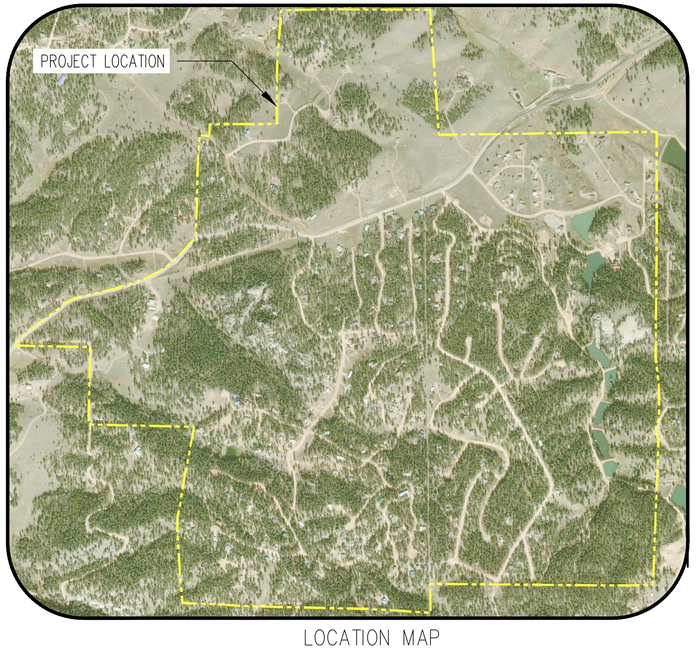
ARABIAN ACRES METROPOLITAN DISTRICT
DISTRIBUTION SYSTEM IMPROVEMENT PROJECT
FINAL ENGINEERING DRAWINGS
MARCH 2020

VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

NOTES:

GENERAL:

1. PROJECT ADDRESS: 72 SILBANI LANE, FLORISSANT, COLORADO, 80866.

2. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, THE CONTRACTOR SHALL GIVE THE OWNER SEVENTY-TWO (72) HOURS ADVANCE NOTICE.

3. NO BELOW GRADE UTILITIES WERE LOCATED FOR THIS PLAN SET. CONTRACTOR IS RESPONSIBLE TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION AND TO COORDINATE WITH THE APPROPRIATE UTILITY COMPANY. CONTRACTOR IS RESPONSIBLE TO PROTECT UTILITIES DURING CONSTRUCTION. IF A CONFLICT EXISTS AND/OR A DESIGN MODIFICATION IS REQUIRED, OWNER AND CONTRACTOR SHALL COORDINATE WITH ENGINEER TO MODIFY THE DESIGN. DESIGN MODIFICATION(S) MUST BE APPROVED BY THE OWNER PRIOR TO BEGINNING CONSTRUCTION AFFECTED. FOR UTILITY LOCATE INFORMATION, CONTACT UNCC: (800) 922-1987.

4. ACTUAL LOCATIONS, DISTANCES, AND ELEVATIONS WILL BE GOVERNED BY ACTUAL FIELD CONDITIONS. CONTRACTOR TO FIELD VERIFY CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER.

5 CONTRACTOR SHALL BE REQUIRED TO RESTORE THE ROUTE OF WORK AND ANY DAMAGED EXISTING LANDSCAPE, STRUCTURES, OR IMPROVEMENTS AS THE RESULT OF WORK TO ORIGINAL CONDITION OR BETTER PRIOR TO ACCEPTANCE OF WORK. CONTRACTOR RESPONSIBLE FOR RESTORING SITE TO PRE-CONSTRUCTION CONDITION.

6. NO UTILITY SERVICE MAY BE DISCONNECTED WITHOUT PRIOR APPROVAL OF THE OWNER OR OWNER'S REPRESENTATIVE.

7. CONTRACTOR TO PROVIDE AND MAINTAIN TEMPORARY PORTABLE RESTROOM FACILITIES FOR THE DURATION OF THE PROJECT.

8. CONTRACTOR SHALL EXHIBIT NECESSARY SAFETY PRECAUTIONS DURING CONSTRUCTION, WHICH INCLUDES, BUT IS NOT LIMITED TO, SIGNAGE, SECURITY, AND EXCAVATION AS SET FORTH BY OSHA, PUBLICATION 2226, "EXCAVATION AND TRENCHING OPERATIONS."

9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROCUREMENT OF ALL PERMITS NECESSARY FOR THE CONSTRUCTION OF THE IMPROVEMENTS SHOWN INCLUDING BUT NOT LIMITED TO A COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT CONSTRUCTION STORM WATER PERMIT.

10. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF EXISTING VALVES, WATERLINES, STRUCTURES, AND OUTFALLS PRIOR TO CONSTRUCTION.

11. THE CONTRACTOR SHALL RECONNECT ALL WATERLINE LATERALS TO WATERLINE DURING REPLACEMENT. EXISTING LATERAL CONNECTIONS ARE SHOW ON PLAN BUT THE LOCATIONS ARE APPROXIMATE. LATERAL DIAMETER AND MATERIALS VARIES. CONTRACTOR SHALL SUPPLY CONNECTION FITTINGS.

12. CONTRACTOR SHALL MAINTAIN CONTINUOUS POTABLE WATER SERVICE TO EACH RESIDENCE DURING INSTALLATION OF WATER LINES.

13. TELLER COUNTY REQUIREMENTS:

A: CONTRACTOR SHALL VIDEO TAPE ALL ROADS WITH TELLER COUNTY PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL RETURN ROADS TO EQUAL OR GREATER CONDITION THAN BEFORE CONSTRUCTION AS VERIFIED BY VIDEO.

B: TELLER COUNTY WILL ONLY ISSUE PERMITS FOR ONE (1) ROAD SEGMENT AT A TIME. THE CONTRACTOR WILL NOT BE ALLOWED TO OBTAIN PERMIT FOR THE NEXT ROAD SEGMENT UNTIL TELLER COUNTY HAS APPROVED THE PREVIOUS ROAD SECTIONS PUNCH LIST.

C: THE CONTRACTOR WILL NEED TO OBTAIN PROPER TELLER COUNTY LICENSES, CONTACT TELLER COUNTY COMMUNITY DEVELOPMENT SERVICES DIVISION (CDSD) (719) 687-3048.

D: CONTRACTOR SHALL NOT GRADE ROADS WITH BACKHOES AND SKID STEERS.

E: GENERALLY ROAD WORK WITHIN TELLER COUNTY R.O.W. WILL END IN OCTOBER DEPENDING ON FROST.

14. THE MINIMUM BURY DEPTH FOR ALL WATERLINES ARE 7'.

15. MAINTAIN 2' OF VERTICAL SEPARATION BETWEEN ALL TRENCHED WATERLINES AND EXISTING GAS LINES.

16. THE CONTRACTOR SHALL MAINTAIN ON SITE A FULL SET OF CONSTRUCTION DRAWINGS, RECORDING ALL INFORMATION PERTAINING TO THE CONSTRUCTION OF THE DRINKING WATER TREATMENT PLANT IMPROVEMENTS. THESE RECORD DRAWINGS SHALL BE PROVIDED TO THE OWNER UPON COMPLETION OF THE PROJECT.

17. HORIZONTAL AND VERTICAL DEFLECTION OF THE PIPES SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS FOR THE PIPE MATERIAL AND TEST PRESSURE SPECIFIED.

18. THE HORIZONTAL DATUM IS COLORADO STATE PLANE COORDINATES (NAD 83), COLORADO ZONE 0502 (CENTRAL). THE VERTICAL DATUM IS NAVD 1988.

19. CONTRACTOR SHALL NOT SCALE FROM DRAWINGS FOR CONSTRUCTION PURPOSES. ANY MISSING DIMENSIONS OR DISCREPANCIES IN PLANS, FIELD STAKING, FIELD CONDITIONS OR PHYSICAL FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. IF CONTRACTOR PROCEEDS WITH THE WORK WITHOUT NOTIFYING ENGINEER HE DOES SO AT HIS OWN RISK.

20. IF CONFLICTS, QUESTIONS OR INTERPRETATION ARE REQUIRED CONTACT THE ENGINEER IN WRITING WITH A REQUEST FOR INFORMATION (RFI).

SPECIFICATIONS:

1. PIPING SHALL BE HDPE DR 11 DIPS UNLESS OTHERWISE NOTED.

2. PIPE DESIGN PRESSURE: 200 PSI

3. NORMAL OPERATING PRESSURE: 20 PSI TO 165 PSI

4. PIPING SHALL BE DISINFECTED FOLLOWING ANSI/AWWA C651-14.

5. ALL WETTED MATERIALS SHALL BE NSF 61 RATED.

LEGEND:

W	PROPOSED WATER LINE
	PROPOSED EROSION CONTROL LOG
	PROPOSED REMOVABLE GUARD POST
	PROPERTY LINE
	EXISTING EASEMENT
	EXISTING SETBACK
X	EXISTING FENCE
W	EXISTING WATER LINE
G	EXISTING GAS LINE
UT	EXISTING TELEPHONE
E	EXISTING UNDERGROUND ELECTRIC
OHE	EXISTING OVERHEAD ELECTRIC
110	CONTOUR MAJOR (EXIST)
110	CONTOUR MINOR (EXIST)
	EXISTING RIGHT OF WAY
BO	EXISTING TELECOM BOX
	EXISTING POWER POLE
WM	EXISTING OR PROPOSED WATER METER
	EXISTING OR PROPOSED GATE VALVE
	EXISTING OR PROPOSED FIRE HYDRANT
	EXISTING TREE
W	PROPOSED ARV VAULT

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
G – 01	COVER
G – 02	PROJECT LAYOUT
C – 01	KENWOOD DR WATER LINE
C – 02	CR 42 WATERLINE
C – 03	DANI GROOVE WATERLINE – I
C – 04	DANI GROOVE WATERLINE – II
C – 05	DEER RIDGE TR WATERLINE – I
C – 06	DEER RIDGE TR WATERLINE – II
C – 07	JENWOOD DR WATER LINE – I
C – 08	JENWOOD DR WATER LINE – II
C – 09	DENWOOD DR WATERLINE
C – 10	SILBANI DR WATERLINE – I
C – 11	SILBANI DR WATERLINE – II
C – 12	DONZI TR WATERLINE – I
C – 13	DONZI TR WATERLINE – II
C – 14	DONZI TR WATERLINE – III
C – 15	SILDONA TRAIL TR WATERLINE
C – 16	LA ABU TRAIL – DUSTI CIRCLE
C – 17	LADY LN TO GERKA LN WATERLINE
C – 18	TIDI RD TO BANNER TR WATERLINE
C – 19	BANNER TR TO GOLDEN LN WATERLINE
C – 20	GERKA LN WATERLINE
C – 21	GERKA LN TO SILVER TR WATERLINE
C – 22	SILVER TR WATERLINE
C – 23	BANNER TR II WATERLINE – I
C – 24	BANNER TR II WATERLINE – II
C – 25	RAW WATERLINE I – I
C – 26	RAW WATERLINE I – II
C – 27	TEMPORARY TRAFFIC CONTROL PLAN DETAILS
C – 28	DETAILS – I
C – 29	DETAILS – II
C – 30	EROSION CONRTOL DETAILS

RELEASED FOR CONSTRUCTION

5/21/2020

AquaWorks DBO INC
DESIGN BUILD OPERATE
3252 WILLIAMS STREET | DENVER
COLORADO | 80205 | (303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT
UNINCORPORATED TELLER COUNTY, COLORADO

COLORADO 811
KNOW WHAT'S BELOW. CALL BEFORE YOU DIG.

PROJECT TEAM:

OWNER:
ARABIAN ACRES METROPOLITAN DISTRICT
ATTN: WALKER SCHOOLER DISTRICT MANAGERS
614 N. TEJON ST
COLORADO SPRINGS, CO 80903

PROJECT MANAGER/CIVIL ENGINEER:
AQUAWORKS DBO, INC.
MR. ADAM SOMMERS, P.E.
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

SURVEYOR:
GALLOWAY & COMPANY, INC.
MR. PERRY BASSETT, PLS
1755 TELSTAR DRIVE, SUITE 107
COLORADO SPRINGS, CO 80920
(719) 900-7220

SYSTEM OPERATOR:
MR. LYNN WILLOW
5305 WHIMSICAL DRIVE
COLORADO SPRINGS, CO 80917
(719) 482-1525

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

AquaWorks DBO INC
DESIGN BUILD OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 38669 3/27/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
FILE PRINTED ON: 3/27/2020 2:28:32 PM
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DRAWING SIZE: 22" X 34"

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USE OF DOCUMENTS

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COVER

SCALE: NONE

SHEET NUMBER: G – 01

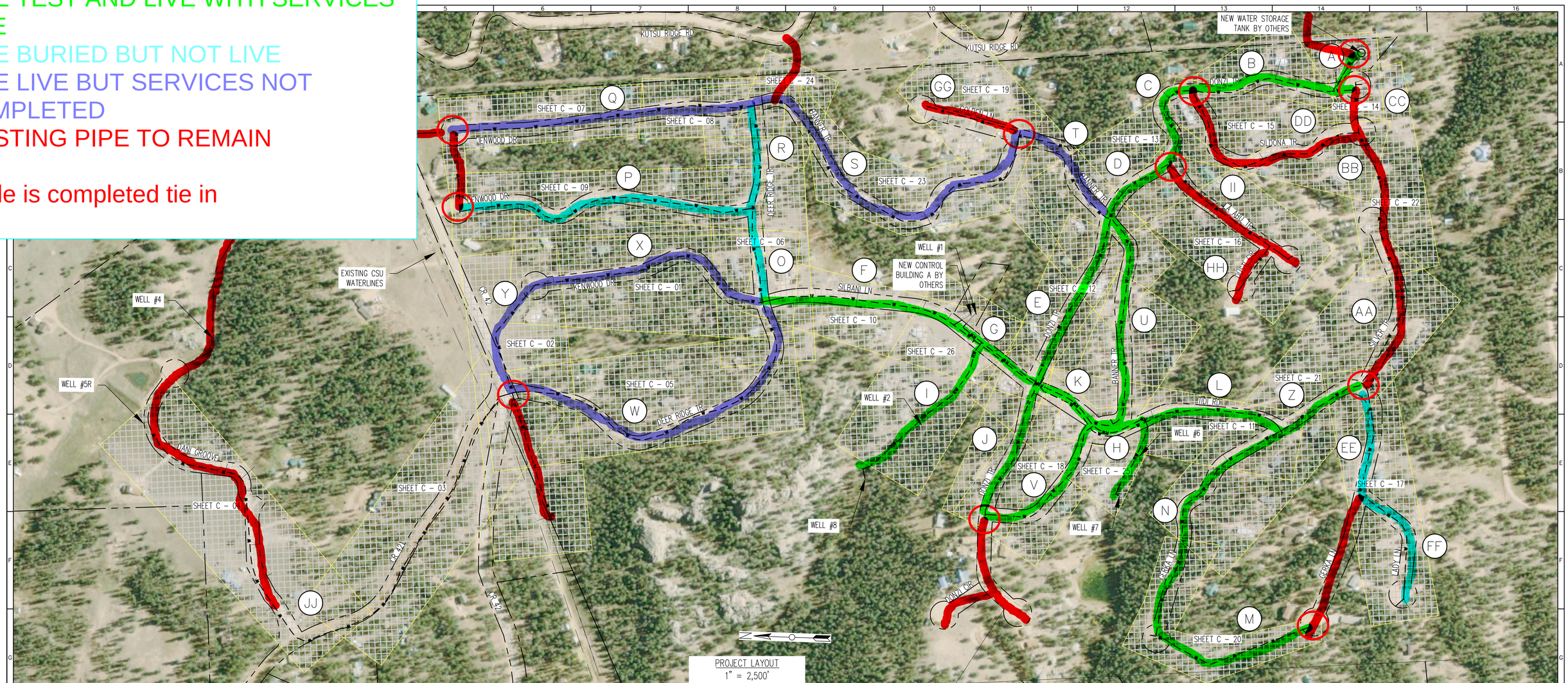
PIPE TEST AND LIVE WITH SERVICES LIVE

PIPE BURIED BUT NOT LIVE

PIPE LIVE BUT SERVICES NOT COMPLETED

EXISTING PIPE TO REMAIN

Circle is completed tie in



PROJECT LAYOUT
1" = 2,500'

Segment	Starting Intersection	Ending Intersection	Pipe Diameter (in)	Begin Station	End Station	Length (ft)	Residental Taps	Gate Valves	Blow-offs	High Point
A	Tank Drain	Tank Drain	4"	1+00	2+80	180	2	2	0	0
B	Donzi and Sildona	Watertank	4"	22+91	30+04	713	5	2	1	0
C	Donzi and La Abu	Donzi and Sildona	4"	18+57	22+91	434	4	2	0	0
D	Donzi and Banner	Donzi and La Abu	4"	14+98	18+57	359	3	2	0	0
E	Donzi and Tidi	Donzi and Banner	4"	7+17	14+98	781	5	3	0	0
F	Deer Ridge and Silbani	Silbani and Donzi	4"	1+00	13+69	1269	7	2	1	1
G	Raw Water in Street	Raw Water in Street	2"	4+56	14+24	968	0	2	0	1
H	Raw Water - Well #6 and #7	Raw Water - Well #6 and #7	2"	1+00	4+56	356	0	1	0	0
I	Raw Water - Well #2 and #8	Raw Water - Well #2 and #8	2"	1+00	8+60	760	0	1	0	0
J	Donzi and Tidi	Donzi and Tidi	4"	1+00	7+17	617	4	3	1	0
K	Silbani and Donzi	Silbani and Banner	4"	13+69	16+82	313	0	2	0	1
L	Tidi and Banner	Tidi and Gerka	4"	16+82	25+56	874	2	2	1	0
M	Old Abandoned Line	Old Abandoned Line	4"	1+00	8+21	721	2	2	1	2
N	Abandon and Gerka	Gerka and Tidi	4"	8+21	19+27	1106	6	3	1	1
O	Deer Ridge and Kenwood	Deer ridge and Denwood	4"	16+60	20+61	401	3	2	0	0
P	Denwood and Deer Ridge	Denwood and CR 42	4"	1+00	14+03	1303	7	3	1	0
Q	Deer Ridge and Jenwood	Jenwood and CR 42	4"	1+00	17+26	1626	6	5	1	0
R	Deer ridge and Denwood	Deer Ridge and Jenwood	4"	20+61	25+22	461	3	3	0	1

Segment	Starting Intersection	Ending Intersection	Pipe Diameter (in)	Begin Station	End Station	Length (ft)	Residental Taps	Gate Valves	Blow-offs	High Point
S	Banner and Golden	Banner and Deer Ridge	4"	1+00	16+70	1570	8	3	0	1
T	Banner and Donzi	Banner and Golden	4"	18+10	24+07	597	5	2	0	0
U	Banner and Tidi	Banner and Donzi	4"	7+71	18+10	1039	4	2	1	1
V	Banner and Donzi	Banner and Tidi	4"	1+00	7+71	671	4	2	1	1
W	Deer Ridge and CR 42	Deer Ridge and Kenwood	4"	1+00	16+60	1560	5	2	0	0
X	Kenwood and CR 42	Kenwood and Deer Ridge	4"	1+00	11+67	1067	5	5	0	0
Y	Kenwood and CR 42	CR 42 Last Lot	4"	1+00	12+00	600	1	2	1	[illegible]
Z	Gerka and Tidi	Gerka and Silver	4"	19+27	23+34	407	1	2	1	0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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EE	Lady In and Gerka	Gerka In and Silver Tr	4"	6+46	11+47	501	4	3	0	0
FF	Lady lane cul-de-sac	Lady In and Gerka	4"	1+00	6+46	1092	5	2	1	1
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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AquaWorks DBO INC
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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 38669 5/7/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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PROJECT LAYOUT

SCALE
1" = 2,500'

SHEET NUMBER:
G – 02

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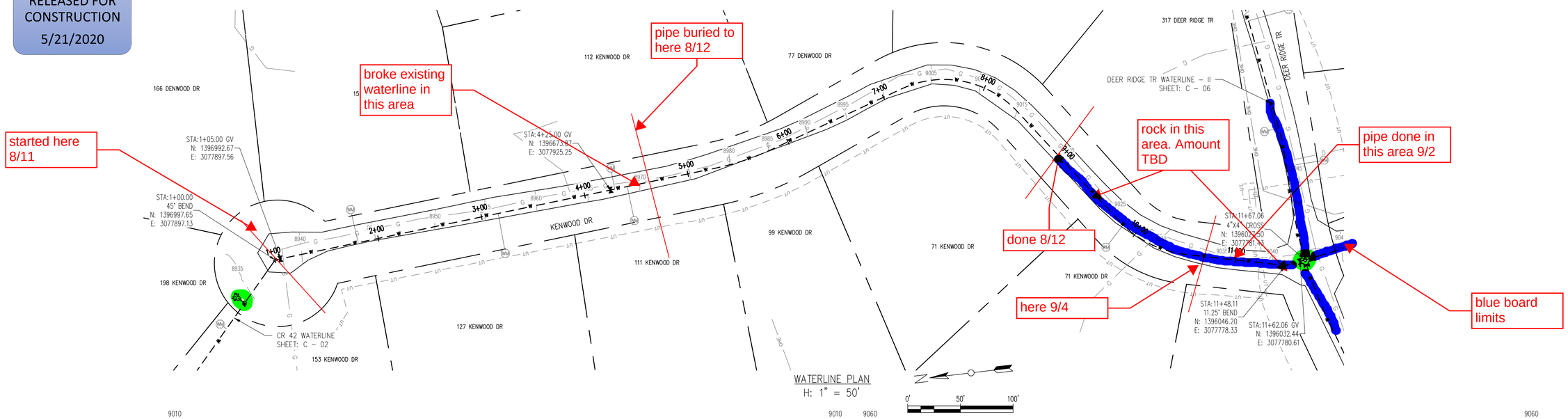
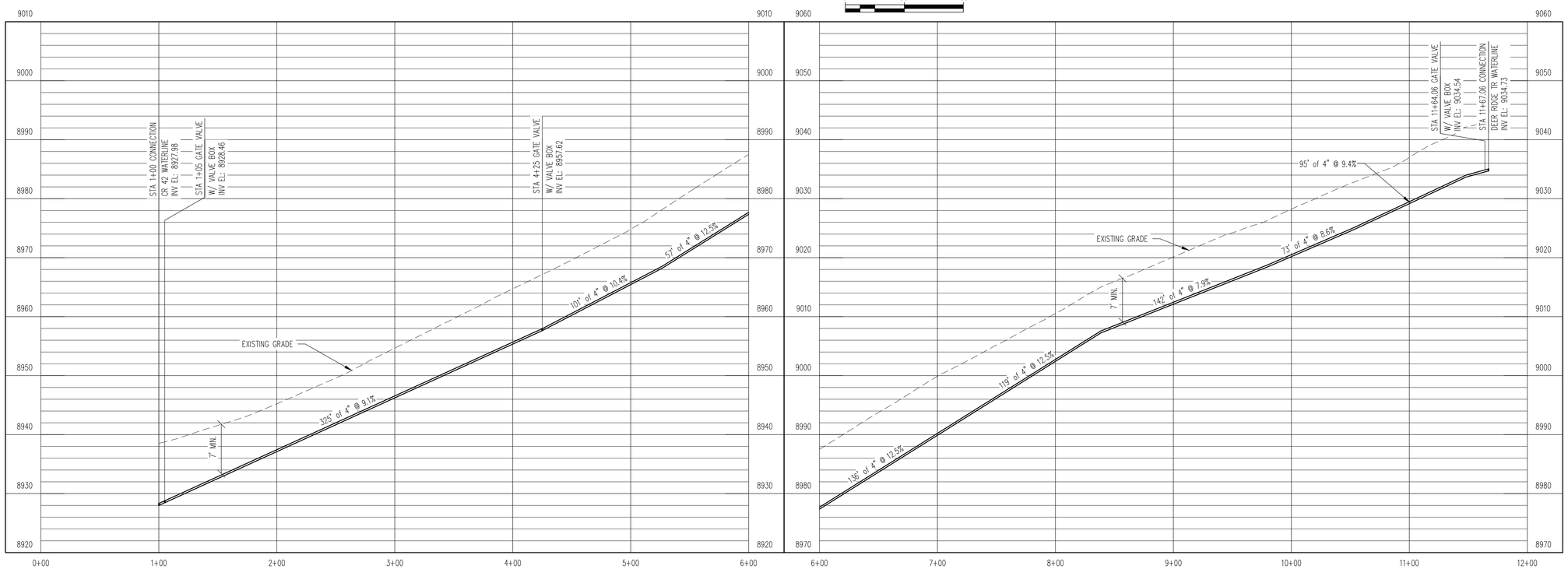
5/21/2020



WATERLINE PLAN
H: 1" = 50'



WATERLINE PROFILE
V: 1" = 10'

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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES
METROPOLITAN DISTRICT
DISTRIBUTION SYSTEM
IMPROVEMENT PROJECT

COLORADO LICENSED
ADAM SOMMERS
36089
3/11/20
PROFESSIONAL ENGINEER

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
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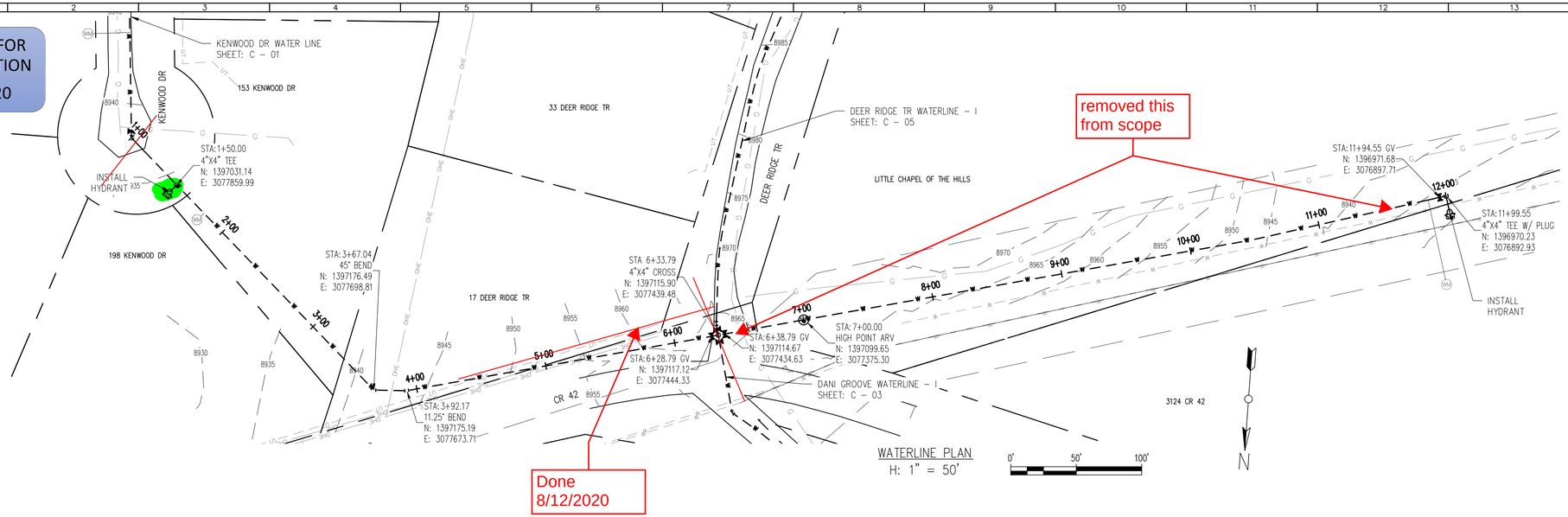
KENWOOD DR WATERLINE
STA 1+00 TO END

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 01

RELEASED FOR CONSTRUCTION
5/21/2020



WATERLINE PLAN
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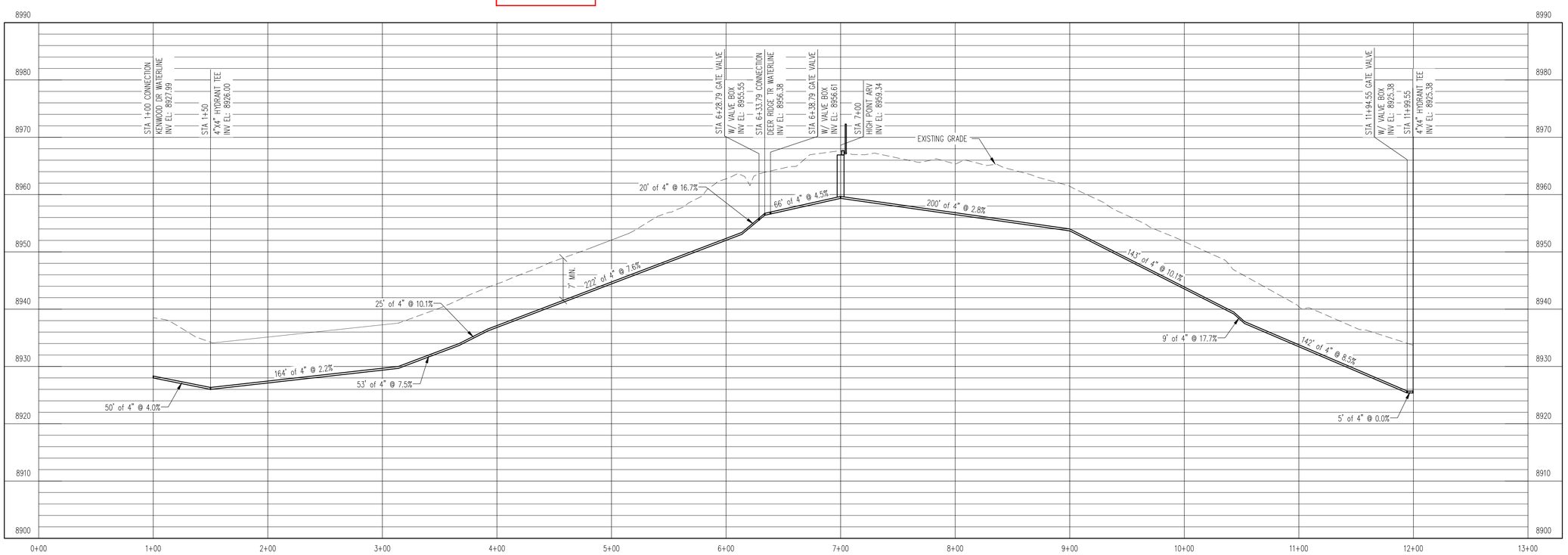

WATERLINE PROFILE
V: 1" = 10'

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3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES
METROPOLITAN DISTRICT
DISTRIBUTION SYSTEM
IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 36669 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
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DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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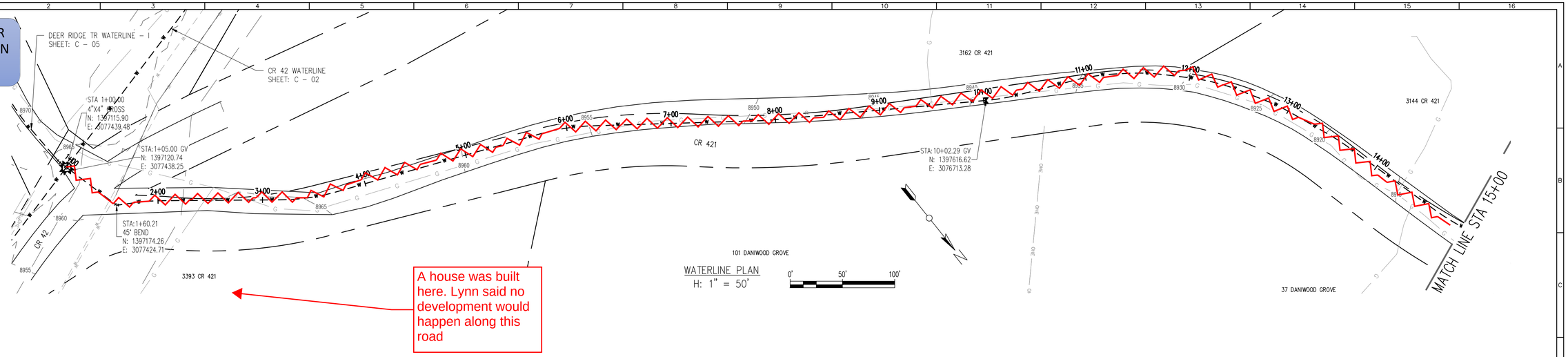
CR 42 WATERLINE
STA 1+00 TO END

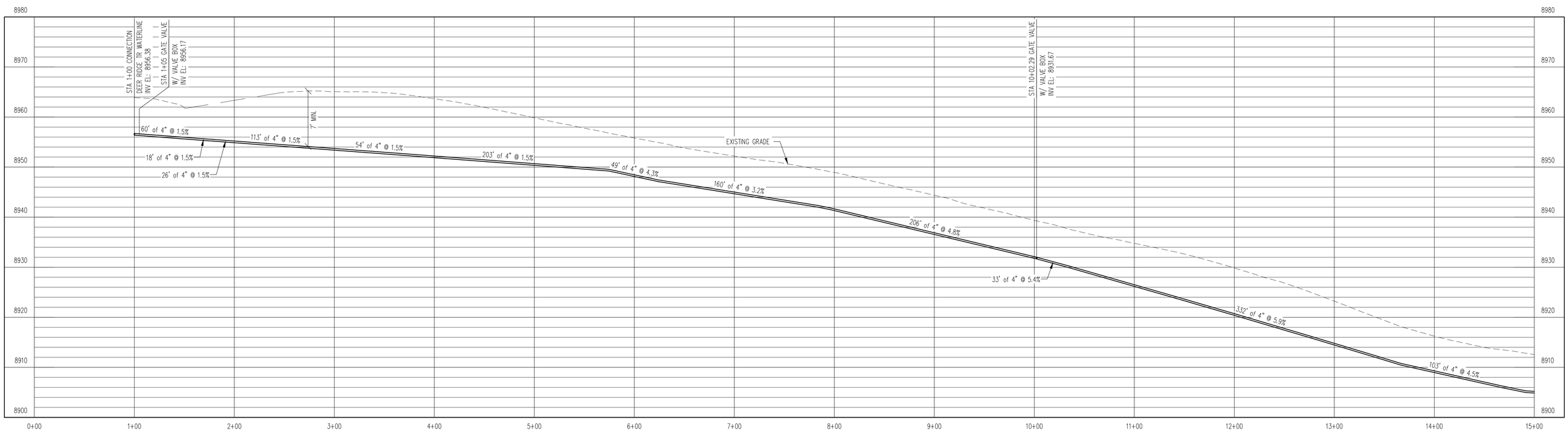
SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 02

RELEASED FOR CONSTRUCTION
5/21/2020



A house was built here. Lynn said no development would happen along this road



WATERLINE PROFILE
V: 1" = 10'

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DESIGN BUILD OPERATE
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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

STATE OF COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 38669 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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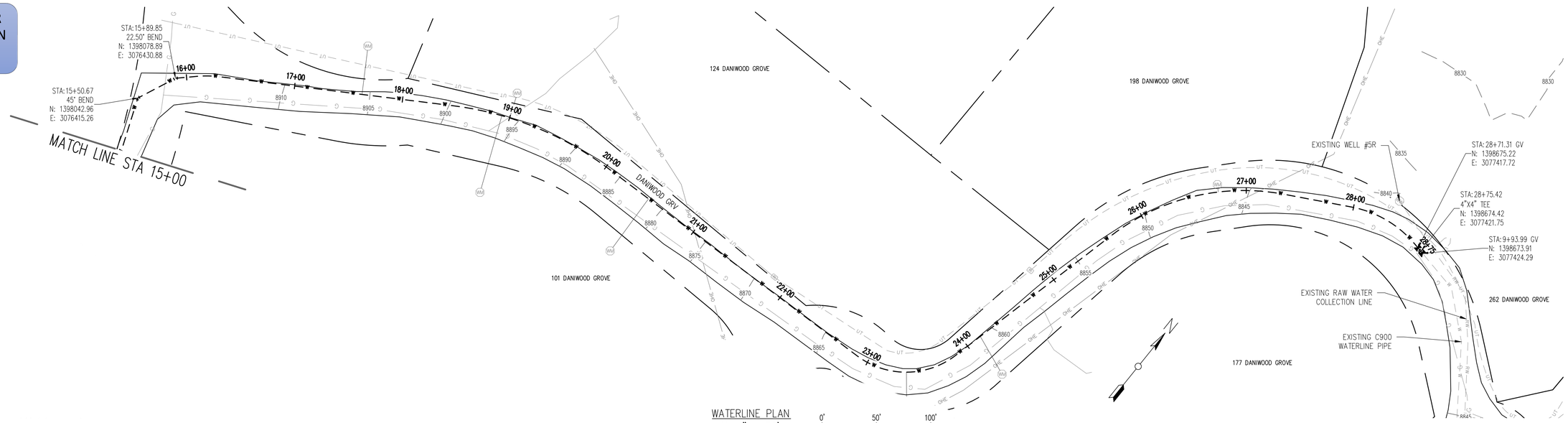
DANI GROOVE WATERLINE – I
STA 1+00 TO STA 14+00

SCALE
H: 1" = 50'
V: 1"= 10'

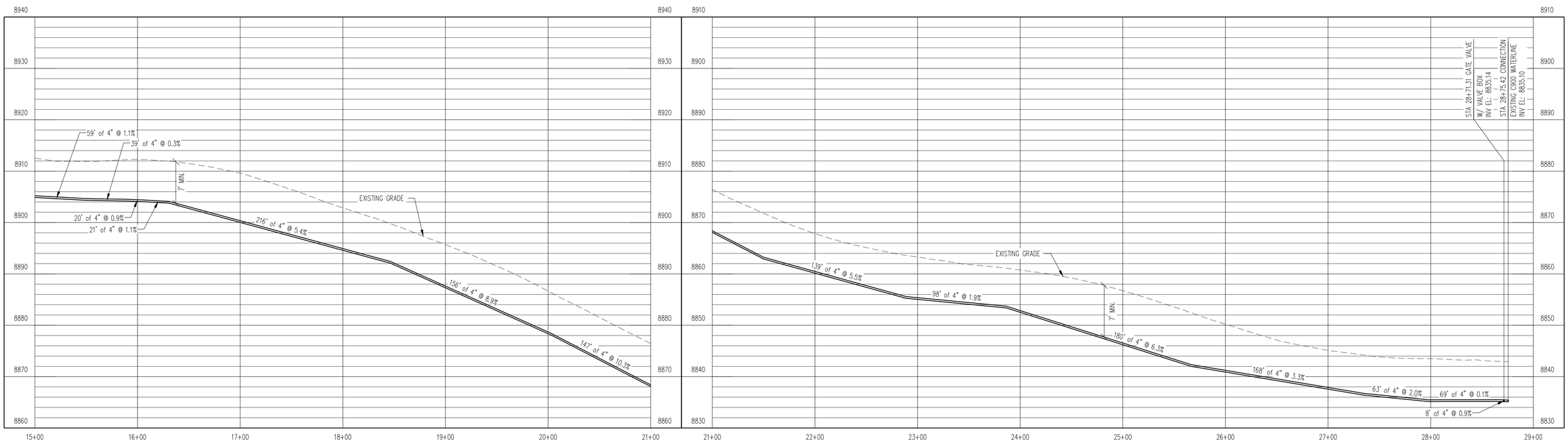
SHEET NUMBER:
C – 03

RELEASED FOR CONSTRUCTION
5/21/2020



WATERLINE PLAN
H: 1" = 50'

0' 50' 100'



WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

AquaWorks DBO INC
DESIGN BUILD OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES
METROPOLITAN DISTRICT
DISTRIBUTION SYSTEM
IMPROVEMENT PROJECT

COLORADO LICENSED
ADAM SOMMERS
38289
3/11/20
PROFESSIONAL ENGINEER

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
FILE PRINTED ON: 3/11/2020 10:20:18 AM

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DRAWING SIZE: 22" X 34"

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DANI GROOVE WATERLINE – II
STA 14+00 TO END

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 04

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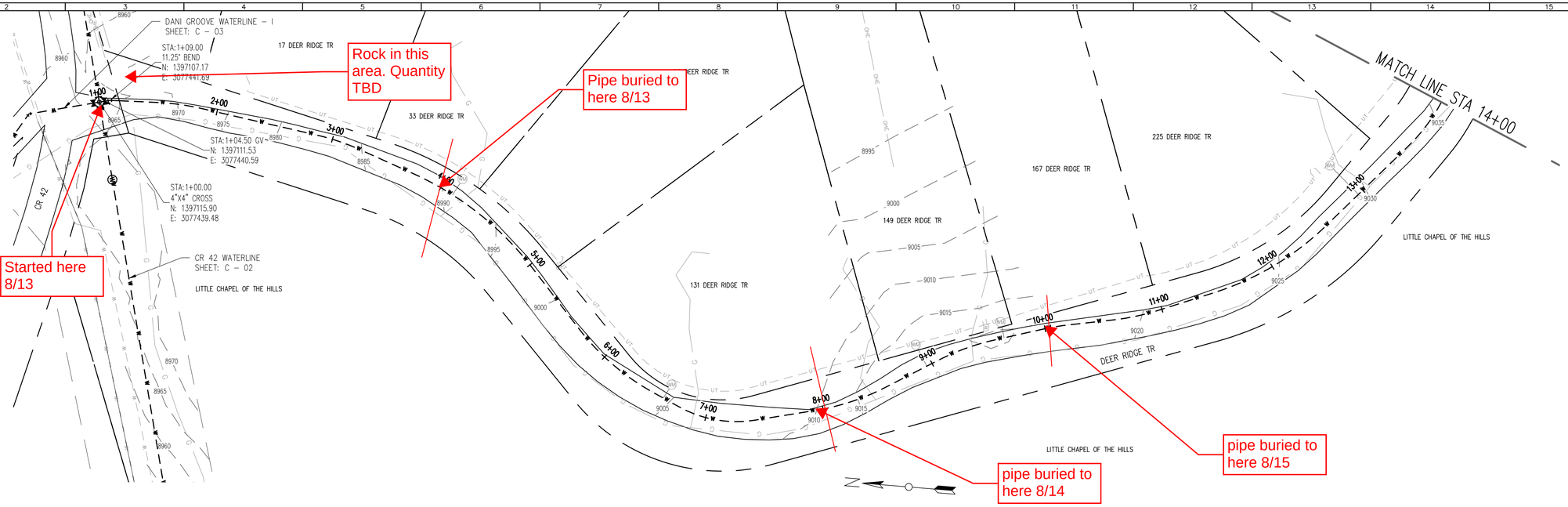
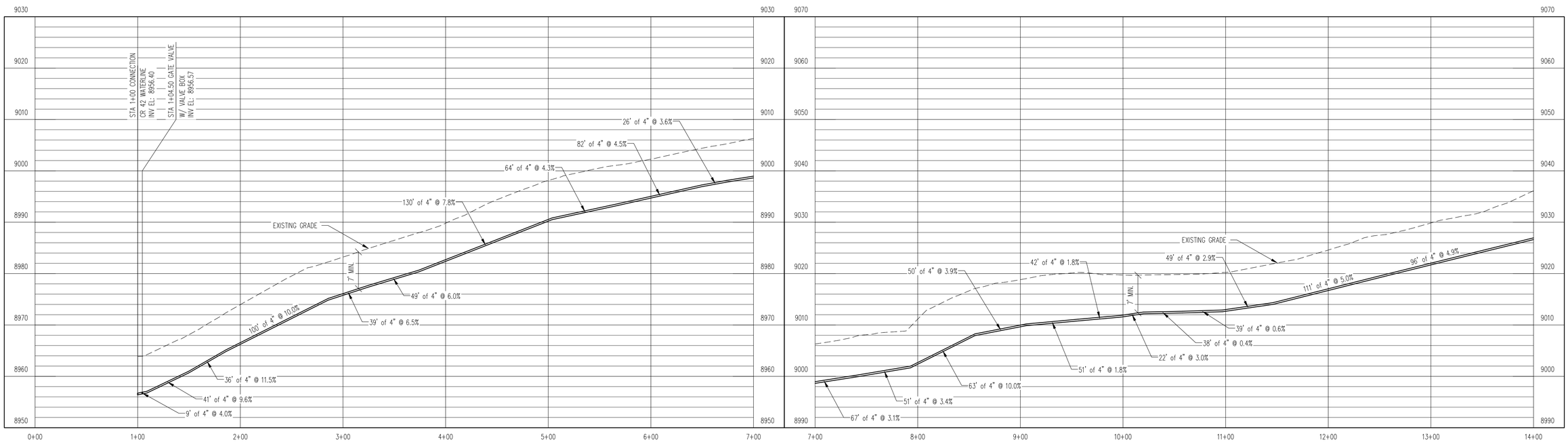
5/21/2020



WATERLINE PLAN
H: 1" = 50'



WATERLINE PROFILE
V: 1" = 10'

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3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 38269 03 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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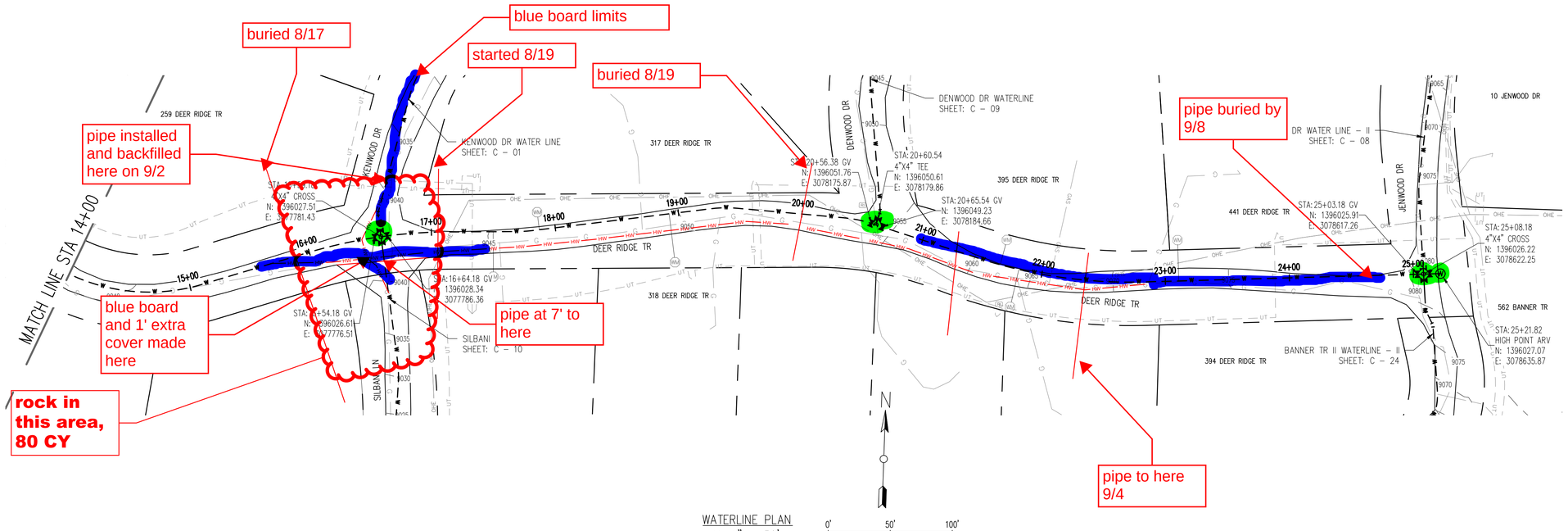
DEER RIDGE TR WATERLINE – I
STA 1+00 TO STA 14+00

SCALE
H: 1" = 50'
V: 1"= 10'

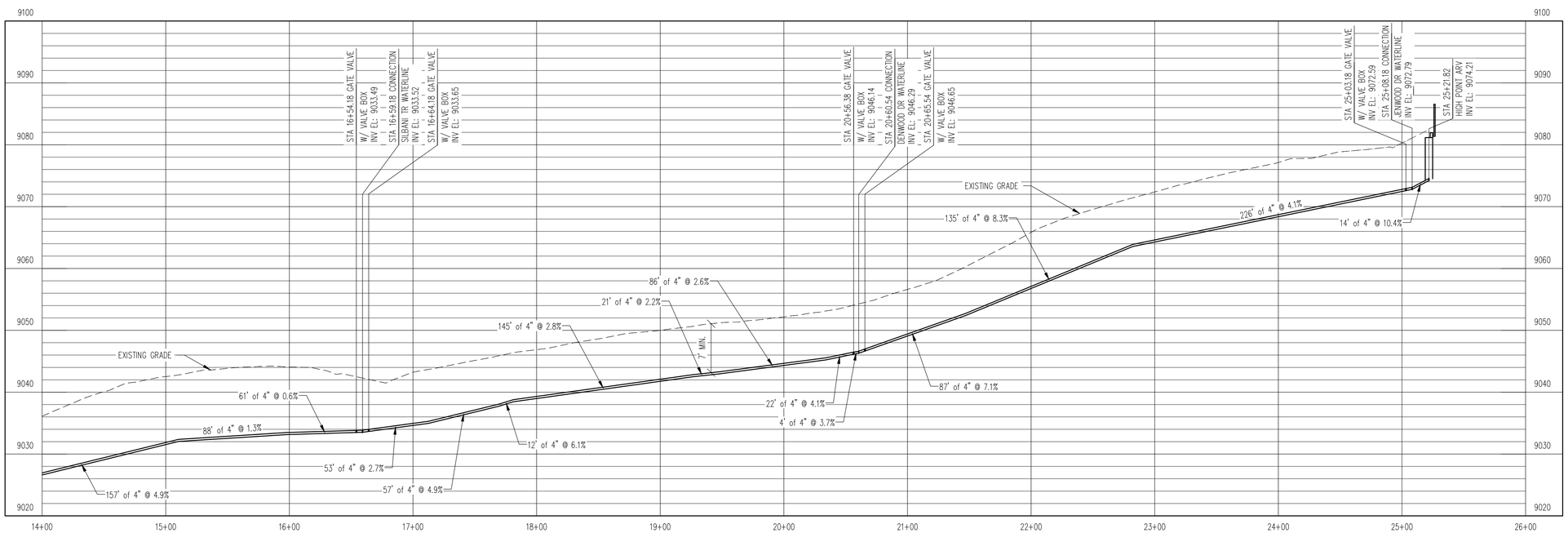
SHEET NUMBER:
C – 05

RELEASED FOR CONSTRUCTION
5/21/2020



WATERLINE PLAN
H: 1" = 50'

0' 50' 100'



WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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DESIGN BUILD OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 36259 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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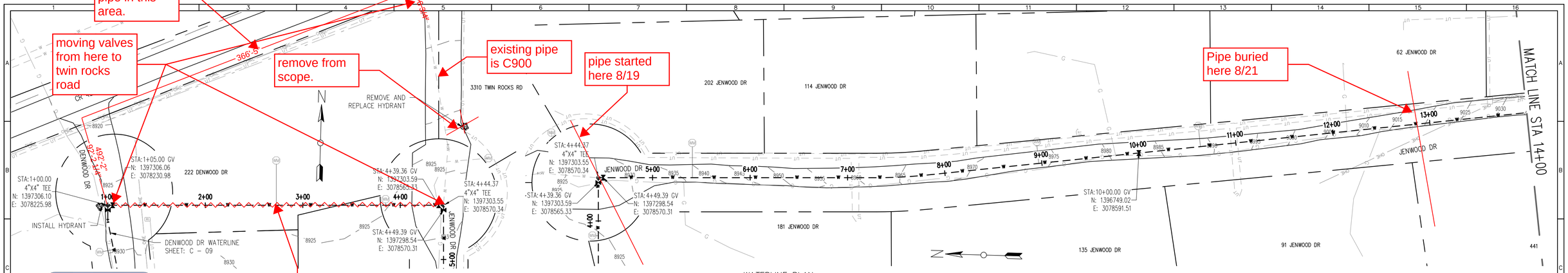
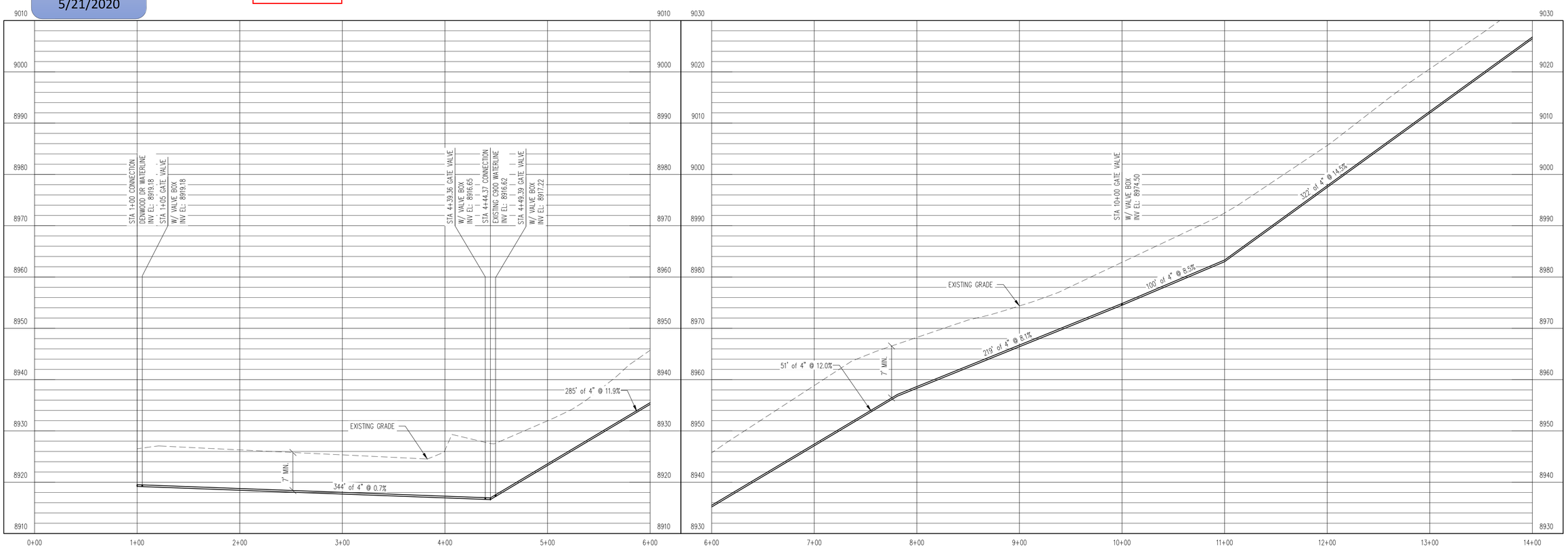
DEER RIDGE TR WATERLINE – II
STA 1+00 TO STA END

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 06



WATERLINE PLAN
H: 1" = 50'



WATERLINE PROFILE
V: 1" = 10'

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DESIGN BUILD OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED ADAM SOMMERS 38289 PROFESSIONAL ENGINEER 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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JENWOOD DR WATER LINE – I
STA 1+00 TO STA 11+00

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 07

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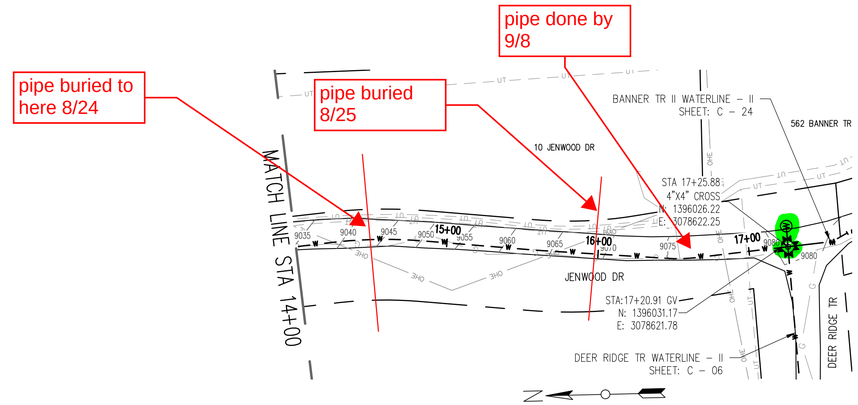
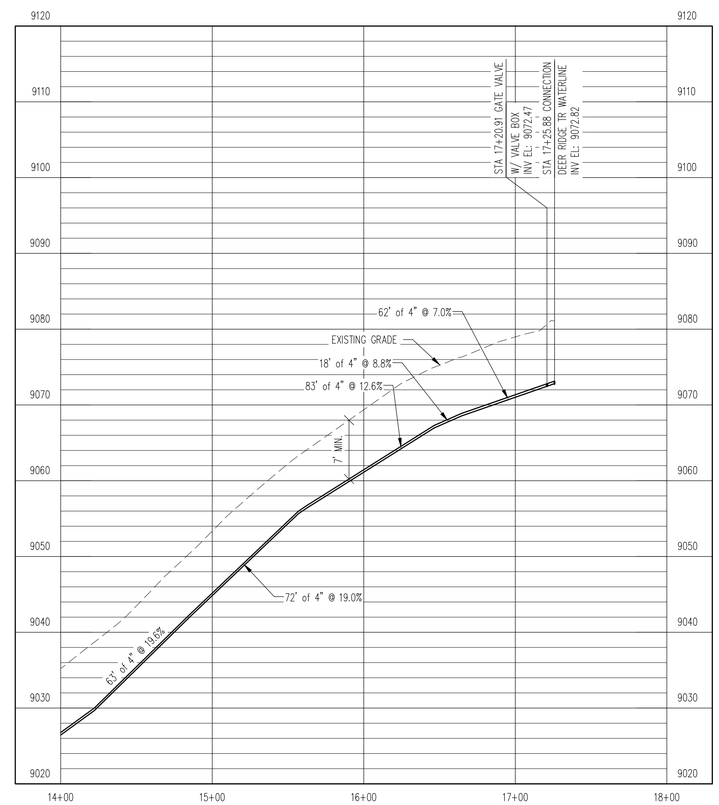
5/21/2020



WATERLINE PLAN
H: 1" = 50'



WATERLINE PROFILE
V: 1" = 10'

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DESIGN BUILD OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 36689 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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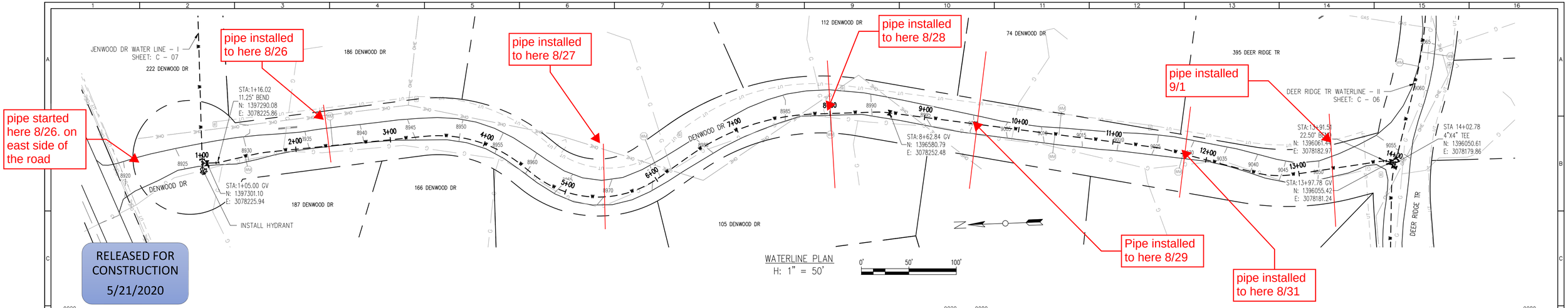
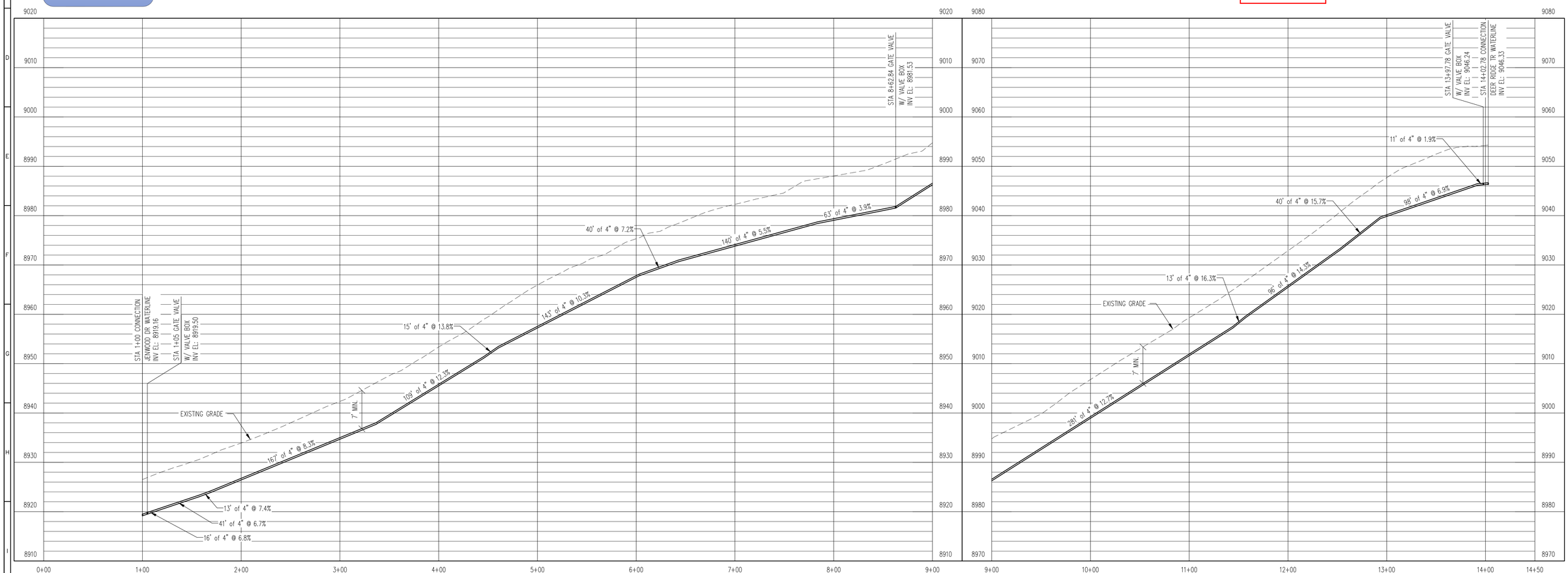
JENWOOD DR WATER LINE – II
STA 11+00 TO END

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 08



WATERLINE PLAN
H: 1" = 50'



WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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DESIGN BUILD OPERATE
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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 36629 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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DENWOOD WATERLINE
STA 1+00 TO END

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 09

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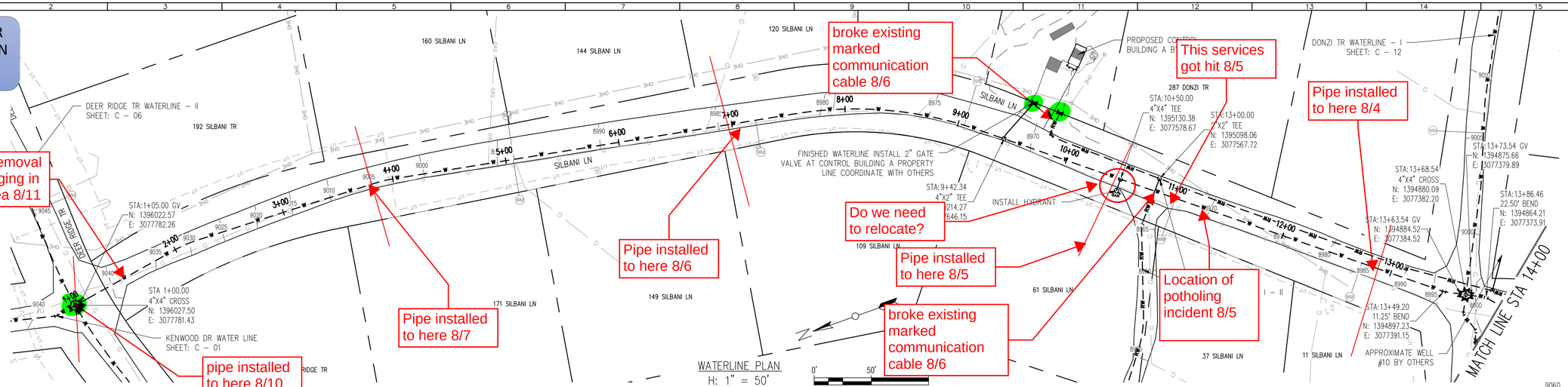

WATERLINE PLAN
H: 1" = 50'

WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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DESIGN BUILD OPERATE
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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED ADAM SOMMERS 38259 PROFESSIONAL ENGINEER 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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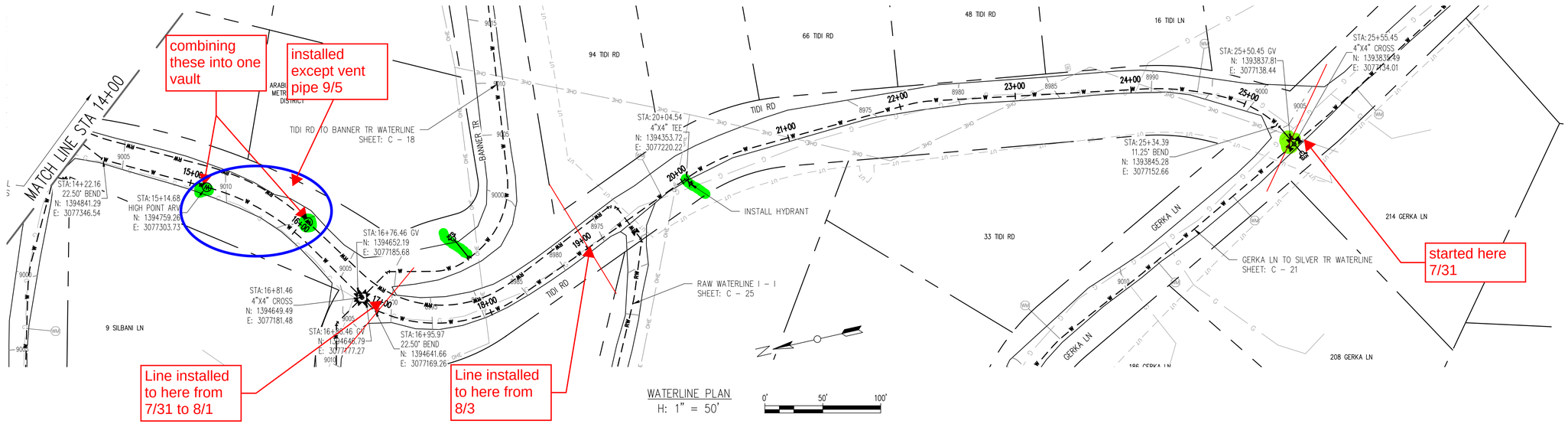
SILBANI WATERLINE – I
STA 1+00 TO STA 14+00

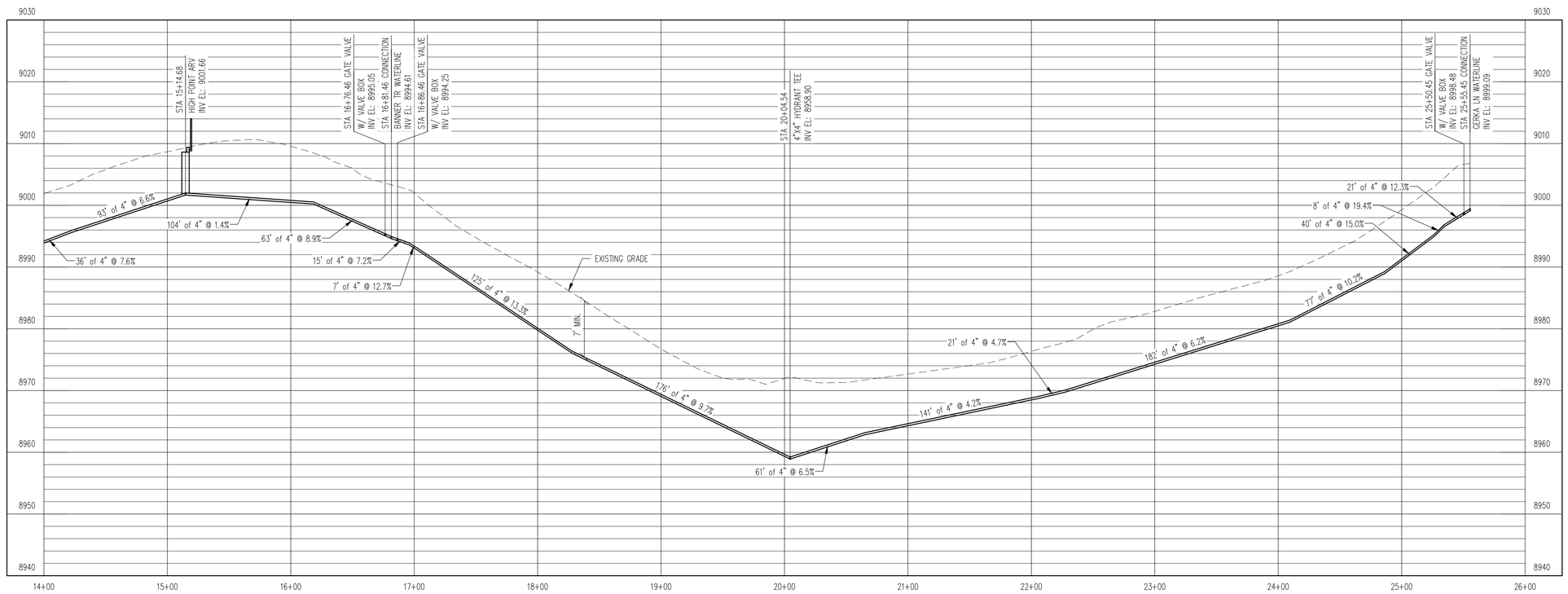
SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 10

RELEASED FOR CONSTRUCTION
5/21/2020



WATERLINE PLAN
H: 1" = 50'



WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 38289 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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SILBANI DR WATERLINE – II
STA 14+00 TO STA END

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 11

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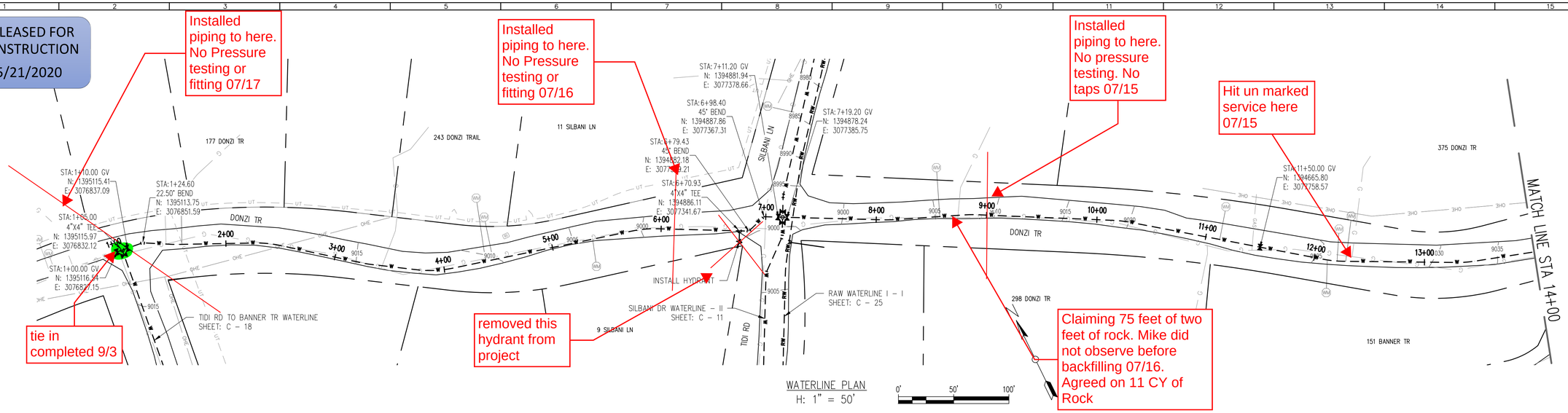
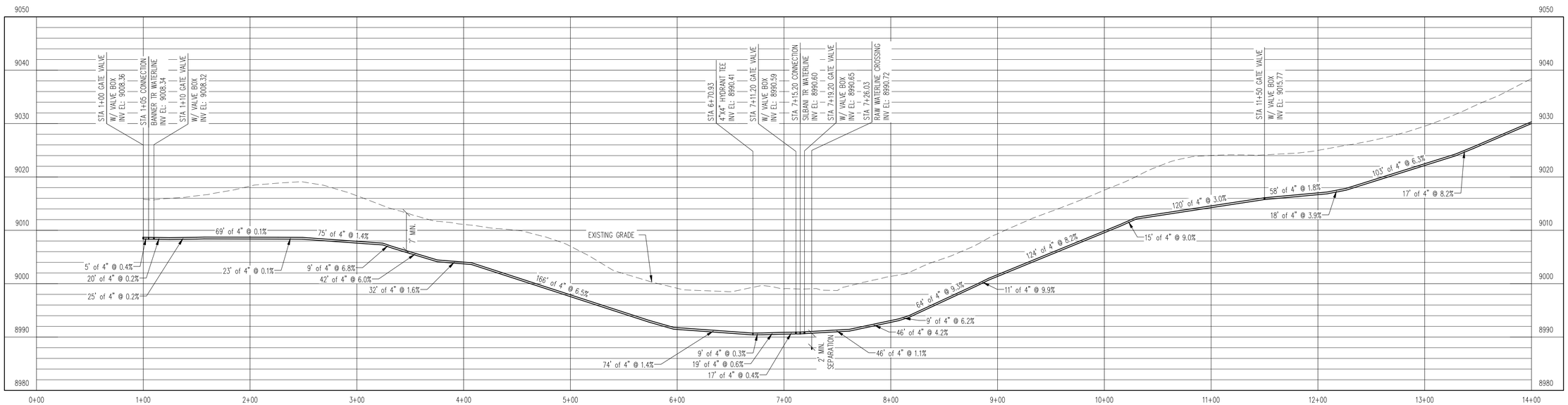


WATERLINE PLAN
H: 1" = 50'



WATERLINE PROFILE
V: 1" = 10'

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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 36259 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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USE OF DOCUMENTS

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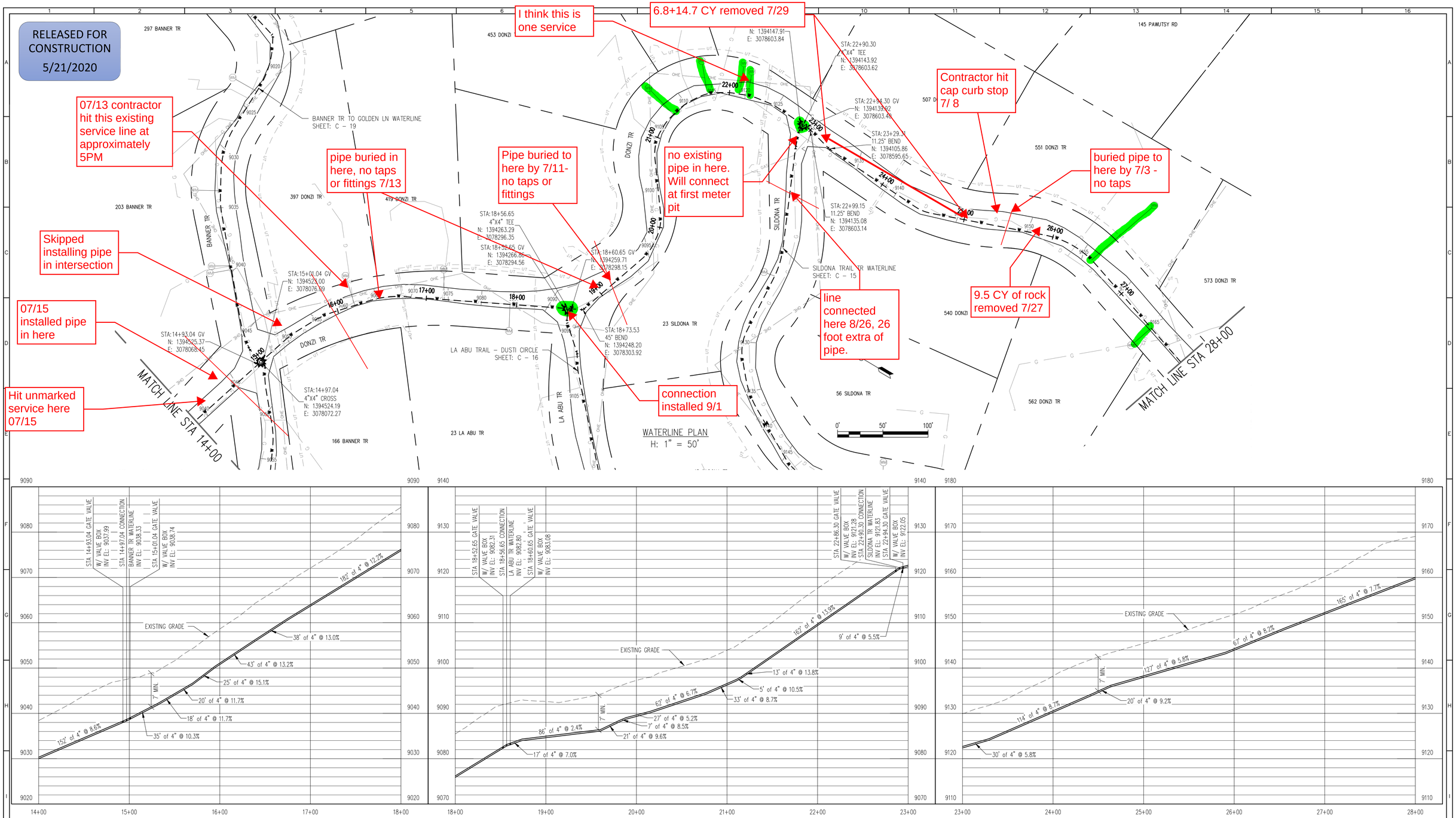
DONZI TR WATERLINE – I
STA 1+00 TO STA 14+00

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 12

RELEASED FOR CONSTRUCTION
5/21/2020



WATERLINE PROFILE
V: 1" = 10'

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DESIGN BUILD OPERATE
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ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 38669 PE 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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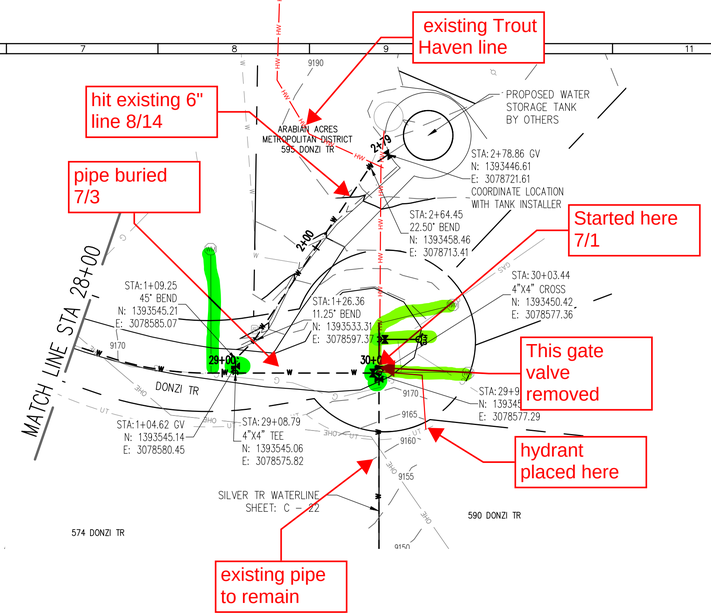
DONZI TR WATERLINE – II
STA 14+00 TO STA 29+00

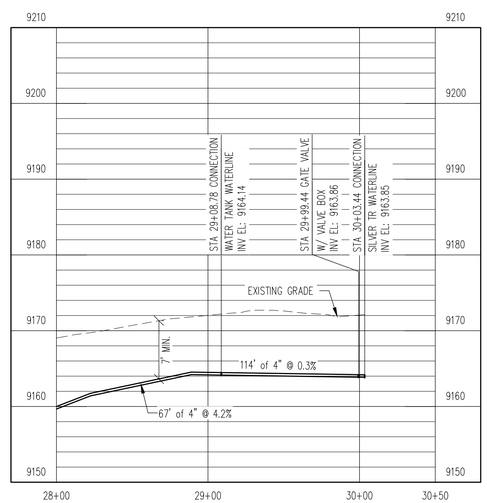
SCALE
H: 1" = 50'
V: 1"= 10'

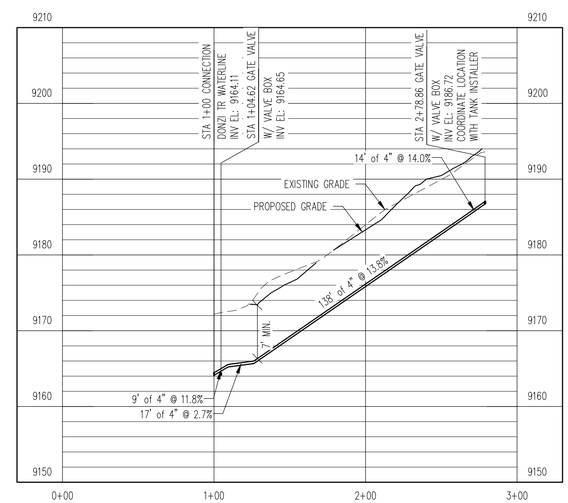
SHEET NUMBER:
C – 13

RELEASED FOR CONSTRUCTION
5/21/2020



WATERLINE PLAN
H: 1" = 50'





WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

AquaWorks DBO INC
DESIGN BUILD OPERATE
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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT
DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

STATE OF COLORADO LICENSED ADAM SOMMERS 38089 PROFESSIONAL ENGINEER 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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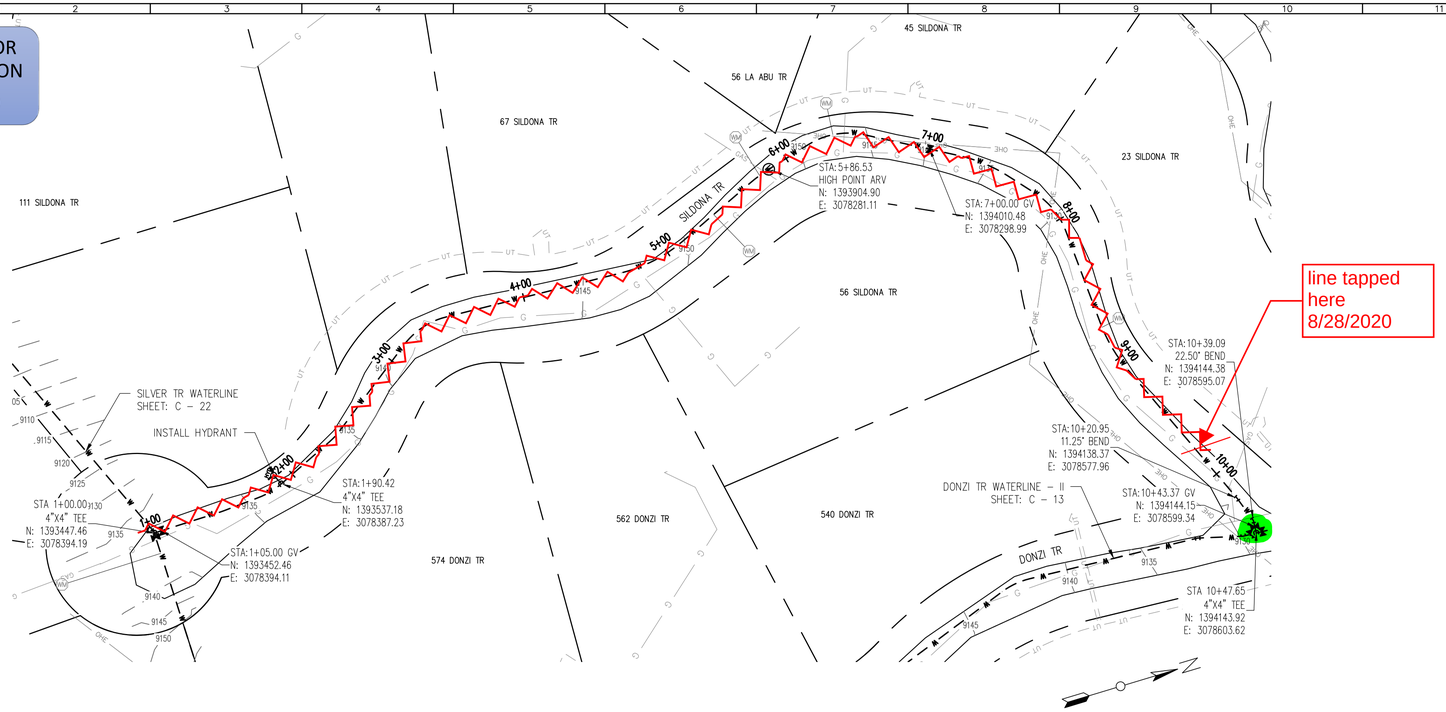
DONZI TR WATERLINE – III
STA 29+00 TO END
TANK DRAIN AND FILL WATERLINE
STA 1+00 TO END

SCALE
H: 1" = 50'
V: 1"= 10'

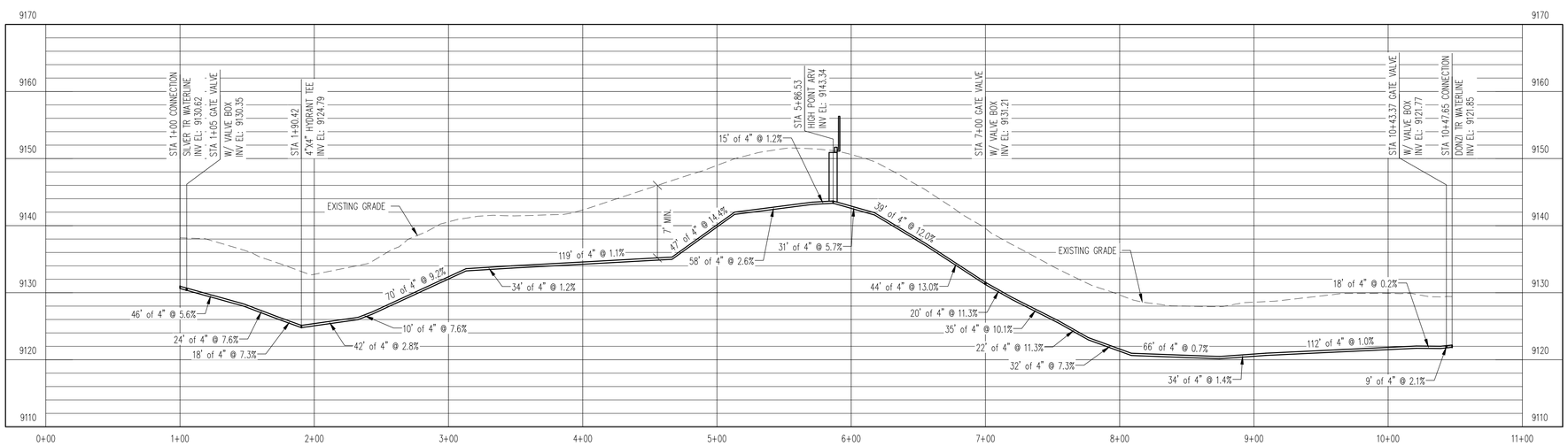
SHEET NUMBER:
C – 14

RELEASED FOR CONSTRUCTION
5/21/2020



WATERLINE PLAN
H: 1" = 50'

0' 50' 100'



WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

AquaWorks DBO INC
DESIGN BUILD OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES
METROPOLITAN DISTRICT
DISTRIBUTION SYSTEM
IMPROVEMENT PROJECT

STATE OF COLORADO LICENSED
ADAM SOMMERS
38289
PROFESSIONAL ENGINEER
3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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SILDONA TR WATERLINE
STA 1+00 TO END

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 15

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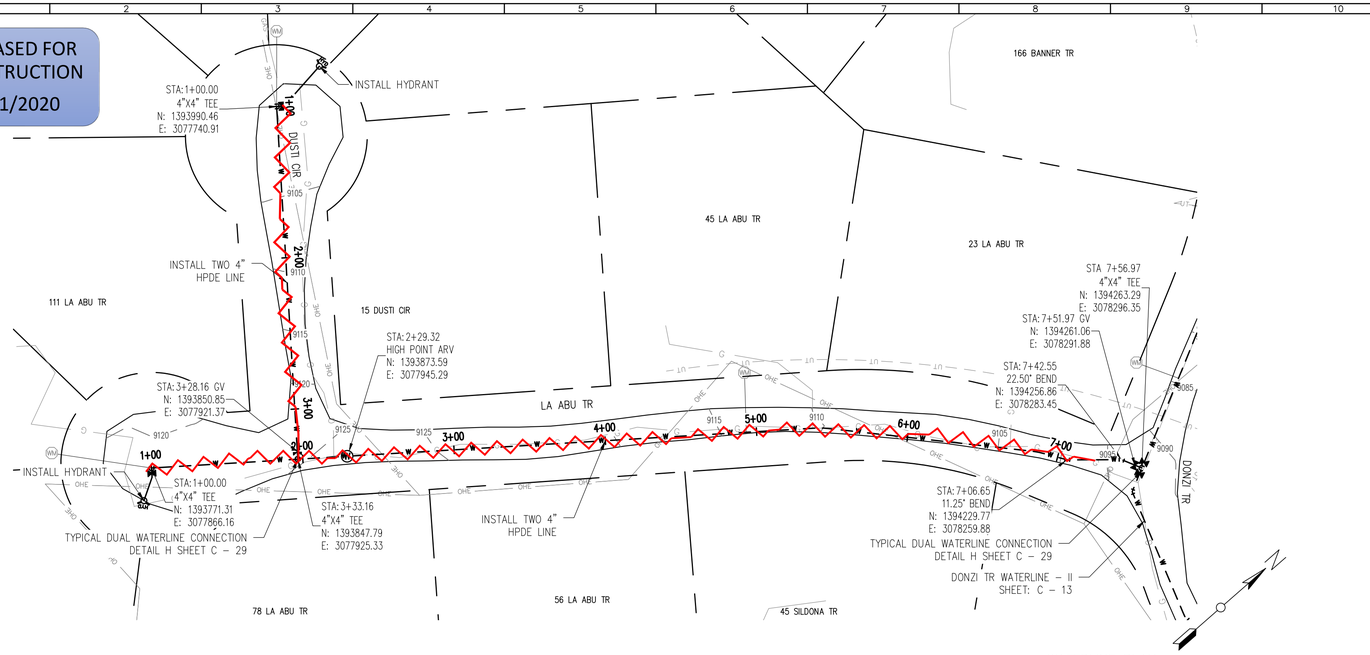
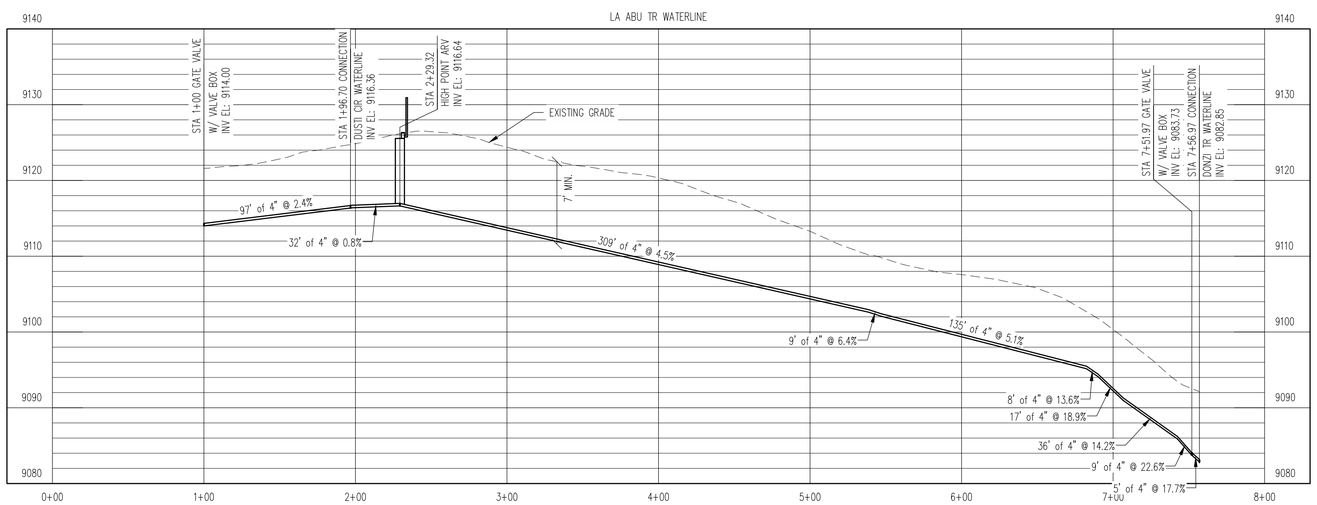
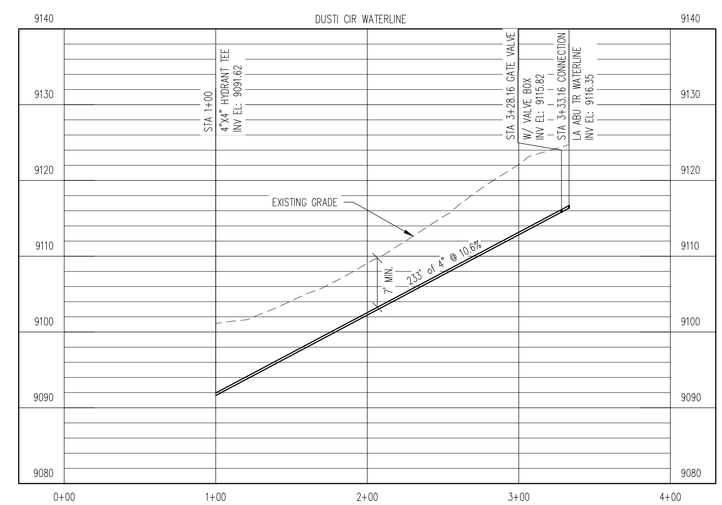


WATERLINE PLAN
H: 1" = 50'

0' 50' 100'





WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

AquaWorks DBO INC
DESIGN BUILD OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

STATE OF COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 38689 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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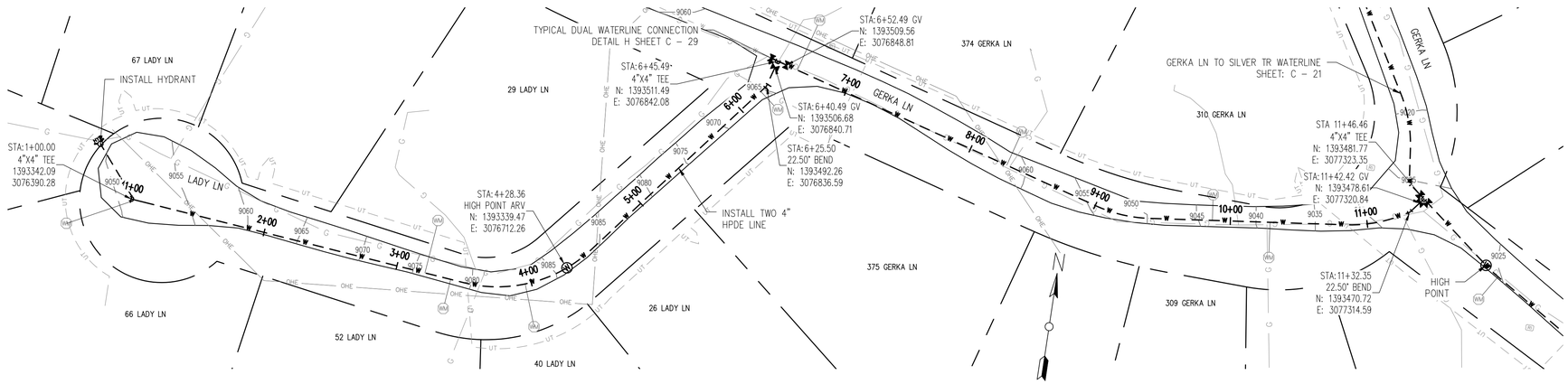
LA ABU TR WATERLINE
STA 1+00 TO END
DUSTI CIR WATERLINE
STA 1+00 TO END

SCALE
H: 1" = 50'
V: 1"= 10'

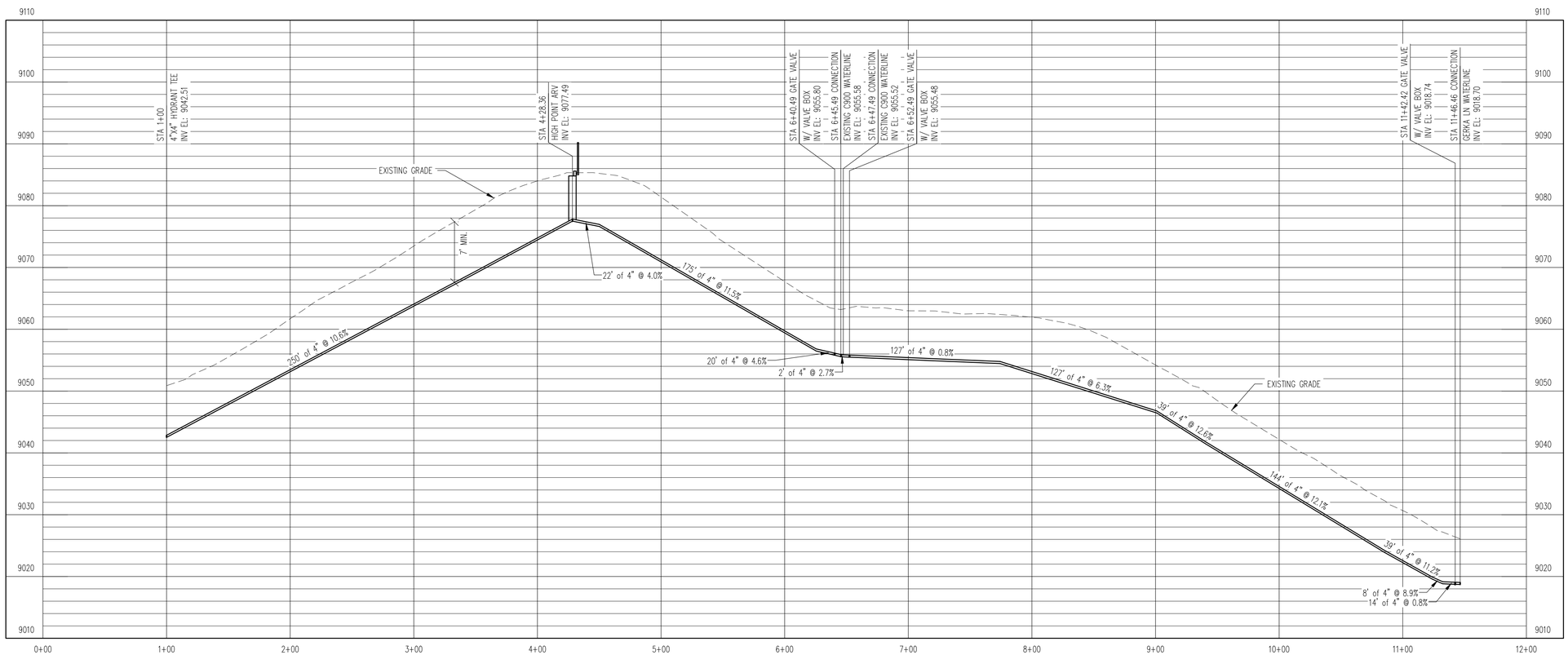
SHEET NUMBER:
C – 16

RELEASED FOR CONSTRUCTION
5/21/2020



WATERLINE PLAN
H: 1" = 50'

0' 50' 100'



WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES
METROPOLITAN DISTRICT
DISTRIBUTION SYSTEM
IMPROVEMENT PROJECT

COLORADO LICENSED
ADAM SOMMERS
36689
PROFESSIONAL ENGINEER
3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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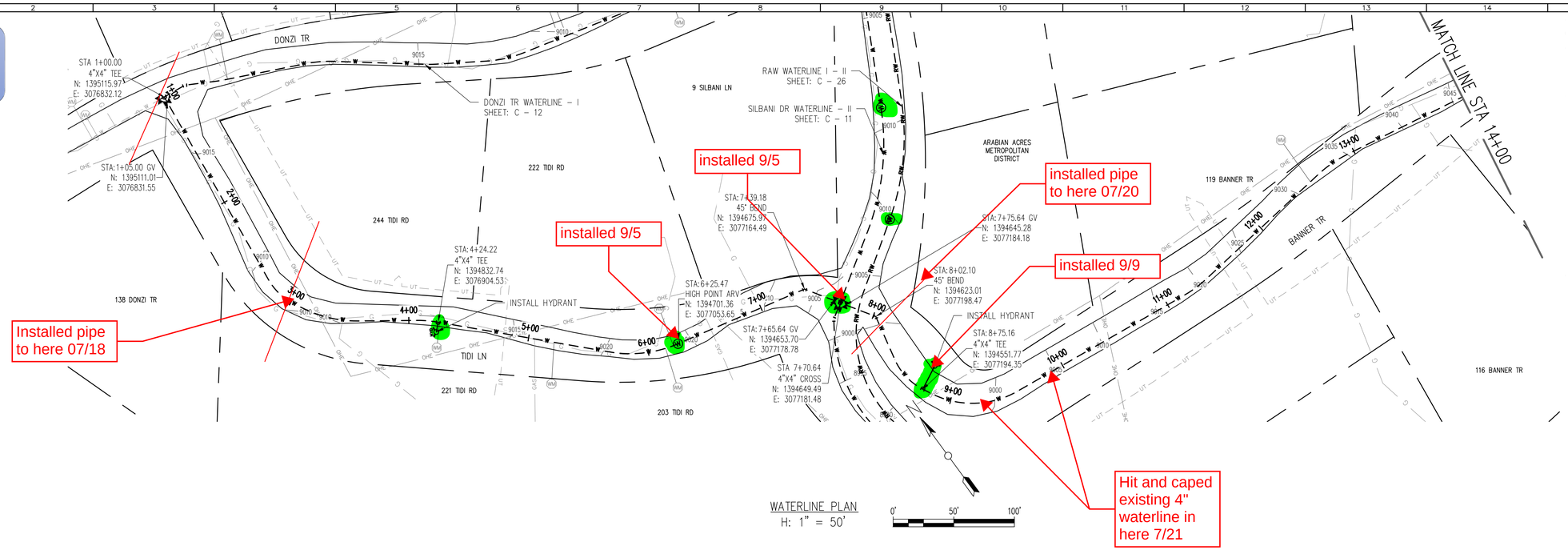
LADY LN TO GERKA LN WATERLINE
STA 1+00 TO END

SCALE
H: 1" = 50'
V: 1"= 10'

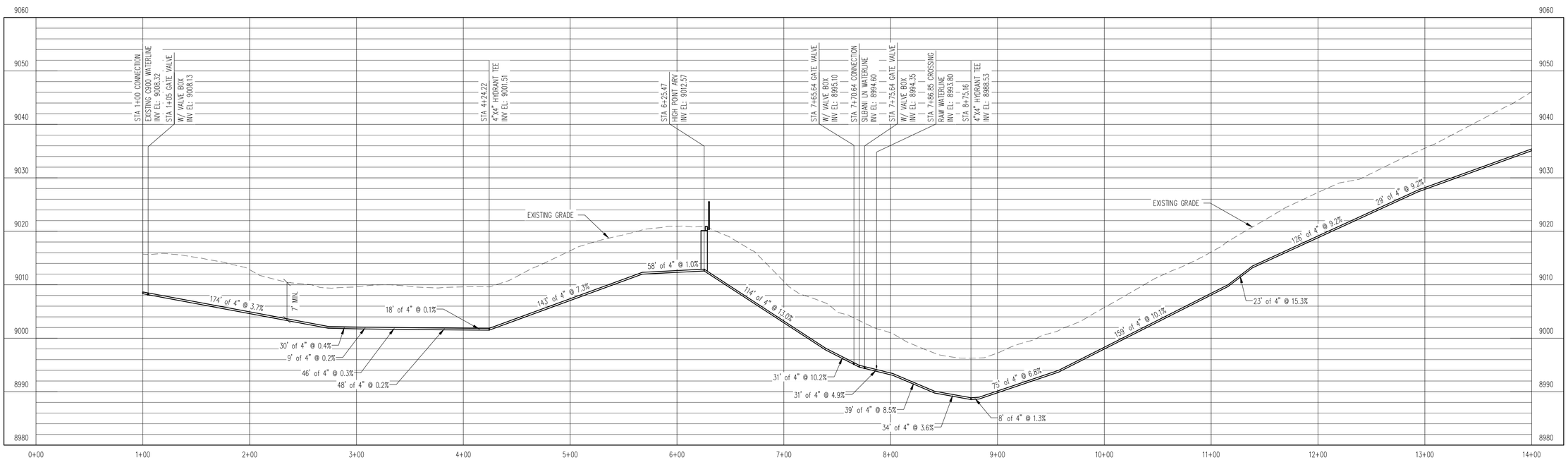
SHEET NUMBER:
C – 17

RELEASED FOR CONSTRUCTION
5/21/2020



WATERLINE PLAN
H: 1" = 50'

0' 50' 100'



WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

AquaWorks DBO INC
DESIGN · BUILD · OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 34689 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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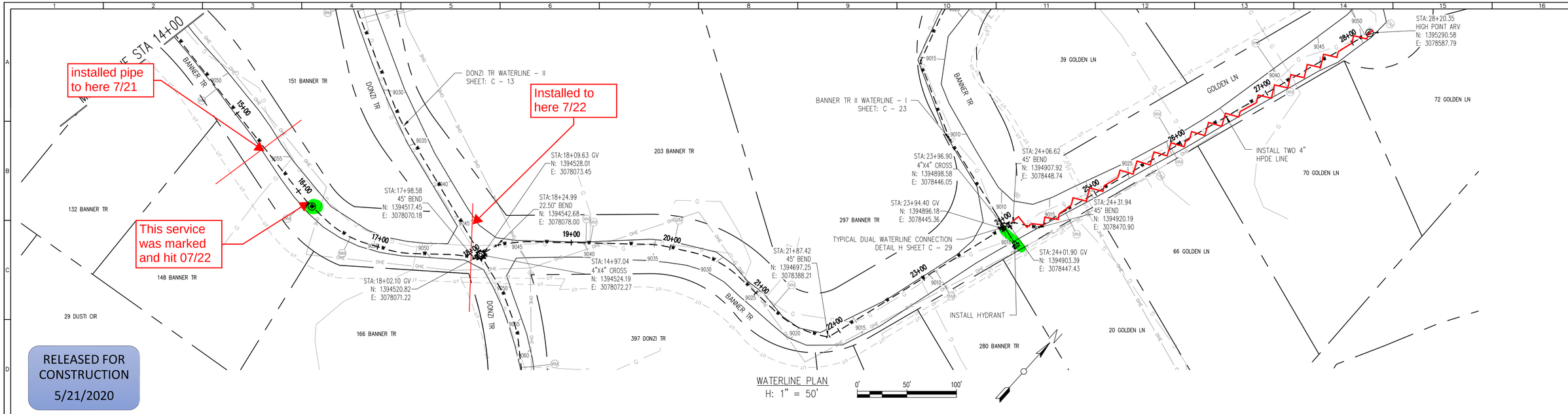
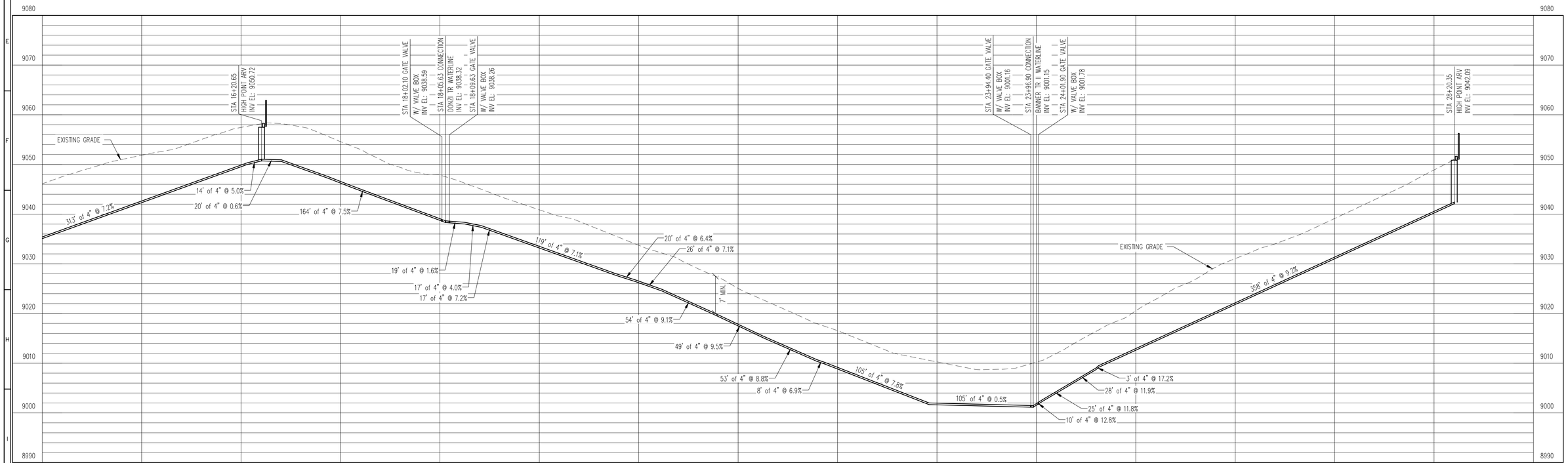
TIDI RD TO BANNER TR WATERLINE
STA 1+00 TO STA 14+00

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 18





WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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DESIGN BUILD OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 36689 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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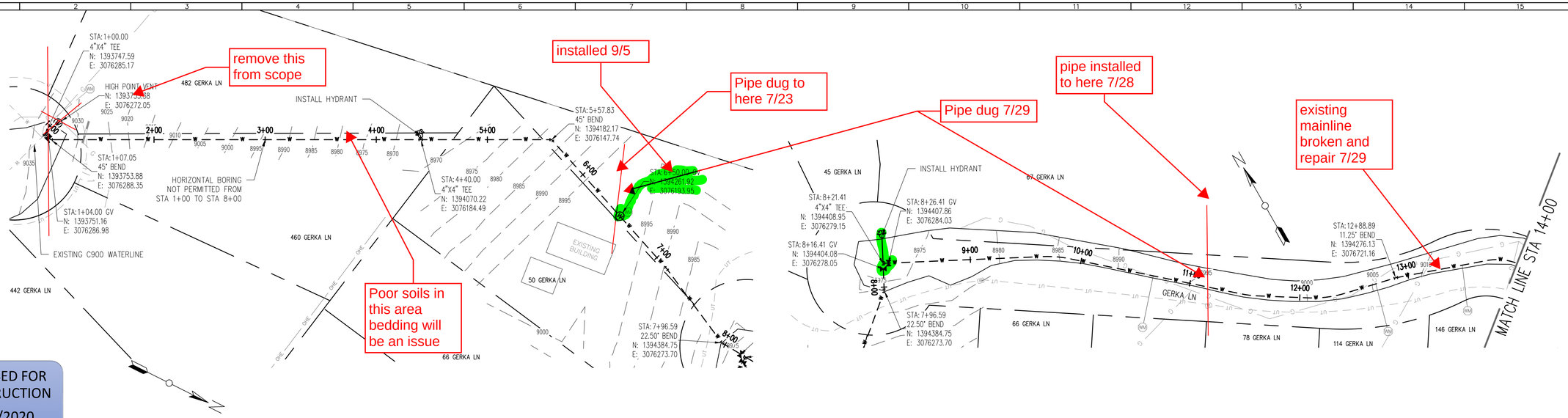
BANNER TR TO GOLDEN LN WATERLINE STA 14+00 TO END

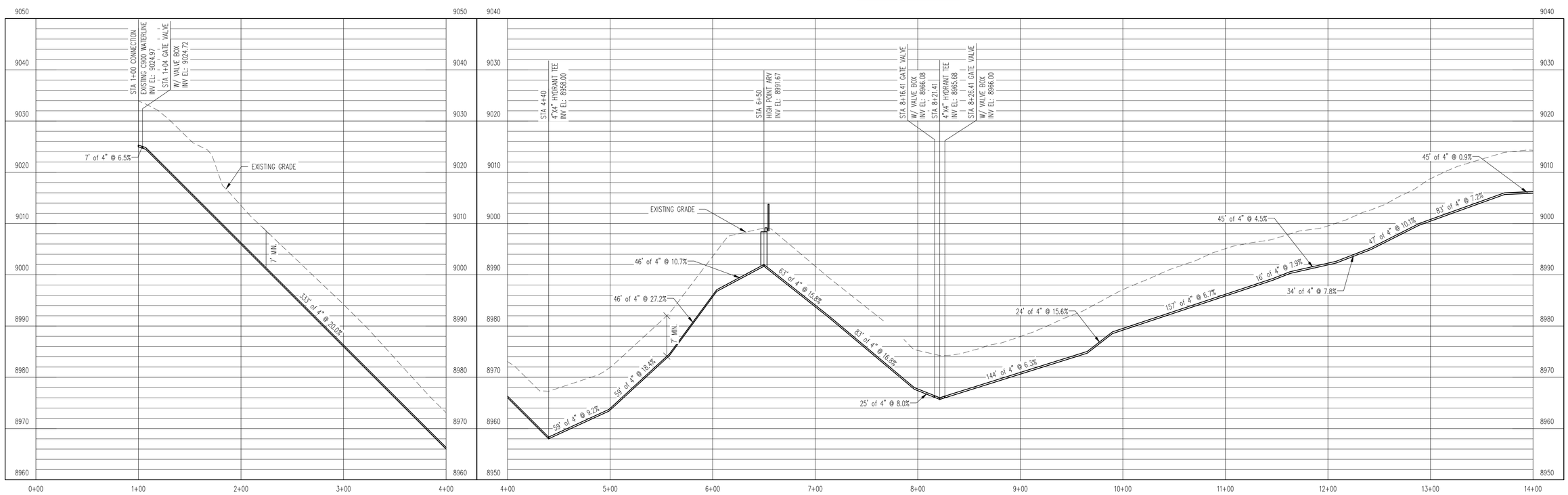
SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 19



RELEASED FOR CONSTRUCTION
5/21/2020

WATERLINE PLAN
H: 1" = 50'



WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED ADAM SOMMERS 38369 3/11/20 PROFESSIONAL ENGINEER

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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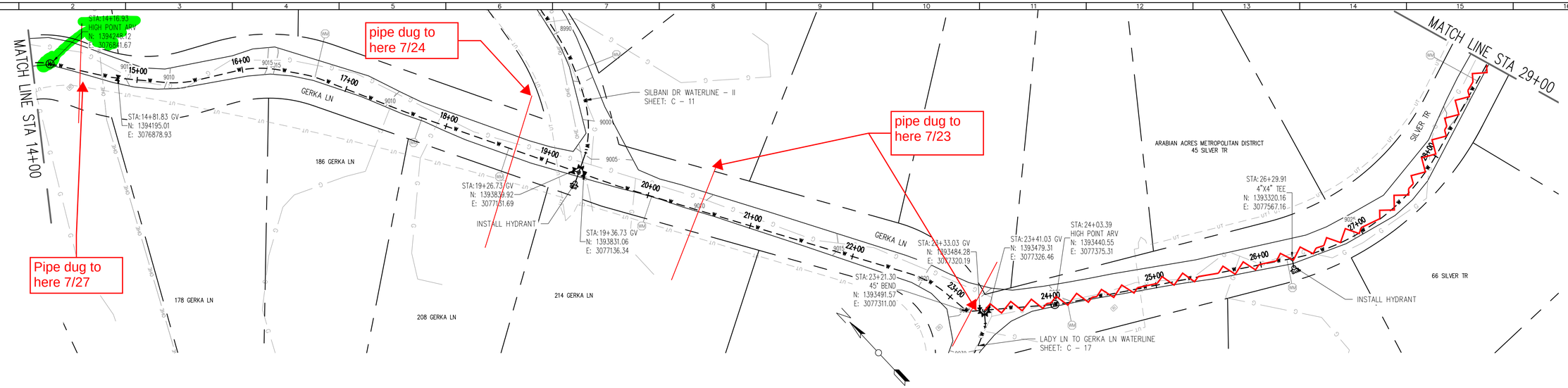
GERKA LN WATERLINE
STA 1+00 TO STA 14+00

SCALE
H: 1" = 50'
V: 1"= 10'

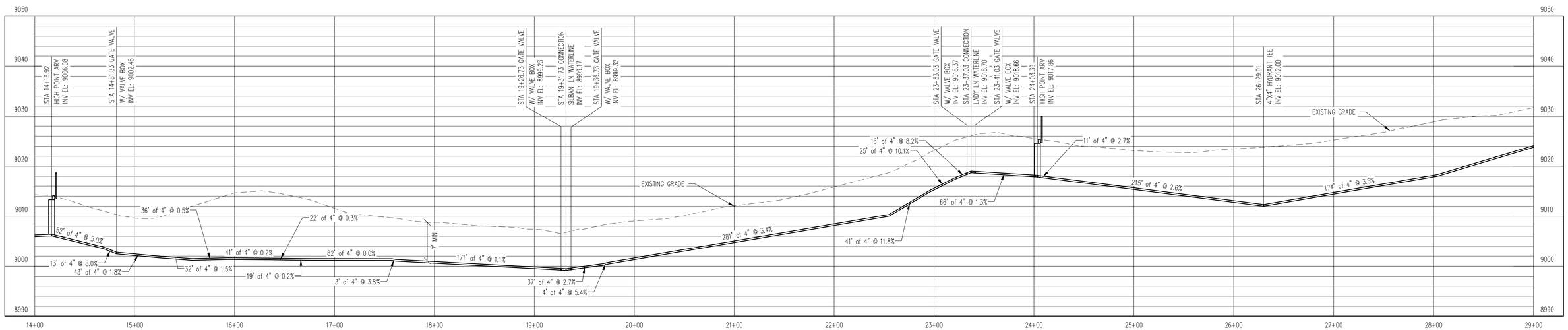
SHEET NUMBER:
C – 20



WATERLINE PLAN
H: 1" = 50'

0' 50' 100'

RELEASED FOR CONSTRUCTION
5/21/2020



WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 38269 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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GERKA LN TO SILVER TR WATERLINE
STA 14+00 TO STA 29+00

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 21

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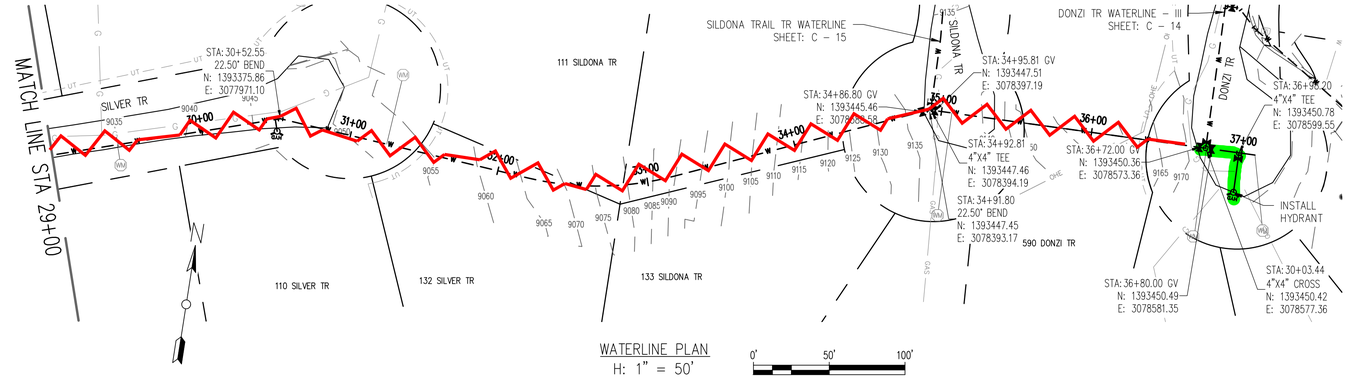
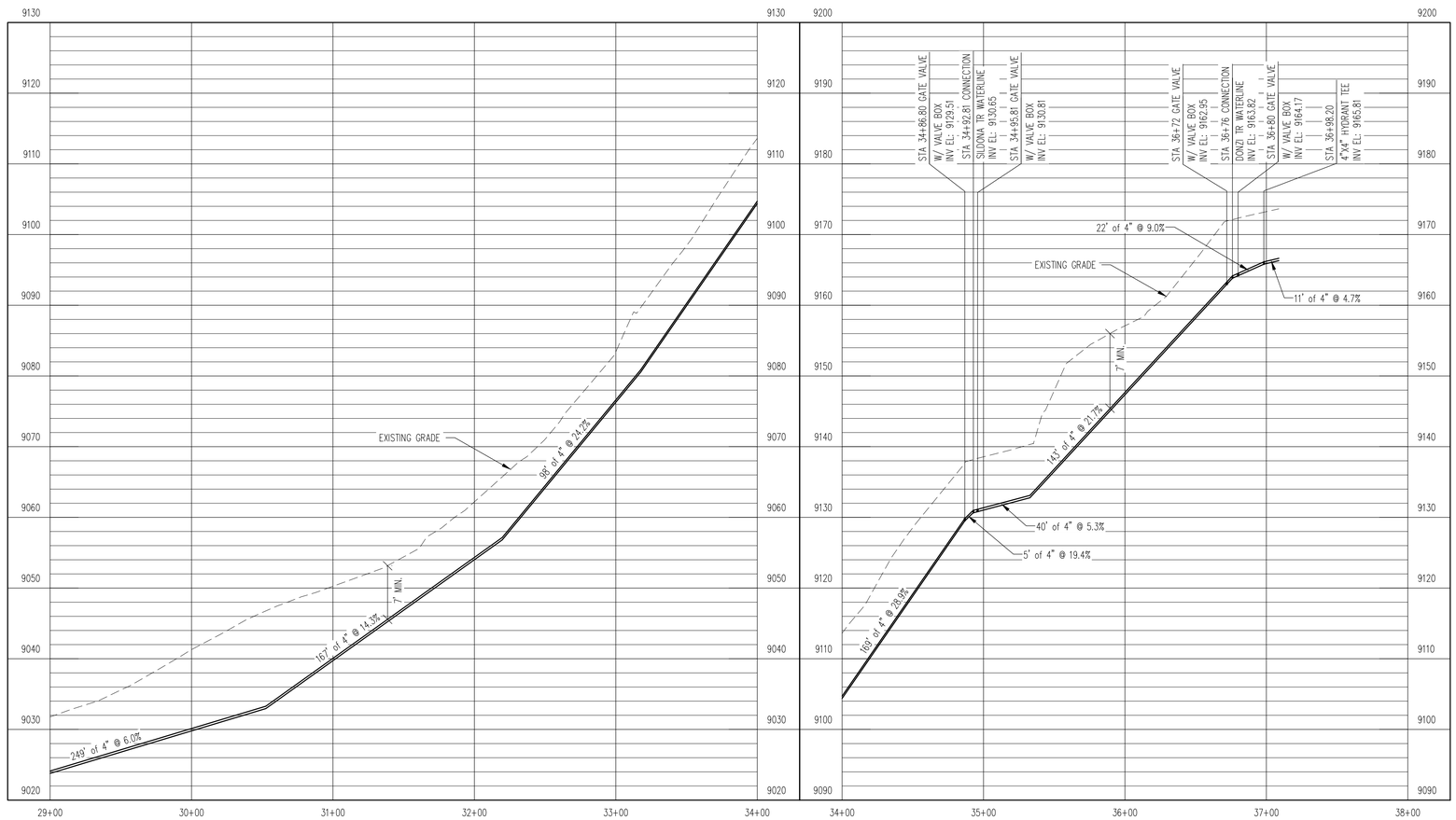
5/21/2020



WATERLINE PLAN
H: 1" = 50'

0' 50' 100'



WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES
METROPOLITAN DISTRICT
DISTRIBUTION SYSTEM
IMPROVEMENT PROJECT

COLORADO LICENSED
TODD SCHEIDT
36289
PROFESSIONAL ENGINEER
3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
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SILVER TR WATERLINE
STA 29+00 TO END

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 22

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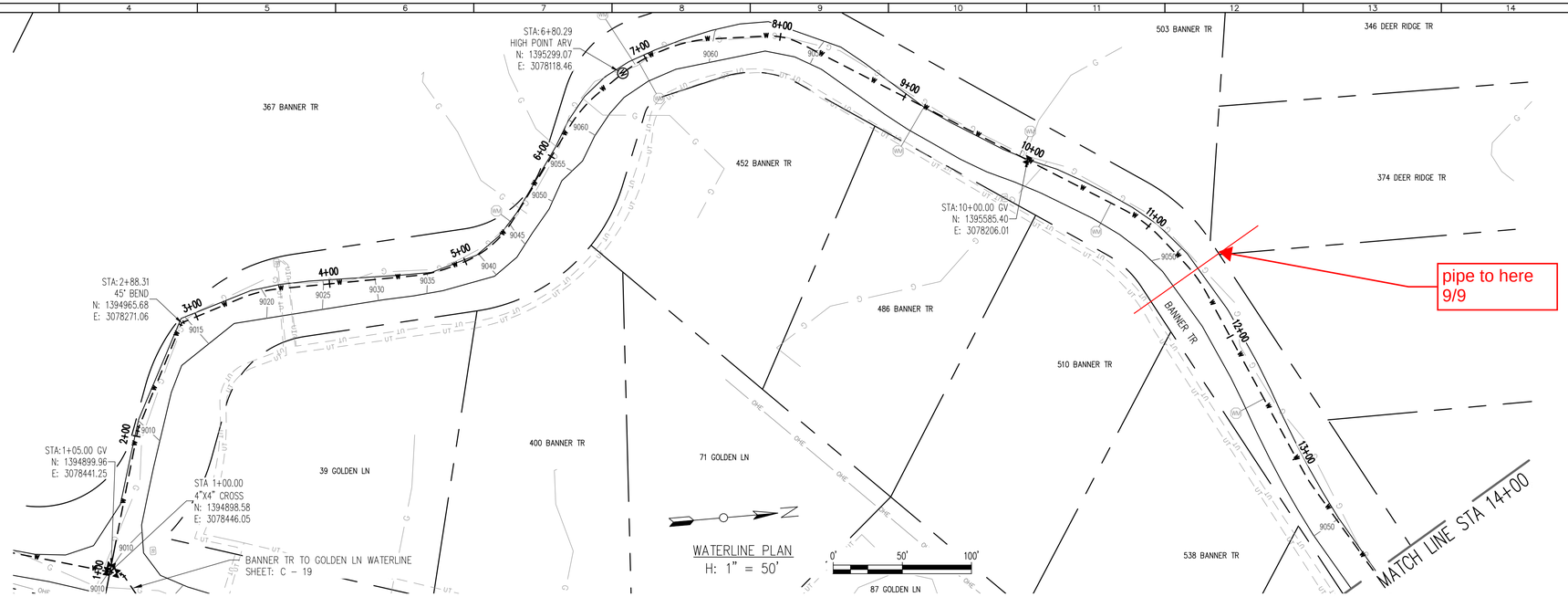
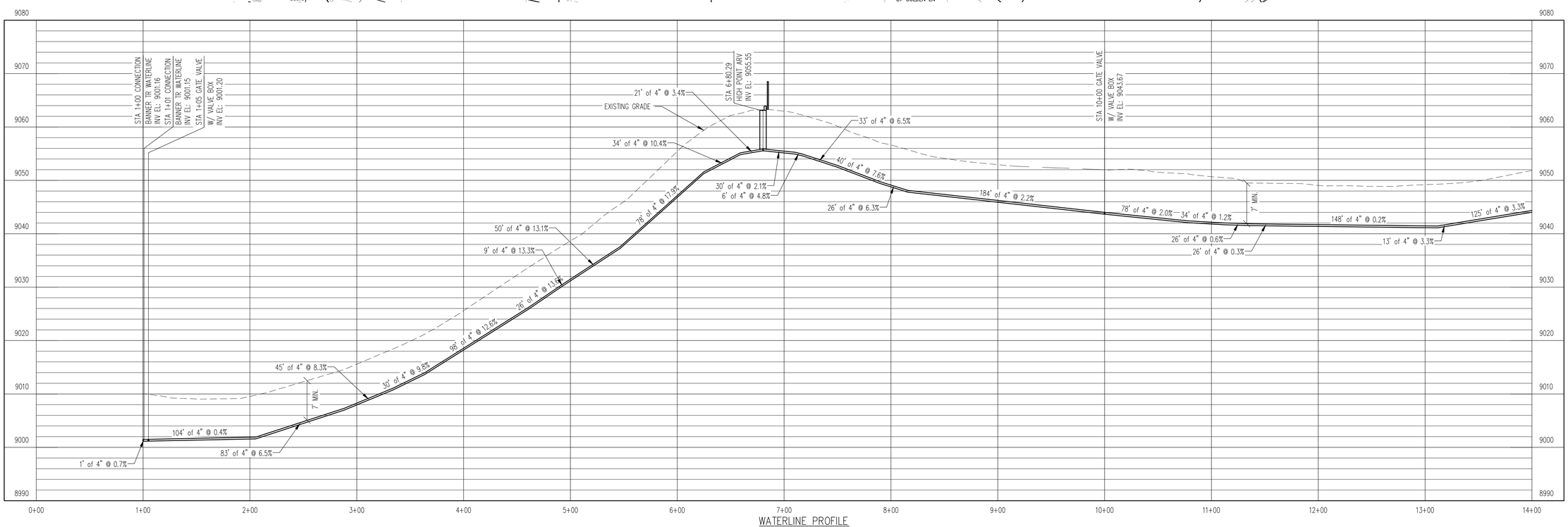
5/21/2020





WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 38609 PE 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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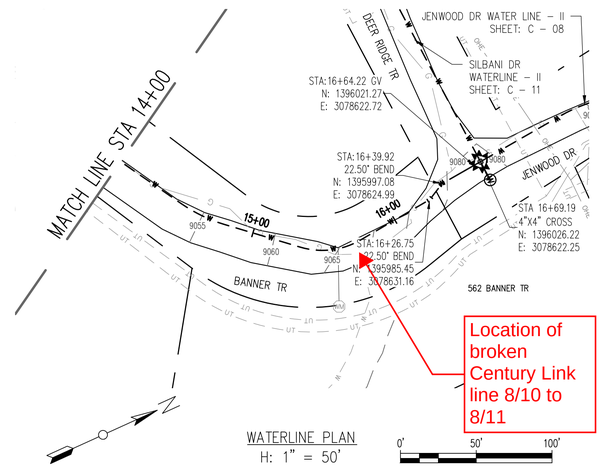
BANNER TR II WATERLINE – I
STA 1+00 TO STA 14+00

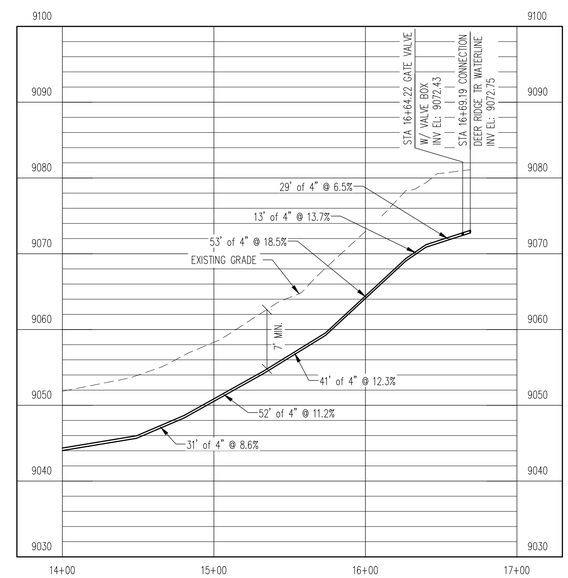
SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 23

RELEASED FOR CONSTRUCTION
5/21/2020



WATERLINE PLAN
H: 1" = 50'



WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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DESIGN BUILD OPERATE
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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES
METROPOLITAN DISTRICT
DISTRIBUTION SYSTEM
IMPROVEMENT PROJECT

COLORADO LICENSED
ADAM SOMMERS
36969
PROFESSIONAL ENGINEER
3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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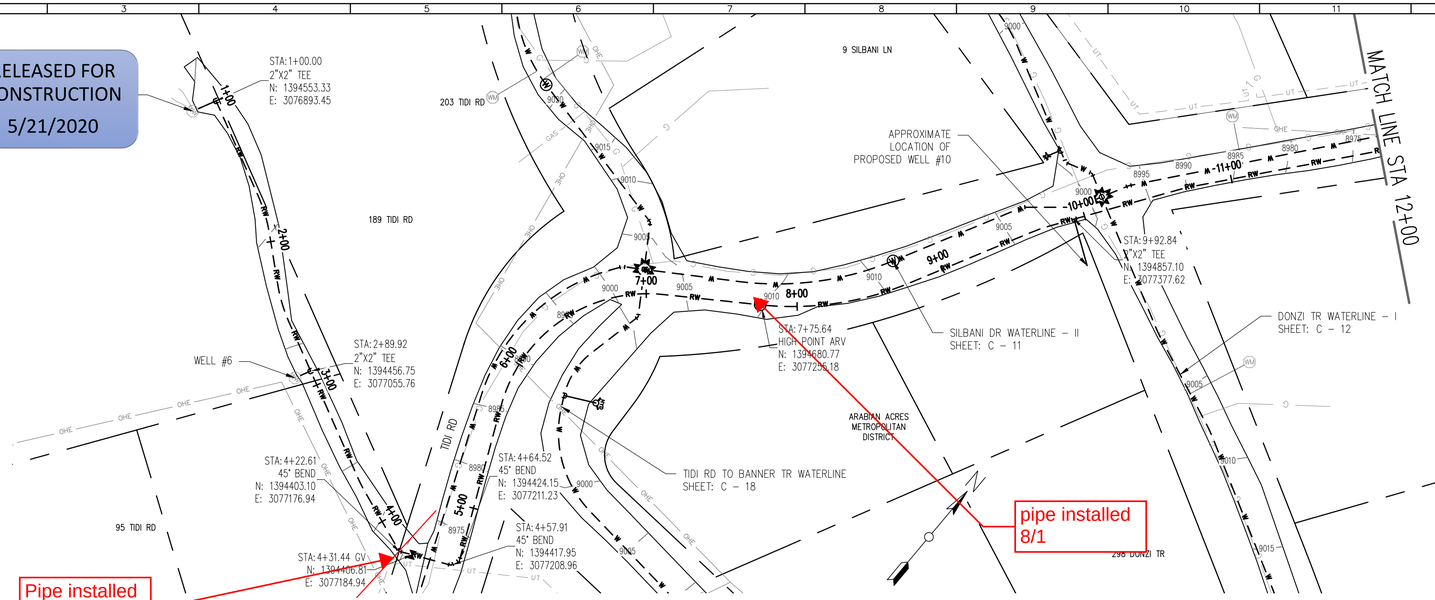
BANNER TR II WATERLINE – II
STA 14+00 TO END

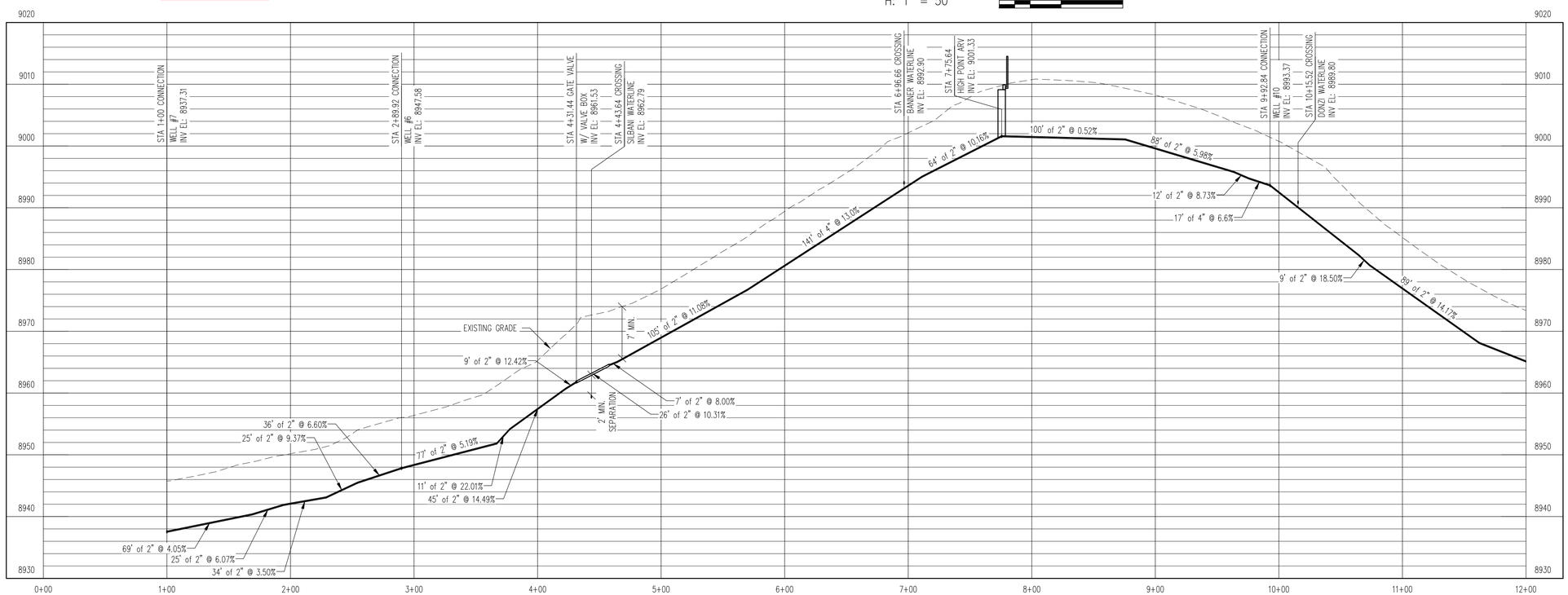
SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 24

RELEASED FOR CONSTRUCTION
5/21/2020



WATERLINE PLAN
H: 1" = 50'



WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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DESIGN BUILD OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER 38268 ADAM SOMMERS 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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RAW WATERLINE I – I
STA 1+00 TO STA 14+00

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 25

RELEASED FOR CONSTRUCTION
5/21/2020

Waterline leaks in these areas when opening temporary gate valves

Meter pit was reconnected to new line. Should be a change order of 3 guys for an hour or so

Contractor broke and replaced electrical in this area. 7/8

Contractor broke and replaced electrical in this area. 7/8

Moving to this area was 2 hours of mobilization and demobilization of the entire crew. About 8 hours of delays for 2-3 workers and a mini excavator.

4" gate valve installed 7/8. Pipe completed to this point. Gate valve needs to be opened. No significant rock noted. Pressure Testing not completed.

broke existing marked communication cable 8/6

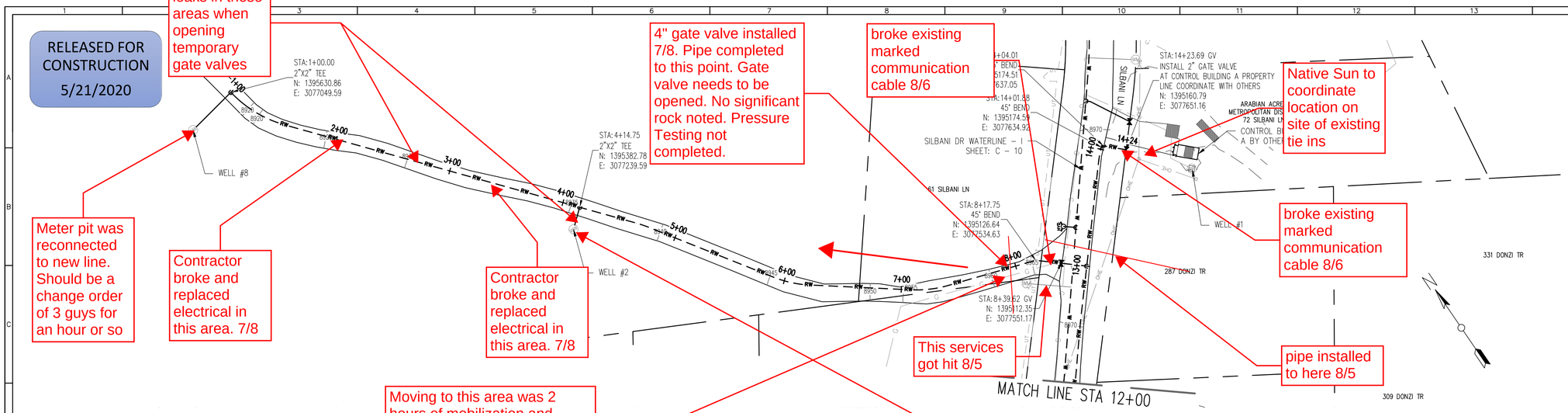
Native Sun to coordinate location on site of existing tie ins

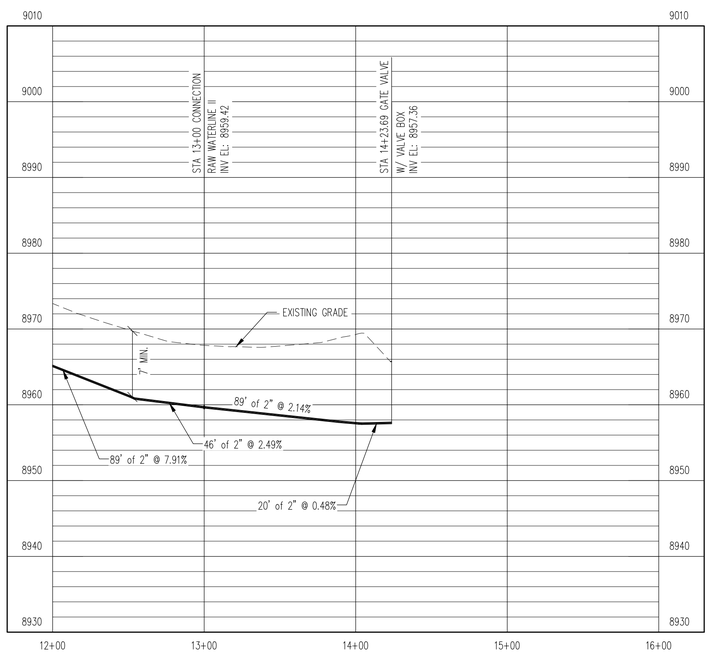
broke existing marked communication cable 8/6

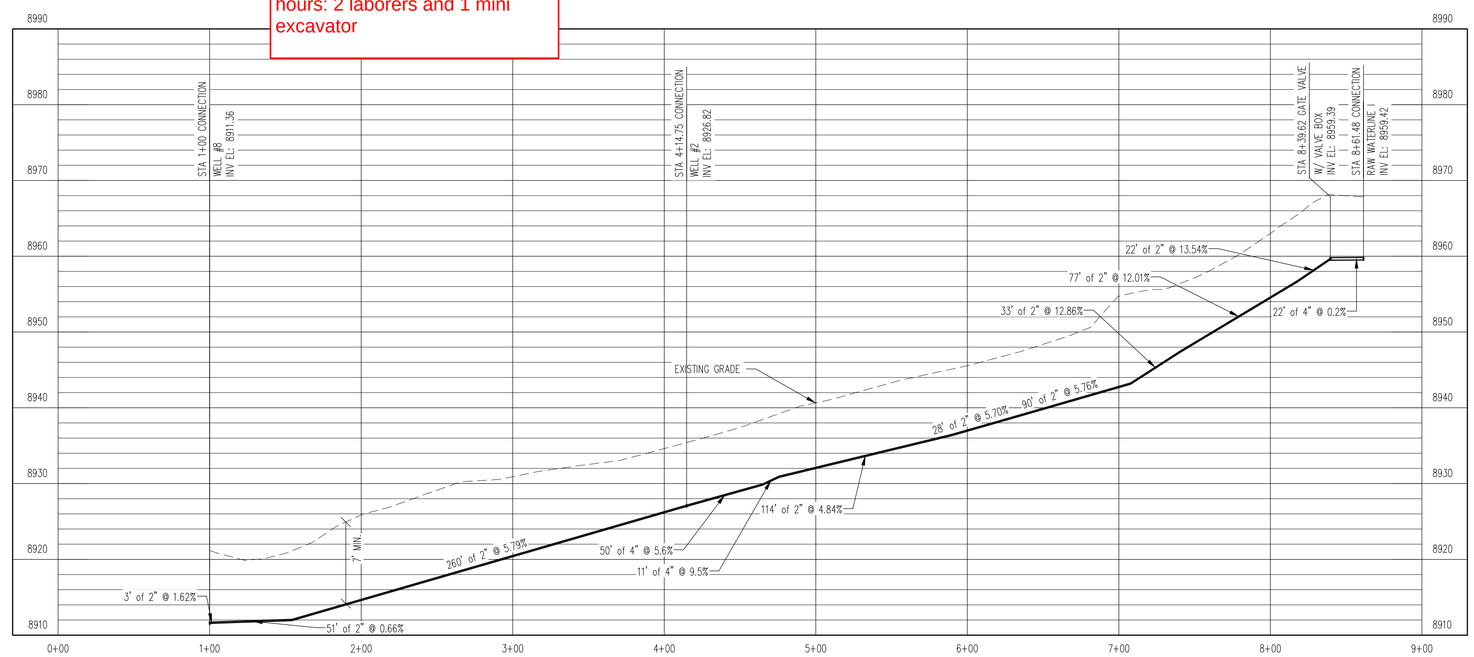
This services got hit 8/5

pipe installed to here 8/5

Piping on 90 elbow for well #2 was leaking. Contractor identified 07/15 and will have fixied 07/16. Estimated delay 10 hours: 2 laborers and 1 mini excavator







WATERLINE PROFILE
V: 1" = 10'

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

AquaWorks DBO INC
DESIGN · BUILD · OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 36089 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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RAW WATERLINE I – II
STA 14+00 TO END
RAW WATERLINE II
STA 1+00 TO END

SCALE
H: 1" = 50'
V: 1"= 10'

SHEET NUMBER:
C – 26

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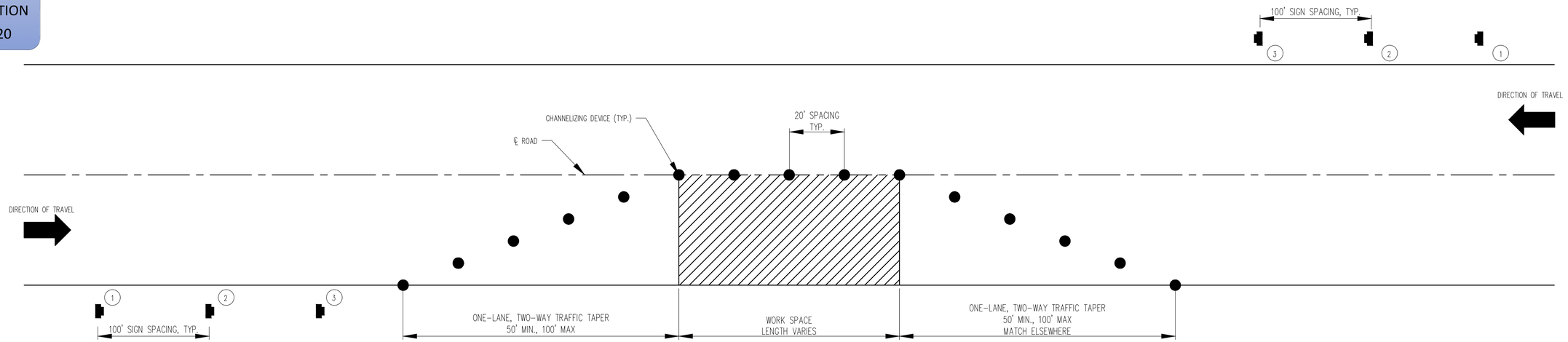
5/21/2020



ONE-LANE, TWO-WAY TRAFFIC TAPER DETAIL

NOT TO SCALE

SIGN DESIGNATION TABLE			
LABEL NUMBER	SIGN	SIGN DESIGNATION	SIZE
1	ROAD WORK AHEAD	W20-1	36"x36"
2	ONE LANE ROAD	W20-4	36"x36"
3	BE PREPARED TO STOP	W3-4	36"x36"

NOTES:

1. ALL SIGNS AND TRAFFIC DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAY (M.U.T.C.D.).
2. SHIFTING TAPERS SHALL BE A MINIMUM OF 50' AND A MAXIMUM OF 100'.
3. TEMPORARY SIGNS SHALL BE PLACED AT AN INTERVAL OF 100' AND SHALL CONFORM TO THE M.U.T.C.D. REQUIREMENTS.
4. ALWAYS MAINTAIN ONE LANE OF TRAFFIC.
5. ONE DESIGNATED FLAGGER SHALL REMAIN AT SITE AT ALL TIMES. FLAGGER MUST BE CERTIFIED PER COLORADO LAW. FLAGGER CAN BE PART OF THE CONSTRUCTION CREW.
6. MAINTAIN TELLER COUNTY TRAFFIC CONTROL REQUIREMENTS.

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ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER
ADAM SOMMERS
38289
3/27/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
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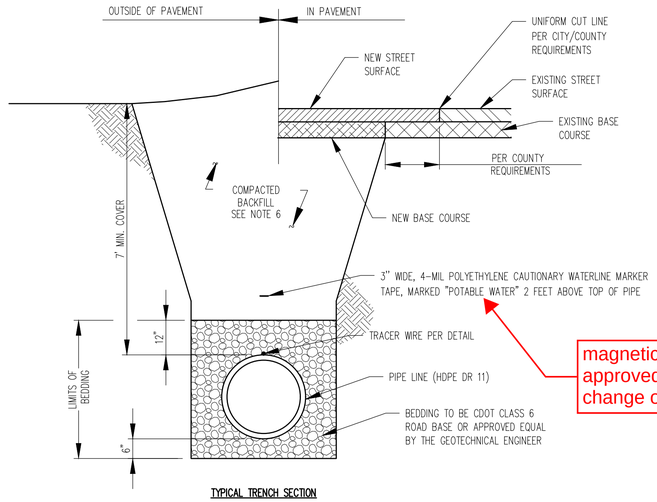
TEMPORARY TRAFFIC CONTROL PLAN DETAILS

SCALE: N/A

SHEET NUMBER: C – 27



magnetic tape approved via change order

TYPICAL TRENCH SECTION

NOTES:
1. MINIMUM COVER TO BE 7' BELOW FINAL GRADE.
2. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL SAFETY REGULATIONS.
3. PIPE SHALL BE BEDDED FROM 6" BELOW THE BOTTOM OF THE PIPE TO 12" ABOVE THE TOP OF THE PIPE.
4. SHOULD THE TRENCH BE EXCAVATED WIDER THAN ALLOWED, A CONCRETE CRADLE SHALL BE PLACED WITH 2500 P.S.I. CONCRETE FROM TRENCH BOTTOM TO PIPE SPRINGLINE.
5. COMPACTION SHALL BE AS FOLLOWS: PIPE ZONE BEDDING 6" UNDER AND 12" OVER PIPE WILL REQUIRE 90% S.P.D. TRENCH ZONE ABOVE BEDDING MATERIALS, FULL TRENCH SECTION IN ROADWAY OR STREET R.O.W. LIMITS WILL REQUIRE 95% S.P.D. TRENCH ZONE ABOVE BEDDING MATERIALS, OUTSIDE OF STREET R.O.W. WILL REQUIRE 90% S.P.D. LIFTS SHALL NOT EXCEED 6". COMPACTION TESTING SHALL BE EVERY FOOT OR PER TELLER COUNTY REQUIREMENTS.
6. USE ONLY BACKFILL FOR TRENCHES WHICH IS FREE FROM ROCKS, LARGE ROOTS, OTHER VEGETATION OR ORGANIC MATTER, AND FROZEN MATERIAL. NO ROCKS GREATER THAN TWELVE (12) INCHES IN DIAMETER SHALL BE ALLOWED.

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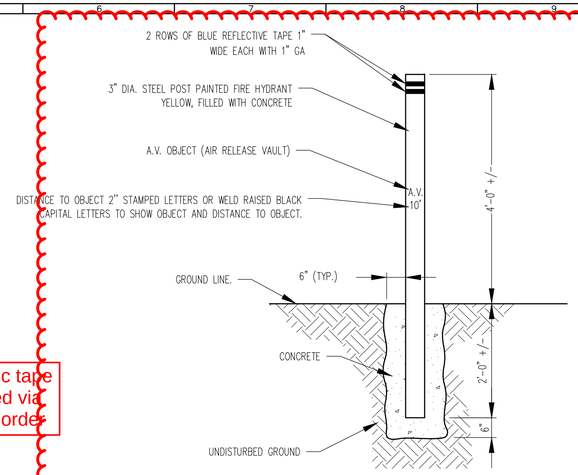
5/21/2020

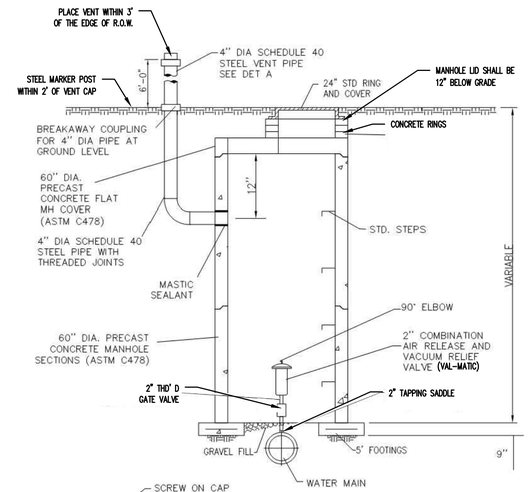
BEDDING/COMPACTION (A)

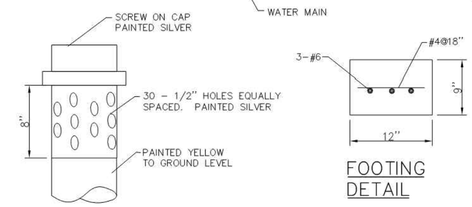


NOTE:
1. MARKER POSTS SHALL BE INSTALLED AT THE LOCATIONS INDICATED ON THE SIGNED CONSTRUCTION PLANS AND AT ANY OTHER LOCATIONS REQUIRED BY THE DISTRICT DURING CONSTRUCTION.

STEEL MARKER POST (B)

when to be installed?



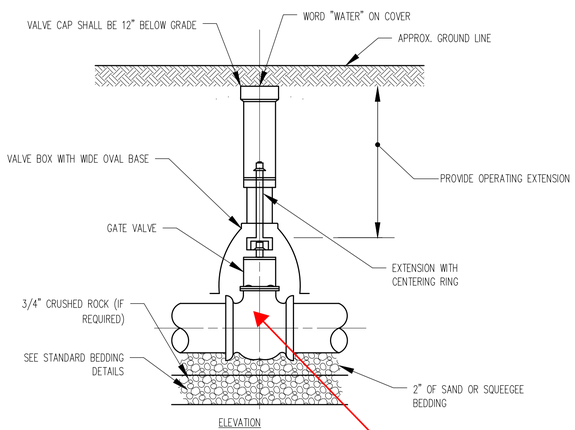


DETAIL A

FOOTING DETAIL

NOTE: ALL METAL SURFACES SHALL BE COATED WITH TWO COATS OF HEAVY COAL TAR PAINT.

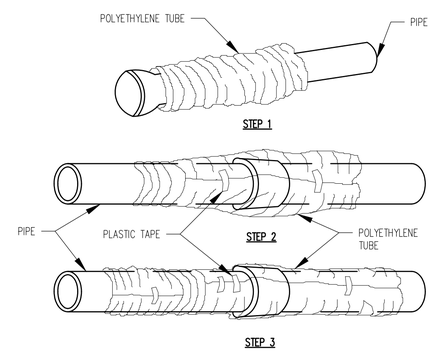
AIR RELEASE VALVE AND VAULT (E)



NOTES:
1. CARE SHALL BE TAKEN WHEN INSTALLING VALVES TO ASSURE PROPER SUPPORT. 3/4" WASHED ROCK SHALL BE INSTALLED UNDER THE VALVE TO PROVIDE ADDITIONAL SUPPORT IF REQUIRED. DO NOT INSTALL ROCK DIRECTLY AGAINST POLY- WRAP. USE 2" OF BEDDING BETWEEN ROCK AND POLY.
2. VALVES SHALL NOT BE PLACED IN CONCRETE CROSS PANS.
3. VALVES SHALL BE OPEN RIGHT.
4. POLYWRAP VALVE PER STANDARD DETAIL.

polyvalves installed on 4" gate valves installed on 2"

GATE VALVE (C)



FIELD INSTALLATION - POLYETHYLENE WRAP

STEP 1- PLACE TUBE OF POLYETHYLENE MATERIAL ON PIPE PRIOR TO LOWERING IT INTO TRENCH.

STEP 2- PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH TAPE TO HOLD THE PLASTIC TUBE IN PLACE.

STEP 3- OVERLAP FIRST TUBE WITH ADJACENT TUBE AND SECURE WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE SHALL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED ON TOP OF PIPE AND TAPED IN PLACE.

NOTE:
ALL BURIED DUCTILE IRON PIPE, FITTINGS, VALVES, FIRE HYDRANT ASSEMBLIES, AND RODDING SHALL BE POLYETHYLENE WRAPPED.

POLYETHYLENE WRAP DETAIL (D)

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DESIGN - BUILD - OPERATE
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DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER MIKE GROSELLE 38359 5/7/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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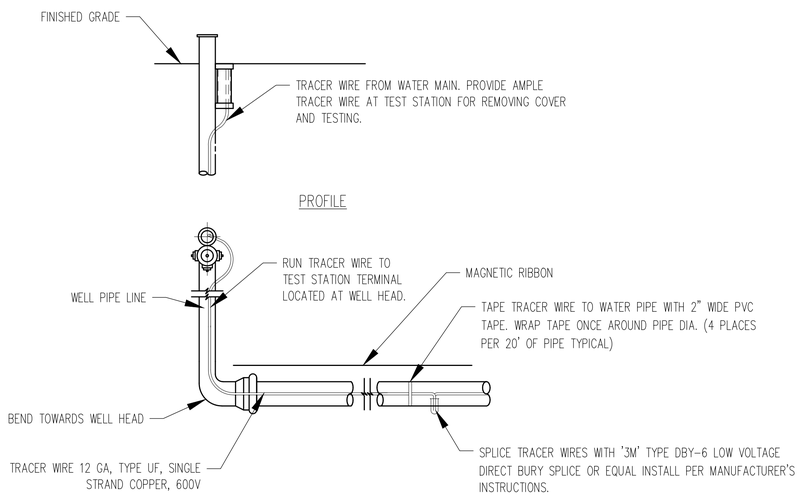
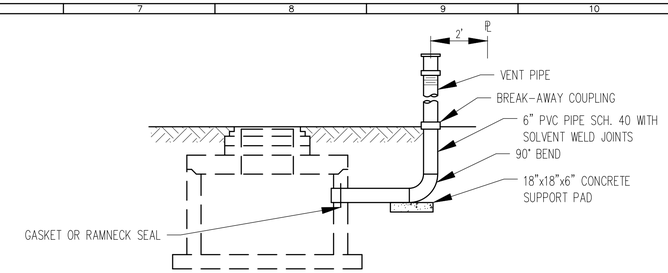
DETAILS - I

SCALE: N/A

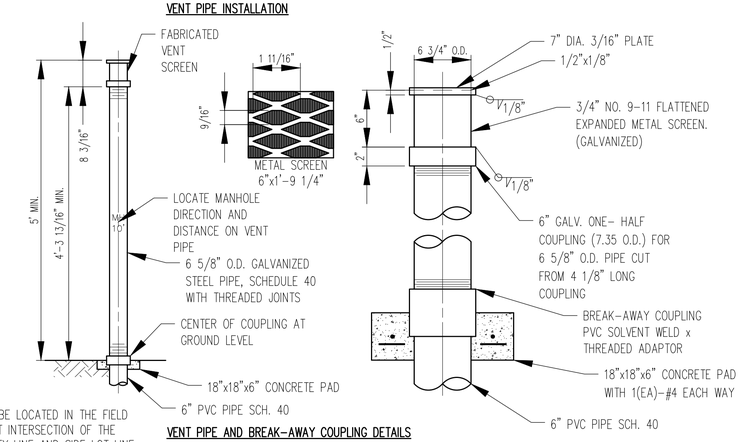
SHEET NUMBER: C - 28



TYPICAL TRACER WIRE INSTALLATION DETAIL (F)



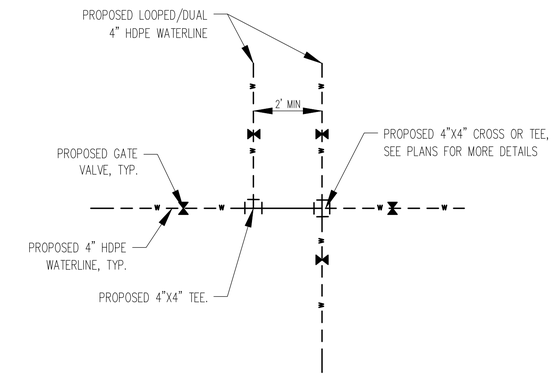
VENT PIPE INSTALLATION



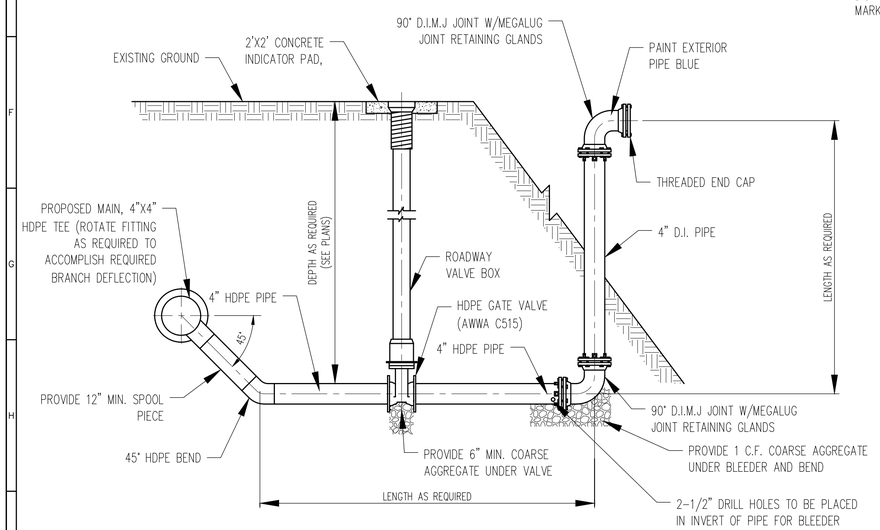
VENT PIPE AND BREAK-AWAY COUPLING DETAILS

NOTES:
VENT PIPES TO BE LOCATED IN THE FIELD AT THE NEAREST INTERSECTION OF THE STREET PROPERTY LINE AND SIDE LOT LINE. PAINT PIPE AND LOCATE M.H. WITH DISTANCE AND DIRECTION SIMILAR TO MARKER POST.

VENT PIPE DETAIL (G)



TYPICAL DUAL WATERLINE CONNECTION (H)



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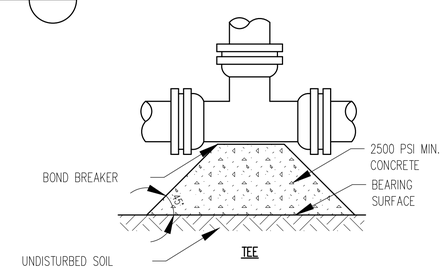
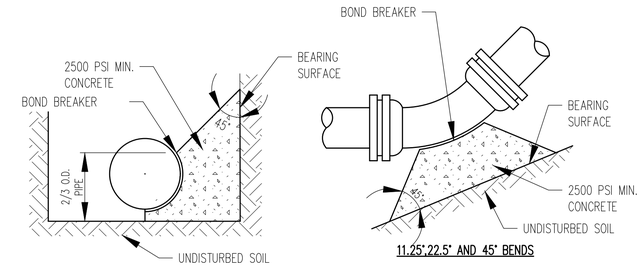
BLOW OFF / FLUSHING HYDRANT (I)



TEE



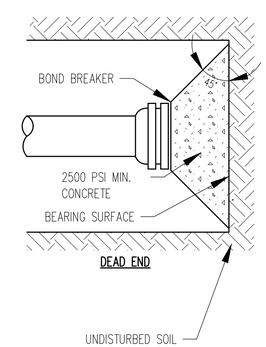
TYPICAL CROSS SECTION

11.25°,22.5° AND 45° BENDS

MINIMUM BEARING SURFACE AREA
(IN SQUARE FEET)

SIZE OF PIPE	BENDS				TEE OR DEAD END
	11.25°	22.5°	45°	90°	
4"	1.00	1.00	1.00	2.00	1.50
6"	1.00	1.25	2.25	4.25	3.00
8"	1.00	2.00	4.00	7.50	5.25
12"	2.25	4.50	8.75	16.00	11.25
16"	3.75	7.50	14.50	27.00	19.00
20"	5.00	10.00	19.50	35.50	25.00
24"	7.00	14.00	27.75	51.00	36.00

NOTES:
1. ALL MAINS AND ALL BENDS SHALL BE BOTH RESTRAINED AND KICKBLOCKED.
2. BEARING SURFACE AREAS SHOWN IN CHART ARE MINIMUM.
3. BASED ON 150 PSI INTERNAL PIPE PRESSURE PLUS WATER HAMMER.
   4",6" AND 8" ø PIPES, WATER HAMMER = 120 P.S.I.
   12" ø PIPES, WATER HAMMER = 110 P.S.I.
   16" AND 20" ø PIPES, WATER HAMMER = 70 P.S.I.
4. SOIL BEARING CAPACITY = 3,000 LB / SQ. FT.
5. ALL 90° BENDS SHALL BE RESTRAINED.



KICKBLOCK (J)

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

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DESIGN BUILD OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO PROFESSIONAL ENGINEER
ADAM SOMMERS
36089
5/7/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
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DETAILS – II

SCALE: N/A

SHEET NUMBER: C – 29

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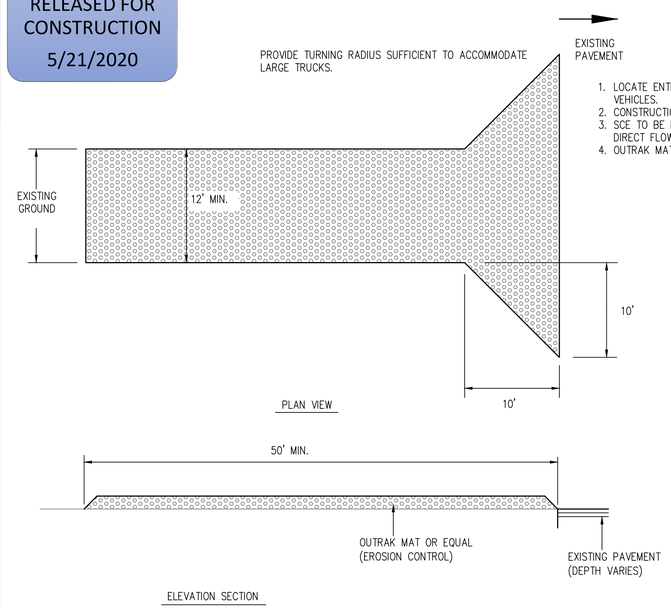
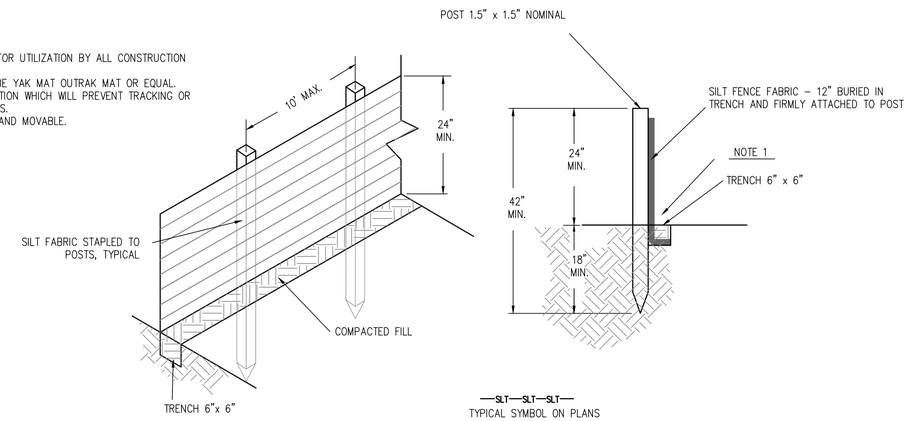


1. LOCATE ENTRANCE(S) TO PROVIDE FOR UTILIZATION BY ALL CONSTRUCTION VEHICLES.
2. CONSTRUCTION ENTRANCES SHALL BE YAK MAT OUTRAK MAT OR EQUAL.
3. SCE TO BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS.
4. OUTRAK MAT SHALL BE PORTABLE AND MOVABLE.

STABILIZED CONSTRUCTION ENTRANCE (1)



SILT FENCE (2)

EROSION CONTROL DETAIL NOTES:

1. ALL RUNOFF LEAVING A DISTURBED AREA SHALL PASS THROUGH AT LEAST ONE SEDIMENT ENTRAPMENT FACILITY BEFORE IT EXITS THE SITE.
2. CONTRACTOR TO REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE THIRD OF PROTECTION FEATURE HEIGHT. CONTRACTOR SHALL PERFORM CONTINUOUS INSPECTION FOR PROPER FUNCTION.
3. SILT FENCE POSTS SHALL BE METAL OR WOOD WITH A MINIMUM LENGTH OF 42 INCHES. METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH A MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION OF 2 INCHES. SILT FENCE GEOTEXTILE SHALL BE ATTACHED TO POSTS WITH THREE OR MORE STAPLES PER POST.
4. SILT FENCE SHALL BE INSTALLED IN LOCATIONS THAT PREVENT RUNOFF FROM LEAVING THE SITE PRIOR TO ANY GRUBBING OR GRADING ACTIVITY. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT ACCUMULATES TO ONE HALF THE EXPOSED GEOTEXTILE HEIGHT AND SHALL BE DISPOSED OF.
5. EROSION LOGS: EROSION LOGS SHALL BE CURLED ASPEN WOOD EXCELSIOR WITH A CONSISTENT WIDTH OF FIBERS EVENLY DISTRIBUTED THROUGHOUT THE LOG. THE CASING SHALL BE SEAMLESS, PHOTODEGRADABLE TUBE NETTING AND SHALL HAVE MINIMUM DIMENSIONS AS SHOWN BELOW. THE CURLED ASPEN WOOD EXCELSIOR SHALL BE FUNGUS FREE, RESIN FREE AND SHALL BE FREE OF GROWTH OR GERMINATION INHIBITING SUBSTANCES. STAKES TO SECURE EROSION LOGS SHALL CONSIST OF PINEWOOD OR HARDWOOD.
6. THE CONTRACTOR SHALL MAINTAIN THE EROSION LOGS DURING CONSTRUCTION TO PREVENT SEDIMENT FROM PASSING OVER OR UNDER THE LOGS OR FROM SEDIMENT ACCUMULATION GREATER THAN 30% OF THE ORIGINAL EXPOSED HEIGHT OF EACH EROSION LOG. STAKES SHALL BE EMBEDDED A MINIMUM OF DEPTH OF 4 INCHES.
7. STABILIZATION OF SEDIMENT AND EROSION CONTROL MEASURES:
   - 7.1. SEDIMENT BARRIERS, PERIMETER DIKES, AND OTHER MEASURES INTENDED TO EITHER TRAP SEDIMENT OR PREVENT RUNOFF FROM FLOWING OVER DISTURBED AREAS SHALL BE CONSTRUCTED AS A FIRST STEP IN GRADING AND BE MADE FUNCTIONAL BEFORE LAND DISTURBANCE TAKES PLACE.
   - 7.2. EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS SHALL BE STABILIZED WITHIN FIVE (5) DAYS OF INSTALLATION.
   - 7.3. STORMWATER OUTLETS SHALL ALSO BE STABILIZED PRIOR TO ANY UPSTREAM LAND DISTURBING ACTIVITIES.
8. STABILIZATION OF WATERWAYS AND OUTLETS:
   - 8.1. ALL ONSITE STORMWATER CONVEYANCE CHANNELS USED BY CONTRACTOR FOR TEMPORARY EROSION CONTROL PURPOSES SHALL BE DESIGNED AND CONSTRUCTED WITH ADEQUATE CAPACITY AND PROTECTION TO PREVENT EROSION DURING STORM AND RUNOFF EVENTS.
   - 8.2. STABILIZATION ADEQUATE TO PREVENT EROSION SHALL ALSO BE PROVIDED AT THE OUTLETS OF ALL PIPES AND CHANNELS.
9. STORM SEWER INLET PROTECTION: ALL STORM SEWER INLETS WHICH ARE MADE OPERABLE DURING CONSTRUCTION OR WHICH DRAIN STORMWATER RUNOFF FROM A CONSTRUCTION SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION BY THE USE OF FILTERS.
10. CONSTRUCTION ACCESS ROUTES:
   - 10.1. WHEREVER CONSTRUCTION VEHICLES ENTER OR LEAVE A CONSTRUCTION SITE, A STABILIZED CONSTRUCTION ENTRANCE IS REQUIRED.
   - 10.2. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROADS SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY.
   - 10.3. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A SEDIMENT CONTROLLED DISPOSAL AREA.
   - 10.4. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.

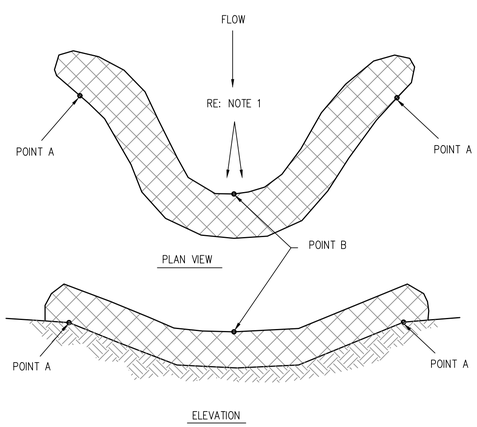
EROSION CONTROL SPECIFICATIONS:

NOMINAL DIMENSIONS OF EROSION LOGS:

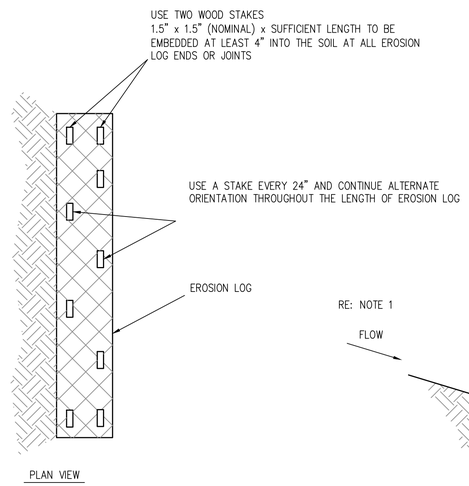
DIAMETER	LENGTH	WEIGHT	STAKE DIMENSIONS
12 INCH	7–10 FEET	2.5 LBS/FOOT	1.5X1.5X24 INCHES

GEOTEXTILE FOR SILT FENCE:

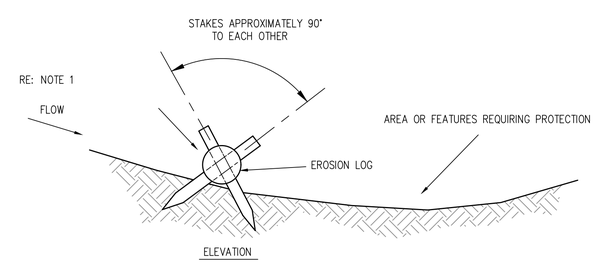
PROPERTY	SPECIFICATION	TEST METHOD
GRAB STRENGTH, N (LBS)	400 (90)	ASTM D 4632
ELONGATION, % MIN	50 MAXIMUM	ASTM D 4632
APPARENT OPENING SIZE	0.84 MAXIMUM	ASTM D 4751
ULTRAVIOLET DEGRADATION	70% STRENGTH RETAINED (AT 500 HOURS)	ASTM D 4355
PERMEABILITY S–1	0.01 MINIMUM	ASTM D 4491



EROSION LOG DITCH INSTALLATION (3)



TYPICAL STAKE INSTALLATION (A)



TYPICAL EROSION LOG APPLICATION (B)

SPECIES	VARIETY	PERCENT OF MIX	BROADCAST PLS LBS/AC
BLUE GRAMA	LOVINGTON	20	1.2
LITTLE BLUESTEM	PASTURE	15	2.1
SHEEP FESCUE	COVER	15	1.4
ARIZONA FESCUE	REDONDO	10	0.9
INDIAN RICEGRASS	PALOMA	10	2.5
CANBY BLUEGRASS	CANBAR	10	0.6
WESTERN WHEATGRASS	ROSANA	10	3.2
THICKSPIKE WHEATGRASS	CRITANA	10	2.2
TOTAL:		100%	14.1 LBS/AC

NOTE: PROVIDE MULCH AND TACKIFIER TO MEET GERMINATION REQUIREMENTS.

SEED MIX AND MULCH (4)

REV. No:	DATE:	BY:	REVISION DESCRIPTION:

AquaWorks DBO INC
DESIGN BUILD OPERATE
3252 WILLIAMS STREET
DENVER, CO 80205
(303) 477-5915

ARABIAN ACRES METROPOLITAN DISTRICT DISTRIBUTION SYSTEM IMPROVEMENT PROJECT

COLORADO LICENSED PROFESSIONAL ENGINEER ADAM SOMMERS 38609 3/11/20

PROJECT: DISTRIBUTION SYSTEM FINAL DESIGN
PROJECT NUMBER: 1289
CLIENT: ARABIAN ACRES METROPOLITAN DISTRICT
LOCATION: UNINCORPORATED TELLER COUNTY, COLORADO
DESIGNED BY: MIKE GROSELLE, P.E.
CHECKED BY: ADAM SOMMERS, P.E.
FILE PRINTED ON: 3/11/2020 10:26:20 AM
COPYRIGHT: AQUAWORKS DBO, INC.
DRAWING SIZE: 22" X 34"

0 1 IF THIS BAR DOES NOT READ 1" DRAWING IS NOT LABELED TO SCALE

USE OF DOCUMENTS

THIS DOCUMENT, INCLUDING THE INCORPORATED DESIGNS, IS AN INSTRUMENT OF SERVICE FOR THIS PROJECT AND SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF AQUAWORKS DBO, INC.

EROSION CONTROL DETAILS

SCALE: N/A

SHEET NUMBER: C – 30