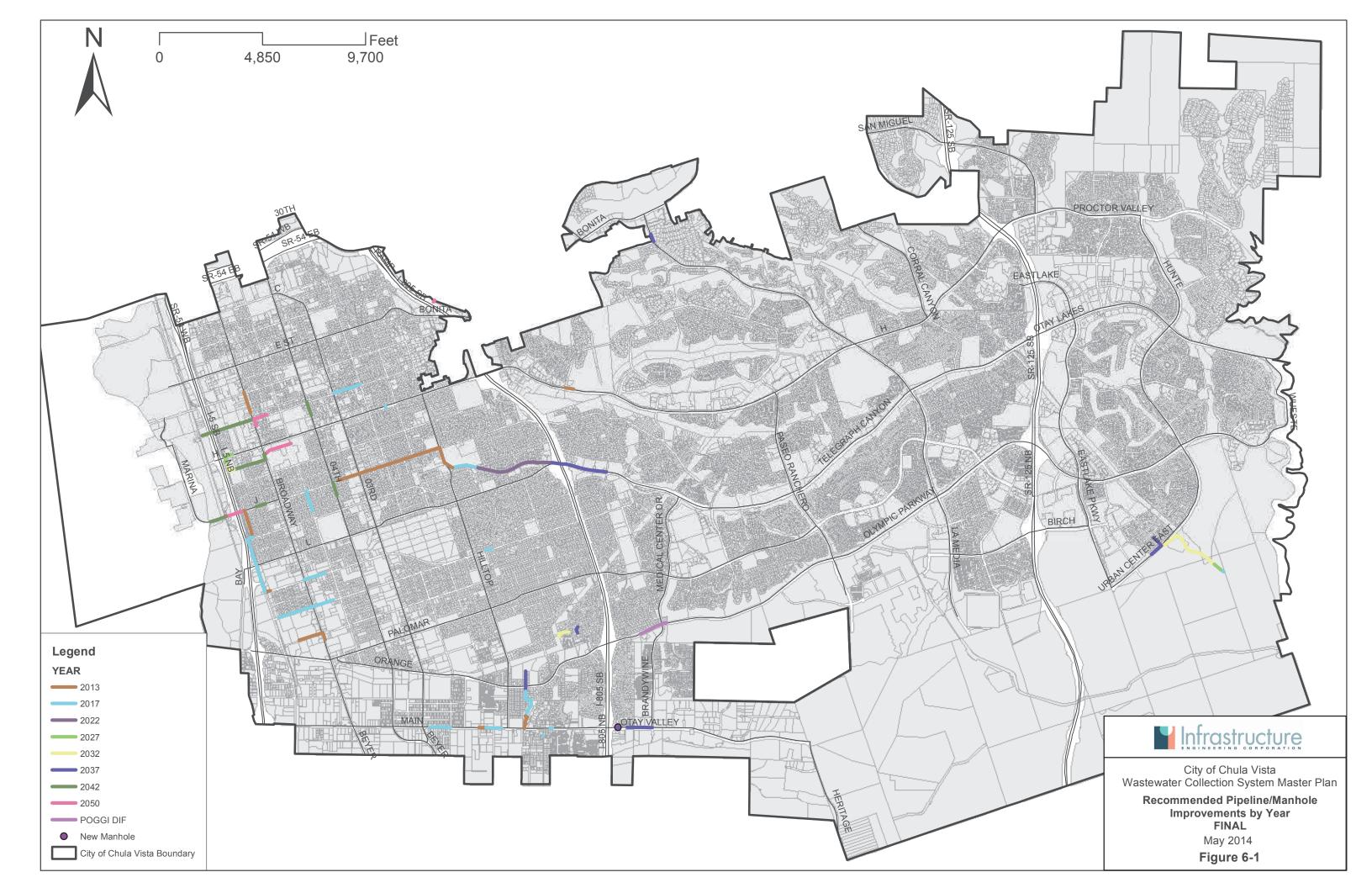


City of Chula Vista Wastewater Collection System Master Plan May 2014 - FINAL

Table 6-6 Cont'd

Pipe ID	Existing Diameter (in)	Pipe Length (ft)	Slope	Upstream Manhole ID	Downstream Manhole ID	Average Dry Weather Flow (gpm)	Peak Dry Weather Flow (gpm)	Peak Dry Weather d/D	Peak Wet Weather Flow (gpm)	Peak Wet Weather d/D	Replacem ent Diameter (in)	Replacement 2050 Peak Wet Weather d/D
7013	10	152	0.001	6904	6907	219.2	302.8	0.605	450.4	1	12	0.611
7392	10	167	0.007	6908	8675	191.6	265.0	0.472	390.3	0.747	12	0.453
> 7394	10	384	0.004	7278	7277	190.7	263.8	0.404	387.5	0.512	12	0.550
7014	10	238	0.002	8675	6904	193.3	267.3	0.624	394.4	1	12	0.593
IEC_NEW_ PIPE_03	10	9	0	IEC_NEW _MH_03	14211	169.9	218.5	0.215	304.6	0.272	12	0.221
> 13755	10	18	0.019	7277	6908	191.6	265.0	0.348	389.6	0.43	12	0.515





ENCOMPASS HEALTH CHULA VISTA REHABILITATION HOSPITAL - SEWER STUDY



PROJECT DIRECTORY

ENCOMPASS HEALTH CORPORATION 9001 LIBERTY PARKWAY PHONE: 205.970.5677

ARCHITECT

BOULDER ASSOCIATES, INC. 26 O'FARRELL STREET, 7 FL. SAN FRANCISCO, CA 94108 PHONE: 415.796.6720 FAX: 415.796.6721

RIDGE LANDSCAPE ARCHITECTS 8841 RESEARCH DRIVE, SUITE 200 IRVINE, CA 92618

LANDSCAPE ARCHITECT

PHONE: 949.387.1323

M.J. HARRIS CONSTRUCTION SERVICES ONE RIVERCHASE RIDGE, SUITE 300 PHONE: 205.380.6800

STRUCTURAL ENGINEER

MARTIN/MARTIN INC

244 MAGNOLIA AVE.

LARKSPUR, CA 94939

PHONE: 415.814.0030 FAX: 303.431.6866

NEXUS ENGINEERING

MODESTO, CA 95351

PHONE: 209.572.7399

APD CONSULTANTS, INC.

188 TECHNOLOGY DR. - SUITE B

425 MARKET STREET, 17 FL.

SAN FRANCISCO, CA 94105

PHONE: 415.402.2727

CIVIL ENGINEER

IRVINE, CA 92618

MECH/PLUMBING ENGINEER

1400 LONE PALM AVE. SUITE A

SEWER STUDY COVER SHEET SEWER AND WATER PLAN 3 1 OF 3 GRADING PLAN FOR PARCEL 1, T.P.M. 86-2 1670 BRANDYWINE AVE 4 2 OF 3 GRADING PLAN FOR PARCEL 2, T.P.M. 86-2 1690 BRANDYWINE AVE 5 3 OF 3 GRADING PLANS FOR T.P.M. 86-2 1570 AND 1690 BRANDYWINE AVE 8 3 OF 3 8" SEWER MAIN OTAY VALLEY RD TO SHINOHARA LANE

SHEET INDEX

STREET IMPROVEMENT PLANS FOR NW CORNER OF BRANDYWINE & OTAY VALLEY ROAD STREET IMPROVEMENT PANS OTAY VALLEY ROAD - NS@ BRANDYWINE & SHINOHARA LN. OVERALL UNDERGROUND PLAN 9 P2.0 PROJECT PLUMBING AND LOAD INFORMAITON

VICINITY MAP



DR 19-0028 CUP-19___

PROJECT DATA

LEGAL DESCRIPTION:

517 SHINOHARA LANE CHULA VISTA, CA 91911 BUILDING ADDRESS:

PARCEL 1: APN: 644-040-01-00

THAT PORTION OF LOT 1 IN SECTION 19, TOWNSHIP 18 SOUTH, RANGE 1 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF CHULA VISTA, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID SECTION 19; THENCE SOUTH ALONG THE WEST LINE OF SAID SECTION, 812 FEET; THENCE EASTERLY AT RIGHT ANGLES TO SAID WEST LINE, 515 FEET; THENCE SOUTHERLY PARALLEL WITH SAID WEST LINE 508 FEET; THENCE EASTERLY AT RIGHT ANGLES 13 FEET; THENCE NORTHERLY PARALLEL WITH THE WEST LINE OF SAID SECTION, 1320 FEET TO THE NORTH LINE OF SAID SECTION; THENCE WEST ALONG SAID NORTH LINE, 528 FEET TO THE POINT OF BEGINNING

ENCOMPASS IS PROPOSING A SINGLE STORY 80-BED, 72,768 SQ FT INPATIENT REHABILITATION HOSPITAL TO BE CONSTRUCTED IN TWO PHASES. THE FIRST PHASE INCLUDES THE CONSTRUCTION OF A 55.579 SQFT STRUCTURE

(BUILDING 1) WITH OF 30 BEDS. THE SECOND PHASE INCLUDES THE DEMOLITION OF A PORTION OF BUILDING 1 (1,040 SF) TO ADD AN 18,228 SQFT ADDITION, RESULTING IN THE ULTIMATE BUILDING OF THE 80-BED, 72,768 SE STRUCTURE SITE DEVELOPMENT WILL INCLUDE A LANDSCAPED THERAPY COURTYARD. ENCLOSURES FOR TRASH AND RECYCLING, AN EMERGENCY POWER GENERATOR, AND A BULK OXYGEN SYSTEM, ALONG WITH 143 PARKING SPACES FOR STAFF AND VISITORS DURING THE CONSTRUCTION OF BUILDING 1 AND 143 PARKING SPACES WHEN THE ADDITION IS CONSTRUCTED. THIS WILL BE A LICENSED ACUTE CARE HOSPITAL UNDER

OSHPD-1 JURISDICTION. -INCLUDED IN THIS SCOPE IS A REQUEST FOR A WAIVER REGARDING ZONING CODE §19.58.360, A SITE WALL REQUIREMENT; THIS SITE'S GRADING AND LANDSCAPE FORM SUFFICIENT SCREENING AND PROTECTION

BETWEEN THE PROPERTY AND THE NEIGHBORS.

PERMITTING & CODE ENFORCEMENT BY OSHPD UNDER OSHPD-1 CRITERIA WITH LOCAL APPROVAL OF ENVIRONMENTAL IMPACT, LAND USE, ZONING, PARKING, LANDSCAPING, SITE GRADING, SITE DRAINAGE & **AUTHORITIES HAVING** JURISDICTION:

PAVING (HEALTH & SAFETY CODE, DIVISION 107, SECTION 129680) LICENSED TO TREAT PATIENTS BY THE

APPLICABLE CODES: 2016 CALIFORNIA BUILDING CODE (CBC) 2016 CALIFORNIA MECHANICAL CODE (CMC)

2016 CALIFORNIA PLUMBING CODE (CPC) 2016 CALIFORNIA ELECTRICAL CODE (CEC) 2016 CALIFORNIA FIRE CODE (CFC) 2016 CALIFORNIA ENERGY CODE

2016 CALIFORNIA GREEN BUILDING STANDARDS

PARCEL INFORMATION

= SECTION 19, TOWNSHIP 18 SOUTH, RANGE 1 WEST, SAN BERNARDINO MERIDIAN

184048.00

Author

9/20/2019

REVISIONS DESCRIPTION



Boulder Associates, Inc. Architecture + Interior Design 26 O'Farrell Street, Seventh Floor San Francisco, California 94108 415.796.6720 F 415.796.6721 www.boulderassociates.com



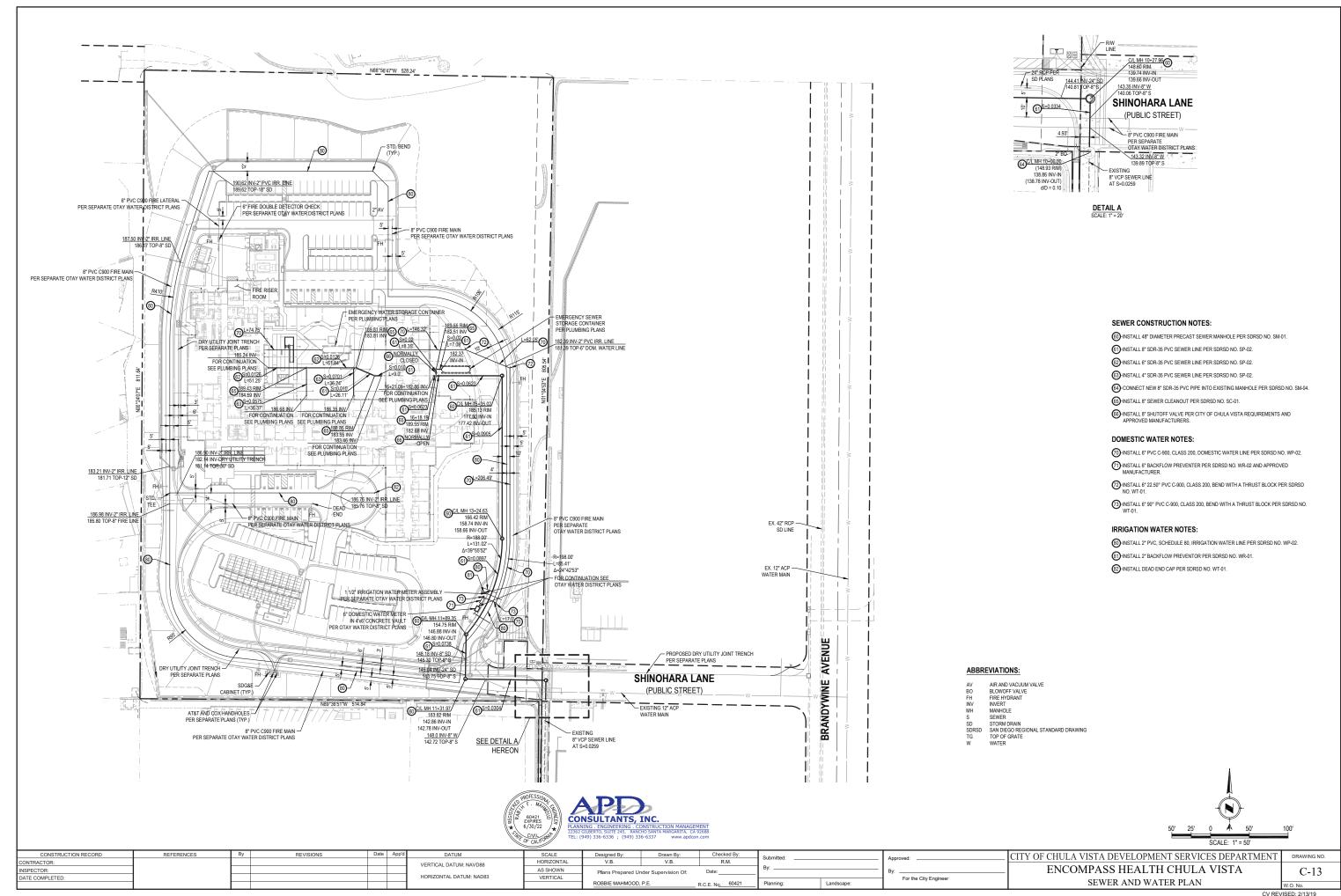
ENCOMPASS HEALTH CHULA VISTA

517 SHINOHARA LANE

SHEET TITLE

COVER SHEET

SHEET NUMBER



CHULA VISTA T. P. M. 86-2

BRANDYWINE DISTRIBUTION CENTER

WATER NOTES

I. WATER MAINS AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS OF THE OTAY WATER DISTRICT. 2. WATER MAINS SHALL HAVE A MINIMUM COVER OF 42 INCHES TO TOP OF PIPE. ALL WATER MAINS SHALL BE OF A CLASS AS SHOWN ON PLANS. 3. THE DISTRICT SHALL RECEIVE THE CONSTRUCTION SCHEDULE 48 HOURS IN ADVANCE OF START OF CONSTRUCTION. WORK DONE WITHOUT DISTRICT INSPECTION SHALL BE SUBJECT TO REMOVAL. TELEPHONE NUMBER OF OTAY WATER DISTRICT IS (619)

4. CONSTRUCTION OF WATER WORK SHALL NOT START UNTIL THE SUBDIVISION AGREEMENT HAS BEEN BEEN EXECUTED BY THE DISTRICT AND THE DEVELOPER. 5. APPROVAL OF PLANS BY CTAY WATER DISTRICT DOES NOT CONSTITUTE RESPONSIBILITY FOR ACCURACY OF INFORMATION NOR LOCATIONS OF OTHER EXISTING UTILITIES

6. NO WATER METERS SHALL BE INSTALLED BY OTAY WATER DISTRICT UNTIL NEW FACILITIES HAVE BEEN ACCEPTED BY THE DISTRICT BOARD OF DIRECTORS.

7. FIRE HYDRANT PROTECTOR POSTS MUST BE INSTALLED IN AREAS AS DEEMED NECESSAR BY DISTRICT ENGINEER.

8. THE CONTRACTOR SHALL POTHOLE ALL TIE IN LOCATIONS BEFORE PIPE INSTALLATION TO DETERMINE: (A) PIPE SIZE AND TYPE; (B) ELEVATION; AND (C) IF TIE IN CAN BE MADE AT LOCATION INDICATED, (I) POTHOLE EXISTING UTILITIES THAT MAY INTERFER WITH TIE-INS; AND (2) PIPE SHOULD BE EXPOSED A MINIMUM OF THREE EITHER SIDE OF CONNECTION POINT TO ASSURE NO COLLARS ARE IN THE TAP AREA. ANY DISCREPENCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DISTRICT ENGINEER PRIOR TO PROCEEDINGS.

9. CONTRACTOR SHOULD NOT LAY ANY PIPE CLOSER THEN 13 FEET TO TIE-IN LOCATIONS OR 26 FEET WHERE WET-TAPS ARE TO BE MADE.

AND HEALTH TESTS HAVE PASSED. TIE-INS WILL BE COMPLETED AFTER THE CONTRACTOR DRAINS THE LINE.

II. OTAY WATER DISTRICT WILL CUT IN TEES AND VALVES AT CONNECTIONS ON EXISTING MAINS; INSTALL SADDLES, TAPPING VALVES AND OR MAKE WET-TAPS; AND MAKE CLOSURES BETWEEN END CAPS WHERE AN EXISTING LINE IS AFFECTED.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PHASES OF WORK NOT PERFORMED

13. CONTRACTOR TO FURNISH ALL MATERIALS TO COMPLETE THE WORK OTHER THAN THAT SPECIFICALLY CALLED FOR ON THE PLANS TO BE FURNISHED BY THE DISTRICT.

14. WHEN WATER FACILITIES HAVE BEEN INSTALLED, CHLORINATED, TESTED AND THE DEVELOPMENT LIES DORMANT FOR A THREE MONTH PERIOD WITHOUT ADDITIONAL WORK TAKING PLACE OR IMPROVENTS ACCEPTED INTO THE OTAY SYSTEM, THE VALVES AT THE SOURCE OR SOURCES WILL BE CLOSED, LOCKED AND WILL NOT BE REOPENED UNTIL THE FACILITIES HAVE BEEN RETESTED FOR BACTERIA AND ARE READY FOR ACCEPTANCE.

15. WATER PRESSURE REGULATORS WILL BE REQUIRED, INSTALLATION AND MAINTENANCE OF REGULATORS IS THE RESPONSIBILITY OF THE DEVELOPER.

16.2 COPPER SERVICE LATERALS SHALL BE INSTALLED PERPENDICULAR TO THE CENTERLINE OF

17. EACH LOT SHALL RECEIVE A 2-INCH COPPER SERVICE LATERAL, INSTALLED PERPENDICULAR TO THE CENTERLINE AND AT A LOCATION DETERMINED BY THE ENGINEER OF WORK. METER BOXES SHALL BE PROVIDED AND INSTALLED TO FINISHED GRADE BY THE CONTRACTOR.

18.ALL CAST IRON AND NON-COATED STEEL PIPE AND APPURTENANCES BURIED IN THE GROUND SHALL BE PROTECTED WITH AN 8-MIL THICK POLYETHYLENE SLEEVE OR SHEET.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATION OF ANY EXISTING WATER OF APPURTENANCES,

An approved alternate for the 8" v.c. sewer shown on plans is p.v.c. sewer pipe per a.s.t.m. D 3034 type psm sdr-35 with minimum pipe stiffness of 46 when tested at 5% deflection, gravity p.v.c. sewer shall have a 3/4" maximum crushed rock backfill to 1-foot above the pipe.

2. SEWER CONTRACTOR SHALL MAKE CERTAIN THAT ALL MANHOLES ARE CONSTRUCTED IN EXACT LOCATION SHOWN, AND WITH THE OFFSET CONE POSITIONED AWAY FROM SURVEY MONUMENT LOCATIONS ADJACENT THERETO.

3. ALL V.C. SEWER PIPES CONNECTING TO MANHOLES SHALL HAVE A FLEXIBLE JOINT WITHIN 12" OF THE INSIDE FACE OF THE MANHOLE. THESE FLEXIBLE JOINTS ARE CONSIDERED TO BE INCLUDED IN THE UNIT PRICE BID FOR MANHOLES.

I. THE FIRE FLOW REQUIREMENT SHALL BE A MINIMUM 1000 GPM FOR TWO (2) HOURS DURATION BASED ON A MINIMUM OF 20 P.S.I. RESIDUAL OPERATION PRESSURE IN THE STREET MAIN FROM WHICH THE FLOW IS MEASURED AT THE TIME OF MEASUREMENT, NOTE: IN THE EVENT WOOD SHINGLES ARE USED AS ROOF COVERING, THE FIREFLOW REQUIREMENT SHALL BE INCREASED TO A TOTAL FIREFLOW OF 1500 GPM.

2. Type of fire hydrant shall have one (1) 4"outlet and two(2) 21/2" outlet. Installation shall be in accordance with the standard specifications. 3. PROTECTION OF FIRE HYDRANTS TO BE PROVIDED AND MAINTAINED AT ALL TIMES.

4. WATER SUPPLIES FOR FIRE PROTECTION TO BE PROVIDED PRIOR TO ANY COMBUSTIBLE CONSTRUCTION MATERIAL BEING PLACED ON THE SITE.

5. ACCESS FOR FIRE APPARATUS TO BE PROVIDED AND MAINTAINED TO WITHIN 150 FEET

6. ACCESS TO FIRE HYDRANTS TO BE PROVIDED AND MAINTAINED AT ALL TIMES. HYDRANTS SHALL NOT BE OBSTRUCTED IN ANY MANNER.

ALL WATER SYSTEMS SHALL BE DESIGNED TO PERMIT CIRCULATION WATER FLOW EXCEPT HERE IMPRACTICAL BECAUSE OF CUL- DE-SACS AND LIKE CONDITIONS OR THE WOOMPLETE DEVELOPMENT OF THE GRID SYSTEM.

Senior Civil Engineer

Submitted 6987 Approved 69 5

By Coper & Dagust By www 1 igget

City Engineer

OF COMBUSTIBLE CONSTRUCTION MATERIAL.

Drawn By Checked By M B

Plant Brefared Under Supervision Of DAVID L. WALDEN RC.E No. 19402

4. P. V. C. PIPE CONNECTION TO MANHOLES SHALL COMPLY WITH REGINAL STANDARD.

19. METER BOXES SHALL NOT BE LOCATED IN SIDEWALKS OR DRIVEWAYS.

SEWER NOTES

FIRE NOTES

NO 194.7

CIVIL

Designed By

Traffic

645 4.50 49

THE MAIN AND ATA LOCATION DETERMINED BY THE ENGINEER OF WORK. METER BOXES SHALL BE PROVIDED AND INSTALLED TO FINISHED GRADE.

BY OTAY WATER DISTRICT; HAND AND MACHINE EXCAVATION FOR TAPS, INSTALL THRUST BLOCKS, PAINT AND WRAP FITTINGS, BACKFILL AND COMPACT TRENCH AREA, INSTALL THRUST BLOCKS, INSTALL GATE CASTINGS, MAKE NECESSARY PAVING REPAIRS, ETC.

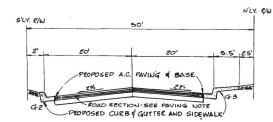
TAPS OR TIE-INS WILL BE SCHEDULED UNTIL AFTER PRESSURE TESTS

FUTUREG S'LY E/W 14' EXIST. VARIES _ 7.5' 35' 5.5' 14' A.C. OVERLAY FOR SMOOTH TRANSITI LIMITS PER PLAN SHIT ? VARIES PROPOSED CUEB EQUETTER SEE NOTE THIS SHEET AND SIDEWALK, 9-3

STRUCTURAL STREET SECTION . 4° AC. - 18'/2 CLASSII AGGREGATE BASE

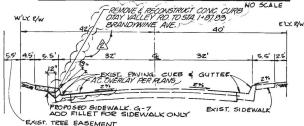
TYPICAL SECTION OTAY VALLEY RD

TREE EASEMENT.



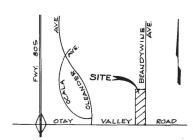
STRUCTURAL STREET SECTION STATION 0+00 - 1+75: 3"A.C-11/2" CLASS I AGGREGATE BASE 1+75 - Z+40: 3"AC.-4" Z+40-3+75: 3"AC.-11/2"

TYPICAL SECTION SHINOHARA LN.



ORIGINAL TO CITY COUNTY FOR DISCONATURES ★ RECORDS 5-90-87

TYPICAL SECTION BRANDYWINE AVE



TEL. (619) 587-0073 ASSESSORS PARCEL NO.

644-040-20

LEGAL DESCRIPTION

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSION CODE, AND THE DESIGN IS CONSISTANT WITH CURRENT STANDARDS.

I UNDERSTAND THAT THE CHECK OF THE PROJECT DRAWINGS AND SPECIFICATIONS BY THE CITY OF CHULA VISTA IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME, AS ENGINEER OF WORK, OF MY RESPONSIBILITIES FOR PROJECT DESIGN.

WALDEN & ASSOCIATES, INC. 9245 SKYPARK COURT, SUITE.IIO SAN DIEGO, CA 92123 TEL. (619) 571-9035

19002 10.22.86 DAVID L. WALDEN DATE R.C.E

Prepared in the office of VICINITY MAP Church Engineering, Inc.

Consulting Engineers 225 Broadway Suite 700 Planners San Diego, CA 92101

hone (619) 237-0722 ENGINEER OF WORK 0,4,00 DATE

spector Jim Biasi tote Completed 5-19-88

MANUEL E NIETO ROE 30724 *XPIRATION DATE: 3/31/88 MANUEL E. NIETO R.C.E. 30724
EXPIRATION DATE: 3/31/92 CONSTRUCTION RECORD REFERENCES ntroctor Cardon Meadows

AS - BUILT WATER OTAY DISTRICT 5/17/88 APPROVED BY: R.E. BARBER, JR DATE DATE 5-13-87 R.C.E. 2287 REVISIONS BENCH MARK pate Appo Office A SCALE A WIDEN IMPROVEMI C.E. & REVISETC; WLY BORY TO I + BT BB BRANDY WINE C.E. 4S - BUILT BM 7 1045 L & T E/SIDE LT. STD. AT N W COR., OLEANDER AVE AND CTAY VALLEY RD. ELEV: 128.746 Horizonta Field_

OWNER

CARDON MEADOWS DEVELOPMENT CORPORATION 9339 GENESE AVE. SUITE 250 SAN DIEGO, CA 92121

BEING THAT PORTION OF PARCEL MAP NO. 11685, IN THE CITY OF CHULA VISTA, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, SEPTEMBER 23, 1981 AS FILED NO. 81-307612 OF OFFICIAL RECORDS, AS DELINIATED AND DESIGNATED AS "REMAINDER PARCEL" ON SAID PAPCEL MAP.

Said C. Wall

WORK TO BE DONE

THE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE DONE IN ACCORDANCE WITH THESE PLANS, 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.

Ŕ	LEGEND A. C. PAVEMENT	STD. DWG. SD6 - 104,105	
T	A. C. OVERLAY		
	6 TYPY G CURB & GUTTER	G-2	
	P. C. C. SIDEWALK ONLY	G-7 , G-9	
	CURB, GUTTER & SIDEWALK	G-3	**************************************
	PEDESTRIAN RAMP	SDG-101	Δ
	GROSS GUTTER	C.V.C.S. 2	
	GUARD POST AND BARRICADE	м-9	
	CURB OUTLET TYPE A	D-25	===0
Y	WATER MAIN	_	w
	WATER SERVICE		
FEET	SEWER MANHOLE	CVDS 19	OMH. NO
	SEWER MAIN	S-5.I	——S——
	SEWER LATERALS	S-I3	(S)

GENERAL NOTES

- ALL UNDERGROUND UTILITIES AND LATERALS TO BE INSTALLED BEFORE CONSTRUCTION OF CURB OR SURFACING OF STREETS.
- 2. SIDEWALK IS TO BE 6" THICK THROUGH ALL DRIVEWAYS.

MID BLOCK CROSS GUTTER - - - G-13

STREET LIGHT, 250 WATT HBSV CUTOFF - - CV 6. 7

- 3. ALL WORK SHALL BE COMPLETED PER THESE PLANS AND APPROVED REVISIONS. ALL CHANGES OR REVISIONS THEREFROM MUST BE APPROVED BY THE CITY ENGINEER PRIOR TO ANY REQUEST FOR INSPECTION.
- 4. CITY OF CHULA VISTA INSPECTION NOTICE:
- A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM THE CITY ENGINEER 48 HOURS IN ADVANCE OF COMMENCING WORK. PHONE 691-5028
- B. THE CONTRACTOR SHALL GIVE 24 HOURS NOTICE ON CALLS FOR INSPECTION. PHONE 691-5028
- C. ANY WORK PERFORMED WITHOUT BENEFIT OF INSPECTION SHALL BE SUBJECT TO REJECTION AND REMOVAL.
- IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND WORK PRIOR TO EXCAVATION FOR INSTALLATION OF NEW UNDERGROUND WORK.

6. STREET LIGHT NOTE.

STREET LIGHT SERVICE POINTS SHOWN HEREON ARE APPROXIMATE ONLY, SUBJECT TO REVISION BY FINAL SAN DIEGO GAS AND ELECTRIC COMPANY PLANS. IT SHALL BE THE SUBDIVIDERS RESPONSIBILITY TO PROVICE THE PROPER SERVICE TO THE STREET LIGHTS SHOWN ON THIS PLAN, ACCORDING TO THE APPRICABLE CITY OF CHULA VISTA PLANS AND SPECIFICATIONS. DEVELOPER SHALL BE RESPONSIBLE FOR PROVIDING CONDUIT AND CONDUCTORS FROM STREET LIGHTS TO APPRIVE SERVICE POINTS FURNISHED BY SAN DIEGO GAS AND FLECTRIC. CONDUIT RUIS AND CONFUCTOR SIZE FROM STREET LIGHTS TO SERVICE POINTS WILL BE SHOWN ON THESE PLANS AND MINTAIN ALL SAFETY DEVICES, INCLUDING SHORING AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REQULATIONS DURING CONSTRUCTION OPERATIONS.

NEITHER THE OWNER NOR THE ENGINEER OF WORK WILL ENFORCE SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING, AND SHALL BE RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS DURING CONSTRUCTION OPERATIONS.

NOTIFICATIONS

THE EXISTENCE AND LOCATION OF UNDERGROUND UTLITY PIPES AND STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS; HOWEVER, THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ANY EXISTING UTILITIES OR STRUCTURES LOCATED AT THE WORK SITE. IT IS THE CONTRACTORS RESPONSIBILITY TO CONTACT UNDERGROUND SERVICE ALERT (PHONE: 1-800-422-4133) 48 HOURS IN ADVANCE OF ANY EXCAVATION FOR THE MARK OUT OF THE LOCATION OF UTILITIES AND NOTIFICATION OF COMMENCEMENT OF WORK.

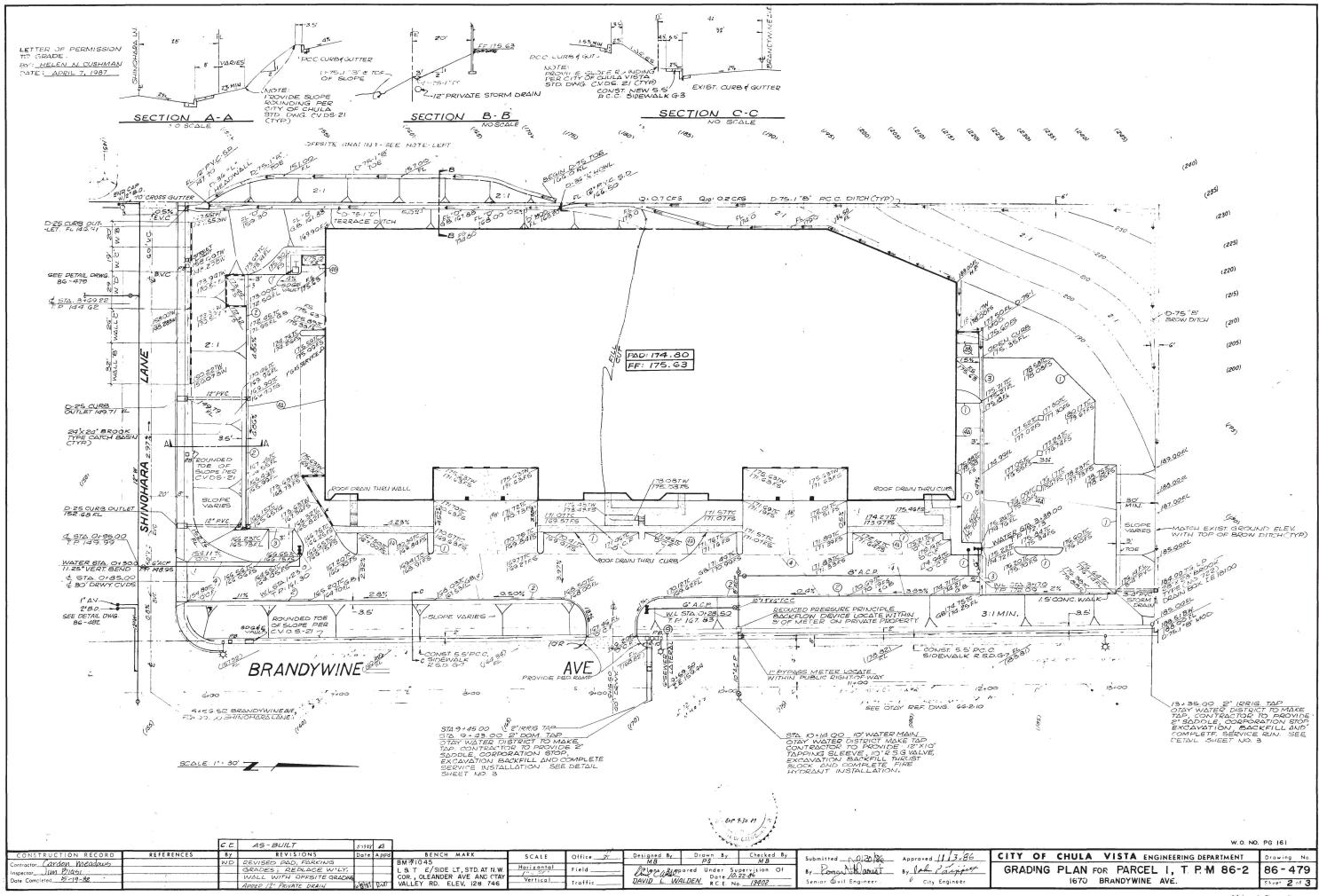
FOR ANY QUESTIONS REGARDING THE MARK OUT OF UNDERGROUND UTILITIES, THE CONTRACTOR SHOULD CONTACT THE RESPECTIVE UTILITY COMPANY:

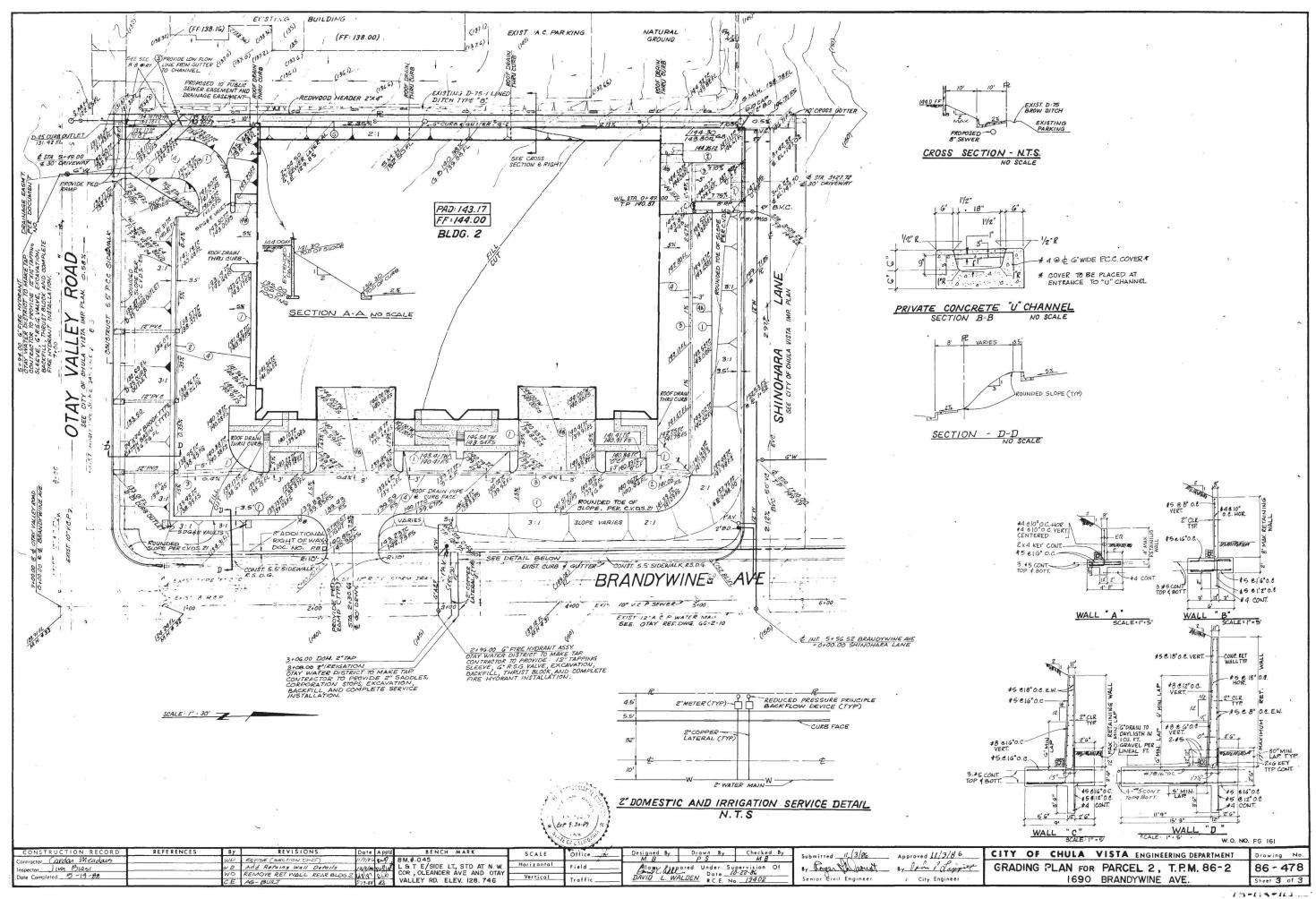
STREET LIGHT OR SIGNAL LIGHT CONDUIT- CITY OF CHULA VISTA	691-504
SEWER OR STORM DRAIN - CITY OF CHULA VISTA	691-502
GAS AND ELECTRIC - SAN DIEGO GAS & ELECTRIC	425-306
WATER - OTAY WATER DISTRICT	462-222
TELEPHONE - PACIFIC BELL	697 - 549
TELEVISION - COX CABLE OF SAN DIEGO	263 - 579

THE OFFICE OF THE CITY ENGINEER SHALL DESIGN ALL STRUCTURAL STREET SECTIONS BASED ON THE R VALUE METHOD SPECIFIED BY THE CITY ENGINEER. THE SOIL TESTS SHALL BE PERFORMED BY A REGISTERED CIVIL ENGINEER WHOSE PRIMARY PROFESSIONAL ACTIVITY IS PERFORMING SUCH TEST. RESULTS SHALL BE PROVIDED TO THE CITY BY THE DEVELOPER IN THE NUMBER AND AT 3°CH LOCATIONS AND TIMES AS DETERMINED BY THE CITY ENGINEER. WHERE HEAVY GRADING IS PROPOSED, GATHERING OF SAMPLES SHALL BE DELAYED UNTIL ROUGH SUBGRADE IS MADE. MINIMUM BASE THICKNESS ON ALL STREET CLASSIFICATIONS SHALL BE 4-INCHES. BASE MATERIAL SHALL CONFORM TO TO TO FINE PROCESSED MISCELLANEOUS BASE, 3/4 MINIMUM, AS SET FORTH IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SECTION 200-2-5. 1985 EDITION. ALL. ASPHALT CONCRETE SURFACES SHALL BE SEAL COATED IN ACCORDANCE WITH SECTION 302-5-9 OF THE 1982 STANDARD SPECIAL PROVISIONS.

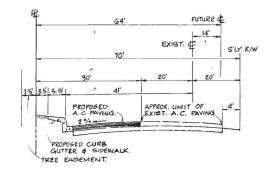
W.O. NO. PC 307

CITY OF CHULA VISTA ENGINEERING DEPARTMENT STREET IMPROVEMENT PLANS 86-483 FOR NW CORNER OF BRANDYWINE & OTAY VALLEY ROAD Sheet

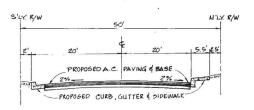




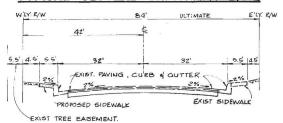
BRANDYWINE DISTRIBUTION CENTER



TYPICAL SECTION OTAY VALLEY ROAD



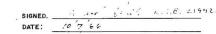
TYPICAL SECTION SHINOHARA LANE



TYPICAL SECTION BRANDYWINE AVE.

SOILS ENGINEER'S STATEMENT

A REGISTERED CIVIL ENGINEER OF THE STATE OF CALIFORNIA, PRINCIPALLY DOING BUSINESS IN THE FIELD OF APPLIED SOIL MECHANICS, HERBEY VERYFY THAT A SAMPLING AND STUDY OF THE SOIL CONDITIONS PREVALENT WITHIN THIS SITE WAS MADE BY ME OR UNDER MY DIRECTION BETWEEN THE DATES SOILS REPORT COMPILED; FROM THIS STUDY, WITH MY RECOMMENDATIONS, HAS BEEN SUBMITTED TO THE OFFICE OF THE CITY ENGINEER.



I hereby declare that I am the engineer of work for this project. That I have exercised responsible charge over the design of the project as defined in section 67°3 of the business and professions code, and that the design is consistant with current standards.

I understand that the check of the project drawings and specifications by the City of Chula Vista is confined to a review only and does not relieve me, as engineer of work, of my responsibilities for project designs.

WALDEN & ASSOCIATES, INC. 9245 SKYPARK COURT, STE. IIO SAN DIEGO, CA 92123 (619) 571-9035 Bril C. Wall 10.22.86 DAVID L. WALDEN, R.C.E. 19402

Office____

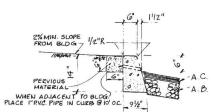
ield ___

SCALE

Horizontal

Vertical

EARTHWORK QUANTITIES CUT 61,000 CB. YDS. FILL 52,000 CB. YDS. EXPORT 9, CCL Ca. YDS.



CONSTRUCTION NOTES

CONST. CURB-SEE DETAIL 2 CONST CURE & GUTTER - SEE DETAIL

FL --- FLOWLINE
FG --- FINISH GRADE
FS --- FINISH SURFACE
TW --- TOP OF WALL

- HETAINING WALL
- P. C.C. DRAINAGE DITCH
YYY CUT SLOPE

TC - TOP OF CURB

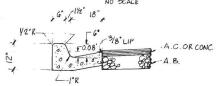
TY FILL SLOPE

3 CONST. "V" GUTTER - SEE DETAIL

4) CONST. 4" A.C./ 6" CL II BASE (TRUCK PARKING AND ACCESS) (AA) CONST. 3" A.C / 4" CL II BASE (AUTO PARKING AND ACCESS)

AB) CONST. 6" PCC CL"A" (TRUCK PAMP & SLAP AND TRASH AREA)

(I) PRIVATE CURB DETAIL

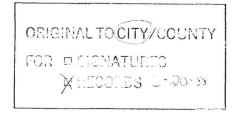


2 PRIVATE CURB & GUTTER DETAIL



(3) PRIVATE P.C.C. V" GUTTER

SITE OTAY



VICINITY MAP

CONSTRUCTION RECORD

ontractor Cardon Meadows

nspector_ Jim 191451 Date Completed_ 5-19-88

AS - BUILT			
			4.1
EXPIRAT	TON DATE: 3 / 31/92	DATE	
Ву	REVISIONS	Date	A pp'd
	EXPIRAT	MANUEL E. NIETO R.C.E. 30724 EXPIRATION DATE: 3/31/92	MANUEL E NIETO R.C.E. 30724 DATE EXPRATION DATE: 3/31/92

BM.*1045 L & T E/SIDE LT. STD. AT N.W. COR., OLEANDER AVE AND OTAY VALLEY RD. ELEV. 128.746

Designed By Drawn By Checked By MB PS MB Plans Prepared Under Supervision Of DAVID L. WALDEN R.C.E. No. 19402

Ext 4:0.09

Submitted 10/30/86 Approved 1/1, 3/86 By Frager of about By John Pripitt Senior Civil Engineer

GRADING PLANS T. P.M. 86-2 1570 AND 1690 BRANDYWINE AVE.

CITY OF CHULA VISTA ENGINEERING DEPARTMENT Drawing No Shee' | of 3

WORK TO BE DONE GENERAL

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THESE PLANS, THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, THE DESIGN AND CONSTRUCTION STANDARDS OF CHULA VISTA AND THE SAN DIEGO AREA REGIONAL STANDARD DRAWINGS. ANY CHANGES OR REVISIONS THEREFROM SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO ANY REQUEST FOR INSPECTION.
- 2. THE SOILS REPORT TITLED RACO WAREHOUSE, PREPARED BY WOODWARD -CLYDE, DATED 9-26-85, ADDENDUM REPORTS DATED 9-10-86 AND 10-3-86 SHALL BE CONSIDERED AS PART OF THIS GRADING PLAN. ALL GRADING SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS AND SPECIFICATIONS CONTAINED IN SAID REPORT.
- 3. APPROVAL OF THIS PLAN DOES NOT CONTITUTE APPROVAL OF SIZES, LOCATION AND TYPE OF DRAINAGE FACILITIES, NOR OF IMPROVEMENTS WITHIN STREET RIGHT OF WAYS.
 SEPARATE APPROVALS AND PERMITS FOR THESE SHALL BE REQUIRED IN CONJUNCTION
 WITH IMPROVEMENT PLANS.
- EXISTING DRIVEWAYS TO BE ABANDONED WILL BE REMOVED AND REPLACED WITH CURB, GUTTER, AND SIDEWALK.
- 5. WRITTEN PERMISSION SHALL BE OBTAINED FOR ANY OFF-SITE GRADING.
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS REQUIRED TO PROTECT
 ADJACENT PROPERTIES DURING GRADING OPERATIONS. ANYTHING DAMAGED OR DESTROYED
 SHALL BE REPLACED OR REPAIRED TO CONDITION EXISTING PRIOR TO GRADING.
- 7. THE DEVELOPER SHALL BE RESPONSIBLE THAT ANY MONUMENT OR BENCH MARK WHICH IS DISTURBED OR DESTROYED SHALL BE REESTABLISHED AND REPLACED BY A REGISTERED CIVIL ENGINEER OR A LICENSED LAND SURVEYOR.
- 8. THE CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFITY DEVICES, INCLUDING SHORING, AND SHALL BE RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS.

- I. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITY PIPES AND STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDDE, THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN OIL THESE PLANS, HOWEVER, THE CONTRACTOR IS REQUIRED TO TAKE DUE PLECALUTIONARY MEASURES TO PROTECT ANY EXISTING UTILITIES OR STRUCTURES LOCATED AT THE WORK SITE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT UNDERGROUND SERVICE ALERT (PHONE 1-800-422-4133) 48 HOURS IN ADVANCE OF AIY EXCLAVATION FOR THE MARK-OUT OF THE LOCATION OF UTILITIES AND NOTIFICATION OF COMMENCEMENT OF WORK.
- For any questions regarding the mark-out of underground utilities, the contractor should contact the respective company:

STREET LIGHT OR SIGNAL LIGHT CONDUIT - CITY OF CHULA VISTA	691-5045
SEWER OR STORM DRAIN - CITY OF CHULA VISTA	691-5027
GAS AND ELECTRIC - SAN DIEGO GAS A ELECTRIC	425-3060
WATER - OTAY WATER DISTRICT	462-2222

TELEPHONE - PACIFIC RELL TELEVISION - COX CABLE OF SAN DIEGO

697-5497 267-5793

- 3. Contractor shall notify the City Engineer's office 48 hours prior to beginning any work on this project. Phone: 691-5028
- 4. THE CONTRACTOR SHALL GIVE 24 HOURS NOTICE ON CALLS FOR INSPECTION. PHONE: 691-5028. ALL WORK PERFORMED WITHOUT BENEFIT OF INSPECTION WILL BE STEJECT TO REJECTION AND REMOVAL.

GRADING

- ALL GRADING SHALL BE OBSERVED AND TESTED BY A QUALIFIED SOILS ENGINEER OR HIS REPRESENTATIVE. HE SHALL OBSERVE AND TEST THE EXCAVATION, PLACEMENT, AND COMPACTION OF FILLS AND BACKFILLING AND COMPACTION OF TRENCH BACKFILL. IS SHALL SUBMIT SOILS REPORTS AS REQUIRED AND WILL EVALUATE THE SUITABILITY OF ANY FILL MATERIAL. UPON COMPLETION OF GRADING "PERATIONS, HE SHALL STATE THAT OBSERVATIONS AND TESTS WERE MADE BY HIM OR UNDER HIS SUFFICIENT AND THAT, IN HIS OPINION, ALL EMBANKMENTS AND EXCAVATIONS WERE CONSTRUCTED IN ACCORDANCE WITH THE APPROVED GRADING PLANS, ANY APPROVED REVISIONS THERETY, SUBJECT LAND DEVELOPMENT PERMIT AND ORDINANCE NO. 1797 AS AMENICED AND THAT ALL EMBANKMENTS AND EXCAVATIONS ARE ACCEPTABLE FOR THEIR INTENDED. USE.
- 2. THE CONTRACTOR SHALL PROPERLY GRADE ALL EXCAVATEL SURFACES TO PROVIDE POSITIVE DRAINAGE AND PREVENT PONDING OF WATER. HE SHALL CONTROL SURFACE WATER TO AVOID DAMAGE TO ADJCHING PROPERTIES ON TO FINISHED WORK ON THE SITE AND SHALL TAKE REMEDIAL MEASURES TO PREVENT EROSION OF FRESHLY GRADED AREAS UNTIL SUCH TIME AS PERMANENT DRAINAGE AND ERGSION CONTROL MEASURES HAVE BEEN INSTALLED.
- 3. ALL AREAS TO BE FILLED SHALL BE PREPARED TO BE FILLED AND FILL SHALL BE ALL AREAS TO BE FILLES SHALL BE PREPARET TO BE FILLED AND FILL SHALL BE PLACED IN ACCORDANCE WITH EARTHWORK SPECIFICATIONS. ALL VEGETABLE MATTER AND OBJECTIONABLE MATERIAL SHALL BE REMOVED BY THE C'HITRACTOR FROM THE SURFACE UPON WHICH THE FILL IS TO BE PLACED PRIOR TO CUT AND FILL OPERATIONS. LOOSE FILL AND ALLUVIAL SOILS SHALL BE REMOVED TO SUITABLE FIRM NATURAL GROUND. THE EXPOSED SOILS SHALL BE SCARIFIED TO A DEPTH OF 6 AND THEN COMPACTED TO AN INDICATED MINIMUM OF 90 PERCENT RELATIVE COMPACTION OF ASTM, D:155778.
- 4. CUT AND FILL SLUPES SHALL BE CUT AND TRIMMED TO THE FINISH GRADE TO PRODUCE SMOOTH SURFACE AND UNIFORM CRUSS SECTIONS. THE SLOPES OF EXCAVATIONS AND EMBANKENTS SHALL BE SHAPED, PLANTED AND TRIMMED AS DIRECTED BY THE ENGINEER OF WORK AND LEFT III A NEAT AND ORDERLY CONDITION. ALL STONES, ROOTS AND OTHER WASTE MATTER EXPOSED ON EXCAVATION OR EMBANKMENT SLOPES WHICH ARE LIBBLE TO BECOME LOGSENED SHALL BE REMOVED AND DISPYSED OF. THE TOE AND TOP OF ALL SLOPES SHALL BE ROUNDED IN ACCORDANCE WITH CVDS 21 & 22.
- 5. EXISTING SLOPES WHICH ARE TO REMAIN ARE TO BE TRIMMED AND FINE GRADED TO ELIMINATE EROSION SCARS.
- 6. ALL TREES, PRUSH, GRASS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE COLLECTED, PILED OR OTHERWISE DISPUSED OF OFFITHE SITE BY THE CONTRACTOR SO AS TO LEAVE THE AREAS THAT HAVE BEEN CLEARED WITH A NEAT AND FINISHED APPEARANCE FREE FROM UNSIGHTLY DEBRIS.

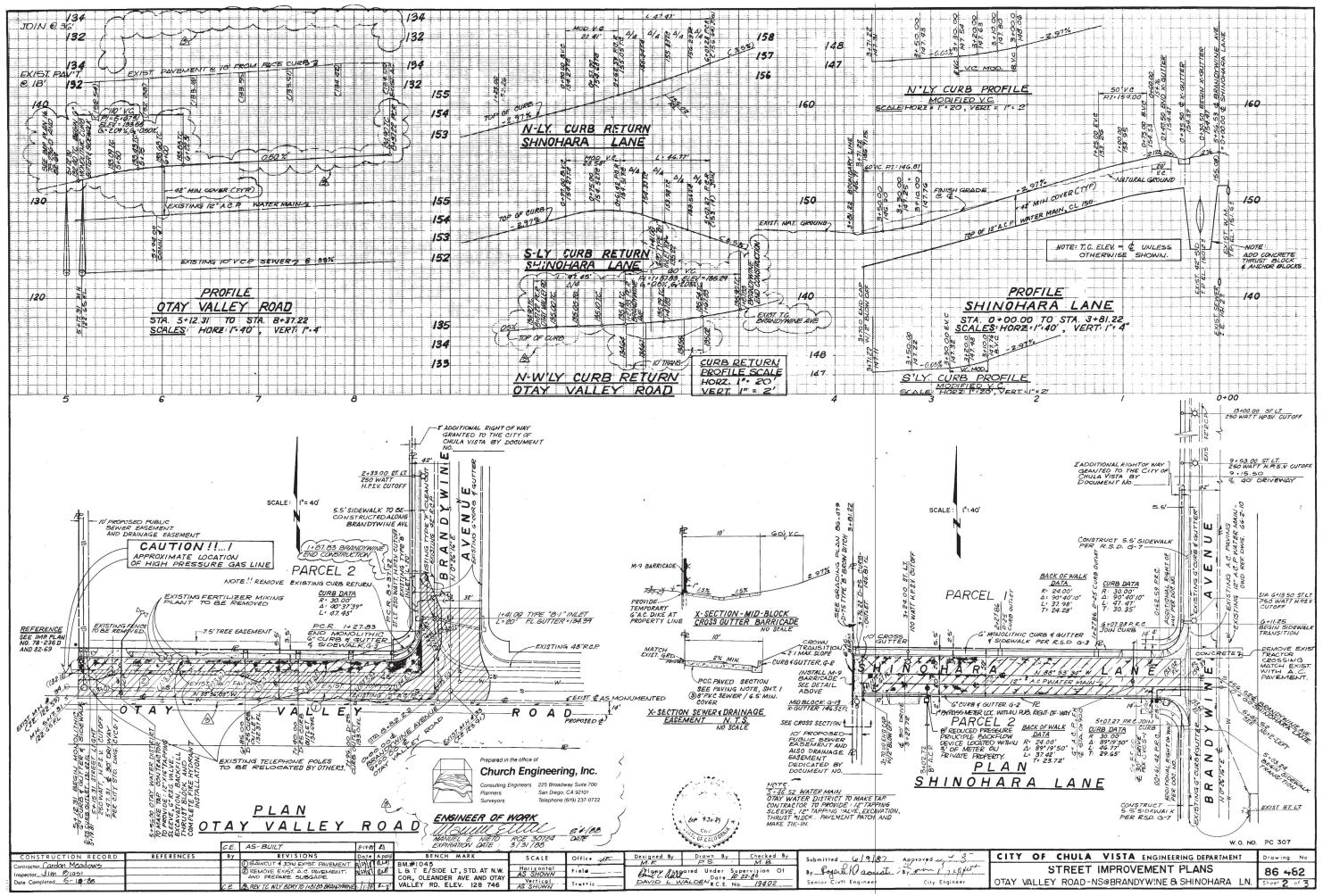
LANDSCAPING

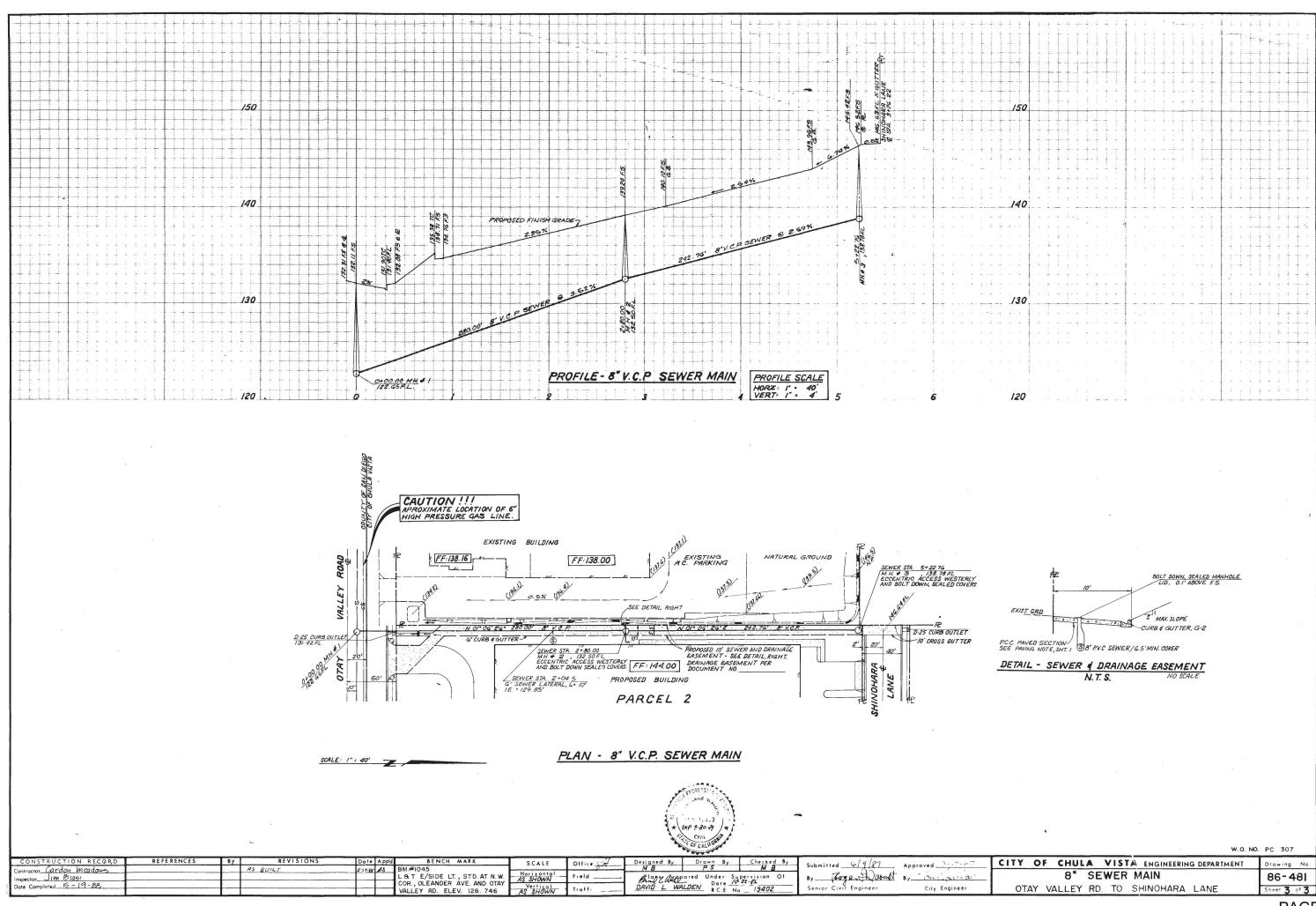
- I. ALL SLOPES SHALL BE PLATED AND IRRIGATED IN ACCORDANCE WITH PLANS APPROVED BY THE CITY OF CHULA VISTA LANDSCAPE ARCHITECT AND CITY ENGINEER. PLANS SHALL CONFORM TO THE CITY OF CHULA VISTA LANDSCAPE MANUAL AND ORDINANCE NO. 1797, BOTH AS AMENDED.
- 2. Finish grading and planting shall be accomplished on all slopes prior to October I or immediately upon completion of any SULFES GRADED BETWEEN OCTOBER I AND APRIL I PADS OR OTHER RELATIVELY LEVEL AREAS SHALL BE PLANTED AS DIRECTED BY THE CITY'S LANDSCAPE ARCHITECT.

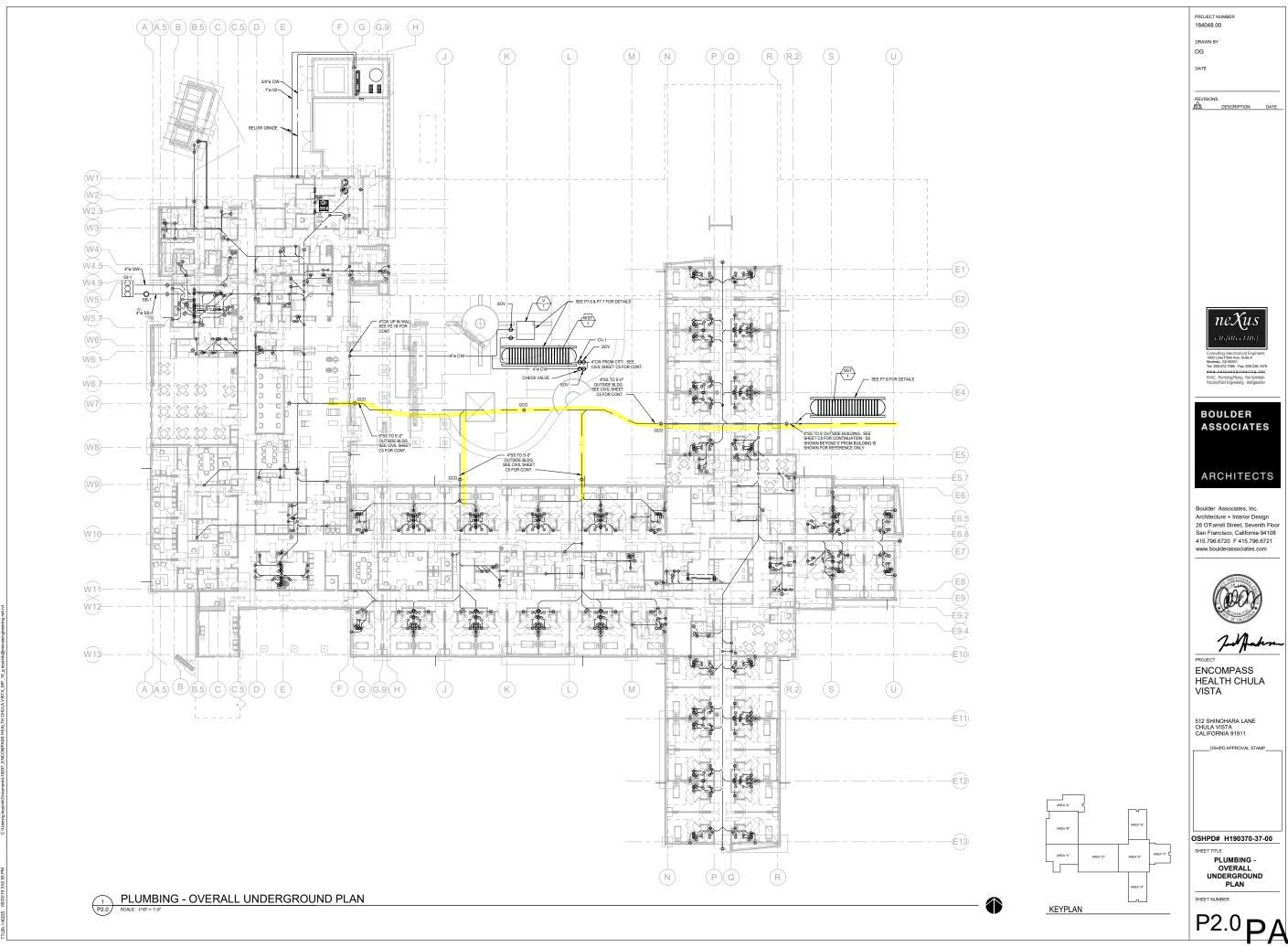
WATER NOTE

Water mains and appurtenances shall be constructed in accordance with these plans and the current specifications of the Otay Water District.

86-480







P2.0 PAGE 9



Development Services Department Neighborhood Services | Development Processing

Development Checklist for Municipal Code Requirements FORM 5509

2. ENGINEERING FEES APPLICABLE ON BUILDING PERMIT(S)

The following fees are applicable to your project, and they are required to be paid at the time of issuance of the Building Permit under the authority of the City of Chula Vista's Master Fee Schedule, applicable ordinances, and other fees and assessments as approved by the City Council.

If your plans call for a change to an existing structure, fees will be calculated on the difference in use/size. No refunds will be given

Please note that the fees listed are based only on the plans submitted and are subject to change to reflect items shown on the final building plans. This list may not include other Non-Engineering fees that may apply to your project.

Many engineering fees are generally adjusted annually on October 1 to reflect current building industry cost indices.

2.1 Sewer Fees (See Fee Schedule 12-100)

Administrative Fee:	
\$45 for Residential Sewer Connection Permit	
\$220 for Commercial/Industrial Sewer Connection Permit	
Sewer Lateral Installation Fee for lateral from main to property line (one requ	uired for each building proposed):
☐4-inch: \$9,160 plus \$229.10 per foot of chargeable length over 40 feet	
6-inch: \$9,160 plus \$236.91 per foot of chargeable length over 40 feet	
☑10-inch or larger: \$9,160 plus \$355.10 per foot of chargeable length over	40 feet Note: actual connection
☐Tap into main over nine (9) feet in depth: Add \$995	size = 8". (E) manhole
□Tap into main without City lateral installation: 4" lateral - \$600; 6" lateral	- \$760 appears to be within
☐ Sewer Main Assessment per Ordinance 997: \$16.00 per foot of property fronta	ge property line
Sewer Repayment District No(Call for details)	
☐ Spring Valley Sanitation District: \$130 per acre (area to include ½ of street right)	t-of-way along property frontage)
■ Montgomery Sewer Service Charges (Call for details)	

2.2 Sewer Canacity Charge (See Fee Schedule 12-100)

Sewer Capacity Charge	\$3,892 pe	r Equivalent Dwelling Unit (EDU)
The following is to be used based upon the plans subr	as a guide in calculating the fee for your parted for a building permit:	project; however, the final cha	arges will be
	• •	Note: see	attached for
Land Use Categor	v	EDU calc	culation
Residential:	Single-family Dwellings Multi-Family Mobile Home/Trailer	1.00 EDU 0.79 EDU 0.79 EDU	
Commercial	Self-service laundries, Coin Operated ¹ R.V. Parks	0.5 EDU per washer plus non 0.79 EDU per hook-up plus EFU	-washer EFUs Js in bldgs
Restaurants:	Fast food w/ drive thru Fast food w/o drive thru	0.60 EDU 18.8 GPD/seat 2 21.2 GPD/seat 2 14.5 GPD/seat 2 17.7 GPD/seat 2 7 GPD/seat 2	
Car wash:	Self-serve Automatic w/ water recycling Automatic w/o water recycling ³	2.0 EDUs per stall 6.5 EDUs EFUs case by case	
Transient/Temporary Residence Facility:	Hotel, Motel, Inn, Boarding House Convalescent Hospital, Hospital Dormitories and other Temporary Residences	By EFU By EFU By EFU	
Other	Government, Institutional Commercial, Industrial Manufacturing, Tenant Improvement All other uses not described above	By EFU By EFU By EFU By EFU	

lities with water recycling systems shall be assessed individually. Information required for the assessment shall be provided by

the applicant. 2 230 GPD/EDU.

3 of 8

276 Fourth Avenue | Chula Vista | California | 91910 | (619) 691.5247

Encompass Health Chula Vista – Equivalent Dwelling Unit Calculation

	Quantity	EFU per Fixture	EFU Totals
Bathtub	1	2	2
Clinic flushometer sink	2	4	8
Clothes washer	1	3	3
Dishwasher	1	2	2
Drinking fountain	3	0.5	1.5
Lavatory	198	1	198
Service Sink	5	3	15
Shower	84	2	168
Sink, Washup	36	2	72
Urinal	2	2	4
Water closet	103	4	412
		TOTAL EFU	885.5
Total GPD =	EFU*12.1		10714.55
TOTAL EDU's =	GPD/230		46.6

Notes:

- 1. All the values reflect the fixtures for the future expansion.
- For the shower, it has been considered (2) EFU to match the value for the Bathtub.
- 3. For the clinic flushometer sink, it has been considered (4) EFU to match the value of a water



SANITARY DRAINAGE

TABLE 702.1
DRAINAGE FIXTURE UNIT VALUES (DFU)

PLUMBING APPLIANCES, APPURTENANCES, OR FIXTURES	AND TRAP ARM ⁷ (Inches)	PRIVATE	PUBLIC	ASSEMBLY
Bathtub or Combination Bath/Shower	1½	2.0	2.0	
Bidet	11/4	1.0	-	-
Bidet	11/2	2.0	-	1-
Clothes Washer, domestic, standpipe ⁵	2	3.0	3.0	3.0
Dental Unit, cuspidor	11/4	-	1.0	1.0
Dishwasher, domestic, with independent drain ²	11/2	2.0	2.0	2.0
Drinking Fountain or Water Cooler	11/4	0.5	0.5	1.0
Food Waste Disposer, commercial	2	-	3.0	3.0
Floor Drain, emergency	2	_	0.0	0.0
Floor Drain (for additional sizes see Section 702.0)	2	2.0	2.0	2.0
Shower, single-head trap	2	2.0	2.0	2.0
Multi-head, each additional	2	1.0	1.0	1.0
Lavatory	11/4	1.0	1.0	1.0
Lavatories in sets	11/2	2.0	2.0	2.0
Washfountain	11/2	_	2.0	2.0
Washfountain	2		3.0	3.0
Mobilehome or Manufactured Home, trap*	3	6.0		
Receptor, indirect waste ^{1,3}	156		Sec footn	ntel3
Receptor, indirect waste ^{1,4}	2		See footn	nte ^{1,4}
Receptor, indirect wastel	- 3		See footn	otel
Sinks			Dec 100th	
Bar	11/2	1.0		
Bar ²	11/2		2,0	2.0
Clinical	3		6,0	6.0
Commercial with food waste ²	11/6		3.0	3.0
Exam Room	11/2		1.0	5.0
Special Purpose ²	11/4	2.0	3.0	3.0
Special Purpose	2	3.0	4.0	4.0
Special Purpose	3	3.0	6.0	6.0
Kitchen, domestic ² (with or without food waste disposer, dishwasher, or both)	1½	2.0	2.0	0.0
Laundry* (with or without discharge from a clothes washer)	11/2	2.0	2.0	2.0
Service or Mop Basin	2	2.0	3.0	3.0
	3	_	3.0	3.0
Service or Mop Basin Service, flushing rim	3	_	6.0	6.0
Service, flushing rim Wash, each set of faucets	,	_	2.0	2.0
		-	1.0	1.0
Urinal, Hybrid		1.0	2.0	5.0
Urinal, integral trap 1.0 GPF ¹	2	2.0		5.0
Urinal, integral trap greater than 1.0 GPF	2	2.0	2.0	
Urinal, exposed trap?	1//	2.0	2.0	5.0
Water Closet, 1.6 GPF Gravity Tank ⁶	3	3.0	4.0	6.0
Water Closet, 1.6 GPF Flushometer Tank ⁴	3	3.0	4.0	6.0
Water Closet, 1.6 GPF Flushometer Valve ⁶	3	3.0	4.0	6.0
Water Closet, greater than 1.6 GPF Gravity Tank®	3	4.0	6.0	8.0
Water Closet, greater than 1.6 GPF Flushometer Valve*	3	4.0	6.0	8.0

Notes:
Indirect waste receptors shall be sized based on the total drainage capacity of the fixtures that drain thereinto, in accordance with Table 702.2(2).
Provide a 2 inch (50 mm) minimum drain.

- Provide a 2 acide (50 mm) maintained drain.

 For refrigerators, office arms, water states, and similar low demands.

 For refrigerators, office arms, water states, and similar low demands.

 For ommercial sinks, dishwashers, and similar moderate or heavy demands.

 Buildings having a clother-washing ware with clother waterbare in a buttery of three or more clothes washers shall be rated at 6 fixture units each for purposes of silting common horizontal and switted drainage piping.

 of silting common horizontal and switted drainage piping estemanting septic units sizes based on Appendix H of this code.

 Tarp sixes shall not be increased to the point which where clearming septic units sizes based on Appendix H of this code.

 Assarably Pholic Use (see Table 222.1).

 For drainage firsters unit values related to loss within mubilehouse parks in all parts of the State of Colifornia, rec California Code of Regulations, Title 25.

 Division 1, Chapter 2. Article 5. Section 128. For drainage firster with whites related to loss within appendix to the State of California, see California Code of Regulations, Title 25. Division 1, Chapter 2.2, Article 5. Section 228.

2019 CALIFORNIA PLUMBING CODE

TABLE 703.2
MAXIMUM UNIT LOADING AND MAXIMUM LENGTH OF DRAINAGE AND YENT PIPING SIZE OF PIPE (Inches) 11/4 11/2 2 3 4 5 6 Maximum Units Drainage Piping¹ Vertical Horizontal 16³ 48⁴ 256 8³ 35⁴ 216⁵ 600 428^s Maximum Length Drainage Piping Vertical, (feet) 45 65 85 212 300 390 510 Horizontal (unlimited) Maximum Lengths, (feet) For SI units: 1 inch = 25 num, 1 foot = 304.8 mm

Notes:

1 Excluding trap arm.

0

Pacception statis, urands, and dishwashers – exceeding 1 fixture unit.

Paccept for six-unit raps or water closess.

Only four water closes to ask-unit graps allowed on a vertical pipe or stack, and not to exceed three water closes or six-unit traps on a bon

drain,

Based on ¼ inch per foot (20.8 mm/m) slope. For ½ of an inch per foot (10.4 mm/m) slope, multiply horizontal fixture units by a factor of 0.8.

The diameter of an individual vent shall be not less than 1½ inches (32 mm) nor less than one-half the diameter of the drain to which it is connected. Fixture unit load values for drainage and vent piping shall be computed from Table 702, 1 and Table 702, 2(3). Not to exceed one-hird of the total permitted length of a vent shall be permitted to be installed in a horizonal position. Where vents are increased one pipe size for their entire length, the maximum length limitations specified in this table do not apply. This table is in accordance with the requirements of Section 901,3.

705.2.1 Caulked Joints. Caulked joints shall be 705.2.1 Caulked Joints. Caulked joints shall be firmly packed with oakum or hemp and filled with molten lead to a depth of not less than 1 inch (25.4 mm) in one continuous pour. The lead shall be caulked thor-oughly at the inside and outside edges of the joint. After caulking, the finished joint shall not exceed \(^4\) for an inch (3.2 mm) below the rim of the hub. No paint, varnish, or other coatings shall be permitted on the joining material until after the joint has been tested and approved.

705,2.2 Mechanical Joints and Compression Joints. Mechanical joints for cast-iron pipe and fittings shall be of the elastomeric compression type or mechanical joint couplings. Compression type joints with an
elastomeric gasket for cast-iron hub and spigot pipe shall
comply with ASTM C564 and be tested in accordance
with ASTM C163. Hub and spigot shall be clean and
free of dirt, mud, sand, and foreign materials. Cut pipe
shall be free from sharp edges. Fold and insert gasket into
the hub. Lubricate the joint following manufacturer's
instructions. Insert spigot into hub until the spigot end of
the pipe bottom out in the hub. Use the same procedure
for the installation of fittings.

A mechanical joint shielded coupling type for hubless cast-iron pipe and fittings shall have a metallic shield shall be of the elastomeric compression type or mechan

less cast-iron pipe and fittings shall have a metallic shield that complies with ASTM A1056, ASTM C1277, ASTM that complies with ASTM A1056, ASTM C1271, ASTM C1540, or C1591 310. The elastomeric gasket shall comply with ASTM C564. Hubbess cast-iron pipe and fittings shall be clean and free of dirt, mud, sand, and foreign materials. Cut pipe shall be free from sharp edges. Gasket shall be placed on the end of the pipe of fitting and the stainless steel shield and clamp assembly on the end of the other pipe or fitting. Pipe or fittings shall be scated

against the center stop inside the elastomeric sleeve. Slide against interest step histor to exastence and the stainless steel shield and clamp assembly into a posi-tion centered over the gasket and lighten. Bunds shall be tightened using an approved calibrated torque wrench specifically set by the manufacturer of the couplings.

SANITARY DRAINAGE

Actual DFU = 784.5

705.3 Copper or Copper Alloy Pipe (DWV) and Joints. Joining methods for copper or copper alloy pipe and fittings shall be installed in accordance with the manufacturer's installation instructions and shall comply with Section 705.3.1 through Section 705.3.4.

705.3.1 Brazed Joints. Brazed joints between copper or copper alloy pipe and fittings shall be made with brazing alloys having a liquid temperature above 1000°F (538°C). The joint surfaces to be brazed shall be cleaned bright by either manual or mechanical means. Piping shall be cut square and reamed to full inside diameter. Brazing flux shall be applied to the joint surfaces where required by manufacturer's recommendation. Brazing filler metal shall conform to AWS A5.8 and shall be

applied at the point where the pipe or tubing enters the socket of the fitting. 705.3.2 Mechanical Joints. Mechanical joints in cop-per or copper alloy piping shall be made with a mechan-ical coupling with grooved end piping or approved joint designed for the specific application.

705.3.3 Soldered Joints. Soldered joints between copper or copper alloy pipe and fittings shall be made in accordance with ASTM B828 with the following sequence of joint preparation and operation as follows: measuring and cutting, reaming, cleaning, fluxing, assembly and support, heating, applying the solder, cool

2019 CALIFORNIA PLUMBING CODE