

GENERAL NOTES

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ACQUIRE ALL CITY AND STATE PERMITS, INCLUDING PERMITS REQUIRED BY OTHER GOVERNING BODIES, REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT.
- A PRECONSTRUCTION CONFERENCE SHALL BE SCHEDULED WITH THE CITY ENGINEER. CONSTRUCTION OF THE IMPROVEMENTS SHOWN OR IMPLIED BY THIS SET OF DRAWINGS SHALL NOT BE INITIATED OR ANY PART THEREOF UNDERTAKEN UNTIL AGREED TO BY THE CITY.
- THE WATER MAIN CONTRACTOR SHALL PROVIDE EROSION AND SILT PROTECTION AS REQUIRED FOR HIS SPECIFIC CONSTRUCTION ACTIVITIES DURING THIS CONSTRUCTION AND SHALL BE RESPONSIBLE FOR KEEPING EXISTING STREET AND ADJACENT LAND FEATURES AND PROPERTY FREE OF MUD AND SILT. IF INTERRUPTION OF THE OVERALL SITE EROSION CONTROL FEATURES IS REQUIRED BY THIS WORK, THE SEWER MAIN CONTRACTOR SHALL RELOCATE OR ADD THE PROPER EROSION CONTROL FEATURES TO PROTECT THIS SITE DURING THIS WORK. SEE THE ASSOCIATED POLLUTION PREVENTION PLAN FOR CONSTRUCTION ACTIVITIES AND FOR MINIMUM EROSION CONTROL MEASURES REQUIRED BY THESE PLANS. EROSION CONTROLS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ONCE CONSTRUCTION BEGINS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL MEASURES AND SHALL PROMPTLY REPAIR ANY AREAS REQUIRING ATTENTION UNTIL SUBSTANTIAL COMPLETION OF THE PROJECT.
- PRIOR TO THE LAYING OF PIPE, THE CONTRACTOR SHALL EXPOSE ALL UTILITIES AT PIPE CROSSINGS AND VERIFY ELEVATIONS TO DETERMINE ANY CONFLICTS THAT MAY EXIST. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER OF ANY SUCH CONFLICTS.
- THE CONTRACTOR MUST SUPPORT ALL UTILITIES DURING THIS CONSTRUCTION TO THE SATISFACTION OF THE RESPECTIVE UTILITY COMPANY. ALL SHORING AND TEMPORARY SUPPORTS ARE TO BE INCLUDED IN THE CONTRACT PRICE.
- THE PIPE SHALL BE STORED AT THE SITE TO AVOID ANY DAMAGE TO THE PIPE, PIPE COATINGS, AND JOINT SYSTEM. WHEN THE PIPE IS LAID OUT ALONG THE TRENCH, THE SAME PRECAUTIONS SHALL BE TAKEN TO PREVENT DAMAGE TO THE PIPE OR JOINT SYSTEMS.
- THE INTERIOR OF ALL PIPE SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER BEFORE BEING LOWERED INTO THE TRENCH, AND SHALL BE KEPT CLEAN DURING THE LAYING OPERATION BY MEANS OF PLUGS, PIGS, SWABS OR OTHER APPROVED METHODS.
- ANY PIPE THAT HAS ITS GRADE OR JOINTS DISTURBED AFTER LAYING, SHALL BE TAKEN UP AND RE-LAID BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. TRENCHES SHALL BE KEPT FREE FROM WATER UNTIL THE PIPE SECTIONS ARE JOINED, AND PIPE SHALL NOT BE LAID WHEN THE CONDITION OF THE TRENCH OR THE WEATHER IS UNSUITABLE FOR SUCH WORK. AT TIMES WHEN WORK IS NOT IN PROGRESS, OPEN ENDS OF PIPE AND FITTINGS SHALL BE SECURELY AND SATISFACTORILY CLOSED SO THAT NO TRENCH WATER, EARTH, OR OTHER SUBSTANCE WILL ENTER THE PIPE.
- A MINIMUM OF ONE (1) COMPACTION TEST SHALL BE PERFORMED BY A QUALIFIED TESTING LABORATORY AT INTERVALS NOT EXCEEDING 200-FEET OF TRENCH FOR THE FIRST AND EVERY OTHER 6-INCH LIFT OF COMPACTED TRENCH BACKFILL.
- THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS ON MATERIAL AND STRUCTURES USED FOR APPROVAL BY THE ENGINEER AND FINAL APPROVAL BY THE CITY OF DE SOTO.

GENERAL NOTES - CITY OF DE SOTO

- ALL PIPE SHALL BE (C-900 DR 18), HDPE (DR 17), DIP (CLASS 50), OR 2" HDPE (CTS) UNLESS OTHERWISE NOTED.
- ALL VALVES TO BE RESILIENT SEATED GATE VALVES - AND SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AWWA C509 AND C515. RESILIENT-SEAT GATE VALVES SHALL BE AMERICAN FLOW CONTROL, KENNEDY, CLOW, MUELLER OR U.S. PIPE. ALL VALVES SHALL BE LEFT TURN OPEN, AND HAVE A RISER CONSISTING OF 6" SCHEDULE 40 PIPE AND A CLAY AND BAILEY 2194 VALVE COVER. VALVES INSTALLED IN ROADWAY SHALL HAVE A CLAY AND BAILEY 2193 VALVE COVER.
- ALL VALVES ADJACENT TO TEES, CROSSES, OR ELBOWS SHALL BE ANCHORED TO THE FITTING.
- ALL FIRE HYDRANTS ARE REQUIRED TO HAVE 1-4 1/2" AND 2-2 1/2" NOZZLES, AND SHALL BE "PACER" MODEL MANUFACTURED BY WATEROUS MUELLER, KENNEDY, OR U.S. PIPE. FIRE HYDRANTS SHALL CONFORM TO AWWA C502. ALL HYDRANTS SHALL BE FURNISHED WITH 6" AUXILIARY GATE VALVE ANCHORED TO HYDRANT, AND WHERE RELEVANT, ANCHORED TO THE TEE.
- ALL FIRE HYDRANTS SHALL BE PAINTED ABOVE THE GROUND LINE WITH RED ENAMELED PAINT.
- ALL UTILITIES ARE LOCATED FROM BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY LOCATIONS BEFORE CONSTRUCTION.
- A 5 FOOT STEEL FENCE POST SHALL BE SET 36" ABOVE GROUND BY ALL VALVES AND FLUSHING DEVICES.
- ALL LINES SHALL HAVE 42" MINIMUM COVER OR SHALL BE LAID WITH TOP OF WATER LINE 42" BELOW TOP OF CURB, WHICHEVER IS LOWER. UNLESS SPECIFICALLY NOTED OTHERWISE ON PLAN SHEETS.
- TRACER WIRE SHALL BE PROVIDED AND INSTALLED WITH ALL WATERLINE INSTALLATIONS #12 THHN WIRE SHALL BE TAPED TO THE TOP OF THE PIPE AND EXTENDED UP THROUGH VALVE BOXES.
- ALL DEAD LINES TO BE ONE JOINT OF PIPE WITH 1/2 C.Y. OR MORE OF CONCRETE IN THE CENTER OF THE JOINT WITH A STRADDLE BLOCK INTO UNDISTURBED SOIL.
- BID FOR FIRE HYDRANT SHALL INCLUDE 6" VALVE AND BOX.
- THE CONTRACTOR SHALL DISINFECT, FLUSH AND TEST LINES AS REQUIRED BY THE CITY OF DE SOTO SPECIFICATIONS OR KDHE SPECIFICATIONS LATEST EDITION WHICHEVER IS MORE STRINGENT.
- WHEREVER WATER AND SEWER LINES CROSS WITH CLEARANCE OF LESS THAN 2 FEET, THE SEWER LINE SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE FOR A DISTANCE OF AT LEAST 10 FEET IN EACH DIRECTION OF CROSSING. TESTING OF THE REPLACED SEWER LINE SHALL FOLLOW KDHE STANDARDS.
- WHERE FIRE HYDRANTS ARE NOT LOCATED AT THE END OF LINES, THE CONTRACTOR SHALL FURNISH A FLUSHING DEVICE.
- ALL FIRE HYDRANTS ARE TO BE SET WITH THE BASE 1" ABOVE THE TOP OF CURB.
- ALL TREES SHALL BE SPARED UNLESS MARKED.
- WHERE VERTICAL BENDS ARE REQUIRED, ALL BENDS SHALL BE RESTRAINED WITH RESTRAINED JOINT PIPE AND FITTINGS.
- ALL TAPPING VALVES SHALL BE BLOCKED SAME AS EQUAL SIZED TEE.
- THE CONTRACTOR IS REQUIRED TO REMOVE AND REPLACE FENCE TO THE SATISFACTION OF THE OWNER.
- DEVELOPMENT PLANS ARE APPROVED INITIALLY FOR ONE YEAR AFTER WHICH THEY AUTOMATICALLY BECOME VOID AND MUST BE UPDATED AND RE-APPROVED BY THE CITY ENGINEER BEFORE ANY CONSTRUCTION WILL BE PERMITTED.
- THE CITY OF DE SOTO PLAN REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE CITY OF DE SOTO DESIGN CRITERIA AND THE CITY CODE. THE CITY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, OR DIMENSIONS AND ELEVATIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE. THE CITY OF DE SOTO THROUGH APPROVAL OF THE DOCUMENT ASSUMES NO RESPONSIBILITY, OTHER THAN THAT AS STATED ABOVE, FOR THE COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.
- THE CONTRACTOR SHALL HAVE ONE COPY OF THE PLANS APPROVED BY THE CITY OF DE SOTO WITH STATE APPROVAL STAMP ON COVER SHEET AND ONE COPY OF THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES.
- THE CONTRACTOR SHALL NOT BE ALLOWED TO WORK ON SUNDAYS, HOLIDAYS OR SATURDAY WORK SHALL BE APPROVED BY THE CITY ENGINEER.
- CONSTRUCTION OF THE IMPROVEMENTS SHOWN OR IMPLIED BY THIS SET OF DRAWINGS SHALL NOT BE INITIATED OR ANY PART THEREOF AND ALL REQUIRED AND PROPERLY EXECUTED BONDS AND CONTRACT AGREEMENTS ARE RECEIVED AND APPROVED BY THE CITY ENGINEER.
- THE CONTRACTOR SHALL SUBMIT A PERFORMANCE & 2-YEAR MAINTENANCE BOND TO THE CITY OF DE SOTO PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL SUBMIT PROOF OF CONTRACTOR'S LIABILITY INSURANCE PRIOR TO CONSTRUCTION. THIS INSURANCE SHALL LIST THE CITY OF DE SOTO AS AN ADDITIONAL INSURED.
- CONSTRUCTION INSPECTION WILL BE PROVIDED BY THE CITY OF DE SOTO. A FEE IN THE AMOUNT OF 3% OF THE BONDED IMPROVEMENT COSTS WILL BE ASSESSED TO THE OWNER.

ANDERSON ESTATES

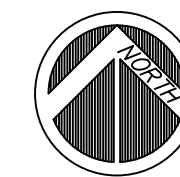
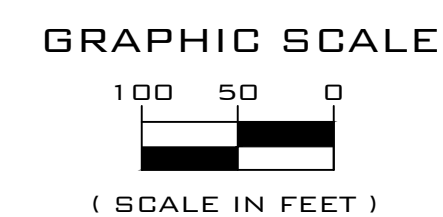
WATERMAIN EXTENSION PLANS

33475 W 85TH ST DE SOTO, KS 66018

Waterline Permit #202400117



OVERALL PLAN



BENCHMARK

BM790: Alum Disk Located at the intersection of Ottawa & Lexington, on the Northwest corner of the intersection, on 1st curb inlet on West side of Ottawa.

Elevation = 819.88

QUANTITIES

Anderson Estates - Watermain			
No.	Description	Unit	Quantities Plan
4.00	8" Diameter PVC C-900 Pressure Class 235 (DR 18)	LF	518
4.01	Fire Hydrant	EA	1
4.02	8" Gate Valve	EA	3

SURVEY CONTROL POINTS

Survey Control Points				
Point #	Northing	Easting	Elevation	Description
2	247522.47	2173039.71	819.88	BM790
40	248003.64	2172649.83	859.30	Square Cut in Top of Curb
50	248002.59	2172696.95	858.06	Plus Cut in Sidewalk
51	247992.86	2172502.82	855.55	Plus Cut in Top of Curb

INDEX OF SHEETS

C500	COVER SHEET
C501	GENERAL LAYOUT
C502	PLAN AND PROFILE - LINE A
C503	DETAILS

PROJECT STANDARDS

- CURRENT KDHE WATER MAIN SPECIFICATIONS
THE GOVERNING SPECIFICATIONS FOR THIS PROJECT SHALL BE THOSE REQUIREMENTS CURRENTLY ON RECORD WITH KDHE FOR THE CITY OF DE SOTO, KANSAS DATED OCTOBER 19, 1992.
- CURRENT KANSAS CITY METROPOLITAN CHAPTER OF THE AMERICAN PUBLIC WORKS ASSOCIATION SECTION 2900 WATERLINES.
SHOULD THERE BE A CONFLICT BETWEEN THE ABOVE REQUIREMENTS, THE MORE STRINGENT OF THE REQUIREMENTS SHALL GOVERN.

UTILITY CONTACTS

ELECTRIC EVERGY CONTACT MATT ROECKER (913)667-5116	WATER CITY OF DE SOTO 32905 W. 84TH STREET DE SOTO, KS 66018 (913) 238-0434
NATURAL GAS ATMOS ENERGY P.O BOX 650205 DALLAS, TEXAS 75265-0205 (888) 286-6700	STORMWATER CITY OF DE SOTO 32905 W. 84TH STREET DE SOTO, KS 66018 (913) 238-0434
SANITARY SEWER CITY OF DE SOTO 32905 W. 84TH STREET DE SOTO, KS 66018 (913) 238-0434	CABLE/COMMUNICATIONS SPECTRUM CABLE 6921 W. 119TH STREET (855)707-7328

CIVIL ENGINEER

MILBURN CIVIL ENGINEERING, LLC
331.35 W. 83RD ST
DE SOTO, KS 66018

PLANS PREPARED AND SUBMITTED BY:

JUSTIN MILBURN, KANSAS PE #18836 DATE

APPROVED BY: CITY OF DE SOTO, KANSAS

JOE JOHNSON
CITY ENGINEER, DE SOTO, KS
APPROVED FROM ONE YEAR FROM THIS DATE

DATE



Milburn Civil Engineering, LLC
MILBURN CIVIL ENGINEERING, LLC
331.35 W 83RD ST
DE SOTO, KS 66018
913-583-0367

ANDERSON'S ESTATES
WATERMAIN EXTENSION PLANS
33475 W 85TH ST
DE SOTO, KS 66018

DATE 4/12/2024
DESIGNED BY TAS
CHECKED BY JPM

REVISIONS	DATE

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NOT FOR
CONSTRUCTION**

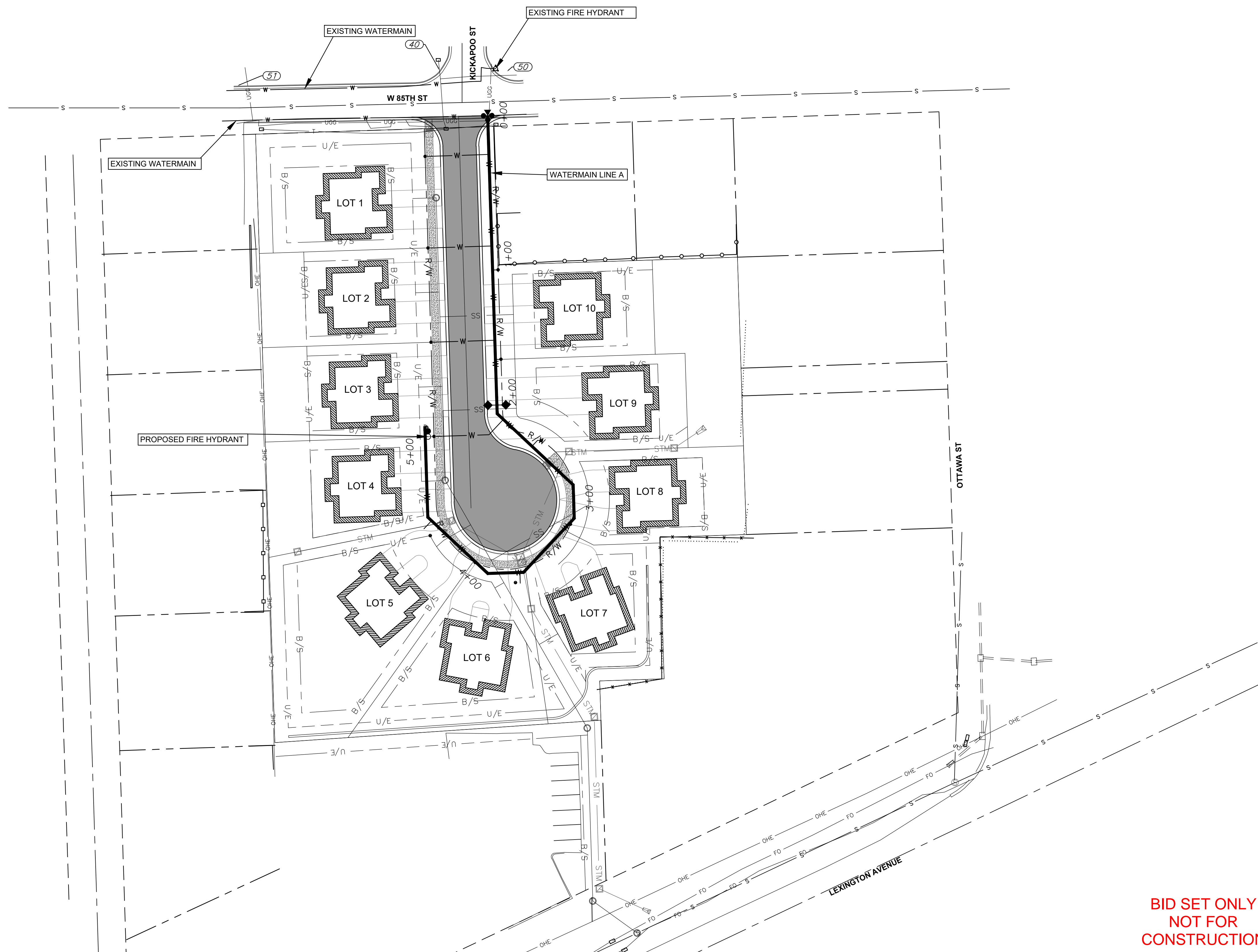
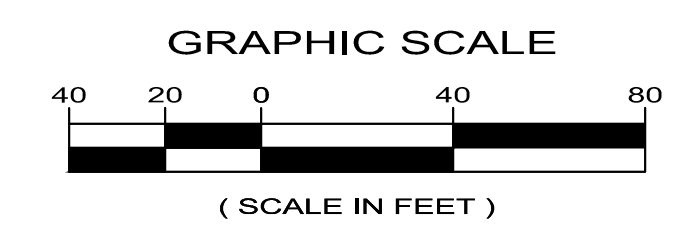
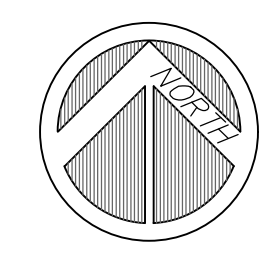
COVER
C500



LEGEND

WATER MAIN SYMBOLS

	NEW	EXISTING
WATER MAINS	— W —	- - - W - - -
ENCASEMENT PIPE	— [] —	- - - [] - - -
FIRE HYDRANT ASSEMBLY	⊙	⊙
REMOVAL OR RELOCATION	⊙	⊙
SOLID SLEEVE	— [] —	- - - [] - - -
NON-CONNECTING MAINS	— [] —	- - - [] - - -
BEND WITH BACKING BLOCK	— [] —	- - - [] - - -
STRADDLE BLOCK	— [] —	- - - [] - - -
VALVES	⊙	⊙
TAPPING SLEEVE AND VALVE	⊙	⊙
CHECK VALVES	⊙	⊙
BLOWOFF ASSEMBLY OR FLUSHING ASSEMBLY	⊙	⊙
AIR RELEASE VALVE	⊙	⊙
REDUCER	⊙	⊙
TEE	⊙	⊙
PLUG	⊙	⊙
PLUG ON TEE	⊙	⊙
PLUG ON CROSS	⊙	⊙
CROSSES	⊙	⊙
SERVICE LINES	— w/s —	- - - w/s - - -
CONNECTIONS	⊙	⊙
CURB STOP	⊙	⊙
METERS	⊙	⊙
DRINKING WATER SAMPLING STATION	⊙	⊙
EASEMENTS	[]	[]
OTHER UTILITIES (UNDERGROUND UNLESS INDICATED OTHERWISE)		
CABLE TV	— CTV —	- - - CTV - - -
ELECTRIC	— UGP/OHP —	- - - UGP/OHP - - -
GAS	— G —	- - - G - - -
MANHOLE	⊙	⊙
SANITARY SEWER	— SAN —	- - - SAN - - -
STORM SEWER	— ST —	- - - ST - - -
TELEPHONE	— TEL —	- - - TEL - - -
POWER POLE	⊙	⊙
GAS METER	⊙	⊙
TEST BORINGS		
LOCATION	⊙	⊙
REFUSAL	⊙	⊙
NO REFUSAL	⊙	⊙
MISCELLANEOUS		
TREE TO BE REMOVED	⊙	⊙
TREE TO BE SAVED	⊙	⊙
PROPOSED STREET	[]	[]
PROPOSED SIDEWALK	[]	[]
PROPOSED RIP-RAP	[]	[]
PROPOSED STORM SEWER	[]	[]
PROPOSED EASEMENT	[]	[]
EXISTING CONTOURS	— 904 —	— 905 —



ANDERSON'S ESTATES
WATERMAIN EXTENSION PLANS
 33475 W 85TH ST
 DE SOTO, KS 66018

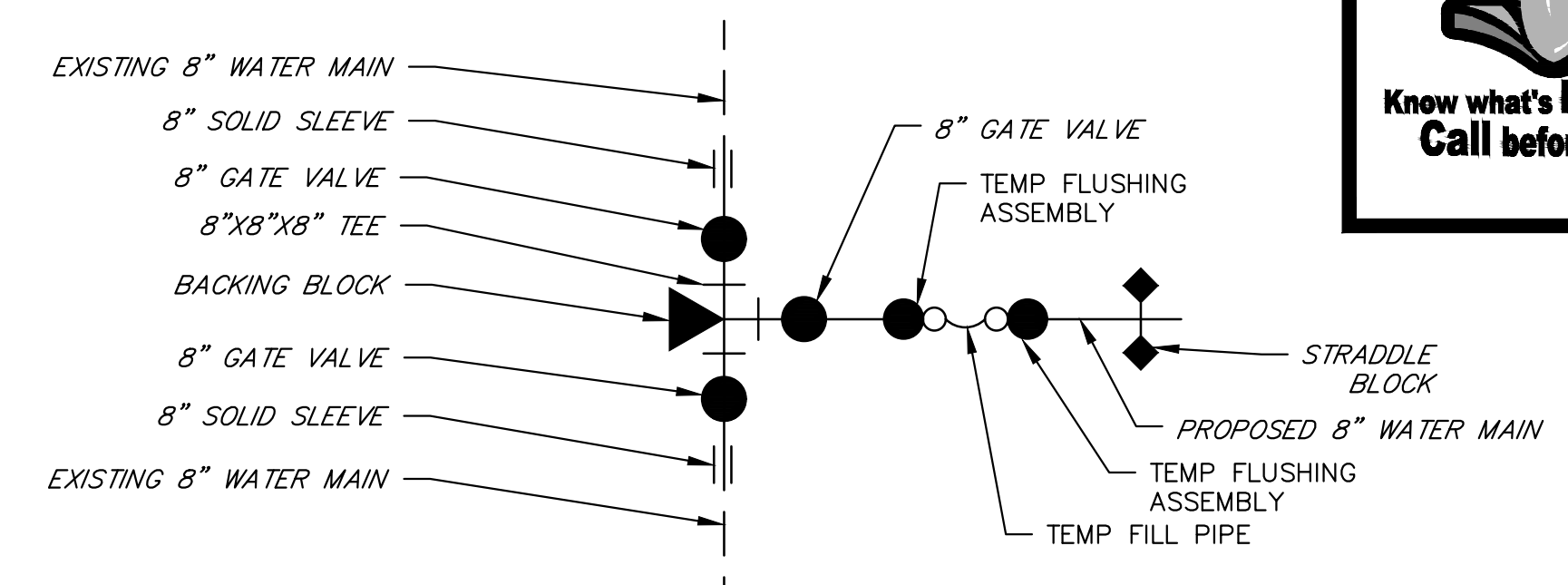
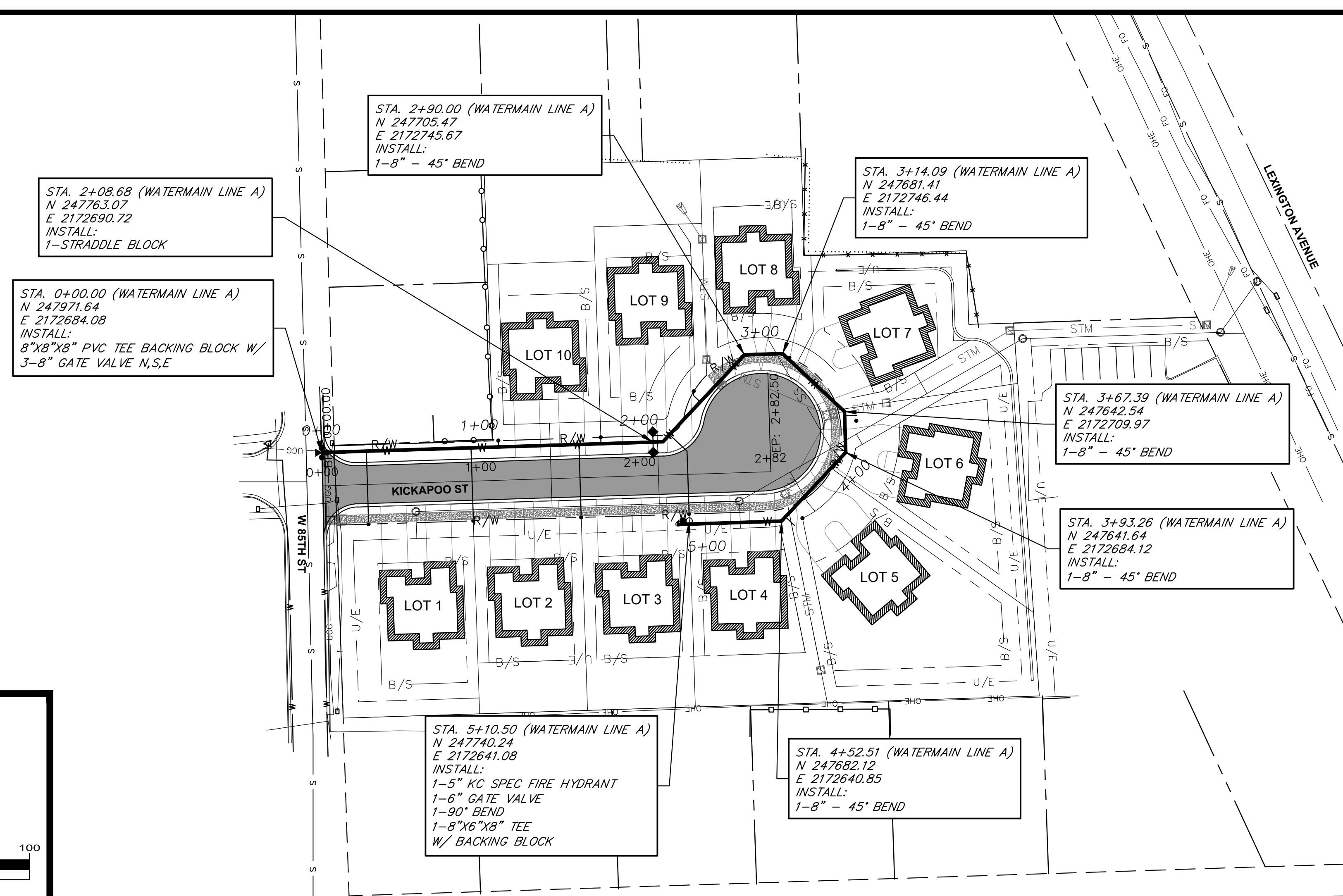
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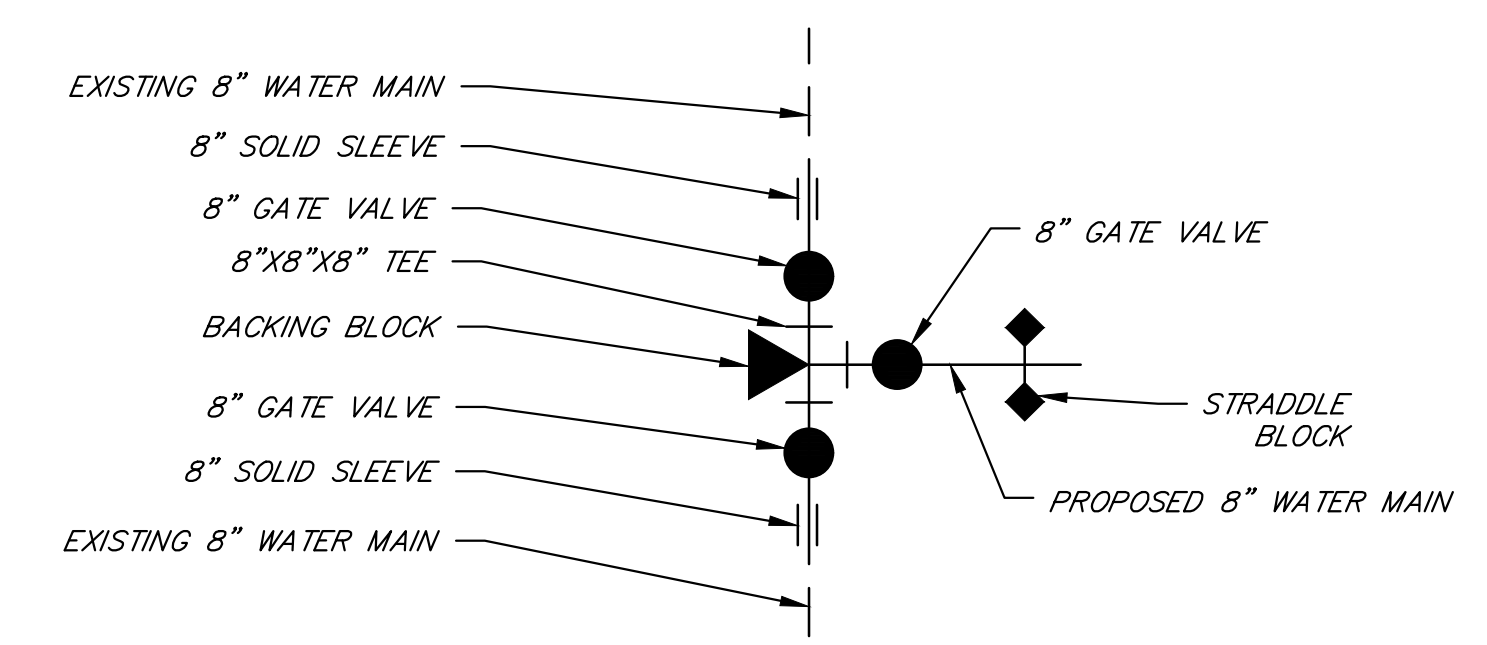
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GENERAL LAYOUT
C501

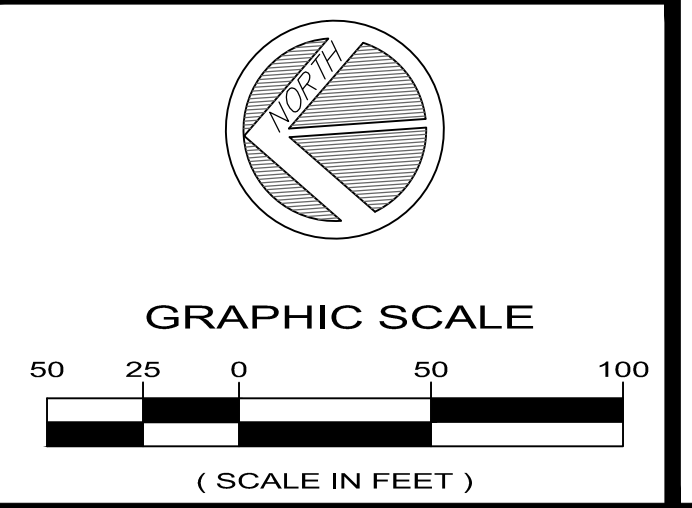
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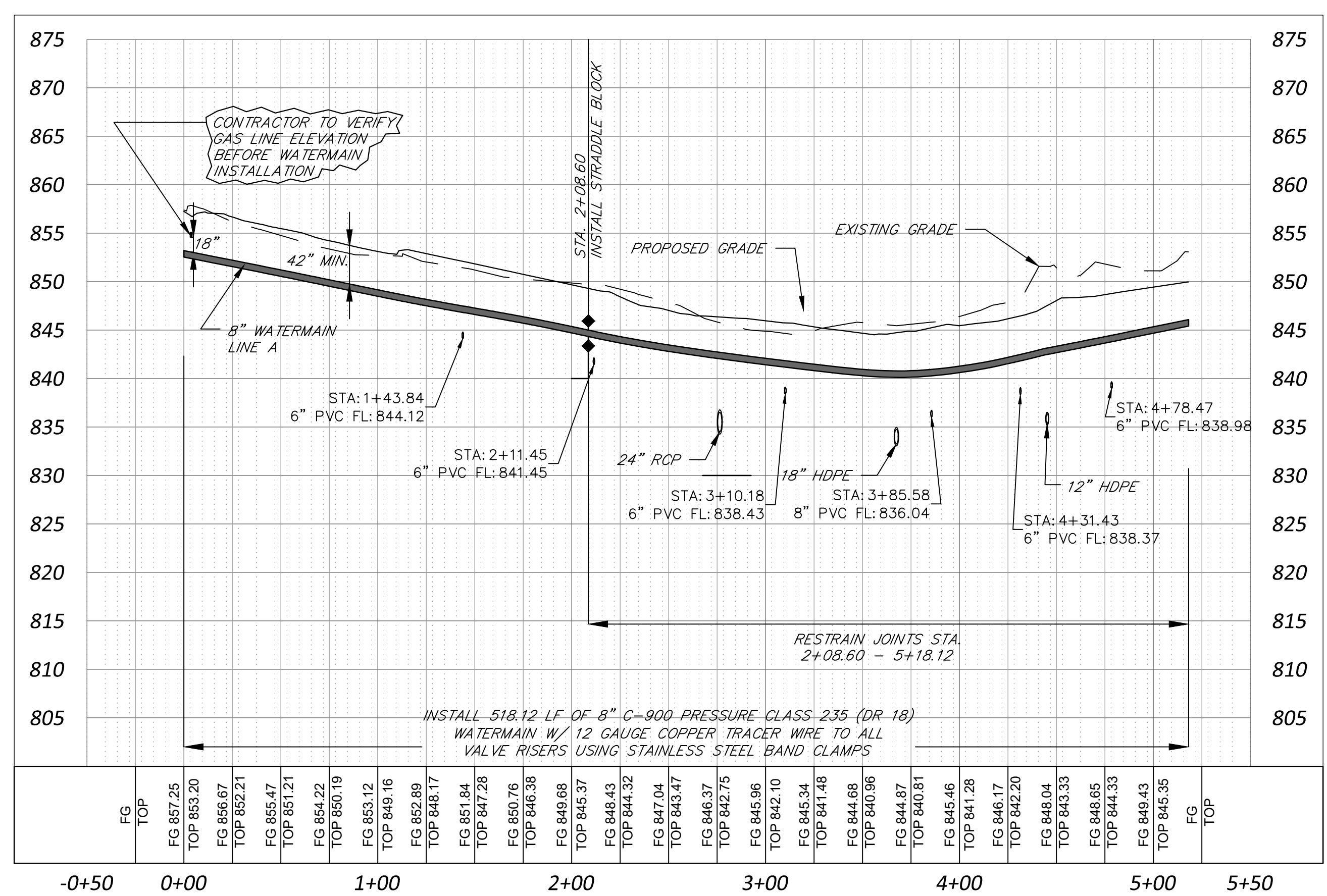
W 85TH ST AND KICKAPOO ST INTERSECTION
 TEMPORARY CONNECTION DETAIL



W 85TH ST AND KICKAPOO ST INTERSECTION
 PERMANENT CONNECTION DETAIL

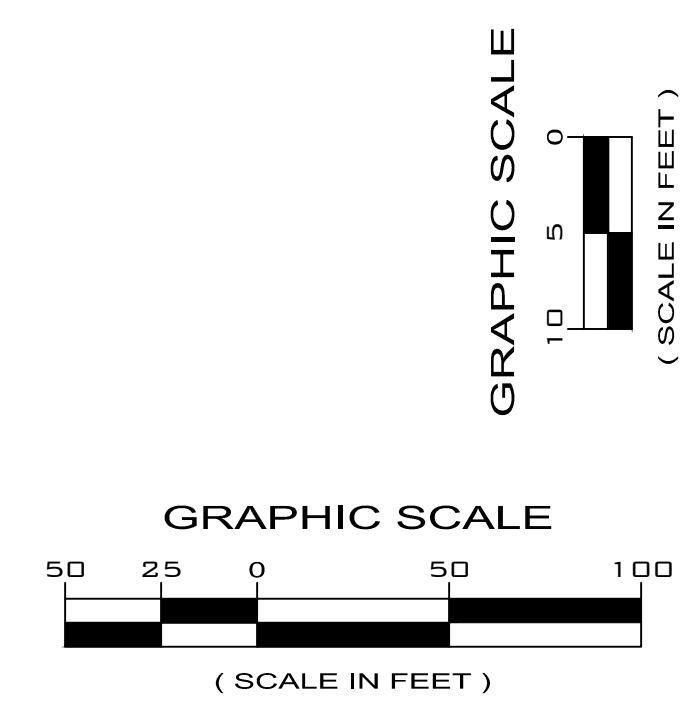


WATERMAIN LINE A PROFILE



NOTE: ALL WATER MAINS TO BE INSTALLED IN TRENCH CONDITIONS. ALL FILL SHALL BE PLACED AND COMPACTED PRIOR TO WATER MAIN INSTALLATION.

STA.	DESCRIPTION	FL	CLEARANCE (ft)	MINIMUM CLEARANCE (ft)
0+03.74	GAS MAIN	VERIFY	1.5	1.5
1+43.84	6" SAN SERVICE BLDG 10	844.12	2.02	2
2+11.45	6" SAN SERVICE BLDG 9	841.45	2.07	2
2+76.38	24" STM RCP	834.52	5.29	1.5
3+10.18	6" SAN SERVICE BLDG 8	838.43	2.05	2
3+67.46	18" STM HDPE	833.27	5.15	1.5
3+85.58	8" SAN MAIN	836.04	3.55	2
4+31.43	6" SAN SERVICE BLDG 5	838.37	2.77	2
4+45.25	12" STM HDPE	835.37	5.96	1.5
4+78.47	6" SAN SERVICE BLDG 4	838.98	4.12	2



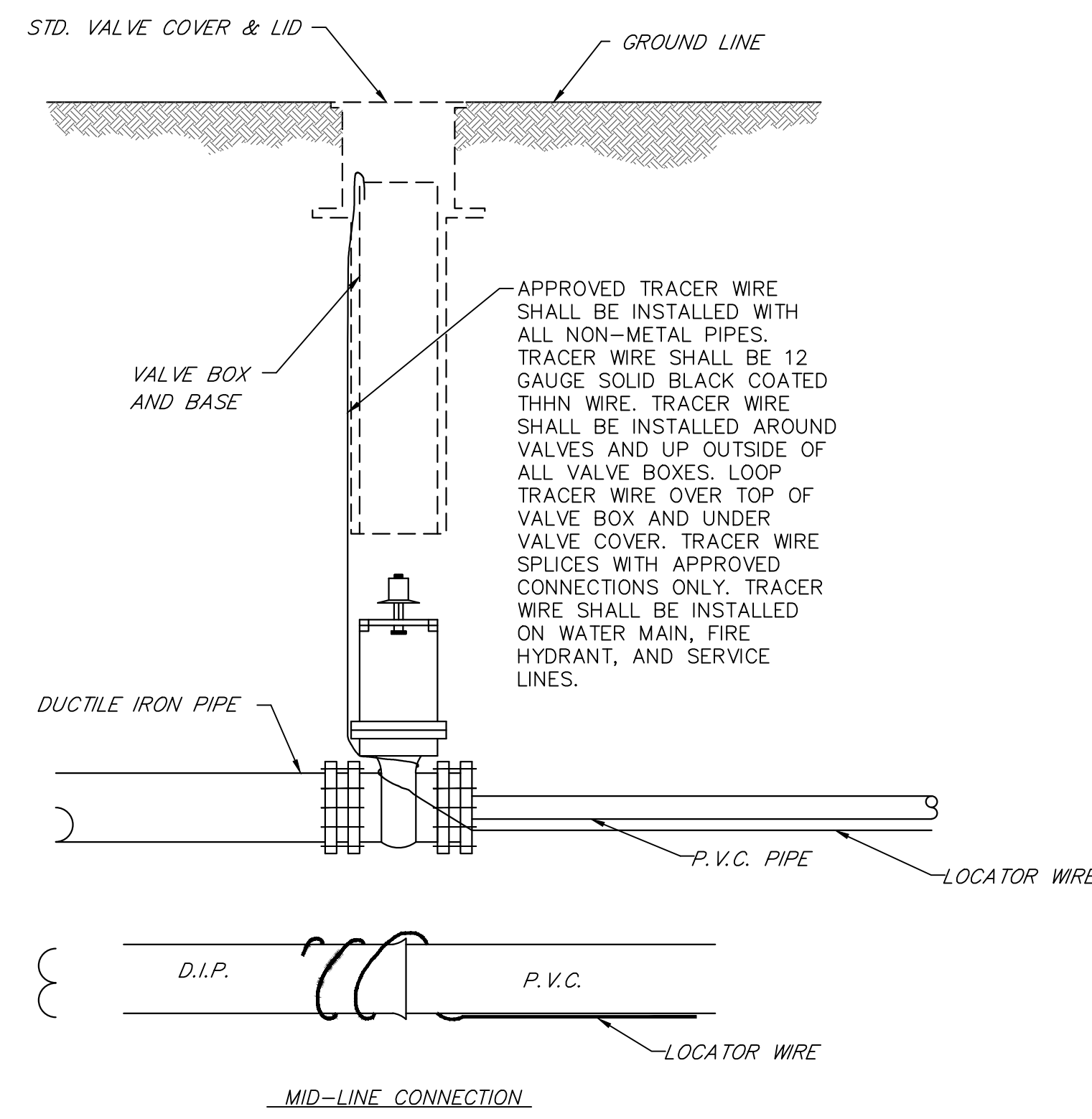
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ANDERSON'S ESTATES
 WATERMAIN EXTENSION PLANS
 33475 W 85TH ST
 DE SOTO, KS 66018

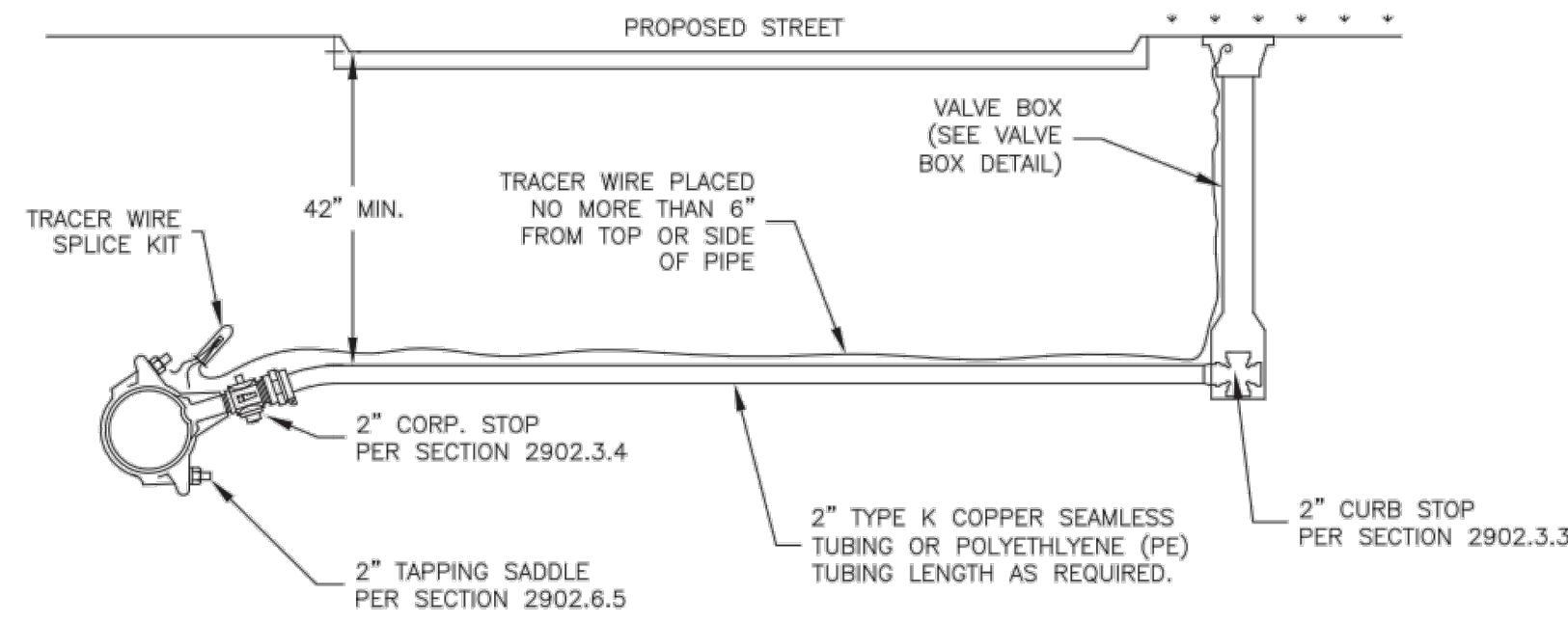
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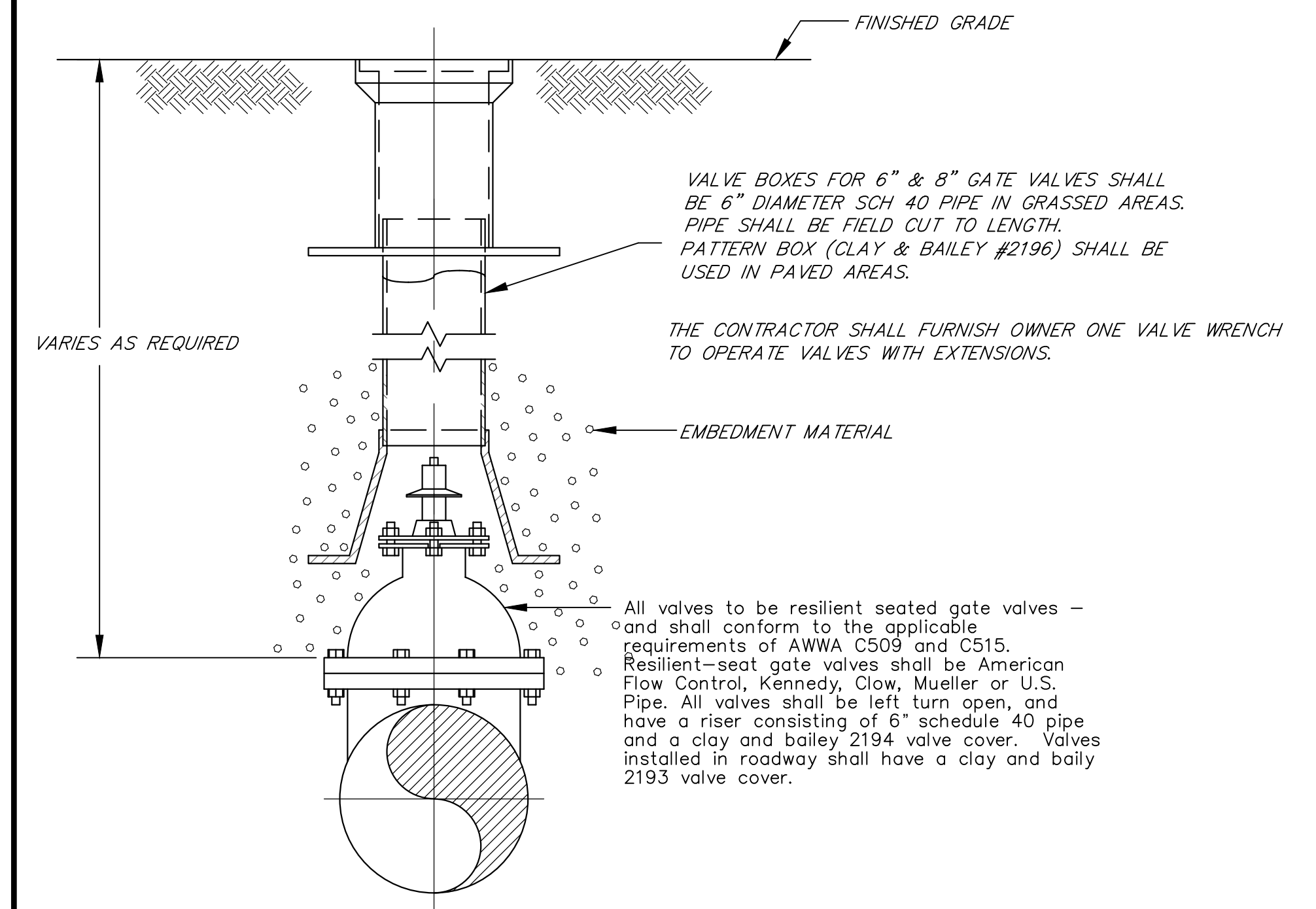
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LOCATOR WIRE DETAIL

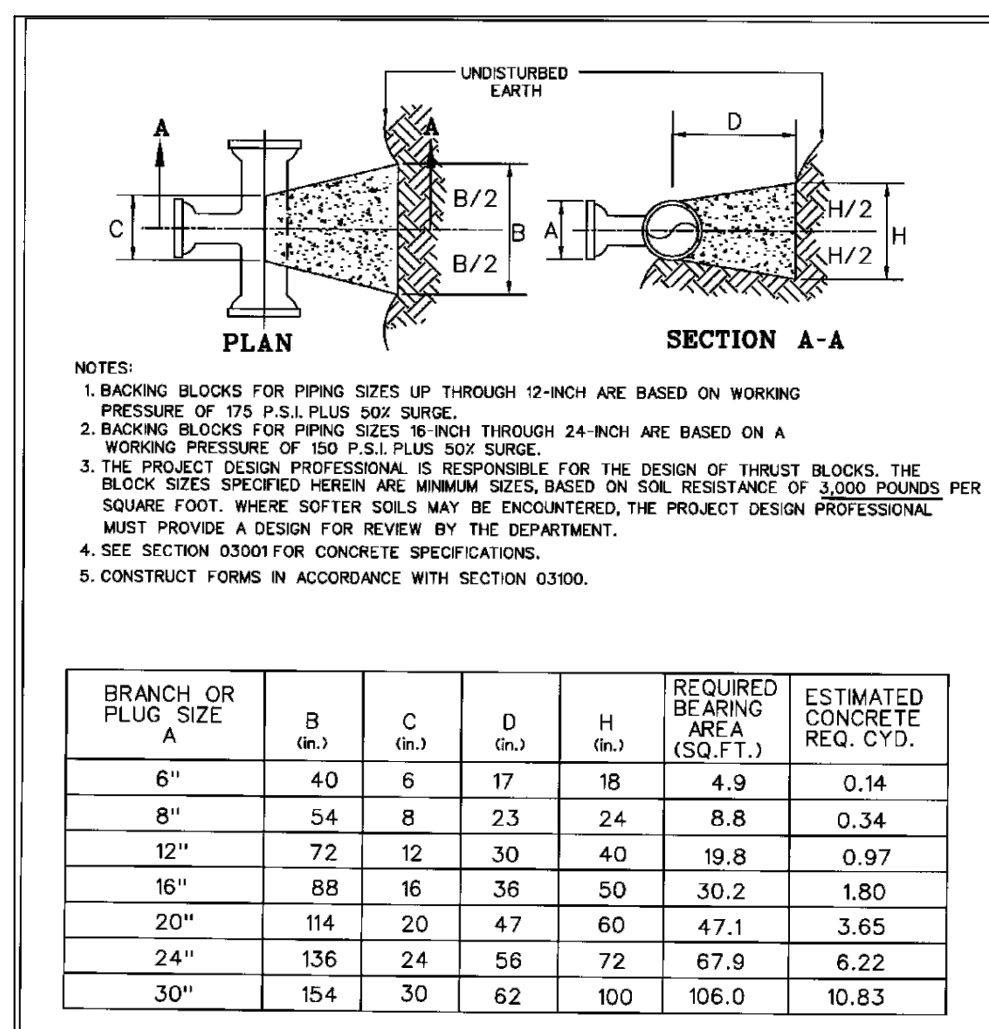


Typical Water Line Service from Water Main to Curb Stop



TYPICAL VALVE BOX DETAIL

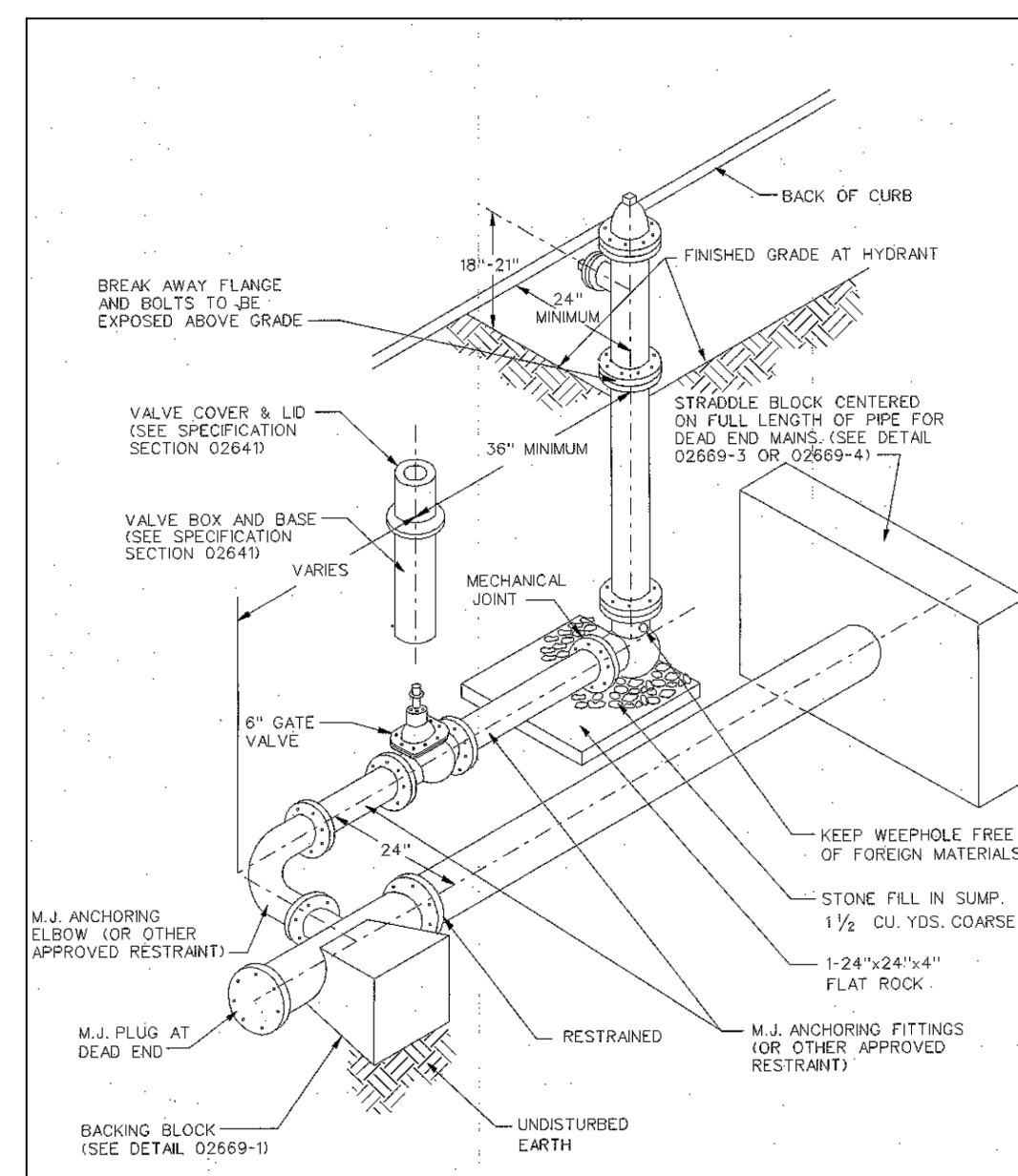
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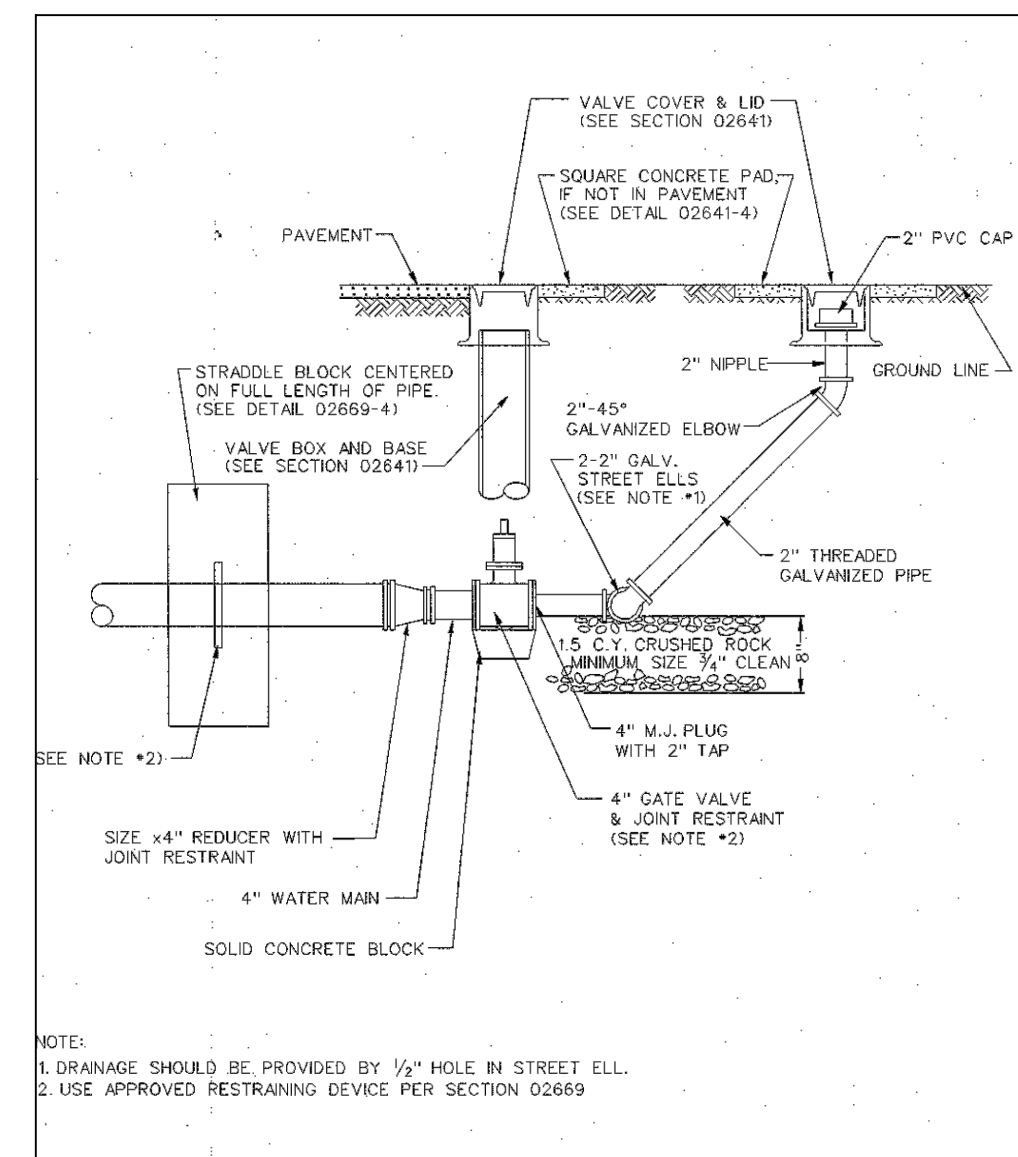
NOTES:
 1. BACKING BLOCKS FOR PIPING SIZES UP THROUGH 12-INCH ARE BASED ON WORKING PRESSURE OF 175 P.S.I. PLUS 50% SURGE.
 2. BACKING BLOCKS FOR PIPING SIZES 16-INCH THROUGH 24-INCH ARE BASED ON A WORKING PRESSURE OF 150 P.S.I. PLUS 50% SURGE.
 3. THE PROJECT DESIGN PROFESSIONAL IS RESPONSIBLE FOR THE DESIGN OF INVERT BLOCKS. THE BLOCK SIZES SPECIFIED HEREIN ARE MINIMUM SIZES BASED ON SOIL RESISTANCE OF 3,000 POUNDS PER SQUARE FOOT. WHERE SOFTER SOILS MAY BE ENCOUNTERED, THE PROJECT DESIGN PROFESSIONAL MUST PROVIDE A DESIGN FOR REVIEW BY THE DEPARTMENT.
 4. SEE SECTION 03001 FOR CONCRETE SPECIFICATIONS.
 5. CONSTRUCT FORMS IN ACCORDANCE WITH SECTION 03300.

BRANCH OR PLUG SIZE A	B (in.)	C (in.)	D (in.)	H (in.)	REQUIRED BEARING AREA (SQ. FT.)	ESTIMATED CONCRETE REQ. CYD.
6"	40	6	17	18	4.9	0.14
8"	54	8	23	24	8.8	0.34
12"	72	12	30	40	19.8	0.97
16"	88	16	36	50	30.2	1.80
20"	114	20	47	60	47.1	3.65
24"	136	24	56	72	67.9	6.22
30"	154	30	62	100	106.0	10.83

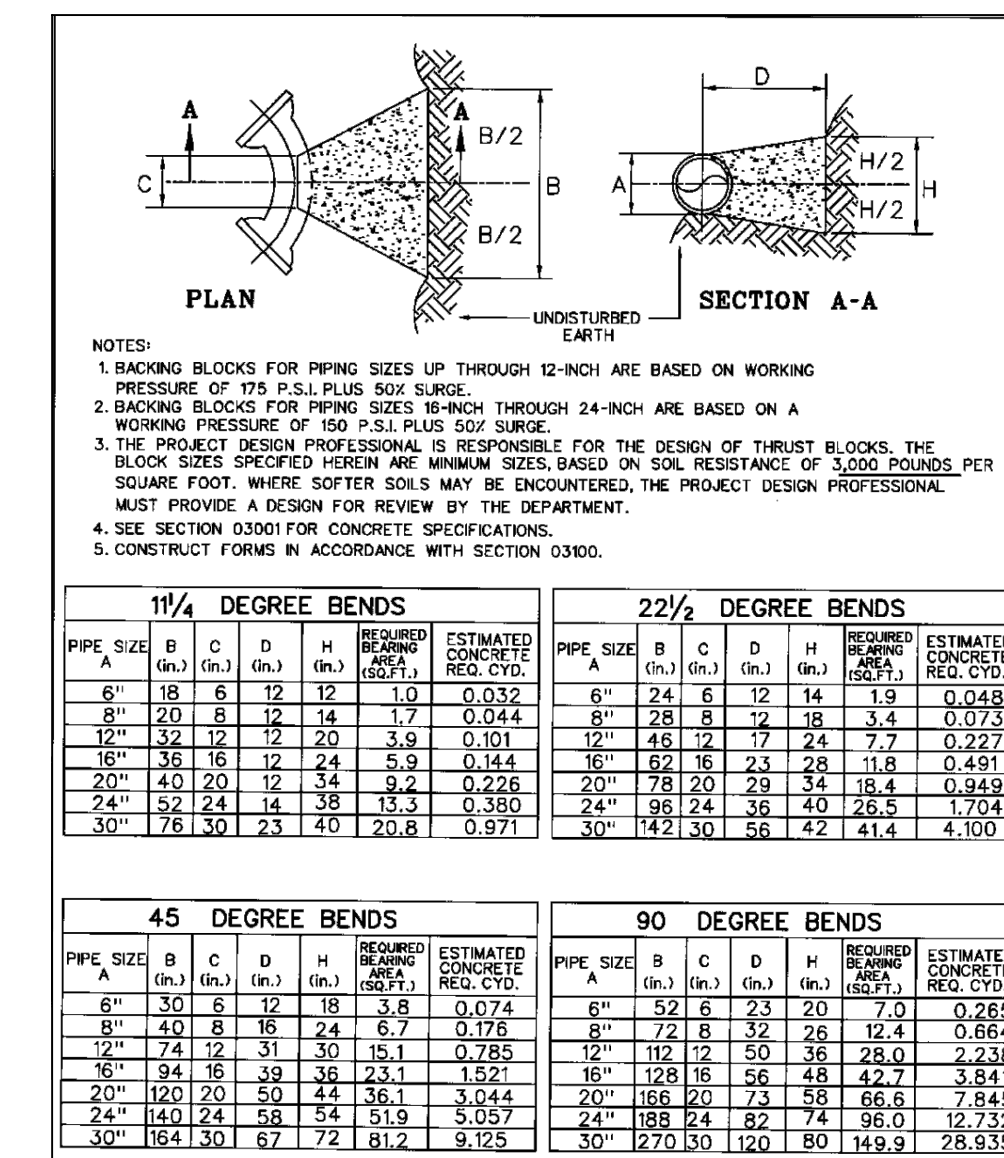
BACKING BLOCK FOR TEES & PLUGS DETAIL



TYPICAL HYDRANT WITH 90 DEGREE BEND DETAIL



TYPICAL FLUSHING ASSEMBLY - 12" MAINS AND SMALLER



BACKING BLOCK FOR BENDS DETAIL

1 1/4 DEGREE BENDS							2 1/2 DEGREE BENDS						
PIPE SIZE A	B	C	D	H	REQUIRED BEARING AREA (SQ. FT.)	ESTIMATED CONCRETE REQ. CYD.	PIPE SIZE A	B	C	D	H	REQUIRED BEARING AREA (SQ. FT.)	ESTIMATED CONCRETE REQ. CYD.
6"	15	8	12	12	1.0	0.032	6"	24	6	12	14	1.9	0.048
8"	20	8	12	12	1.7	0.044	8"	28	8	12	18	3.4	0.073
12"	32	12	20	20	3.9	0.101	12"	46	12	18	24	7.7	0.227
16"	38	16	24	24	5.9	0.144	16"	52	16	24	28	11.8	0.451
20"	40	20	34	34	9.2	0.226	20"	73	20	34	34	18.4	0.969
24"	52	24	44	44	13.3	0.360	24"	96	24	44	40	26.5	1.704
30"	76	30	62	62	20.8	0.971	30"	142	30	62	42	41.4	4.100

45 DEGREE BENDS							90 DEGREE BENDS						
PIPE SIZE A	B	C	D	H	REQUIRED BEARING AREA (SQ. FT.)	ESTIMATED CONCRETE REQ. CYD.	PIPE SIZE A	B	C	D	H	REQUIRED BEARING AREA (SQ. FT.)	ESTIMATED CONCRETE REQ. CYD.
6"	30	6	12	18	3.8	0.174	6"	52	6	20	20	7.0	0.265
8"	40	8	16	24	6.0	0.274	8"	72	8	28	28	15.4	0.664
12"	74	12	31	30	15.1	0.785	12"	112	12	50	36	28.0	2.338
16"	94	16	38	33	15.2	1.521	16"	128	16	56	48	42.7	3.811
20"	120	20	50	44	36.1	3.044	20"	168	20	73	68	66.6	7.845
24"	140	24	68	54	51.9	3.557	24"	198	24	82	74	96.0	12.732
30"	164	30	87	72	81.4	9.162	30"	270	30	100	80	148.9	26.935

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