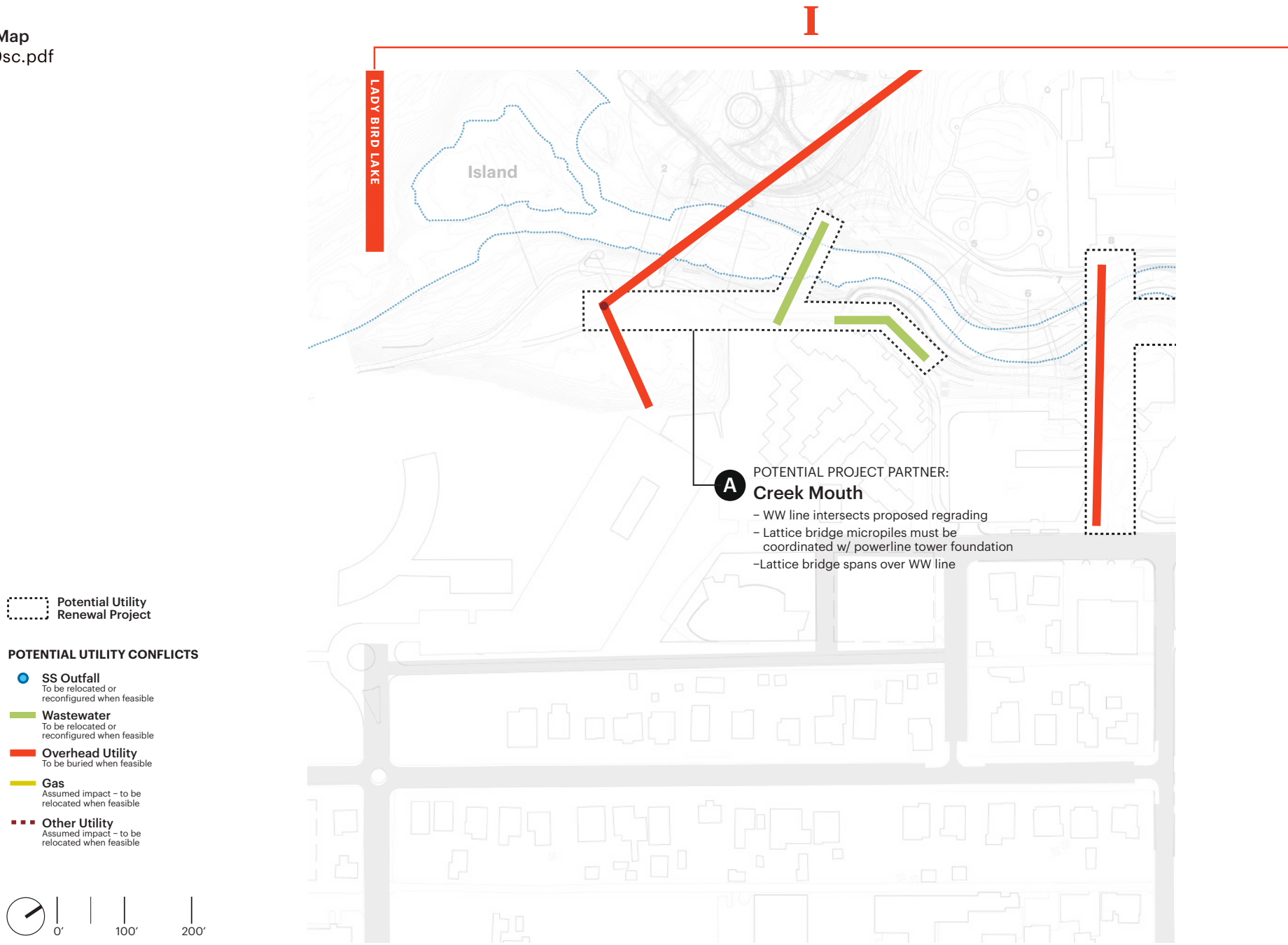
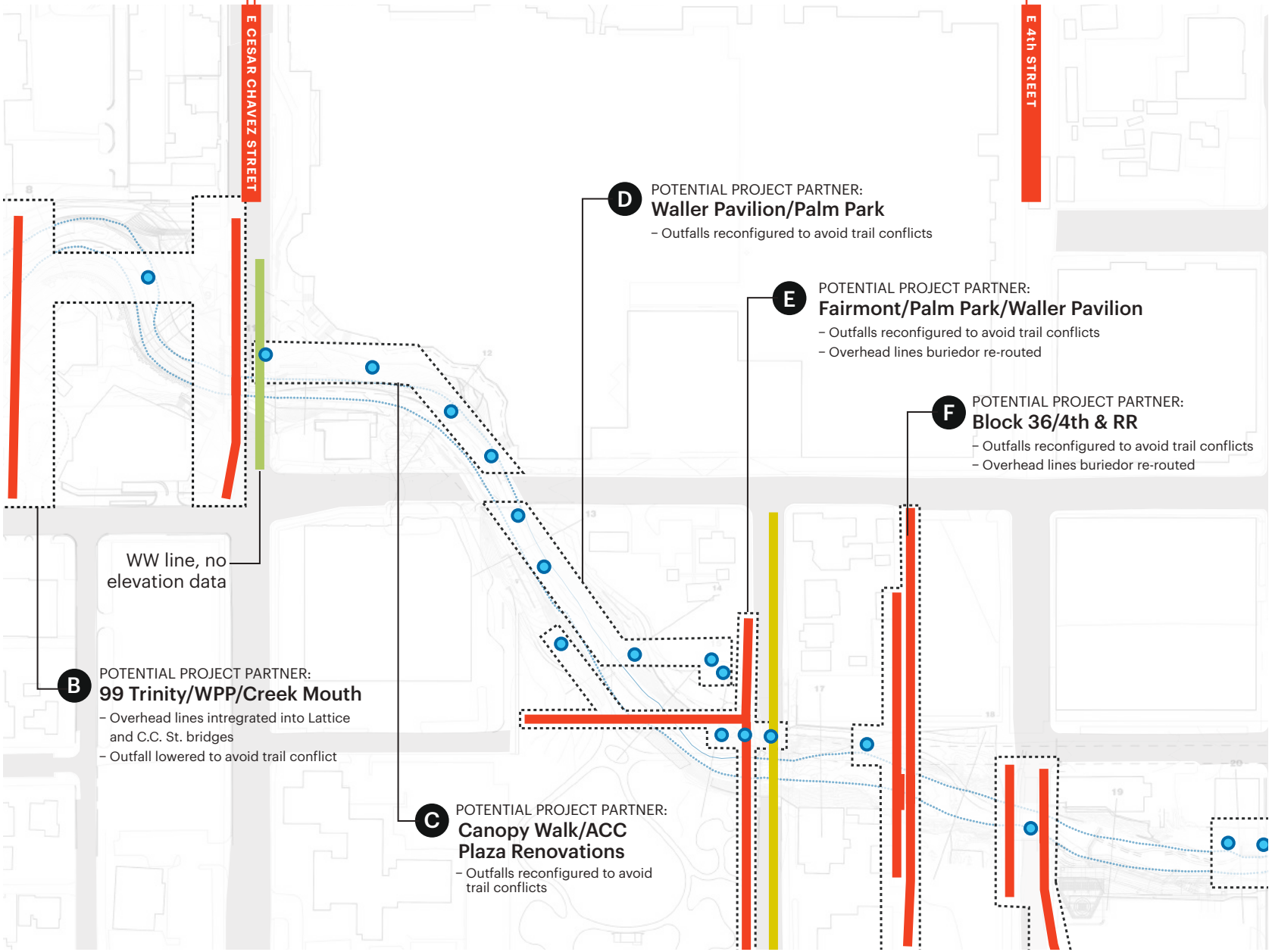
Utilities

UTILITIES

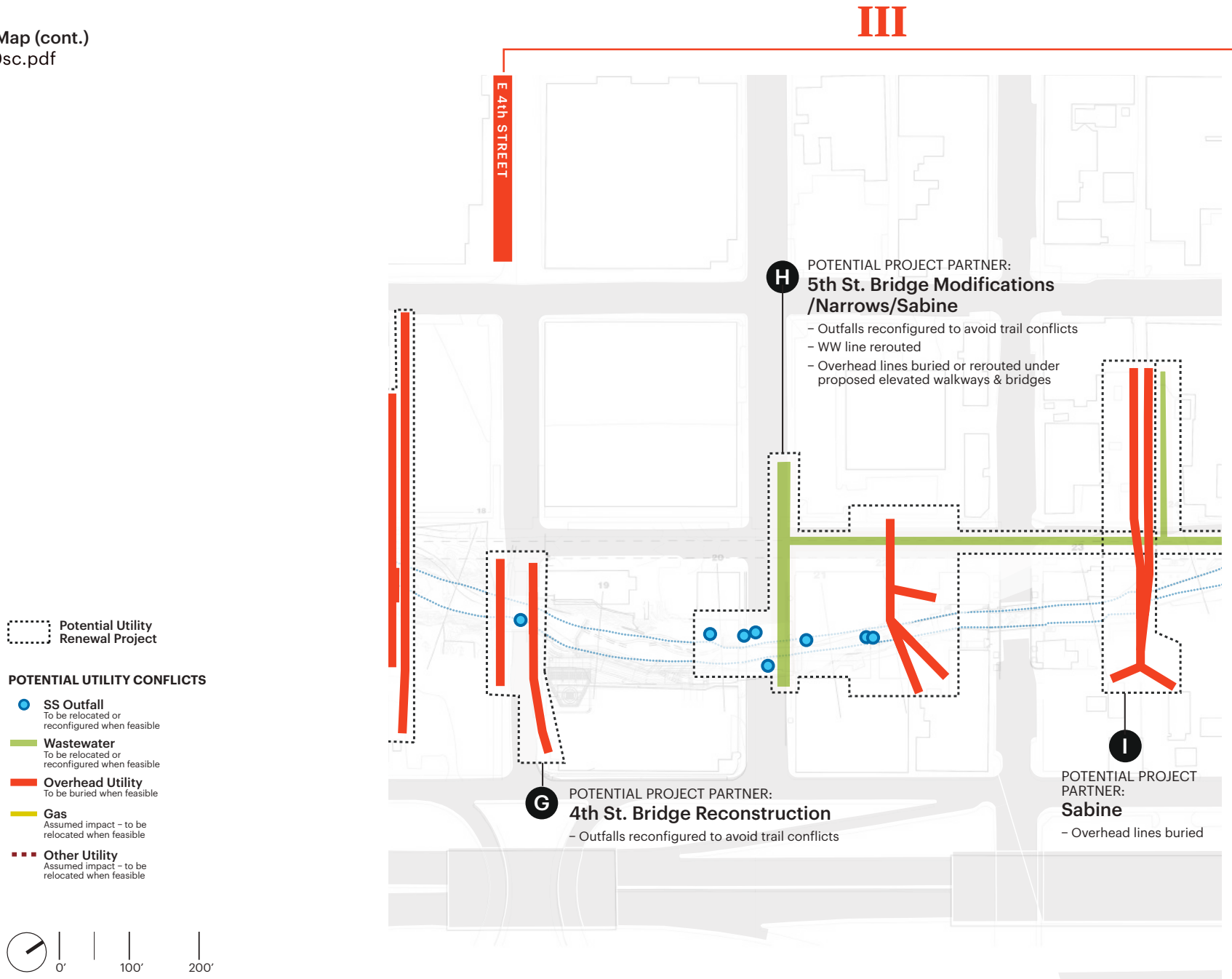
Utilites Site Map
UTILITY_300sc.pdf



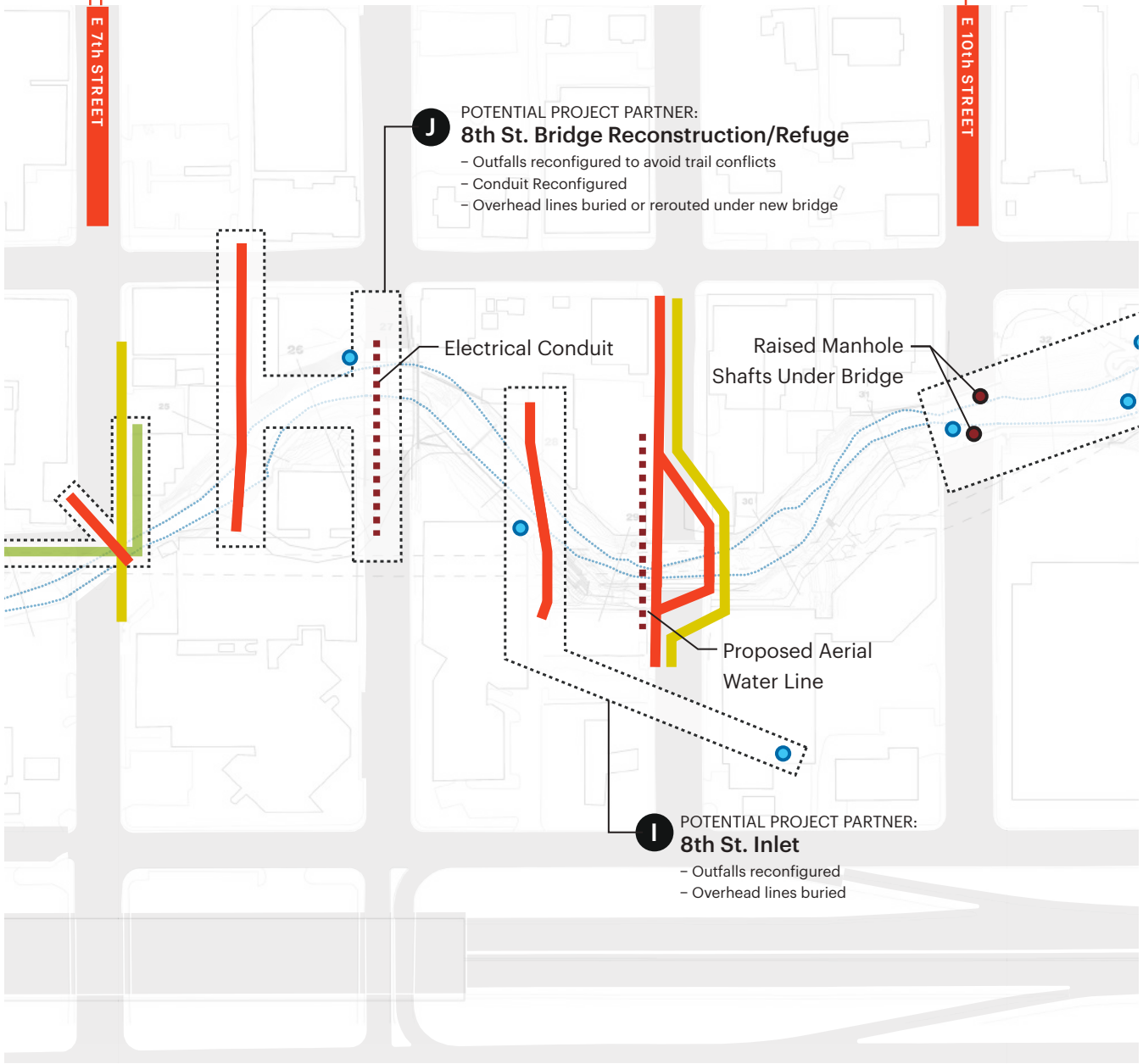

E CESAR CHAVEZ STREET
E 4th STREET
WW line, no elevation data
B
POTENTIAL PROJECT PARTNER:
99 Trinity/WPP/Creek Mouth
– Overhead lines intregrated into Lattice and C.C. St. bridges
– Outfall lowered to avoid trail conflict
C
POTENTIAL PROJECT PARTNER:
Canopy Walk/ACC Plaza Renovations
– Outfalls reconfigured to avoid trail conflicts
D
POTENTIAL PROJECT PARTNER:
Waller Pavilion/Palm Park
– Outfalls reconfigured to avoid trail conflicts
E
POTENTIAL PROJECT PARTNER:
Fairmont/Palm Park/Waller Pavilion
– Outfalls reconfigured to avoid trail conflicts
– Overhead lines buriedor re-routed
F
POTENTIAL PROJECT PARTNER:
Block 36/4th & RR
– Outfalls reconfigured to avoid trail conflicts
– Overhead lines buriedor re-routed

UTILITIES

Utilites Site Map (cont.)
UTILITY_300sc.pdf

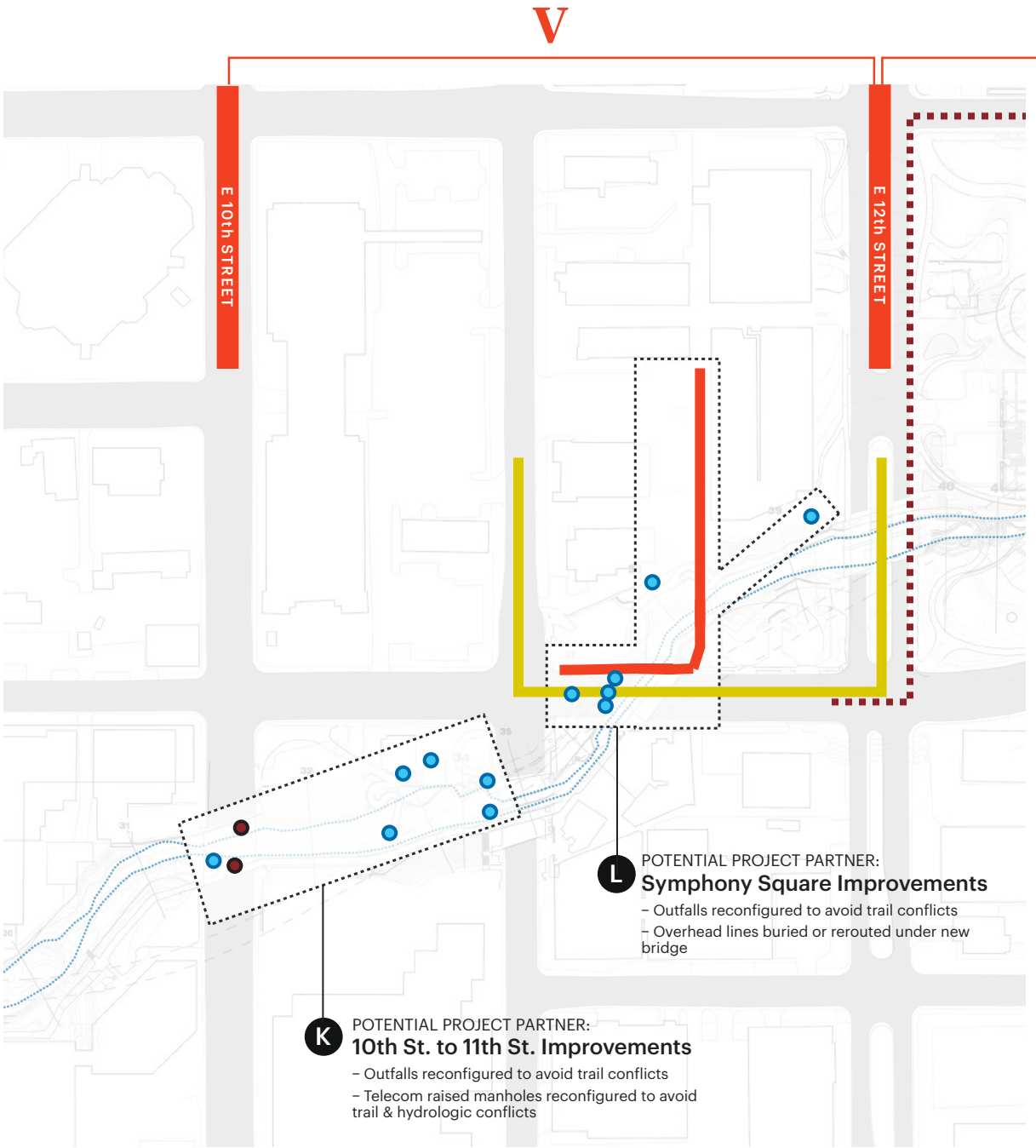


IV


E 7th STREET
E 10th STREET
J
POTENTIAL PROJECT PARTNER:
8th St. Bridge Reconstruction/Refuge
– Outfalls reconfigured to avoid trail conflicts
– Conduit Reconfigured
– Overhead lines buried or rerouted under new bridge
Electrical Conduit
Raised Manhole
Shafts Under Bridge
Proposed Aerial
Water Line
I
POTENTIAL PROJECT PARTNER:
8th St. Inlet
– Outfalls reconfigured
– Overhead lines buried

UTILITIES

Utilites Site Map (cont.)
UTILITY_300sc.pdf



Potential Utility Renewal Project

POTENTIAL UTILITY CONFLICTS

- **SS Outfall** — To be relocated or reconfigured when feasible
- **Wastewater** — To be relocated or reconfigured when feasible
- **Overhead Utility** — To be buried when feasible
- **Gas** — Assumed impact – to be relocated when feasible
- **Other Utility** — Assumed impact – to be relocated when feasible

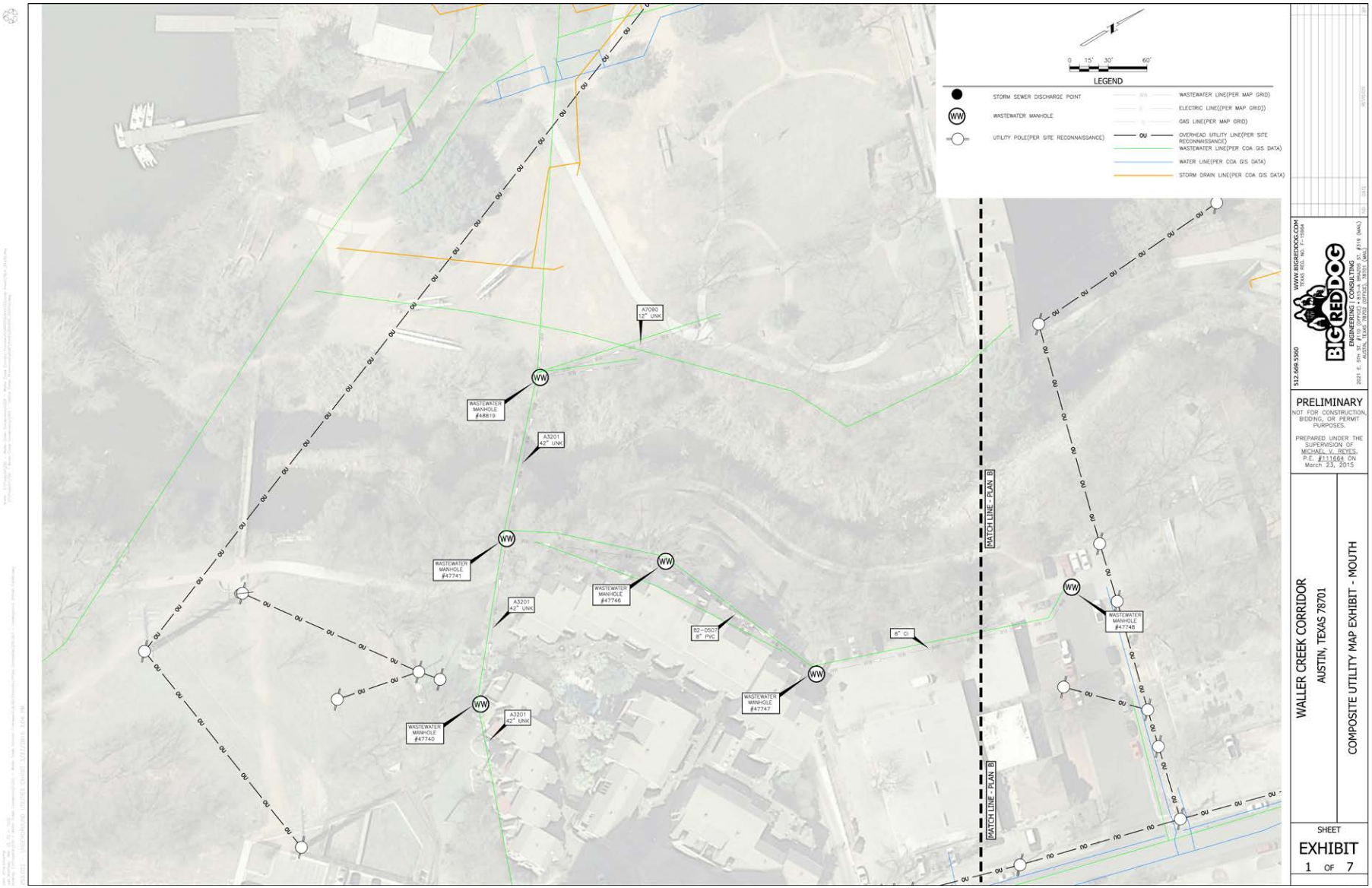
0′ 100′ 200′

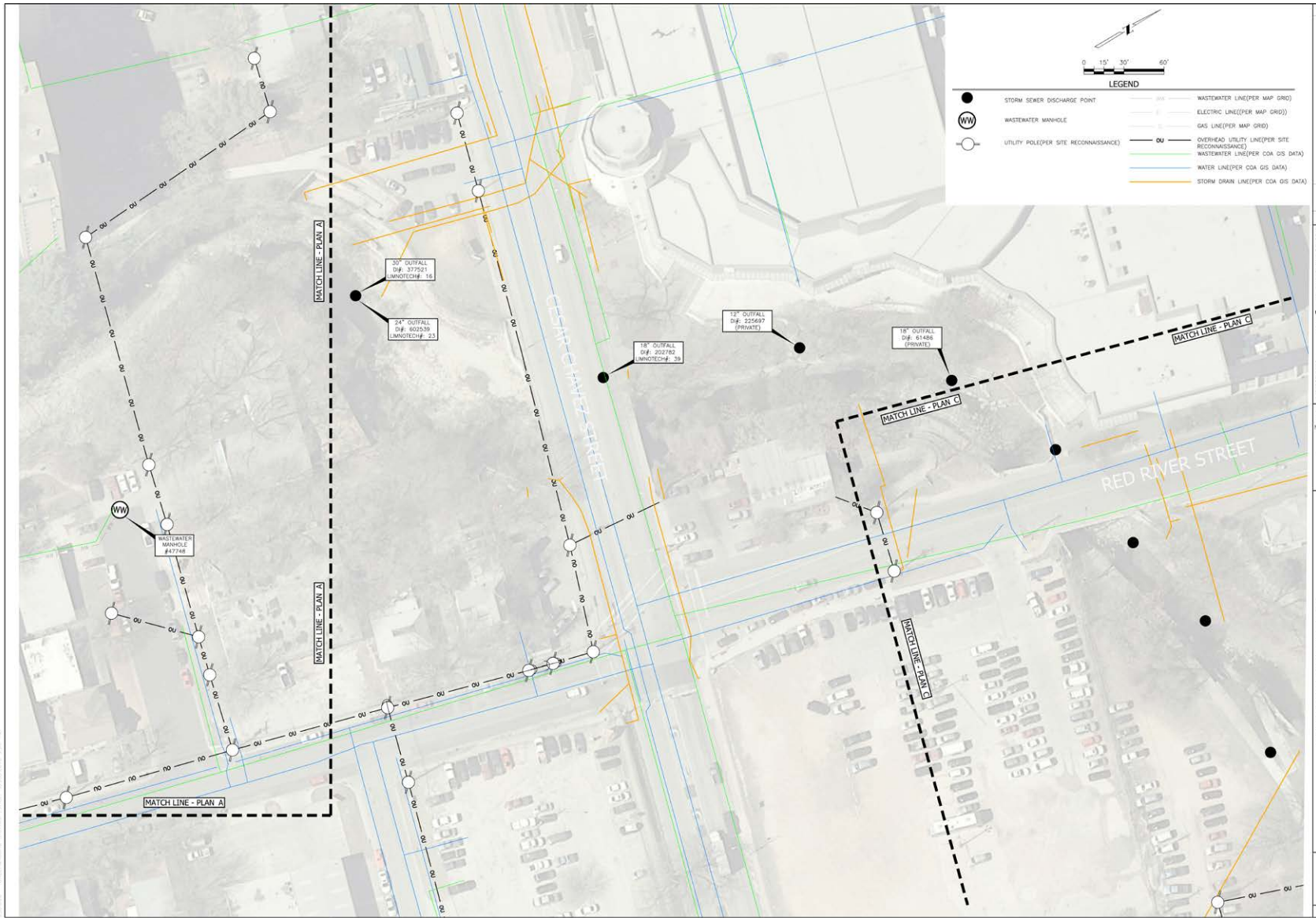
VI


M
POTENTIAL PROJECT PARTNER:
Reclaimed Water Line
– Supplemental water source for Waterloo Park irrigation
E 15th STREET

UTILITIES

Composite Utility Map Exhibit (1-2)
1-7 - 250.003 - Composite Utilities Exhibit.pdf





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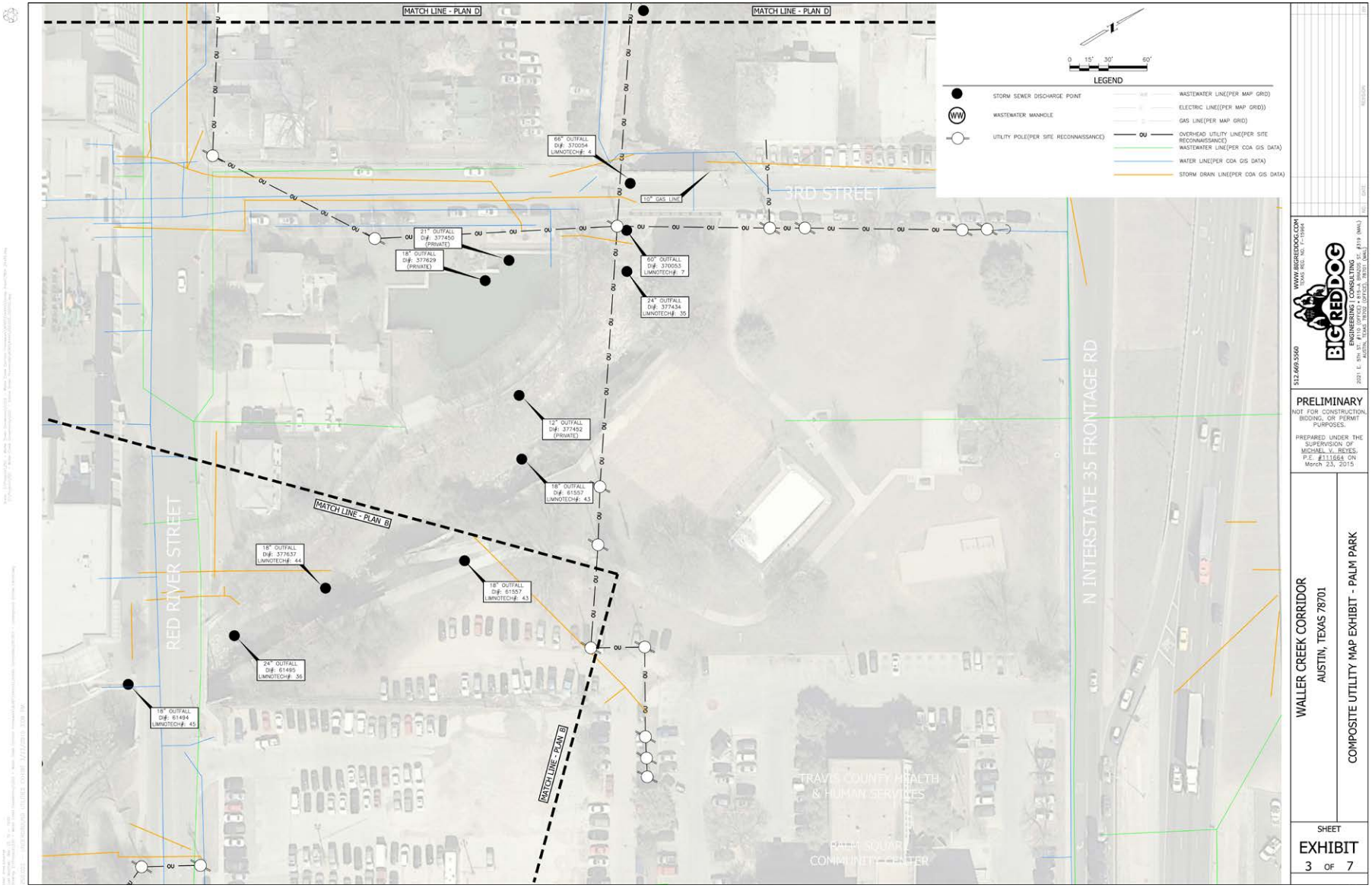
WALLER CREEK CORRIDOR
AUSTIN, TEXAS 78701

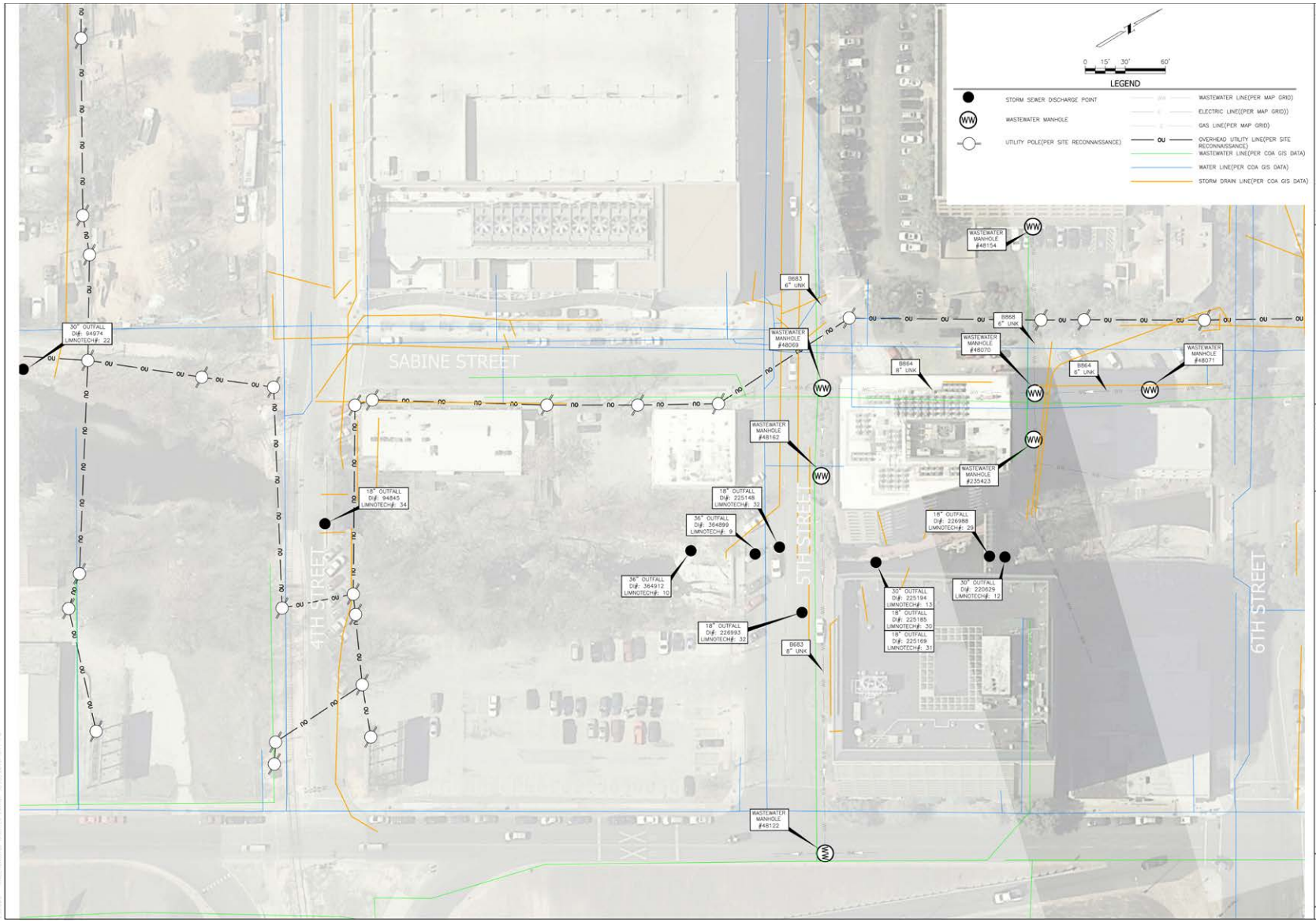
COMPOSITE UTILITY MAP EXHIBIT - CONVENTION CENTER

SHEET
EXHIBIT
2 OF 7

UTILITIES

Composite Utility Map Exhibit (3-4)
1-7 - 250.003 - Composite Utilities Exhibit.pdf





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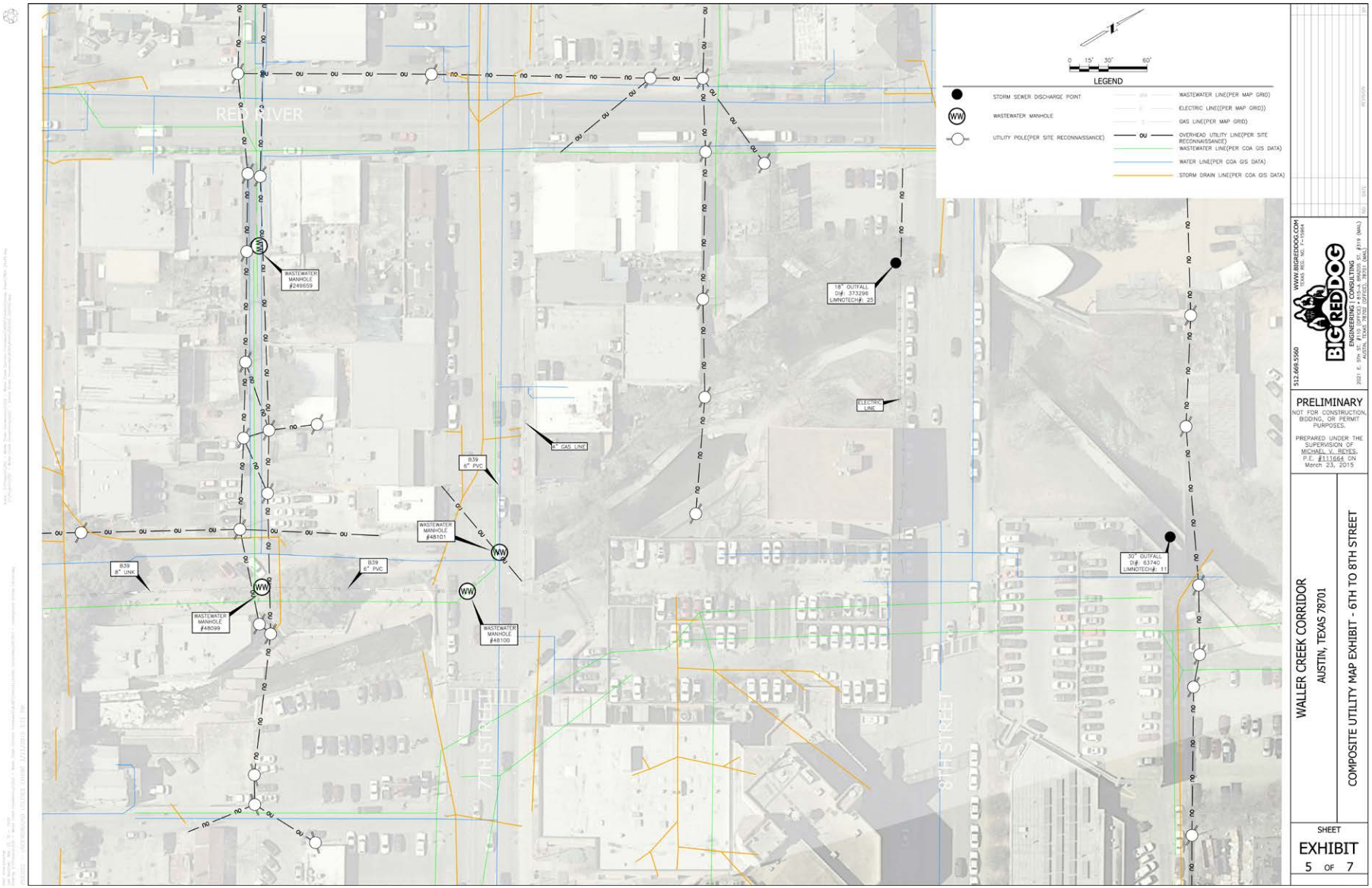
AUSTIN, TEXAS 78701

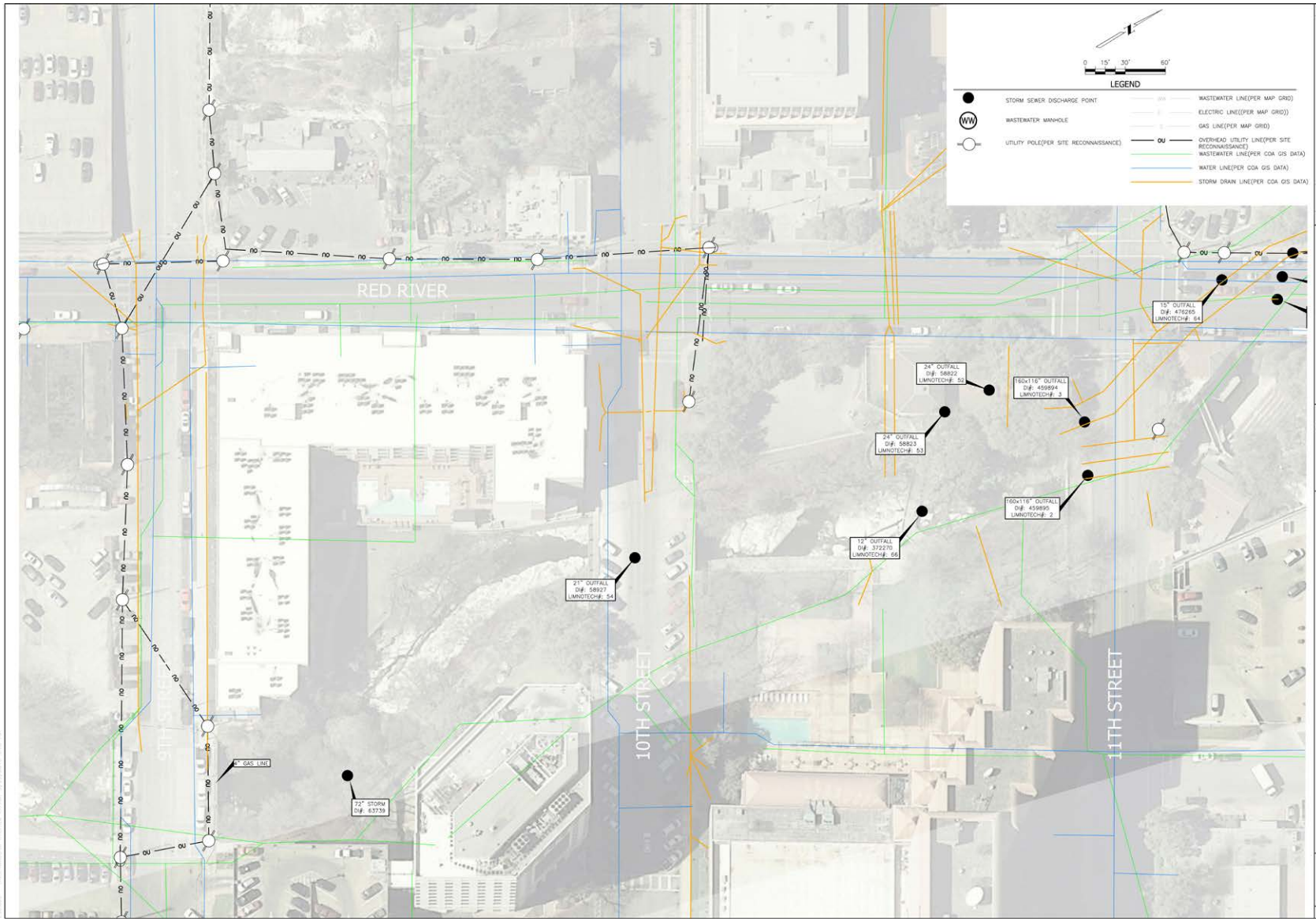
COMPOSITE UTILITY MAP EXHIBIT - 4TH TO 6TH STREET

SHEET
EXHIBIT
4 OF 7

UTILITIES

Composite Utility Map Exhibit (5-6)
1-7 - 250.003 - Composite Utilities Exhibit.pdf





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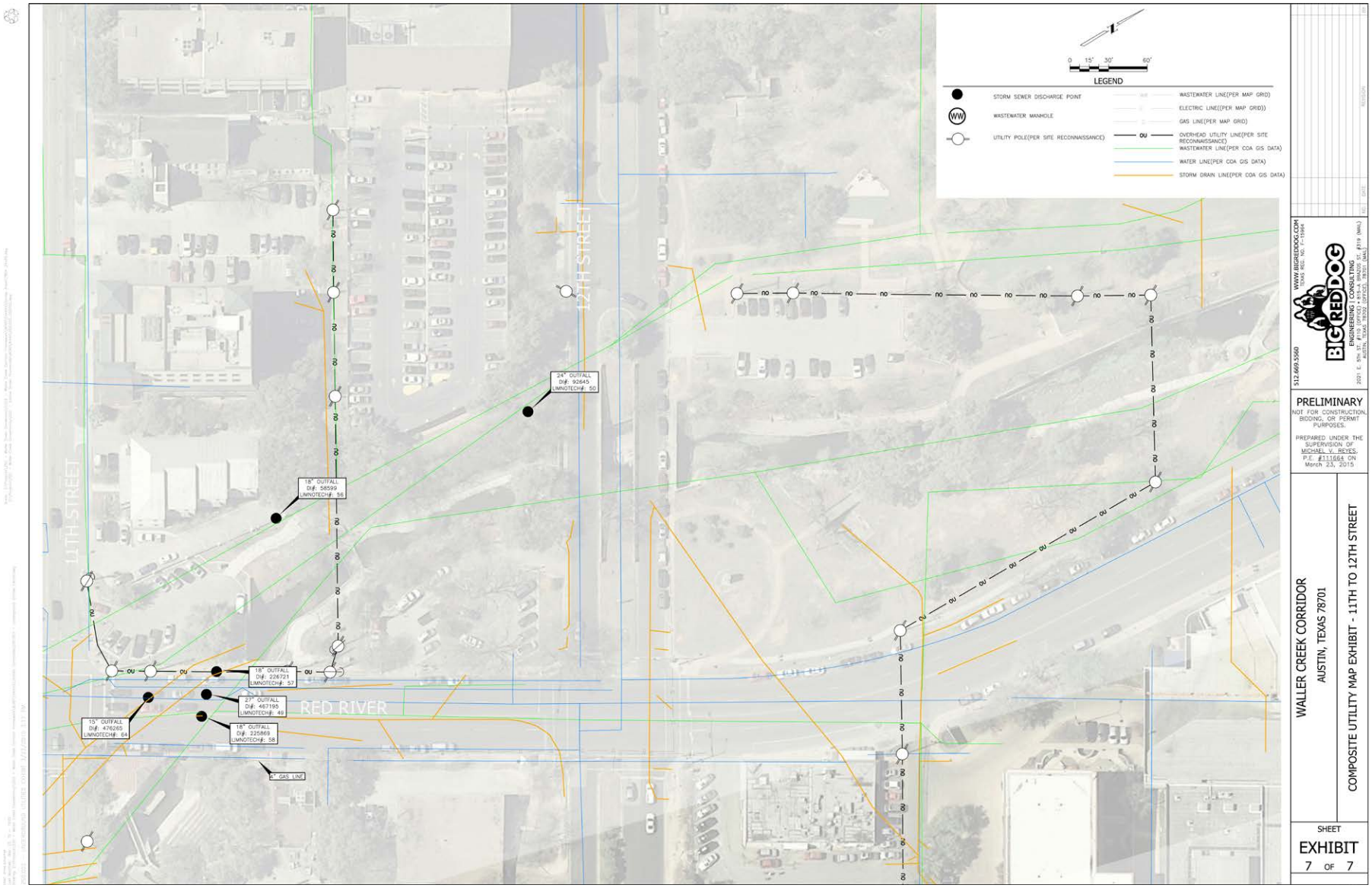
WALLER CREEK CORRIDOR
AUSTIN, TEXAS 78701

COMPOSITE UTILITY MAP EXHIBIT - 9TH TO 11TH STREET

SHEET
EXHIBIT
6 OF 7

UTILITIES

Composite Utility Map Exhibit (7)
1-7 - 250.003 - Composite Utilities Exhibit.pdf



250.003

Prepared by: Michael Reyes, P.E.; Diana Wang, P.E., LEED AP
Date: November 20, 2014, *Revised May 8, 2015 (Draft)*
Project: Waller Creek Corridor Framework
Re: Overall Utility Assessment

This assessment is intended to describe the possible utility work that may be required for each section of the Waller Creek Corridor Framework, as proposed by MVVA. This assessment is broken out by proposed improvement district and will further describe intersections of note between Waller Creek and City of Austin Streets, as well as significant improvements that are proposed along Waller Creek.

In addition to this utility assessment, GIS layers have been created to document the existing utilities along Waller Creek. The GIS layers were obtained from the City of Austin, and were amended by Big Red Dog Engineering (BRD) and LimnoTech to include additional attributes and relocation feasibility rankings. The rankings created by BRD were based on the potential impact to the project design. Exhibits of the utility conflicts and associated tables with pipe attributes are attached to this report.

1. Water lines are fairly well documented and pressurized, so the relocation of these lines should be feasible unless the size of the mains are large.
2. Wastewater lines are fairly well documented, but due to the system's design as being gravity operated, wastewater utilities have a signification potential impact on limiting design options or may include significant costs to find a feasible relocation.
3. Stormwater outfalls have been analyzed and ranked by LimnoTech, based on associated runoff volumes. Stormwater lines along Waller Creek are not well documented based on historic design information. Relocation feasibility determined by BRD was based on LimnoTech ranking as well as outfall location and size.
4. Dry utilities (electric, telecom, gas) relocation feasibility have been considered during this assessment. Electric utilities should be fairly well documented, but the infrastructure installed for these utilities may be difficult to redesign. Telecom utilities are the least well documented, and also have a high track record of being discovered onsite while being previously unknown. Due to gas lines being pressurized and easily rerouted, it is not expected that these lines will be a limiting proposed designs. Note that BRD has prepared a separate memo and exhibits on the feasibility of overhead electric relocation.

<u>The Lattice (Creek Mouth Scope)</u>
The Lattice (located along Waller Creek from its outlet to Ladybird Lake to Cesar Chavez (1st) St.) has the benefit of not being overly populated with existing utilities, not intersecting any City of Austin streets and not proposing a large amount of grading work as part of the Waller Creek improvements. Some large diameter wastewater lines, private storm sewer lines, and overhead utilities are indicated near the Waller Creek Tunnel Outlet at Ladybird Lake, but the proposed Waller Creek Improvements do not appear to have any impact on these utilities and necessary relocations appear to be minimal.

A few public storm sewer outfalls (ranging in size from 18" to 30" diameter, and made of reinforced concrete pipe) are located on the south side of the Cesar Chavez bridge, on both the east and west

embankments. Although they appear to be active, the outfall elevations may be lowered as necessary by adding additional pipe to accommodate proposed trail route elevations.

<u>The Grove</u>
The Grove district (located between Cesar Chavez and 3rd St) proposes improvements that will have a likely impact on the existing utilities. Existing water, wastewater, storm sewer, and overhead utilities cross this area. A list of some of the utilities that may necessitate relocation in this area are:

1. Similar to the south side of the Cesar Chavez Bridge, on the north side of the bridge on both embankments are what appear to be active public storm sewer lines. The outfall elevations may be lowered as necessary.
2. Austin Convention Center (ACC) outfalls on the west bank of the creek would need to be adjusted to avoid conflicts with the proposed trail alignments along Waller Creek. Additionally, this is in the area where Manchester Financial is proposing a Canopy Walk Bridge across Waller Creek to connect the proposed Fairmont Hotel to ACC. Currently, the structural column locations of the Canopy Walk Bridge are being finalized. Further coordination between ACC and Manchester Financial would need to take place to determine the most feasible routing of these outfalls.
3. It appears that an existing 66" waterline is located underground along the north side of the 3rd Street Bridge, then turning north along the west side of the creek into the Narrows district. As this is an active waterline, this large line would mostly likely be difficult and expensive to relocate. Additionally, any work within the vicinity of this existing waterline would need to be coordinated with Austin Water Utility (AWU). Maintenance access would also need to be provided after proposed improvements are complete to allow AWU staff to service this waterline as necessary. AWU should be informed of any proposed work within the vicinity of this waterline during the design process.
4. The existing, large 60" diameter public storm sewer outfalls located within the vicinity of the 3rd Street Bridge may remain as possible energy dissipation features as they appear to be difficult to relocate.
5. In other areas where grading cuts may occur, some utilities may need to be lowered, but the utilities in those areas appear to be pressurized waterlines and should not pose major relocation problems.
6. The overhead utility lines in the area of the grading may need to be raised or lowered, depending on the change of elevation at the position of the poles and the resultant ground clearance of spans. Austin Energy staff is currently working with BRD on utility route planning.

<u>The Narrows</u>
The Narrows district (located between 3rd St and 7th St) most significant area of note is the 5th Street Bridge work. Due to the age of the structure and the density of use for this portion of the City, it is assumed that all or most utilities will be located in this section of the road to serve the surrounding developments and that in order to provide a pass through under the 5th Street Bridge, extensive utility renovations may be required. The work that is necessary to allow for the trail paths to cross underneath the bridge may encounter multiple utilities that may be affected, including:

1. An 8" wastewater line that runs underneath the bridge section, causing clearance issues with the proposed trail route. Currently, it appears there may be issues with locating the trail both above the 100-year floodplain and providing adequate clearance below the wastewater line. BRD has prepared a separate memo and exhibits outlining the rerouting options in details.

Assuming the 5th Street weir is removed and the proposed trail can tie in at the required elevation, the most feasible option appears to be leaving the wastewater line in place and locating the trail at the 100-year water surface elevation (with little to no freeboard) in order to maintain the minimum clearance required below the pipe.

2. Multiple storm water drainage lines appear to discharge under the 5th Street Bridge, but adjusting these discharge points should not have a significant impact on the ability to adjust the embankment. That said, these storm drainage lines to appear to be of a significant size.
3. Telecom manholes and conduit lines are located at either end of the 5th Street Bridge and could pose an impact on the ability to change the bridge embankment without affecting these lines. Many telecom providers do not supply wholesale plan information unless they are contacted directly. However, these utilities are the least well documented and have a high track record of being discovered onsite while previously being unknown.
4. Several public and private storm water outfalls are located in the area between 5th and 6th Streets. The outfall elevations may be lowered as necessary to avoid trail conflicts. Further coordination with the Hilton Garden Inn may be required to reroute flows from the east side of the creek.

<u>The Refuge</u>

The Refuge district (between 7th St and 11th St) includes locations that are likely to have a significant impact on the utilities in the area.

8th St Refugium:

1. There is an underground electric conduit that is located under the sidewalk on south side of the bridge. These utilities should be fairly well documented, but may be difficult to redesign.
2. A 36" storm water line discharges under the bridge on the west side of the creek. This outfall may be adjusted as necessary.

8th St Channel – In the area where the channel is being rerouted:

1. An existing water line is located in the area where the channel is currently proposed and will be required to be rerouted. Additionally, a series of abandoned water lines are located in this area.
2. A gas line is also located in the area where the channel is being proposed and will need to be relocated.
3. In the area around the channel, where additional grading work is proposed, gas, electric and significantly-sized (24" and 36" diameter) wastewater lines are located, but based on the proposed grading changes, it does not look that this area should have a major impact on these utilities.

<u>The Confluence</u>

The Confluence district (located between 11th St and the tunnel inlet in Waterloo Park) does not appear to include a significant amount of grading work. In addition, the Waller Creek Tunnel inlet project has discovered and relocated many of the utilities in the Waterloo Park area and should reduce the impact that utilities will have on the Park improvements proposed as part of the Waller Creek improvements project.

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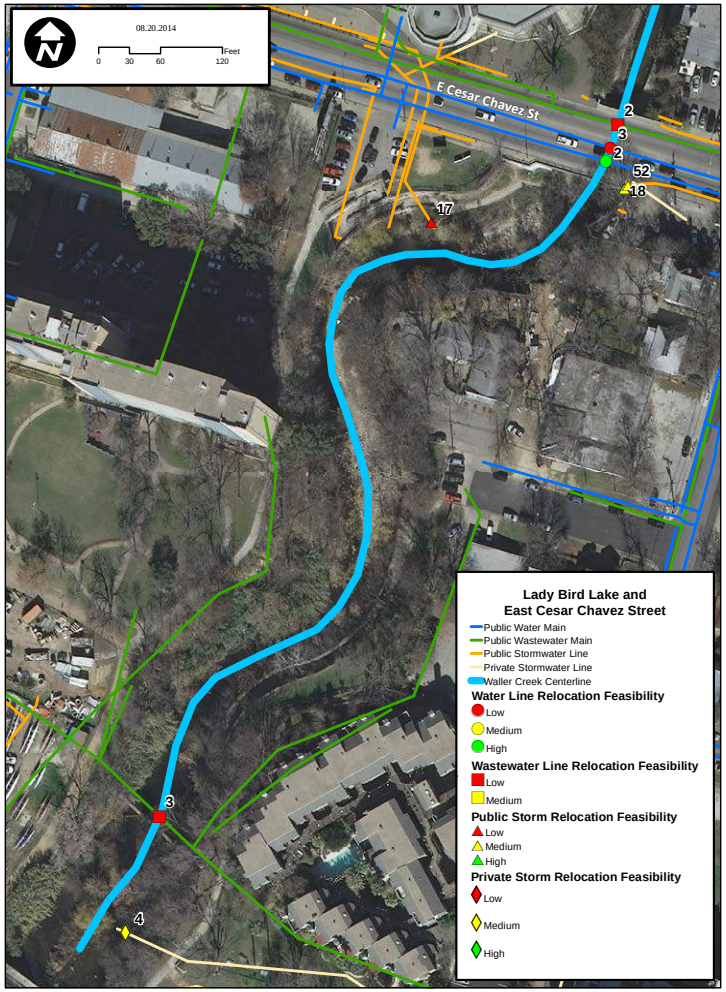
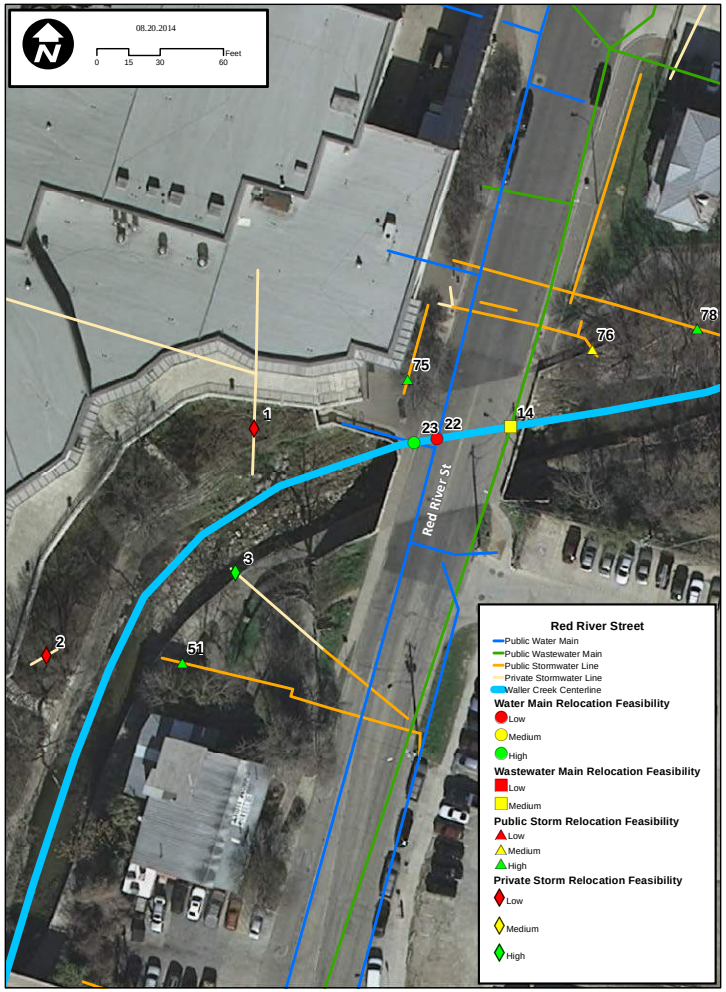
However, though the majority of overhead utilities in Waterloo Park were removed when construction of the Waller Creek Tunnel inlet commenced, an electric line crossing the park near 15th Street could not be removed. Austin Energy believes that

[Additional exhibits and detail to be added to area north of 11th St.]

END

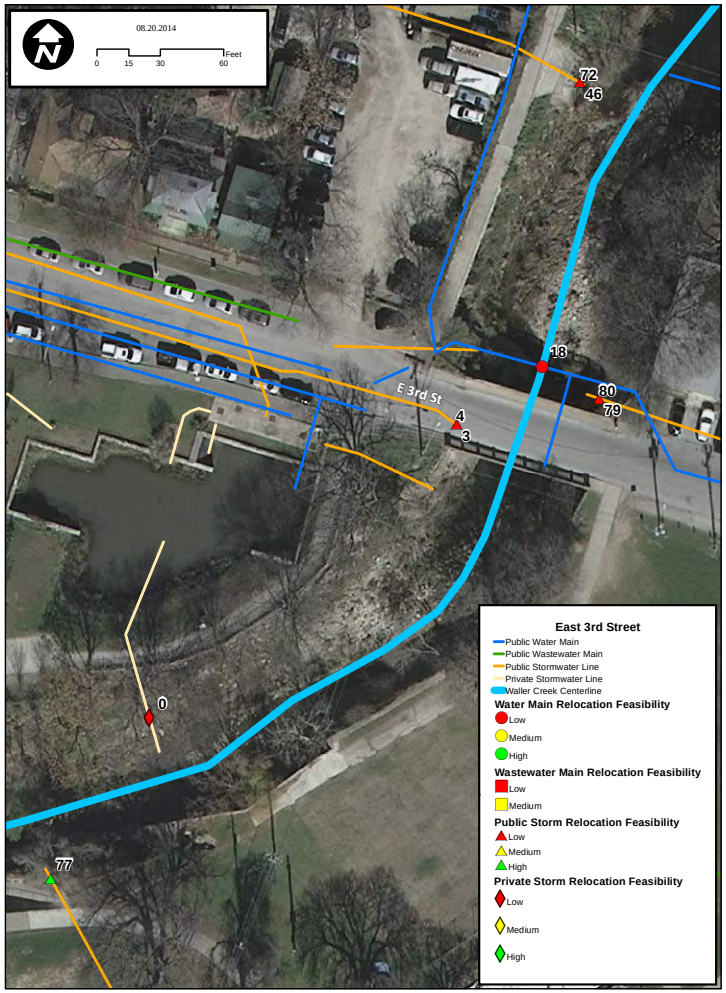

08.20.2014
0 30 60 120 Feet
E Cesar Chavez St
2
3
2
52
18
17
3
4
Lady Bird Lake and
East Cesar Chavez Street
Public Water Main
Public Wastewater Main
Public Stormwater Line
Private Stormwater Line
Waller Creek Centerline
Water Line Relocation Feasibility
Low
Medium
High
Wastewater Line Relocation Feasibility
Low
Medium
Public Storm Relocation Feasibility
Low
Medium
High
Private Storm Relocation Feasibility
Low
Medium
High

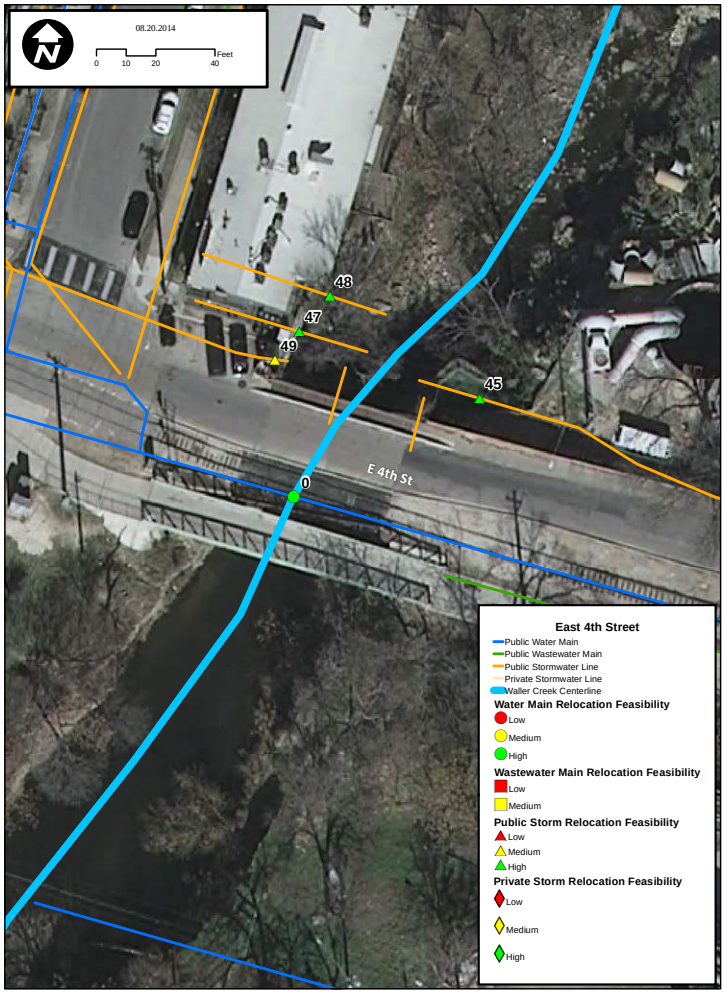

08.20.2014
0 15 30 60 Feet
78
76
75
1
23
22
14
Red River St
3
2
51
Red River Street
Public Water Main
Public Wastewater Main
Public Stormwater Line
Private Stormwater Line
Waller Creek Centerline
Water Main Relocation Feasibility
Low
Medium
High
Wastewater Main Relocation Feasibility
Low
Medium
Public Storm Relocation Feasibility
Low
Medium
High
Private Storm Relocation Feasibility
Low
Medium
High

UTILITIES

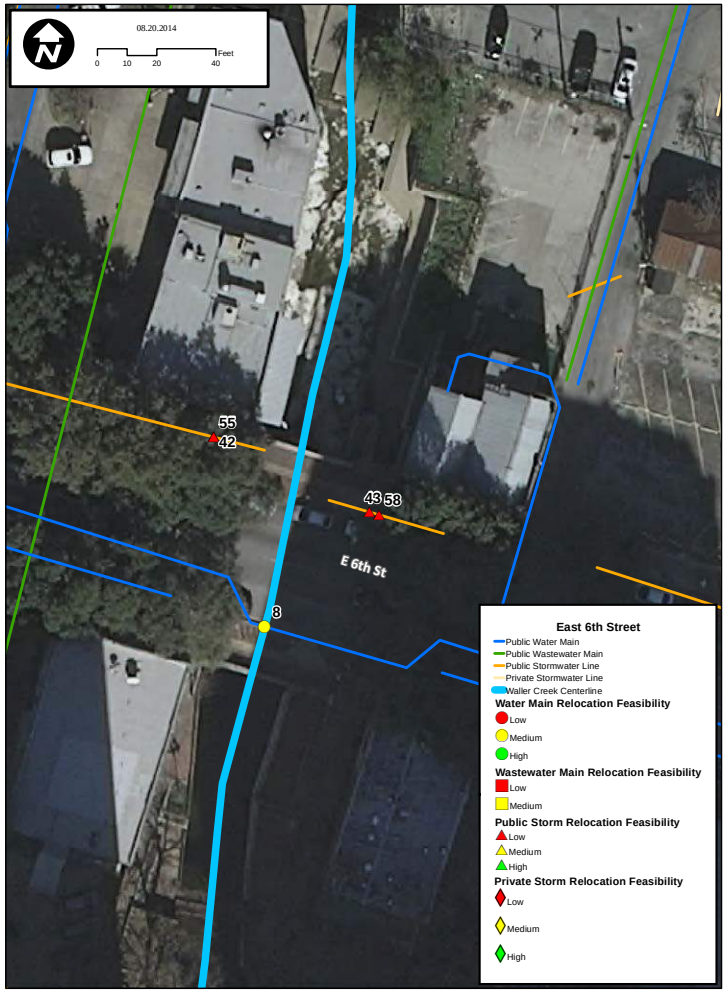
Waller Creek Overall Utility Assessment (7-10)

250 003 - Waller Creek Utility Narrative - 2015.05.08.pdf






08.20.2014
0 10 20 40 Feet
57
9
10
56
5
6
14
13
28
12
26
11
7
29
27
E 5th St
19
30
15
East 5th Street
Public Water Main
Public Wastewater Main
Public Stormwater Line
Private Stormwater Line
Waller Creek Centerline
Water Main Relocation Feasibility
Low
Medium
High
Wastewater Main Relocation Feasibility
Low
Medium
Public Storm Relocation Feasibility
Low
Medium
High
Private Storm Relocation Feasibility
Low
Medium
High


08.20.2014
0 10 20 40 Feet
55
42
43
58
E 6th St
8
East 6th Street
Public Water Main
Public Wastewater Main
Public Stormwater Line
Private Stormwater Line
Waller Creek Centerline
Water Main Relocation Feasibility
Low
Medium
High
Wastewater Main Relocation Feasibility
Low
Medium
Public Storm Relocation Feasibility
Low
Medium
High
Private Storm Relocation Feasibility
Low
Medium
High

UTILITIES

Waller Creek Overall Utility Assessment (11-14)
250 003 - Waller Creek Utility Narrative - 2015.05.08.pdf

Private Storm Conflicts

FID	WIDTH	STATUS
0	12	ACTIVE
1	18	ACTIVE
2	12	ACTIVE
3	18	INACTIVE
4	24	ACTIVE
5	30	ACTIVE
6	18	REMOVED

Page 1 of 1

Public Storm Conflicts

FID	WIDTH	MATERIAL	STATUS
0	120	NODATA	REMOVED
1	30	NODATA	ACTIVE
2	18	CONCRETE	ACTIVE
3	60	RCP	ACTIVE
4	60	RCP	ACTIVE
5	24	NODATA	ACTIVE
6	36	CONCRETE	ACTIVE
7	48	RCP	ACTIVE
8	36	NODATA	ACTIVE
9	18	NODATA	INACTIVE
10	30	NODATA	ACTIVE
11	18	NODATA	ACTIVE
12	18	NODATA	ACTIVE
13	18	NODATA	ACTIVE
14	30	NODATA	ACTIVE
15	36	RCP	ACTIVE
16	36	CONCRETE	ACTIVE
17	30	RCP	ACTIVE
18	21	CONCRETE	ACTIVE
19	18	NODATA	ACTIVE
20	24	NODATA	ACTIVE
21	24	NODATA	ACTIVE
22	18	NODATA	INACTIVE
23	120	NODATA	REMOVED
24	12	RCP	ACTIVE
25	18	NODATA	ACTIVE
26	18	NODATA	ACTIVE
27	12	NODATA	ACTIVE
28	18	NODATA	ACTIVE
29	36	NODATA	REMOVED
30	36	RCP	ACTIVE
31	18	NODATA	ACTIVE
32	21	RCP	ACTIVE
33	24	CONCRETE	ACTIVE
34	18	NODATA	ACTIVE
35	18	CONCRETE	ACTIVE
36	36	NODATA	ACTIVE
37	18	NODATA	INACTIVE
38	18	CONCRETE	ACTIVE
39	24	CONCRETE	ACTIVE
40	21	RCP	ACTIVE

Page 1 of 2

FID	WIDTH	MATERIAL	STATUS
41		12 RCP	ACTIVE
42		42 STONE	ACTIVE
43		36 STONE	ACTIVE
44		18 NODATA	ACTIVE
45		18 NODATA	INACTIVE
46		30 RCP	ACTIVE
47		24 NODATA	INACTIVE
48		15 NODATA	INACTIVE
49		24 RCP	ACTIVE
50		24 NODATA	ACTIVE
51		18 RCP	ACTIVE
52		24 CONCRETE	ACTIVE
53		30 NODATA	ACTIVE
54		18 NODATA	ACTIVE
55		42 STONE	ACTIVE
56		18 NODATA	INACTIVE
57		30 NODATA	ACTIVE
58		36 STONE	ACTIVE
59		18 CONCRETE	ACTIVE
60		18 NODATA	ACTIVE
61		18 NODATA	ACTIVE
62		18 NODATA	INACTIVE
63		18 NODATA	INACTIVE
64		18 NODATA	INACTIVE
65		120 NODATA	REMOVED
66		120 NODATA	REMOVED
67		120 NODATA	REMOVED
68		160 RCP	ACTIVE
69		160 RCP	ACTIVE
70		27 RCP	ACTIVE
71		18 NODATA	ACTIVE
72		30 RCP	ACTIVE
73		18 CONCRETE	ACTIVE
74		27 RCP	ACTIVE
75		18 NODATA	REMOVED
76		24 RCP	ACTIVE
77		18 NODATA	ACTIVE
78		18 NODATA	ACTIVE
79		60 RCP	ACTIVE
80		60 RCP	ACTIVE

Wastewater Line Conflicts

FID	OPERAT	ADMINSTATI	PROJECT	PROJECT2	DIAMETER	MATERIAL
0	PROP	PROP	2014-0008			18 PVC
1	PRAB	IS	81-2001			10 PVC
2	IS	IS				24 UNK
3	IS	IS				42 UNK
4	IS	IS				36 CONC
5	IS	IS				12 CI
6	IS	IS				36 CONC
7	IS	IS				8 UNK
8	IS	IS				8 CONC
9	IS	IS				36 CONC
10	IS	IS				8 DI
11	PRAB	IS				36 CONC
12	PROP	PROP	2011-0021			36 FRPM
13	AB	AB				10 CI
14	IS	IS	89-0019			24 PVC

UTILITIES

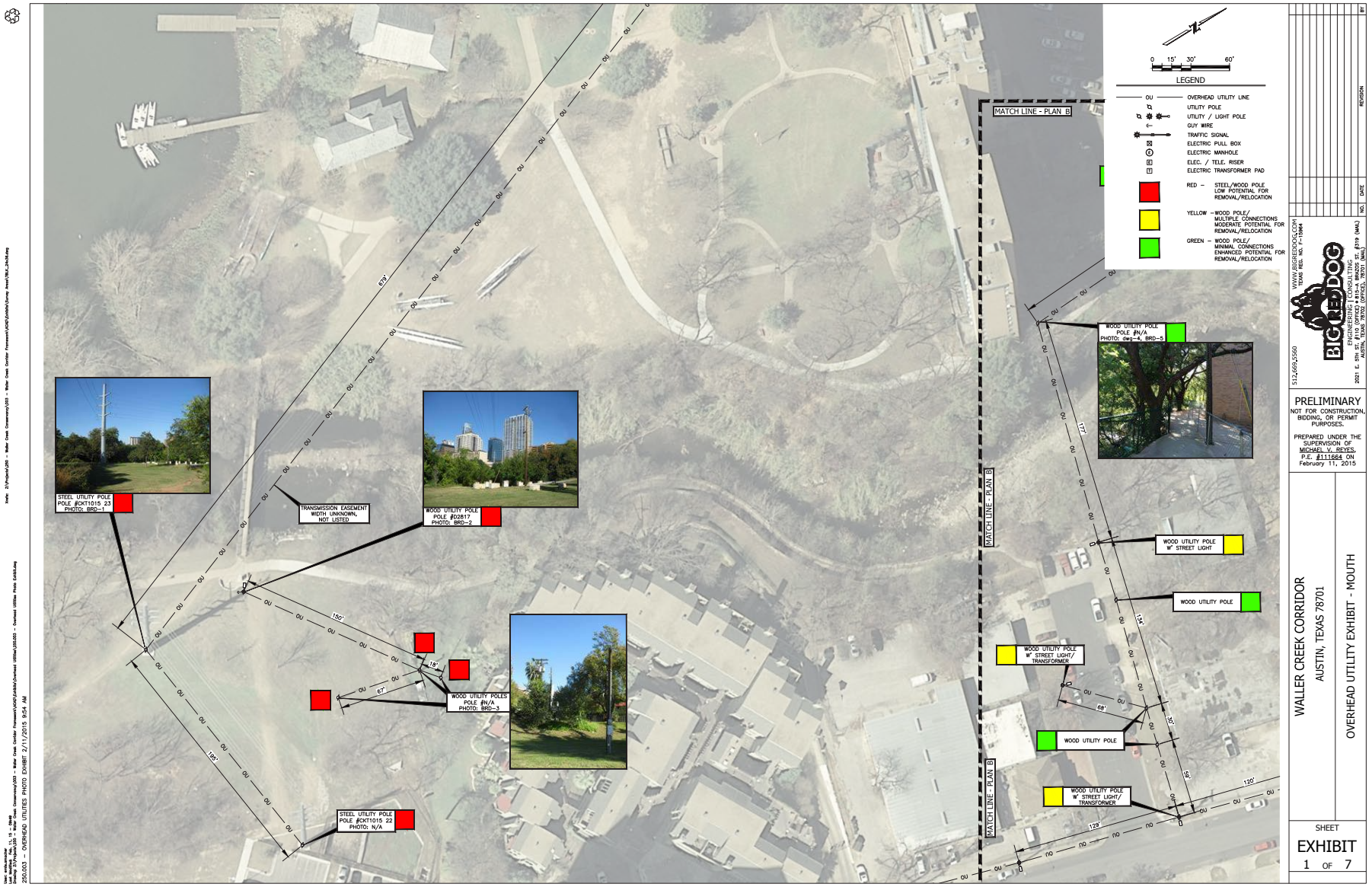
Waller Creek Overall Utility Assessment (15)
250 003 - Waller Creek Utility Narrative - 2015.05.08.pdf

Water Line Conflicts

FID	OPERAT	ADMINSTAT	PROJECT	MAINDIAMET	MAINMATER	RELOC_FEA
0	IS	IS		6	CI	High
1	PRAB	IS		6	CI	
2	IS	IS		4	CI	High
3	IS	IS		24	CI	Low
4	IS	IS	82-0243	8	DI	
5	IS	IS	73-0139	12	AC	
6	IS	IS	73-0139	12	DI	
7	AB	AB		6	CI	
8	IS	IS	93-2009	12	DI	Medium
9	IS	IS		12	CI	
10	IS	IS		8	CI	
11	AB	AB		12	CI	
12	AB	AB		12	CI	
13	AB	AB		2	CI	
14	AB	AB		2	CI	
15	IS	IS	89-0024	12	DI	
16	AB	AB		4	CI	
17	IS	IS		6	CI	
18	IS	IS	69-1224	66	CSC	Low
19	IS	IS		6	CI	High
20	IS	IS	85-0865	12	DI	
21	IS	IS		6	CI	
22	IS	IS	89-0023	16	DI	Low
23	IS	IS		0.75		High

UTILITIES

Waller Creek Overhead Utility Exhibit (1)
250.003 - Waller Creek OU Exhibit 2015-05-07- 1-8.pdf



UTILITIES

Waller Creek Overhead Utility Exhibit (2-3)

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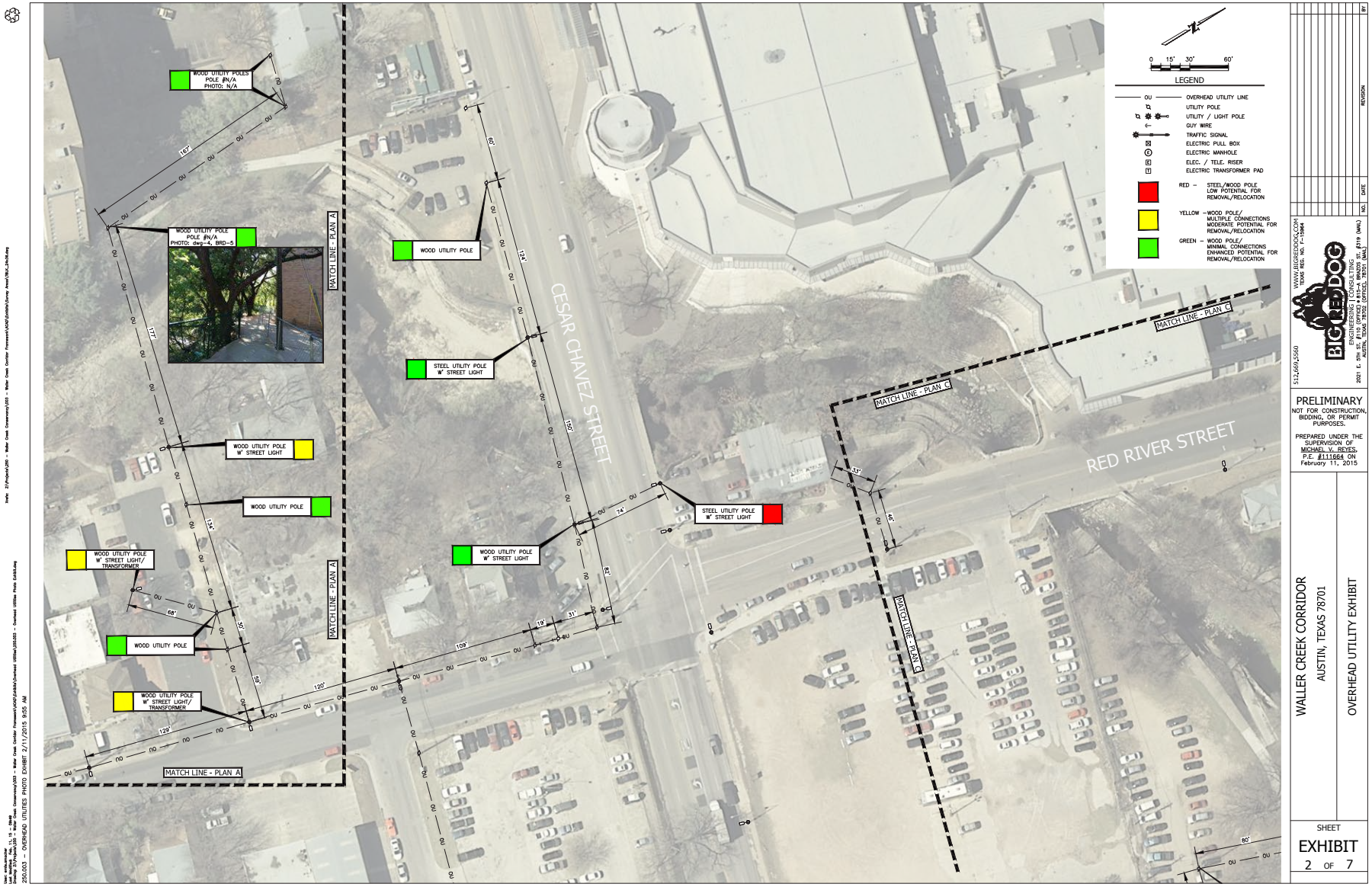

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AUSTIN, TEXAS 78702 (OFFICE), 78701 (MAIL)
512.669.5560

NO.	DATE	REVISION	BY

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PREPARED UNDER THE SUPERVISION OF MICHAEL V. REYES, P.E. #111664 ON February 11, 2015

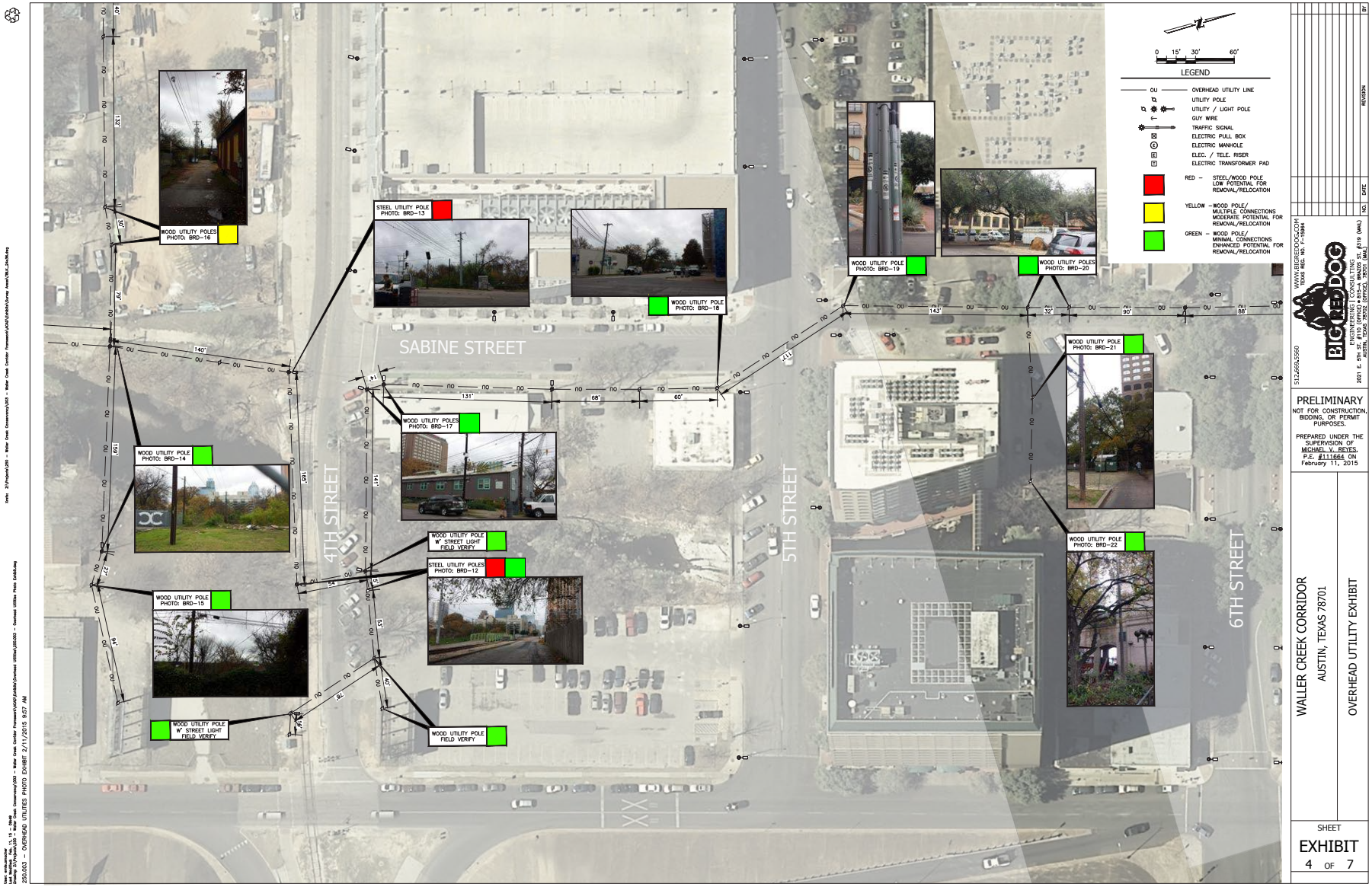
WALLER CREEK CORRIDOR
AUSTIN, TEXAS 78701

OVERHEAD UTILITY EXHIBIT - PALM PARK

SHEET
EXHIBIT
3 OF 7

UTILITIES

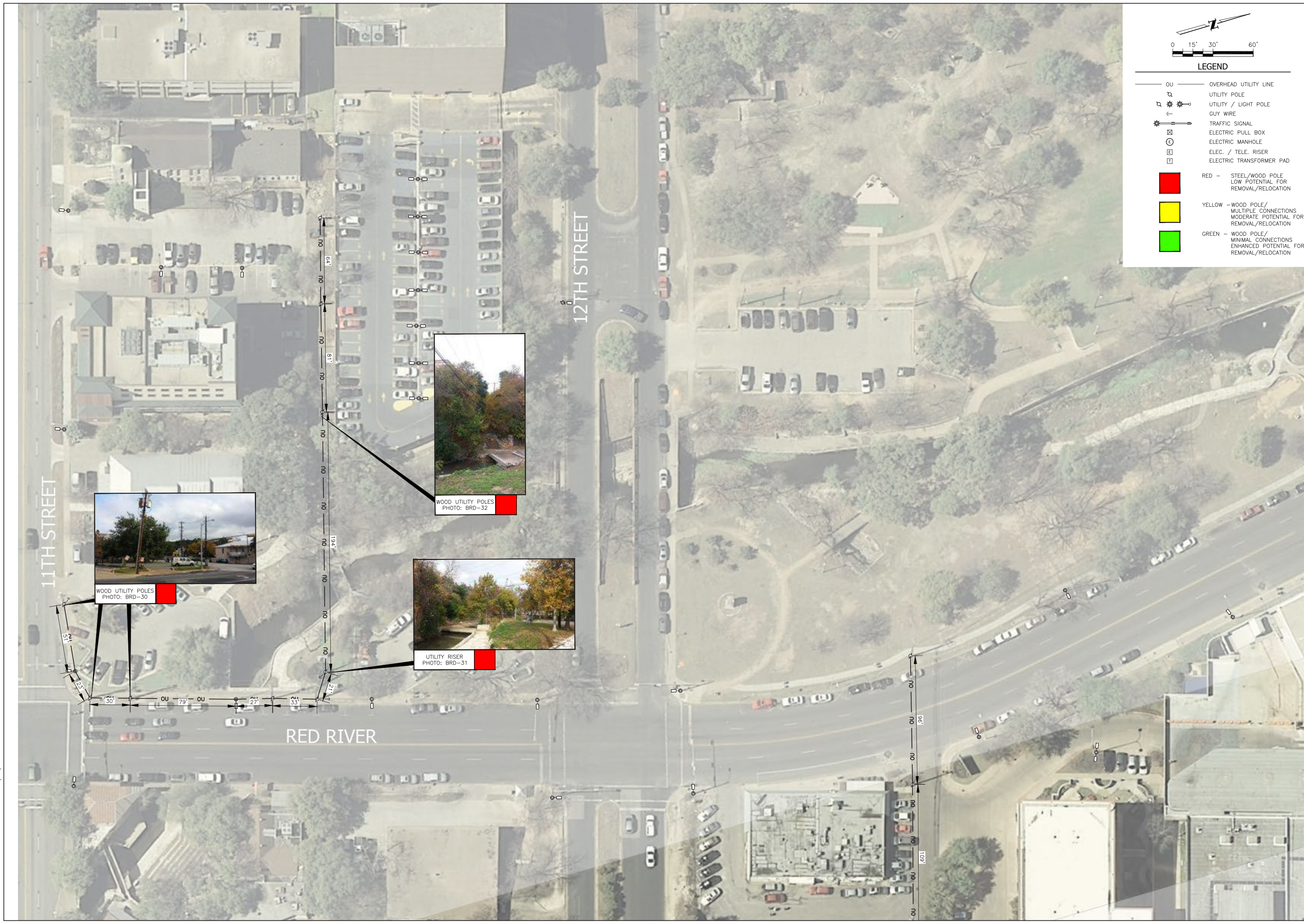
Waller Creek Overhead Utility Exhibit (4-5)
250.003 - Waller Creek OU Exhibit 2015-05-07- 1-8.pdf



SHEET 5 OF 7 EXHIBIT	WALLER CREEK CORRIDOR AUSTIN, TEXAS 78701 OVERHEAD UTILITY EXHIBIT	PRELIMINARY NOT FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES. PREPARED UNDER THE SUPERVISION OF MICHAEL V. BIGGS, P.E. #111984 ON February 11, 2015	512.669.5560 WWW.BIGREDDOG.COM TEXAS REG. NO. F-10964 BIG RED DOG ENGINEERING | CONSULTING 2021 E. 5TH ST. #110 (OFFICE) ● 815-A BRAZOS ST. #319 (MAIL) AUSTIN, TEXAS 78702 (OFFICE), 78701 (MAIL)	NO. DATE REVISION BY

UTILITIES

Waller Creek Overhead Utility Exhibit (6-7)
250.003 - Waller Creek OU Exhibit 2015-05-07- 1-8.pdf


11TH STREET
12TH STREET
RED RIVER
WOOD UTILITY POLES
PHOTO: BRD-30
WOOD UTILITY POLES
PHOTO: BRD-32
UTILITY RISER
PHOTO: BRD-31
0 15' 30' 60'
LEGEND
OU OVERHEAD UTILITY LINE
UTILITY POLE
UTILITY / LIGHT POLE
GUY WIRE
TRAFFIC SIGNAL
ELECTRIC PULL BOX
ELECTRIC MANHOLE
ELEC. / TELE. RISER
ELECTRIC TRANSFORMER PAD
RED – STEEL/WOOD POLE LOW POTENTIAL FOR REMOVAL/RELOCATION
YELLOW – WOOD POLE/ MULTIPLE CONNECTIONS MODERATE POTENTIAL FOR REMOVAL/RELOCATION
GREEN – WOOD POLE/ MINIMAL CONNECTIONS ENHANCED POTENTIAL FOR REMOVAL/RELOCATION

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WALLER CREEK CORRIDOR
AUSTIN, TEXAS 78701

OVERHEAD UTILITY EXHIBIT

SHEET
EXHIBIT
7 OF 7

250.003 – OVERHEAD UTILITIES PHOTO EXHIBIT 2/11/2015 9:59 AM

UTILITIES

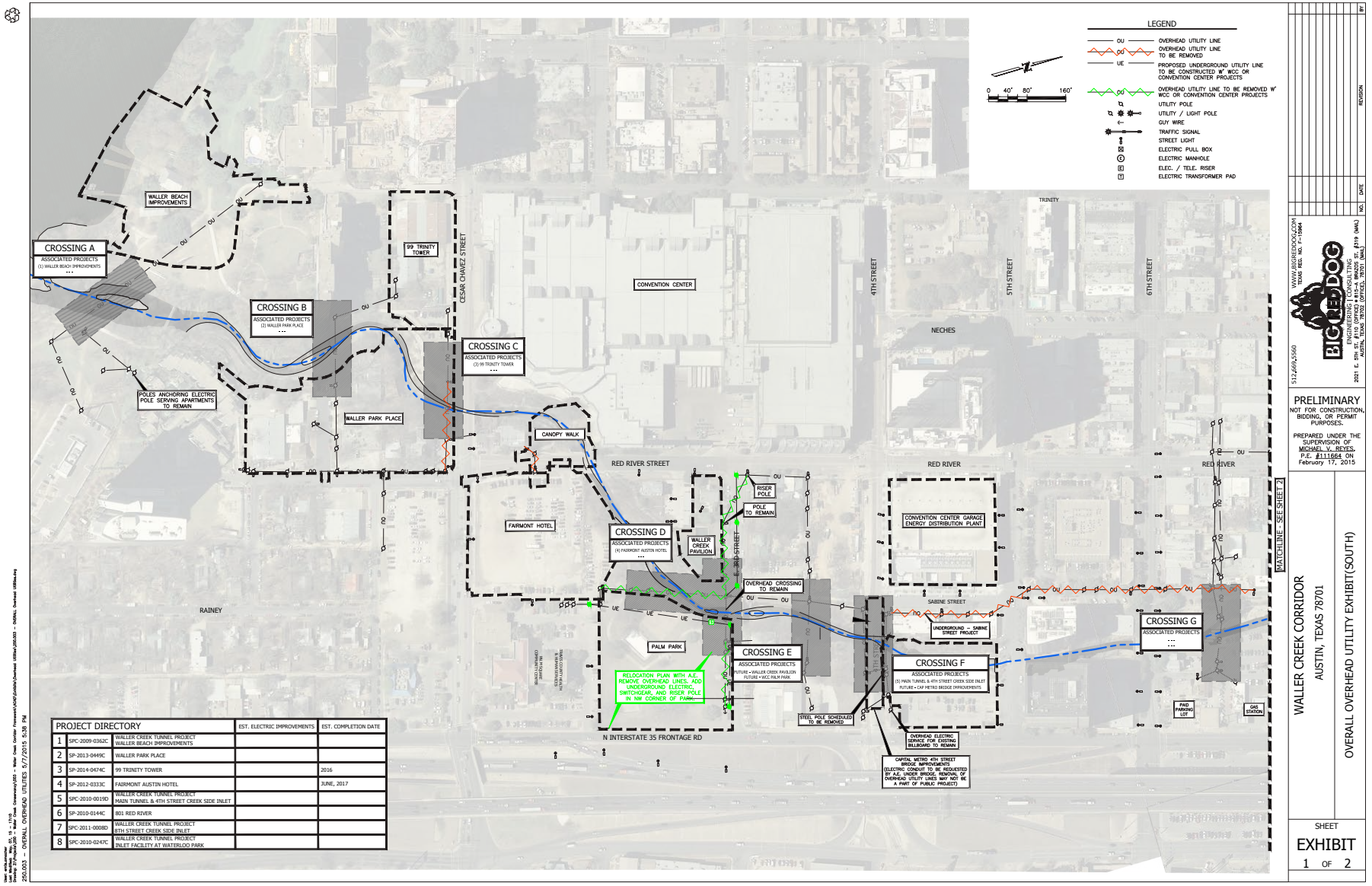
Waller Creek Overhead Utility Exhibit (8)
250.003 - Waller Creek OU Exhibit 2015-05-07- 1-8.pdf

EXHIBIT TO BE ADDED
FOR 12TH TO 15TH
STREET

UTILITIES

Overall Overhead Utility Exhibit (South)

250.003 - Waller Creek OU Exhibit 2015.05.07.pdf



PROJECT DIRECTORY		EST. ELECTRIC IMPROVEMENTS	EST. COMPLETION DATE
1	SPC-2009-0362C WALLER CREEK TUNNEL PROJECT WALLER BEACH IMPROVEMENTS		
2	SP-2013-0449C WALLER PARK PLACE		
3	SP-2014-0474C 99 TRINITY TOWER		2016
4	SP-2012-0333C FAIRMONT AUSTIN HOTEL		JUNE, 2017
5	SPC-2010-0019D WALLER CREEK TUNNEL PROJECT MAIN TUNNEL & 4TH STREET CREEK SIDE INLET		
6	SP-2010-0144C 801 RED RIVER		
7	SPC-2011-0008D WALLER CREEK TUNNEL PROJECT 8TH STREET CREEK SIDE INLET		
8	SPC-2010-0247C WALLER CREEK TUNNEL PROJECT INLET FACILITY AT WATERLOO PARK		

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WALLER CREEK CORRIDOR
AUSTIN, TEXAS 78701

OVERALL OVERHEAD UTILITY EXHIBIT(SOUTH)

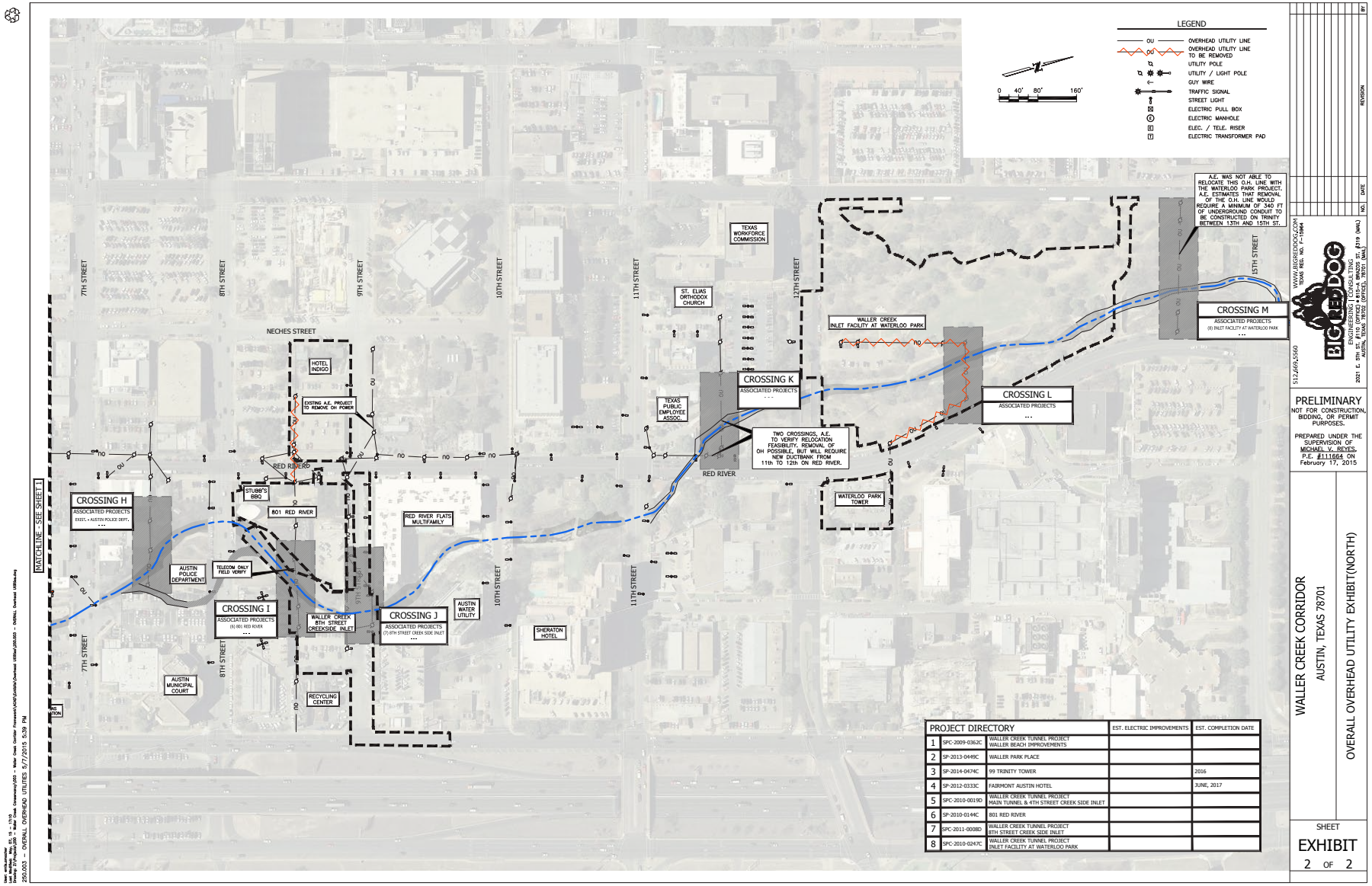
SHEET
EXHIBIT
1 OF 2

250.003 – OVERALL OVERHEAD UTILITIES 5/7/2015 5:38 PM

UTILITIES

Overall Overhead Utility Exhibit (North)

250.003 - Waller Creek OU Exhibit 2015.05.07.pdf



250.003

Date: May 8, 2015 (Draft)

From: Diana Wang, P.E.
To: Danielle Choi, Gullivar Shepard - MVVA
Mike Kelly, Kristin Pipkin – City of Austin Watershed Protection
Kevin Wolf, Austin Energy
CC: Susan Benz, BRG

Project: Waller Creek Corridor Framework
Re: Overhead Utility Assessment

This assessment has been prepared to identify the overhead utility crossings and poles within the Waller Creek trail development area and to determine the feasibility of removal and/or relocation. Several site visits and meetings were held with Austin Energy (AE) and surrounding property owners to understand master plan improvements in the area and developments affecting the current electric distribution system.

The criteria for evaluating and ranking the feasibility (low/moderate/high) for overhead removal includes:

- Type of electric pole (transmission/steel/wood)
- Number of service connections attached to the pole
- If known, potential for relocation/removal (AE projects or new development). If there are already plans to remove overhead, high potential that the overhead will be buried by others, or minimal improvements required to reroute a line, then the feasibility of removal is high.

Two sets of exhibits were prepared to represent this information are attached - Overall Overhead Utility Exhibits and Overhead Utility Relocation Feasibility Exhibits. The Overall Plans show adjacent developments, utility lines planned to be removed, and notes from our meetings with Austin Energy on system modifications. The Relocation Feasibility exhibits show a more detailed, close-up view of the overhead utilities and includes photos of the poles. The poles are color coded to show the feasibility of removal based on the criteria above.

There are several areas of particular concern, which are described below. The crossing assignments correspond to the Overall Overhead Utility Exhibit.

- Crossing D - Palm Park: Note that there are two creek crossings at Palm Park. The poles on each side of the creek for the north crossing (along E. 3rd St.) must remain. In order to remove the overhead line for the south crossing, approximately 1000 linear feet of underground conduit must be installed through the park and a switchgear and pole are required at the northwest corner of the park. Austin Energy prepared an Order of Magnitude Cost Estimate for this work, which is attached for your reference. The Austin Energy cost estimate totals $510,300, but does not include civil costs. The civil costs would include duct bank and the switchgear which could add

another $400,000 to the electric improvement costs. Therefore, the total cost for this work would be approximately $910,300. At this time, Austin Energy will not participate in these costs and the Waller Creek project would be responsible for the full amount.

- Crossing M – Waterloo Park: Austin Energy was not able to remove this crossing when construction at Waterloo Park commenced. Austin Energy has estimated that approximately 340 linear feet of underground conduit would be required to remove the overhead crossing, but a more in-depth study may be required to confirm whether or not additional improvements would be required.

Attachments:
Overall Overhead Utility Exhibits (North and South)
Overhead Utility Relocation Feasibility Exhibits
Austin Energy Order of Magnitude Cost Estimate for Palm Park

Order of Magnitude

2015-03-26 - AE Palm Park Order of Magnitude Cost.pdf

Order of Magnitude

JOB ADDRESS TBD - MJ22
DATE PREPARED March 26, 2015
PREPARED BY Kevin Wolf

NOTES

This quote includes the material needed to remove the overhead electric around most of Palm Park. It does not take into account any civil costs. It is assumed that Palm Park will grant the placement of a switchgear and pole in the northwest corner of the park.

CONTACT	# Meters	DEVELOPMENT	Cost/Meter
Diana Wang - Big Red Dog		Palm Park	$0

QUANTITY	DESCRIPTION	UNIT PRICE	LINE TOTAL
700	Wire,Urd,3Ph,1000CU(perfoot)	$155.86	$109,099
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
		Sub Total	$ 109,099

SPECIAL LINE ITEMS			
2	Pole, Galv, 50LD6	$3,752	$7,503
2	Riser, 3Ph, 1000CU (Including Cable in Riser)	$14,620	$29,240
1	Vista 633	$94,408	$94,408
1600	Sec, URD, 3Ph, 500 CU (per foot)	$104	$166,560
1	1 Transformer 208 V	$102,000	$102,000
50	Sec, URD, 3Ph, 1/0 CU (per foot)	$28	$1,412
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
		Sub Total	$ 401,124
		OOM Total	$ 510,300

This document only represents an Order of Magnitude estimate for budgetary purposes. An actual estimate for work will be created upon receipt of required documentation that adequately communicates the project scope. Differences between the Order of Magnitude and Cost Estimate can result due to change in customer scope or material costs.

Version: 1.1.0 Last Updated: 11-2014

Printed: April 14, 2015

250.003

Date: May 8, 2015 (Draft)

From: Diana Wang, P.E.
To: Danielle Choi, Gullivar Shepard - MVVA
Mike Kelly, Kristin Pipkin – City of Austin Watershed Protection
Phillip Jaeger – Austin Water Utility Systems Planning
CC: Susan Benz, BRG

Project: Waller Creek Corridor Framework
Re: 5th Street Bridge Wastewater Line Conflict and Relocation Options

Summary:

This assessment describes a potential trail conflict with an existing wastewater line at the 5th Street Bridge. There is an 8-inch gravity wastewater line hung on the 5th Street Bridge. The wastewater line runs east along 5th Street and ties into a wastewater main along I-35. According to current tap plans and records, this section of pipe serves the hotel and businesses on both sides of 5th Street. Based on as-built plans, the bottom of the wastewater pipe is located at an elevation of approximately 454.44 above the proposed trail alignment. The elevation of the existing wastewater line could potentially be in conflict with the proposed Waller Creek trail, as depicted on attached **Exhibit 1.**

The following assumptions were made for an initial analysis of the trail cross section at the bridge:

- There is a weir upstream of the 5th Street Bridge with an approximate top elevation of 447 and bottom elevation of 443. Assuming the weir is removed, LimnoTech has determined that the 100-year floodplain elevation at the bridge is 447.71.
- According to Texas Accessibility Standards, the minimum vertical clearance above a bike lane should be 80 inches. MVVA is currently confirming that this clearance will also meet City of Austin standards for the Waller Creek trail.
- A minimum of 6 inches of freeboard above the 100-year floodplain elevation will be required at the trail.

Based on these assumptions, the trail elevation would need to be a maximum of 447.77 in order to provide vertical clearance above the trail. However, in order to provide minimal freeboard above the 100-year water surface elevation, the trail elevation would need to be a minimum of 448.21. Therefore, the proposed trail elevation could not meet both requirements, and would either be 5.28 inches short of the vertical clearance requirement or the 100-year floodplain freeboard requirement.

Note that in addition to the above assumptions, the trail is in the preliminary stages of design. The required elevation at the bridge could also be affected by the trail's connection to the surrounding Creek improvements and the need to maintain maximum slopes for accessibility. Given the trail constraints at the bridge, it is critical to understand the relocation options for the wastewater line at the 5th Street Bridge.

Wastewater Line Options at 5th Street

The following options were explored with the consultant team and input from AWU Systems Planning staff. Note that the wastewater routing options were laid out with consideration to known existing utilities and high-level analysis of potential conflicts and elevation issues. A route survey would be required prior to actual wastewater system design.

1. No modifications to the existing wastewater line
   If the wastewater line were to remain in place, the trail may be in conflict with the 100 year floodplain. In this scenario, the upstream weir must be removed. The trail elevation would need to be a maximum of 447.77 in order to provide the 80-inch clearance between the bottom of pipe and the trail. However, at this elevation, the trail would only be 0.72 inches above the 100-year floodplain elevation. This is less than the 6 inches of freeboard that is typically required.

2. Raise the existing wastewater pipe
   a. Reconstruct the wastewater line at the 5th Street bridge
      According to AWU records, the existing wastewater line is a gravity line that is currently running at a slope of approximately 0.67%. Given the relatively flat slope and existing elevations of the wastewater lines upstream and downstream of the bridge, it is not possible to raise the section of pipe at the 5th Street bridge. Therefore, this option is not feasible.
   b. Lift Station
      A lift station upstream of the wastewater line would allow the pipe section under the bridge to be raised. However, all departments within AWU, including Pipeline Engineering and Systems Planning, do not allow lift stations in the downtown area primarily because of maintenance concerns. Additionally, real estate for a private or public lift station would need to be identified and procured. Therefore, this option is not feasible.
   c. Grinder Pump
      Grinder pumps typically allow flow from laterals (service lines from homes and businesses) to be pumped uphill to wastewater mains. A grinder pump could not be placed in line on the wastewater line/main to raise the pipe being hung on 5th Street. Additionally, AWU does not allow grinder pumps on their downtown system. Therefore, this option is not feasible.

3. Remove the wastewater line and reroute the existing flow
   a. 4th Street Bridge Route
      One of the options for abandoning the 5th Street Bridge wastewater line and rerouting the existing flow involves redirecting wastewater line on a portion of 5th Street and Sabine St. and installing new wastewater line east, under the 4th Street Bridge, to tie into the existing system. A cross section of the 4th Street Bridge is detailed on the attached **Exhibit 1** and the rerouting plan is shown on **Exhibit 2**.

      This option involves the construction of approximately 1170 linear feet of 8-inch wastewater line, 50 linear feet of 8-inch line to be hung on the 4th Street Bridge, and reconstruction of 235 linear feet of wastewater laterals. AWU Systems Planning has confirmed that there is sufficient capacity at the existing downstream line on 4th Street (MH#48141).

Additionally, Capital Metro is currently evaluating the reconstruction of the 4th Street Bridge. A memo has been sent to request that Capital Metro account for the alignment and loading capacity of the proposed wastewater line to be hung under the 4th Street Bridge deck. The criteria for the proposed wastewater line on 4th Street is outlined below.

- Elevation: MVVA is currently designing the trail in this area, which will have a trail elevation very close to the 100-year water surface elevation. For preliminary calculations, it is assumed that the trail elevation will exceed the 100-year water surface elevation by a minimum of 6 inches. The 100-year water surface elevation provided by Limnotech is 446.60. Additionally, the trail will require minimum vertical clearance of 80 inches. Based on these assumptions, the minimum elevation of the bottom of the wastewater pipe must be 453.77 and the bottom of the bridge deck should be a minimum of approximately 455.
- The 100-year surface elevation assumes removal of the 5th Street weir.
- Size/Material: 8-inch diameter Lined Ductile Iron Wastewater Gravity Pipe (COA Standard Products List WW-602 & WW-534)
- Alignment: The alignment of the pipe to be hung on the 4th Street Bridge is currently flexible, but the south side of the bridge deck may be preferable. There is a proposed connection to an existing wastewater manhole located on the south side of 4th Street.

b. Sabine and Red River Wastewater Reroute

Another possible option for rerouting the wastewater flow is running the wastewater line south along Sabine Street then west on either 3rd or 4th towards Red River. This rerouting plan is detailed on the attached **Exhibit 3** and will require additional analysis by AWU Systems Planning to ensure adequate capacity is available in the system. Based on knowledge of the overall system, AWU believes the wastewater main on Red River should have capacity for additional flow.

The 3rd Street route requires approximately 1070 linear feet of 10-inch wastewater line, 80 linear feet of 8-inch wastewater, and 235 linear feet of reconstructed laterals. This option also involves boring under the Capital Metro railroad line on 4th Street and potential regarding along the creek (unimproved section of Sabine Street between 3rd and 4th Streets) due to insufficient cover.

The 4th Street route requires approximately 380 linear feet of 21-inch wastewater line, 755 linear feet of 10-inch line, 80 linear feet of 8-inch line, and 235 linear feet of reconstructed laterals. This option requires construction of wastewater line adjacent to the Capital Metro railroad line along 4th Street and large diameter pipe (21-inch) along Red River. Given the issues with cover and boring under the railroad for the 3rd Street route, it appears the 4th Street route would be preferred.

Conclusion:

The feasible options are currently Option 1 - leaving the wastewater pipe in place or Option 3 – removing the wastewater line and rerouting the flow. In either, scenario the wastewater pipe and bridge area should be surveyed to obtain accurate and current elevation data.

Although Option 3 may be feasible from a design perspective, given the extensive downtown wastewater improvements required, this option will be very costly. AWU does not have a master plan in place that

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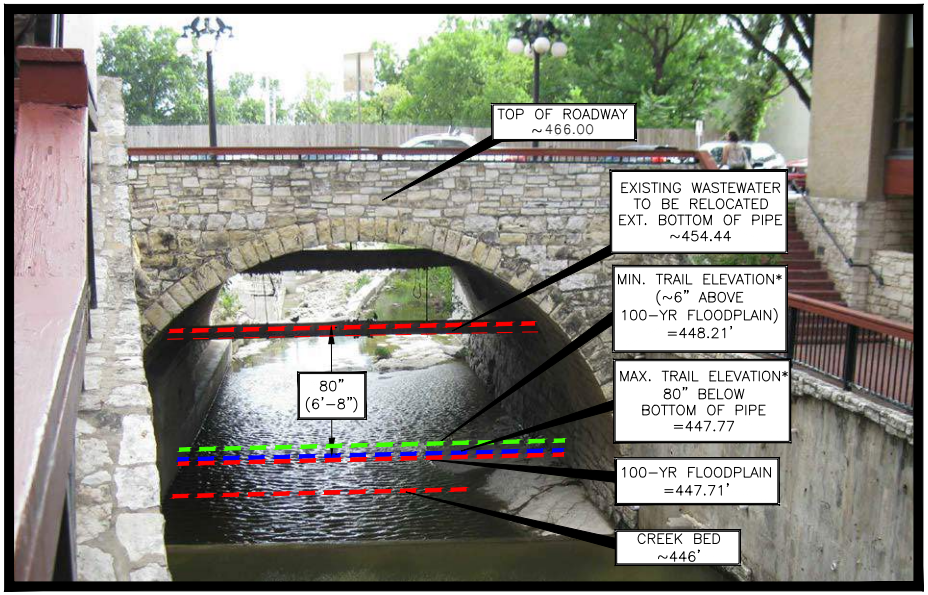
encompasses these improvements and surrounding private development most likely would not trigger the rerouting. However, AWU Systems Planning will keep this plan on file and consider it for future planning.

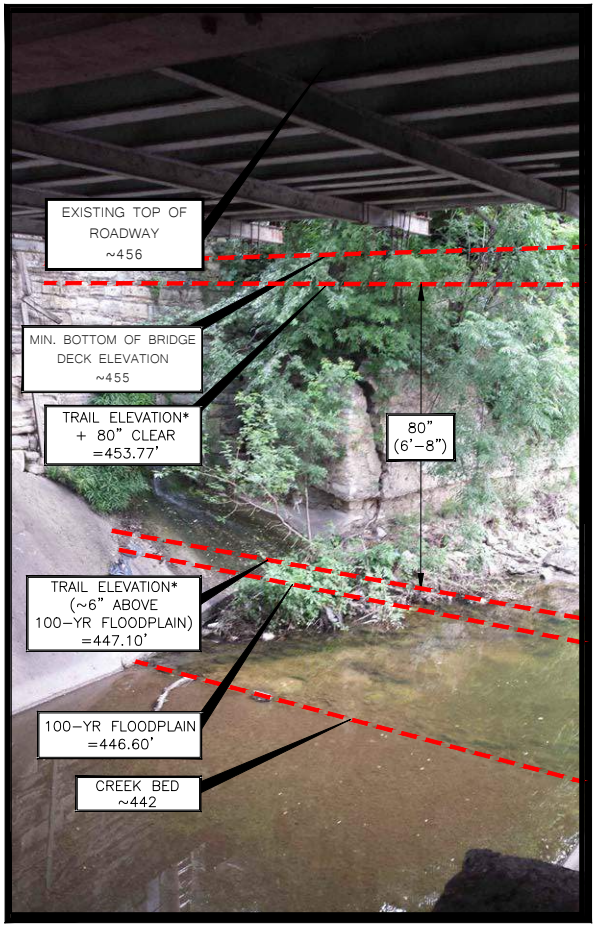
If the trail system can tie in at the required elevation under the 5th Street Bridge, the most feasible option appears to be Option 1 – leaving the wastewater pipe in place. Although there is a minor conflict with the 100-year floodplain, it's possible the freeboard requirement could be reduced or the team could work to mitigate the floodplain issue with creek modifications and updates to the drainage analysis.

Attachments:

Exhibit 1: 4th and 5th Street Bridge Cross Sections
Exhibit 2: 4th Street Bridge Wastewater Reroute
Exhibit 3: Sabine and Red River Wastewater Reroute



WASTEWATER AT 5TH
STREET BRIDGE



WASTEWATER AT 4TH
STREET BRIDGE

*NOTE: TRAIL ELEVATION APPROXIMATE PENDING FINAL DESIGN

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2021 E. 5TH ST. AUSTIN, TEXAS 78702 OFFICE (512) 619 (MAIL)
AUSTIN, TEXAS 78722 OFFICE (512) 301

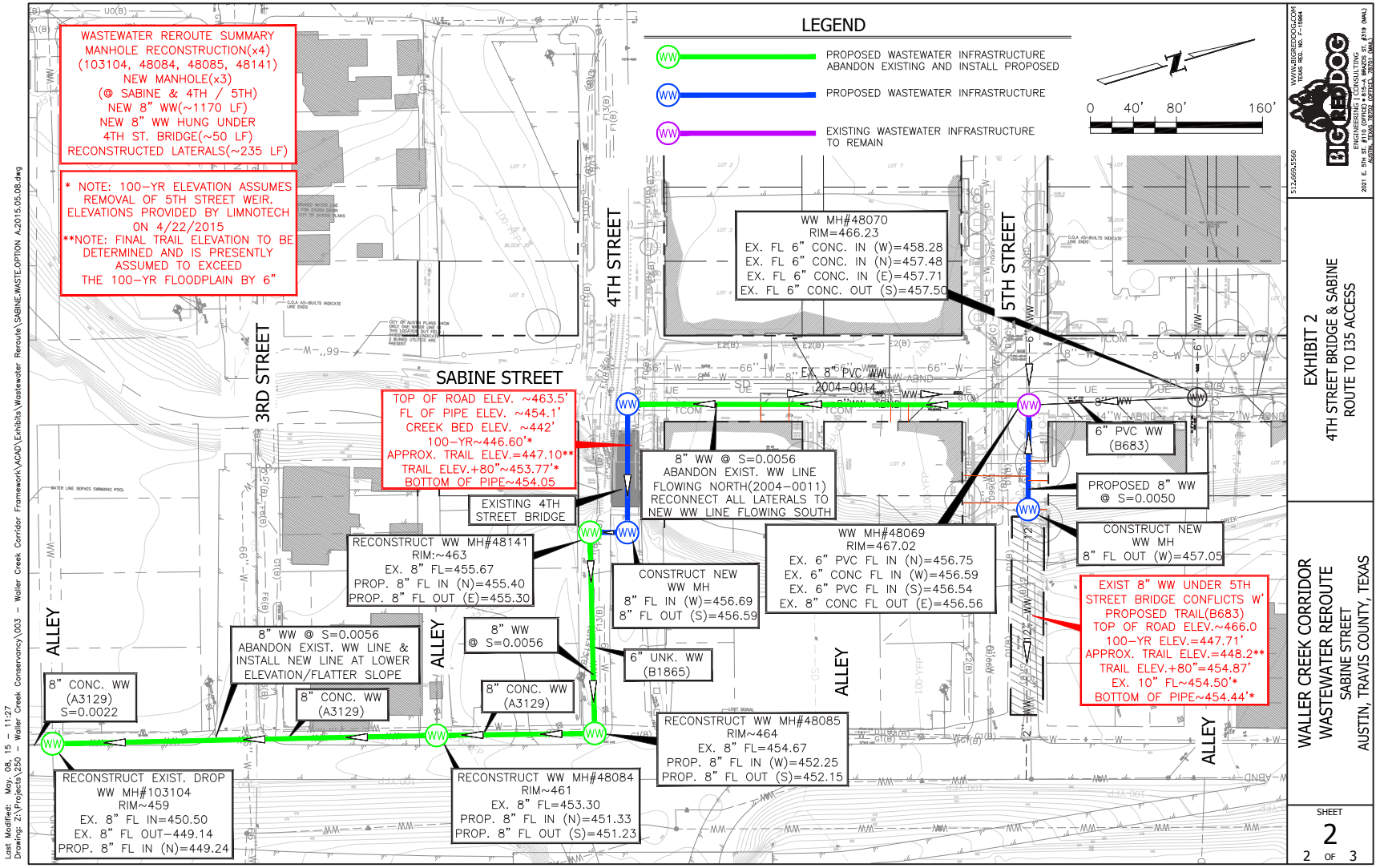
EXHIBIT 1
4th AND 5th STREET BRIDGE
CROSS SECTIONS

WALLER CREEK CORRIDOR
WASTEWATER REROUTE
SABINE STREET
AUSTIN, TRAVIS COUNTY, TEXAS

SHEET
1
1 OF 3

Last Modified: May. 08, 15 - 11:27
Drawing: Z:\Projects\250 - Waller Creek Conservancy\003 - Waller Creek Corridor Framework\ACAD\Exhibits\Wastewater Reroute\SABINE_WASTE_OPTION A_2015.05.08.dwg

5th Street Bridge Wastewater Line Conflict and Relocation Options (6-7)
250.003 - Waller Creek 5th St. WW Memo Package 2015-05-08.pdf



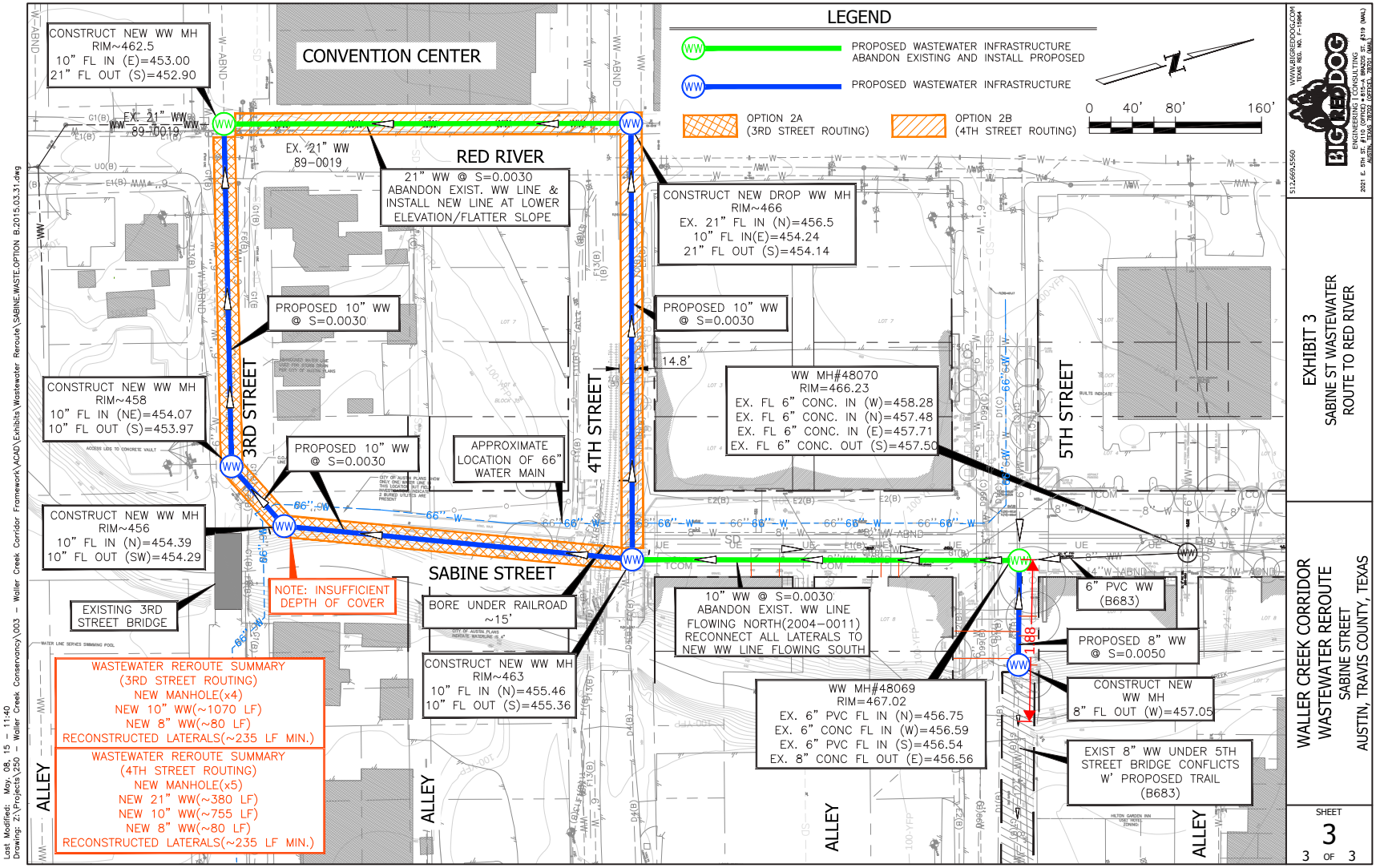


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EXHIBIT 3
SABINE ST WASTEWATER ROUTE TO RED RIVER

WALLER CREEK CORRIDOR
WASTEWATER REROUTE
SABINE STREET
AUSTIN, TRAVIS COUNTY, TEXAS

SHEET 3 OF 3

UTILITIES

Waller Creek District: Reclaimed Water Capitol Complex Project (1-4)
Waller Creek District-Captiol Complex Project %5BCompatibility Mode%5D.pdf

City of Austin
Water Reclamation Initiative

City of Austin
Water Reclamation
Program

WALLER CREEK DISTRICT
RECLAIMED WATER CAPTIOL COMPLEX PROJECT

January 27, 2015

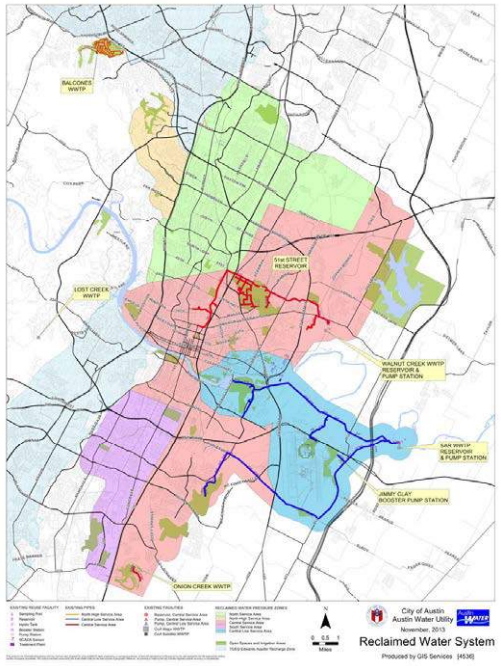
System Overview

Miles of trans. main – 48.3

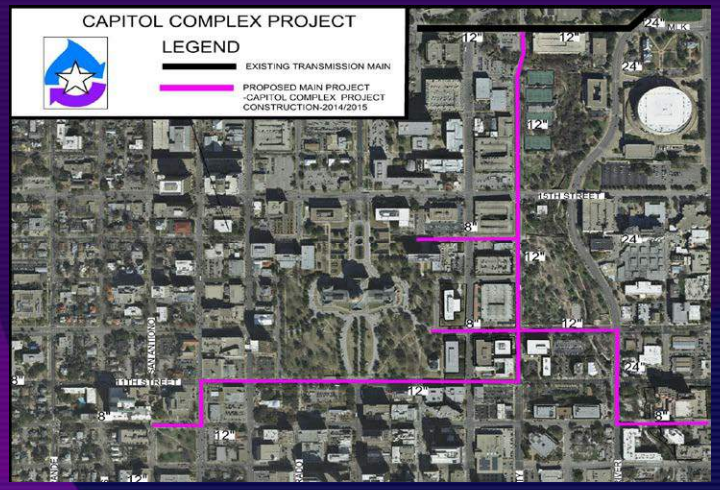
Customers – 69

Annual use – 1.3-1.5 billion gallons

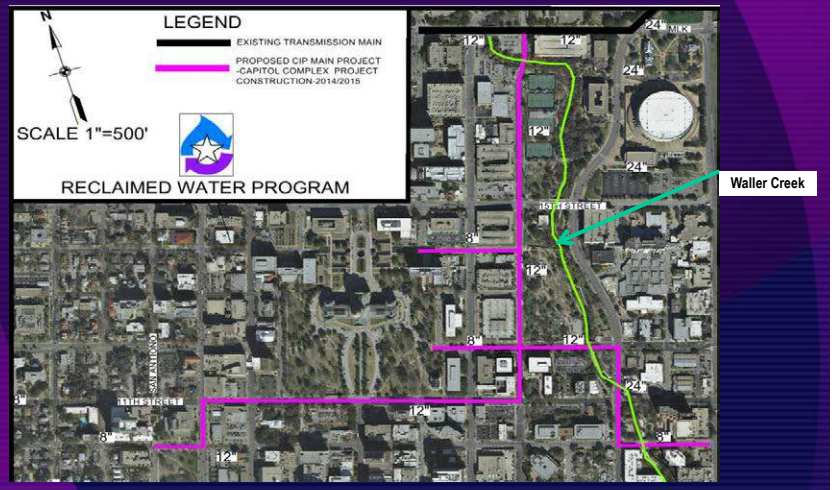
Completing the Core



Mains to Capitol Complex - 5267.034



Mains to Capitol Complex - 5267.034



UTILITIES

Waller Creek District: Reclaimed Water Capitol Complex Project (5-6)
Waller Creek District-Captiol Complex Project %5BCompatibility Mode%5D.pdf

Mains to Capitol Complex – 5267.034

- Temporary Staging Area –Waterloo Park

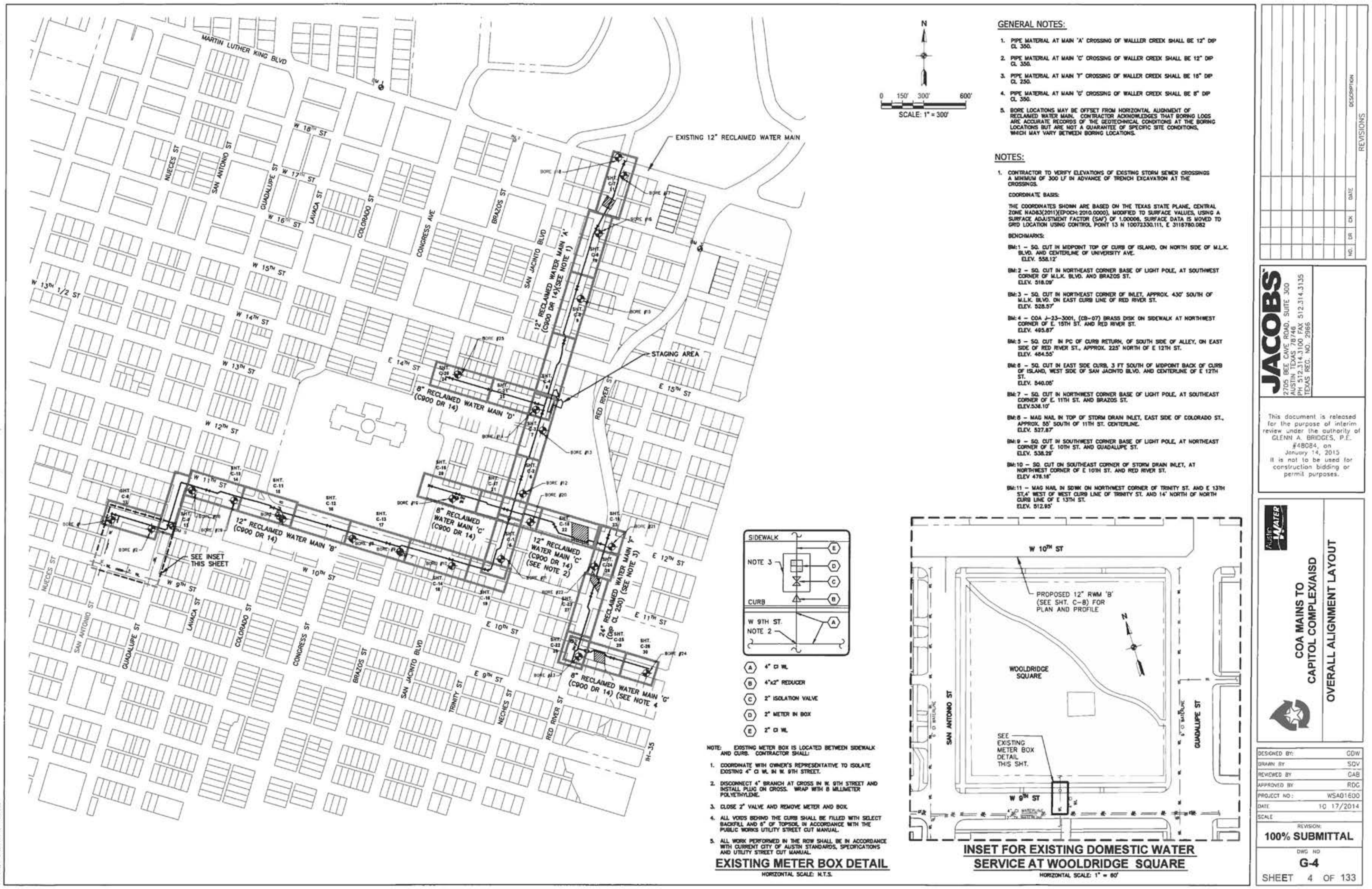
Mains to Capitol Complex - 5267.034

- Existing Condition of 7,411 sq. ft. Parkland

UTILITIES

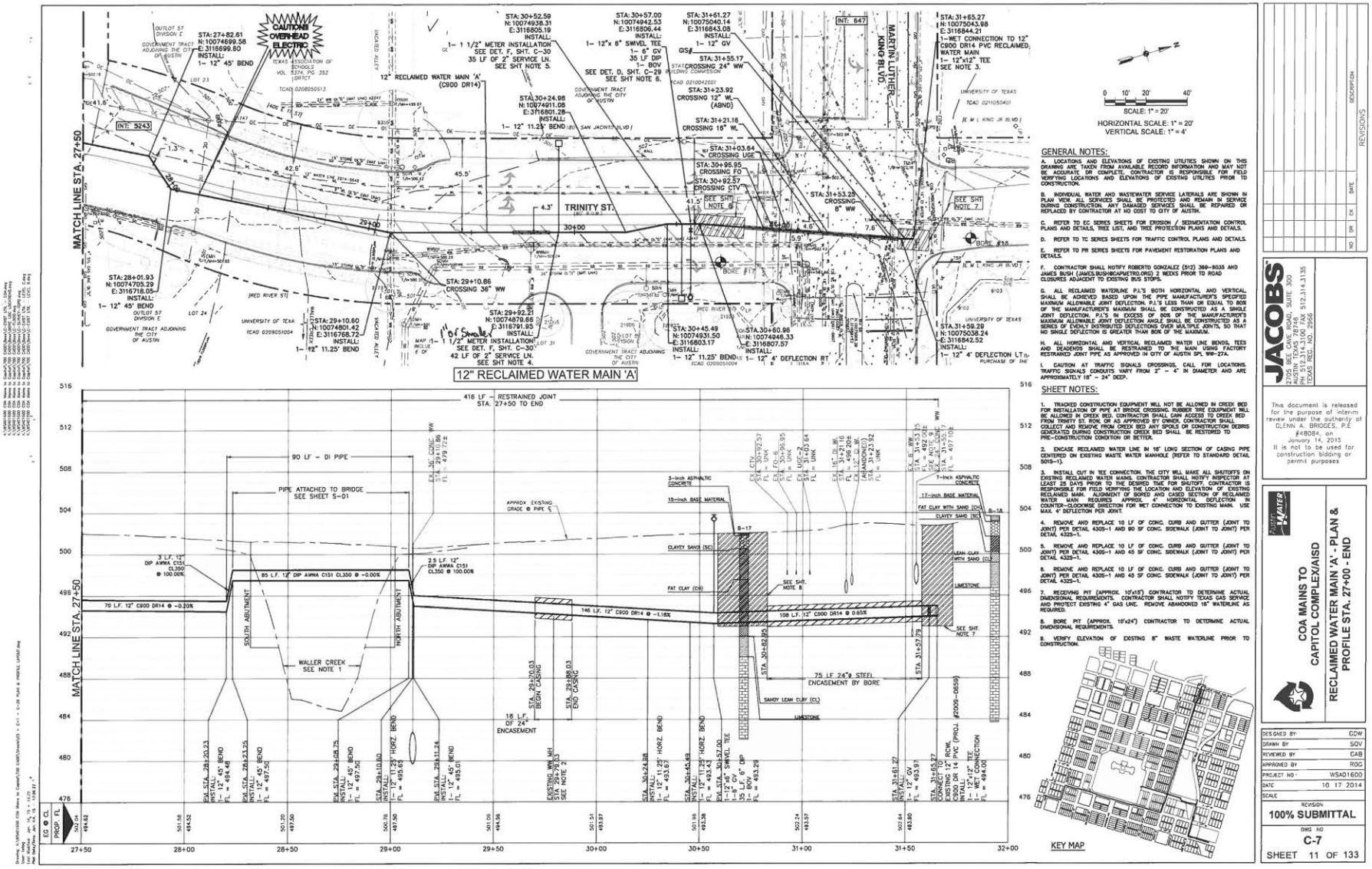
COA Mains to Capitol Complex/AISD Bridge Crossing (1)

Bridge Crossing PP 90.pdf



UTILITIES

COA Mains to Capitol Complex/AISD Bridge Crossing (2-3)
Bridge Crossing PP 90.pdf



GENERAL NOTES:

A. LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES SHOWN ON THIS DRAWING ARE TAKEN FROM AVAILABLE RECORD INFORMATION AND MAY NOT BE ACCURATE OR COMPLETE. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

B. INDIVIDUAL WATER AND WASTEWATER SERVICE LATERALS ARE SHOWN IN PLAN VIEW. ALL SERVICES SHALL BE PROTECTED AND REMAIN IN SERVICE DURING CONSTRUCTION. ANY DAMAGED SERVICES SHALL BE REPAIRED OR REPLACED BY CONTRACTOR AT NO COST TO CITY OF AUSTIN.

C. REFER TO EC SERIES SHEETS FOR EROSION / SEDIMENTATION CONTROL PLANS AND DETAILS, TREE LIST, AND TREE PROTECTION PLANS AND DETAILS.

D. REFER TO TC SERIES SHEETS FOR TRAFFIC CONTROL PLANS AND DETAILS.

E. REFER TO PR SERIES SHEETS FOR PAVEMENT RESTORATION PLANS AND DETAILS.

F. CONTRACTOR SHALL NOTIFY ROBERTO GONZALEZ (512) 369-8035 AND JAMES BUSH (JAMES.BUSH@CAPACITYCORP.) 2 WEEKS PRIOR TO ROAD CLOSURES ADJACENT TO EXISTING BUS STOPS.

G. ALL RECLAIMED WATERLINE P.I.'S BOTH HORIZONTAL AND VERTICAL, SHALL BE ACHIEVED BASED UPON THE PIPE MANUFACTURER'S SPECIFIED MAXIMUM ALLOWABLE JOINT DEFLECTION. P.I.'S LESS THAN OR EQUAL TO 80% OF THE MANUFACTURER'S MAXIMUM SHALL BE CONSTRUCTED AS A SINGLE JOINT DEFLECTION. P.I.'S IN EXCESS OF 80% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE JOINT DEFLECTION ANGLE SHALL BE CONSTRUCTED AS A SERIES OF EVENLY DISTRIBUTED DEFLECTIONS OVER MULTIPLE JOINTS, SO THAT NO SINGLE DEFLECTION IS GREATER THAN 80% OF THE MAXIMUM.

H. ALL HORIZONTAL AND VERTICAL RECLAIMED WATER LINE BENDS, TEES AND DEADENDS SHALL BE RESTRAINED TO THE MAIN USING FACTORY RESTRAINED JOINT PIPE AS APPROVED IN CITY OF AUSTIN SPL 9W-27A.

I. CAUTION AT TRAFFIC SIGNALS CROSSINGS. CALL FOR LOCATIONS. TRAFFIC SIGNALS CONDUITS VARY FROM 2" - 4" IN DIAMETER AND ARE APPROXIMATELY 18" - 24" DEEP.

SHEET NOTES:

1. TRACKED CONSTRUCTION EQUIPMENT WILL NOT BE ALLOWED IN CREEK BED FOR INSTALLATION OF PIPE AT BRIDGE CROSSING. RUBBER TIRE EQUIPMENT WILL BE ALLOWED IN CREEK BED. CONTRACTOR SHALL GAIN ACCESS TO CREEK BED FROM TRINITY ST. ROW OR AS APPROVED BY OWNER. CONTRACTOR SHALL COLLECT AND REMOVE FROM CREEK BED ANY SPOILS OF CONSTRUCTION DEBRIS GENERATED DURING CONSTRUCTION. CREEK BED SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITION OR BETTER.

2. ENCASE RECLAIMED WATER LINE IN 18" LONG SECTION OF CASING PIPE CENTERED ON EXISTING WASTE WATER MANHOLE (REFER TO STANDARD DETAIL 5015-1).

3. INSTALL CUT IN TEE CONNECTION. THE CITY WILL MAKE ALL SHUTOFFS ON EXISTING RECLAIMED WATER MAINS. CONTRACTOR SHALL NOTIFY INSPECTOR AT LEAST 25 DAYS PRIOR TO THE DESIRED TIME FOR SHUTOFF. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THE LOCATION AND ELEVATION OF EXISTING RECLAIMED MAIN. ALIGNMENT OF BORED AND CASED SECTION OF RECLAIMED WATER MAIN REQUIRES APPROX. 4° HORIZONTAL DEFLECTION IN COUNTER-CLOCKWISE DIRECTION FOR WET CONNECTION TO EXISTING MAIN. USE MAX. 4° DEFLECTION PER JOINT.

4. REMOVE AND REPLACE 10 LF OF CONC. CURB AND GUTTER (JOINT TO JOINT) PER DETAIL 4305-1 AND 80 SF CONC. SIDEWALK (JOINT TO JOINT) PER DETAIL 4325-1.

5. REMOVE AND REPLACE 10 LF OF CONC. CURB AND GUTTER (JOINT TO JOINT) PER DETAIL 4305-1 AND 45 SF CONC. SIDEWALK (JOINT TO JOINT) PER DETAIL 4325-1.

6. REMOVE AND REPLACE 10 LF OF CONC. CURB AND GUTTER (JOINT TO JOINT) PER DETAIL 4305-1 AND 45 SF CONC. SIDEWALK (JOINT TO JOINT) PER DETAIL 4325-1.

7. RECEIVING PIT (APPROX. 10'x15') CONTRACTOR TO DETERMINE ACTUAL DIMENSIONAL REQUIREMENTS. CONTRACTOR SHALL NOTIFY TEXAS GAS SERVICE AND PROTECT EXISTING 4" GAS LINE. REMOVE ABANDONED 18" WATERLINE AS REQUIRED.

8. BORE PIT (APPROX. 10'x24') CONTRACTOR TO DETERMINE ACTUAL DIMENSIONAL REQUIREMENTS.

9. VERIFY ELEVATION OF EXISTING 8" WASTE WATERLINE PRIOR TO CONSTRUCTION.

KEY MAP

SCALE: 1" = 20'
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 4'

NO	BY	CK	DATE	REVISIONS / DESCRIPTION

JACOBS
2705 BEE CAVE ROAD, SUITE 300
AUSTIN, TEXAS 78746
PH 512.314.3100 FAX 512.314.3135
TEXAS REG. NO. 2966

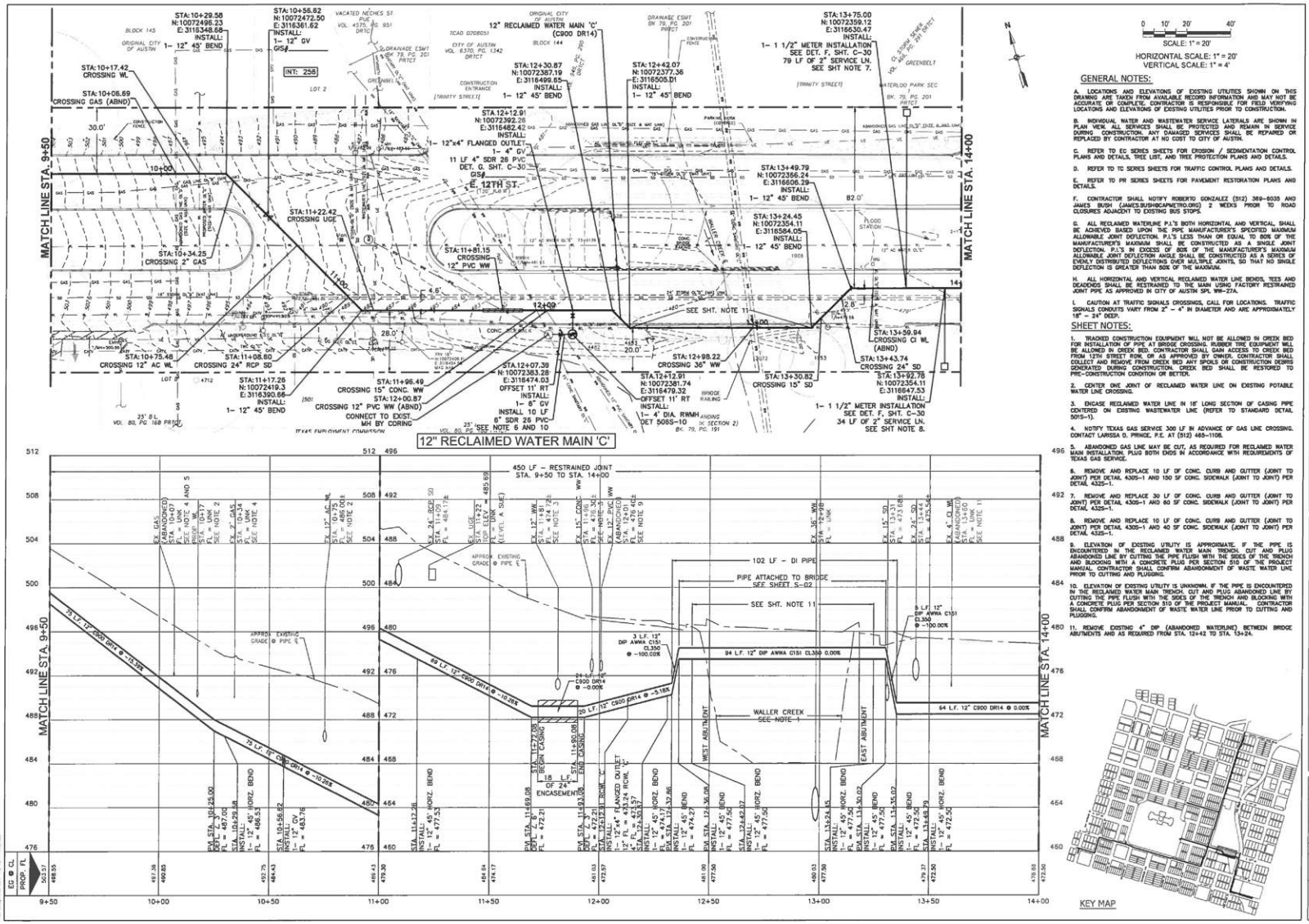
This document is released for the purpose of interim review under the authority of GLENN A. BRIDGES, P.E. #88084, on January 14, 2015. It is not to be used for construction bidding or permit purposes

AUSTIN WATER

COA MAINS TO CAPITOL COMPLEX/AISD

RECLAIMED WATER MAIN 'A' - PLAN & PROFILE STA. 27+00 - END

DESIGNED BY:	CDW
DRAWN BY	SOV
REVIEWED BY	CAB
APPROVED BY	RGG
PROJECT NO.	WSA01600
DATE	10 17 2014
SCALE	
REVISION	100% SUBMITTAL
DWG NO	C-7
SHEET	11 OF 133



GENERAL NOTES:

A. LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES SHOWN ON THIS DRAWING ARE TAKEN FROM AVAILABLE RECORD INFORMATION AND MAY NOT BE ACCURATE OR COMPLETE. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

B. INDIVIDUAL WATER AND WASTEWATER SERVICE LATERALS ARE SHOWN IN PLAN VIEW. ALL SERVICES SHALL BE PROTECTED AND REMAIN IN SERVICE DURING CONSTRUCTION. ANY DAMAGED SERVICES SHALL BE REPAIRED OR REPLACED BY CONTRACTOR AT NO COST TO CITY OF AUSTIN.

C. REFER TO EC SERIES SHEETS FOR EROSION / SEDIMENTATION CONTROL PLANS AND DETAILS, TREE LIST, AND TREE PROTECTION PLANS AND DETAILS.

D. REFER TO TC SERIES SHEETS FOR TRAFFIC CONTROL PLANS AND DETAILS.

E. REFER TO PR SERIES SHEETS FOR PAVEMENT RESTORATION PLANS AND DETAILS.

F. CONTRACTOR SHALL NOTIFY ROBERTO GONZALEZ (512) 369-6035 AND JAMES BUSH (JAMES.BUSH@CAPMETRO.ORG) 2 WEEKS PRIOR TO ROAD CLOSURES ADJACENT TO EXISTING BUS STOPS.

G. ALL RECLAIMED WATERLINE P.I.'S BOTH HORIZONTAL AND VERTICAL, SHALL BE ACHIEVED BASED UPON THE PIPE MANUFACTURER'S SPECIFIED MAXIMUM ALLOWABLE JOINT DEFLECTION. P.I.'S LESS THAN OR EQUAL TO 80% OF THE MANUFACTURER'S MAXIMUM SHALL BE CONSTRUCTED AS A SINGLE JOINT DEFLECTION. P.I.'S IN EXCESS OF 80% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE JOINT DEFLECTION ANGLE SHALL BE CONSTRUCTED AS A SERIES OF EVENLY DISTRIBUTED DEFLECTIONS OVER MULTIPLE JOINTS, SO THAT NO SINGLE DEFLECTION IS GREATER THAN 80% OF THE MAXIMUM.

H. ALL HORIZONTAL AND VERTICAL RECLAIMED WATER LINE BENDS, TEES AND DEADENDS SHALL BE RESTRAINED TO THE MAIN USING FACTORY RESTRAINED JOINT PIPE AS APPROVED IN CITY OF AUSTIN SPL 599–27A.

I. CAUTION AT TRAFFIC SIGNALS CROSSINGS, CALL FOR LOCATIONS. TRAFFIC SIGNALS CONDUITS VARY FROM 2" – 4" IN DIAMETER AND ARE APPROXIMATELY 18" – 24" DEEP.

SHEET NOTES:

1. TRACKED CONSTRUCTION EQUIPMENT WILL NOT BE ALLOWED IN CREEK BED FOR INSTALLATION OF PIPE AT BRIDGE CROSSING. RUBBER TIRE EQUIPMENT WILL BE ALLOWED IN CREEK BED. CONTRACTOR SHALL GAIN ACCESS TO CREEK BED FROM 12TH STREET ROW, OR AS APPROVED BY OWNER. CONTRACTOR SHALL COLLECT AND REMOVE FROM CREEK BED ANY SPOILS OR CONSTRUCTION DEBRIS GENERATED DURING CONSTRUCTION. CREEK BED SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITION OR BETTER.

2. CENTER ONE JOINT OF RECLAIMED WATER LINE ON EXISTING POTABLE WATER LINE CROSSING.

3. ENCASE RECLAIMED WATER LINE IN 18" LONG SECTION OF CASING PIPE CENTERED ON EXISTING WASTEWATER LINE (REFER TO STANDARD DETAIL 5015-1).

4. NOTIFY TEXAS GAS SERVICE 300 LF IN ADVANCE OF GAS LINE CROSSING. CONTACT LARISSA D. PRINCE, P.E. AT (512) 469-1108.

5. ABANDONED GAS LINE MAY BE CUT, AS REQUIRED FOR RECLAIMED WATER MAIN INSTALLATION. PLUG BOTH ENDS IN ACCORDANCE WITH REQUIREMENTS OF TEXAS GAS SERVICE.

6. REMOVE AND REPLACE 10 LF OF CONC. CURB AND GUTTER (JOINT TO JOINT) PER DETAIL 4305-1 AND 150 SF CONC. SIDEWALK (JOINT TO JOINT) PER DETAIL 4325-1.

7. REMOVE AND REPLACE 30 LF OF CONC. CURB AND GUTTER (JOINT TO JOINT) PER DETAIL 4305-1 AND 60 SF CONC. SIDEWALK (JOINT TO JOINT) PER DETAIL 4325-1.

8. REMOVE AND REPLACE 10 LF OF CONC. CURB AND GUTTER (JOINT TO JOINT) PER DETAIL 4305-1 AND 40 SF CONC. SIDEWALK (JOINT TO JOINT) PER DETAIL 4325-1.

9. ELEVATION OF EXISTING UTILITY IS APPROXIMATE. IF THE PIPE IS ENCOUNTERED IN THE RECLAIMED WATER MAIN TRENCH, CUT AND PLUG ABANDONED LINE BY CUTTING THE PIPE FLUSH WITH THE SIDES OF THE TRENCH AND BLOCKING WITH A CONCRETE PLUG PER SECTION 510 OF THE PROJECT MANUAL. CONTRACTOR SHALL CONFIRM ABANDONMENT OF WASTE WATER LINE PRIOR TO CUTTING AND PLUGGING.

10. ELEVATION OF EXISTING UTILITY IS UNKNOWN. IF THE PIPE IS ENCOUNTERED IN THE RECLAIMED WATER MAIN TRENCH, CUT AND PLUG ABANDONED LINE BY CUTTING THE PIPE FLUSH WITH THE SIDES OF THE TRENCH AND BLOCKING WITH A CONCRETE PLUG PER SECTION 510 OF THE PROJECT MANUAL. CONTRACTOR SHALL CONFIRM ABANDONMENT OF WASTE WATER LINE PRIOR TO CUTTING AND PLUGGING.

11. REMOVE EXISTING 4" DIP (ABANDONED WATERLINE) BETWEEN BRIDGE ABUTMENTS AND AS REQUIRED FROM STA. 12+42 TO STA. 13+24.

NO	BR	CK	DATE	DESCRIPTION
				REVISIONS

JACOBS
2705 BEE CAVE ROAD, SUITE 300
AUSTIN, TEXAS 78746
TEL 512.314.3100 FAX 512.314.3135
TBPE REG. NO. F-2966

This document is released for the purpose of interim review under the authority of GLENN A. BRIDGES, P.E. #48084, on January 14, 2015. It is not to be used for construction bidding or permit purposes.

AUSTIN WATER

COA MAINS TO CAPITOL COMPLEX/AISD

RECLAIMED WATER MAIN 'C' - PLAN & PROFILE STA. 9+50 - 14+00

DESIGNED BY:	GDW
DRAWN BY	SQV
REVIEWED BY	GAB
APPROVED BY	RDG
PROJECT NO.:	WSA01600
DATE	10/17/2014
SCALE	

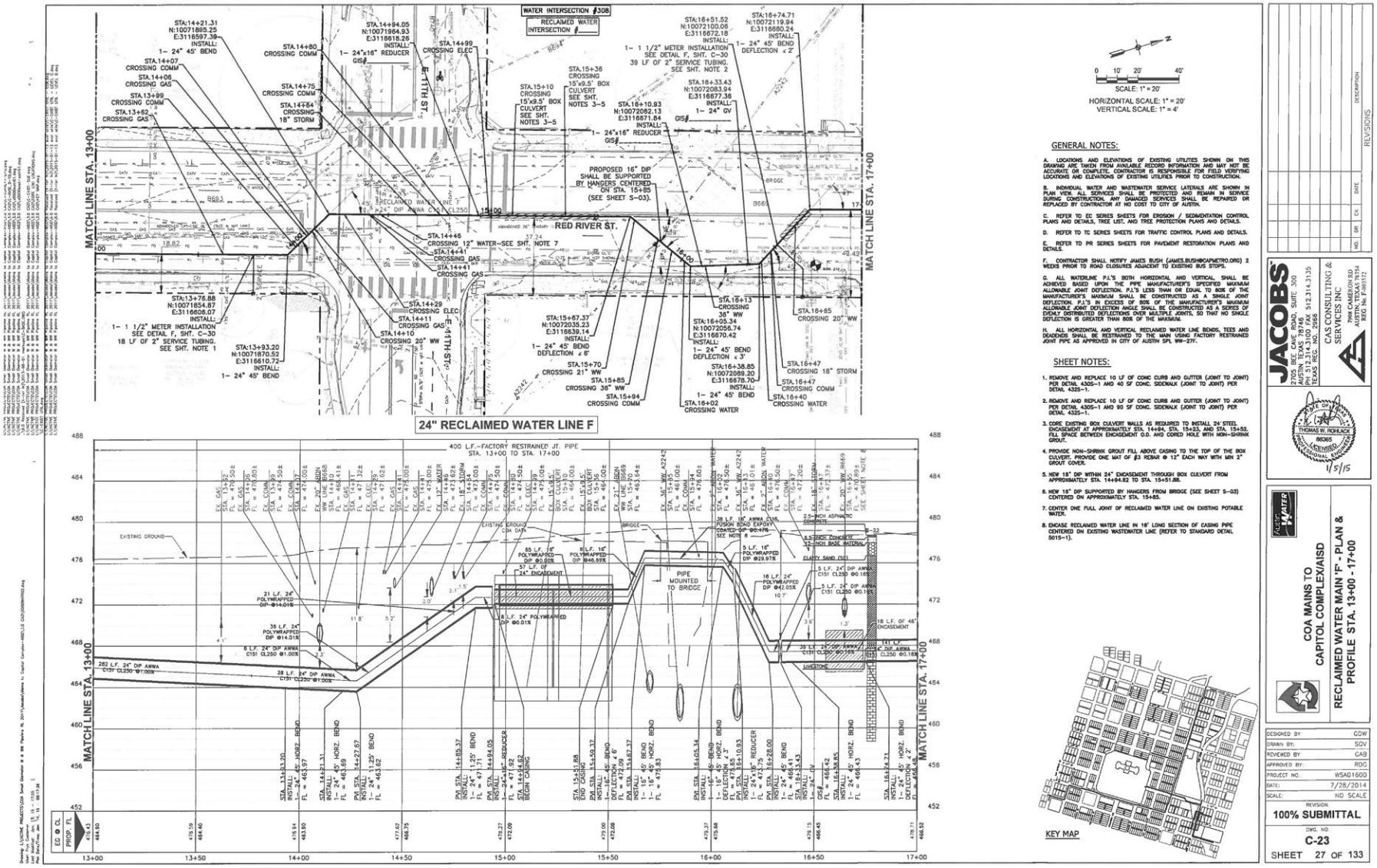
REVISION: 100% SUBMITTAL

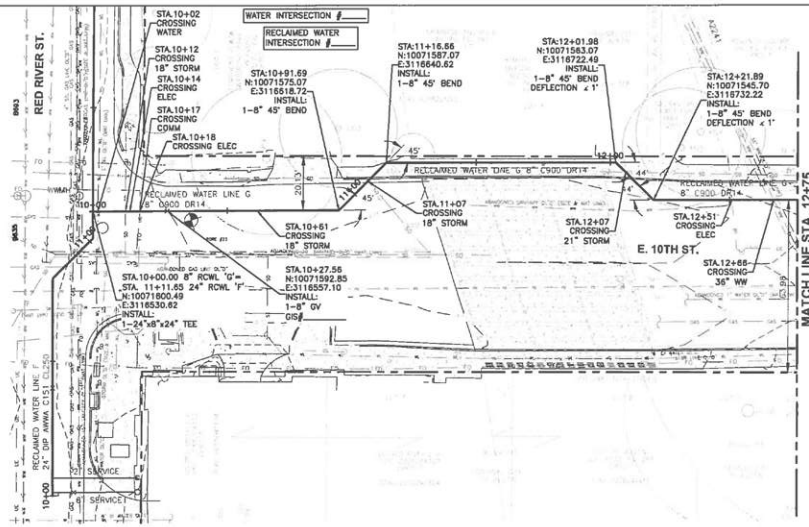
DWG. NO. C-18

SHEET 22 OF 133

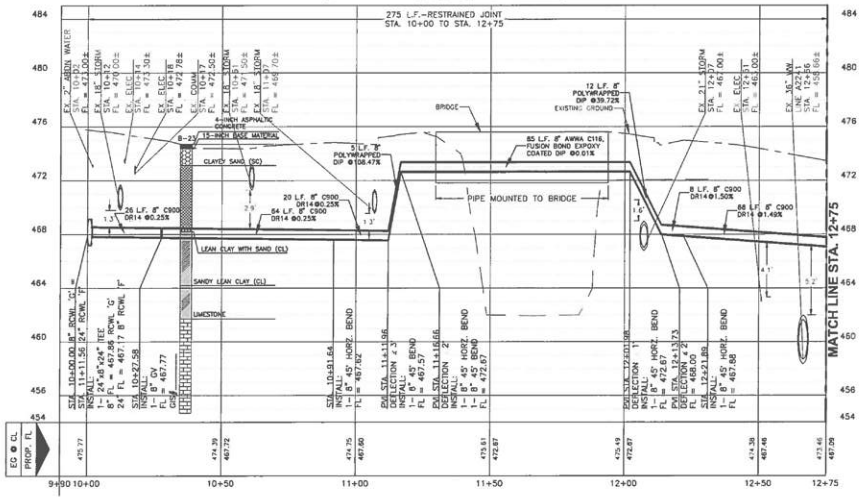
UTILITIES

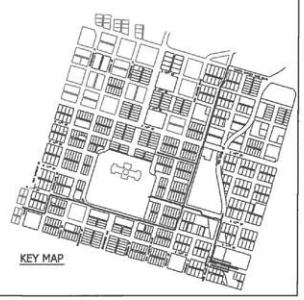
COA Mains to Capitol Complex/AISD Bridge Crossing (4-5)
Bridge Crossing PP 90.pdf





8" RECLAIMED WATER LINE G





HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 4'

GENERAL NOTES:

A. LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES SHOWN ON THIS DRAWING ARE TAKEN FROM AVAILABLE RECORD INFORMATION AND MAY NOT BE ACCURATE OR COMPLETE. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

B. INDIVIDUAL WATER AND WASTEWATER SERVICE LATERALS ARE SHOWN IN PLAN VIEW. ALL SERVICES SHALL BE PROTECTED AND REMAIN IN SERVICE DURING CONSTRUCTION. ANY DAMAGED SERVICES SHALL BE REPAIRED OR REPLACED BY CONTRACTOR AT NO COST TO CITY OF AUSTIN.

C. REFER TO EC SERIES SHEETS FOR EROSION / SEDIMENTATION CONTROL PLANS AND DETAILS, TREE LIST, AND TREE PROTECTION PLANS AND DETAILS.

D. REFER TO TC SERIES SHEETS FOR TRAFFIC CONTROL PLANS AND DETAILS.

E. REFER TO PR SERIES SHEETS FOR PAVEMENT RESTORATION PLANS AND DETAILS.

F. CONTRACTOR SHALL NOTIFY JAMES BUSH (JAMES.BUSH@CAPMETRO.ORG) 2 WEEKS PRIOR TO ROAD CLOSURES ADJACENT TO EXISTING BUS STOPS.

G. ALL WATERLINE P.I.'S BOTH HORIZONTAL AND VERTICAL SHALL BE ACHIEVED BASED UPON THE PIPE MANUFACTURER'S SPECIFIED MAXIMUM ALLOWABLE JOINT DEFLECTION. P.I.'S LESS THAN OR EQUAL TO 80% OF THE MANUFACTURER'S MAXIMUM SHALL BE CONSTRUCTED AS A SINGLE JOINT DEFLECTION. P.I.'S IN EXCESS OF 80% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE JOINT DEFLECTION ANGLE SHALL BE CONSTRUCTED AS A SERIES OF EVENLY DISTRIBUTED DEFLECTIONS OVER MULTIPLE JOINTS, SO THAT NO SINGLE DEFLECTION IS GREATER THAN 80% OF THE MAXIMUM.

H. ALL HORIZONTAL AND VERTICAL RECLAIMED WATER LINE BENDS, TEES AND DEADENDS SHALL BE RESTRAINED TO THE MAIN USING FACTORY RESTRAINED JOINT PIPE AS APPROVED IN CITY OF AUSTIN SPL WW-27A & WW-27F.

NO.	DR.	CK.	DATE	DESCRIPTION
				REVISIONS

JACOBS
2705 BEE CAVE ROAD, SUITE 300
AUSTIN, TEXAS 78746
PH 512.314.3100 FAX 512.314.3335
TBPE REG. NO. F-2966

CAS CONSULTING & SERVICES INC
7704 CAMERON RD
AUSTIN, TEXAS 78754
REG. No. F-001572

THOMAS W. ROHLACK
86365
LICENSED
PROFESSIONAL ENGINEER
1/5/15

COA MAINS TO CAPITOL COMPLEX/AISD

RECLAIMED WATER MAIN 'G' - PLAN & PROFILE STA. 10+00 - 12+75

DESIGNED BY:	GDW
DRAWN BY:	SOV
REVIEWED BY:	GAB
APPROVED BY:	ROG
PROJECT NO.	WSA01600
DATE:	7/28/2014
SCALE:	1" = 20'

REVISION:
100% SUBMITTAL

DWG. NO.
C-25
SHEET 29 OF 133

COA Mains to Capitol Complex/AISD Structural Set (1-2)

COA - Mains to Capitol Complex Structural Set 01-14-15.pdf

GENERAL

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL RESULTING REVISIONS TO THE STRUCTURAL SYSTEM OR OTHER TRADES AS A RESULT OF ACCEPTANCE OF CONTRACTOR PROPOSED ALTERNATIVES OR SUBSTITUTIONS.
2. METHODS, PROCEDURES, AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
3. THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL DETERMINE THE SCOPE OF THE STRUCTURAL WORK FROM THE CONTRACT DOCUMENTS TAKEN AS A WHOLE. THE STRUCTURAL DRAWINGS SHALL NOT BE CONSIDERED SEPARATELY FOR PURPOSES OF BIDDING THE STRUCTURAL WORK. DUE CONSIDERATION SHALL BE GIVEN TO OTHER STRUCTURAL WORK OR WORK RELATED TO THE STRUCTURE, INCLUDING NECESSARY COORDINATION DESCRIBED OR IMPLIED BY THE CIVIL DRAWINGS.
4. THE REPRODUCTIVE USE OF THE STRUCTURAL CONTRACT DOCUMENTS OR ELECTRONIC FILES AS STRUCTURAL SHOP DRAWING DOCUMENTS BY THE CONTRACTOR OR SUB-CONTRACTORS IS NOT ALLOWED.
5. SCALES NOTED ON THE DRAWINGS ARE FOR GENERAL REFERENCE ONLY. NO DIMENSIONAL INFORMATION SHALL BE OBTAINED BY DIRECT SCALING OF THE DRAWING.
6. GENERAL CONTRACTOR IS TO VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL PENETRATIONS THROUGH THE STRUCTURE WITH SHOP DRAWINGS FROM EQUIPMENT SUPPLIERS AND INSTALLERS PRIOR TO CONSTRUCTION.

DESIGN SPECIFICATIONS/ CODES

1. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LOAD AND RESISTANCE FACTOR (LRFD) BRIDGE DESIGN SPECIFICATIONS, 2012.
2. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION (2002).
3. 2012 INTERNATIONAL BUILDING CODE WITH REQUIRED AMENDMENTS.
4. MINIMUM DESIGN LOADS FOR BUILDINGS & OTHER STRUCTURES, ASCE/SEI 7-10.
5. STRUCTURAL STEEL: AISC STEEL CONSTRUCTION MANUAL, FOURTEENTH EDITION.
6. STRUCTURAL CONCRETE: AMERICAN CONCRETE INSTITUTE, ACI 318-11.

DESIGN LOADINGS:

1. PERMANENT LOADS:
   - REINFORCED CONCRETE 150 PCF
   - STRUCTURAL STEEL 490 PCF
2. UTILITIES:
   - 8" Ø D.I. RECLAIMED WATER LINE (350 PSI PRESSURE CLASS) 48 PLF
   - 12" Ø D.I. RECLAIMED WATER LINE (350 PSI PRESSURE CLASS) 92 PLF
   - 16" Ø D.I. RECLAIMED WATER LINE (250 PSI PRESSURE CLASS) 151 PLF
3. IMPACT LOADS PER AASHTO STANDARD SPECIFICATION

WIND LOADS:

1. AS PER AMERICAN ASSOCIATION OF STATE AND HIGHWAY TRANSPORTATION OFFICIALS (AASHTO).

EARTHQUAKE EFFECTS:

1. AS PER AMERICAN ASSOCIATION OF STATE AND HIGHWAY TRANSPORTATION OFFICIALS (AASHTO).
2. THE PEAK GROUND ACCELERATION COEFFICIENT IS 2.9 PERCENT PER SECTION 3, AASHTO LRFD. THE SEISMIC ZONE IS 1.

STRUCTURAL STEEL

1. STEEL PIPE SHALL CONFORM TO ASTM SPECIFICATION A53, TYPE E OR S, GRADE B.
2. STEEL SHAPES SUCH AS PLATES, ANGLES, & CHANNELS SHALL CONFORM TO ASTM SPECIFICATION A36.
3. STAINLESS STEEL SHAPES AND FASTENERS SHALL BE TYPE 316 STAINLESS.
4. SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ENGINEER AS TO LOCATION AND TYPE OF SPLICE TO BE MADE. ANY MEMBER HAVING SPLICE NOT SHOWN AND DETAILED ON SHOP DRAWINGS WILL BE REJECTED.
5. PENETRATIONS SHALL NOT BE CUT IN STRUCTURAL STEEL MEMBERS UNLESS SO INDICATED IN THE DRAWINGS OR AS REVIEWED BY THE ENGINEER.

POST-INSTALLED ANCHORS

1. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE DRAWINGS.
2. CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REBAR. HOLES SHALL BE DRILLED WITH A ROTARY HAMMER AND CLEANED PER THE MANUFACTURER'S INSTRUCTIONS. ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCES AND/OR SPACINGS INDICATED IN THE MANUFACTURER'S LITERATURE.
3. UNLESS SPECIFIED OTHERWISE, ANCHORS SHALL BE EMBEDDED IN THE APPROPRIATE SUBSTRATE WITH A MINIMUM EMBEDMENT OF 8 TIMES THE NOMINAL ANCHOR DIAMETER OR THE EMBEDMENT REQUIRED TO SUPPORT THE INTENDED LOAD.
4. CONTRACTOR TO NOTIFY ENGINEER PRIOR TO INSTALLATION FOR ANCHOR PRODUCT APPROVAL CHOSEN FROM LIST BELOW.
5. SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIED, SHALL BE SUBMITTED TO THE ENGINEER WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER SHOWING THAT THE SUBSTITUTED PRODUCT WILL ACHIEVE AN EQUIVALENT CAPACITY USING THE APPROPRIATE DESIGN PROCEDURE REQUIRED BY THE CODE.
6. CONTACT SIMPSON STRONG-TIE AT (800) 999-5099 OR HILTI AT (800) 879-6000 X7980 FOR PRODUCT RELATED QUESTIONS AND AVAILABILITY.
7. ADHESIVE ANCHORS SHALL BE INSTALLED ONLY BY PERSONNEL WHO HAVE ACI/CRSI CERTIFICATION AS AN ADHESIVE ANCHOR INSTALLER.

COORDINATION

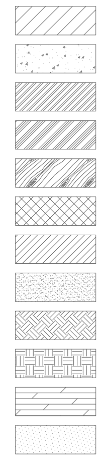
1. ONLY CERTAIN OF THE REQUIRED SLEEVE OPENINGS IN STRUCTURAL FRAMING COMPONENT MEMBERS, AND ONLY CERTAIN OF THE REQUIRED FRAMED OPENINGS IN AND/OR THROUGH STRUCTURAL ASSEMBLY ARE INDICATED ON THE STRUCTURAL SERIES DRAWINGS. HOWEVER, ALL SLEEVES, INSERTS AND OPENINGS, INCLUDING FRAMES AND/OR SLEEVES, THEREFORE, SHALL BE PROVIDED FOR PASSAGE, PROVISION AND/OR INCORPORATION OF THE WORK OF THE CONTRACT, INCLUDING BUT NOT LIMITED TO MECHANICAL, ELECTRICAL, AND PLUMBING WORK. THE PROVIDING FOR SLEEVES OR FRAMED OPENINGS SHALL INCLUDE THE VERIFICATION OF SIZES, ALIGNMENT, DIMENSION, POSITION, LOCATIONS, ELEVATIONS, AND GRADES AS REQUIRED TO SERVE THE INTENDED PURPOSE. OPENINGS NOT INDICATED ON THE STRUCTURAL SERIES DRAWINGS, BUT REQUIRED AS ABOVE, SHALL HAVE BEEN APPROVED BY THE ENGINEER.
2. REFER TO CIVIL DRAWINGS FOR EXACT ELEVATIONS, SLOPES, AND LOCATION OF PIPE ALIGNMENT.
3. STRUCTURAL SERIES DRAWINGS SHALL BE COMPARED WITH DRAWINGS OF OTHER SERIES.
4. PRIOR TO COMPLETION OF THE STRUCTURE, STRUCTURAL COMPONENTS MAY BE UNSTABLE AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR, OR THE CLIENT IN THE ABSENCE OF A GENERAL CONTRACTOR, TO PROVIDE TEMPORARY SHORING AND/OR BRACING AS REQUIRED FOR THE STABILITY OF THE INCOMPLETE STRUCTURE AND FOR THE SAFETY OF ALL ON-SITE PERSONNEL.
5. THE REHABILITATION OF AN EXISTING STRUCTURE REQUIRES THAT CERTAIN ASSUMPTIONS BE MADE REGARDING EXISTING CONDITIONS, AND BECAUSE SOME OF THESE ASSUMPTIONS MAY NOT BE VERIFIABLE WITHOUT EXPENDING ADDITIONAL SUMS OF MONEY OR DESTROYING AN OTHERWISE ADEQUATE OR SERVICEABLE PORTION OF THE STRUCTURES. THE CLIENT AGREES TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD THE DESIGN PROFESSIONAL HARMLESS FROM ANY CLAIM, LIABILITY, OR COST (INCLUDING REASONABLE ATTORNEYS' FEES AND COST OF DEFENSE) FOR INJURY OR ECONOMIC LOSS ARISING OR ALLEGEDLY ARISING OUT OF THE PROFESSIONAL SERVICES PROVIDED UNDER THIS AGREEMENT, EXCEPTING ONLY THOSE DAMAGES, LIABILITIES FOR COSTS THE ATTRIBUTABLE TO THE NEGLIGENCE OR WILLFUL MISCONDUCT OF THE DESIGN PROFESSIONAL.

STRUCTURAL ABBREVIATIONS

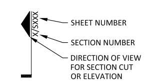
ADDITIONAL	ADD'L.
ADJACENT	ADJ.
AGGREGATE	AGGR.
ALTERNATE	ALT.
ANCHOR ROD	A.R.
APPROXIMATE(LY)	APPROX.
BACK FACE	B.F.
BEAM	BM.
BEARING	BRG.
BETWEEN	BTWN.
BLOCKING	BLKG.
BOTTOM	BOT.
BOTTOM OF STEEL	B.O.S.
BRIDGING	BRDG.
CAST-IN-PLACE	C.I.P.
CENTER LINE	C.L. OR ℄
CENTER LINE OF STEEL	C.L.S.
CLEAR(ANCE)	CLR.
COMPRESSION	C OR COMP.
CONCRETE	CONC.
CONTINUOUS	CONT.
CONTRACTOR	CONTR.
CONSTRUCTION	CONST.
DEFORMED BAR ANCHOR(S)	DBA('S).
DETAIL	DET.
DEAD LOAD	D.L.
DIAGONAL	DIAG.
DIAMETER	DIA.
DIMENSION(S)	DIM(S).
DRAWING(S)	DWG(S).
DOUBLE	DBL.
DOWEL(S)	DWL(S).
DUCTILE IRON	D.I.
EACH	EA.
EACH FACE	E.F.
EACH WAY	E.W.
ELEVATION	EL.
EMBEDMENT	EMBED.
ENGINEER	ENGR.
EQUAL	EQ.
EQUIPMENT	EQUIP.
EXPANSION	EXP.
EXPANSION JOINT	E.J.
EXISTING	EXIST.
EXTERIOR	EXT.
FABRICATE(ION)(OR)	FAB.
FAR SIDE	F.S.
FOOTING	FTG.
FOUNDATION	FDN.
GALVANIZED	GALV.
GENERAL	GEN.
GRADE	GR.
GRADE BEAM	GR.BM.
HOT DIP(PED)	H.D.
HEIGHT	HT.
HORIZONTAL	HORIZ.
HOOK	HK.
INSIDE DIAMETER	I.D.
INSIDE FACE	I.F.
INTERIOR	INT.
INTERMEDIATE	INTERM.
JOINT	JT.
LIGHTWEIGHT	LWT.
LIVE LOAD	L.L.
LONGITUDINAL	LONG.
LONG LEG HORIZONTAL	LLH.
LONG LEG VERTICAL	LLV.
LONG SIDE HORIZONTAL	LSH.
LONG SIDE VERTICAL	LSV.

MANUFACTURE(R)	MFR.
MATERIAL	MAT'L.
METAL	MTL.
MIDDLE	MID.
MISCELLANEOUS	MISC.
NEAR FACE	N.F.
NOMINAL	NOM.
NON-SHRINK	N.S.
NORMAL WEIGHT	N.W.
NOT IN CONTRACT	N.I.C.
NOT TO SCALE	N.T.S.
ON CENTER	O.C.
OPENING(S)	OPNG(S).
OPPOSITE	OPP.
OPPOSITE HAND	O.H.
OUTSIDE FACE	O.F.
OUTSIDE DIAMETER	O.D.
PARALLEL	PAR.
PENETRATION	PEN.
PERPENDICULAR	PERP.
PIECE	PC.
PLATE	PL. OR ℘
PLYWOOD	PLYWD.
POINT	PT.
POUND(S) X1000	KIP(S)
POUNDS PER LINEAR FOOT	PLF
POUNDS PER SQUARE FOOT	PSF
POUNDS PER CUBIC FOOT	PCF
POUNDS PER CUBIC YARD	PCY
PREFABRICATED	PREFAB.
PRELIMINARY	PRELIM.
PRESSURE	PRESS.
PROJECT(ION)	PROJ.
RADIUS	R.
REFER TO / REFERENCE	REF.
REINFORCED CONCRETE PIPE	RCP.
REINFORCE(ING)(ED)(MENT)	REINF.
REMAINDER	REM.
REQUIRE	REQ.
REQUIRED	REQ'D
RETURN	RET.
ROUGH OPENING	R.O.
ROUND	RND.
SCHEDULE(D)	SCHED.
SECTION	SECT.
SHEAR FORCE	V
SHEET	SHT.
SIMILAR	SIM.
SPACE(S)(ING)	SPA.
SPECIFICATION(S)	SPEC(S).
SPECIFIED	SPEC'D
SQUARE	SQ.
STAINLESS STEEL	S.S.
STANDARD	STD.
STEEL	STL.
STIFFENER	STIFF
STRAIGHT	STR.
STIRRUPS	STIR
STRUCTURE OR STRUCTURAL	STRUCT.
SUPPORT(S)	SUPT(S)
TENSION	T
THICK(NESS)	THK.
TOP AND BOTTOM	T&B
TOP OF BEAM	T.O.BM.
TOP OF FOOTING	T.O.FTG.
TOP OF STEEL	T.O.S.
TOP OF STRUCTURAL CONCRETE	T.O.S.C.
TYPICAL	TYP.
UNLESS NOTED OTHERWISE	U.N.O.
VERTICAL	VERT.
VOLUME	VOL.
WATER STOP	W.S.
WELDED WIRE MESH	W.W.M.
WIND LOAD	W.L.
WITH	W/
WITHOUT	W/O
WATER PROOFING	W.P.
WORK POINT	W.P.

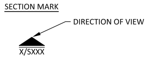
MATERIALS LEGEND



DRAFTING SYMBOLS



SECTION MARK



ELEVATION MARK

PLAN/DETAIL DESIGNATION

PLAN NAME/DETAIL TITLE

SCALE:

STRUCTURAL DRAWING TYPES

S-00 .... GENERAL NOTES
S-01 .... PLAN AND PROFILE
S-02 .... PLAN AND PROFILE
S-03 .... PLAN AND PROFILE
S-04 .... PLAN AND PROFILE
S-05 .... STRUCTURAL DETAILS

NO.	DR	CK	DATE	DESCRIPTION

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01/14/2015

Austin Water

COA MAINS TO CAPITOL COMPLEX/AISD

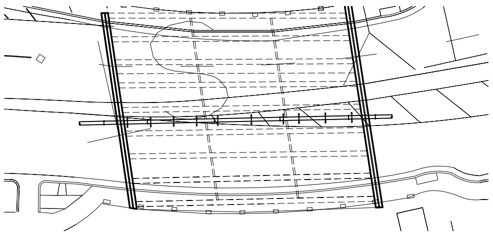
GENERAL NOTES

DESIGNED BY:	RAH
DRAWN BY:	MAS/CNH
REVIEWED BY:	SLT
APPROVED BY:	SLT
PROJECT NO.:	13005.S.AUS
DATE:	01/14/2015
SCALE:	AS SHOWN

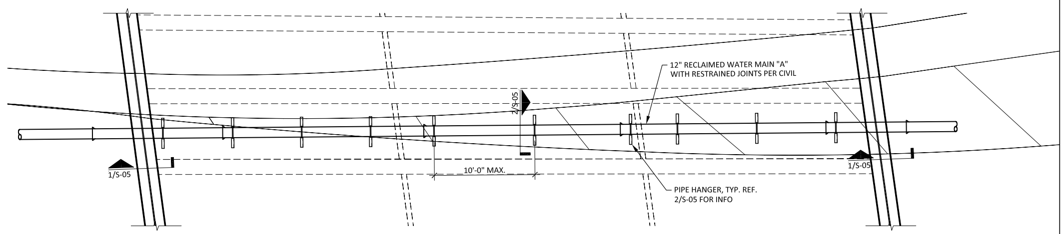
REVISION:
100% SUBMITTAL

DWG. NO.
S-00

SHEET 35 OF 133



1 TRINITY STREET BRIDGE ALIGNMENT PLAN
SCALE: 1/16"=1'-0"

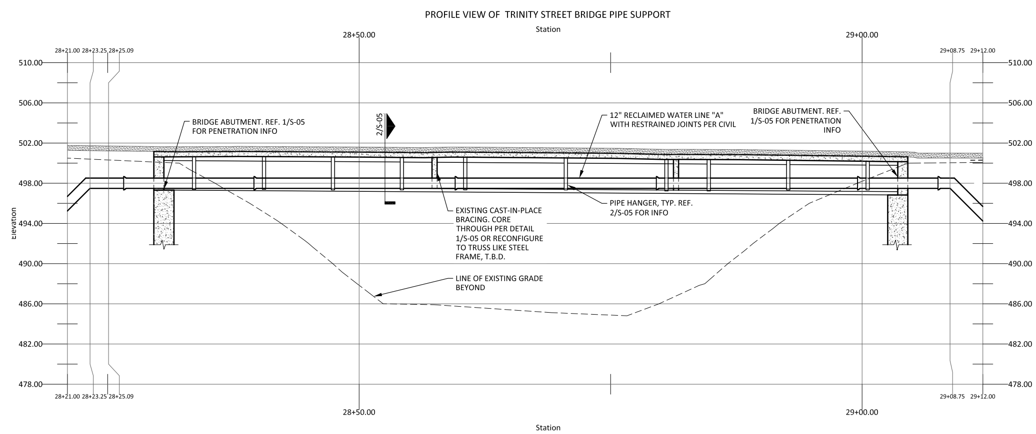


2 TRINITY STREET BRIDGE PIPE SUPPORT PLAN
SCALE: 3/16"=1'-0"

PIPE BRIDGE CROSSING PLAN AND PROFILE NOTES:

1. NO EXISTING DRAWINGS WERE AVAILABLE AT THE TIME THESE DOCUMENTS WERE PREPARED. THE FOLLOWING ARE THE ASSUMPTIONS MADE IN DETERMINING THE CAPACITY OF THE BRIDGE TO CARRY THE PIPE LOAD:
   - 1.a. f'c = 3,000 PSI FOR TRINITY STREET AND 10TH STREET BRIDGES;
     f'c = 2,500 PSI FOR 12TH STREET AND RED RIVER STREET BRIDGES;
     fy = 40 KSI FOR TRINITY STREET AND 10TH STREET BRIDGES;
     fy = 33 KSI FOR 12TH STREET AND RED RIVER STREET BRIDGES

     CONCRETE COMPRESSIVE STRENGTH AND YIELD STRENGTH OF REINFORCING STEEL WAS NOT A PART OF THE NONDESTRUCTIVE LOAD TESTS PERFORMED. THESE VALUES CAME FROM COORDINATION WITH THE STREET AND BRIDGE DEPARTMENT AS WELL RECOMMENDATIONS IN AASHTO'S "THE MANUAL FOR BRIDGE EVALUATION" (2011).
   - 1.b. REINFORCEMENT SPACING PER CTL GROUP'S REPORT (PROJECT NO. 510163) "GROUND PENETRATING RADAR SCANNING OF FOUR BRIDGES" DATED FEBRUARY 12, 2014 (REINFORCEMENT SIZE UNKNOWN)
2. THE PIPE JOINT AND SUPPORT LAYOUT SHOWN ON THIS SHEET IS ONE OPTION IN ORDER TO MEET THE REQUIREMENTS ON 1/S-05. PLEASE SUBMIT FINAL LAYOUT OF PIPE JOINT AND SUPPORTS TO ENGINEER TO REVIEW BEFORE CONSTRUCTION.



3 TRINITY STREET BRIDGE PIPE SUPPORT PROFILE
SCALE: 3/16"=1'-0"

NO.	DR	CK	DATE	DESCRIPTION

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Austin Water

COA MAINS TO CAPITOL COMPLEX/AISD

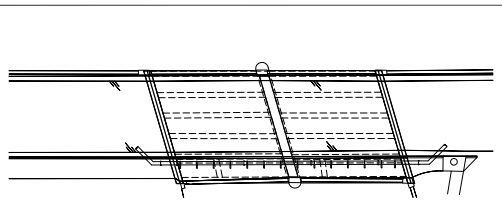
RECLAIMED WATER MAIN 'A' - PLAN & PROFILE STA. 28+15 - 29+05

DESIGNED BY:	RAH
DRAWN BY:	MAS/CNH
REVIEWED BY:	SLT
APPROVED BY:	SLT
PROJECT NO.:	13005.S.AUS
DATE:	01/14/2015
SCALE:	AS SHOWN

REVISION:
100% SUBMITTAL

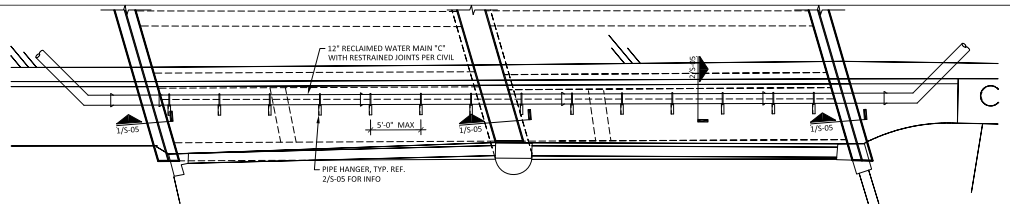
DWG. NO.
S-01

SHEET 36 OF 133



1 12TH STREET BRIDGE ALIGNMENT PLAN
SCALE: 1/16"=1'-0"

NOTE: REF. CIVIL SHEET C-18 FOR ADDITIONAL INFORMATION REGARDING RECLAIMED WATER MAIN "C"



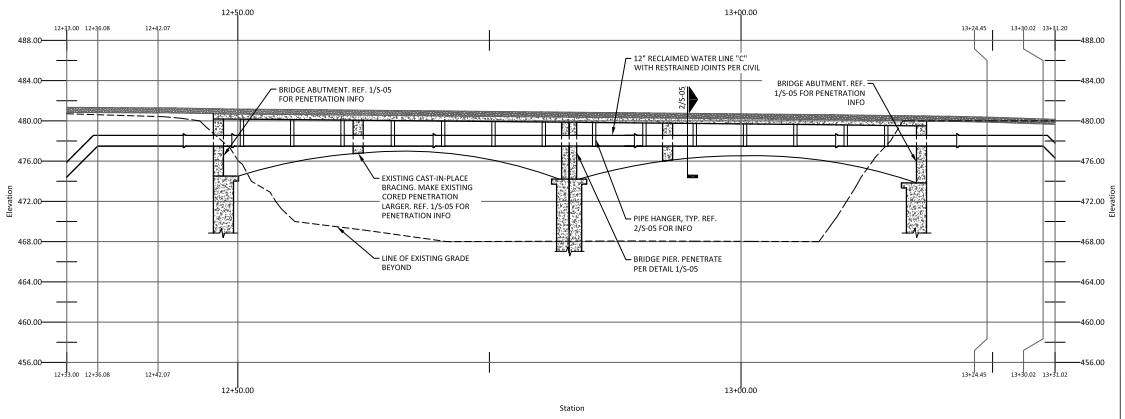
2 12TH STREET BRIDGE PIPE SUPPORT PLAN
SCALE: 3/16"=1'-0"

NOTE: EXISTING 4" ABANDONED WATER PIPE TO BE REMOVED BEFORE NEW 12" PIPE TO BE INSTALLED

PIPE BRIDGE CROSSING PLAN AND PROFILE NOTES:

1. NO EXISTING DRAWINGS WERE AVAILABLE AT THE TIME THESE DOCUMENTS WERE PREPARED. THE FOLLOWING ARE THE ASSUMPTIONS MADE IN DETERMINING THE CAPACITY OF THE BRIDGE TO CARRY THE PIPE LOAD:
   - 1.a. f'c = 3,000 PSI FOR TRINITY STREET AND 10TH STREET BRIDGES; f'c = 2,500 PSI FOR 12TH STREET AND RED RIVER STREET BRIDGES; fy = 40 KSI FOR TRINITY STREET AND 10TH STREET BRIDGES; fy = 33 KSI FOR 12TH STREET AND RED RIVER STREET BRIDGES
     CONCRETE COMPRESSIVE STRENGTH AND YIELD STRENGTH OF REINFORCING STEEL WAS NOT A PART OF THE NONDESTRUCTIVE LOAD TESTS PERFORMED. THESE VALUES CAME FROM COORDINATION WITH THE STREET AND BRIDGE DEPARTMENT AS WELL RECOMMENDATIONS IN AASHTO'S "THE MANUAL FOR BRIDGE EVALUATION" (2011).
   - 1.b. REINFORCEMENT SPACING PER CTL GROUP'S REPORT (PROJECT NO. 510163) "GROUND PENETRATING RADAR SCANNING OF FOUR BRIDGES" DATED FEBRUARY 12, 2014 (REINFORCEMENT SIZE UNKNOWN)
2. THE PIPE JOINT AND SUPPORT LAYOUT SHOWN ON THIS SHEET IS ONE OPTION IN ORDER TO MEET THE REQUIREMENTS ON 1/S-05. PLEASE SUBMIT FINAL LAYOUT OF PIPE JOINT AND SUPPORTS TO ENGINEER TO REVIEW BEFORE CONSTRUCTION.

PROFILE VIEW OF E. 12TH STREET BRIDGE PIPE SUPPORT



3 12TH STREET BRIDGE PIPE SUPPORT PROFILE
SCALE: 3/16"=1'-0"

NO.	DR	CK	DATE	DESCRIPTION
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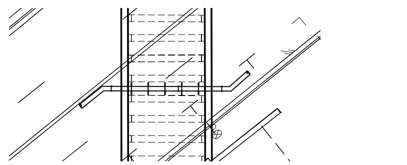
Austin Water

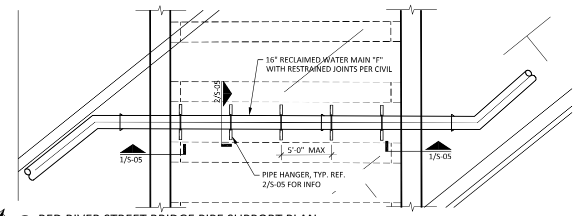
COA MAINS TO CAPITOL COMPLEX/AISD

RECLAIMED WATER MAIN "C" - PLAN & PROFILE STA. 12+34.08 - 13+31.20

DESIGNED BY:	RAH
DRAWN BY:	MAS/CNH
REVIEWED BY:	SLT
APPROVED BY:	SLT
PROJECT NO.:	13005.S.AUS
DATE:	01/14/2015
SCALE:	AS SHOWN
REVISION:	100% SUBMITTAL
DWG. NO.	S-02
SHEET	37 OF 133



1 RED RIVER STREET BRIDGE ALIGNMENT PLAN
SCALE: 1/16"=1'-0"



2 RED RIVER STREET BRIDGE PIPE SUPPORT PLAN
SCALE: 3/16"=1'-0"

PIPE BRIDGE CROSSING PLAN AND PROFILE NOTES:

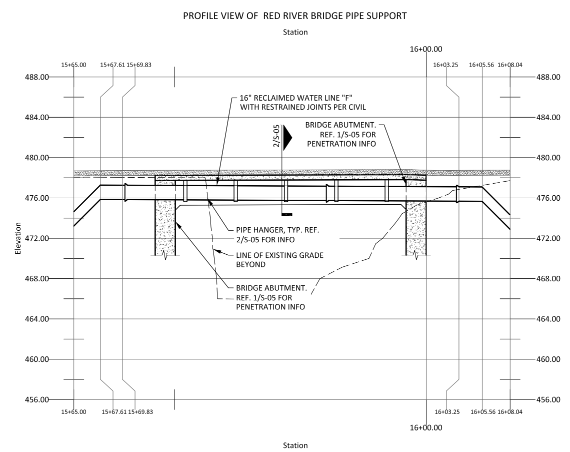
1. NO EXISTING DRAWINGS WERE AVAILABLE AT THE TIME THESE DOCUMENTS WERE PREPARED. THE FOLLOWING ARE THE ASSUMPTIONS MADE IN DETERMINING THE CAPACITY OF THE BRIDGE TO CARRY THE PIPE LOAD:

   1.a. f'c = 3,000 PSI FOR TRINITY STREET AND 10TH STREET BRIDGES;
   f'c = 2,500 PSI FOR 12TH STREET AND RED RIVER STREET BRIDGES;
   fy = 40 KSI FOR TRINITY STREET AND 10TH STREET BRIDGES;
   fy = 33 KSI FOR 12TH STREET AND RED RIVER STREET BRIDGES

   CONCRETE COMPRESSIVE STRENGTH AND YIELD STRENGTH OF REINFORCING STEEL WAS NOT A PART OF THE NONDESTRUCTIVE LOAD TESTS PERFORMED. THESE VALUES CAME FROM COORDINATION WITH THE STREET AND BRIDGE DEPARTMENT AS WELL RECOMMENDATIONS IN AASHTO'S "THE MANUAL FOR BRIDGE EVALUATION" (2011).

   1.b. REINFORCEMENT SPACING PER CTL GROUP'S REPORT (PROJECT NO. 510163) "GROUND PENETRATING RADAR SCANNING OF FOUR BRIDGES" DATED FEBRUARY 12, 2014 (REINFORCEMENT SIZE UNKNOWN).

2. THE PIPE JOINT AND SUPPORT LAYOUT SHOWN ON THIS SHEET IS ONE OPTION IN ORDER TO MEET THE REQUIREMENTS ON 1/S-05. PLEASE SUBMIT FINAL LAYOUT OF PIPE JOINT AND SUPPORTS TO ENGINEER TO REVIEW BEFORE CONSTRUCTION.



3 RED RIVER STREET BRIDGE PIPE SUPPORT PROFILE
SCALE: 3/16"=1'-0"

NO.	DR	CK	DATE	DESCRIPTION

REVISIONS

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01/14/2015

Austin Water

COA MAINS TO CAPITOL COMPLEX/AISD

RECLAIMED WATER MAIN 'F' - PLAN & PROFILE STA. 15+65 - 16+08.04

DESIGNED BY:	RAH
DRAWN BY:	MAS/CNH
REVIEWED BY:	SLT
APPROVED BY:	SLT
PROJECT NO.:	13005.S.AUS
DATE:	01/14/2015
SCALE:	AS SHOWN

REVISION:
100% SUBMITTAL

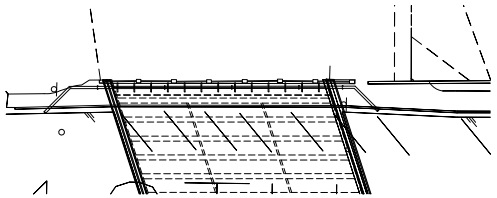
DWG. NO.
S-03

SHEET 38 OF 133

UTILITIES

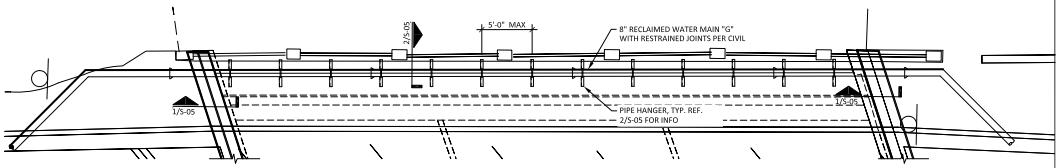
COA Mains to Capitol Complex/AISD Structural Set (5-6)

COA - Mains to Capitol Complex Structural Set 01-14-15.pdf



1 10TH STREET BRIDGE ALIGNMENT PLAN
SCALE: 1/16"=1'-0"

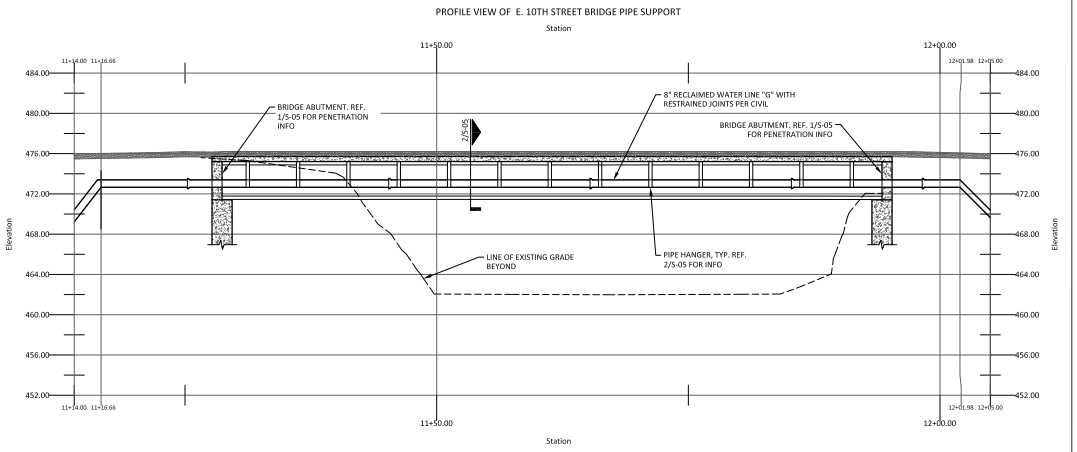
NOTE: REF. CIVIL SHEET C-25 FOR ADDITIONAL INFORMATION REGARDING RECLAIMED WATER MAIN "G"



2 10TH STREET BRIDGE PIPE SUPPORT PLAN
SCALE: 3/16"=1'-0"

PIPE BRIDGE CROSSING PLAN AND PROFILE NOTES:

1. NO EXISTING DRAWINGS WERE AVAILABLE AT THE TIME THESE DOCUMENTS WERE PREPARED. THE FOLLOWING ARE THE ASSUMPTIONS MADE IN DETERMINING THE CAPACITY OF THE BRIDGE TO CARRY THE PIPE LOAD:
   - 1.a. f'c = 3,000 PSI FOR TRINITY STREET AND 10TH STREET BRIDGES; f'c = 2,500 PSI FOR 12TH STREET AND RED RIVER STREET BRIDGES; fy = 40 KSI FOR TRINITY STREET AND 10TH STREET BRIDGES; fy = 33 KSI FOR 12TH STREET AND RED RIVER STREET BRIDGES
     CONCRETE COMPRESSIVE STRENGTH AND YIELD STRENGTH OF REINFORCING STEEL WAS NOT A PART OF THE NONDESTRUCTIVE LOAD TESTS PERFORMED. THESE VALUES CAME FROM COORDINATION WITH THE STREET AND BRIDGE DEPARTMENT AS WELL RECOMMENDATIONS IN AASHTO'S "THE MANUAL FOR BRIDGE EVALUATION" (2011).
   - 1.b. REINFORCEMENT SPACING PER CTL GROUP'S REPORT (PROJECT NO. 510163) "GROUND PENETRATING RADAR SCANNING OF FOUR BRIDGES" DATED FEBRUARY 12, 2014 (REINFORCEMENT SIZE UNKNOWN).
2. THE PIPE JOINT AND SUPPORT LAYOUT SHOWN ON THIS SHEET IS ONE OPTION IN ORDER TO MEET THE REQUIREMENTS ON 1/S-05. PLEASE SUBMIT FINAL LAYOUT OF PIPE JOINT AND SUPPORTS TO ENGINEER TO REVIEW BEFORE CONSTRUCTION.
3. THE CANTILEVERED SIDEWALKS AT THE 10TH STREET BRIDGE WERE CONSTRUCTED IN THE 1960S AND NOT ORIGINALLY REQUIRED TO BE DESIGNED FOR A WHEEL LIVE LOAD. CURRENT CODE REQUIRES BRIDGES TO ACCOUNT FOR WHEEL LOAD ON SIDEWALKS IF THERE IS NO PROTECTIVE TRAFFIC BARRIER BETWEEN ROAD AND SIDEWALK. PLEASE NOTE THAT ENSURING THE CANTILEVER'S CAPACITY WILL WITHSTAND WHEEL LIVE LOAD IN THE EVENT A VEHICLE ENTERS THE SIDEWALK AREA IS OUTSIDE THE SCOPE OF THIS PROJECT AND WAS NOT ACCOUNTED FOR IN DETERMINING THE CAPACITY OF THE SIDEWALK DUE TO DATE OF CONSTRUCTION. IF IT IS DEEMED NECESSARY THAT THIS COMPONENT OF THE BRIDGE IS REQUIRED TO SUPPORT WHEEL LOAD LISTED IN THE CURRENT AASHTO CODE, ADDITIONAL MODIFICATIONS TO THE STRUCTURE WILL LIKELY BE REQUIRED.



3 10TH STREET BRIDGE PIPE SUPPORT PROFILE
SCALE: 3/16"=1'-0"

NO.	DR	CK	DATE	DESCRIPTION
				REVISIONS

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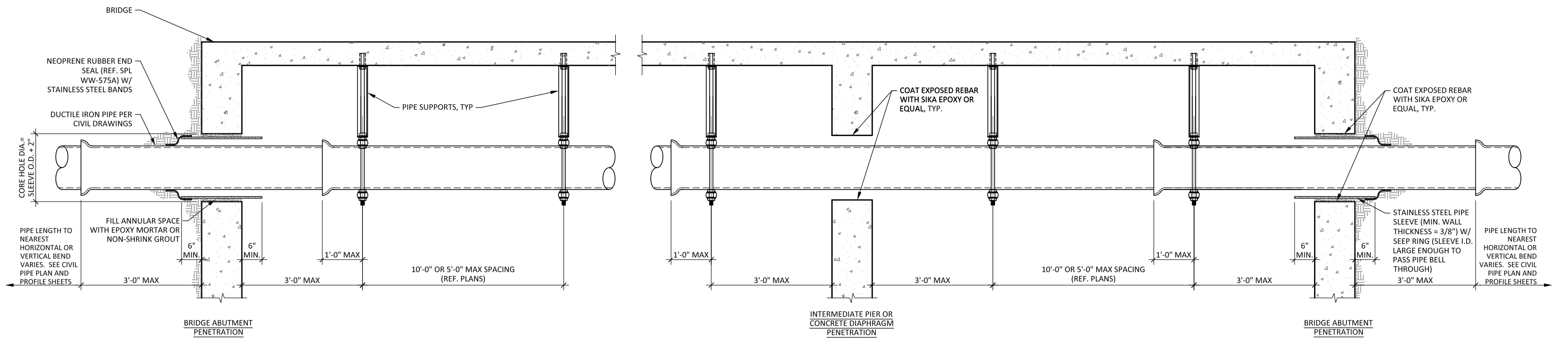
Austin Water

COA MAINS TO CAPITOL COMPLEX/AISD

RECLAIMED WATER MAIN 'G' - PLAN & PROFILE STA. 11+14 - 12+05

DESIGNED BY:	RAH
DRAWN BY:	MAS/CNH
REVIEWED BY:	SLT
APPROVED BY:	SLT
PROJECT NO.:	13005.S.AUS
DATE:	01/14/2015
SCALE:	AS SHOWN
REVISION:	100% SUBMITTAL
DWG. NO.	S-04
SHEET	39 OF 133

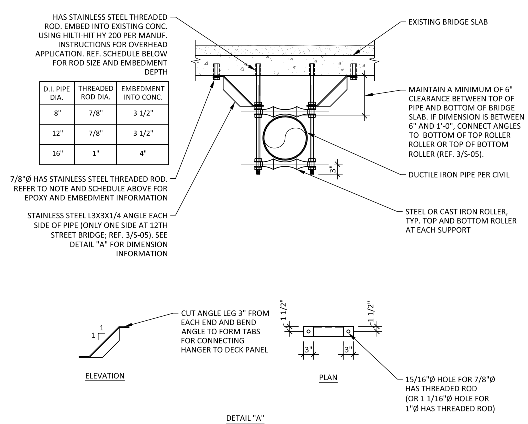

BRIDGE
NEOPRENE RUBBER END SEAL (REF. SPL WW-575A) W/ STAINLESS STEEL BANDS
DUCTILE IRON PIPE PER CIVIL DRAWINGS
CORE HOLE DIA.= SLEEVE O.D. + 2"
PIPE SUPPORTS, TYP
FILL ANNULAR SPACE WITH EPOXY MORTAR OR NON-SHRINK GROUT
PIPE LENGTH TO NEAREST HORIZONTAL OR VERTICAL BEND VARIES. SEE CIVIL PIPE PLAN AND PROFILE SHEETS
6" MIN.
1'-0" MAX
3'-0" MAX
10'-0" OR 5'-0" MAX SPACING (REF. PLANS)
COAT EXPOSED REBAR WITH SIKA EPOXY OR EQUAL, TYP.
STAINLESS STEEL PIPE SLEEVE (MIN. WALL THICKNESS = 3/8") W/ SEEP RING (SLEEVE I.D. LARGE ENOUGH TO PASS PIPE BELL THROUGH)
BRIDGE ABUTMENT PENETRATION
INTERMEDIATE PIER OR CONCRETE DIAPHRAGM PENETRATION
BRIDGE ABUTMENT PENETRATION

NOTES:

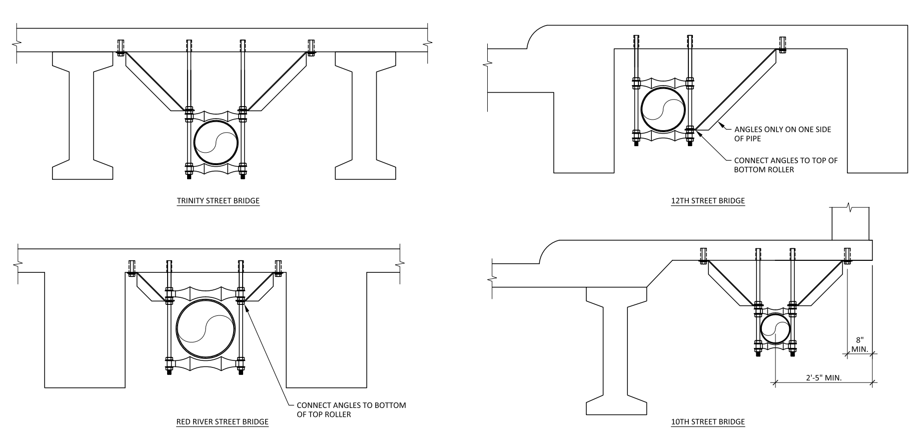
1. PROVIDE NO MORE THAN 5 FEET SPACING BETWEEN PIPE SUPPORTS (10'-0" MAX AT TRINITY STREET BRIDGE).
2. PROVIDE NO MORE THAN 3 FEET SPACING BETWEEN PIPE SUPPORTS AND THE VERTICAL FACES OF THE BRIDGE ABUTMENT PENETRATIONS AND THE PIER OR INTERMEDIATE DIAPHRAGM PENETRATIONS.
3. PROVIDE A MINIMUM OF 4 SUPPORTS PER LENGTH OF PIPE (2 SUPPORTS MINIMUM AT TRINITY STREET BRIDGE), WITH ONE SUPPORT BEING ON THE BELL END OF THE PIPE WITHIN 12 INCHES OF THE BELL FACE AND THE OTHER SUPPORT BEING ROUGHLY MIDWAY BETWEEN THE PIPE ENDS.
4. INSTALL PIPE SO THAT ALL BELLS ARE ORIENTED IN THE SAME DIRECTION.
5. INSTALL ONLY DUCTILE IRON PIPE WITH INTEGRAL FACTORY RESTRAINED BELL AND SPIGOT CONNECTIONS THROUGHOUT THE LENGTH OF THE BRIDGE AND BEYOND THE ENDS OF THE BRIDGE TO THE LIMITS SHOWN ON SHEET C-7 (TRINITY STREET BRIDGE), SHEET C-18 (12TH STREET BRIDGE), SHEET C-23 (RED RIVER STREET BRIDGE) AND SHEET C-25 (10TH STREET BRIDGE).
6. EXTEND THE JOINTS ON ALL PIPE FROM STA. 28+23.25 TO STA. 29+08.75 (FOR TRINITY STREET BRIDGE), FROM STA. 12+36.08 TO STA. 13+30.02 (FOR 12TH STREET BRIDGE), FROM STA. 15+67.64 TO STA. 16+05.56 (FOR RED RIVER STREET BRIDGE), AND FROM STA. 11+16.66 TO STA. 12+01.98 (FOR 10TH STREET BRIDGE BY PULLING OR PRESSURIZING IT AFTER INSTALLATION BUT BEFORE BACKFILLING (OF BURIED PORTIONS) IN ORDER TO ELIMINATE FUTURE AXIAL JOINT MOVEMENT. PERFORM SUBSEQUENT WORK IN A MANNER TO MAINTAIN THE PIPE IN EXTENDED CONDITION.
7. ALL NUTS, WASHERS AND OTHER HARDWARE SHALL BE 316 STAINLESS STEEL, TYP.

1 BRIDGE CROSSING TYPICAL DETAIL
SCALE: 3/4"=1'-0"

D.I. PIPE DIA.	THREADED ROD DIA.	EMBEDMENT INTO CONC.
8"	7/8"	3 1/2"
12"	7/8"	3 1/2"
16"	1"	4"


HAS STAINLESS STEEL THREADED ROD. EMBED INTO EXISTING CONC. USING HILTI-HIT HY 200 PER MANUF. INSTRUCTIONS FOR OVERHEAD APPLICATION. REF. SCHEDULE BELOW FOR ROD SIZE AND EMBEDMENT DEPTH
EXISTING BRIDGE SLAB
MAINTAIN A MINIMUM OF 6" CLEARANCE BETWEEN TOP OF PIPE AND BOTTOM OF BRIDGE SLAB. IF DIMENSION IS BETWEEN 6" AND 1'-0", CONNECT ANGLES TO BOTTOM OF TOP RAILER ROLLER OR TOP OF BOTTOM ROLLER (REF. 3/S-05).
7/8"Ø HAS STAINLESS STEEL THREADED ROD. REFER TO NOTE AND SCHEDULE ABOVE FOR EPOXY AND EMBEDMENT INFORMATION
DUCTILE IRON PIPE PER CIVIL
STAINLESS STEEL L3X3X1/4 ANGLE EACH SIDE OF PIPE (ONLY ONE SIDE AT 12TH STREET BRIDGE; REF. 3/S-05). SEE DETAIL "A" FOR DIMENSION INFORMATION
STEEL OR CAST IRON ROLLER, TYP. TOP AND BOTTOM ROLLER AT EACH SUPPORT
CUT ANGLE LEG 3" FROM EACH END AND BEND ANGLE TO FORM TABS FOR CONNECTING HANGER TO DECK PANEL
1 1/2"
3"
15/16"Ø HOLE FOR 7/8"Ø HAS THREADED ROD (OR 1 1/16"Ø HOLE FOR 1"Ø HAS THREADED ROD)
ELEVATION
PLAN
DETAIL "A"

2 PIPE SUPPORT DETAIL
SCALE: 3/4"=1'-0"



3 SCHEMATIC DETAILS OF CONNECTIONS AT EACH BRIDGE
SCALE: 3/4"=1'-0"

NO.	DR	CK	DATE	DESCRIPTION

REVISIONS

JACOBS
2705 BEE CAVE ROAD, SUITE 300
AUSTIN TEXAS 78746
PH 512.314.3100 FAX 512.314.3135
TEXAS REG. NO. 2966

ENCOTECH ENGINEERING CONSULTANTS
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103 Austin, Texas 78759 | 512.338.1101

STATE OF TEXAS
RACHEL A. HAWKINS
117500
LICENSED PROFESSIONAL ENGINEER
01/14/2015

Austin Water

COA MAINS TO CAPITOL COMPLEX/AISD
STRUCTURAL DETAILS

DESIGNED BY:	RAH
DRAWN BY:	MAS/CNH
REVIEWED BY:	SLT
APPROVED BY:	SLT
PROJECT NO.:	13005.S.AUS
DATE:	01/14/2015
SCALE:	AS SHOWN

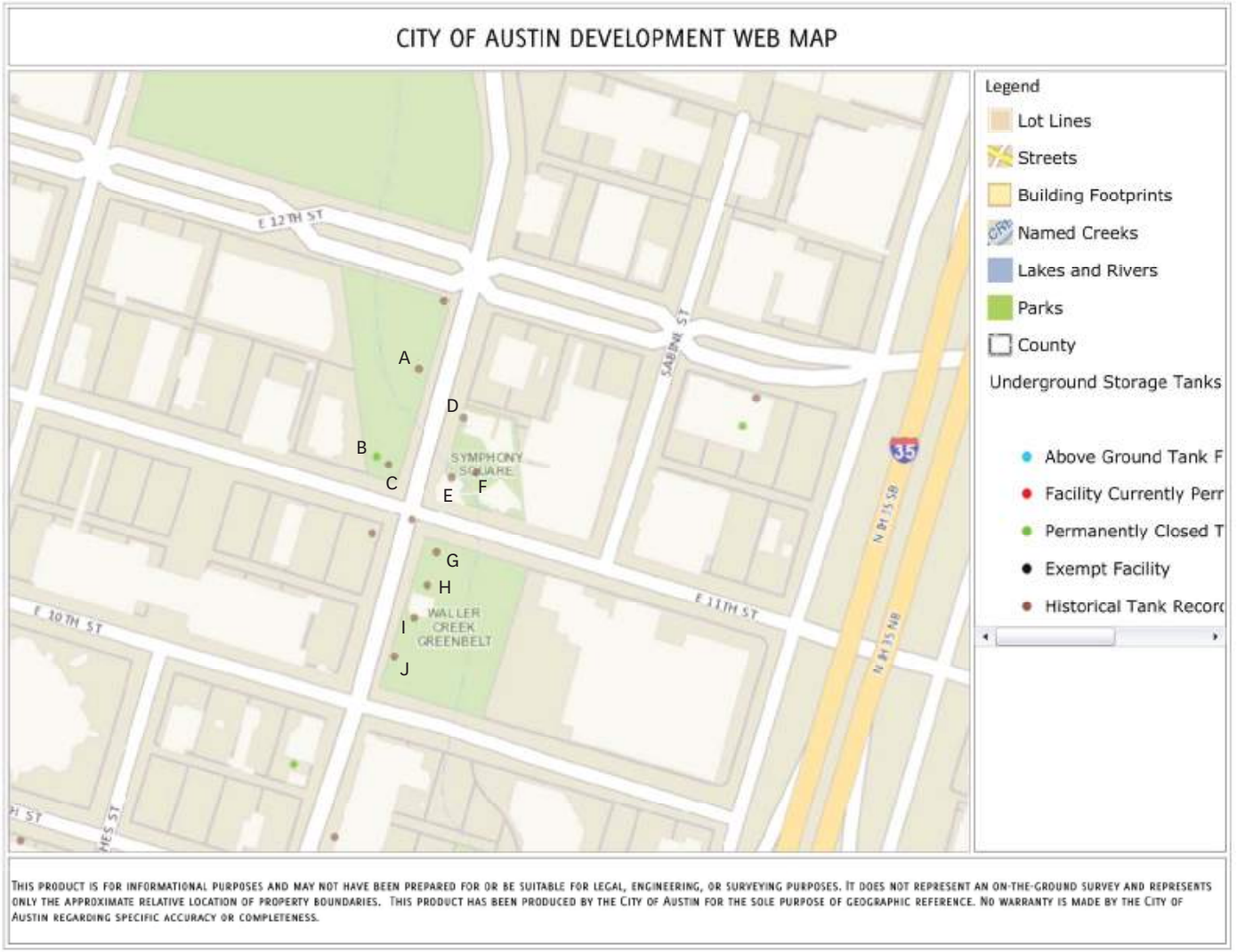
REVISION:
100% SUBMITTAL

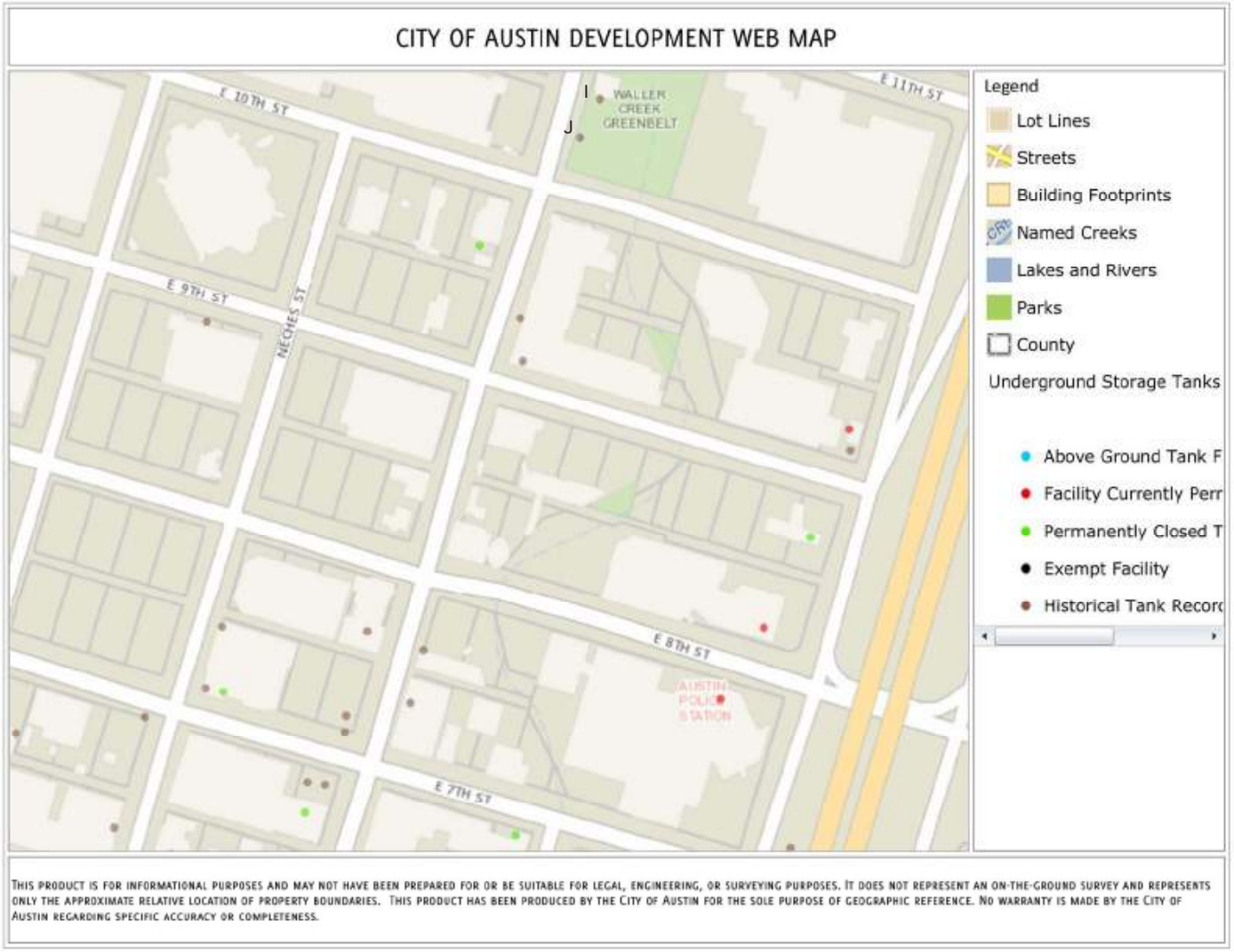
DWG. NO.
S-05
SHEET 40 OF 133

UTILITIES

Historic Tanks Information and Map (1-2)
Historic Tanks Info and Map.pdf

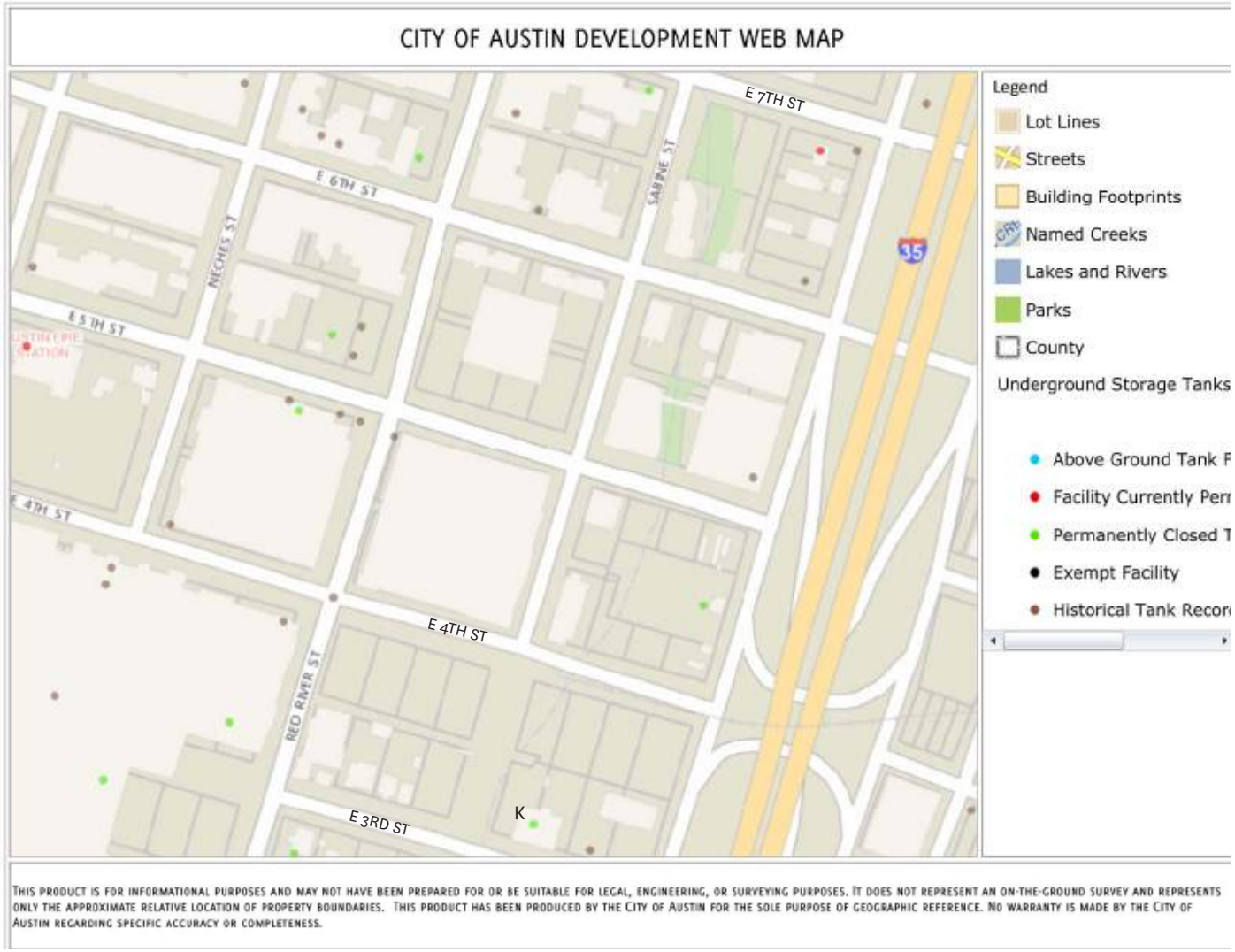
Map Source: "City of Austin Development Web Map," Geographic Information System. 16 April 2015.

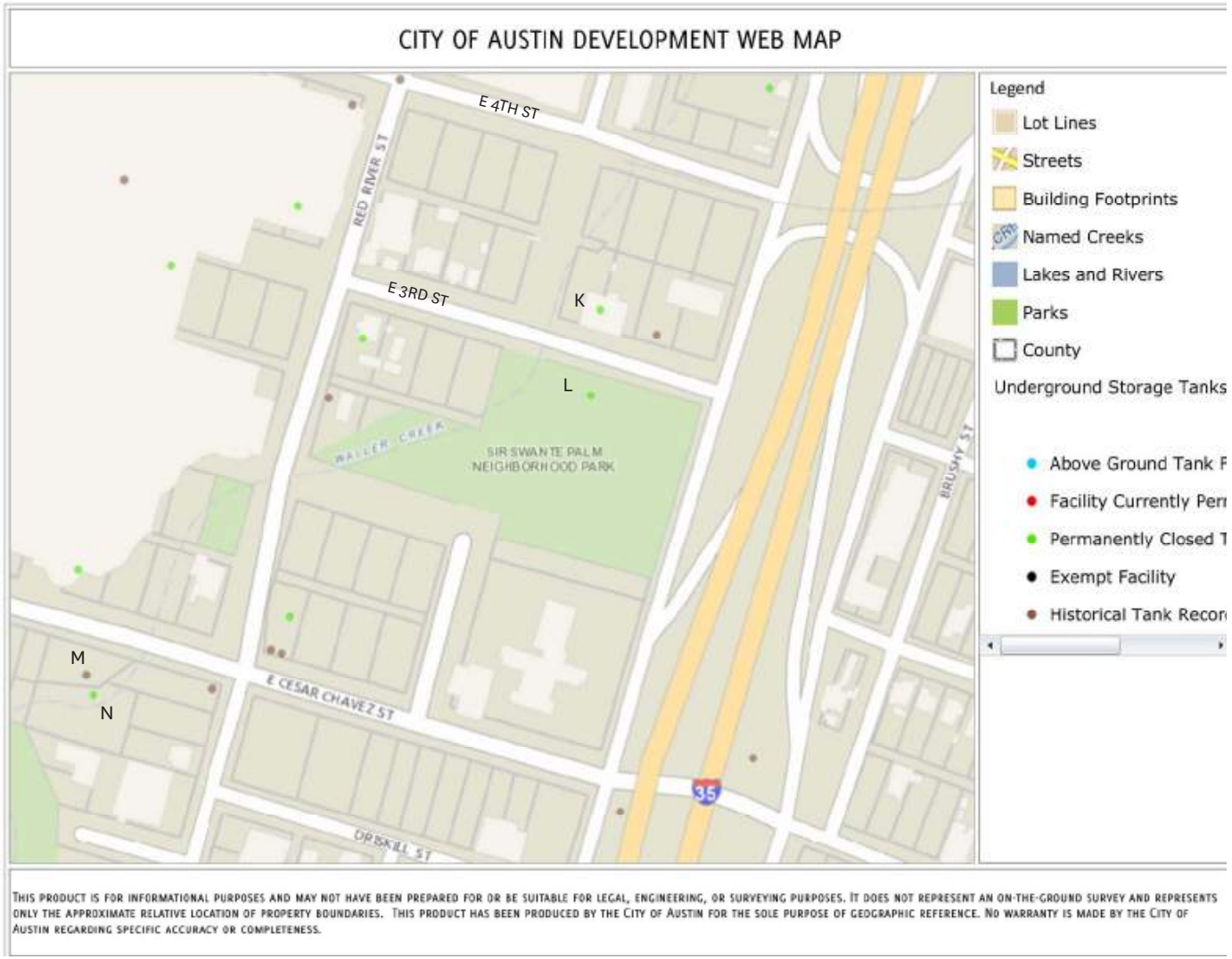



CITY OF AUSTIN DEVELOPMENT WEB MAP
E 10TH ST
E 11TH ST
E 9TH ST
NECHES ST
E 8TH ST
E 7TH ST
WALLER CREEK GREENBELT
I
J
AUSTIN POLICE STATION
Legend
Lot Lines
Streets
Building Footprints
Named Creeks
Lakes and Rivers
Parks
County
Underground Storage Tanks
Above Ground Tank F
Facility Currently Perr
Permanently Closed T
Exempt Facility
Historical Tank Recor
THIS PRODUCT IS FOR INFORMATIONAL PURPOSES AND MAY NOT HAVE BEEN PREPARED FOR OR BE SUITABLE FOR LEGAL, ENGINEERING, OR SURVEYING PURPOSES. IT DOES NOT REPRESENT AN ON-THE-GROUND SURVEY AND REPRESENTS ONLY THE APPROXIMATE RELATIVE LOCATION OF PROPERTY BOUNDARIES. THIS PRODUCT HAS BEEN PRODUCED BY THE CITY OF AUSTIN FOR THE SOLE PURPOSE OF GEOGRAPHIC REFERENCE. NO WARRANTY IS MADE BY THE CITY OF AUSTIN REGARDING SPECIFIC ACCURACY OR COMPLETENESS.

UTILITIES

Historic Tanks Information and Map (3-4)
Historic Tanks Info and Map.pdf




CITY OF AUSTIN DEVELOPMENT WEB MAP
E 4TH ST
RED RIVER ST
E 3RD ST
K
L
WALLER CREEK
SIR SWANTE PALM
NEIGHBORHOOD PARK
BRUSHY ST
M
N
E CESAR CHAVEZ ST
35
ORISKILL ST
Legend
Lot Lines
Streets
Building Footprints
Named Creeks
Lakes and Rivers
Parks
County
Underground Storage Tanks
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UTILITIES

Historic Tanks Information and Map (5-8)

Historic Tanks Info and Map.pdf

Tank	A
UST_ID	HO101
Facility Address	1112 Red River
Date	4/20/1922
Historical Record	Yes
Tank Type	Tank and pump

NOTES: Regular Meeting of the City Council: Austin, Texas, April 20, 1922 – "The application of Jim Gann to install a gasoline tank at #1112 Red River Street was referred to the City Engineer and City Fire Marshal for their report back to the Council, by the following vote: Ayes, Mayor Yett, Councilmen Eyres and Searight, 3; nayes, none, Councilmen Copeland and Haynes absent."

Tank	B
UST_ID	C0093
Facility Name	Teachers Retirement Cent
Date	Null
Historical Record	No
Tank Type	Null

NOTES: Permit Status: Permanently Closed Tank Facility

Tank	C
UST_ID	HO883
Facility Address	--
Date	--
Historical Record	Yes
Tank Type	--

NOTES: Regular Meeting of the City Council: Austin, Texas, January 31, 1935 – Report read from J. E. Motheral, City Engineer, and J. C. Eckert, Building Inspector, and directed to Mr. Gulton Morgan, City Manager, regarding "the application of Joe Sandgarten, acting by and through W. O. Gustafson, for permission to construct, maintain and operate a drive-in gasoline filling station … upon property known as Lot 4, Block 139 … located at the northwest intersection of East 11th Street and Red River Street." Report notes that "A storm sewer inlet exists on the north side of East 11th Street at Red River Street. The flow of Waller Creek is carried underneath Red River Street adjacent to this property." Report recommends granting permission, noting necessity of compliance with "ordinances prohibiting the disposal of commercial water or oils upon the City streets." Applicant instructed to build pipe connection to direct runoff to the nearest storm sewer.

Councilman Wolf offered a resolution approving the plan, which "was adopted by the following vote: Ayes, Councilmen Alford, Gillis, Mayor Miller, and Councilman Wolf, 4; nays, none; Councilman Bartholomew absent, 1."

Tank	D
UST_ID	H0150
Facility Address	1107 Red River
Date	2/4/1926
Historical Record	Yes
Tank Type	New Filling Station

NOTES: Regular Meeting of the City Council: Austin, Texas, February 11, 1926 – "The application of D.S. Pardue for permission to install a gasoline tank at 1107 Red River Street, together with the Committee's report upon same, was read and Councilman Avery moved that same be granted as recommended. Motion prevailed by the following vote: Ayes, Mayor Yett, Councilmen Avery, Haynes, Nolen and Searight, 5; nayes, none."

Tank	E
UST_ID	H0148
Facility Address	E 11th & Red River
Date	1/28/1926
Historical Record	Yes
Tank Type	New Filling Station

NOTES: Land leased from COA; approximate location of tank: on banks of creek

Regular Meeting of the City Council: Austin, Texas, January 26, 1926 – Councilman Haynes introduced a resolution that G. S. Hamby has proposed to lease a strip of ground "for the purpose of erecting thereon apparatus used in connection with a gasoline filling station, for the term of three years at $12.00 per year." Resolved on condition that lease may be terminated by the City upon refunding any unearned portion of the lease money, if it became possible to employ the land for any public purpose. "The above resolution was adopted by the following vote: Ayes, Mayor Yett, Councilmen Avery, Haynes, and Searight, 4; nayes, none, Councilman Nolen absent.

Tank	F
UST_ID	H0325
Facility Address	E 11th & Red River
Date	10/8/1931
Historical Record	Yes
Tank Type	New Filling Station

NOTES: Approximate location of tank: NE corner

Regular Meeting of the City Council: Austin, Texas, October 8, 1931 – In a letter to City Manager Adam R. Johnson, Building Inspector G. S. Moore and City Engineer Orin E. Metcalfe "considered the request of G. S. Hamby, owner of the property situated at the northeast corner of Eleventh and Red River Streets, being a portion of Lot 1, Block 140," and advised "that the following conditions exist and make the following recommendations." The letter indicates that Hamby "proposes to construct a filling station" and that "Waller Creek runs through the edge of the property owned by the applicant into which waste water can be concentrated after having gone through a sand and grease trap." The letter recommends that a permit be granted subject to several conditions. The resolution "was adopted by the following vote: Ayes,

Councilmen Alford, Gillis, Mayor McFadden, Councilman Steck, 4; nays, none; Councilman Mueller absent, 1."

Tank	G
UST_ID	H0114
Facility Address	E 11th & Red River
Date	7/2/1923
Historical Record	Yes
Tank Type	Tank and Pump

NOTES: Special Meeting of the City Council: Austin, Texas, July 10, 1923 – "The application of the Magnolia Petroleum Company to install an underground storage tank and pump at the southeast corner of Red River and East 11th Street was read and Councilman Haynes moved that same be granted as recommended by the Safety Committee. Lotion [sic, "motion"] prevailed by the following vote: Ayes, Mayor Yett, Councilmen Avery, Haynes, Nolen and Searight, 5; nayes, none."

Tank	H
UST_ID	H0261
Facility Address	1011 Red River
Date	5/9/1929
Historical Record	Yes
Tank Type	New Filling Station

NOTES: Regular Meeting of the City Council: Austin, Texas, May 9, 1929 – "The Mayor laid before the Council the application of James R. Hamilton to erect a filling and tire station at 1011 Red River Street, together with the report of the Safety Committee recommending the tentative approval of the site for said station, pending submission of the ground plan by the applicant and approval of same by the Safety Committee. Councilman Mueller moved that in accordance with the recommendation of the Safety Committee, the site for said station be tentatively approved, subject to the submission of the ground plan by the applicant. Motion was seconded by Councilman Pannell, and same prevailed by the following vote: Ayes, Mayor McFadden, Councilmen Mueller, Pannell, and Steck, 4; nays, none, Councilman Reed absent."

Tank	I
UST_ID	H0264
Facility Address	1011 Red River
Date	5/23/1929
Historical Record	Yes
Tank Type	New Filling Station

NOTES: Regular Meeting of the City Council: Austin, Texas, May 23, 1929 – A letter to the Mayor and City Council, dated May 16, 1929, from the City Safety Committee, recommends that Jas. R. Hamilton's application to operate a filling station be approved, subject to several conditions, including that "provision shall be made to take care of waste oils and water by having … a storm sewer connection made with Waller Creek." In response to this letter, "Councilman Mueller moved that permit be granted to said Jas. R. Hamilton, subject to the above recommendations of the Safety Committee. Motion was seconded by Councilman Pannell, and same prevailed by the following vote: Ayes, Mayor McFadden, Councilmen Mueller, Pannell, and Steck, 4; nays, none, Councilman Reed absent.

Tank	J
UST_ID	H0061
Facility Address	1001 Red River
Date	6/4/1918
Historical Record	Yes
Tank Type	Tank and pump

NOTES: Approximate location of tank: under sidewalk

Special Meeting of the City Council: Austin, Texas, June 4, 1918 – It was resolved by the Council that a permit be "granted to Mr. J. V. Macry to install and maintain a gasoline tank … under the sidewalk in front of his place of business at No. 1001 Red River Street." It was resolved further that Macry also be authorized to install a gasoline pump, etc. "The resolution was adopted by the following vote: Yeas, Mayor Woolridge, Councilmen Anthony, Bartholomew, Haynes, and Powell, 5; nays none."

Tank	K
UST_ID	C0105
Facility Name	Young & Pratt
Date	Null
Historical Record	No
Tank Type	Null

NOTES: Permit status: Permanently Closed Tank Facility

Tank	L
UST_ID	C0277
Facility Name	Seth Engine Parts
Date	Null
Historical Record	No
Tank Type	Null

NOTES: Permit Status: Permanently Closed Tank Facility

Tank	M
UST_ID	H0411
Facility Address	503 E 1st
Date	4/3/1947
Historical Record	Yes
Tank Type	Existing Filling Stn

UTILITIES

Historic Tanks Information and Map (9)

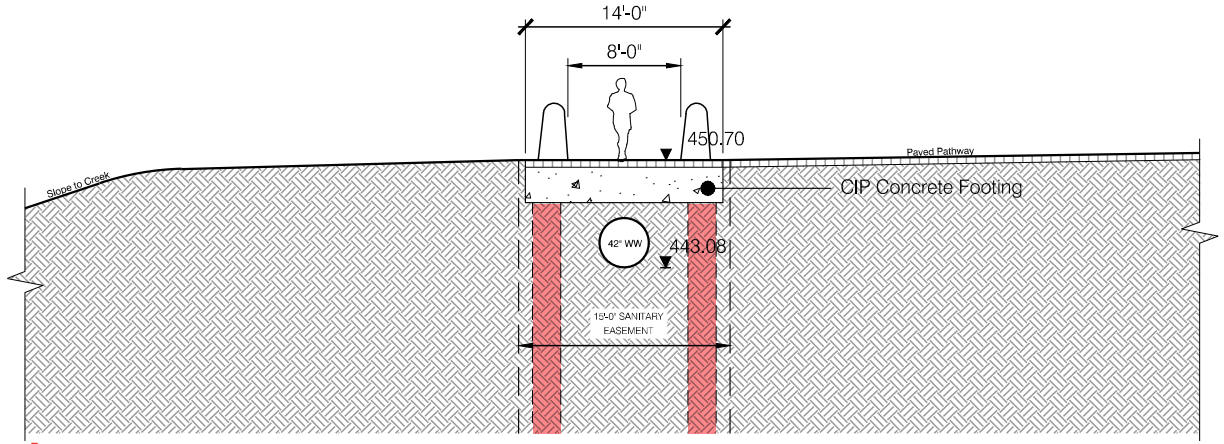
Historic Tanks Info and Map.pdf

NOTES: Minutes of the City Council: Regular Merting, April 3, 1947, 10:55 a.m. – "Jas. Lucas, owner of a grocery store and filling station at 503 East First Street, came before the Council and protested that his business was being hurt by reason of the routing of traffic off said street while the work of laying water mains and paving was being done. … Jas. Lucas further submitted a request that First Street be widened from Congress Avenue to East Avenue, instead of Seventh Street, to make it a traffic thoroughfare to connect with the inter-regional highway." (No tank was mentioned in connection with Mr. Lucas.)

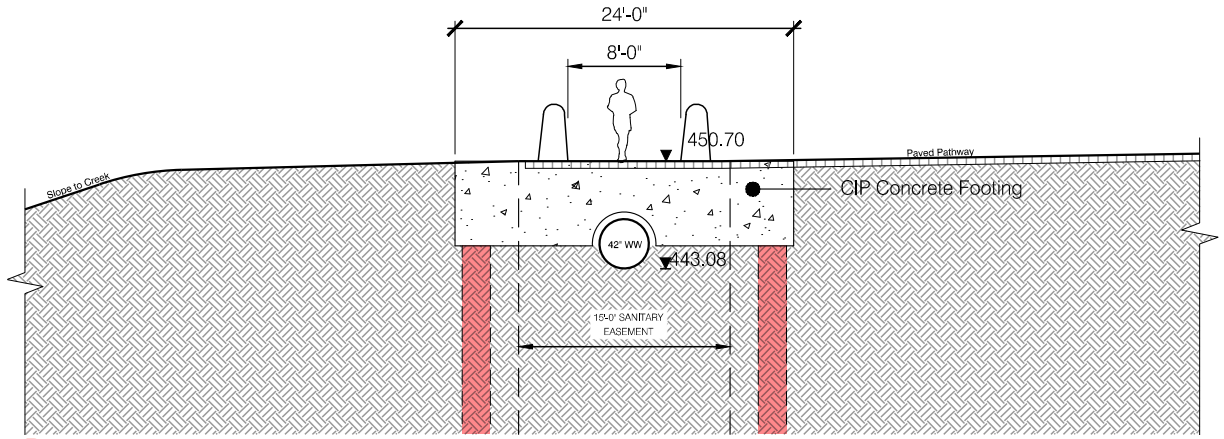
Tank	N
UST_ID	Co510
Facility Name	Acuna's
Date	Null
Historical Record	No
Tank Type	Null

NOTES: Permit Status: Permanently Closed Tank Facility

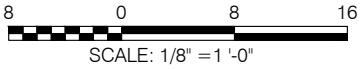
Waller Creek Mouth – Lattice Bridge #2 at Waste Water Line
MVVA - UTILITIES_2015.06.22_WW Bridge Sections.pdf



A



B



PREFERRED OPTION:
8'-0" Wide Bridge with Easement Variance:

1. **Variance allows drilled shafts within 15' sanitary easement**
2. **Bridge foundations will likely be drilled shafts with compressible fill**
3. **Bridge footing can be shallower and narrower**

ALTERNATIVE (NOT-PREFERRED) OPTION:
8'-0" Wide Bridge with Foundations Spanning Easement:

1. **Drilled shafts outside of 15' sanitary easement**
2. **Bridge footing will need to be thicker - conflicts with existing waste water line**
2. **Bridge footing also needs to be longer (24'-0")**