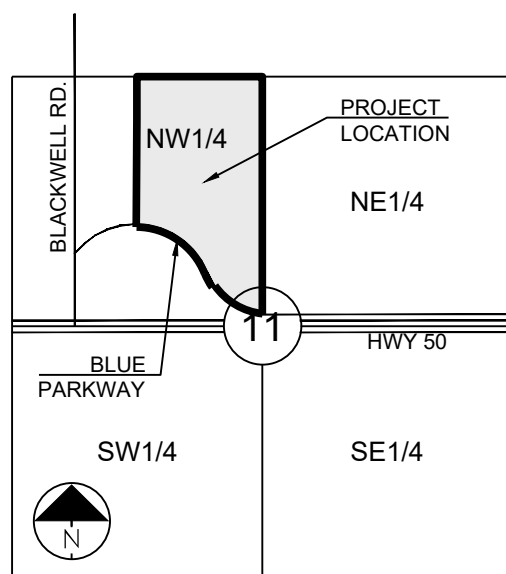
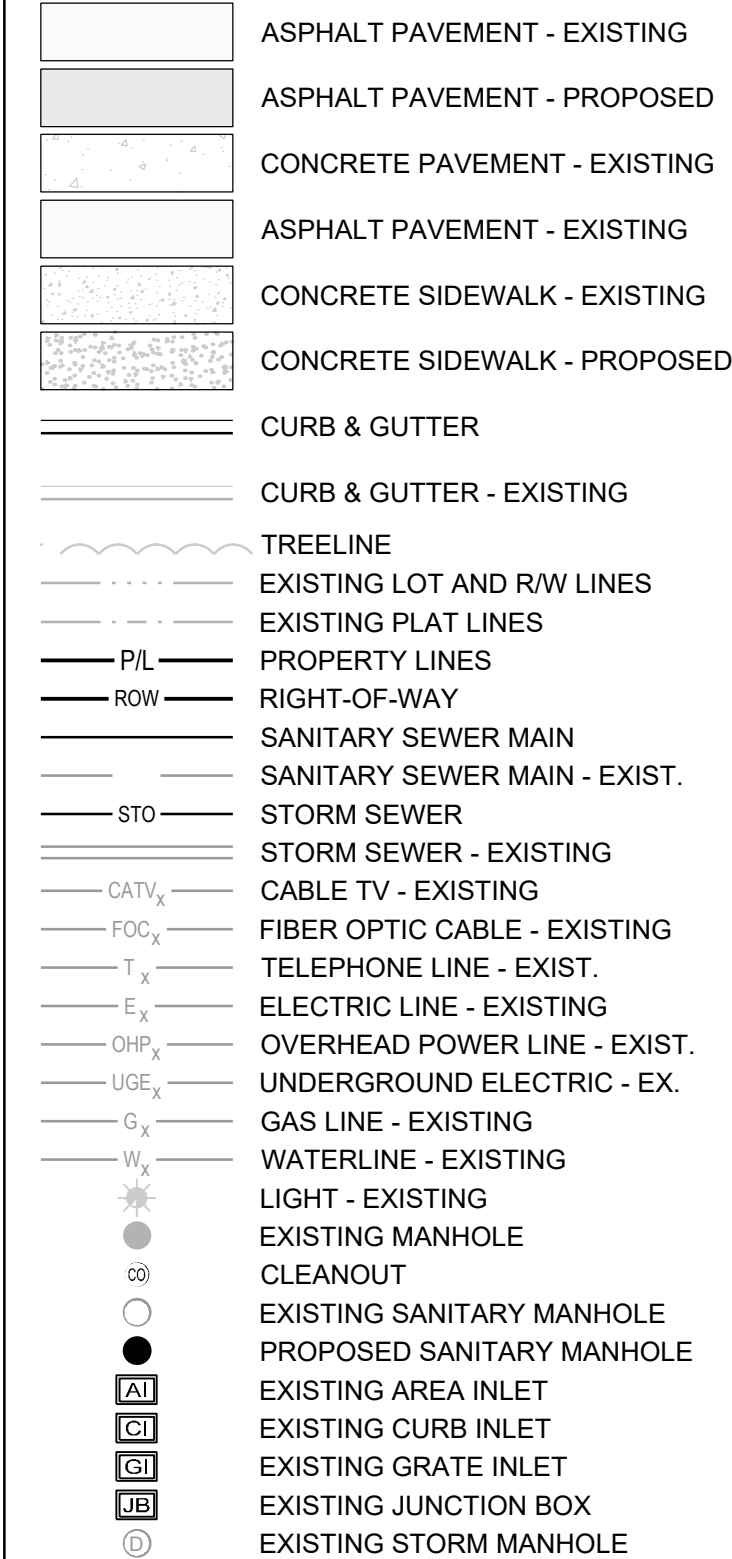


AC	- ACCESS EASEMENT
BC	- BACK OF CURB
B/B	- BACK TO BACK
BM	- BENCHMARK
BL or B.L.	- BUILDING LINE
CO	- CLEANOUT
TJB	- TELEPHONE JUNCTION BOX
C&G	- CURB AND GUTTER
D/E	- DRAINAGE EASEMENT
E/E	- ELECTRICAL EASEMENT
EL	- ELEVATION
FL	- FLOW LINE
G/E	- GAS LINE EASEMENT
HDPE	- HIGH-DENSITY POLYETHYLENE
L/E	- LANDSCAPE EASEMENT
MSFE	- MINIMUM SERVICEABLE FLOOR ELEVATION
PVC	- POLYVINYL CHLORIDE
P/L	- PROPERTY LINE
PUB/E	- PUBLIC EASEMENT
RCP	- REINFORCED CONCRETE PIPE
ROW or R/W	- RIGHT-OF-WAY
S/E	- SANITARY SEWER EASEMENT
SL	- SERVICE LINE
S/W	- SIDEWALK
TE	- TOP ELEVATION
U/E	- UTILITY EASEMENT
WSE	- WATER SURFACE ELEVATION
W/E	- WATERLINE EASEMENT



**LOCATION MAP**  
SCALE 1" = 2000'

MISSOURI DEPARTMENT OF  
TRANSPORTATION (MODOT)

**SPIRE**  
Brent Jones  
3025 SE Clover Drive  
Lee's Summit, MO 64082  
(816) 399-0663 [brent.jones@spireenergy.com](mailto:brent.jones@spireenergy.com)

Philip Ingram  
1300 SE Hamblin Road  
Lee's Summit, MO 64081  
Office: (816) 347-347-4339  
[philip.ingram@evergy.com](mailto:philip.ingram@evergy.com)

Dena Mezger  
220 SE Green Street  
Lee's Summit, MO 64063  
(816) 969-1800

Mark Manion or Marty Loper  
500 E. 8th Street, Room 370  
Kansas City, MO 64106  
(816) 275-2341 or (816) 275-1550

John Meadows  
4700 Little Blue Parkway  
Independence, MO 64057  
(816) 795-2257

Mark Schaufler  
1200 SE Hamblen Road  
Lee's Summit, MO 64081  
(816) 969-1900



811 or  
1-800-344-7483  
mo1call.com

## EARTHWORK:

1. PRIOR TO EARTHWORK ACTIVITIES, PRE-DISTURBANCE EROSION AND SEDIMENT CONTROL DEVICES SHALL BE IN PLACE PER THE STORM WATER POLLUTION PREVENTION PLAN AND/OR THE EROSION AND SEDIMENT CONTROL PLAN PREPARED FOR THIS SITE.
2. ALL BACKFILL MATERIAL SHALL BE PLACED IN MAXIMUM 6-INCH LIFTS AND COMPACTED TO 95-PERCENT OF MAXIMUM DENSITY AS DEFINED USING A STANDARD PROCTOR TEST (AASHTO T99/ASTM 698).
3. BACKFILL MATERIALS SHALL NOT INCLUDE ORGANIC MATTER, DEBRIS OR TOPSOIL.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REDISTRIBUTING THE TOPSOIL OVER PROPOSED TURF AND LANDSCAPED AREAS TO A MINIMUM DEPTH OF 6-INCHES BELOW FINAL GRADE.
5. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, UNLESS NOTED OTHERWISE THE FOLLOWING GRADES SHALL APPLY:
  - A. TURF AREAS - 2.5% MINIMUM, 4H:1V MAXIMUM
  6. ALL DISTURBED AREAS SHALL BE FERTILIZED, SEEDED AND MULCHED IMMEDIATELY AFTER EXCAVATION ACTIVITIES HAVE CEASED. SEEDING SHALL BE PER THE EROSION AND SEDIMENT CONTROL PLAN AND/OR LANDSCAPE PLAN, IF NOT SPECIFIED SEEDING SHALL BE PER APWA SECTION 2400, LATEST EDITION, UNLESS OTHERWISE NOTED. SEEDING SHALL BE SUBSIDIARY TO THE CONTRACT PRICE FOR PIPE INSTALLATION.
7. CONTRACTOR SHALL ADHERE TO THE REPORTING REQUIREMENTS OUTLINED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED FOR THIS PROJECT. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PROPERLY MAINTAINED AND KEPT CLEAN OF SILT AND DEBRIS AND IN GOOD WORKING ORDER. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS REQUIRED.

1. EXISTING UTILITIES HAVE BEEN SHOWN TO THE GREATEST EXTENT POSSIBLE BASED UPON INFORMATION PROVIDED TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY COMPANIES AND FIELD LOCATING UTILITIES PRIOR TO CONSTRUCTION AND IDENTIFYING ANY POTENTIAL CONFLICTS. ALL CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ANY REQUIRED UTILITY RELOCATIONS. UTILITIES DAMAGED THROUGH THE NEGLIGENCE OF THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
3. CONTRACTOR SHALL VERIFY FLOW-LINES AND STRUCTURE TOPS PRIOR TO CONSTRUCTION, AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES. PROVIDE SHOP DRAWINGS FOR ALL PRECAST AND MANUFACTURED UTILITY STRUCTURES FOR REVIEW BY THE ENGINEER PRIOR TO CONSTRUCTION OF THE STRUCTURES.
4. UTILITY SEPARATION: WATERLINES SHALL HAVE A MINIMUM OF 10 FEET HORIZONTAL AND 2 FEET (MINIMUM OF 1.5 FEET) VERTICAL SEPARATION FROM ALL SANITARY AND STORM SEWER LINES. IF MINIMUM SEPARATIONS CAN NOT BE OBTAINED, DUCTILE IRON PIPE, DIP, SHALL BE REQUIRED 10 FEET IN EACH DIRECTION OF THE CONFLICT ON THE WATER LINE.
5. TRENCHES FOR TRENCHES SHALL BE NEATLY FILL, PIPE EMBEDMENT, FLOWABLE FILL, BACKFILL MATERIALS, CLEAN UP, SEEDING, SODDING AND ANY OTHER ITEMS NECESSARY FOR THE CONSTRUCTION OF THE UTILITY LINE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE UTILITY INSTALLATION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING RESPECTIVE UTILITY COMPANIES 48-HOURS IN ADVANCE FOR THE INSPECTION OF ANY PROPOSED UTILITY MAIN EXTENSION OR SERVICE LINE OR SERVICE CONNECTION TO ANY EXISTING MAIN.
7. DISPOSAL SHALL BE NEATLY PLACED ONSITE ADJACENT TO THE TRENCH, AND COMPACTED TO PREVENT SATURATION AND EXCESS SEDIMENT RUNOFF. UNSUITABLE MATERIALS, ROCK AND SHALE, ASPHALT, CONCRETE, TREES, BRUSH ETC. SHALL BE PROPERLY DISPOSED OF OFFSITE. MATERIALS MAY BE WASTED ONSITE AT THE DIRECTION OF THE OWNER OR HIS APPOINTED REPRESENTATIVE.

	ITEM	QUANTITY	UNITS
1	CONNECT TO EXISTING WATER MAIN	2	EA
2	12" C900 DR18 WATER MAIN	1707	LF
3	8" C900 DR18 WATER LINE	1137	LF
4	8" C900 DR18 WATER LINE (RESTRAINED JOINTS)	73	LF
5	12" X 12" TEE W/THRUST BLOCK	1	LF
6	12" X 8" TEE W/THRUST BLOCK	3	EA
7	12" X 6" TEE W/THRUST BLOCK	2	EA
8	8" X 8" TEE W/THRUST BLOCK	5	EA
9	8" X 6" TEE W/THRUST BLOCK	4	EA
10	12" BUTTERFLY VALVE	9	EA
11	8" GATE VALVE	14	EA
12	8" PLUG	6	EA
13	12" 90° BEND W/THRUST BLOCK	1	EA
14	12" 45° BEND W/THRUST BLOCK	5	EA
15	8" 45° BEND W/THRUST BLOCK (VERT)	7	EA
16	8" 22.5° BEND W/THRUST BLOCK	1	EA
17	8" 22.5° BEND W/THRUST BLOCK (VERT)	1	EA
18	8" 11.25° BEND W/THRUST BLOCK	3	EA
19	12" AIR RELEASE ASSEMBLY	1	EA
20	5-1/4" FIRE HYDRANT ASSEMBLY	5	EA
21	TEMP. FIRE HYDRANT	1	EA
22	TEMP. 8" X 6" REDUCER	1	EA
23	STRADDLE BLOCK	2	EA
24	PERMIT FEE	1	LS
25	BOND	1	LS

NO PART OF THE PROJECT LIES WITHIN THE 100 YEAR FLOOD PLAIN PER FEMA FLOOD INSURANCE RATE MAP NUMBERS 29095C0441G, 29095C0445G, 29095C0437G AND 29095C0439G DATED JANUARY 20TH, 2017.

THERE ARE NOT OIL/GAS WELLS PRESENT ON THE PROJECT PER  
MISSOURI DEPARTMENT OF NATURAL RESOURCES - MISSOURI  
GEOLOGICAL SURVEY GeoSTRAT MAPPING.

## STATION NAME - JA-90

KC METRO ALUMINUM GRS DISK SET IN CONCRETE STAMPED "JA-90, 1988"  
LOCATED NEAR THE INTERSECTION OF LANGSFORD ROAD AND OLD  
LANGSFORD ROAD, 43 FEET SOUTHEAST OF THE CENTER OF LANGSFORD  
ROAD AND 32 FEET NORTH OF THE CENTER OF OLD LANGSFORD ROAD.  
N:1001052.8503, E:2845604.8272

ELEV. 997.045

### PROJECT BENCHMARK:

"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE  
STORM MANHOLE IS LOCATED APPROX. 130 FEET EAST OF THE  
INTERSECTION OF SE JOEL AVE & BLUE PARKWAY AND 26 FEET SOUTH  
OF THE CENTERLINE OF BLUE PARKWAY.  
N:996874.9690, E:2840937.1365

ELEV. 1005.719

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
2	GENERAL LAYOUT
3	WATER LINE A - PUBLIC
4	WATER LINE A - PUBLIC 2
5	WATER LINE B - PUBLIC
6	WATER LINE C - PUBLIC
7	DETAILS

PREPARED BY:



SCHLAGEL &amp; ASSOCIATES, P.A.

# RESIDENCES AT BLACKWELL PUBLIC WATER MAIN PLANS

HERITAGE STREET LEE'S SUMMIT. MO

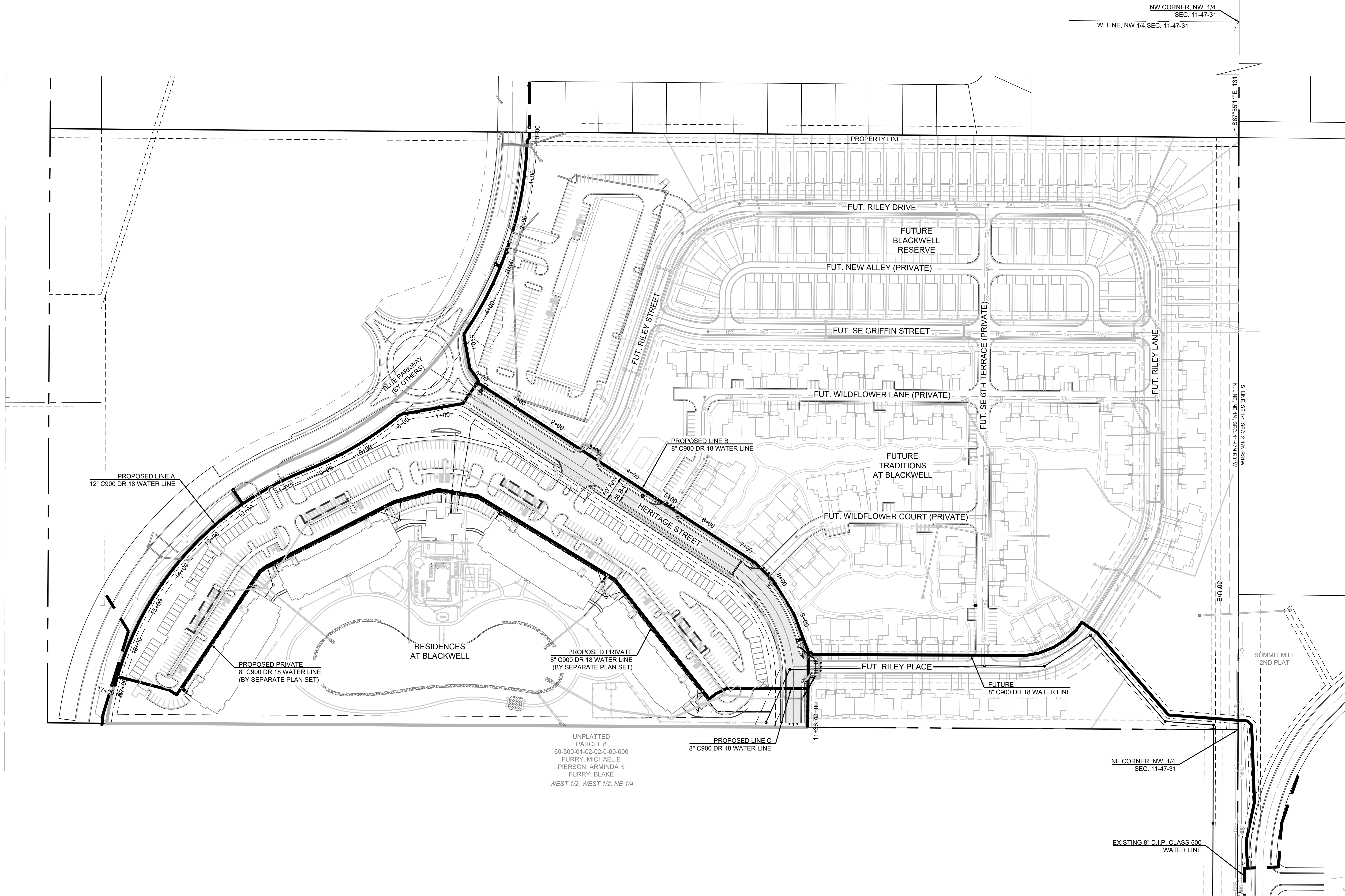
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COVER SHEET

SHEET



I:\PROJECTS\2022\22-102\3.0 Design\3.0 DWG Plans\8.0 Water\PUBLIC\22-102- PUBLIC WAT - GEN.dwg 2 GENERAL LAYOUT, 11/30/2022 3:30:38 PM, 1:1

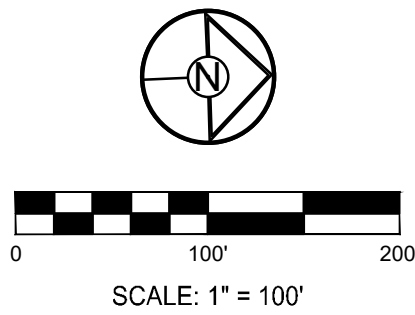


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SCHLAGEL

ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS

14920 West 107th Street • Lenexa, Kansas 66215  
(913) 492-5158 • Fax: (913) 492-8400  
WWW.SCHLAGELASSOCIATES.COM  
Missouri State Certificates of Authority  
#E2002003600-F #LAC200100237 #LS200200859-F

PREPARED BY:

STATE OF MISSOURI

MARK ALLEN BREUER

PROFESSIONAL ENGINEER

NUMBER PE-2009007268

EXPIRATION DATE 11/30/2022

SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL  
PUBLIC WATER MAIN PLANS

HERITAGE STREET LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
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DRAWN BY: ###	CHECKED BY: ###	DATE PREPARED: 11/30/2022	PROJ. NUMBER: 22-102
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GENERAL LAYOUT

SHEET  
2



MO GRS BENCHMARK:

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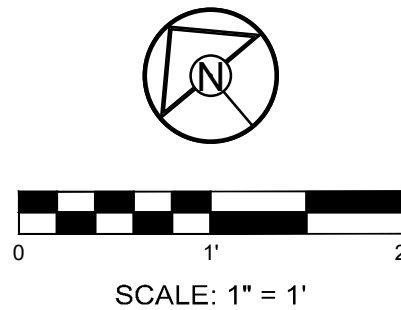
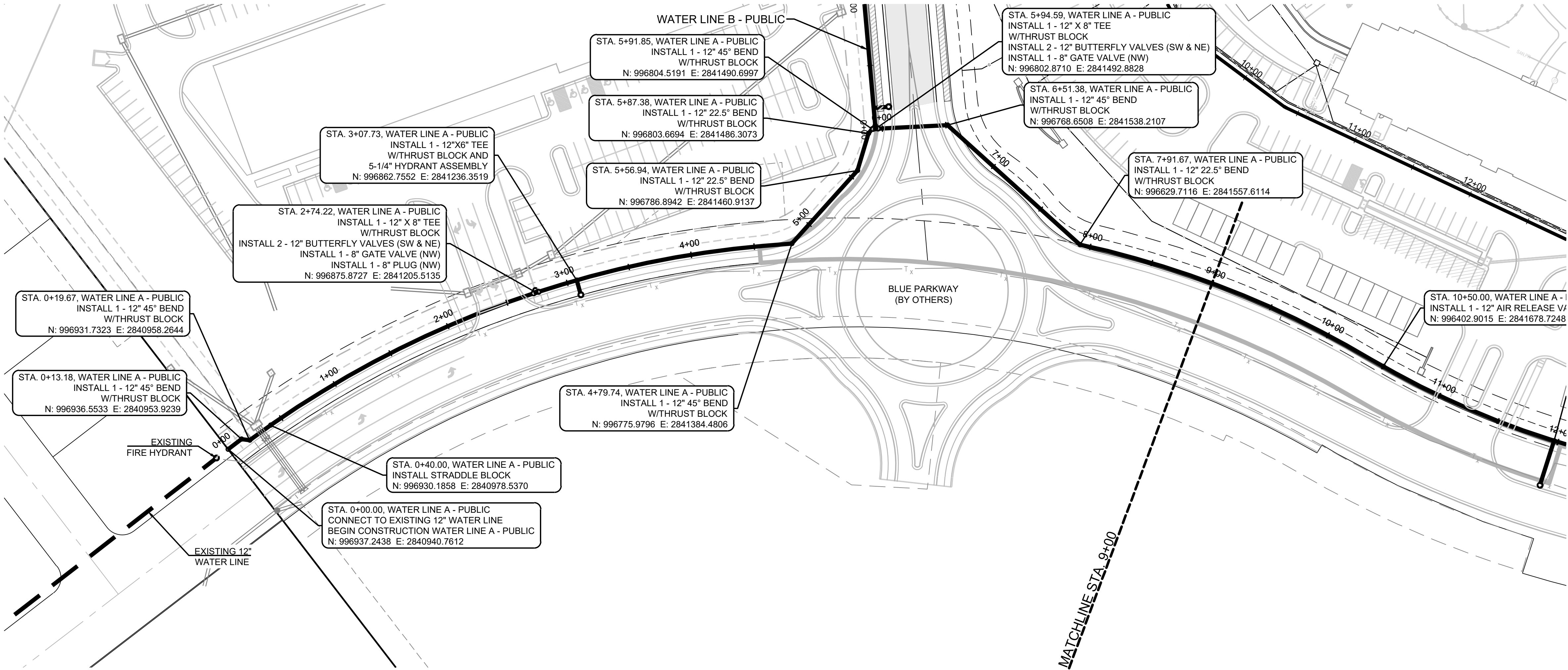
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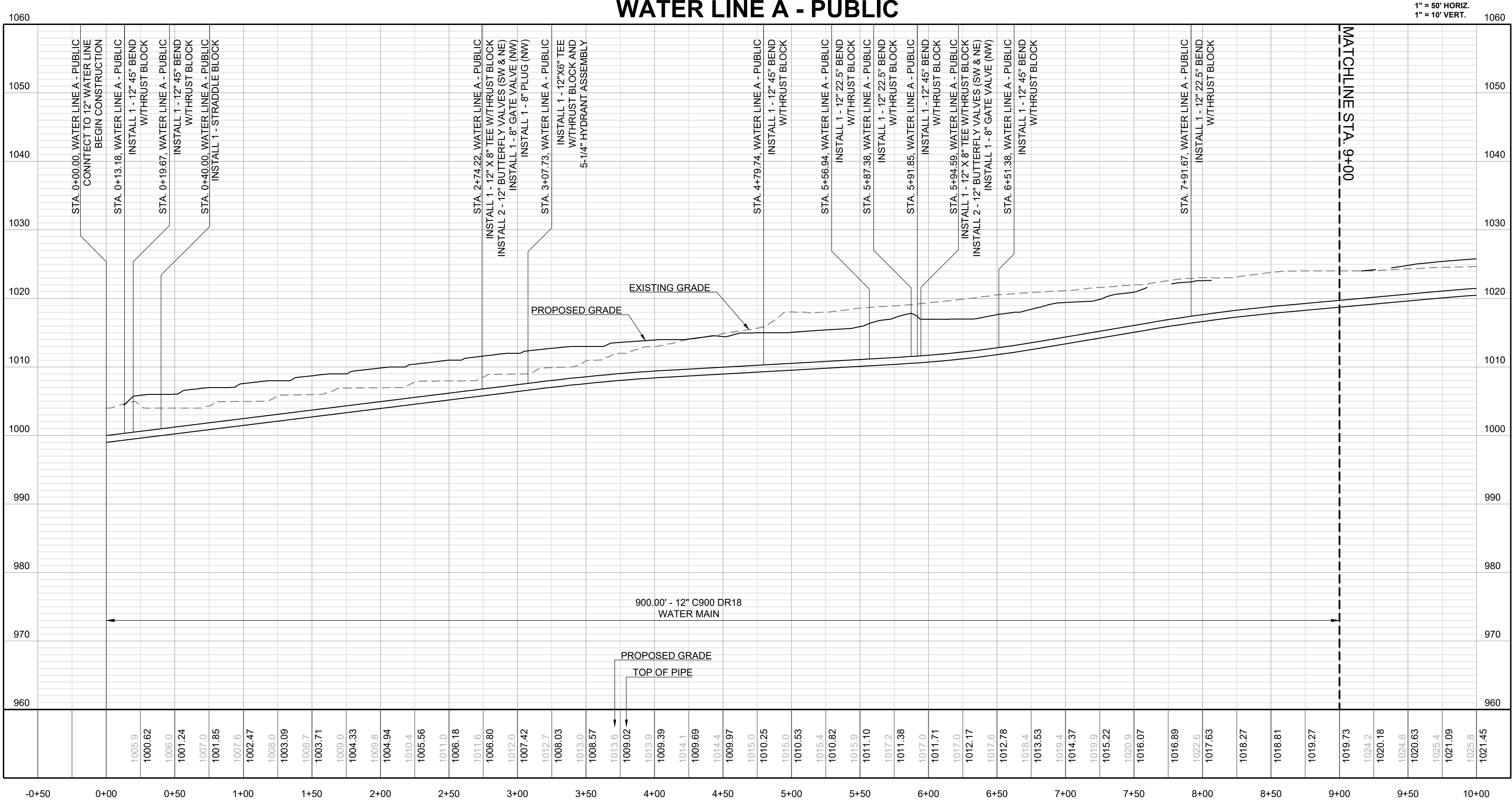
WATER LINE A -  
PUBLIC

SHEET

3



WATER LINE A - PUBLIC





STA. 5+94.59, WATER LINE A - PUBLIC  
INSTALL 1 - 12" X 8" TEE  
W/THRUST BLOCK  
INSTALL 2 - 12" BUTTERFLY VALVES (SW & NE)  
INSTALL 1 - 8" GATE VALVE (NW)  
N: 996802.8710 E: 2841492.8828

STA. 6+51.38, WATER LINE A - PUBLIC  
INSTALL 1 - 12" 45° BEND  
W/THRUST BLOCK  
N: 996768.6508 E: 2841538.2107

STA. 7+91.67, WATER LINE A - PUBLIC  
INSTALL 1 - 12" 22.5° BEND  
W/THRUST BLOCK  
N: 996629.7116 E: 2841557.6114

STA. 10+50.00, WATER LINE A - PUBLIC  
INSTALL 1 - 12" AIR RELEASE VALVE ASSEMBLY  
N: 996402.9015 E: 2841678.7248

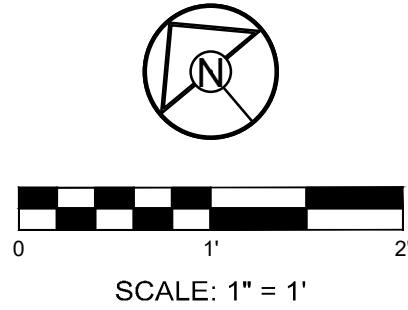
STA. 11+96.78, WATER LINE A - PUBLIC  
INSTALL 1 - 12"X6" TEE  
W/THRUST BLOCK AND  
5-1/4" HYDRANT ASSEMBLY  
N: 996271.7728 E: 2841744.1008

STA. 16+79.87, WATER LINE A - PUBLIC  
INSTALL 1 - 12" X 8" TEE  
W/THRUST BLOCK  
INSTALL 2 - 12" BUTTERFLY VALVES (SW & NE)  
INSTALL 1 - 8" GATE VALVE (NW)  
INSTALL 1 - 8" PLUG (NW)  
N: 995980.4966 E: 2842117.6811

STA. 17+00.00, WATER LINE A - PUBLIC  
INSTALL 1 - 12" 90° BEND  
W/THRUST BLOCK  
N: 995974.3694 E: 2842136.8584

STA. 17+06.58, WATER LINE A - PUBLIC  
INSTALL 1 - 12" X 12" TEE  
W/THRUST BLOCK  
INSTALL 3 - 12" BUTTERFLY VALVES (N, NE & SW)  
CONNECT TO EXISTING 12" WATER LINE  
END CONSTRUCTION WATER LINE A - PUBLIC  
N: 995968.0645 E: 2842134.9631

MATCHLINE STA. 9+00



**MO GRS BENCHMARK:**

STATION NAME - JA-90

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N:1001052.8503, E:2845604.8272

ELEV. 997.045

**PROJECT BENCHMARK:**

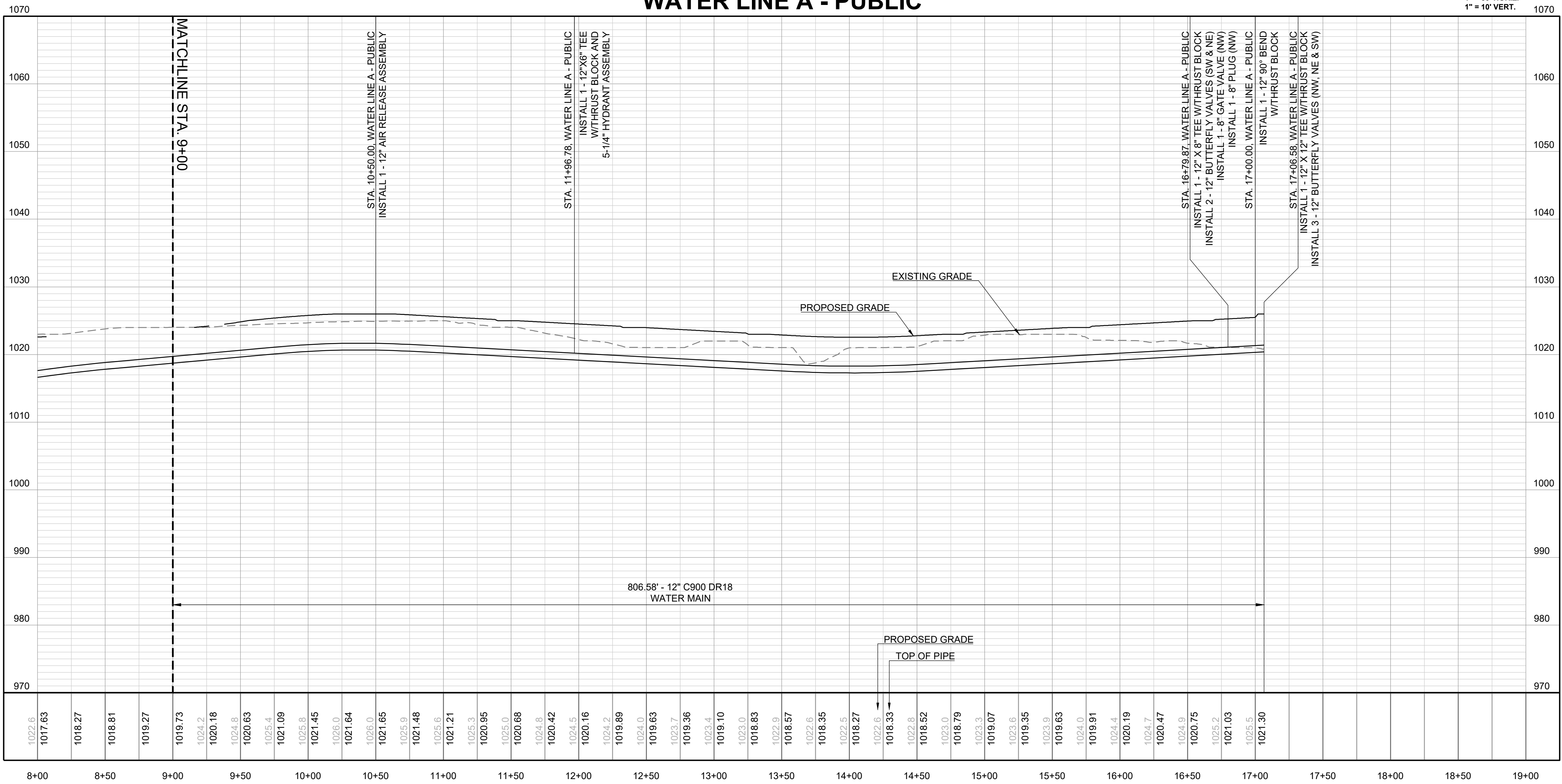
"SQUARE" CUT IN TOP OF CONCRETE STORM MANHOLE  
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N:996874.9690, E:2840937.1365

ELEV. 1005.719

**NOTES:**

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**WATER LINE A - PUBLIC**



PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL  
PUBLIC WATER MAIN PLANS

HERITAGE STREET LEE'S SUMMIT, MO

REVISION DATE	DESCRIPTION
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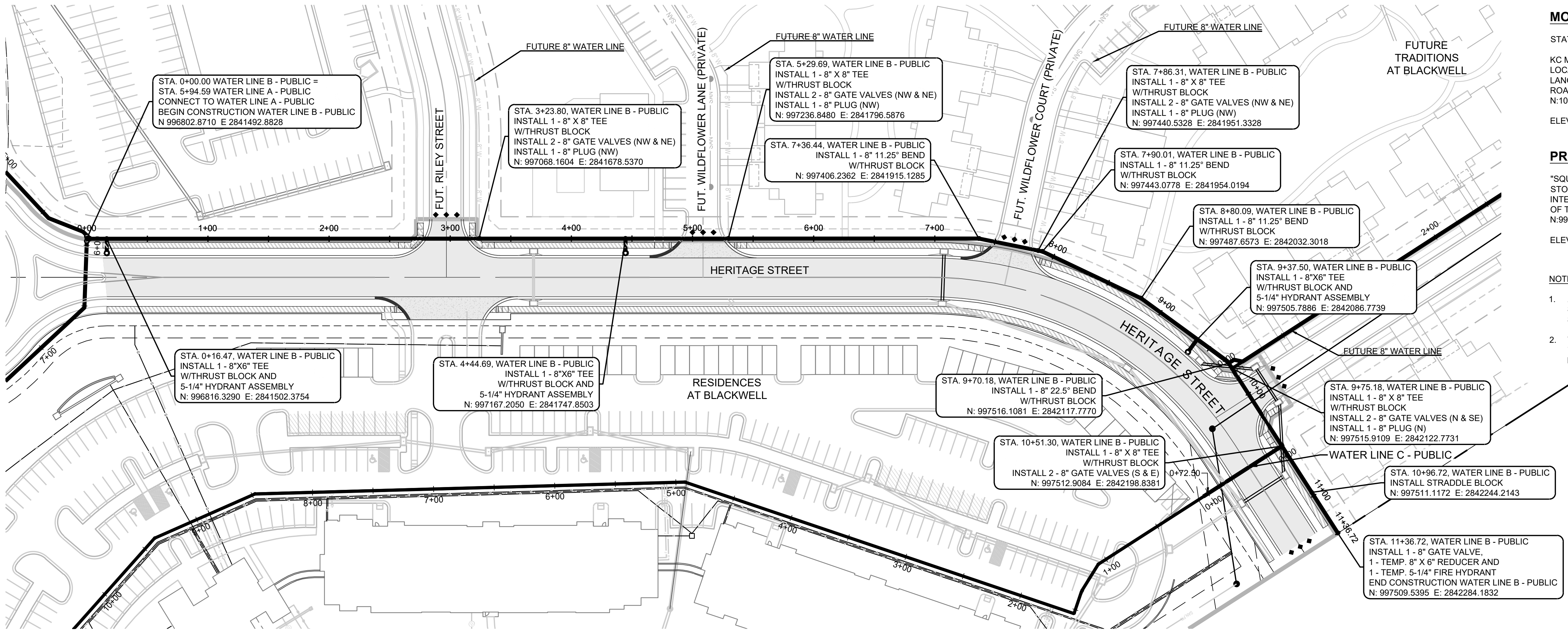
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CHECKED BY:	MAB
DATE PREPARED:	11/30/2022
PROJ. NUMBER:	22-102

WATER LINE A -  
PUBLIC

SHEET

4





MO GRS BENCHMARK:

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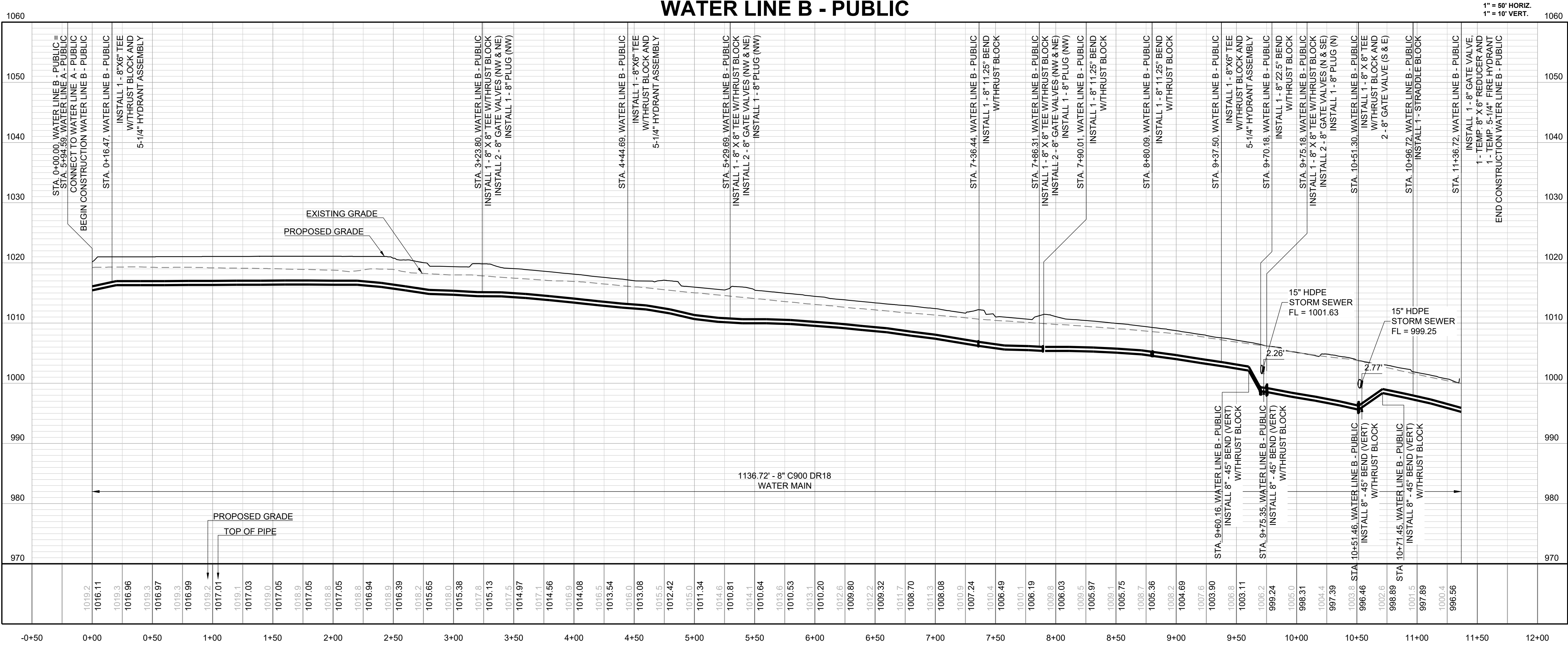
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WATER LINE B - PUBLIC



PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL  
PUBLIC WATER MAIN PLANS

HERITAGE STREET LEE'S SUMMIT, MO

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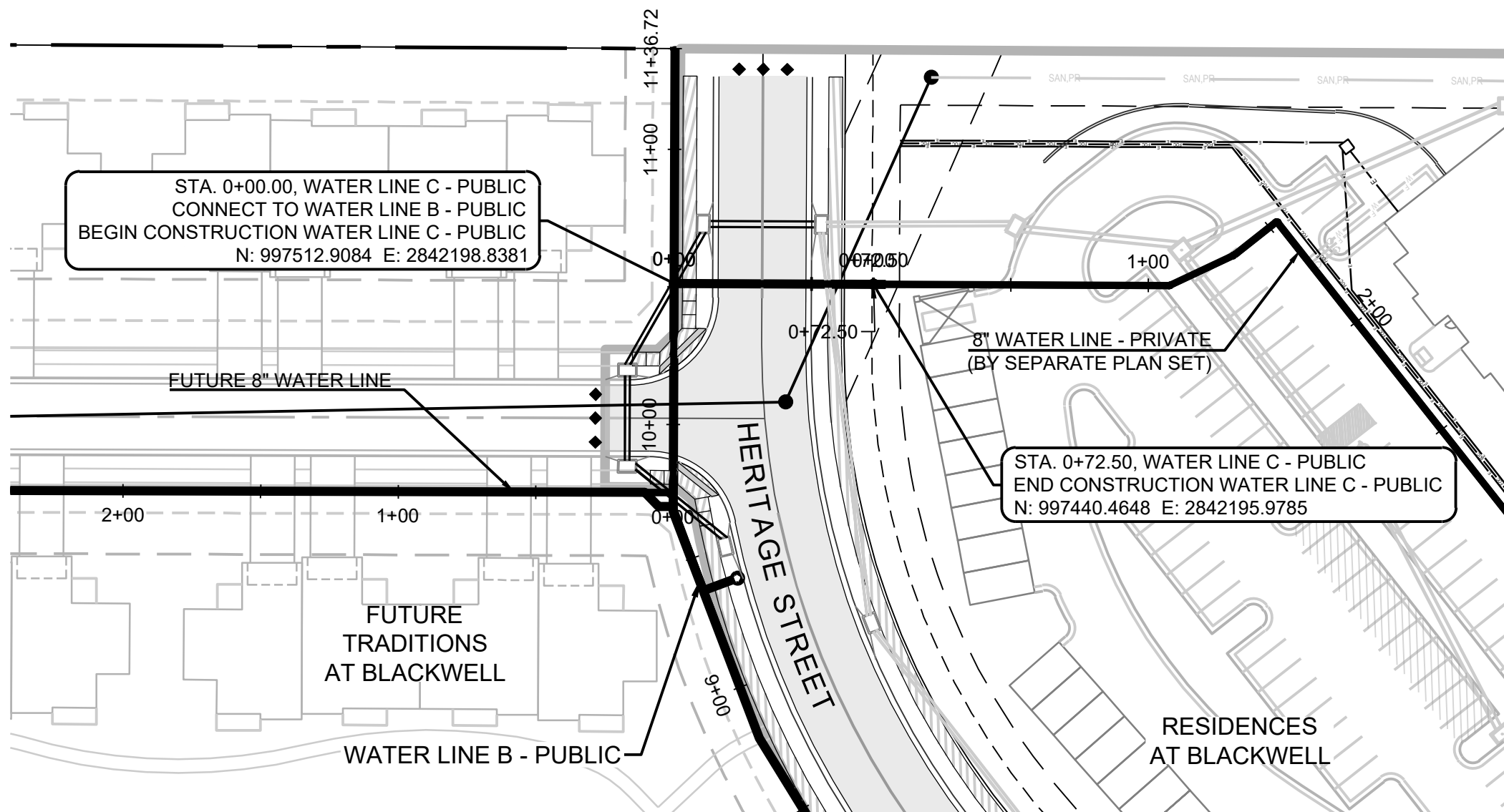
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DATE PREPARED:	11/30/2022
PROJ. NUMBER:	22-102

WATER LINE B - PUBLIC

SHEET

5





MO GRS BENCHMARK:

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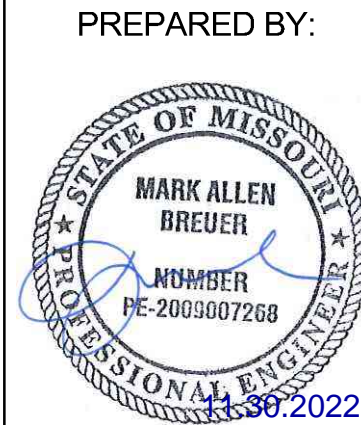
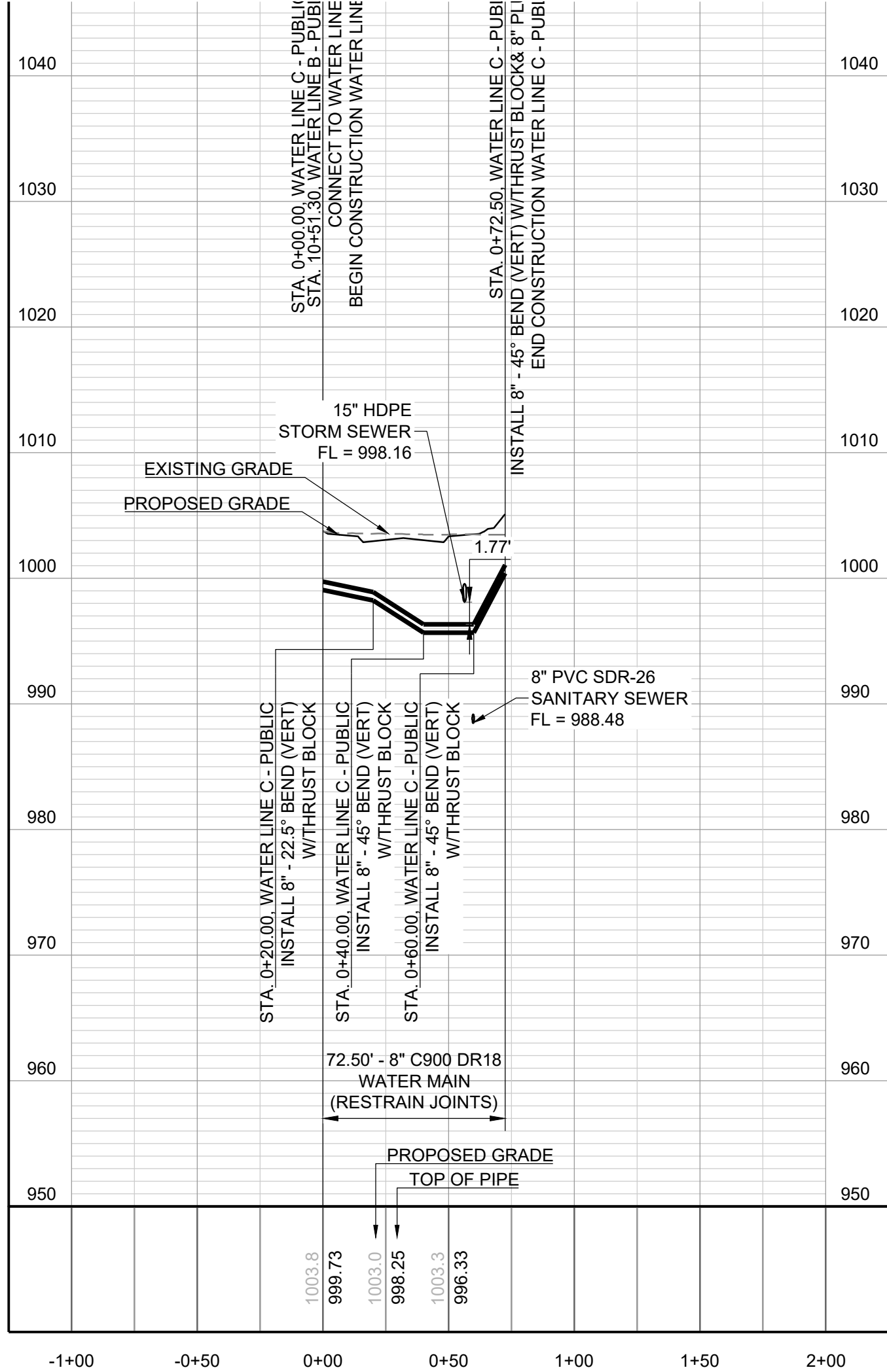
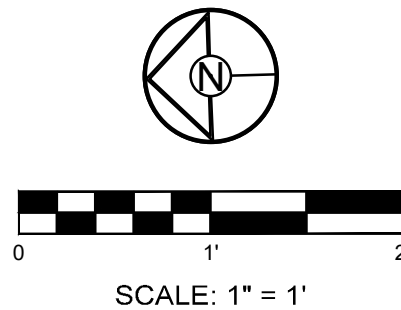
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SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL  
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HERITAGE STREET LEE'S SUMMIT, MO

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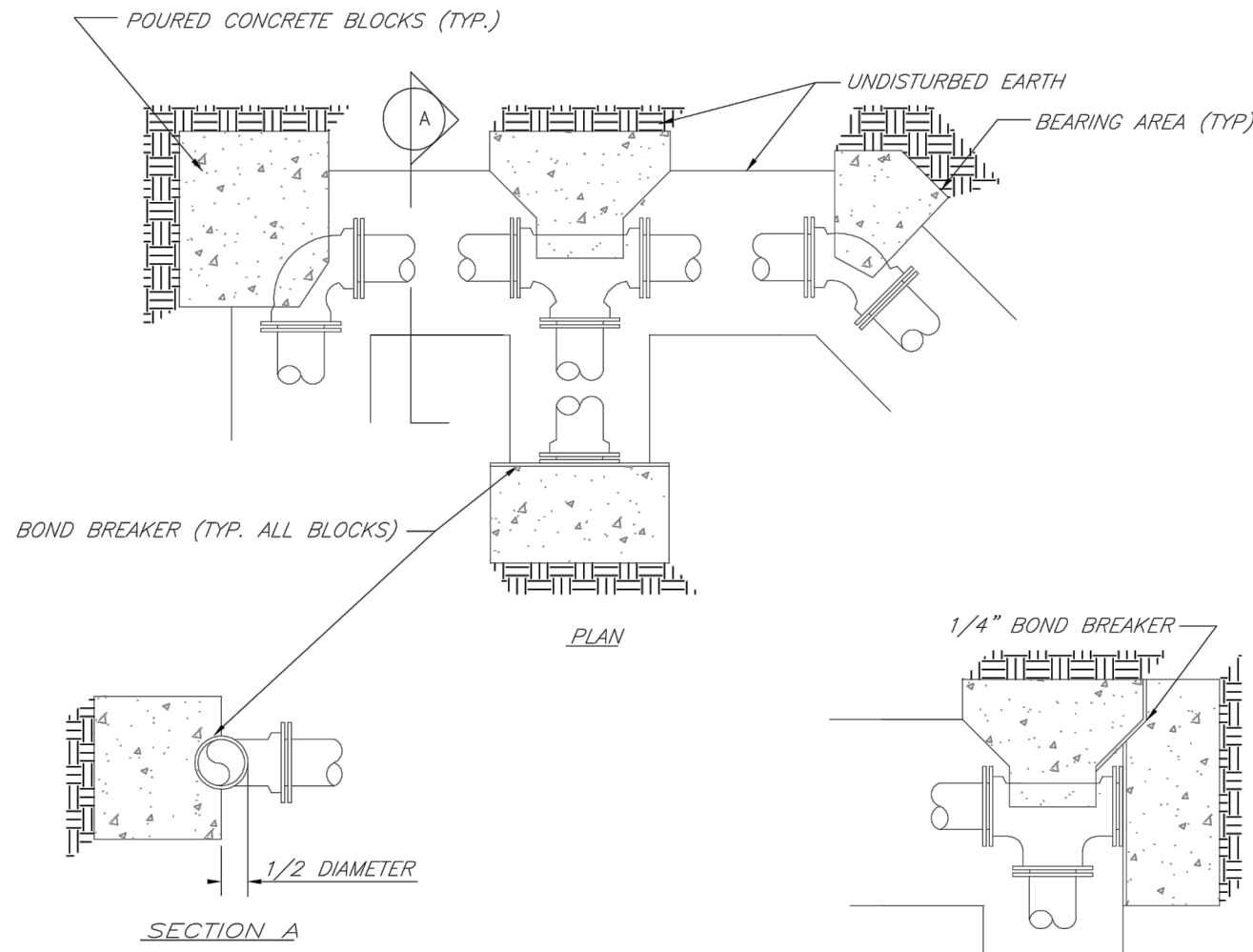
DRAWN BY: TRC	CHECKED BY: MAB	DATE PREPARED: 11/30/2022	PROJ. NUMBER: 22-102
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WATER LINE C - PUBLIC



REQUIRED CONCRETE BEARING AREA (SQUARE FEET - SF)									
NOM. DIA. (INCHES)	TEE, PLUG	BEND	BEND	45° BEND	22.5° BEND	11.25° BEND	45° BEND	22.5° BEND	11.25° BEND
6	4.7	6.7	4.0	4.0	4.0	4.0			
8	8.4	11.9	6.4	4.0	4.0	4.0			
10	13.1	18.5	10.0	5.1	4.0	4.0			
12	18.8	26.7	14.4	7.4	5.0	4.0			
14	25.7	36.3	19.6	10.0	5.0	4.0			
16	33.5	47.4	25.6	13.1	6.6	4.0			
18	42.4	REST. JT.	32.5	16.5	8.3	4.0			
20	REST. JT.	REST. JT.	40.1	20.4	10.3	4.0			
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8	4.0			

NOTES:  
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.  
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.  
3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.  
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



LS

LEE'S SUMMIT

MISSOURI

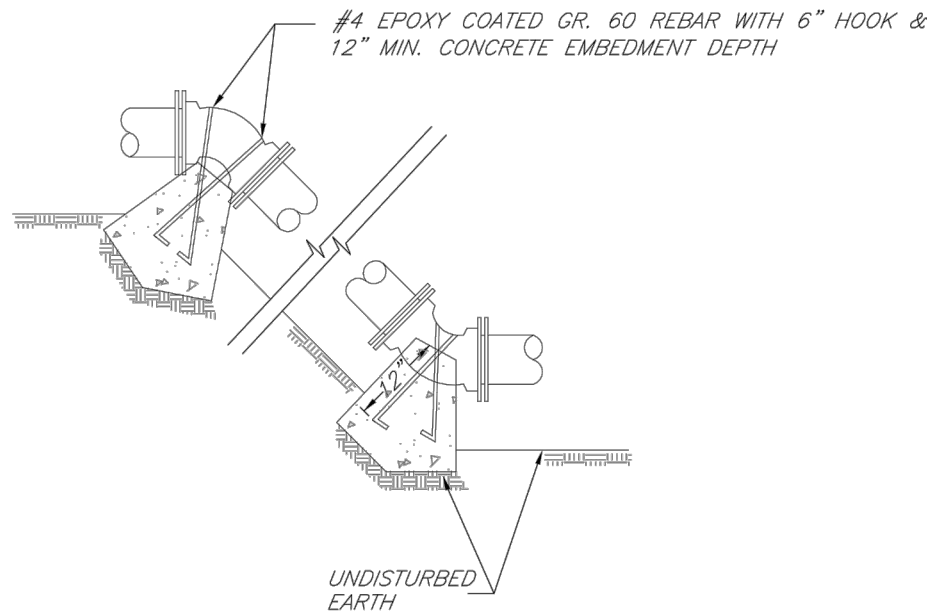
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Horizontal Thrust Blocks

Date: 02/13  
Drawn By: JN  
Checked By: DL  
FILE: WAT-1  
Rev: 1/14  
Rev:

REQUIRED CONCRETE VOLUME (CUBIC FEET - CF)									
NOM. DIA. (INCHES)	TEE, PLUG	BEND	BEND	45° BEND	22.5° BEND	11.25° BEND	45° BEND	22.5° BEND	11.25° BEND
6	50.5	71.4	38.6	19.7	9.9	9.9			
8	89.8	126.9	68.7	35.0	17.6	17.6			
10	140.2	198.3	107.3	54.7	27.5	27.5			
12	202.0	REST. JT.	154.6	78.9	39.6	39.6			
14	REST. JT.	REST. JT.	210.4	107.3	53.9	53.9			
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4	70.4			
18	REST. JT.	REST. JT.	REST. JT.	177.3	89.1	89.1			
20	REST. JT.	REST. JT.	REST. JT.	REST. JT.	110.0	110.0			
24	REST. JT.	REST. JT.	REST. JT.	REST. JT.	138.4	138.4			

NOTES:  
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.  
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.  
3. BEARING MUST BE AGAINST UNDISTURBED SOIL.  
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.



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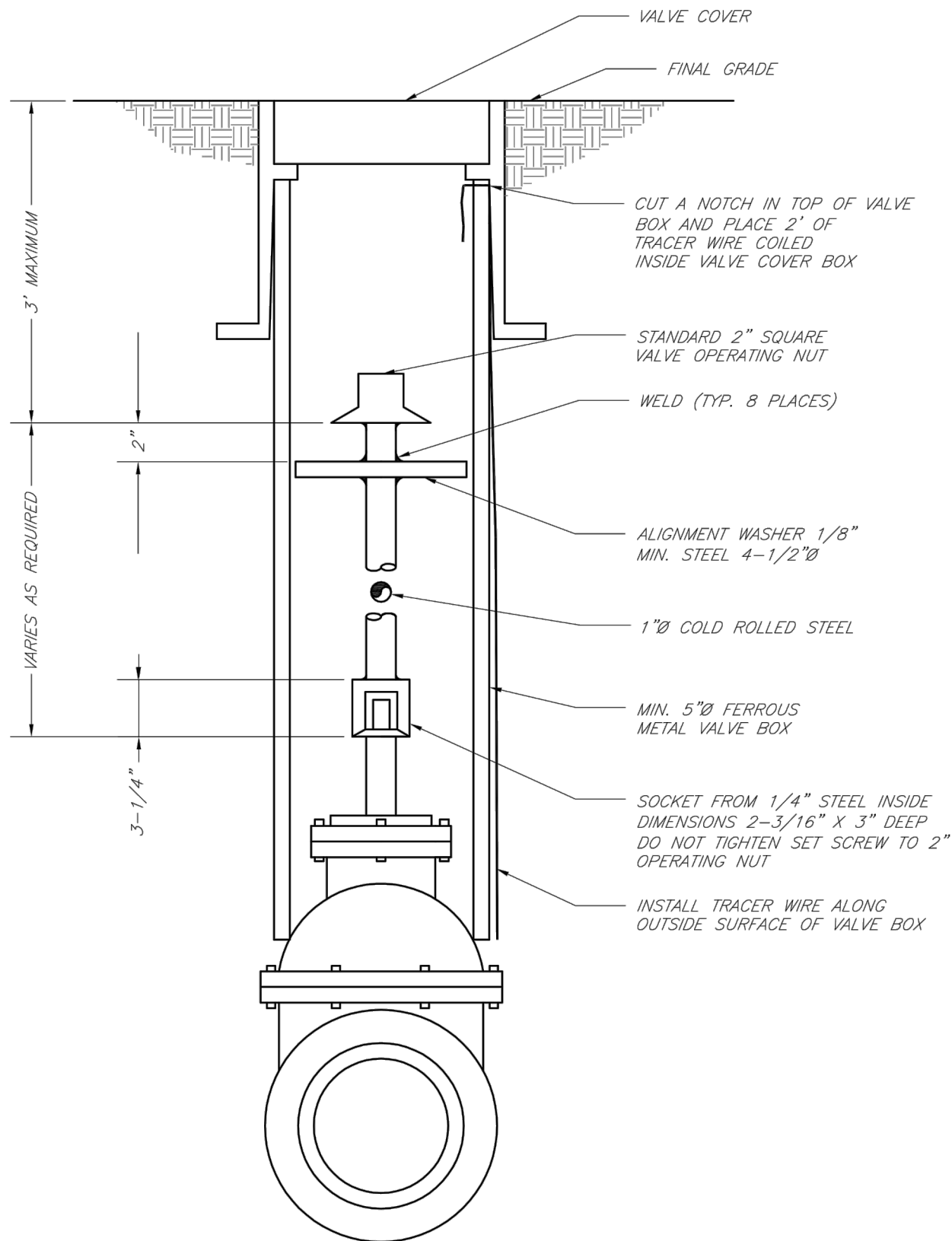
LEE'S SUMMIT

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PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Vertical Thrust Blocks

Date: 02/13  
Drawn By: JN  
Checked By: DL  
FILE: WAT-2  
Rev: 1/14  
Rev:



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LEE'S SUMMIT

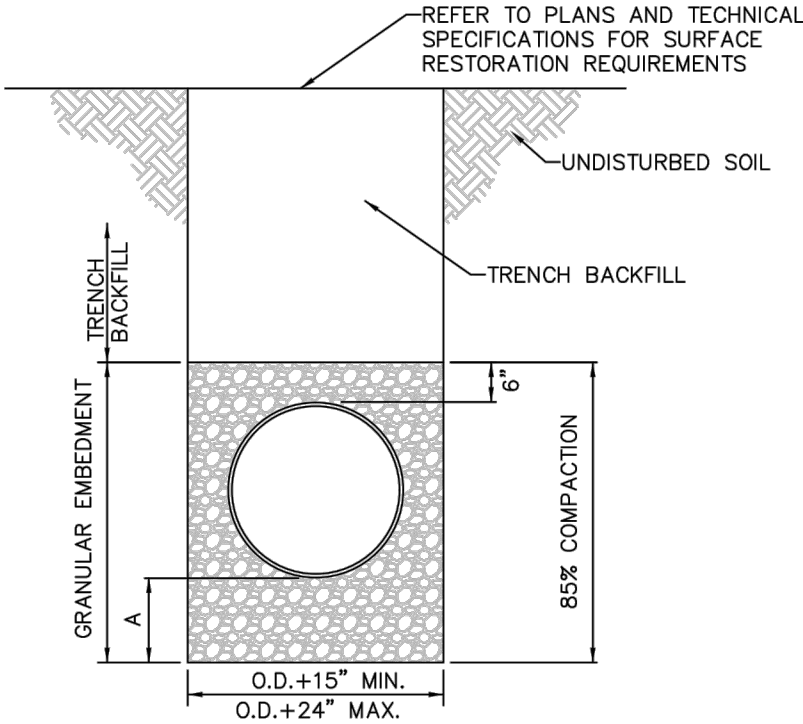
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Valve Stem Extension and Valve Box

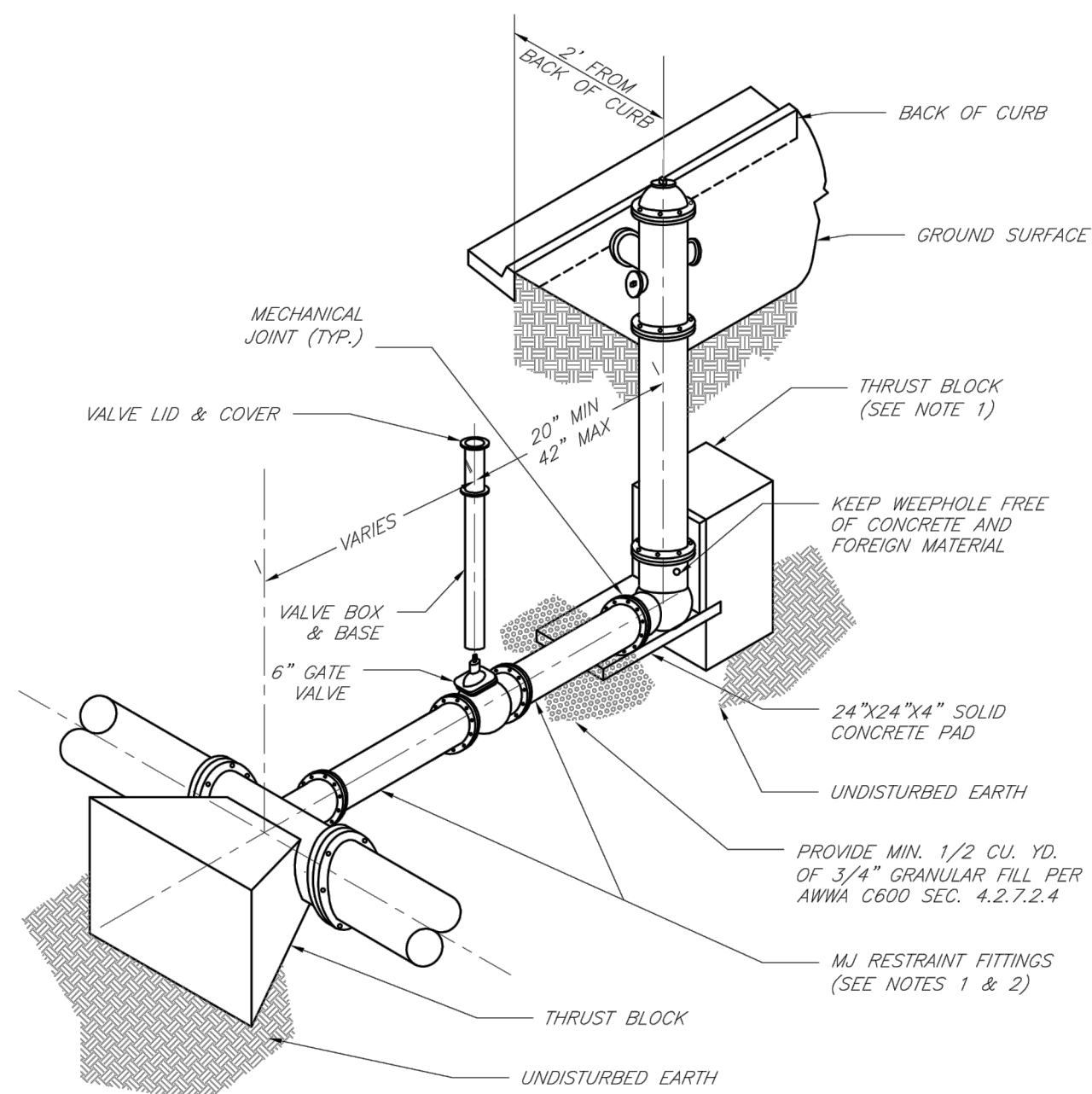
Date: 02/13  
Drawn By: JN  
Checked By: DL  
FILE: WAT-9  
Rev: 1/14  
Rev:

- NOTES:  
1. GRANULAR EMBEDMENT MATERIAL SHALL BE KOOT PB-2 AS SPECIFIED IN SECTION 4000. GRANULAR EMBEDMENT SHALL BE COMPACTED TO 85% MAXIMUM DENSITY AS DETERMINED BY ASTM D698.  
2. TRENCH OUTLINES DO NOT INDICATE ACTUAL TRENCH EXCAVATION SHAPE, SOIL CONDITIONS OR PRESENCE OF SHEETING LEFT IN PLACE. EMBEDMENT AND BACKFILL MATERIAL SHALL EXTEND THE FULL WIDTH OF THE ACTUAL TRENCH EXCAVATION.  
3. TRENCH WIDTHS SHALL BE LIMITED BELOW AN ELEVATION OF ONE (1) FOOT ABOVE THE TOP OF THE INSTALLED PIPE AS FOLLOWS: NOT LESS THAN FIFTEEN (15) INCHES NOR MORE THAN TWENTY-FOUR (24) INCHES GREATER THAN THE OUTSIDE DIAMETER OF THE PIPE.



EMBEDMENT DEPTH BELOW PIPE "A"		
PIPE DIAMETER	MIN. SOIL	MIN. ROCK
<= 27"	4"	6"
30" TO 60"	6"	12"

EMBEDMENT & TRENCH  
BACKFILL - WATER &  
SANITARY SEWER PIPE



- NOTES:  
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.  
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.  
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.  
4. BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.  
5. FOR STREETS WITHOUT CURBS FIRE HYDRANTS SHALL BE PLACED WITHIN 1 FOOT OF THE R/W LINE, BUT NOT MORE THAN 10" FROM EDGE OF PAVEMENT. FIRE HYDRANT SHALL NOT BE PLACED IN BOTTOM OF DITCH.  
6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

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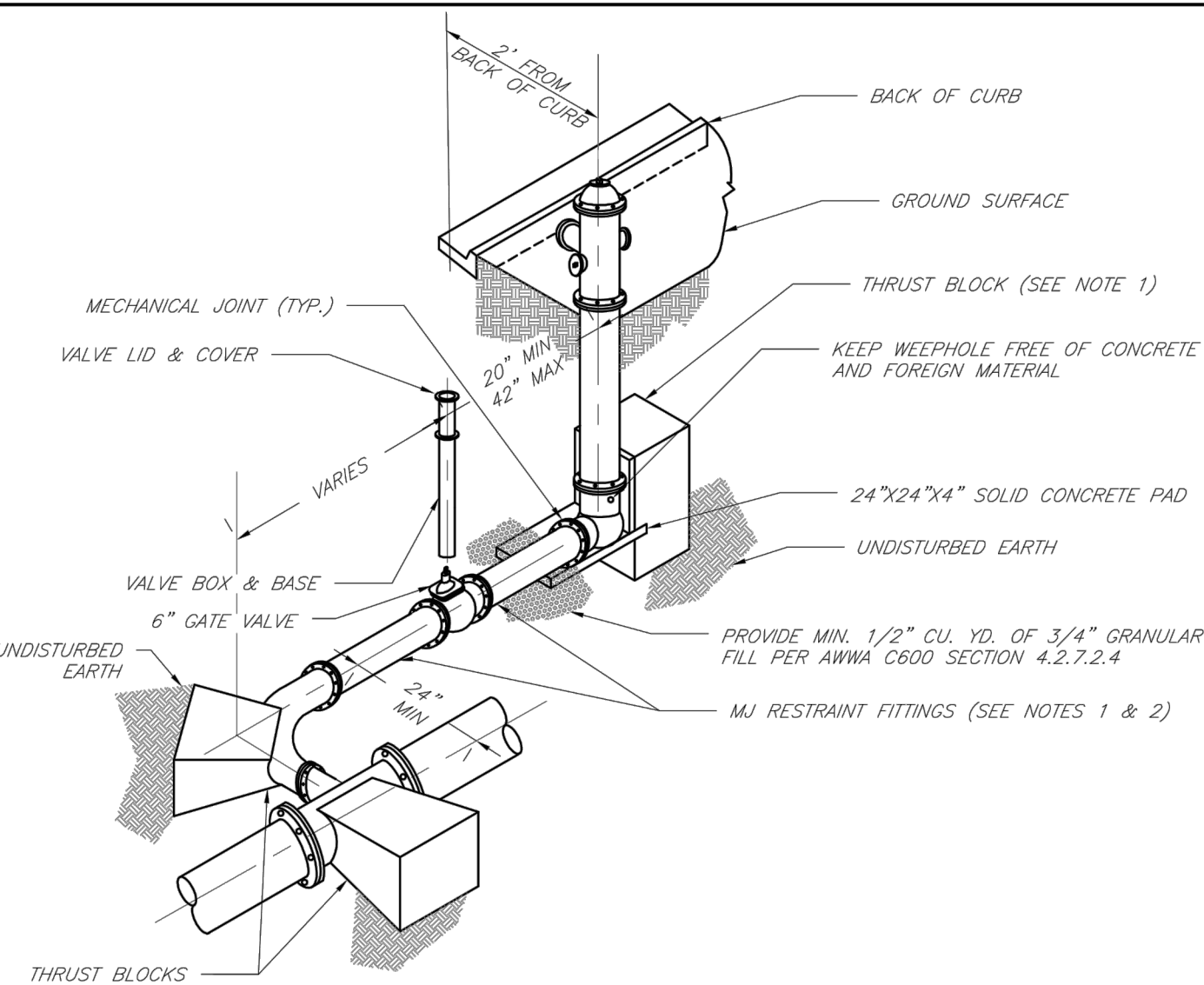
LEE'S SUMMIT

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PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Hydrant Installation - Straight Set

Date: 02/13  
Drawn By: JN  
Checked By: DL  
FILE: WAT-7  
Rev: 1/14  
Rev:



- NOTES:  
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.  
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.  
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.  
4. BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.  
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6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

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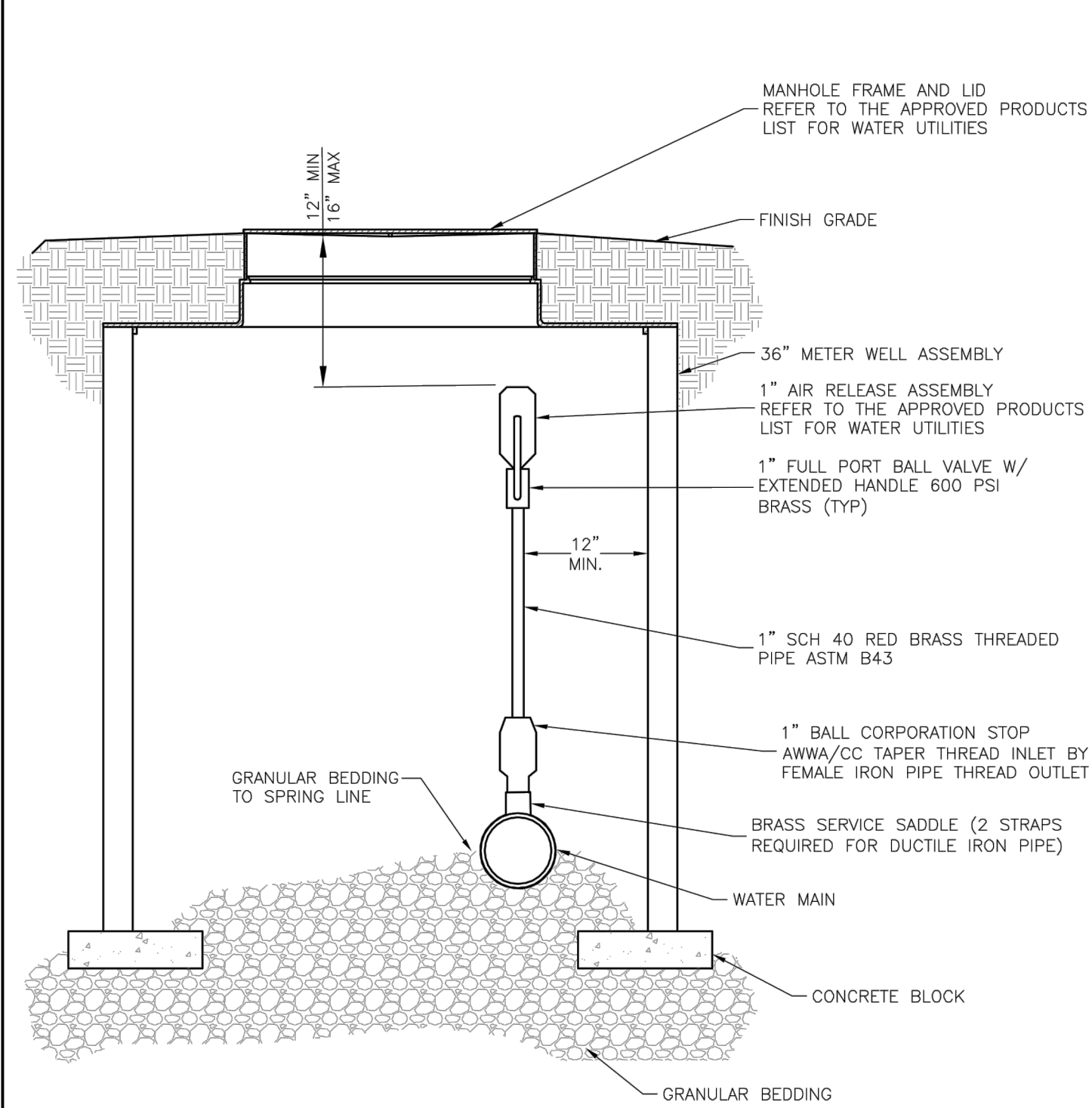
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PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Hydrant with 90 Degree Bend

Date: 02/13  
Drawn By: JN  
Checked By: DL  
FILE: WAT-8  
Rev: 1/14  
Rev:



AIR RELEASE ASSEMBLY  
NOT TO SCALE

LS

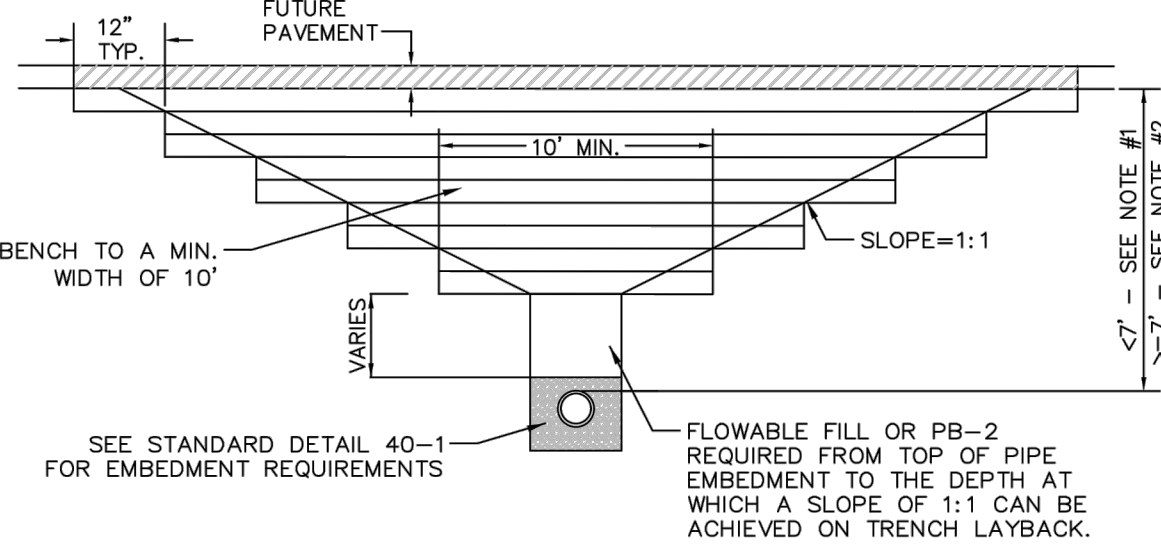
LEE'S SUMMIT

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PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Air Release Assembly

Date: 04/17  
Drawn By: MJF  
Checked By: DL  
FILE: WAT-10  
Rev:



- NOTES:  
1. Flowable Fill is required for trench backfill above the pipe embedment for all trenches that are less than 7 feet in depth as measured from the top of the pipe to the bottom of the future pavement. Flowable Fill shall conform to Technical Specification 4000.  
2. For trenches 7 feet or greater in depth, flowable fill or PB-2 is required above the pipe embedment to the depth at which a slope of 1:1 can be achieved on the trench layback. An exception is that PB-2 will not be allowed within 5 feet of the bottom of the future pavement. Above this elevation, backfill shall be flowable fill or a combination of flowable fill and select backfill. Select backfill material shall require the approval of the City Engineer before backfilling operations will be permitted. Backfilling and compaction operations shall comply with Technical Specification 4000.

TRENCHING UNDER FUTURE STREET

SCHLAGEL

ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS

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(913) 492-5158 • Fax: (913) 492-8400  
WWW.SCHLAGELASSOCIATES.COM  
Missouri State Certificate of Authority  
#E200200360F #LS200200859F

PREPARED BY:

STATE OF MISSOURI

MARK ALLEN BREUER

NUMBER PE-2009007268

11-30-2022

SCHLAGEL & ASSOCIATES, P.A.

RESIDENCES AT BLACKWELL  
PUBLIC WATER MAIN PLANS  
HERITAGE STREET LEE'S SUMMIT, MO

REVISION	DATE	DESCRIPTION
1	02/13	ISSUED FOR PERMIT
2	02/13	ISSUED FOR PERMIT
3	02/13	ISSUED FOR PERMIT
4	02/13	ISSUED FOR PERMIT
5	02/13	ISSUED FOR PERMIT
6	02/13	ISSUED FOR PERMIT
7	02/13	ISSUED FOR PERMIT
8	02/13	ISSUED FOR PERMIT
9	02/13	ISSUED FOR PERMIT
10	02/13	ISSUED FOR PERMIT

DRAWN BY: TRC

CHECKED BY: MAB

DATE PREPARED: 11/30/2022

PROJ. NUMBER: 22-102

DETAILS