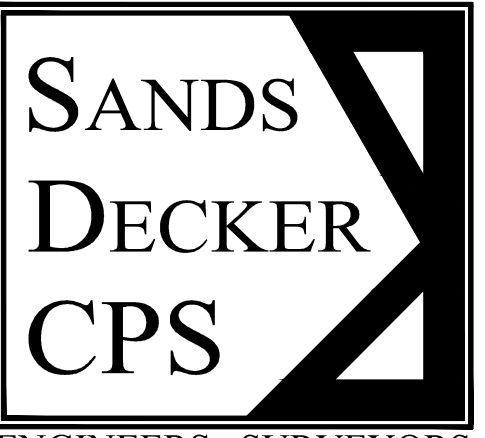


MONROE TOWNSHIP, MIAMI COUNTY, OHIO MONROE TOWNSHIP WATER & SEWER DISTRICT COUNTRY ESTATES EAST WATER LINE IMPROVEMENTS



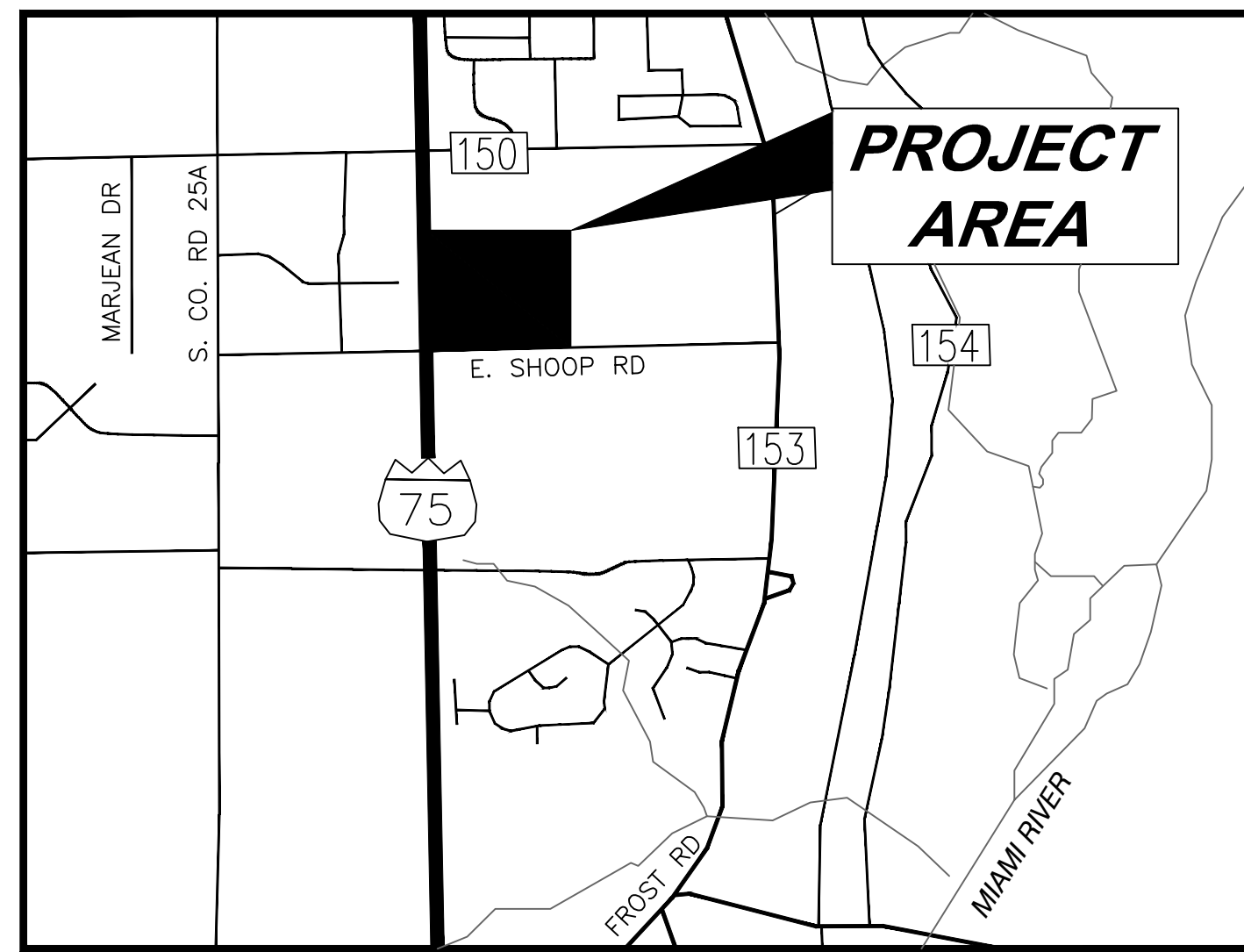
ENGINEERS • SURVEYORS

128 EAST MAIN ST
PO BOX 188
LOGAN, OH 43138
740-385-2140

1495 OLD HENDERSON RD
COLUMBUS, OH 43220
614-459-6992

507 MAIN STREET, SUITE 203
ZANESVILLE, OH 43701
740-450-1640

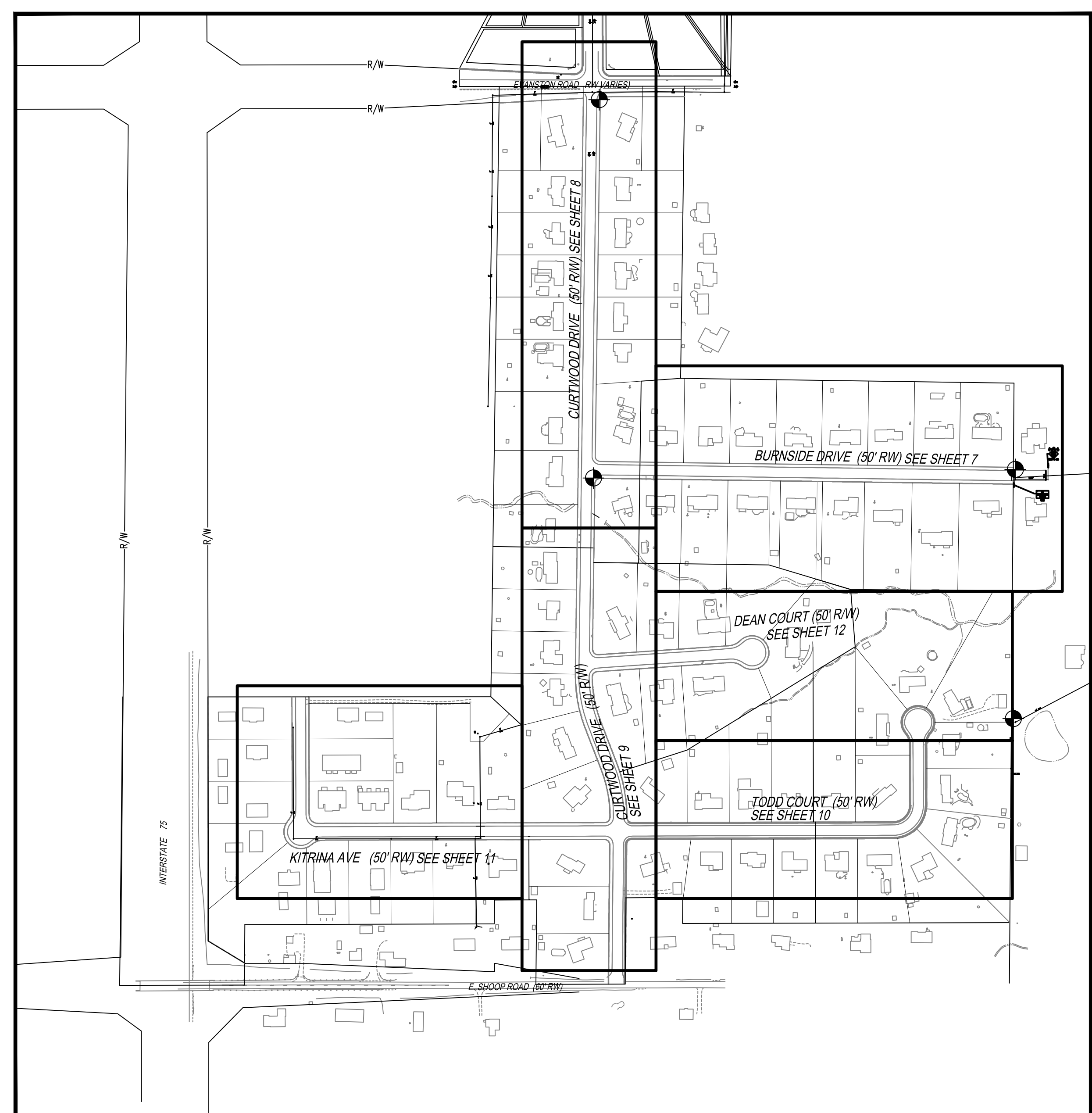
FAX: 614-459-6987
TOLL FREE: 866-277-0600



LOCATION MAP
NOT TO SCALE

INDEX OF SHEETS:

- 1.....TITLE SHEET
- 2.....GENERAL NOTES
- 3.....GENERAL NOTES
- 4.....MISC. DETAILS
- 5.....MISC. DETAILS & SUMMARY OF ESTIMATED QUANTITIES
- 6.....MISC. DETAILS
PLAN & PROFILE
- 7.....BURNSIDE STA 0+00 TO 14+00
- 8.....CURTWOOD DRIVE STA 0+00 TO 14+25
- 9.....CURTWOOD DRIVE STA 14+25 TO 21+93 &
STA 0+00 TO 3+28
- 10.....TODD COURT/KITRINA AVE STA 0+00 TO 14+75
- 11.....KITRINA AVE STA 14+75 TO 26+33
- 12.....TODD COURT STA 0+00 TO 1+80 &
DEAN COURT STA 0+00 TO 5+22



INDEX MAP
1" = 250'

BENCH MARKS

- BM 1
ELEVATION 877.56
EAST BOLT OF TOP FLANGE OF FIRE HYDRANT LOCATED APPROXIMATELY 230 FEET EAST OF THE CUL DE SAC OF TODD COURT.
- BM 2
ELEVATION 874.80
WEST BOLT OF TOP FLANGE OF FIRE HYDRANT ON THE NORTH SIDE OF BURNSIDE DRIVE APPROXIMATELY 1,200 FEET EAST OF CURTWOOD DRIVE
- BM 3
ELEVATION 884.73
MAGNOLIA IN TOP OF CURB SOUTHEAST CORNER OF THE INTERSECTION OF CURTWOOD DRIVE AND BURNSIDE DRIVE
- BM 4
ELEVATION 894.17
CHISELED X IN THE NORTH BOLT OF THE TOP FLANGE OF THE FIRE HYDRANT AT THE SOUTHEAST CORNER OF THE INTERSECTION OF CURTWOOD DRIVE AND EVANSTON ROAD

OWNER

MONROE TOWNSHIP WATER & SEWER DISTRICT
4 E. MAIN STREET
TIPP CITY, OH 45371

MONROE TOWNSHIP WATER & SEWER DISTRICT BOARD

- | | |
|-------------------------|----------------|
| WILLIAM RODENBERG | PRESIDENT |
| DALE VOISARD | VICE PRESIDENT |
| DAVID DEXTER | SECRETARY |
| RICHARD MAINS | TREASURER |
| JAMES FLESHER | BOARD MEMBER |

MONROE TOWNSHIP REPRESENTATIVE

RONALD D. THUMA TRUSTEE

WATER & SEWER DISTRICT OFFICIALS APPROVALS

THE SIGNATURES ON THIS PLAN SIGNIFY ONLY CONCURRENCE WITH THE GENERAL PURPOSES AND LOCATION OF THE PROPOSED IMPROVEMENT. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL ENGINEER WHO PREPARED AND CERTIFIED THESE PLANS.

William Rodenberg

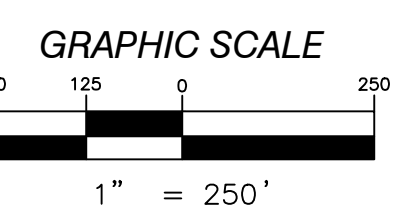
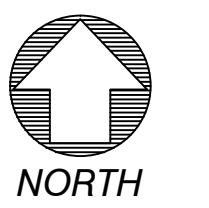
ACCEPTING AUTHORITY SIGNATURES EPA

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Registered Engineer _____ Date _____



1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)



**COUNTRY ESTATES EAST
WATER IMPROVEMENTS**

- | | |
|----------|-------------|
| 02-09-15 | PRELIMINARY |
| 08-07-15 | BACKCHECK |
| 02-26-16 | BACKCHECK 2 |
| 03-30-16 | BACKCHECK 3 |
| 04-29-16 | BACKCHECK 4 |
| 05-03-16 | FINAL |
| 09-16-16 | BID SET |

TITLE SHEET

1

SDPCS PROJECT NO. 2772

WATER LINE: ALL WATER PIPE, FITTINGS, & METHODS OF CONSTRUCTION & WORKMANSHIP SHALL CONFORM TO THE CURRENT REQUIREMENTS OF MONROE TOWNSHIP WATER AND SEWER DISTRICT (MTWSD), TIPP CITY, & OHIO DEPARTMENT OF TRANSPORTATION INCLUDING ALL SUPPLEMENTS THERETO, IN FORCE ON THE DATE THE CONSTRUCTION DRAWINGS ARE APPROVED BY ALL APPROVING AGENCIES, UNLESS THE REQUIREMENTS OF SUCH SPECIFICATIONS ARE MODIFIED BY THE FOLLOWING SPECIFICATIONS OR BY THE CONSTRUCTION DETAILS SET FORTH HEREIN.

MATERIALS: THE WATER LINE & ASSOCIATED MATERIALS & EQUIPMENT SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS & SPECIFIED AS FOLLOWS:

(1) CLASS 53 DOMESTIC DUCTILE IRON PIPE DESIGNED IN ACCORDANCE WITH ANSI/AWWA C150/A21.50 FOR A MINIMUM 150 PSI RATED WORKING PRESSURE PLUS A 100PSI MINIMUM SURGE ALLOWANCE OR A TWO TO ONE FACTOR OF SAFETY BASED ON THE SUM OF THE PROJECT WORKING PRESSURE PLUS SURGE PRESSURE.

PIPE SHALL HAVE STANDARD ASPHALTIC COATING ON THE EXTERIOR. CLASS 53 DOMESTIC DUCTILE IRON PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI/AWWA C151/A21.51. EACH PIPE SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST OF AT LEAST 500 PSI AT THE POINT OF MANUFACTURE.

PIPE SHALL ALSO HAVE A CEMENT MORTAR LINING IN ACCORDANCE WITH ANSI/AWWA C104/A21.4.

THE CLASS OR NOMINAL THICKNESS, NET WEIGHT WITHOUT LINING & CASTING PERIOD SHALL BE CLEARLY MARKED ON EACH LENGTH OF PIPE. ADDITIONALLY, THE MANUFACTURER'S MARK, COUNTRY WHERE CAST, YEAR IN WHICH THE PIPE WAS PRODUCED & THE LETTERS "DI" OR "DUCTILE" SHALL BE CLEARLY CAST OR STAMPED ON THE PIPE.

(2) RESERVED.

(3) UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS, ALL PIPE SHALL BE FURNISHED WITH PUSH-ON TYPE JOINTS, SUCH AS TYTON OR FASTITE. JOINTS SHALL BE IN ACCORDANCE WITH ANSI/AWWA C111/A21.11 & BE FURNISHED COMPLETE WITH ALL NECESSARY ACCESSORIES.

(4) FITTINGS SHALL BE DOMESTIC ONLY DUCTILE IRON CONFORMING TO EITHER ANSI/AWWA C110/A21.10 OR ANSI/AWWA C153/A21.53. FITTINGS SHALL HAVE A STANDARD ASPHALTIC COATING ON THE EXTERIOR. FITTINGS SHALL ALSO HAVE A CEMENT MORTAR LINING ON THE INTERIOR IN ACCORDANCE WITH ANSI/AWWA C104/A21.4.

UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS, FITTINGS & ACCESSORIES SHALL BE FURNISHED WITH MECHANICAL TYPE JOINTS IN ACCORDANCE WITH ANSI/AWWA C111/A21.11 & RESTRAINED USING FORD WEDGE ACTION RESTRAINING GLANDS OR APPROVED EQUIVALENT.

(5) RESERVED.

(6) GATE VALVES SHALL HAVE A NON-RISING STEM, LEFT HAND OPEN (COUNTER-CLOCKWISE) WITH DOUBLE O-RING STEM SEALS. VALVES SHALL HAVE END JOINTS CONFORMING TO AWWA C111. VALVES SHALL PASS A SEAT TEST AT 200 PSI WITHOUT LEAKAGE. THE VALVE SHALL PASS A SHELL TEST WITH THE VALVE IN THE OPEN POSITION AT 400 PSI WITHOUT LEAKAGE THROUGH METAL, FLANGED JOINTS OR STEM SEALS. ADDITIONALLY, THE VALVES SHALL BE RESILIENT WEDGE L515 DOMESTIC, FOLLOWING:

(A) AWWA C500 HAVING A DOUBLE REVOLVING PARALLEL SEAT WITH INDEPENDENT WEDGING ACTION TO SPREAD THE TWO DISCS AGAINST THE SEATS. SEATS SHALL BE REPLACEABLE THROUGH THE TOP OF THE VALVE. DISCS SHALL BE FREE TO ROTATE 360 DEGREES. INTERCHANGEABLE & REPLACEABLE THROUGH THE TOP OF THE VALVE. WEDGING SURFACE SHALL BE PROTECTED BY BRONZE, STAINLESS STEEL OR OTHER CORROSION RESISTANT MATERIAL SUITABLE FOR USE IN THE VALVE. ALL INTERNAL & EXTERNAL FERROUS SURFACES SHALL BE COATED WITH ASPHALTIC VARNISH PER MILITARY SPECIFICATION MIL C-450 OR APPROVED EQUIVALENT. BONNET BOLTS SHALL BE STAINLESS STEEL.

(B) AWWA C509 HAVING A SEALING MECHANISM THAT PROVIDES ZERO LEAKAGE AT THE WATER WORKING PRESSURE AGAINST LINE FLOW FROM EITHER DIRECTION. NO EXPOSED METAL SEAMS, EDGES, SCREWS, ETC. SHALL BE WITHIN THE WATERWAY IN THE CLOSED POSITION (ALL SURFACES SHALL BE RUBBER COVERED). THE RUBBER COVERED GATE SHALL NOT BE WEDGED IN A POCKET NOR SLIDE ACROSS THE SEATING SURFACE TO OBTAIN TIGHT CLOSURE. ALL INTERNAL & EXTERNAL FERROUS SURFACES, INCLUDING THE INTERIOR OF THE GATE, BOLT HOLES & FLANGE FACES, SHALL BE COATED, PRIOR TO ASSEMBLY OF THE VALVE, WITH EPOXY HAVING A MINIMUM THICKNESS OF 8 MILS. THERE SHALL BE AN O-RING SEAL ABOVE THE STORM COLLAR & AN O-RING SEAL BELOW THE STEM COLLAR WITH THE AREA BETWEEN THE O-RING SEALS FILLED WITH LUBRICANT. THERE SHALL BE ANTI-FRICTION WASHERS AT THE STEM COLLAR. BONNET BOLTS SHALL BE STAINLESS STEEL.

UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS, VALVE BOXES IN PAVEMENT & BERM AREAS SHALL BE HEAVY DUTY, THREE-PIECE VALVE BOXES EQUIVALENT TO TIPP CITY STANDARD HEAVY DUTY VALVE BOX. REGULAR DUTY VALVE BOXES SHALL BE EQUIVALENT TO TIPP CITY REGULAR DUTY VALVE BOX.

(7) SERVICE LINES SHALL BE:
A) COPPER PIPE, TYPE K,
B) 1" DIAMETER FROM MAIN TO CURB STOP

(8) CORPORATION STOPS SHALL BE EQUIVALENT TO MUELLER B25008N 1-BALL OR FORD FB1000-4-NL.

(9) CURB STOPS SHALL BE EQUIVALENT TO FORD B44-444-NL OR MUELLER B25209N 1 BALL WITH BOXES EQUIVALENT TO BINGHAM & TAYLOR NO. 4901, SIZE 93E.

(10) FOR DUCTILE IRON PIPE - DIRECT TAP FOR 3/4" AND 1" TAPS.

(11) RESERVED.

(12) ALL JOINTS, FITTINGS, VALVES & APPURTENANCES SHALL BE FURNISHED WITH ALL DOMESTIC ACCESSORIES.

(13) RESERVED.

MINIMUM DEPTH: THE WATER LINE IS TO BE INSTALLED WITH A MINIMUM OF 4.5' OF COVER TO THE TOP OF THE WATER LINE FROM THE EXISTING OR PROPOSED GROUND OR FINISHED CURB GRADE.

HYDROSTATIC TESTS: A HYDROSTATIC TEST AS REQUIRED IN APPLICABLE SECTIONS OF AWWA C600 SHALL BE APPLIED TO THE WHOLE OR TO INDIVIDUALLY ISOLATED SECTIONS OF THE WATER LINES, WATER SERVICES, & FIRE HYDRANT LEADS AFTER THE TRENCH IS BACKFILLED. THE PRESSURE DURING THE TEST SHALL BE MAINTAINED AT 150 PSI, IN ANY SECTION BEING TESTED. THE DURATION OF EACH PRESSURE TEST SHALL BE AT LEAST 2 HOURS. THE OWNER, MONROE TOWNSHIP WATER AND SEWER DISTRICT, WILL FURNISH GAUGES FOR THE TEST, HOWEVER THE CONTRACTOR SHALL FURNISH ALL MATERIALS, MAKE ALL TAPS REQUIRED & FURNISH A PUMP, PIPING, ALL OTHER EQUIPMENT & ALL ASSISTANCE NECESSARY FOR CONDUCTING THE TESTS. BEFORE APPLYING THE SPECIFIED PRESSURE, ALL AIR SHALL BE EXPELLED FROM THE PIPE. TO ACCOMPLISH THIS, THE CONTRACTOR SHALL USE FIRE HYDRANTS TO ACCOMPLISH. TAPS SHALL BE MADE BY THE CONTRACTOR AT POINTS OF HIGHEST ELEVATION OR AS REQUIRED. TAPS SHALL BE 3/4" UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.

LEAKAGE SHALL BE DEFINED AS THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO THE NEWLY LAID PIPE, OR ANY VALVED SECTION THEREOF, TO MAINTAIN PRESSURE WITHIN 5 PSI OF THE SPECIFIED TEST PRESSURE AFTER THE AIR IN THE PIPELINE HAS BEEN EXPELLED & THE PIPE HAS BEEN FILLED WITH WATER. NO PIPE INSTALLATION WILL BE ACCEPTED UNTIL THIS LEAKAGE (EVALUATED ON A PRESSURE BASIS OF 150 PSI) IS LESS THAN 1.99 U.S. GALLONS PER HOUR PER 100 JOINTS OF 12" NOMINAL DIAMETER PIPE & CORRESPONDINGLY VARIED FOR OTHER SIZES OF PIPE AS PROVIDED IN AWWA SPECIFICATIONS. IF PRESSURE DROPS BELOW 150 PSI - TEST IS FAILED.

ANY TESTING PERFORMED AGAINST EXISTING VALVES SHALL BE AT THE CONTRACTOR'S RISK & IN STRICT COMPLIANCE WITH THE REQUIREMENTS OF THE ENGINEER. IF UNABLE TO ACHIEVE THE REQUIRED TEST RESULTS, THE CONTRACTOR SHALL DISCONNECT FROM THE EXISTING VALVE, PLUG THE LINE & RETEST UNTIL SATISFACTORY RESULTS ARE OBTAINED. ANY DAMAGE CAUSED TO EXISTING FACILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

DISINFECTION OF POTABLE WATER FACILITIES: THE COMPLETED POTABLE WATER FACILITIES SHALL BE DISINFECTED BY THE CONTRACTOR IN ACCORDANCE WITH APPLICABLE SECTIONS OF AWWA C651 (WATER MAINS, VALVES & FIRE HYDRANTS), C652 (STORAGE FACILITIES), C653 (WATER PLANTS) & C654 (WELLS). AT 50mg/l OF CL2 TO "BAKE". ALL LABOR, MATERIAL & EQUIPMENT REQUIRED FOR DISINFECTION & TESTING WILL BE FURNISHED & PAID FOR BY THE CONTRACTOR, INCLUDING DISINFECTION TAPS, BLOW-OFF TAPS, TAPPING VALVES, SUFFICIENT TUBING OR PIPE TO EXTEND OUTSIDE THE TRENCH & AN OPERABLE VALVE ABOVE GROUND. BLOW-OFFS WILL BE INSTALLED AT THE END OF ALL RUNS, 1' FROM EACH PLUG, & AT THE CONNECTION POINT WHERE CONNECTION TO A LIVE LINE IS MADE. AFTER ALL TESTS HAVE BEEN PASSED, THE CONTRACTOR SHALL REMOVE THE BLOW-OFF ASSEMBLY & LEAVE THE CORPORATION STOP IN THE OFF POSITION. BACTERIA TESTS SHALL BE TAKEN AT SET LOCATIONS AS DIRECTED BY THE OWNER. FAILURE OF ANY TEST WILL REQUIRE RETESTING OF THE SYSTEM ON THE SUPPLY SIDE OF THE TEST LOCATION. ALL TESTS ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE TIME OF THE TESTING & SECTION OF LINE OR FACILITY TO BE DISINFECTED SHALL BE APPROVED BY THE OWNER. THE CONTRACTOR SHALL, IN ACCORDANCE WITH 10 STATES STANDARDS, SECTION 7.0.18, DISINFECTION, COORDINATE TWO OR MORE SUCCESSIVE SETS OF SAMPLES AT 24 HOUR INTERVALS. THESE SAMPLES SHALL INDICATE MICROBIOLOGICALLY SATISFACTORY WATER BEFORE THE STORAGE FACILITY IS PLACED INTO OPERATION. THE CONTRACTOR SHALL, IN ACCORDANCE WITH 10 STATES STANDARDS, SECTION 7.0.19, PROVIDE APPROPRIATE SAMPLING TAPS TO FACILITATE COLLECTION OF WATER SAMPLES FOR BOTH BACTERIOLOGIC & CHEMICAL ANALYSIS. REPORTS TO BE COPIED TO TIPP CITY.

ONLY TIPP CITY EMPLOYEES TO OPERATE VALVES TO FILL LINE. IF FLUSHED TO SANITARY SEWER IT SHALL BE AT A RATE NOT TO EXCEED 25 GPM.

VALVE EXTENSIONS: IF THE TOP OF THE OPERATING NUT IS MORE THAN 36" BELOW FINISHED GRADE, AN EXTENSION STEM SHALL BE PROVIDED TO PLACE THE OPERATING WRENCH NUT BETWEEN 24" & 36" FROM FINISHED GRADE. COST OF EXTENSION ITEMS SHALL BE INCLUDED IN THE UNIT PRICE FOR THE VARIOUS VALVE TYPES & SIZES. OPERATING NUT SHALL BE OF STANDARD SIZE. ALL EXTENSIONS SHALL BE EQUIPPED WITH A RETAINING NUT OR SIMILAR METHOD SO EXTENSION SHALL NOT COME OFF.

WORKING PRESSURE: THIS PROJECT HAS BEEN DESIGNED SO THAT NORMAL WORKING PRESSURE WILL NOT BE LESS THAN 35 PSI.

BOOSTER PUMPS: INDIVIDUAL RESIDENTIAL BOOSTER PUMPS ARE PROHIBITED.

SPECIAL WATERLINE NOTES:

FIRE HYDRANT EXTENSIONS: IN THE EVENT THAT A FIRE HYDRANT EXTENSION IS REQUIRED TO PLACE THE HYDRANT AT THE ELEVATION SHOWN IN THE STANDARD DETAIL, THE EXTENSION SHALL BE FURNISHED & INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. IF MORE THAN ONE HYDRANT EXTENSION IS USED CENTERING SPIDER IS REQUIRED.

LONG WATER SERVICES CROSSING UNDER PAVED STREET SHALL BE INSTALLED USING TRENCHLESS TECHNOLOGY.

CONNECTING WATER LINES: THE CONNECTION OF EXISTING WATER LINES & SERVICES TO PROPOSED WATER LINES SHALL BE DONE IN A MANNER THAT WILL CAUSE A MINIMUM OF INCONVENIENCE TO THOSE WITH AFFECTED SERVICES. WORK CONCERNING THE DISCONNECTION & RECONNECTION OF EXISTING WATER LINES SHALL BE DONE BETWEEN THE HOURS OF 7:00 A.M. & 5:00 P.M., OR AS DIRECTED BY THE OWNER. NO SUCH WORK SHALL BEGIN UNTIL THE OWNER, THE LOCAL FIRE DEPARTMENT & THE RESIDENTS WHOSE SERVICES WILL BE AFFECTED ARE ALL NOTIFIED OF THE EXTENT, NATURE & TIME OF THE ANTICIPATED WORK, & THE METHOD & SCHEDULE OF SUCH WORK HAS BEEN APPROVED BY TIPP CITY & THE MONROE TOWNSHIP WATER & SEWER DISTRICT. WORK SHALL NOT AFFECT TIPP CITY RESIDENCE SERVICE.

EXISTING WATER LINE REPAIRS: IN THE EVENT AN EXISTING WATER LINE IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE TIPP CITY & THE MONROE TOWNSHIP WATER & SEWER DISTRICT & INITIATE & COMPLETE ALL REPAIRS TO THE DAMAGED WATER LINE AT HIS OWN EXPENSE. PRIOR TO BEGINNING WORK ON THE PROJECT, THE CONTRACTOR MUST PROVIDE PROOF TO TIPP CITY OF HAVING THE MATERIALS NECESSARY TO MAKE SAID REPAIRS ON THE SITE. ALL REPAIRS SHALL BE INSPECTED BY A CITY REPRESENTATIVE PRIOR TO BEING BACKFILLED BY THE CONTRACTOR. ALL REPAIRS MUST BE COMPLETED AS QUICKLY AS POSSIBLE BUT IN NO MORE THAN 8 HOURS. IF REPAIRS TAKE LONGER THAN 8 HOURS, THE CONTRACTOR IS REQUIRED TO PROVIDE BOTTLED WATER TO THE AFFECTED SYSTEM USERS UNTIL REPAIRS ARE COMPLETE. THE COST FOR WATER PERSONNEL RESPONDING TO THE PROBLEM SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR & SHALL BE CHARGED AGAINST HIM AT A RATE OF \$34 PER HOUR.

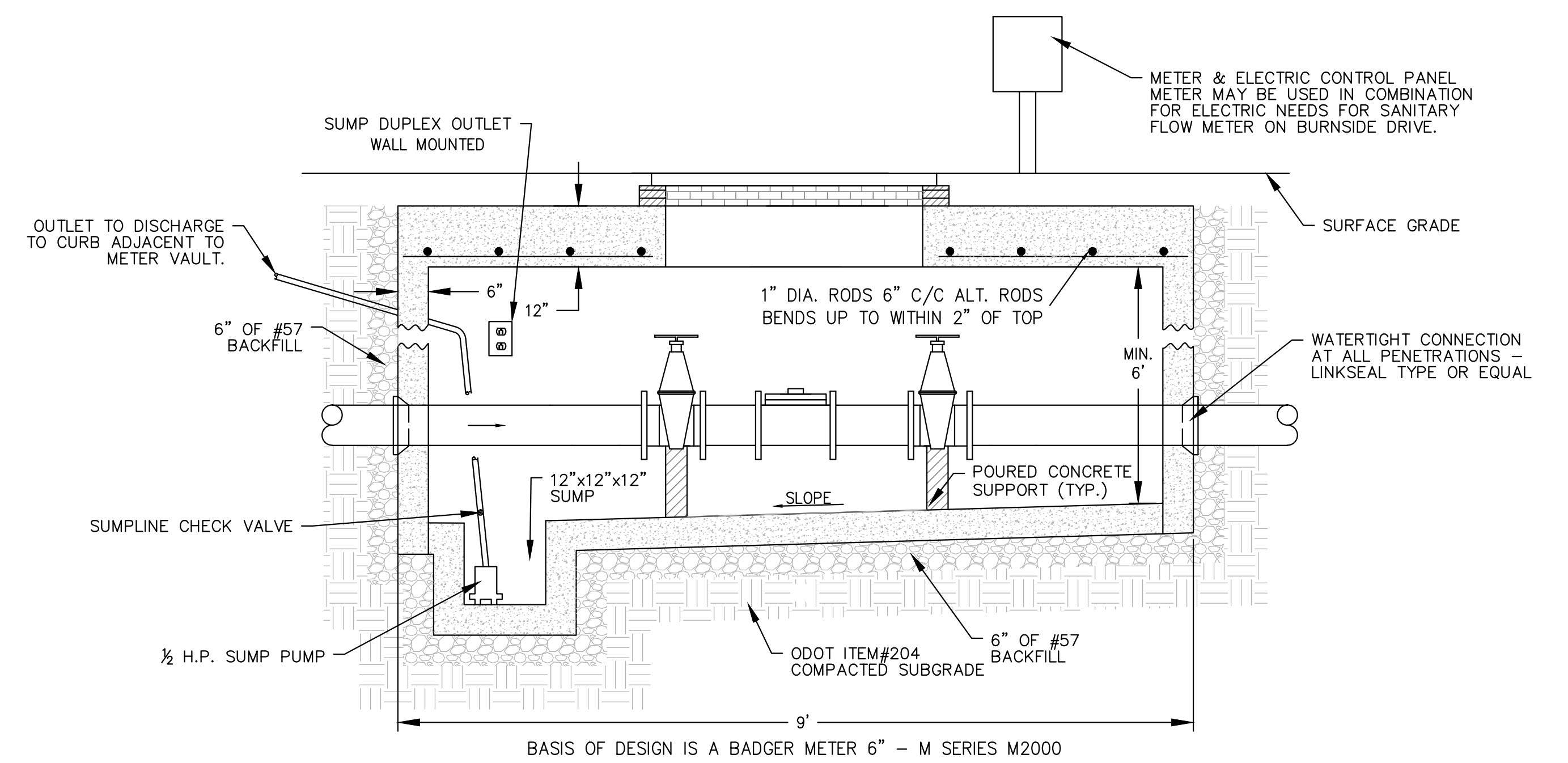
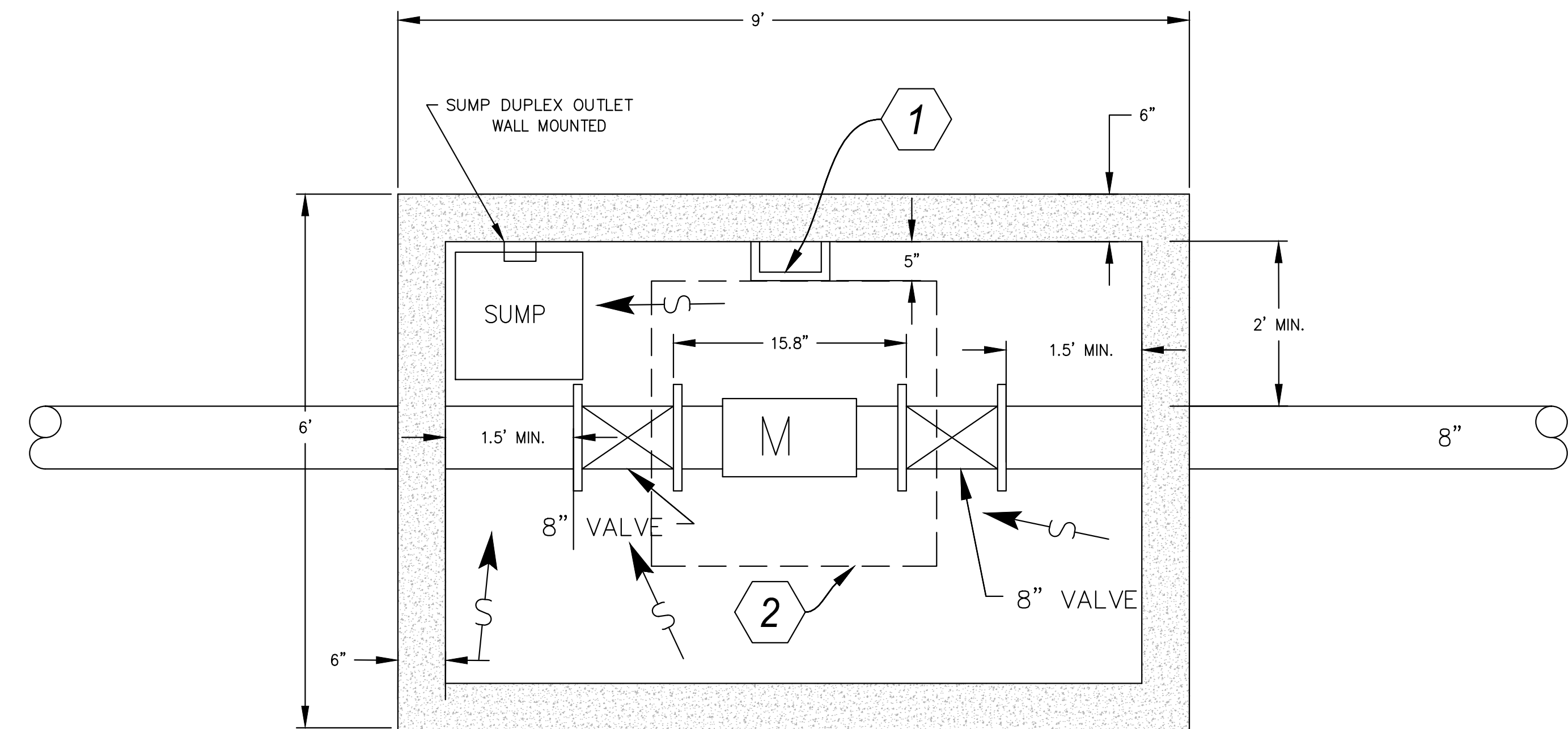
LOCATION POLES: THE CONTRACTOR SHALL FURNISH & PLACE, AS DIRECTED, APPROVED LOCATION POLES MADE OF 2"x2" LUMBER AT ALL VALVE BOXES & SERVICE BOXES. THE LOCATION POLES SHALL EXTEND ABOVE THE GROUND AT LEAST 3' FEET.

ANY HOME TAPPED INTO WATER MAIN WHO CHOOSES TO MAINTAIN THEIR WELL AS ACTIVE SHALL BE REQUIRED TO INSTALL AN ASSE 1013 BACKFLOW PREVENTOR.

TIPP CITY IS THE ONLY ENTITY PERMITTED TO OPERATE CITY OWNED VALVES.

WORK IN TIPP CITY RIGHT-OF-WAY: CONTRACTOR REGISTRATION IS REQUIRED FOR ALL WORK IN THE TIPP CITY RIGHT-OF-WAY. CONTACT TIPP CITY FOR APPLICATION PROCESS.

CONTRACTOR SHALL MAINTAIN CONSTRUCTION PLANS ONSITE WITH DETAILED AS-BUILT CONDITIONS. UPON COMPLETION OF CONSTRUCTION A SURVEY OF MANHOLE INVERTS SHALL BE PERFORMED AND A DOCUMENT OF GRADE CERTIFICATIONS BE PROVIDED TO THE DISTRICT AND TIPP CITY.



1. ACCESS STEPS SHALL BE ALUMINUM OR POLYPROPYLENE MEETING THE REQUIREMENTS OF ASTM C-478 AND SHALL BE INSTALLED IN A UNIFORM VERTICAL SPACING OF 16".

IF METER PIT IS POSITIONED IN YARD/GRASSED AREA:

2. ACCESS DOORS TO BE BILCO K-2 SINGLE LEAF, ALUMINUM, 4'-0" L X 4'-0" W ACCESS DOOR, OR EQUAL, GASKETED CENTERED OVER WATER METER AND CHECK VALVE ASSEMBLIES AND ALLOWING ACCESS TO ALL STEPS.

IF METER PIT IS POSITIONED IN A PAVED TRAFFIC AREA:

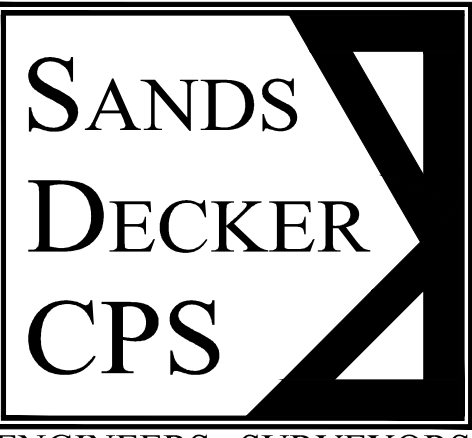
2. ACCESS DOORS TO BE EAST JORDAN EJ-8217 SINGLE HATCH, CAST IRON, 3'-0" X 3'-0" ACCESS DOOR, ASHTO H20 TRAFFIC LOADING, OR EQUAL, GASKETED CENTERED OVER WATER METER AND CHECK VALVE ASSEMBLIES AND ALLOWING ACCESS TO WALL STEPS.

STRUCTURE DESIGN SHALL MEET H-20 LOADING REQUIREMENTS.

*GROUNDING RINGS AND EXTERNAL GROUNDING ROD TO BE USED (PER TIPP CITY)

METER AND METER PIT
NOT TO SCALE

1



ENGINEERS • SURVEYORS

128 EAST MAIN ST
PO BOX 188
LOGAN, OH 43138
740-385-2140

1495 OLD HENDERSON RD
COLUMBUS, OH 43220
614-459-6992

507 MAIN STREET, SUITE 203
ZANESVILLE, OH 43701
740-450-1640

FAX: 614-459-6987
TOLL FREE: 866-277-0600



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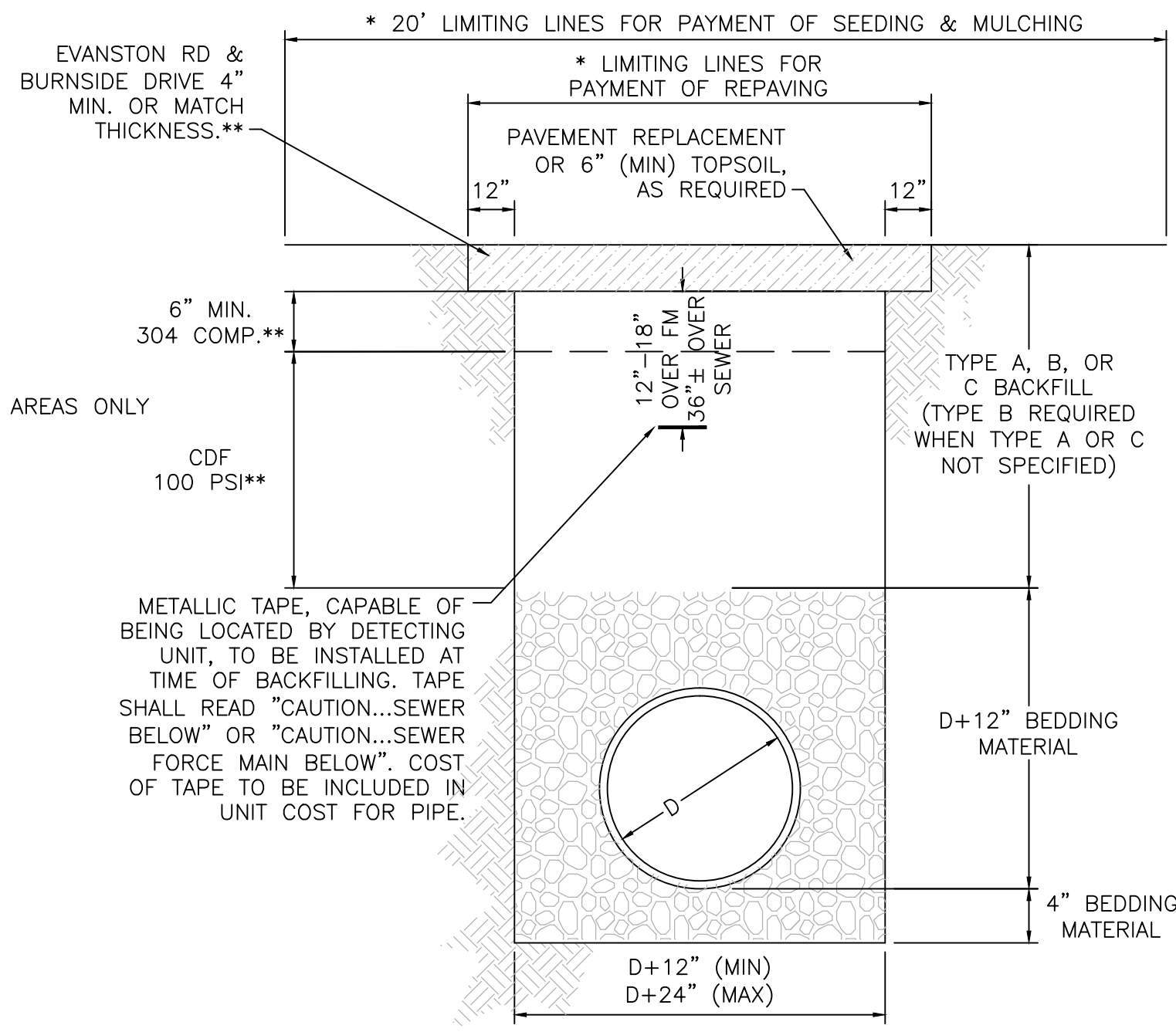
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02-09-15	PRELIMINARY
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GENERAL NOTES

3

SDCPS PROJECT NO. 2772

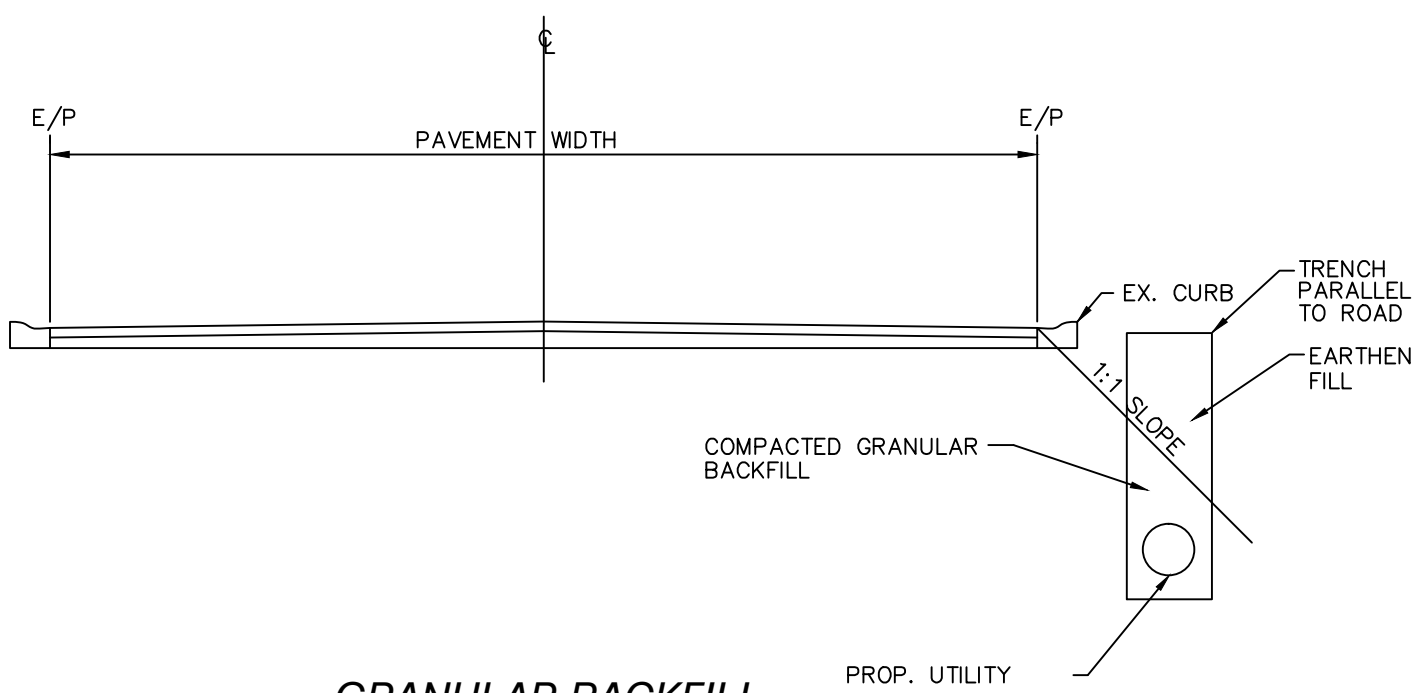


TOWNSHIP AREAS TYPICAL TRENCH FOR PVC SANITARY SEWER & SEWER FORCE MAIN
NOT TO SCALE

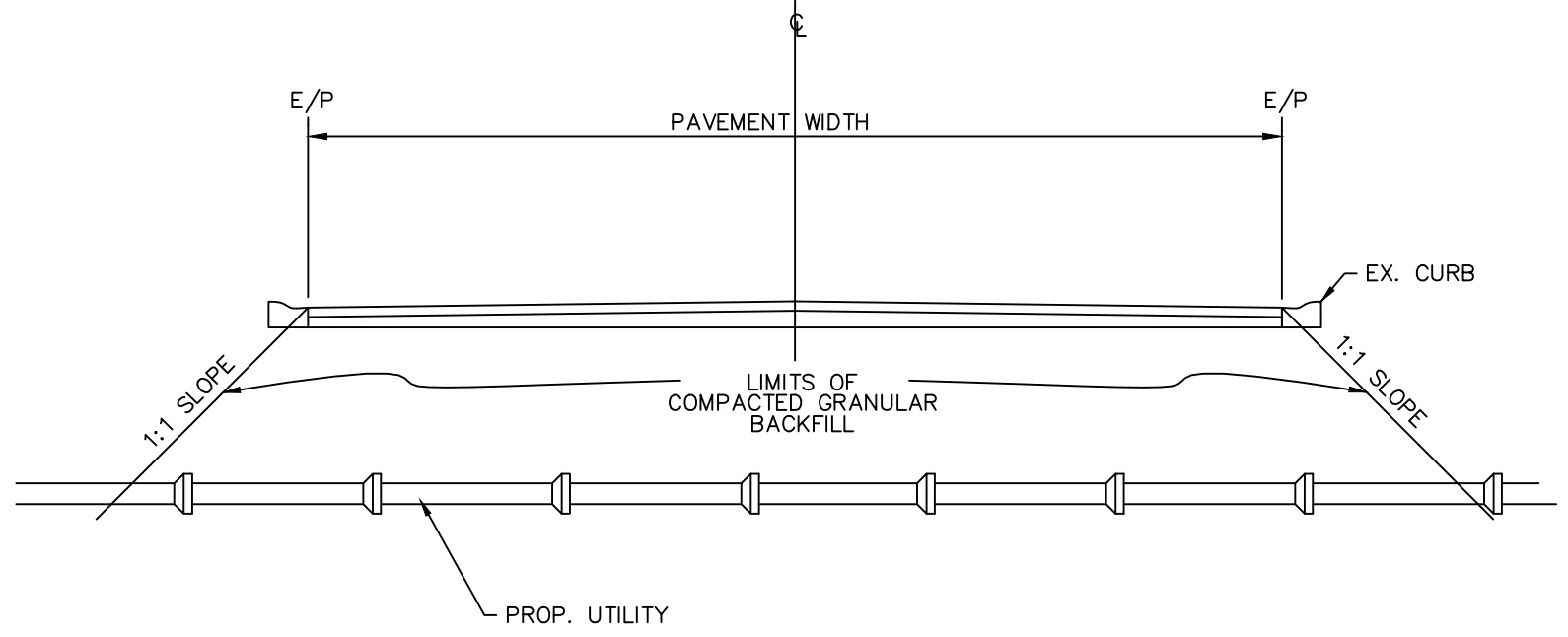
- NOTES:
- ITEM NUMBERS REFER TO STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION AND MATERIAL SPECIFICATIONS.
 - AGGREGATE FOR BEDDING FOR SEWERS SHALL BE NO. 57, CRUSHED GRAVEL. BEDDING FOR FORCE MAIN SHALL BE SAND.
 - TYPE A BACKFILL SHALL BE COMPACTED GRANULAR MATERIAL AS SPECIFIED IN ITEM 304, GRADE A. TYPE A BACKFILL SHALL BE USED WHEN THE TRENCH IS 5' OR LESS FROM ANY PAVED OR GRAVEL SURFACE, OR BENEATH THE PAVEMENT OR GRAVEL. COMPACTION SHALL MEET THE REQUIREMENTS OF ITEM 203.
 - TYPE B BACKFILL SHALL BE NATURAL SOIL FREE FROM STONES LARGER THAN 2" ACROSS THEIR GREATEST DIMENSION, TOPSOIL, VEGETATION, DEBRIS, RUBBISH, OR FROZEN MATERIAL, COMPACTED TO 95% OF ITS MAXIMUM LABORATORY DRY WEIGHT.
 - TYPE C BACKFILL SHALL BE NATURAL SOIL FREE FROM STONES LARGER THAN 6" ACROSS THEIR GREATEST DIMENSION, TOPSOIL, VEGETATION, DEBRIS, RUBBISH, OR FROZEN MATERIAL, COMPACTED TO 90% OF ITS MAXIMUM LABORATORY DRY WEIGHT. WHEN APPROVED BY THE ENGINEER, STONES NO LARGER THAN ONE CUBIC FOOT MAY BE DEPOSITED AT LEAST 3' ABOVE THE TOP OF THE PIPE.
 - THE EXCAVATED TRENCH WIDTH 12" ABOVE THE CONDUIT MAY BE INCREASED WITHOUT EXTRA COMPENSATION.
 - COVER OVER PIPE SHALL BE AS SPECIFIED ON PLANS. UNLESS OTHERWISE SPECIFIED, ROOF DRAINS SHALL HAVE 30" MIN. COVER AND SANITARY SEWER SERVICES SHALL HAVE 48" MIN. COVER.

* LIMITING LINES FOR PAYMENT APPLY ONLY WHEN CONTRACT PROVIDES FOR UNIT PRICE PAYMENT OF PAVEMENT REPLACEMENT AND SEEDING & MULCHING.

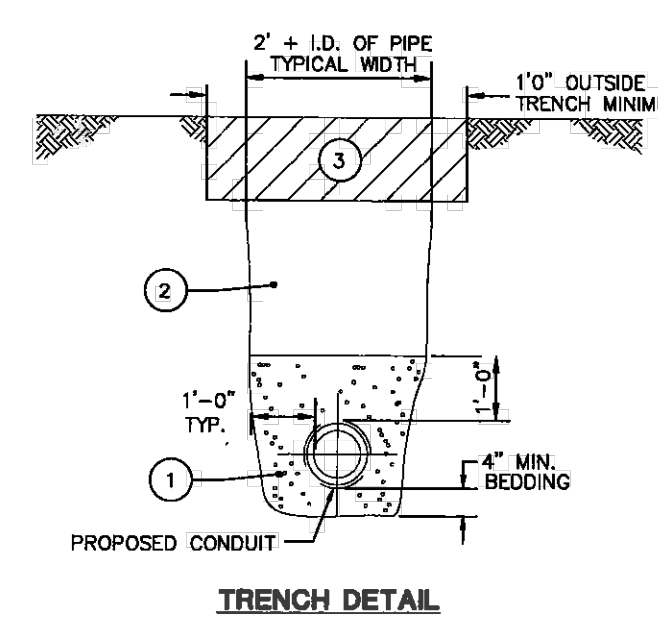
SUMMARY OF ESTIMATED QUANTITIES									
ITEM	DESCRIPTION	SHEET 7	SHEET 8	SHEET 9	SHEET 10	SHEET 11	SHEET 12	TOTAL	UNIT
203	CLEARING & GRUBBING								LUMP
301	BITUMINOUS AGGREGATE BASE (ROADWAY REPAIR)	109	122	111	104	98	7	550	C.Y.
304	AGGREGATE BASE (ROADWAY REPAIR)	109	122	111	104	98	7	550	C.Y.
304	AGGREGATE BASE (DRIVE REPAIR)						7	7	C.Y.
407	TACK COAT (0.10 GAL/SY)	66	74	67	63	59	5	334	GAL
408	PRIME COAT (0.35 GAL/SY)	229	253	233	219	206	15	1,155	GAL
448	ASPHALT CONCRETE, SURFACE COURSE, TYPE 1 (ROADWAY REPAIR)	37	41	37	35	33	3	183	C.Y.
452	NON-REINFORCED CONCRETE PAVEMENT						58	58	S.Y.
603	8" CONDUIT, TYPE D, 707.01, CONTINGENCY ITEM							100	L.F.
603	12" CONDUIT, TYPE D, 707.01							100	L.F.
603	6" CONDUIT, TYPE D, 707.33							100	L.F.
609	CURB REPLACEMENT	130	140	120	120	80	50	640	L.F.
614	MAINTAINING TRAFFIC								LUMP
659	SEEDING & MULCHING	60	127			295	450	932	S.Y.
670	EROSION CONTROL								LUMP
748	3/4" AIR RELEASE								EACH
748	8" GATE VALVE W/ TRAFFIC TYPE BOX	3	3	8	0	0	2	16	EACH
748	6" GATE VALVE W/ TRAFFIC TYPE BOX								EACH
748	4" GATE VALVE W/ TRAFFIC TYPE BOX								EACH
748	2" GATE VALVE W/ TRAFFIC TYPE BOX								EACH
748	8" DI WATER LINE AND APPURTENANCES	1,283	1,425	1,289	1,200	1,254	550	7,001	L.F.
748	6" DI WATER LINE AND APPURTENANCES								L.F.
748	4" DI WATER LINE AND APPURTENANCES								L.F.
748	2" DI WATER LINE AND APPURTENANCES								L.F.
748	CONNECT TO EXISTING WATERLINES	1	1					2	EACH
748	FIRE HYDRANT W/ WATCH VALVE & BOX (TYPE A)	3	2	4	3	3	1	16	EACH
748	FIRE HYDRANT W/ WATER VALVE & BOX (TYPE B)					1	1	2	EACH
748	3/4" SHORT WATER SERVICE W/ METER BOX COMPLETE	11	6	7	7	4	3	38	EACH
748	3/4" LONG WATER SERVICE W/ METER BOX COMPLETE	10	6	4	10	3	3	36	EACH
748	1" SHORT WATER SERVICE W/ METER BOX COMPLETE					4		4	EACH
748	1" LONG WATER SERVICE W/ METER BOX COMPLETE					7		7	EACH
SPEC	MASTER METER PIT COMPLETE	1	1					2	EACH
SPEC	12"x8" TAPPING SLEEVE AND VALVE		1					1	EACH
SPEC	EVANSTON ROAD CROSSING								LUMP



GRANULAR BACKFILL OF TRENCHES PARALLEL TO ROADS
NOT TO SCALE



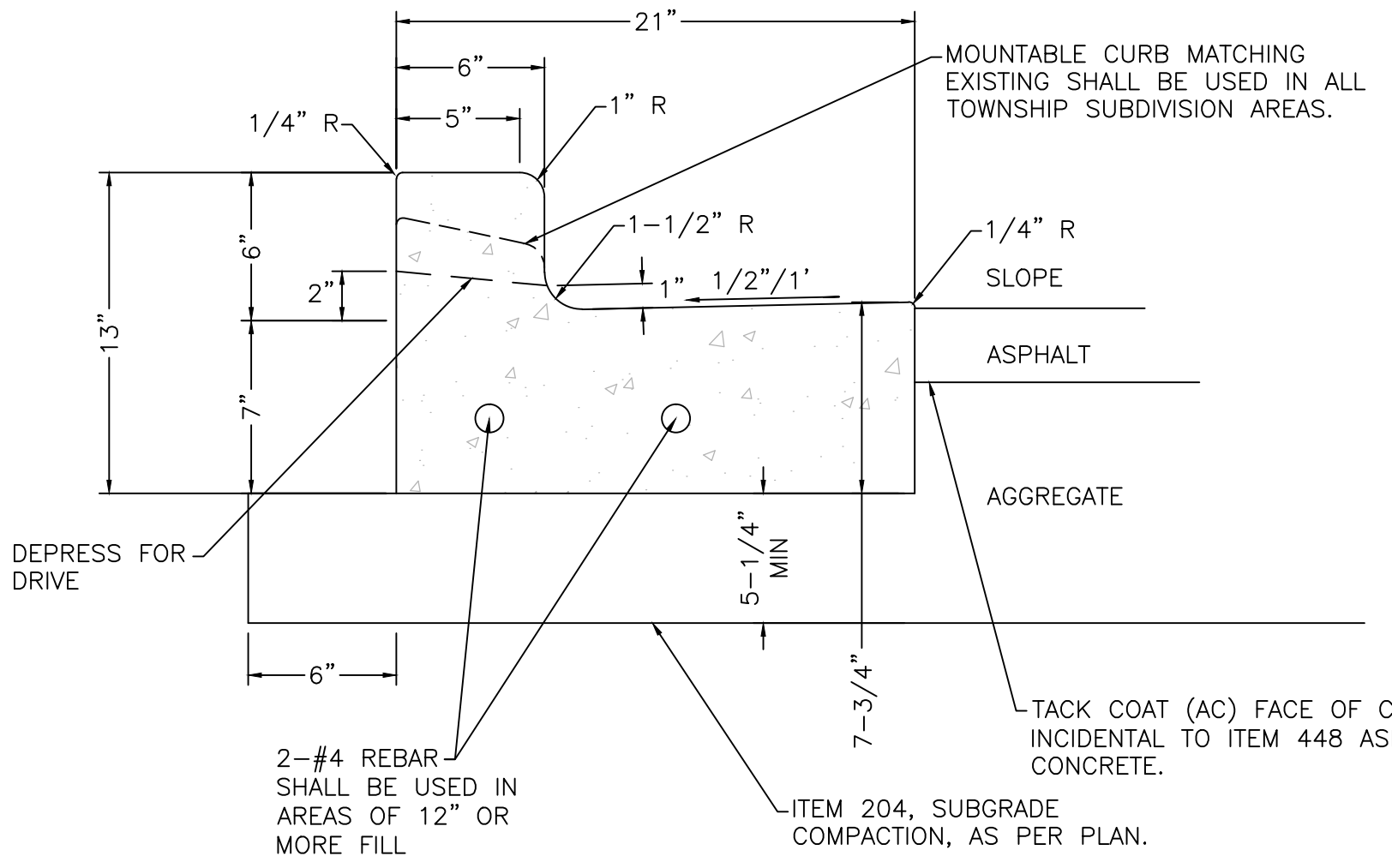
GRANULAR BACKFILL OF TRENCHES CROSSING ROADS
NOT TO SCALE



- 1. BEDDING**
- GRANULAR BEDDING MATERIAL SHALL BE CRUSHED STONE OR GRAVEL COMPLYING WITH ODOT ITEM 603 TYPE 2 BEDDING (#57 OR #411). BEDDING SHALL EXTEND 4" BELOW THE CONDUIT. BEDDING MATERIAL SHALL EXTEND 12" ABOVE THE TOP AND TO EACH SIDE OF THE CONDUIT. USE SHOVEL SLICING AND SPUD BARS IN CONJUNCTION WITH THE COMPACTION OPERATIONS TO COMPACT THE MATERIAL AND TO MANIPULATE THE MATERIAL UNDER THE HAUNCH OF THE PIPE.
- 2. BACKFILL**
- ALL TRENCH EDGES WITHIN THE STREET RIGHT-OF-WAY, SHALL BE BACKFILLED WITH EITHER ODOT ITEM 603 GRANULAR BACKFILL MATERIAL (#504, #411) OR ODOT ITEM 613 LOW STRENGTH MORTAR BACKFILL, AS DIRECTED BY THE CITY.

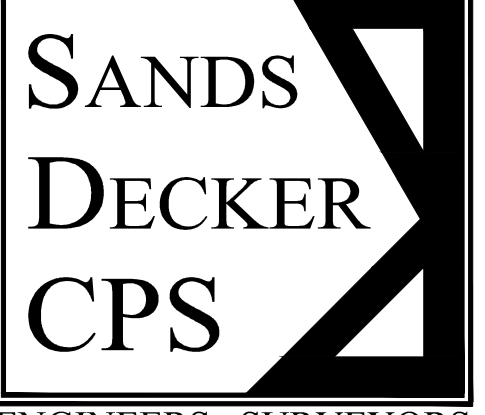
- GRANULAR MATERIAL SHALL BE PLACED IN MAXIMUM 6" LIFTS. FOR GRANULAR EMBANKMENT AND STRUCTURAL BACKFILL, COMPACT EACH LIFT OF MATERIAL USING MECHANICAL DEVICES, HOE RAMS, JIMMING JACKS, HAND DEVICES, VIBRATING PLATES, OR OTHER SIMILAR EQUIPMENT. COMPACTION REQUIREMENTS SHALL BE 85% OF STANDARD PROCTOR CURVE.
 - LOW STRENGTH MORTAR BACKFILL SHALL BE FURNISHED AND PLACED AS PER ODOT ITEM 613.
- ALL TRENCH EDGES NOT WITHIN THE STREET RIGHT-OF-WAY, CAN BE BACKFILLED WITH CLEAN NATIVE MATERIAL, COMPACTED IN 12 INCH LIFTS. MATERIAL SHALL BE COMPACTED TO 85% OF THE ORIGINAL COMPOSITION; NO MATERIAL SHALL BE USED FOR BACKFILLING THAT CONTAINS GRANULAR MATERIAL, ROCK OR STONE GREATER THAN 4 INCHES IN DIAMETER.
- 3. PAVEMENT RESTORATION**
- IN PAVED AREAS WITHIN THE STREET RIGHT-OF-WAY THE PAVEMENT AND AGGREGATE BASE COMPOSITION SHALL BE PROVIDED EQUAL TO THE EXISTING PAVEMENT BUT IN NO CASE, SHALL THE COMPOSITION BE LESS THAN THE FOLLOWING:
- 1-1/2" OF ODOT ITEM 448 SURFACE COURSE, TYPE 1
 - 2-1/2" OF ODOT ITEM 448 INTERMEDIATE COURSE, TYPE 2
 - 10" OF ODOT ITEM 304 AGGREGATE BASE
- IN ALLEYS AND DRIVEWAYS OUTSIDE OF THE STREET RIGHT-OF-WAY, THE REPLACEMENT OF PAVEMENT AND/OR AGGREGATE SHALL BE EQUAL TO THE EXISTING ALLEYWAY OR DRIVEWAY COMPOSITION. IF THE PERMANENT ASPHALT CANNOT BE APPLIED WITHIN 48 HOURS OF THE INITIAL REPAIR, ODOT ITEM 405 OR COLD PATCH SHALL BE APPLIED TO THE TRENCH SURFACE. MINIMUM THICKNESS OF THE COLD PATCH MATERIAL SHALL BE 3 INCHES. SAID MATERIAL SHALL BE REMOVED PRIOR TO THE PLACEMENT OF ODOT ITEM 448, UNLESS OTHERWISE APPROVED.

- CONCRETE RESTORATION**
- ALL CONCRETE DRIVEWAYS, DRIVE APPROACHES, AND SIDEWALKS WITHIN THE STREET RIGHT-OF-WAY, SHALL BE REPLACED WITH THE FOLLOWING:
- SIDEWALKS** --- MINIMUM THICKNESS OF 4" INCHES OF CONCRETE
- MATCH ORIGINAL WIDTH OF SIDEWALK
 - MINIMUM WIDTH OF 4" REQUIRED
 - DRIVEWAYS AND DRIVE APPROACHES: RESIDENTIAL: MINIMUM THICKNESS OF 6" OF CONCRETE BUSINESS & INDUSTRIAL: MINIMUM THICKNESS OF 8" OF CONCRETE
- ALL CONCRETE DRIVEWAYS, DRIVE APPROACHES, AND SIDEWALKS OUTSIDE OF THE STREET RIGHT-OF-WAY SHALL BE REPLACED EQUAL TO THE EXISTING MATERIAL COMPOSITION.
- COMPACTION GUIDELINES**
- THE CONTRACTOR MAY OPERATE SMALL COMPACTION EQUIPMENT WITH LESS THAN A TOTAL WEIGHT OF 1 TON OVER THE CONDUIT TO COMPACT THE BACKFILL. DO NOT USE HOE RAMS ON TOP OF THE CONDUIT. UNTIL 2" OF BACKFILL IS COMPACTED ON TOP OF THE CONDUIT, THE CONTRACTOR MAY OPERATE COMPACTION EQUIPMENT WITH LESS THAN A TOTAL WEIGHT OF 8 TONS, BUT MORE THAN 1 TON, OVER THE CONDUIT AFTER PLACING AND COMPACTING 2" OF BACKFILL. DO NOT OPERATE EQUIPMENT WITH A TOTAL WEIGHT OF 8 TONS OR MORE UNTIL PLACING AND COMPACTING A COVER OF 4" OVER THE TOP OF THE CONDUIT. THE ABOVE RESTRICTIONS APPLY WHEN WORKING WITHIN ONE SPAN ON EACH SIDE OF THE CONDUIT, OR 6", WHICHEVER IS LESS.
- ALL TRENCHES AND EXCAVATIONS SHALL BE BACKFILLED IMMEDIATELY AFTER THE PLACEMENT OF THE CONDUIT, UNLESS DIRECTED OTHER WISE BY THE CITY ENGINEER. UNDER NO CIRCUMSTANCES SHALL WATER BE PERMITTED TO RISE IN UNBACKFILLED TRENCHES AFTER THE CONDUIT HAS BEEN PLACED.



TIPP CITY (ONLY) TYPE 1 COMBINATION CURB & GUTTER
NOT TO SCALE

TIPP CITY STREET REPAIR - TIPP CITY ONLY DETAIL AND NOTES
NOT TO SCALE



ENGINEERS • SURVEYORS
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PO BOX 188
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740-385-2140

1495 OLD HENDERSON RD
COLUMBUS, OH 43220
614-459-6992

507 MAIN STREET, SUITE 203
ZANESVILLE, OH 43701
740-450-1640

FAX: 614-459-6987
TOLL FREE: 866-277-0600



1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

COUNTRY ESTATES EAST WATER IMPROVEMENTS

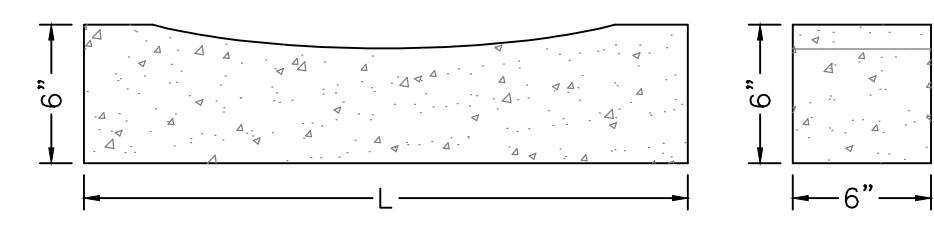
- 02-09-15 PRELIMINARY
- 08-07-15 BACKCHECK
- 02-26-16 BACKCHECK 2
- 03-30-16 BACKCHECK 3
- 04-29-16 BACKCHECK 4
- 05-03-16 FINAL
- 09-16-16 BID SET

MISC. DETAILS

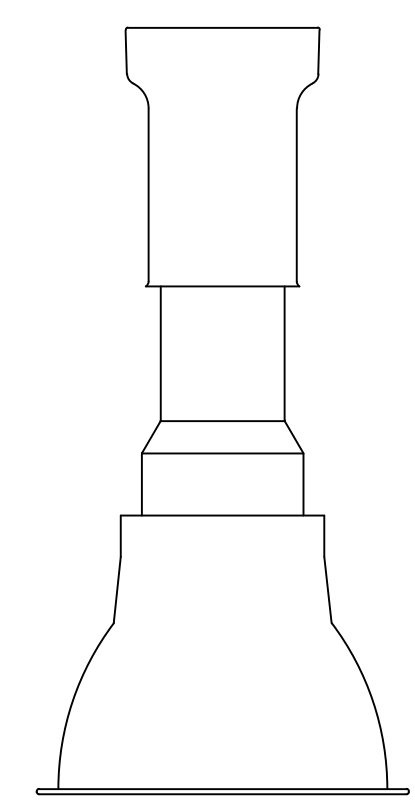
4

SDCPS PROJECT NO. 2772

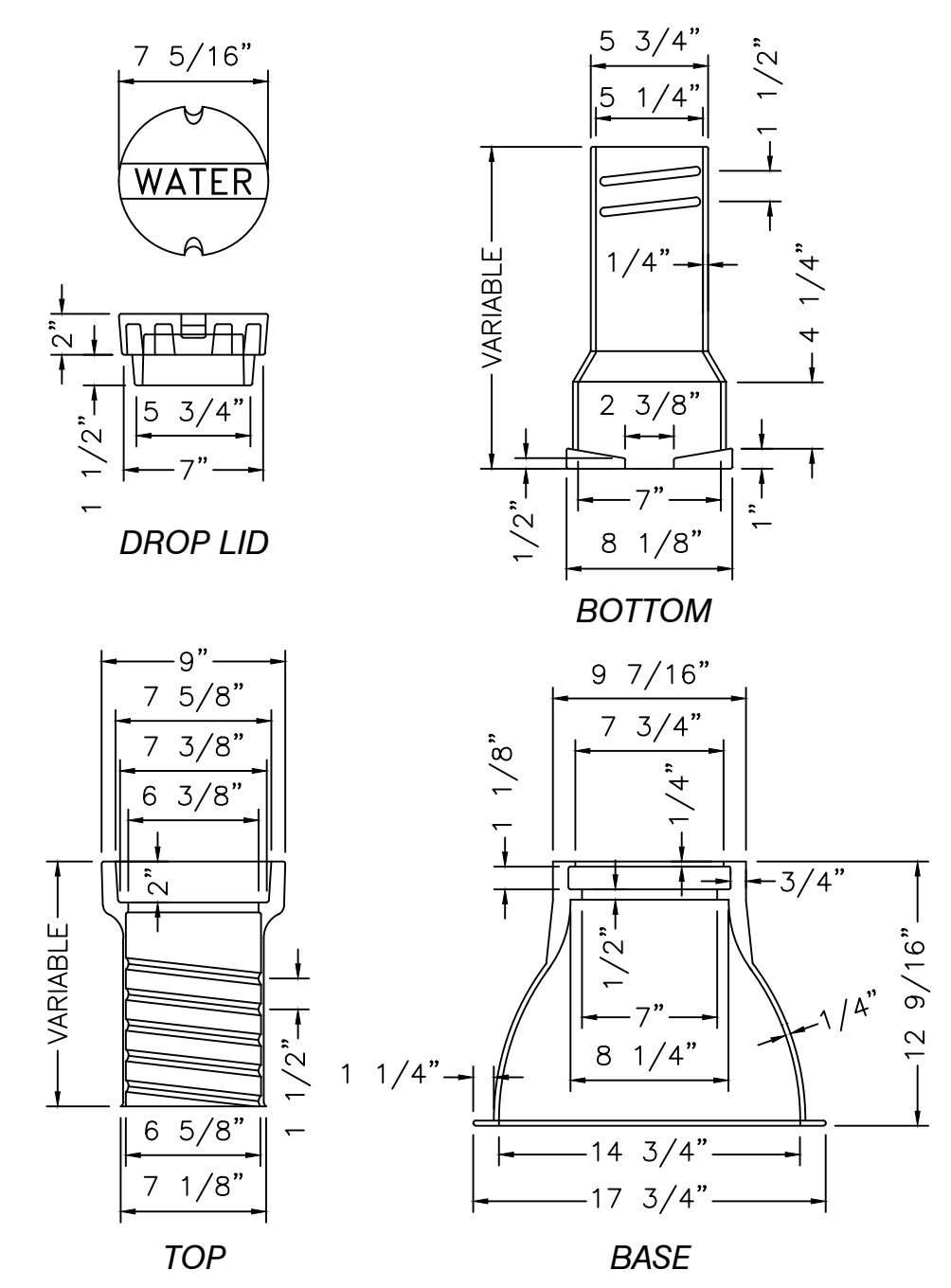
	VALVE SIZE	L	REQUIRED CONCRETE VOLUME (CUBIC FEET)
GATE VALVES	3"	15"	0.31
	4"	16"	0.33
	6"	17"	0.36
	8"	20"	0.42
	12"	24"	0.50
BUTTERFLY VALVES	16"	30"	0.63
	20"	36"	0.75
	24"	42"	0.88
	30"	48"	1.00



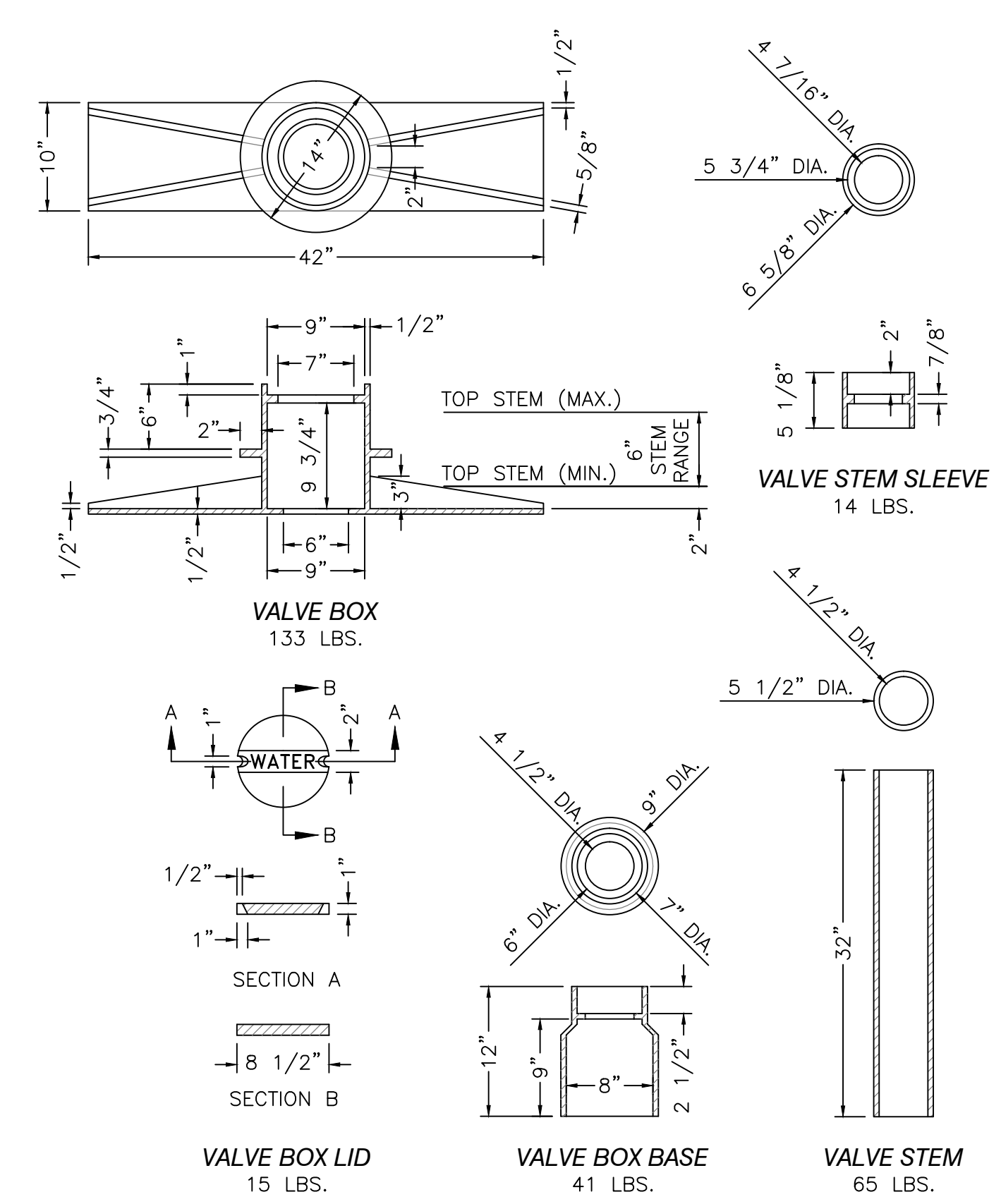
CONCRETE VALVE SUPPORT
NOT TO SCALE



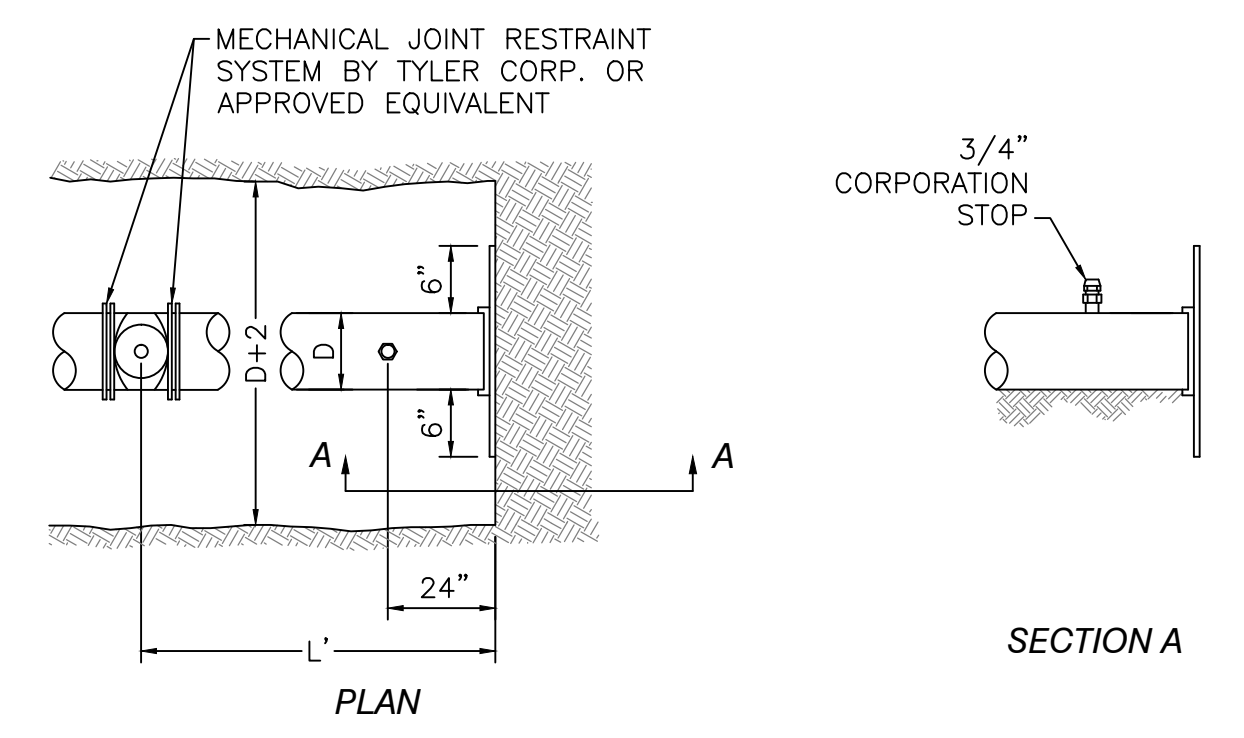
BOX COMPLETE



STANDARD VALVE BOX
NOT TO SCALE

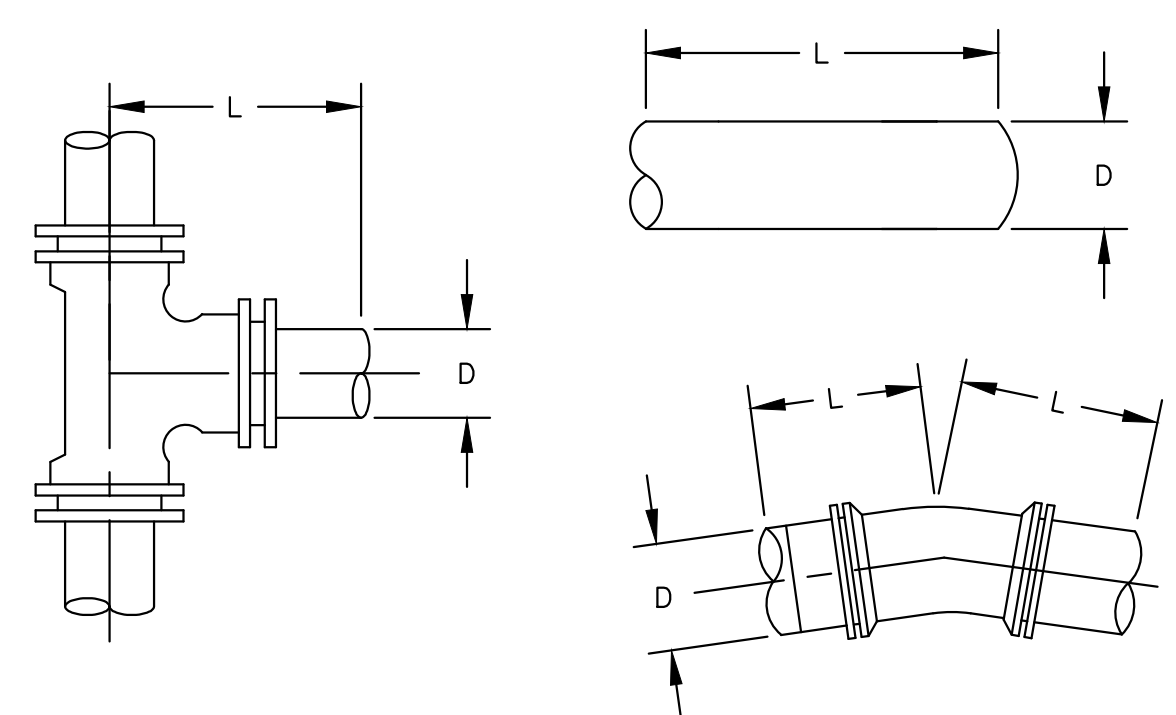


TRAFFIC TYPE VALVE BOX
NOT TO SCALE



END OF PIPE PLUG
NOT TO SCALE

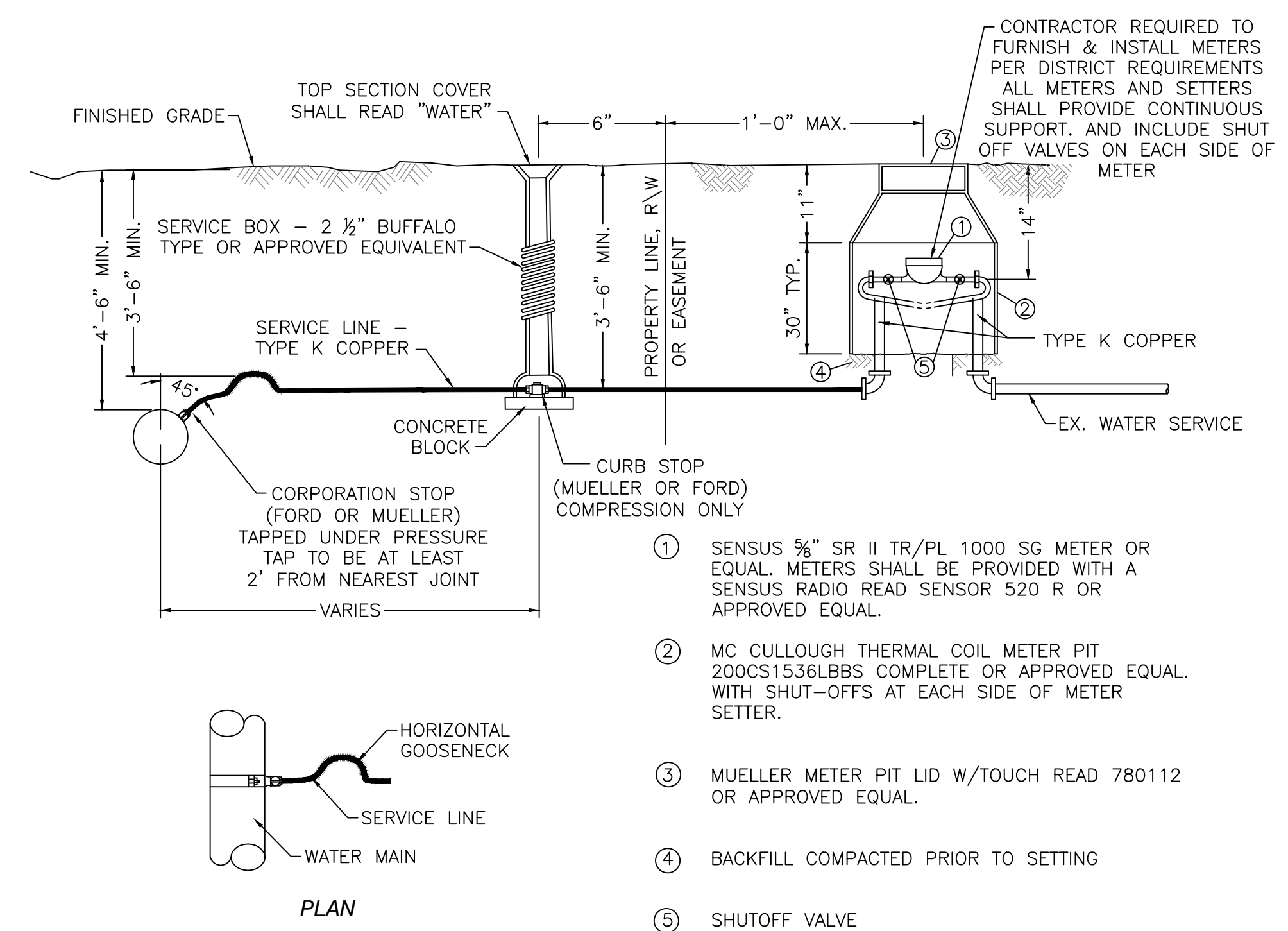
- NOTES:
1. END OF PIPE SHALL BE CAPPED OR PLUGGED.
2. PLUG POLES SHALL BE INSTALLED AT ALL END-OF-LINE STUBS AT THE THRUST BLOCK.



A - DEGREE OF DEFLECTION	D - DIAMETER OF PIPE							
	4"	6"	8"	10"	12"	16"	20"	24"
11 1/4°	*	*	*	*	*	5	5	6
22 1/2°	*	2	3	5	6	8	10	12
45°	4	8	12	14	20	30	36	45
90°	12	26	38	48	66	98	125	145
TEE	12	26	38	48	66	98	125	145
END	12	26	38	48	66	98	125	145

* REQUIRED RESTRAINED JOINT AT FITTING ONLY USE MEGALUG MECHANICAL JOINT RESTRAINT OR EQUAL FIRE HYDRANT BRANCHES MUST BE ANCHOR PIPE

REQUIRED LENGTH OF RESTRAINED JOINTS FOR WATER MAINS
NOT TO SCALE



- NOTES:
1. THE WATER SERVICE LINE SHALL BE A SINGLE PIECE OF PIPE WITHOUT JOINTS, COUPLINGS OR UNIONS BETWEEN:
A. THE CORPORATION STOP & THE CURB STOP
B. THE CURB STOP & THE METER SETTING
2. THE WATER SERVICE LINE SHALL BE BEDDED USING TYPE A BACKFILL.
3. LONG WATER SERVICES SHALL BE INSTALLED USING TRENCHLESS TECHNOLOGY.
4. AT THE TIME SITE GRADING & LANDSCAPING IS COMPLETED, THE VALVE BOX OVER THE CURB BOX SHALL:
A. BE SET VERTICALLY OVER THE CURB STOP SO THAT A KEY CAN BE PLACED ON THE CURB STOP & THE CURB STOP EASILY OPERATES TO THE FULLY OPEN & CLOSED POSITIONS AND SHALL BE STRAIGHT AND CENTERED OVER VALVE
B. HAVE THE TOP SET AT FINISHED GRADE
C. BE UNBROKEN
5. A LONG WATER SERVICE IS DEFINED AS ANY SERVICE WHICH CROSSES THE CENTERLINE OF THE ROADWAY.

3/4", 1", & 2" STANDARD WATER SERVICE W/ METER BOX
NOT TO SCALE

FIRE HYDRANT NOTES

TYPE OF HYDRANT: THE HYDRANT SHALL BE A 5' 1/4" MUELLER SUPER CENTURIAN 250, THE POST TYPE TRAFFIC MODEL MADE OF CAST IRON AS SHOWN HEREON. IT SHALL HAVE A BREAKING CONNECTION THAT PREVENTS LOSS OF WATER WHEN THE UPPER & LOWER SECTION ARE SEPARATED BY A SMASHING IMPACT. THE HYDRANT SHALL BE OF THE COMPRESSION TYPE WITH THE VALVE OPENING IN A COUNTERCLOCKWISE DIRECTION AGAINST THE PRESSURE & CLOSING WITH THE PRESSURE. THE VALVE END OF THE STEM OR VALVE ROD SHALL BE SO CONSTRUCTED AS TO ELIMINATE CONTACT OF DISSIMILAR METALS IN THE PRESENCE OF MOISTURE.

THE STEM OR VALVE ROD SHALL BE CONSTRUCTED IN ONE CONTINUOUS LENGTH FROM THE VALVE TO THE BREAKING COUPLING OR TO THE BOTTOM OF THE EXTENSION PIECE WHERE EXTENSIONS ARE REQUIRED. THE STEM OR VALVE ROD BETWEEN THE VALVE & OPERATING NUT SHALL BE MADE OF STEEL STOCK & HAVE A 1 1/4" MINIMUM DIAMETER AFTER MACHINING. THE BREAKING COUPLING SHALL FIT OVER THE VALVE ROD & BE LOCATED AT THE PROPER POINT TO CONFORM TO THE BREAKING CONNECTION IN THE STANDPIPE.

THE BARREL SHALL HAVE AN AREA OF NOT LESS THAN 120 PERCENT OF THE VALVE OPENING. THE TYPE OF VALVE SHALL BE RUBBER WITH THE DIAMETER OF THE PORT IN THE SEAL RING BEING A MINIMUM OF 4 1/4".

ALL INTERIOR WORKING PARTS OF THE HYDRANT INCLUDING THE VALVE & VALVE SEAT SHALL BE SUCH THAT THEY CAN BE REMOVED THROUGH THE TOP OF THE STANDPIPE WITHOUT EXCAVATION. THE UPPER SECTION OF THE STANDPIPE ABOVE THE GROUND LINE SHALL BE ADJUSTABLE SO THAT THE NOZZLES CAN BE ROTATED TO ANY DESIRED POSITION. ALL DRIP OR DRAIN OPENINGS SHALL BE PLUGGED.

REFERENCE SPECIFICATIONS: ALL FIRE HYDRANTS SHALL CONFORM TO THE LATEST AMERICAN WATER WORKS ASSOCIATION SPECIFICATIONS C502, THE REQUIREMENTS OF THE OWNER & THE APPLICABLE LOCAL FIRE DEPARTMENT. ALL SPECIFICATIONS SHALL BE THE LATEST EDITION IN EFFECT ON THE DATE THE CONSTRUCTION DRAWINGS ARE APPROVED (SIGNED) BY THE OWNER, UNLESS OTHERWISE NOTED.

APPROVALS & CERTIFICATION: THE SUPPLIER OR MANUFACTURER SHALL SUBMIT TO THE OWNER SIX (6) COPIES OF THE RESULTS OF CERTIFIED FLOW TESTS RUN BY AN INDEPENDENT TESTING LABORATORY & SHOP DRAWINGS WITH DIMENSIONS, MATERIALS & NOMENCLATURE OF PARTS FOR EACH TYPE OR MODEL OF HYDRANT PROPOSED FOR USE IN THE PROJECT AREA.

UPON APPROVAL OF THE ABOVE INFORMATION BY THE OWNER, IT SHALL REMAIN ON FILE WITH THE OWNER. SUBMISSION OF THE ABOVE MATERIALS WITH EACH ORDER OF FIRE HYDRANTS IS NOT NECESSARY IF APPROVED MATERIAL IS ALREADY ON FILE. SUBMISSION OF NEW MATERIAL IS REQUIRED WHEN A DEVIATION IN THE PRODUCT, ITS MANUFACTURER, OR THE STANDARDS IS REQUESTED.

ANY FIRE HYDRANTS DELIVERED TO A PROJECT WHICH FAIL TO CONFORM TO THE APPROVED INFORMATION ON FILE WITH THE OWNER SHALL BE REJECTED.

WITH EACH DELIVERY SHIPMENT OF FIRE HYDRANTS, THE HYDRANT MANUFACTURER SHALL CERTIFY THAT THE HYDRANTS CONFORM TO THE INFORMATION APPROVED & ON FILE WITH THE OWNER. THIS CERTIFICATE SHALL INCLUDE THE MODEL OR IDENTIFICATION NUMBERS OF THE HYDRANTS BEING DELIVERED & THE APPROVAL DATE OF THE INFORMATION ON FILE WITH THE OWNER. THIS DOCUMENTATION DOES NOT CONSTITUTE APPROVAL OR FINAL ACCEPTANCE OF THE SPECIFIC HYDRANTS DELIVERED.

INSPECTION: PRIOR TO INSTALLATION, ALL FIRE HYDRANTS SHALL BE INSPECTED BY THE OWNER & BY THE CHIEF OF THE APPLICABLE FIRE DEPARTMENT OR HIS REPRESENTATIVE. THE HYDRANTS SHALL RECEIVE EITHER A CONDITIONAL ACCEPTANCE OR A REJECTION. CONDITIONAL ACCEPTANCE SHALL MEAN THAT THE HYDRANTS MAY BE INSTALLED.

UPON INSTALLATION, EACH HYDRANT SHALL BE TESTED FOR OPERATION & LEAKS WITH A MEMBER OF THE APPLICABLE FIRE DEPARTMENT PRESENT DURING THE TEST & SHALL RECEIVE EITHER OPERATIONAL ACCEPTANCE OR A REJECTION.

THE OWNER RESERVES THE RIGHT TO REJECT ANY & ALL FIRE HYDRANTS FOUND TO BE IN NON-COMPLIANCE WITH ANY OF THE REQUIREMENTS STATED HEREIN AT ANY TIME DURING THE ACCEPTANCE OR ABOVE-DESCRIBED APPROVAL PROCESS. ANY HYDRANTS WHICH ARE REJECTED & WHICH CANNOT BE BROUGHT INTO COMPLIANCE WITH THE REQUIREMENTS AS STATED HEREIN SHALL BE REMOVED FROM THE PROJECT SITE, STORAGE SITE OR THE WORK AT NO EXPENSE TO THE OWNER.

THE FINAL FIELD ACCEPTANCE SHALL GOVERN OVER ANY DOCUMENT APPROVAL & SHALL BE BASED ON ALL WORK BEING COMPLETED INCLUDING INSTALLATION, TESTING, OPERATION & PAINTING.

INSTALLATION: THE FIRE HYDRANTS SHALL BE INSTALLED AS SPECIFIED HEREIN & IN ACCORDANCE WITH THE FOLLOWING STANDARD DRAWINGS: FIRE HYDRANT LOCATION DETAIL, FIRE HYDRANT PROTECTION DETAIL, TYPICAL HYDRANT SETTING (TYPE A), TYPICAL HYDRANT SETTING (TYPE A MODIFIED) & TYPICAL HYDRANT SETTING (TYPE B & TYPE B MODIFIED).

THE BASE SECTION OF ALL FIRE HYDRANTS SHALL BE SET TO AN ELEVATION WHICH WILL BE CORRECT FOR THE PROPOSED GRADE OF THE STREET. THE ELEVATION OF THE TOP BARREL SECTION SHALL BE SET SO THAT THE GRADE LINE OF THE HYDRANT IS AT THE ESTABLISHED OR PROPOSED FINISHED GRADE AS INDICATED ON THE CONSTRUCTION DRAWINGS, THROUGH THE INSTALLATION OF HYDRANT EXTENSION SECTIONS AS NEEDED.

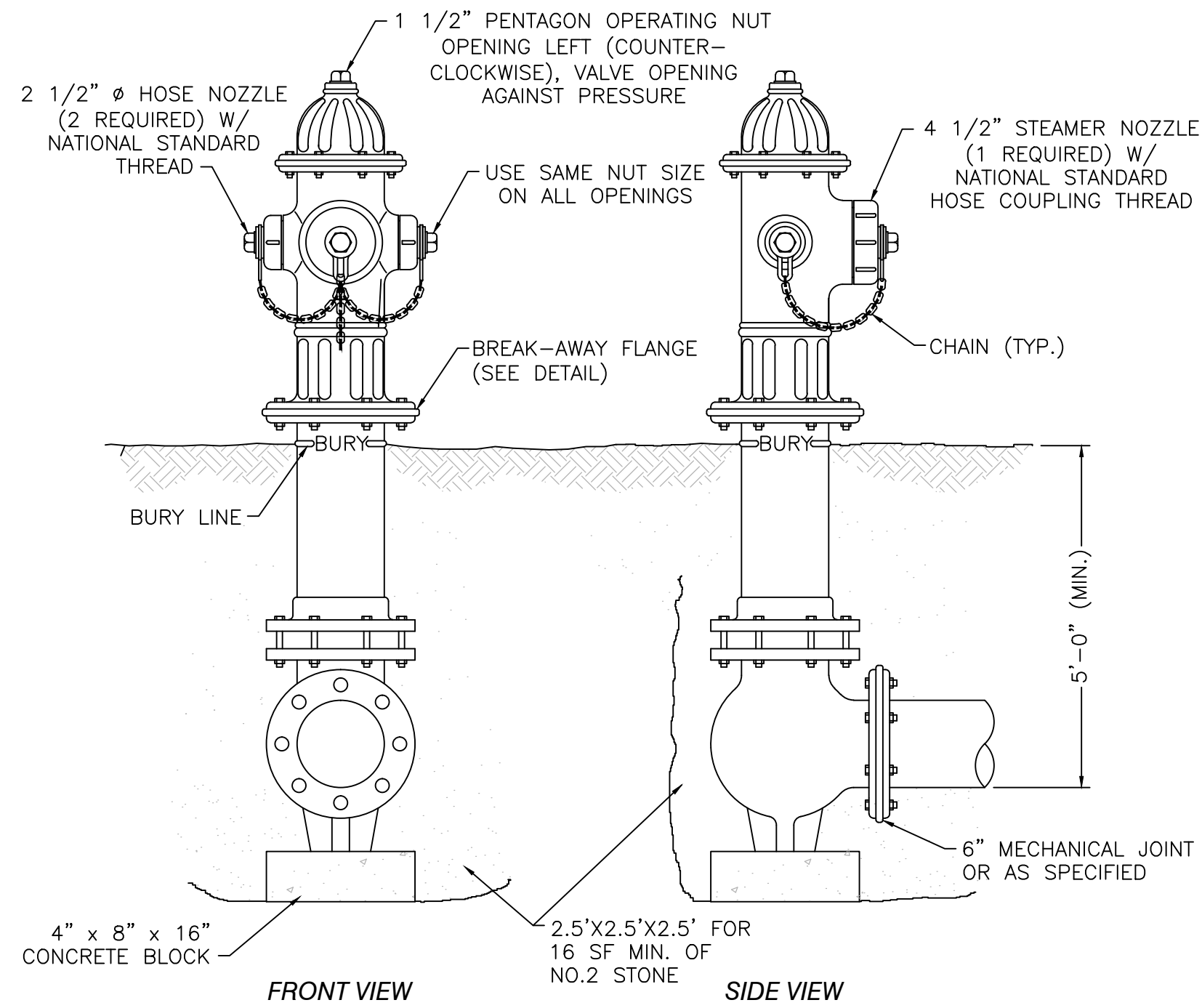
PRIOR TO OPERATIONAL ACCEPTANCE, THE HYDRANT NOZZLES SHALL BE TURNED AWAY FROM THE STREET. UPON RECEIVING OPERATIONAL ACCEPTANCE, THE HYDRANT SHALL BE TURNED WITH THE STEAMER NOZZLE FACING THE ROAD OR STREET & THE HYDRANT EXERCISED TO CHECK THE OPERATION AND FOR LEAKS.

PAINTING: FINAL PAINT COLOR SHALL BE PER GOVERNING AUTHORITY STANDARDS. PRIOR TO PAINTING, SAMPLES SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL. AFTER OPERATIONAL ACCEPTANCE, ALL HYDRANT SURFACES ABOVE THE GROUND LINE SHALL BE CLEANED, WASHED & WIRE-BRUSHED. ALL SURFACES OR SPOTS THAT REQUIRE TOUCHING UP SHALL HAVE TWO (2) COATS OF ZINC CHROMATE PRIMER. WHEN ALL THE SURFACES HAVE BEEN PRIMED & ARE DRY, ALL HYDRANT SURFACES SHALL RECEIVE ONE (1) COAT OF THE APPROVED RED ENAMEL.

MATERIALS & WORKMANSHIP: ALL MACHINED PARTS SHALL BE TRUE TO GAUGE SO THAT THEY WILL BE INTERCHANGEABLE BETWEEN HYDRANTS OF THE SAME MAKE & SIZE.

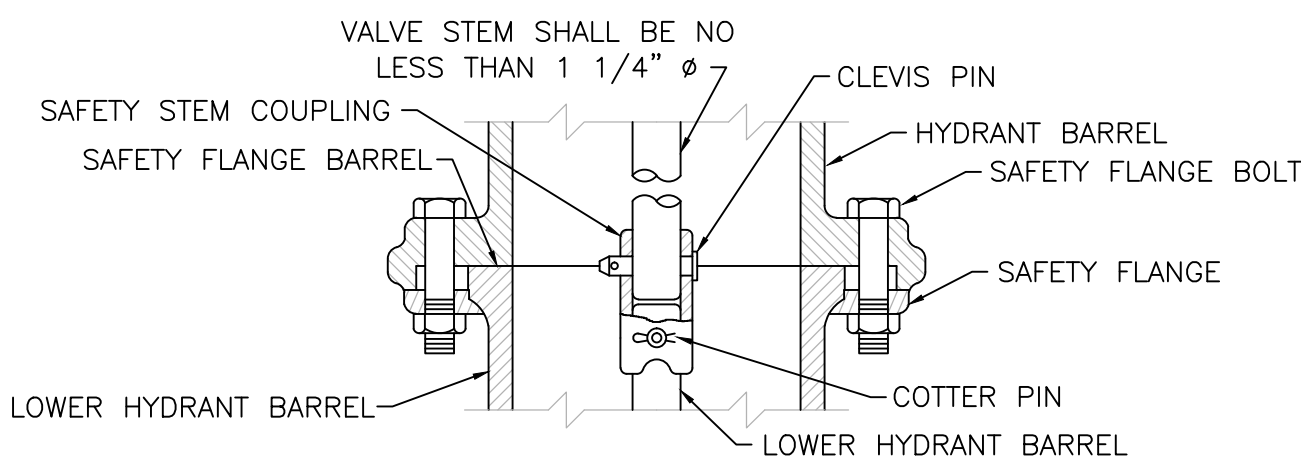
WHEN REQUIRED, NON-ADJUSTABLE HYDRANT WRENCHES, PROPERLY SIZED TO THE SPECIFIED OPERATING NUT DIMENSIONS & FABRICATED BY THE HYDRANT MANUFACTURER, SHALL BE SUPPLIED.

HYDRANT EXTENSIONS: ONLY 1 (ONE) TO BE USED PER HYDRANT USE OF CENTERING SPIDER RECOMMENDED.



NOTES:

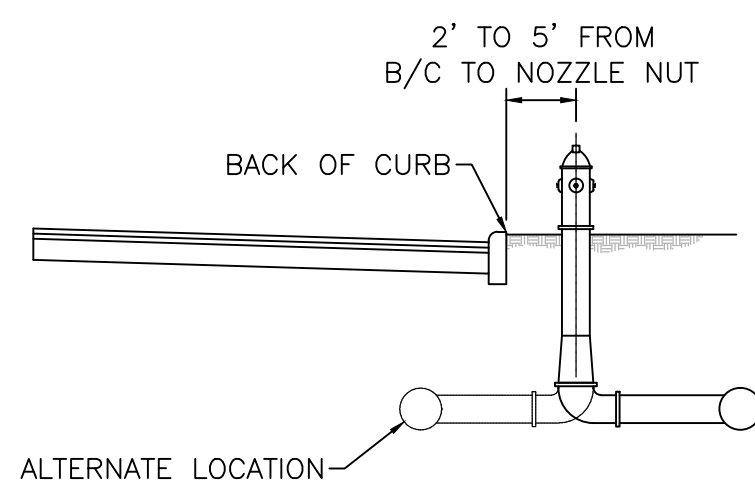
- BACKFILL SHALL BE GRANULAR MATERIAL CONFORMING TO ITEM 703.11 (ODOTCMS), TYPE 2, OR APPROVED SUITABLE EXCAVATED MATERIAL POWER-TAMPED IN LAYERS NOT EXCEEDING 4" IN THICKNESS, LOOSE MEASUREMENT. BACKFILL SHALL EXTEND FROM THE BOTTOM OF THE PIT OR TRENCH TO 6" BELOW THE EXISTING OR PROPOSED SURFACE. COST OF FURNISHING & PLACING BACKFILL SHALL BE INCLUDED IN THE PRICE BID FOR EACH FIRE HYDRANT.
- ALL FIRE HYDRANTS SHALL BE INSTALLED WITH HARDWOOD BLOCKING AGAINST UNDISTURBED EARTH.



BREAK-AWAY FLANGE & SAFETY COUPLING SECTION

STANDARD FIRE HYDRANT

NOT TO SCALE



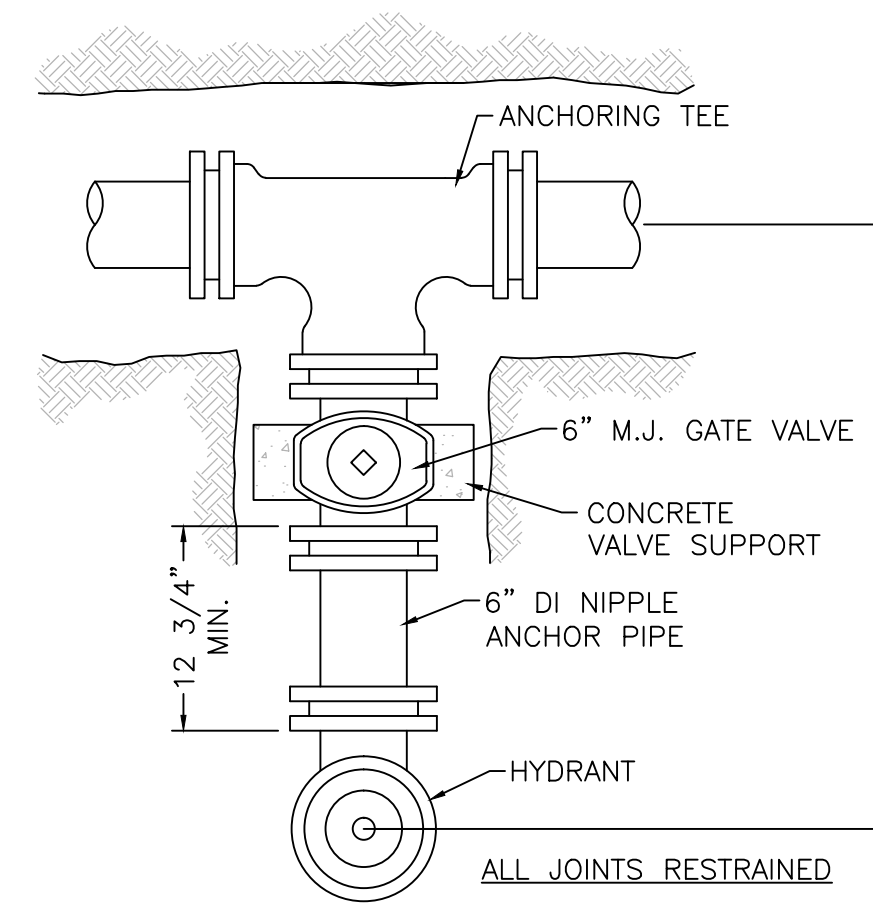
CURB SECTION

NOTES:

- THIS DETAIL IS TO BE USED IN CONJUNCTION WITH THE FOLLOWING STANDARD DRAWINGS AS APPLICABLE: STANDARD FIRE HYDRANT DETAIL, TYPICAL HYDRANT SETTING (TYPE A), TYPICAL HYDRANT SETTING (TYPE A MODIFIED) AND TYPICAL HYDRANT SETTING (TYPE B & TYPE B MODIFIED).
- NO FIRE HYDRANT SHALL BE LOCATED WITHIN SIX (6) FEET OF THE EDGE OF ANY RESIDENTIAL DRIVE APPROACH NOR SHALL ANY HYDRANT BE LOCATED WITHIN EIGHT (8) FEET OF ANY ALLEY, COMMERCIAL DRIVE OR ACCESS ROAD.

FIRE HYDRANT LOCATION DETAIL

NOT TO SCALE

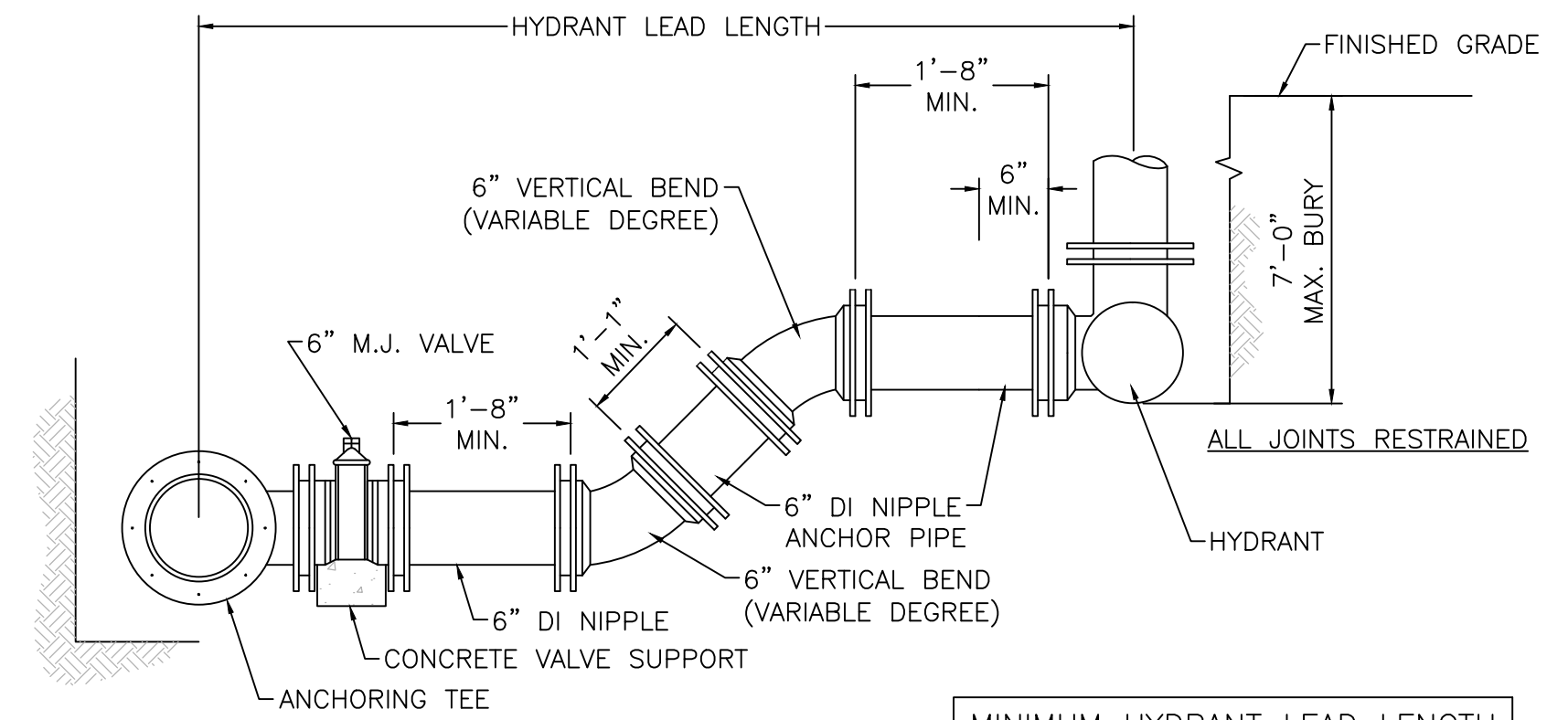


MAIN LINE	MINIMUM L
6"	35"
8"	36"
12"	39"
16"	42"

TYPICAL HYDRANT SETTING TYPE A

NOT TO SCALE

3



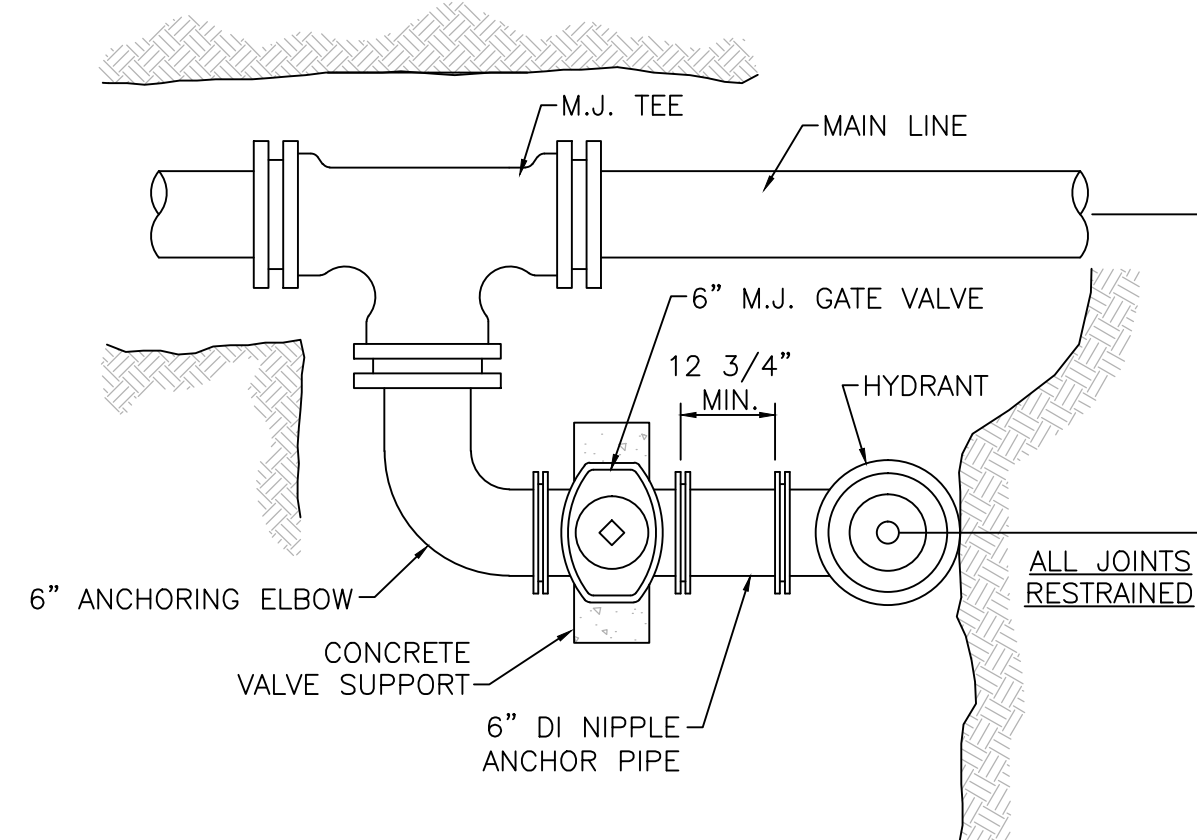
NOTES:

- VERTICAL BENDS SHALL NOT EXCEED 45°.
- WHERE APPLICABLE & APPROVED BY THE OWNER, A COMMERCIAL OFFSET (CLOW F-982 OR APPROVED EQUIVALENT) MAY BE USED IN LIEU OF THE TWO VERTICAL BENDS & THE INCLINED NIPPLE.
- CONCRETE BACKING FOR VERTICAL BENDS SHALL BE PROVIDED PER CONTRACT SPECIFICATIONS.
- ALL BENDS SHALL BE MECHANICALLY RESTRAINED.

TYPICAL HYDRANT SETTING TYPE A MODIFIED (TO AVOID EXCESSIVE BURY)

NOT TO SCALE

SIZE OF MAIN	VERTICAL BENDS			
	11-1/4"	22-1/2"	45"	
6"	8'-2"	8'-1"	7'-8"	
8"	8'-3"	8'-2"	7'-9"	
12"	8'-6"	8'-5"	8'-0"	
16"	8'-9"	8'-8"	8'-3"	



NOTES:

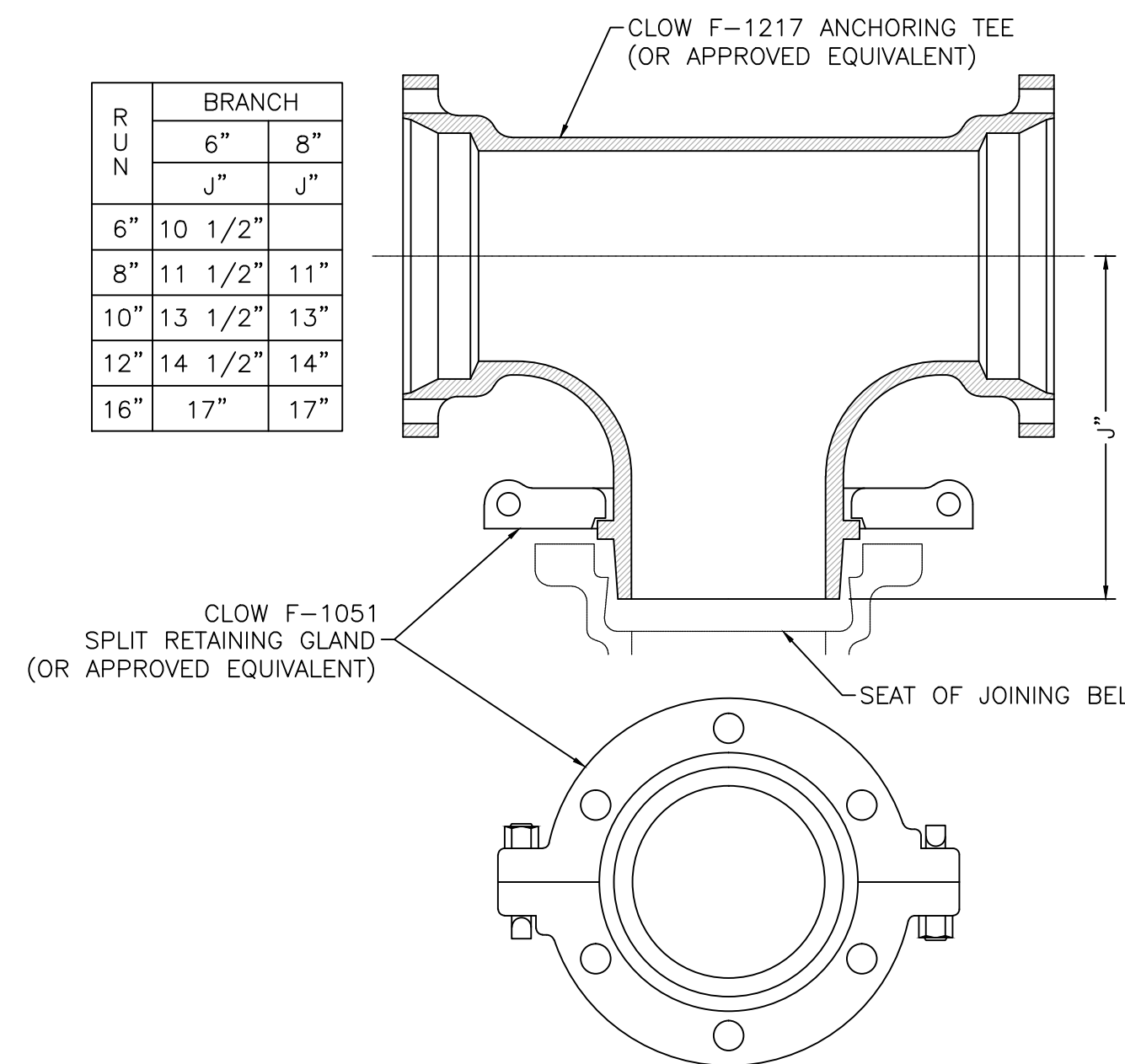
- TYPE B: LONG SIDE OF BEND TO TEE. TYPE B MODIFIED: SHORT SIDE OF BEND TO TEE.
- FIRE HYDRANTS SHALL HAVE A MAXIMUM BURY OF 7'-0". MODIFICATION OF THE HYDRANT LEAD TO MEET THIS REQUIREMENT SHALL BE IN THE SECTION FROM THE VALVE TO THE HYDRANT PER TYPICAL HYDRANT SETTING TYPE A MODIFIED.

MAIN LINE	MINIMUM L	
	TYPE B	TYPE B MODIFIED
6"	24"	19"
8"	25"	20"
12"	28"	23"
16"	31"	26"

TYPICAL HYDRANT SETTING TYPE B & B MODIFIED

NOT TO SCALE

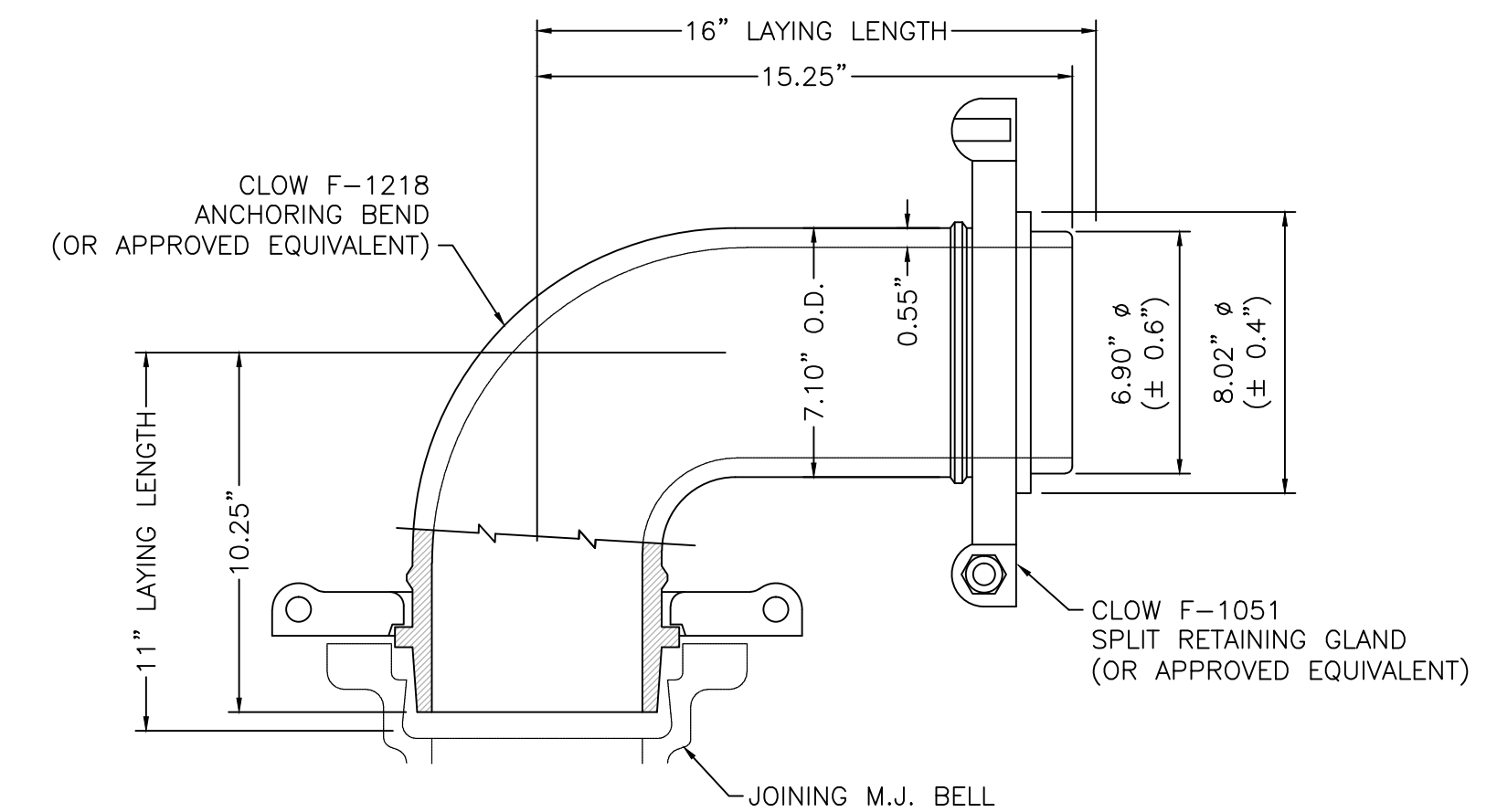
5



ANCHORING TEE

NOT TO SCALE

6



60° ~ 90° ANCHORING ELBOW

NOT TO SCALE

7



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COUNTRY ESTATES EAST WATER IMPROVEMENTS

02-09-15	PRELIMINARY
08-07-15	BACKCHECK
02-26-16	BACKCHECK 2
03-30-16	BACKCHECK 3
04-29-16	BACKCHECK 4
05-03-16	FINAL
09-16-16	BID SET

MISC. DETAILS

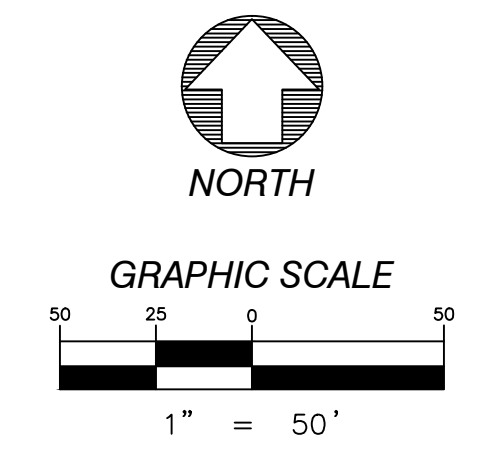
6

SDCPS PROJECT NO. 2772

MISC. NOTES:
ALL SIGNS TO BE PLACED WITHIN THE
R/W.



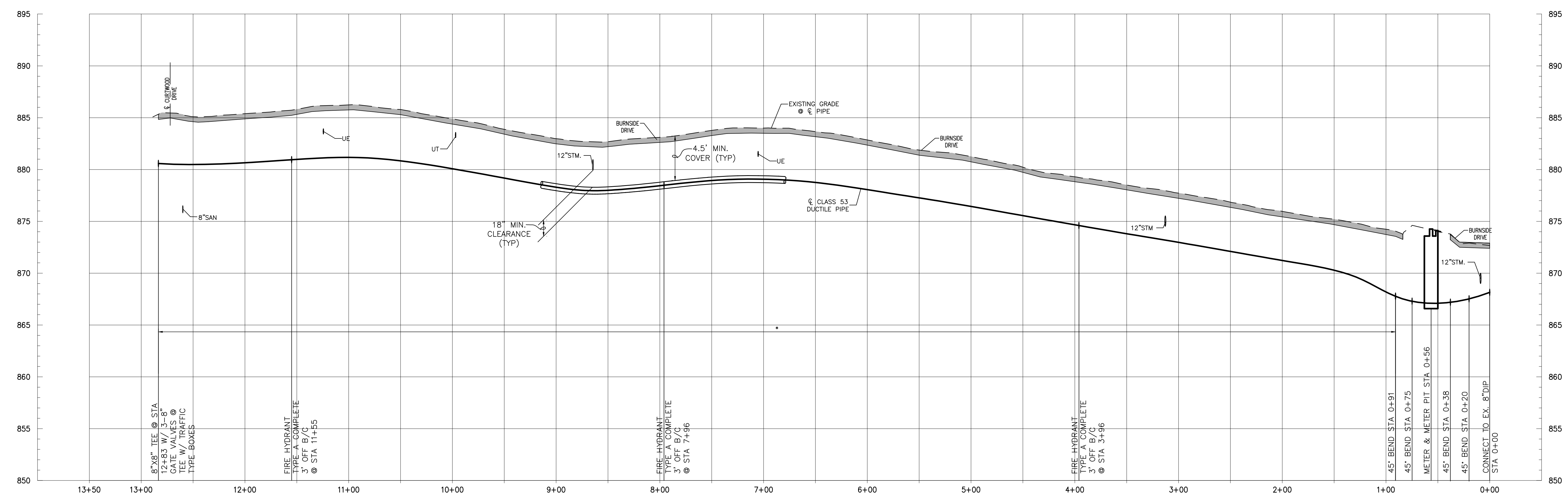
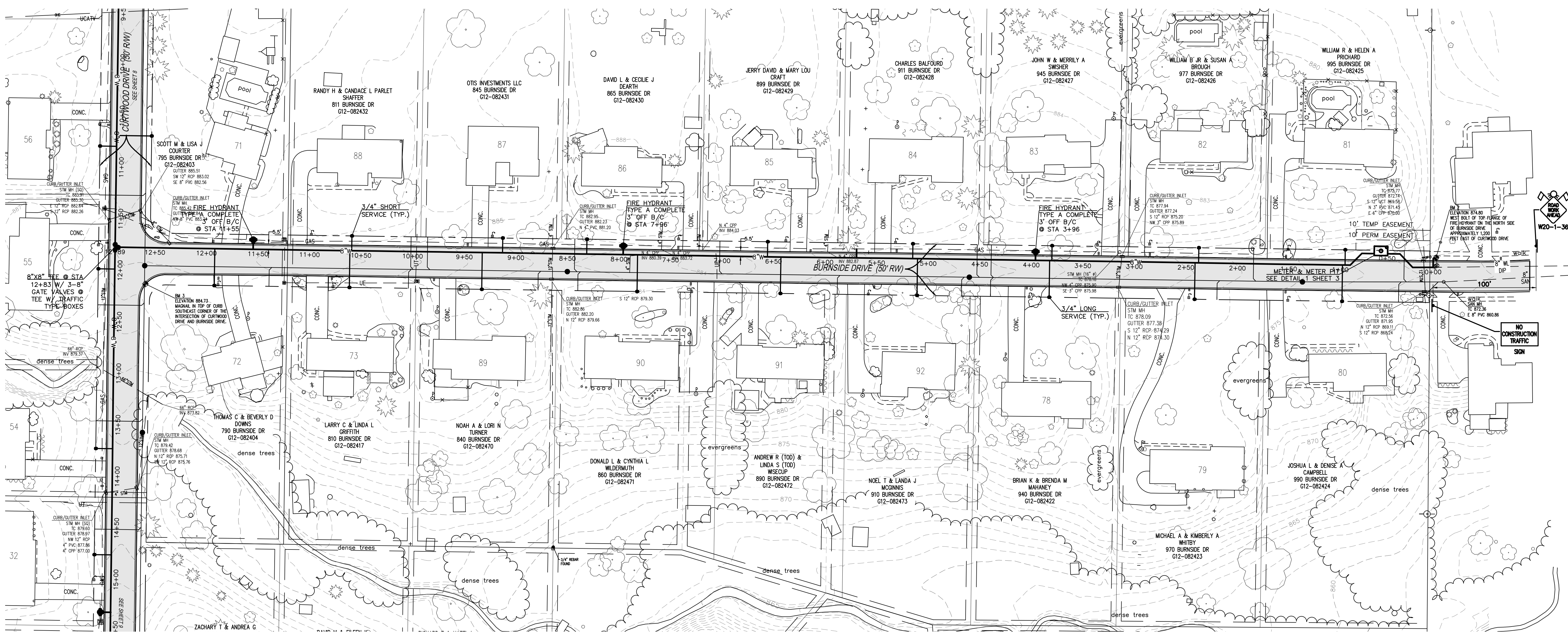
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

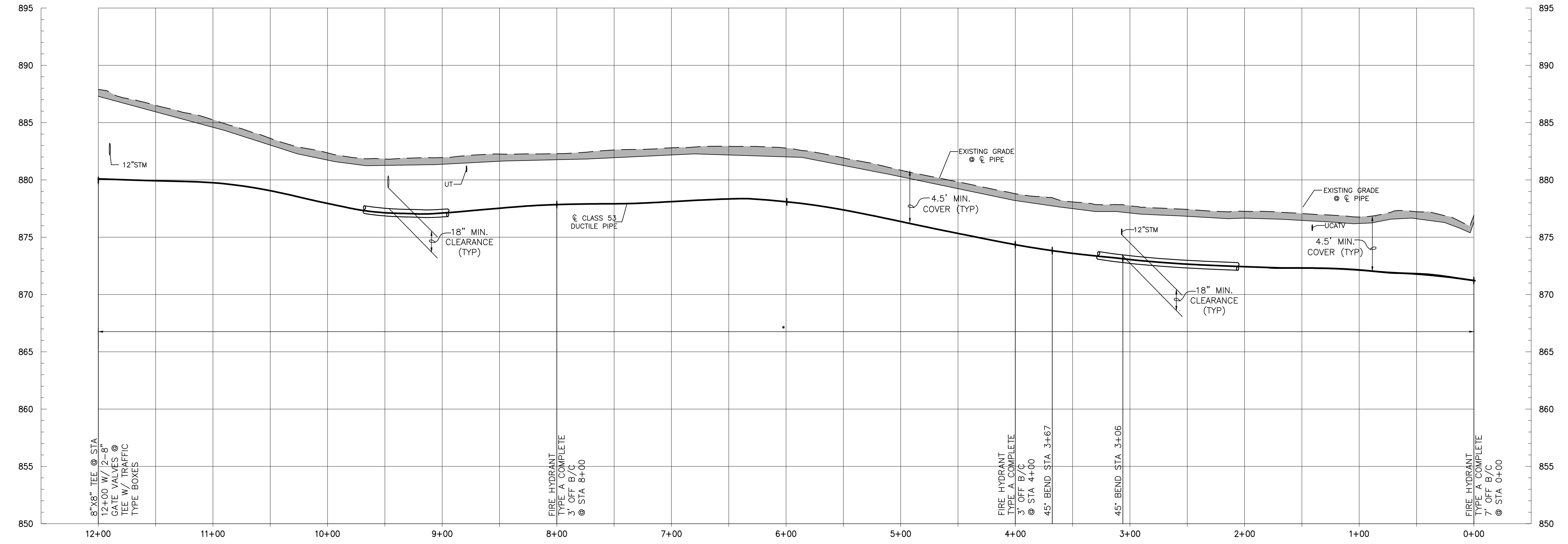
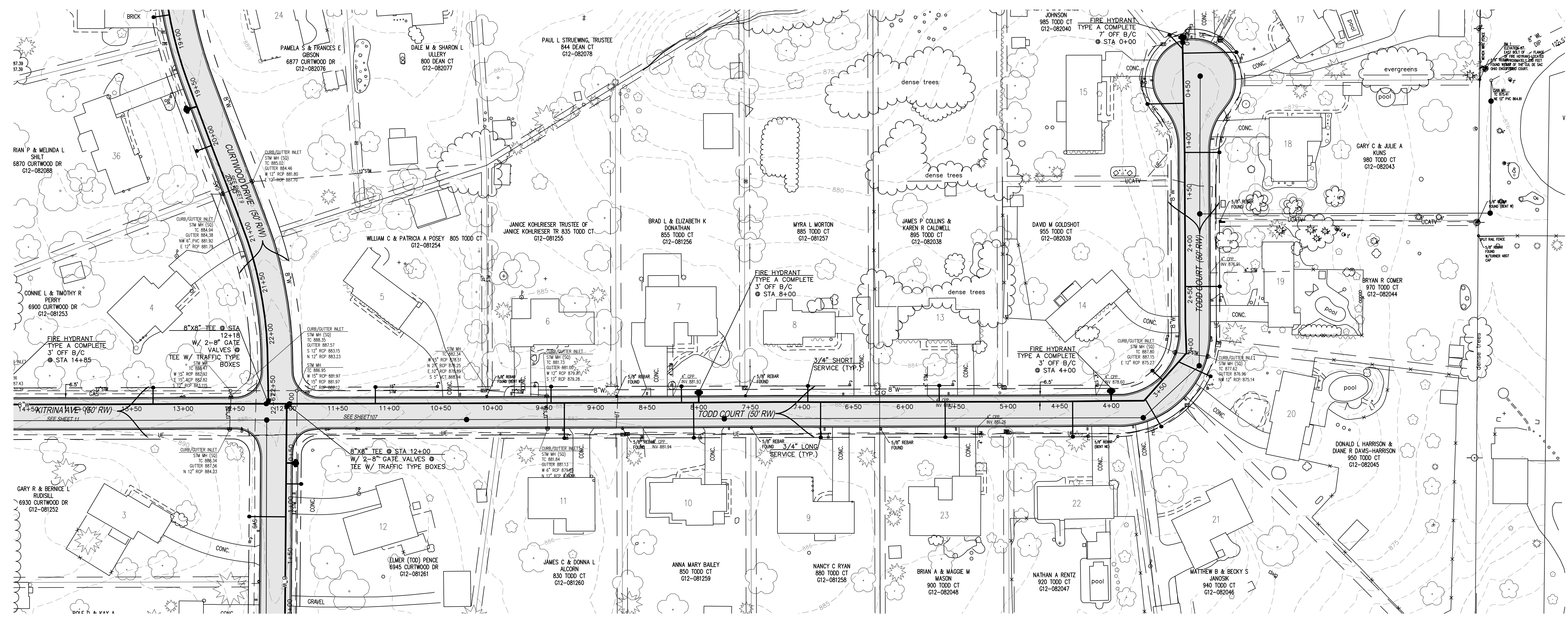


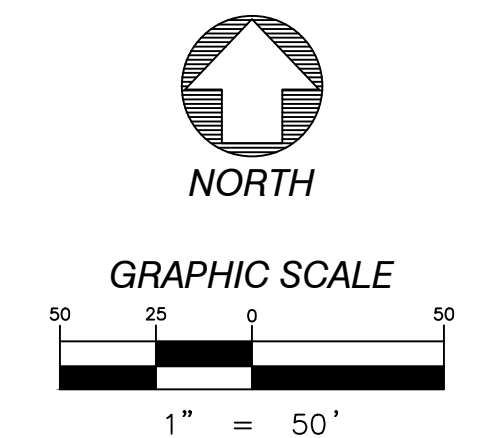
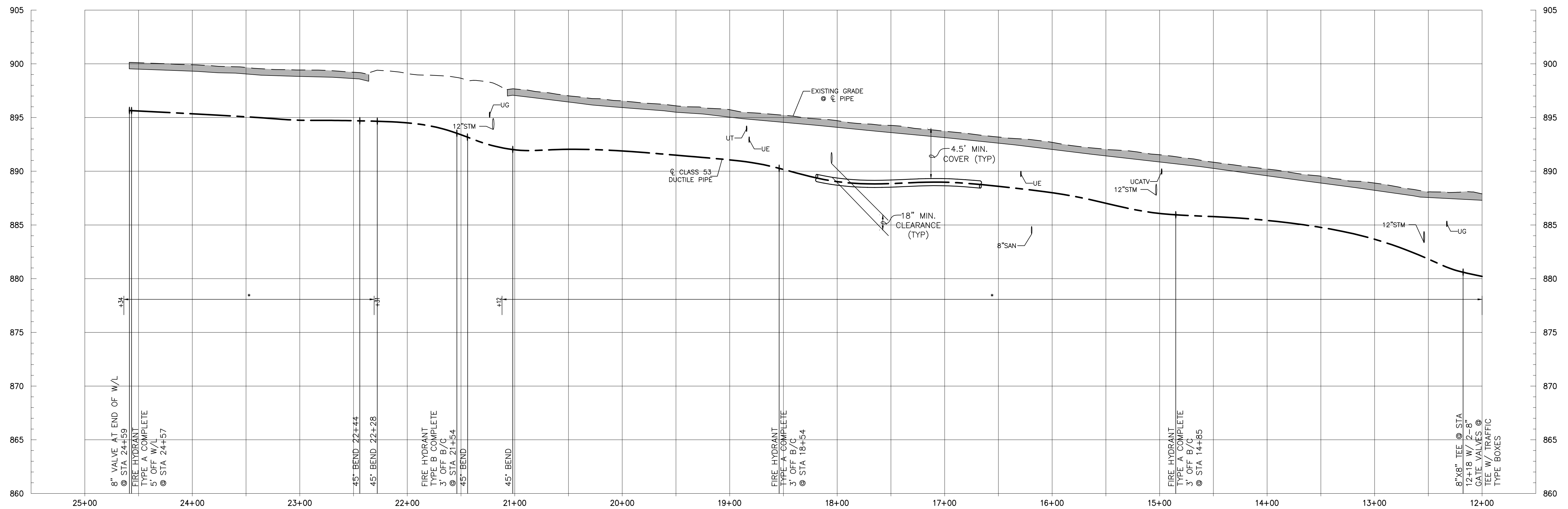
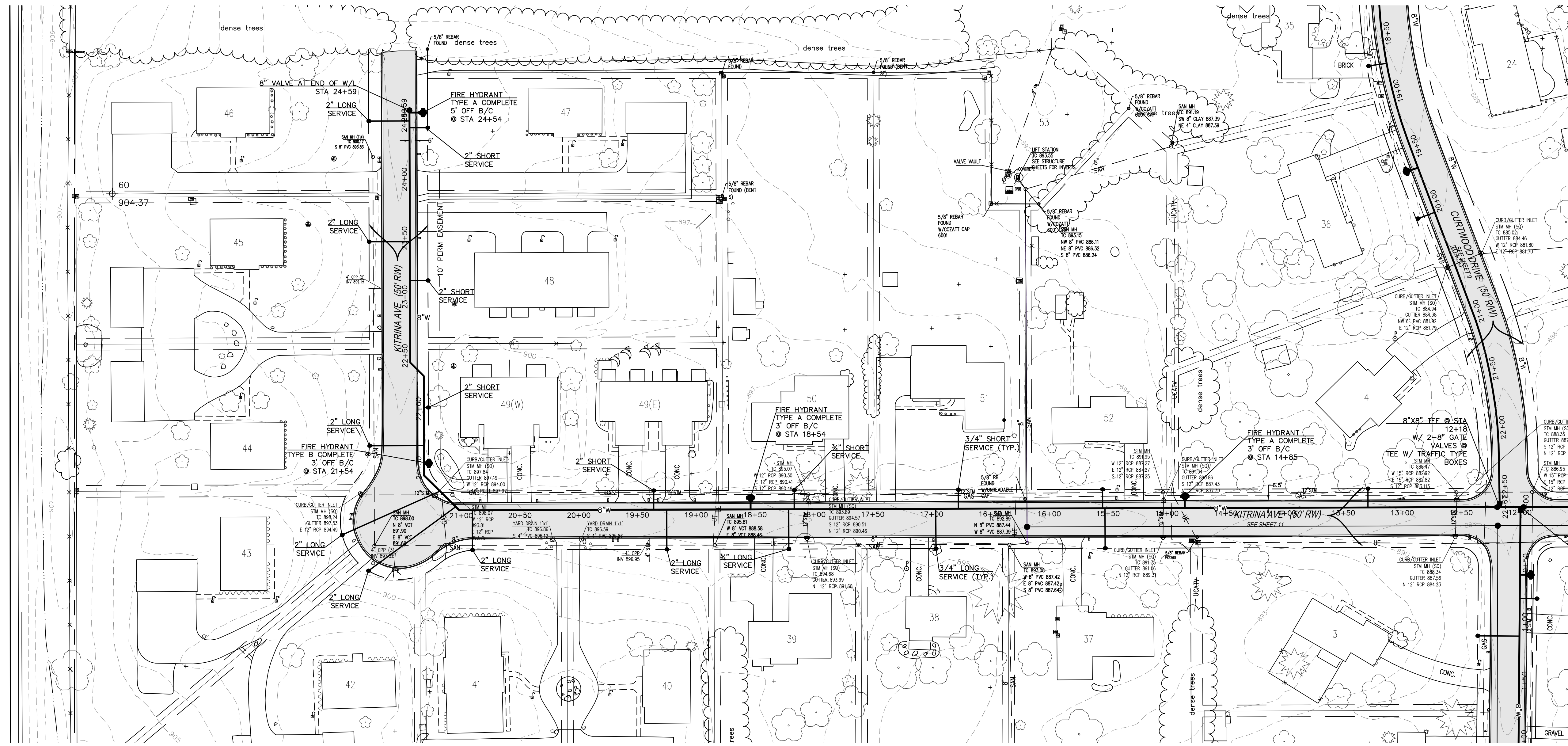
**COUNTRY
ESTATES EAST
WATER
IMPROVEMENTS**

- 02-09-15 PRELIMINARY
- 08-07-15 BACKCHECK
- 02-26-16 BACKCHECK 2
- 03-30-16 BACKCHECK 3
- 04-29-16 BACKCHECK 4
- 05-03-16 FINAL
- 09-16-16 BID SET

**PLAN & PROFILE
BURNSIDE DRIVE
STA 0+00 TO 14+00**



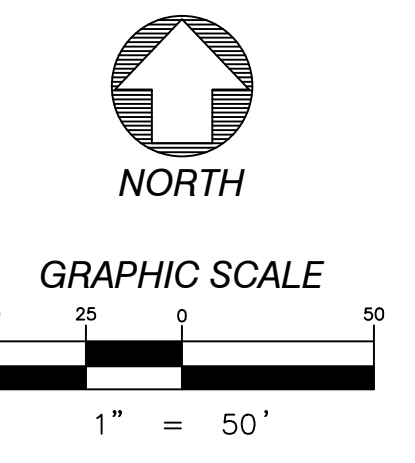
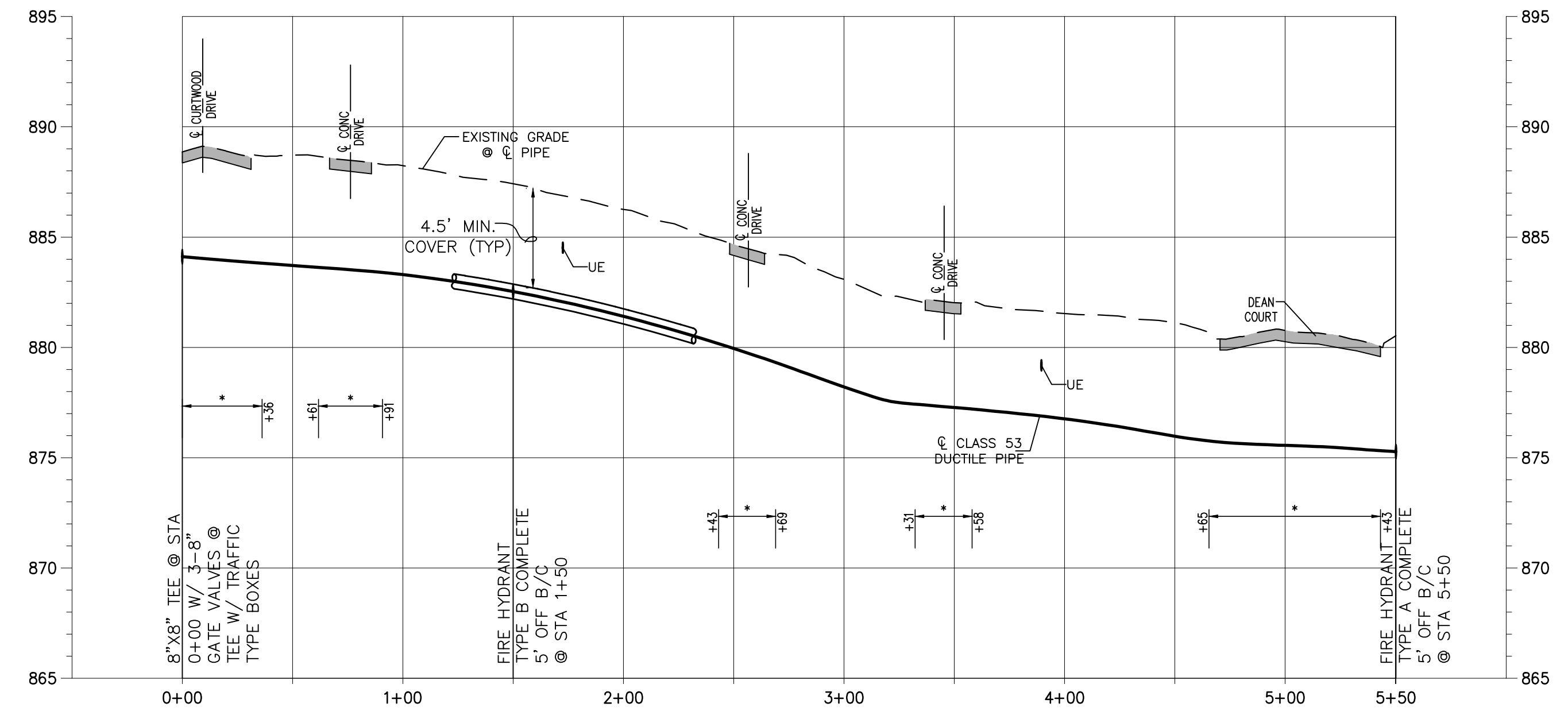
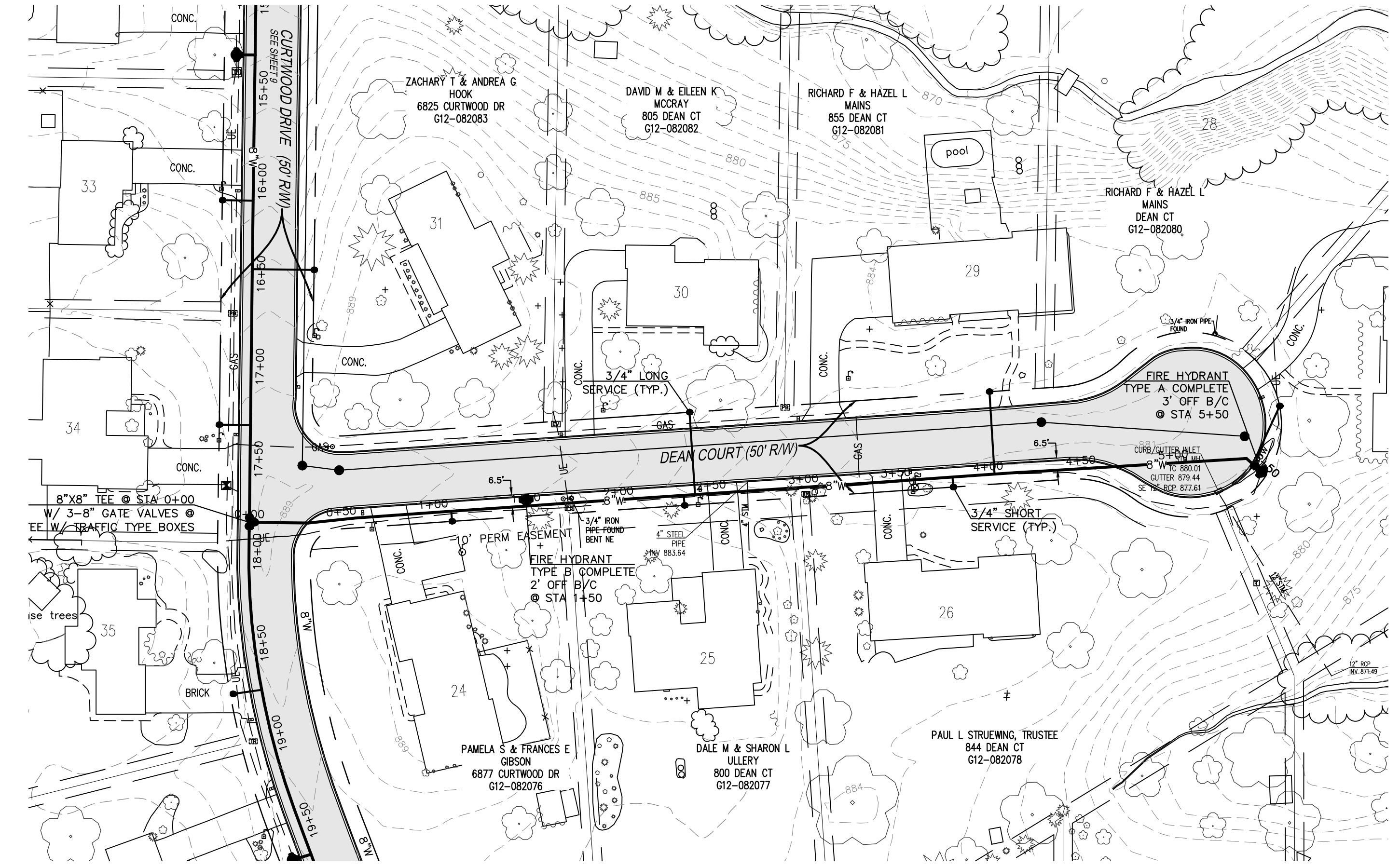




**COUNTRY
ESTATES EAST
WATER
IMPROVEMENTS**

02-09-15	PRELIMINARY
08-07-15	BACKCHECK
02-26-16	BACKCHECK 2
03-30-16	BACKCHECK 3
04-29-16	BACKCHECK 4
05-03-16	FINAL
09-16-16	BID SET

**PLAN & PROFILE
KITRINA AVE
STA 14+33 TO STA 26+34**



**COUNTRY
ESTATES EAST
WATER
IMPROVEMENTS**

02-09-15	PRELIMINARY
08-07-15	BACKCHECK
02-26-16	BACKCHECK 2
03-30-16	BACKCHECK 3
04-29-16	BACKCHECK 4
05-03-16	FINAL
09-16-16	BID SET

**PLAN & PROFILE
TODD COURT
STA 0+00 TO STA 1+80**

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