C I T Y O F O C E A N S I D E
DEVELOPMENT SERVICES DEPARTMENT /
PLANNING DIVISION

July 27, 2024

JPI REAL ESTATE ACQUISITION II, LLC
Attn: Conner Kloeppel
11988 El Camino Real, Suite 200
San Diego, CA 92130

Subject: Application Review Committee (ARC), RD24-00002, Development of an SB330 - 8-story mixed-use development to include 272 multifamily dwelling units and 4,006 sq.ft. commercial. 28 units (10%) will be deed restricted lower income units.

Dear Conner Kloeppel, **E-MAIL: conner.kloeppel@jpi.com**

The City of Oceanside Application Review Committee (ARC) has conducted a secondary review of your application for the following:

1. Development Plan (RD24-00002) –Development of an SB330 - 8-story mixed-use development to include 272 multifamily dwelling units and 4,006 sq.ft. commercial.

2. Density Bonus (DB24-00004) – provide 28 low income units.

Pursuant to Government Code Section 65943, City staff has evaluated the development application and determined it to be **incomplete**. The attached comments have been provided from each reviewing department. A formal resubmittal shall be required and all comments must be addressed prior to deeming the application complete.

PLANNING:

Nathalie Vazquez, Associate Planner, (760) 435-3558, navazquez@oceansideca.org

- Comments Attached (Attachment 1)

BUILDING:

Doug Morris, Plans Examiner III, 760-435-3940, dmorris@oceansideca.org

- Comments Attached (Attachment 2)

ENGINEERING:

Benjamin Grenis, P.E, Association Engineer, 760-435-5182, BGrenis@oceansideca.org

- Engineering Comments will be sent upon completion.

ENGINEERING (GEOTECHNICAL):

Jim Knowlton, Engineering Consultant, (760) 435-5075 jknowlton@oceansideca.org

- Approved

ENGINEERING (LANDSCAPE):

Harry Grove, Landscape Architect (760) 435-5090 HGrove@oceansideca.org

- Review pending. Comments will be forwarded upon receipt

ENGINEERING (STORM WATER):

Alex J Smith, Consultant, 760-414-9212, Alex@trwengineering.com

- SWQMP Redline (Attachment 3)
- Storm Water Comments Attached (Attachment 4)

ENGINEERING (SURVEYOR COMMENTS):

Kathy Layaoen, Consultant, klayaoen@oceansideca.org

- Comments Attached (Attachment 5)

HOUSING

Leilani Hines, Director Housing & Neighborhood Services, 760-435-3377, LHines@oceansideca.org

- Review pending. Comments will be forwarded up receipt

FIRE:

ofdplanreview@oceansideca.org.

- Approved with Conditions

TRANSPORTATION/TRAFFIC:

Tam Tran, Associate Engineer, (760) 435-3538, ttran@oceansideca.org.

- Comments Attached (Attachment 6)

WATER UTILITIES:

Bryan Kellenbaugh, Associate Engineer, (760) 435-5860, bkellenbaugh@oceansideca.org.

- Comments Attached (Attachment 7)

North County Transit District (NTCD)

Mary Balderrama, Transit Planner, (760) 966-6569, mbalderrama@nctd.org

- Please include an ADA-compliant bus stop with an NCTD standard shelter on the project site, ideally on Clementine St.
- NTCD Bus Stop Development Handbook and NCTD Shelter Standards Attached (Attachment 8).

Next Steps

The applicant is encouraged to initiate contact with ARC members to address outstanding issues listed above. Project manager, Nathalie Vazquez, should be copied on any correspondence with City staff. At such time that the revised application materials are ready, please contact me to schedule a digital resubmittal. The digital resubmittal shall include the following:

- Cover letter of all items
- Response letter identifying how each department's comments have been addressed.
- Revised plans, documents, and technical studies as requested by reviewing departments

Note: All digital documents shall be provided in PDF format with a consistent naming convention (i.e. "S2. Site Plan 6-27-24").

Upon resubmittal, the application package will be distributed to the ARC for a 30-day review. After the review is complete, the project manager will determine if the project can be deemed complete or if additional information is required.

Please don't hesitate to contact me at 760-435-3558 or navazquez@oceansideca.org with any questions regarding the processing of this application.

Sincerely,

Nathalie Vazquez
Associate Planner
Development Services Department
Planning Division

Attachments

1. Planning Comments
2. Building Comments
3. SWQMP Redline
4. SWQMP Comments
5. Surveyor Comments
6. Traffic Comments
7. Water Utility Comments
8. NTCD Bus Stop Development Standards and NCTD Shelter Standards

Project Number: RD24-00002
Project Name: 901 Mission Avenue

Application Review Committee
Division Comments- PLANNING DIVISION

Development Services Department
300 N. Coast Hwy, Oceanside, CA 92054 | (760) 435-4373

Project: 901 Mission Avenue Mixed Use Development with Density Bonus

Property address and/or APN: 147-196-10-00

Acreage: 1.513 acres (65,912 square-feet)

Project description: SB330 - 8-story mixed-use development to include 272 multifamily dwelling units and 4,006 sq.ft. commercial. 28 units (10%) will be deed restricted lower income units.

General Plan Designation: Downtown

Zoning: Subdistrict 2

☒ 1st ☐ 2nd ☐ 3rd ☐ 4th Review

Staff member: Nathalie Vazquez

Phone number: 760-435-3558

E-mail: navazquez@oceansideca.org

☒ Review Comments ☐ Conditions of Approval

1. **SB330 –** SB330 application filed on November 30, 2023, effectively "locking in" the development standards in effect at that time.

2. **Density Bonus**

   A. FYI – the 28 affordable units shall be reserved for persons within the Low-Income category.

   B. The project includes a Density Bonus request and will provide affordable units at the low-income. Mixed-use projects in the Downtown District are not subject to a density cap. However, mixed-use projects providing a certain percentage of affordable units are entitled to a certain number of "incentives or concessions" and unlimited waivers or reductions of development standards necessary to build the project.

   - Sub District 2 Maximum Density = Unlimited

Project Number: RD24-00002
Project Name: 901 Mission Avenue

- Units proposed = 272 units
- Density = 178 units/acre
- Total density bonus units reserved (10% Low-Income) = 28
- Incentives or Concessions Allowed: 1
- Incentives or Concessions Requested: None
- Waivers Allowed: Unlimited
- Waivers Requested: 7

3. Architectural Plans

A. Elevations – Please illustrate the property lines and setbacks on the elevation plans. It would be helpful to see the property lines and setbacks marked on the elevation plans. This would visually show if the architectural features project into the required yard area.

B. Parking – Please dimension parking stalls and driveways.

- This will ensure the driveways meet the minimum 24' wide requirement.
- Please dimension parking stalls to show parking spaces will be adequately dimensioned. Per Section 3109 of the City's Zoning ordinance, parking spaces shall have the following minimum interior dimensions: Large Car = 8.5' x 18' deep.
- In general, all required spaces shall be large-car spaces, however any additional spaces may be small-car spaces = 7.5' x 15' deep.

4. California Environmental Quality Act CEQA

A. CAP Consistency Checklist is deemed complete. Conforming to the requirements of the CAP Consistency Checklist automatically assumes that a project complies with the significance threshold for GHG emissions analysis.

B. VMT Project Information Form (PIF) has been evaluated per the City's Traffic Impact Analysis Guidelines for VMT and LSA. The project is screened out from VMT analysis based on Table 2 Project Type: "Projects located in a Transit Priority Areas (TPA) or Smart Growth Opportunity Area as identified in the most recent SANDAG San Diego Forward Regional Plan and is consistent with the General Plan at the time of project application."

C. Based on the information submitted to date, the project will likely qualify for a Categorical Exemption, Section 15332 In-fill Development Project. A CEQA determination will be made upon deeming the application complete. Infill conditions are below:

- The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

Project Number: RD24-00002
Project Name: 901 Mission Avenue

- The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.
- The project site has no value as habitat for endangered, rare or threatened species.
- Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.
- The site can be adequately served by all required utilities and public services.

D. To substantiate the justification for a Class 32 Exemption, staff recommends submittal of the following:

- Provide a narrative describing why the project qualifies for a Class 32 Exemption and how the project meets the above Class 32 conditions.

5. Advanced Notification & Community Outreach

A. Residential projects with more than five units must prepare a community outreach plan describing who might be affected by the project and strategy to implement community engagement efforts. Please submit a community outreach plan. A final report shall be submitted upon completion of outreach efforts and prior to deeming the application complete.

(Parent) Project Number: RD24-00002
Project Name: 901 Mission 8 story mixed use
Project Planner: Nathalie Vazquez

Application Review Committee
Division Comments – Building Division

Development Services Department
300 N. Coast Hwy, Oceanside, CA 92054 | (760) 435-4373

To be filled out by Project Planner

Project/property address and/or APN: 147-196-105-00

Project description: 8 story mixed use structure with under ground parking with 272 multi family dwellings and approx. 4006 Commercial/retail space.

To be filled out by ARC Division Reviewer

☒ 1st ☐ 2nd ☐ 3rd ☐ 4th Review

Staff member: Doug Morris

Phone number: (760) 435-3940

E-mail: dmorris@oceansideca.org

☒ Review Comments ☐ Conditions of Approval

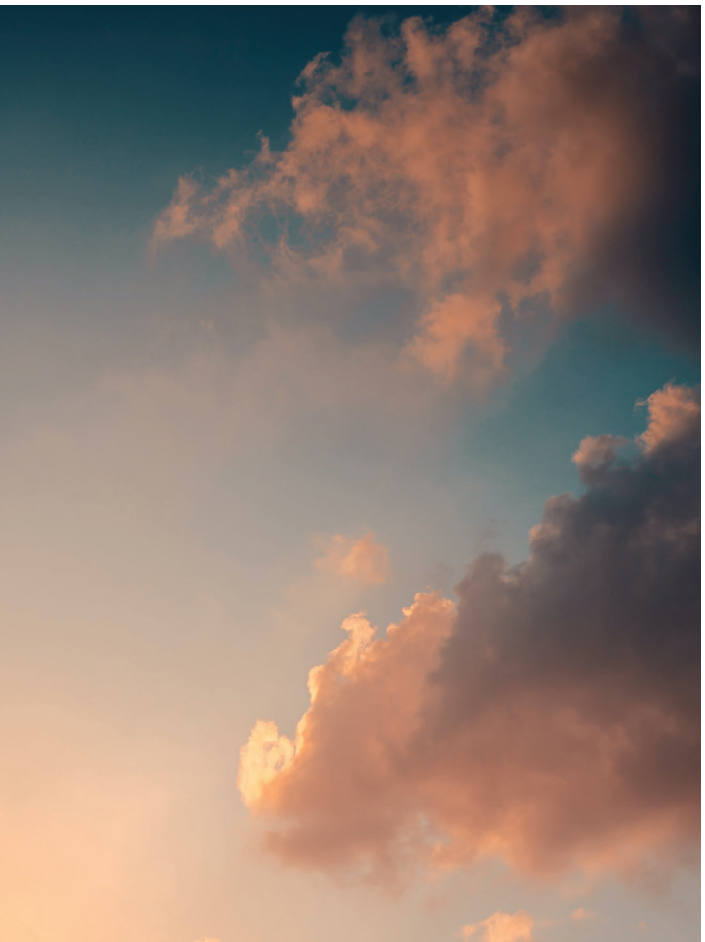
PRELIMINARY COMMENTS* :
This submittal is preliminary and many items are not shown. The following items are noted to help the designer comply with code requirements.

1. The Plans do not show all EV Chargers requirements.
2. The Plans do not show a PV Solar Electrical System.
3. The Plans do not show all fire Resistive Construction for the Type of Construction
4. The Plans do not show all Exiting requirements.
5. The Plans do not appear to show all Disabled Access requirements.
6. The Plans do not show an Area Analysis
7. The Plans do not show the type of Occupancy, Type of Construction and what type of sprinklers will be used.
8. The Plans do not show the type of wall construction for the Type of Construction of the Building
9. Structural calculations, Energy calculations will be required.

10. Plans do not show areas of refuge.
11. Plumbing, Electrical, and Mechanical plans will be required.
12. The plans do not show compliance with the City of Oceanside midrise ordinance.

This plan is preliminary. These items have been noted for some of the code requirements for the designer to acknowledge that they will be required when plans are submitted for Permits

1ST PLANNING REVIEW 1



FUSCOE ENGINEERING

901 MISSION AVENUE

PRELIMINARY STORM WATER QUALITY MANAGEMENT PLAN (SWQMP)

PREPARED FOR:
JPI COMPANY
11988 EL CAMINO REAL, SUITE 200
SAN DIEGO, CA 92130

PROJECT MANAGER
JULIAN BLEVINS

DATE PREPARED: MAY 2024

PROJECT NUMBER: 557-017

FUSCOE ENGINEERING, INC.
6390 GREENWICH DR. STE: 170
SAN DIEGO, CA 92122

fuscoe.com

Summary of Comments on S1. RD24-00002 - 901 Mission - Preliminary SWQMP.pdf

Page: 1

Number: 1 Author: Alex Subject: Text Box Date: 6/20/2024 3:44:16 PM

1ST PLANNING REVIEW

(INSERT PERMIT APPLICATION NUMBERS)

CITY OF OCEANSIDE
ENGINEERING DIVISION

PRIORITY DEVELOPMENT PROJECT

STORM WATER QUALITY MANAGEMENT PLAN

FOR

901 Mission Ave

ENGINEER OF WORK

Wet Signature, Wet Date, Stamp

PREPARED FOR:

JPI COMPANY

11988 El Camino Real Suite 200,

San Diego, CA 92130

(314) 302-2469

PREPARED BY:

FUSCOE ENGINEERING, INC.

6390 Greenwich Dr #170

San Diego, CA 92122

858.554.4500

Page: 2

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:44:39 PM

(TYP THROUGHOUT)

PLEASE PROVIDE PERMIT NOs. THROUGHOUT

(RD23-00005)

Quick Reference Guide

Item	Project Information
Project Name	901 Mission Ave
1 Application Number(s)	Click here to enter text.
Project Address	901 Mission Ave, Oceanside, CA 92054
Total Parcel Area	65,910 sq. ft.
Project Description	The project consists of redevelopment of an approximately 1.5ac site in downtown Oceanside. The site was previously developed but site improvements were demoed approximately 20-years ago and the site has been vacant ever since. The vacant lot is bisected by a paved alley way that connects Horne St to Clementine St. Existing site improvements include a 2-3' masonry retaining wall along the property line on Mission Ave, Clementine St, and Seagaze Dr, and various public utilities located in the alley including water, sewer, gas and underground/overhead electrical. . Proposed improvements include demolition of existing improvements, re-route of the alley way utilities around the site, and construction of a multi-story, multi-use podium style building. The proposed building will contain retail space at ground level, residential units at and above grade, and underground parking. The proposed building will cover almost the entire property.
Proposed Disturbed Area	65,910 sq. ft.
Created or Replaced Impervious	3 65,910 sq. ft.
Project Hydrologic Unit Watershed	☐ Santa Maria ☒ San Luis Rey ☐ Carlsbad
Required to implement HMP	☐ Yes ☒ No

PLEASE EXPAND TO INCLUDE PROPOSED OFFSITE STREET IMPROVEMENTS 2

Page: 4

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:44:52 PM

(TYP THROUGHOUT)

PLEASE PROVIDE PERMIT NOs. THROUGHOUT

(RD23-00005)

Number: 2 Author: Alex Subject: Callout Date: 6/20/2024 3:52:01 PM

PLEASE EXPAND TO INCLUDE PROPOSED OFFSITE STREET IMPROVEMENTS

Number: 3 Author: Alex Subject: Polygon Date: 6/20/2024 4:34:50 PM

100% IMPERVIOUS?

CERTIFICATION PAGE

Project Name: 901 Mission Ave

1 **Permit Application Number:** [Insert Permit Application Number]

I hereby declare that I am the Engineer in Responsible Charge of design of storm water BMPs for this project, and 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 the requirements of the City of Oceanside BMP Design Manual, which is based on the requirements of San Diego Regional Water Quality Control Board Order No. R9-2013-0001 (MS4 Permit).

I have read and understand that the City has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the BMP Design Manual. I certify that this SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable source control and site design BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this SWQMP by City staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

As Engineer of Work, I agree to indemnify, defend, and hold harmless the City of Oceanside, its officers, agents, and employees from any and all liability, claims, damages, or injuries to any person or property which might arise from the negligent acts, errors, or omissions of the Engineer of Work, my employees, agents or consultants.

2

_____ RCE 75822 Exp. 6-30-2024

Engineer of Work's Signature, PE Number & Expiration Date

Eric Armstrong PE, RCE 36083

Engineer of Work

Fuscoe Engineering, Inc.

Company

_____

Date

Engineer's Seal:

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:45:41 PM

(TYP THROUGHOUT)

PLEASE PROVIDE PERMIT NOs. THROUGHOUT

(RD23-00005)

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 3:47:13 PM

PLEASE SIGN AND DATE

Applicability of Permanent, Post-Construction Storm Water BMP Requirements (Storm Water Intake Form for all Development Permit Applications)	Form I-1

Project Identification

Project Name: 901 Mission Ave

Permit Application Number: 1 | Date: 5/17/2024

Determination of Requirements

The purpose of this form is to identify permanent, post-construction requirements that apply to the project. This form serves as a short summary of applicable requirements, in some cases referencing separate forms that will serve as the backup for the determination of requirements.

Answer each step below, starting with Step 1 and progressing through each step until reaching "Stop".
Refer to the manual sections and/or separate forms referenced in each step below.

Step	Answer	Progression
Step 1: Is the project a "development project"? See Section 1.3 of the manual for guidance.	☒Yes	Go to Step 2.
	☐No	Stop. Permanent BMP requirements do not apply. No SWQMP will be required. Provide discussion below.
Discussion / justification if the project is not a "development project" (e.g., the project includes *only* interior remodels within an existing building):		
Step 2: Is the project a Standard Project, PDP, or exception to PDP definitions? To answer this item, see Section 1.4 of the manual *in its entirety* for guidance, AND complete Form I-2, Project Type Determination.	☐Standard Project	Stop. Standard Project requirements apply, including Standard Project SWQMP.
	☒PDP	PDP requirements apply, including PDP SWQMP. Go to Step 3.
	☐ Exception to PDP definitions	Stop. Standard Project requirements apply. Provide discussion and list any additional requirements below. Prepare Standard Project SWQMP.
Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:		

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:45:03 PM

(TYP THROUGHOUT)

PLEASE PROVIDE PERMIT NOs. THROUGHOUT

(RD23-00005)

Form I-1 Page 2 of 2		
Step	**Answer**	**Progression**
Step 3. Is the project subject to earlier PDP requirements due to a prior lawful approval? See Section 1.10 of the manual for guidance.	☐Yes	Consult the [City Engineer] to determine requirements. Provide discussion and identify requirements below. Go to Step 4.
	☒No	BMP Design Manual PDP requirements apply. Go to Step 4.
Discussion / justification of prior lawful approval, and identify requirements (*not required if prior lawful approval does not apply*):		
Step 4. Do hydromodification control requirements apply? See Section 1.6 of the manual for guidance.	☐Yes	PDP structural BMPs required for pollutant control (Chapter 5) and hydromodification control (Chapter 6). Go to Step 5.
	☒No	1 Stop. PDP structural BMPs required for pollutant control (Chapter 5) only. Provide brief discussion of exemption to hydromodification control below.
Discussion / justification if hydromodification control requirements do <u>not</u> apply: Stormwater from the site is conveyed via concrete conveyance channels (curb and gutter) and underground storm drains discharging directly to the Pacific Ocean (hydromodification exempt). Storm water runoff from the site confluences in the curb-and-gutter along Clementine St and travels northwest to Mission Ave. Flow travels down the curb-and-gutter in Mission Ave and through a series of flow-through planters along Mission Ave until entering the public storm drain system via a curb inlet on Mission Ave just before intersecting PCH. The public storm drain discharges directly into the Pacific Ocean at Surfrider Way and The Strand N.		
2 **Step 5.** Does protection of critical coarse sediment yield areas apply? See Section 6.2 of the manual for guidance.	☐Yes	Management measures required for protection of critical coarse sediment yield areas (Chapter 6.2). Stop.
	☒No	Management measures not required for protection of critical coarse sediment yield areas. Provide brief discussion below. Stop.
Discussion / justification if protection of critical coarse sediment yield areas does <u>not</u> apply: No CCSYAs exist within the sites vicinity or along its flow path from the site to its discharge point into the Pacific Ocean.		

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:47:31 PM

IF "NO," FORM I-1 IS COMPLETE

PROCEED TO FORM I-2

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 3:49:13 PM

STEP 5 IS N/A, PER ABOVE (NO HMP, NO PCCSYAs)

Project Type Determination Checklist			Form I-2
Project Information			
Project Name: 901 Mission Ave			
1 Permit Application Number:			
Project Type Determination: Standard Project or PDP			
The project is (select one): New Development X Redevelopment			
The total proposed newly created or replaced impervious area is: 65,910 ft² (1.5 acres)			
Is the project in any of the following categories, (a) through (f)?			
Yes ☐	No ☒	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☒	No ☐	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☒	No ☐	(c)	New and redevelopment projects that create 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption SIC code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:45:08 PM

(TYP THROUGHOUT)

PLEASE PROVIDE PERMIT NOs. THROUGHOUT

(RD23-00005)

Site Information Checklist For PDPs	Form I-3B (PDPs)
Project Summary Information	
Project Name	901 Mission Ave
Project Address	901 Mission Ave, Oceanside, CA 92054
Assessor's Parcel Number(s)	147-196-10
Permit Application Number	RD24-00002 [1]
Project Watershed (Hydrologic Unit)	Select One: ☐ Santa Margarita 902 ☒ San Luis Rey 903 ☐ Carlsbad 904
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	1.5 Acres (65,910 Square Feet)
Area to be disturbed by the project (Project Area)	[2] 1.5 Acres (65,910 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	[3] 1.17 Acres (51,100 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	0.33 Acres (14,810 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Hydrologic Unit	Hydrologic Area	Hydrologic Sub-Area
Santa Margarita 902.00	☐ Ysidora 902.10	☐ Lower Ysidora 902.11
San Luis Rey 903.00	☒ Lower San Luis 903.10	☒ Mission 903.11
		☐ Bonsall 903.12
Carlsbad 904.00	☐ Loma Alta 904.10	Not Applicable
	☐ Buena Vista Creek 904.20	☐ El Salto 904.21
		☐ Vista 904.22
	☐ Agua Hedionda 4.30	☐ Los Monos 904.31

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Number: 1 Author: Alex Subject: Callout Date: 6/20/2024 3:45:22 PM

RD24-00002

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 3:52:21 PM

PLEASE INCREASE TO REPRESENT TOTALITY OF ONSITE AND OFFSITE IMPROVEMENTS

Number: 3 Author: Alex Subject: Polygon Date: 6/20/2024 4:35:20 PM

IMPERVIOUSNESS SEEMS LOW FOR THIS KIND OF DEVELOPMENT

PLEASE INCREASE TO AGREE WITH LANDSCAPE PLANS AND REPRESENT TOTALITY OF ONSITE AND OFFSITE IMPROVEMENTS

PLEASE ALSO ENSURE ONSITE TOTALS INCLUDE ALL IMPERVIOUS AREAS THAT ARE EXPOSED TO RAINFALL (E.G., OVERHANGS, BALCONIES, ROOFTOPS, ETC.)

Description of Existing Site Condition and Drainage Patterns

Current Status of the Site (select all that apply):

☐Existing development

1 ☐Previously graded but not built out

☐Agricultural or other non-impervious use

2 ☒Vacant, undeveloped/natural

Description / Additional Information:
Vacant and bisected by a paved alley way. The site has been vacant for roughly 20-years. Previous development had existed on the site before it was all demoed, based on historic aerial photography improvements consisted of multiple buildings and a paved parking lot.

Existing Land Cover Includes (select all that apply):

3 ☒Vegetative Cover

☐Non-Vegetated Pervious Areas

☒Impervious Areas

Description / Additional Information:
Mostly vacant lot bisected by a paved alley way.

Underlying Soil belongs to Hydrologic Soil Group (select all that apply):

☒NRCS Type A

☐NRCS Type B

☐NRCS Type C

☐NRCS Type D

Approximate Depth to Groundwater:

☐Groundwater Depth < 5 feet

☐5 feet < Groundwater Depth < 10 feet

☐10 feet < Groundwater Depth < 20 feet

☒Groundwater Depth > 20 feet

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:53:04 PM
PLEASE SELECT AND NOTE DEMOLITION PER BELOW

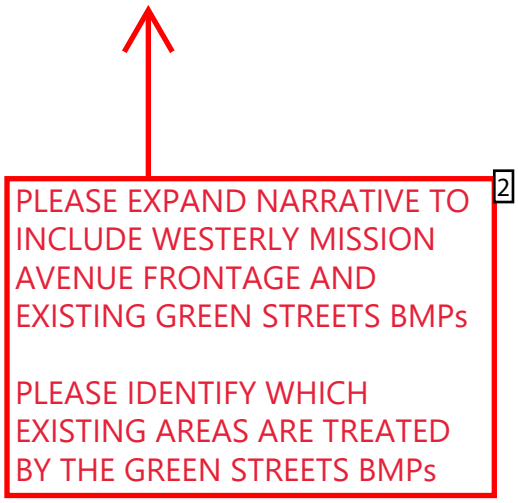
Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 3:53:17 PM
PLEASE DESELECT (NOT A NATURAL SITE)

Number: 3 Author: Alex Subject: Polygon Date: 6/20/2024 3:53:47 PM
PLEASE DESCRIBE NATURE OF VEGETATION BELOW (WEEDS, GRASSES, ETC.)

Description of Existing Site Topography and Drainage [How is storm water runoff conveyed from the site? At a minimum, this description should answer (1) whether existing drainage conveyance is natural or urban; (2) describe existing constructed storm water conveyance systems, if applicable; and (3) is runoff from offsite conveyed through the site? If so, describe]:

Existing drainage is urban. The site drains from east to west via sheet flow. All site runoff confluences in the public right-of-way in the curb-and-gutter along Horne St – there are no underground storm drains in the immediate site vicinity. Flow travels via curb and gutter from Horne St northwest to Mission Ave, then southwest along Mission Ave and through a series of flow-thru planters and finally into a curb inlet at the south side of Mission Ave just before its intersection with PCH. Flows from the curb inlet enter the underground storm drain system and is conveyed northwest to Surfrider Way and The Strand N discharging directly into the Pacific Ocean. No offsite runoff is conveyed through the site.

The existing public storm drain system that conveys the site's flow to the Pacific Ocean is deemed inadequate for the 10, 25 & 100-year storm event according to, "The City of Oceanside Master Plan of Drainage, Update 2013," prepared by Torrey Walker Engineering, Inc. 1 It is unclear at this time if the City of Oceanside has upgraded the public storm drain system to meet the demands of the watershed that it serves. Solutions were brainstormed by City Staff as seen in the 2014 Update to the Drainage Study but city GIS maps of the public storm drain indicates no changes to the storm drains from 2013 conditions.



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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:54:41 PM

THE CLEVELAND STREET STORM DRAIN UPGRADES ARE NOT YET CONSTRUCTED

PLEASE PROVIDE DETENTION TO ENSURE NO INCREASE TO DOWNSTREAM SYSTEM

Number: 2 Author: Alex Subject: Callout Date: 6/20/2024 3:54:49 PM

PLEASE EXPAND NARRATIVE TO INCLUDE WESTERLY MISSION AVENUE FRONTAGE AND EXISTING GREEN STREETS BMPs

PLEASE IDENTIFY WHICH EXISTING AREAS ARE TREATED BY THE GREEN STREETS BMPs

Description of Proposed Site Development and Drainage Patterns

Project Description / Proposed Land Use and/or Activities:
Podium style building, multiple residential stories over retail space with at grade and underground parking.

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):
Roof, common area hardscape

List/describe proposed pervious features of the project (e.g., landscape areas):

Scattered landscaping planters, water cannot infiltrate from planters due to basement level below.

Does the project include grading and changes to site topography?
☒Yes
☐No

Description / Additional Information:
Podium style building from property line to property line with underground parking.

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?
☐Yes
☒No

Description / Additional Information:

The site intends to mimic existing drainage patterns to the maximum extent possible. Runoff from the site will be conveyed (via sheet flow and storm drains onsite) to modular wetland systems for pollutant treatment and will be pumped to discharge in the curb and gutter along Clementine St like it does in the existing condition.

Page: 16

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:55:12 PM
PLEASE QUANTIFY

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 3:55:41 PM
PLEASE EXPAND NARRATIVE TO INCLUDE ONSITE AND OFFSITE IMPROVEMENTS

Number: 3 Author: Alex Subject: Polygon Date: 6/20/2024 3:55:23 PM
PLEASE EXPAND NARRATIVE TO DESCRIBE AMENITY DECK AND ITS IMPERVIOUS FEATURES

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply):

1 ☐ Onsite storm drain inlets

☒ Interior floor drains and elevator shaft sump pumps

☒ Interior parking garages

☒ Need for future indoor & structural pest control

☒ Landscape/outdoor pesticide use

☒ Pools, spas, ponds, decorative fountains, and other water features

☒ Food service

☒ Refuse areas

☐ Industrial processes

☐ Outdoor storage of equipment or materials

☐ Vehicle and equipment cleaning

☐ Vehicle/equipment repair and maintenance

☐ Fuel dispensing areas

☐ Loading docks

☐ Fire sprinkler test water

☒ Miscellaneous drain or wash water

☒ Plazas, sidewalks, and parking lots

Page: 17

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:56:15 PM
APPLICABLE POLLUTANT SOURCE

Form I-3B Page 6 of 10		
Identification of Receiving Water Pollutants of Concern		
Describe path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable): The site drains from east to west via sheet flow. All site runoff confluences in the public right-of-way in the curb and gutter along Clementine St – there are no underground storm drains in the immediate site vicinity. Flow travels via curb-and-gutter from Clementine St northwest to Mission Ave, then southwest along Mission Ave and through a series of flow-thru planters to a curb inlet just before the intersection of Mission Ave and PCH. From the curb inlet flows enter the public underground storm drain system. The storm drain conveys flows northwest to Surfrider Way and The Strand N discharging directly into the Pacific Ocean. No offsite runoff is conveyed through the site		
List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs for the impaired water bodies:		
303(d) Impaired Water Body	**Pollutant(s)/Stressor(s)**	**TMDLs**
Pacific Ocean Shoreline @ Surfrider Way	1 ~~Indicator Bacteria~~ ~~Trash~~	Status: 2 ~~Required~~ Indicator Bacteria Status: 3 ~~Being addressed with action other than TMDL~~ 4 ~~Trash~~

Page: 18

Number: 1	Author: Alex	Subject: Cross-Out	Date: 6/20/2024 3:56:34 PM

N/A

Number: 2	Author: Alex	Subject: Cross-Out	Date: 6/20/2024 3:56:43 PM

ACTIVE

Number: 3	Author: Alex	Subject: Cross-Out	Date: 6/20/2024 3:56:52 PM

TMDL IS ACTIVE

Number: 4	Author: Alex	Subject: Cross-Out	Date: 6/20/2024 3:57:00 PM

N/A

Form I-3B Page 7 of 10			
Identification of Project Site Pollutants* ***Identification of project site pollutants is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs (note the project must also participate in an alternative compliance program unless prior lawful approval to meet earlier PDP requirements is demonstrated)**			
Identify pollutants expected from the project site based on all proposed use(s) of the site (see manual Appendix B.6):			
Pollutant	**Not Applicable to the Project Site**	**Expected from the Project Site**	**Also a Receiving Water Pollutant of Concern**
Sediment	X		
Nutrients	X		
Heavy Metals		X	X
Organic Compounds		X	X
Trash & Debris		X	X
Oxygen Demanding Substances		X	X
Oil & Grease		X	X
Bacteria & Viruses		X	X
Pesticides		X	X

<u>Note:</u> Indicator Bacteria shall be addressed as a Pollutant of Concern (POC) for projects located in the Lower San Luis Hydrologic Area <u>and</u> for projects that discharge to the Pacific Ocean Shoreline within the boundaries of the City of Oceanside.

<u>Note:</u> Nutrients shall be addressed as a Pollutant of Concern (POC) for projects located in the Loma Alta Hydrologic Area.

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:57:14 PM
N/A PER HEADER ROW INSTRUCTIONS

Hydromodification Management Requirements

Do hydromodification management requirements apply (see Section 1.6 of the manual)?

☐Yes, hydromodification management flow control structural BMPs required.

☒No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.

1 ☒No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.

☐No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA for the watershed in which the project resides.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

Critical Coarse Sediment Yield Areas*

***This Section only required if hydromodification management requirements apply**

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

☐Yes

☐No, no critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Section 6.2 of the manual been performed?

☐6.2.1 Verification of GLUs Onsite

☐6.2.2 Downstream Systems Sensitivity to Coarse Sediment

☐6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite

☐No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

☐No critical coarse sediment yield areas to be protected based on verification of GLUs onsite.

☐Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 8 of the SWQMP.

☐Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections 6.2.4 and 6.2.5 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

NA

Page: 20

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:57:29 PM
PLEASE REMOVE (ONLY ONE CRITERIA SATISFIES, PER ABOVE)

1

Form I-3B Page 10 of 10

Other Site Requirements and Constraints

When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.

None

Optional Additional Information or Continuation of Previous Sections As Needed

This space provided for additional information or continuation of information from previous sections as needed.

Page: 22

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:57:40 PM

PLEASE DISCUSS GREEN STREETS FEATURES HERE FOR ALL FRONTAGE IMPROVEMENTS

Source Control BMP Checklist for All Development Projects (Standard Projects and PDPs)	Form I-4

Project Identification

Project Name: 901 Mission Ave

Permit Application Number:

Source Control BMPs

All development projects must implement source control BMPs SC-1 through SC-6 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement source control BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the source control BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided.

Source Control Requirement	Implemented?		
SC-1 Prevention of Illicit Discharges into the MS4	☒ Yes	☐ No	☐ N/A
Discussion / justification if SC-1 not implemented:			
SC-2 Storm Drain Stenciling or Signage	☒ Yes	☐ No	☐ N/A
Discussion / justification if SC-2 not implemented:			
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	☒ N/A
Discussion / justification if SC-3 not implemented: No Outdoor material storage planned for the project.			

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:57:59 PM

(TYP FOR FORM I-4)

PLEASE PROVIDE SPECIFIC EXPLANATIONS FOR ALL YES/NO/N/A RESPONSES

IN THE SPACES BELOW, PLEASE PROVIDE SPECIFIC DESCRIPTIONS FOR HOW ALL APPLICABLE AND FEASIBLE SOURCE CONTROL BMPs WILL BE IMPLEMENTED THROUGHOUT THE PROJECT SITE (BOTH ONSITE AND OFFSITE)

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 3:45:46 PM

(TYP THROUGHOUT)

PLEASE PROVIDE PERMIT NOs. THROUGHOUT

(RD23-00005)

Form I-4 Page 3 of 3			
SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below)	**Implemented?**		
Onsite storm drain inlets	☒ Yes	☐ No	☐ N/A
Interior floor drains and elevator shaft sump pumps	☒ Yes	☐ No	☐ N/A
Interior parking garages	☒ Yes	☐ No	☐ N/A
Need for future indoor & structural pest control	☒ Yes	☐ No	☐ N/A
Landscape/outdoor pesticide use	☒ Yes	☐ No	☐ N/A
Pools, spas, ponds, decorative fountains, and other water features	☒ Yes	☐ No	☐ N/A
Food service	☒ Yes	☐ No	☐ N/A
Refuse area	☒ Yes	☐ No	☐ N/A
Industrial processes	☐ Yes	☐ No	☒ N/A
Outdoor storage of equipment or materials	☐ Yes	☐ No	☒ N/A
Vehicle and equipment cleaning	☐ Yes	☐ No	☒ N/A
Vehicle/equipment repair and maintenance	☐ Yes	☐ No	☒ N/A
Fuel dispensing areas	☐ Yes	☐ No	☒ N/A
Loading docks	☐ Yes	☐ No	☒ N/A
Fire sprinkler test water	☒ Yes	☐ No	☐ N/A
Miscellaneous drain or wash water	☒ Yes	☐ No	☐ N/A
Plazas, sidewalks, and parking lots	☒ Yes	☐ No	☐ N/A

Discussion / justification if SC-6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for all "No" answers shown above.

SC-6 implemented for all applicable Potential Sources of Runoff Pollutants.

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:58:16 PM

PLEASE CONFIRM APPLICABILITY

ONLY APPLIES TO COMMERCIAL/INDUSTRIAL FACILITIES

Site Design BMP Checklist for All Development Projects (Standard Projects and PDPs)	Form I-5

Project Identification

Project Name: 901 Mission Ave

Permit Application Number:

Site Design BMPs

All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement site design BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification may be provided.

Site Design Requirement	Applied?		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-1 not implemented:			
SD-2 Conserve Natural Areas, Soils, and Vegetation	☐ Yes	☐ No	☒ N/A
Discussion / justification if SD-2 not implemented: Redevelopment project. Existing development does not contain natural areas, CCSYAs, and vegetation. Existing trees in the Sidewalk of the adjacent R?W will be protected in place.			
SD-3 Minimize Impervious Area	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-3 not implemented: Project includes maximizing pervious areas throughout site.			
SD-4 Minimize Soil Compaction	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-4 not implemented:			

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:58:37 PM

(TYP FOR FORM I-5)

PLEASE PROVIDE SPECIFIC EXPLANATIONS FOR ALL YES/NO/N/A RESPONSES

IN THE SPACES BELOW, PLEASE PROVIDE SPECIFIC DESCRIPTIONS FOR HOW ALL APPLICABLE AND FEASIBLE SITE DESIGN BMPs WILL BE IMPLEMENTED THROUGHOUT THE PROJECT SITE (BOTH ONSITE AND OFFSITE)

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 3:45:52 PM

(TYP THROUGHOUT)

PLEASE PROVIDE PERMIT NOs. THROUGHOUT

(RD23-00005)

Number: 3 Author: Alex Subject: Polygon Date: 6/20/2024 3:58:51 PM

IF EXISTING SITE IS NATURAL, THEN NO NATURAL DRAINAGE PATHWAYS OR HYDROLOGIC FEATURES EXIST

Number: 4 Author: Alex Subject: Polygon Date: 6/20/2024 3:59:08 PM

IF EXISTING TREES ARE PLANTED WITHIN R/W, THEN THEY ARE NOT NATURAL

Form I-5 Page 2 of 2			
Site Design Requirement	**Applied?**		
SD-5 Impervious Area Dispersion	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-5 not implemented:			
SD-6 Runoff Collection	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-6 not implemented:			
SD-7 Landscaping with Native or Drought Tolerant Species	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-7 not implemented:			
SD-8 Harvesting and Using Precipitation	☐ Yes	☒ No	☐ N/A
Discussion / justification if SD-8 not implemented: 1 Deemed infeasible, see Attachment 1d			

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:59:24 PM

PLEASE DESCRIBE FEASIBILITY AS A FUNCTION OF A DCV-REDUCING SITE DESIGN BMP (NOT A PDP BMP FOR TREATMENT OF 85TH PERCENTILE, AS DESCRIBED)

RATIONALE SHOULD BE TECHNICAL

Summary of PDP Structural BMPs	Form I-6 (PDPs)

Project Identification

Project Name: 901 Mission Ave

1 Permit Application Number:

PDP Structural BMPs

All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).

PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative to certify construction of the structural BMPs (see Section 1.12 of the manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the manual).

Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

2 The Geotechnical Engineer has classified the site as a No Infiltration Condition due to the depth of fill and compressible alluvium onsite and space constraints (proximity of infiltration to the structure and property lines). Geotechnical Engineer has prepared a Infiltration Feasibility Letter which will be submitted to the City and included as Attachment 1e. The Harvest and reuse for toilet demand is considered infeasible per Form I-7 in Attachment 1d. The only effective BMP that is feasible to implement is the Modular Wetland System (MWS).

(Continue on page 2 as necessary.)

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 3:45:57 PM

(TYP THROUGHOUT)

PLEASE PROVIDE PERMIT NOs. THROUGHOUT

(RD23-00005)

Number: 2 Author: Grant Subject: Polygon Date: 6/20/2024 3:59:41 PM

PLEASE REVISE NARRATIVE TO DESCRIBE HOW THE STEPS FOR SELECTING AND DESIGNING STORM WATER POLLUTANT CONTROL BMPS PRESENTED IN SECTION 5.1 OF THE MANUAL WERE FOLLOWED, AND THE RESULTING STRUCTURAL BMPS THAT WERE SELCTED. PLEASE SPECIFY WHICH BMPS PROVIDE HYDROMODIFICATION AND/OR WATER QUALITY MITIGATION.

PLEASE SPECIFICALLY QUANTIFY THE SITE'S RETENTION VOLUME REQUIREMENT AND HOW THE REQUIRED RETENTION VOLUME IS PROVIDED (E.G., TREE WELLS, DISPERSION AREAS, ETC.)

THE MODULAR WETLANDS SYSTEM DOES NOT POSSESS RETENTION PROPERTIES THAT CAN MEET THE RETENTION REQUIREMENTS IN AND OF ITSELF--ALL RETENTION VOLUME MUST BE PROVIDED EXTERNAL TO THE UNIT (TO MAXIMIZE LID)

(Page reserved for continuation of description of general strategy for structural BMP implementation at the site)

1

(Continued from page 1)

The proposed development will be divided into two DMAs. DMA 1 comprises the mixed-use portion of the project and consists of the building, roofs, courtyards, landscaping planters and associated hardscape. DMA 2 will be landscaped and pervious and is therefore deemed self-mitigating.

DMA 1 will flow via sheet-flow and proposed storm drains to a modular wetland system for pollution control treatment.

2

DMA 2 consists of 3 sub-DMAs, 2.1, 2.2, and 2.3, and the entire DMA is proposed 100% landscaped/planted area. DMA2 is deemed self-mitigating, it will flow via sheet-flow over proposed landscape directly to the right-of-way; or flow via sheet-flow over proposed landscape to inlets that will direct flow via storm drains through the curb face and into the right-of-way.

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 4:00:41 PM

PLEASE DEPICT ON DMA EXHIBIT WITH RESUBMITTAL

PLEASE ENSURE SUPPORTING PRELIMINARY ROOF AND PLUMBING PLANS ARE PROVIDED TO VERIFY ASSUMED DMA BOUNDARIES

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 4:00:25 PM

PLEASE IDENTIFY PLANNED LOCATION

PLEASE DISCUSS IF SYSTEM IS TO BE CONFIGURED AS A FLOW-BASED OR VOLUME-BASED SYSTEM

PLEASE DESCRIBE OUTFLOW (E.G., PUMP, GRAVITY, ETC.)

Form I-6 Page 3 of 4 (Copy as many as needed)	
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**	
Structural BMP ID No. BMP-1	
Construction Plan Sheet No. 4	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Partial retention by biofiltration with partial retention (PR-1) ☒Biofiltration (BF-1) ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms if required by the [City Engineer] (See Section 1.12 of the manual)	Eric Armstrong PE Fuscoe Engineering, Inc. 6390 Greenwich Dr, Suite 170 San Diego, CA 92117
Who will be the final owner of this BMP?	JPI Company 12250 El Camino Ral, Suite 200 San Diego, CA 92108
Who will maintain this BMP into perpetuity?	JPI Company
What is the funding mechanism for maintenance?	JPI Company

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 4:00:57 PM
PROPRIETARY BIOFILTRATION (BF-3)

Form I-6 Page 4 of 4 (Copy as many needed)
Structural BMP Summary Information **(Copy this page as needed to provide information for each individual proposed structural BMP)**
Discussion (as needed): 1 This is a high-flow proprietary biofiltration system designed to treat 1.5xDCV. Flows collected from roof drains and hardscape area drains will be piped to this structure, be treated (excess flows will by bypass), and be pumped up to its discharge point through curb outlets to the curb-and-gutter along Clementine St.

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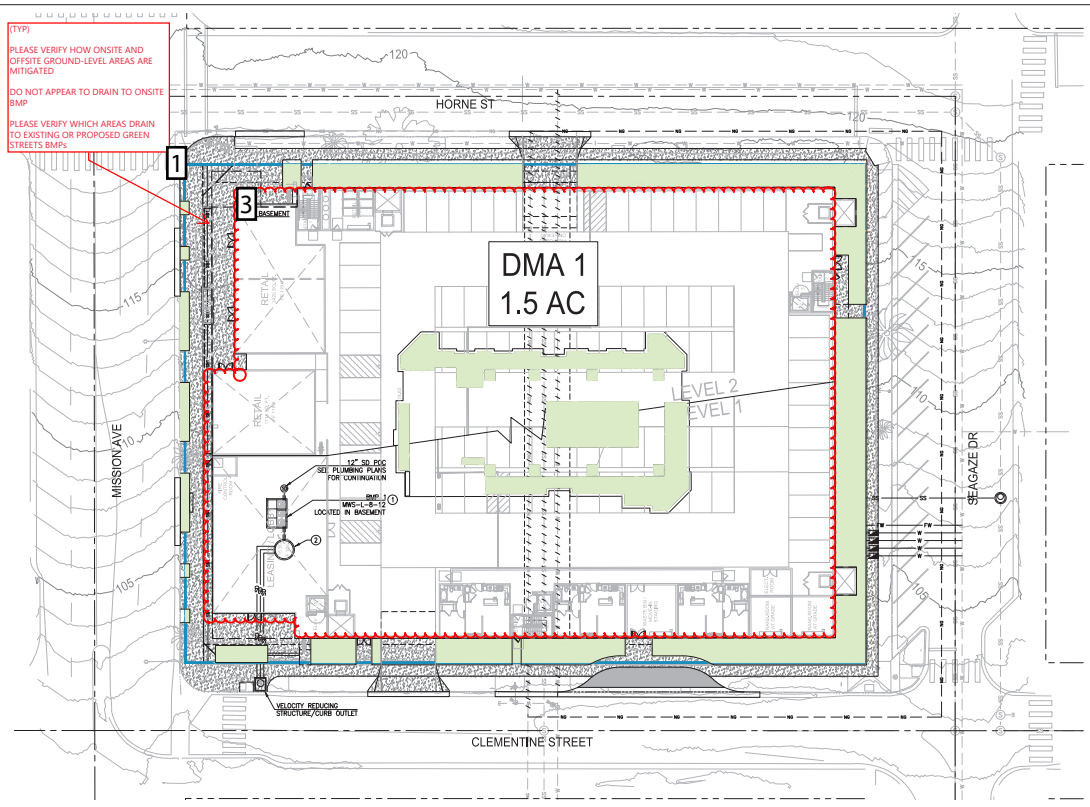
Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 4:08:17 PM

PLEASE IDENTIFY PLANNED LOCATION

PLEASE IDENTIFY MODEL NO.

PLEASE DISCUSS IF SYSTEM IS TO BE CONFIGURED AS A FLOW-BASED OR VOLUME-BASED SYSTEM



PROJECT SITE INFO

UNDERLYING HYDROLOGIC SOIL: A
APPROXIMATE DEPTH TO GROUNDWATER: > 25 FT
EX NATURAL HYDROLOGIC FEATURES: NONE LOCATED WITHIN PROJECT BOUNDARY
CCVNs TO BE PROTECTED: NONE LOCATED WITHIN PROJECT BOUNDARY
EXISTING IMPERVIOUS AREA: 4,400 SF
DISTURBED AREA (ONSITE ONLY): 65,950 SF
PROPOSED IMPERVIOUS AREA: 51,100 SF
PROPOSED PERVIOUS AREA: 14,810 SF

SITE DESIGN BMPs

2

1. SD-2 CONSERVE NATURAL AREAS, SOILS AND VEGETATION
2. SD-3 MINIMIZE IMPERVIOUS AREA
3. SD-4 MINIMIZE SOIL COMPACTION
4. LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT PLANTS

PERMANENT STORM WATER BMP NOTES

① PROPRIETARY BMP (BF-3), POLLUTANT CONTROL ONLY
② PUMP STRUCTURE BY OTHERS

LEGEND

PROPERTY LINE
RIGHT-OF-WAY
STREET CENTERLINE
EXISTING CONTOUR — 260 —
PROPOSED STORM DRAIN — SD —
DMA LIMITS
DIRECTION OF SURFACE FLOW
DMA DESIGNATION — DMA 1
PERVIOUS AREA
MODULAR WETLAND UNITS — BMP 1(MWS)

20' 0' 10' 20' 40'
SCALE: 1" = 20'

ATTCHMENT 1b - TABULAR SUMMARY OF DMAs

DMA	TOTAL AREA (AC)	TOTAL AREA (SF)	PERVIOUS AREA (SF)	IMPERVIOUS AREA - ROOFS, CONCRETE, ASPHALT (SF)	% IMPERVIOUS	WATER QUALITY WEIGHTED AREA (SF)	WEIGHTED C FACTOR	INITIAL DCV (CF)	POLLUTANT CONTROL TREATMENT METHOD	MWS TREATMENT VOLUME REQUIRED (CF)	MWS TREATMENT VOLUME PROVIDED (CF)
1	1.5	65,910	14,810	51,100	78%	50,433	0.72	2,333	BMP 1 (MWS)	3,500	3,811
2	0.0	0	0	0	0%	0	0.00	0	Self Mitigating	-	-
3	0.0	0	0	0	0%	0	0.00	0	Self Mitigating	-	-
TOTALS	1.5	65,910	14,810	51,100	78%	50,433	0.77	2,333	-	-	-

DMAs 2 & 3 MISSING
4

901 MISSION AVE

ATTACHMENT 1a
DMA EXHIBIT

REVISIONS

NO.	INIT.	DATE	DESCRIPTION	APP'D	DATE

FUSCOE ENGINEERING
6390 Greenwich Dr, Suite 170
San Diego, Ca 92122
858.554.1500
fuscoe.com

JOB NO. 557-017
DRAWN BY: JGB
SHEET 1 of 1

Page: 37

Number: 1 Author: Alex Subject: Callout Date: 6/20/2024 4:31:37 PM

(TYP)

PLEASE VERIFY HOW ONSITE AND OFFSITE GROUND-LEVEL AREAS ARE MITIGATED

DO NOT APPEAR TO DRAIN TO ONSITE BMP

PLEASE VERIFY WHICH AREAS DRAIN TO EXISTING OR PROPOSED GREEN STREETS BMPs

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 4:34:16 PM

PLEASE ELABORATE FURTHER HOW ALL THESE FEATURES ARE PLANNED TO BE IMPLEMENTED

PLEASE PROVIDE ADDITIONAL DETAILS, NOTES, OR SYMBOLOGY AS NEEDED TO DEMONSTRATE PLANNED IMPLEMENTATION

PLEASE INCLUDE SOURCE CONTROL BMPs AS WELL AND SHOW/NOTE IMPLEMENTATION HEREON

Number: 3 Author: Alex Subject: Polygon Date: 6/20/2024 4:30:35 PM

(TYP)

PLEASE DEPICT ALL SURFACES THAT ARE EXPOSED TO RAINFALL (E.G., ROOFTOPS, COURTYARDS, PATIOS, ETC.) AND SHOW HOW THEY CONCEPTUALLY DRAIN TO BMP(s) (E.G., STRUCTURAL, SITE DESIGN)

Number: 4 Author: Alex Subject: Callout Date: 6/20/2024 4:29:18 PM

DMAs 2 & 3 MISSING

ATTACHMENT 1c

Automated Worksheet B.1: Calculation of Design Capture Volume (V2.0)

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	Units
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	BMP 1										unitless
	2	85th Percentile 24-hr Storm Depth	0.59										inches
	3	[1] pervious Surfaces Not Directed to Dispersion Area (C=0.90)	51,100										sq-ft
	4	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)	0										sq-ft
	5	[2] gineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)	14,810										sq-ft
	6	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)	0										sq-ft
	7	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)	0										sq-ft
	8	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)	0										sq-ft
	9	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)	0										sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	No	No	No	No	No	No	No	No	yes/no
	11	Impervious Surfaces **Directed to Dispersion Area** per SD-B (Ci=0.90)											sq-ft
	12	Semi-Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	13	Engineered Pervious Surfaces **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	14	Natural Type A Soil **Serving as Dispersion Area** per SD-B (Ci=0.10)											sq-ft
	15	Natural Type B Soil **Serving as Dispersion Area** per SD-B (Ci=0.14)											sq-ft
	16	Natural Type C Soil **Serving as Dispersion Area** per SD-B (Ci=0.23)											sq-ft
	17	Natural Type D Soil **Serving as Dispersion Area** per SD-B (Ci=0.30)											sq-ft
	18	Number of Tree Wells Proposed per SD-A											#
	19	Average Mature Tree Canopy Diameter											ft
	20	Number of Rain Barrels Proposed per SD-E											#
	21	Average Rain Barrel Size											gal
Initial Runoff Factor Calculation	22	Total Tributary Area	65,910	0	0	0	0	0	0	0	0	0	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	25	Initial Weighted Runoff Factor	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	26	Initial Design Capture Volume	2,333	0	0	0	0	0	0	0	0	0	cubic-feet
Dispersion Area Adjustments	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft
	28	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.72	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	unitless
	32	Design Capture Volume After Dispersion Techniques	2,333	0	0	0	0	0	0	0	0	0	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
	34	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Results	35	Final Adjusted Runoff Factor	0.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	36	Final Effective Tributary Area	47,455	0	0	0	0	0	0	0	0	0	sq-ft
	37	Initial Design Capture Volume Retained by Site Design Elements	0	0	0	0	0	0	0	0	0	0	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	2,333	0	0	0	0	0	0	0	0	0	cubic-feet

No Warning Messages

Page: 39

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 4:20:01 PM

55,798 SF PER BELOW?

+65,910 SF TOTAL
-10,112 SF PERVIOUS
=55,798 SF IMP

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 4:19:28 PM

~10,112 SF ONSITE PER LANDSCAPE PLANS?

+12,246 SF ON-GRADE LANDSCAPE
-4,7050 SF ON-GRADE R/W
+2,571 SF ON PODIUM
=10,112 SF TOTAL ONSITE PERMEABLE AREA

ATTACHMENT 1c

Automated Worksheet B.2: Retention Requirements (V2.0)

Category	#	Description	*i*	*ii*	*iii*	*iv*	*v*	*vi*	*vii*	*viii*	*ix*	*x*	Units
Basic Analysis	1	Drainage Basin ID or Name	BMP 1	-	-	-	-	-	-	-	-	-	unitless
	2	85th Percentile Rainfall Depth	0.59	-	-	-	-	-	-	-	-	-	inches
	3	Predominant NRCS Soil Type Within BMP Location	51,100										unitless
	4	Is proposed BMP location Restricted or Unrestricted for Infiltration Activities?	Restricted										unitless
	5	Nature of Restriction	14,810										unitless
	6	Do Minimum Retention Requirements Apply to this Project?	0	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes/no
	7	Habitable Structures Greater than 9 Stories Proposed?	No										yes/no
Advanced Analysis	8	Has Geotechnical Engineer Performed an Infiltration Analysis?	Yes										yes/no
	9	Design Infiltration Rate Recommended by Geotechnical Engineer	0.680										in/hr
Result	10	Design Infiltration Rate Used To Determine Retention Requirements	0.000	-	-	-	-	-	-	-	-	-	in/hr
	11	Percent of Average Annual Runoff that Must be Retained within DMA	4.5%	-	-	-	-	-	-	-	-	-	percentage
	12	Fraction of DCV Requiring Retention	0.02	-	-	-	-	-	-	-	-	-	ratio
	13	Required Retention Volume	47	-	-	-	-	-	-	-	-	-	cubic-feet

No Warning Messages

Page: 40

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 4:35:39 PM
PLEASE REVISE

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 4:36:00 PM
IF "NO," THEN H&U ASSESSMENT NOT REQUIRED AND IS ASSUMED TO BE INFEASIBLE

Number: 3 Author: Alex Subject: Polygon Date: 6/20/2024 4:36:09 PM
PLEASE PROVIDE SUPPORTING SITE DESIGN BMP CALCULATIONS TO DEMONSTRATE HOW REQUIRED RETENTION VOLUME IS PROVIDED ONSITE

ATTACHMENT 1d

Harvest and Use Feasibility Checklist	Form I-7

1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?

☒ Toilet and urinal flushing

☒ Landscape irrigation

☐ Other:_____

2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.

See attached Harvest and Use Calculation Worksheet on next page.

3. Calculate the DCV using worksheet B-2.1.

DCV = 2,333 (cubic feet)

3a. Is the 36 hour demand greater than or equal to the DCV?	3b. Is the 36 hour demand greater than 0.25DCV but less than the full DCV?	3c. Is the 36 hour demand less than 0.25DCV?
☐ Yes / ☒ No ⇨ ⇩	1 ☐ Yes / ☐ No ⇨ ⇩	☒ Yes ⇩
Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.	Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.	Harvest and use is considered to be infeasible.

Is harvest and use feasible based on further evaluation?

☐ Yes, refer to Appendix E to select and size harvest and use BMPs.

☒ No, select alternate BMPs.

Page: 41

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 4:36:28 PM
"YES" PER FOLLOWING SET OF CALCULATIONS

ATTACHMENT 1d

HARVEST AND REUSE CALCULATION WORKSHEET						
Land Use Type	Toliet User Unit of Normalization	Toliet Flushing	Per Capita Use per Day		Water Efficient Factor	Total Use per Resident or Employee
			Urinals	Visitor Factor		
Residential	Resident	18.5	NA	NA	0.5	9.3

Dwelling Units	268	units
Resident per Unit	2.0	Resident
Toliet and Urinal Demand	666	cubic - feet / day
36 hr. Demand	1,000	cubic - feet
DCV	2,334	cubic - feet
36 hr. Demand ≥ DCV	No	
DCV > 36 hr. Demand > 0.25DCV	Yes	
36 hr. Demand < 0.25DCV	No	
Harvest Use:	May be feasible	

1 Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at and adequate rate to meet drawdown criteria
Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours

Planning Level Irrigation Demand by Plant Factor and Landscape Type		
General Landscape Type	**36-Hour Planning Level Irrigation Demand**	**Units**
Hydrozone - Moderate Plant Water Use	1,470	gal /acre / 36 hrs
36 hr. Demand	67	cubic - feet
DCV	2,334	cubic - feet
36 hr. Demand ≥ DCV	No	
DCV > 36 hr. Demand > 0.25DCV	No	
36 hr. Demand < 0.25DCV	Yes	
Harvest Use:	Not Feasible	

Harvest and use is considered to be infeasible

Page: 42

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 4:36:40 PM

PLEASE EITHER CONDUCT MORE DETAILED EVALUATION OR ELSE BASE INFEASIBIILTY UPON THE STRUCTURE BEING LESS THAN 9 STORIES IN HEIGHT (SEE PREVIOUS COMMENT)

ATTACHMENT 1f

Appendix B: Storm Water Pollutant Control Hydrologic Calculations and Sizing Methods

Worksheet B.6-1: Flow-Thru Design Flows

Flow-Thru Design Flows		Worksheet B.6-1		
			DMA 1	Units
1	DCV*	DCV	2,333	cubic-feet
1	DCV retained**	DCV retained		cubic-feet
3	DCV biofiltered	DCV biofiltered		cubic-feet
4	DCV requiring flow-thru (Line 1 - Line 2 - 0.67 * Line 3)	DCV flow-thru	2,333	cubic-feet
5	Adjustment Factor (Line 4 / Line 1)*	AF=	1.00	unitless
6	Design rainfall intensity	i=	0.20	in/hr
7	Area tributary to BMP (s)	A=	1.5	acres
8	Area-weighted runoff factor (estimate using Appendix B.2)	C=	0.90	unitless
9	Calculate Flow Rate = AF x (C x i x A)	Q=	0.270	cfs
	TREATMENT FLOW REQUIRED (1.5 X FLOW RATE)	2=	0.405	cfs

*DCV as calculated per County of San Diego Worksheet B.1 in SWQMP Attachment 1c

3 *Although retention will be provided via trees, each MWS has been sized for its entire DMA

4 VOLUME-BASED MWS PROVIDED IN ATTACHMENT 4?

PLEASE CLARIFY WHICH CONFIGURATION IS PROPOSED

Page: 47

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 4:37:03 PM

WHILE IT IS UNDERSTOOD THE MWS IS OVERSIZED, THE PROJECT MUST SHOW THAT THE REQUIRED RETENTION VOLUME IS PROVIDED ONSITE

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 4:37:55 PM

Q = 0.412 CFS?

C = 0.90
i = 0.20 IN/HR
A = 65,910 SF

Number: 3 Author: Alex Subject: Polygon Date: 6/20/2024 4:38:11 PM

PLEASE PROVIDE RETENTION VOLUME CALCULATIONS

PLEASE NOTE THAT IF TREE WELL WITH UNDERDRAIN IS TO BE UTILIZED, THE CREDIT MUST BE REDUCED ACCORDINGLY (I.E., LIMTIED ONLY TO 10% OF THE PROVIDED SOIL VOLUME)

Number: 4 Author: Alex Subject: Callout Date: 6/20/2024 5:09:15 PM

VOLUME-BASED MWS PROVIDED IN ATTACHMENT 4?

PLEASE CLARIFY WHICH CONFIGURATION IS PROPOSED

ATTACHMENT 2
BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

1

☒Mark this box if this attachment is empty because the project is exempt from PDP hydromodification management requirements.

Page: 48

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 4:59:26 PM
PLEASE PROVIDE EXHIBIT THAT DOCUMENTS THE EXEMPT FLOW PATH

1

Indicate which Items are Included:

Attachment Sequence	Contents	Checklist
Attachment 2a	1. Hydromodification Management Exhibit (Required)	☐Included See Hydromodification Management Exhibit Checklist.
Attachment 2b	Management of Critical Coarse Sediment Yield Areas (WMAA Exhibit is required, additional analyses are optional) See Section 6.2 of the BMP Design Manual.	☐Exhibit showing project drainage boundaries marked on WMAA Critical Coarse Sediment Yield Area Map (Required) Optional analyses for Critical Coarse Sediment Yield Area Determination ☐6.2.1 Verification of Geomorphic Landscape Units Onsite ☐6.2.2 Downstream Systems Sensitivity to Coarse Sediment ☐6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite
Attachment 2c	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the BMP Design Manual.	☐Not performed ☐Included ☐Submitted as separate stand-alone document
Attachment 2d	Flow Control Facility Design and Structural BMP Drawdown Calculations (Required) Overflow Design Summary for each structural BMP See Chapter 6 and Appendix G of the BMP Design Manual	☐Included ☐Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	☐Included ☐Not required because BMPs will drain in less than 96 hours

Page: 49

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 5:00:12 PM

(TYP)

PLEASE REMOVE ALL ATTACHMENT 2 CHECKLISTS AND PLACEHOLDERS (LEAVE ONLY THE EXEMPTION EXHIBIT)

Indicate which Items are Included:

Attachment Sequence	Contents	Checklist
Attachment 3a	Structural BMP Maintenance Thresholds and Actions (Required)	☒Included See Structural BMP Maintenance Information Checklist.
Attachment 3b	Draft Maintenance Agreement (when applicable)	☒Included ☐Not Applicable

Page: 61

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 5:01:06 PM
N/A FOR PLANNING PHASE

Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

Preliminary Design / Planning / CEQA level submittal:

1

- Attachment 3a must identify:

☒Typical maintenance indicators and actions for proposed structural BMP(s) based on Section 7.7 of the BMP Design Manual

- Attachment 3b is not required for preliminary design / planning / CEQA level submittal.

2

Final Design level submittal:

Attachment 3a must identify:

☒Specific maintenance indicators and actions for proposed structural BMP(s). This shall be based on Section 7.7 of the BMP Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)

☒How to access the structural BMP(s) to inspect and perform maintenance

☒Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)

☒Manufacturer and part number for proprietary parts of structural BMP(s) when applicable

☒Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)

☒Recommended equipment to perform maintenance

☒When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

Attachment 3b: For private entity operation and maintenance, Attachment 3b shall include a draft maintenance agreement in the local jurisdiction's standard format (PDP applicant to contact the City Engineer to obtain the current maintenance agreement forms).

Page: 62

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 5:01:39 PM
PLEASE PROVIDE CURRENT CONTECH MWS MAINTENANCE GUIDE

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 5:02:02 PM
COMPLETE O&M PLAN NOT REQUIRED FOR PLANNING PHASE; THEREFORE, IT WAS NOT REVIEWED

1

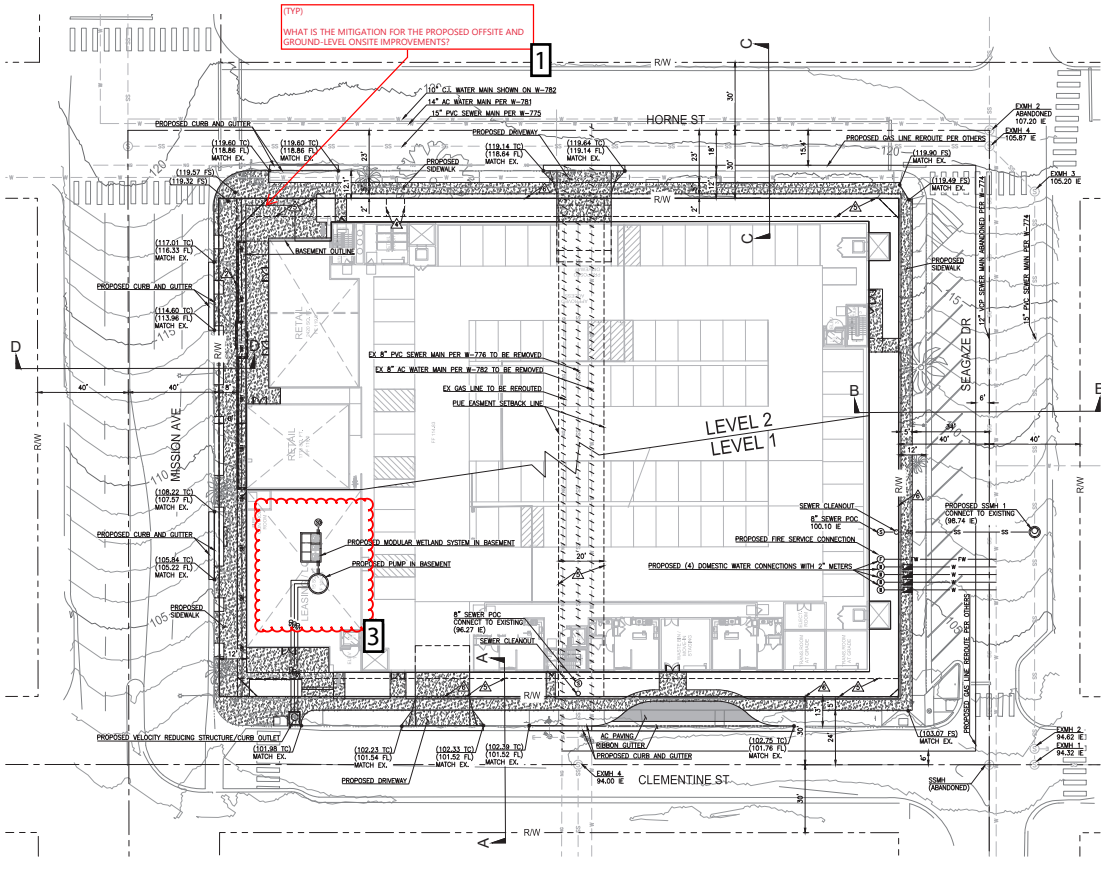
ATTACHMENT 4
Copy of Plan Sheets Showing Permanent Storm Water BMPs

This is the cover sheet for Attachment 4.

Page: 143

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 5:02:35 PM

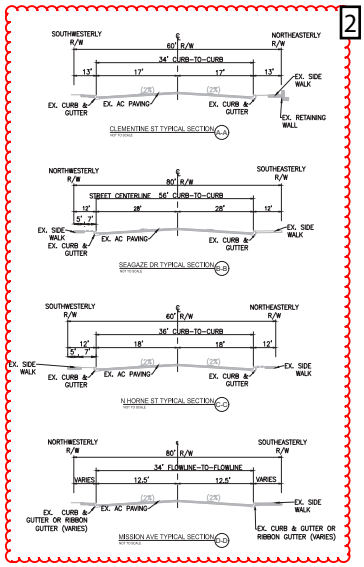
PLEASE PROVIDE COPY OF CONCEPTUAL LANDSCAPE, ROOF, AND PLUMBING PLAN WITH RESUBMITTAL



EASEMENTS OF RECORD PER FILE NO. 00203181

1. ITEM 1 IS NON MAPPING AND NOT SHOWN HEREON
2. EASEMENT FOR PUBLIC HIGHWAY IN FAVOR OF THE CITY OF OCEANSIDE BY DOCUMENT RECORDED JUNE 16, 1969 AS DOC# 1969-106989, 1969-106990, AND 106991 O.R. NOT LOCATABLE OR SHOWN HEREON.

   ITEM 3 IS NON MAPPING AND NOT SHOWN HEREON
3. AN EASEMENT FOR EITHER OR BOTH POLELINES AND UNDERGROUND CONDUITS IN FAVOR OF SAN DIEGO GAS & ELECTRIC COMPANY BY DOCUMENT RECORDED MAY 23, 1978 AS INSTRUMENT NO. 78-209943 OF OFFICIAL RECORDS.
4. AN EASEMENT FOR PUBLIC UTILITIES AND 8' PUBLIC ACCESS, GENERAL UTILITIES AS SHOWN ON TRACT MAP NO. 15581.
5. THE OWNERSHIP OF SAID LAND DOES NOT INCLUDE RIGHTS OF VEHICULAR ACCESS TO HORNE STREET, SEAGAZE DRIVE, CLEMENTINE STREET AND MISSION AVENUE, EXCEPT THE DRIVEWAY OPENINGS FOR LOT 1 OF TRACT NO. 15581.



901 MISSION AVENUE MIXED-USE

OCEANSIDE, CA

F:\PROJECTS\557\017\PLANS\ENTITLEMENTS\0557-17-C4-IP.DWG (05-16-2024 8:42:30AM) Plotted by: JBlackwelder

CONCEPTUAL PUBLIC IMPROVEMENT & UTILITY PLAN

1"=20'

0 20' 40' 60' 80'

RUSCOE ENGINEERING

858.554.1500 fuscoe.com

C4.0

JOB NO. 0557-017

DATE 05-15-2024

Page: 148

Number: 1 Author: Alex Subject: Callout Date: 6/20/2024 5:06:22 PM

(TYP)

WHAT IS THE MITIGATION FOR THE PROPOSED OFFSITE AND GROUND-LEVEL ONSITE IMPROVEMENTS?

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 5:03:33 PM

PLEASE DEPICT PROPOSED GREEN STREETS FEATURES ON TYPICAL SECTIONS

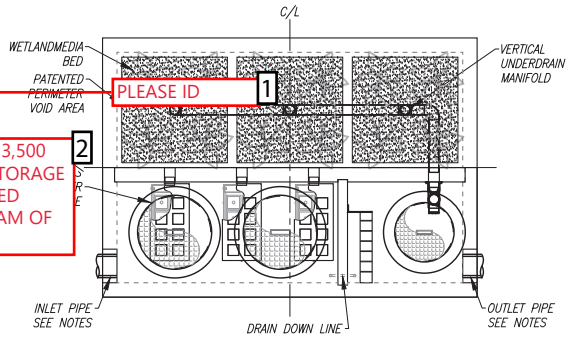
Number: 3 Author: Alex Subject: Polygon Date: 6/20/2024 5:06:54 PM

PLEASE PROVIDE ADDITIONAL PRELIMINARY DETAILS WITH RESUBMITTAL

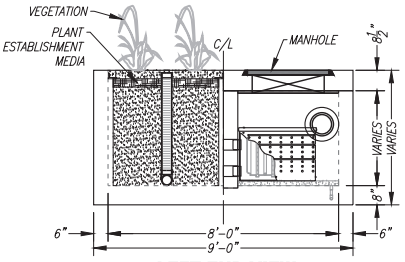
SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME	901 Mission Ave		
PROJECT LOCATION	Oceanside, CA		
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
3,500 CF		N/A	
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			OFFLIN
PIPE DATA	I.E.	MATERIAL	DIAMET
INLET PIPE 1		HDPE	12"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE		HDPE	12"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
FRAME & COVER	2EA ø30"	UNDERGROUND	ø24"
NOTES:			

PLEASE ID 1

HOW IS 3,500 CF OF STORAGE PROVIDED UPSTREAM OF UNIT? 2



PLAN VIEW

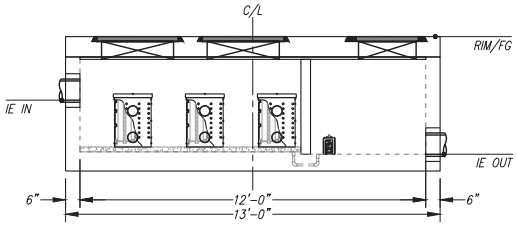


LEFT END VIEW

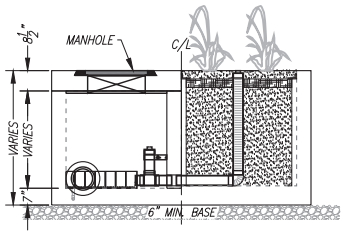
* PRELIMINARY NOT FOR CONSTRUCTION

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATER TIGHT PER MANUFACTURERS STANDARD CONNECTION DETAIL.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING BIO CLEAN FOR ACTIVATION OF UNIT. MANUFACTURERS WARRANTY IS VOID WITH OUT PROPER ACTIVATION BY A BIO CLEAN REPRESENTATIVE.



ELEVATION VIEW



RIGHT END VIEW

TREATMENT VOLUME (CFS)	3,811 CF
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	2.0
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT BIO CLEAN.

Bio Clean — A Forterra Company

MWS-L-8-12-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

Page: 149

Number: 1 Author: Alex Subject: Callout Date: 6/20/2024 5:07:50 PM

PLEASE ID

Number: 2 Author: Alex Subject: Callout Date: 6/20/2024 5:07:40 PM

HOW IS 3,500 CF OF STORAGE PROVIDED UPSTREAM OF UNIT?

FUSCOE ENGINEERING
6390 Greenwich Drive, Suite 170
San Diego, California 92122
tel 858.554.1500 ◦ fax 858.597.0335
www.fuscoe.com

Job Name: 901 Mission Ave
Job #: 557-017
Run Name: Existing Series 100
Date: 5/7/2024
Notes:

Node 1	Node 2	Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (acres)	Comments	BANK 1	BANK 2	BANK 3
102	101	2	120.0	112.3	72.6	0.10	0.15	1 oil Type A			
101	100	5	112.3	102.9	154.5	0.10	0.56	but fill over top?			
100	100	8				0.85	0.10				
100	100	8				0.10	0.66				
						Total =	1.47				

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Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 5:13:17 PM
HSG TYPE D PER NARRATIVE?

```
 FLOW PROCESS FROM NODE    102.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 USER-SPECIFIED RUNOFF COEFFICIENT = .8000
 S.C.S. CURVE NUMBER (AMC II) =  89
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    72.60
 UPSTREAM ELEVATION(FEET) =    120.00
 DOWNSTREAM ELEVATION(FEET) =    112.30
 ELEVATION DIFFERENCE(FEET) =      7.70
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.136
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.850
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      0.82
 TOTAL AREA(ACRES) =      0.15   TOTAL RUNOFF(CFS) =      0.82

****************************************************************************
 FLOW PROCESS FROM NODE    101.00 TO NODE    100.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    112.30  DOWNSTREAM(FEET) =    102.90
 CHANNEL LENGTH THRU SUBAREA(FEET) =   154.50   CHANNEL SLOPE =  0.0608
 CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   5.000
 MANNING'S FACTOR = 0.025   MAXIMUM DEPTH(FEET) =   5.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.850
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 USER-SPECIFIED RUNOFF COEFFICIENT = .8000
 S.C.S. CURVE NUMBER (AMC II) =  89
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.36
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.35
 AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   0.77
 Tc(MIN.) =    2.90
 SUBAREA AREA(ACRES) =     0.56       SUBAREA RUNOFF(CFS) =    3.07
 AREA-AVERAGE RUNOFF COEFFICIENT =  0.800
 TOTAL AREA(ACRES) =        0.7         PEAK FLOW RATE(CFS) =       3.89

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.16   FLOW VELOCITY(FEET/SEC.) =   4.05
 LONGEST FLOWPATH FROM NODE    102.00 TO NODE    100.00 =     227.10 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    100.00 TO NODE    100.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.850
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
```

Page: 172

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 5:15:54 PM

(TYP THROUGHOUT EXISTING ANALYSIS)

CORRESPONDS TO EXISTING CONDITION ~80% IMPERVIOUS?

DOES NOT AGREE WITH NARRATIVES OR SITE CONDITIONS

PLEASE REVISE

FUSCOE ENGINEERING
6390 Greenwich Drive, Suite 170
San Diego, California 92122
tel 858.554.1500 ◦ fax 858.597.0335
www.fuscoe.com

Job Name: 901 Mission Ave
Job #: 557-017
Run Name: Proposed Series 100
Date: 5/7/2024
Notes:

Node 1	Node 2	Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (acres)	Comments	BANK 1	BANK 2	BANK 3
102	101	2	120.0	112.3	72.6	0.10	0.15				
101	100	5	112.3	102.9	154.5	0.10	1.32				
						Total =	1.47				

Page: 175

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 5:16:16 PM
NOT REFLECTIVE OF IMPERVIOUS CONDITIONS

```
 FLOW PROCESS FROM NODE    102.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 1 USER-SPECIFIED RUNOFF COEFFICIENT = .8000
 S.C.S. CURVE NUMBER (AMC II) =  89
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    72.60
 UPSTREAM ELEVATION(FEET) =    120.00
 DOWNSTREAM ELEVATION(FEET) =    112.30
 ELEVATION DIFFERENCE(FEET) =      7.70
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.136
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.850
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      0.82
 TOTAL AREA(ACRES) =      0.15   TOTAL RUNOFF(CFS) =      0.82

****************************************************************************
 FLOW PROCESS FROM NODE    101.00 TO NODE    100.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    112.30  DOWNSTREAM(FEET) =    102.90
 CHANNEL LENGTH THRU SUBAREA(FEET) =   154.50   CHANNEL SLOPE =  0.0608
 CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =   5.000
 MANNING'S FACTOR = 0.025   MAXIMUM DEPTH(FEET) =   5.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.850
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 *USER SPECIFIED(SUBAREA):
 2 USER-SPECIFIED RUNOFF COEFFICIENT = .8500
 S.C.S. CURVE NUMBER (AMC II) =  89
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       4.67
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.23
 AVERAGE FLOW DEPTH(FEET) =   0.19   TRAVEL TIME(MIN.) =   0.61
 Tc(MIN.) =    2.74
 SUBAREA AREA(ACRES) =     1.32       SUBAREA RUNOFF(CFS) =    7.69
 AREA-AVERAGE RUNOFF COEFFICIENT =  0.845
 TOTAL AREA(ACRES) =        1.5         PEAK FLOW RATE(CFS) =       8.51

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.26   FLOW VELOCITY(FEET/SEC.) =   5.28
 LONGEST FLOWPATH FROM NODE    102.00 TO NODE    100.00 =     227.10 FEET.
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)     =        1.5  TC(MIN.) =      2.74
 PEAK FLOW RATE(CFS)   =       8.51
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

Page: 177

Number: 1 Author: Alex Subject: Polygon Date: 6/20/2024 5:18:09 PM
CORRESPONDS TO PROPOSED CONDITION ~80% IMPERVIOUS?

INITIAL SUBAREA LIKELY 100% IMPERVIOUS

Number: 2 Author: Alex Subject: Polygon Date: 6/20/2024 5:18:24 PM
90% IMPERVIOUS?

PLEASE REVISE FOR CONSISTENCY WITH SWQMP

TORY R. WALKER ENGINEERING

City of Oceanside Engineering Department

MEMORANDUM

Date: June 20, 2024

To: Benjamin Grenis, PE
City of Oceanside
300 N. Coast Highway
Oceanside, CA 92054

From: Alex Smith, PE, MS
Tory R. Walker Engineering, Inc.
122 Civic Center Drive
Vista, CA 92084

Subject: Preliminary PDP SWQMP for 901 Mission Avenue (RD24-00002) – 1st Entitlement Review (PC1) for Development Plan

Mr. Grenis,

We have completed our review of the Preliminary Priority Development Project (PDP) Stormwater Quality Management Plan (SWQMP) for the subject project. Based upon our partial review, we find the SWQMP to be incomplete at this time. We have summarized our major comments as follows:

COMMENTS

1. Stormwater Quality Management Plan

1.1. Please provide a written response to all SWQMP comments and redlines.

1.2. Please resubmit a completely "flat" PDF (i.e., no comments, markups, AutoCAD linework, and/or other similar features that become detectable within standard PDF viewer software) at resubmittal. Please ensure all reference plans included within the SWQMP are also flattened accordingly.

1.3. Please address all SWQMP redline comments (provided as a separate PDF).

1.4. Please include all relevant supporting preliminary plans in Attachment 4 for reference (e.g., landscape, roof plans, plumbing plans, etc.).

1.5. Please reference the applicable permit numbers throughout the SWQMP (RD24-00002).

1.6. Please update all reported square footages for proposed disturbed, impervious, and

pervious areas across the "whole of the action" of the project. This includes all onsite and offsite areas to be disturbed, landscaped, or improved as part of the project, including driveways, sidewalks, roadways, and connections to existing roadways adjacent to the project site. Please delineate and identify all applicable surfaces as drainage management areas (DMAs) and ensure all like values remain consistent throughout the SWQMP and its Attachments.

1.7. Please clarify any proposed impacts to existing offsite Green Streets BMPs within the Mission Avenue right-of-way.

1.8. Please provide additional supporting language, symbology, linework, callouts, and other supporting information within the SWQMP and on the DMA Exhibit to document where and how all applicable and feasible source control (SC) and site design (SD) BMPs will be implemented in the post-construction environment. Please document specific planned implementation on SWQMP Forms 3 and 4. Please refer to City of Oceanside BMP Design Manual Chapter 4, Sections 4.2, 4.3, and Appendix E.1 for additional information on applicability of SC & SD BMPs to minimize runoff generation and pollutant loadings to the maximum extent practicable (MEP).

1.9. Please ensure all DMA boundaries and surface types conform to all proposed grading contours/elevations and rooftop ridgelines, roof overhangs, downspout locations, etc. Please use appropriate hatching to distinguish between rooftop, at-grade hardscape, landscaping, rooftop planters, etc. If the rooftop drainage patterns are not precisely known, please clearly state all planning assumptions within the SWQMP and on the DMA Exhibit with the qualifying statement that the DMA boundaries will be confirmed at the engineering phase and synchronized with the supporting plans (e.g., plumbing, architectural, landscape).

1.10. Please demonstrate how the project will satisfy the minimum retention requirements using onsite volume-reducing site design BMPs (e.g., tree wells, dispersion areas, etc.). Please provide supporting details on the DMA exhibit and plans and supporting calculations in Attachment 1.

1.11. (COMMENT ALSO APPLICABLE TO RD23-00005) Please provide a completed Biofiltration Standard Checklist from Attachment F of the City BMP Design Manual. Please document thereon how all applicable biofiltration performance standard criteria will be satisfied the MWS unit and the site civil and landscape design.

1.12. Please clarify if the proposed proprietary biofiltration BMP will be configured as a flow-based or volume-based system. The supporting calculations indicate the former, but the provided detail indicates the latter. If detention is needed, it would likely follow that a volume-based configuration would be desired.

1.13. If detailed capture and use is to be evaluated for the project (only required for habitable structures over 9 stories in height, per BMPDM Appendix B, Section B.4.2 and Automated Pollutant Control Worksheet B.2, Row 7), then please provide more detailed 36-hour demand calculations in accordance with the SWQMP redlines. Otherwise, please note

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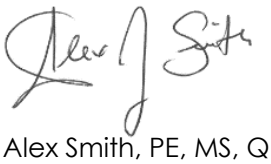
1.14. Please provide an enhanced hydromodification exemption flow path exhibit in SWQMP Attachment 2. Please clearly depict that all post-project flow paths and respective discharge points directly discharge to the exempt receiving water.

1.15. Please clarify the pre-project and post-project runoff coefficients in the provided 100-year Rational Method analysis. Please ensure the values therein are consistent with the information presented in the SWQMP.

Once all requested information is provided, additional comments will follow.

Please call if you have any questions.

Best Regards,



Alex Smith, PE, MS, QISP
Project Manager
Tory R. Walker Engineering, Inc.
(760) 414-9212
alex@trwengineering.com

TORY R. WALKER ENGINEERING

City of Oceanside Engineering Department

MEMORANDUM

Date: June 20, 2024

To: Benjamin Grenis, PE
City of Oceanside
300 N. Coast Highway
Oceanside, CA 92054

From: Alex Smith, PE, MS
Tory R. Walker Engineering, Inc.
122 Civic Center Drive
Vista, CA 92084

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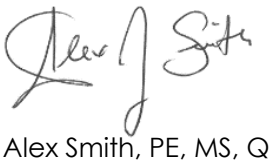
Please call if you have any questions.

Best Regards,



Alex Smith, PE, MS, QISP
Project Manager
Tory R. Walker Engineering, Inc.
(760) 414-9212
alex@trwengineering.com

Map Check Transmittal Letter

June 24, 2024
Eric Armstrong, RCE 36083
Fuscoe Engineering
6390 Greenwich Drive, Suite 170
San Diego, CA 92122

KDM 24-OCN-21
901 Mission Plan – 1st Check

The following should be addressed in order for the map to conform to the Subdivision Map Act, Professional Land Surveyors Act, and City Ordinances/Codes:

1. Address all redline comments on provided pdf.
2. Provide a note including an explanation and/or documentation / citation for any comment not addressed. Failure to provide this may result in your submittal being deemed "Non-responsive" or may be subject to additional reviews.
3. If changes are made to the plan set that were not requested, please note them with your resubmittal. Not providing this information will unnecessarily extend the time required to perform a complete check.

Attached:

1. 901 Mission Plan – 1st Check - Redlines

Conformance to Zoning and General/Specific Plan Requirements is not within the scope of this review.

After all comments have been addressed, request the subsequent submittal box link from Development_Services_Technicians@oceansideca.org and provide a copy of the revised Map and requested items.

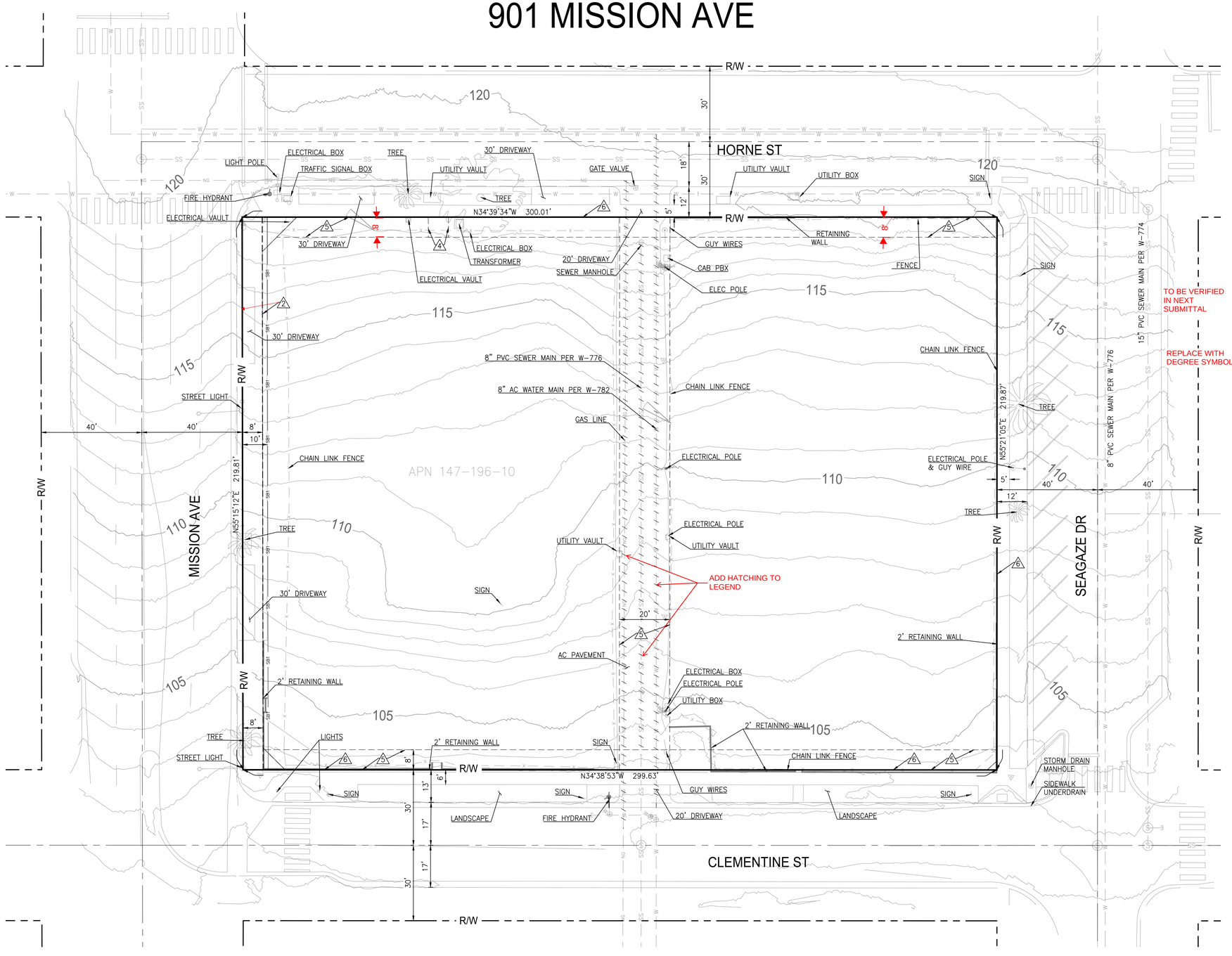
For all questions regarding this map check, please contact Kathleen Layaoen, PLS (oceansidemapchecking@kdmmeridian.com).

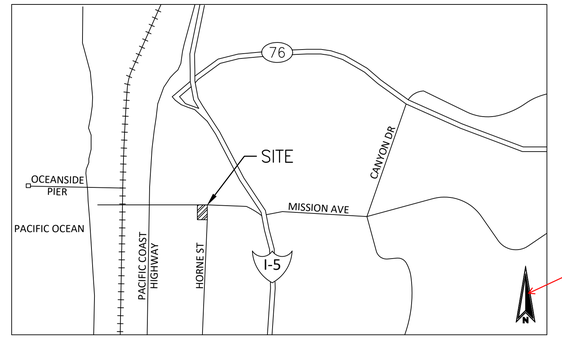
Sincerely,

Richard C. Maher, PLS
President

1ST CHECK

CONCEPTUAL GRADING AND UTILITY PLANS
FOR
901 MISSION AVE





WRONG NORTH ARROW

VICINITY MAP
NTS

SHOULD MATCH CURRENT VESTING DEED (INCLUDE PHONE #)

OWNER/ APPLICANT
JPI DEVELOPMENT COMPANY
12250 EL CAMINO REAL, SUITE 380
SAN DIEGO, CALIFORNIA 92130

NOT SHOWN ON ROS 21787

SURVEY SOURCE
THE TOPOGRAPHIC MAPPING USED FOR THIS SURVEY IS BASED ON A FIELD SURVEY PERFORMED BY PLSA ENGINEERING PER FLIGHT OF 04/10/2024.

TO BE VERIFIED IN NEXT SUBMITTAL

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM, NAD 83 (CCS83) EPOCH 2011, ZONE 6, AS DETERMINED LOCALLY BY A LINE BETWEEN CONTROL STATIONS 1004 AND 1103R BEING A GRID BEARING OF N78°34'08"W AS DERIVED FROM GEODETIC VALUES SHOWN ON ROS NO. 21787, CITY OF OCEANSIDE SURVEY CONTROL, FILED ON JULY 23, 2007 AS FILE NO. 2007-15581 IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY.

REPLACE WITH DEGREE SYMBOL

3.5"

4.ELEVATIONS SHOWN HEREON ARE BASED ON A FOUND BRASS DISC IN WELL MONUMENT, AS SHOWN ON ROS 21787 AS POINT NO. 1004
ELEVATION:120.59' (NAVD 88)

STAMPED "LS 7959"

ZONING
EXISTING ZONE: D-2

PRELIMINARY TITLE REPORT PROVIDED BY CHICAGO TITLE COMPANY ORDER

PARCEL AREA
EXISTING: 1.51 AC
PROPOSED: 1.51 AC

ASSESSORS PARCEL NUMBER
147-196-10

EXISTING LEGAL DESCRIPTION
LOT 1 OF THE BELVEDERE MIXED-USE PROJECT, IN THE CITY OF OCEANSIDE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP NO. 15581, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JULY 23 2007.

GRADING QUANTITIES

TOTAL DISTURBED AREA:	1.51 AC
PROJECT MAX DEPTH OF CUT:	35.1 FT
PROJECT MAX DEPTH OF FILL:	0 FT
MAX CUT SLOPE RATIO:	2:1
MAX FILL SLOPE RATIO:	2:1

ON-SITE GRADING:

DISTURBED AREA:	1.51 AC
AMOUNT OF CUT:	58,400 CY
AMOUNT OF FILL:	0 CY
AMOUNT OF EXPORT:	58,400 CY

GRADING QUANTITIES ARE APPROXIMATE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN. QUANTITIES SHALL NOT BE USED FOR BIDDING PURPOSES.

UTILITIES
ELECTRIC – SDG&E
GAS – SDG&E
TELEPHONE – COX OR AT&T
STORM DRAIN – OCEANSIDE WATER UTILITIES DEPARTMENT
WATER – OCEANSIDE WATER UTILITIES DEPARTMENT
SEWER – OCEANSIDE WATER UTILITIES DEPARTMENT

SHEET INDEX

LEGEND
STREET CENTERLINE
RIGHT OF WAY
EASEMENT
PROPOSED SEWER — SS
SEWER MANHOLE
SEWER CLEANOUT
PROPOSED FIRE WATER — FW
DOMESTIC WATER — W
PROPOSED STORM DRAIN — SD
PROPOSED FIRE HYDRANT
PROPOSED CONCRETE
PROPOSED AC
STORM DRAIN CLEANOUT
STORM DRAIN INLET/CATCH BASIN
SIDEWALK
CURB AND GUTTER
MODULAR WETLAND SYSTEM (MWS)

THIS IS PLOTTABLE AND SHOWN HEREON

EASEMENTS NOTES PER FILE NO. 00203181

FILE/PAGE NO.

1 ITEM 1 IS NON MAPPING AND NOT SHOWN HEREON

2 EASEMENT FOR PUBLIC HIGHWAY IN FAVOR OF THE CITY OF OCEANSIDE BY DOCUMENT RECORDED JUNE 16, 1969 AS ~~DOC# 1969-106989, 1969-106990~~ AND 106991 O.R. NOT LOCATABLE OR SHOWN HEREON.

ADD SPACE

ITEM 3 IS NON MAPPING AND NOT SHOWN HEREON

ELECTRIC

4 AN EASEMENT FOR ~~EITHER OR BOTH~~ POLELINES AND UNDERGROUND CONDUITS IN FAVOR OF SAN DIEGO GAS & ELECTRIC COMPANY BY DOCUMENT RECORDED MAY 23, 1978 AS ~~INSTRUMENT~~ NO. 78-209943 OF OFFICIAL RECORDS.

FILE/PAGE

5 AN EASEMENT FOR PUBLIC UTILITIES AND 8' PUBLIC ACCESS, GENERAL UTILITIES AS SHOWN ON ~~TRACT~~ MAP NO. 15581.

MAP

6 THE OWNERSHIP OF SAID LAND DOES NOT INCLUDE RIGHTS OF VEHICULAR ACCESS TO HORNE STREET, SEAGAZE DRIVE, CLEMENTINE STREET AND MISSION AVENUE, EXCEPT THE DRIVEWAY OPENINGS FOR LOT 1 OF ~~TRACT~~ NO. 15581.

SHOULD BE CLEARLY DELINEATED ON THE MAP. USE HATCHING AS SHOWN ON MAP NO. 15581

SHOULD BE SIGNED OR LABELLED AS PRELIMINARY

AND WRITE DATE OF PREPARATION

REGISTERED PROFESSIONAL ENGINEER
ERIC K. ARMSTRONG
No. RCE 36083
Civil
STATE OF CALIFORNIA

901 MISSION AVENUE MIXED-USE

OCEANSIDE, CA

F:\PROJECTS\557\017\PLANS\ENTITLEMENTS\0557-17-C1-TS.DWG (05-15-2024 6:12:14PM) Plotted by: JBlackwelder

TITLE SHEET & EXISTING CONDITIONS PLAN

NORTH

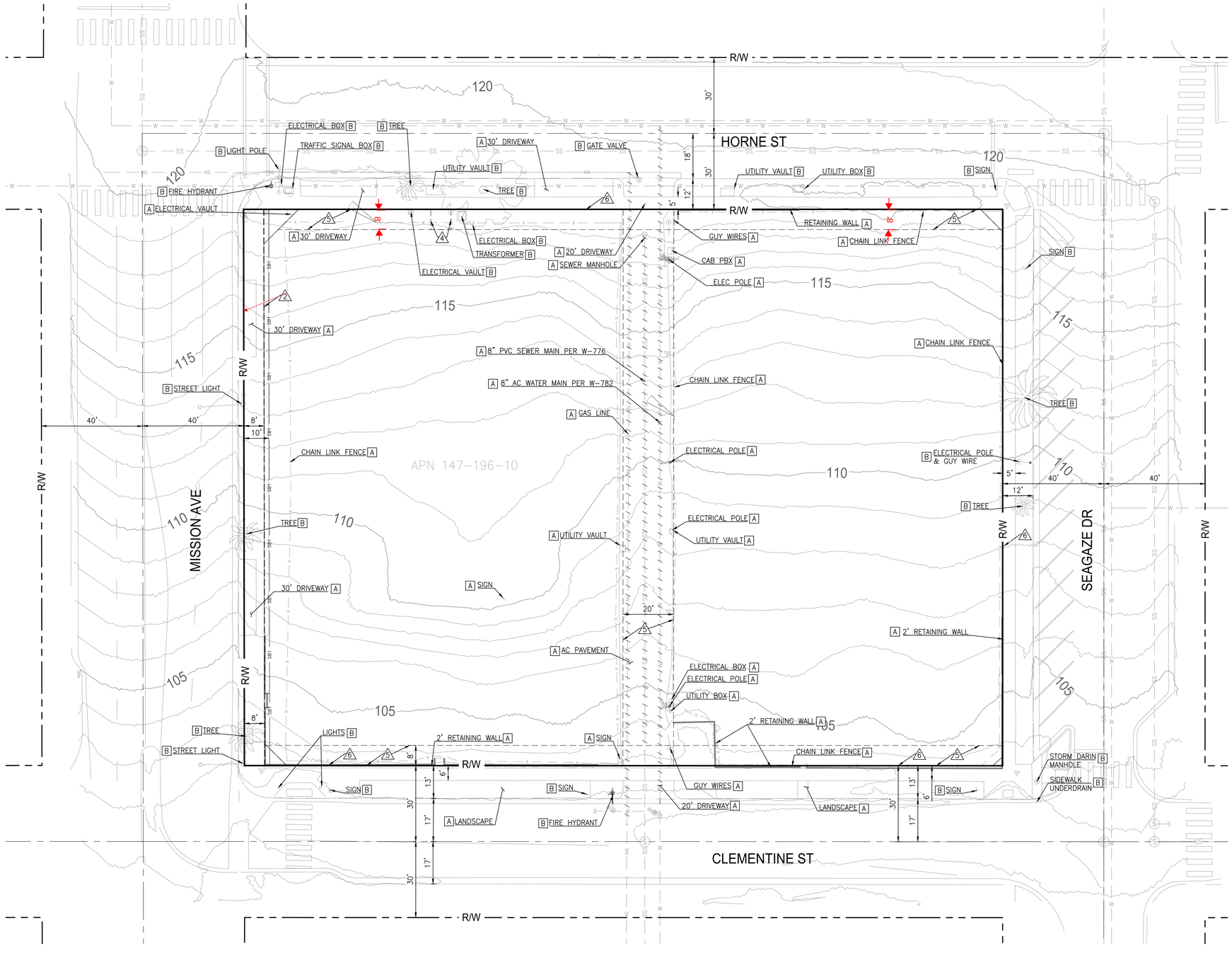
1"=20'
0 20' 40' 60' 80'

FUSCOE ENGINEERING
6390 Greenwich Dr, Suite 170
San Diego, Ca 92122
858.554.1500
fuscoe.com

C1.0

JOB NO. 0557-017
DATE 05-15-2024

1ST CHECK



SEE COMMENTS ON SHEET C1.0

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DEMOLITION NOTES

- [A] EXISTING TO BE REMOVED
- [B] EXISTING TO REMAIN – PROTECT IN PLACE
- [C] ADJUST TO NEW GRADE

NOTICE TO CONTRACTOR

1. ADJUST ALL SURFACE UTILITES WITHIN LIMITS OF WORK TO PROPOSED GRADES
2. THE UPPER 24 INCHES OF SITE SOILS SHOULD BE REMOVED & RE-COMPACTED IN AREAS OF SIDEWALKS & SURFACE PARKING. IF LOOSE, DISTURBED, OR OTHERWISE USUITABLE MATERIALS ARE ENCOUNTERED AT THE BOTTOM OF EXCAVATION, DEEPER REMVOAL WILL BE REQUIRED UNTIL FIRM NATIVE SOILS ARE ENCOUNTERED. SEE GEOTECHNICAL REPORT SECTION 7.2 FOR OVER-EXCAVATION INFORMATION.

901 MISSION AVENUE MIXED-USE

OCEANSIDE, CA

F:\PROJECTS\557\017\PLANS\ENTITLEMENTS\0557-17-C2-DM.DWG (05-15-2024 6:10:40PM) Plotted by: JBlackwelder

REGISTERED PROFESSIONAL ENGINEER ERIC K. ARMSTRONG No. RCE 36083 Civil STATE OF CALIFORNIA

DEMOLITION PLAN

1"=20'

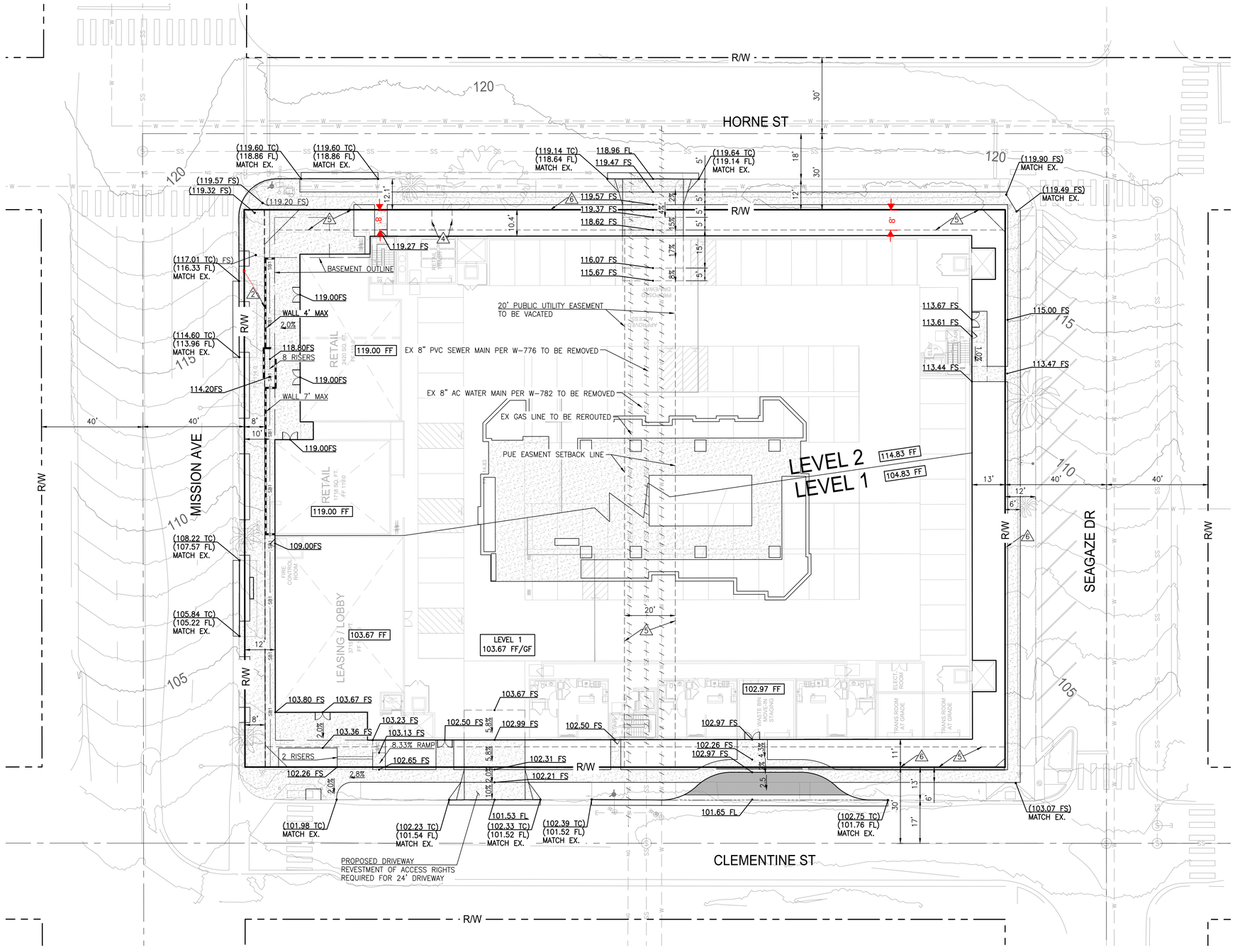
0 20' 40' 60' 80'

FUSCOE ENGINEERING
6390 Greenwich Dr, Suite 170
San Diego, Ca 92122
858.554.1500
fuscoe.com

JOB NO. 0557-017
DATE 05-15-2024

C2.0

1ST CHECK



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   ITEM 3 IS NON MAPPING AND NOT SHOWN HEREON
4. AN EASEMENT FOR EITHER OR BOTH POLELINES AND UNDERGROUND CONDUITS IN FAVOR OF SAN DIEGO GAS & ELECTRIC COMPANY BY DOCUMENT RECORDED MAY 23, 1978 AS INSTRUMENT NO. 78-209943 OF OFFICIAL RECORDS.
5. AN EASEMENT FOR PUBLIC UTILITIES (TO BE VACATED) AND 8' PUBLIC ACCESS, GENERAL UTILTIES AS SHOWN ON TRACT MAP NO. 15581.
6. THE OWNERSHIP OF SAID LAND DOES NOT INCLUDE RIGHTS OF VEHICULAR ACCESS TO HORNE STREET, SEAGAZE DRIVE, CLEMENTINE STREET AND MISSION AVENUE, EXCEPT THE DRIVEWAY OPENINGS FOR LOT 1 OF TRACT NO. 15581.

901 MISSION AVENUE MIXED-USE

OCEANSIDE, CA

F:\PROJECTS\557\017\PLANS\ENTITLEMENTS\0557-17-C3-GP.DWG (05-20-2024 4:13:44PM) Plotted by: JBlevins

REGISTERED PROFESSIONAL ENGINEER ERIC K. ARMSTRONG No. RCE 36083 Civil STATE OF CALIFORNIA

CONCEPTUAL GRADING PLAN

1"=20'

0 20' 40' 60' 80'

FUSCOE ENGINEERING
6390 Greenwich Dr, Suite 170
San Diego, Ca 92122
858.554.1500
fuscoe.com

C3.0

JOB NO. 0557-017
DATE 05-15-2024

1ST CHECK

SEE COMMENTS ON SHEET C1.0

EASEMENTS OF RECORD PER FILE NO. 00203181

1. ITEM 1 IS NON MAPPING AND NOT SHOWN HEREON
2. EASEMENT FOR PUBLIC HIGHWAY IN FAVOR OF THE CITY OF OCEANSIDE BY DOCUMENT RECORDED JUNE 16, 1969 AS DOC# 1969–106989, 1969–106990, AND 106991 O.R. NOT LOCATABLE OR SHOWN HEREON.

   ITEM 3 IS NON MAPPING AND NOT SHOWN HEREON
4. AN EASEMENT FOR EITHER OR BOTH POLELINES AND UNDERGROUND CONDUITS IN FAVOR OF SAN DIEGO GAS & ELECTRIC COMPANY BY DOCUMENT RECORDED MAY 23, 1978 AS INSTRUMENT NO. 78–209943 OF OFFICIAL RECORDS.
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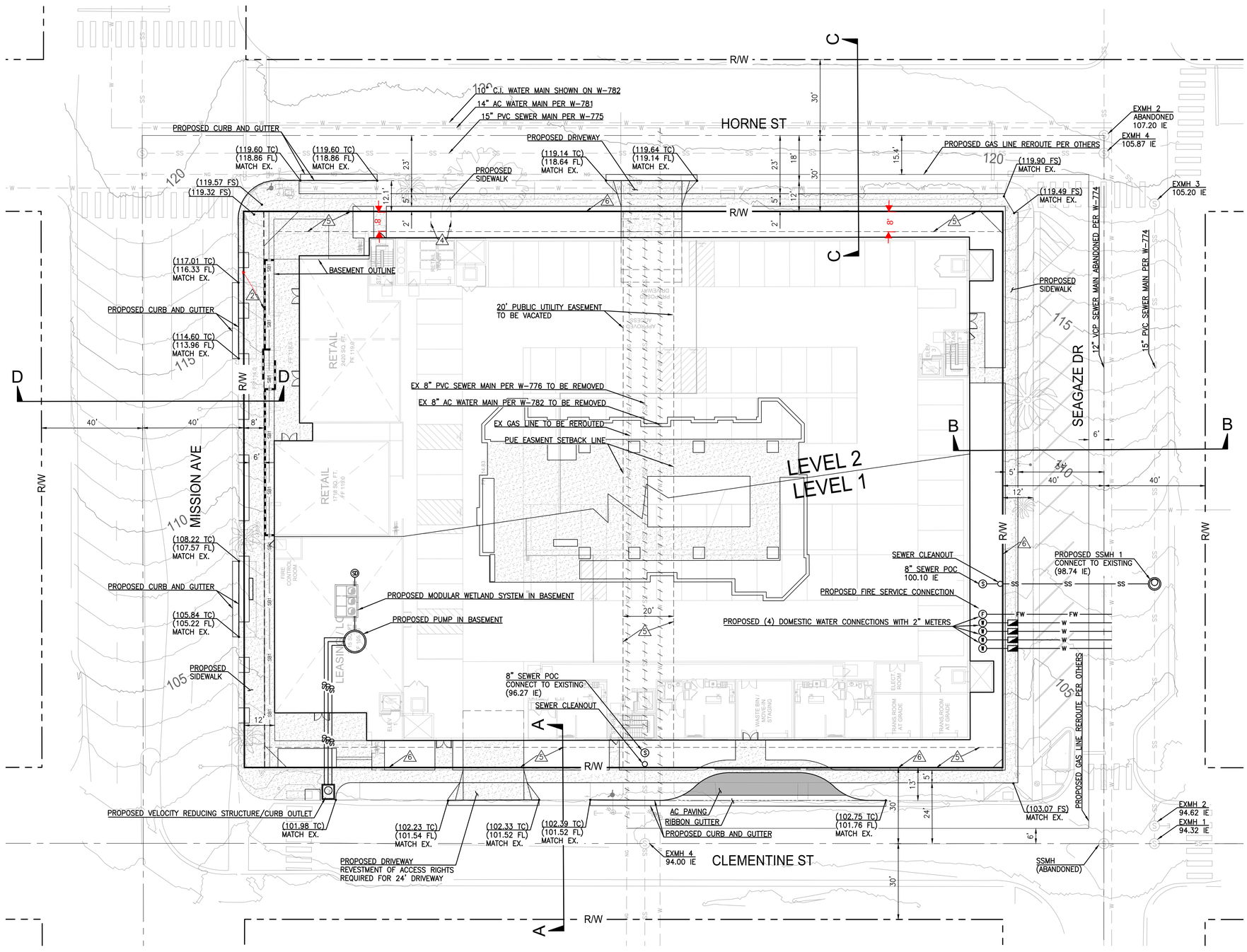
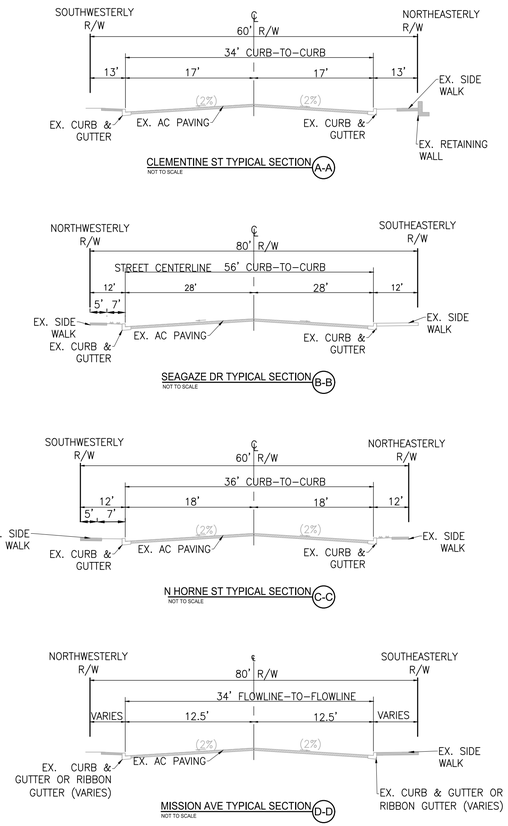




JPI

901 MISSION AVENUE MIXED–USE

OCEANSIDE, CA

F:\PROJECTS\557\017\PLANS\ENTITLEMENTS\0557–17–C4–IP.DWG (05–20–2024 4:15:42PM) Plotted by: JBlevins

REGISTERED PROFESSIONAL ENGINEER ERIC K. ARMSTRONG No. RCE 36083 Civil STATE OF CALIFORNIA

CONCEPTUAL PUBLIC IMPROVEMENT & UTILITY PLAN

NORTH

1"=20'

0 20' 40' 60' 80'

FUSCOE ENGINEERING
6390 Greenwich Dr, Suite 170
San Diego, Ca 92122
858.554.1500
fuscoe.com

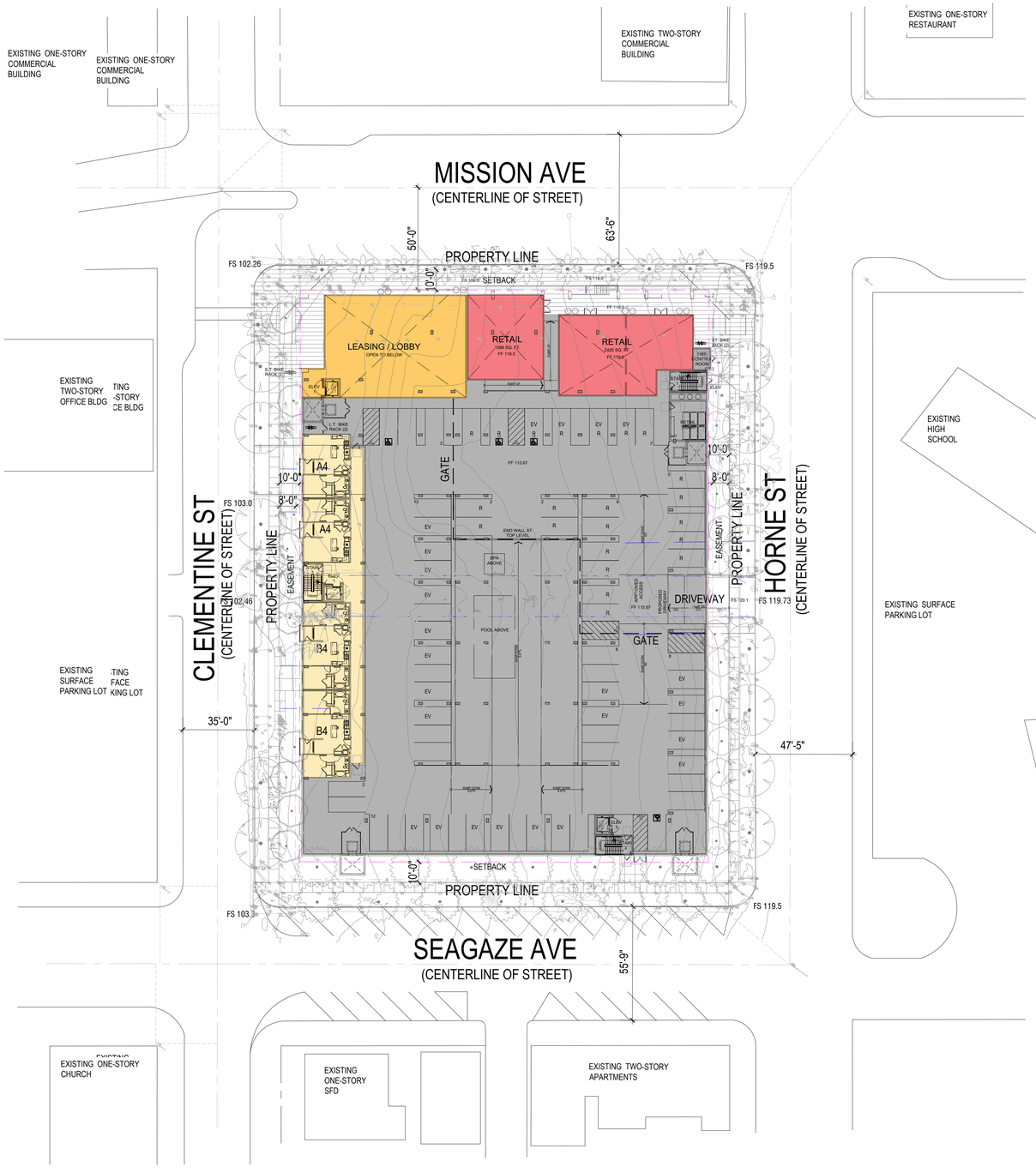
C4.0

JOB NO. 0557–017
DATE 05–15–2024

1ST CHECK

LEGEND

- RETAIL
- LEASING AND AMENITIES
- RESIDENTIAL
- PARKING



FEE BOUNDARY UNCLEAR. CONSIDER CHANGING COLOR TO BLUE LIKE IN SHEET A2.0.

PLOT AND LIST EXISTING EASEMENTS.

SHOW BENCHMARK INFORMATION AND BOUNDARY DIMENSIONS.

SHOW DISTANCE OF PROPOSED STRUCTURES TO PL.

901 MISSION AVENUE MIXED-USE

OCEANSIDE, CA

MIXED-USE BUILDING
SITE PLAN

1"=30'

0 30' 60' 90' 120'

A1.0

JOB NO. 2023-0939
DATE 05-22-2024

CITY OF OCEANSIDE

PUBLIC WORKS DEPARTMENT

901 MISSION AVE RD24-00002

Traffic Study Comments:

1. Update the Project Information Form. The City already moved toward using only ITE Trip Rate and will not approve project using SANDAG Trip Rate anymore.

The Transportation Section's comments are outlined below:

1. Development Plan:
    a. C4.0 – note that the driveway off of Horne shall be 24 feet wide
    b. A1.0 to A2.1 - show 2-foot clearance for stalls adjacent to a wall (at the end of an aisle)
    c. A1.0 – provide more details on the "gate" that is shown. How will it open? Show turning template for someone who cannot access gate. Etc.
    d. A2.0 – What is the "storage" area? Is it closed in? Is it cupboards? Clarify.
    e. A2.1 – Show that the driveways are 24 feet wide
2. Show existing signage, striping, curb markings, and traffic control (stops, signals) around the project site
3. Show pork chop at Seagaze and Clementine
4. Verify that ADA ramps around the site are up to current standards
5. Show corner sight distance at the two driveways. Also, keep in mind that drivers can see pedestrians coming down the sidewalk when they are existing the driveways (show that sight distance, as well)
6. Show all bike parking onsite and offsite for the commercial portion of the project. How may onsite bike parking will be available?
7. Show street light plans (what is existing and proposed)
8. When people are to move in, where will the moving truck or POD be able to park? What about when there are deliveries?
9. Project shall provide dedicated 8 feet or ROW along the project frontage on Horne Street.

10. The project shall install a landscape median island along Mission Avenue between Clementine Street and Horne Street to satisfaction of the City Engineer

(Parent) Project Number: RD24-00002
Project Name: 901 Mission Ave Mixed-Use
Project Planner: Nathalie Vazquez

Application Review Committee
Division Comments- Water Utilities

Development Services Department
300 N. Coast Hwy, Oceanside, CA 92054 | (760) 435-4373

To be filled out by Project Planner

Project/property address and/or APN: 901 Mission Avenue (APN: 147-196-10)
Project description: A 272 unit multi-family residential development with approximately 4,006 square feet of retail/commercial space. Building will consist of 5-stories of residential and commercial space over 3 levels of a parking structure.

To be filled out by ARC Division Reviewer

☒ **1st** ☐ **2nd** ☐ **3rd** ☐ **4th** **Review** **Date: 06/26/2024**

Staff member: Bryan Kallenbaugh

Phone number: (760) 435-5860

E-mail: bkallenbaugh@oceansideca.org

☐ Approved w/Conditions
☐ Returned for Corrections – 15 Days
☒ Returned for Corrections – 30 Days

(include attachments/forms on TRAKiT, if applicable):

The following comment(s) shall be addressed to deem the entitlement application complete.

1. A water study and sewer study must be prepared by the developer at the developer's expense and approved by the Water Utilities Department. The water study shall demonstrate that adequate fire flows and pressures can be delivered to the development. The sewer study shall determine if the existing downstream sewer collection system has adequate capacity to serve the proposed development. Sewer flow monitoring downstream of the proposed development may be required by a City approved flow monitoring company for at least a one-week period to confirm existing sewer capacity.
2. Developer shall design, permit, and construct a new 12-inch PVC water main along Mission Avenue from Horne Street to Clementine Street and along Clementine Street from Mission Avenue to Seagaze Drive and connect to the existing 10-inch ACP water main at the intersection of Seagaze Drive and Clementine Street. The water main shall also connect to the existing 8-

inch ACP water main along Clementine Street at the alley between Mission Aveue and Seagaze Drive. The new water main will replace the abandoned water main located in the alley of Mission Avenue.

The development plan shall reflect all requested comments above in next resubmittal for review and approval by the Water Utilities Department prior to the Planning Commission's consideration.

General Conditions:

3. The developer will be responsible for developing all water and sewer utilities necessary to develop the property. Any relocation of water and/or sewer utilities is the responsibility of the developer and shall be done by an approved licensed contractor at the developer's expense.
4. All Water and Wastewater construction shall conform to the most recent edition of the *Water, Sewer, and Recycled Water Design and Construction Manual* or as approved by the Water Utilities Director.
5. The property owner shall maintain private water and wastewater utilities located on private property.
6. Water services and sewer laterals constructed in existing right-of-way locations are to be constructed by an approved and licensed contractor at developer's expense.
7. Minimum separation between water services and sewer laterals shall be 10 feet.
8. Water facilities, backflows or meters, shall have a minimum 10' separation from trees. Palm tree minimum separation is lowered to 5' from water facilities.
9. Each new residential dwelling unit or commercial suite shall be metered individually.
10. For new buildings with multiple residential dwelling units; the City has accepted, as an alternative, a public master meter for each building provided there is a private sub-meter for each individual dwelling unit. The Building Owner would be responsible for the ownership, maintenance, reading, and replacement of the private sub-meters.

11. The commercial spaces that are associated with and support the residential units may be served by the residential domestic water meter(s). Any commercial space that will operate as a separate business and serve the public shall have it's own separate dedicated commercial water meter.
12. Provide a separate irrigation water meter with reduced pressure principle backflow device for common area landscaping. Meter shall be managed and paid for by the Property Owner of the development. An address assignment will need to be completed for the meter, and can be processed through the City Planning Department.
13. Per the latest approved California Fire Code, all new residential units shall be equipped with fire sprinkler system.
14. Buildings requiring an NFPA 13 or NFPA 13R automatic sprinkler system for fire protection shall have a dedicated fire service connection to a public water main with a double check detector backflow assembly. Location of the backflow assembly must be approved by Fire Department.
15. Hot tap connections will not be allowed for size on size connections, and connections that are one (1) pipe size smaller than the water main. These connections shall be cut-in tees with three valves for each end of the tee. Provide a connection detail on the improvement plans for all cut-in tee connections.

The following conditions shall be met prior to the approval of engineering design plans.

16. Any water and/or sewer improvements required to develop the proposed property will need to be included in the improvement plans and designed in accordance with the *Water, Sewer, and Recycled Water Design and Construction Manual.*
17. All public water and/or sewer facilities not located within the public right-of-way shall be provided with easements sized according to the *Water, Sewer, and Recycled Water Design and Construction Manual.* Easements shall be constructed for all weather access.
18. No trees, structures or building overhang shall be located within any water or wastewater utility easement.
19. Minimum separation between water services and sewer laterals shall be 10 feet.

20. Water facilities, backflows or meters, shall have a minimum 10’ separation from trees. Palm tree minimum separation is lowered to 5’ from water facilities.
21. Recycled water is anticipated to be supplied through pipelines in N. Horne Street in the near future. When recycled water becomes available, this property will be required to convert its irrigation supply to recycled water. The irrigation system shall be designed in anticipation of a future recycled water service with a meter located near the future line. The system design shall meet the recycled water requirements of the City’s Water, Sewer, and Recycled Water Design and Construction Manual.
22. Developer shall prepare and submit recycled water irrigation plans to the Water Utilities Department for an independent review and pay a separate recycled water review fee. The review shall include the processing, plan submittal, permitting, inspection, and testing of the proposed irrigation system for approval by the State Water Resources Control Board / San Diego County Department of Environmental Health and Quality for on-site recycled water use. If Development is responsible for the irrigation or maintenance of any landscaping in the right-of-way, then a separate/dedicated recycled irrigation meter and service shall be required for this irrigation system. Local regulations do not permit a single irrigation meter to service landscaping areas across property lines.
23. If the City determines that the anticipated recycled water main in N. Horne Street will not be constructed in the near future, then the developer shall pay a recycled water impact fee, per City of Oceanside Ordinance No. 14-OR0565-1, since the proposed project is not within 75 feet of a recycled water main. The impact fee shall be established by submitting a formal letter requesting the City to determine this fee, which is based on 75% of the design and construction cost to construct a recycled water line fronting the property in N. Horne Street.
24. A water study and sewer study must be prepared by the developer at the developer’s expense and approved by the Water Utilities Department. The water study shall demonstrate that adequate fire flows and pressures can be delivered to the development. The sewer study shall determine if the existing downstream sewer collection system has adequate capacity to serve the proposed

development. Sewer flow monitoring downstream of the proposed development may be required by a City approved flow monitoring company for at least a one-week period to confirm existing sewer capacity. Off-site improvements may be required as a result of the studies and flow monitoring. Off-site improvements may include replacing sewer infrastructure that is in poor condition that would be exacerbated by the development.

25. Developer shall design, permit, and construct a new 12-inch PVC water main along Mission Avenue from Horne Street to Clementine Street and along Clementine Street from Mission Avenue to Seagaze Drive and connect to the existing 10-inch ACP water main at the intersection of Seagaze Drive and Clementine Street. The water main shall also connect to the existing 8-inch ACP water main along Clementine Street at the alley between Mission Aveue and Seagaze Drive. The new water main will replace the abandoned water main located in the alley of Mission Avenue.
26. An Oil and Sand Interceptor, as described by the latest adopted California Plumbing Code Chapter 10, relating to garages, gasoline stations, wash racks or when deemed necessary shall be shown on building plans at each building sewer in an appropriate location and shall be maintained in accordance with the Fats, Oil, and Grease permit. The location shall be shown on the approved Engineering Plans with reference to Building Plans for design and detail.
27. A Grease Interceptor, as required per City of Oceanside Ordinance 07-OR0021-1 & 18-OR0021-1 relating to food service establishments shall be on each building sewer when deemed necessary in an appropriate outside location and shall be maintained by the property owner. The grease interceptor shall be shown on Engineering Plans with reference to Building Plans for design and detail.
28. Connections to public sewer main with 6-inch or larger sewer lateral will require a new sewer manhole for connection to main per Section 3.3 of *Water, Sewer, and Recycled Water Design and Construction Manual*.
29. Connection to an existing sewer manhole will require rehabilitation of the manhole per City standards. Rehabilitation may include, but not be limited to, re-channeling of the manhole base,

surface preparation and coating the interior of the manhole, and replacing the manhole cone with a 36" opening and double ring manhole frame and lid.

30. An inspection manhole as described by the Water, Sewer, and Recycled Water Design and Construction Manual, shall be on each building sewer lateral and the location shall be called out on the approved engineering plans.
31. Any commercial space that will operate as a separate business and serve the public shall have it's own separate sewer lateral from the residential units. Sewage from all units (commercial, residential) may combine on site before entering the public sewer system, but the commercial space sewage shall be capable of being isolated and sampled on site.
32. A separate irrigation meter and connection with an approved backflow prevention device is required to serve common landscaped areas and shall be displayed on the plans.
33. Provide peak irrigation flows per zone or control valve to verify size of irrigation meter and reduced pressure principle backflow device on Landscape Plans.
34. Provide stationing and offsets for existing and proposed water service connections and sewer laterals on the plans.
35. Subterranean parking structures shall be designed with a drainage system that conveys runoff to the City's Storm Drain System and shall comply with the California Regional Water Quality Control Board Order No. 2013-0001.
36. Any unused water mains and services or sewer mains and laterals by the proposed development, shall be abandoned in accordance with Water Utilities requirements. If an existing water meter is abandoned then a credit will be applied towards future buy-in fees in the amount of the buy-in fee of the existing meter.

The following conditions of approval shall be met prior to building permit issuance.

37. Show location and size of existing and proposed water meter(s) on site plan of building plans. Show waterline from proposed meter to connection point to building.
38. Indicate the size and location of the private water sub-meters.

39. Show location and size of existing and proposed sewer lateral(s) from property line or connection to sewer main to connection point at building.
40. Provide a fixture unit count table and supply demand estimate per the latest adopted California Plumbing Code (Appendix A) to size the water meter(s) and service line(s).
41. Provide drainage fixture unit count per the latest adopted California Plumbing Code to size sewer lateral for property.
42. If a Grease Interceptor is required per City of Oceanside Ordinance 07-OR0021-1, then building plans must show sizing calculations per the latest California Plumbing Code, the location, the make and model, and plumbing schematic showing the required appurtenances at each building sewer lateral.
43. If a Sand and Oil Separator is required, then building plans must show drainage fixture unit count and calculations per the latest California Plumbing Code to size oil and sand separator and show on plans the location, make and model of separator, inlet/outlet piping, and a plumbing schematic of the separator along with the required appurtenances at each building sewer lateral.
44. Water and Wastewater Buy-in fees and the San Diego County Water Authority Fees are to be paid to the City at the time of Building Permit issuance per City Code Section 32B.7.

NORTH COUNTY
TRANSIT DISTRICT

Bus Stop Development Handbook

March 2018

Table of Contents

1.0 Introduction

This guidebook has been designed to help planners, developers, architects, and engineers understand the physical requirements of public transportation and to provide a uniform guide for the design and placement of various bus-related facilities and amenities. The transit system's stops and facilities are an important feature of the transit system, as they provide the "first impression" for customers. Additionally, when done correctly, proper stop and amenity placement throughout the service area helps to improve customer satisfaction as well as encourage the use of the transit system and, in turn, help communities achieve established sustainability goals and improve the overall quality of life.

The guidelines provided in this document are consistent with North County Transit District's (NCTD) policies to ensure that public transportation is included as a part of the early stages of the planning process. Coordination between public transit and land development at the beginning of the planning process can prevent the need for costly, less effective modifications later on, as well as ensure that safety considerations and transit customer needs reflected in the design.

We have included specific design standards for public transportation facilities and vehicles. These guidelines were developed primarily for application in areas where new bus transit services are proposed or where modifications or improvements to existing service are necessary to facilitate safe and efficient bus operations, in addition to a safe and comfortable environment for passengers and adequate pedestrian and bicycle facilities. Overall, these guidelines consider the transit system as a whole, including the importance of mobility options, safety, aesthetics, and community context.

The guidelines for providing these transit facilities and amenities are based on the following considerations:

1. Basic bus operations and safety requirements;
2. Current engineering practices in North San Diego County;
3. Amenities necessary for attracting and increasing transit ridership;
4. Anticipated benefits to developers or agencies in providing transit services to their future residents, tenants, and customers;
5. Compatibility of the improvements with other roadway uses; and
6. The Americans with Disabilities Act (ADA)

We at NCTD want to work with you to develop an environment that will be more conducive to and more accessible by public transit. Please feel free to contact our Transit Planning and Bus Operations Division with questions or to schedule an appointment with a planner.

Principal Contact: Damon Blythe - Chief Operations Officer - Transit Planning and Bus Operations
North County Transit District
810 Mission Avenue
Oceanside, CA 92054
Phone (760)-966-6708
Email dblythe@nctd.org

2.0 NCTD Service Overview

The North County Transit District (NCTD) provides public transportation services to North County San Diego across a 1,000 sq.mi. area, connecting residents and visitors to jobs, schools, medical centers, and other points of interests. In addition to expanding modal choice across the community, NCTD services enable mobility for those who have limited travel options, including seniors and persons with disabilities. Serving as the coastal gateway to the San Diego region, the NCTD multi-modal system consists of COASTER commuter rail, SPRINTER hybrid rail, BREEZE fixed-route bus, FLEX demand response, and LIFT complementary paratransit services. In calendar year 2016, NCTD carried more than 11.5 million passengers throughout North San Diego County.

NCTD's service area spans across nine cities, unincorporated areas of San Diego County, tribal lands, and a major military base that serves as the largest employer in San Diego County. Each of these entities contain diverse populations with differing community visions and land use plans, resulting in differing types of service levels and modes to best meet the area's travel needs. Development projects must take into consideration the characteristics of NCTD services and associated vehicles when designing infrastructure. Roadways, intersections, stops, and other facilities, as outlined in this guidebook, must be designed in a manner that accommodates NCTD's transit vehicles to ensure safety for both the passenger and service provider.

3.0 Bus Stop Guidelines

Obstacles to improving transit infrastructure – lack of sidewalk and bike network, available space for stop infrastructure (including ADA), accessible neighborhood sidewalks connecting to stops, accessible street crossings. Work with city departments to make improvements and encourage continued upgrades to complete the networks, especially during other construction projects.

3.1 Curb-Side Improvements

Passenger comfort, safety, and convenience are all impacted by bus stop features that are located off the street or roadway, commonly referred to as curbside improvements. This section outlines how developers and jurisdictions can appropriately locate bus stops and choose the correct stop type, as well as information on general preferred and recommended curbside improvements.

3.1.1 Bus Stop Types

The design of a bus stop can often impact the amount of ridership at that particular location. A stop must be accessible, safe, and convenient for passengers. NCTD has developed three distinct bus stop types – the basic stop, the bench stop, and the shelter stop – as well as stops associated with transit stations/centers.

BASIC STOPS are characterized by the presence of a bus stop sign only, and do not contain passenger amenities like benches or shelters. These stops are generally utilized in rural areas or those areas with lower density and lower ridership. Basic stops are required to meet ADA design requirements.

BENCH STOPS are basic transit stops with the addition of a bench for waiting passengers and trash receptacles. In some cases, additional amenities such as lighting or bicycle racks may be warranted. Bench stops are best suited for areas with low to medium density and ridership.

	Required Amenities	Recommended Amenities	Optional Amenities
Bench Stops	• Bus stop sign • ADA accessible pad • Bench • Connection to adjacent sidewalks/pathways • Trash receptacle	• Lighting • Bicycle racks/lockers • Transit route information	• Screening from sun / elements (landscaping) • Transit system information

SHELTER STOPS are located in areas with higher ridership and medium to high density developments. In addition to a sign, ADA compliant concrete pad, and bench, these stops include a shelter and trash receptacle, at a minimum. Additional amenities like lighting and bicycle racks are highly encouraged. The design of a shelter stop is dependent upon the existing features of the site, including sidewalk design, right-of-way, and proximity to existing structures.

	Required Amenities	Recommended Amenities	Optional Amenities
Shelter Stops	• Bus stop sign • ADA accessible pad • Bench • Shelter • Connection to adjacent sidewalks/pathways • Trash receptacle	• Lighting • Bicycle racks/lockers • Transit route information • Screening from sun / elements (landscaping) • Transit system information	• Digital messaging signs

STATION STOPS are associated with branded services like BREEZE Rapid. These stops have enhanced passenger amenities, including more robust transit system information signage and branded shelters.

	Required Amenities	Recommended Amenities
Station Stops (BREEZE Rapid)	• All requirements of shelter stops, plus: • Single shelter or double shelter with integrated station marker • Station marker with integrated seats • Solar-powered LED lighting	• Transit route and schedule information • Transit system information • Wayfinding signage • Digital messaging signs

The dimensions for each stop type above have been provided as guidelines for the development of new bus stops. District staff understands that some stops may not be able to be retrofitted to meet these standards, or alternative designs may be more feasible based on existing conditions. When a developer has been required to upgrade an existing stop, District staff should be contacted to help create an appropriate design.

3.1.2 Bus Stop Type Selection Criteria

The type of stop provided is primarily driven by route frequency and land use density – routes with higher frequency are typically located in areas with more intensive development, and generally result in more daily boardings. The table below shows the recommended attributes for each of the four stop types. District staff will assist developers in determining the appropriate stop type on a case-by-case basis.

Table 1: Bus Stop Type Location Recommendations

Criteria	Basic Stop	Bench Stop	Shelter Stop
Minimum Daily Boardings			
Rural Stop	<5 daily boardings	5 – 10 daily boardings	10+ daily boardings
Suburban Stop	<10 daily boardings	10 – 20 daily boardings	>20 daily boardings
Urban Stop	<20 daily boardings	20 – 30 daily boardings	>30 daily boardings
Density Considerations	Low density residential; Rural	Low to Medium Density Residential; Commercial; Industrial	Medium to High Density Residential; Mixed-Use; Commercial Core
Land Use and Development: Located ¼-mile (max.) from employment center, retail/commercial center, mixed use development or other major activity center			✓
Population Considerations: Youths, seniors, disabled persons, low-income households		Within ¼-mile of population concentrations	Within 1/8-mile of population concentrations
Connections with other NCTD mode or transit provider		✓	✓
Located within Planned Enhanced Development Corridor			✓

In addition, NCTD's system also includes Station Stops, which are generally characterized by service from multiple routes and/or providers, enhanced facilities, and higher ridership. Stops that are served by BREEZE Rapid are also categorized as Station Stops. New stations should be focused in urban and more developed suburban areas with a mix of uses, commercial core development, and medium to higher density housing, particularly with affordable and multi-family housing, in addition to the provision of enhanced transit service or connections to multiple transit options. In suburban settings, a minimum of 100 daily boardings may warrant a general station, while in urban settings, a minimum of 500 daily boardings should be generated.

3.1.3 Design and Access

Providing defined, safe, and direct access to a bus stop is critical to maintaining and increasing transit usage. Access to a bus stop from an intersection or land use should be as direct as possible, and provide essential security and safety along the route. General guidelines for access are as follows:

General Access and Site Design

- Pedestrian access should be finished with impervious, non-slip material (such as concrete or asphalt) and be well drained, and should not require passengers to walk through grass or exposed soil.
- All sidewalks and pathways should be designed to accommodate wheelchair and other mobility devices
- Intersections near bus stops should include defined pedestrian crosswalks and signals at intersections to allow for safe access. In situations where there is no signalized intersection, pedestrian signals may be warranted based upon the stop usage and development type.
- In areas with disjointed sidewalk networks, new bus stops should include new sidewalks or pedestrian pathways that connect the stop with existing intersections, at a minimum.
- Defined pathways from the sidewalk and/or bus stop waiting area to the curb (bus loading area) should be provided in compliance with ADA requirements.
- A minimum of 5 feet should be kept clear between bus stops and utility poles, fire hydrant, and other similar features.

Landscaping

- Landscaping near the passenger area should be used to maximize shade and overall aesthetics, however should be located so as not to interfere with bus operations or obstruct shelters or lines of sight.
    - Preferred locations for larger landscape elements, like shade trees, are at the back of a sidewalk, behind shelters and/or benches.
- The use of landscaping is encouraged to help define pathways, buffer pedestrians from adjacent traffic, and provide shade; however, landscaping should be designed in a manner that eliminates barriers and impediments to pedestrian access, visibility, or safety.
    - Plants should be kept open and trimmed low to enhance line of site for passengers. Dense hedges that restrict view are discouraged.
    - Visibility around and through landscaping should be maintained for surveillance and security.

Security

- Bus stops and sidewalks should be coordinated with existing streetlights to provide a minimum level of lighting and security.
    - In areas without existing lighting, new stops should provide solar lighting, where feasible.
- Views to and from sidewalks or pathways through bus stops and waiting areas should not be blocked by walls, structures, or landscaping.

New Developments

- New developments should be designed to provide clear and direct access to bus stops (existing or new), and should emphasize pedestrian access, activity, and safety.
    - Gated or walled developments should provide openings through walls to minimize the walk distance and provide a more direct route to bus stops.
    - Developments with parking lots should be designed with clear pedestrian walkways.
    - Distinct walkway networks should be provided where bus stops and/or transit centers can be linked with building entrances.

- Entrances to buildings should face the street with pedestrian access located close to the nearest bus stop.

Rural areas may present challenges for bus stop design and placement, as many areas are lacking sidewalk networks or have other potential impediments such as drainage ditches along the roadway. In these cases, efforts should be made to find the most level and open area for the bus stop to ensure customer safety for access and waiting. When funding is available, at a minimum, new stops should include ADA accessible waiting pads and any necessary ramps constructed of concrete or asphalt, and where feasible, connections to existing intersections or developments. When funding is not available, waiting areas along the shoulder should be comprised of compacted and stabilized decomposed granite, if feasible.

Compliance with Americans with Disabilities Act

The Americans with Disabilities Act of 1990 (ADA) "prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, State and local government services, public accommodations, commercial facilities, and transportation."

28 CFR § 36.402 – Alterations: General (1): Any alteration to a place of public accommodation or a commercial facility, after January 26, 1992, shall be made so as to ensure that, to the maximum extent feasible, the altered portions of the facility are readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs.

*The quoted text above is an excerpt. The full CFR text shall be considered when performing any alterations.

The following bus stop specifications are to be used as guidance when constructing or improving bus stops. A complete list of enforceable accessibility standards shall be referenced from https://www.ada.gov/index.html.

810 Transportation Facilities

810.1 General. Transportation facilities shall comply with 810.

810.2 Bus Boarding and Alighting Areas. Bus boarding and alighting areas shall comply with 810.2.

Advisory 810.2 Bus Boarding and Alighting Areas. At bus stops where a shelter is provided, the bus stop pad can be located either within or outside of the shelter.

810.2.1 Surface. Bus stop boarding and alighting areas shall have a firm, stable surface.

810.2.2 Dimensions. Bus stop boarding and alighting areas shall provide a clear length of 96 inches (2440 mm) minimum, measured perpendicular to the curb or vehicle roadway edge, and a clear width of 60 inches (1525 mm) minimum, measured parallel to the vehicle roadway.

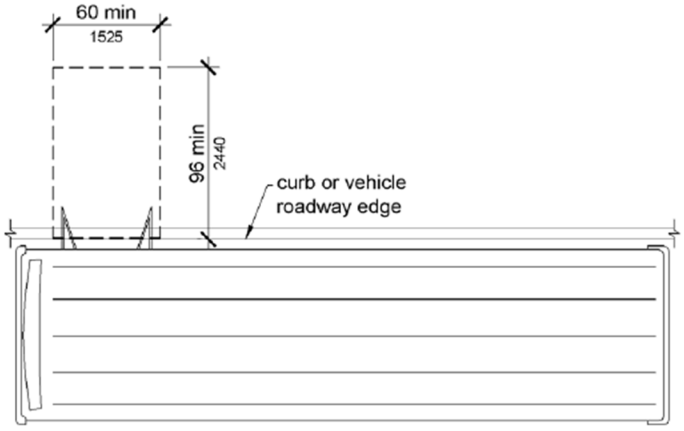


Figure 810.2.2 Dimensions of Bus Boarding and Alighting Areas

810.2.3 Connection. Bus stop boarding and alighting areas shall be connected to streets, sidewalks, or pedestrian paths by an accessible route complying with 402.

810.2.4 Slope. Parallel to the roadway, the slope of the bus stop boarding and alighting area shall be the same as the roadway, to the maximum extent practicable. Perpendicular to the roadway, the slope of the bus stop boarding and alighting area shall not be steeper than1:48.

810.3 Bus Shelters. Bus shelters shall provide a minimum clear floor or ground space complying with 305 entirely within the shelter. Bus shelters shall be connected by an accessible route complying with 402 to a boarding and alighting area complying with 810.2.

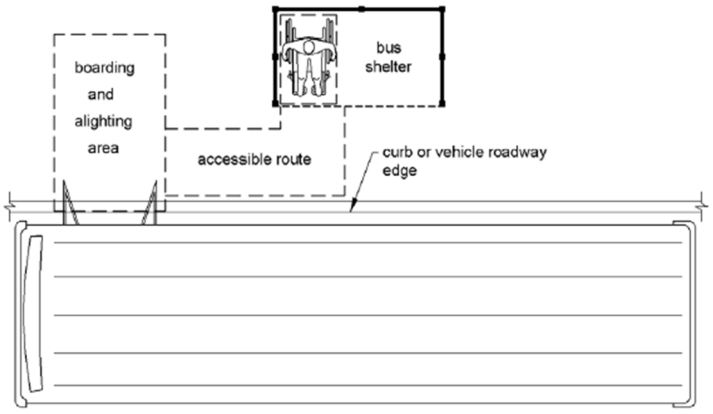


Figure 810.3 Bus Shelters

903 Benches

903.1 General. Benches shall comply with 903.

903.2 Clear Floor or Ground Space. Clear floor or ground space complying with 305 shall be provided and shall be positioned at the end of the bench seat and parallel to the short axis of the bench.

903.3 Size. Benches shall have seats that are 42 inches (1065 mm) long minimum and 20 inches (510 mm) deep minimum and 24 inches (610 mm) deep maximum.

903.5 Height. The top of the bench seat surface shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the finish floor or ground.

402 Accessible Routes

402.2 Components. Accessible routes shall consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators, and platform lifts. All components of an accessible route shall comply with the applicable requirements of Chapter 4.

Advisory 402.2 Components. Walking surfaces must have running slopes not steeper than 1:20, see 403.3. Other components of accessible routes, such as ramps (405) and curb ramps (406), are permitted to be more steeply sloped.

403 Walking Surfaces

403.1 General. Walking surfaces that are a part of an accessible route shall comply with 403.

403.2 Floor or Ground Surface. Floor or ground surfaces shall comply with 302.

403.3 Slope. The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of walking surfaces shall not be steeper than 1:48.

403.4 Changes in Level. Changes in level shall comply with 303.

403.5 Clearances. Walking surfaces shall provide clearances complying with 403.5.

EXCEPTION: Within employee work areas, clearances on common use circulation paths shall be permitted to be decreased by work area equipment provided that the decrease is essential to the function of the work being performed.

403.5.1 Clear Width. Except as provided in 403.5.2 and 403.5.3, the clear width of walking surfaces shall be 36 inches (915 mm) minimum.

EXCEPTION: The clear width shall be permitted to be reduced to 32 inches (815 mm) minimum for a length of 24 inches (610 mm) maximum provided that reduced width segments are separated by segments that are 48 inches (1220 mm) long minimum and 36 inches (915 mm) wide minimum.

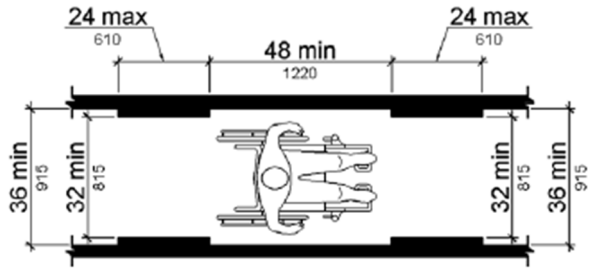


Figure 403.5.1 Clear Width of an Accessible Route

403.5.2 Clear Width at Turn. Where the accessible route makes a 180 degree turn around an element which is less than 48 inches (1220 mm) wide, clear width shall be 42 inches (1065 mm) minimum approaching the turn, 48 inches (1220 mm) minimum at the turn and 42 inches (1065 mm) minimum leaving the turn.

EXCEPTION: Where the clear width at the turn is 60 inches (1525 mm) minimum compliance with 403.5.2 shall not be required.

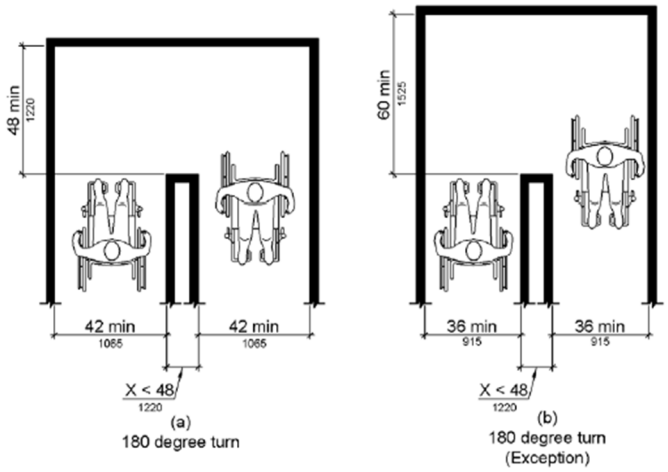


Figure 403.5.2 Clear Width at Turn

403.5.3 Passing Spaces. An accessible route with a clear width less than 60 inches (1525 mm) shall provide passing spaces at intervals of 200 feet (61 m) maximum. Passing spaces shall be either: a space 60 inches (1525

mm) minimum by 60 inches (1525 mm) minimum; or, an intersection of two walking surfaces providing a T-shaped space complying with 304.3.2 where the base and arms of the T-shaped space extend 48 inches (1220 mm) minimum beyond the intersection.

305 Clear Floor or Ground Space

305.1 General. Clear floor or ground space shall comply with 305.

305.2 Floor or Ground Surfaces. Floor or ground surfaces of a clear floor or ground space shall comply with 302. Changes in level are not permitted.

305.3 Size. The clear floor or ground space shall be 30 inches (760 mm) minimum by 48 inches (1220 mm) minimum.

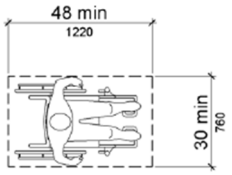


Figure 305.3 Clear Floor or Ground Space

305.4 Knee and Toe Clearance. Unless otherwise specified, clear floor or ground space shall be permitted to include knee and toe clearance complying with 306.

305.5 Position. Unless otherwise specified, clear floor or ground space shall be positioned for either forward or parallel approach to an element.

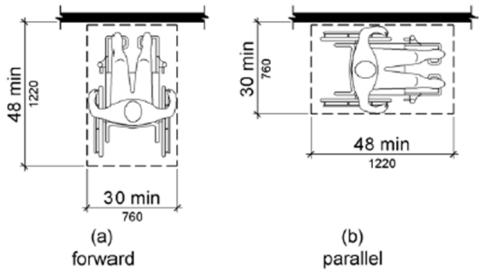


Figure 305.5 Position of Clear Floor or Ground Space

305.6 Approach. One full unobstructed side of the clear floor or ground space shall adjoin an accessible route or adjoin another clear floor or ground space.

305.7 Maneuvering Clearance. Where a clear floor or ground space is located, an alcove or otherwise confined on all or part of three sides, additional maneuvering clearance shall be provided in accordance with 305.7.1 and 305.7.2.

305.7.1 Forward Approach. Alcoves shall be 36 inches (915 mm)wide minimum where the depth exceeds 24 inches (610 mm).

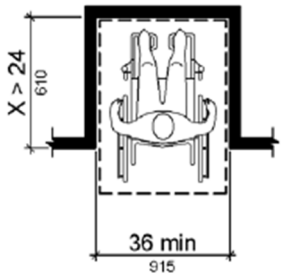


Figure 305.7.1 Maneuvering Clearance in an Alcove, Forward Approach

305.7.2 Parallel Approach. Alcoves shall be 60 inches (1525 mm) wide minimum where the depth exceeds 15 inches (380 mm).

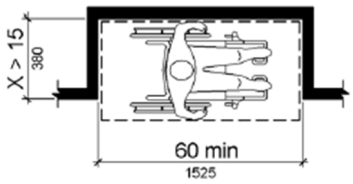


Figure 305.7.2 Maneuvering Clearance in an Alcove, Parallel Approach

304 Turning Space

304.1 General. Turning space shall comply with 304.

304.2 Floor or Ground Surfaces. Floor or ground surfaces of a turning space shall comply with 302. Changes in level are not permitted.

Advisory 304.2 Floor or Ground Surface Exception. As used in this section, the phrase "changes in level" refers to surfaces with slopes and to surfaces with abrupt rise exceeding that permitted in Section 303.3. Such changes in level are prohibited in required clear floor and ground spaces, turning spaces, and in similar spaces where people using wheelchairs and other mobility devices must park their mobility aids such as in wheelchair spaces, or maneuver to use elements such as at doors, fixtures, and telephones. The exception permits slopes not steeper than 1:48.

304.3 Size. Turning space shall comply with 304.3.1 or 304.3.2.

304.3.1 Circular Space. The turning space shall be a space of 60 inches (1525 mm) diameter minimum. The space shall be permitted to include knee and toe clearance complying with 306.

304.3.2 T-Shaped Space. The turning space shall be a T-shaped space within a 60 inch (1525 mm) square minimum with arms and base 36 inches (915 mm) wide minimum. Each arm of the T shall be clear of obstructions 12 inches (305 mm) minimum in each direction and the base shall be clear of obstructions 24 inches (610 mm) minimum. The space shall be permitted to include knee and toe clearance complying with 306 only at the end of either the base or one arm.

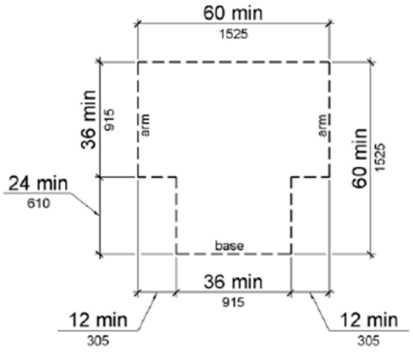


Figure 304.3.2 T-Shaped Turning Space

3.1.4 Bus Stop Amenities

In addition to stop type, the amenities provided are highly dependent upon the number of passengers that use the stop. As activity and ridership increase, expanded amenities beyond the required bench or shelter are typically warranted. District staff will assist developers in determining the appropriate amenities on a case-by-case basis.

In an attempt to standardize the look of street furniture, as well as minimize potential damage from the elements and vandalism, NCTD has identified the following standards for certain stop amenities:

BUS STOP SIGN – Bus stop signs must be placed at all designated stops, and must include service type (BREEZE, LIFT, and/or FLEX) and route number associated with the stop. All bus stop signs, including dimensions and

placement, must comply with ADA requirements as defined in Sections 810.4 of the ADA Accessibility Guidelines, to the maximum extent feasible.

ADA ACCESSIBLE PAD – All bus stops should be designed to comply with ADA requirements. When new development activity occurs adjacent to a non-compliant bus stop, efforts shall be made to upgrade the stop to comply with ADA.

BENCH –ADA guidelines for benches are not enforceable, but shall comply with ADA Standards where applicable, (903). New benches should be constructed of perforated metal with no back, and of solid welded construction using heavy-duty pipe. Benches must be 4-, 6-, or 8-feet in length, and may either have center or multiple divider tubes. Finishes must be sandblasted and powder coated, and ground smooth with no sharp corners. Each bench should be surface mounted. Colors selected for benches should be consistent with the design requirements of the appropriate jurisdiction where the stop is located. In some cases, specific designs may be approved to ensure consistency with overall project design.

Figure 2: Bench Stop Examples

SHELTER – New shelters should be consistent with NCTD's standard specifications, unless the shelter is part of a larger project with an approved design. Dimensions are dependent upon the specific installation location, but generally should range between 8-feet and 13-feet in length. Additionally, design styles are dependent upon the specific project environment, however the dome style is the standard acceptable design. Walls (back and sides) should be constructed of perforated metal with vertical columns, and where required, should include LED lighting

(conventional or solar powered). Roofing should be comprised of durable materials, such as LEXAN or aluminum. Each shelter must include a built-in ADA compliant aluminum bench and the overall structure must be surface mounted. Colors selected for the shelters should be consistent with the design requirements of the appropriate jurisdiction where the stop is located.

Figure 3: Shelter Stop Examples

TRASH RECEPTACLE – All ground-mounted trash receptacles located at bench and shelter stop locations are required to be 32-gallon perforated metal construction with a flat bar top and bottom pedestal mount. Trash receptacles must be constructed of aluminum, steel, or stainless steel, and finished with a galvanized powder primer and secondary powder coat. Lids must be 11-gauge thick laser cut with a 10-inch center hole and locking hasp. To comply with ADA requirements, trash receptacles should not be placed within the required minimum clear area or in a manner that would obstruct walking paths. Colors for the trash receptacles should be consistent with the design requirements of the appropriate jurisdiction where the stop is located.

LIGHTING – For shelter stops, solar lighting panels mounted on the roof of approved shelter designs are recommended. Bench stops may provide pole mounted lighting if located in an area with limited lighting, or instead, may take advantage of existing street lights or lighting from adjacent buildings by located the stop appropriately.

BIKE RACKS / LOCKERS – Bike racks and secured storage lockers should be designed to complement other street furniture used at the stop in terms of construction, style, and colors. All bicycle facilities should be placed outside of the required minimum ADA clear area.

TRANSIT ROUTE AND SYSTEM INFORMATION – Transit route schedules and maps (for stops served by a specific route) are recommended to be displayed at bench stops with higher daily boardings and shelter stops. For shelter stops with higher ridership and/or served by multiple routes, it is recommended that system map and schedule information be displayed. For bench stops, route information should be displayed with pole-mounted cases; approved shelter designs incorporate mountings for map and system information display cases.

SCREENING FROM SUN / ELEMENTS – Weather in San Diego County is associated with exposure to sun year-round, with increased intensity during the summer months. When shelters are not provided or warranted, other shade-

providing elements should be installed, where feasible, such as trees or other fixed screens. If additional screening is provided, safety of passengers must also be considered – dense hedges or non-transparent materials are not recommended.

WAYFINDING SIGNAGE – Wayfinding signage is recommended at high ridership stops that serve multiple transit modes, such as Station Stops/Transit Centers. Signage should provide clear direction for passengers to key features, such as boarding areas for different modes and fare payment resources (i.e. TVMs).

DIGITAL MESSAGE SIGNS – Electronic messaging information should be included at BREEZE Rapid stops, as well as Station Stops/Transit Centers and high ridership shelter stops that serve multiple routes. Signs may be LED panels and/or LCD screens and should display bus arrival/departure information and passenger alerts.

3.2 Street-Side Improvements

Improvements within the roadway that may impact bus operations are considered street-side improvements. This includes adequate stop spacing, stop location and placement, stop design, and other roadway characteristics like intersection design. While developers and jurisdictions are encouraged to follow the guidelines below, NCTD understands that in some cases, existing roadway design and characteristics may present challenges; in these cases, NCTD can advise on acceptable solutions.

3.2.1 Stop Spacing

The spacing between bus stops can impact both transit vehicles and the overall system's performance, as it can impact overall travel time and, as a result, demand for transit. Stops that are located closer together (such as every block or ¼-mile apart or less) provide for short walk distances but more frequent stops and longer bus trips. Stops that are farther apart result in longer walk distances but higher speeds and shorter bus trips.

These tradeoffs will impact where a bus stop is located along a route, in addition to other factors such as development type and potential ridership generated. In a dense residential or commercial environment, closer stop spacing may be required in order to serve passenger demand. Conversely, the street network in suburban or rural may force stops to be located further apart than desired. Higher frequency services like BREEZE Rapid generally have increased stop spacing in order to minimize travel times.

NCTD's general recommended stop spacing for BREEZE and BREEZE Rapid is as follows:

Table 3: Recommended Bus Stop Spacing

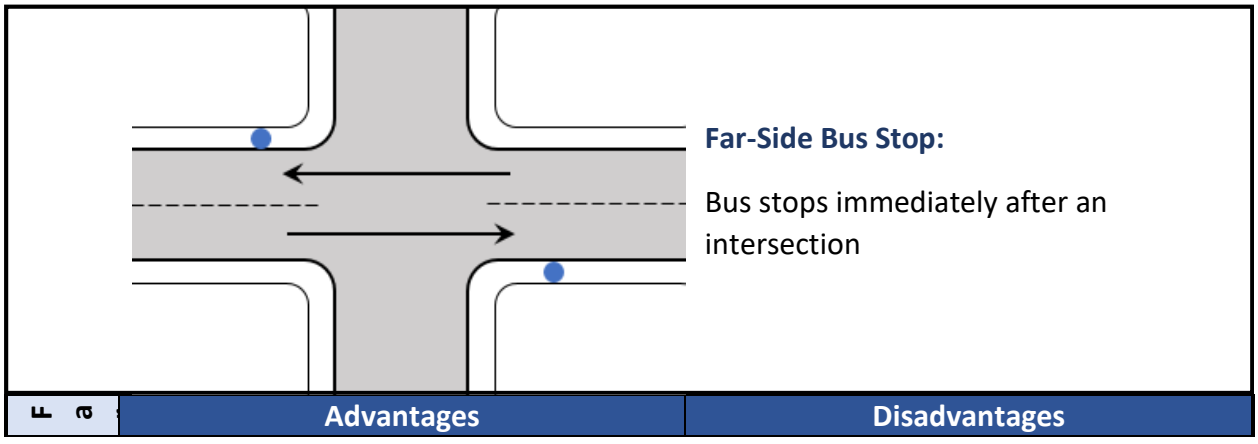
Service Type	Area Type	Distance Between Stops
BREEZE	Rural	0.5 miles
	Suburban	0.3 miles
	Urban	0.25 miles
BREEZE Rapid		0.5 – 2.0 miles

3.2.2 Stop Location and Placement

A bus stop is a linear curbside area that is specially designed for bus passenger boardings and alightings. It is identified by a bus stop sign and may be accompanied by a red curb zone and/or no-parking sign, as well as amenities like benches or shelters. ***NCTD staff must be consulted before placing, relocating, removing, or enhancing a bus stop.*** The placement of new bus stops should not only consider spacing and ridership potential, but also safety to pedestrians, bicyclists, and vehicle traffic, as well as the right-of-way's ability to accommodate the required stop type and associated amenities. In general, the following factors[1] should be considered when determining the appropriate bus stop location and placement:

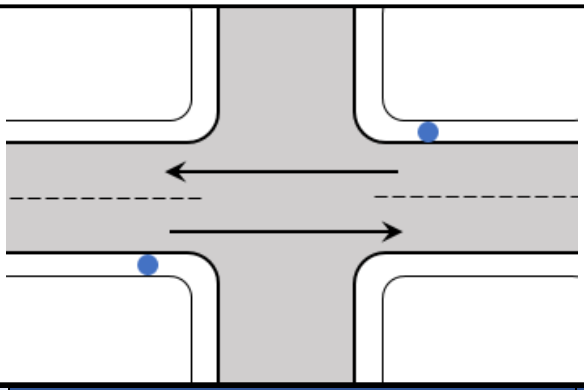
- Adjacent land use and activities
- Bus route operations and movements
- Bus signal priority
- Impact on intersection operations
- Intersecting transit routes
- Intersection geometry
- Parking restrictions and requirements
- Passenger origins and destinations
- Pedestrian access, including accessibility for disabled persons
- Physical roadside constraints, such as trees, utility poles, or driveways
- Potential ridership
- Presence of bus bypass lane
- Traffic control devices

Stop locations fall within three categories: far-side, near-side, and mid-block . ***Far-side*** stops are characterized by bus stops located after an intersection. ***Near-side*** stops are located immediately before an intersection. ***Mid-block*** stops are located within the block. NCTD staff will determine which stop location is the most appropriate based on individual situations.



[1] *TCRP Report 19: Guidelines for the Location and Design of Bus Stops*

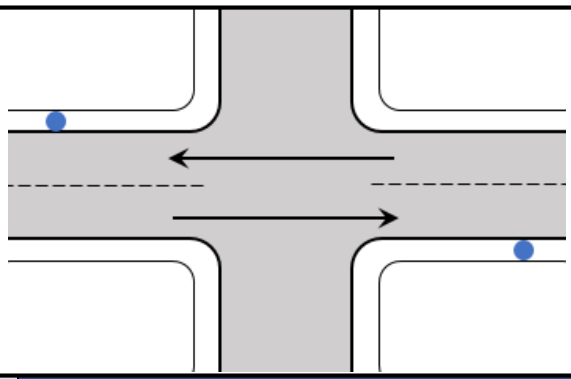
	• Minimizes conflicts between right turning vehicles and buses • Provides additional right turn capacity by making curb lane available for traffic • Minimizes sight distance problems on approaches to intersection • Encourages pedestrians to cross behind the bus • Creates shorter deceleration distances for buses since the bus can use the intersection to decelerate • Results in bus drivers being able to take advantage of the gaps in traffic flow that are created at signalized intersections	• May result in the intersections being blocked during peak periods by stopping buses • May obscure sight distance for crossing vehicles • May increase sight distance problems for crossing pedestrians • Can cause a bus to stop far-side after stopping for a red light, which interferes with both bus operations and all other traffic • May increase the number of rear-end accidents since drivers do not expect buses to stop again after stopping at a red light • Could result in traffic queued into intersection when a bus is stopped in travel lane



Near-Side Bus Stop:

Bus stops immediately before an intersection

	Advantages	Disadvantages
Near-Side	• Minimizes interferences when traffic is heavy on the far side of the intersection • Allows passengers to access buses closest to crosswalk • Results in the width of the intersection being available for the driver to pull away from the curb • Eliminates the potential of double stopping • Allows passengers to board and alight while the bus is stopped at a red light • Provides driver with the opportunity to look for oncoming traffic, including other buses with potential passengers	• Increases conflicts with right-turning vehicles • May result in stopped buses obscuring curbside traffic control devices and crossing pedestrians • May cause sight distance to be obscured for cross vehicles stopped to the right of the bus • May block the through lane during peak period with queuing buses • Increases sight distance programs for crossing passengers



Mid-Block Bus Stop:

Bus stops located in middle of block

	Advantages	Disadvantages
Mid-Block	• Minimizes sight distance problems for vehicles and pedestrians • May result in passenger waiting areas experiences less pedestrian congestion	• Requires additional distance for no-parking restrictions • Encourages patrons to cross street at midblock • Increases walking distance for patrons crossing at intersections

Whenever possible, bus stops should be located at the far-side of an intersection to facilitate bus and traffic operations, and to maximize pedestrian safety. Under the following special circumstances, near-side stops may be necessary:

1. If accumulation of buses occasionally exceed the length of bus zones, far-side stops should be avoided and the zone placed on the near-side.
2. At transfer points of two crossing routes, placing one stop on the near-side and the stop for the crossing route on the far-side is an advantageous arrangement. This places both stops on the same corner and minimizes street crossings by transferring passengers.
3. When a large percentage of bus passengers using a stop destined to a single large generator, the bus stop should be located so that pedestrian traffic is minimized in the intersection. The proper bus stop location could be either near-side or far-side.

NCTD staff should be consulted whenever special circumstances regarding bus stop placement arise. Bus stop zones can usually be accommodated on-street in the parking lane or bike lane.

3.2.3 In-Street Bus Stop Design

NCTD utilizes three main types of bus stop designs – curbside stops, bus bulb (curb extension), and bus turnout (bus bay). The application of each stop design type is dependent upon the current or planned roadway conditions and design, as required stop zone lengths and operational impacts vary.

Curbside Stop Design

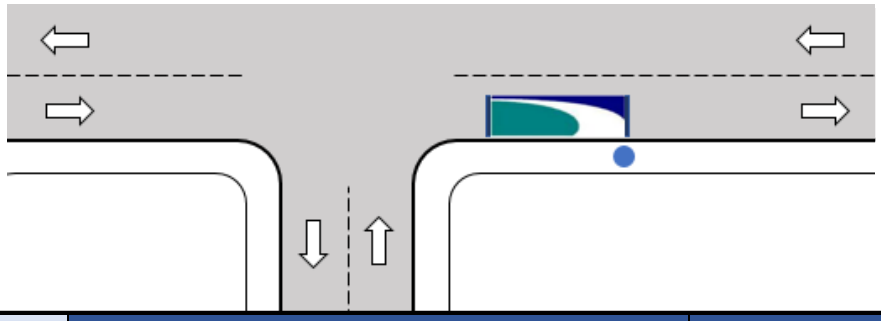
Bus stops located directly along the roadway curb and within a travel lane are referred to as curbside stops. Curbside stops can allow one or multiple buses to be stopped at a given time, depending on the length of curb

available, passenger service time at the stop, and the rate of bus arrivals. To ensure that adequate space is provided for the bus, no parking zones must be included at curbside stops as follows:

- **Near-side stops:** 100 ft. minimum no parking zone
- **Far-side stops:** 90 ft. minimum no parking zone
    - *Stop after a bus turn:* 130 ft. minimum no parking zone, including 60' clear space from the rear of the bus at the stop to the curbline of the intersecting street.
- **Mid-block stops:** 130 ft. minimum no parking zone

New curbside stop locations must ensure that adequate space is available for ADA design requirements, as well as any warranted passenger amenities. Additionally, where feasible, connections to existing pedestrian and bicycle facilities should be incorporated to increase access to the stop. In general, curbside stops should be located in a manner that considers the following:

- Stop does not result in passengers waiting for a bus in the middle of a driveway, or so that the stopped bus does not block a driveway.
- Stop is near a major intersection that is signalized, includes a stop sign, or near an existing pedestrian crossing signal to increase passenger safety.
- Stop allow passengers to board or alight the bus directly from a curb (where present) rather than from a driveway.



Curbside Stop:

Bus stops along curb in roadway

	Advantages	Disadvantages
Curbside	• Provides easy access for bus drivers and results in minimal delay to the bus. • Simple design is easy and inexpensive to install. • Easy to relocate.	• Can cause traffic to queue behind stopped bus, thus causing traffic congestion. • May cause drivers to make unsafe maneuvers when changing lanes in order to avoid a stopped bus.

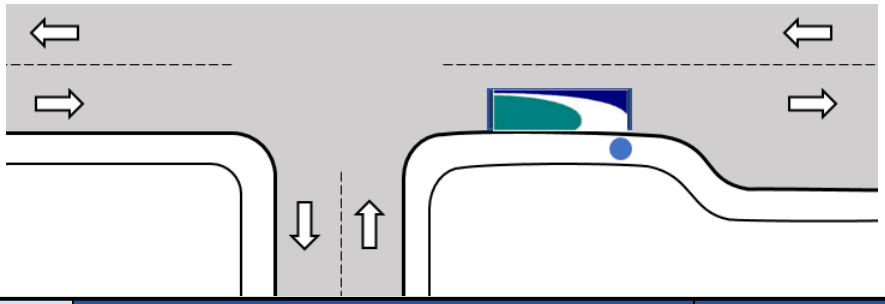
Bus Bulb Stop Design

A bus bulb is a section of sidewalk that extends from the curb of a parking lane to the edge of a through lane, and are also known as curb extensions. A bus bulb allows buses to stop in the traffic lane instead of weaving in and out of a parking lane or shoulder. The following list outlines reasons for constructing bus bulbs:

- Additional space for bus passengers, benches, shelters, and other amenities are needed;
- Reduces congestion at busy sidewalks;

- Shortens crossing distance for pedestrians at intersections and crosswalks;
- Reduces bus stop spacing requirements at bus stop (shared traffic lane and stop);
- Improves safety by eliminating bus-weaving maneuver in and out of traffic; and/or
- Saves time by reducing conflicts between bus and through traffic.

NCTD recommends bus bulbs at bus stops that have high passenger volumes, crowded sidewalks, and at streets with permit curbside parking.



Bus Bulb Stop:

Bus stops along curb extension in traffic lane

	Advantages	Disadvantages
Bus Bulb	• Removes fewer parking spaces for the bus stop. • Decreases the walking distance (and time) for pedestrians crossing the street. • Provides additional sidewalk area for passengers to wait. • Results in minimal delay for bus since it is not turning out of the travel lane.	• Installation costs are higher compared to curbside stops. • Can cause traffic to queue behind stopped bus, thus causing traffic congestion. • May cause drivers to make unsafe maneuvers when changing lanes in order to avoid a stopped bus.

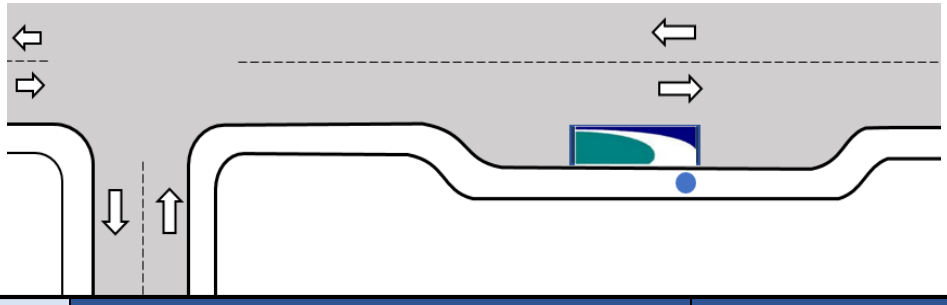
Bus Turnout / Bus Bay Stop Design

Bus turnouts are widened sections of roadway designed for buses to pull out of the traffic stream. In cases where there are no parking or right-turn lanes, or where traffic speeds or passenger boardings/bus volumes are high, a bus turnout may be necessary. Bus turnouts should be considered at a location when the following factors are present:

- Traffic in the curb lane exceeds 250 vehicles during the peak hour;
- Traffic speed is greater than 45 mph;
- Bus volumes are 10 or more at peak hour period on the roadway;
- Passenger volumes exceed 25 boardings per hour;
- Potential for auto/bus conflict warrants separation of transit and passenger vehicles;
- History of repeated traffic and/or pedestrian accidents at stop location; and/or
- Sight distances (i.e. hills, curves) prevent traffic from stopping safely behind a stopped bus.

NCTD suggests installing bus turnouts sparingly and only when assessing the issues mentioned above. Buses removed from the roadway will often have difficulty merging back into traffic, thus negatively impacting on-time performance and the quality of transit service. NCTD staff can provide more information regarding when construction of a bus turnout is necessary.

Due to the large amount of stress that buses place on our roadways, NCTD recommends that concrete bus pads be installed at all bus turnouts. This will reduce the amount of necessary street maintenance due to pavement damage at bus stops.



Bus Turnout Stop:

Bus stops out of traffic

	Advantages	Disadvantages
Bus Turnout	• Allows passengers to board and alight out of the travel lane. • Provides a protected area away from moving vehicles for the stopped bus and passengers. • Minimizes delay to through traffic by pulling out of the travel lane to stop.	• May present problems to bus drivers when attempting to re-enter traffic, especially during periods of peak travel, that result in on-time performance issues. • Installation costs are higher compared to curbside stops. • Difficult and expensive to relocate.

3.2.4 Vehicle and Roadway Design Considerations

Roadway design is a critical consideration when siting and developing bus stops. The following section outlines various general characteristics related to roadway design.

Vehicle Considerations

NCTD FLEET CHARACTERISTICS – Currently, NCTD operates vehicles ranging in length, with the largest bus extending 40 feet. NCTD may purchase larger articulated buses in the future for specific routes and corridors. All vehicles are equipped with bicycle racks and wheelchair lifts. NCTD's vehicles are fueled with either CNG, gasoline, or diesel; vehicle height varies depending on the fueling type, and is an important consideration due to horizontal clearance requirements. In addition to height, the vehicles width, weight, and turning radius are all additional features that can influence a bus stop design. NCTD recommends that new bus stops be designed to accommodate 40 foot vehicles, with the following specifications:

- **Length:** 40'-0"
- **Width:** 102"
- **Height**: 11'-1"

However, certain corridors may warrant stops that can accommodate larger buses to remain consistent with longer-range NCTD service plans. As such, planners and developers should coordinated with NCTD to ensure that the most appropriate specifications are considered during the planning stage.

TURNING RADII – In order for buses to safely execute turning movements in and out of bus stops, adequate roadway clearances, and more specifically, bus turning radii, are required. Bus turning radii refers to an outside and inside turning arc, both of which must be considered when designing any turning movements associated with bus stops. Below is a sample template for a turning radius for a 40-foot bus.

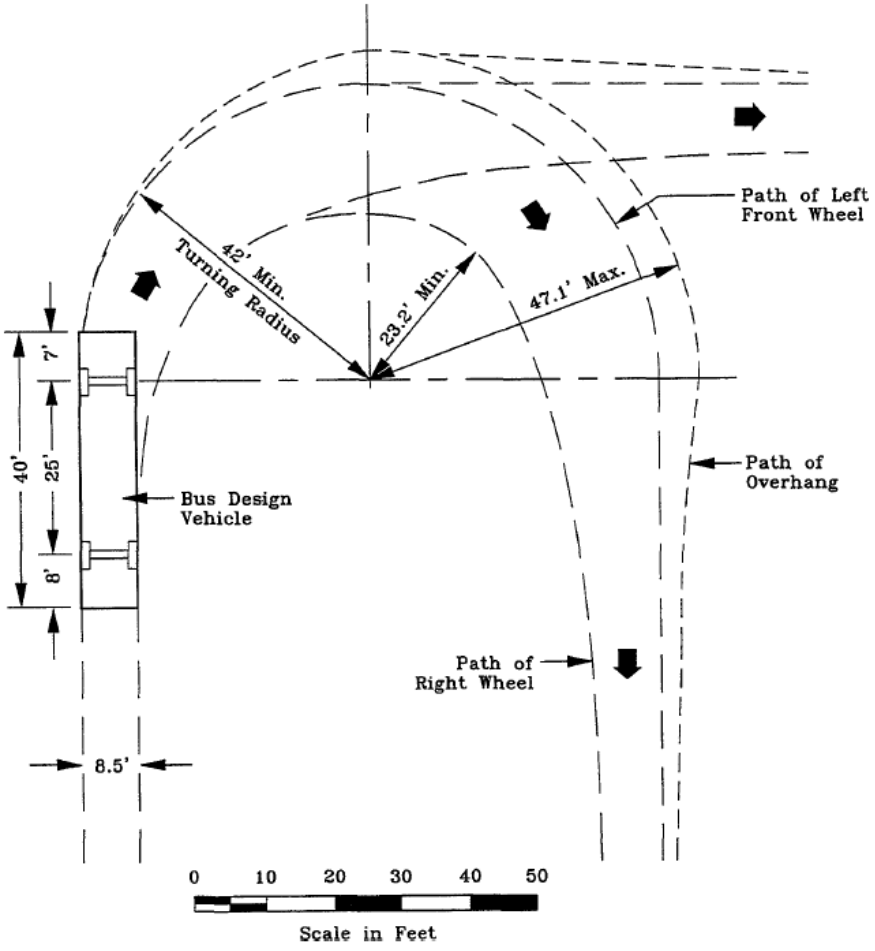


Figure 4: Bus Turning Radii Specifications

Roadway Considerations

ROADWAY DESIGN – Bus stops should be designed in a manner that accommodates the size, weight, and turning requirements of NCTD's buses. Doing so helps to improve the safety and operation of the overall roadway, not just the transit vehicle. Frequent stops along the roadway necessitate buses to travel in the lane that is closest to the curb, resulting in bus clearance and other design requirements, as follows:

- Minimum 14 ft. vertical clearance for overhead obstructions (i.e. trees, signs, or utilities) above the street surface
- Minimum 2 ft. horizontal clearance from the edge of the street to avoid strikes from bus mirrors
- Minimum 12 ft. traffic lane for lanes used by buses to accommodate total maximum bus width (body + mirrors)
- Ideal total width (travel lane + curb + gutter) of 14 ft.
- Maximum 6 percent grade for uphill roadways and 12 percent grade for downhill roadways
- Maximum 6 percent grade change between street and driveway
- Ideal curb height of 6 to 9 in.

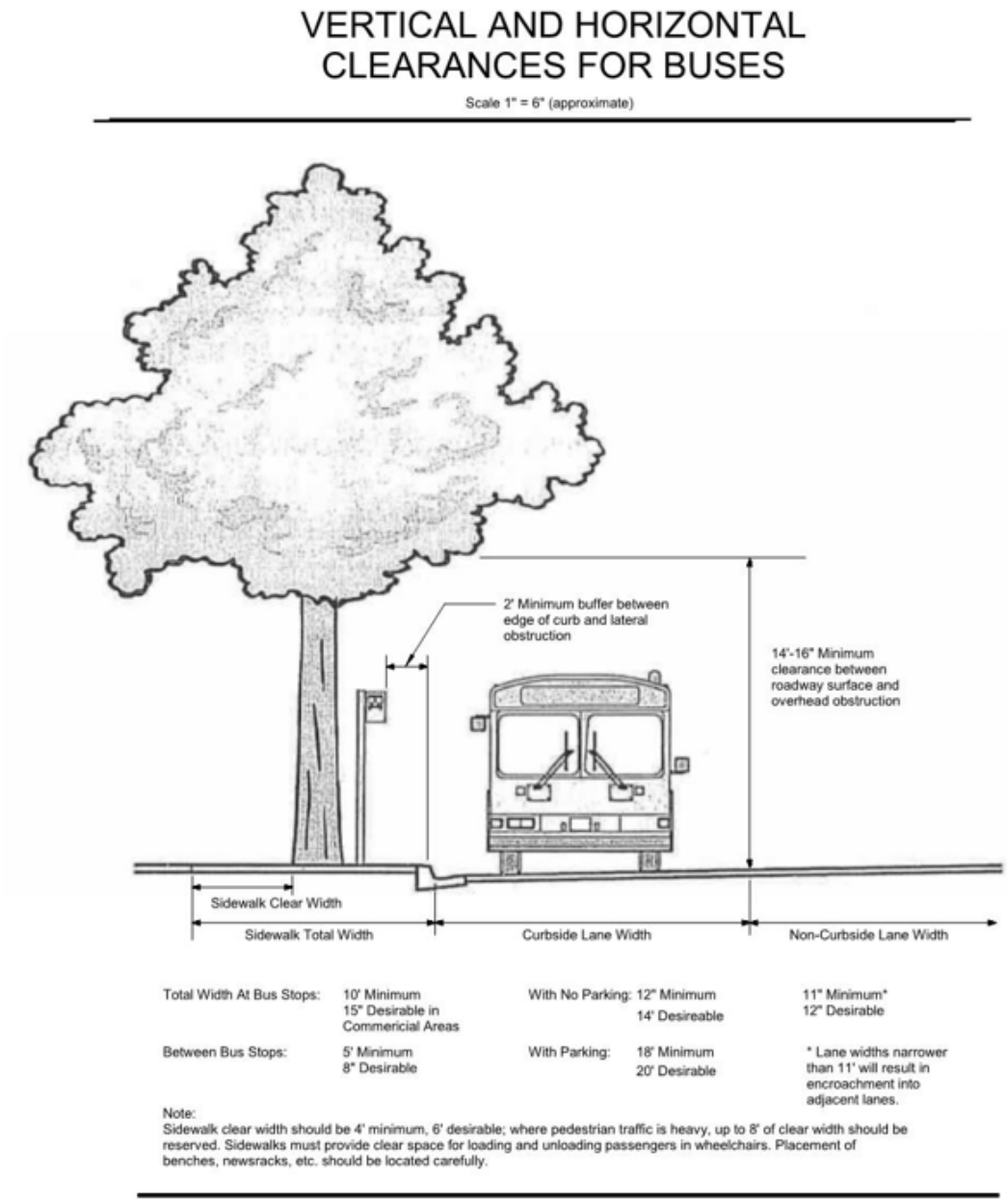


Figure 5: Specifications for Vertical and Horizontal Clearances

PAVEMENT – To accommodate the repetitive bus axle loads of 25,000 pounds, roadways pavements must be of sufficient strength. Concrete is the preferred material for bus pads to avoid failure problems that are common with asphalt, and is more apt to withstand the load and sheer force applied during bus starting and stopping movements.

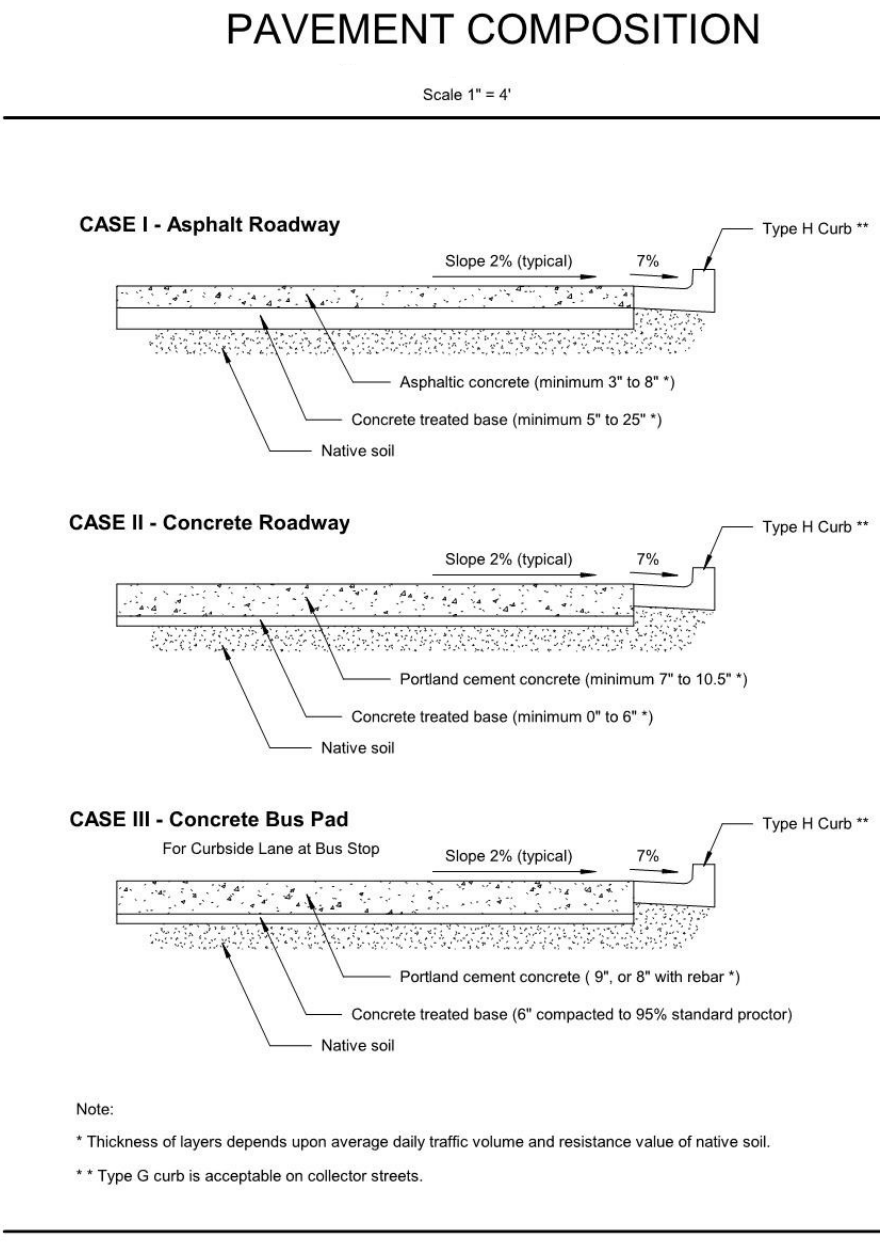


Figure 6: Pavement Composition Specifications

4.0 Coordinating Transit and Land Use

When transit and land use work seamlessly together, the quality of life for residents and visitors increases. NCTD places a priority on coordinating transportation and land use decisions as a means to increase transit access, and to ensure that development considers and plans for transit from the very beginning. With nine separate jurisdictions in NCTD's service area, this coordination is essential, as each community has a unique vision for how their community will be shaped over time.

Those in the private sector proposing new development at or adjacent to existing transit stops and stations, as well as new development with new transit facilities, should become familiar with the standards throughout this document to ensure that their projects will accommodate transit. Alternately, as transit accessibility and pedestrian accessibility are closely linked, developments should at a minimum, provide pedestrian and bicycle access to existing transit facilities. The design of our communities must recognize possibilities that may exist several years into the future. Ideally, land use development and planning professionals should work together with the transit agency to ensure that the new development is well positioned in relation to transit services. When buses do not serve a proposed project at the present time, designing for buses is still desirable by considering the transit program's short-term and long-term plans for service and expansion. Proper location decision-making during the planning stage of a project will assure that future extensions of service, if needed, are consistent with the transit agency's service plans and can be accommodated economically.

There are many ways in which the design of new development can encourage greater use of public transit. Most involve little cost or effort if they are followed early enough.

4.1 Location

The location of a development is an especially important consideration when thinking about transit usage and service. Developments with high intensity uses, for example, are incredibly valuable to the economic health and quality of life within a community, however when located in areas with minimal to no transit service, this value is greatly diminished. As a result, developers and planners should include transit as a decision-making criteria when selecting development sites or broader planning initiatives to ensure that the value of both the transit service and the community's health are fully realized.

New developments should carefully consider what the transit needs may be based upon the uses involved. Uses that would generate transit ridership, such as employment centers, social services/community resources, or multifamily residential, should ideally be located within ½-mile of an existing bus route so that passengers can easily access the service, or so that transit service may be realigned (if possible) to serve the development. Planners and developers should take care not to site large-scaled developments far from existing (or planned) transit service, highlighting the importance of involving NCTD early on in the planning process to assess 1) whether transit can easily be provided within a cost efficient manner, 2) what types of amenities would be required, or 3) whether future transit service plans would positively or negatively impact the success of the development.

4.2 Density and Land Use

4.2.1 Transit-Supportive Design and Development

Figure 7: Vista TOD with affordable housing

Transit-supportive development not only includes mixed land use and higher densities, but also incorporates design strategies that bring the development to a pedestrian scale. The design and orientation of buildings can both contribute to or discourage transit usage in ways which are not always obvious. Most suburban buildings are oriented to people arriving by automobile, with parking facilities located along the street and buildings set back. In contrast, buildings and developments should be designed and sited in ways that cater to transit riders, pedestrians, and cyclists, as well as those arriving by car. Building entrances should be clearly visible to those arriving on foot, bicycle, or transit, and access to entrances should include clearly defined and direct pedestrian paths from the street. Further, public spaces that include pedestrian walkways, bicycle routes, street furniture, and streetscaping are vital to transit supportive developments and should be integrated into developments at or adjacent to bus stops and stations.

Quite often, transit service is relegated to the periphery of a development as a practical necessity. A bolder approach is to bring transit service to the heart of a community, integrated into its fabric and treated as an asset to be embraced rather than a nuisance. Neighborhoods with attributes that lend to potential transit success – efficient street networks, adequate pedestrian and bicycle facilities, mixed uses, and/or transit supportive densities – should be prioritized. Transit should be incorporated in the developments where it "makes sense" – pulling transit onto streets that are difficult for buses to navigate, such as winding through walled communities or through low-density developments – is not good practice and should be avoided. Instead, developments should be designed for transit service, or at a minimum, be located adjacent to quality bus service with direct and clear access to existing stops and stations.

Figure 8: Carlsbad Poinsettia Station TOD

Transit-oriented developments (TODs) focus on providing a mix of elements that are conducive to transit usage, and incorporate many (if not all) of the concepts discussed in this section.

Key Transit Supportive Design and Development Guidelines Supported by NCTD
• Orient developments towards the street, with parking located to the rear of buildings rather than along the street frontage.
• Building design and circulation plans should minimize the need for parking and increase the opportunity for transit and active transportation.
• Bus stop and station elements should be incorporated into the design, in addition to other public spaces like walkways, bicycle paths, and street furniture.
• Emphasize compatible and compact land uses that enable convenient access to and from bus routes, and that are designed to provide connections to a variety of uses (i.e. residential, employment, educational, and commercial).
• Minimize walk distances through developments to bus stops, especially those with walls or gates, so that transit is accessible to most patrons or residents.

4.2.2 Transit Supportive Densities

Higher density development, particularly when paired with mixed-use development, is a factor that is often associated with high transit ridership. Appropriate levels of density vary between neighborhoods and communities, and does not mean that only high-rise apartments and office buildings should be constructed near bus stops. Instead, certain thresholds of development should be encouraged that complement the surrounding area and community goals. As the relationship between transit usage and density varies by mode and frequency of service, development must consider the both the existing and planned land uses in concert with the available and planned transit services.

Figure 9: North City Master Plan rendering, San Marcos

Figure 10: North Beach Promenade development rendering, Oceanside

NCTD encourages development of at least 12 to 18 residential dwelling units per acre to generate transit ridership, ideally within ¼-mile of a bus or rail stop/station. Where densities of a project vary, the highest densities should be located closest to existing or potential bus stops to encourage transit usage. Please check with local Planning Departments to determine appropriate project density.

Key Development Density Strategies Supported by NCTD
• Low-density development or developments with low rates of employment are discouraged from locating near existing bus stops and stations.
• Higher density developments with affordable housing and a mix of uses are encouraged at or near existing bus stops and stations.
• Land use density should be maximized within transit walksheds/bikesheds and should minimize parking requirements.
• Densities should be matched to the available and planned services in order to maximize ridership potential generated by new developments. For example, employment and service-related development densities may be more appropriate near COASTER stations, while higher residential densities may be more beneficial near BREEZE stations and stops.

4.2.3 Land Use Diversity

A basic element often overlooked in creating a more multimodal focused environment is the importance of mixing different types of land use – housing, retail commercial, restaurants, office, etc. Mixed use developments increase connectivity between these elements, in turn strengthening the potential for transit success, as well as pedestrian and bicycle activities. Providing a mix of uses reduces the need for car ownership, increases opportunities to walk or cycle for everyday trips, promotes transit usage, and creates an overall public transit friendly environment vital to community sustainability. Important to public transit usage, diverse uses along a street increase foot traffic that lends a sense of security for those waiting for a bus.

Figure 11: North City Master Plan, San Marcos

Figure 12: Pacific Station Development, Encinitas

Retail uses are a key component of effective mixed-use developments, and in particular, ground floor retail. These uses optimally should be located as close to a bus stop as possible in order to generate ridership. Additionally, a mix of uses that combines retail and restaurant within close proximity to employment centers can greatly encourage a shift towards transit for both lifestyle and commute trips. Employees are more likely to use transit services when they have walkable access to other amenities during the day. For other residents or visitors, a mix of uses allows for the ability to

combine multiple errands or activities together in a single location, further reducing the need for an automobile to complete their trip.

Key Land Use Guidelines Supported by NCTD
• Limit auto-oriented uses near transit. For developments already in place, incorporate shared parking strategies like park-and-ride lots near transit stops with existing parking lots to encourage transit usage.
• Encourage TOD development at or near existing transit stops or stations, especially those with multimodal options, higher frequency transit routes, or with service by multiple bus routes/providers.
• Street corners should be developed with transit supportive commercial uses, like restaurants, services, and shopping, along with bus stops.
• When evaluating new developments near existing bus stops or along designated/planned development corridors, mixed-use developments should be provided within ½-mile of a bus stop or station, with retail uses as close to the stop as possible.
• Concentrate employment centers near existing or planned transit routes, as well as near other services like retail and restaurant uses.

4.3 Access and Walksheds

The simplest way of increasing the use of public transportation is to establish communities where walking and biking are more attractive. Transit combined with pedestrian and bicycle access is critical not only for creating a complete and sustainable transportation network, but also to encourage passengers to use transit to complete daily trips and activities. The factors that encourage people to walk are often subtle, but they all focus upon the creation of a pleasant environment for the pedestrian. New or existing developments that are within close proximity to transit should incorporate plans for improved pedestrian access to nearby bus stops, which may include pedestrian walkways/entrances separate from the street network.

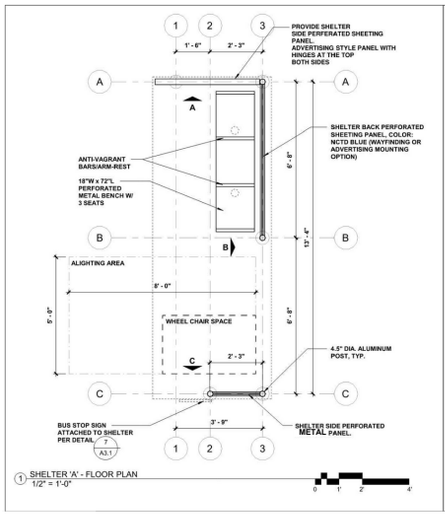
Adequate sidewalks, pathways, and crosswalks will assist in the creation of a pedestrian and bicycle environment, and will reinforce safety for users. Sidewalks in residential areas should be of sufficient width for two people to walk side-by-side comfortably, and multiuse pathways should be designed to accommodate both pedestrians and bicyclists safely. Please check with the local jurisdiction, as required sidewalk and bicycle facility widths may vary.

The walkable area surrounding a bus stop or station (or “walkshed”) differs between pedestrian and bicyclists, as well as between general transit modes. In general, acceptable pedestrian walksheds are ¼-mile for local fixed route bus (BREEZE, FLEX) and ½-mile for higher capacity transit (BREEZE Rapid, SPRINTER, COASTER), while a 3-mile radius is suitable for bicycles, regardless of mode. To ensure connectivity with land uses, new developments with transit supportive densities and associated bus stops should be focused within these walkshed targets, and investments should be made to expand stop area walksheds at existing stops. Combined with investments like street furniture, lighting, and landscaping, clear and direct pathways from the bus stop to employment centers or other high-intensity uses within the walkshed often help to improve the public’s perception of transit and serve as a catalyst to usage.

Major streets and arterials accommodate and encourage high levels of traffic, and also pose special problems for transit. Many of the streets in North County are wide, lack access to abutting land uses, cater to high-speed traffic, are difficult places for buses to stop, and present safety challenges for pedestrians and bicyclists to cross.

Street crossings must be allowed at frequent intervals to increase safety and include pedestrian access to all abutting land uses.

Key Access Guidelines Supported by NCTD
• Focus developments within ¼-mile to ½-mile of existing bus routes to provide walkable access to transit.
• While walled and gated developments are generally discouraged from a transit perspective, new such developments should include openings for pedestrian and bicycle access to major corridors with transit service.
• Provide designated pathways for pedestrians to access existing bus stops and stations.



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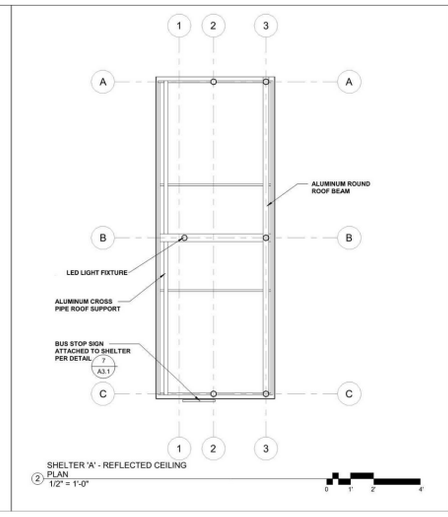

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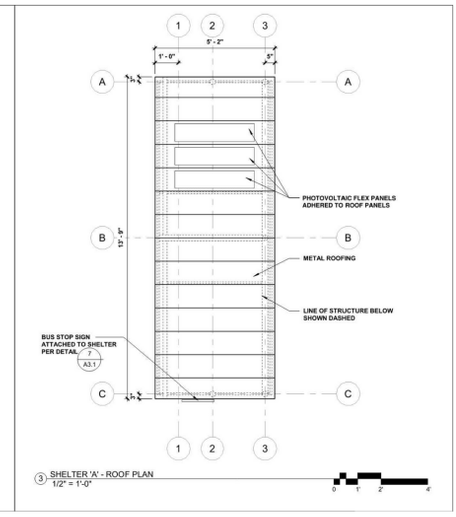

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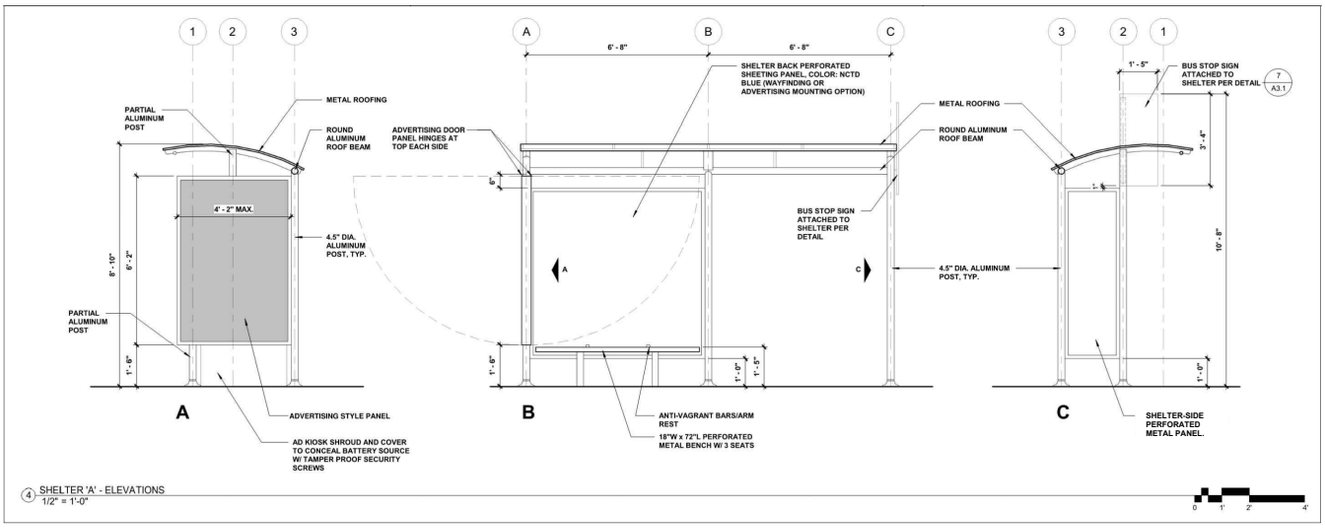

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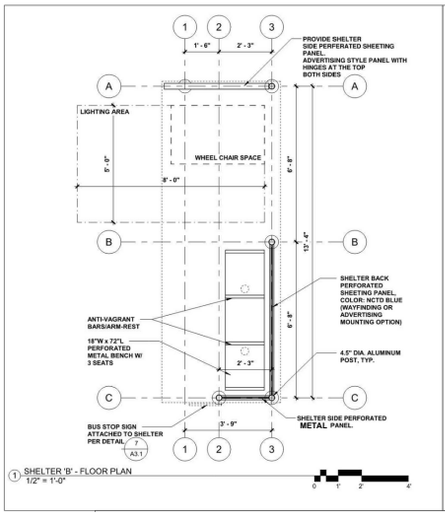

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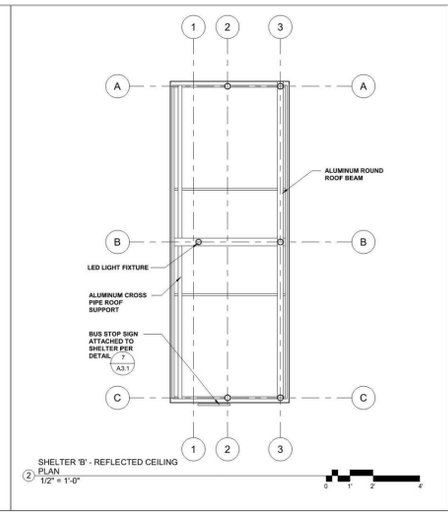

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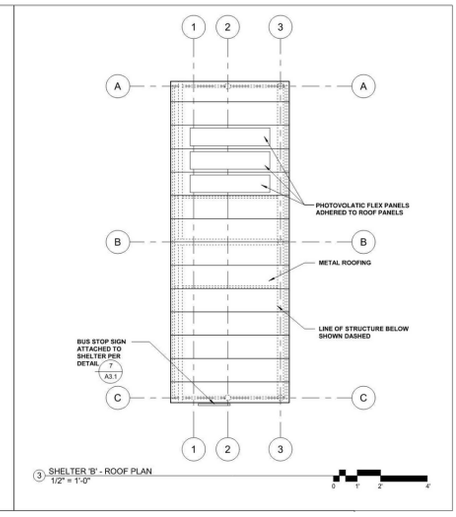

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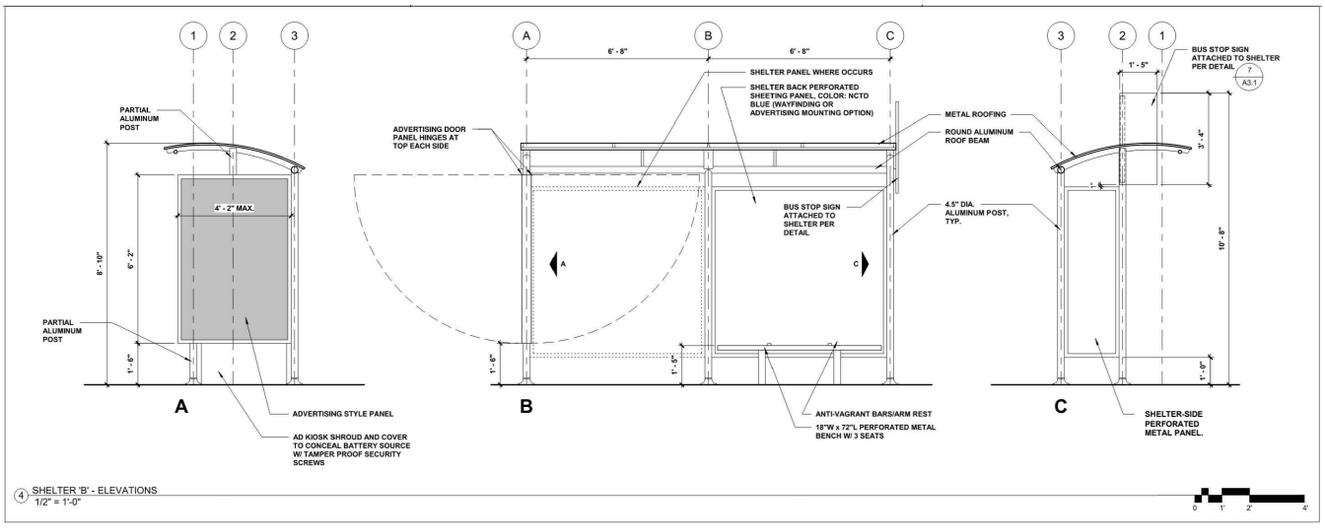

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1/2" = 1'-0"