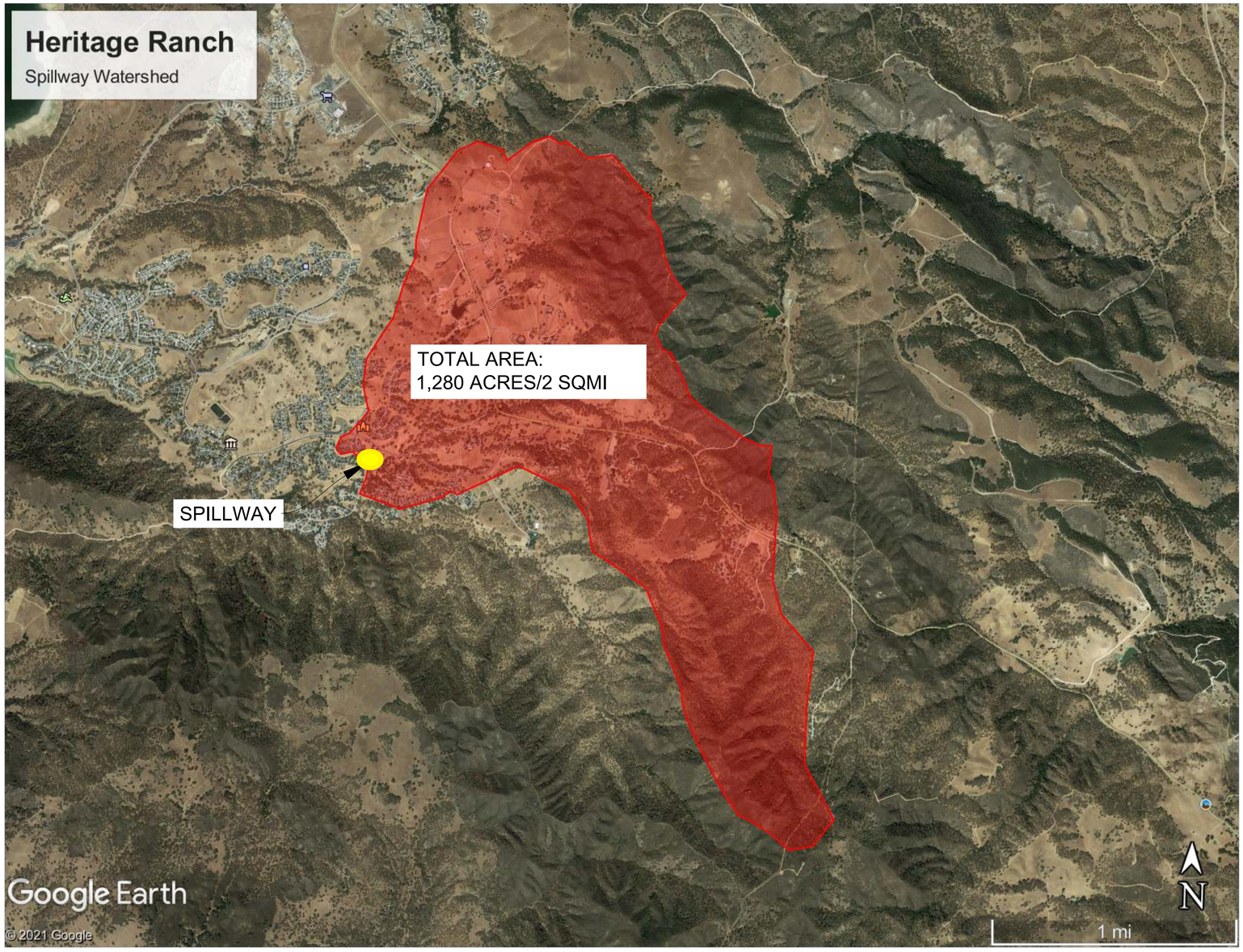
Spillway/(2) Drain Pipe Culverts

2021-CIVIL-C11

Tracts 447, 452 and 693

October 02, 2021



S01

HERITAGE RANCH
2021-CIVIL-C11
WATERSHED EXHIBIT

725 CRESTON ROAD, SUITE C
PASO ROBLES, CA
805.239.3127
NCE NORTH COAST ENGINEERING

LEGEND

1. CULVERT REPLACEMENT
2. OVERSIDE DRAIN REPAIR
3. **CONCRETE** SWALE REPAIR
4. SPILLWAY RECONSTRUCTION
5. CULVERT INLET/OUTFALL REPAIR
6. AC DIKE REPAIR
7. STORMDRAIN REPAIR
8. Clean up natural drainage channel

1. County Permit - tasks are highlighted by red outline.
2. All other tasks are "Everything Else" scope.

5,7: ± 140', IN NATIVE

5, 7: ±150', SLIP LINE

BROOK LN

WILLOWBROOK LN

TUMBLEWEED WAY

GREEN BROOK LN

BASEBALL PARKING LOT

LONG HORN LN

BIG BUCK LN

5,7: ± 100' PAVEMENT

3:+/-100'

2

BUCK TAIL LN

5,7: ±205' SLIP LINE

5,7: ± 140' SLIP LINE

COMANCHE WAY

3: ±100'

5

2

7' DIA PIPE

4' DIA PIPE

2

5

5

GATEWAY

5,7: ±200' PAVEMENT

6:+/-75'

2

2 ,3

2 ,5, 7

4

8

5

PRETTY DOE LN

1: ± 100'

CLAMATH

+/- 165'

6

2

3: ±200'

NORTHFORK PL

YELLOW GOLD CIR

6: +/-300'

2

WILD RICE LN

SOUTHFORK PL

S02

0 75' 150' 300'

SCALE: 1"=150'

HERITAGE RANCH
2021-CIVIL-C11
SCOPE EXHIBIT

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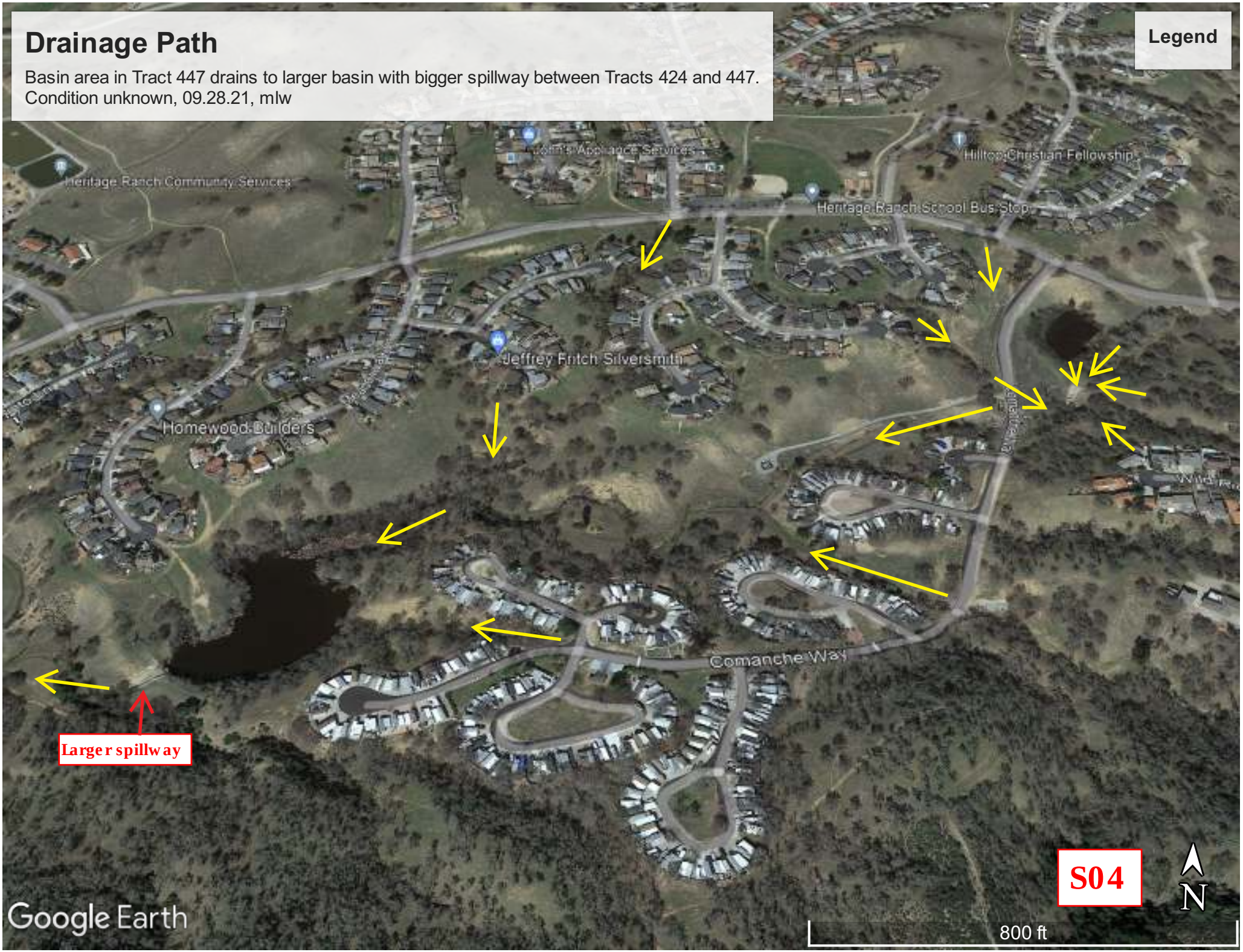
NCE NORTH COAST ENGINEERING


S03


Drainage Path
Basin area in Tract 447 drains to larger basin with bigger spillway between Tracts 424 and 447.
Condition unknown, 09.28.21, mlw
Legend
Heritage Ranch Community Services
Hilltop Christian Fellowship
Heritage Ranch School Bus Stop
Jeffrey Fritch Silversmith
Homewood Builders
Comanche Way
Larger spillway
S04
N
800 ft
Google Earth


1. Height of pipe at the center is no longer 7' but only 6'-6". The pipes were installed in 1973 and are 48 years old. The pipes are at the end of their life cycle which is in the +/- 30 year range.
2. This is due to lack of soil compaction around the pipes which leads to long term settlement.
3. Once the circular pipe loses it's form it is susceptible to further and accelerated deformation.
Bottom of pipe is rusting out
S05


Bottom of pipe is completely rusting out.
Soil is being pulled through holes which will undermine the pipe even more.

Spillway/(2) Drain Pipes-Tract 447 2021-CIVIL-C11

7' culvert pipe - north side of Gateway Drive, interior, 05.14.21 (SJ-ESP), rec'd 05.17.21, mlw

Significant debris build-up

Based on level of pipe degradation and the buildup of debris on the bottom there is increased potential that the bottom of the pipe is already rotted out.

S07


Gap around the pipe allows for water intrusion
1. Significant hole under pipe.
2. Can see through to the 3rd pipe
1. The bottom of all (3) pipes are rusted out which allows water to flow underneath.
2. If there is a large storm event it would dislodge the pipes and cause Comanche to fail.
3. Comanche is the only road into and out of Tract 447.
Gunite on this spillway is severly cracking which allows water intrusion that leads to failure.
S08


S09

Example of a Failed Culvert Pipe

Galvanized CMP's only have a lifecycle of +/- 30 years depending on soil conditions.


DEER
XING
S11


S12


Almost 5 ' from hole to edge of road
S13

From the face of where the rock is supposed to be there is a 7' plus void which goes back past the 2' hole towards the road edge.


S15


S16

S17