CLIFF BECHTEL AND ASSOCIATES, LLC
ENGINEERING AND PROJECT MANAGEMENT

RECEIVED
07/28/2023
Woodside Town Hall

July 17, 2023

Mr. Sage Schaan
The Town of Woodside
2955 Woodside Road
Woodside, CA 94062

RE: Update Submittal for Improvements and Expansion at Robert's Center, 3036 – 3062 Woodside Road, Woodside, CA

Dear Sage,

Attached updated Civil Plans associated with the proposed improvements and expansion of the Roberts Center parking lot. Plans have been updated to reflect responses to comment dated September 2, 2022. No "clouding" has been performed since we are still in the planning phase. The following are my responses:

General

I have provided responses for civil related comments and adjustment made to plans. See Mr. Dave Tanner's responses for all other items.

I. Additional/updated Materials

A. The owner has contracted with H.T. Harvey & Associates to complete the required Biological Study. Study has been provided to the Town.
B. Parking Lot Layout/Spaces:
   1. The existing parking lot, without the temporary outdoor dining, can be found on sheets C-0.1 and C-0.2, which identify the 4 existing handicap spaces for the parking lot. This topographic background is used for all base site sheets.
   2. Existing dimensions have been added to Existing Site Plan on A0. Please note that only 10 existing stalls are in compliance with Woodside Standard 9' x 20'.
   3. Parking lot ADA spaces counts have remained the same as previously submitted (5 Standard ADA and 2 Van Accessible for a total of 7 ADA spaces).
   4. Loading Spaces for the Roberts Center are located on the west side of the parking lot and have been identified on the plan.
   5. See Mr. Dave Tanner's response.
   6. Parking information has been updated as requested.
   7. Parking lot layout proposes 36 existing parking spaces to be 8'- 6" wide. To require these spaces to be stripped at a width of 9'-0" would lose an estimated 4 spaces.
   8. Plans and written documents have been coordinated.
C. Equipment Plan was provided to the Town and Acoustic Consultant evaluation has been completed. See Mr. Dave Tanner's response.
D. See Mr. Dave Tanner's response.
E. The project surveyor has provided the required additional information.
F. See Mr. Dave Tanner's response.

G. Grading Balance has been reviewed and determined that the design shown is the least impactful. Creek setbacks, existing tree coverage and site terrain restrict the possibility of any fill material being left on site. See response to Engineering Comment A-1.
H. See Mr. Dave Tanner's response.

II. Revisions to Existing Plan Sheets

A. Sheet updates as follows.
   1. Address in title blocks have been updated.
   2. Stream Corridor labeling has been clarified on Civil Sheets.
   3. This is a single legal parcel. See response to comment E-2 below.
   4. No slopes in excess of 35% were identified in the areas of work.
   5. The existing trail has been identified A0 and C-1.0. Re-routing is up to the discretion of the trail committee. We shall be removing the existing trail as part of this project and recommend that the trail be installed in the appropriate easement area. It is our understanding that the trail committee will be processing the appropriate permitting for the development of the trail within the existing trail easements.
   6. Tree removals have been identified on sheet C-0.3 – Demolition and Tree Protections. See attached corresponding Arborist Report.

B. Sheet A0 (Cover Sheet)
   1. APNs are a Tax Number Designation, which are not related to the "legal description" of a parcel. The "legal description" for the parcel outlines 4.23acres as noted on the plans and sheet A0. We have listed APN 072-162-350 & 072-162-360 which encompasses the whole 4.23 Acres, with no division lines. See Mr. Tanner's response.

C. Sheets A1 and A2 (Parking Calculations)
   1. All existing spaces have been shown and counted on sheet A1.
   2. See Mr. Tanner's response.
   3. See table on sheet A1.
   4. See table on sheet A2. The "compact" label has been removed.
   5. See table on sheet A2.

D. Sheet A4
   1. See Mr. Dave Tanner's response.

E. Survey Sheets C-0.1 and C-0.2
   1. Legend has been clarified and checked.
   2. One legal lot. Additional note not required. "Doc.2012-033711" is the correct way to label and is in conformance with standard survey mapping.
   3. It is our understanding that all survey questions have been addressed. See Mr. Dave Tanner's response.
   4. Civil sheet labeling has been updated.

F. Easement and Creek Location Map sheets.
   1. It is our understanding that all easements are shown.
   2. Creek centerline has been clarified and extended on Civil Sheets. Survey sheets were not updated to reflect the extended centerlines.
   3. Sewer easement is shown.
   4. All sheets are stamped and signed.
   5. Adjustments have been shown.

6. The easement sheet has been clarified.

III. Additional Plan Sheets

A. See Paved Area sheet A5.
B. It is my understanding that detailed dining layout plans will be submitted separately and permitted separately. Current permitting is just to get approval for the space. See Mr. Dave Tanner's response.
   3. Protection barriers have been changed to bollards. See detail 5 sheet C-4.0.
C. Tree Removal Plan
   1. Tree removals required for parking lot expansion is shown on sheet C-0.3. See attached corresponding Arborist Report. Please note that the trees associated with the trail easement shall be identified by others and trail shall be permitted by others. Application does not include the relocation of the existing miss placed trail.
D. Material Boards are not applicable for the given application.

IV. Building Department Comments

A. Detailed parking count is on sheet A2. According to ADA compliance 7 ADA stalls are required up to 200 spaces (i.e. project proposes 199 spaces).
B. Standard bollards are being proposed to define the outdoor dining spaces. No ADA compliance issues are anticipated.
C. We understand geologic review is required and we will wait for the building permit phase to conduct this review.

V. Engineering Department Comments

A. Sheet C-0.0, C-2.1, and C-2.2
   1. The site terrain and setback restrictions require the need for a cut and a retaining wall; thus earthwork cannot be balanced. Placing the excess soil on site would require artificial mounding of the soil and require removal of most of the vegetation and trees, at the rear of property. A thinner retaining wall technically would not save any significant amount of soil removal, since other wall types would require extensive foundations and back wall drainage, which will generate similar amounts of soil excavation.
   2. Additional wall heights have been noted.
   3. Connections to existing drainage systems have been removed.
B. Sewer Easement
   1. Sheet numbering has been updated. Index on sheet A0 has been updated.
   2. We will work with the Engineering Department to develop additional easements to reflect the existing sewer encroachments during the building permit process. We understand this will be a condition of approval.
C. Stormwater Treatment
   1. The C3 and C6 Development Review Checklist is attached.
   2. DMA areas have been developed for new and replaced areas. See sheet C-6.0.

3. The existing parking lot has an extensive parking lot drainage containment and treatment system. We will not be able to enhance any existing areas, due to the restrictive creek setback limits.
4. Hydromodification Management is proposed for the increases in impervious surface. We are proposing a detention tank for the new impervious surface.
5. The bio treatment areas are located at the low of area and will serve as the trach capture point, prior to entering the detention device.

It is my hope that the above information, in combination with the attached materials meets with your approvals and the Planning Process can proceed. Please give me a call if you have any further questions.

Sincerely,

Clifford Bechtel

Clifford Bechtel,
Clifford Bechtel & Associates

SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.

COUNTY OF SAN MATEO
Planning & Building Department
455 County Center, 2nd Floor
Redwood City, CA 94063
BLD: 650-599-7311/PLN: 650-363-1825
http://planning.smcgov.org

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C.3 and C.6 Development Review Checklist

Municipal Regional Stormwater Permit (MRP 3.0)
Stormwater Controls for Development Projects
Effective Date: July 1, 2023

Project Information (Enter information only into blue-highlighted cells - other cells are locked.)

I.A Enter Project Data (For "C.3 Regulated Projects," data will be reported in the municipality's stormwater Annual Report.)

Project Name:	Roberts Center	Case Number:	
Project Address:	3036-3062 Woodside Road	Cross Street:	Canada Road
Project APN:	072-162-350 & 072-162-360	Project Watershed:	SF Bay
Applicant Name:	Dave Tanner	Project Phase No.	
Applicant Phone:	650-464-1234	Applicant Email Address:	ddmtanner2gmail.com

Development Type: (check all that apply)

- ☐ Small Single-Family Home Project (<10,000 sq. ft. of created and/or replaced impervious surface[1])
- ☐ Large Single-Family Home Project (≥10,000 sq. ft. of created and/or replaced impervious surface[1])
- ☐ Subdivision - Residential: Two or more lot development[2] # of units:
- ☐ Multi-Family Residential # of units:
- ☒ Commercial
- ☐ Industrial, Manufacturing
- ☐ Mixed-Use # of units:
- ☐ New, widened or reconstructed roads related to parcel-based projects[3]
- ☐ Stand-alone pavement maintenance or construction work, or similar work related to parcel-based projects[3]
- ☐ Other redevelopment project as defined by MRP: creating, adding and/or replacing exterior existing impervious surface on a site where past development has occurred.
- ☐ Institutional: schools, libraries, jails, etc.
- ☐ Parks and trails, camp grounds, other recreational
- ☐ Kennels, Ranches
- ☐ Other, Please specify

Project Description (Don't include past or future phases)[4]: Parking lot expansion and modification.

I.A.1 Total Project Area: 93,218 square feet (on and off-site)
I.A.2 Total Area on-site: 93,218 square feet (on the private property)
I.A.3 Total Area off-site: 0 square feet (frontage or area in Public Right of Way being improved)
I.A.4 Total Area of land disturbed during construction: 30,000 square feet
(Include all project on-site and off-site areas of clearing, grading, excavating and stockpiling)
I.A.5 Site slope: 3 %

I.A.6 Certification:

I certify that the information provided on this form is correct and acknowledge that, should the project exceed the amount of new and/or replaced impervious surface provided in this form, the as-built project may be subject to additional improvements.

☐ Preliminary Calculations Attached ☐ Final Calculations Attached ☒ Stormwater Control Plan Attached

Name of person completing the form:	Clifford Bechtel	Title:	Engineer
Signature:	Clifford Bechtel	Date:	7/17/23
Phone Number:	650-333-0103	E-mail:	cliffbechtel1@comcast.net

[1] Small and Large Detached Single-Family Homes that are not part of a common plan of development[2].

[2] Common Plans of Development (subdivisions or contiguous, commonly owned lots, for the construction of two or more homes developed within 1 year of each other), and/or constructed with shared utilities, are not considered single family home projects by the MRP.

[3] Stand-alone roadway or pavement projects, or pavement work that is part of a project, creating or replacing 5,000 sq. ft. or more of impervious surface may be subject to C.3 requirements - both in public and private areas. See the Roads Factsheet at: www.flowstobay.org/newdevelopment

[4] Project description examples: 5-story office building, industrial warehouse, residential with five 4-story buildings for 200 condominiums, etc.

I.B Is the project a "C.3 Regulated Project" per MRP Provision C.3.b? (Use table below to make determination.)

I.B.1 Enter the amount of Impervious surface Retained, Replaced or Created[5] by the project (use DMA Table in Worksheet D):

Table I.B.1 Impervious[6] and Pervious[6] Surfaces (Match DMA Summary Table in Worksheet D, if applicable)

	Pre-Project	Post-Project			
	I.B.1.a	**I.B.1.b**	**I.B.1.c**	**I.B.1.d**	**I.B.1.e**
Impervious Surfaces (IS) (e.g., sidewalks, driveways, parking areas, patios, roads, rooftops, pools, pathways, etc.)	Existing (Pre-Project) Impervious Surface (sq.ft.)	Existing Impervious Surface to be Retained[5] (sq.ft.)	Existing Impervious Surface to be Replaced[5] (sq.ft.)	New Impervious Surface to be Created[5] (sq.ft.)	Post-Project Impervious Surface (sq.ft.) (=b+c+d)
On-site area (within the parcel/private site boundaries)	93,078	88,337	9,741	17,062	110,140 -
Off-site area (e.g., frontage/other area in Public Right of Way)	0	0	0	0	0 -
Subtotal:	-	-	-	-	-
Total Impervious Surface Replaced and Created: ***(sum of totals for columns I.B.1.c and I.B.1.d):***		**I.B.1.f**	26,803 **- sq. ft.**		
Pervious Surfaces (PS) (e.g., landscaping, pervious pavement, bioretention areas, parking strips, street trees, etc. - both on-site and off-site)	Existing (Pre-Project) Pervious Surface (sq.ft.)				Post-project Pervious Surface (sq.ft.)
All pervious off-site area (e.g., frontage/Public Right of Way)[6]					
Landscaping area on-site	91,354.8				65,021.8
Pervious Pavement area on-site				**I.B.1.g**	9,171
Green Roof area on-site					
Subtotal:	91,354.8 -	**50% Rule Calculation**			74,192.8 -
Total Project Area (should be equal to **I.A.1**)	184,332.8 -	**I.B.1.h**	- %		184,332.8 -

I.B.2 Please review and attach additional worksheets as required below using the Total Impervious Surface (IS) Replaced or Created in cell **I.B.1.f** from Table **I.B.1** above and other factors:

	Review Steps	Check One Yes	Check One No	Attach Worksheet
I.B.2.a	Does this project involve any earthwork and/or stockpiling of soil, aggregates etc? If YES, then Check Yes, and Complete Worksheet A. If NO, then Check No, and go to I.B.2.b	X	☐	A
I.B.2.b	Is **I.B.1.f** greater than or equal to 2,500 sq.ft? If YES, then the Project is subject to Provision C.3.i. - complete Worksheets B, C and go to I.B.2.c. If NO, go to I.B.2.i - or ask municipal staff for Small Project Checklist.	X	☐	B, C
I.B.2.c	Does the 50% rule apply to the project? Is **I.B.1.h** 50% or more? If YES, site design, source control and treatment requirements apply to the entire on-site area. Continue to I.B.2.d If NO, these requirements apply only to the impervious surface created and/or replaced. Continue to I.B.2.d	☐	X	
I.B.2.d	Is this project a Roadway Project and is **I.B.1.f** greater than or equal to 5,000 sq.ft? If YES, project may be C.3 Regulated Project. See the Roadways Fact Sheet at: www.flowstobay.org/newdevelopment If NO, go to I.B.2.e	☐	X	
I.B.2.e	Is **I.B.1.f** greater than or equal to 5,000 sq.ft? (Or 10,000 sq.ft. for a Large Single-Family Home?) If YES, project is a C.3 Regulated Project - complete Worksheet D. Then continue to I.B.2.f. If NO, then skip to I.B.2.g. - or ask municipal staff for Small Project Checklist.	X	☐	D
I.B.2.f	Is **I.B.1.f** greater than or equal to 43,560 sq.ft, (i.e., one acre)? If YES, project may be subject to Hydromodification Management requirements - complete Worksheet E then go to I.B.2.g. If NO, then go to I.B.2.g.	☐	X	E
I.B.2.g	Is **I.A.4** greater than or equal to 43,560 sq.ft., (i.e., one acre)? [**SWRS Site**: Subject to monthly inspections from Oct 1 to April 30; weekly inspections if located in ASBS Watershed] For more information see: www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml If YES, check box, obtain coverage under CA Construction General Permit & submit Notice of Intent to municipality- go to I.B.2.h. If NO, then go to I.B.2.h.	☐	X	
I.B.2.h	Is this a Special Project or does it have the potential to be a Special Project? If YES, complete Worksheet F - then continue to I.B.2.i. If NO, go to I.B.2.i.	☐	X	F
I.B.2.i	Is this project a **Hillside Site**? Or a **High Priority Site**? Hillside Sites include those with ≥ 20% slope (see **I.A.5**) disturbing greater than or equal to 5,000 square feet. High Priority Sites include: 1) All sites where the scope of development or land alteration requires grading in excess of 250 c.y. or requiring a Grading or Land Clearing Permit; 2) Project with land disturbance of: a.) 1 sq. ft. or greater within the Fitzgerald Marine Reserve ASBS Watershed, b.) 1,000 sq. ft. or greater for areas within 100 feet of a creek, wetland, or coastline; 3) Any public project involving work within a waterway or any private project involving work within a waterway that requires a permit issued by the Planning and Building Department. [**SWRS Site:** Subject to monthly inspections from Oct 1 to April 30; weekly inspections if located in ASBS Watershed] If YES, complete section G-2 on Worksheet G - then continue to I.B.2.j. and complete the Certification in Section **I.A.6** If NO, then go to I.B.2.j and complete the Certification in Section **I.A.6**	☐	X	G
I.B.2.j	**For Municipal Staff Use Only**: Are you using Alternative Certification for the project review? If YES, then fill out section G-1 on Worksheet G. Fill out other sections of Worksheet G as appropriate. See cell **I.B.1.g** above - Is the project installing 3,000 square feet or more of pervious pavement? If YES, then fill out section G-3 on Worksheet G. Add to Municipal Inspection Lists (C.3 and C.3.h)	☐ ☐	☐ ☐	G

[5] "Retained" means to leave existing impervious surfaces in place; "Replaced" means to install new impervious surface where existing impervious surface is removed anywhere on the same site; and "Created" means the amount of new impervious surface being proposed which exceeds the total amount of existing impervious surface at the site.

[6] Per the MRP, pavement that meets the following definition of pervious pavement is NOT an impervious surface: pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in Provision C.3. Gravel pavement is not pervious unless it is constructed using pervious pavement system designs or runoff flows to adjacent landscaping. Pervious off-site areas include landscaped areas such as parking strips and street trees; off-site pervious pavement includes pervious concrete gutters and interlocking permeable concrete paver sidewalks, etc. 7/1/23

Worksheet A

C.6 – Construction Stormwater BMPs

Identify Plan sheet showing the appropriate construction Best Management Practices (BMPs) used on this project:
(Applies to all projects with earthwork)

Yes	Plan Sheet	Best Management Practice (BMP)
X	C-0.0,C-3.0,C-5.0	Control and prevent the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, rinse water from architectural copper, and non-stormwater discharges to storm drains and watercourses.
X	C-0.0 NOTES	Store, handle, and dispose of construction materials/wastes properly to prevent contact with stormwater.
X	C-0.0 NOTES	Do not clean, fuel, or maintain vehicles on-site, except in a designated area where wash water is contained and treated.
X	C-0.0 NOTES	Train and provide instruction to all employees/subcontractors re: construction BMPs.
X	C-0.0,C-3.0	Protect all storm drain inlets in vicinity of site using sediment controls such as berms, fiber rolls, or filters.
X	C-3.0	Limit construction access routes and stabilize designated access points.
X	C-3.0	Attach the San Mateo Countywide Water Pollution Prevention Program's construction BMP plan sheet to project plans and require contractor to implement the applicable BMPs on the plan sheet.
X	C-3.0	Use temporary erosion controls to stabilize all denuded areas until permanent erosion controls are established.
X	C-3.0	Delineate with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses.
X	C-0.0 NOTES	Provide notes, specifications, or attachments describing the following: ■ Construction, operation and maintenance of erosion and sediment controls, include inspection frequency; ■ Methods and schedule for grading, excavation, filling, clearing of vegetation, and storage and disposal of excavated or cleared material; ■ Specifications for vegetative cover & mulch, include methods and schedules for planting and fertilization; ■ Provisions for temporary and/or permanent irrigation.
X	C-0.0 NOTES	Perform clearing and earth moving activities only during dry weather.
X	C-0.0 NOTES	Use sediment controls or filtration to remove sediment when dewatering and obtain all necessary permits.
X	C-3.0	Trap sediment on-site, using BMPs such as sediment basins or traps, earthen dikes or berms, silt fences, check dams, soil blankets or mats, covers for soil stock piles, etc.
X	C-3.0	Divert on-site runoff around exposed areas; divert off-site runoff around the site (e.g., swales and dikes).
X	C-3.0	Protect adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.

Worksheet B

C.3 – Source Controls

Select appropriate source controls and identify the detail/plan sheet where these elements are shown.

Yes	Detail/Plan Sheet No.	Features that require source control	Source Control Measures (Refer to Local Source Control List for detailed requirements)
☒	C-1.0 &1.1	Storm Drain	Mark on-site inlets with the words "No Dumping! Flows to Bay" or equivalent.
☐		Floor Drains	Plumb interior floor drains to sanitary sewer [or prohibit].
☐		Parking garage	Plumb interior parking garage floor drains to sanitary sewer.[8]
☒	C-1.0 &1.1	Landscaping	■ Retain existing vegetation as practicable. ■ Follow ReScape (www.rescapeca.org) principles. Select diverse species appropriate to the site. Include plants that are pest- and/or disease-resistant, drought-tolerant, and/or attract beneficial insects. ■ Minimize use of pesticides and quick-release fertilizers. ■ Use efficient irrigation system; design to minimize runoff.
☐		Pool/Spa/Fountain	Provide connection to the sanitary sewer to facilitate draining.[8]
☐		Food Service Equipment (non-residential)	Provide sink or other area for equipment cleaning, which is: ■ Connected to a grease interceptor prior to sanitary sewer discharge.[8] ■ Large enough for the largest mat or piece of equipment to be cleaned. ■ Indoors or in an outdoor roofed area designed to prevent stormwater run-on and run-off, and signed to require equipment washing in this area.
☐		Refuse Areas	■ Provide a roofed and enclosed area for dumpsters, recycling containers, etc., designed to prevent stormwater run-on and runoff. ■ Connect any drains in or beneath dumpsters, compactors, and tallow bin areas serving food service facilities to the sanitary sewer.[8] ■ For more information, see the New Development Projects Litter Reduction Fact Sheet at: https://www.flowstobay.org/wp-content/uploads/2021/06/New-Dev-Litter-Reduction-Fact-Sheet-
☐		Outdoor Process Activities[9]	Perform process activities either indoors or in roofed outdoor area, designed to prevent stormwater run-on and runoff, and to drain to the sanitary sewer.[8]
☐		Outdoor Equipment/ Materials Storage	■ Cover the area or design to avoid pollutant contact with stormwater runoff. ■ Locate area only on paved and contained areas. ■ Roof storage areas that will contain non-hazardous liquids, drain to sanitary sewer[8], and contain by berms or similar.
☐		Vehicle/ Equipment Cleaning	■ Roofed, pave and berm wash area to prevent stormwater run-on and runoff, plumb to the sanitary sewer[8], and sign as a designated wash area. ■ Commercial car wash facilities shall discharge to the sanitary sewer.[8]
☐		Vehicle/ Equipment Repair and Maintenance	■ Designate repair/maintenance area indoors, or an outdoors area designed to prevent stormwater run-on and runoff and provide secondary containment. Do not install drains in the secondary containment areas. ■ No floor drains unless pretreated prior to discharge to the sanitary sewer.[8] ■ Connect containers or sinks used for parts cleaning to the sanitary sewer.[8]
☐		Fuel Dispensing Areas	■ Fueling areas shall have impermeable surface that is a) minimally graded to prevent ponding and b) separated from the rest of the site by a grade break. ■ Canopy shall extend at least 10 ft. in each direction from each pump and drain away from fueling area.
☐		Loading Docks	■ Cover and/or grade to minimize run-on to and runoff from the loading area. ■ Position downspouts to direct stormwater away from the loading area. ■ Drain water from loading dock areas to the sanitary sewer.[8] ■ Install door skirts between the trailers and the building.
☐		Fire Sprinklers	Design for discharge of fire sprinkler test water to landscape or sanitary sewer.[8]
☐		Miscellaneous Drain or Wash Water	■ Drain condensate of air conditioning units to landscaping. Large air conditioning units may connect to the sanitary sewer.[8] ■ Roof drains from equipment drain to landscaped area where practicable. ■ Drain boiler drain lines, roof top equipment, all wash water to sanitary sewer.[8]
☐		Architectural Copper Rinse Water	■ Drain rinse water to landscaping, discharge to sanitary sewer[8], or collect and dispose properly offsite. See flyer "Requirements for Architectural Copper."[10]

8 Any connection to the sanitary sewer system is subject to sanitary district approval.
9 Businesses that may have outdoor process activities/equipment include machine shops, auto repair, industries with pretreatment facilities.
10 See the Flowstobay website: https://flowstobay.org/wp-content/uploads/2020/04/ArchitecturalcopperBMPs.pdf

Worksheet C

Low Impact Development – Site Design Measures

Select Appropriate Site Design Measures *(Required for C.3 Regulated Projects; all other projects are encouraged to implement site design measures, which may be required at municipality discretion.) Projects that create and/or replace between 2,500 and 5,000 sq.ft. of impervious surface, and detached single family homes that create/replace between 2,500 and 10,000 sq.ft. of impervious surface, must include* ***one of Site Design Measures a through f*** *(Provision C.3.i requirements).*[10] *Larger (>=5,000 sq.ft) projects must also include applicable Site Design Measures g through i. Consult with municipal staff about requirements for your project.*

Select appropriate site design measures and Identify the Plan Sheet where these elements are shown.

Yes	Plan Sheet No.	Site Design Measures
☐		a. Direct roof runoff into cisterns or rain barrels and use rainwater for irrigation or other non-potable use.
☐		b. Direct roof runoff onto vegetated areas.
☒	C-2.0 &2.1	c. Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
☒	C-2.0 &2.1	d. Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
☒	C-1.0 &1.1 & C-4.0	e. Construct sidewalks, walkways, and/or patios with pervious or permeable surfaces. Use the specifications in the C.3 Regulated Projects Guide downloadable at www.flowstobay.org/newdevelopment
☒	C-1.0 & 1.1	f. Construct bike lanes, driveways, and/or uncovered parking lots with pervious surfaces. Use the specifications in the C.3 Regulated Projects Guide downloadable at www.flowstobay.org/newdevelopment
☒	C-1.0 & 1.1	g. Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies;
☒	C-1.0 & 1.1	h. Conserve natural areas, including existing trees, other vegetation and soils.
☒	C-1.0 & 1.1	i. Minimize impervious surfaces.

Regulated Projects can also consider the following site design measures to reduce treatment system sizing:

Yes	Plan Sheet No.	Site Design Measures
☒	C-1.0 & 1.1	j. Self-treating area (see Section 4.2 of the C.3 Regulated Projects Guide)
☒	C-1.0 & 1.1	k. Self-retaining area (see Section 4.3 of the C.3 Regulated Projects Guide)

[10] See MRP Provision C.3.a.i.(6) for non-C.3 Regulated Projects, C.3.c.i.(2)(a) for Regulated Projects, C.3.i for projects that create/replace between 2,500 and 5,000 sq.ft. of impervious surface and detached single family homes that create/replace between 2,500 and 10,000 sq.ft. of impervious surface.

Worksheet D

C.3 Regulated Projects and Non-Regulated GI Projects

Stormwater Treatment Measures and Site Design Measures by Drainage Management Area (DMA)

Check all applicable boxes, answer questions and fill in cells related to the site design and treatment measure(s) included in the project.

Drainage Management Area Summary Table

Complete the information below at the Entitlement, Building Permit and Certificate of Occupancy stages for Regulated C.3 Projects and Non-Regulated Green Infrastructure Projects. (The first four cells are automatically filled in from the Project Info sheet.)

Project Name:	0 Roberts Center
Project Address:	0 3036-3062 Woodside Road
Cross Streets:	0 Canada Road
APN:	0 072-162-350 & 072-162-360
Special Project[11]?	no
C.3 Regulated?	yes
Public or Private Project?	private

of C.3.d amount of runoff treated by Non-LID Systems on the Special Project site.

Public projects are those on public property or ROW; private projects are on privately-owned property but can include improvements in the public ROW required as part of the project.

DMA Identification Number	Impervious Area[12] (ft^2)	Pervious Area[13] (ft^2)	Type of Site Design Measure or Treatment Measure[14]	Sizing Criteria Used[15]	Size Required[16]	Size Provided
Example DMA 1	5,000	2,000	Bioretention unlined with underdrain	2c: Flow	208 ft2	220 ft2
Example DMA 2	1,000	1,000	Self-retaining area	Other	< 2:1 ratio	1:1 ratio
Example DMA 3	1,000	-	Infiltration trench	1b: Volume	1,000 ft3	1,100 ft3
1	263	0	Self retaining	Other		
2	49	0	Self retaining	Other		
3	1057	0	Pervious pavement	1a:Volume	<2:1	671 sf
4	167	0	Pervious pavement	1a: Volume	<2:1	588 sf
5	1066	0	Pervious pavement	1a: Volume	<2:1	600 sf
6	112	0	Self retaining	Other		
7	1857	0	Bio Retention	2c: 4% rule	74 sf	125 sf
8	16785	0	Bio Retention	2c; 4% rule	771 sf	680 sf
9						
10						
11						
12						
13						
14						
15						
add rows, if needed						
TOTALS	-	-	N/A	N/A	N/A	N/A
Totals from Project Info Sheet Cells	-	-				

Is the project harvesting and using rainwater? Yes ☐

Rainwater Harvesting/Use Measures:

☐ Rainwater Harvesting for indoor non-potable water use

☐ Rainwater Harvesting for landscape irrigation use

A long term Operations and Maintenance (O&M) Agreement and Plan for this project will be required. Please contact the municipality for an agreement template and/or consult the C.3 Regulated Projects Guide and table of contents at www.flowstobay.org/newdevelopment for maintenance plan templates for specific facility types.

11 Special Projects are smart growth, high density, transit-oriented or affordable housing developments with the criteria defined in Provision C.3.e.ii.(2), (3) or (4) (see Worksheet F).

12 The sq.ft. of impervious area within the Drainage Management Area

13 The sq.ft. of pervious area within the Drainage Management Area

14 "Lined" refers to an impermeable liner placed on the bottom of a bioretention area, such that no infiltration into native soil occurs.

15 Select from the menu which of the following Provision C.3.d.i hydraulic sizing methods was used, if any. Volume based approaches: 1(a) Urban Runoff Quality Management approach, or 1(b) 80% capture approach (recommended volume-based approach). Flow-based approaches: 2(a) 10% of 50-year peak flow approach, 2(b) 2 times the 85th percentile rainfall intensity approach, 2(c) 0.2-Inch-per-hour intensity approach (recommended flow-based approach - also known as the 4% rule for bioretention), or 3 Combination flow and volume-based approach. "Other" is used for Site Design Measures such as Self-Retaining or Self-Treating Areas.

16 Each DMA should drain to one treatment area (unless it is self-treating or self-retaining). If multiple DMAs are draining to one treatment area, they should be combined into one DMA. If one DMA drains to multiple treatment areas, that DMA should be split up so there is one DMA per treatment area (which allows the treatment area to be properly sized).

7/1/23

CLIFFORD BECHTEL AND ASSOCIATES
Project Management & Engineering

Project: Roberts Center
Project No. 2022784
By: CB Date: 7/17/23
Chkd By: _____ Date _____
Sheet No. 1 of 2

NPDES STORM WATER CONTROL CALCULATIONS

CURRENT PARKING LOT IS ENTIRELY ASPHALT WHICH DRAINS TO THE WEST, TOWARD REDWOOD CREEK. A PORTION OF THE EXISTING PARKING LOT IS COLLECTED AND DIRECTED TO AN EXISTING FILTERING AND DETENTION FACILITY. THE EXPANDED PARKING AREA OF 17,062 SF HAS BEEN DESIGNED TO COLLECT THE NEW ASPHALT AREA AND OUTFALL AT A NEW BIO TREATMENT AREA. THE BIO AREA DIRECTS RUNOFF TO THE PROPOSED DETENTION TANK. THE DETENTION TANK HAS A LOW FLOW RELEASE DIRECTED TO A BUBBLE BOX VIA A PROPOSED PUMP STATION.

$$Q = CLA = (0.9-0.3)(1.27)(17950/43560) \quad \text{(NOAA, 25yr)}$$
$$= 0.3140 \text{ cfs}$$

$$V_{\text{TO STORE}} = 0.3140 \text{ cfs}\,(60 \text{ s/m})(60 \text{ m/hr})(1 \text{ hr})$$
$$= 1{,}130.4 \text{ cf}$$

$$V_{\text{project}} = 2 \times (5 \times 5 \times 3)\,0.35 \text{ (voids)} + (805 \times 0.5) \times (19.62)(40)$$
(BUBBLE PITS; BIO; 60"ϕ TANK)

$$= 1240 \text{ cf} > 1{,}130.4 \text{ cf}$$ OK

CONT. →

CLIFFORD BECHTEL AND ASSOCIATES
Project Management & Engineering

Project: Roberts Center
Project No. 2022784
By: CB Date: 7/17/23
Chkd By: _____ Date _____
Sheet No. 2 of 2

CONT.

C3/C6 COMPLIANCE

THE PROJECT CONSISTS OF SEVERAL REPLACEMENT AREAS AND AN EXPANSION AREA. THE AREAS SHALL IMPLIMENT PERVIOUS PAVEMENT, LANDSCAPE RETENTION AND BIO RETENTION TO COMPLY WITH C3/C6 GUIDELINES.

SEE DMA LAYOUT SHEET C-6.0 OF THE PERMIT SET. SEE C3/C6 CHECKLIST WORKSHEET D FOR BREAKDOWN AND COMPLIANCE.

REGISTERED PROFESSIONAL ENGINEER
CLIFFORD E. BECHTEL
C 52075
Exp. 12/24
CIVIL
STATE OF CALIFORNIA

Clifford Bechtel

ROBERT'S PARKING LOT

RECEIVED
07/28/2023
Woodside Town Hall

NOAA Atlas 14, Volume 6, Version 2
Location name: Redwood City, California, USA*
Latitude: 37.4296°, Longitude: -122.2548°
Elevation: 362.21 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.168 (0.147-0.195)	0.210 (0.183-0.243)	0.264 (0.229-0.308)	0.310 (0.266-0.364)	0.372 (0.307-0.454)	0.420 (0.339-0.526)	0.470 (0.368-0.605)	0.522 (0.396-0.694)	0.594 (0.430-0.829)	0.652 (0.454-0.947)
10-min	0.241 (0.210-0.279)	0.300 (0.262-0.348)	0.379 (0.329-0.441)	0.444 (0.382-0.521)	0.533 (0.440-0.651)	0.602 (0.486-0.754)	0.673 (0.528-0.867)	0.748 (0.568-0.995)	0.852 (0.617-1.19)	0.935 (0.650-1.36)
15-min	0.291 (0.254-0.337)	0.363 (0.316-0.421)	0.458 (0.398-0.533)	0.537 (0.461-0.630)	0.644 (0.533-0.787)	0.728 (0.587-0.911)	0.814 (0.639-1.05)	0.905 (0.687-1.20)	1.03 (0.746-1.44)	1.13 (0.787-1.64)
30-min	0.407 (0.355-0.471)	0.507 (0.442-0.588)	0.640 (0.555-0.744)	0.749 (0.644-0.880)	0.899 (0.744-1.10)	1.02 (0.820-1.27)	1.14 (0.892-1.46)	1.26 (0.959-1.68)	1.44 (1.04-2.01)	1.58 (1.10-2.29)
60-min	0.575 (0.501-0.666)	0.717 (0.624-0.832)	0.904 (0.785-1.05)	1.06 (0.911-1.24)	1.27 (1.05-1.55)	1.44 (1.16-1.80)	1.61 (1.26-2.07)	1.79 (1.36-2.38)	2.03 (1.47-2.84)	2.23 (1.55-3.24)
2-hr	0.842 (0.734-0.975)	1.04 (0.909-1.21)	1.31 (1.14-1.52)	1.53 (1.31-1.80)	1.83 (1.51-2.23)	2.06 (1.66-2.58)	2.30 (1.80-2.96)	2.55 (1.94-3.39)	2.90 (2.10-4.04)	3.17 (2.21-4.60)
3-hr	1.06 (0.928-1.23)	1.32 (1.15-1.53)	1.65 (1.44-1.93)	1.93 (1.66-2.27)	2.31 (1.91-2.82)	2.60 (2.10-3.26)	2.90 (2.28-3.74)	3.22 (2.44-4.28)	3.65 (2.64-5.10)	4.00 (2.78-5.80)
6-hr	1.52 (1.33-1.76)	1.89 (1.65-2.19)	2.38 (2.07-2.78)	2.79 (2.40-3.28)	3.34 (2.77-4.09)	3.78 (3.05-4.73)	4.22 (3.31-5.44)	4.68 (3.56-6.23)	5.32 (3.85-7.42)	5.82 (4.05-8.46)
12-hr	2.00 (1.74-2.32)	2.53 (2.20-2.93)	3.23 (2.80-3.76)	3.80 (3.27-4.47)	4.60 (3.80-5.62)	5.22 (4.21-6.53)	5.86 (4.59-7.54)	6.53 (4.95-8.68)	7.45 (5.39-10.4)	8.18 (5.69-11.9)
24-hr	2.44 (2.23-2.72)	3.13 (2.86-3.49)	4.05 (3.69-4.53)	4.81 (4.35-5.42)	5.85 (5.15-6.79)	6.67 (5.77-7.88)	7.51 (6.36-9.06)	8.39 (6.93-10.4)	9.61 (7.66-12.3)	10.6 (8.17-13.9)
2-day	3.18 (2.90-3.54)	4.10 (3.75-4.58)	5.32 (4.85-5.96)	6.33 (5.73-7.13)	7.70 (6.77-8.93)	8.76 (7.57-10.3)	9.85 (8.34-11.9)	11.0 (9.07-13.6)	12.5 (9.99-16.1)	13.8 (10.6-18.2)
3-day	3.68 (3.36-4.10)	4.75 (4.34-5.31)	6.16 (5.62-6.90)	7.31 (6.62-8.24)	8.88 (7.82-10.3)	10.1 (8.73-11.9)	11.3 (9.59-13.7)	12.6 (10.4-15.6)	14.4 (11.4-18.4)	15.7 (12.2-20.8)
4-day	4.08 (3.73-4.55)	5.27 (4.82-5.89)	6.82 (6.22-7.64)	8.08 (7.32-9.11)	9.80 (8.63-11.4)	11.1 (9.62-13.1)	12.5 (10.6-15.0)	13.9 (11.5-17.1)	15.8 (12.6-20.2)	17.2 (13.3-22.7)
7-day	5.15 (4.71-5.74)	6.59 (6.02-7.36)	8.46 (7.71-9.47)	9.98 (9.03-11.3)	12.0 (10.6-14.0)	13.6 (11.8-16.1)	15.2 (12.9-18.4)	16.9 (13.9-20.8)	19.1 (15.2-24.5)	20.9 (16.1-27.6)
10-day	5.77 (5.27-6.43)	7.36 (6.72-8.22)	9.40 (8.57-10.5)	11.1 (10.0-12.5)	13.3 (11.7-15.4)	15.0 (13.0-17.7)	16.7 (14.2-20.2)	18.5 (15.3-22.9)	20.9 (16.7-26.8)	22.8 (17.6-30.1)
20-day	7.36 (6.73-8.21)	9.40 (8.59-10.5)	12.0 (10.9-13.4)	14.1 (12.7-15.8)	16.8 (14.8-19.5)	18.8 (16.3-22.2)	20.9 (17.7-25.2)	22.9 (18.9-28.3)	25.7 (20.5-32.9)	27.8 (21.5-36.7)
30-day	8.80 (8.05-9.82)	11.3 (10.3-12.6)	14.4 (13.1-16.1)	16.8 (15.2-18.9)	19.9 (17.6-23.1)	22.3 (19.3-26.3)	24.6 (20.8-29.7)	26.9 (22.2-33.2)	30.0 (23.9-38.4)	32.3 (25.0-42.6)
45-day	10.9 (9.96-12.2)	14.0 (12.8-15.6)	17.7 (16.2-19.9)	20.6 (18.7-23.3)	24.4 (21.4-28.3)	27.1 (23.4-32.0)	29.7 (25.1-35.8)	32.3 (26.7-39.9)	35.7 (28.5-45.8)	38.3 (29.6-50.5)
60-day	13.2 (12.0-14.7)	16.8 (15.4-18.8)	21.3 (19.4-23.8)	24.7 (22.3-27.8)	29.0 (25.5-33.6)	32.0 (27.7-37.8)	35.0 (29.6-42.2)	37.9 (31.3-46.8)	41.6 (33.2-53.3)	44.4 (34.3-58.6)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical