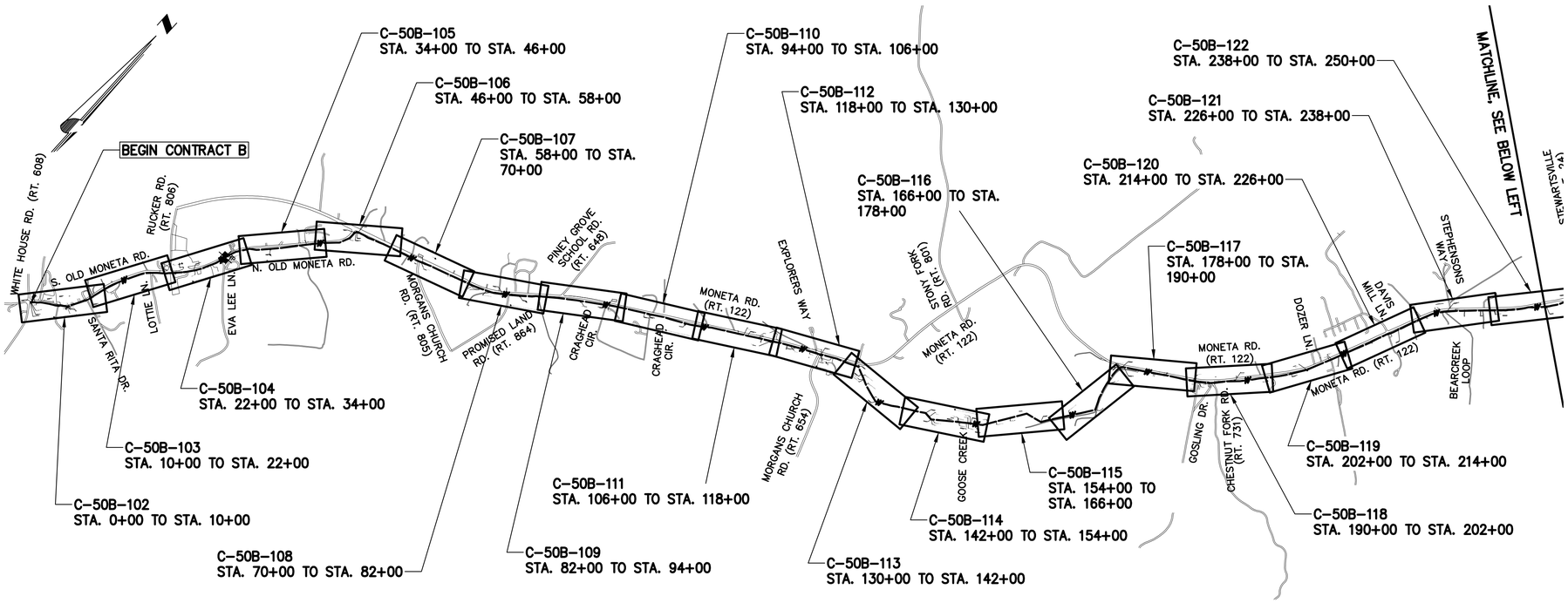

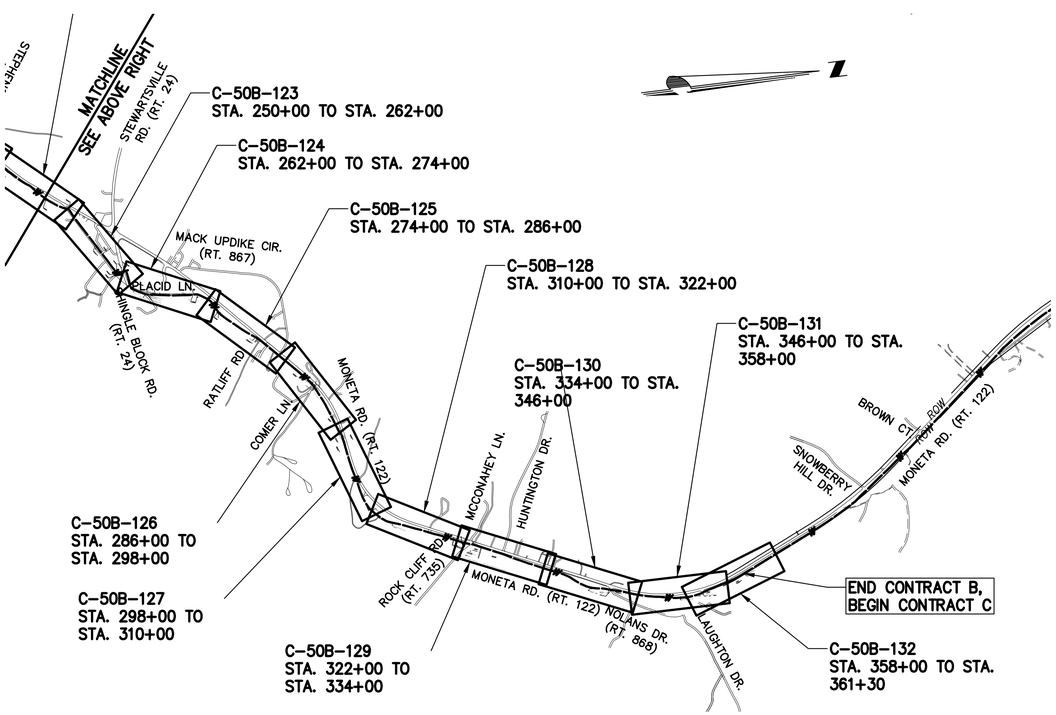

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
C-50B-101	CONTRACT B – WATER MAIN KEY PLAN
C-50B-102	CONTRACT B WATER MAIN – PLAN AND PROFILE S. OLD MONETA RD (RT 903) STA. 0+00 TO STA. 10+00
C-50B-103	CONTRACT B WATER MAIN – PLAN AND PROFILE N. OLD MONETA RD (RT 901) STA. 10+00 TO STA. 22+00
C-50B-104	CONTRACT B WATER MAIN – PLAN AND PROFILE N. OLD MONETA RD (RT 901) STA. 22+00 TO STA. 34+00
C-50B-105	CONTRACT B WATER MAIN – PLAN AND PROFILE N. OLD MONETA RD (RT 901) STA. 34+00 TO STA. 46+00
C-50B-106	CONTRACT B WATER MAIN – PLAN AND PROFILE N. OLD MONETA RD (RT 901) STA. 46+00 TO STA. 58+00
C-50B-107	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 58+00 TO STA. 70+00
C-50B-108	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 70+00 TO STA. 82+00
C-50B-109	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 82+00 TO STA. 94+00
C-50B-110	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 94+00 TO STA. 106+00
C-50B-111	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 106+00 TO STA. 118+00
C-50B-112	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 118+00 TO STA. 130+00
C-50B-113	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) & GOOSE CREEK STA. 130+00 TO STA. 142+00
C-50B-114	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) & GOOSE CREEK STA. 142+00 TO STA. 154+00
C-50B-115	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) & GOOSE CREEK STA. 154+00 TO STA. 166+00
C-50B-116	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) & GOOSE CREEK STA. 166+00 TO STA. 178+00
C-50B-117	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 178+00 TO STA. 190+00
C-50B-118	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 190+00 TO STA. 202+00
C-50B-119	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 202+00 TO STA. 214+00
C-50B-120	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 214+00 TO STA. 226+00
C-50B-121	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 226+00 TO STA. 238+00
C-50B-122	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 238+00 TO STA. 250+00
C-50B-123	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 250+00 TO STA. 262+00
C-50B-124	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 262+00 TO STA. 274+00
C-50B-125	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 274+00 TO STA. 286+00
C-50B-126	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 286+00 TO STA. 298+00
C-50B-127	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 298+00 TO STA. 310+00
C-50B-128	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 310+00 TO STA. 322+00
C-50B-129	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 322+00 TO STA. 334+00
C-50B-130	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 334+00 TO STA. 346+00
C-50B-131	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 346+00 TO STA. 358+00
C-50B-132	CONTRACT B WATER MAIN – PLAN AND PROFILE MONETA RD (RT 122) STA. 358+00 TO STA. 361+30

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
12/12/2017	RECORD DRAWINGS	-	KMM	BSR	SMS
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6/4/2015	LEVEL 3 DESIGN DOCUMENTS	B	GLM	JRM	SMS
	LEVEL 2 DESIGN DOCUMENTS	A	GLM	JRM	SMS

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Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP & LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B - WATER MAIN KEY PLAN & SHEET LIST TABLE

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO. 27872

C-50B-101
SHEET
OF

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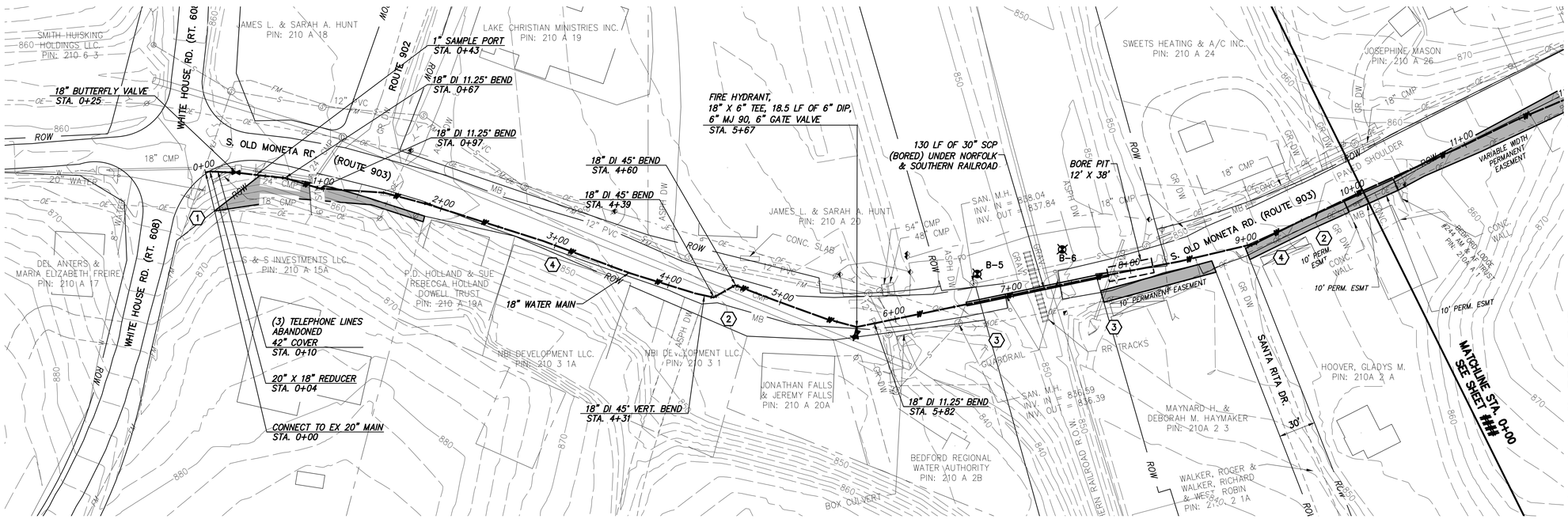

WATER MAIN PLAN

CHA
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Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

1. COORDINATE TIE-IN WITH OWNER/ENGINEER.
2. PAVEMENT OPEN CUT & REPAIR PER DETAIL 3, C-00-503 FROM EDGE OF PAVEMENT.
3. PROVIDE SIGNAGE AT RAILROAD RIGHT OF WAY, SEE SECTION 015720.
4. MAINTAIN MINIMUM 10' SEPARATION FROM EXISTING BUILDING STRUCTURES.

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

NO.	BY:	CK.	APP
-	KMM	BSR	SMS
-	GLM	JRM	SMS
B	GLM	JRM	SMS
A	GLM	JRM	SMS

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Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
N. OLD MONETA RD (RT 901)
STA. 0+00 TO STA. 10+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-102
SHEET
OF

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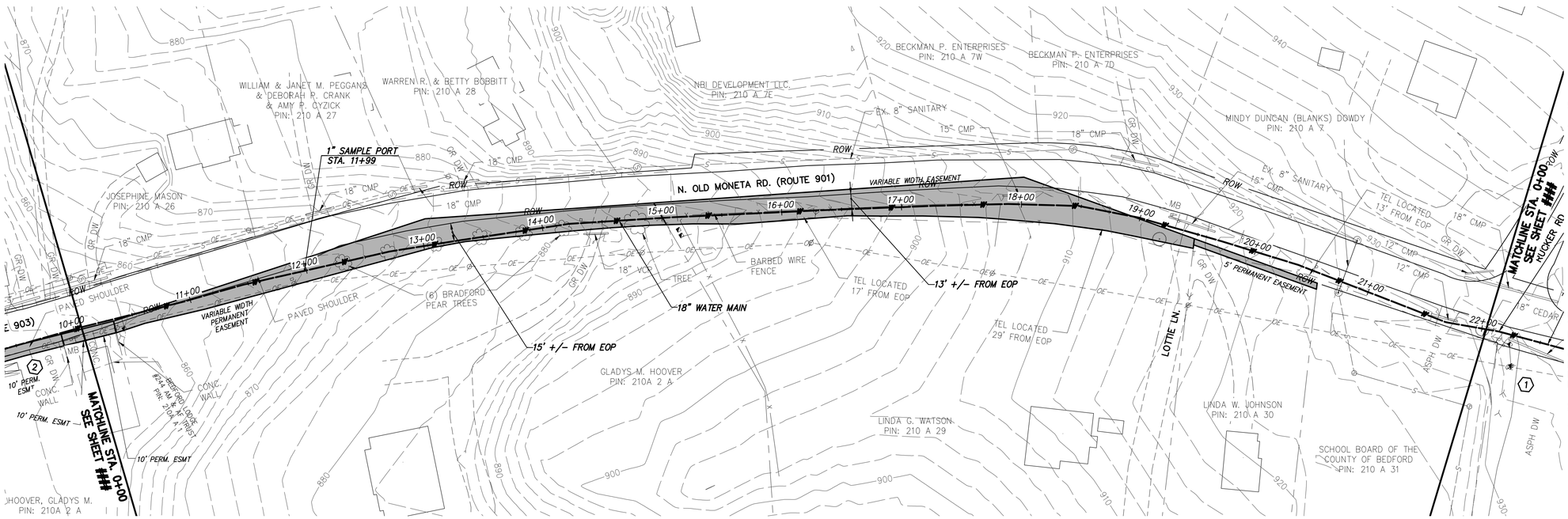

WATER MAIN PLAN

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0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) ——

NO.	BY:	CK.	APP
-	KMM	BSR	SMS
-	GLM	JRM	SMS
B	GLM	JRM	SMS
A	GLM	JRM	SMS

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LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
N. OLD MONETA RD (RT 901)
STA. 10+00 TO STA. 22+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-103
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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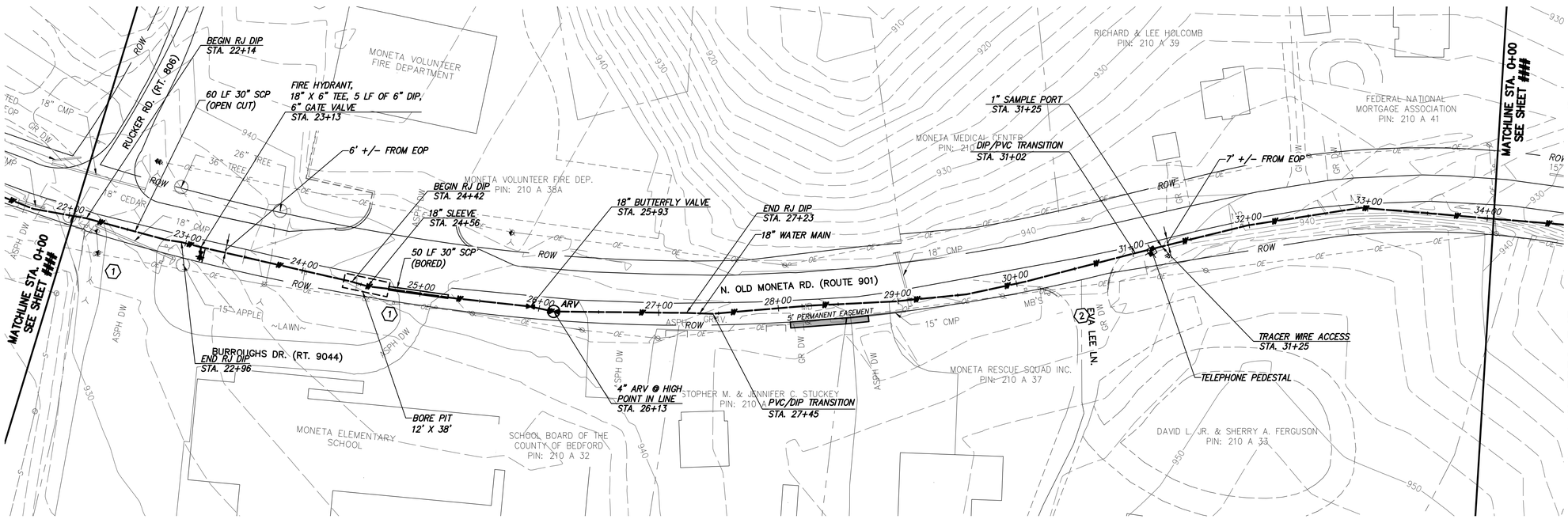

WATER MAIN PLAN

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0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

1. MAINTAIN INGRESS AND EGRESS TO SCHOOL AT ALL TIMES.
2. MAINTAIN ONE LANE OPEN AT ALL TIMES. COORDINATE INGRESS AND EGRESS WITH PROPERTY OWNER.

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
N. OLD MONETA RD (RT 901)
STA. 22+00 TO STA. 34+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-104
SHEET
OF

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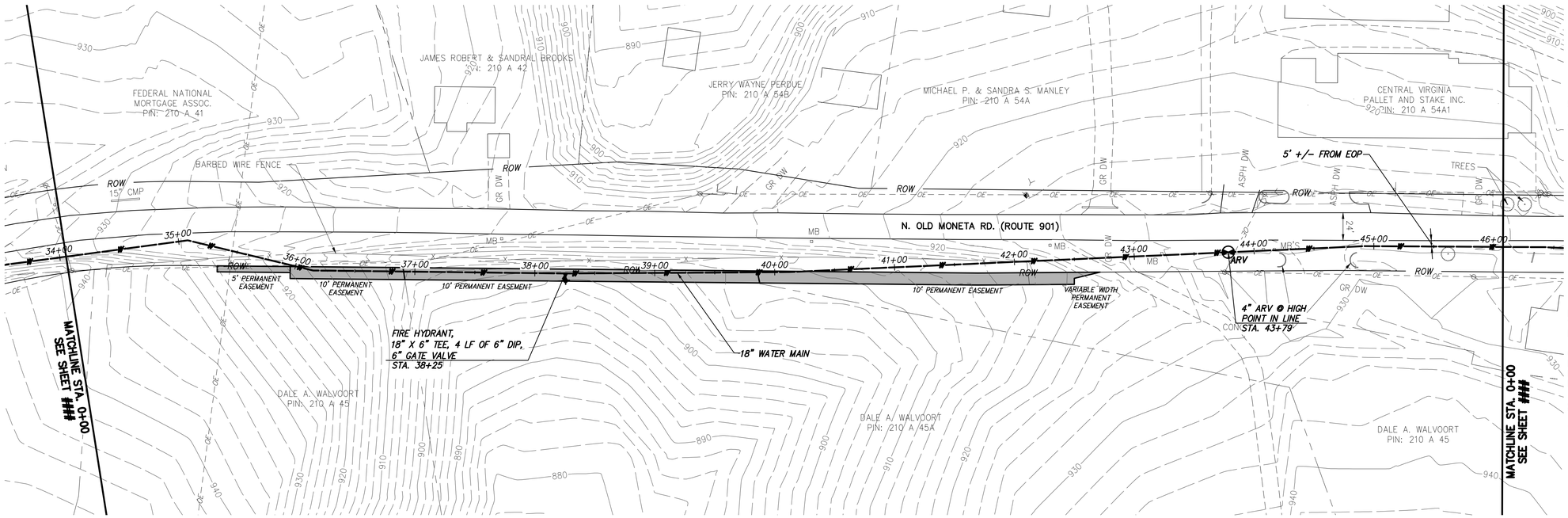

WATER MAIN PLAN

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0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
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3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

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SPECIFIC NOTES

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Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
N. OLD MONETA RD (RT 901)
STA. 34+00 TO STA. 46+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-105
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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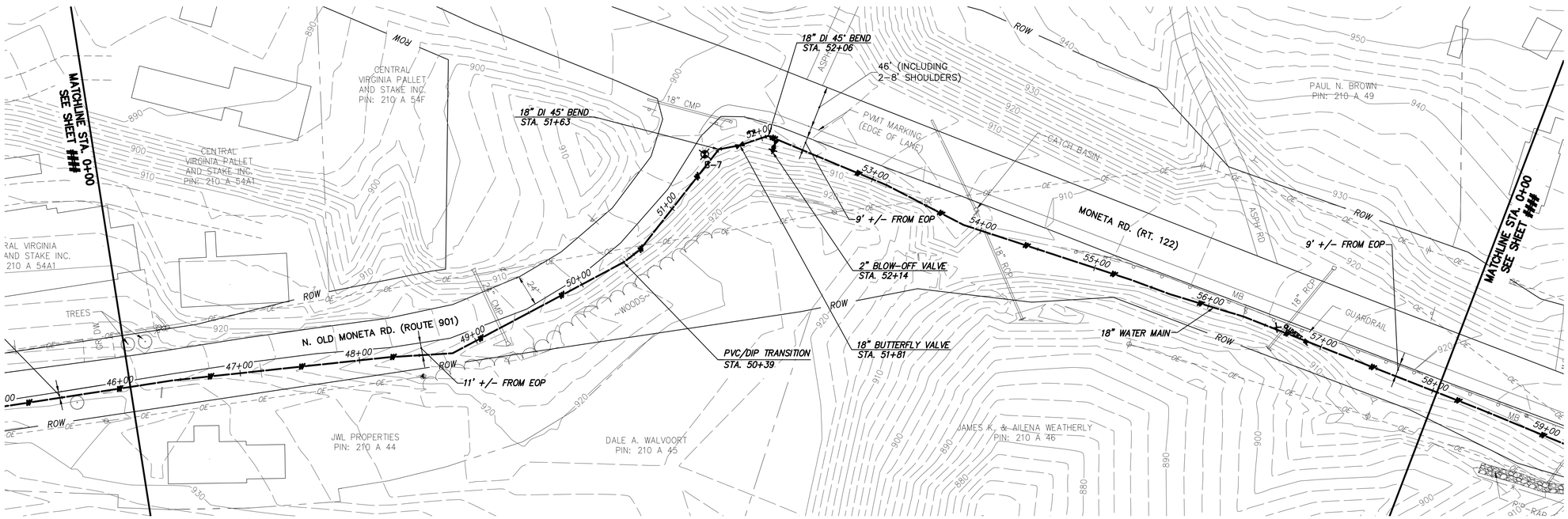

WATER MAIN PLAN

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0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
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b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
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3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

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SPECIFIC NOTES

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LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
N. OLD MONETA RD (RT 901), MONETA RD (RT 122)
STA. 46+00 TO STA. 58+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-106
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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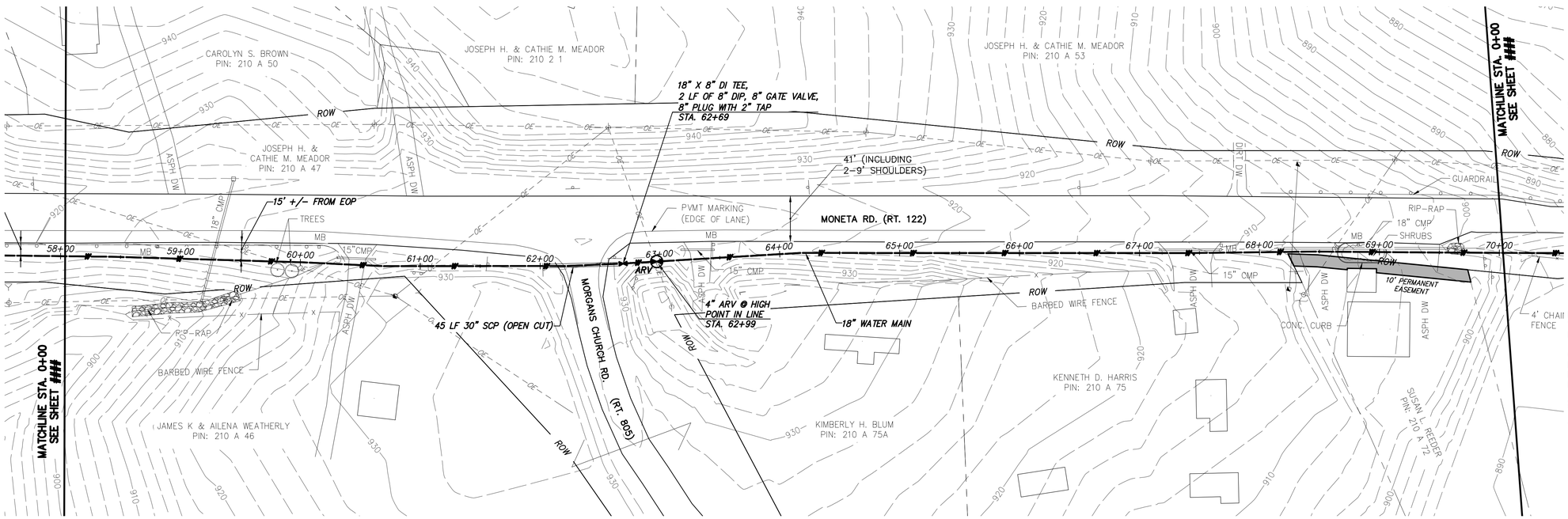

WATER MAIN PLAN

CHA
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Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
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b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
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SPECIFIC NOTES

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LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 58+00 TO STA. 70+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-107
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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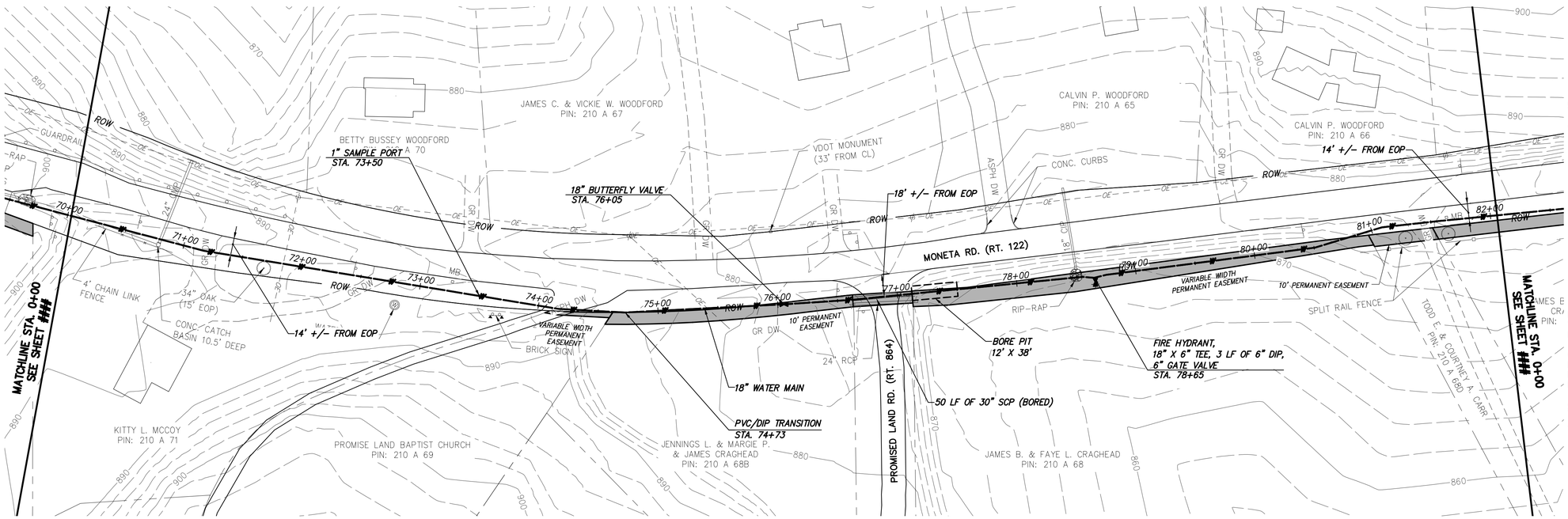

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) ____

NO.	BY:	CK.	APP
-	KMM	BSR	SMS
-	GLM	JRM	SMS
B	GLM	JRM	SMS
A	GLM	JRM	SMS

DATE	REVISIONS AND RECORD OF ISSUE
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XREF4:
SAVED:
PLOTTED:
USER:
DWG VER:

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Black & Veatch Corporation
Kansas City, Missouri

LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 70+00 TO STA. 82+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-108
SHEET
OF

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RECORD DRAWING 12-12-17

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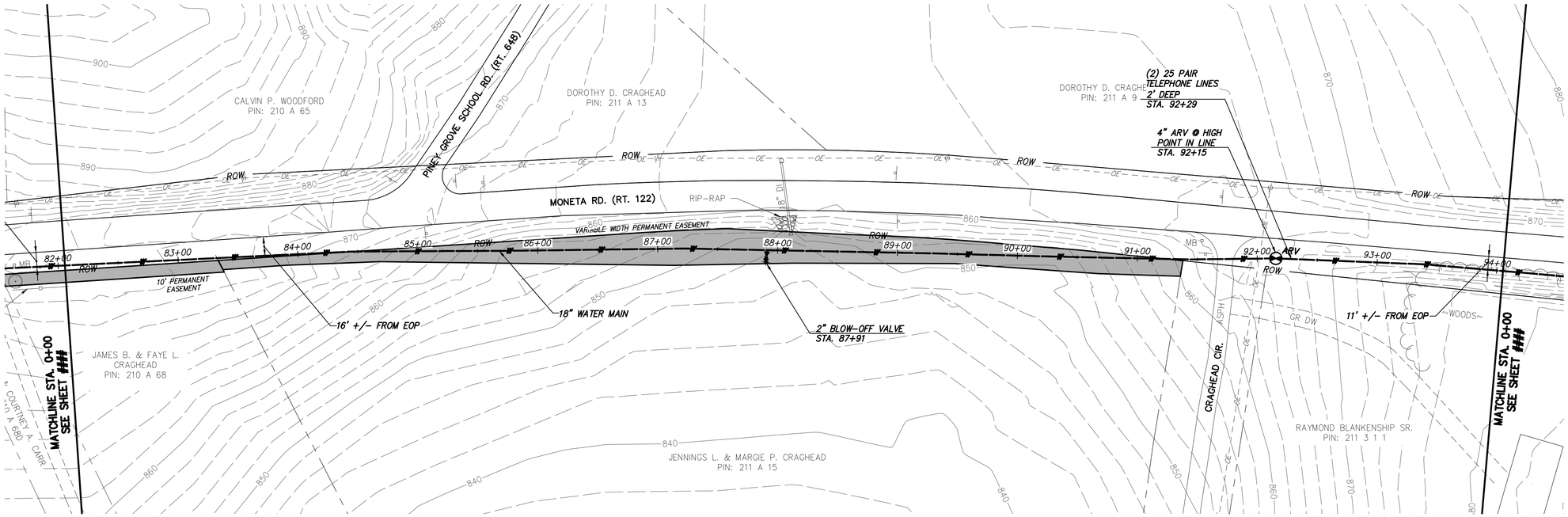

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) ——

NO.	BY:	CK.	APP
-	KMM	BSR	SMS
-	GLM	JRM	SMS
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DWG VER:

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Black & Veatch Corporation
Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 82+00 TO STA. 94+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-109
SHEET
OF

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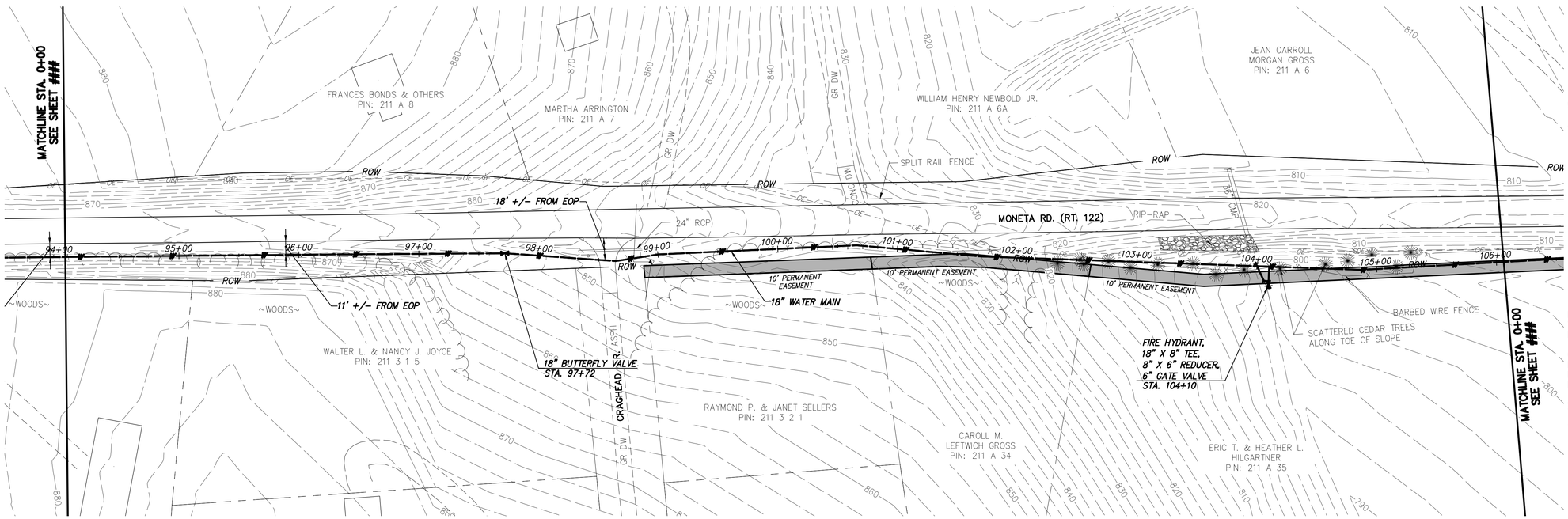

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) ——

NO.	BY:	CK.	APP
-	KMM	BSR	SMS
-	GLM	JRM	SMS
B	GLM	JRM	SMS
A	GLM	JRM	SMS

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Black & Veatch Corporation
Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 94+00 TO STA. 106+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-110
SHEET
OF

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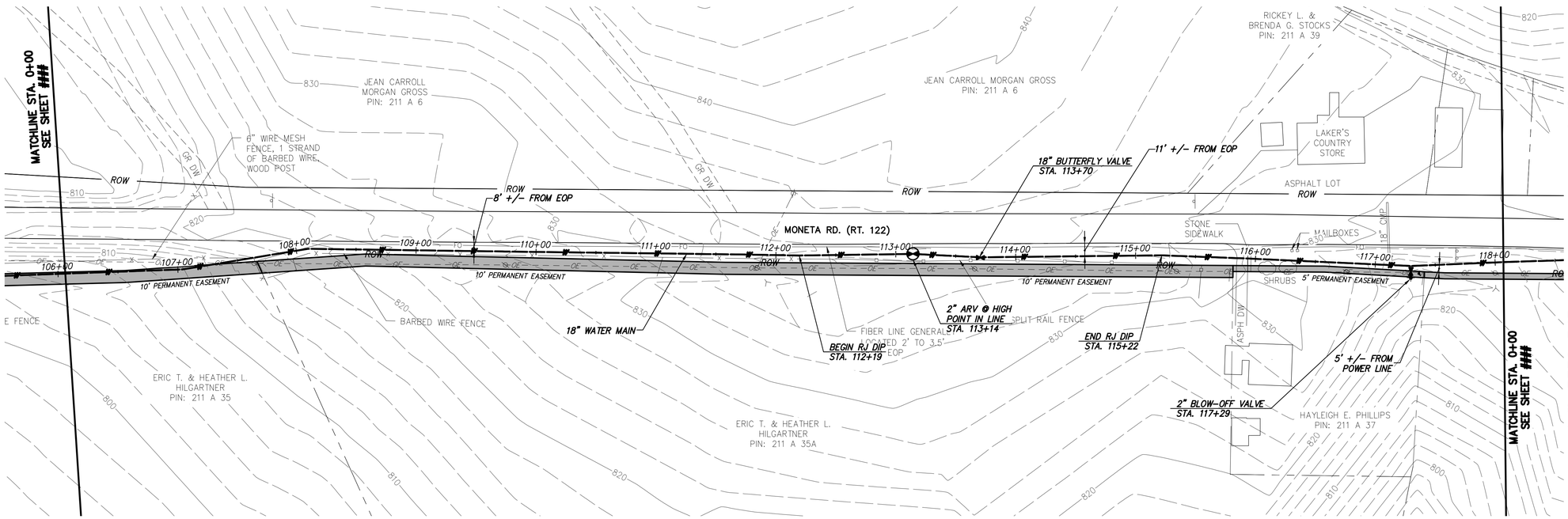

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

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C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

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	LEVEL 2 DESIGN DOCUMENTS	A	GLM	JRM	SMS

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XREF1:
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XREF3:
XREF4:
DWG VER:

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Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 106+00 TO STA. 118+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-111
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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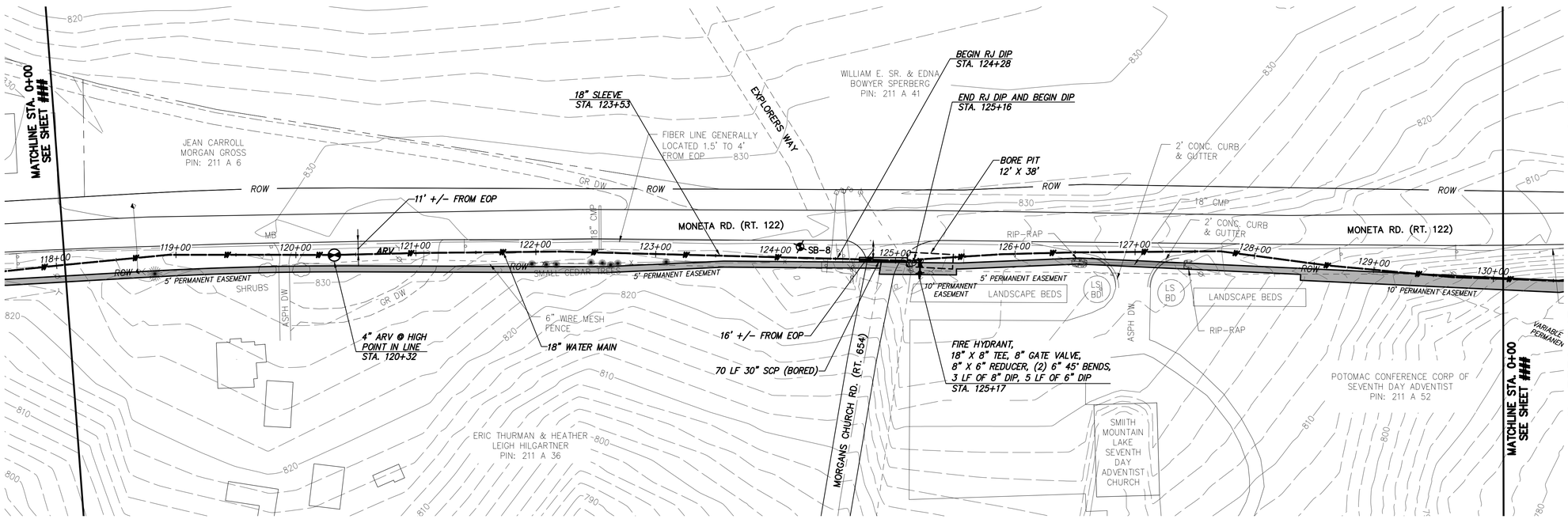

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

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C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

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	LEVEL 2 DESIGN DOCUMENTS	A	GLM	JRM	SMS

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XREF2:
XREF3:
XREF4:
DWG VER:

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Black & Veatch Corporation
Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 118+00 TO STA. 130+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-112
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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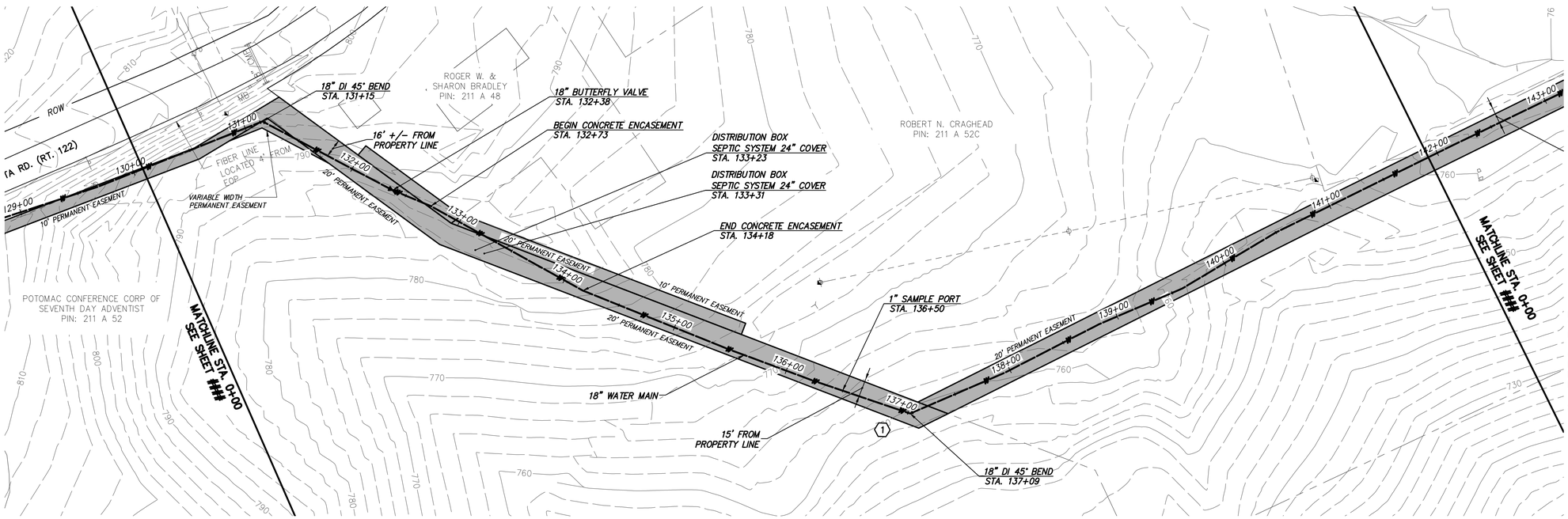

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) PROVIDE WATER MARKER POSTS (SEE DETAIL 4, C-00-501) AT APPROX. 500' STATIONS AND AT BENDS BETWEEN STATIONS 131+00 AND 180+00.

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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XREF4:
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Black & Veatch Corporation
Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP & LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122) & GOOSE CREEK
STA. 130+00 TO STA. 142+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-113
SHEET
OF

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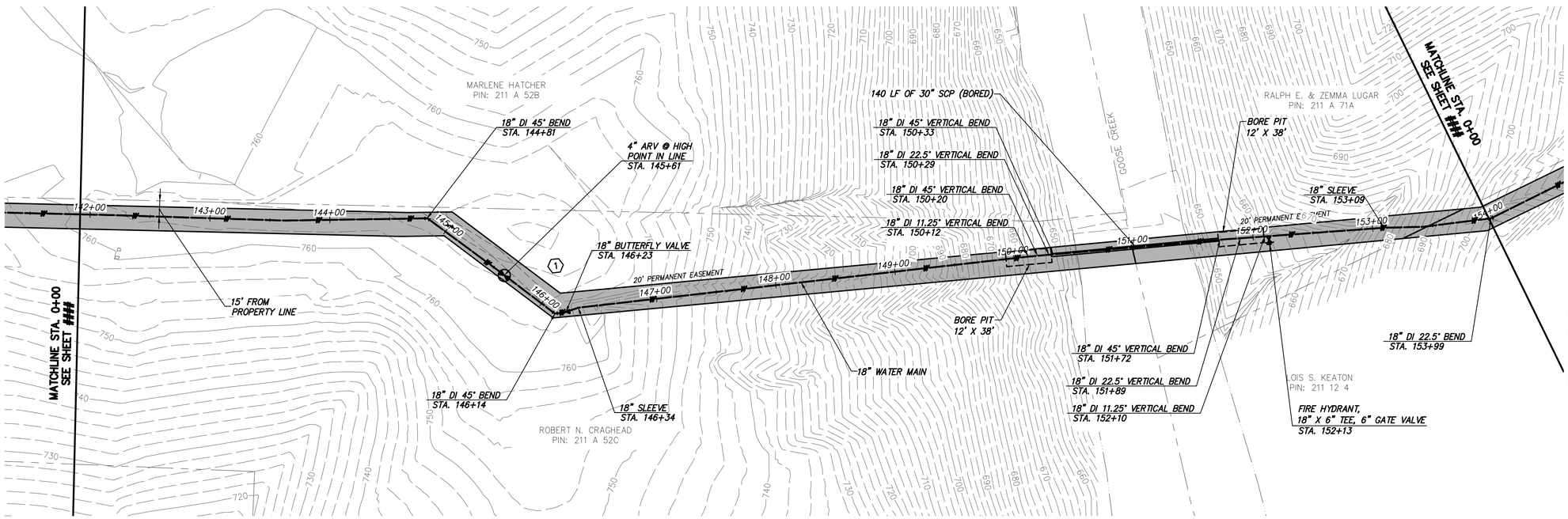

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
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SPECIFIC NOTES

(1) PROVIDE WATER MARKER POSTS (SEE DETAIL 4, C-00-501) AT APPROX. 500' STATIONS AND AT BENDS BETWEEN STATIONS 131+00 AND 180+00.

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Black & Veatch Corporation
Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122) & GOOSE CREEK
STA. 142+00 TO STA. 154+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-114
SHEET
OF

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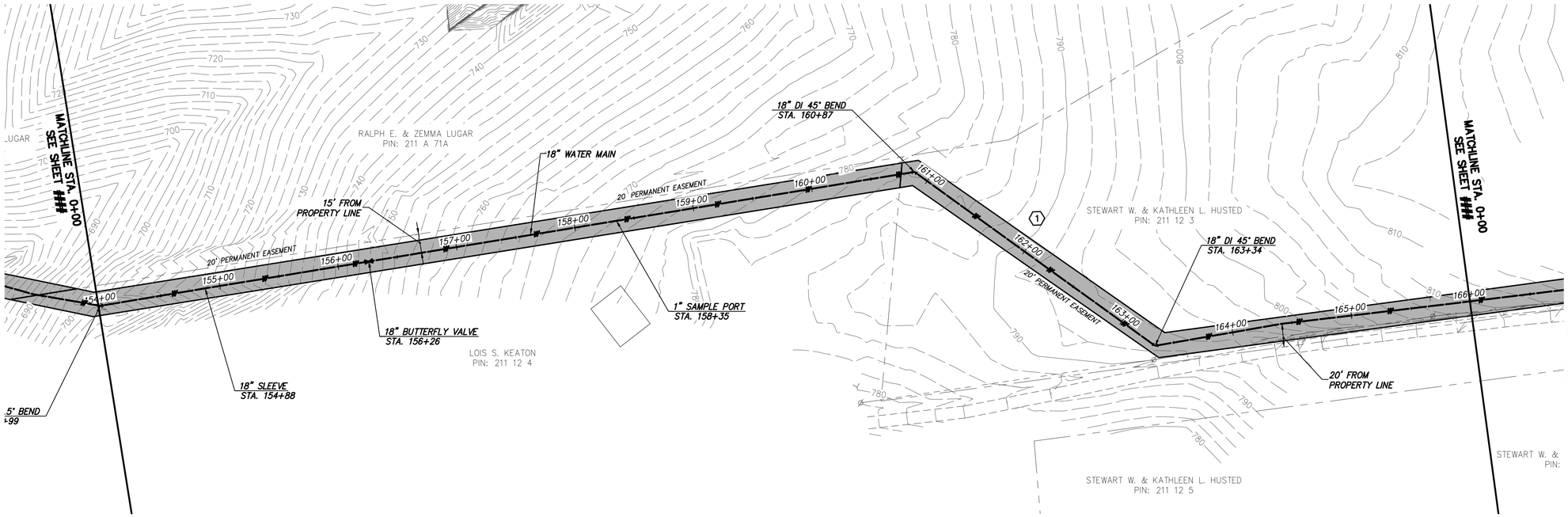

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

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SPECIFIC NOTES

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DWG VER:

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Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122) & GOOSE CREEK
STA. 154+00 TO STA. 166+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-115
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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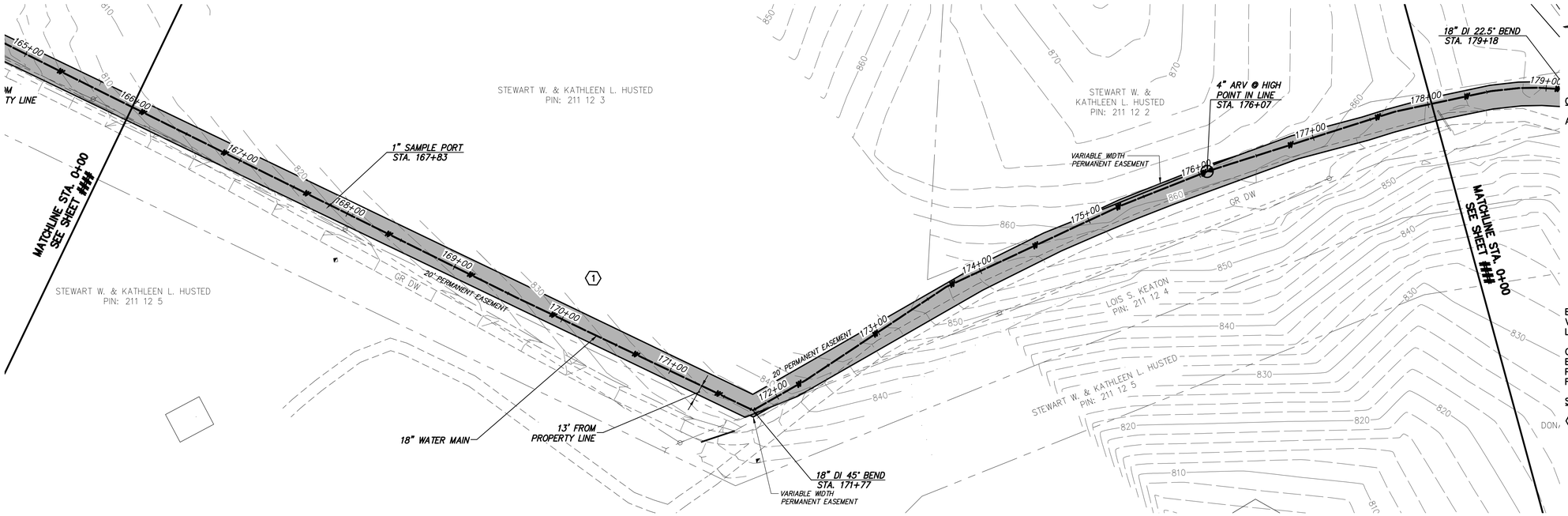

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

1 PROVIDE WATER MARKER POSTS (SEE DETAIL 4, C-00-501) AT APPROX. 500' STATIONS AND AT BENDS BETWEEN STATIONS 131+00 AND 180+00.

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
12/12/2017	RECORD DRAWINGS	-	KMM	BSR	SMS
11/20/2015	ISSUED FOR CONSTRUCTION	-	GLM	JRM	SMS
6/4/2015	LEVEL 3 DESIGN DOCUMENTS	B	GLM	JRM	SMS
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XREF4:
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PLOTTED:
USER:
DWG VER:

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Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122) & GOOSE CREEK
STA. 166+00 TO STA. 178+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-116
SHEET
OF

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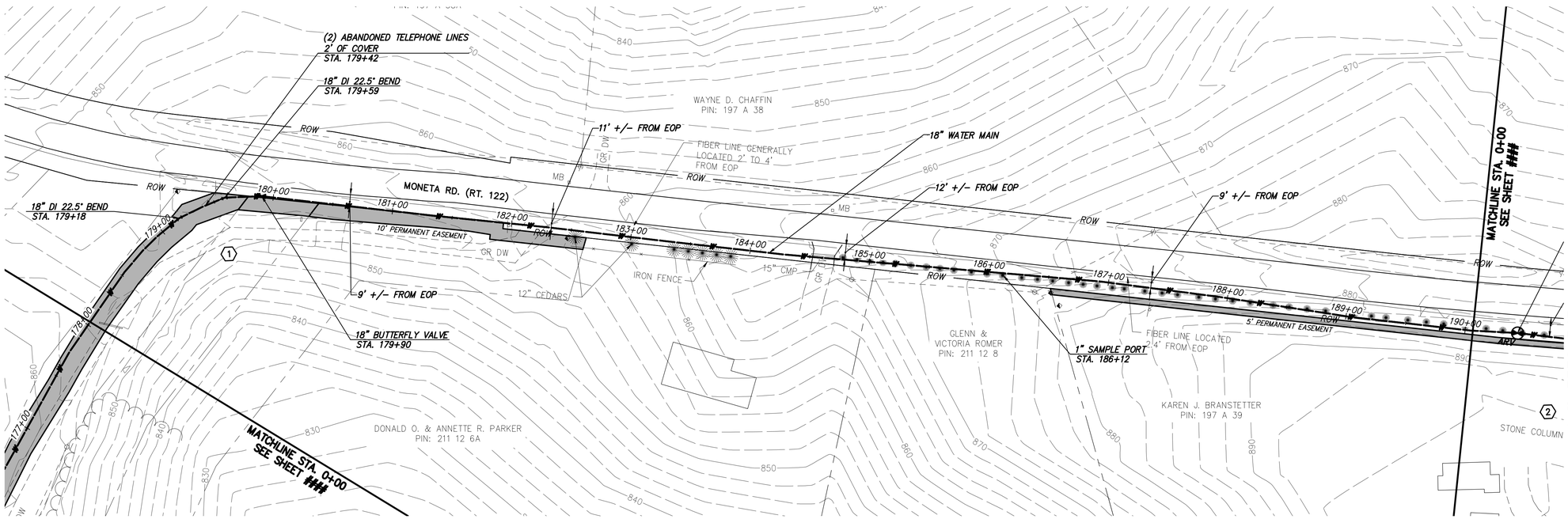

WATER MAIN PLAN

CHA
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Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

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XREF3:
XREF4:
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LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP & LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 178+00 TO STA. 190+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-117
SHEET
OF

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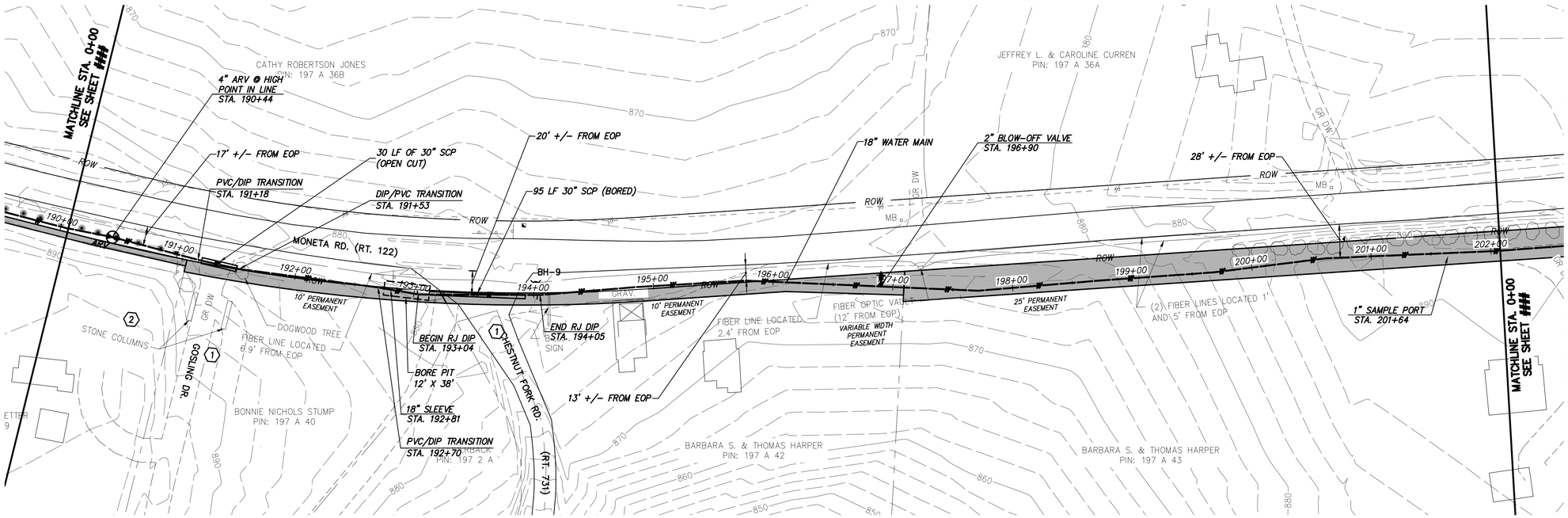

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
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C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) CONTRACTOR TO MAINTAIN VEHICLE INGRESS AND EGRESS AT ALL TIMES.

(2) CONTRACTOR TO PROTECT STONE COLUMNS AND DOGWOOD TREE.

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 190+00 TO STA. 202+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-118
SHEET
OF

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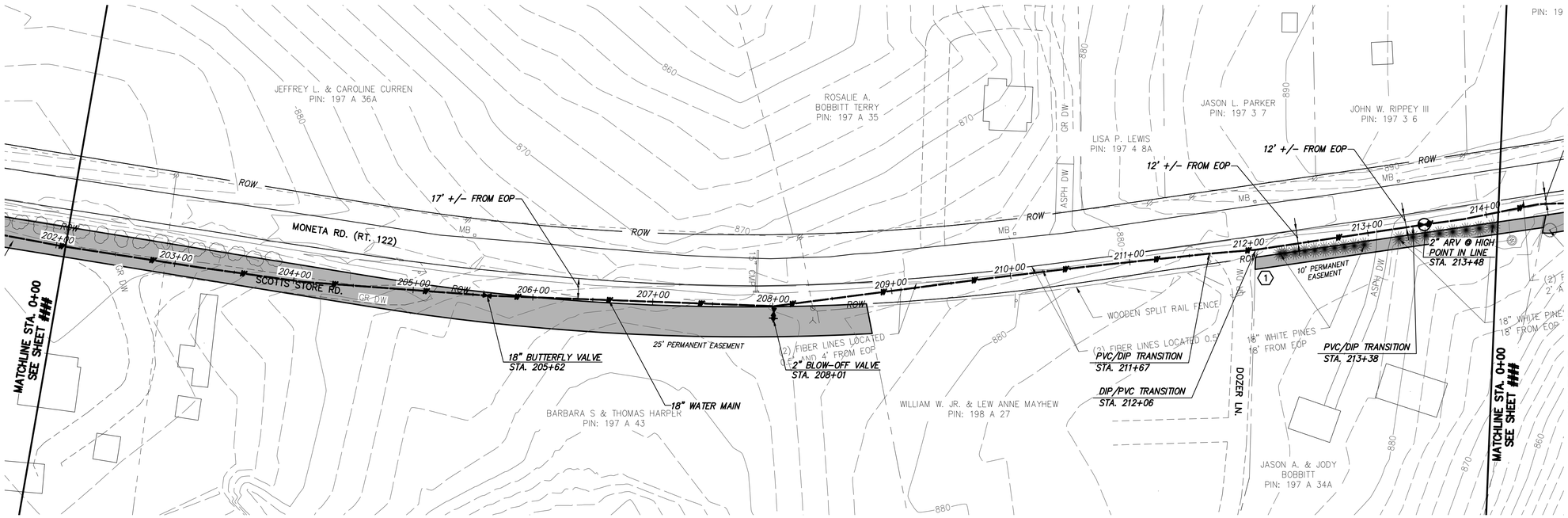

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
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SPECIFIC NOTES

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RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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	LEVEL 2 DESIGN DOCUMENTS	A	GLM	JRM	SMS

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Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 202+00 TO STA. 214+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-119
SHEET
OF

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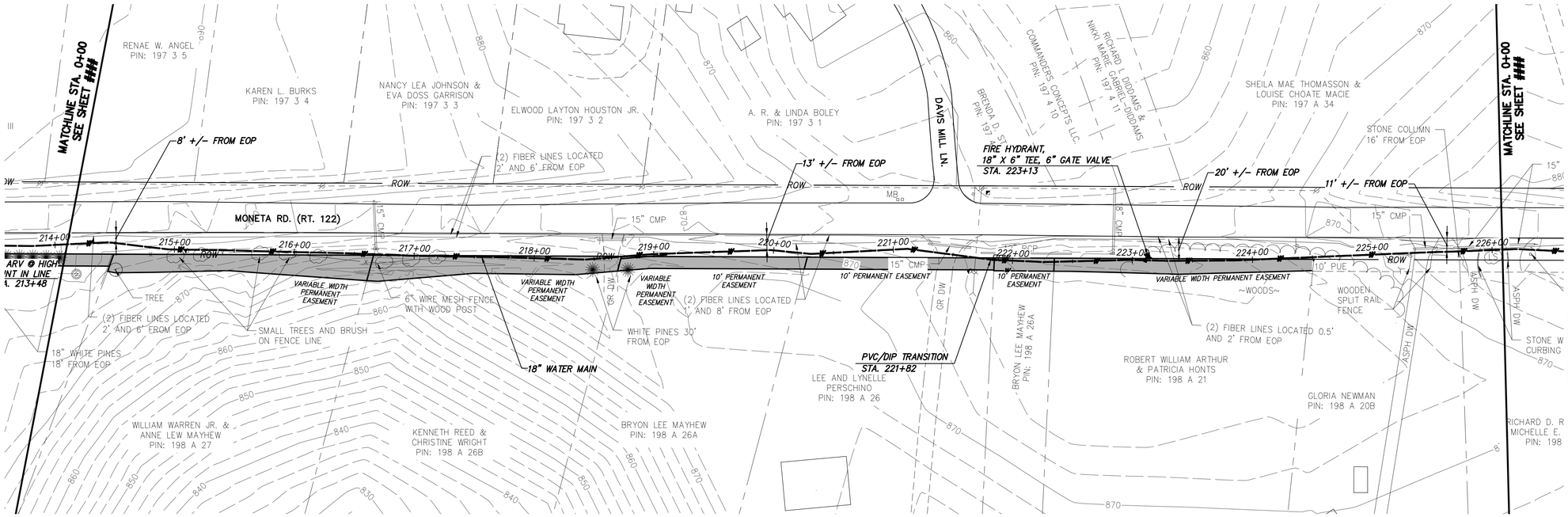

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
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SPECIFIC NOTES

1 ——

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-	KMM	BSR	SMS
-	GLM	JRM	SMS
B	GLM	JRM	SMS
A	GLM	JRM	SMS

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Black & Veatch Corporation
Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 214+00 TO STA. 226+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-120
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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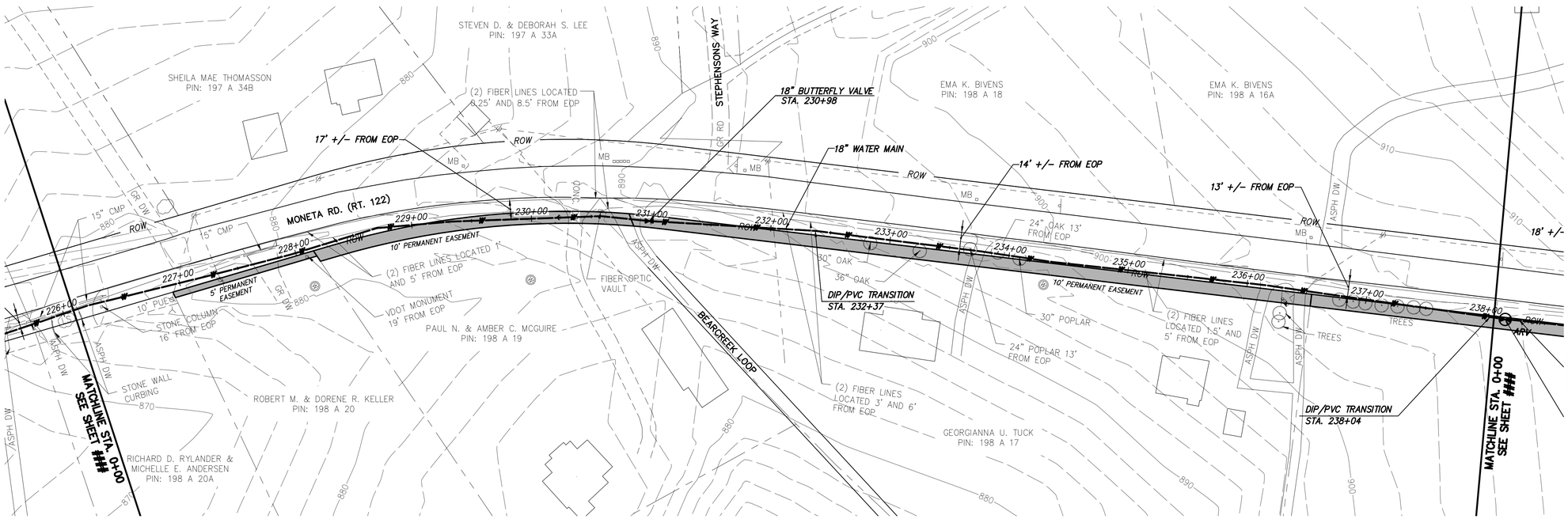

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Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
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3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

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C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) ——

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-	KMM	BSR	SMS
-	GLM	JRM	SMS
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DATE	REVISIONS AND RECORD OF ISSUE
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LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP & LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 226+00 TO STA. 238+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-121
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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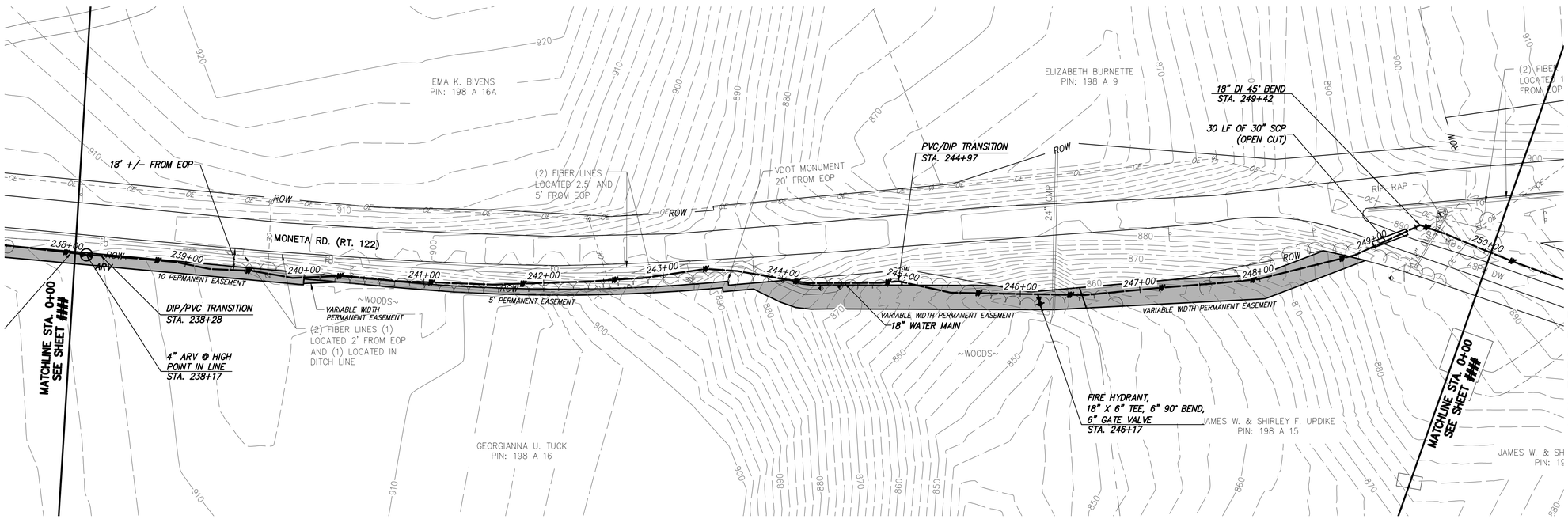

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

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SPECIFIC NOTES

(1) ____

NO.	BY:	CK.	APP
-	KMM	BSR	SMS
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SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 238+00 TO STA. 250+00

DESIGNED: JRM
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0 1/2 1
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PROJECT NO.
27872

C-50B-122
SHEET
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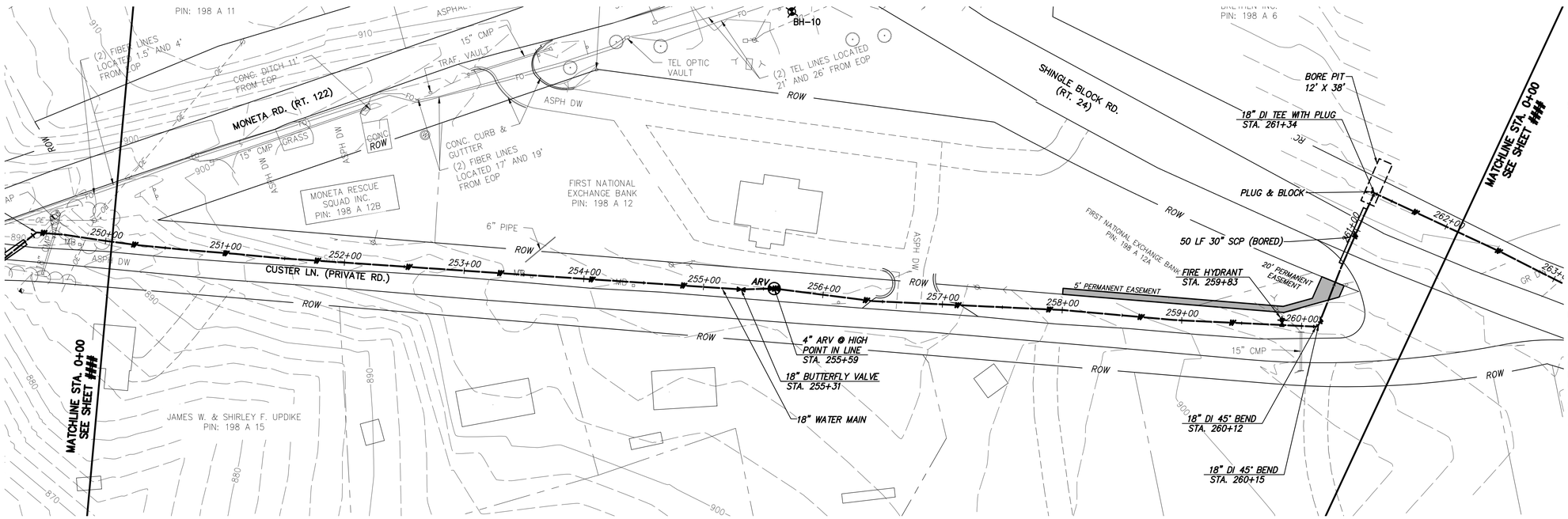

WATER MAIN PLAN

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Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
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XREF1:
XREF2:
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USER:
DWG VER:

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Black & Veatch Corporation
Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP & LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
CUSTER LN & SHINGLE BLOCK RD (RT 24)
STA. 250+00 TO STA. 262+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-123
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

File: V:\PROJECTS\BVA\27872\CADD_ACAD\C-50B-122-126_27872.DWG
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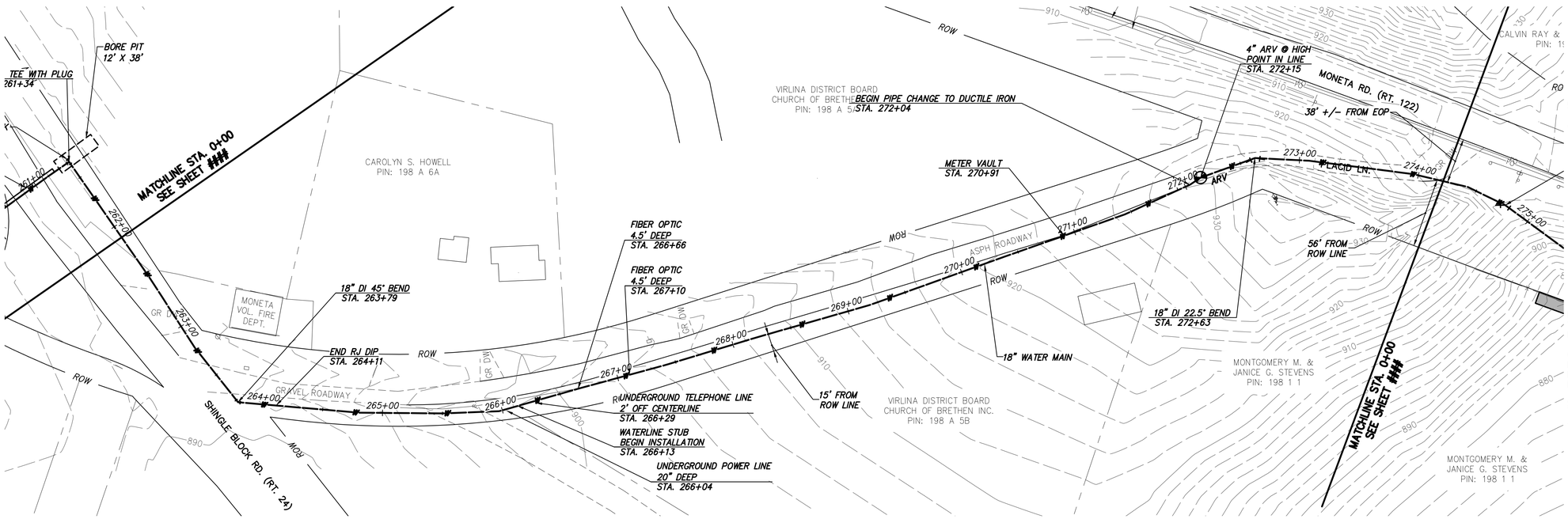

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) ——

NO.	BY:	CK.	APP
-	KMM	BSR	SMS
-	GLM	JRM	SMS
B	GLM	JRM	SMS
A	GLM	JRM	SMS

DATE	REVISIONS AND RECORD OF ISSUE
12/12/2017	RECORD DRAWINGS
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6/4/2015	LEVEL 3 DESIGN DOCUMENTS
	LEVEL 2 DESIGN DOCUMENTS

XREF1:
XREF2:
XREF3:
XREF4:
SAVED:
PLOTTED:
USER:
DWG VER:

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Black & Veatch Corporation
Kansas City, Missouri

LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP & LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
SHINGLE BLOCK RD (RT 24) & MONETA RD (RT 122)
STA. 262+00 TO STA. 274+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-124
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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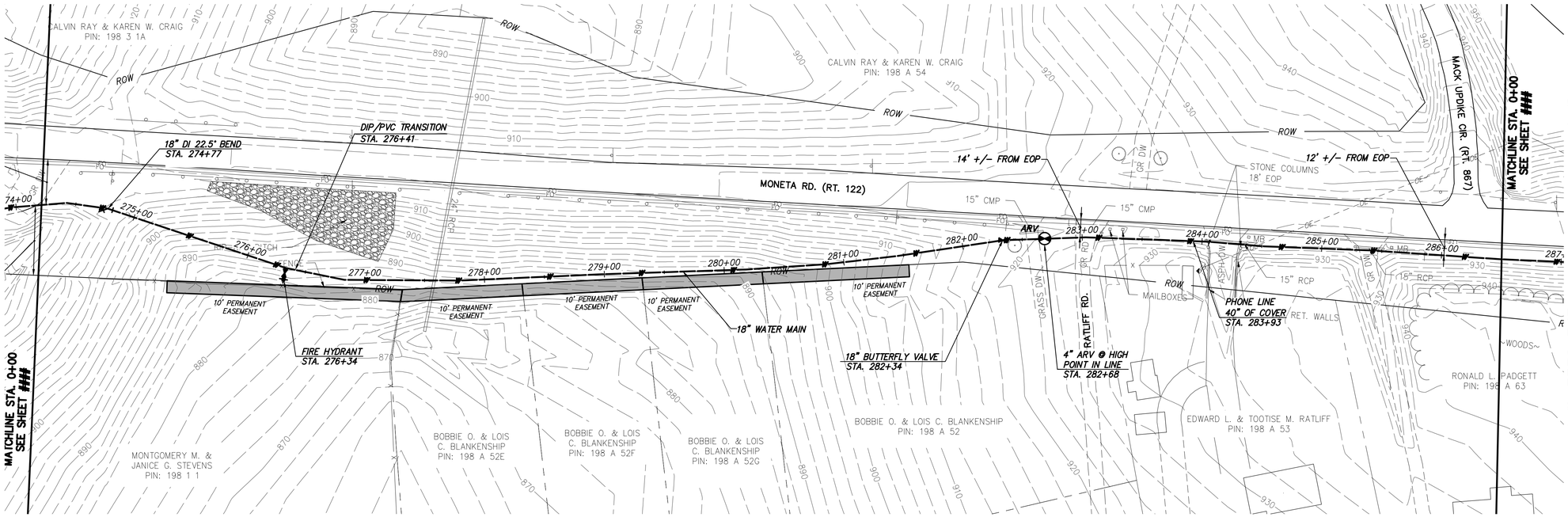

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) ——

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY:	CK.	APP
12/12/2017	RECORD DRAWINGS	-	KMM	BSR	SMS
11/20/2015	ISSUED FOR CONSTRUCTION	-	GLM	JRM	SMS
6/4/2015	LEVEL 3 DESIGN DOCUMENTS	B	GLM	JRM	SMS
	LEVEL 2 DESIGN DOCUMENTS	A	GLM	JRM	SMS

XREF1:
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XREF4:
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PLOTTED:
USER:
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Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP & LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 274+00 TO STA. 286+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-125
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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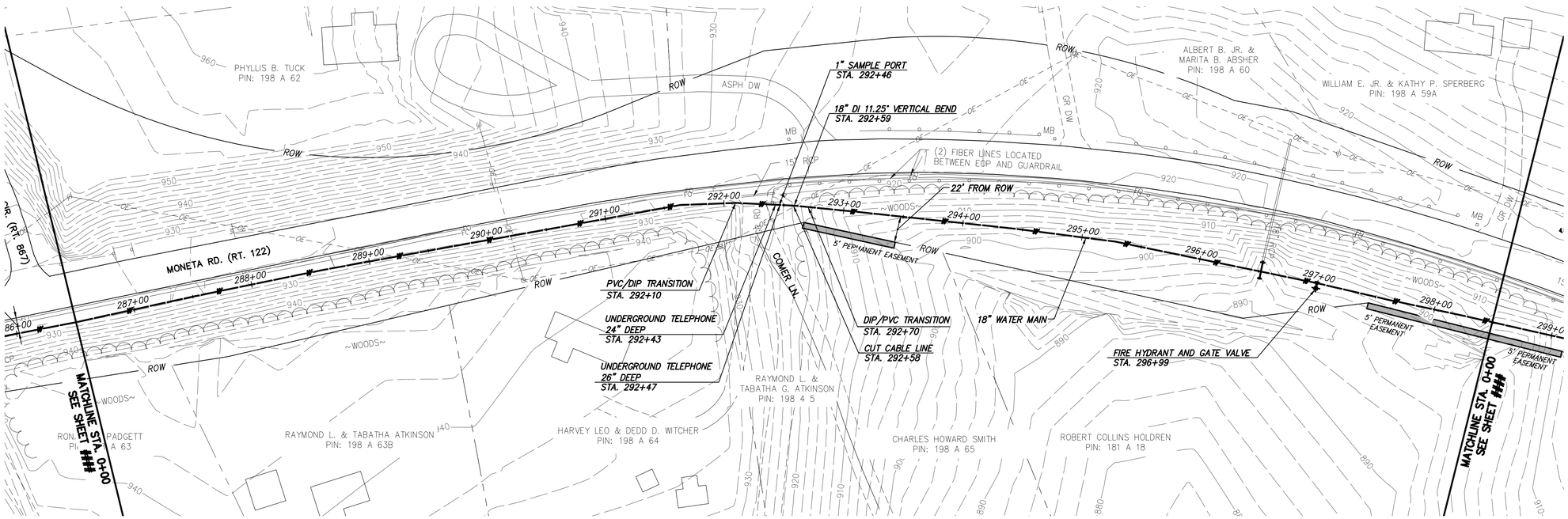

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

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C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

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DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY:	CK.	APP
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11/20/2015	ISSUED FOR CONSTRUCTION	-	GLM	JRM	SMS
6/4/2015	LEVEL 3 DESIGN DOCUMENTS	B	GLM	JRM	SMS
	LEVEL 2 DESIGN DOCUMENTS	A	GLM	JRM	SMS

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XREF3:
XREF4:
DWG VER:

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Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 286+00 TO STA. 298+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-126
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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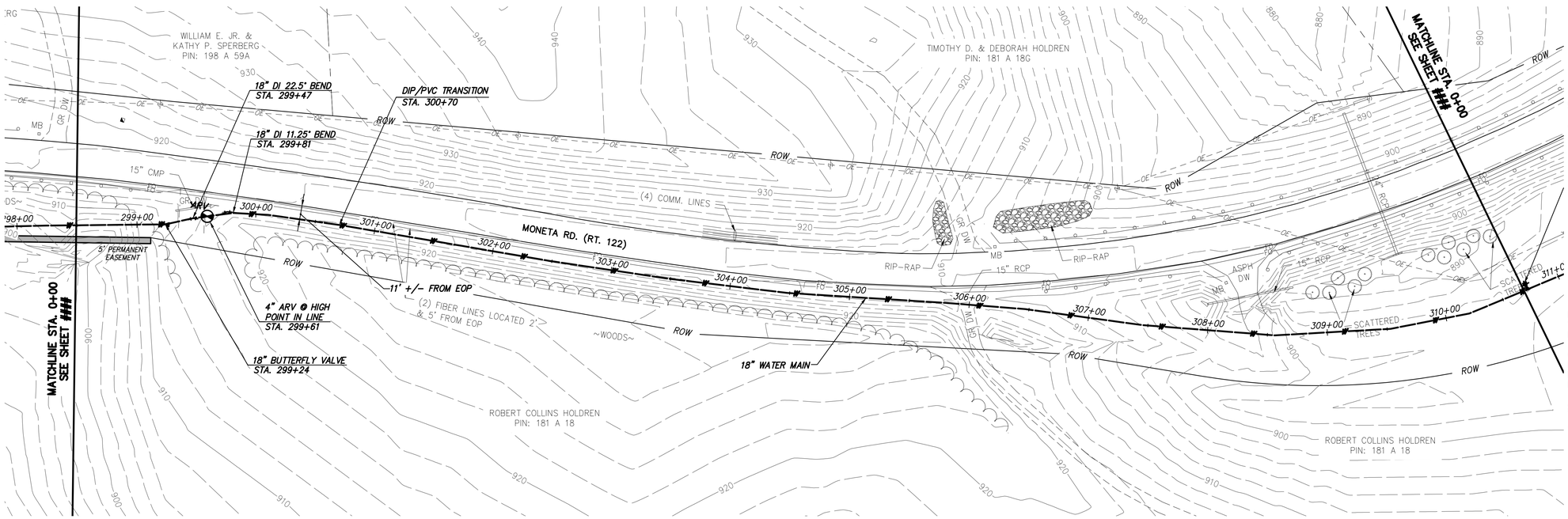

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1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) ——

WATER MAIN PLAN

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

NO.	BY	CK	APP
-	KMM	BSR	SMS
-	GLM	JRM	SMS
B	GLM	JRM	SMS
A	GLM	JRM	SMS

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Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 298+00 TO STA. 310+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-127
SHEET
OF

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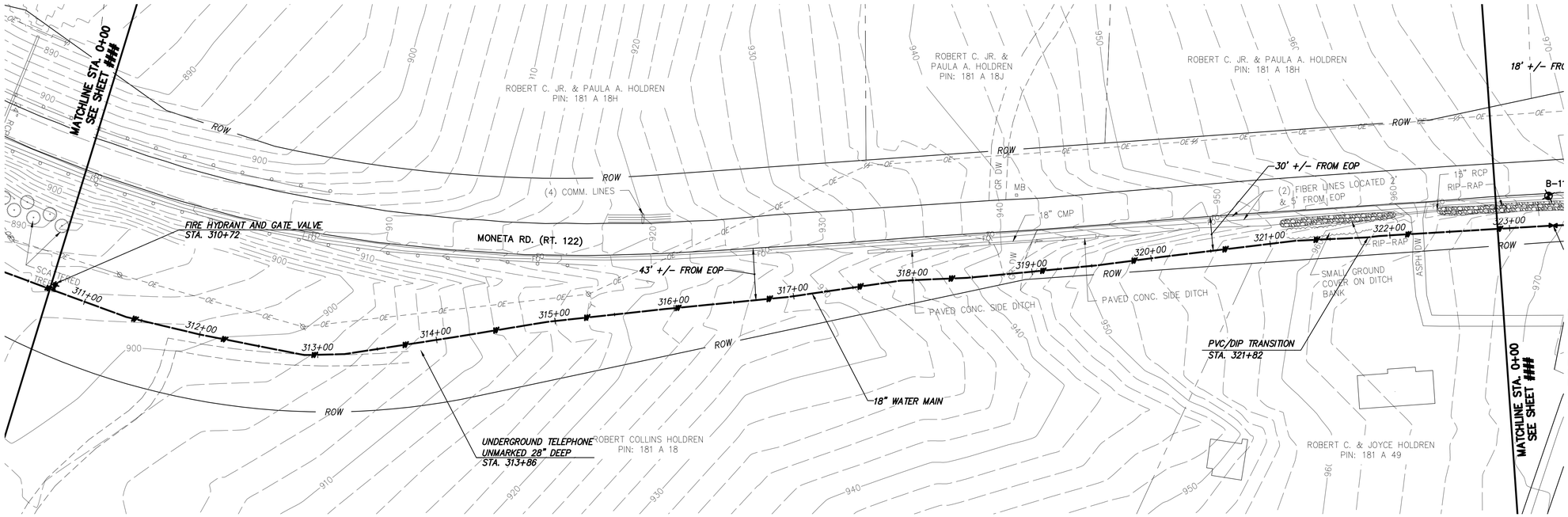

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) ——

NO.	BY:	CK.	APP
-	KMM	BSR	SMS
-	GLM	JRM	SMS
B	GLM	JRM	SMS
A	GLM	JRM	SMS

DATE	REVISIONS AND RECORD OF ISSUE
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XREF4:
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PLOTTED:
USER:
DWG VER:

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Black & Veatch Corporation
Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 310+00 TO STA. 322+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-128
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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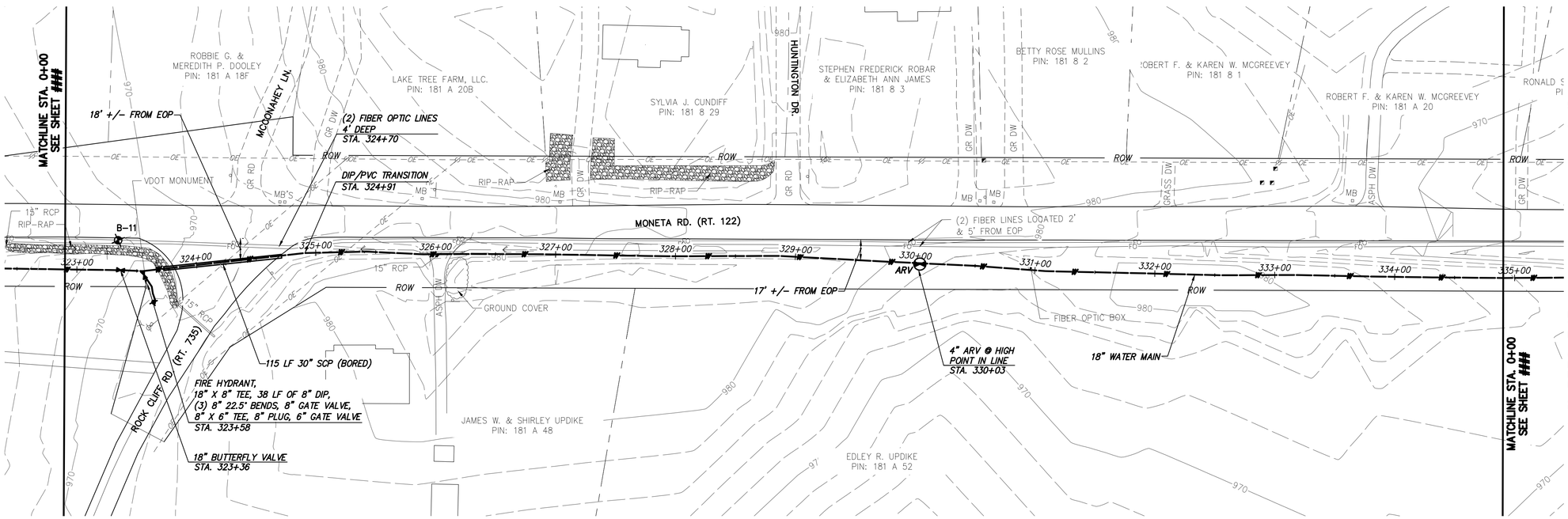

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) ___

NO.	BY:	CK.	APP
-	KMM	BSR	SMS
-	GLM	JRM	SMS
B	GLM	JRM	SMS
A	GLM	JRM	SMS

DATE	REVISIONS AND RECORD OF ISSUE
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XREF4:
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PLOTTED:
USER:
DWG VER:

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Black & Veatch Corporation
Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 322+00 TO STA. 334+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-129
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

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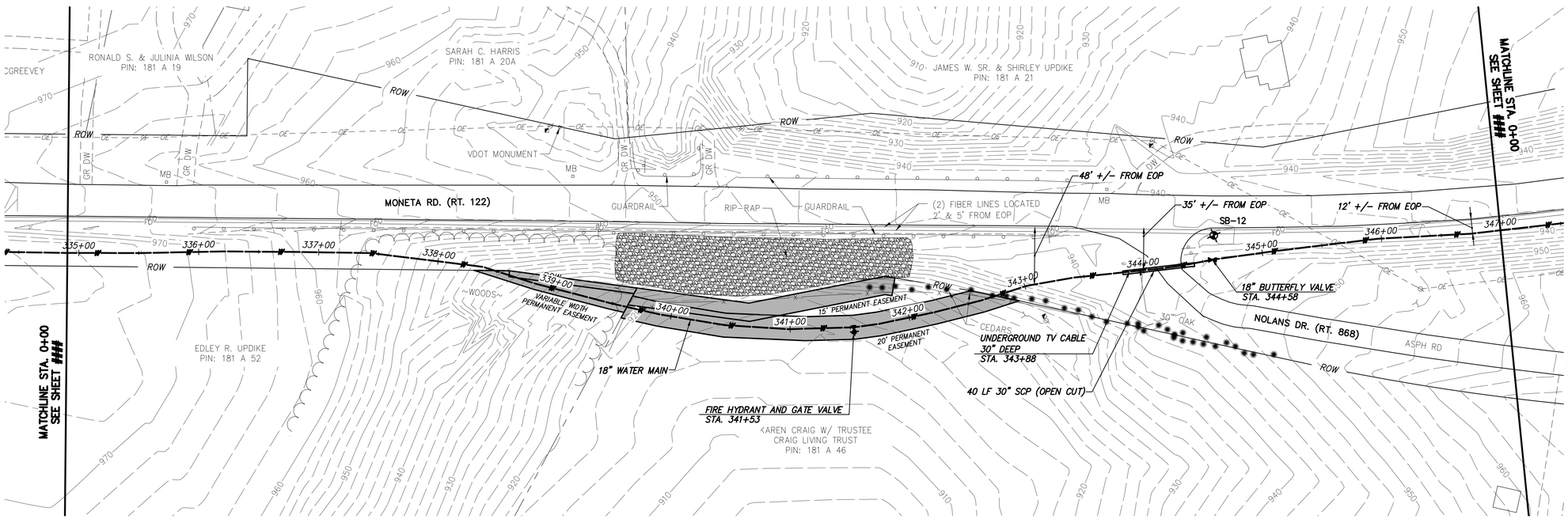

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

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C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

(1) ____

NO.	BY:	CK.	APP
-	KMM	BSR	SMS
-	GLM	JRM	SMS
B	GLM	JRM	SMS
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PLOTTED:
USER:
DWG VER:

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Black & Veatch Corporation
Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP &
LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 334+00 TO STA. 346+00

DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-130
SHEET
OF

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

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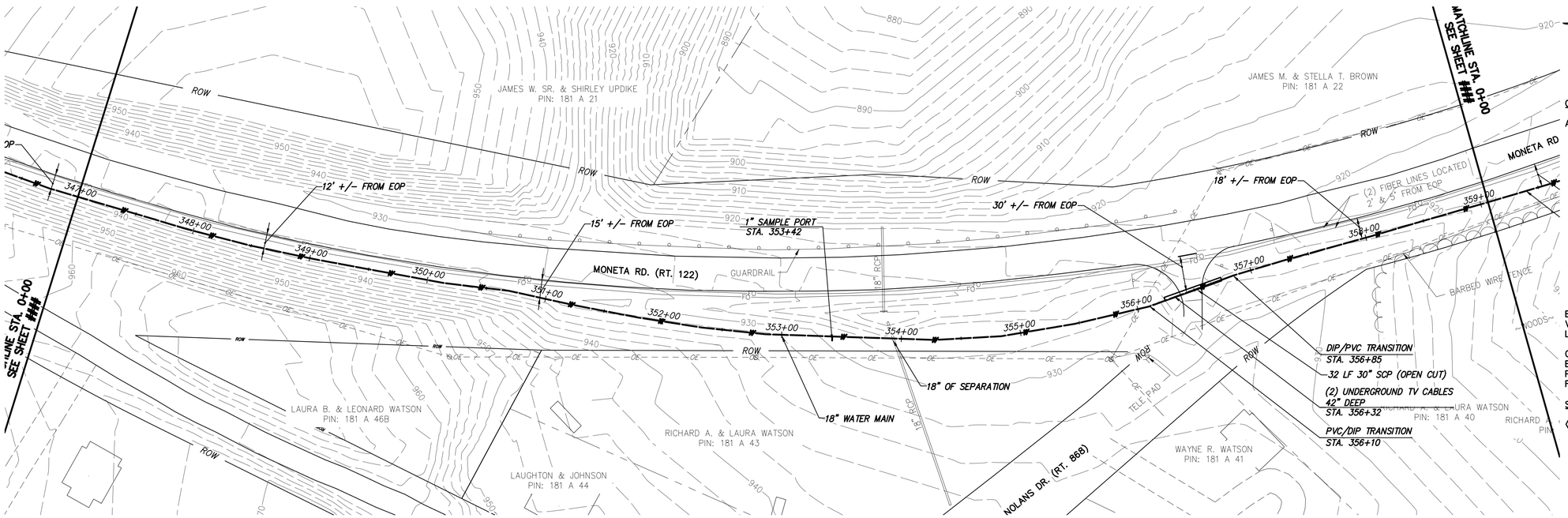

WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
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SPECIFIC NOTES

1 ——

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RECORD DRAWING 12-12-17

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	LEVEL 2 DESIGN DOCUMENTS	A	GLM	JRM	SMS

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PLOTTED:
USER:
DWG VER:

BLACK & VEATCH
Building a world of difference.
Black & Veatch Corporation
Kansas City, Missouri
LEVEL 3 DESIGN DOCUMENTS

BEDFORD REGIONAL WATER AUTHORITY
SMITH MOUNTAIN LAKE WTP & LAKES TO FOREST WATER LINE EXTENSION

CONTRACT B WATER MAIN - PLAN & PROFILE
MONETA RD (RT 122)
STA. 346+00 TO STA. 358+00

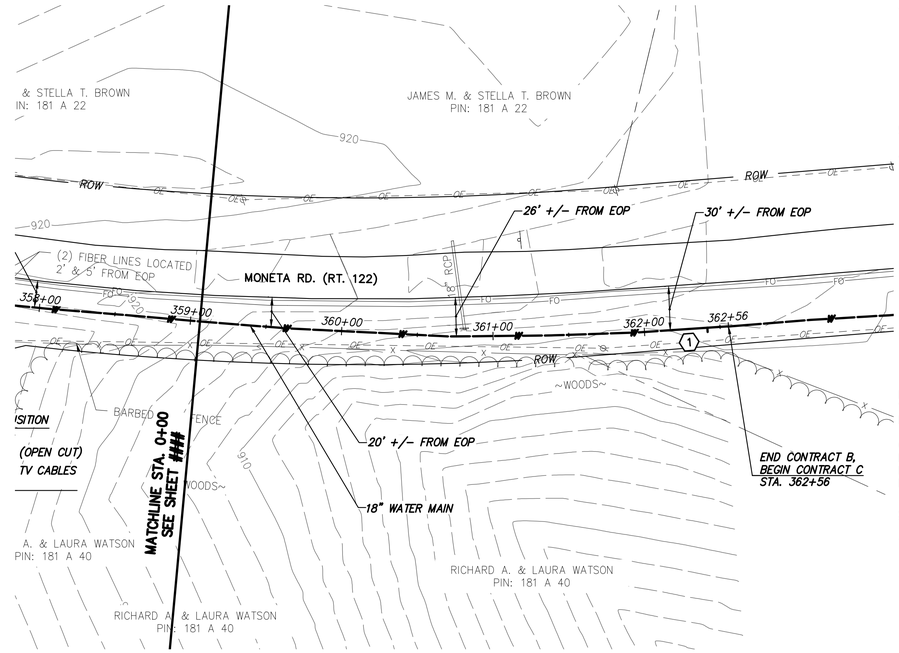
DESIGNED: JRM
DETAILED: GLM
CHECKED: BSR
APPROVED: SMS
DATE: 11-20-2015

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.
27872

C-50B-131
SHEET
OF

File: V:\PROJECTS\BVA\27872\CADD_ACAD\C-50B-127-131_27872.DWG
Saved: 1/26/2018 3:22:11 PM Plotted: 6/21/2018 11:51:05 AM User: Parks, Sarah LastSavedBy: 4465



WATER MAIN PLAN

CHA
1901 Innovation Drive, Suite 2100
Blacksburg, VA 24060
Main: (540) 552-5548 • www.chacompanies.com

0 50 100
Scale in feet

GENERAL NOTES:

A. 18-IN WATER MAIN:
1. PIPING:
a. PVC: PRESSURE CLASS 165-DR25, 200-DR21, AND 235-DR18 AS NOTED.
b. DIP (INCLUDES ALL RJ): PRESSURE CLASS 250 AND 350 AS NOTED
2. VALVES: RATED FOR WORKING PRESSURE OF 250 PSI
3. TEST PRESSURES WILL VARY BASED ON OPERATING CONDITIONS, ELEVATION CHANGES AND PIPE PRESSURE CLASSES. PC165 WILL BE TESTED AT 150 PSI, PC200 AT 200 PSI, PC235 AT 225 PSI, AND DIP AT RIVER CROSSINGS WILL BE TESTED AT MIN. 250 PSI UNLESS NOTED OTHERWISE.

B. VALVES, BLOW-OFFS AND AIR RELEASE VALVES LOCATIONS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE FIELD DETERMINED.

C. CONTRACTOR MAY PROVIDE TEMPORARY BLOW-OFFS, AIR RELEASE VALVES AND TEST PORTS AS NEEDED FOR TESTING AND FLUSHING.

SPECIFIC NOTES

1 COORDINATE TIE-IN AND TESTING WITH CONTRACTOR FOR CONTRACT C.

RECORD DRAWING INFORMATION PROVIDED TO CHA BY ACRES OF VIRGINIA, INC. CHA DID NOT PERFORM AN ACTUAL FIELD SURVEY IN PREPARATION OF THESE RECORD DRAWINGS

RECORD DRAWING 12-12-17

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY:	CK.	APP
12/12/2017	RECORD DRAWINGS	-	KMM	BSR	SMS
11/20/2015	ISSUED FOR CONSTRUCTION	-	GLM	JRM	SMS
6/4/2015	LEVEL 3 DESIGN DOCUMENTS	B	GLM	JRM	SMS
	LEVEL 2 DESIGN DOCUMENTS	A	GLM	JRM	SMS

SAVED:
PLOTTED:
USER:
XREF1:
XREF2:
XREF3:
XREF4:
DWG VER:

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