VOLUME 2 - FIGURES

SOUTHWEST CANAL AND CREEK STUDY

PHASE 2 - MIDAS CREEK

Prepared for:

SALT LAKE COUNTY

September 2021

Prepared by:

BOWEN COLLINS & ASSOCIATES

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LEGEND

- Midas Creek Drainage Basin/Study Area
- Municipal Boundary
- Midas, Copper & Butterfield Creeks
- Removed Drainage Area*
- Major Canal/Jordan River

West Jordan
South Jordan
Unincorporated County
South Jordan
Herriman
South Jordan
Riverton
Herriman
Riverton
Riverton
Bluffdale
Herriman
Unincorporated County

Rio Tinto
Bingham Open Pit Mine

Butterfield Canyon

Confluence of Midas and Copper Creeks

Confluence of Midas and Butterfield Creeks

State Hwy
New Bingham Hwy
9000 S
Skye Dr
Shields Ln
South Jordan Pkwy
4000 W
Mountain View Corridor
6000 West
11400 S
South Jordan Canal
Bacchus Hwy
Herriman Hwy
3600 W
12600 S
Utah Lake Distribution Canal
2700 W
Utah and Salt Lake Canal
Jordan River
13400 S
Welby Jacobs Canal
Mountain View Hwy
Middle Canyon Rd
TOOELE COUNTY

NORTH:

SCALE: 0 2,500 5,000 Feet

MIDAS CREEK
STUDY AREA

SALT LAKE COUNTY
SOUTHWEST CANAL
AND CREEK STUDY

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FIGURE NO.
1-1

* Runoff from the removed drainage area is collected in a cutoff channel/ pipe and conveyed to the north away from Bingham Creek, Midas Creek and Butterfield Creek.

P:\Salt Lake County\2019 Phase 2 - Southwest Canal and Creek Study\4.0 GIS\4.1 Projects\Midas\MC_Study_Area.aprx tjorgensen 11/20/2020

LEGEND

- Midas Creek Drainage Basin/Study Area
- Municipal Boundary
- Midas & Butterfield Creeks
- Copper Creek & Major Canal

Pipe Network for Butterfield Creek

- 48" RCP
- 60" RCP

Upstream Limit of Hydraulic Model (Midas Creek)

South Jordan

11800 South

Unincorporated County

South Jordan

Herriman

6000 West

Mountain View Corridor

Confluence of Midas and Butterfield Creeks

Midas Creek

Realigned Copper Creek Channel

Abandoned Copper Creek Channel

Herriman Parkway

Copper Creek

Approximate Pipe Diameter Change Location

Herriman

Riverton

12300 South

Herriman

Riverton

Unincorporated County

Herriman

Intake to 48" Pipe Structure

Butterfield Creek

Upstream Limit of Hydraulic Model (Butterfield Creek)

Bacchus Hwy

Herriman Hwy

Welby Jacob Canal

NORTH:

SCALE: 0 1,000 2,000 Feet

MIDAS CREEK
STUDY AREA 2

SALT LAKE COUNTY
SOUTHWEST CANAL
AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
1-2

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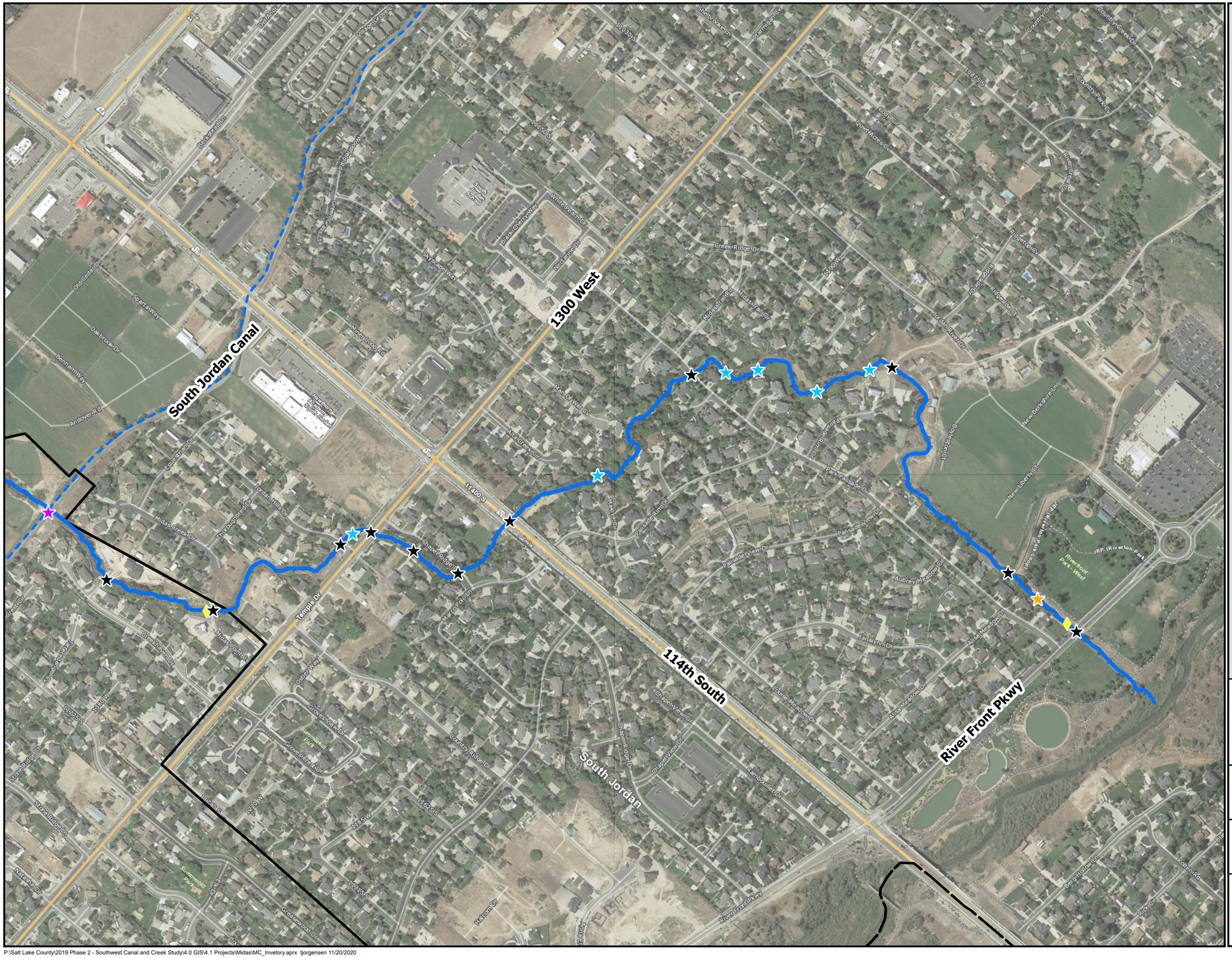

Index Map

LEGEND

Existing Structure Type

- Drop Structure
- Canal Overflow/Dumpout
- Bridge
- Culvert

Potential Problems/Concerns

- Bank Erosion
- Fence Crossing Creek
- Potential Unpermitted Culvert
- Rounded Riprap
- Trash Rack
- Uncertifiable Levee
- Midas Creek
- Major Canal
- Municipal Boundary

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK EXISTING STRUCTURE INVENTORY AND POTENTIAL PROBLEM AREAS

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 2-1

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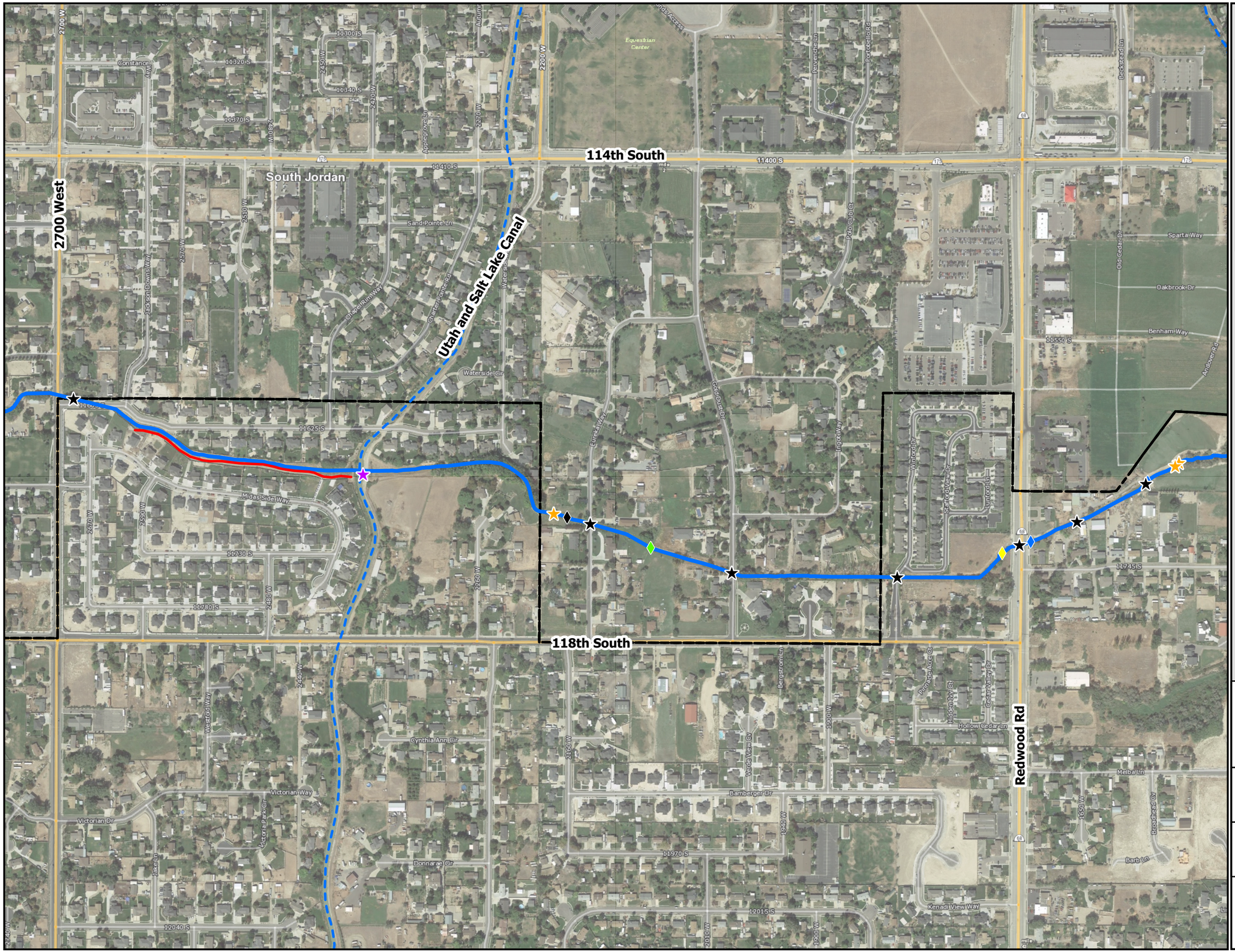

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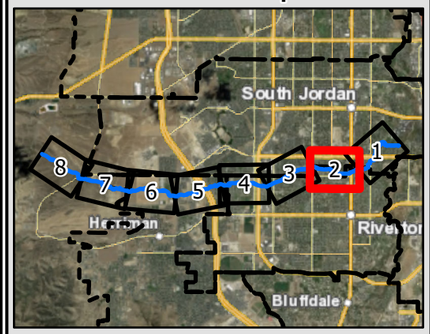

LEGEND

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- Rounded Riprap
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- Uncertifiable Levee
- Midas Creek
- Major Canal
- Municipal Boundary

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK EXISTING STRUCTURE INVENTORY AND POTENTIAL PROBLEM AREAS

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 2-1

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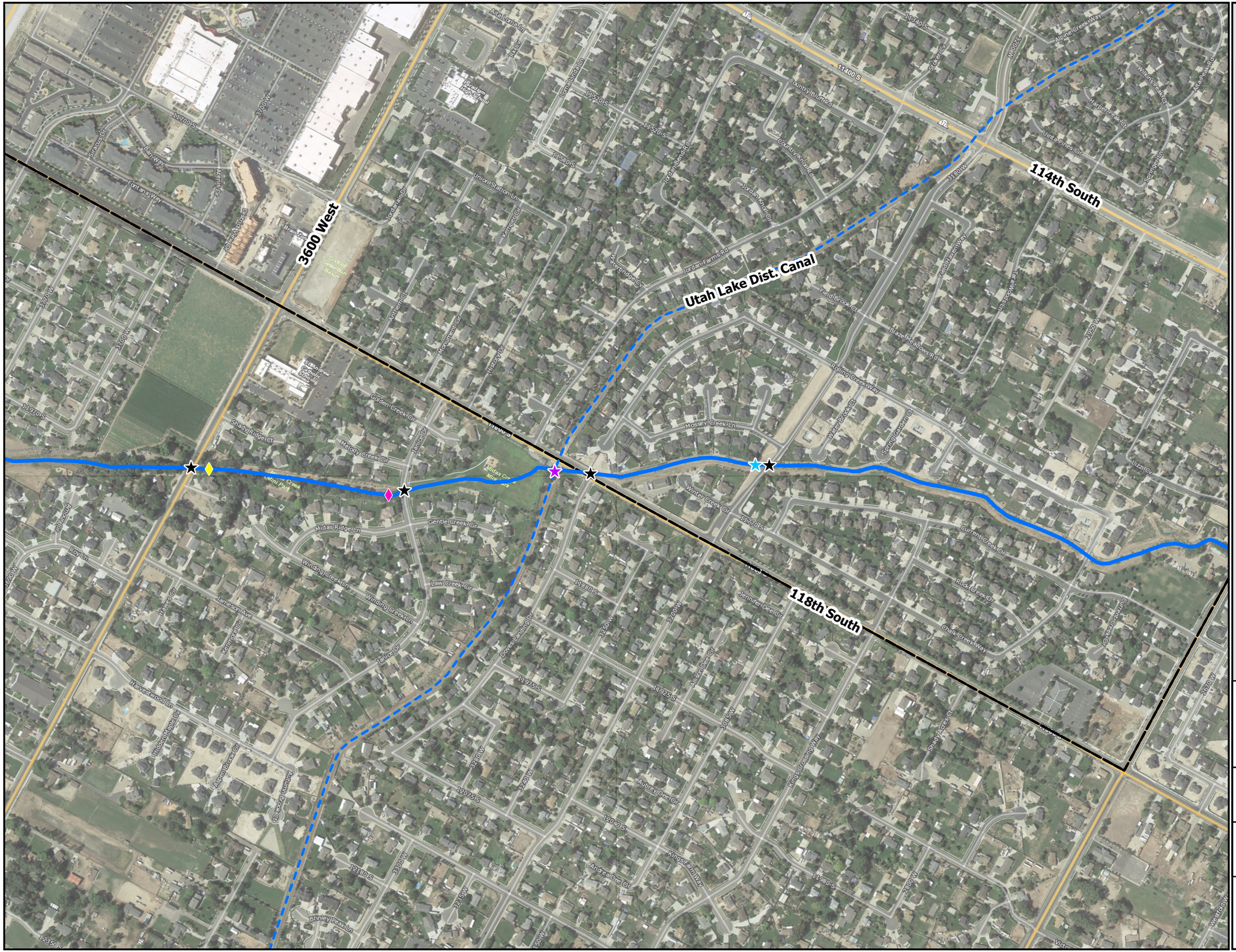

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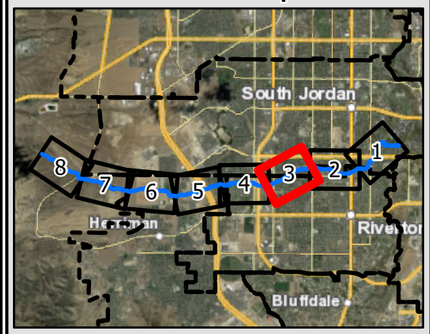

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NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK EXISTING STRUCTURE INVENTORY AND POTENTIAL PROBLEM AREAS

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

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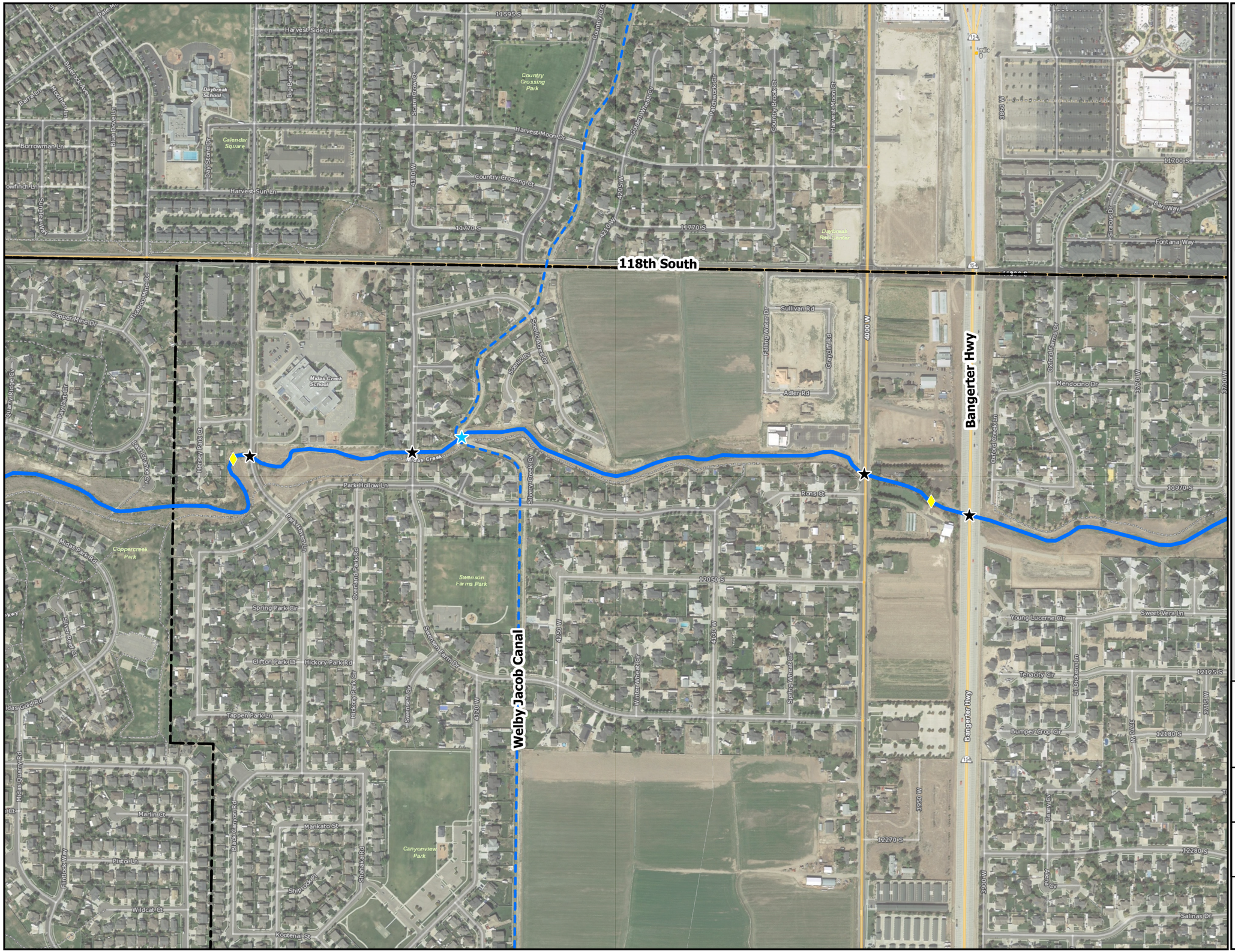

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- Municipal Boundary

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK EXISTING STRUCTURE INVENTORY AND POTENTIAL PROBLEM AREAS

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

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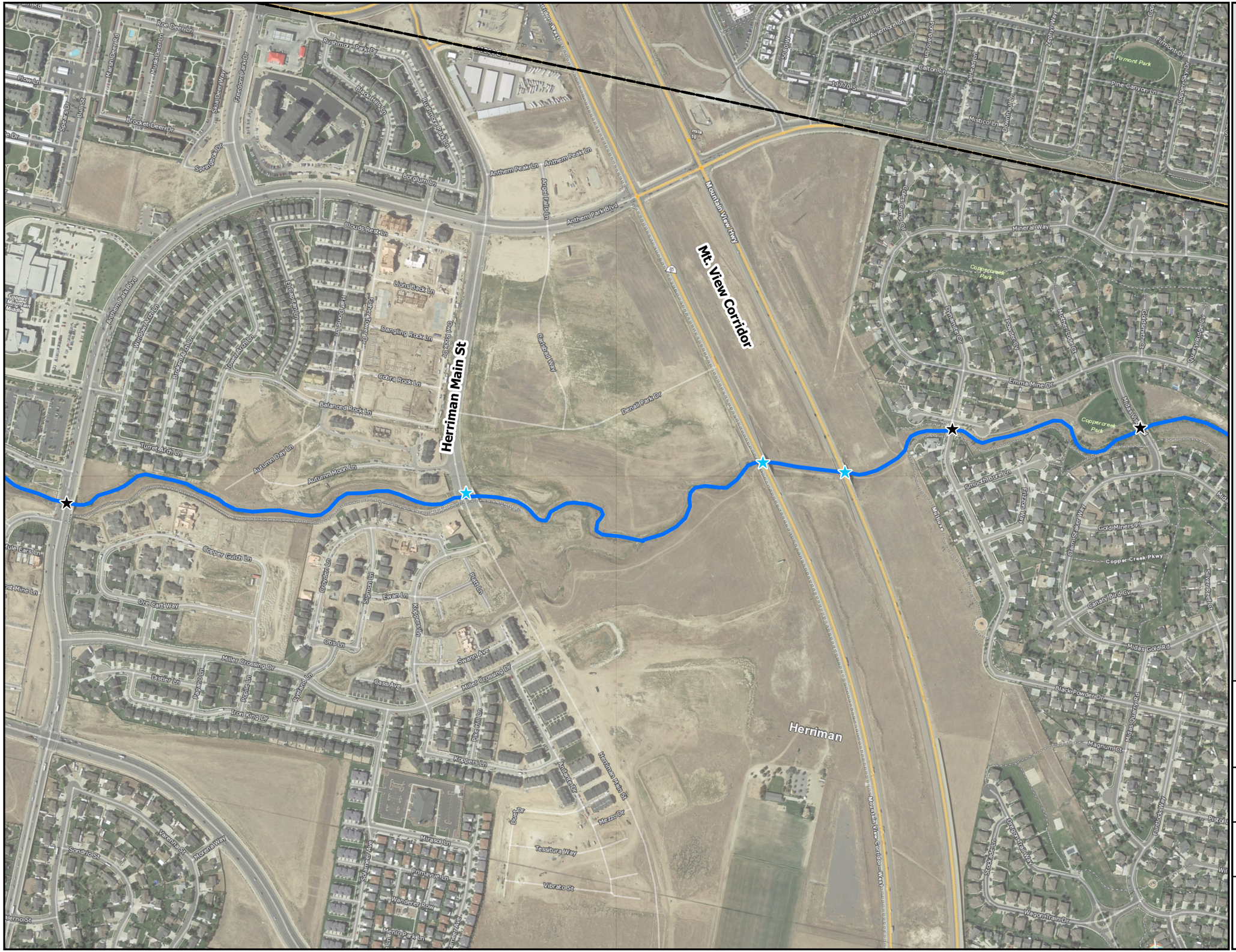
Herriman Main St
Mt. View Corridor
Mountain View Hwy
Anthem Park Blvd
Anthem Peak Ln
Mineral Way
Emma Mine Dr
Midas Creek
Copper Creek Park
Herriman
Copper Gulch Ln
Ore Cart Way
Miller Crossing Dr
Iron King Dr
Koppers Ln
Cass Ave
Swamp Ave
Tessitura Way
Vibrato St
Primavue Ln
Miraszi Ln
Mezzo Dr
Andante Dr
Herriman Main St
Wagon Train Dr
Midas Gold Rd
Black Powder Dr
Magnum Ct
Copper Creek Pkwy
Gold Miners Pl
Canary Bird Cv
Smoothbore Ln
Mistico Ln
Pine Canyon Ln
Firmont Park
Rushmore Park Dr
Brocket Deer Dr
Spring Rock Dr
Anthem Peak Ln
Angel Falls Ln
Clouds Rest Ln
Lichen Back Ln
Dangling Rock Ln
Cobra Rock Ln
Balanced Rock Ln
Turret Arch Ln
Autumn Day Ln
Autumn Moon Ln
Denali Park Dr
Garfield Way
Roe Deer Ln
Freedom Park Dr
Black Hills Ln
Mountain View Corridor
5800 W
11770 S
Curran Dr
Avenmore Ln
Calton Ln
Fairhead Ln
Downhall Ln
Zephyr Way
Firmont Dr
Copper Sky Dr
Pine Canyon Ln
Gossamer Gl
Dynamite Dr
Powder Gv
Miner Level Ct
Goldsmith Gl
Quartz Ridge Gv
Midas Vw
Smoothbore Ln
Mistico Ln
Gold Miners Pl
Glum Stacker Way
Copper Creek Pkwy
Canary Bird Cv
Silver Reef St
Midas Gold Rd
Black Powder Dr
Midas Quarry Rd
Magnum Ct
Flintlock Way
Stockade Ln
Wagon Train Dr
Herriman Main St
Andante Dr
Mezzo Dr
Tessitura Way
Vibrato St
Primavue Ln
Miraszi Ln
Wanderer Row
Memo Park Ln
Sonorous Ave
Sonnet Ln
Ewan Ln
Koppers Ln
Pikehill Ln
Cass Ave
Swamp Ave
Miller Crossing Dr
Otis Ln
Ore Cart Way
Copper Gulch Ln
Iron King Dr
Pepperidge Ln
Poplar Ln
Dexter Ln
Ryeland Ln
Miller Crossing Dr
Cass Ave
Swamp Ave
Koppers Ln
Pikehill Ln
Andante Dr
Herriman Main St
Mezzo Dr
Tessitura Way
Vibrato St
Primavue Ln
Miraszi Ln
Wanderer Row
Memo Park Ln
Sonorous Ave
Sonnet Ln
Ewan Ln
Koppers Ln
Otis Ln
Ore Cart Way
Copper Gulch Ln
Iron King Dr

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- Major Canal
- Municipal Boundary

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK EXISTING STRUCTURE INVENTORY AND POTENTIAL PROBLEM AREAS

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 2-1

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- Municipal Boundary

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK EXISTING STRUCTURE INVENTORY AND POTENTIAL PROBLEM AREAS

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 2-1

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Bacchus Hwy

13800 S

Index Map

LEGEND

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- Drop Structure
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- Bridge
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Potential Problems/Concerns

- Bank Erosion
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- Trash Rack
- Uncertifiable Levee
- Midas Creek
- Major Canal
- Municipal Boundary

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK EXISTING STRUCTURE INVENTORY AND POTENTIAL PROBLEM AREAS

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

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FIGURE NO. 2-1

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Confluence with Midas Creek

6000 West

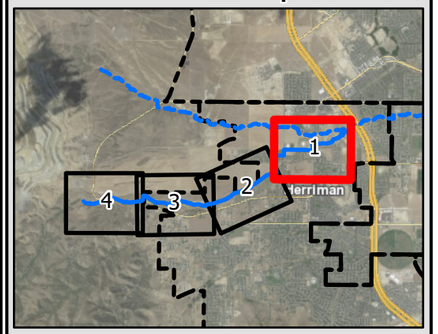
5600 West

Herriman Blvd

Silver Sky Dr.

Herriman

Index Map



LEGEND

- ★ Existing Culvert

Potential Problem/Concern

- Bank Erosion
- Fence Crossing Creek
- Rounded Riprap
- Trash Rack

Butterfield Creek

- 48" RCP
- 60" RCP
- 66" RCP
- Hidden Oaks Development*
- Open Channel
- Channel Encroached by Farming Activities
- Midas Creek
- Hidden Oaks Development Property*
- Municipal Boundary

NORTH:

SCALE: 0 250 500 Feet

* Culverts and channel improvements are currently being constructed as part of the Hidden Oaks property development. Construction on the improvements is anticipated to be completed within a year or two. The post-construction culverts and channel improvements were included in the hydraulic model.

BUTTERFIELD CREEK EXISTING STRUCTURE INVENTORY AND POTENTIAL PROBLEM AREAS

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 2-2

P:\Salt Lake County\2019 Phase 2 - Southwest Canal and Creek Study\4.0 GIS\4.1 Projects\Butterfield\Butterfield - Inventory.aprx tjorgensen 11/20/2020

Intake Structure to 48" RCP

Herriman Hwy

6400 West

Muzzle Loader Dr

Peacemaker Way

Hidden Elm Way

Twisted Oak Dr

Rifle Shot Ln

Silver Bowl Dr

13100 S

13200 S

6100 W

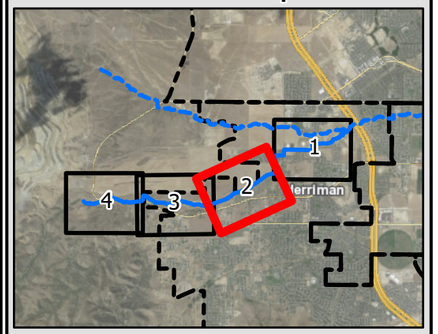
6200 W

6300 W

Pioneer St

* Culverts and channel improvements are currently being constructed as part of the Hidden Oaks property development. Construction on the improvements is anticipated to be completed within a year or two. The post-construction culverts and channel improvements were included in the hydraulic model.

Index Map



LEGEND

- Existing Culvert

Potential Problem/Concern

- Bank Erosion
- Fence Crossing Creek
- Rounded Riprap
- Trash Rack

Butterfield Creek

- 48" RCP
- 60" RCP
- 66" RCP
- Hidden Oaks Development*
- Open Channel
- Channel Encroached by Farming Activities
- Midas Creek
- Hidden Oaks Development Property*
- Municipal Boundary

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK EXISTING STRUCTURE INVENTORY AND POTENTIAL PROBLEM AREAS

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 2-2

P:\Salt Lake County\2019 Phase 2 - Southwest Canal and Creek Study\4.0 GIS\4.1 Projects\Butterfield\Butterfield - Inventory.aprx tjorgensen 11/20/2020

Herriman

Hi Country Cir

Jem Cir

Sunset Shadow Cir

Sunset Shadow Ln

Havana Ln

Cyprus Ln

Hall Crossing Dr

Gibson Ln

7300 West

Galen Dr

Elliot Dr

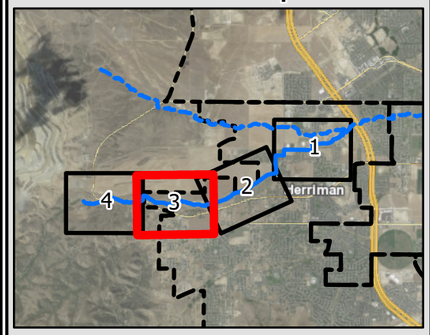
Rowell Dr

Ansell Ave

Herriman Hwy

* Culverts and channel improvements are currently being constructed as part of the Hidden Oaks property development. Construction on the improvements is anticipated to be completed within a year or two. The post-construction culverts and channel improvements were included in the hydraulic model.

Index Map



LEGEND

- Existing Culvert

Potential Problem/Concern

- Bank Erosion
- Fence Crossing Creek
- Rounded Riprap
- Trash Rack

Butterfield Creek

- 48" RCP
- 60" RCP
- 66" RCP
- Hidden Oaks Development*
- Open Channel
- Channel Encroached by Farming Activities
- Midas Creek
- Hidden Oaks Development Property*
- Municipal Boundary

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK EXISTING STRUCTURE INVENTORY AND POTENTIAL PROBLEM AREAS

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 2-2

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Bacchus Hwy

Herriman Hwy

Herriman Hwy

Herriman Hwy

Butterfield Canyon

Turkey Canyon Rd

* Culverts and channel improvements are currently being constructed as part of the Hidden Oaks property development. Construction on the improvements is anticipated to be completed within a year or two. The post-construction culverts and channel improvements were included in the hydraulic model.

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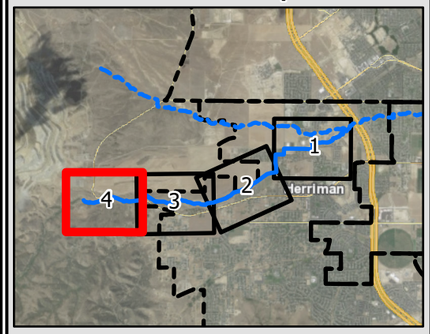

LEGEND

- ★ Existing Culvert

Potential Problem/Concern

- Bank Erosion
- Fence Crossing Creek
- Rounded Riprap
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Butterfield Creek

- 48" RCP
- 60" RCP
- 66" RCP
- Hidden Oaks Development*
- Open Channel
- Channel Encroached by Farming Activities
- Midas Creek
- Hidden Oaks Development Property*
- Municipal Boundary

NORTH:

NORTH

SCALE:

0 250 500

Feet

BUTTERFIELD CREEK EXISTING STRUCTURE INVENTORY AND POTENTIAL PROBLEM AREAS

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.

2-2

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P:\Salt Lake County\2019 Phase 2 - Southwest Canal and Creek Study\4.0 GIS\4.1 Projects\Butterfield\Butterfield - Inventory.aprx tjorgensen 11/20/2020

LEGEND

- Midas Creek Drainage
- Municipal Boundary
- Midas & Butterfield Creeks
- Midas Creek Subbasins with ID

West Jordan

South Jordan

South Jordan

Riverton

Draper

Herriman

Bluffdale

Bluffdale

Unincorporated County

MI890 MI880 MI870 MI810 MI800 MI680 MI830 MI820 MI1000 OH130 OH100 OH110 OH120 OH140 MI1090 MI1140 MI1150 MI1170 MI1160 MI1100 MI1110 MI1180 MI1190 HC110 HC130 HC140 MI660 MI670 HC120 HC150 MI990 MI950 HC160 HC170 MI1060 HC180 HC190 MI970 MI980 MI840 MI850 MI860 MI550 MI650 MI640 MI620 MI720 MI630 MI900 MI920 MI930 MI910 MI740 MI940 MI750 MI770 MI760 MI960 MI540 MI600 MI590 MI610 MI530 MI510 MI500 MI520 MI480 MI490 MI470 MI580 MI570 MI780 MI790 PRC_MI100 MI430 MI360 MI350 MI280 MI400 MI410 MI340 MI290 MI270 MI250 MI460 MI440 MI420 MI390 MI370 MI380 MI450 MI310 MI260 MI320 MI330 MI180 MI170 MI160 MI190 MI110 MI100 MI200 MI120 MI210 SJC_MI110 MI130 MI140 MI150 MI220 SJC_MI120 MI230 SJC_MI125 MI240 SJC_MI130 SJC_MI180 SJC_MI140 SJC_MI150 SJC_MI160 SJC_MI170 ULDC_MI400 ULDC_MI330 ULDC_MI380 ULDC_MI290 ULDC_MI320 ULDC_MI300 ULDC_MI350 ULDC_MI360 ULDC_MI370 USLC_M290 USLC_MI130 USLC_MI100 USLC_MI120 USLC_MI110 USLC_MI140 USLC_MI170 USLC_MI150 USLC_MI200 USLC_MI160 USLC_MI190 USLC_MI210 USLC_MI230 USLC_MI220 USLC_MI250 USLC_MI240 USLC_MI270 USLC_MI280

Butterfield Canyon

Mountain View Hwy

OOELE COUNTY

SALT LAKE COUNTY

UTAH COUNTY

UTAH COUNTY

UTAH COUNTY

CAMP WILLIAMS ARMY NATIONAL GUARD

NORTH:

SCALE: 0 2,500 5,000 Feet

MIDAS CREEK DRAINAGE BASIN AND SUBBASIN BOUNDARIES

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 4-1

P:\Salt Lake County\2019 Phase 2 - Southwest Canal and Creek Study\4.0 GIS\4.1 Projects\Midas\Midas Creek Subbasins.aprx tjorgensen 11/20/2020

L E G E N D

- Midas/Butterfield Creek
- Major Canal

Hydrologic Soil Type

- A
- B
- C
- D
- Unknown
- Subbasin Boundary

PRC_MI100
MI870
MI890
MI880
MI810
MI800
MI850
MI680
MI830
MI820
MI660
MI840
MI860
MI620
MI550
MI540
MI530
MI610
MI510
MI500
MI480
MI520
MI600
MI590
MI580
MI570
MI780
MI790
MI650
MI640
MI630
MI720
MI990
MI920
MI900
MI930
MI910
MI740
MI940
MI750
MI770
MI760
MI960
MI950
MI970
MI1000
MI1060
MI1180
MI980
MI1190
MI1140
MI1090
MI1150
MI1170
MI1160
MI1100
MI1110
HC110
HC130
HC140
HC120
HC150
HC100
HC170
HC160
HC180
HC190
OH130
OH120
OH100
OH110
OH140
MI1430
MI400
MI360
MI350
MI280
MI180
MI170
MI160
MI190
MI110
MI200
MI120
MI100
MI340
MI290
MI270
MI250
MI410
MI390
MI320
MI310
MI300
MI260
MI370
MI460
MI440
MI420
MI210
SJC_MI110
MI130
MI450
MI380
MI330
USLC_M290
MI150
MI140
ULDC_MI400
USLC_MI130
MI480
USLC_MI100
SJC_MI120
MI220
MI470
MI490
ULDC_MI380
ULDC_MI330
MI230
ULDC_MI390
ULDC_MI290
USLC-MI120
USLC_MI110
SJG_MI125
USLC_MI140
USLC_MI170
SJC_MI130
ULDC_MI320
USLC-MI150
MI240
ULDC_MI310
USLC_MI180
ULDC_MI300
ULDC_MI350
USLC_MI200
SJC_MI180
USLC_MI160
USLC_MI190
SJC_MI140
SJC_MI150
USLC_MI230
USLC_MI220
USLC_MI210
SJC-MI160
USLC_MI250
ULDC_MI360
USLC_MI240
SJC_MI170
ULDC_MI370
USLC_MI270
USLC_MI260
USLC_MI280
Welby Jacobs Canal
Utah Lake Distributing Canal
Utah & Salt Lake Canal
South Jordan Canal
UTAH COUNTY
UTAH COUNTY

Hydrologic Soil Type from NRCS SSURGO Soil Dataset

NORTH:

SCALE:

0 2,250 4,500 Feet

MIDAS CREEK DRAINAGE BASIN HYDROLOGIC SOIL TYPES

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.

4-2

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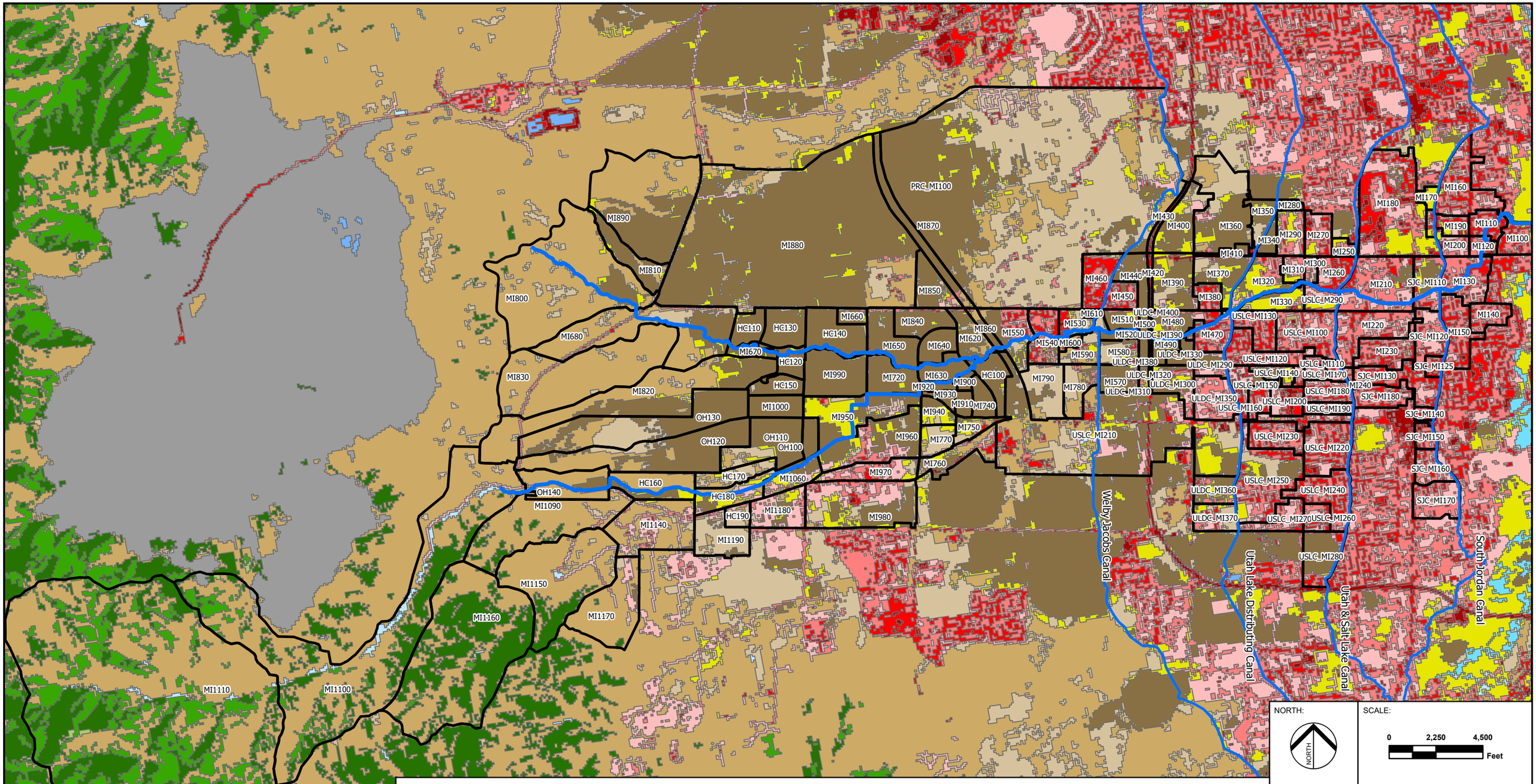

National Land Cover Dataset (NLCD) from the United States Geological Service (USGS)

LEGEND

- Midas/Butterfield Creek
- Major Canal
- Midas Creek Basin

NLCD Land Cover Classification

- Open Water
- Developed, Open Space
- Developed, Low Density
- Developed, Medium Density
- Developed, High Density
- Barren land (Rock/Sand/Clay)
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Shrub/Scrub
- Grassland/Herbaceous
- Pasture/Hay
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands

NORTH:

SCALE: 0 2,250 4,500 Feet

MIDAS CREEK DRAINAGE BASIN LAND COVER

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 4-3

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Existing conditions land use is based on a 2018 aerial photo from Google

L E G E N D

- Midas/Butterfield Creek
- Major Canal
- Midas Creek Basin

Landuse

- Business/Commercial
- Church
- Industrial
- Open Space
- High Density Residential Over 16 Units/ac
- Medium Density Residential 4-16 Units/ac
- Low Density Residential 2-4 Units/ac
- Low Density Residential 0-3 Units/ac
- Road

NORTH:

SCALE: 0 2,250 4,500 Feet

MIDAS CREEK DRAINAGE BASIN EXISTING LAND USE

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 4-4

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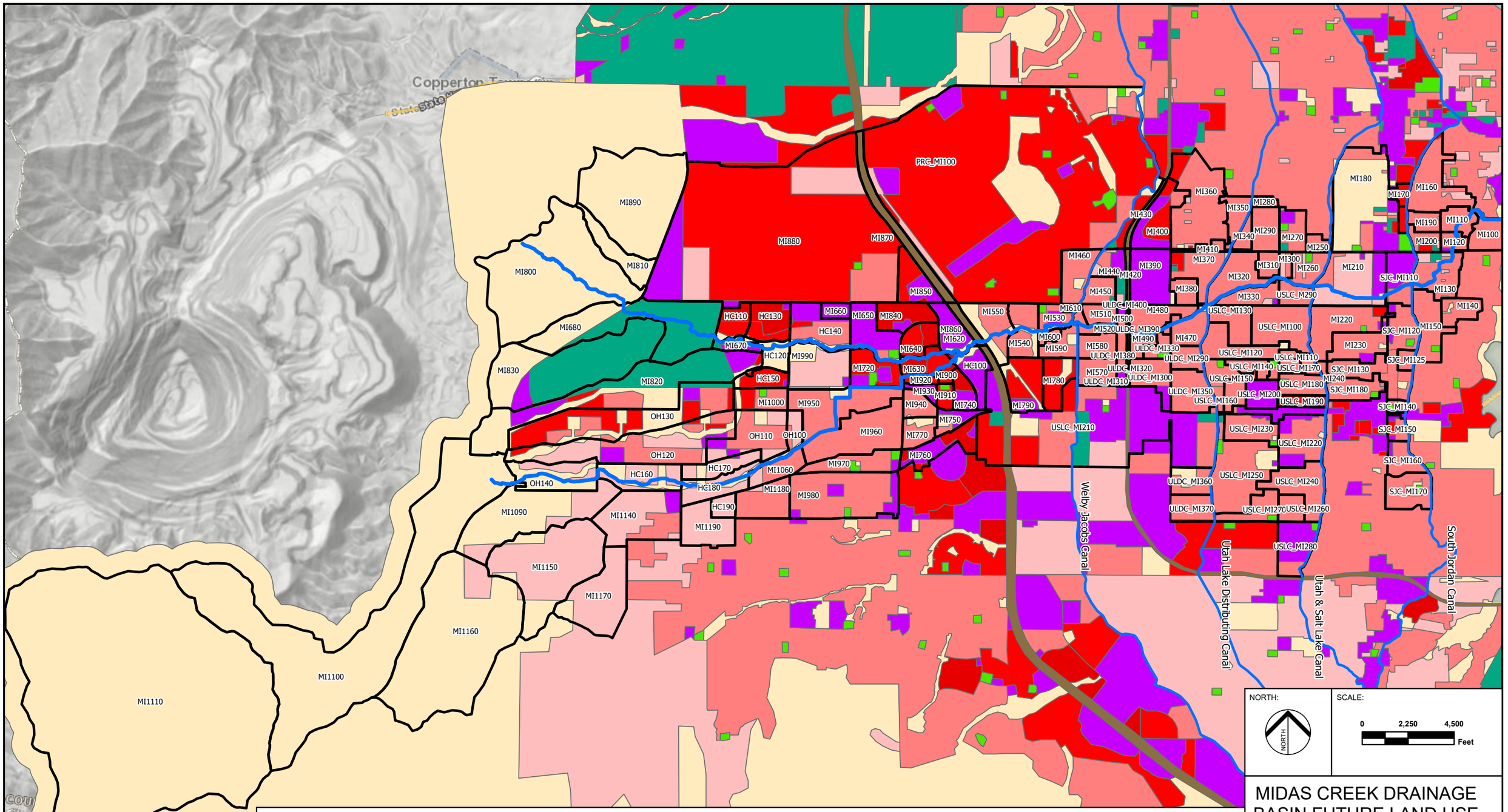

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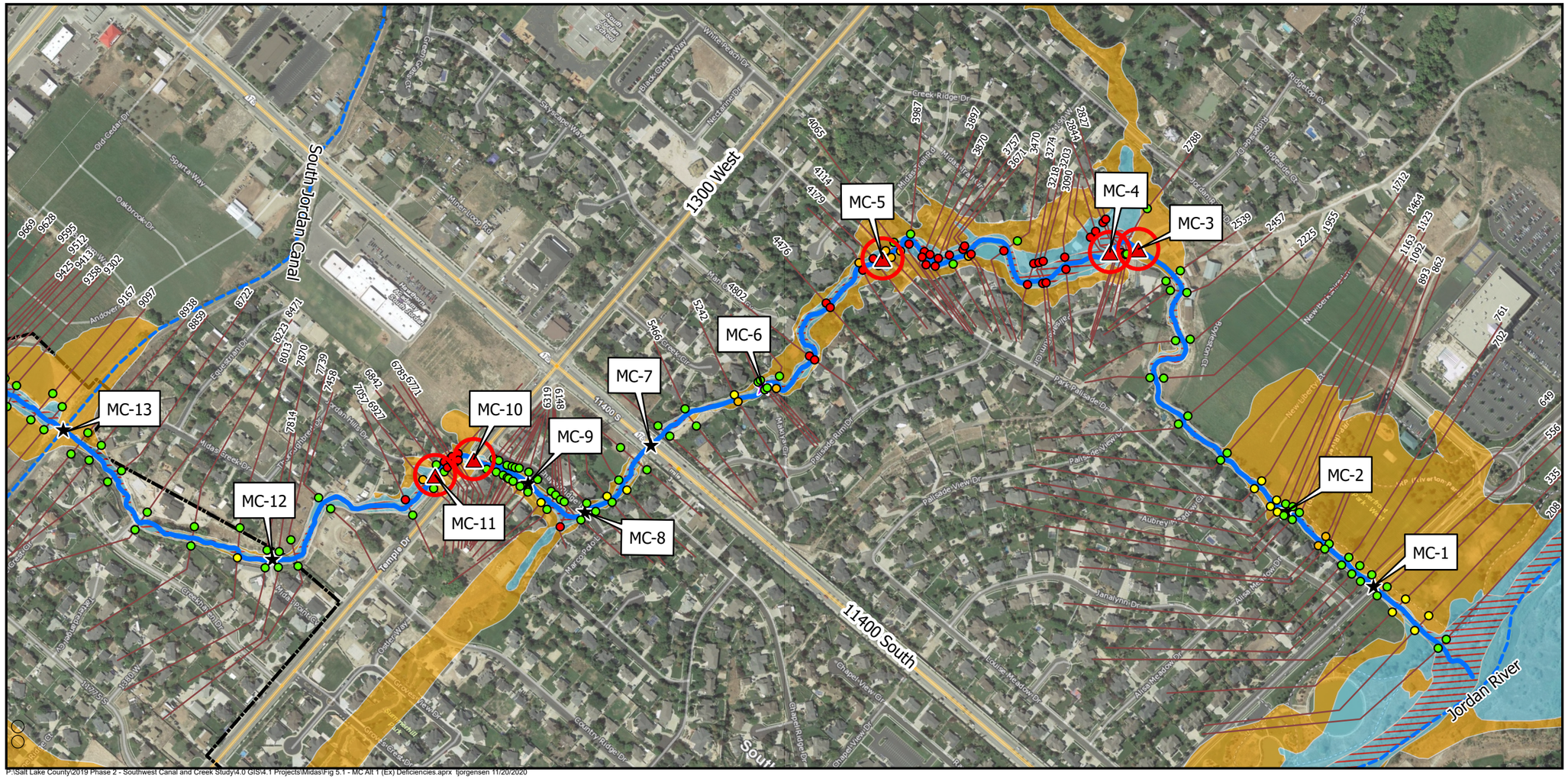
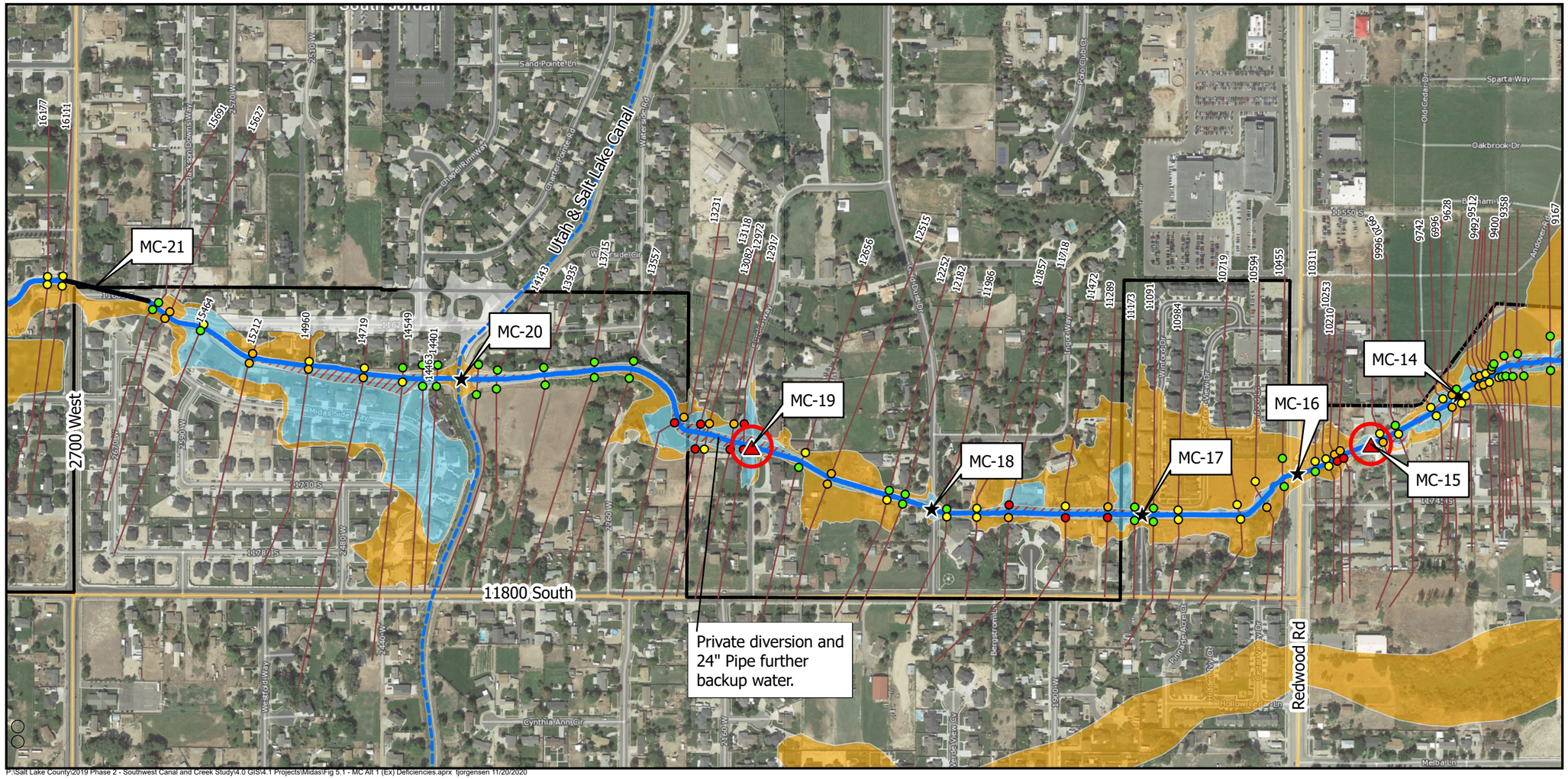

MC-1
MC-2
MC-3
MC-4
MC-5
MC-6
MC-7
MC-8
MC-9
MC-10
MC-11
MC-12
MC-13
South Jordan Canal
1300 West
11400 South
Jordan River
Creek Ridge Dr
Park Palisade Dr
Palisade View Dr
Chapel Ridge Dr
Temple Dr
Grandville Ave
Grandville Park
Grandville Ave Greenway
Mountain View Corridor
Sparta Way
Oakbrook Dr
Andover
Equestrian Dr
Midas Creek Dr
Mineral Loop Rd
Old Cedar Dr
Black Cherry Way
Nectarine Dr
Ridgetop Cv
Ridgeside Dr
New Bern Ridge Dr
New Liberty Dr
Aubrey Meadow Dr
Janalynn Dr
Alice Meadow Dr
Louise Meadow Dr
Gruber Circle
Gruber Way
Country Ridge Dr
Glacier View Dr
Glacier Ridge Dr
Rose Creek Dr
Rose Creek Cir
Rose Creek Ln
Rose Creek Way
Rose Creek Pkwy
Rose Creek Park
Rose Creek Preserve Park
Rose Creek Preserve Dr
Rose Creek Preserve Cir
Rose Creek Preserve Ln
Rose Creek Preserve Way
Rose Creek Preserve Pkwy



Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-14	Private Dr. DS of Redwood Rd. (aprox. 1600 W)	890	670	15'X5'	790		
MC-15	Private Dr. DS of Redwood Rd. (aprox. 1650 W)	890	670	14'X5'	630	23'X7'	Undersized culvert casues overtopping, but water is contained in the channel
MC-16	Redwood Rd	890	670	18'X5'	1080		
MC-17	Winford Dr.	890	670	Two 7'X6' Box Culverts	930		
MC-18	Gold Dust Dr.	890	670	Two 9'X5' Box Culverts	950		
MC-19	Eureka Way	890	670	Two 5' RCP	230	20'X6'	Culverts are undersized
MC-20	Downstream of Utah & Salt Lake Canal	890	670	10'X7'	1090		
MC-21	2700 West	735	550	16'X7'	870		

Index Map

LEGEND

Midas Creek Structures
- Bridge/Culvert Capacity Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Existing 100-yr Design Storm
- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

FEMA Preliminary Floodplain
- Floodway
- Zone AE Floodplain
- 0.2% Annual Chance Flow Hazard
- Shaded Zone X

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES FOR EXISTING DEVELOPMENT CONDITIONS

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 5-1

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Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-22	3200 West	735	520	18'X7'	800		
MC-23	Upstream of 3200 West	735	520	63' wide Footbridge	1160		
MC-24	11800 South/Utah Lake Dist Canal	735	520	Two 5' RCP	710		
MC-25	Janice Dr./3400 West	844	540	20'X4'	770		
MC-26	3600 West	844	540	5' and 6' Diameter Culverts	470	18'X6'	Culverts are undersized

Index Map

LEGEND

Midas Creek Structures
- Bridge/Culvert Capacity Deficiency
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- Existing Pipeline

Midas Creek Freeboard for Existing 100-yr Design Storm
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- Major Canal/Jordan River
- Municipal Boundary
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FEMA Preliminary Floodplain
- Floodway
- Zone AE Floodplain
- 0.2% Annual Chance Flow Hazard
- Shaded Zone X

NORTH:

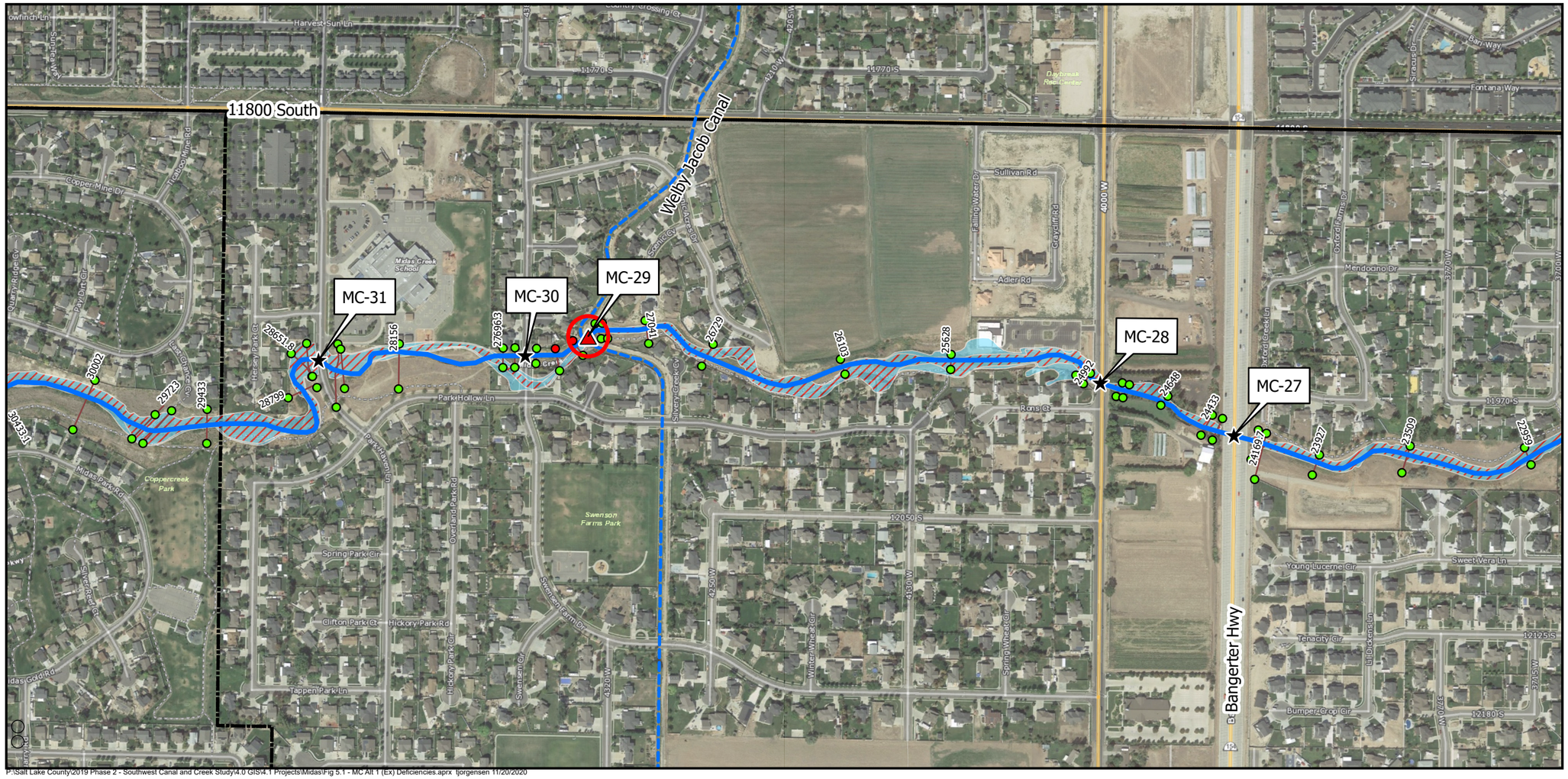
SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES FOR EXISTING DEVELOPMENT CONDITIONS

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 5-1



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LEGEND

Midas Creek Structures
- Bridge/Culvert Capacity Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Existing 100-yr Design Storm
- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

FEMA Preliminary Floodplain
- Floodway
- Zone AE Floodplain
- 0.2% Annual Chance Flow Hazard
- Shaded Zone X

NORTH:

SCALE: 0 250 500 Feet

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-27	Bangerter Hwy	495	540	18'X9'	2400		
MC-28	4000 West	495	530	14'X6'	980		
MC-29	Welby Jacob Canal	497	510	10' Wide Bridge	340	11'X7'	Bridge is undersized, the height is 2-3 ft, overtopping will discharge into the Welby Jacob Canal
MC-30	Swensen Farms Dr. (4370 W)	503	500	10'X5'	690		
MC-31	Park Haven Ln. (4510 W)	503	500	15'X8'	1200		

MIDAS CREEK DEFICIENCIES FOR EXISTING DEVELOPMENT CONDITIONS

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 5-1

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LEGEND

Midas Creek Structures
- Bridge/Culvert Capacity Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Existing 100-yr Design Storm
- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

FEMA Preliminary Floodplain
- Floodway
- Zone AE Floodplain
- 0.2% Annual Chance Flow Hazard
- Shaded Zone X

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES FOR EXISTING DEVELOPMENT CONDITIONS

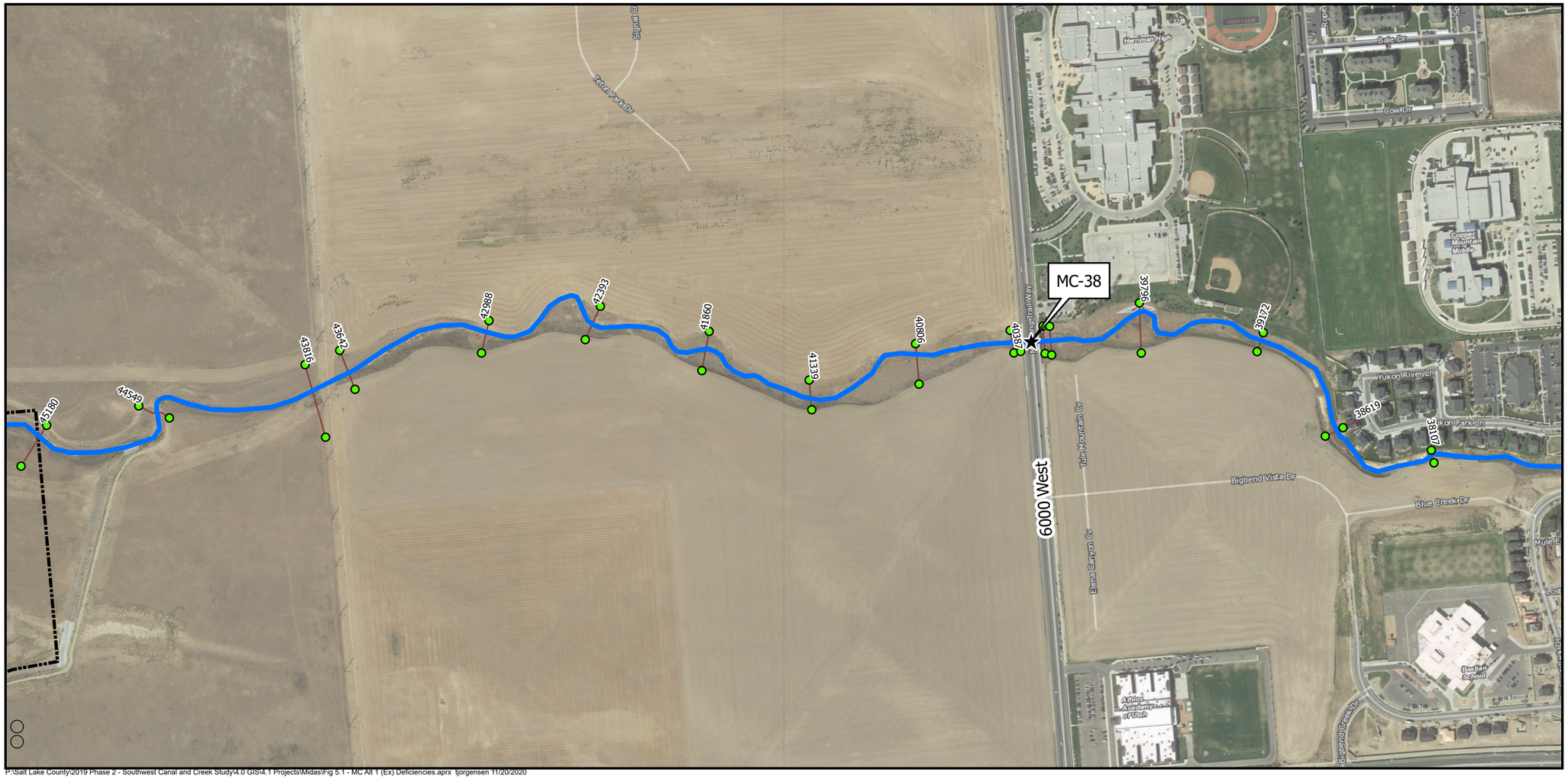
SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 5-1

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-32	Midas Vista Rd (4775 W)	503	490	10'X6'	970		
MC-33	Black Powder Drive (4895 W)	503	470	10'X6'	840		
MC-34	North Bound MVC	503	470	75' Wide Bridge	12210		
MC-35	South Bound MVC	503	420	75' Wide Bridge	4940		
MC-36	Herriman Main Street	503	350	60' Wide Bridge	8450		
MC-37	Anthem Park Blvd	503	360	13'X33' Arch	4900		



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Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-38	6000 West	503	80	13'X33' Arch	3260		

Index Map

LEGEND

Midas Creek Structures
- Bridge/Culvert Capacity Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Existing 100-yr Design Storm
- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

FEMA Preliminary Floodplain
- Floodway
- Zone AE Floodplain
- 0.2% Annual Chance Flow Hazard
- Shaded Zone X

NORTH:

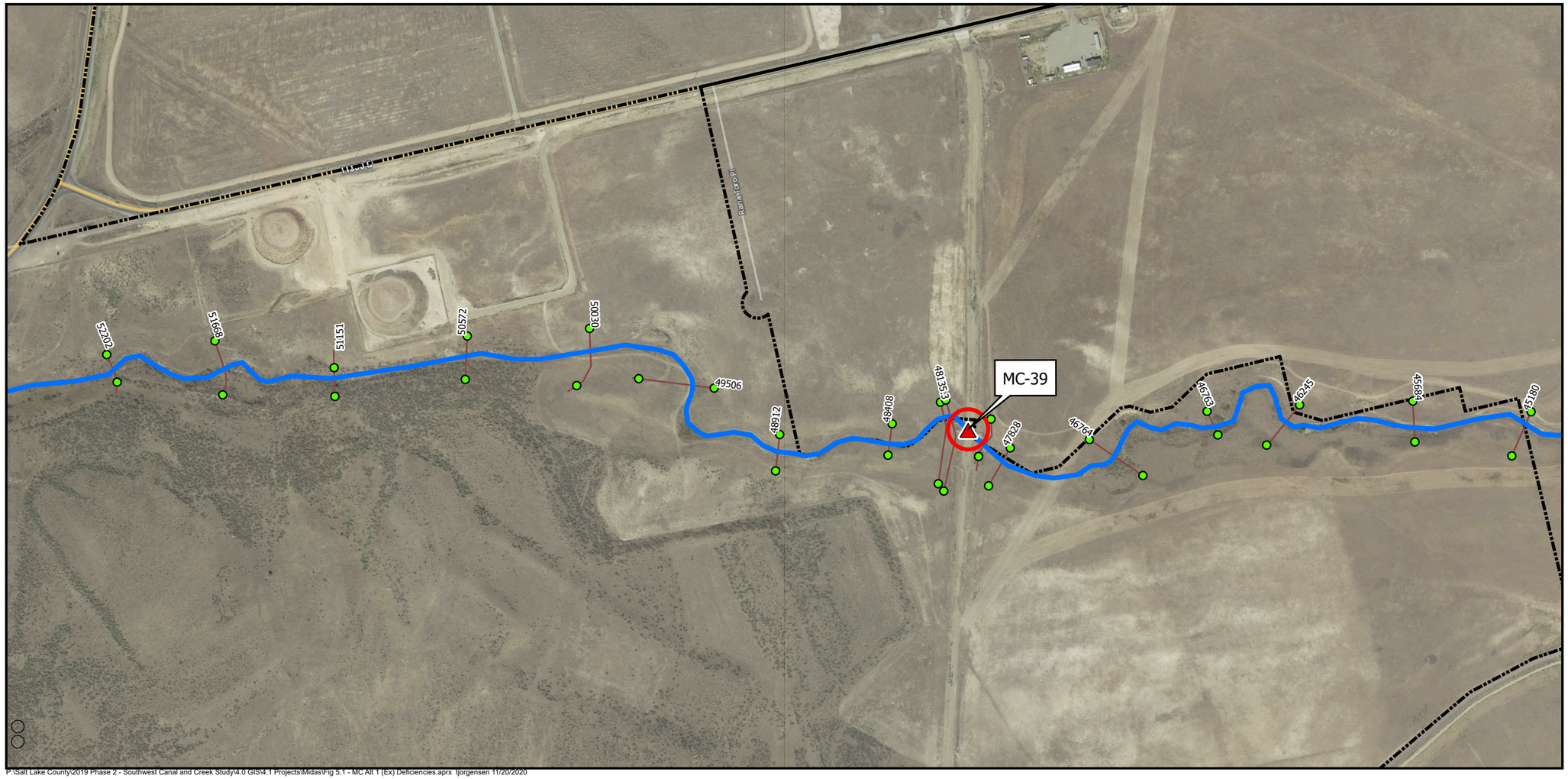
SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES FOR EXISTING DEVELOPMENT CONDITIONS

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 5-1



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LEGEND

Midas Creek Structures
- Bridge/Culvert Capacity Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Existing 100-yr Design Storm
- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

FEMA Preliminary Floodplain
- Floodway
- Zone AE Floodplain
- 0.2% Annual Chance Flow Hazard
- Shaded Zone X

NORTH:

SCALE: 0 250 500 Feet

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-39	~7000 West Farm Bridge		60	15" Culvert	10	72" Culvert	Culvert is undersized causing overtopping, but water is contained in the channel

MIDAS CREEK DEFICIENCIES FOR EXISTING DEVELOPMENT CONDITIONS

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 5-1

P:\Salt Lake County\2019 Phase 2 - Southwest Canal and Creek Study\4.0 GIS\4.1 Projects\Midas\Fig 5.1 - MC Alt 1 (Ex) Deficiencies.aprx tjorgensen 11/20/2020

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LEGEND

Midas Creek Structures
- Bridge/Culvert Capacity Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Existing 100-yr Design Storm
- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

FEMA Preliminary Floodplain
- Floodway
- Zone AE Floodplain
- 0.2% Annual Chance Flow Hazard
- Shaded Zone X

NORTH:

SCALE: 0 250 500 Feet

Bridge/Culvert Table

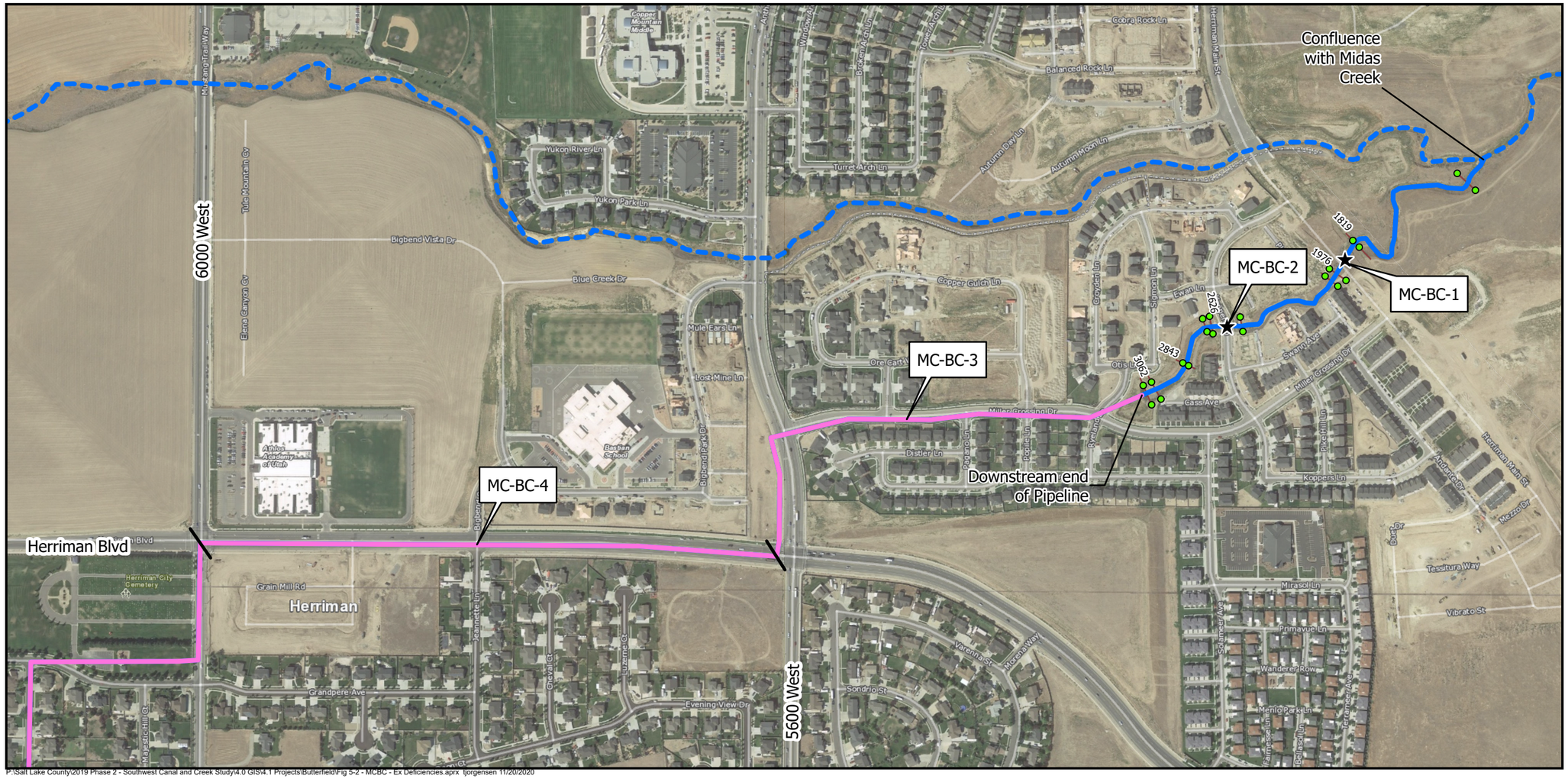
ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-40	Bacchus Hwy		50	4' CMP	130		
MC-41	Private Road Upstream of Bacchus Hwy		30	Two 21" Culverts	50		

MIDAS CREEK DEFICIENCIES FOR EXISTING DEVELOPMENT CONDITIONS

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 5-1



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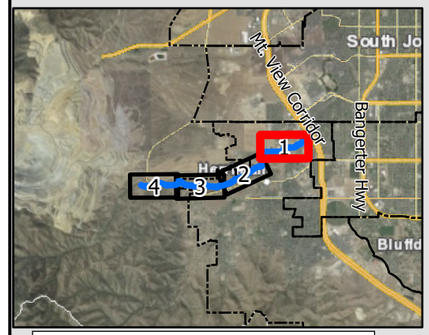


LEGEND

Butterfield Creek Structures

- ★ Culvert
- Butterfield Pipeline

Butterfield Creek Freeboard for Existing 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet

- Butterfield Creek
- Midas Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

Culvert Table

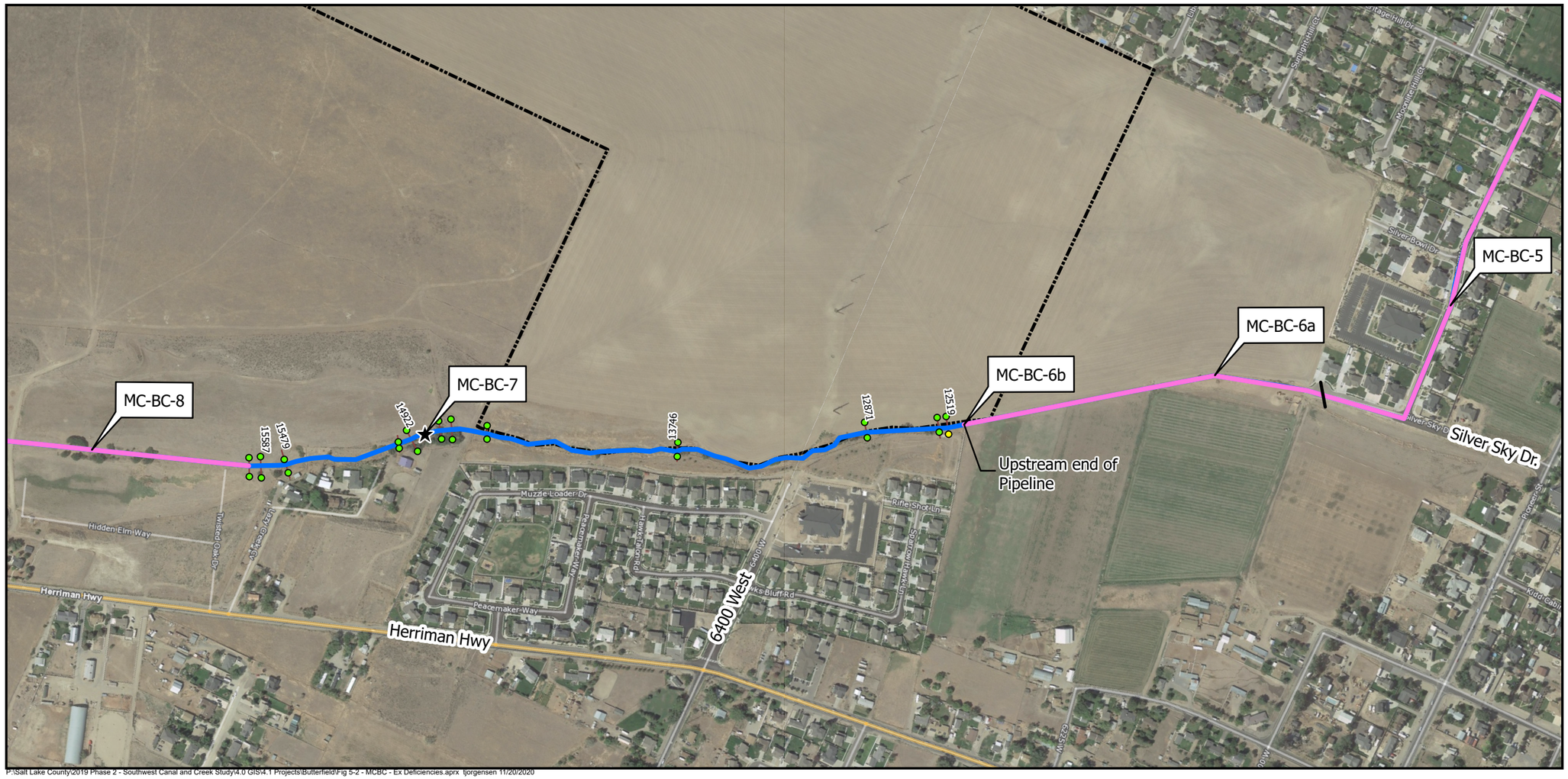
ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Notes
MC-BC-1	Herriman Main Street	N/A	140	8' X 5' Box	340	
MC-BC-2	Koppers Lane	N/A	140	8' X 5' Box	480	
MC-BC-3	Pipeline from 5600 West to End	N/A	140	5' RCP	200	Reach Length is 1,540 ft with slope of 0.006 ft/ft
MC-BC-4	Pipeline from Herriman Blvd to 5600 West	N/A	90	5' RCP	200	Reach Length is 3,115 ft with slope of 0.006 ft/ft

BUTTERFIELD CREEK DEFICIENCIES FOR EXISTING DEVELOPMENT CONDITIONS

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 5-2



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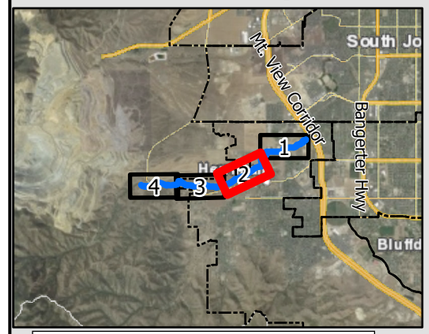
Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Notes
MC-BC-5	Pipeline from Silver Sky Dr. to Herriman Blvd	N/A	90	5' RCP	280	Reach Length is 3,150 ft with slope of 0.012 ft/ft
MC-BC-6a	Pipeline from Entrance to Silver Sky Dr.	N/A	80	4' RCP	200	Reach Length is 1,570 ft with slope of 0.010 ft/ft
MC-BC-6b	Inlet to Pipe Network	N/A	80	4' RCP	140	
MC-BC-7	Hidden Oaks Culvert 3 (approx. 6600 W)	N/A	60	5.5' RCP	260	
MC-BC-8	Hidden Oaks Pipeline (approx. 6700 W)	N/A	60	5.5' RCP	310	Reach Length is 1,650 ft with slope of 0.025 ft/ft

Index Map



LEGEND

Butterfield Creek Structures

- ★ Culvert
- Butterfield Pipeline

Butterfield Creek Freeboard for Existing 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet

- Butterfield Creek
- Midas Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

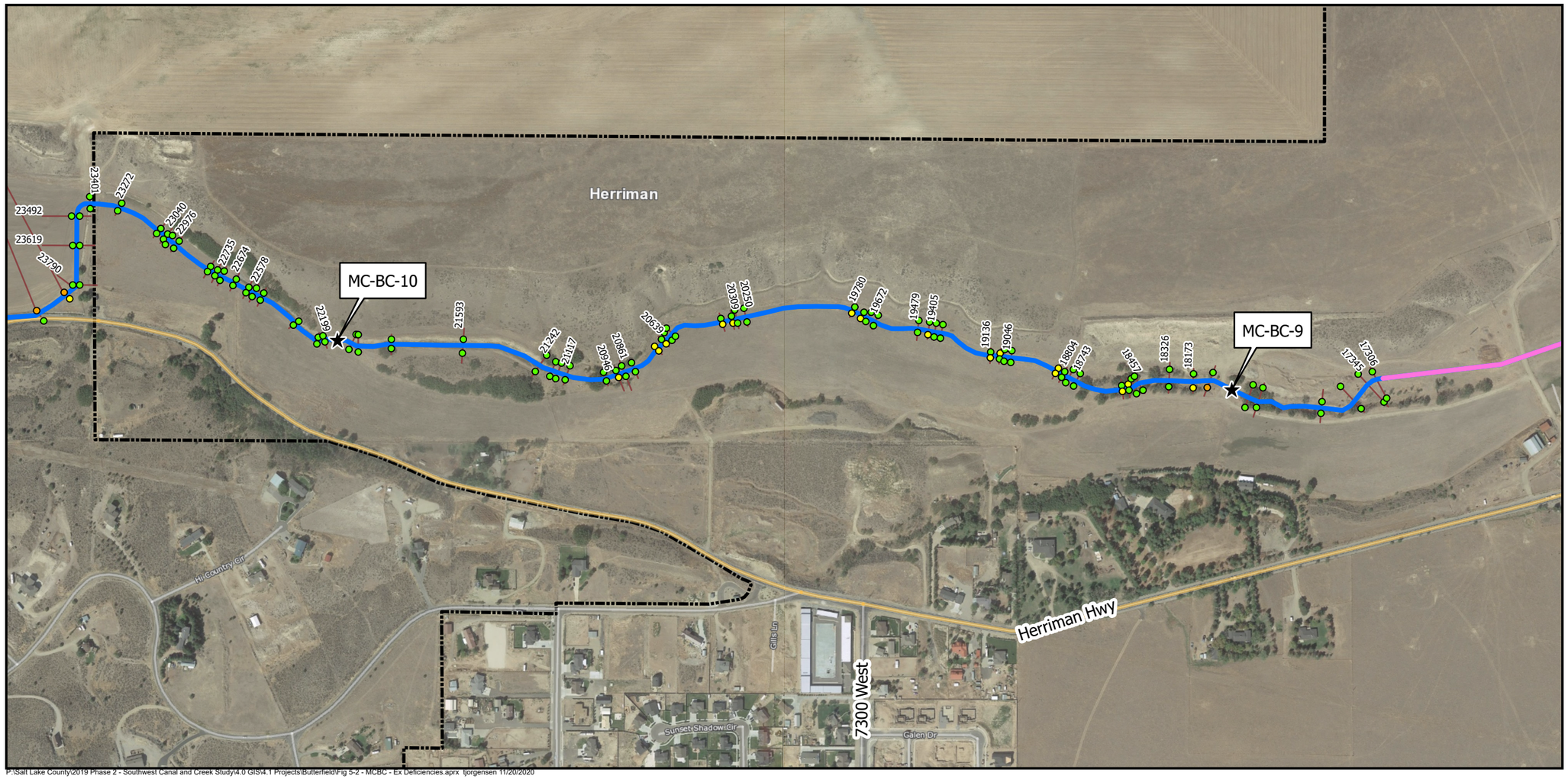
BUTTERFIELD CREEK DEFICIENCIES FOR EXISTING DEVELOPMENT CONDITIONS

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 5-2

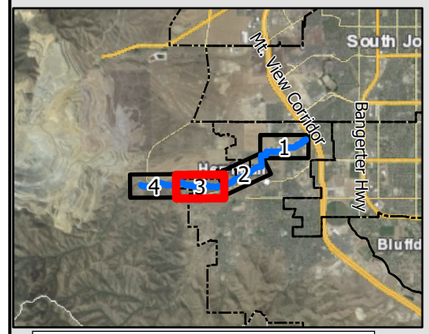


P:\Salt Lake County\2019 Phase 2 - Southwest Canal and Creek Study\4.0 GIS\4.1 Projects\Butterfield\Fig 5-2 - MCBC - Ex Deficiencies.aprx tjorgensen 11/20/2020

Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Notes
MC-BC-9	Hidden Oaks Culvert 2 (approx. 7075 W)	N/A	50	5.5' RCP	150	
MC-BC-10	Hidden Oaks Culvert 1 (approx. 7550 W)	N/A	50	5.5' RCP	190	

Index Map



LEGEND

Butterfield Creek Structures

- ★ Culvert
- Butterfield Pipeline

Butterfield Creek Freeboard for Existing 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Butterfield Creek
- Midas Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES FOR EXISTING DEVELOPMENT CONDITIONS

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

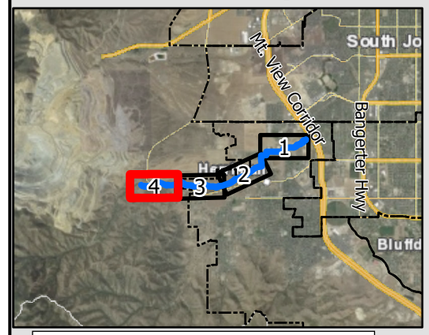
FIGURE NO. 5-2
3 of 4

P:\Salt Lake County\2019 Phase 2 - Southwest Canal and Creek Study\4.0 GIS\4.1 Projects\Butterfield\Fig 5-2 - MCBC - Ex Deficiencies.aprx tjorgensen 11/20/2020

Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Notes
MC-BC-11	Bacchus Hwy	N/A	20	4' RCP	150	
MC-BC-12	Farm Road US of Baccus	N/A	20	3.5' CMP	70	
MC-BC-13	Access Road US of Baccus	N/A	20	4' CMP	170	

Index Map



LEGEND

Butterfield Creek Structures

- ★ Culvert
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Butterfield Creek Freeboard for Existing 100-yr Design Storm

- Bank Overtopping
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- Municipal Boundary
- Division between Pipeline Segments
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NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES FOR EXISTING DEVELOPMENT CONDITIONS

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 5-2
4 of 4

Legend

EXISTING WATER SURFACE

FUTURE WATER SURFACE

CHANNEL BOTTOM

TOP LEFT BANK

RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'

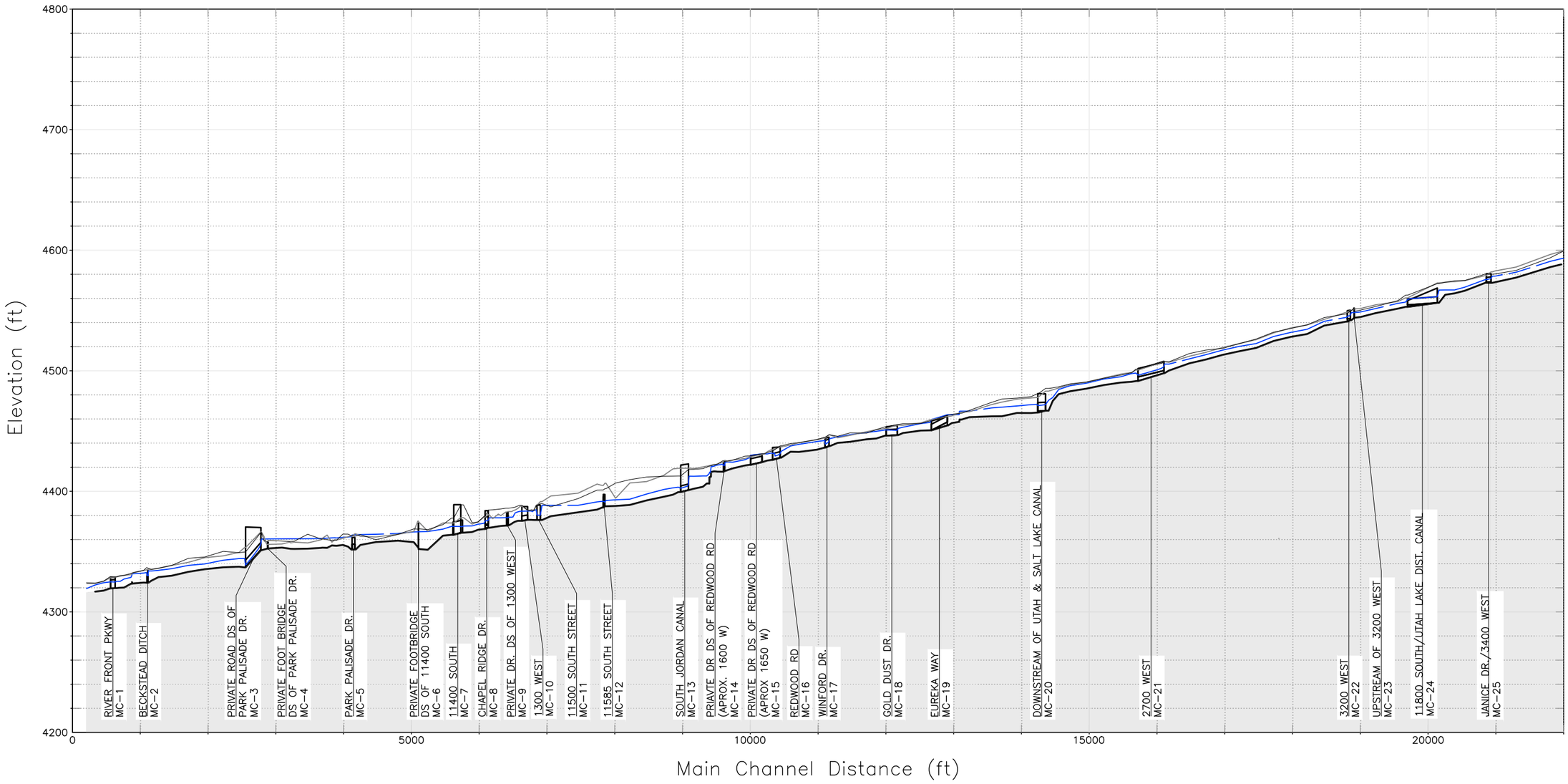

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FIGURE 5-3A
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 1
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

EXISTING WATER SURFACE

FUTURE WATER SURFACE

CHANNEL BOTTOM

TOP LEFT BANK

RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'

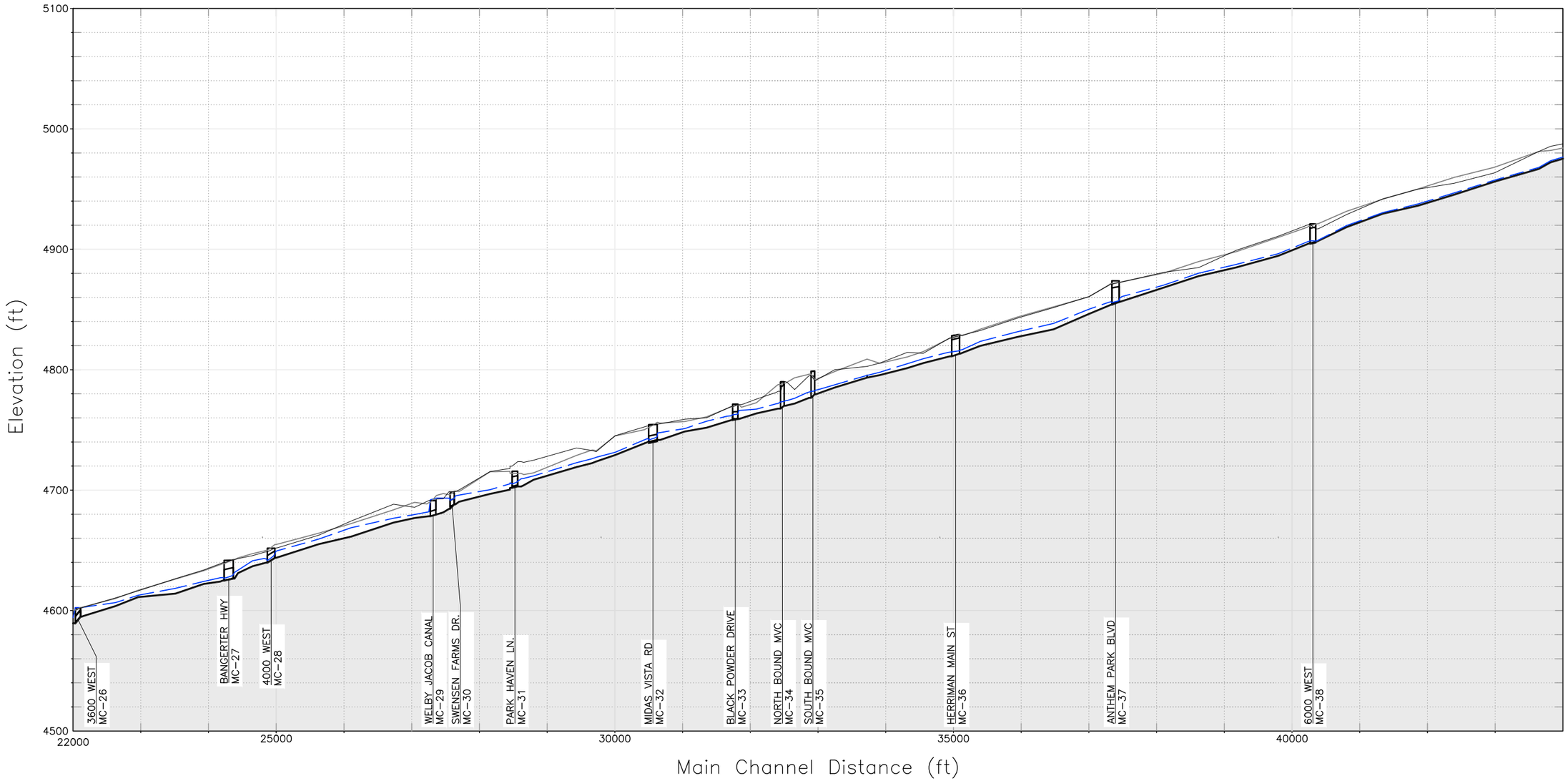

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FIGURE 5-3B
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 1
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

EXISTING WATER SURFACE

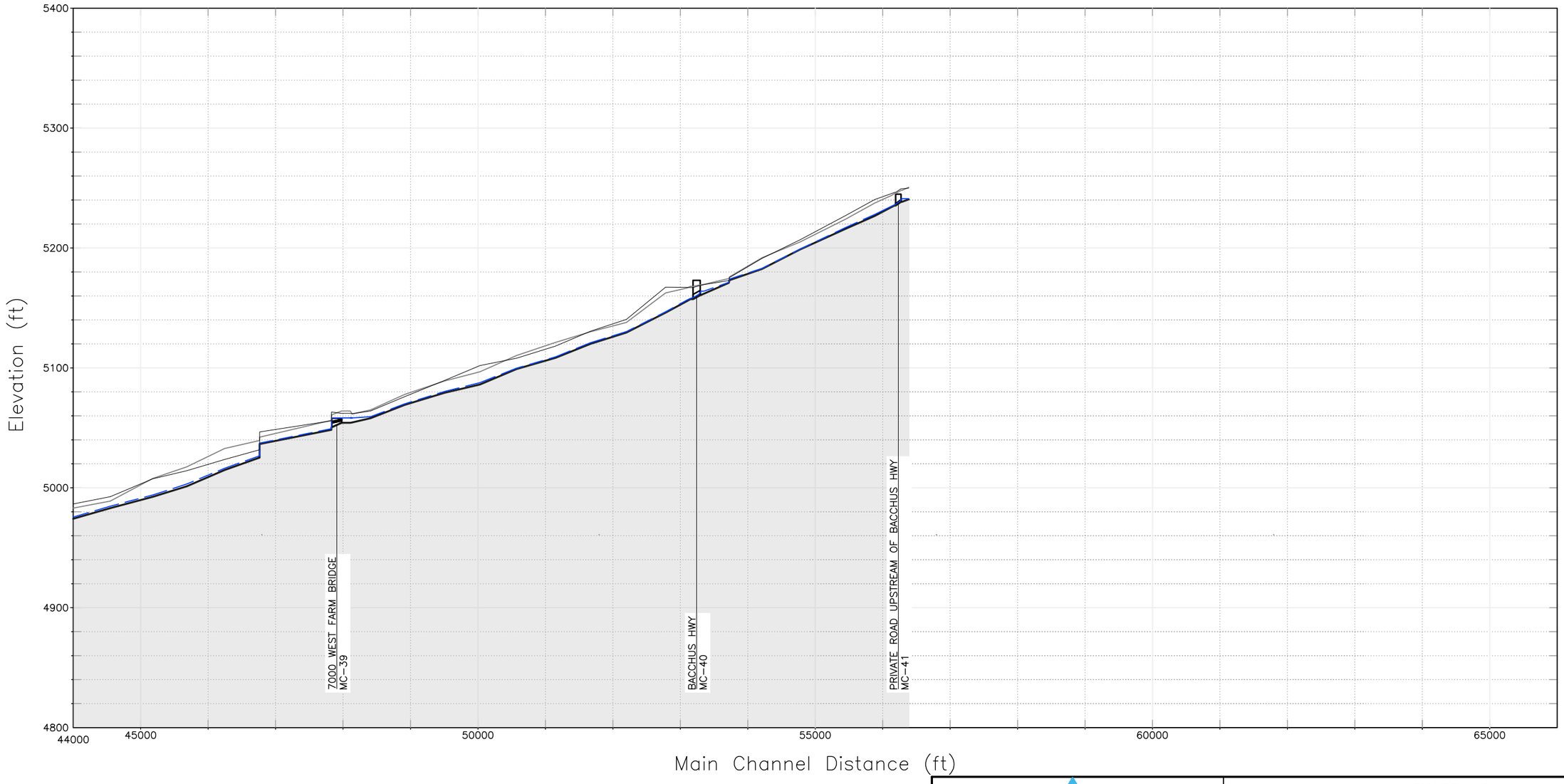
FUTURE WATER SURFACE

CHANNEL BOTTOM

TOP LEFT BANK

RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



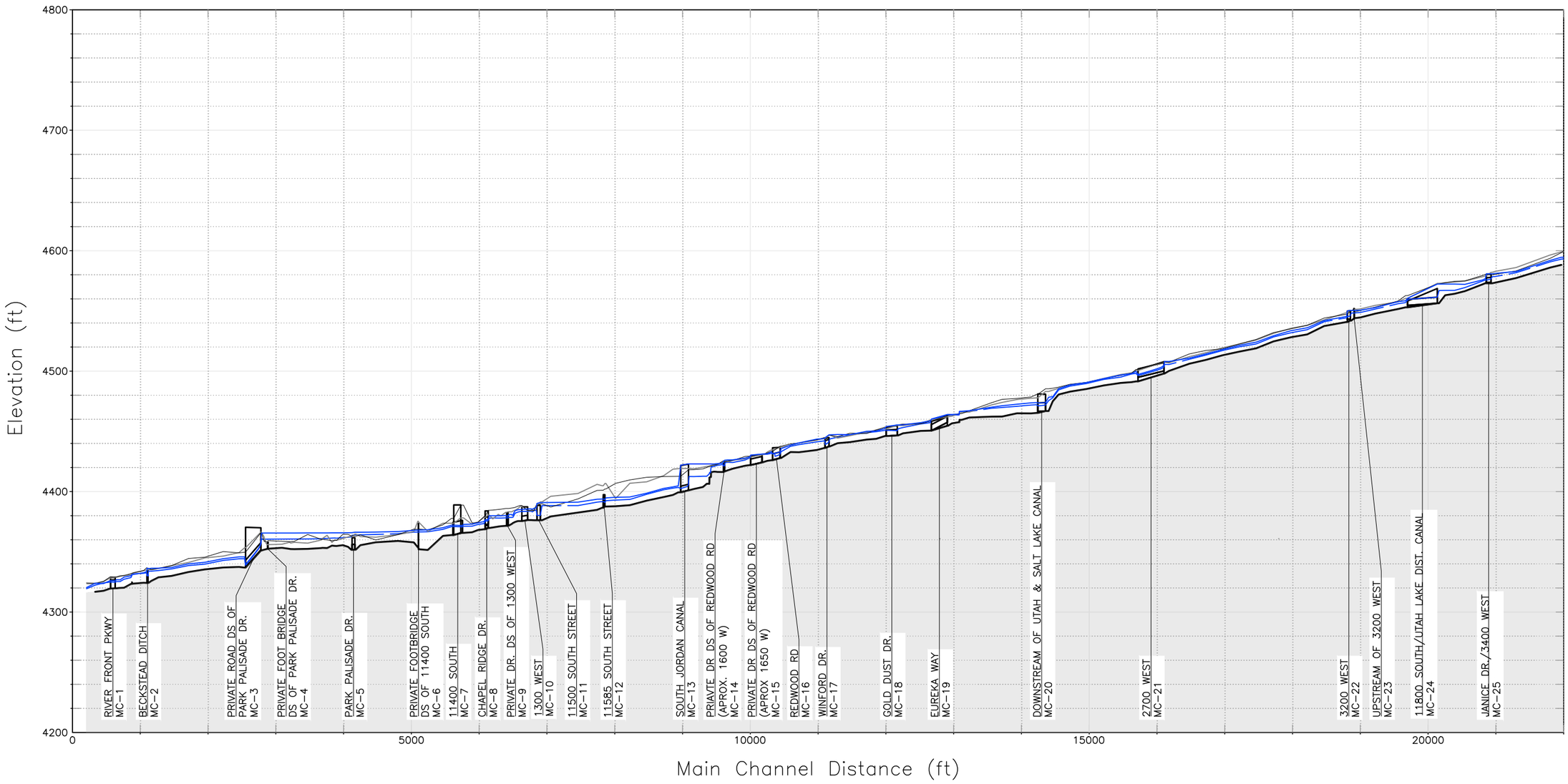
BOWEN COLLINS & ASSOCIATES

FIGURE 5-3C
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 1
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



BOWEN COLLINS & ASSOCIATES

FIGURE 5-4A
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 2
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'

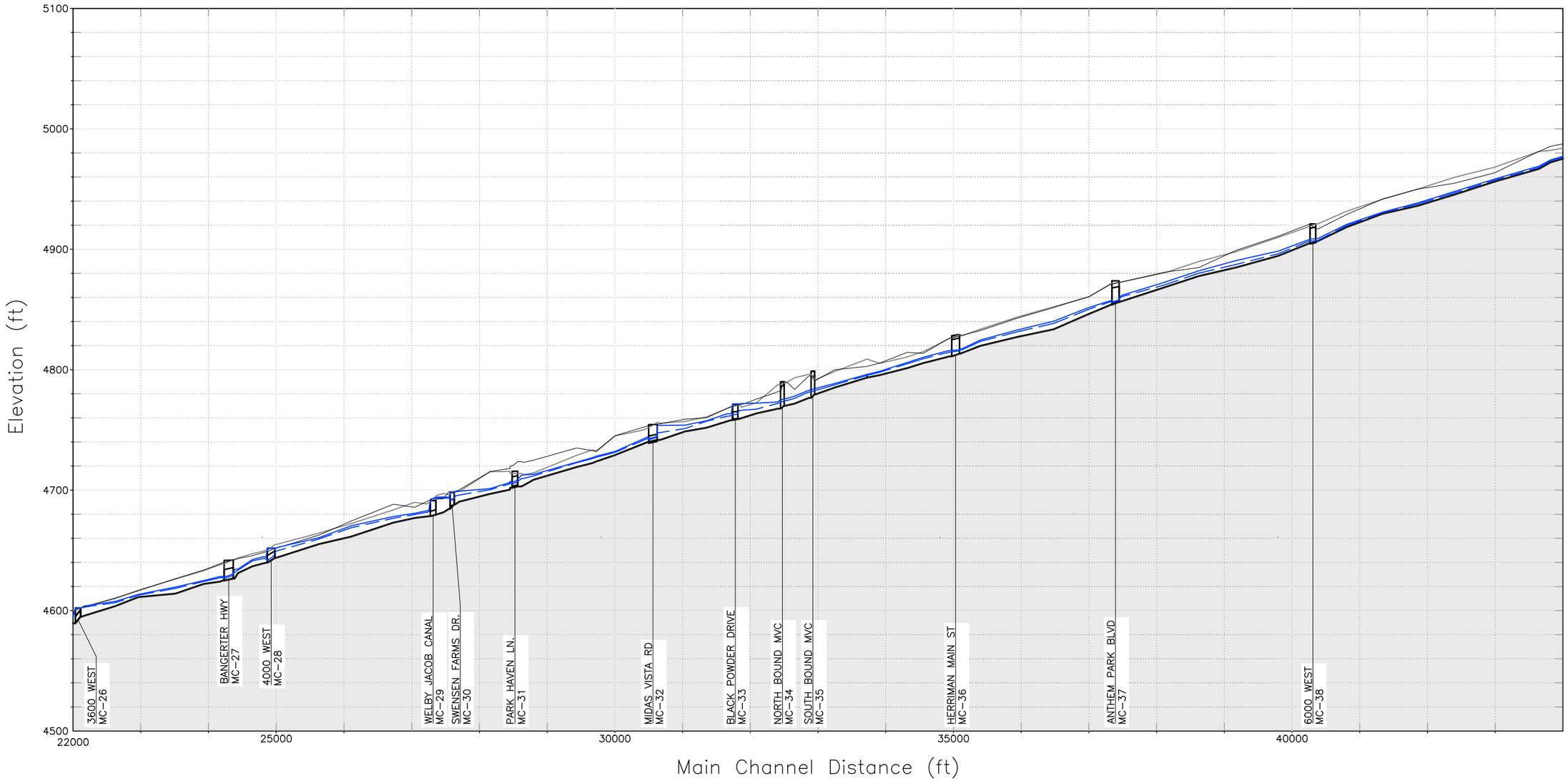


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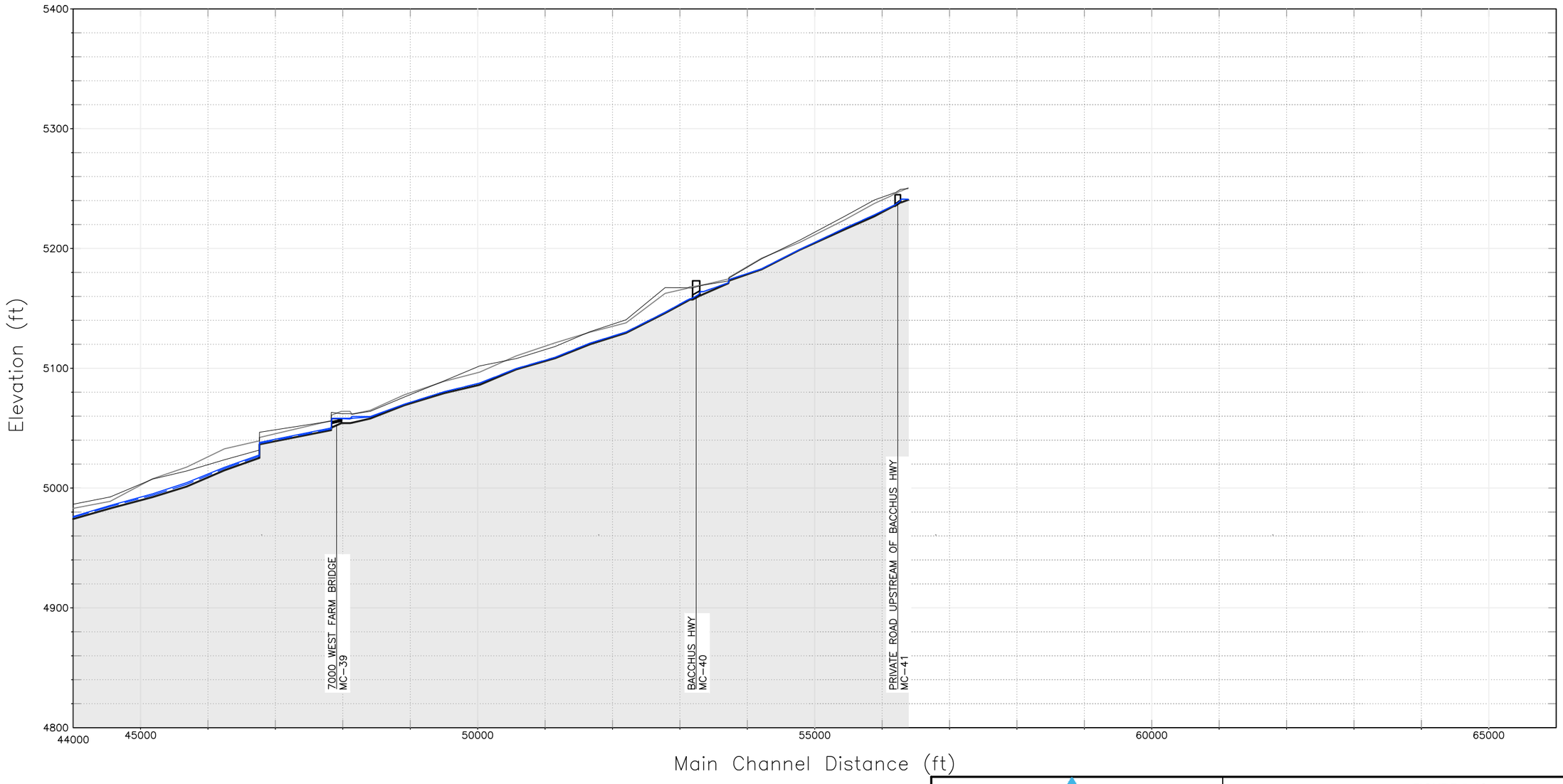
FIGURE 5-4B
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 2
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend
EXISTING WATER SURFACE
FUTURE WATER SURFACE
CHANNEL BOTTOM
TOP LEFT BANK
RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



BOWEN COLLINS & ASSOCIATES

FIGURE 5-4C
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 2
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'

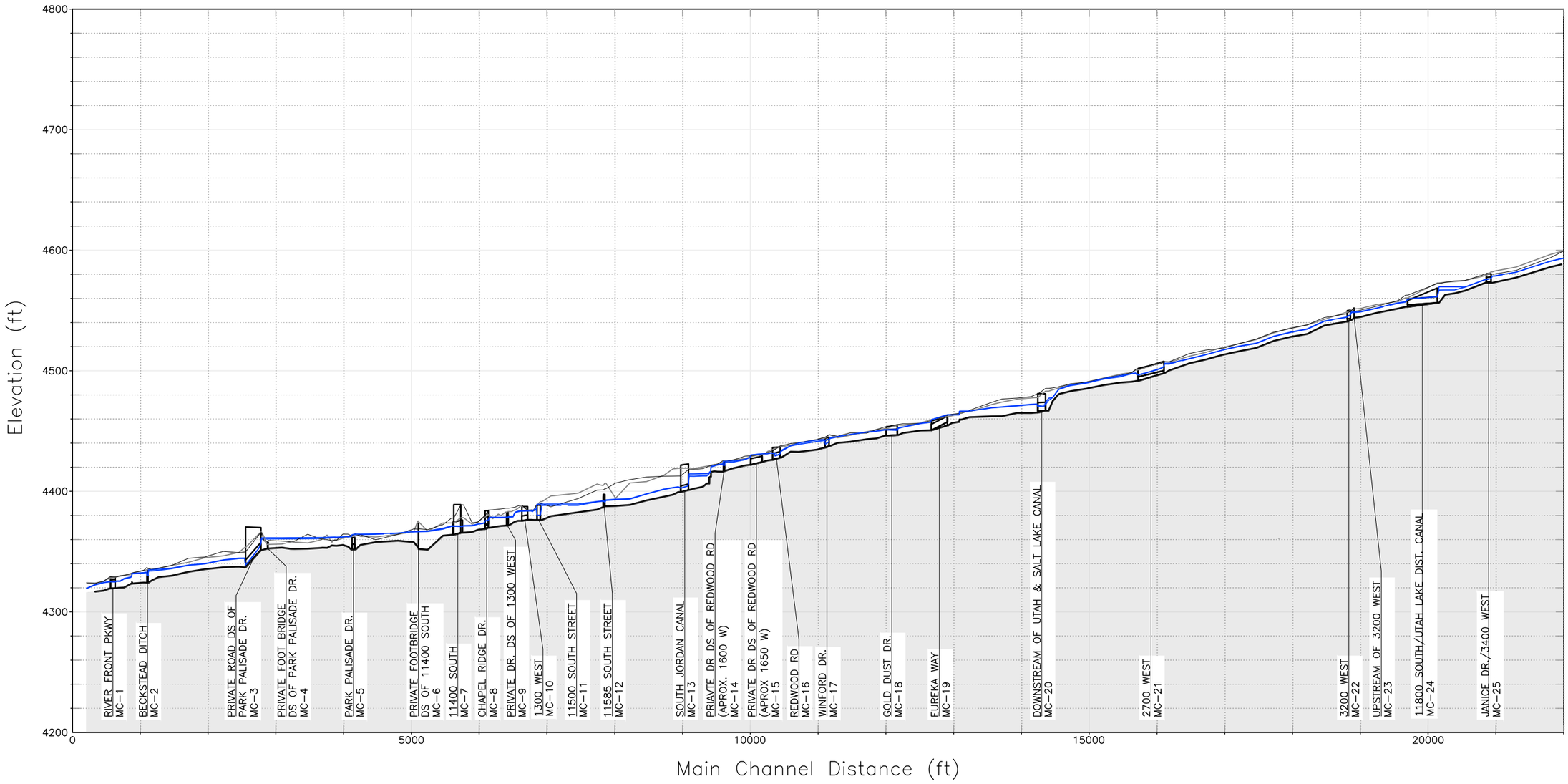


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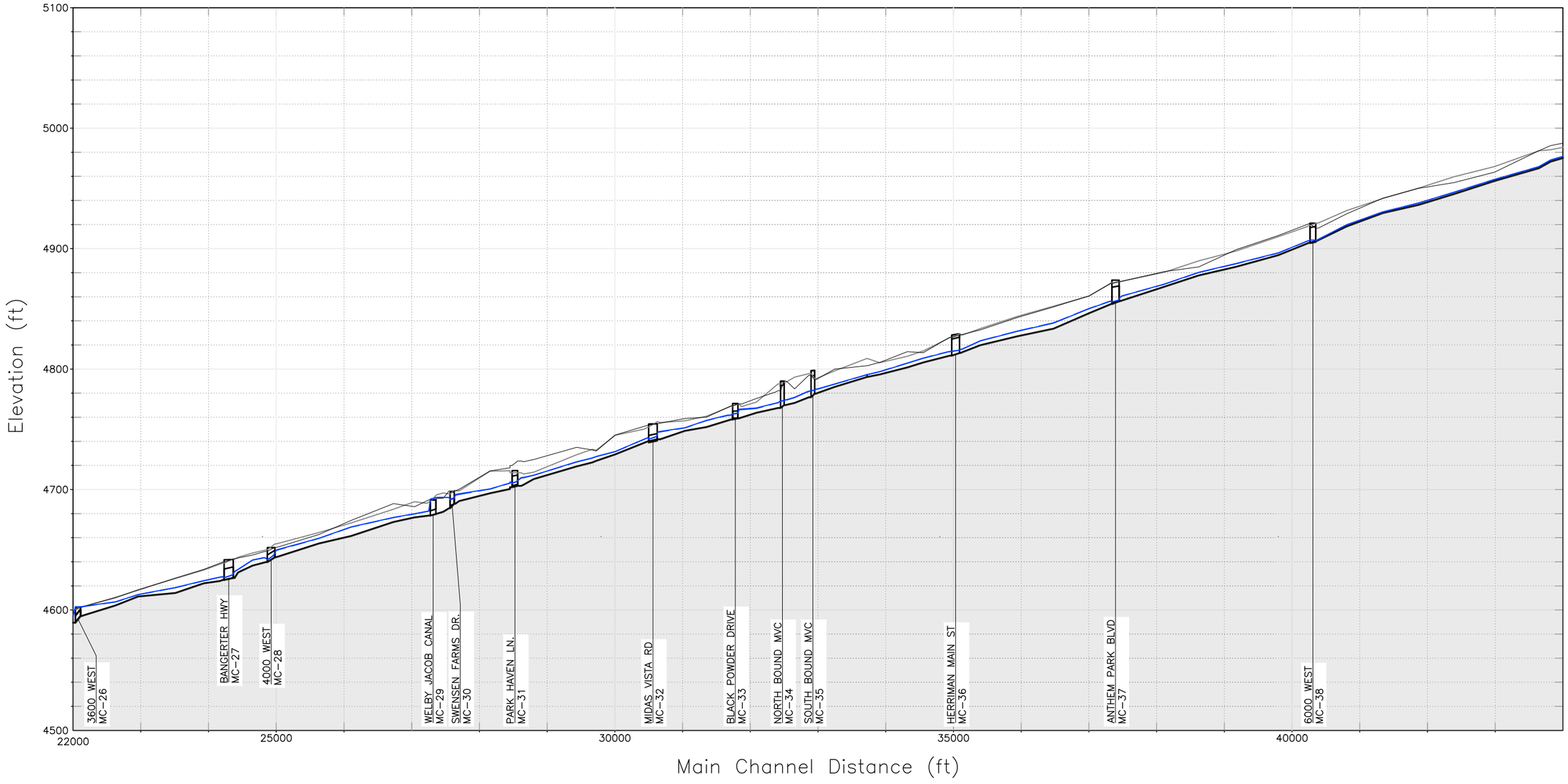
FIGURE 5-5A
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 3
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



BOWEN COLLINS & ASSOCIATES

FIGURE 5-5B
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 3
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'

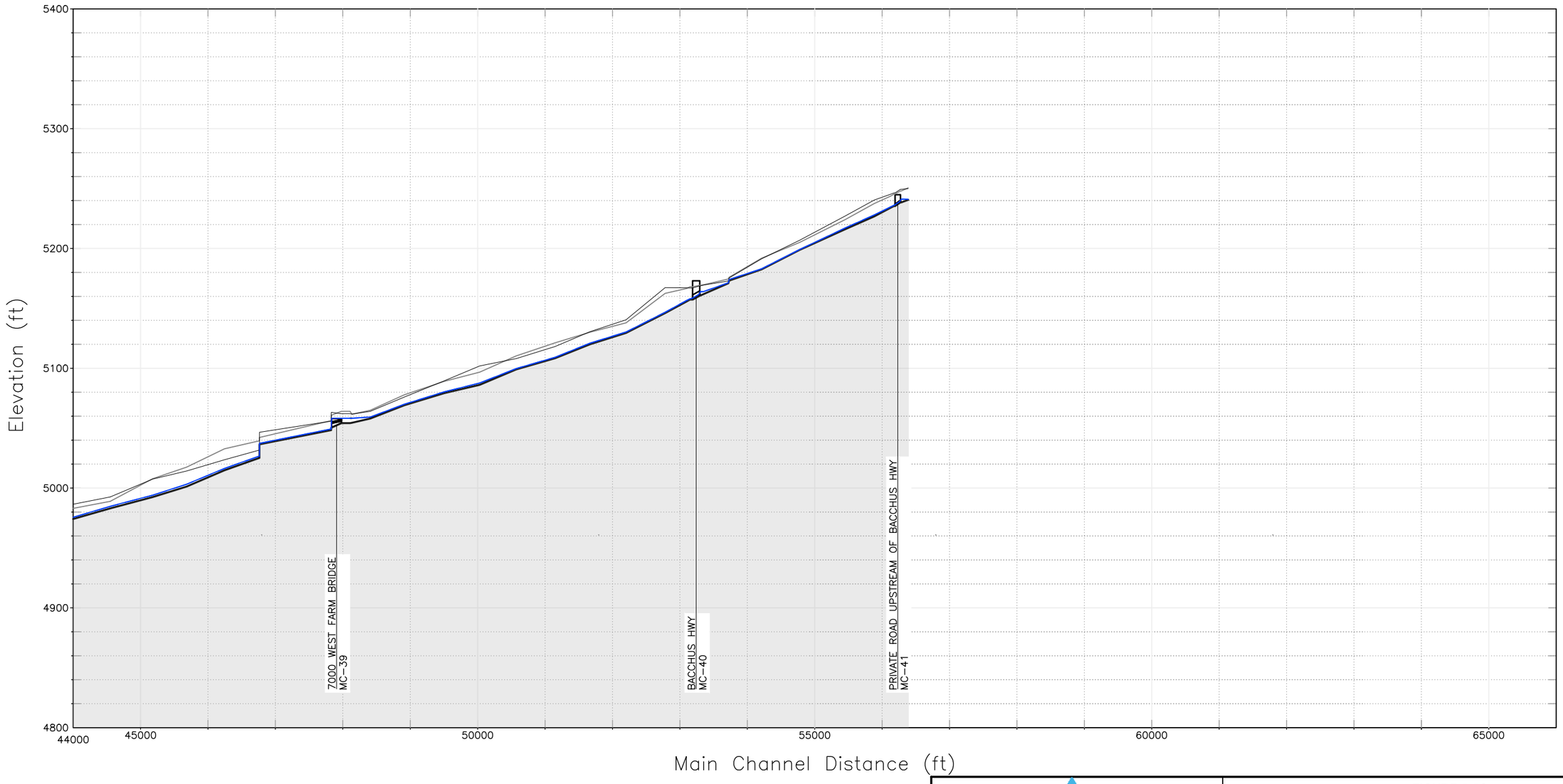


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FIGURE 5-5C
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 3
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'

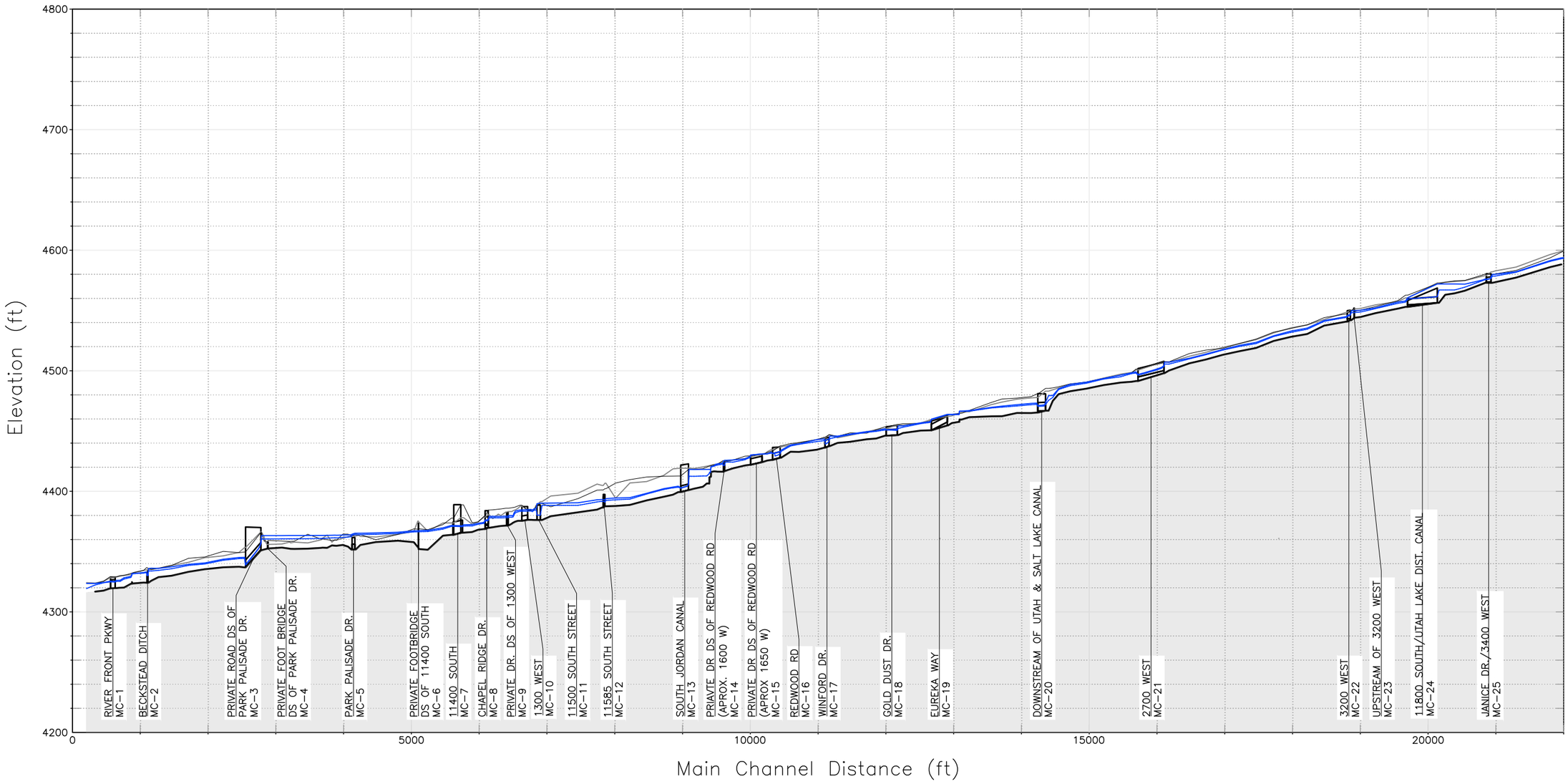

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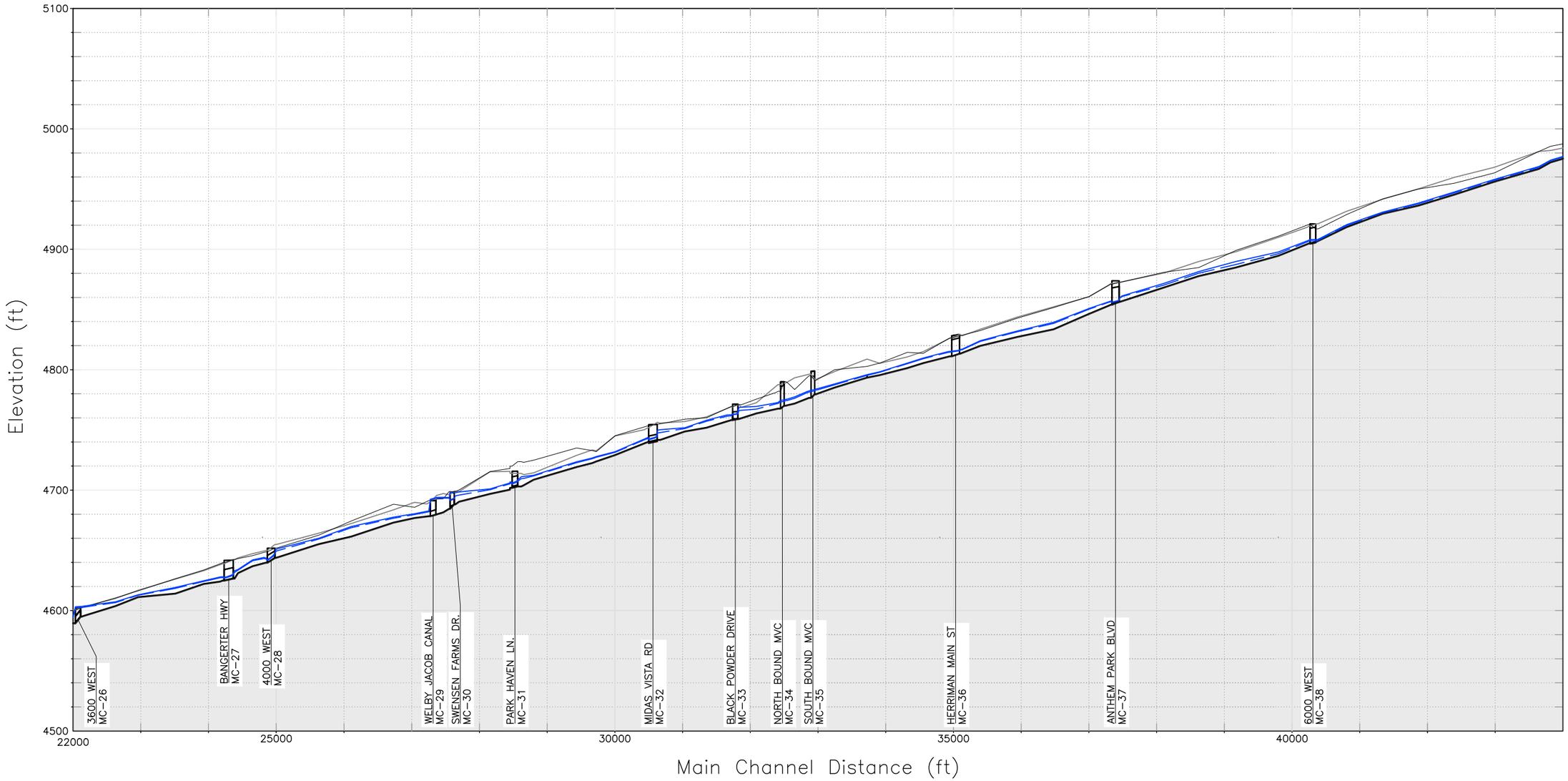
FIGURE 5-6A
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 4
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



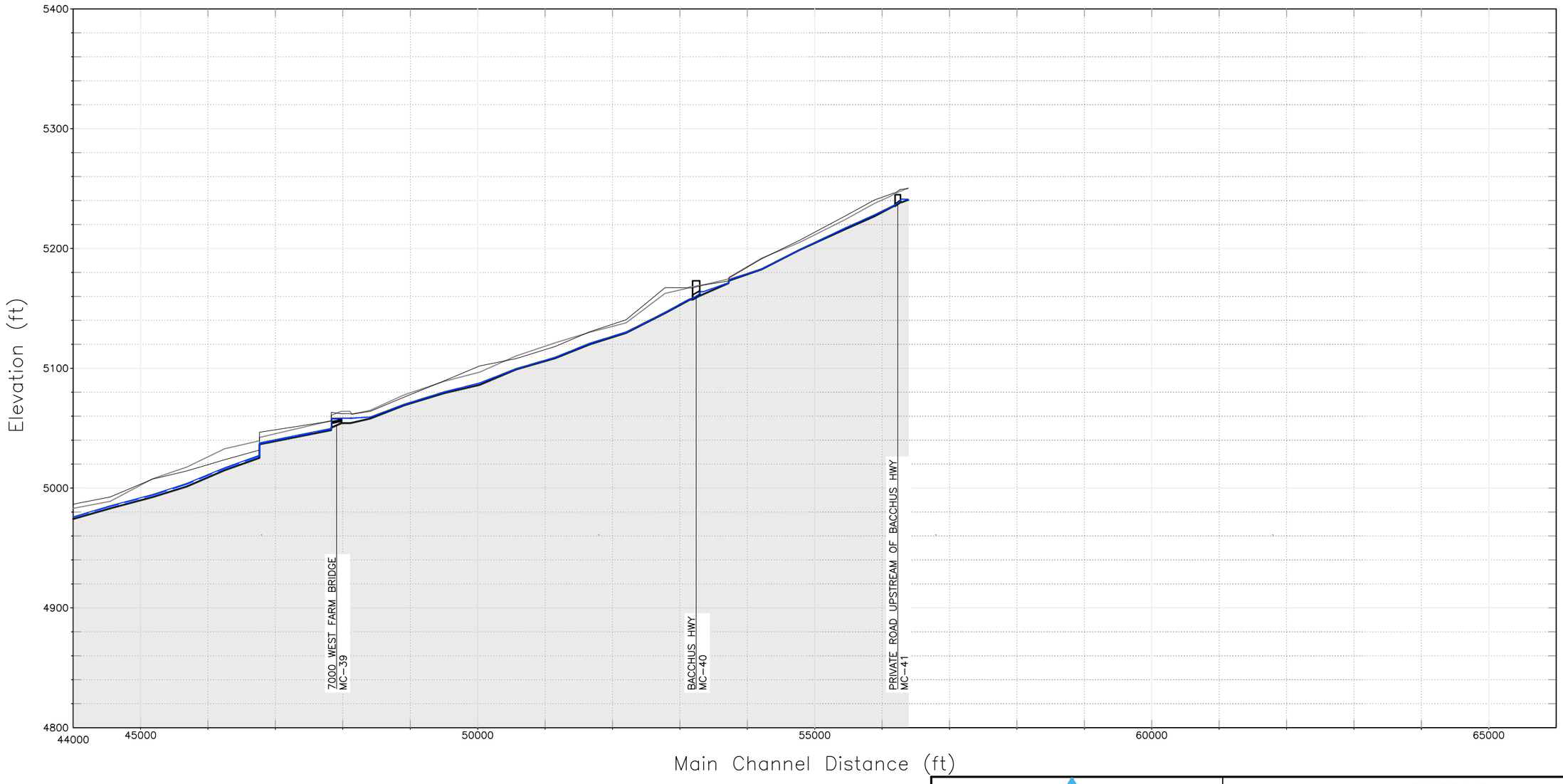
BOWEN COLLINS & ASSOCIATES

FIGURE 5-6B
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 4
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



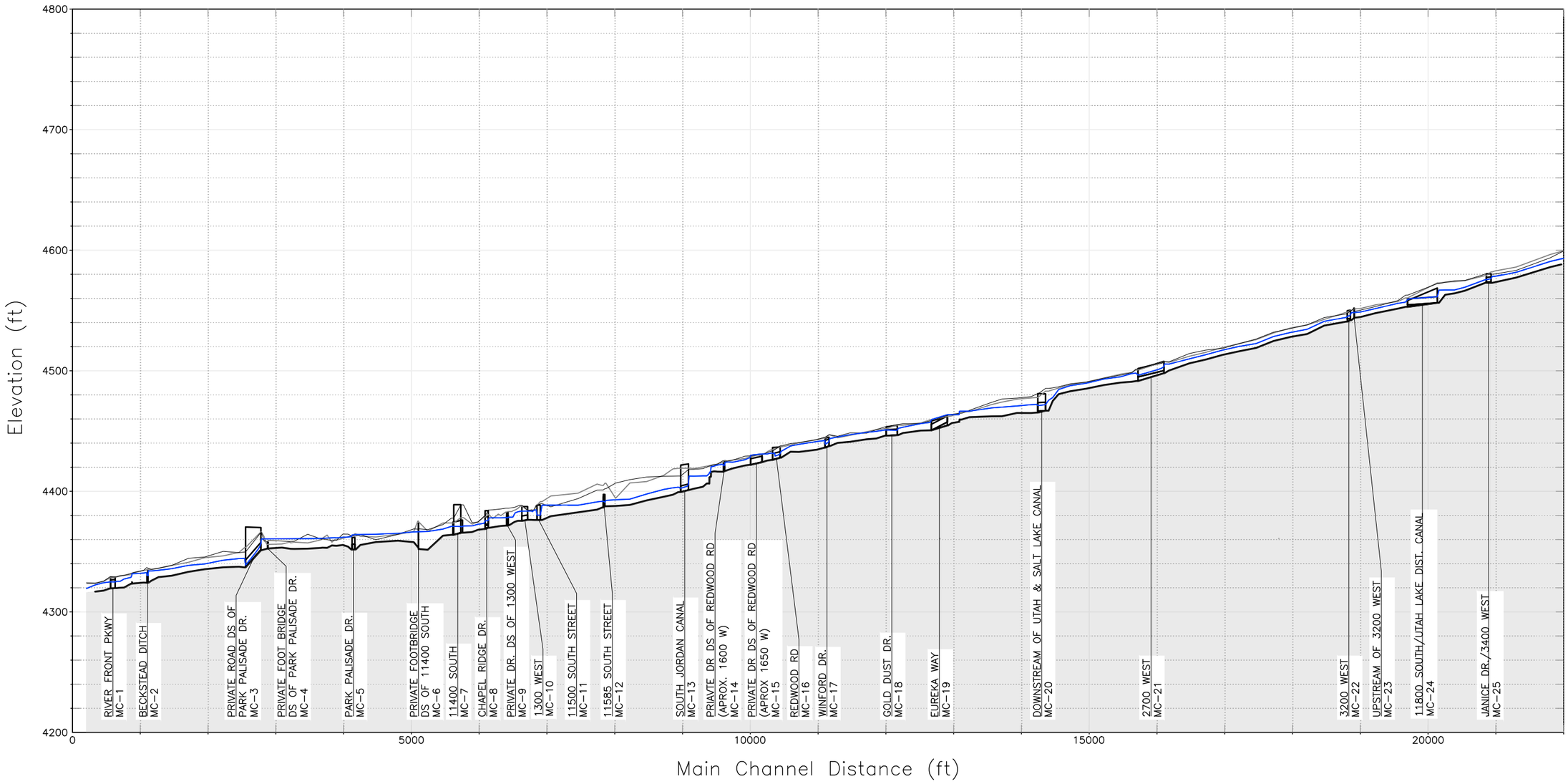
BOWEN COLLINS & ASSOCIATES

FIGURE 5-6C
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 4
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



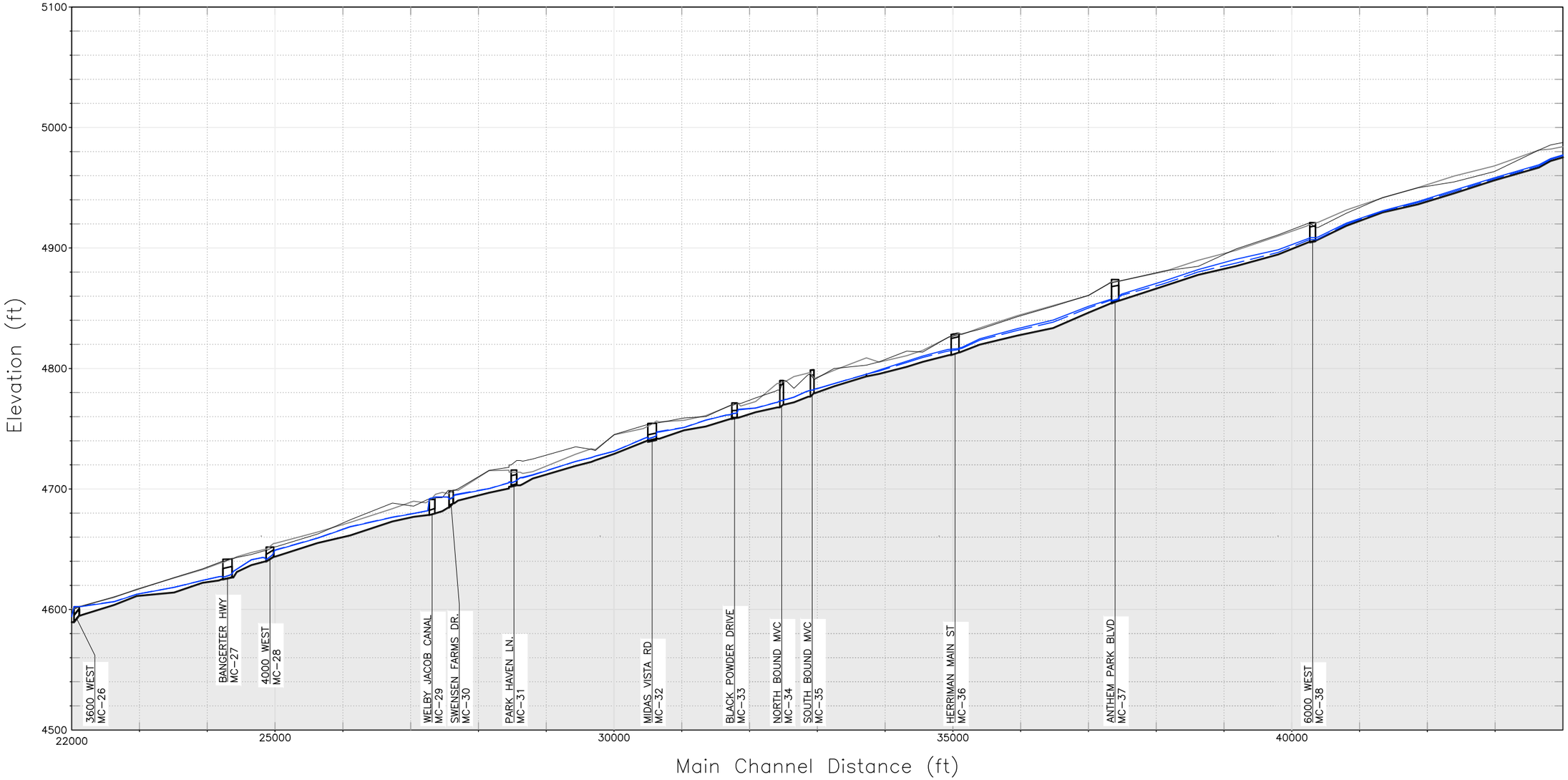
BOWEN COLLINS & ASSOCIATES

FIGURE 5-7A
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 5
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



BOWEN COLLINS & ASSOCIATES

FIGURE 5-7B
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 5
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'

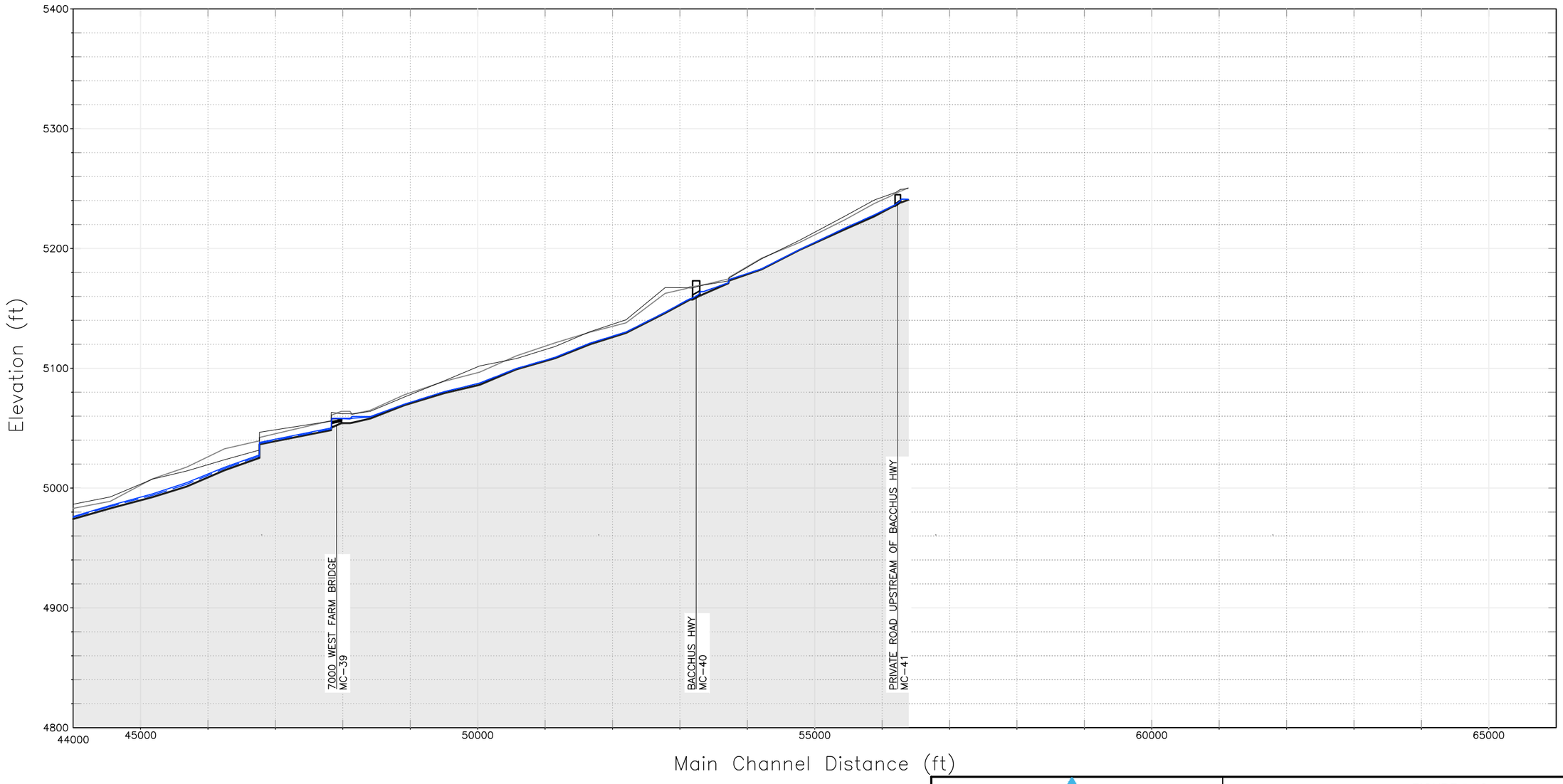


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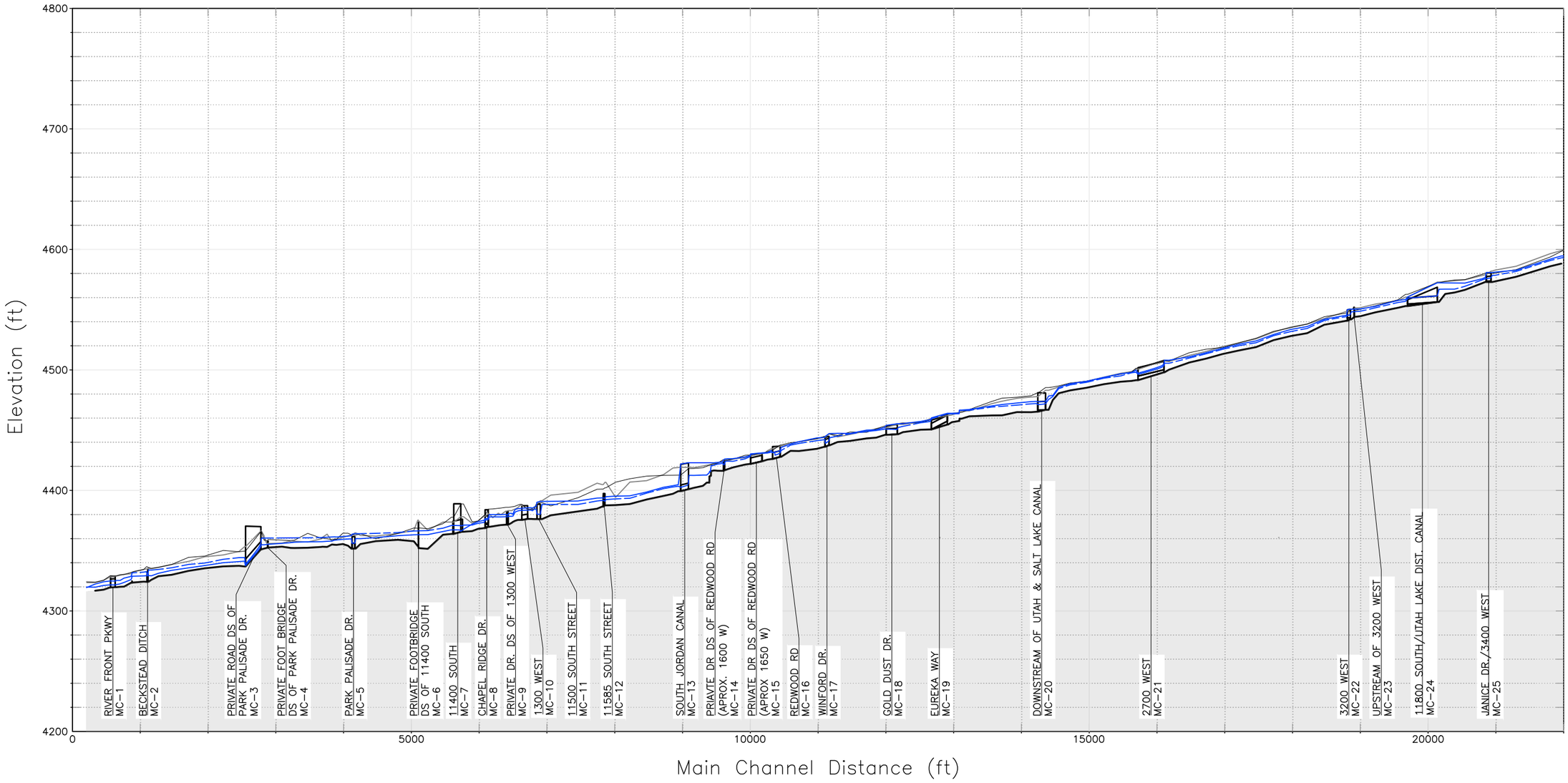
FIGURE 5-7C
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 5
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



BOWEN COLLINS & ASSOCIATES

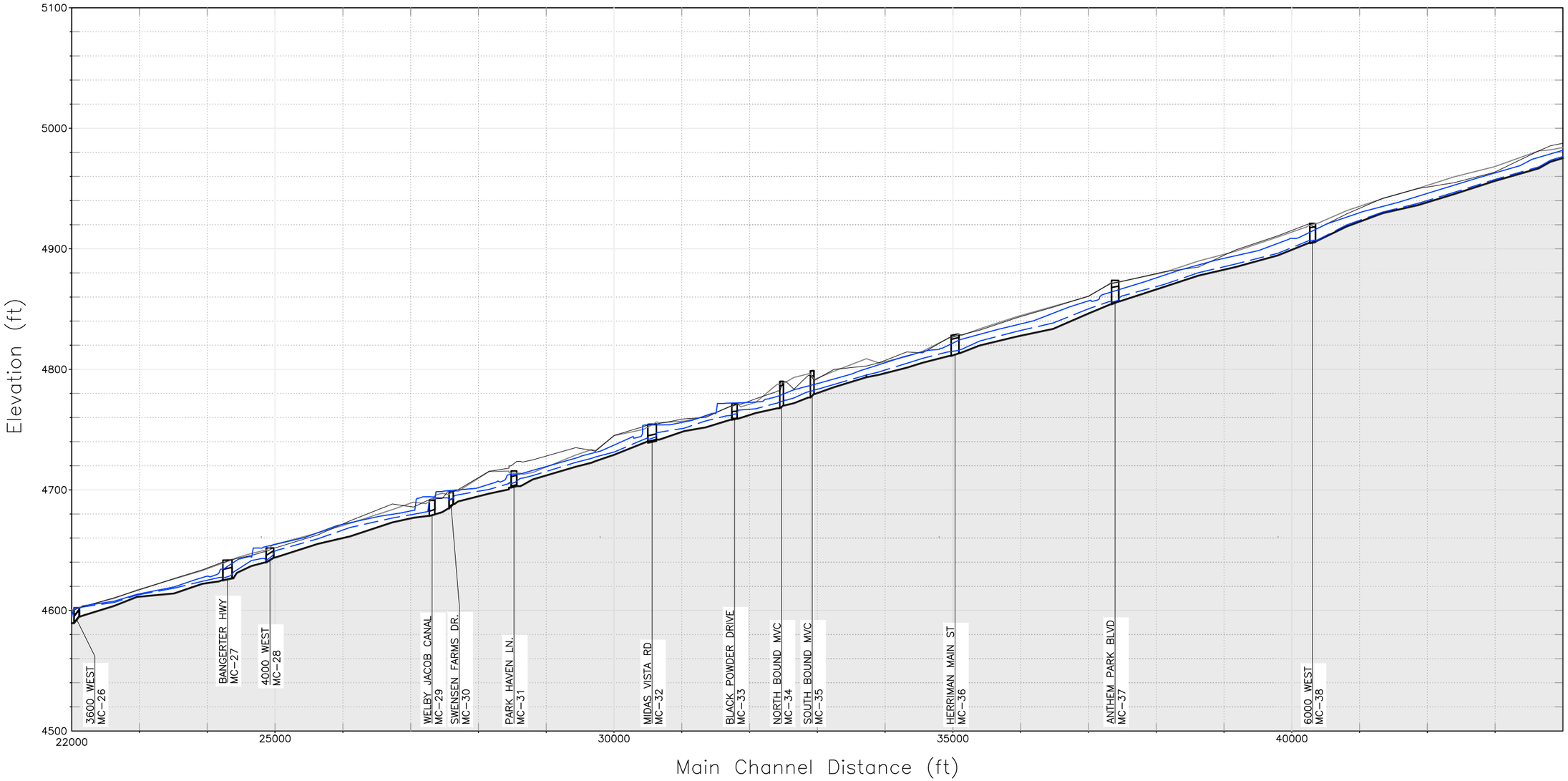
FIGURE 5-8A
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 6
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

P:\Salt Lake County\2019 Phase 2 – Southwest Canal and Creek Study\7.0 Profile Figures\Midas Creek\Alt 6 & Ex Profile.dwg Plotted: 9/27/2021 9:23 AM By: Tucker Jorgensen

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



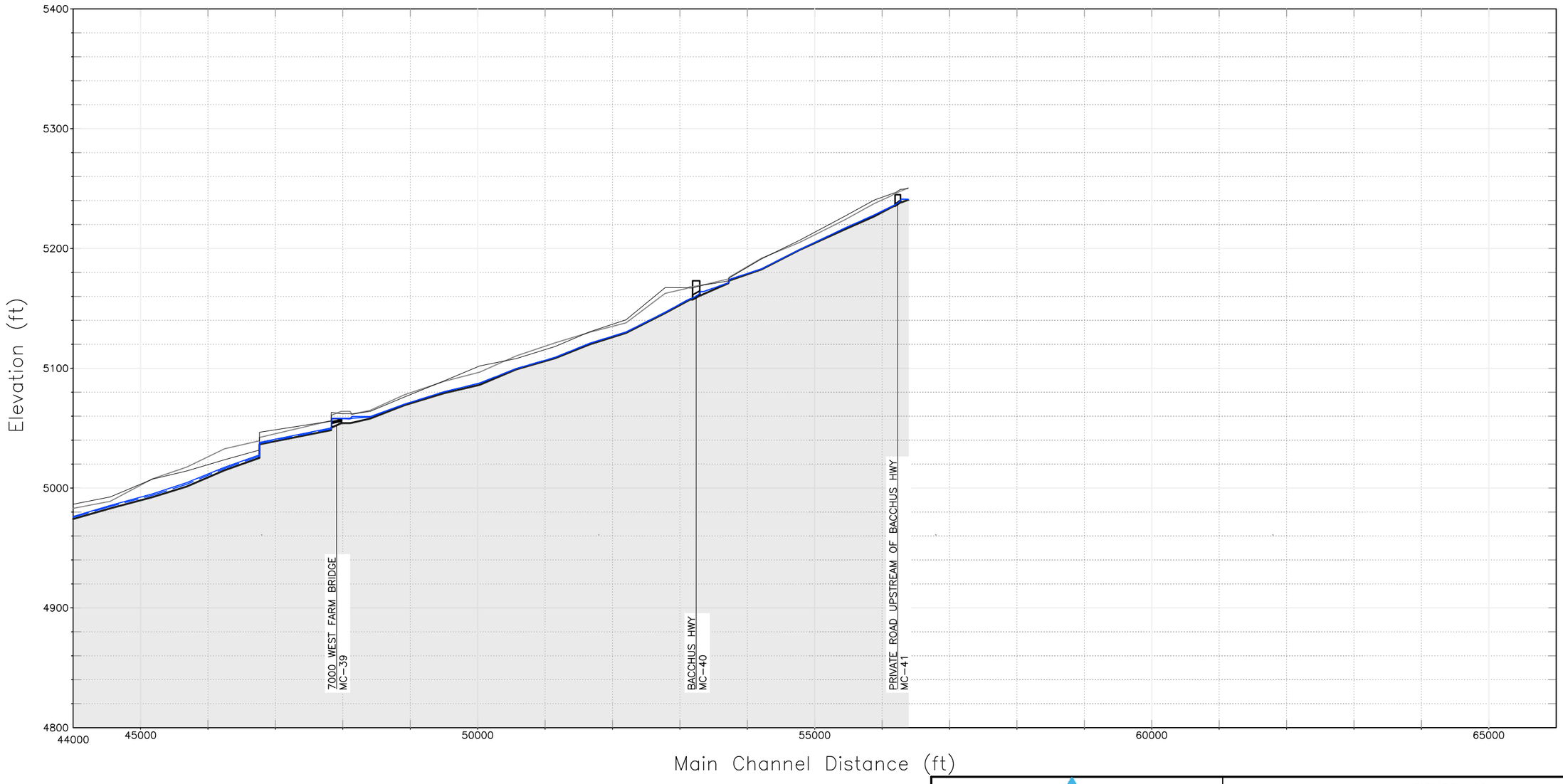
BOWEN COLLINS & ASSOCIATES

FIGURE 5-8B
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 6
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



BOWEN COLLINS & ASSOCIATES

FIGURE 5-8C
HYDRAULIC PROFILE OF MIDAS CREEK - ALTERNATIVE 6
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'

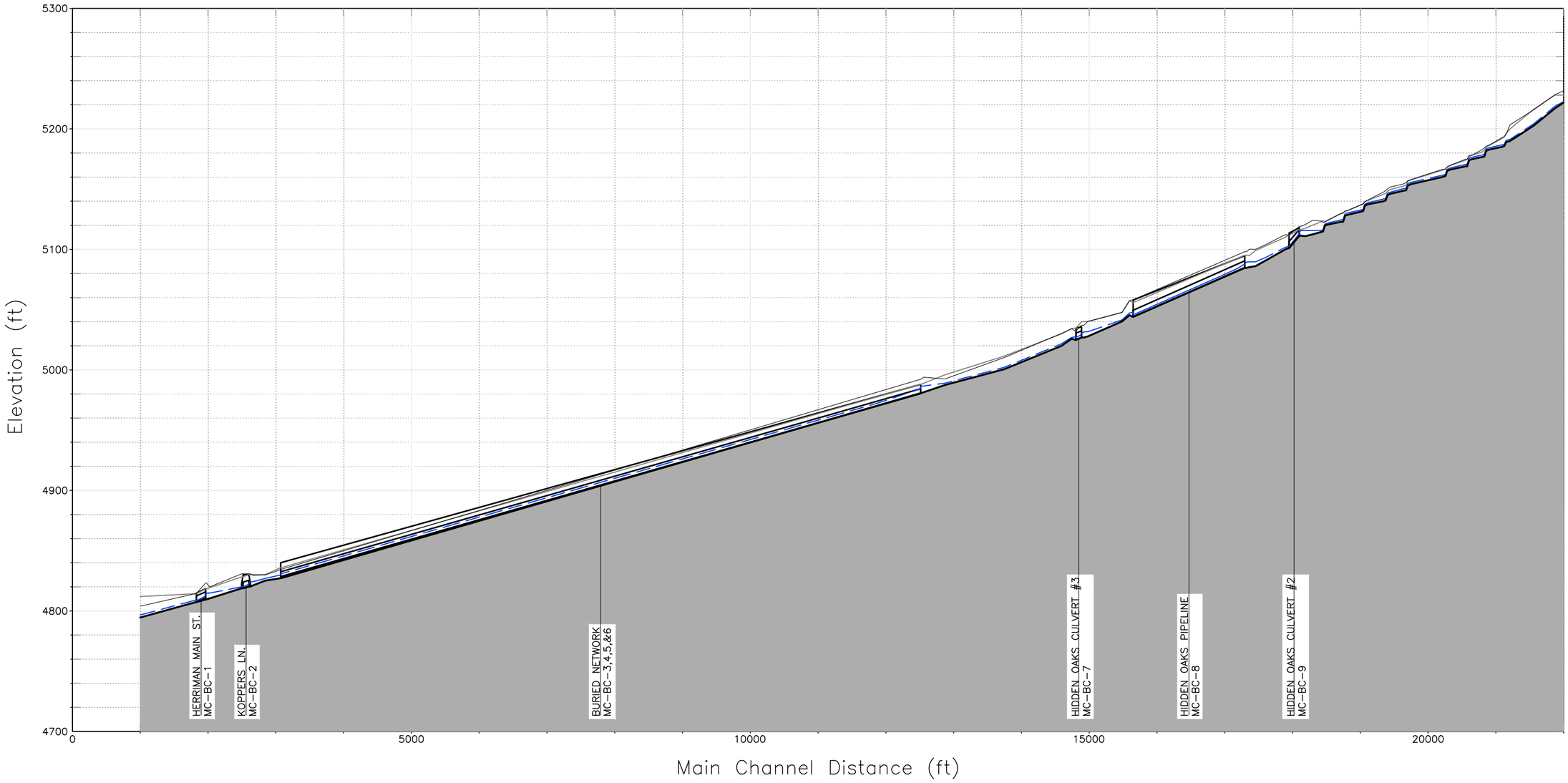


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FIGURE 5-9A
HYDRAULIC PROFILE OF BUTTERFIELD CREEK - ALTERNATIVE 1
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

EXISTING WATER SURFACE

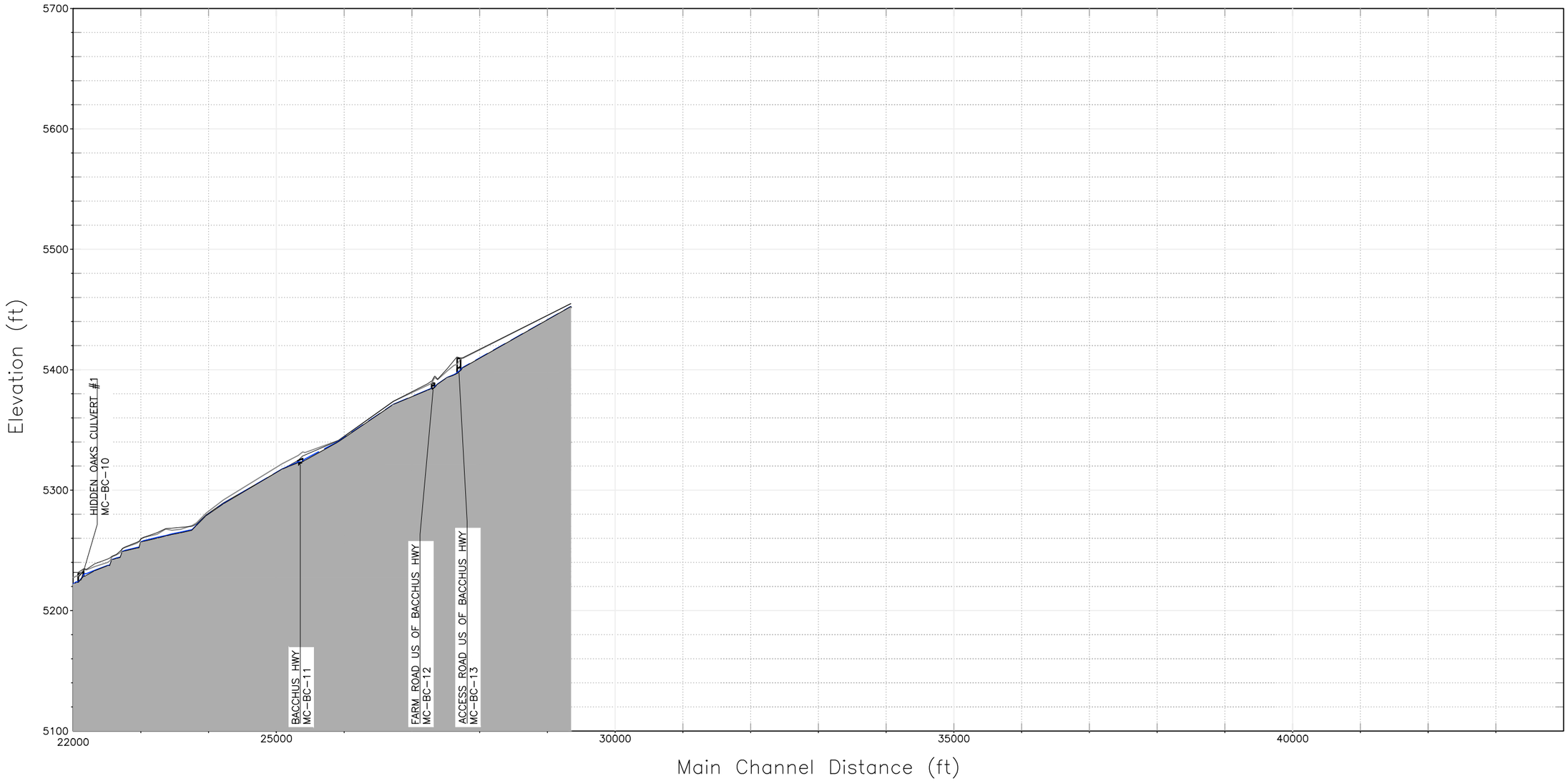
FUTURE WATER SURFACE

CHANNEL BOTTOM

TOP LEFT BANK

RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



BOWEN COLLINS & ASSOCIATES

FIGURE 5-9B
HYDRAULIC PROFILE OF BUTTERFIELD CREEK - ALTERNATIVE 1
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'

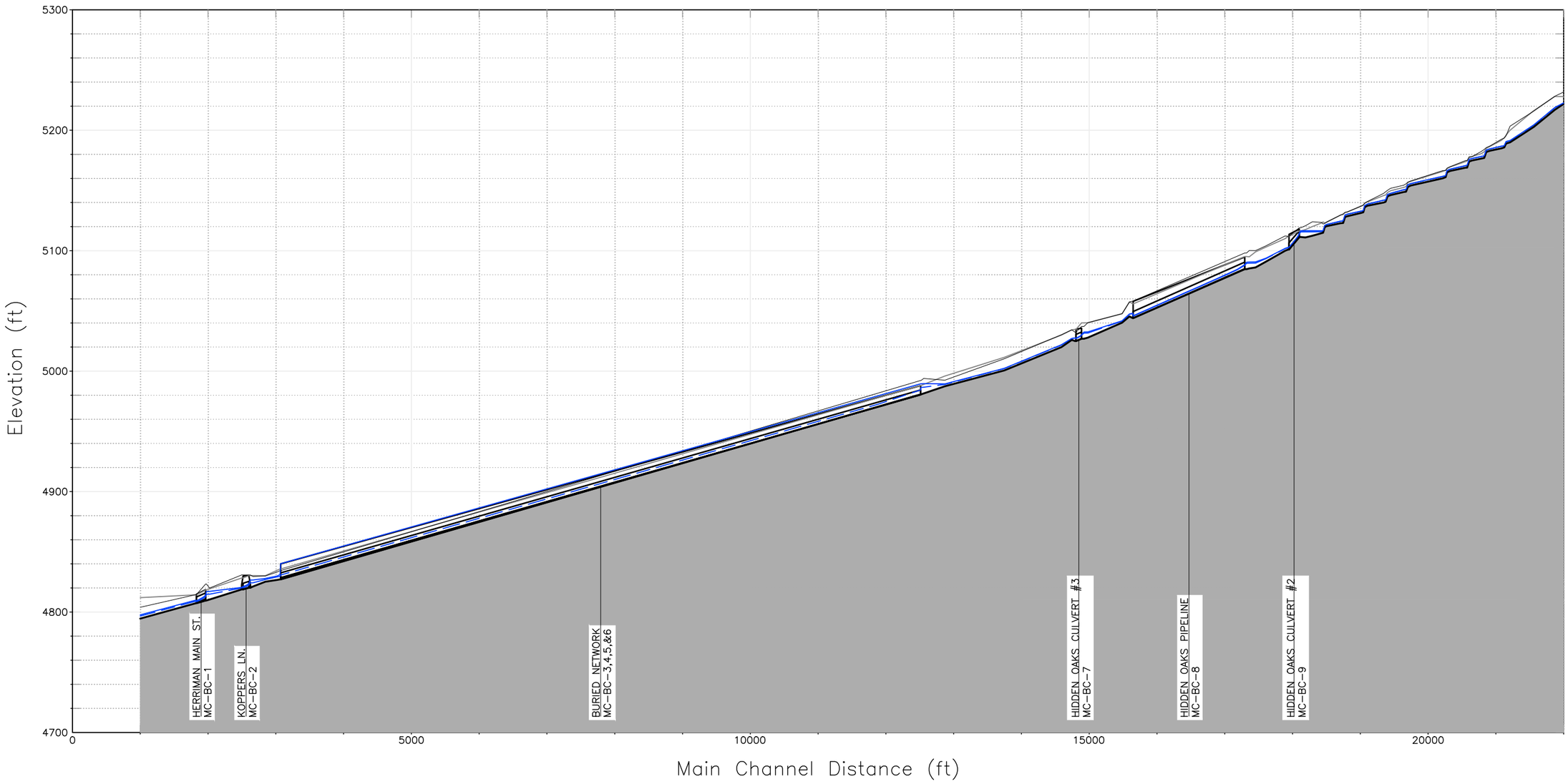


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FIGURE5-10A
HYDRAULIC PROFILE OF BUTTERFIELD CREEK - ALTERNATIVE 2,5&6
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

EXISTING WATER SURFACE

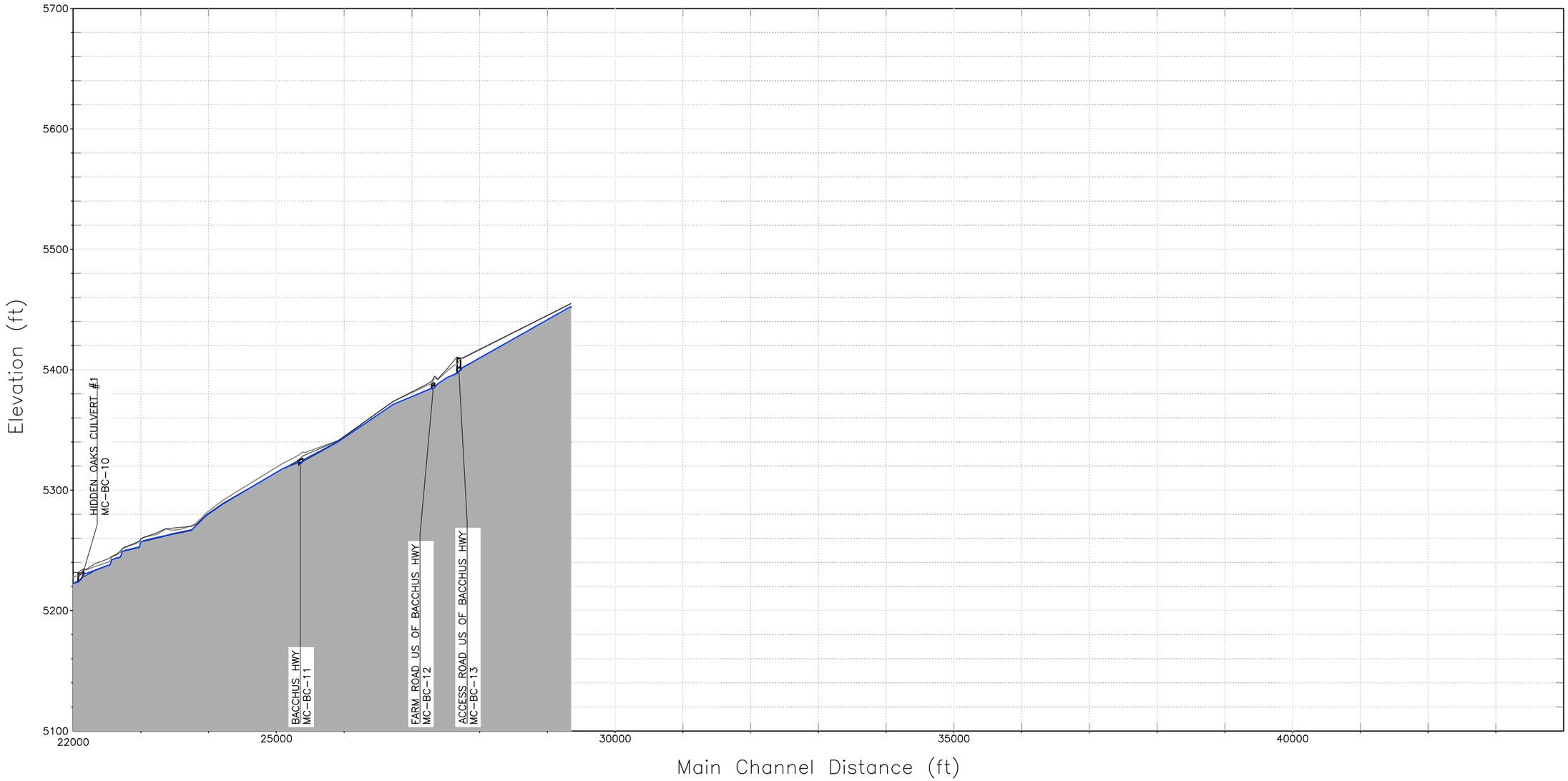
FUTURE WATER SURFACE

CHANNEL BOTTOM

TOP LEFT BANK

RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'

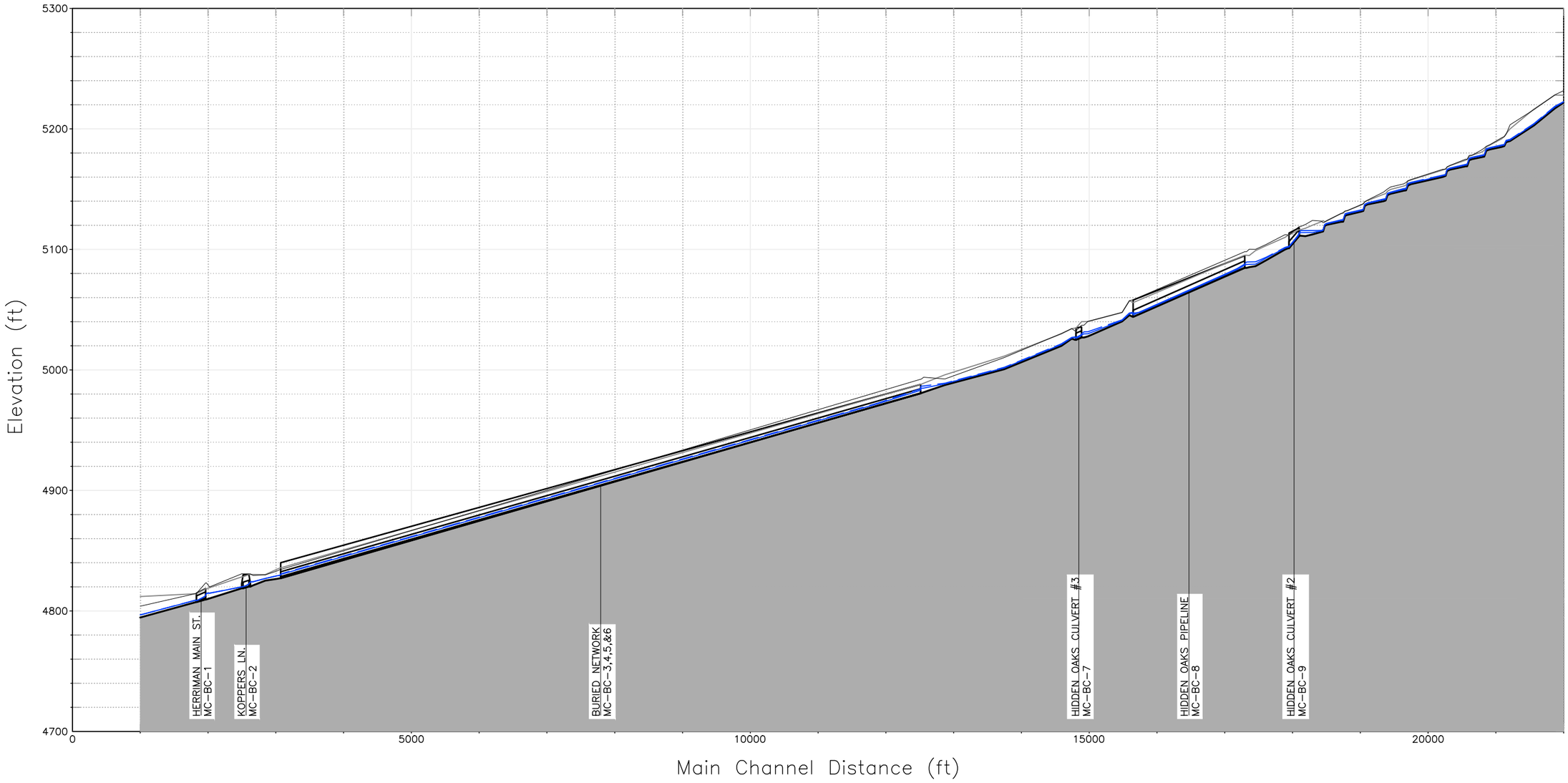


BOWEN COLLINS & ASSOCIATES

FIGURE5-10B
HYDRAULIC PROFILE OF BUTTERFIELD CREEK - ALTERNATIVE 2,5&6
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend
EXISTING WATER SURFACE
FUTURE WATER SURFACE
CHANNEL BOTTOM
TOP LEFT BANK
RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



BOWEN COLLINS & ASSOCIATES

FIGURE5-11A
HYDRAULIC PROFILE OF BUTTERFIELD CREEK - ALTERNATIVE 3
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

EXISTING WATER SURFACE

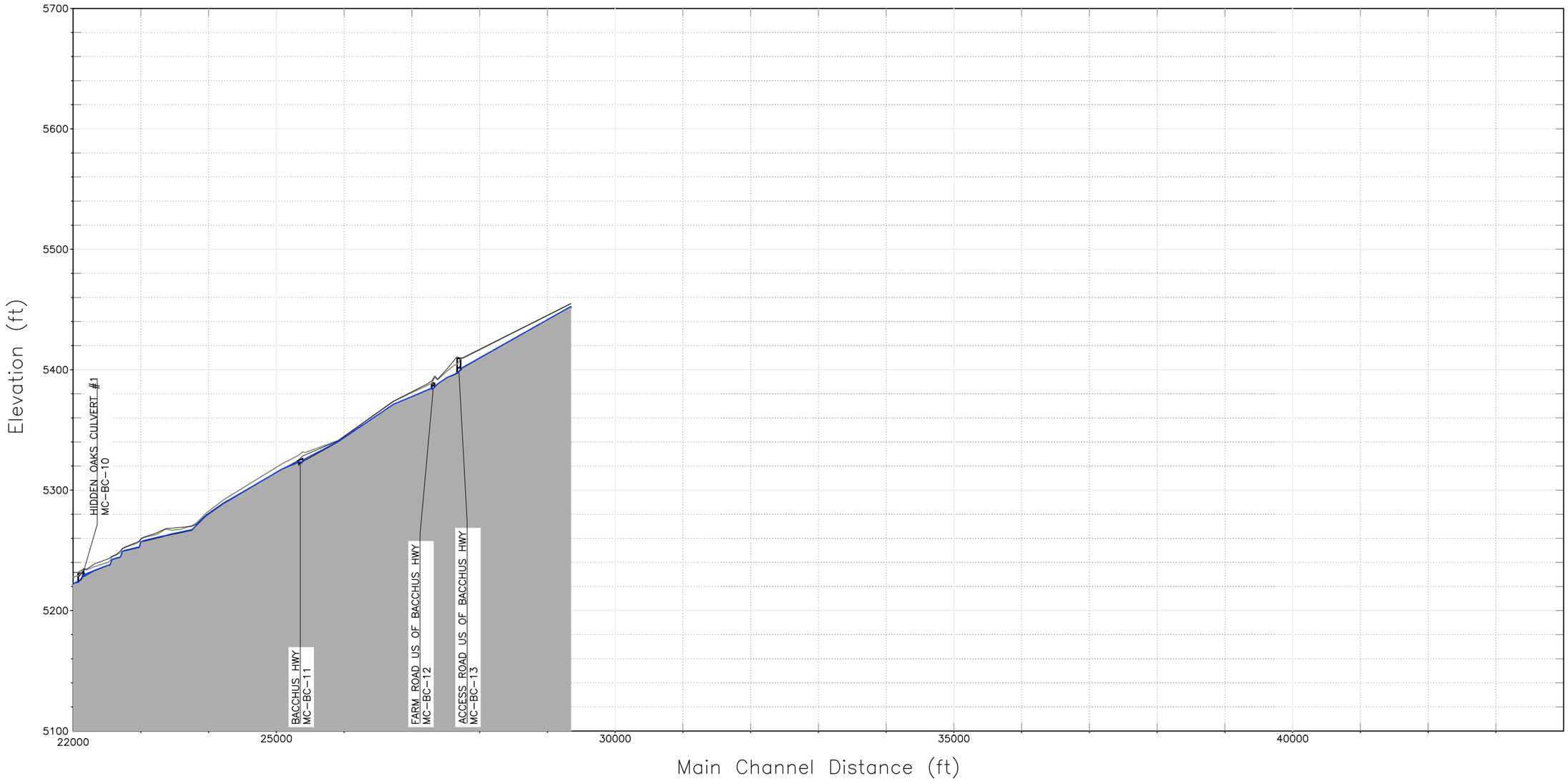
FUTURE WATER SURFACE

CHANNEL BOTTOM

TOP LEFT BANK

RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'



BOWEN COLLINS & ASSOCIATES

FIGURE5-11B
HYDRAULIC PROFILE OF BUTTERFIELD CREEK - ALTERNATIVE 3
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

- EXISTING WATER SURFACE
- FUTURE WATER SURFACE
- CHANNEL BOTTOM
- TOP LEFT BANK
- RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'

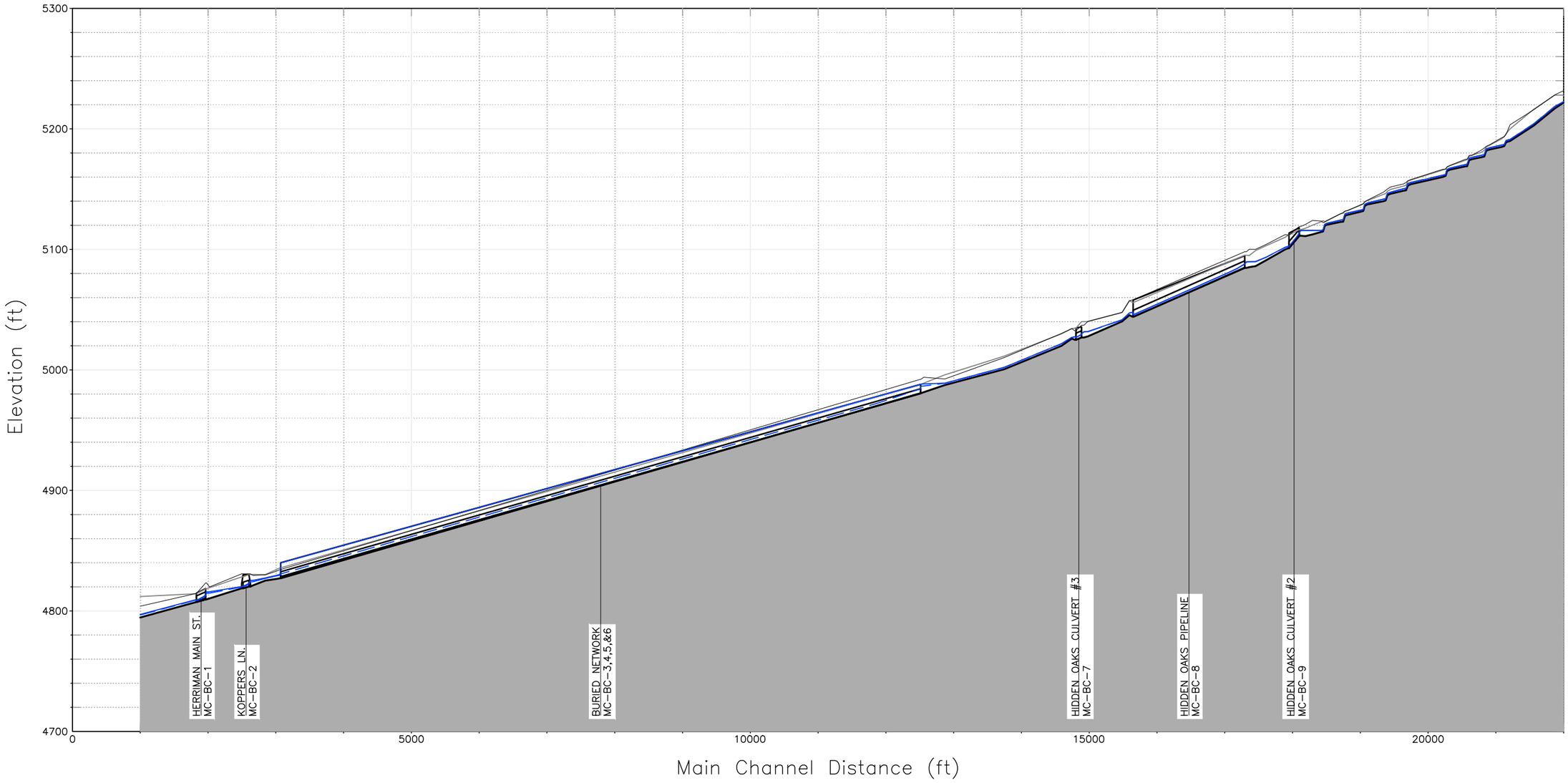


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FIGURE5-12A
HYDRAULIC PROFILE OF BUTTERFIELD CREEK - ALTERNATIVE 4
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

Legend

EXISTING WATER SURFACE

FUTURE WATER SURFACE

CHANNEL BOTTOM

TOP LEFT BANK

RIGHT TOP BANK

SCALE:
HORIZ 1"=800'
VERT 1"=40'

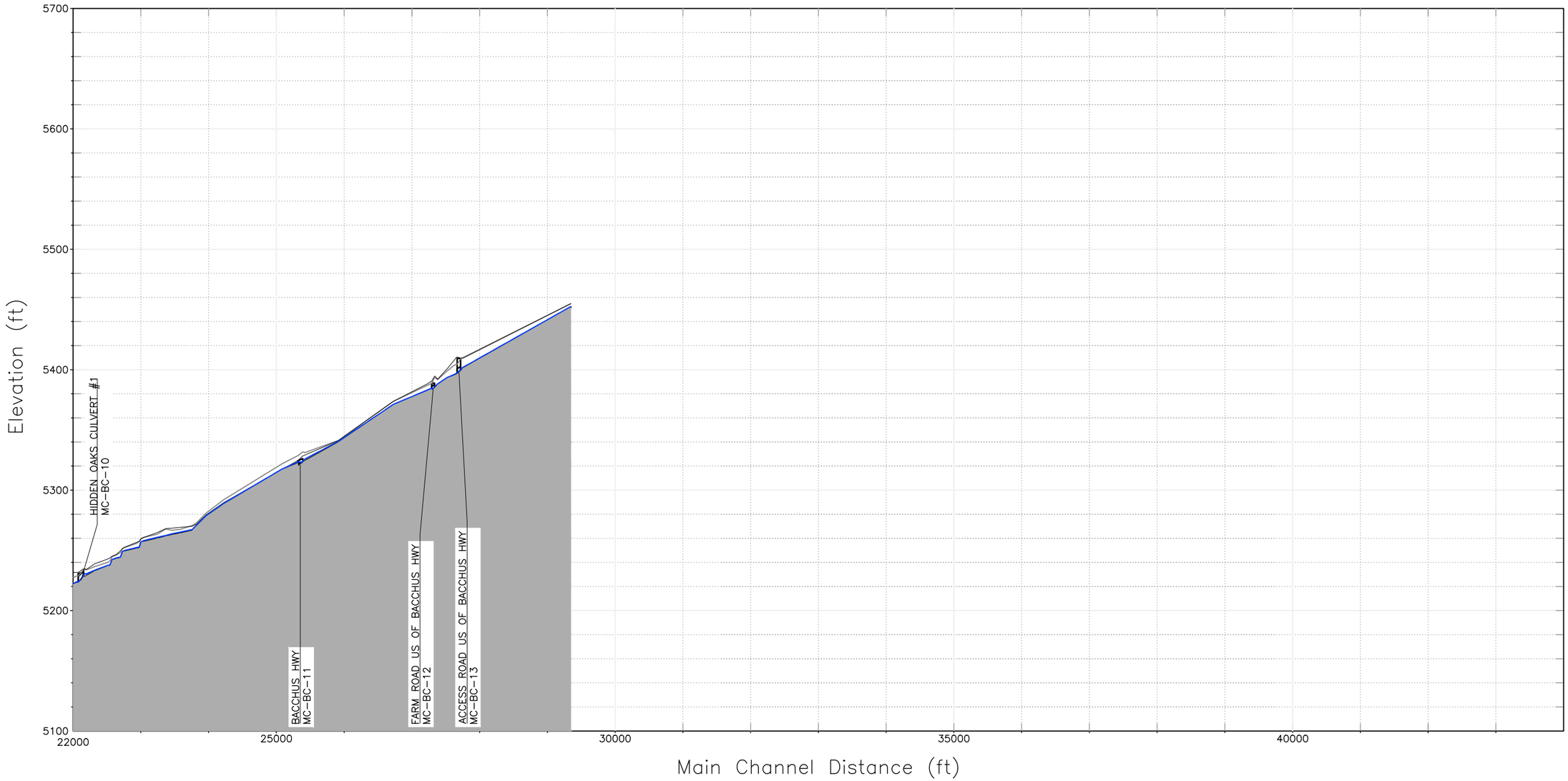

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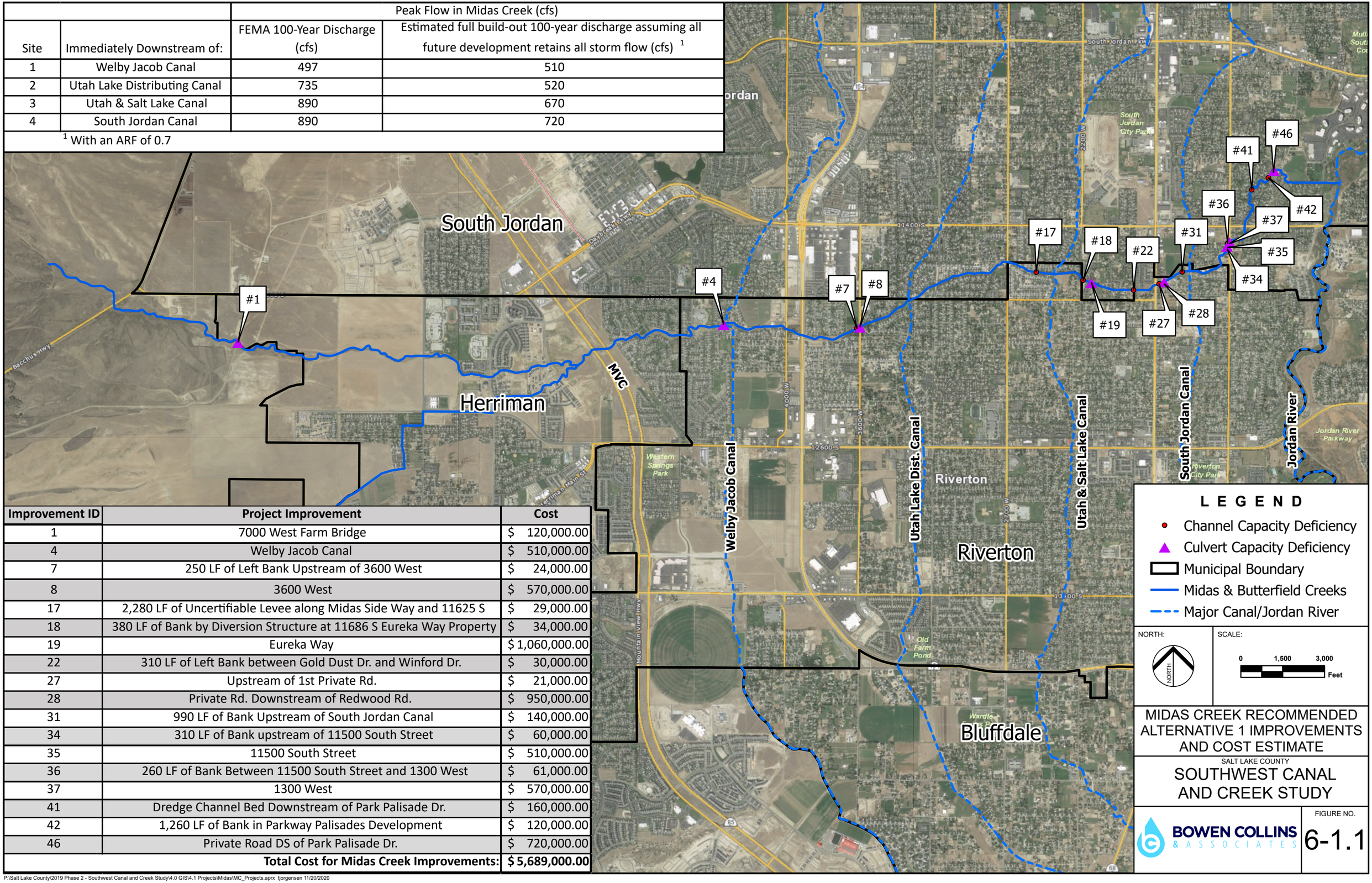
FIGURE5-12B
HYDRAULIC PROFILE OF BUTTERFIELD CREEK - ALTERNATIVE 4
SOUTHWEST CANAL AND CREEK STUDY
SALT LAKE COUNTY

		Peak Flow in Midas Creek (cfs)	
Site	Immediately Downstream of:	FEMA 100-Year Discharge (cfs)	Estimated full build-out 100-year discharge assuming all future development retains all storm flow (cfs) [1]
1	Welby Jacob Canal	497	510
2	Utah Lake Distributing Canal	735	520
3	Utah & Salt Lake Canal	890	670
4	South Jordan Canal	890	720

[1] With an ARF of 0.7



Improvement ID	Project Improvement	Cost
1	7000 West Farm Bridge	$ 120,000.00
4	Welby Jacob Canal	$ 510,000.00
7	250 LF of Left Bank Upstream of 3600 West	$ 24,000.00
8	3600 West	$ 570,000.00
17	2,280 LF of Uncertifiable Levee along Midas Side Way and 11625 S	$ 29,000.00
18	380 LF of Bank by Diversion Structure at 11686 S Eureka Way Property	$ 34,000.00
19	Eureka Way	$ 1,060,000.00
22	310 LF of Left Bank between Gold Dust Dr. and Winford Dr.	$ 30,000.00
27	Upstream of 1st Private Rd.	$ 21,000.00
28	Private Rd. Downstream of Redwood Rd.	$ 950,000.00
31	990 LF of Bank Upstream of South Jordan Canal	$ 140,000.00
34	310 LF of Bank upstream of 11500 South Street	$ 60,000.00
35	11500 South Street	$ 510,000.00
36	260 LF of Bank Between 11500 South Street and 1300 West	$ 61,000.00
37	1300 West	$ 570,000.00
41	Dredge Channel Bed Downstream of Park Palisade Dr.	$ 160,000.00
42	1,260 LF of Bank in Parkway Palisades Development	$ 120,000.00
46	Private Road DS of Park Palisade Dr.	$ 720,000.00
	Total Cost for Midas Creek Improvements:	**$ 5,689,000.00**

LEGEND

- Channel Capacity Deficiency
- Culvert Capacity Deficiency
- Municipal Boundary
- Midas & Butterfield Creeks
- Major Canal/Jordan River

NORTH:

SCALE: 0 1,500 3,000 Feet

MIDAS CREEK RECOMMENDED ALTERNATIVE 1 IMPROVEMENTS AND COST ESTIMATE

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-1.1

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#1

Bacchus Hwy

Herriman Hwy

Herriman

MVC

Improvement ID	Project Improvement	Cost
1	Redefining 1,450 LF of channel banks along Bacchus Hwy near Farm Field [1]	$ -
	Total Cost for Butterfield Creek Improvements:	**$ -**

[1] Redefining channel should be part of future development and paid for by the developer to protect new contstruction from risk of flooding.

LEGEND

- Channel Capacity Deficiency
- Butterfield Creek Pipeline
- Midas & Butterfield Creeks
- Municipal Boundary

NORTH:

SCALE: 0 1,000 2,000 Feet

BUTTERFIELD CREEK
RECOMMENDED ALTERNATIVE 1
IMPROVEMENTS AND COST ESTIMATE

SALT LAKE COUNTY
SOUTHWEST CANAL
AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
6-1.2

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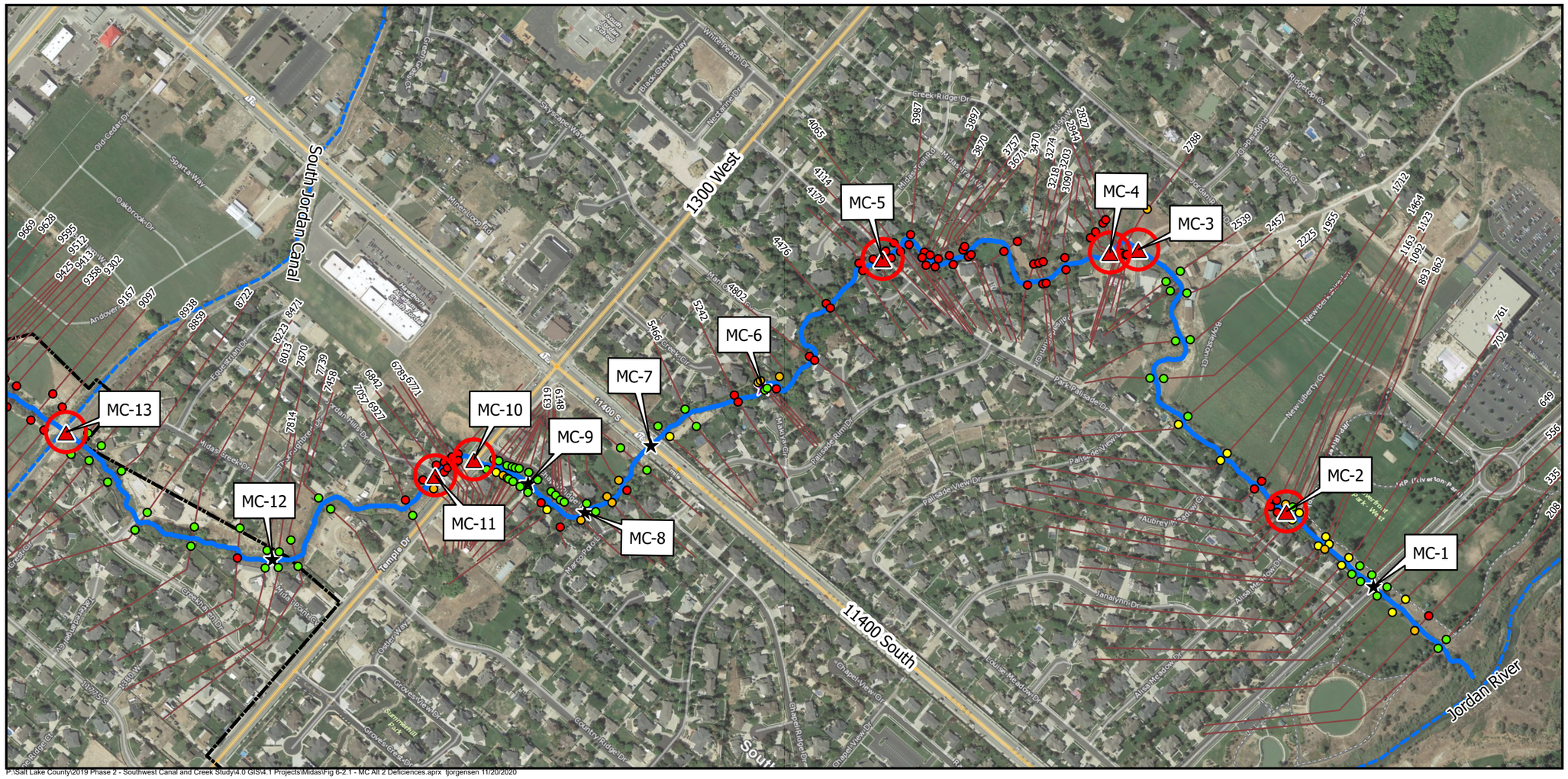

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LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
- Pipeline Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 2 - FUTURE
DEVELOPMENT DETAINS TO 0.2 CFS/AC

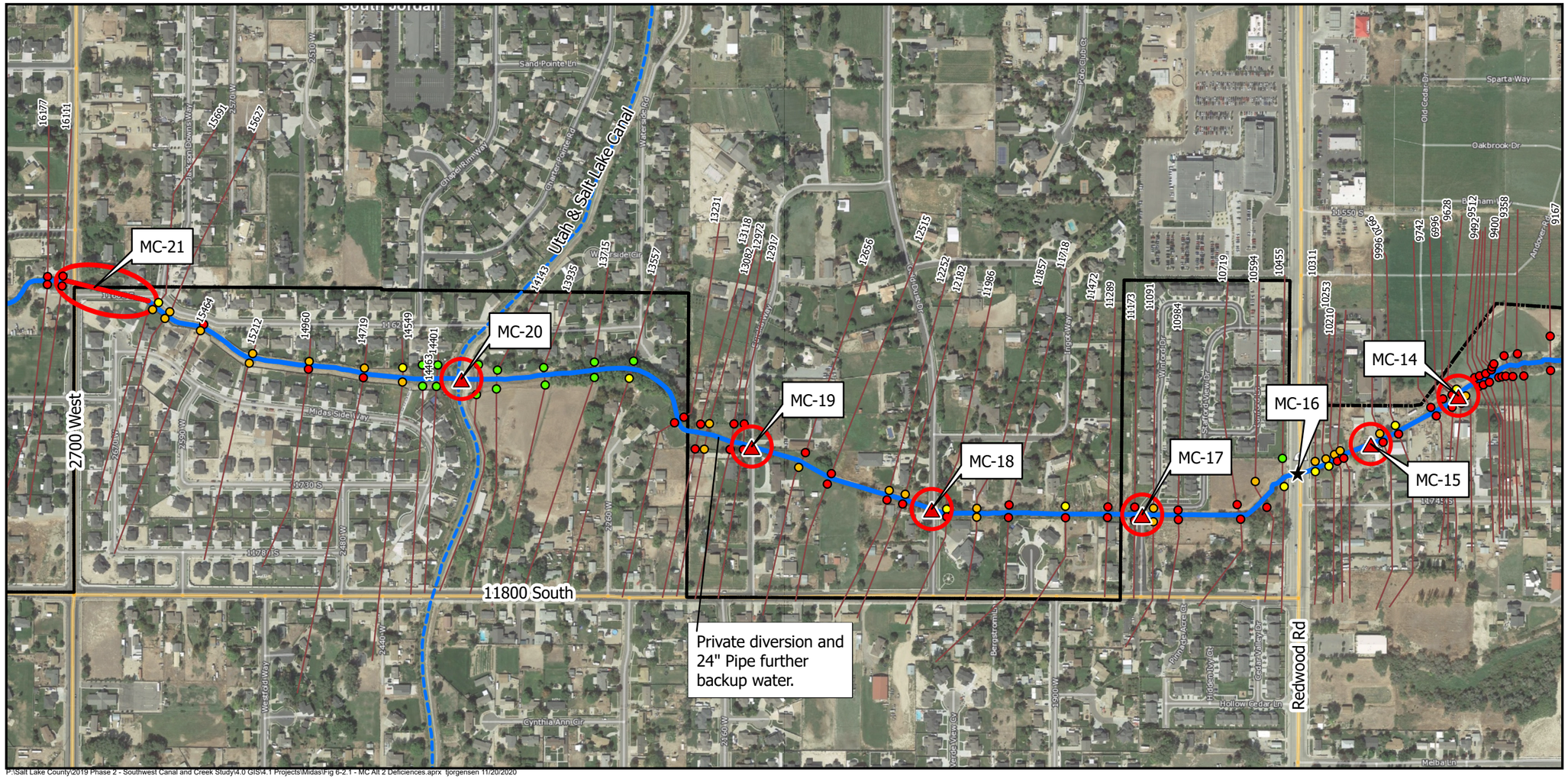
SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-2.1
1 of 8

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-1	River Front PKWY	890	770	1180	Two 13'X7' Box Culverts	2130		
MC-2	Beckstead Ditch	890	770	1180	15'X6'	1130	15'X7'	Culvert is undersized causing overtopping into beckstead ditch
MC-3	Private Road DS of Park Palisade Dr.	890	760	1170	12'X6'	1180	13'X8'	Back water increases water surface upstream
MC-4	Private Foot Bridge DS of Park Palisade Dr.	890	760	1170	30' wide Footbridge	800		Culvert is undersized causing overtopping
MC-5	Park Palisade Dr.	890	760	1170	15'X4.5'	920	15'X5'	Culvert is undersized causing overtopping
MC-6	Private Foot Bridge DS of 11400 South	890	760	1160	34.5' wide Footbridge	3170		
MC-7	11400 South	890	760	1160	24'X10.5'	2810		
MC-8	Chapel Ridge Dr.	890	760	1160	21.5'X6.2'	1340		
MC-9	Private Dr. DS of 1300 West	890	720	1130	20'X8'	1860		
MC-10	1300 West	890	720	1130	Two 8.5'X4' Box Culverts	730	17'X5'	Culvert is undersized causing overtopping
MC-11	11500 South Street	890	720	1130	14'X4'	910	16'X5'	Culvert is undersized causing overtopping
MC-12	11585 South Street	890	720	1130	23'X9' Arch	3850		
MC-13	South Jordan Canal	890	720	1130	10'X5'	960	13'X5'	Culvert is undersized, flow would enter the South Jordan Canal



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LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
- Pipeline Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 2 - FUTURE
DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-2.1
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Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-14	Private Dr. DS of Redwood Rd. (aprox. 1600 W)	890	670	1070	15'X5'	790	19'X6'	Culvert is undersized causing overtopping
MC-15	Private Dr. DS of Redwood Rd. (aprox. 1650 W)	890	670	1070	14'X5'	630	23'X7'	Culvert is undersized causing overtopping
MC-16	Redwood Rd	890	670	1070	18'X5'	1080		
MC-17	Winford Dr.	890	670	1070	Two 7'X6' Box Culverts	930	16'X7'	Culvert is undersized causing overtopping
MC-18	Gold Dust Dr.	890	670	1070	Two 9'X5' Box Culverts	950	21'X5'	Culvert is undersized causing overtopping
MC-19	Eureka Way	890	670	1070	Two 5' RCP	230	20'X6'	Culverts are undersized causing overtopping
MC-20	Downstream of Utah & Salt Lake Canal	890	670	1070	10'X7'	1090		
MC-21	2700 West	735	550	950	16'X7'	870	19'X7'	Back water raises water surface upstream increasing flooding in yards.

Index Map

LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
- Pipeline Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-22	3200 West	735	520	920	18'X7'	800	22'X7'	Culvert is undersized causing overtopping
MC-23	Upstream of 3200 West	735	520	920	63' wide Footbridge	1160		
MC-24	11800 South/Utah Lake Dist Canal	735	520	920	Two 5' RCP	710		
MC-25	Janice Dr./3400 West	844	540	940	20'X4'	770	23'X5'	Culvert is undersized causing overtopping
MC-26	3600 West	844	540	940	5' and 6' Diameter Culverts	470	18'X6'	Culverts are undersized causing overtopping

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 2 - FUTURE
DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
6-2.1
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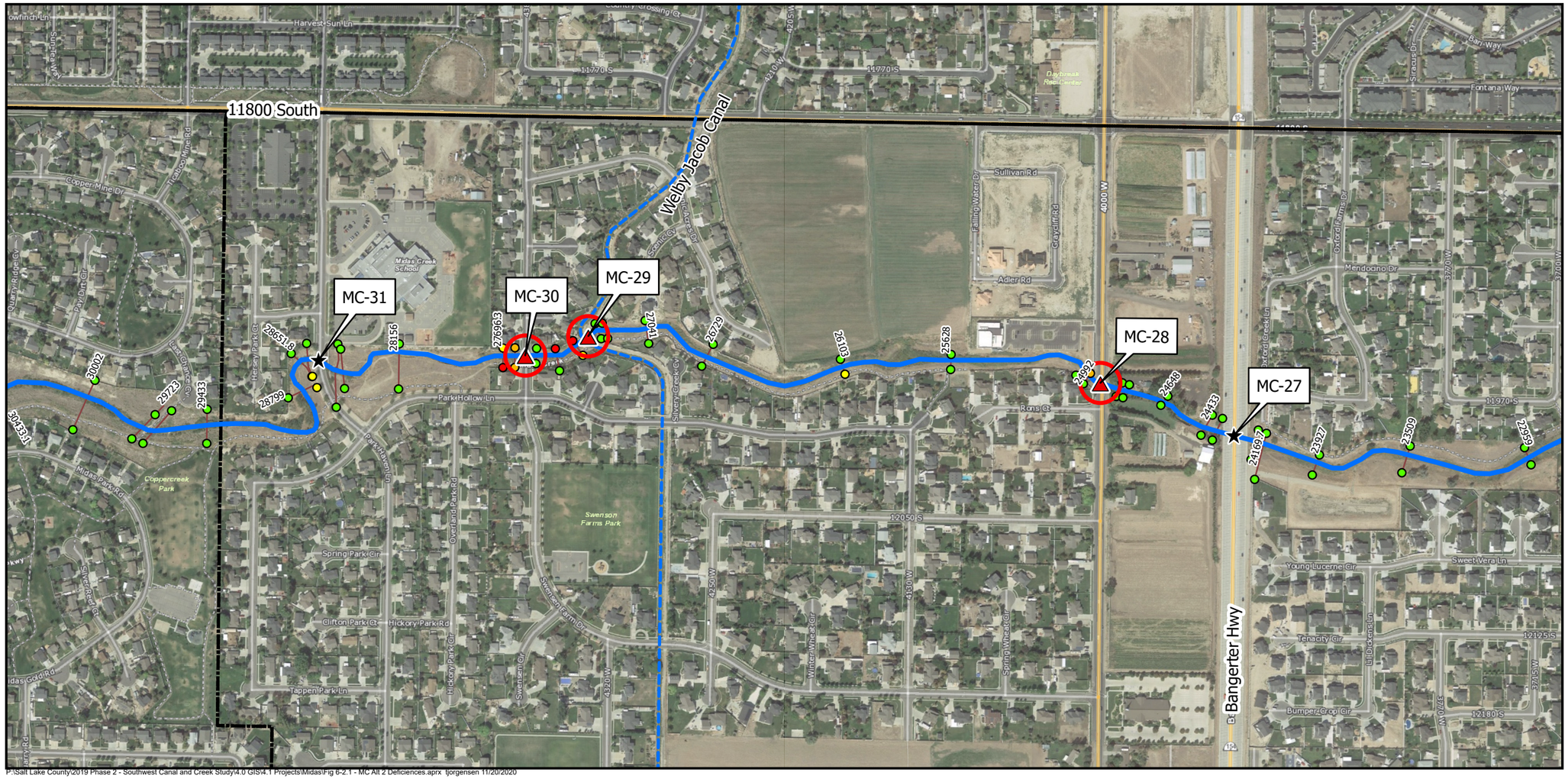

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LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
- Pipeline Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 2 - FUTURE
DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL
AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
6-2.1
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Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-27	Bangerter Hwy	495	540	940	18'X9'	2400		
MC-28	4000 West	495	530	930	14'X6'	980		
MC-29	Welby Jacob Canal	497	510	910	10' Wide Bridge	340	11'X7'	Bridge is undersized, the height is 2-3 ft, overtopping will discharge into the Welby Jacob Canal
MC-30	Swensen Farms Dr. (4370 W)	503	500	910	10'X5'	690	12'X7'	Culvert is undersized causing overtopping
MC-31	Park Haven Ln. (4510 W)	503	500	910	15'X8'	1200		

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LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
- Pipeline Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 2 - FUTURE
DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-2.1
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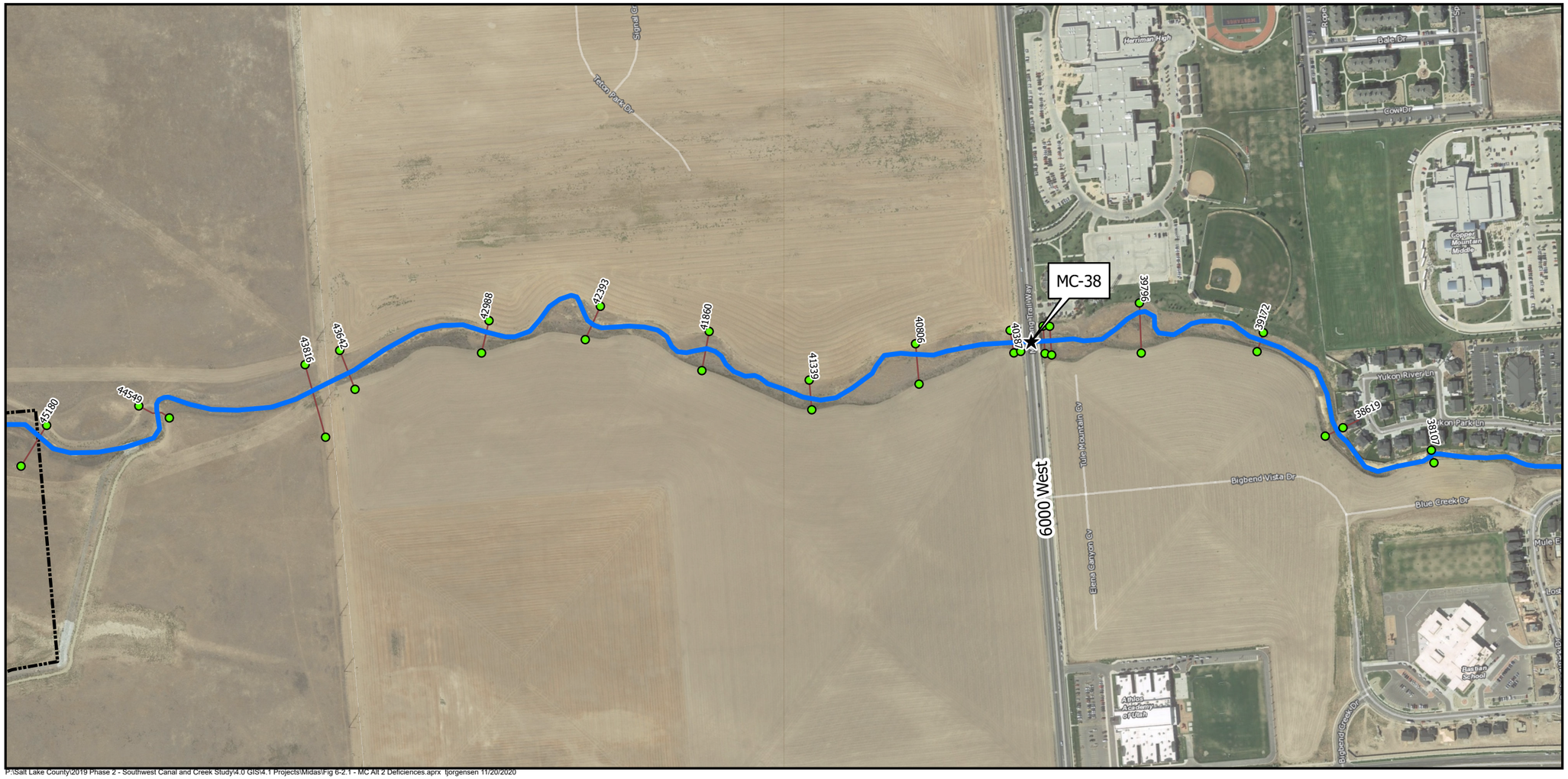
Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-32	Midas Vista Rd (4775 W)	503	490	910	10'X6'	970		
MC-33	Black Powder Drive (4895 W)	503	470	910	10'X6'	840	10'X7'	Culvert is undersized
MC-34	North Bound MVC	503	470	910	75' Wide Bridge	12210		
MC-35	South Bound MVC	503	420	870	75' Wide Bridge	4940		
MC-36	Herriman Main Street	503	350	630	60' Wide Bridge	8450		
MC-37	Anthem Park Blvd	503	360	640	13'X33' Arch	4900		



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LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
- Pipeline Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 2 - FUTURE
DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-2.1
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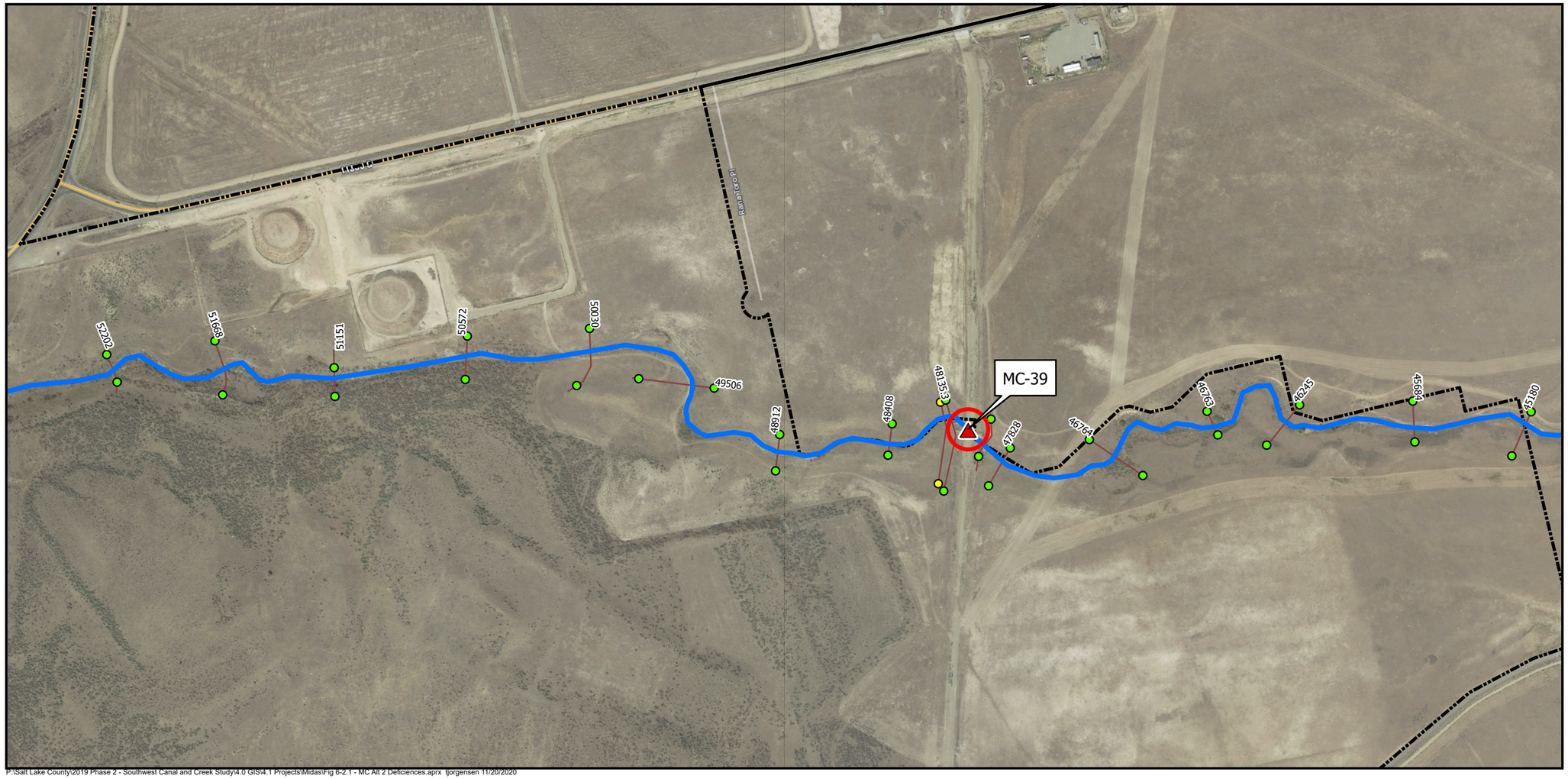
Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-38	6000 West	503	80	480	13'X33' Arch	3260		



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LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
- Pipeline Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 2 - FUTURE
DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-2.1

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-39	~7000 West Farm Bridge		60	210	15" Culvert	10	72" Culvert	Culvert undersized causing overtopping, but water is contained in the channel

P:\Salt Lake County\2019 Phase 2 - Southwest Canal and Creek Study\4.0 GIS\4.1 Projects\Midas\Fig 6-2.1 - MC Alt 2 Deficiences.aprx tjorgensen 11/20/2020

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-40	Bacchus Hwy		50	50	4' CMP	130		
MC-41	Private Road Upstream of Bacchus Hwy		30	30	Two 21" Culverts	50		

Index Map

LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
- Pipeline Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 2 - FUTURE
DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
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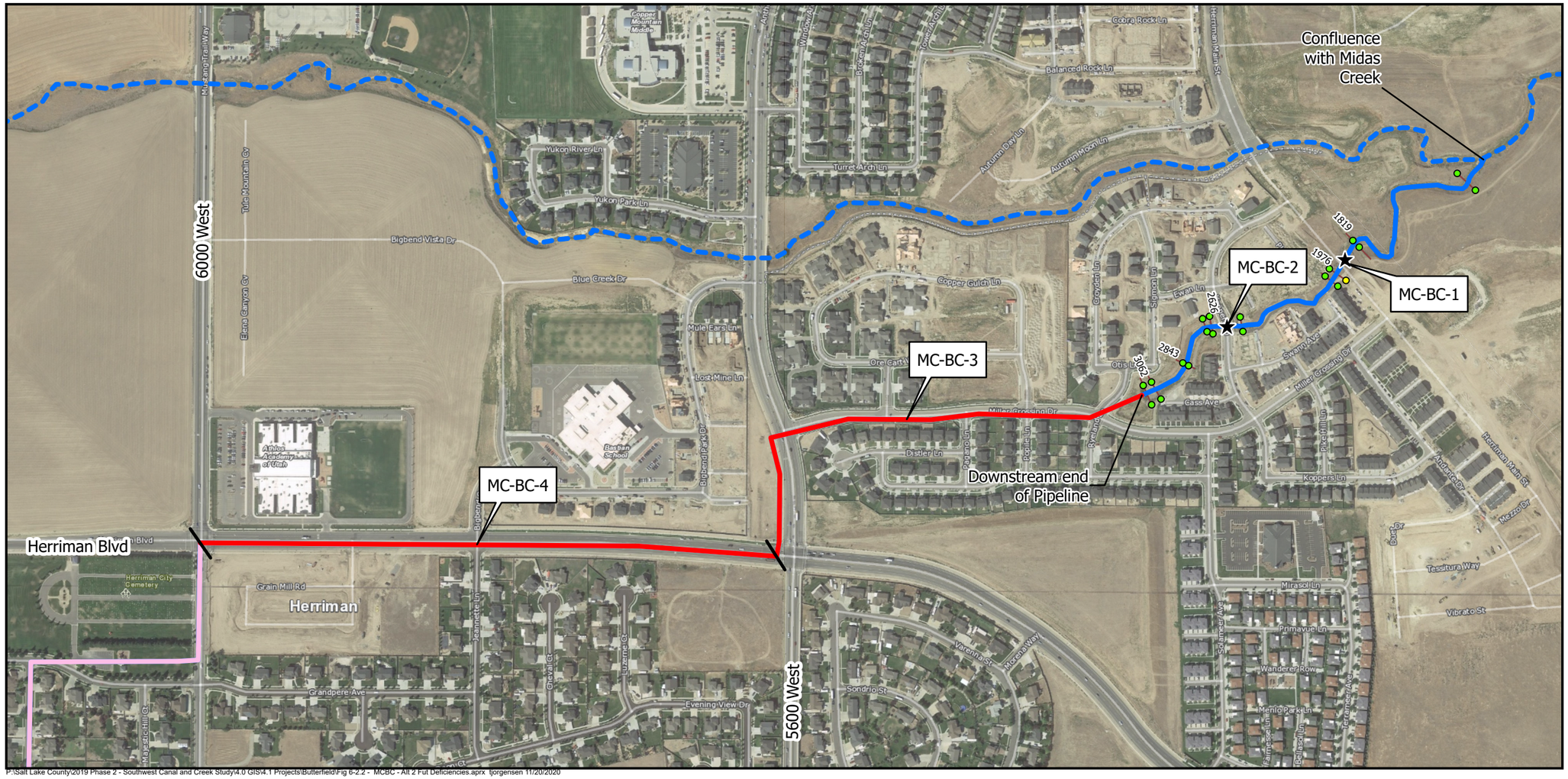

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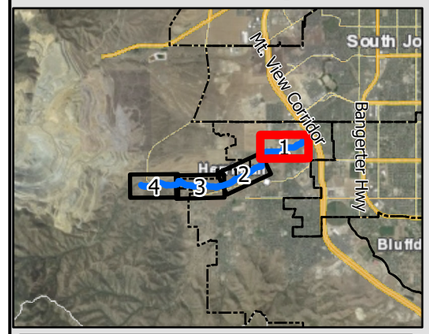


LEGEND

Butterfield Creek Structures

- Culvert/Inlet Deficiency
- Pipeline Deficiency
- Culvert
- Pipeline

Butterfield Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Butterfield Creek
- Midas Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES ALTERNATIVE 2 - FUTURE DEVELOPMENT DETAINS TO 0.2 CFS/AC

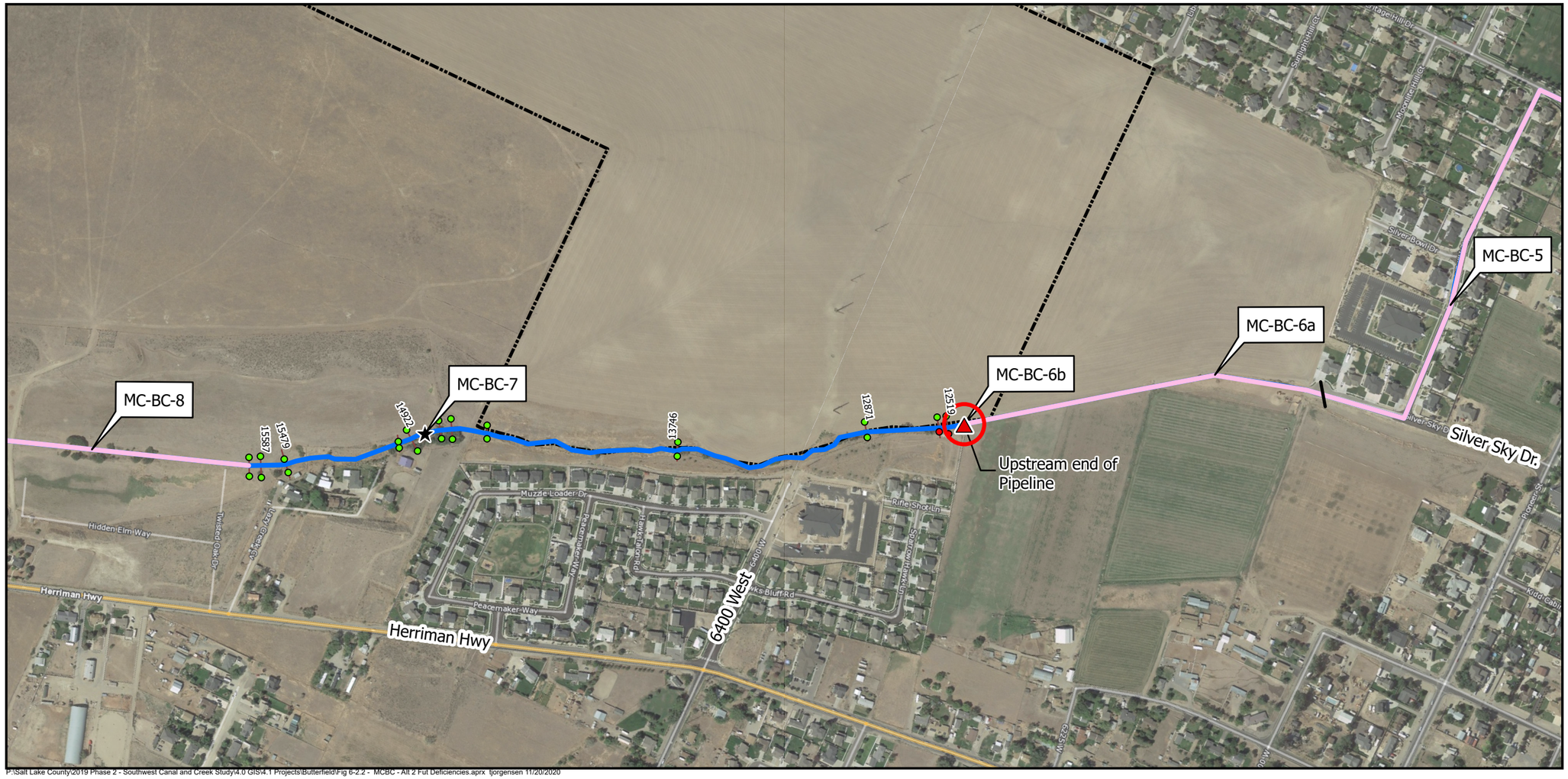
SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-2.2
1 of 4

Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Note
MC-BC-1	Herriman Main Street	N/A	140	300	8' X 5' Box	340		
MC-BC-2	Koppers Lane	N/A	140	300	8' X 5' Box	480		
MC-BC-3	Pipeline from 5600 West to End	N/A	140	300	5' RCP	200	6' RCP	Pipe is undersized, potentially causing water to flow out of manholes
MC-BC-4	Pipeline from Herriman Blvd to 5600 West	N/A	90	290	5' RCP	200	6' RCP	Pipe is undersized, potentially causing water to flow out of manholes



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Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Note
MC-BC-5	Pipeline from Silver Sky Dr. to Herriman Blvd	N/A	90	210	5' RCP	280		
MC-BC-6a	Pipeline from Entrance to Silver Sky Dr.	N/A	80	210	4' RCP	200		
MC-BC-6b	Inlet to Pipe Network	N/A	80	210	4' RCP	140	Replace Inlet	Inlet is inadequate, causing banks to overtop
MC-BC-7	Hidden Oaks Culvert 3 (approx. 6600 W)	N/A	60	150	5.5' RCP	260		
MC-BC-8	Hidden Oaks Pipeline (approx. 6700 W)	N/A	60	150	5.5' RCP	310		

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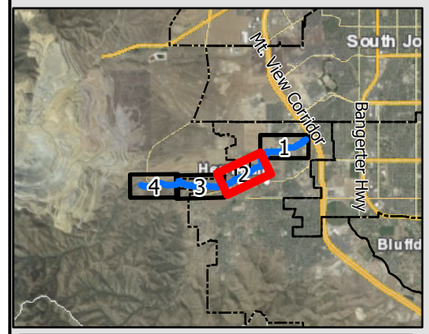

LEGEND

Butterfield Creek Structures

- Culvert/Inlet Deficiency
- Pipeline Deficiency
- Culvert
- Pipeline

Butterfield Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Butterfield Creek
- Midas Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 2 - FUTURE DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-2.2
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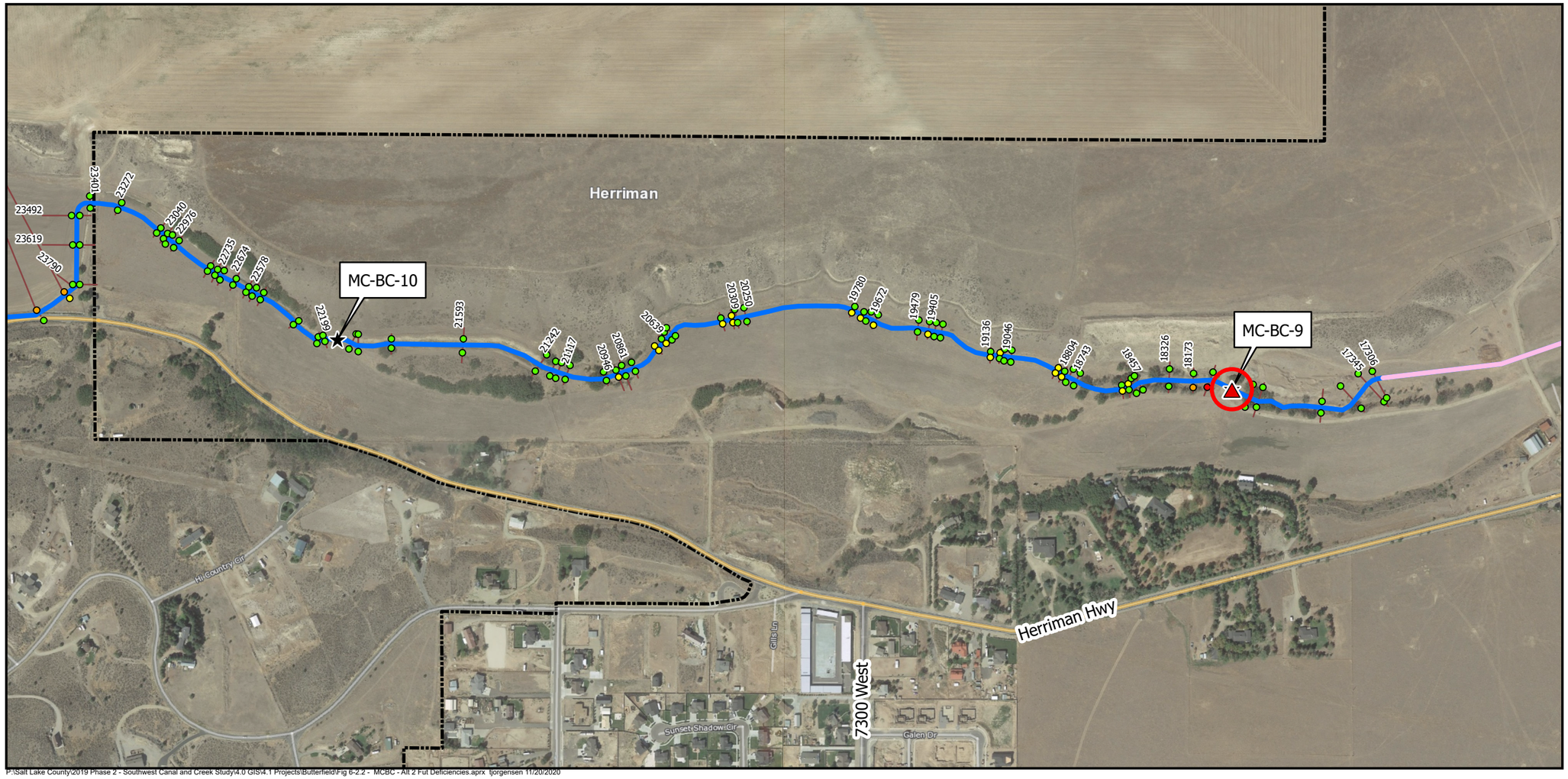
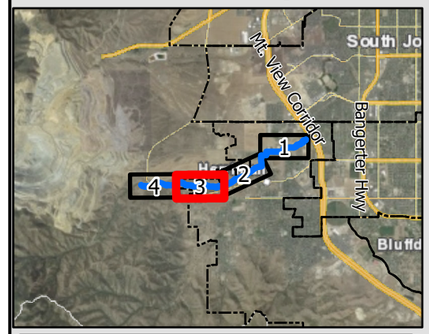


P:\Salt Lake County\2019 Phase 2 - Southwest Canal and Creek Study\4.0 GIS\4.1 Projects\Butterfield\Fig 6-2.2 - MCBC - Alt 2 Fut Deficiencies.aprx tjorgensen 11/20/2020

Index Map



LEGEND

Butterfield Creek Structures

- Culvert/Inlet Deficiency
- Pipeline Deficiency
- Culvert
- Pipeline

Butterfield Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Butterfield Creek
- Midas Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 2 - FUTURE
DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL
AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
6-2.2
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Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Note
MC-BC-9	Hidden Oaks Culvert 2 (approx. 7075 W)	N/A	50	150	5.5' RCP	150		
MC-BC-10	Hidden Oaks Culvert 1 (approx. 7550 W)	N/A	50	60	5.5' RCP	190		

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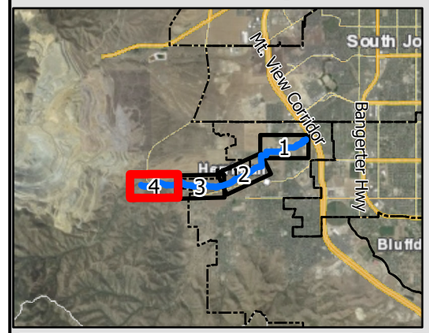
Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Note
MC-BC-11	Bacchus Hwy	N/A	20	20	4' RCP	150		
MC-BC-12	Farm Road US of Baccus	N/A	20	20	3.5' CMP	70		
MC-BC-13	Access Road US of Baccus	N/A	20	20	4' CMP	170		

Index Map



LEGEND

Butterfield Creek Structures

- Culvert/Inlet Deficiency
- Pipeline Deficiency
- Culvert
- Pipeline

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NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 2 - FUTURE
DEVELOPMENT DETAINS TO 0.2 CFS/AC

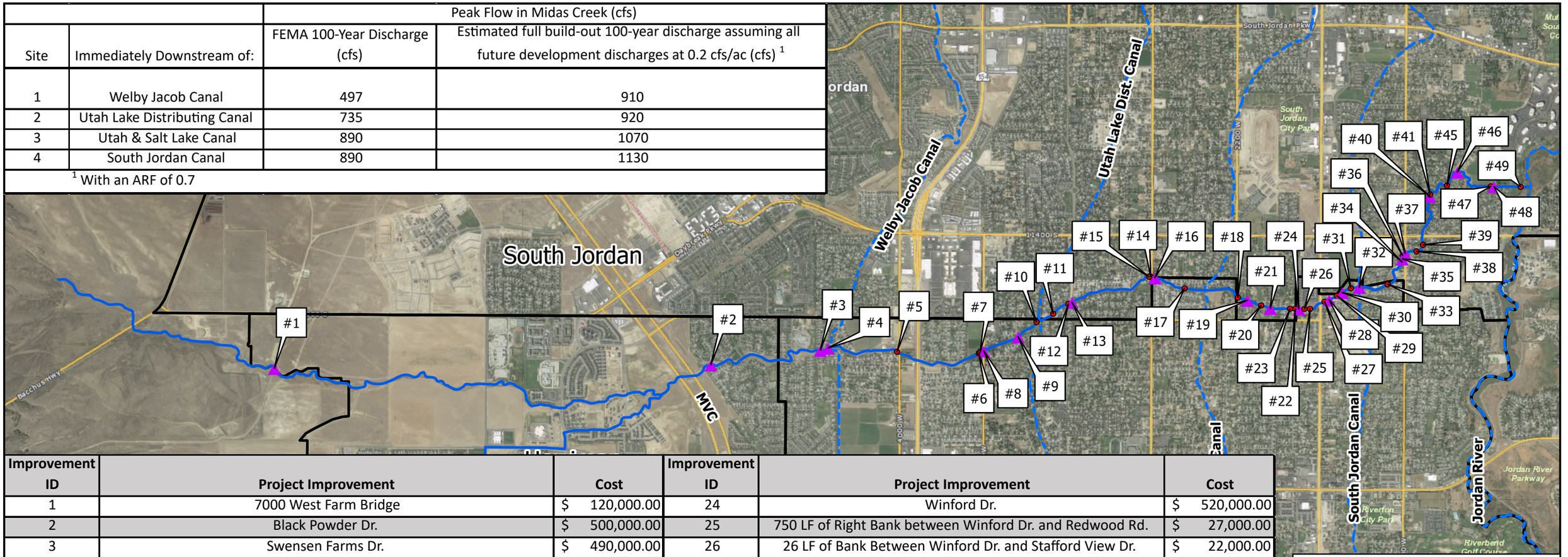
SALT LAKE COUNTY
SOUTHWEST CANAL
AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
6-2.2
4 of 4

		Peak Flow in Midas Creek (cfs)	
Site	Immediately Downstream of:	FEMA 100-Year Discharge (cfs)	Estimated full build-out 100-year discharge assuming all future development discharges at 0.2 cfs/ac (cfs) [1]
1	Welby Jacob Canal	497	910
2	Utah Lake Distributing Canal	735	920
3	Utah & Salt Lake Canal	890	1070
4	South Jordan Canal	890	1130

[1] With an ARF of 0.7



Improvement ID	Project Improvement	Cost	Improvement ID	Project Improvement	Cost
1	7000 West Farm Bridge	$ 120,000.00	24	Winford Dr.	$ 520,000.00
2	Black Powder Dr.	$ 500,000.00	25	750 LF of Right Bank between Winford Dr. and Redwood Rd.	$ 27,000.00
3	Swensen Farms Dr.	$ 490,000.00	26	26 LF of Bank Between Winford Dr. and Stafford View Dr.	$ 22,000.00
4	Welby Jacob Canal	$ 510,000.00	27	Upstream of 1st Private Rd.	$ 21,000.00
5	80 LF of Bank Upstream of 4000 West	$ 21,000.00	28	Private Rd. Downstream of Redwood Rd.	$ 950,000.00
6	390 LF of Right Bank upstream of 3600 West	$ 23,000.00	29	520 LF of Bank Between Private Rds.	$ 33,000.00
7	250 LF of Left Bank Upstream of 3600 West	$ 24,000.00	30	2nd Private Rd. Downstream of Redwood Rd.	$ 440,000.00
8	3600 West	$ 570,000.00	31	990 LF of Bank Upstream of South Jordan Canal	$ 140,000.00
9	Janice Dr./3400 West	$ 630,000.00	32	South Jordan Canal	$ 560,000.00
10	Midas Mini Park Outlet Structure Changes	$ 4,000.00	33	20 LF of Bank Protecting Home at 1357 Midas Point Cv.	$ 21,000.00
11	200 LF of Bank Downstream of 118th South	$ 21,000.00	34	310 LF of Bank upstream of 11500 South Street	$ 60,000.00
12	130 LF of Left Bank Upstream of 3200 West	$ 25,000.00	35	11500 South Street	$ 510,000.00
13	3200 West	$ 550,000.00	36	260 LF of Bank Between 11500 South Street and 1300 West	$ 61,000.00
14	80 LF of Left Bank upstream of 2700 West	$ 21,000.00	37	1300 West	$ 570,000.00
15	110 LF of Right Bank upstream of 2700 West	$ 23,000.00	38	90 LF of Bank along Chapel Ridge Dr.	$ 21,000.00
16	2700 West	$ 1,260,000.00	39	60 LF of Bank along Marco Polo Ln.	$ 21,000.00
17	2,280 LF of Uncertifiable Levee along Midas Side Way and 11625 S	$ 29,000.00	40	Park Palisade Dr.	$ 480,000.00
18	380 LF of Bank by Diversion Structure at 11686 S Eureka Way Property	$ 34,000.00	41	Dredge Channel Bed Downstream of Park Palisade Dr.	$ 160,000.00
19	Eureka Way	$ 1,060,000.00	45	4,410 LF of Bank in Parkway Palisades Development	$ 417,000.00
20	360 LF of Bank Between Eureka Way and Gold Dust Dr.	$ 23,000.00	46	Private Road DS of Park Palisade Dr.	$ 720,000.00
21	Gold Dust Dr.	$ 870,000.00	47	390 LF of Left bank upstream of Beckstead Ditch	$ 27,000.00
22	310 LF of Left Bank between Gold Dust Dr. and Winford Dr.	$ 30,000.00	48	Beckstead Ditch Culvert	$ 420,000.00
23	790 LF of Right Bank between Gold Dust Dr. and Winford Dr.	$ 77,000.00	49	330 LF of Bank protecting East River Front Park at Jordan River	$ 23,000.00
				Total Cost for Midas Creek Improvements:	$ 13,139,000.00

LEGEND

- Channel Capacity Derficiency
- Culvert Capacity Deficiency
- Municipal Boundary
- Midas & Butterfield Creeks
- Major Canal/Jordan River

NORTH:

SCALE: 0 1,500 3,000 Feet

MIDAS CREEK RECOMMENDED ALTERNATIVE 2 IMPROVEMENTS AND COST ESTIMATE

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-2.3

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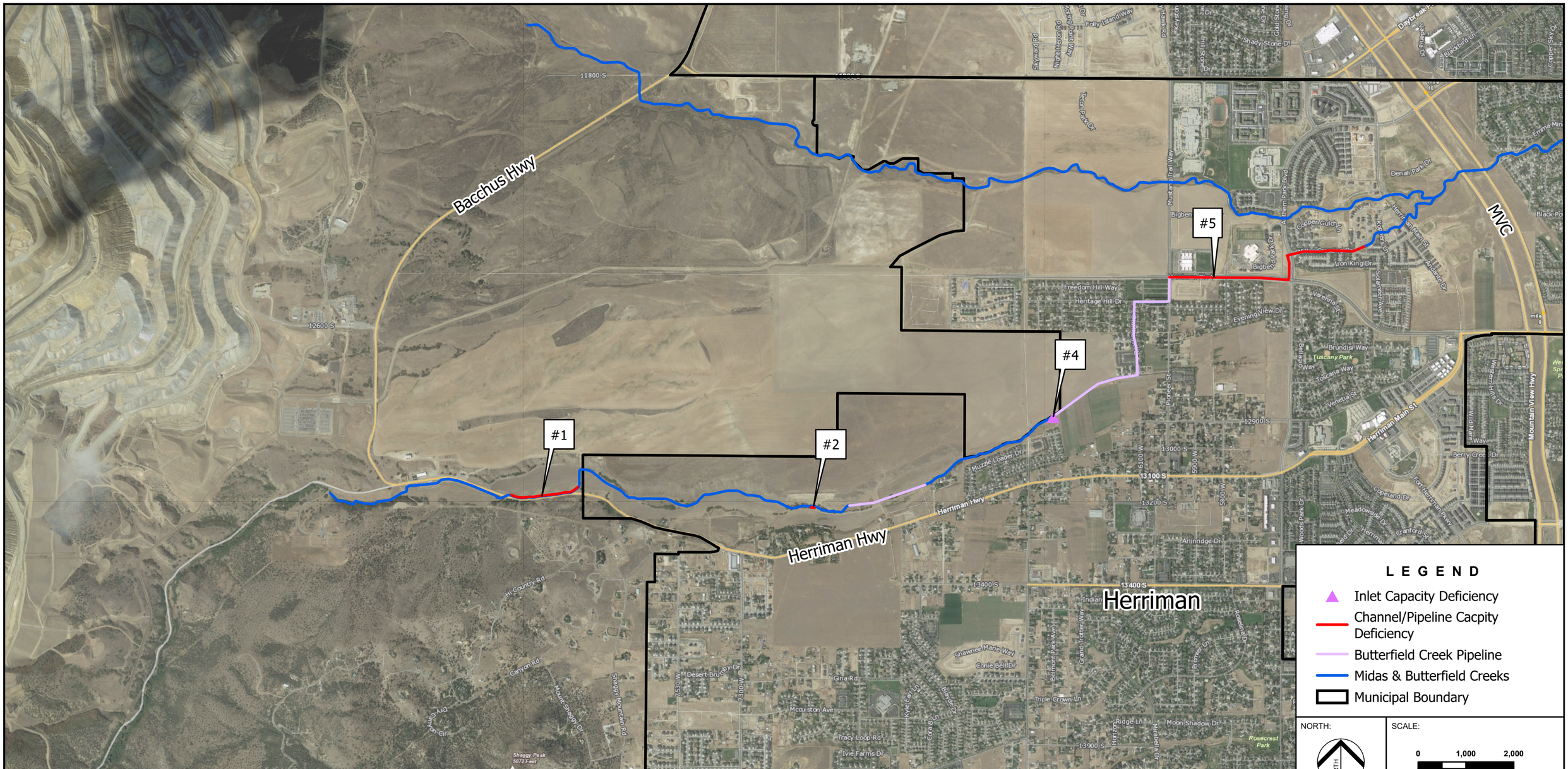

Improvement ID	Project Improvement	Cost
1	Redefining 1,450 LF of channel banks along Bacchus Hwy near Farm Field [1]	$ -
2	Raise 520 LF of Left Bank Upstream of Culvert 2 [2]	$ 56,400.00
4	Replace Intake Structure to Butterfield Creek Pipeline	$ 120,000.00
5	Replacing 4,700 LF of 5-ft pipe with a 6-ft pipe from 6000 West to Ryeland Ln	$ 1,974,000.00
	Total Cost for Butterfield Creek Improvements:	**$ 2,150,400.00**

[1] Redefining channel should be part of future development and paid for by the developer to protect new contstruction from risk of flooding.

[2] Currently under construction, left bank grading plan is not adequate for protection from risk of flooding.

LEGEND

- Inlet Capacity Deficiency
- Channel/Pipeline Cacpity Deficiency
- Butterfield Creek Pipeline
- Midas & Butterfield Creeks
- Municipal Boundary

NORTH:

SCALE: 0 1,000 2,000 Feet

BUTTERFIELD CREEK
RECOMMENDED ALTERNATIVE 2
IMPROVEMENTS AND COST ESTIMATE

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-2.4

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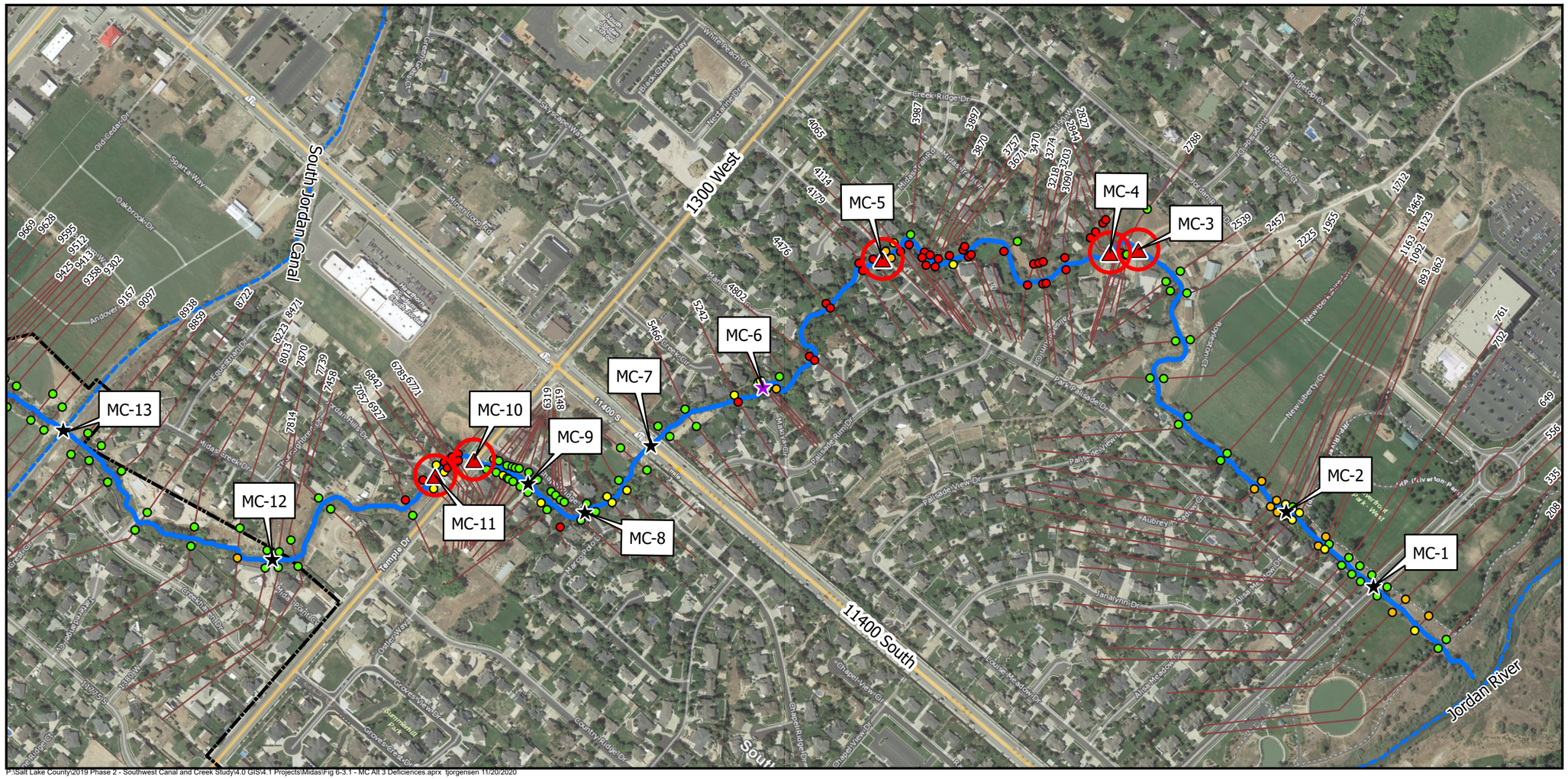
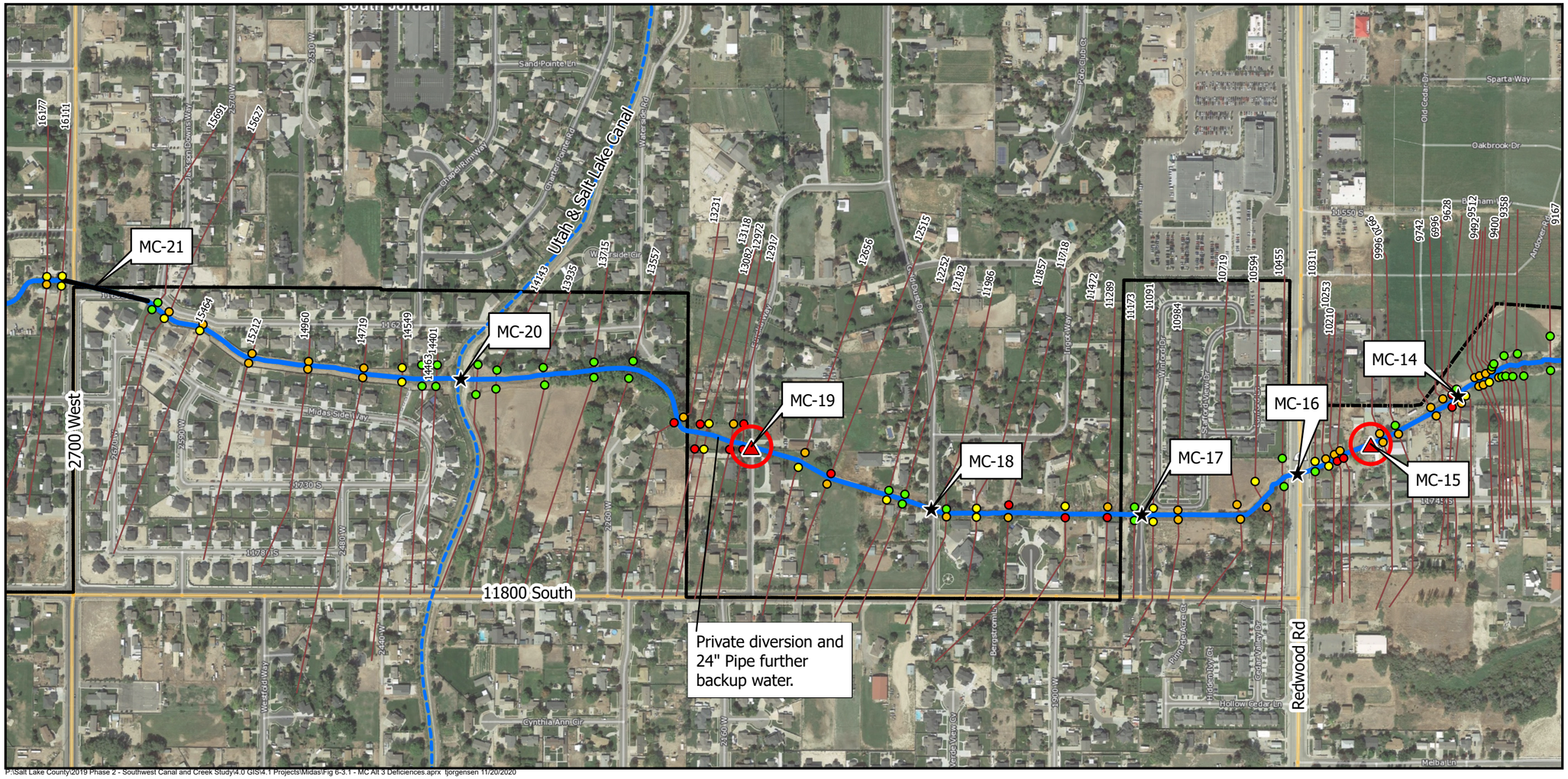

MC-1
MC-2
MC-3
MC-4
MC-5
MC-6
MC-7
MC-8
MC-9
MC-10
MC-11
MC-12
MC-13
South Jordan Canal
1300 West
11400 South
Jordan River
Midas Creek
Creek Ridge Dr.
Park Palisade Dr.
Palisade View Dr.
Chapel Ridge Dr.
Chapel View Dr.
Temple Dr.
Midas Creek Dr.
Oakbrook Dr.
Sparta Way
Andover
Equestrian Dr.
Country Ridge Dr.
Groves View Dr.
Groves Creek Dr.
Summerhill Park
New Liberty Dr.
Aubrey Meadow Dr.
Janalynn Dr.
Alissa Meadow Dr.
Ridgecrest Dr.
Ridgetop Cv.
Whitepeach Dr.
Nectarine Dr.
Black Cherry Way
Sky Ridge Way
Minersloop Rd.
Old Cedar Dr.
Creek Ridge Cv.
Hidden Ridge Dr.
Hidden Ridge Pl.
Jordan Ridge Dr.
Jordan Ridge Cv.
Park Palisade Cv.
Palisade Ridge Dr.
Palisade Ridge Cv.
Aubrey Meadow Cv.
Janalynn Cv.
Alissa Meadow Cv.
Chapel Ridge Cv.
Chapel View Cv.
Oyster Way
Gossamer Ln.
Gossamer Cv.
Gossamer Rd.
Gossamer Bay Dr.
Gossamer Creek Dr.
Gossamer Pointe Dr.
Gossamer Ridge Dr.
Gossamer Ridge Cv.
Gossamer Ridge Pl.
Gossamer Bay Cv.
Gossamer Bay Pl.
Gossamer Creek Cv.
Gossamer Creek Pl.
Gossamer Pointe Cv.
Gossamer Pointe Pl.
Gossamer Rd.
Gossamer Ln.
Gossamer Cv



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Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-14	Private Dr. DS of Redwood Rd. (aprox. 1600 W)	890	670	760	15'X5'	790		
MC-15	Private Dr. DS of Redwood Rd. (aprox. 1650 W)	890	670	760	14'X5'	630	23'X7'	Undersized culvert casues overtopping, but water is contained in the channel
MC-16	Redwood Rd	890	670	760	18'X5'	1080		
MC-17	Winford Dr.	890	670	750	Two 7'X6' Box Culverts	930		
MC-18	Gold Dust Dr.	890	670	750	Two 9'X5' Box Culverts	950		
MC-19	Eureka Way	890	670	750	Two 5' RCP	230	20'X6'	Culverts are undersized
MC-20	Downstream of Utah & Salt Lake Canal	890	670	750	10'X7'	1090		
MC-21	2700 West	735	550	640	16'X7'	870		

Index Map

LEGEND

Midas Structures

- Bridge/Culvert Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 3 - FUTURE
DEVELOPMENT DETAINS TO 0.02 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-3.1
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Index Map

LEGEND

Midas Structures

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Midas Creek Freeboard for Proposed Future 100-yr Design Storm

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MIDAS CREEK DEFICIENCIES
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SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-3.1
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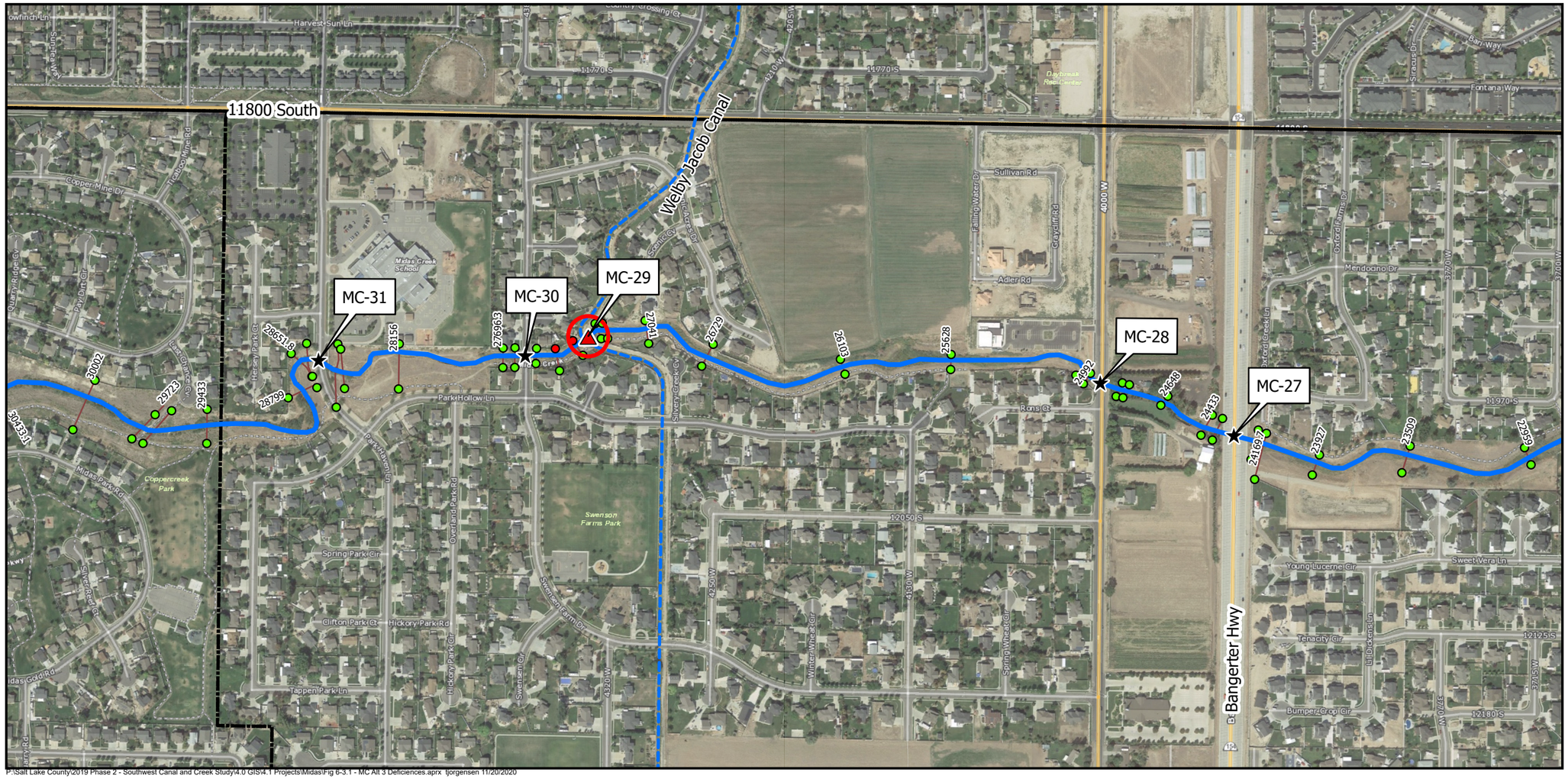
Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-22	3200 West	735	520	600	18'X7'	800		
MC-23	Upstream of 3200 West	735	520	600	63' wide Footbridge	1160		
MC-24	11800 South/Utah Lake Dist Canal	735	520	600	Two 5' RCP	710		
MC-25	Janice Dr./3400 West	844	540	580	20'X4'	770		
MC-26	3600 West	844	540	580	5' and 6' Diameter Culverts	470	18'X6'	Culverts are undersized



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MC-27	Bangerter Hwy	495	540	580	18'X9'	2400		
MC-28	4000 West	495	530	580	14'X6'	980		
MC-29	Welby Jacob Canal	497	510	550	10' Wide Bridge	340	11'X7'	Bridge is undersized, the height is 2-3 ft, overtopping will discharge into the Welby Jacob Canal
MC-30	Swensen Farms Dr. (4370 W)	503	500	550	10'X5'	690		
MC-31	Park Haven Ln. (4510 W)	503	500	550	15'X8'	1200		

Index Map

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MIDAS CREEK DEFICIENCIES
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DEVELOPMENT DETAINS TO 0.02 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-3.1
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LEGEND

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MIDAS CREEK DEFICIENCIES
ALTERNATIVE 3 - FUTURE
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SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-3.1
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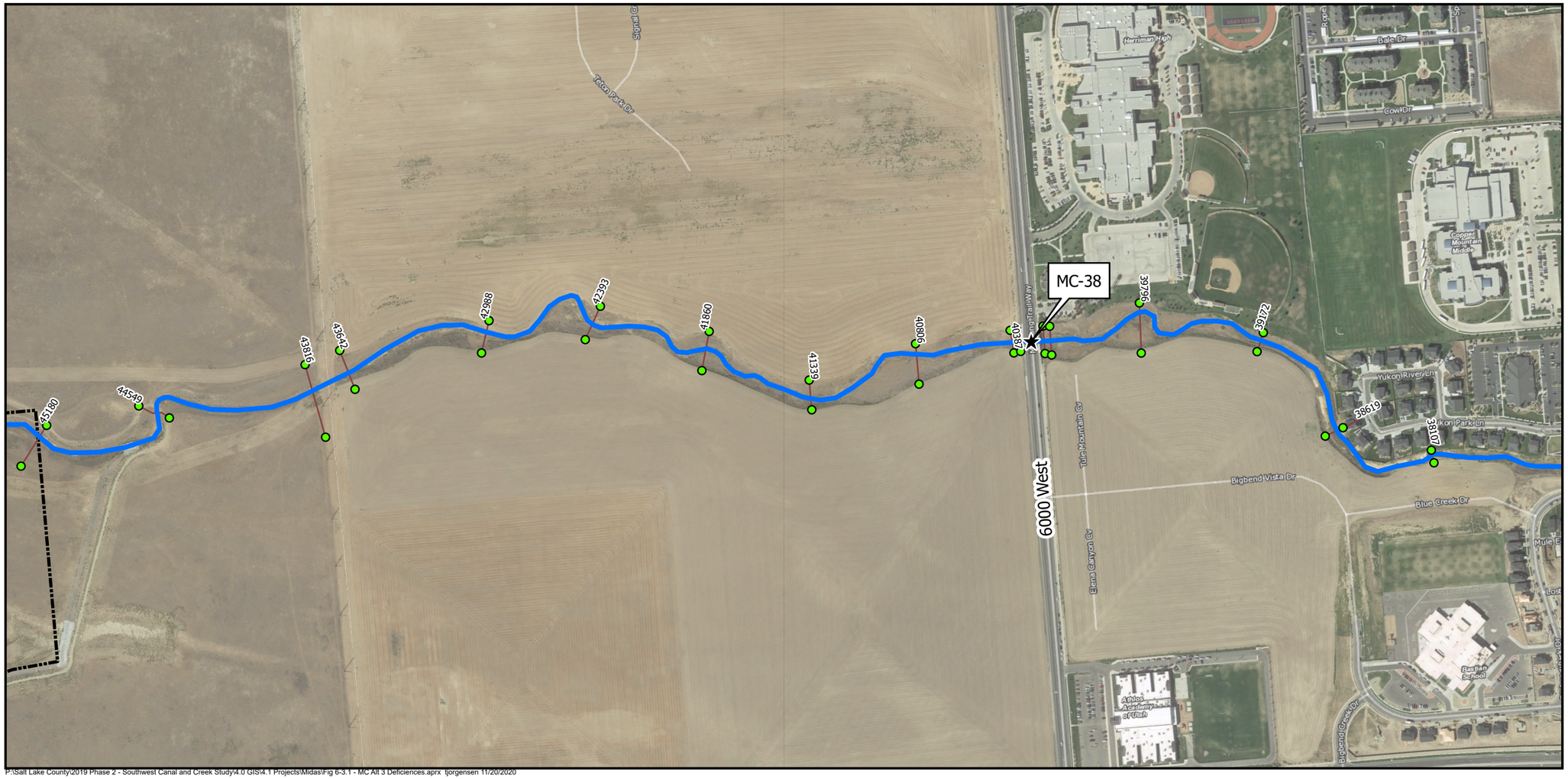
Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-32	Midas Vista Rd (4775 W)	503	490	530	10'X6'	970		
MC-33	Black Powder Drive (4895 W)	503	470	520	10'X6'	840		
MC-34	North Bound MVC	503	470	520	75' Wide Bridge	12210		
MC-35	South Bound MVC	503	420	480	75' Wide Bridge	4940		
MC-36	Herriman Main Street	503	350	320	60' Wide Bridge	8450		
MC-37	Anthem Park Blvd	503	360	330	13'X33' Arch	4900		



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LEGEND

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MIDAS CREEK DEFICIENCIES
ALTERNATIVE 3 - FUTURE
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SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-3.1
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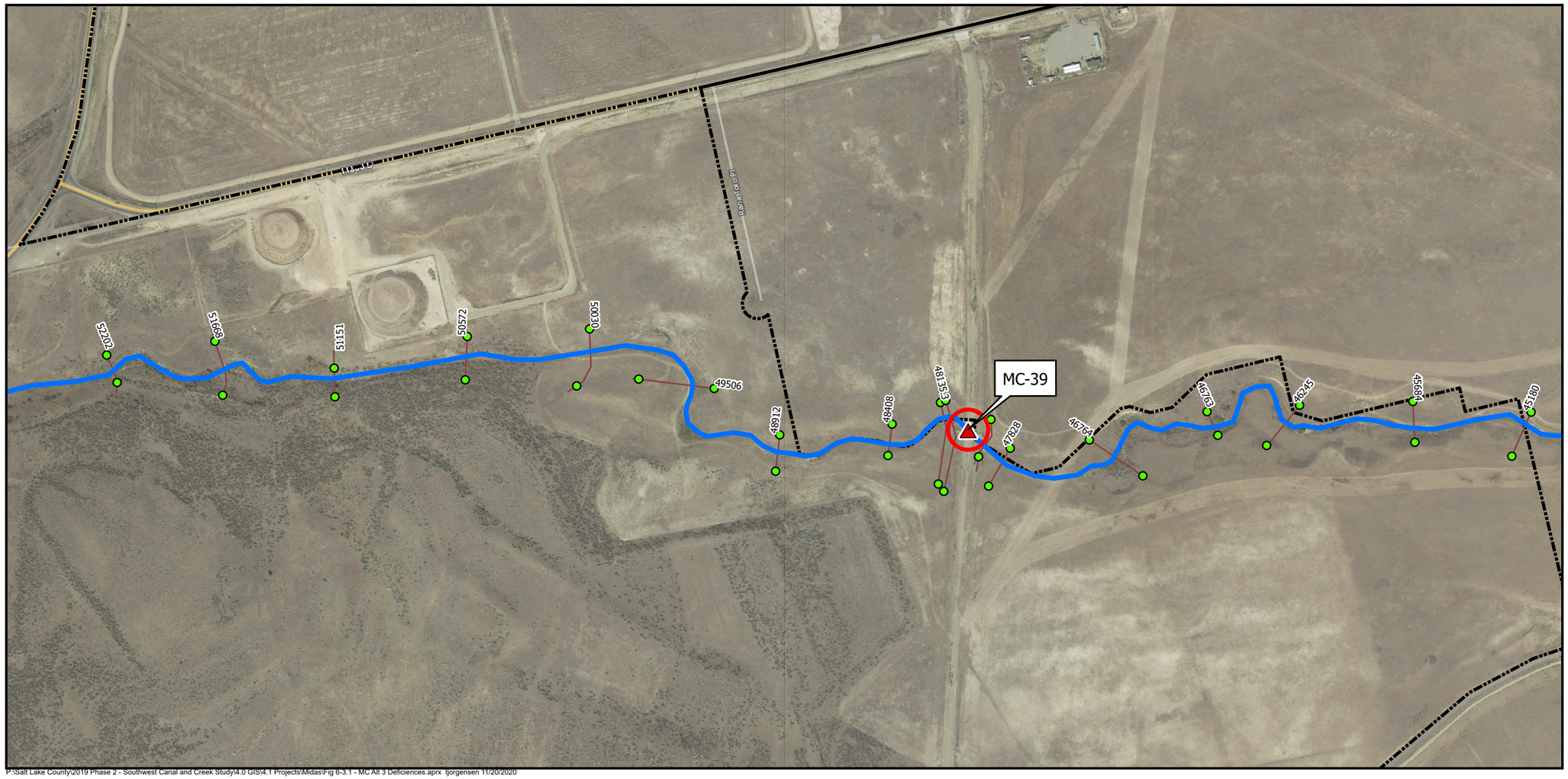
Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-38	6000 West	503	80	100	13'X33' Arch	3260		



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Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-39	~7000 West Farm Bridge		60	70	15" Culvert	10	72" Culvert	Culvert is undersized causing overtopping, but water is contained in the channel

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LEGEND

Midas Structures

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- Existing Culvert
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MIDAS CREEK DEFICIENCIES
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SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

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LEGEND

Midas Structures

- Bridge/Culvert Deficiency
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MIDAS CREEK DEFICIENCIES
ALTERNATIVE 3 - FUTURE
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SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-3.1
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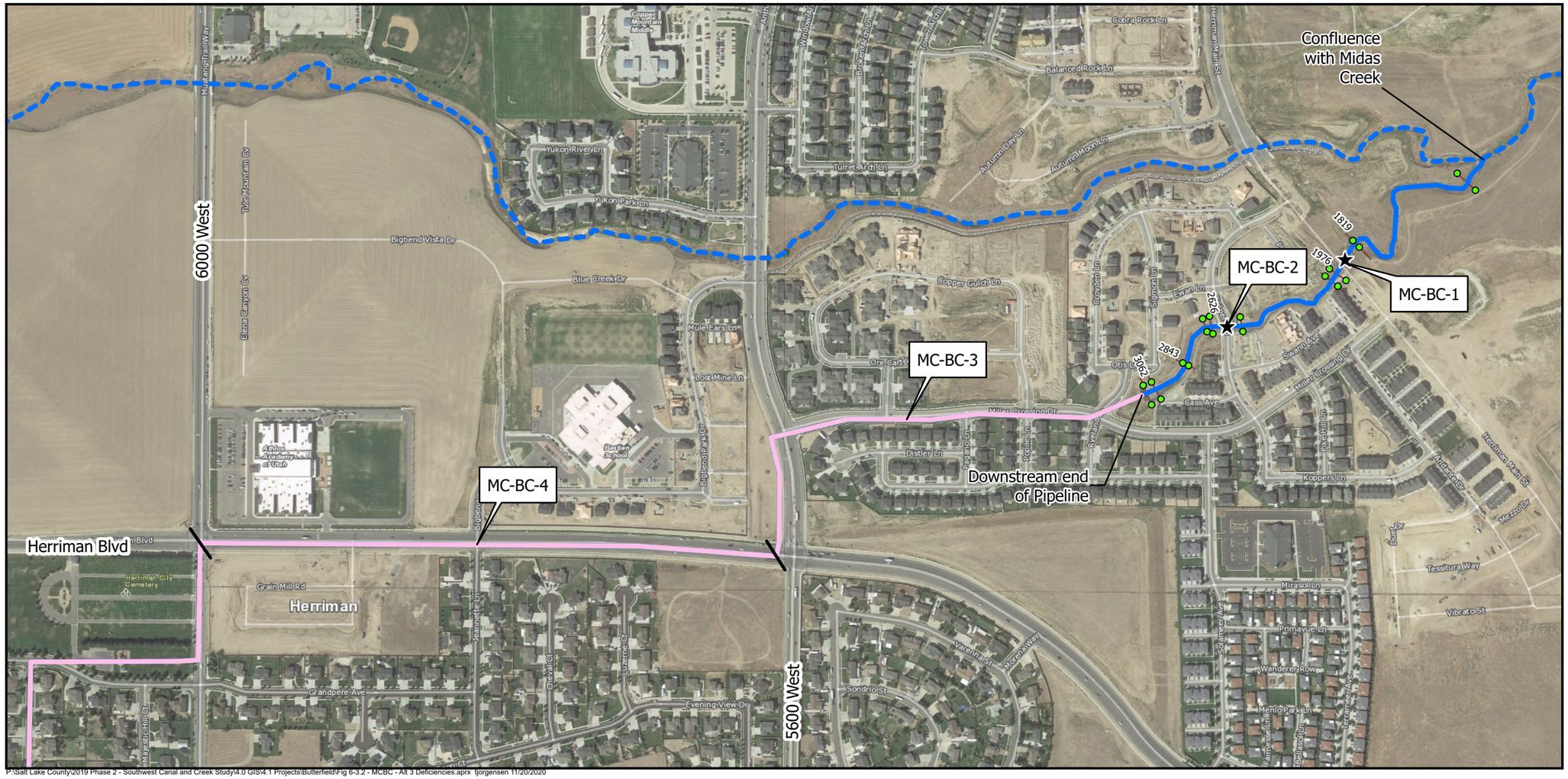
Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-40	Bacchus Hwy		50	50	4' CMP	130		
MC-41	Private Road Upstream of Bacchus Hwy		30	30	Two 21" Culverts	50		



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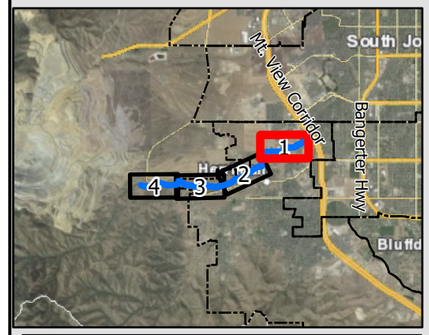

LEGEND

Butterfield Creek Structures

- ★ Culvert
- Butterfield Pipeline

Butterfield Creek Freeboard for Proposed 100-y Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet

- Butterfield Creek
- Midas Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 3 - FUTURE
DEVELOPMENT DETAINS TO 0.02 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-3.2
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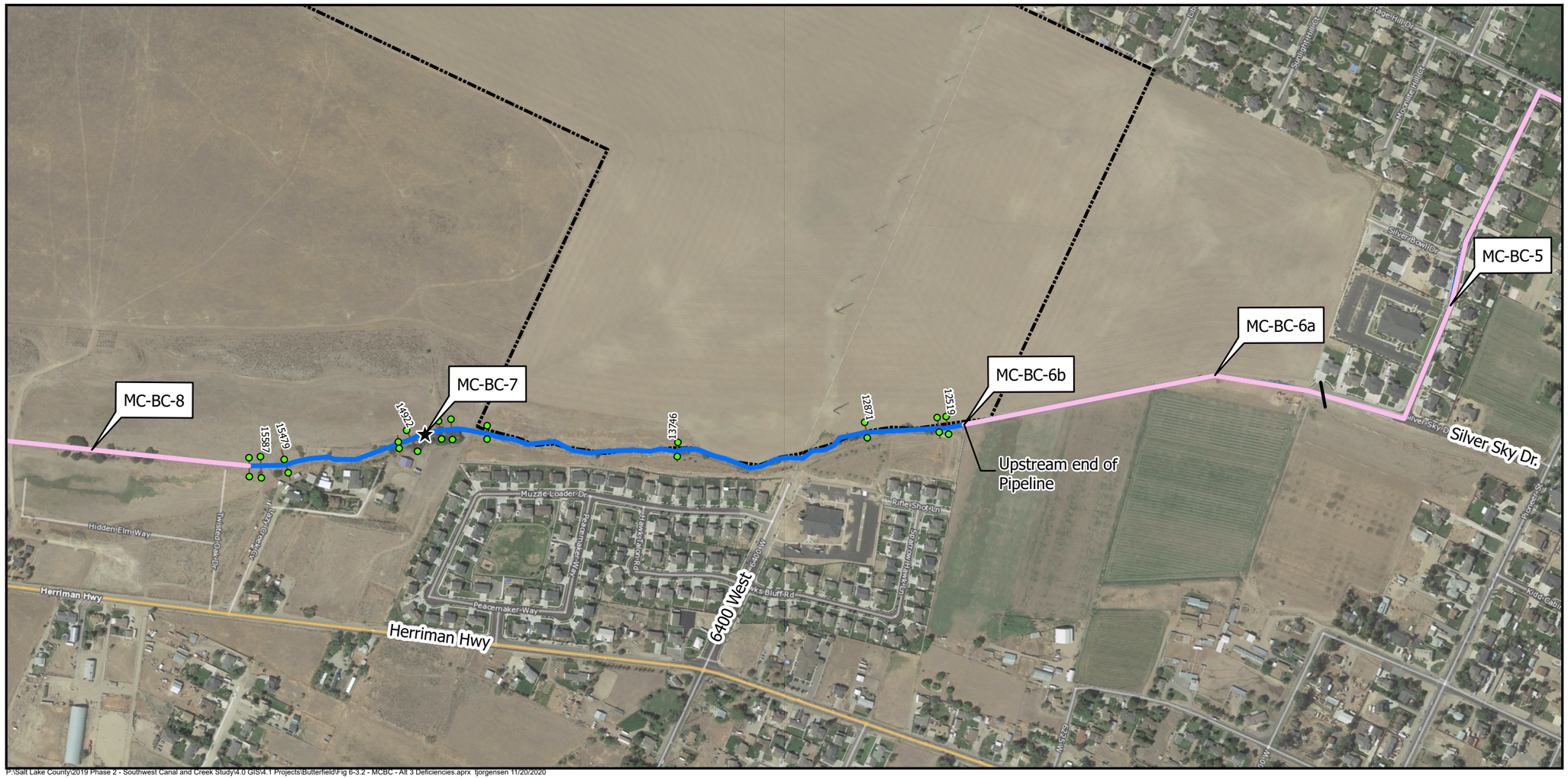
Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Notes
MC-BC-1	Herriman Main Street	N/A	140	150	8' X 5' Box	340	
MC-BC-2	Koppers Lane	N/A	140	150	8' X 5' Box	480	
MC-BC-3	Pipeline from 5600 West to End	N/A	140	140	5' RCP	200	Reach Length is 1,540 ft with slope of 0.006 ft/ft
MC-BC-4	Pipeline from Herriman Blvd to 5600 West	N/A	90	110	5' RCP	200	Reach Length is 3,115 ft with slope of 0.006 ft/ft



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ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Notes
MC-BC-5	Pipeline from Silver Sky Dr. to Herriman Blvd	N/A	90	90	5' RCP	280	Reach Length is 3,150 ft with slope of 0.012 ft/ft
MC-BC-6a	Pipeline from Entrance to Silver Sky Dr.	N/A	80	90	4' RCP	200	Reach Length is 1,570 ft with slope of 0.010 ft/ft
MC-BC-6b	Inlet to Pipe Network	N/A	80	90	4' RCP	140	
MC-BC-7	Hidden Oaks Culvert 3 (approx. 6600 W)	N/A	60	80	5.5' RCP	260	
MC-BC-8	Hidden Oaks Pipeline (approx. 6700 W)	N/A	60	80	5.5' RCP	310	Reach Length is 1,650 ft with slope of 0.025 ft/ft

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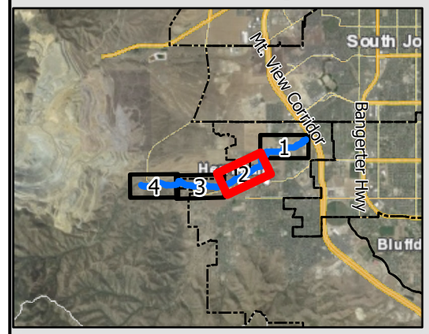

LEGEND

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NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 3 - FUTURE
DEVELOPMENT DETAINS TO 0.02 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-3.2
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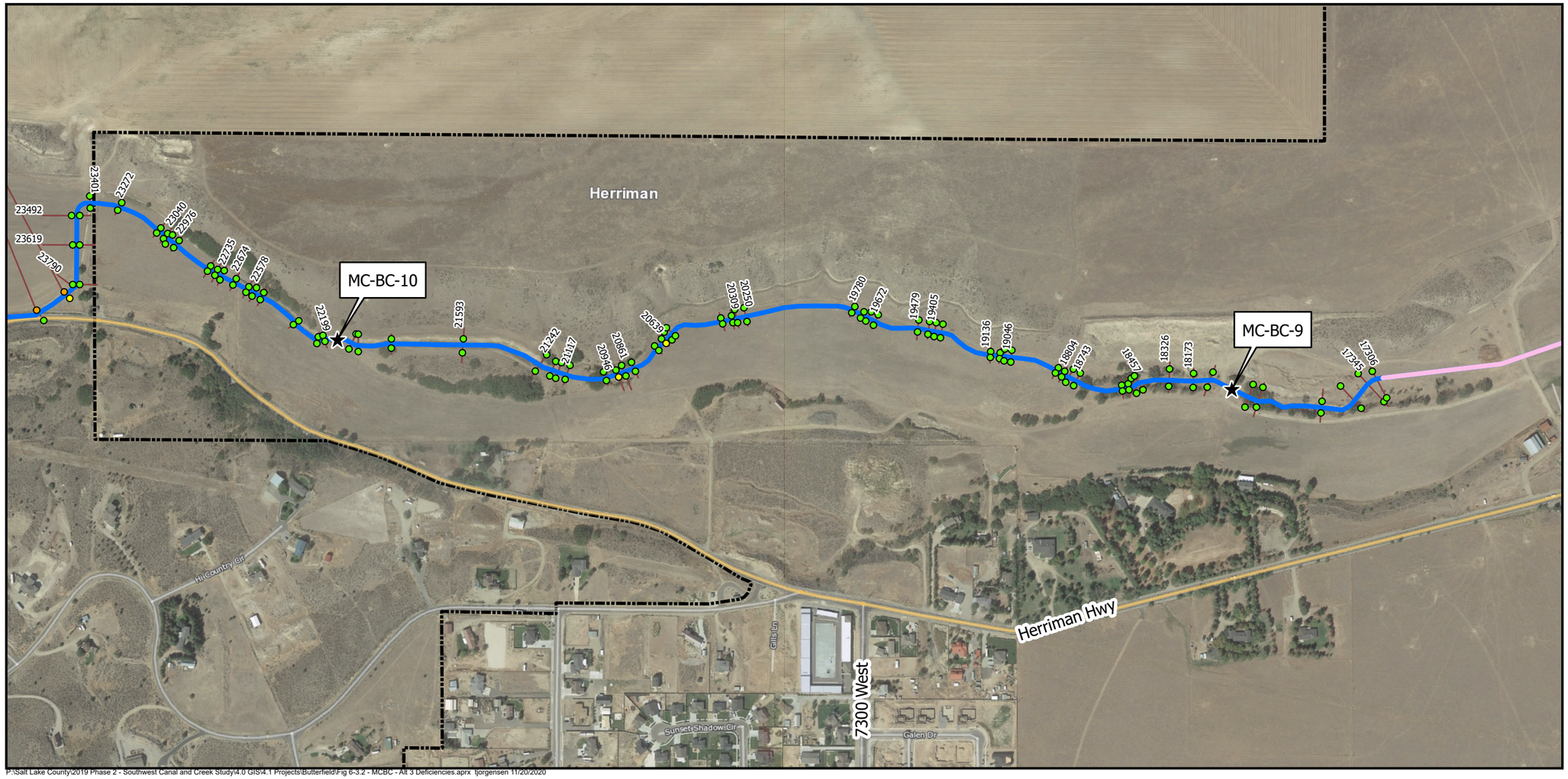

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ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Notes
MC-BC-9	Hidden Oaks Culvert 2 (approx. 7075 W)	N/A	50	50	5.5' RCP	150	
MC-BC-10	Hidden Oaks Culvert 1 (approx. 7550 W)	N/A	50	20	5.5' RCP	190	

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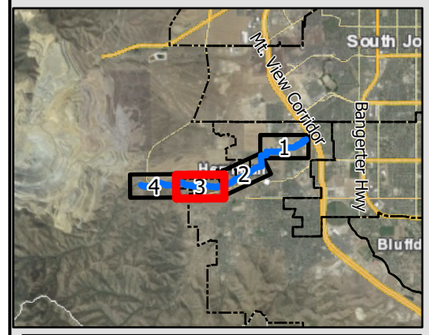

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BUTTERFIELD CREEK DEFICIENCIES
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SALT LAKE COUNTY
SOUTHWEST CANAL
AND CREEK STUDY

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Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Notes
MC-BC-11	Bacchus Hwy	N/A	20	20	4' RCP	150	
MC-BC-12	Farm Road US of Baccus	N/A	20	20	3.5' CMP	70	
MC-BC-13	Access Road US of Baccus	N/A	20	20	4' CMP	170	

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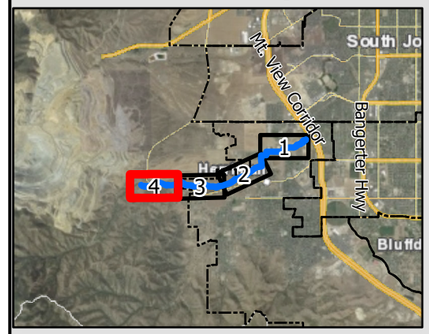

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BUTTERFIELD CREEK DEFICIENCIES
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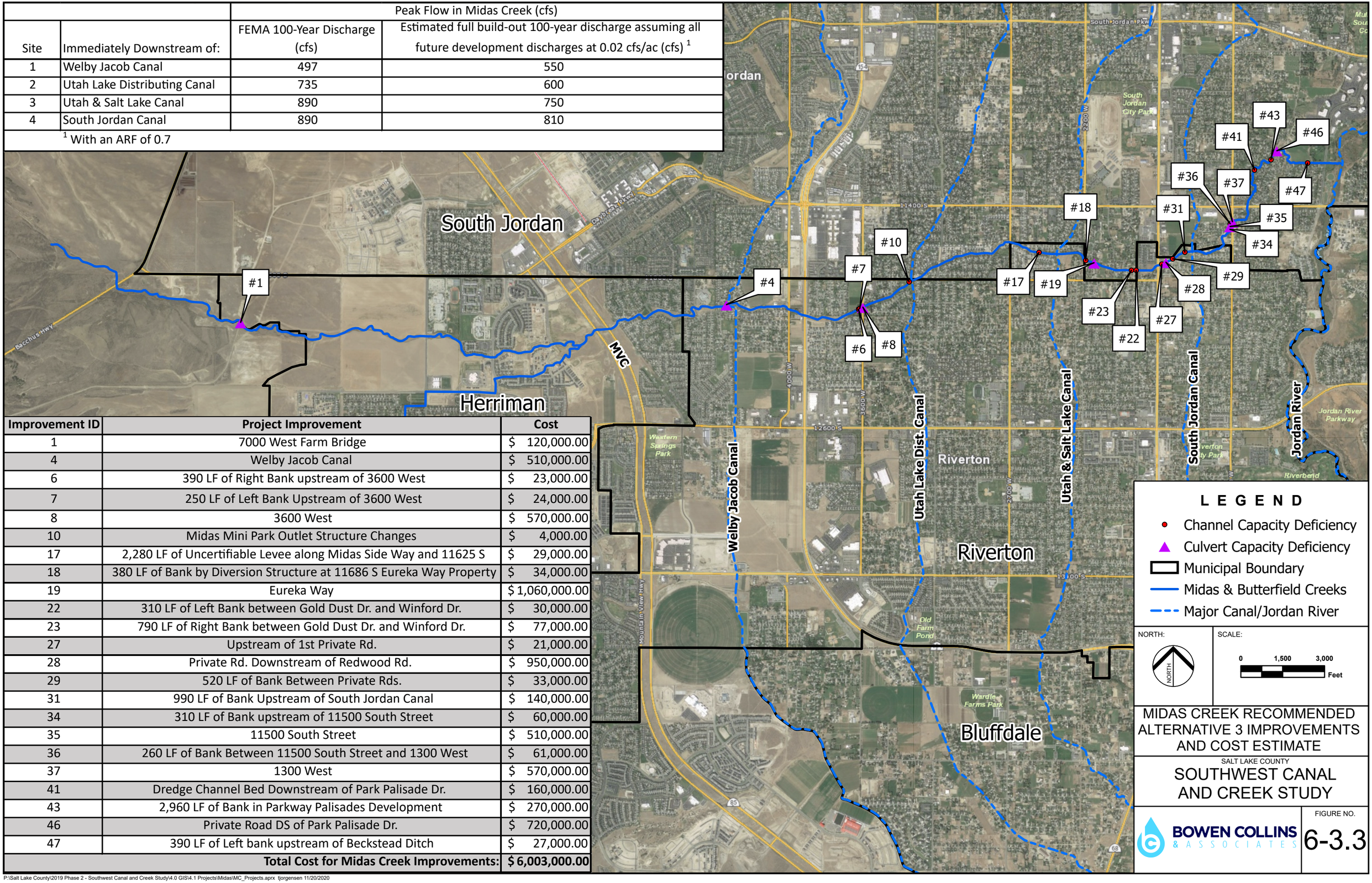
		Peak Flow in Midas Creek (cfs)	
Site	Immediately Downstream of:	FEMA 100-Year Discharge (cfs)	Estimated full build-out 100-year discharge assuming all future development discharges at 0.02 cfs/ac (cfs) [1]
1	Welby Jacob Canal	497	550
2	Utah Lake Distributing Canal	735	600
3	Utah & Salt Lake Canal	890	750
4	South Jordan Canal	890	810

[1] With an ARF of 0.7



Improvement ID	Project Improvement	Cost
1	7000 West Farm Bridge	$ 120,000.00
4	Welby Jacob Canal	$ 510,000.00
6	390 LF of Right Bank upstream of 3600 West	$ 23,000.00
7	250 LF of Left Bank Upstream of 3600 West	$ 24,000.00
8	3600 West	$ 570,000.00
10	Midas Mini Park Outlet Structure Changes	$ 4,000.00
17	2,280 LF of Uncertifiable Levee along Midas Side Way and 11625 S	$ 29,000.00
18	380 LF of Bank by Diversion Structure at 11686 S Eureka Way Property	$ 34,000.00
19	Eureka Way	$ 1,060,000.00
22	310 LF of Left Bank between Gold Dust Dr. and Winford Dr.	$ 30,000.00
23	790 LF of Right Bank between Gold Dust Dr. and Winford Dr.	$ 77,000.00
27	Upstream of 1st Private Rd.	$ 21,000.00
28	Private Rd. Downstream of Redwood Rd.	$ 950,000.00
29	520 LF of Bank Between Private Rds.	$ 33,000.00
31	990 LF of Bank Upstream of South Jordan Canal	$ 140,000.00
34	310 LF of Bank upstream of 11500 South Street	$ 60,000.00
35	11500 South Street	$ 510,000.00
36	260 LF of Bank Between 11500 South Street and 1300 West	$ 61,000.00
37	1300 West	$ 570,000.00
41	Dredge Channel Bed Downstream of Park Palisade Dr.	$ 160,000.00
43	2,960 LF of Bank in Parkway Palisades Development	$ 270,000.00
46	Private Road DS of Park Palisade Dr.	$ 720,000.00
47	390 LF of Left bank upstream of Beckstead Ditch	$ 27,000.00
	Total Cost for Midas Creek Improvements:	**$ 6,003,000.00**

LEGEND

- Channel Capacity Deficiency
- Culvert Capacity Deficiency
- Municipal Boundary
- Midas & Butterfield Creeks
- Major Canal/Jordan River

NORTH:

SCALE: 0 1,500 3,000 Feet

MIDAS CREEK RECOMMENDED ALTERNATIVE 3 IMPROVEMENTS AND COST ESTIMATE

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-3.3

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#1

Bacchus Hwy

Herriman Hwy

Herriman

MVC

Improvement ID	Project Improvement	Cost
1	Redefining 1,450 LF of channel banks along Bacchus Hwy near Farm Field [1]	$ -
	Total Cost for Butterfield Creek Improvements:	**$ -**

[1] Redefining channel should be part of future development and paid for by the developer to protect new contstruction from risk of flooding.

LEGEND

- Channel Capacity Deficiency
- Butterfield Creek Pipeline
- Midas & Butterfield Creeks
- Municipal Boundary

NORTH:

SCALE: 0 1,000 2,000 Feet

BUTTERFIELD CREEK
RECOMMENDED ALTERNATIVE 3
IMPROVEMENTS AND COST ESTIMATE

SALT LAKE COUNTY
SOUTHWEST CANAL
AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
6-3.4

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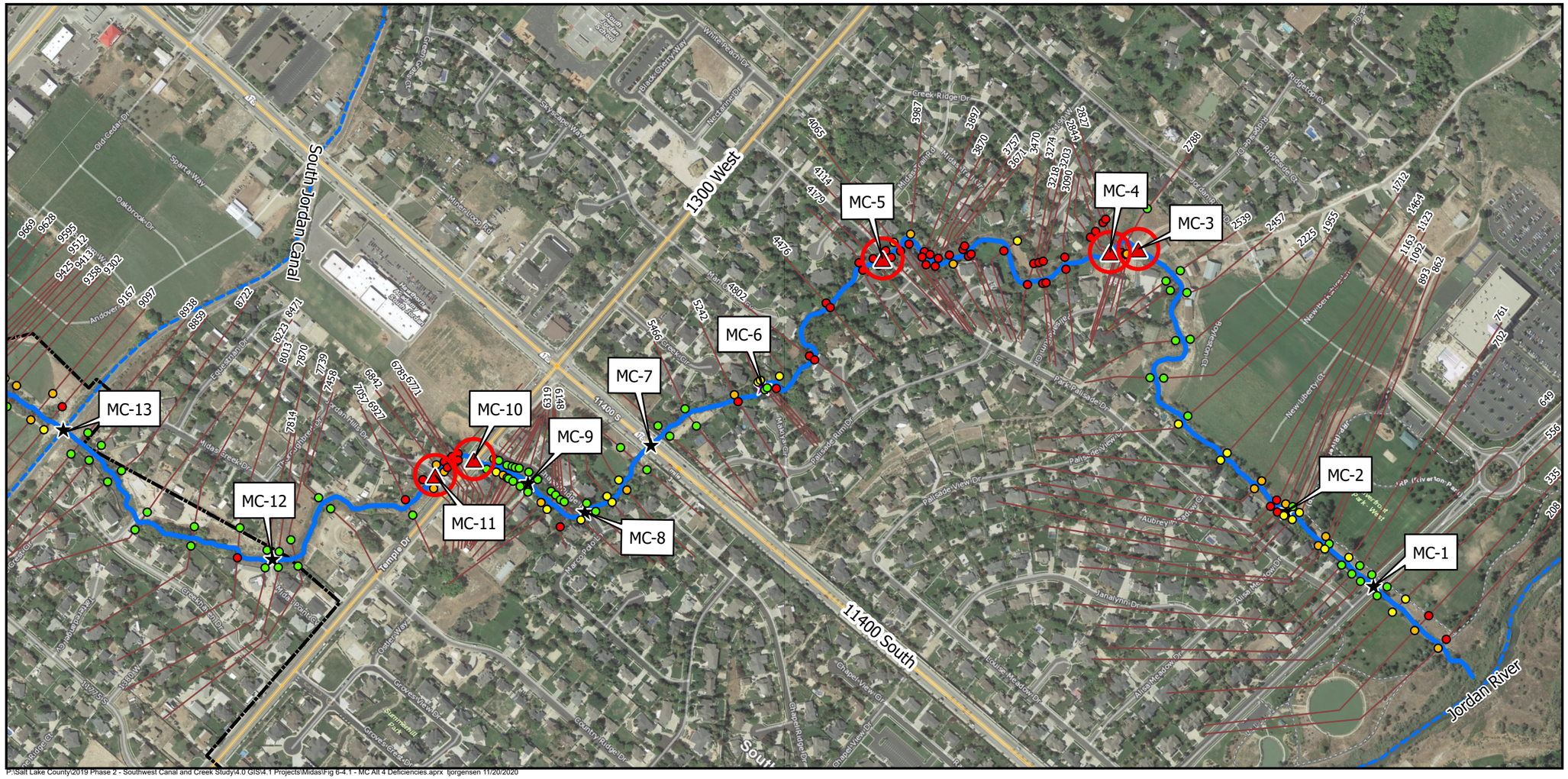
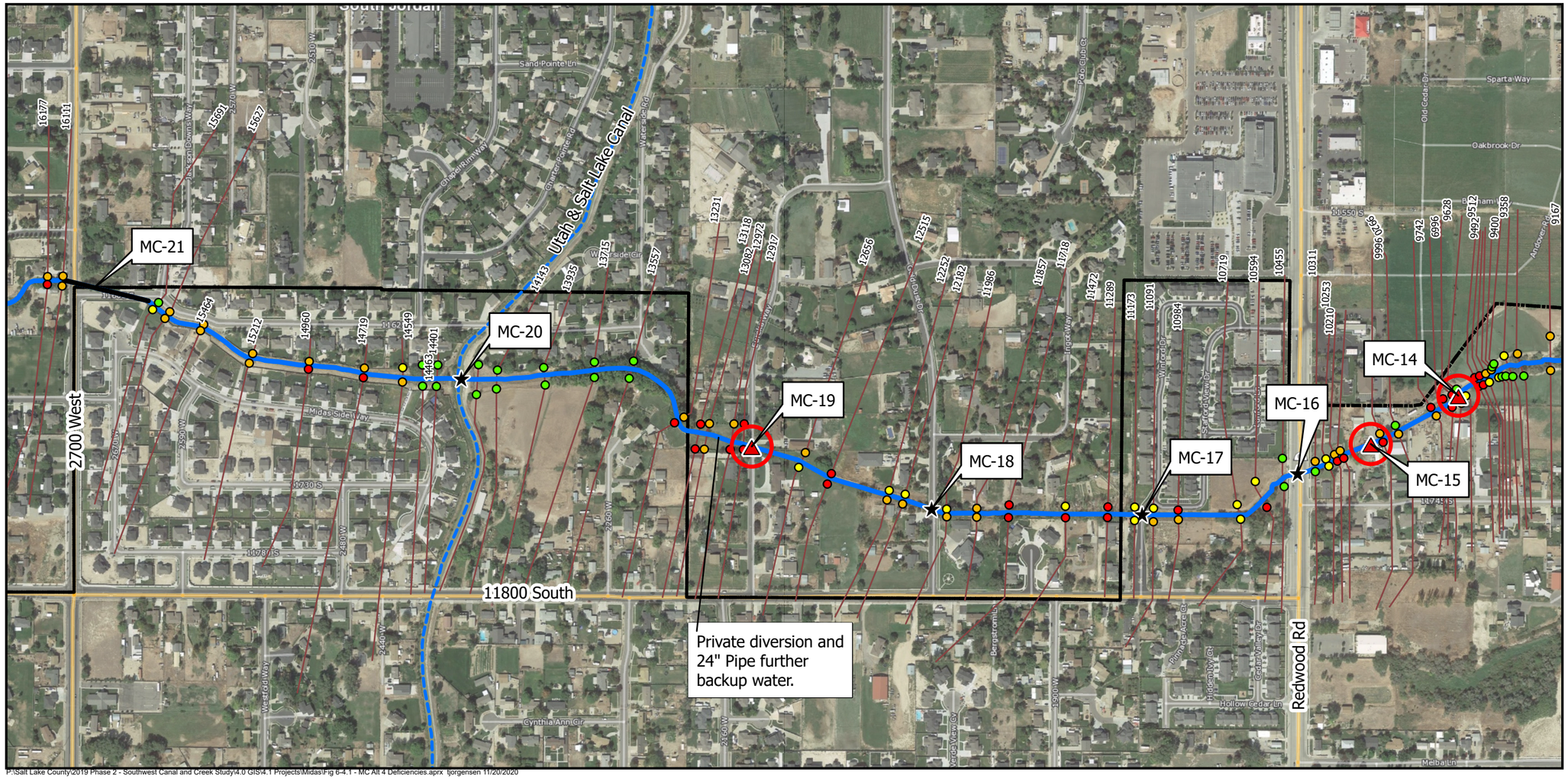

MC-1
MC-2
MC-3
MC-4
MC-5
MC-6
MC-7
MC-8
MC-9
MC-10
MC-11
MC-12
MC-13
South Jordan Canal
1300 West
11400 South
Jordan River
Creek Ridge Dr
Park Palisade Dr
Palisade View Dr
Chapel Ridge Dr
Chapel View Cir
Louise Meadow Dr
Alissa Meadow Dr
Temple Dr
Midas Creek Dr
Oakbrook Dr
Sparta Way
Andover
Equestrian Dr
Oyster Way
Grooves Creek Dr
Country Ridge Dr
Summerhill Park
Rivertop Cv
Ridgeside Ct
New Liberty Ct
Janalynn Dr
Aubrey Meadow Dr
Rockton Ct
Mallory Dr
Creek Ridge Cir
Hidden Creek Dr
Hidden Creek Cir
Jordan Ridge Dr
Jordan Ridge Cir
Jordan Palisade Dr
Jordan Palisade Cir
Pallisade Ridge Dr
Pallisade View Cir
Aubrey Meadow Cir
Rockton Cir
New Beckstead Dr
Park Palisade Cir
Chapel Ridge Cir
Chapel View Dr
Grooves Creek Cir
Summerhill Park
Oyster Way
Temple Dr
Midas Creek Dr
Oakbrook Dr
Sparta Way
Andover
Equestrian Dr
Mineral Loop Rd
Old Cedar Dr
Creek Ridge Dr
Black Cherry Way
Nectarine Dr
Whitepeach Dr
Sky Parke Way
Ridget



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Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-14	Private Dr. DS of Redwood Rd. (aprox. 1600 W)	890	670	910	15'X5'	790	19'X6'	
MC-15	Private Dr. DS of Redwood Rd. (aprox. 1650 W)	890	670	910	14'X5'	630	23'X7'	Undersized culvert casues overtopping, but water is contained in the channel
MC-16	Redwood Rd	890	670	910	18'X5'	1080		
MC-17	Winford Dr.	890	670	900	Two 7'X6' Box Culverts	930		
MC-18	Gold Dust Dr.	890	670	900	Two 9'X5' Box Culverts	950		
MC-19	Eureka Way	890	670	900	Two 5' RCP	230	20'X6'	Culverts are undersized
MC-20	Downstream of Utah & Salt Lake Canal	890	670	900	10'X7'	1090		
MC-21	2700 West	735	550	790	16'X7'	870		

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LEGEND

Midas Structures

- Bridge/Culvert Deficiency
- Pipeline Deficiency
- Existing Bridge
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- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

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- 2+ feet
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- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 4 - FUTURE
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SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
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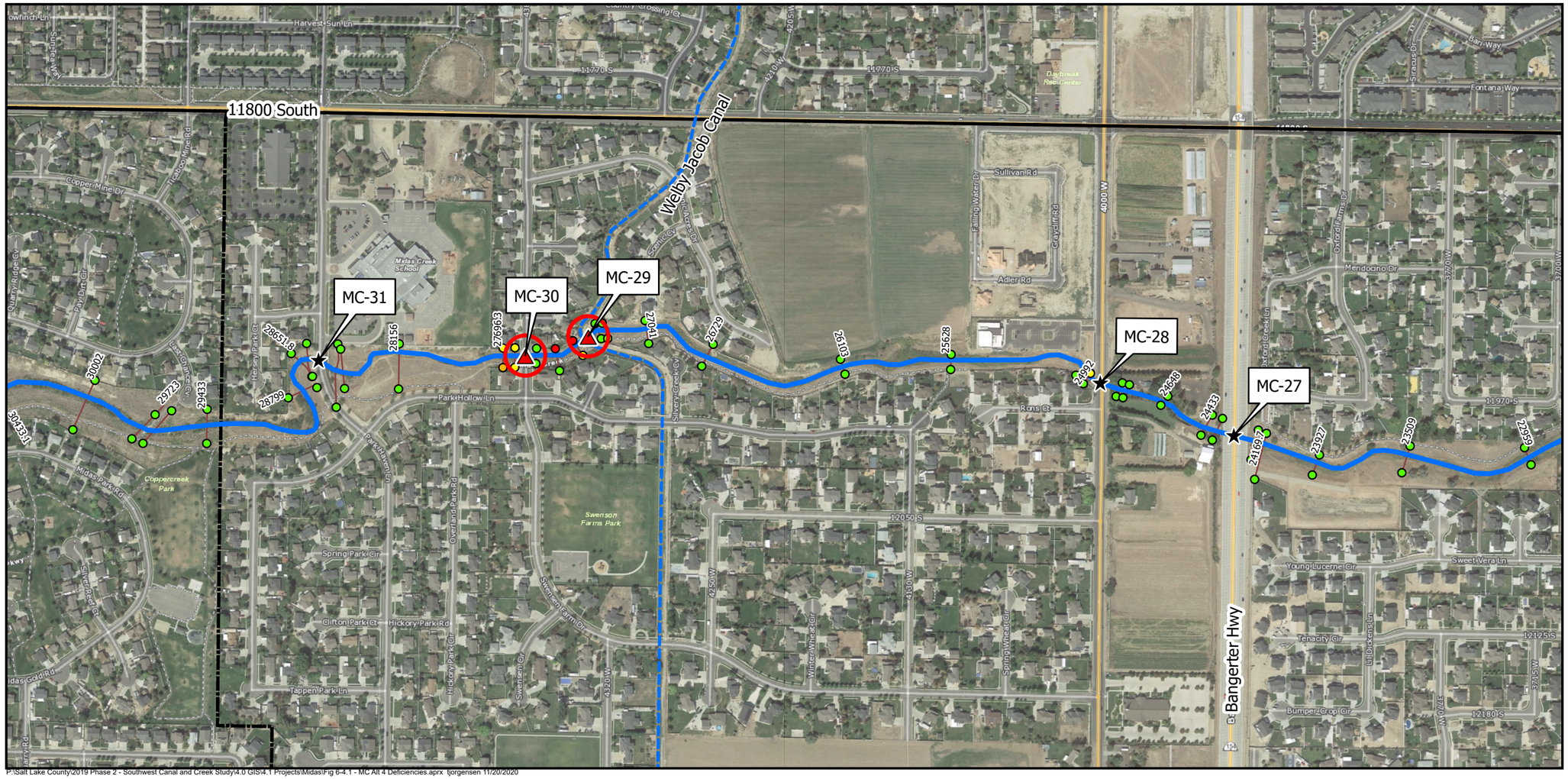
SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-4.1

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-22	3200 West	735	520	760	18'X7'	800		
MC-23	Upstream of 3200 West	735	520	760	63' wide Footbridge	1160		
MC-24	11800 South/Utah Lake Dist Canal	735	520	760	Two 5' RCP	710		
MC-25	Janice Dr./3400 West	844	540	730	20'X4'	770	23'X5'	
MC-26	3600 West	844	540	730	5' and 6' Diameter Culverts	470	18'X6'	Culverts are undersized



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LEGEND

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SOUTHWEST CANAL AND CREEK STUDY

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FIGURE NO. 6-4.1
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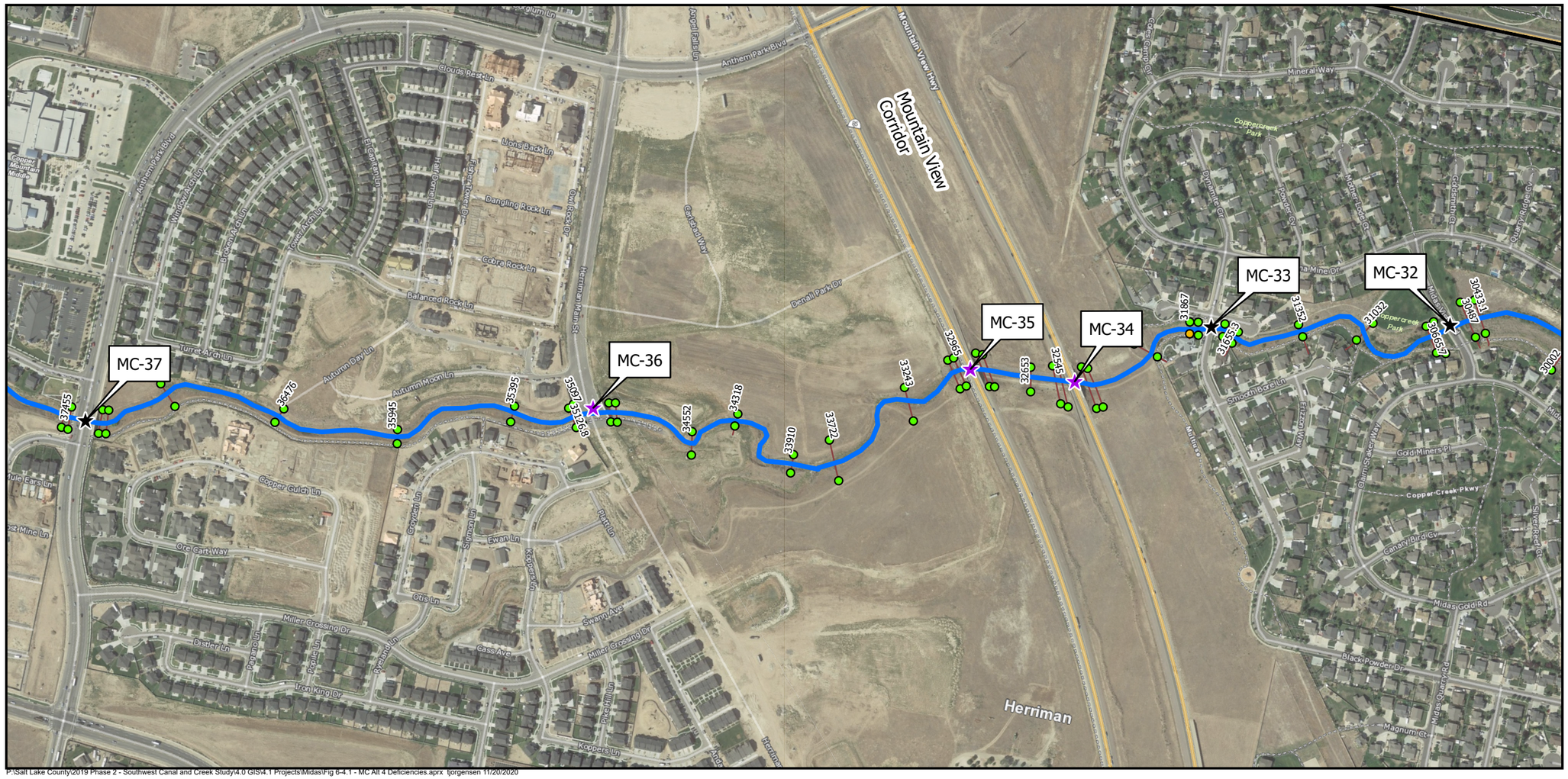
Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-27	Bangerter Hwy	495	540	730	18'X9'	2400		
MC-28	4000 West	495	530	720	14'X6'	980		
MC-29	Welby Jacob Canal	497	510	700	10' Wide Bridge	340	11'X7'	Bridge is undersized, the height is 2-3 ft, overtopping will discharge into the Welby Jacob Canal
MC-30	Swensen Farms Dr. (4370 W)	503	500	700	10'X5'	690	12'X7'	
MC-31	Park Haven Ln. (4510 W)	503	500	700	15'X8'	1200		



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MC-32	Midas Vista Rd (4775 W)	503	490	680	10'X6'	970		
MC-33	Black Powder Drive (4895 W)	503	470	680	10'X6'	840		
MC-34	North Bound MVC	503	470	680	75' Wide Bridge	12210		
MC-35	South Bound MVC	503	420	640	75' Wide Bridge	4940		
MC-36	Herriman Main Street	503	350	450	60' Wide Bridge	8450		
MC-37	Anthem Park Blvd	503	360	450	13'X33' Arch	4900		

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SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
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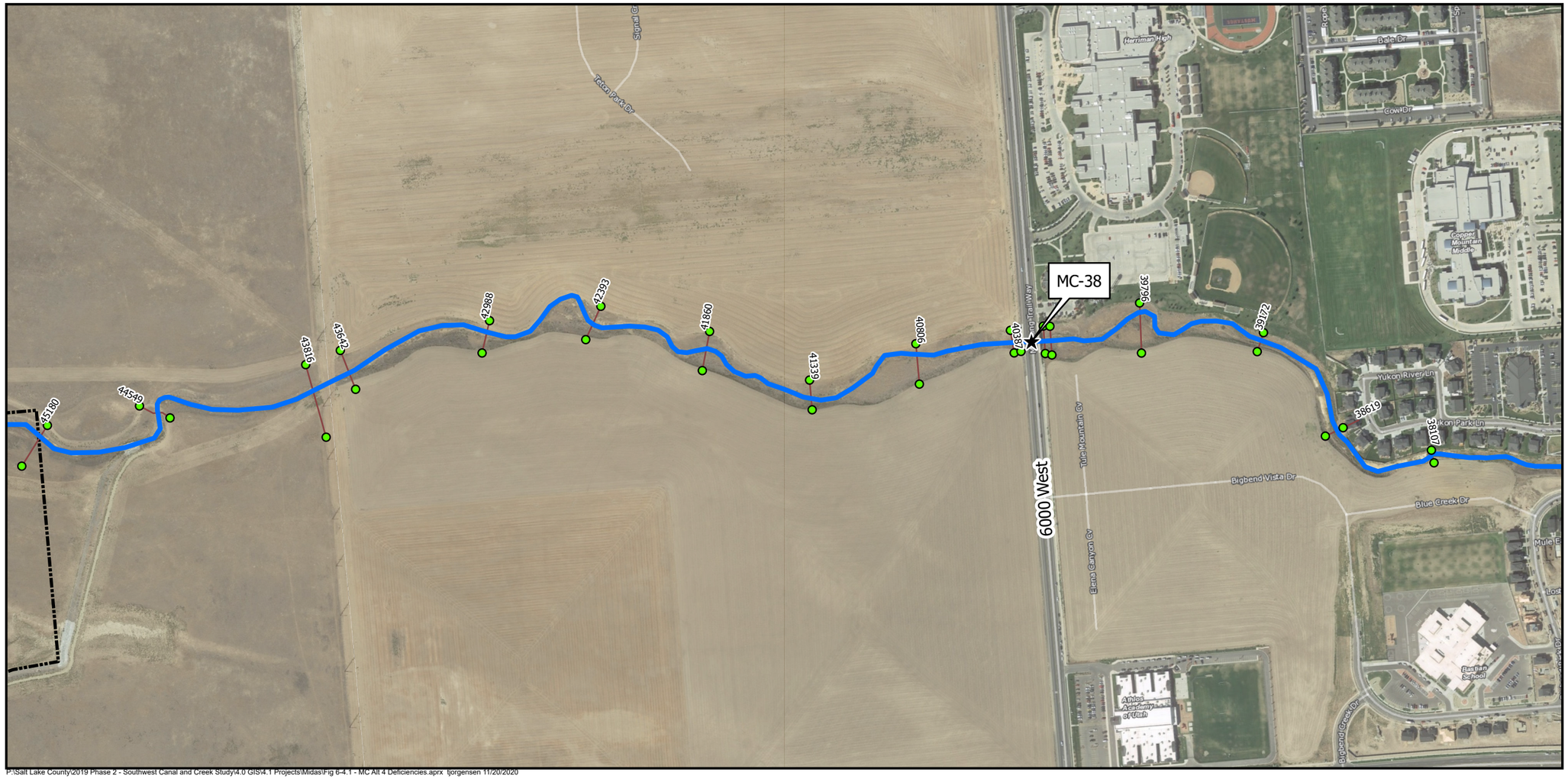

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MC-38	6000 West	503	80	270	13'X33' Arch	3260		

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DEVELOPMENT DETAINS TO 0.1 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL
AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
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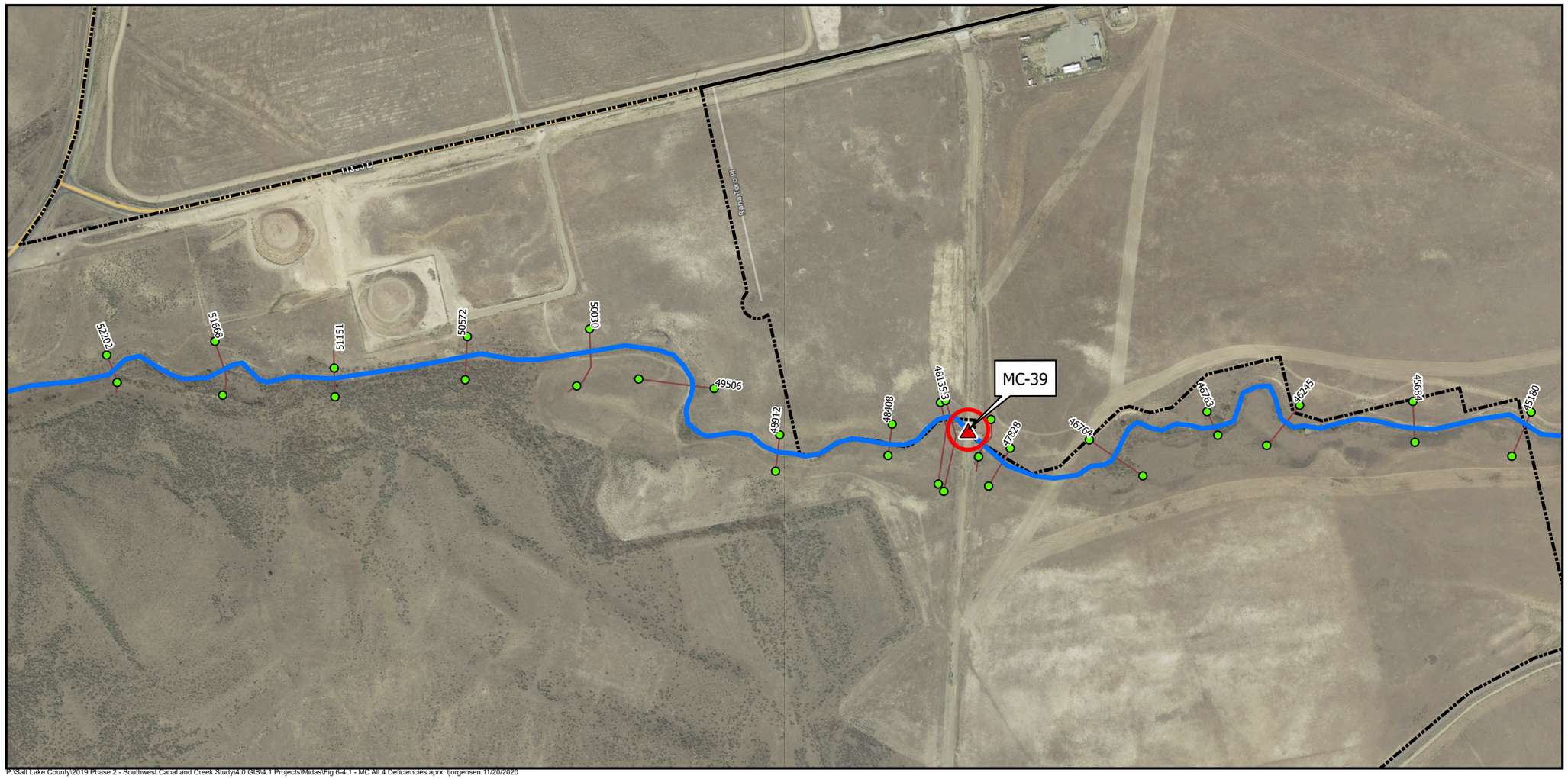

P:\Salt Lake County\2019 Phase 2 - Southwest Canal and Creek Study\4.0 GIS\4.1 Projects\Midas\Fig 6-4.1 - MC Alt 4 Deficiencies.aprx tjorgensen 11/20/2020

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-39	~7000 West Farm Bridge		60	130	15" Culvert	10	72" Culvert	Culvert is undersized causing overtopping, but water is contained in the channel

Index Map

LEGEND

Midas Structures

- Bridge/Culvert Deficiency
- Pipeline Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 4 - FUTURE
DEVELOPMENT DETAINS TO 0.1 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL
AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

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LEGEND

Midas Structures

- Bridge/Culvert Deficiency
- Pipeline Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

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- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-40	Bacchus Hwy		50	50	4' CMP	130		
MC-41	Private Road Upstream of Bacchus Hwy		30	30	Two 21" Culverts	50		

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 4 - FUTURE
DEVELOPMENT DETAINS TO 0.1 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
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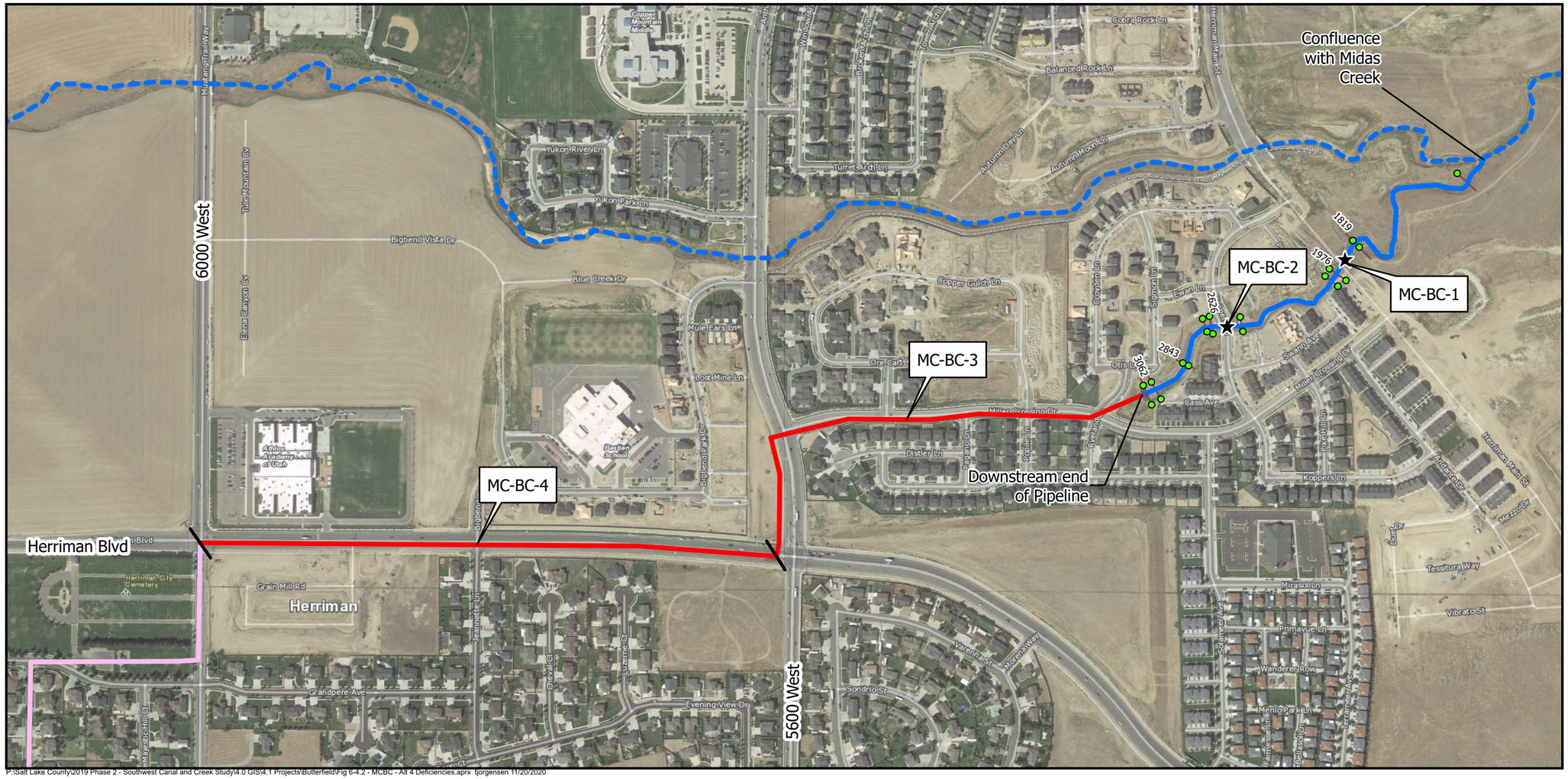

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Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Devlopment Condition (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Note
MC-BC-1	Herriman Main Street	N/A	140	220	8' X 5' Box	340		
MC-BC-2	Koppers Lane	N/A	140	220	8' X 5' Box	480		
MC-BC-3	Pipeline from 5600 West to End	N/A	140	220	5' RCP	200	6' RCP	Pipe is undersized, potentially causing water to flow out of manholes
MC-BC-4	Pipeline from Herriman Blvd to 5600 West	N/A	90	210	5' RCP	200	6' RCP	Pipe is undersized, potentially causing water to flow out of manholes

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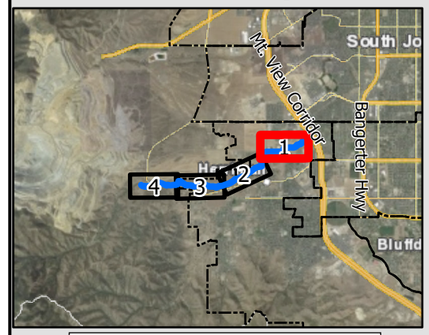

LEGEND

Butterfield Creek Structures
- Culvert Deficiency
- Butterfield Pipeline Deficiencies
- Culvert
- Butterfield Pipeline

Butterfield Creek Freeboard for Proposed Flow Rate
- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Butterfield Creek
- Midas Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 4 - FUTURE DEVELOPMENT
DETAINS TO 0.1 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

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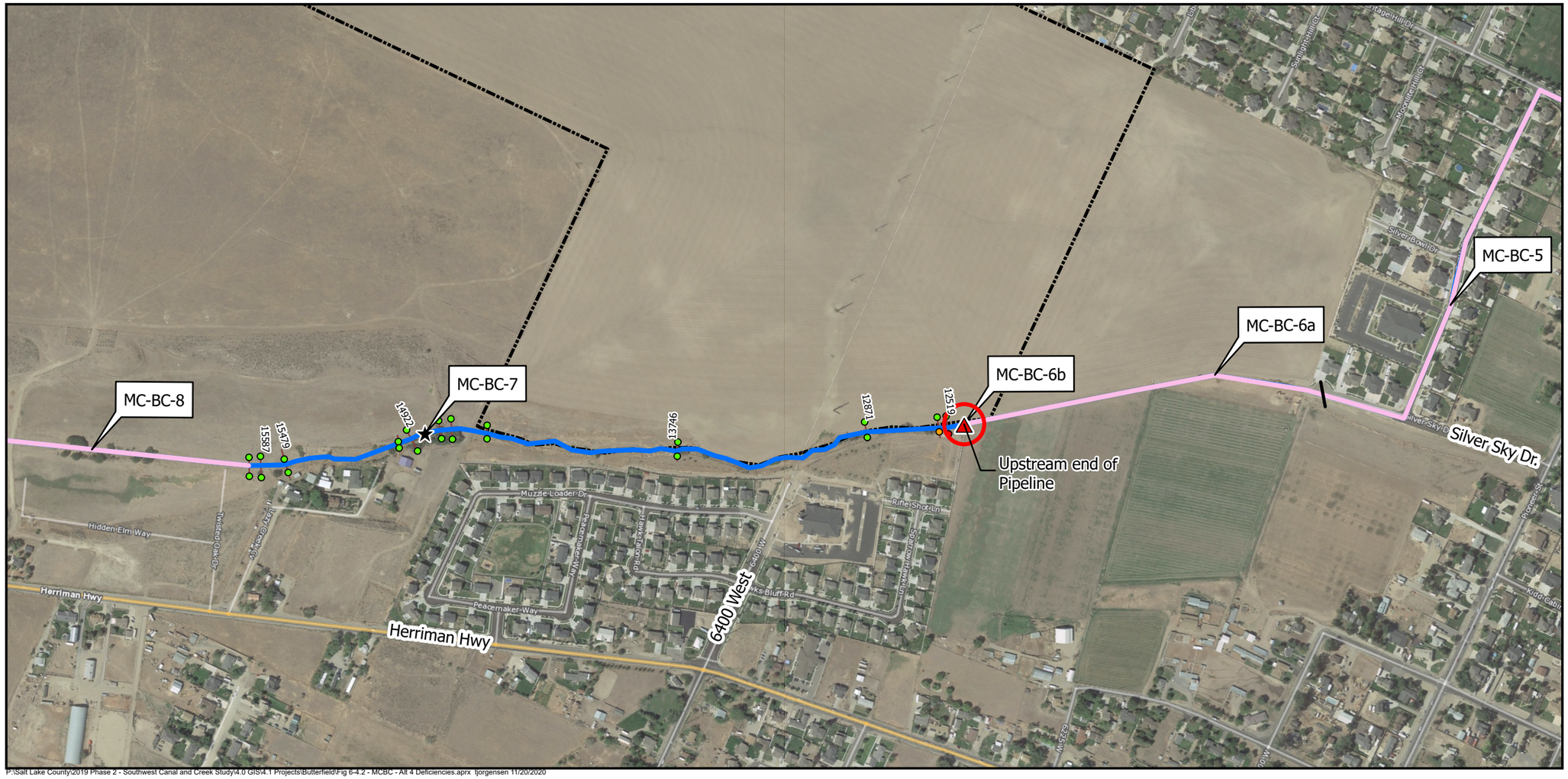

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Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Devlopment Condition (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Note
MC-BC-5	Pipeline from Silver Sky Dr. to Herriman Blvd	N/A	90	150	5' RCP	280		
MC-BC-6a	Pipeline from Entrance to Silver Sky Dr.	N/A	80	150	4' RCP	200		
MC-BC-6b	Inlet to Pipe Network	N/A	80	150	4' RCP	140	Replace Inlet	Inlet is inadequate, causing banks to overtop
MC-BC-7	Hidden Oaks Culvert 3 (approx. 6600 W)	N/A	60	120	5.5' RCP	260		
MC-BC-8	Hidden Oaks Pipeline (approx. 6700 W)	N/A	60	120	5.5' RCP	310		

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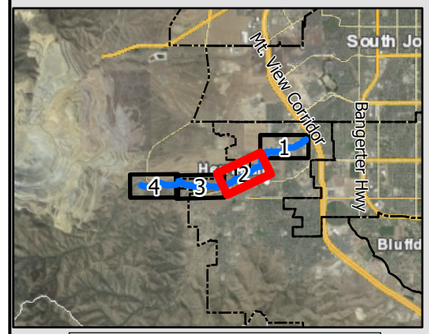

LEGEND

Butterfield Creek Structures

- Culvert Deficiency
- Butterfield Pipeline Deficiencies
- Culvert
- Butterfield Pipeline

Butterfield Creek Freeboard for Proposed Flow Rate

- Bank Overtopping
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- 2+ feet

- Butterfield Creek
- Midas Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 4 - FUTURE DEVELOPMENT
DETAINS TO 0.1 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
6-4.2
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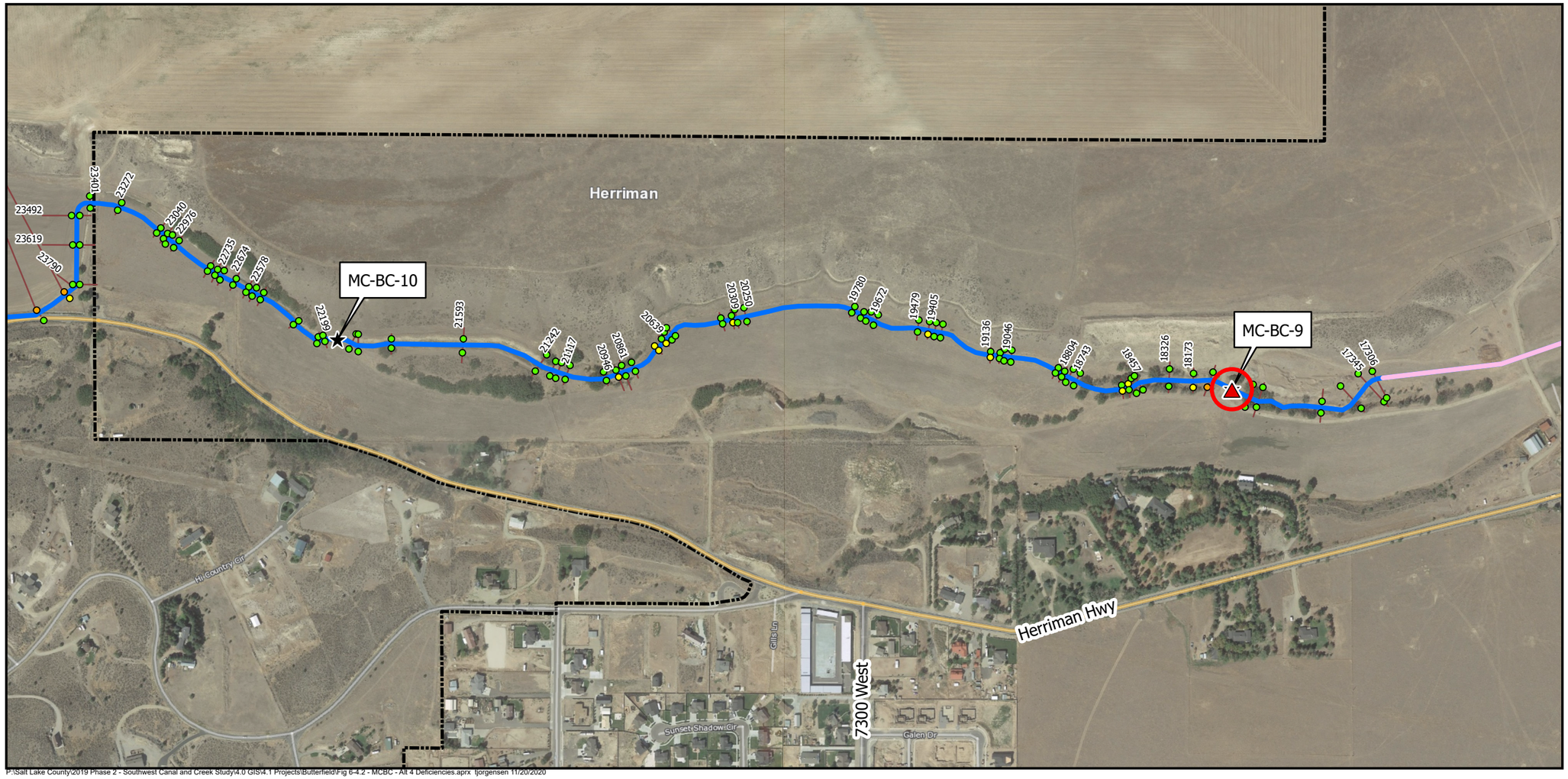

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Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Devlopment Condition (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Note
MC-BC-9	Hidden Oaks Culvert 2 (approx. 7075 W)	N/A	50	120	5.5' RCP	150		
MC-BC-10	Hidden Oaks Culvert 1 (approx. 7550 W)	N/A	50	40	5.5' RCP	190		

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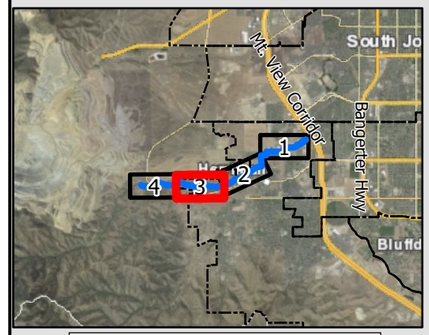

LEGEND

Butterfield Creek Structures
- Culvert Deficiency
- Butterfield Pipeline Deficiencies
- Culvert
- Butterfield Pipeline

Butterfield Creek Freeboard for Proposed Flow Rate
- Bank Overtopping
- 0 - 1 feet
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- Butterfield Creek
- Midas Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 4 - FUTURE DEVELOPMENT DETAINS TO 0.1 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

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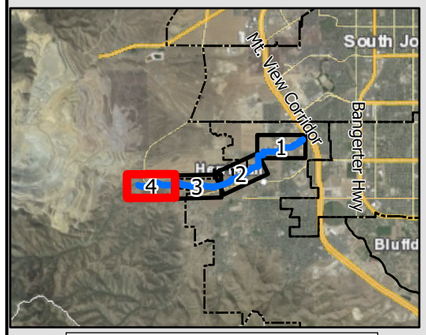

LEGEND

Butterfield Creek Structures
- Culvert Deficiency
- Butterfield Pipeline Deficiencies
- Culvert
- Butterfield Pipeline

Butterfield Creek Freeboard for Proposed Flow Rate
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- 2+ feet

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- Midas Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 4 - FUTURE DEVELOPMENT DETAINS TO 0.1 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-4.2
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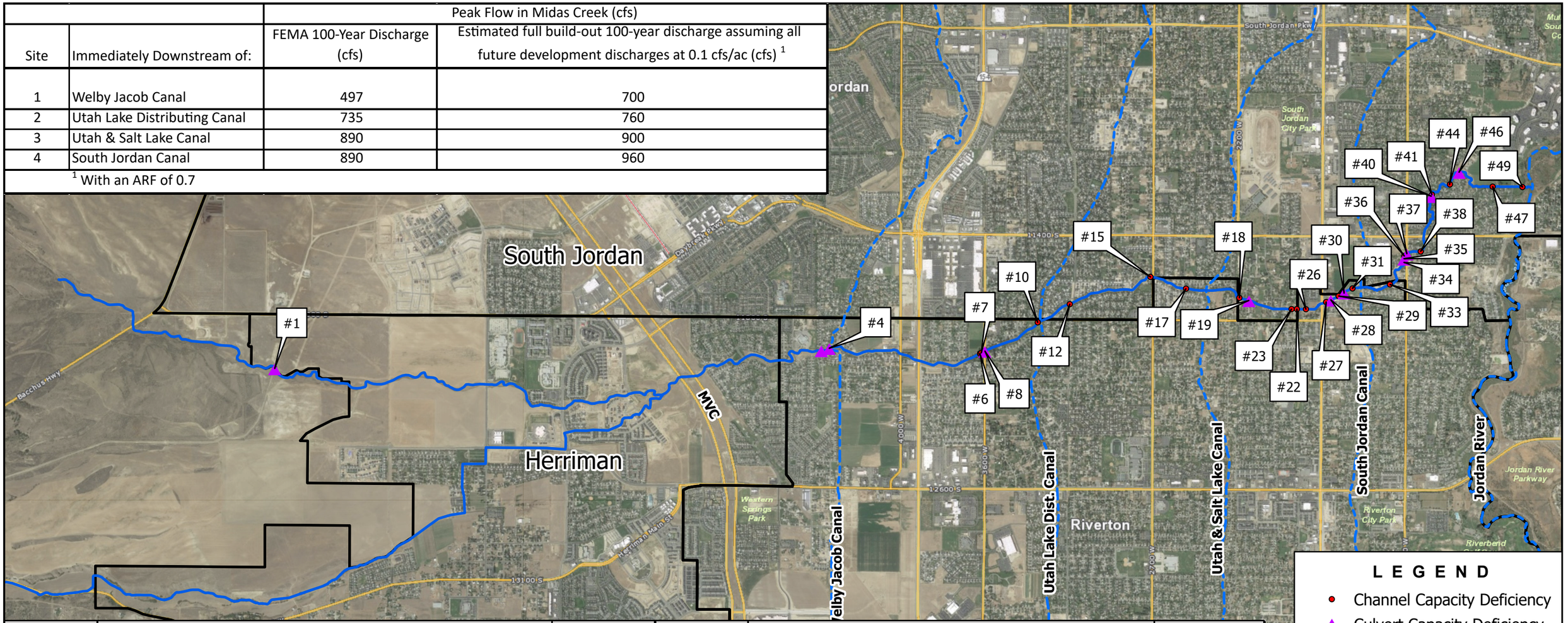
Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Devlopment Condition (cfs)	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Note
MC-BC-11	Bacchus Hwy	N/A	20	20	4' RCP	150		
MC-BC-12	Farm Road US of Baccus	N/A	20	20	3.5' CMP	70		
MC-BC-13	Access Road US of Baccus	N/A	20	20	4' CMP	170		

Site	Immediately Downstream of:	Peak Flow in Midas Creek (cfs) FEMA 100-Year Discharge (cfs)	Peak Flow in Midas Creek (cfs) Estimated full build-out 100-year discharge assuming all future development discharges at 0.1 cfs/ac (cfs) [1]
1	Welby Jacob Canal	497	700
2	Utah Lake Distributing Canal	735	760
3	Utah & Salt Lake Canal	890	900
4	South Jordan Canal	890	960

[1] With an ARF of 0.7



Improvement ID	Project Improvement	Cost	Improvement ID	Project Improvement	Cost
1	7000 West Farm Bridge	$ 120,000.00	29	520 LF of Bank Between Private Rds.	$ 33,000.00
4	Welby Jacob Canal	$ 510,000.00	30	2nd Private Rd. Downstream of Redwood Rd.	$ 440,000.00
6	390 LF of Right Bank upstream of 3600 West	$ 23,000.00	31	990 LF of Bank Upstream of South Jordan Canal	$ 140,000.00
7	250 LF of Left Bank Upstream of 3600 West	$ 24,000.00	33	20 LF of Bank Protecting Home at 1357 Midas Point Cv.	$ 21,000.00
8	3600 West	$ 570,000.00	34	310 LF of Bank upstream of 11500 South Street	$ 60,000.00
10	Midas Mini Park Outlet Structure Changes	$ 4,000.00	35	11500 South Street	$ 510,000.00
12	130 LF of Left Bank Upstream of 3200 West	$ 25,000.00	36	260 LF of Bank Between 11500 South Street and 1300 West	$ 61,000.00
15	110 LF of Right Bank upstream of 2700 West	$ 23,000.00	37	1300 West	$ 570,000.00
17	2,280 LF of Uncertifiable Levee along Midas Side Way and 11625 S	$ 29,000.00	38	90 LF of Bank along Chapel Ridge Dr.	$ 21,000.00
18	380 LF of Bank by Diversion Structure at 11686 S Eureka Way Property	$ 34,000.00	40	Park Palisade Dr.	$ 480,000.00
19	Eureka Way	$ 1,060,000.00	41	Dredge Channel Bed Downstream of Park Palisade Dr.	$ 160,000.00
22	310 LF of Left Bank between Gold Dust Dr. and Winford Dr.	$ 30,000.00	44	3,820 LF of Bank in Parkway Palisades Development	$ 353,000.00
23	790 LF of Right Bank between Gold Dust Dr. and Winford Dr.	$ 77,000.00	46	Private Road DS of Park Palisade Dr.	$ 720,000.00
26	26 LF of Bank Between Winford Dr. and Stafford View Dr.	$ 22,000.00	47	390 LF of Left bank upstream of Beckstead Ditch	$ 27,000.00
27	Upstream of 1st Private Rd.	$ 21,000.00	49	330 LF of Bank protecting East River Front Park at Jordan River	$ 23,000.00
28	Private Rd. Downstream of Redwood Rd.	$ 950,000.00		**Total Cost for Midas Creek Improvements:**	**$ 7,141,000.00**

LEGEND

- Channel Capacity Deficiency
- Culvert Capacity Deficiency
- Municipal Boundary
- Midas & Butterfield Creeks
- Major Canal/Jordan River

NORTH:

SCALE: 0 1,500 3,000 Feet

MIDAS CREEK RECOMMENDED ALTERNATIVE 4 IMPROVEMENTS AND COST ESTIMATE

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-4.3

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Improvement ID	Project Improvement	Cost
1	Redefining 1,450 LF of channel banks along Bacchus Hwy near Farm Field [1]	$ -
4	Replace Intake Structure to Butterfield Creek Pipeline	$ 120,000.00
5	Replacing 4,700 LF of 5-ft pipe with a 6-ft pipe from 6000 West to Ryeland Ln	$ 1,974,000.00
	Total Cost for Butterfield Creek Improvements:	**$ 2,094,000.00**

[1] Redefining channel should be part of future development and paid for by the developer to protect new contstruction from risk of flooding.

LEGEND

- Inlet Capacity Deficiency
- Channel/Pipeline Capacity Deficiency
- Midas & Butterfield Creeks
- Municipal Boundary

NORTH:

SCALE: 0 1,000 2,000 Feet

BUTTERFIELD CREEK
RECOMMENDED ALTERNATIVE 4
IMPROVEMENTS AND COST ESTIMATE

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-4.4

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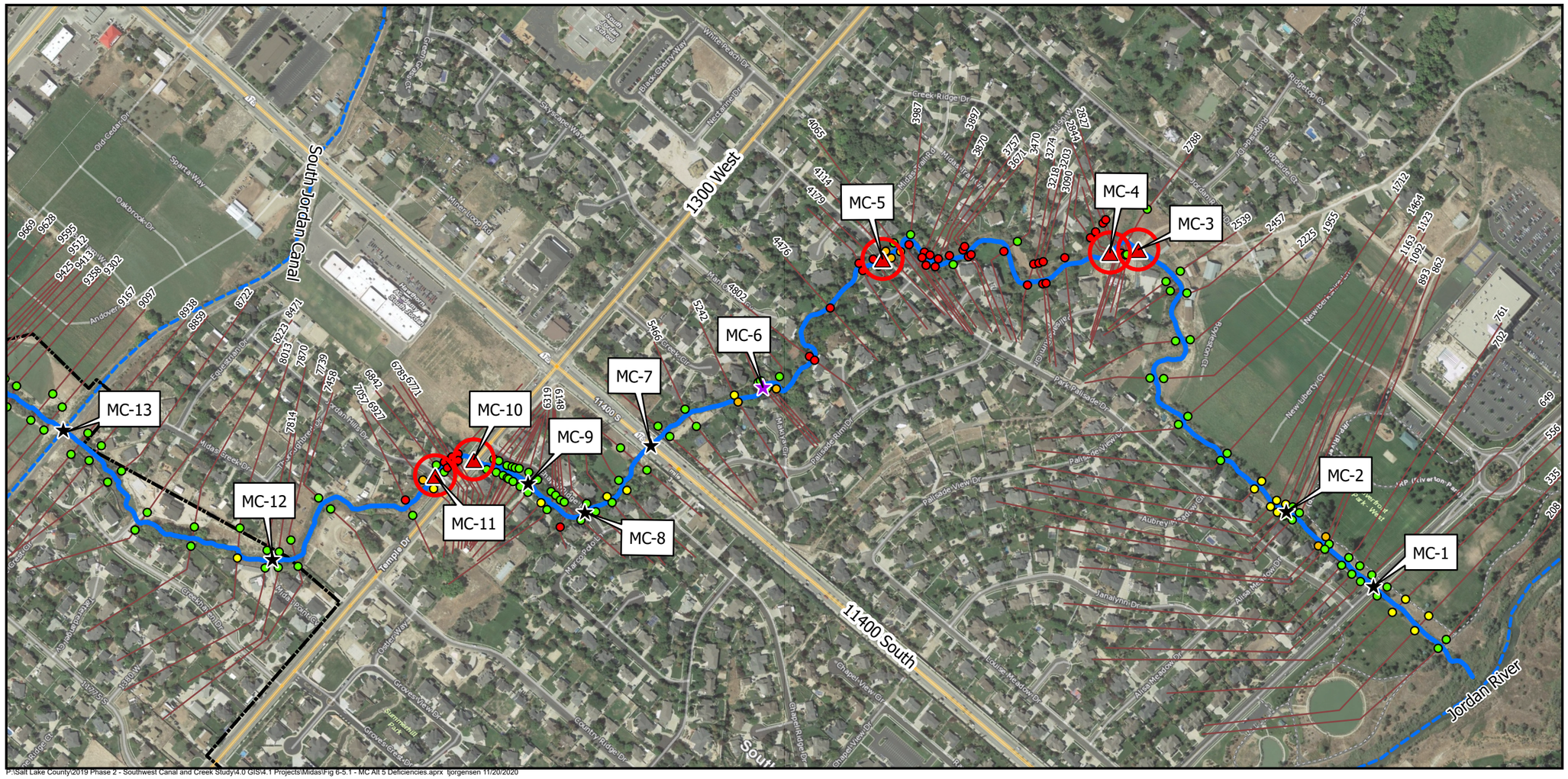

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LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

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- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 5 - IN-LINE REGIONAL DETENTION BASIN (85+ AC-FT) AND DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-5.1
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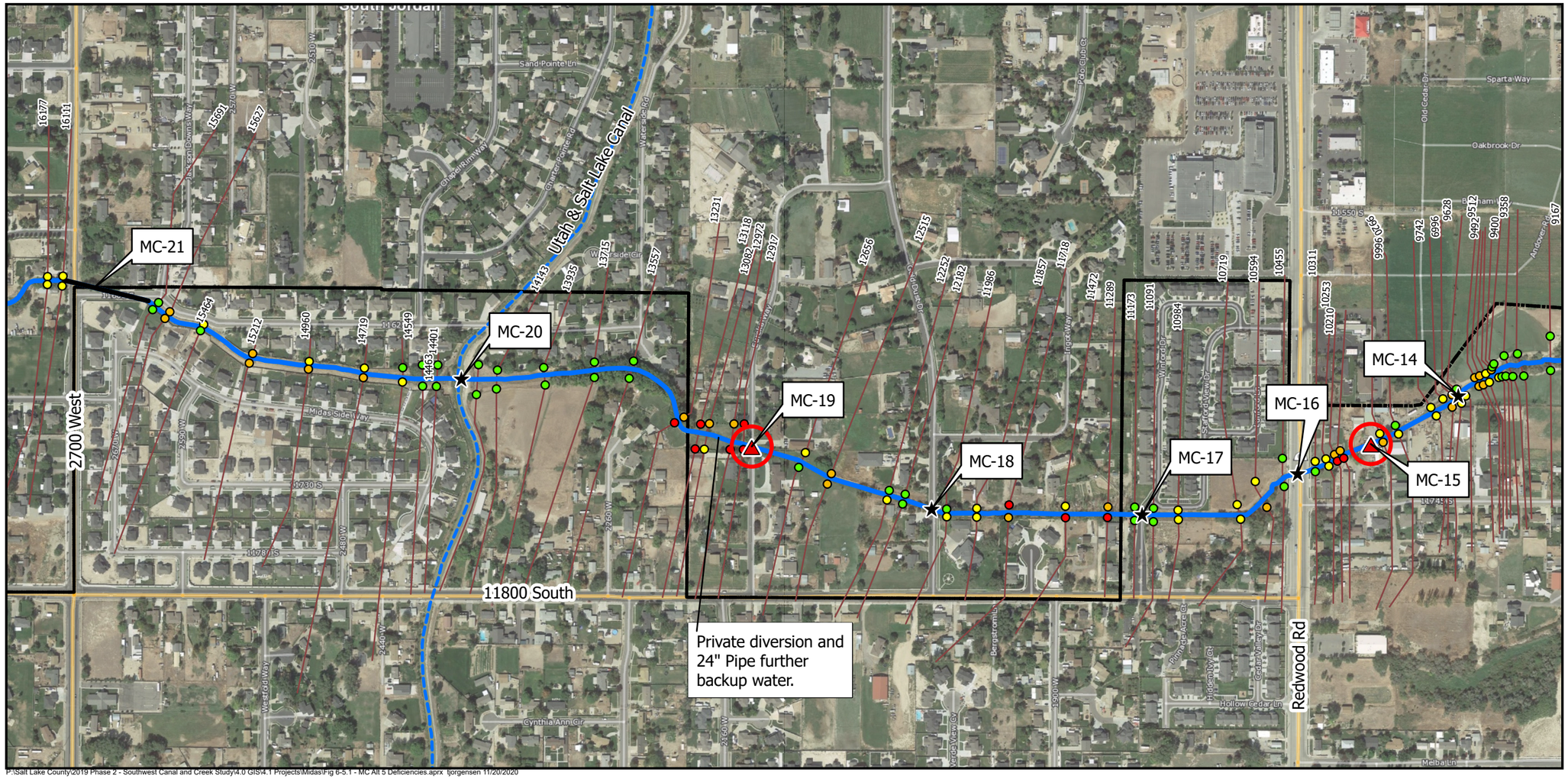
Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-1	River Front PKWY	890	770	780	Two 13'X7' Box Culverts	2130		
MC-2	Beckstead Ditch	890	770	780	15'X6'	1130		
MC-3	Private Road DS of Park Palisade Dr.	890	760	770	12'X6'	1180	13'X8'	Back water increases water surface upstream
MC-4	Private Foot Bridge DS of Park Palisade Dr.	890	760	770	30' wide Footbridge	800		Back water from MC-3 causes bridge and banks to overtop
MC-5	Park Palisade Dr.	890	760	770	15'X4.5'	920		Back water from MC-3 causes bridge and banks to overtop
MC-6	Private Foot Bridge DS of 11400 South	890	760	770	34.5' wide Footbridge	3170		
MC-7	11400 South	890	760	770	24'X10.5'	2810		
MC-8	Chapel Ridge Dr.	890	760	760	21.5'X6.2'	1340		
MC-9	Private Dr. DS of 1300 West	890	720	730	20'X8'	1860		
MC-10	1300 West	890	720	730	Two 8.5'X4' Box Culverts	730		
MC-11	11500 South Street	890	720	730	14'X4'	910		
MC-12	11585 South Street	890	720	730	23'X9' Arch	3850		
MC-13	South Jordan Canal	890	720	730	10'X5'	960		



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LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
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- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 5 - IN-LINE REGIONAL DETENTION BASIN (85+ AC-FT) AND DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-5.1
2 of 8

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-14	Private Dr. DS of Redwood Rd. (aprox. 1600 W)	890	670	670	15'X5'	790		
MC-15	Private Dr. DS of Redwood Rd. (aprox. 1650 W)	890	670	670	14'X5'	630	23'X7'	Undersized culvert casues overtopping, but water is contained in the channel
MC-16	Redwood Rd	890	670	670	18'X5'	1080		
MC-17	Winford Dr.	890	670	670	Two 7'X6' Box Culverts	930		
MC-18	Gold Dust Dr.	890	670	670	Two 9'X5' Box Culverts	950		
MC-19	Eureka Way	890	670	670	Two 5' RCP	230	20'X6'	Culvert is Undersized
MC-20	Downstream of Utah & Salt Lake Canal	890	670	670	10'X7'	1090		
MC-21	2700 West	735	550	550	16'X7'	870		

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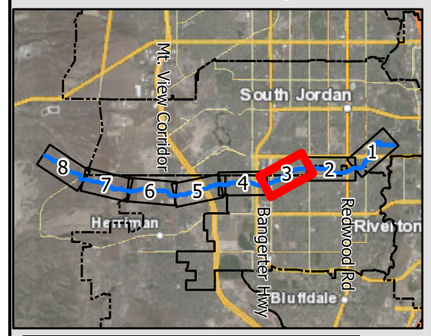

LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

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NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 5 - IN-LINE REGIONAL DETENTION BASIN (85+ AC-FT) AND DEVELOPMENT DETAINS TO 0.2 CFS/AC

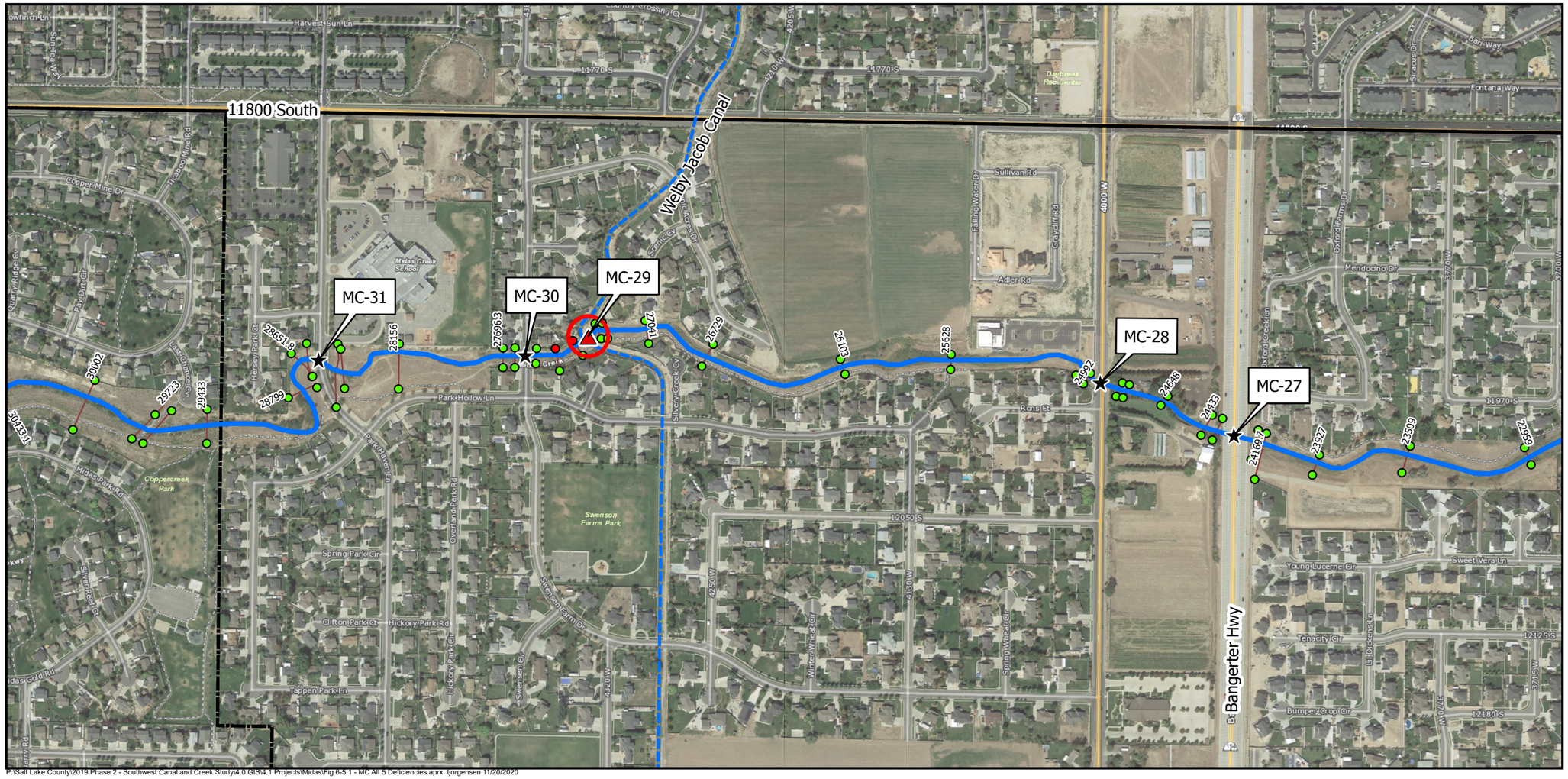
SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-5.1

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-22	3200 West	735	520	520	18'X7'	800		
MC-23	Upstream of 3200 West	735	520	520	63' wide Footbridge	1160		
MC-24	11800 South/Utah Lake Dist Canal	735	520	520	Two 5' RCP	710		
MC-25	Janice Dr./3400 West	844	540	490	20'X4'	770		
MC-26	3600 West	844	540	490	5' and 6' Diameter Culverts	470	18'X6'	Culverts are undersized



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LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
- Existing Bridge
- Existing Culvert
- Existing Pipeline

Midas Creek Freeboard for Proposed Future 100-yr Design Storm

- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Midas Creek
- Major Canal/Jordan River
- Municipal Boundary
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

MIDAS CREEK DEFICIENCIES
ALTERNATIVE 5 - IN-LINE REGIONAL DETENTION BASIN (85+ AC-FT) AND DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-5.1

Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-27	Bangerter Hwy	495	540	490	18'X9'	2400		
MC-28	4000 West	495	530	480	14'X6'	980		
MC-29	Welby Jacob Canal	497	510	460	10' Wide Bridge	340	11'X7'	Bridge is undersized, the height is 2-3 ft, overtopping will discharge into the Welby Jacob Canal
MC-30	Swensen Farms Dr. (4370 W)	503	500	450	10'X5'	690		
MC-31	Park Haven Ln. (4510 W)	503	500	450	15'X8'	1200		

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Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-32	Midas Vista Rd (4775 W)	503	490	440	10'X6'	970		
MC-33	Black Powder Drive (4895 W)	503	470	430	10'X6'	840		
MC-34	North Bound MVC	503	470	430	75' Wide Bridge	12210		
MC-35	South Bound MVC	503	420	390	75' Wide Bridge	4940		
MC-36	Herriman Main Street	503	350	630	60' Wide Bridge	8450		
MC-37	Anthem Park Blvd	503	360	630	13'X33' Arch	4900		

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SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-5.1
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Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-38	6000 West	503	80	480	13'X33' Arch	3260		

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LEGEND

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MIDAS CREEK DEFICIENCIES
ALTERNATIVE 5 - IN-LINE REGIONAL DETENTION BASIN (85+ AC-FT) AND DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

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FIGURE NO. 6-5.1
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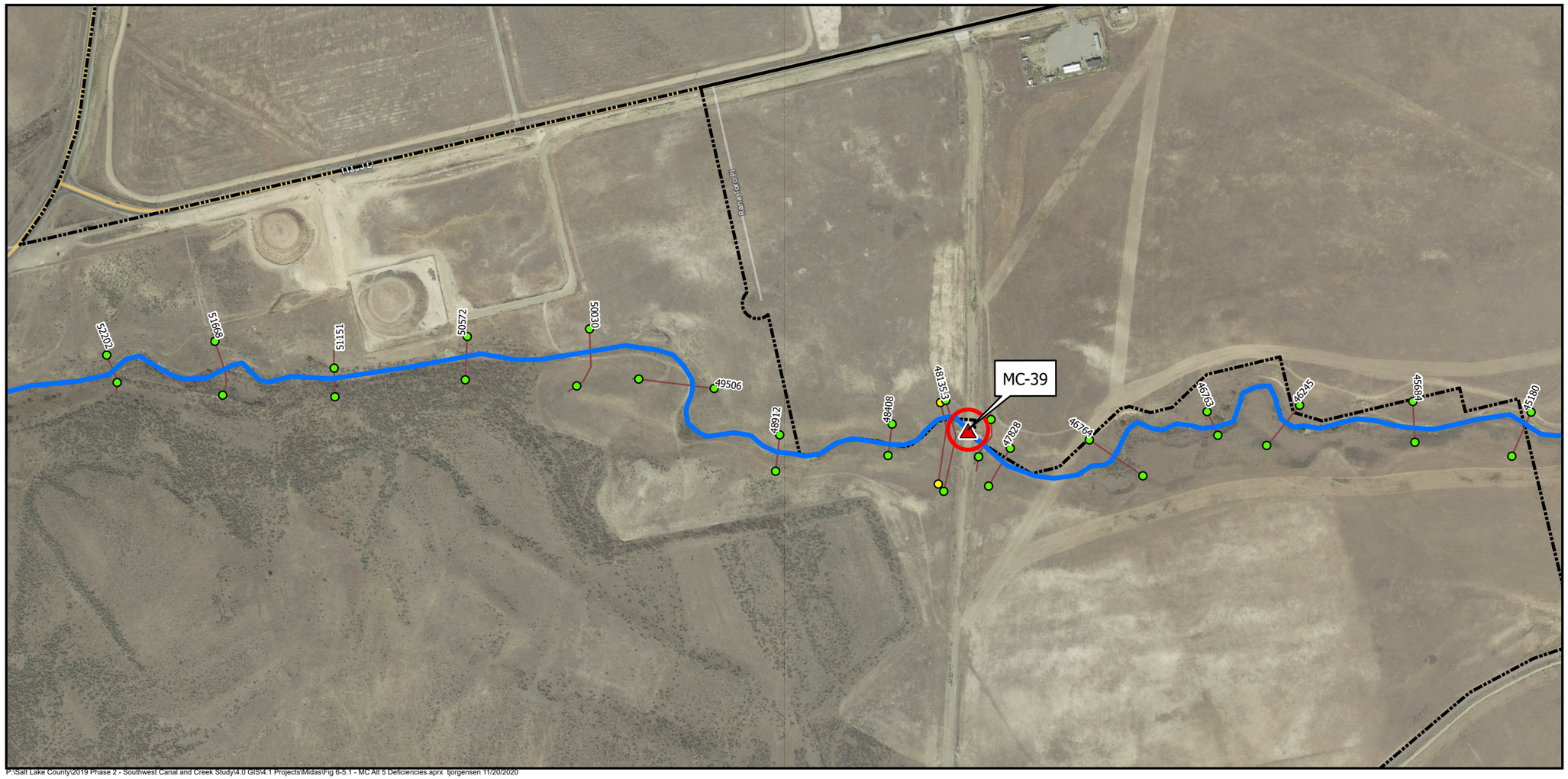

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ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-39	~7000 West Farm Bridge		60	210	15" Culvert	10	72" Culvert	Culvert undersized causing overtopping, but water is contained in the channel

Index Map

LEGEND

Midas Creek Structures

- Bridge/Culvert Deficiency
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MIDAS CREEK DEFICIENCIES
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SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

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MIDAS CREEK DEFICIENCIES
ALTERNATIVE 5 - IN-LINE REGIONAL DETENTION BASIN (85+ AC-FT) AND DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-5.1
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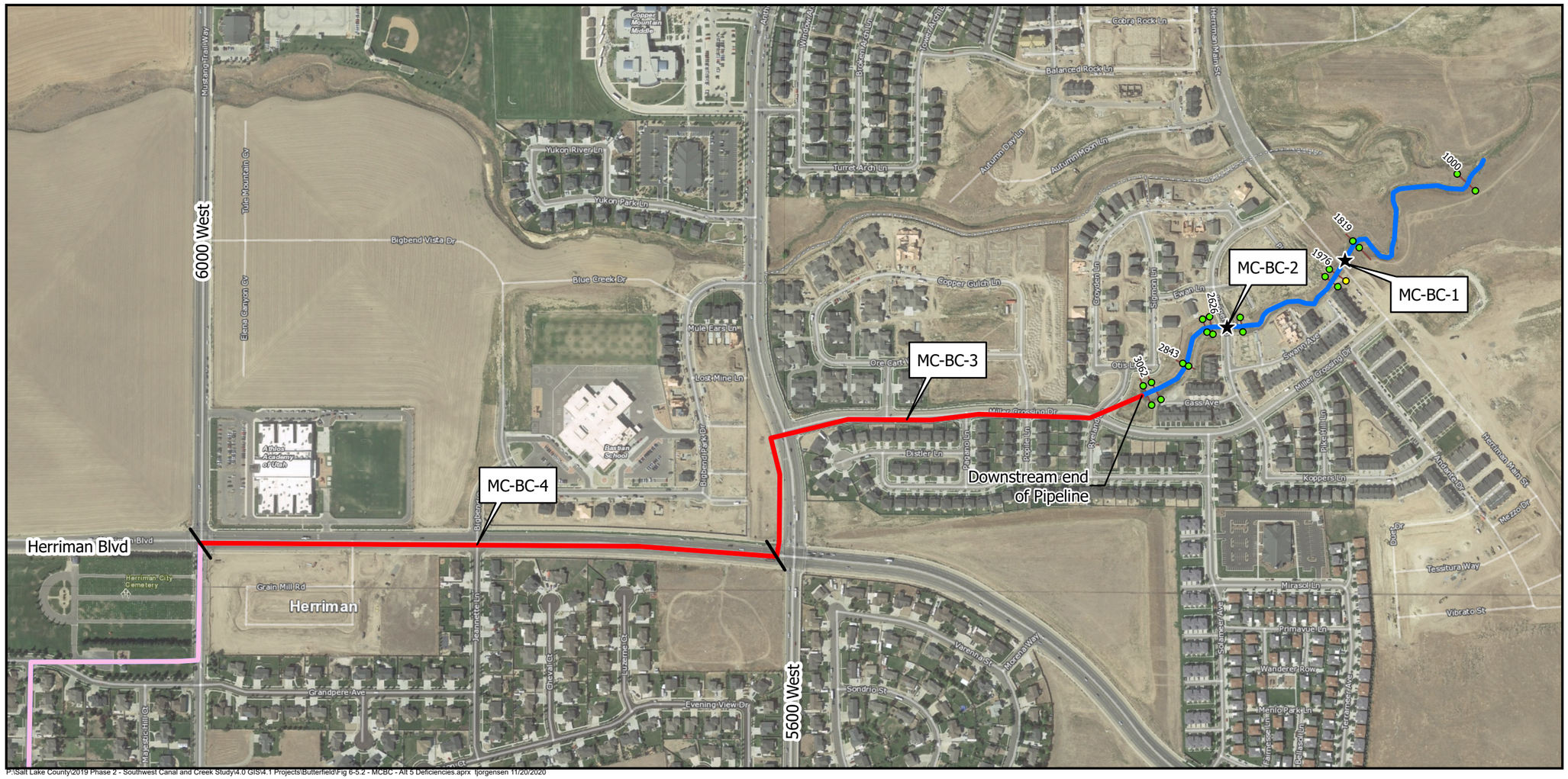
Bridge/Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Estimated Full Build-Out 100-Year Discharge for Proposed Development Condition (cfs)	Existing Culvert Size	Exstimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Notes
MC-40	Bacchus Hwy		50	50	4' CMP	130		
MC-41	Private Road Upstream of Bacchus Hwy		30	30	Two 21" Culverts	50		



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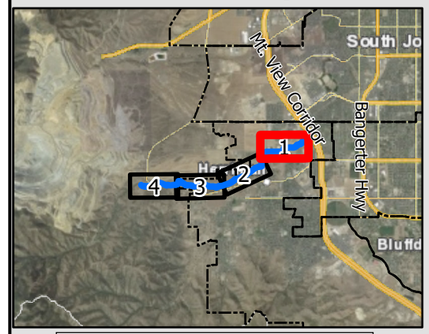

LEGEND

Butterfield Creek Deficiency
- Culvert Deficiency
- Pipeline Deficiencies
- Culvert
- Butterfield Creek Pipeline

Buterfield Creek Freeboard for Proposed Future 100-yr Design Storm
- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet

- Butterfield Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 5 - IN-LINE REGIONAL DETENTION BASIN (85+ AC-FT) AND DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-5.2
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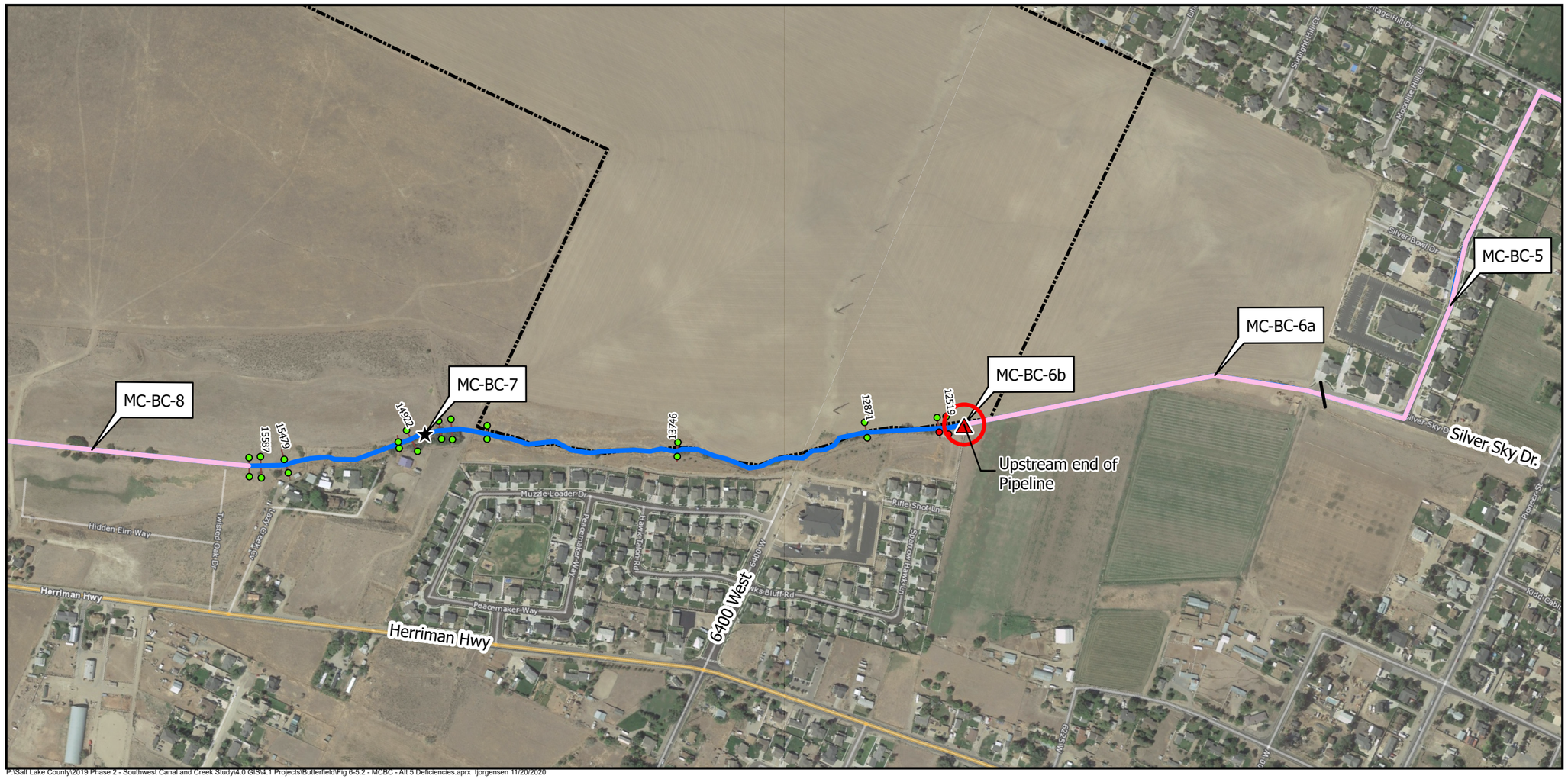
Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Future Flow Rate - Future Development Areas Detain to 0.2 cfs/ac with an In-line Detention Basin	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Note
MC-BC-1	Herriman Main Street	N/A	140	220	8' X 5' Box	340		
MC-BC-2	Koppers Lane	N/A	140	220	8' X 5' Box	480		
MC-BC-3	Pipeline from 5600 West to End	N/A	140	220	5' RCP	200	6' RCP	Pipe is undersized, potentially causing water to flow out of manholes
MC-BC-4	Pipeline from Herriman Blvd to 5600 West	N/A	90	210	5' RCP	200	6' RCP	Pipe is undersized, potentially causing water to flow out of manholes



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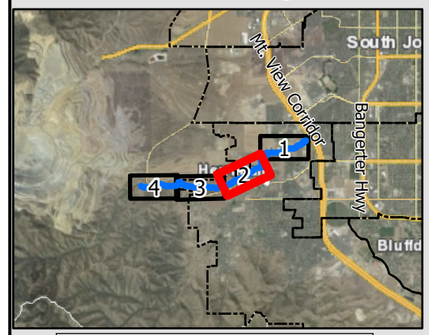

LEGEND

Butterfield Creek Deficiency
- Culvert Deficiency
- Pipeline Deficiencies
- Culvert
- Butterfield Creek Pipeline

Buterfield Creek Freeboard for Proposed Future 100-yr Design Storm
- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet

- Butterfield Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 5 - IN-LINE REGIONAL DETENTION BASIN (85+ AC-FT) AND DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO. 6-5.2
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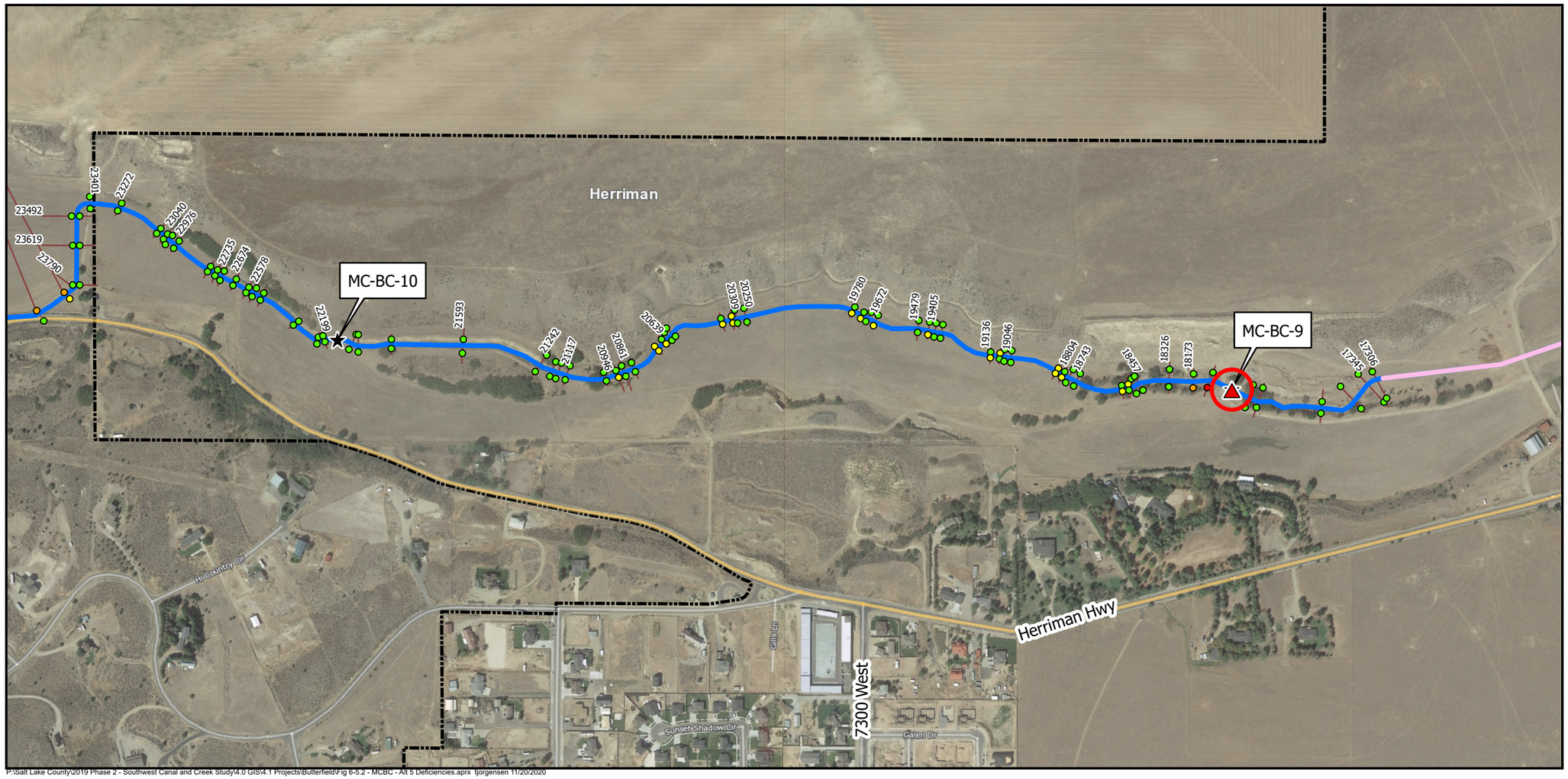
Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Future Flow Rate - Future Development Areas Detain to 0.2 cfs/ac with an In-line Detention Basin	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Note
MC-BC-5	Pipeline from Silver Sky Dr. to Herriman Blvd	N/A	90	150	5' RCP	280		
MC-BC-6a	Pipeline from Entrance to Silver Sky Dr.	N/A	80	150	4' RCP	200		
MC-BC-6b	Inlet to Pipe Network	N/A	80	150	4' RCP	140	Replace Inlet	Inlet is inadequate, causing banks to overtop
MC-BC-7	Hidden Oaks Culvert 3 (approx. 6600 W)	N/A	60	120	5.5' RCP	260		
MC-BC-8	Hidden Oaks Pipeline (approx. 6700 W)	N/A	60	120	5.5' RCP	310		



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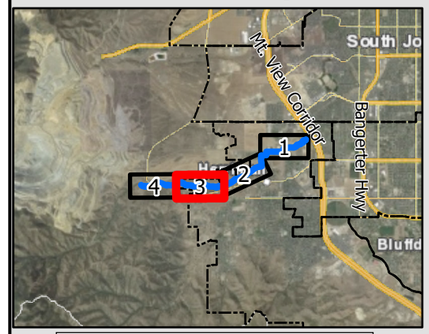

LEGEND

- Butterfield Creek Deficiency
- Culvert Deficiency
- Pipeline Deficiencies
- Culvert
- Butterfield Creek Pipeline
- Buterfield Creek Freeboard for Proposed Future 100-yr Design Storm
- Bank Overtopping
- 0 - 1 feet
- 1 - 2 feet
- 2+ feet
- Butterfield Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Future Flow Rate - Future Development Areas Detain to 0.2 cfs/ac with an In-line Detention Basin	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Note
MC-BC-9	Hidden Oaks Culvert 2 (approx. 7075 W)	N/A	50	120	5.5' RCP	150		
MC-BC-10	Hidden Oaks Culvert 1 (approx. 7550 W)	N/A	50	40	5.5' RCP	190		

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 5 - IN-LINE REGIONAL DETENTION BASIN (85+ AC-FT) AND DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

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Culvert Table

ID	Culvert or Bridge Location	FEMA 100-Year Discharge (cfs)	100-Year Discharge Associated with Existing Development (cfs)	Future Flow Rate - Future Development Areas Detain to 0.2 cfs/ac with an In-line Detention Basin	Existing Culvert Size	Estimated Hydraulic Capacity (cfs)	Recommended Culvert Size	Note
MC-BC-11	Bacchus Hwy	N/A	20	20	4' RCP	150		
MC-BC-12	Farm Road US of Baccus	N/A	20	20	3.5' CMP	70		
MC-BC-13	Access Road US of Baccus	N/A	20	20	4' CMP	170		

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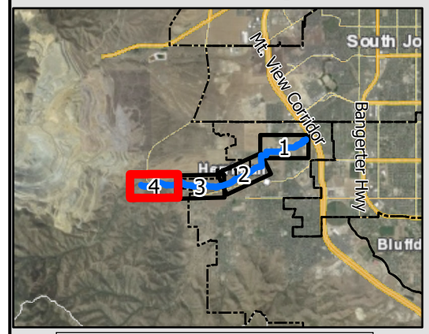

LEGEND

Butterfield Creek Deficiency
- Culvert Deficiency
- Pipeline Deficiencies
- Culvert
- Butterfield Creek Pipeline

Buterfield Creek Freeboard for Proposed Future 100-yr Design Storm
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- Butterfield Creek
- Municipal Boundary
- Division between Pipeline Segments
- #### HEC-RAS Cross Section With Station

NORTH:

SCALE: 0 250 500 Feet

BUTTERFIELD CREEK DEFICIENCIES
ALTERNATIVE 5 - IN-LINE REGIONAL DETENTION BASIN (85+ AC-FT) AND DEVELOPMENT DETAINS TO 0.2 CFS/AC

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

BOWEN COLLINS & ASSOCIATES

FIGURE NO.
6-5.2
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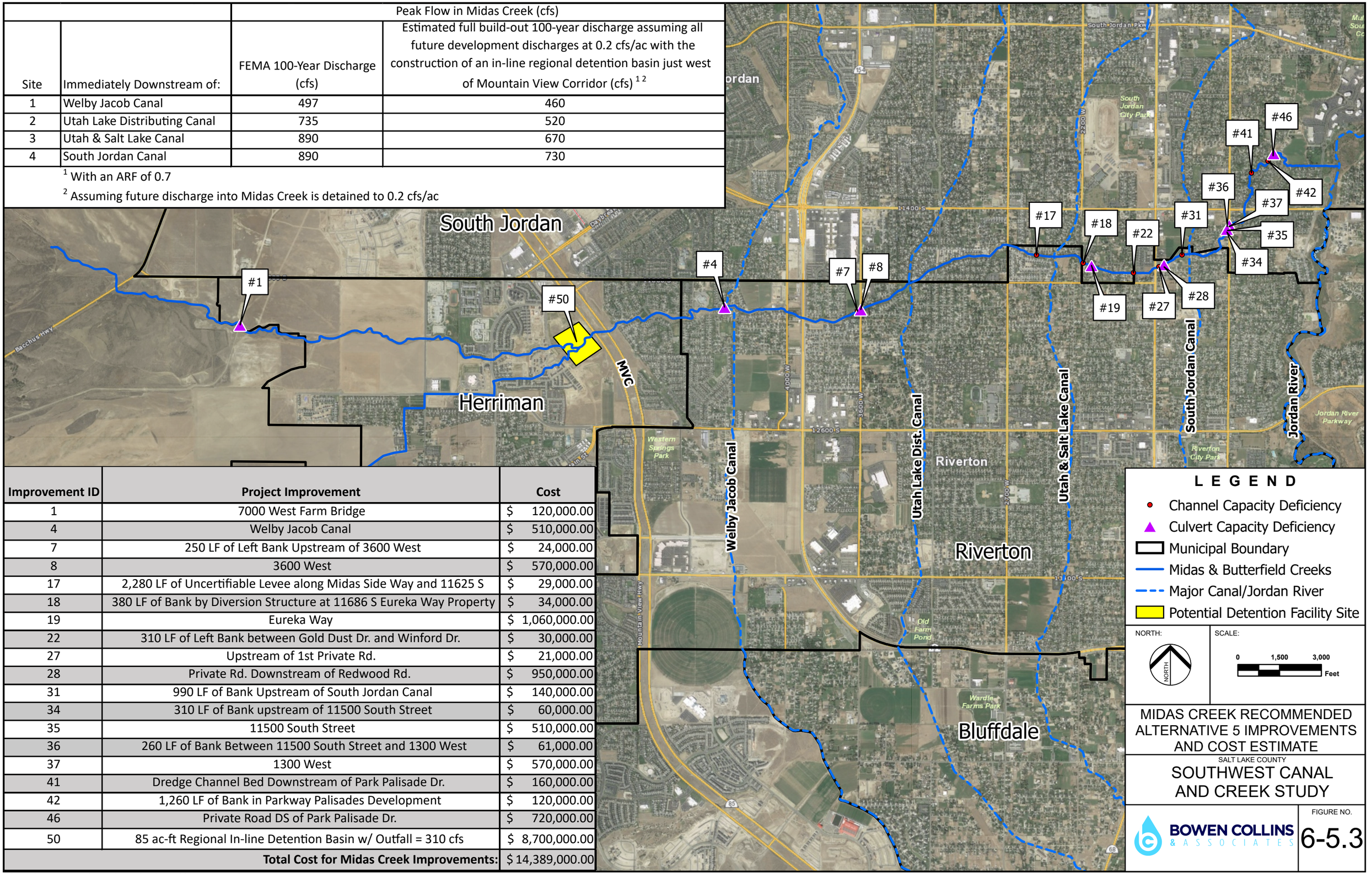
		Peak Flow in Midas Creek (cfs)	
Site	Immediately Downstream of:	FEMA 100-Year Discharge (cfs)	Estimated full build-out 100-year discharge assuming all future development discharges at 0.2 cfs/ac with the construction of an in-line regional detention basin just west of Mountain View Corridor (cfs) [1] [2]
1	Welby Jacob Canal	497	460
2	Utah Lake Distributing Canal	735	520
3	Utah & Salt Lake Canal	890	670
4	South Jordan Canal	890	730

[1] With an ARF of 0.7

[2] Assuming future discharge into Midas Creek is detained to 0.2 cfs/ac



Improvement ID	Project Improvement	Cost
1	7000 West Farm Bridge	$ 120,000.00
4	Welby Jacob Canal	$ 510,000.00
7	250 LF of Left Bank Upstream of 3600 West	$ 24,000.00
8	3600 West	$ 570,000.00
17	2,280 LF of Uncertifiable Levee along Midas Side Way and 11625 S	$ 29,000.00
18	380 LF of Bank by Diversion Structure at 11686 S Eureka Way Property	$ 34,000.00
19	Eureka Way	$ 1,060,000.00
22	310 LF of Left Bank between Gold Dust Dr. and Winford Dr.	$ 30,000.00
27	Upstream of 1st Private Rd.	$ 21,000.00
28	Private Rd. Downstream of Redwood Rd.	$ 950,000.00
31	990 LF of Bank Upstream of South Jordan Canal	$ 140,000.00
34	310 LF of Bank upstream of 11500 South Street	$ 60,000.00
35	11500 South Street	$ 510,000.00
36	260 LF of Bank Between 11500 South Street and 1300 West	$ 61,000.00
37	1300 West	$ 570,000.00
41	Dredge Channel Bed Downstream of Park Palisade Dr.	$ 160,000.00
42	1,260 LF of Bank in Parkway Palisades Development	$ 120,000.00
46	Private Road DS of Park Palisade Dr.	$ 720,000.00
50	85 ac-ft Regional In-line Detention Basin w/ Outfall = 310 cfs	$ 8,700,000.00
	Total Cost for Midas Creek Improvements:	$ 14,389,000.00

LEGEND

- Channel Capacity Deficiency
- Culvert Capacity Deficiency
- Municipal Boundary
- Midas & Butterfield Creeks
- Major Canal/Jordan River
- Potential Detention Facility Site

NORTH:

SCALE: 0 1,500 3,000 Feet

MIDAS CREEK RECOMMENDED ALTERNATIVE 5 IMPROVEMENTS AND COST ESTIMATE

SALT LAKE COUNTY

SOUTHWEST CANAL AND CREEK STUDY

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FIGURE NO. 6-5.3

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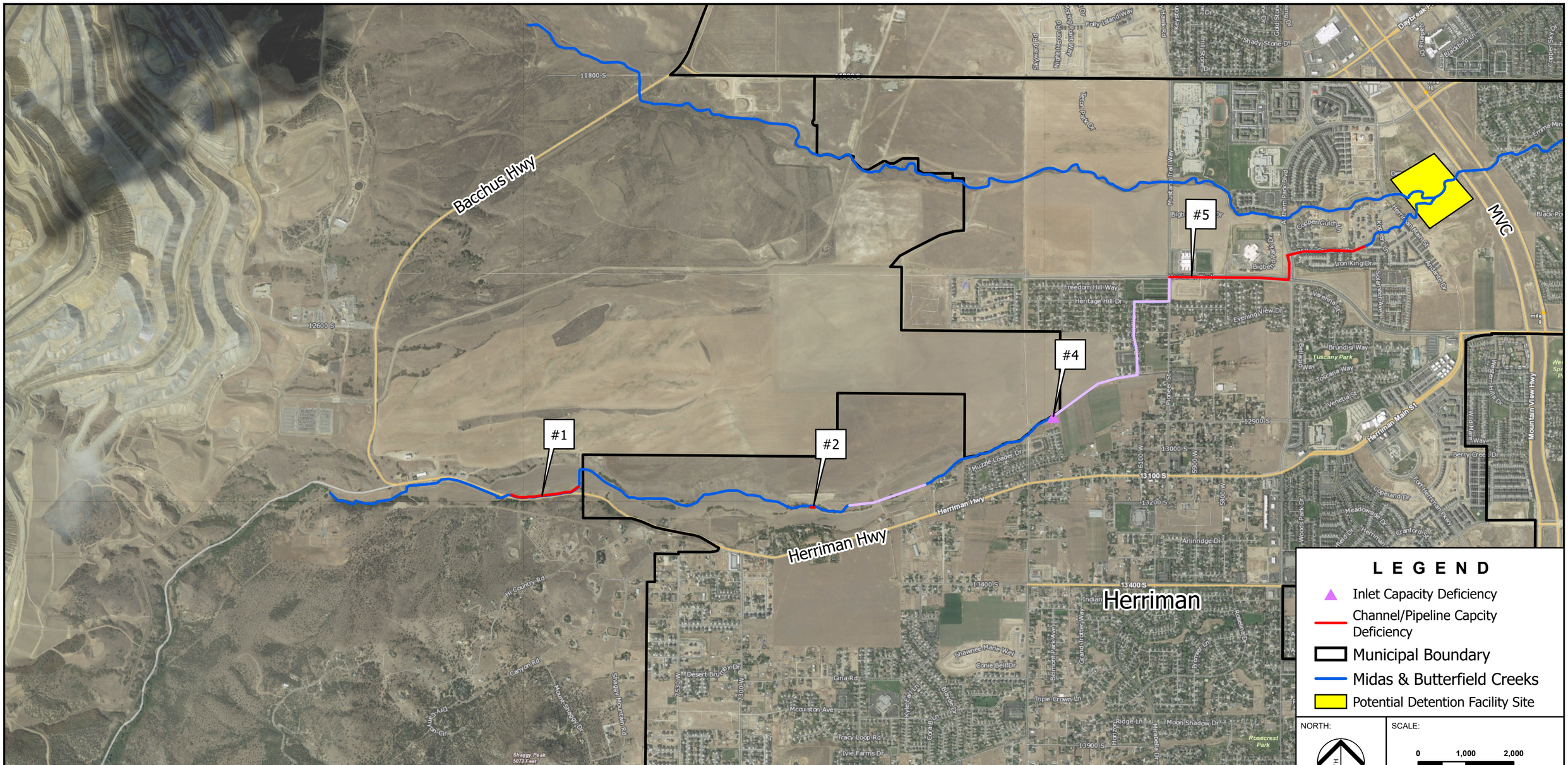

Improvement ID	Project Improvement	Cost
1	Redefining 1,450 LF of channel banks along Bacchus Hwy near Farm Field [1]	$ -
2	Raise 520 LF of Left Bank Upstream of Culvert 2 [2]	$ 56,400.00
4	Replace Intake Structure to Butterfield Creek Pipeline	$ 120,000.00
5	Replacing 4,700 LF of 5-ft pipe with a 6-ft pipe from 6000 West to Ryeland Ln	$ 1,974,000.00
	Total Cost for Butterfield Creek Improvements:	**$ 2,150,400.00**

[1] Redefining channel should be part of future development and paid for by the developer to protect new contstruction from risk of flooding.

[2] Currently under construction, left bank grading plan is not adequate for protection from risk of flooding.

LEGEND

- Inlet Capacity Deficiency
- Channel/Pipeline Capcity Deficiency
- Municipal Boundary
- Midas & Butterfield Creeks
- Potential Detention Facility Site

NORTH:

SCALE: 0 1,000 2,000 Feet

BUTTERFIELD CREEK
RECOMMENDED ALTERNATIVE 5
IMPROVEMENTS AND COST ESTIMATE

SALT LAKE COUNTY
SOUTHWEST CANAL AND CREEK STUDY

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FIGURE NO. 6-5.4

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Limit flow in Midas Creek to 210 cfs or less

Divert Storm Water into Storm Drain Pipe Along 114th South to Jordan River

Summary of Large Storm Drain Pipe Along 11400 South		
Pipeline Size (in)*	Approximate Cost	Required Design Flow
78	$ 3,010,000.00	560
90	$ 3,810,000.00	960

Note *:
Pipeline size will vary depending on which alternative is selected
Alternatives 1, 3, & 5 would require a 78-inch Pipe
Alternatives 2 & 4 would require a 90-inch Pipe

LEGEND

Midas Structures
- Existing Bridge
- Existing Culvert
- Midas Creek
- 11400 South Pipeline
- Jordan River

NORTH:

SCALE: 0 150 300 Feet

ALTERNATIVE 6 - INSTALL PIPE ALONG 114TH SOUTH TO JORDAN RIVER

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SOUTHWEST CANAL AND CREEK STUDY

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FIGURE NO. 6-6

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