

CITY OF BATTLE CREEK, MICHIGAN

CONSTRUCTION DRAWINGS FOR 2018 WATERMAIN REPLACEMENT PROJECT BUCKEYE ST., HANOVER ST., HAZEL ST., WILKES ST., MERRITT ST., 30TH ST., 31ST ST., WEEKS AVE. CONTRACT NO.: 2018-058B

CITY COMMISSION:

MAYOR:

MARK BEHNKE

VICE MAYOR:

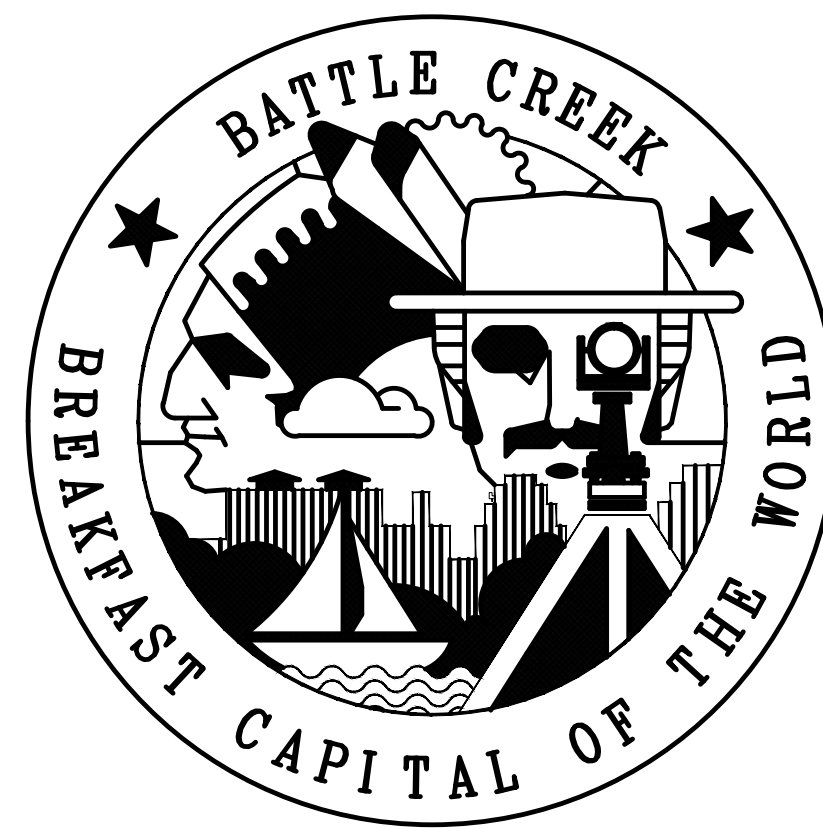
DAVE WALTERS

COMMISSIONERS:

JOHN GRIFFIN
LYNN WARD GRAY
KATE FLORES
CHRISTOPHER SIMMONS
SUSAN BALDWIN
KAYTEE FARIS
SHERRY SOFIA

CITY MANAGER:

REBECCA FLEURY



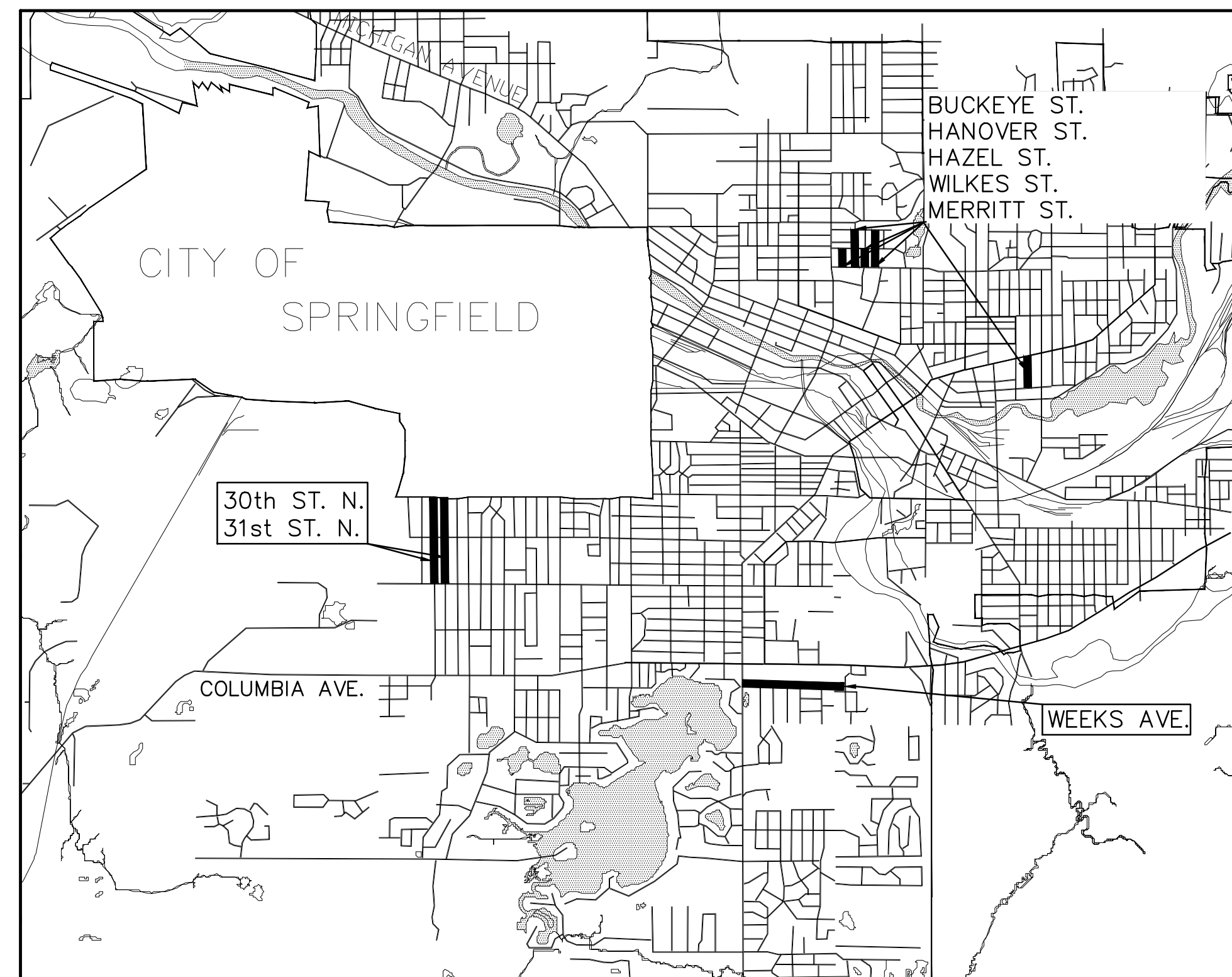
CITY OFFICIALS:

DEPARTMENT OF PUBLIC
WORKS DIRECTOR:

CHRISTOPHER DOPP, P.E.

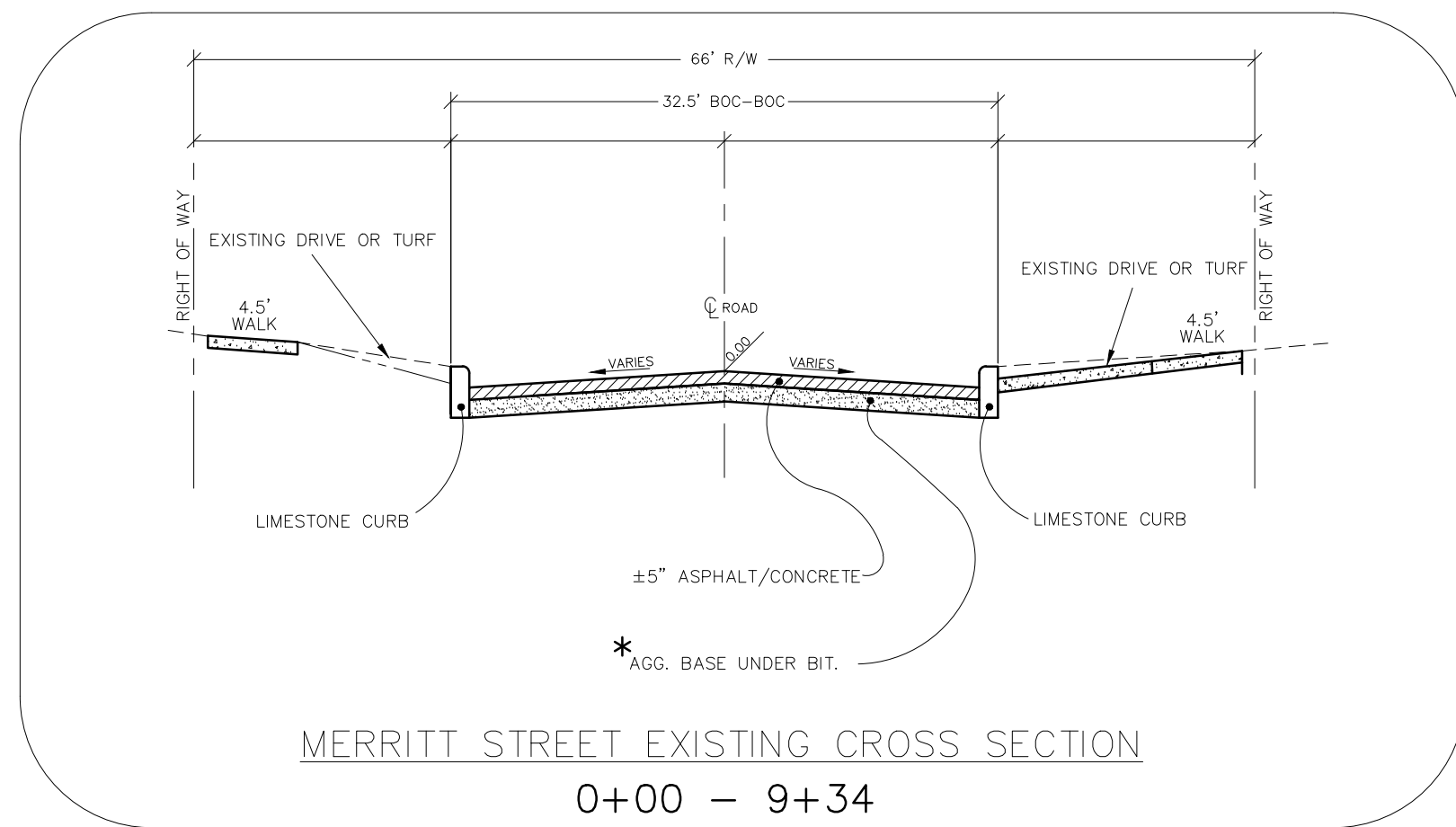
CITY ENGINEER:

CARL E. FEDDERS, P.E.

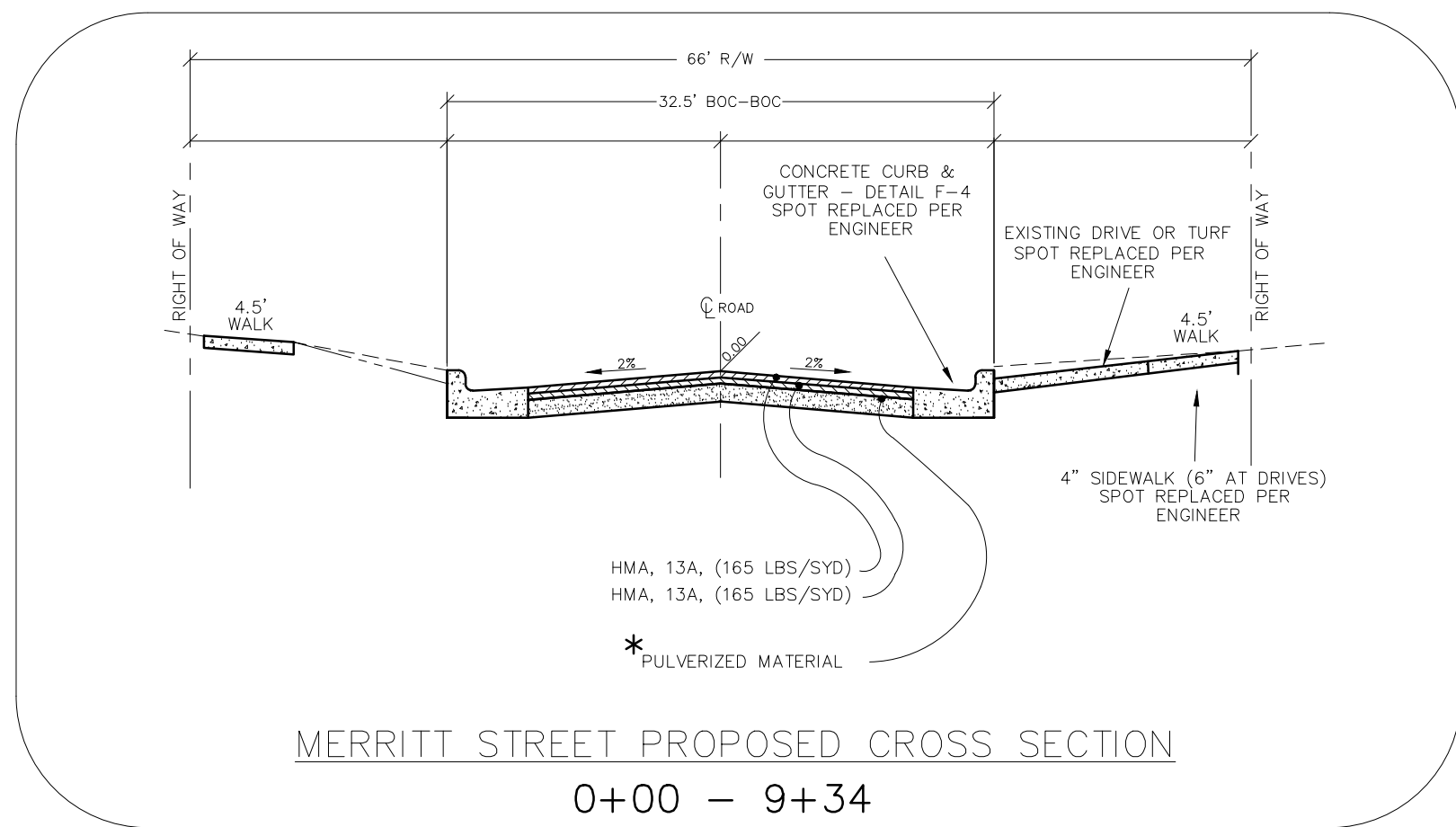


SHEET NO.	DRAWING INDEX
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2-3	CROSS SECTIONS AND DETAILS
4	STANDARD WATERMAIN DETAILS
5-7	30th STREET N. REMOVAL SHEET
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14-16	31st STREET N. CONSTRUCTION STREET
17	BUCKEYE STREET REMOVAL SHEET
18	BUCKEYE STREET CONSTRUCTION SHEET
19-20	HANOVER STREET REMOVAL SHEET
21-22	HANOVER STREET CONSTRUCTION SHEET
23	HAZEL STREET REMOVAL SHEET
24	HAZEL STREET CONSTRUCTION SHEET
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29	MERRITT STREET REMOVAL SHEET
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34-36	WEEKS AVENUE CONSTRUCTION SHEET
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38-41	TRAFFIC CONTROL DETAILS SHEET

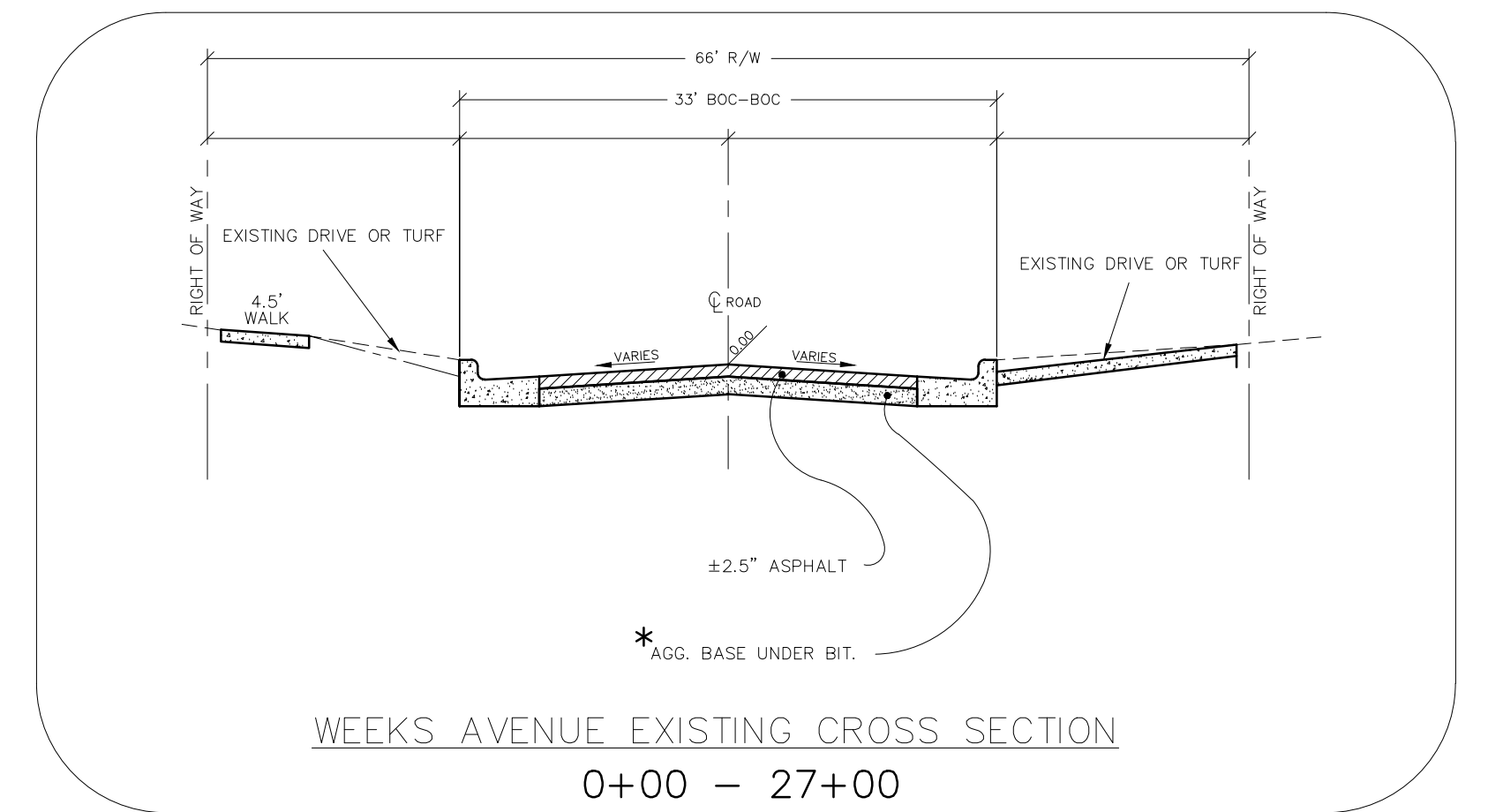
PREPARED BY:
ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS



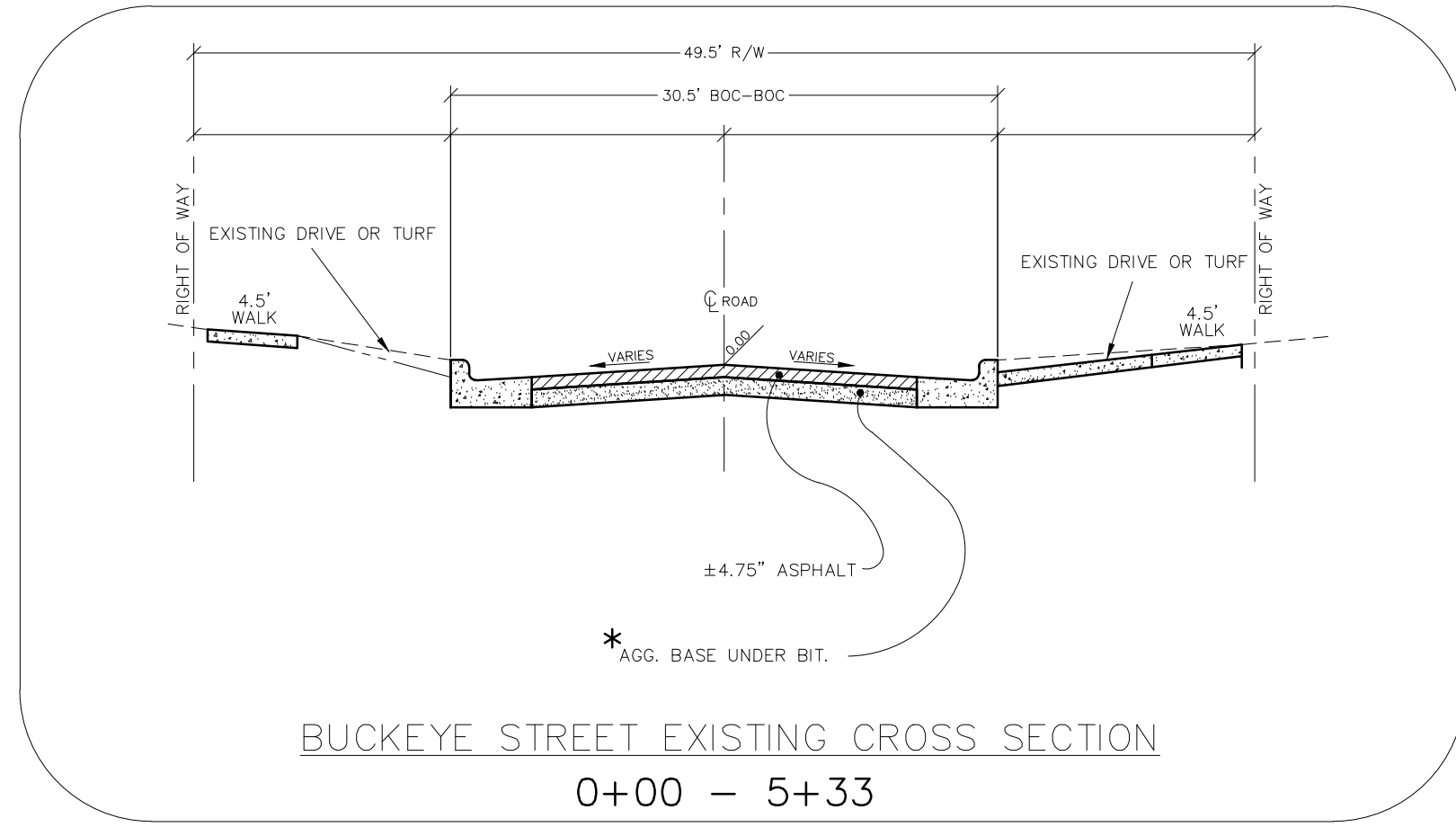
MERRITT STREET EXISTING CROSS SECTION
0+00 - 9+34



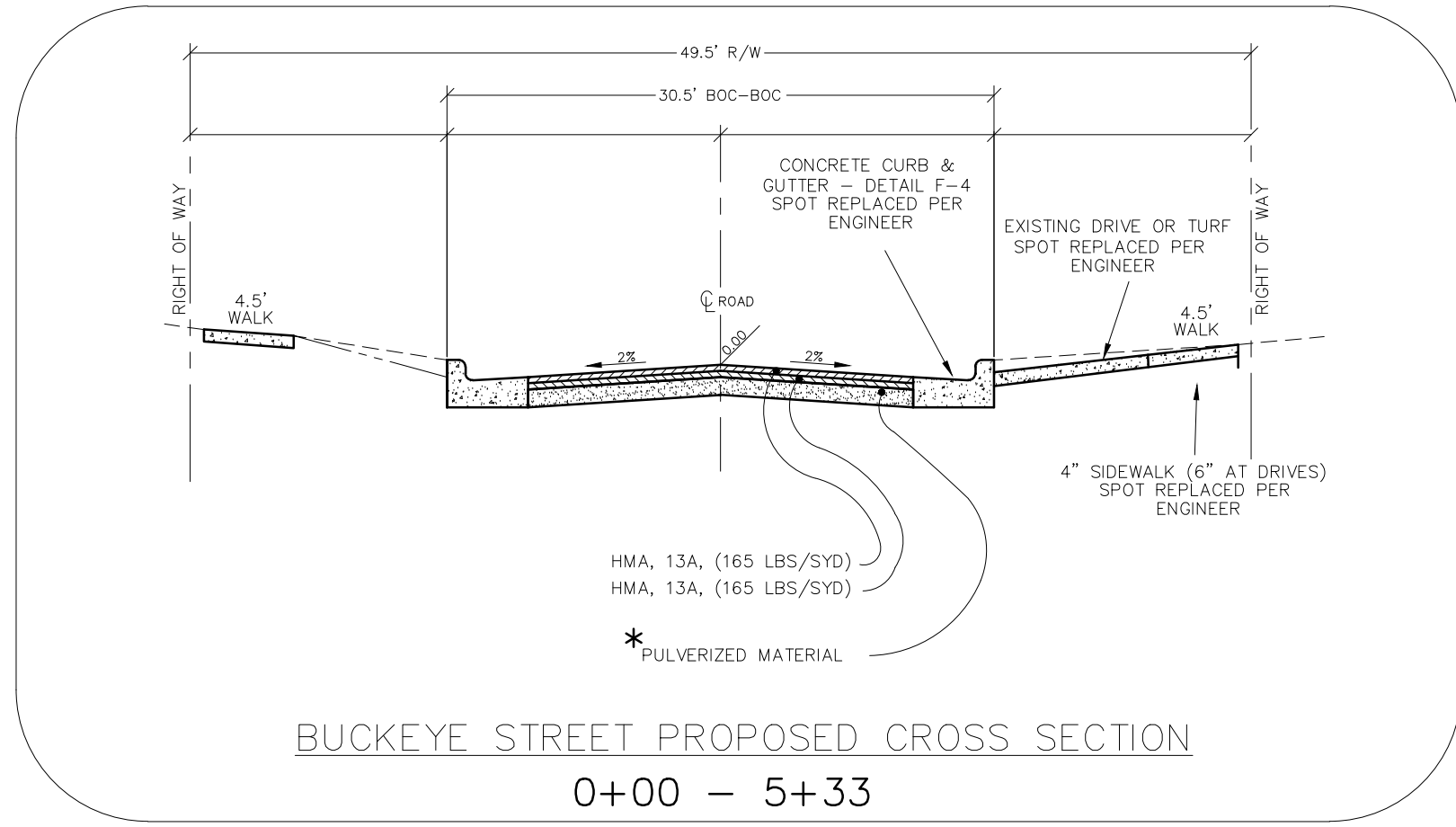
MERRITT STREET PROPOSED CROSS SECTION
0+00 - 9+34



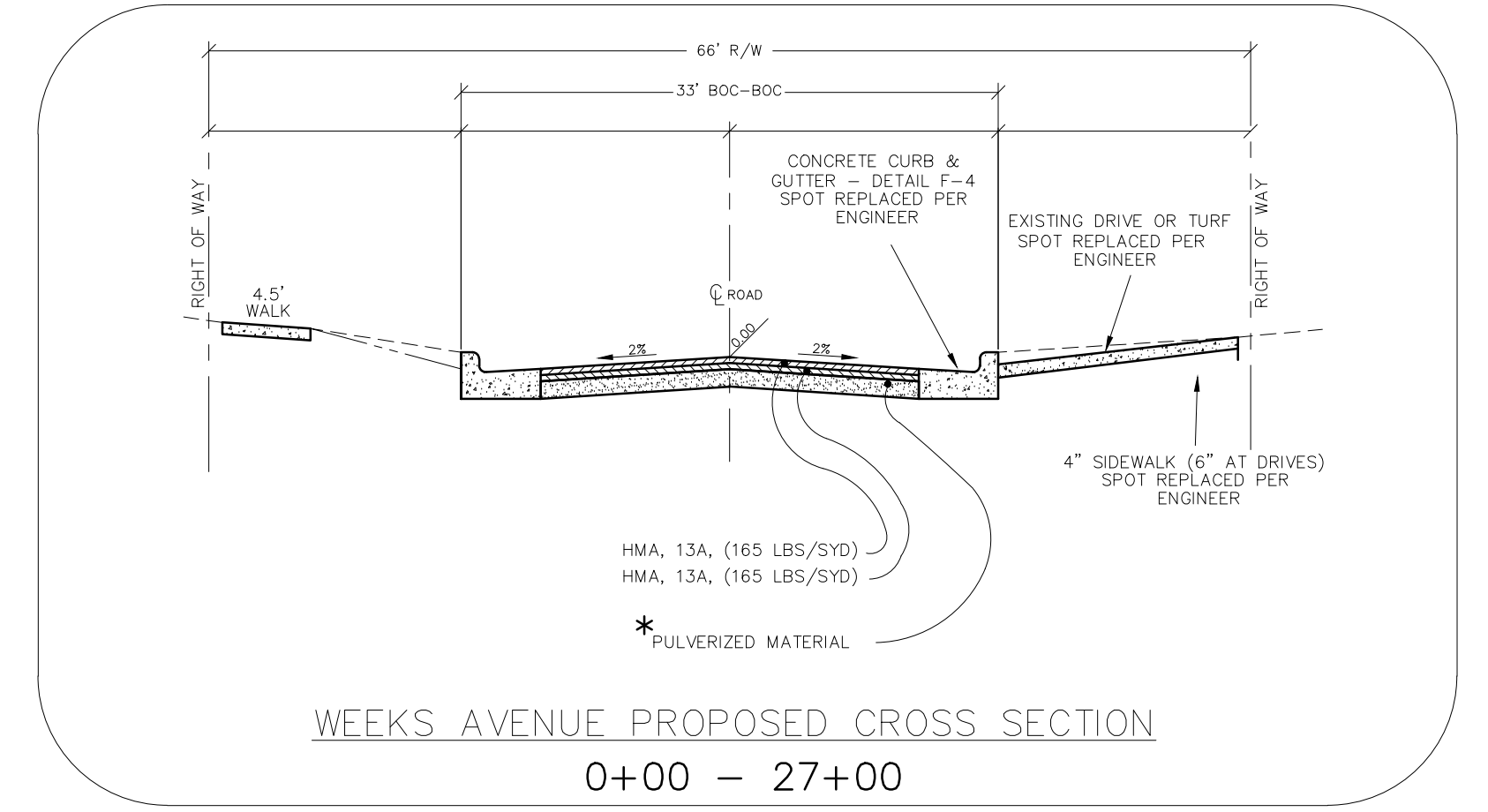
WEEKS AVENUE EXISTING CROSS SECTION
0+00 - 27+00



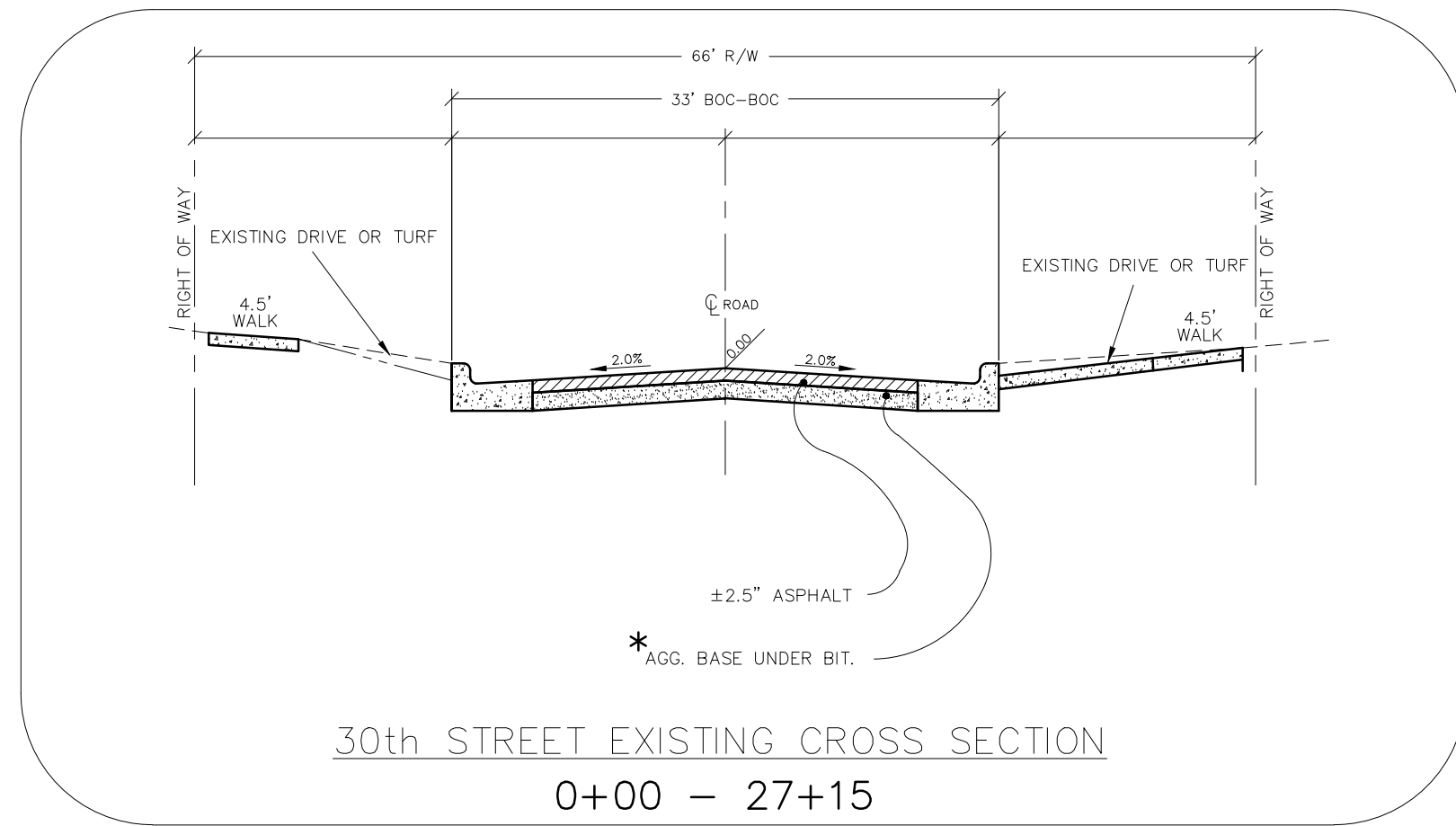
BUCKEYE STREET EXISTING CROSS SECTION
0+00 - 5+33



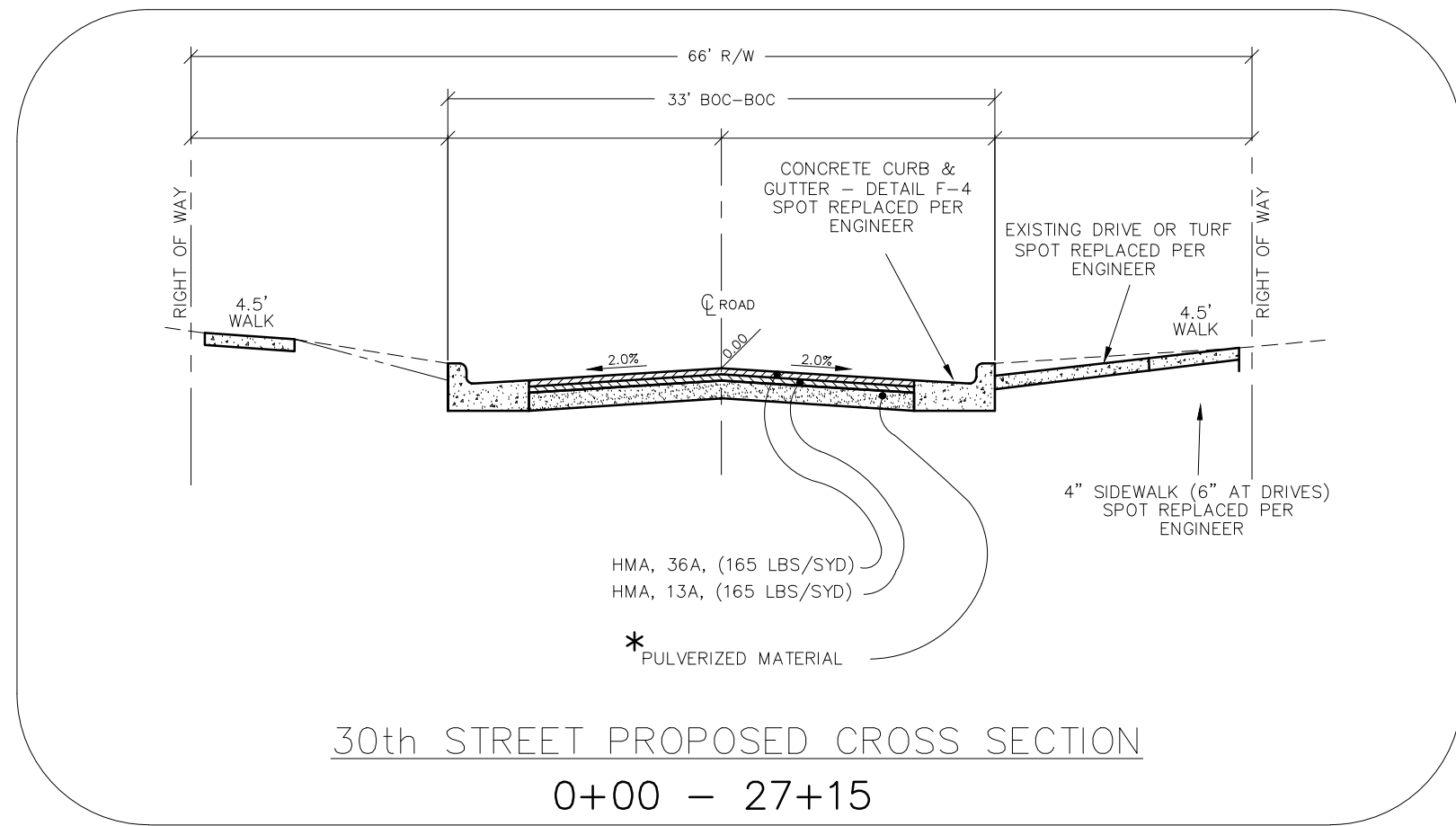
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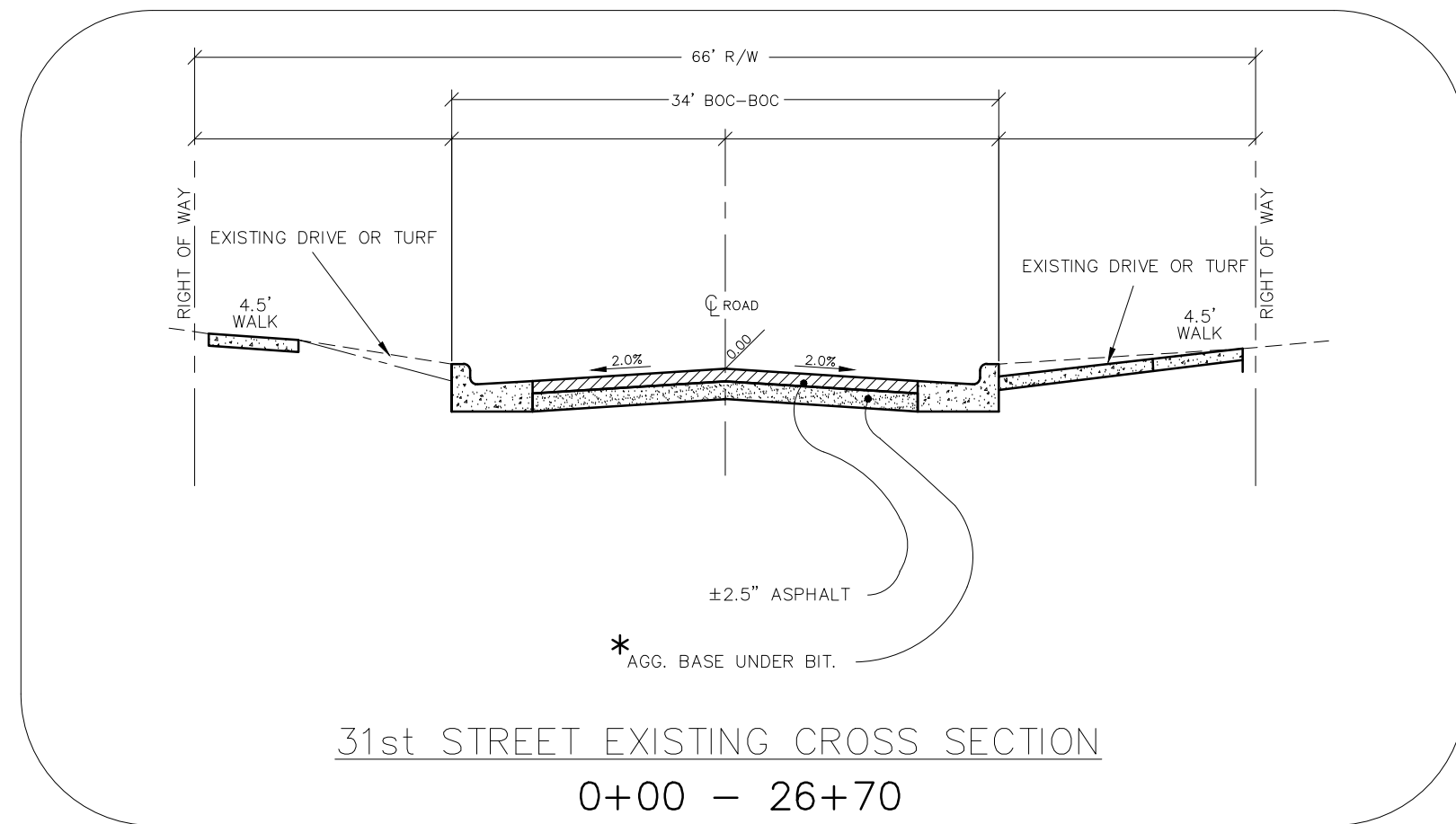
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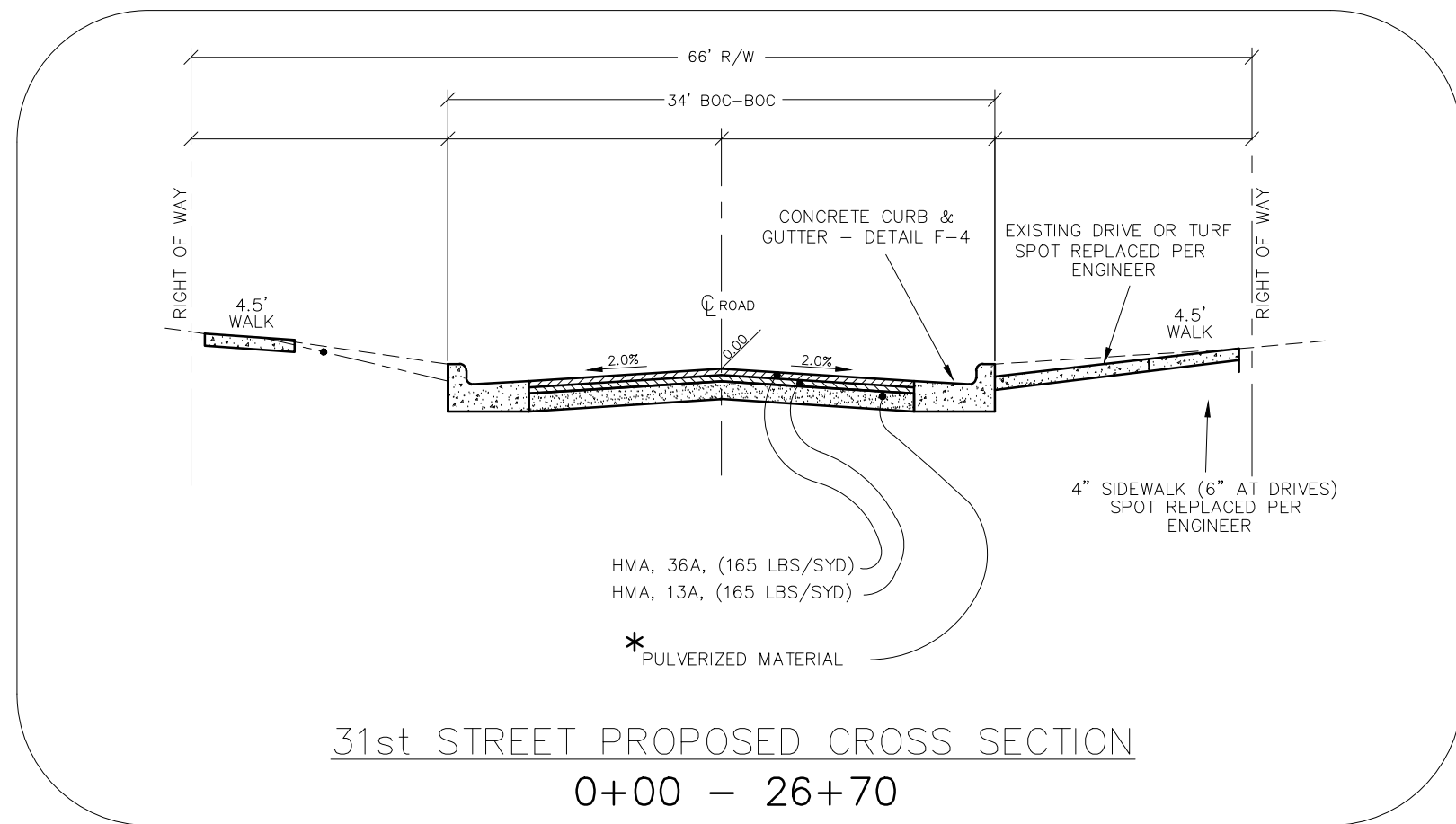
30th STREET EXISTING CROSS SECTION
0+00 - 27+15



30th STREET PROPOSED CROSS SECTION
0+00 - 27+15

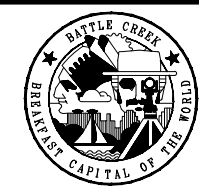


31st STREET EXISTING CROSS SECTION
0+00 - 26+70



31st STREET PROPOSED CROSS SECTION
0+00 - 26+70

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY



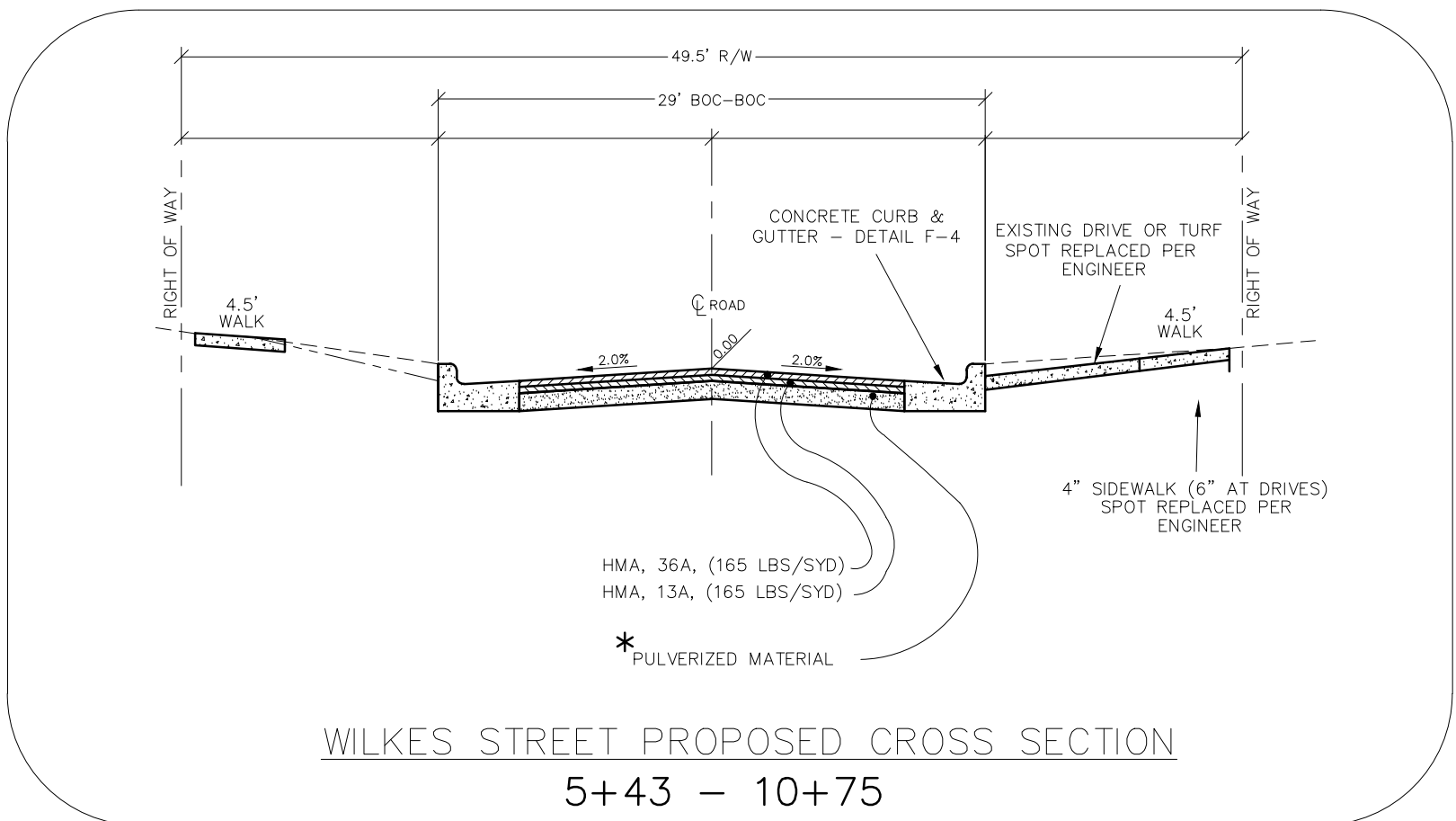
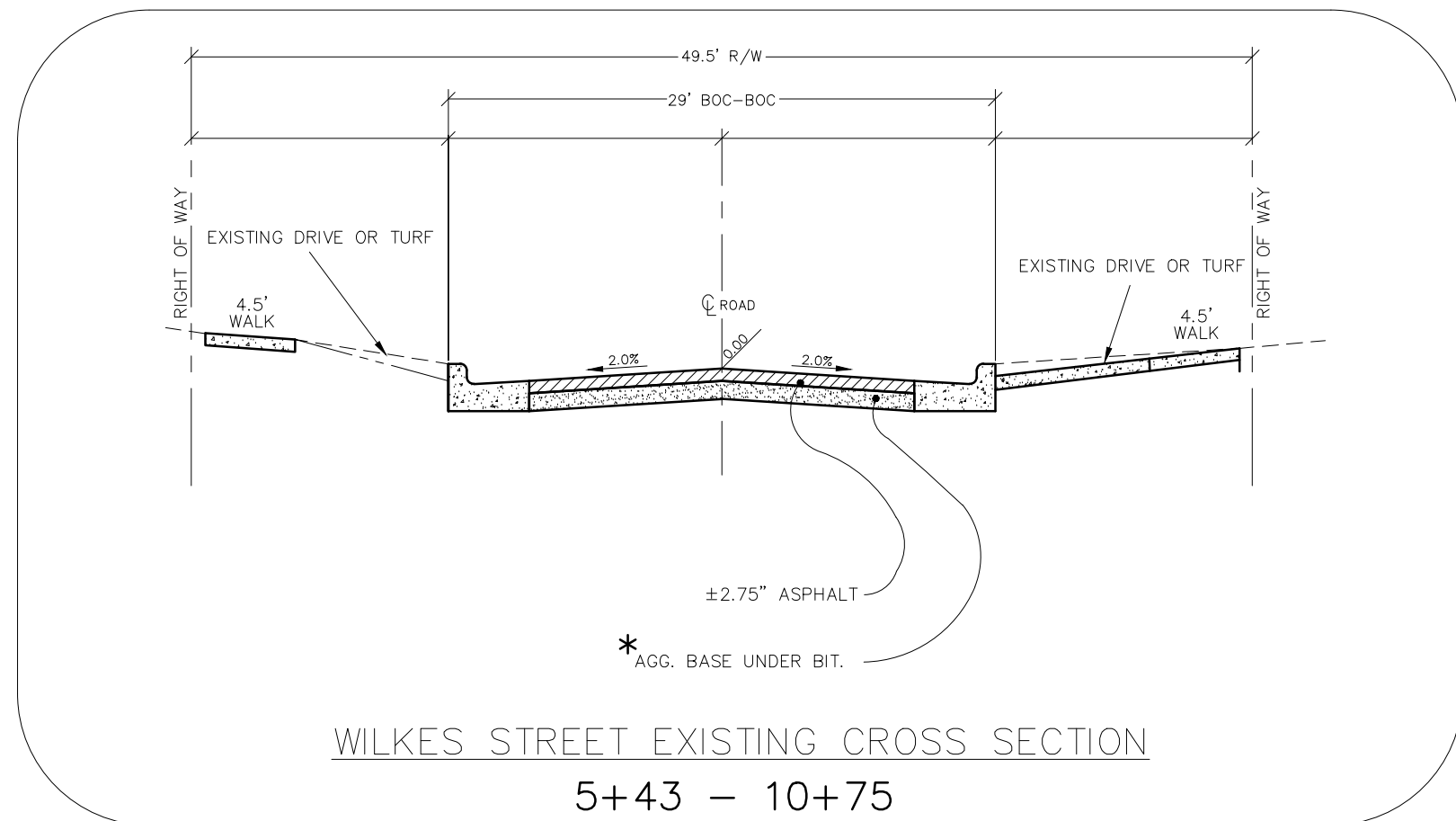
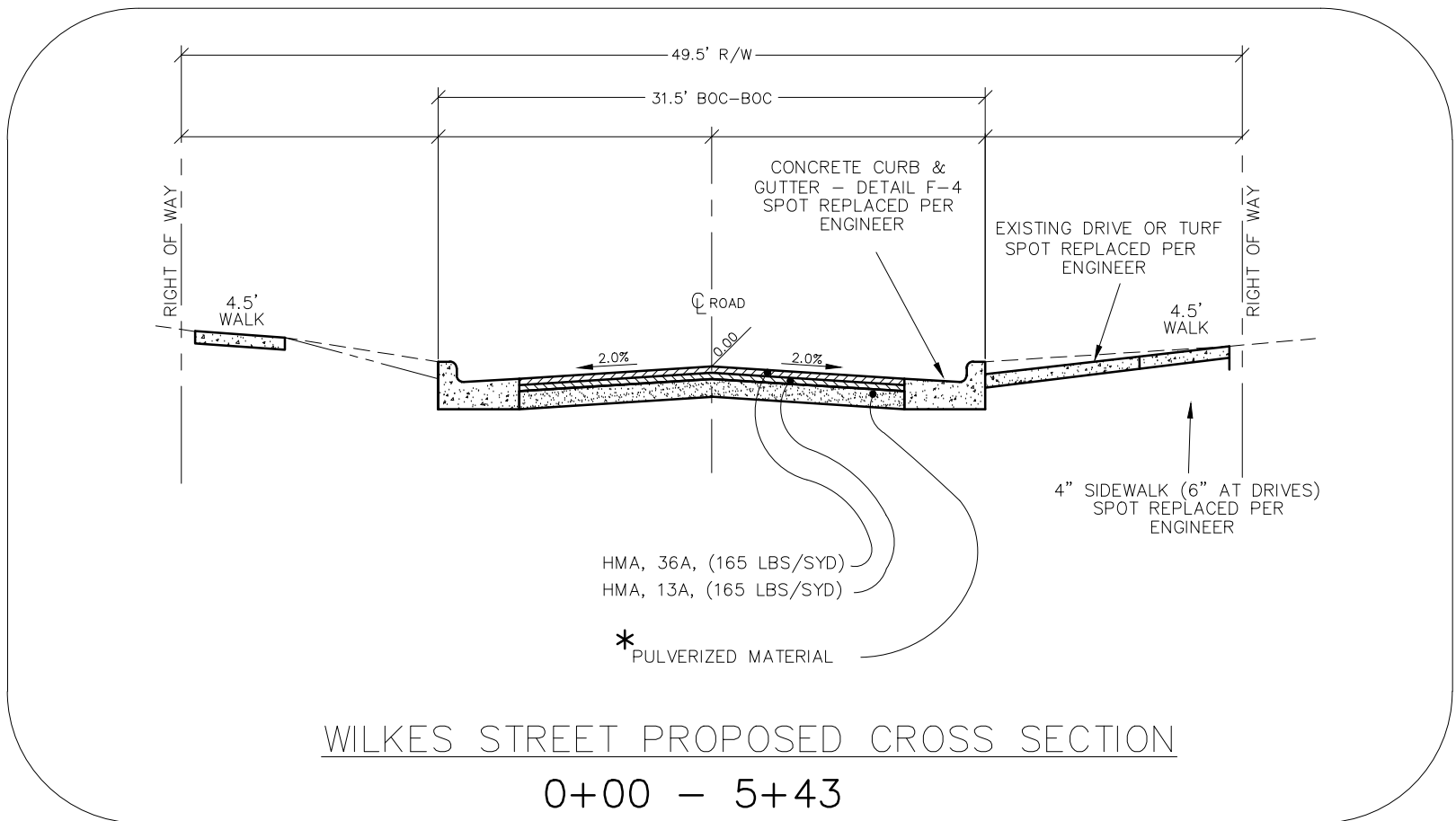
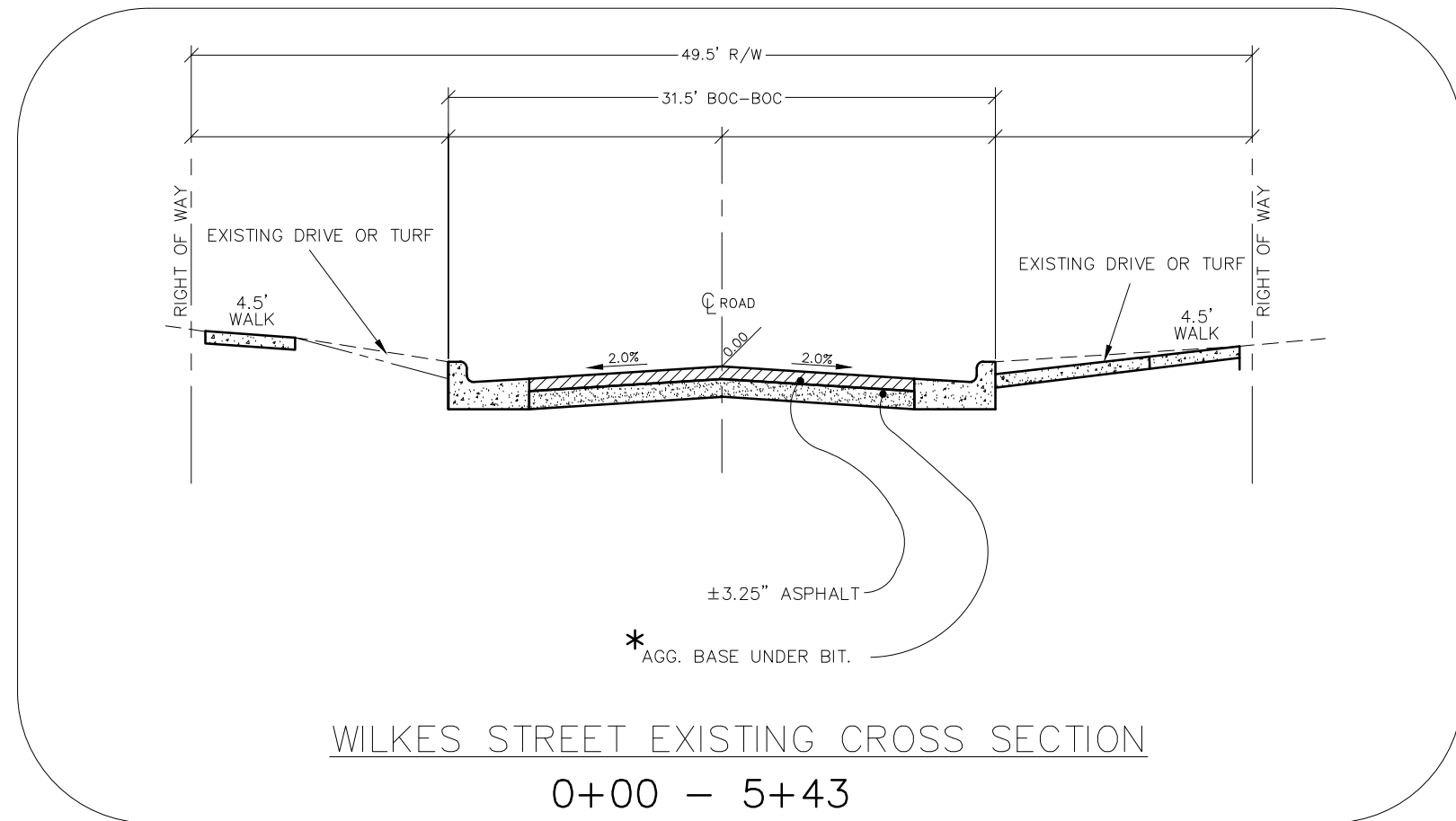
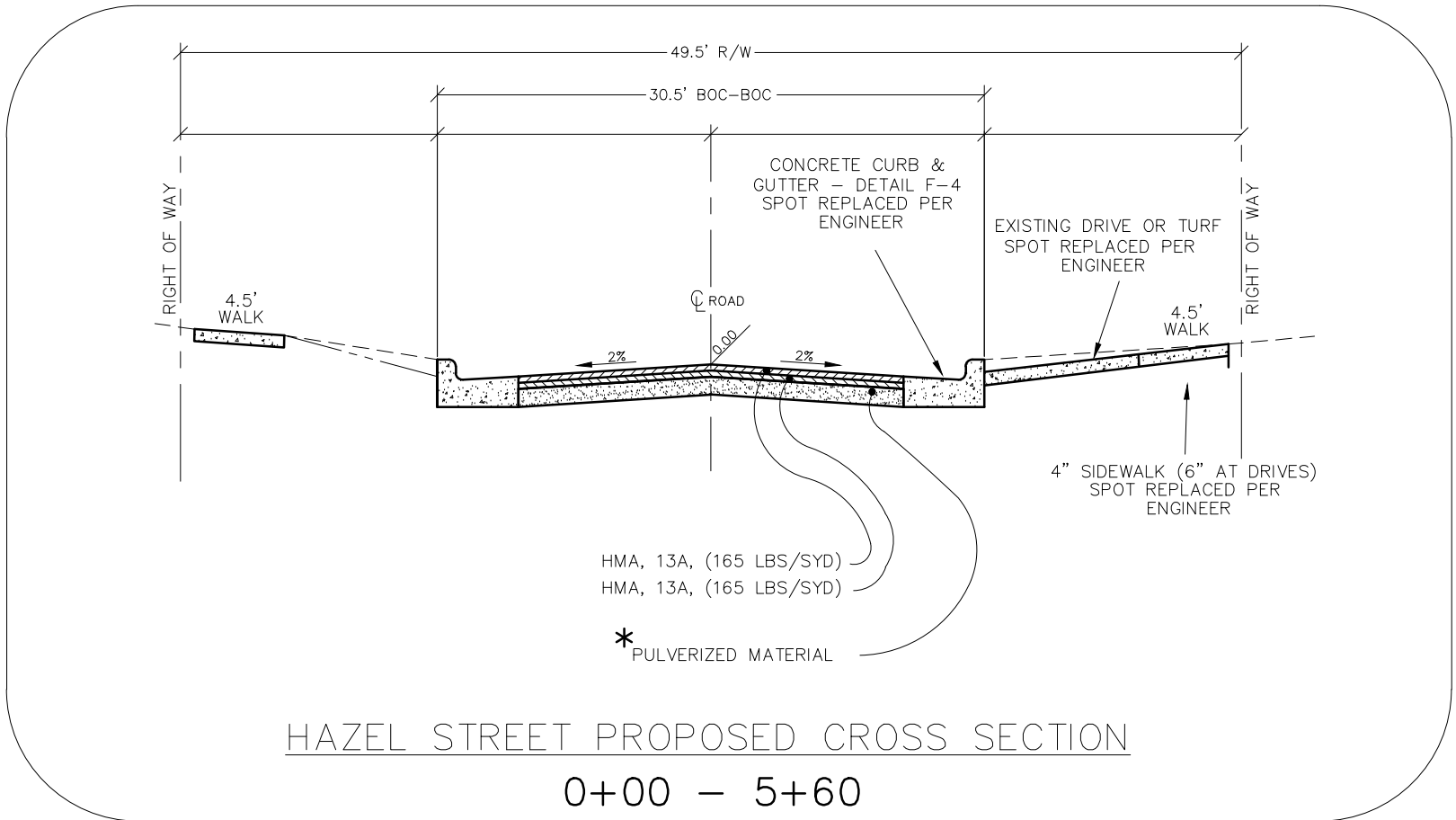
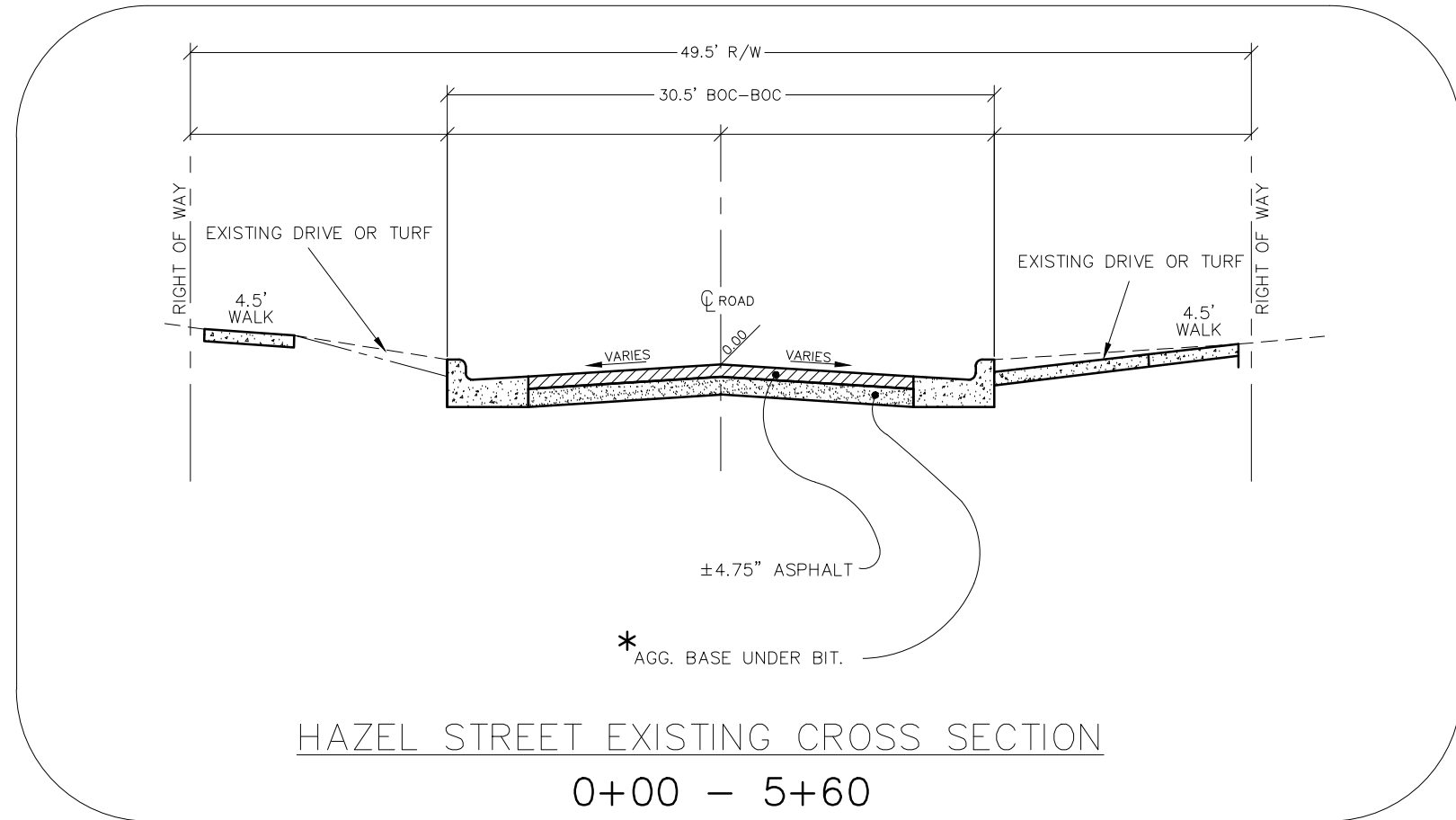
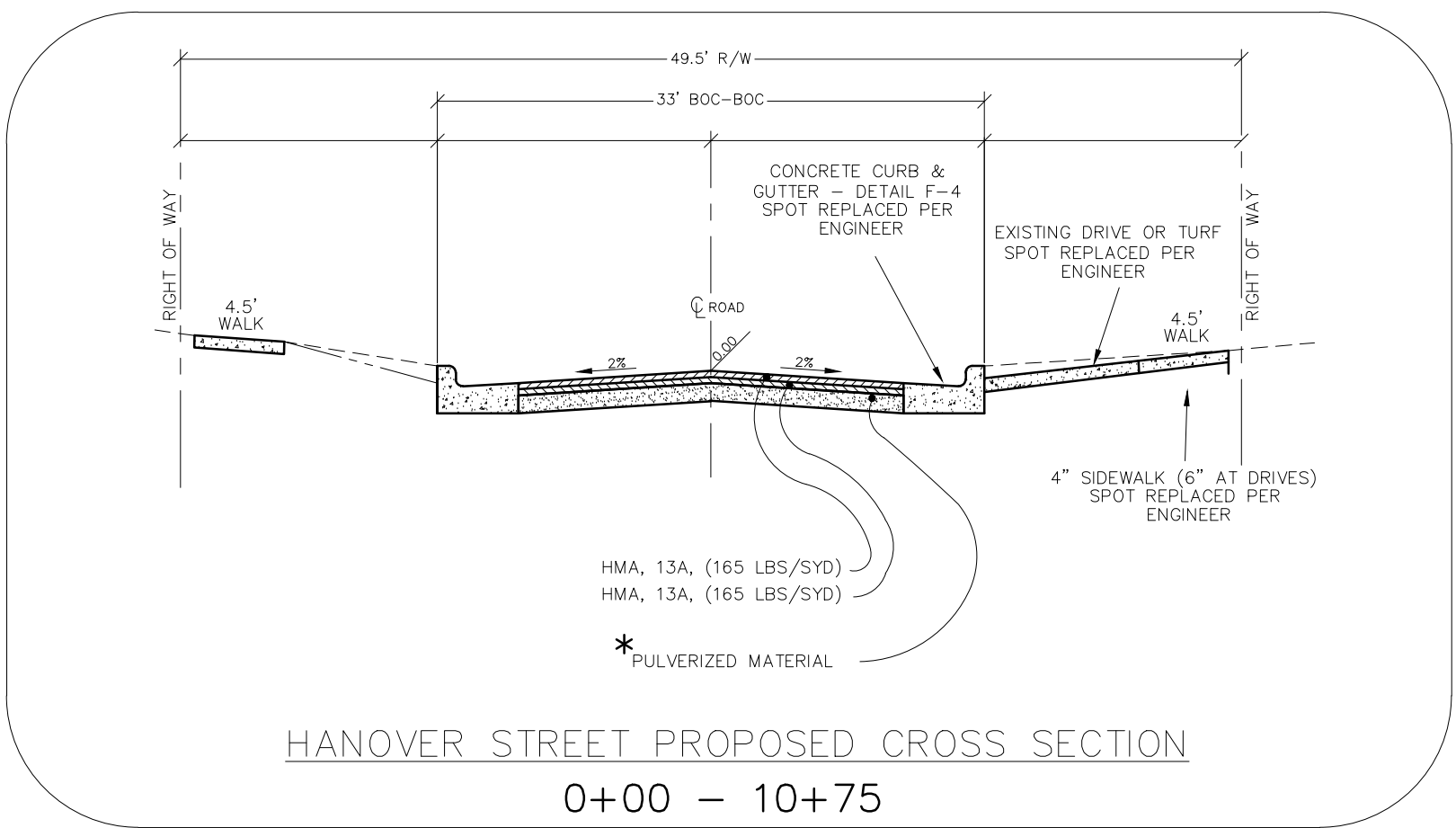
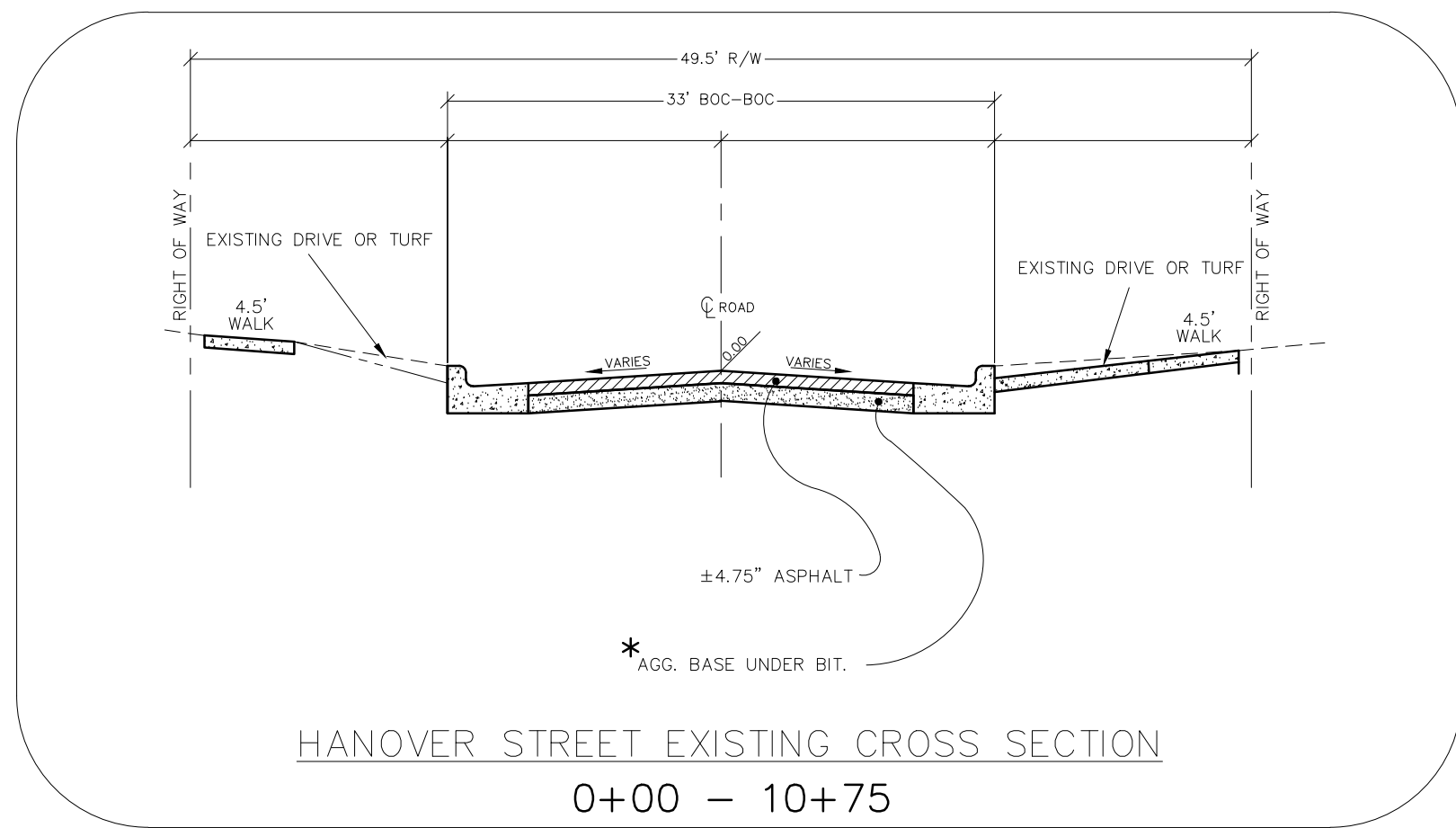
CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

DRAWN BY: RHP
SCALE: N./A.
DATE: JANUARY, 2018
FILE NAME:

APPROVED BY: CEF

2018 WATERMAIN PROJECT
STANDARD CROSS SECTIONS & DETAILS
MERRITT, BUCKEYE, 30th, 31st & WEEKS

CONTRACT NO.:
R.O.W. SHEET NO.: 1 OF 2
CONTRACT SHEET NO.: 2 OF 41



GENERAL CONSTRUCTION NOTES

PAVEMENT SURFACES SHALL BE CLEANED PRIOR TO PLACEMENT OF ADDITIONAL HMA COURSES AND WILL BE CONSIDERED INCLUDED IN THE HMA PAY ITEMS.

SIDEWALK RAMPS AND DETECTABLE WARNING SURFACES TO BE CONSTRUCTED ACCORDING TO MDT SPECIFICATION R-28-J

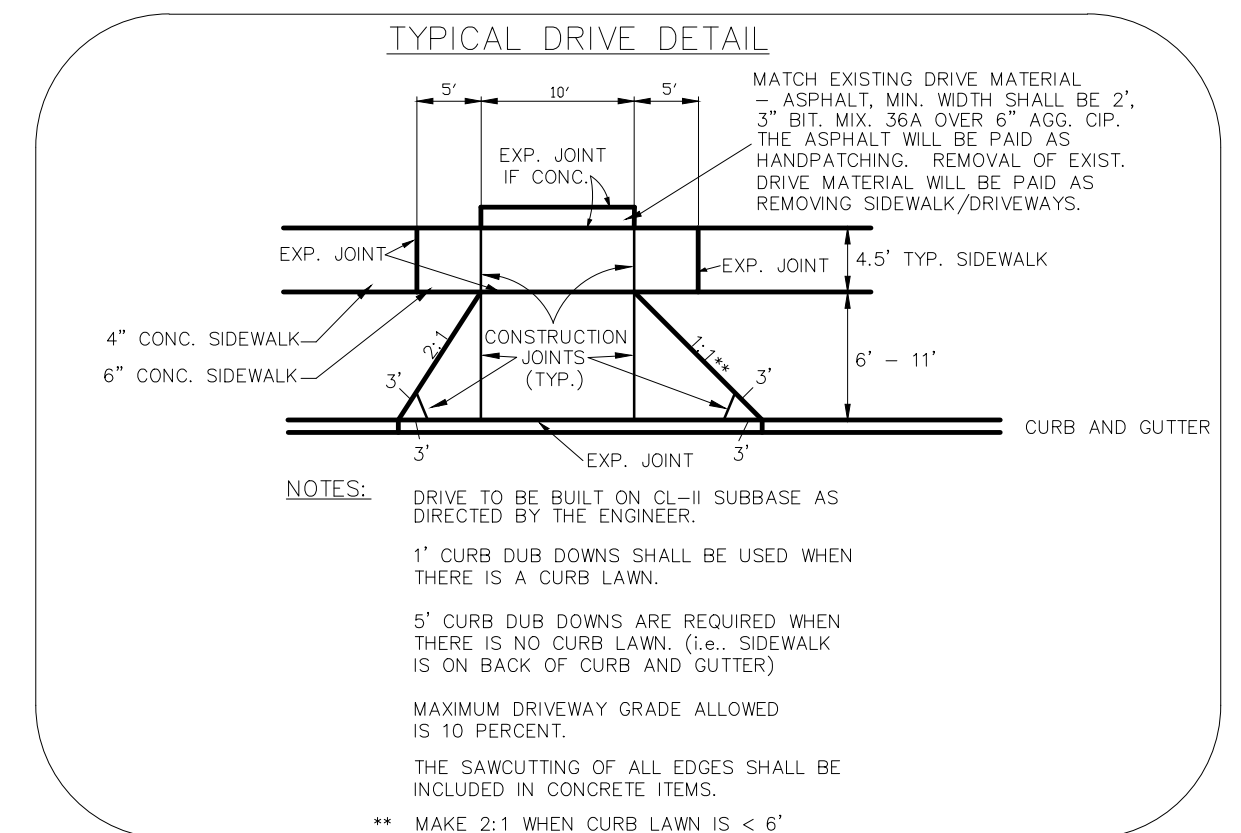
BUTT JOINTS: CONTRACTOR SHALL CONSTRUCT A BUTT JOINT AT ALL CONSTRUCTION PAVING LIMITS ADJOINING EXISTING ROADS. THIS WILL INCLUDE SAWCUTTING THE JOINT TO EXPOSE A MINIMUM OF 1-1/2\"/>

BURLAP JOINTS: REMOVABLE BURLAP CONSTRUCTION JOINTS WILL BE REQUIRED FOR TRANSVERSE PAVEMENT JOINTS, WHEN THE ADJOINING ROAD IS NOT BEING OVERLAID ON THE SAME DAY. THE ENGINEER MAY ALSO DIRECT SUCH A JOINT BE CONSTRUCTED AT OTHER TRANSVERSE JOINTS FOR VARIOUS REASONS. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCLUDED IN THE UNIT PRICES FOR HMA ITEMS.

PROPERTY CORNERS: ALL PROPERTY IRONS, MONUMENTS, BENCHMARKS, SECTION AND QUARTER SECTION MONUMENTS THAT ARE REMOVED OR DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY A REGISTERED LAND SURVEYOR AND DOCUMENTED ON ALL DRAWINGS. THIS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THE COST CONSIDERED INCLUDED THE PROJECT CLEANUP ITEM.

WATER SHUTOFF BOXES: IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE NEW WATER SHUTOFF BOXES AS PART OF THE WATER SERVICE PAY ITEMS.

THE USE OF BACK FLOW PREVENTERS IS REQUIRED WHENEVER WATER IS OBTAINED FROM A CITY OF BATTLE CREEK HYDRANT. THE CONTRACTOR IS ALSO REQUIRED TO OBTAIN A HYDRANT USE PERMIT FROM THE CITY'S WATER DEPARTMENT, BEFORE INSTALLING THEIR OWN BACK FLOW PREVENTER OR HAVING THE CITY INSTALL ONE FOR THEIR USE. THE CHARGE FOR THIS PERMIT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.



HMA APPLICATION TABLE			
HMA MIXTURE	RATE OF APPLICATION	PERFORMANCE GRADE	REMARKS
13A	165 LBS/SYD	58-28	TOP COURSE AWI = 280
13A	165 LBS/SYD	58-28	LEVELING COURSE
13A	330 LBS/SYD	58-22	HANDPATCHING

NOTE: HMA BOND COAT 0.05-0.15 GAL/SYD (NOT A PAY ITEM)

*INTERSECTIONS ARE MAIN LINE PAVING, NOT HANDPATCHING.
*DRIVEWAYS WILL BE PAID AS HANDPATCHING.

UTILITY COMPANIES AND CONTACTS

TELEPHONE: AT&T 2919 MILCORK KALAMAZOO, MI 49001
JEFF SAYLOR 269-384-4475

ELECTRIC: CONSUMERS ENERGY CO. 311 E. MICHIGAN AVE. BATTLE CREEK, MI 49017
MATTHEW KOEPEK 269-969-8595

GAS: SEMCO ENERGY 15851 HELMER ROAD BATTLE CREEK, MI 49015
JULIE CONANT 269-966-0404 (EXT. 5574)

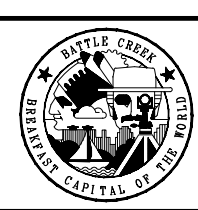
CABLE: COMCAST 350 N. 22ND ST. BATTLE CREEK, MI 49015
JOE SCHOPT 269-788-1150

WATER: CITY OF BATTLE CREEK 150 N. KENDALL ST. BATTLE CREEK, MI 49037
MATT MILLER 269-966-3496

SEWER: CITY OF BATTLE CREEK 150 N. KENDALL ST. BATTLE CREEK, MI 49037
BRYAN CRAWFORD 269-966-3496

BEFORE YOU DIG:
CALL MISS DIG 1-800-482-7171
AT LEAST 72 HOURS IN ADVANCE
EXCLUDING SAT. SUN & HOLIDAYS

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY



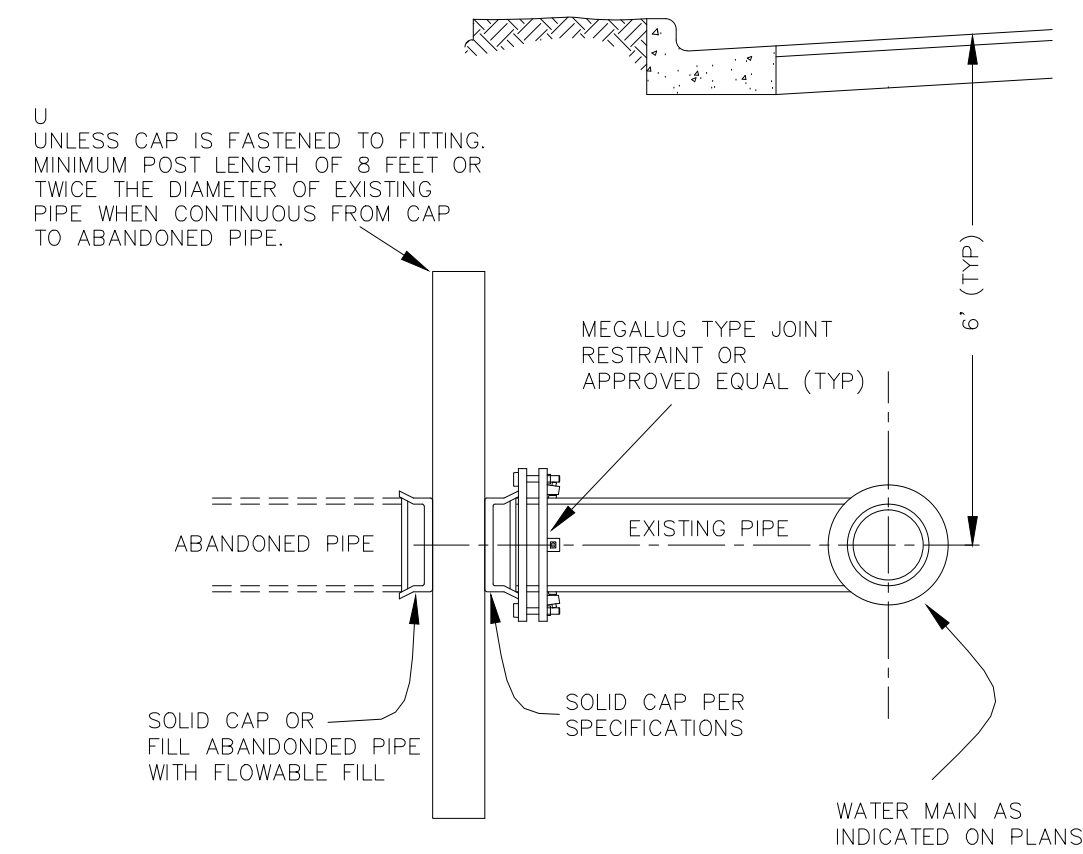
CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

DRAWN BY: RHP
SCALE: N./A.
DATE: JANUARY, 2018
FILE NAME:

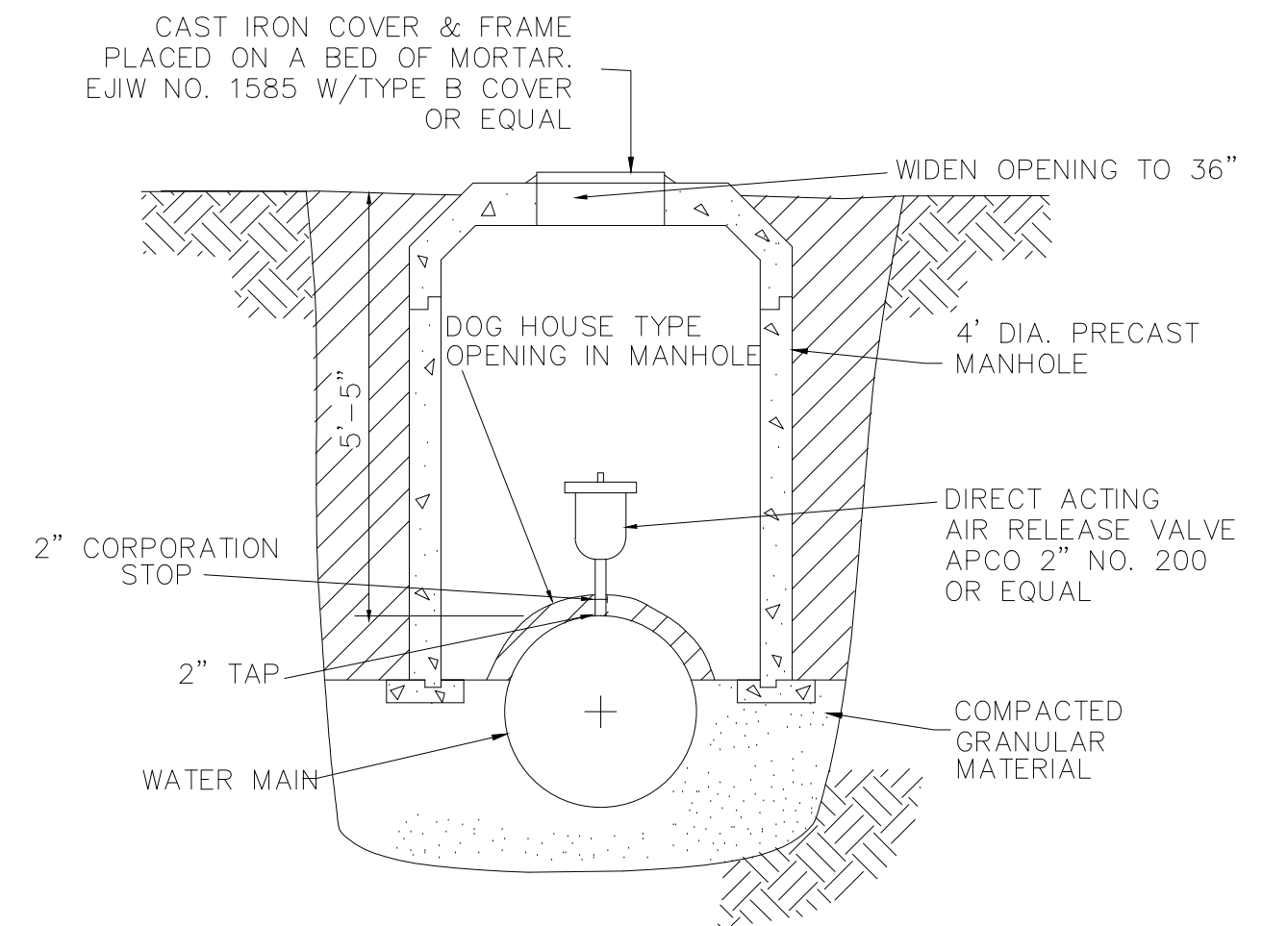
APPROVED BY: CEF

2018 WATERMAIN PROJECT
STANDARD CROSS SECTIONS & DETAILS
HANOVER, HAZEL AND WILKES STREET

CONTRACT NO.:
R.O.W. SHEET NO.: 2 OF 2
CONTRACT SHEET NO.: 3 OF 41



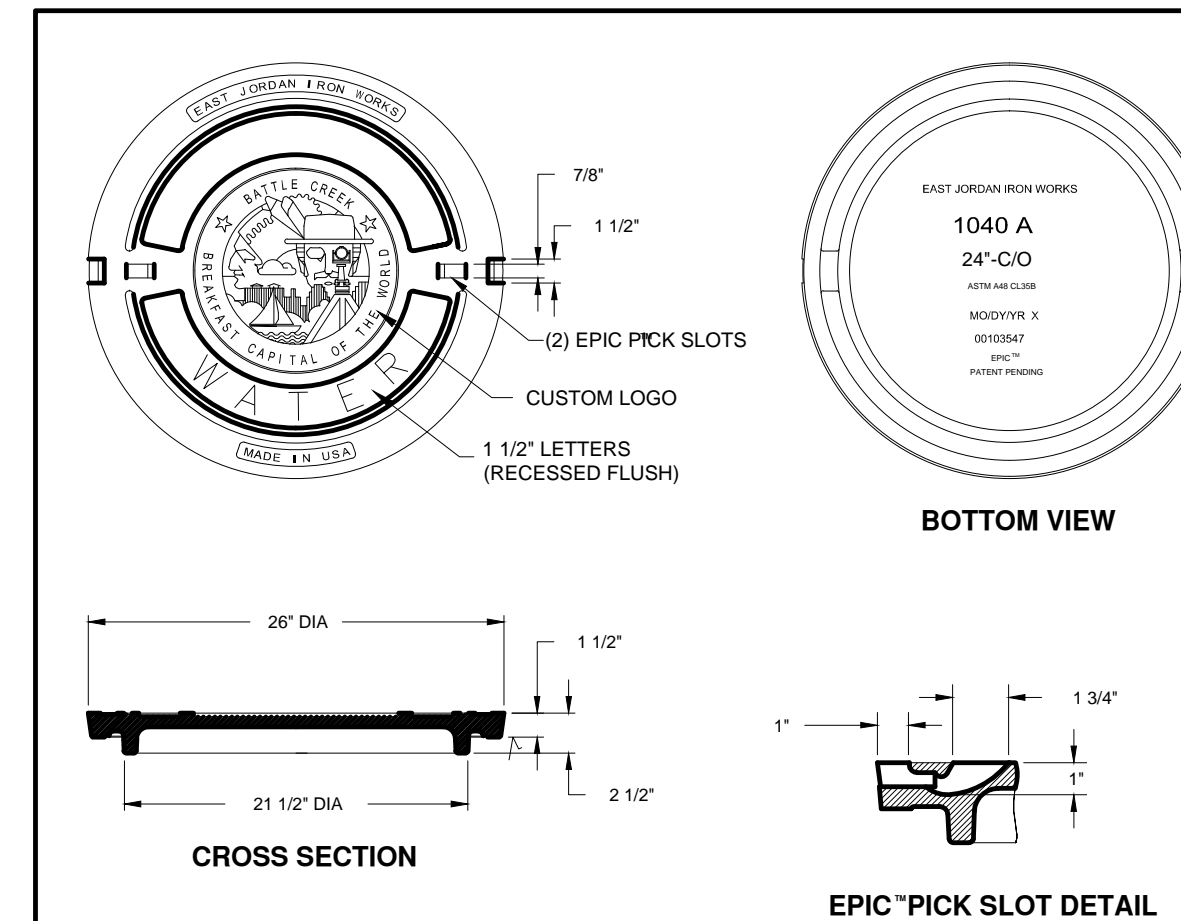
CAP AND PLUG MAIN



AIR RELEASE VALVE DETAIL

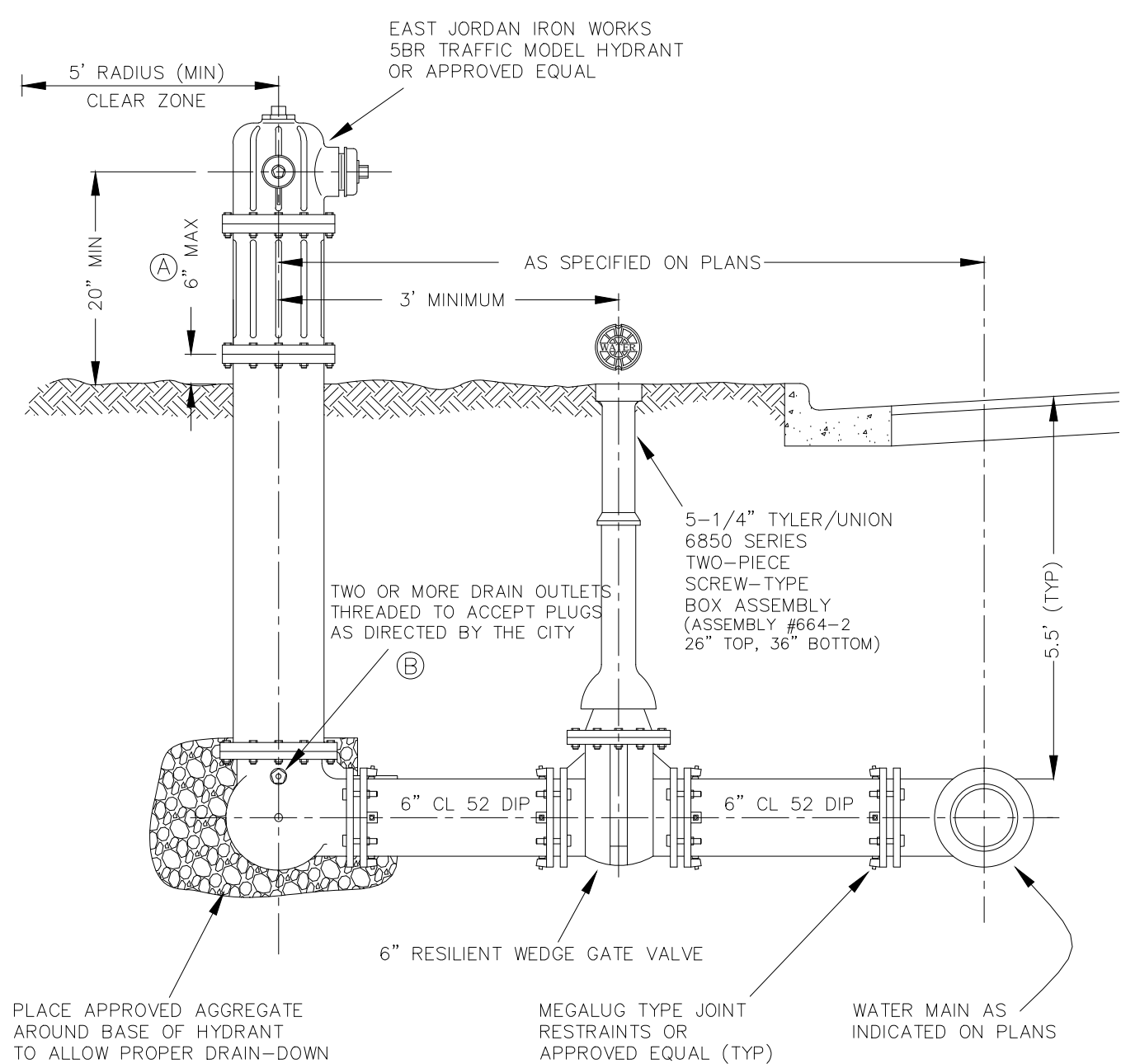
GENERAL WATER MAIN CONSTRUCTION NOTES

1. CONTRACTOR SHALL NOT PRESSURE TEST AGAINST A TAPPING VALVE.
2. CONTRACTOR SHALL NOT OPERATE ANY EXISTING VALVES (CONTACT CITY WATER DEPT.). ALL VALVES SHALL BE OPERATED TO OPEN POSITION AT THE FINAL INSPECTION.
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING THRUST RESTRAINT DESIGN FOR TEE, VALVES AND BENDS. SHOP DRAWINGS SHALL BE SUBMITTED 3 WEEKS PRIOR TO WATER MAIN CONSTRUCTION.



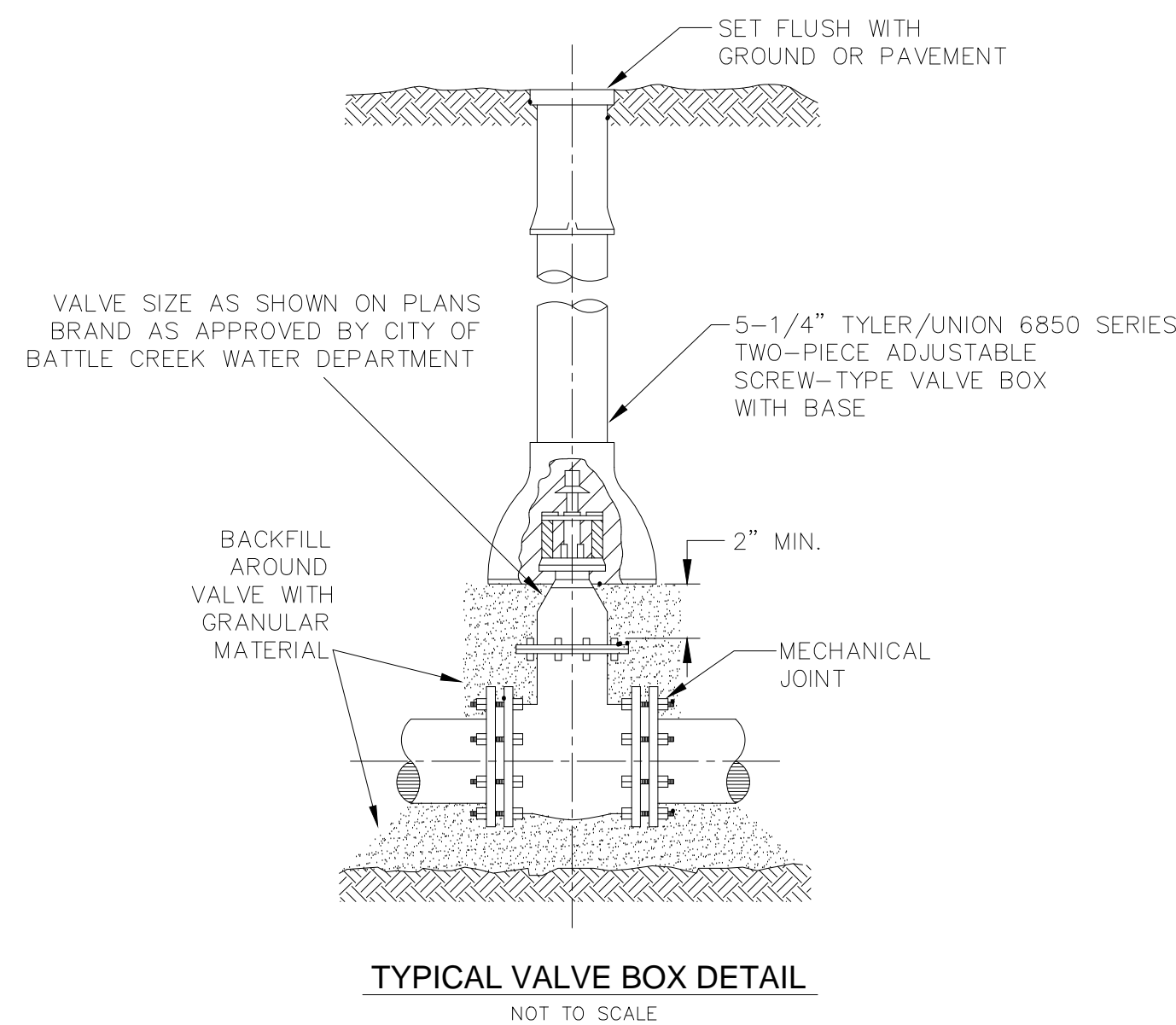
CROSS SECTION

EPIC™PICK SLOT DETAIL



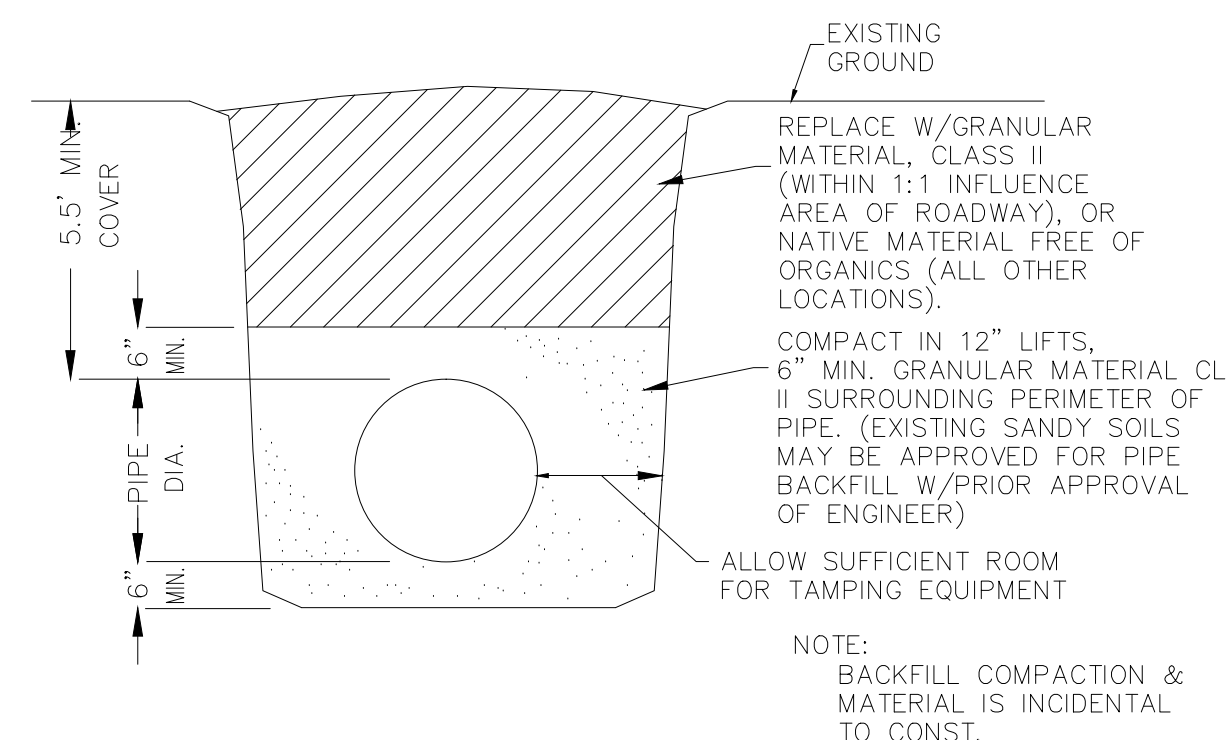
TYPICAL HYDRANT AND VALVE DETAIL

REV: 2/24/2005



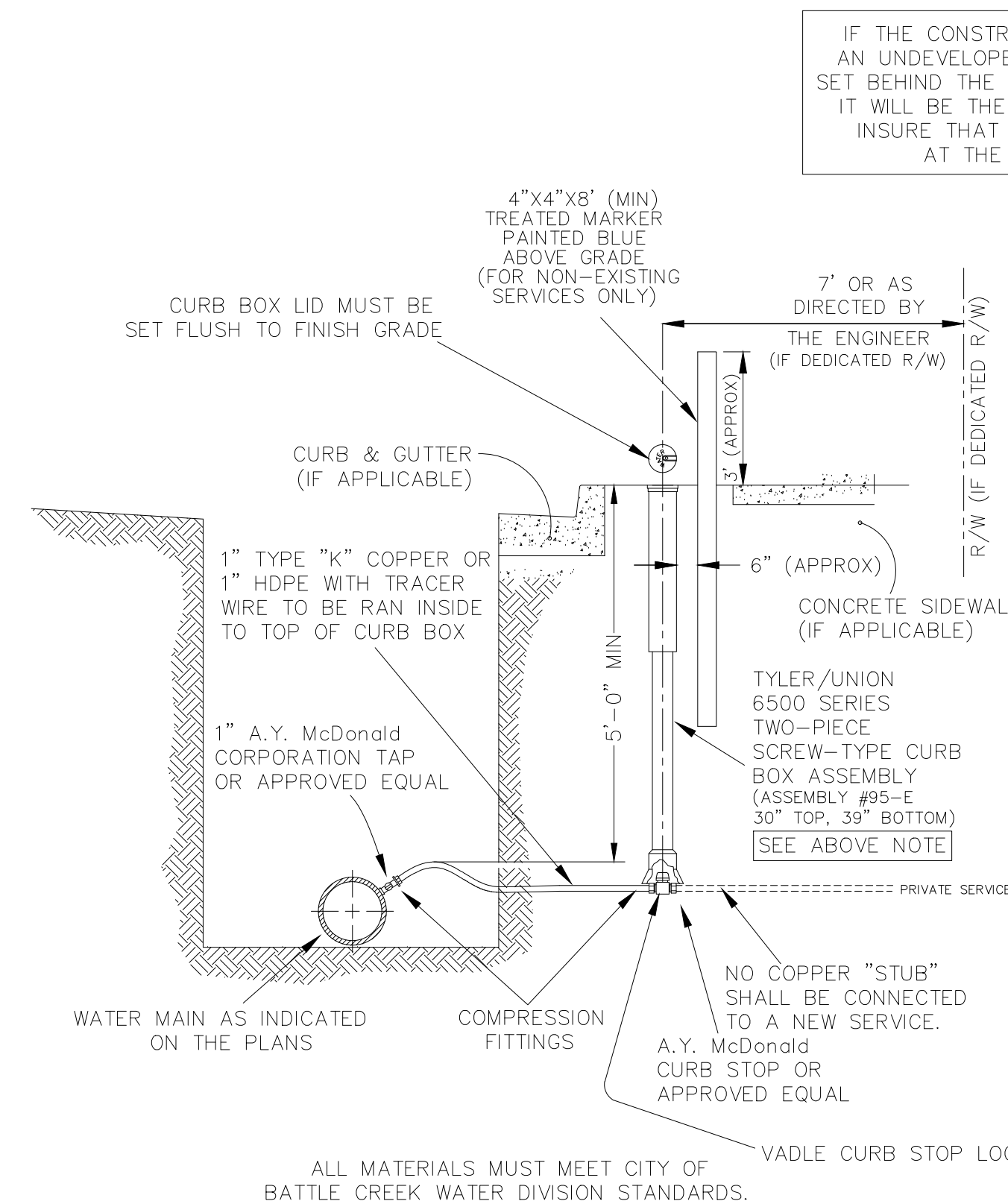
TYPICAL VALVE BOX DETAIL

NOT TO SCALE



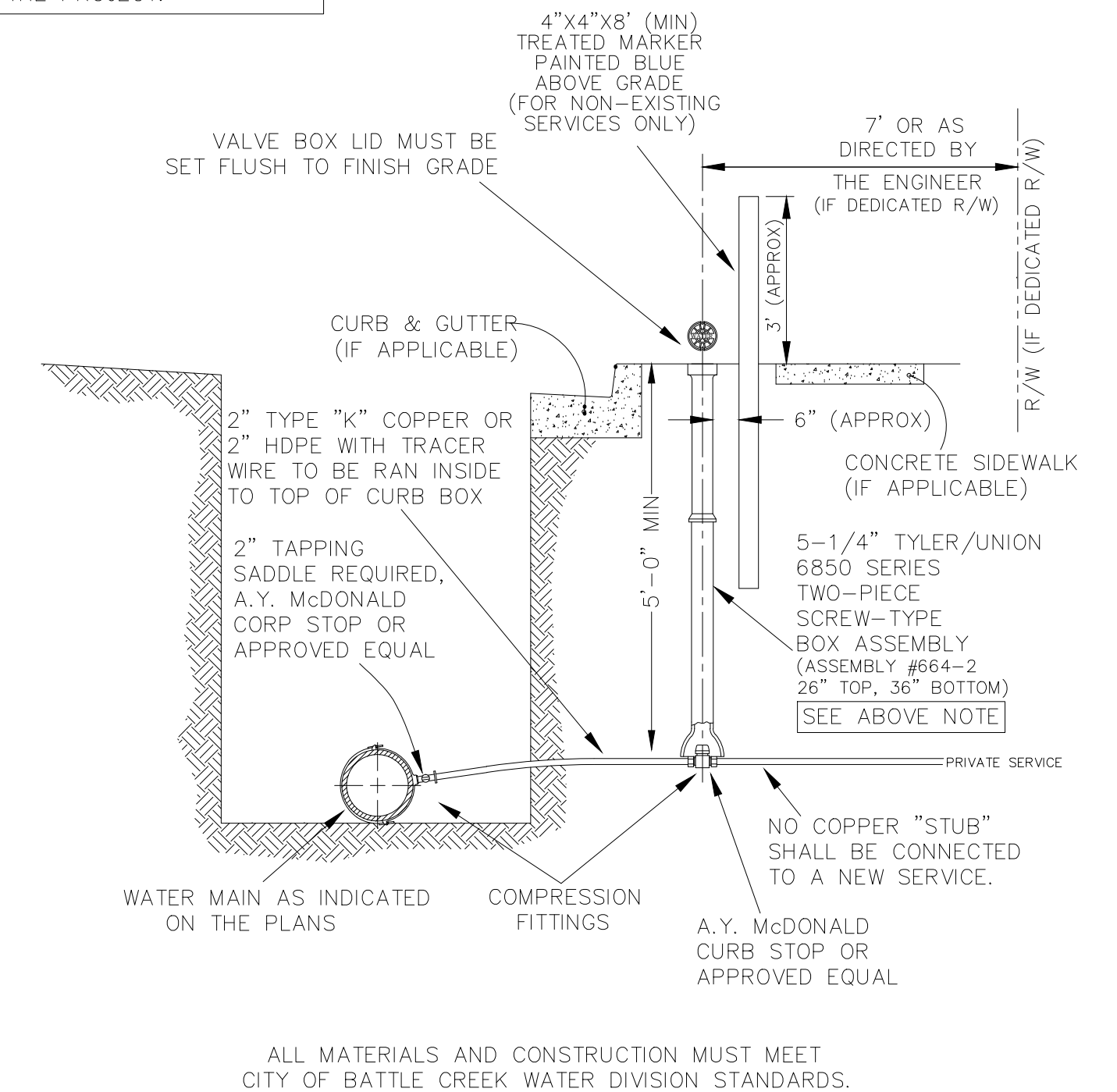
TYPICAL PIPE BEDDING DETAIL

NOTE: BACKFILL COMPACTION & MATERIAL IS INCIDENTAL TO CONST.



TYPICAL 1" WATER SERVICE DETAIL

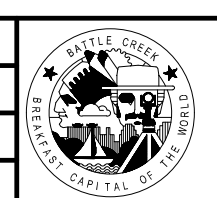
REV: 07/27/05



TYPICAL 2" WATER SERVICE DETAIL

REV: 07/27/2005

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY
DETAILS REVISED	7/28/2005	TJG	DETAILS REVISED	3/13/2017	CLA
NOTES ADDED	4/9/2009	DLW			
CAP ADDED - HYD REVISED	10/29/2015	KRT			

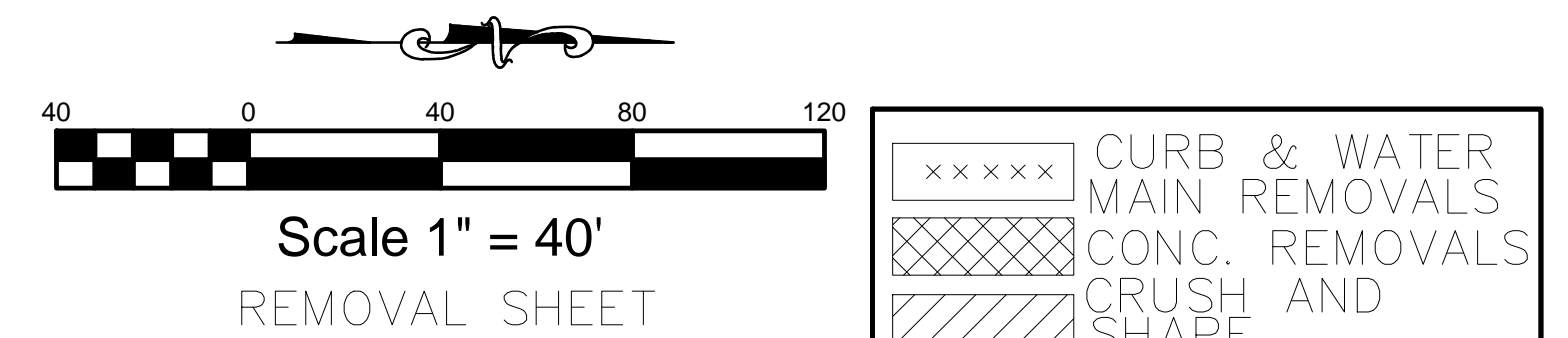
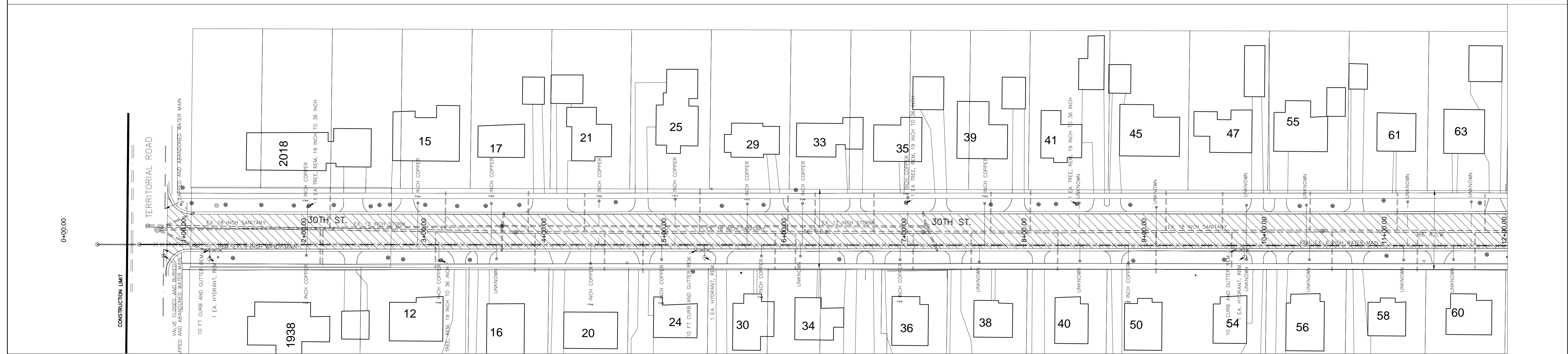
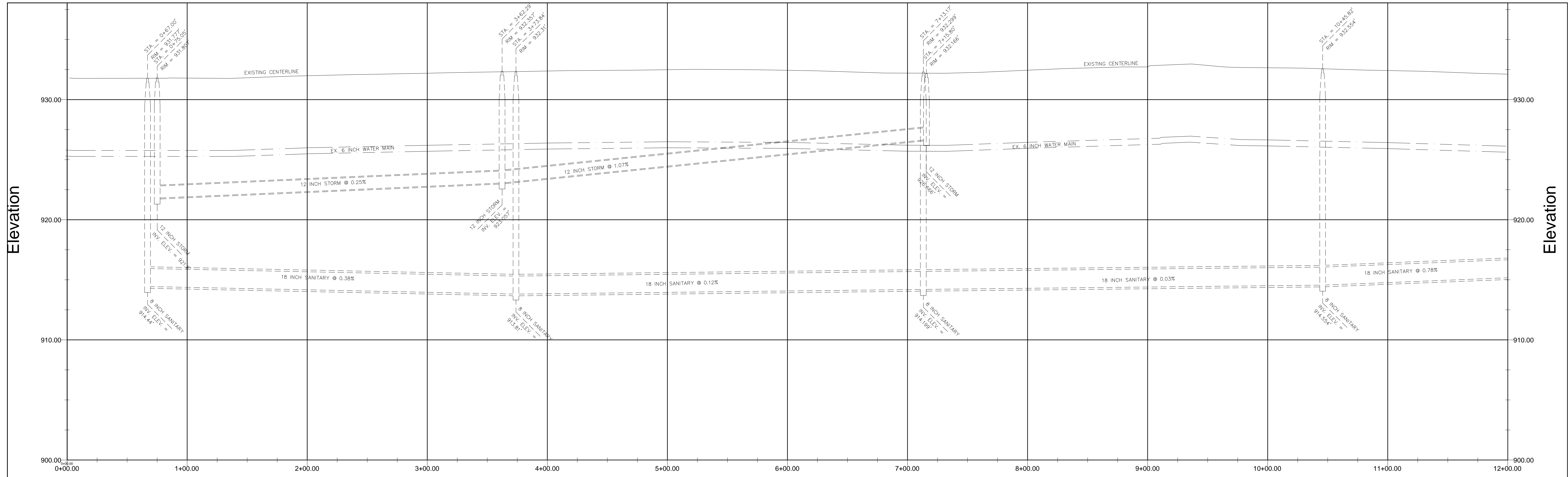


CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

DRAWN BY: TJG	APPROVED BY: TJG
SCALE: NOTED	DATE: 2/99 REVISED 3/2017
FILE NAME: STANDARD WATER DETAILS.DWG	

STANDARD WATER MAIN DETAILS

JOB NO.:	CONTRACT SHEET NO.:
STREET SHEET NO.:	4 OF 41



DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

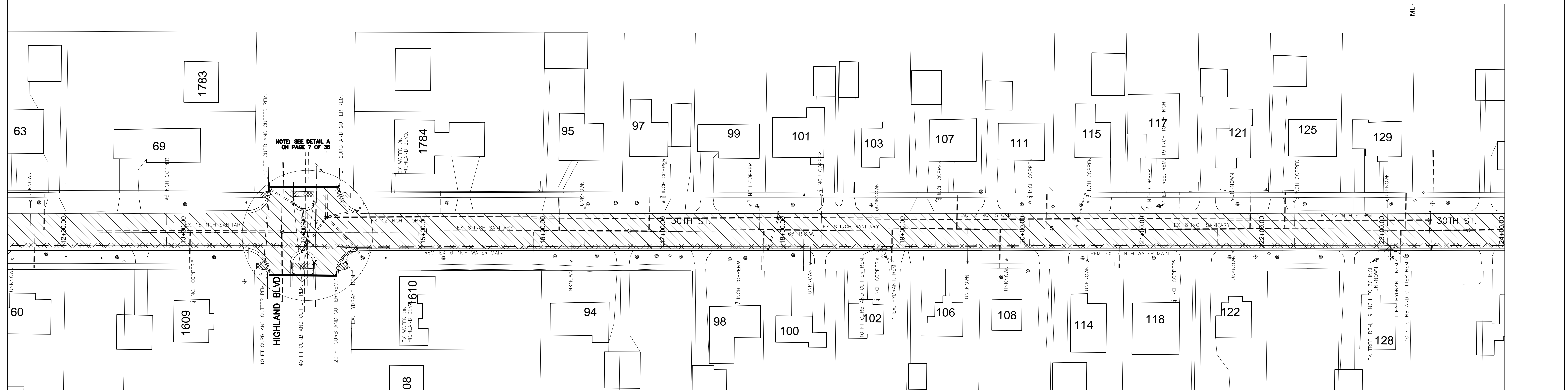
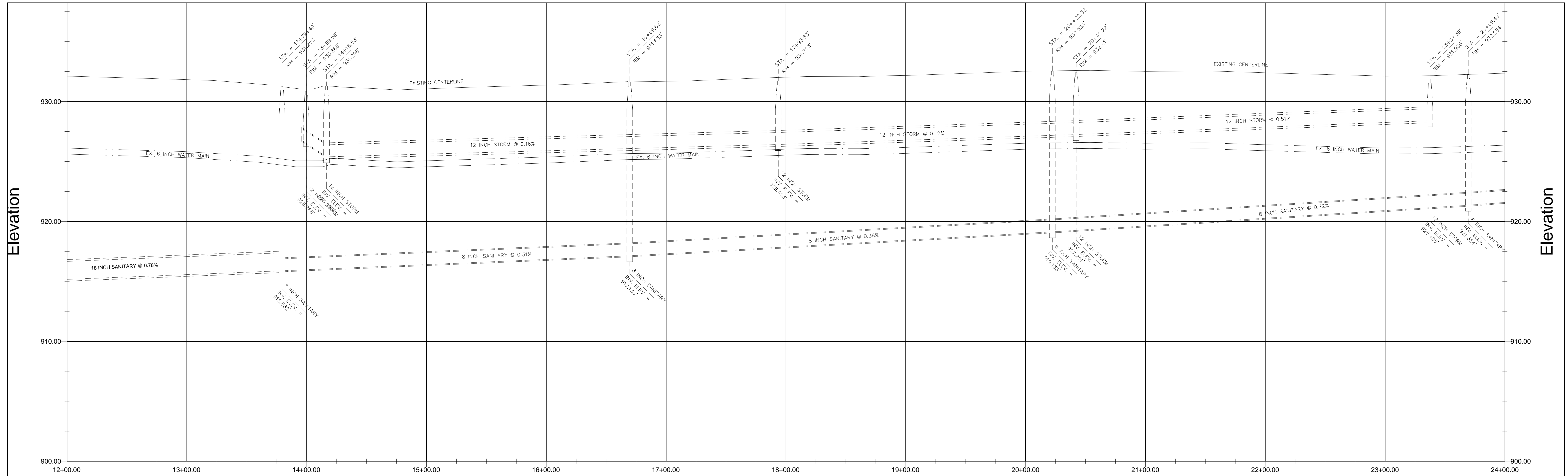
CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

DRAWN BY: CLA
SCALE: 1" = 40' HOR., 1" = 4' VERT.
DATE: JANUARY, 2018
FILE NAME:

APPROVED BY: CEF
CONTOUR INTERVAL:

30TH STREET
2018 WATER MAIN PROJECT

CONTRACT NO.:	R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
	1 OF 3	5 OF 41



Scale 1" = 40'
REMOVAL SHEET

xxxxx	CURB & WATER MAIN REMOVALS
[Cross-hatch pattern]	CONC. REMOVALS
[Diagonal line pattern]	CRUSH AND SHAPE

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING

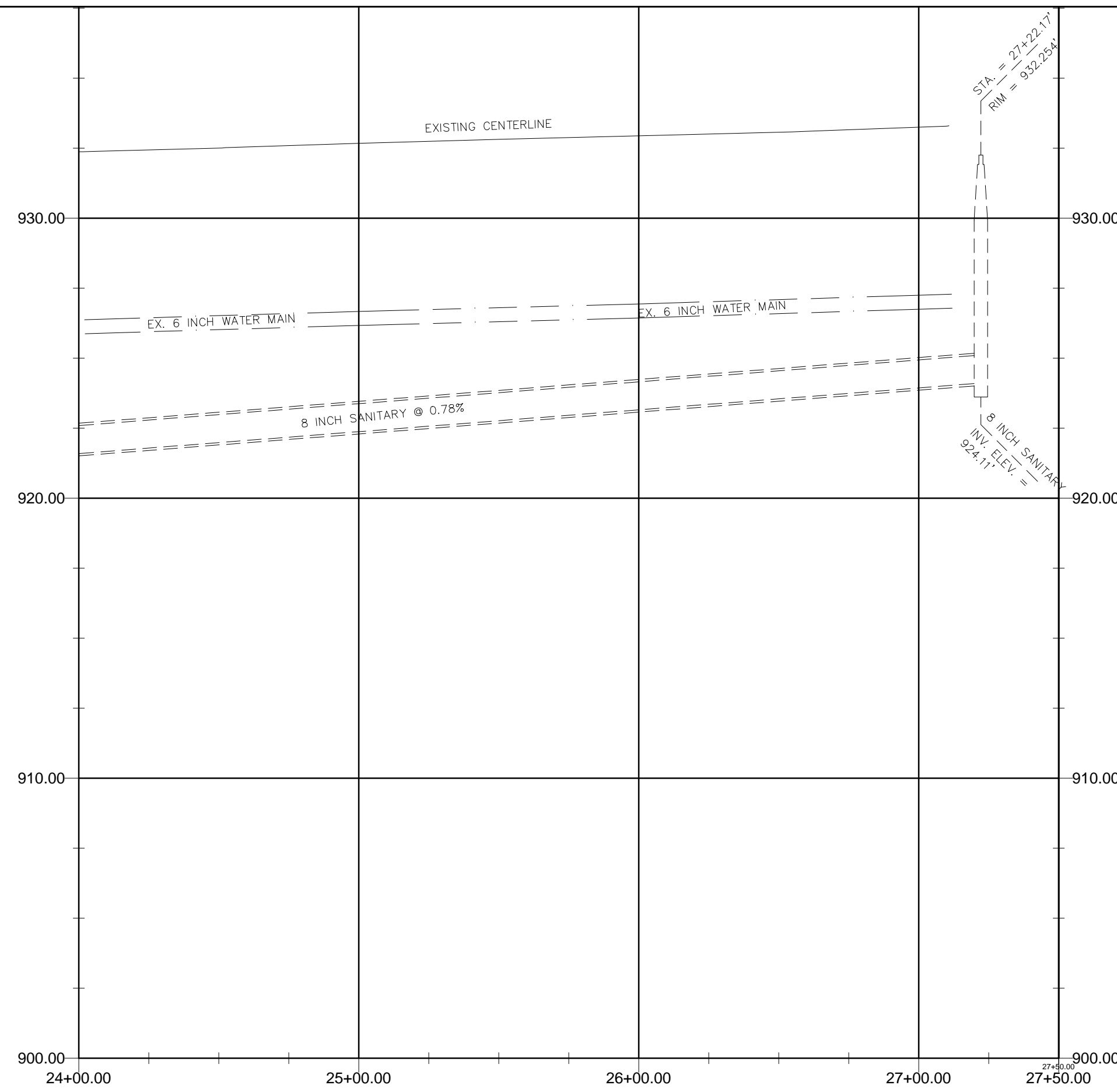
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DATE: JANUARY, 2018	
FILE NAME:	

30TH STREET

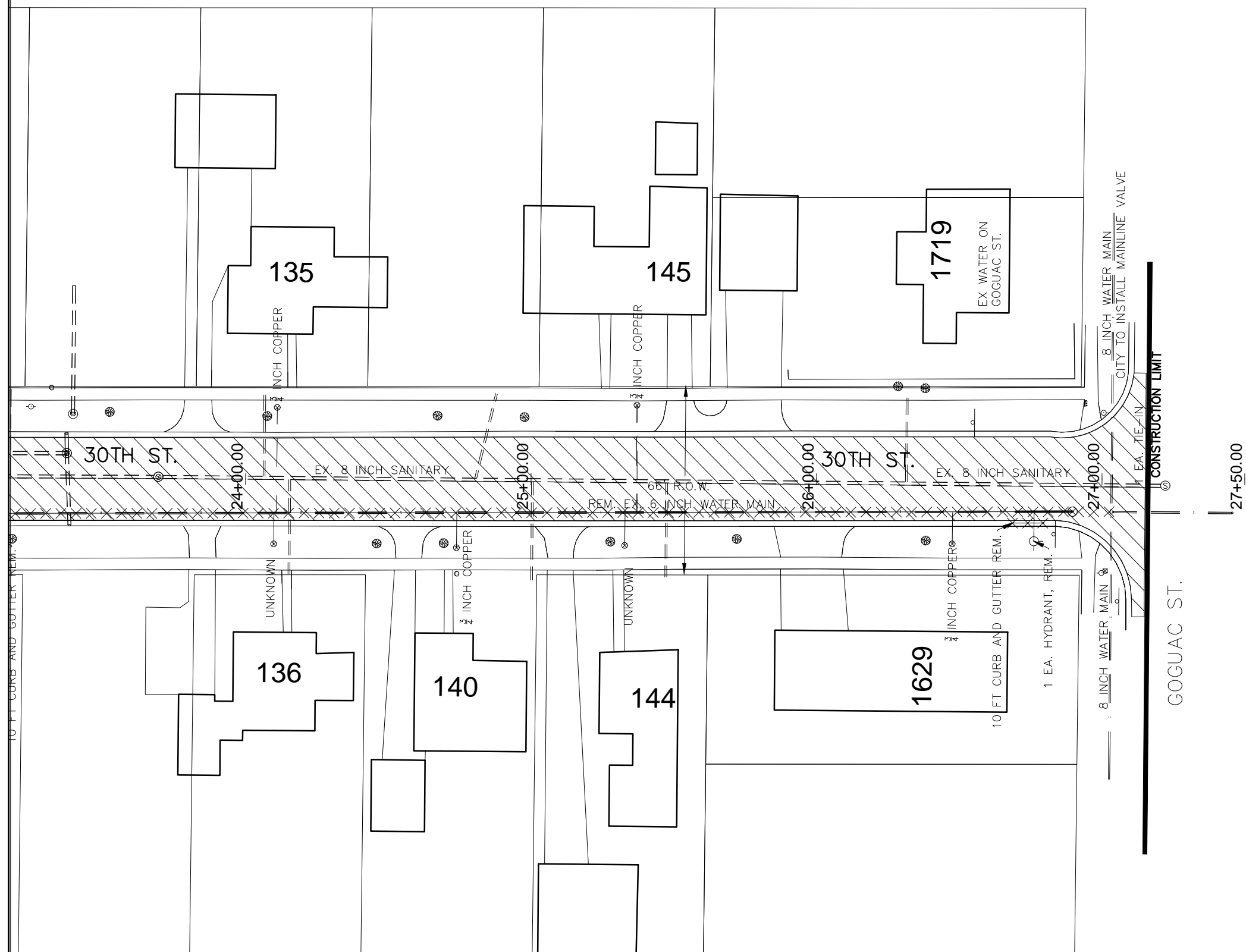
2018 WATER MAIN PROJECT

CONTRACT NO.:	CONTRACT SHEET NO.:
R.O.W.	2 OF 3
SHEET NO.:	6 OF 41

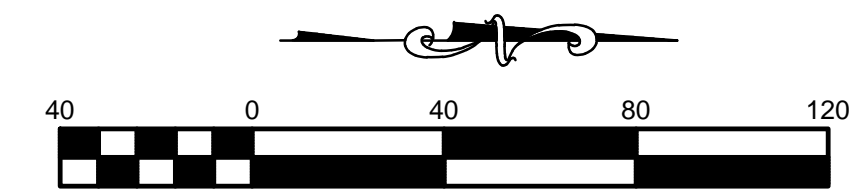
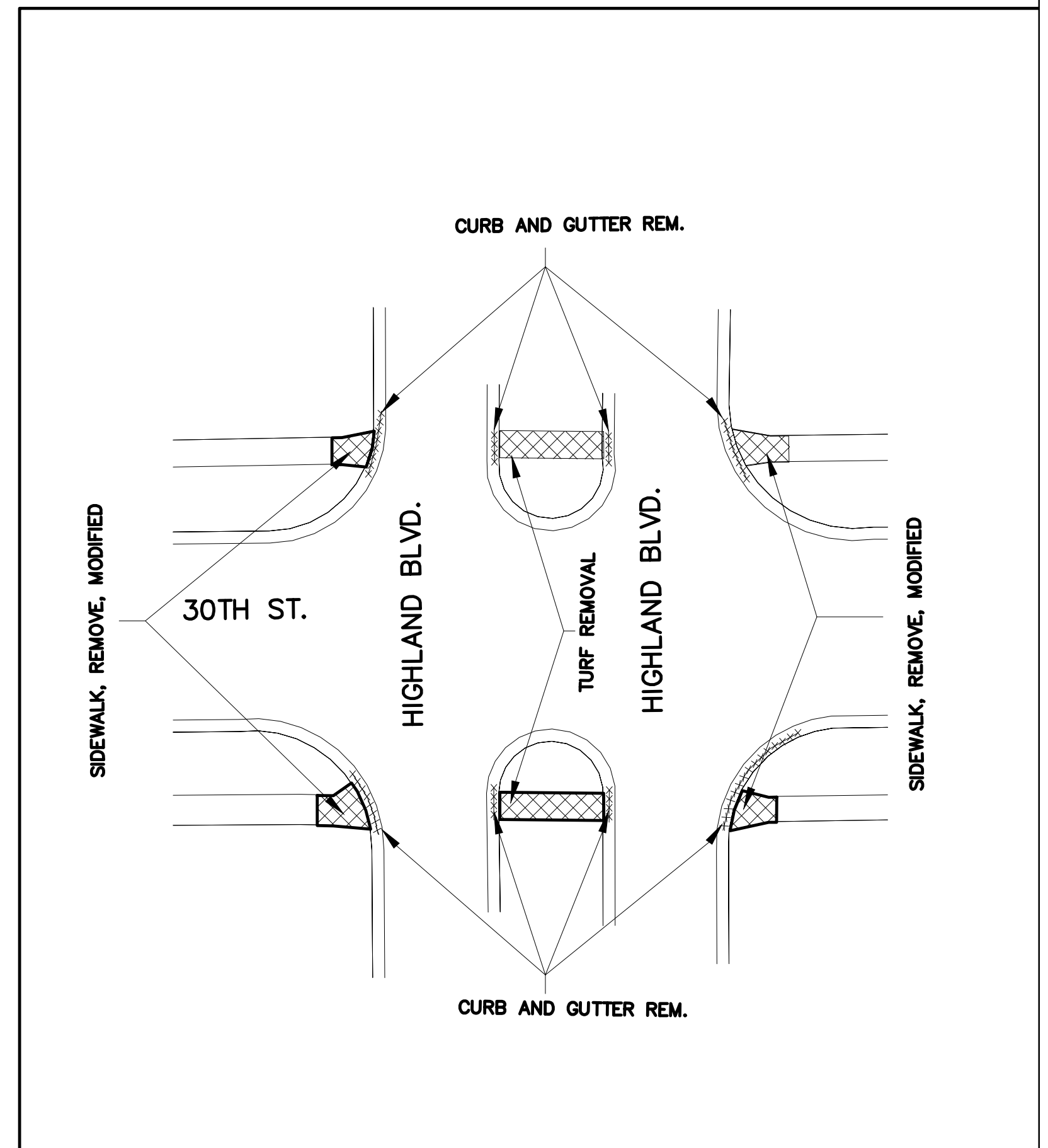
Elevation



Elevation



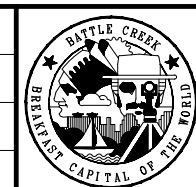
DETAIL A



Scale 1" = 40'
REMOVAL SHEET

XXXXXX	CURB & WATER MAIN REMOVALS
[Cross-hatched pattern]	CONC. REMOVALS
[Diagonal hatched pattern]	CRUSH AND SHAPE

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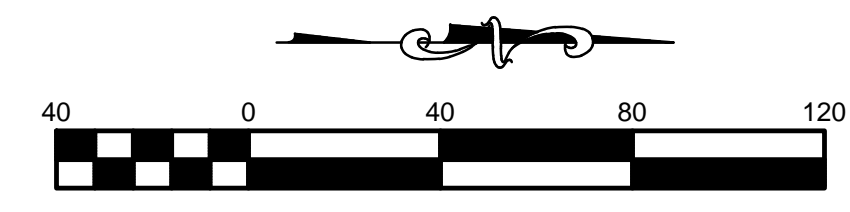
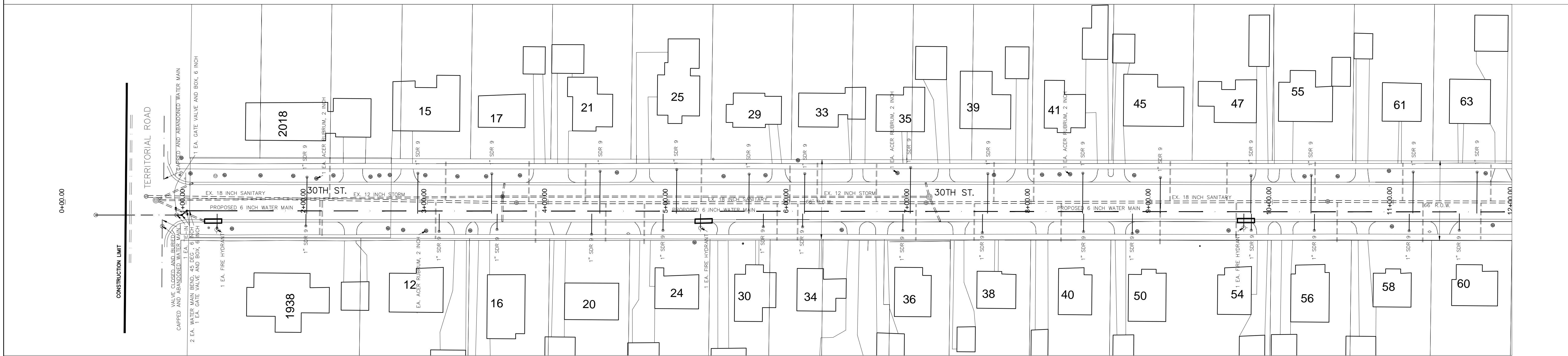
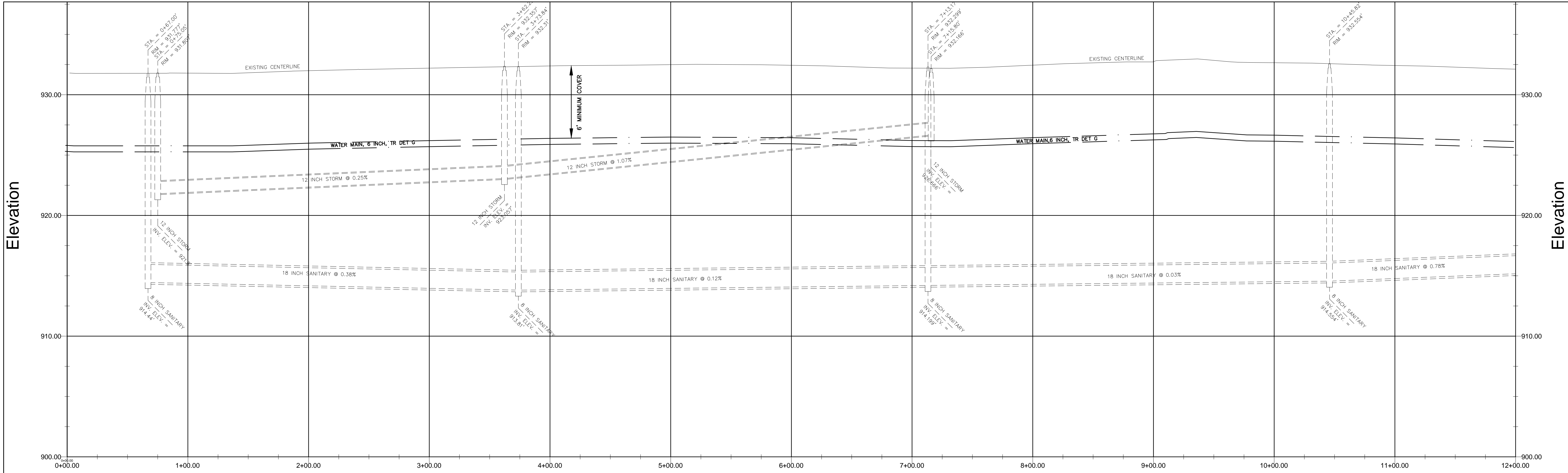


CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

DRAWN BY: CLA APPROVED BY: CEF
SCALE: 1"=40' HOR., 1" = 4' VERT. CONTOUR INTERVAL:
DATE: JANUARY, 2018
FILE NAME:


30TH STREET
2018 WATER MAIN PROJECT

CONTRACT NO.:	
R.O.W. SHEET NO.: 3 OF 3	CONTRACT SHEET NO.: 7 OF 41



CONSTRUCTION SHEET

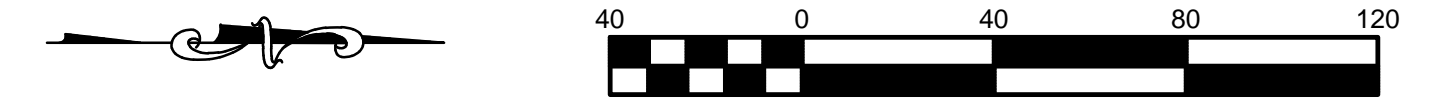
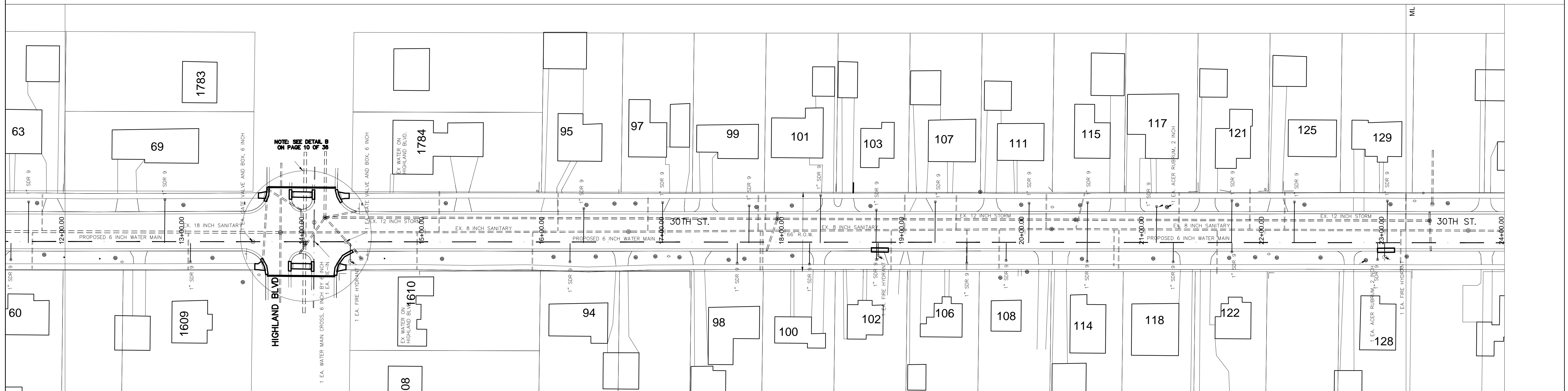
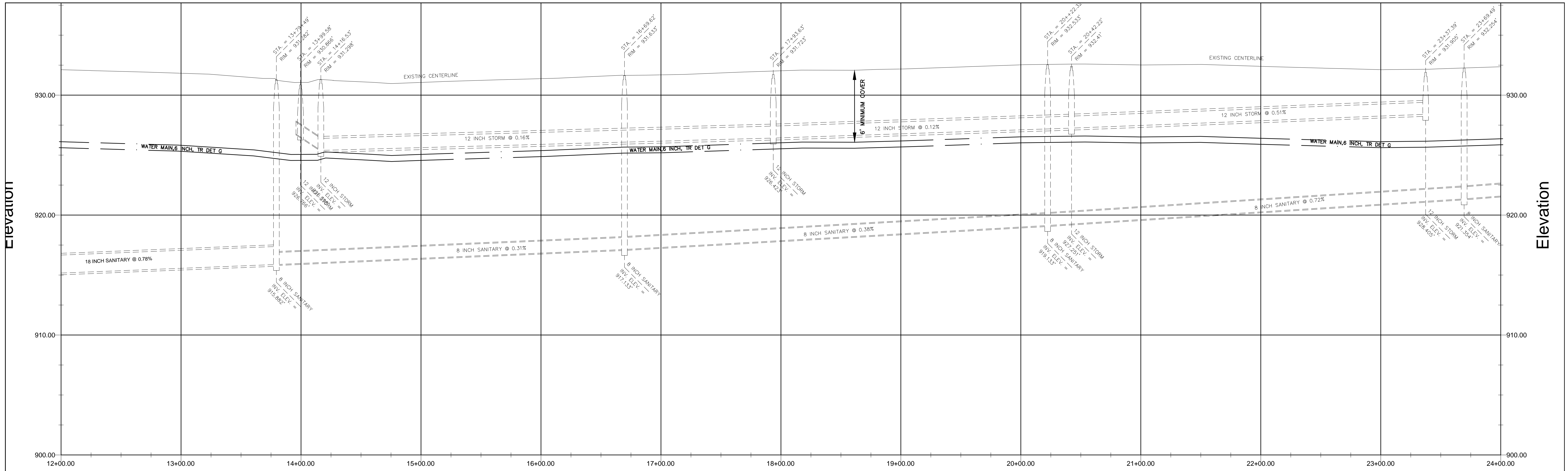
DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY


CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING

DRAWN BY: CLA
 SCALE: 1" = 40' HOR., 1" = 4' VERT. | CONTOUR INTERVAL:
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 FILE NAME:

30TH STREET
 2018 WATER MAIN PROJECT

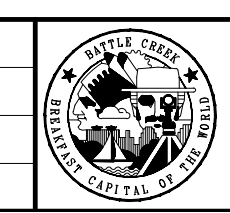
CONTRACT NO.:
 R.O.W. SHEET NO.: 1 OF 3
 CONTRACT SHEET NO.: 8 OF 41



CONSTRUCTION SHEET

Scale 1" = 40'

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CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

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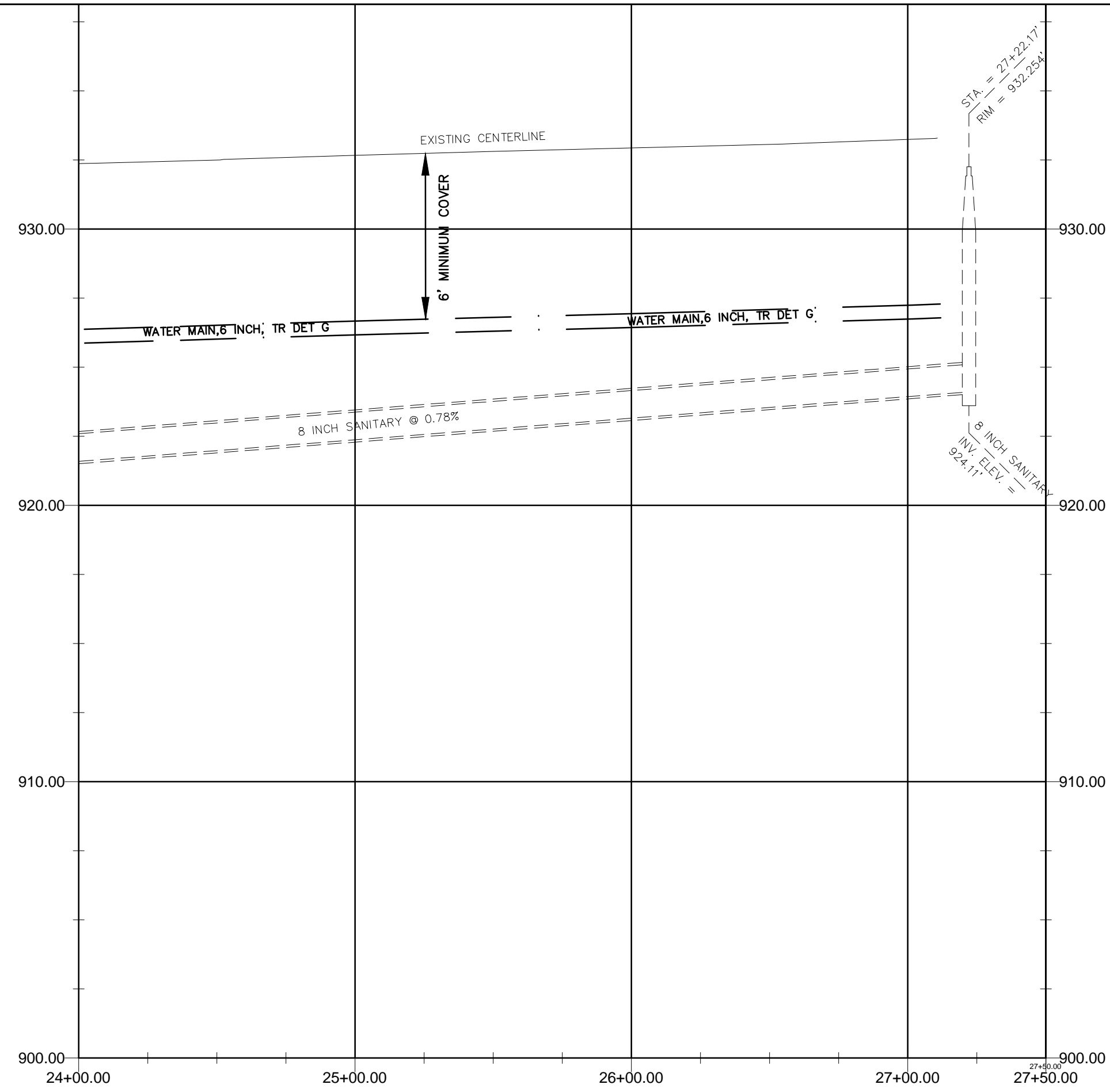
APPROVED BY: CEF
CONTOUR INTERVAL

30TH STREET
2018 WATER MAIN PROJECT

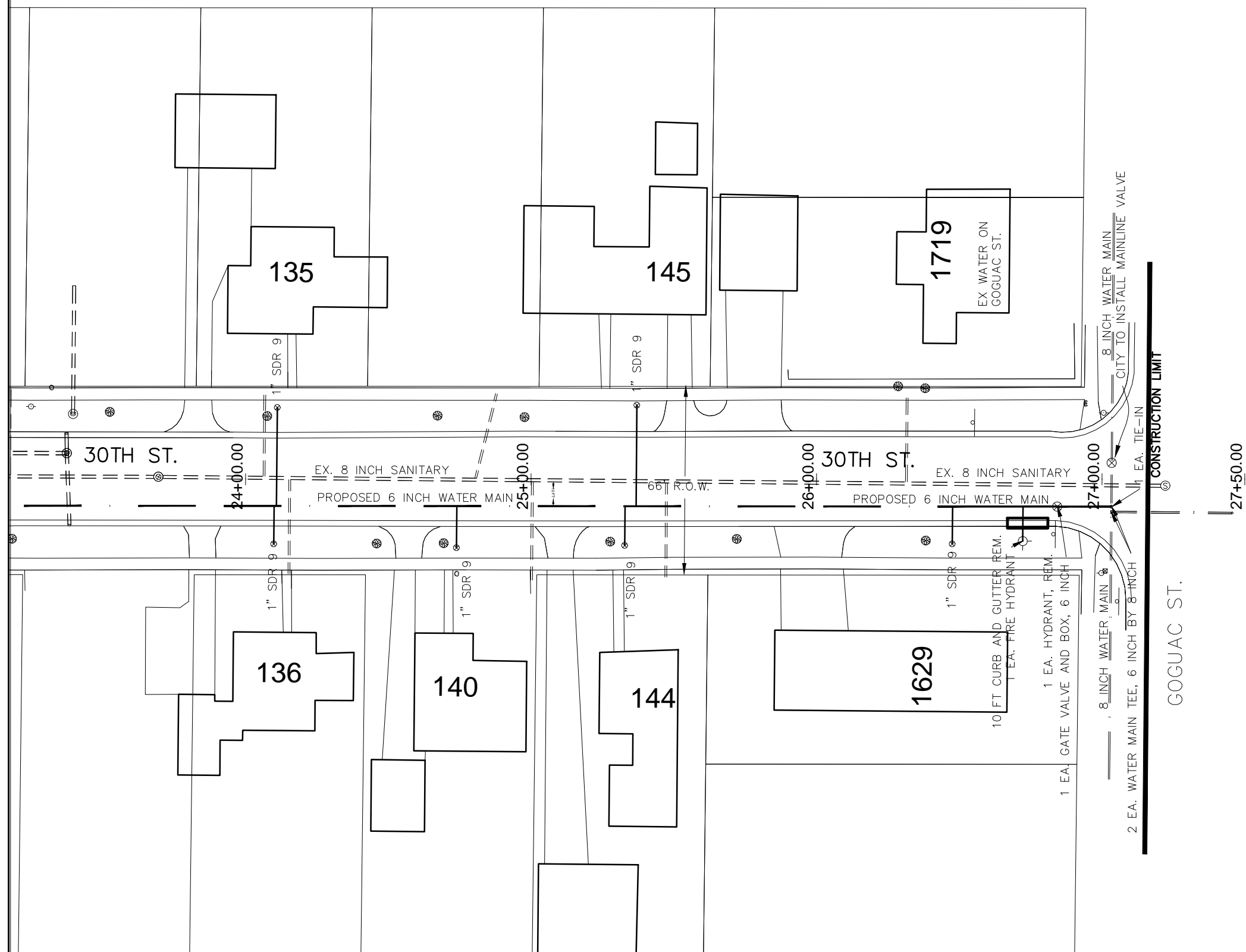
CONTRACT NO.:
R.O.W. SHEET NO.:
2 OF 3

CONTRACT SHEET NO.:
9 OF 41

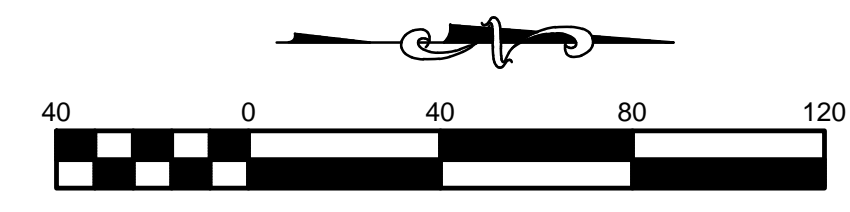
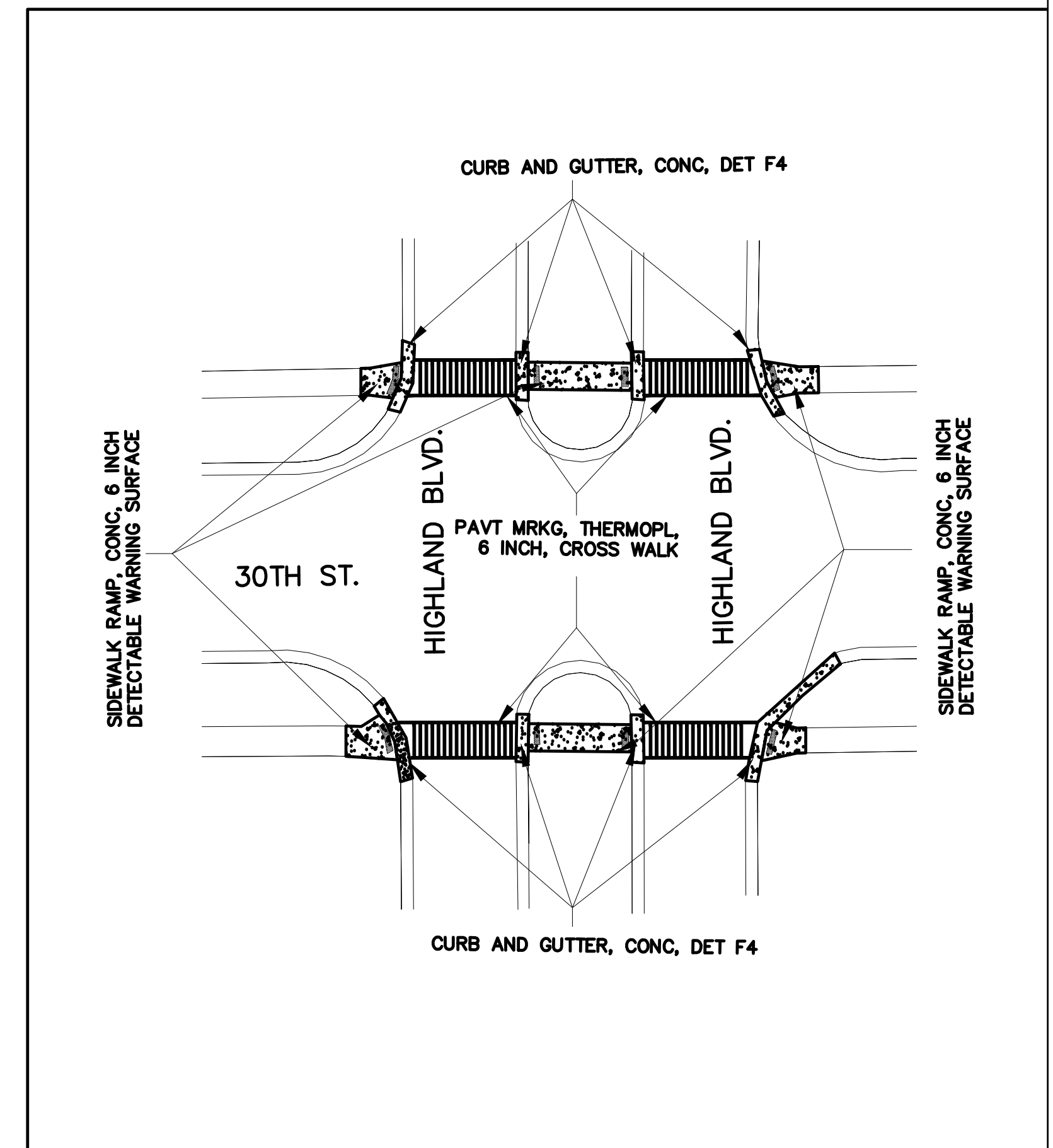
Elevation



Elevation



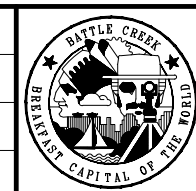
DETAIL B



Scale 1" = 40'
CONSTRUCTION SHEET

- ⊕ = BENCHMARK
- = TRAVERSE POINT
- = PROPERTY CORNER
- = SECTION CORNER
- ⊗ = STORM SEWER MANHOLE
- ⊗ = INLET/CATCH BASIN
- ⊗ = SANITARY SEWER MANHOLE
- ⊗ = SANITARY SEWER CLEANOUT
- ⊗ = ELECTRIC MANHOLE
- = UTILITY POLE
- = LIGHT POLE
- = YARD LIGHT
- ⊗ = GUY ANCHOR
- ⊗ = TRANSFORMER
- ⊗ = ELECTRIC HANDHOLE
- ⊗ = TELEPHONE MANHOLE
- ⊗ = TELEPHONE BOX
- ⊗ = TELEPHONE VAULT
- ⊗ = WATER MANHOLE
- ⊗ = HYDRANT
- ⊗ = WATER VALVE
- ⊗ = WATER CURB BOX
- ⊗ = WATER WELL
- ⊗ = WELL
- ⊗ = GAS VALVE
- ⊗ = GAS LINE MARKER
- ⊗ = GAS METER
- ⊗ = CONFEROUS TREE
- ⊗ = DECIDUOUS TREE
- ⊗ = SHRUB/BUSH
- ⊗ = STUMP
- ⊗ = SIGN
- ⊗ = BUS STOP
- ⊗ = MAILBOX
- ⊗ = BOLLARD
- ⊗ = MONITOR WELL
- ⊗ = LANDSCAPE ROCK

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY



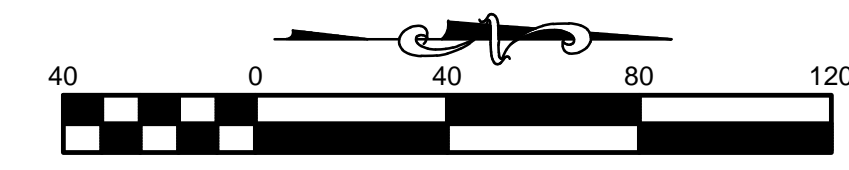
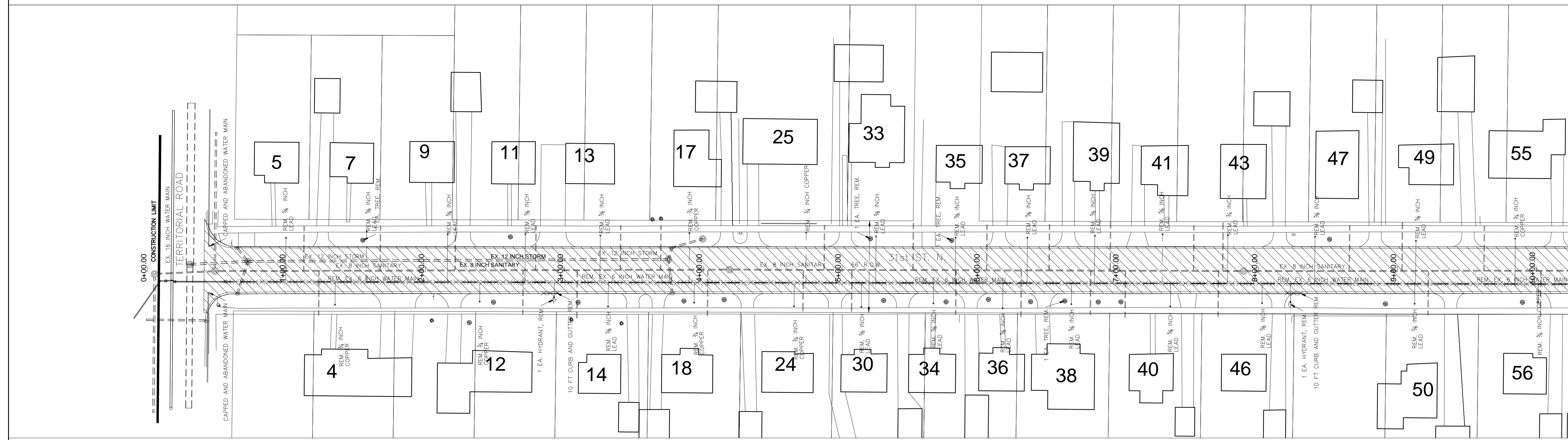
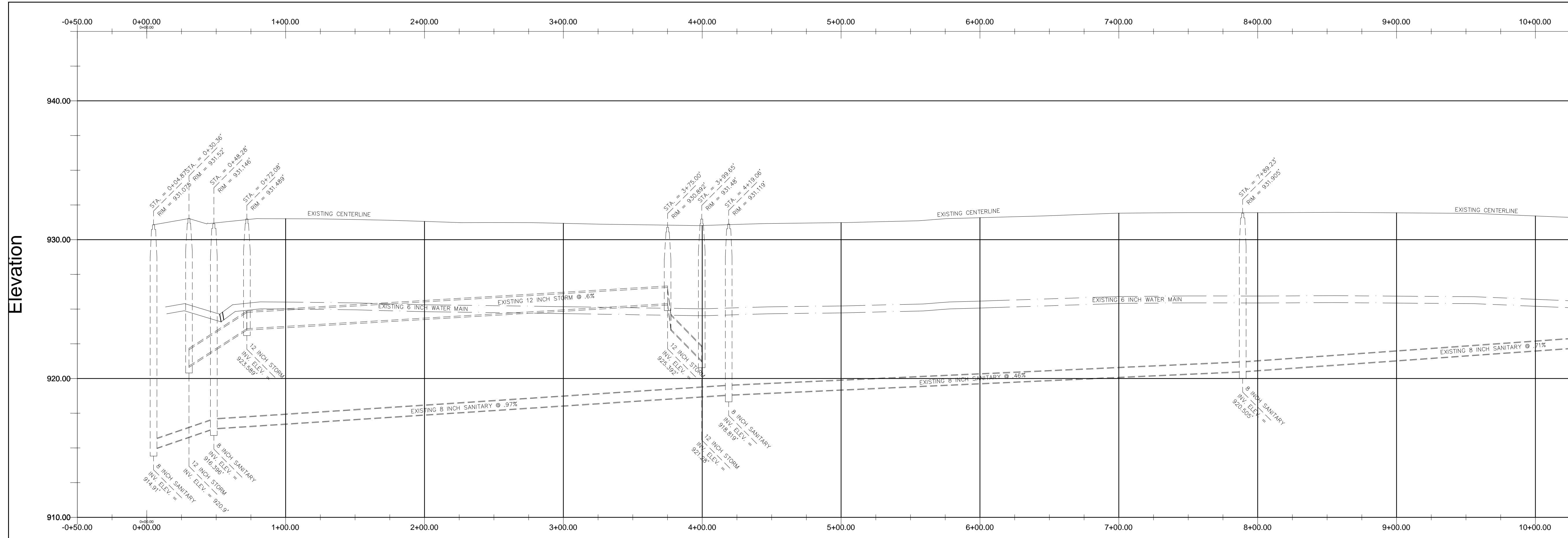
CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

DRAWN BY: CLA
SCALE: 1"=40' HOR., 1" = 4' VERT.
DATE: JANUARY, 2018
FILE NAME:

APPROVED BY: CEF
CONTOUR INTERVAL:

30TH STREET
2018 WATER MAIN PROJECT

CONTRACT NO.:
R.O.W. SHEET NO.: 3 OF 3
CONTRACT SHEET NO.: 10 OF 41



XXXXX	CURB & WATER MAIN REMOVALS
[Cross-hatched]	CONC. REMOVALS
[Diagonal lines]	CRUSH AND SHAPE

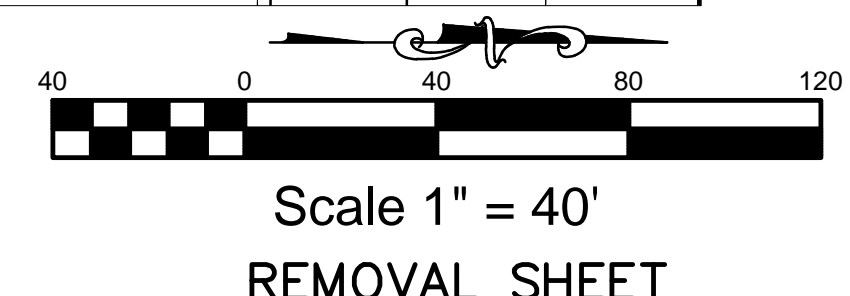
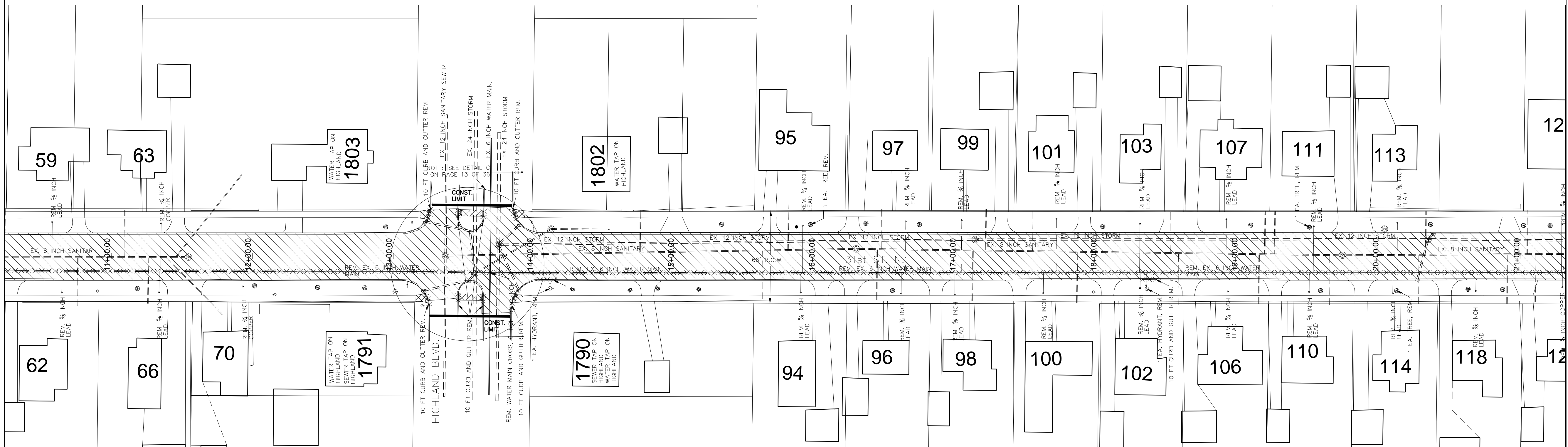
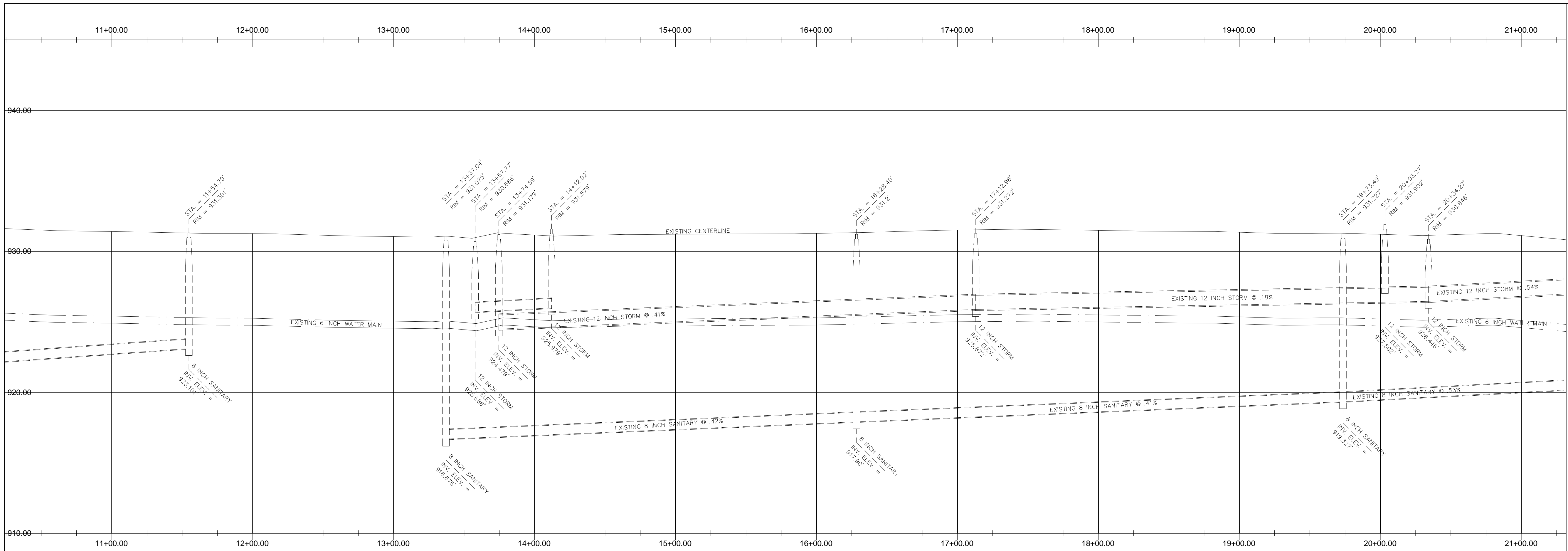
DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING

DRAWN BY: CLA
 SCALE: 1" = 40' HOR., 1" = 4' VERT.
 DATE: DECEMBER, 2017
 FILE NAME:
 APPROVED BY: CEF
 CONTOUR INTERVAL:

31ST STREET N.
 2018 WATER MAIN PROJECT

CONTRACT NO.:
 R.O.W. SHEET NO.: 1 OF 3
 CONTRACT SHEET NO.: 11 OF 41



XXXXXX	CURB & WATER MAIN REMOVALS
XXXXXX	CONC. REMOVALS
XXXXXX	CRUSH AND SHAPE

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

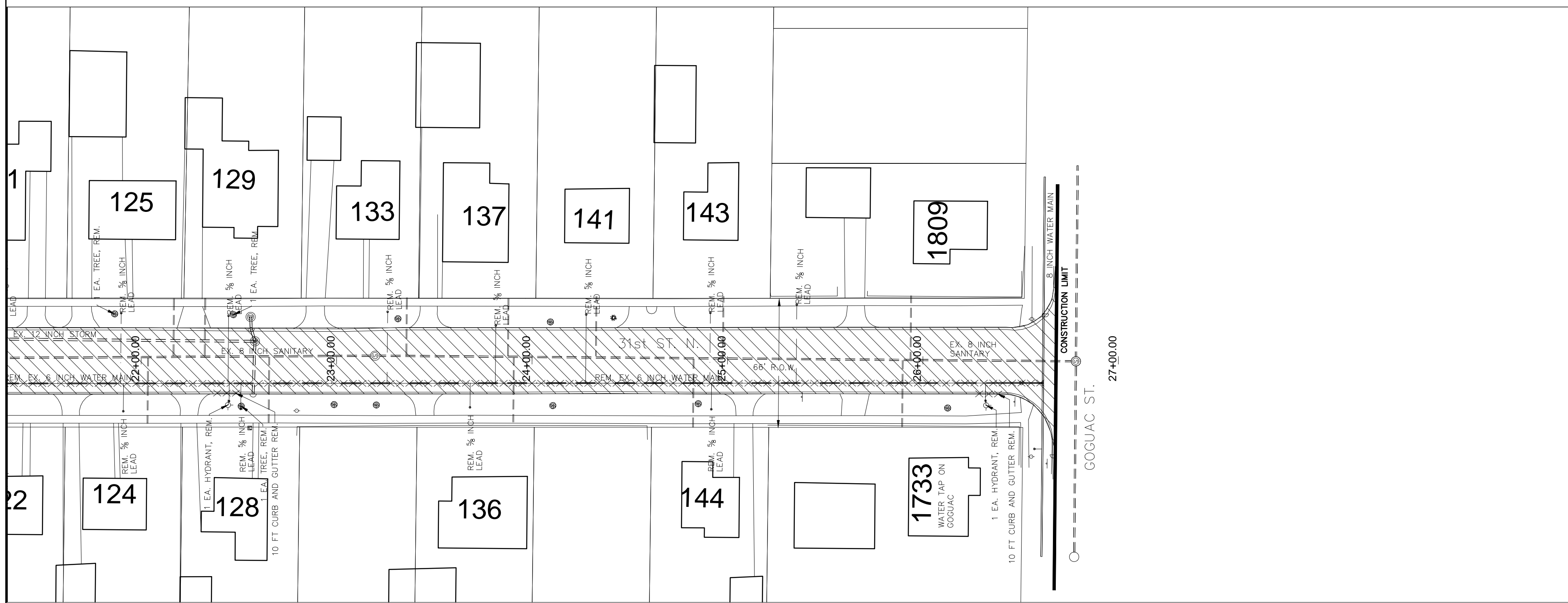
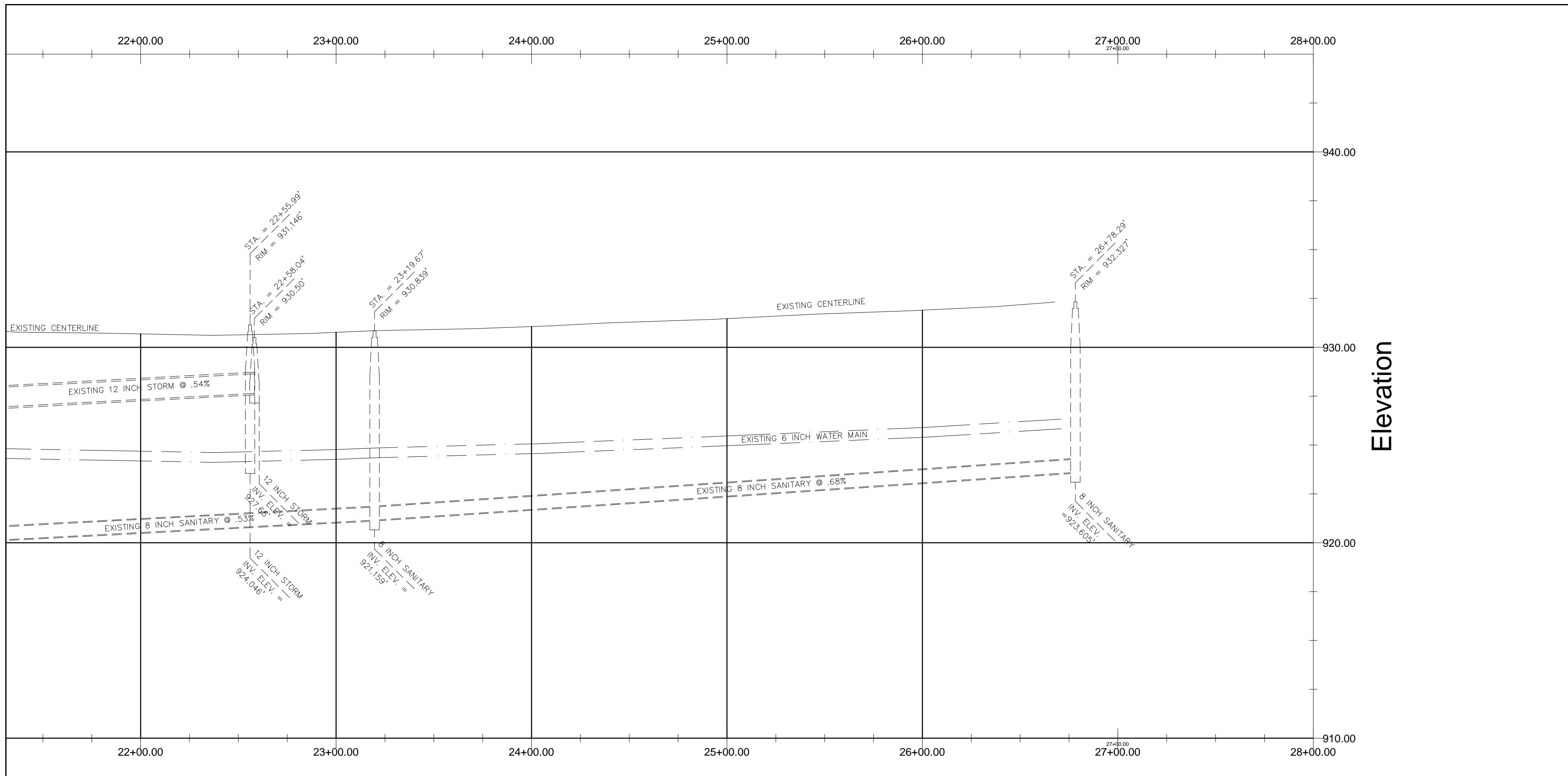
CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

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DATE: DECEMBER, 2017
FILE NAME:

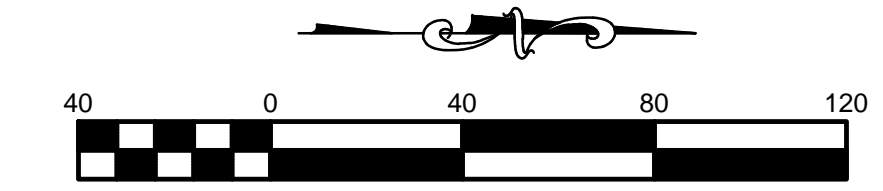
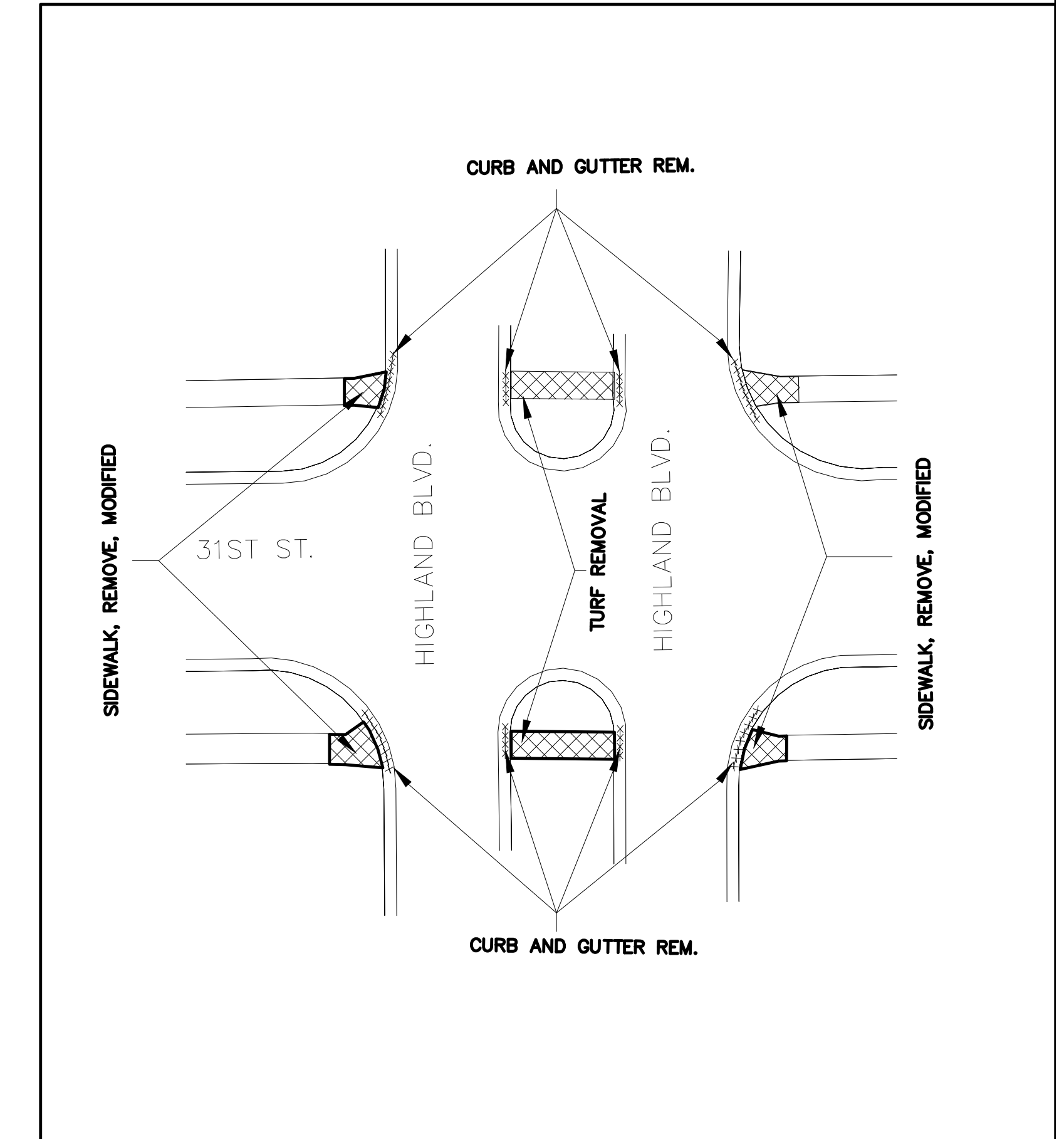
APPROVED BY: CEF
CONTOUR INTERVAL:

31ST STREET N.
2018 WATER MAIN PROJECT

CONTRACT NO.:	R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
	2 OF 3	12 OF 41




DETAIL C



Scale 1" = 40'
REMOVAL SHEET

XXXXXX	CURB & WATER MAIN REMOVALS
XXXXXX	CONC. REMOVALS
XXXXXX	SHAPE

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

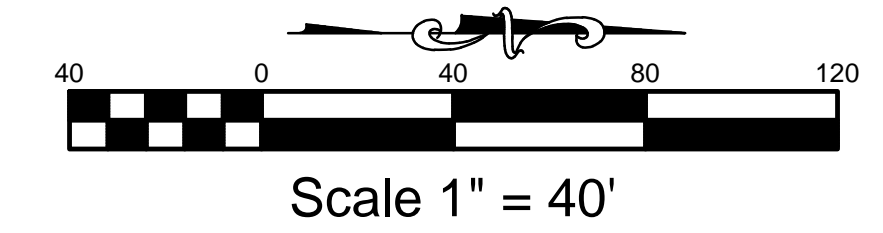
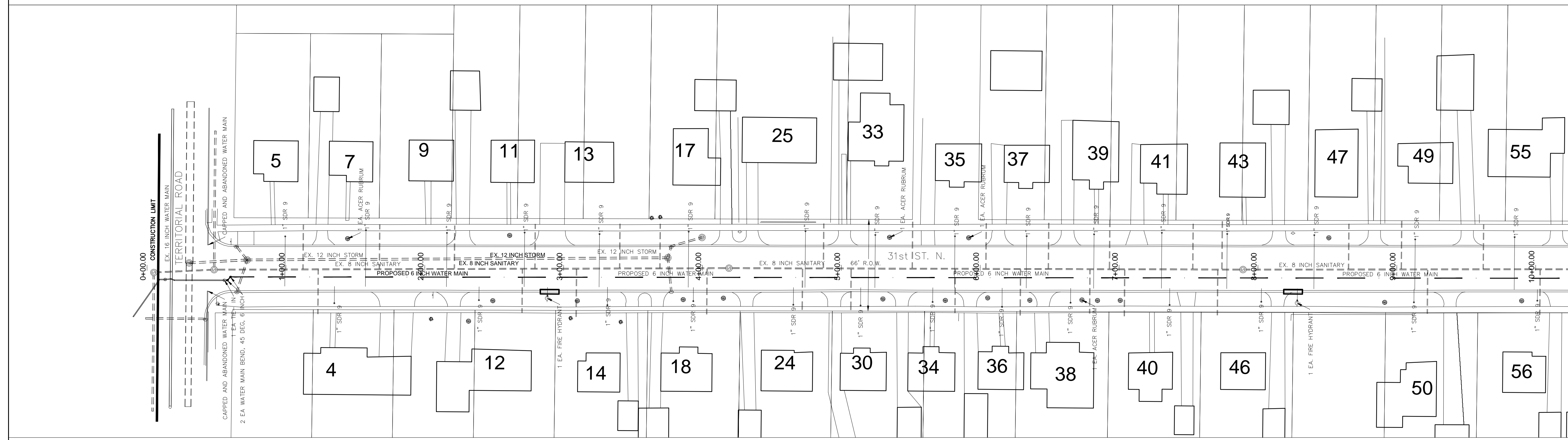
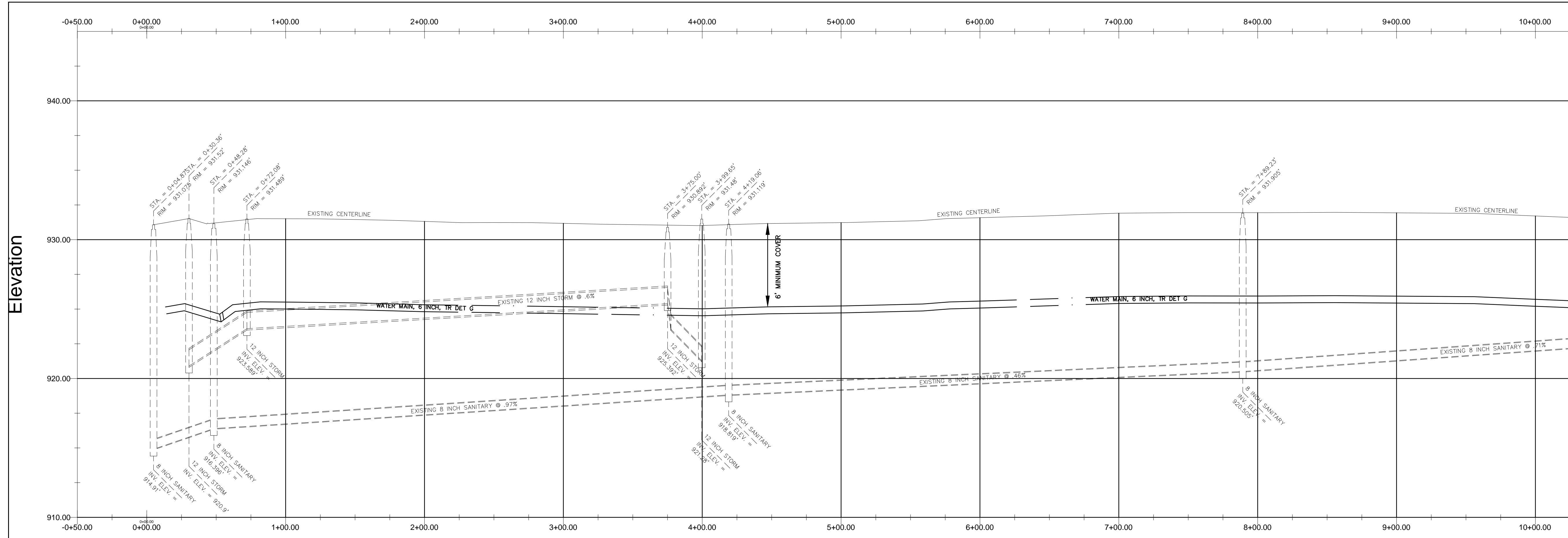


CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING


DRAWN BY: CLA APPROVED BY: CEF
 SCALE: 1"=40' HOR., 1" = 4' VERT. CONTOUR INTERVAL:
 DATE: DECEMBER, 2017
 FILE NAME:

31ST STREET N.
2018 WATER MAIN PROJECT

CONTRACT NO.:	R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
	3 OF 3	13 OF 41



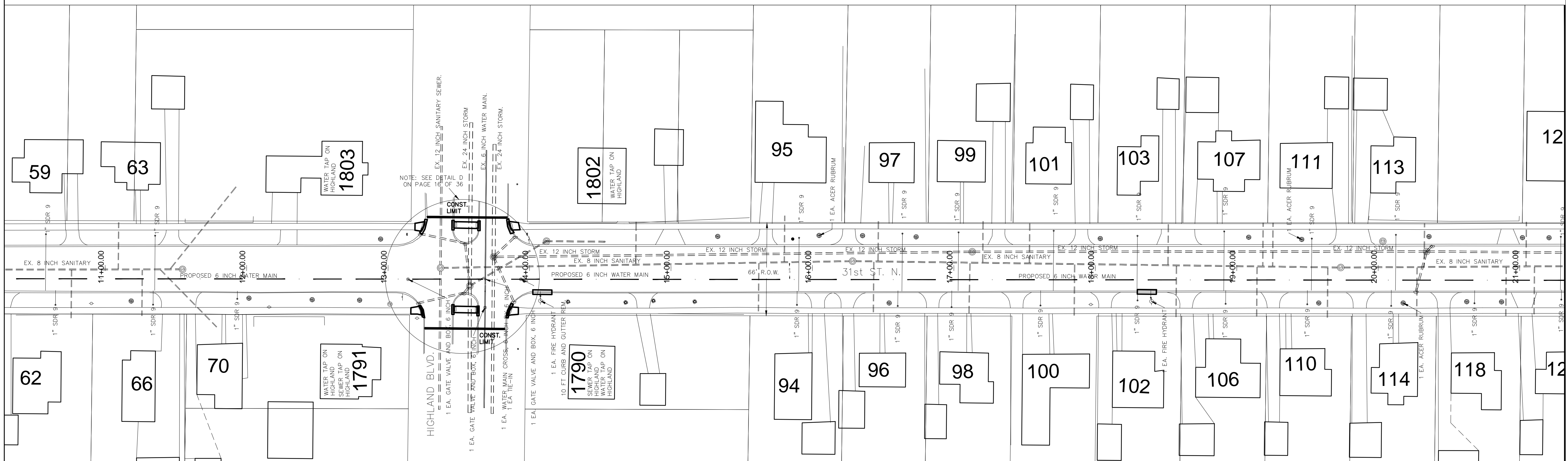
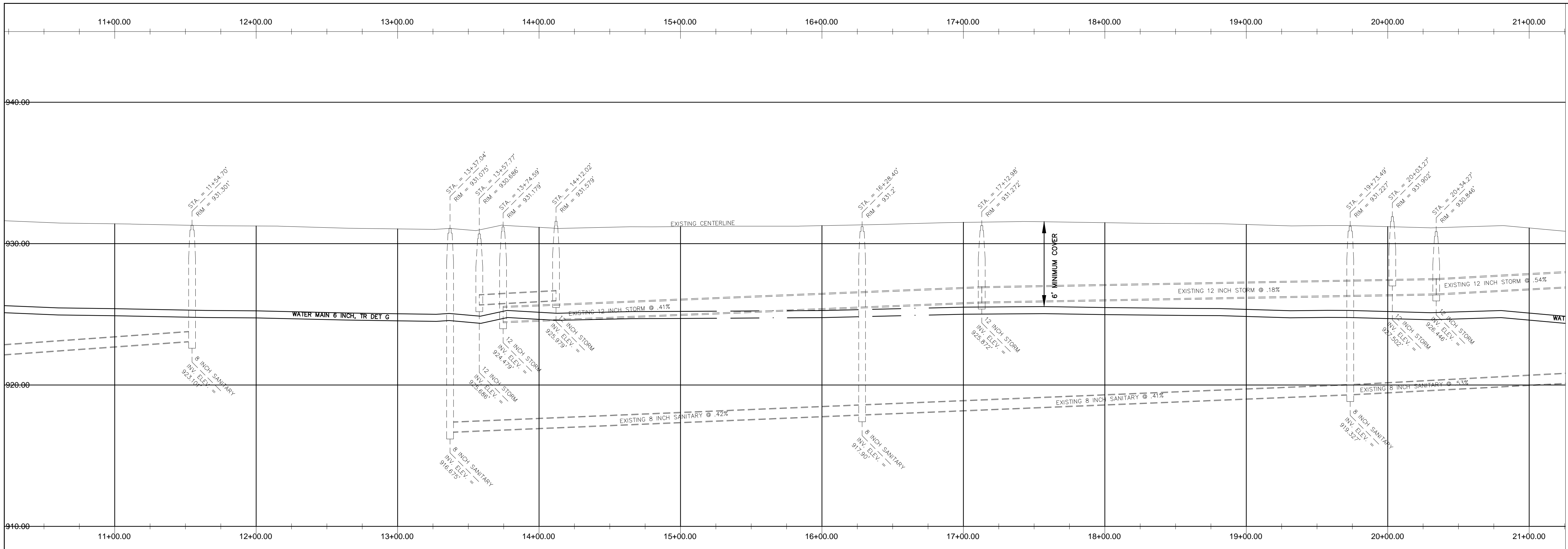
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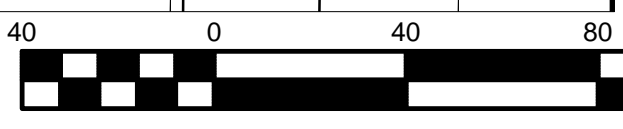

CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
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DRAWN BY: CLA APPROVED BY: CEF
 SCALE: 1"=40' HOR., 1" = 4' VERT. CONTOUR INTERVAL:
 DATE: DECEMBER, 2017
 FILE NAME:


31ST STREET N.
 2018 WATER MAIN PROJECT

CONTRACT NO.:	CONTRACT SHEET NO.:
R.O.W. SHEET NO.:	1 OF 3
CONTRACT SHEET NO.:	14 OF 41




 Scale 1" = 40'
 CONSTRUCTION SHEET

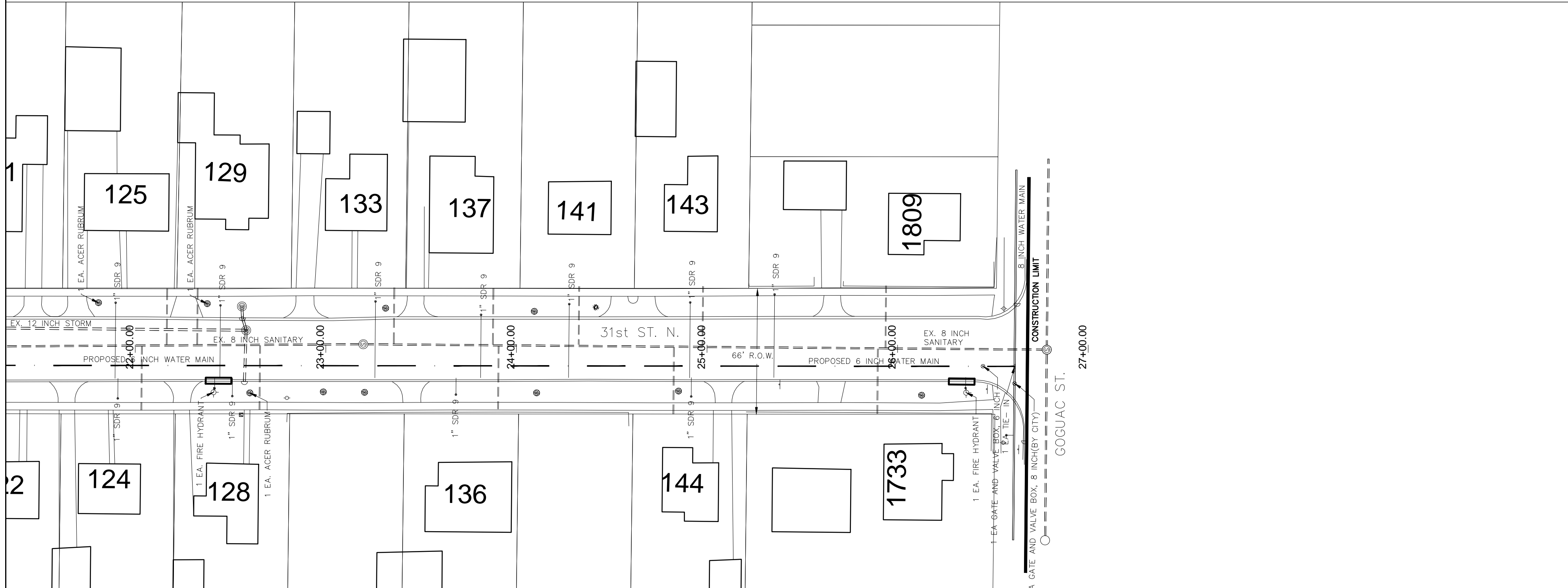
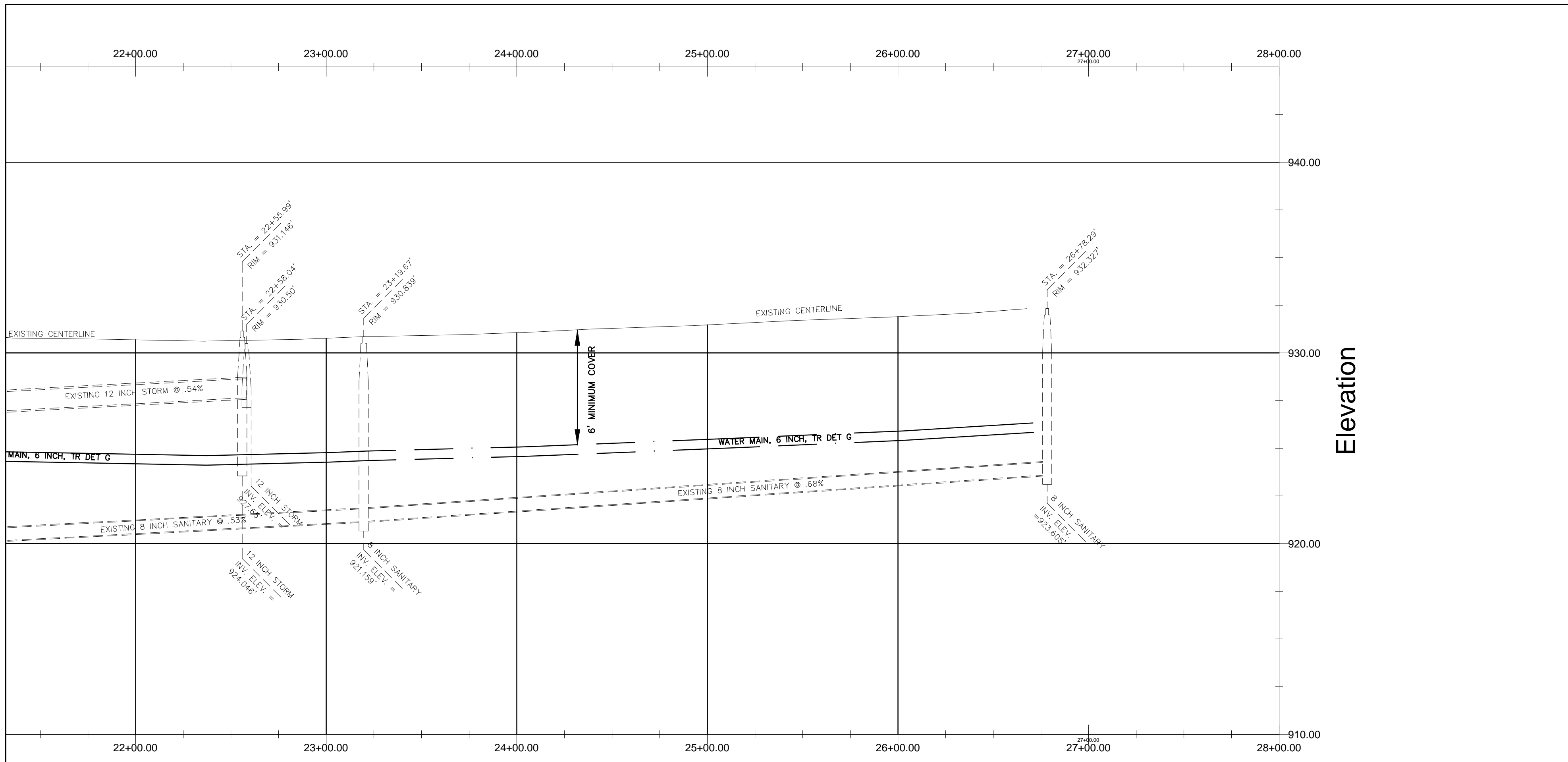
DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY


 CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING

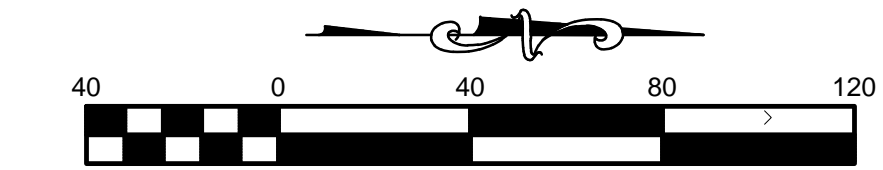
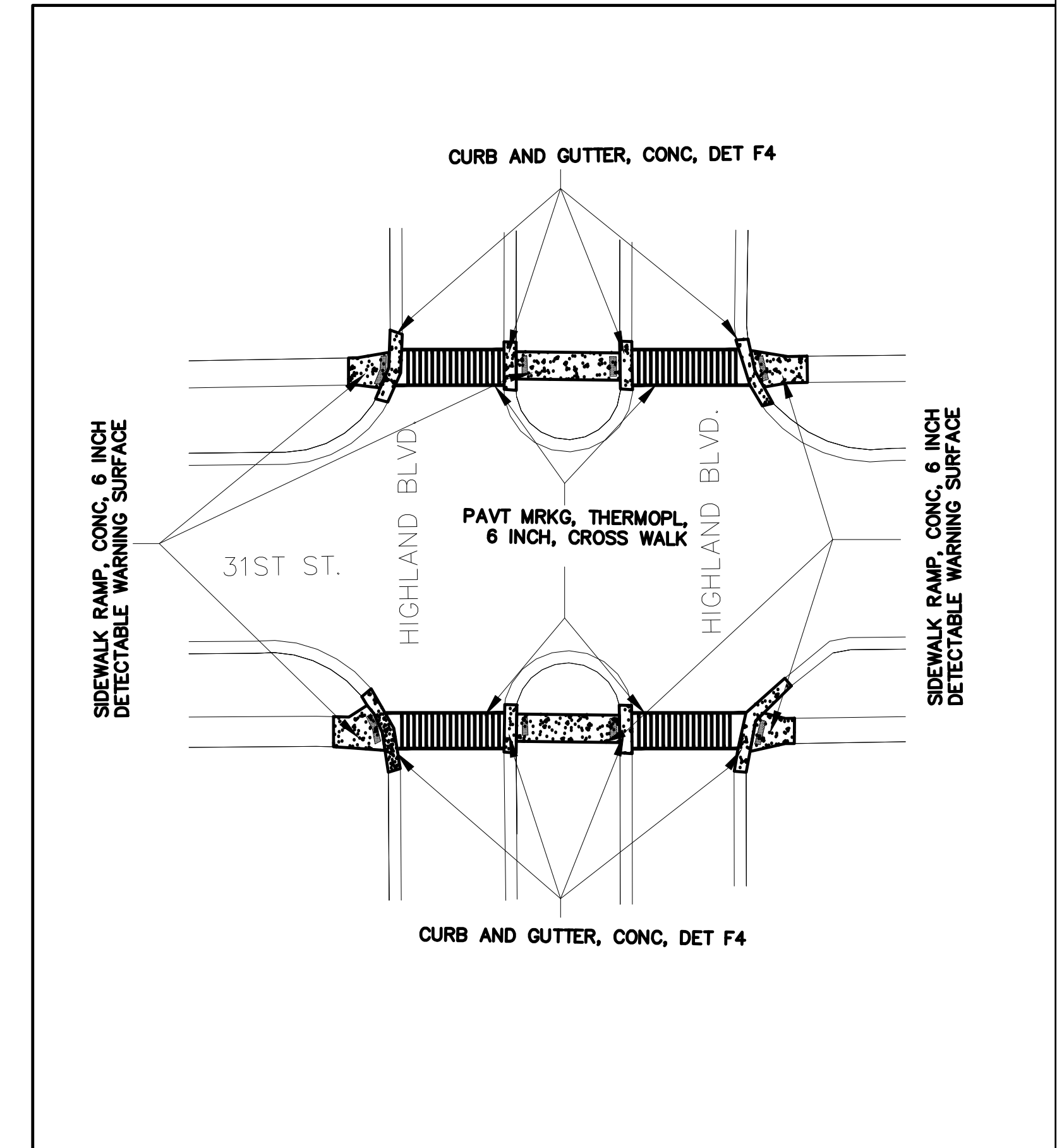
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 DATE: DECEMBER, 2017
 FILE NAME:

31ST STREET N.
 2018 WATER MAIN PROJECT

CONTRACT NO.:	R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
	2 OF 3	15 OF 41



DETAIL D




CONSTRUCTION SHEET

31ST STREET N.
2018 WATER MAIN PROJECT

- ⊕ = BENCHMARK
- ⊙ = TRAVERSE POINT
- ⊠ = PROPERTY CORNER
- ⊡ = SECTION CORNER
- ⊕ = STORM SEWER MANHOLE
- ⊕ = INLET/CATCH BASIN
- ⊕ = SANITARY SEWER MANHOLE
- ⊕ = SANITARY SEWER CLEANOUT
- ⊕ = ELECTRIC MANHOLE
- ⊕ = UTILITY POLE
- ⊕ = LIGHT POLE
- ⊕ = YARD LIGHT
- ⊕ = GUY ANCHOR
- ⊕ = TRANSFORMER
- ⊕ = ELECTRIC HANDHOLE
- ⊕ = TELEPHONE MANHOLE
- ⊕ = TELEPHONE BOX
- ⊕ = TELEPHONE VAULT
- ⊕ = WATER MANHOLE
- ⊕ = HYDRANT
- ⊕ = WATER VALVE
- ⊕ = WATER CURB BOX
- ⊕ = WATER WELL
- ⊕ = WELL
- ⊕ = GAS VALVE
- ⊕ = GAS LINE MARKER
- ⊕ = GAS METER
- ⊕ = CONFEROUS TREE
- ⊕ = DECIDUOUS TREE
- ⊕ = SHRUB/BUSH
- ⊕ = STUMP
- ⊕ = SIGN
- ⊕ = BUS STOP
- ⊕ = MAILBOX
- ⊕ = BOLLARD
- ⊕ = MONITOR WELL
- ⊕ = LANDSCAPE ROCK

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

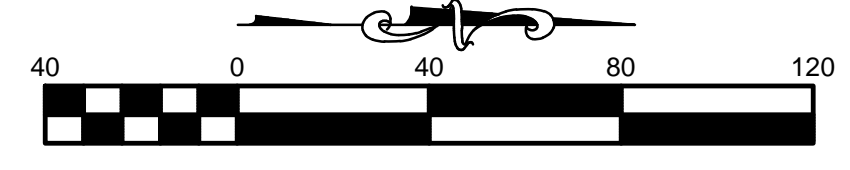
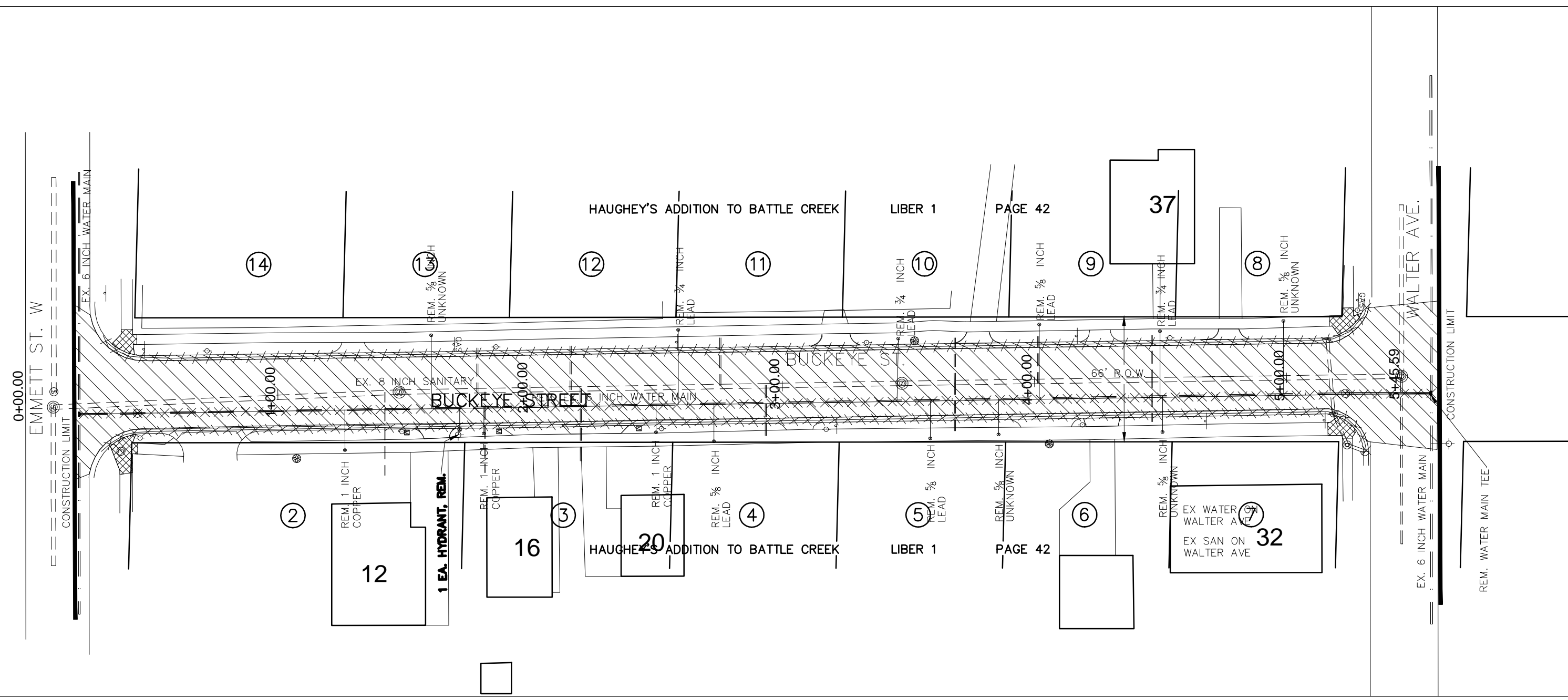
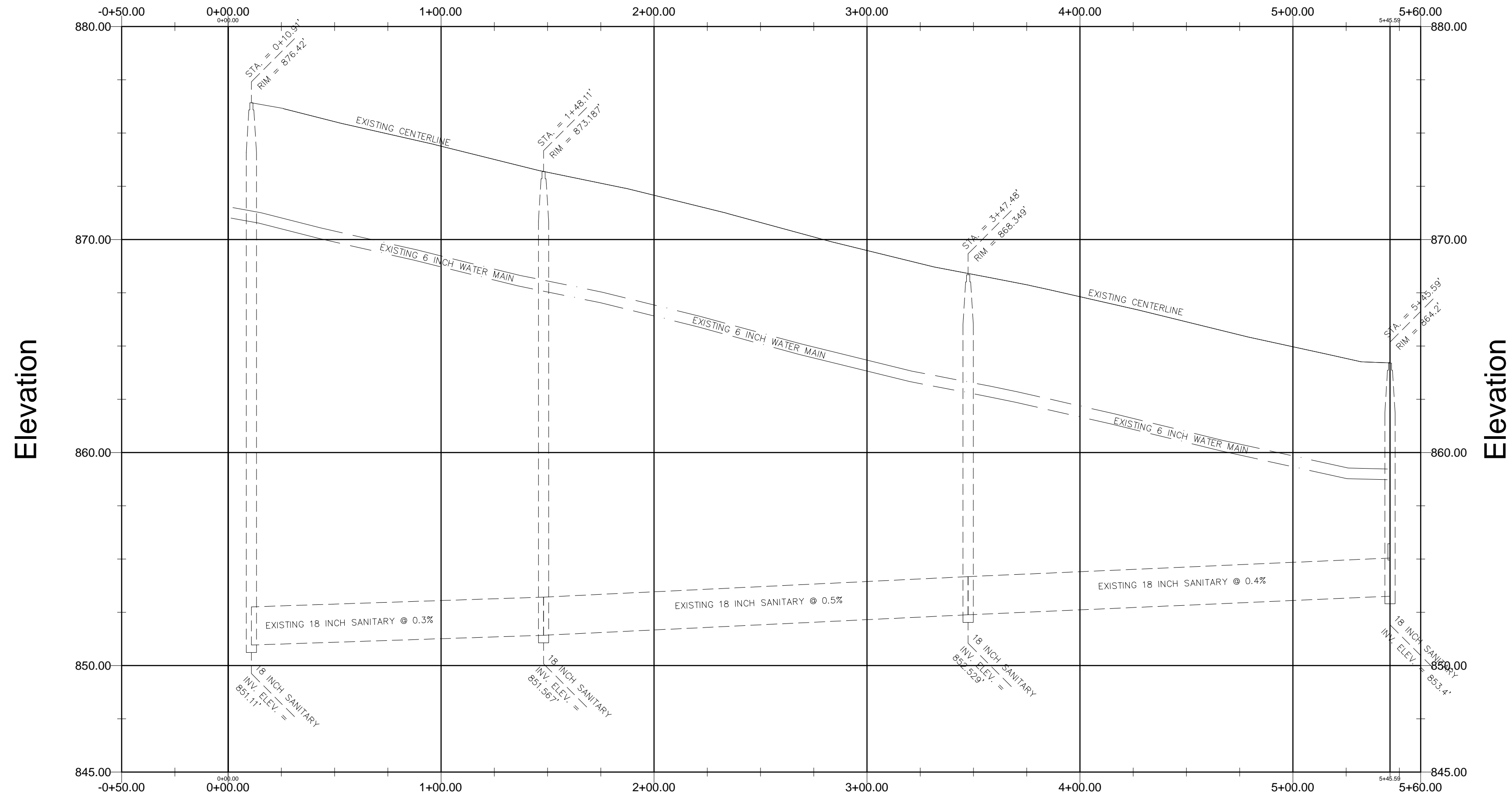
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DIVISION OF ENGINEERING

DRAWN BY: CLA APPROVED BY: CEF
SCALE: 1"=40' HOR., 1" = 4' VERT. CONTOUR INTERVAL:
DATE: DECEMBER, 2017
FILE NAME:

CONTRACT NO.:
R.O.W. SHEET NO.:
3 OF 3

CONTRACT SHEET NO.:
16 OF 41


Station



REMOVAL SHEET

XXXXXX	CURB & WATER MAIN REMOVALS
XXXXXX	CONC. REMOVALS
XXXXXX	CRUSH AND SHAPE

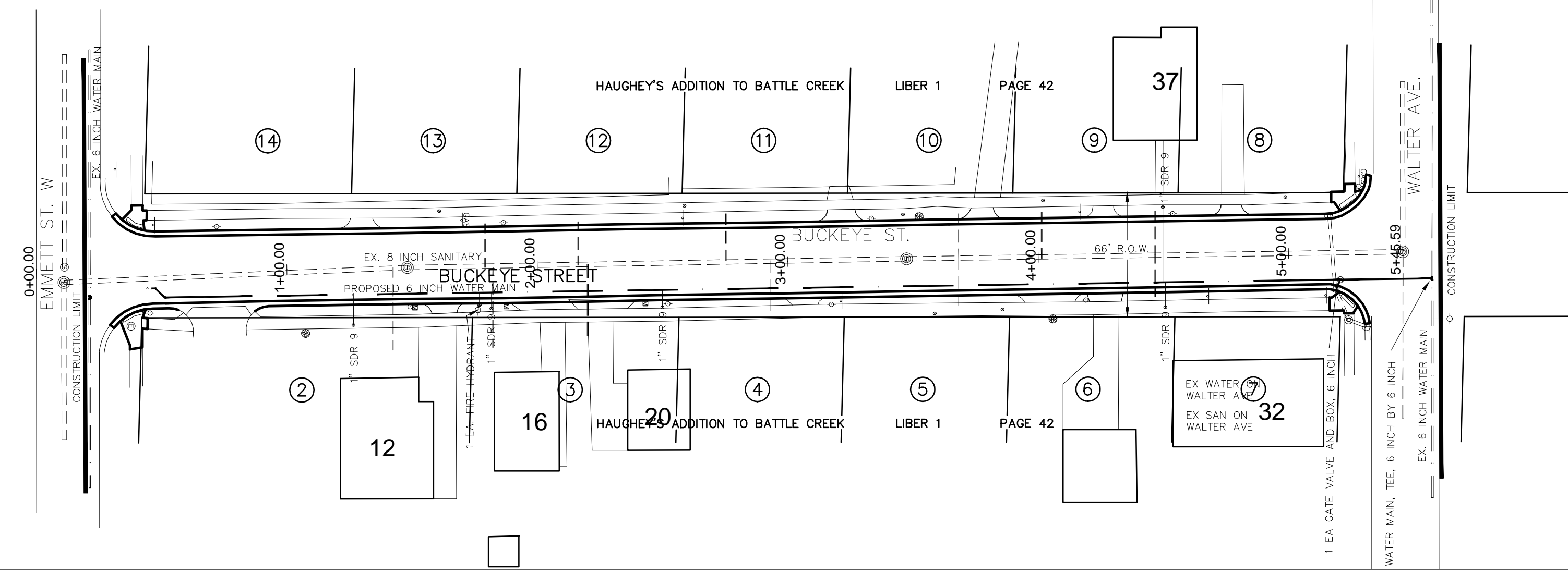
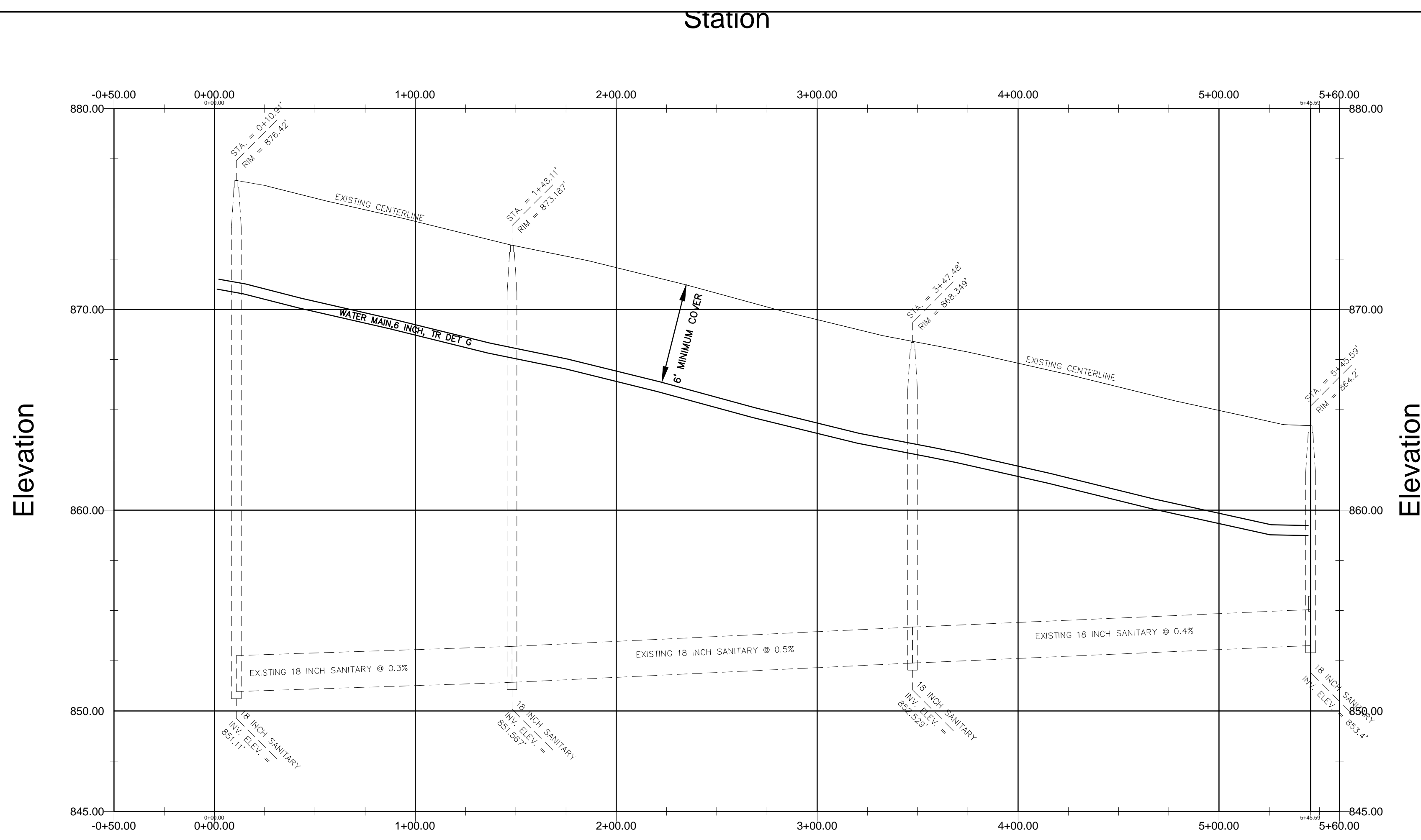
DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY


CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING

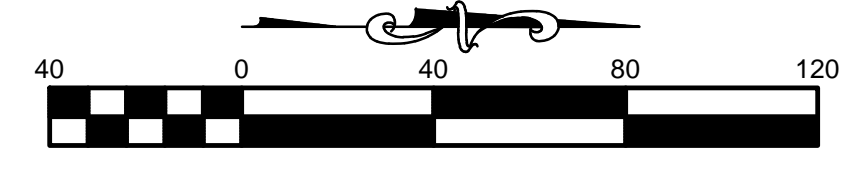
DRAWN BY: CLA APPROVED BY: CEF
 SCALE: 1"=40' HOR., 1" = 4' VERT. CONTOUR INTERVAL:
 DATE: JANUARY, 2018
 FILE NAME:

BUCKEYE STREET
 2018 WATER MAIN PROJECT

CONTRACT NO.:	
R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
1 OF 1	17 OF 41



- ⊙ = BENCHMARK
- ⊙ = TRAVERSE POINT
- ⊙ = PROPERTY CORNER
- ⊙ = SECTION CORNER
- ⊙ = STORM SEWER MANHOLE
- ⊙ = INLET/CATCH BASIN
- ⊙ = SANITARY SEWER MANHOLE
- ⊙ = SANITARY SEWER CLEANOUT
- ⊙ = ELECTRIC MANHOLE
- ⊙ = UTILITY POLE
- ⊙ = LIGHT POLE
- ⊙ = YARD LIGHT
- ⊙ = GUY ANCHOR
- ⊙ = TRANSFORMER
- ⊙ = ELECTRIC HANDHOLE
- ⊙ = TELEPHONE MANHOLE
- ⊙ = TELEPHONE BOX
- ⊙ = TELEPHONE VAULT
- ⊙ = WATER MANHOLE
- ⊙ = HYDRANT
- ⊙ = WATER VALVE
- ⊙ = WATER CURB BOX
- ⊙ = WATER WELL
- ⊙ = WELL
- ⊙ = GAS VALVE
- ⊙ = GAS LINE MARKER
- ⊙ = GAS METER
- ⊙ = CONIFEROUS TREE
- ⊙ = DECIDUOUS TREE
- ⊙ = SHRUB/BUSH
- ⊙ = STUMP
- ⊙ = SIGN
- ⊙ = BUS STOP
- ⊙ = MAILBOX
- ⊙ = BOLLARD
- ⊙ = MONITOR WELL
- ⊙ = LANDSCAPE ROCK



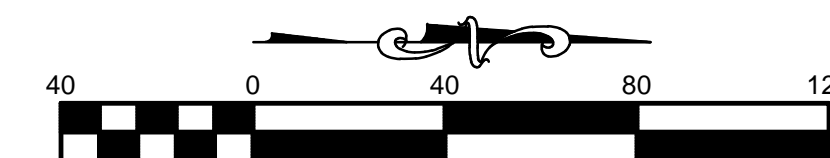
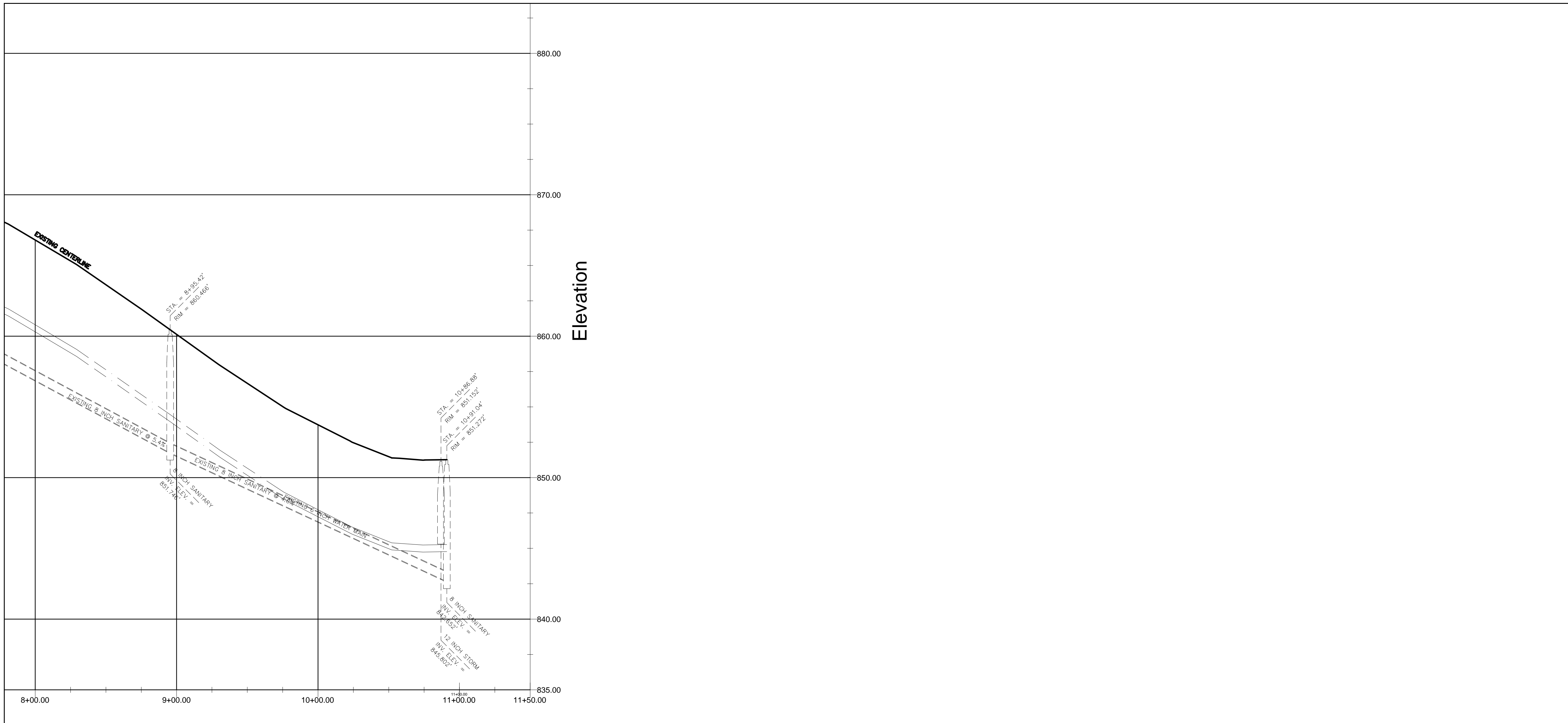
CONSTRUCTION SHEET
BUCKEYE STREET
 2018 WATER MAIN PROJECT

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING

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 SCALE: 1"=40' HOR., 1" = 4' VERT. CONTOUR INTERVAL:
 DATE: JANUARY, 2018
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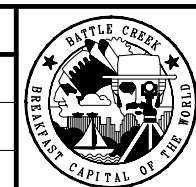
CONTRACT NO.:
 R.O.W. SHEET NO.: 1 OF 1 CONTRACT SHEET NO.: 18 OF 41



Scale 1" = 40'
REMOVAL SHEET

XXXXXX	CURB & WATER MAIN REMOVALS
XXXXXX	CONC. REMOVALS
XXXXXX	CRUSH AND SHAPE

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

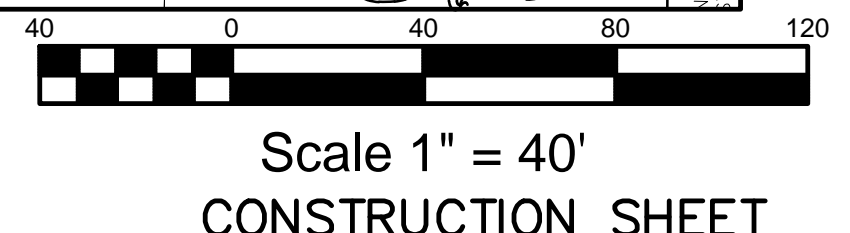
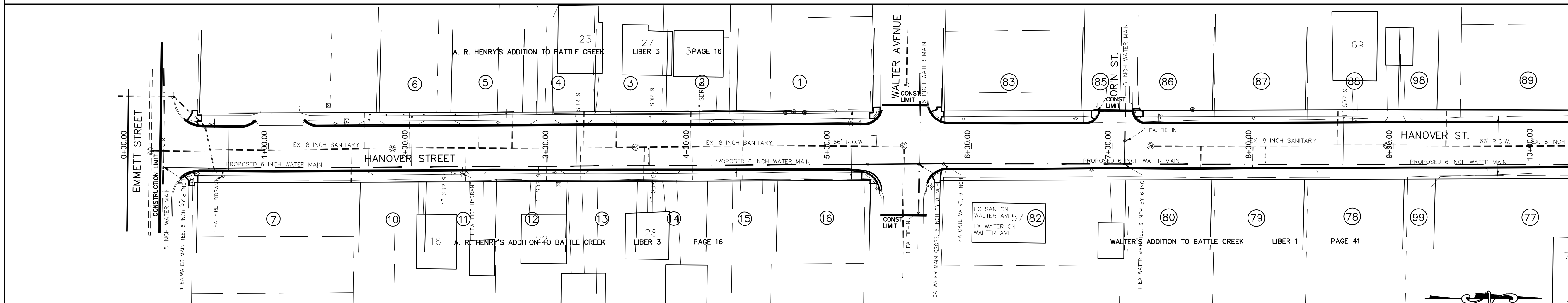
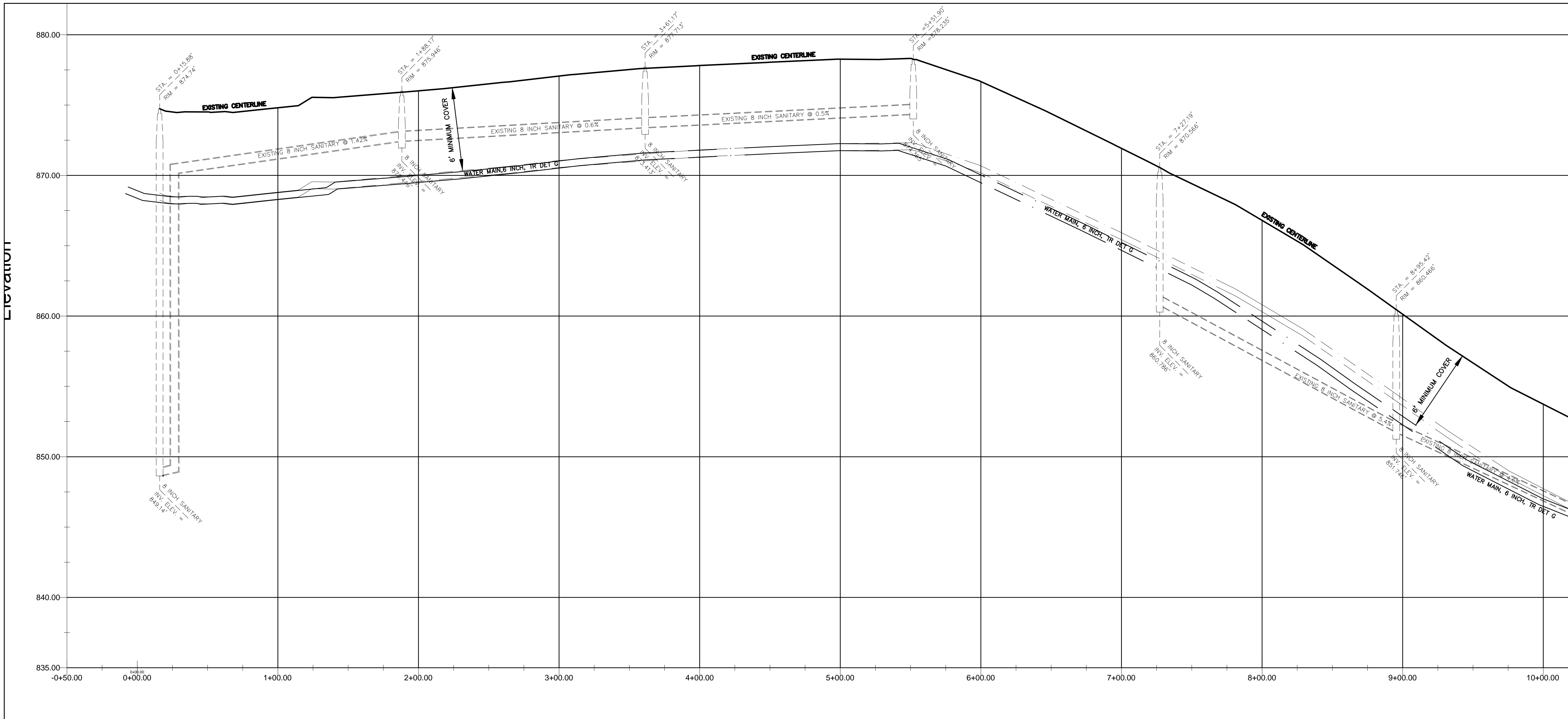


CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING


DRAWN BY: CLA	APPROVED BY: CEF
SCALE: 1"=40' HOR., 1" = 4' VERT.	CONTOUR INTERVAL:
DATE: JANUARY, 2018	
FILE NAME:	

HANOVER STREET
2018 WATER MAIN PROJECT

CONTRACT NO.:	
R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
2 OF 2	20 OF 41



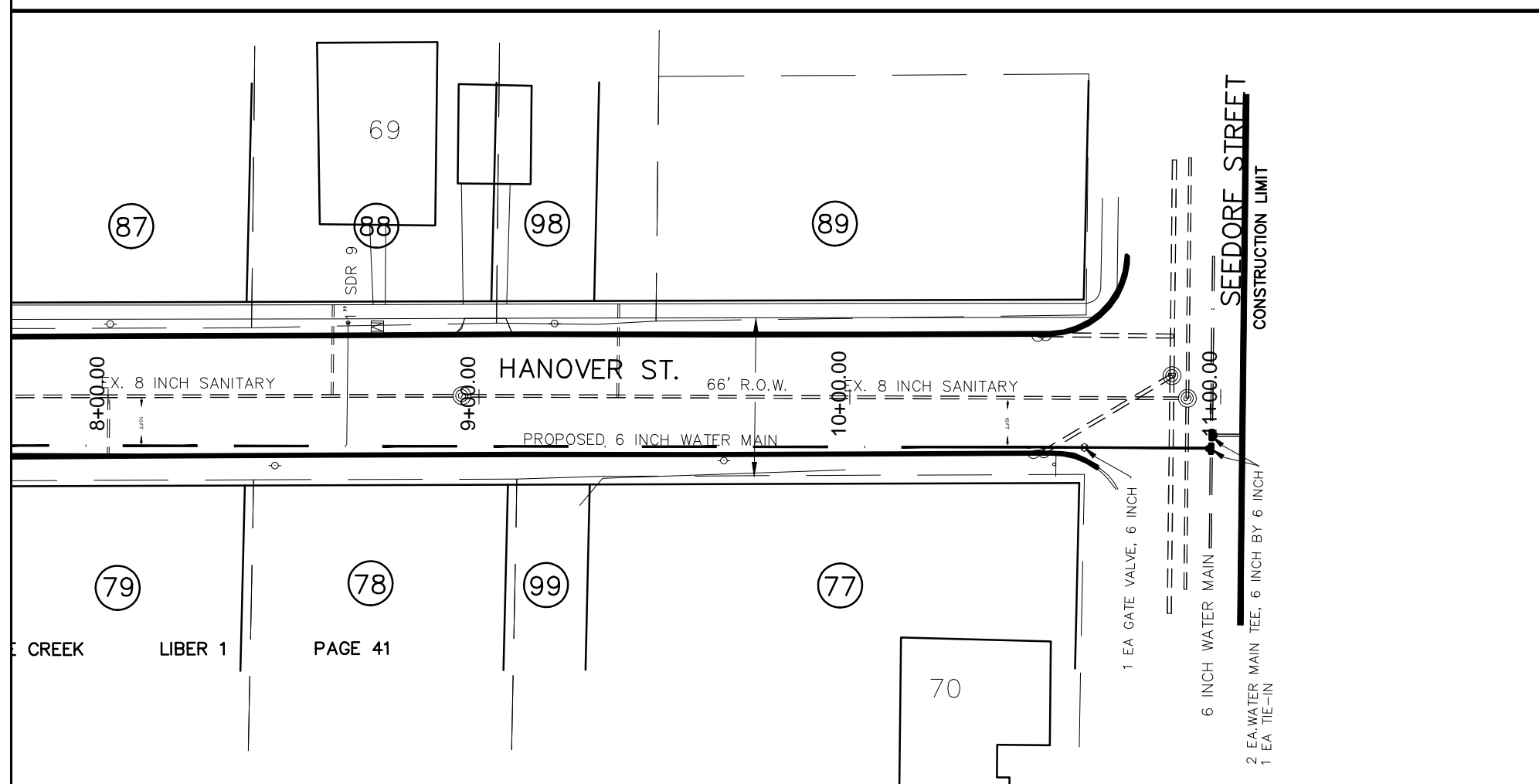
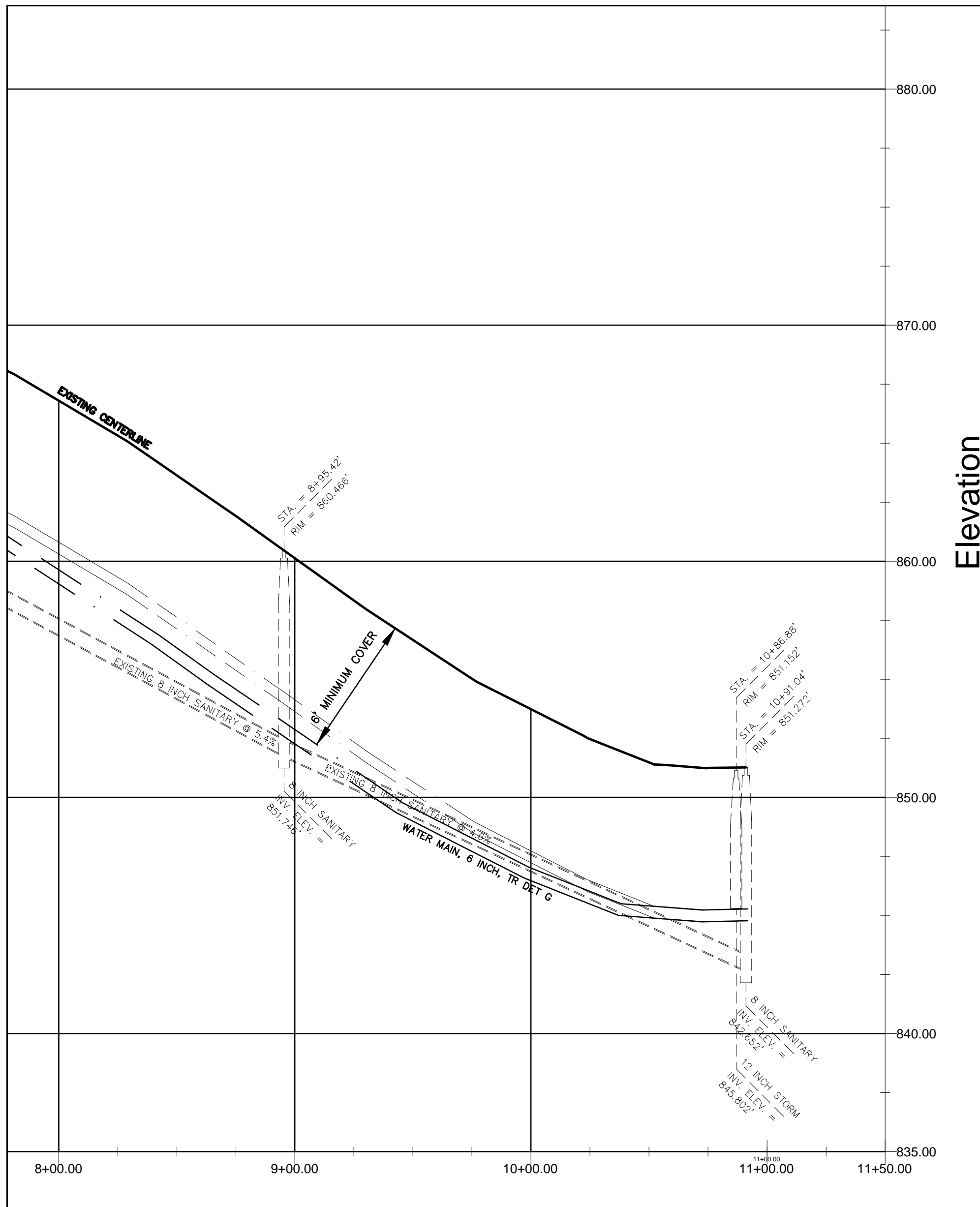
DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY


CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING

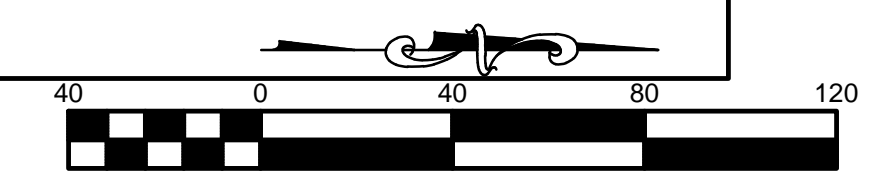
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 FILE NAME:
 APPROVED BY: CEF
 CONTOUR INTERVAL:

HANOVER STREET
 2018 WATER MAIN PROJECT

CONTRACT NO.:	R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
	1 OF 2	21 OF 41



- ⊕ = BENCHMARK
- ⊙ = TRAVERSE POINT
- ⊠ = PROPERTY CORNER
- ⊡ = SECTION CORNER
- ⊞ = STORM SEWER MANHOLE
- ⊚ = INLET/CATCH BASIN
- ⊙ = SANITARY SEWER MANHOLE
- ⊙ = SANITARY SEWER CLEANOUT
- ⊙ = ELECTRIC MANHOLE
- ⊙ = UTILITY POLE
- ⊙ = LIGHT POLE
- ⊙ = YARD LIGHT
- ⊙ = GUY ANCHOR
- ⊙ = TRANSFORMER
- ⊙ = ELECTRIC HANDHOLE
- ⊙ = TELEPHONE MANHOLE
- ⊙ = TELEPHONE BOX
- ⊙ = TELEPHONE VAULT
- ⊙ = WATER MANHOLE
- ⊙ = HYDRANT
- ⊙ = WATER VALVE
- ⊙ = WATER CURB BOX
- ⊙ = WATER WELL
- ⊙ = WELL
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- ⊙ = GAS METER
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- ⊙ = DECIDUOUS TREE
- ⊙ = SHRUB/BUSH
- ⊙ = STUMP
- ⊙ = SIGN
- ⊙ = BUS STOP
- ⊙ = MAILBOX
- ⊙ = BOLLARD
- ⊙ = MONITOR WELL
- ⊙ = LANDSCAPE ROCK



Scale 1" = 40'
CONSTRUCTION SHEET

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

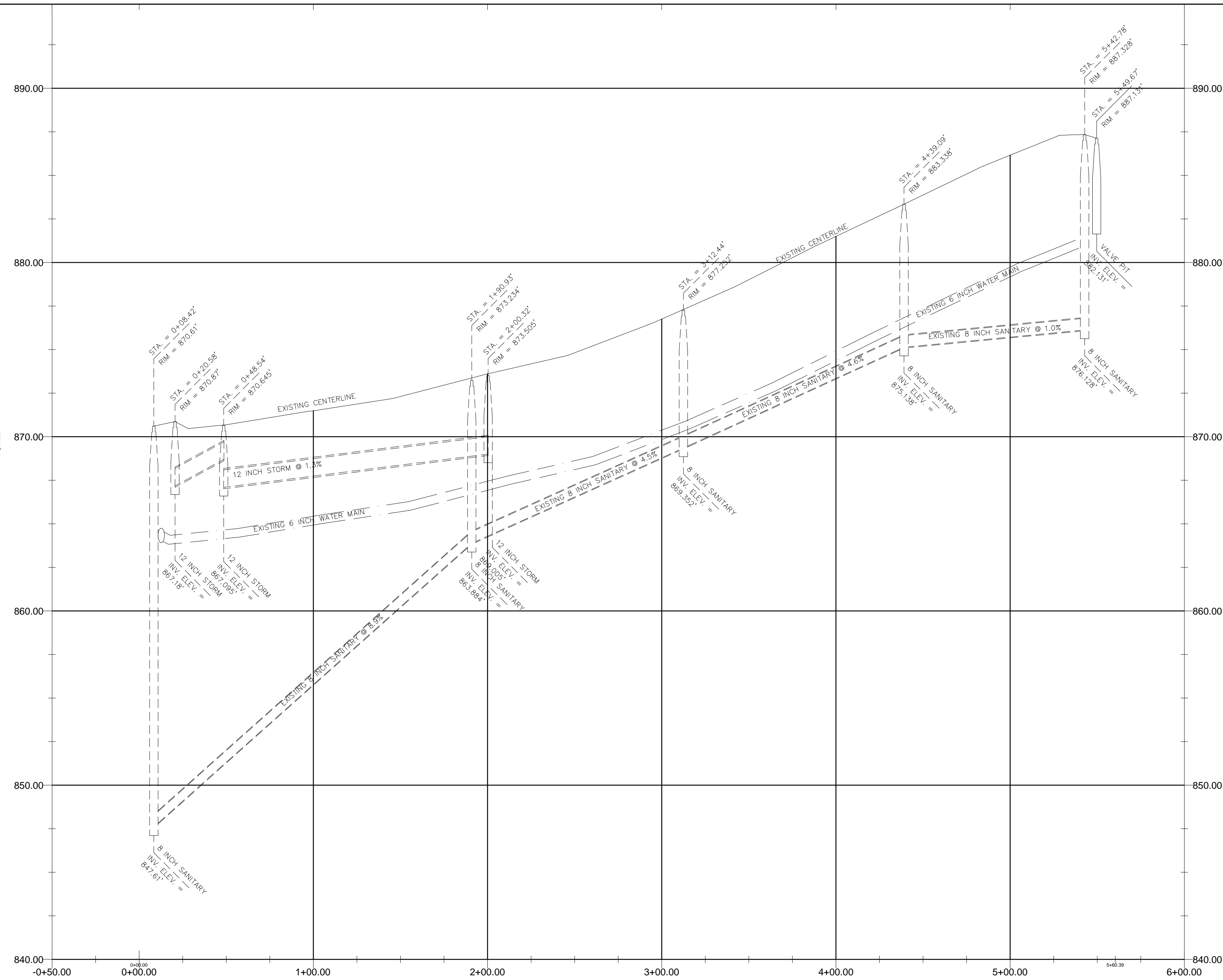
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 DATE: JANUARY, 2018
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HANOVER STREET

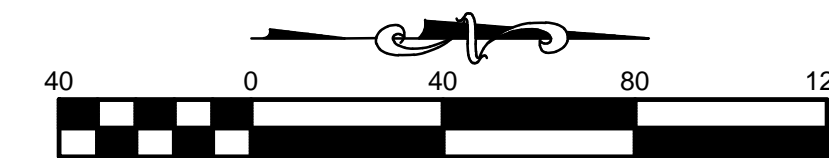
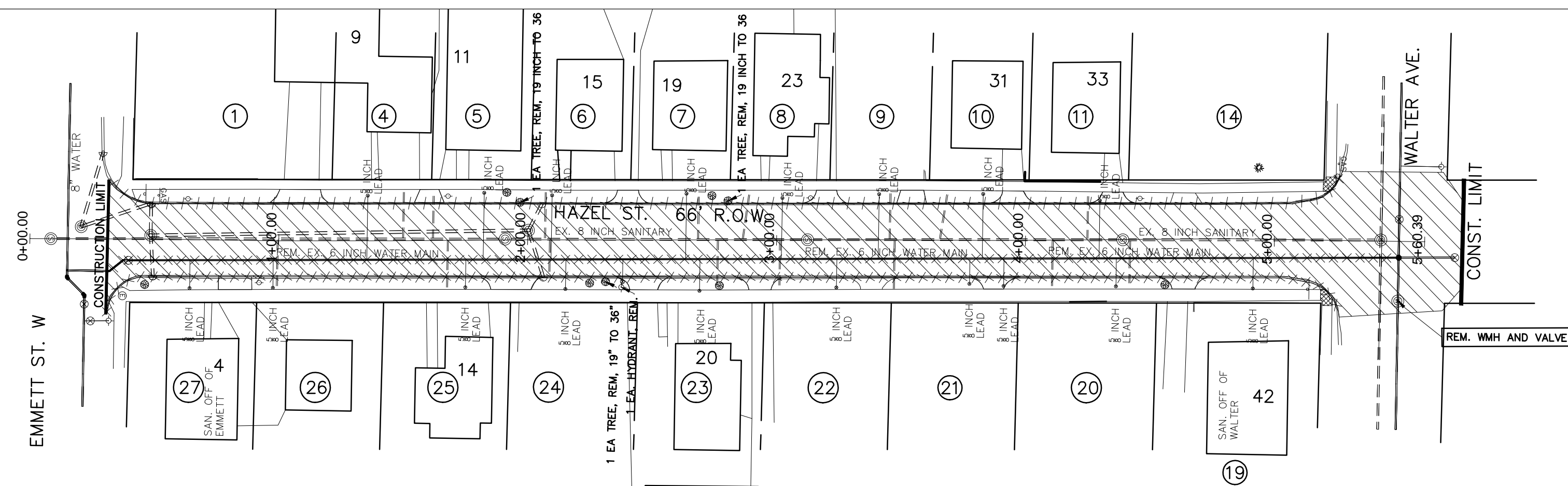
2018 WATER MAIN PROJECT

CONTRACT NO.:	
R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
2 OF 2	22 OF 41

Elevation



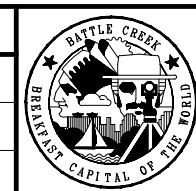
Elevation



Scale 1" = 40'
REMOVAL SHEET

XXXXXX	CURB & WATER MAIN REMOVALS
XXXXXX	CONC. REMOVALS
XXXXXX	CRUSH AND SHAPE

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY



CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

DRAWN BY: CLA
SCALE: 1"=40' HOR., 1" = 4' VERT.
DATE: JANUARY, 2018
FILE NAME:

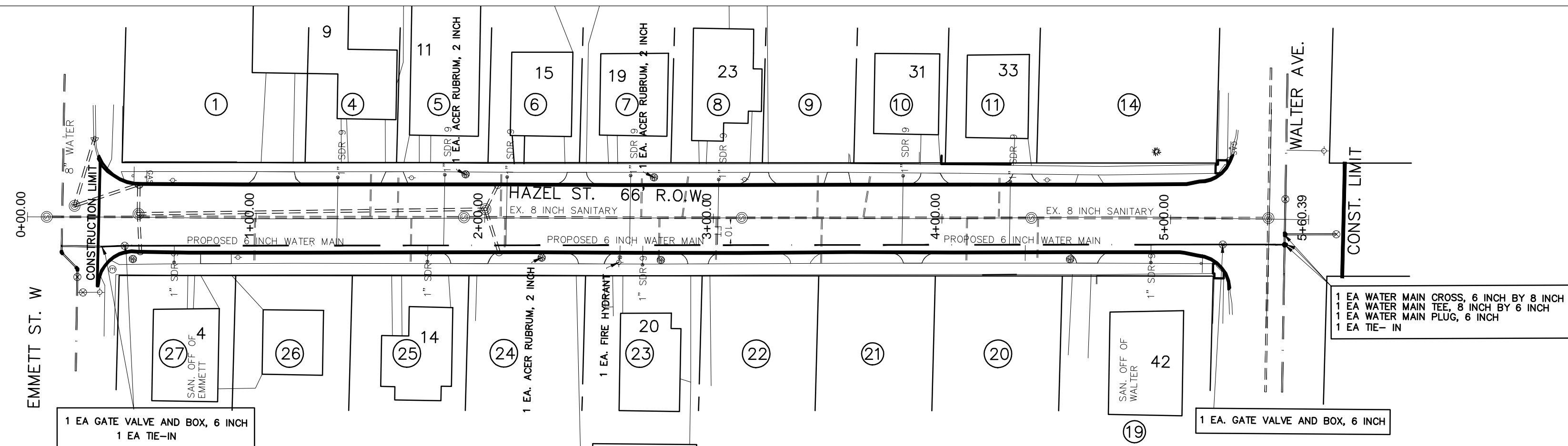
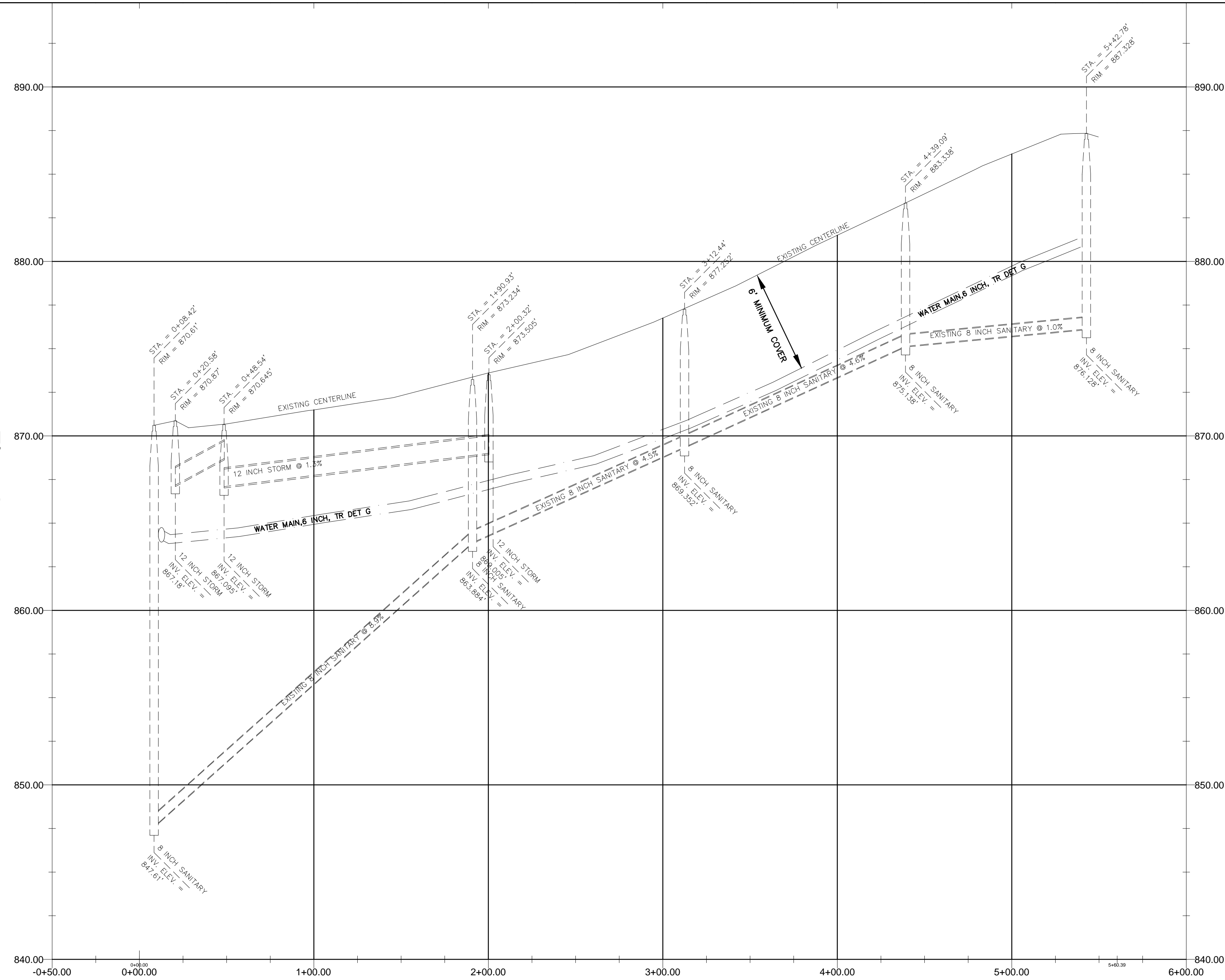
APPROVED BY: CEF
CONTOUR INTERVAL:

HAZEL STREET
2018 WATER MAIN PROJECT

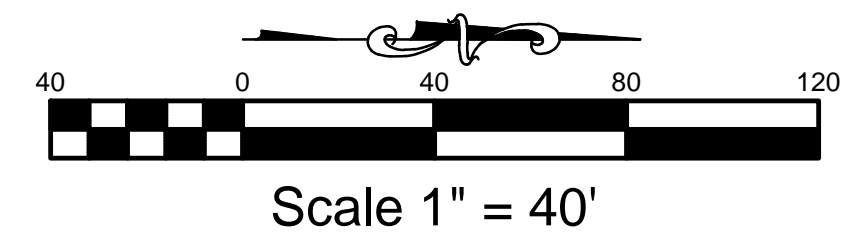
CONTRACT NO.:	
R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
1 OF 1	23 OF 41

Elevation

Elevation



- ⊕ = BENCHMARK
- ⊙ = TRAVERSE POINT
- ⊙ = PROPERTY CORNER
- ⊙ = SECTION CORNER
- ⊙ = STORM SEWER MANHOLE
- ⊙ = INLET/CATCH BASIN
- ⊙ = SANITARY SEWER MANHOLE
- ⊙ = SANITARY SEWER CLEANOUT
- ⊙ = ELECTRIC MANHOLE
- ⊙ = UTILITY POLE
- ⊙ = LIGHT POLE
- ⊙ = YARD LIGHT
- ⊙ = GUY ANCHOR
- ⊙ = TRANSFORMER
- ⊙ = ELECTRIC HANDHOLE
- ⊙ = TELEPHONE MANHOLE
- ⊙ = TELEPHONE BOX
- ⊙ = TELEPHONE VAULT
- ⊙ = WATER MANHOLE
- ⊙ = HYDRANT
- ⊙ = WATER VALVE
- ⊙ = WATER CURB BOX
- ⊙ = WATER WELL
- ⊙ = WELL
- ⊙ = GAS VALVE
- ⊙ = GAS LINE MARKER
- ⊙ = GAS METER
- ⊙ = CONIFEROUS TREE
- ⊙ = DECIDUOUS TREE
- ⊙ = SHRUB/BUSH
- ⊙ = STUMP
- ⊙ = SIGN
- ⊙ = BUS STOP
- ⊙ = MAILBOX
- ⊙ = BOLLARD
- ⊙ = MONITOR WELL
- ⊙ = LANDSCAPE ROCK



CONSTRUCTION SHEET
HAZEL STREET
 2018 WATER MAIN PROJECT

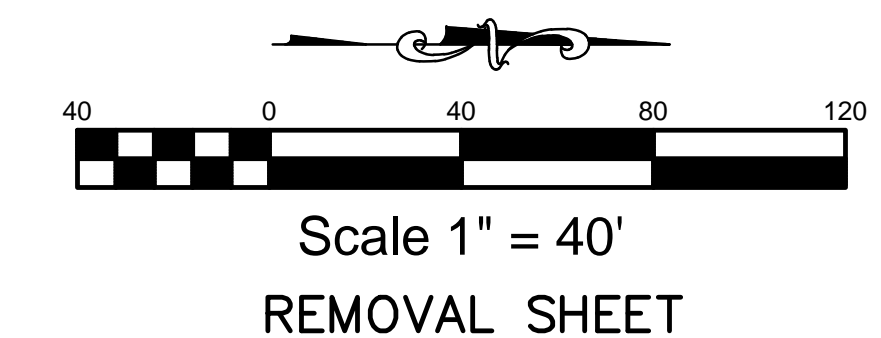
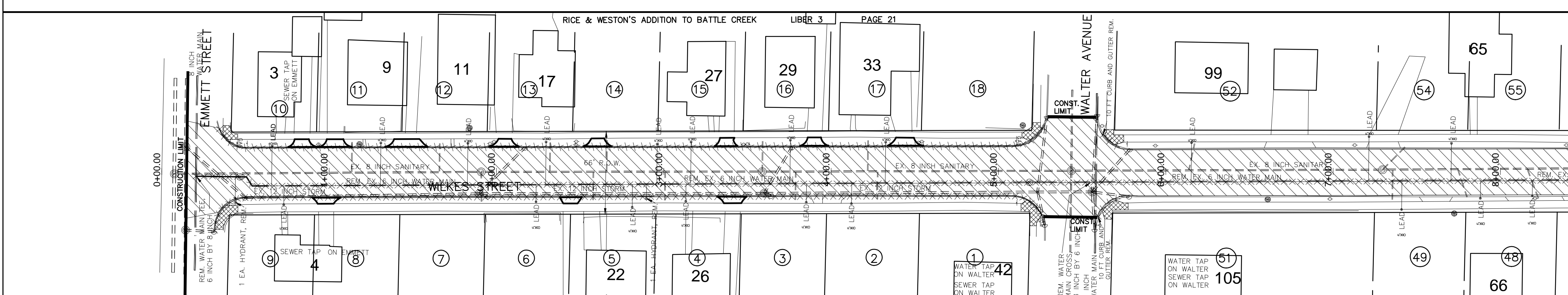
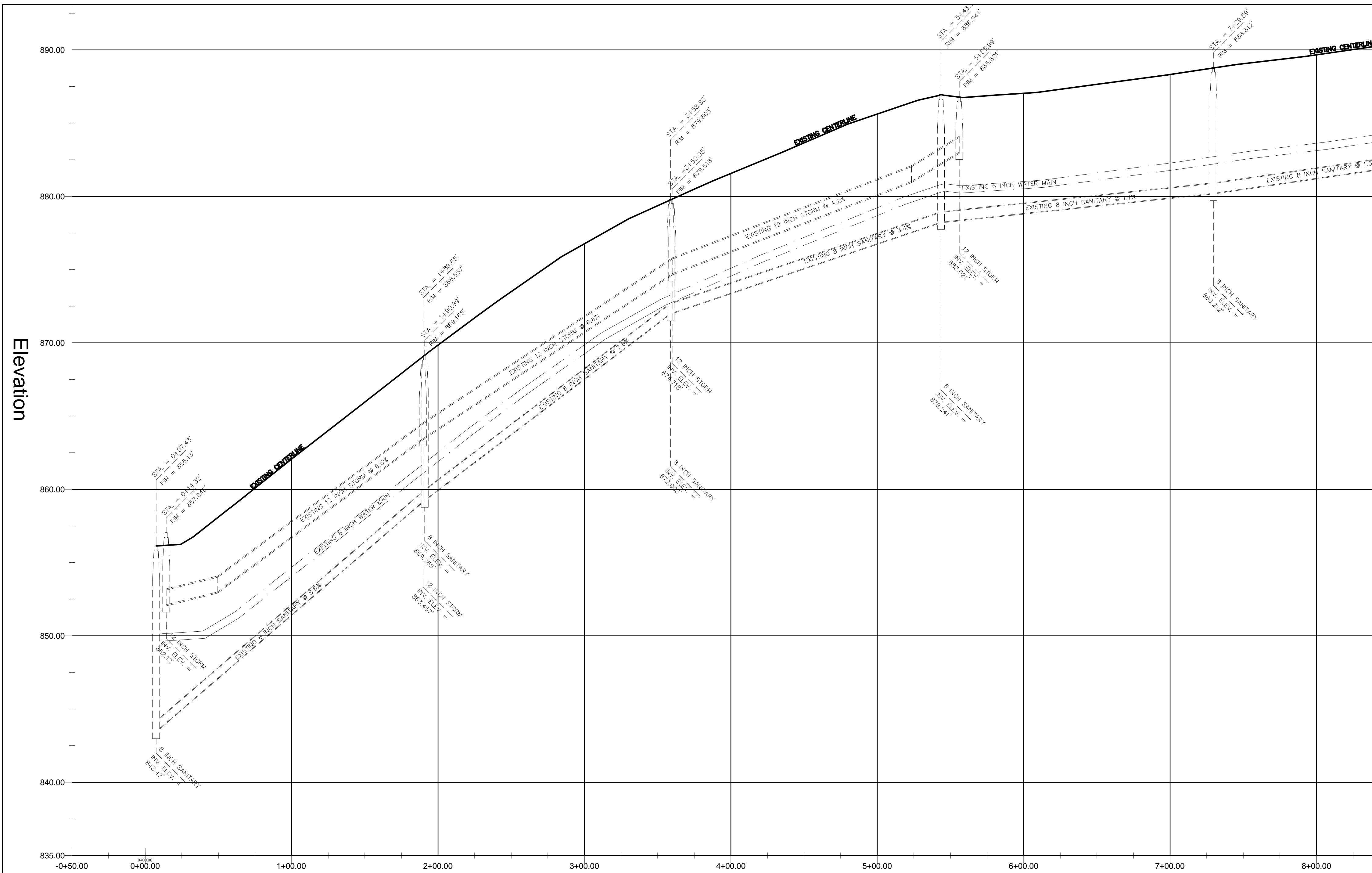
DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING

DRAWN BY: CLA
 SCALE: 1"=40' HOR., 1" = 4' VERT.
 DATE: JANUARY, 2018
 FILE NAME:

APPROVED BY: CEF
 CONTOUR INTERVAL:

CONTRACT NO.:
 R.O.W. SHEET NO.: 1 OF 1
 CONTRACT SHEET NO.: 24 OF 41



XXXXXX	CURB & WATER MAIN REMOVALS
[Cross-hatch pattern]	CONC. REMOVALS
[Diagonal line pattern]	CRUSH AND SHAPE

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

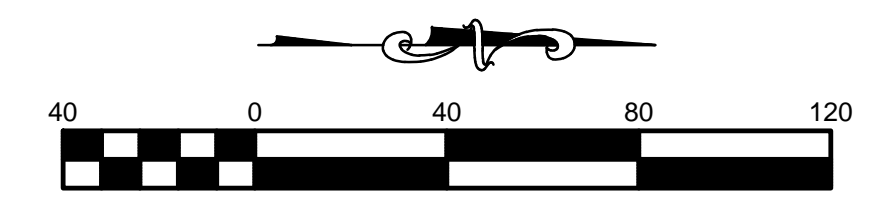
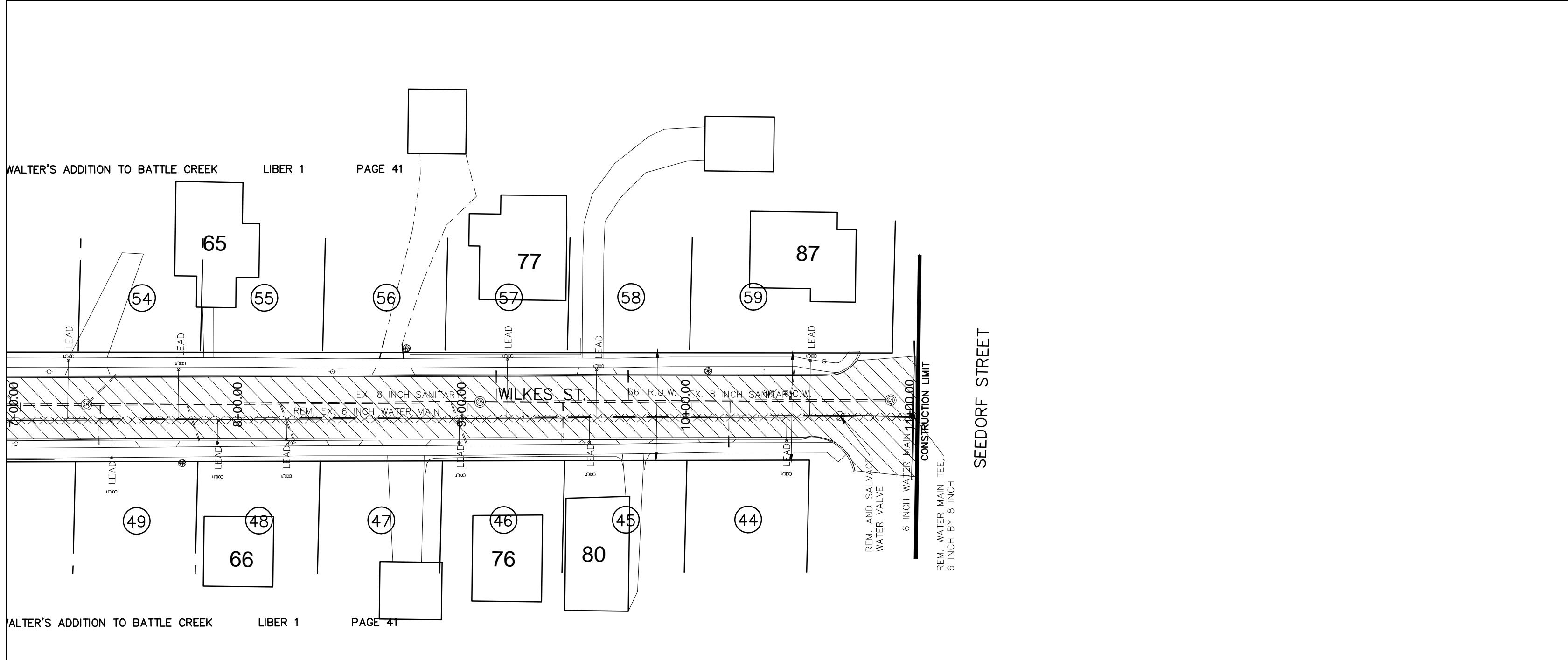
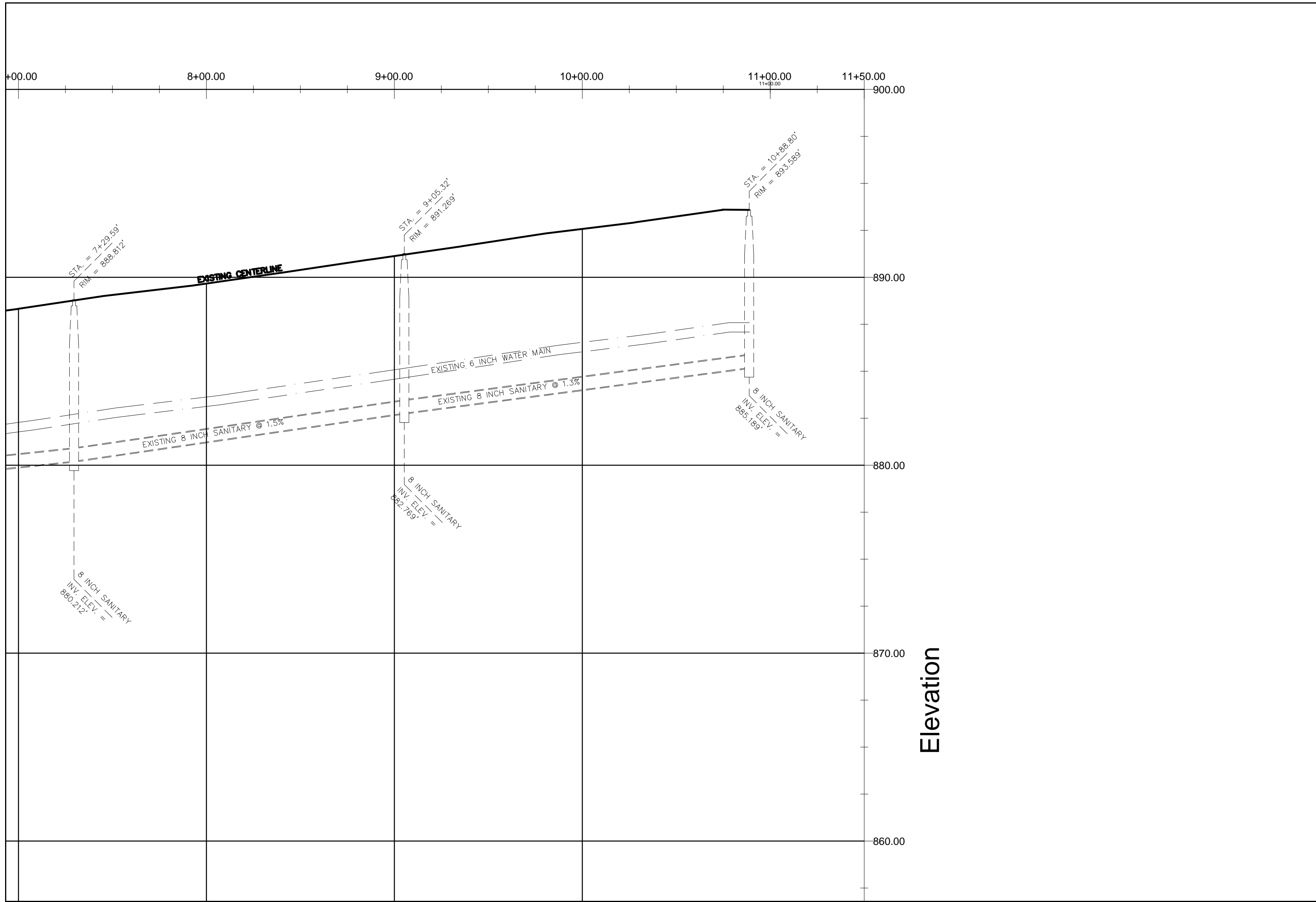
CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

DRAWN BY: CLA
SCALE: 1" = 40' HOR., 1" = 4' VERT.
DATE: JANUARY, 2018
FILE NAME:

APPROVED BY: CEF
CONTOUR INTERVAL:

WILKES STREET
2018 WATER MAIN PROJECT


CONTRACT NO.:	
R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
1 OF 2	25 OF 41



Scale 1" = 40'
REMOVAL SHEET

XXXXXX	CURB & WATER MAIN REMOVALS
[Cross-hatched pattern]	CONC. REMOVALS
[Diagonal hatched pattern]	CRUSH AND SHAPE

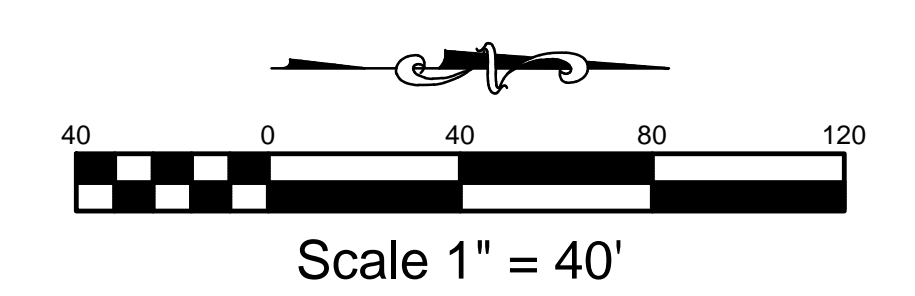
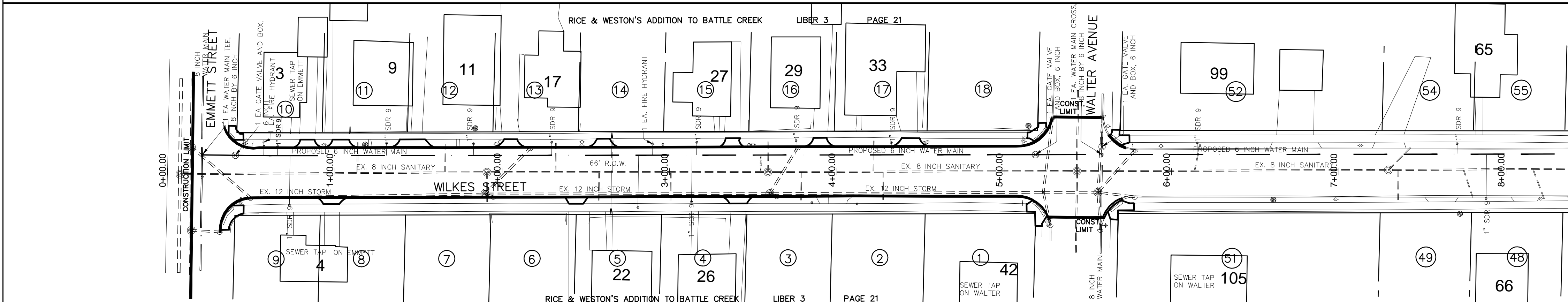
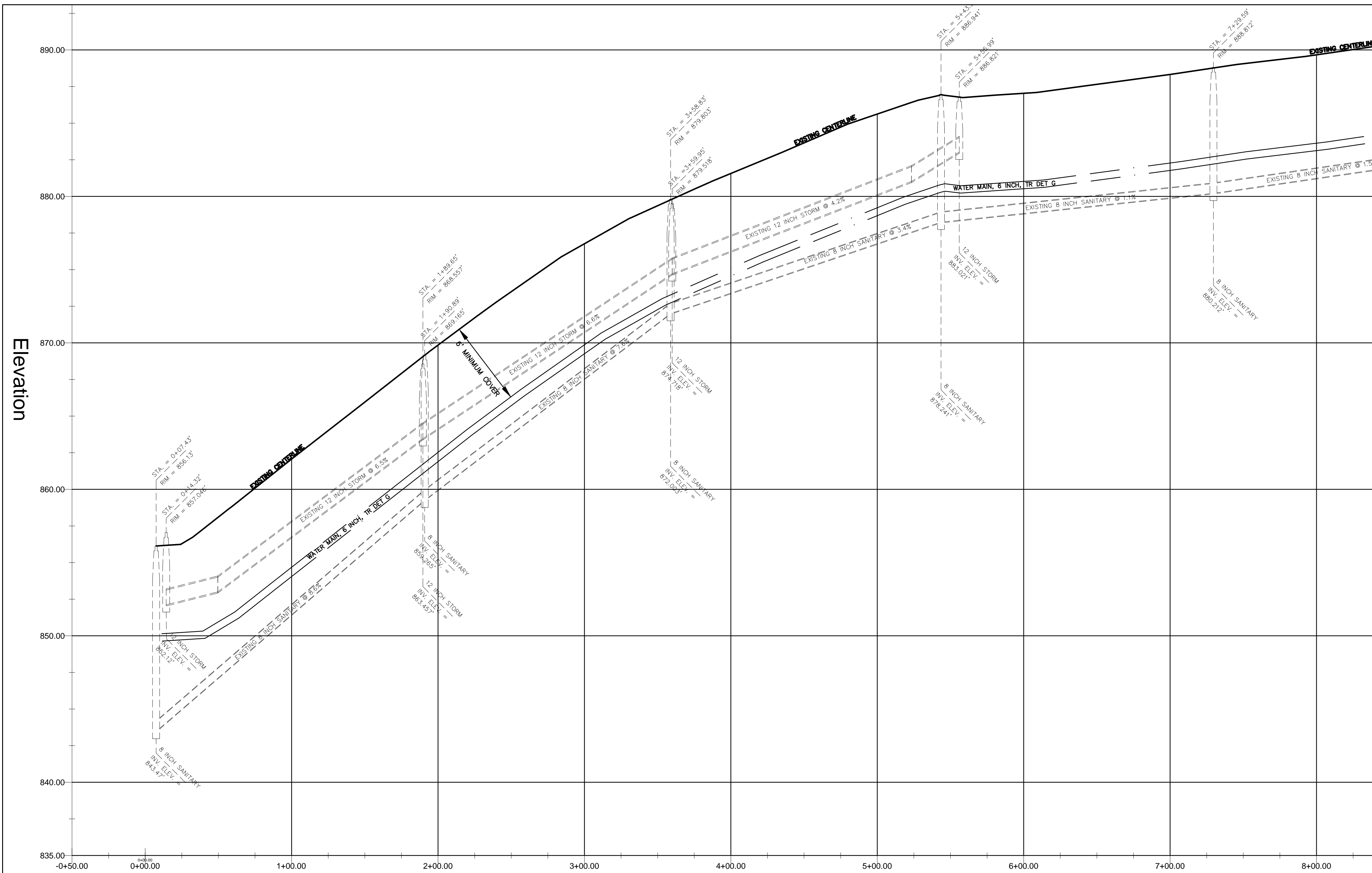
DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

 CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING


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SCALE: 1"=40' HOR., 1" = 4' VERT. CONTOUR INTERVAL:
DATE: JANUARY, 2018
FILE NAME:

WILKES STREET
2018 WATER MAIN PROJECT

CONTRACT NO.:	
R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
2 OF 2	26 OF 41



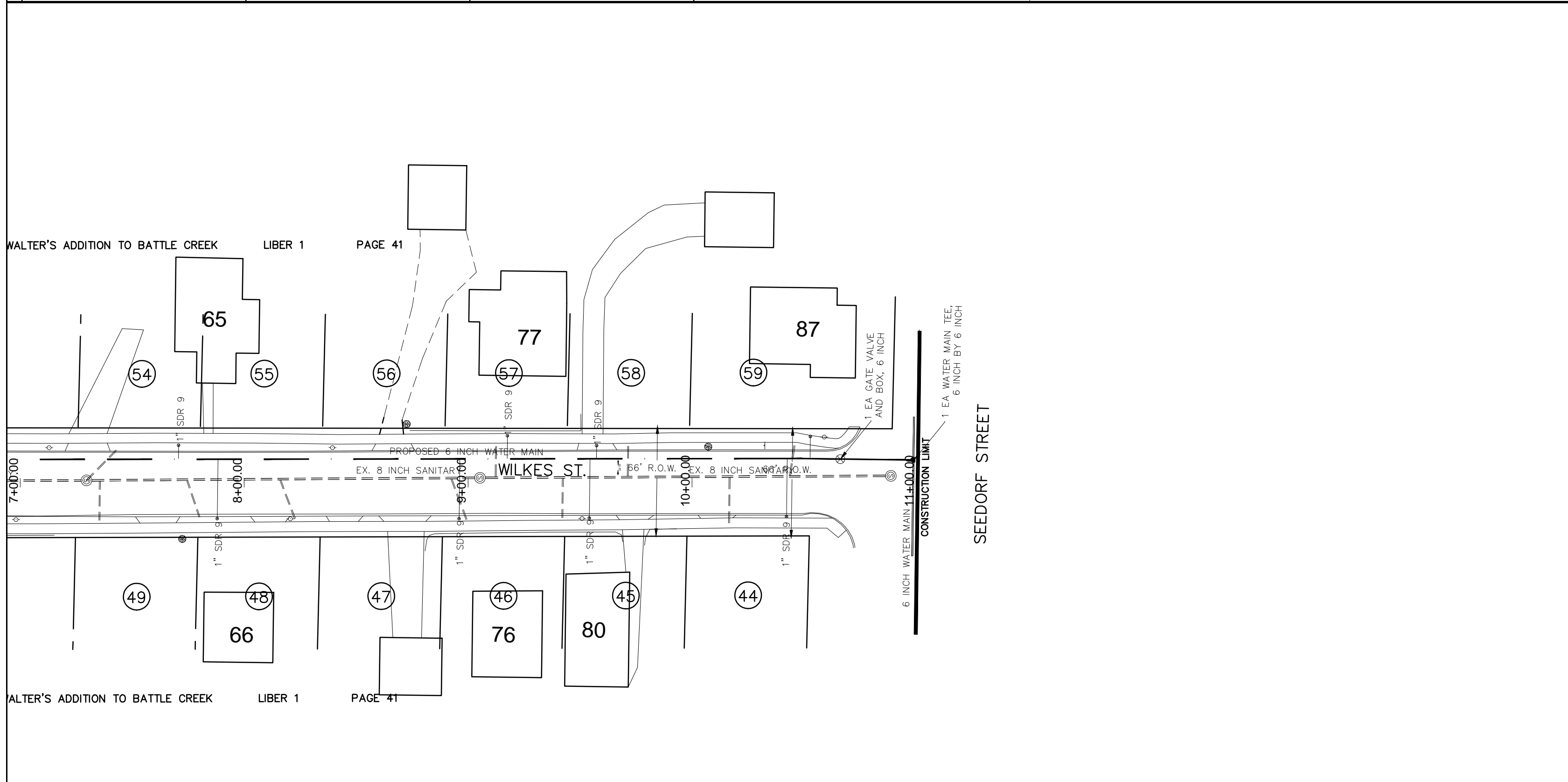
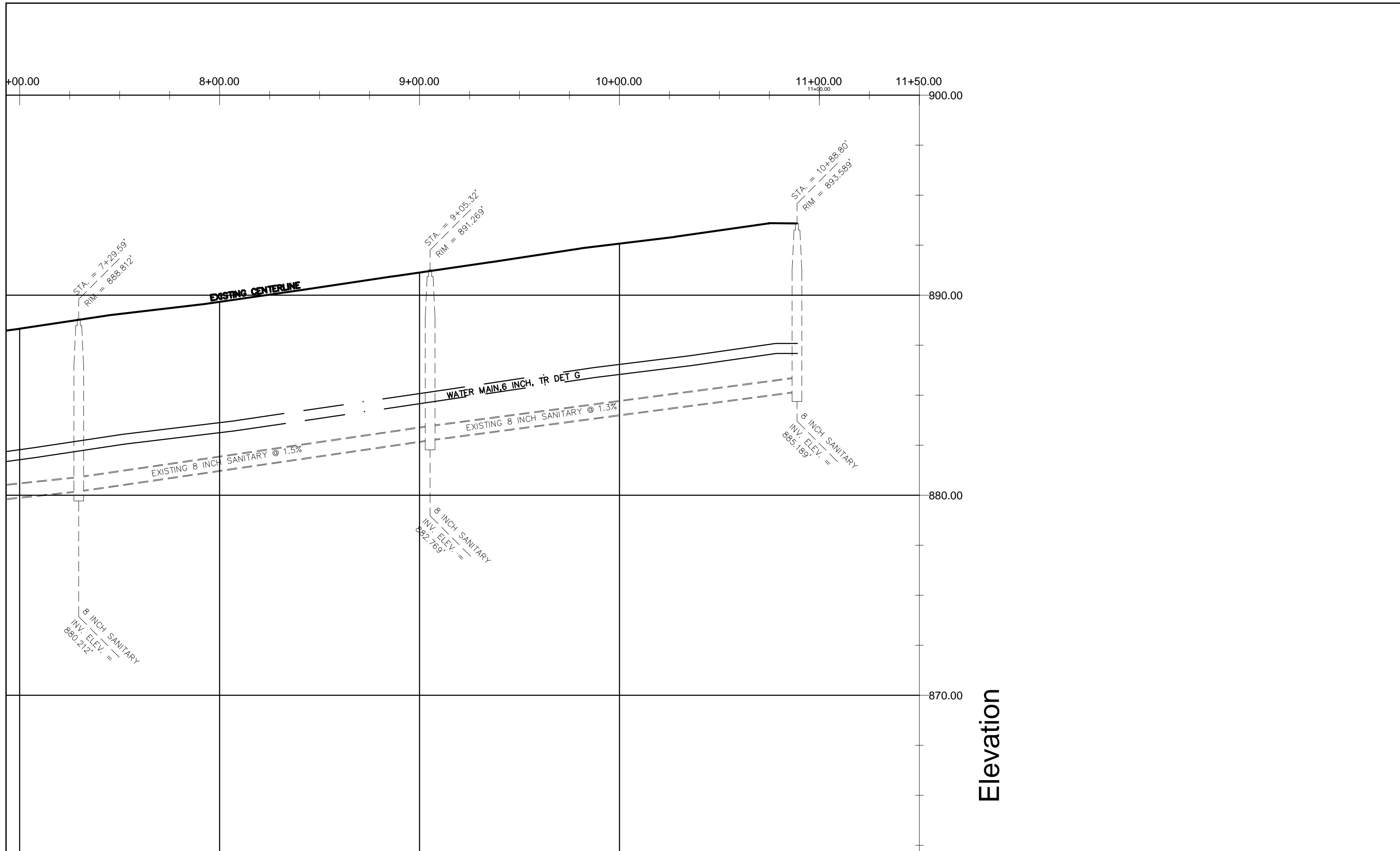
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CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING

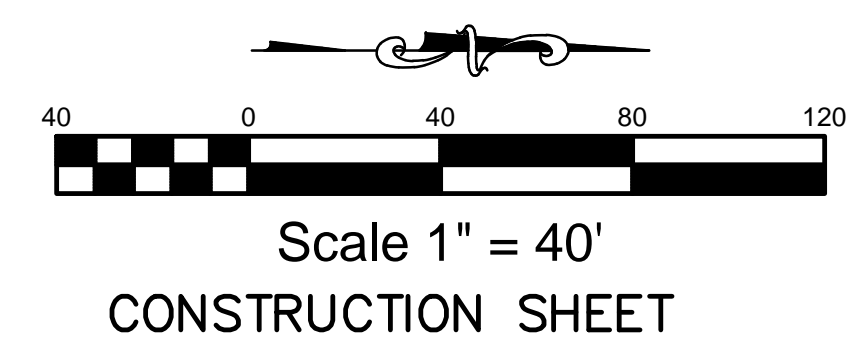
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 DATE: JANUARY, 2018
 FILE NAME:

CONSTRUCTION SHEET
WILKES STREET
 2018 WATER MAIN PROJECT

CONTRACT NO.:	R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
	1 OF 2	27 OF 41



- ⊕ = BENCHMARK
- = TRAVERSE POINT
- ◊ = PROPERTY CORNER
- ⊙ = SECTION CORNER
- ⊕ = STORM SEWER MANHOLE
- ⊕ = INLET/CATCH BASIN
- ⊕ = SANITARY SEWER MANHOLE
- ⊕ = SANITARY SEWER CLEANOUT
- ⊕ = ELECTRIC MANHOLE
- ⊕ = UTILITY POLE
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- ⊕ = SHRUB/BUSH
- ⊕ = SLUMP
- ⊕ = SIGN
- ⊕ = BUS STOP
- ⊕ = MAILBOX
- ⊕ = BOLLARD
- ⊕ = MONITOR WELL
- ⊕ = LANDSCAPE ROCK



DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

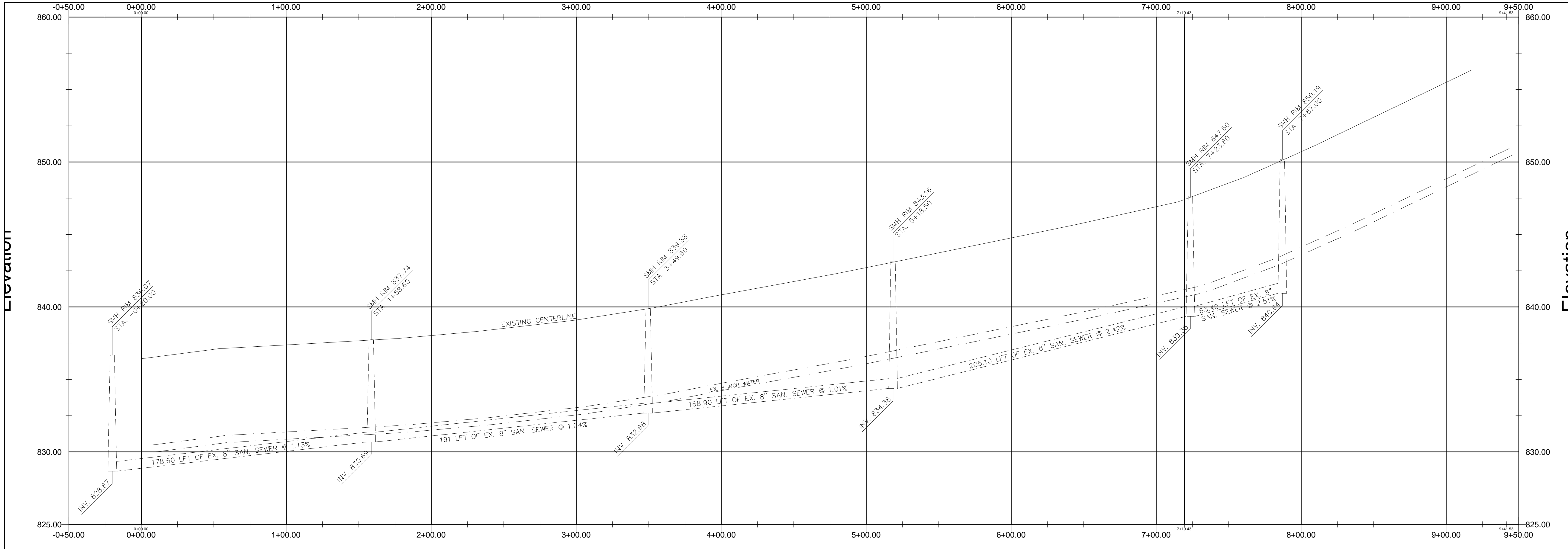
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WILKES STREET

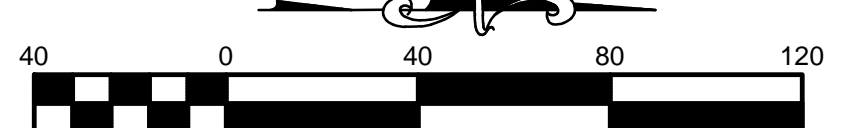
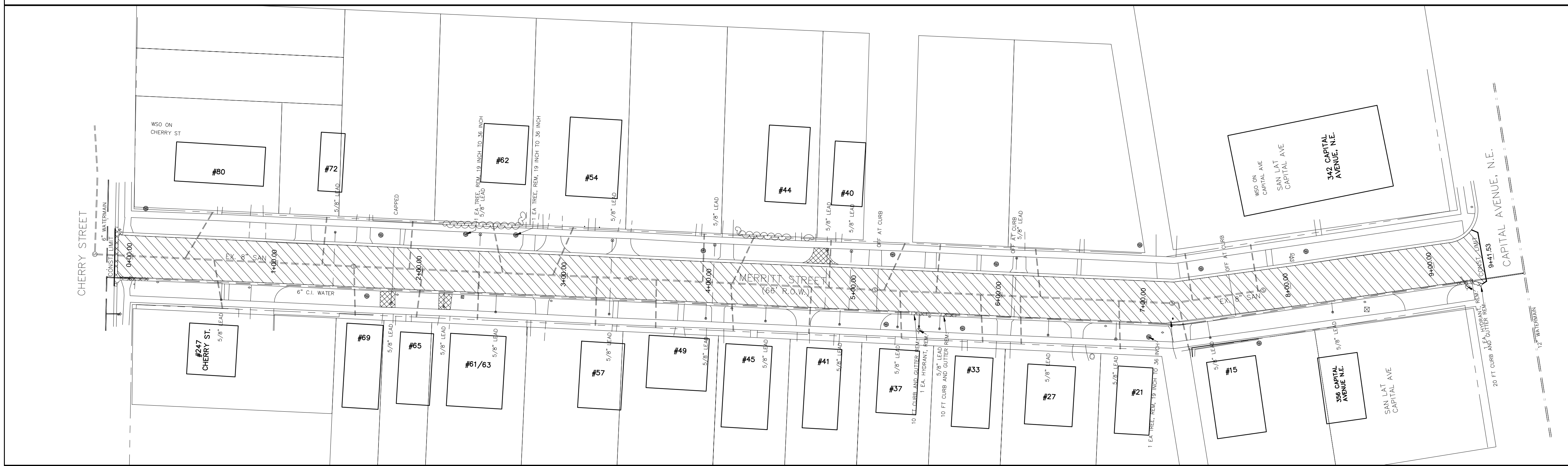
2018 WATER MAIN PROJECT

CONTRACT NO.:	
R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
2 OF 2	28 OF 41

NOTE: CAP EXISTING 6" WATER MAIN AND LEAVE IN PLACE



Elevation



Scale 1" = 40'
REMOVAL SHEET

XXXXXX	CURB & WATER MAIN REMOVALS
XXXXXX	CONC. REMOVALS
XXXXXX	CRUSH AND SHAPE

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

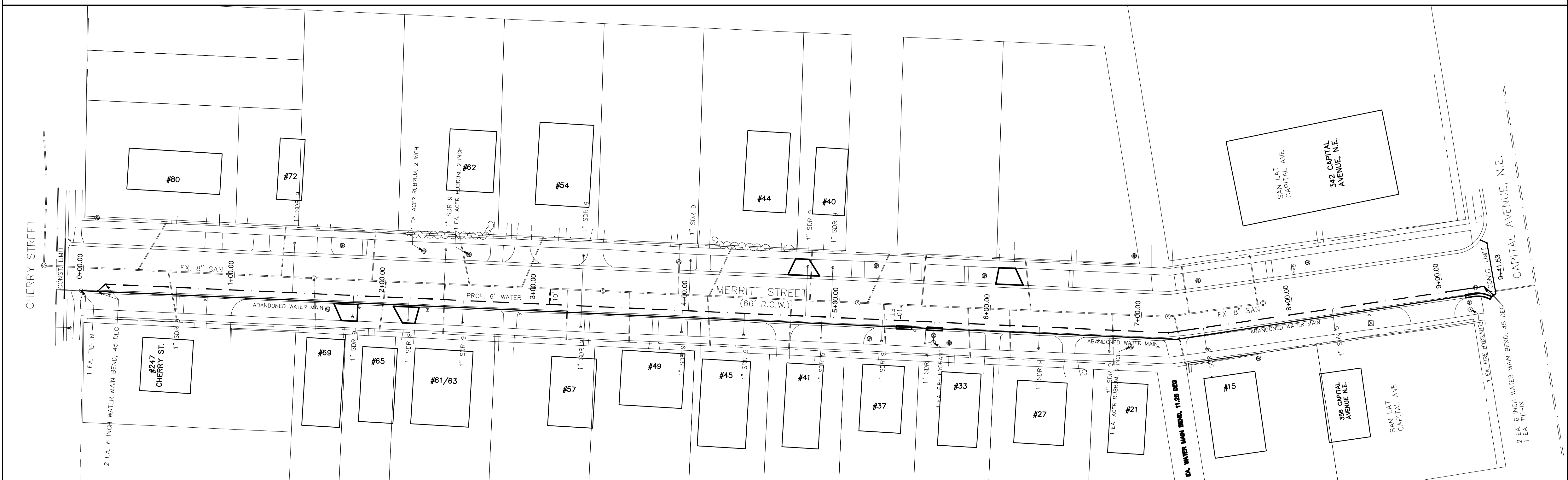
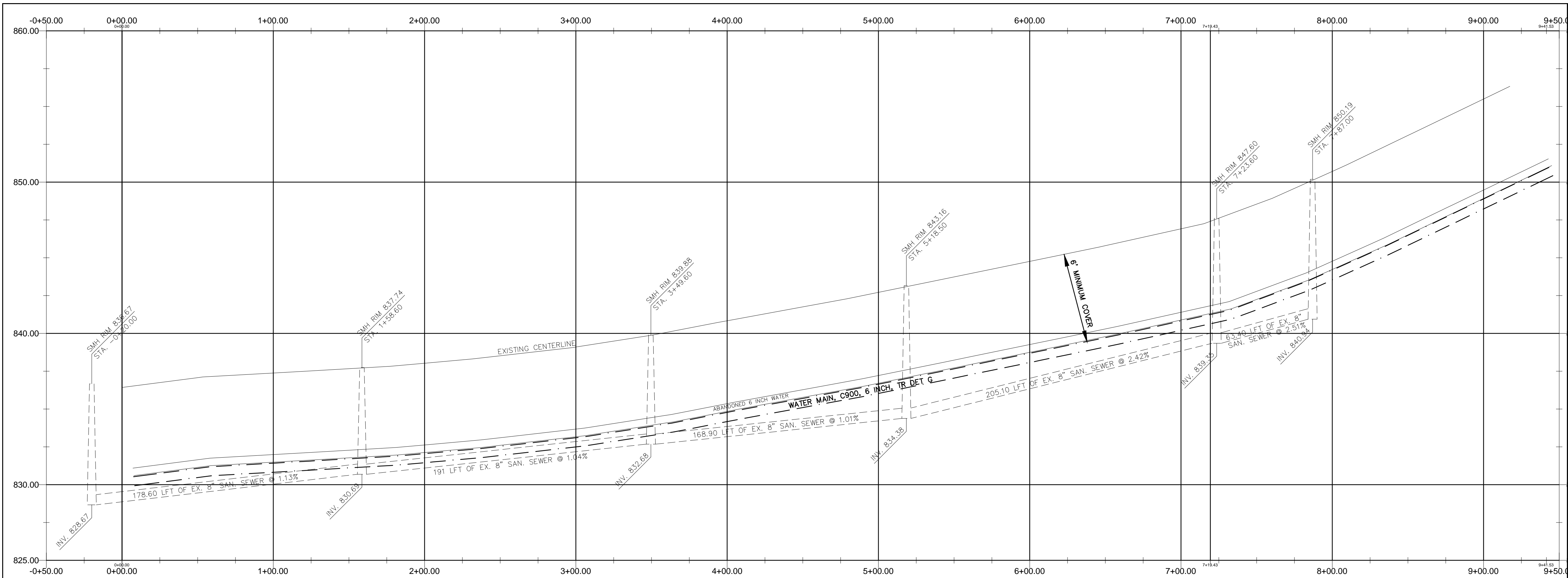
CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

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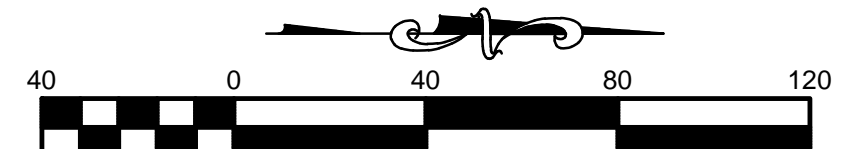
APPROVED BY: CEF
CONTOUR INTERVAL:

MERRITT STREET
2018 WATER MAIN PROJECT

CONTRACT NO.:	
R.O.W. SHEET NO.:	CONTRACT SHEET NO.:
1 OF 1	29 OF 41




- ⊕ = BENCHMARK
- ⊙ = TRAVERSE POINT
- ⊙ = PROPERTY CORNER
- ⊙ = SECTION CORNER
- ⊙ = STORM SEWER MANHOLE
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- ⊙ = LANDSCAPE ROCK



Scale 1" = 40'
CONSTRUCTION SHEET

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

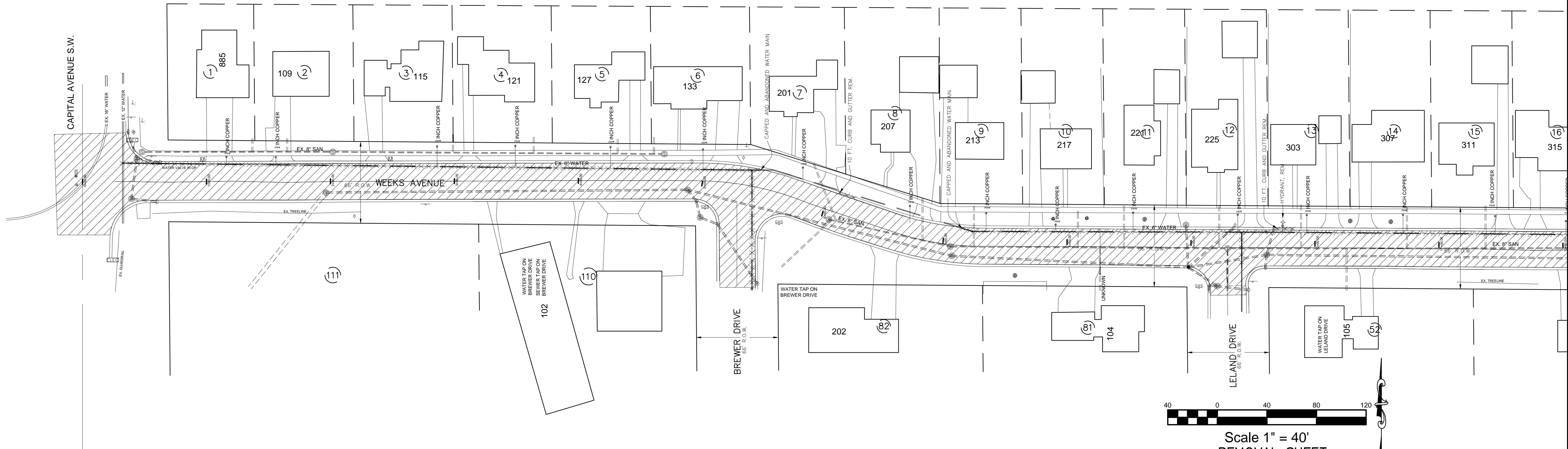
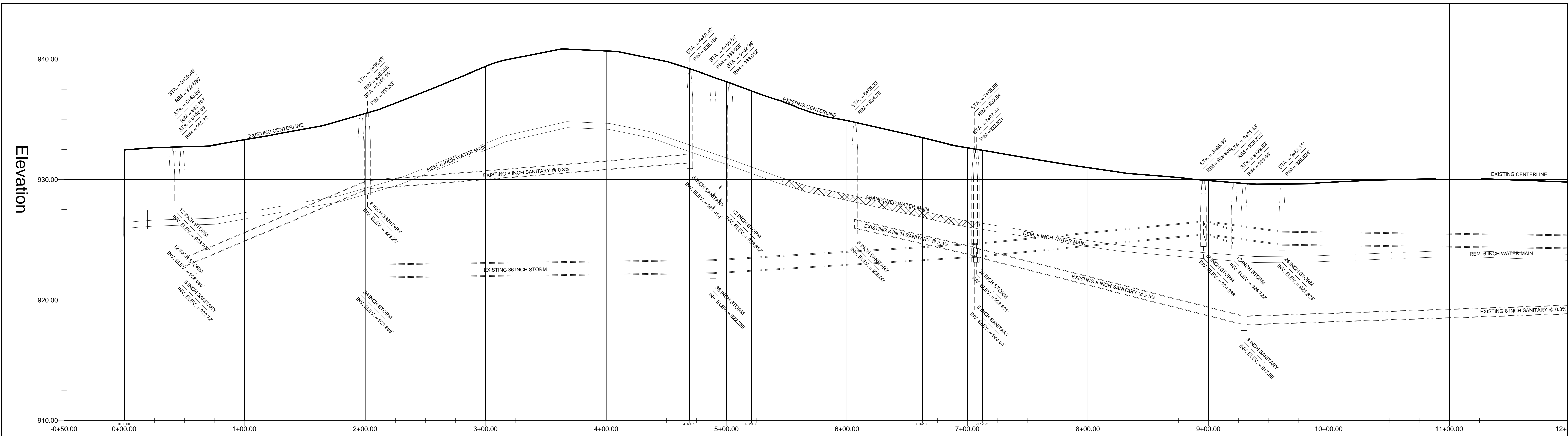
 CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

DRAWN BY: CLA APPROVED BY: CEF
SCALE: 1" = 40' HOR., 1" = 4' VERT. CONTOUR INTERVAL:
DATE: DECEMBER, 2017
FILE NAME:

MERRITT STREET

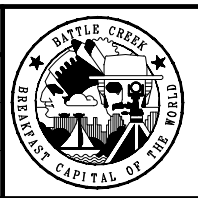
2018 WATER MAIN PROJECT

CONTRACT NO.:
R.O.W. SHEET NO.: 1 OF 1
CONTRACT SHEET NO.: 30 OF 41



Scale 1" = 40'
REMOVAL SHEET

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

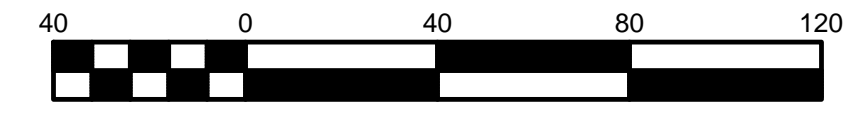
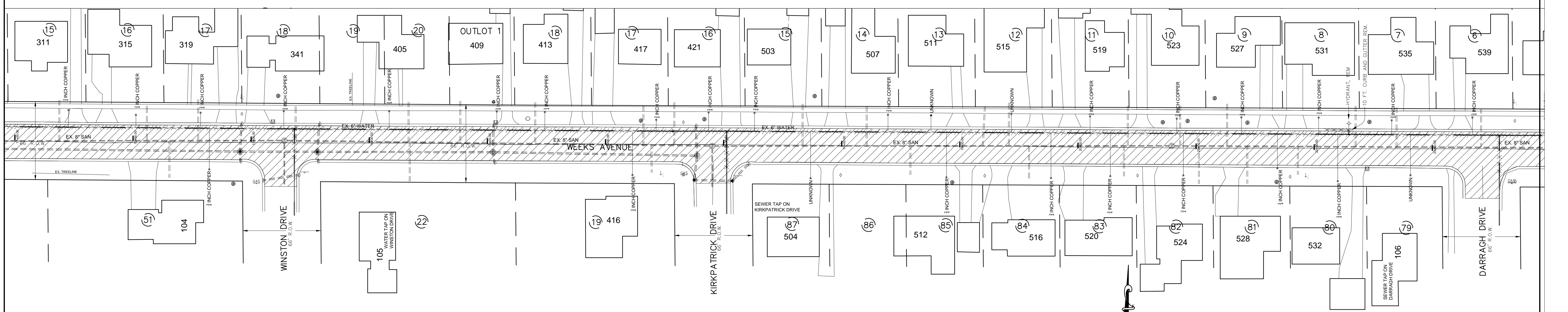
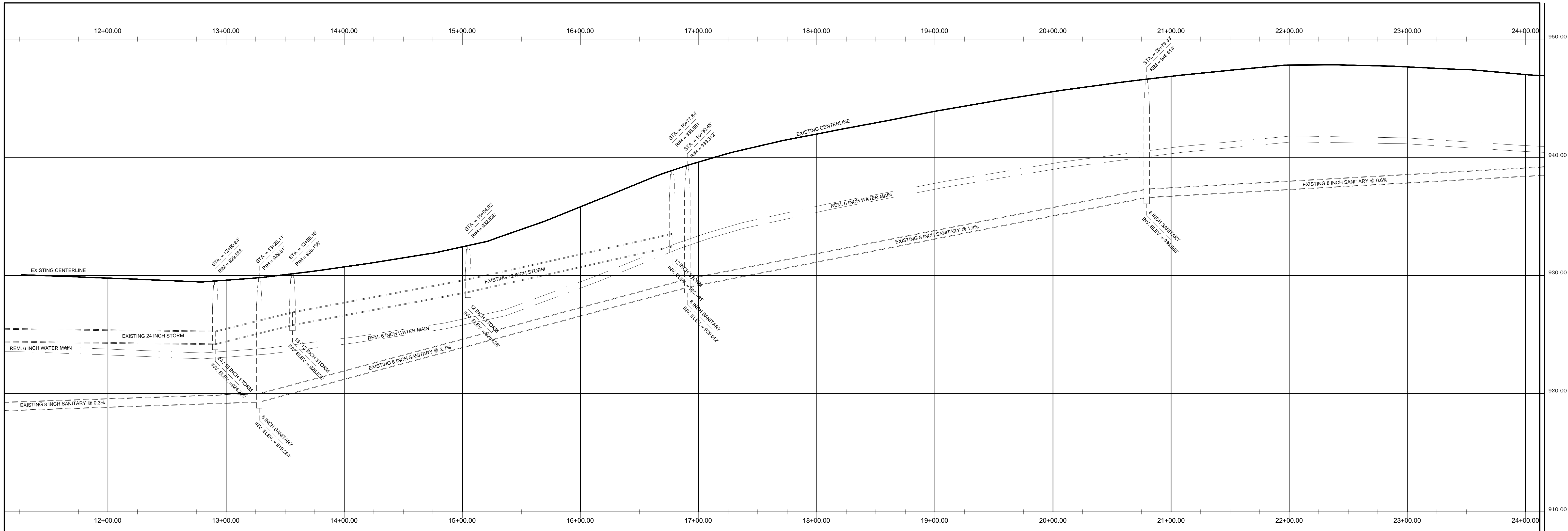


CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

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DATE: JANUARY, 2018
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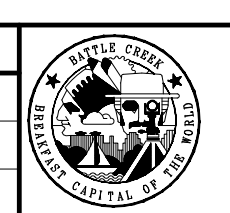
WEEKS AVENUE
2018 WATER MAIN PROJECT

CONTRACT NO.:
R.O.W. SHEET NO.:
1 OF 6
CONTRACT SHEET NO.:
31 OF 41



Scale 1" = 40'
REMOVAL SHEET

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

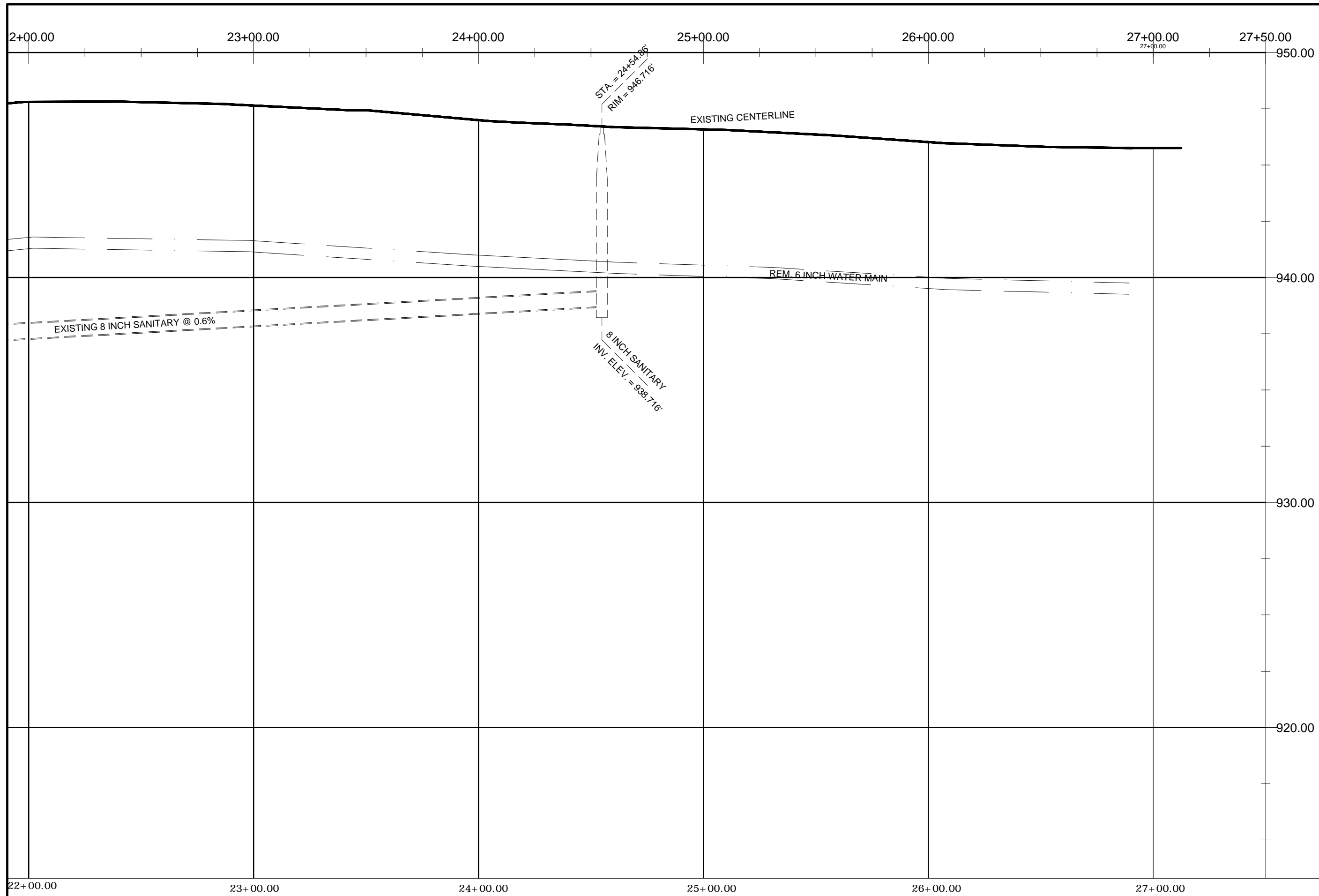


CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

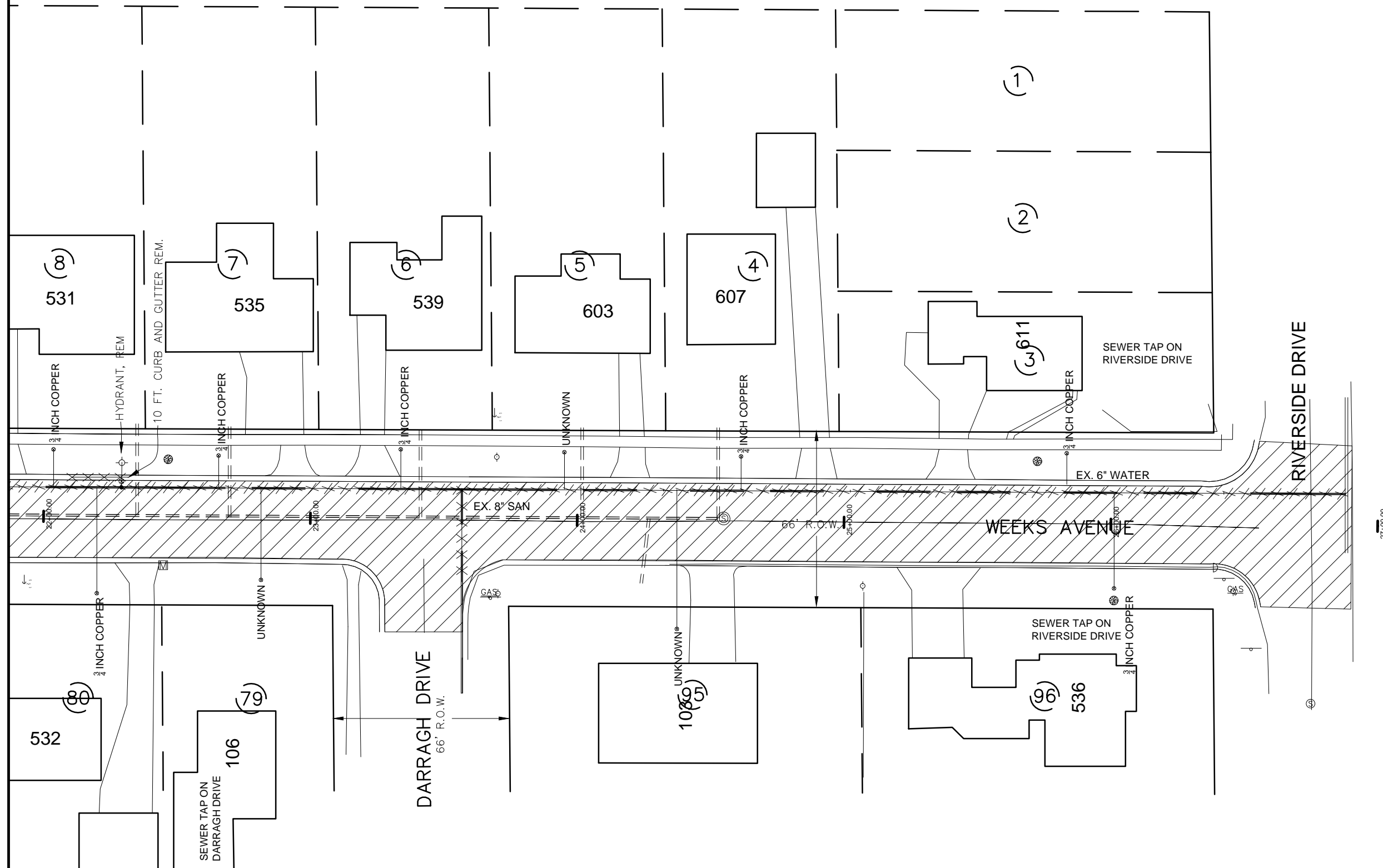
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DATE: JANUARY, 2018
FILE NAME:

WEEKS AVENUE
2018 WATER MAIN PROJECT

CONTRACT NO.:
R.O.W. SHEET NO.: 2 OF 6
CONTRACT SHEET NO.: 32 OF 41



Elevation



	CURB & WATER MAIN REMOVALS
	CONC. REMOVALS
	CRUSH AND SHAPE

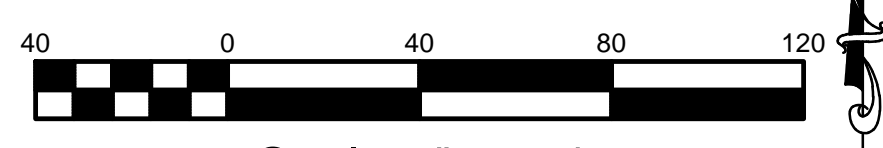
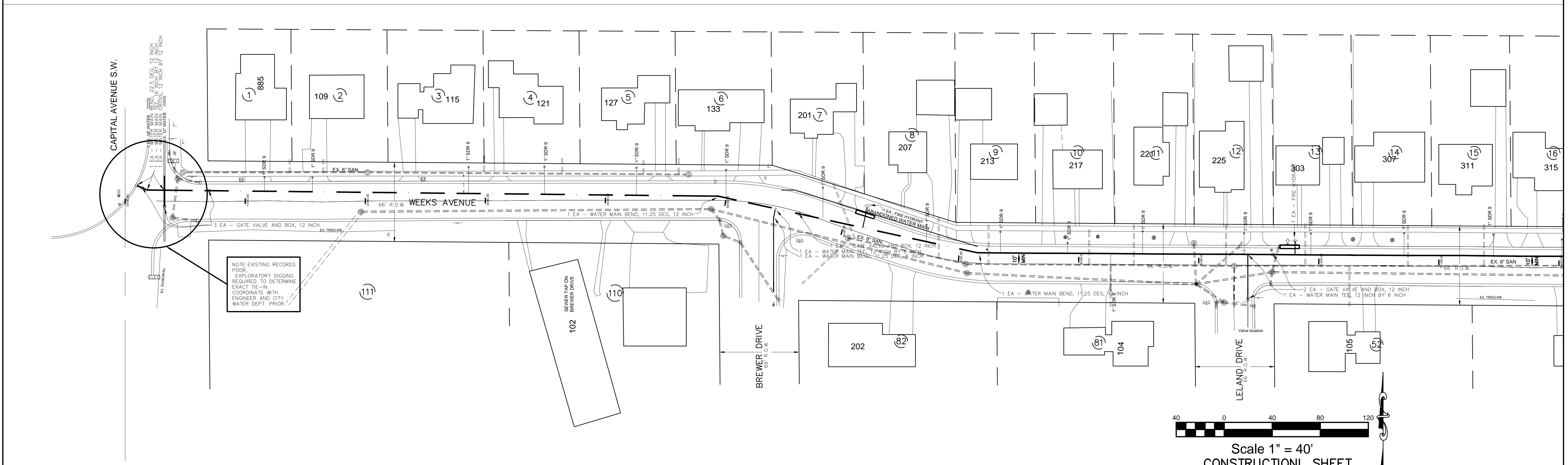
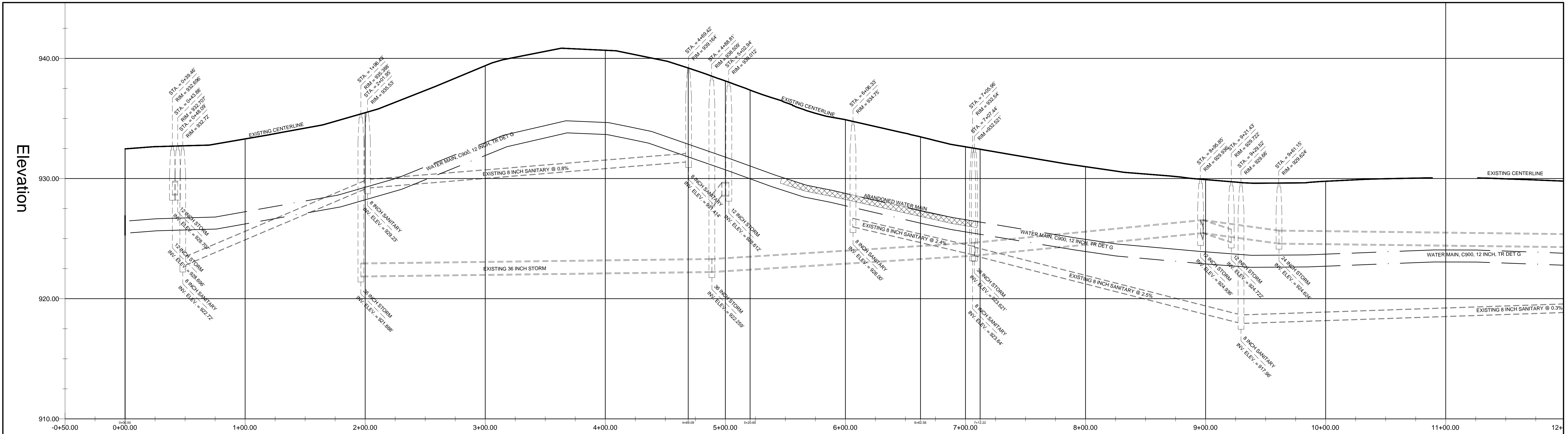
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CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING

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 DATE: JANUARY, 2017
 FILE NAME:

WEEKS AVENUE
 2018 WATER MAIN PROJECT

CONTRACT NO.:
 R.O.W. SHEET NO.:
 3 OF 6 CONTRACT SHEET NO.:
 33 OF 41



CONSTRUCTION SHEET

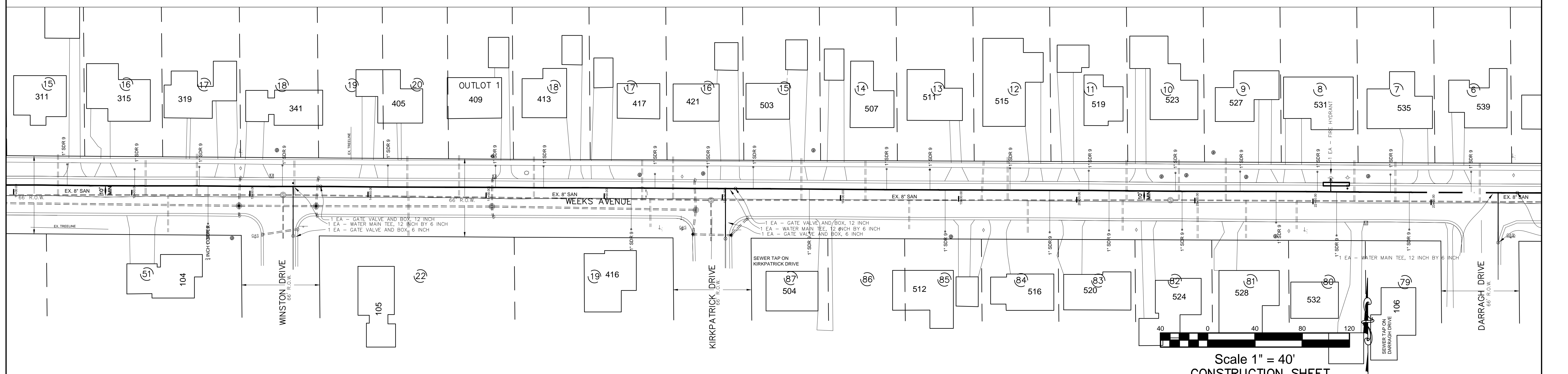
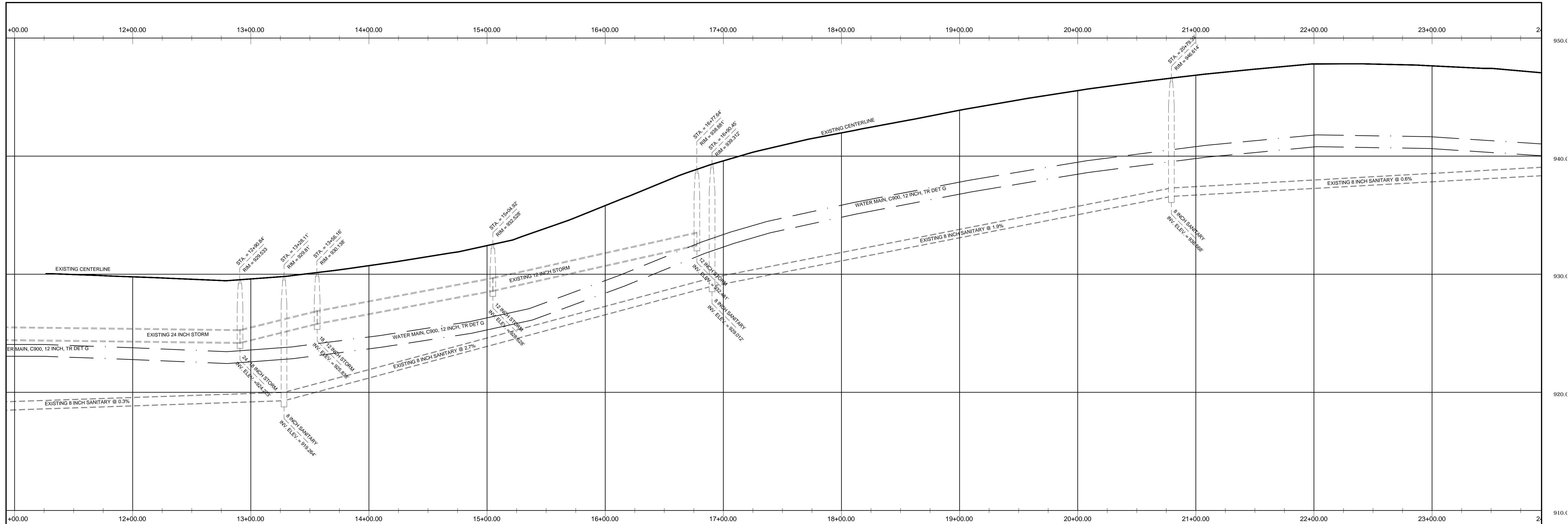
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CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

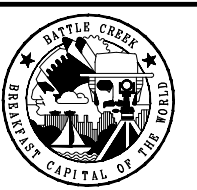
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DATE: NOVEMBER, 2017
FILE NAME:

WEEKS AVENUE
2018 WATER MAIN PROJECT

CONTRACT NO.:
R.O.W. SHEET NO.: 4 OF 6
CONTRACT SHEET NO.: 34 OF 41



DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY

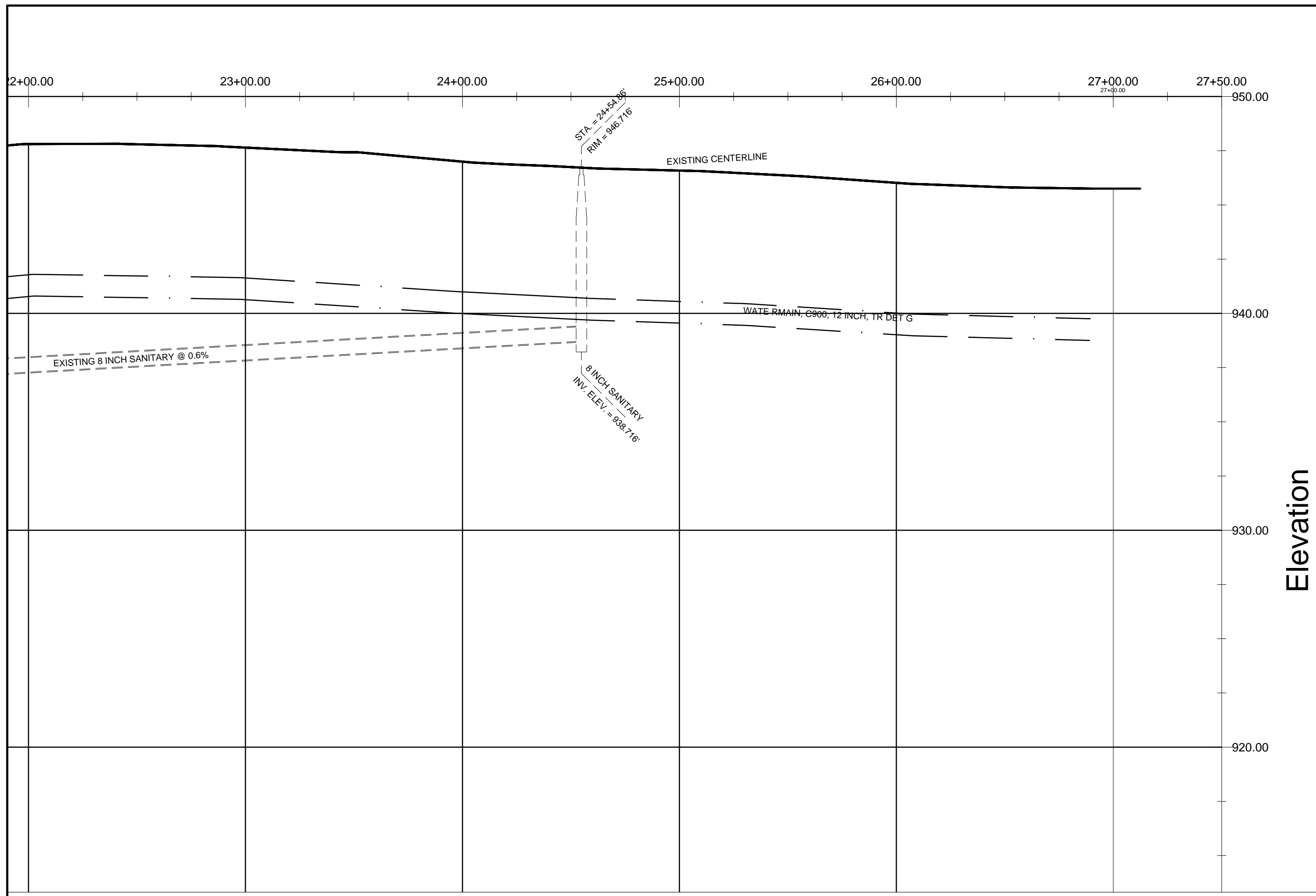


CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING

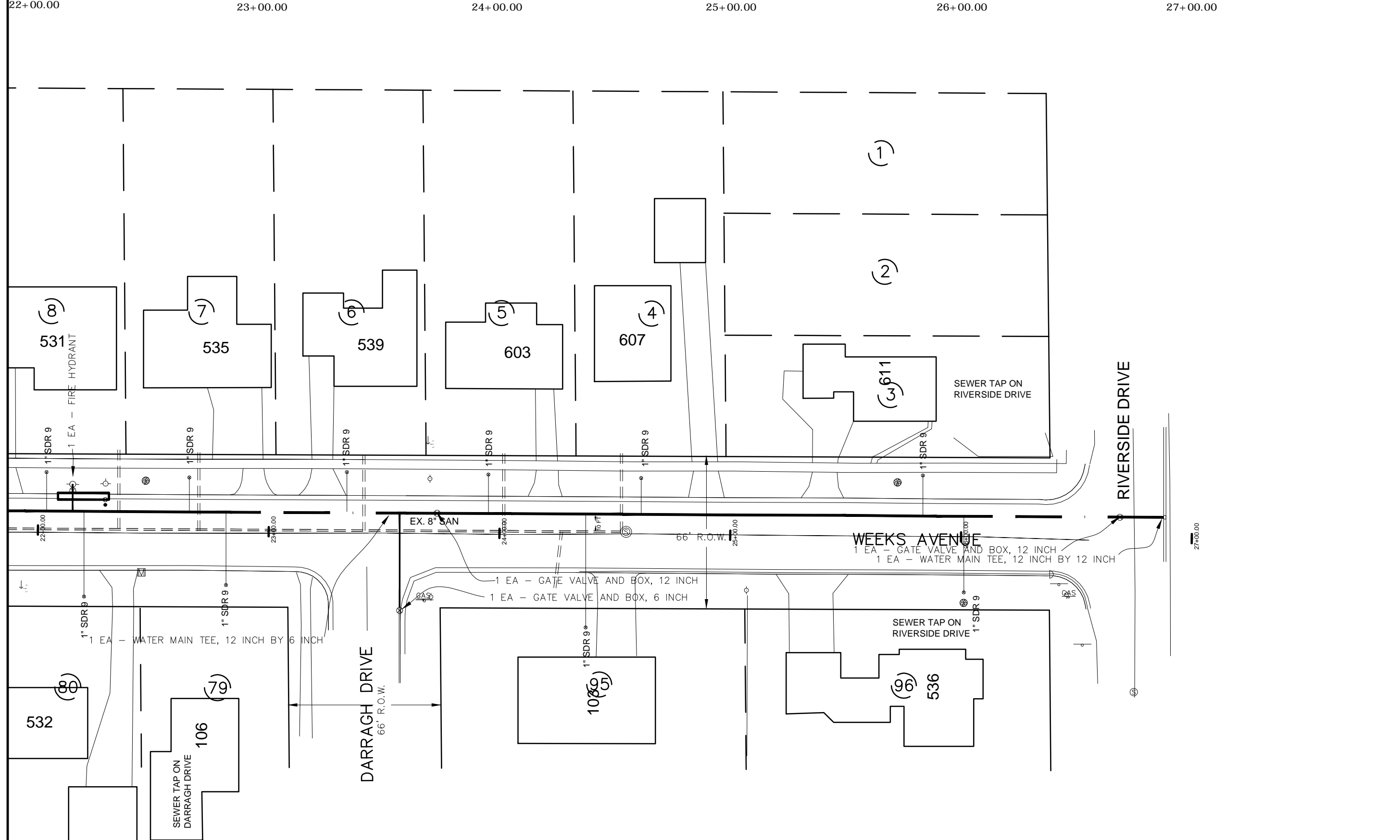
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 CONTOUR INTERVAL:

WEEKS AVENUE
 2018 WATER MAIN PROJECT

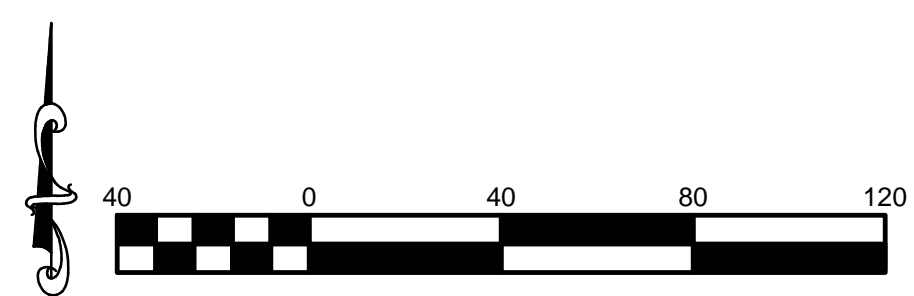
CONTRACT NO.:
 R.O.W. SHEET NO.: 5 OF 6
 CONTRACT SHEET NO.: 35 OF 41



Elevation



- ⊕ = BENCHMARK
- ⊙ = TRAVERSE POINT
- ⊠ = PROPERTY CORNER
- ⊡ = SECTION CORNER
- ⊕ = STORM SEWER MANHOLE
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CITY OF BATTLE CREEK, MICHIGAN
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF ENGINEERING

DRAWN BY: CLA
 SCALE: 1"=40' HOR., 1" = 4' VERT.
 DATE: NOVEMBER, 2017
 FILE NAME:

APPROVED BY: CEF
 CONTOUR INTERVAL:

WEEKS AVENUE
 2018 WATER MAIN PROJECT

CONTRACT NO.:
 R.O.W. SHEET NO.: 6 OF 6
 CONTRACT SHEET NO.: 36 of 41

30TH STREET

ITEM NO.	DESCRIPTION 30th St	UNITS	EST. QTY
1	Mobilization, Max 5%	LSUM	0.125
2	Maintaining Local Traffic	LSUM	0.125
3	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	8
4	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	8
5	Plastic Drum, High Intensity, Furn	Ea	54
6	Plastic Drum, High Intensity, Oper	Ea	50
7	Sign, Type B, Temp, Prismatic, Furn	Sft	118.5
8	Sign, Type B, Temp, Prismatic, Oper	Sft	118.5
9	Erosion Control, Inlet Protection, Fabric Drop	Ea	16
10	Curb and Gutter, Rem	Ft	70
11	Sidewalk, Remove, Modified	Syd	275.5
12	HMA Base Crushing and Shaping	Syd	1030.14
13	Machine Grading	Sft	27
14	Subgrade Undercutting, Type II	Cyd	45.2
15	Maintenance Gravel, LM	Cyd	22.5
16	Dr Structure Cover, Adj, Case 1	Ea	16
17	Dr Structure Cover, Type B	Ea	6
18	Dr Structure Cover, Type Q	Ea	2
19	Dust Control	Ea	9
20	HMA, 13A	Ton	1821.89
21	Hand Patching	Ton	16.52
22	Curb and Gutter, Conc, Det F4	Ft	70
23	Driveway, Nonreinf Conc, 6 inch	Syd	28
24	Sidewalk, Conc, 6 inch	Sft	234
25	Sidewalk, Conc, 4 inch	Sft	2140
26	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	315
27	Pavt Mrkg, Thermopl, 24 inch, Stop Bar	Ft	72
28	Turf Establishment, Special	Syd	1050
29	Tree, Rem, 19 inch to 36 inch	Ea	9
30	Acer rubrum, 2 inch	Ea	9
31	Water Service, Rem	Ea	59
32	Water main, Rem	Ea	2630
33	Hydrant, Rem	Ea	7
34	Gate Well, Rem	Ea	2
35	Flowable Fill, Non-Structural	Cyd	14.86
36	Project Cleanup	LSUM	0.125
37	Fire Hydrant	Ea	7
38	Gate Valve and Box, 6 inch	Ea	2
39	Gate Valve and Box, 12 inch	Ea	0
40	Water Man, Df, 6 inch, Tr Det G	Ft	292
41	Water Man, Df, 12 inch, Tr Det G	Ft	0
42	Water Serv	Ea	29
43	Water Serv, Long	Ea	30
44	Gate Box, Adj, Case 1	Ea	2
45	Water main, Tie-in	Ea	3
46	Pressure Test and Disinfect	Ea	2
47	Water Main Cross, 6 inch by 6 inch	Ea	1
48	Water Main Tee, 6 inch by 6 inch	Ea	0
49	Water Main Bend, 45 Deg, 6 inch	Ea	2
50	Water Main Bend, 22.5 Deg, 6 inch	Ea	0
51	Water Main Bend, 11.25 Deg, 6 inch	Ea	0
52	Water Main Tee, 8 inch by 6 inch	Ea	1
53	Water Main Reducer 12 inch by 6 inch	Ea	0
54	Water Main Cross, 6 inch by 8 inch	Ea	0
55	Water Main Bend, 11.25 Deg, 12 inch	Ea	0
56	Water Main Tee, 12 inch by 12 inch	Ea	0
57	Water Main Tee, 12 inch by 6 inch	Ea	0
58	Water Main Bend, 22.5 Deg, 12 inch	Ea	0
59	Water Main Tee 16 inch by 12 inch	Ea	0
60	Sidewalk Ramp, Conc, 6 inch	Sft	154.47
61	Detectable Warning Surface	Sft	40
62	Erosion Control, Gravel Access Approach	Ea	0
63	Exploratory Excavation	Ea	0

31ST STREET

ITEM NO.	DESCRIPTION 31st	UNITS	EST. QTY
1	Mobilization, Max 5%	LSUM	0.125
2	Maintaining Local Traffic	LSUM	0.125
3	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	8
4	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	8
5	Plastic Drum, High Intensity, Furn	Ea	50
6	Plastic Drum, High Intensity, Oper	Ea	50
7	Sign, Type B, Temp, Prismatic, Furn	Sft	118.5
8	Sign, Type B, Temp, Prismatic, Oper	Sft	118.5
9	Erosion Control, Inlet Protection, Fabric Drop	Ea	17
10	Curb and Gutter, Rem	Ft	150
11	Sidewalk, Remove, Modified	Syd	275
12	HMA Base Crushing and Shaping	Syd	1030
13	Machine Grading	Sft	27
14	Subgrade Undercutting, Type II	Cyd	37.5
15	Maintenance Gravel, LM	Cyd	22.5
16	Dr Structure Cover, Adj, Case 1	Ea	16
17	Dr Structure Cover, Type B	Ea	6
18	Dr Structure Cover, Type Q	Ea	2
19	Dust Control	Ea	10
20	HMA, 13A	Ton	1880
21	Hand Patching	Ton	25
22	Curb and Gutter, Conc, Det F4	Ft	150
23	Driveway, Nonreinf Conc, 6 inch	Syd	28
24	Sidewalk, Conc, 6 inch	Sft	335
25	Sidewalk, Conc, 4 inch	Sft	2140
26	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	315
27	Pavt Mrkg, Thermopl, 24 inch, Stop Bar	Ft	72
28	Turf Establishment, Special	Syd	1050
29	Tree, Rem, 19 inch to 36 inch	Ea	9
30	Acer rubrum, 2 inch	Ea	10
31	Water Service, Rem	Ea	63
32	Water main, Rem	Ea	2650
33	Hydrant, Rem	Ea	9
34	Gate Well, Rem	Ea	0
35	Flowable Fill, Non-Structural	Cyd	4.7
36	Project Cleanup	LSUM	0.125
37	Fire Hydrant	Ea	6
38	Gate Valve and Box, 6 inch	Ea	4
39	Gate Valve and Box, 12 inch	Ea	0
40	Water Man, Df, 6 inch, Tr Det G	Ft	292
41	Water Man, Df, 12 inch, Tr Det G	Ft	0
42	Water Serv	Ea	30
43	Water Serv, Long	Ea	33
44	Gate Box, Adj, Case 1	Ea	0
45	Water main, Tie-in	Ea	3
46	Pressure Test and Disinfect	Ea	2
47	Water Main Cross, 6 inch by 6 inch	Ea	1
48	Water Main Tee, 6 inch by 6 inch	Ea	0
49	Water Main Bend, 45 Deg, 6 inch	Ea	4
50	Water Main Bend, 22.5 Deg, 6 inch	Ea	0
51	Water Main Bend, 11.25 Deg, 6 inch	Ea	0
52	Water Main Tee, 8 inch by 6 inch	Ea	1
53	Water Main Reducer 12 inch by 6 inch	Ea	0
54	Water Main Cross, 6 inch by 8 inch	Ea	0
55	Water Main Bend, 11.25 Deg, 12 inch	Ea	0
56	Water Main Tee, 12 inch by 12 inch	Ea	0
57	Water Main Tee, 12 inch by 6 inch	Ea	0
58	Water Main Bend, 22.5 Deg, 12 inch	Ea	0
59	Water Main Tee 16 inch by 12 inch	Ea	0
60	Sidewalk Ramp, Conc, 6 inch	Sft	204
61	Detectable Warning Surface	Sft	50
62	Erosion Control, Gravel Access Approach	Ea	0
63	Exploratory Excavation	Ea	0

BUCKEYE STREET

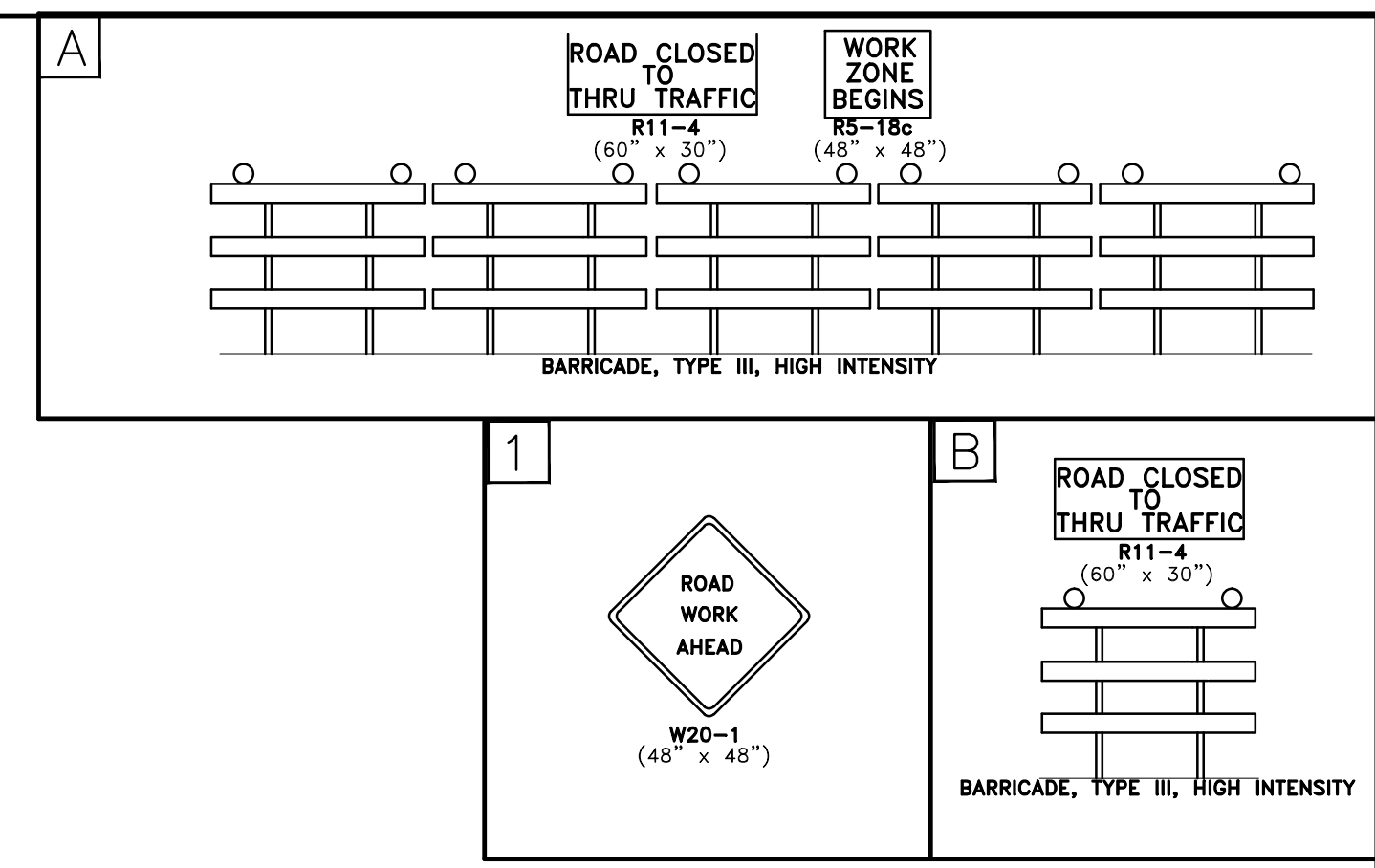
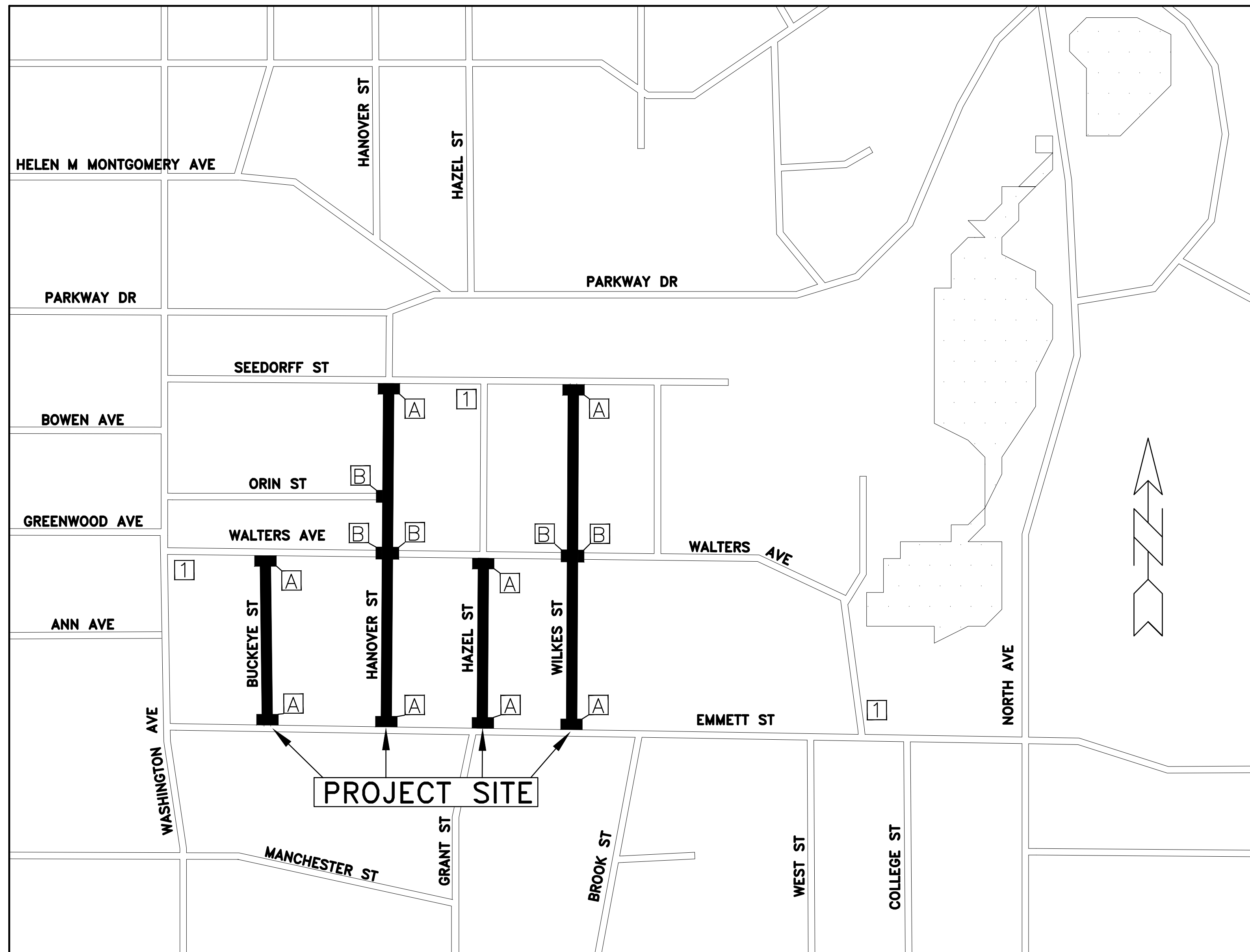
ITEM NO.	DESCRIPTION Buckeye	UNITS	EST. QTY
1	Mobilization, Max 5%	LSUM	0.125
2	Maintaining Local Traffic	LSUM	0.125
3	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	4
4	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	4
5	Plastic Drum, High Intensity, Furn	Ea	11
6	Plastic Drum, High Intensity, Oper	Ea	11
7	Sign, Type B, Temp, Prismatic, Furn	Sft	0
8	Sign, Type B, Temp, Prismatic, Oper	Sft	0
9	Erosion Control, Inlet Protection, Fabric Drop	Ea	3
10	Curb and Gutter, Rem	Ft	1007
11	Sidewalk, Remove, Modified	Syd	82
12	HMA Base Crushing and Shaping	Syd	1538.31
13	Machine Grading	Sft	27
14	Subgrade Undercutting, Type II	Cyd	10
15	Maintenance Gravel, LM	Cyd	22.5
16	Dr Structure Cover, Adj, Case 1	Ea	2
17	Dr Structure Cover, Type B	Ea	0
18	Dr Structure Cover, Type Q	Ea	2
19	Dust Control	Ea	6
20	HMA, 13A	Ton	279
21	Hand Patching	Ton	3
22	Curb and Gutter, Conc, Det F4	Ft	1016
23	Driveway, Nonreinf Conc, 6 inch	Syd	30
24	Sidewalk, Conc, 6 inch	Sft	42
25	Sidewalk, Conc, 4 inch	Sft	405
26	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	67.4
27	Pavt Mrkg, Thermopl, 24 inch, Stop Bar	Ft	30
28	Turf Establishment, Special	Syd	504
29	Tree, Rem, 19 inch to 36 inch	Ea	2
30	Acer rubrum, 2 inch	Ea	0
31	Water Service, Rem	Ea	13
32	Water main, Rem	Ea	535
33	Hydrant, Rem	Ea	0
34	Gate Well, Rem	Ea	0
35	Flowable Fill, Non-Structural	Cyd	1.06
36	Project Cleanup	LSUM	0.125
37	Fire Hydrant	Ea	1
38	Gate Valve and Box, 6 inch	Ea	0
39	Gate Valve and Box, 12 inch	Ea	0
40	Water Man, Df, 6 inch, Tr Det G	Ft	535
41	Water Man, Df, 12 inch, Tr Det G	Ft	0
42	Water Serv	Ea	4
43	Water Serv, Long	Ea	1
44	Gate Box, Adj, Case 1	Ea	2
45	Water main, Tie-in	Ea	3
46	Pressure Test and Disinfect	Ea	1
47	Water Main Cross, 6 inch by 6 inch	Ea	0
48	Water Main Tee, 6 inch by 6 inch	Ea	1
49	Water Main Bend, 45 Deg, 6 inch	Ea	2
50	Water Main Bend, 22.5 Deg, 6 inch	Ea	0
51	Water Main Bend, 11.25 Deg, 6 inch	Ea	0
52	Water Main Tee, 8 inch by 6 inch	Ea	0
53	Water Main Reducer 12 inch by 6 inch	Ea	0
54	Water Main Cross, 6 inch by 8 inch	Ea	0
55	Water Main Bend, 11.25 Deg, 12 inch	Ea	0
56	Water Main Tee, 12 inch by 12 inch	Ea	0
57	Water Main Tee, 12 inch by 6 inch	Ea	0
58	Water Main Bend, 22.5 Deg, 12 inch	Ea	0
59	Water Main Tee 16 inch by 12 inch	Ea	0
60	Sidewalk Ramp, Conc, 6 inch	Sft	307.04
61	Detectable Warning Surface	Sft	20
62	Erosion Control, Gravel Access Approach	Ea	0
63	Exploratory Excavation	Ea	0

HANOVER STREET

ITEM NO.	DESCRIPTION Hanover	UNITS	EST. QTY
1	Mobilization, Max 5%	LSUM	0.125
2	Maintaining Local Traffic	LSUM	0.125
3	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	8
4	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	8
5	Plastic Drum, High Intensity, Furn	Ea	20
6	Plastic Drum, High Intensity, Oper	Ea	20
7	Sign, Type B, Temp, Prismatic, Furn	Sft	0
8	Sign, Type B, Temp, Prismatic, Oper	Sft	0
9	Erosion Control, Inlet Protection, Fabric Drop	Ea	7
10	Curb and Gutter, Rem	Ft	2100
11	Sidewalk, Remove, Modified	Syd	80
12	HMA Base Crushing and Shaping	Syd	3830
13	Machine Grading	Sft	42
14	Subgrade Undercutting, Type II	Cyd	19
15	Maintenance Gravel, LM	Cyd	22.5
16	Dr Structure Cover, Adj, Case 1	Ea	6
17	Dr Structure Cover, Type B	Ea	0
18	Dr Structure Cover, Type Q	Ea	6
19	Dust Control	Ea	9
20	HMA, 13A	Ton	710
21	Hand Patching	Ton	7
22	Curb and Gutter, Conc, Det F4	Ft	2088
23	Driveway, Nonreinf Conc, 6 inch	Syd	30
24	Sidewalk, Conc, 6 inch	Sft	120
25	Sidewalk, Conc, 4 inch	Sft	600
26	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	67.4
27	Pavt Mrkg, Thermopl, 24 inch, Stop Bar	Ft	75
28	Turf Establishment, Special	Syd	550
29	Tree, Rem, 19 inch to 36 inch	Ea	0
30	Acer rubrum, 2 inch	Ea	0
31	Water Service, Rem	Ea	7
32	Water main, Rem	Ea	1120
33	Hydrant, Rem	Ea	0
34	Gate Well, Rem	Ea	0
35	Flowable Fill, Non-Structural	Cyd	5.23
36	Project Cleanup	LSUM	0.125
37	Fire Hydrant	Ea	2
38	Gate Valve and Box, 6 inch	Ea	4
39	Gate Valve and Box, 12 inch	Ea	0
40	Water Man, Df, 6 inch, Tr Det G	Ft	1148
41	Water Man, Df, 12 inch, Tr Det G	Ft	0
42	Water Serv	Ea	3
43	Water Serv, Long	Ea	4
44	Gate Box, Adj, Case 1	Ea	4
45	Water main, Tie-in	Ea	4
46	Pressure Test and Disinfect	Ea	1
47	Water Main Cross, 6 inch by 6 inch	Ea	1
48	Water Main Tee, 6 inch by 6 inch	Ea	2
49	Water Main Bend, 45 Deg, 6 inch	Ea	4
50	Water Main Bend, 22.5 Deg, 6 inch	Ea	0
51	Water Main Bend, 11.25 Deg, 6 inch	Ea	0
52	Water Main Tee, 8 inch by 6 inch	Ea	1
53	Water Main Reducer 12 inch by 6 inch	Ea	0
54	Water Main Cross, 6 inch by 8 inch	Ea	1
55	Water Main Bend, 11.25 Deg, 12 inch	Ea	0
56	Water Main Tee, 12 inch by 12 inch	Ea	0
57	Water Main Tee, 12 inch by 6 inch	Ea	0
58	Water Main Bend, 22.5 Deg, 12 inch	Ea	0
59	Water Main Tee 16 inch by 12 inch	Ea	0
60	Sidewalk Ramp, Conc, 6 inch	Sft	358.03
61	Detectable Warning Surface	Sft	20
62	Erosion Control, Gravel Access Approach	Ea	0
63	Exploratory Excavation	Ea	0

TOTAL

ITEM NO.	DESCRIPTION Total	UNITS	EST. QTY
1	Mobilization, Max 5%	LSUM	1
2	Maintaining Local Traffic	LSUM	1
3	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	56
4	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	56
5	Plastic Drum, High Intensity, Furn	Ea	239
6	Plastic Drum, High Intensity, Oper	Ea	239
7	Sign, Type B, Temp, Prismatic, Furn	Sft	985.5
8	Sign, Type B, Temp, Prismatic, Oper	Sft	985.5
9	Erosion Control, Inlet Protection, Fabric Drop	Ea	85
10	Curb and Gutter, Rem	Ft	5492
11	Sidewalk, Remove, Modified	Syd	1086
12	HMA Base Crushing and Shaping	Syd	4293
13	Machine Grading	Sft	124.25
14	Subgrade Undercutting, Type II	Cyd	239
15	Maintenance Gravel, LM	Cyd	235
16	Dr Structure Cover, Adj, Case 1	Ea	81
17	Dr Structure Cover, Type B	Ea	34
18	Dr Structure Cover, Type Q	Ea	47
19	Dust Control	Ea	25
20	HMA, 13A	Ton	7779
21	Hand Patching	Ton	91
22	Curb and Gutter, Conc, Det F4	Ft	5466
23	Driveway, Nonreinf Conc, 6 inch	Syd	232
24	Sidewalk, Conc, 6 inch	Sft	860
25	Sidewalk, Conc, 4 inch	Sft	6474
26	Pavt Mrkg, Thermopl, 6 inch, Crosswalk	Ft	1147
27	Pavt Mrkg, Thermopl, 24 inch, Stop Bar	Ft	322
28	Turf Establishment, Special	Syd	4679
29	Tree, Rem, 19 inch to 36 inch	Ea	22
30	Acer rubrum, 2 inch	Ea	22
31	Water Service, Rem	Ea	260
32	Water main, Rem	Ea	11450
33	Hydrant, Rem	Ea	25
34	Gate Well, Rem	Ea	5
35	Flowable Fill, Non-Structural	Cyd	34
36	Project Cleanup	LSUM	1
37	Fire Hydrant	Ea	24
38	Gate Valve and Box, 6 inch	Ea	23
39	Gate Valve and Box, 12 inch	Ea	8
40	Water Main, 6 inch, Tr Det G	Ft	9045
41	Water Main, 12 inch, Tr Det G	Ft	2677
42	Water Serv	Ea	131
43	Water Serv, Long	Ea	105
44	Gate Box, Adj, Case 1	Ea	27
45	Water main Tie-in	Ea	27
46	Pressure Test and Disinfect	Ea	13
47	Water Main Cross, 6 inch by 6 inch	Ea	5
48	Water Main Tee, 6 inch by 6 inch	Ea	3
49	Water Main Bend, 45 Deg, 6 inch	Ea	22
50	Water Main Bend, 22.5 Deg, 6 inch	Ea	1



CONSTRUCTION SIGN QUANTITIES

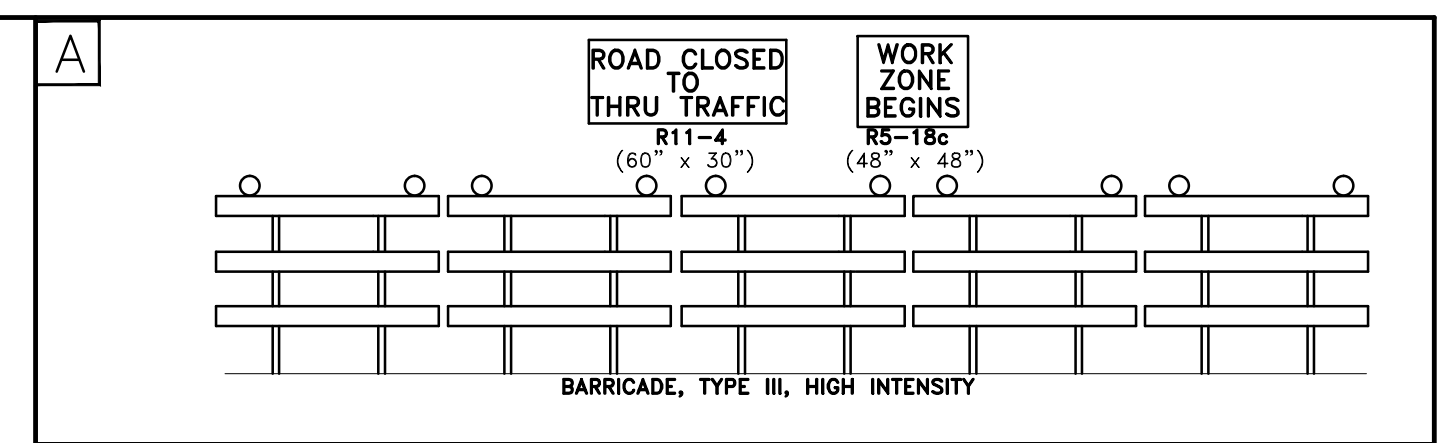
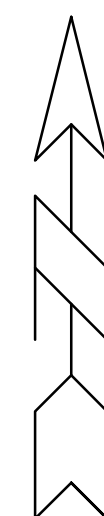
TYPE	#	SFT/SIGN	TOTAL SFT
R5-18c	8	16	128
R11-4	13	12.5	162.5
W20-1	3	16	48
SIGN, TYPE B, TEMP TOTAL =			338.5 SFT

CONSTRUCTION BARRICADE QUANTITIES

TYPE	QTY	UNIT
BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED, FURN	45	EA
PLASTIC DRUM, HIGH INTENSITY, FURN	50	EA
LIGHTED ARROW, TYPE C, FURN	2	EA
BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED, OPER	45	EA
PLASTIC DRUM, HIGH INTENSITY, OPER	50	EA
LIGHTED ARROW, TYPE C, OPER	2	EA
TRAF REGULATOR CONTROL	1	LS
MINOR TRAF DEVICES	1	LS

TEMPORARY SIGNING AND DETOUR PLAN

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY	CITY OF BATTLE CREEK, MICHIGAN DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING	DRAWN BY: BGH SCALE: NONE DATE: January, 2018 DRAWING NAME:	APPROVED BY:	JOB NO.: 2550 CONTROL SECTION: R.O.W. CONTRACT SHEET NO. 1 OF 3 SHEET NO. 38 OF 41
<p style="text-align: center;">2018 WATERMAIN PROJECT</p>									



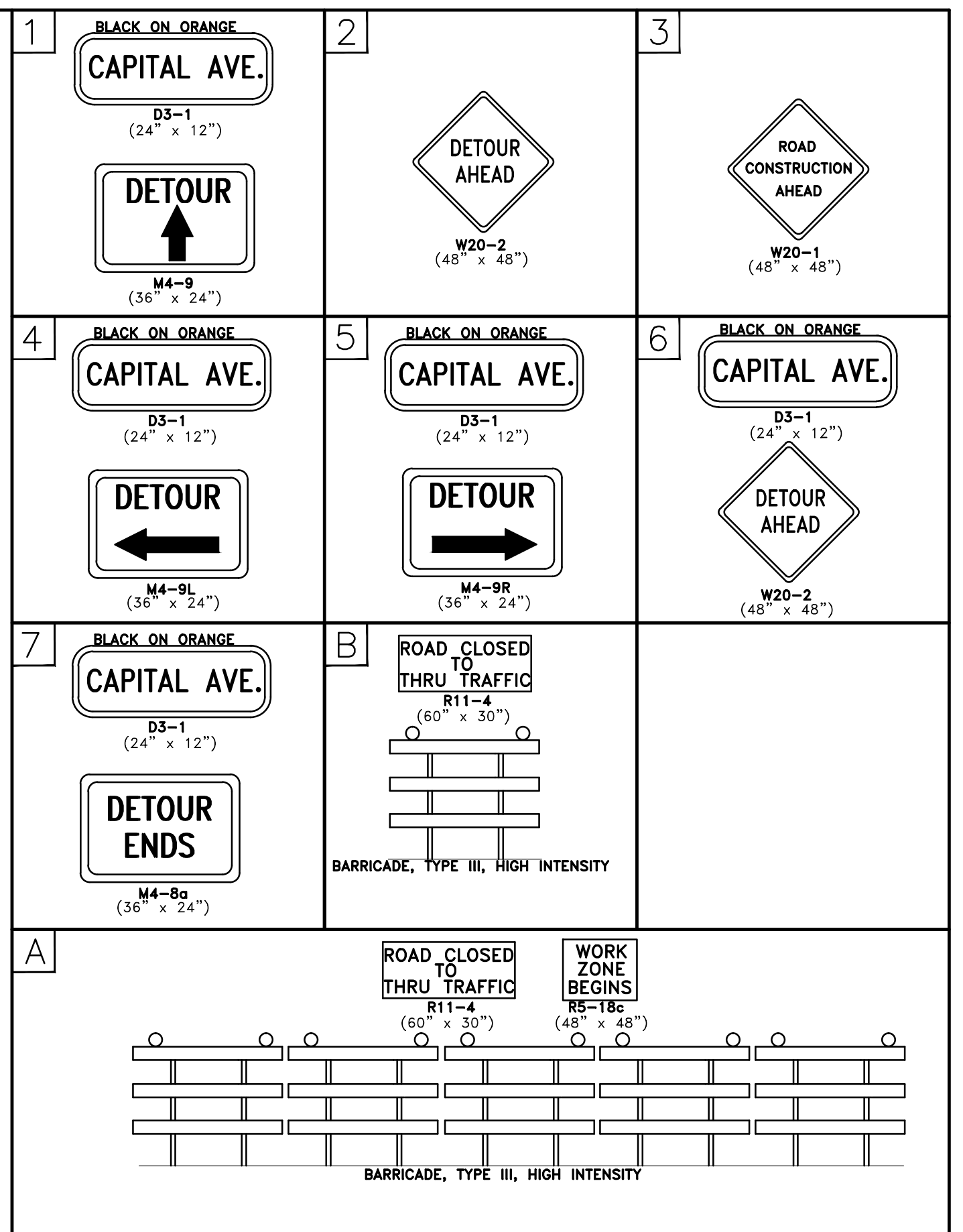
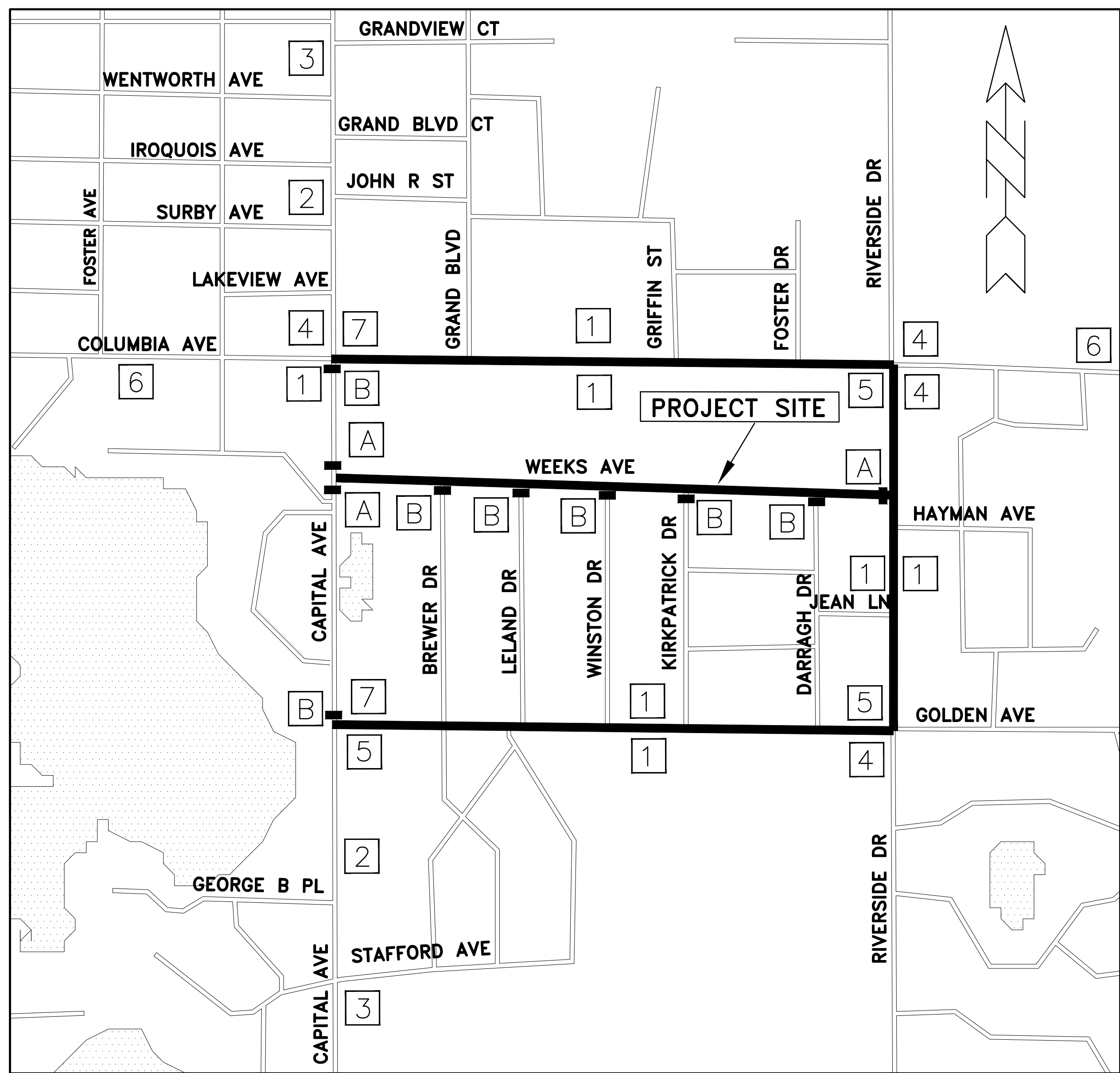
CONSTRUCTION SIGN QUANTITIES

TYPE	#	SFT/SIGN	TOTAL SFT
R5-18c	2	16	32
R11-4	2	12.5	25
SIGN, TYPE B, TEMP TOTAL =			57 SFT

CONSTRUCTION BARRICADE QUANTITIES

TYPE	QTY	UNIT
BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED, FURN	10	EA
PLASTIC DRUM, HIGH INTENSITY, FURN	50	EA
LIGHTED ARROW, TYPE C, FURN	2	EA
BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED, OPER	10	EA
PLASTIC DRUM, HIGH INTENSITY, OPER	50	EA
LIGHTED ARROW, TYPE C, OPER	2	EA
TRAF REGULATOR CONTROL	1	LS
MINOR TRAF DEVICES	1	LS

TEMPORARY SIGNING AND DETOUR PLAN



CONSTRUCTION SIGN QUANTITIES

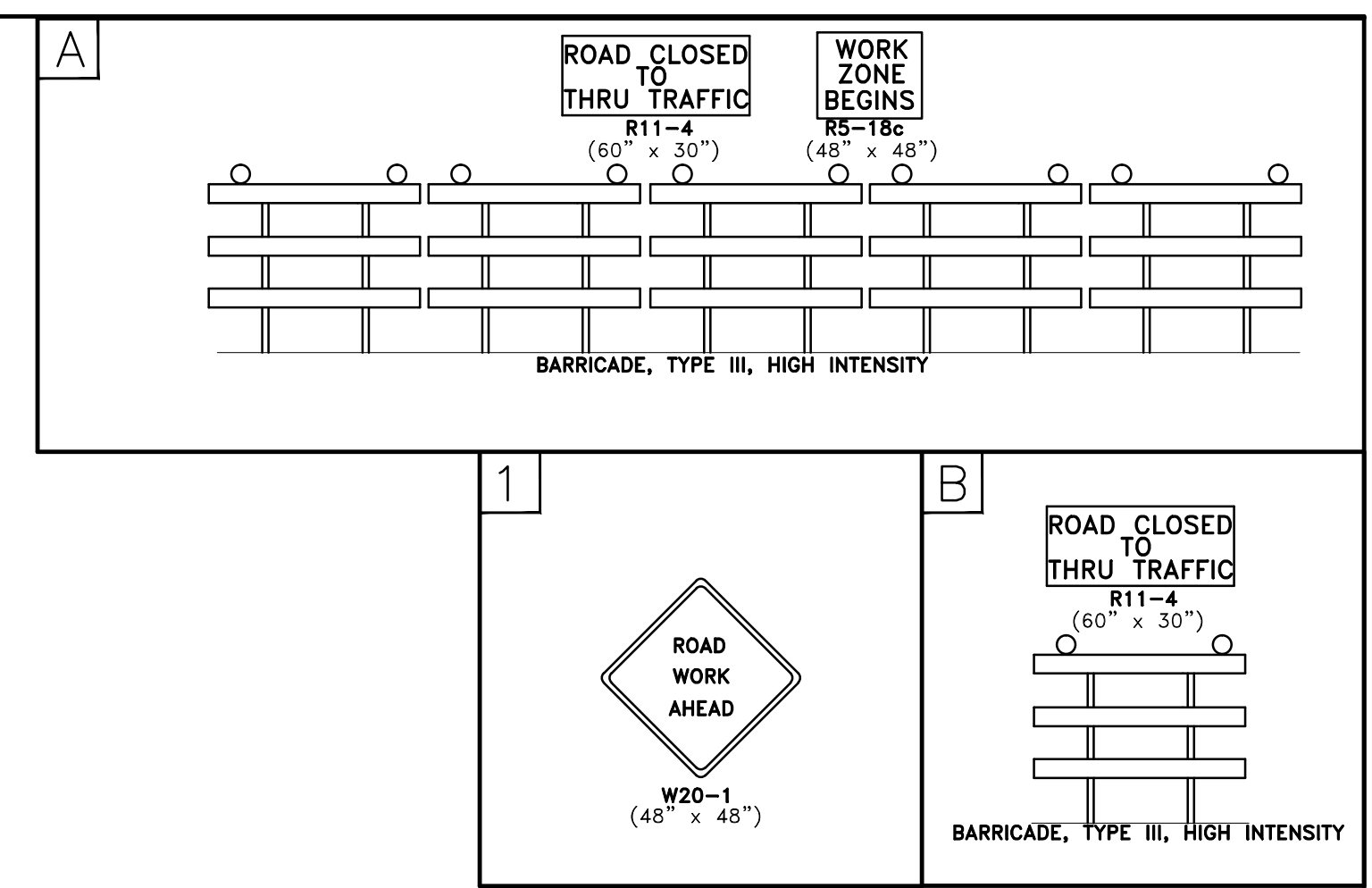
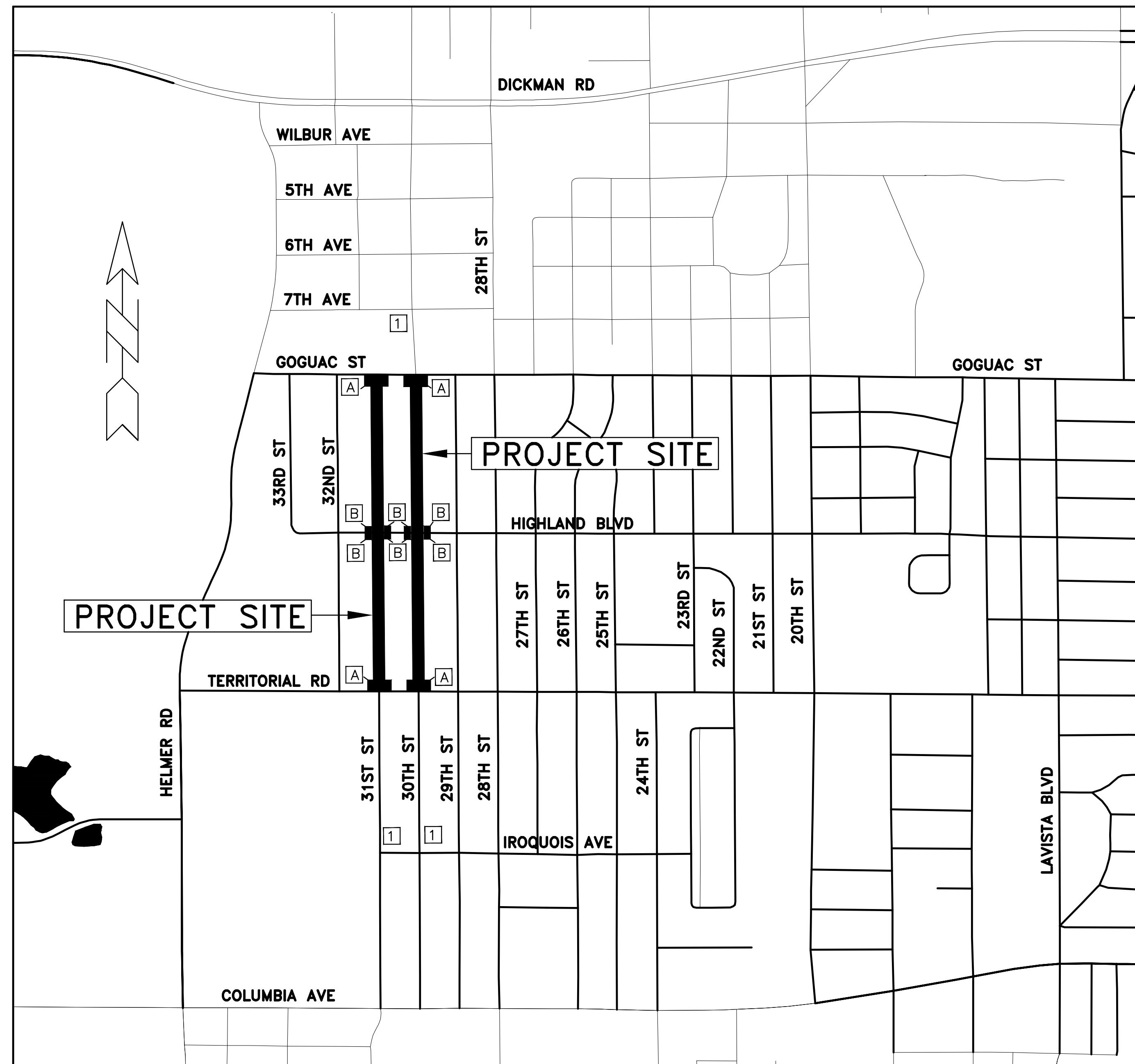
TYPE	#	SFT/SIGN	TOTAL SFT
D3-1	18	2	36
M4-8a	2	6	12
M4-9	6	6	36
R5-18c	3	16	48
R11-4	10	12.5	125
W20-1	2	16	32
W20-2	4	16	64
SIGN, TYPE B, TEMP TOTAL =			353 SFT

CONSTRUCTION BARRICADE QUANTITIES

TYPE	QTY	UNIT
BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED, FURN	22	EA
PLASTIC DRUM, HIGH INTENSITY, FURN	50	EA
LIGHTED ARROW, TYPE C, FURN	2	EA
BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED, OPER	22	EA
PLASTIC DRUM, HIGH INTENSITY, OPER	50	EA
LIGHTED ARROW, TYPE C, OPER	2	EA
TRAF REGULATOR CONTROL	1	LS
MINOR TRAF DEVICES	1	LS

TEMPORARY SIGNING AND DETOUR PLAN

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY	 CITY OF BATTLE CREEK, MICHIGAN DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING	DRAWN BY: BGH SCALE: NONE DATE: January, 2018 DRAWING NAME:	APPROVED BY:	2018 WEEKS AVE. PROJECT	JOB NO.: CONTROL SECTION:



CONSTRUCTION SIGN QUANTITIES

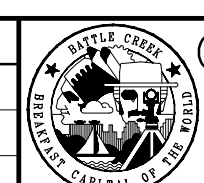
TYPE	#	SFT/SIGN	TOTAL SFT
R5-18c	4	16	64
R11-4	10	12.5	125
W20-2	3	16	48
SIGN, TYPE B, TEMP TOTAL =			237 SFT

CONSTRUCTION BARRICADE QUANTITIES

TYPE	QTY	UNIT
BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED, FURN	26	EA
PLASTIC DRUM, HIGH INTENSITY, FURN	50	EA
LIGHTED ARROW, TYPE C, FURN	4	EA
BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED, OPER	26	EA
PLASTIC DRUM, HIGH INTENSITY, OPER	50	EA
LIGHTED ARROW, TYPE C, OPER	4	EA
TRAF REGULATOR CONTROL	1	LS
MINOR TRAF DEVICES	1	LS

TEMPORARY SIGNING AND DETOUR PLAN

DESCRIPTION OF REVISION	DATE	BY	DESCRIPTION OF REVISION	DATE	BY



CITY OF BATTLE CREEK, MICHIGAN
DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

DRAWN BY: BGH APPROVED BY:
SCALE: NONE
DATE: January, 2018
DRAWING NAME:

2018 WATERMAIN PROJECT

JOB NO.: 2550
CONTROL SECTION:
R.O.W. SHEET NO. 4 OF 4 CONTRACT SHEET NO. 41 OF 41