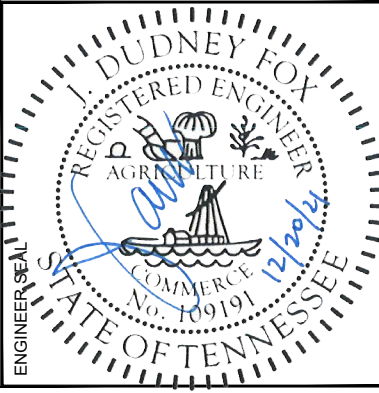
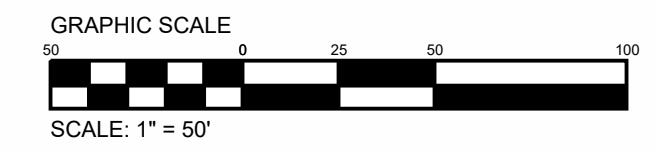


**GENERAL NOTES:**

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2. EROSION CONTROL MEASURE SHALL BE IN ACCORDANCE W/ LOCAL, STATE, & FEDERAL REQUIREMENTS. SEE SHEET C44.0 FOR ALL EROSION & SEDIMENT CONTROL DETAILS.

**ABANDONMENT NOTES:**

1. ALL EX. WATERLINE TO BE REPLACED SHALL BE ABANDONED IN PLACE UNLESS NOTED OTHERWISE.
2. INSTALL WATER TIGHT CAPS ON OPEN ENDS OF ALL PIPE TO BE ABANDONED.
3. HYDRANTS ON WATERLINES TO BE ABANDONED ARE TO BE REMOVED & SCRAPPED OFF SITE.
4. VALVE BOXES ON WATERLINES TO BE ABANDONED ARE TO BE FILLED W/ CONCRETE.



FAYETTEVILLE PUBLIC UTILITIES  
 2021 WATER SYSTEM  
 IMPROVEMENTS WATER  
 MAIN REPLACEMENTS  
 1600-022



NORTH  
 DRAWN BY: CAJ  
 APPROVED BY: JDF

DATE	ISSUE

TITLE  
 PLAN VIEW  
 DRAWING NO.  
**C31.0**

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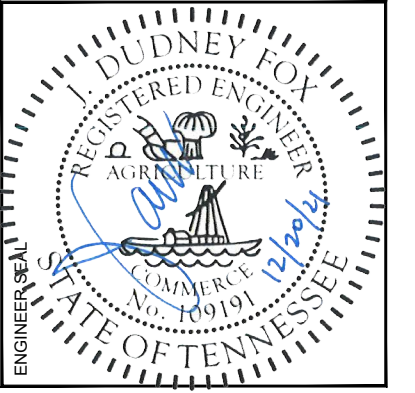
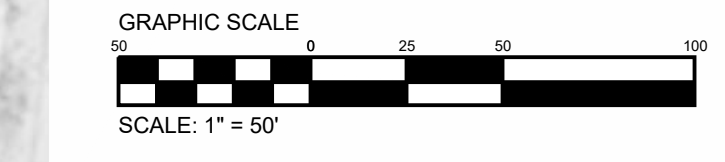
MATCHLINE - SHEET C30.0

**GENERAL NOTES:**

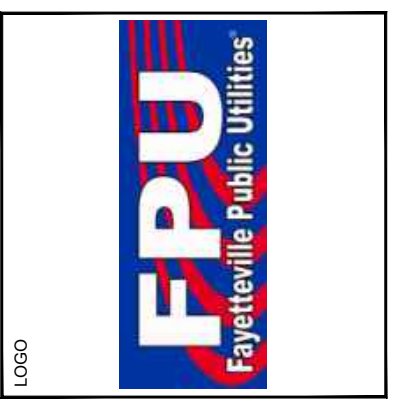
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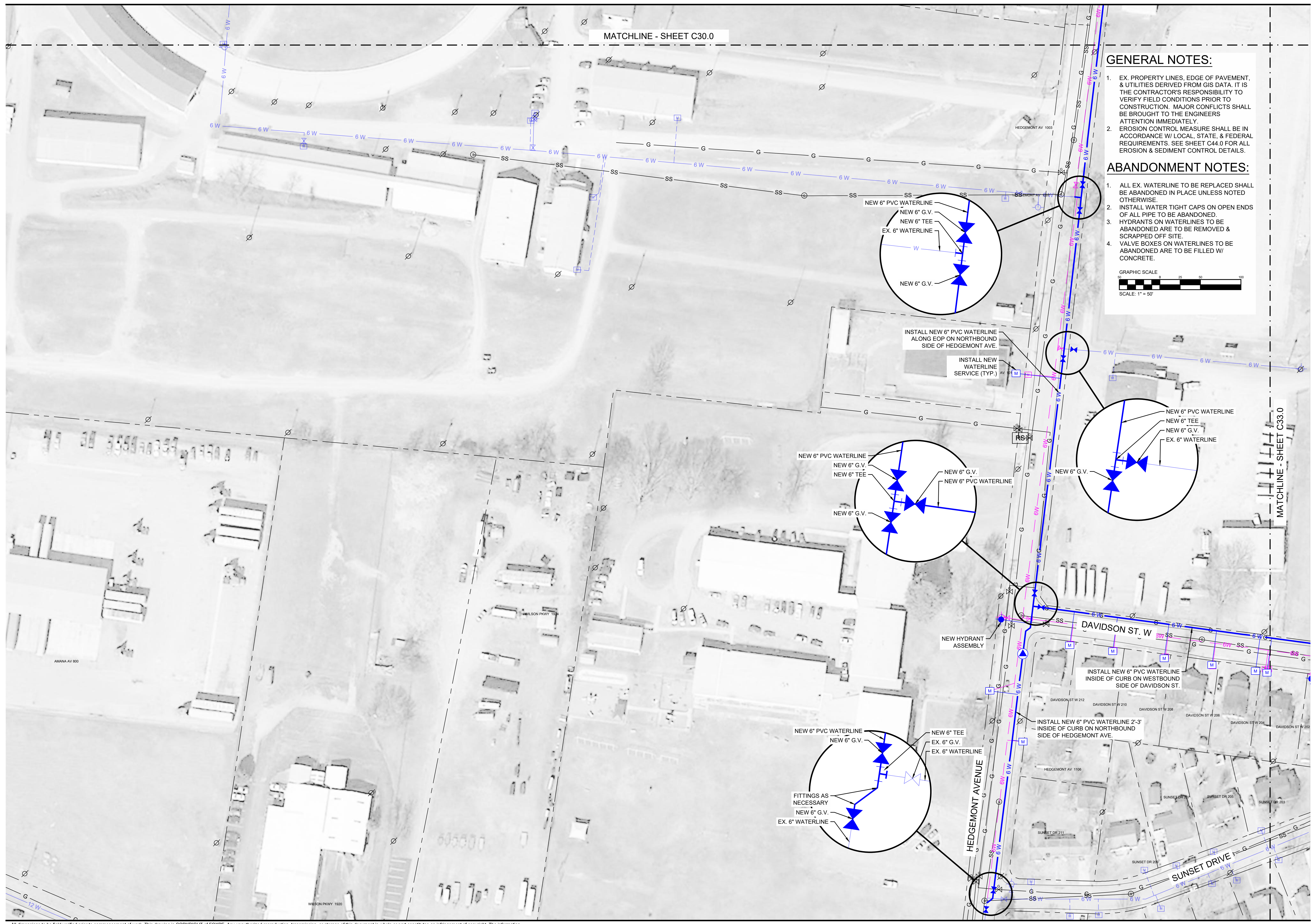
FAYETTEVILLE PUBLIC UTILITIES  
2021 WATER SYSTEM  
IMPROVEMENTS WATER  
MAIN REPLACEMENTS  
1600-022



NORTH  
DRAWN BY  
**CAJ**  
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**JDF**

DATE	ISSUE

TITLE  
**PLAN VIEW**  
DRAWING NO.  
**C32.0**



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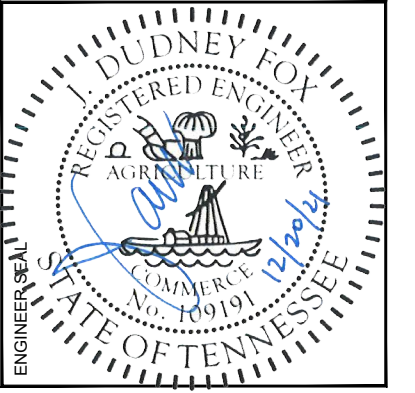
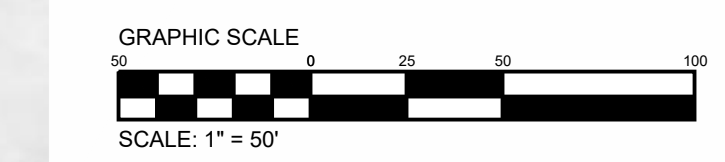
MATCHLINE - SHEET C31.0

**GENERAL NOTES:**

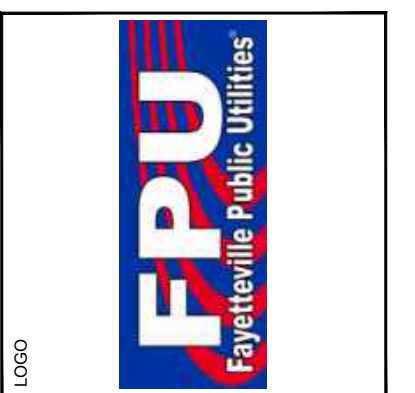
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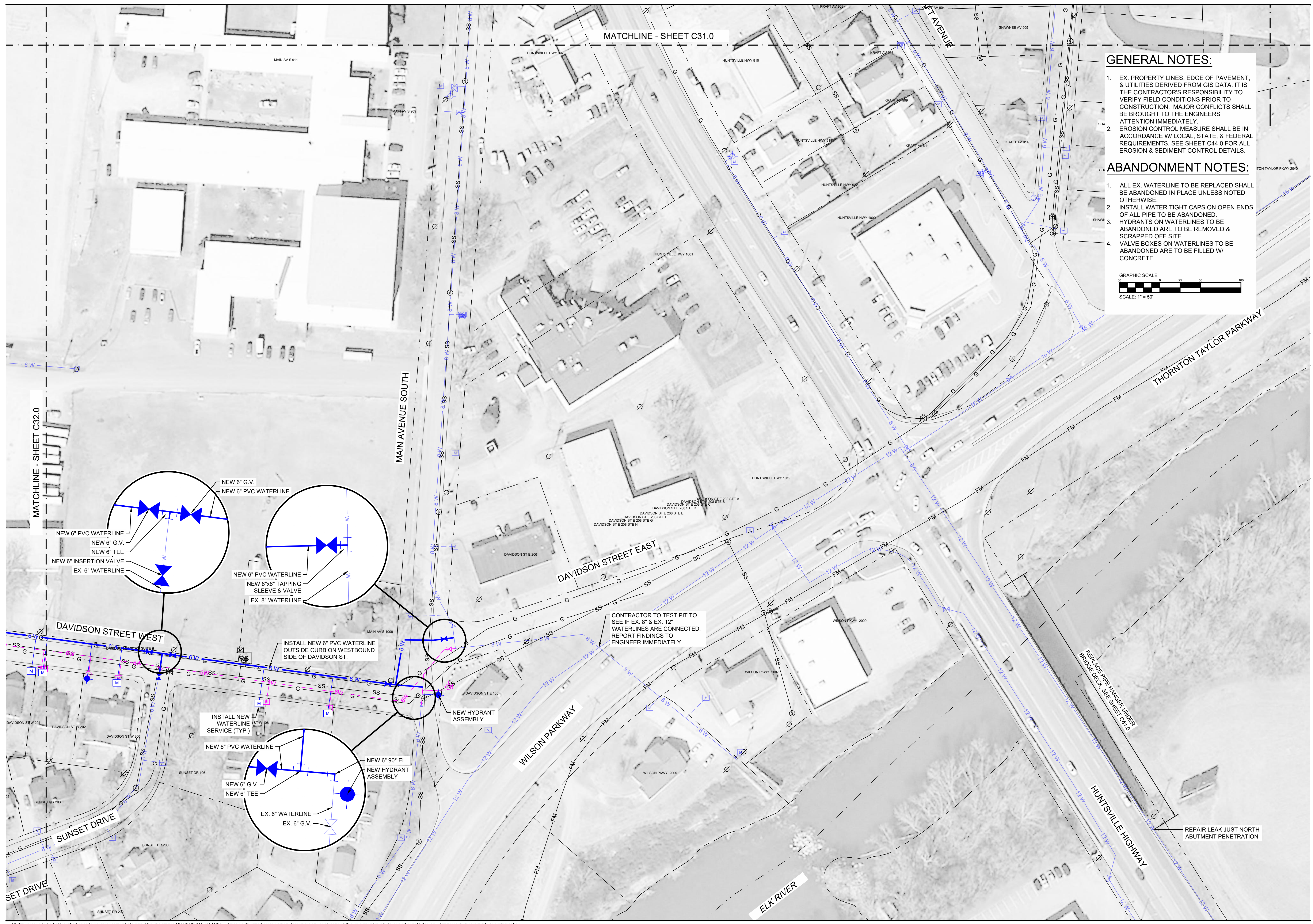
PROJECT  
 FAYETTEVILLE PUBLIC UTILITIES  
 2021 WATER SYSTEM  
 IMPROVEMENTS WATER  
 MAIN REPLACEMENTS  
 1600-022



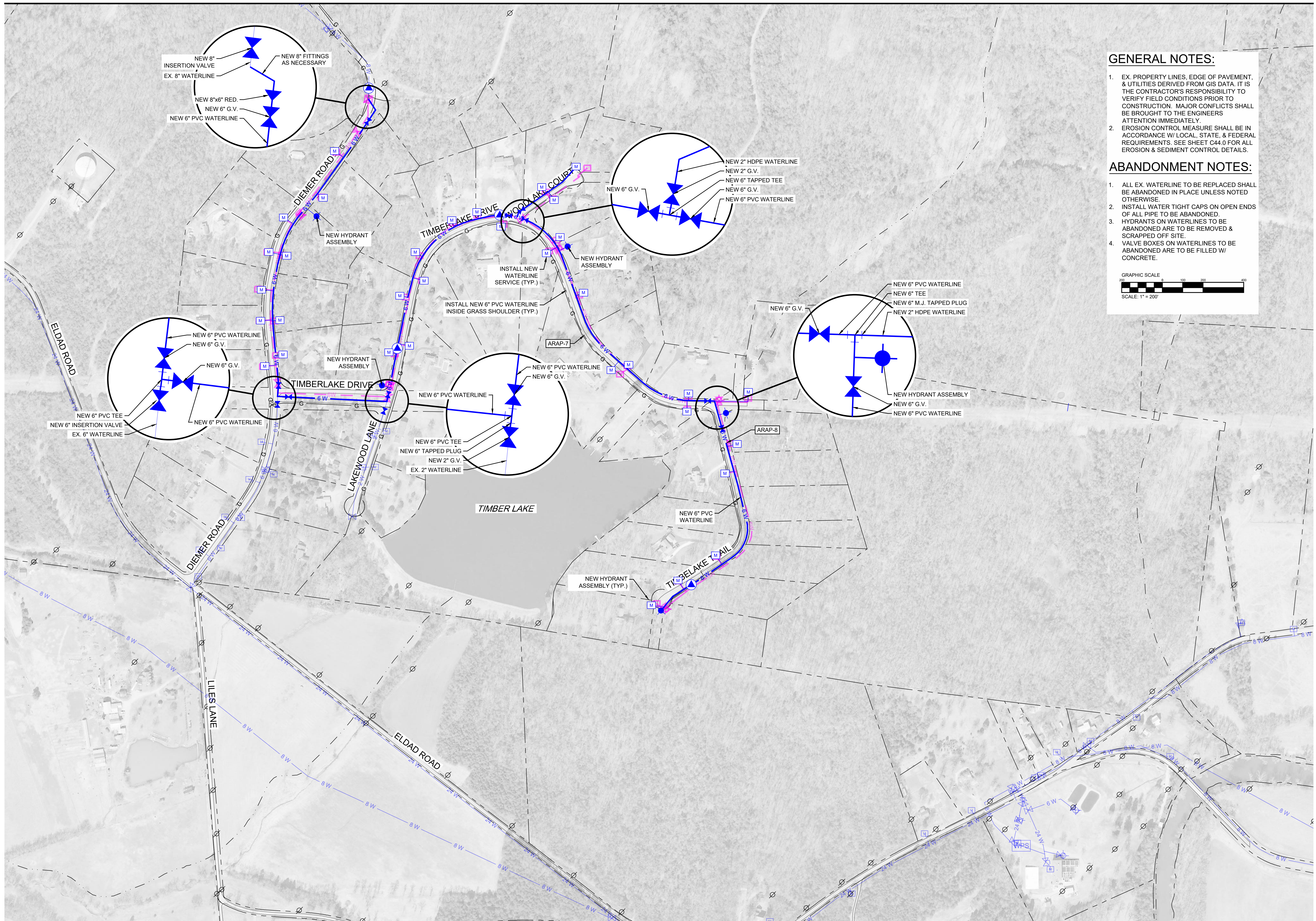
NORTH  
 DRAWN BY  
**CAJ**  
 APPROVED BY  
**JDF**

DATE	ISSUE

TITLE  
 PLAN VIEW  
 DRAWING NO.  
**C33.0**



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NEW 8" INSERTION VALVE  
EX. 8" WATERLINE  
NEW 8" FITTINGS AS NECESSARY  
NEW 8"x6" RED.  
NEW 6" G.V.  
NEW 6" PVC WATERLINE

NEW 2" HDPE WATERLINE  
NEW 2" G.V.  
NEW 6" TAPPED TEE  
NEW 6" G.V.  
NEW 6" PVC WATERLINE

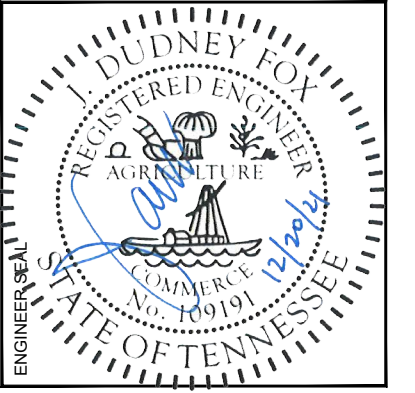
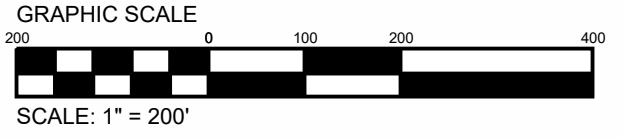
NEW 6" PVC WATERLINE  
NEW 6" TEE  
NEW 6" M.J. TAPPED PLUG  
NEW 2" HDPE WATERLINE

**GENERAL NOTES:**

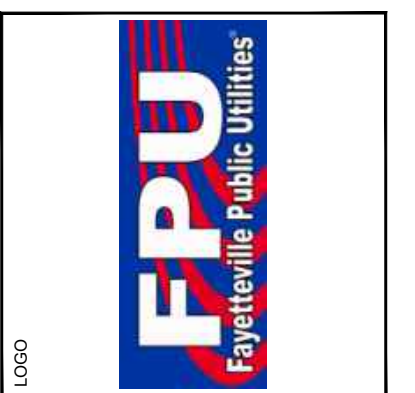
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FAYETTEVILLE PUBLIC UTILITIES  
2021 WATER SYSTEM  
IMPROVEMENTS WATER  
MAIN REPLACEMENTS  
1600-022

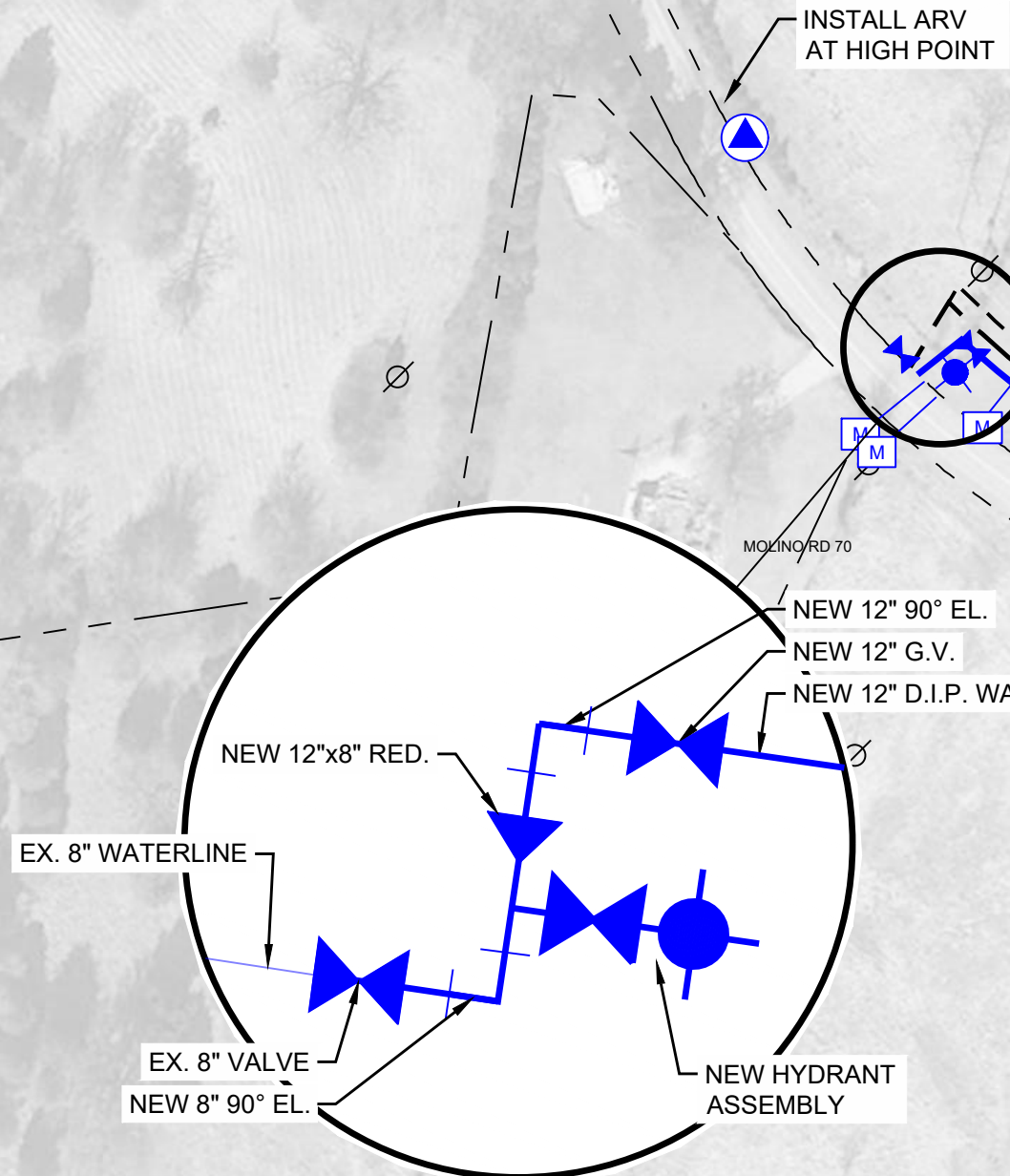


NORTH  
DRAWN BY: CAJ  
APPROVED BY: JDF

DATE	ISSUE

TITLE  
PLAN VIEW  
DRAWING NO.  
**C34.0**

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INSTALL NEW 12" D.I.P. WATERLINE  
APPROX. 30' OUTSIDE OF EOP ON  
WESTBOUND SIDE OF MOLINO ROAD  
WITHIN NEW 40' EASEMENT

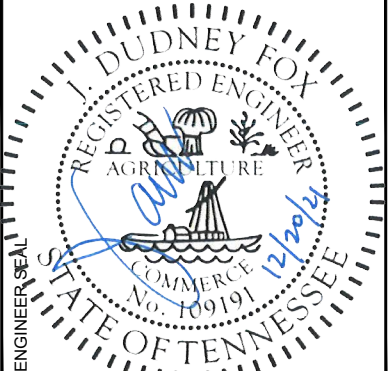
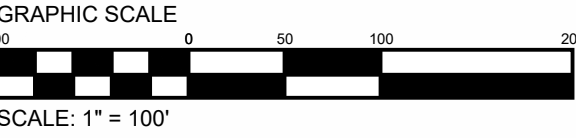
40' PERMANENT EASEMENT  
10' TEMPORARY WORKSPACE

**GENERAL NOTES:**

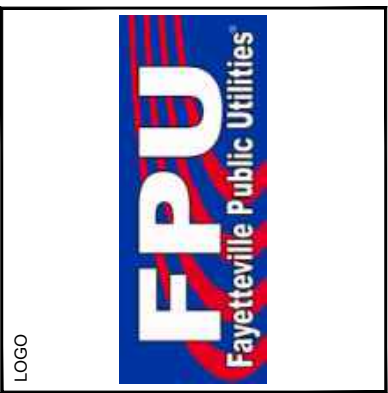
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FAYETTEVILLE PUBLIC UTILITIES  
2021 WATER SYSTEM  
IMPROVEMENTS WATER  
MAIN REPLACEMENTS  
1600-022

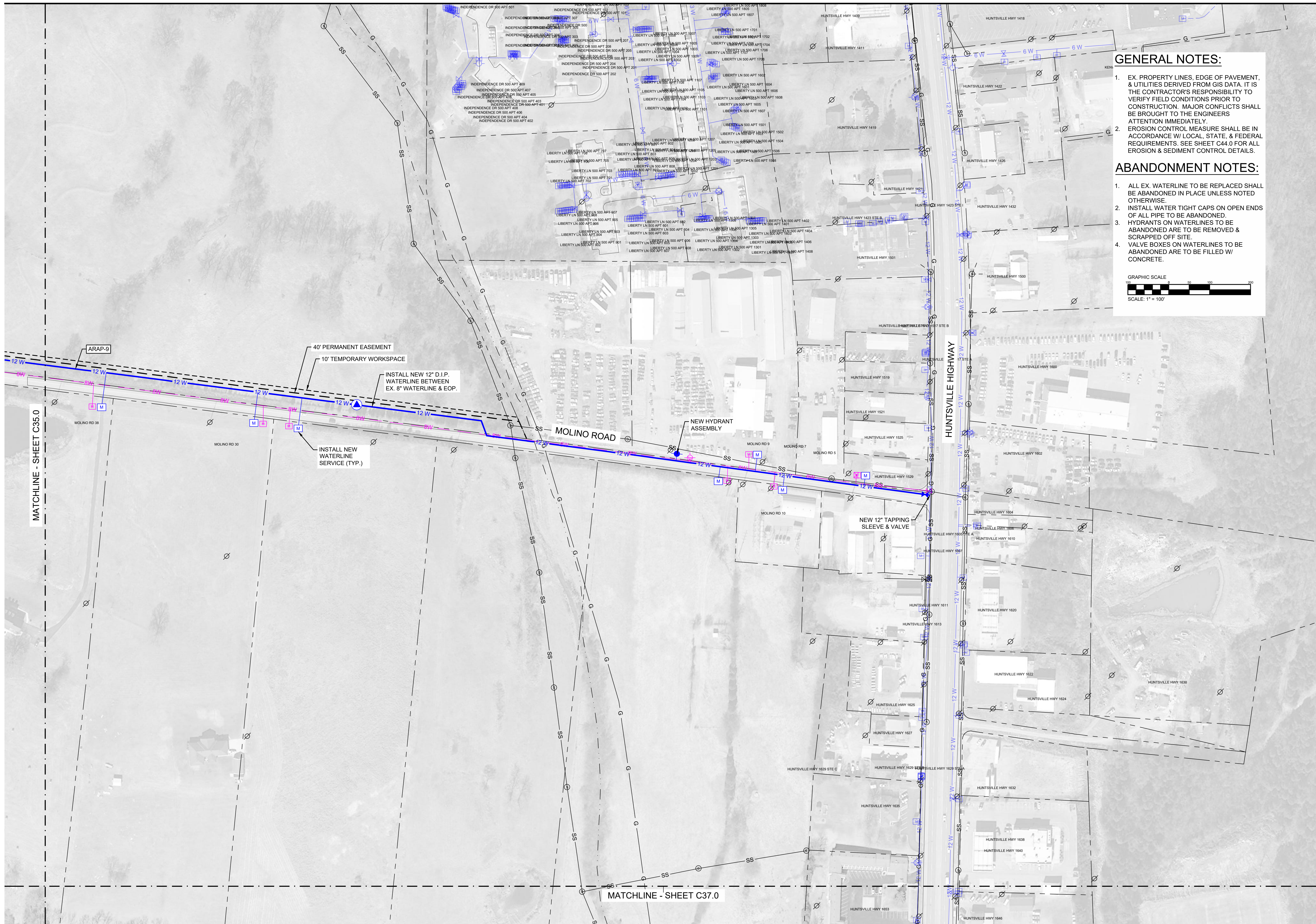


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TITLE  
PLAN VIEW  
DRAWING NO.  
**C35.0**

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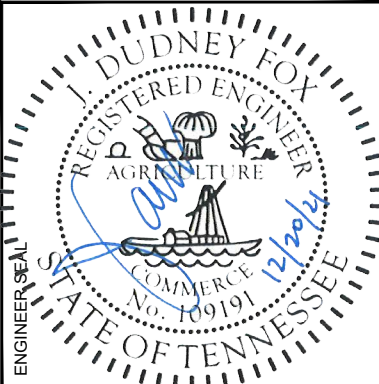
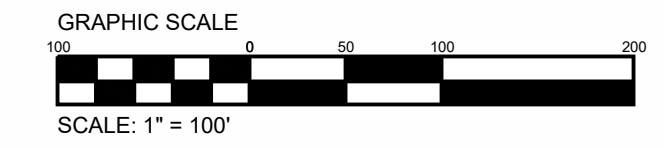


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FAYETTEVILLE PUBLIC UTILITIES  
**2021 WATER SYSTEM  
 IMPROVEMENTS WATER  
 MAIN REPLACEMENTS**  
 1600-022

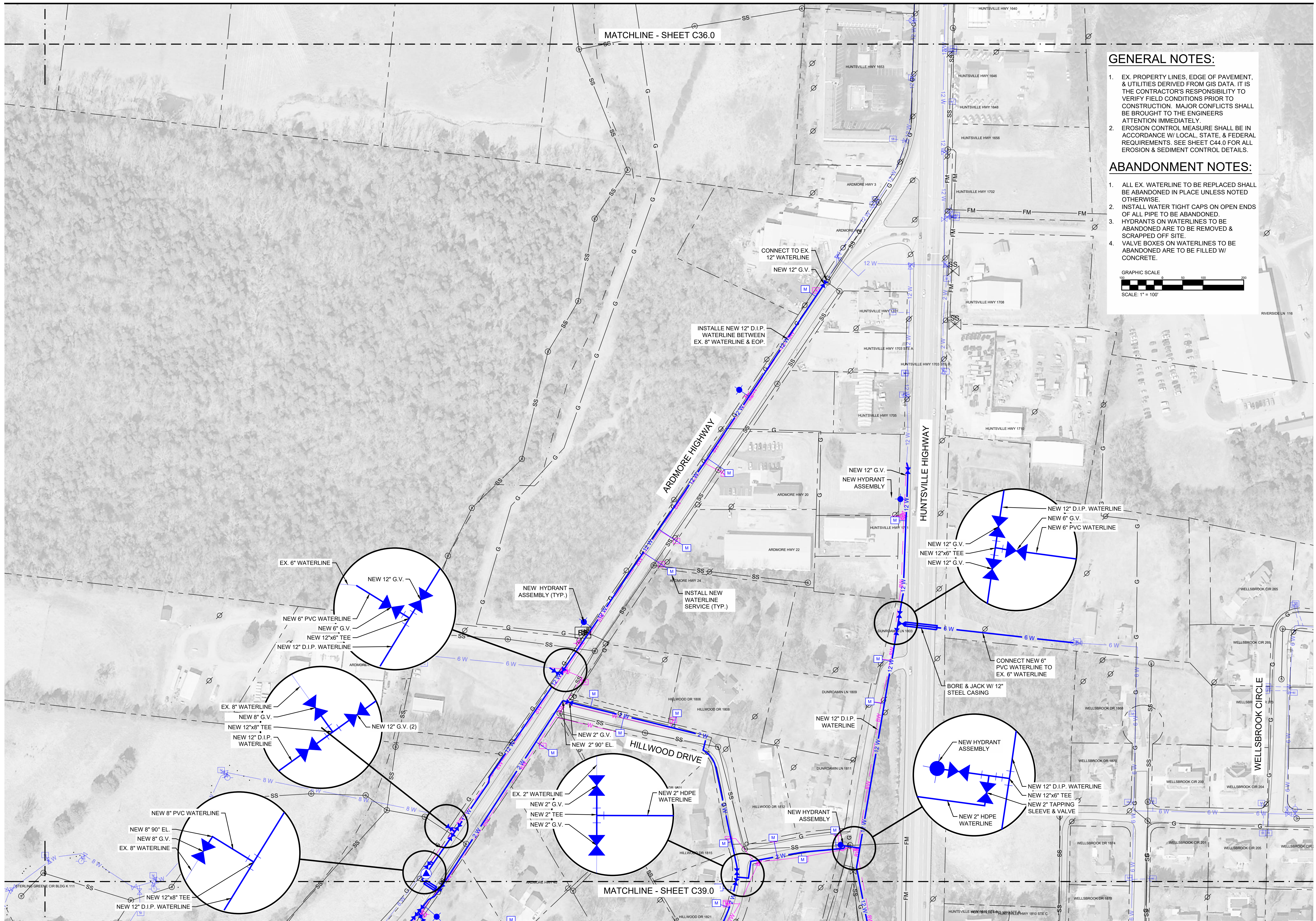


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 DRAWN BY: CAJ  
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DATE	ISSUE

TITLE  
**PLAN VIEW**  
 DRAWING NO.  
**C36.0**

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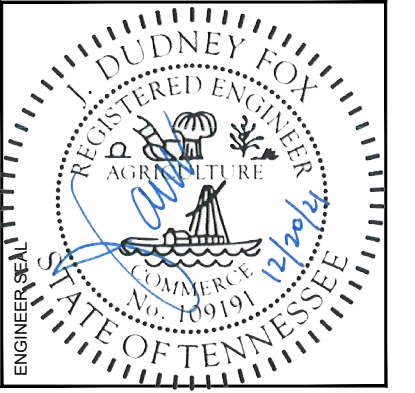
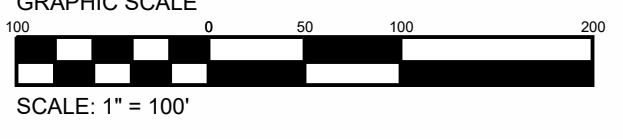


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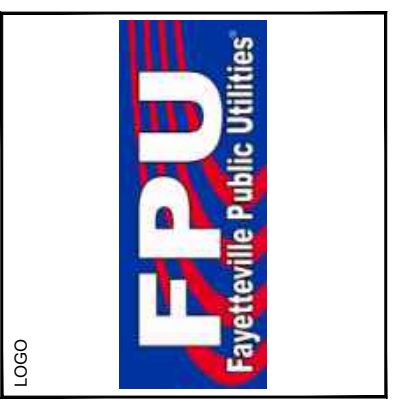
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FAYETTEVILLE PUBLIC UTILITIES  
 2021 WATER SYSTEM  
 IMPROVEMENTS WATER  
 MAIN REPLACEMENTS  
 1600-022

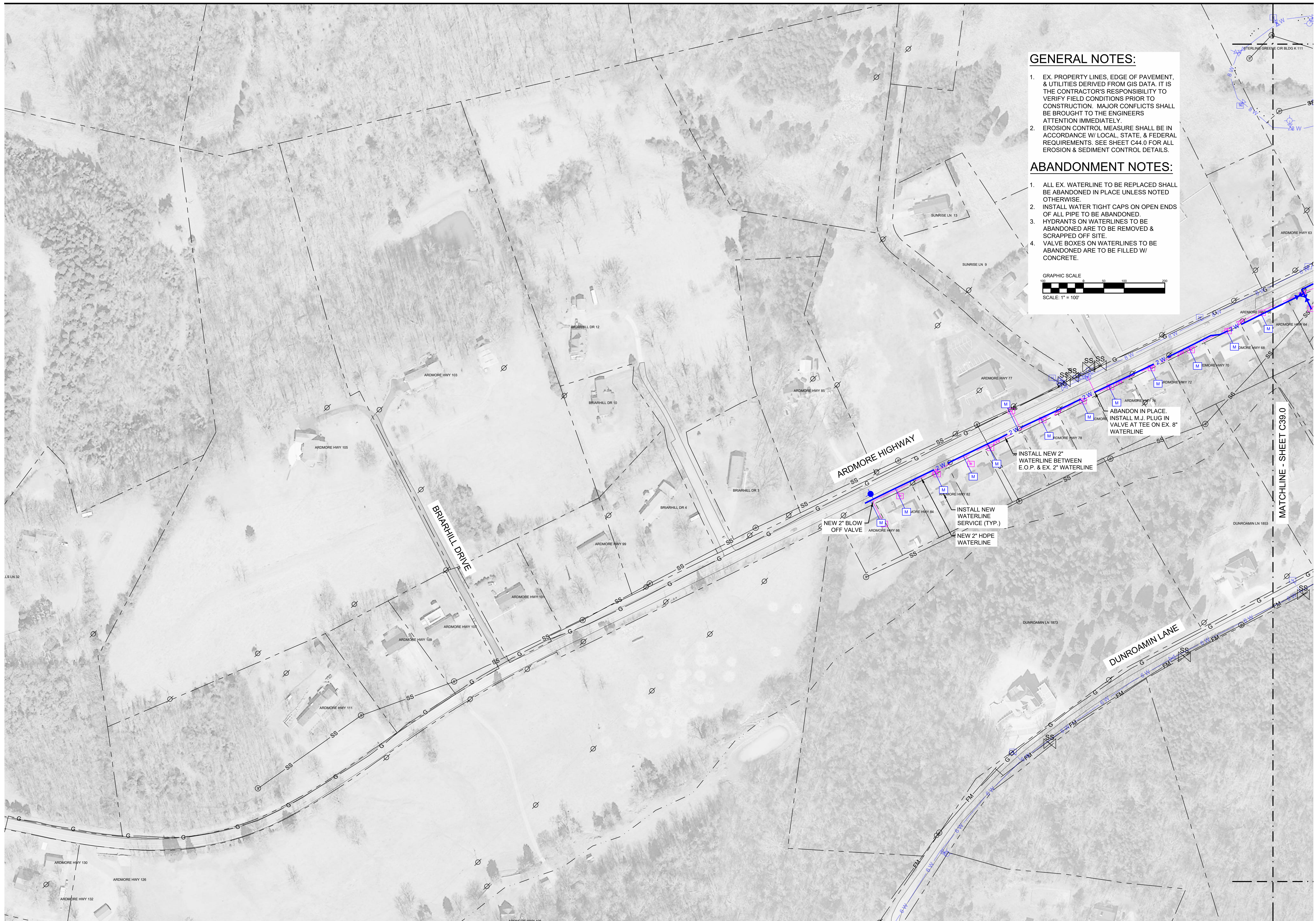


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**JDF**

DATE	ISSUE

TITLE  
**PLAN VIEW**  
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**C37.0**

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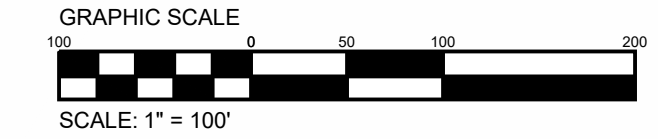


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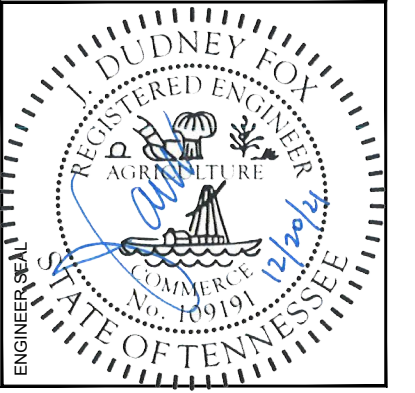
ABANDON IN PLACE. INSTALL M.J. PLUG IN VALVE AT TEE ON EX. 8\"/>

INSTALL NEW 2\"/>

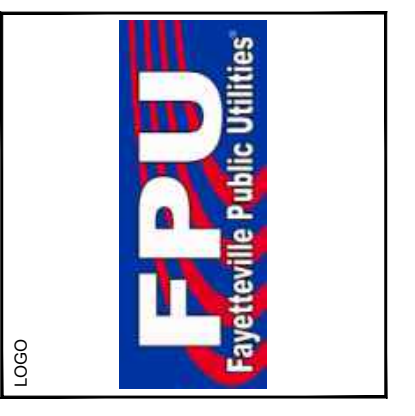
INSTALL NEW WATERLINE SERVICE (TYP.)

NEW 2\"/>

NEW 2\"/>



FAYETTEVILLE PUBLIC UTILITIES  
 2021 WATER SYSTEM  
 IMPROVEMENTS WATER  
 MAIN REPLACEMENTS  
 1600-022



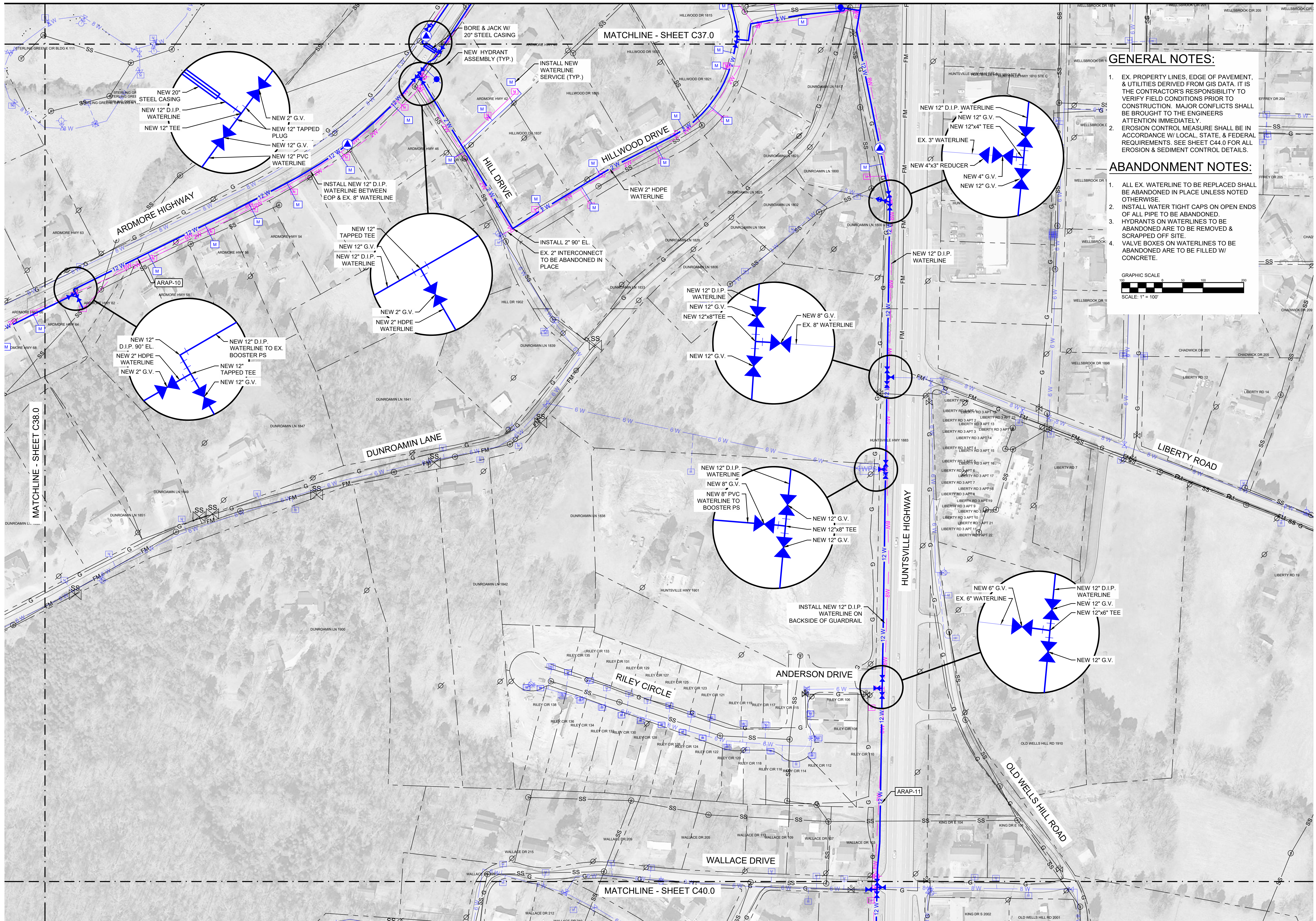
NORTH  
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TITLE  
 PLAN VIEW  
 DRAWING NO.  
**C38.0**

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FAYETTEVILLE PUBLIC UTILITIES  
 2021 WATER SYSTEM  
 IMPROVEMENTS WATER  
 MAIN REPLACEMENTS  
 1600-022

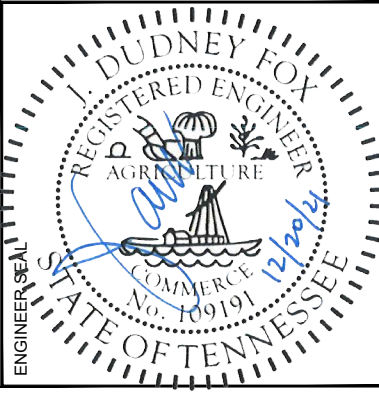
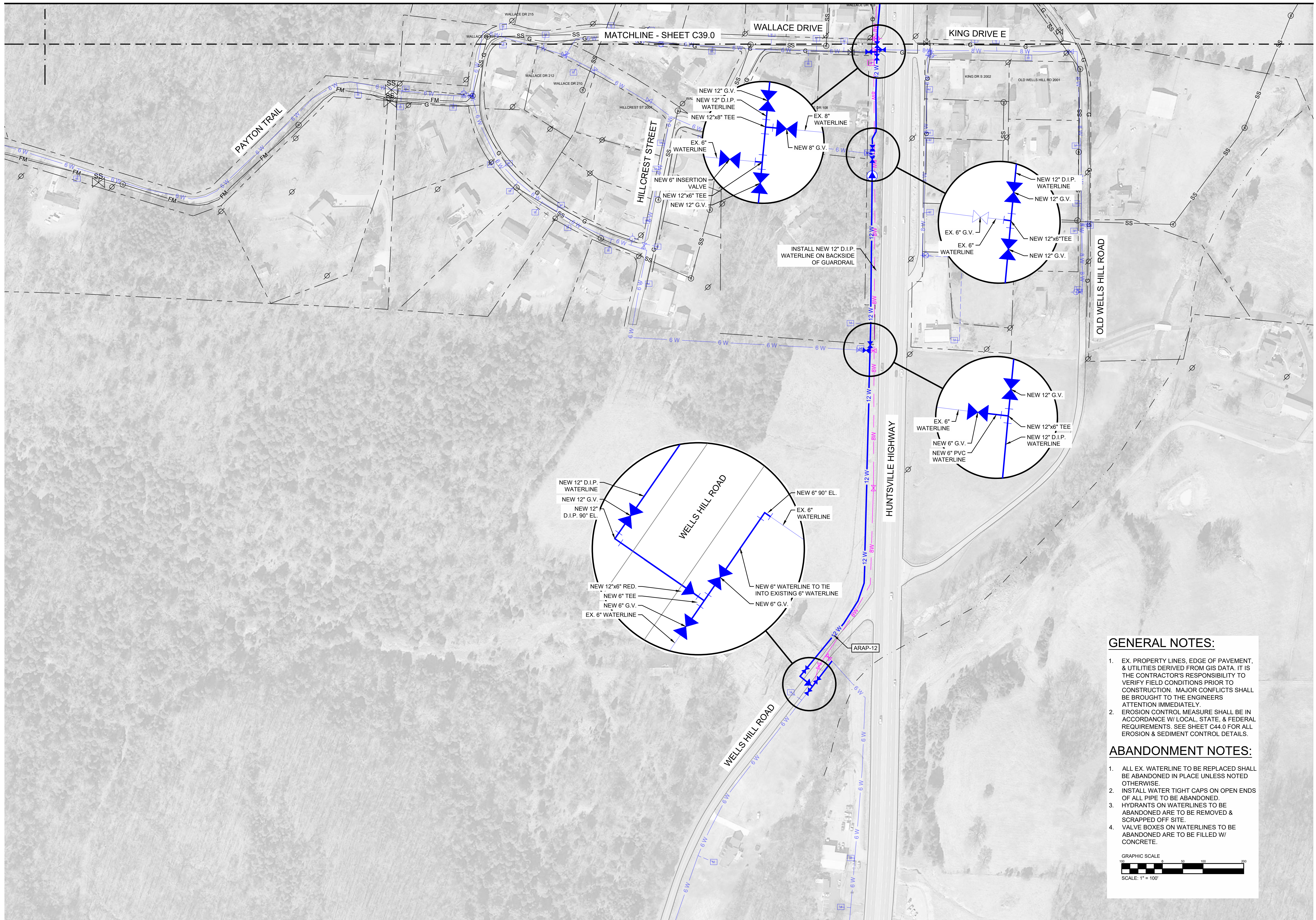


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 DRAWN BY: CAJ  
 APPROVED BY: JDF

DATE	ISSUE

TITLE: PLAN VIEW  
 DRAWING NO.: C39.0

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FAYETTEVILLE PUBLIC UTILITIES  
 2021 WATER SYSTEM  
 IMPROVEMENTS WATER  
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 1600-022



NORTH  
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DATE	ISSUE

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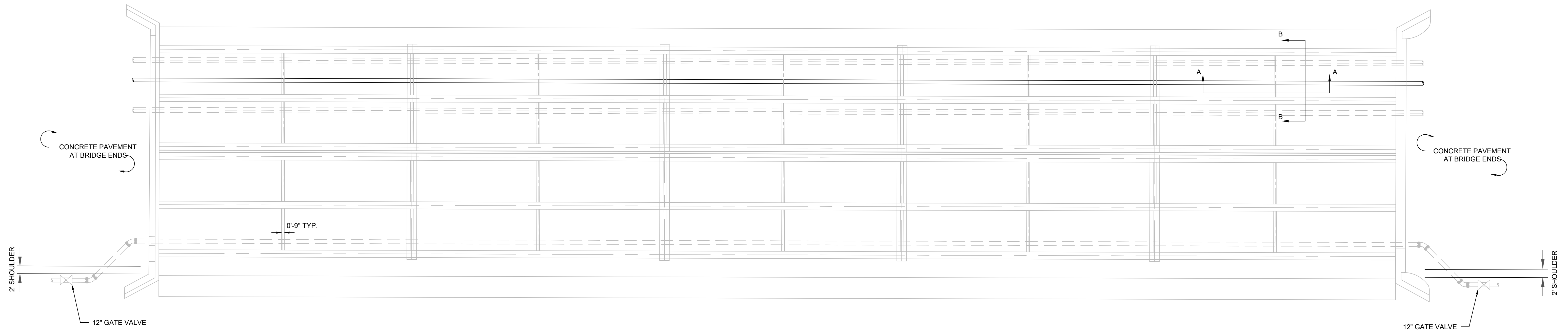
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GRAPHIC SCALE  
 0 50 100 200  
 SCALE: 1" = 100'

TITLE  
 PLAN VIEW  
 DRAWING NO.  
**C40.0**

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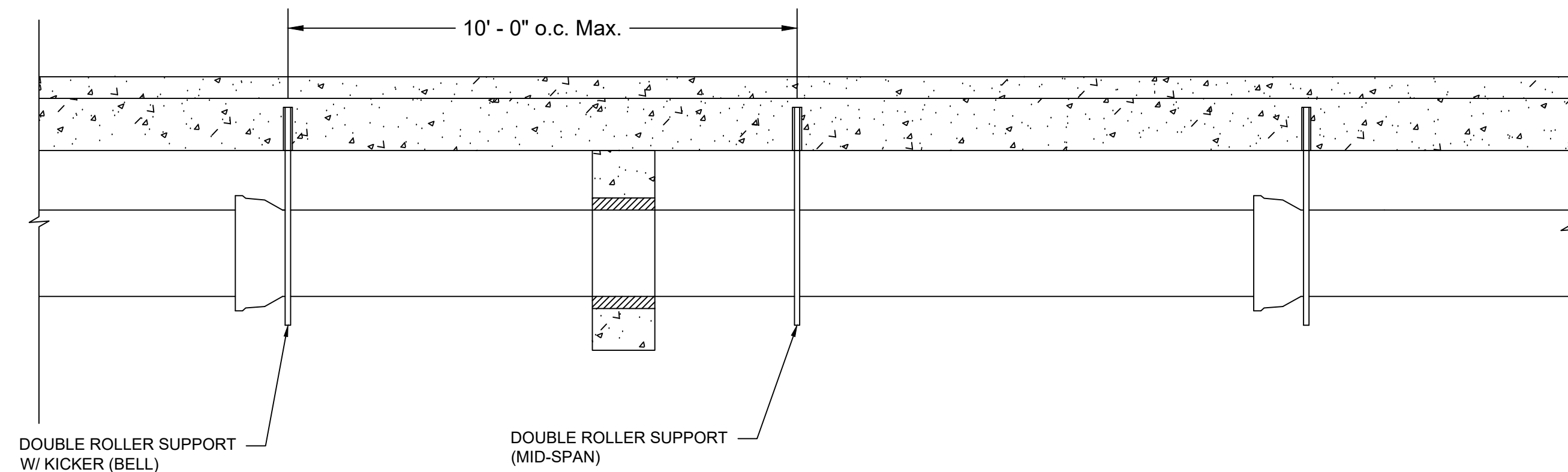


**DETAIL**

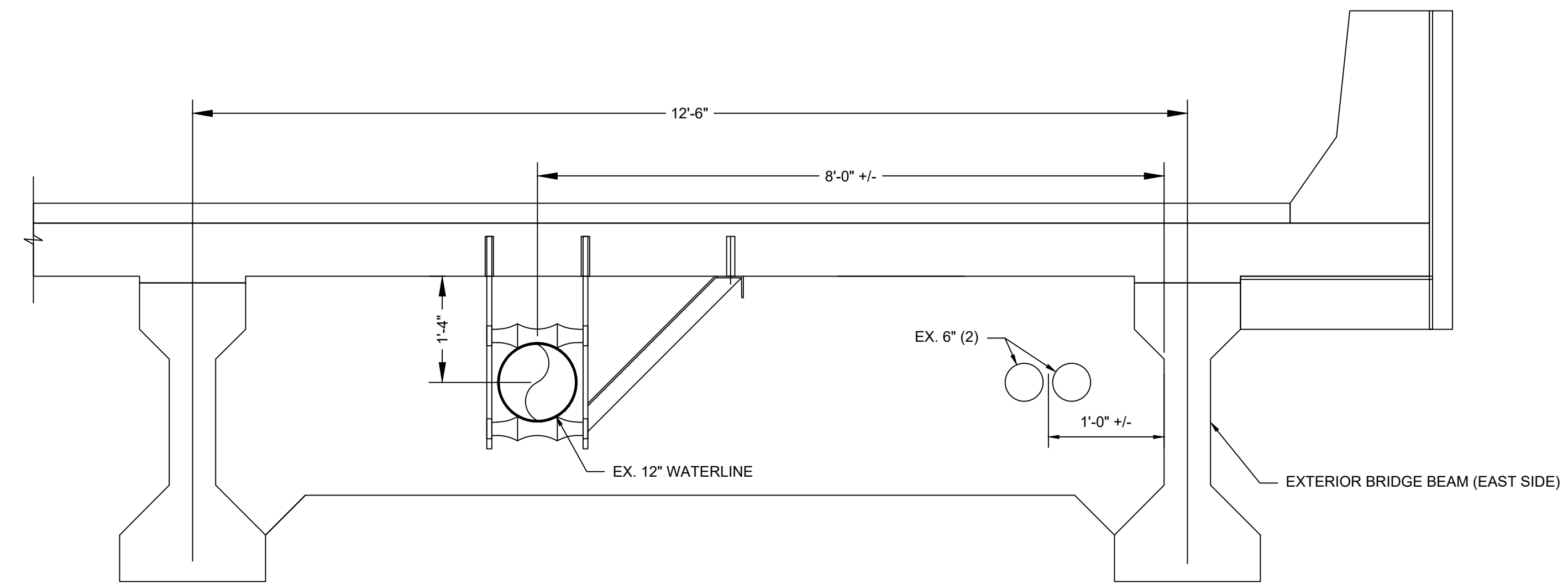
TDOT BRIDGE CROSSING (HUNTSVILLE HIGHWAY) PLAN (52-10-10.58)  
NOT TO SCALE

**NOTES:**

1. DOUBLE ROLLER SUPPORTS SHALL BE HDG COOPER B-LINE B3122A OR APPROVED EQUAL.
2. COAT CORED FACES OF OPENINGS WITH 2 COATS OF SIKAGARD 62, GRAY.
3. EPOXY TO BE HILTI HIT-HY 200 SAFE SET SYSTEM OR APPROVED EQUAL. CLEAN HOLES PER MANUFACTURER RECOMMENDATIONS.



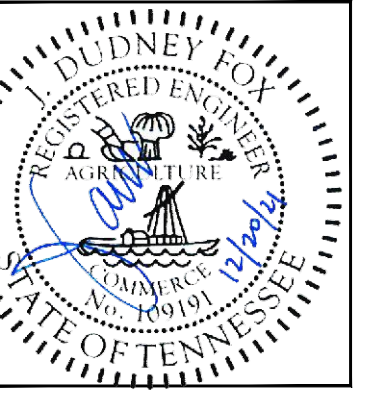
**SECTION A - A**



**SECTION B - B**

**DETAIL**

TDOT BRIDGE CROSSING (HUNTSVILLE HIGHWAY) SECTIONS  
SCALE: 3/4" = 1'-0"



FAYETTEVILLE PUBLIC UTILITIES  
2021 WATER SYSTEM  
IMPROVEMENTS WATER  
MAIN REPLACEMENTS  
1600-0-022



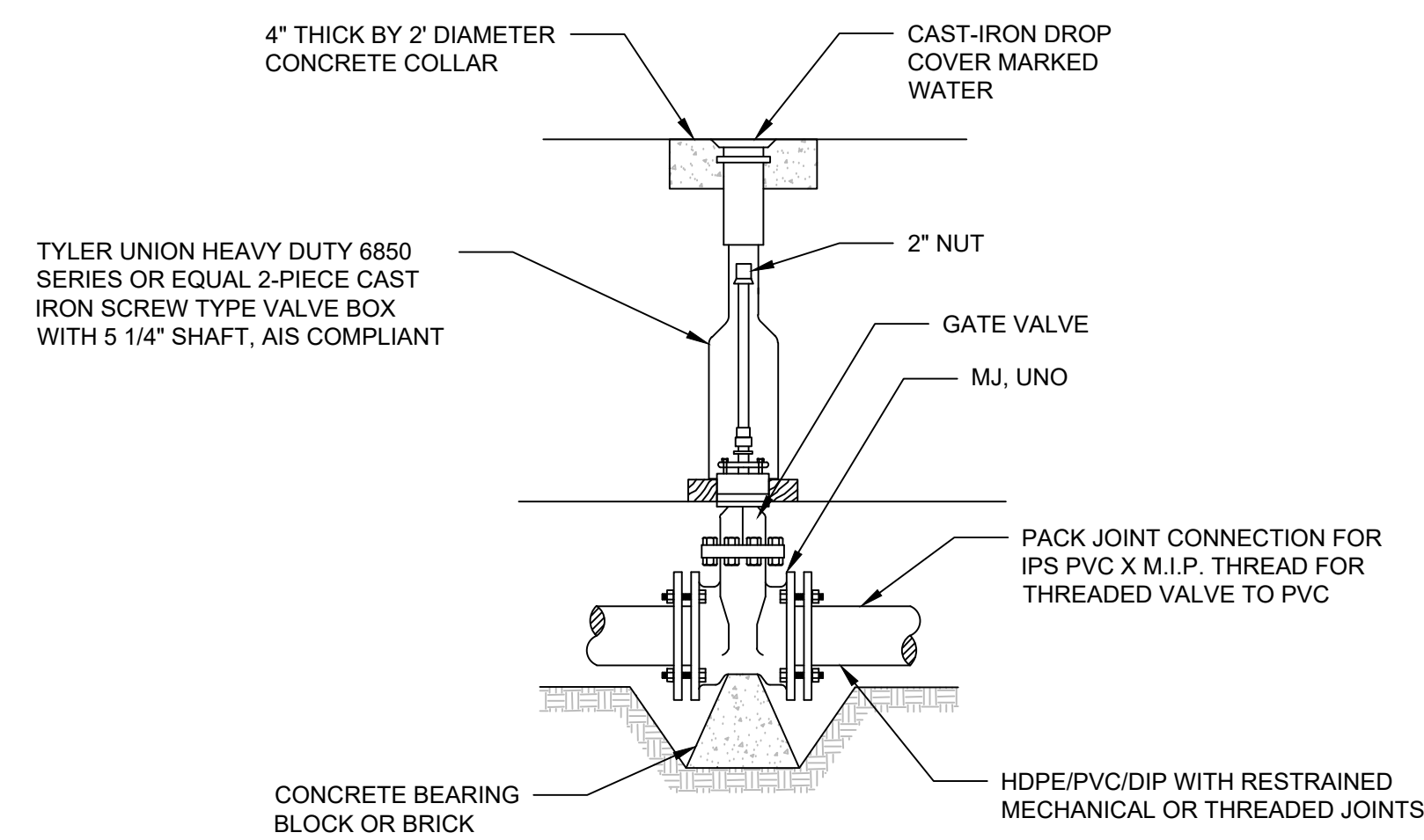
NORTH

DRAWN BY: CAJ  
APPROVED BY: JDF

DATE	ISSUE

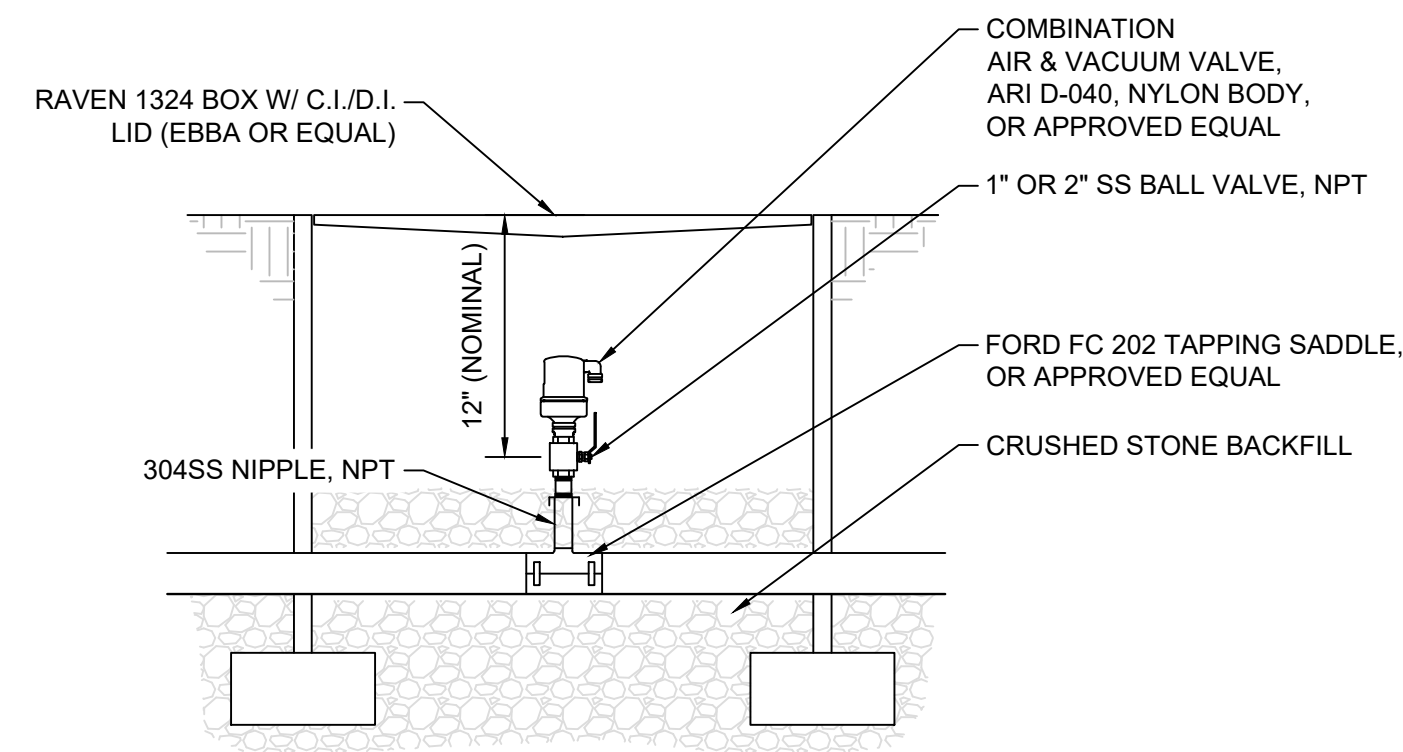
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BRIDGE CROSSING  
DETAILS

DRAWING NO.  
**C41.0**



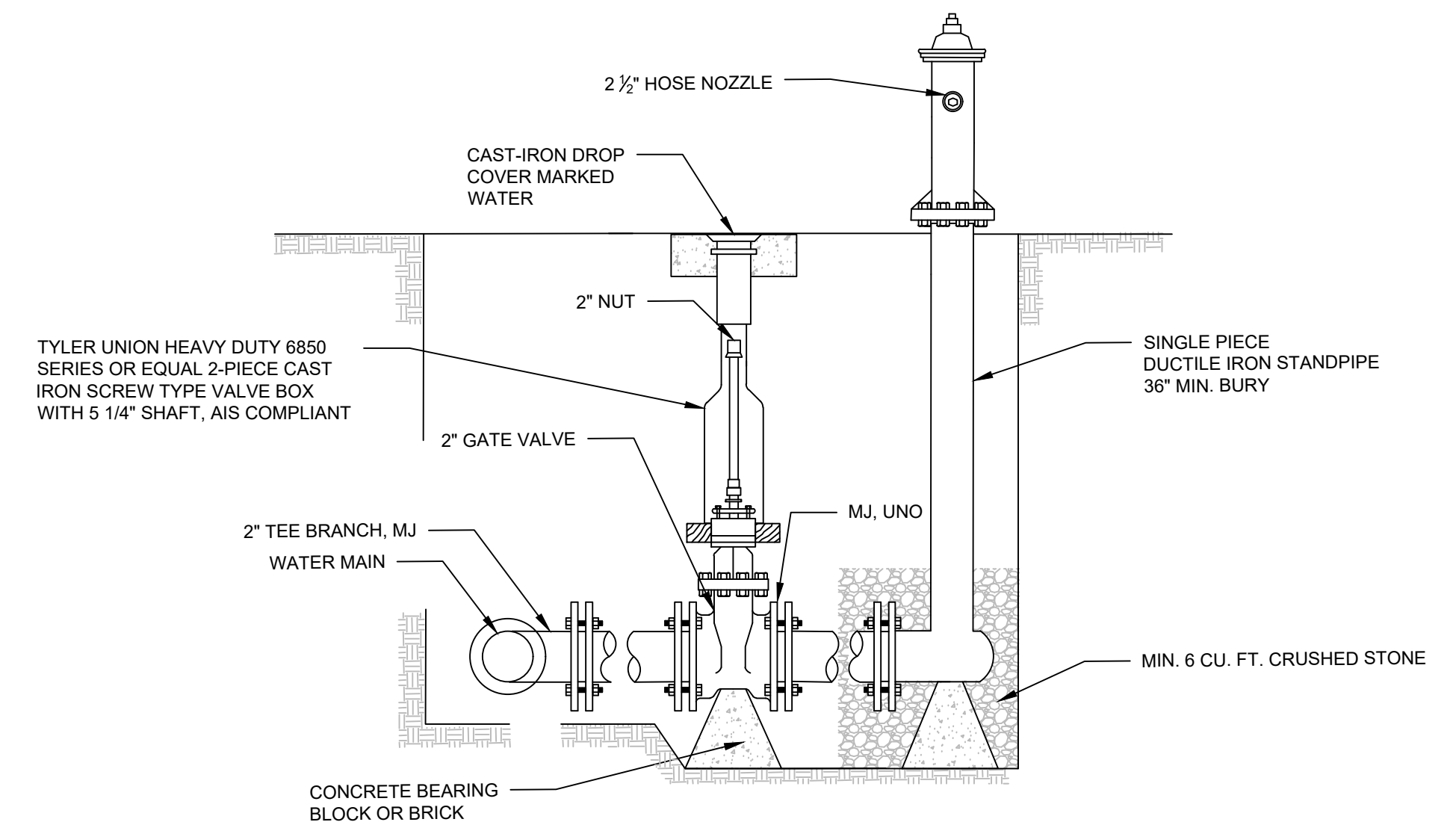
**VALVE ASSEMBLY DETAIL**  
N.T.S.

- NOTES:
1. ALL VALVES SHALL BE AIS COMPLIANT.
  2. ALL VALVES 12" AND SMALLER SHALL BE M&H C515 RESILIENT WEDGE GATE VALVES, OR APPROVED EQUAL.
  3. ALL VALVES 16" AND LARGER SHALL BE M&H STYLE 4500 CL250 BUTTERFLY VALVE, OR APPROVED EQUAL.
  4. ALL VALVES SHALL BE EPOXY COATED (MIN. 6 MILS DRY FILM THICKNESS) INSIDE AND OUT PER AWWA C550 AND NSF 61 CERTIFIED.
  5. EXTERNALLY ACCESSIBLE BOLTS, NUTS, AND WASHERS SHALL BE STAINLESS STEEL TYPE 304.
  6. PULL TRACER WIRE INTO VALVE BOX.
  7. CUT-IN SLEEVE TO BE USED TO CUT-IN VALVE. CONTRACTOR TO VERIFY REQUIRED SLEEVE LENGTH.
  8. TAPPING SLEEVE SHALL BE FORD FAST, M&H 7590, OR ENGINEER APPROVED EQUAL.



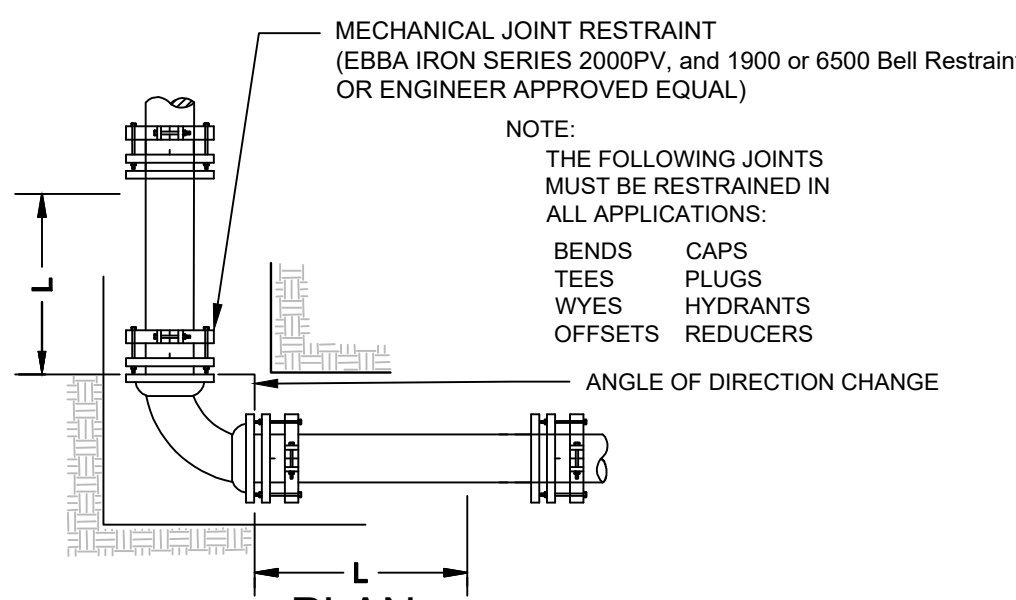
**COMBINATION AIR AND VACUUM VALVE ASSEMBLY**  
N.T.S.

- NOTES:
1. LOCATE ENTIRELY WITHIN RIGHT-OF-WAY.
  2. ISOLATION VALVE & ARV SHALL BE 1-INCH FOR PIPE SIZES 6-INCHES & SMALLER, 2-INCH FOR 8-INCH OR LARGER.
  3. SUPPORT S.S. NIPPLE IN CRUSHED STONE.
  4. STACK BOXES AS REQUIRED.



**2" BLOW - OFF AND VALVE ASSEMBLY DETAIL**  
N.T.S.

- NOTES:
1. BLOW - OFF SHALL BE MUELLER A423-501999, AIS COMPLIANT.
  2. ALL JOINTS SHALL BE RESTRAINED.
  3. GATE VALVES SHALL BE M&H C515 RESILIENT WEDGE OR APPROVED EQUAL, AIS COMPLIANT.
  4. GATE VALVES SHALL BE EPOXY COATED (MIN. 6 MILS DRY FILM THICKNESS) INSIDE AND OUT PER AWWA C550 AND NSF 61 CERTIFIED.
  5. PULL TRACER WIRE INTO VALVE BOX.
  6. COORDINATE NOZZLE DIRECTION WITH ENGINEER/OWNER.



**MECHANICALLY RESTRAINED JOINT DETAIL**  
N.T.S.

L = MINIMUM LENGTH TO BE RESTRAINED ON EACH SIDE OF FITTING (FEET)\*

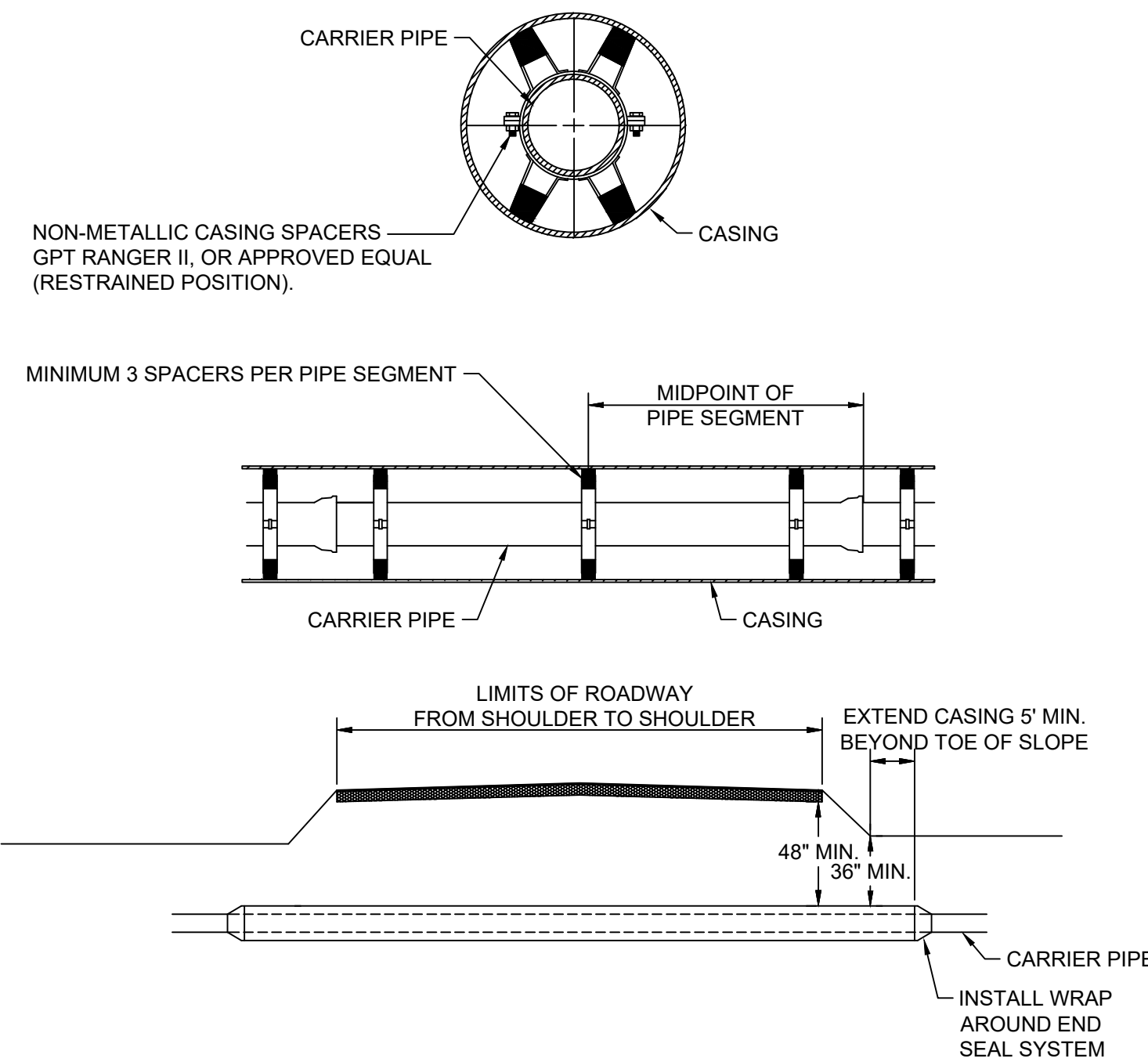
NOM. PIPE SIZE (IN.)	TEST PRESSURE - 150 PSI								TEES, VALVES, DEAD-ENDS		
	ELBOWS (HORIZ.) (DEGREES)				ELBOWS (VERT.) (DEGREES)						
	11*	22*	45	90	11	14	22	12*	45	22	74
					UP	LOW	UP	LOW			
DIP											
16"	6	12	24	57	9	4	18	8	37	15	41
12"	5	9	19	45	7	3	14	6	29	12	22
PVC											
10"	5	10	21	50	9	4	19	7	38	13	39
8"	5	9	18	42	8	3	16	6	32	11	41
6"	4	7	14	32	6	2	12	4	24	9	38
4"	3	5	10	23	5	2	9	3	18	6	17
3"	3	5	9	21	4	2	8	3	16	6	17
2"	3	5	9	21	4	2	8	3	16	6	17

COMMENTS AND ASSUMPTIONS:

THE TABULATED VALVES SHOWN WERE GENERATED USING THE EBAA IRON, INC. COMPUTER PROGRAM.  
SOIL TYPE: WORST CASE  
MH GRANULAR - FOR ELBOWS  
ML - FOR REDUCERS, TEES, VALVES, AND DEAD-ENDS.  
TRENCH TYPE: 3 (PIPE BEDDED IN 4-INCH MINIMUM LOOSE SOIL.  
BACKFILL LIGHTLY CONSOLIDATED TO TOP OF PIPE)  
DEPTH OF COVER TO TOP OF PIPE: 3 FEET  
SAFETY FACTOR: 1.5 (THE VALUES SHOWN FOR THE REDUCERS WERE BASED ON A REDUCTION FROM THE NOMINAL PIPE SIZE TO A PIPE ONE-SIZE SMALLER.)

\*RESTRAIN ONE JOINT BEYOND THE MINIMUM LENGTH FOR ALL LENGTHS OVER 10 FEET.

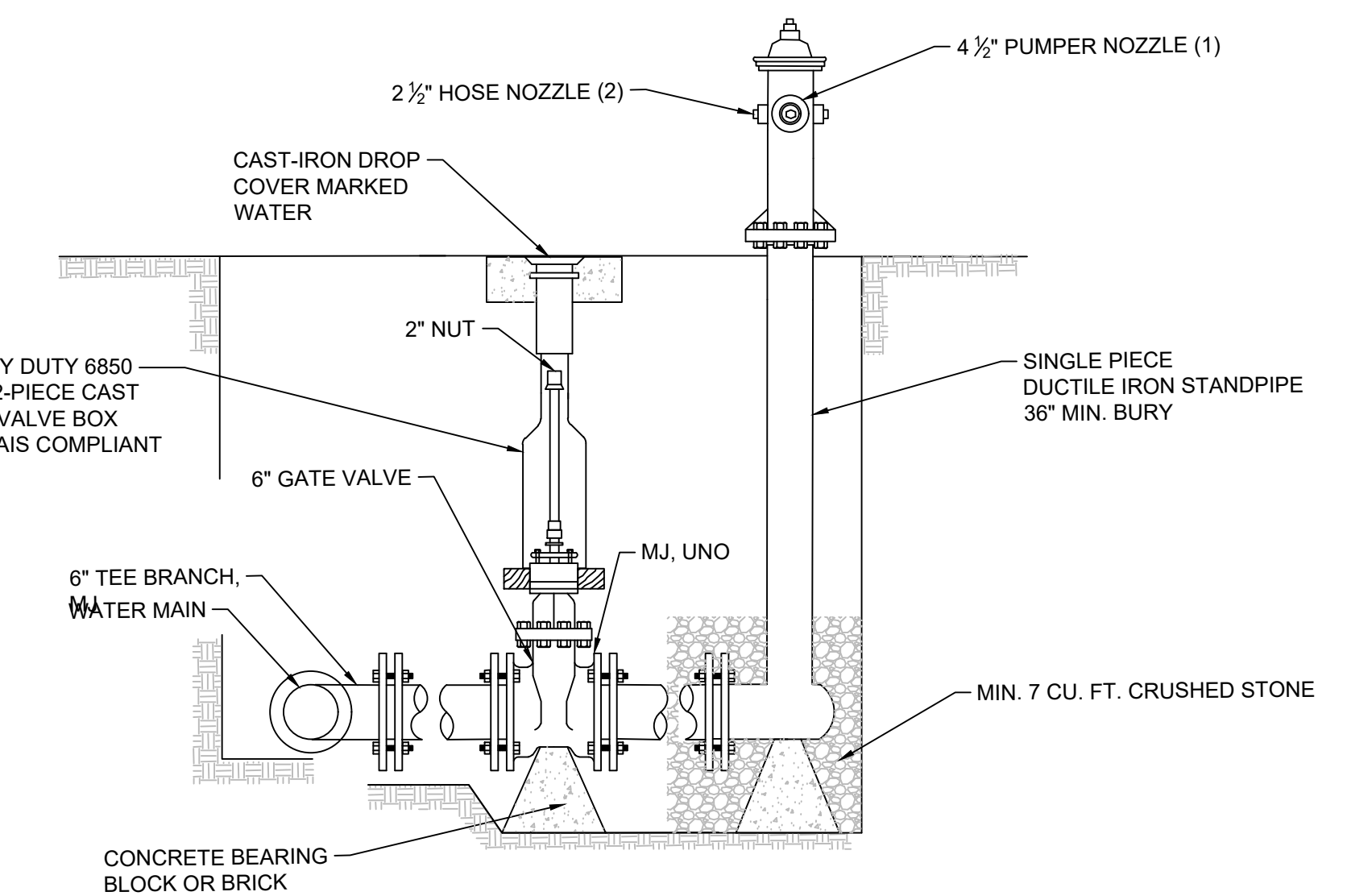
\* UP INDICATES UPPER FITTING FOR VERTICAL RESTRAINT  
\* LOW INDICATES LOWER FITTING FOR VERTICAL RESTRAINT



**BORE & JACK ROAD CROSSING DETAIL**  
N.T.S.

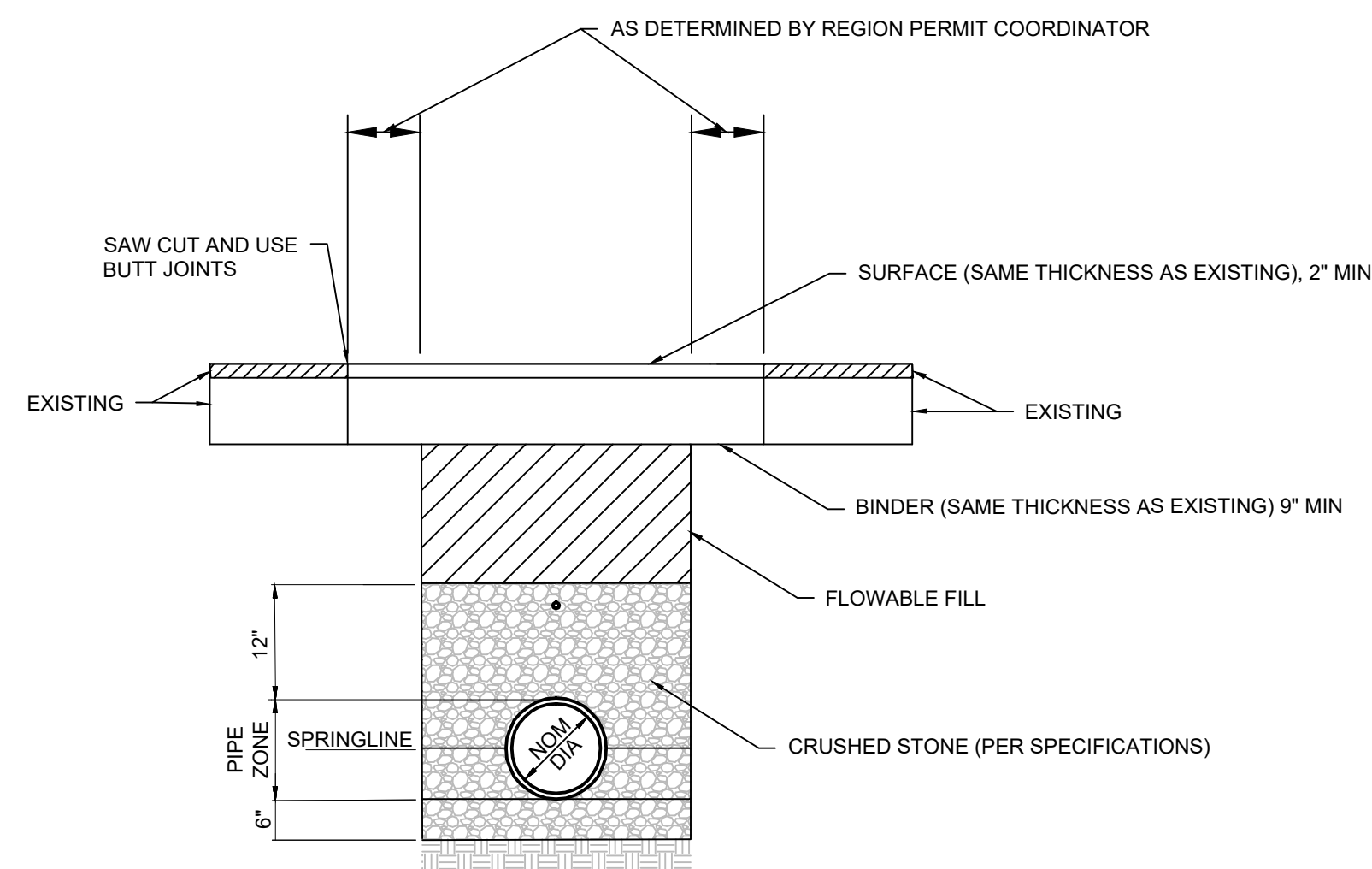
- NOTES:
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH TENNESSEE DEPT OF TRANSPORTATION RULES AND REGULATIONS FOR ACCOMMODATING UTILITIES WITHIN HIGHWAY RIGHTS OF WAY LATEST REVISION.
  2. LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION.
  3. END SEAL SHALL BE APS MODEL AC OR APPROVED EQUAL.
  4. CARRIER PIPE MUST BE RATED FOR H2O LOADING AND WHERE APPLICABLE THE THICKNESS REQUIRED BY DOT REQUIREMENTS. MINIMUM THICKNESS SHALL BE 0.25". 20" CASING SHALL HAVE MINIMUM THICKNESS OF 0.375".
  5. THE CASING PIPE SHALL BE SPIRAL WELDED STEEL.
  6. CARRIER PIPE SHALL BE CLASS 350 DIP. ALL JOINTS RESTRAINED USING TR FLEX, OR APPROVED EQUAL. JOINTS RESTRAINTS SHALL BE FULLY EXTENDED TO REMOVE SLACK AND ENGAGE RESTRAINT.

CARRIER PIPE NORMAL SIZE (INCHES)	CASING PIPE NOMINAL DIAMETER (INCHES)
6	12
12	20

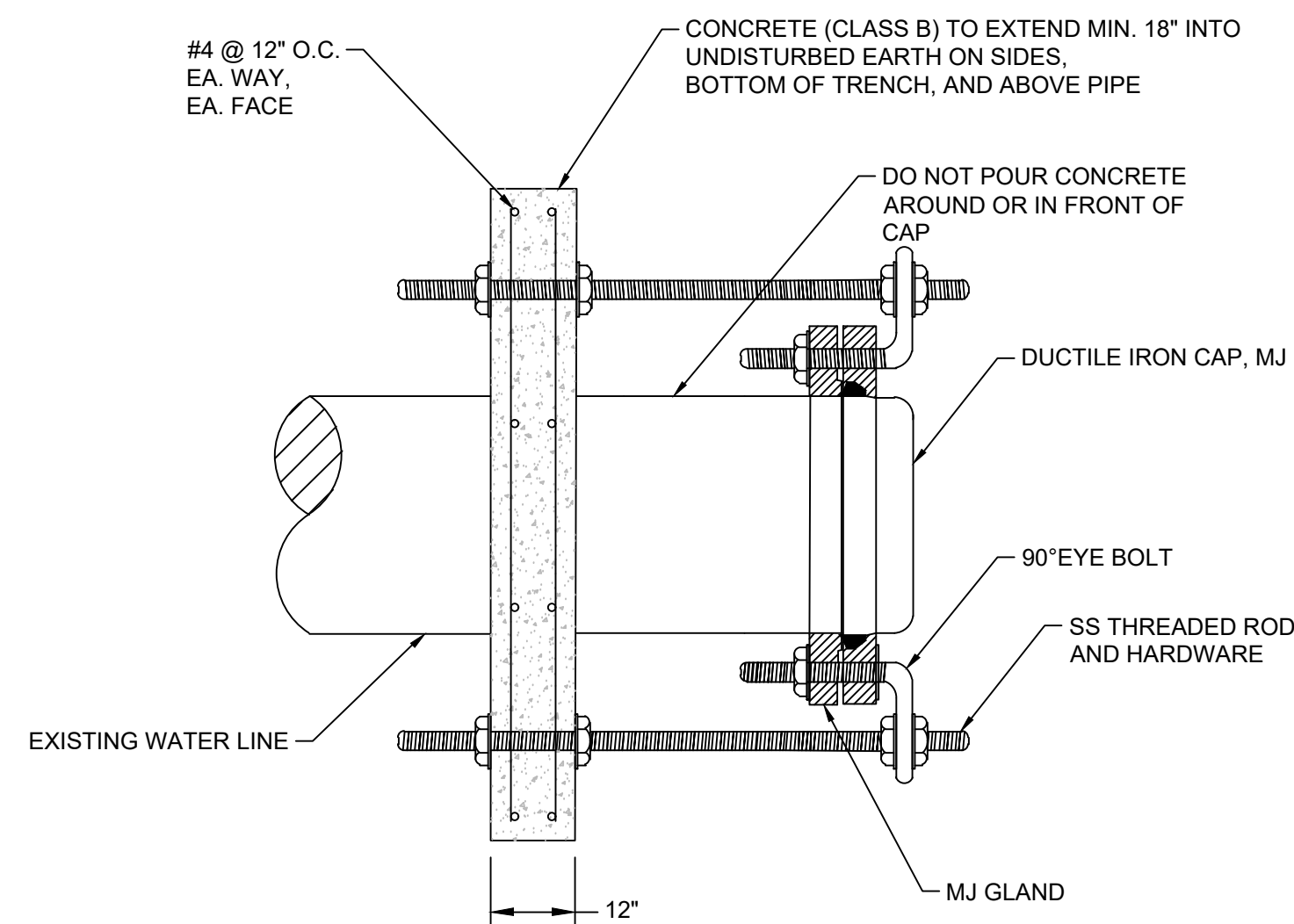


**FIRE HYDRANT AND VALVE ASSEMBLY DETAIL**  
N.T.S.

- NOTES:
1. FIRE HYDRANT SHALL BE MUELLER 423-501999 OR APPROVED EQUAL, AIS COMPLIANT.
  2. ALL JOINTS SHALL BE RESTRAINED.
  3. GATE VALVES SHALL BE M&H C515 RESILIENT WEDGE OR APPROVED EQUAL, AIS COMPLIANT.
  4. GATE VALVES SHALL BE EPOXY COATED (MIN. 6 MILS DRY FILM THICKNESS) INSIDE AND OUT PER AWWA C550 AND NSF 61 CERTIFIED.
  5. PULL TRACER WIRE INTO VALVE BOX.
  6. COORDINATE NOZZLE DIRECTION WITH ENGINEER/OWNER.



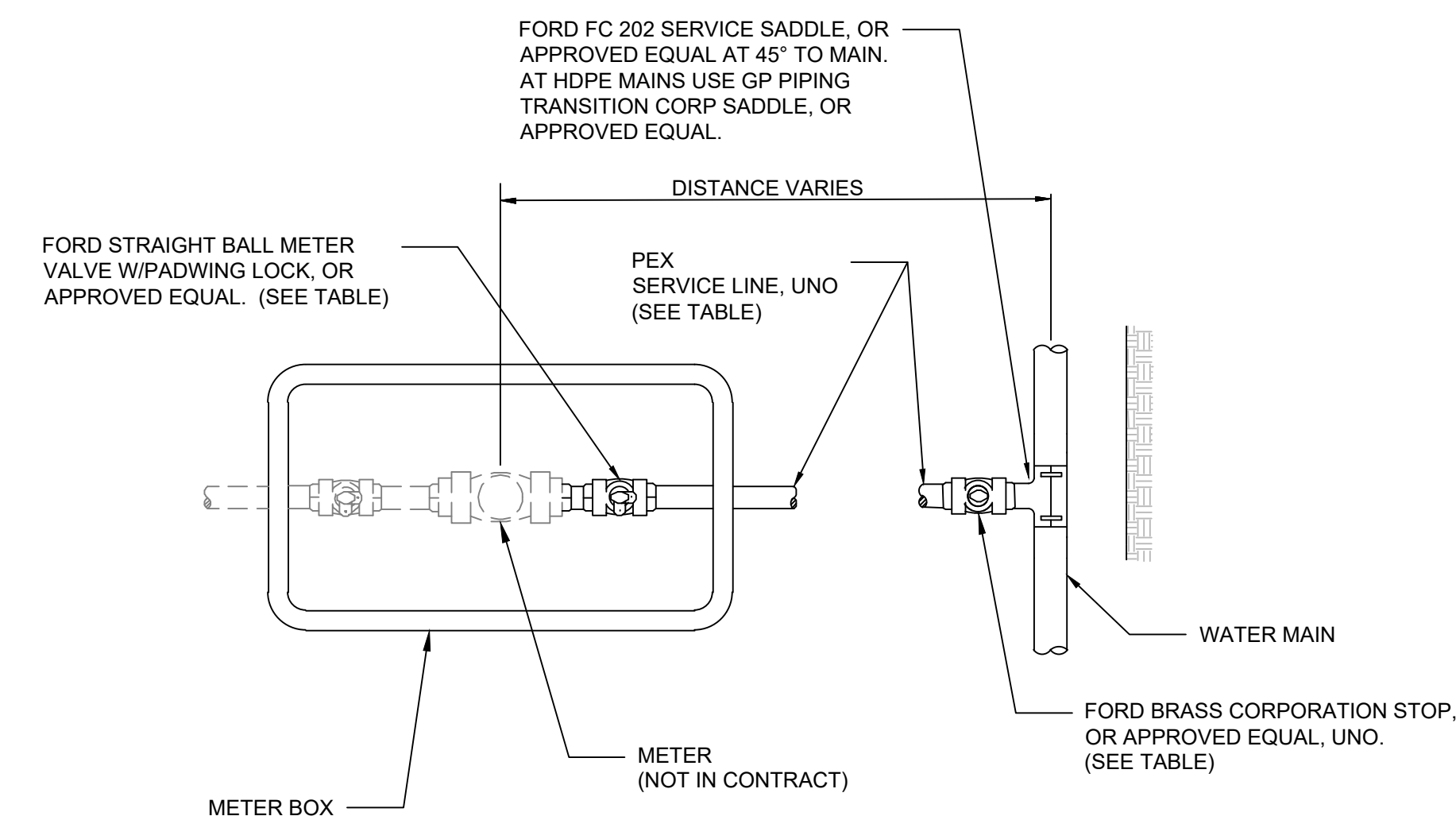
**TDOT PAVEMENT REPAIR DETAIL**  
N.T.S.



**REVERSE THRUST BLOCK DETAIL**  
N.T.S.

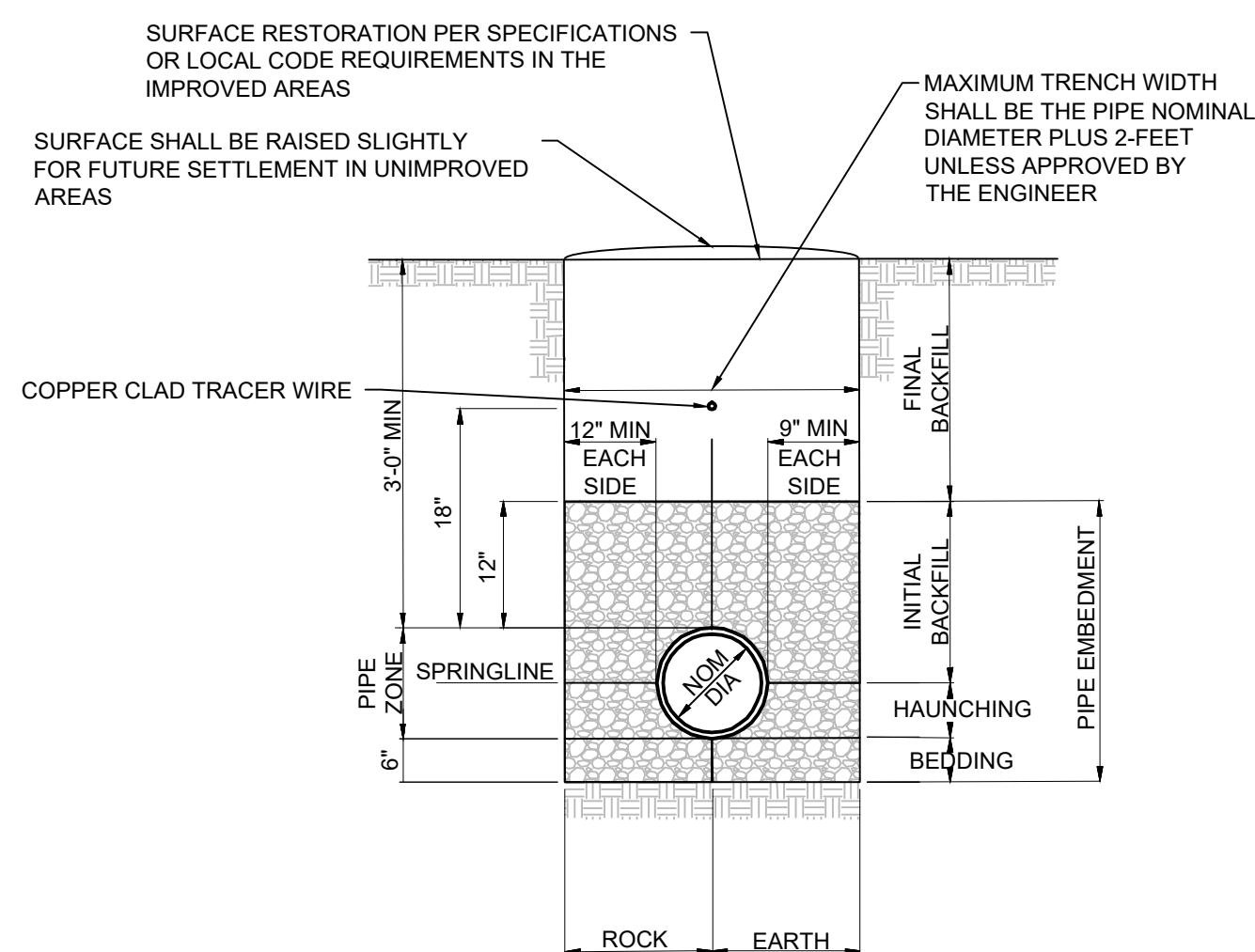
- NOTES:
- NON-RESTRAINED MJ GLAND (NO "MEGA-LUG") ONLY TO BE USED ON AC PIPE.
  - MIN. OF 4 90° EYE BOLTS WITH SS RODS PER REVERSE THRUST BLOCK.

SERVICE SIZE	CORPORATION STOP	SERVICE PIPE	STRAIGHT BALL METER VALVE
3/4"	F1000-NL	3/4"	B43-232W-Q-NL
1"	F1000-NL	1"	B43-444W-Q-NL
2"	FB1600-7-NL	2"	B11-777W-NL



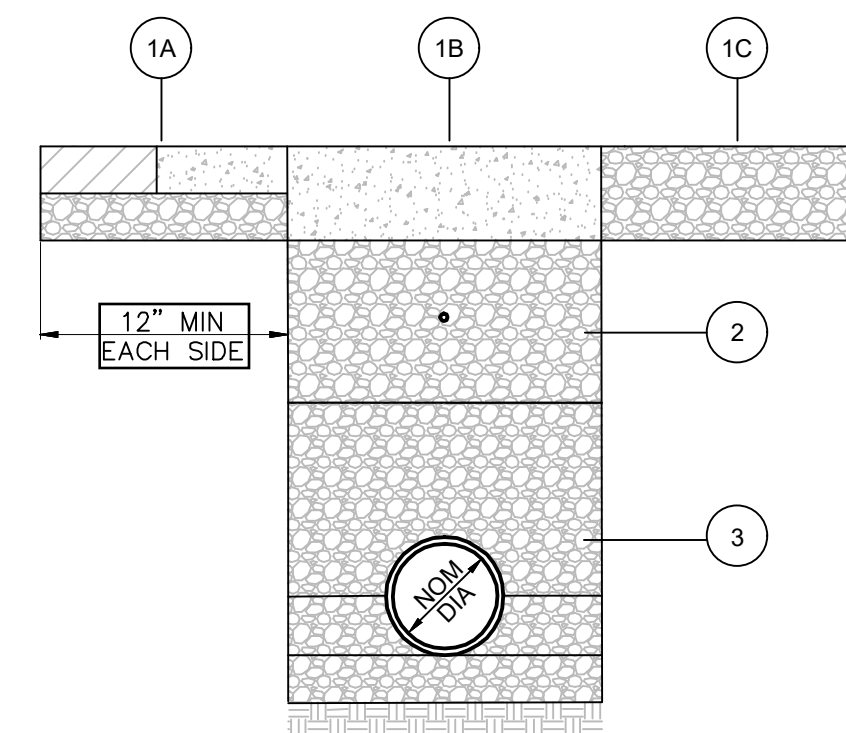
**WATER SERVICE DETAIL**  
N.T.S.

- NOTES:
- TYPICAL SERVICE SIZE 3/4" UNLESS NOTED OTHERWISE.
  - CONNECT TO EXISTING WATER METER INSIDE OF EXISTING METER BOX, UNO.
  - PULL TRACER WIRE INTO EACH METER BOX WITH SERVICE PIPING.
  - SERVICE LINES IN ROADWAY TO BE BORED. OTHER IMPROVED AREAS (PARKING LOTS, DRIVEWAYS, ETC.) BORED AT CONTRACTOR'S OPTION.
  - SERVICE PIPE MIN. BURY DEPTH SHALL BE 18" IN UNIMPROVED AREAS, 24" IN IMPROVED AREAS, AND 30" IN TDOT R.O.W.
  - 3/4" and 1" SERVICES WITHIN TDOT R.O.W. SHALL BE SLEEVED WITH 2" DR9 HDPE PIPE. 2" SERVICES WITHIN TDOT R.O.W. SHALL BE SLEEVED WITH 4" DR9 HDPE PIPE. SLEEVES SHALL EXTEND 5' BEYOND ROAD EDGE ON EACH SIDE.
  - METER BOXES FOR 3/4" and 1" SERVICES IN UNIMPROVED AREAS SHALL BE RAVEN 1324. METER BOXES FOR 2" SERVICES IN UNIMPROVED AREAS SHALL BE 1936 CONCRETE BOX W/ JBS 8122 LIDS (MWS 1" STANDARD). LIDS SHALL HAVE CAST OR DUCTILE IRON READER DOORS AND SHALL BE COMPATIBLE WITH EKM REMOTE READER MODULES. ALL LIDS SHALL BE DUCTILE OR CAST IRON, AIS COMPLIANT.
  - METER BOXES FOR 3/4" and 1" SERVICES IN IMPROVED AREAS SHALL BE RAVEN 1324. METER BOXES FOR 2" SERVICES IN IMPROVED AREAS SHALL BE 1936 CONCRETE BOX W/ JBS 8122 LIDS (MWS 1" STANDARD). LIDS SHALL HAVE CAST OR DUCTILE IRON READER DOORS AND SHALL BE COMPATIBLE WITH EKM REMOTE READER MODULES. ALL LIDS SHALL BE DUCTILE OR CAST IRON, AIS COMPLIANT.
  - WHERE SIDEWALK IS PRESENT, METER BOXES SHALL BE SET ON THE BACKSIDE OF THE SIDEWALK.
  - USE 4"x8"x16" SOLIDS UNDER BOX BOTTOM.



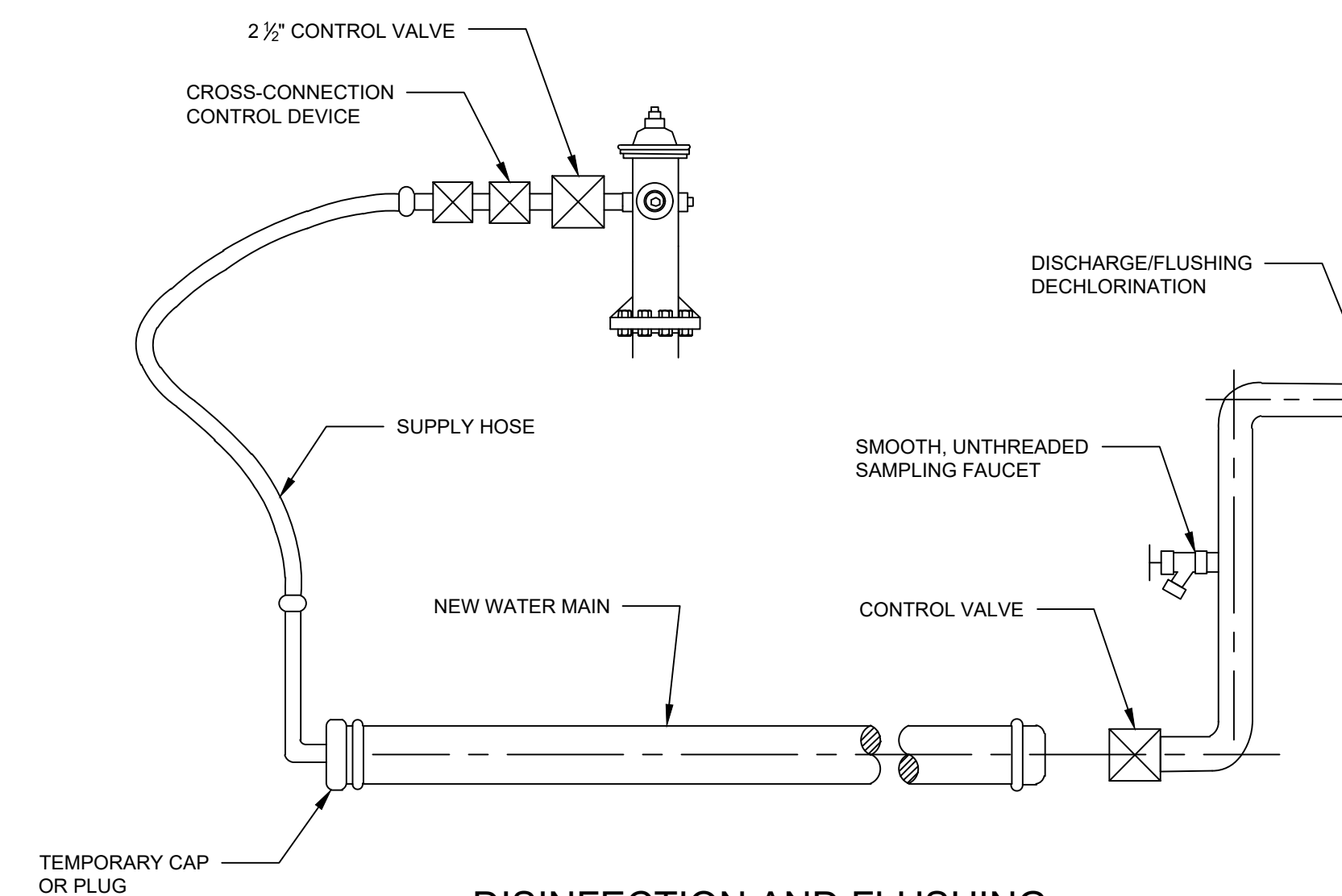
**PRESSURE PIPE INSTALLATION DETAIL**  
N.T.S.

- NOTES:
- BEDDING, HAUNCHING, AND INITIAL BACKFILL SHALL BE CRUSHED STONE COMPACTED TO 90% PER ATSM D698.
  - FINAL BACKFILL SHALL BE PER SPECIFICATION IN SECTION 31 2000, EARTHWORK. FINAL BACKFILL SHALL BE COMMON EARTH, CRUSHED STONE, OR FLOWABLE FILL. SEE SPECIFICATIONS. FLOWABLE FILL SHALL ONLY BE USED WHEN REQUIRED BY A DOT PERMIT REQUIREMENT & WITH ENGINEER APPROVAL.
  - PIPE TO BE CONTINUOUSLY SUPPORTED ALONG LENGTH OF PIPE BARREL EXCEPT AT BELL. BELL HOLES ARE REQUIRED SUCH THAT NO BEARING LOAD IS TAKEN BY THE BELL.
  - NOMINAL DIAMETER SHALL REFER TO CASING DIAMETER IN CASING INSTALLATIONS.
  - TRACER WIRE SHALL HAVE A MIN. GAUGE OF 12 WITH BREAKLOADS NECESSARY FOR A SINGLE WIRE IN HDD APPLICATIONS. TRACER WIRE SHALL HAVE A BLUE (30 MIL MIN.) HDPE INSULATED JACKET RATED FOR DIRECT BURY AND WATERPROOF GREASE FILLED WIRE CONNECTORS AT JUNCTIONS.



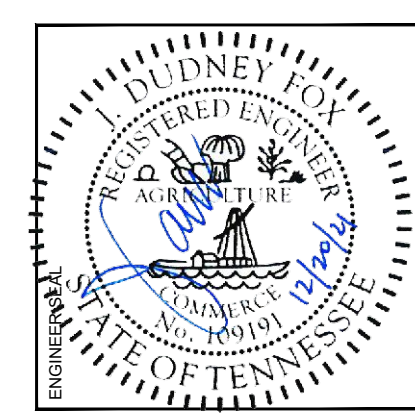
**PAVEMENT REPAIR/IMPROVED SURFACE DETAIL**  
N.T.S.

- 1A DRIVEWAYS AND PARKING LOTS**  
COMPACTED MINERAL AGGREGATE BASE. THE THICKNESS SHALL BE THE GREATER OF 8" OR THE EXISTING DEPTH OF BASE MATERIAL. THE MINERAL AGGREGATE SHALL BE COMPACTED 303-01, TYPE A, GRADING D ("33-P"), PER TENNESSEE D.O.T. SPECIFICATIONS. ASPHALTIC CONCRETE SURFACE COURSE SHALL BE MINIMUM 2" THICK, GRADING C, SECTION 307 SSRBC. PORTLAND CEMENT CONCRETE SURFACE COURSE SHALL BE MINIMUM 4" THICK, CLASS B.
  - 1B COUNTY ROADS AND CITY STREETS**  
PORTLAND CEMENT CONCRETE RESTORATION SHALL BE MINIMUM 6" OR AS REQUIRED BY PERMIT. CLASS A CONCRETE REQUIRED. REPAIRS SHALL MEET CITY OF FAYETTEVILLE STANDARDS.
  - 1C GRAVEL TRAFFIC AREAS**  
COMPACTED MINERAL AGGREGATE BASE. THE THICKNESS SHALL BE THE GREATER OF 6" OR THE EXISTING DEPTH OF BASE MATERIAL. THE MINERAL AGGREGATE SHALL BE COMPACTED 303-01, TYPE A, GRADING D ("33-P"), PER TENNESSEE D.O.T. SPECIFICATIONS.
  - 2 BACKFILL PER SPECIFICATIONS**
  - 3 BEDDING PER SPECIFICATIONS**
- GENERAL REQUIREMENTS**
- ALL STREET CUTS MUST BE REPAIRED IMMEDIATELY AFTER BACKFILLING AND ACCORDING TO THIS STANDARD.
  - A ROAD CUT PERMIT AND AN APPROVED TRAFFIC CONTROL PLAN ARE REQUIRED FOR ALL CUTS IN STREETS.
  - WHERE LONGITUDINAL CUTS ARE MADE THE OWNER RESERVES THE RIGHT TO REQUIRE ADDITIONAL RESURFACING BEYOND THE LIMITS OF THE REPAIR TO ENSURE THE PROPER RIDING REQUIREMENTS AND THE STABILITY OF THE PAVEMENT.
  - FOLLOWING TEMPORARY PAVEMENT REPAIRS, A MINIMUM OF 48 HOURS SHALL TRANSPIRE PRIOR TO COMPLETING PERMANENT PAVEMENT REPAIRS.
  - BARRICADES OR METAL PLATES SHALL BE PLACED AROUND ALL HOLES WIDER THAN 4 INCHES UNTIL CONCRETE CAN WITHSTAND TRAFFIC.
  - NEAT/SAW CUTLINES (STREETS), JOINT TO JOINT (SIDEWALK).

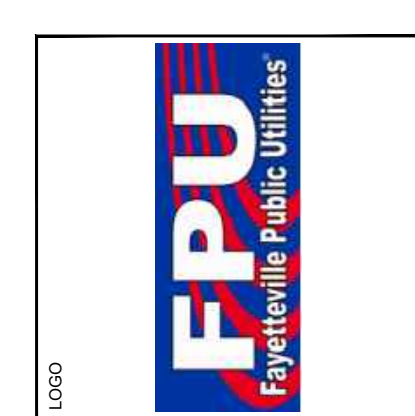


**DISINFECTATION AND FLUSHING SCHEMATIC (AWWA C651)**  
N.T.S.

- NOTES:
- THE CONTRACTOR SHALL SUBMIT A COMPLETE FLUSHING AND DISINFECTATION PLAN IN ACCORDANCE WITH SECTION 33 1300, "DISINFECTING OF WATER UTILITY DISTRIBUTION".
  - THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, MATERIALS, CHEMICALS, LABOR, AND LABORATORY TESTING SERVICES NECESSARY TO FLUSH AND DISINFECT ALL INSTALLED POTABLE WATER LINES IN ACCORDANCE WITH SECTION 33 1300 AND AWWA C651.
  - DISCHARGE/FLUSHING LOCATIONS REQUIRE ENGINEER/OWNER APPROVAL.



FAYETTEVILLE PUBLIC UTILITIES  
2021 WATER SYSTEM  
IMPROVEMENTS WATER  
MAIN REPLACEMENTS  
1600-022

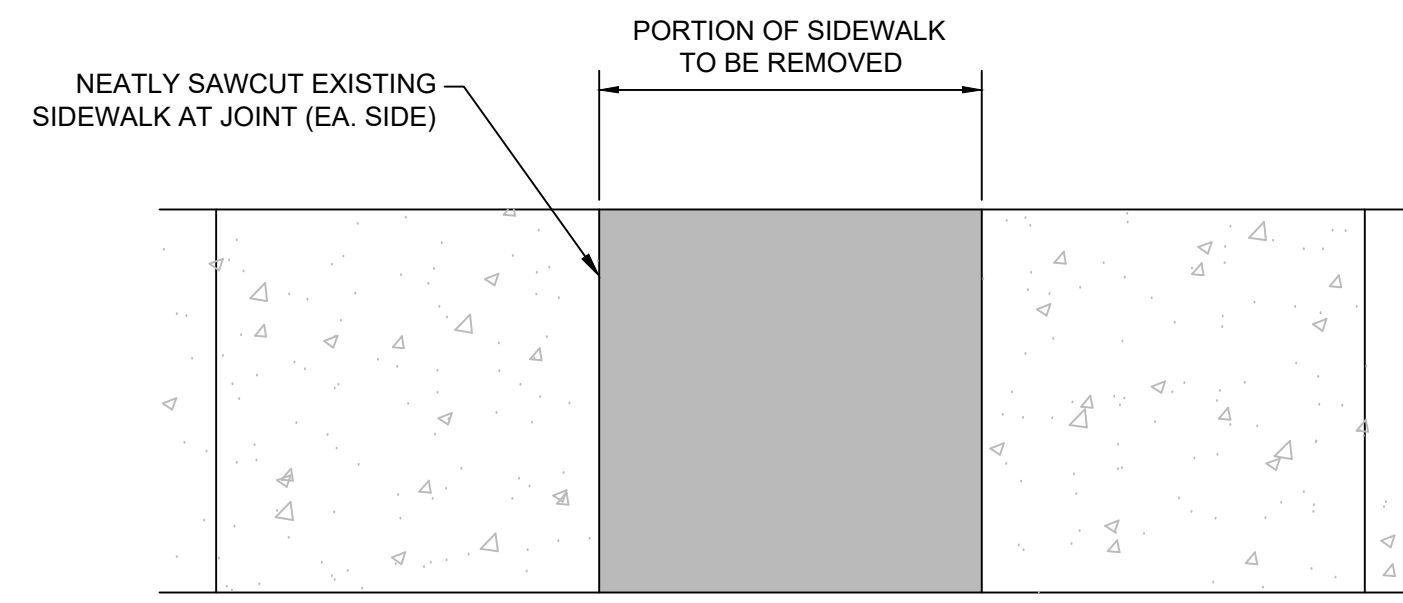


NORTH  
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**CAJ**  
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**JDF**

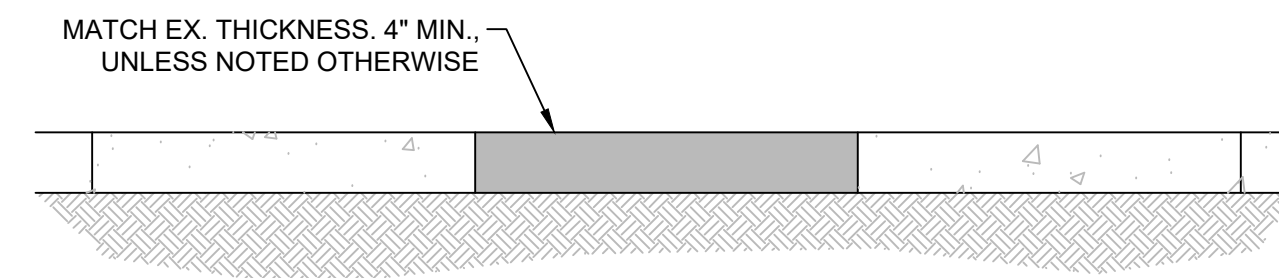
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TITLE  
**CIVIL DETAILS**  
DRAWING NO.  
**C43.0**

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PLAN VIEW



SECTION VIEW

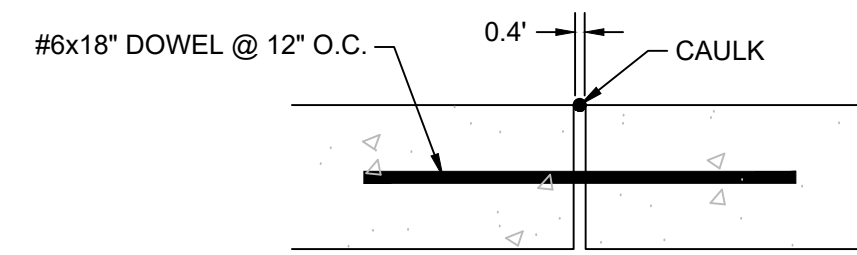
**SIDEWALK REPLACEMENT DETAIL**  
N.T.S.

**NOTES:**

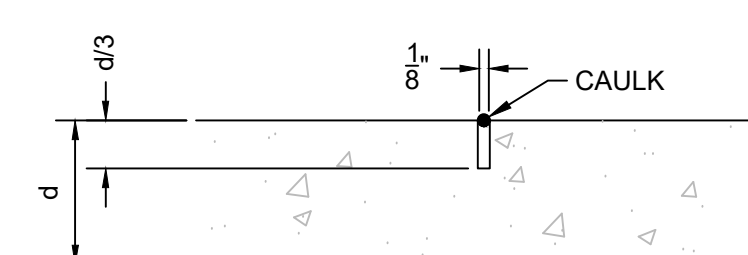
1. ANY PORTION OF SIDEWALK BASE THAT HAS BEEN DISTURBED DURING CONSTRUCTION MUST BE RESTORED TO CITY OF FAYETTEVILLE SIDEWALK STANDARDS.

**CONCRETE**

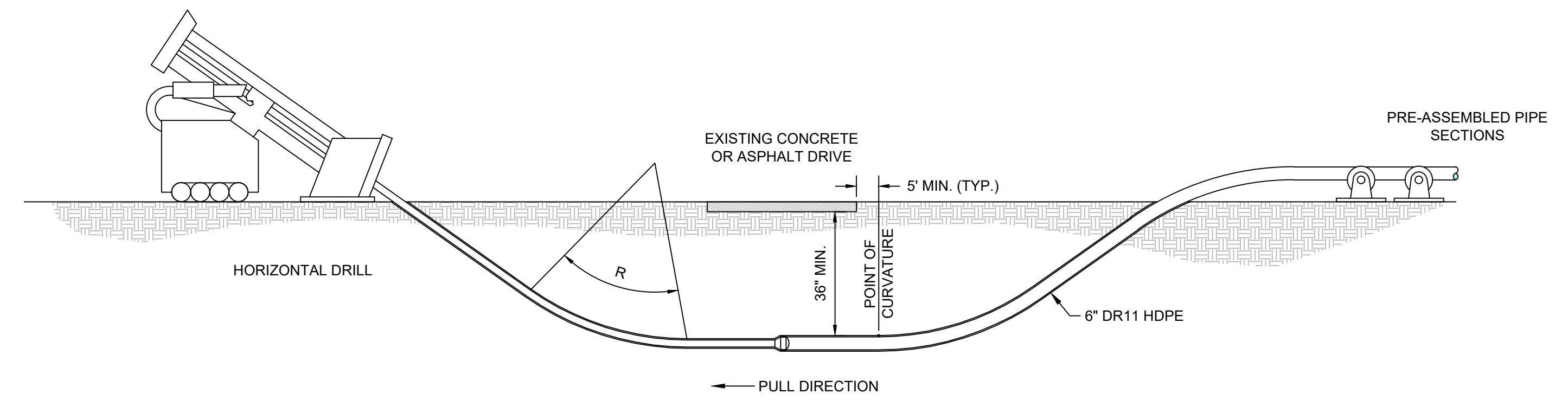
1. CONCRETE IS DESIGNED IN ACCORDANCE WITH ACI 318-11.
2. CONCRETE STRENGTH IS F'C28 = 3,000 PSI.
3. ALL EXPOSED EDGES ARE TO HAVE 3/4" CHAMFER.
4. SEE SPECIFICATIONS FOR DETAILS.



**EXPANSION JOINT DETAIL**  
N.T.S.



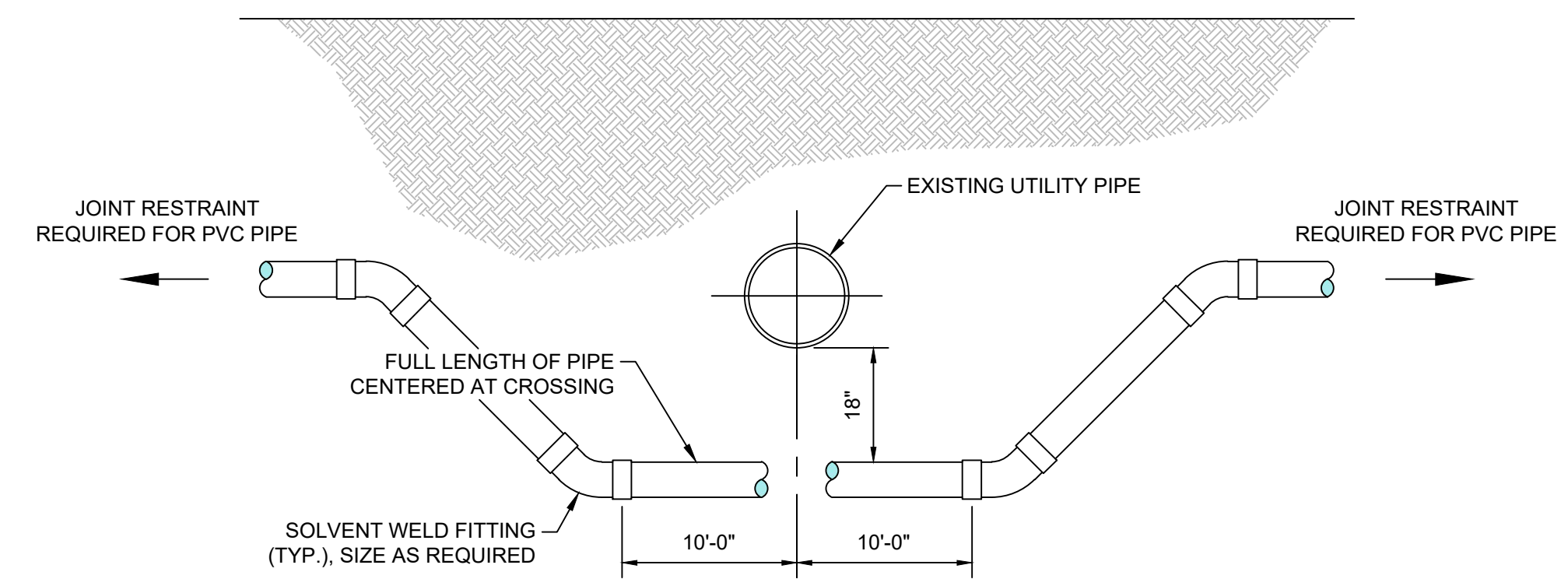
**CONTROL JOINT DETAIL**  
N.T.S.



**HORIZONTAL DIRECTIONAL DRILL DETAIL**  
N.T.S.

**NOTES:**

1.  $R \geq$  MIN. BENDING RADIUS OF PIPE.

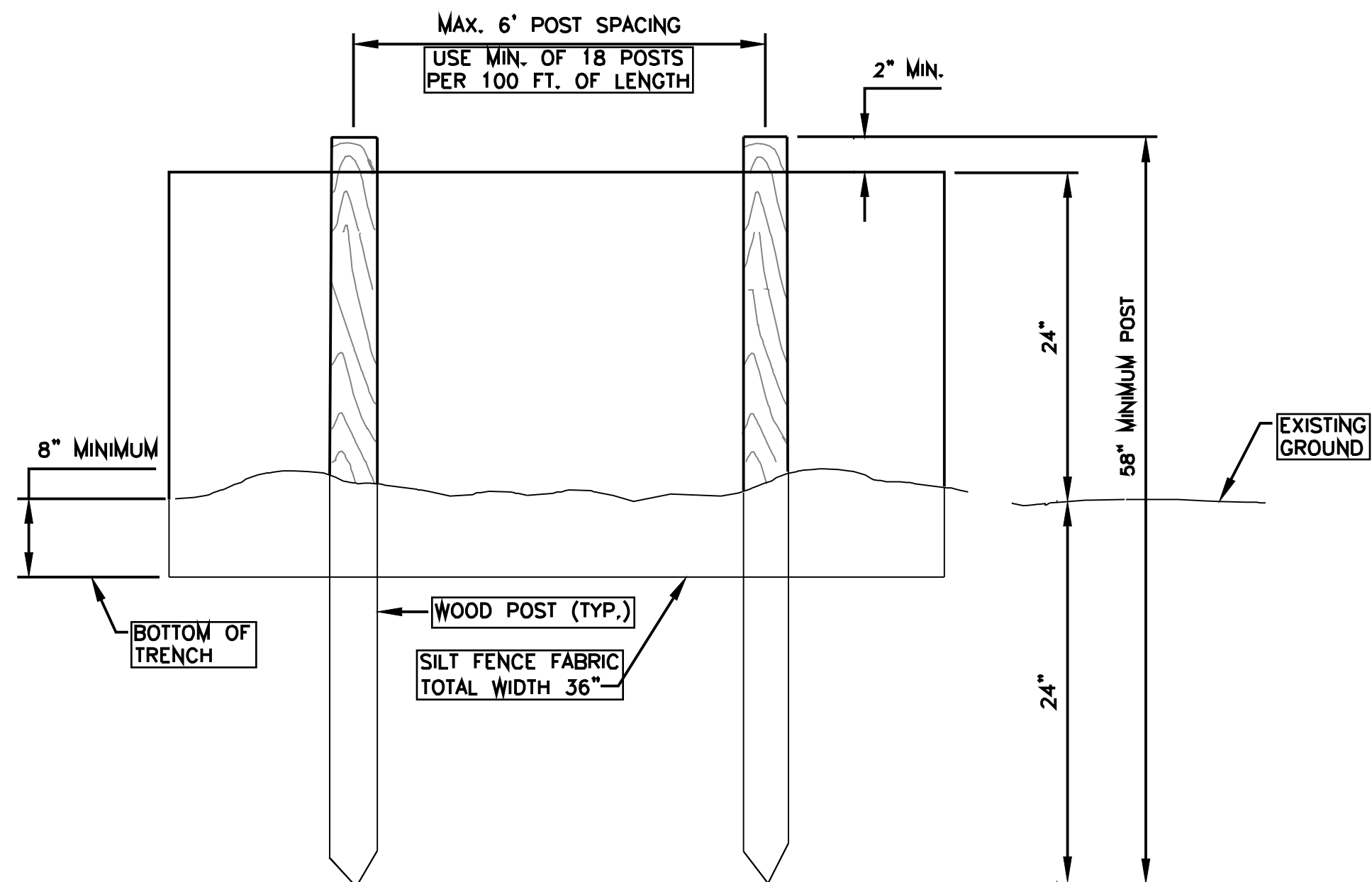


**CONFLICTING UTILITY CROSSING DETAIL**  
N.T.S.

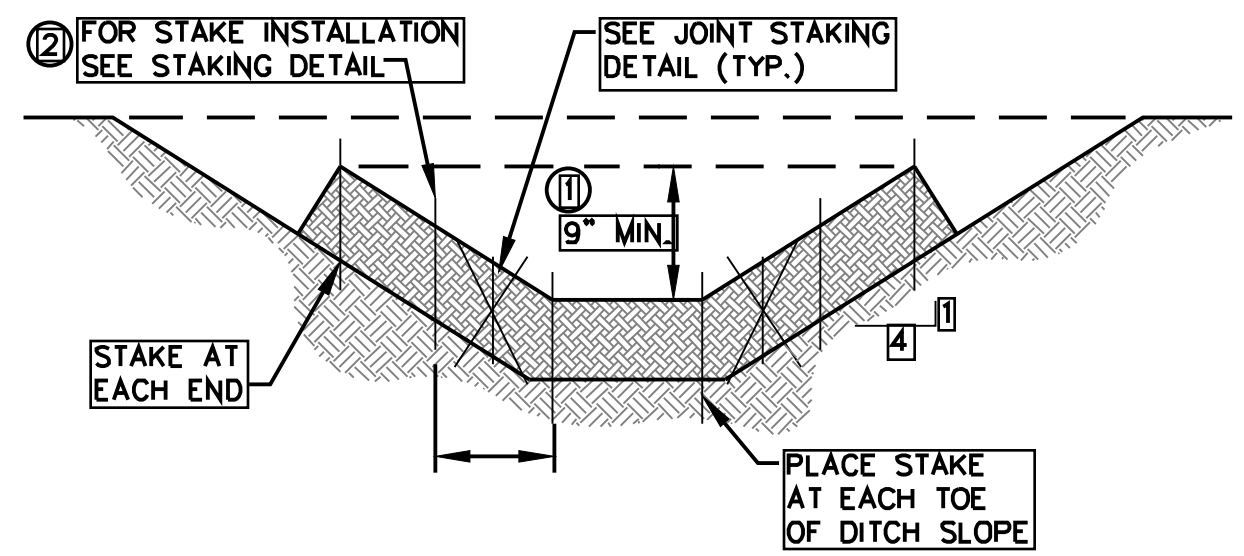
**NOTES:**

1. WHEREVER POSSIBLE DEFLECTION OF THE PIPE WILL BE USED TO AVOID EXISTING OBSTRUCTIONS. THIS CROSSING SHALL BE USED ONLY WHEN APPROVED BY ENGINEER.
2. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, BOTH WATER AND SEWER SHALL BE CONSTRUCTED OF RESTRAINED JOINT PIPE AND SHALL BE PRESSURE TESTED TO ASSUME WATER TIGHTNESS.
3. HDD HDPE PIPE MAY BE USED IN THE ALTERNATIVE, FUSED JOINTS REQUIRED.

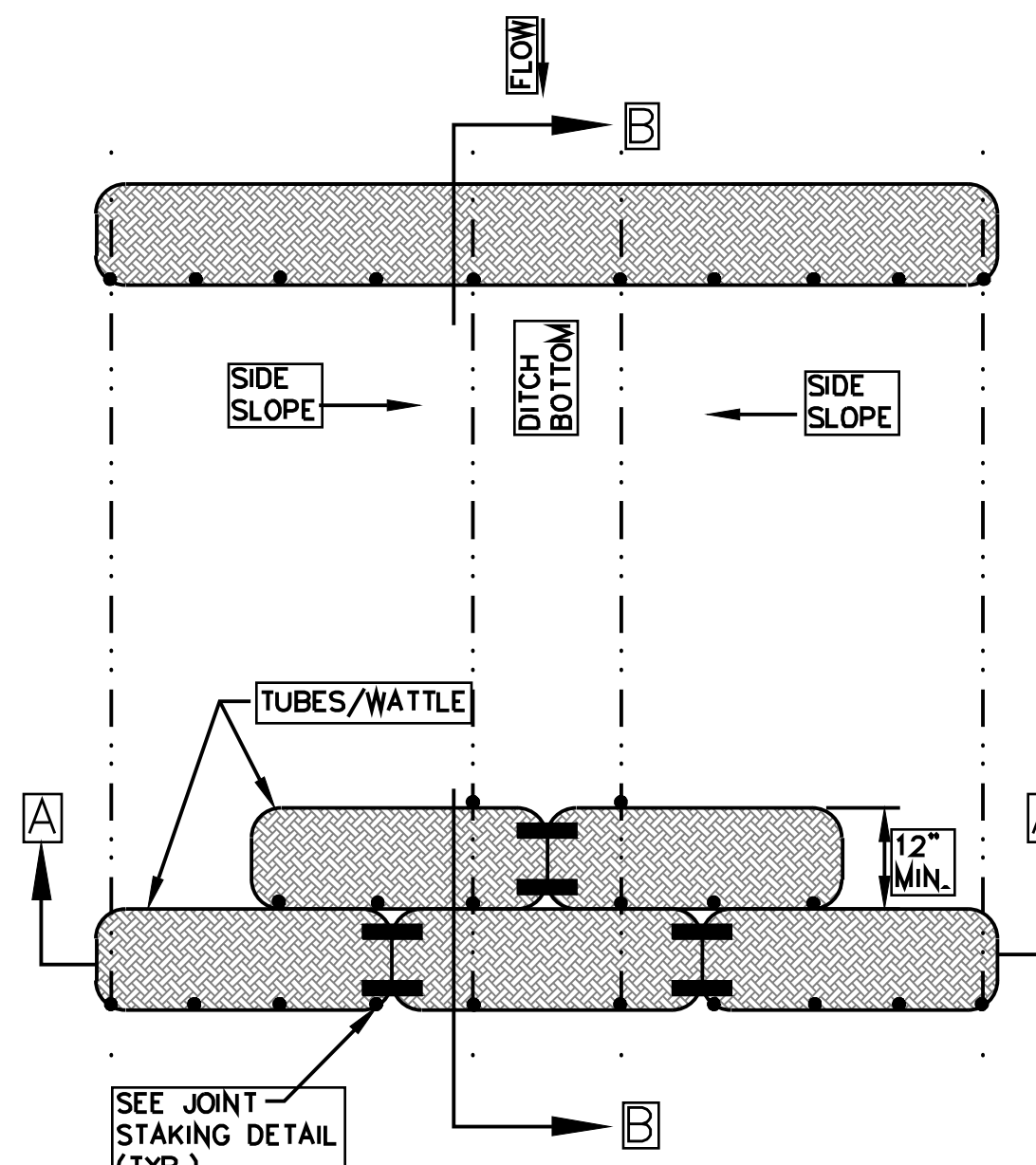
DATE	ISSUE



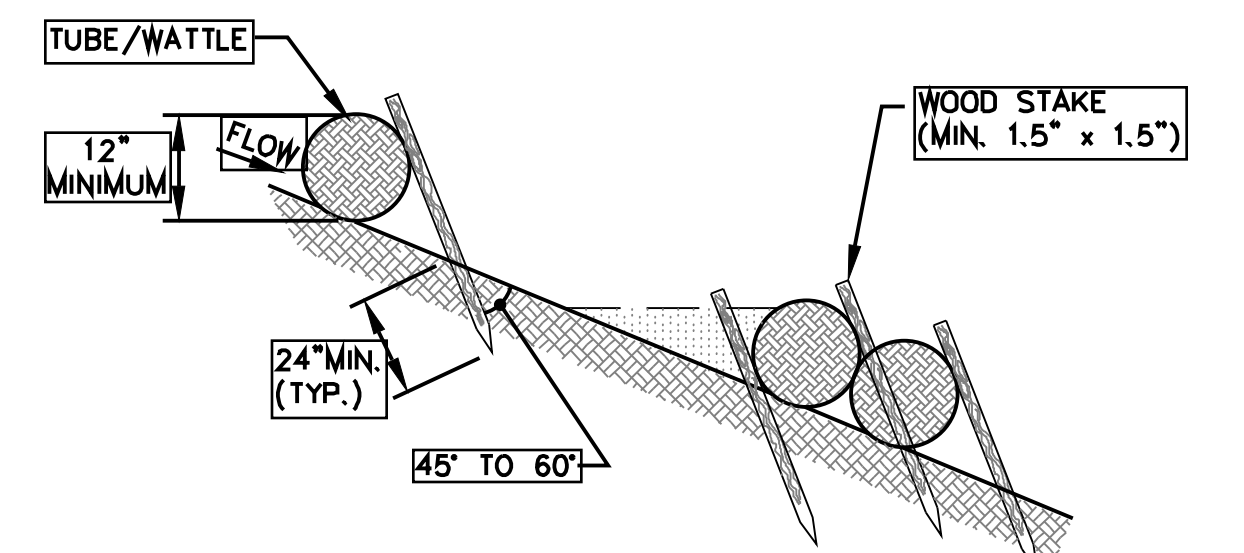
ELEVATION VIEW



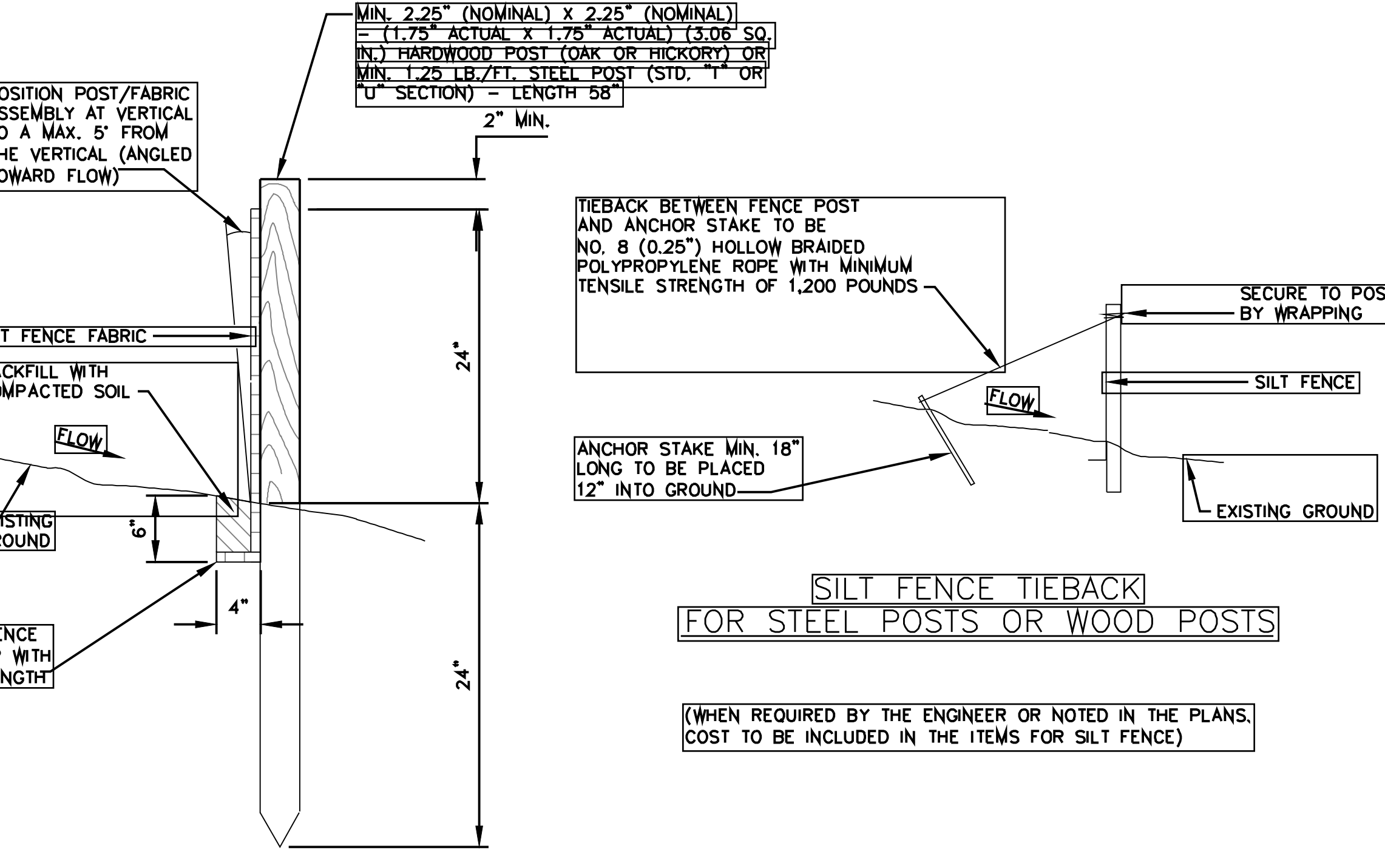
SECTION A-A



PLAN VIEW FOR DITCH APPLICATION



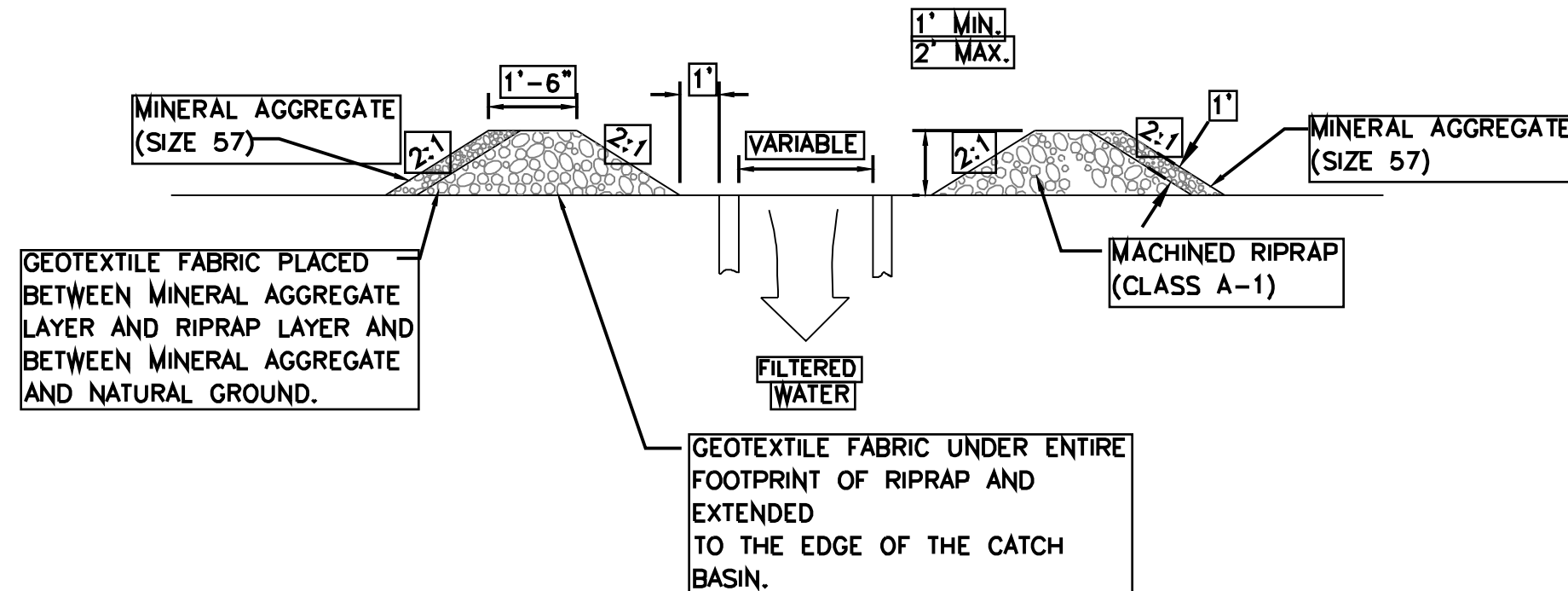
SECTION B-B



DETAIL 1  
SILT FENCE TIEBACK FOR STEEL POSTS OR WOOD POSTS  
NOT TO SCALE

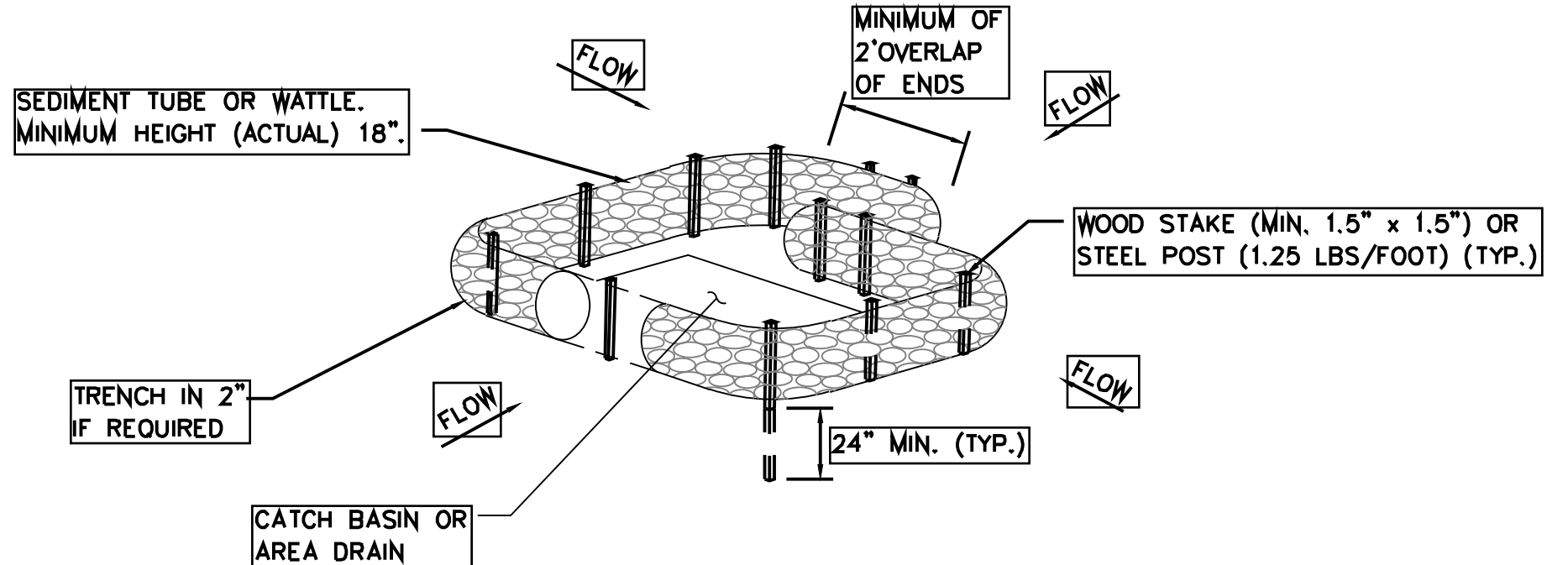
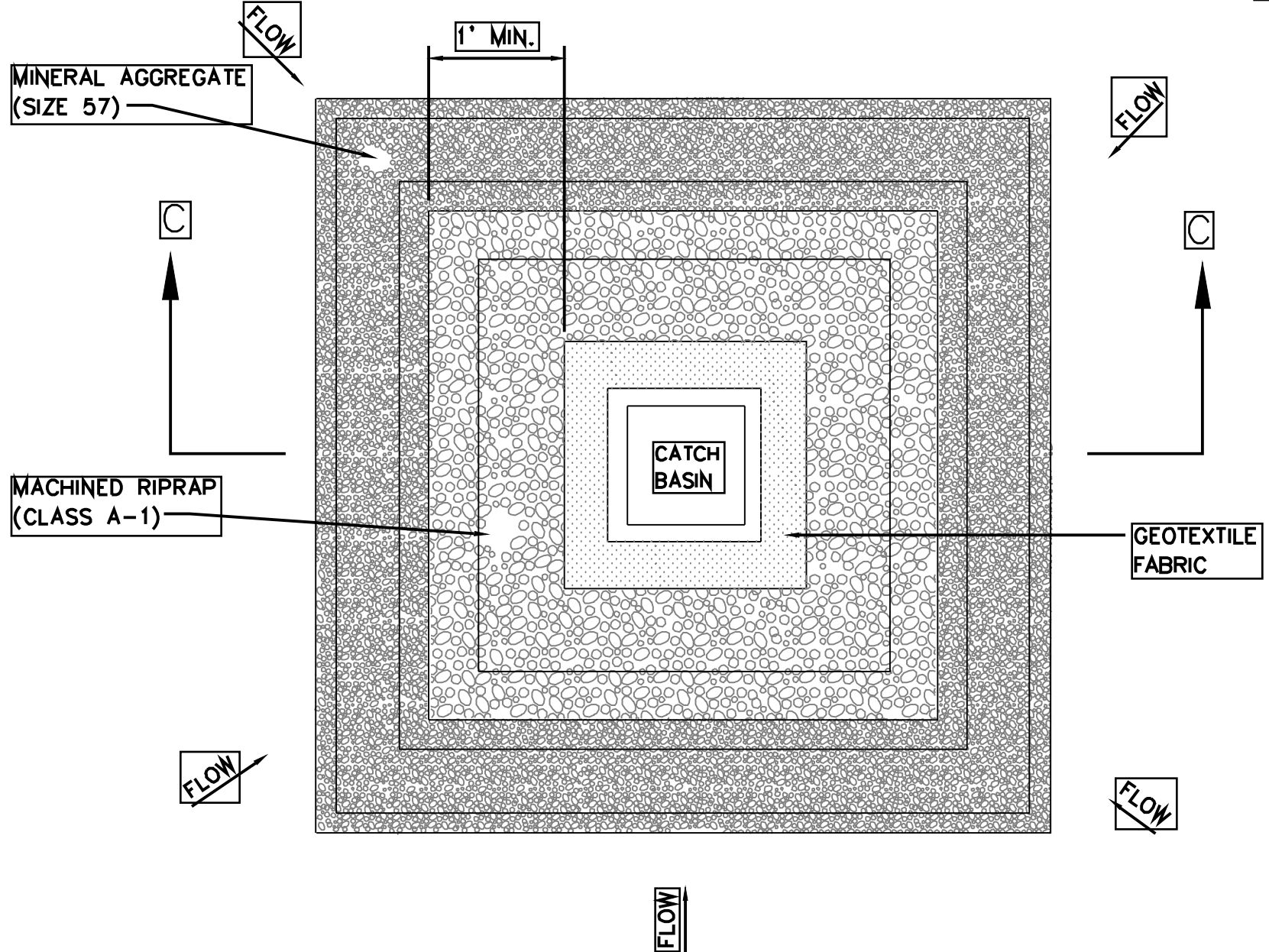
NOTES:  
 (1) THE DEPTH AND WIDTH OF THE WEIR SECTION OF THE WATTLE SHALL BE DESIGNED TO PASS THE 2yr/24hr OR 5yr/24hr STORM EVENT WITHOUT OVERTOPPING THE CHANNEL.  
 (2) STAKE PER MANUFACTURERS RECOMMENDATIONS

DETAIL 2  
WATTLES  
NOT TO SCALE



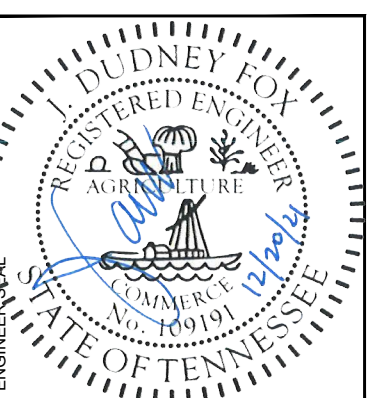
SECTION C-C

CATCH BASIN PROTECTION



DETAIL 3  
INLET PROTECTION  
NOT TO SCALE

CATCH BASIN PROTECTION (TYPE D)



PROJECT  
 FAYETTEVILLE PUBLIC UTILITIES  
 2021 WATER SYSTEM  
 IMPROVEMENTS WATER  
 MAIN REPLACEMENTS  
 1600-022



NORTH  
 DRAWN BY: CAJ  
 APPROVED BY: JDF

DATE	ISSUE

TITLE  
 EROSION &  
 SEDIMENT CONTROL  
 DETAILS  
 DRAWING NO.  
**C44.0**

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**CONSTRUCTION NOTES**

CONSTRUCTION ENTRANCE/EXIT

- EXCAVATE AREA TO A DEPTH OF AT LEAST 3 INCHES AND CLEAR THE AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL.
- CONSTRUCTION EXITS SHOULD BE AT A MINIMUM OF 50 FEET IN LENGTH BY 20 FT IN WIDTH.
- INSTALL A GEOTEXTILE UNDER LINER ACROSS THE FULL WIDTH AND DEPTH OF THE CONSTRUCTION EXIT TO SEPARATE THE ROCK FROM THE UNDERLYING SOIL. FABRIC SHOULD MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR GEOTEXTILES, AASHTO DESIGNATED M-288, EROSION CONTROL.
- PROVIDE CLEAN, WASHED STONE TO A DEPTH OF 8 INCHES. STONE SHOULD VARY IN SIZE FROM 2 TO 4 INCHES. ROCK MUST BE CLEAN WITH NO FINES. CRUSHER RUN AND ROAD BASE ARE NOT ACCEPTABLE MATERIALS, AS THE FINES CAN BE TRACKED OUT ONTO THE ROAD.
- A TURNING RADIUS OF 20 FEET SHOULD BE PROVIDED ON EACH SIDE OF THE ENTRANCE WHERE IT INTERSECTS WITH THE PUBLIC ROADWAY.
- THE EXIT MUST BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOW OF MATERIAL ONTO PUBLIC RIGHTS-OF WAY OR INTO STORM DRAIN SYSTEMS.

SILT FENCE

- ENSURE THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE GROUND SURFACE.
- WHEN JOINTS IN FENCE ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH A 4 FOOT MINIMUM OVERLAP TO NEXT POST.
- CONNECT THE FENCE FABRIC TO THE POSTS WITH ZIP TIES HAVING A MINIMUM 50-POUND TENSILE STRENGTH.
- INSTALL SILT FENCE IN A TRENCH APPROXIMATELY 4" WIDE AND 8" DEEP ALONG THE PROPOSED LINE OF POSTS AND UP SLOPE FROM THE BARRIER.
- PLACE 12" OF FABRIC ALONG THE BOTTOM AND SIDE OF TRENCH.
- BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT.
- DO NOT ATTACH SILT FENCE FABRIC TO EXISTING TREES.
- SILT FENCE SHOULD BE INSTALLED ALONG THE CONTOUR, NEVER UP OR DOWN A SLOPE.

SEDIMENT LOGS

- REMOVE ALL ROCKS, COLDS, VEGETATION OR OTHER OBSTRUCTIONS SO INSTALLED LOGS HAVE DIRECT CONTACT WITH THE UNDERLYING SOIL SURFACE.
- INSTALL LOGS BY LAYING THEM FLAT ON THE GROUND AND INSTALL STAKES AT SPACING PER THE MANUFACTURER'S RECOMMENDATIONS.
- STAKES SHALL BE INSTALLED ON THE DOWNSTREAM SIDE OF THE LOGS.
- INSTALL LOGS SO NO GAPS EXIST BETWEEN THE SOIL AND THE BOTTOM OF THE LOG.
- KEEP LOGS IN PLACE UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.
- THE END OF THE LOG MUST EXTEND UP THE DITCH SIDE SLOPES TO THE TOP OF THE DITCH.

OUTLET PROTECTION

- A GEOTEXTILE LINER SHALL BE USED TO PREVENT SOIL MOVEMENT THROUGH THE OPENING IN THE RIPRAP.
- THE GEOTEXTILE MUST MEET DESIGN REQUIREMENTS AND BE PROPERLY PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION. ALL CONNECTING JOINTS SHOULD OVERLAP A MINIMUM OF 1 FOOT.
- RIPRAP MAY BE PLACED BY EQUIPMENT, BUT CARE SHOULD BE TAKEN TO AVOID DAMAGING THE GEOTEXTILE.
- THE MINIMUM THICKNESS OF RIPRAP SHOULD BE 1.5 TIMES THE MAXIMUM STONE DIAMETER.
- THE OUTLET STRUCTURE MUST CONFORM TO THE SPECIFIED GRADING LIMITS SHOWN ON THE PLANS.
- CONSTRUCT THE APRON ON ZERO GRADE. MAKE THE TOP OF THE RIPRAP AT THE DOWNSTREAM END LEVEL AND PREFERABLY, STRAIGHT THROUGHOUT ITS LENGTH.
- IMMEDIATELY AFTER CONSTRUCTION, STABILIZE ALL DISTURBED AREAS WITH VEGETATION.

SURFACE TRACKING

- SURFACE TRACKING CONSISTS OF ROUGHENING A BARE SOIL SURFACE WITH HORIZONTAL GROOVES RUNNING ACROSS THE SLOPE, OR TRACKING WITH CONSTRUCTION EQUIPMENT.
- ALL CONSTRUCTION SLOPED REQUIRE SURFACE ROUGHENING TO FACILITATE STABILIZATION WITH VEGETATION.
- SLOPES TO BE COVERED WITH ROLLED EROSION CONTROL PRODUCTS NEED NOT BE ROUGHENED.
- OPERATE TRACKED MACHINERY UP AND DOWN SLOPE TO LEAVE HORIZONTAL DEPRESSIONS IN THE SOIL.
- DO NOT BACK-BLADE DURING THE FINAL GRADING OPERATION.
- IMMEDIATELY SEED AND MULCH ROUGHED AREAS TO OBTAIN OPTIMUM SEED GERMINATION AND GROWTH.

TEMPORARY VEGETATION

- TEMPORARY SEEDING CONTROLS RUNOFF AND EROSION UNTIL PERMANENT VEGETATION OR OTHER EROSION CONTROL MEASURES CAN BE ESTABLISHED.
- COMPLETE GRADING BEFORE PREPARING SEEDBEDS, AND INSTALL ALL NECESSARY EROSION CONTROL PRACTICES.
- IF SOILS BECOME COMPACTED DURING GRADING, LOOSEN THEM TO A DEPTH OF 6-8 INCHES USING A RIPPER, HARROW, OR CHISEL PLOW.
- PROPER SEEDBED PREPARATION IS ESSENTIAL FO SUCCESSFUL PLANT ESTABLISHMENT.
- LIME SHALL BE APPLIED AT THE RATE OF 1 TO 1 ½ TONS/ACRE ON COARSE TEXTURED SOILS AND 2-3 TONS/ACRE ON FINE TEXTURED SOILS. APPLY LIME UNIFORMLY AND INCORPORATE INTO THE TOP 4-6 INCHES OF SOIL. SOILS WITH A PH OF 6 OR HIGHER DO NOT NEED TO BE LIMED.
- APPLY A 10-10-10 GRADE FERTILIZER AT 700-1000 LB./ACRE AND INCORPORATE INTO THE TOP 4-6 INCHES OF SOIL.
- IF RAINFALL CAUSED THE SURFACE TO BECOME SEALED OR CRUSTED, LOOSEN IT JUST PRIOR TO SEEDING BY DISKING, RAKING, HARROWING, OR OTHER SUITABLE METHODS.
- SELECT A NON-INVASIVE GRASS OR GRASS-LEGUME MIXTURE SUITABLE TO THE AREA AND SEASON OF THE YEAR.
- SEED SHALL BE APPLIED UNIFORMLY BY CYCLONE SEEDER, DRILL, CULTIPACKER, OR HYDRAULIC SEEDER.
- APPROXIMATE DEPTH OF PLANTING IS 10 TIMES THE SEED DIAMETER.
- SOIL SHALL BE RAKED LIGHTLY TO COVER SEED WITH SOIL IF SEEDED BY HAND.
- APPLY MULCH AT A RATE OF 4,000 LB./ACRE.
- DURING TIMES OF DROUGHT, WATER SHALL BE APPLIED AT A RATE NOT CAUSING RUNOFF AND EROSION. THE SOIL SHALL BE THOROUGHLY WETTED TO A DEPTH THAT WILL ENSURE GERMINATION OF THE SEED. SUBSEQUENT APPLICATIONS SHOULD BE MADE AS NEEDED TO PROMOTE GROWTH.

**MAINTENANCE NOTES**

CONSTRUCTION ENTRANCE/EXIT

- MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE.
- PERIODICALLY TOP DRESS WITH 2-INCH STONE AS NEEDED.
- AFTER EACH RAINFALL, INSPECT THE ENTRANCE FOR BUILDUP OF SEDIMENT AND CLEAN AS NECESSARY.
- IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

SILT FENCE

- INSPECT SILT FENCE AT LEAST ONCE PER WEEK AND AFTER EACH RAINFALL EVENT.
- MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
- IF THE FABRIC OF THE SILT FENCE IS DAMAGED AND NOT WORKING AS INTENDED, REPLACE THE SECTION OF SILT FENCE IMMEDIATELY.
- REMOVE SEDIMENT THAT HAS COLLECTED IN FRONT OF THE SILT FENCE ONCE IT HAS ACCUMULATED TO ½ THE ORIGINAL HEIGHT OF THE BARRIER.
- ALL SEDIMENT ACCUMULATED AT THE FENCE SHOULD BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE FENCE IS REMOVED.
- REPAIR SAGGING SILT FENCE TO PREVENT FAILURE OR OVERTOPPING.
- MONITOR THE TOE FOR EVIDENCE OF EROSION ALONG THE TOE. INSTALL J-HOOKS WHEREVER RUNOFF FLOWS ALONG THE TOE OF THE FENCING TO PREVENT UNDERMINING.
- ONCE THE DRAINAGE AREA HAS BEEN STABILIZED, REMOVE THE FENCE AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE.

SEDIMENT LOGS

- INSPECT LOGS AND TUBES AFTER INSTALLATION FOR GAPS UNDER THE LOGS AND FOR GAPS BETWEEN THE JOINTS OF ADJACENT ENDS OF LOGS. ENSURE STAKES ARE ON THE DOWNSTREAM SIDE.
- REPAIR ALL RILLS, GULLIES, AND UNDERCUTTING NEAR LOGS.
- REMOVE ALL SEDIMENT DEPOSITS WHEN THE SEDIMENT REACHES 1/3 THE HEIGHT OF THE EXPOSED LOG.
- REMOVE AND/OR REPLACE INSTALLED SEDIMENT LOGS AS REQUIRED TO ADAPT TO CHANGING CONSTRUCTION SITE CONDITIONS.
- WHEN THE FILL MATERIALS DEGRADE AND SETTLE, THE LOG SHOULD BE REPLACED.
- AT THE END OF THE PROJECT, BIODEGRADABLE LOGS CAN BE SPLIT OPEN, THE NETTING MATERIAL AND STAKES REMOVE, AND THE BIODEGRADABLE MATERIAL LEFT IN PLACE TO AID STABILIZATION.

OUTLET PROTECTION RIP RAP APRON

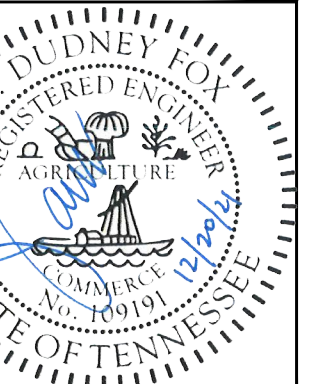
- INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1/2" OR GREATER) RAINFALL EVENTS.
- DURING INSPECTION, MAKE OBSERVATIONS OF ANY EROSION AROUND OR BELOW THE RIP RAP OR IF STONES HAVE BEEN DISLODGED.
- IMMEDIATELY MAKE ANY REPAIRS NEEDED.

SURFACE TRACKING

- PERIODICALLY CHECK THE SEEDED SLOPES FOR RILLS AND WASHES.
- FILL THESE AREAS SLIGHTLY ABOVE THE ORIGINAL GRADE, THEN RESEED AND MULCH AS SOON AS POSSIBLE.
- IF SURFACE TRACKING IS WASHED AWAY IN A HEAVY STORM, THE SURFACE WILL HAVE TO BE RE-TRACKED AND NEED SEED LAID AND MULCHED APPROPRIATELY.

PERMANENT VEGETATION

- RESEED AND MULCH AREAS WHERE SEEDLING EMERGENCE IS POOR OR WHERE EROSION OCCURS, AS SOON AS POSSIBLE.
- RE-FERTILIZE IF GROWTH IS NOT FULLY ADEQUATE.
- DO NOT MOW TEMPORARY VEGETATED AREAS.



FAYETTEVILLE PUBLIC UTILITIES  
 2021 WATER SYSTEM  
 IMPROVEMENTS WATER  
 MAIN REPLACEMENTS  
 1600-022



NORTH	DRAWN BY <b>CAJ</b>
	APPROVED BY <b>JDF</b>

DATE	ISSUE

TITLE  
**EROSION &  
 SEDIMENT CONTROL  
 NOTES**

DRAWING NO.  
**C45.0**