PROPOSED PROJECTS MAPBOOK
LEFT HAND WATERSHED MASTER PLAN

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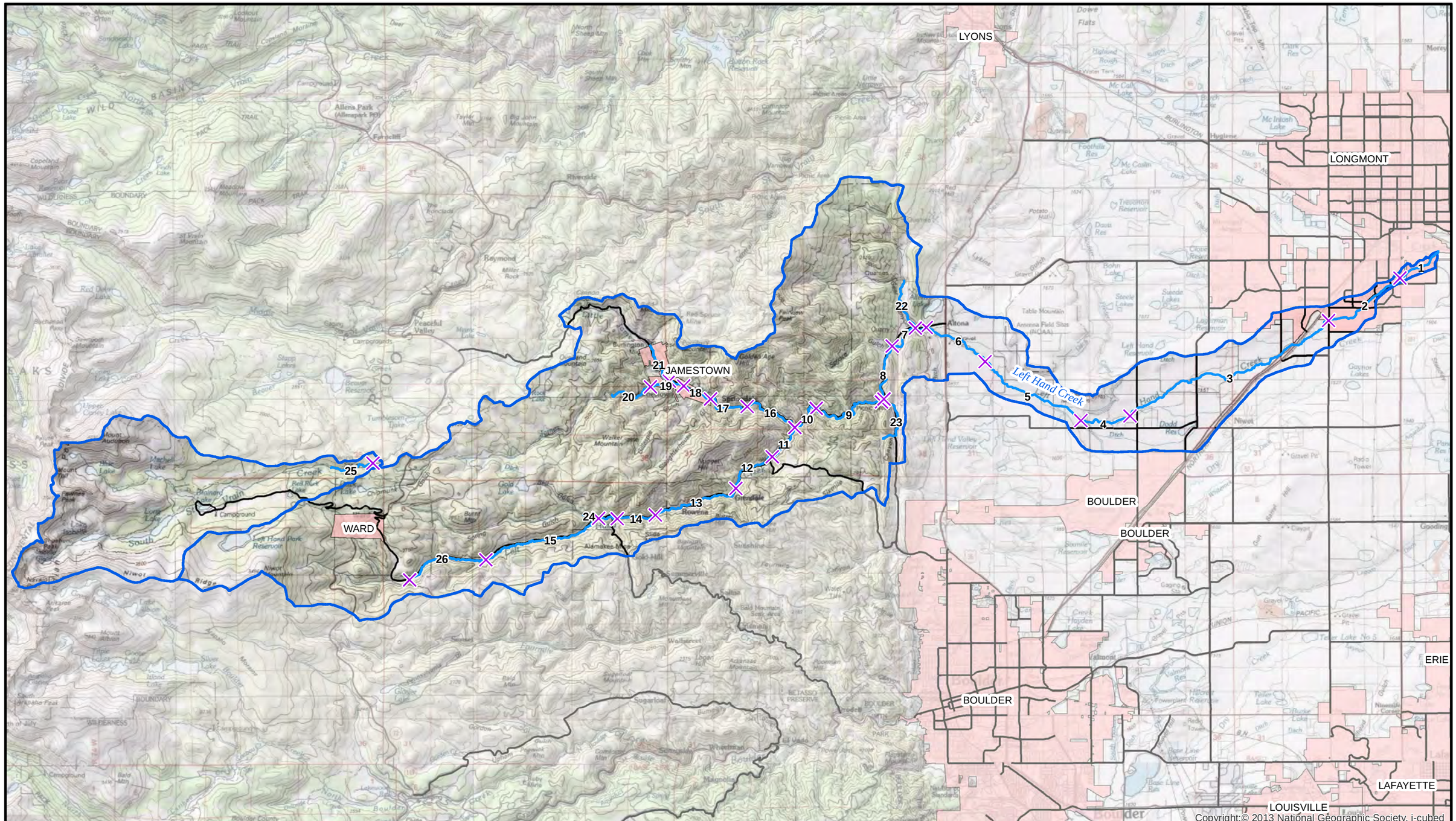
PROJECTS MAPBOOK
LEFT HAND CREEK WATERSHED MASTER PLAN

LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014

SHEET: **TITLE**



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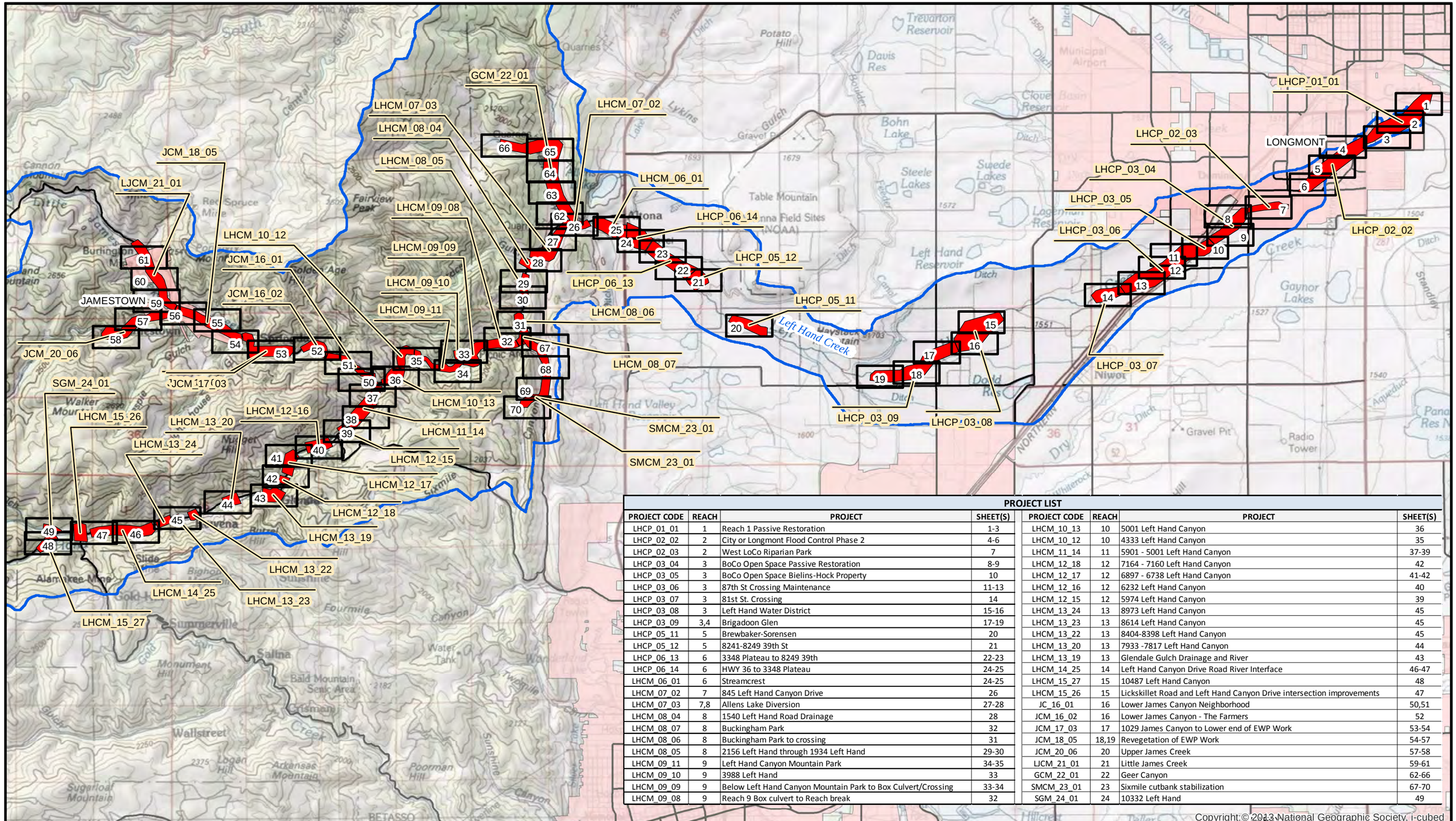
MAPBOOK PANELS AND REACHES

PROJECTS MAPBOOK

LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014

SHEET: **REACHES**



PROJECT LIST

PROJECT CODE	REACH	PROJECT	SHEET(S)
LHCP_01_01	1	Reach 1 Passive Restoration	1-3
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LHCP_03_07	3	81st St. Crossing	14
LHCP_03_08	3	Left Hand Water District	15-16
LHCP_03_09	3,4	Brigadoon Glen	17-19
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LHCP_05_12	5	8241-8249 39th St	21
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LHCP_06_14	6	HWY 36 to 3348 Plateau	24-25
LHCM_06_01	6	Streamcrest	24-25
LHCM_07_02	7	845 Left Hand Canyon Drive	26
LHCM_07_03	7,8	Allens Lake Diversion	27-28
LHCM_08_04	8	1540 Left Hand Road Drainage	28
LHCM_08_07	8	Buckingham Park	32
LHCM_08_06	8	Buckingham Park to crossing	31
LHCM_08_05	8	2156 Left Hand through 1934 Left Hand	29-30
LHCM_09_11	9	Left Hand Canyon Mountain Park	34-35
LHCM_09_10	9	3988 Left Hand	33
LHCM_09_09	9	Below Left Hand Canyon Mountain Park to Box Culvert/Crossing	33-34
LHCM_09_08	9	Reach 9 Box culvert to Reach break	32

PROJECT CODE	REACH	PROJECT	SHEET(S)
LHCM_10_13	10	5001 Left Hand Canyon	36
LHCM_10_12	10	4333 Left Hand Canyon	35
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LHCM_12_18	12	7164 - 7160 Left Hand Canyon	42
LHCM_12_17	12	6897 - 6738 Left Hand Canyon	41-42
LHCM_12_16	12	6232 Left Hand Canyon	40
LHCM_12_15	12	5974 Left Hand Canyon	39
LHCM_13_24	13	8973 Left Hand Canyon	45
LHCM_13_23	13	8614 Left Hand Canyon	45
LHCM_13_22	13	8404-8398 Left Hand Canyon	45
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JCM_18_05	18,19	Revegetation of EWP Work	54-57
JCM_20_06	20	Upper James Creek	57-58
LJCM_21_01	21	Little James Creek	59-61
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MAPBOOK PANELS AND PROJECTS

PROJECTS MAPBOOK

LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014

SHEET: **PROJECTS**

Backwater

Building Footprint Inside Inundated Area

Building Footprint Outside Inundated Area

Channel Stabilization

Culvert

Cutbank Stabilization

Debris Flow Channel

Drainage

Establish Channel

Establish Swale Drainage

Existing Channel Alignment

Fish Passage Barrier

Floodplain Roughness

Flow Direction

Grade Control

Grade and Revegetate

Grading As Necessary to Reconnect Floodplain

Habitat Features

Headcut Stabilization

High Flow Zone

Incorrect Channel Layout

Inundated Area Boundary (Inundated Area Provided by Boulder County)

Low Flow Channel

Overflow Channel

Parking

Potential Acquistion

Project Boundary

Realign Channel

Realign Road

Regrade Road

Relocate Berm

Reserve as Confluence Area

Resize Culvert

Road Embankment

Sediment Detention Basin

Setback Rip-Rap

Toe Protection

Trail

Wetland

Diversions[1]

Reach Breaks

Stream Stations

Cross Sections

Post-flood Channel Alignment

Inundated Area[2]

Notes:
1. Exact locations for surface water diversions are not available. Diversion locations are approximated for display purposes only
2. The "Inundated Area" layer is a boundary generated using multiple imagery products intended to capture the September 2013 flood spatial extent. The layer has not been field verified and is for display purposes only. (Layer provided by Boulder County)

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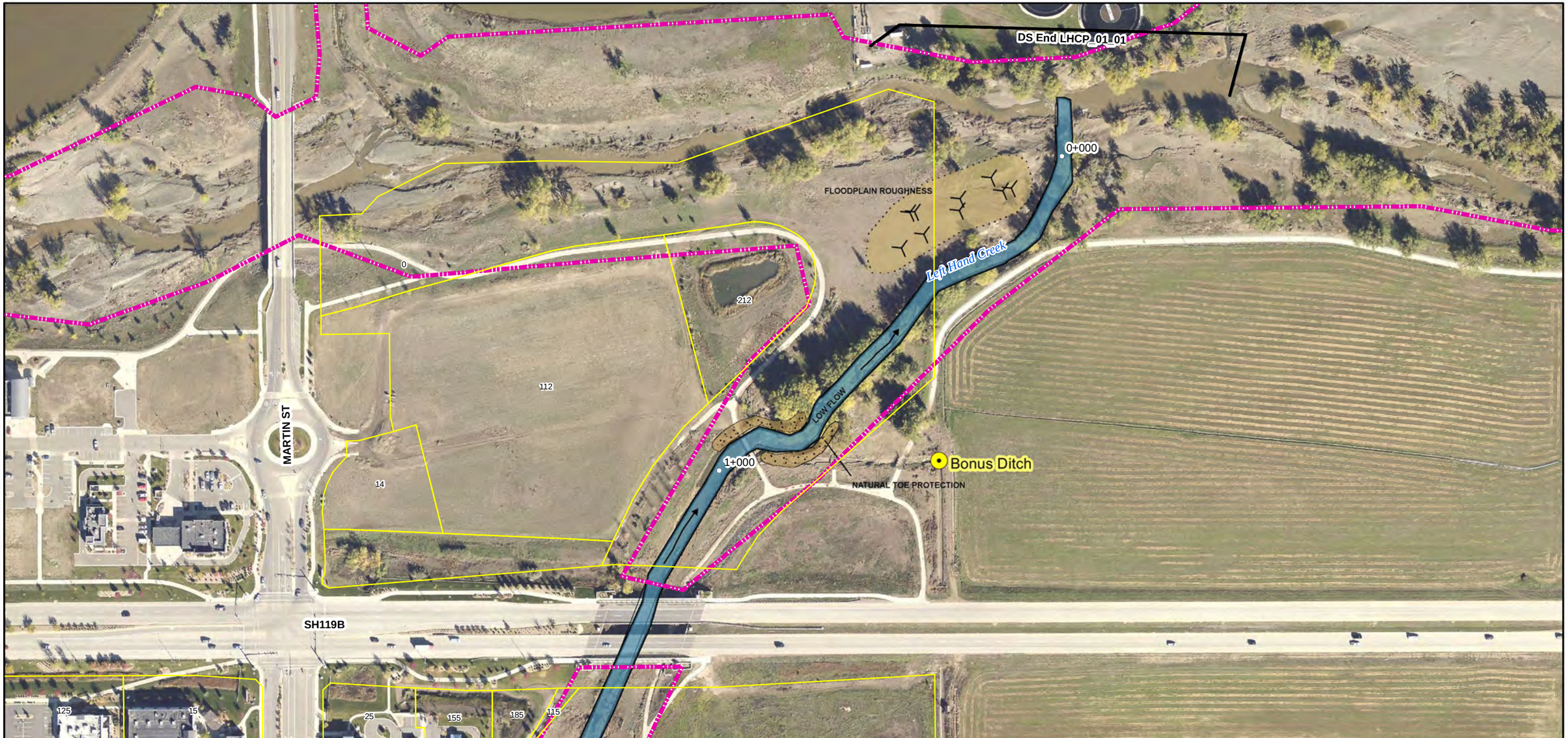
MAPBOOK LEGEND

PROJECTS MAPBOOK

LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014

SHEET: **LEGEND**

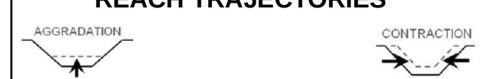


Reach Typical Details:
1. Reach 1 River Style: Entrenched, Urban Channel - See Sheet T-1

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_01_01: At this location perform passive restoration through the encouragement of a low flow channel.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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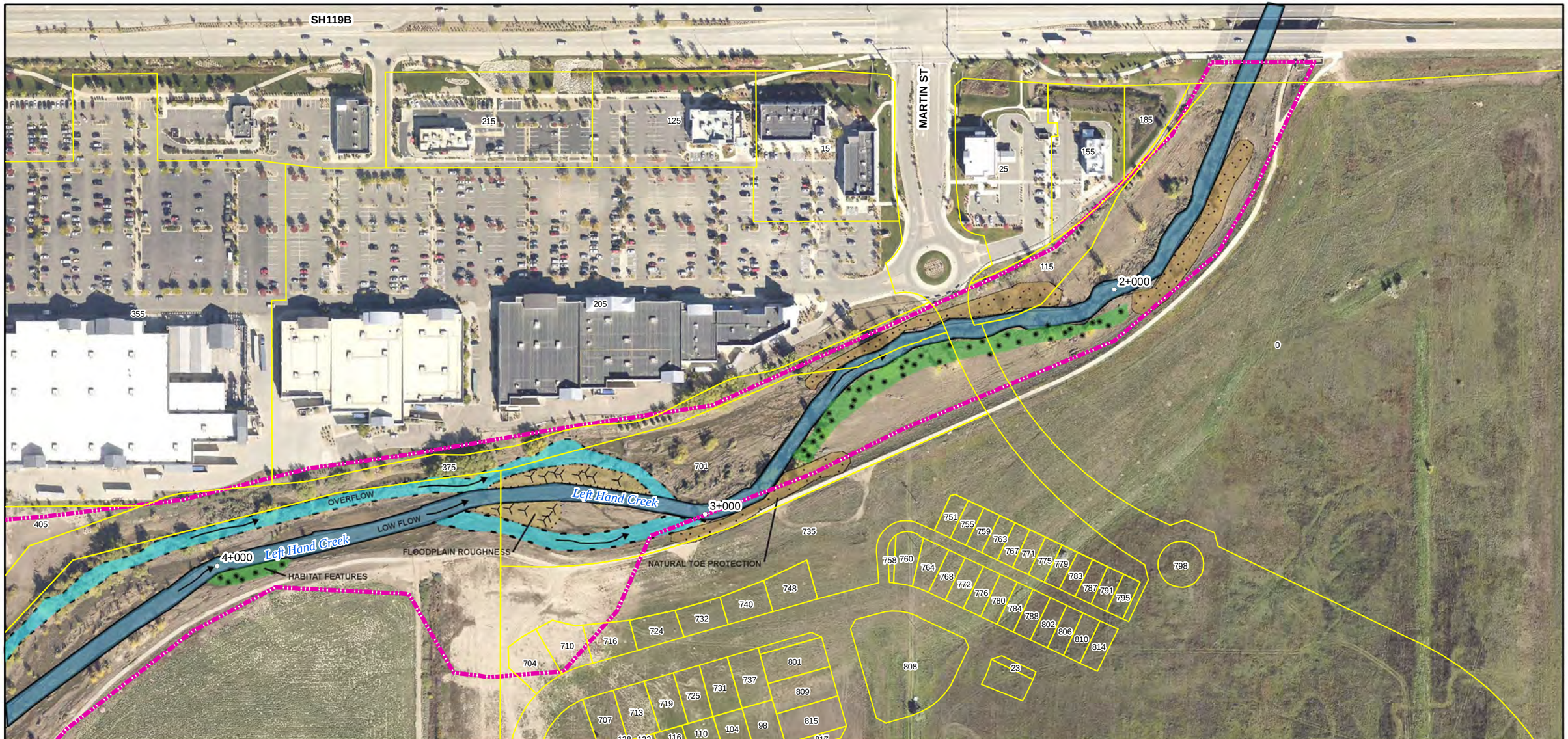
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_01_01**

REACH(ES): **Reach 1**

SHEET: **1**



Reach Typical Details:
1. Reach 1 River Style: Entrenched, Urban Channel - See Sheet T-1

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_01_01: At this location perform passive restoration through the encouragement of a low flow channel.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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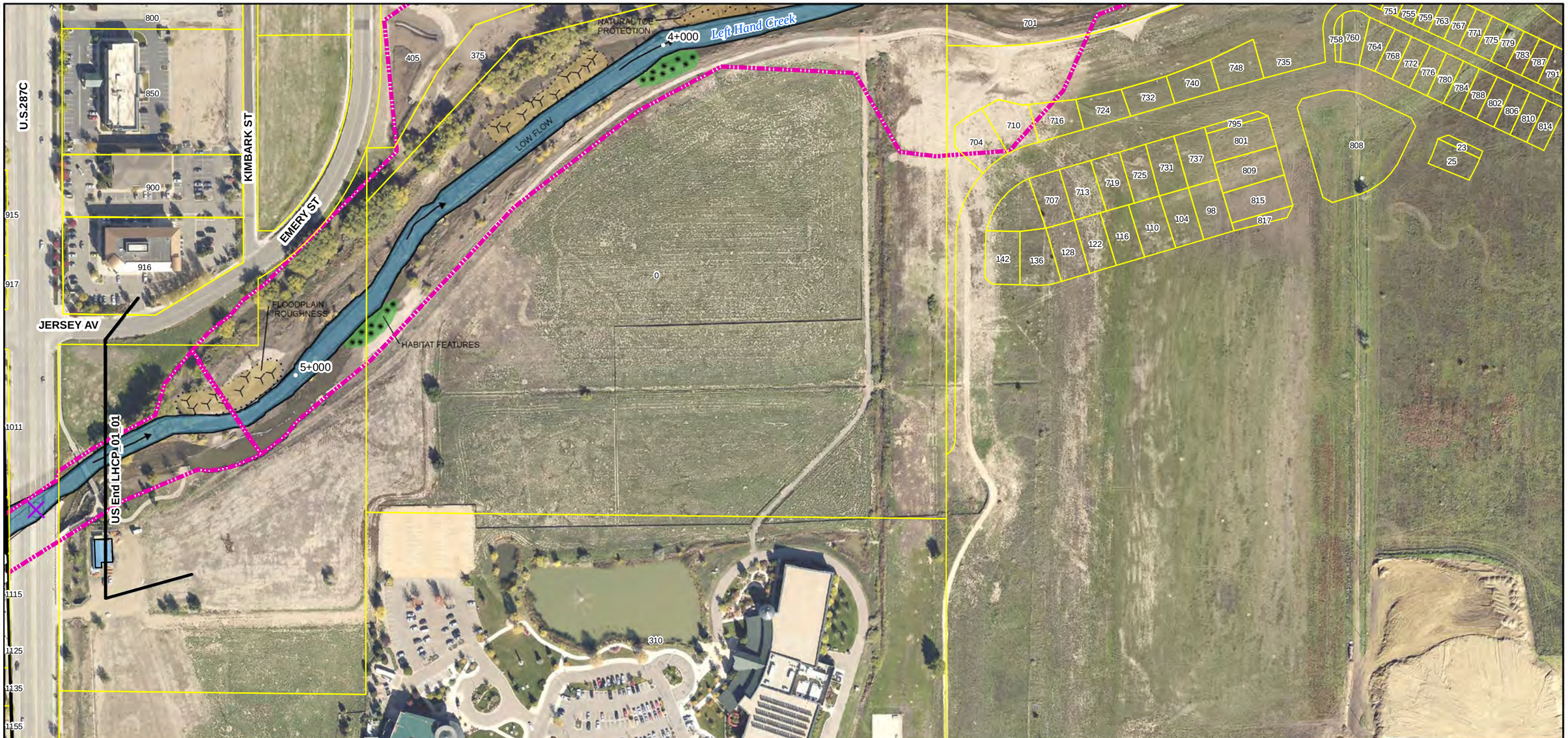
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_01_01**

REACH(ES): **Reach 1**

SHEET: **2**



Reach Typical Details:
1. Reach 1 River Style: Entrenched, Urban Channel - See Sheet T-1

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_01_01: At this location perform passive restoration through the encouragement of a low flow channel.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_01_01**

REACH(ES): **Reach 1**

SHEET: **3**

Reach Typical Details:

1. Reach 2 River Style: Entrenched, Urban Channel - See Sheet T-1

Special Cross-Sections:

Project Descriptions:

1. Project LHCP_02_02: At this site, there is an ongoing project to adopt and implement the City of Longmont's Lefthand Creek Flood Control Project - Main Street to Pike Road - Phase II.

REACH TRAJECTORIES

AGGRADATION

CONTRACTION

1 " = 200 '

0 50 100 200 300 400 Feet

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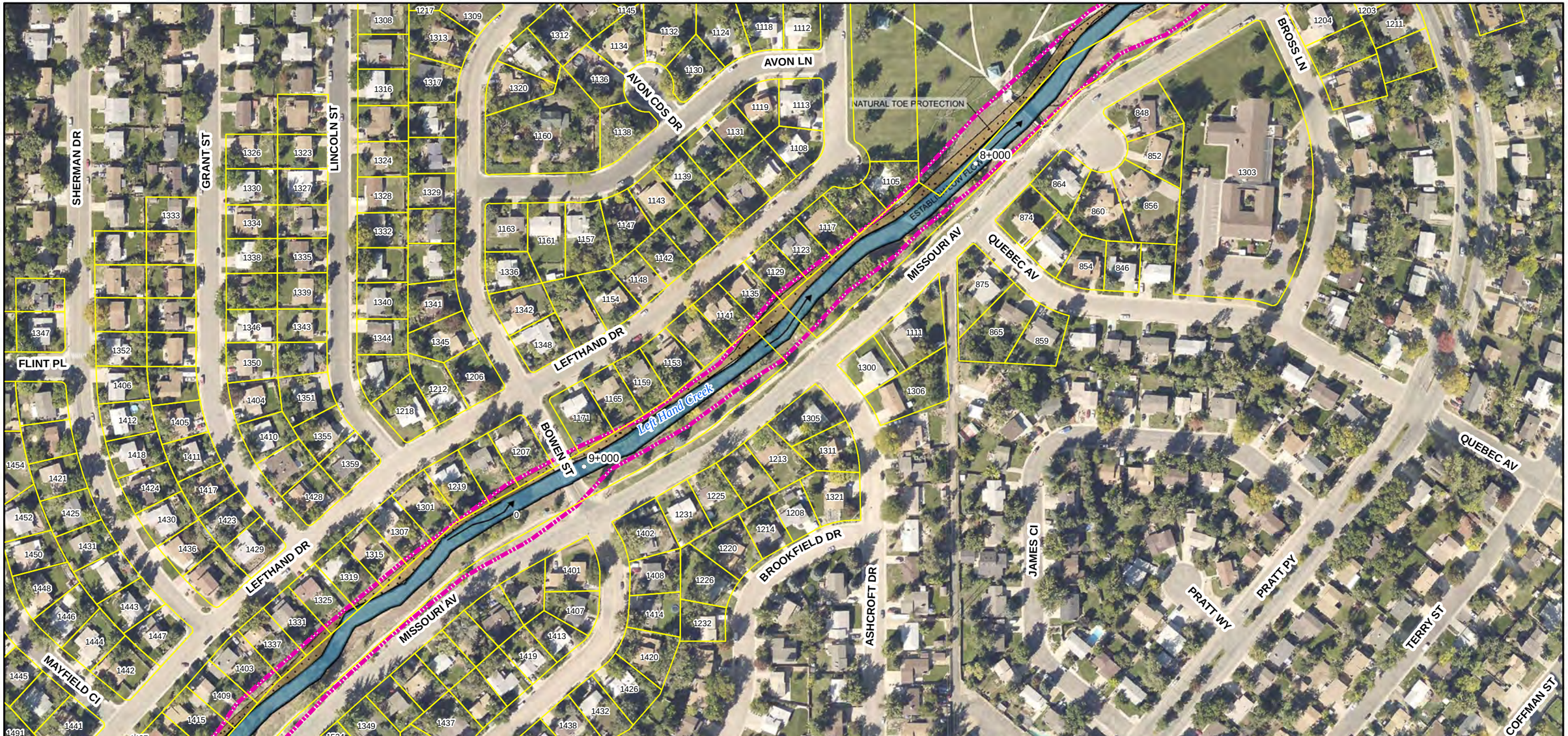
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_02_02**

REACH(ES): **Reach 2**

SHEET: **4**



Reach Typical Details:
1. Reach 2 River Style: Entrenched, Urban Channel - See Sheet T-1

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_02_02: At this site, there is an ongoing project to adopt and implement the City of Longmont's Lefthand Creek Flood Control Project - Main Street to Pike Road - Phase II.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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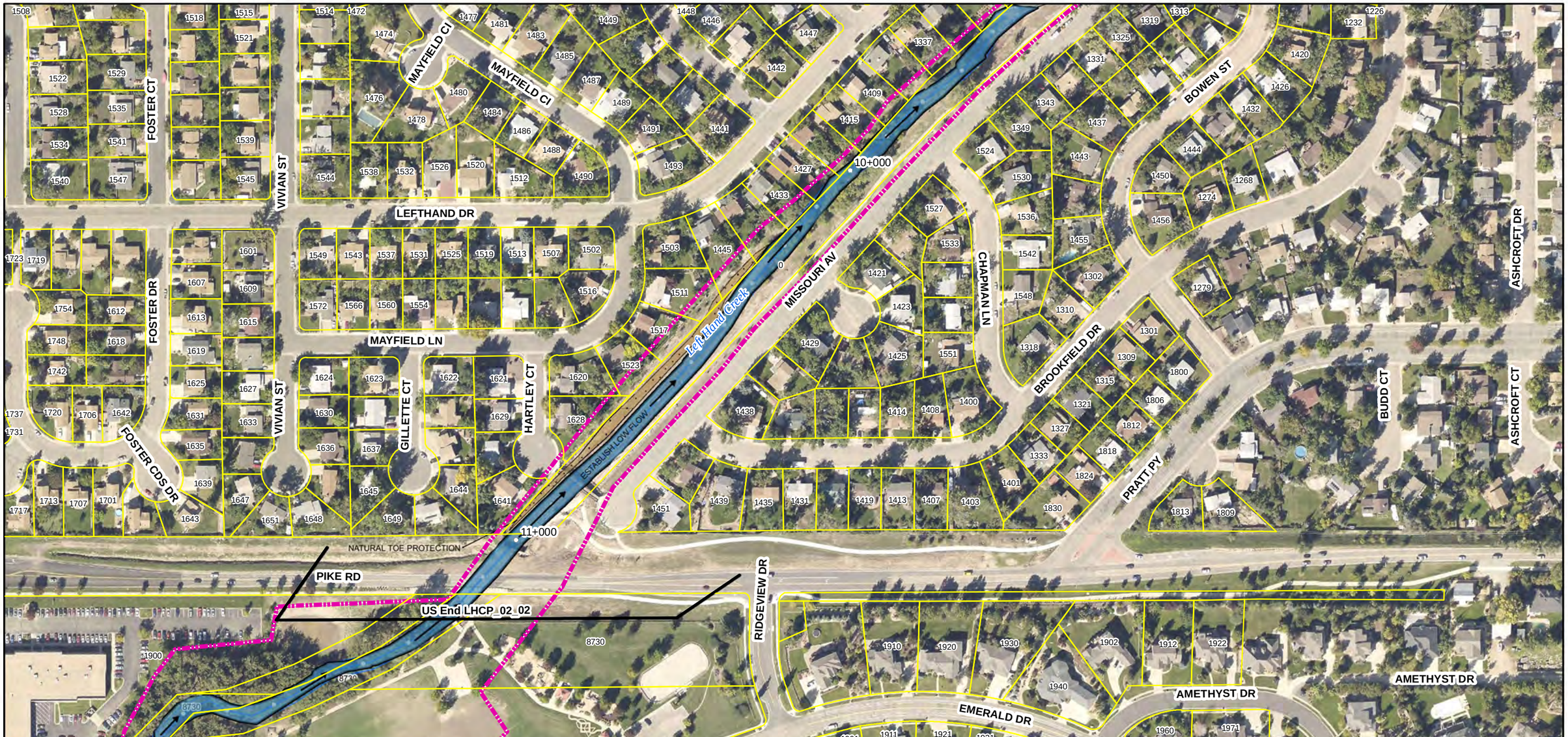
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_02_02**

REACH(ES): **Reach 2**

SHEET: **5**



Reach Typical Details:
1. Reach 2 River Style: Entrenched, Urban Channel - See Sheet T-1

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_02_02: At this site, there is an ongoing project to adopt and implement the City of Longmont's Lefthand Creek Flood Control Project - Main Street to Pike Road - Phase II.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_02_02**

REACH(ES): **Reach 2**

SHEET: **6**

Reach Typical Details:

1. Reach 2 River Style: Entrenched, Urban Channel - See Sheet T-1

Special Cross-Sections:

Sec SX-7 - West Longmont River Park, Sheet: S-1, Sta: 12+900 to 15+600

Project Descriptions:

1. Project LHCP_02_03: This project involves creation of a park that provides public access as well as riparian corridor enhancement. 95th St. crossing has aggraded and needs to be excavated and reconstructed with a compound channel.

REACH TRAJECTORIES

AGGRADATION

CONTRACTION

1 " = 200 '

0 50 100 200 300 400 Feet

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BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_02_03**

REACH(ES): **Reach 2**

SHEET: **7**

Reach Typical Details:
1. Reach 3 River Style: Unconfined, Continuous Floodplain - See Sheet T-2

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_03_04: Provide passive+ restoration and monitoring of channel and banks on Boulder County Open Space land. A low water crossing is recommended at this location instead of a new bridge for the farmer.

REACH TRAJECTORIES

AGGRADATION

LATERAL MIGRATION

1 " = 200 '

0 50 100 200 300 400 Feet

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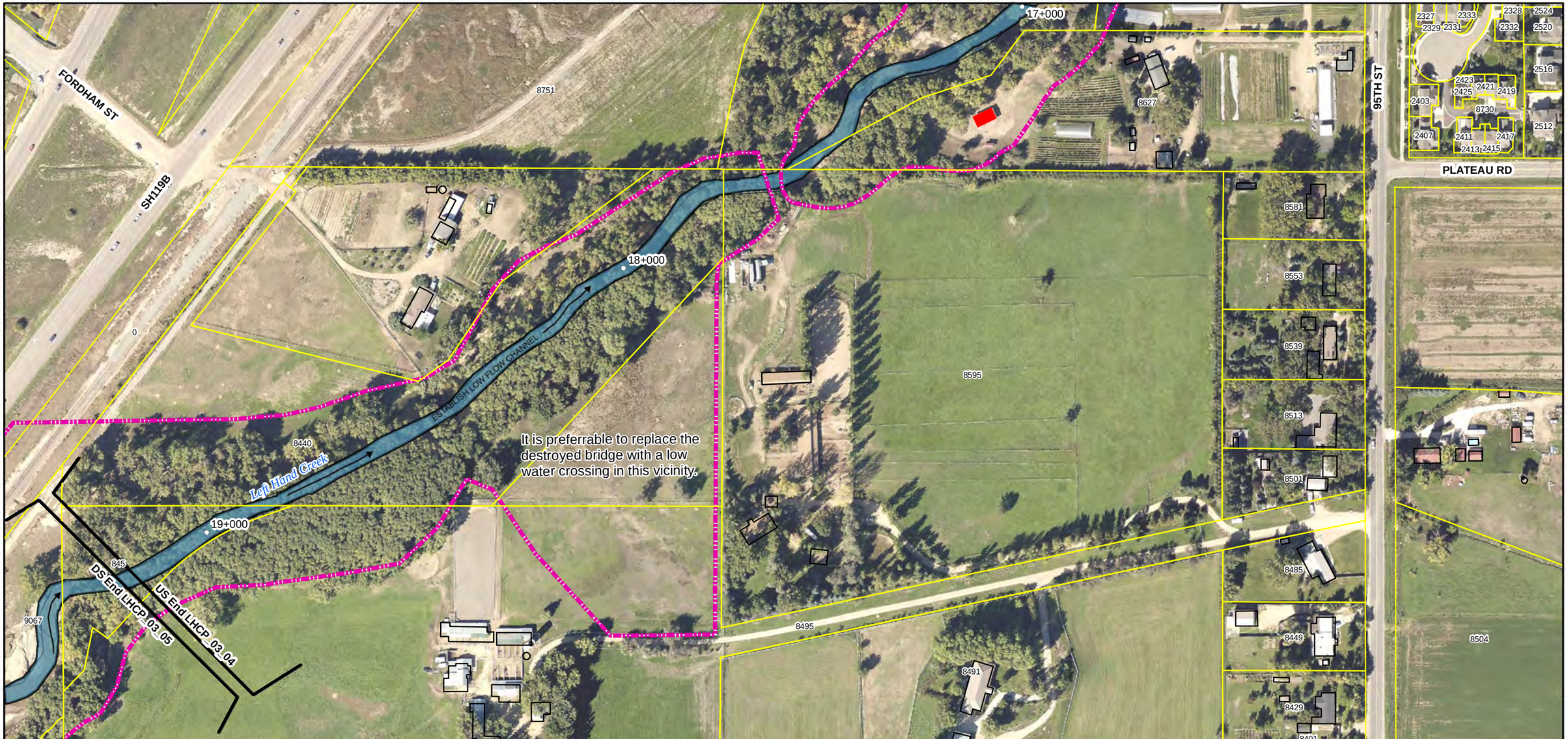
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_03_04**

REACH(ES): **Reach 3**

SHEET: **8**



Reach Typical Details:
1. Reach 3 River Style: Unconfined, Continuous Floodplain - See Sheet T-2

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_03_04: Provide passive+ restoration and monitoring of channel and banks on Boulder County Open Space land. A low water crossing is recommended at this location instead of a new bridge for the farmer.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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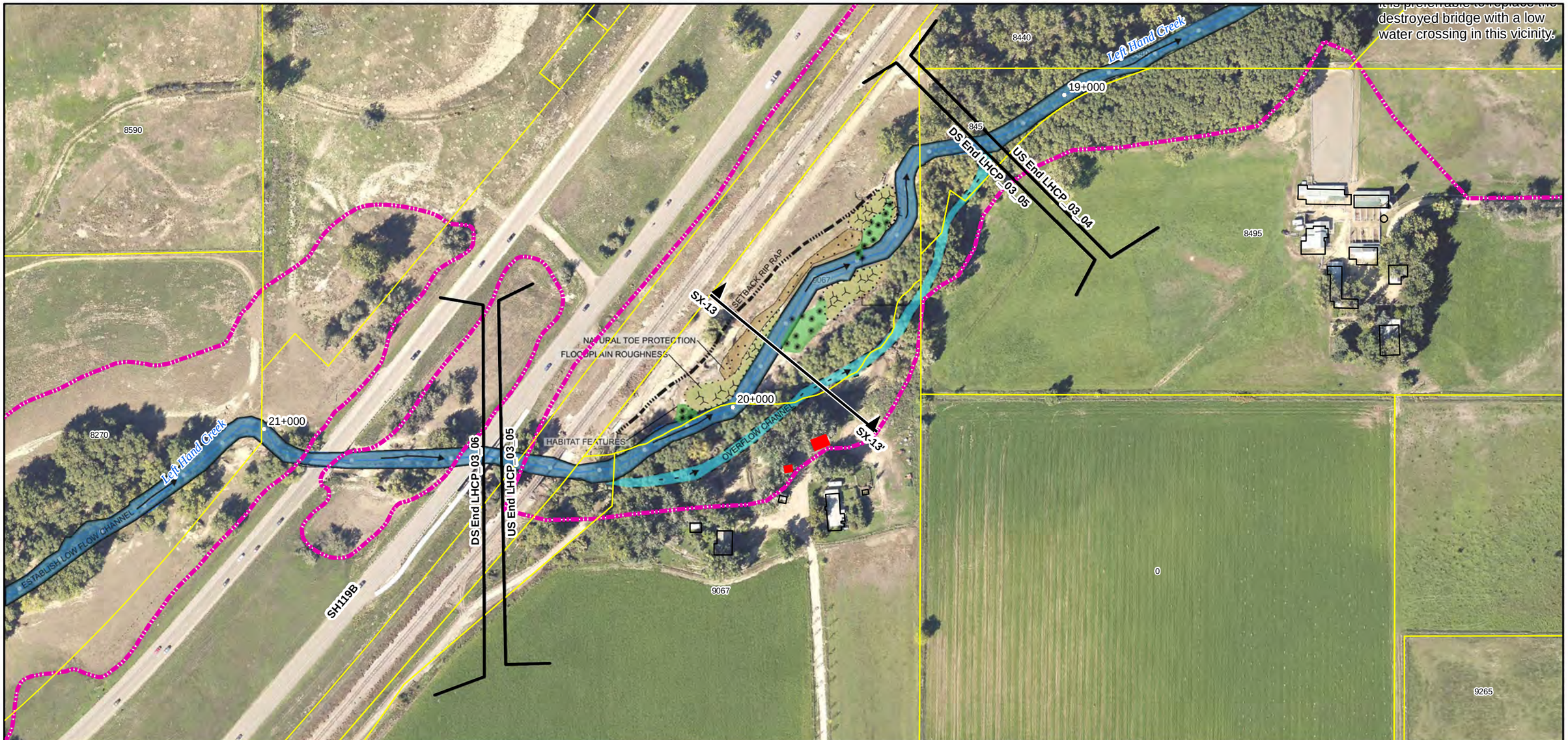
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_03_04**

REACH(ES): **Reach 3**

SHEET: **9**



Reach Typical Details:
1. Reach 3 River Style: Unconfined, Continuous Floodplain - See Sheet T-2

Special Cross-Sections:
Sec SX-13 - Bielins-Hock, Sheet: S-1, Sta: 19+300 to 20+400

Project Descriptions:
1. Project LHCP_03_05: For this project, perform bank and headcut stabilization, revegetate the area, maintain the pre-flood channel as an overflow channel and remove cars.

REACH TRAJECTORIES

AGGRADATION

LATERAL MIGRATION

1 " = 200 '

0 50 100 200 300 400 Feet

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LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_03_05**

REACH(ES): **Reach 3**

SHEET: **10**

Reach Typical Details:
1. Reach 3 River Style: Unconfined, Continuous Floodplain - See Sheet T-2

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_03_06: Project involves sediment maintenance, passive restoration and revegetation. The Airport Rd crossing has aggraded, closing the bike path. Excavate and establish compound channel with low flow to maintain sediment transport.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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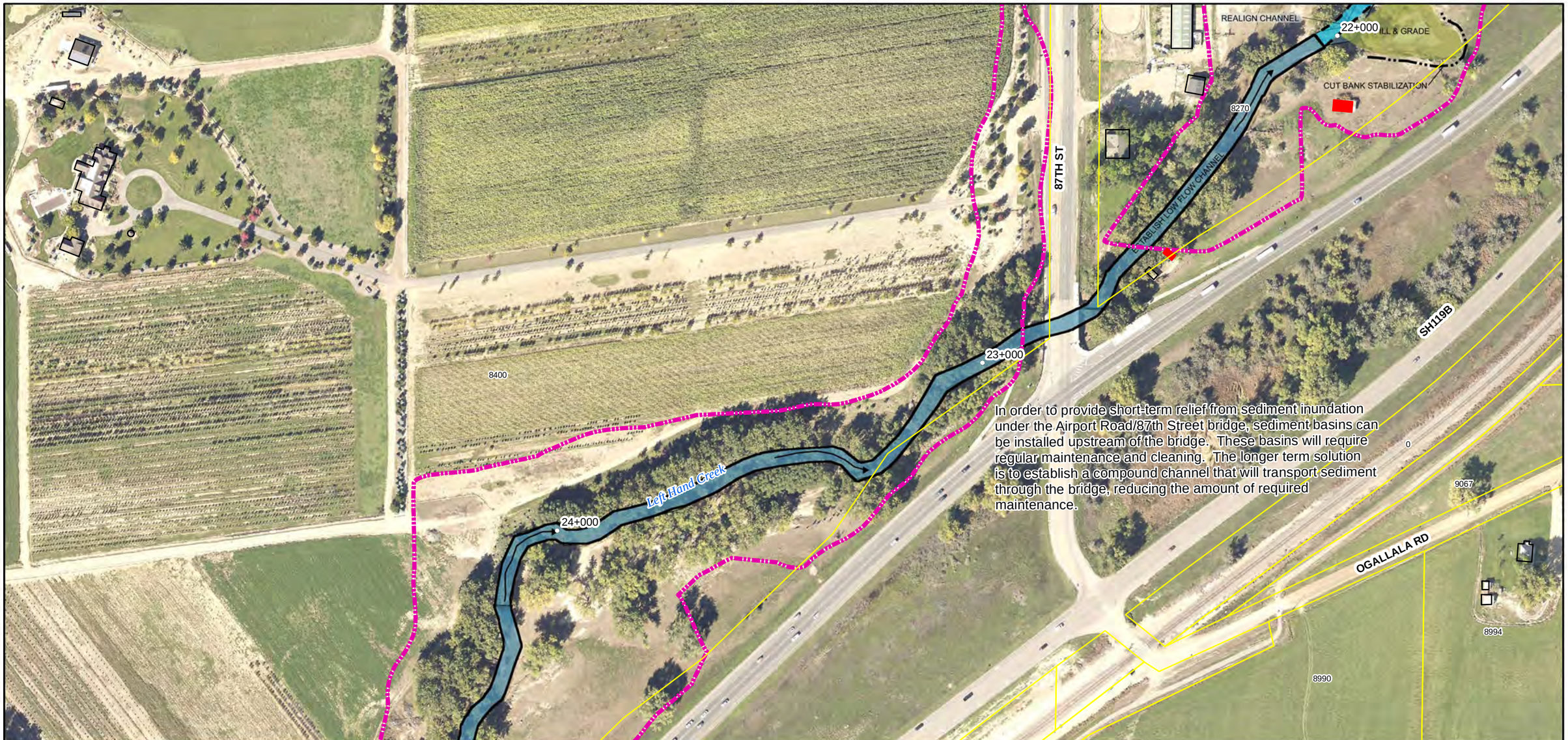
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_03_06**

REACH(ES): **Reach 3**

SHEET: **11**



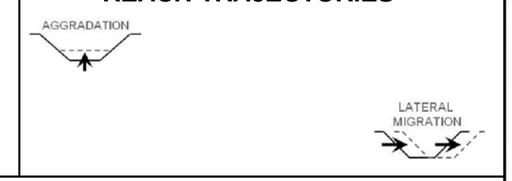
In order to provide short-term relief from sediment inundation under the Airport Road/87th Street bridge, sediment basins can be installed upstream of the bridge. These basins will require regular maintenance and cleaning. The longer term solution is to establish a compound channel that will transport sediment through the bridge, reducing the amount of required maintenance.

Reach Typical Details:
1. Reach 3 River Style: Unconfined, Continuous Floodplain - See Sheet T-2

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_03_06: Project involves sediment maintenance, passive restoration and revegetation. The Airport Rd crossing has aggraded, closing the bike path. Excavate and establish compound channel with low flow to maintain sediment transport.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_03_06**

REACH(ES): **Reach 3**

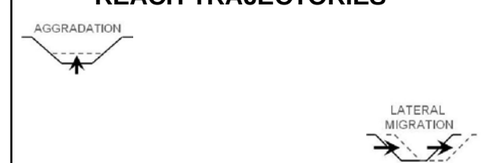
SHEET: **12**

Reach Typical Details:
1. Reach 3 River Style: Unconfined, Continuous Floodplain - See Sheet T-2

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_03_06: Project involves sediment maintenance, passive restoration and revegetation. The Airport Rd crossing has aggraded, closing the bike path. Excavate and establish compound channel with low flow to maintain sediment transport.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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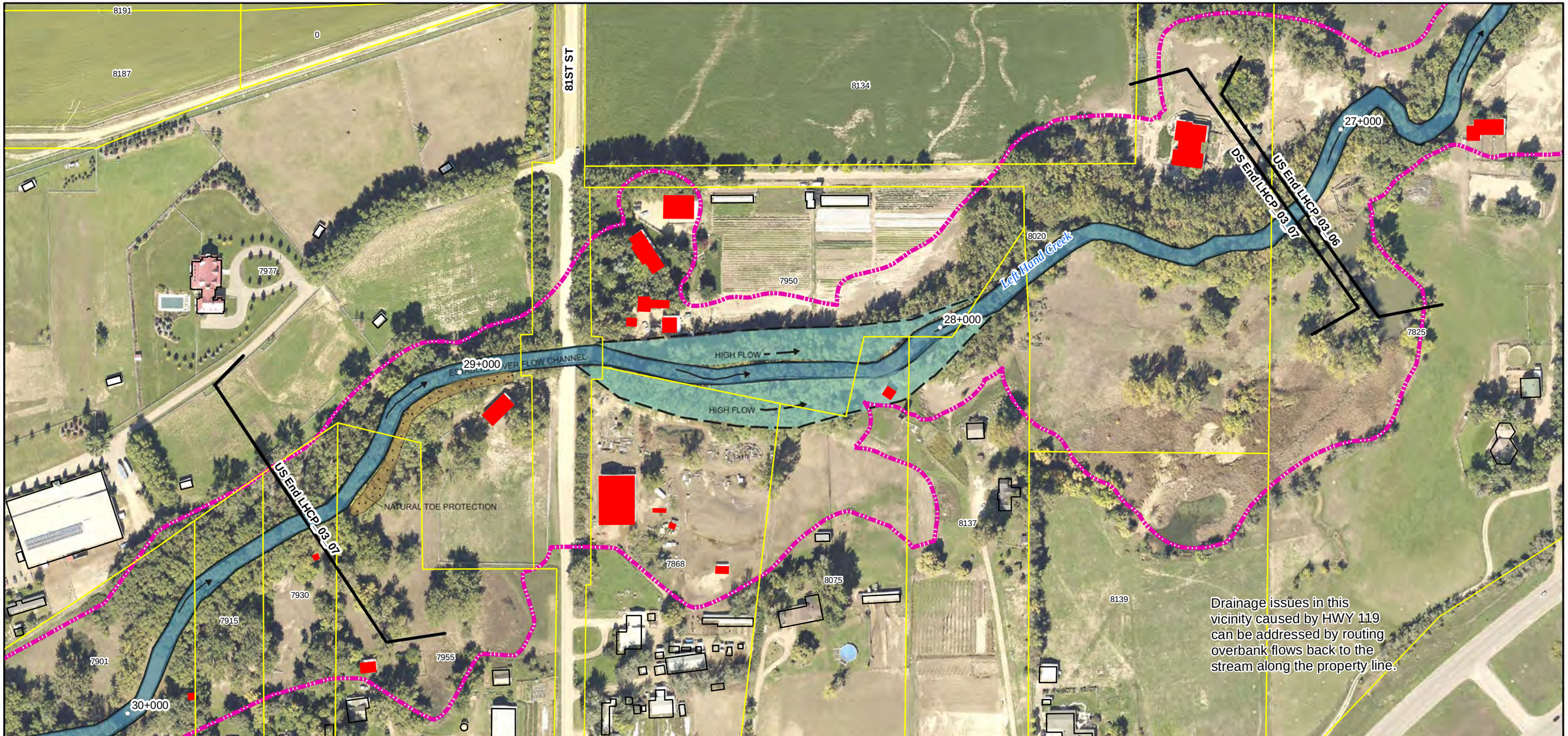
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_03_06**

REACH(ES): **Reach 3**

SHEET: **13**



Reach Typical Details:
1. Reach 3 River Style: Unconfined, Continuous Floodplain - See Sheet T-2

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_03_07: For this project perform sediment maintenance, floodproofing, passive restoration and increase the channel capacity.

REACH TRAJECTORIES

AGGRADATION

LATERAL MIGRATION

1 " = 200 '

0 50 100 200 300 400 Feet

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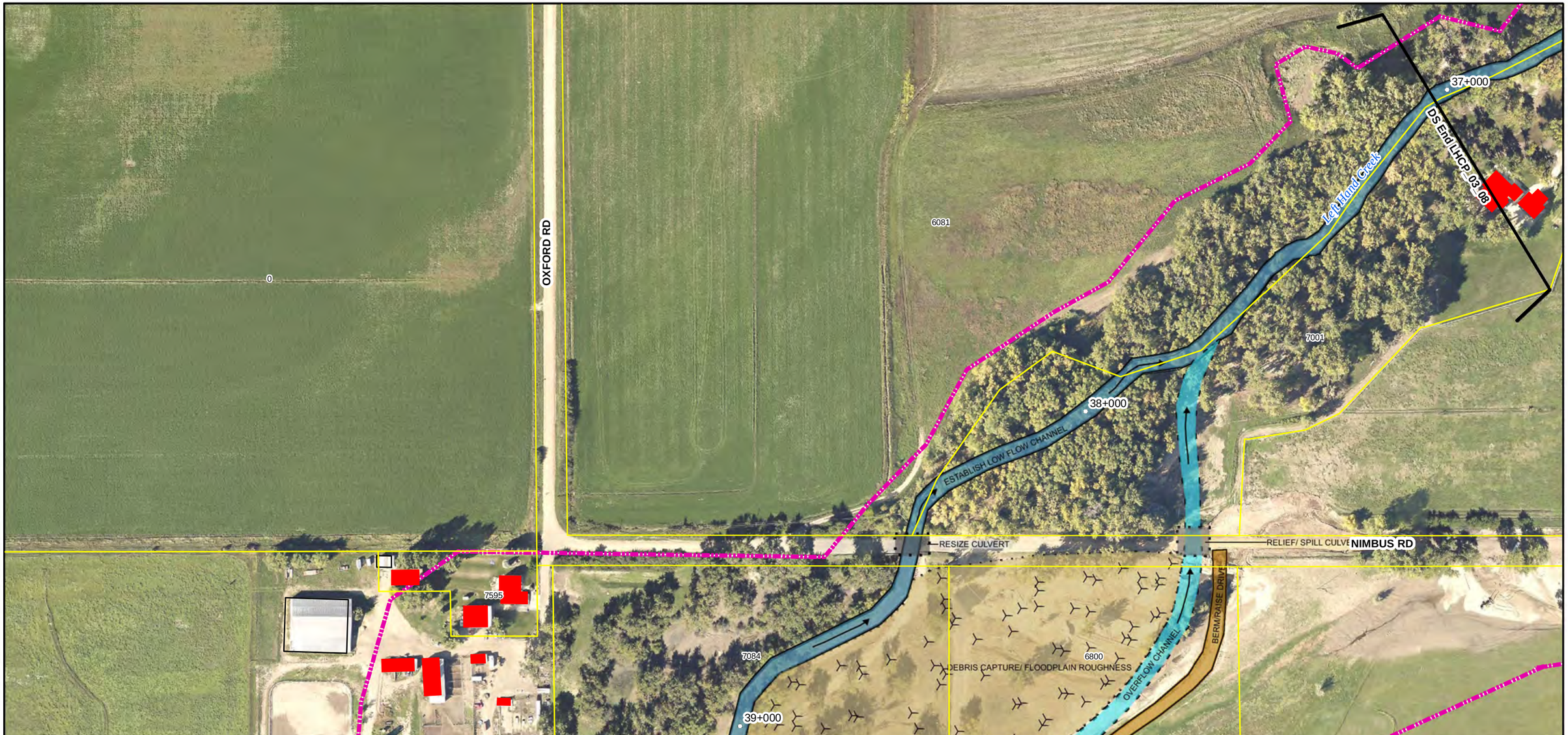
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_03_07**

REACH(ES): **Reach 3**

SHEET: **14**



Reach Typical Details:
1. Reach 3 River Style: Unconfined, Continuous Floodplain - See Sheet T-2

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_03_08: For this project, perform floodproofing and establish a low-flow channel. Drainage issues at end of Cardinal Lane need to be addressed. Provide overflow culvert and debris capture area to aid crossing at Nimbus.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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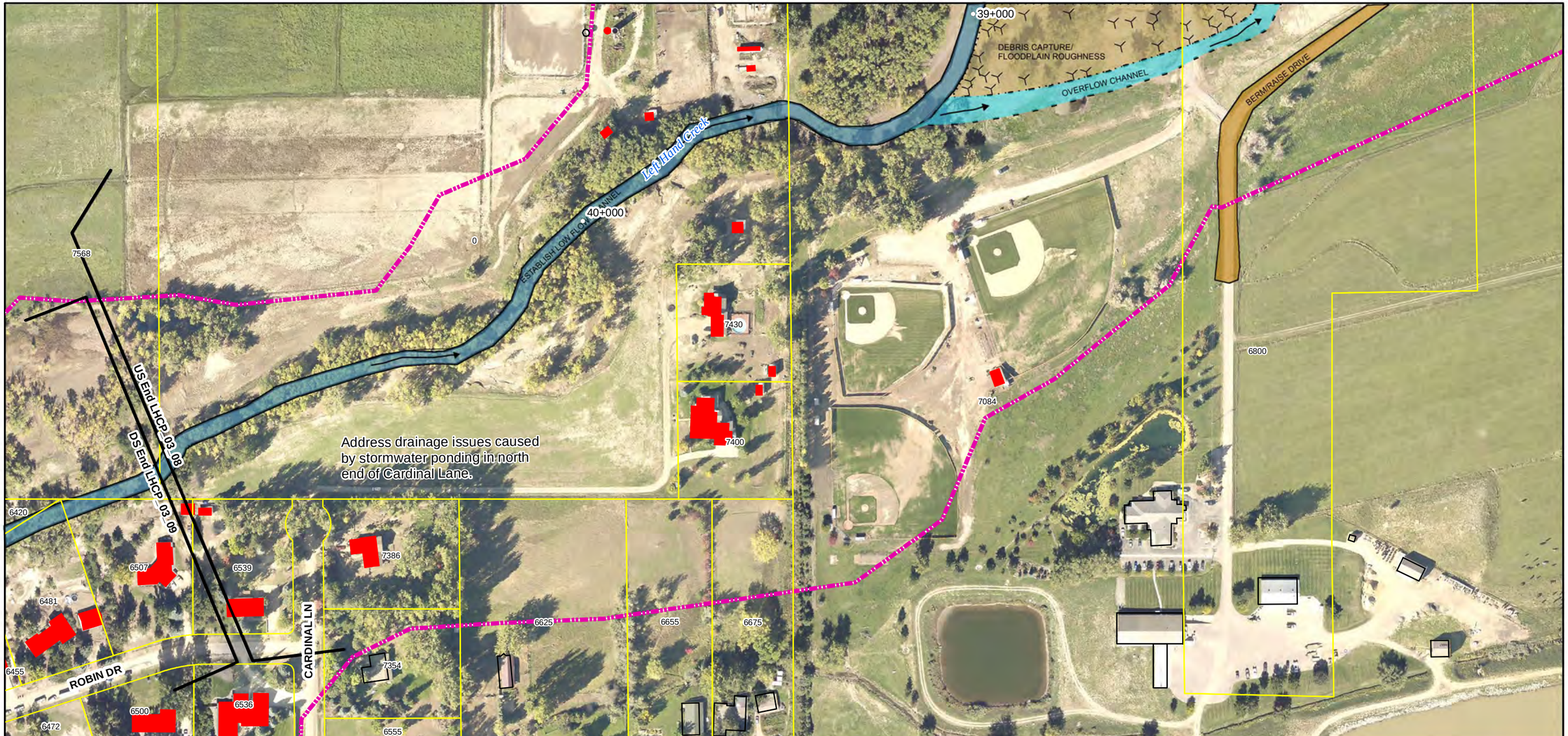
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_03_08**

REACH(ES): **Reach 3**

SHEET: **15**

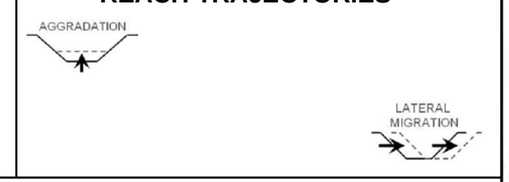


Reach Typical Details:
1. Reach 3 River Style: Unconfined, Continuous Floodplain - See Sheet T-2

Special Cross-Sections:

Project Descriptions:
1. Project LHCP_03_08: For this project, perform floodproofing and establish a low-flow channel. Drainage issues at end of Cardinal Lane need to be addressed. Provide overflow culvert and debris capture area to aid crossing at Nimbus.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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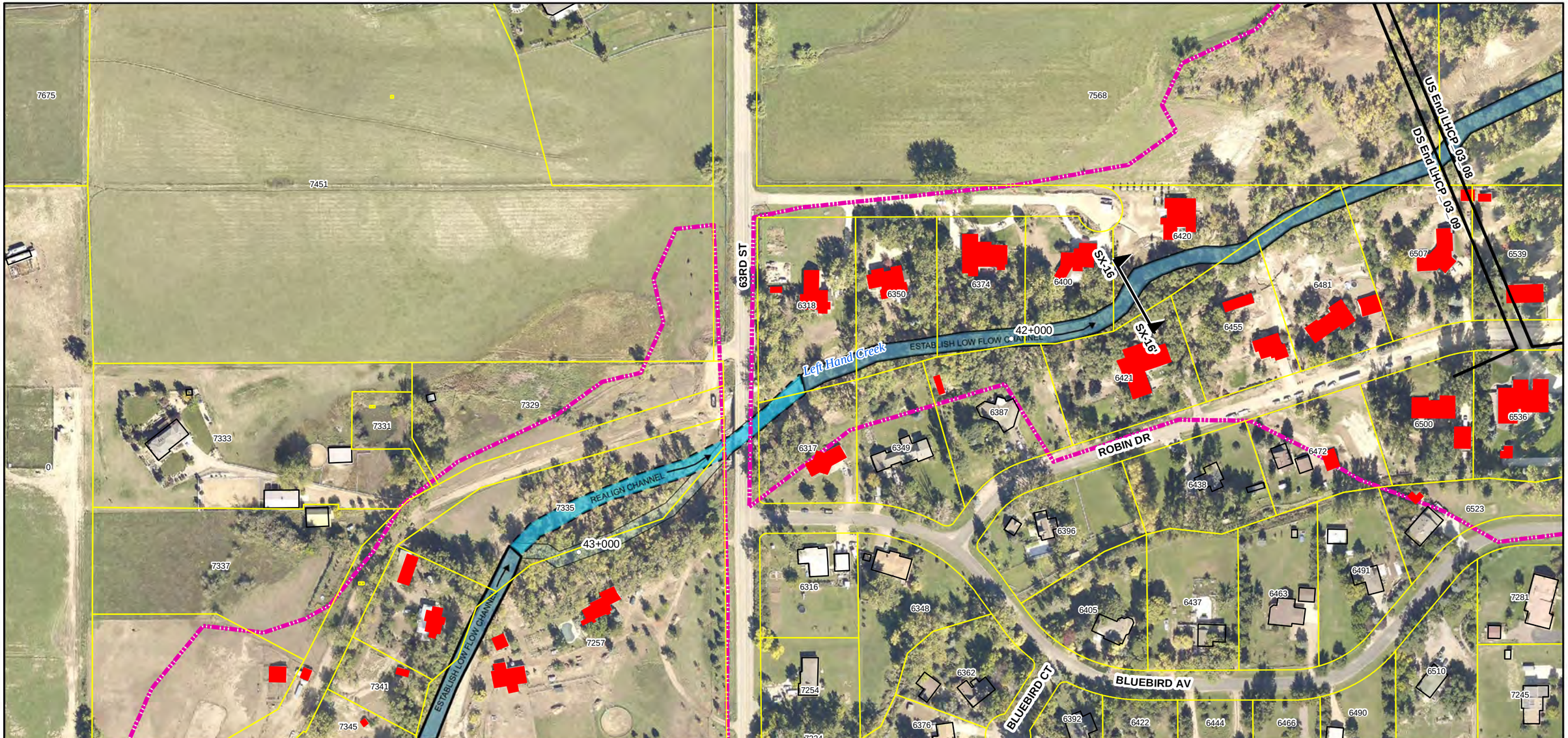
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_03_08**

REACH(ES): **Reach 3**

SHEET: **16**



Reach Typical Details:
1. Reach 3 River Style: Unconfined, Continuous Floodplain - See Sheet T-2

Special Cross-Sections:
Sec SX-16 - Brigadoon Glen Channel Capacity Improvements, Sheet: S-2, Sta: 41+100 to 42+500

Project Descriptions:
1. Project LHCP_03_09: Install channel capacity improvements, box culvert/crossing replacement, stabilizing banks as necessary and extend existing restoration work through reach to golf course.

REACH TRAJECTORIES

AGGRADATION

LATERAL MIGRATION

1 " = 200 '

0 50 100 200 300 400 Feet

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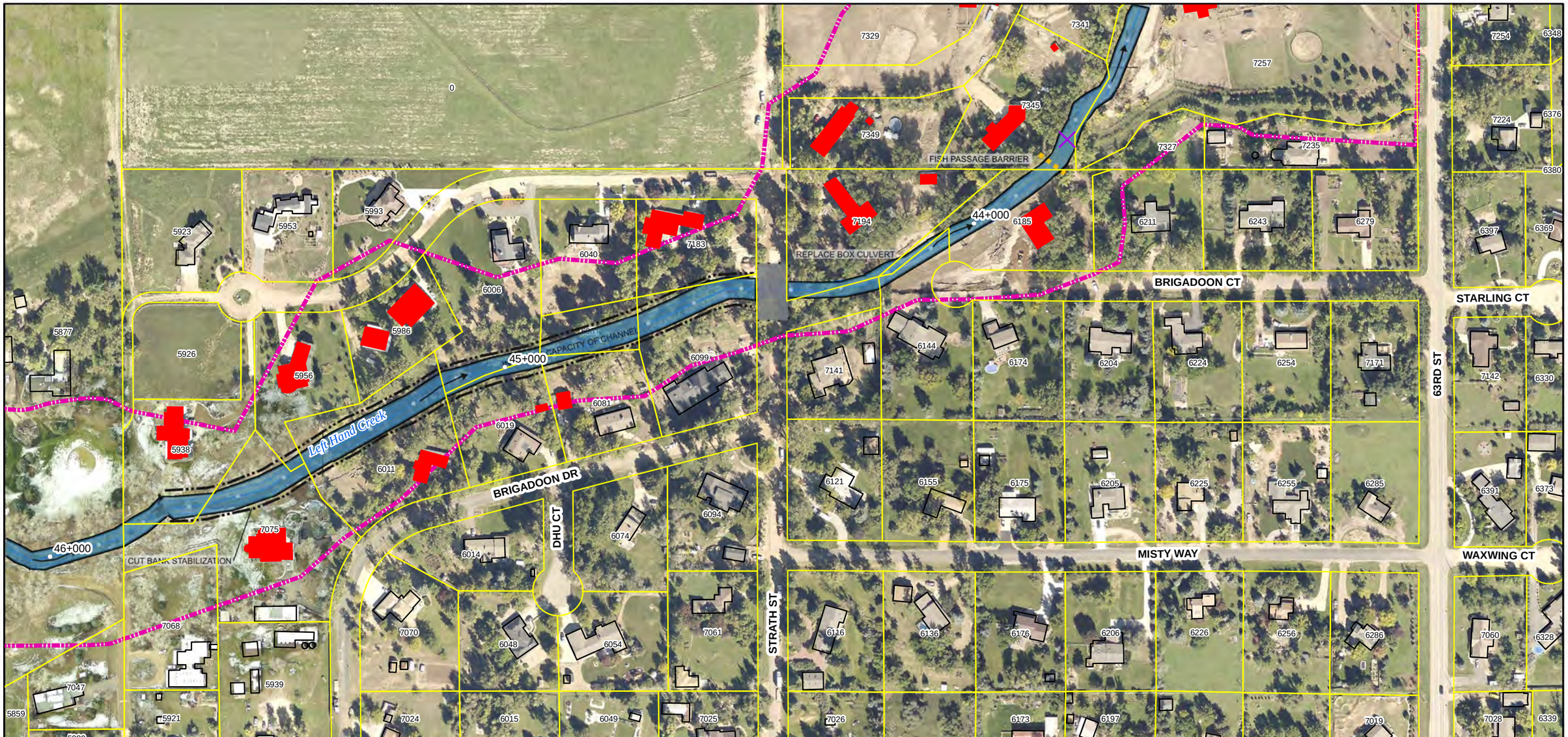
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_03_09**

REACH(ES): **Reach 3**

SHEET: **17**



Reach Typical Details:

1. Reach 4 River Style: Unconfined, Continuous Floodplain - See Sheet T-2

Special Cross-Sections:

Project Descriptions:

1. Project LHCP_03_09: Install channel capacity improvements, box culvert/crossing replacement, stabilizing banks as necessary and extend existing restoration work through reach to golf course.

REACH TRAJECTORIES

AGGRADATION

LATERAL MIGRATION

1 " = 200 '

0 50 100 200 300 400 Feet

N

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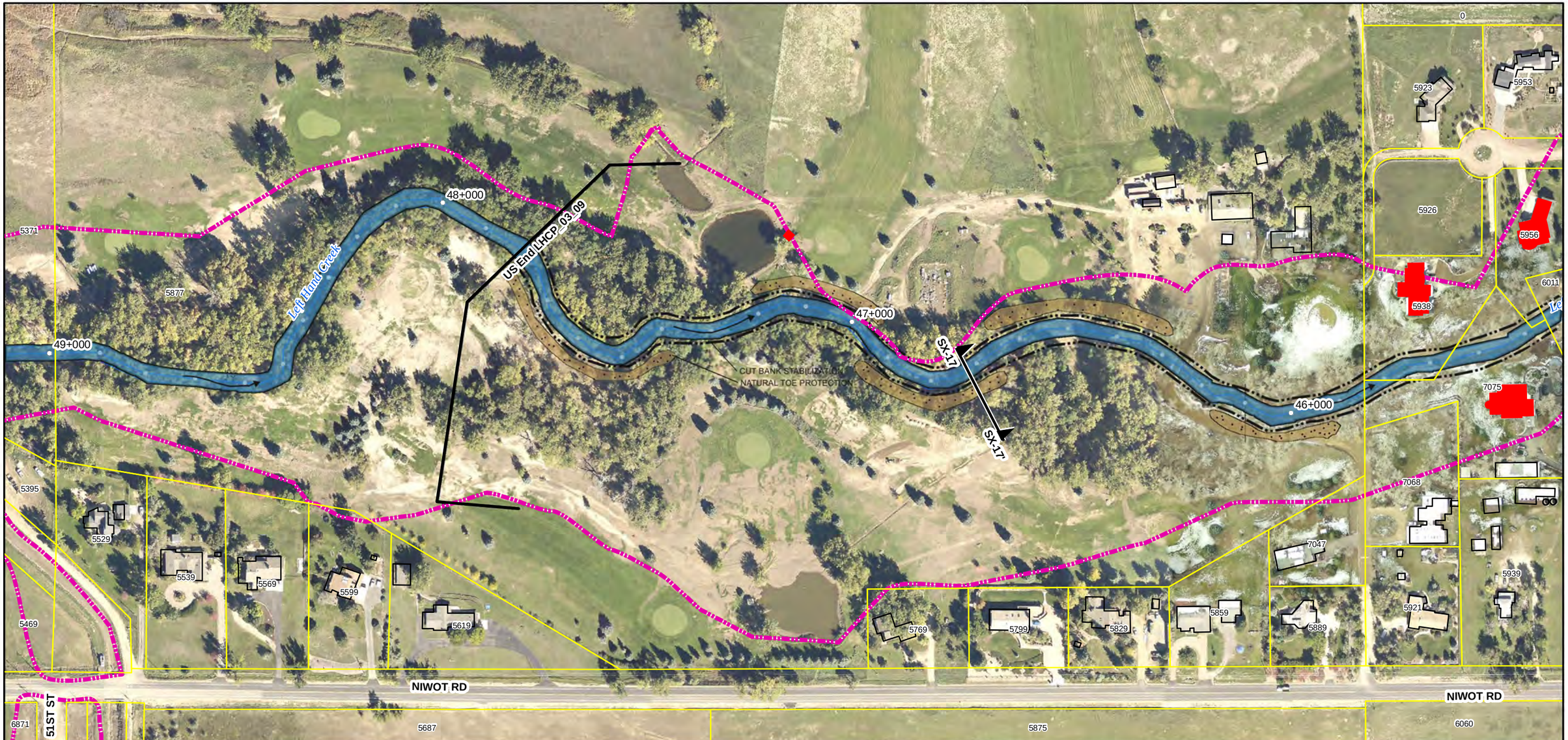
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_03_09**

REACH(ES): **Reach 4**

SHEET: **18**



Reach Typical Details:
1. Reach 4 River Style: Unconfined, Continuous Floodplain - See Sheet T-2

Special Cross-Sections:
Sec SX-17 - Brigadoon Glen Entrenched, Sheet: S-2, Sta: 44+500 to 47+700

Project Descriptions:
1. Project LHCP_03_09: Install channel capacity improvements, box culvert/crossing replacement, stabilizing banks as necessary and extend existing restoration work through reach to golf course.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

N

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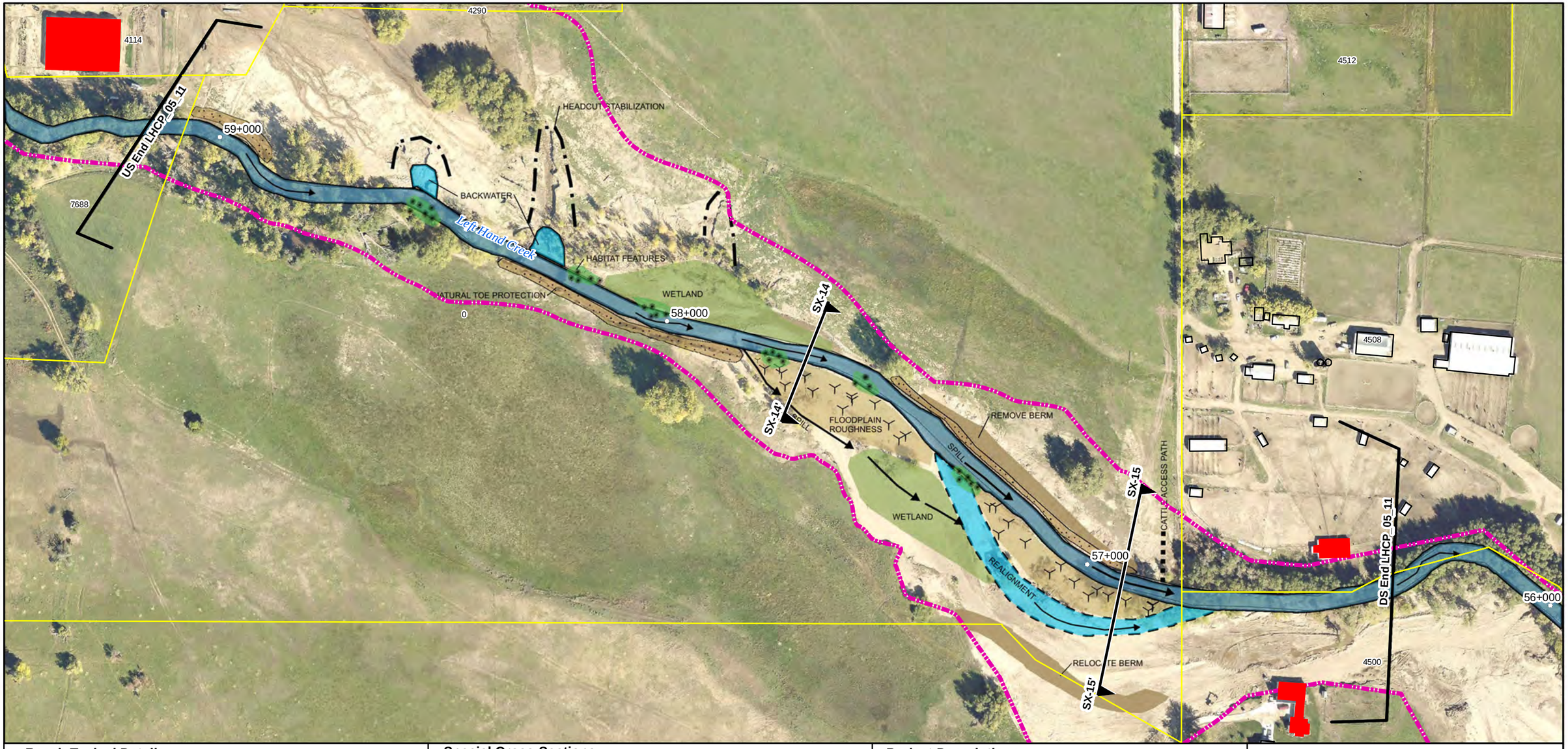
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_03_09**

REACH(ES): **Reach 4**

SHEET: **19**



Reach Typical Details:

1. Reach 5 River Style: Partly Confined, Wandering - See Sheet T-3

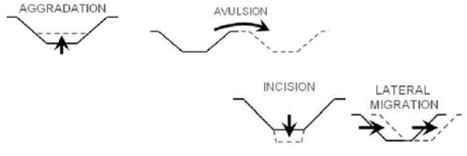
Special Cross-Sections:

Sec SX-14 - Brewbaker-Sorensen, Sheet: S-3, Sta: 57+500 to 58+500
Sec SX-15 - Brewbaker-Sorensen Berm, Sheet: S-3, Sta: 56+700 to 57+500
See Detail - Cutbank Stabilization, Sheet: D-1

Project Descriptions:

1. Project LHCP_05_11: Stabilize loose sediments and failing banks. Also create a low flow channel and restore wetlands within the project bounds.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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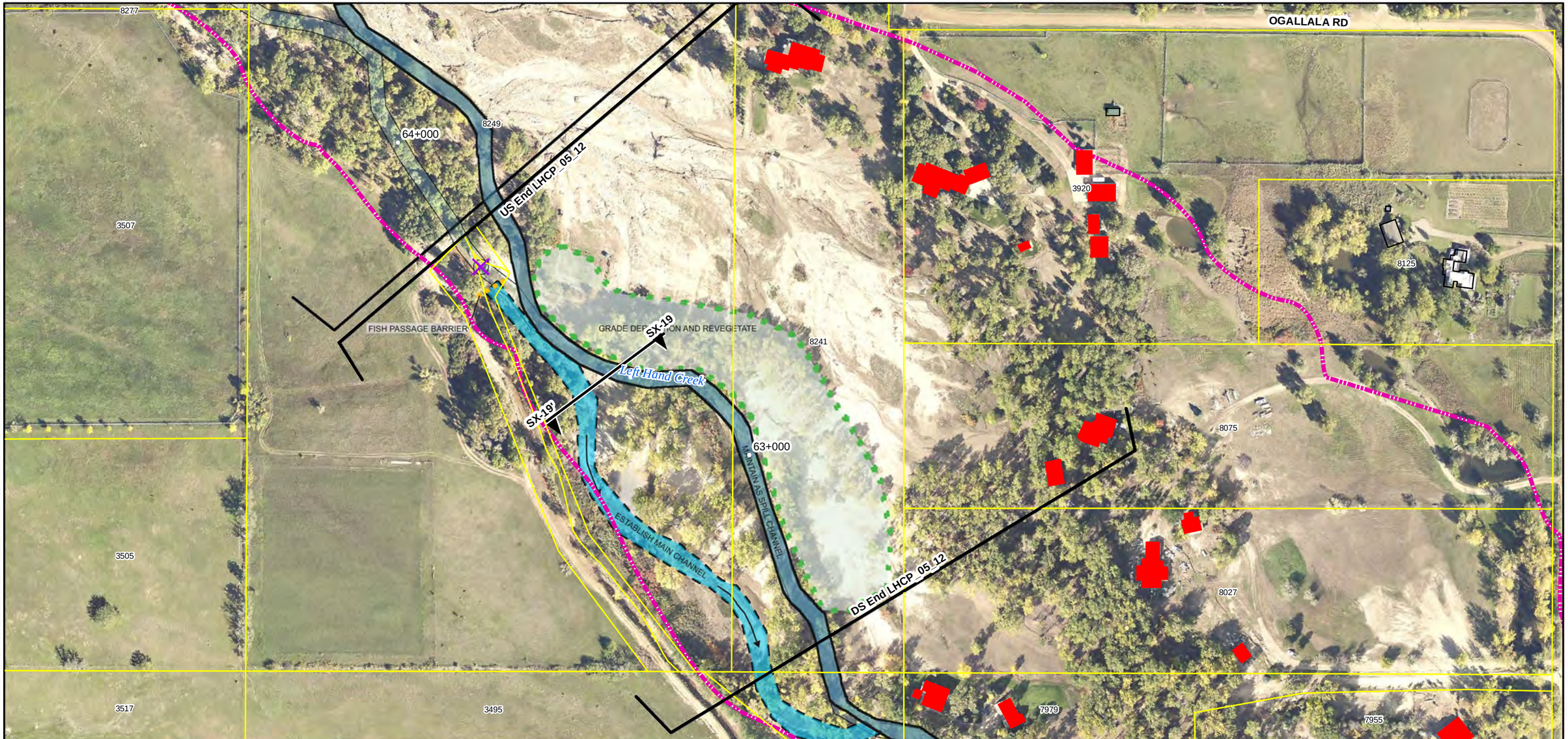
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_05_11**

REACH(ES): **Reach 5**

SHEET: **20**

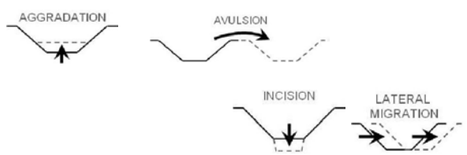


Reach Typical Details:
1. Reach 5 River Style: Partly Confined, Wandering - See Sheet T-3

Special Cross-Sections:
Sec SX-19 - 8241 39th Street Grading, Sheet: S-4, Sta: 62+600 to 63+800

Project Descriptions:
1. Project LHCP_05_12: For this project establish low-flow and spill channels. Also grade and stabilize the extensive deposition area and revegetate the area within the project bounds.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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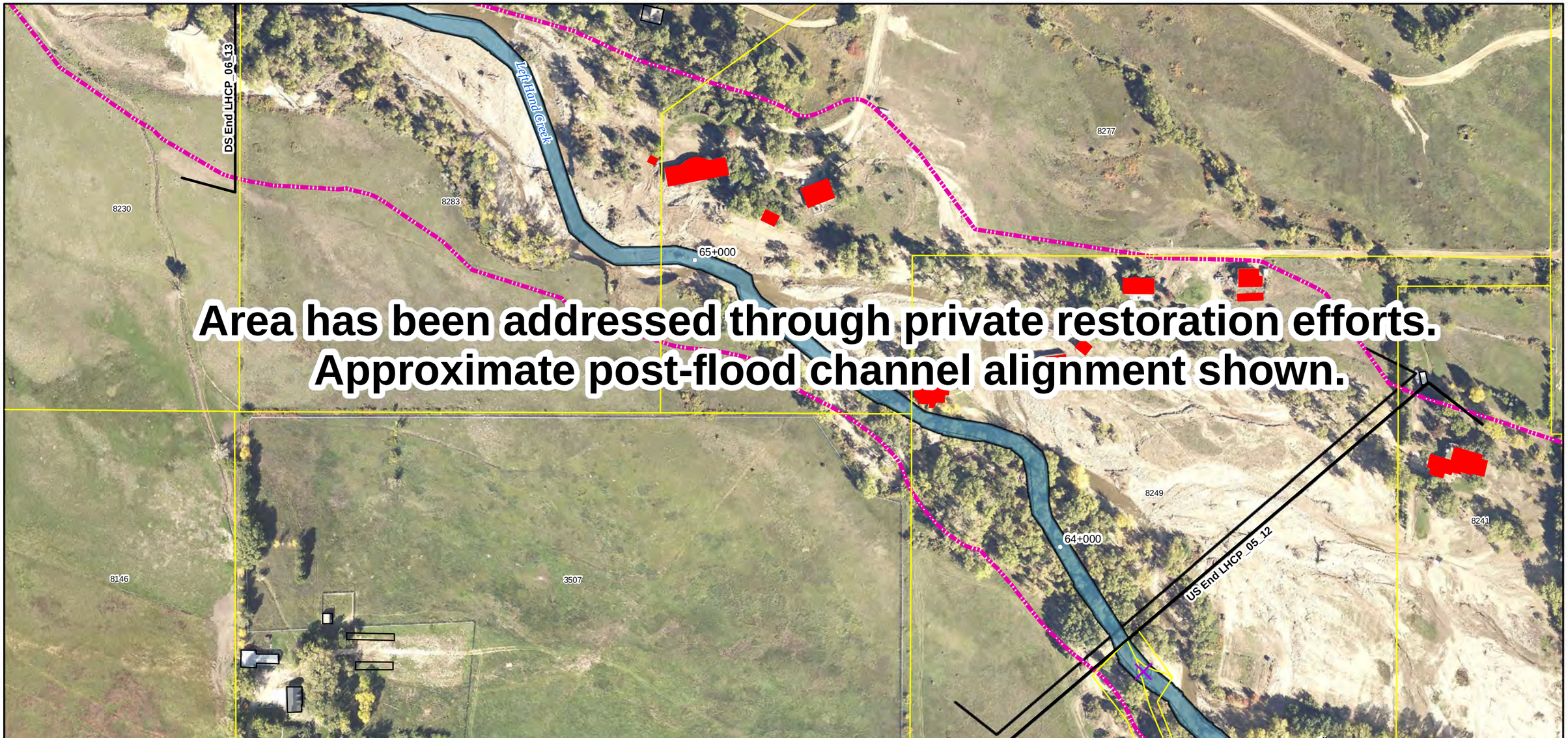
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCP_05_12**

REACH(ES): **Reach 5**

SHEET: **21**

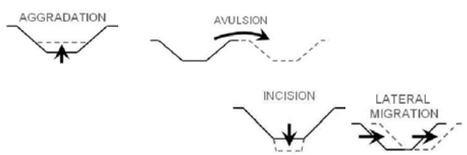


Reach Typical Details:

Special Cross-Sections:

Project Descriptions:

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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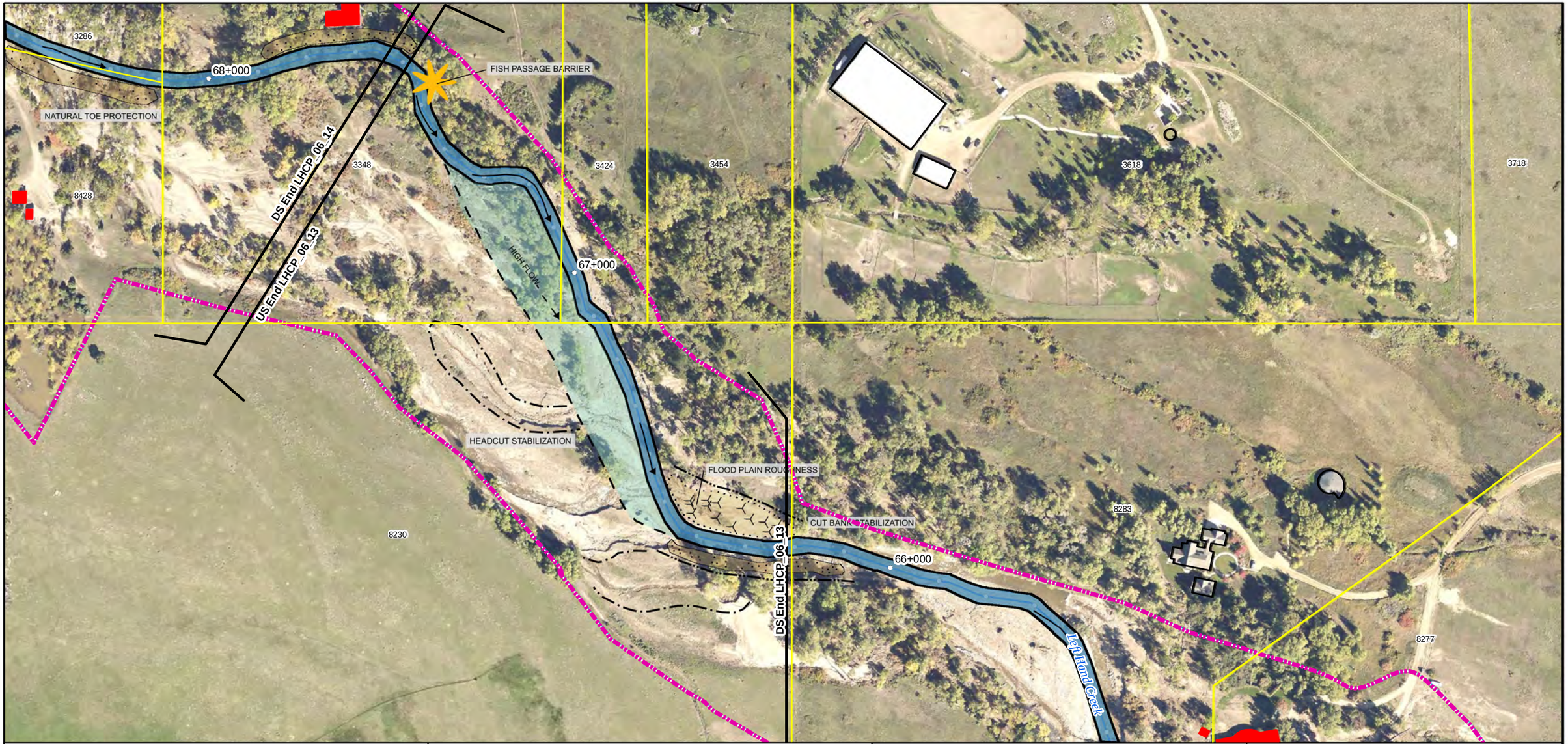
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S):

REACH(ES): **Reach**

SHEET: **22**

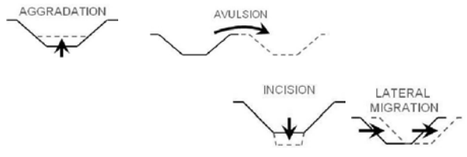


Reach Typical Details:
1. Reach 6 River Style: Partly Confined, Wandering - See Sheet T-3

Special Cross-Sections:
See Detail - Cutbank Stabilization, Sheet: D-1

Project Descriptions:
1. Project LHCP_06_13: Perform channel, bank and headcut stabilization, regrade and stabilize the floodplain and revegetate. Continue private restoration work.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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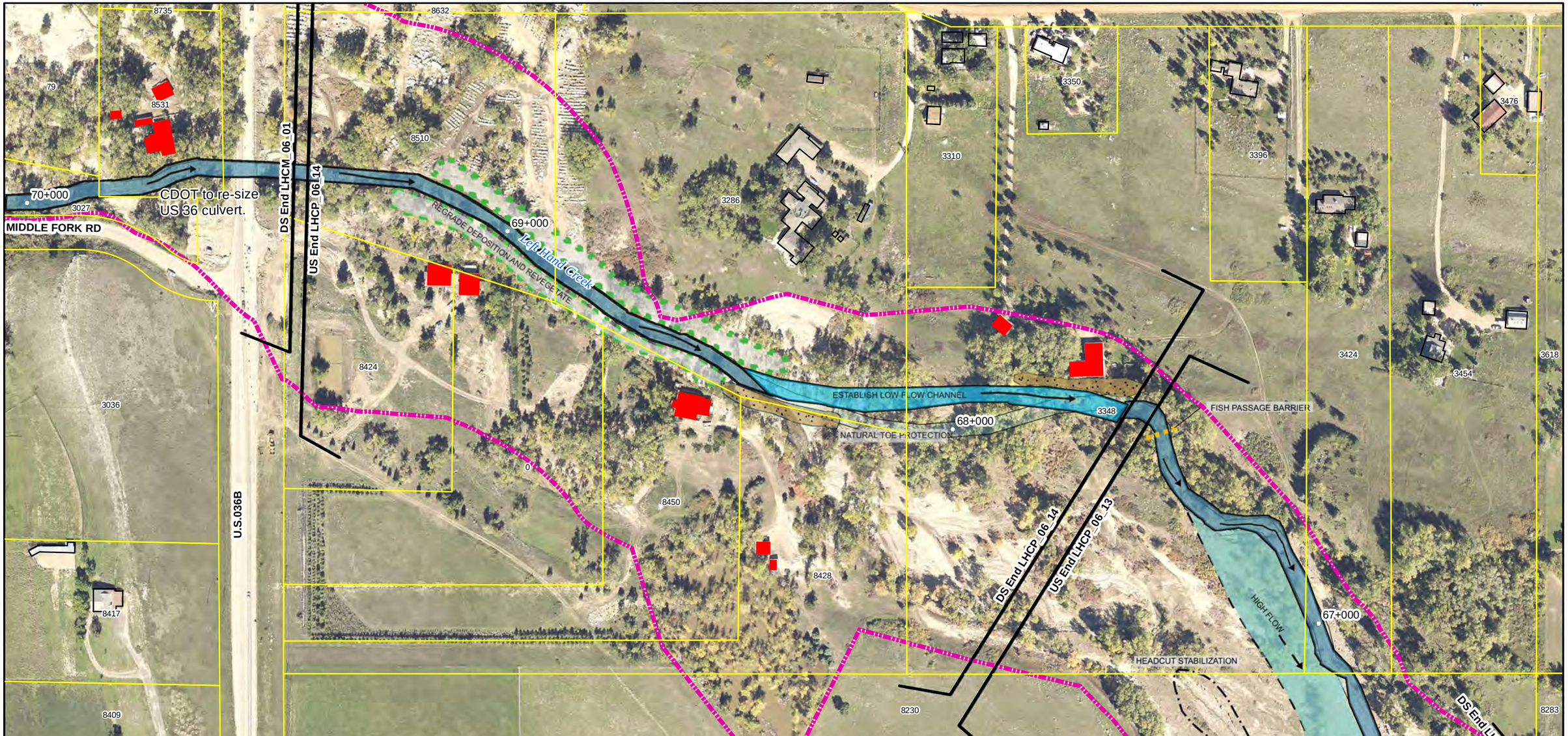
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S):

REACH(ES): **Reach 6**

SHEET: **23**

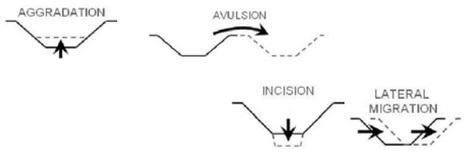


Reach Typical Details:
1. Reach 6 River Style: Partly Confined, Wandering - See Sheet T-3

Special Cross-Sections:

Project Descriptions:
1. Project LHCM_06_01: Lower the channel, reconnect the floodplain with the channel and increase local channel complexity. Add in LWD and habitat features to stabilize both the channel and dissipate flood energy. CDOT to re-size US 36 crossing.
2. Project LHCP_06_14: Perform channel, bank and floodplain stabilization at this site, establish a new low-flow channel, regrade the floodplain and remove any extensive deposition in the floodplain. Continue any private restoration work upstream.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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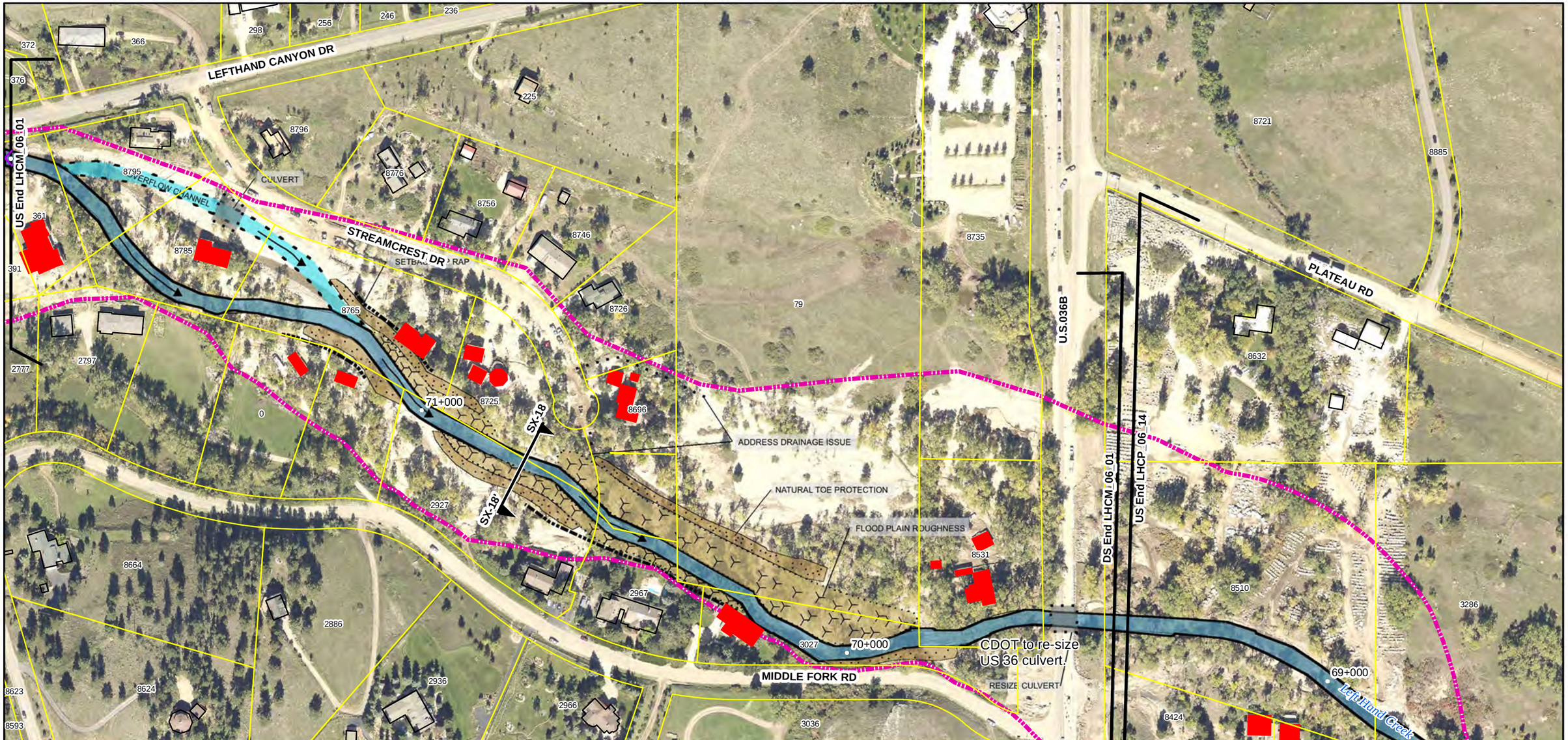
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_06_01, LHCP_06_14**

REACH(ES): **Reach 6**

SHEET: **24**

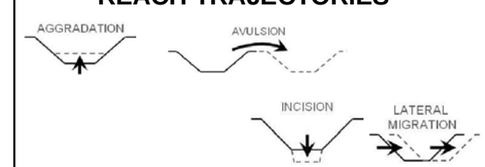


Reach Typical Details:
1. Reach 6 River Style: Partly Confined, Wandering - See Sheet T-3

Special Cross-Sections:
Sec SX-18 - Streamcrest, Sheet: S-4, Sta: 68+700 to 72+000

Project Descriptions:
1. Project LHCM_06_01: Lower the channel, reconnect the floodplain with the channel and increase local channel complexity. Add in LWD and habitat features to stabilize both the channel and dissipate flood energy. CDOT to re-size US 36 crossing.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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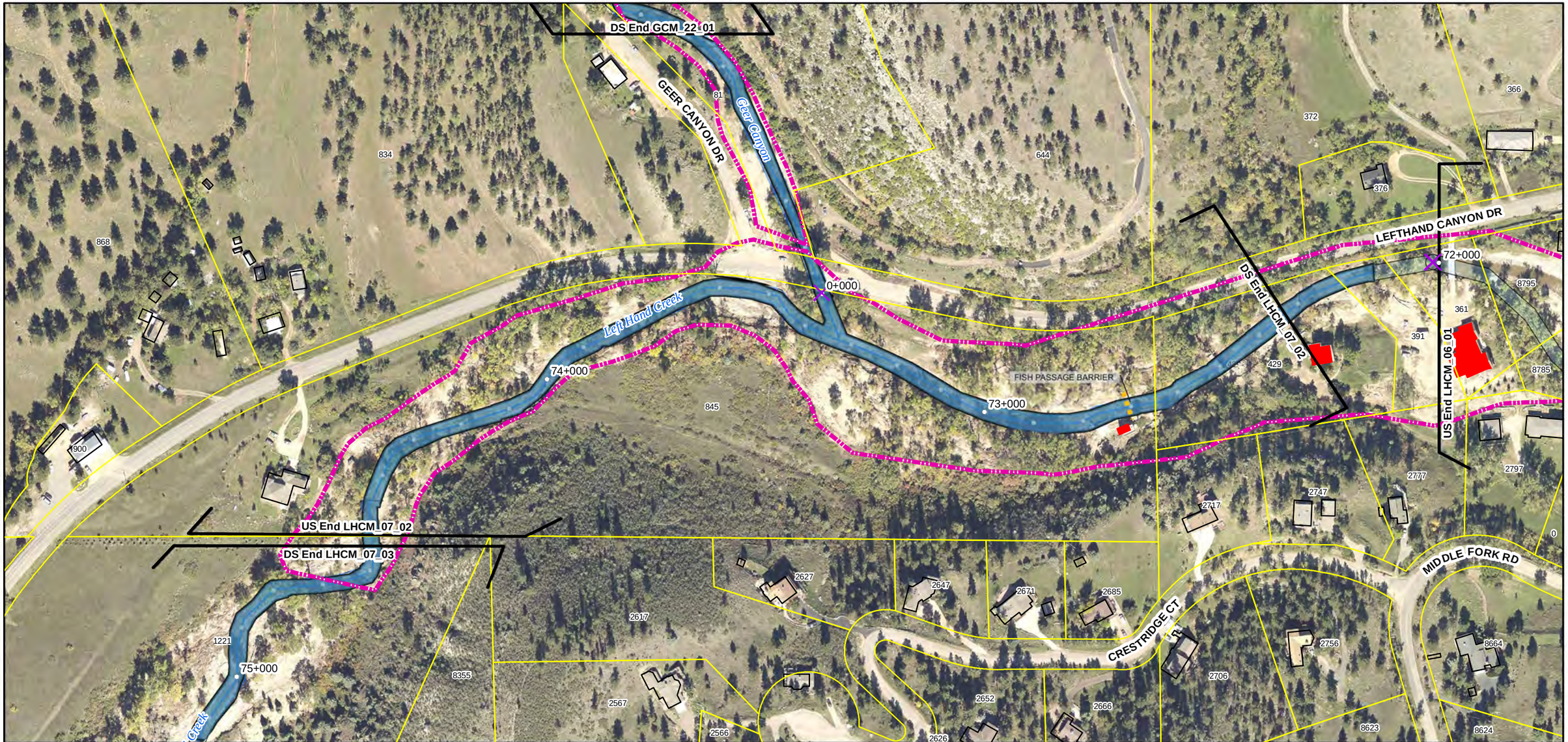
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_06_01**

REACH(ES): **Reach 6**

SHEET: **25**

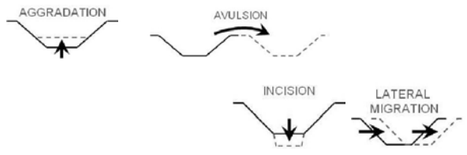


Reach Typical Details:
1. Reach 7 River Style: Partly Confined, Wandering - See Sheet T-3

Special Cross-Sections:

Project Descriptions:
1. Project LHCM_07_02: Perform bank stabilization where necessary, revegegate the area and add in large woody debris and habitat features.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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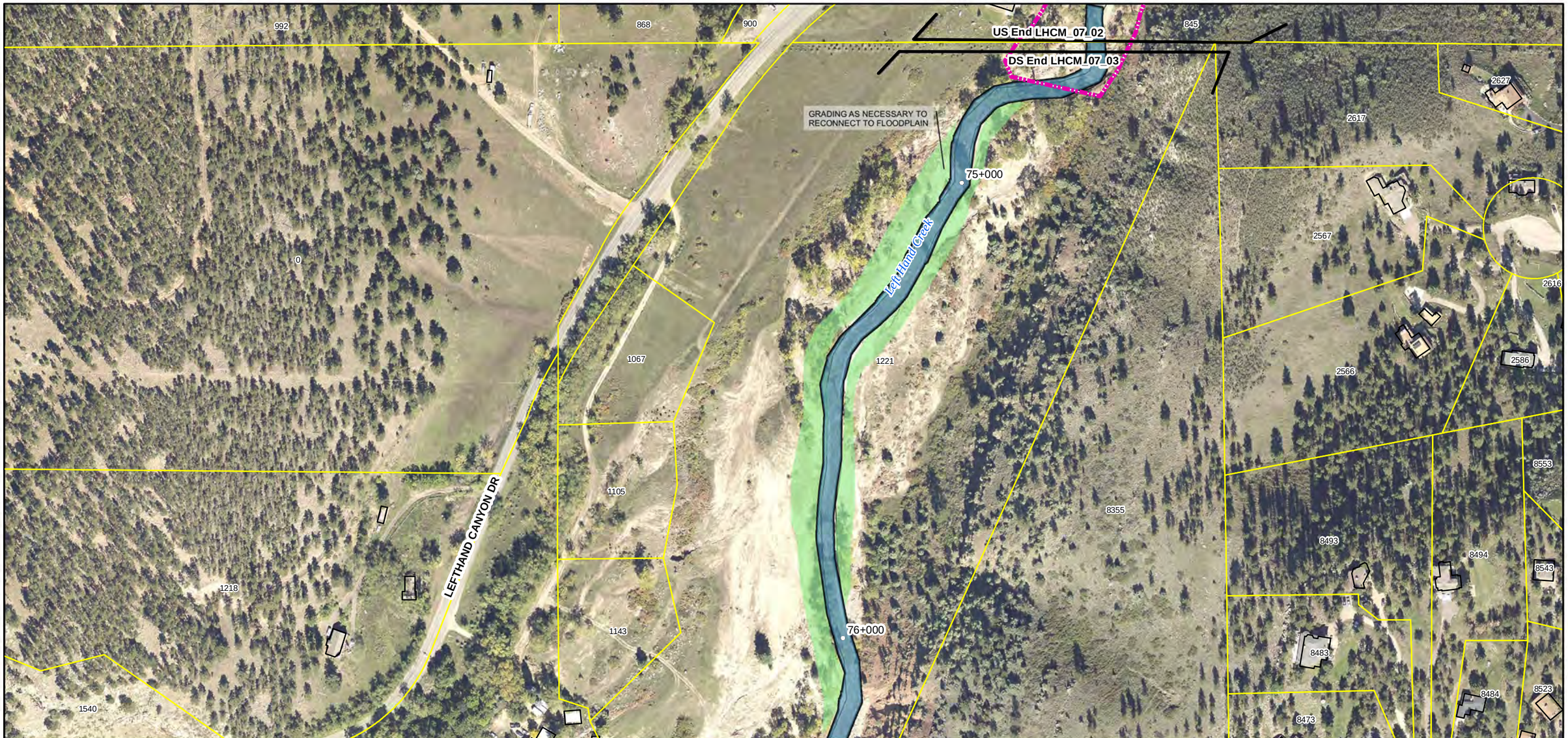
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_07_02**

REACH(ES): **Reach 7**

SHEET: **26**

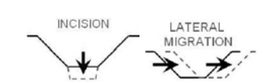


Reach Typical Details:
1. Reach 7 River Style: Partly Confined, Wandering - See Sheet T-3

Special Cross-Sections:

Project Descriptions:
1. Project LHCM_07_03: Build a fish-passable diversion, peform road realignment and use crossings friendly to fish-passage. Perform channel work to control local sediment sources, improve habitat and stabilize both the channel and floodplain.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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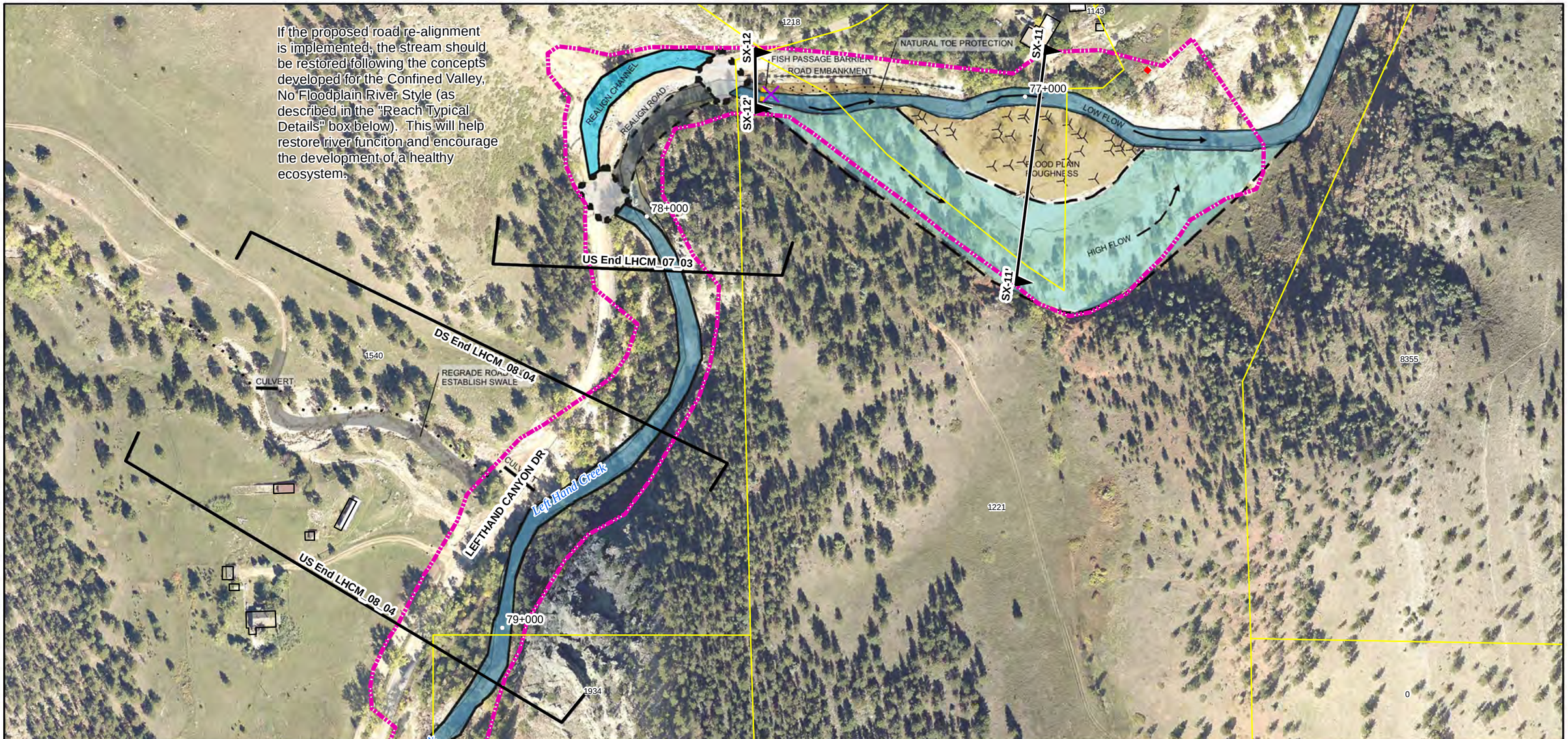
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_07_03**

REACH(ES): **Reach 7**

SHEET: **27**



Reach Typical Details:
1. Reach 7 River Style: Partly Confined, Wandering - See Sheet T-3
2. Reach 8 River Style: Typical Confined Valley, No Floodplain Plan and Profile - See Sheet T-5

Special Cross-Sections:
Sec SX-11 - Reach 7 Floodplain, Sheet: S-5, Sta: 76+500 to 77+300
Sec SX-12 - Reach 7 Spill, Sheet: S-5, Sta: 77+200 to 77+700

Project Descriptions:
1. Project LHCM_07_03: Build a fish-passable diversion, peform road realignment and use crossings friendly to fish-passage. Perform channel work to control local sediment sources, improve habitat and stabilize both the channel and floodplain.
2. Project LHCM_08_04: Perform grading and drainage stabilization and install a new culvert at this site.

REACH TRAJECTORIES

1 " = 200 '
0 50 100 200 300 400 Feet
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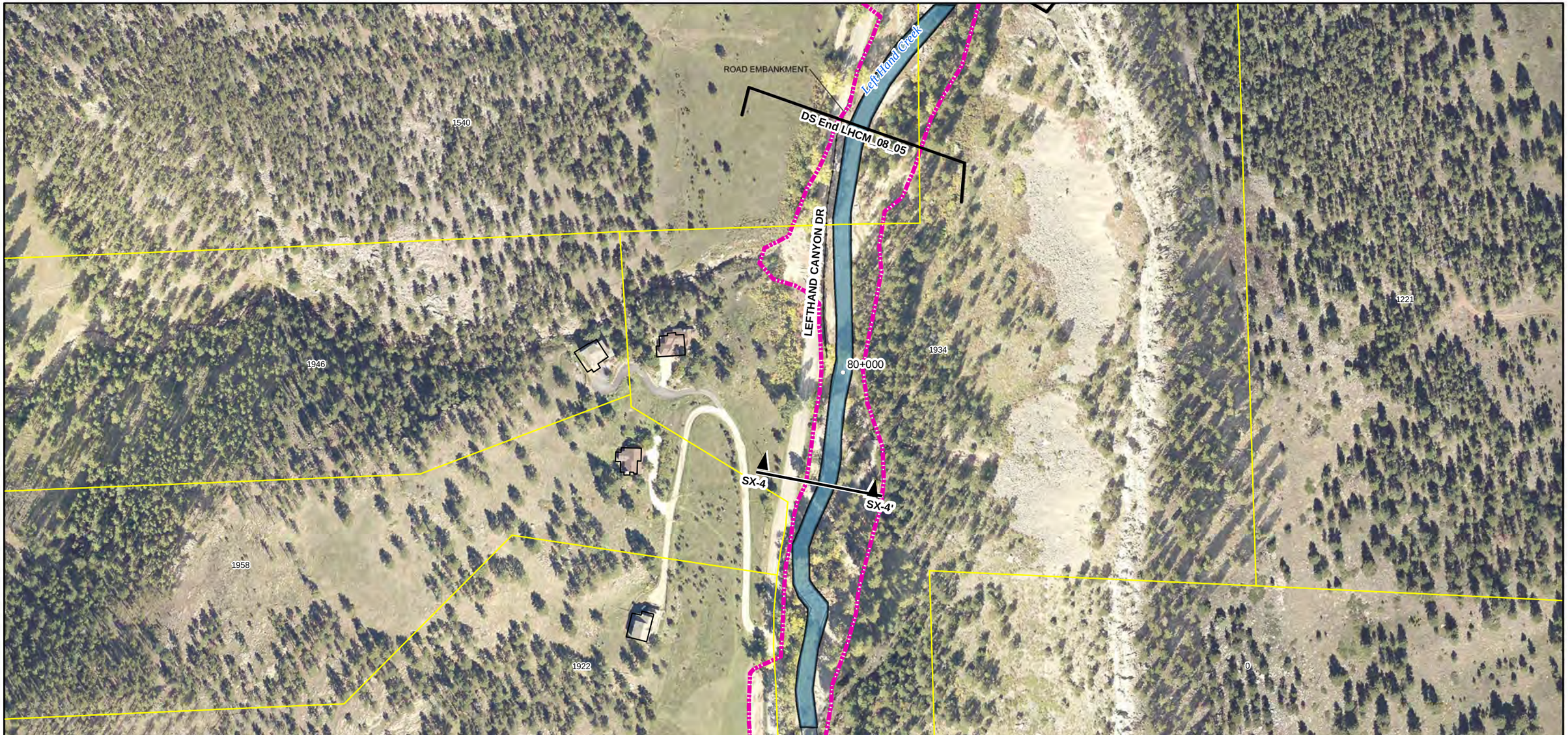
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_07_03, LHCM_08_04**

REACH(ES): **Reach 7** **Reach 8**

SHEET: **28**



Reach Typical Details:
1. Reach 8 River Style: Confined Valley, No Floodplain - See Sheet T-5

Special Cross-Sections:
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 79+600 to 81+600

Project Descriptions:
1. Project LHCM_08_05: Improve the road-river interface and stabilize the channel.

REACH TRAJECTORIES

EXPANSION

1 " = 200 '

0 50 100 200 300 400 Feet

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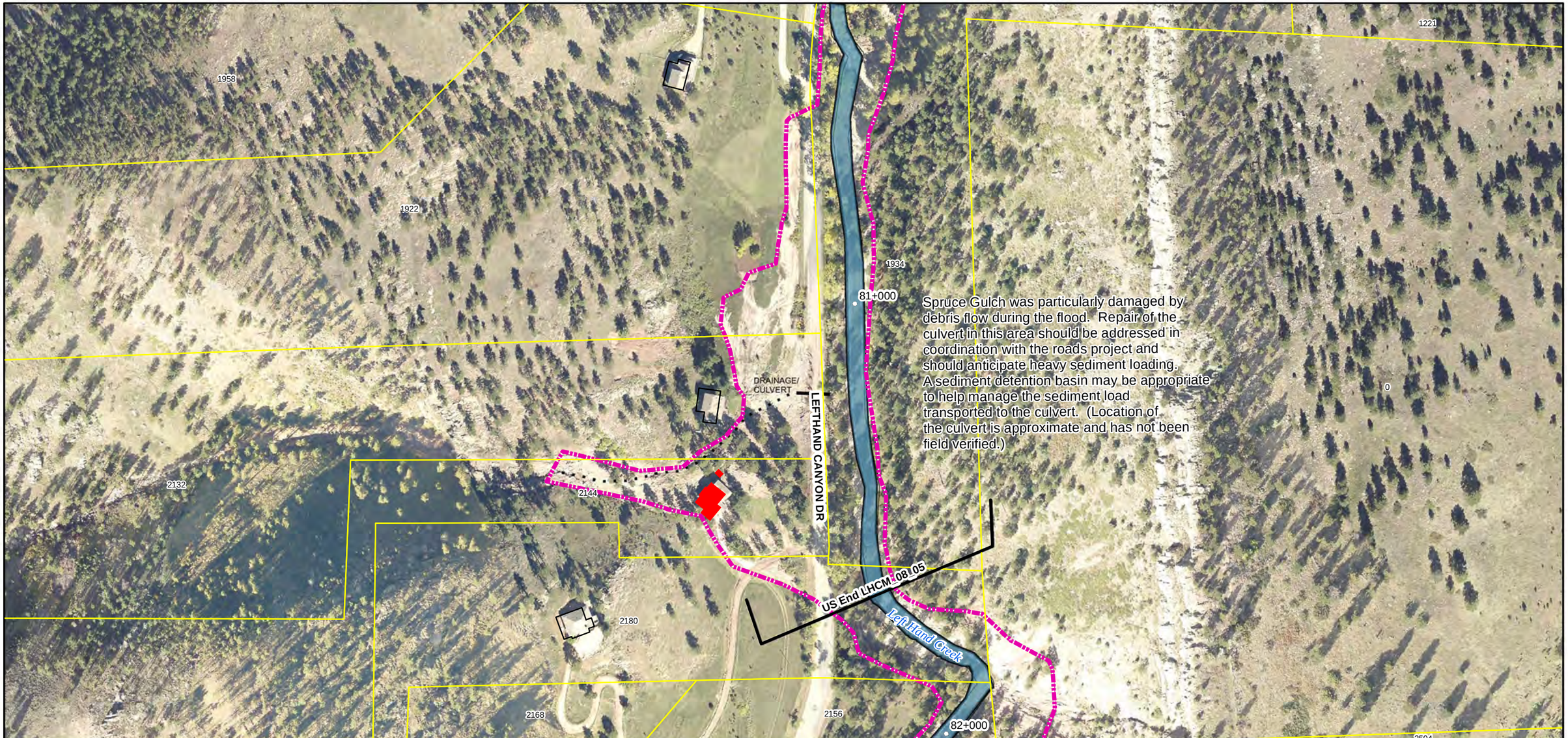
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_08_05**

REACH(ES): **Reach 8**

SHEET: **29**



Reach Typical Details:
1. Reach 8 River Style: Confined Valley, No Floodplain - See Sheet T-5

Special Cross-Sections:

Project Descriptions:
1. Project LHCM_08_05: Improve the road-river interface and stabilize the channel.

REACH TRAJECTORIES

EXPANSION

1 " = 200 '

0 50 100 200 300 400 Feet

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LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_08_05**

REACH(ES): **Reach 8**

SHEET: **30**

Reach Typical Details:
1. Reach 8 River Style: Confined Valley, No Floodplain - See Sheet T-5

Special Cross-Sections:
Sec SX-3 - Road-River Interface Confined Right, Sheet: S-8, Sta: 82+600 to 83+800

Project Descriptions:
1. Project LHCM_08_06: Improve the road-river interface and stabilize the channel where necessary.

REACH TRAJECTORIES

EXPANSION

1 " = 200 '

0 50 100 200 300 400 Feet

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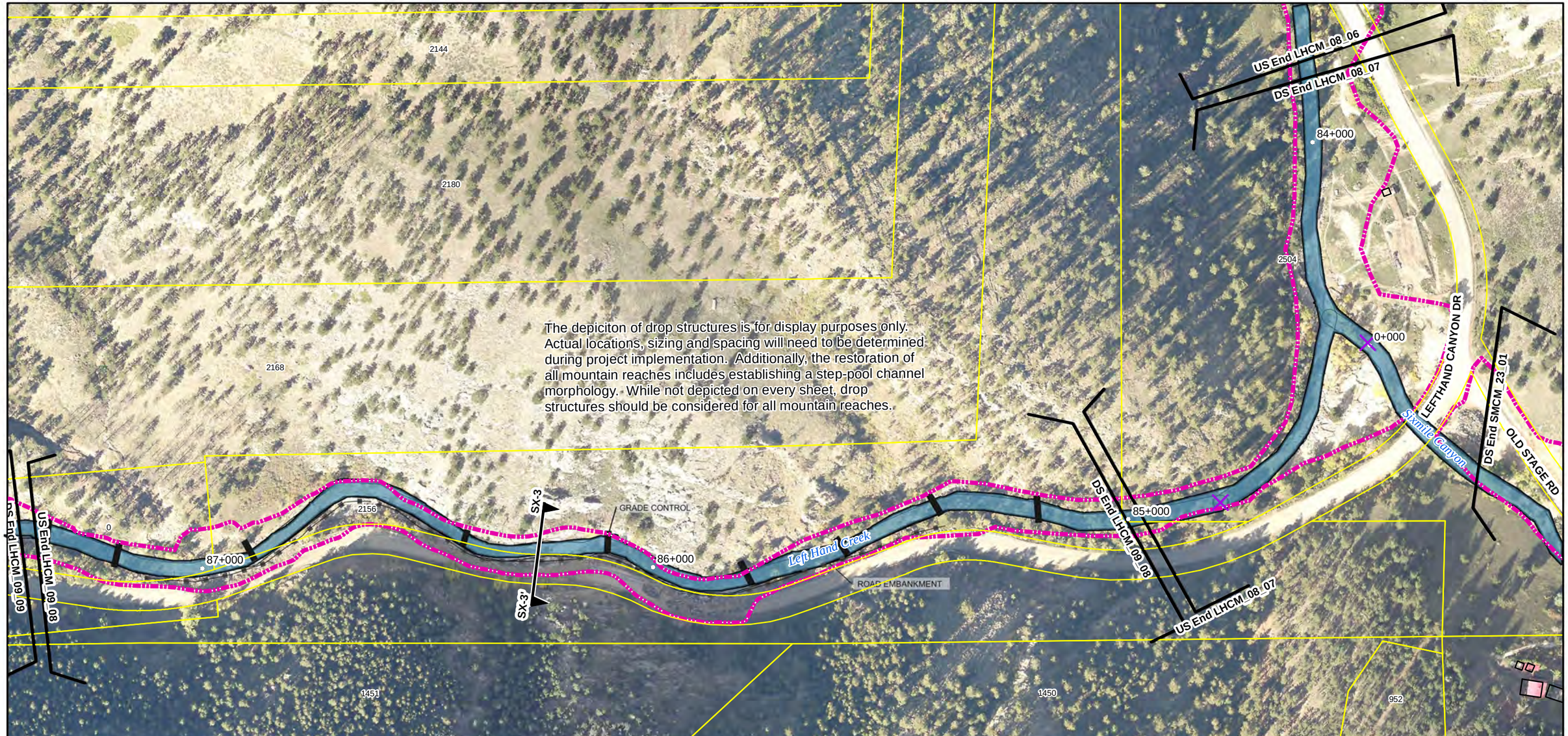
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_08_06**

REACH(ES): **Reach 8**

SHEET: **31**



The depiciton of drop structures is for display purposes only. Actual locations, sizing and spacing will need to be determined during project implementation. Additionally, the restoration of all mountain reaches includes establishing a step-pool channel morphology. While not depicted on every sheet, drop structures should be considered for all mountain reaches.

Reach Typical Details:

1. Reach 8 River Style: Confined Valley, No Floodplain - See Sheet T-5
2. Reach 9 River Style: Typical Confined Valley with Bedrock-controlled Floodplain Pockets Plan and Profile - See Sheet T-4

Special Cross-Sections:

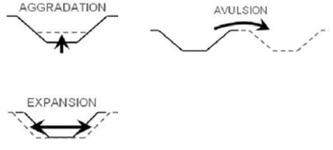
Sec SX-3 - Road-River Interface Confined Right, Sheet: S-8, Sta: 85+000 to 87+300

See Detail - Sediment Detention Pond, Sheet: D-1

Project Descriptions:

1. Project LHCM_08_07: Incorporate seed control and other passive restoration measures. Continue monitoring the project after completion,
2. Project LHCM_09_08: Improve the road-river interface, perform grade control and stabilize the channel.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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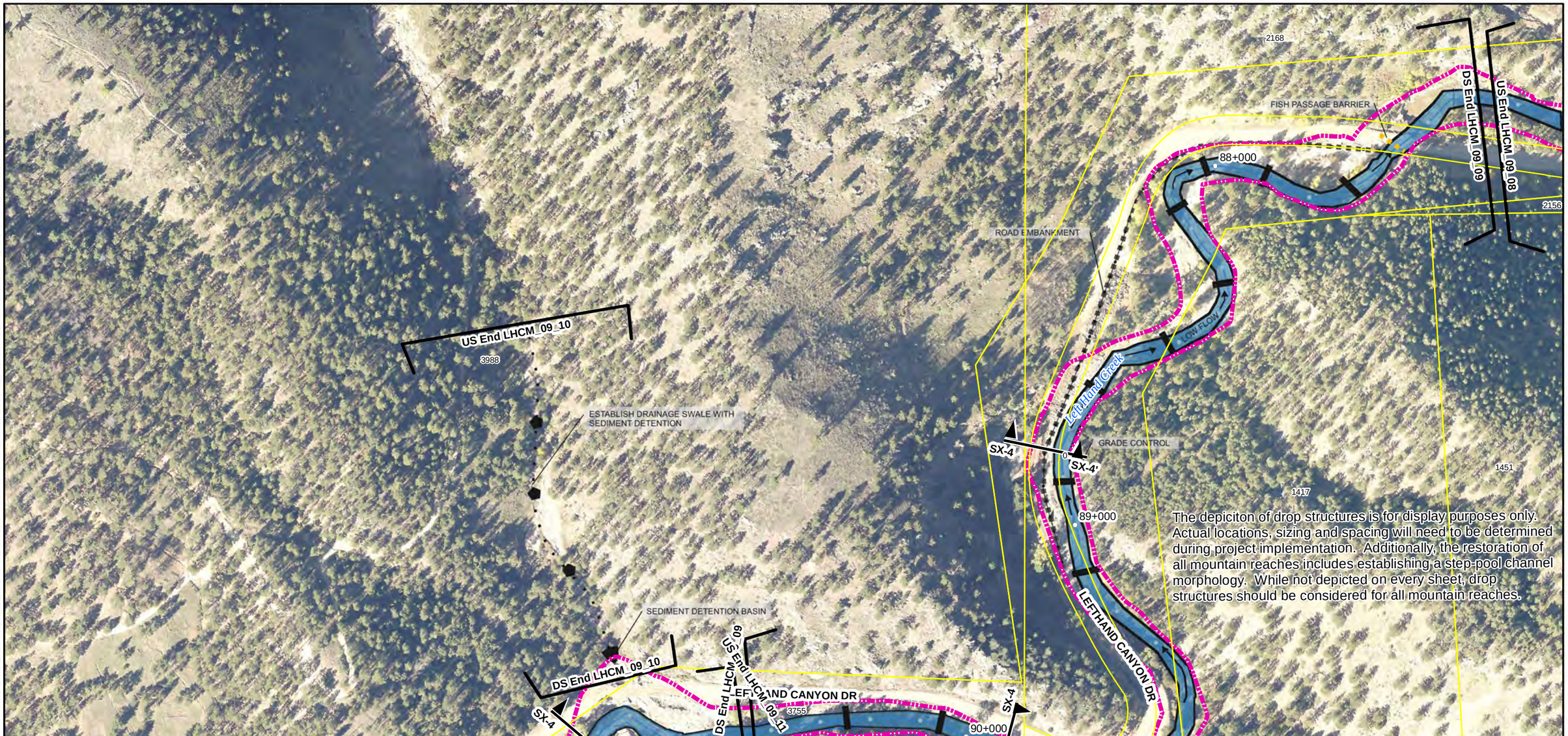
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_08_07, LHCM_09_08**

REACH(ES): **Reach 8** **Reach 9**

SHEET: **32**



Reach Typical Details:

1. Reach 9 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4
2. Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 89+500 to 90+400

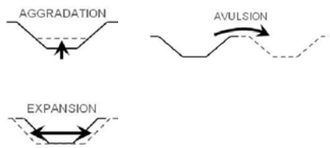
Special Cross-Sections:

Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 87+600 to 89+600
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 89+500 to 90+400

Project Descriptions:

1. Project LHCM_09_09: Improve road-river interface, perform stream restoration and develop fish passages. Also stabilize both the channel and floodplain and perform grade control measures.
2. Project LHCM_09_10: Control sediment and make drainage improvements along Forest Service road.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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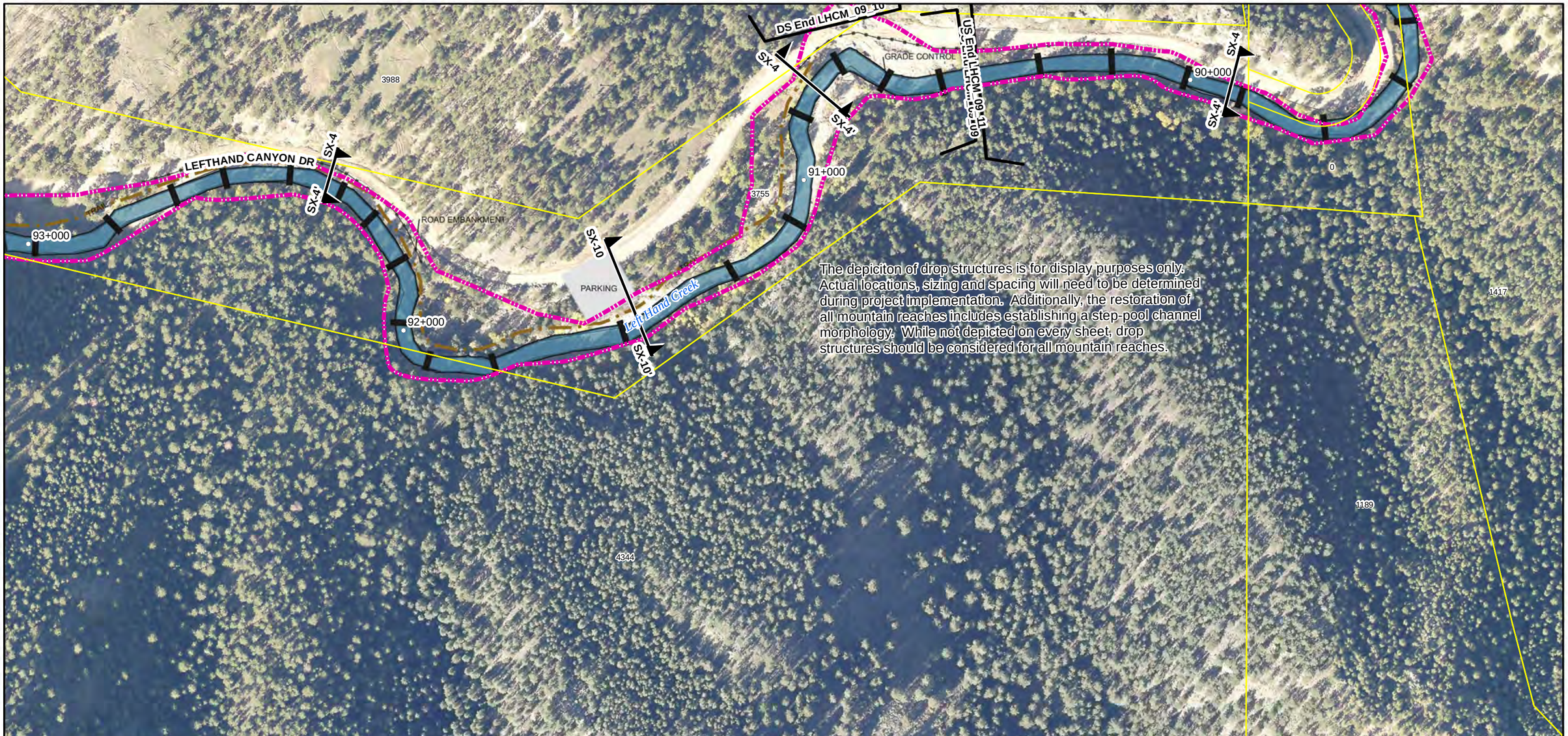
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_09_09, LHCM_09_10**

REACH(ES): **Reach 9**

SHEET: **33**



The depiciton of drop structures is for display purposes only. Actual locations, sizing and spacing will need to be determined during project implementation. Additionally, the restoration of all mountain reaches includes establishing a step-pool channel morphology. While not depicted on every sheet, drop structures should be considered for all mountain reaches.

Reach Typical Details:

1. Reach 9 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4
2. Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 92+200 to 92+700

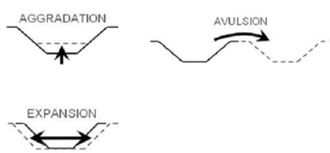
Special Cross-Sections:

Sec SX-10 - Left Hand Canyon Mountain Park, Sheet: S-6, Sta: 90+900 to 92+100
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 92+200 to 92+700
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 90+500 to 90+900
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 89+500 to 90+400

Project Descriptions:

1. Project LHCM_09_09: Improve road-river interface, perform stream restoration and develop fish passages. Also stabilize both the channel and floodplain and perform grade control measures.
2. Project LHCM_09_11: This project involves creation of mountain park that provides public access and recreation opportunities as well as riparian corridor enhancement and preservation.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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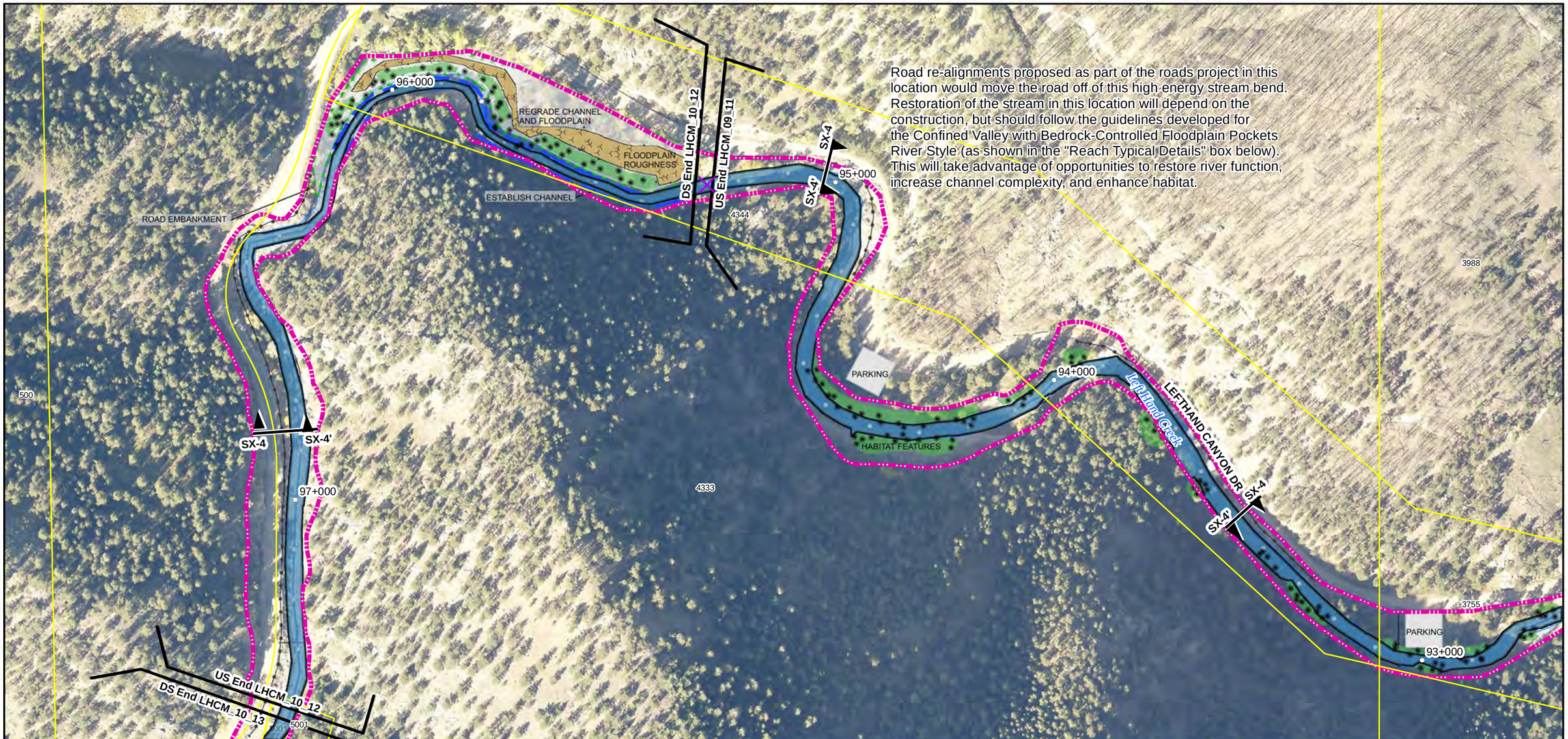
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_09_09, LHCM_09_11**

REACH(ES): **Reach 9**

SHEET: **34**



Reach Typical Details:

1. Reach 9 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4
2. Reach 10 River Style: Typical Confined Valley with Bedrock-controlled Floodplain Pockets Plan and Profile - See Sheet T-4

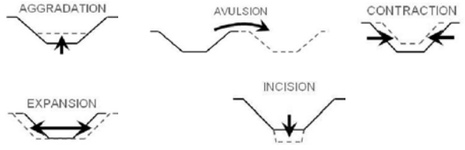
Special Cross-Sections:

Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 94+700 to 95+200
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 93+200 to 93+900
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 86+200 to 87+400

Project Descriptions:

1. Project LHCM_09_11: This project involves creation of mountain park that provides public access and recreation opportunities as well as riparian corridor enhancement and preservation.
2. Project LHCM_10_12: Improve the road-river interface, stabilize the channel and perform grade control measures.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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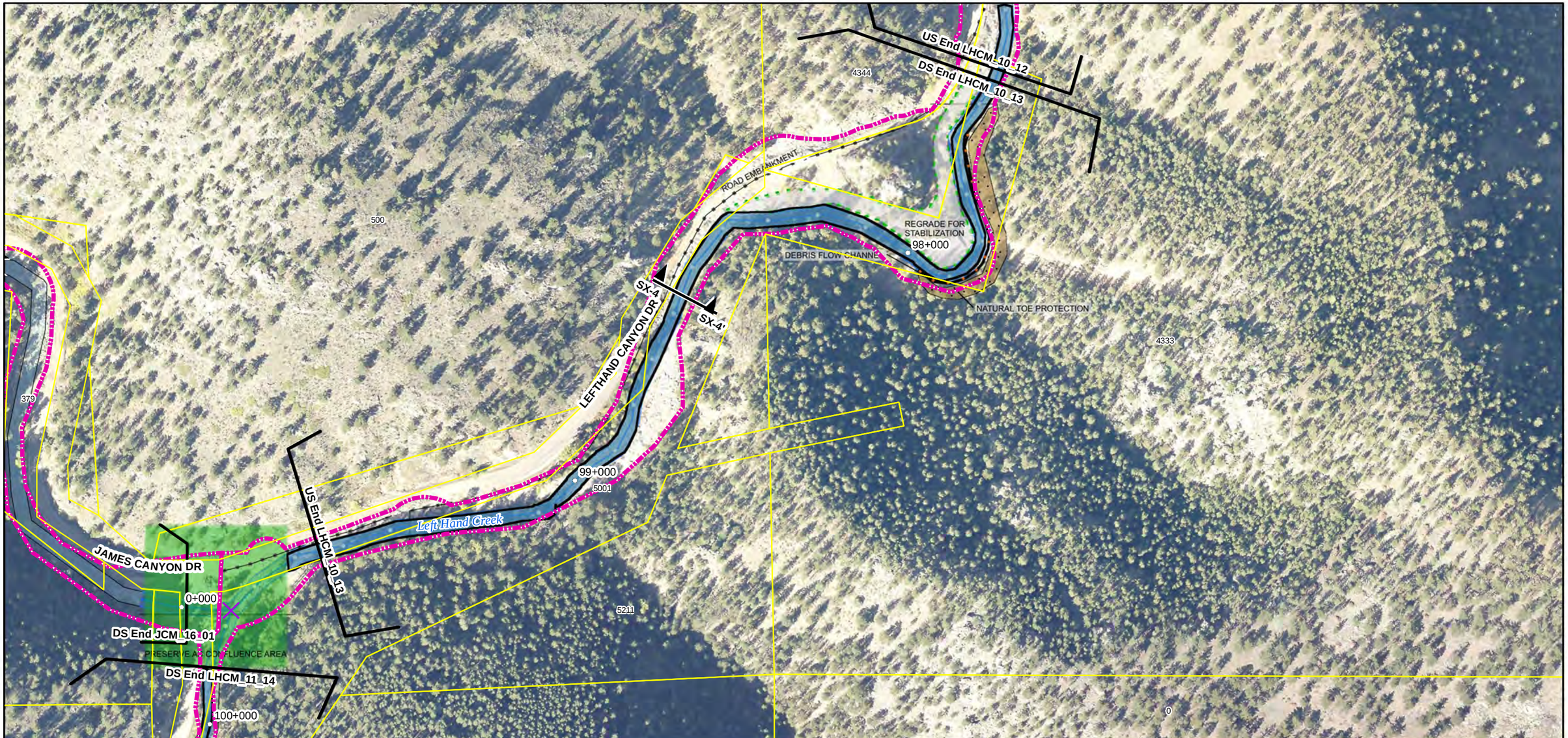
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_09_11, LHCM_10_12**

REACH(ES): **Reach 9** **Reach 10**

SHEET: **35**

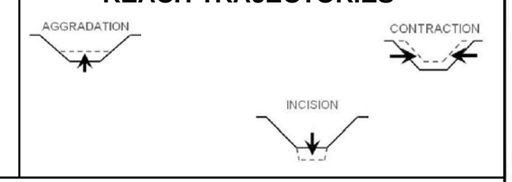


Reach Typical Details:
1. Reach 10 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4

Special Cross-Sections:
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 98+500 to 99+500

Project Descriptions:
1. Project LHCM_10_13: Improve the road-river interface and stabilize the channel.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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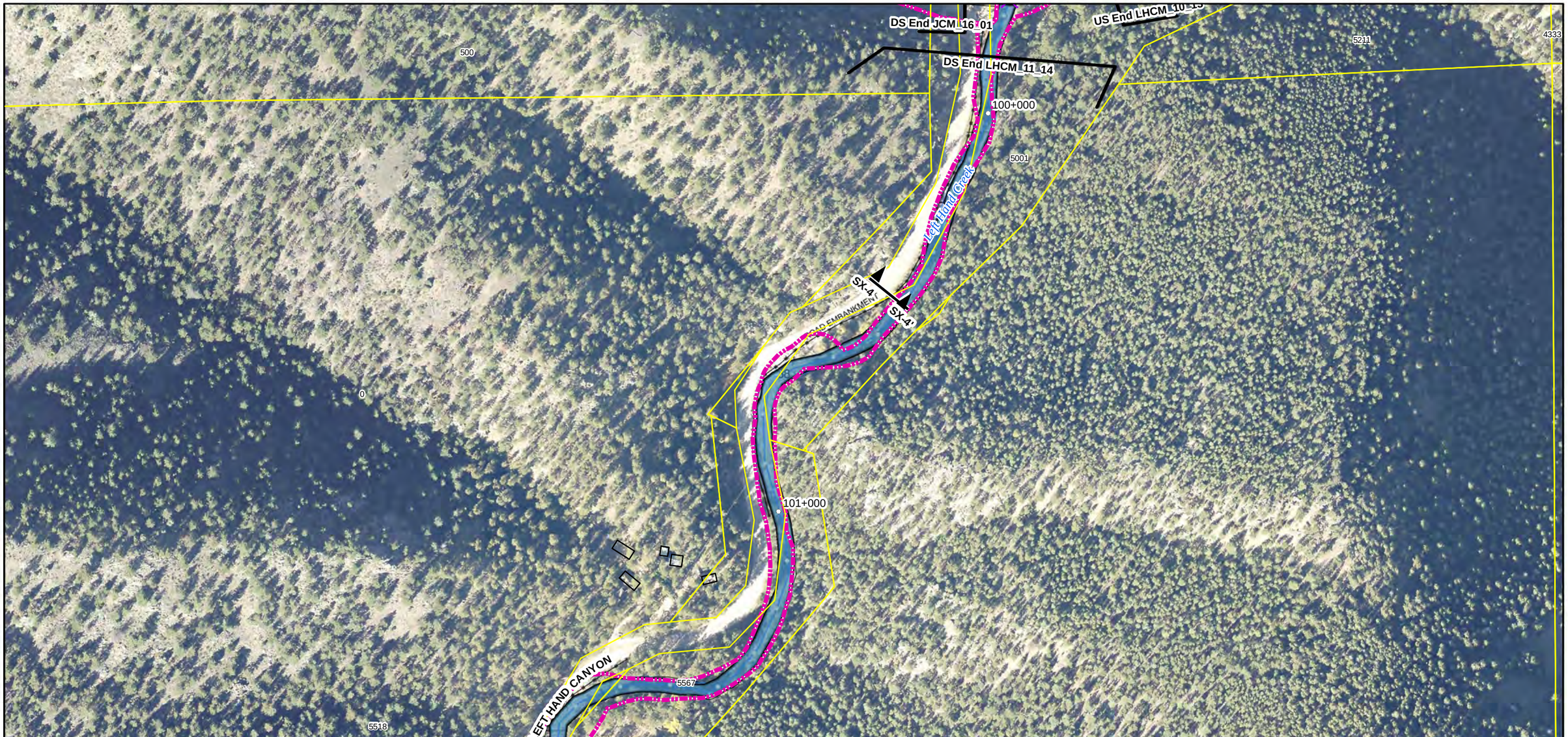
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_10_13**

REACH(ES): **Reach 10**

SHEET: **36**

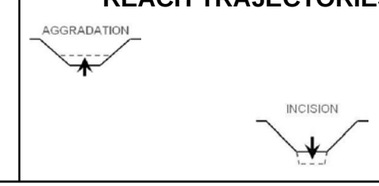


Reach Typical Details:
1. Reach 11 River Style: Confined Valley, No Floodplain - See Sheet T-5

Special Cross-Sections:
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 99+000 to 103+800

Project Descriptions:
1. Project LHCM_11_14: Improve the road-river interface here, stabilize the channel and perform grade control. Also develop a preserve at the confluence.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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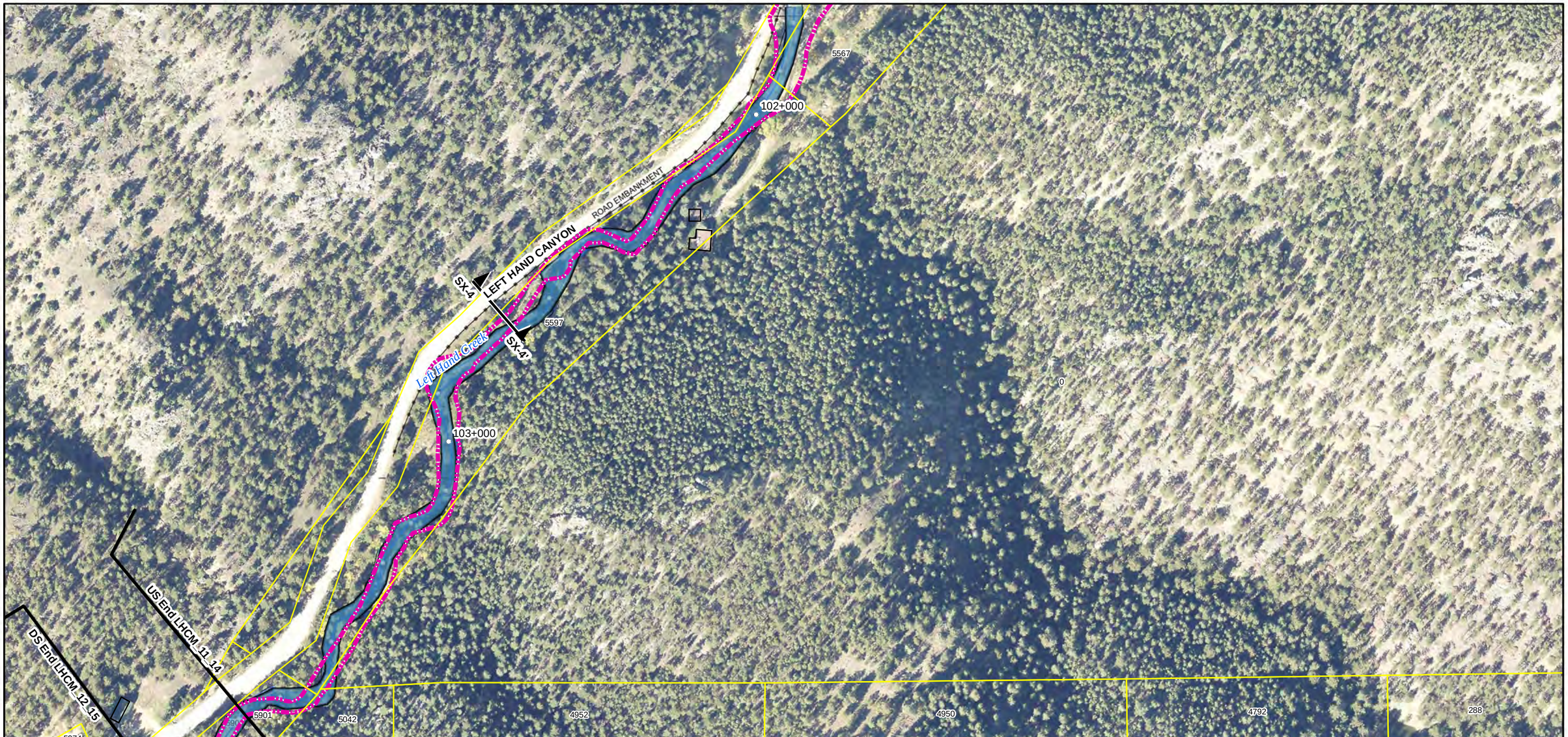
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_11_14**

REACH(ES): **Reach 11**

SHEET: **37**

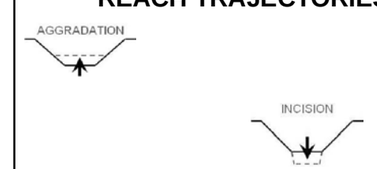


Reach Typical Details:
1. Reach 11 River Style: Confined Valley, No Floodplain - See Sheet T-5

Special Cross-Sections:
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 99+000 to 103+800

Project Descriptions:
1. Project LHCM_11_14: Improve the road-river interface here, stabilize the channel and perform grade control. Also develop a preserve at the confluence.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_11_14**

REACH(ES): **Reach 11**

SHEET: **38**

Reach Typical Details:

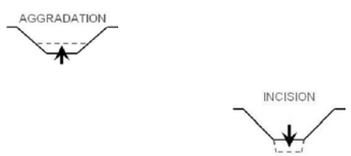
1. Reach 11 River Style: Confined Valley, No Floodplain - See Sheet T-5
2. Reach 12 River Style: Typical Confined Valley, No Floodplain Plan and Profile - See Sheet T-5

Special Cross-Sections:

Project Descriptions:

1. Project LHCM_11_14: Improve the road-river interface here, stabilize the channel and perform grade control. Also develop a preserve at the confluence.
2. Project LHCM_12_15: Re-size the crossing here to allow for aquatic organism passage and facilitate sediment transport.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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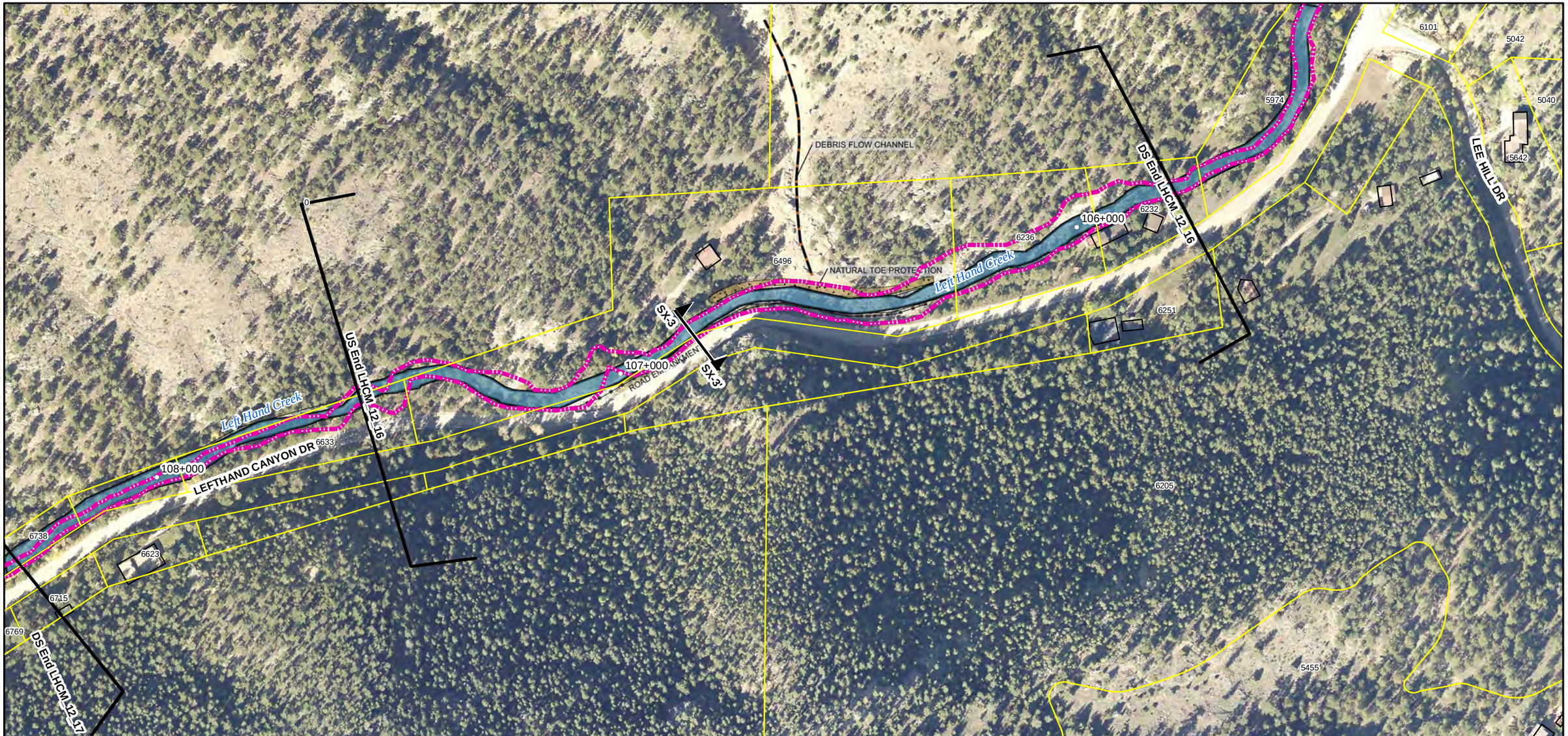
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_11_14, LHCM_12_15**

REACH(ES): **Reach 11 Reach 12**

SHEET: **39**



Reach Typical Details:
1. Reach 12 River Style: Confined Valley, No Floodplain - See Sheet T-5

Special Cross-Sections:
Sec SX-3 - Road-River Interface Confined Right, Sheet: S-8, Sta: 106+300 to 107+500

Project Descriptions:
1. Project LHCM_12_16: Improve the road-river interface, stabilize both the channel and toe of the local debris flow.

REACH TRAJECTORIES

AGGRADATION

1 " = 200 '

0 50 100 200 300 400 Feet

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LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_12_16**

REACH(ES): **Reach 12**

SHEET: **40**

Reach Typical Details:
1. Reach 12 River Style: Confined Valley, No Floodplain - See Sheet T-5

Special Cross-Sections:
Sec SX-3 - Road-River Interface Confined Right, Sheet: S-8, Sta: 108+400 to 110+100

Project Descriptions:
1. Project LHCM_12_17: For this project improve the road-river interface and stabilize the channel.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_12_17**

REACH(ES): **Reach 12**

SHEET: **41**

Reach Typical Details:
1. Reach 12 River Style: Confined Valley, No Floodplain - See Sheet T-5

Special Cross-Sections:
Sec SX-3 - Road-River Interface Confined Right, Sheet: S-8, Sta: 108+400 to 110+100

Project Descriptions:
1. Project LHCM_12_17: For this project improve the road-river interface and stabilize the channel.
2. Project LHCM_12_18: Stabilize the bank and channel at this site.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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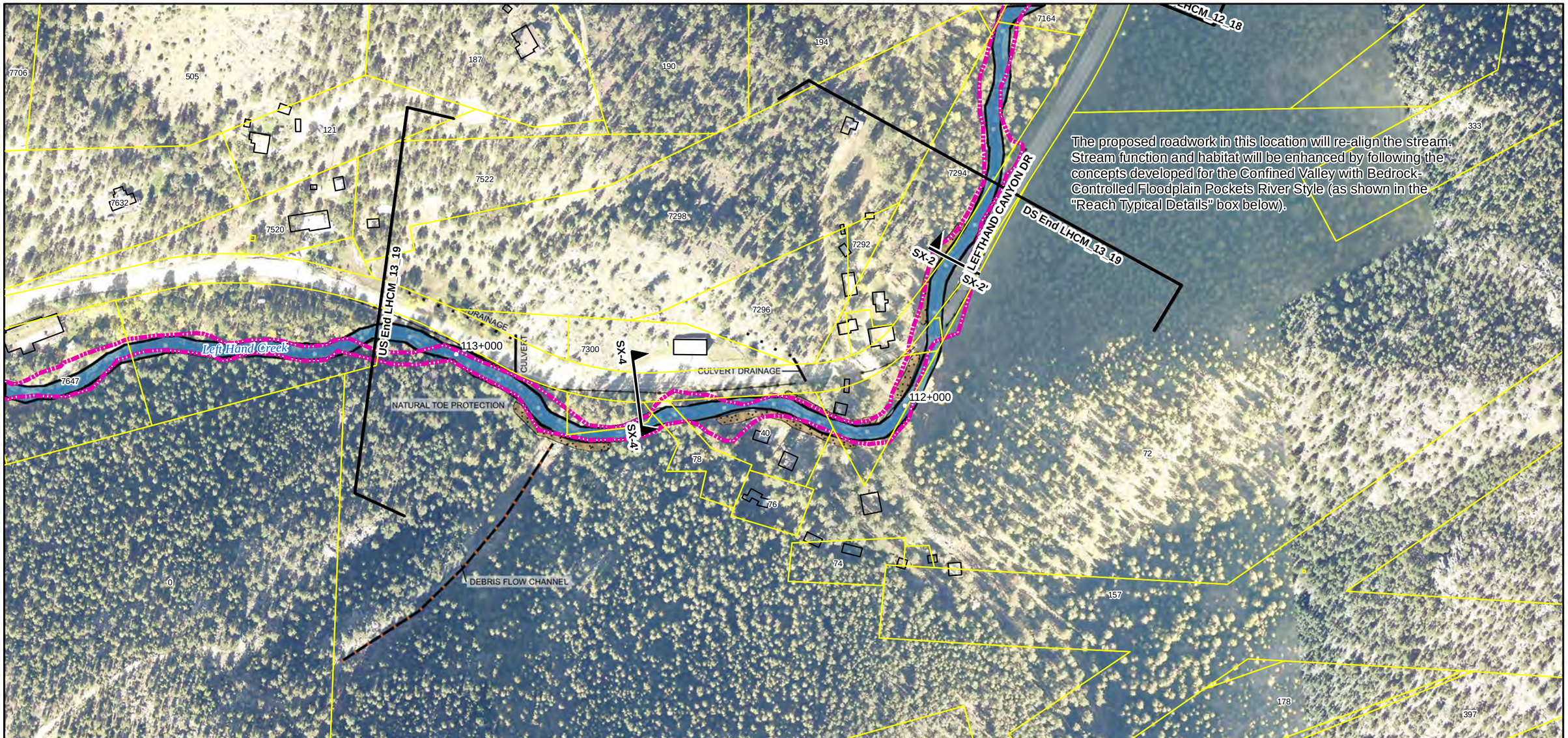
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_12_17, LHCM_12_18**

REACH(ES): **Reach 12**

SHEET: **42**

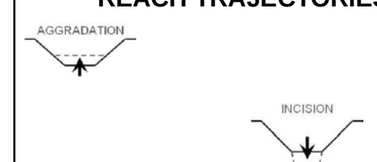


Reach Typical Details:
1. Reach 13 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4

Special Cross-Sections:
Sec SX-2 - Road-River Interface with Pocket Right, Sheet: S-9, Sta: 111+500 to 111+900
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 112+000 to 113+200

Project Descriptions:
1. Project LHCM_13_19: Improve drainage for the fire station, include river crossings and improve the road-river interface. Stabilize the toe of the local debris flow and stabilize the channel as needed.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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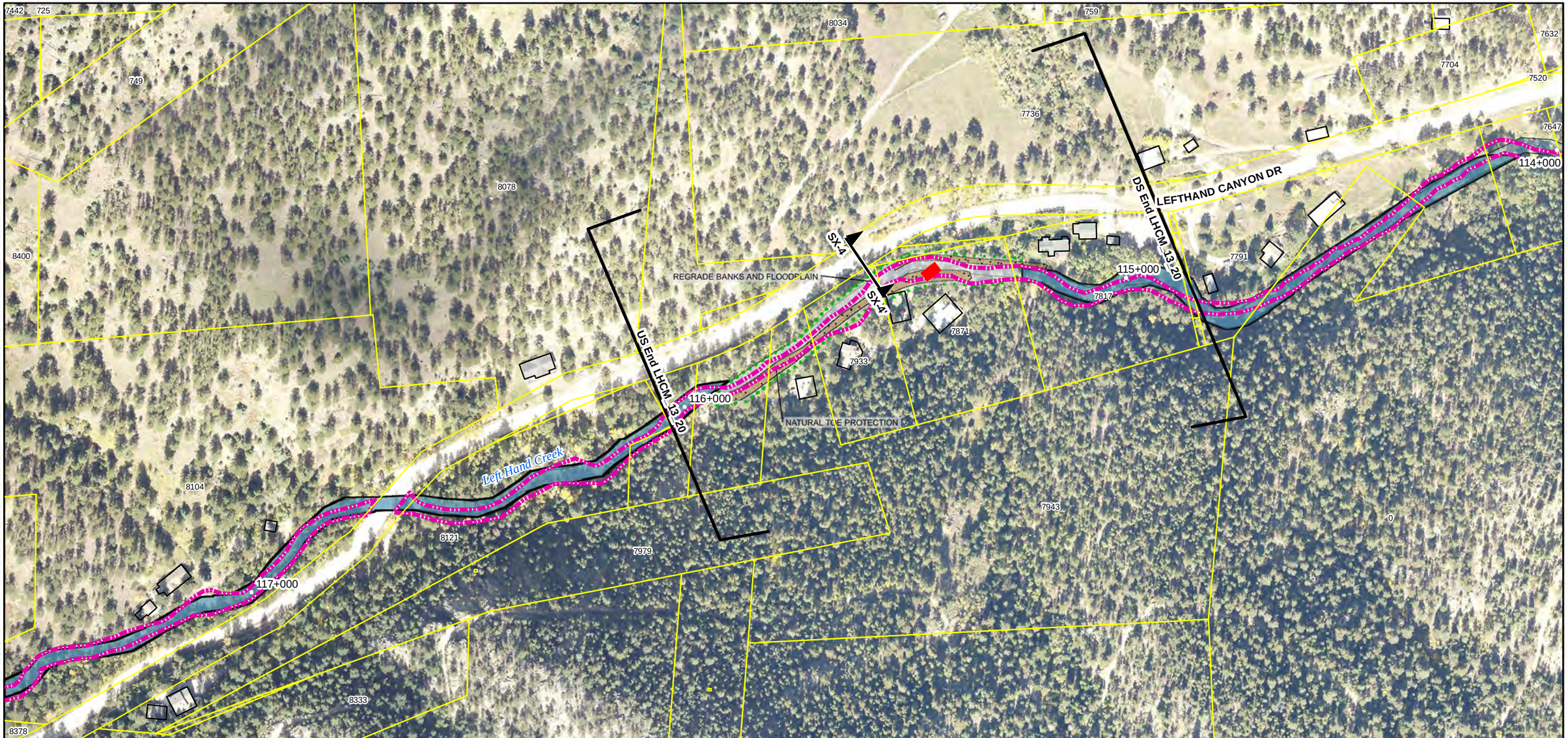
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_13_19**

REACH(ES): **Reach 13**

SHEET: **43**

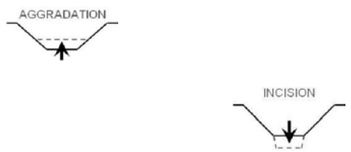


Reach Typical Details:
1. Reach 13 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4

Special Cross-Sections:
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 115+000 to 116+000

Project Descriptions:
1. Project LHCM_13_20: For this project, evaluate any shared or low-water private crossings, remove any unstable berms, grade the floodplain and stabilize the channel.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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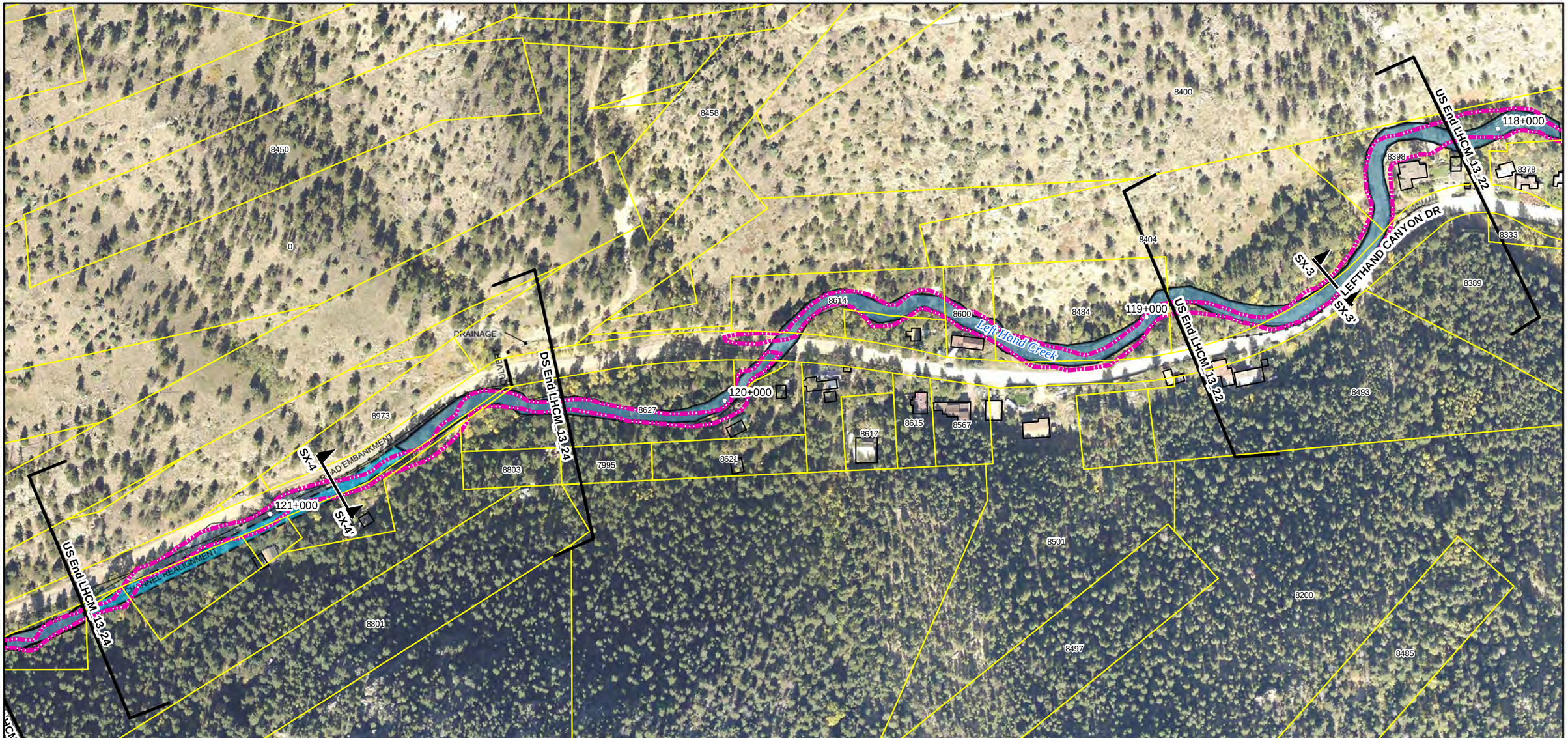
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_13_20**

REACH(ES): **Reach 13**

SHEET: **44**



Reach Typical Details:

1. Reach 13 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4
2. Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 120+300 to 121+400

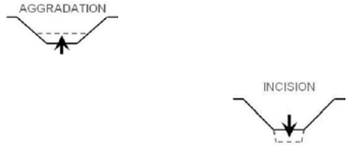
Special Cross-Sections:

Sec SX-3 - Road-River Interface Confined Right, Sheet: S-8, Sta: 118+200 to 118+900
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 120+300 to 121+400
See Detail - Sediment Detention Pond, Sheet: D-1

Project Descriptions:

1. Project LHCM_13_22: Improve the road road-river interface at this site and stabilize both the channel and bank.
2. Project LHCM_13_24: For this project straighten the channel, cut into the channel bed 3-6' and include grade control measures.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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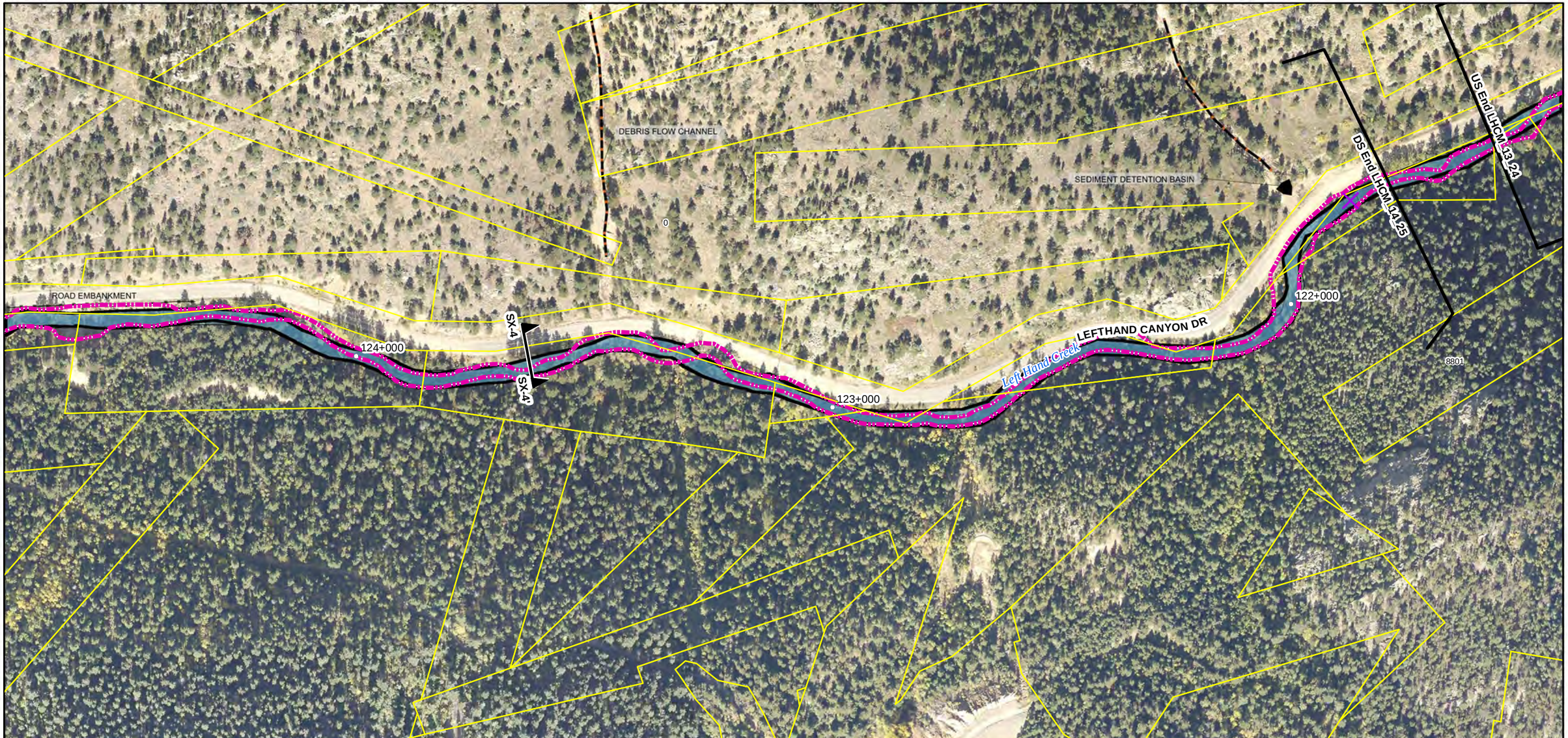
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_13_22, LHCM_13_24**

REACH(ES): **Reach 13**

SHEET: **45**



Reach Typical Details:
1. Reach 14 River Style: Confined Valley, No Floodplain - See Sheet T-5

Special Cross-Sections:
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 121+700 to 126+300

Project Descriptions:
1. Project LHCM_14_25: For this project improve the road-river interface and stabilize the channel and banks.

REACH TRAJECTORIES

EXPANSION

1 " = 200 '

0 50 100 200 300 400 Feet

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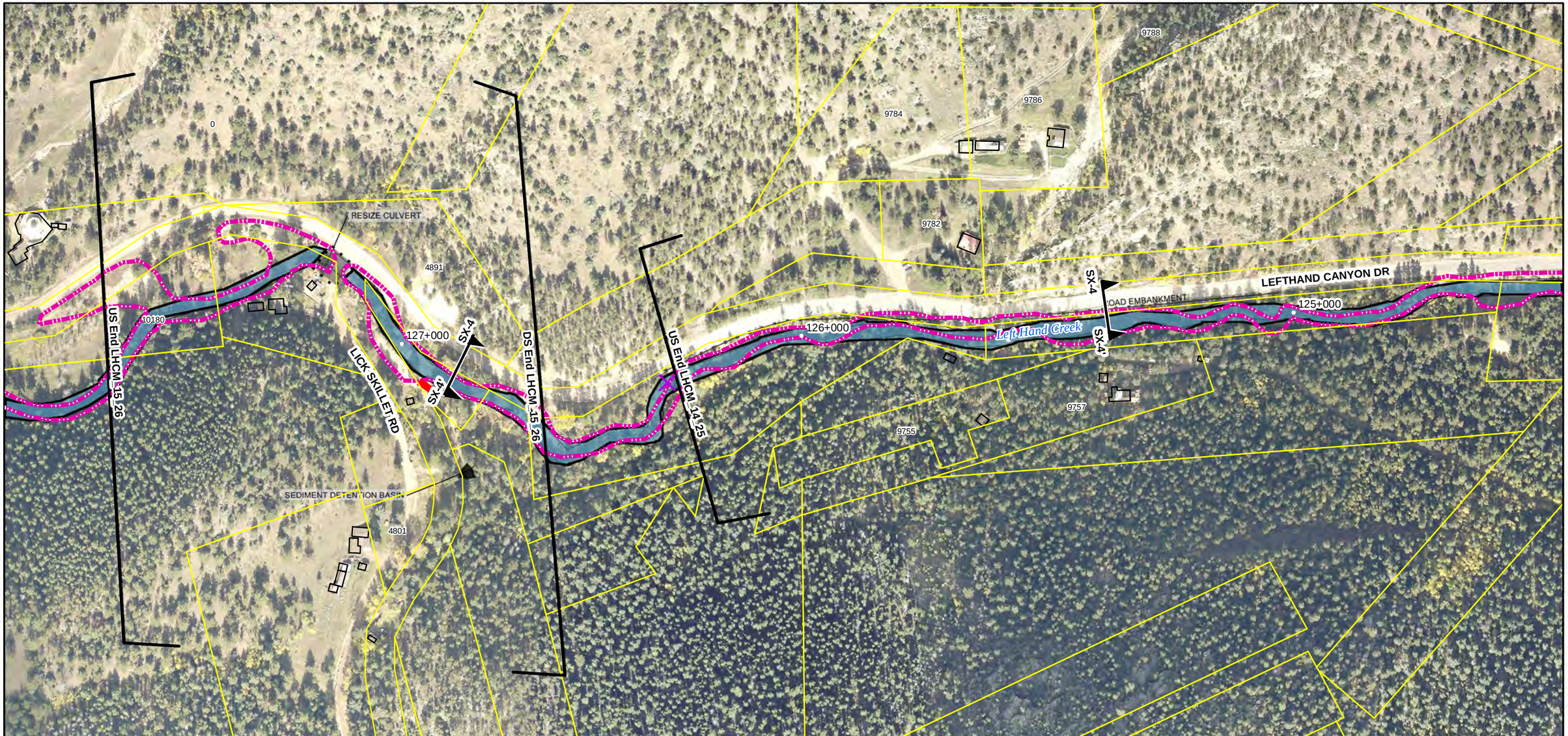
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_14_25**

REACH(ES): **Reach 14**

SHEET: **46**



Reach Typical Details:

1. Reach 14 River Style: Confined Valley, No Floodplain - See Sheet T-5
2. Reach 15 River Style: Typical Headwater Plan and Profile - See Sheet T-6

Special Cross-Sections:

Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 121+700 to 126+300

Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 126+700 to 127+200

Project Descriptions:

1. Project LHCM_14_25: For this project improve the road-river interface and stabilize the channel and banks.
2. Project LHCM_15_26: For this project develop stream crossing Improvements and stabilize the channel. Constructing a sediment detention basin on the ephemeral tributary can help reduce sediment loading from Lickskillet Road.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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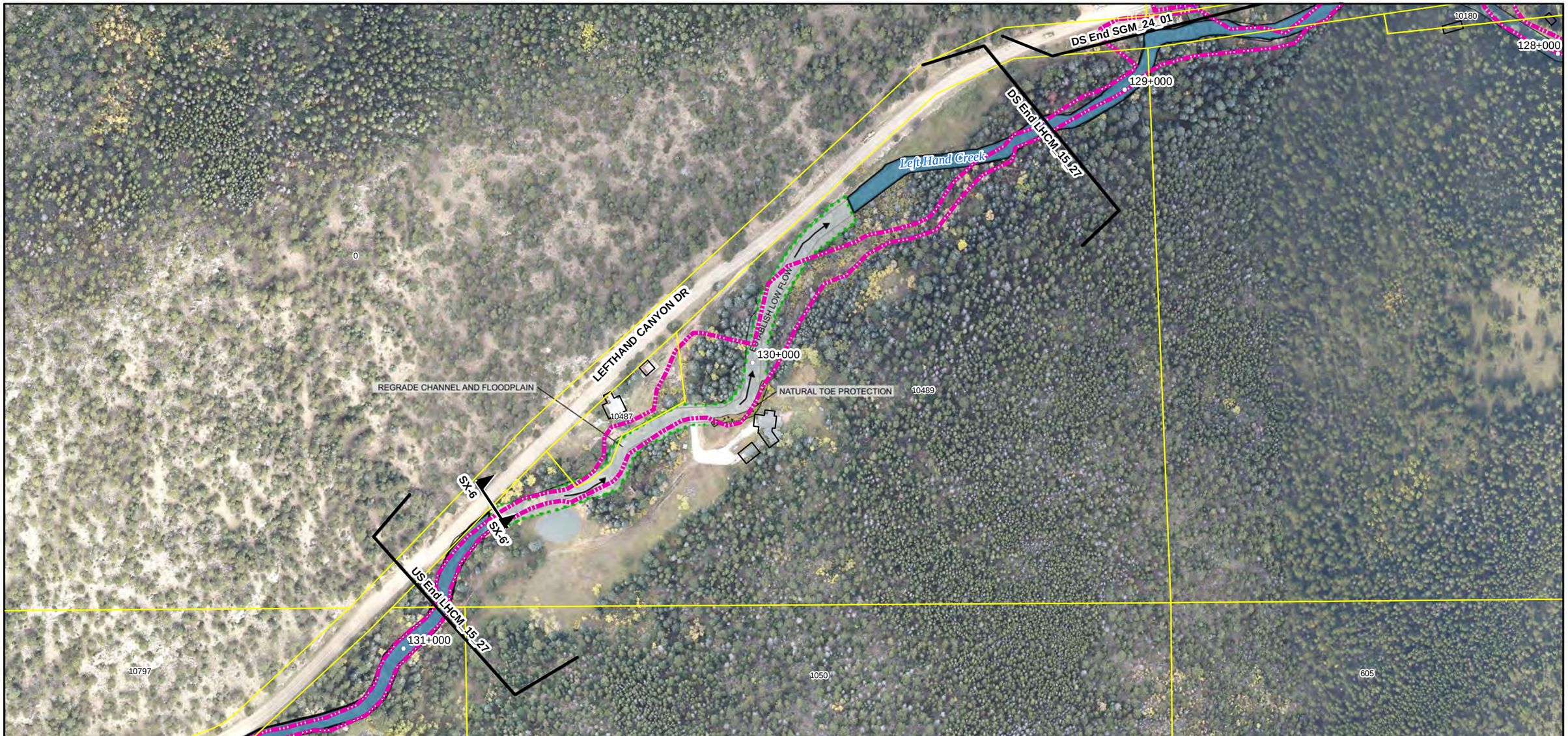
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_14_25, LHCM_15_26**

REACH(ES): **Reach 14 Reach 15**

SHEET: **47**



Reach Typical Details:
1. Reach 15 River Style: Headwater - See Sheet T-6

Special Cross-Sections:
Sec SX-6 - Road-River Interface Headwater Left, Sheet: S-8, Sta: 130+600 to 130+800

Project Descriptions:
1. Project LHCM_15_27: Restore channel capacity, regrade the floodplain and stabilize the channel banks where appropriate.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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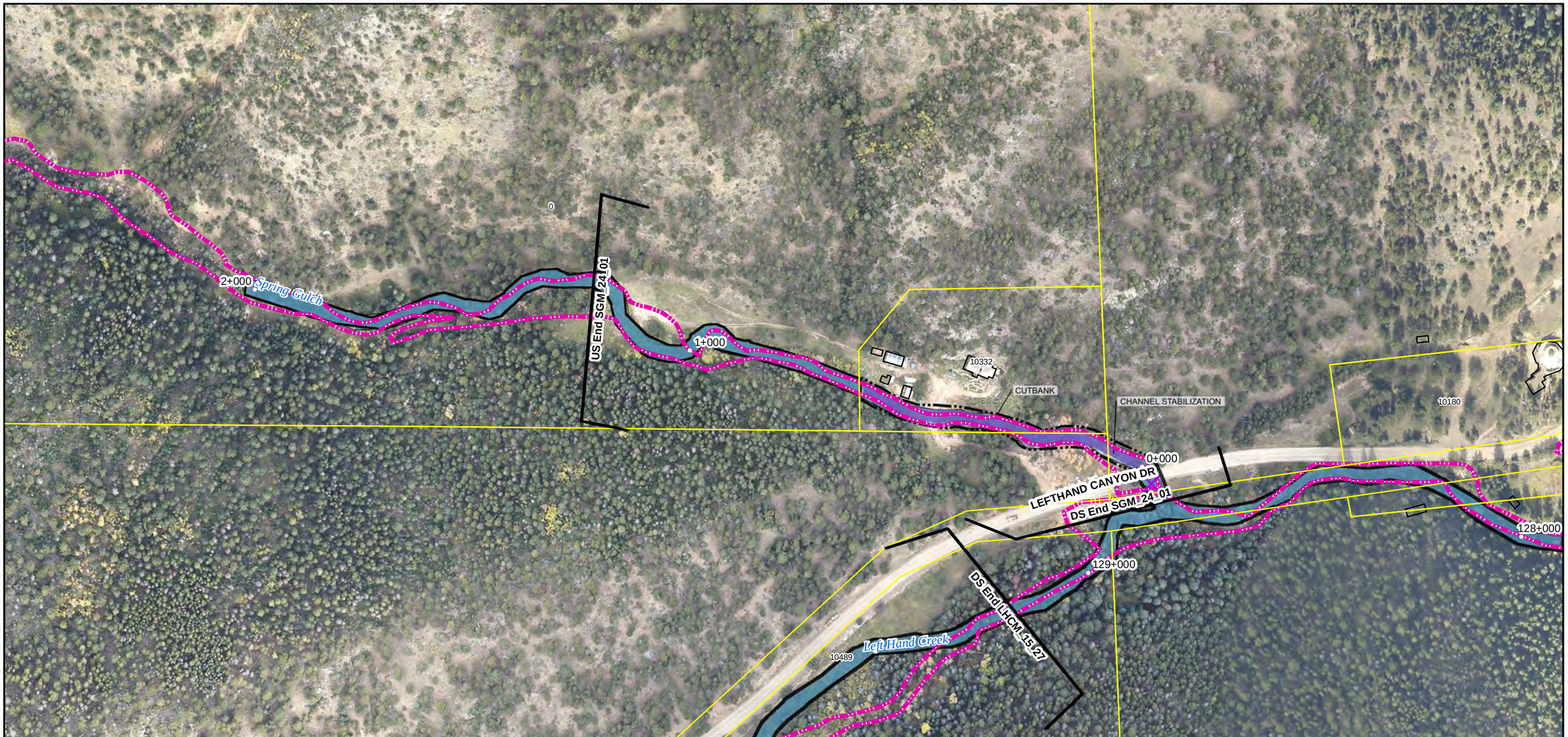
BOULDER COUNTY, COLORADO

PROJECT(S): **LHCM_15_27**

REACH(ES): **Reach 15**

SHEET: **48**



Reach Typical Details:
1. Reach 24 River Style: Headwater - See Sheet T-6

Special Cross-Sections:

Project Descriptions:
1. Project SGM_24_01: For this project stabilize the channel banks to control sediment inputs.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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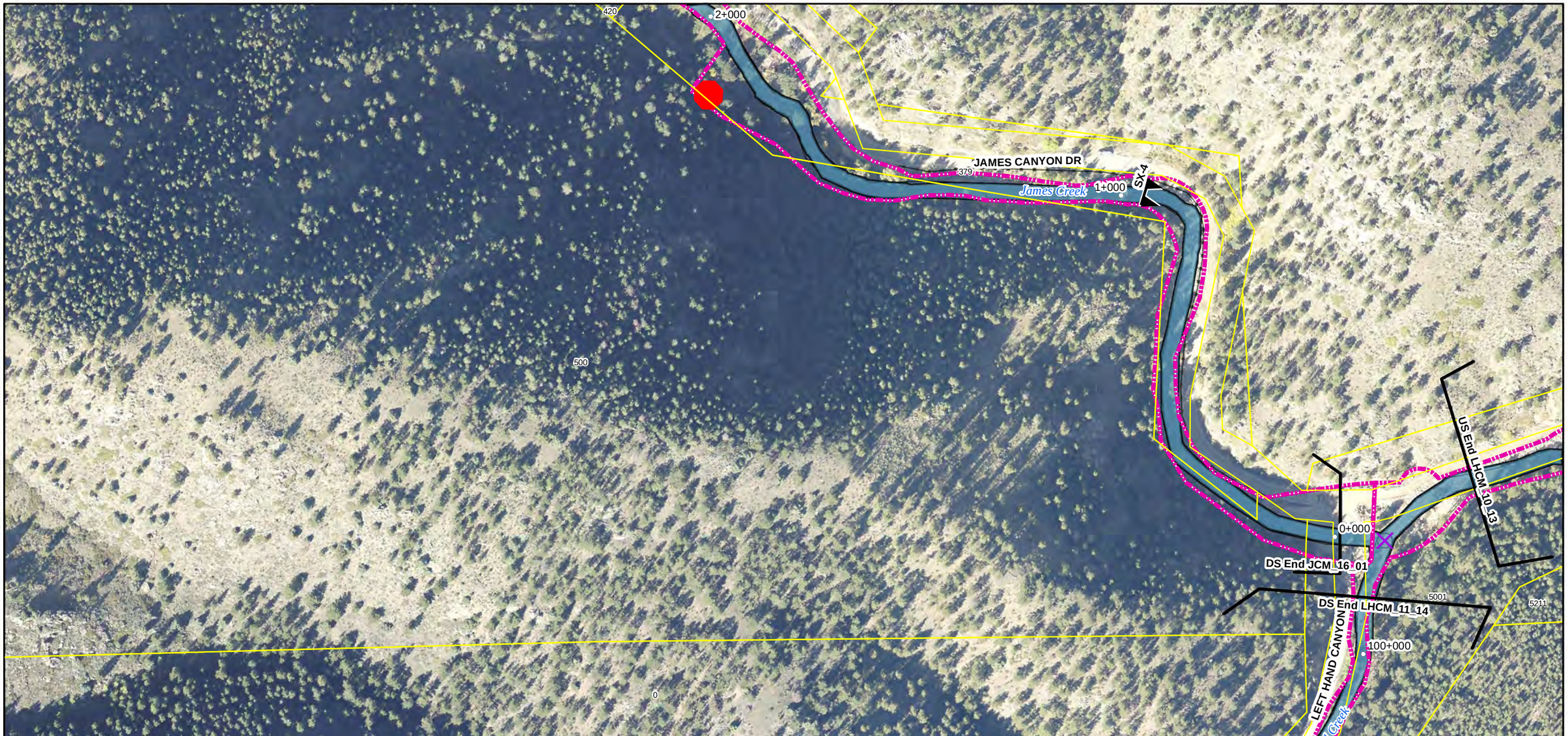
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **SGM_24_01**

REACH(ES): **Reach 24**

SHEET: **49**

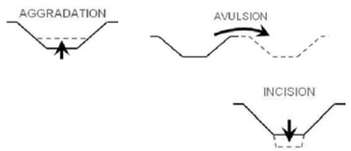


Reach Typical Details:
1. Reach 16 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4

Special Cross-Sections:
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 0+000 to 1+500

Project Descriptions:
1. Project JCM_16_01: Install controls for an unstable sediment source, provide bank stabilization, grade control, as well as hillside drainage. Also provide additional conveyance capacity. Refer to Sheets 06-07.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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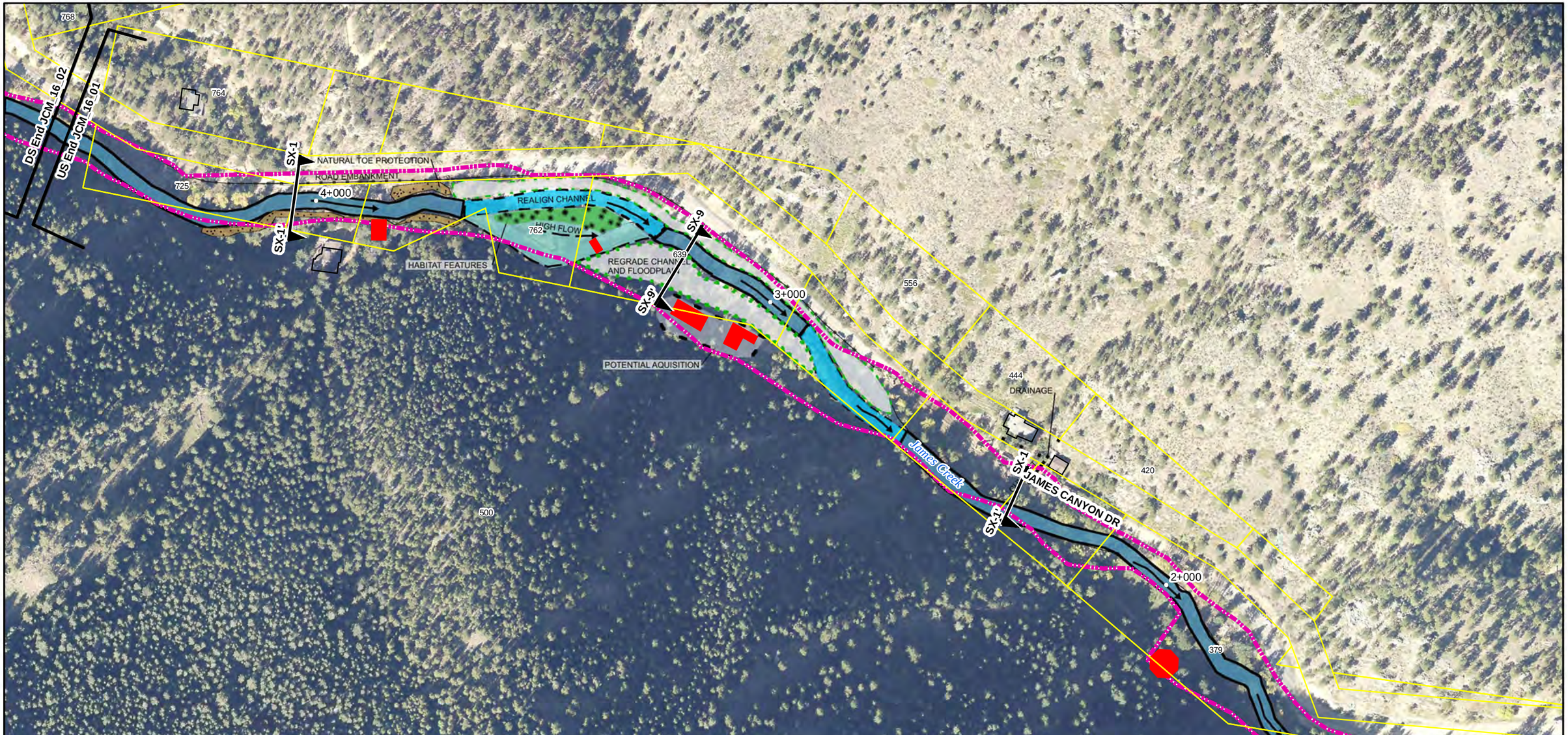
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **JCM_16_01**

REACH(ES): **Reach 16**

SHEET: **50**

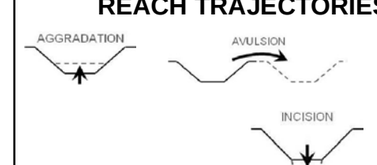


Reach Typical Details:
1. Reach 16 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4

Special Cross-Sections:
Sec SX-1 - Road-River Interface with Pocket Left, Sheet: S-9, Sta: 2+200 to 2+800
Sec SX-1 - Road-River Interface with Pocket Left, Sheet: S-9, Sta: 3+700 to 4+600
Sec SX-9 - Reach 16 Neighborhood, Sheet: S-7, Sta: 2+800 to 3+700

Project Descriptions:
1. Project JCM_16_01: Install controls for an unstable sediment source, provide bank stabilization, grade control, as well as hillside drainage. Also provide additional conveyance capacity. Refer to Sheets 06-07.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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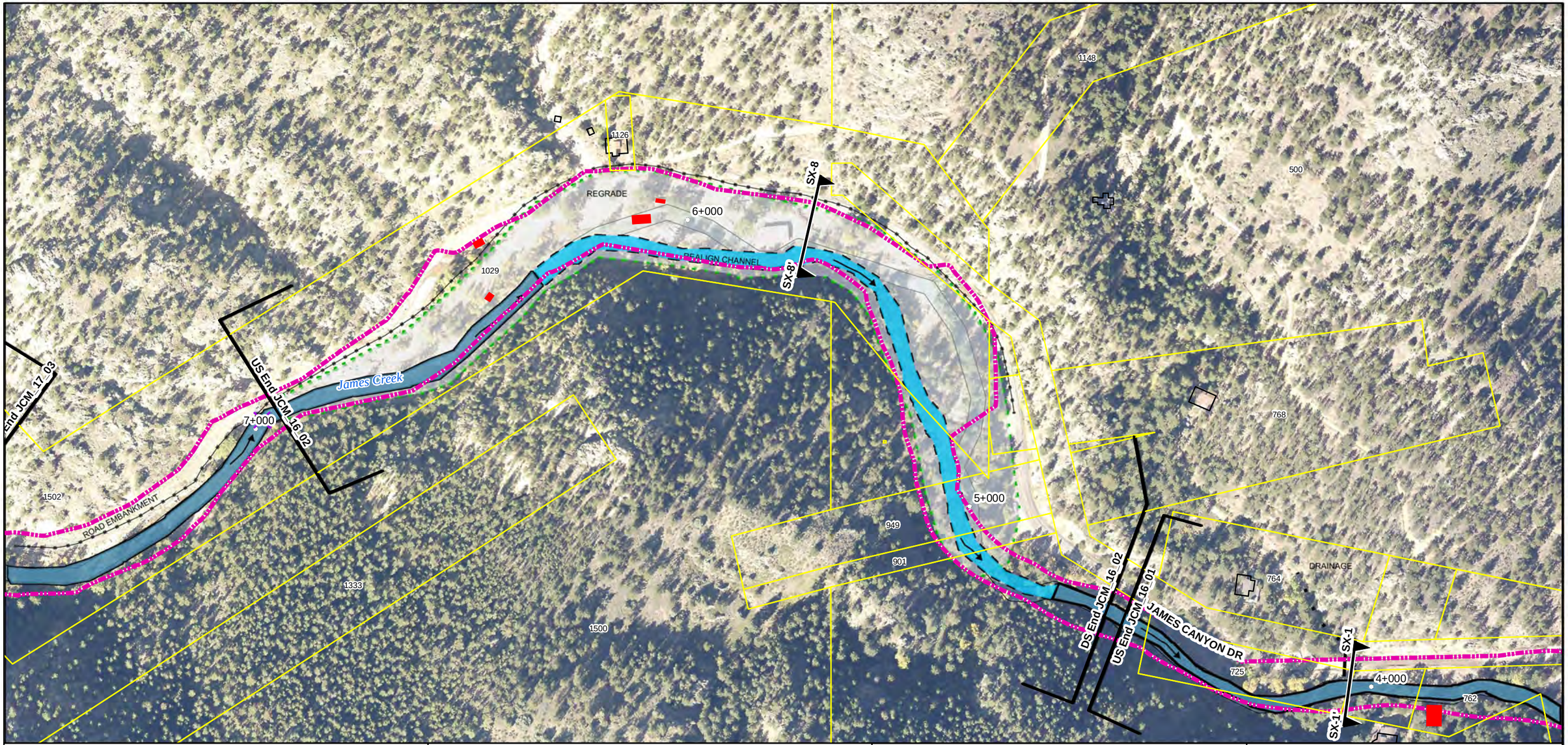
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **JCM_16_01**

REACH(ES): **Reach 16**

SHEET: **51**



Reach Typical Details:

1. Reach 16 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4
2. Reach 17 River Style: Typical Confined Valley, No Floodplain Plan and Profile - See Sheet T-5

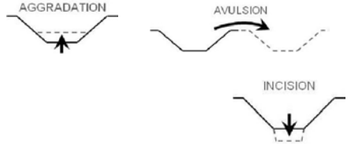
Special Cross-Sections:

Sec SX-1 - Road-River Interface with Pocket Left, Sheet: S-9, Sta: 3+700 to 4+600
Sec SX-8 - 1126 James Canyon, Sheet: S-7, Sta: 4+700 to 7+000

Project Descriptions:

1. Project JCM_16_01: Install controls for an unstable sediment source, provide bank stabilization, grade control, as well as hillside drainage. Also provide additional conveyance capacity. Refer to Sheets 06-07.
2. Project JCM_16_02: This project is located in James Canyon (1029 - 768). Modify channel to the Farmers typical cross section with Pocket Floodplain.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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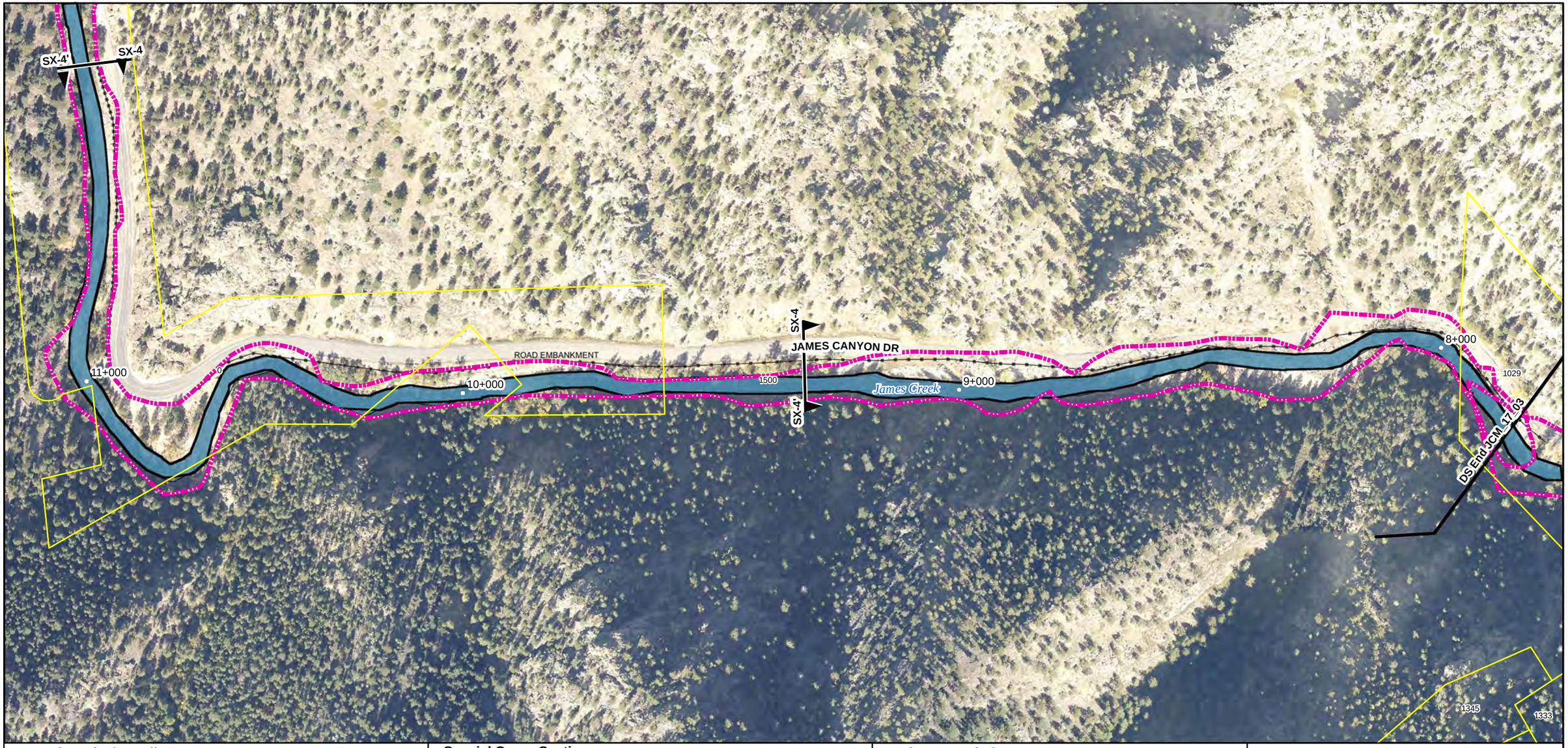
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **JCM_16_01, JCM_16_02**

REACH(ES): **Reach 16 Reach 17**

SHEET: **52**



Reach Typical Details:
1. Reach 17 River Style: Confined Valley, No Floodplain - See Sheet T-5

Special Cross-Sections:
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 7+800 to 10+400
Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 11+200 to 12+400

Project Descriptions:
1. Project JCM_17_03: Improve the road-river interface and stabilize the channel. Road construction has created choke point with adjacent bedrock. Opportunities to expand the stream width should be considered.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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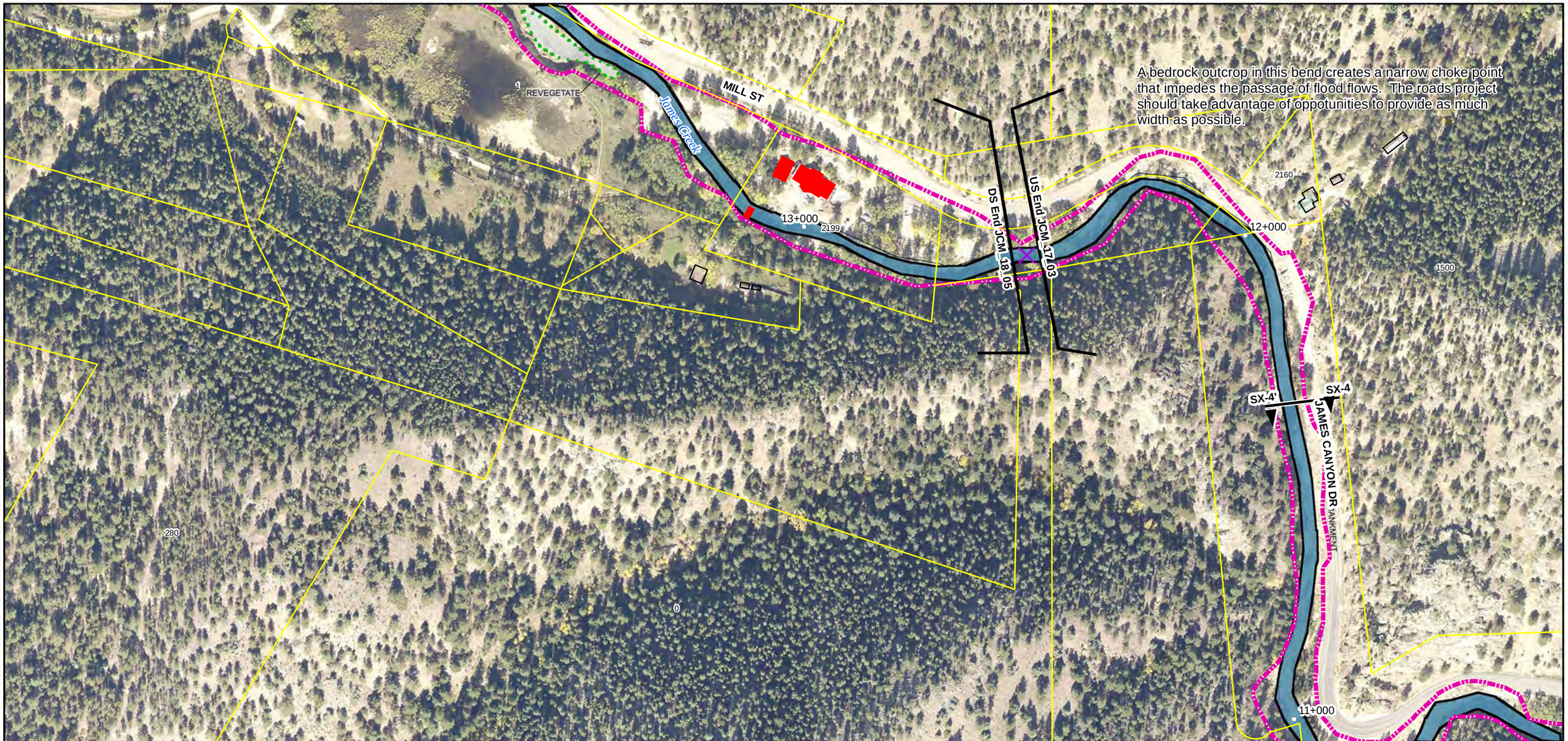
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **JCM_17_03**

REACH(ES): **Reach 17**

SHEET: **53**



Reach Typical Details:

1. Reach 17 River Style: Confined Valley, No Floodplain - See Sheet T-5
2. Reach 18 River Style: Typical Confined Valley with Bedrock-controlled Floodplain Pockets Plan and Profile - See Sheet T-4

Special Cross-Sections:

Sec SX-4 - Road-River Interface Confined Left, Sheet: S-8, Sta: 11+200 to 12+400

Project Descriptions:

1. Project JCM_17_03: Improve the road-river interface and stabilize the channel. Opportunities to expand the stream width at noted choke point during road construction should be considered.
2. Project JCM_18_05: Re-vegetate graded areas shaped during EWP project. (Jamestown has applied for a grant for this.) Add channel habitat features and re-assess drop structures for fish passage.

REACH TRAJECTORIES

AGGRADATION

1 " = 200 '

0 50 100 200 300 400 Feet

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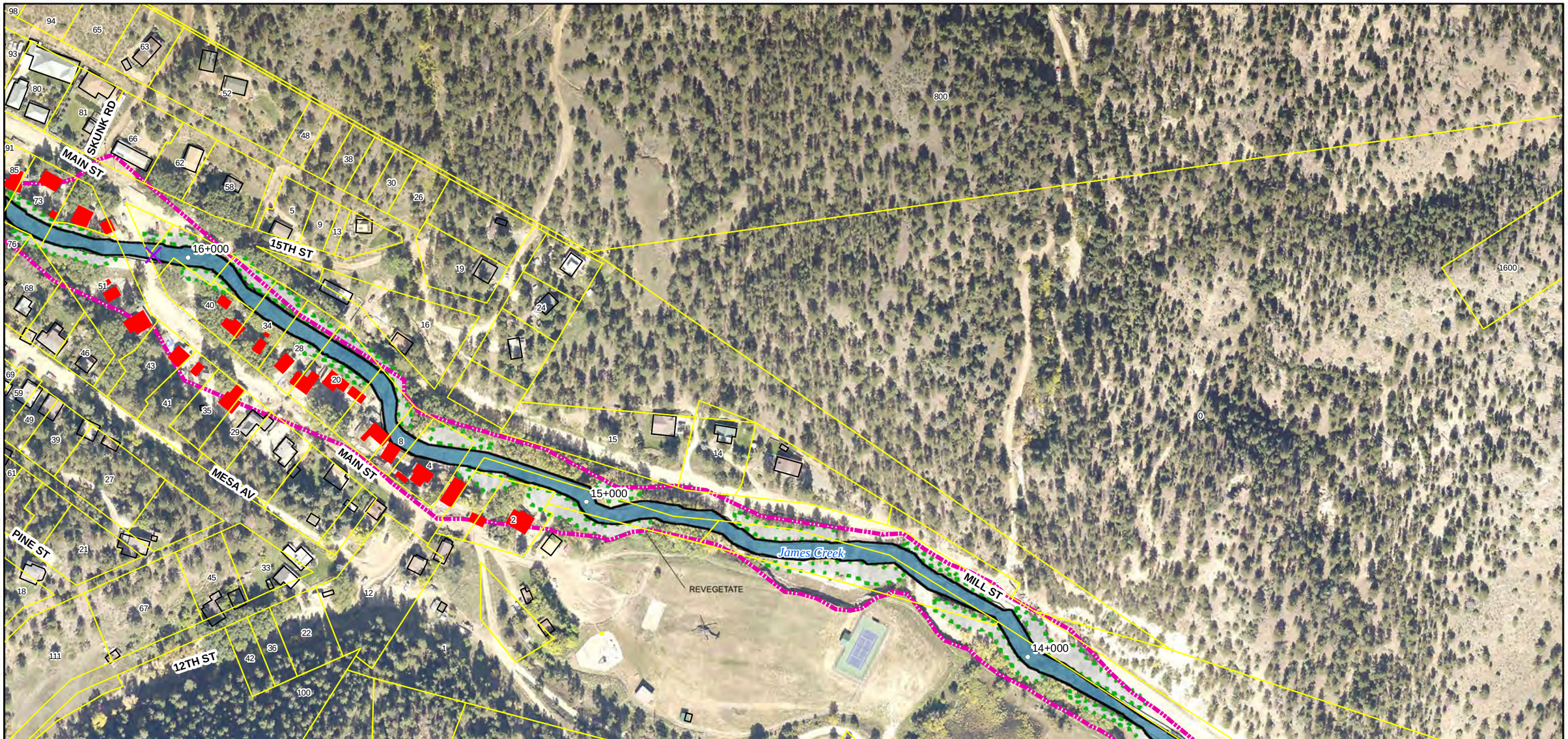
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **JCM_17_03, JCM_18_05**

REACH(ES): **Reach 17 Reach 18**

SHEET: **54**



Reach Typical Details:
1. Reach 18 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4
2. Reach 19 River Style: Typical Confined Valley with Bedrock-controlled Floodplain Pockets Plan and Profile - See Sheet T-4

Special Cross-Sections:

Project Descriptions:
1. Project JCM_18_05: Revegetate graded areas shaped during EWP project. (Jamestown has applied for a grant for this.) Add channel habitat features and re-assess drop structures for fish passage.

REACH TRAJECTORIES

AGGRADATION

1 " = 200 '

0 50 100 200 300 400 Feet

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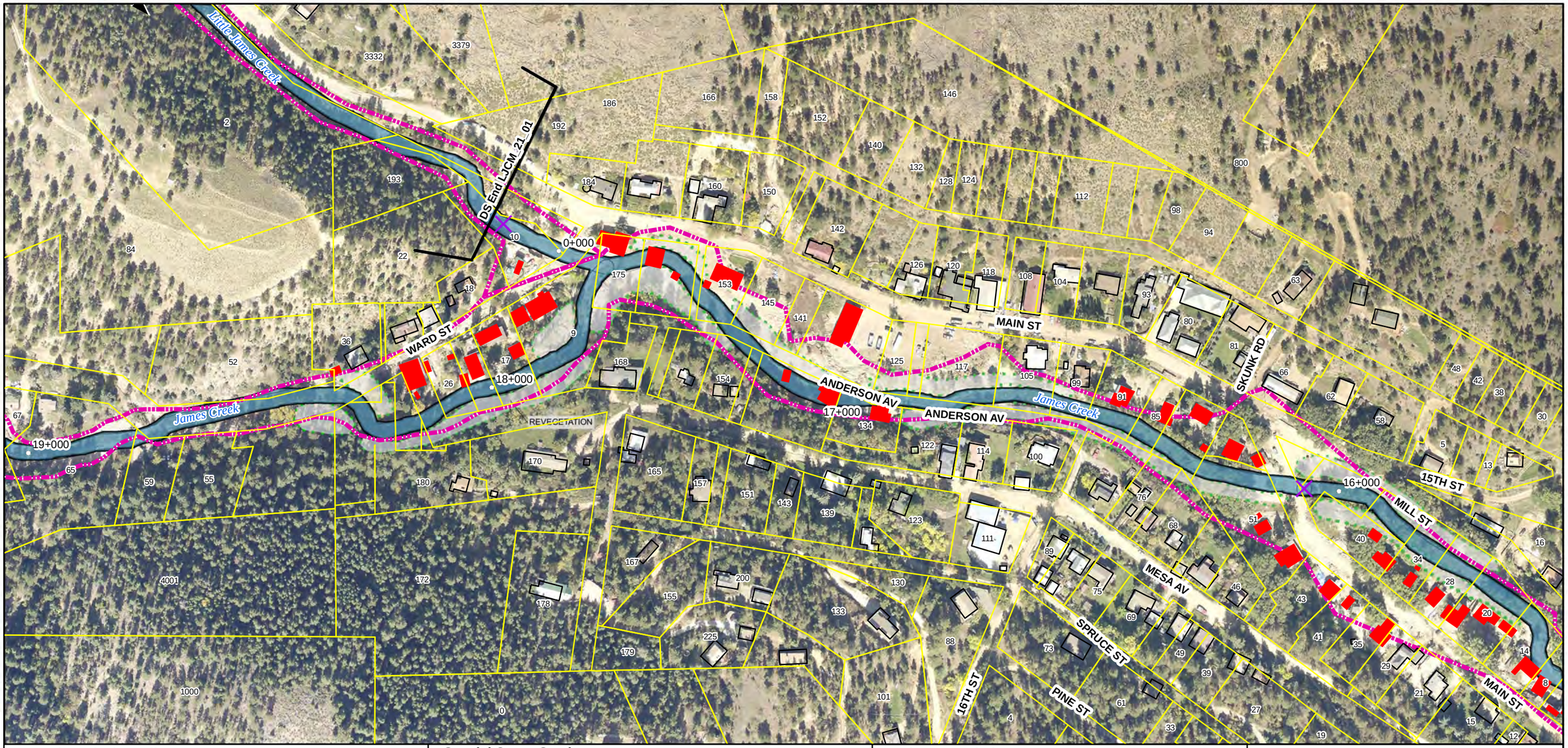
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **JCM_18_05**

REACH(ES): **Reach 18 Reach 19**

SHEET: **55**



Reach Typical Details:
1. Reach 19 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4

Special Cross-Sections:

Project Descriptions:
1. Project JCM_18_05: Revegetate graded areas shaped during EWP project. (Jamestown has applied for a grant for this.) Add channel habitat features and re-assess drop structures for fish passage.

REACH TRAJECTORIES

AGGRADATION

1 " = 200 '

0 50 100 200 300 400 Feet

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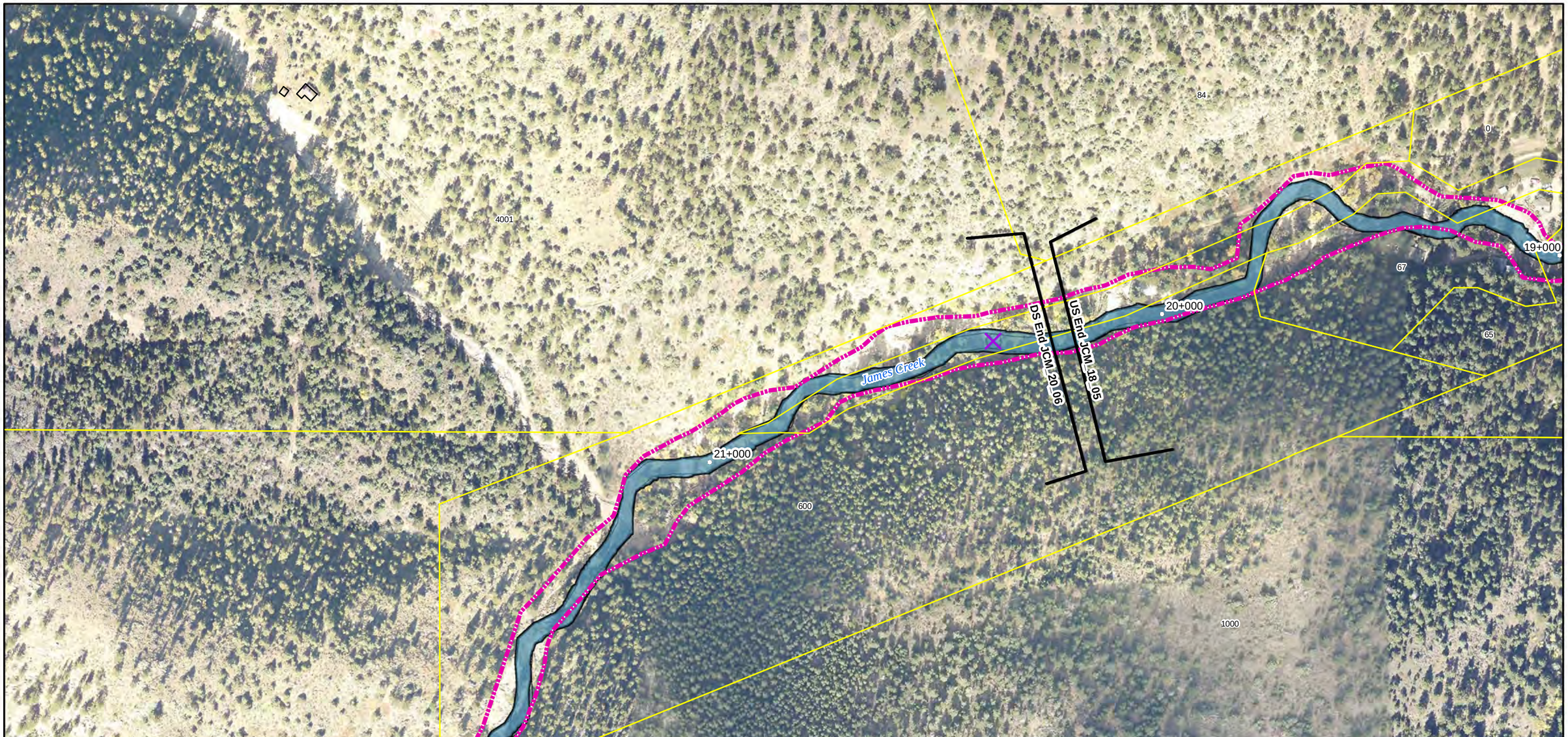
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **JCM_18_05**

REACH(ES): **Reach 19**

SHEET: **56**

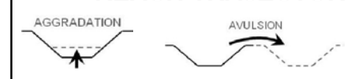


Reach Typical Details:
1. Reach 19 River Style: Confined Valley, Bedrock-control Fp Pockets - See Sheet T-4
2. Reach 20 River Style: Typical Confined Valley, No Floodplain Plan and Profile - See Sheet T-5

Special Cross-Sections:

Project Descriptions:
1. Project JCM_18_05: Revegetate graded areas shaped during EWP project. (Jamestown has applied for a grant for this.) Add channel habitat features and re-assess drop structures for fish passage.
2. Project JCM_20_06: Perform passive restoration and monitoring of the site.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

N

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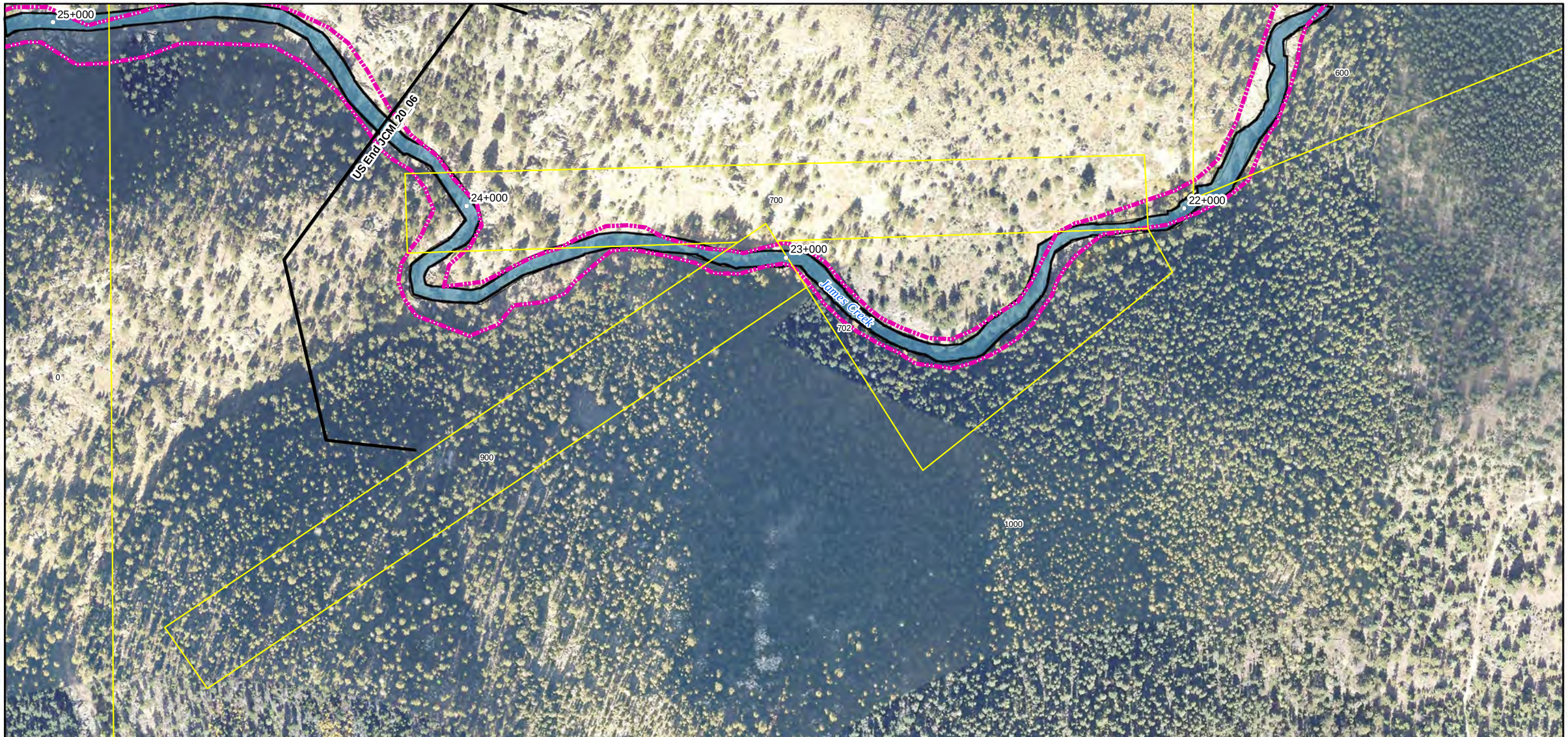
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **JCM_18_05, JCM_20_06**

REACH(ES): **Reach 19 Reach 20**

SHEET: **57**



Reach Typical Details:
1. Reach 20 River Style: Confined Valley, No Floodplain - See Sheet T-5

Special Cross-Sections:

Project Descriptions:
1. Project JCM_20_06: Perform passive restoration and monitoring of the site.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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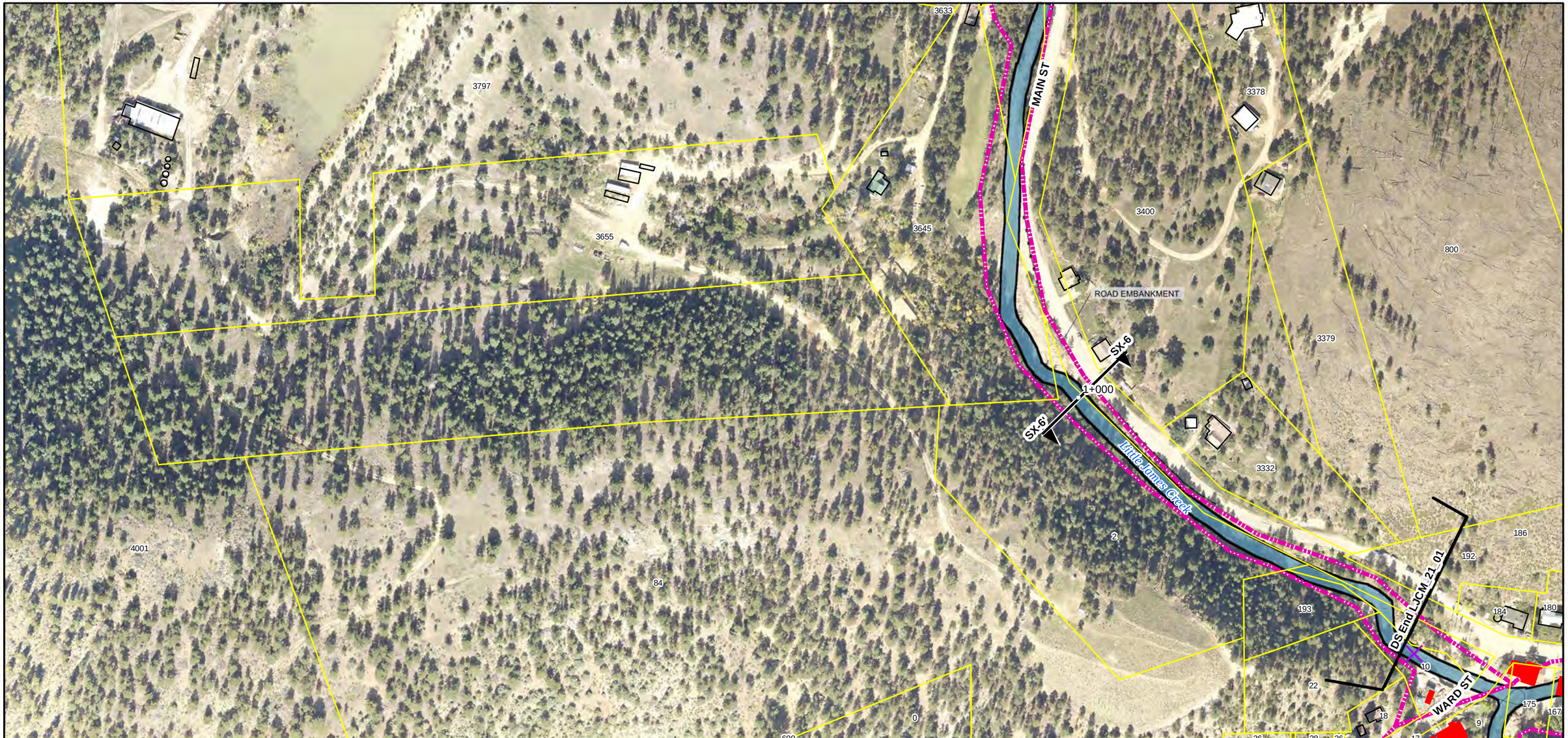
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **JCM_20_06**

REACH(ES): **Reach 20**

SHEET: **58**



Reach Typical Details:
1. Reach 21 River Style: Headwater - See Sheet T-6

Special Cross-Sections:
Sec SX-6 - Road-River Interface Headwater Left, Sheet: S-8, Sta: 0+000 to 3+100

Project Descriptions:
1. Project LJCM_21_01: Improve the road-river interface and stabilize the channel.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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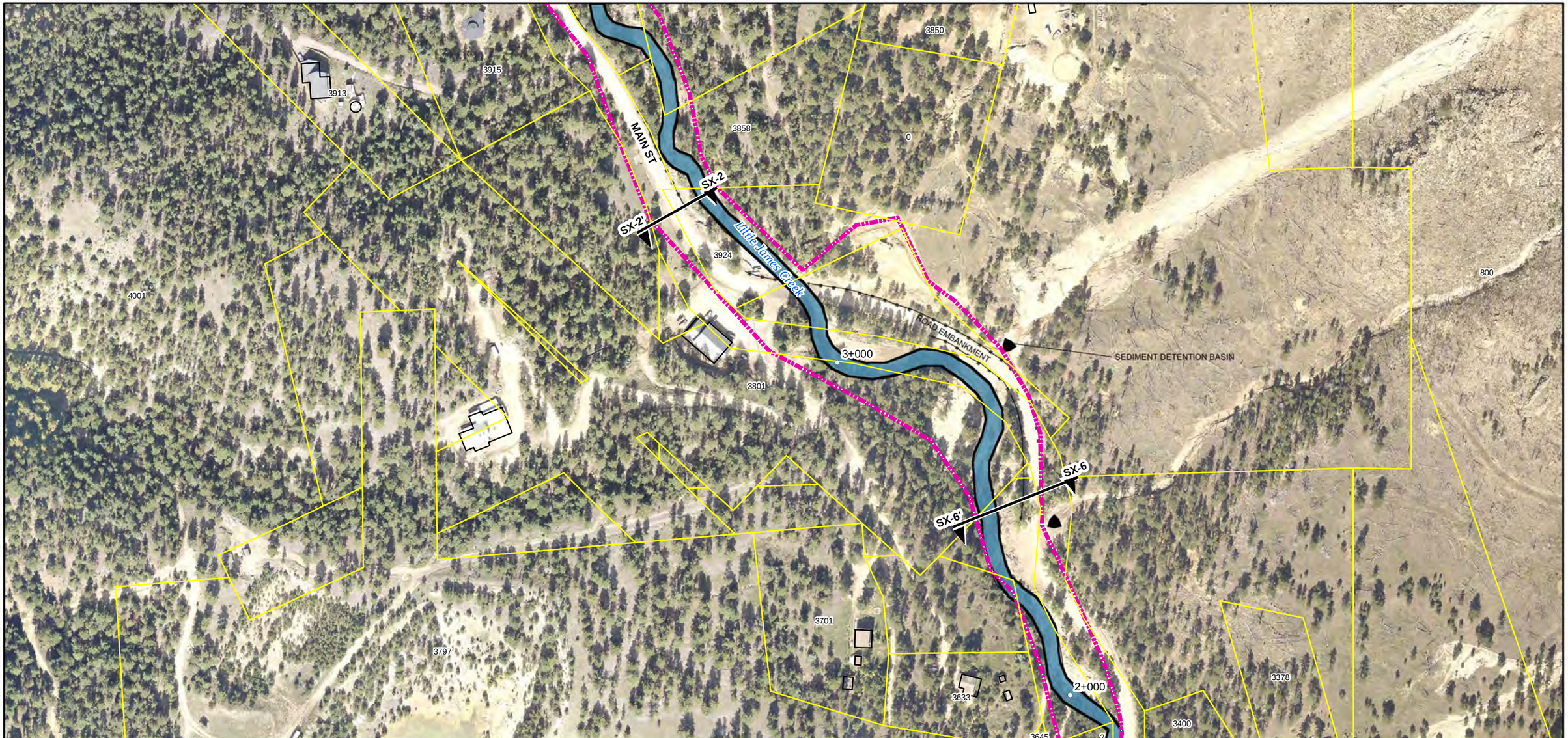
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LJCM_21_01**

REACH(ES): **Reach 21**

SHEET: **59**



Reach Typical Details:

1. Reach 21 River Style: Headwater - See Sheet T-6

Special Cross-Sections:

Sec SX-2 - Road-River Interface with Pocket Right, Sheet: S-9, Sta: 3+200 to 5+300

Sec SX-6 - Road-River Interface Headwater Left, Sheet: S-8, Sta: 0+000 to 3+100

Project Descriptions:

1. Project LJCM_21_01: Improve the road-river interface and stabilize the channel.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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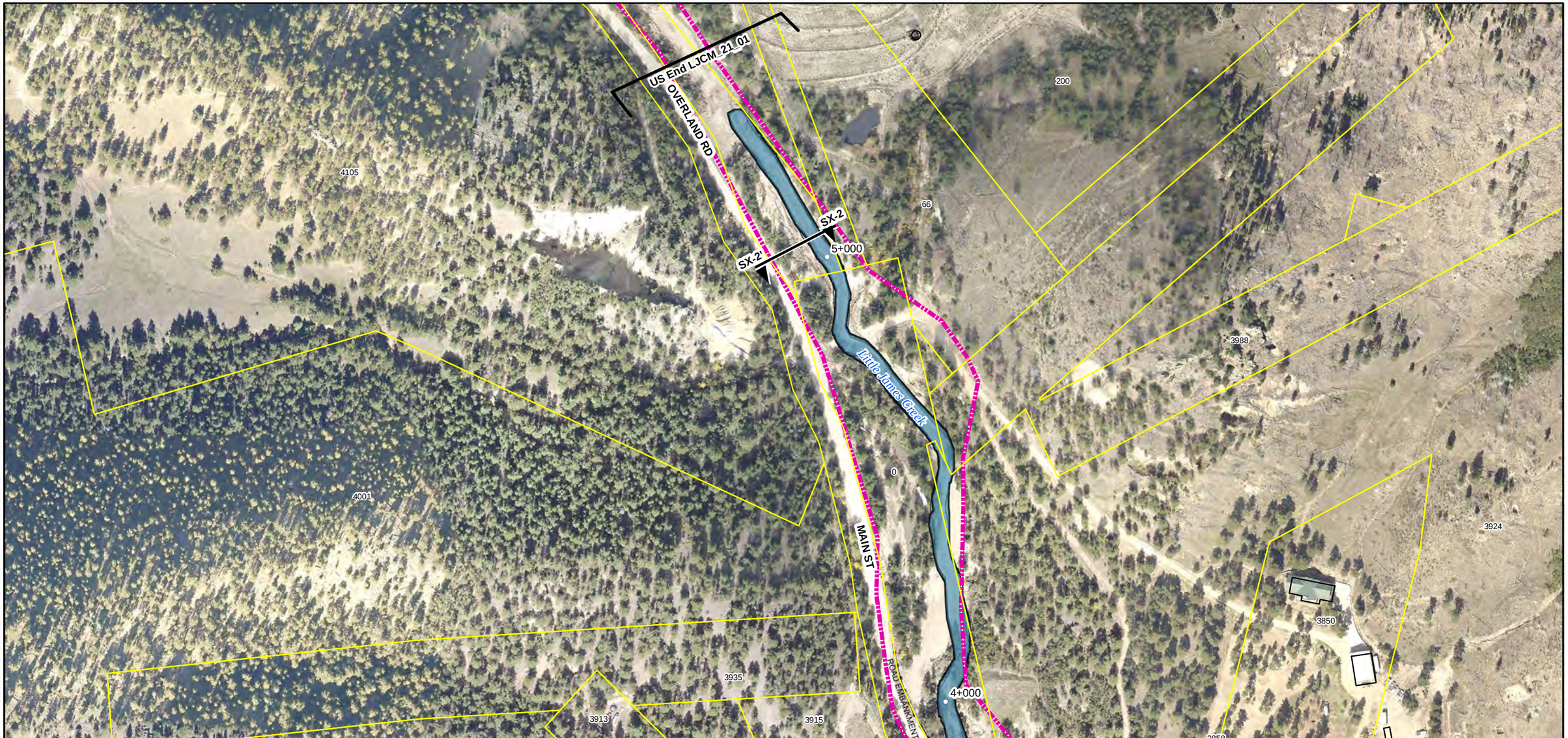
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LJCM_21_01**

REACH(ES): **Reach 21**

SHEET: **60**



Reach Typical Details:
1. Reach 21 River Style: Headwater - See Sheet T-6

Special Cross-Sections:
Sec SX-2 - Road-River Interface with Pocket Right, Sheet: S-9, Sta: 3+200 to 5+300

Project Descriptions:
1. Project LJCM_21_01: Improve the road-river interface and stabilize the channel.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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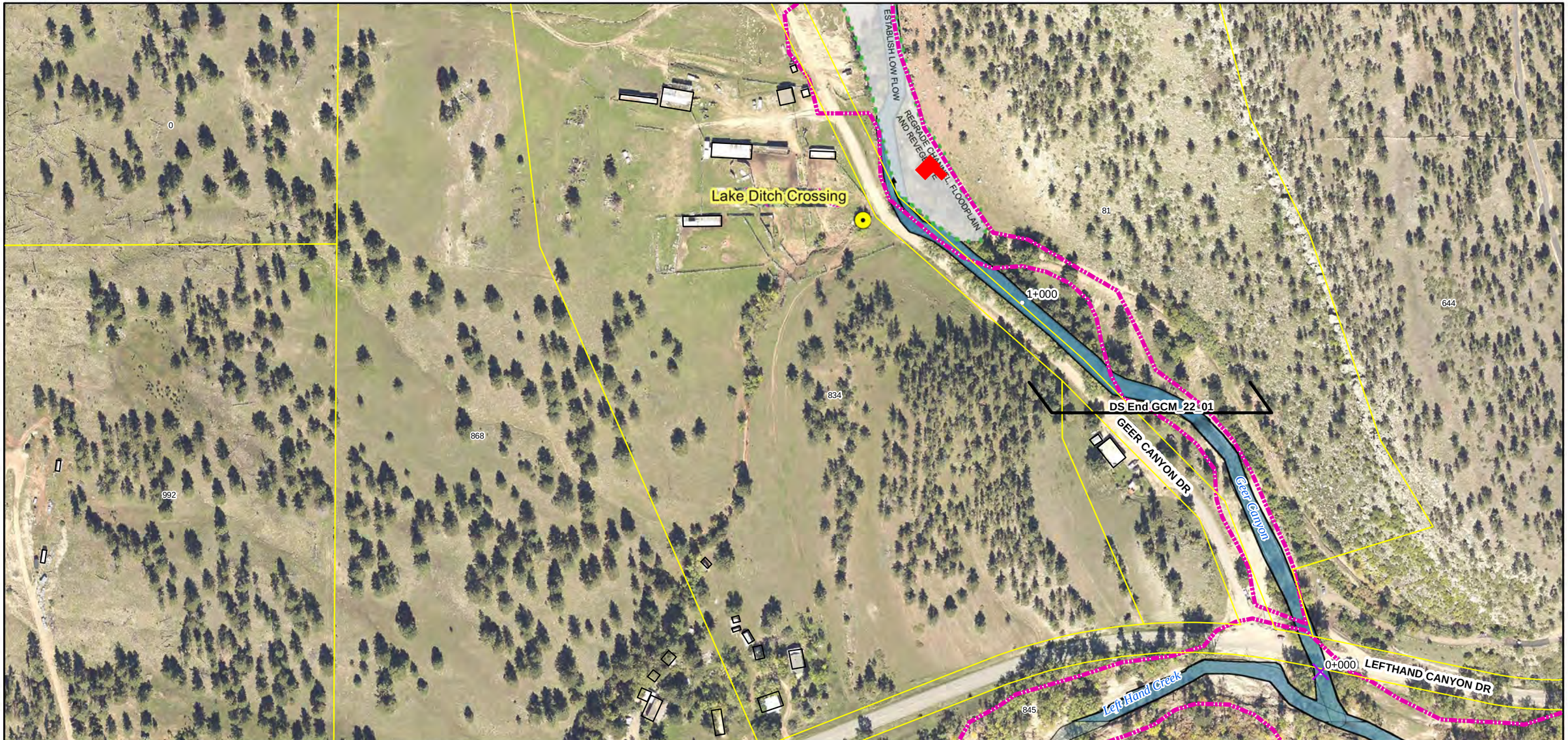
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **LJCM_21_01**

REACH(ES): **Reach 21**

SHEET: **61**

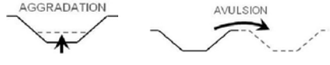


Reach Typical Details:
1. Reach 22 River Style: Headwater - See Sheet T-6

Special Cross-Sections:

Project Descriptions:
1. Project GCM_22_01: Improve the road-river interface and stabilize the channel.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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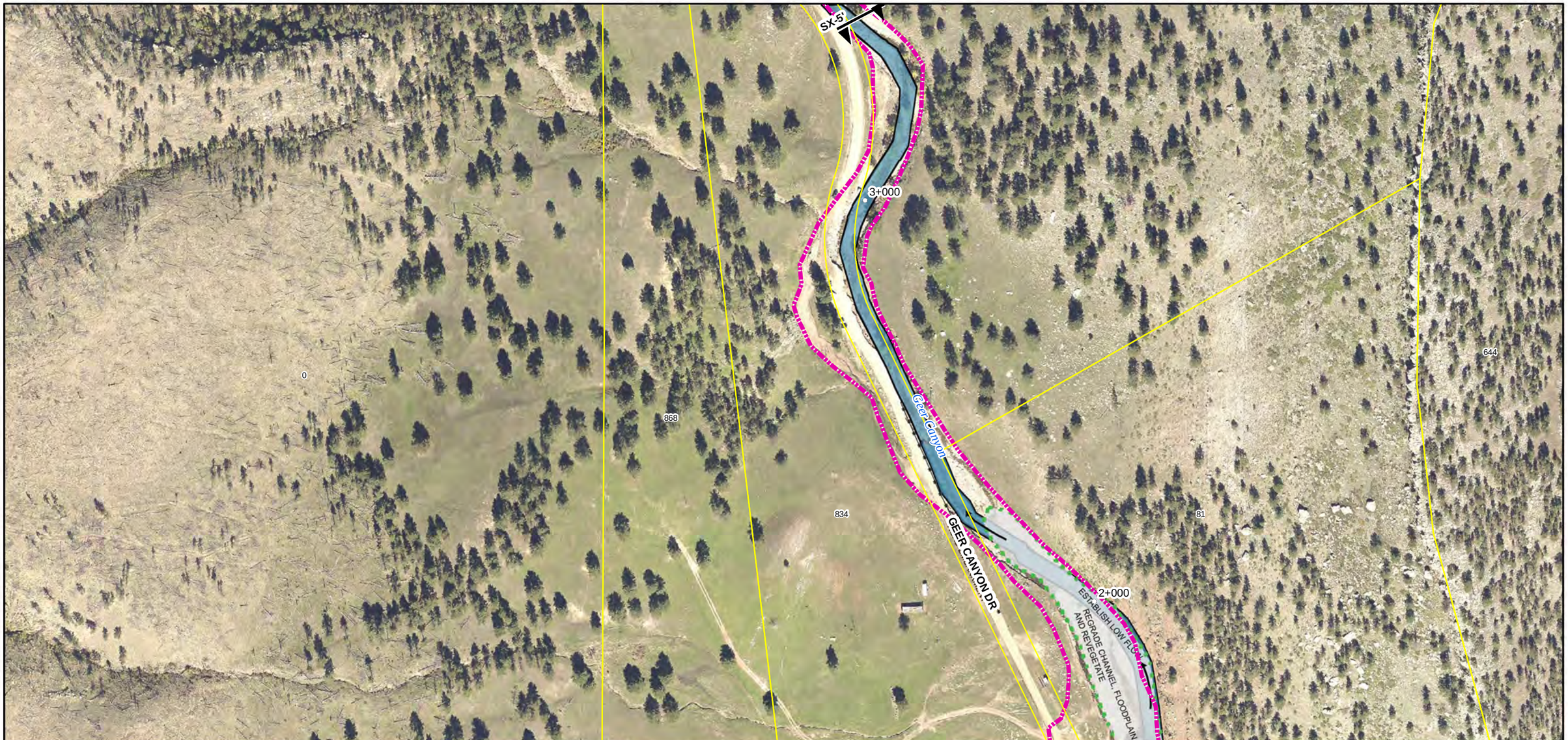
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **GCM_22_01**

REACH(ES): **Reach 22**

SHEET: **62**

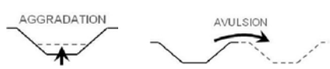


Reach Typical Details:
1. Reach 22 River Style: Headwater - See Sheet T-6

Special Cross-Sections:
Sec SX-5 - Road-River Interface Headwater Right, Sheet: S-8, Sta: 2+200 to 8+000

Project Descriptions:
1. Project GCM_22_01: Improve the road-river interface and stabilize the channel.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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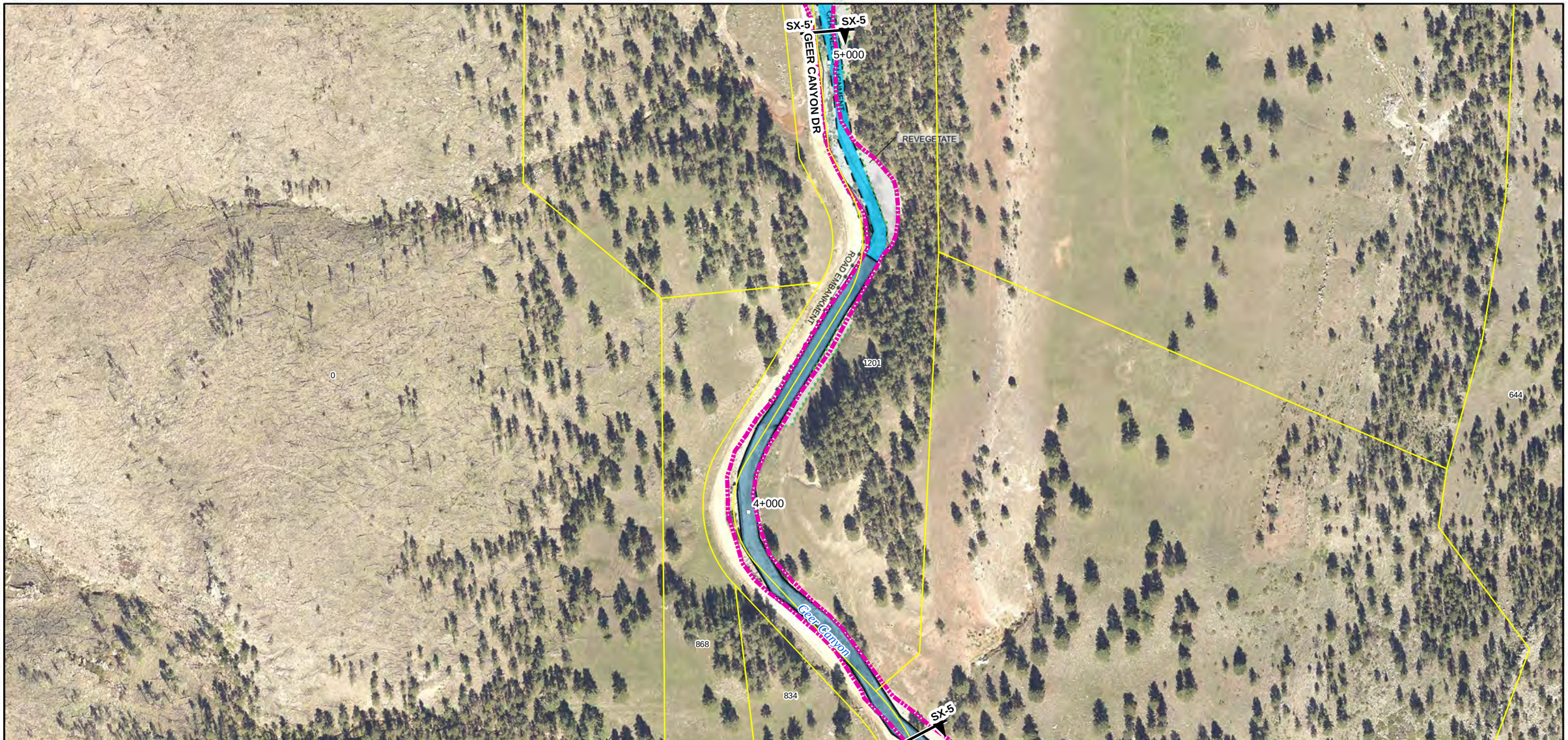
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **GCM_22_01**

REACH(ES): **Reach 22**

SHEET: **63**



Reach Typical Details:
1. Reach 22 River Style: Headwater - See Sheet T-6

Special Cross-Sections:
Sec SX-5 - Road-River Interface Headwater Right, Sheet: S-8, Sta: 2+200 to 8+000

Project Descriptions:
1. Project GCM_22_01: Improve the road-river interface and stabilize the channel.

REACH TRAJECTORIES

1 " = 200 '

0 50 100 200 300 400 Feet

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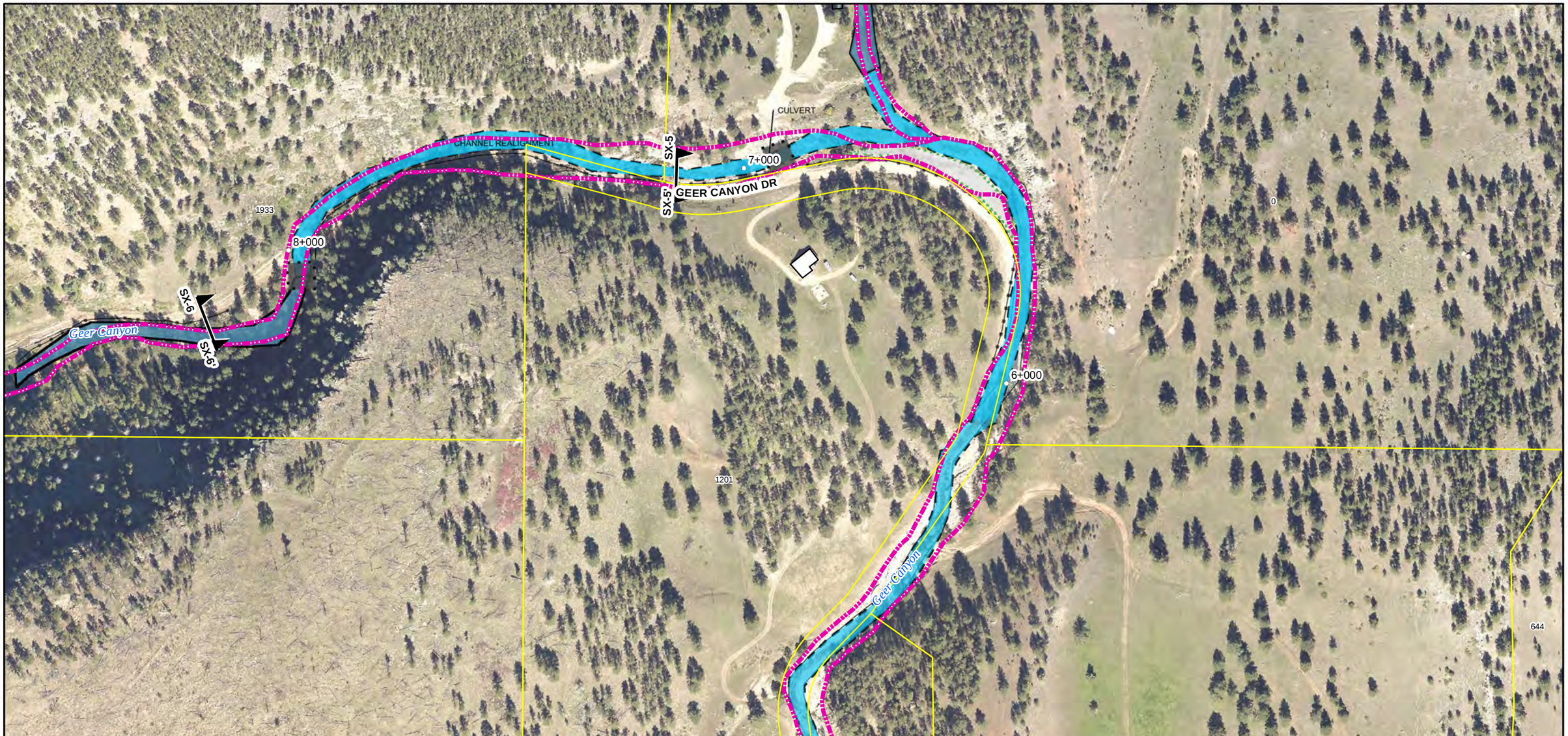
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **GCM_22_01**

REACH(ES): **Reach 22**

SHEET: **64**

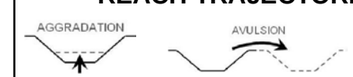


Reach Typical Details:
1. Reach 22 River Style: Headwater - See Sheet T-6

Special Cross-Sections:
Sec SX-5 - Road-River Interface Headwater Right, Sheet: S-8, Sta: 2+200 to 8+000
Sec SX-6 - Road-River Interface Headwater Left, Sheet: S-8, Sta: 8+000 to 9+400

Project Descriptions:
1. Project GCM_22_01: Improve the road-river interface and stabilize the channel.

REACH TRAJECTORIES



1 " = 200 '
0 50 100 200 300 400 Feet
N

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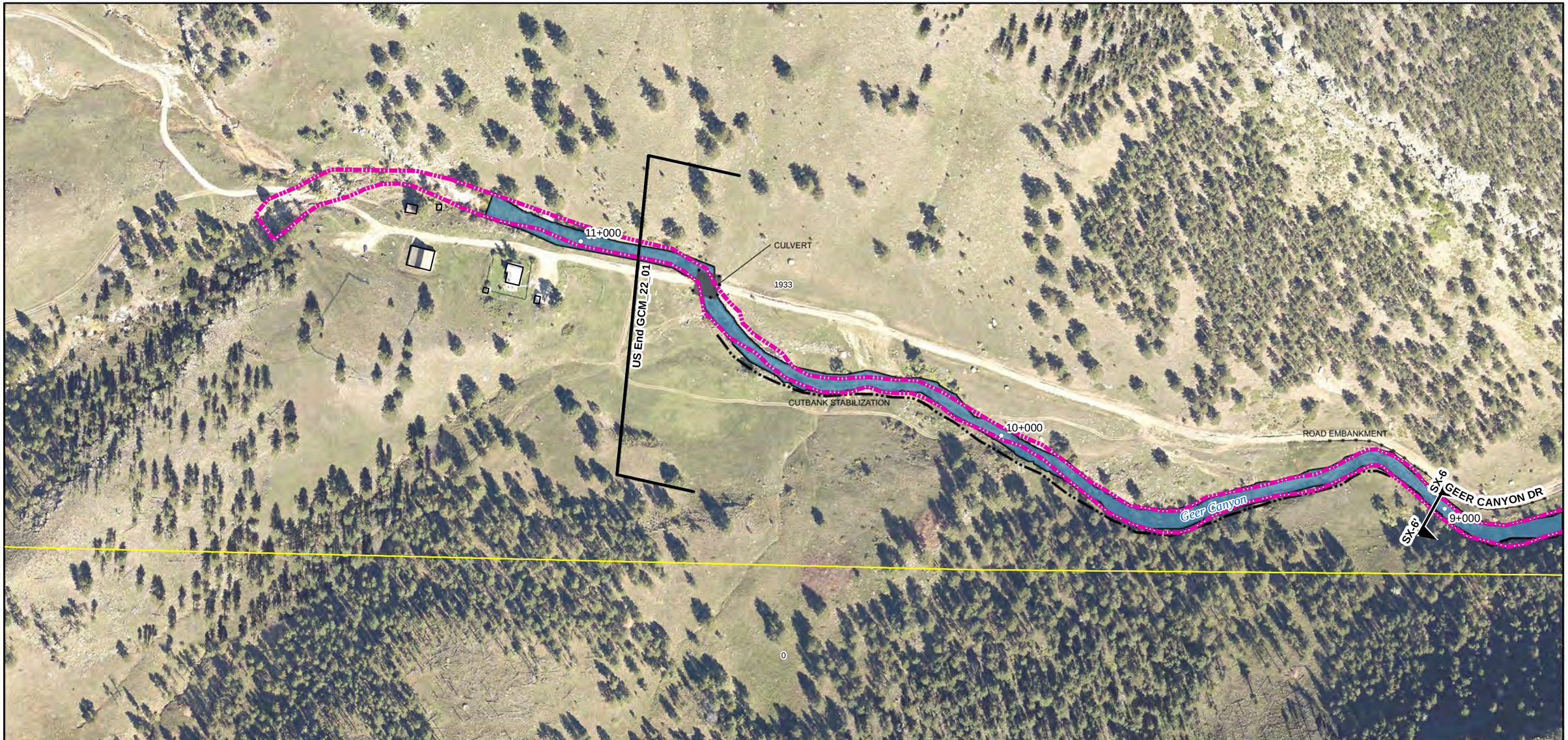
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **GCM_22_01**
REACH(ES): **Reach 22**
SHEET: **65**

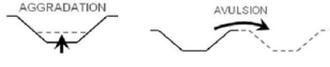


Reach Typical Details:
1. Reach 22 River Style: Headwater - See Sheet T-6

Special Cross-Sections:
Sec SX-6 - Road-River Interface Headwater Left, Sheet: S-8, Sta: 8+000 to 9+400

Project Descriptions:
1. Project GCM_22_01: Improve the road-river interface and stabilize the channel.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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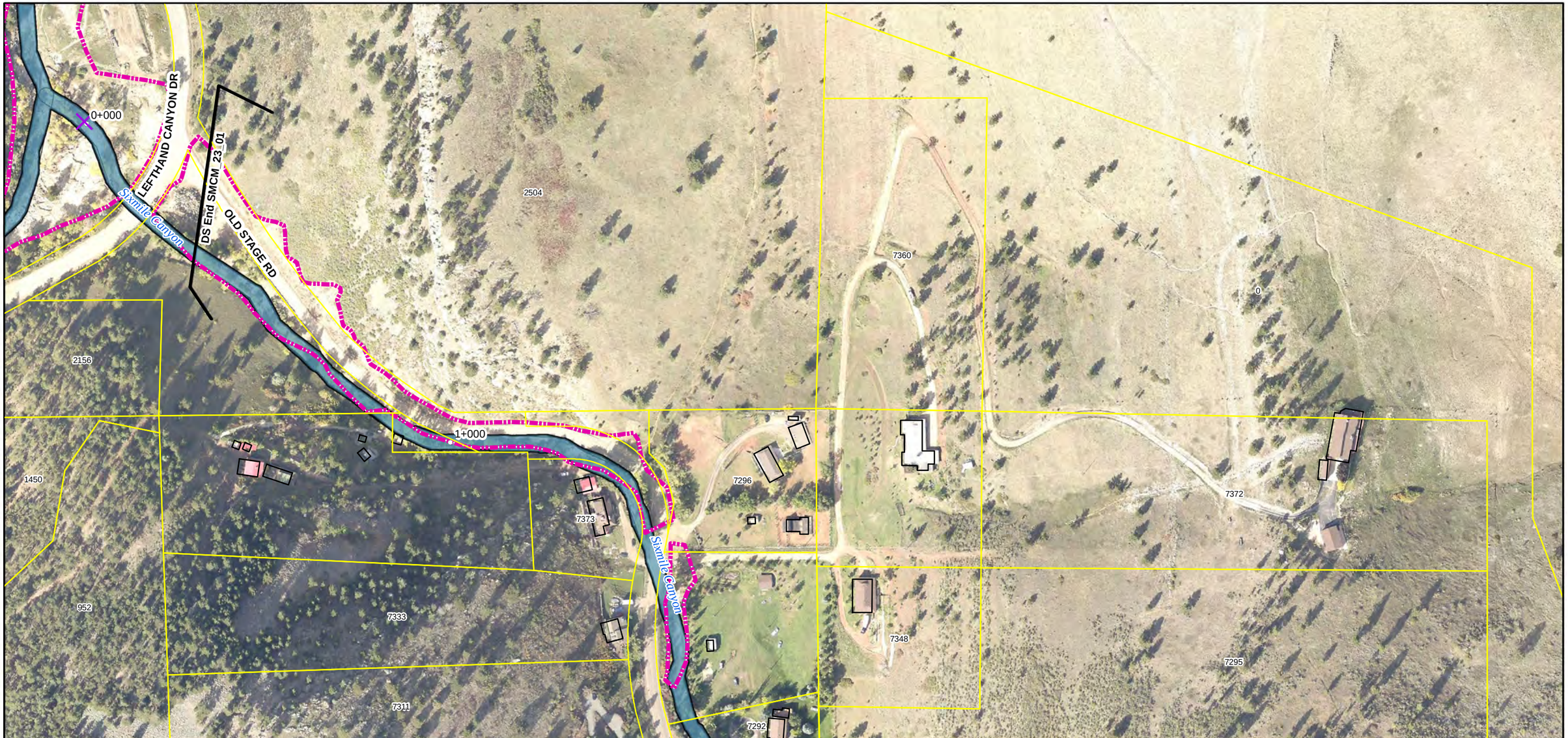
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **GCM_22_01**

REACH(ES): **Reach 22**

SHEET: **66**

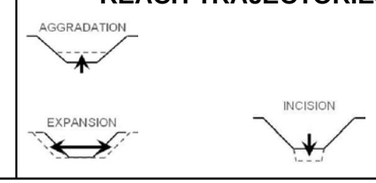


Reach Typical Details:
1. Reach 23 River Style: Headwater - See Sheet T-6

Special Cross-Sections:

Project Descriptions:
1. Project SMCM_23_01: For this project stabilize any cutbanks and improve local drainage.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

N

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LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **SMCM_23_01**

REACH(ES): **Reach 23**

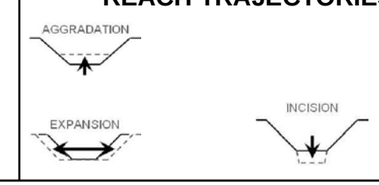
SHEET: **67**

Reach Typical Details:
1. Reach 23 River Style: Headwater - See Sheet T-6

Special Cross-Sections:
See Detail - Cutbank Stabilization, Sheet: D-1

Project Descriptions:
1. Project SMCM_23_01: For this project stabilize any cutbanks and improve local drainage.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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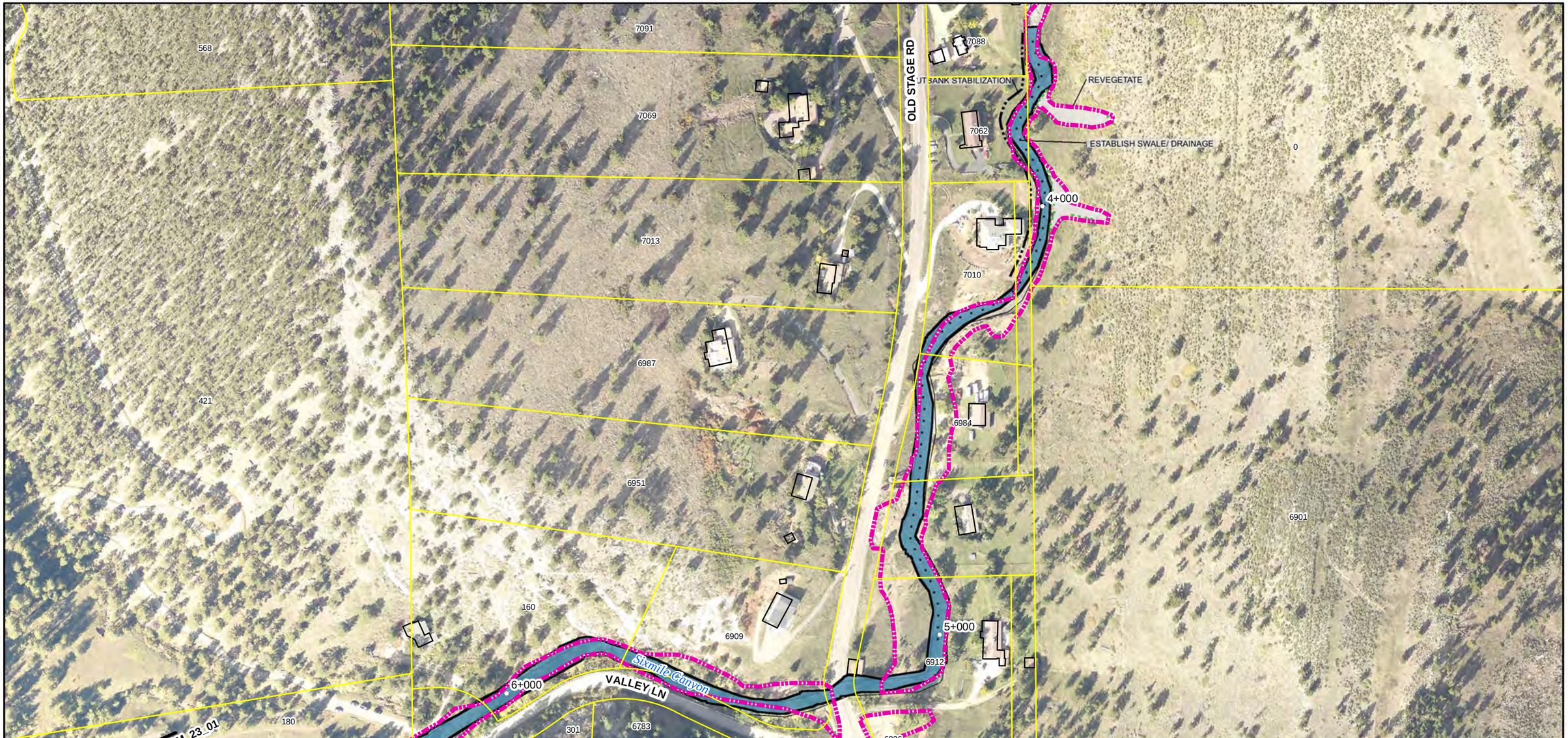
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **SMCM_23_01**

REACH(ES): **Reach 23**

SHEET: **68**

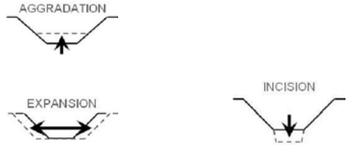


Reach Typical Details:
1. Reach 23 River Style: Headwater - See Sheet T-6

Special Cross-Sections:
See Detail - Cutbank Stabilization, Sheet: D-1

Project Descriptions:
1. Project SMCM_23_01: For this project stabilize any cutbanks and improve local drainage.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

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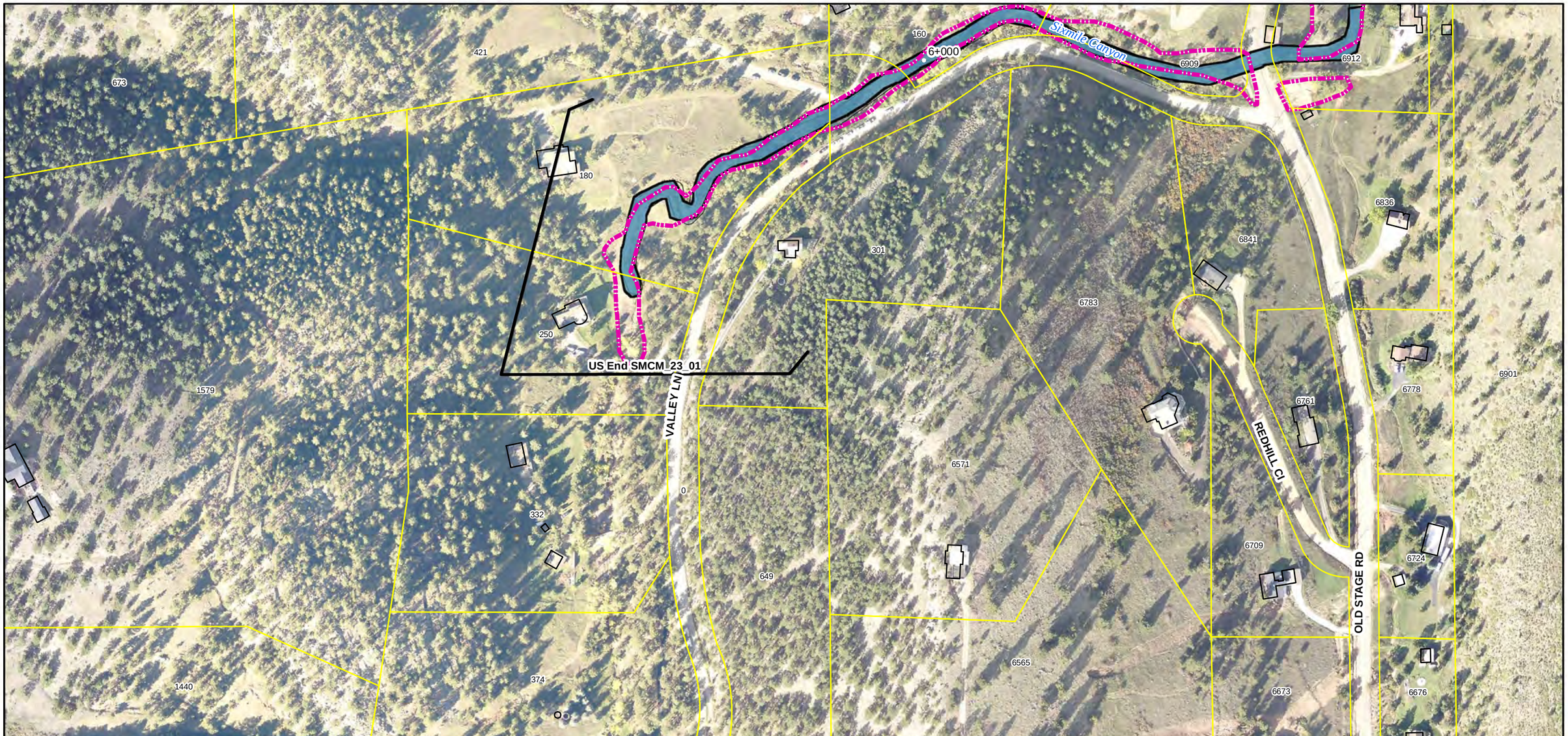
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

PROJECT(S): **SMCM_23_01**

REACH(ES): **Reach 23**

SHEET: **69**

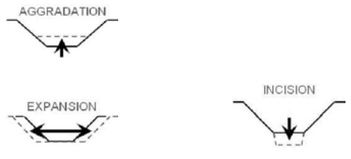


Reach Typical Details:
1. Reach 23 River Style: Headwater - See Sheet T-6

Special Cross-Sections:

Project Descriptions:
1. Project SMCM_23_01: For this project stabilize any cutbanks and improve local drainage.

REACH TRAJECTORIES



1 " = 200 '

0 50 100 200 300 400 Feet

N

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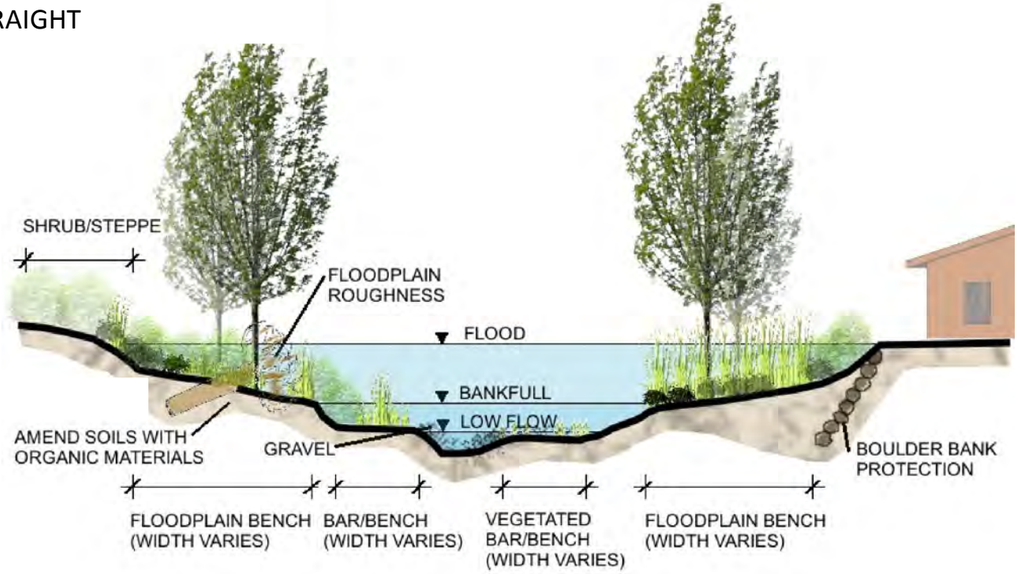
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

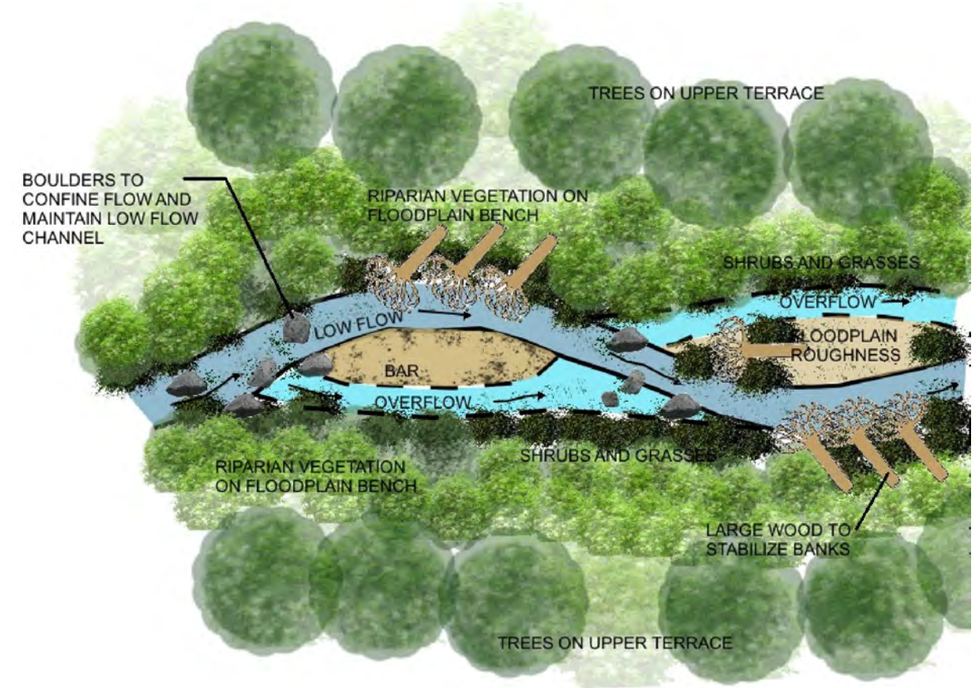
PROJECT(S): **SMCM_23_01**

REACH(ES): **Reach 23**

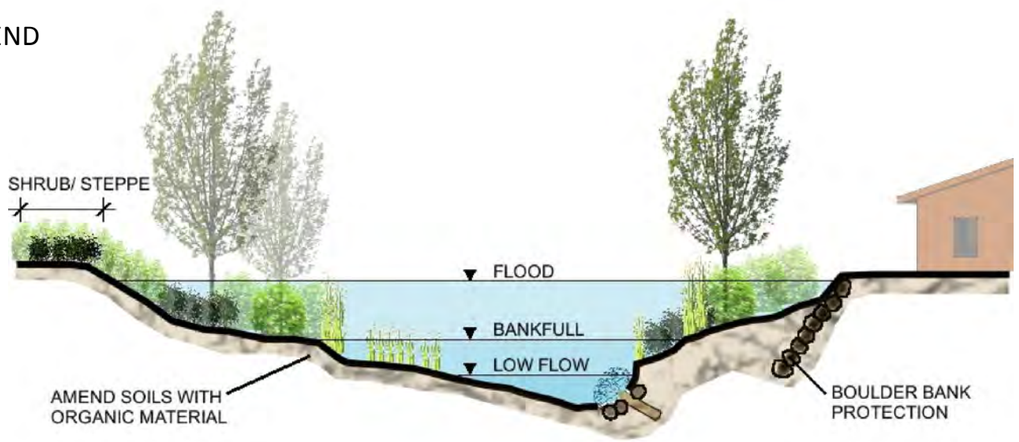
SHEET: **70**

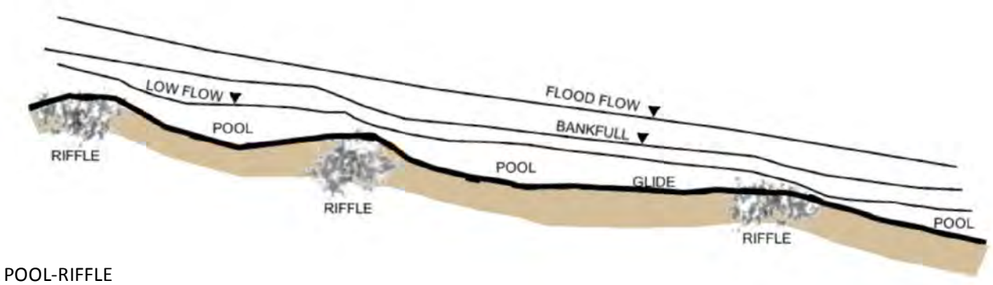
STRAIGHT





BEND





TYPICAL POOL-RIFFLE BED MORPHOLOGY

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ENTRENCHED, RESIDENTIAL

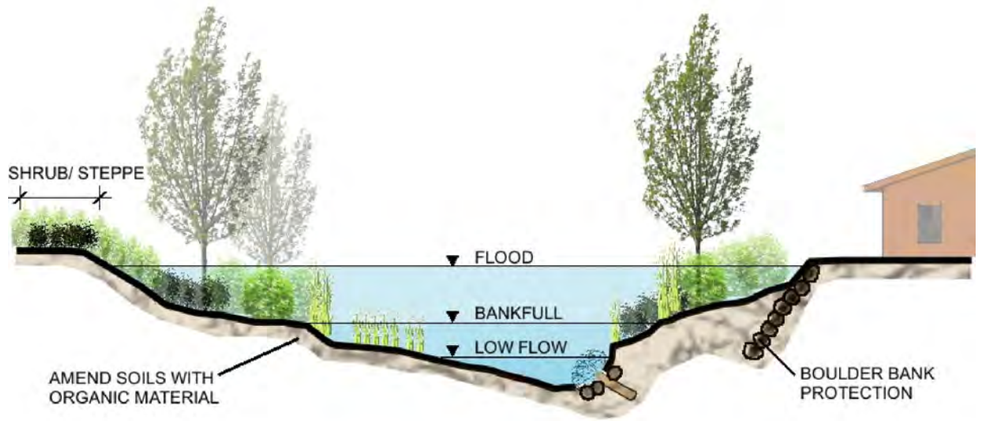
TYPICAL PLAN, PROFILE, CROSS SECTION

LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

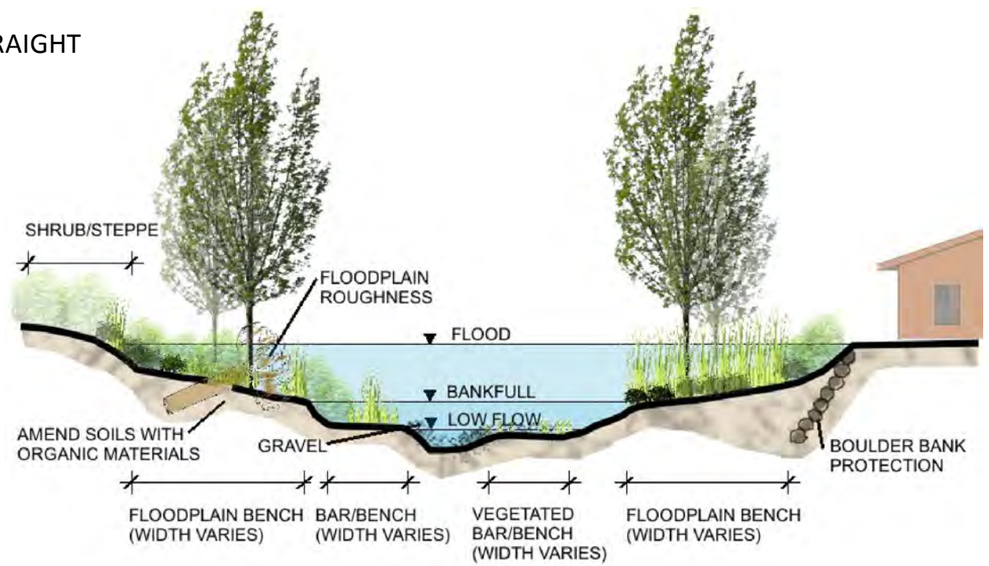
DATE: 12/08/2014

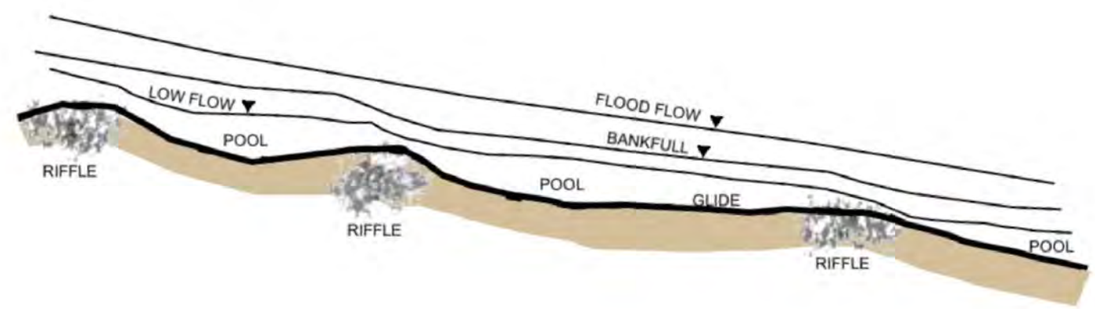
SHEET: **T-1**

BEND



STRAIGHT





TYPICAL POOL-RIFFLE BED MORPHOLOGY

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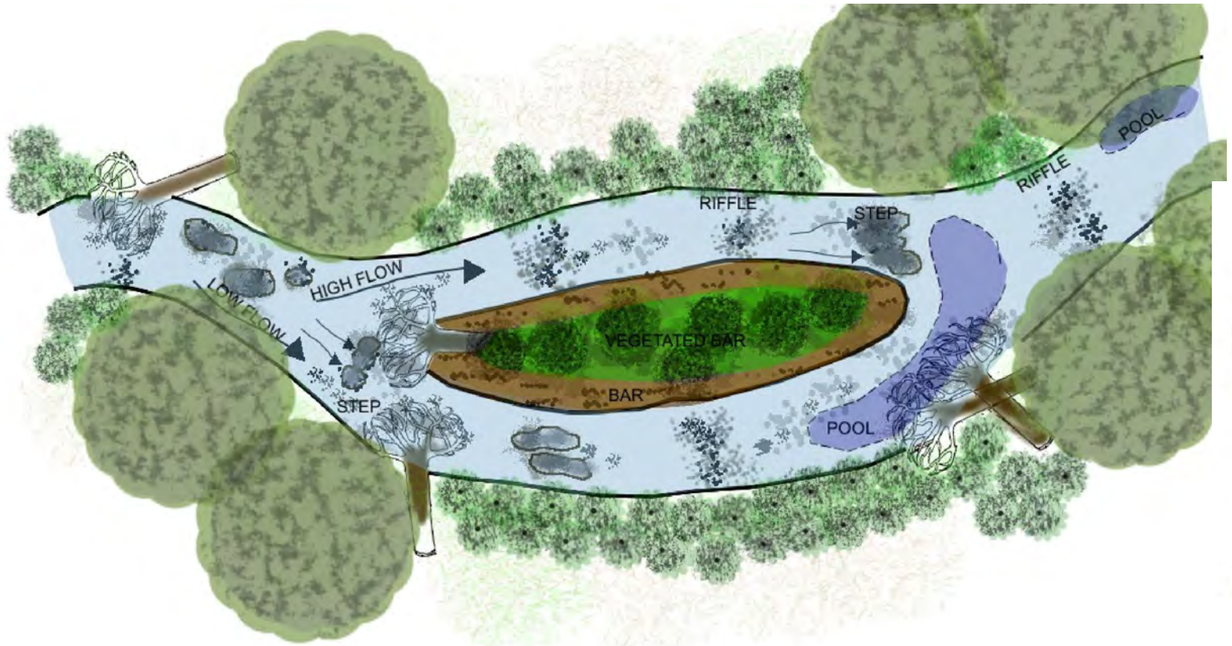
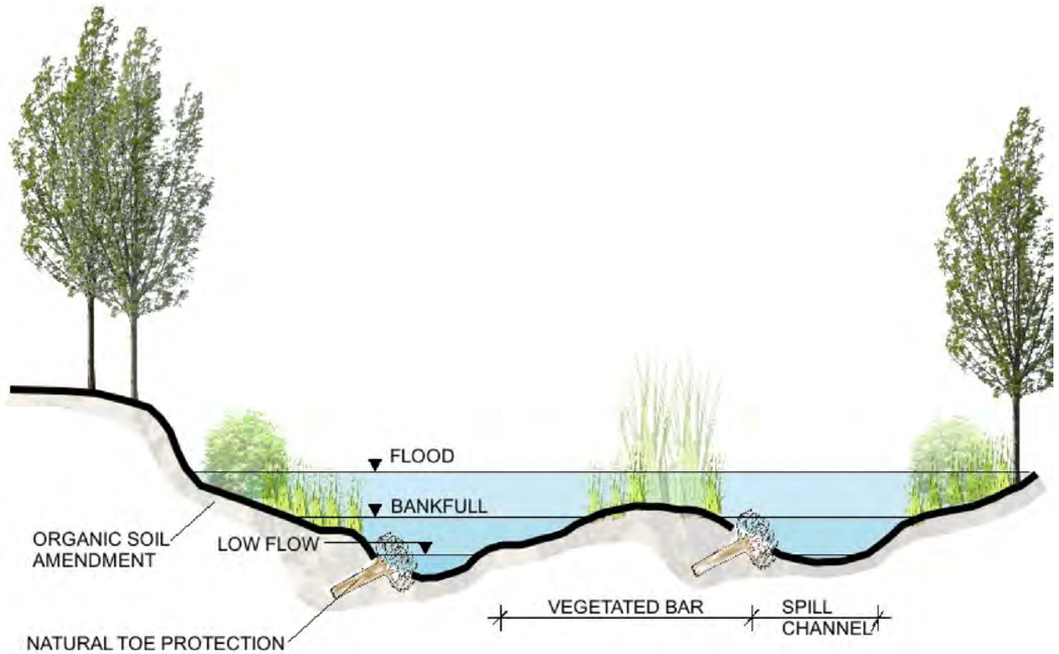
UNCONFINED, CONTINUOUS FLOODPLAIN

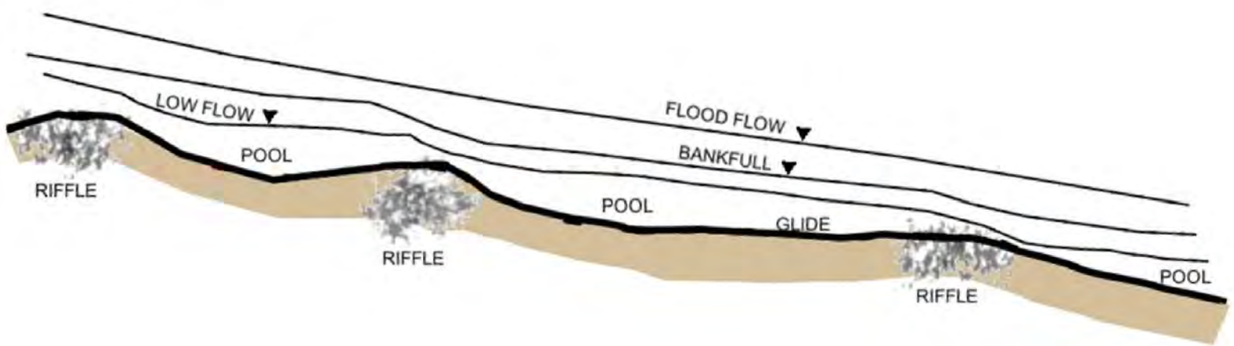
TYPICAL PLAN, PROFILE, CROSS SECTION

LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014 | SHEET: **T-2**







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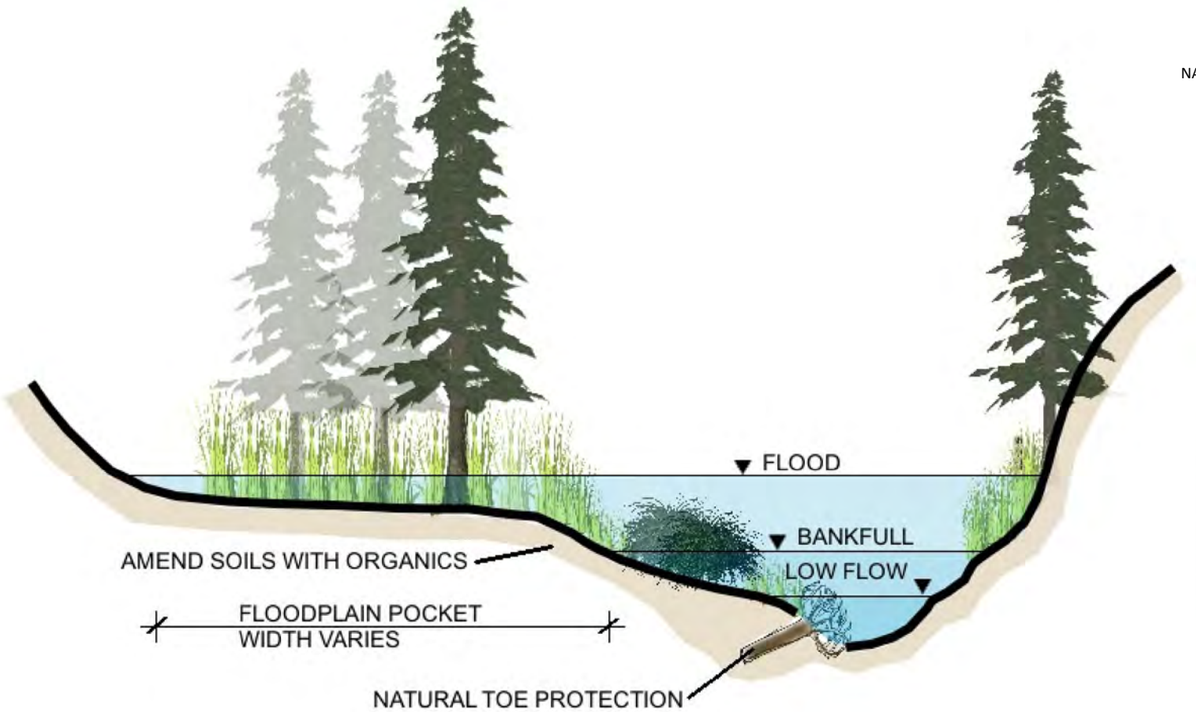
PARTLY CONFINED, WANDERING

TYPICAL PLAN, PROFILE, CROSS SECTION

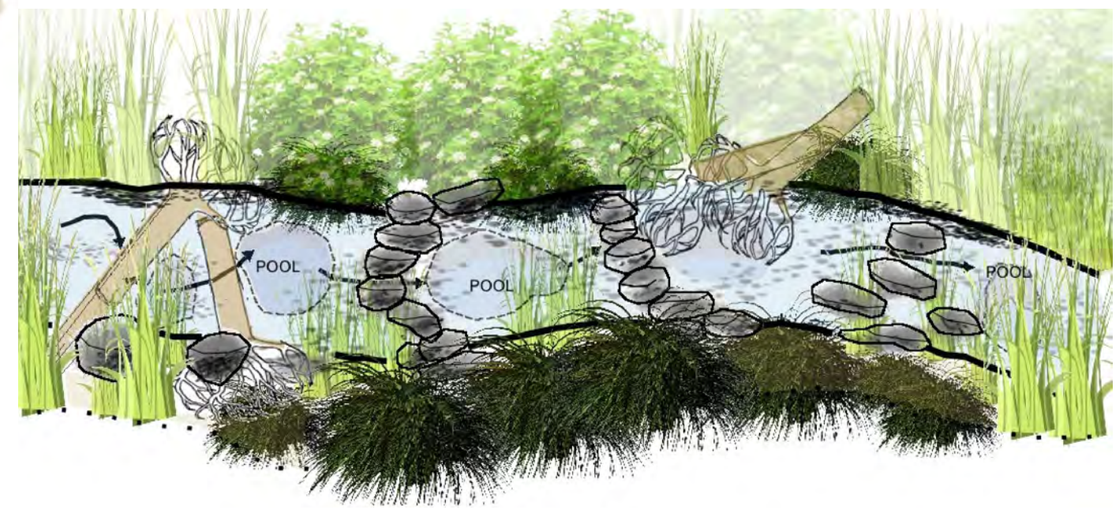
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014

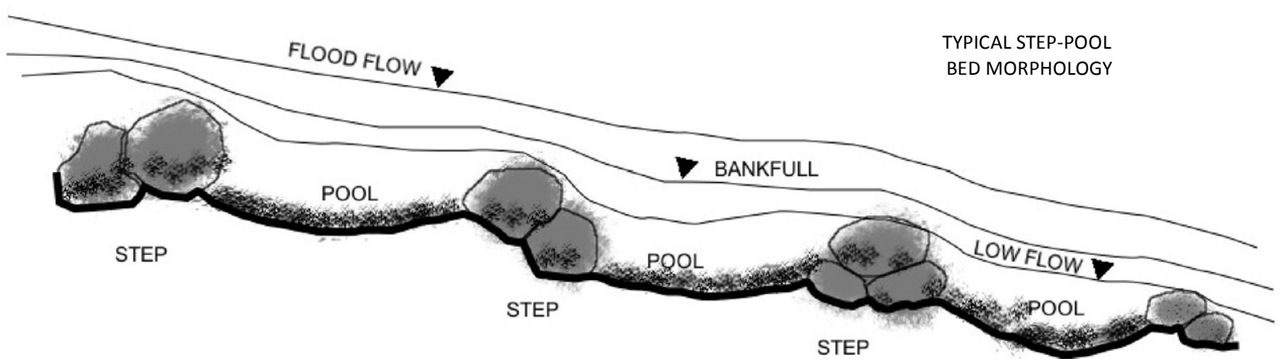
SHEET: **T-3**



NATURAL TOE PROTECTION



TYPICAL STEP-POOL
BED MORPHOLOGY



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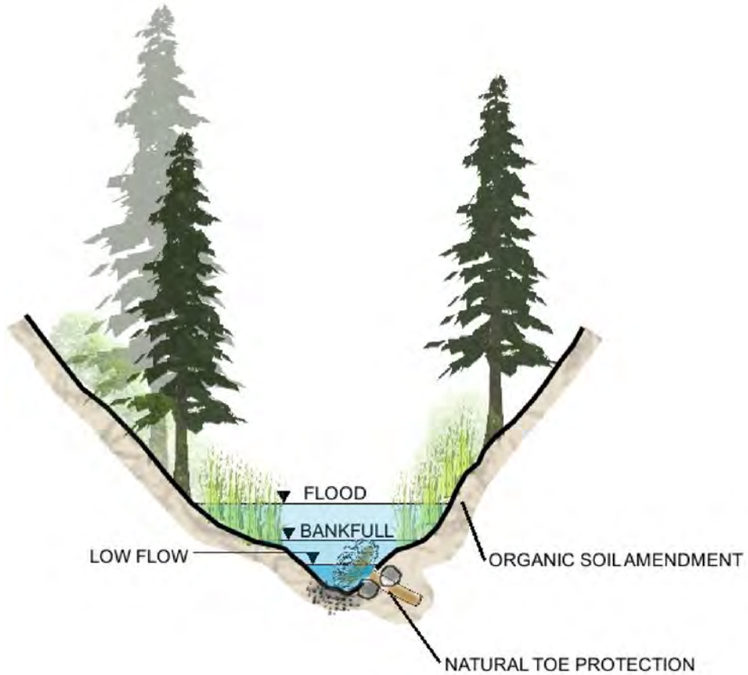
CONFINED W/ BEDROCK CONTROLLED POCKETS

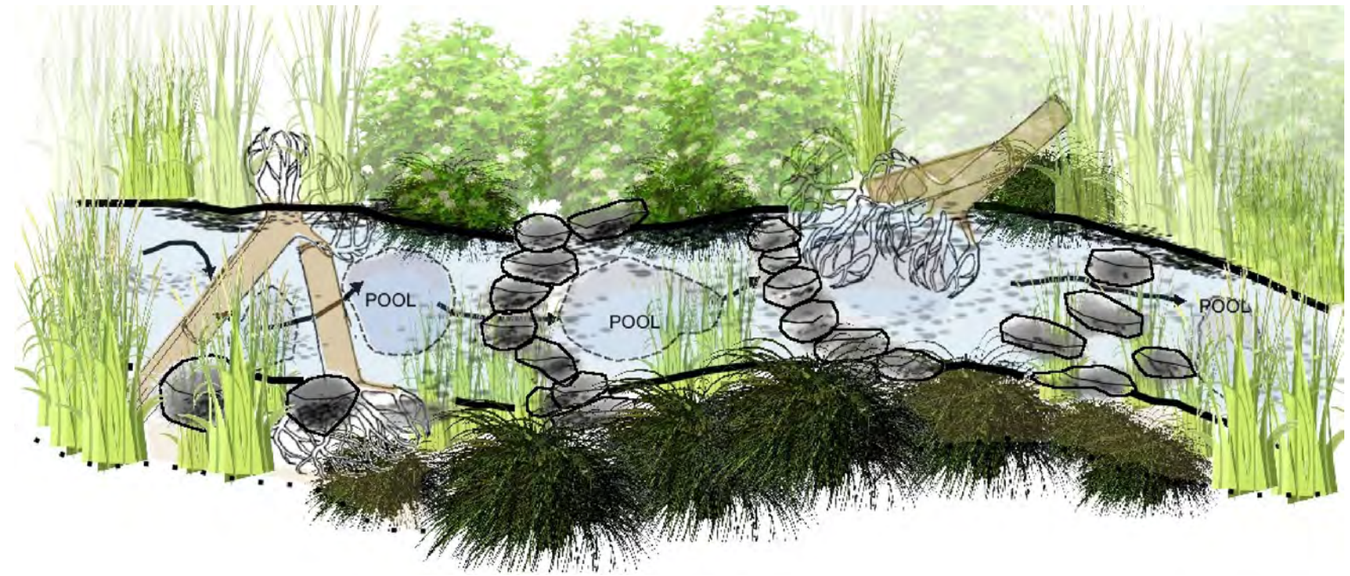
TYPICAL PLAN, PROFILE, CROSS SECTION

LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

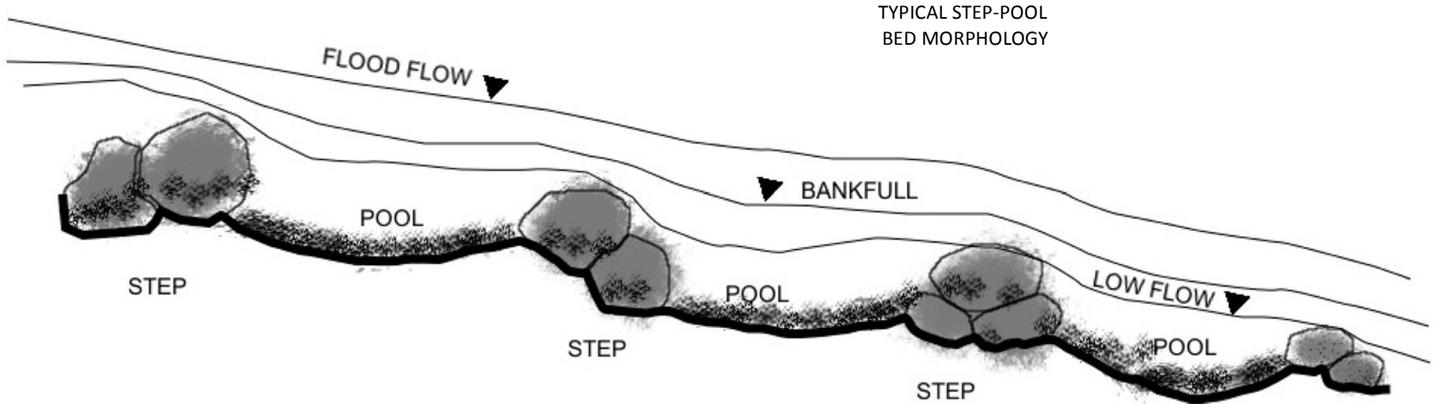
DATE: 12/08/2014

SHEET: T-4





TYPICAL STEP-POOL
BED MORPHOLOGY



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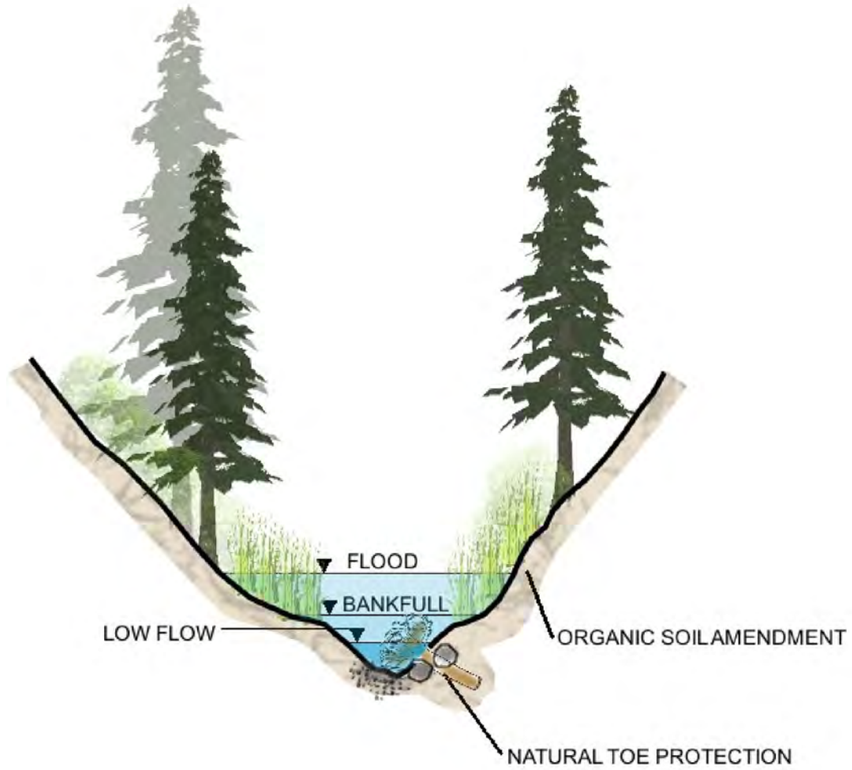
CONFINED, NO FLOODPLAIN

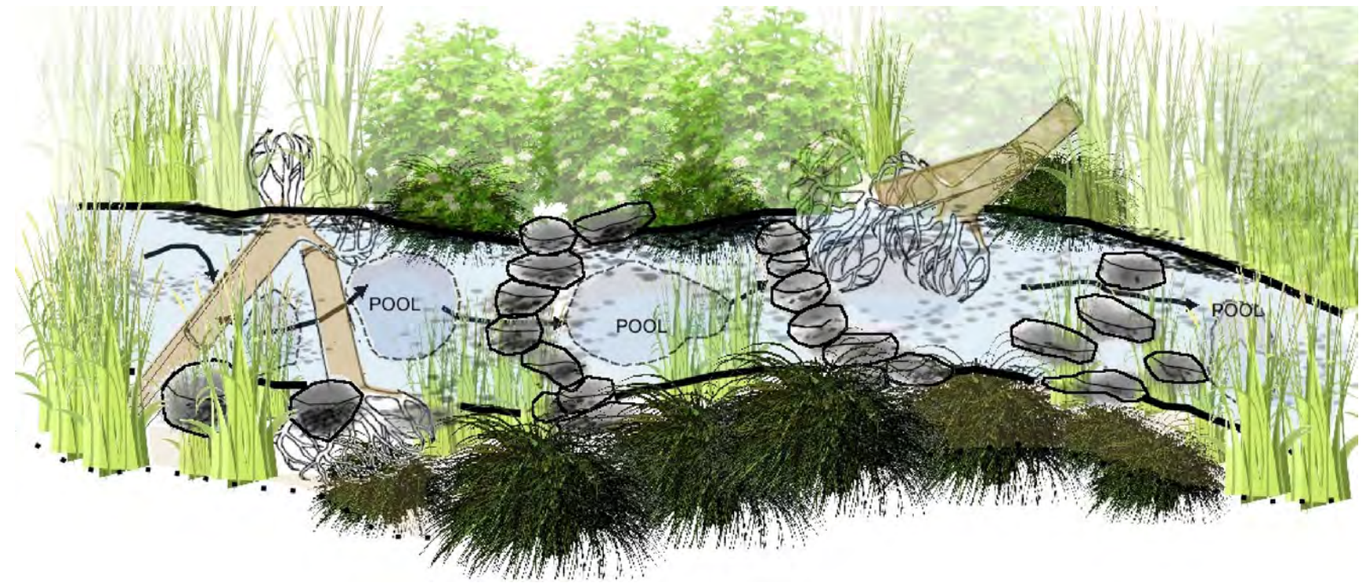
TYPICAL PLAN, PROFILE, CROSS SECTION

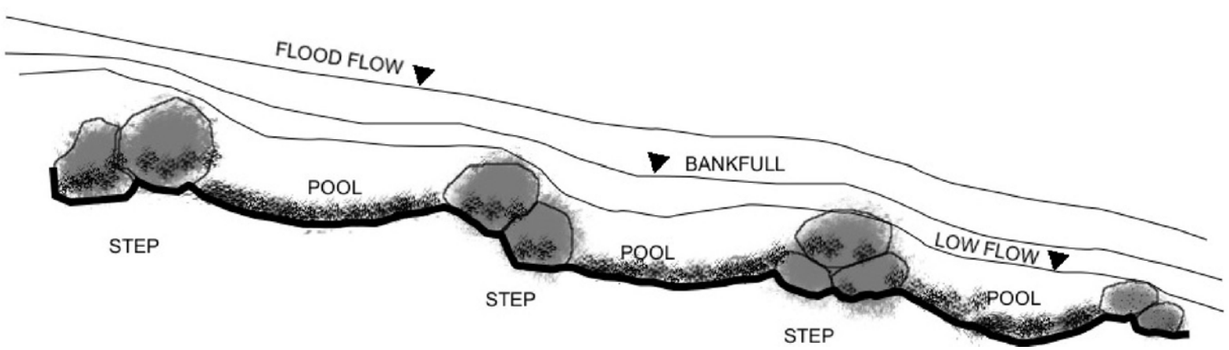
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014

SHEET: **T-5**







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HEADWATER

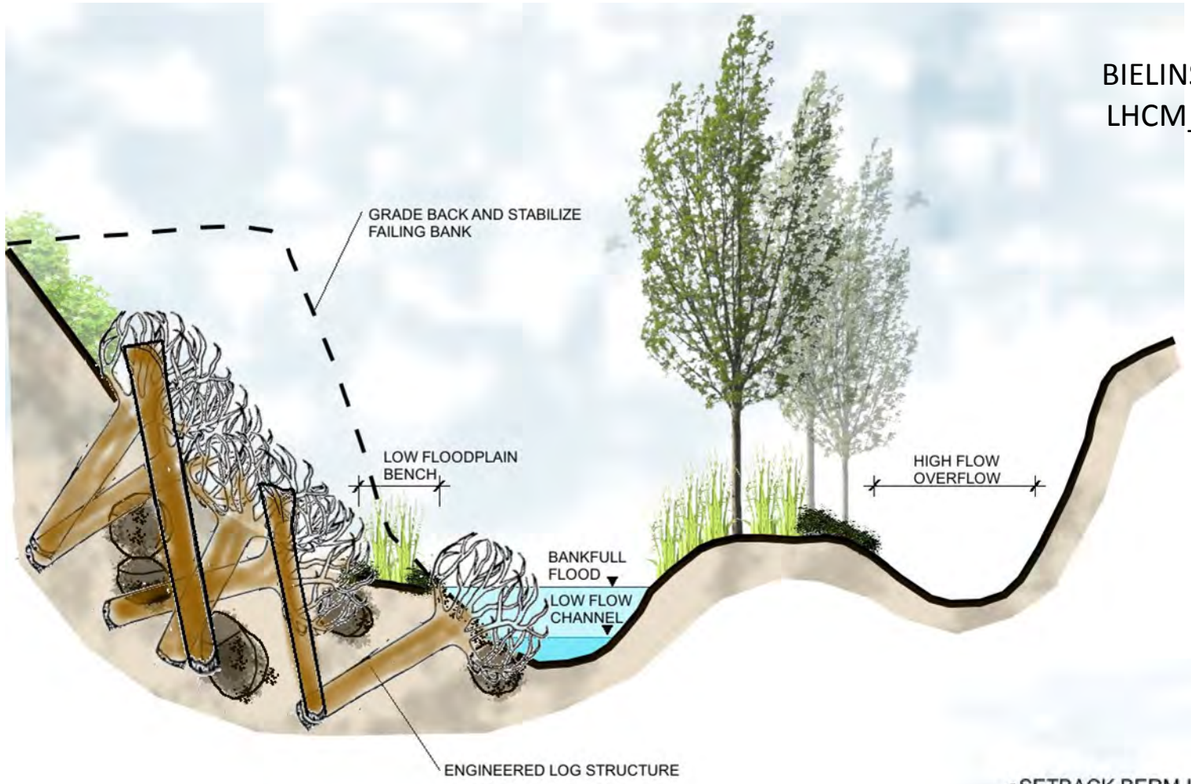
TYPICAL PLAN, PROFILE, CROSS SECTION

LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

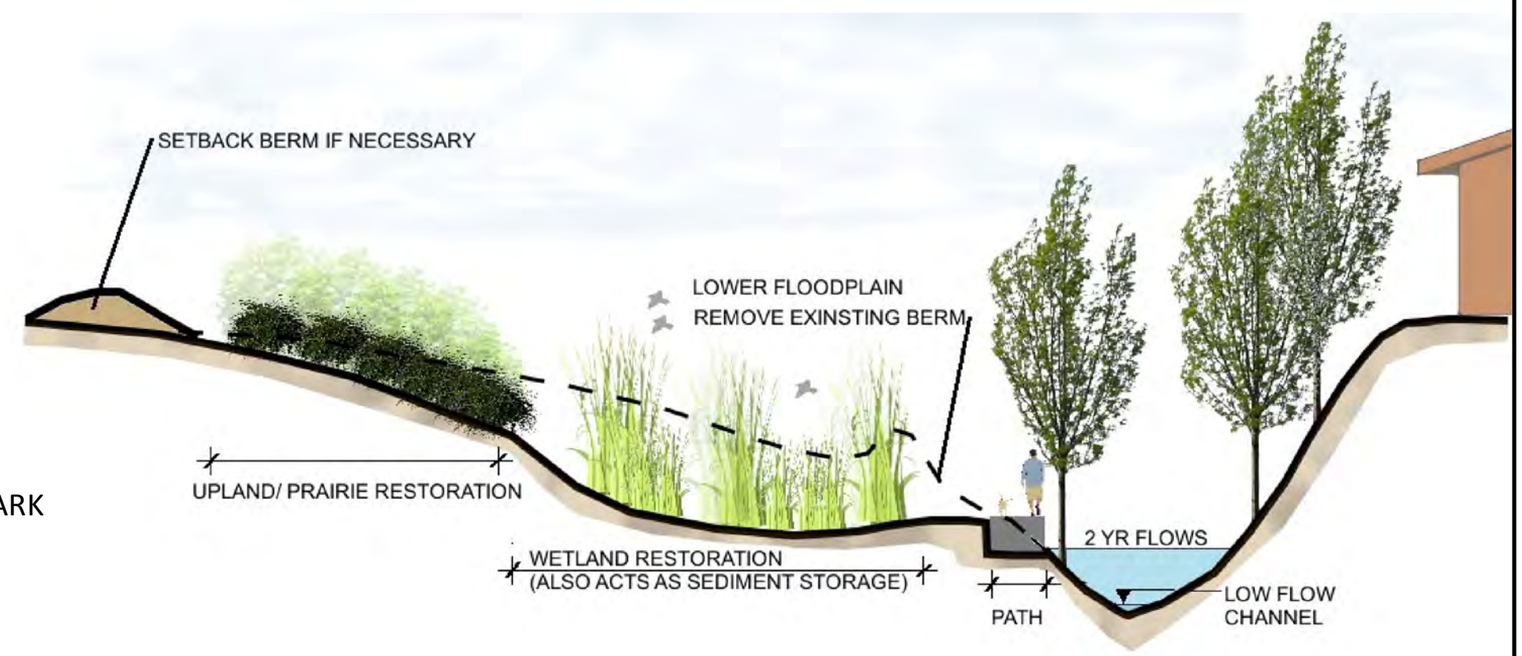
DATE: 12/08/2014

SHEET: **T-6**

BIELINS-HOCK
LHCM_03_05



WEST LONGMONT RIVER PARK
LHCM_02_03



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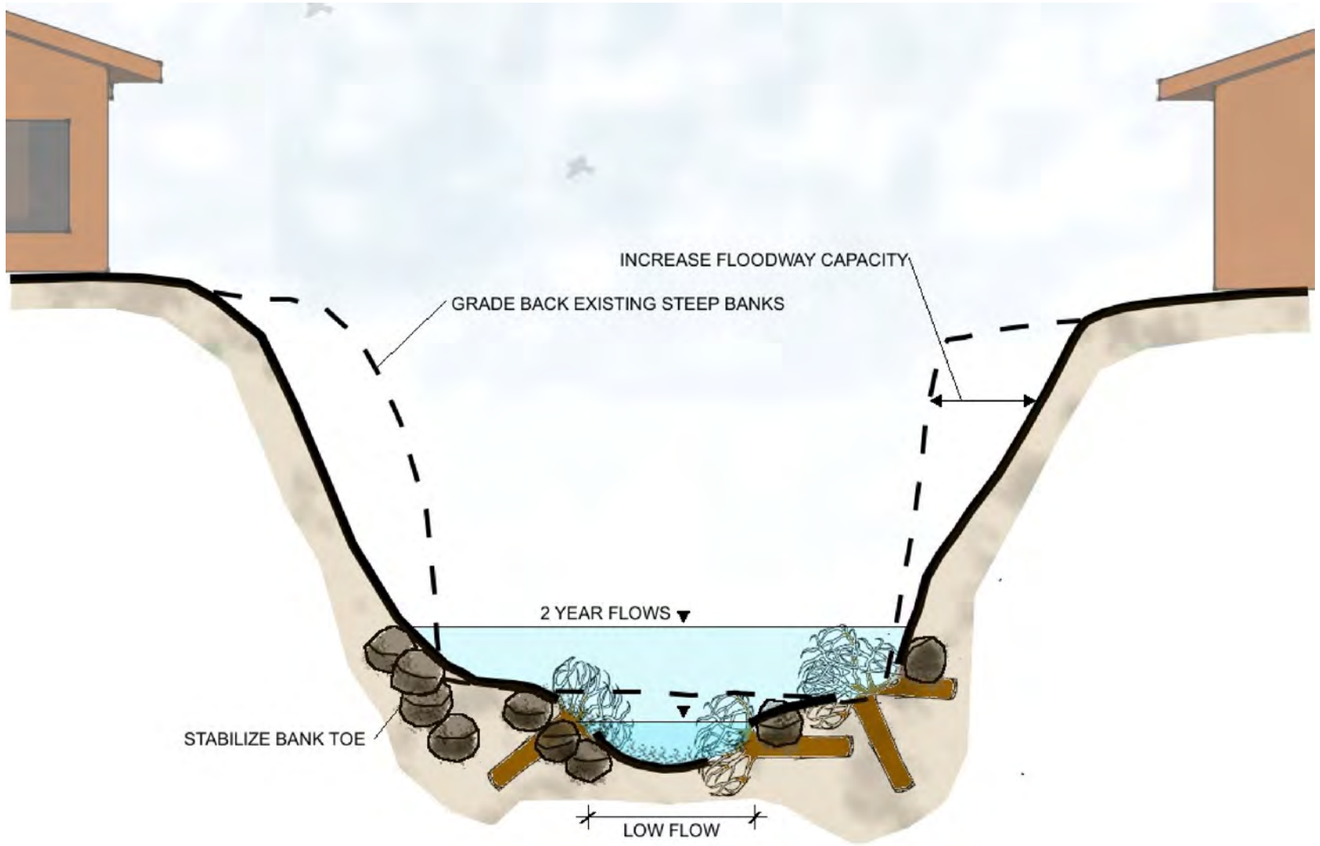
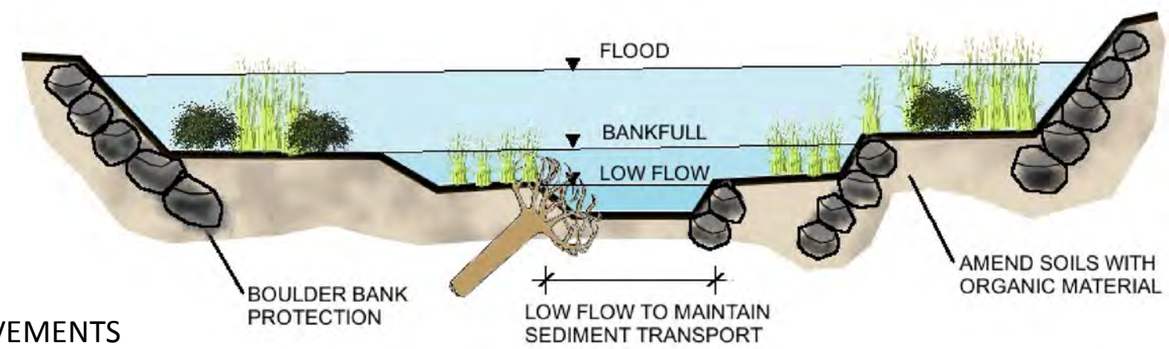
BIELINS-HOCK & WEST LOCO PARK
SPECIAL CROSS SECTION

LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014 | SHEET: **S-1**



BRIGADOON GLEN ENTRENCHED
LHCM_03_09



BRIGADOON GLEN
CHANNEL CAPACITY IMPROVEMENTS
LHCM_03_09

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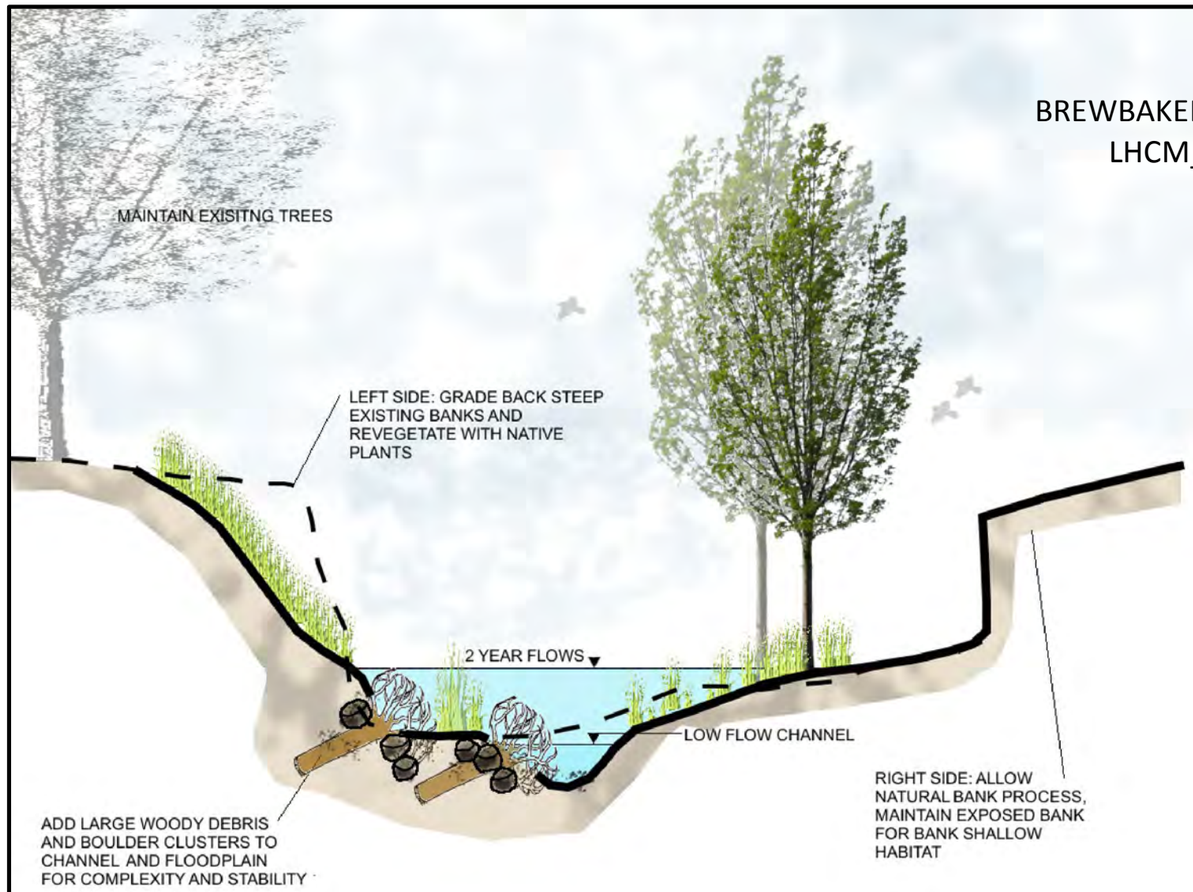
BRIGADOON GLEN
SPECIAL CROSS SECTION

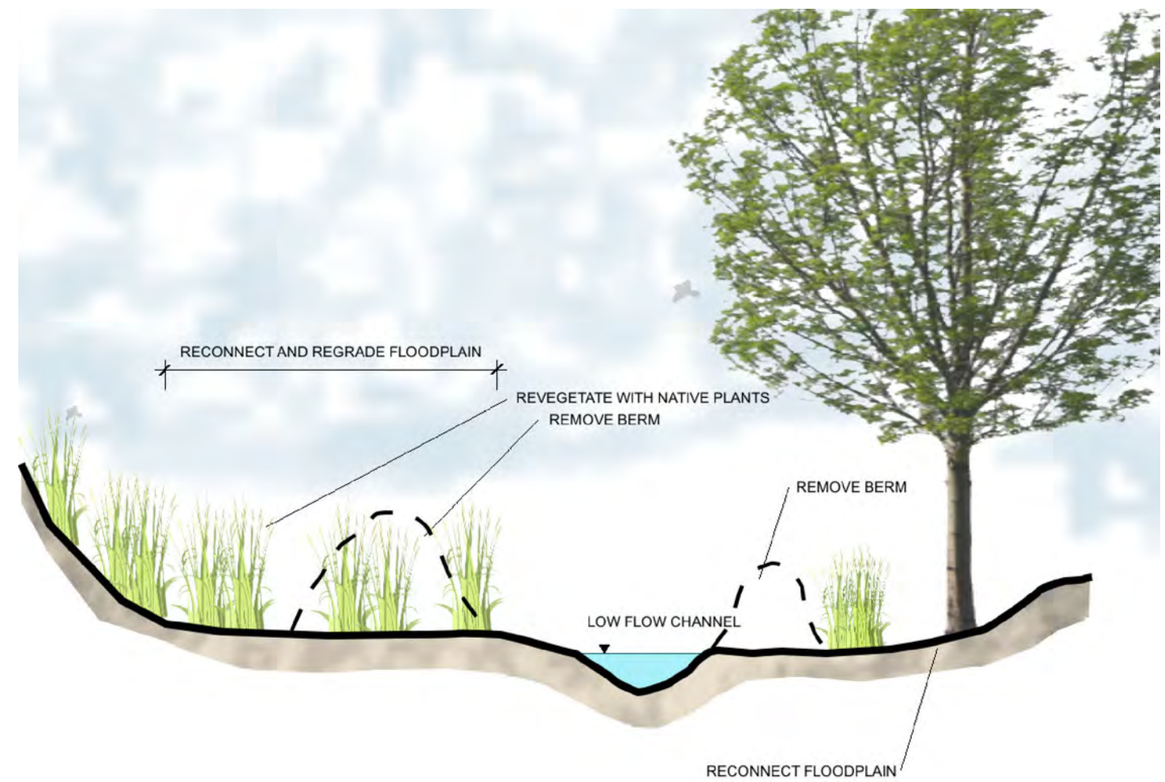
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014 | SHEET: **S-2**

BREWBAKER-SORENSEN
LHCM_05_11



BREWBAKER-SORENSEN BERM
LHCM_05_11



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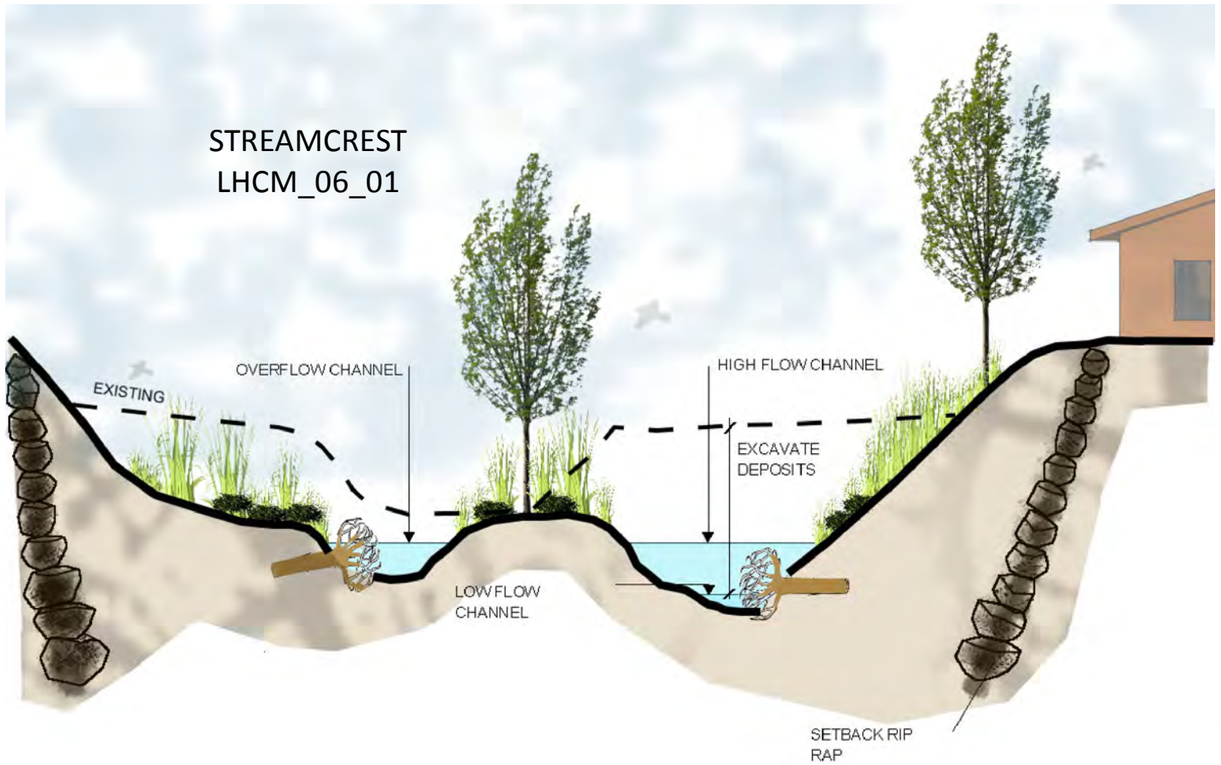
BREWBAKER-SORENSEN
SPECIAL CROSS SECTION

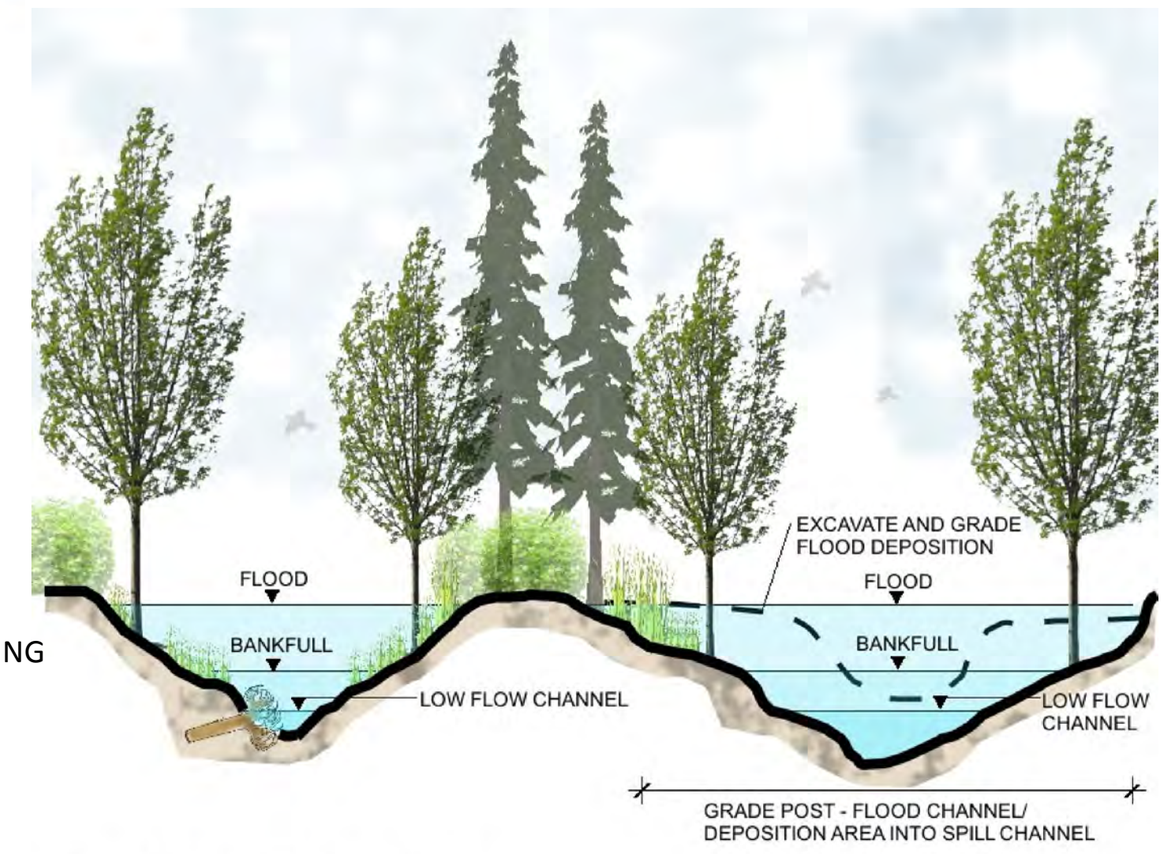
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014 | SHEET: **S-3**

STREAMCREST
LHCM_06_01



8241 39TH STREET GRADING
LHCM_05_12



*ESTABLISH LOW FLOW IN MAIN CHANNEL

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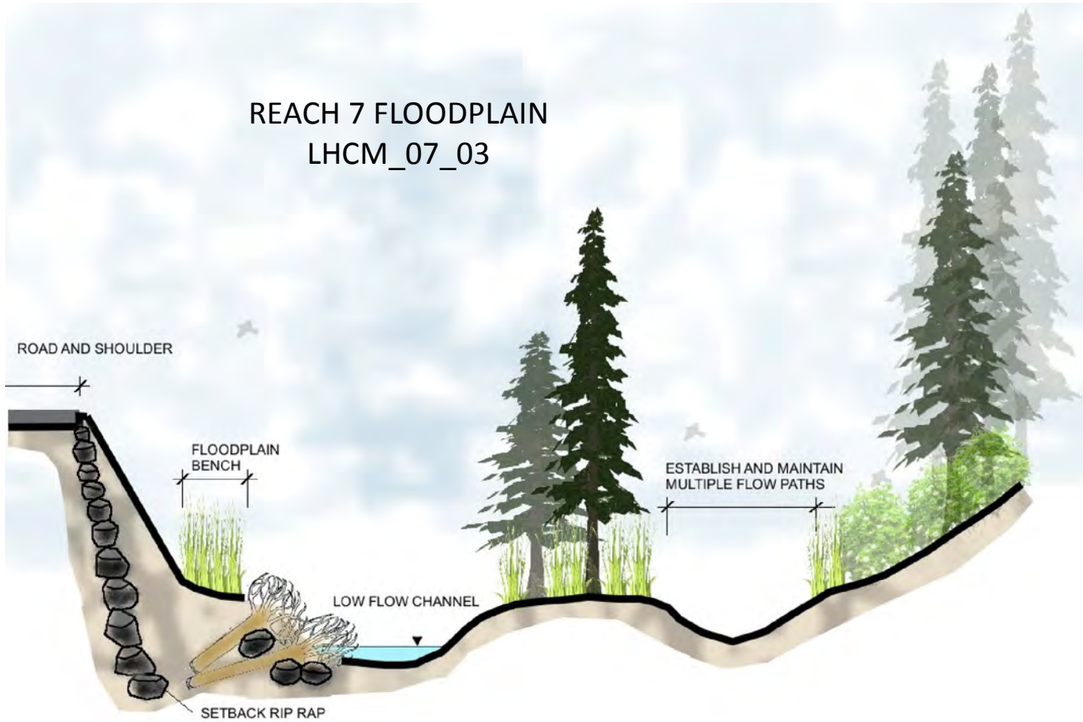
STREAMCREST & 8241 39TH STREET

SPECIAL CROSS SECTION

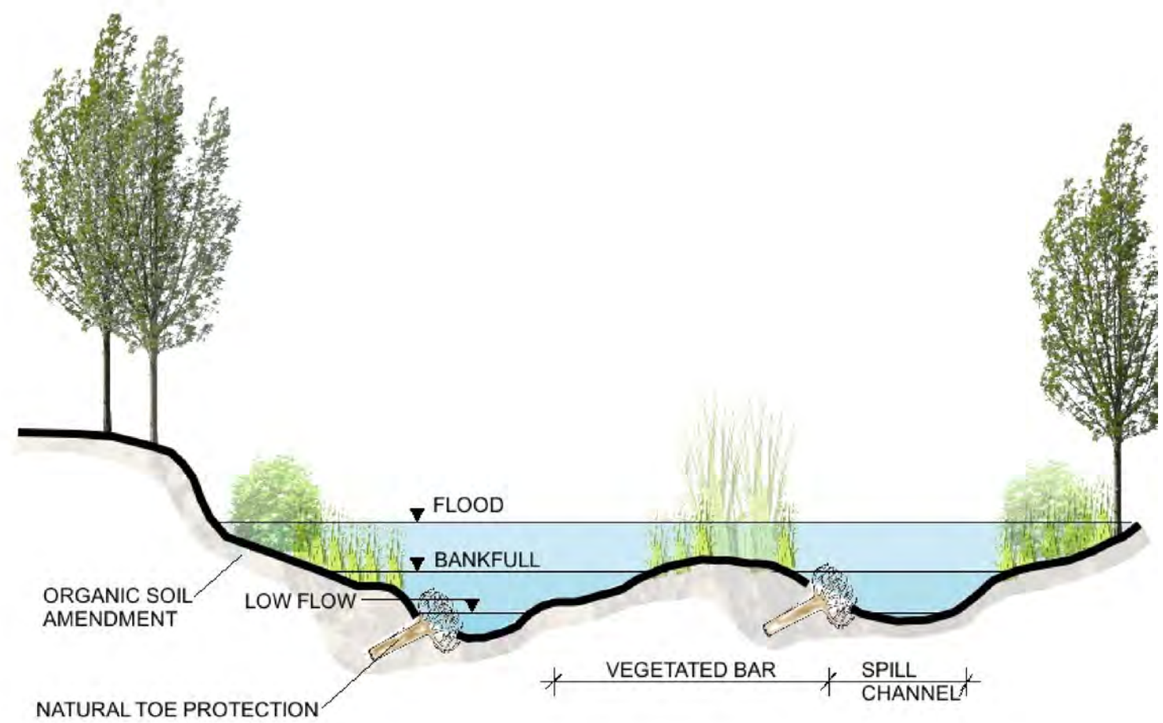
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014 | SHEET: **S-4**

REACH 7 FLOODPLAIN
LHCM_07_03



REACH 7 SPILL
LHCM_07_03



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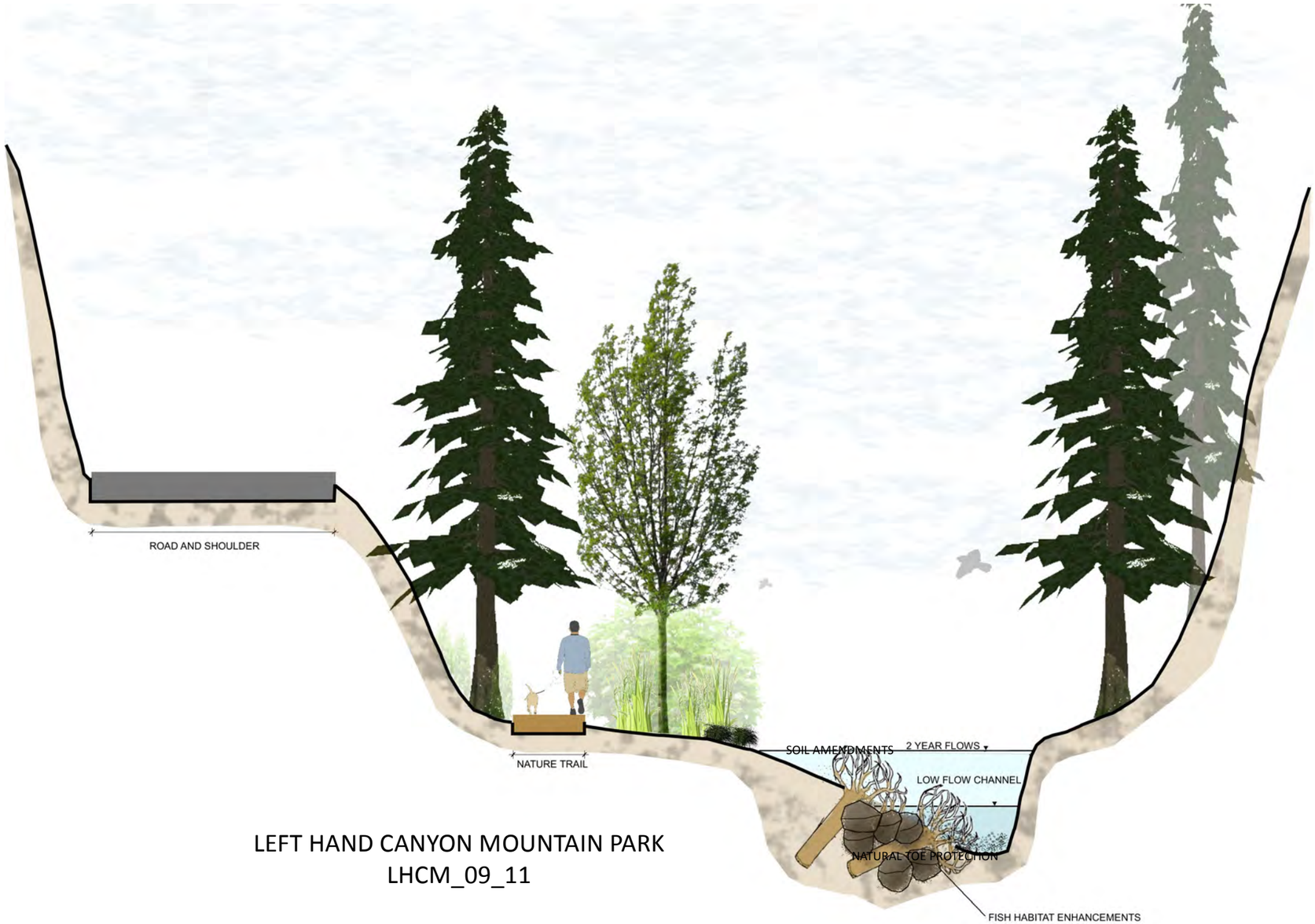
REACH 7 ALLENS LAKE DIVERSION
SPECIAL CROSS SECTION

LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014 | SHEET: **S-5**



LEFT HAND CANYON MOUNTAIN PARK
LHCM_09_11

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LEFT HAND CANYON MOUNTAIN PARK

SPECIAL CROSS SECTION

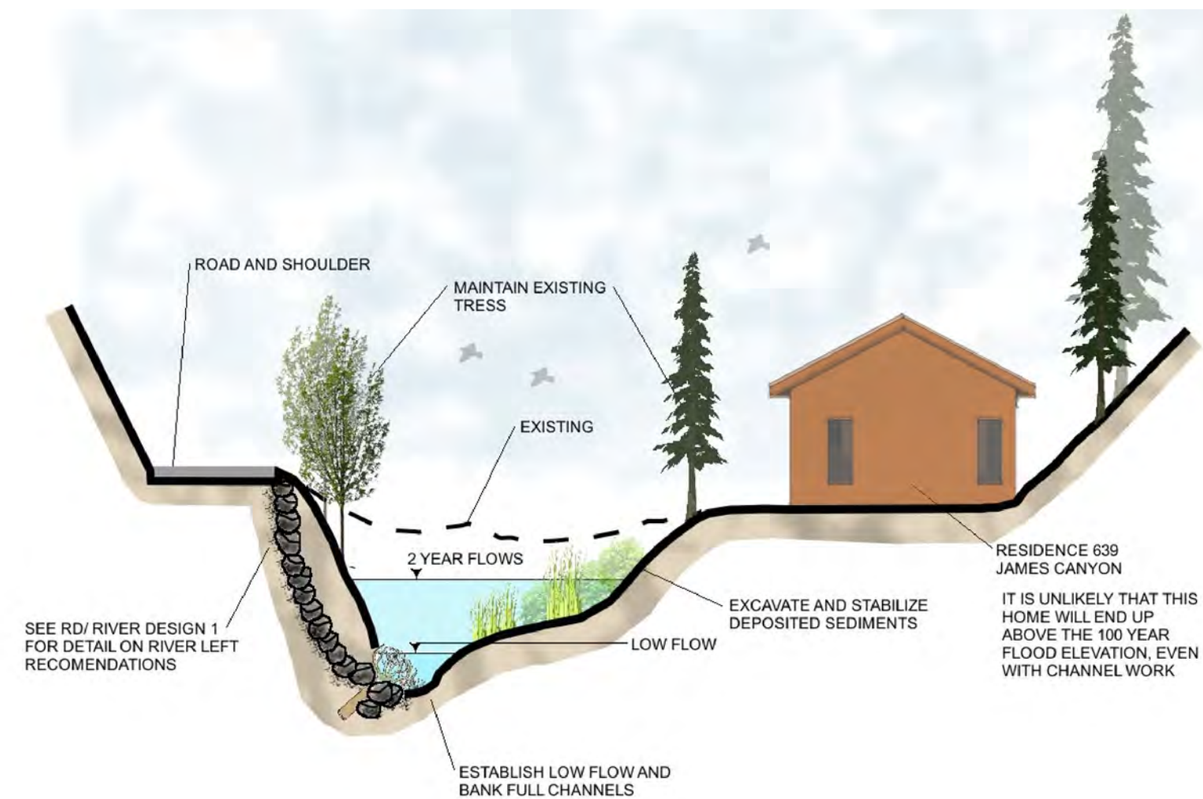
LEFT CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014

SHEET: **S-6**

JAMES CANYON (768-1029 JAMES CANYON DRIVE)
JC_16_02

LOWER JAMES CANYON NEIGHBORHOOD
JC_16_01



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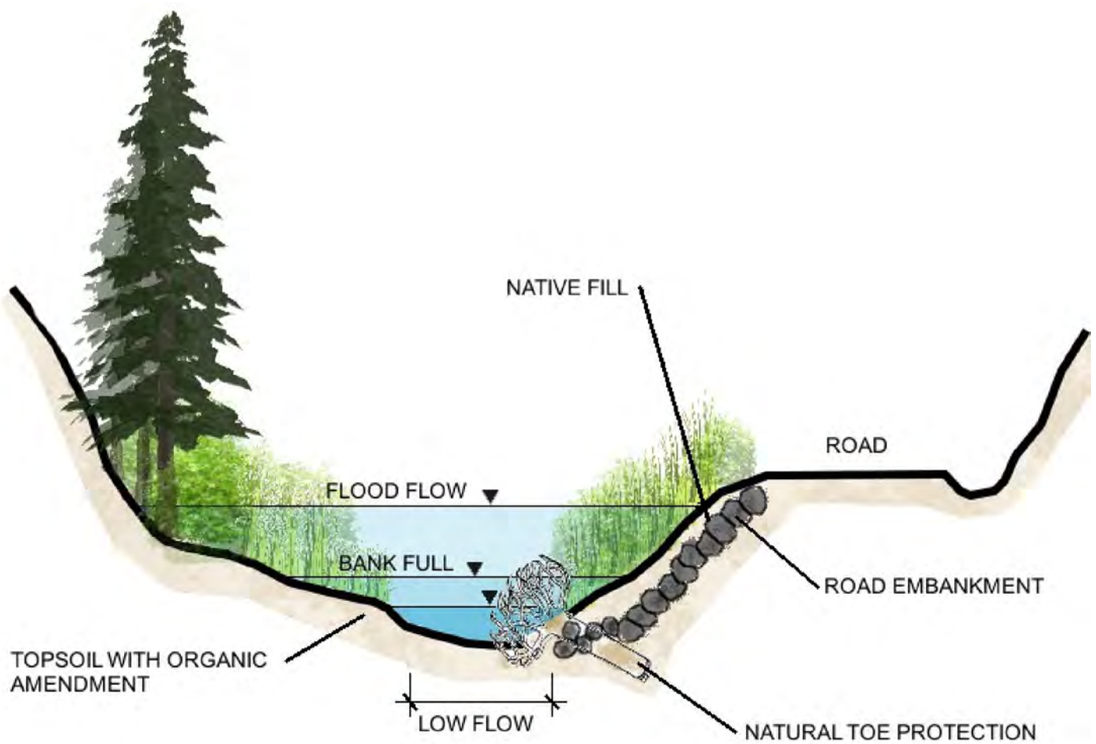
REACH 16 LOWER JAMES CANYON
SPECIAL CROSS SECTION

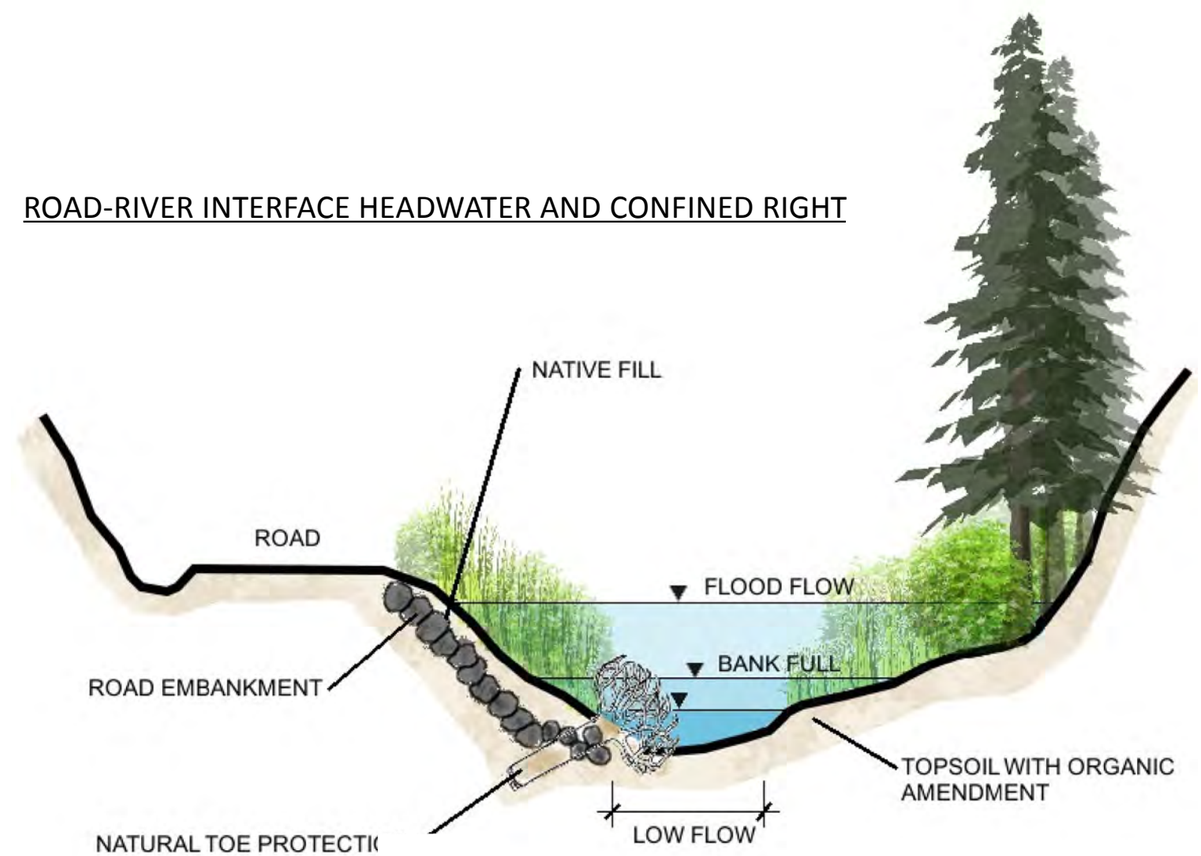
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014 | SHEET: **S-7**

ROAD-RIVER INTERFACE HEADWATER AND CONFINED LEFT



ROAD-RIVER INTERFACE HEADWATER AND CONFINED RIGHT



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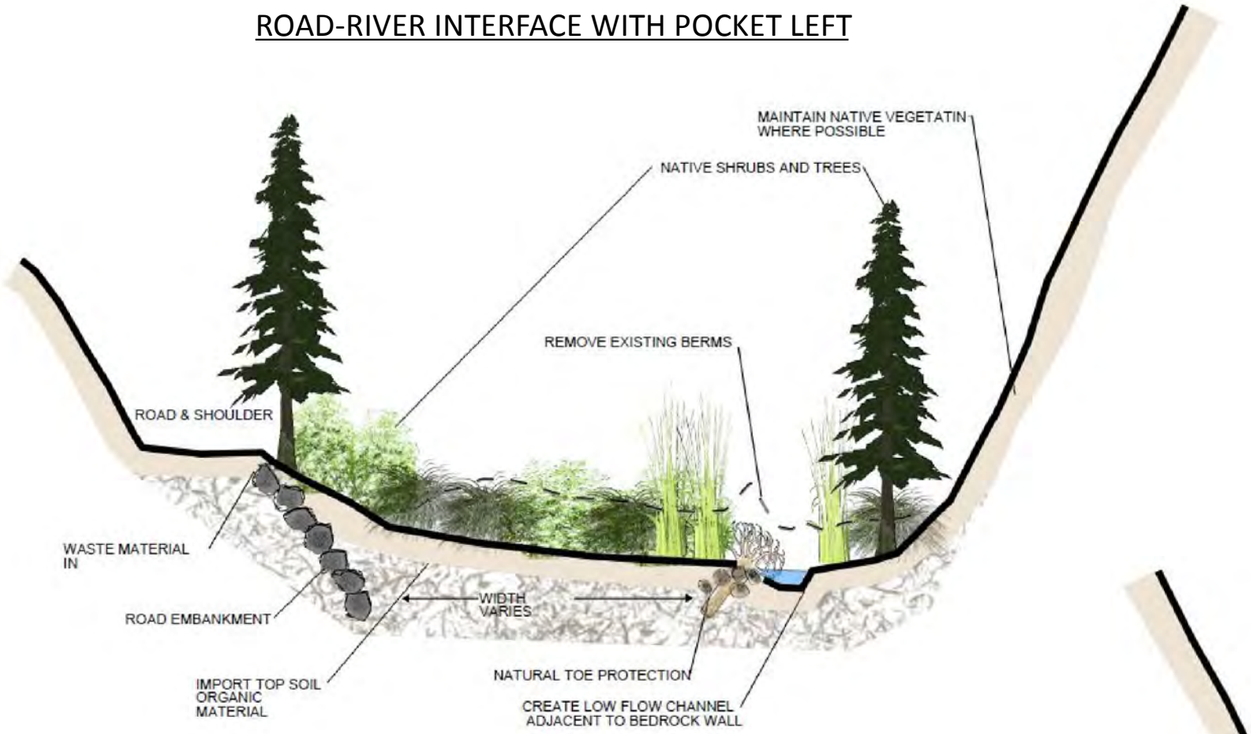
TYPICAL ROAD-RIVER INTERFACE (1)

SPECIAL CROSS SECTION

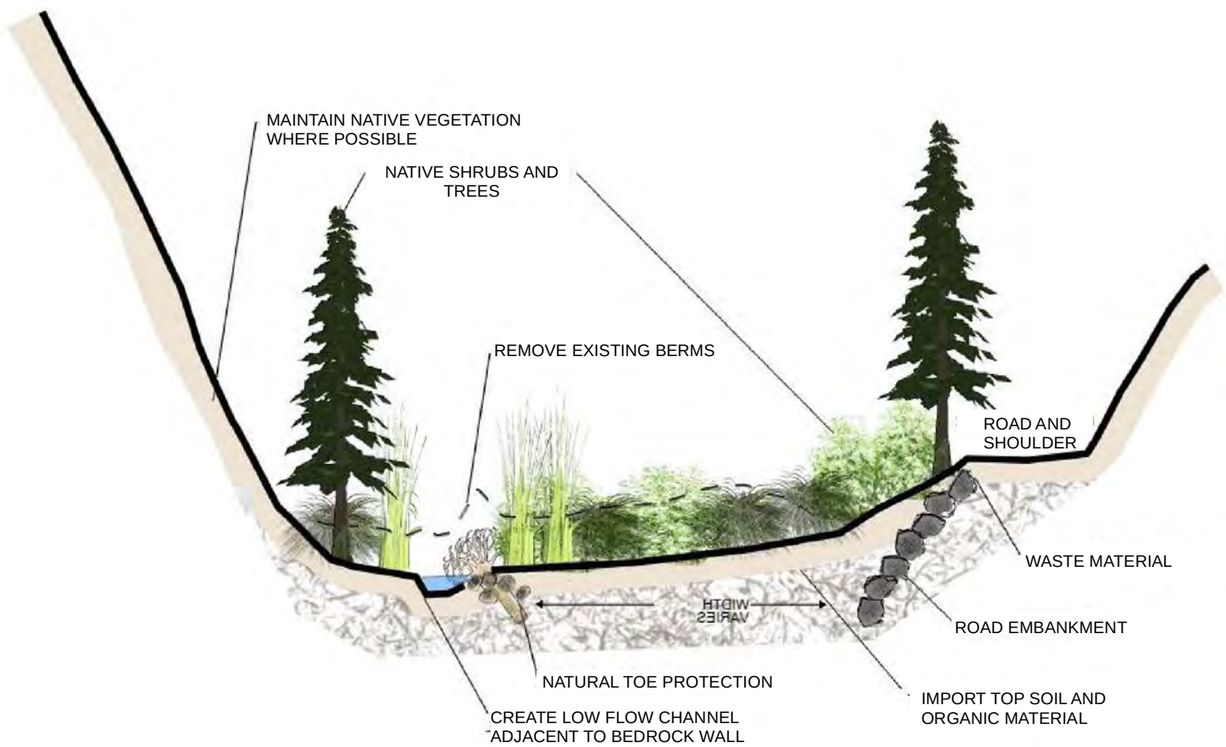
LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014 SHEET: **S-8**

ROAD-RIVER INTERFACE WITH POCKET LEFT



ROAD-RIVER INTERFACE WITH POCKET RIGHT



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TYPICAL ROAD-RIVER INTERFACE (2)

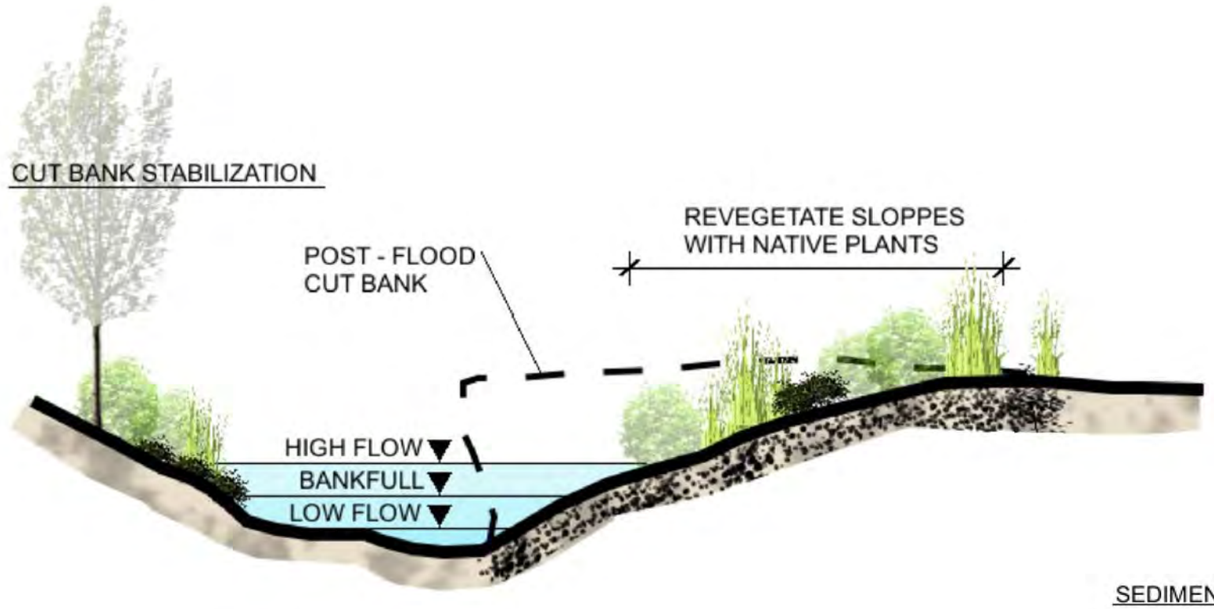
SPECIAL CROSS SECTION

LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

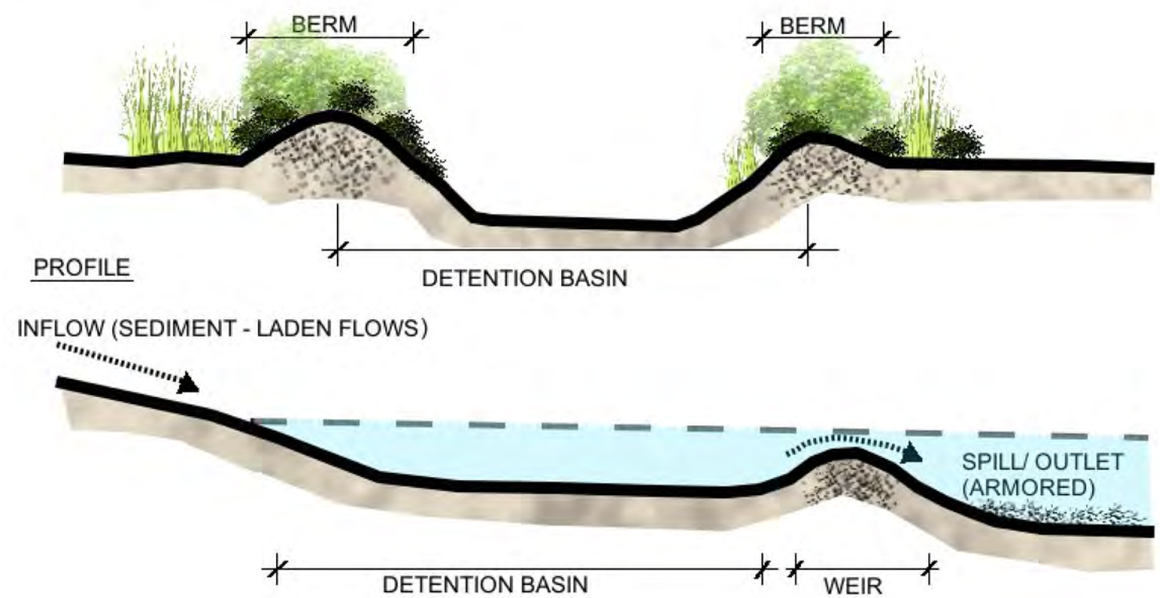
DATE: 12/08/2014

SHEET: **S-9**

CUT BANK STABILIZATION



SEDIMENT DETENTION CROSS SECTION



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CUTBANK STABILIZATION & SEDIMENT DETENTION

DETAIL

LEFT HAND CREEK WATERSHED MASTER PLAN
BOULDER COUNTY, COLORADO

DATE: 12/08/2014

SHEET: **D-1**