Appendix K. Aggregate Report

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FREEMAN
ASSOCIATES

Fanita Ranch Aggregate Report

March 25, 2020

REVISED

For

HomeFed Fanita Rancho, LLC.

Contents

Introduction

This report examines the onsite geologic resources present on the Fanita Ranch and the opportunity to manufacture much of the aggregate needed to construct the project. Triad Holmes Associates, Civil Engineers and Freeman Associates estimated the aggregate amounts for the project. Plans prepared by Hunsaker and Associates, dated October 7, 2019 were used for this report.

Table 1 summarizes the main findings:

Table 1

Project Summary		
Total Aggregate Required	300,000	CY
Tons @ 2.5 tons/CY	750,000	Tons
Waste Factor	25%	
Raw Aggregate Required	937,500	Tons
Truck Loads Avoided	52,083	Trips

The project plans are conceptual in nature, and these estimates are subject to change as final construction drawings are developed. It should be noted that by producing its own aggregates, the project will take over 52,083 trucks off the road that would normally be importing aggregates, thereby reducing the overall project's carbon footprint.

Project Geology

The majority of the Fanita Ranch property is underlain with two major rock types that are suitable for the manufacture of construction grade aggregates. Stadium Conglomerate (Tst) and Granitic Rock (Kgr) make up the majority of the project footprint and are commonly mined elsewhere in San Diego for use as aggregate. It is a formation consisting of massive cobble conglomerates with a yellowish-brown coarse-grained sandstone matrix.

Granitic rock is mined all over the State of California for use as aggregate. A single processing plant has been designed to handle the processing of both types of material.

The majority of the cuts in all phases of the project will be in the Stadium Conglomerate. It overlays the Friars formation on the project site at various depths and is over 150 deep

in most areas. This material that will be the primary raw feed for the aggregate plant. A small portion of Phase 1 and Phase 3 will be in the Granitic material. These areas will be used to produce the decomposed granite (DG) for the project paths, hiking trails and walkways. More intact granitic material found below the weathered layers can also be used as raw feed for the aggregate plant.

While the vast majority of the material from the cuts in all phases will go directly in the fills, portions of the material will be selected for its quality and sent to the raw feed stockpile to aggregate processing. Material from deep cuts over 100 feet in depth, in the Stadium Conglomerate, will provide more than sufficient material for the production of all aggregates for the project.

Cut and Fill Analysis

The Cut/Fill analysis for the project indicates that the on-site cut and fill amounts roughly balance. There is approximately 27,000,000 cubic yards of cut and fill on site.

Approximately 937,500 tons will be required to manufacture the aggregates for the project. See table 1 above.

The following graphics show the site geology with the project topography, the depths and location of the cuts and fills, depth of cut and the project footprint overlain on geologic layer.

Concentrated Rock Outcroppings

Design Perimeter

Geologic Map

Qudf - UNDOCUMENTED FILL

Qdf - DEBRIS FLOW

Qaf - FILL PLACED DURING REMEDIAL GRADING IN 1984

Qaf2 - FILL PLACED DURING CONSTRUCTION OF CARLTON ESTATES UNIT 2

Qal - ALLUVIUM

Qcol - COLLUVIUM

Qal/Qdf - ALLUVIUM/DEBRIS FLOWS (undifferentiated)

Qls - LANDSLIDE DEBRIS

Qt - TERRACE DEPOSIT

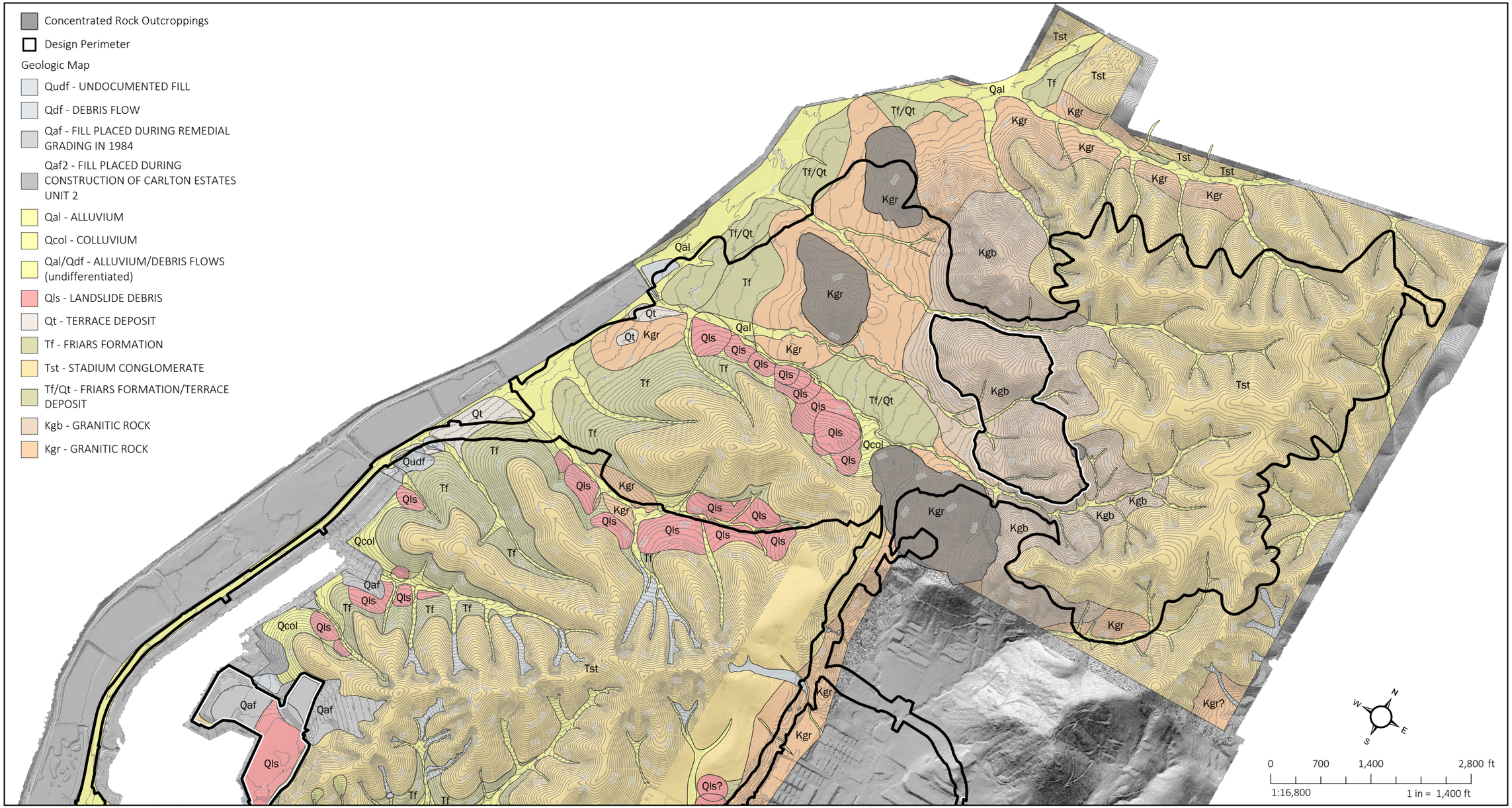
Tf - FRIARS FORMATION

Tst - STADIUM CONGLOMERATE

Tf/Qt - FRIARS FORMATION/TERRACE DEPOSIT

Kgb - GRANITIC ROCK

Kgr - GRANITIC ROCK



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SOURCES: Geologic Map for Fanita Ranch, GeoCon. Topographic Contour Lines, GeoCon.

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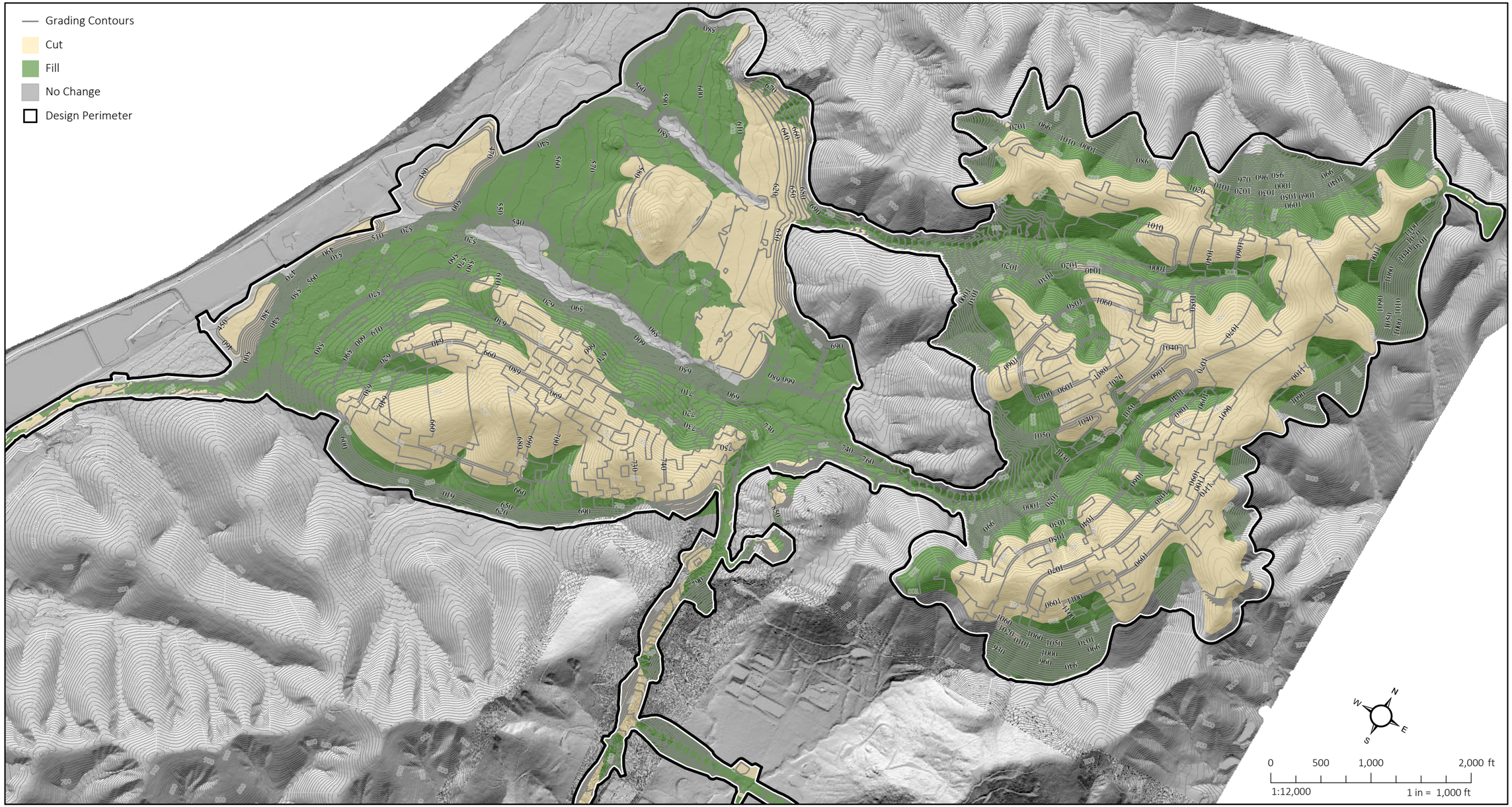
FANITA RANCH

EXHIBIT 1

EXISTING SITE TOPOGRAPHY & GEOLOGY



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SOURCES: Geologic Map for Fanita Ranch, GeoCon. Topographic Contour Lines, GeoCon. Proposed Grading Contour Lines, Hunsaker & Associates.

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EXHIBIT 2

PROPOSED GRADING CONTOURS WITH CUT/FILL AREAS

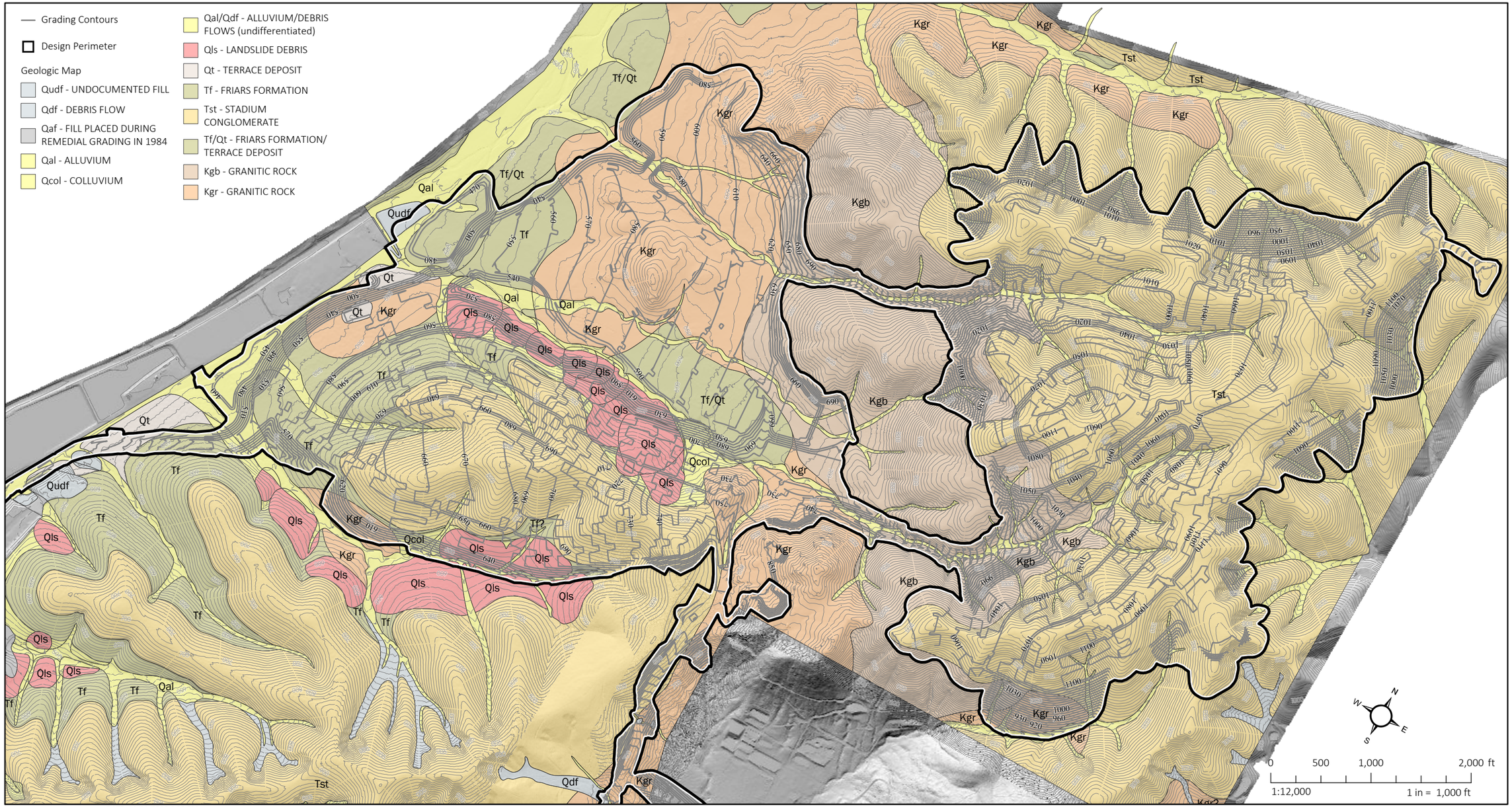

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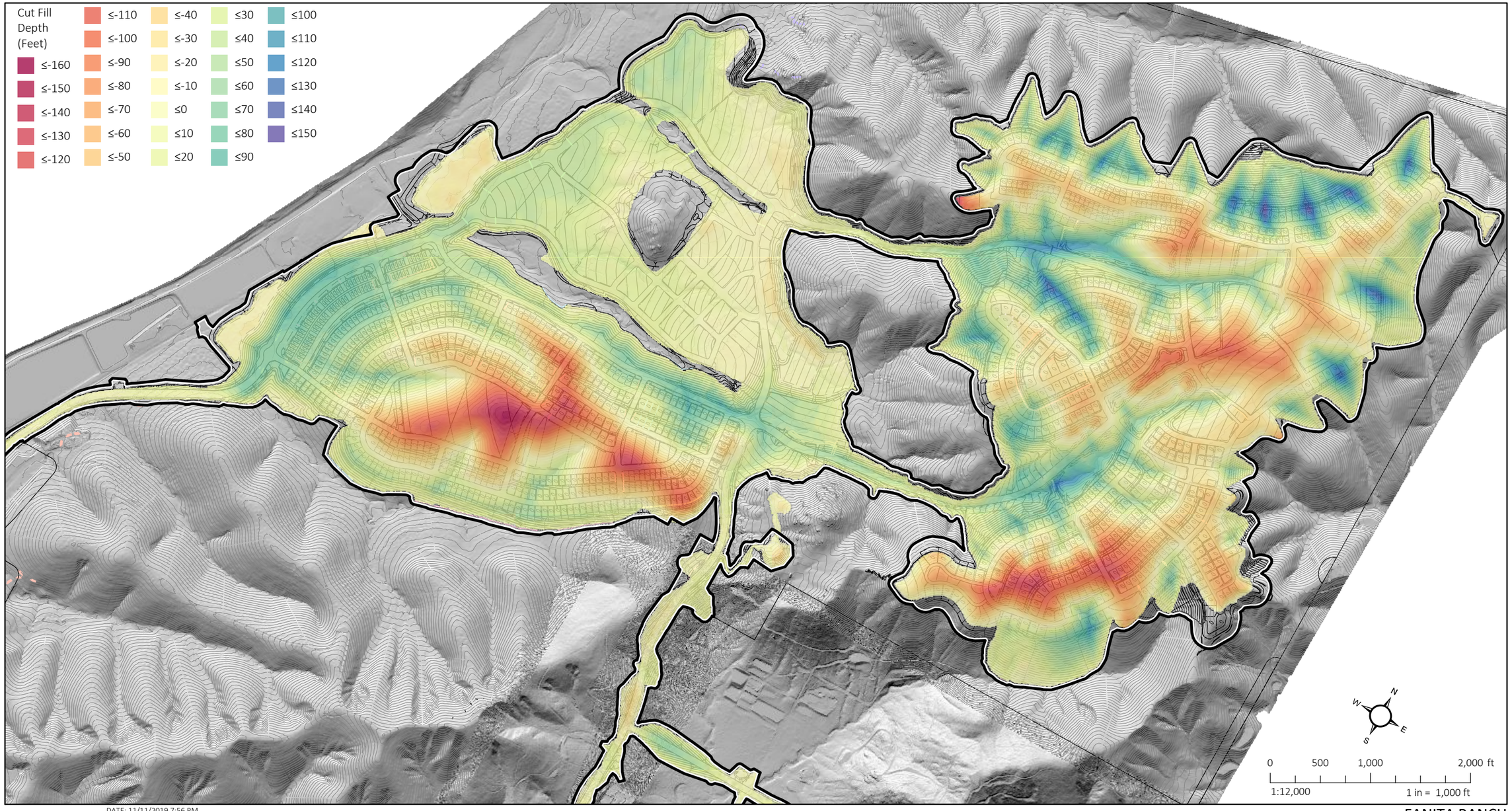
EXHIBIT 3

PROPOSED GRADING CONTOURS & GEOLOGY



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SOURCES: Geologic Map for Fanita Ranch, GeoCon. Topographic Contour Lines, GeoCon. Proposed Grading Contour Lines, Hunsaker & Associates.

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EXHIBIT 4

GRADING DEPTH

Potential Location of Aggregate Plant Site

Phase

- 1
- 2
- 3
- 4

PHASE 1

PHASE 2

PHASE 3

PHASE 4

ROCK CRUSHING WILL OCCUR ONSITE AT VARIOUS LOCATIONS AND THE MATERIAL WILL BE USED FOR ROAD CONSTRUCTION AND PIPE BEDDING. BENEFITS FROM ONSITE CRUSHING INCLUDE REDUCED TRUCK TRIPS, GAS EMISSIONS AND NOISE.

N W E S

0 500 1,000 2,000 ft

1:12,000 1 in = 1,000 ft

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SOURCES: Phasing Boundaries, Triad/Holmes. Aggregate Plant Sites, Hunsaker & Associates.

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EXHIBIT 5

PROJECT PHASING

Aggregate Products Produced

The onsite aggregate plant will be capable of producing all of the materials that will be required to construct the project's infrastructure. These include base rock for the streets and roads; drain rock and backfill materials for the wet and dry utilities, cobbles to line drainage channels and street medians, as well as a variety of landscaping materials for the project. In addition to using the onsite resources to reduce the greenhouse gas footprint, the use of onsite materials will give a unique look and feel to the project, that will be harmonious with the surrounding natural landscape.
The plant is not designed to produce materials for the production of asphalt or ready mixed concrete. Ready mixed concrete and asphalt will be purchased from outside vendors.

The roughly 300,000 cubic yards required for the onsite aggregate production needs represent a small portion of the 27,000,000 cubic yards of cut required for the grading of the project. Areas of high-grade stadium conglomerate or granite will be selected as the cut operation is ongoing and raw feed for the plant will be hauled to the crushing plant from time to time, as aggregates are needed. Aggregate production should be timed closely with their need for placement in roadways or other areas to avoid segregation of materials.

Onsite Aggregate Estimates in Detail

Table 2

		L	W	Area	Volume	Quantity	Unit
Fanita Parkway (4 Lane Parkway/Major Arterial Option 2)	AC	2890	57.5	166175		166,175	SF
	Base 10"	2890	57.5	166175	138479	5,129	CY
		0	0	0		0	SF
	Base Trail 4"	2890	0	0	0	0	CY
	Curb	2890				2,890	LF
	Curb and Gutter	8670				8,670	LF
	Base Curb and Gutter 4"	11560	6.75	78030	26010	963	CY
	Sidewalk Concrete	2890	0	0		0	SF

		L	W	Area	Volume	Quantity	Unit
	16" Water Granular Mat'l	2890		14.7		1,573	CY
	42" SD 3/4" Crushed Rock	2890		17		1,820	CY
Fanita Parkway (3-Lane Parkway)	AC	3715	46.5	172747.5		172,748	SF
	Base 10"	3715	46.5	172747.5	143956	5,332	CY
		0	10	0		0	SF
	Base Trail 4"	3715	10	37150	12383	459	CY
	Curb	3715				3,715	LF
	Curb and Gutter	11145				11,145	LF
	Base Curb and Gutter 4"	14860	6.75	100305	33435	1,238	CY
	Sidewalk Concrete	3715	0	0		0	SF
	16" Water Granular Mat'l	3715		14.7		2,023	CY
	42" SD 3/4" Crushed Rock	3715		17		2,339	CY
Cuyamaca Street Offsite	AC	0	26	0		0	SF
	Base 10"	0	26	0	0	0	CY
	Curb	0				0	LF
	Base Curb 4"	0	1.5	0	0	0	CY
Cuyamaca Street on & Offsite	AC	5990	39	233610		233,610	SF
	Base 9"	5990	39	233610	175208	6,489	CY
	Trail Multiuse 4" DG	5990	4.5	26955	8985	333	CY
		0	8	0		0	SF
	Base Trail 4"	5990	8	47920	15973	592	CY
	Curb	11980				11,980	LF
	Curb and Gutter	11980				11,980	LF
	Base Curb and Gutter 4"	23960	5.5	131780	43926.7	1,627	CY
	16" Water Granular Mat'l	5990		14.7		3,261	CY
	42" SD 3/4" Crushed Rock	5990		17		3,771	CY
Fanita Parkway 2 Lane Parkway Type II	AC	5720	39.5	225940		225,940	SF
	Base 9"	5720	39.5	225940	169455	6,276	CY
		0	10	0		0	SF
	Base Trail 4"	5720	10	57200	19067	706	CY
	Curb	5720				5,720	LF

		L	W	Area	Volume	Quantity	Unit
	Curb and Gutter	17160				17,160	LF
	Base Curb and Gutter 4"	22880	6.75	154440	51480	1,907	CY
	Sidewalk Concrete	0	4.5	0		0	SF
	16" Water Granular Mat'l	5720		14.7		3,114	CY
	42" SD 3/4" Crushed Rock	5720		17		3,601	CY
Fanita Parkway 2 Lane Parkway Type III	AC	2575	50	128750		128,750	SF
	Base 8"	2575	50	128750	85833	3,179	CY
		0	10	0		0	SF
	Base Trail 4"	2575	10	25750	8583	318	CY
	Curb	5150				5,150	LF
	Curb and Gutter	5150				5,150	LF
	Base Curb and Gutter 4"	10300	6.75	69525	23175	858	CY
	Sidewalk Concrete	2575	4.5	11587.5		11,588	SF
	12" Sewer Crushed Rock	2575		4.2		401	CY
	12" Sewer Granular Mat'l	2575		10		954	CY
	12" Water Granular Mat'l	2575		13.7		1,307	CY
	42" SD 3/4" Crushed Rock	2575		17		1,621	CY
Residential Collector Type I	AC	3655	40	146200		146,200	SF
	Base 8"	3655	40	146200	97467	3,610	CY
	Trail Multiuse 4" DG	3655	6	21930	7310	271	CY
	Curb	0				0	LF
	Curb and Gutter	7310				7,310	LF
	Base Curb and Gutter 4"	7310	4	29240	9746.67	361	CY
	Sidewalk Concrete	3655	5	18275		18,275	SF
	8" Sewer Crushed Rock	3655		3.3		447	CY
	8" Sewer Granular Mat'l	3655		8.4		1,137	CY
	16" Water Granular Mat'l	3655		14.7		1,990	CY

			L	W	Area	Volume	Quantity	Unit
		42" SD 3/4" Crushed Rock	3655		17		2,301	CY
	Residential Collector Type II	Concrete Paving	3925	39	153075		153,075	SF
		Base 9"	3925	39	153075	114806	4,252	CY
		Base Trail 4"	3925	6	23550	7850	291	CY
		Curb	7850				7,850	LF
		Curb and Gutter	7850				7,850	LF
		Base Curb and Gutter 4"	15700	6	94200	31400	1,163	CY
		Sidewalk Concrete	3925	5	19625		19,625	SF
		8" Sewer Crushed Rock	3925		3.3		480	CY
		8" Sewer Granular Mat'l	3925		8.4		1,221	CY
		16" Water Granular Mat'l	3925		14.7		2,137	CY
		Rock (Median)	3925	4	15700	15700	581	CY
		24" SD 3/4" Crushed Rock	3925		10.2		1,483	CY
		78" SD 3/4" Crushed Rock	3925		34.8		5,059	CY
	Residential Collector Type III	AC	9045	39	352755		352,755	SF
		Base 8"	9045	39	352755	235170	8,710	CY
		Curb	18090				18,090	LF
		Curb and Gutter	18090				18,090	LF
		Base Curb and Gutter 4"	36180	5.5	198990	66330	2,457	CY
		Sidewalk Concrete	18090	5	90450		90,450	SF
		8" Sewer Crushed Rock	9045		3.3		1,106	CY
		8" Sewer Granular Mat'l	9045		8.4		2,814	CY
		12" Water Granular Mat'l	9045		13.7		4,590	CY
		60" SD 3/4" Crushed Rock	9045		17		5,695	CY
9	Magnolia Avenue Offsite (Collector Type IV)	AC	3145	49	154105		154,105	SF
		Base 8"	3145	49	154105	1E+05	3,805	CY
		Curb and Gutter	6290				6,290	LF
		Base Curb and Gutter 4"	6290	4	25160	8387	311	CY

			L	W	Area	Volume	Quantity	Unit
		Sidewalk Concrete	3145	4.5	14153		14,153	SF
		16" Water Granular Mat'l	3145		14.7		1,712	CY
10	Cuyamaca Street (Residential Collector Type V)	AC	1080	39	42120		42,120	SF
		Base 8"	1080	39	42120	28080	1,040	CY
			0	8	0		0	SF
		Base Trail 4"	1080	8	8640	2880	107	CY
		Curb	2160				2,160	LF
		Curb and Gutter	2160				2,160	LF
		Base Curb and Gutter 4"	4320	5.5	23760	7920	293	CY
		Trail Multiuse 4" DG	1080	5	5400	1800	67	CY
		8" Sewer Crushed Rock	1080		3.3		132	CY
		8" Sewer Granular Mat'l	1080		8.4		336	CY
		12" Water Granular Mat'l	1080		13.1		524	CY
		42" SD 3/4" Crushed Rock	1080		17		680	CY
11	Cuyamaca Street (Village Collector)	AC	1140	61	69540		69,540	SF
		Base 8"	1140	61	69540	46360	1,717	CY
		Curb and Gutter	2280				2,280	LF
		Base Curb and Gutter 4"	2280	4	9120	3040	113	CY
		Sidewalk Concrete	1140	23	26220		26,220	SF
		8" Sewer Crushed Rock	1140		3.3		139	CY
		8" Sewer Granular Mat'l	1140		8.4		355	CY
		12" Water Granular Mat'l	1140		13.1		553	CY
		24" SD 3/4" Crushed Rock	1140		10.2		431	CY
12	Residential Collector Type VII	AC	6490	37	240130		240,130	SF
		Base 4"	6490	37	240130	80043	2,965	CY
		Curb and Gutter	12980				12,980	LF
		Sidewalk Concrete	12980	5	64900		64,900	SF
		Base Curb and Gutter 4"	12980	5	64900	21633	801	CY

			L	W	Area	Volume	Quantity	Unit
		8" Sewer Crushed Rock	12980		3.3		1,586	CY
		8" Sewer Granular Mat'l	12980		8.4		4,038	CY
		12" Water Granular Mat'l	6490		13.1		3,149	CY
		42" SD 3/4" Crushed Rock	6490		17		4,086	CY
13	Village Street Type I	AC	995	37	36815		36,815	SF
		Base 4"	995	37	36815	12272	455	CY
		Curb	1990				1,990	LF
		Curb and Gutter	1990				1,990	LF
		Base Curb and Gutter 4"	3980	5.5	21890	7297	270	CY
		Sidewalk Concrete	1990	9	17910		17,910	SF
		Pavers	995	19	18408		18,408	SF
		8" Sewer Crushed Rock	995		3.3		122	CY
		8" Sewer Granular Mat'l	995		8.4		310	CY
		8" Water Granular Mat'l	995		9.3		343	CY
		24" SD 3/4" Crushed Rock	995		10.2		376	CY
14	Village Street Type II	AC	935	47	43945		43,945	SF
		Base 4"	935	47	43945	14648	543	CY
		Curb and Gutter	1870				1,870	LF
		Base Curb and Gutter 4"	1870	4	7480	2493	92	CY
		Sidewalk Concrete	1870	9.5	17765		17,765	SF
		8" Sewer Crushed Rock	935		3.3		114	CY
		8" Sewer Granular Mat'l	935		8.4		291	CY
		8" Water Granular Mat'l	935		9.3		322	CY
		24" SD 3/4" Crushed Rock	935		10.2		353	CY
15	Village Street Type III	AC	6180	33	203940		203,940	SF
		Base 4"	6180	33	203940	67980	2,518	CY
		Curb and Gutter	12360				12,360	LF

			L	W	Area	Volume	Quantity	Unit
		Base Curb and Gutter 4"	12360	4	49440	16480	610	CY
		Sidewalk Concrete	12360	9.5	117420		117,420	SF
		8" Sewer Crushed Rock	6180		3.3		755	CY
		8" Sewer Granular Mat'l	6180		8.4		1,923	CY
		8" Water Granular Mat'l	6180		9.3		2,129	CY
		24" SD 3/4" Crushed Rock	6180		10.2		2,335	CY
16	**Residential Street**	AC	68960	33	2E+06		2,275,680	SF
		Base 4"	68960	33	2E+06	8E+05	28,095	CY
		Curb and Gutter	137920				137,920	LF
		Base Curb and Gutter 4"	137920	4	551680	2E+05	6,811	CY
		Sidewalk Concrete	137920	5	689600		689,600	SF
		8" Sewer Crushed Rock	68960		3.3		8,428	CY
		8" Sewer Granular Mat'l	68960		8.4		21,454	CY
		8" Water Granular Mat'l	68960		9.3		23,753	CY
		24" SD 3/4" Crushed Rock	68960		10.2		26,052	CY
17	**Carlton Hills Blvd**	AC Overlay	1070	8	8560		8,560	SF
		Curb and Gutter	2140				2,140	LF
		Base Curb and Gutter 4"	2140	4	8560	2853	106	CY
		Sidewalk Concrete	1070	9.5	10165		10,165	SF
18	**Private Split Residential Street (One Way)**	AC	5630	38	213940		213,940	SF
		Base 8"	5630	38	213940	1E+05	5,282	CY
		Curb (0")	11260				11,260	LF
		Curb and Gutter	11260				11,260	LF
		Base Curb and Gutter 4"	11260	5	56300	18767	695	CY
		Sidewalk Concrete	11260	5	56300		56,300	SF
		8" Sewer Crushed Rock	11260		3.3		1,376	CY
		8" Sewer Granular Mat'l	11260		8.4		3,503	CY

			L	W	Area	Volume	Quantity	Unit
		8" Water Granular Mat'l	11260		9.3		3,878	CY
		24" SD 3/4" Crushed Rock	5630		10.2		2,127	CY
19	Private Street	AC	2990	29	86710		86,710	SF
		Base 4"	2990	29	86710	28903	1,070	CY
		Curb and Gutter	5980				5,980	LF
		Base Curb and Gutter 4"	5980	4	23920	7973	295	CY
		Sidewalk Concrete	2990	5	14950		14,950	SF
		15" Sewer Crushed Rock	2990		5		554	CY
		15" Sewer Granular Mat'l	2990		11.3		1,251	CY
		16" Water Granular Mat'l	2990		9.3		1,030	CY
20	Private Alley	Concrete	2070	20	41400		41,400	SF
	Site Trails	Trail Multiuse 4" DG	65100	6	390600	1E+05	4,822	CY

Table 3

Total Project Road Quantities			
		Quantity	**Unit**
1	AC Pavement	4,714,608	SF
2	Base	113,910	CY
3	SD Crushed Rock 3/4"	64,130	CY
4	Rock (Median)	581	CY
5	Sewer Crushed Rock	15,640	CY
6	Sewer Granular	39,587	CY
7	Water Granular	57,387	CY
8	DG	5,783	CY
9	Sidewalk	1,169,320	SF
10	Curb	70,805	LF
11	Curb and Gutter	284,585	LF
12	Slope Drain Rock	1,000	CY

Table 4

Total Quarried Quantities			
		Quantity	**Unit**
1	Base	113,910	CY
2	Crushed Rock	80,770	CY
3	Rock	581	CY
4	Granular Trench Backfill	96,974	CY
5	DG	5,783	CY
TOTAL		**298,018**	**CY**

Aggregate Plant Process

Table 5

Aggregate Plant Raw Feed Mix	
Stadium Conglomerate	
16 inch plus Boulders	10%
8 x 16 Cobbles	40%
Natural Fines (Yellow Fill)	25%
1 x 8 Rock	25%
Granite	
1/4 ton Rip Rap	10%
Gabion 12x 6 Stone	20%
6 x 1 rock	30%
DG	40%

Portions of the raw material from the cuts in the Stadium Conglomerate that are deemed to be of sufficient quality will be hauled to the aggregate plant location and placed in the Raw Feed surge pile. Raw feed will be screened prior to introduction into the plant for oversized boulders. Any boulder in excess of 16 inches in size will be screened and conveyed into a stockpile to be used as needed for landscaping or used as raw feed for the plant. Any excess boulders can also be placed in the areas where deep fills are planned.

After the boulders have been removed a second screening deck will remove the natural fines less that 1-inch to 1 ½ inch or less in size. These natural fines, commonly called "yellow fill" consist of sand, silts, clays and small rock. This material can be placed in the general fill locations or, possibly, blended with the crushed fines to make and SE 30 product. The natural fines may also be used for pad capping. Testing will be performed on these natural fines to determine if they can be made in a usable product or if they should be used in an engineered fill.

A separate screening system can be moved in when the project needs to make an 8" by 16" inch cobble product. Stockpiles of cobbles can be built up in anticipation of the needs based on the construction schedule. Otherwise these cobbles will be crushed for aggregate through a jaw/cone crusher system. This process will reduce all the aggregate

to ¾ inch or smaller. It can then be screened and sorted into separate stockpiles and available for onsite use.

By screening this product, the plant can produce ¾ Class 2 base by mixing all the material coming off the secondary screen deck. Or by using the screen deck to separate the material into discrete sizes it can make 3/4, 1/2 drain rock and 3/8 by dust products. 3/8 by dust is a 100% crushed fines product that has a variety of construction uses because of its high S.E (Sand Equivalent) or cleanliness value. An SE of 30 or greater can be expected from the crushed fines.

All products will manufactured and ready to be delivered as close as possible to the needs of the project's construction schedule to avoid product degradation due to material segregation over time.

Figure 1

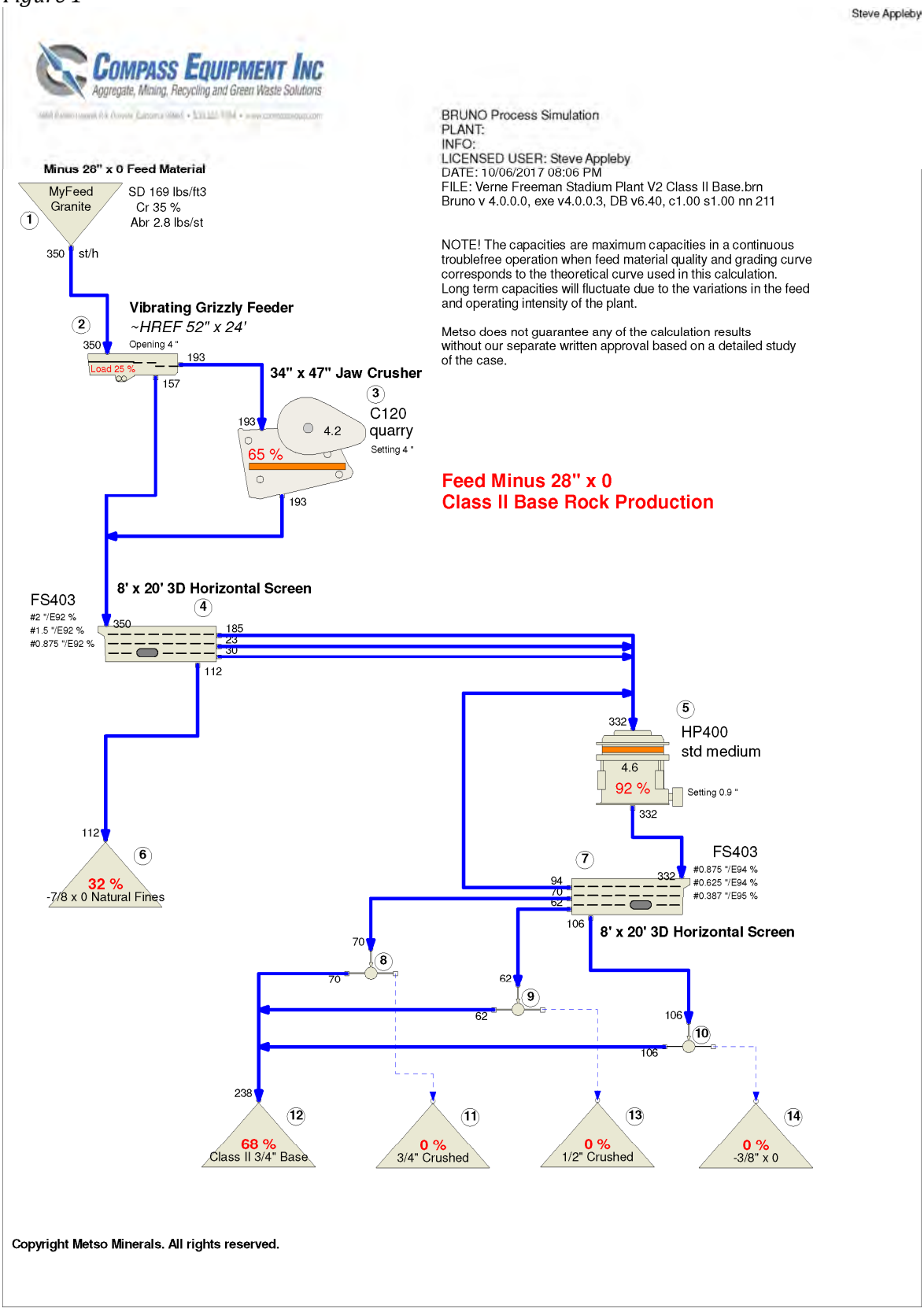
Steve Appleby
COMPASS EQUIPMENT INC
Aggregate, Mining, Recycling and Green Waste Solutions
BRUNO Process Simulation
PLANT:
INFO:
LICENSED USER: Steve Appleby
DATE: 10/06/2017 08:06 PM
FILE: Verne Freeman Stadium Plant V2 Class II Base.brn
Bruno v 4.0.0.0, exe v4.0.0.3, DB v6.40, c1.00 s1.00 nn 211
NOTE! The capacities are maximum capacities in a continuous troublefree operation when feed material quality and grading curve corresponds to the theoretical curve used in this calculation. Long term capacities will fluctuate due to the variations in the feed and operating intensity of the plant.
Metso does not guarantee any of the calculation results without our separate written approval based on a detailed study of the case.
Minus 28" x 0 Feed Material
MyFeed Granite
SD 169 lbs/ft3
Cr 35 %
Abr 2.8 lbs/st
350 st/h
Vibrating Grizzly Feeder
~HREF 52" x 24'
Opening 4 "
Load 25 %
34" x 47" Jaw Crusher
C120 quarry
Setting 4 "
65 %
4.2
Feed Minus 28" x 0
Class II Base Rock Production
8' x 20' 3D Horizontal Screen
FS403
#2 "/E92 %
#1.5 "/E92 %
#0.875 "/E92 %
HP400
std medium
92 %
Setting 0.9 "
32 %
-7/8 x 0 Natural Fines
FS403
#0.875 "/E94 %
#0.625 "/E94 %
#0.387 "/E95 %
8' x 20' 3D Horizontal Screen
68 %
Class II 3/4" Base
0 %
3/4" Crushed
0 %
1/2" Crushed
0 %
-3/8" x 0
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Figure 2

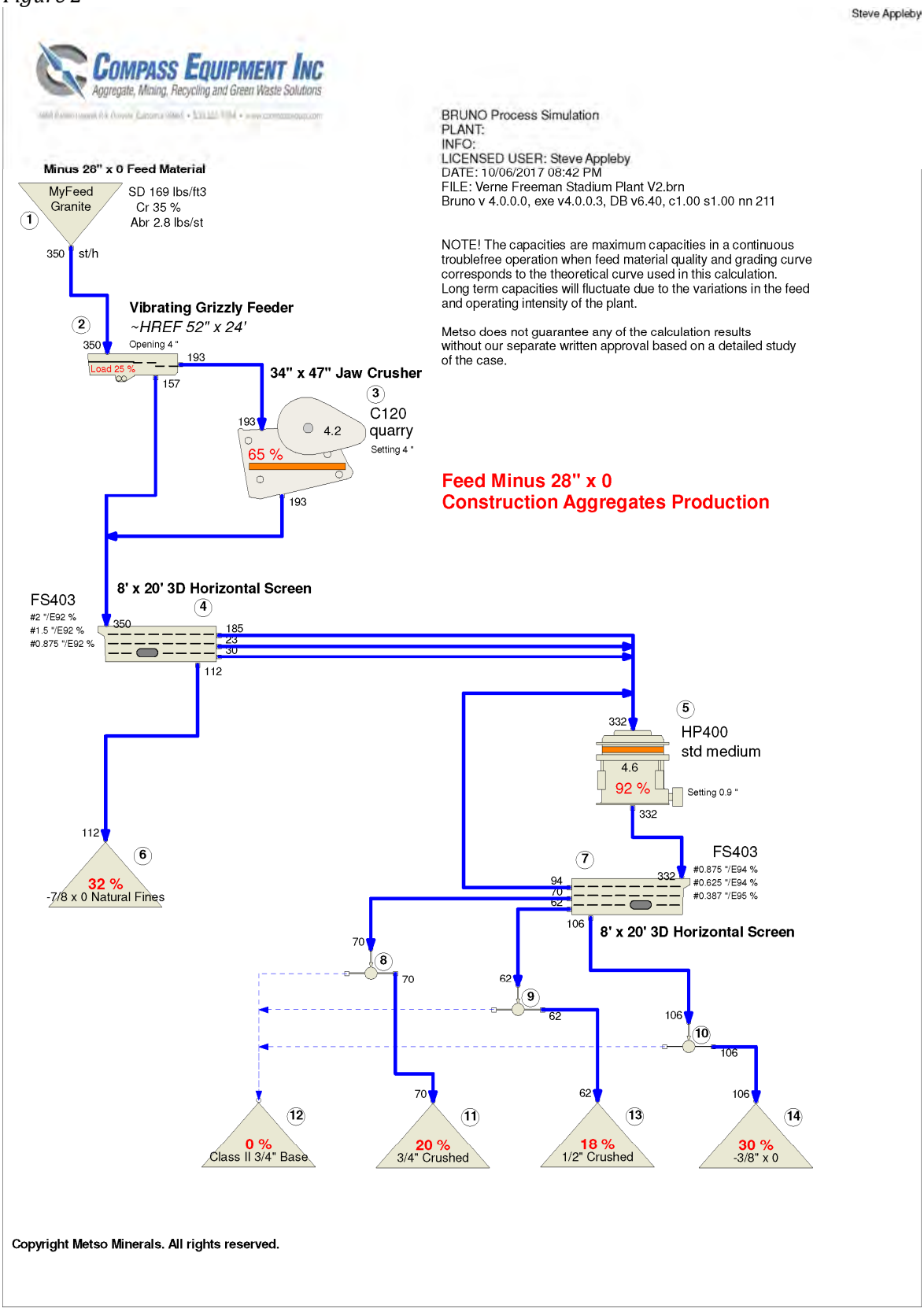
Steve Appleby
COMPASS EQUIPMENT INC
Aggregate, Mining, Recycling and Green Waste Solutions
BRUNO Process Simulation
PLANT:
INFO:
LICENSED USER: Steve Appleby
DATE: 10/06/2017 08:42 PM
FILE: Verne Freeman Stadium Plant V2.brn
Bruno v 4.0.0.0, exe v4.0.0.3, DB v6.40, c1.00 s1.00 nn 211
NOTE! The capacities are maximum capacities in a continuous troublefree operation when feed material quality and grading curve corresponds to the theoretical curve used in this calculation. Long term capacities will fluctuate due to the variations in the feed and operating intensity of the plant.
Metso does not guarantee any of the calculation results without our separate written approval based on a detailed study of the case.
Minus 28" x 0 Feed Material
MyFeed Granite
SD 169 lbs/ft3
Cr 35 %
Abr 2.8 lbs/st
350 st/h
Vibrating Grizzly Feeder
~HREF 52" x 24'
Opening 4 "
Load 25 %
34" x 47" Jaw Crusher
C120 quarry
Setting 4 "
65 %
4.2
Feed Minus 28" x 0
Construction Aggregates Production
8' x 20' 3D Horizontal Screen
FS403
#2 "/E92 %
#1.5 "/E92 %
#0.875 "/E92 %
HP400
std medium
92 %
Setting 0.9 "
32 %
-7/8 x 0 Natural Fines
FS403
#0.875 "/E94 %
#0.625 "/E94 %
#0.387 "/E95 %
8' x 20' 3D Horizontal Screen
0 %
Class II 3/4" Base
20 %
3/4" Crushed
18 %
1/2" Crushed
30 %
-3/8" x 0
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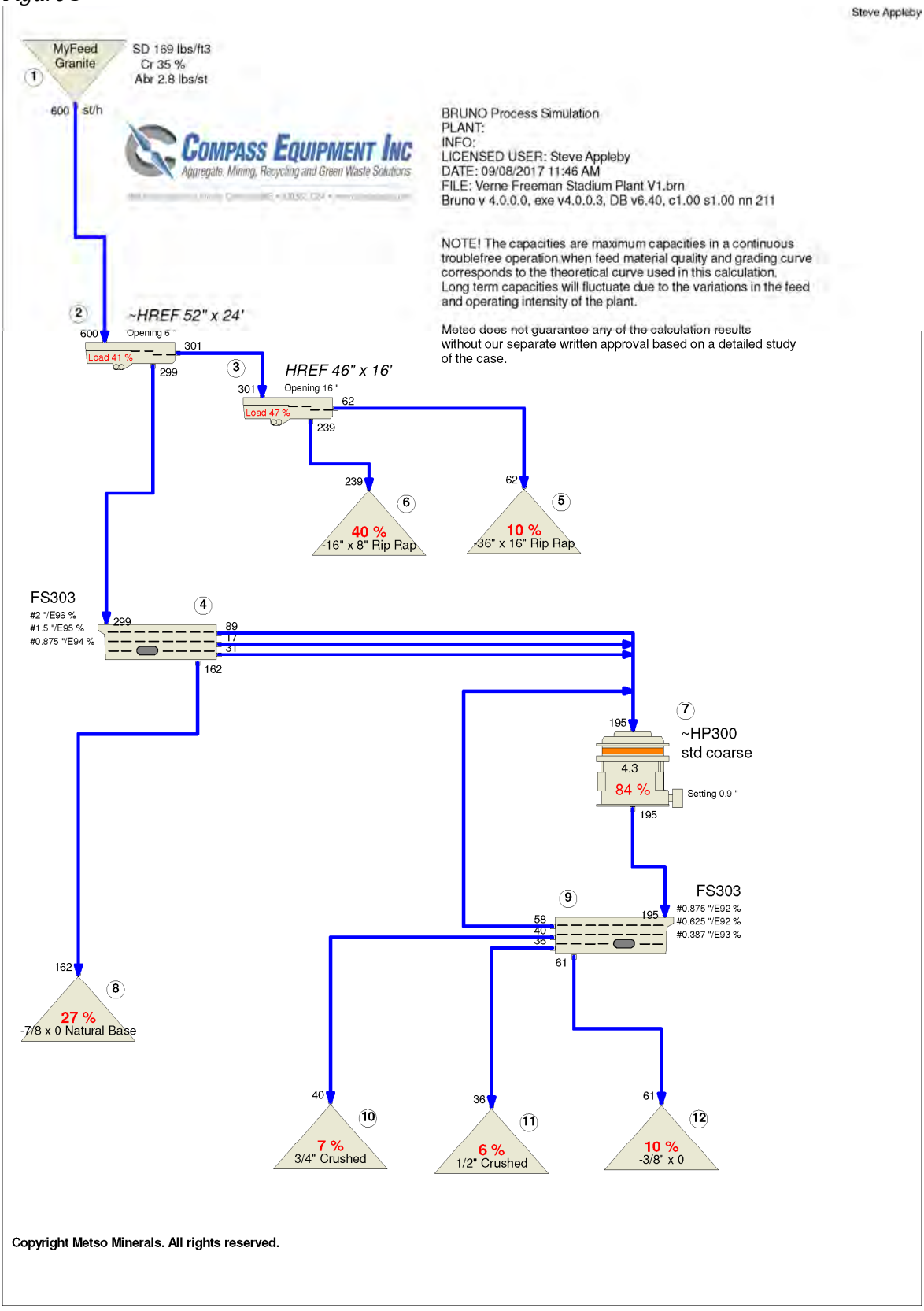
Figure 3


Steve Appleby
MyFeed
Granite
SD 169 lbs/ft3
Cr 35 %
Abr 2.8 lbs/st
600 st/h
COMPASS EQUIPMENT INC
Aggregate, Mining, Recycling and Green Waste Solutions
BRUNO Process Simulation
PLANT:
INFO:
LICENSED USER: Steve Appleby
DATE: 09/08/2017 11:46 AM
FILE: Verne Freeman Stadium Plant V1.brn
Bruno v 4.0.0.0, exe v4.0.0.3, DB v6.40, c1.00 s1.00 nn 211
NOTE! The capacities are maximum capacities in a continuous troublefree operation when feed material quality and grading curve corresponds to the theoretical curve used in this calculation. Long term capacities will fluctuate due to the variations in the feed and operating intensity of the plant.
Metso does not guarantee any of the calculation results without our separate written approval based on a detailed study of the case.
~HREF 52" x 24'
Opening 6 "
Load 41 %
HREF 46" x 16'
Opening 16 "
Load 47 %
40 %
-16" x 8" Rip Rap
10 %
-36" x 16" Rip Rap
FS303
#2 "/E96 %
#1.5 "/E95 %
#0.875 "/E94 %
~HP300
std coarse
84 %
Setting 0.9 "
FS303
#0.875 "/E92 %
#0.625 "/E92 %
#0.387 "/E93 %
27 %
-7/8 x 0 Natural Base
7 %
3/4" Crushed
6 %
1/2" Crushed
10 %
-3/8" x 0
Copyright Metso Minerals. All rights reserved.

Proposed Aggregate Plant Design

Exhibit 6 shows all material going into a 16 " grizzly bar system to screen out any loose fines, and to separate boulders to big to go through the jaw crusher. The 34 X 47 jaw will crush the rock and cobbles but also loosen up cemented sandstone and other fines. Then this material goes to a primary vibratory screen deck that will remove the rest of the natural fines and separate them from the rock. The rock then is conveyed to a Cone Crusher that will reduce the rock to 7/8 minus in size. The material then goes to a three deck vibratory screening system. The top screen catches the material larger than ¾ inch in size and circulates it back to the cone. Ultimately, all the material will pass through the screen deck and either be sorted into pile of 3/4, 1/2 and 3/8-dust rock or combined to make Class 2 Aggregate Base.

Exhibit 7 shows the system modified to make 8 x 16 cobbles for drainage systems and still producing some material for aggregate base or drain rock. This system retains the grizzly bar system designed to screen out oversized boulders, but include a second set of grizzly bars set at 8 inches to screen out 8 x 16 cobbles.

Both plant designs are going to build up stockpiles of natural fines (yellow fill) that may not be usable for any other purpose than general fill. This material is estimated at 25% of the total raw feed but will vary from location to location. Testing on this material is anticipated to see if there are any other uses for this material, such as pad capping or trench backfill. However this material may have to be placed in general fill areas if it has no other use.

Aggregate Plant Location

The location of the aggregate plant will be permitted within the approved development footprint. The plant and surrounding stockpiles need approximately 5 acres of relatively flat topography. Although it will be portable, it is assumed that a location or locations will be chosen to minimize exposure to noise and dust onsite and to maximize efficiency with the construction process.

The three potential locations for the aggregate plant are shown on Exhibit 5.

Conclusions and Recommendations

1. The use of onsite aggregate grade rock will allow the production of all fill, backfill, and base materials required for the project. This will result in a reduction of the project's greenhouse gas footprint by taking over 60,000 truck trips off the road. This will save the project money as well. The crushing costs for the proposed aggregate plant have not been studied in detail, but are similar to quarries throughout the State. For purposes of this report, the average cost of production for aggregates at Fanita Ranch is estimated to be $5.00 dollars per ton. With approximately 1,000,000 tons required for the project, that results of a $5,000,000 total cost. To buy and haul in the same amount from an outside vender will cost $15.00/ton, saving $10,000,000 over the life of the project.
2. The onsite plant will be permitted by the City of Santee as a part of the overall Fanita Ranch entitlement process. Operation of the aggregate plant will be included in the overall CEQA review of the project.
3. The plant can be purchased or leased. If purchased, the plant can be sold at the end of construction and removed from the site. HomeFed can own the plant or a subcontractor can be found to operate the plant on a fee basis. In any case it will be removed from the site at the end of construction.

Appendix 1. Specifications

PUBLIC WORKS STANDARDS

CITY OF SANTEE

September 1982

TABLE A

CITY OF SANTEE

STREET DESIGN CRITERIA

DESIGN CRITERIA	PRIME ARTERIAL	MAJOR ROAD	COLLECTOR STREETS	INDUSTRIAL STREET	LOCAL STREET	CUL-DE-SAC STREET	HILLSIDE * STREET
Estimated Ultimate ADT	40,000 or more	20,000 to 40,000	5,000 to 20,000	------	500 to 5,000	300 max.	500 max.
Design Speed	60 mph	50 mph	40 mph	30 mph	25 mph	20 mph	20 mph
Right-of-Way	126'	102'	84'	72'	56'	56'	40-60'
Curb-to-Curb Distance	106' 18' median	82' 18' median	64'	52'	36'	36'	30'**
Minimum Traffic Index	9	8.5	8.0	7.0	5.0	4.5	5.0
Minimum Structural Section (inches)	5 AC 6 AB	4 AC 6 AB	3 AC 6 AB	3 AC 6 AB	2 AC 6 AB	2 AC 6 AB	2 AC 6 AB
Stopping Sight Distance	525'	350'	275'	200'	160'	160'	160'
Minimum Horizontal Radius	1150'	850'	550'	300'	200'	200'	200'
Max. Grade	6%	7%	10%	6%	12%	12%	20%
Min. Grade	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

* These standards shall also apply to local streets in residential areas, where homes will front on only one side of the street

** Parking 1 side only.
36' with parking both sides.

F. All street plans shall demonstrate the feasibility of future street extension a minimum of 200 feet beyond the property line or limit of work. Longer extensions may be required by the City Engineer.

3. ALIGNMENT

A. Streets shall normally intersect at right angles. Local streets shall have a least 50 feet of tangent adjacent to an intersection, measured from the beginning of the curb return (BCR) along the centerline while collectors and above should have at least 100 feet. Tangent lengths less than specified or an angle of intersection more than 10° from a right angle requires special approval and design.

B. Cul-de-sac streets shall not exceed 500 feet in length without special approval and shall have a 38-foot minimum curb line radius at the turn-around.

C. Minimum length of tangent between reversing curves shall be 100 feet.

D. All corners for local and cul-de-sac streets shall have a minimum a 30-foot curb line radius; collector streets and above shall have a minimum curb line radius of 40 feet. Major streets may require special design.

E. All street plans shall demonstrate the feasibility of future street extension a minimum of 200 feet beyond the property line or limit of work. Longer extensions may be required by the City Engineer.

4. STRUCTURAL SECTION

A. Design shall be in accordance with the California Department of Transportation stabilometer method.

B. Design shall be based on results of preliminary tests made before plans are prepared. The final structural section shall be based on Resistance Value tests, taken at locations designated by the City Engineer, after rough grading has been completed.

C. A minimum of 6" of Class II Aggregate Base as defined in the California Department of Transportation Standard Specifications shall be used when the Traffic Index (TI) exceeds 7 or the street grade is in excess of 8%.

D. The structural section shall be designed to include at least the minimum amount of asphalt concrete (AC) as shown in Table A.

CITY OF SANTEE

TO: Craig Stampher, Associate Engineer

FROM: George L. Allen, Traffic Engineer GLA

DATE: August 3, 1989

SUBJECT: RESIDENTIAL COLLECTOR STREET DESIGN CRITERIA

It is recommended that the following Design Criteria for a residential collector be incorporated into the new Public Works Design Standard.

Estimated Ultimate ADT	500-10,000
Design Speed	35 mph
Right-of-way	60 feet
Curb-to-Curb	40 feet
Minimum Traffic Index	7.5
Minimum Structure Section	3AC/6AB
Stopping Sight Distance	250 feet
Minimum Horizontal Radius	400 feet
Maximum Grade	10%
Minimum Grade	1.0%

It is also recommended that these standards be used effective immediately.

GLA:lb

cc: Al Krier

2:m.c

10765 Woodside Avenue • Santee, California 92071-3198 • (619) 562-6153

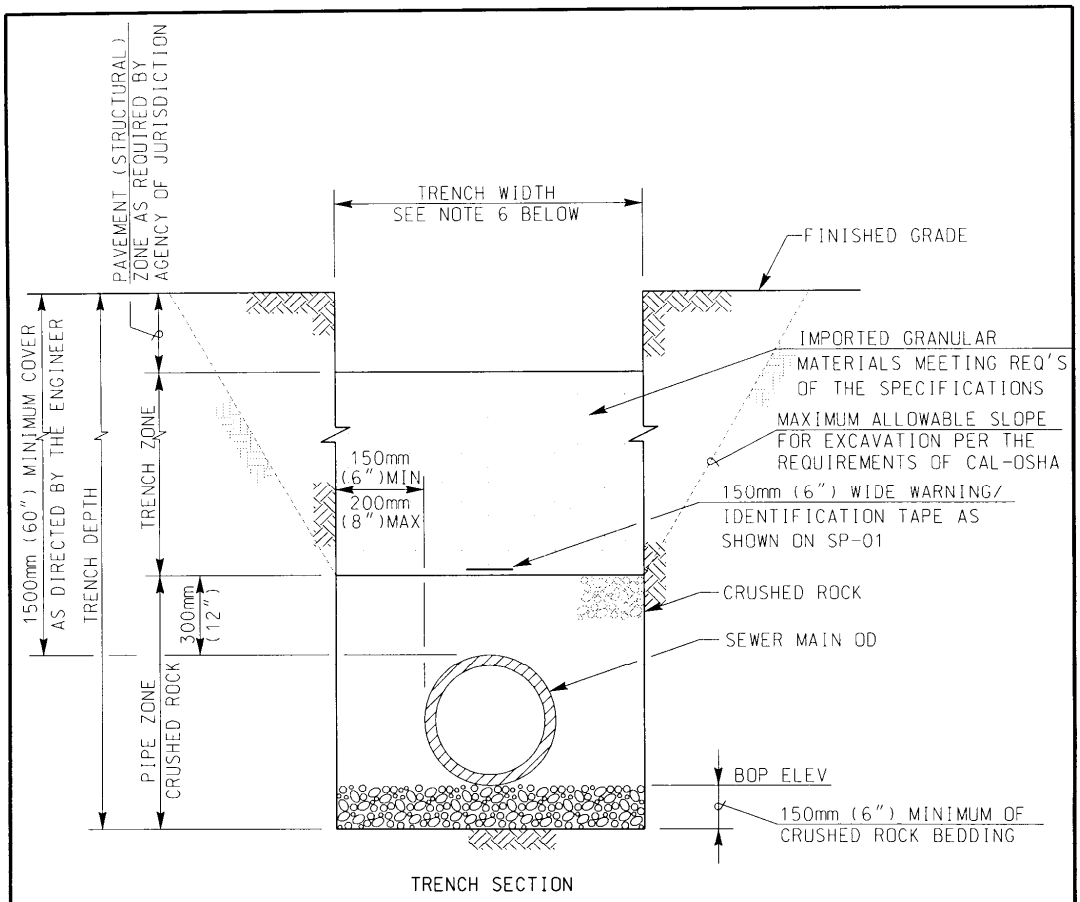
Fanita Ranch Pavement Sections

FANITA RANCH PAVEMENT SECTIONS

assumed pavement sections are based on San Diego Co. Std Spec section 6.4 and the estimated ADTs provided on sheet 2 of the Tentative Map for Fanita Ranch prepared by Huntsaker and Assoc.

RD. #	STREET NAME/TYPE	SAN DIEGO CO RD	PAVEMENT SECTION
1	CUYAMACASTREET	MAJOR ROAD	4" AC/ 10" AB
2	FANITA PKWY	MAJOR ROAD	4" AC/ 10"AB
3	CUYAMACA STREET	COLLECTOR	3" AC/ 9" AB
4	FANITA PKWY	COLLECTOR	3" AC/ 9" AB
5,6,6B	FANITA PKWY	MAJOR ROAD	3" AC / 8" AB
8-11	FANITA STREETS	RESIDENTIAL	3". AC / 6" AB

Pipe Bedding and Trench Backfill for Sewer Facilities



TRENCH SECTION

NOTES:

1) REFER TO SECTIONS 02223 AND 15065 OF THE SPECIFICATIONS FOR TRENCHING, BACKFILLING AND COMPACTING OF PIPELINE TRENCHES
2) PAVING OR PAVEMENT REPAIR TO BE DONE IN ACCORDANCE WITH AGENCY OF JURISDICTION
3) ALL PIPELINE TRENCHES SHALL BE EXCAVATED SO THAT THE DISTANCE BETWEEN TRENCH WALLS AT THE TOP OF PIPE SHALL BE AS CALLED OUT IN NOTE 6
4) CONCRETE CRADLE PER SP-03 SHALL BE USED WHEN THE TRENCH WIDTH AT THE UPPER LIMIT OF THE PIPE ZONE EXCEEDS THE MAXIMUM WIDTH SPECIFIED
5) EXCAVATE BELL HOLES AT EACH JOINT TO PERMIT PROPER ASSEMBLY AND INSPECTION OF THE ENTIRE JOINT
6) THE TRENCH WIDTH EQUALS, SEWER MAIN OD PLUS 300mm (12") MINIMUM, 400mm (16") MAXIMUM
7) FOR BEDDING AND BACKFILL OF TRENCHES FOR WATER AND RECYCLED WATER FACILITIES SEE WP-02

K:\WAS\Sewer\Updated11-02\sp02.dgn 12-NOV-2002 09:48

PIPE BEDDING AND TRENCH BACKFILL FOR SEWER FACILITIES	WATER AGENCIES STANDARDS
	COMMITTEE APPROVAL: 11/01/2002
	DRAWING NUMBER: SP-02

1.15 FILTER FABRIC

Filter fabric shall be used when excessively wet, soft, spongy, or similarly unstable material is encountered or in areas of suspected high groundwater in accordance with the soils technician's recommendation and the approval of the District Engineer.

1.16 CHANGES IN LINE AND GRADE

In the event obstructions not shown on the plans are encountered during the progress of the work, and which will require alterations to the plans, the District Engineer shall have the authority to change the plans and order the necessary deviation from the line and grade, in accordance with Section 01000. The Contractor shall not deviate from the specified line and grade without prior written approval by the District Engineer.

1.17 HYDROSTATIC TESTING

Pre-testing of the piping system may be performed for the Contractor's convenience at any time. However, the final hydrostatic pressure test shall be as described in Section 15044.

PART 2 MATERIALS

2.01 GENERAL

The Contractor shall furnish backfill material as specified below. All materials used in and above the pipe zone shall be capable of attaining the required relative density.

2.02 IMPORTED GRANULAR MATERIAL - PIPE ZONE

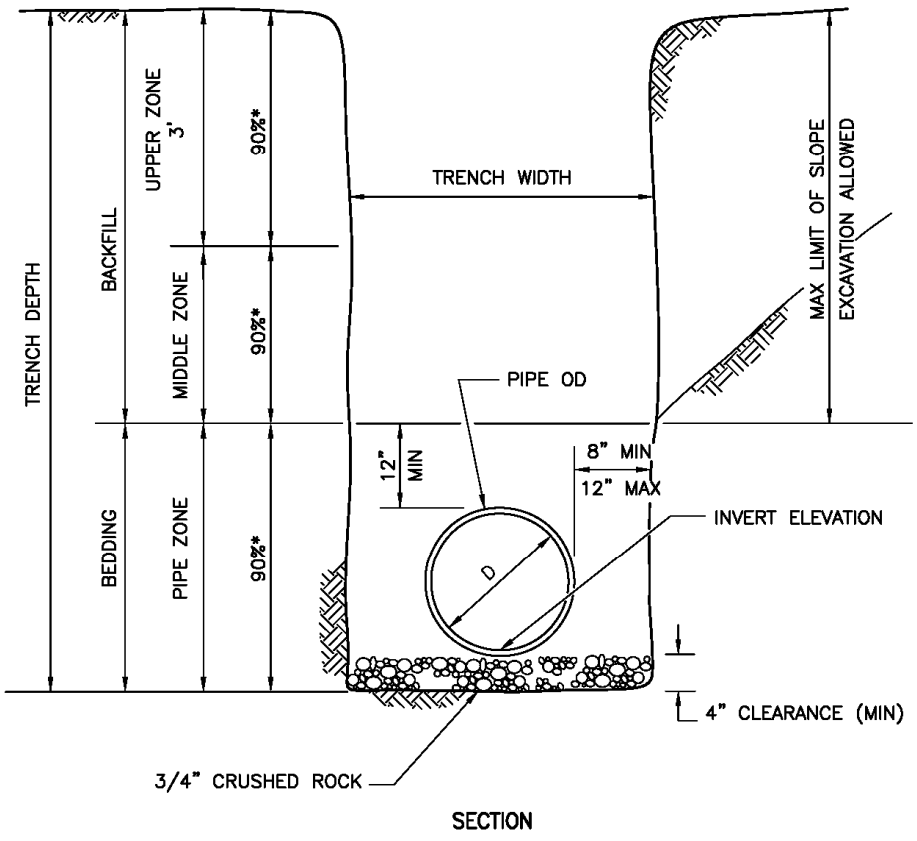
Imported Granular Material shall be used within the Pipe Zone for installations of all pressure pipe and tubing.

The Imported Granular Material shall be quarry waste (decomposed granite) free from organic matter. Material shall have a sand equivalent value of not less than 30 per ASTM D 2419, a coefficient of uniformity of 3 or greater, and shall conform to the following gradation:

U.S. Standard Sieve Size	Percent Passing By Weight
25mm (1")	100
19mm (3/4")	90 – 100
4.75mm (No. 4)	50 – 95
600µm (No. 30)	25 – 45
75µm (No. 200)	3 – 15

Native materials may not be used in lieu of Imported Granular Material within the Pipe Zone unless such native materials meet all of the requirements specified above and specific written permission has been obtained from the District Engineer.

Pipe Bedding and Trench Backfill for Storm Drains



NOTES

1. SEE G-24A AND G-24B OR G-25 FOR RESURFACING DETAILS ON IMPROVED STREETS.
2. (*) INDICATES MINIMUM RELATIVE COMPACTION.
3. TOP 12" OF TRENCH BACKFILL IN STREET SECTION SHALL BE 95% RELATIVE COMPACTION UNLESS SPECIFIED OTHERWISE.

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Reformatted		T. Stanton	04/06
Edited	S.S.	T. Regello	03/11
Edited	T.R.	T. Regello	10/15

SAN DIEGO REGIONAL STANDARD DRAWING

PIPE BEDDING AND TRENCH BACKFILL FOR STORM DRAINS

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

12/17/2015
Chairperson R.C.E. 19246 Date

DRAWING NUMBER D-60

Appendix 2. – Stadium Conglomerate Photos

Photo 1 - 30 Trench T4, 6 to 8 feet

Photo 2 - 31 Trench T2 Stockpile

Photo 3 - LA Abrasion T4-1 second