

City of San Diego

SEWER STUDY

For:

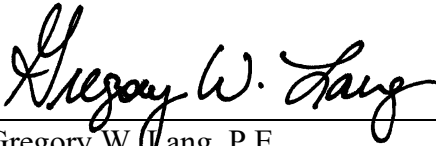
Towne Centre View

PTS#: 624751

Parcels 1 & 2 of Parcel Map 20710, Parcels 1, 2 & 3 of Parcel Map 18286
APNs: 343-121-37-00, 343-121-35-00, 343-121-36-00, 343-121-42-00, 343-
121-43-00

Towne Centre Drive
San Diego, CA 92121

Prepared By:



Gregory W. Lang, P.E.
Pasco Laret Suiter & Associates, Inc.
119 Aberdeen Drive
Cardiff By The Sea, CA 92007

RCE 68075

09/20/2022

EXP: 06-30-23

PASCO LARET SUITER
& ASSOCIATES
CIVIL ENGINEERING + LAND PLANNING + LAND SURVEYING



Prepared for:

BRE-BRM Towne Centre Science Park LLC
c/o Project Management Advisors, Inc.
420 Stevens Avenue, Suite 170
Solana Beach, CA 92075

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INTRODUCTION

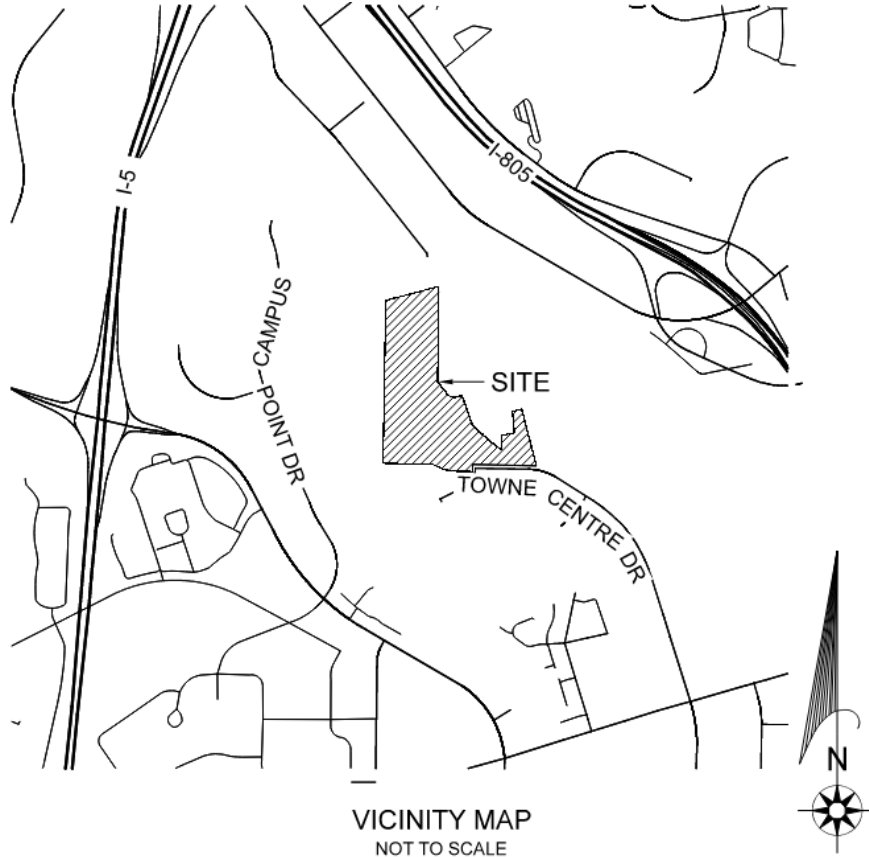
This report has been prepared to analyze the sewer capacity for the Towne Centre View project located at the terminus of Towne Centre Drive in San Diego, CA. This sewer study estimates the preliminary sewer flow rates generated by the proposed project and presents the hydraulic calculations for the proposed sewer facilities. This study will be used as a guideline for the preparation of the final construction plans for this project. A detailed layout of the buildings included in the sewer study is shown in the Sewer Study Map enclosed in Appendix 1.

The 33.5± acre project site is bordered to the north, east, and west by an existing open land, and to the south by adjacent commercial/industrial sites and Town Centre Drive.

The 33.5± acre project site is located north of the Town Centre Drive cul-de-sac, which is northwest of the intersection of Town Centre Drive and Eastgate Mall, directly between the I-5 and I-805 freeways. The west half of the existing site is currently zoned IP-1-1 (Industrial Park with research & development and some limited manufacturing) and is currently in an undeveloped rough-graded condition. The east half of the existing site is also zoned IP-1-1 and is fully developed with three existing industrial buildings. The proposed zoning will remain as IP-1-1 and the proposed project is comprised of four (4) scientific research buildings, one (1) amenity building, one (1) above grade parking structure, and one (1) underground parking facility, totaling approximately 999,386 square feet of scientific research and amenity space, 688,177 square feet of underground parking, and an above ground parking structure totaling 120,000 square feet.

The project will install a new private sewer system on site to service the proposed project. Buildings A, B, and C will connect to the existing public 10" PVC sewer main at the end of the Towne Centre Drive cul-de-sac (Ref. DWG 32375-D). Buildings D and E will be connected to the existing public 10" PVC sewer main in Towne Centre Drive (Ref. DWG 21075-D & 31343-D). The private sewer system will be designed per City of San Diego Sewer Guidelines.

In the existing condition, there is a public 10" PVC sewer main at the end of the Towne Centre Drive in the cul-de-sac that runs southwest down into the adjacent canyon. Another 10" public sewer main runs northwest within Towne Centre Drive from Towne Centre Court to Westerra Court, turns down Westerra Court, then dives down into the canyon to converge with the public 10" PVC main from the Towne Centre Drive cul-de-sac. The combined sewage is conveyed through an existing public 10" PVC main that runs southwest before tying in to an existing 10" main located in the bottom of the canyon, west of the project site.

VICINITY MAP**DESIGN CRITERIA**

The design for this sewer study was completed in accordance with the design criteria listed in the City of San Diego's Sewer Design Guide (Revised May, 2015). All gravity sewers have been designed to convey peak wet weather flow. Per the City of San Diego Sewer Design Guide, all sewers have been designed to convey this flow when flowing half full. Manning's Equation with an "n" value of 0.013 was used to size all gravity sewers. All sewers were designed to maintain a minimum velocity of 2 feet per second (ft/sec) at design capacity, or a minimum slope of 1%, per the design manual. All sewer lines in this study are within public streets or appropriately sized easements. All newly proposed locations for sewer have less than 15' of cover.

ON-SITE SEWER FLOW PROJECTIONS

The on-site sewer flows have been estimated using Equivalent Population Served based the site zoning and associated in-line net acreage for each sewer reach. The net acreage is the developable lot area for each sewer reach. The on-site sewer flows for the industrial

use associated with the proposed project have projected sewer generations based on developable lot area as prescribed in the City's Sewer Design Guide. The calculated flows can be found in the "PROPOSED PROJECT SEWER GENERATION" table in the enclosed sewer study map in Appendix 1.

OFF SITE SEWER FLOW PROJECTIONS

The existing 10" sewer system at the end of Towne Centre Drive was constructed in 2007 per City of San Diego PTS #6109 as a condition of approval to this current project. The existing 10" main does not have any other sewer connections within Towne Centre Drive. Therefore, we have analyzed the existing 10" system with our proposed project generated flows to verify the existing 10" main has enough capacity to carry the flow.

The existing 10" sewer system within Towne Centre Drive was constructed in 1985 per City of San Diego DWG 21075-D. The existing sewer generation was estimated using zoning information and net lot acreage for each property contributing to the sewer system. We have analyzed the existing 10" system with our proposed project generated flows to verify the existing 10" main has enough capacity to carry the flow.

DISCUSSION

The City of San Diego Sewer Guideline criteria was used to calculate the sewer generation from the proposed project. Based on the calculations as shown on the "PROPOSED PROJECT SEWER GENERATION" table shown on the enclosed sewer study map in Appendix 1, prior to connecting to the existing 10" sewer main at the end of Towne Centre Drive, the proposed Buildings A, B, and C generate a Peak Wet Weather Flow of 0.32 cfs with a dn/D of 0.28 and a velocity of 3.86 ft/sec through an 8" PVC pipe (Line DD in the table). As this flow enters the existing 10" PVC pipe, the dn/D decreases to 0.24 and the velocity decreases to 3.13 ft/sec (Line Q in the table).

The proposed sewer generation from Building E provides a Peak Wet Weather Flow of 0.06 cfs through a 4" PVC pipe (Line X in the table). Due to the Finish Floor elevation of Building E being below the invert elevation of the 10" sewer within Towne Centre Drive, a private pump will be installed to convey the flow. As this flow enters the existing 10" PVC pipe in Town Centre Drive (Line J in the table), the dn/D is 0.33 and the velocity is 4.20 ft/sec, compared to a dn/D of 0.32 and a velocity of 4.13 ft/sec in the existing condition.

The proposed sewer generation from Building D provides a Peak Wet Weather Flow of 0.09 cfs with a dn/D of 0.22 and a velocity of 2.62 ft/sec (Line Y in the table). As this flow enters the existing 10" PVC pipe that runs down Westerra Court (Line L in the table) the dn/D is 0.41 and the velocity is 3.67 ft/sec, compared to a dn/D of 0.39 and a velocity of 3.58 ft/sec in the existing condition.

The total project generation converges at Sewer Manhole #16. The existing 10" pipe downstream of this manhole (Line S in the table) conveys the combined flow of 1.06 cfs

with a dn/D of 0.24 and a velocity of 9.96 ft/sec, compared to a dn/D of 0.20 and a velocity of 8.95 ft/sec in the existing condition

CONCLUSION

This analysis, as shown on the enclosed exhibit, demonstrates that the two existing 10" sewer mains in Towne Centre Drive do not exceed a dn/D of 0.5 as required per Section 1.3.3.3 of the Sewer Design Guide.

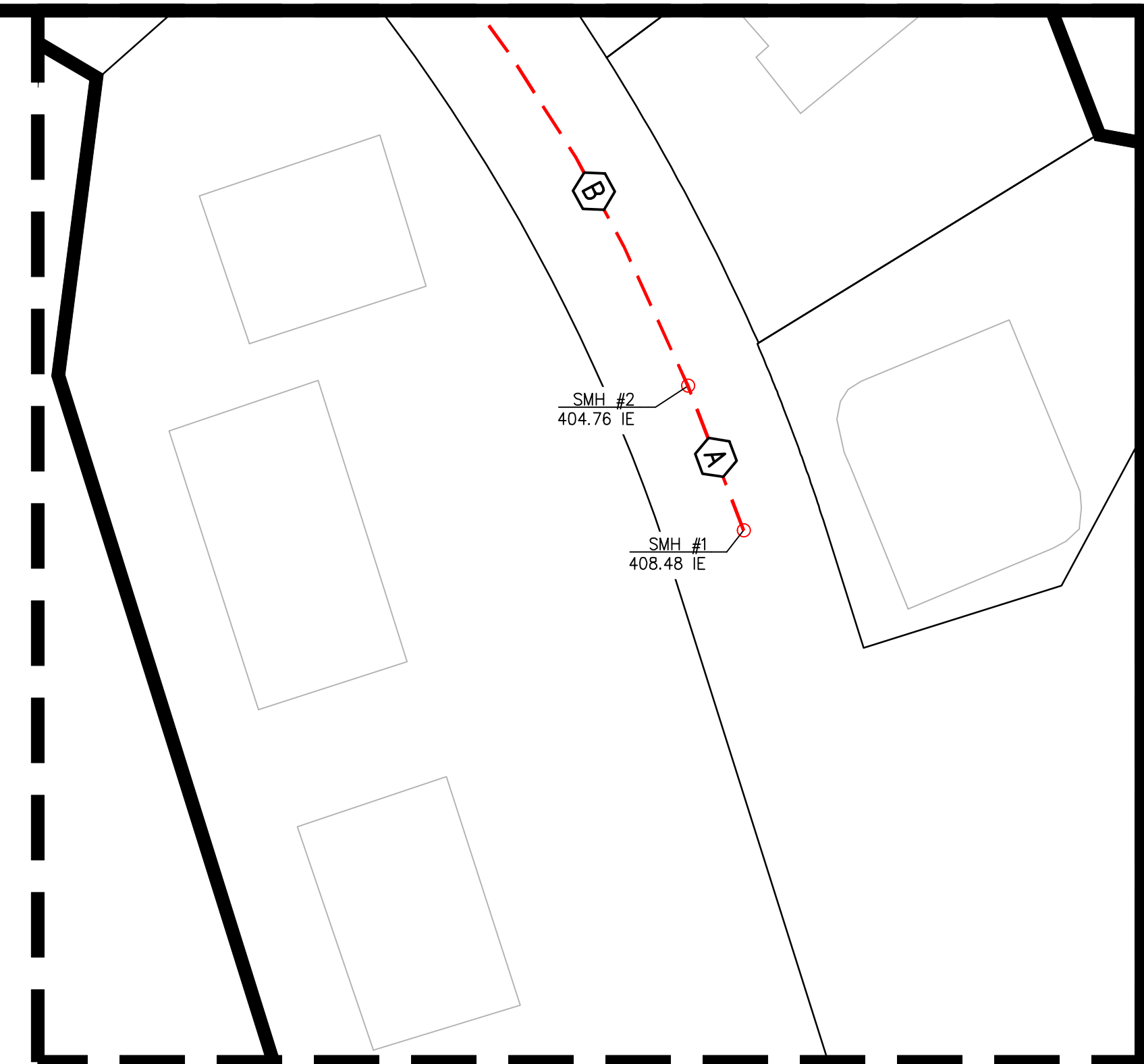
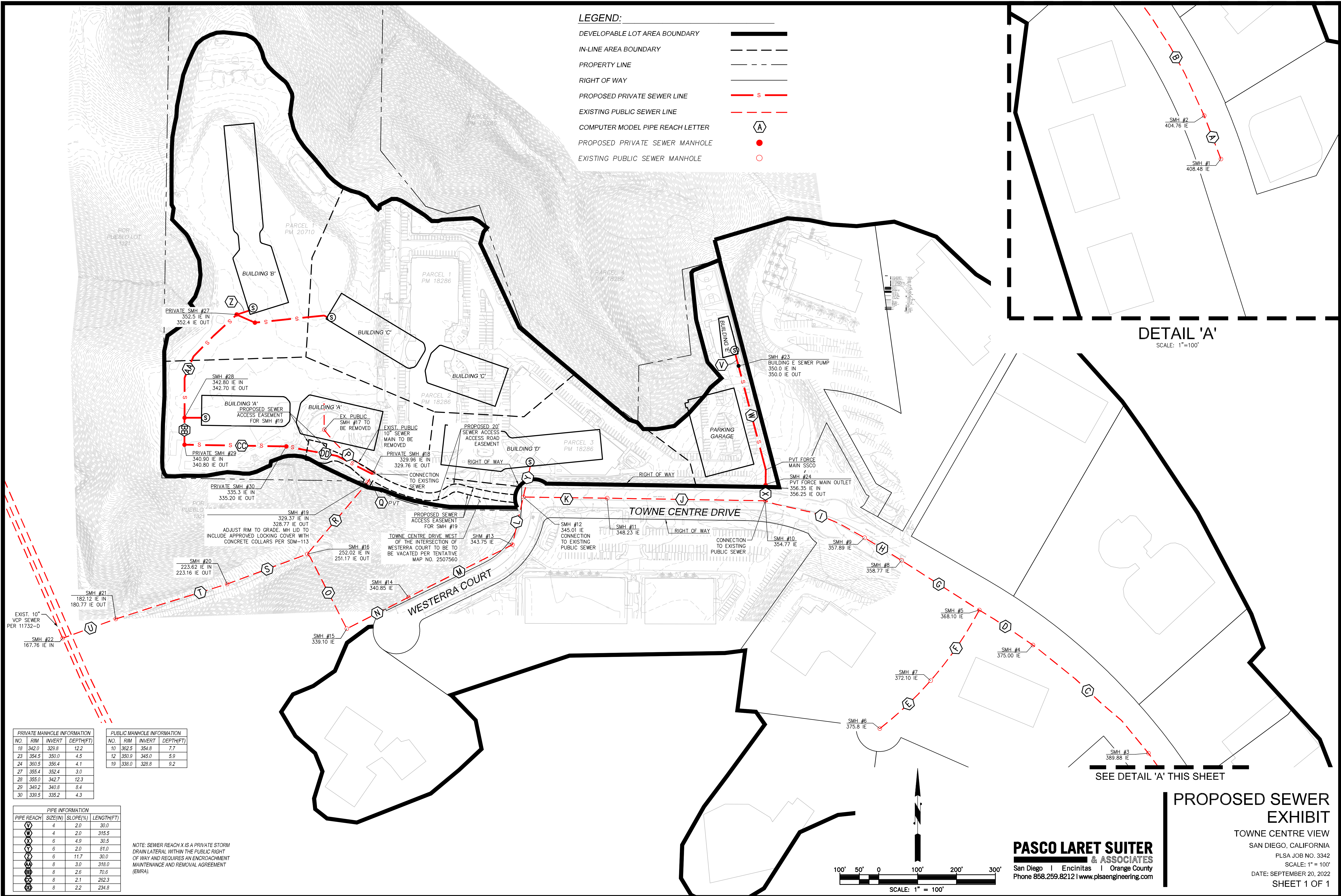
Therefore, it is our opinion that the existing sewer infrastructure located in Towne Centre Drive has sufficient capacity to convey the anticipated sewer flows from the proposed project per the criteria listed in the city's Sewer Design Guide (May, 2015).

APPENDIX 1

SEWER STUDY MAP FOR TOWNE CENTRE VIEW

LEGEND:

- DEVELOPABLE LOT AREA BOUNDARY
- IN-LINE AREA BOUNDARY
- PROPERTY LINE
- RIGHT OF WAY
- PROPOSED PRIVATE SEWER LINE
- EXISTING PUBLIC SEWER LINE
- COMPUTER MODEL PIPE REACH LETTER
- PROPOSED PRIVATE SEWER MANHOLE
- EXISTING PUBLIC SEWER MANHOLE



DETAIL 'A'
SCALE: 1"=100'

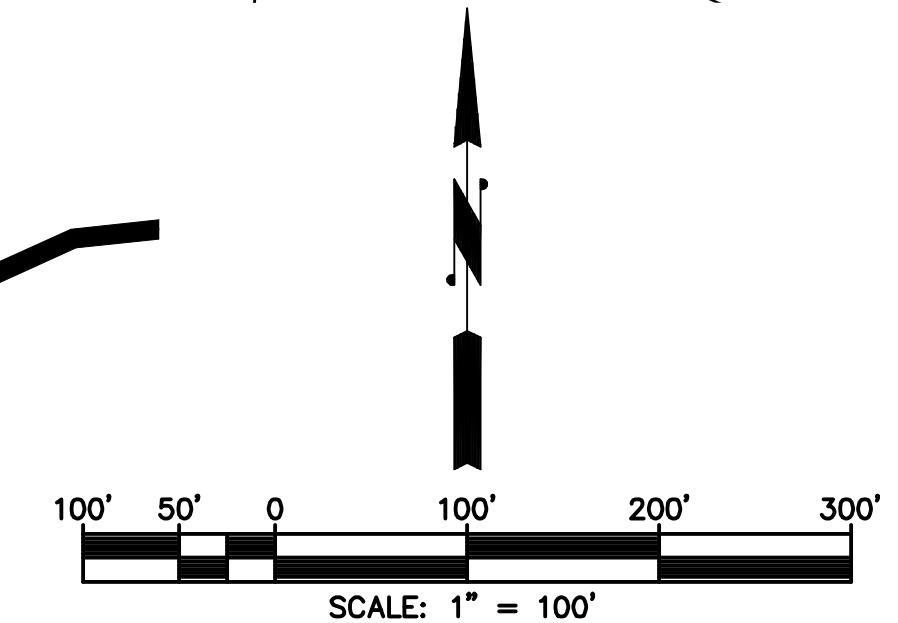
PRIVATE MANHOLE INFORMATION				PUBLIC MANHOLE INFORMATION			
NO.	RIM	INVERT	DEPTH(FT)	NO.	RIM	INVERT	DEPTH(FT)
18	342.0	328.8	12.2	10	362.5	354.8	7.7
23	354.5	350.0	4.5	12	350.9	345.0	5.9
24	360.5	356.4	4.1	19	338.0	328.8	9.2
27	355.4	352.4	3.0				
28	355.0	342.7	12.3				
29	349.2	340.8	8.4				
30	339.5	335.2	4.3				

PIPE INFORMATION			
PIPE REACH	SIZE(IN)	SLOPE(%)	LENGTH(FT)
V	4	2.0	30.0
W	4	2.0	315.5
X	6	4.9	30.5
Y	6	2.0	81.0
Z	6	11.7	30.0
AA	8	3.0	318.0
BB	8	2.6	70.6
CC	8	2.1	262.3
DD	8	2.2	234.8

NOTE: SEWER REACH X IS A PRIVATE STORM DRAIN LATERAL WITHIN THE PUBLIC RIGHT OF WAY AND REQUIRES AN ENCROACHMENT MAINTENANCE AND REMOVAL AGREEMENT (EMRA).

PASCO LARET SUITER & ASSOCIATES
San Diego | Encinitas | Orange County
Phone 858.259.8212 | www.plsaengineering.com

PROPOSED SEWER EXHIBIT
TOWNE CENTRE VIEW
SAN DIEGO, CALIFORNIA
PLSA JOB NO. 3342
SCALE: 1" = 100'
DATE: SEPTEMBER 20, 2022
SHEET 1 OF 1



APPENDIX 2
SEWER DESIGN CRITERIA

streets, in accordance with Council Policies 400-13 and 400-14 (ATTACHMENT 1).

- c. As development or redevelopment occurs, existing sewers in environmentally-sensitive areas shall be relocated to streets or other appropriate areas where possible (Ref. Municipal Code §144.0240(a)).
- d. Where an existing canyon sewer main has capacity to serve a new development, the number of sewer mains penetrating the canyon from a new development shall be limited. This shall require coordination with other new developments wanting to access the same canyon sewer main. Sewer main access roads shall be provided to the point of connection and to the extent of all new manholes, and shall be coordinated with other access requirements, such as equestrian, pedestrian, multiple-use recreational trails, or storm water detention/retention/remediation facilities. However, all sewer access in canyons or other environmentally-sensitive lands shall be designed in conformance with Council Policies 400-13 and 400-14 (ATTACHMENT 1).
- e. To assist in determining where to direct sewer flow or where new sewer facilities may be located within canyons and environmentally-sensitive lands, a cost-benefit analysis shall be conducted per Council Policy 400-14 (ATTACHMENT 1).
- f. Sewer access roads that penetrate into canyons shall not exceed the maximum allowable slope (Ref. Subsection 3.2.3.4c) and shall be aligned along the centerline of the sewer main as much as practicable.
- g. To assist in determining where new sewer facilities and sewer access roads may be located within canyons and environmentally-sensitive lands, a sewer maintenance plan shall be prepared in accordance with Council Policy 400-13 (ATTACHMENT 1).

1.3 PLANNING STUDY

1.3.1 General Requirements

For a new development and/or redevelopment, a sewer planning study for new sewer facilities shall be prepared, as directed by the Senior Civil Engineer, to demonstrate that there are no negative impacts on the existing sewer system. A minimum of three (3) copies of the planning study shall be submitted, each stamped and wet/electronically signed by a Civil Engineer registered in the State of California. Each study shall be bound and formatted in accordance with this *Sewer Design Guide* and/or the *Clean Water Program (CWP) Guidelines*.

The final approved sewer study shall also be submitted electronically in PDF format.

For new development, the planning study must be approved prior to approval of the tentative map. The study shall include all items listed in the minimum intake standards for sewer studies and subsequent reviews shall include an explanation for each review comment.

1.3.1.1 **Capacity**

For new development and/or redevelopment, the planning study shall address the capacity of all sewer collection and trunk sewer systems that will be impacted downstream of the new development and/or redevelopment and shall demonstrate that sewer capacity is available in those systems to accommodate the new development and/or redevelopment (refer to Section 1.7). Authorization and approval to impact any downstream sewer system must be obtained from the reviewing Senior Civil Engineer. If such downstream sewer system has already been identified as critical or sub-critical in a monitoring report, the Senior Civil Engineer may require additional field monitoring to determine if adequate capacity is available.

For an existing development and/or redevelopment, the planning study shall address the existing capacity within the existing sewer collection system, and identify all existing facilities whose capacity will be exceeded by projected sewage flows.

Where available capacity will be exceeded, the planning study shall propose upsizing of sewer facilities in accordance with Subsection 1.3.3.

Where applicable, the DESIGN ENGINEER shall incorporate into the community's existing master sewer plan, including zoning changes and other specific plans, the proposed sewer system amendments resulting from the drainage basin evaluation.

1.3.1.2 **Drainage Basin**

The planning study shall address the sewage generating potential of the entire drainage basin where the development is located. It shall also include current topographic maps of the entire drainage basin and any and all adjacent new developments for which a planning study has not yet been submitted and/or approved. The maps shall demonstrate that no adjacent development, including potential and existing pumped lands outside of the drainage basin and any lands outside of the incorporated boundaries of the City of San Diego with potential to be served but where no current master sewerage plan exists, will be precluded from obtaining sewer service. The planning study shall also show all proposed sewer system alignments (superimposed on planned

street alignments) and all potential points of entry of sewage from surrounding lands.

1.3.1.3 **Depth of Mains**

The planning study shall clearly identify all existing and/or proposed facilities which will exceed standard depths for sewer mains as defined in Subsection 2.2.1.5. In cases where proposed sewers will exceed 15 feet in depth, a request for design deviation (ATTACHMENT 2) must be submitted to the Water and Sewer Development Review Senior Civil Engineer with the Sewer Planning Study. A design deviation will only be approved in exceptional cases and when adequate justification is provided. Mains more than 20 feet deep shall also require approval from the Wastewater Collection Division Senior Civil Engineer.

1.3.1.4 **Existing Studies**

The City of San Diego maintains an extensive library of sewer planning studies which were prepared for lands throughout the City. These studies are available for review at the Water and Sewer Development Section, Public Utilities Department. All studies are catalogued by subdivision or trunk sewer name. Logs of sewer flow study analyses for recently monitored trunk sewers and a map of sewers which meet the Regional Water Quality Control Board (RWQCB) criteria for being critical or sub-critical may also be viewed. In addition, information regarding proposed CIP projects within the vicinity of a given project may be requested. In many cases, an addendum or reference to one of the existing planning studies may be acceptable in lieu of an independent study. Concurrent with the preparation of planning studies for sewers proposed to connect to existing canyon sewer mains, a study of flow redirection per Council Policy 400-13 and a cost-benefit analysis per Council Policy 400-14 shall be prepared (Refer to ATTACHMENT 1). An existing analysis of redirection of flows and a cost-benefit analysis, as required by Council Policies 400-13 and 400-14 respectively, may be available for reference for various existing canyon sewers.

1.3.2 **Flow Estimation**

1.3.2.1 **Land Use**

Present or future allowable land use, whichever results in higher equivalent population, shall be used to generate potential sewage flows.

1.3.2.2 **Flow Determination**

Flow definitions and calculation procedures are listed below. All calculations shall be tabulated for each sewer main section (manhole to manhole) in the

format shown on Figure 1-2.

Equivalent Population: The equivalent population shall be calculated from zoning information (Ref. Section 1.6). For major new facilities such as high rise apartment buildings, flow rates (assuming one lateral) shall be checked based on the most current, adopted edition of the Uniform Plumbing Code. The most conservative flow rate shall govern.

Daily Per Capita Sewer Flow: The sewer flow for the equivalent population shall be 80 gallons per capita per day (gpcd).

Average Dry Weather Flow (ADWF): Equivalent populations shall be used to calculate the average dry weather flow. The average dry weather flow for each sewer main reach (manhole to manhole) shall be determined by multiplying the total accumulated equivalent population contributing to that reach by 80 gallons per capita per day:

$$\text{Average Dry Weather Flow} = (80 \text{ gpcpd}) \times (\text{Equivalent Population})$$

Peaking Factor for Dry Weather Flow (PFDWF): The peaking factor is the ratio of peak dry weather flow to average dry weather flow. It is dependent upon the equivalent population within a tributary area. The tributary area is the area upstream of, and including, the current reach for the total flow in each reach of pipe. Figure 1-1, consisting of the table prepared by Holmes and Narver in 1960, shall be used to determine peaking factors for each tributary area. In no instance shall the dry weather flow peaking factor be less than 1.5.

Peak Dry Weather Flow (PDWF): The peak dry weather flow for each sewer main reach shall be determined by multiplying the average dry weather flow by the appropriate peaking factor (Note that peak dry weather flows are not algebraically cumulative as routed through the sewer system, i.e. the peak dry weather flow at any point shall be based on the equivalent population in the basin to that point (Ref. Figure 1-2).

$$\text{Peak Dry Weather Flow} = (\text{Average Dry Weather Flow}) \times (\text{Dry Weather Flow Peaking Factor})$$

Peaking Factor for Wet Weather Flow (PFWWF): The peaking factor for wet weather flow is the ratio of peak wet weather flow to peak dry weather flow. It is basin-specific and shall be based on essential information available at the time of the planning study. Information such as historical rainfall/sewage flow data, land use, soil data, pipe/manhole age, materials and conditions, groundwater elevations (post development), inflow and infiltration (I/I) studies, size, slope and densities of the drainage basin, etc., should be utilized in the wet weather analysis to estimate the peaking factor for wet weather. Upward adjustments shall be made in areas with expected high inflow and

infiltration (i.e. high ground water or in areas with lush landscaping schemes). Flow meters are installed throughout the City's sewer system. Flow data collected from these meters are available upon request. The objective of this analysis is to quantify the magnitude of peak wet weather flow with a 10-year return period on a statistical basis.

The Senior Civil Engineer overseeing the preparation of the planning study shall coordinate with the City Sewer Modeling Group for approval of the peaking factors to be used for design.

Peak Wet Weather Flow (PWWF): The peak wet weather flow (or design flow) for a gravity sewer main reach shall be determined by multiplying the peak dry weather flow (ref. Figure 1-2) by the appropriate wet weather peaking factor. The peak wet weather flow is the design flow for a gravity sewer main. It is determined at any point in the system based on the associated upstream average dry weather flow in the basis to that point times the peaking factor for wet weather.

$$\text{Peak Wet Weather Flow} = (\text{Peak Dry Weather Flow}) \times (\text{Wet Weather Peaking Factor})$$

1.3.3 Pipe Sizing Criteria

1.3.3.1 Hydraulic Requirements

Manning's formula for open-channel flows shall be used to calculate flows in gravity sewer mains. Manning's coefficient of roughness "n" shall be assumed to be 0.013 for all types of sewer pipe. Sewer grades shall be designed for velocities of 3 to 5 feet per second (fps) where possible. This is extremely important in areas where peak flow will not be achieved for many years. The minimum allowable velocity is 2 fps at calculated peak dry weather flow, excluding infiltration. Sewer mains that do not sustain 2 fps at peak flows shall be designed to have a minimum slope of 1 percent. Additional slope may be required by the Senior Civil Engineer where fill of varied depth is placed below the pipe in order to provide adequate slope after expected settlement occurs. The maximum allowable velocity shall be 10 fps and shall be avoided by adjusting slopes, by increasing the pipe diameter, or by utilizing a vertical curve transition to lower velocities per subsections 2.2.4 and 2.2.9.4. If the Senior Civil Engineer approves a velocity greater than 10 fps, the pipe shall be upgraded to SDR 18 PVC (standard dimension ratio polyvinyl chloride), concrete-encased VC (vitrified clay), or PVC sheet-lined reinforced concrete pipe.

1.3.3.2 **Slope**

Slope shall be calculated as the difference in elevation at each end of the pipe divided by the horizontal length of the pipe, and shall be a constant value between manholes.

1.3.3.3 **Ratio of Depth of Flow to Pipe Diameter (d_n/D)**

New sewer mains 15 inches and smaller in diameter shall be sized to carry the projected peak wet weather flow at a depth not greater than half of the inside diameter of the pipe (d_n/D not to exceed 0.5). New sewer mains 18 inches and larger shall be sized to carry the projected peak wet weather flow at a depth of flow not greater than 3/4 of the inside diameter of the pipe (d_n/D not to exceed 0.75).

1.3.3.4 **Minimum Pipe Sizes**

The size of a sewer pipe is defined as the inside diameter of the pipe. Sewer mains shall be a minimum of 8 inches in diameter in residential areas, and a minimum of 10 inches in commercial, industrial, and high-rise building areas.

1.3.4 **Sewer Study Exhibit Criteria**

The DESIGN ENGINEER's sewer study exhibits shall be used to evaluate hydraulics and to establish minimum street and easement widths. Therefore, these documents need to reflect depths and separation of mains from other utilities and improvements. Refer to the Minimum Intake Standards for Sewer Studies in Subsection 1.8.

1.3.5 **Private On-Site Wastewater Treatment and Reuse**

Refer to Attachment 6 for permitting guidelines of private on-site wastewater treatment and reuse in the City of San Diego.

1.4 **SEPARATION OF MAINS**

1.4.1 **Horizontal Separation**

1.4.1.1 **Wet Utilities**

The separation of water, sewer, reclaimed water mains, and storm drains shall comply with the *State of California Department of Health Services Criteria for the Separation of Water Mains and Sanitary Sewers*. At least 10 feet of horizontal separation shall be maintained between the nearest outer surfaces of sewer lines and potable water mains. More stringent separation requirements

may be necessary if unusual conditions, such as high groundwater levels or large diameter mains, exist (Ref. State of California “Blue Book”). If a horizontal separation of 10 feet or other requirement is not possible, a deviation from standards may be permitted by the City provided the structural integrity of both the pipe and the pipe joints is upgraded in accordance with the *State of California Department of Health Services Criteria for the Separation of Water Mains and Sanitary Sewers - Special Provisions*, and provided it has been reviewed and written approval has been obtained from the California Department of Health Services, Drinking Water Field Operations Branch. This deviation is not applicable for subdivisions, or where sewers are placed in new streets. Lateral connections to sewer mains typically do not meet the upgraded joint requirements for reduced separation. All installations of sewer mains which fail to comply with the basic separation standards must be reviewed and approved by the State of California Department of Health Services. For separation from curbs, see Subsection 2.2.5.2. For separation from structures, see Subsections 2.2.5.8 and 2.2.5.9.

1.4.1.2 **Separation for Dry Utility Pipes and Cable Conduits**

Other utility pipes, conduits, and cable lines shall be governed by their respective franchise agreement with the City of San Diego. A minimum 10-foot horizontal separation is desirable between sewer mains and any other utility infrastructure. Separations of less than 10 feet must be approved by the Senior Civil Engineer of Water and Sewer Development Section, Public Utilities Department. Additional separation may be required for sewer mains which exceed 10 feet in depth. The DESIGN ENGINEER shall consider the relative depth of adjacent utilities and the stability of the soils where the sewer shall be constructed when designing the separation from other utilities. Refer to San Diego Regional Standard Drawing (SDRSD) M-22 and City of San Diego Drawing SDM-111 for standard locations of utilities in streets.

1.4.2 **Vertical Separation**

1.4.2.1 **Shallow Mains, General**

Shallow mains require a special design. Review and written approval is required from the California Department of Health Services, Drinking Water Field Operations Branch for deviations from vertical separation requirements for water and sewer utilities. For mains less than 4 feet deep, special design shall be required for live and dead loads and vertical cyclical deflections which shall include an evaluation to demonstrate zero deflection in the pavement.

1.4.2.2 **Parallel Mains**

Potable water, reclaimed water, and sewer mains shall be located at various

depths below the ground surface, in order of descending water quality. Potable water pipelines shall be located above both reclaimed water pipes and sewer mains, and reclaimed water mains shall be located above sewer mains. A minimum vertical separation of one foot shall be provided between the top and bottom surfaces of the pipes in the same street or easement.

1.4.2.3 **Crossing Mains**

A minimum vertical separation of 12 inches shall be provided between the top and bottom surfaces of crossing utility conduits and shall comply with the *State of California Department of Health Services Criteria for the Separation of Water Mains and Sanitary Sewers*. Separation measurements shall be taken from the outer most surface of any pipeline protection (i.e. concrete encasement or steel sleeve) which may be installed. Where the vertical separation is less than 12 inches, a request for design deviation (ATTACHMENT 2), with justification, shall be submitted for review. If approved, for pipes 12 inches or less in diameter, a 12-inch sand cushion, or alternatively a minimum 6-inch sand cushion with 1 inch neoprene pad shall be used. Separations of less than 7 inches will not be allowed by the City. For skewed main crossings, see Subsection 2.2.6. Mains crossing large facilities shall evaluate deflection across the span, changes in hydraulics due to change of slope, shear forces, and special joint designs to account for pipe movement.

1.5 **PUMP STATION PLANNING CRITERIA**

If at all possible, the construction of a sewer pump station is to be avoided. However, in cases where constraints such as topography and environmentally sensitive habitat dictate, a pump station may be necessary (Ref. Council Policies 400-13 and 400-14 – ATTACHMENT 1). The DESIGN ENGINEER shall analyze the planning area for the sewer system to minimize the number of units to be pumped and to design the shortest possible force main. In cases where only a small tributary area is to be served by a pump station, the City will accept the facility as public only if it can be shown that the capitalized cost of facility replacement and maintenance will not exceed 50 percent of the standard sewer fees for the area to be served. Otherwise, the pump station must be privately owned, maintained and operated. In cases where a pump station will be a public facility, specific criteria for the design, construction, and operational testing of sewer pump stations are given in Chapter 7.

1.5.1 **Pump Station Design Capacity**

The Pump Station Design Capacity shall be calculated as follows:

Pump Station Design Capacity (PSDC): Pump stations shall be designed to pump the calculated peak wet weather flow from the upstream tributary area.

Pump Station Reserve Capacity Factor (PSRCF): This is a safety factor that takes into account that service pumps will generally not be operating at their

full intended design capacity due to mechanical wear and the subsequent loss of efficiency, and increases in force main friction loss due to the deposition of solids and grit. The reserve capacity factor shall be 1.0 if two (2) hours emergency storage (Ref. Subsection 7.2.6.7) or six hours emergency storage (Ref. Subsection 7.2.7) are provided. Where this storage is not provided in design, then a reserve capacity factor greater than 1.0 shall be used and an appropriate factor shall be evaluated for approval, on a case-by-case basis, by the Wastewater Collections Division Senior Civil Engineer.

$$\text{Pump Station Design Capacity} = (\text{Peak Wet Weather Flow}) \times (\text{Pump Station Reserve Capacity Factor})$$

1.5.2 Private Pump Stations

Private pump stations (privately-owned and operated) serving more than one lot shall not be located in the public right-of-way. The capacity for private pump stations shall be determined in the same manner as for public pump stations. Station wet well detention times shall not exceed 4 hours. A planning study for the pump station outlining capacity of the pumps, equivalent dwelling units (EDU) served, capacity of the wet well, detention times, length and size of the force main, and provision of any odor control equipment shall be submitted for review to Water and Sewer Development Review, Public Utilities Department. Private pump stations shall require separate structural, mechanical, and electrical permits from the City of San Diego, Development Services Department, Building Review Division. However, private pump station plans are not reviewed for compliance with City of San Diego Sewer Design Guide Chapter 7 criteria. As such, it shall be the responsibility of the DESIGN ENGINEER to ensure that all private pump stations are adequately sized, have sufficient redundant measures (dual force mains, back-up power supply, auto dialer alarm system to a licensed plumber with 24-hour response, etc.), and comply with all applicable local, state, and federal regulations. In the design of such facilities, the DESIGN ENGINEER shall utilize sound engineering judgment to provide for an adequate design for any potential failure during the service life of the pump station. If a developer elects to construct a private sewer system including a sewer pump station, then a letter of agreement must be executed over all lots served in the subdivision if the pump station will serve two or more lots. A copy of this agreement is available at the City Plan Check Counter and the City Website <http://www.sandiego.gov/mwwd/business/sewer>. Also required is a recorded copy of the CC&R's for the home or business owners association, outlining the responsibility and maintenance requirements for the shared private improvements.

1.6 ZONE - DENSITY CONVERSIONS

Table 1-1 shall be used in planning studies to determine the equivalent

population for a given land use. These tabulated figures represent a general case analysis. When more accurate or detailed information, such as fixture unit counts, is available, Table 1-1 shall not be used. For more information on the requirements of the zones shown in Table 1-1, refer to Chapter 13 of the City of San Diego Municipal Code.

1.7 REQUIRED CAPACITY IN EXISTING SEWER SYSTEMS DOWNSTREAM OF NEW FACILITIES

1.7.1 Required Capacity Downstream of New Gravity Sewers

For a new development, the projected peak wet weather flow from the proposed system (ref. Subsection 1.3.2.2) will be added to the field measured maximum flow in the downstream sewer to determine if the projected d_n/D is in compliance with the depth criterion described in Subsection 1.3.3.3. If this criterion is not met, a comprehensive sewer study of the area shall be prepared.

The downstream system shall be studied to the point in the system where the projected peak wet weather flow from the proposed new development is less than 10% of the total flow. All sewers to this point are required to carry the total flow per the depth criterion described in the above paragraph. The existing system to be studied shall not be less than two pipe reaches (i.e. manhole to manhole) from the point of discharge of the new development into the existing system.

1.7.2 Required Capacity Downstream of New Pump Stations

In developed lands, the discharge of the pump station design capacity from the proposed new development will be added to the field measured maximum flow in the existing downstream sewer to determine if the projected d_n/D will comply with the depth criteria described in Subsection 1.3.3.3. If these criteria are not met, a comprehensive sewer study of the area shall be prepared.

The sewer system downstream of the pump station shall be designed for cyclical pumping operation (i.e. on-off pumping). Use the design discharge capacity of the pump station for the tributary area. As a rule of thumb, the cyclical effect in single family residential may be considered negligible when the pump station's discharge is less than 10% of the total flow. For other density types consult with the Senior Engineer. All sewers to this point are required to carry the total flow per the depth criterion described in the above paragraph. The proposed new system shall discharge at a point not less than two pipe reaches (i.e. manhole to manhole) away the existing system.

1.7.3 **Odor Control**

The DESIGN ENGINEER shall design the wastewater system so that objectionable odors are not discharged into the atmosphere or through plumbing vents. Odors are caused by organic biologic activity and the location of the problematic area in the system is not always predictable.

The DESIGN ENGINEER shall account for the possibility of odors developing as the subdivisions build out including setting right of way aside that has good access for the locations of odor control equipment. The developer will modify the system up to one year after final occupancy of the drainage basin.

Some of the properties that impact odor may include the following:

- sewage detention times
- force main discharge points
- submerged flow at siphons
- locations with turbulent flow
- flat slopes
- type of discharge content including industrial waste discharge
- temperature and weather conditions

Odor control may include chemical injection such as calcium nitrate or other approved chemicals, or installation of an activated carbon system, or both.

1.8 **MINIMUM INTAKE STANDARDS FOR SEWER STUDIES**

At a minimum, include the following items on the exhibit and within the body of all wastewater planning studies for new sewer development projects:

- a. Internal order numbers, tentative map numbers, and any discretionary permit numbers [i.e. Conditional Use Permit (CUP), Planned Residential Development (PRD), or Planned Industrial Development (PID)].
- b. Project name.
- c. Vicinity map.
- d. Scale of sufficient size to accommodate the details required by this list. Minimum Scale will be 1 inch = 100 feet.
- e. Reference drawing numbers for existing sewer mains.
- f. Limits of the project area.

- g. Streets with names or distinguishing labels and dimensions.
- h. All existing and proposed utilities with adequate separation, whether in streets, side yards, or canyon slopes. Cross sections shall show dry and wet utilities.
- i. Existing and proposed sewer mains labeled as public or private.
- j. Deviation requests for all sewer mains which exceed standard depths.
- k. All existing and proposed “sewer access” easements. Indicate whether these will be permanent, to be abandoned after construction, or will be dedicated.
- l. Paved width of all easements and connections to streets and manholes.
- m. Typical bench section for limits of easement width and paving.
- n. Topography of the entire drainage basin and the proposed development.
- o. Elevations for existing and proposed grades throughout the project area. A reference copy of the proposed grading plans may be provided instead, if applicable.
- p. Manhole numbers and reach or pipe segment numbers for ease of comparison with the flow data in the Sewer Study Summary (Figure 1-2). Label all points of connection where project flows discharge to existing facilities and, where applicable, to the terminus of the study area. For off-site sewer mains, show information for a minimum of two reaches upstream and downstream in accordance with Subsection 1.7.1. Also identify all existing sewer mains in the Remarks column of Figure 1-2 - Sewer Study Summary.
- q. Pipes labeled with size, type, flow direction, and slope.
- r. Manholes, within the limits of the project area, shown with rim elevation and invert elevation. Note that sewer depth information is more critical where the mains are not at standard depths (refer to section 2.2.1.5), where they are located in easements, where off-site flows join the project area, or where grading is proposed over existing facilities.
- s. Number of Dwelling Units per Pipe Reach. Equivalent dwelling units per each reach shall be identified from the most upstream manhole to the downstream end of the project boundary.

- t. Land use areas labeled as single family residential, multi-family residential, commercial, industrial, schools, parks, open space, multiple habitat preservation area (MHPA), multiple species conservation program area (MSCP), stream beds or 100-year flood area.
- u. Location of all proposed pump stations. Label all pump stations as public or private. For public pump stations, show access roads and lots as dedicated in fee title to the City of San Diego. All pipe systems upstream of private pump stations shall be clearly labeled “private”.
- v. Location of any sewer facilities proposed in canyons and environmentally sensitive lands. Show any required sewer access roads in order to implement the Sewer Maintenance Plan to be developed as part of the planning study (refer to Council Policy 400-13 - ATTACHMENT 1).
- w. List any documents or studies that are incorporated by reference into the report. Do not include copies of the reports in the sewer study if they are part of the Public Utilities Department’s Library.
- x. Master plan of the project area, when requested.
- y. As-built plans of existing facilities where any point of connection is planned.
- z. Flow metering data, when requested.

APPENDIX 3
AS-BUILT PLANS

GENERAL NOTES

- 1. APPROVAL OF THESE PLANS BY THE CITY ENGINEER DOES NOT AUTHORIZE ANY WORK TO BE PERFORMED UNTIL A PERMIT HAS BEEN ISSUED.
2. THE APPROVAL OF THIS PLAN OR ISSUANCE OF A PERMIT BY THE CITY OF SAN DIEGO DOES NOT AUTHORIZE THE SUBDIVIDER AND OWNER TO VIOLATE ANY FEDERAL, STATE OR CITY LAWS, ORDINANCES, REGULATIONS, OR POLICIES, INCLUDING, BUT NOT LIMITED TO, THE FEDERAL ENDANGERED SPECIES ACT OF 1973 AND AMENDMENTS THERETO (16 USC SECTION 1531 ET.SEQ.).
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEY MONUMENTS AND/OR VERTICAL CONTROL BENCH MARKS WHICH ARE DISTURBED OR DESTROYED BY CONSTRUCTION...

SPECIAL NOTES

- THE FOLLOWING NOTES ARE PROVIDED TO GIVE DIRECTIONS TO THE CONTRACTOR BY THE ENGINEER OF WORK. THE CITY ENGINEER'S SIGNATURE ON THESE PLANS DOES NOT CONSTITUTE APPROVAL OF ANY OF THESE NOTES AND THE CITY WILL NOT BE RESPONSIBLE FOR THEIR ENFORCEMENT.
1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING, AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS...
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO INSURE THAT ALL SLOPES, STREETS, UTILITIES AND STORM DRAINS ARE BUILT IN ACCORDANCE WITH THESE PLANS...

GRADING AND IMPROVEMENT PLANS FOR: SUMMIT POINTE PLAZA

GRADING AND GEOTECHNICAL SPECIFICATIONS

- 1. ALL GRADING SHALL BE DONE UNDER OBSERVATION AND TESTING BY A QUALIFIED CIVIL ENGINEER OR GEOTECHNICAL ENGINEER AND, IF REQUIRED, BOTH A QUALIFIED CIVIL ENGINEER OR GEOTECHNICAL ENGINEER AND AN ENGINEERING GEOLOGIST. ALL GRADING MUST BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY ORDINANCE AND THE REPORTS AND SPECIFICATIONS SET FORTH IN THE SOILS REPORT OR GEOLOGICAL/GEOTECHNICAL INVESTIGATION ENTITLED: UPDATE GEOTECHNICAL INVESTIGATION, TOWNE CENTRE CORPORATE PLAZA, SAN DIEGO, CALIFORNIA...
2. ALL FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 90% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MOST RECENT VERSION OF A.S.T.M. D-1557 OR AN APPROVED ALTERNATIVE STANDARD.
3. AT THE COMPLETION OF THE GRADING OPERATIONS FOR THE EARTHWORK SHOWN ON THIS PLAN, AN AS-GRADED SOILS REPORT, OR IF REQUIRED, AN AS-GRADED SOILS AND GEOLOGICAL REPORT WILL BE PREPARED...

OWNER/APPLICANT

TOWNE CENTRE SCIENCE PARK L.P., A DELAWARE LIMITED PARTNERSHIP 2901 FIFTH AVENUE SAN DIEGO, CA 92103

REFERENCE DRAWINGS

PLAN: DWG. NO.: W.O. NO.: SEWER 21075-D 118150 STORM DRAIN 23029-D 118958 IMPVTS. 29333-D 98-0326

BENCH MARK

CITY MONUMENT AT SOUTHERLY END OF CUL-DE-SAC ON ROSELLE STREET. ELEVATION 65.363 M.S.L. DATUM PER CITY OF SAN DIEGO VERTICAL CONTROL RECORD (INDEX 2652 17034).

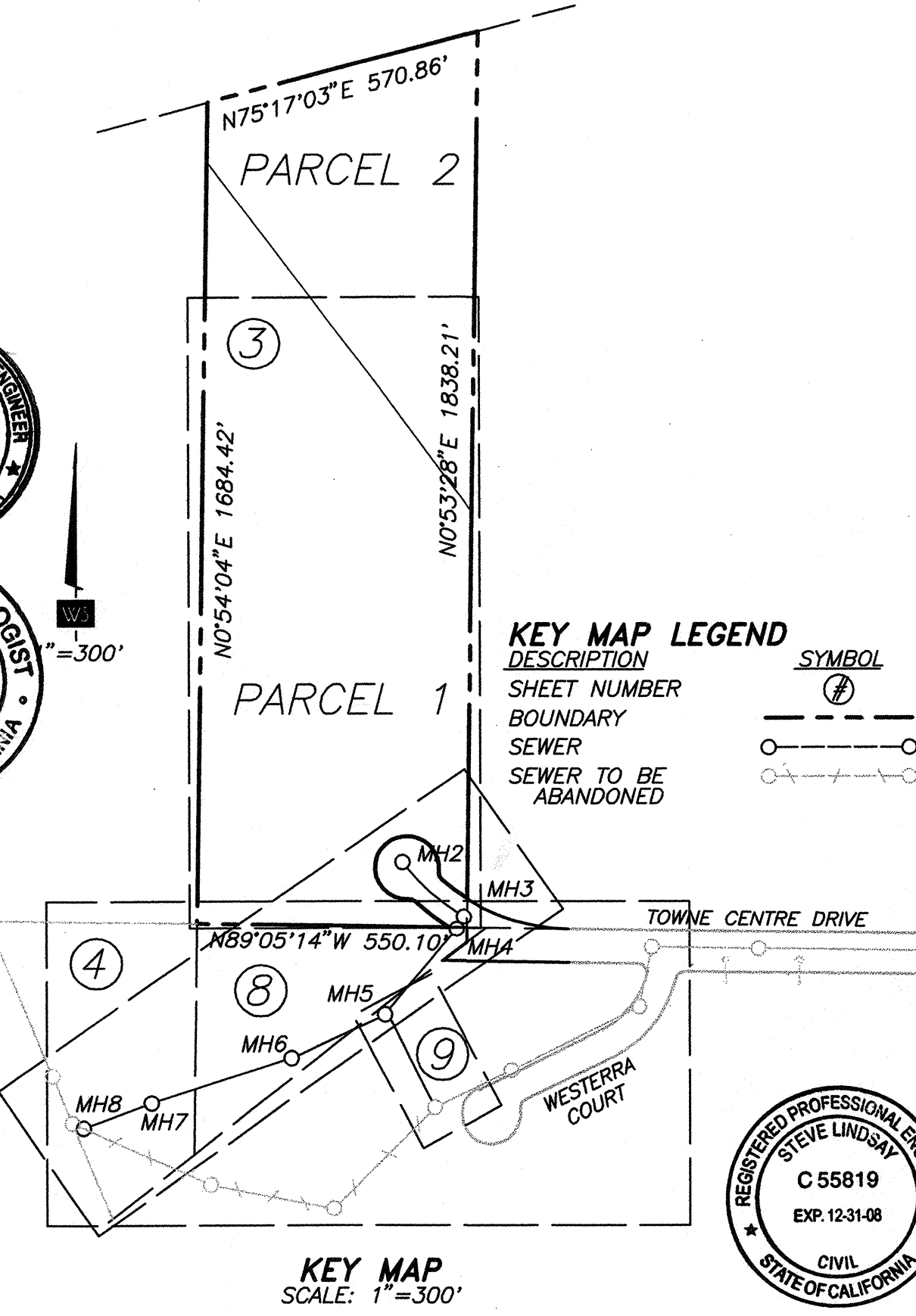
LEGAL DESCRIPTION

EXISTING: LOT "A" OF PUEBLO LOT 1320, OF PUEBLO LANDS OF SAN DIEGO, MISC. MAP NO. 36, IN THE CITY OF SAN DIEGO, AS PER SUPERIOR COURT CASE ACTION NO. 17622. PROPOSED: PARCELS 1 AND 2 OF PM

SHEET INDEX

- 1 GRADING PLAN-NOTES, LEGEND, KEY MAP
2 GRADING PLAN-NOTES
3 GRADING PLAN
4 GRADING PLAN-DETAILS
5 DETENTION FACILITY SPECS. AND DETAILS
6 GRADING PLAN-WALL PROFILES
7 IMPROVEMENT PLANS-SEWER MAIN AND PRIVATE STORM DRAIN ENVIRONMENTAL MITIGATION REQUIREMENTS
8 EROSION CONTROL PLAN
9-13 LANDSCAPE AND IRRIGATION PLANS

APN 343-121-03



Professional Engineer and Geologist signatures and stamps for William A. Steen and Steve Lindsay.

SPECIAL GEOTECHNICAL NOTES

- 1. THE GEOTECHNICAL CONSULTANT SHALL PROVIDE AN OBSERVATION PROGRAM DURING EXCAVATION TO VERIFY THE LOCATION OF FAULTING ON THE SITE. FAULTS DISCOVERED DURING GRADING OF THE SITE SHALL BE EVALUATED AND ANALYZED FOR ACTIVITY LEVEL BY THE GEOTECHNICAL CONSULTANT WITH DETAILED REPORTS SUBMITTED SUBJECT TO REVIEW AND APPROVAL BY CITY GEOLOGY STAFF PRIOR TO ISSUANCE OF BUILDING PERMITS.
2. A "NOTICE OF GEOLOGIC AND GEOTECHNICAL CONDITIONS" SHALL BE RECORDED PRIOR TO ISSUANCE OF BUILDING PERMITS FOR HABITABLE STRUCTURES SITED OVER ANY POTENTIALLY ACTIVE FAULT(S) DISCOVERED ON SITE UNLESS A SETBACK FROM THE FAULT IS RECOMMENDED BY THE GEOTECHNICAL CONSULTANT...

TOPOGRAPHY NOTES

- 1. THE EXISTING TOPOGRAPHY SHOWN ON THIS PLAN IS FROM AERIAL SURVEY PROVIDED BY SAN-LO AERIAL SURVEYS, JOB NO. 2508, FLOWN AT 40 SCALE WITH 2FT CONTOUR INTERVALS ON 11-3-87, AND SUPPLEMENTED BY FIELD SURVEY MEASUREMENTS MADE BY WILLIAM A. STEEN AND ASSOCIATES.
2. THE LOCATIONS OF UNDERGROUND UTILITIES HAVE BEEN ESTIMATED BY PHYSICAL SURFACE FEATURES AND BY RECORD DRAWINGS PROVIDED BY THE UTILITY COMPANIES.
3. ADDITIONAL UNDERGROUND UTILITIES MAY EXIST ON SITE BUT CANNOT BE LOCATED FROM FIELD OBSERVATIONS. ACTUAL LOCATIONS OF ANY UTILITY SERVICES SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

TRAFFIC CONTROL NOTES

THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN (11"x17") FOR APPROVAL PRIOR TO STARTING WORK. THE PLAN SHOULD BE SUBMITTED TO THE TRAFFIC CONTROL PERMIT COUNTER, 3RD FLOOR, BOOTH 22, LAND DEVELOPMENT REVIEW DIVISION, DEVELOPMENT SERVICES CENTER, 1222 FIRST AVENUE, SAN DIEGO (619-446-5150). CONTRACTOR SHALL OBTAIN A TRAFFIC CONTROL PERMIT A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO STARTING WORK, AND A MINIMUM OF FIVE (5) DAYS IF WORK WILL AFFECT A BUS STOP OR AN EXISTING TRAFFIC SIGNAL, OR IF WORK WILL REQUIRE A ROAD OR ALLEY CLOSURE.

DECLARATION OF RESPONSIBLE CHARGE

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 PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

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

Signature of William A. Steen, R.C.E. 18136, dated 10-5-07.

Logo and contact information for William A. Steen & Associates, Consulting Civil Engineers, Land Surveying & Planning. Address: 8580 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941. Phone: (619) 460-9000. Fax: (619) 460-9005.

WORK TO BE DONE

THE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE DONE ACCORDING TO THESE PLANS AND THE SPECIFICATIONS AND STANDARD DRAWINGS OF THE CITY OF SAN DIEGO.

STANDARD SPECIFICATIONS

- 1. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2006 EDITION (GREENBOOK), DOCUMENT NO. AEC1231061, FILED DECEMBER 31, 2006, INCLUDING THE REGIONAL AND CITY OF SAN DIEGO SUPPLEMENT, DOCUMENT NO. AEC1231062, FILED DECEMBER 31, 2006.
2. 1999 STANDARD SPECIAL PROVISIONS FOR SIGNALS, LIGHTING AND ELECTRICAL SYSTEMS OF THE CITY OF SAN DIEGO, DOCUMENT NO. 769842, FILED OCTOBER 22, 1999.
3. CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (FHWA'S MUTCD, 2003 EDITION, AS AMENDED FOR USE IN CALIFORNIA), DOCUMENT NO. AEC1231064, FILED DECEMBER 31, 2006.
4. STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DOCUMENT NO. AEC0925062, FILED SEPTEMBER 25, 2006.

STANDARD DRAWINGS

- 1. CITY OF SAN DIEGO STANDARD DRAWINGS, INCLUDING ALL REGIONAL STANDARD DRAWINGS, DOCUMENT NO. AEC1231063, FILED DECEMBER 31, 2006.
2. STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, STANDARD PLANS, DOCUMENT NO. AEC0925061, FILED SEPTEMBER 25, 2006.

LEGEND

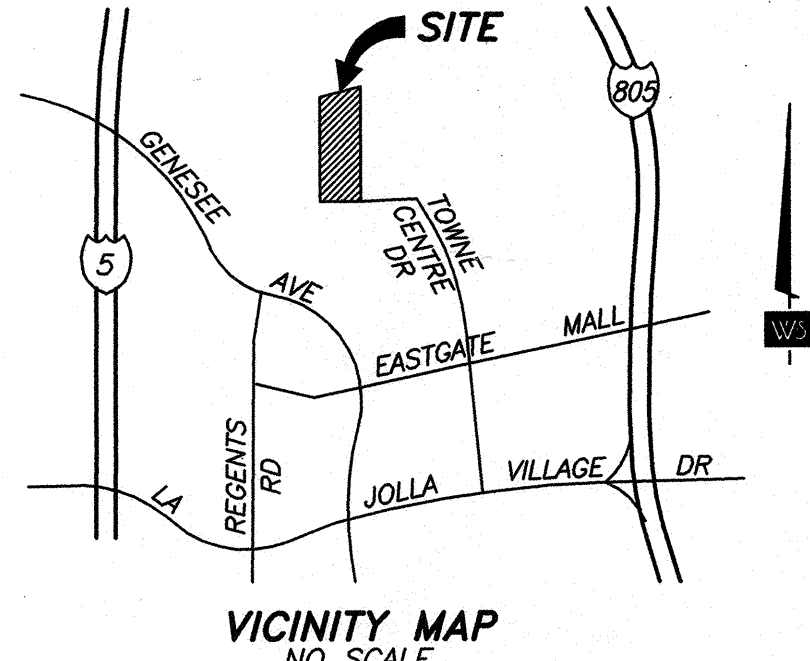
Table with columns: PROPOSED IMPROVEMENTS, STD. DWG., and SYMBOL. Lists various items like SUBDIVISION BOUNDARY, FINISH SPOT ELEVATION, SLOPE, etc., with corresponding drawing symbols.

EXISTING IMPROVEMENTS

EXISTING SURVEY MONUMENT

ABBREVIATIONS

Table listing abbreviations for materials and features: AC ASPHALT CONCRETE, BW BOTTOM OF WALL, CONC. CONCRETE, CL CENTERLINE, DG DISINTEGRATED GRANITE, EXIST. EXISTING, FG FINISHED GRADE, GR GRADE, HH HAND HOLE, HP HIGH POINT, IE INVERT ELEVATION, PCC PORTLAND CEMENT CONCRETE, PVC POLYVINYL CHLORIDE, PVT. PRIVATE, RCP REINFORCED CONCRETE PIPE, R/W RIGHT OF WAY, SMH SEWER MANHOLE, TW TOP OF WALL, TYP. TYPICAL.



GRADING NOTES

- 1. GRADING AS SHOWN ON THESE PLANS SHALL BE IN CONFORMANCE WITH CURRENT STANDARD SPECIFICATIONS AND CHAPTER 14, ARTICLE 2, DIVISION 1, OF THE SAN DIEGO MUNICIPAL CODE, 2000 EDITION.
2. PLANT AND IRRIGATE ALL CUT AND FILL SLOPES AS REQUIRED BY ARTICLE 2, DIVISION 4, SECTION 142.0411 OF THE SAN DIEGO LAND DEVELOPMENT CODE AND ACCORDING TO SECTION IV OR THE LAND DEVELOPMENT MANUAL LANDSCAPE STANDARDS.
3. GRADED PAD AREAS SHALL BE HYDROSEED TO PREVENT EROSION IF BUILDING CONSTRUCTION DOES NOT COMMENCE WITHIN 30 DAYS OF GRADING. HYDROSEED SHALL BE IRRIGATED OR REAPPLIED AS NECESSARY TO ESTABLISH GROWTH.
4. ALL GRADED, DISTURBED OR ERODED AREAS THAT WILL NOT BE PERMANENTLY PAVED OR COVERED BY STRUCTURES SHALL BE PERMANENTLY REVEGETATED AND IRRIGATED AS SHOWN IN TABLE 142-04F AND IN ACCORDANCE WITH THE STANDARDS IN THE LAND DEVELOPMENT MANUAL.

STREET DESIGN DATA TABLE with columns: STREET NAME, CLASSIFICATION, DESIGN SPEED, FUTURE ADT, R/W. Includes data for Towne Centre Drive and Cul-de-sac to Westerra Ct.

CONSTRUCTION CHANGE TABLE with columns: CHANGE, DATE, EFFECTED OR ADDED SHEET NUMBERS.

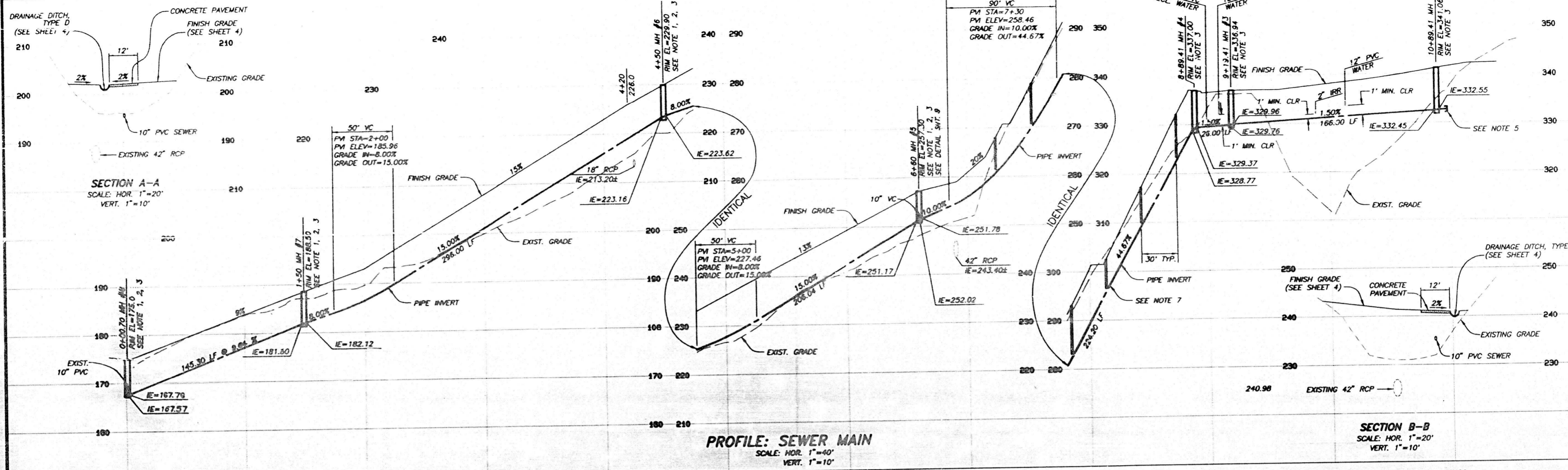
GRADING QUANTITIES

Table showing grading quantities: DISTURBED AREA 12 AC, GRADED AREA 11.5 AC, CUT 54,000 CY, FILL 54,000 CY, EXPORT 0 CY. Includes max cut and fill depths and slope ratios.

GRADING QUANTITIES ARE GEOMETRIC ESTIMATED FOR PERMIT PURPOSES ONLY AND ARE NOT TO BE USED FOR FINAL PAY QUANTITIES.

UNAUTHORIZED CHANGES & USES: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

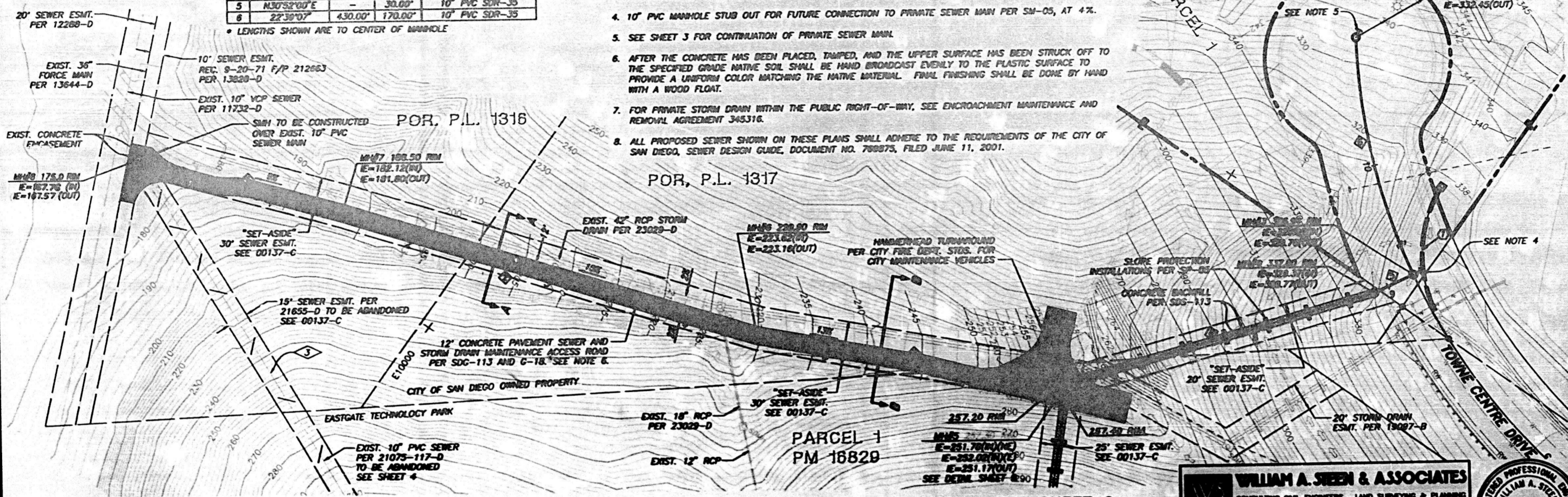
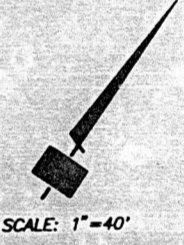
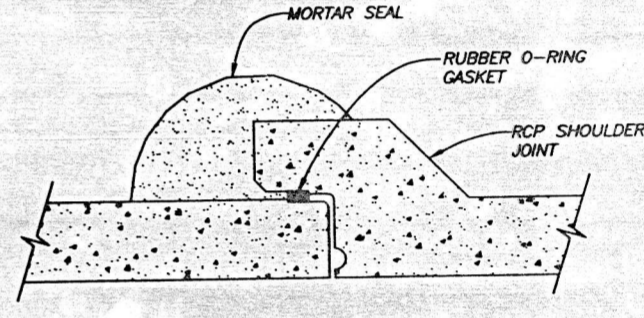




- NOTES:**
1. WATERPROOF EXTERIOR WALLS WITH COAL TAR EMULSION APPLIED IN NO LESS THAN TWO COATS FOR A TOTAL DRY FILM THICKNESS OF 25 TO 35 MILS.
 2. ALL MANHOLES LOCATED OUTSIDE OF THE PUBLIC RIGHT-OF-WAY SHALL BE EQUIPPED WITH APPROVED LOCKING COVER WITH COLLARS PER SDG-113.
 3. ALL MANHOLES SHALL BE COATED AND LINED PER SM-07.
 4. 10" PVC MANHOLE STUB OUT FOR FUTURE CONNECTION TO PRIVATE SEWER MAIN PER SM-05, AT 4%.
 5. SEE SHEET 3 FOR CONTRIBUTION OF PRIVATE SEWER MAIN.
 6. AFTER THE CONCRETE HAS BEEN PLACED, TAMPED, AND THE UPPER SURFACE HAS BEEN STRUCK OFF TO THE SPECIFIED GRADE NATIVE SOIL SHALL BE HAND BROADCAST EVENLY TO THE PLASTIC SURFACE TO PROVIDE A UNIFORM COLOR MATCHING THE NATIVE MATERIAL. FINAL FINISHING SHALL BE DONE BY HAND WITH A WOOD FLOAT.
 7. FOR PRIVATE STORM DRAIN WITHIN THE PUBLIC RIGHT-OF-WAY, SEE ENCROACHMENT MAINTENANCE AND REMOVAL AGREEMENT 345316.
 8. ALL PROPOSED SEWER SHOWN ON THESE PLANS SHALL ADHERE TO THE REQUIREMENTS OF THE CITY OF SAN DIEGO, SEWER DESIGN GUIDE, DOCUMENT NO. 788873, FILED JUNE 11, 2001.

NO.	DELTA/BEARING	RADIUS	LENGTH	REMARKS
1	S6°01'21"W	90.00'	88.00'	24" RCP, 1350-D, W/WATERTIGHT JOINTS *

* 8' LENGTHS 5' BEVEL ONE END
** SEE STORM DRAIN PROFILE ON SHEET 9



Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property, that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, accepting liability arising from the sole negligence of design professional.

CEL SOC UNAUTHORIZED CHANGES & USES: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

WILLIAM A. SEEN & ASSOCIATES
CONSULTING CIVIL ENGINEERS, LAND SURVEYING & PLANNING
8880 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
(619) 488-8800 • FAX (619) 488-8000 •
DESIGNED BY: [Signature] DATE: 10-5-07 JOB NO. 8247-101
DRAWN BY: [Signature] DATE: []

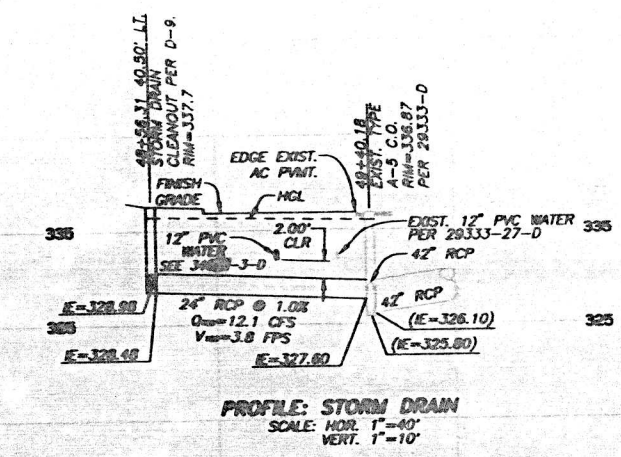
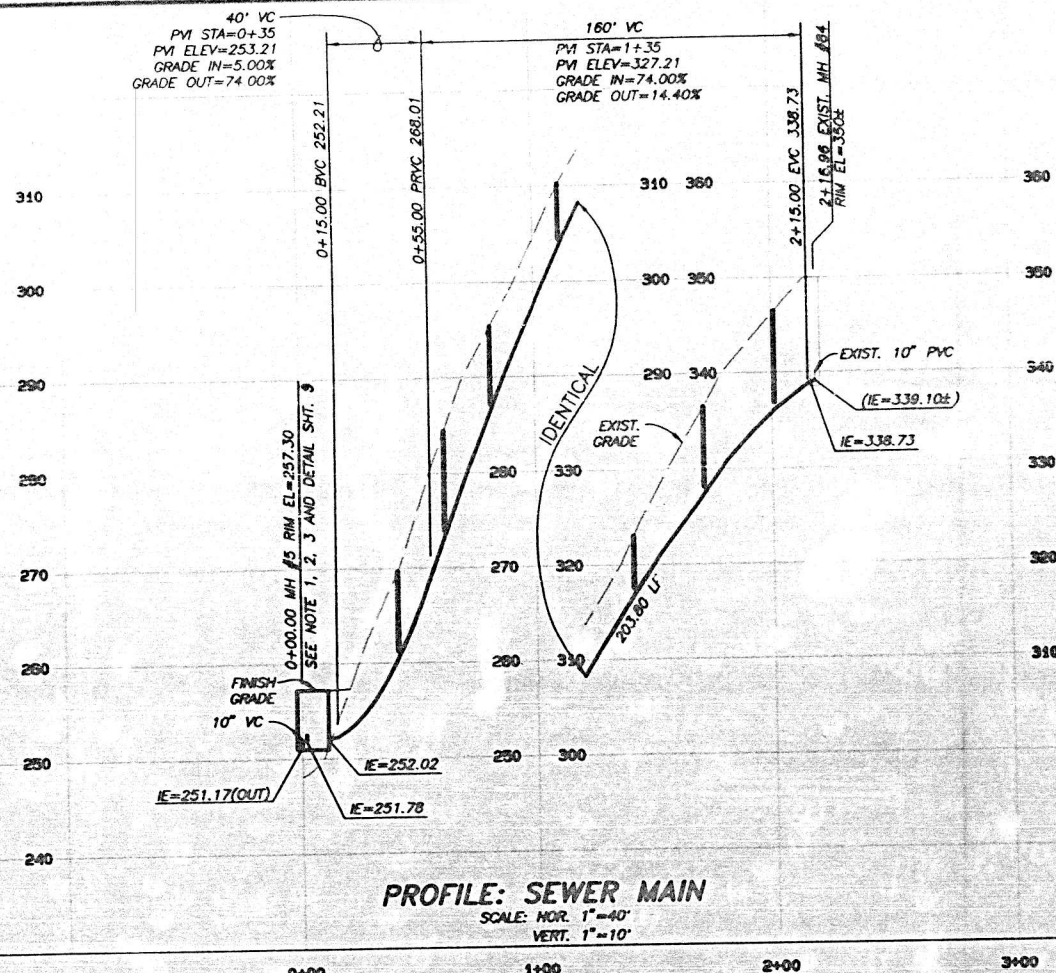


PRIVATE CONTRACT
IMPROVEMENT PLANS FOR:

**SUMMIT POINTE PLAZA
10" SEWER MAIN & PVT. STORM DRAIN**

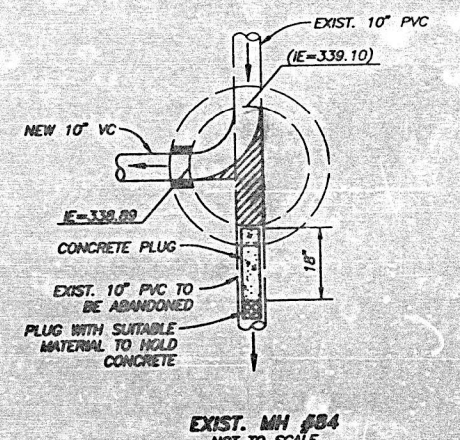
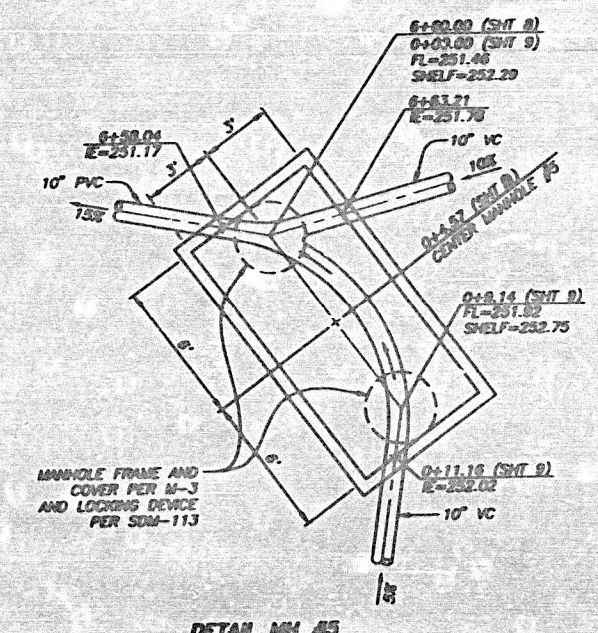
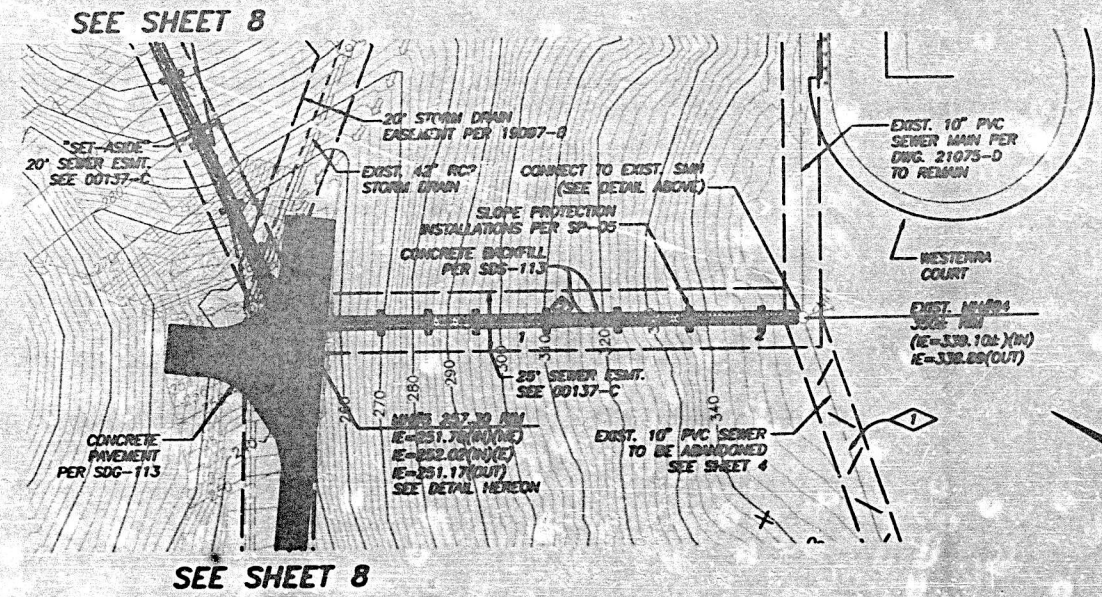
CITY OF SAN DIEGO, CALIFORNIA DEVELOPMENT SERVICES DEPARTMENT SHEET # OF 30 SHEETS	W.D. NO. 421168 P.T.S. NO. 6109
DATE: 10/17/07	T.M. 2781
FOR CITY ENGINEER: [Signature]	DATE FILMED: []
APPROVED: [Signature]	DATE: []
AS-BUILT PMS: [Signature]	DATE: 10/18/07
CONTRACTOR: LANSKY/BLANCO	DATE STARTED: 1/03/08
INSPECTOR: SERGIO HERRERA	DATE COMPLETED: 6/30/11
	32375-8-D

AS-BUILT



SEWER MAIN DATA			
NO.	DELTA/BEARING	RADIUS	LENGTH
1	N77°24'04\"/>		
2	N82°32'21\"/>		

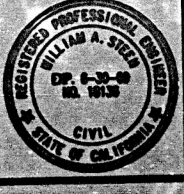
- NOTES**
1. WATERPROOF EXTERIOR WALLS WITH COAL TAR EMULSION APPLIED IN NO LESS THAN TWO COATS FOR A TOTAL DRY FILM THICKNESS OF 25 TO 35 MILS.
 2. ALL MANHOLES LOCATED OUTSIDE OF THE PUBLIC RIGHT-OF-WAY SHALL BE EQUIPPED WITH APPROVED LOCKING COVER WITH COLLARS PER SDG-113.
 3. ALL MANHOLES SHALL BE COATED AND LINED PER SM-07.
 4. ALL PROPOSED SEWER SHOWN ON THESE PLANS SHALL ADHERE TO THE REQUIREMENTS OF THE CITY OF SAN DIEGO, SEWER DESIGN GUIDE, DOCUMENT NO. 788976, FILED JUNE 11, 2001.



Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property, and that this responsibility shall be made to exist continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, accepting liability arising from the sole negligence of design professional.

CEL SOC UNAUTHORIZED CHANGES & USES: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

WILLIAM A. STEEN & ASSOCIATES
 CONSULTING CIVIL ENGINEERS, LAND SURVEYING & PLANNING
 6800 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
 (619) 440-8888 • FAX (619) 440-8888



PRIVATE CONTRACT			
IMPROVEMENT PLANS FOR:			
SUMMIT PONTE PLAZA			
10" SEWER MAIN & PVT. STORM DRAIN			
CITY OF SAN DIEGO, CALIFORNIA		W.D. NO. 421105	
DEVELOPMENT SEWER REPAIR/REPLACE		P.T.S. NO. 6109	
SHEET # OF SHEETS		T.M.	
FOR CITY ENGINEER	DATE	DATE	DATE
DESIGNED BY	APPROVED	DATE	DATE
GENERAL	DATE	DATE	DATE
AS-BUILT	DATE	DATE	DATE
CONTRACTOR JERRY BILLYARD ONE SHILOH - 1/16/07		32375-9-D	

AS-BUILT

NOTES

- 1. GRADING AS SHOWN ON THESE PLANS AND IN CONFORMANCE WITH CITY OF SAN DIEGO STANDARD DRAWINGS...
2. A SEPARATE PLUMBING PERMIT WILL BE REQUIRED FROM THE BUILDING INSPECTION DEPARTMENT FOR THE INSTALLATION OF THE IRRIGATION SYSTEM SHOWN ON THIS DRAWING.
3. PLANT AND IRRIGATE ALL CUT AND FILL SLOPES AS REQUIRED BY DIVISION 4, SECTION 60 OF THE SAN DIEGO MUNICIPAL CODE...

GRADING SPECIFICATIONS

- 1. ALL GRADING SHALL BE DONE UNDER THE OBSERVATION OF A QUALIFIED SOILS ENGINEER AND CONSULTING GEOLOGIST IN ACCORDANCE WITH THE RECOMMENDATIONS AND SPECIFICATIONS SET FORTH IN THE SOILS AND GEOLOGICAL REPORT ENTITLED "SOILS AND GEOLOGIC INVESTIGATION PUEBLO LANDS PARCEL A, SAN DIEGO, CALIFORNIA, DATED JUNE 24, 1981, PROJECT NO. 51159M-S101, BY WOODWARD CLYDE CONSULTANTS.
2. ALL FILL MATERIAL SHALL BE CONTRACTED TO A MINIMUM OF 90% OF THE MAXIMUM DRY DENSITY AND REPORTS SUBMITTED TO THE CITY'S RESIDENT ENGINEER PRIOR TO THE ACCEPTANCE OF WORK.
3. AT THE COMPLETION OF THE GRADING OPERATION, AN AS-GRADED SOILS REPORT WILL BE PREPARED. ONE COPY OF THIS REPORT WILL BE SUBMITTED TO THE FIELD INSPECTION SECTION OF THE CITY OF SAN DIEGO.
4. THESE GRADING PLANS HAVE BEEN REVIEWED BY THE UNDERSIGNED AND FOUND TO BE IN CONFORMANCE WITH THE RECOMMENDATION AND SPECIFICATION OUTLINE IN THE SOILS REPORT PREPARED FOR THIS DEVELOPMENT.

Richard Polite R.C.E. 21992 DATE 12/9/83
Robert D. Dowler C.E.G. 1011 DATE 12/9/83

GRADING LEGEND

Table with columns: IMPROVEMENT, STD. DWG., SYMBOL. Includes rows for EXISTING CONTOURS, EXISTING SPOT ELEVATIONS, FINISH CONTOURS, FLOW LINE ELEVATION, INVERT ELEVATION, PRIVATE STORM DRAIN, PRIVATE CATCH BASIN, PRIVATE CATCH BASIN MOD. TYPE "G", PRIVATE RIP RAP ENERGY DISSIPATOR, CUT SLOPES 2:1, FILL SLOPES 2:1, DAYLIGHT LINE, BROW DITCH TYPE "A" OR "B", EARTHWORK QUANTITIES.

THE EARTHWORK QUANTITIES SHOWN ON THESE PLANS ARE FOR BONDING PURPOSES ONLY.
SPECIAL NOTES
1. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE RESPECTIVE UTILITY COMPANIES PRIOR TO GRADING OR TRENCHING.
2. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITY PIPES, CONDUITS, AND STRUCTURES SHOWN ON THESE DRAWINGS WERE OBTAINED BY SEARCH OF AVAILABLE RECORDS. CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES PRIOR TO START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF WORK OF ANY CONFLICTS. CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT ALL UTILITIES.
3. CONTRACTOR SHALL REPLACE ALL DESTROYED OR DAMAGED SURFACE IMPROVEMENTS WITH IMPROVEMENTS EQUAL TO THOSE REMOVED.

MAINTAINING TRAFFIC

USE SIGNS, DELINEATORS, BARRICADES, ETC., AS PER 1977 STATE OF CALIFORNIA TRAFFIC CONTROL MANUAL, DELINEATORS AND STEADY BURN LIGHTS TO OUTLINE THE TRAFFIC PATH, BARRICADED TO PROTECT THE WORK AREA.

THE CONTRACTOR SHALL MAINTAIN ONE TRAFFIC LANE IN EACH DIRECTION ON TWO LANE STREETS AND TWO LANES IN EACH DIRECTION FOR TRAFFIC ON ALL FOUR OR MORE LANE STREETS DURING THE WORKING HOURS OF 8:30 AM TO 3:30 PM. FULL WIDTH OF ALL TRAVEL LANES ON EXISTING ROADWAYS MUST BE MAINTAINED DURING THE HOURS OF 3:30 PM TO 8:30 AM DAILY, AND ON SATURDAYS, SUNDAYS AND DESIGNATED LEGAL HOLIDAYS, OR WHEN CONSTRUCTION OPERATIONS ARE NOT ACTIVELY IN PROGRESS ON WORKING DAYS. A FOUR FOOT WIDE PEDESTRIAN ACCESS SHALL BE PROVIDED AND MAINTAINED IN ACCORDANCE WITH SECTION 7-10.1 OF THE STANDARD SPECIFICATIONS. FOR CLARIFICATION OF THE ABOVE THE CONTRACTOR MAY CONTACT TRAFFIC ENGINEERING AT 236-6040. ANY MODIFICATION OR CHANGE IN ALIGNMENT OF THE EXISTING PARKING OR TRAVEL LANES OF ONE WAY OR TWO WAY STREETS SHALL RECEIVE PRIOR APPROVAL FROM THE CITY TRAFFIC ENGINEER AND SHALL BE IN ACCORDANCE WITH SECTION 7-10.3 OF THE STANDARD SPECIFICATIONS, 1979 EDITION.

STREET LIGHT NOTES

- 1. CONTRACTOR INSTALLING THE STREET LIGHTING DISTRIBUTION SYSTEM SHALL NOTIFY FIELD ENGINEER, TELEPHONE: 236-8520, A MINIMUM OF THREE (3) DAYS BEFORE BEGINNING OF WORK FOR APPROVAL OF CONDUIT LOCATION AND REQUIREMENTS.
2. CONTRACTOR SHALL VERIFY ALL STREET LIGHTS ARE BURNING AND NOTIFY FIELD ENGINEER, TELEPHONE: 236-5520, A MAXIMUM OF FOUR (4) WEEKS AFTER FINAL INSPECTION.
3. 12-150 WATTS HIGH PRESSURE SODIUM VAPOR, WITH CUTOFF FIXTURE AND TYPE 15 STEEL STANDARD.

WATER AND SEWER NOTES

- 1. EACH LOT SHALL RECEIVE AN 8" WATER SERVICE AND 8" SEWER LATERAL, UNLESS OTHERWISE INDICATED ON THE PLANS OR SPECIAL SPECIFICATIONS. LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER OF WORK. THE "AS-BUILT" LOCATIONS SHALL BE SHOWN ON THESE PLANS AND THE SEWER LATERAL TABLE COMPLETED PRIOR TO ACCEPTANCE OF THE WATER AND SEWER FACILITIES.
A. FUTURE DEVELOPMENT OF EACH LOT WITHIN THIS SUBDIVISION IS TO PROVIDE A SEWER SYSTEM CAPABLE OF SERVING THAT LOT, DESIGNED AND CONSTRUCTED TO ENGINEERING STANDARDS AND THE REQUIREMENTS OF THE CITY OF SAN DIEGO.
B. 8" WATER SERVICES TO BE PROVIDED TO LOTS 1 THROUGH 8.
C. 2" WATER SERVICE TO LOTS 1 THROUGH 8 FOR IRRIGATION ONLY.
2. ALL CONNECTIONS TO EXISTING WATER MAINS ARE TO BE DONE BY THE CITY UTILITY DEPARTMENT FOR WHICH THE FOLLOWING FEES WILL BE CHARGED: IF THE CONNECTIONS ARE NOT READY TO BE MADE AND THE FEES PAID BEFORE, THE CITY RESERVES THE RIGHT TO ADJUST THE FEES ACCORDING TO THE FEE SCHEDULE IN EFFECT AT THE TIME THE CONNECTION IS MADE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXPOSE THE EXISTING MAIN AT THE CONNECTION POINT AND TO INSTALL THE NEW MAIN AT THE ALIGNMENT AND GRADE WHICH WILL PERMIT THE CITY TO MAKE A "STRAIGHT IN" CONNECTION WITHOUT USING MORE THAN 10 LINEAL FEET OF PIPE.
CONNECTION NO. 1 \$5650.00 - SHEET NO. 3 - 12" STRAIGHT-IN WITH IN-LINE VALVE.
CONNECTION NO. 2 \$6230.00 - SHEET NO. 5 - ONLY BETWEEN NOV. AND MAY, MAX. 24 HOUR SHUT DOWN. PERFORMED BY METRO-YOUNG CONST. CO.
CONNECTION NO. 3 \$5154.00 - SHEET NO. 14 - CONTRACTOR TO PROVIDE TRENCH, 10"x12" REINFORCED CITY FORCES TO REMOVE EXISTING 3" BLOWOFF AND MAKE CONNECTION.
3. ALL VALVES TO BE FLANGED TO TEES AND CROSSES.
4. ALL DUCTILE AND GRAY CAST IRON FITTINGS, VALVES AND APPURTENANCES DIRECTLY BURIED IN THE GROUND SHALL BE WRAPPED WITH POLYETHYLENE FILM IN CONFORMANCE WITH SECTION 5-4 OF ANNA 1105.

GENERAL NOTES

- 1. ALL EXISTING AND/OR PROPOSED PUBLIC UTILITY SYSTEM AND SERVICE FACILITIES SHALL BE INSTALLED UNDERGROUND IN ACCORDANCE WITH SECTION 102.0404 OF THE MUNICIPAL CODE AND PLANNING COMMISSION RESOLUTION NO. 4015.
A. THE EXISTING TELEPHONE LINE IN EASTGATE HALL WILL BE UNDERGROUND.
2. ADT COUNT
EASTGATE MALL 22,000
TOWNE CENTER DRIVE 16,000
3. BEFORE EXCAVATING, VERIFY LOCATION OF UNDERGROUND UTILITIES-CONTACT:
UNDERGROUND SERVICE ALERT 800-422-4133
WATER & SEWER 236-5520
COMMUNICATION DIVISION 236-5505
BUILDING & IRRIGATION 233-5530
CABLE TELEVISION 263-9251

SHEET INDEX

- INDEX MAPS, SEWER LATERAL TABLE & DETAILS ARE ON SHEET 2
IMPROVEMENTS ARE SHOWN ON SHEETS 3 THRU 9
STORM DRAIN & OFFSIDE SEWER PLANS ARE ON SHEETS 3 THRU 18
PRESSURE REDUCING STATION SHOWN ON SHEET 5
SIGNAL & STREET LIGHTING PLANS ARE ON SHEETS 16 THRU 18
DETOUR PLANS ARE ON SHEET 17
LANDING IS COVERED BY SHEETS 10 THRU 20
EROSION CONTROL PLANTING ARE ON SHEETS 42-53.
CONSTRUCTION PLANS ARE ON SHEETS 54-64.
IRRIGATION PLANS ARE ON SHEETS 65-74.
PLANTING PLANS ARE ON SHEETS 75-84.
SHRUB PLANTING PLANS ARE ON SHEETS 85-94.
PLANTING LEGEND AND DETAILS ARE ON SHEET 95.
IRRIGATION DETAILS ARE ON SHEETS 96-99.
CONSTRUCTION DETAILS ARE ON SHEETS 100-104.
PLANTING DETAILS ARE ON SHEET 105.

ASSESSOR'S PARCEL NO.

343-120-03, 343-120-05, 343-120-04, 343-120-06

OWNER & DEVELOPER

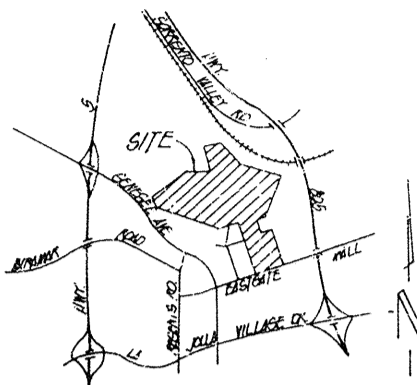
THE CITY OF SAN DIEGO A MUNICIPAL CORPORATION
202 C STREET
SAN DIEGO CA 92101

LEGAL DESCRIPTION

A SUBDIVISION OF PORTIONS OF P.B.L.O. LOTS 1316, 1317, 1318, & 1351 OF THE PUEBLO LANDS OF SAN DIEGO, PER MISCELLANEOUS MAP NO. 36, IN THE CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA

REFERENCE DRAWINGS

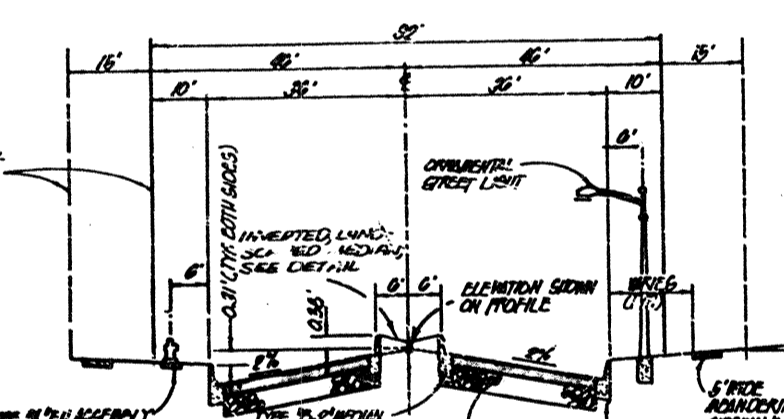
Table with columns: MAP NO., N, S, W, E, and corresponding coordinates.



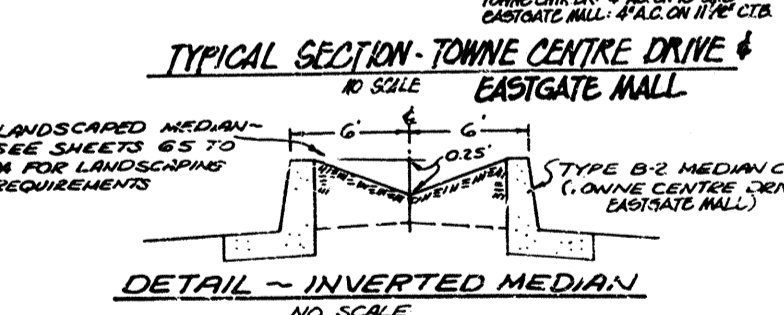
VICINITY MAP
NO SCALE

AS BUILT NOTE

THE USE OF THE TERM "AS-BUILT" HEREIN REFERS TO RECORD DRAWINGS; NOLTE HAS INCORPORATED ONTO THE DESIGN DRAWINGS ONLY THOSE CHANGES THAT ARE APPARENT BY FIELD REVIEW, OR THAT HAVE BEEN PROVIDED TO NOLTE BY THE CONSTRUCTION CONTRACTOR. NOLTE DOES NOT ASSUME THE CONTRACTOR'S RESPONSIBILITY FOR COMPLETION OF THE WORK AS SHOWN ON THE DRAWINGS OR THE ACCURACY OF THE DATA PROVIDED TO NOLTE.



TYPICAL SECTION - TOWNE CENTER DRIVE & EASTGATE MALL
NO SCALE



DETAIL - INVERTED MEDIAN
NO SCALE

WORK TO BE DONE

THE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE DONE ACCORDING TO THESE PLANS AND SPECIFICATIONS AND STANDARD DRAWINGS OF THE CITY OF SAN DIEGO.

STANDARD SPECIFICATIONS

- 1. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (1982 ED.) DOCUMENT NO. 768688, FILED MAY 5, 1983.
2. STANDARD SPECIAL PROVISIONS, DOCUMENT NO. 768688, FILED MAY 5, 1983.
3. CITY OF SAN DIEGO STANDARD SPECIAL PROVISIONS, DOCUMENT NO. 768688, FILED MAY 5, 1983.
4. STANDARD SPECIAL PROVISIONS ADDENDUM PERTAINING TO STREET LIGHTING, DOCUMENT NO. 768684, FILED APRIL 9, 1983.
5. CALIFORNIA DEPARTMENT OF TRANSPORTATION, "MANUAL OF TRAFFIC CONTROLS, WARNING SIGNS, LIGHTS AND DEVICES FOR USE IN PERFORMANCE OF WORK UPON HIGHWAYS", (1977 ED.), DOCUMENT NO. 767526, FILED JANUARY 1, 1980.

STANDARD DRAWINGS

- 1. SAN DIEGO REGIONAL STANDARD DRAWINGS, (OCT. 1982 ED.) DOCUMENT NO. 768710, FILED JUNE 22, 1983.
2. CITY OF SAN DIEGO STANDARD DRAWINGS, DOCUMENT NO. 768710, FILED JUNE 22, 1983.

PUBLIC IMPROVEMENTS LEGEND

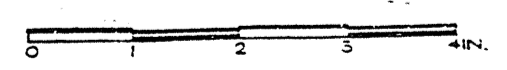
Table mapping improvement types to standard drawing numbers and symbols. Includes items like Pedestrian Ramp, Paving Schedule, Trench Resurfacing, Street Name Sign, A.C. Overlay, etc.

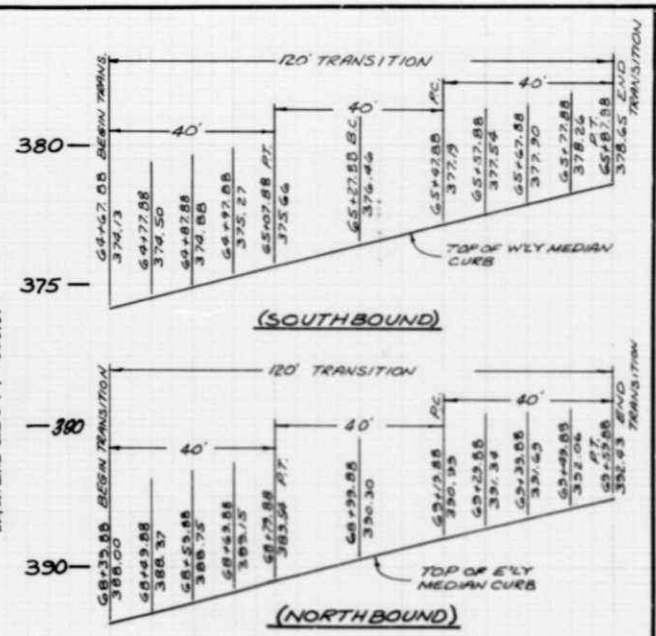
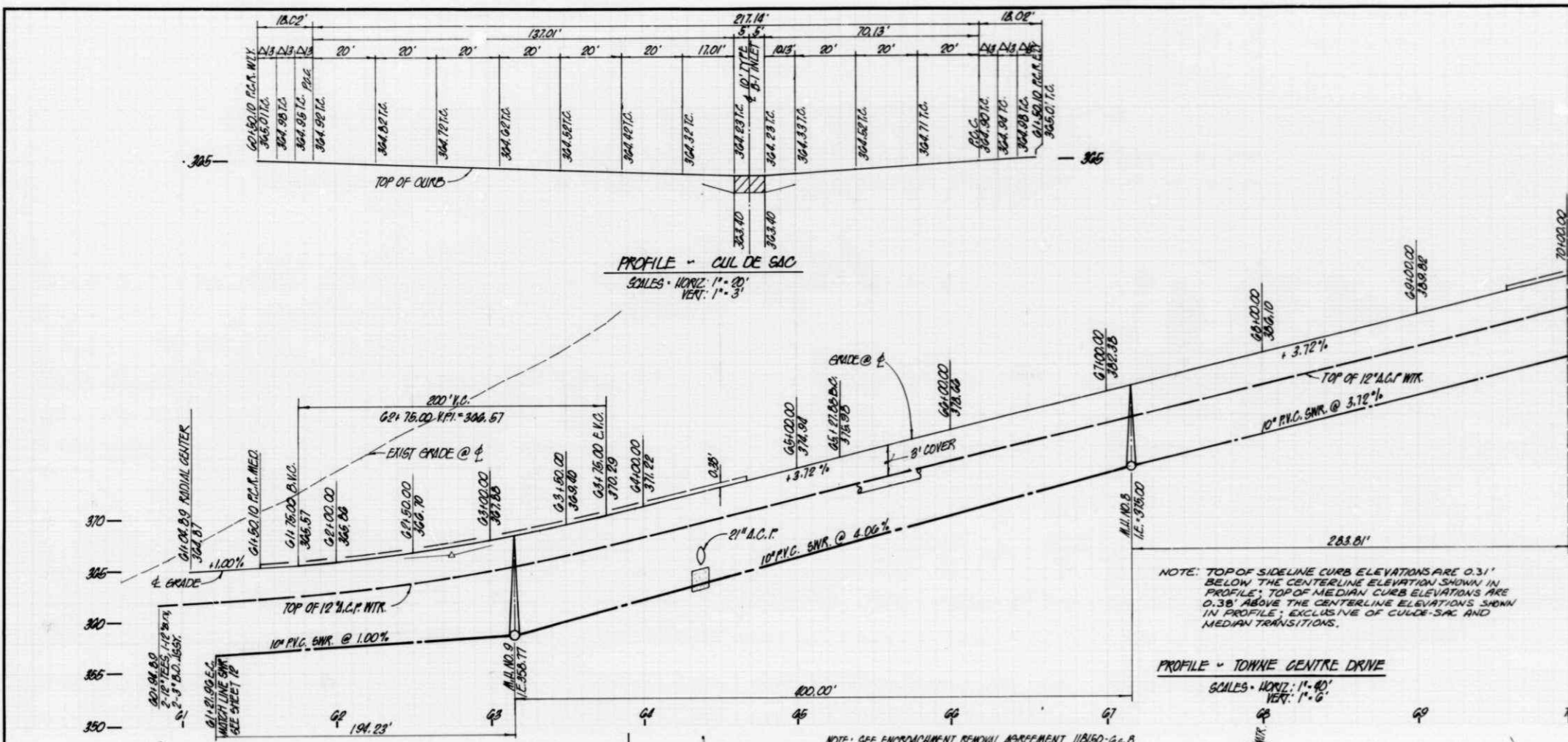
PLANS FOR THE IMPROVEMENT OF: EASTGATE TECHNOLOGY PARK, UNIT NO. 1

City of San Diego Engineering Department sheet information including project name, sheet number, date, and approval signatures.

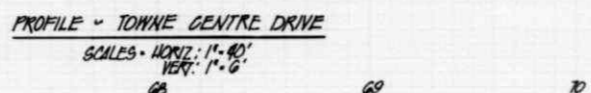
Logo and contact information for George S. Nolte and Associates, San Diego, CA.

AS BUILT

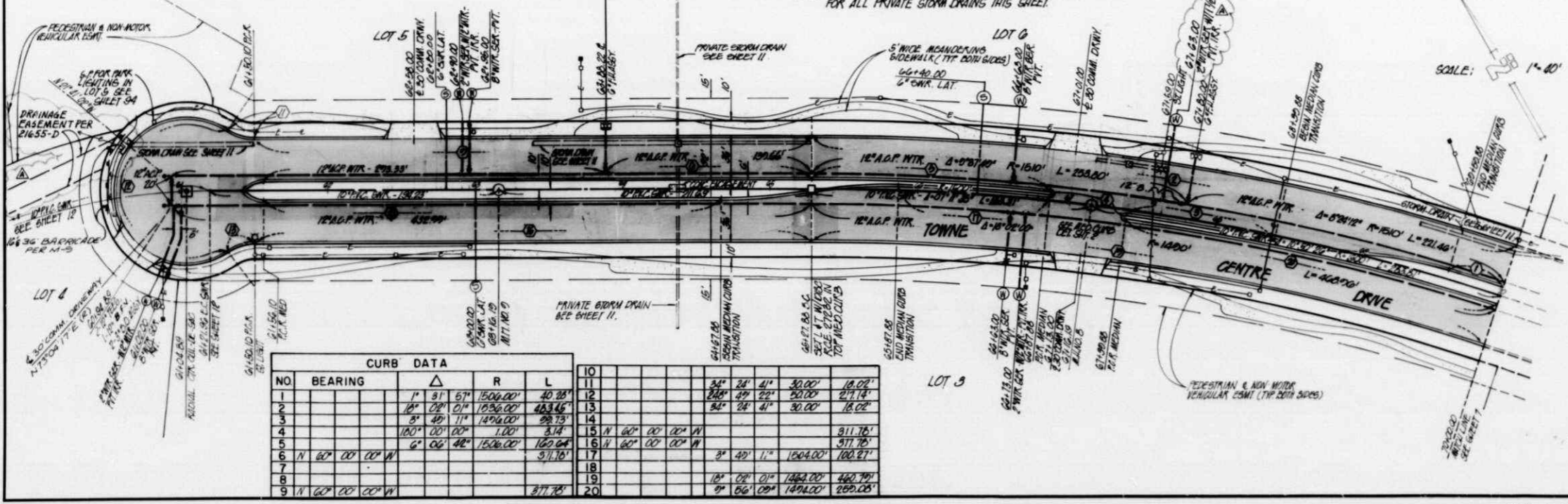




NOTE: TOP OF SIDELINE CURB ELEVATIONS ARE 0.31' BELOW THE CENTERLINE ELEVATION SHOWN IN PROFILE; TOP OF MEDIAN CURB ELEVATIONS ARE 0.38' ABOVE THE CENTERLINE ELEVATIONS SHOWN IN PROFILE; EXCLUSIVE OF CUL-DE-SAC AND MEDIAN TRANSITIONS.



NOTE: SEE ENCROACHMENT RENEWAL AGREEMENT 118160-6-8 FOR ALL PRIVATE STORM DRAIN THIS SHEET.



CURB DATA									
NO	BEARING	Δ	R	L	10	11	12	13	14
1		1° 51' 57"	1506.00'	40.78'					
2		18° 08' 01"	1036.00'	48.34'					
3		8° 49' 11"	1496.00'	28.73'					
4		100° 00' 00"	1.00'	5.14'					
5	N 60° 00' 00" W	6° 06' 48"	1506.00'	160.04'					
6				5.11.78'					
7									
8									
9	N 60° 00' 00" W			277.78'					

GEORGE S. NOLTE AND ASSOCIATES
 SAN JOSE - SACRAMENTO - SAN DIEGO - WALNUT CREEK
 9455 RIDGEHAVEN CT SAN DIEGO, CA 92123
 ENGINEER OF WORK: JAMES R. BRETHERICK
 DATE: 11-8-83
 SCALE: 1"=20' HORIZ. 1"=3' VERT.

PLANS FOR THE IMPROVEMENT OF
TOWNE CENTRE DRIVE IN EASTGATE TECHNOLOGY PARK UNIT NO. 1
 CITY OF SAN DIEGO, CALIFORNIA
 ENGINEERING DEPARTMENT
 SHEET 8 OF 11 SHEETS

DESIGNED: CAD
 DRAWN: DJF
 CHECKED: 11-8-83
 JOB NO: 8408-00-03

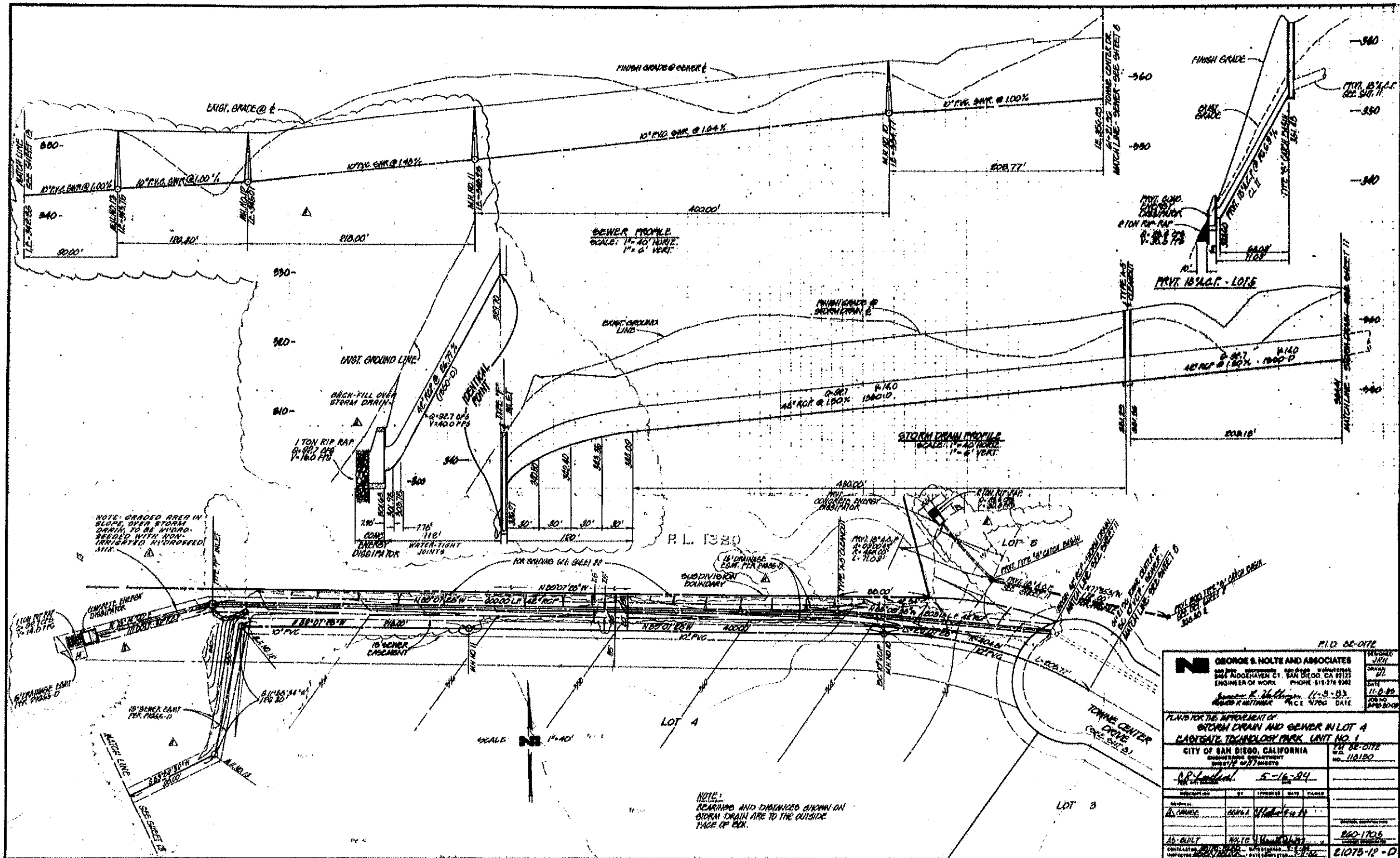
APPROVED: 5-16-84
 DATE: 11-8-83

DESCRIPTION: AS-BUILT
 BY: GANIE C. HALL
 APPROVED: [Signature]
 DATE: 11-8-83

CONTROL CERTIFICATION
 200-1703
 21075-8-D

AS BUILT





SEWER PROFILE
SCALE: 1" = 40' HORIZ.
1" = 6' VERT.

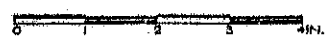
STORM DRAIN PROFILE
SCALE: 1" = 40' HORIZ.
1" = 6' VERT.

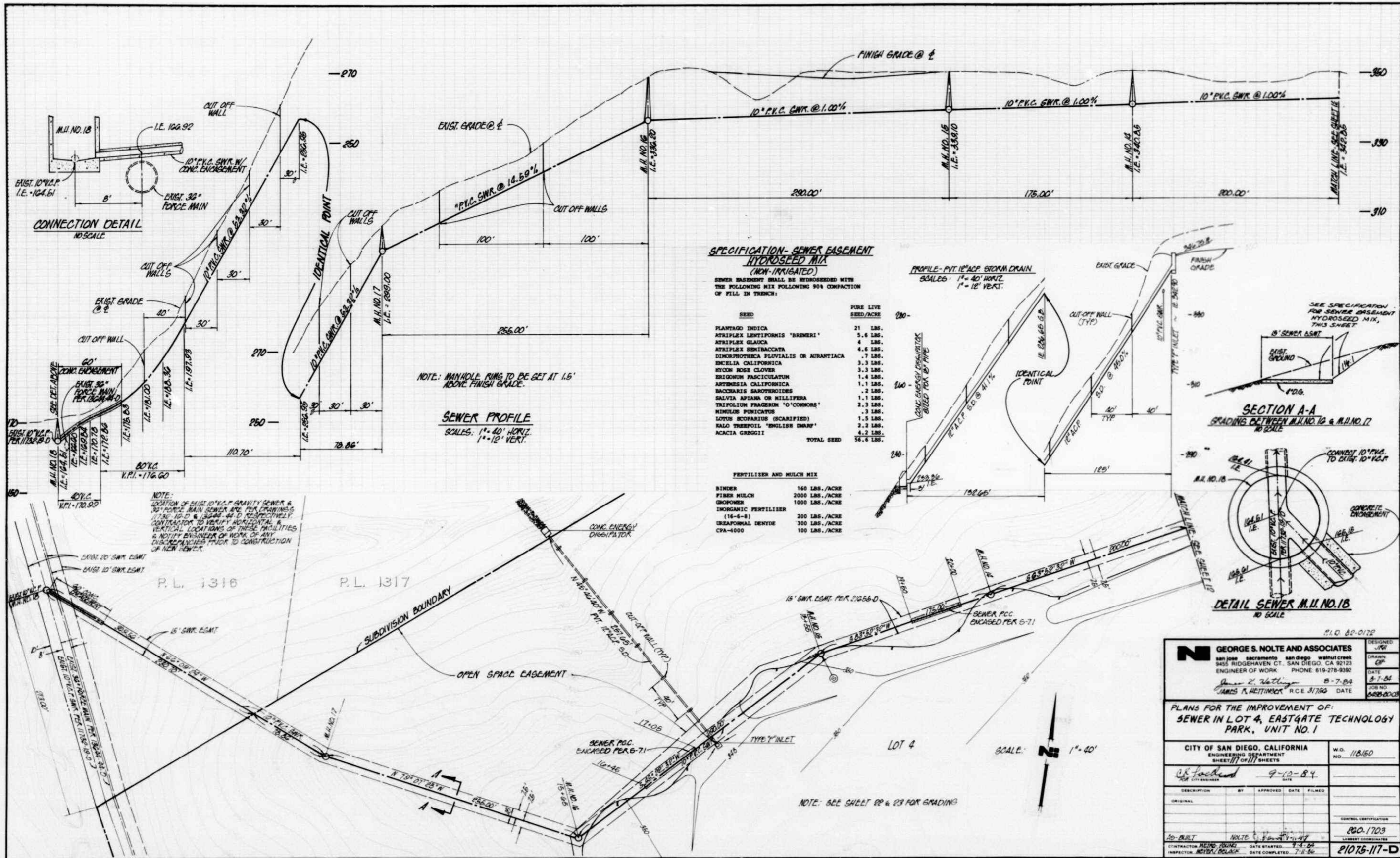
NOTE: GRADED AREA IN
SLOPE OVER STORM
DRAIN IS TO BE MOUND
SEEDED WITH NON-
IRRADIATED HYDROSEED
MIX.

NOTE:
REARINGS AND DIMENSIONS SHOWN ON
STORM DRAIN ARE TO THE OUTSIDE
FACE OF BOX.

GEORGE & NOLTE AND ASSOCIATES 500 PINE STREET, SAN DIEGO, CALIFORNIA 92101 545 RODOVENA CT. SAN DIEGO, CA 92122 ENGINEER OF WORK PHONE 519-276-9362	
Project No. 11-9-83 Date 11-9-83	Project No. 4796 Date
PLANS FOR THE IMPROVEMENT OF STORM DRAIN AND SEWER IN LOT 4 GARDEN TECHNOLOGY PARK UNIT NO. 1 CITY OF SAN DIEGO, CALIFORNIA PROJECT NO. 11-9-83 SHEET NO. 11-9-83	
Prepared by: <i>[Signature]</i> Date: 5-16-84	Checked by: <i>[Signature]</i> Date: 5-16-84
AS BUILT 21075-12-D	21075-12-D

AS BUILT





CONNECTION DETAIL
NO SCALE

SEWER PROFILE
SCALE: 1"=40' HORIZ.
1"=12' VERT.

SPECIFICATION - SEWER EASEMENT HYDROSEED MIX (NON-IRRIGATED)

SEWER EASEMENT SHALL BE HYDROSEEDED WITH THE FOLLOWING MIX FOLLOWING 90% COMPACTION OF FILL IN TRENCH:

SEED	PURE LIVE SEED/ACRE
PLANTAGO INDICA	21 LBS.
ATRIPLEX LENTIFORMIS 'BREMERI'	5.6 LBS.
ATRIPLEX GLAUCA	4 LBS.
ATRIPLEX SENTRIBACCATA	4.6 LBS.
DIMORPHOTEREA PLUVIALIS OR AURANTIACA	7 LBS.
ESCHOLIA CALIFORNICA	3.3 LBS.
HYCYN ROSE CLOVER	3.3 LBS.
ERIGONUM FASCICULATUM	1.4 LBS.
ANTHRESIA CALIFORNICA	1.1 LBS.
NACCAARIS SARCOTROIDES	2 LBS.
SALVIA APIANA OR HILLIFERA	1.1 LBS.
TRIFOLIUM FRAGRANS 'O'CONNORS'	2.3 LBS.
NIMULUS PUNICATUS	3 LBS.
LOTUS SCOPARIUS (SCARIFIED)	1.5 LBS.
HALO TREFOIL 'ENGLISH DWARF'	3.3 LBS.
ACACIA GREGGII	4.2 LBS.
TOTAL SEED	56.6 LBS.

FERTILIZER AND MULCH MIX

BINDER	160 LBS./ACRE
FINE MULCH	2000 LBS./ACRE
COMPOST	1000 LBS./ACRE
INORGANIC FERTILIZER (16-6-8)	200 LBS./ACRE
UREAPORMAL DENTIDE	300 LBS./ACRE
CPA-4000	100 LBS./ACRE

PROFILE - PVT 12" ACP SEWER DRAIN
SCALE: 1"=40' HORIZ.
1"=12' VERT.

SECTION A-A
GRADING BETWEEN M.H. NO. 16 & M.H. NO. 17
NO SCALE

DETAIL SEWER M.H. NO. 18
NO SCALE

NOTE: LOCATION OF EXIST 10" P.V.C. GRAVITY SEWER & 30" FORCE MAIN SEWER ARE PER DRAWINGS 1736-10-D & 1304-44-D RESPECTIVELY. CONTRACTOR TO VERIFY HORIZONTAL & VERTICAL LOCATIONS OF THESE FACILITIES & NOTIFY ENGINEER OF WORK OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION OF NEW SEWER.

NOTE: MANHOLE RING TO BE SET AT 1.5' ABOVE FINISH GRADE.

NOTE: SEE SHEET PP & P3 FOR GRADING

GEORGE S. NOLTE AND ASSOCIATES
SAN JOSE SACRAMENTO SAN DIEGO WALNUT CREEK
9455 RIDGEMOUNT CT. SAN DIEGO, CA 92123
ENGINEER OF WORK PHONE 619-278-9392

DESIGNED BY: *James L. Hettler* DATE: 5-7-84
DRAWN BY: *JAMES K. HETTINGER* DATE: 6-28-80

PLANS FOR THE IMPROVEMENT OF SEWER IN LOT 4, EASTGATE TECHNOLOGY PARK, UNIT NO. 1

CITY OF SAN DIEGO, CALIFORNIA		NO. 118/150
ENGINEERING DEPARTMENT		
SHEET 17 OF 17 SHEETS		
APPROVED BY: <i>[Signature]</i>	DATE: 9-10-84	
DESCRIPTION:	BY:	APPROVED DATE FILED
ORIGINAL		
CONTROL CERTIFICATION		
NO. BUILT		
CONTRACTOR: <i>NEEDS FOUND</i>	DATE STARTED: 7-4-80	
INSPECTOR: <i>NEEDS FOUND</i>	DATE COMPLETED: 7-1-80	
		260.1703
		21075-117-D

REPLACES ORIGINAL SHEET NO. 13
NEW SHEET AS BUILT

