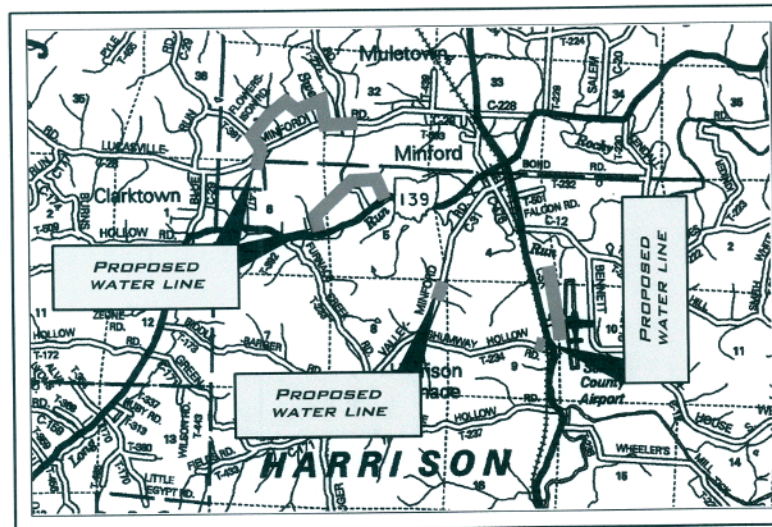


Received  
1/17/12 SF  
Approved  
1/20/12

# LUCASVILLE-MINFORD ROAD, STATE ROUTE 139, SWAUGER VALLEY-MINFORD ROAD, & STATE ROUTE 335 WATER LINE RELOCATION SCIOTO COUNTY REGIONAL WATER DISTRICT SCIOTO COUNTY, OHIO

**LEGEND**

Ex R/W	---
L-A R/W	---
PROP R/W	---
Temporary R/W	---
Construction Limits	---
Railroad Tracks	
Ex / Prop Fence	-x-x-
Ex / Prop Ditch	-x-x-
Ex / Prop Storm	---
Ex Cable	---
Ex Electric	---
Ex Fiber Optics	---
Ex Gas	---
Ex Telephone	---
Ex Water	---
Prop Water	---
Ex Flush Hydrant	⊗
Prop Flush Hydrant	⊗
Prop Gate Valve	⊗



**SITE LOCATION MAP**  
Not To Scale

APPROVED BY:



*Leo B. Conkel, Jr.*

Leo B. Conkel, Jr., P.E. No. 57781

3-11-11  
Date

**SHEET INDEX**

<b>TITLE SHEET</b>	1
<b>PLAN AND PROFILE</b>	
<b>LUCASVILLE-MINFORD ROAD</b>	2-4
<b>STATE ROUTE 139</b>	5
<b>SWAUGER VALLEY - MINFORD ROAD</b>	6
<b>SHUMWAY - HOLLOW ROAD</b>	6
<b>STATE ROUTE 335</b>	7
<b>WATER LINE DETAILS</b>	8-10

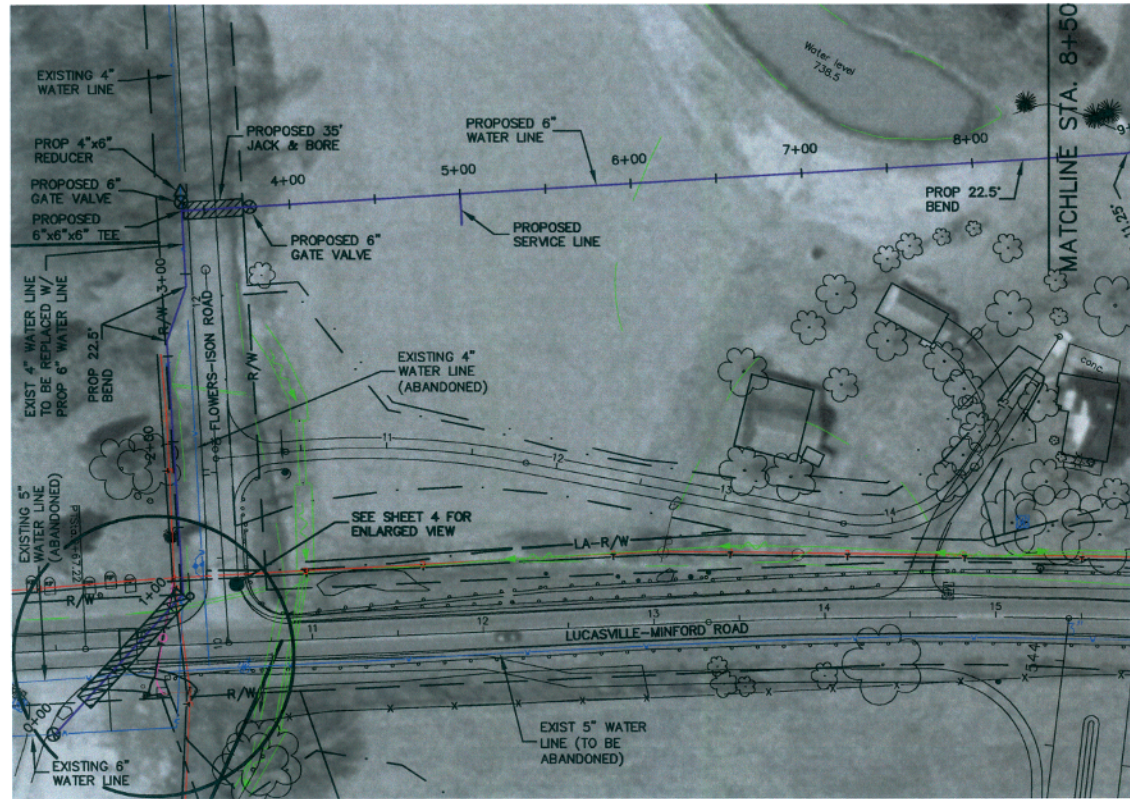
**L-CON ENGINEERS, LLC**  
9485 HAAF FARM DRIVE NW  
PICKERINGTON, OHIO 43147  
PHONE (740) 927-5851 FAX (740) 927-1178

2 WORKING DAYS  
BEFORE YOU DIG  
CALL TOLL FREE 800-362-2764  
OHIO UTILITIES PROTECTION SERVICE

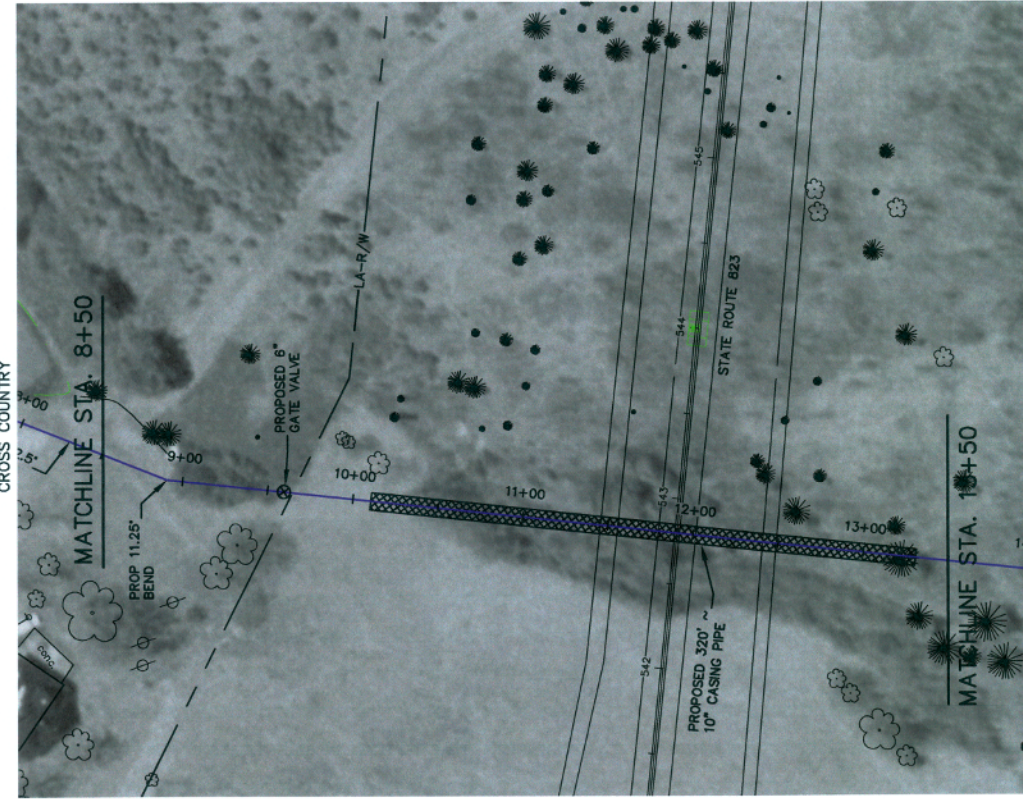
TITLE SHEET		
Drawn By	Checked By	Sheet
N.E.W.	L.B.C.	1 of 10

NOTE:  
OPEN CUT & REPAIR (A.S.) ASPHALT/(G.)  
GRAVEL DRIVES. SEE DETAIL, SHT. 8

NOTE:  
DEMOLITION WAS DONE TO SOME  
STRUCTURES, DRIVEWAYS, & PARKING.

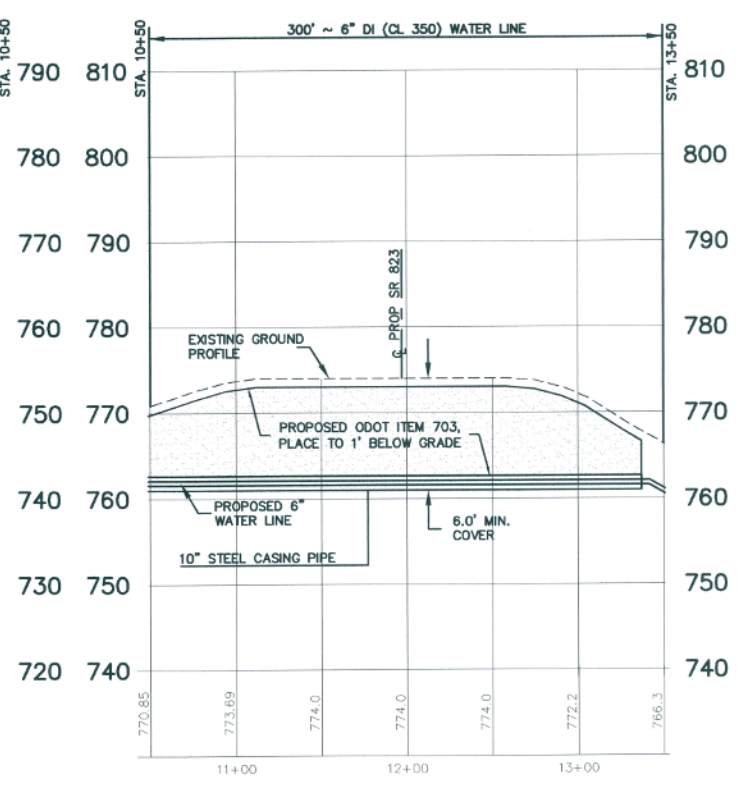
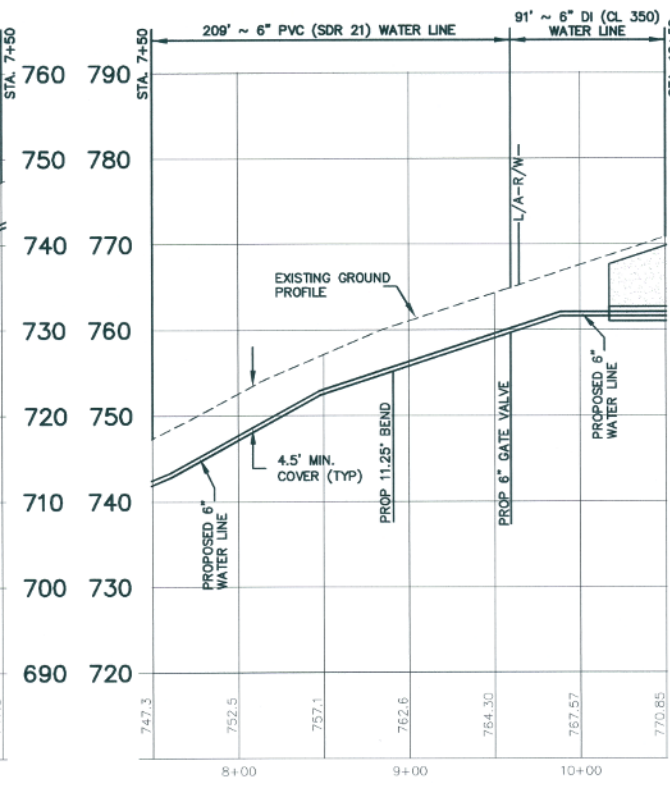
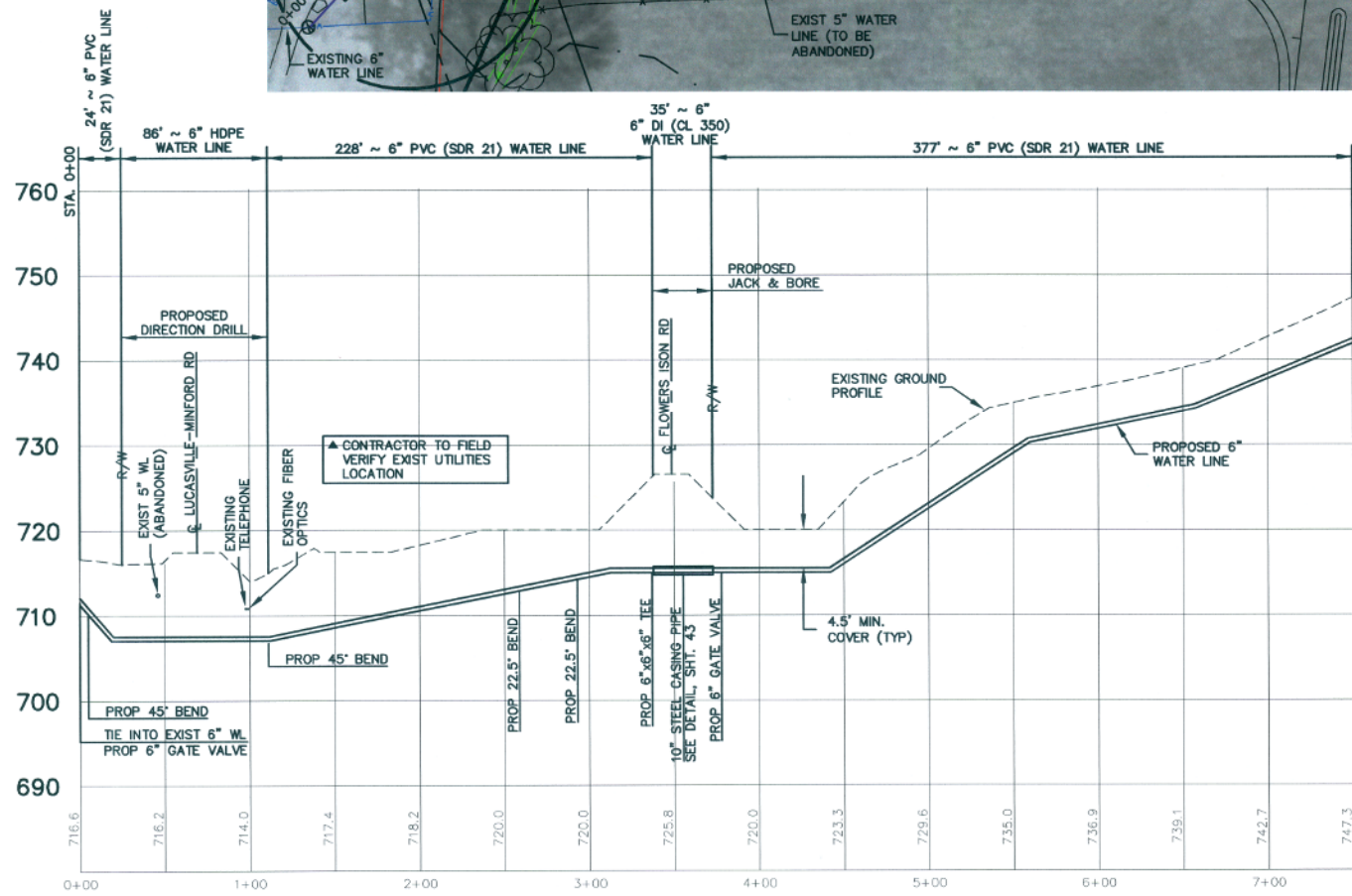
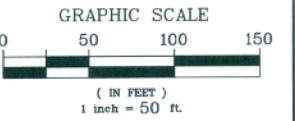


PLAN AND PROFILE  
SEE SHT 2 FOR CONT.  
CROSS COUNTRY



PLAN AND PROFILE  
SEE SHT 2 FOR CONT.  
CROSS COUNTRY

PLAN AND PROFILE  
SEE SHT 3 FOR CONT.  
CROSS COUNTRY



SCALE  
HORIZ.: 1" = 50'  
VERT.: 1" = 10'

2 WORKING DAYS  
BEFORE YOU DIG  
CALL TOLL FREE 800-362-2764  
OHIO UTILITIES PROTECTION SERVICE

LUCASVILLE-MINFORD ROAD WATER LINE RELOCATION  
SCIOTO COUNTY REGIONAL WATER DISTRICT  
SCIOTO COUNTY, OHIO

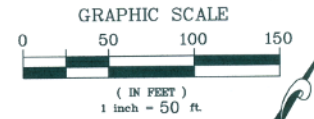
**L-CON ENGINEERS, LLC**  
9485 HAAF FARM DRIVE NW  
PICKERINGTON, OHIO 43147  
PHONE (740) 927-5851 FAX (740) 927-1178

WATER LINE  
PLAN AND PROFILE

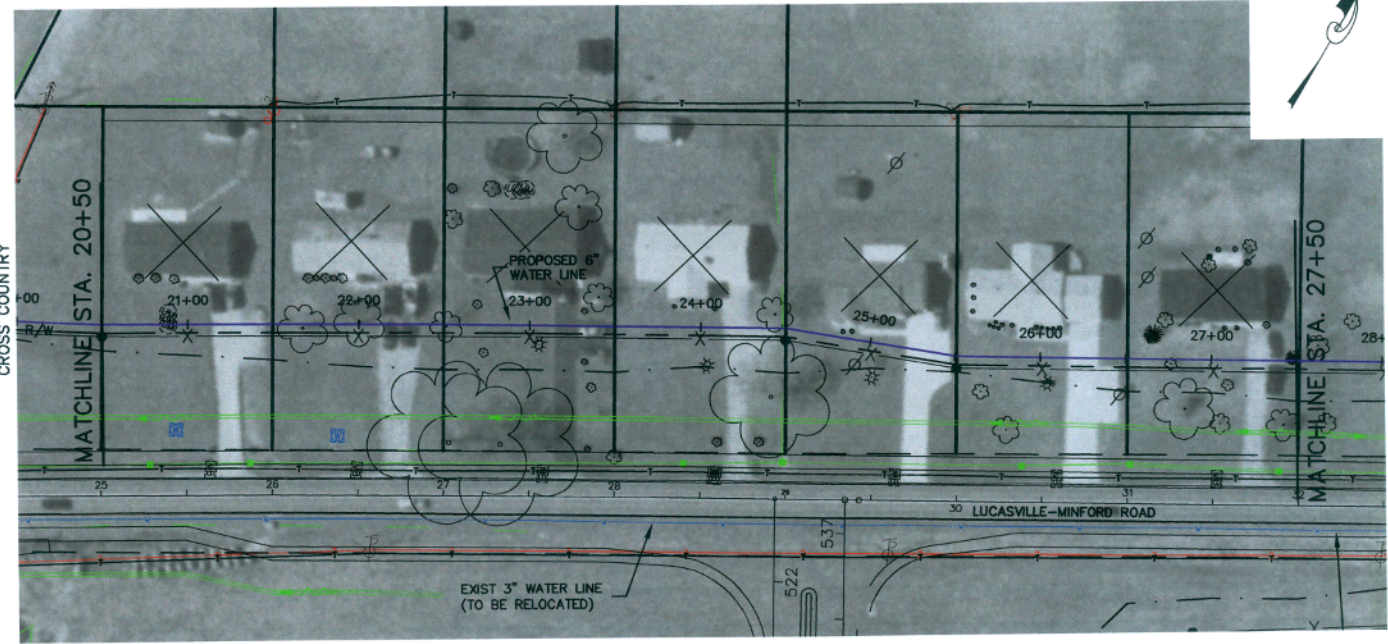
Revised	LONGMEN CASING PIPE 11-21-11	Job Number	
	CORRECT PROFILE 11-30-11	Drawn By	Checked By
	CHANGED 6" DI TO 6" DI 12-15-11	N.E.W.	L.B.C.
	CHANGED NOTE IN PROFILE 1-11-11	Sheet 2 of 10	

NOTE:  
OPEN CUT & REPAIR (AS.) ASPHALT/(G.)  
GRAVEL DRIVES. SEE DETAIL, SHT. 8

NOTE:  
DEMOLITION WAS DONE TO SOME  
STRUCTURES, DRIVEWAYS, & PARKING.

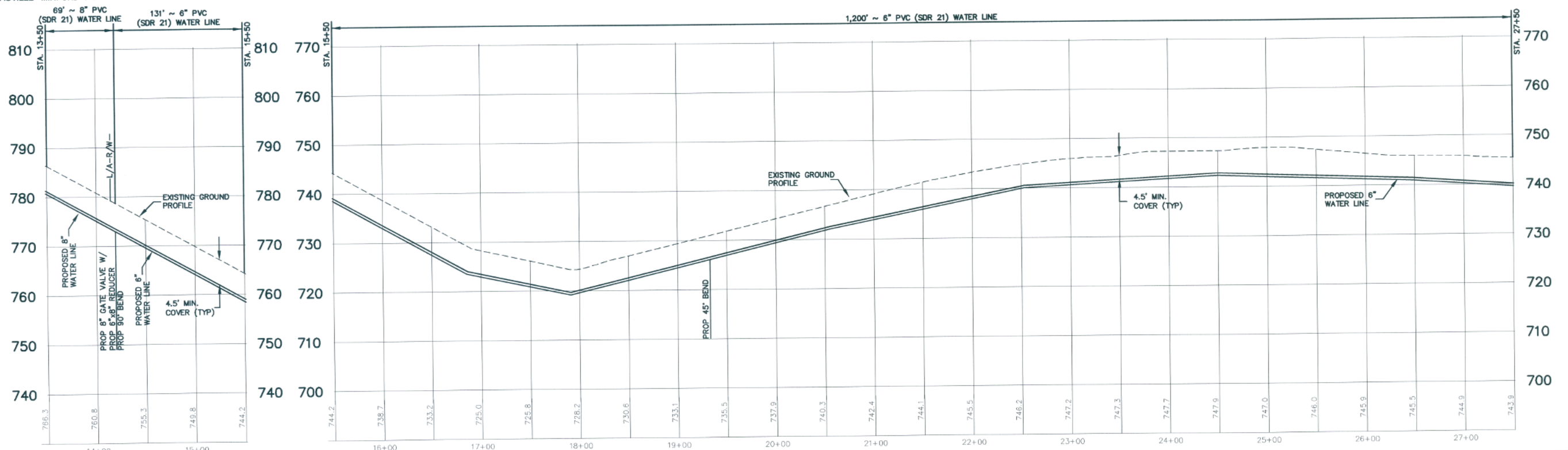


PLAN AND PROFILE  
SEE SHT 3 FOR CONT.  
LUCASVILLE-MINFORD ROAD



PLAN AND PROFILE  
SEE SHT 3 FOR CONT.  
LUCASVILLE-MINFORD ROAD

PLAN AND PROFILE  
SEE SHT 3 FOR CONT.  
LUCASVILLE-MINFORD ROAD



SCALE  
HORIZ.: 1" = 50'  
VERT.: 1" = 10'

2 WORKING DAYS  
BEFORE YOU DIG  
CALL TOLL FREE 800-362-2764  
OHIO UTILITIES PROTECTION SERVICE

LUCASVILLE-MINFORD ROAD WATER LINE RELOCATION  
SCIOTO COUNTY REGIONAL WATER DISTRICT  
SCIOTO COUNTY, OHIO

**L-CON ENGINEERS, LLC**  
9485 HAAF FARM DRIVE NW  
PICKERINGTON, OHIO 43147  
PHONE (740) 927-5851 FAX (740) 927-1178

WATER LINE  
PLAN AND PROFILE

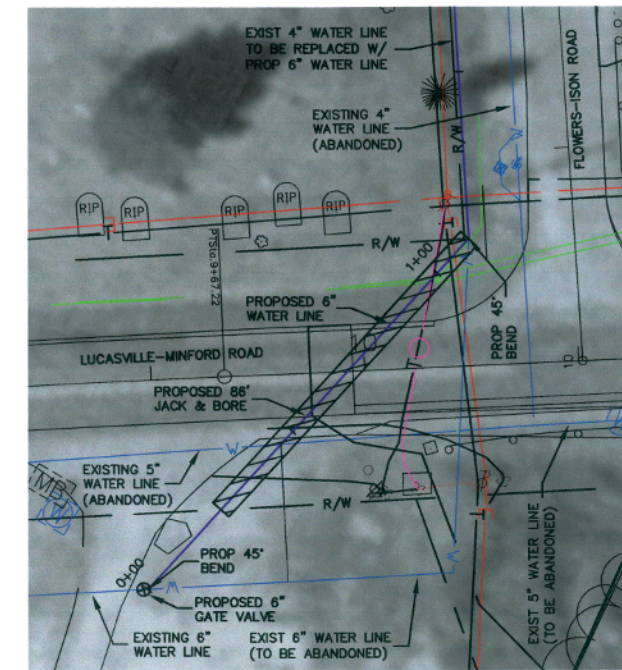
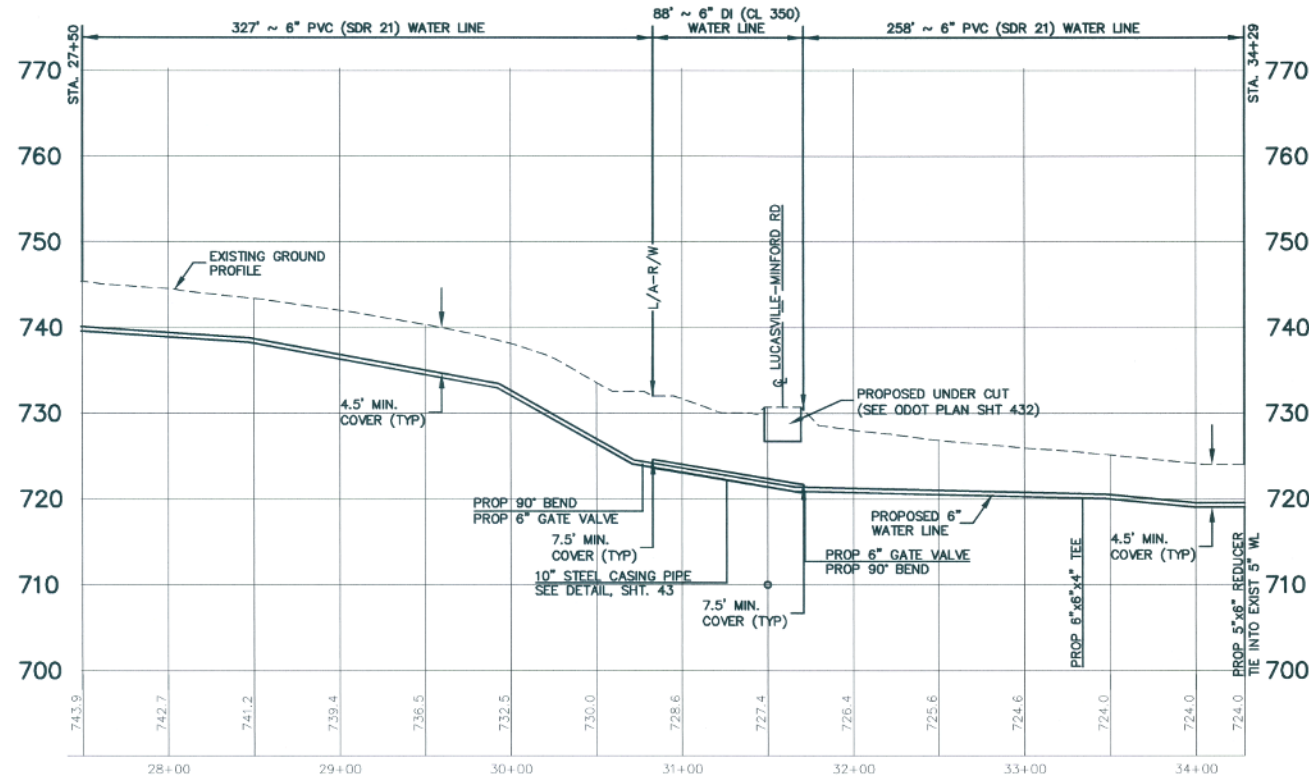
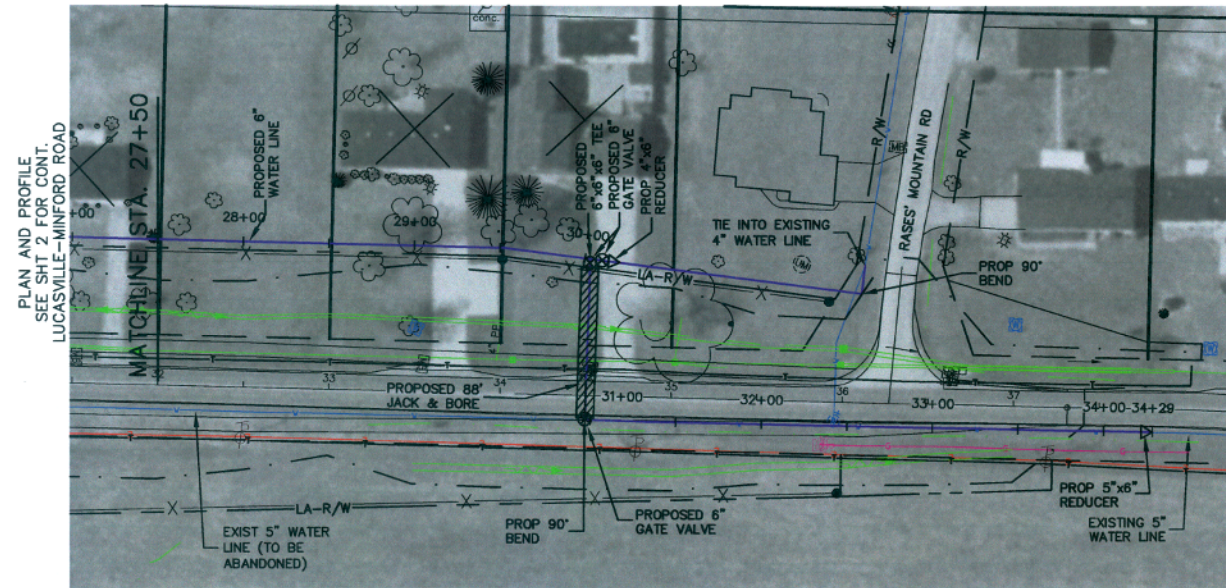
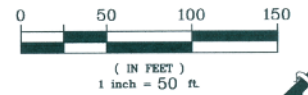
Station	Job Number	Drawn By	Checked By
		N.E.W.	L.B.C.

Sheet 3 of 10

NOTE:  
OPEN CUT & REPAIR (A.S.) ASPHALT/(G.)  
GRAVEL DRIVES. SEE DETAIL, SHT. 8

NOTE:  
DEMOLITION WAS DONE TO SOME  
STRUCTURES, DRIVEWAYS, & PARKING.

GRAPHIC SCALE



ENLARGED VIEW  
SCALE: 1"=20'

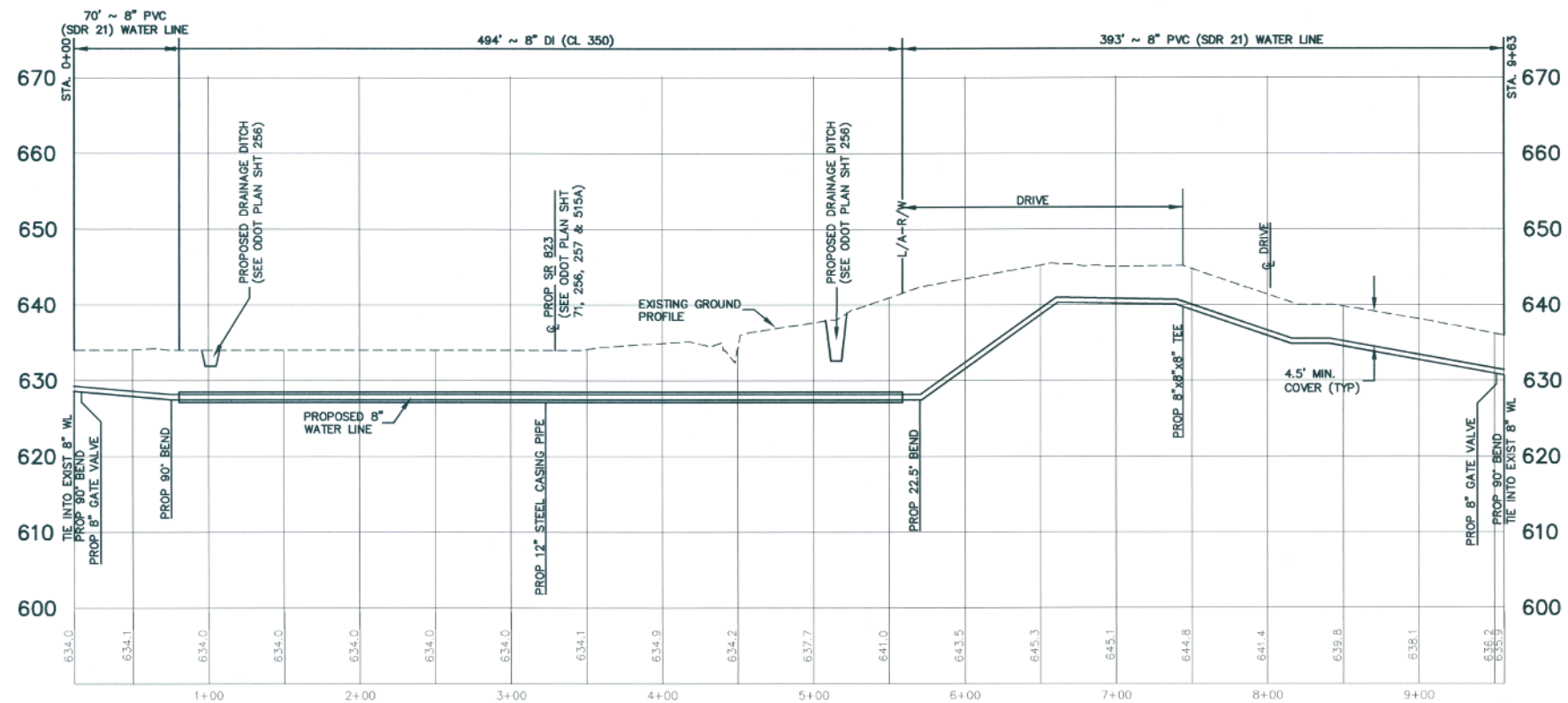
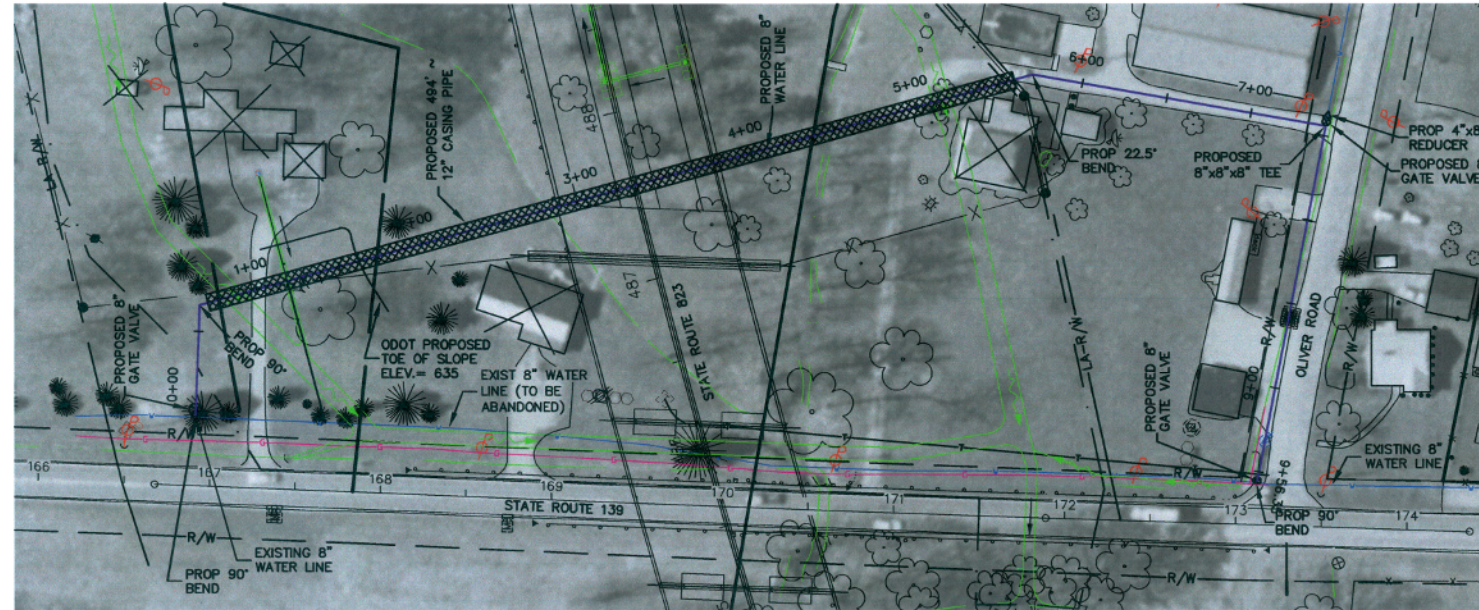
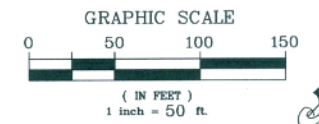
SCALE  
HORIZ.: 1" = 50'  
VERT.: 1" = 10'

2 WORKING DAYS  
BEFORE YOU DIG  
CALL TOLL FREE 800-362-2764  
OHIO UTILITIES PROTECTION SERVICE

LUCASVILLE-MINFORD ROAD WATER LINE RELOCATION SCIOTO COUNTY REGIONAL WATER DISTRICT SCIOTO COUNTY, OHIO	
<b>L-CON ENGINEERS, LLC</b> 9485 HAAF FARM DRIVE NW PICKERINGTON, OHIO 43147 PHONE (740) 927-5851 FAX (740) 927-1178	WATER LINE PLAN AND PROFILE
Revision: _____ _____ _____	Job Number: _____ _____ _____
Drawn By: N.E.W.	Checked By: L.B.C.
Sheet 4 of 10	

NOTE:  
OPEN CUT & REPAIR (AS.) ASPHALT/(G.)  
GRAVEL DRIVES. SEE DETAIL, SHT. 8

NOTE:  
DEMOLITION WAS DONE TO SOME  
STRUCTURES, DRIVEWAYS, & PARKING.



STATE ROUTE 139 WATER LINE RELOCATION  
SCIOTO COUNTY REGIONAL WATER DISTRICT  
SCIOTO COUNTY, OHIO

**L-CON ENGINEERS, LLC**

9485 HAAF FARM DRIVE NW  
PICKERINGTON, OHIO 43147  
PHONE (740) 927-5851 FAX (740) 927-1178

WATER LINE  
PLAN AND PROFILE

SCALE  
HORIZ.: 1" = 50'  
VERT.: 1" = 10'

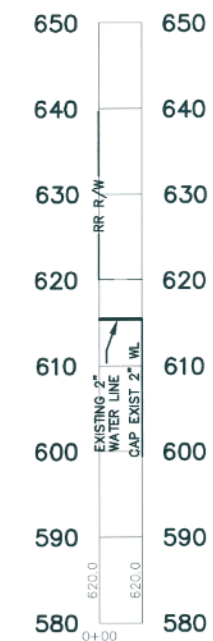
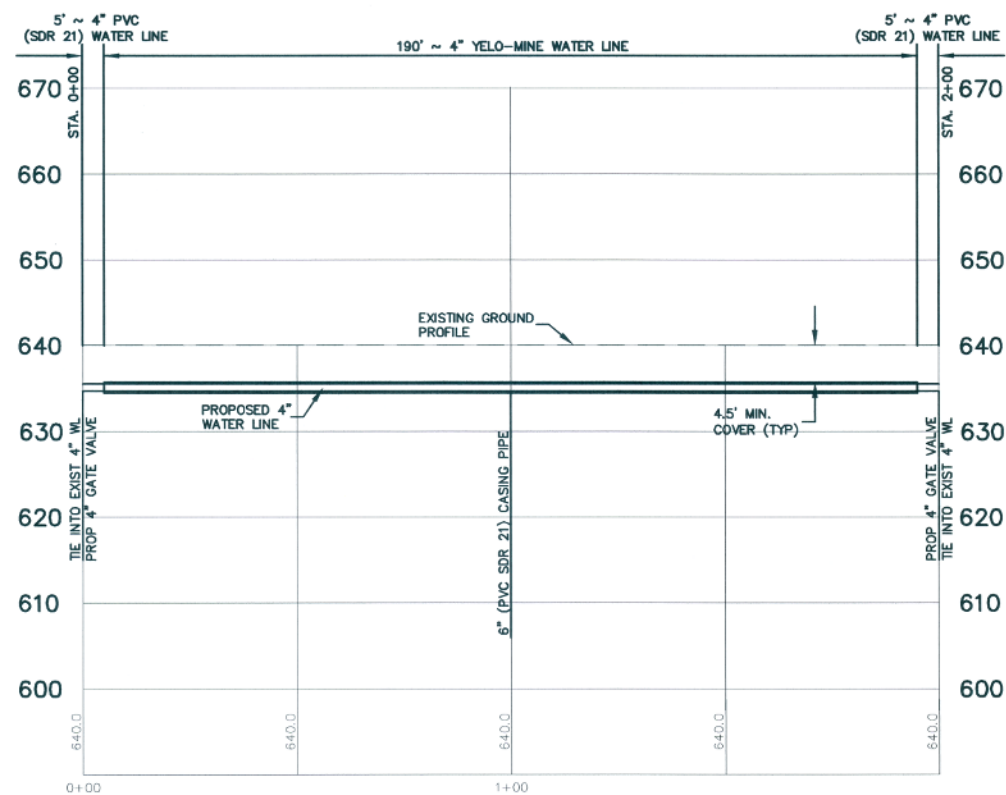
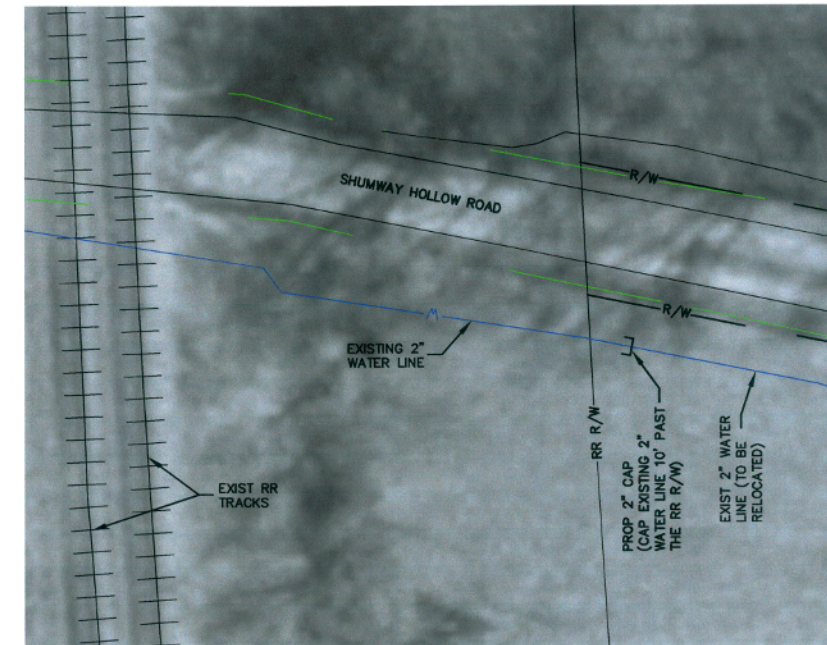
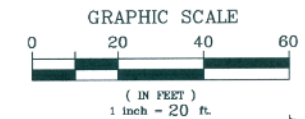
2 WORKING DAYS  
BEFORE YOU DIG  
CALL TOLL FREE 800-362-2764  
OHIO UTILITIES PROTECTION SERVICE

Revision: \_\_\_\_\_  
Job Number: \_\_\_\_\_

Drawn By: \_\_\_\_\_  
Checked By: \_\_\_\_\_  
N.E.W. L.B.C. Sheet 5 of 10

NOTE:  
OPEN CUT & REPAIR (AS.) ASPHALT/(G.)  
GRAVEL DRIVES. SEE DETAIL, SHT. 8

NOTE:  
DEMOLITION WAS DONE TO SOME  
STRUCTURES, DRIVEWAYS, & PARKING.



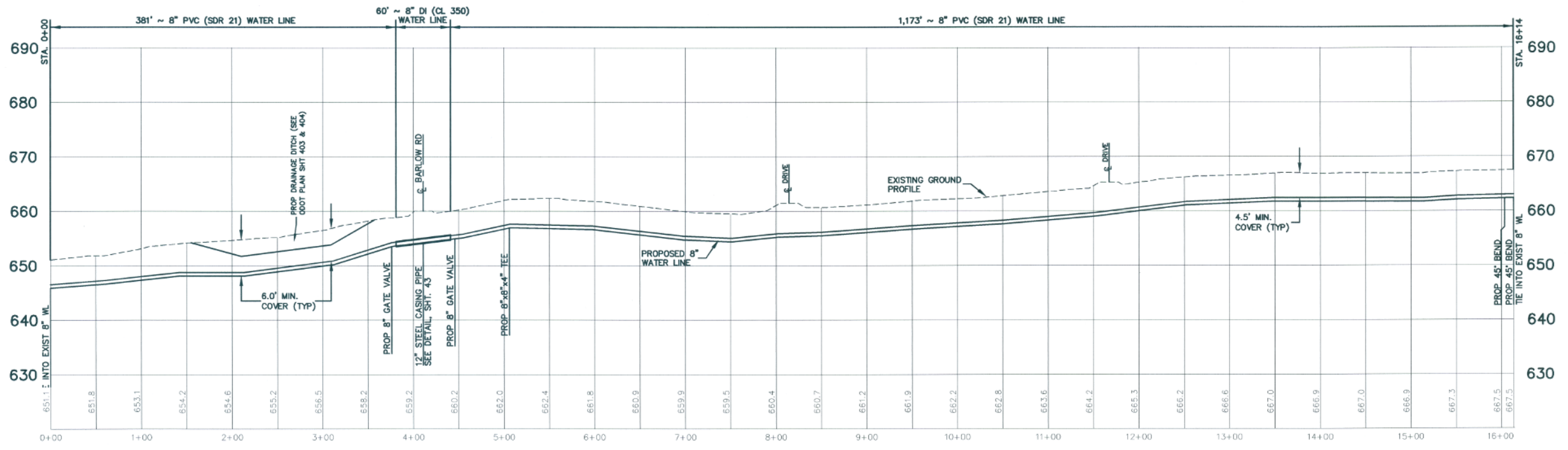
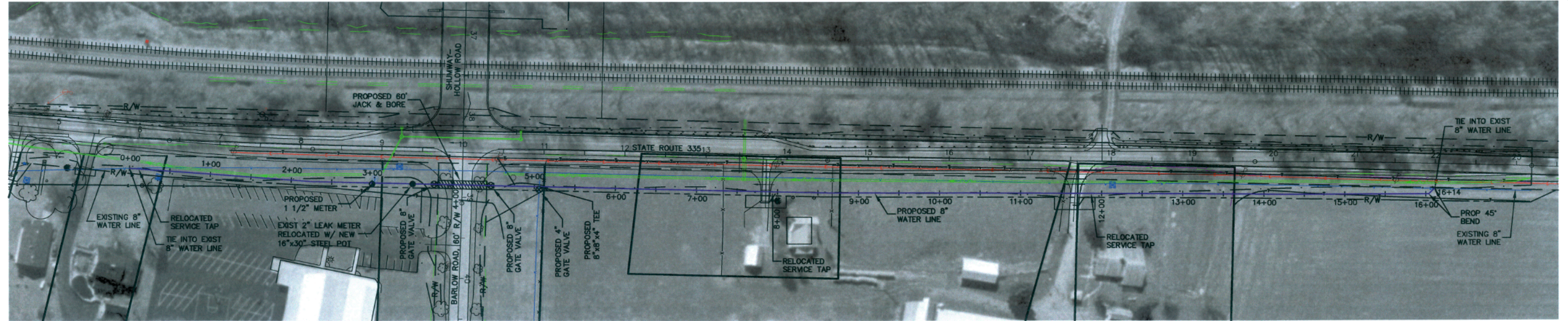
SCALE  
HORIZ.: 1" = 20'  
VERT.: 1" = 10'

2 WORKING DAYS  
BEFORE YOU DIG  
CALL TOLL FREE 800-362-2764  
OHIO UTILITIES PROTECTION SERVICE

SWAUGER VALLY-MINFORD ROAD WATER LINE RELOCATION SCIOTO COUNTY REGIONAL WATER DISTRICT SCIOTO COUNTY, OHIO			
<b>L-CON ENGINEERS, LLC</b> 9485 HAAF FARM DRIVE NW PICKERINGTON, OHIO 43147 PHONE (740) 927-5851 FAX (740) 927-1178		WATER LINE PLAN AND PROFILE	
Revision: _____ _____ _____	Job Number: _____	Drawn By: _____ N.E.W.	Checked By: _____ L.B.C.
		Sheet 6 of 10	

NOTE:  
OPEN CUT & REPAIR (AS) ASPHALT/(G.)  
GRAVEL DRIVES. SEE DETAIL, SHT. 8

NOTE:  
DEMOLITION WAS DONE TO SOME  
STRUCTURES, DRIVEWAYS, & PARKING.



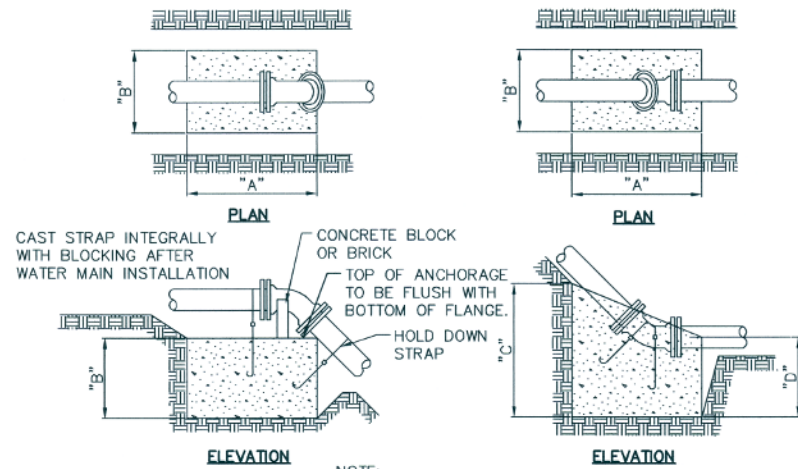
STATE ROUTE 335 WATER LINE RELOCATION  
SCIOTO COUNTY REGIONAL WATER DISTRICT  
SCIOTO COUNTY, OHIO

<b>L-CON ENGINEERS, LLC</b>		PLAN AND PROFILE	
9485 HAAF FARM DRIVE NW PICKERINGTON, OHIO 43147 PHONE (740) 927-5851 FAX (740) 927-1178			
Revision	Job Number	Drawn By	Checked By
		N.E.W.	L.B.C.
			Sheet 7 of 10

SCALE  
HORIZ.: 1" = 60'  
VERT.: 1" = 10'

2 WORKING DAYS  
BEFORE YOU DIG  
CALL TOLL FREE 800-362-2764  
OHIO UTILITIES PROTECTION SERVICE

**STANDARD BLOCKING**

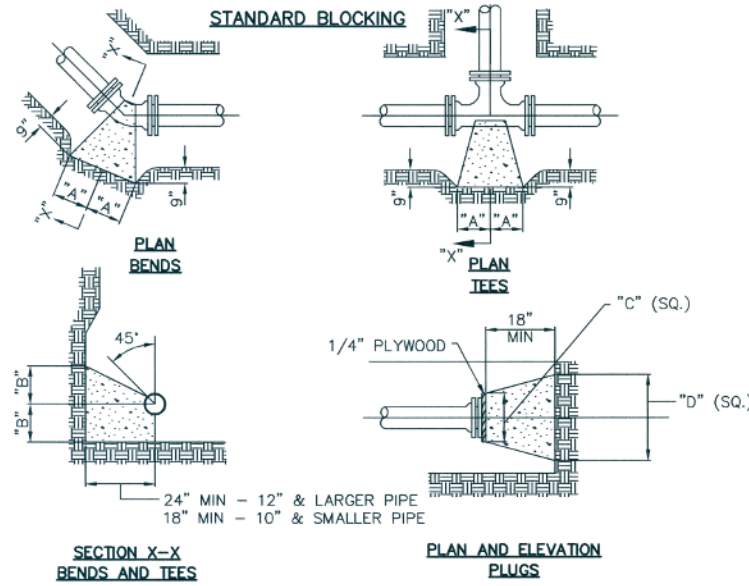


NOTE:  
 6" TO 8" 1-1/4"x1-1/8" STRAP  
 10" TO 12" 2-1/4"x1-1/4" STRAP  
 14" TO 16" 2-3/8"x1-1/2" STRAP  
 18" TO 20" 2-1/2"x1-3/4" STRAP

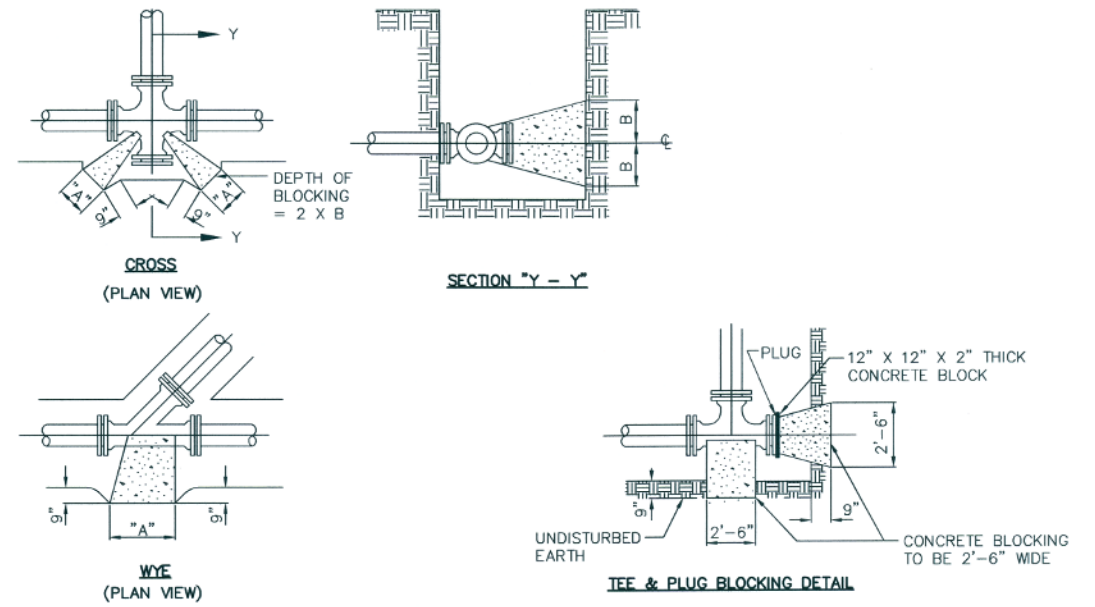
**VERTICAL BENDS**

SOIL TYPE	SIZE	TYPE A		TYPE B			
		A	B	A	B	C	D
2000 PSF SOIL	6"	36"	30"	24"	24"	24"	16"
	8"	42"	36"	24"	30"	30"	18"
	10"	48"	42"	30"	36"	30"	18"
	12"	54"	48"	36"	36"	36"	21"
	14"	54"	48"	60"	42"	42"	24"
	16"	60"	54"	60"	48"	48"	24"
	20"	72"	60"	72"	60"	54"	30"
	24"						

**STANDARD BLOCKING**



**STANDARD BLOCKING**



NOTE:  
 BASED ON 100 P.S.I. STATIC PRESSURE PLUS A.W.W.A. WATER HAMMER.

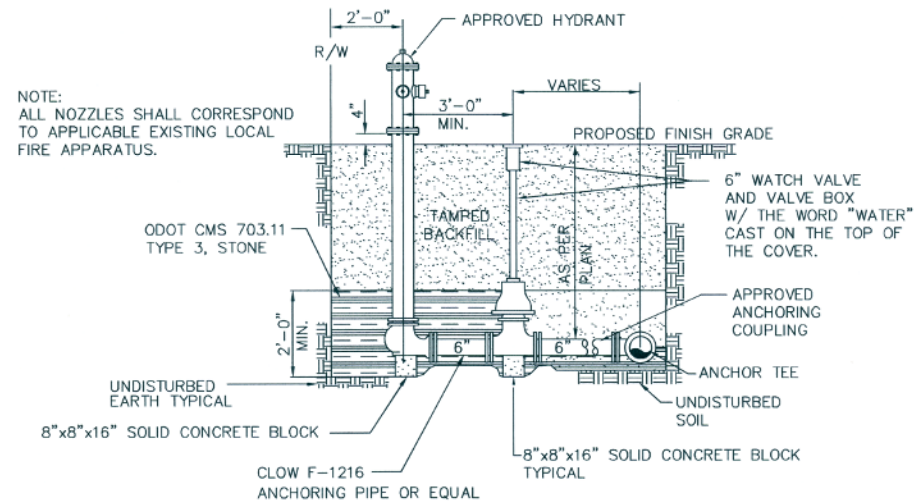
ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.  
 ALL PIPE SURFACES COMING IN CONTACT WITH CONCRETE SHALL BE WRAPPED WITH 6MIL POLYETHYLENE.

CONCRETE FOR BLOCKING SHALL BE CAST IN PLACE AND SHALL CONFORM TO O.D.O.T. ITEM 499, CLASS "C" AS PER THE O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS.

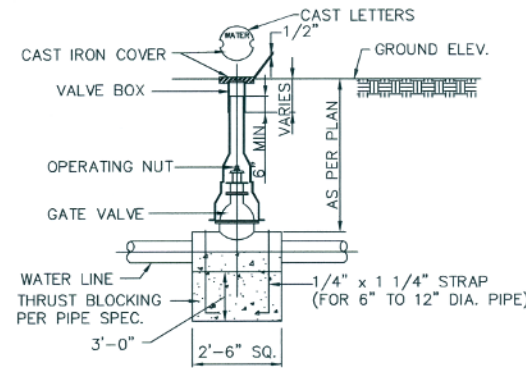
TYPE	SIZE	1/4 BENDS		1/8 BENDS		1/16 BENDS		TEES		PLUGS		
		A	B	A	B	A	B	A	B	C	D	
2000 PSF SOIL	6"	16"	10"	9"	10"	6"	8"	10"	12"	10"	21"	
	8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"	
	10"	26"	17"	14"	17"	10"	13"	16"	20"	14"	36"	
	12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"	
	14"	35"	24"	19"	24"	12"	20"	22"	27"	18"	48"	
	16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"	
	20"	46"	36"	25"	36"	15"	30"	30"	39"	24"	68"	
	24"											

TYPE	SIZE	CROSS		WYE	
		A	B	A	B
2000 PSF SOIL	6"	10"	12"	9"	10"
	8"	13"	16"	12"	13"
	10"	16"	20"	14"	17"
	12"	18"	24"	16"	21"
	14"	22"	27"	19"	24"
	16"	24"	30"	21"	27"
	20"	30"	39"	25"	36"
	24"				

NOTE:  
 SIMILAR FOR 2" POST TYPE FLUSH HYDRANT.  
 1-1/2" HOSE OUTLET TO BE ROTATED TO SUIT SITE DRAINAGE.

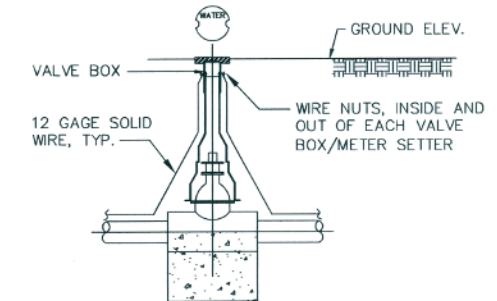


**STANDARD HYDRANT ASSEMBLY - TYPE "A"**  
**PERPENDICULAR TO WATER MAIN**  
 NOT TO SCALE



**GATE VALVE INSTALLATION**  
 (12" MAX.)  
 NOT TO SCALE

INSTALLATION OF VALVES UNDER PRESSURE CONDITIONS, ALL VALVES (INCLUDING THOSE IN HYDRANT RUN-OUTS) REQUIRE ANCHORAGE AGAINST THRUST CREATED WHEN VALVE IS CLOSED. JOINT RESTRAINTS ARE REQUIRED EACH DIRECTION FROM VALVE FOR A DISTANCE (L<sub>DE</sub>), SEE JOINT RESTRAINT REQUIREMENTS FOR DEAD END LINES FOR THIS DISTANCE.



**TRACER WIRE TERMINATION DETAIL**  
 NOT TO SCALE

1. 12 GAGE SOLID WIRE TO BE USED ON ALL PVC WATER LINE.
2. SIMILAR FOR ALL METER SETTER.

2 WORKING DAYS BEFORE YOU DIG  
 CALL TOLL FREE 800-362-2764  
 OHIO UTILITIES PROTECTION SERVICE

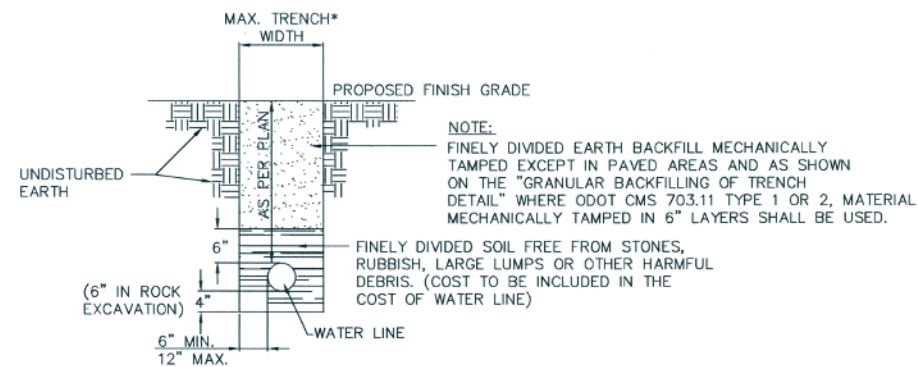


SHELDON-CARTRO ROAD WATER LINE EXTENSION  
 SCIOTO COUNTY REGIONAL WATER DISTRICT  
 SCIOTO COUNTY, OHIO

**L-CON ENGINEERS, LLC**  
 9485 HAAF FARM DRIVE NW  
 PICKERINGTON, OHIO 43147  
 PHONE (740) 927-5851 FAX (740) 927-1178

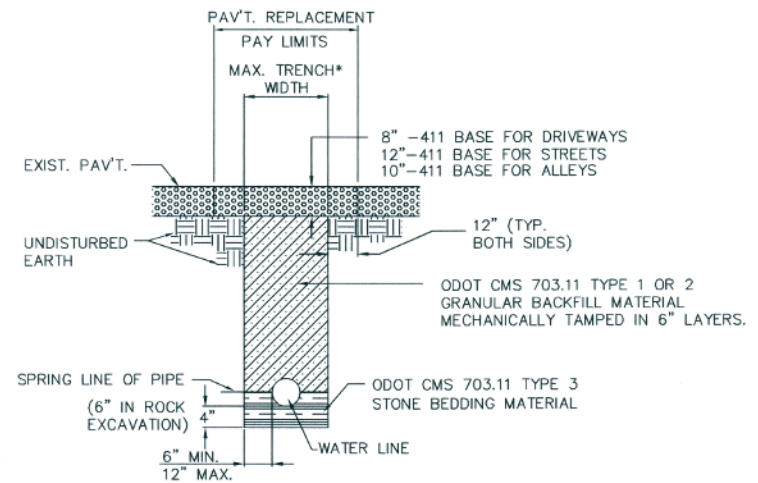
WATER LINE DETAILS





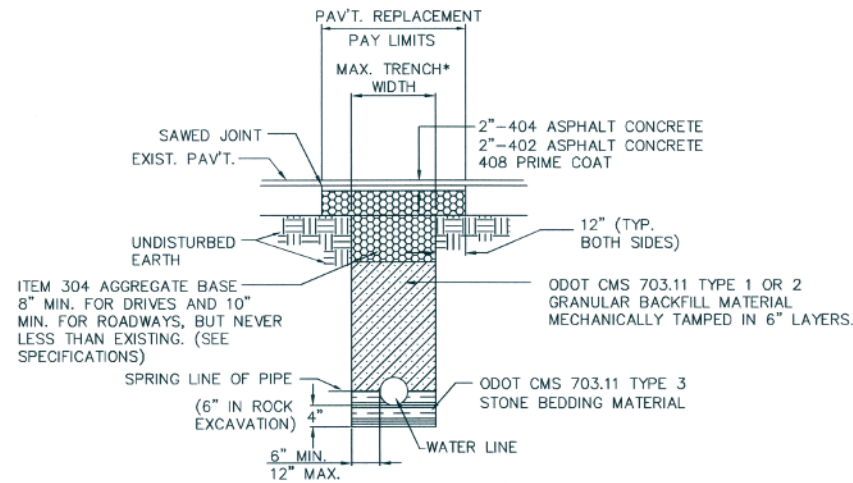
**PVC AND DUCTILE IRON WATER LINE TRENCH DETAIL**  
NOT TO SCALE

\* FOR PAY LIMITS ONLY, MAXIMUM TRENCH WIDTH SHALL BE THE SAME AS THE TRENCH WIDTH AT THE TOP OF THE PIPE.



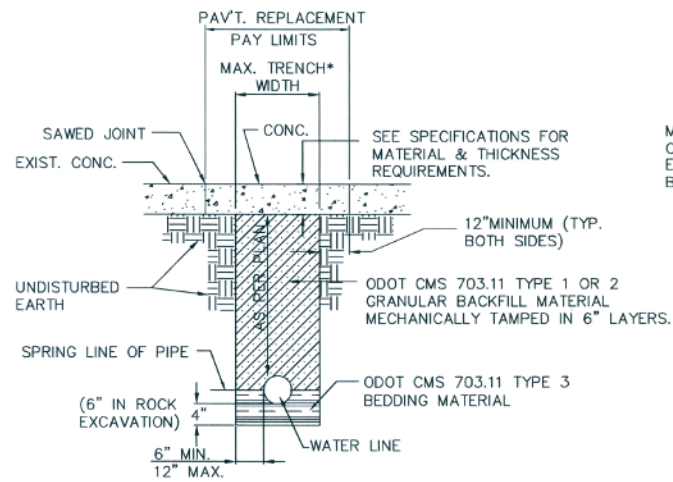
**TRENCH DETAIL IN GRANULAR PAVEMENT**  
NOT TO SCALE

\* FOR PAY LIMITS ONLY, MAXIMUM TRENCH WIDTH SHALL BE THE SAME AS THE TRENCH WIDTH AT THE TOP OF THE PIPE.



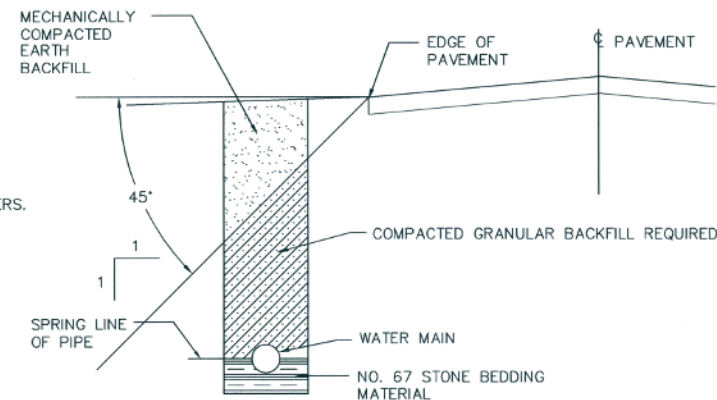
**TRENCH DETAIL IN ASPHALT PAVEMENT**  
NOT TO SCALE

\* FOR PAY LIMITS ONLY, MAXIMUM TRENCH WIDTH SHALL BE THE SAME AS THE TRENCH WIDTH AT THE TOP OF THE PIPE.



**TRENCH DETAIL IN CONCRETE PAVEMENT**  
NOT TO SCALE

\* FOR PAY LIMITS ONLY, MAXIMUM TRENCH WIDTH SHALL BE THE SAME AS THE TRENCH WIDTH AT THE TOP OF THE PIPE.



**GRANULAR BACKFILLING OF TRENCH DETAIL**  
NOT TO SCALE

**GENERAL NOTES**

- ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO SCIOTO COUNTY STANDARDS AND SPECIFICATIONS OR O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS.
- ALL WATER LINES UNDER AND WITHIN 5 FEET OF EXISTING OR PROPOSED PAVEMENT, SIDEWALKS AND DRIVEWAY AREAS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CONFORMING TO O.D.O.T. ITEM 703.
- UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY FIELD CHECKS AND RESEARCH OF AVAILABLE RECORDS. IT IS BELIEVED THAT THE LOCATIONS SHOWN ARE REASONABLY CORRECT, BUT NEITHER SCIOTO COUNTY REGIONAL WATER DISTRICT NOR THE ENGINEER ENSURES THEIR ACCURACY OR COMPLETENESS. THE EXACT LOCATIONS AND PROTECTION OF ALL UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
- OHIO E.P.A. WATERLINE REQUIREMENTS:** THE OHIO ENVIRONMENTAL PROTECTION AGENCY REQUIRES CONFORMANCE TO THE LATEST EDITION OF THE "RECOMMENDED STANDARDS FOR WATERWORKS" ("10 STATES STANDARDS"). THIS STANDARD SHALL BE EQUALLED OR EXCEEDED FOR THE WATERLINES. SPECIAL ATTENTION SHALL BE GIVEN TO THE FOLLOWING SECTIONS OF PART 8:
  - 8.0.1 MATERIALS CONFORM TO AWWA STANDARDS
  - 8.1.2 MINIMUM 6" DIAMETER FIRE PROTECTION
  - 8.5.3 MINIMUM 4.5' GROUND COVER
  - 8.5.5 PRESSURE TESTING AWWA C-600\*
  - 8.5.6 DISINFECTION AWWA C-651\*
  - 8.6.2 10' HORIZONTAL SEPARATION WATER MAIN/SEWER
  - 8.6.3 18" VERTICAL SEPARATION WATER MAIN/SEWER
  - 8.6.6 NO ENTRY AND/OR CONTACT WITH SEWER MANHOLE

\*NOTE: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM THIS TEST PROPERLY AND THE RESPONSIBILITY FOR ADEQUATE SUPERVISION AND APPROVAL RESTS WITH THE APPROPRIATE GOVERNMENTAL AGENCY. ANY DEVIATION FROM THE ABOVE WILL NOT BE PERMITTED UNLESS OTHERWISE SPECIFICALLY INCLUDED IN THE GENERAL NOTES OR OTHERWISE SHOWN ON THESE PLANS.

5. CONTRACTOR TO OBTAIN SIGN-OFF FROM SCIOTO COUNTY ENGINEER, O.D.O.T., RAILROAD OFFICIALS AND TOWNSHIP TRUSTEES, FOR THEIR RESPECTIVE TRANSPORTATION AREAS.

**MAXIMUM WIDTH FOR TRENCH ITEMS**

PIPE SIZE	TRENCH WIDTH
6"	2'-5"
8"	2'-8"
10"	2'-10"
12"	3'-0"
14"	3'-2"
16"	3'-3"
18"	3'-4"
20"	3'-6"
21"	3'-9"
24"	4'-0"
27"	4'-9"
30"	5'-0"
OVER 30"	PIPE I.D. + 3'

MAXIMUM WIDTH OF PAYMENT FOR PAVEMENT REPLACEMENT OR TOPSOIL, FERTILIZER, SEEDING & MULCH = TRENCH WIDTH + 2'

**TRENCH WIDTH SCHEDULE**

**LEGEND**

- COMPACTED EARTH BACKFILL
- UNDISTURBED EARTH
- ODOT CMS 703.11 TYPE 1 OR 2 GRANULAR BACKFILL
- ODOT CMS 703.11 TYPE 3 STONE
- ODOT 411 CRUSHED AGGREGATE
- ODOT 304 AGGREGATE BASE

2 WORKING DAYS BEFORE YOU DIG  
CALL TOLL FREE 800-362-2764  
OHIO UTILITIES PROTECTION SERVICE



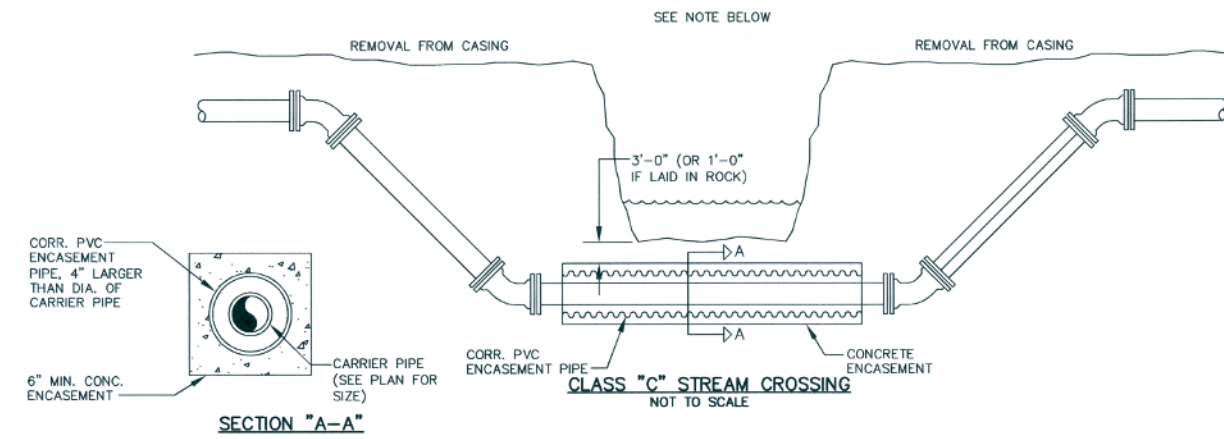
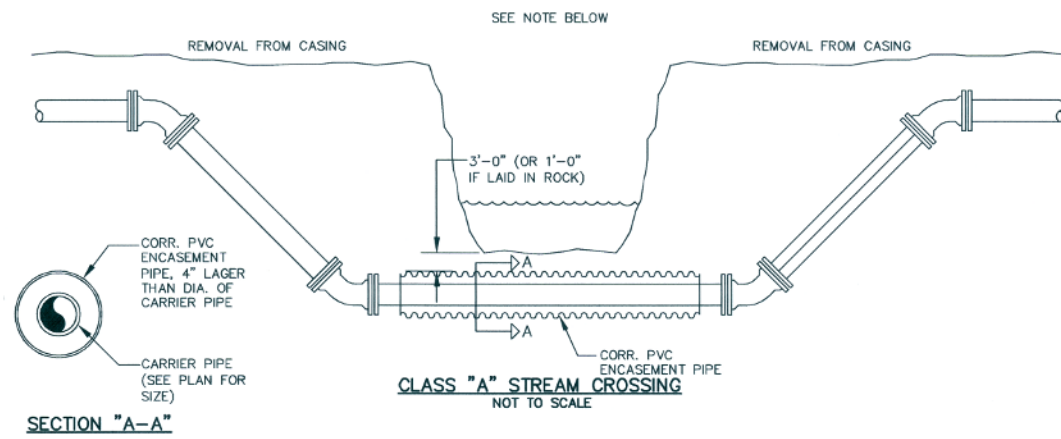
SHELDON-CARTRO ROAD WATER LINE EXTENSION  
SCIOTO COUNTY REGIONAL WATER DISTRICT  
SCIOTO COUNTY, OHIO

**L-CON ENGINEERS, LLC**  
9485 HAAF FARM DRIVE NW  
PICKERINGTON, OHIO 43147  
PHONE (740) 927-5851 FAX (740) 927-1178

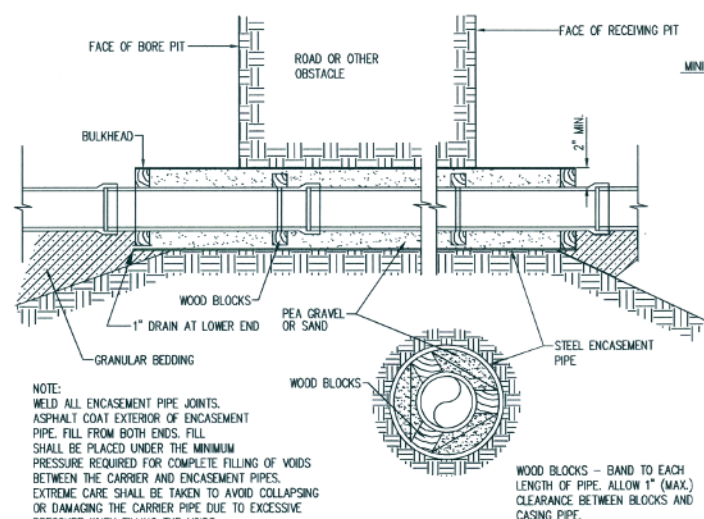
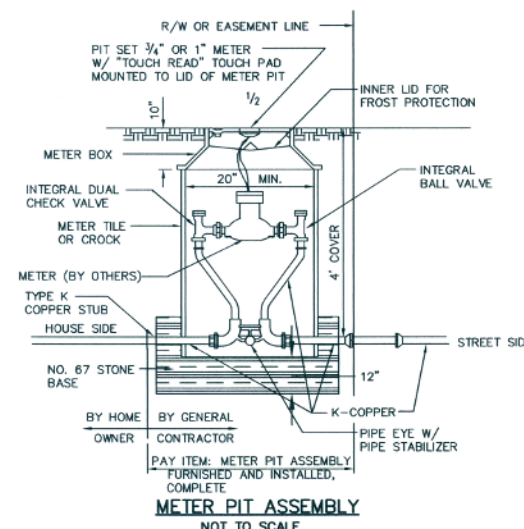
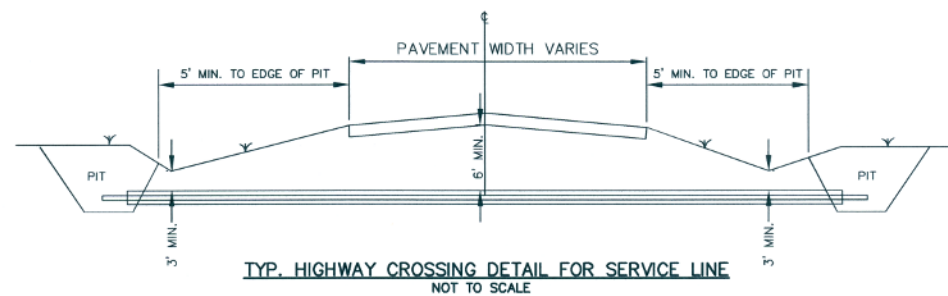
WATER LINE DETAILS

Revision	Job Number	Drawn By	Checked By
		N.E.W.	L.B.C.

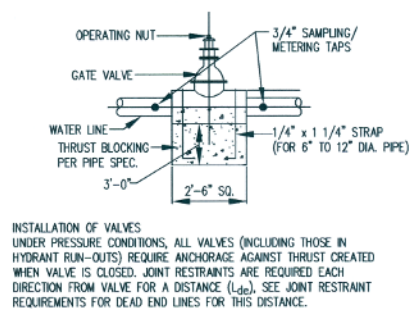
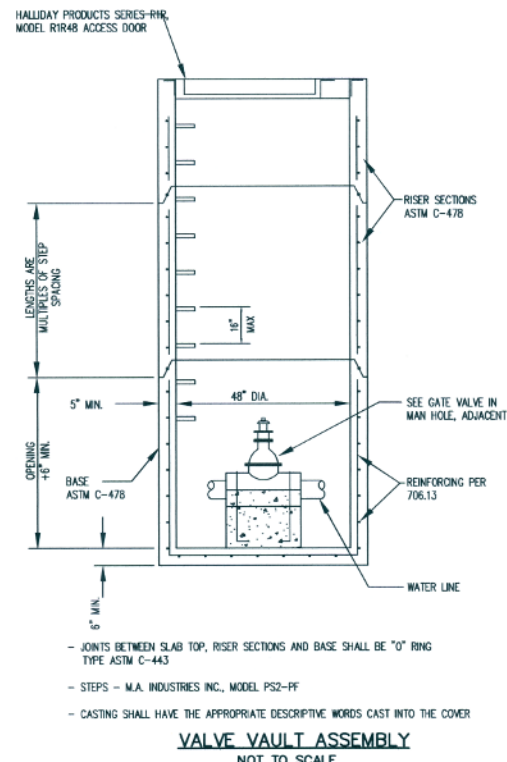
Sheet 9 of 10



**NOTES**  
1. SEE GENERAL NOTES ON SHEET D2.



MINIMUM WALL THICKNESS FOR STEEL CASING PIPE		
NOMINAL DIAMETER (INCHES)	UNCOATED AND UNPROTECTED NOMINAL THICKNESS (INCHES)	
10 AND UNDER	0.188	
12 & 14	0.250	
16	0.281	
18	0.312	
20 & 22	0.344	
24	0.375	
26	0.406	
28	0.438	
30	0.469	
32	0.500	
34 & 36	0.532	
38	0.562	
40	0.594	
42	0.625	
44 & 46	0.657	
48	0.688	
50	0.719	
52	0.750	
54	0.781	



INSTALLATION OF VALVES UNDER PRESSURE CONDITIONS, ALL VALVES (INCLUDING THOSE IN HYDRANT RUN-OUTS) REQUIRE ANCHORAGE AGAINST THRUST CREATED WHEN VALVE IS CLOSED. JOINT RESTRAINTS ARE REQUIRED EACH DIRECTION FROM VALVE FOR A DISTANCE (L<sub>dv</sub>). SEE JOINT RESTRAINT REQUIREMENTS FOR DEAD END LINES FOR THIS DISTANCE.

NOTE: 1. GENERAL CONTRACTOR SHALL PROVIDE WATER TIGHT PLUGS FOR ALL SERVICE CONNECTIONS.

NOTE: WELD ALL ENCASEMENT PIPE JOINTS. ASPHALT COAT EXTERIOR OF ENCASEMENT PIPE. FILL FROM BOTH ENDS. FILL SHALL BE PLACED UNDER THE MINIMUM PRESSURE REQUIRED FOR COMPLETE FILLING OF VOIDS BETWEEN THE CARRIER AND ENCASEMENT PIPES. EXTREME CARE SHALL BE TAKEN TO AVOID COLLAPSING OR DAMAGING THE CARRIER PIPE DUE TO EXCESSIVE PRESSURE WHEN FILLING THE VOIDS.

2 WORKING DAYS BEFORE YOU DIG  
CALL TOLL FREE 800-362-2764  
OHIO UTILITIES PROTECTION SERVICE



SHeldon-CARTRO ROAD WATER LINE EXTENSION  
SCIOTO COUNTY REGIONAL WATER DISTRICT  
SCIOTO COUNTY, OHIO

**L-CON ENGINEERS, LLC**  
9485 HAAF FARM DRIVE NW  
PICKERINGTON, OHIO 43147  
PHONE (740) 927-5851 FAX (740) 927-1178

WATER LINE DETAILS

Revision: \_\_\_\_\_ Job Number: \_\_\_\_\_  
Date: \_\_\_\_\_

Author: \_\_\_\_\_ Check: \_\_\_\_\_  
N.E.W. L.B.C. Sheet 10 of 10