



LSC TRANSPORTATION CONSULTANTS, INC.
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June 15, 2020

Mr. Jim Morley
Morley-Bentley Investments, LLC
20 Boulder Crescent, 1st Floor
Colorado Springs, CO 80903

RE: Sterling Ranch Filing No. 2 and
Sterling Ranch Phase 2
El Paso County, CO
Noise Impact Study
LSC #184661

Dear Mr. Morley,

In response to your request, LSC Transportation Consultants, Inc. has completed an evaluation of the noise exposure of the proposed Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 residential developments to be located east of Vollmer Road and north of a future extension of Marksheffel Road in El Paso County, Colorado.

CURRENTLY PROPOSED LAND USE

Figure 1 shows the proposed site plans for Sterling Ranch Filing 2 and Sterling Ranch Phase 2. Sterling Ranch Filing No. 2 is planned to include 49 lots for single-family homes. Sterling Ranch Phase 2 is planned to include 212 lots for single-family homes (50 homes are planned north of Sterling Ranch Road and 162 homes are planned south of Sterling Ranch Road).

EXISTING ROAD AND TRAFFIC CONDITIONS

The adjacent streets are shown in Figure 1 and are described below.

Vollmer Road is currently a five-lane urban street, within the City of Colorado Springs limits, between Black Forest Road and Cowpoke Road; and a two-lane, rural, paved roadway north of Cowpoke Road extending to north of Hodgen Road. In the southbound direction, Vollmer Road has a posted speed limit of 45 miles per hour (mph). South of Cowpoke Road, Vollmer Road has a 40-mph posted speed limit. The 2040 El Paso County Major Transportation Corridors Plan (MTCP) and the Sterling Ranch master traffic study show Vollmer Road as a four-lane Urban Minor Arterial adjacent to the site

Marksheffel Road is a Principal Arterial extending north from the City of Fountain to Woodmen Road. Marksheffel Road is ultimately planned to be widened to six lanes and extended north and west from Woodmen Road to connect to Research Parkway at Black Forest Road. Marksheffel Road is shown as a six-lane Principal Arterial through the site on the El Paso County MTCP.

NOISE ANALYSIS

Section 2.5.2 of the El Paso County *Engineering Criteria Manual* (ECM) states

A noise study shall be prepared where a new expressway or principal arterial is planned or where roadway construction is planned which will result in changing an existing road classification from a lower classification road to an expressway or principal arterial.

the LDC Chapter 8.4.2 Noise- an analysis is necessary per staff

Sterling Ranch Filing No. 2

Sterling Ranch Filing No. 2 is located adjacent to Vollmer Road. As Vollmer Road is classified as a Minor Arterial, a noise study would not automatically be required by the ECM. However, a 6-foot-high concrete wall is currently proposed adjacent to Vollmer Road along the entire site frontage. This wall will provide noise mitigation for the proposed lots adjacent to Vollmer Road. The streetscape landscaping plans showing the location of this wall are attached.

please provide the noise levels at the residential prop line after the ROW is dedicated for the 2040 /2020 conditions

Sterling Ranch Phase 2

Sterling Ranch Phase 2 is located adjacent to Marksheffel Road, which is classified as a Principal Arterial. The plans for Sterling Ranch Phase 2 include tracts for utilities, trails, and drainage adjacent to Marksheffel Road. As shown in Figure 1, the closest residential lots are located 126 feet away from the Marksheffel right-of-way. Based on noise analysis studies done on other sections of Marksheffel Road, including a study done for the Windermere development located northwest of Marksheffel Road and North Carefree Circle, the noise levels for the Sterling Ranch Phase 2 lots are anticipated to be below the 67-decibel threshold set by the ECM.

* * * after dedication i though mark Sheffle was 180- feet proposed?

Please contact me if you have any questions regarding this report.

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By: Kirstin D. Ferrin, P.E.
Senior Transportation Engineer

KDF:jas

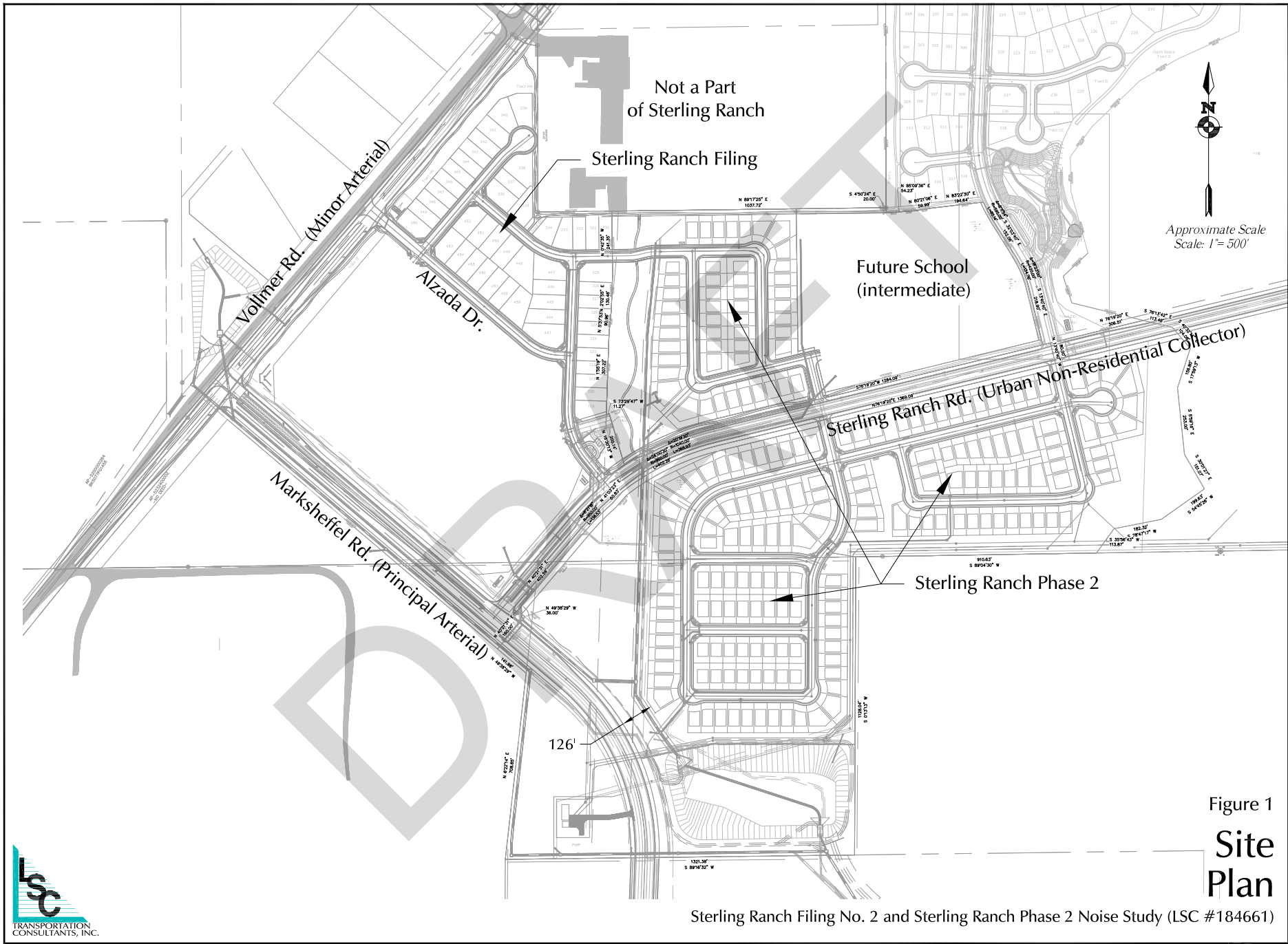
Enclosures: Figure 1
NES Sterling Ranch - Fence Exhibit
Traffic Noise Model Input and Output

Figure 1

01.08.2020

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NES Sterling Ranch - Fence Exhibit

01.08.2020

DRAFT



LANDSCAPE NOTES

- SOIL AMENDMENT** - INCORPORATE 2 CUBIC YARDS/1000 SF AREA OF PREMIUM 3 ORGANIC COMPOST (TYPE II) OR BLUEGRASS TURF AREAS. INCORPORATE 2 CUBIC YARDS/1000 SF AREA OF ORGANIC COMPOST (DECOMPOSED MANURE) TO ALL NATIVE SEED AREAS. TILL INTO TOP 6" OF SOIL. AMENDMENTS ARE BASED ON SOIL ANALYSIS. THE BELOW LEVELS ARE REQUIRED FOR ANY ORGANIC MATTER USE. AMEND SOIL PER THE GUIDELINES LISTED BELOW TO ADDRESS DEFICIENCIES NOTED IN THE SOIL ANALYSIS.
 - SAT LEVEL EQUAL TO OR LESS THAN 0.05%
 - pH LEVEL EQUAL TO OR LESS THAN 7
 - ORGANIC MATTER CONTENT EQUAL TO OR GREATER THAN 85%
 - NITROGEN: CARBON: BETWEEN 20:1 AND 30:1
 - PARTICLE SIZE: THE COARSER THE BETTER, NO SILT OR CLAY SIZED PARTICLES
- CONTRACTOR TO UTILIZE STOCKPILED TOPSOIL FROM GRADING OPERATION AS AVAILABLE. TILL INTO TOP 6" OF SOIL.**
- A FULLY AUTOMATED SPRINKLER/IRRIGATION SYSTEM WILL BE PROVIDED. ALL TREES, SHRUBS, AND GROUND COVER PLANTING AREAS AND SPRAY ANY TURF. IRRIGATION PLAN WILL INCLUDE AN IRRIGATION SCHEDULE THAT NOTES APPLICATION RATES BASED ON TURF TYPE, AND NOTES RATES FOR NEWLY PLANTED PLANTS VS. ESTABLISHED PLANTS AND GENERAL RECOMMENDATIONS REGARDING SEASONAL ADJUSTMENTS (SPRING AND FALL).**
- ALL TREES AND SHRUBS TO RECEIVE A BACK FILL MIXTURE OF 50% IMPORTED LOAMY TOPSOIL, 25% PEAT MOSS, AND 25% EXISTING SOIL.**
- ALL TREES TO BE STAKED WITH WOOD STAKES. FOR 3" CAL. DECIDUOUS TREES AND EVERGREEN TREES OVER 8" USE 3" WOOD STAKES (STAKE TO GROUND LEVEL). SUBMIT STAKING MATERIALS PRODUCT INFO TO L.A. FOR APPROVAL PRIOR TO INSTALLATION.**
- CONTRACTOR TO APPLY PRE-EMERGENT HERBICIDE TO SHRUBS BASED PER MANUFACTURER'S SPECIFICATIONS. SUBMIT MANUFACTURER'S SPEC. SHEET TO OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO APPLICATION OF HERBICIDE.**
- CONTRACTOR TO RECEIVE 3" INCH DEPTH OF WOOD MULCH TO BE SIZED PER PLANTING DETAILS. WOOD MULCH TO BE "GORILLA HAIR CEDAR MULCH" SUBMIT PRODUCT INFORMATION TO OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION.**
- CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL PLANT MATERIAL SHOWN ON THIS PLAN. IF ANY DISCREPANCIES ARE FOUND BETWEEN THE LANDSCAPE PLAN AND THE PLANT SCHEDULE, THE QUANTITIES SHOWN ON THE LANDSCAPE PLAN SUPERSEDE THOSE SHOWN ON THE PLANT SCHEDULE.**
- PLANTS SHALL BE WARRANTED FOR THE DURATION OF ONE FULL YEAR AFTER THE INSTALLATION (WARRANTY SHALL COVER 100% OF THE REPLACEMENT COST).**
- ALL SEED, ROCK, & SHRUB BEDS TO BE SEPARATED BY SOLID STEEL EDGING. ALL SHRUB BEDS TO BE ENCLOSED BY STEEL EDGING. BETWEEN ALTERNATIVE TURF AND NATIVE SEED SHALL BE A MOWED STRIP, WITHOUT STEEL EDGING.**
- SE: SOLID STEEL EDGING TO BE: "OURADEGE" (1/2" THICK X 4" WIDE) STEEL LANDSCAPE EDGING, GREEN COLOR, WITH ROLLED EDGE AND STEEL STAKES, USE SOLID STEEL EDGING EXCEPT WHERE NOTED ON THE PLANS. SUBMIT PRODUCT INFORMATION TO OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION.**
- COBBLES: 2" X 4" CRUMPLE CREEK SOLID ONE FROM C&S SAND AND STONE, CO. (719.577.9900), OR APPROVED EQUAL. SUBMIT SAMPLE TO OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO ORDERING OR INSTALLATION.**
- ROCK: MICHIGAN 3/4" CUMMARRON GRANITE FROM C&S SAND AND STONE, CO. (719.577.9900), OR APPROVED EQUAL. SUBMIT SAMPLE TO OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO ORDERING OR INSTALLATION.**

PLANT SCHEDULE FILING 1

TREES	CODE	BOTANICAL NAME / COMMON NAME	HEIGHT	WIDTH	SIZE	COND	KEY	KEY	QTY
+	Agr	Acer grandidentatum / Bigtooth Maple	30'	30'	3" Cal.	B&B	NonX		51
+	Coc	Celtis occidentalis / Common Hackberry	60'	50'	3" Cal.	B&B	Xeric		23
+	Cco	Corylus columa / Turkish Filbert	45'	30'	3" Cal.	B&B	Xeric		36
+	Ccr	Crataegus crus-galli / Cockspur Hawthorn	30'	30'	2" Cal.	B&B	Xeric		10
+	Gdi	Gymniodia dioica / Kentucky Coffee Tree	60'	50'	3" Cal.	B&B	NonX		12
+	Mhx	Malus x 'Hopa' / Hopa Crab Apple	25'	25'	2" Cal.	B&B	NonX		22
+	Pcl	Pinus contorta latifolia / Lodgepole Pine	70'	15'	8" HT	B&B	NonX		25
+	Ped	Pinus edulis / Pinon Pine	30'	20'	6" HT	B&B	Xeric		46
+	Pfl	Pinus flexilis / Limber Pine	50'	30'	6" HT	B&B	Xeric		29
+	Ppo	Pinus ponderosa / Ponderosa Pine	80'	40'	8" HT	B&B	Xeric		26
+	Pde	Populus deltoides / Eastern Cottonwood	80'	60'	3" Cal.	B&B	NonX		7
+	Pam	Prunus americana / American Plum	20'	10'	2" Cal.	B&B	NonX		25
SHRUBS	CODE	BOTANICAL NAME / COMMON NAME	HEIGHT	WIDTH	SIZE	COND	XERIC	KEY	QTY
+	Cxa	Calamagrostis x acutiflora "Karl Foerster" / Feather Reed Grass	5'	2"	1 GAL	CONT	NonX	A	165
+	Cto	Cerastium tomentosum / Snow In Summer	1'	1.5'	1 GAL	CONT	NonX		145
+	Cse	Cornus sericea / Redosier Dogwood	8'	8'	5 GAL	CONT	NonX		41
+	CC	Cotoneaster apiculatus / Coral Beauty Cotoneaster	1.5'	5'	5 GAL	CONT			26
+	Hse	Helictotrichon sempervirens / Blue Oat/Blue Avena	3'	2'	1 GAL	CONT	NonX		258
+	Jbu	Juniperus sabina "Buffalo" / Buffalo Savin Juniper	1'	8"	5 GAL	CONT	NonX	568A	70
+	Jta	Juniperus sabina "Tamariscifolia" / Tamarix Savin Juniper	6"	8"	5 GAL	CONT	NonX		6
+	Pvm	Panicum virgatum / Switch Grass	4'	1.5'	1 GAL	CONT	NonX		153
+	Paf	Persicaria affinis / Knotweed	0.5'	1.5'	1 GAL	CONT	NonX		138
+	Pod	Physocarpus opulifolius "Diablo" / Diablo Ninebark	8'	8'	5 GAL	CONT	NonX		13
+	PM	Pinus mugo "Mops" / Mugo Pine	4'	4"	5 GAL	CONT	Xeric	1256D	14
+	Ral	Ribes alpinum / Alpine Currant	6'	6"	5 GAL	CONT	Xeric		42
+	Srf	Solidago rugosa "Fireworks" / Wrinkleleaf Goldenrod	3'	2"	1 GAL	CONT	NonX		91
+	Vie	Viburnum lentago / Nannyberry Viburnum	15'	8"	5 GAL	CONT	NonX	456DA	6

FENCE EXHIBIT LEGEND

- VINYL FENCE
- CEDAR FENCE
- CONC. BLOCK WALL
- 3 RAIL FENCE

SHEET INDEX

- Sheet 1 of 15: L-1.00
- Sheet 2 of 15: L-1.01
- Sheet 3 of 15: L-1.02
- Sheet 4 of 15: L-1.03
- Sheet 5 of 15: L-1.04
- Sheet 6 of 15: L-1.05
- Sheet 7 of 15: L-1.06
- Sheet 8 of 15: L-1.07
- Sheet 9 of 15: L-1.08
- Sheet 10 of 15: L-1.09
- Sheet 11 of 15: L-1.10
- Sheet 12 of 15: L-1.11
- Sheet 13 of 15: L-1.12
- Sheet 14 of 15: L-1.13
- Sheet 15 of 15: L-2.00

NATIVE GRASS MIX

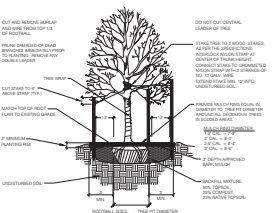
EROSION PROTECTION/REVEGETATION REQUIREMENTS
Per U.S.A. Soil Conservation Service Guidelines

1. Particle Size & Name	2. Quantity	3. Spacing	4. Planting Depth
1. Particle Size & Name: JOBY COCKLE GRASS/GRASS , From Anderson Valley Seed Co.	Range Size: www.andersonvalleyseed.com	Spacing: 12" x 12"	Planting Depth: 1/4" - 1/2"
2. Particle: 1/8" - 1/4"	Quantity: 1.00	Spacing: 12" x 12"	Planting Depth: 1/4" - 1/2"

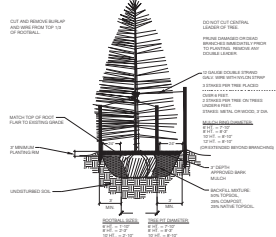
ALTERNATIVE TURF NATIVE SEED MIX

EROSION PROTECTION/REVEGETATION REQUIREMENTS
Per U.S.A. Soil Conservation Service Guidelines

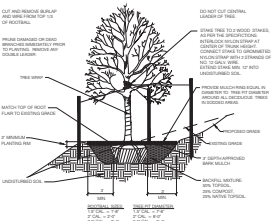
1. Particle Size & Name	2. Quantity	3. Spacing	4. Planting Depth
1. Particle Size & Name: SHORT GRASS PRAIRIE	Range Size: www.andersonvalleyseed.com	Spacing: 12" x 12"	Planting Depth: 1/4" - 1/2"
2. Particle: 1/8" - 1/4"	Quantity: 1.00	Spacing: 12" x 12"	Planting Depth: 1/4" - 1/2"



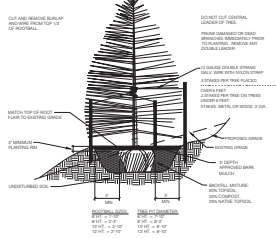
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2 CONIFEROUS TREE PLANTING DETAIL



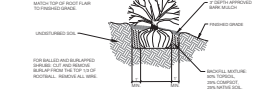
3 DECIDUOUS TREE PLACEMENT ON SLOPE



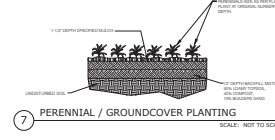
4 CONIFEROUS TREE PLACEMENT ON SLOPE



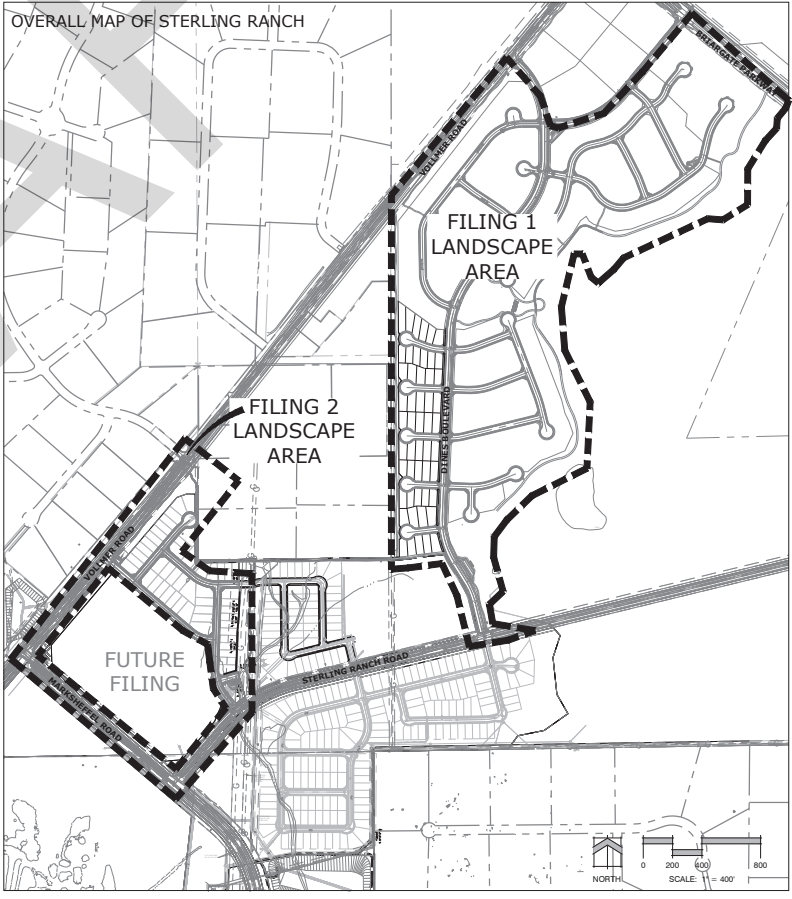
5 SHRUB PLANTING DETAIL



6 SHRUB PLACEMENT ON SLOPES



7 PERENNIAL / GROUNDCOVER PLANTING



STERLING RANCH

STREETSCAPE LANDSCAPING

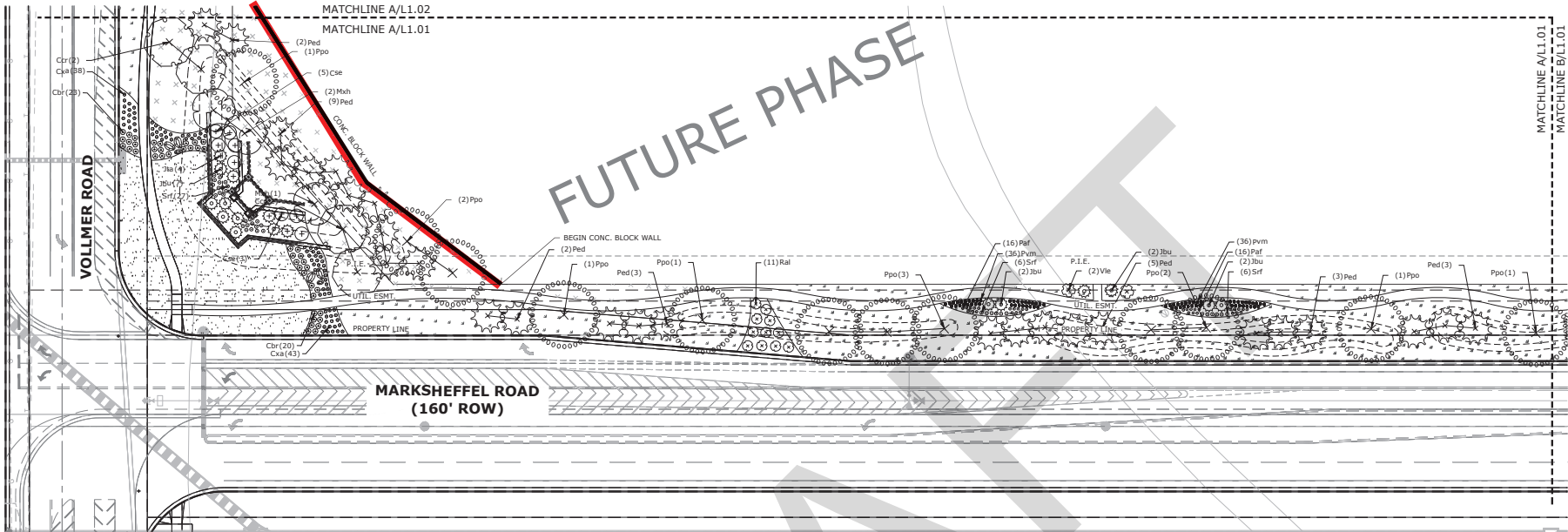
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PROJECT HDR: ROMERO
PREPARED BY: S.FUNN/SWNET

90% CONSTRUCTION DOCUMENTS

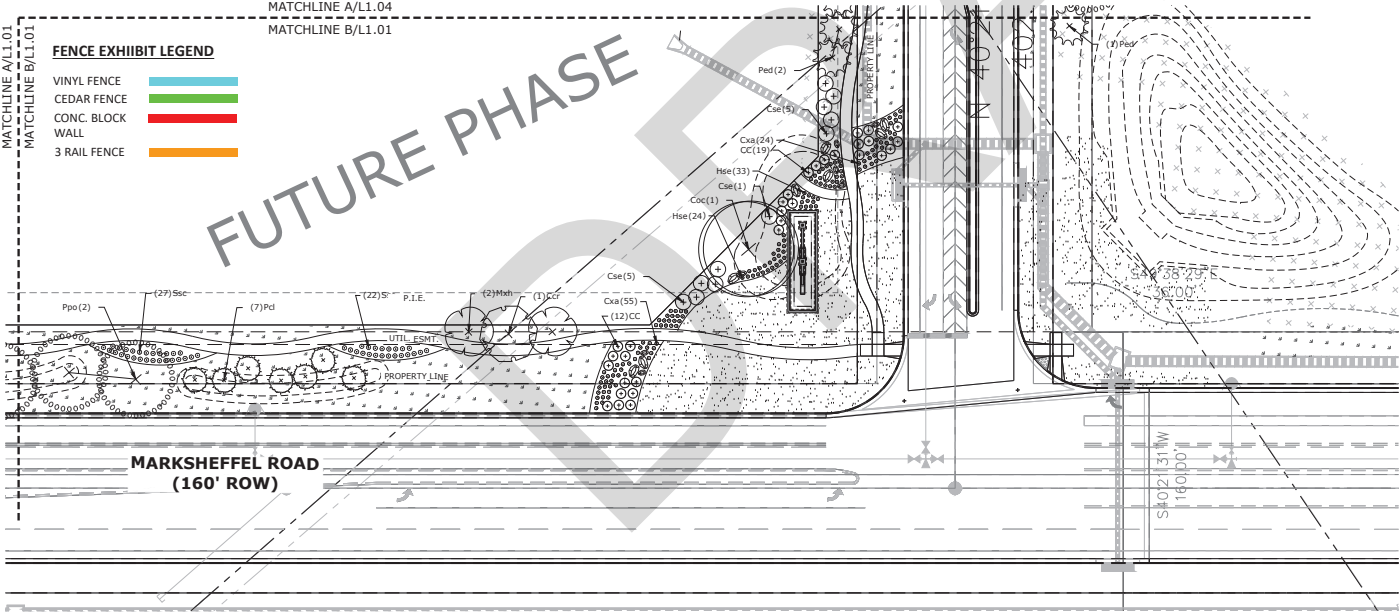
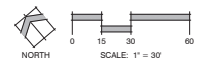
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2.14.16	JAR	90% SD SET
6.11.16	MS	PL 1 UPDATES
01.08.2020	IS	PHASE 1 FENCE UPDATES

LANDSCAPE DETAILS AND NOTES

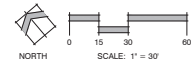
L1.00



A VOLLMER AND MARKSHEFFEL ROAD
L1.01 PLAN



B MARKSHEFFEL AND STERLING RANCH ROAD
L1.01 PLAN

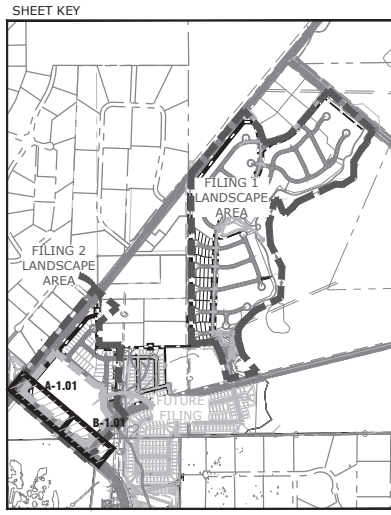


FENCE EXHIBIT LEGEND

- VINYL FENCE
- CEDAR FENCE
- CONC. BLOCK WALL
- 3 RAIL FENCE

LANDSCAPE LEGEND

	TALL NATIVE GRASS		CEDAR WOOD MULCH PLANT BED
	UPLAND NATIVE SEED MIX		ROCK MULCH
	LOW ALTERNATIVE TURF GRASS		COBBLE
	LOW-GROW NATIVE SEED MIX		
	TALL FESCUE SOD		



STERLING RANCH

STREETSCAPE LANDSCAPING

DATE: 12-01-15
PROJECT MGR: J. ROMERO
PREPARED BY: S. FLYNN/SWET

90% CONSTRUCTION DOCUMENTS

DATE	BY	DESCRIPTION
9/21/16	JAR	COUNTY COMMENT
2/14/16	JAR	90% SET
6/11/16	MS	PL 1 UPDATES
01/08/2020	IS	PHASE 1 FENCE UPDATES

LANDSCAPE PLAN

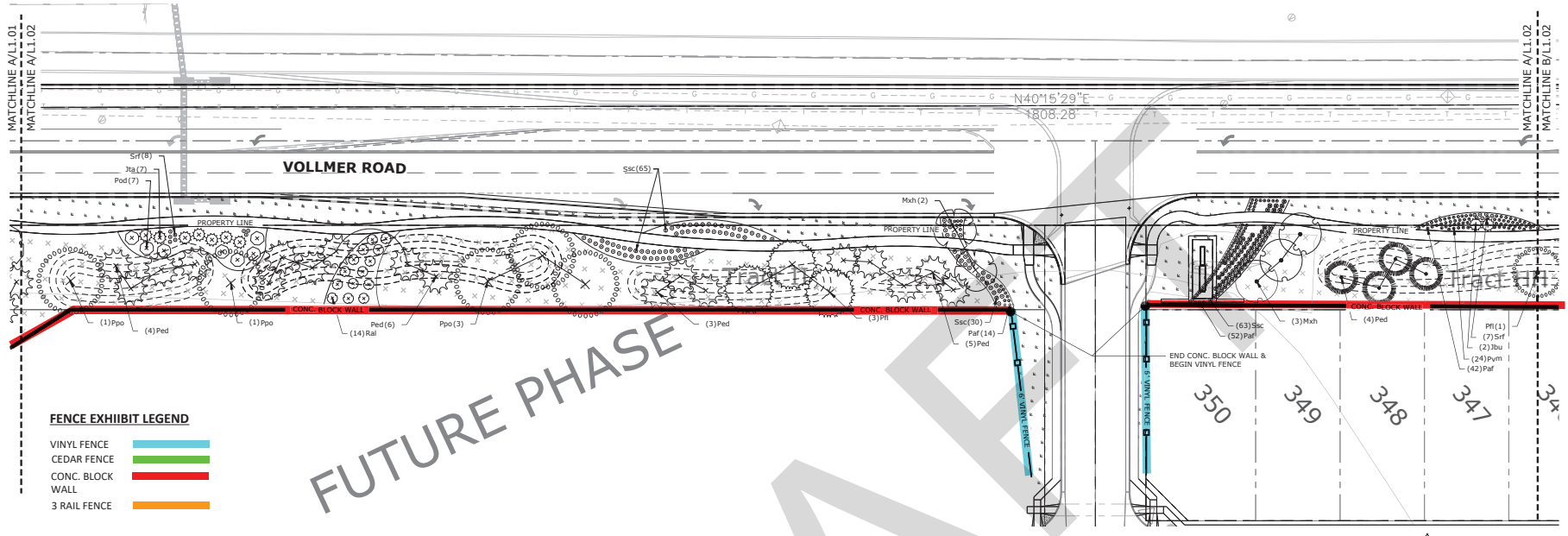
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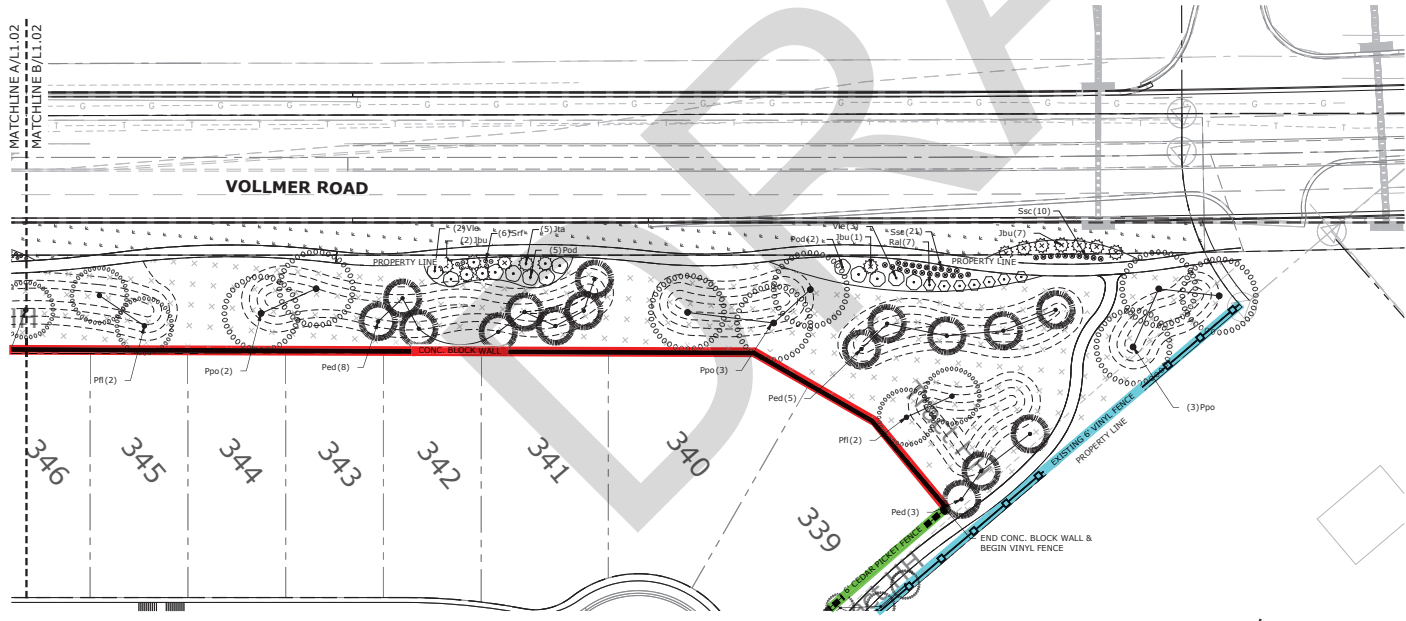
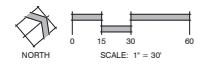
Land Planning
Landscape
Architecture
Urban Design

NES

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www.nescolorado.com



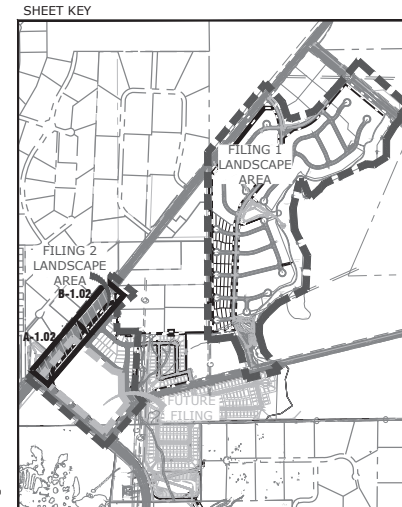
A VOLLMER ROAD
L1.02 PLAN



B VOLLMER ROAD
L1.02 PLAN

LANDSCAPE LEGEND

	TALL NATIVE GRASS		CEDAR WOOD MULCH PLANT BED
	UPLAND NATIVE SEED MIX		ROCK MULCH
	LOW ALTERNATIVE TURF GRASS		COBBLE
	LOW-GROW NATIVE SEED MIX		
	TALL FESCUE SOD		



STERLING RANCH

STREETSCAPE
LANDSCAPING

DATE: 12-01-15
PROJECT MGR: J. BARNER
PREPARED BY: S.FLYNN/SWET

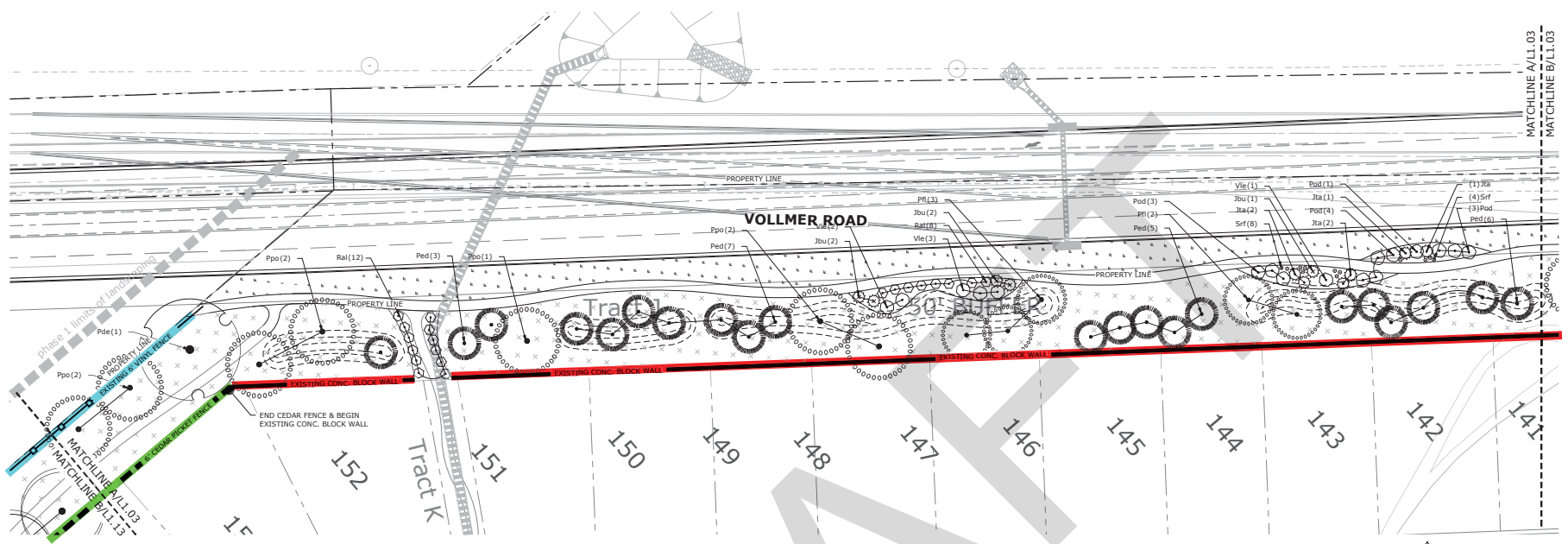
90%
CONSTRUCTION
DOCUMENTS

DATE	BY	DESCRIPTION
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01/08/2020	IS	PHASE 1 FENCE UPDATES

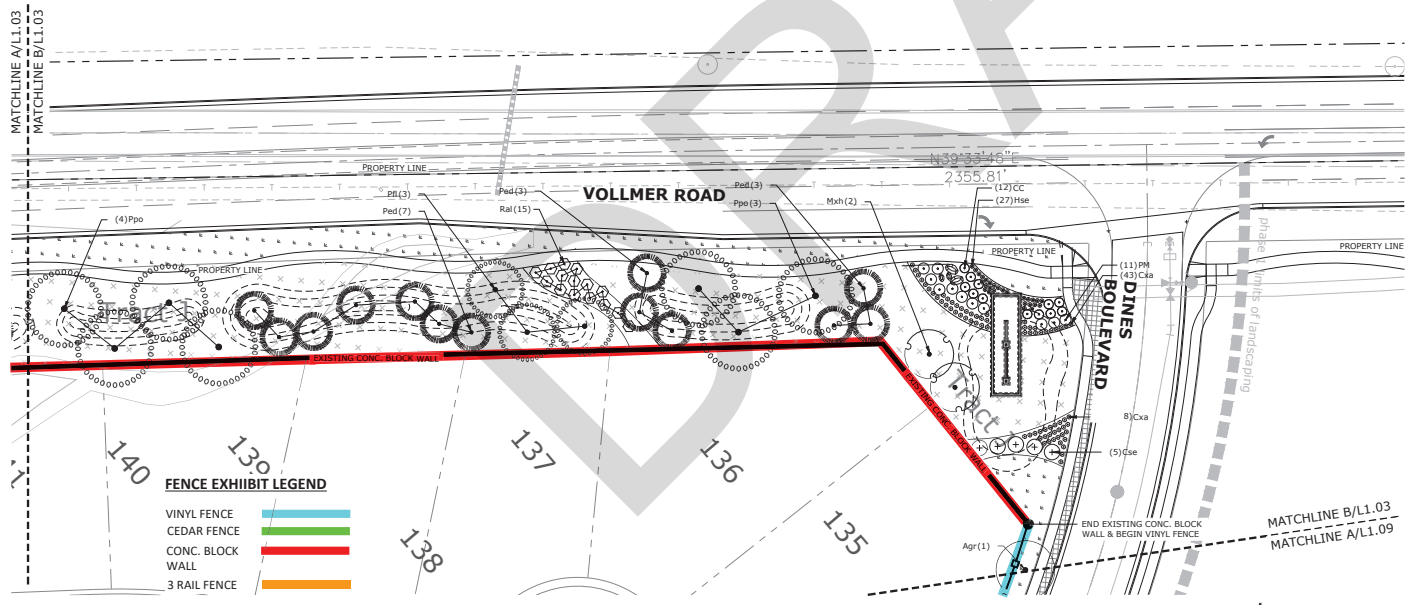
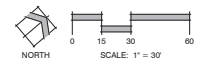
LANDSCAPE PLAN

L 1.02
3 OF 15

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A VOLLMER ROAD
L1.03 PLAN



B VOLLMER ROAD AND DINES BOULEVARD
L1.03 PLAN

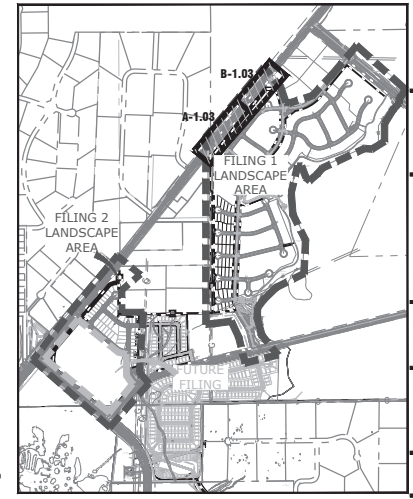
FENCE EXHIBIT LEGEND

VINYL FENCE	
CEDAR FENCE	
CONC. BLOCK WALL	
WALL	
3 RAIL FENCE	

LANDSCAPE LEGEND

	TALL NATIVE GRASS		CEDAR WOOD MULCH PLANT BED
	UPLAND NATIVE SEED MIX		ROCK MULCH
	LOW ALTERNATIVE TURF GRASS		COBBLE
	LOW-GROW NATIVE SEED MIX		
	TALL FESCUE SOD		

SHEET KEY



STERLING RANCH
STREETSCAPE LANDSCAPING

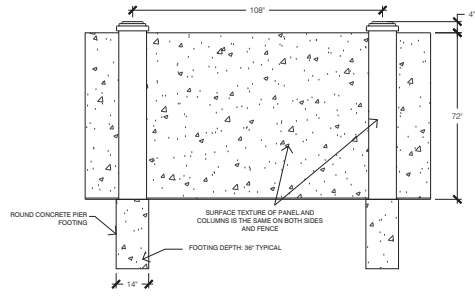
DATE: 12-01-15
PROJECT MGR: J. ROMERO
PREPARED BY: S. FLYNN/SWET

90% CONSTRUCTION DOCUMENTS

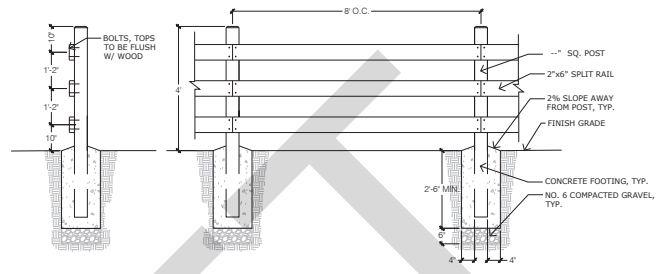
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2-14-16	JAR	90% SET
6-11-16	MS	PL 1 UPDATES
01-08-2020	IN	PHASE 1 FENCE UPDATES

LANDSCAPE PLAN

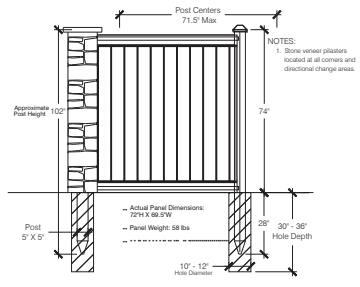
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4 OF 15



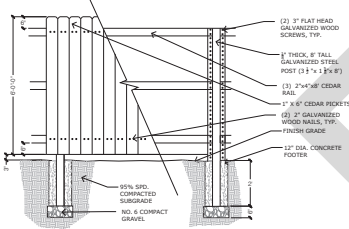
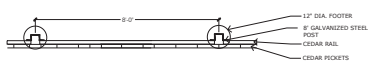
1 6" CONCRETE BLOCK WALL
SCALE: NOT TO SCALE



9 4' HT. 3-RAIL WOOD FENCE
SCALE: NOT TO SCALE



2 VINYL FENCE
SCALE: NOT TO SCALE



3 6" CEDAR OPAQUE FENCE WITH STEEL POSTS
SCALE: NOT TO SCALE

STERLING RANCH
STREETSCAPE LANDSCAPING

DATE: 12-01-15
PROJECT MGR: J. ROMERO
PREPARED BY: S. FLYNN/SWET

90% CONSTRUCTION DOCUMENTS

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9-21-16	JAR	COUNTY COMMENT
2-14-18	JAR	90% SD SET
6-11-18	MS	PL 1 UPDATES
01-08-2020	BS	PHASE 1 FENCE UPDATES

LANDSCAPE DETAILS

L 2.00
15 OF 15

P:\New\Sterling Ranch Phase 1\DWG\90%CONSTR\90%CONSTR.dwg User: jromero, LSC DATE: 12/01/15 11:31:29 AM 1500

Noise Analysis Inputs/Outputs

DRAFT