

2751 NORTHEAST DOUGLAS STREET
LEE'S SUMMIT, MISSOURI 64064

WATER LINE
CONSTRUCTION PLANS
FOR
LEE'S SUMMIT
MUNICIPAL AIRPORT

CITY PROJECT NO. 47732472

LXT EASTSIDE DEVELOPMENT

ISSUED-FOR-BID PLAN SET

JANUARY 04, 2024

REVISED FEBRUARY 29, 2024

RELEASED FOR CONSTRUCTION
As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri

03/13/2024

CALL MISSOURI ONE-CALL SYSTEMS
BEFORE EXCAVATING
1-800-DIG-RITE

DESIGN AIRCRAFT - GEOMETRY
CANADAIR CL-600
AIRCRAFT APPROACH CATEGORY C
AIRPLANE DESIGN GROUP II
DESIGN AIRCRAFT - STRUCTURE
GRUMMAN GULFSTREAM IV
GROSS WEIGHT - 71,800 LBS
EQUIVALENT ANNUAL DEPARTURES - 651

MAXIMUM EQUIPMENT HEIGHT: 100'

UNICOM/CTAF FREQUENCY - 122.80

CMT

22001238

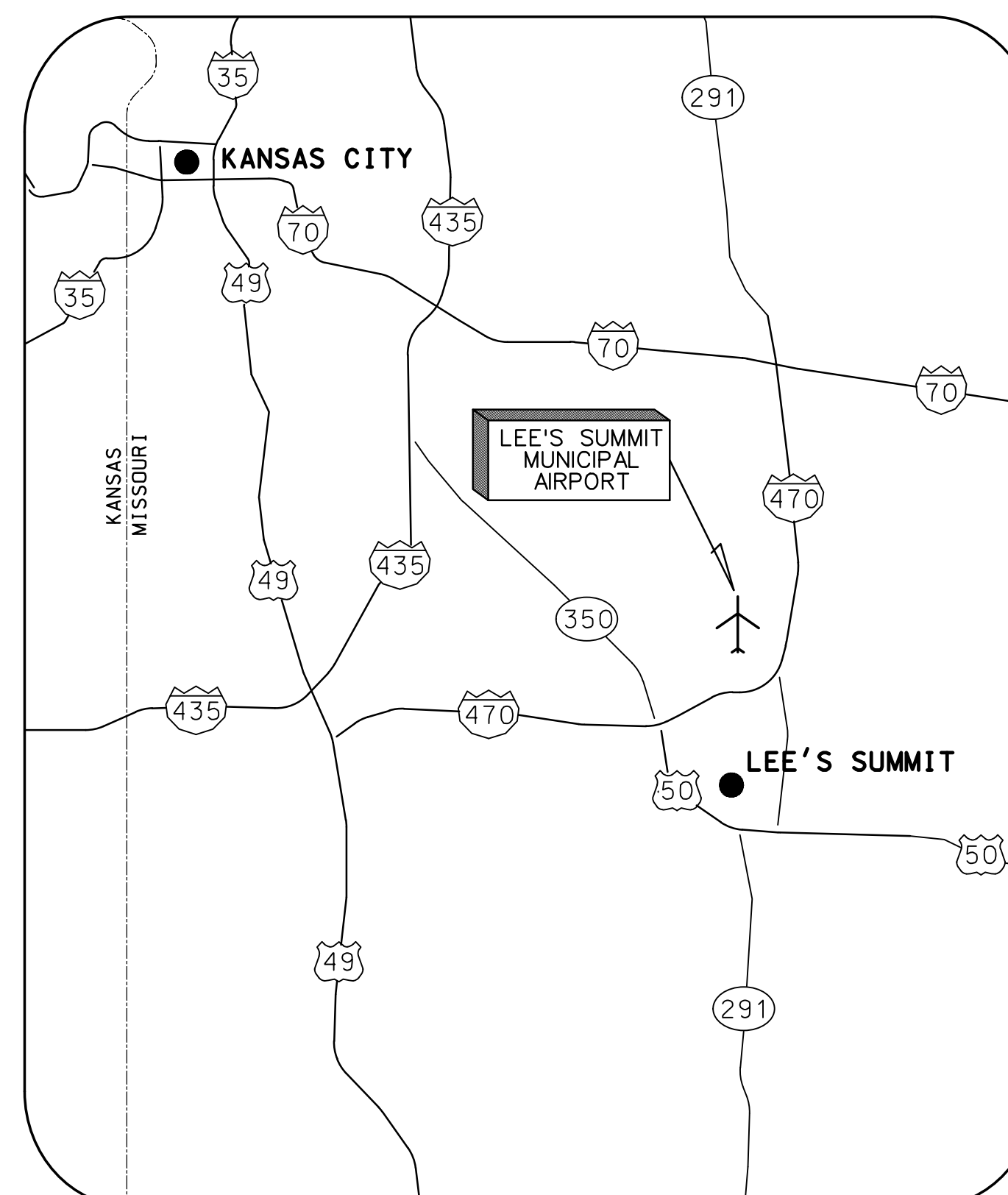
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PROFESSIONAL ENGINEERING - 000631

CRAWFORD MURPHY & TILLY, INC.
CONSULTING ENGINEERS

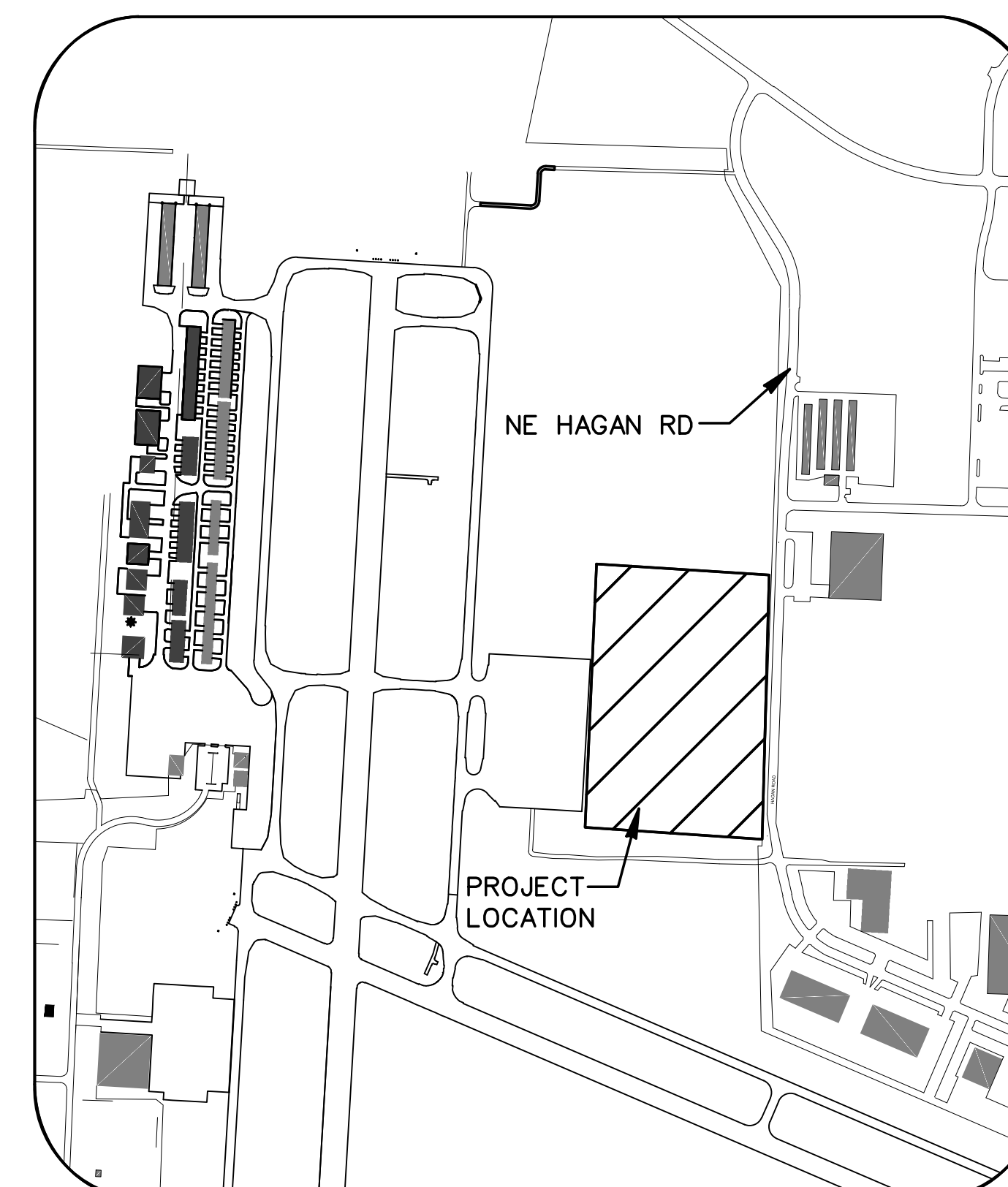
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■ EDWARDSVILLE, IL ■ CHICAGO, IL ■ PEORIA, IL ■ ROCKFORD, IL
■ INDIANAPOLIS, IN ■ COLUMBUS, OH ■ SPRINGFIELD, MO
■ KANSAS CITY, MO ■ LA BELLE, FL ■ MOLINE, IA

SUBMITTED BY TYLER HORN, PE

DATE JANUARY 04, 2024



LOCATION MAP

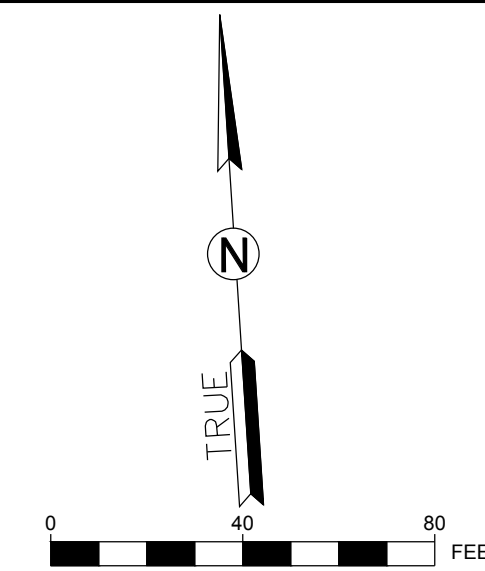


SITE PLAN

PL2023269



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03/13/2024



1627 MAIN STREET, SUITE 600
KANSAS CITY, MO 64108



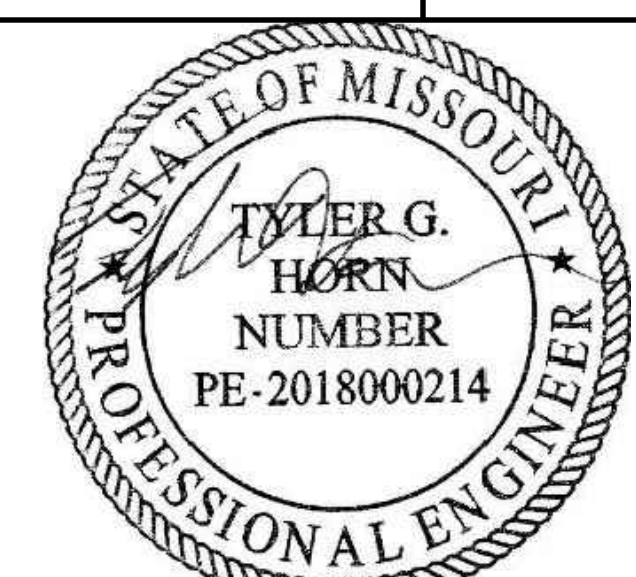
1627 MAIN STREET, #100
KANSAS CITY, MO 64108



1301 BURLINGTON STREET
NORTH KANSAS CITY, MO 64116

LEE'S SUMMIT MUNICIPAL AIRPORT
LEE'S SUMMIT, MISSOURI

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JANUARY 4, 2024

LEE'S SUMMIT MUNICIPAL AIRPORT
LEE'S SUMMIT, MO

MARK DATE DESCRIPTION

PROJECT NO: 47732472

CAD DWG FILE: SITE PLAN

DESIGNED BY: WLC

DRAWN BY: WLC

CHECKED BY: JRC

APPROVED BY: TGH

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SHEET TITLE

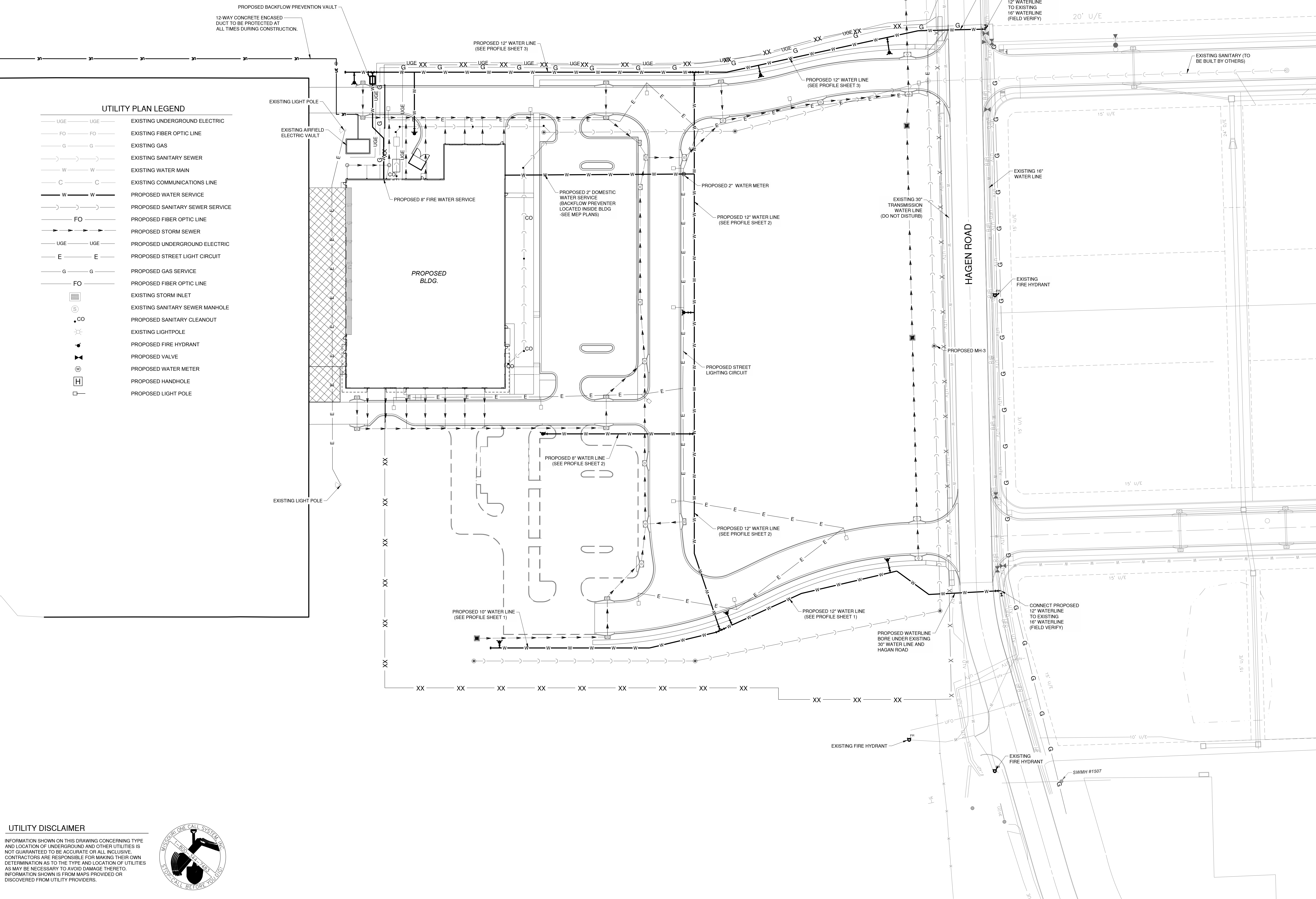
SITE OVERVIEW

G100

SHEET 1 OF 5

UTILITY PLAN LEGEND

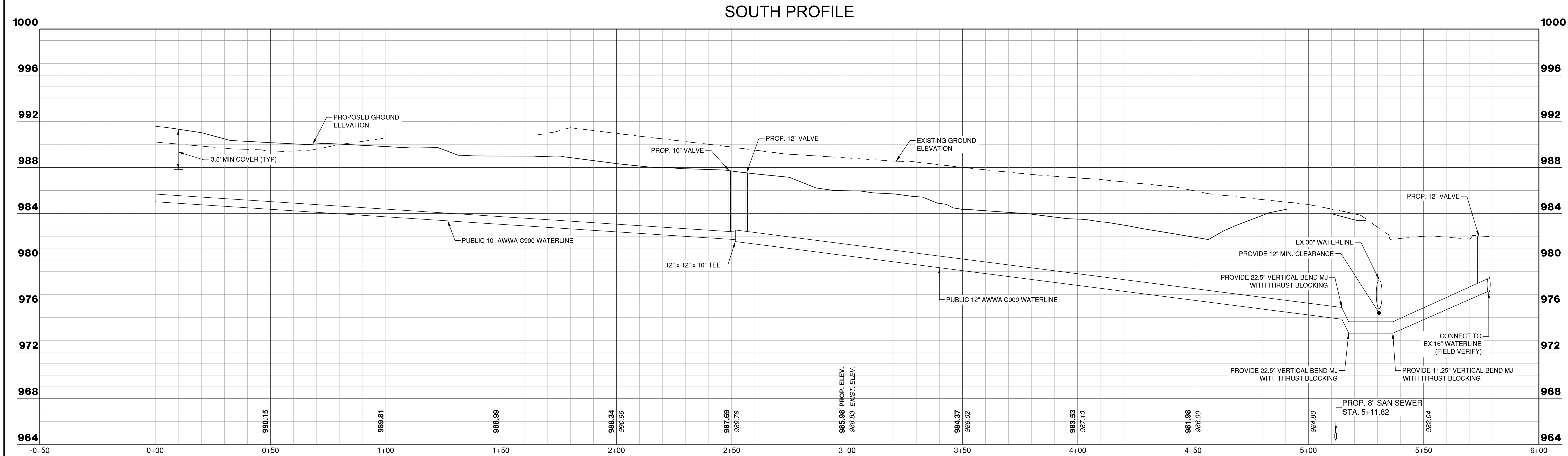
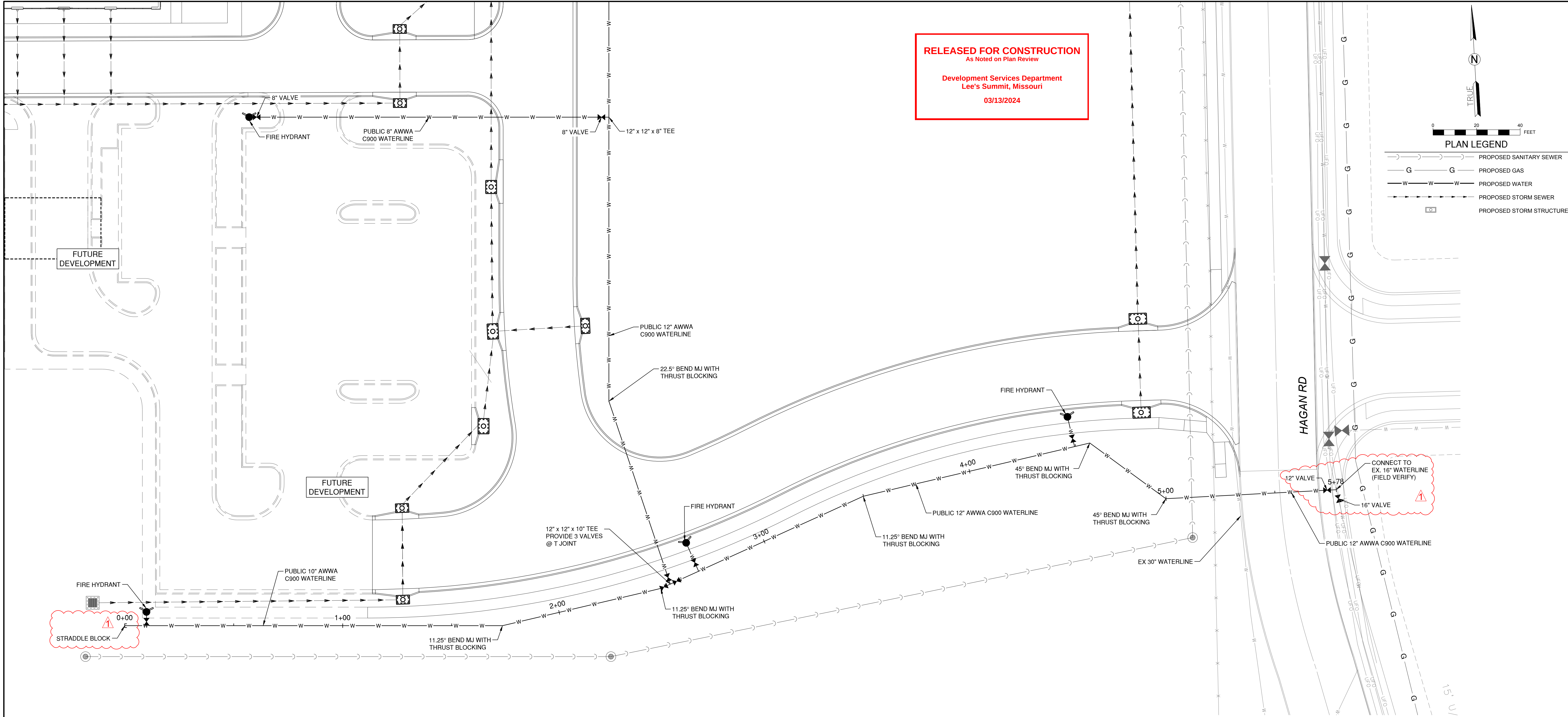
UGE	UGE	EXISTING UNDERGROUND ELECTRIC
FO	FO	EXISTING FIBER OPTIC LINE
G	G	EXISTING GAS
W	W	EXISTING SANITARY SEWER
C	C	EXISTING WATER MAIN
W	W	EXISTING COMMUNICATIONS LINE
W	W	PROPOSED WATER SERVICE
W	W	PROPOSED SANITARY SEWER SERVICE
FO	FO	PROPOSED FIBER OPTIC LINE
W	W	PROPOSED STORM SEWER
UGE	UGE	PROPOSED UNDERGROUND ELECTRIC
E	E	PROPOSED STREET LIGHT CIRCUIT
G	G	PROPOSED GAS SERVICE
FO	FO	PROPOSED FIBER OPTIC LINE
CO	CO	EXISTING STORM INLET
CO	CO	EXISTING SANITARY SEWER MANHOLE
CO	CO	PROPOSED SANITARY CLEANOUT
CO	CO	EXISTING LIGHTPOLE
CO	CO	PROPOSED FIRE HYDRANT
CO	CO	PROPOSED VALVE
CO	CO	PROPOSED WATER METER
CO	CO	PROPOSED HANDHOLE
CO	CO	PROPOSED LIGHT POLE



UTILITY DISCLAIMER

INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. CONTRACTORS ARE RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. INFORMATION SHOWN IS FROM MAPS PROVIDED OR DISCOVERED FROM UTILITY PROVIDERS.





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LEE'S SUMMIT, MISSOURI
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CITY PROJECT NO. - 47732472



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LEE'S SUMMIT, MO

MARK DATE DESCRIPTION

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CAD DWG FILE: WATER LINE PLAN & PROFILES
DESIGNED BY: WLC
DRAWN BY: WLC
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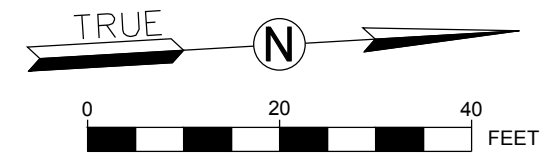
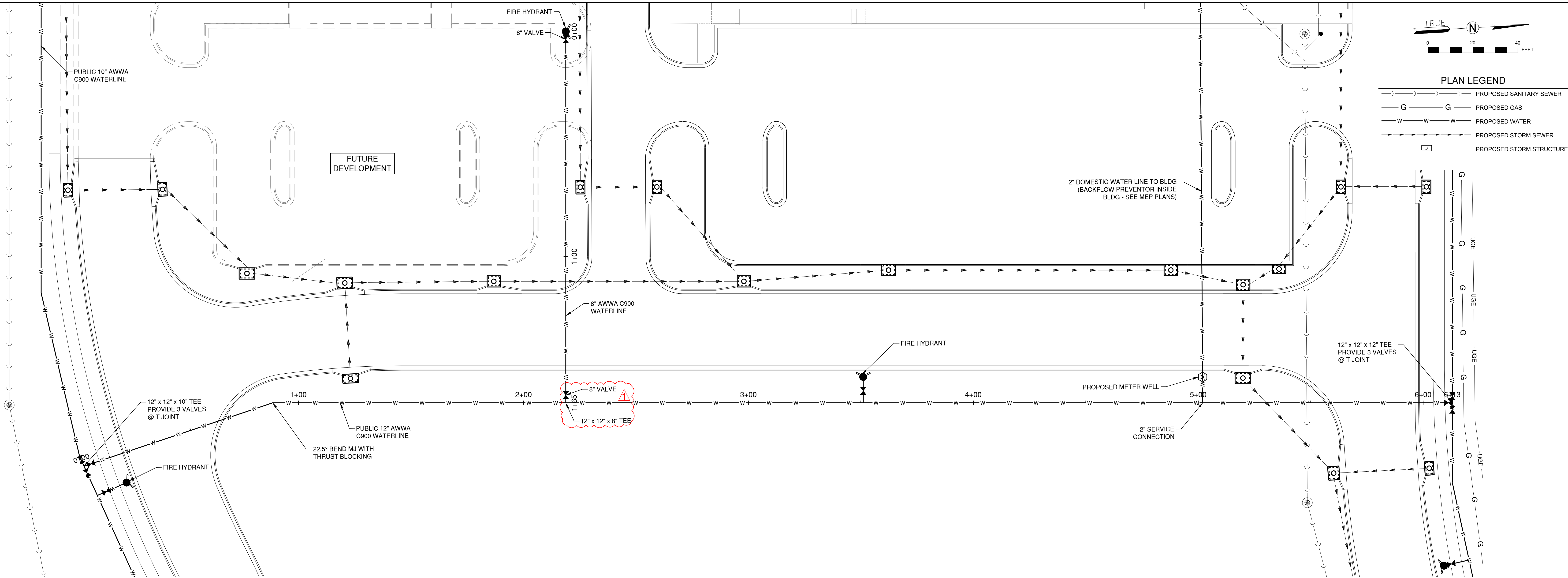
SHEET TITLE

WATER LINE PLAN &
PROFILE - SHEET 1

C100

SHEET 2 OF 5

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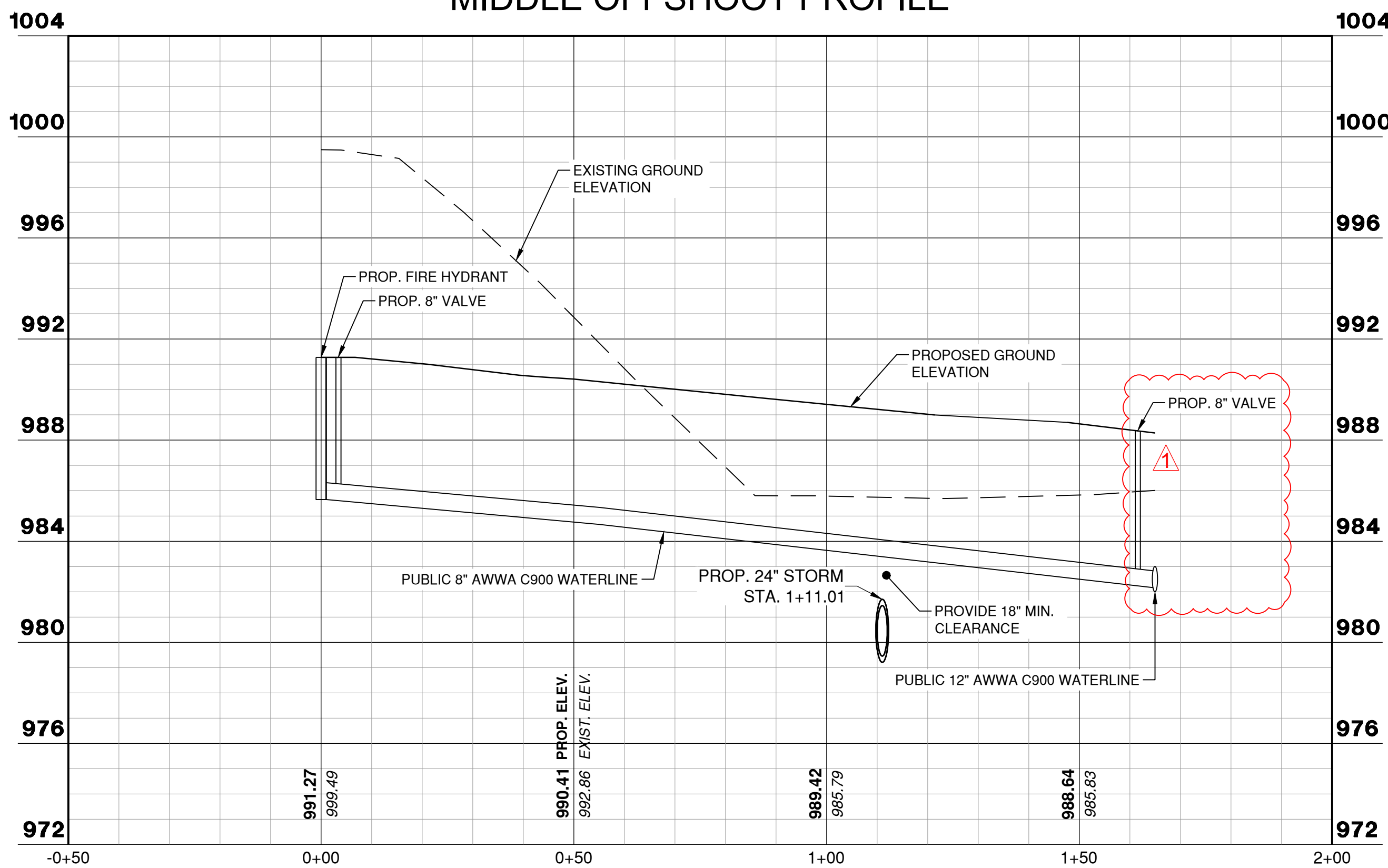
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WATER LINE PLAN &
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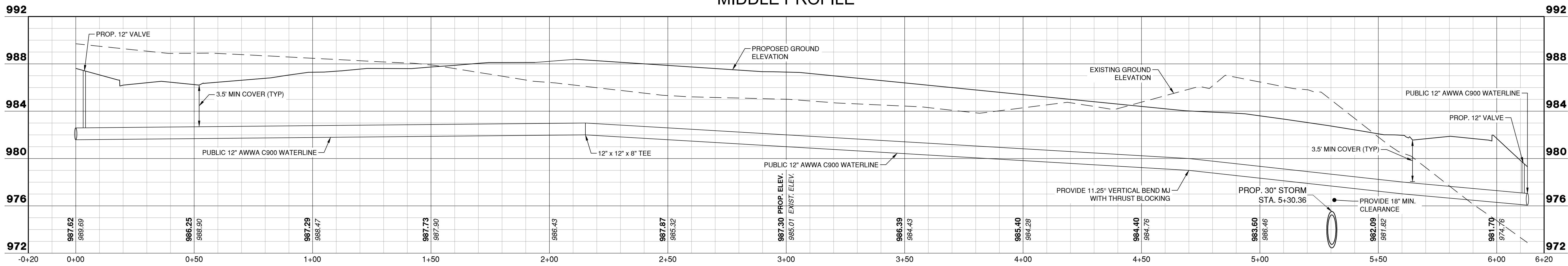
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SHEET 3 OF 5

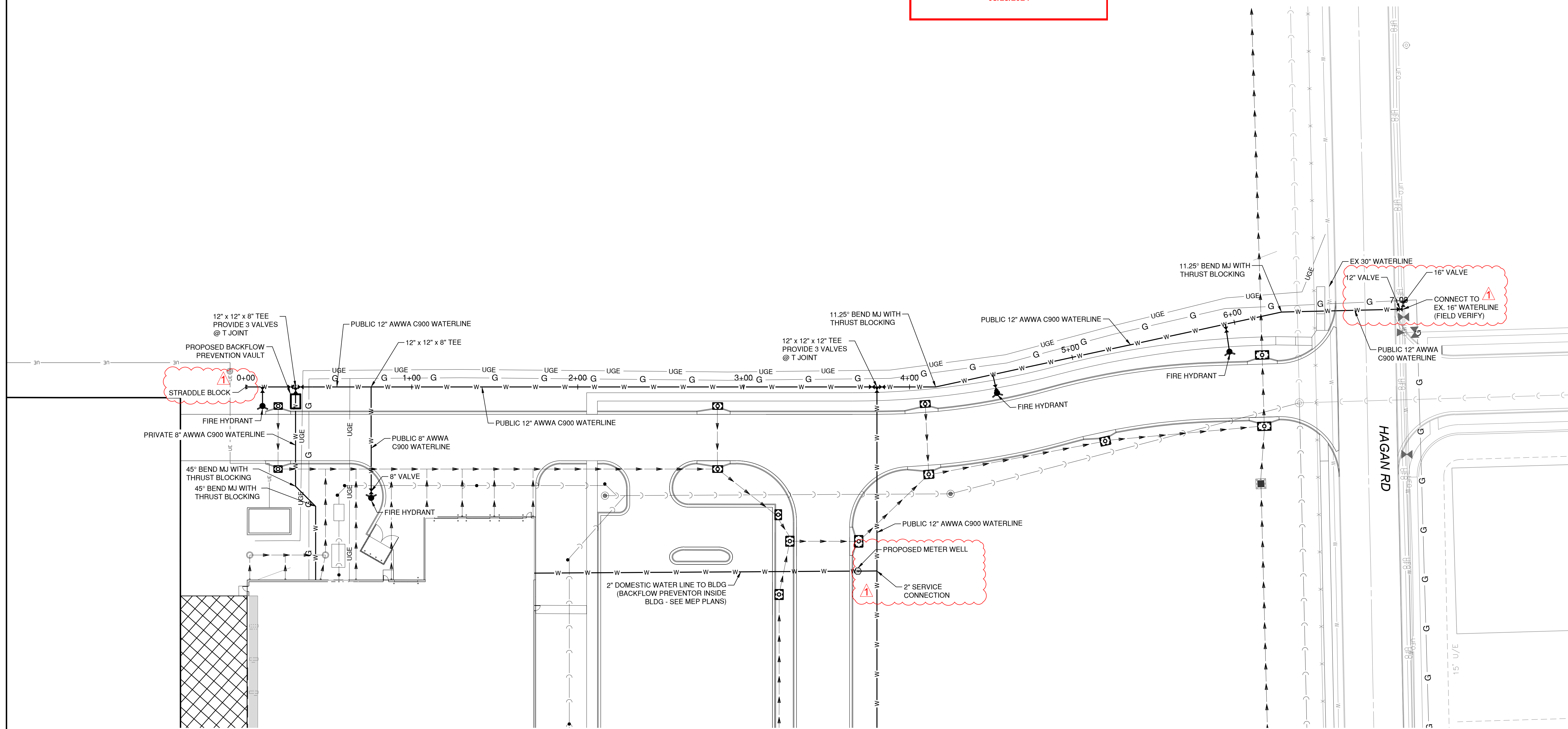
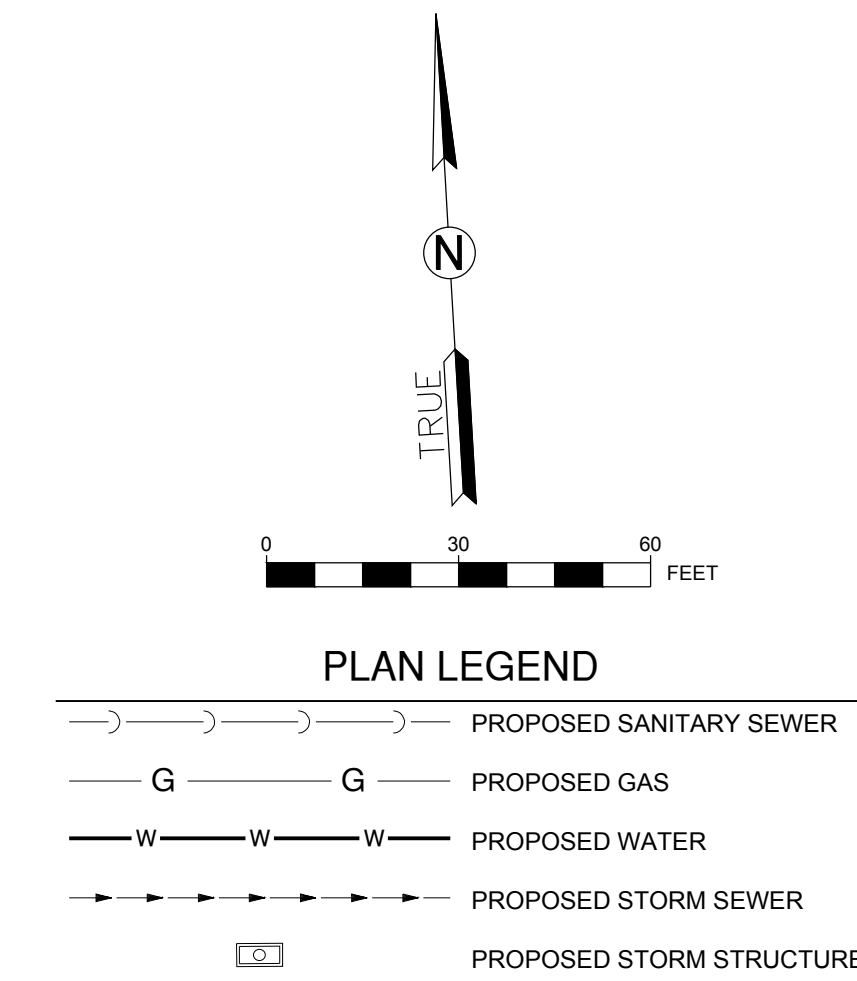
MIDDLE OFFSHOOT PROFILE



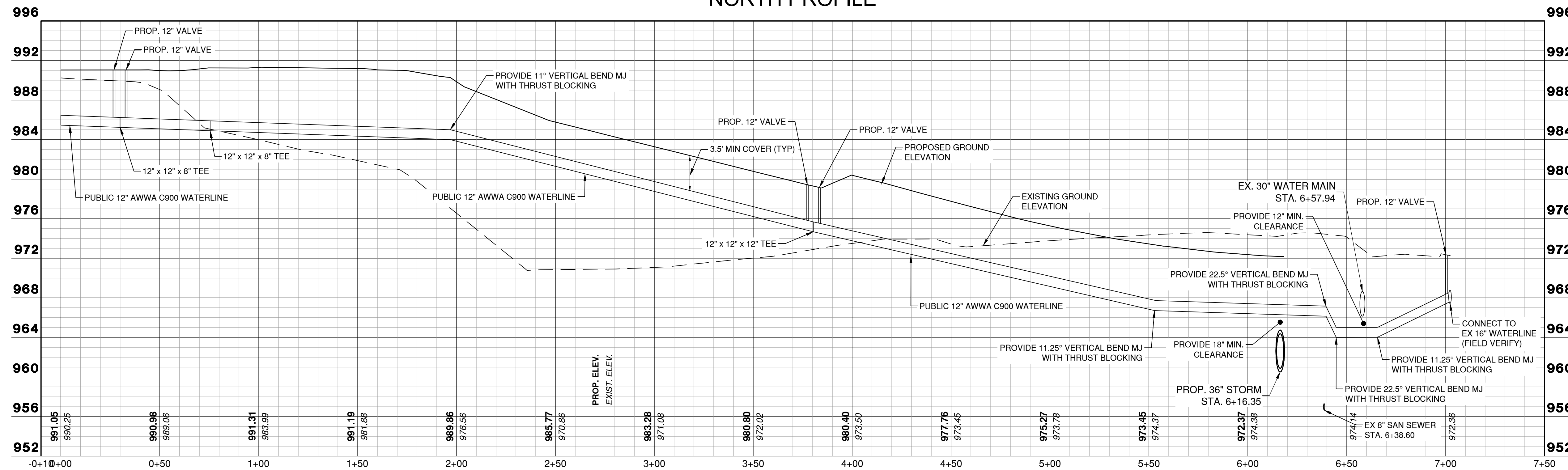
MIDDLE PROFILE



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NORTH PROFILE



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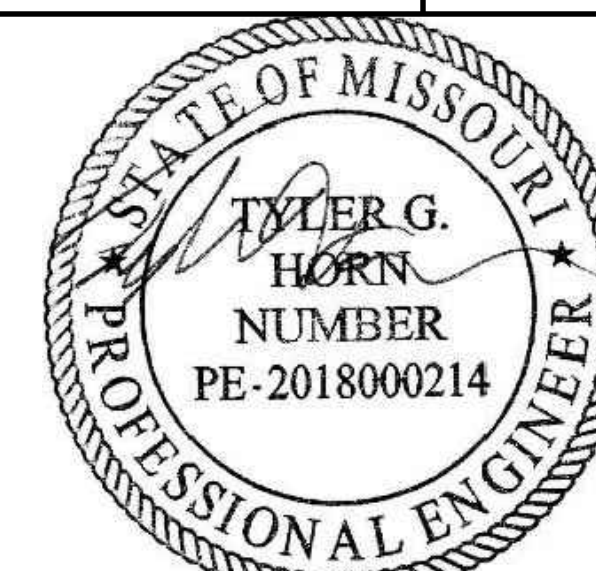


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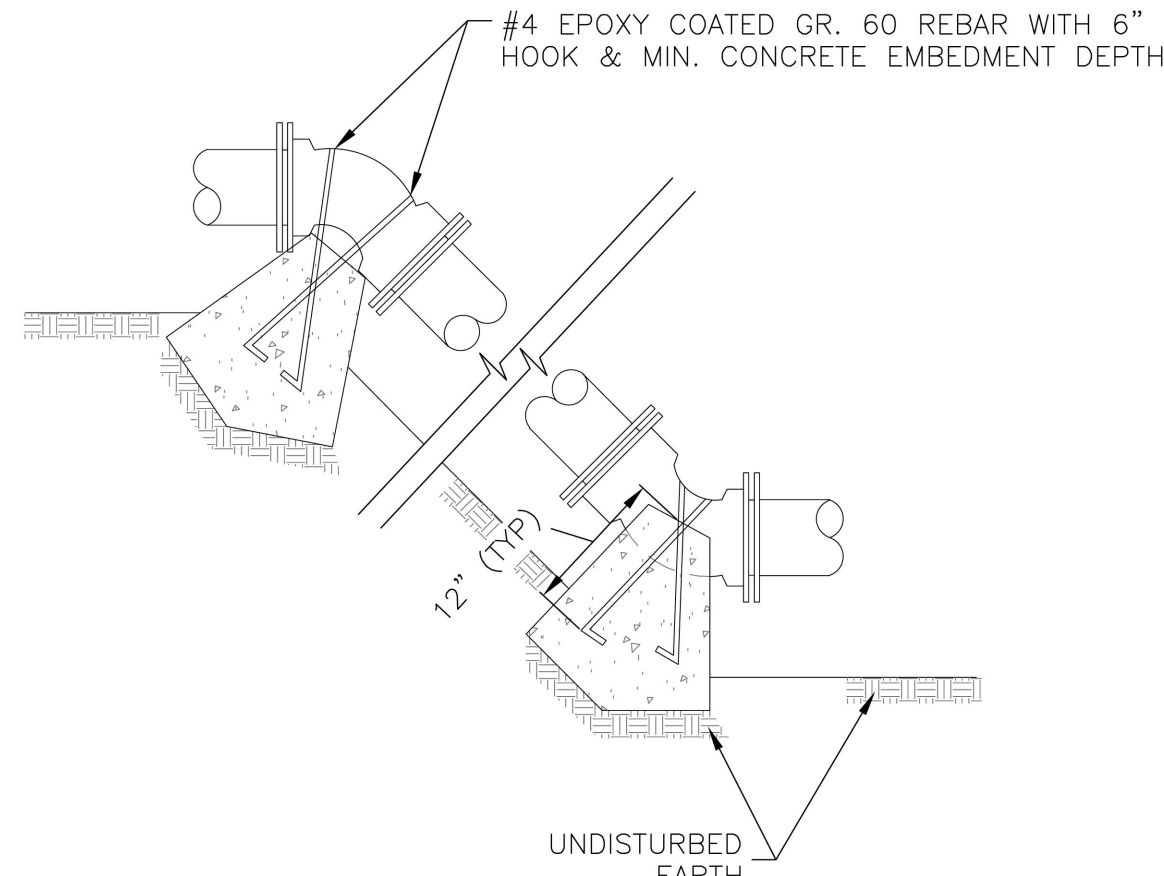
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WATER LINE PLAN &
PROFILE - SHEET 3

C102

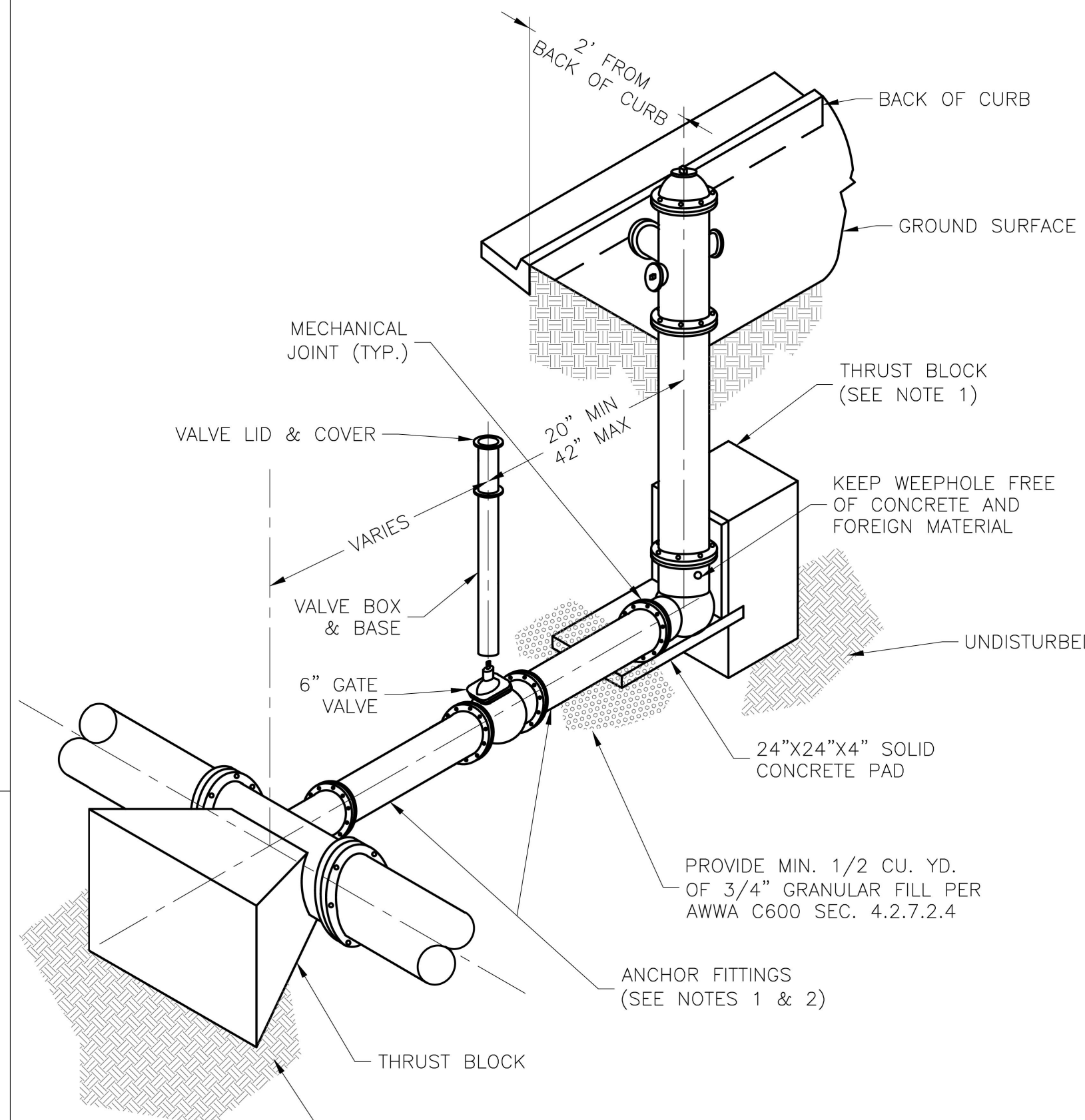
SHEET 4 OF 5

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- 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.

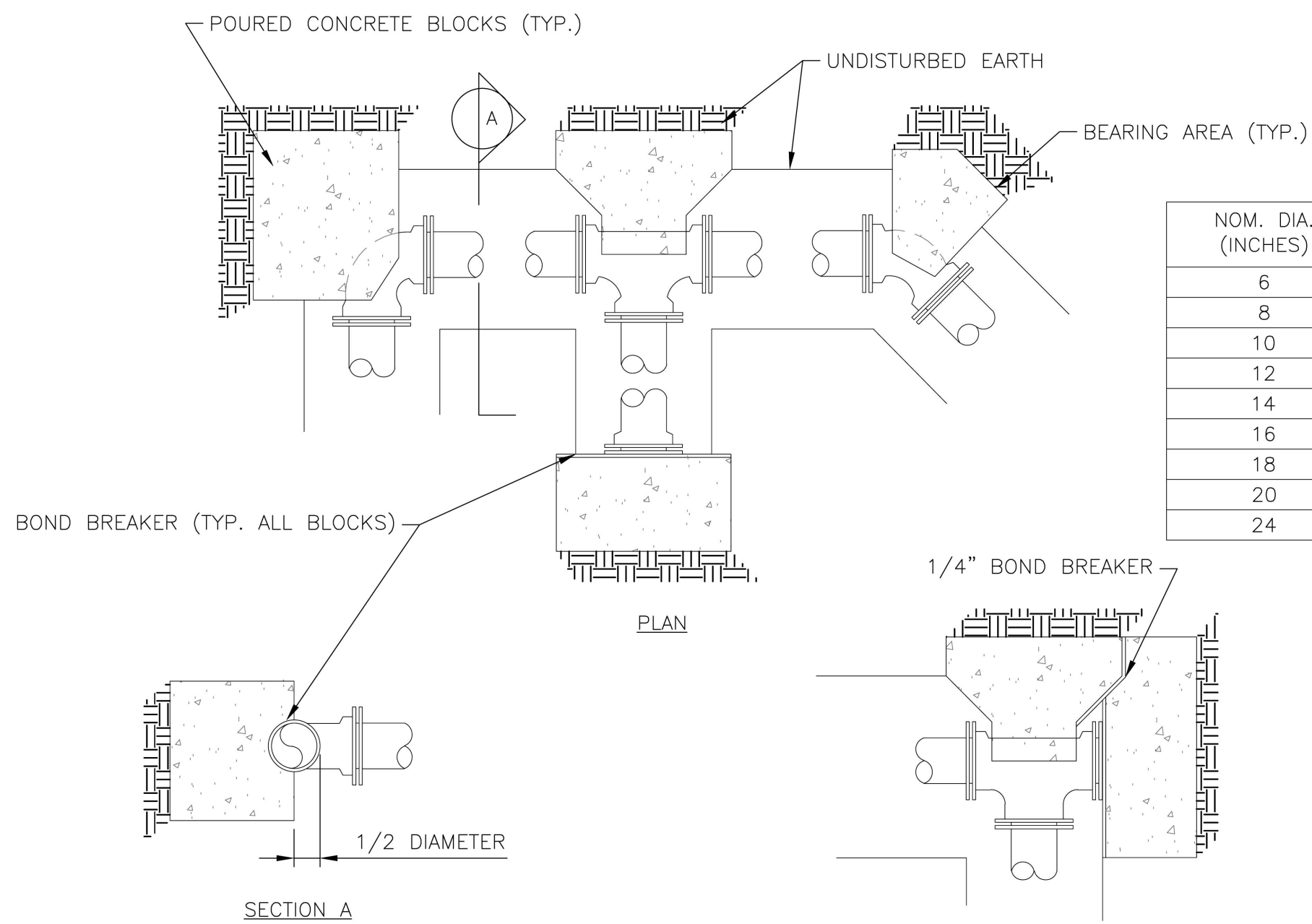
VERTICAL THRUST BLOCK
N.T.S. WAT-2



- NOTES:
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF ANCHOR FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
 2. GATE VALVE MAY BE BOLTED DIRECTLY TO ANCHOR 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.

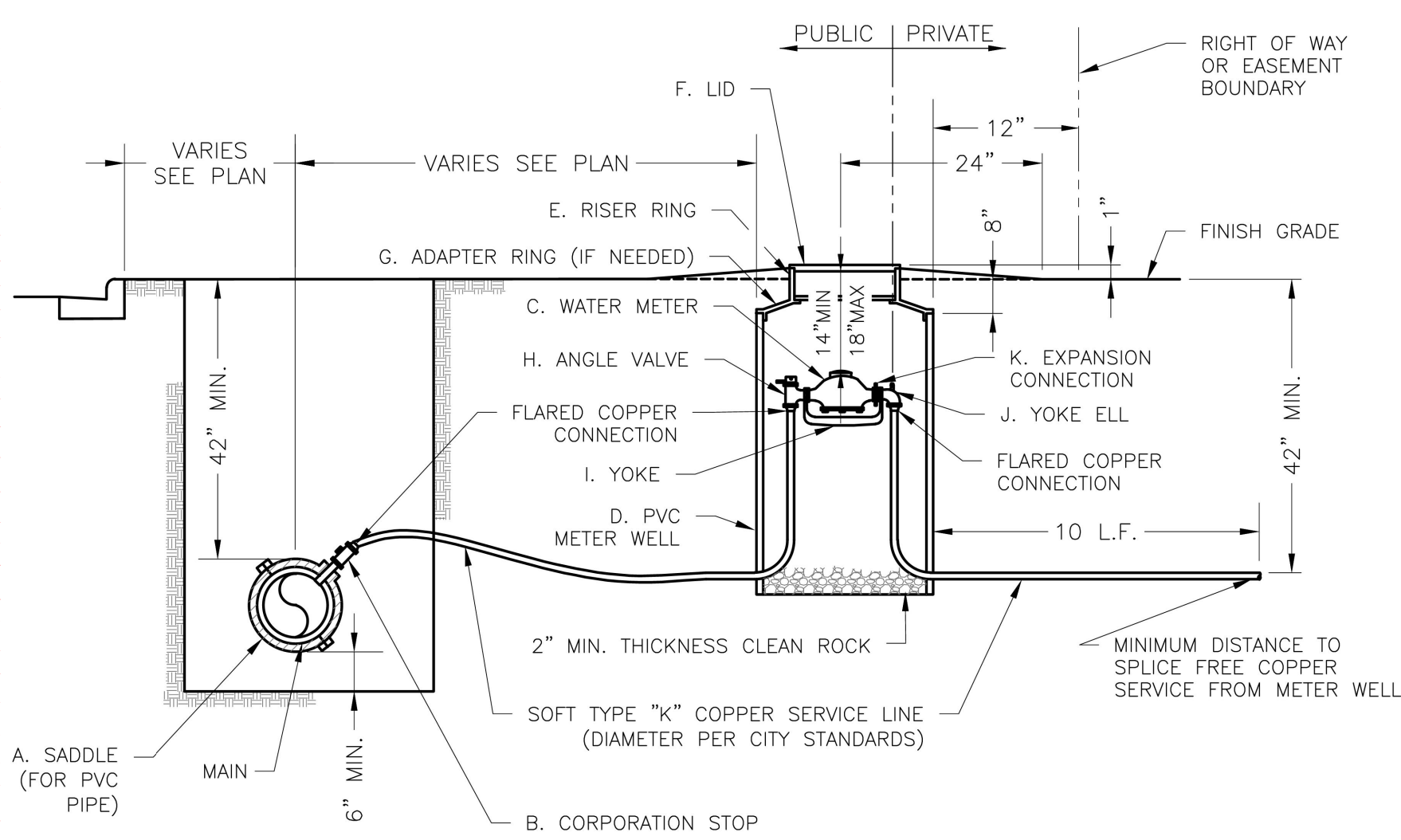
FIRE HYDRANT ASSEMBLY DETAIL
N.T.S. WAT-7

REQUIRED CONCRETE VOLUME (CUBIC FEET - CF)					
NOM. DIA. (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	50.5	71.4	38.6	19.7	9.9
8	89.8	126.9	68.7	35.0	17.6
10	140.2	198.3	107.3	54.7	27.5
12	202.0	292.0	154.6	78.8	39.6
14	REST. JT.	REST. JT.	210.4	107.3	53.9
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4
18	REST. JT.	REST. JT.	REST. JT.	177.3	89.1
20	REST. JT.	REST. JT.	REST. JT.	REST. JT.	110.0
24	REST. JT.	REST. JT.	REST. JT.	REST. JT.	158.4



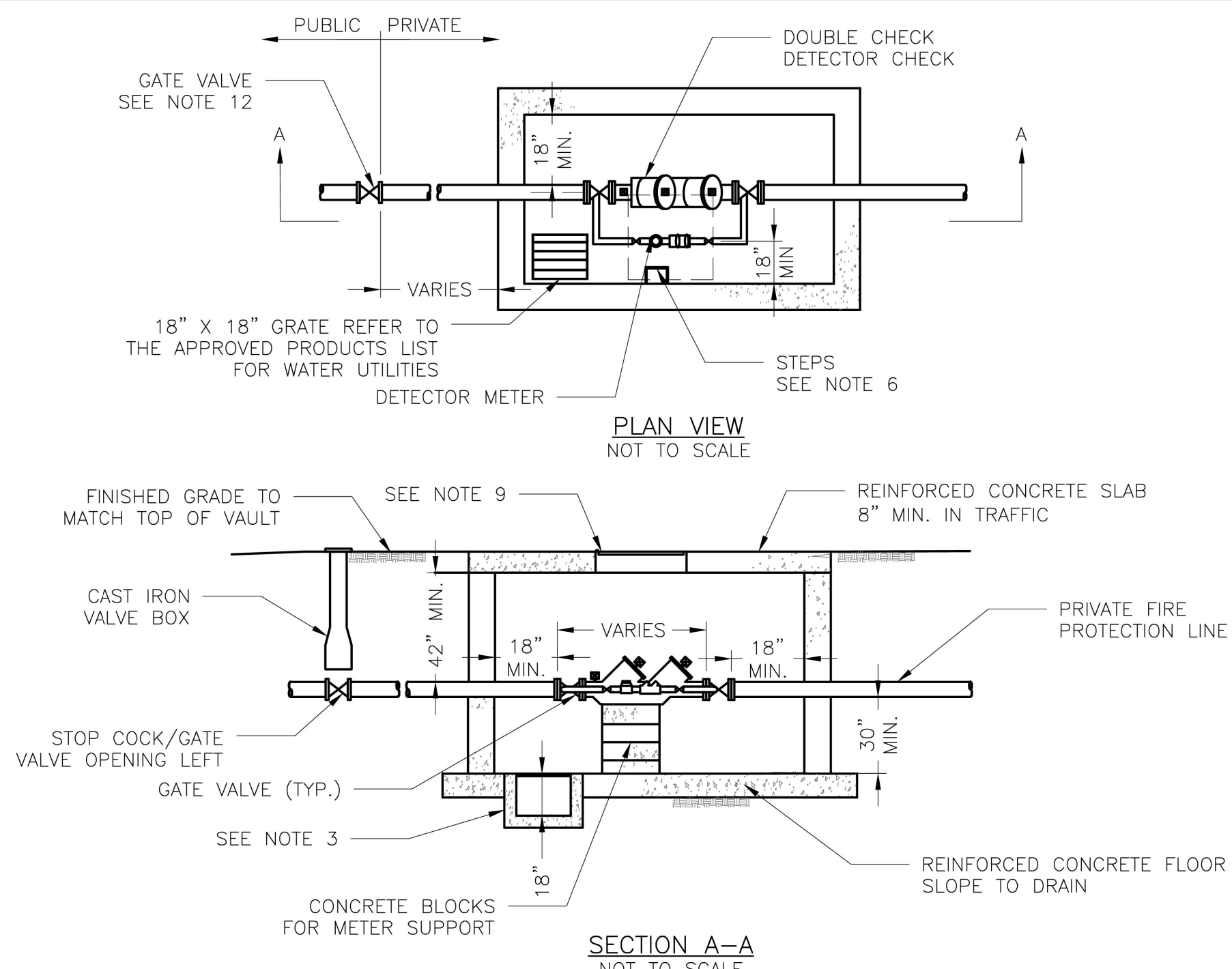
- NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
 2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
 3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
 4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.

HORIZONTAL THRUST BLOCK
N.T.S. WAT-1



- NOTES:
1. METER INSTALLATION SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC OR IN CONCRETE PAVEMENT WITHOUT CITY APPROVAL.
 2. IF METER IS TO BE LOCATED OTHER THAN IN FRONT OF PROPERTY LINE, CITY APPROVAL SHALL BE OBTAINED.
 3. CITY TO FURNISH ITEMS A-K.
 4. NO OTHER EQUIPMENT SHALL BE INSTALLED IN THIS PIT.
 5. 42" MINIMUM BURY DEPTH FOR ALL SERVICE LINES.
 6. EXCAVATION FOR TAP TO EXPOSE 4 LINEAR FEET OF MAIN.
 7. NO SPLICES ALLOWED BETWEEN METER AND MAIN.
 8. SERVICE CONNECTION TAP AT APPROXIMATELY 45 DEGREES.
 9. LID AND RISER RING SHALL BE SET SO THAT GROUND WATER WILL DRAIN AWAY FROM THE WELL.
 10. CONTACT WATER UTILITIES, 816-969-1900, FOR REQUIREMENTS OF A METER LARGER THAN 2"

SERVICE CONNECTION WITH METER WELL
N.T.S. WAT-11

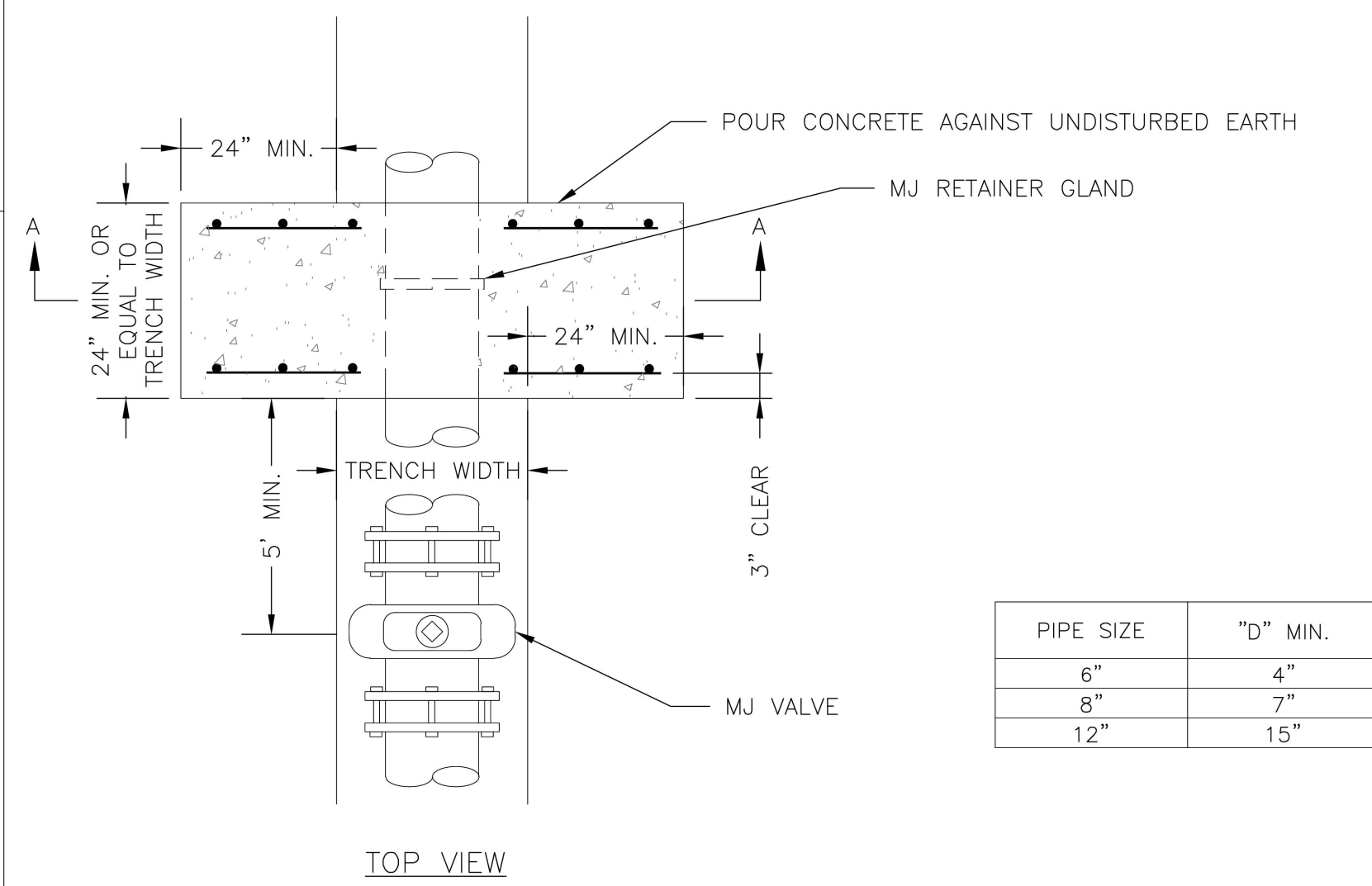


- GENERAL NOTES:
1. METER VAULT WALLS TO BE POURED OR PRECAST CONCRETE.
 2. METER VAULT ROOF TO BE REINFORCED CONCRETE OPENING CENTERED OVER DETECTOR METER.
 3. METER VAULT TO BE LOCATED, WHEN POSSIBLE, OUTSIDE TRAFFIC AREA WHERE SURFACE WATER WILL NOT DRAIN INTO IT. VAULT MUST BE KEPT FREE OF WATER. PROVIDE CONCRETE SUMP AS A MINIMUM, WHERE PRACTICAL, PROVIDE A 2" PIPE DRAIN WITH AN ABOVE-GROUND DISCHARGE POINT. PROJECT OWNER MAY DESIRE A PERMANENTLY INSTALLED SUMP PUMP.
 4. ALL PIPE SHALL BE DUCTILE IRON CLASS 50. ALL PIPE FITTINGS FROM THE CITY WATER MAIN THROUGH THE VAULT SHALL BE PROVIDED WITH RESTRAINED JOINT FITTINGS.
 5. ALL FITTINGS TO BE BRASS.
 6. STEPS SHALL BE IN ACCORDANCE WITH THE APPROVED PRODUCTS LIST FOR WATER UTILITIES AND SHALL BE ON 16" CENTERS.
 7. A DEPARTMENT OF NATURAL RESOURCES APPROVED DOUBLE CHECK DETECTOR CHECK BACKFLOW PREVENTER MUST BE USED. FOR A COPY OF THE MISSOURI DEPARTMENT OF NATURAL RESOURCES APPROVED BACKFLOW PREVENTION ASSEMBLIES, CONTACT THE WATER UTILITIES OPERATIONS DIVISION AT 816-969-1940. AS OF JANUARY 1, 1987, THE DNR REQUIRES FIRE SPRINKLER SYSTEMS USING CHEMICALS TO HAVE A DNR APPROVED PRESSURE BACKFLOW PREVENTER INSTALLED, PRIOR TO THE MIXING POINT.
 8. ALL VALVES SHALL HAVE RISING STEMS.
 9. FOR MANHOLE COVERS, SELECT A MANHOLE FOUND ON THE APPROVED PRODUCTS LIST FOR WATER UTILITIES SUITABLE FOR EITHER TRAFFIC OR NON-TRAFFIC CONDITIONS.
 10. A MINIMUM OF 18" CLEARANCE SHALL BE PROVIDED AROUND ALL PIPING, VALVES, APPURTENANCES, ETC.
 11. METER SHALL BE OWNED AND MAINTAINED BY THE WATER UTILITIES DEPARTMENT.
 12. IF PUBLIC WATER IS LOCATED ON THE OPPOSITE SIDE OF THE STREET, THEN THE PUBLIC WATER MAIN RESPONSIBILITY OF THE WATER UTILITIES DEPARTMENT ENDS AT THE GATE VALVE NEAREST THE VAULT.

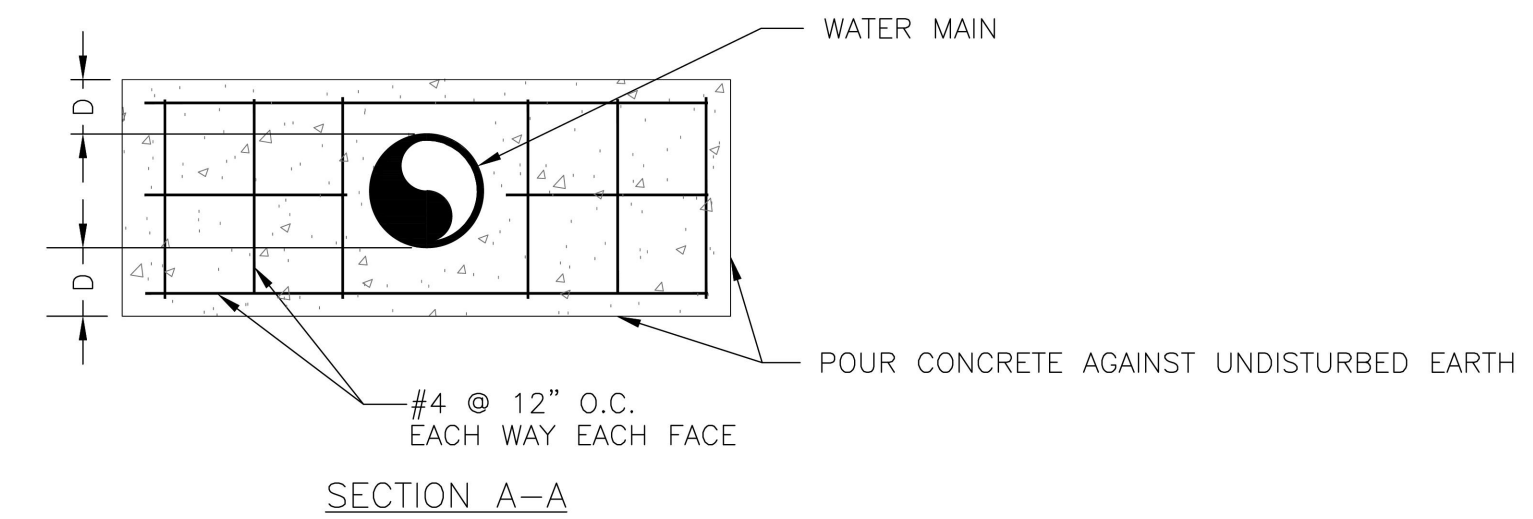
BACKFLOW PREVENTION VAULT
N.T.S. WAT-12

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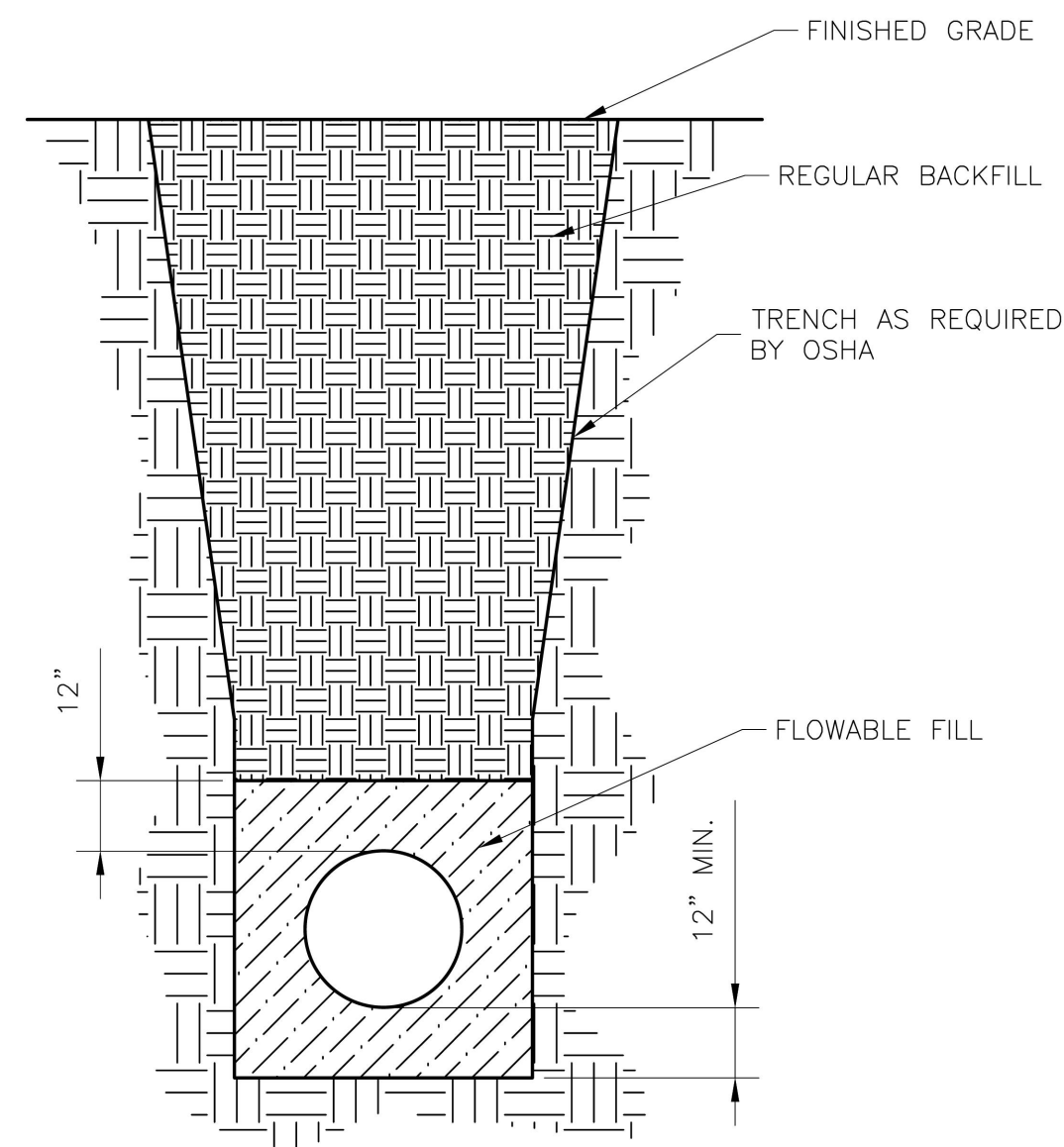


PIPE SIZE	"D" MIN.
6"	4"
8"	7"
12"	15"



NOTE:
THIS DETAIL NOT TO BE USED FOR PIPE GREATER THAN 12"

STRADDLE BLOCK DETAIL
N.T.S. WAT-3



- NOTES:
1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
 2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" IN ANY DIMENSION.
 3. TOP OF FLOWABLE BACKFILL SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE.
 4. LENGTH OF TRENCH CHECK SHALL BE A MINIMUM OF 12".

WATER TRENCH CHECK DETAIL
N.T.S. WAT-6



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SHEET TITLE

SITE DETAILS

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SHEET 5 OF 5