

C/D/M



Project Managers
Developers
Asset Management

TOWN OF FAIRFAX

MAY 19 2011

RECEIVED

May 17, 2011

TO: Jim Moore & Linda Neal cc. Rich Hall, Developer/ Landlord
Larry Kennings Good Earth Market: Al Baylacq
FROM: John U. Fry, *JU* Project Manager Mark Squire
Edwin Cariati
RE: Town Council Package Submittal –June 1st Meeting
Fairfax Properties/ Good Earth Market

Included in this Town Council Package submittal are eleven (11) sets of the following:

- Project Description Narrative
- Plans: Architectural w/ elevations and cross-sections
Landscape w/ planting and irrigation
Civil - Site Plan w/ parking lot layout
Electrical – Site Light Standards and Photometrics
- Current Building Exterior Pictures (two views)
- Visual Simulations of Building after Renovation(two views)
- Exterior color selections
- Studies Performed--- **[Full Reports]**
 - Acoustical/ Noise Study
 - Asbestos Remediation Study
 - Air Quality Study
 - Concrete Tests
 - Hydrology Analysis w/ Storm Water calculations
 - Geotechnical and Seismic Study
 - Structural Engineer- Scope of Structural Modification
 - Energy Study - Title 24 w/ calculations
 - Traffic Study and Supplemental Study w/ Town's Peer Review Recommendation
- Miscellaneous Materials/ Letters
 - Structural Engineer – Building Shell Seismic Upgrades Explanation
 - Reduced Photometric Study and Specification Sheet for Parking Lot Lights
 - Letter to Fire Marshal accepting on-site 20ft wide roadway/access asiles

In addition to the documents listed above the Planning Dept. will provide:

- Planning Staff Report w/ Conditions of Approval
- Initial Environmental Study and Negative Declaration Mitigations

CDM / Real Estate Company, Inc.

CONSTRUCTION • DEVELOPMENT • MANAGEMENT

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EXHIBIT #

C

Submittal Package – Town Council
Meeting – June 1st, 2011
Fairfax Center Properties, LLC/ Tenant: good Earth market

Previously sent for Design Review Hearings and on file with Town planning Dept.:

- Planning Application and Use Permit Application
- Sign Application will be a separate application submitted at a later date
- Preliminary Title Report – APN 2-131-012
- Boundary and Topography Map
- Plan reductions [8 ½ x 11] Architectural, Civil, and Landscape.

The following is a listing of Plans submitted with the modifications required for fire department 20ft wide roadway, Initial Environmental Review Study.

- | | | | |
|-------|---|------|----------------------------------|
| A-0 | Cover Sheet | | |
| C-3 | Civil – Parking Layout
[Pages C-1, C-2, &
C-4 > C-8, Plan Check only] | | |
| A-2.1 | Store Floor plan | E1.1 | Electrical Site Plan |
| A2.2 | Store Mezzanine (2 nd floor) | E1.2 | Electrical Site Photometric Plan |
| A2.3 | Clerestory & Mechanical Well | | |
| A2.4 | Roof Plan | L1.0 | Landscape Cover Sheet |
| A4.1 | Exterior Elevations | L2.0 | West Parking Lot – Details |
| A4.2 | Exterior Elevations | L2.1 | East Parking Lot –Detail |
| | | A5.1 | Building Sections |
| | | L3.0 | Irrigation Plan |
| | | L4.0 | Planting Plan |
| A9 | Existing elevations | | |
| A10 | Existing Elevations | | |

The following is an explanation of the modifications to be made to the former Albertson property located at 720 Center Blvd., Fairfax, CA and the amenities needed to accommodate the transfer of Good Earth Market & Natural Foods to this location.

Overview

Good Earth Market will be relocating store operations from their current store [8,500sf] on Sir Francis Drake Blvd (west end of Town) to the east end of Town at 720 Center Blvd. and Pastori Avenue to the former location of the Albertson's Grocery Store[21 21,150sf].

The Zoning and Use for their new site at 720 Center Blvd., Fairfax will accommodate the store operations. There are parking lots on the east and west sides of the store building which will be renovated: new and additional landscaping, new light standards, and resurfaced pavement. The store will continue to use the entrance from Center Blvd and will construct an additional new entrance on the east side with patio/porch, trellis, and seating areas. This will present a new aesthetic to be seen by those entering Town from the eastern direction [from San Rafael, Ross, and San Anselmo]. The exterior of the building will be ungraded with a new added element on the ridge of the roof—a clerestory going from south to north.

The store interior improvements will include a complete remodel: new décor, insulated windows, upgraded equipment, and energy saving lighting and HVAC [heating and air conditioning], as well as, new mechanical refrigeration with programmed controlled energy management system. In addition, the building will have a seismic upgrade to the Standards of the International Building Code, Edition 2011.

The store will continue to provide natural foods in its new setting with an on-site bakery, prepared foods from a new kitchen, service deli, meat/ fish/ poultry department, a farmer's market/ organic produce & bulk grains department, a nutrition and health care venue, and increased selection of groceries.

Design Issues Addressed

(a) Site Improvements

The store will have two parking lots: east parking lot facing Pastori will have 35 spaces and the west parking lot entered from Center Blvd will have 61 parking spaces assigned to the store. The total designated parking for the store is 90 spaces of the Center's 248 spaces. The current Parking Ordinance requires 2 spaces per 1,000 sq. ft. of grocery store and the 90 spaces is 4.3 spaces per 1,000 sf ft of building area.

The parking lot will be re-surfaced with a 2 inch A.C. layer. The traffic pattern will be a one-way system with 45 degree angled parking and 15ft wide drive aisles. The change in parking pattern will eliminate car staging on the street at the enter/exit driveways and instead will occur on site reducing congestion on the street.

The current parking lots have 35ft high light standards which will be replaced with 18ft height with sodium light fixtures. The foot-candle target range is 2 to 5 foot-candles giving an average of 2.73 foot-candle in the parking lot while only .19 foot-candle at the property line due to the non-glare fixtures with cutoff luminaries with not more than 2.5% rated lumens above 90% angle.

Post DRC Work Session: The Fire Department has required a 20 ft driveway in the east parking lot in front of the store patio/ building entrances. This has been accommodated in the Civil Plan, page C-3.

(b) Utilities

The current sewer system will have a grease interceptor [1,500 gallons] installed. Currently there is no grease processing system. The restroom fixtures will have low flush water, electric eye activated faucets, and all staff hand sinks will be knee operated with automatic shut-off. All wash-down areas will have automatic shut-off hoses.

The electrical feeds into the building will be replaced with new transformers to eliminate the overhead electrical lines which will be underground. New switchgear will be installed with capacity for 1,600amps in accordance with the new Electrical Codes.

(c) Waste management

The waste system will include modifications to the current operations adding a cardboard

(d) Landscaping

The landscape, which is almost non-existent in the parking lots, will be increased with eleven parking lot planter islands, planting strips, and there will be five (5) landscape /hardscape nodes strategically located for "community placemaking". The north hillside adjacent to Sir Francis Drake Blvd will be planted with oak trees along with a new planting plan with low-water plantings and a drip irrigation system. The roof rain run-off and the parking lots storm water will be directed into perimeter bio-swales. The current site storm water run-off will be reduced as discussed in the hydrology study with calculations.

Post DRC Work Session: Additional details have been added for the "pocket parks" on the additional of page L-2.0 and L-3.0

(e) Building Modifications

There are four major design elements added to this building while only increasing the building footprint by 192 sq. ft. These enhancements include: (i) Clerestory on the roof ridge which will be 30ft wide and 110ft long [north-south direction], (ii) new east entrance/exits with patio/ porch areas for customer seating, (iii) the current south entrance will have a 28ft high window wall and (iv) additional fenestration will be placed on the south and east sides of the building,

Clerestory has a threefold purpose: (i) it will add additional light into the store, (ii) it will minimize the expansive roof mass seen from the hillsides and when driving along both Center Blvd and Sir Francis Drake Blvd., and (iii) the HVAC equipment will not be placed on the roof, but rather, be located on an interior mechanical equipment platform inside the clerestory.

East Parking Lot and Patio/Porch will provide a second front to the building (the other is the south side) welcoming the traveler into the Town of Fairfax on both Center Blvd and Sir Francis Drake Blvd. There will two seating areas and a wood trellis across the entire expanse of the building with the clerestory viewed above.

Post DRC Work Session: The patio/ planters had a concrete finish called "fracture fin, channeled" which at the request of the DRC has been replace with a "heavy aggregate texture" to match the stucco finish at other locations of the project. Sample picture has been included in the DRC packet.

South Entrance Fenestration will enhance the building's presentation to the shoppers across the street in the Fair-Anselm Center. This fenestration will be part of the clerestory.

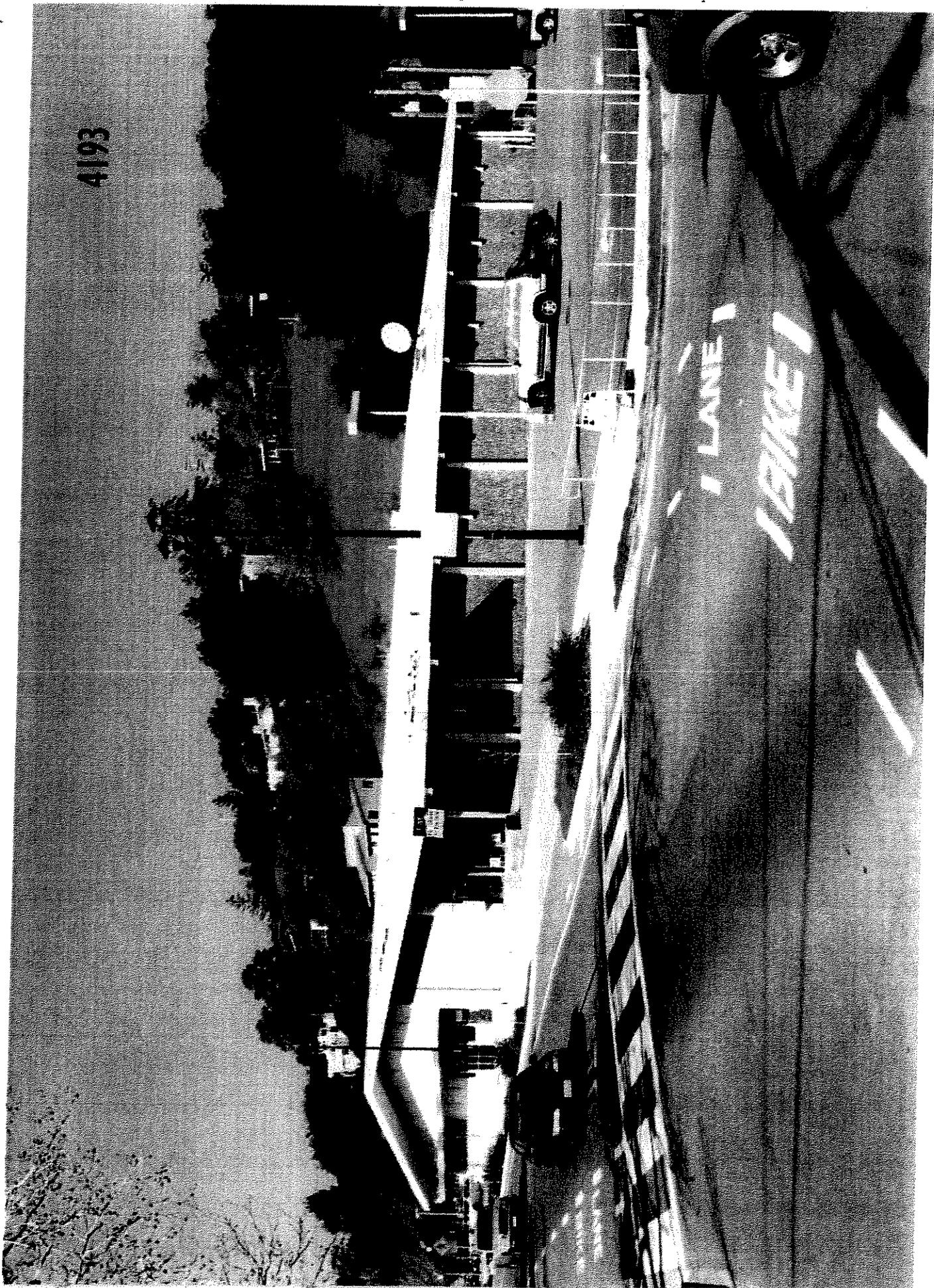
West side of the building will have two new "pocket park" areas [one a bike riders' Rest Stop] with seating, message board, picnic table w/ ADA access, a bike air pump station, and an electric car charging station. The Java Hut area will have a pocket park, too.

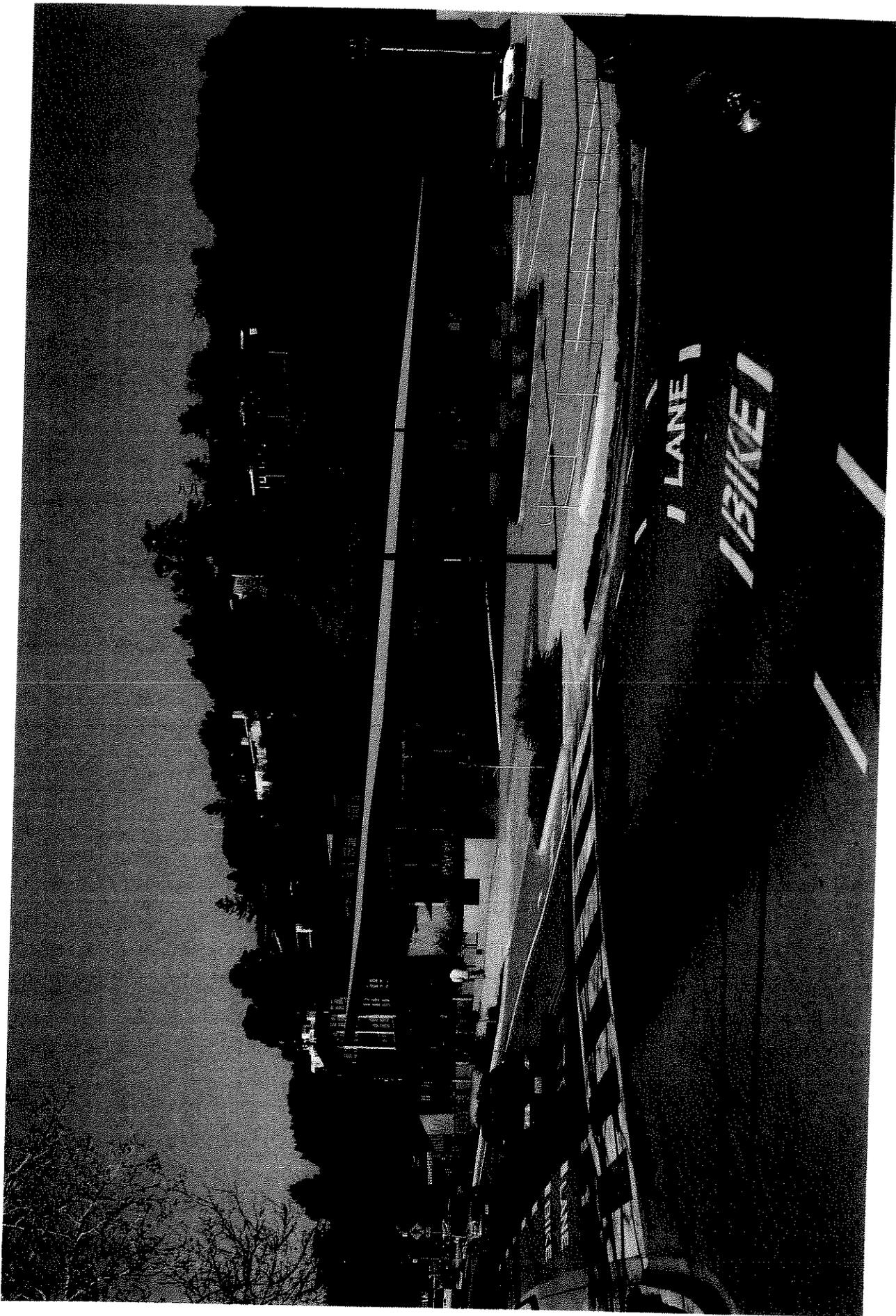
(f) Colors and Materials will be earth tones. The window frames with mullions will be anodized dark bronze with insulated glass. The clerestory will have a metal standing seam metal roof. The current roof will be light beige for reflectivity and not the current harsh white-grey color and the metal roof color will be anodized dark bronze. The current east and south exterior tilt-up walls with impeded rock be replaced with 80% fenestration. The west wall will have its stone panels stained.

(g) Construction's Interim Requirements

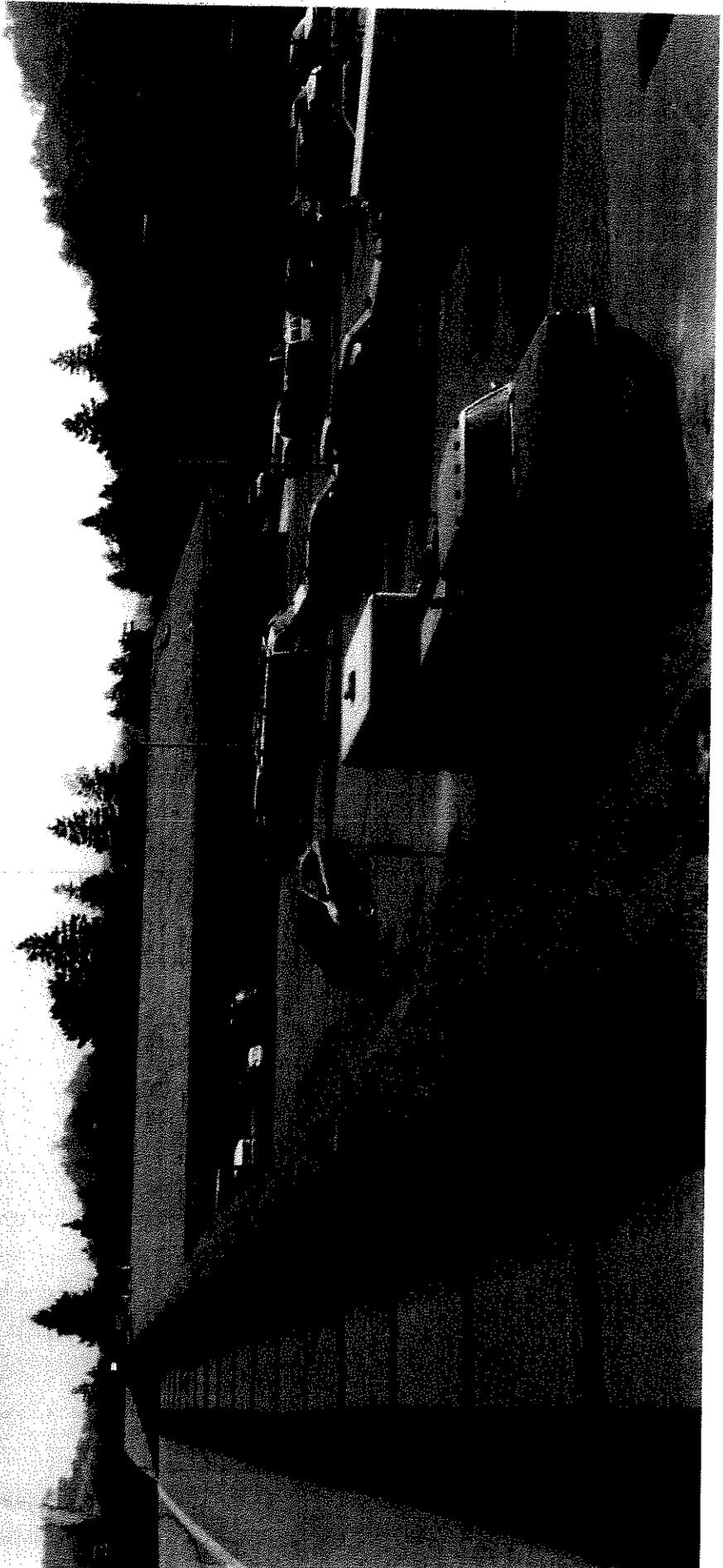
The building renovation will have overlapping schedules in order to reduce the construction timeline for tenant improvements, building shell modifications, and the site improvements. The total construction period duration is planned for five (5) months. The staging area will be in the east parking lot so that trucks and equipment will not travel into Town when making the deliveries. The site work and building demolition will be completed in 60 days. The exterior work will be done per Ordinance during the construction hours of 7am to 4pm. to minimize the noise.

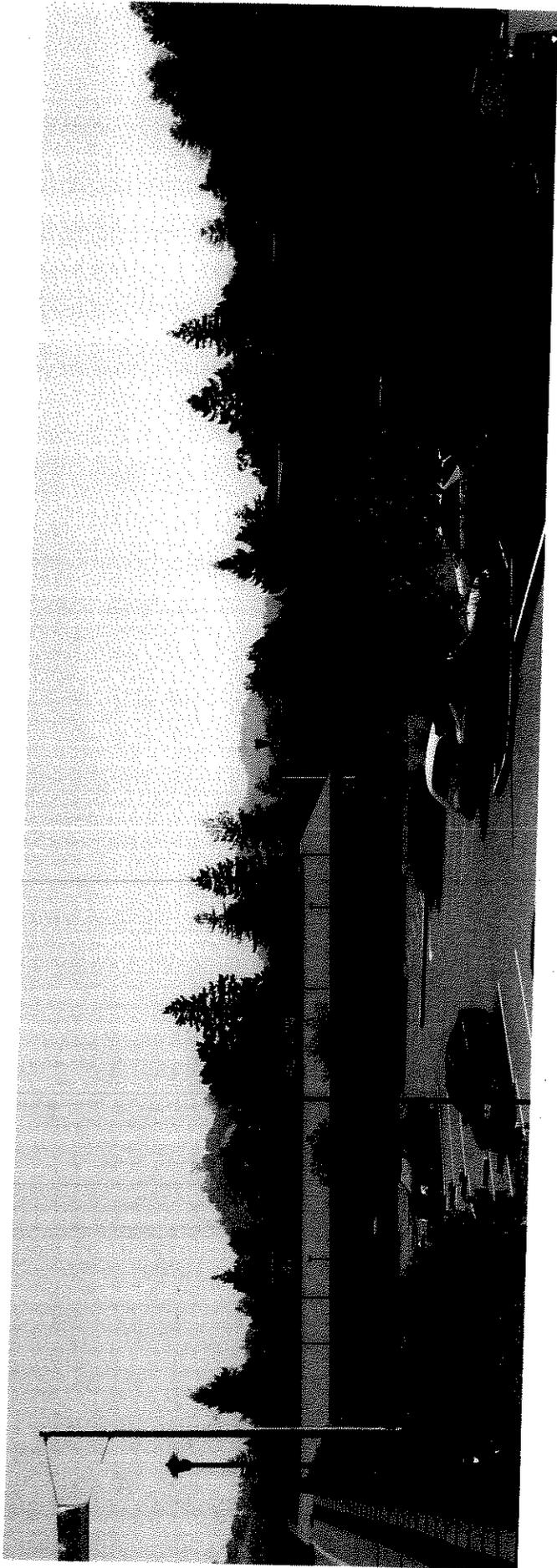
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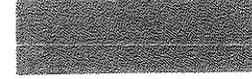


4205





FAIRFAX CENTER PROPERTIES, LLC / EXTERIOR COLOR SELECTIONS

1	MAIN ROOF	Custom Built Metals - Tan	
2	CLERESTORY & CANOPY ROOF	Custom Built Metals - Sierra Tan	
3	MAIN & CLERESTORY FACIA	BM Black Bean Soup 2130-10	
4	WINDOW TRIM	BM Essex Green	
5	CLERESTORY WALLS	BM Roxbury Caramel HC-42	
6	EXISTING TILT-UP WALLS	Scofield CS-15 Antique Amber	
7	WALL PILASTERS	BM Roxbury Caramel HC-42	
8	STUCCO WALLS	Scofield CS-15 Antique Amber	
9	PATIO TRELIS	Minwax Vermont Maple	
10	PATIO HANDRAILS	BM Pine Brook 490	
11	PATIO UMBRELLA	Rust	
12	OUTDOOR FIREPLACE	Pro-Fit LedgeStone Autumn	
13	PATIO CONCRETE	Scofield A-59 Beige Cream	

GOOD EARTH NATURAL & ORGANIC FOODS / EXTERIOR MATERIAL & COLOR SCHEDULE

720 Center Blvd., Fairfax, CA

DESCRIPTION	MATERIAL	FINISH/STYLE	COLOR
1 MAIN ROOF	TPO (Thermoplastic Olefin) Single Ply Cool Roofing	Ethylene Propylene Rubber	Tan (Use Shaker Beige HC-45 Benjamin Moore for color)
2 CLERESTORY ROOF	Standing Seam Metal Roof	Berridge Mfg.	Buckskin (Use Beigewood 1007 Benjamin Moore for color)
3 CLERESTORY ROOF FACIA	Painted Wood	Satin Exterior Enamel	BM Van Buren Brown HC-70
4 MAIN ROOF FACIA	Painted Wood	Satin Exterior Enamel	BM Devonwood Taupe 1008
5 CLERESTORY WINDOW TRIM	Extruded Aluminum	Kynar 500	Anodized Bronze Finish
6 CLERESTORY WALLS	Cementitious Panels	James Hardy Hardipanel Vertical Siding (Smooth)	BM HC-46 Jackson Tan
7 SOUTH WALL CANOPY ROOF	Standing Seam Metal Roof	Berridge Mfg.	Buckskin (Use Beigewood 1007 Benjamin Moore for color)
8 SOUTH WALL CANOPY FRAME	Galvanized Steel	Benjamin Moore Semi-Gloss Enamel	BM Devonwood Taupe 1008
9 EXISTING TILT-UP WALLS	River Rock & Mortar	L.M. Scofield Co. Lithochrome Chemstain	CS-15 Antique Amber
10 STUCCO WALLS	Three Coat Plaster	Intregal Colored Sand Finish/ Use L.M. Scofield Co. Lithochrome Chemstain for color	CS-15 Antique Amber
11 STUCCO WAINSCOTTING	Three Coat Plaster	Intregal Colored Sand Finish/ Use L.M. Scofield Co. Lithochrome Chemstain for color	CS-15 Antique Amber
12 WAINSCOT CAP	High Density Foam under Three Coat Plaster	Same as Wainscotting	CS-15 Antique Amber
13 TILT-UP WALL PILASTERS	Existing Concrete	Flat Wall Enamel	BM HC-46 Jackson Tan
14 STOREFRONT WINDOW & DOOR TRIM	Baked Enamel on Metal	Benjamin Moore Semi-Gloss Enamel	BM Essex Green
15 PATIO CONCRETE	Intregal Colored Concrete	L.M. Scofield Co. Lithochrome Colors	A-59 Beige Cream
16 PATIO TRELLIS	Locally Sustainable Cedar	Minwax Water Based Wood Stain	Vermont Maple (match sample)
17 PATIO HANDRAILS	Galvanized iron	Benjamin Moore Semi-Gloss Enamel	BM Essex Green
18 OUTDOOR FIREPLACE	Napa Field Stone	Clark's Veneer	Oranges & Dark Browns
17 FIREPLACE HEARTH & BENCH	Intregal Colored Concrete	L.M. Scofield Co. Lithochrome Colors	A-59 Beige Cream
18 PATIO UMBRELLA	Canvas	Market Style w/ Wood Frame	Rust
19 LOADING DOCK DOORS & TRIM	Metal Doors & Frames	Benjamin Moore Semi-Gloss Enamel	BM HC-46 Jackson Tan

REV 4/13

Robinson
Meier
Jully & Associates

Principals
Peter Robinson, S.E.
Jayson E. Haines, S.E.

February 15, 2011

John Fry
CDM Real Estate
444 Airport Blvd #203
Watsonville, CA 95076

Re: Fairfax Center Remodeling
720 Center Boulevard, Fairfax, California
Shell Modifications
RMJ Job # 11128S

Dear John,

The purpose of this letter is to explain the nature of the proposed structural modifications to the Fairfax Center (building shell) for use by Good Earth Market.

The work involves removing some existing concrete walls at the perimeter and providing a clerestory roof element in the location of the existing ridge. The revisions are being done in compliance with the 2010 California Building Code. Specifically, Section 3403 of Chapter 34 deals with alterations to existing structures. By this section, new work must comply with the code provisions for new construction, but portions of the structure not altered and not affected by the alterations are not required to comply.

This section further states that alterations shall not increase the force in any structural element by more than 5%, unless the element with the increased force complies with the code for new structures. The strength of any element shall not be decreased to less than that required by the code for new structures.

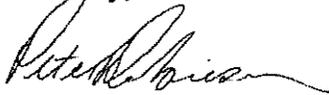
For seismic considerations, however, if the alterations increase the seismic force in any existing element by more than 10% or decrease the strength of an element to resist seismic forces by more than 10%, then the entire seismic force resisting system is required to conform to the code

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for new structures, regardless of whether or not the element with the increased force can be shown to meet the code. In our case, we are indeed increasing the seismic force on the remaining walls of the east wall by more than 10%, so we are required to show that the entire seismic force resisting system conforms to the code seismic requirements for new construction. Fortunately, the remaining concrete shear walls are able to meet the current code seismic requirements with only minor strengthening.

If you have any questions regarding this information, please call.

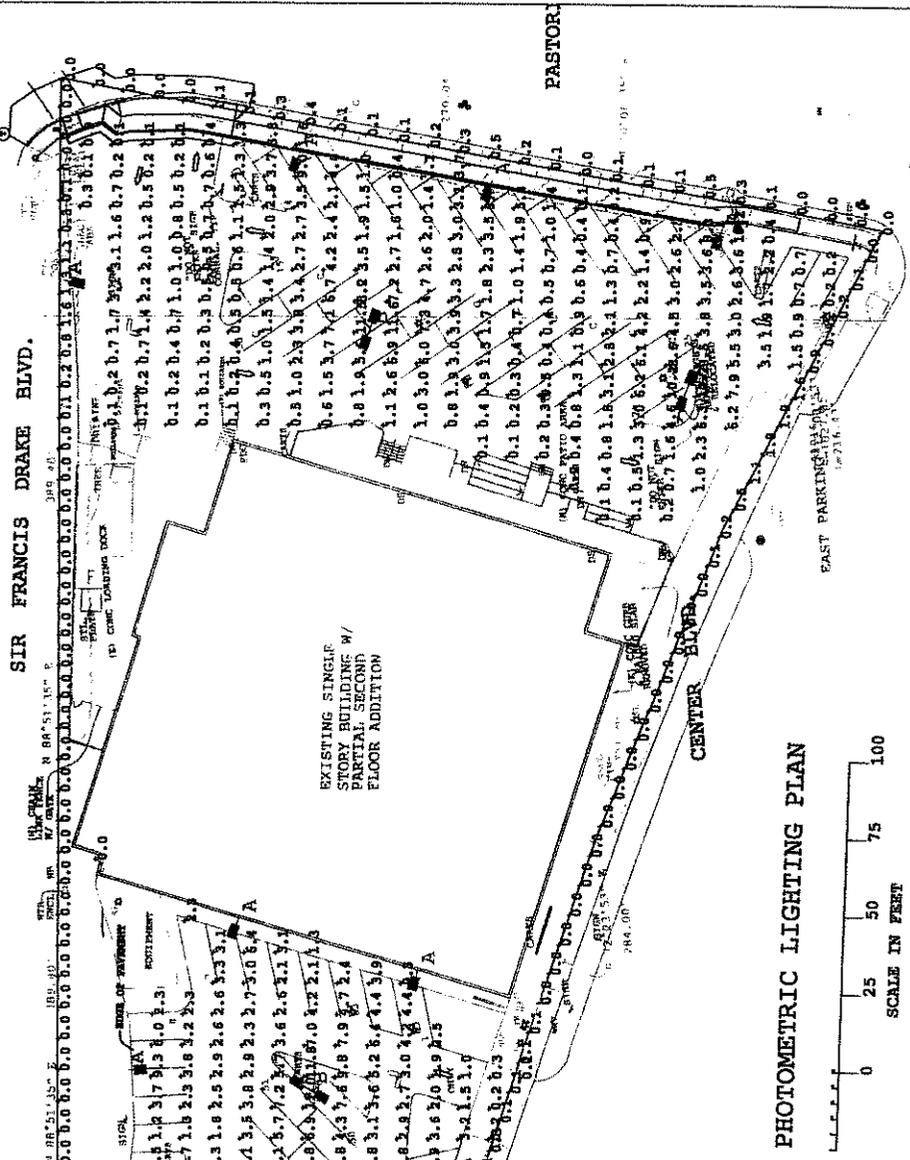
Sincerely,



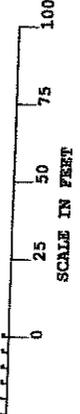
Peter Robinson

President





PHOTOMETRIC LIGHTING PLAN



Calculation Summary

Project: Project_1						
Description	Units	Avg	Min	Max	Avg/Min	Max/Min
PARKING/DRIVES	FC	2.73	0.0	12.6	N.A.	N.A.
PROPERTY LINE	FC	0.19	0.0	1.9	N.A.	N.A.

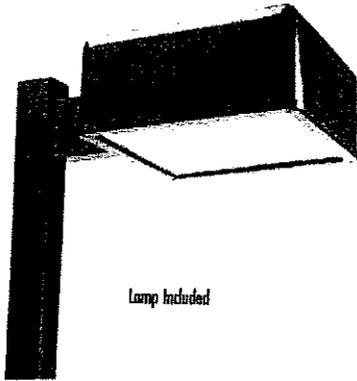
Filename: FAIRFAX3.MET

Luminaire Schedule

Label	Symbol	Qty	Description	Lumens	LFP
A	LM	13	150WT HPS FREQ/THRU W/DLS - FFM8515-M @ 17.5' AFF	16000	0.800
B	LM	5	2 - 150WT HPS FRNG/ROWY - FFM8515-M @ 17.5' AFF	16000	0.800

NOTE: THE LIGHTING DESIGN IS BASED ON INFORMATION PROVIDED BY OTHERS. ACTUAL RESULTS MAY VARY FROM DESIGN DUE TO UNACCOUNTED CONDITIONS OR LUMINAIRE OUTPUT. ALL INFORMATION THAT IS REFERENCED TO THIS DESIGN, REGARDING CONDITIONS OR OTHER LUMINAIRES IS NOT NEARLY AS COMPREHENSIVE AS THE INFORMATION PROVIDED BY THE MANUFACTURER. ILLUMINANCE VALUES SHOWN ARE CALCULATED FROM THE LUMINAIRE LAYOUT THAT IS SHOWN. LUMINOUS FLUX AND LUMINOUS INTENSITY VALUES ARE BASED ON THE LUMINAIRE DATA PROVIDED BY THE MANUFACTURER. ILLUMINANCE VALUES ARE BASED ON THE LUMINAIRE DATA PROVIDED BY THE MANUFACTURER. ILLUMINANCE VALUES ARE BASED ON THE LUMINAIRE DATA PROVIDED BY THE MANUFACTURER.

Wattage Range:
35 to 1000 W

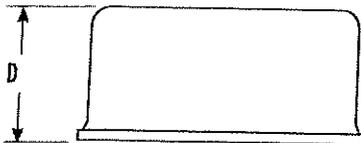
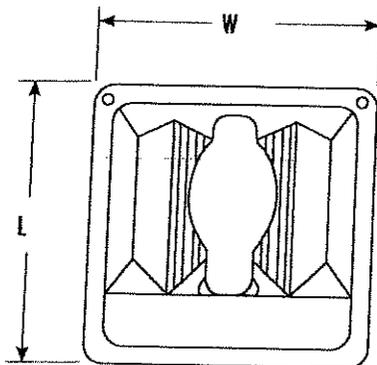


The FP Series is ideally suited for roadway applications, parking areas or for building-mounted security lighting. Units feature a sleek square design with rounded edges in either a 12", 16" or 23" die cast aluminum housing.

 Listed for Wet Locations
Consult Factory for CUL Availability

Dimensions

	Fixture Length	Fixture Width	Fixture Depth	Approx. Ship Wt.
FPS Series	12.4"	12.4"	5.25"	18 lbs.
FPM Series	16.4"	16.4"	7.0"	33 lbs.
FPL Series	23.4"	23.4"	10.25"	68 lbs.



Features

Housing

Die cast aluminum housing with flush doorframe and rounded edges are standard with bronze, black or white polyester powder topcoat. Other colors available upon request. The 16" and 23" housings can be rotated. (See Optics)

Optics

The 16" and 23" housings come standard with Type III asymmetric distribution. Ideally suited for roadway applications, parking areas or building mounted security lighting. The 16" and 23" housings have mounting knockouts on three sides that allow the housing to be rotated 90 degrees either right or left.

Ballast

All fixtures come standard with a high-power factor multi-tap or 480V ballast. All units are supplied with a 36" SOW 16/3 cord. If no Voltage is specified, cord is connected to highest Voltage.

Lamps

- 12" housing: 35 - 175W medium base lamp
- 16" housing: 70 - 400W mogul base lamp
- 23" housing: 750 - 1000W mogul base lamps

Lens

A clear, tempered glass lens is held securely in a die cast doorframe. Complete silicon gasketing around the lens frame and at mounting points provide a watertight seal.

EPA Ratings

Because of its unique design, lower EPA levels are obtained, resulting in lower pole costs. EPA Ratings are listed on page 252.

Mounting Options

Refer to page 247 for a complete description of mounting options.

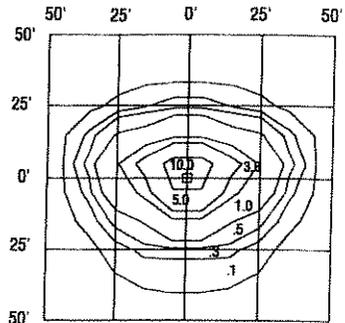
Parking/Roadway Floodlight Pole Spacing Selection Guide

Lamp Type	Desired Mounting Height	Design Footcandles	
Metal Halide	175W	12'	25.0
	400W	20'	16.8
	400W	25'	10.5
	1000W	30'	19.8
	1000W	35'	14.3
High-Pressure Sodium	250W	20'	13.3
	400W	25'	15.0
	400W	30'	10.2
	1000W	30'	26.9
	1000W	35'	19.5

Photometric Data

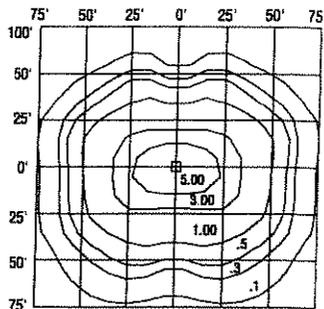
(Isofootcandle Plots)

12" FPS



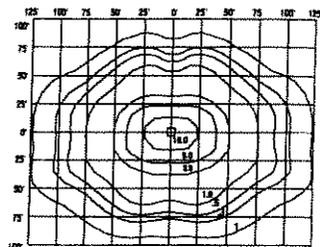
Isofootcandle plot of 175W MH Parking/Roadway Floodlight at 15' mounting height, and 0° vertical tilt.

16" FPM

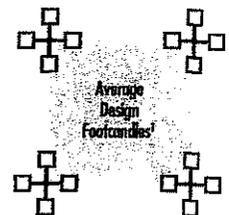


Isofootcandle plot of 400W MH Parking/Roadway Floodlight at 25' mounting height, and 0° vertical tilt.

23" FPL



Isofootcandle plot of 1000W MH Forward-Throw Luminaire at 30' mount height, 0° vertical tilt.



Criteria:
Floodlight FP Series, 0° vertical tilt
Mounting Height: 30'
Wattage: 400W
Mounting: 12" Extended Pole Mount
Pole Spacing: 4 times mounting height

¹ assuming 4 floodlights/pole



May 16, 2011

Mr. Rob Bastianon
Fire Inspector - Ross Valley Fire Department
777 San Anselmo Avenue
San Anselmo, CA 94960

RE: Access Requirements per CFC Section 503.1.1
Good Earth Market at 720 Center Blvd, Fairfax, CA

Dear Mr. Bastianon:

Appreciate your meeting with Steven Crocker and me on April 26th to discuss your letter dated April 5, 2011 stating the requirements for fire apparatus access per Section 503.1.1 (attached). We will proceed with the 20 foot roadways [Civil Plan, C-3] on the east and west sides of the building and not appeal your decision in order to avoid a project delay and meet the scheduled November 2011 opening date for the new Good Earth Market in Fairfax, CA. However, we do not concur with: (i) your interpretation of the Code you required to be implemented on this particular project, nor (ii) with your requirement that the project needs to provide two -20ft driveways on the property.

The project's site drawing was presented to you showing how we meet the Code as follows:

The first requirement you stated: "At least one of the required access routes shall be located within a minimum 15feet and a maximum 30 feet from the building, and shall be positioned parallel to one entire side of the building".

We discussed the West Parking Lot access road having an entry directly from Center Blvd which could be 20ft wide and parallel to the building for the length of the west side of the building and within 15ft of the building. At the southwest corner of the building next to this access road currently there is a fire hydrant. This roadway and hydrant meet the requirement above stated in your letter of April 5th.

The second requirement in your letter "...requires a 20 foot access road be provided to within 150 feet of all portions of the 1st floor exterior wall".

The west side meets this requirement as stated above. The north side of the building has access from either parking lot and is within 150ft of the required 20ft width roadway. This requirement also is accomplished on the south side from Center Blvd which is a major street and within 15 feet of the building. In addition, this requirement it is met on the east side of the building from Pastori Avenue, a two-way street exceeding the required 20ft width.

CDM / Real Estate Company, Inc.

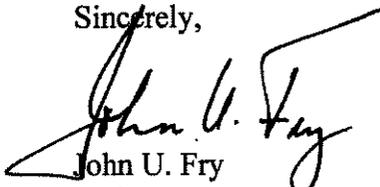
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However, your interpretation of the Code resulted in your roadway requirement on the east side of the building having to be on-site within 30ft of the building and be 20ft wide, rather than using Pastori as the access roadway. This means you required two (2) roadways, 20ft wide [west and east] to be on the property and within 15 to 30 feet of the side of the building although the Code requires this condition on only one side of the building and that could have been done from Center Blvd.

Therefore, we are memorializing for the record this matter regarding your Code interpretation by sending this letter to the Town Council of Fairfax explaining the impact of your interpretation. It has resulted in the Pastori sidewalk having to be reduced one foot in width [still meets ADA Code], and one foot in width had to be deleted in the tree planting strip, plus it caused the on-site revision of ADA parking. All of which caused the Town and landowner to incur additional cost while compromising the quality of design in order to accommodate your interpretation.

Sincerely,



John U. Fry
Project Manager

CC. Rich Hall, Fairfax Center Properties, LLC
Jim Moore, Fairfax Planning Director
Fairfax Town Council Members

MAY 19 2011

RECEIVED

Environmental Consulting Services **18488 Prospect Road – Suite 1, Saratoga, CA 95070**
Phone: (408) 257-1045 stanshell99@toast.net FAX: (408) 257-7235

NOISE IMPACT AND MITIGATION STUDY

Good Earth Market

720 Center Boulevard

Fairfax, CA

April 28, 2011

Revised

Prepared by

H. STANTON SHELLY

Acoustical Consultant

1. Project Description [1] [2]

The existing unoccupied 21,150 square foot building at 720 Center Blvd is proposed to be renovated to accommodate a new Good Earth Market. The site between Sir Francis Drake Blvd and Center Blvd at Pastori Avenue was previously the site of a grocery store. Parking for customers would be provided in existing parking lots at both the east and west end of the building, totaling approximately 40 vehicle spaces in the east parking lot and 60 in the west parking lot. Vehicle access to the project is from Center Blvd and Pastori Avenue. The project area is presently a mix of residential and commercial uses, with two moderate-volume traffic arterials through the Town of Fairfax serving it. The new tenant's present 8,500 square foot Market facility at the west end of Fairfax is expected to be remodeled for traditional retail shopping after they take occupancy of the new facility.

This study evaluates the potential noise impacts on nearby sensitive receptors, produced by temporary construction activities, and market operations, both on site and traffic-related. Recommended noise mitigation measures are described, as needed.

2. Existing Setting

Noise Sources in the Area

The primary source of noise at the project site is traffic on Center Blvd, a two-lane street bounding the project on the south side, and also traffic on Sir Francis Drake Boulevard on the north boundary, although Sir Francis Drake traffic is mitigated by being elevated 6 to 12 feet above the site. Typical Center Blvd vehicle passby noise levels are in the 55 -65 dBA range at 50 feet. Trucks, buses, motorcycles, and poorly-muffled vehicles produce peak noise levels 5 to 15 dBA higher on passby. Infrequent small aircraft overflights create noise incidents of 60 70 dBA. Other than normal sporadic noise from trash pickup trucks, there are no other significant noise sources in the project area.

Sensitive Receptor Locations and Descriptions

The closest sensitive receptor locations that could potentially be affected by noise generated by the project include several residences across Pastori Avenue on the east boundary of the project site, residential properties on Sir Francis Drake Boulevard both east and west of the project site, and residential properties adjacent to Center Blvd both east and west of the project site. This study investigates the extent to which the closest receptors could be impacted by noise from on-site Good Earth Market activities and also by noise from traffic generated by the project. Other sensitive receptor areas would have less project noise impacts because of significant additional distance and/or structural obstruction.

Ambient Noise Levels

Field noise measurements were made during the morning of February 4, 2011, with a CEL-440 Precision Noise Meter and Analyzer, calibrated with a B & K Model 4230 Sound Level Calibrator. The measurement locations were chosen to represent key nearby receptor locations, as described below:

- Location 1 – at the corner of the residential property at the intersection of Center and Pastori across the street from the project, approximately 50 feet from the nearest Center traffic lane
- Location 2 – in the front yard of an apartment on the north side of Sir Francis Drake Boulevard two blocks east of the project site, approximately 35 feet from the nearest traffic lane.
- Location 3 – adjacent to Center Blvd near the apartments one block west of the project site, approximately 25 feet from the nearest traffic lane.
- Location 4 – across Pastori Avenue from the project, in the middle of the block, approximately 25 feet from the nearest traffic lane

Noise levels were measured and are reported using percentile noise descriptors as follows: L_{90} (the background noise level exceeded 90 % of the time), L_{50} (the median noise level exceeded 50% of the time), L_1 (the peak level exceeded 1% of the time), and L_{eq} (the average energy-equivalent noise level for the measurement period). Measured noise levels are presented in Exhibit 1 following. The DNL/Ldn noise levels

were computed as the long-term average of the L_{eq} using the daily traffic distribution in the area, with standard weighted penalties for the nighttime hours, and modeled with an enhanced version of the National Cooperative Highway Research Board traffic noise model [3].

EXHIBIT 1
EXISTING NOISE LEVELS (dBA)
Good Earth Market Project Area – Fairfax

Location	L ₉₀	L ₅₀	L _{eq}	L ₁	L _{dn}
1. Pastori Avenue and Center Blvd	52	57	60.0	68	63
2. East of site on Sir Francis Drake Blvd	55	65	66.0	73	69
3. West of site on Center Blvd	56	62	63.8	71	66
4. Middle of block on Pastori Avenue	48	52	55.5	69	57

Center Blvd traffic is the dominant noise source near the project site, since Sir Francis Drake is elevated above the site and the vehicle noise is partially obstructed. Noise levels at any location depend almost entirely upon the nearby traffic volume, average vehicle speed, and distance to the nearest lane of the dominant traffic flow. The Exhibit 1 monitored levels indicate those relationships at each monitoring location.

Fairfax Noise Ordinance Standards

Exhibit 2 presents the Town of Fairfax Exterior Noise Limits, Section 8.20.040 of the Town code [4] for key types of community land uses.

EXHIBIT 2
Fairfax Exterior Noise Limits [4]

Noise Zone	Noise limit not be exceeded more than 7.5 min. in any 15 min. period at receiving land use	
	Time period	Noise Level (dBA)
A. Single Family Residences	Night : 10pm to 7am	40
	Day: 7am to 10pm	50
B. Multiple-family Residences	Night : 10pm to 7am	50
	Day: 7am to 10pm	55
C. Commercial uses	Night : 10pm to 7am	55
	Day: 7am to 10pm	60

Fairfax Land Use Noise Planning Standards

Exhibit 3 presents general noise planning guidelines adopted in the Fairfax Noise Element [5] for various types of community land uses.

EXHIBIT 3
Fairfax Noise Planning Guidelines [5] – L_{dn} (dBA)

Land Use	"Normally Acceptable" Noise Level
Single -family Residential	60
Multiple-family Residential, Motels, Hotels	65
Schools, Libraries, Museums, Meeting halls, Hospitals, Churches	60
Outdoor Sports and Recreation, Neighborhood parks, Playgrounds	65
Commercial, Office, Business, and Professional buildings	70

Suitability of Noise Environment for Proposed Project

The project site is zoned for and was previously used by a similar retail/ grocery tenant, so the site is considered appropriate for the proposed new grocery/market retail use.

3. Potential Project Noise Impacts

On-site Market Operations

Some Good Earth Market operations could potentially cause noise impacts at nearby receptor areas, particularly at the closest residences across Pastori Avenue. The market will be open for business from 7 am to 9 pm seven days a week. Product delivery trucks visit the store at various times of the day at the dock on the east end. Mechanical refrigeration and HVAC equipment are located inside the store, with no units on the roof, and so are not considered a potential source of noise impact. The most important sources of project noise are described in the following paragraphs.

Loading dock activities

Delivery trucks will arrive Monday through Saturday at the loading dock at the northeast corner of the building, as follows:

- 5 am – 6am : Two 45-foot produce trucks (Mon – Sat)
- 6 am – 7 am : One 60-foot grocery truck (Mon – Fri)
- 7 am – 2 pm : Approximately 30 grocery vans (Mon – Sat)

Trash trucks would make pickups after 8 am.

Each truck operation around the loading dock could generate engine noise for less than one minute for each arriving and departing trip, generating temporary noise levels of 65 to 75 dBA at the nearest residences on Pastori Avenue. Backup alarms on trucks at the loading dock could create noise levels of 75 dBA for 5-10 seconds at the nearest residences on Pastori each time a vehicle backs up. These levels are perhaps 5 dB higher the noise level of automobiles passing on Pastori. The truck engines would be turned off during unloading. Delivery operations would raise long term noise levels at the Pastori residences approximately 1 dBA relative to present noise levels with no tenant on the site.

Cardboard compaction and baling

Because of the substantial amount of cardboard containers coming into the facility, a cardboard recycling process would be installed, including cardboard compactor/ baler equipment on the loading dock. This would be utilized several times a week and would generate noise levels of 60 to 70 dBA for one to two minutes at the closest residences on Pastori, less than truck engine noise levels. Because these are only a few brief operations several times a week, it would have minimal impact on the overall noise level.

Parking Lot Noise

Both the number and speed of customer vehicles moving in the parking lots would be very low, so customer vehicles coming and going in the east or west lots would be less than 50 dBA at any of the receptor locations, and below normal street traffic noise levels.

Project Traffic Noise

Noise levels from traffic on both Sir Francis Drake Blvd and Center Blvd are moderate now without the project, as shown in Exhibit 1. Traffic volumes at most key residential locations on these two streets (represented by measurement locations 1, 2, and 3 in Exhibit 1) would increase less than 10% from project trips, as described in the project traffic study [6]. This level of traffic increase from project-related trips would raise noise levels less than 1 dBA—not a noticeable increase.

The one location where traffic volumes would increase significantly due to new project trips is on Pastori Avenue adjacent to the site, where there is an entrance driveway to the east parking lot. According to the traffic study, compared to existing traffic with no tenant on the site, traffic would increase from the present average of 1-2 vehicles per minute during the day to an average of 3-4 vehicles per minute during the day from Good Earth Market customer trips. The higher traffic on Pastori would increase traffic noise levels by approximately 2 dB, which would be somewhat noticeable for this location. However, overall project-related noise from traffic and from on-site activities at Pastori residences would still be significantly below noise levels at other nearby receptor locations, as shown in the summary in Exhibit 4.

EXHIBIT 4

PROJECT NOISE LEVELS - Ldn (dBA)

Key Receptor Locations in Good Earth Market Area – Fairfax

Location	Existing	With Project
1. Pastori Avenue and Center Blvd	63	63
2. East of site on Sir Francis Drake Blvd	69	69
3. West of site on Center Blvd	66	66
4. Middle of block on Pastori Avenue	57	60

Summary of Potential Noise Impacts from Market Activities

Exhibit 4 shows that most receptor locations on heavily-traveled streets would have no noticeable increase in noise levels. At the residences in the middle of Pastori Avenue, an increase of about 2 dB from increased traffic, and another approximately 1 dB from truck deliveries, would be expected. Although the individual noise levels created by loading dock area vehicle activities would briefly exceed noise levels specified by the Noise Ordinance at the nearest residences, the duration of the incidents would be much less than 7.5 minutes in any 15 minute period specified in the ordinance. These anticipated Market activities in a designated commercial area would not be considered a significant impact, since the Pastori area still remains relatively quieter than other receptor locations in the project area that are more affected by traffic noise, and the noise levels would still be considered "acceptable" according to Fairfax Noise Planning Guidelines (Exhibit 3).

Temporary Construction Noise

This section describes typical project construction activities, and the noise levels of vehicles, heavy equipment and powered tools that are typically used for demolition, site preparation and construction tasks. Unless otherwise noted, noise levels are stated at a distance of 50 feet.

Typical noise levels for general construction equipment are listed in Exhibit 5, along with the "usage" level, or the portion of the time the equipment is generally used. Many of the types of equipment listed would not be used on this project, since major site preparation work is not required. Construction equipment noise level data are based on Reference 7.

The receptor locations most affected by the construction phases are the same as for the project operations, those residences directly across Pastori Avenue adjacent to the site. In addition, each of the tasks may require some heavy truck traffic to and from the site, affecting receptors on the major access routes such as along Center Blvd and Sir Francis Drake Blvd.

Following Exhibit 5, general task descriptions for anticipated outside construction and preparation work on the Good Earth Market building and parking lot are summarized, along with the expected noise levels. Work would be completed during normal daytime work hours.

EXHIBIT 5
POTENTIAL CONSTRUCTION NOISE LEVELS (dBA) [6]
Good Earth Market – Fairfax

Equipment	Noise Level	Usage
Mobile Equipment		
Front Loader	75-80	0.4
Backhoe	75-85	0.2
Bulldozers, tractors	75-85	0.4
Scraper	80-90	0.4
Grader	75-85	0.1
Truck	75-90	0.4
Paver	80-90	0.1
Materials Handling		
Concrete mixer	75-85	0.4
Concrete pump	75-80	0.4
Crane	75-85	0.2
Derrick	75-90	0.2
Stationary Equipment		
Pumps	70-75	1.0
Generators	75-80	1.0
Compressors	75-80	1.0
Saws	75-80	0.05
Impact Equipment		
Pile drivers	95-100	0.05
Jackhammers	75-90	0.1
Pneumatic tools	80-85	0.2

Building Modifications and Concrete/blacktop Work

Expected demolition, remodeling and construction tasks include:

- Cutting concrete openings in the building for window and door modifications, which require various types of saws, drills and motorized equipment.
- Building forms for concrete and installing new windows with carpentry tools
- Renovating and remodeling exterior elements of the building.

These tasks require both manual and electrical carpentry tools, which produce noise levels of 70 to 80 dBA.

Parking Lot Modifications and Landscaping

- Cutting openings and removing blacktop to install parking lot islands and planting areas
- Repaving the parking lot. This could involve diesel engines and typically produce noise levels of 80 to 85 dBA at 50 feet under full load and 75 to 80 dBA while idling

Completion of Structure and Interior Details

Final construction phases include completion of interior remodeling, installation of equipment, plumbing and lighting. The highest noise levels during this period would be from material haul trucks and cranes, with miscellaneous pumps and auxiliary engines providing the background noise at 60 to 70 dBA. The final interior finishing stages generally would not cause significant noise disturbances.

Summary of Potential Construction Noise Impacts

During site preparation and construction, certain heavy equipment could be within 100 feet of the nearest residences during some work periods. Therefore the maximum noise exposure at an unprotected location could be 70-55 dBA. Construction noise would be intermittent and of limited duration at any given location, rather than continuous, since equipment is used sporadically over a number of weeks.

For the Good Earth Market project, a few of the nearby residences could experience some temporary disturbance from project-related noisy equipment. For these reasons, general mitigation measures are recommended in Section 4.

4. Recommended Noise Mitigation Measures

Although none of the project operational activities would be considered significant impacts or exceed the Town's noise planning standards, the following mitigation measures are suggested to reduce individual noise events impacts in nearby receptor areas. Temporary construction noise has a greater potential to cause disturbance because of the higher noise levels, although only for a period of a few weeks.

Operational Noise Mitigation Measures

Turn off delivery trucks while unloading products and the loading dock.

Construction Noise Mitigation Measures

1. Choose construction equipment that is of quiet design, has a high- quality muffler system, and is well maintained. This includes trucks used to haul materials.
2. Install superior mufflers and engine enclosure panels as needed on gas, diesel or pneumatic impact machines.
3. Erect temporary plywood enclosures around stationary equipment that produce excessive noise at nearby receptors.
4. Restrict construction hours to 8 am to 5 pm.
5. Eliminate unnecessary idling of machines when not in use.
6. Use good maintenance and lubrication procedures to reduce operating noise.
7. If possible, locate equipment as far from sensitive receptors as possible.

5. Conclusions

Overall moderate traffic noise levels will continue to be the dominant noise source in the project area in the foreseeable future. Some brief disturbances by morning truck operations could occur at a few nearby properties. But overall the addition of commercial activities associated with the proposed Good Earth Market, with the recommended mitigation measures, would not noticeably raise noise levels at most nearby receptors, except for a few locations across Pastori Avenue, where noise levels would increase about 3 dBA. But even at these locations resulting noise levels would be about 60 dB Ldn and lower than other nearby receptor areas.

REFERENCES

1. Project Site and Design Drawings, Good Earth Market, Fairfax; William S. Bagnall Architects Inc. dated October 2010.
2. Discussions and descriptions of planned Good Earth Market operations, John U. Fry, CDM Real Estate Company Inc; February 2011.
3. Highway Noise - A Design Guide for Highway Engineers, National Cooperative Highway Research Program Report 117, Highway Research Board, National Academy of Sciences, Washington, D.C., 1971 (model enhanced and field validated by ECS).
4. "Exterior Noise Limits", Code Section 8.20.050; Town of Fairfax; 1981.
5. "Land Use Compatibility for Transportation Noise", Noise Element, Town of Fairfax General Plan, Department of Planning and Building Services, December 2010.
6. Project traffic study, "Traffic Impact Analysis for Good Earth Store, Fairfax, CA"; KD Anderson and Associates, Loomis, CA; Feb 8, 2011.
7. "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances", U.S. Environmental Protection Agency, Office of Noise Abatement and Control, Washington, D.C., December 1971.

October 8, 2010

MAY 19 2011

RECEIVED

Re: Results of Pre-Demolition Asbestos Assessment at 720 Center Boulevard in Fairfax, California

Dear Mr. Brown:

Consulting Associates of California (CAC) is pleased to submit this letter which presents the findings of a pre-demolition asbestos assessment conducted at the vacant former grocery store building located at 720 Center Boulevard in Fairfax, California (the site). The asbestos assessment was conducted on October 5, 2010. The work was performed based on your verbal authorization on October 1, 2010.

Scope of Work

It is understood that the Site owner has planned to deconstruct and salvage the components of the structure in the near future. In accordance with this determination, an asbestos assessment is required by the Bay Area Air Quality Management District's (BAAQMD's) Regulation 11, Rule 2 and the Cal-OSHA *Asbestos in the Construction Industry Standard* (CCR Title 8, Section 1529).

CAC conducted an inspection of the accessible portions of the interior and exterior of the structure to determine whether suspect asbestos-containing materials (ACMs) were present. As part of the asbestos assessment, a total of 21 bulk material samples were collected. CAC submitted all of the bulk material samples to an analytical laboratory for analysis for asbestos content by polarized light microscopy (PLM) analysis in accordance with EPA Method 600/R-93/116. Copies of the analytical data sheets and the chain-of-custody records are attached. The sample number, location and description are identified on the chain-of-custody records.

Site Description

The Site consists of an approximately 21,000 square foot vacant former grocery store building. At the time of the assessment, the building was vacant and mostly gutted of interior improvements. The structure is constructed with concrete-tilt-up exterior walls and is situated on a concrete slab. The majority of the interior floor is exposed concrete with vinyl flooring in one restroom and one small office. The existing interior walls are either painted drywall or covered in plastic wall panels. The upper ceiling of the former retail area is textured drywall wallboard. The roof is covered with several layers of tar and gravel.

Findings

The following presents a general description of the suspect ACMs identified and sampled:

- Black floor tile mastic (exposed)-in locations of former inventory gondolas
- Drywall and joint compound-perimeter walls
- Drywall and joint compound and panel mastic-food prep area
- 12-inch by 12-inch vinyl floor tile and mastic-corner office
- Transite (asbestos cement) cooler panels
- 12-inch by 12-inch vinyl floor tile and mastic-front office
- Sheet vinyl floor covering and black mastic-front office
- Drywall and joint compound/texture-front office
- Drywall and joint compound/texture-retail ceiling
- Roof tar and felt layers-roof

Consulting Associates of California

1 Casey Glen Court - Clayton, CA 94517 - (925) 673-1392 - Fax (925) 673-1393

The following presents a general description, location and quantity of the confirmed ACMs:

- Approximately 3,600 square feet of black floor tile mastic contains 5 percent Chrysotile asbestos. The black mastic was observed in the former location of inventory gondolas throughout the retail floor. The material is in good condition and is non-friable, Category I.
- Approximately 1,700 square feet of drywall joint compound contains 1 percent Chrysotile asbestos. The asbestos-containing samples were collected from the food prep area (former butcher shop). The material was in good condition and is friable.
- Approximately 2,200 square feet of transite cooler panels contain 15 percent Chrysotile asbestos. The material was observed in the two coolers located in the backroom. The material was in good condition and is non-friable, Category II.
- Approximately 160 square feet of black floor tile mastic contains 3 percent Chrysotile asbestos. The material was located in the front offices. Some of the mastic is beneath floor tile, while some is on exposed concrete. The material was in good condition and is non-friable, Category I.
- Approximately 18,000 square feet of drywall texture compound contains 2 percent Chrysotile asbestos. The asbestos-containing samples were collected from the retail ceiling. The material was in good condition and is friable.

REGULATIONS SUMMARY

The two primary regulation governing asbestos related work in California are the US EPA's National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation which is administered by the Bay Area Air Quality Management District's (BAAQMD's) Regulation 11, Rule 2 and Cal-OSHA's Asbestos in the Construction Industry Standard (CCR Title 8, Section 1529). The following presents a brief summary of each regulation. The following is not intended to be all inclusive and is included for reference only. Additional agencies such as Department of Transportation, Department of Health Services and Contractors State Licensing Board, etc. have additional regulations applying to removal, handling, and disposal of asbestos-containing materials.

BAAQMD

Through Regulation 11, Rule 2, the BAAQMD enforces the EPA's NESHAP regulation. This regulation requires that regulated asbestos-containing materials (RACMs) be removed and appropriately disposed of prior to renovation or demolition activities that would disturb them. RACMs are identified as:

- Friable ACMs that contain **more than one percent asbestos**;
- Non-friable Category I ACMs that will or may be subjected to sanding, grinding or otherwise abraded during the planned demolition/renovation activities (making them friable); and
- Non-friable Category II ACMs that will or may become friable as a result of renovation/demolition activities.

Non-friable Category I ACMs are vinyl floor tiles, mastics, roofing materials, gaskets and other materials bound in a matrix. Non-friable Category II ACMs are generally limited to asbestos cement (transite) products such as transite pipes, shingles and panels.

For the purposes of this report, the ACMs identified at the Site may be characterized as follows:

Friable ACMs (RACM):

- Drywall joint compound
- Drywall texture

Non-friable ACMs:

- Black floor tile mastic
- Transite cooler panels

In accordance with the regulation, the drywall joint compound and texture, floor mastic and transite panels will require removal and proper disposal prior to demolition/renovation activities that would impact the materials.

Further analysis of the drywall and joint using the Point Count Method would be necessary to confirm that the asbestos content of the composite material is less than 1 percent asbestos. The alternative is to treat the material as RACM and remove it in accordance with BAAQMD requirements.

Cal-OSHA

Cal-OSHA regulates asbestos related work in California including asbestos abatement (removal) and demolition activities. Cal-OSHA regulates materials containing more than 0.1 percent asbestos by weight. Cal-OSHA requires appropriate training, employee monitoring, engineering controls (wet methods, containments/enclosures and HEPA vacuums, etc.), medical surveillance and record keeping for contractors conducting activities where employees may be exposed to airborne asbestos.

Cal-OSHA divides the asbestos related work activities into four categories:

- Class I Asbestos Related Work-the removal of thermal system insulation (pipe or boiler insulation) or surfacing material (materials sprayed or troweled on to a surface);
- Class II Asbestos related Work-the removal of all other ACMs;
- Class III Asbestos related Work-Operation and Maintenance activities where the main goal of the activity is a maintenance task, not asbestos removal; and
- Class IV Asbestos related Work-janitorial/custodial operations.

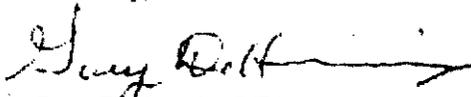
The removal of the drywall and joint compound and texture, floor mastic and transite panels will be classified as Class I and Class II Asbestos Related Work.

Conclusions and Recommendations

Any activity that would impact the drywall joint compound and texture, floor mastic and transite panels should be conducted in accordance with applicable Cal-OSHA regulations regarding asbestos related work, specifically Title 8, California Code of Regulations (CCR) Section 1529, the Asbestos in the Construction Industry Standard and the BAAQMD's Regulation 11, Rule 2. Further analysis of the drywall and joint compound using the Point Counting Method may confirm that the material contains less than 1 percent asbestos.

CAC recommends that a copy of this letter be submitted to the BAAQMD when applying for a renovation permit for the Site. Please feel free to call me at (925) 673-1392 with questions or comments regarding this information. Thank you for the opportunity to provide our services to you.

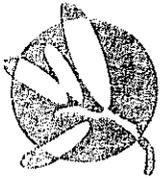
Sincerely,



Gary D. Hennis, REA
Cal-OSHA Certified Asbestos Consultant No. 92-0292

Attachment

N.B.
→
→



EMLab P&K

Report for:

Mr. Gary Hennis
Consulting Associates of California
1 Casey Glen Ct.
Clayton, CA 94517

Regarding: Project: 720 Center Boulevard, Fairfax, CA
EML ID: 711335

Approved by:

Lab Manager
Dr. Kamashwaran Ramanathan

Dates of Analysis:
Asbestos-EPA Method 600/R-93/116: 10-07-2010

Service SOPs: Asbestos-EPA Method 600/R-93/116 (EPA-600/M4-82-020 (SOP 01264))

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the items tested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Document Number: 200091 - Revision Number: 5

EMLab P&K, LLC

EMLab ID: 711335, Page 1 of 7

Client: Consulting Associates of California
C/O: Mr. Gary Hennis
Re: 720 Center Boulevard, Fairfax, CADate of Sampling: 10-05-2010
Date of Receipt: 10-06-2010
Date of Report: 10-07-2010**ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**

Total Samples Submitted: 21

Total Samples Analysed: 21

Total Samples with Layer Asbestos Content > 1%: 8

Location: CB-F-01, Retail area-black floor tile mastic

Lab ID-Version†: 3153064-1

Sample Layers	Asbestos Content
Black Mastic	5% Chrysotile
Sample Composite Homogeneity: Good	

Location: CB-F-02, Retail area-black floor tile mastic

Lab ID-Version†: 3153065-1

Sample Layers	Asbestos Content
Black Mastic	5% Chrysotile
Sample Composite Homogeneity: Good	

Location: CB-F-03, Retail area-perimeter-drywall and JC

Lab ID-Version†: 3153066-1

Sample Layers	Asbestos Content
White Drywall	ND
White Joint Compound with Paint	ND
Composite Non-Asbestos Fibrous Content:	3% Cellulose
Sample Composite Homogeneity: Good	

Location: CB-F-04, Retail area-perimeter-drywall and JC

Lab ID-Version†: 3153067-1

Sample Layers	Asbestos Content
White Drywall	ND
White Joint Compound with Paint	ND
Composite Non-Asbestos Fibrous Content:	3% Cellulose
Sample Composite Homogeneity: Good	

The results relate only to the items tested. Interpretation is left to the company and/or persons who conducted the field work. The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

All samples were received in acceptable condition unless otherwise noted. EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed.

† A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Consulting Associates of California
 C/O: Mr. Gary Hennis
 Re: 720 Center Boulevard, Fairfax, CA

Date of Sampling: 10-05-2010
 Date of Receipt: 10-06-2010
 Date of Report: 10-07-2010

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116

Location: CB-F-05, Retail area-perimeter-drywall and JC

Lab ID-Version‡: 3153068-1

Sample Layers	Asbestos Content
White Drywall	ND
White Joint Compound with Paint	ND
Composite Non-Asbestos Fibrous Content:	3% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-F-06, Food prep-drywall and JC/mastic

Lab ID-Version‡: 3153069-1

Sample Layers	Asbestos Content
Brown Drywall	ND
Composite Non-Asbestos Fibrous Content:	3% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-F-07, Food prep-drywall and JC/mastic / *Butcher Shop*

Lab ID-Version‡: 3153070-1

Sample Layers	Asbestos Content
White Drywall	ND
Beige Joint Compound	< 1% Chrysotile
Black Mastic	ND
Composite Asbestos Fibrous Content:	< 1% Asbestos
Composite Non-Asbestos Fibrous Content:	3% Cellulose
Sample Composite Homogeneity:	Good

Comments: Composite content provided does not follow the guidelines set forth by NVLAP. This analysis was performed by following the NESHAP guidelines.

Location: CB-F-08, Back office-12x12 VFT and mastic

Lab ID-Version‡: 3153071-1

Sample Layers	Asbestos Content
Black/Yellow Mastic	ND
Beige Floor Tile	ND
Sample Composite Homogeneity:	Good

The results relate only to the items tested. Interpretation is left to the company and/or persons who conducted the field work. The test report shall not be reproduced except in full, without written approval of the laboratory. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

All samples were received in acceptable condition unless otherwise noted. EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed.

‡ A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Consulting Associates of California
 C/O: Mr. Gary Hennis
 Re: 720 Center Boulevard, Fairfax, CA

Date of Sampling: 10-05-2010
 Date of Receipt: 10-06-2010
 Date of Report: 10-07-2010

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116

Location: CB-F-09, Back office-12x12 VFT and mastic

Lab ID-Version†: 3153072-1

Sample Layers	Asbestos Content
Black/Yellow Mastic	ND
Beige Floor Tile	ND
Sample Composite Homogeneity:	Good

Location: CB-F-10, Cooler-transite

Lab ID-Version†: 3153073-1

Sample Layers	Asbestos Content
Gray Transite	15% Chrysotile
Sample Composite Homogeneity:	Good

Location: CB-F-11, Front office-12x12 VFT and mastic

Lab ID-Version†: 3153074-1

Sample Layers	Asbestos Content
Black Mastic	ND
Off-White Floor Tile	ND
Sample Composite Homogeneity:	Good

Location: CB-F-12, Front office-12x12 VFT and mastic

Lab ID-Version†: 3153075-1

Sample Layers	Asbestos Content
Black Mastic	ND
Off-White Floor Tile	ND
Sample Composite Homogeneity:	Good

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All samples were received in acceptable condition unless otherwise noted. EMLab P&K reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified.

Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed.

† A "Version" indicated by -"x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: Consulting Associates of California
C/O: Mr. Gary Hennis
Re: 720 Center Boulevard, Fairfax, CA

Date of Sampling: 10-05-2010

Date of Receipt: 10-06-2010

Date of Report: 10-07-2010

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**Location: CB-F-13, Front RR-sufc and mastic**

Lab ID-Version†: 3153076-1

Sample Layers	Asbestos Content
White Sheet Flooring	ND
White Leveling Compound	ND
Black Mastic	3% Chrysotile
Sample Composite Homogeneity:	Good

Location: CB-F-14, Front office-drywall and JC/texture

Lab ID-Version†: 3153077-1

Sample Layers	Asbestos Content
White Drywall	ND
White Texture	ND
Composite Non-Asbestos Fibrous Content:	3% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-F-15, Front office-drywall and JC/texture

Lab ID-Version†: 3153078-1

Sample Layers	Asbestos Content
White Drywall	ND
White Texture	ND
Composite Non-Asbestos Fibrous Content:	3% Glass Fibers
Sample Composite Homogeneity:	Good

Location: CB-F-16, Retail ceiling-drywall and JC/texture

Lab ID-Version†: 3153079-1

Sample Layers	Asbestos Content
White Drywall	ND
Beige Non-Fibrous Material with Paint	2% Chrysotile
Composite Non-Asbestos Fibrous Content:	3% Cellulose
Sample Composite Homogeneity:	Good

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Client: Consulting Associates of California
 C/O: Mr. Gary Hennis
 Re: 720 Center Boulevard, Fairfax, CA

Date of Sampling: 10-05-2010
 Date of Receipt: 10-06-2010
 Date of Report: 10-07-2010

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116

Location: CB-F-17, Retail ceiling-drywall and JC/texture

Lab ID-Version‡: 3153080-1

Sample Layers	Asbestos Content
White Drywall	ND
Beige Non-Fibrous Material with Paint	2% Chrysotile
Composite Non-Asbestos Fibrous Content:	3% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-F-18, Retail ceiling-drywall and JC/texture

Lab ID-Version‡: 3153081-1

Sample Layers	Asbestos Content
White Drywall	ND
Beige Non-Fibrous Material with Paint	2% Chrysotile
Composite Non-Asbestos Fibrous Content:	3% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-F-19, Retail area/drywall and JC/texture

Lab ID-Version‡: 3153082-1

Sample Layers	Asbestos Content
White Drywall	ND
Beige Non-Fibrous Material with Paint	2% Chrysotile
Composite Non-Asbestos Fibrous Content:	3% Cellulose
Sample Composite Homogeneity:	Good

Location: CB-F-20, Roof/cove-tar and felt

Lab ID-Version‡: 3153083-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt	ND
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Fibrous Content:	45% Cellulose
Sample Composite Homogeneity:	Good

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Client: Consulting Associates of California
C/O: Mr. Gary Hennis
Re: 720 Center Boulevard, Fairfax, CADate of Sampling: 10-05-2010
Date of Receipt: 10-06-2010
Date of Report: 10-07-2010**ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116****Location: CB-F-21, Roof/cove-tar and felt**

Lab ID-Version‡: 3153084-1

Sample Layers	Asbestos Content
Black Roofing Tar and Felt	ND
Black Roofing Tar and Felt	ND
Composite Non-Asbestos Fibrous Content:	45% Cellulose
Sample Composite Homogeneity:	Good

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 <p>BAY AREA AIR QUALITY MANAGEMENT DISTRICT</p>	<p>COMPLIANCE & ENFORCEMENT DIVISION</p>	<p>Regulation 11, Rule 2</p>
		<p>Acknowledgement of Notification and Payment of Fees</p>

4/20/2011

Alliance Environmental Group, Inc.
3545 Victor Street
Santa Clara, CA 95054

J#: 3P627
Invoice No : 2SC97

The Bay Area Air Quality Management District (BAAQMD) acknowledges receipt of your payment and your Asbestos Removal or Demolition Plan described as: **Renovation**

Site address 720 Center Blvd
Fairfax, CA 94930

Start Date April 22, 2011
Completion Date May 6, 2011

Removal amounts of friable ACM 2,500 linear feet 18,080 square feet 0 cubic feet

Should it become necessary to revise this plan, please do so in the spaces provided below and immediately copy the District by fax or by mail.

REGULATION 11-2 REVISION	BAAQMD J# 3P627
--------------------------	-----------------

REVISION #	START DATE	COMPLETION DATE
1	___/___/___	___/___/___
2	___/___/___	___/___/___
3	___/___/___	___/___/___
4	___/___/___	___/___/___
5	___/___/___	___/___/___

NOTE: This form is not intended as a verification of either the completeness of your original notification or of its compliance with BAAQMD Regulation 11-2. If you have any questions about this acknowledgment, please call our office at (415) 749-4762.

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality505 Petaluma Boulevard South
Petaluma, California 94952

MAY 19 2011

RECEIVED

Tel: 707-766-7700
www.illingworthrodkin.comFax: 707-766-7790
illro@illingworthrodkin.com

February 18, 2011

John U. Fry
CDM Real Estate Co.
444 Airport Blvd., Suite 203
Watsonville, CA 95076

VIA E-MAIL: john@cdmre.com

**SUBJECT: Fairfax Center Properties Good Earth Market Project in Fairfax, CA –
Air Quality and Greenhouse Gas CEQA Evaluation**

Dear John:

The purpose of this letter is to address air quality impacts associated with the proposed relocation of the Good Earth Market in Fairfax, California. We understand that the Town has requested that you address air quality Environmental Checklist questions for compliance with the California Environmental Quality Act.

The project involves relocating the existing Good Earth Market located along Sir Francis Drake Boulevard in Fairfax to the former Albertsons store at the east end of town at 720 Center Boulevard. The existing Good Earth Market store is 8,500 square feet and the new site would be 21,150 square feet. The proposed site is currently vacant, but housed the former Lucky/Albertsons food store. The project site is surrounded by commercial uses on the south, west, and north sides; and on the east side are residences and a restaurant (along Pastori Avenue on the east). Air quality impacts would occur due to temporary construction emissions, direct and indirect emissions from users of the new store. This analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD)¹. Our report is as follows:

Setting

The project is located in Marin County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and Federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM₁₀) and fine particulate matter (PM_{2.5}). While exceedances of these standards do not occur in Marin County, emissions from the area can contribute to exceedances elsewhere in the Bay Area.

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NOx). These precursor pollutants react under certain meteorological conditions to form high

¹ BAAQMD 2010. BAAQMD CEQA Air Quality Guidelines. June.

ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. Highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants listed above. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and Federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the CARB, diesel exhaust is a complex mixture of gases, vapors and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the state's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008 CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles². The regulation requires affected vehicles to meet specific performance requirements between 2011 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The Bay Area Air Quality Management District (BAAQMD) is the regional agency tasked with managing air quality in the region. At the State level, the California Air Resources Board (a part of the California Environmental Protection Agency) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has recently published CEQA Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects³.

Impact 1: Conflict with or obstruct implementation of the applicable air quality plan?
No Impact

² <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>

³ Bay Area Air Quality Management District. 2010. BAAQMD CEQA Air Quality Guidelines. June.

The most recent clean air plan is the *Bay Area 2010 Clean Air Plan* that was adopted by BAAQMD in September 2010. The proposed project would not conflict with the latest Clean Air planning efforts since (1) the project would have emissions well below the BAAQMD thresholds (see Impact 2), (2) development of the project site would reuse a land use that has traditionally had a similar type of use, and (3) development would be near existing transit with regional connections. The project, a 21,150 square-foot market, is too small to incorporate project-specific transportation control measures listed in the latest Clean Air Plan (i.e., *Bay Area 2010 Clean Air Plan*)

Impact 2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? *Less than significant*

The Bay Area is considered a non-attainment area for ground-level ozone and fine particulate matter (PM_{2.5}) under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for respirable particulates or particulate matter with a diameter of less than 10 micrometers (PM₁₀) under the California Clean Air Act, but not the Federal act. The area has attained both State and Federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for ozone and PM₁₀, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NO_x), PM₁₀ and PM_{2.5} and apply to both construction period and operational period impacts.

Due to the project size, construction period emissions would be less than significant. In their latest update to the *CEQA Air Quality Guidelines*, BAAQMD identified the size of land use projects that could result in significant air pollutant emissions. For construction impacts, the "supermarket" project size was identified at 277,000 square feet. For operational impacts, the project size was identified at 42,000 square feet. Projects of smaller size would be expected to have less-than-significant impacts with respect to construction- and operational-period emissions. Since the project proposes 21,150 square feet of "supermarket" type uses, it is concluded that emissions would be below the BAAQMD significance thresholds for both construction exhaust and operational emissions. In addition, the project would actually relocate existing operational emissions. The net change in the size of the market would be about 12,600 square feet.

Impact 3: Violate any air quality standard or contribute substantially to an existing or projected air quality violation? *Less-than-significant*

As discussed under Impact 2, the project would have emissions less than significant thresholds adopted by BAAQMD for evaluating impacts to ozone and particulate matter. Therefore, the project would not contribute substantially to existing or projected violations of those standards. Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and Federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the standard. There is an ambient air quality monitoring station in San Rafael that measures carbon monoxide concentrations. The highest measured level over any 8-hour averaging period during the last 3 years is less than 2 parts per million (ppm), compared to the ambient air quality standard of 9.0 ppm. The project would generate

a small amount of traffic (less than 100 new trips per busiest hour), so the contribution of project-generated traffic to these levels would be minimal and the project would not cause or contribute to a violation of an ambient air quality standard.

Impact 4: Expose sensitive receptors to substantial pollutant concentrations? *Less-than-significant with construction period mitigation measures*

Construction activities would include renovation of the building, landscape improvements, utility upgrades, and repaving of the parking area. Construction activities would last about 6 months. These would not be intensive operations. There would be no site grading, which typically has the greatest construction period emissions. As indicated in Impact 2, emissions would be well below the BAAQMD thresholds and are not expected to cause adverse impacts to nearby sensitive receptors. Operation of the project would include localized emissions from trucks delivering goods, which could expose sensitive receptors to unhealthy air pollutant levels.

The only source of toxic air contaminants (TACs) emitted by the project would come primarily from delivery trucks. On a weekly basis, the project would receive approximately 9 large truck and 85 medium truck/van deliveries. Many of these trucks would be diesel powered and emit diesel particulate matter or DPM, which is a known TAC. Emissions of TACs could pose an air quality impact to nearby sensitive uses.

For sources of TAC emissions, the BAAQMD has identified significance thresholds as part of their new CEQA Air Quality Guidelines. Projects that cause the following effects would be considered to have a significant project-level impact:

- Project causes an excess cancer risk level of more than 10 in one million, or a non-cancer (i.e., chronic or acute) hazard index greater than 1.0 would be a cumulatively considerable contribution;
- Project causes an incremental increase of greater than 0.3 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) annual average $\text{PM}_{2.5}$ would be a cumulatively considerable contribution.

In order to address this impact, emission from the truck deliveries were estimated and a simple screening-level model was used to predict concentrations at the nearest sensitive receptor. Residences along Pastori Avenue are considered the closest sensitive receptors. Impacts to these residences were evaluated.

Emissions from delivery trucks were computed using the California Air Resources Board's EMFAC2007 model assuming a year 2010 fleet of trucks. DPM emissions were modeled in grams per miles for travel and grams per hour for idling. Annual emissions were computed based on truck travel movements on site and idling. Emissions were input to the SCREEN3 dispersion model. This model predicts concentrations of air contaminants at a receptor position. Since this is a screening model, a set of hourly meteorological conditions conducive to high concentrations are input to the model, which assumes flat terrain with no obstructions. Modeled emissions are also input to the model. An hourly concentration representative of daytime conditions is predicted. This concentration is converted to annual concentrations to compute the increased cancer risk or $\text{PM}_{2.5}$ concentration caused if a receptor were exposed to this concentration for 70 years. Model inputs and output are provided in Attachment 1.

Using the modeled long-term average DPM concentrations, the individual cancer risks were computed using the most recent methods recommended by BAAQMD⁴ and the California Office of Environmental

⁴ BAAQMD, *Air Toxics NSR Program Health Risk Screening Analysis (HSRA) Guidelines*, January 2010.

Health Hazard Assessment (OEHHA)⁵. The factors used to compute cancer risk are highly dependent on modeled concentrations, exposure period or duration, and the type of receptor. The exposure level is determined by the modeled concentration; however, it has to be averaged over a representative exposure period. The averaging period is dependent on many factors, but mostly the type of sensitive receptor that would reside at a site. This assessment conservatively assumed long-term residential exposures. OEHHA has developed exposure assumptions for typical types of sensitive receptors. These include nearly continuous exposures of 70 years for residences. It should be noted that the cancer risk calculations for 70-year residential exposures reflect use of BAAQMD's most recent cancer risk calculation method, adopted in January 2010. This method applies a Cancer Risk Adjustment Factor of 1.7 to the cancer risks for residential exposures to account for age sensitivity to toxic air contaminants. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing TACs. This analysis, therefore, presents the most conservative computation of cancer risk for various types of exposures.

This assessment predicts a worst-case condition, in terms of community risk, for the following reasons:

- A simple screening level model is used that assumes wind is mostly blowing lightly from the source to the receptor under generally stable conditions;
- Reduced emissions from future changes in the truck fleet are not taken into account;
- All delivery trucks were assumed to be diesel powered and utilize the parking area closest to the residences on Pastori Avenue; and
- Receptors are assumed to be almost continuously exposed to these emissions for 70 years.

Results of this analysis indicate an increased cancer risk of 6.6 excess cases per million people. This is below the BAAQMD significance threshold of 10 in one million. The PM_{2.5} concentration associated with this exposure is predicted to be 0.01 µg/m³ on an annual basis, which is below the BAAQMD threshold of 0.3 µg/m³. Potential non-cancer health effects due to chronic exposure to DPM were not estimated since the concentration threshold for non-cancer effects is considerably higher than concentrations that would result in significant cancer risks that were described above. The chronic inhalation reference exposure level for DPM is 5 µg/m³ the predicted maximum annual exposure is 0.01 µg/m³, which is much lower than the REL. Thus, the Hazard Index, which is the ratio of the annual DPM concentration to the reference exposure level, would be much lower than significance criterion of a Hazard Index greater than 1.0.

Impact 5: Create objectionable odors affecting a substantial number of people? *Less-than-significant*

The project would generate localized emissions associated with bakery operations. These emissions may be noticeable from time to time by adjacent receptors. However, they would be localized and are not likely to adversely affect people off site in that they would result in confirmed odor complaints.

Impact 6: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *Less-than-significant*

⁵ OEHHA 2003. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. August 2003.

Scientists have found that human caused emissions of greenhouse gases (GHG) contribute to global warming. The State of California is addressing this issue through legislation, policy guidance, and outreach programs. Carbon dioxide (CO₂) is the primary GHG emitted from land use projects, mostly through automobile and energy use.

The BAAQMD adopted GHG emissions-based thresholds on June 2, 2010. These criteria establish a "bright-line" emissions threshold at 1,100 metric tons per year for land-use type projects and 10,000 metric tons per year for stationary sources. Projects with emissions above this threshold would be considered to have an impact, which, cumulatively, would be significant. The project size, a 21,150 square-foot market, exceeds the screening size listed by BAAQMD as having less than significant GHG emissions. Therefore, a refined analysis that includes modeling of GHG emissions from the project was conducted.

Modeling of GHG emissions was conducted to determine whether or not the proposed project would generate GHG emissions that may have a significant impact on the environment. In order to estimate the annual quantity of GHGs emitted by the project during operation, the URBEMIS2007 and the Bay Area Greenhouse Gas Model (BGM) were used and the results compared to the non-stationary source project-level threshold of 1,100 metric tons (MT) of CO₂e/year. Emissions were modeled for the existing Good Earth Market and the proposed Good Earth Market at the new project site. The difference in emissions between the two scenarios is considered the impact in terms of changes to GHG emission and compared against the BAAQMD 1,100 metric ton per year threshold.

BAAQMD developed a GHG model referred to as the BAAQMD GHG Model or BGM. BGM is an Excel workbook tool that uses the URBEMIS2007 file to provide GHG emissions in the form of equivalent CO₂ emissions (CO₂e) in metric tons per year. Unless otherwise noted below, the model defaults for the San Francisco Bay Area were used. BGM provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport.

Model Year

The model uses mobile emission factors from the California Air Resources Board's EMFAC2007 model. This model is sensitive to the year selected, since vehicle emissions have and continue to be reduced due to fuel efficiency standards and low carbon fuels. The Year 2020 was selected, since BAAQMD thresholds are based on meeting the AB32 reduction goals by 2020.

Traffic

Trip generation rates developed in the traffic study were used. These trip generation rates include pass by adjustments. The URBEMIS2007 model further evaluated emissions to account for the relatively minor estimate of pedestrian and bicyclist customers.

Area Sources

The proposed project would meet 2010 CalGreen standards that are approximately equivalent to LEED Silver certification. Therefore, energy efficiency would be 30 percent greater than the model assumed Title 24 standards (prior to the 2005 Title 24 amendments). This should be achievable, because the project would be subject to the upcoming amendments to the code expected to be in place by 2011. Adjustments were made either in the BGM model or to the model output. These include:

- Energy efficiency of the project was assumed to be 30% greater than pre-2005 Title 24 standards;

- A minimum waste diversion rate of 50%, consistent with Marin County waste diversion rate, was assumed;
- Emissions associated with electricity consumption output by BGM were adjusted to account for Pacific Gas & Electric utility's (PG&E) lower emission rate. BGM uses a Statewide rate of 805 pounds of CO₂ per megawatt of electricity produced, while the rate for PG&E is much lower⁶. The PG&E rate was also adjusted to account for increased use of renewable sources. The current renewable portfolio of 13 percent was assumed to increase to 20 percent by 2020⁷. The derived 2020 rate for PG&E was estimated at 526 pounds of CO₂ per megawatt of electricity delivered.

Table 1 presents the results of the URBEMIS and BGM model analysis in terms of annual metric tons of equivalent CO₂ emissions (MT of CO₂e/yr). Assumptions are contained in the technical data provided in Attachment 2. As shown in Table 1 below, the project would not exceed the 1,100 MT of CO₂e/yr GHG threshold of significance applied to this project.

Table 1 Net New GHG Emissions from the Proposed Good Earth Market

Project Name:		Proposed Good Earth Store				
Project Years:		2020				
Emissions of CO₂e in Metric Tons Per Year						
Source Category	Existing Good Earth Market	Proposed Good Earth Market	Existing Good Earth Market Converted for PG&E rates adjusted for RPS	Proposed Good Earth Market Converted for PG&E rates adjusted for RPS	Net Project Emissions	
Transportation:	1171	1638	1171	1638	467	
Area Source:	0	0	0	0	0	
Electricity:	106	218	69	143	73	
Natural Gas:	16	33	16	33	17	
Water & Wastewater:	0	1	0	1	0	
Solid Waste:	13	39	13	39	26	
Total:			1270	1853	584	
Model Adjustments:		1) Used Traffic Report trip generation rate that includes passby adjustment 2) Used PG&E emission rates and adjusted for 2020 RPS target 3) Assumed 30% more energy efficient new store 4) Assumed 50% waste diversion through recycling programs				

⁶ CARB, CCAR, ICLEI, and the Climate Registry. 2010. Local Government Operations Protocol For the quantification and reporting of greenhouse gas emissions inventories, Version 1.1 May. Table G.6 of Appendix G provides PG&E's Utility-Specific Verified Electricity CO₂ Emission Factors. The years 2005 through 2007 were averaged.

⁷ 2010. BAAQMD. CEQA Guidelines Update - Thresholds of Significance. June. Page 19 discusses the effect of the renewable portfolio Standard (rules) on PG&E's portfolio.

Eventually the existing Good Earth site will be reused and result in GHG emissions. It is unlikely that it would be reused as a market, given the numerous markets in the area. Retail uses were assumed for the 8,500 square-foot site. A strip-mall retail use type of project was selected in the URBEMIS2007/BGM modeling and emissions were computed for the Year 2020 in the same manner that the existing market emissions were computed. Annual GHG emissions were computed at 226 MT CO₂e with reuse of the site as 8,500 square feet of strip-mall type uses. When added to the project increase reported in Table 1, approximately 810 metric tons of equivalent CO₂ could be emitted as a result of the proposed project and reuse of the existing project site. These emissions would be below the BAAQMD GHG threshold of 1,100 metric tons of CO₂e for land use type projects.

Impact 7: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? *No Impact.*

The project would be subject to new requirements under rule making developed at the State and local level regarding greenhouse gas emissions and be subject to local policies that may affect emissions of greenhouse gases.

* * *

This concludes our assessment of the air quality impacts from this project. If you have any questions or comments, please feel free to contact me at (707) 766-7700 x24. We appreciate the opportunity to assist you.

Sincerely,


Digitally signed by James Reyff
DN: cn=James Reyff, o, ou,
email=jreyff@illingworthrodki
n.com, c=US
Date: 2011.02.18 14:05:37
+0800

James A. Reyff
Project Scientist

Illingworth & Rodkin

10-169

- Attachment 1: Delivery Truck TAC Modeling
- Attachment 2: GHG Emission Computations
- Attachment 3: Firm Description and Resume of James Reyff

DPM/PM10/PM2.5 Emission Rates									
Vehicle Type	Trucks per Week	Trucks per Year	Total Travel Distance (ft) (mi)		DPM (PM10)				
					Emission Factors		Emission Rates		
					Exhaust (g/ml)	Idle (g/hr)	Exhaust (g/year)	Idle (g/year)	Total (g/year)
Heavy Duty Trucks (HHD)	9	468	400	0.076	1.596	1.848	56.6	72.1	128.7
Medium Duty Trucks (LHD2)	85	4420	580	0.110	0.112	1.012	54.4	372.8	427.1
Total	94	4888					111.0	444.8	555.8

Notes:

Travel distances from center of Sir Francis Drake & Pastori intersection

Emission rates for 2010

Trucks assumed to travel at 10 mph

Trucks assumed to idle for 5 minutes per trip

Modeling Information		
Model:	SCREEN3	
Source Type	Volume	volume source near northeast corner of store (near loading dock)
Distance to Residence (m)	55	(180 ft)
<u>Volume Source parameters</u>		
Volume Source Dimensions (m)	10	
Release height (m)	3	
Vertical Dimension (m)	3	
Initial Lateral Dimension (m)	2.33	source side length / 4.3
Initial Vertical Dimension (m)	0.70	vertical dimension / 4.3 for elevated release
Hourly Emission Rate (g/s)	1.76E-05	

	DPM/PM10/PM2.5				DPM Cancer Risk (per million)
	Distance	Max 1-Hr		Annual Ave	
		(µg/m ³)	(µg/m ³)	(µg/m ³)	
Receptor Distances	160 feet	49 meters	0.1277	0.013	6.9
	180 feet	55 meters	0.1117	0.011	6.0

Notes:

Assumes PM2.5 is the same as PM10

Hourly concentrations converted to annual concentrations using a factor of 0.1

Cancer Risk Calculation Method								
Inhalation Dose = $C_{air} \times DBR \times A \times EF \times ED \times 10^{-6} / AT$								
Where: C_{air} = concentration in air (µg/m ³)								
DBR = daily breathing rate (L/kg body weight-day)								
A = Inhalation absorption factor								
EF = Exposure frequency (days/year)								
ED = Exposure duration (years)								
AT = Averaging time period over which exposure is averaged.								
10^{-6} = Conversion factor								
<u>Inhalation Dose Factors</u>								
Exposure Type	Value ¹							
	DBR (L/kg BW-day)	A (-)	Exposure (hr/day)	Exposure (days/week)	Exposure (week/year)	EF (days/yr)	ED (Years)	AT (days)
Residential (70-Year)	302	1	24	7	50	350	70	25,550
Default values recommended by OEHHA & Bay Area Air Quality Management District								
Cancer Risk (per million) = Inhalation Dose x CRAF x CPF x 10 ⁶								
= URF x Cair								
Where: CPF = Cancer potency factor (mg/kg-day) ⁻¹								
CRAF = Cancer Risk Adjustment Factor								
URF = Unit risk factor (cancer risk per µg/m ³)								
<u>Unit Risk Factor for DPM</u>								
Exposure Type	CPF (mg/kg-day) ⁻¹	CRAF (-)	URF DPM					
Residential (70-Yr Exposure)	1.10E+00	1.7	541.5					

ATTACHMENT 2 GHG Emissions Computations

Project Name: Proposed Good Earth Store

Project Years: 2020

Emissions of CO2e in Metric Tons Per Year

Source Category	Existing Good Earth Market	Proposed Good Earth Market	Existing Good Earth Market Converted for PG&E rates adjusted for RPS	Proposed Good Earth Market Converted for PG&E rates adjusted for RPS	Net Project Emissions
Transportation:	1171	1638	1171	1638	467
Area Source:	0	0	0	0	0
Electricity:	106	218	69	143	73
Natural Gas:	16	33	16	33	17
Water & Wastewater:	0	1	0	1	0
Solid Waste:	13	39	13	39	26
Total:			1270	1853	584

- Model Adjustments:**
- 1) Used Traffic Report trip generation rate that includes passby adjustment
 - 2) Used PG&E emission rates and adjusted for 2020 RPS target
 - 3) Assumed 30% more energy efficient new store
 - 4) Assumed 50% waste diversion through recycling programs

Project Name: Reuse Existing Good Earth Store

Project Years: 2020

Emissions of CO₂e in Metric Tons Per Year

Source Category	Replaced Retail Uses	Replaced Retail Uses Converted for PG&E rates adjusted for RPS
Transportation:	191	191
Area Source:	0	0
Electricity:	39	26
Natural Gas:	2	2
Water & Wastewater:	1	0
Solid Waste:	7	7
Total:		226

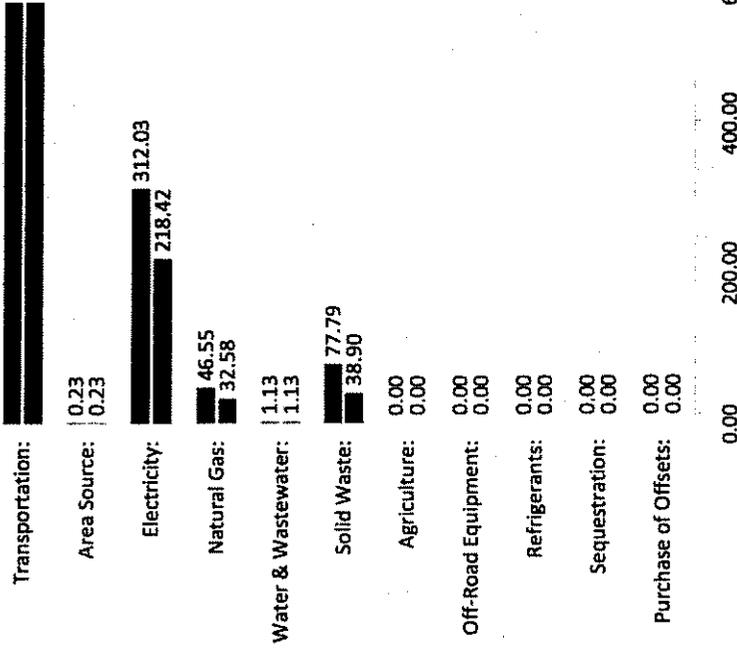
Model Adjustments: 1) Used URBEMIS2007 trip generation rate for retail includes passby adjustmnt
2) Used PG&E emission rates and adjusted for 2020 RPS target

Summary Results

Proposed Store

Project Name: Good Earth
 Project and Baseline Years: 2020 N/A

Results	Unmitigated Project- Baseline CO2e (metric tons/year)	Mitigated Project- Baseline CO2e (metric tons/year)
Transportation:	1,682.57	1,638.25
Area Source:	0.23	0.23
Electricity:	312.03	218.42
Natural Gas:	46.55	32.58
Water & Wastewater:	1.13	1.13
Solid Waste:	77.79	38.90
Agriculture:	0.00	0.00
Off-Road Equipment:	0.00	0.00
Refrigerants:	0.00	0.00
Sequestration:	N/A	0.00
Purchase of Offsets:	N/A	0.00
Total:	2,120.30	1,929.51



Baseline is currently: **OFF**
 Baseline Project Name:
 Go to Settings Tab to Turn On Baseline

Detailed Results

Unmitigated	CO2 (metric tpy)	CH4 (metric tpy)	N2O (metric tpy)	CO2e (metric tpy)	% of Total
Transportation*:				1,682.57	79.36%
Area Source:	0.23	0.00	0.00	0.23	0.01%
Electricity:	311.53	0.00	0.00	312.03	14.72%
Natural Gas:	46.43	0.00	0.00	46.55	2.20%
Water & Wastewater:	1.13	0.00	0.00	1.13	0.05%
Solid Waste:	0.54	3.68	N/A	77.79	3.67%
Agriculture:	0.00	0.00	0.00	0.00	0.00%
Off-Road Equipment:	0.00	0.00	0.00	0.00	0.00%
Refrigerants:	N/A	N/A	N/A	0.00	0.00%
Sequestration:	N/A	N/A	N/A	N/A	N/A
Purchase of Offsets:	N/A	N/A	N/A	N/A	N/A
Total:				2,120.30	100.00%

* Several adjustments were made to transportation emissions after they have been imported from URBEMIS. After importing from URBEMIS, CO2 emissions are converted to metric tons and then adjusted to account for the "Pavley" regulation. Then, CO2 is converted to CO2e by multiplying by 100/95 to account for the contribution of other GHGs (CH4, N2O, and HFCs) from leaking air condi. Finally, CO2e is adjusted to account for th low carbon fuels rule.

Mitigated

	CO2 (metric tpy)	CH4 (metric tpy)	N2O (metric tpy)	CO2e (metric tpy)	% of Total
Transportation*:				1,638.25	84.91%
Area Source:	0.23	0.00	0.00	0.23	0.01%
Electricity:	218.07	0.00	0.00	218.42	11.32%
Natural Gas:	32.50	0.00	0.00	32.58	1.69%
Water & Wastewater:	1.13	0.00	0.00	1.13	0.06%
Solid Waste:	0.27	1.84	N/A	38.90	2.02%
Agriculture:	0.00	0.00	0.00	0.00	0.00%
Off-Road Equipment:	0.00	0.00	0.00	0.00	0.00%
Refrigerants:	N/A	N/A	N/A	0.00	0.00%
Sequestration:	N/A	N/A	N/A	0.00	0.00%
Purchase of Offsets:	N/A	N/A	N/A	0.00	0.00%
Total:				1,929.51	100.00%

AIR QUALITY

In 1995 Illingworth & Rodkin, Inc. was expanded to include air quality and meteorological capabilities. The bulk of the firms' air quality work involves environmental air quality studies that are in support of both private and public projects. Air quality studies for land use projects to support Environmental Impact Reports are most common. Types of projects include specific plans for a variety of land use types, office centers, construction activities, wastewater treatment facilities, waste management facilities, quarries, and other industrial facilities. The firm also assists local communities in developing air quality policies for incorporation into General Plans.

For air quality, many projects involve the analysis of air quality impacts from both direct and indirect sources of air pollutants. Indirect sources include transportation facilities, which Illingworth & Rodkin's staff has considerable experience evaluating. Through years of conducting environmental noise and air quality studies for local, state and federal agencies, the firm has developed considerable experience in dealing with both the technical and policy issues involved with air quality. While transportation projects can involve considerable air quality technical aspects, the regulatory challenges can be quite complex. This is especially true in the case with federal projects, where SIP conformity issues arise. Illingworth & Rodkin Inc.'s staff have dealt successfully with these issues on a wide variety of projects ranging from large new freeway projects to simple urban intersection modifications. Conformity issues can be the largest hurdles for urban projects, especially those that involve federal action. Illingworth & Rodkin, Inc. has the right staff experience to tackle both the technical and regulatory air quality issues in both a quality and cost-effective manner.

The firm also conducts assessments to evaluate the air pathway health risk from common toxic air contaminants. This includes analysis of contaminants and PM_{2.5} from traffic and construction equipment as well as common stationary sources.

Environmental Studies

- Assessments for environmental studies (EIR, IS, EIS, EA)
- Transportation projects
- New residential developments
- Control plans and ordinances
- Ordinance compliance
- Conformity determinations
- Peer Review

Computer Modeling

- Air Pollutant emissions estimation using EMFAC2002, Mobile, AP-42
- Microscale air quality traffic modeling using CALINE4, CAL3QHC
- Stationary air pollution source modeling using EPA-approved models (e.g., SCREEN3 and ISCST)
- Analysis of meteorological data

Field Monitoring

- Aerometrics and Air toxics
- Meteorological conditions
- Fence line monitoring (e.g., particulates)

ILLINGWORTH & RODKIN, INC.
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illro@illingworthrodkin.com

JAMES A. REYFF

Mr. Reyff is a Meteorologist with expertise in the areas of air quality and acoustics. His expertise includes meteorology, air quality emissions estimation, transportation/land use air quality studies, air quality field studies, and environmental noise studies. He is familiar with federal, state and local air quality and noise regulations and has developed effective working relationships with many regulatory agencies.

During the past 22 years, Mr. Reyff has prepared Air Quality Technical Reports for over 10 major Caltrans highway projects and conducted over 100 air quality analysis for other land use development projects. These projects included carbon monoxide microscale analyses, the calculation of project emissions (e.g., ozone precursor pollutants, fine particulate matter, and diesel particulate matter), seasonal field monitoring, and preparation of air quality conformity determinations. Mr. Reyff advised decisions of federal and local air quality agencies regarding impact assessment methodologies and air quality conformity issues. He has conducted air quality evaluations for specific plans and General Plan updates. Recently, he prepared the air quality analysis for the NASA Ames Research Park, which included a Federal SIP Conformity analysis.

Mr. Reyff has been responsible for a variety of meteorological and air quality field investigations in support of air permitting and compliance determinations. He has conducted air quality analyses of diesel generators in support of regulatory permitting requirements and environmental compliance issues. Mr. Reyff has designed and implemented meteorological and air quality monitoring programs throughout the Western United States including Alaska. Programs include field investigations to characterize baseline levels of air toxics in rural areas, as well as regulatory air quality and meteorological monitoring. He was the Meteorologist involved in a long-term monitoring program at the Port of Oakland that evaluated meteorological conditions and fine particulate matter concentrations in neighborhoods adjacent to the Port.

Mr. Reyff has conducted over 15 major acoustical technical studies for transportation systems. He has managed several research studies for Caltrans including a noise study that evaluated long-range diffraction and reflection of traffic noise from sound walls under different meteorological conditions. Mr. Reyff has also evaluated noise from power plants, quarries and other industrial facilities. He has also been actively involved in research regarding underwater sound effects from construction on fish.

PROFESSIONAL EXPERIENCE

1995-Present	Illingworth & Rodkin, Inc.
Project Scientist	Petaluma, California
1989-1995	Woodward-Clyde Consultants (URS)
Project Meteorologist	Oakland, California
1988-1989	Oceanroutes (Weather News)
Post Voyage Route Analyst	Sunnyvale, California

EDUCATION

1986 San Francisco State University
B.S., Major: Geoscience (Meteorology)

PROFESSIONAL SOCIETIES

American Meteorological Society Institute of Noise Control Engineering

AWARDS

FHWA Environmental Excellence Award - 2005
Caltrans Excellence in Transportation, Environment - 2005



CEL CONSULTING

A DIVISION OF CONSOLIDATED ENGINEERING

October 18, 2010

Fairfax Center Properties, LLC
P.O. Box 633
Ross, CA 94957

RE: 720 Center Blvd.
Fairfax, CA
CEL # 40-05140

Inspectors: Rothacher / Welter
Inspection Date: October 15, 2010
Report No. R-001

CONCRETE CORE SAMPLING AND COMPRESSION TEST REPORT

On October 15, 2010, CEL Consulting's representatives reported to the subject project for the purpose of obtaining core samples from the existing concrete slab on grade for compressive strength tests. Our representatives report the following.

A total of four (4) three inch diameter core specimens were removed using a water cooled diamond tipped core bit.

Specimens were removed from four quadrants of the retail space as directed.

Slab thicknesses were as note below.

Sample # 1. North/West Quadrant 4-1/2"
Sample # 2. South/West Quadrant 3-1/2"
Sample # 3. South /East Quadrant 5-1/4"
Sample # 4. South West Quadrant 4-1/4"

All four specimens were returned to our lab, prepared and tested for compressive strength.

Please refer to attached table I for lab results.

REVIEWING ENGINEER: JAMES M. POWERS, P.E.

All reports are submitted as the confidential property of clients. Publication of statements, conclusions or extracts is reserved pending our written approval.

720 Center Blvd.
 Fairfax, CA
 Inspection Date: October 15, 2010
 CEL # 40-05140
 Report No. R-001



CONSOLIDATED ENGINEERING

TABLE 1
 CONCRETE CORE COMPRESSION TEST REPORT

Sample Number	Sample Location	Diameter (inches)	Prepared Length (inches)	Area (sq. in.)	L/D	Correction Factor	Ultimate Load (lbs.)	Compressive Strength (p.s.i.)
1	Retail Space, Slab on Grade, North/West Quadrant	3.00	4.70	7.07	1.57	0.97	38,693	5310
2	Retail Space, Slab on Grade, North/East Quadrant	3.00	3.75	7.07	1.25	0.93	33,151	4360
3	Retail Space, Slab on Grade, South/East Quadrant ✓	3.00	5.00	7.07	1.67	0.97	24,160	3310
4	Retail Space, Slab on Grade, South/West Quadrant	3.00	3.85	7.07	1.28	0.94	33,264	4420
							Average Strength (p.s.i.)	4350

The above report is for client information only. Publication of statements, conclusions or extracts is reserved pending our written approval.



TOWN OF FAIRFAX

MAY 19 2011

RECEIVED

HYDROLOGY ANALYSIS
Good Earth Market, Fairfax CA

DESCRIPTION

The proposed project consists of the Good Earth Market Tenant Improvements necessary for the existing grocery market shell building and parking lot located on Pastori Avenue between Sir Francis Drake Boulevard and Center Boulevard in Fairfax, California. The subject property is almost entirely covered with existing impervious surfaces consisting of the existing parking and building roof area. The property is approximately 2 acres in size and relatively flat with average slopes varying across the site from 2-4 percent. The watershed area of the site was modeled using the software program *Hydroflow Hydrographs* in order to determine the existing and proposed flows for a 100-year storm event. Storm drainage leaves the property and enters the Town drainage facilities in the street right of way in three directions: West along Center Blvd., East along Center Blvd., and towards Pastori Avenue.

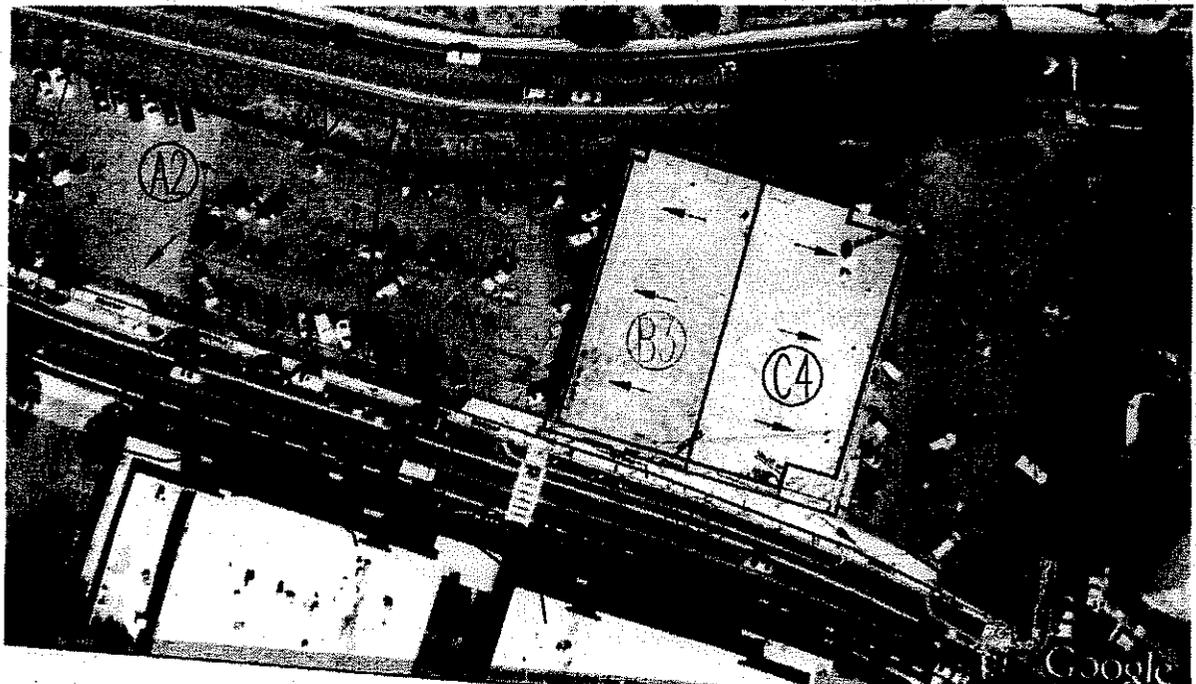
EXISTING CONDITIONS SUMMARY

The existing conditions were divided into three drainage areas. The runoff data used in the hydrograph model is summarized as follows:

Area A = 0.512 acres
 $C_{\text{composite}} = 0.85$
 $T_c = 10$ min

Area B = 0.681 acres
 $C_{\text{composite}} = 0.87$
 $T_c = 10$ min

Area C = 0.982 acres
 $C_{\text{composite}} = 0.88$
 $T_c = 10$ min





EXISTING CONDITIONS SUPPORTING CALCULATIONS

SHED AREA A

Runoff Coefficient C for Natural Ground

Use Methodology from the Highway Design Manual Figure 819.2A

Relief – Steep, rugged terrain with average slopes above 30%

Extreme Range from .28-.35 use 0.35

Soil Infiltration – assume normal use 0.07

Vegetal Cover – Good with grass and woodlands use 0.05

Surface Storage – Negligible use 0.12

Total 0.59

Composite Runoff Coefficient C

Area A1 = 3,707 ft² Pervious Slope Bank: C = 0.59

Area A2 = 18,600 ft² Impervious Ex. Pavement: C = 0.90

Total Area A = 22,307 ft² or 0.512 ac.

$$C = \frac{(0.90 * 18,600) + (0.59 * 3,707)}{22,307} = 0.85$$

SHED AREA B

Composite Runoff Coefficient C

Area B1 = 3,192 ft² Pervious Slope Bank: C = 0.59

Area B2 = 12,617 ft² Impervious Ex. Pavement: C = 0.90

Area B3 = 11,459 ft² Impervious Rooftop: C = 0.90

Area B4 = 2,408 ft² Impervious Ex. Sidewalk: C = 0.90

Total Area B = 29,676 ft² or 0.681 ac.

Total Impervious Area = 26,484 ft²

$$C = \frac{(0.90 * 26,484) + (0.59 * 3,192)}{29,676} = 0.87$$

SHED AREA C

Composite Runoff Coefficient C

Area C1 = 577 ft² Pervious Slope Bank: C = 0.59

Area C2 = 1,947 ft² Pervious Slope Bank: C = 0.59

Area C3 = 265 ft² Impervious Sidewalk/Street: C = 0.90

Area C4 = 12,197 ft² Impervious Rooftop: C = 0.90

Area C5 = 27,790 ft² Impervious Ex. Pavement: C = 0.90

Total Area = 42,776 ft² or 0.982 ac.

Total Impervious Area = 40,252 ft²

Total Pervious Area = 2,524 ft²

$$C = \frac{(0.90 * 40,252) + (0.59 * 2,524)}{42,776} = 0.88$$



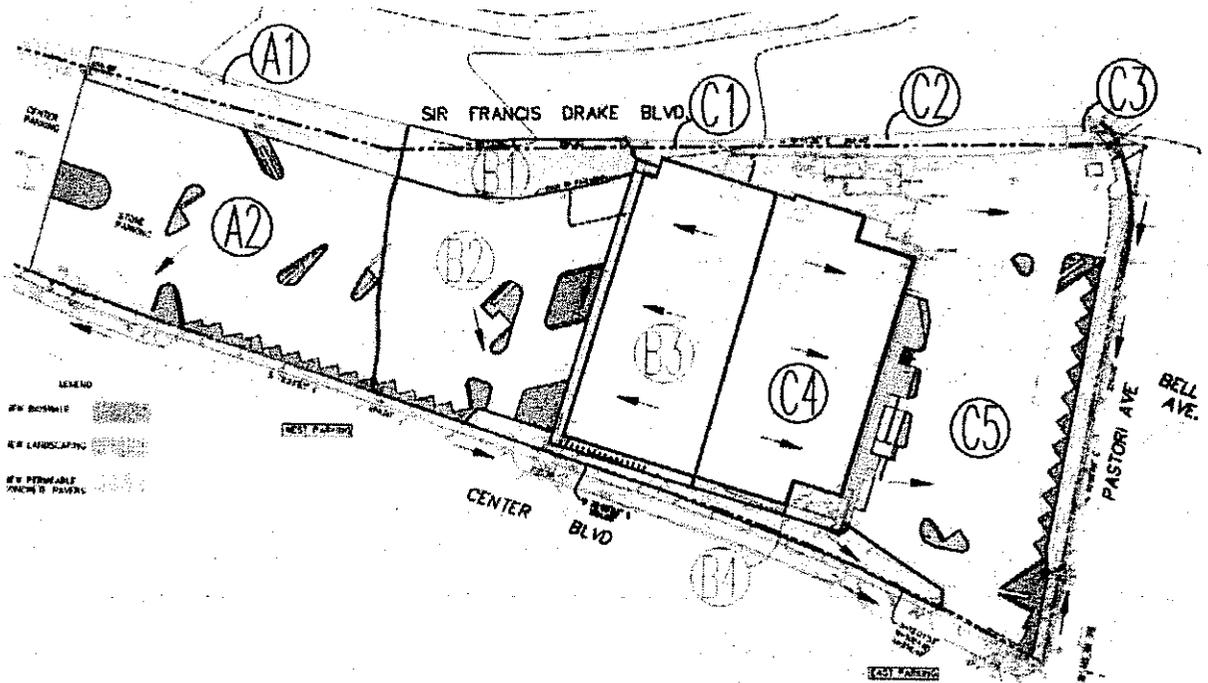
PROPOSED CONDITIONS SUMMARY

The proposed conditions were divided into three drainage areas as modified from the existing conditions. The runoff data used in the hydrograph model is summarized as follows:

Area A = 0.512 acres
 $C_{\text{composite}} = 0.80$
 $T_c = 10$ min

Area B = 0.681 acres
 $C_{\text{composite}} = 0.83$
 $T_c = 10$ min

Area C = 0.982 acres
 $C_{\text{composite}} = 0.86$
 $T_c = 10$ min



EXISTING CONDITIONS SUPPORTING CALCULATIONS

SHED AREA A

Composite Runoff Coefficient C

Area A1 = 3,707 ft ²	Pervious Slope Bank:	C = 0.59
Area A2		
16,864 ft ²	Impervious Ex. Pavement:	C = 0.90
1,250 ft ²	New Bioswale Areas	C = 0.30
486 ft ²	New Landscape Islands	C = 0.30

Total Area A = 22,307 ft² or 0.512 ac.

$$C = \frac{(0.90 \cdot 16,864) + (0.30 \cdot 1,250) + (0.30 \cdot 486) + (0.59 \cdot 3,707)}{22,307} = 0.80$$



SHED AREA B

Composite Runoff Coefficient C

Area B1 = 3,192 ft ²	Pervious Slope Bank:	C = 0.59
Area B2		
10,904 ft ²	Impervious Ex. Pavement:	C = 0.90
1,465 ft ²	New Bioswale Areas	C = 0.30
248 ft ²	New Landscape Islands	C = 0.30
Area B3 = 11,459 ft ²	Impervious Rooftop:	C = 0.90
Area B4 = 2,408 ft ²	Impervious Ex. Sidewalk:	C = 0.90
<hr/>		
Total Area B = 29,676 ft ² or 0.681 ac.		
Total Impervious Area _{C=0.9} = 24,771 ft ²		

$$C = \frac{(0.90*24,771)+(0.59*3,192)+(0.30*1,465)+(0.30*248)}{29,676} = 0.83$$

SHED AREA C

Composite Runoff Coefficient C

Area C1 = 577 ft ²	Pervious Slope Bank:	C = 0.59
Area C2 = 1,947 ft ²	Pervious Slope Bank:	C = 0.59
Area C3 = 265 ft ²	Impervious Sidewalk/Street:	C = 0.90
Area C4 = 12,197 ft ²	Impervious Rooftop:	C = 0.90
Area C5		
25,086 ft ²	Impervious Ex. Pavement:	C = 0.90
1,009 ft ²	Permeable Concrete Pavers	C = 0.30
1,134 ft ²	New Bioswale Areas	C = 0.30
561 ft ²	New Landscape Islands	C = 0.30
<hr/>		
Total Area = 42,776 ft ² or 0.982 ac.		
Total Impervious Area = 37,548		

$$C = \frac{(0.90*37,548)+(0.59*2,524)+(0.30*2,704)}{42,776} = 0.84$$

RESULTS

Existing Flow

Shed A	Q _{100year} = 1.148 cfs	>
Shed B	Q _{100year} = 1.563 cfs	>
Shed C	Q _{100year} = 2.279 cfs	>
Total Flow	Q _{100year} = 4.990 cfs	>

Improved Flow

Shed A	Q _{100year} = 1.080 cfs
Shed B	Q _{100year} = 1.491 cfs
Shed C	Q _{100year} = 2.176 cfs
Total Flow	Q _{100year} = 4.747 cfs



SUMMARY

The proposed project will increase the pervious surfaces onsite by constructing landscaping islands and bioswales. The bioswales are designed to provide treatment of storm water runoff through filtration within the bioswale. The proposed improvements will decrease the rate of runoff from the site by 0.24 cfs.

APPENDICES

Hydroflow Hydrograph Results:

Existing Conditions

Watershed Model Schematic

Summary Report

Hydrograph Report

Proposed Conditions

Watershed Model Schematic

Summary Report

Hydrograph Reports 1-3

IDF Curves

Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066



Legend

<u>Hyd. Origin</u>	<u>Description</u>
1 Rational	Shed A
2 Rational	Shed B
3 Rational	Shed C

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	1.148	1	10	1,722	---	---	---	Shed A
2	Rational	1.563	1	10	2,344	---	---	---	Shed B
3	Rational	2.279	1	10	3,419	---	---	---	Shed C
Existing.gpw					Return Period: 100 Year		Thursday, Feb 24, 2011		

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

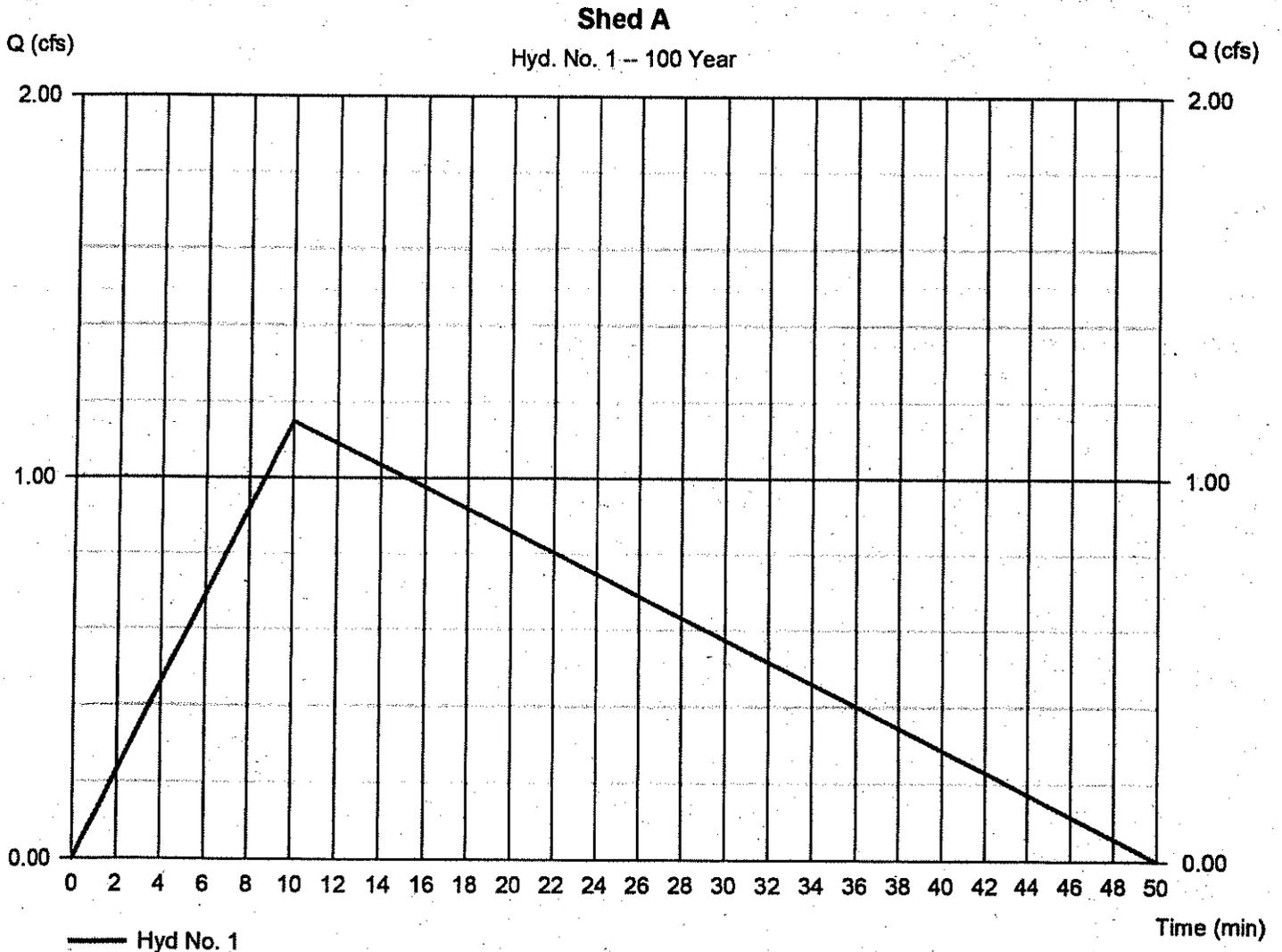
Thursday, Feb 24, 2011

Hyd. No. 1

Shed A

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 0.512 ac
Intensity = 2.638 in/hr
IDF Curve = FairAnselmo.idf

Peak discharge = 1.148 cfs
Time to peak = 10 min
Hyd. volume = 1,722 cuft
Runoff coeff. = 0.85
Tc by User = 10.00 min
Asc/Rec limb fact = 1/4



Hydrograph Report

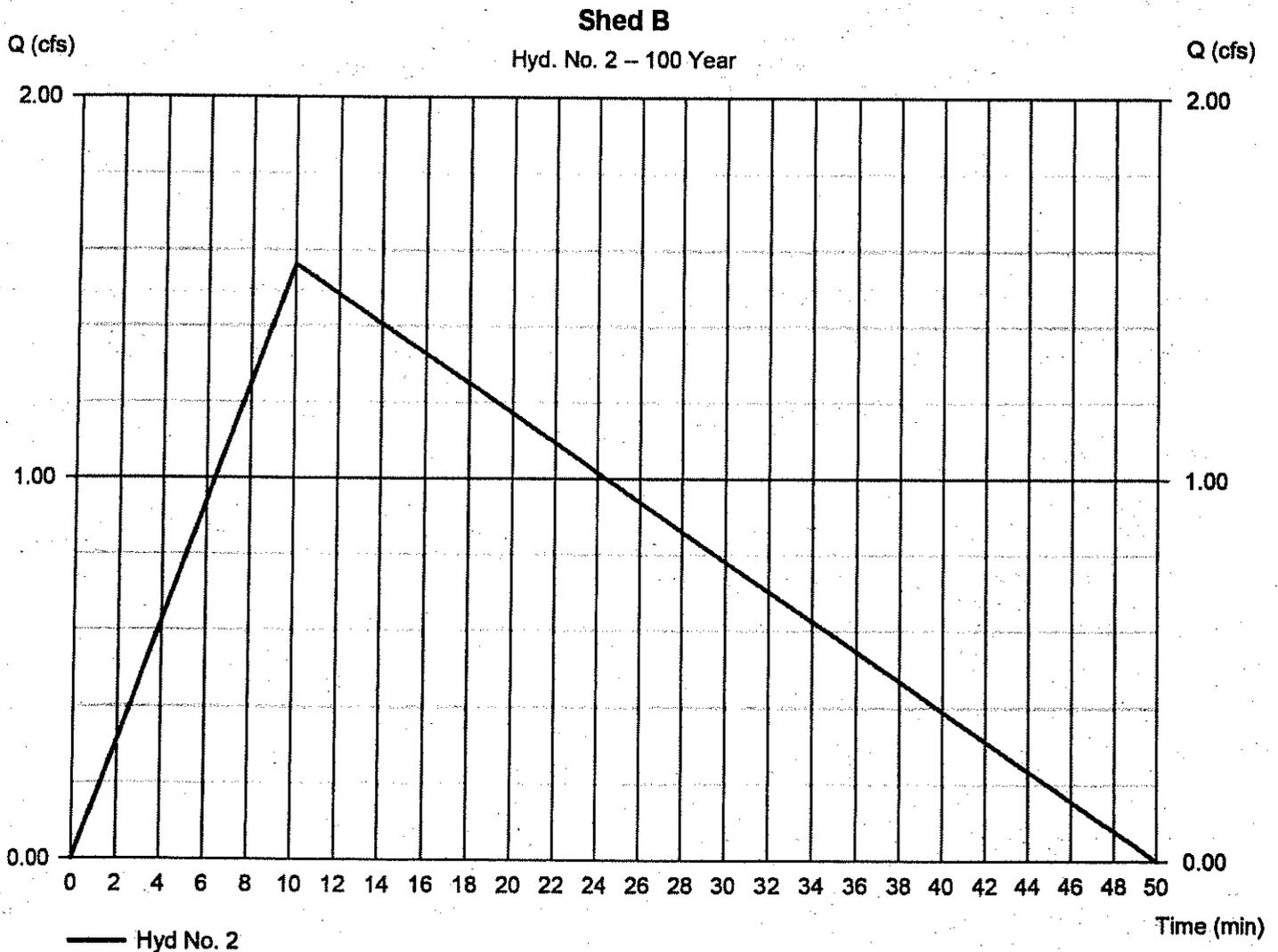
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Thursday, Feb 24, 2011

Hyd. No. 2

Shed B

Hydrograph type	= Rational	Peak discharge	= 1.563 cfs
Storm frequency	= 100 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 2,344 cuft
Drainage area	= 0.681 ac	Runoff coeff.	= 0.87
Intensity	= 2.638 in/hr	Tc by User	= 10.00 min
IDF Curve	= FairAnselmo.idf	Asc/Rec limb fact	= 1/4



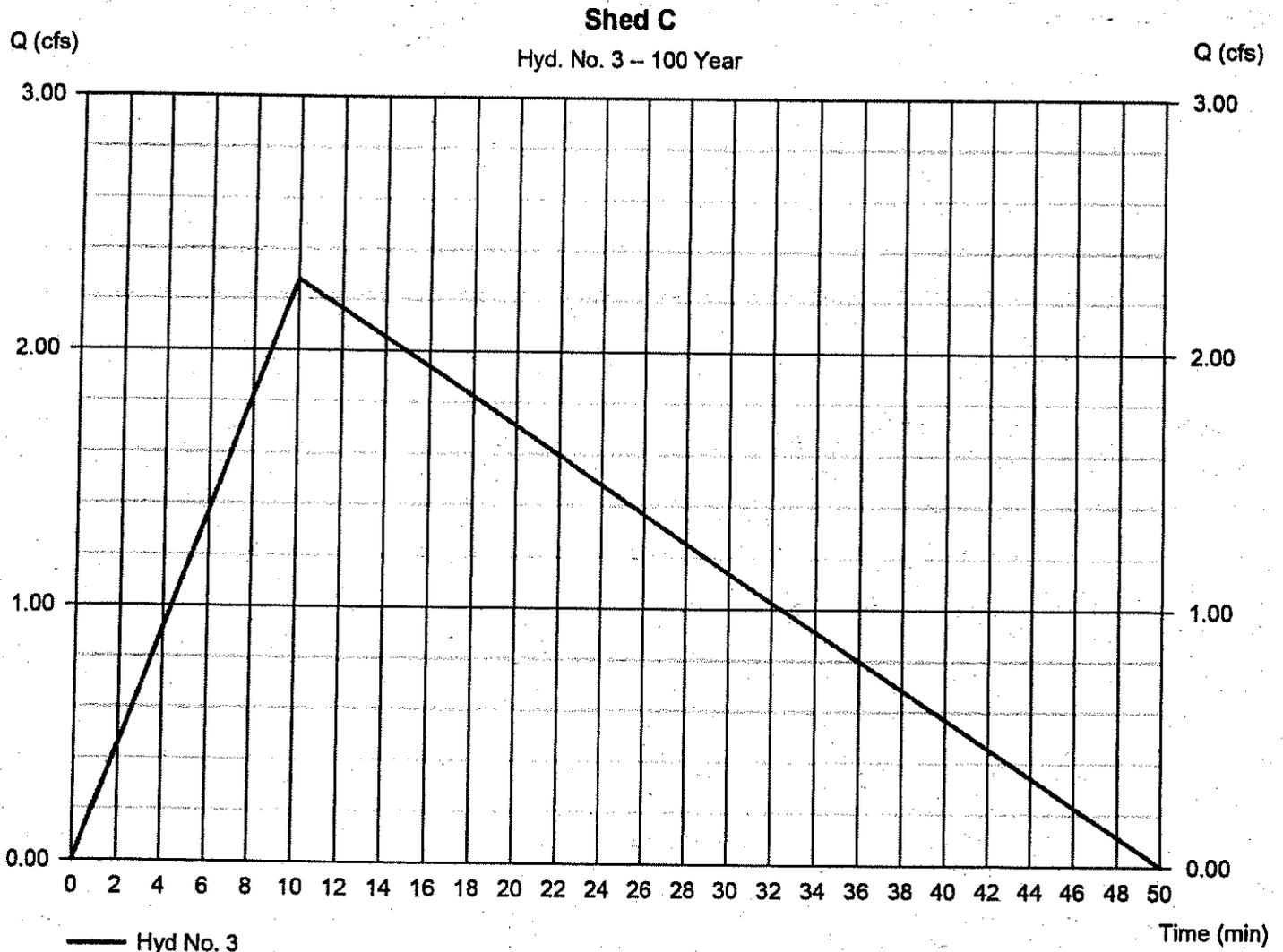
Hydrograph Report

Hyd. No. 3

Shed C

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 0.982 ac
Intensity = 2.638 in/hr
IDF Curve = FairAnselmo.idf

Peak discharge = 2.279 cfs
Time to peak = 10 min
Hyd. volume = 3,419 cuft
Runoff coeff. = 0.88
Tc by User = 10.00 min
Asc/Rec limb fact = 1/4



Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066



Legend

<u>Hyd. Origin</u>	<u>Description</u>
1 Rational	Shed A
2 Rational	Shed B
3 Rational	Shed C

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Rational	1.080	1	10	1,621	---	---	---	Shed A
2	Rational	1.491	1	10	2,236	---	---	---	Shed B
3	Rational	2.176	1	10	3,264	---	---	---	Shed C

Proposed.gpw

Return Period: 100 Year

Friday, Feb 25, 2011

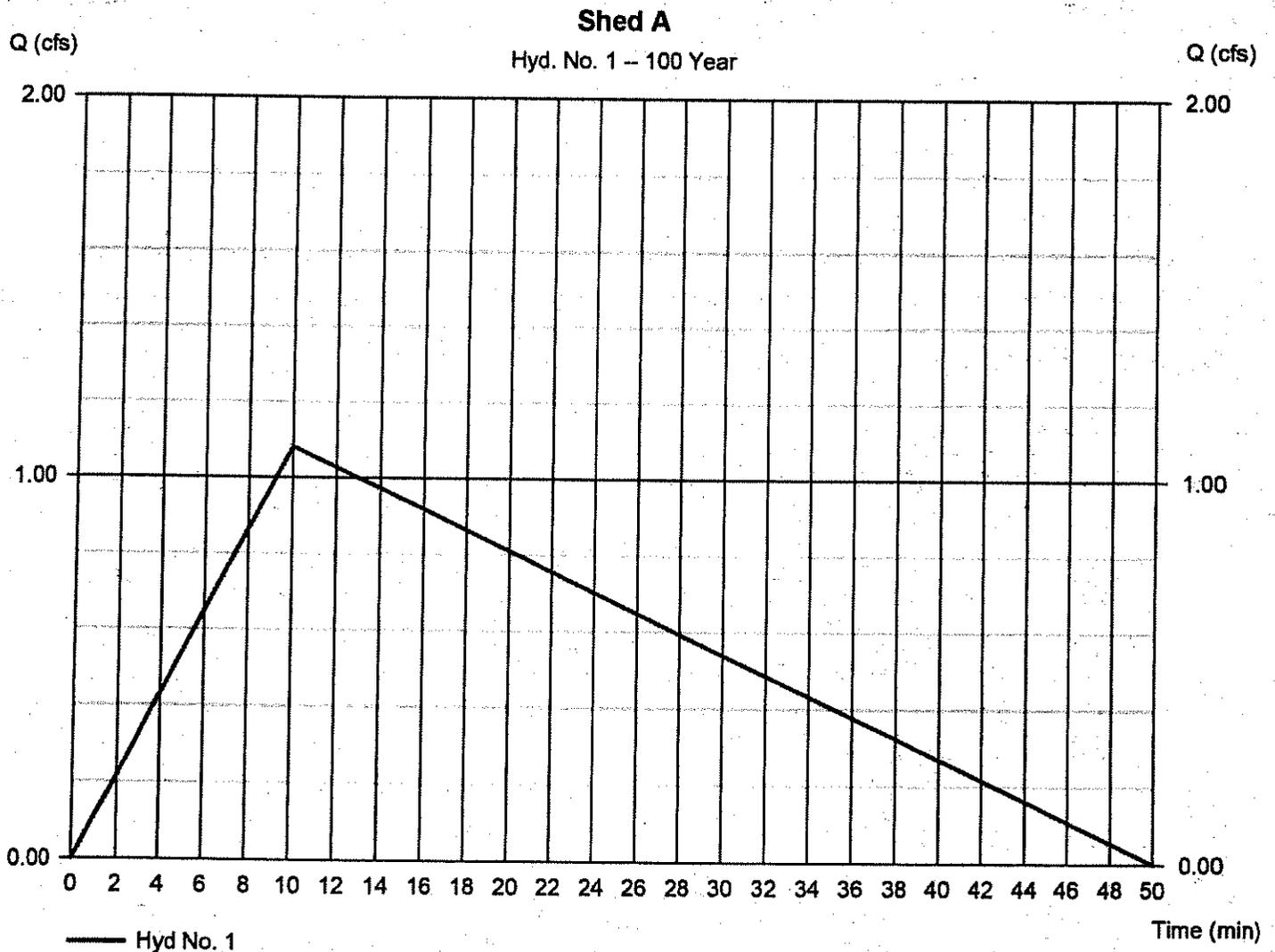
Hydrograph Report

Hyd. No. 1

Shed A

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 0.512 ac
Intensity = 2.638 in/hr
IDF Curve = FairAnselmo.idf

Peak discharge = 1.080 cfs
Time to peak = 10 min
Hyd. volume = 1,621 cuft
Runoff coeff. = 0.8
Tc by User = 10.00 min
Asc/Rec limb fact = 1/4



Hydrograph Report

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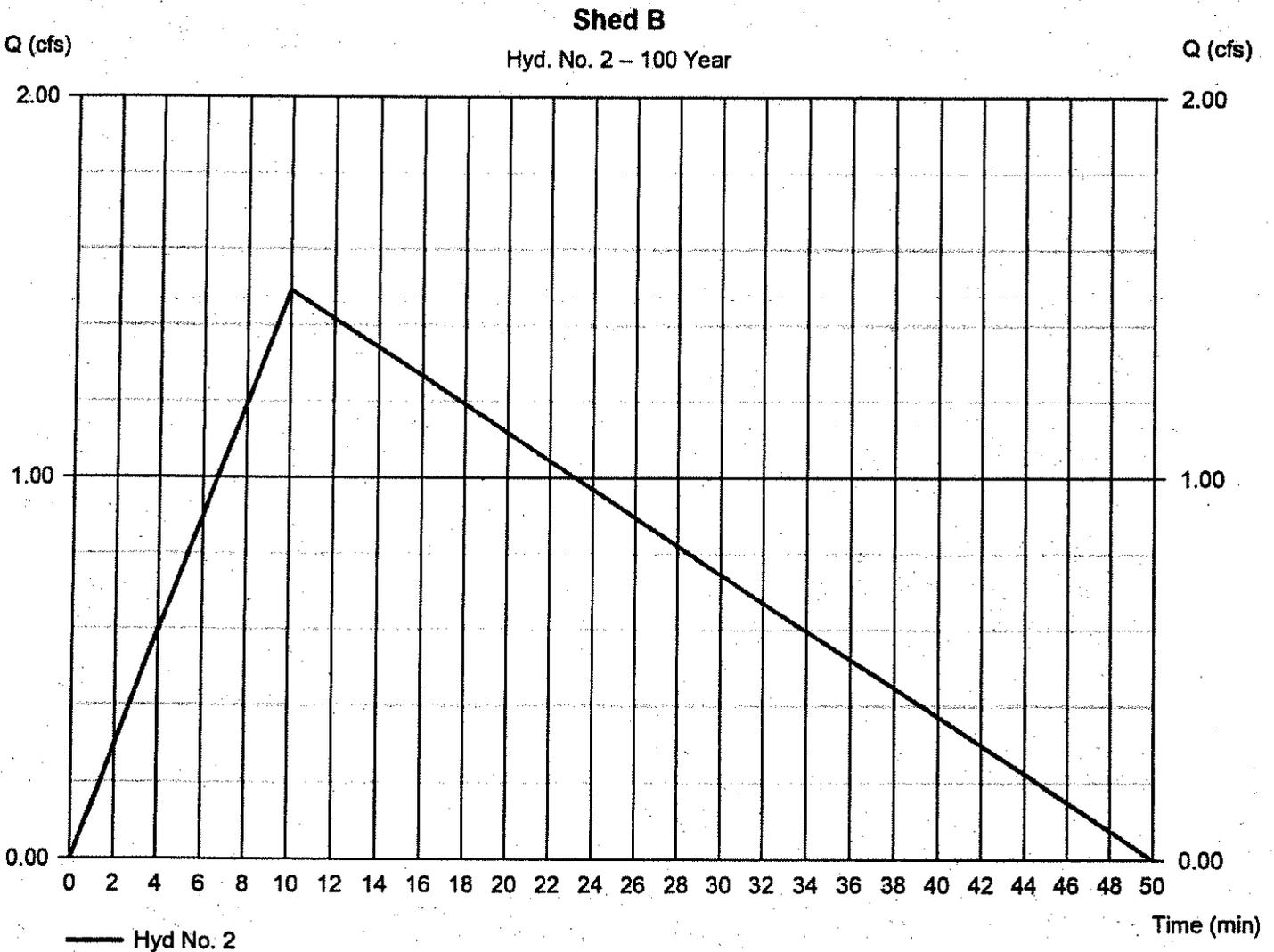
Friday, Feb 25, 2011

Hyd. No. 2

Shed B

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 0.681 ac
Intensity = 2.638 in/hr
IDF Curve = FairAnselmo.idf

Peak discharge = 1.491 cfs
Time to peak = 10 min
Hyd. volume = 2,236 cuft
Runoff coeff. = 0.83
Tc by User = 10.00 min
Asc/Rec limb fact = 1/4



Hydrograph Report

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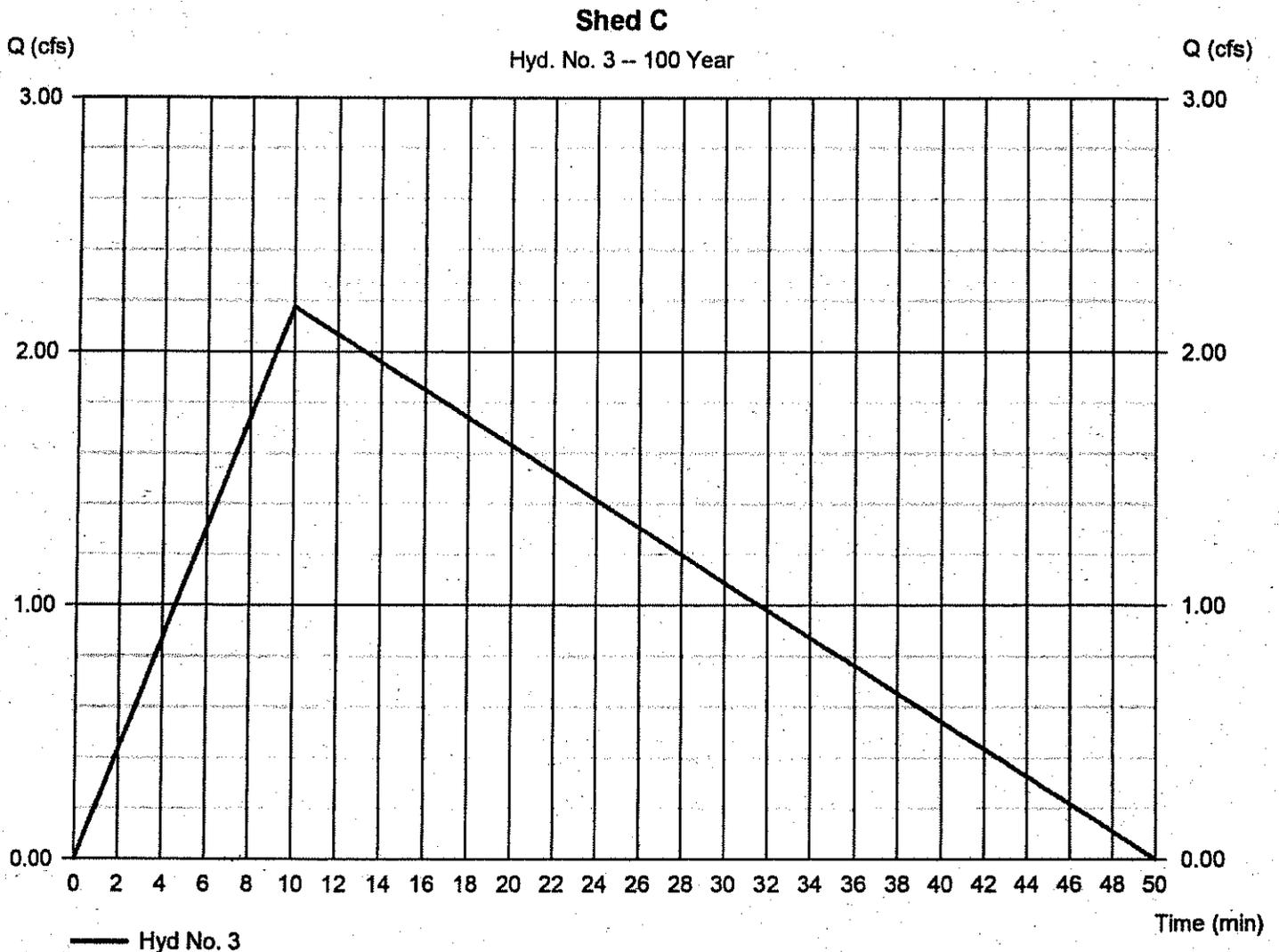
Friday, Feb 25, 2011

Hyd. No. 3

Shed C

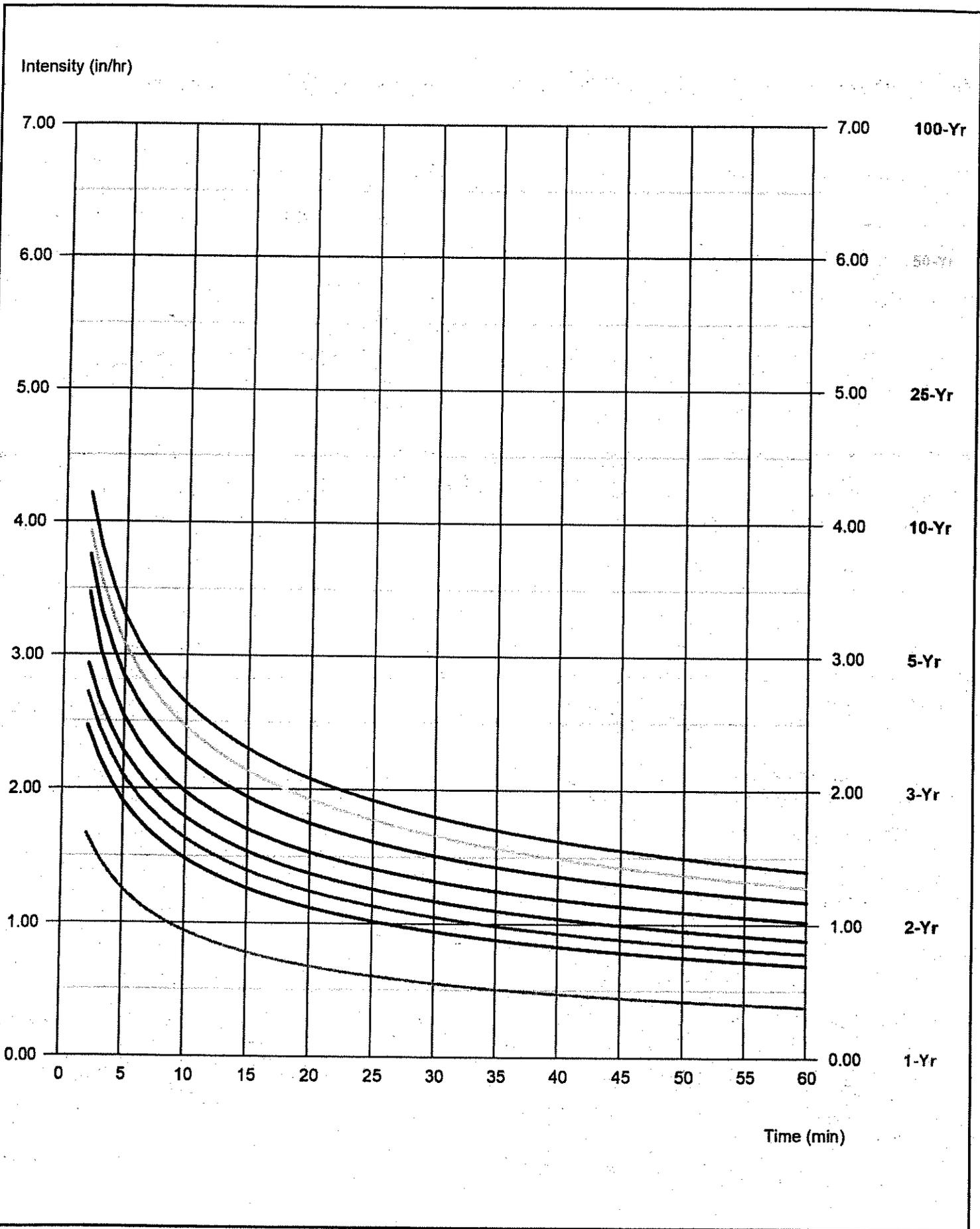
Hydrograph type = Rational
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 0.982 ac
 Intensity = 2.638 in/hr
 IDF Curve = FairAnselmo.idf

Peak discharge = 2.176 cfs
 Time to peak = 10 min
 Hyd. volume = 3,264 cuft
 Runoff coeff. = 0.84
 Tc by User = 10.00 min
 Asc/Rec limb fact = 1/4



Hydraflow IDF Curves

IDF file: FairAnselmo.idf



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2009 by Autodesk, Inc. v6.066

Thursday, Feb 24, 2011

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	3.9619	2.6000	0.5667	-----
2	4.7752	2.1000	0.4685	-----
3	4.9355	1.8000	0.4474	-----
5	5.1309	1.7000	0.4277	-----
10	4.7380	0.3000	0.3747	-----
25	5.4389	0.7000	0.3742	-----
50	6.3152	1.4000	0.3876	-----
100	6.4956	1.2000	0.3730	-----

File name: FairAnselmo.idf

$$\text{Intensity} = B / (Tc + D)^E$$

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	1.26	0.94	0.78	0.68	0.60	0.55	0.51	0.47	0.44	0.42	0.40	0.38
2	1.91	1.48	1.26	1.12	1.02	0.94	0.88	0.83	0.79	0.75	0.72	0.69
3	2.09	1.64	1.40	1.24	1.13	1.05	0.98	0.93	0.88	0.84	0.81	0.78
5	2.27	1.79	1.54	1.38	1.26	1.17	1.10	1.04	0.99	0.95	0.91	0.88
10	2.54	1.98	1.71	1.53	1.41	1.32	1.25	1.19	1.14	1.09	1.05	1.02
25	2.84	2.24	1.94	1.75	1.61	1.51	1.43	1.36	1.30	1.25	1.21	1.17
50	3.08	2.46	2.14	1.93	1.78	1.66	1.57	1.49	1.43	1.37	1.32	1.28
100	3.29	2.64	2.30	2.08	1.92	1.80	1.70	1.62	1.55	1.50	1.45	1.40

Tc = time in minutes. Values may exceed 60.

Precip. file name: tomales.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	2.20	0.00	3.30	4.25	5.77	6.80	7.95
SCS 6-Hr	0.00	1.80	0.00	0.00	2.60	0.00	0.00	4.00
Huff-1st	0.00	1.55	0.00	2.75	4.00	5.38	6.50	8.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	1.55	0.00	2.75	4.00	5.38	6.50	8.00
Custom	0.00	1.75	0.00	2.80	3.90	5.25	6.00	7.10