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ENGINEERING REPORT

Bartons Creek Tributary 3
Drainage Improvements

PREPARED FOR:

City of Lebanon Engineering Department

PREPARED BY:

Neel-Schaffer, Inc.

March 31, 2011

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Introduction

It has been reported that the Maple Hill Sports Complex on Carver Lane and several other businesses located between the Nashville & Eastern Railroad and Highway 70 (Lebanon Road) suffered flood damages during the May 2010 flood.

The City of Lebanon commissioned Neel-Schaffer, Inc. to perform a comprehensive drainage analysis of this area in order to identify conceptual drainage improvements that will help reduce flooding. The following report describes methodology utilized and results obtained in the drainage analysis. In addition, both structural improvements and routine maintenance items were identified, and preliminary estimated project costs are included.

Field Review

The field review began at the detention pond behind the Publix grocery store where Maple Hill Road intersects the railroad. The water empties from the detention pond and flows east, passing through a junction box with a 48-inch reinforced concrete pipe (RCP) outlet. The pipe empties into a 48-inch corrugated metal pipe (CMP). The pipe empties into a ditch that runs through a series of stone check dams and intersects with a ditch that collects runoff from a 15" CMP parking lot drain before turning south. The ditch intersects with another ditch that collects runoff from two (2) 15" CMP, turns east, and flows through three (3) 21" RCPs. These pipes also collect water from street drainage along the north side of Highway 70 and then empty into a ditch that runs east toward a 24" CMP. The water is then emptied into a ditch running east that collects runoff from the 30-foot by 5.5-foot box culvert at Highway 70 as well as a detention pond located behind Corn Crib Health Store and flows through a 30-foot by 6-foot box culvert located on Cedar Crossing Lane. Once through the culvert, the ditch continues east and flows through a concrete ditch that collects runoff from a detention pond at a business park under construction. The ditch continues east and then intersects with a ditch draining from a 32" RCP cross drain on Highway 70 near Trinity Drive. The ditch then flows east through a 24-foot by 4-foot box culvert located on Carver Lane, continues east alongside Maple Hills Sports Center and empties into the main creek (Tributary 3 to Bartons Creek) flowing north.

The stream crosses the railroad through four (4) pipes—two (2) 48" CMPs and two (2) 48" RCPs. Before crossing the railroad, the stream flows north through a flat area (where the ditch along Maple Hill Sports Center empties) and two (2) natural detention areas on the east bank. From the east bank, the stream also collects runoff starting at a ditch behind the K-mart lot. This ditch flows west into a 24" CMP parking lot drain that empties into another ditch. The ditch continues west and flows into a 20" RCP cross drain on West Baddour Parkway. This pipe empties into a ditch that empties into the main creek.

Watershed Description

The watershed covers an area of approximately 1,396 acres (2.18 square miles), and extends from Nashville & Eastern Railroad (railroad) to the southwest approximately two miles. The

upper portions of the watershed extend to the City of Lebanon corporate limits at a point near the intersection of Hickory Ridge Road and Asbury Hawn Drive. Three primary areas of interest were identified:

- The cross drains on the main stem of Tributary 3 under Nashville & Eastern Railroad;
- Carver Lane between the railroad and Highway 70 (also known as Lebanon Road); and
- The Highway 70 cross drain at the main stem of Tributary 3 between Carver Lane and West Baddour Parkway.

All three points of interest are included in a delineated FEMA floodplain. As shown on Figure 1, Tributary 3 to Bartons Creek has been designated as a Zone AE floodplain. A Zone AE floodplain has 100-year flood elevations determined by detailed methods. All proposed improvements within Zone AE must comply with FEMA regulations.

Sub-basins for the watershed were delineated to provide an estimation of the storm water runoff at each of the areas of interest. The sub-basin boundaries were estimated based on the 5-foot interval topographic mapping provided by the City, and from information obtained during the field review.

The hydrologic model used in this analysis is HEC-HMS, developed by the U.S. Army Corps of Engineers. The Soil Conservation Service (SCS) method was used to compute storm water runoff for various frequency recurrence intervals. The SCS procedure is based on land use, soil data, and other topographic features which together are used to estimate the runoff potential (known as the Runoff Curve Number) at each area of interest.

Land use within the watershed was determined from aerial photography and information gathered during the field review. Land use along Highway 70 is primarily commercial with some undeveloped open space. An area generally bounded by Blair Lane on the east, Indian Hill Road on the north, and Hickory Ridge Road on the south is largely undeveloped. The remainder of the watershed contains medium density residential development. Hydrologic Soil Group data was obtained from the Natural Resource Conservation Service (NRCS). Runoff Curve Numbers within the watershed range from 77 to 86, which reflects the varying degree of urbanization within the watershed. A summary of the hydrologic parameters is presented on Figure 1.

Analysis of Existing Storm Water Runoff

Storm water runoff is collected by two separate drainage systems, western and southern, which form a confluence just south of the railroad. The western drainage system collects runoff from approximately 582 acres (0.91 square miles) before discharging to the Carver Lane cross drain near Maple Hill Sports Center. The southern system, which is named Tributary 3 to Bartons Creek, collects runoff from approximately 762 acres (1.19 square miles) and discharges to the Highway 70 cross drain. The two systems combine in the area between Highway 70 and the railroad.

During the technical analysis, it was determined that the existing four (4) railroad cross drains are undersized in relation to the amount of storm water runoff collected. The cross drain consists of

two (2) 48" CMPs and two (2) 48" RCPs. During the field review, it was noted that the pipes are elevated above the channel. This causes water to pond before flowing through the pipes, and contributes to the inadequate capacity of the cross drain. The capacity of the railroad cross drain, assuming no overtopping of the railroad, is 550 cubic feet per second (cfs). This is significantly below the 2-year storm discharge of 957 cfs. Since the railroad crossing is situated within a Zone AE floodplain, the 100-year discharge would be used as a basis for all improvements. The existing 100-year runoff at the railroad is 2,791 cfs, which is five times the capacity of the existing cross drain. A summary of the existing storm water runoff at the three points of interest is presented on Figure 1.

Analysis of Drainage Improvement Alternatives

Two drainage improvement alternatives were considered for the mitigation of the flooding issues at Carver Lane and Highway 70. The first alternative to be considered is the replacement of the railroad cross drain with a structure that would provide sufficient capacity for the existing 100-year storm water discharge. Secondly, a number of detention basins were modeled in an effort to reduce the existing discharges.

Alternative 1 - Railroad Cross Drain Replacement

The hydraulic model used for the FEMA floodplain delineation was obtained from FEMA and used as a basis for the hydraulic analysis of the existing railroad culverts. The appropriate cross sections were corrected or modified to determine the hydraulic performance of the existing pipes under current conditions. It is important to note that no field survey was conducted as a part of this study. Data used in the updated hydraulic model was obtained from the 5-foot interval topographic mapping provided by the City and from measurements obtained during the field review. Therefore, the results of the updated hydraulic model can only be regarded as conceptual.

Several types of infrastructure replacements were evaluated. It was determined that the only type of structure that will provide enough capacity to convey the 100-year discharge of 2,791 cfs is a 100 foot bridge, consisting of four 25-foot spans. The bridge would lower the existing 100-year water surface between the railroad and Highway 70 by 2.7 feet or more.

As mentioned previously, the existing pipes are perched above the channel. Installation of the bridge would lower streambed invert elevation through the railroad embankment by approximately 0.62 feet. The lowering of the channel, combined with the larger opening, will reduce the storm water storage behind the railroad embankment. It is possible that the reduction in storage could increase the discharges downstream, and thereby increase the potential for downstream flood damages. Survey data would need to be collected downstream to determine if the channel and downstream bridge crossings have enough capacity to convey the additional discharge through the proposed bridge that was previously being stored behind the railroad embankment.

Figure 2 presents the bridge cross section used in the hydraulic model. Table 1 summarizes the reduction in flood elevations that could result with the proposed bridge in place. Figure 3 is a

profile representation along the centerline of flow that demonstrates the potential reduction in the 100-year flood elevations as a result of constructing the proposed bridge.

		Point of Interest A Railroad	Point of Interest B Carver Ln.	Point of Interest C Lebanon Rd.
Return Period (years)	Existing Discharge (cfs)	Flood Elevation Reduction (ft)	Flood Elevation Reduction (ft)	Flood Elevation Reduction (ft)
2	957	-5.18	-4.49	-3.79
5	1319	-4.8	-4.05	-3.36
10	1630	-4.36	-3.69	-3.07
25	2063	-4.32	-3.42	-2.77
50	2418	-3.97	-3.1	-2.5
100	2791	-4.22	-3.37	-2.81

Table 1. Alternative 1 (Railroad Cross Drain Replacement) Flood Elevation Reductions

Alternative 2 – Railroad Cross Drain Replacement with Upstream Detention

During the initial phases of the project, two sites were identified that offer the potential for regional detention, which could reduce the volumes and rates of discharge to the Carver Lane and railroad crossings. Both sites are situated such that they would intercept flow from the western portions of the watershed. The first site is located immediately west of Carver Lane on an undeveloped parcel of land. The second site is immediately south of Highway 70 and east of Blair Lane. This tract is also undeveloped, although the western portion of the parcel is currently used for local storm water detention.

A 4.2 acre detention basin, with a depth of six feet, was modeled adjacent to Carver Lane. A second detention basin, 3.4 acres in size, with a depth of six feet, was modeled south of Highway 70. The combination of the two detention basins provides a reduction of 8% in the 5-year storm water discharges at the railroad. However, due to the topographic limitations of the two areas, there is insufficient storage capacity to provide any flow reduction at discharges greater than the 5-year storm event. Therefore, the reduction in storm water discharges resulting from upstream detention is not enough to relieve the flooding issues of the area without the aforementioned 100-foot bridge at the railroad cross drain. The analyses of these two detention basins should be verified with field-run survey data in the future.

Two additional sites were identified for potential local detention; a natural low area behind Burchett Ford and east of Publix, and the area west of the West Baddour Parkway cross drain (adjacent to Highway 70). Both areas could be modified to intercept local storm water runoff,

but analysis shows that the reduction in discharges at the railroad would be negligible for events greater than the 2-year storm. Given the expense of construction and minimal benefits, these two additional locations are not considered to be viable sites for detention basins.

Table 2 summarizes the potential flood elevation reduction for Alternative 2. Figure 4 shows the location of the two detention basins considered for Alternative 2 as well as the results of the storage evaluation, and Figure 5 graphically illustrates the reduction in the 2- and 5-year water surface elevations. It should be noted the reduction in water surfaces for the 10- thru 100-year events are the same as for Alternative 1. Table 2 summarizes the potential flood elevation reduction for Alternative 2.

		Point of Interest A Railroad		Point of Interest B Carver Ln.		Point of Interest C Lebanon Rd.	
Return Period (years)	Existing Discharge (cfs)	Discharge Reduction Due to Detention	Flood Elevation Reduction (ft)	Discharge Reduction Due to Detention	Flood Elevation Reduction (ft)	Discharge Reduction Due to Detention	Flood Elevation Reduction (ft)
2	957	-22.3%	-5.56	-35.3%	-4.93	0%	-4.19
5	1319	-8.0%	-4.94	-10.2%	-4.21	0%	-3.5
10	1630	0%	-4.36	0%	-3.69	0%	-3.07
25	2063	0%	-4.32	0%	-3.42	0%	-2.77
50	2418	0%	-3.97	0%	-3.1	0%	-2.5
100	2791	0%	-4.22	0%	-3.37	0%	-2.81

Table 2. Alternative 2 (Railroad Cross Drain Replacement with Upstream Detention) Flood Elevation Reductions

A description of the proposed structural alternatives and preliminary estimated project costs are shown below. The following costs include engineering/design fees, FEMA review fees (where applicable), and provision for 20% contingency:

Structural Alternatives (See Figures 2, 3, 4, and 5)	**Preliminary Estimated Project Cost**
Alternative 1: Replace existing (4) railroad culverts with 100-foot, multi-span railroad bridge and lower the streambed elevation.	$ 308,400.00
Alternative 2: Alternative 1 plus construct a 4.2 acre detention pond adjacent to Carver Land, and construct a 3.4 acre detention basin south of Highway 70.	$ 677,500.00

Routine Maintenance

In addition to the proposed structural improvements described above, numerous routine maintenance issues were found throughout the study area during the field reconnaissance. Examples of required maintenance items include removing sediment buildup from culvert inlets, removing excess vegetation and debris from culvert inlets, and regrading channels to improve capacity. While correcting these deficiencies will not solve flooding problems, it is critical to correct them sooner, rather than later, so that the drainage system can function as designed and conditions do not worsen, leading to possible flooding problems in the future. In addition, it is important to note that areas identified as requiring remediation should be regularly scheduled for maintenance by City crews to prevent future buildup of debris and sediment. A map showing locations identified as requiring maintenance is included as Figure 6. In addition, a document containing captioned photographs of each maintenance location is included as Appendix A, with locations and orientations of each photograph indicated with red arrows on Figure 6. A preliminary cost estimate for the proposed maintenance items are shown below:

Infrastructure Maintenance Items (See Figure 6)	**Preliminary Estimated Project Cost**
1. Channel cleanout at seven locations (Items 1, 2, 4, 6, 8, 9, 10) – 1,550 L.F.	$ 7,750.00
2. Debris/sediment removal from culvert ends at six locations (Items 3, 5, 7, 12, 13, 14)	$ 3,000.00
3. Culvert end repair at one location (Item 11)	$ 1,000.00
Total Maintenance Cost	**$ 11,750.00**

It should be noted that no field survey data was available for this study. Elevations were estimated based on the 5-foot interval topographic mapping provided by the City, and from information obtained during the field reconnaissance. Therefore, evaluation of the proposed improvements included in this study should be regarded as conceptual.

The above costs do not include property acquisition, which will be necessary if detention ponds are constructed. It is estimated that the Carver Lane detention pond would require a drainage easement of approximately 5.0 acres, and the Highway 70 detention pond would require an easement of approximately 4.0 acres. The proposed ponds are situated on two large, undeveloped tracts of land. The large undeveloped tract adjacent to Carver Lane is owned by the Eskew Family, LTD. The undeveloped tract adjacent to Highway 70 is owned by West Harbor Properties, LLC.

Future Design Considerations and Additional Analysis

As previously mentioned, the study area is within a FEMA Zone AE floodplain. Therefore, any modification to the railroad cross drain will need to meet “no-rise” standards (i.e. no increase in the 100-year flood elevation). If a “no-rise” standard cannot be achieved, a Conditional Letter of

Map Revision (CLOMR) will need to be approved by FEMA before commencement of construction of the new structure.

To meet the requirements of a "no-rise" or CLOMR, a full topographic survey will need to be conducted of the railroad crossing area. This will enable hydraulic modeling to be done in compliance with FEMA standards.

It will also be necessary to evaluate the hydrologic impacts of a larger bridge opening under the railroad. As previously mentioned, it is possible that the larger opening will release runoff that is currently stored behind the railroad embankment during large storm events, thereby increasing the flood discharges downstream of the railroad. Before the previously mentioned Alternative 1 or Alternative 2 are implemented, it will be necessary to extend the study to the north, or downstream, to the Toshiba Road bridge crossing.

Although many steps will have to be taken prior to implementing structural drainage improvements in the study area, including survey and design; the infrastructure maintenance items discussed above and shown in Figure 6 can be performed by City crews immediately.

Bartons Creek Trib. 3
Hydrologic Parameters

Subbasin	Area (ac)	Area (sq. miles)	Runoff Curve No.	Lag Time (min)
A	17.1	0.027	85	5.9
B	19.8	0.031	93	23.7
C	13.6	0.021	96	13.0
D	240.3	0.376	84	33.4
E	339.0	0.530	81	56.5
F	183.8	0.287	77	49.6
G	16.8	0.026	84	30.0
H	7.3	0.012	89	9.3
I	5.4	0.008	85	13.8
J	23.6	0.037	90	12.2
K	172.5	0.270	83	41.6
L	357.3	0.558	78	41.0
Watershed	1396.4	2.18		

Point of Interest B
Carver Lane

Point of Interest A
Railroad

Point of Interest C
Lebanon Rd.
(Highway 70)

Existing
Quarry Lake

Sub-Basin A
Sub-Basin B
Sub-Basin C
Sub-Basin D
Sub-Basin E
Sub-Basin F
Sub-Basin G
Sub-Basin H
Sub-Basin I
Sub-Basin J
Sub-Basin K
Sub-Basin L

Hampton Dr.
Roanoke Dr.
Cambridge Rd.
Bethlehem Rd.
Leilani Dr.
Geers Ct.
Geers Dr.
Palani Cir.
Gray's Ln.
Maple Hill Rd.
Monument Ln.
Cook Dr.
Greentree Point Cir.
Blairmont Dr.
Pocahontas Tr.
Cherokee Dr.
Indian Hill Rd.
Hiawatha Dr.
Private
Churchhill Downs
Cedar Crossing Ln.
Lebanon Rd.
Carver Ln.
W. Baddour Pkwy.
Babb Dr.
McCowin Dr.
Woodhaven Ct.
Trinity Cir.
Trinity Dr.
Noah Ct.
W. Main St.
Signature Pl.
Rollingwood Dr.
Hillcreek Dr.
Plymouth Dr.
Standish Dr.
Jamestown Dr.
Mayflower Way
Woodside Dr.
Babb Ct.
Bay Ct.
ST. HWY. 24
Idlewild Dr.
Knob Rd.
Edgewood Dr.
Shady Cir.
Dogwood Dr.
Windmill Dr.
Blair Ln.
Shady Crest Dr.
Westland Dr.
Winwood Dr.
Providence Dr.
Rocky Rd.
Westhill Dr.
Hickory Ridge Rd.
Colgate Ave.
Crowell Ln.
Fox Run
Hickory Valley Rd.
Foxglove Cir.
Greenbriar Trace
Manor Pl.
Ten Oaks Dr.
Greensward Ave.
Asbury Hawn Dr.
Hillock Trace
Glade Rd.
Hickory Point Dr.
Tanager Pl.
Nina Cir.
Briarhill Rd.
Vine Way
Leah Ct.
Colchester Cir.

Area B - Bartons Creek Trib. 3
Existing Runoff Summary

Return Period	Point of Interest A Nashville & Eastern Railroad Drainage Area = 2.18 sq. mi. Existing Discharge (cfs)	Point of Interest B Carver Lane Drainage Area = 0.91 sq. mi. Existing Discharge (cfs)	Point of Interest C Lebanon Road Drainage Area = 1.19 sq. mi. Existing Discharge (cfs)
2-year	957	487	440
5-year	1319	677	604
10-year	1630	841	745
25-year	2063	1069	940
50-year	2418	1257	1101
100-year	2791	1454	1269

Legend

- Sub-basin Boundaries
- Streams
- Railroad
- Existing Culverts
- City Limits
- FEMA Zone AE

City of Lebanon Drainage Analysis
Bartons Creek Tributary 3
Drainage Improvements

N W E S

1 inch equals 1,000 feet

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Existing Conditions Hydrology Results

Figure 1

Figure 2
Bartons Creek Tributary 3
Alternative 1 - Proposed Bridge Section

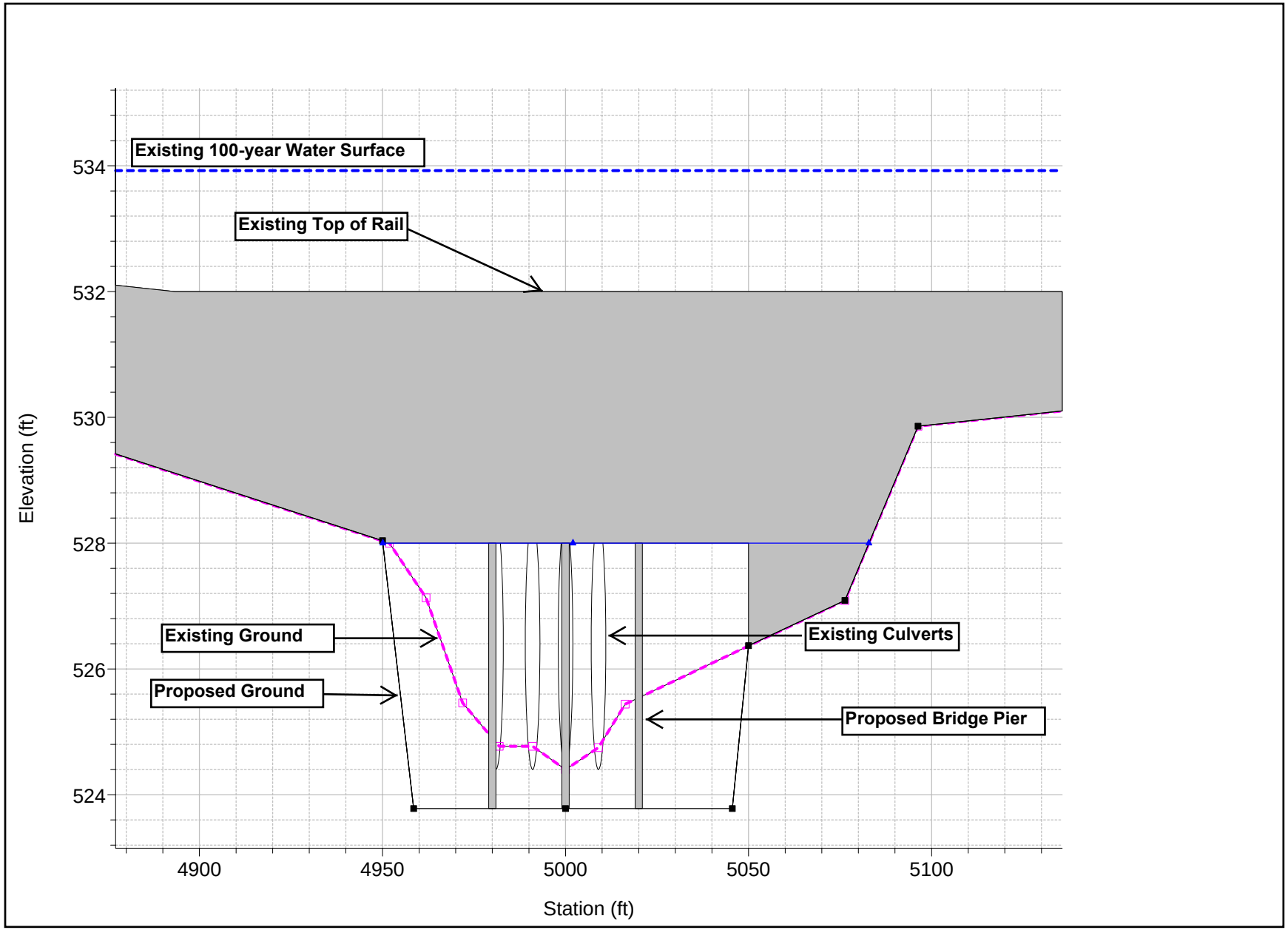
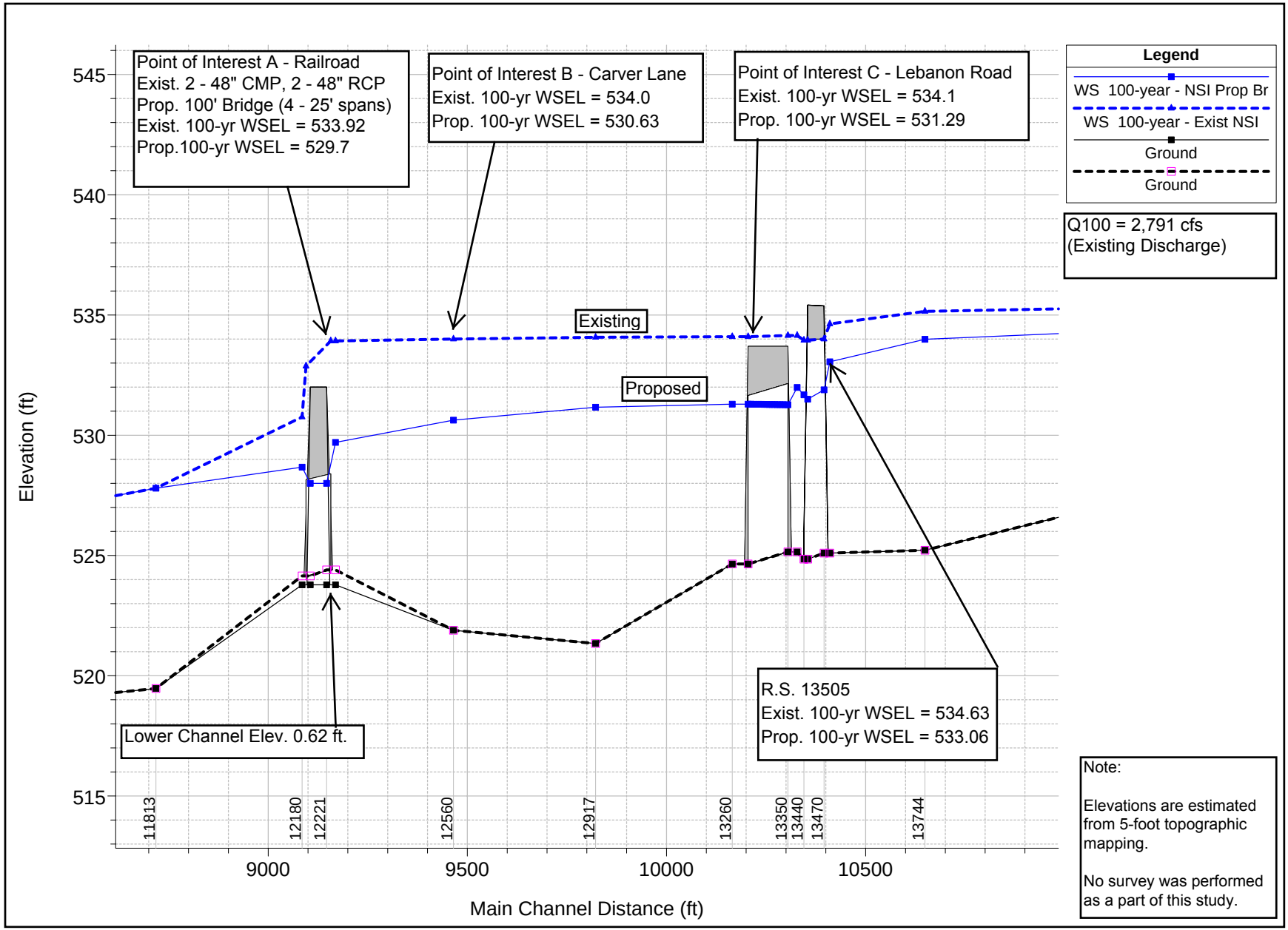


Figure 3
Bartons Creek Tributary 3
Alternative 1 - 100-year Water Surface Profiles



Potential Carver Ln. Detention Basin 5-year Design Level	
Outlet Data	
Dia. & Type	36" RCP
Number	2
Length (ft)	50
Slope	0.50%
Pond Data	
Pond IE	530
Top of Dam Elev.	536
Footprint Area (ac.)	4.2
Spillway Elev.	535
Spillway Type	Rip-Rap
Spillway Length (ft)	200

Hydrologic Data		
	5-year	100-year
Inflow (cfs)	665	1454
Outflow (cfs)	608	1454
Pool Elev	536	Above top of dam
Storage (ac.ft.)	23.1	23.1
Freeboard (ft)	0	0

Potential Lebanon Road Detention Basin 5-year Design Level	
Outlet Data	
Dia. & Type	36" RCP
Number	1
Length (ft)	50
Slope	0.50%
Pond Data	
Pond IE	540
Top of Dam Elev.	546
Footprint Area (ac.)	3.4
Spillway Elev.	545
Spillway Type	Rip-Rap
Spillway Length (ft)	200

Hydrologic Data		
	5-year	100-year
Inflow (cfs)	639	1380
Outflow (cfs)	632	1380
Pool Elev	546	Above top of dam
Storage (ac.ft.)	18.6	18.6
Freeboard (ft)	0	0

ALTERNATIVE 2 FLOOD ELEVATION REDUCTION

		Point of Interest A Railroad		Point of Interest B Carver Ln.		Point of Interest C Lebanon Rd.	
Return Period (years)	Existing Discharge (cfs)	Discharge Reduction Due to Detention	Flood Elevation Reduction (ft)	Discharge Reduction Due to Detention	Flood Elevation Reduction (ft)	Discharge Reduction Due to Detention	Flood Elevation Reduction (ft)
2	957	-22.3%	-5.56	-22.3%	-4.93	0%	-4.19
5	1319	-8.0%	-4.94	-8.0%	-4.21	0%	-3.5
10	1630	0%	-4.36	0%	-3.69	0%	-3.07
25	2063	0%	-4.32	0%	-3.42	0%	-2.77
50	2418	0%	-3.97	0%	-3.1	0%	-2.5
100	2791	0%	-4.22	0%	-3.37	0%	-2.81

Potential Lebanon Rd. Detention Basin

Potential Carver Ln. Detention Basin

Low Adjacent Ground Elev. 530

Low Adjacent Ground Elev. 530

Point of Interest A Railroad

Replace existing cross drains with 100-foot bridge.

Existing Quarry Lake

Low Adjacent Ground Elev. 530

Point of Interest B Carver Lane

Low Adjacent Ground Elev. 530.9

Point of Interest C Lebanon Road (Highway 70)

Cedar Crossing

Lebanon Rd.

Carver Ln.

Medical Center

W. Baddour Pkwy.

Greentree Point Cir.

Trinity Cir.

Trinity Dr.

Winwood Dr.

W. Main St.

Noah Ct.

Signature Pl.

Eugewood Dr.

Legend

- Streams
- Existing Culverts
- Parcels
- Buildings
- FEMA AE Flood Zone
- Proposed Detention Basins

City of Lebanon Drainage Analysis
Bartons Creek Tributary 3
Drainage Improvements

N W E S

1 inch equals 400 feet

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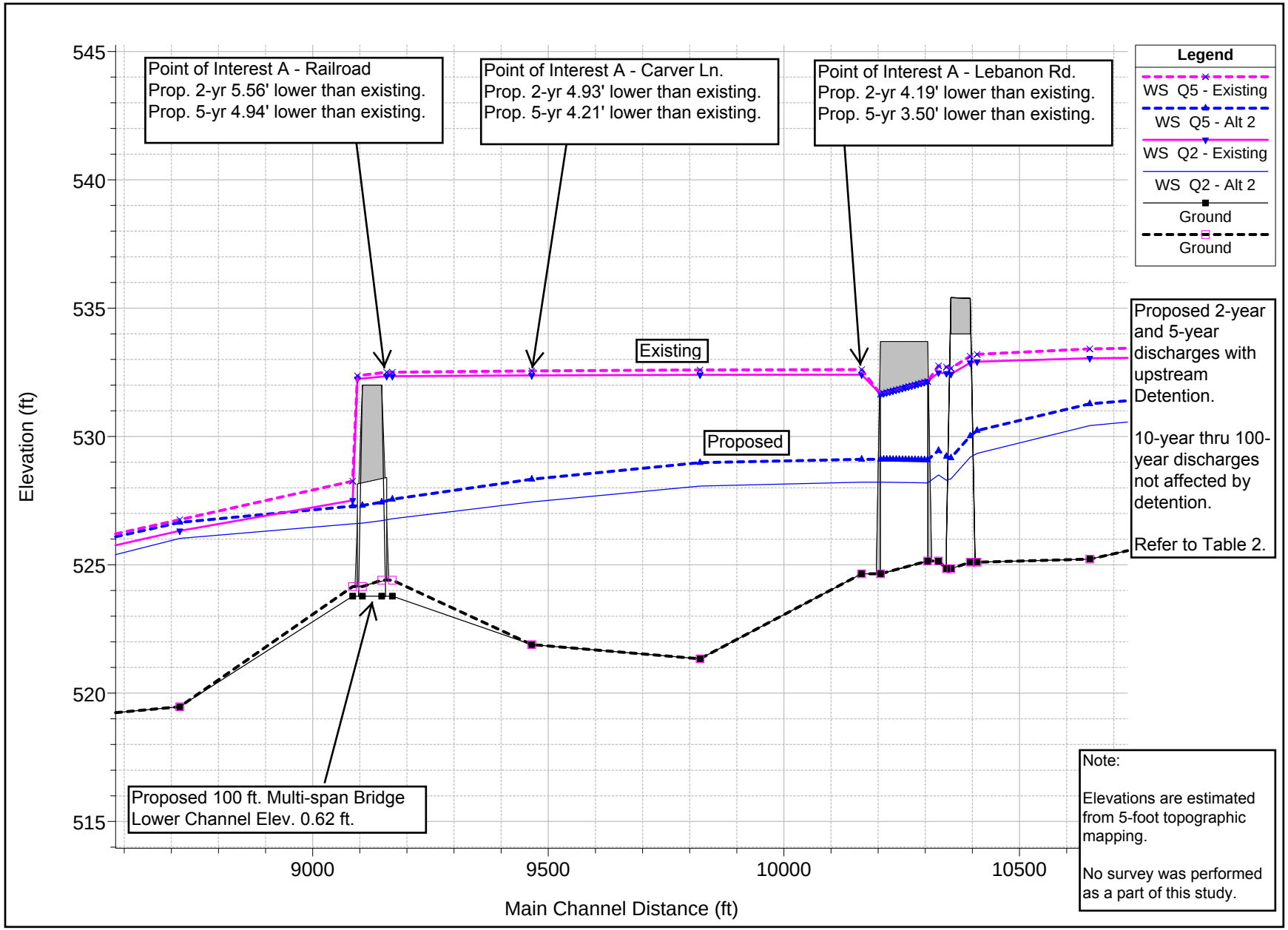
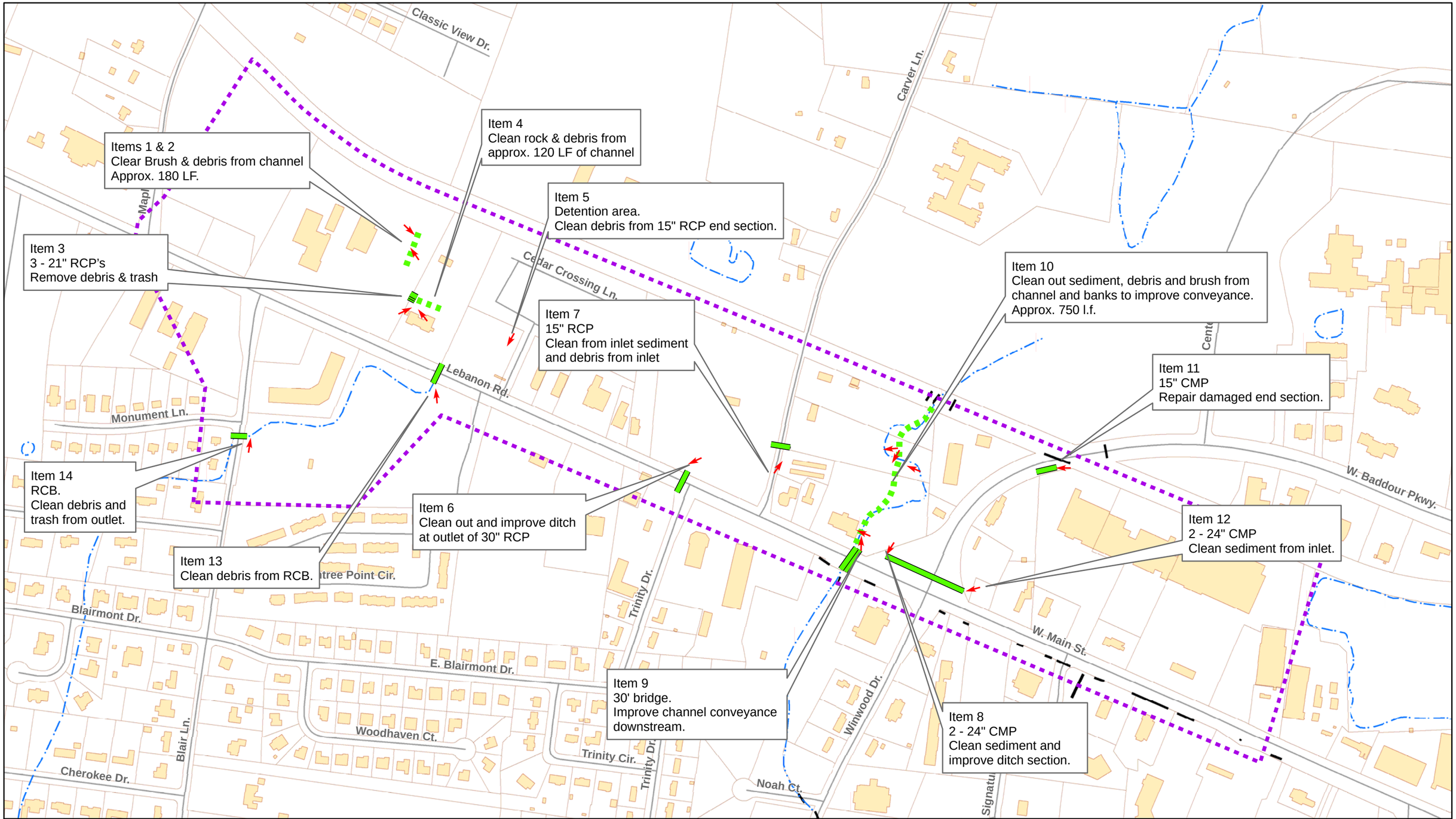
Conceptual Drainage Improvements Alternative 2

Figure 4

Figure 5
Bartons Creek Tributary 3
Alternative 2 - 2-year and 5-year Water Surface Profiles





Legend

- Streams
- Parcels
- Existing Culverts
- City Limits
- Buildings
- Area of Field Reconnaissance
- Directional Photo Log
- Stream/Ditch Maintenance Locations
- Infrastructure Maintenance Locations

City of Lebanon Drainage Analysis
Bartons Creek Tributary 3
Drainage Improvements

N W E S

1 inch equals 400 feet

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Infrastructure Maintanence Locations

Figure 6

APPENDIX A

Routine Maintenance Location Photographs

Item 1 Channel east of Burchett Ford. Clear brush & debris from approx. 180 LF of channel. Picture 1410.

Item 2 - Channel east of Burchett Ford. Remove trash from approx. 180 LF of channel. Picture 1413.

Item 3 –1655 W. Main St. Remove debris & trash from the area of 3 – 21" RCP's. Picture 1429.

Item 4 – Channel behind 1655 W. Main St. Clean rock & debris from approx. 120 LF of channel. Picture 1430.

Item 5 – Detention basin behind 1655 W. Main St. Clean debris from 15” RCP end section. Picture 1444.

Item 6 – Lebanon Rd. at Trinity Dr. Clean out and improve ditch at outlet of 30” RCP . Picture 1498.

Item 7 – 103 Carver Lane. Clean sediment and debris from inlet of 15" RCP. Picture 1507.

Item 8 – Lebanon Rd. and W. Baddour Pkwy. Clean sediment from outlet of 2 - 24" CMP and improve ditch section. Picture 1529.

Item 9 – Lebanon Rd. Improve channel conveyance downstream of 30 ft. bridge. Picture 1530.

Item 10 – Lebanon Rd. north to Railroad. Clean out sediment, debris and brush from channel and banks to improve conveyance. Approx. 750 l.f.

Looking north from Lebanon Rd. Picture 1531.

Looking north towards railroad. Picture 1542.

Looking south towards Lebanon Rd. Picture 1543.

Looking west towards Carver Ln. Picture 1548

Item 11 – Tractor Supply Co. access drive from W. Baddour Pkwy. Repair damaged end section of 15" CMP. Picture 1561.

Item 12 – W. Main St. and W. Baddour Pkwy. Clean sediment from inlet of 2 – 24" CMP. Picture 1594.

Item 13 – Lebanon Rd. Clean debris from RCB. Picture 1613.

Item 14 – Blair Ln. Clean debris and trash from outlet of RCB. Picture 1633.