CONSTRUCTION STANDARDS AND DRAWINGS

City of Van Wert
515 E. Main Street
Van Wert, OH 45891
(419)238-6940

2025

PLEASE NOTE:

A COPY OF THESE STANDARDS MUST BE ON THE JOBSITE BEFORE ANY WORK COMMENCES.

A COPY OF THESE STANDARDS MAY BE OBTAINED AT THE MUNICIPAL BUILDING, 515 E. MAIN STREET, ROOM 203. ($5 FEE PER COPY)

100 - ROADWAYS

200 - GENERAL

300 - STORM DRAINAGE

400 - WATER DISTRIBUTION

500 - SANITARY SEWERS

ADDITIONAL CONSTRUCTION DRAWINGS

FULL HEIGHT HEADWALL
HALF HEIGHT HEADWALL
DETENTION BASIN DETAILS
DRY HYDRANT POND DETAILS
SURVEY MONUMENT DETAILS
FENCE LOCATION DETAIL

*IF APPLICABLE, CONTACT ENGINEERING DEPARTMENT FOR COPIES.

CITY OF VAN WERT	TABLE OF CONTENTS	DATE	PAGE NO.
		2/02/2023	TOC

STREET CUT NOTES

A. A PERFORMANCE SURETY BOND IS REQUIRED FOR EVERY STREET CUT ON OR WITHIN PUBLIC RIGHT-OF-WAY. THE BOND AMOUNT WILL BE DETERMINED BY THE CITY ENGINEER AND BASED UPON THE LENGTH AND WIDTH OF EXCAVATION. THE MINIMUM BOND AMOUNT IS $1,000.00. THE BOND WILL BE HELD FOR A PERIOD OF ONE YEAR AFTER APPROVAL OF REPAIRS IN CASE OF TRENCH SETTLEMENT.

B. THE APPLICANT SHALL HAVE SUFFICIENT BARRICADES, WARNING SIGNS, AND LIGHTS DURING THE ENTIRE PERIOD THAT THE WORK IS BEING PERFORMED AND SHALL ADHERE TO APPLICABLE SECTION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

C. ALL UTILITIES ARE REQUIRED TO OBTAIN A PERMIT, BUT THEY ARE EXEMPT FROM THE BOND REQUIREMENT. ANY UTILITY THAT FAILS TO OBTAIN A PERMIT WILL THEN BE REQUIRED TO OBTAIN A PERMIT AND POST THE REQUIRED BOND.

D. THE EXISTING PAVEMENT SHALL BE NEATLY CUT PRIOR TO EXCAVATION. ALL EXCAVATED MATERIAL SHALL BE REMOVED FROM THE JOB SITE. THE APPLICANT IS RESPONSIBLE FOR ALL PAVEMENT DAMAGED OUTSIDE THE TRENCH AREA.

E. ALL STREET CUTS SHALL BE BACKFILLED AS PER PAGE 100-10 OF THESE STANDARDS.

F. ALL DISTURBED AREAS MUST BE RETURNED TO A A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. ALL REPAIRS MUST MEET CITY SPECIFIACTIONS. THE CITY MUST INSPECT AND APPROVE AND APPROVE ALL REPAIRS.

G. IF ASPHALT PAVEMENT CAN NOT BE PLACED IMMEDIATELY, THEN 1 1/2" OF COLD MIX SHALL BE PLACED IN THE BACKFILLED TRENCH WITHIN ONE WORKING DAY AFTER THE BACKFILL HAS BEEN COMPACTED.

H. EFFORTS SHALL BE MADE TO MINIMIZE DISTURBANCE TO TREES OR THIN ROOTS. EXTENSIVE EXCAVATION CAUSING DAMAGE TO TREES WILL RESULT IN THE REMOVAL AND REPLACEMENT OF, BY THE CONTRACTOR. THE REPLACEMENT SHALL BE AS PER THE CITY TREE ORDINANCE SEC. 131.10 AND OTHER APPLICABLE SECTIONS.

I. FOR CLOSURES OF ARTERIALS OR BUSY COLLECTORS THE CITY RESERVES THE OPPORTUNITY TO DIRECT CONTRACTOR TO CLOSE STREET DURING OFF PEAK TRAFFIC HOURS. CLOSURE MAY OCCUR AT NIGHT OR ON WEEKENDS. CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL ASSOCIATED WITH ROAD CLOSURE.

J. SURETY SHALL BE PROVIDED IN THE FORM OF A CERTIFIED CASHIER'S CHECK PAYABLE TO THE CITY OF VAN WERT.

K. IN THE EVENT THAT AFTER NOTIFICATION FROM THE CITY, THE CONTRACTOR FAILS TO CORRECT PROBLEMS ASSOCIATED WITH POOR TRENCH MAINTENANCE, THE CITY RESERVES EXCLUSIVE RIGHT TO CORRECT TRENCH PROBLEMS AND COLLECT ASSOCIATED COSTS FROM THE PERFORMANCE BOND.

GENERAL NOTES

A. FAILURE TO COMPLY WITH THE CONSTRUCTION STANDARDS, DRAWINGS AND DESIGN CRITERIA MAY BE CONSIDERED A VIOLATION OF THE CITY'S BUILDING CODE OR SUBDIVISION REGULATIONS. PENALTIES MAY BE ASSESSED ACCORDING TO THE SEVERITY OF THE VIOLATION.

B. ALL WORK SHALL BE ADHERE TO ODOT'S LATEST REVISION AND TO THE CITY SPECIFICATIONS WHICHEVER IS MORE STRINGENT SHALL PREVAIL UNLESS OTHERWISE APPROVED.

C. NON-PUBLIC CONSTRUCTION IMPROVEMENTS AFFECTING THE EXISTING CONDITION, PERFORMANCE AND LIFECYCLE OF CITY STREETS, ALLEYS, OR RIGHT-OF-WAY SHALL BE RESTORED ACCORDING TO APPLICABLE STANDARDS AND DETAILS.

D. ALL NEW SUBDIVISIONS AND DEVELOPMENTS SHALL BE PROVIDED WITH PUBLIC SIDEWALKS ON BOTH SIDES OF STREETS IN ACCORDANCE WITH CITY STANDARDS.

E. NO CITY STREET OR ALLEY SHALL BE CLOSED UNLESS THE CITY'S NOTIFIED A MINIMUM OF 48 HOURS IN ADVANCE OF A NON-EMERGENCY SITUATION. ADVANCED PUBLIC NOTIFICATION AND PUBLISHING SHALL BE A MINIMUM OF 24 HOURS.

F. ALL TEMPORARY PAVEMENT AND SIDEWALK SHALL BE MAINTAINED BY THE CONTRACTOR OR DEVELOPER AT HIS OWN EXPENSE IN A SUITABLE AND SAFE CONDITION FOR TRAFFIC UNTIL PERMANENT REPLACEMENT IS MADE OR THE PROJECT IS FINALLY ACCEPTED BY THE CITY.

G. ALL UTILITY ADJUSTMENTS (MANHOLES, WATER VALVES, ETC.) SHALL BE RAISED TO FINISHED GRADE AFTER THE FINAL ASPHALT COURSE IS LAID.

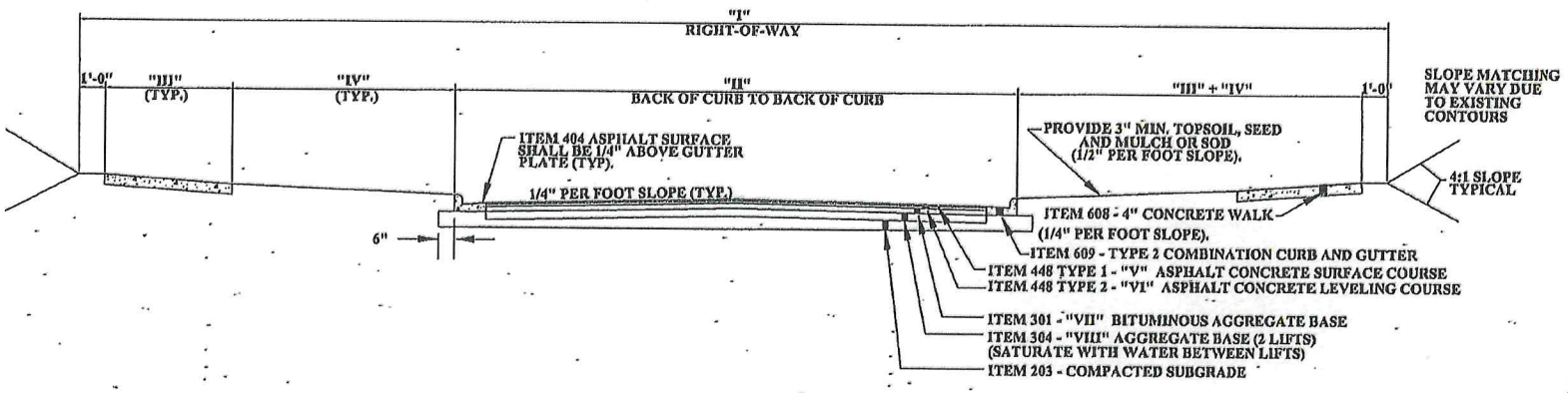
H. NO ASPHALT SHALL BE PLACED OVER EXCAVATED TRENCHES UNLESS THE TRENCHES HAVE BEEN COMPACTED AS PER CITY SPECIFICATIONS.

I. NO ASPHALT SHALL BE LAID UNLESS THE CITY IS GIVEN PRIOR NOTICE AND THE AMBIENT TEMPERATURE IS 50°F OR GREATER UNLESS OTHERWISE APPROVED.

TRAFFIC CONTROL

A. THE CONTRACTOR SHALL MAINTAIN TRAFFIC CONTROL AT ALL TIMES WITH THE PROPER BARRICADES AS PER THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THESE CONTROL DEVICES SHALL BE IN PLACE PRIOR TO ANY WORK COMMENCING. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL TRAFFICE CONTROL ITEMS.

B. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE CITY.



MINIMUM STANDARDS

ITEM	DESCRIPTION	ARTERIAL	COMM. & IND.	RESIDENTIAL	LOCAL
I	RIGHT-OF-WAY	80'	60'	60'	60'
II	B\B CURB				
	PARKING BOTH SIDES	57'	41'	41'	36'
	PARKING ONE SIDE	51'	36'	36'	30'
	NO PARKING	45'	36'	36'	30'
III	SIDEWALK WIDTH	4'	4'	4'	4'
IV	TREE LAWN	6.5'	4.5'	7'	7'
V	ITEM 404	1-1/4"	1-1/4"	1-1/4"	1-1/4"
VI	ITEM 402	1-3/4"	1-3/4"	1-3/4"	1-3/4"
VII	ITEM 301	7"	7"	4"	3"
VIII	ITEM 304	2-3" LIFTS	2-3" LIFTS	2-3" LIFTS	2-3" LIFTS

NOTES

A. ALL WORK TO CONFORM TO ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS LATEST REVISION UNLESS OTHERWISE SPECIFIED.

B. ITEM 407 TACK COAT, SHALL BE REQUIRED WHEN 10 DAYS HAVE ELAPSED BETWEEN BITUMINOUS PAVEMENT LIFTS UNLESS OTHERWISE SPECIFIED BY THE ENGINEER. APPLICATION RATE IS .10 GALLON PER SQUARE YARD.

C. NO CONCRETE PAVEMENT WILL BE ACCEPTED UNLESS SPECIFICALLY AUTHORIZED BY THE CITY ENGINEER.

D. SIDEWALKS NOT REQUIRED IN INDUSTRIAL ZONING.

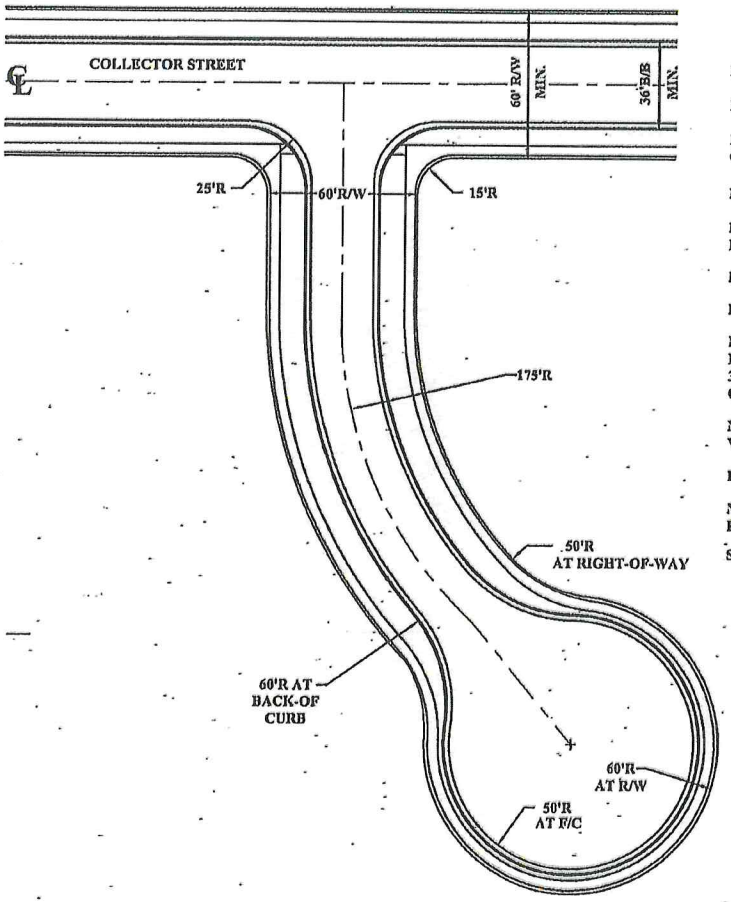
E. ALL BUTT JOINTS SHALL BE SEALED ACCORDING TO ODOT ITEM 407 AFTER PLACEMENT OF ODOT ITEM 404.

F. ODOT ITEM 408 PRIME COAT SHALL BE REQUIRED BETWEEN ODOT ITEM 304 AND ODOT ITEM 301 ON ALL NEW PAVEMENTS.

G. PG64-22 LIQUID REQUIRED WITH ITEMS 448 TYPE 1 AND 2

CITY OF VAN WERT	TYPICAL SECTIONS AND PAVEMENT COMPOSITION	DATE	PAGE NO.
		12/5/2006	100-2

CUL-DE-SAC PLAN



STREET DESIGN STANDARDS

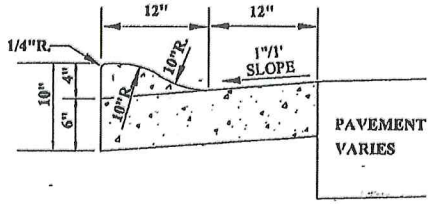
	LOCAL (THRU STREETS)	COLLECTOR	ARTERIAL
MINIMUM CENTERLINE GRADES	.40%	.40%	.40%
MAXIMUM CENTERLINE GRADES	10%	7%	4%
MINIMUM LENGTH OF VERTICAL CURVE (SEE NOTE C)	25FT.	50FT.	100FT.
MINIMUM CENTERLINE RADIUS	250FT.	400FT.	600FT.
MINIMUM LENGTH TANGENT BETWEEN CURVES	50FT.	50FT.	100FT.
MINIMUM FACE-OF-CURB RADIUS	25FT.	25FT.	50FT.
MINIMUM HORIZONTAL VISIBILITY	150FT.	250FT.	400FT.
MINIMUM STOPPING SIGHT DISTANCE (MEASURED FROM 3.5' EYE-LEVEL TO 6' OBJECT HEIGHT)	150FT.	250FT.	400FT.
MAXIMUM CENTERLINE GRADE WITHIN 100' OF AN INTERSECTION	3%	3%	3%
RIGHT-OF-WAY WIDTH	SEE SHEET 100-1		
MINIMUM PAVEMENT WIDTH BACK-TO-BACK OF CURB	SEE SHEET 100-1		
SPEED LIMIT	25 MPH	35 MPH	45 MPH

NOTES

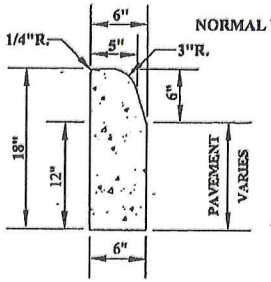
A. THESE ARE MINIMUM DESIGN STANDARDS AND MAY BE REQUIRED TO BE INCREASED TO COMPLY WITH THE CITY'S OFFICIAL THROUGHFARE PLAN.

B. THE MAXIMUM LENGTH FOR A CUL-DE-SAC STREET SHALL BE 600' FROM CENTER OF INTERSECTING STREET TO CENTER OF CUL-DE-SAC UNLESS AUTHORIZED BY THE CITY PLANNING COMMISSION.

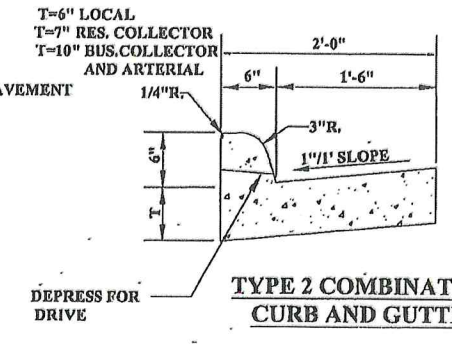
C. MINIMUM LENGTH OF VERTICAL CURVE CAN BE REDUCED OR ELIMINATED TO ALLOW FOR PROPER DRAINAGE,WITH APPROVAL OF THE CITY.



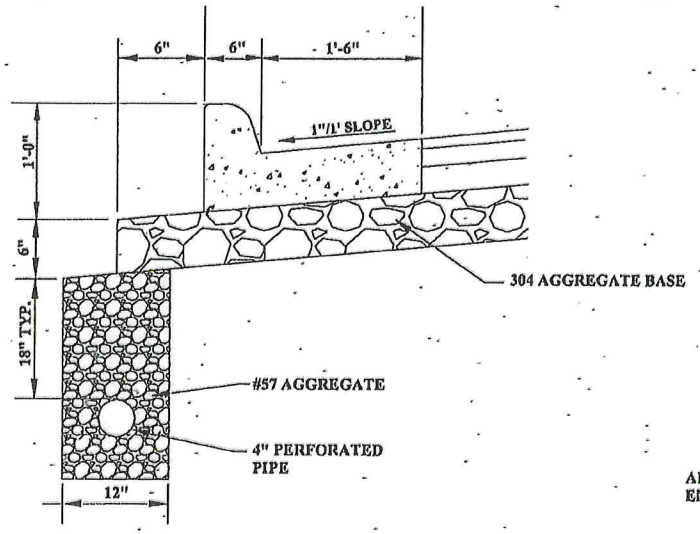
TYPE 1
COMBINATION ROLL CURB AND GUTTER



TYPE 6
BARRIER CURB



TYPE 2 COMBINATION
CURB AND GUTTER



4" SHALLOW PIPE UNDERDRAIN DETAIL

NOTES

A. CONCRETE AND WORK SHALL MEET THE REQUIREMENT SET FORTH IN ODOT ITEM 609 CURBING.

B. CURBING SHALL HAVE CONTRACTION JOINTS EVERY 10'. ALL JOINTS SHALL BE SAWCUT.

C. MINIMUM OF 6" OF ODOT 304 SHALL BE PLACED UNDER CURBING.

D. CURBING SHALL BE BACKFILLED IMMEDIATELY AFTER FORMS ARE REMOVED OR AS SOON AS PRACTICAL WHEN SLIP FORMING PRIOR TO OTHER CONSTRUCTION OPERATIONS.

E. PROVIDE BROOM FINISH AND EDGING TO ALL EXPOSED SURFACES.

F. APPLY WHITE PIGMENTED CURING COMPOUND ON ALL SURFACES INCLUDING BACK IMMEDIATELY AFTER FINISHING SURFACES. ANY OTHER METHOD OR TYPE OF CURING COMPOUND MUST BE PREAPPROVED.

G. CONCRETE SHALL BE ODOT CLASS C (4000 PSI, 600LB/CY CEMENT). PROPOTIONING OPTIONS 1 AND 2 NOT ALLOWED.

H. CONCRETE SHALL CONTAIN 6% ± 2% OF TOTAL AIR.

J. TYPE 6 CURBS ARE FOR USE AROUND MEDIAN SECTION.

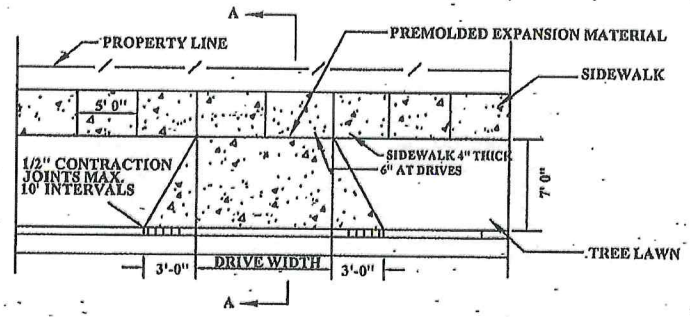
J. UNDERDRAIN MUST BE INSTALLED PRIOR TO CURB INSTALLATION.

ALL CURB CUTS MUST MUST BE BE APPROVED PRIOR TO WORK BY THE ENGINEERING DEPARTMENT

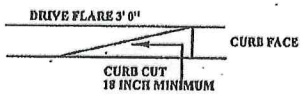
CITY OF VAN WERT	CONCRETE CURB DETAILS	DATE	PAGE NO.
		8/01/2006	100-4

RESIDENTIAL DRIVE DETAILS

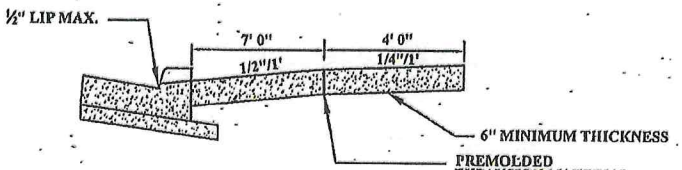
ALL CURB CUTS MUST MUST BE BE APPROVED PRIOR TO WORK BY THE ENGINEERING DEPARTMENT



NOTE: 1/2" PREMOLDED EXP. JOINTS IN SIDEWALKS TO BE PLACED AT MAX. 30' INTERVALS



NOTE: CURB CUT METHOD TO BE APPROVED BY ENGINEERING



SECTION A-A

NOTES

A. DRIVE APPROACHES SHALL MEET THE REQUIREMENTS OF ODOT ITEM 452 AND 499 CAST-IN-PLACE CONCRETE.

B. DRIVE APPROACHES SHALL NOT BE POURED MONOLITHICLY WITH CURB.

C. MAXIMUM JOINT SPACING SHALL BE 10' LONGITUDINALLY, TRANSVERSELY AND AT TAPERS.

D. EXPANSION MATERIAL SHALL BE 1/2" PREMOLDED.

E. 3" OF COMPACTED GRAVEL SHALL BE PLACED UNDER DRIVE APPROACHES.

F. PROVIDE BROOM FINISH AND EDGING TO All EXPOSED SURFACES.

G. WHERE CURB AND GUTTER HAS NOT BEEN PROPERLY DROPPED AT DRIVE APPROACHES, THE CURB SHALL BE ENTIRELY REMOVED AND REPLACED BY THE CONTRACTOR OR OWNER AS DIRECTED BY THE CITY ENGINEER.

H. WHERE ASPHALTIC CONCRETE PAVEMENT IS DISTURBED, THE ASPHALT SHALL BE SAWCUT AND REPLACED AS DIRECTED BY THE CITY ENGINEER.

I. JOINTS SHALL BE SAWCUT. EXPANSION JOINTS SHALL BE OF SUCH DIMENSIONS AS SHOWN ON PAGES 100-5, 100-6, 100-8.

J. DRIVE WIDTH = 12' MINIMUM TO 24' MAXIMUM UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

K. CONCRETE SHALL BE ODOT CLASS C (4000 PSI,600LB/CY) CEMENT. PORPOTIONING OPTIONS 1 AND 2 NOT ALLOWED.

L. CONCRETE SHALL CONTAIN 6% ± 2% OF TOTAL AIR.

M. IF CURB IS REMOVED AND REPLACED DURING DRIVEWAY CONSTRUCTION, JOINTS BETWEEN EXISTING AND NEW CURB ARE TO BE 1/2" PREMOLDED EXPANSION MATERIAL. USE REBAR TO PIN CURB TOGETHER

N. IF CURB IS CUT, MINIMUM OF 18 INCH SLOPE FOR EACH SIDE. UNLESS OTHERWISE APPROVED BY CITY ENGINEER.

CITY OF VAN WERT	RESIDENTIAL DRIVE APPROACH	DATE	PAGE NO.
		8/01/2006	100-5

NOTES

A. DRIVE APPROACHES SHALL MEET THE REQUIREMENTS OF ODOT ITEM 452 AND 499 CAST-IN-PLACE CONCRETE.

B. DRIVE APPROACHES SHALL NOT BE POURED MONOLITHICLY WITH CURB.

C. MAXIMUM JOINT SPACING SHALL BE 10' LONGITUDINALLY, TRANSVERSELY AND AT TAPERS.

D. EXPANSION MATERIAL SHALL BE 1/2" PREMOLDED.

E. 3" OF COMPACTED GRAVEL SHALL BE PLACED UNDER DRIVE APPROACHES.

F. PROVIDE BROOM FINISH AND EDGING TO All EXPOSED SURFACES.

G. WHERE CURB AND GUTTER HAS NOT BEEN PROPERLY DROPPED AT DRIVE APPROACHES, THE CURB SHALL BE ENTIRELY REMOVED AND REPLACED BY THE CONTRACTOR OR OWNER AS DIRECTED BY THE CITY ENGINEER.

H. WHERE ASPHALTIC CONCRETE PAVEMENT IS DISTURBED, THE ASPHALT SHALL BE SAWCUT AND REPLACED AS DIRECTED BY THE CITY ENGINEER.

I. JOINTS SHALL BE SAWCUT. EXPANSION JOINTS SHALL BE OF SUCH DIMENSIONS AS SHOWN ON PAGES 100-4, 100-6, AND 100-8.

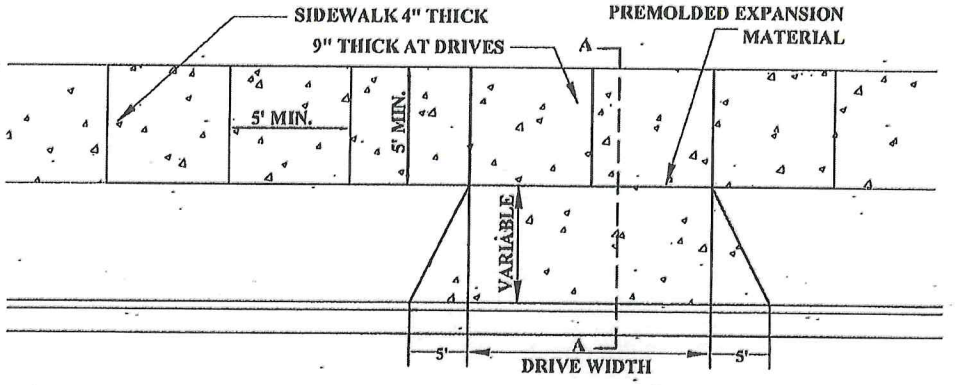
J. CONCRETE SHALL BE ODOT CLASS C (4000 PSI,600LB/CY) CEMENT. PORPOTIONING OPTIONS 1 AND 2 NOT ALLOWED.

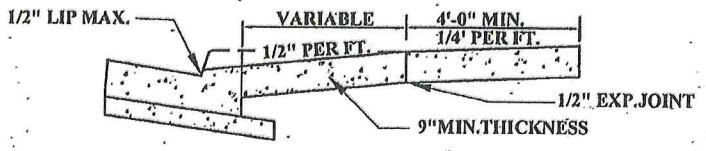
K. CONCRETE SHALL CONTAIN 6% ± 2% OF TOTAL AIR.

L. IF CURB IS REMOVED AND REPLACED DURING DRIVEWAY CONSTRUCTION, JOINTS BETWEEN EXISTING AND NEW CURB ARE TO BE 1/2" PREMOLDED EXPANSION MATERIAL. REBAR IS TO BE USED TO PIN CURB TOGETHER.

M. MINIMUM DRIVE WIDTH FOR ONE WAY TRAFFIC IS 16'-0". MINIMUM DRIVE WIDTH FOR TWO WAY TRAFFIC IS 25'-0". MAXIMUM DRIVE WIDTH IS 30'-0" UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

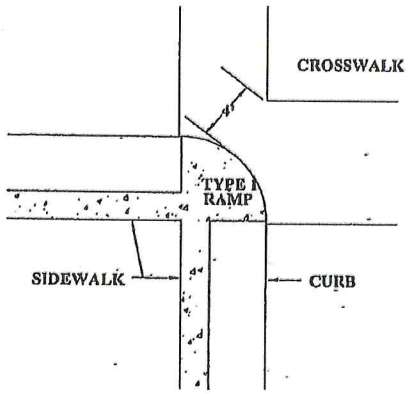
N. IF CURB IS CUT, MINIMUM OF 18 INCH SLOPE FOR EACH SIDE UNLESS OTHERWISE APPROVED BY CITY ENGINEER.



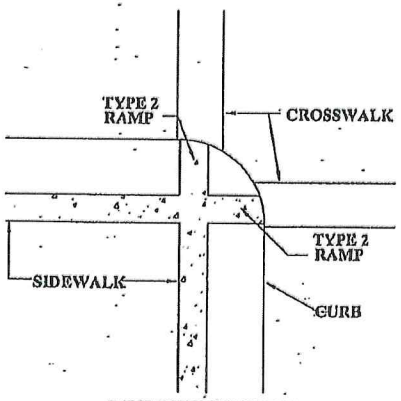


SECTION A-A

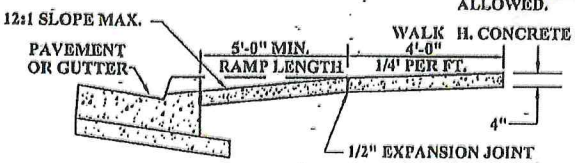
CITY OF VAN WERT	COMMERCIAL AND INDUSTRIAL DRIVE APPROACH	DATE	PAGE NO.
		8/01/2006	100-6



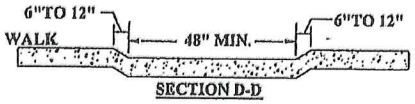
RAMP CONFIGURATION A



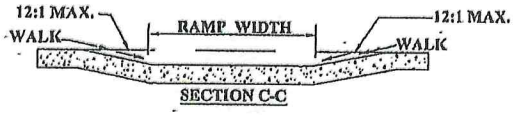
RAMP CONFIGURATION B



SECTION A-A

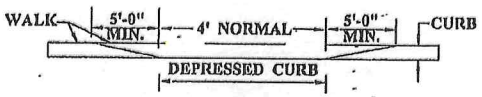


SECTION D-D



SECTION C-C

RAMP WIDTH



VIEW B-B

NOTES

A. CITY ENGINEER TO SPECIFY TYPE 1 OR TYPE 2 CURB RAMP.

B. ANY COMBINATION OF SIDE SLOPES ON OPPOSITE SIDES OF A RAMP MAY BE USED TO BEST FIT THE SITE CONDITIONS.

C. THE MINIMUM RAMP LENGTH IS 5'-0" FROM BACK OF A 6" CURB AND MAY BE INCREASED WHERE FEASIBLE TO OBTAIN A FLATTER RAMP SLOPE OR TO BETTER BLEND WITH THE WALK CONFIGURATION.

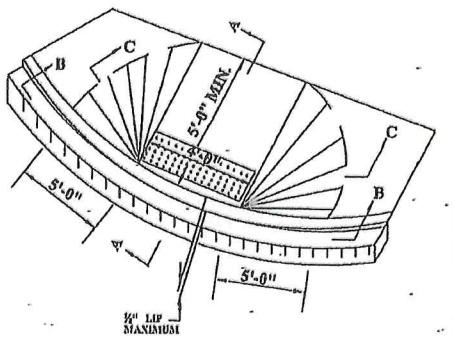
D. WALK THICKNESS IN THE RAMP SLOPES SHALL BE 4" MINIMUM OR THICKER IF NECESSARY TO MATCH ADJACENT WALK THICKNESS.

E. CURB RAMPS SHALL MEET AND BE FINISHED TO A.D.A. STANDARDS. DETECTABLE WARNING INSERTS SHALL BE ADA TILE 24" x 48", BRICK RED OR OTHER APPROVED TILE.

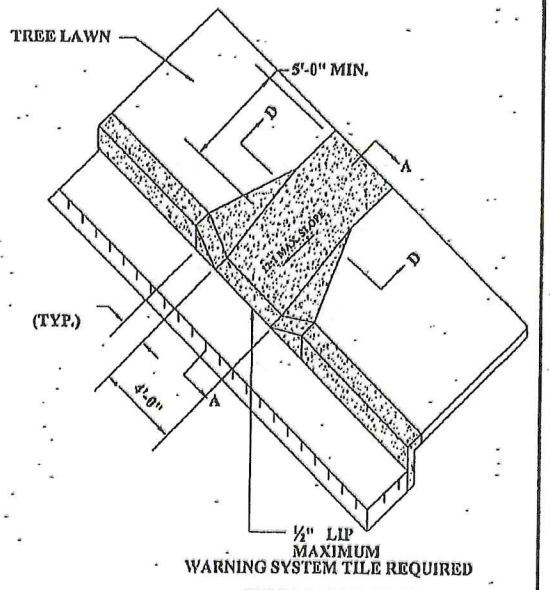
F. CURB RAMPS SHALL MEET THE REQUIREMENTS OF ODOT ITEM 608.

G. CONCRETE SHALL BE ODOT CLASS C (4000 PSI, 600 LB/CY CEMENT). PROPOTIONING OPTIONS 1 AND 2 NOT ALLOWED.

H. CONCRETE SHALL CONTAIN 6%±2% OF TOTAL AIR.

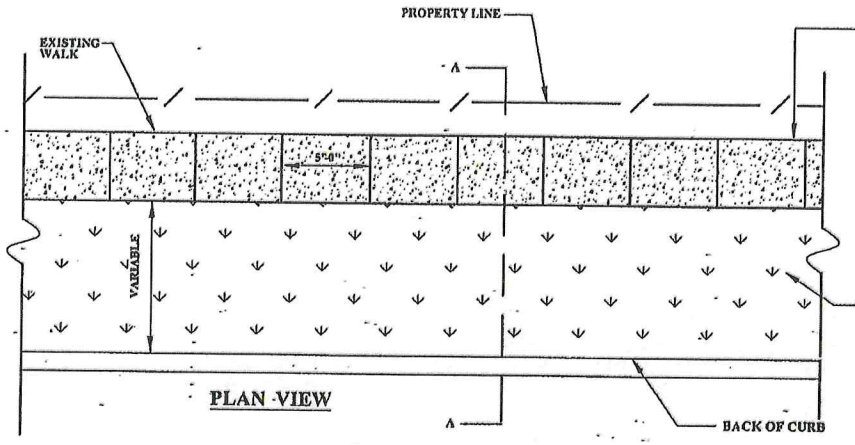


TYPE 1 RAMP DETAIL



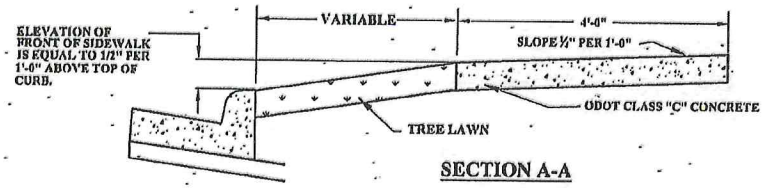
TYPE 2 RAMP DETAIL

CITY OF VAN WERT	CURB RAMPS	DATE	PAGE NO.
		10/04/2007	100-7

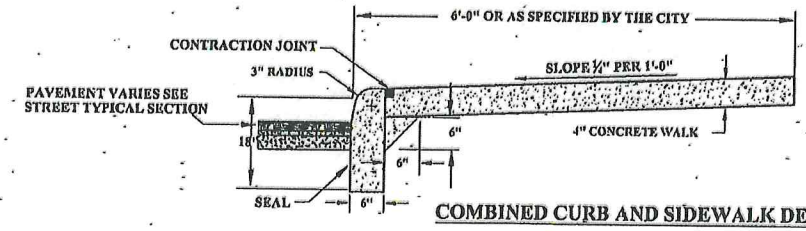


PLAN VIEW

1/2" EXPANSION JOINT REQUIRED AT THE END OF EACH POUR, AT EACH SIDE OF A TREE DRIVEWAY, ANY FIXED STRUCTURE, OR EVERY 50 FEET UNLESS APPROVED BY ENGINEERING DEPARTMENT.



SECTION A-A



COMBINED CURB AND SIDEWALK DETAIL

NOTES

A. WALK TO BE POURED ON COMPACTED GRANULAR BEDDING.

B. PROVIDE BROOM OR OTHER APPROVED SUITABLE FINISH TO ALL EXPOSED SURFACES.

C. CONCRETE WORK SHALL CONFORM TO ODOT ITEM 499 & 608, UNLESS OTHERWISE SPECIFIED WITHIN.

D. PROVIDE EDGING AROUND ALL EXPOSED SURFACES.

E. USE WHITE PIGMENTED CURING COMPOUND IMMEDIATELY AFTER FINISHING SURFACES. ANY OTHER METHOD OR TYPE OF CURING COMPOUND MUST BE PREAPPROVED.

F. ALL JOINTS SHALL BE NEATLY SAW CUT, UNLESS AN ALTERNATIVE METHOD IS APPROVED BY THE ENGINEERING DEPARTMENT.

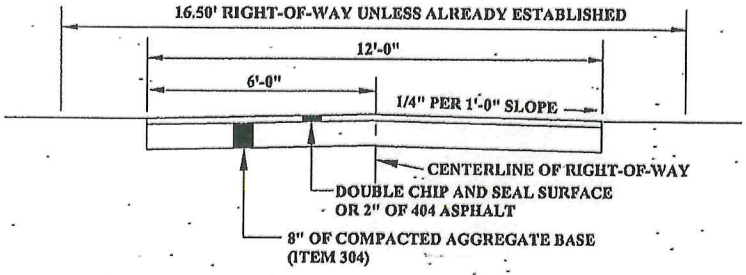
G. CONCRETE SHALL BE ODOT CLASS C (4000 PSI, 600 LB/CY CEMENT) PROPOTIONING OPTIONS 1 AND 2 NOT ALLOWED.

H. CONCRETE SHALL CONTAIN 6% ± 2% OF TOTAL AIR.

I. SIDEWALKS SHALL NOT BE COLOR TINTED WITHOUT PRIOR APPROVAL OF THE ENGINEERING DEPARTMENT.

J. CONCRETE THICKENSS TO BE 6 INCHES THRU SIDEWALK AREA OF DRIVEWAY.

CITY OF VAN WERT	CONCRETE SIDEWALK DETAIL	DATE	PAGE NO.
		8/01/2006	100-8

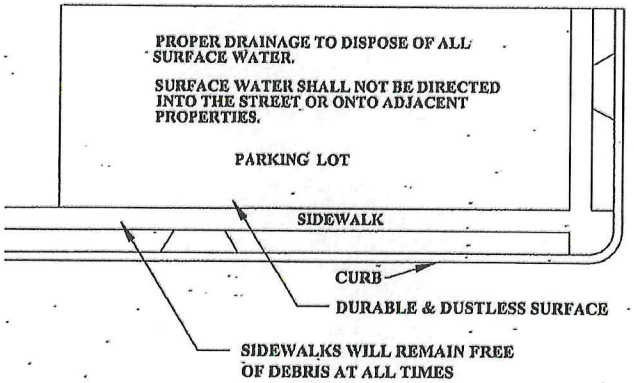


TYPICAL ALLEY CONSTRUCTION

A. MINIMUM STANDARD (UNLESS OTHERWISE APPROVED.)

B. FOR RENOVATION OF EXISTING ALLEYS ONLY. NO NEW ALLEYS WILL BE APPROVED WITHIN THE CITY.

ADJACENT PARKING AREAS SHALL BE CONNECTED TO LIMIT THE NUMBER OF ACCESS DRIVES TO THE STREET.



PARKING LOT DETAIL

THE FOLLOWING ARE ACCEPTED LOT SURFACES (UNLESS OTHERWISE APPROVED).

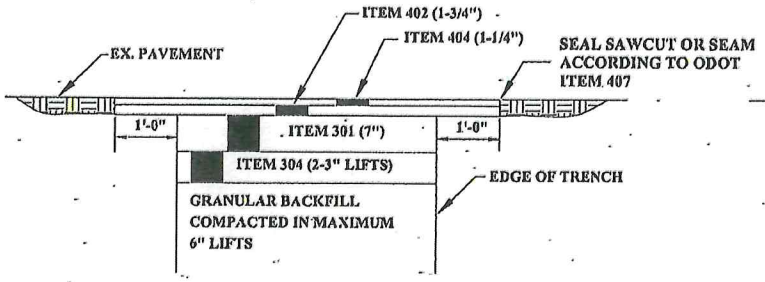
A. DOUBLE CHIP AND SEAL

B. ASPHALT CONCRETE ITEM 404.

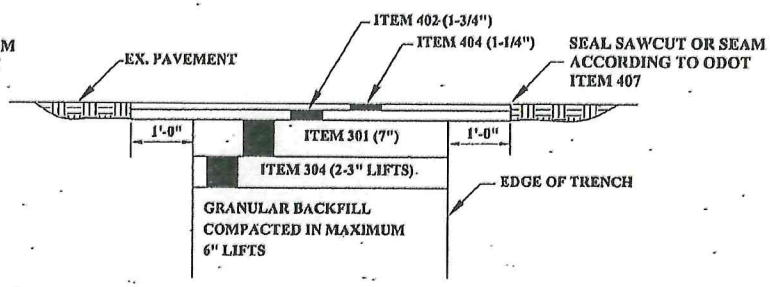
C. CONCRETE

CITY OF VAN WERT	ALLEY AND PARKING LOT DETAIL	DATE	PAGE NO.
		8/01/2006	100-9

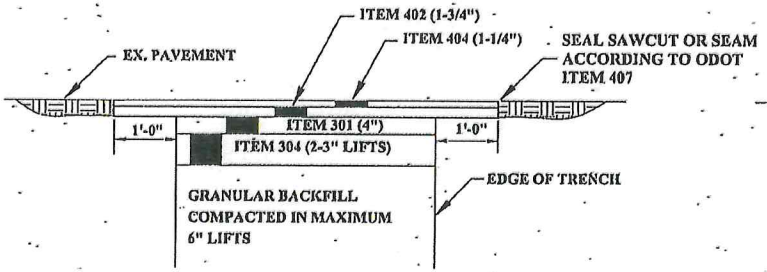
ARTERIAL



COMMERCIAL AND INDUSTRIAL

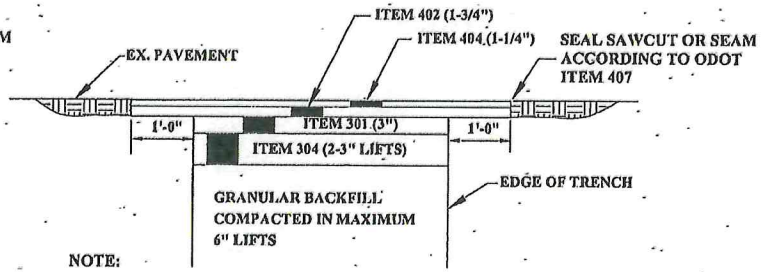


RESIDENTIAL



* ALL PAVEMENT THICKNESS IN PATCH SECTIONS SHALL BE DETERMINED BY THE CLASSIFICATION OF STREET

LOCAL



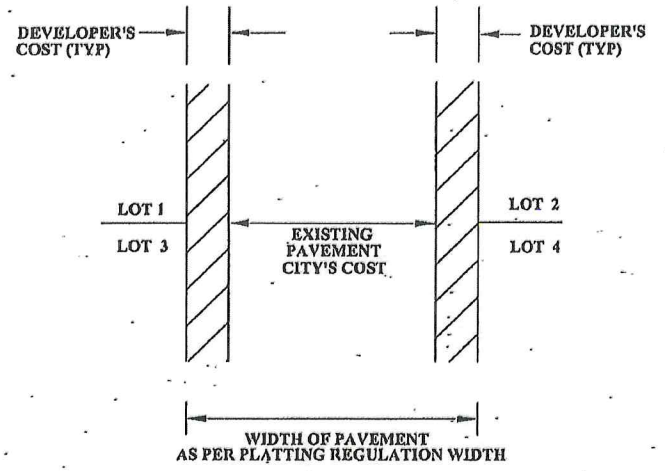
NOTE:

A. WHERE THE EXISTING PAVEMENT IS THICKER, THE CONTRACTOR SHALL INCREASE THE COURSE THICKNESS TO MATCH EXISTING.

B. SOIL BORINGS SHALL BE CAPPED WITH A MINIMUM OF 9" OF ODOT CLASS C CONCRETE.

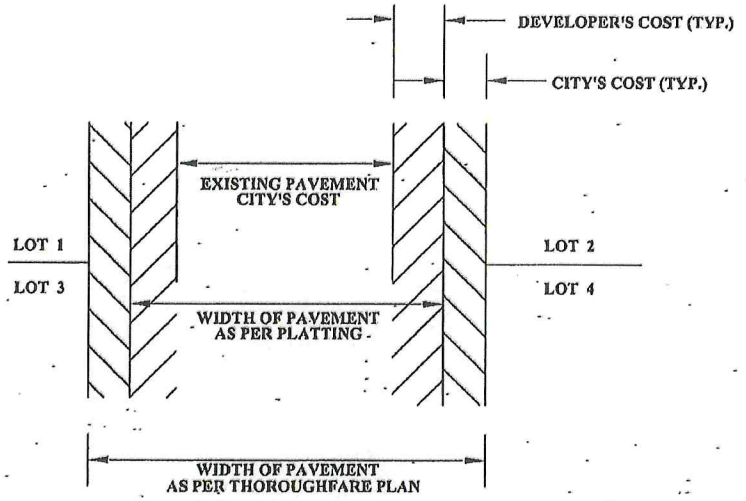
CITY OF VAN WERT	TYPICAL PAVEMENT RESTORATION DETAILS	DATE	PAGE NO.
		8/01/2006	100-10

EXAMPLE "A"



STREET IMPROVEMENTS FROM EXISITNG STREET WIDTH TO PLATTING REGULATION WIDTH

EXAMPLE "B"



STREET IMPROVEMENTS FROM EXISITNG STREET WIDTH TO THOROUGHFARE PLAN WIDTH

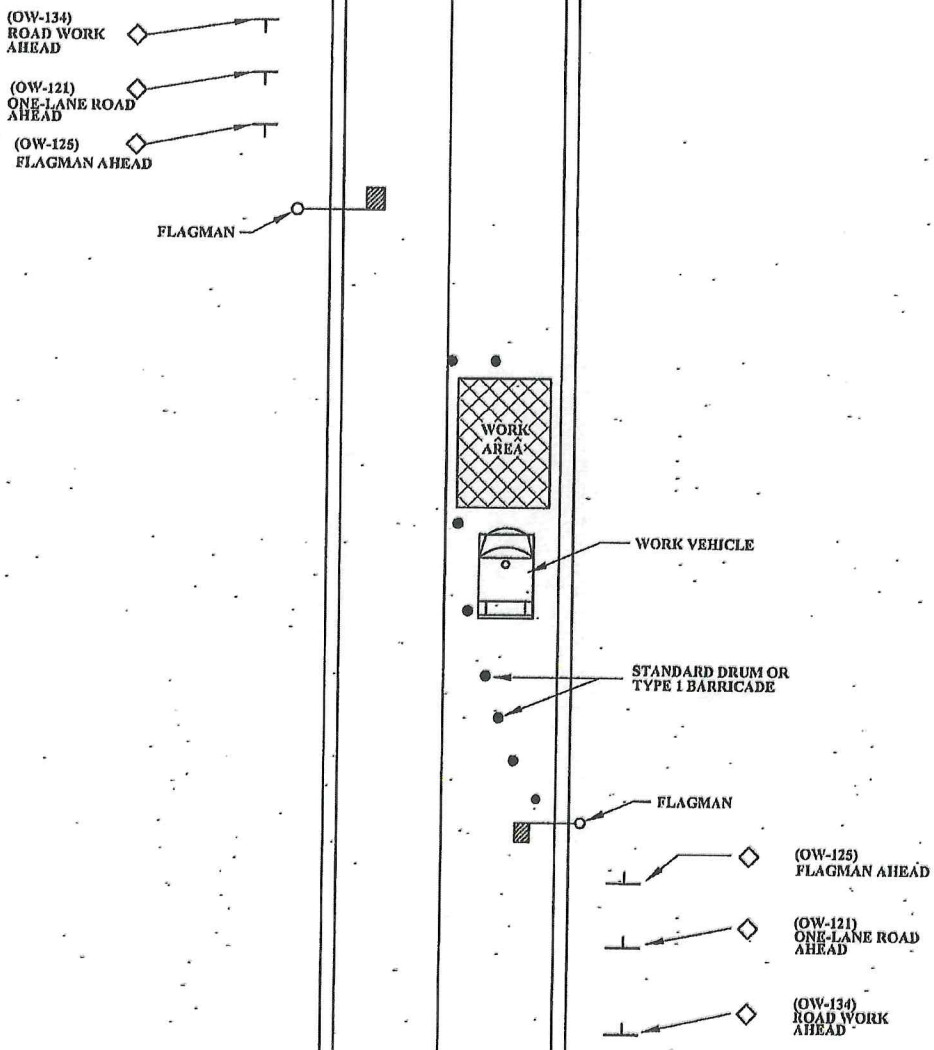
NOTES

A. IF BOTH SIDES OF A STREET ARE INCLUDED IN THE SUBDIVISION, THE DEVELOPER PAYS THE TOTAL COST FOR ADDITIONAL WIDTH OF EXCAVATION, PAVEMENT, CURB AND SIDEWALK INCLUDING COST TO BRING THE STORM SEWER SYSTEM UP TO CITY STANDARDS.

B. IF ONE SIDE OF THE SUBDIVISION ABUTS AN EXISTING STREET, THE DEVELOPER SHALL PAY FOR THE TOTAL COST OF ONE SIDE FOR ADDITIONAL WIDTH OF EXCAVATION, PAVEMENT, CURB AND SIDEWALK INCLUDING COST TO BRING THE STORM SEWER SYSTEM UP TO CITY STANDARDS.

C. THE CITY PAYS CONSTRUCTION COST ON EXISTING STREET WIDTH AND ANY OVERSIZING TO MEET THOROUGHFARE PLAN.

CITY OF VAN WERT	STREET IMPROVEMENT CONDITIONS	DATE	PAGE NO.
		8/01/2006	100-11



NOTES

A. THE POLICE AND FIRE DEPARTMENTS SHALL BE NOTIFIED 24 HOURS IN ADVANCE OF ANY CONSTRUCTION. NO STREET SHALL BE CLOSED WITHOUT THE APPROVAL OF THE CITY ENGINEER.

B. IF THE WORK IS TO COVER THE ENTIRE WIDTH OF THE STREET, ONE HALF OF THE STREET SHALL BE MAINTAINED FOR TRAFFIC WHILE ONE HALF OF THE STREET IS REPAIRED.

C. BARRICADE DISTANCE AND SEPERATION OF WARNING SIGNS TO BE SPACED ACCORDING TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

D. IF BARRICADES ARE TO BE LEFT UP OVERNIGHT, WARNING LIGHTS (FLASHERS) ARE TO BE USED.

E. ALL STREET CONTROL DEVICES APPLICABLE TO DIFFERENT STREET WIDTHS, TYPE OF CONSTRUCTION, ETC., SHALL CONFORM TO THE LATEST REVISION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, UNLESS OTHERWISE APPROVED BY THE CITY AND SHALL BE IN PLACE AND PROPERLY DISPLAYED PRIOR TO THE COMMENCEMENT OF ANY WORK.

CITY OF VAN WERT	TRAFFIC CONTROL DEVICES STATIONARY OPERATIONS IN ONE LANE	DATE	PAGE NO.
		8/01/2006	100-12

CITY DEPARTMENTS

SAFETY SERVICE DIRECTOR
515 E. MAIN ST.
VAN WERT, OH 45891
(419) 238-1237

CITY ENGINEER
515 E. MAIN ST.
VAN WERT, OH 45891
(419) 238-6940

STREET DEPARTMENT
(419) 238-3698

WATER DISTRIBUTION DEPARTMENT
(419) 238-3086

SEWER COLLECTION DEPARTMENT
(419) 238-9676

OUPS

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

SEEDING

A. ALL AREAS DESIGNATED FOR SEEDING SHALL HAVE A MINIMUM OF 6" OF TOPSOIL OVER THE ENTIRE AREAS. THE AREA SHALL BE RAKED, ROLLED, AND DRESSED READY FOR SEEDING. NO STONE OVER 1" IN SIZE PERMITTED.

B. ALL UNPAVED AREAS WITHIN THE STREET RIGHT-OF-WAY SHALL BE SEEDED WITHIN 48 HOURS AFTER THE CURB IS BACKFILLED. EROSION CONTROL METHODS MAY BE REQUESTED BY THE CITY.

LOCATION TO EXISTING PIPE

A. WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING SANITARY SEWER, STORM SEWER OR WATER LINE, IT SHALL BE THE RESPONSIBILTY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT. CONDUIT.

UTILITY SEPARATION

A. ANY UNDERGROUND UTILITIES SUCH AS GAS, ELECTRIC, CABLE TV, TELEPHONE, ETC., SHALL HAVE 10' SEPARATION FROM ANY CITY UTILITY UNLESS OTHERWISE APPROVED.

UTILITIES

A. THE MAXIMUM LENGTH OF ANY UTILITY TRENCH TO BE OPEN AT ANY TIME SHALL BE 250' UNLESS OTHERWISE APPROVED.

COMPACTION METHODS

A. FLOODING SHALL NOT BE PERMITTED.

B. MECHANICAL DEVICES, HAND DEVICES, VIBRATING PLATES OR OTHER EQUIPMENT APPROVED BY THE CITY IS ACCEPTABLE 1' ABOVE PIPE IN UNIFORM LIFTS OF 12" (LOOSE DEPTH) OF EXISTING NATIVE MATERIAL AND 6" OF GRANULAR BACKFILL. THE HEIGHT OF LIFTS WILL DEPEND UPON THE TYPE OF MECHANICAL EQUIPMENT BEING USED. THE HEIGHT WILL BE 6" FOR HAND OPERATED TOOLS AND UP TO 12" ON EQUIPMENT MOUNTED TOOLS. THE COMPACTION EQUIPMENT SHALL BE CAPABLE OF COMPACTING THE MATERIAL UNDER THE HAUNCH OF THE PIPE.

C. ALL COMPACTION SHALL MEET THE CITY REQUIREMENTS. IF TESTING OF COMPACTED AREAS IS REQUESTED BY THE CITY, SAID TESTING SHALL BE PERFORMED AT THE EXPENSE OF THE DEVELOPER.

D. ALL EMBANKMENT AREAS SHALL BE COMPACTED TO A MINIMUM OF 95% OF ASTM D698 STANDARD PROCTOR CURVE AND TESTED TO REPRESENT A DEPTH OF 12" UNLESS OTHERWISE SPECIFIED BY THE CITY.

DISPOSAL OF SURPLUS MATERIAL

A. THE CITY MAY AT THEIR DISCRETION REQUIRE THAT SURPLUS MATERIAL BE DEPOSITED AT A LOCATION DESIGNATED WITHIN A ONE MILE RADIUS OF THE CITY LIMITS.

GENERAL NOTES

A. ALL CONSTRUCTION METHODS AND MATERIALS SHALL COMPLY WITH THE CITY ENGINEERING STANDARDS OR ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS WHICHEVER IS MORE RESTRICTIVE.

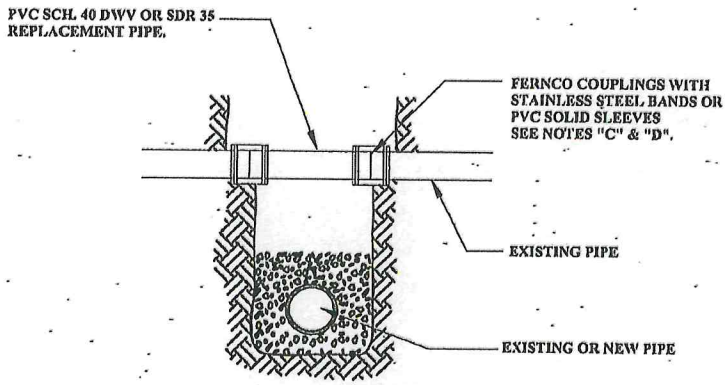
B. THE CITY ENGINEER WILL LOCATE AREAS IN NEED OF UNDERCUTTING UNLESS THE DEVELOPER CHOOSES TO HAVE AT HIS EXPENSE AN INDEPENDENT APPROVED TESTING COMPANY TO DETERMINE UNSUITABLE MATERIAL AREAS THAT NEED UNDERCUTTING.

C. STORM WATER POLLUTION PREVENTION SHOULD BE A HIGH PRIORITY ON ALL CONSTRUCTION PROJECTS. ON ALL PROJECTS WHICH DISTURB AT LEAST 5 ACRES OF SOIL, A NPDES PERMIT IS REQUIRED FROM THE OEPA AND A COPY OF THE PERMIT MUST BE ON FILE AT THE CITY OFFICE BEFORE CONSTRUCTION BEGINS.

LOW STRENGTH MORTAR BACKFILL

A. IN SITUATIONS WHERE UTILITIES CROSS HEAVILY TRAVELED STREETS, OR IT MAY BE DIFFICULT TO GET ADEQUATE COMPACTION ON GRANULAR MATERIAL, LOW STRENGTH MORTAR BACKFILL WILL BE REQUIRED PER ODOT ITEM 613 TYPE 1 ONLY. THE CITY MAY REQUIRE THIS TYPE OF BACKFILL AT THEIR DISCRETION WITH THE COST BEING BORE BY THE CONTRACTOR. CITY WILL REQUIRE MATERIAL CERTIFICATION.

CITY OF VAN WERT	GENERAL NOTES	DATE	PAGE NO.
		8/01/2006	200-1



REPAIR OF NEW OR EXISTING PIPE DETAIL

NOTES

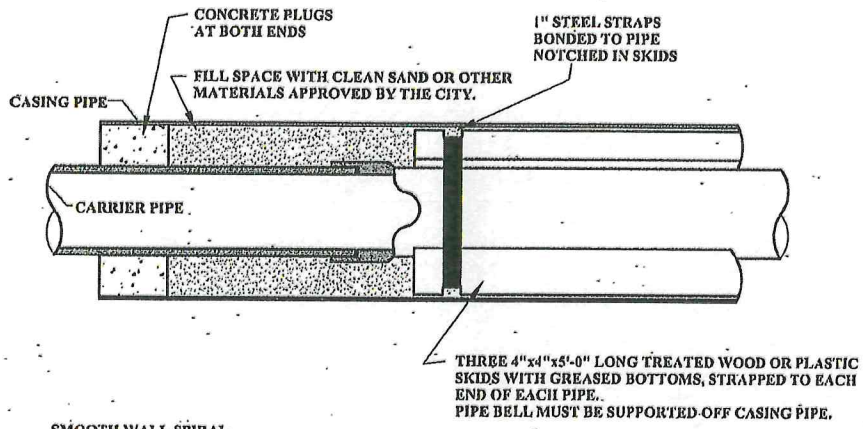
A. SEE APPROPRIATE TRENCH DETAIL FOR PROPER BACKFILLING.

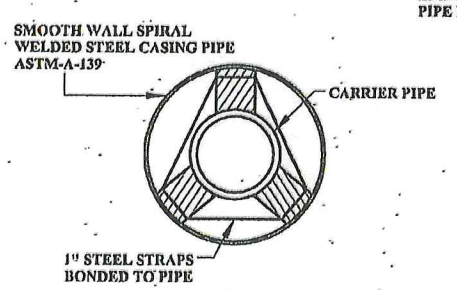
B. CUT BACK TRENCH BANK SO THAT PVC REPLACEMENT PIPE WILL REST ON UNDISTURBED EARTH.

C. FERNCO COUPLINGS SHALL BE PERMITTED ONLY WHEN REPAIRING VETRIFIED CLAY PIPE, DUCTILE IRON PIPE, OR REINFORCED CONCRETE PIPE.

D. PVC SOLID SLEEVES SHALL BE USED WHEN REPAIRING ALL PLASTIC PIPES.

CITY OF VAN WERT	REPAIR OF NEW OR EXISTING PIPE DETAIL	DATE	PAGE NO.
		8/01/2006	200-2





BORING/JACKING

A. MATERIALS
CASING PIPE SHALL BE WELDED STEEL PIPE CONFORMING TO AWWA C200 & C206.

B. INSTALLATION (CASING PIPE).
1. FURNISH PROCEDURE METHODS TO THE CITY FOR APPROVAL.

2. ALL METHODS AND PROCEDURES SHALL BE APPROVED BY THE CITY PRIOR TO CONSTRUCTION.

3. ADEQUATLEY SUPPORT ALL TRENCHES AND BORING/JACKING PITS.

4. INSTALL TO LINE AND GRADE SHOWN.

C. INSTALLATION (CARRIER PIPE).

1. PLACE CONDUITS IN CASING PIPE TO SAME RELATIVE POSITIONS AS ADJACENT DUCT BY USE OF SPACERS.

2. FILL THE SPACE BETWEEN CONDUITS INSIDE THE CASING PIPE WITH CLEAN SAND OR OTHER APPROVED MATERIALS AS APPROVED BY THE CITY.

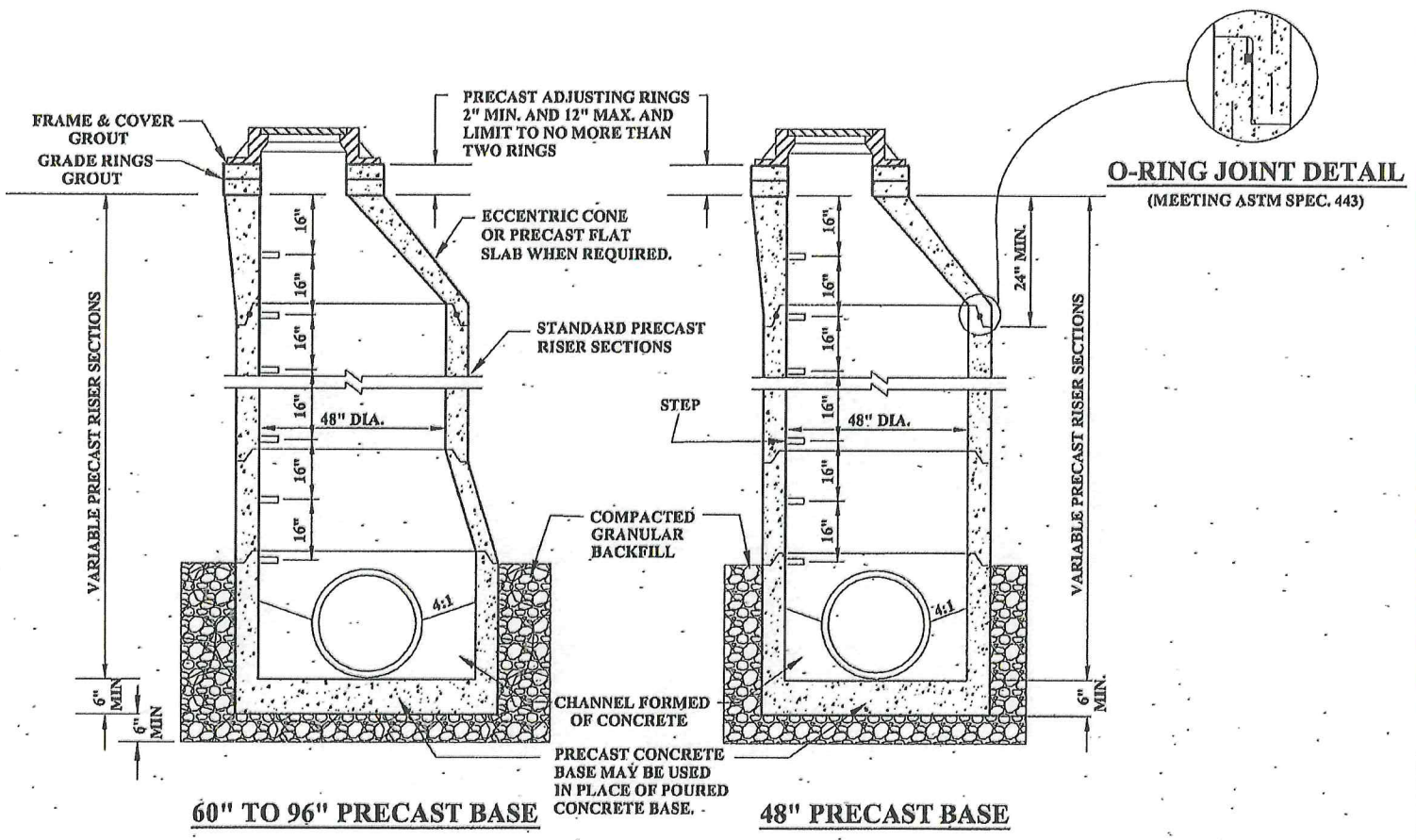
STEEL CASING PIPE

A. STEEL PIPE SHALL HAVE A MINIMUM YIELD STRENGTH OF 35,000 PSI.

B. JOINTS BETWEEN THE SECTIONS OF PIPE SHALL BE FULLY WELED AROUND THE COMPLETE CIRCUMFERENCE OF THE PIPE.

DIAMETER NOMINAL (INCHES)	NOMINAL THICKNESS (INCHES)
10 AND UNDER	0.188
12 AND 14	0.250
16	0.281
18	0.312
20 AND 22	0.344
24	0.375
26	0.406
28	0.438
30	0.469
32	0.500
34 AND 36	0.532
38	0.562
40	0.594
42	0.625
44 AND 46	0.657
48	0.688
50	0.719
52	0.750
54	0.781
56 AND 58	0.812
60	0.844
62	0.875
64	0.906
66 AND 68	0.938
70	0.969
72	1.000

CITY OF VAN WERT	CASING PIPE DETAIL	DATE	PAGE NO.
		8/01/2006	200-3



NOTE

SEE MANHOLE NOTES ON PAGE 200-5

CITY OF VAN WERT	TYPE 3 STORM AND SANITARY MANHOLE	DATE	PAGE NO.
		8/01/2006	200-4

TYPE 3 STORM MANHOLE NOTES

A. STORM MANHOLE FRAME SHALL BE NEENAH NO. R-1772 OR EAST JORDAN IRON WORKS NO. 1022-1.

B. STORM MANHOLE LID SHALL BE NEENAH TYPE "B" VENTED LID OR EAST JORDAN IRON WORKS 1020 A-HD VENTED LID. LID SHALL BE STAMPED STORM SEWER.

C. SECTIONS OF THE PRECAST MANHOLE SHALL BE CAST AND ASSEMBLED WITH EITHER ALL TONGUE OR ALL GROOVE ENDS UP. LIFT HOLES MAY BE PROVIDED IN EACH SECTION FOR HANDLING.

D. TOP AND TRANSITION (OR REDUCER) SECTIONS MAY BE EITHER ECCENTRIC CONE OR FLAT SLABS.

E. OPENINGS IN RISER SECTIONS FOR 18" AND SMALLER INLET PIPES MAY BE PREFABRICATED OR CUT IN THE FIELD PROVIDED THE SIDES OF THE PIPE AT THE SPRING LINE DO NOT PROJECT INTO THE MANHOLE.

F. MATERIALS FOR BASES AND OTHER PRECAST SECTIONS, INCLUDING REINFORCEMENT NOT SPECIFIED HEREIN, SHALL COMPLY WITH ODOT REQUIREMENT OF 706.13 (ASTM C-478).

G. LOCATE THE CENTERLINE OF MANHOLE CONES OVER THE CENTERLINE OF THE MAIN SEWER WHENEVER POSSIBLE.

H. NO LATERALS MAY PROTRUDE INTO THE INTERNAL MANHOLE.

I. MAXIMUM SPACING SHALL BE 450'.

J. WHEN CONNECTING TO AN EXISTING STORM MANHOLE CARE SHALL BE TAKEN TO KEEP OPENING AS MINIMAL AS POSSIBLE. IF POSSIBLE, SAW CUT OR USE ROTARY HAMMER FOR OPENING TO MINIMIZE DAMAGE TO STORM MANHOLE AND PIPE MUST BE CUT PARALLEL TO STORM MANHOLE. USE NONSHRINK GROUT AROUND PIPE TO SEAL BETWEEN PIPE AND STORM MANHOLE.

K. JOINTS BETWEEN SECTIONS SHALL BE EITHER MORTAR OR BITUMINOUS PIPE JOINT FILLER (ODOT 706.10).

L. MORTAR SHALL BE USED UNDER GRADE RINGS AND CASTINGS.

TYPE 3 SANITARY MANHOLE NOTES

A. SANITARY MANHOLE FRAME SHALL BE NEENAH NO. R-1772 OR EAST JORDAN IRON WORKS NO. 1022-1.

B. SANITARY MANHOLE LID SHALL BE NEENAH TYPE "B" SOLID LID OR EAST JORDAN IRON WORKS 1020 A-HD SOLID LID. LID SHALL BE STAMPED SANITARY SEWER.

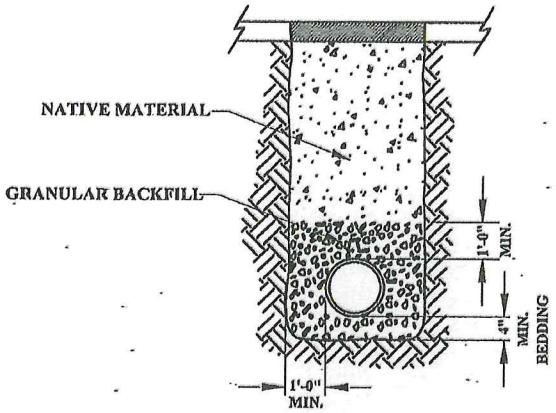
C. WHEN CONNECTING TO AN EXISTING SANITARY MANHOLE, THE MANHOLE SHALL BE CORED AND A PSX BOOT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. NONSHRINK GROUT ALTERNATIVE MAY BE USED IN SPECIAL CIRCUMSTANCES WHEN PREVIOUSLY APPROVED BY THE CITY.

D. JOINTS MUST BE KEPT TO A MINIMUM AND SEALED WITH FLEX-SEAL UTILITY SEALANT.

E. CONCRETE PLACED INSIDE THE MANHOLE SHALL NOT BE PLACED BETWEEN THE PIPE AND THE OPENING SO AS TO INTERFERE IN ANY WAY WITH THE FLEXIBILTY OF THE JOINT.

F. INTERNAL CHIMNEY SEALS MAY BE REQUIRED BY THE CITY, DEPENDING ON LOCATION OF SANITARY MANHOLE.

CITY OF VAN WERT	TYPE 3 STORM & SANITARY MANHOLE NOTES	DATE	PAGE NO.
		8/01/2006	200-5



TRENCH DETAIL

TRENCH DETAIL NOTES

A. GRANULAR BEDDING SHALL BE CRUSHED STONE OR GRAVEL, ODOT 703 TYPE 3 (#57 OR #67) OR OTHER APPROVED EQUIVALENT.

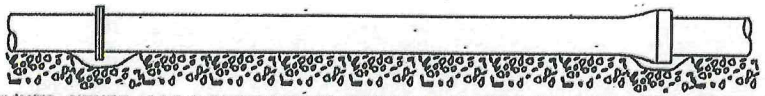
B. ALL TRENCHES SHALL BE COMPACTED WITH GRANULAR BACKFILL MATERIAL ODOT 703 TYPE 3 (#57 OR #67) IN 6" MAXIMUM LIFTS OR LOW STRENGTH MORTAR BACKFILL ODOT ITEM 613 TYPE 1 UNTIL THE TOP OF THE COMPACTED GRANULAR BACKFILL OR LOW STRENGTH MORTAR BACKFILL IS HIGH ENOUGH AS TO LEAVE 4 FEET OF NATIVE MATERIAL FOR COVER.

C. A DENSITY TEST ON GRANULAR BACKFILL OF 98% OF ASTM D698 STANDARD PROCTOR CURVE MAY BE REQUIRED TO BE PERFORMED BY A COMMERCIAL TESTING LAB SATISFACTORY TO THE CITY.

D. OFF PAVEMENT AREAS SHALL BE PROVIDED WITH A MINIMUM OF 6" OF TOPSOIL OVER THE COMPACTED MATERIAL AND THEN SEEDED AND MULCHED PER ODOT ITEM 659.

E. IN-PAVEMENT AREAS SHALL FOLLOW TYPICAL PAVEMENT RESTORATION DETAILS SHOWN ON PAGE 100-10.

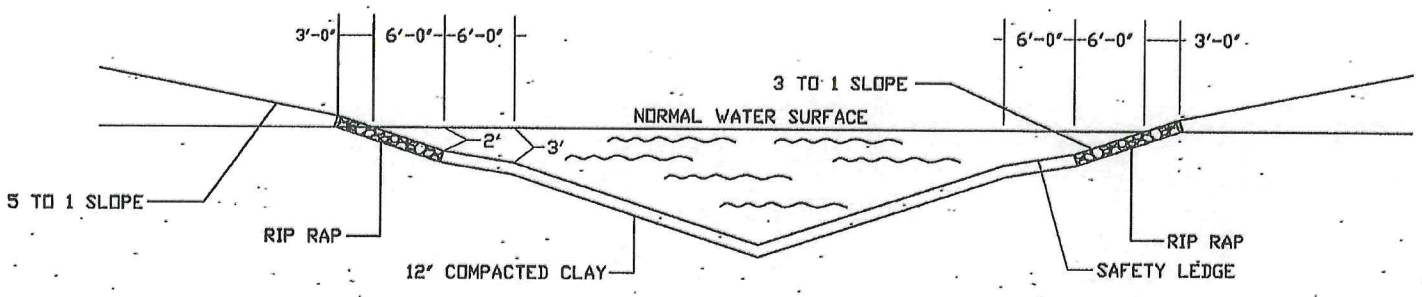
F. THE OPEN ENDS OF ALL PIPES SHALL BE PLUGGED TO THE APPROVAL OF THE CITY BEFORE LEAVING THE WORK FOR THE NIGHT.



COUPLINGS - NEVER ALLOW COUPLINGS TO REST ON OR TO SETTLE DOWN TO ORIGINAL TRENCH BOTTOM.
PIPE - MAKE CERTAIN THAT PIPE BARREL IS GIVEN AN EVEN BEARING FOR ITS FULL LENGTH.

BEDDING OF PIPE

CITY OF VAN WERT	STORM AND SANITARY SEWER TRENCH DETAIL	DATE	PAGE NO.
		11/28/2007	200-6



POND SECTION

CITY OF VAN WERT	RESIDENTIAL AND DETENTION POND DETAIL	DATE	PAGE NO.
		8/01/2006	200-7

NOTES

A. ALL STORM SEWER CONSTRUCTION SHALL ADHERE TO ODOT SPECIFICATIONS LATEST REVISION OR WITH THE CITY CONSTRUCTION STANDARDS AND DRAWINGS, WHICHEVER IS MORE RESTRICTIVE.

B. HUCKY PUCK IS REQUIRED ON ALL NON O-RING STORM SEWER AND MANHOLES, UNLESS OTHERWISE APPROVED.

C. WHEN A CASTING IS ABANDONED IT REMAINS CITY PROPERTY.

D. ALL STORM SEWER SHALL BE INSTALLED USING METHOD OF INSTALLATION APPROVED BY THE CITY.

PIPE

A. ALL STORM SEWER PIPE SHALL HAVE A MINIMUM DIAMETER OF 12", UNLESS OTHERWISE APPROVED.

B. TYPES OF PIPE PERMITTED

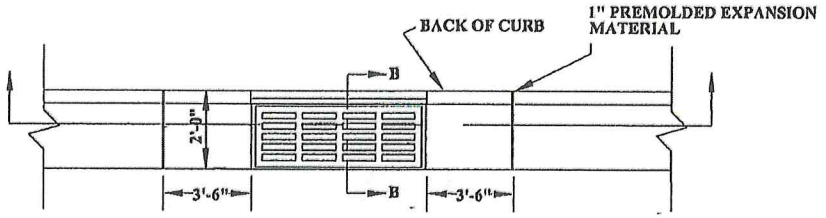
UP TO 30" DIAMETER	ODOT MATERIALS NUMBER
REINFORCED CONCRETE PIPE	706.02
REINFORCED CONCRETE ELLIPTICAL PIPE	706.04
CORRUGATED POLYETHYLENE SMOOTH-LINED PIPE	707.33
POLYVINYL CHLORIDE PLASTIC PIPE (NON-PERFORATED)	707.41
POLYVINYL CHLORIDE CORRUGATED SMOOTH-INTERIOR PIPE	707.42
POLYVINYL CHLORIDE PROFILE WALL PIPE	707.43
POLYVINYL CHLORIDE SOLID WALL PIPE	707.45

OVER 30" DIAMETER	ODOT MATERIALS NUMBER
REINFORCED CONCRETE PIPE	706.02
REINFORCED CONCRETE ELLIPTICAL PIPE	706.04

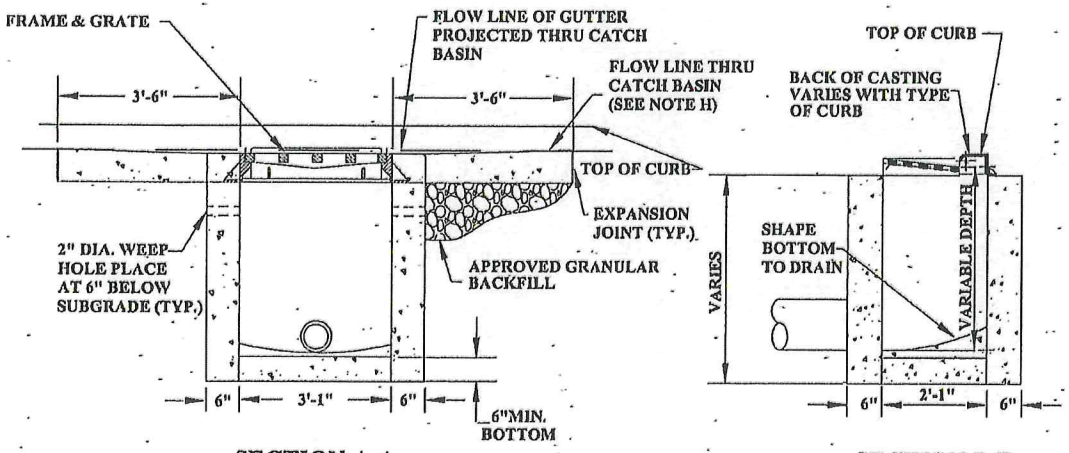
EXISTING TILE HOOKUPS

A. THE DRAINAGE TILE CURRENTLY CONNECTED TO THE EXISTING STORM SEWER SHALL BE CONNECTED TO THE PROPOSED STORM SEWER. ANY DRAINAGE TILE DAMAGED BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. ALL PIPE REMOVED, REPLACED, AND/OR CONNECTED TO THE STORM SEWER SHALL BE NOTED ON THE AS-BUILT DRAWINGS AND SHALL BE INSPECTED BY THE CITY INSPECTOR BEFORE THEY ARE COVERED.

B. ALL FIELD OR STORM DRAINS WHICH ARE ENCOUNTERED DURING CONSTRUCTION SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS OR PLUGGED AS APPROVED AND DIRECTED BY THE CITY ENGINEER.



PLAN VIEW



SECTION A-A

SECTION B-B

NOTES

A. CASTING SHALL BE EAST JORDAN 7030 OR NEENAH R-3246.

B. FOR TYPE 2 COMBINATION CURB AND GUTTER, THE BACK SHALL BE EAST JORDAN TYPE T4 OR NEENAH (3" RADIUS).

C. FOR TYPE 1 COMBINATION ROLL CURB AND GUTTER THE BACK SHALL BE EAST JORDAN TYPE T2 OR NEENAH NO. R-3246-E.

D. CATCH BASIN IN DRIVE APPROACHES (TO BE AVOIDED, IF POSSIBLE) THE BACKS SHALL BE EAST JORDAN TYPE T3 OR NEENAH (R-3246-1 WITH CURB PLATE).

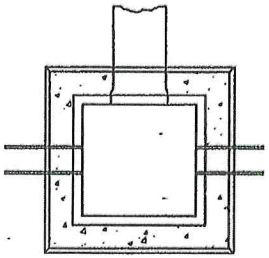
E. STANDARD GRATE SHALL BE EAST JORDAN TYPE M2 OR NEENAH TYPE C. ALL BAR EDGES TO BE ROUNDED 1/8" RADIUS.

F. CAST-IN-PLACE CONCRETE TO BE CLASS C OR PRECAST CONSTRUCTION PERMITTED AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13 WITH 6±2% AIR VOID CONTENT IN THE HARDENED CONCRETE. PRECAST WALLS SHALL HAVE A SUFFICIENT AMOUNT OF REINFORCEMENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.

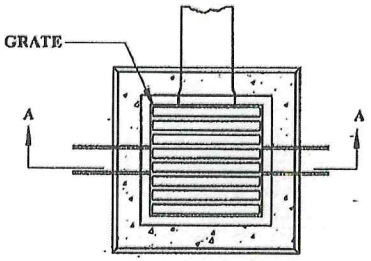
G. CARE SHALL BE TAKEN WHEN CONNECTING TO AN EXISTING CATCH BASIN TO KEEP OPENING AS MINIMAL AS POSSIBLE. IF POSSIBLE, SAW CUT OR USE ROTARY HAMMER FOR OPENING TO MINIMIZE DAMAGE TO CATCH BASIN. PIPE TO INTRUDE INTO CATCH BASIN 1" ONLY AND PIPE MUST BE CUT PARRALLEL TO CATCH BASIN. USE NONSHRINK GROUT AROUND PIPE TO SEAL BETWEEN PIPE AND CATCH BASIN.

H. DROP FLOW LINE 1/2" WITHIN BLOCK OUT OF COMBINED CURB AND GUTTER WHILE KEEPING LIP OF GUTTER CONSISTANT WITH TOP OF CURB.

CITY OF VAN WERT	TYPE 1 CATCH BASIN	DATE	PAGE NO.
		8/01/2006	300-2



SECTION B-B



PLAN

NOTES

A. LOCATION AND ELEVATIONS WHEN GIVEN ON THE PLANS IS TOP CENTER OF THE GRATE. WHEN SIDE OPENINGS ARE PROVIDED, ELEVATION SHALL BE THE FLOW LINE OF THE SIDE INLET.

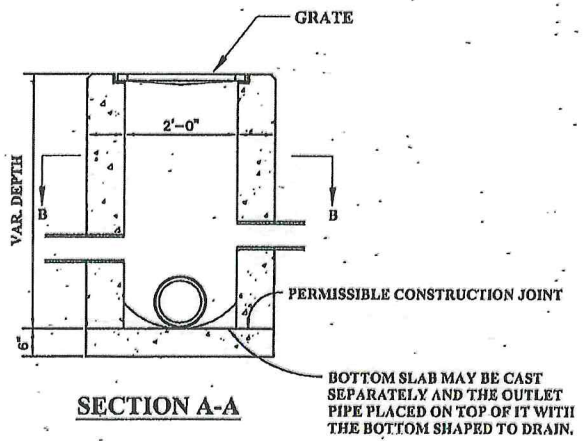
B. GRATE FOR NONPAVED AREAS SHALL BE EAST JORDAN IRON WORKS 5110 TYPE M3 HEAVY DUTY.

C. GRATE ELEVATION TO BE PLACED 4" TO 6" BELOW NORMAL DITCH RETURNING TO NORMAL 10' EACH SIDE OF BASIN.

D. CONCRETE CAST-IN-PLACE, TO BE CLASS C. PRECAST CONSTRUCTION PERMITTED AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13 WITH 6±2% AIR VOID CONTENT IN THE HARDENED CONCRETE. KNOCKOUTS MAY BE PROVIDED IN PRECAST CONSTRUCTION. PRECAST WALLS SHALL HAVE A SUFFICIENT AMOUNT OR REINFORCEMENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.

E. FOR PIPES OVER 18" REFER TO ODOT CATCH BASIN 2-3 AND 2-4. FOR SIDE INLETS REFER TO ODOT CATCH BASIN 2-2-A.

F. CARE SHALL BE TAKEN WHEN CONNECTING TO AN EXISTING CATCH BASIN TO KEEP OPENING AS MINIMAL AS POSSIBLE. IF POSSIBLE, SAW CUT OR USE ROTARY HAMMER FOR OPENING TO MINIMIZE DAMAGE TO CATCH BASIN. PIPE TO INTRUDE INTO CATCH BASIN 1" ONLY AND PIPE MUST BE CUT PARALLEL TO CATCH BASIN. USE NONSHRINK GROUT AROUND PIPE TO SEAL BETWEEN PIPE AND CATCH BASIN.



SECTION A-A

6" WALLS / KNOCKOUTS

CITY OF VAN WERT	TYPE 2-2-B CATCH BASIN	DATE	PAGE NO.
		8/01/2006	300-3

NOTES

A. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROVIDED FOR ALL CONSTRUCTION PROJECTS HAVING SIGNIFICANT GRADING. THE CONTROLS ARE PROVIDED DURING CONSTRUCTION TO PREVENT SOIL ERODED FROM THE CONSTRUCTION AREA FROM ENTERING ADJACENT WATER COURSES.

B. CONSTRUCTION ITEMS INCLUDE SEDIMENT BASINS, SEDIMENT DAMS, DIVERSION DIKES AND/OR DITCHES AND OTHER FILTER DIKES OTHER MISCELLANEOUS EROSION CONTROL MEASURES INCLUDE REPAIR SEEDING AND MULCHING, COMMERCIAL FERTILIZER, WATER AND MOWING AND ROCK CHANNEL PROTECTION, COVERED IN ODOT SPECIFICATION ITEMS 659 AND 601.

C. THE SIZE OF THE ENTIRE DRAINAGE AREA CONTRIBUTING FLOW IS USED TO DETERMINE THE MOST EFFECTIVE EROSION CONTROL METHOD. IN MANY CASES, THE MAJOR PORTION OF THE CONTRIBUTING AREA WILL BE BEYOND THE PROJECT LIMITS, AND FOR THOSE CASES IT WILL BE NECESSARY TO CONTROL THE FLOW FROM OUTSIDE BEFORE IT REACHES THE AREA DISTURBED BY THE PROJECT CONSTRUCTION. FLOW FROM THE AREA DISTURBED BY CONSTRUCTION SHALL BE TREATED PRIOR TO COMBINING IT WITH OFF-PAVEMENT DRAINAGE.

D. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROVIDED FOR ALL SUBDIVISIONS AND INDIVIDUAL SITES UNLESS OTHERWISE APPROVED. THE CONTROL MEASURES ARE TO BE PROVIDED DURING CONSTRUCTION TO PREVENT EROSION FROM ENTERING ADJACENT WATERWAYS AND PROPERTIES.

PLAN SUBMITTAL

A. ALL APPLICABLE SITE PLANS SHALL INCLUDE APPROPRIATE EROSION AND SEDIMENT CONTROL DEVICES AND SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO COMMENCEMENT OF ANY WORK UNLESS OTHERWISE APPROVED. ALL PROJECTS WHICH DISTURB 5 ACRES OR MORE MUST HAVE OEPA EROSION CONTROL APPROVALS.

CONSTRUCTION

A. ALL EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSPECTED AND APPROVED BY THE CITY UNLESS OTHERWISE APPROVED.

STORM WATER PERMITS

A. ON ALL PROJECTS WHICH DISTURB AT LEAST 5 ACRES OF SOIL, A NPDES PERMIT IS REQUIRED FROM OEPA AND A COPY OF THE PERMIT MUST BE ON FILE AT THE CITY BEFORE CONSTRUCTION BEGINS.

CONTROL MEASURES

A. DISTURB ONLY THE AREAS NEEDED FOR CONSTRUCTION.

B. REMOVE ONLY THOSE TREES, SHRUBS, AND GRASSES THAT MUST BE REMOVED FOR CONSTRUCTION. PROTECT THE REST TO PRESERVE THEIR AESTHETIC AND EROSION CONTROL VALUES. TREES SHALL BE REPLACED AFTER CONSTRUCTION IS COMPLETE AT THE DEVELOPER'S COST.

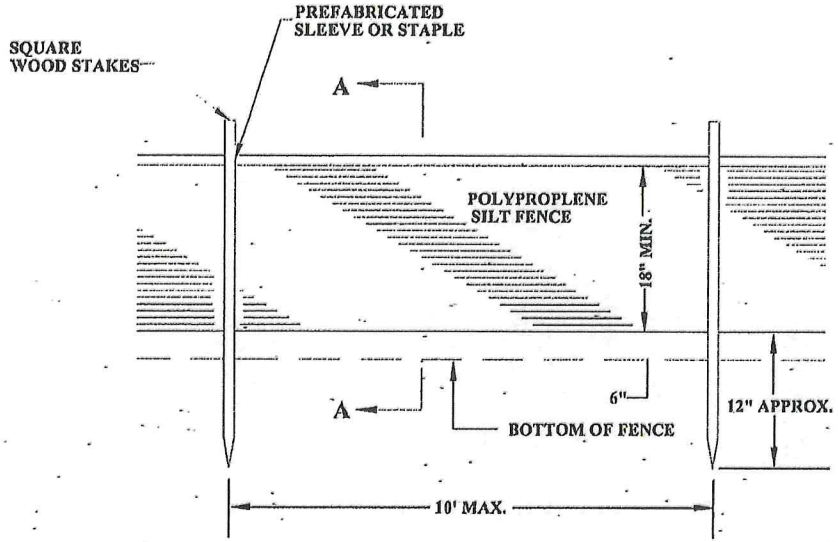
C. INSTALL SEDIMENT BASINS AND DIVERSION DIKES BEFORE DISTURBING THE LAND THAT DRAINS INTO THEM.

D. INSTALL EROSION AND SEDIMENT CONTROL PRACTICES AS INDICATED IN THE PLAN. THE PRACTICES ARE TO BE MAINTAINED IN EFFECTIVE WORKING CONDITION DURING CONSTRUCTION AND UNTIL THE DRAINAGE AREAS HAVE BEEN PERMANENTLY STABILIZED.

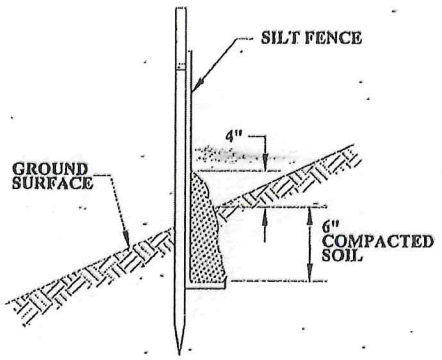
E. TEMPORARILY STABILIZE EACH SEGMENT, GRADED OR OTHERWISE DISTURBED LAND, INCLUDING THE SEDIMENT CONTROL DEVICES NOT OTHERWISE STABILIZED BY SEEDING AND MULCHING OR BY MULCHING ALONE. AS CONSTRUCTION IS COMPLETED, PERMANENTLY STABILIZE EACH SEGMENT WITH PERENNIAL VEGETATION AND STRUCTURAL MEASURES.

F. LEVEL DIVERSION DIKES, SEDIMENT BASINS, AND SILT TRAPS AFTER AREAS THAT DRAIN INTO THEM ARE STABILIZED. ESTABLISH PERMANENT VEGETATION ON THESE AREAS. SEDIMENT BASINS THAT ARE TO BE RETAINED FOR STORM WATER DETENTION MAY BE SEEDED TO PERMANENT VEGETATION AFTER THEY ARE BUILT.

G. DISCHARGE WATER FROM OUTLET STRUCTURES AT NON-EROSIVE VELOCITIES.



SILT FENCE



SECTION A-A

CITY OF VAN WERT	SILT FENCE TEMPORARY EROSION CONTROL	DATE	PAGE NO.
		6/01/2006	300-5

NOTES

A. NO WORK SHALL BE APPROVED OR ACCEPTED BY THE CITY UNLESS 2 WORKING DAYS NOTICE OF COMMENCING WORK IS GIVEN TO THE CITY.

B. ALL TEMPORARY PAVEMENT AND SIDEWALK SHALL BE MAINTAINED BY THE CONTRACTOR OR THE DEVELOPER AT HIS OWN EXPENSE IN A SUITABLE AND SAFE CONDITION FOR TRAFFIC UNTIL PERMANENT REPLACEMENT IS MADE OR THE PROJECT IS FINALLY ACCEPTED BY THE CITY.

C. ALL WATERLINE CONSTRUCTION SHALL FOLLOW THE CITY STANDARDS, OHIO DEPARTMENT OF TRANSPORTATION ITEM 638, AND AWWA STANDARDS WHICHEVER IS MORE RESTRICTIVE.

D. OPERATION OF CITY FIRE HYDRANTS, VALVES, METERS, SERVICES STOPS, AND ALL OTHER MECHANICAL INFRASTRUCTURE ITEMS IS STRICTLY PROHIBITED. PENALTY FOR SUCH OPERATION MAY BE ASSESSED PER. SECTION 151.999(A) OF THE CITY'S SUBDIVISION REGULATIONS.

E. ALL NEW WATER SERVICES SHALL BE EQUIPPED WITH A BACKFLOW PREVENTION DEVICE INSIDE THE BUILDING APPROVED BY THE OHIO EPA.

F. ALL NEW WATER MAINS IN NEW SUBDIVISIONS SHALL BE LOCATED ON THE NORTH OR EAST SIDE OF PROPOSED STREETS IN THE TREE LAWN.

G. ALL PIPE AND FITTINGS PRIOR TO BEING INSTALLED SHALL BE WASHED AND SWABBED WITH CLEAN, CHLORINATED WATER, TO FREE THE PIPE OF DIRT AND FOREIGN MATTER.

FITTINGS AND VALVES

A. FITTINGS IN SIZES 2" THROUGH 48" SHALL BE CLASS 350, COMPACT DUCTILE IRON FITTINGS AND SHALL CONFORM TO ALL REQUIREMENTS OF ANSI-21.53 (AWWA C153)

a. FITTINGS SHALL BE MECHANICAL JOINTS AND BE COMPACT DUCTILE IRON.

b. FITTINGS SHALL BE U.S.A MADE ONLY

c. FITTINGS AND VALVE BOLTS SEE MATERIAL SPECIFICATIONS SECTION J.

B. ALL TEE'S AND CROSSES SHALL BE VALVED IN EACH DIRECTION UNLESS OTHERWISE APPROVED

C. NO VALVE SHALL BE OPERATED BY PERSONNEL OTHER THAN A REPRESENTATIVE EMPLOYED BY THE WATER DISTRIBUTION..

D. GATE VALVES - ALL GATE VALVES SHALL BE AWWA C-509, RESILIENT WEDGE, NON-RISING STEM, MECHANICAL JOINT, 250 PSI WORKING PRESSURE, CCW TO OPEN, WITH ARROW INDICATING OPEN DIRECTION, CLOW OR MUELLER. ALL BOLTS IN VALVE BODY AND OPERATING NUT HOLD DOWN SHALL BE STAINLESS STEEL.

WATER MAIN SIZE

A.

WATER MAIN MINIMUM SIZE UNLESS OTHERWISE APPROVED	
SINGLE AND TWO FAMILY	MINIMUM 8"
MULTI FAMILY	8"
COMMERCIAL	10"
INDUSTRIAL	12"
IF THE WATER MAIN IS NOT LOOPED OR THE WATER MAIN LENGTH IN THE TOTAL DEVELOPMENT IS GREATER THAN 600', THE MINIMUM WATER MAIN SIZE SHALL BE 8".	

B. DEAD ENDS NOT PERMITTED IF AT ALL POSSIBLE.

CITY OF VAN WERT	WATER NOTES	DATE	PAGE NO.
		2/01/2023	400-1

MATERIAL SPECIFICATIONS

A. WATER MAIN 4" THROUGH 12" SHALL BE PVC CLASS 150, DR-18 AWWA C-900.

ALL WATER MAIN OVER 12" SHALL BE PVC CLASS 235, DR-18, AWWA C-905. WATER MAIN SHALL BE SLIP-ON JOINTS WITH RUBBER GASKETS, ONLY BRISTOL, NORTH AMERICAN, UPONOR ETI COMPANY, OR J-M PIPE BRANDS SHALL BE USED.

B. FIRE HYDRANTS - SEE FIRE HYDRANT DETAIL

SERIES 1390 OR APPROVED EQUIVALENT.

C. GATE VALVES - ALL GATE VALVES SHALL BE AWWA C-509, RESILIENT WEDGE,

NON-RISING STEM, MECHANICAL JOINT, 250 PSI WORKING PRESSURE, CCW TO OPEN, WITH ARROW INDICATING OPEN DIRECTION, CLOW OR MUELLER. ALL BOLTS IN VALVE BODY AND OPERATING NUT HOLD DOWN SHALL BE STAINLESS STEEL

D. VALVE BOXES - 3-PIECE CAST IRON 6" DIAMETER NOMINAL, ADJUSTABLE SCREW TYPE,

COVER MARKED "WATER", U.S.A. MADE ONLY. ALL VALVE BOXES IN ROADWAY MUST HAVE A 3" RISER.

E. WHEN INSTALLING PLASTIC WATER MAIN AND SERVICE LINES NO. 12 AWG COPPERHEAD INDUSTRIES TRACER WIRE IS TO BE INSTALLED FOR LOCATING PURPOSES.

A. TRACER WIRE FOR DIRECT BURY/OPEN CUT DIGGING SHALL BE A #12 AWG (0.0808" DIAMETER) DEAD SOFT ANNEALED (DSA) SOLID COPPER CONDUCTOR, INSULATED WITH A 45 MIL, HIGH-DENSITY, HIGH MOLECULAR WEIGHT POLYETHYLENE (HDPE) INSULATION RATED FOR DIRECT BURIAL USE AT 600 VOLTS. BREAK LOAD OF 198 LBS.

B. TRACER WIRE FOR DIRECTIONAL DRILLING/BORING SHALL BE COPPERHEAD SOLOSHOT #12 AWG (0.0808" DIAMETER) HARDDRAWN, HIGH CARBON 1055 GRADE STEEL, SOLID EXTRA-HIGH STRENGTH COPPER-CLAD STEEL CONDUCTOR (EHS-CCS) RATED AT 30 VOLTS, INSULATED WITH A 45 MIL, HIGH-DENSITY, HIGH MOLECULAR WEIGHT POLYETHYLENE (HDPE) INSULATION RATED FOR DIRECT BURIAL USE AT 600VOLTS. EHS-CCS CONDUCTOR MUST BE AT 21% CONDUCTIVITY FOR LOCATE PURPOSES. BREAK LOAD OF 1150 LBS.

C. ALL SERVICE LOCATION WIRE TO BE HOOKED TO MAIN LINE WIRE WITH COPPERHEAD-SELF-STRIPPING MAINLINE-TO-SERVICE CONNECTOR PART #3WB-SS

D. ALL OTHER WIRE SPLICES TO USE COPPERHEAD-SNAKEBITE LOCKING CONNECTOR -12 AWG PART # LSC 1230C-CTR10

E. LOCATION WIRE CONNECTION POINTS SHALL BE MADE AT EVERY FIRE HYDRANT USING COPPERHEAD-COBRA HYDRANT FLANGE PACKAGE PART # T2-B-FLPKG. EACH HYDRANT FLANGE PACKAGE SHALL HAVE A 1" RIGID PVC CONDUIT RAN 6" BELOW DIRT GRADE.

F. IF A WATERMAIN INSTALLED IS A DEAD END IT SHALL HAVE LOCATION WIRE TEST STATIONS INSTALLED AT THE END OF THE WATERMAIN. THE LOCATION WIRE SHALL BE RAN UP AND CONNECTED TO A COPPERHEAD SINGLE-TERMINAL CAST IRON LID PART # RB14BTP.

G. ALL TRACER WIRE INSTALLED SHALL BE VERIFIED TO BE IN GOOD WORKING ORDER USING A HANDHELD UNDERGROUND UTILITY LOCATOR.

F. TAPPING SLEEVES POWERSEAL MODEL 3490 MJ FABRICATED STAINLESS STEEL OR FORD STYLE FTSS BY MJ 18-8 TYPE 304 STAINLESS STEEL FLANGE.

G. CONTRACTOR MAY NEED TO USE WIDE RANGE COUPLINGS TO TIE INTO EXISTING WATER MAINS. COUPLINGS TO BE USED ARE ROMAC STYLE XR501 EXTENDED RANGE COUPLING WITH 304 S.S. BOLTS AND NUTS AND A FUSION EPOXY.

H. MECHANICAL JOINT RESTRAINTS SHALL BE FORD UFR 1500ECOAT EPOXY MADE IN U.S.A.

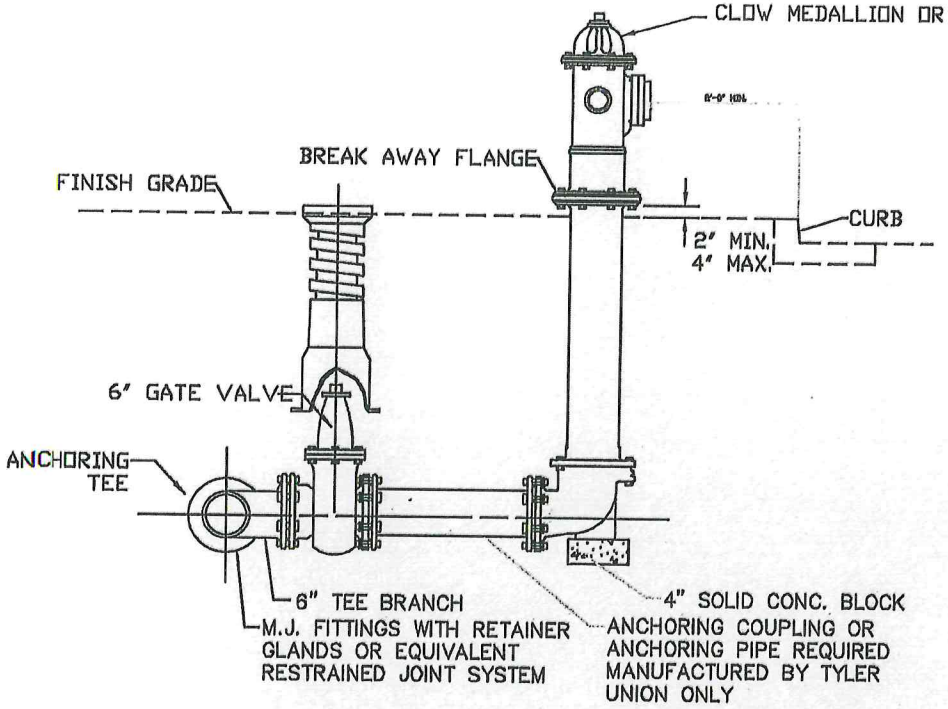
I. IN FACT FOSTER ADAPTORS SHALL BE EPOXY ADAPTOR, BLUE FLUOROCARBON (TEFLON) ACCESSORIES OR EPOXY ADAPTOR, STAINLESS STEEL ACCESSORIES WITH TYPE 304 BOLTS.

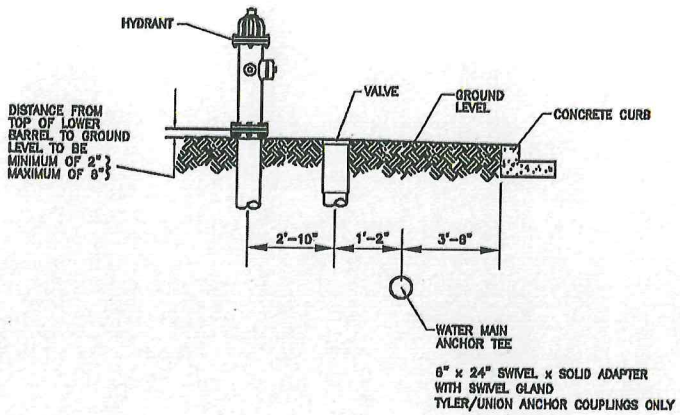
J. FITTINGS AND VALVES - MECHANICAL JOINT BOLTS AND NUTS SHALL BE TYPE 304 STAINLESS STEEL OR COR-BLUE T-HEAD BOLTS AND NUTS MADE BY BIRMINGHAM FASTENER AND SHALL BE CORROSION-RESISTANT, HIGH STRENGTH LOW ALLOY

STEEL THAT CONFORMS TO ANSI/AWWA C111/A21.11 BAKED-ON, CERAMIC-FILLED FLUOROCARBON RESIN.

a. EXCEPT WHEN USING TYPE 304 STAINLESS STEEL ALL BOLTS ARE TO BE CAPPED WITH TRUMBULL ANODE CAPS 6 OZ LARGE ZINC ANODE CAPS TRUMBELL ITEM # 364-1010 (DOMESTIC) ASTM B418-88

K. ALL FITTINGS AND SADDLES ARE TO BE BACK FILLED WITH NATURAL CONCRETE SAND FROM GRAVEL PIT 1' THICK TOP AND SIDES, 6" THICK ON BOTTOM





FIRE HYDRANT INSTALLATION

A. FIRE HYDRANTS SHALL BE MUELLER CENTURION A-423, OR CLOW MEDALLION, MECHANICAL JOINT, WITH (2) 2 1/2" HOSE NOZZLES WITH NST, (1) 5" HARRINGTON INTEGRAL STORZ PUMPER NOZZLE, WITH CAP & CABLE, VAN WERT STANDARD THREADS (5 THREADS PER INCH) CONFORMING TO AWWA, CW TO OPEN, BREAK FLANGES 3" ABOVE FINISH GRADE.

a. ALL BOLTS IN HYDRANT SHALL BE STAINLESS STEEL.
b. BOTH UPPER AND LOWER OPERATING STEMS IN HYDRANT SHALL BE STAINLESS STEEL.

B. GATE VALVES SHALL BE AWWA C-509, RESILIENT WEDGE, NONRISING STEM, MECHANICAL JOINT, 250 PSI WORKING PRESSURE, CCW TO OPEN WITH ARROW INDICATING OPEN DIRECTION, MUELLER OR CLOW. ALL BOLTS IN VALVE BODY AND OPERATING NUT HOLD DOWN SHALL BE STAINLESS STEEL.

C. VALVE BOXES - 3-PIECE CAST IRON 6" DIAMETER NOMINAL, ADJUSTABLE SCREW TYPE, COVER MARKED "WATER", U.S.A. MADE ONLY. ALL VALVES SHALL BE KEPT OUT OF THE PAVEMENT, UNLESS APPROVED BY WATER DISTRIBUTION SUPERINTENDENT. ALL VALVE BOXES IN ROADWAY MUST HAVE A 3" RISER.

D. ALL FITTINGS TO BE RESTRAINED WITH GRIPRINGS, ALL GRIP OR TYLER/UNION ANCHOR COUPLINGS 12" - 36" LONG.

E. ALL FITTINGS TO BE AWWA C153 DUCTILE IRON, COMPACT.

F. CONTRACTOR SHALL FACE THE HYDRANT WITH STORZ PUMPER TOWARDS ROADWAY OR A DIRECTION APPROVED BY THE WATER DISTRIBUTION SUPERINTENDENT

G. FIRE HYDRANTS SHALL BE SPECIAL ORDER FOR THE CITY OF VAN WERT.

H. FIRE HYDRANTS SHALL BE PAINTED RED.

I. MAXIMUM FIRE HYDRANT SPACING:

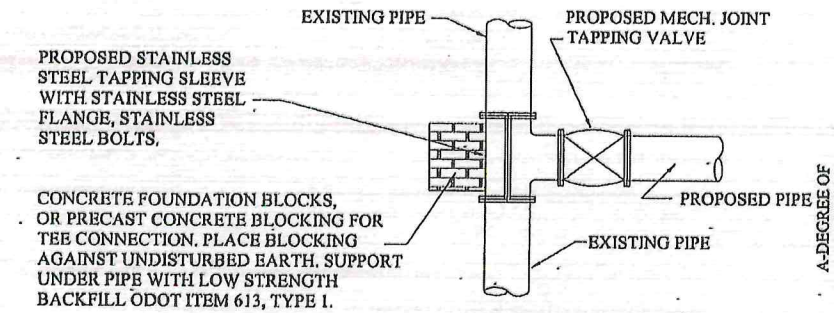
a. RESIDENTIAL = 500'
b. COMMERCIAL/INDUSTRIAL = 400'
c. HAZARDOUS INDUSTRIAL = 300'

J. ALL EXPOSED BOLTS, FITTINGS AND VALVES ARE TO BE WRAPPED IN 8 MIL POLYETHYLENE AND BACKFILLED WITH NATURAL CONCRETE SAND FROM A GRAVEL PIT OF 1' ON TOP AND SIDES AND 6" ON BOTTOM

a. THE LOWER BARREL OF THE FIRE HYDRANT (SHOE) SHALL BE WRAPPED IN 8 MIL POLYETHYLENE AND BACKFILLED 1' WITH #67 GRAVEL NOT NATURAL CONCRETE SAND TO ALLOW FOR DRAINING OF THE HYDRANT.

K. LOCATION WIRE CONNECTION POINTS SHALL BE MADE AT EVERY FIRE HYDRANT USING COPPERHEAD-COBRA HYDRANT FLANGE PACKAGE PART #T2-B-FLPKG, EACH HYDRANT FLANGE PACKAGE SHALL HAVE 1" RIGID PVC CONDUIT RAN 6" BELOW DIRT GRADE.

CITY OF VAN WERT	FIRE HYDRANT	DATE	PAGE NO.
		12/8/2025	400-2



TAPPING SLEEVE AND VALVE DETAIL

DESIGN PARAMETERS
LAYING CONDITIONS-TYPE 5
SOIL DESIGNATION-SILT
DEPTH OF COVER-4'
DESIGN PRESSURE-80PSI
SAFETY FACTOR-1.50
POLYWRAPPED PIPE
IF WORST CONDITIONS EXIST,
ADDITIONAL RESTRAINTS WILL BE
NECESSARY.

A-DEGREE OF DEFLECTION	D-DIAMETER OF PIPE							
	4"	6"	8"	10"	12"	16"	20"	24"
11-¼°	*	*	*	*	*	5	5	6
22-½°	*	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

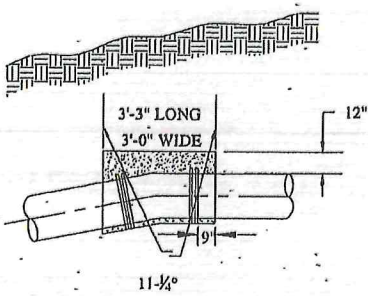
*REQUIRED RESTRAINED JOINT AT FITTING AND ONE BELL JOINT FROM FITTING MINIMUM.

NOTES
A. BELL JOINT RESTRAINTS -FOR PVC, DIP USE UNI-FLANGE SERIES 1390 OR APPROVED EQUIVALENT.

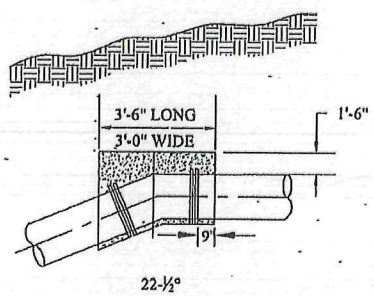
B. MECHANICAL JOINT RESTRAINTS - GRIPRING PIPE RESTRAINER,OR APPROVED EQUIVALENT.

C. CONTRACTOR TO USE RESTRAINED JOINTS UNLESS THRUST BLOCKING IS PREAPPROVED FOR SPECIAL CONDITIONS BY THE CITY PRIOR TO THE BEGINNING OF CONSTRUCTION.

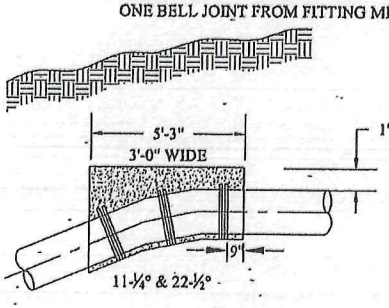
D. ALL MECHANICAL BENDS, TEES, ETC.SHALL BE RESTRAINED USING MECHANICAL RESTRAINING JOINTS.



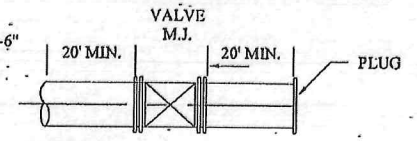
11-¼°



22-½°

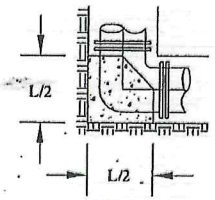


11-¼° & 22-½°

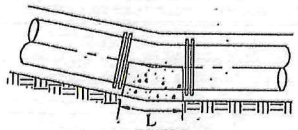


DETAIL - END OF WATER LINE

CONCRETE BLOCKING FOR VERTICAL BENDS

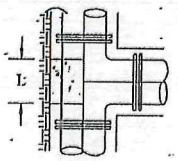


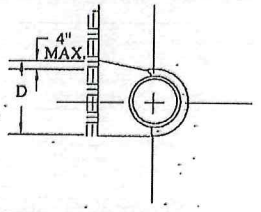
90° BENDS



BENDS
LESS THAN 90°

CONCRETE BLOCKING FOR HORIZONTAL BENDS





NOTES
A. ALL WATERMAIN BENDS OF MORE THAN 5" SHALL BE SECURELY BLOCKED AGAINST MOVEMENT BY USING CONCRETE BLOCKING OR PREFERABLY CAST-IN PLACE CONCRETE PLACED AGAINST UNDISTURBED EARTH.
B. CARE SHALL BE TAKEN TO KEEP CONCRETE AWAY FROM MECHANICAL JOINTS BY PLACING VISQUEEN OR OTHER APPROVED MATERIAL OVER PIPE BEFORE PLACING OF CONCRETE.
C. CONCRETE FOR BLOCKING VALVES AND FITTINGS SHALL CONFORM TO SECTION ODOT 499 CLASS C.
D. CONTRACTOR SHALL USE THE THRUST BLOCKS AS SHOWN ONLY IF PREAPPROVED FOR SPECIAL CONDITION BY THE CITY PRIOR TO BEGINNING CONSTRUCTION.

THRUST BLOCKING AREA (LxD) REQUIRED

SIZE OF PIPE	11-¼°	22-½°	45°	90°	TEE OR PLUG
4"	1	1	1	1.3	1
6"	1	1	1.6	3	2.1
8"	1	1.5	2.9	5	4
10"	1.2	2.3	5	8	6
12"	1.7	3	7	12	9
16"	3	6	12	21	15

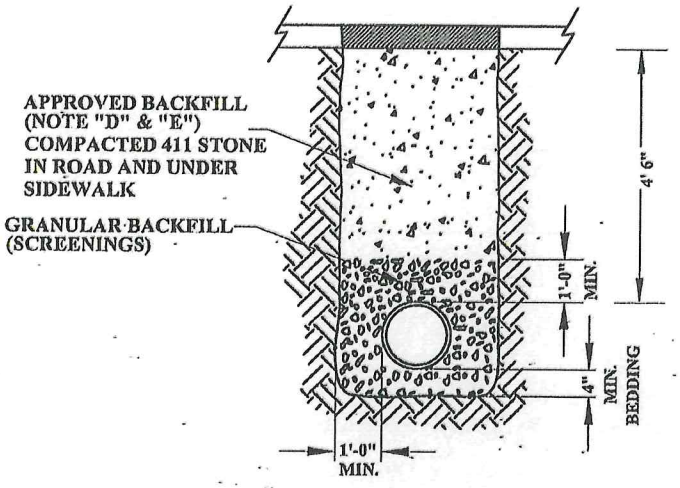
BENDS

SIZE OF OPENING	DEGREE OF BEND							
	11-¼°		22-½°		45°		90°	
	L	D	L	D	L	D	L	D
3", 4", 6"	8"	6"	10"	6"	20"	6"	36"	6"
8"	9"	8"	14"	8"	24"	9"	50"	8"
12"	14"	12"	22"	12"	30"	16"	60"	15"
16"	18"	16"	24"	18"	33"	36"	70"	22"

TEES

RUN	BRANCH							
	3",4",6"		22-½°		45°		90°	
	L	D	L	D	L	D	L	D
3", 4", 6"	16"	6"						
8"	14"	8"	18"	12"				
12"	9"	12"	18"	12"	24"	18"		
16"	8"	16"	14"	16"	28"	16"	30"	26"

CITY OF VAN WERT	RESTRAINING JOINTS,TAPPING SLEEVE,AND CONCRETE BLOCKING FOR WATER MAINS	DATE	PAGE NO.
		8/01/2006	400-3



TRENCH DETAIL

TRENCH DETAIL NOTES

A. GRANULAR BEDDING SHALL BE SCREENINGS, ODOT 703.10 (#10).

B. ALL TRENCHES SHALL BE COMPACTED WITH SCREENINGS ODOT 703.10 (#10) IN 6" MAXIMUM LIFTS OF LOW STRENGTH MORTAR BACKFILL ODOT ITEM 613 TYPE 1 (ONLY AS APPROVED BY THE CITY) UNTIL A 1' 0" OF COVER IS PROVIDED ABOVE TOP OF WATER MAIN

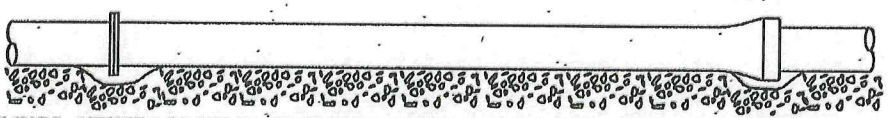
C. A DENSITY TEST ON GRANULAR BACKFILL OF 98% OF ASTM D698 STANDARD PROCTOR CURVE MAY BE REQUIRED TO BE PERFORMED BY A COMMERCIAL TESTING LAB SATISFACTORY TO THE CITY.

D. OFF PAVEMENT AREAS SHALL BE PROVIDED WITH A MINIMUM OF 6" OF TOPSOIL OVER THE COMPACTED NATIVE MATERIAL AND THEN SEEDED AND MULCHED PER ODOT ITEM 659.

E. IN-PAVEMENT AREAS SHALL FOLLOW TYPICAL STREET CUT DETAIL SHOWN ON PAGE 100-8. UNDER SIDEWALK AREAS SHALL BE COMPACTED ITEM 411 GRANULAR BACKFILL.

F. THE OPEN ENDS OF ALL PIPES SHALL BE CLOSED WITH A WATER TIGHT PLUG TO THE APPROVAL OF THE CITY BEFORE LEAVING THE WORK FOR THE NIGHT AND AT OTHER TIMES OF INTERRUPTION OF THE WORK.

G. THE LAYING OF PIPE ON EXISTING EARTH WITH BELLS CUT OUT, SHALL NOT BE PERMITTED.



COUPLINGS - NEVER ALLOW COUPLINGS TO REST ON OR TO SETTLE DOWN TO ORIGINAL TRENCH BOTTOM.
PIPE - MAKE CERTAIN THAT PIPE BARREL IS GIVEN AN EVEN BEARING FOR ITS FULL LENGTH.

BEDDING OF PIPE

CITY OF VAN WERT	WATER MAIN TRENCH DETAIL	DATE	PAGE NO.
		8/01/2006	400-4

HYDROSTATIC TEST

A. AFTER THE PIPE HAS BEEN LAID AND BACKFILLED, ALL NEWLY LAID PIPE OR VALVED SECTION, SHALL BE SUBJECTED TO HYDROSTATIC PRESSURE AND LEAKAGE TEST. ALL WATER MAINS MUST BE HYDROSTATICALLY TESTED (AWWA C-600). THE TESTS MUST BE PERFORMED IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF VAN WERT WATER DISTRIBUTION. THE LEAKAGE TEST PRESSURE SHALL NOT BE LESS THAN 150 PSI. THE DURATION OF THE LEAKAGE TEST SHALL NOT BE LESS THAN 2 HOURS. HYDROSTATIC PRESSURE SHALL BE APPLIED BY MEANS OF A PUMP TAKING WATER FROM AN AUXILIARY SUPPLY. ALL PIPING MUST BE PROPERLY FILLED AND FLUSHED TO DISPEL ALL AIR BEFORE THE TEST IS MADE USING POTABLE WATER. TESTING REQUIREMENTS FOR FIRE SUPPRESSION SYSTEMS SHALL BE IN ACCORDANCE TO THE REQUIREMENT OF THE CITY'S FIRE DEPARTMENT.

B. LEAKAGE IS DEFINED AS THE QUANTITY OF WATER TO BE SUPPLIED INTO THE NEWLY LAID PIPE, OR ANY VALVED SECTION THEREOF, NECESSARY TO MAINTAIN THE SPECIFIED LEAKAGE TEST PRESSURE AFTER THE PIPE HAS BEEN FILLED WITH WATER AND AIR EXPELLED.

C. NO PIPE INSTALLATION WILL BE ACCEPTED IF THE LEAKAGE EXCEEDS THE LEAKAGE DETERMINED BY THE FOLLOWING FORMULA: L = ((n)(D)(P^.5))/7400

WHERE: n = NUMBER OF PIPE JOINTS
D = PIPE DIAMETER
P = TEST PRESSURE
L = ALLOWABLE LEAKAGE PER HOUR
THE FOLLOWING TABLE REPRESENTS THE ALLOWABLE LEAKAGE IN GALLONS PER HOUR.

D. DURING THE HYDROSTATIC TEST, A THOROUGH EXAMINATION OF ALL PIPING, FITTINGS, VALVES, HYDRANTS, ETC. SHALL BE PERFORMED. LEAKING JOINTS SHALL BE TIGHTENED. CRACKED OR OTHERWISE DEFECTIVE MATERIAL SHALL BE REMOVED AND REPLACED AND THE TEST SHALL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED.

ALLOWABLE LEAKAGE PER 1000 FT (305 M) OF PIPELINE (GPH+)

AVG. TEST PRESSURE. (PSI) BAR	NOMINAL PIPE DIAMETER - INCHES											
	3	4	6	8	10	12	14	16	18	20	24	30
450(31)	0.48	0.64	0.95	1.27	1.59	1.91	2.23	2.55	2.87	3.18	3.82	4.78
400(28)	0.45	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.60	4.50
350(24)	0.42	0.56	0.84	1.12	1.40	1.69	1.97	2.25	2.53	2.81	3.37	4.21
300(21)	0.39	0.52	0.78	1.04	1.30	1.56	1.82	2.08	2.34	2.60	3.12	3.90
275(19)	0.37	0.50	0.75	1.00	1.24	1.49	1.74	1.99	2.24	2.49	2.99	3.73
250(17)	0.36	0.47	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.37	2.85	3.56
225(16)	0.34	0.45	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.25	2.70	3.38
200(14)	0.32	0.43	0.64	0.85	1.06	1.28	1.48	1.70	1.91	2.12	2.55	3.19
175(12)	0.30	0.40	0.59	0.80	0.99	1.19	1.39	1.59	1.79	1.98	2.38	2.98
150(10)	0.28	0.37	0.55	0.74	0.92	1.10	1.29	1.47	1.66	1.84	2.21	2.76

DISINFECTION

A. AFTER SATISFACTORY HYDROSTATIC TESTING, THE COMPLETED WATER WORK SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C-651.

B. DISINFECTION OR STERILIZATION OF NEW MAINS AND SERVICES, AS REQUIRED BY THE OEPA, SHALL BE COORDINATED THROUGH AND SUPERVISED BY THE SUPERINTENDENT OF THE WATER DISTRIBUTION OR HIS DESIGNEE. THE SUPERINTENDENT RESERVES THE RIGHT TO REQUIRE STRICTER CHLORINE RESIDUAL REQUIREMENTS ON A CASE-BY-CASE BASIS.

C. MAINTAIN PIPES FREE OF DIRT AND FOREIGN MATTER DURING CONSTRUCTION BY DEWATERING TRENCH AND SEALING OPEN PIPE BARRELS. SWAB EACH LENGTH OF PIPE AS IT IS INSTALLED. UPON COMPLETION OF MAIN, ISOLATE MAIN SEGMENTS AND FLUSH PIPE AT 2 FPS VELOCITY.

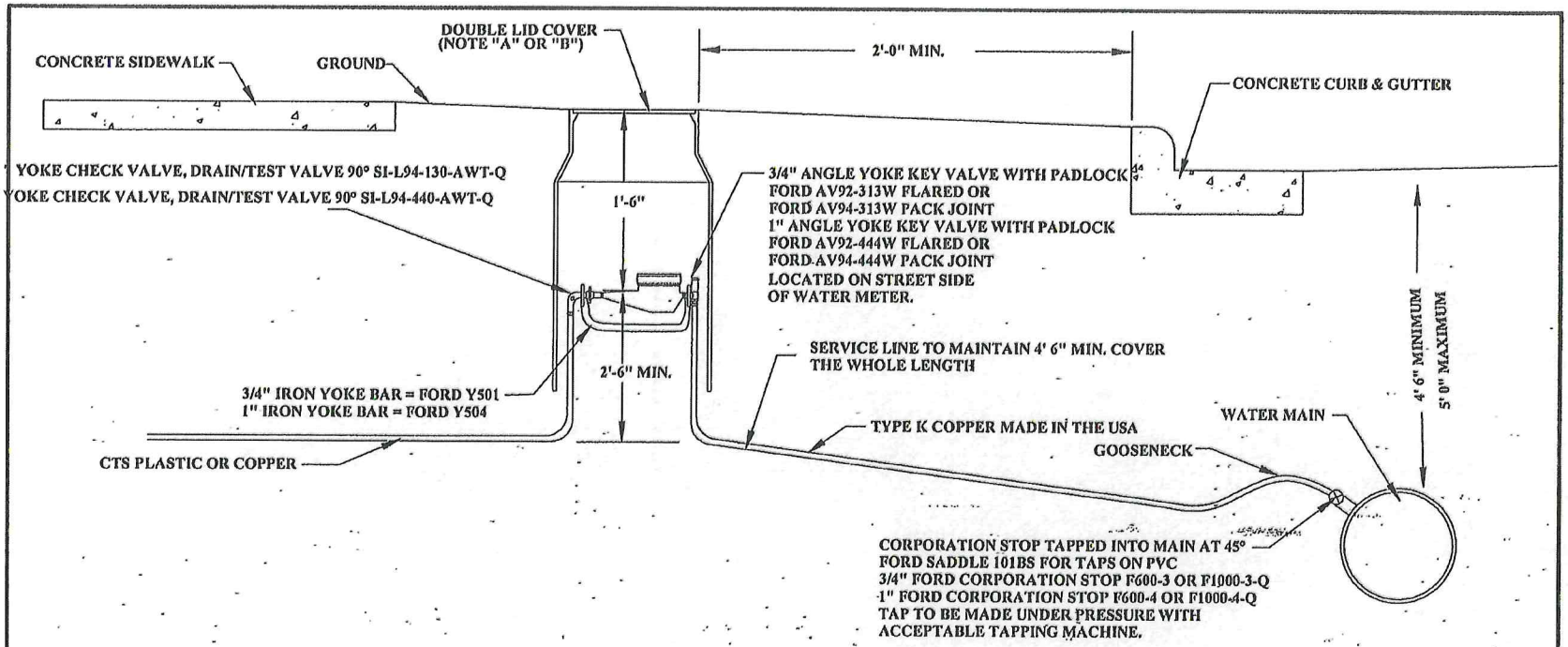
D. STERILIZE MAIN IN ACCORDANCE WITH AWWA C-651. INJECT 3% TO 5% HYPOCHLORITE SOLUTION TO PROVIDE 50 TO 60 MG PER LITER CONCENTRATION IN MAIN. CHLORINE MAY BE PLACED IN EACH SECTION OF PIPE AT THE TIME OF INSTALLATION. SAMPLE WATER AT EACH HYDRANT OR, IF NO HYDRANT IS AVAILABLE, AT A TAP IN THE PROPOSED LINE. ANALYZE SAMPLE USING ORTHOTOLIDINE REAGENT TO VERIFY FREE CHLORINE CONCENTRATION. MAINTAIN CONCENTRATION IN MAIN FOR 24 HOURS. SAMPLE HYDRANTS AT COMPLETION OF STERILIZATION VERIFYING MINIMUM CHLORINE RESIDUAL OF 20 MG PER LITER.

E. FLUSH CHLORINE SOLUTION TO WASTE INTO SANITARY SEWER AT A CONTROLLED RATE, NOT TO EXCEED 25 GPM. IF CHLORINE RESIDUAL DROPS 10 MG PER LITER, FLUSH MAIN AT 2 FPS AND REPEAT STERILIZATION PROCEDURE.

F. WATER SAMPLE - PERFORM BACTERIOLOGICAL TEST PER AWWA C-651 WILL BE DRAWN AND PROCESSED BY THE CITY. IN THE EVENT OF DETECTION OF COLIFORM ORGANISM, REPEAT FLUSHINGS, STERILIZATION, AND SAMPLING OF MAINS UNTIL ACCEPTABLE TEST RESULTS ARE ACHIEVED. THIS IS TO BE PERFORMED PRIOR TO TRANSFER OF SERVICE.

TESTING

A. TESTING OF FIRE SUPPRESSION LINES AND SYSTEMS SHALL ADHERE TO THE REQUIREMENTS OF THE CITY'S DIVISION OF FIRE AND ALL APPLICABLE STATE CODE.



NOTES

A. 3/4" WATER SERVICE SHALL BE SEAMLESS COPPER TYPE K COPPER MADE IN THE U.S.A..

B. WATER SERVICE SHALL BE A MINIMUM OF 10'-0" MEASURED HORIZONTALLY FROM THE SEWER SERVICE AND SHALL BE A MINIMUM OF 18" ABOVE THE CROWN OF THE SANITARY SEWER MAIN WHERE THE WATER SERVICE CROSSES THE SEWER MAIN. WATER SERVICE MAY BE LAID ON BENCH IN THE SEWER LATERAL TRENCH IF CROWN IS AT-LEAST 18" BELOW INVERT OF WATER SERVICE, AND THE MINIMUM DISTANCE BETWEEN THE WATER SERVICE AND THE SANITARY SEWER LATERAL IS 5'-0".

C. ALL METERS SHALL BE LOCATED IN CITY RIGHT-OF-WAY.

D. FIRE SUPPRESSION AND POTABLE WATER SERVICE SHALL BE PROVIDED BY TWO SEPARATE SERVICE LINES.

METER PIT DETAILS

A. 18" I.D. TILE FOR FORD NO. W32 LID (5/8" METER).

B. 20" I.D. TILE FOR FORD NO. W3 LID (1" METER).

C. 3/4" WITH 5/8" METER = MS1836B 18" DIA. x 36" LONG MID-STATES PLASTIC METER BOX
1" METER = MS202436B20 20" DIA. x 24" DIA. x 36" LONG

D. UNSATISFACTORY INSTALLATION WILL RESULT IN WATER NOT BEING TURNED ON.

E. METER PIT LID MUST BE FLUSH OR 1" BELOW FINISHED GRADE. IF FRAME OF METER LID IS SHOWING, POSSIBILITY OF FREEZING OF METERS AND SERVICE LINES IS INCREASED AND CITY-POLICY IS THE CITY'S RESPONSIBILTY STOPS AT THE YOKE ELL.

F. NO INSIDE METERS ALLOWED.

CITY OF VAN WERT	WATER MAIN SERVICE CONNECTION	DATE	PAGE NO.
		12/16/2008	400-6

NOTES

A. METER MUST BE MOUNTED HORIZONTALLY.

B. FULL FACE FLANGE GASKETS TO BE USED AND NEVER SEIZE APPLIED TO ALL NUTS AND BOLTS.

C. METER BYPASS ASSEMBLY AND METER SETTING TO BE CONSTRUCTED OF AWWA C-151 DUCTILE IRON PIPE CLASS 52, BRASS OR COPPER.

D. ALL PIPING TO BE THOROUGHLY SUPPORTED.

E. THE CITY IS NOT RESPONSIBLE FOR MAINTENANCE OF INSIDE PLUMBING OR SUMP PUMP.

F. CONCRETE VAULT TO BE SUPPLIED BY CONTRACTOR.

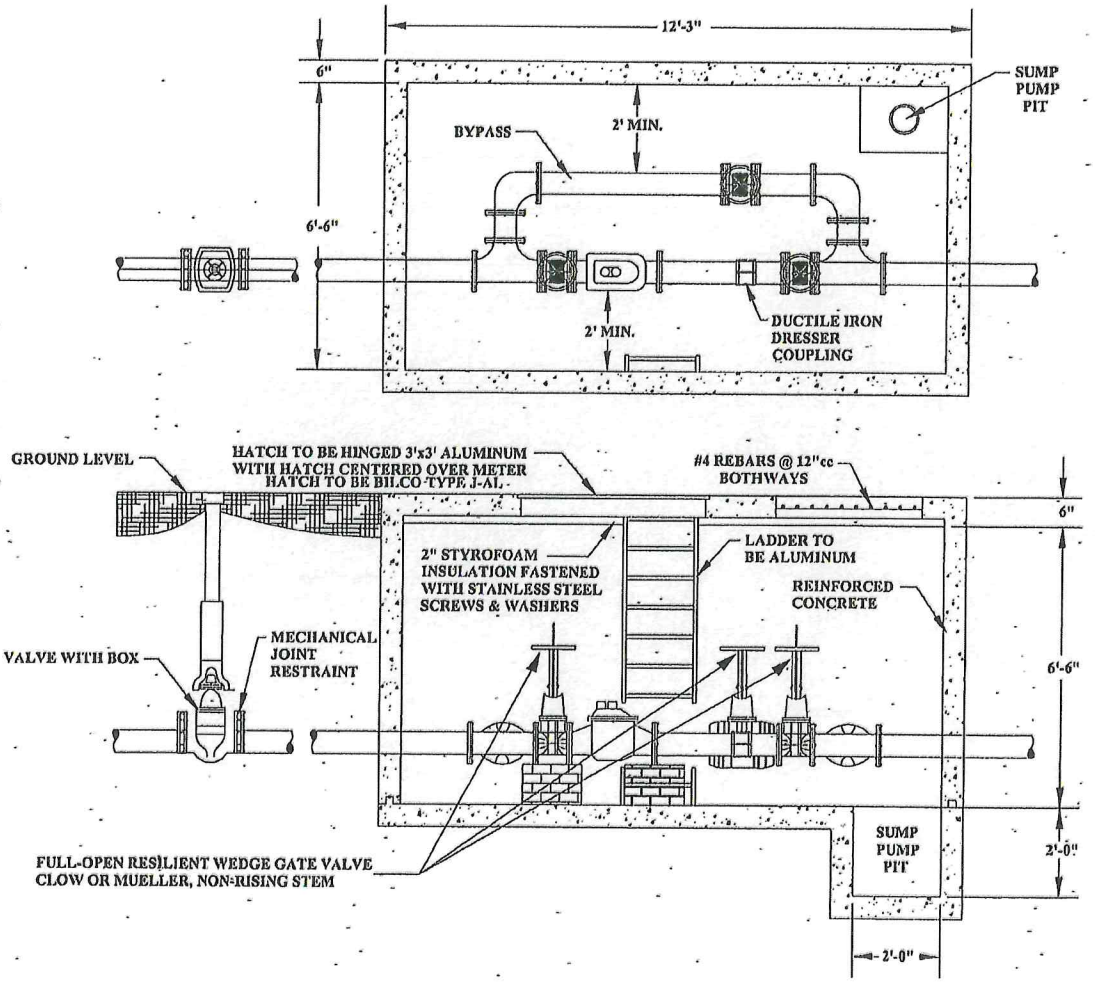
G. SUMP PUMP TO BE SUPPLIED BY CONTRACTOR AND DISCHARGE LOCATION TO BE DETERMINED BY THE CITY.

H. METER PIT DRAWINGS SHALL BE APPROVED BY THE VAN WERT WATER DISTRIBUTION SUPERINTENDENT.

I. LID HATCH SHALL BE ABLE TO ACCOMODATE REMOVAL OF THE METER AND SHALL BE ABLE TO WITHSTAND TRAFFIC LOADS. LID HATCH MUST BE APPROVED BY THE WATER DISTRIBUTION SUPERINTENDENT.

J. BEFORE ANY PRICING OR CONSTRUCTION OF THE METER PIT, PLEASE CONTACT THE CITY ENGINEER.

K. BYPASS VALVE SHALL BE LOCKABLE



CITY OF VAN WERT	3" & LARGER COMPOUND METER WITH BYPASS	DATE	PAGE NO.
		2/14/2008	400-7

NOTES

A. NO WORK SHALL BE APPROVED OR ACCEPTED BY THE CITY UNLESS 2 WORKING DAYS NOTICE OF COMMENCING WORK IS GIVEN TO THE CITY.

B. ALL TEMPORARY PAVEMENT AND SIDEWALK SHALL BE MAINTAINED BY THE CONTRACTOR OR DEVELOPER AT HIS OWN EXPENSE IN A SUITABLE AND SAFE CONDITION FOR TRAFFIC UNTIL PERMANENT REPLACEMENT IS MADE OR THE PROJECT IS FINALLY ACCEPTED BY THE CITY.

C. ROOF DRAINS, FOUNDATION DRAINS, SUMP PUMPS, AND OTHER CLEAR WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.

D. WHEN SEWER CONSTRUCTION BEGINS, THE SEWER AT THE EXISTING MANHOLE, IF SMALLER OR EQUAL TO 12" SHALL BE PLUGGED BY HAVING A POLYETHYLENE BAG PLACED INTO THE SEWER PIPE APPROXIMATELY 6" AND THEN POUR CONCRETE INTO AND AROUND THE SEWER PIPE AS DIRECTED BY THE CITY. SIZES LARGER THAN 12" WILL BE PLUGGED BY OTHER APPROVED METHODS. NO PLUGS SHALL BE REMOVED UNTIL CONSTRUCTION IS COMPLETED AND THEN ONLY AS DIRECTED BY THE CITY.

E. WHEN A CASTING OR OTHER PUBLIC PROPERTY IS ABANDONED IT REMAINS CITY PROPERTY.

F. NEW SEWERS MUST HAVE OEPA PLAN APPROVAL.

EXCAVATION AND PIPE LAYING

A. THE LAYING OF THE PIPE SHALL COMMENCE AT THE LOWEST POINT, WITH THE BELL END LAID UPGRADE. THE PIPE SHALL BE CENTERED IN THE TRENCH AND ALL PIPE SHALL BE LAID WITH ENDS ABUTTING AND TRUE TO LINE AND GRADE.

B. IN-LINE LASER SHALL BE USED UNLESS OTHERWISE APPROVED BY THE WASTEWATER COLLECTION SUPERINTENDENT.

FLEXIBLE PIPES	MATERIAL SPECIFICATIONS	JOINT SPECIFICATIONS
POLYVINYL CHLORIDE	ASTM D-3034 (SDR 35) PIPE STIFFNESS = 46 PSI	ELASTOMERIC GASKET ASTM D-3212
DUCTILE IRON	ANSI A-21.51 & AWWA C-151	ANSI A-21.11 AWWA C-111

HOUSE CONNECTIONS

A. NO SERVICE LINE SHALL BE ALLOWED TO CONNECT DIRECTLY INTO A MANHOLE, UNLESS APPROVED BY THE WASTEWATER COLLECTION SUPERINTENDENT.

B. ALL SERVICE LINES OR TEES SHALL BE ACCURATELY LOCATED, MAPPED, AND GIVEN TO THE CITY WITHIN 15 DAYS AFTER INSTALLATION.

C. BEFORE MAKING A CONNECTION TO AN EXISTING SEWER TAP OR SEWER LATERAL, THE CONTRACTOR SHALL CHECK THE EXISTING PIPE BY UTILIZING A SEWER EEL, STRAP, OR SEWER ROD TO SEE THAT THE EXISTING PIPE IS CONNECTED TO THE MAIN SEWER. IF NECESSARY, THE CITY WILL PROVIDE, AT THE CONTRACTOR'S EXPENSE A HYDRAULIC SEWER CLEANER WHICH WILL PRODUCE LARGE VOLUMES OF WATER TO CHECK THE LATERAL.

D. LATERALS FROM THE MAIN TO THE PROPERTY LINE SHALL BE 6" MINIMUM TO WITHIN 3'-0" OF THE OUTSIDE OF THE BUILDING UNLESS APPROVED BY THE WASTEWATER COLLECTION SUPERINTENDENT.

E. A PERMIT TO OPEN INTO, ALTER, OR DISTURB ANY PUBLIC SEWER MUST BE OBTAINED.

F. ALL ABANDONED SEWER LATERALS SHALL BE CAPPED AT THE OWNER'S EXPENSE. AN INSPECTION SHALL BE MADE AND THE CAP STAKED.

G. LATERAL MATERIAL SHALL BE SDR 35 FROM MAIN TO PROPERTY LINE.

PIPE

A. NO PUBLIC GRAVITY SANITARY SEWER SHALL BE LESS THAN 8".

B. DUCTILE IRON PIPE WILL BE USED IN STREAM CROSSINGS AND WHERE MINIMUM OF 10' SEPARATION FROM WATER LINES CAN NOT BE MAINTAINED.

C. ALL JOINTS SHALL BE OF THE BELL AND SPIGOT TYPE. THE BELLS BEING FORMED INTEGRALLY WITH THE PIPE. THE BELL SHALL CONTAIN A FACTORY INSTALLED ELASTOMETRIC GASKET WHICH IS POSITIVELY RETAINED. NO SOLVENT CEMENT JOINTS WILL BE PERMITTED IN FIELD CONSTRUCTION EXCEPT AS SPECIFICALLY AUTHORIZED BY THE CITY.

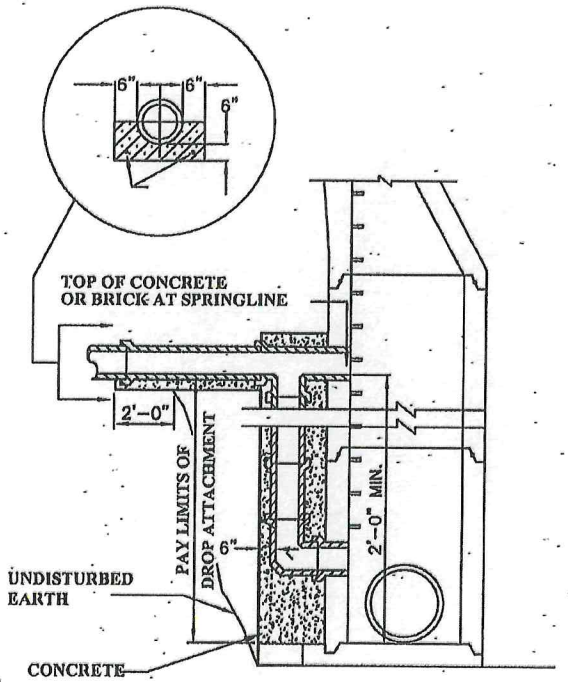
CITY OF VAN WERT	SANITARY SEWER NOTES	DATE	PAGE NO.
		8/01/2006	500-1

NOTES

A. TYPE D SANITARY DROP MANHOLE SHALL BE USED WHERE THE DIFFERENCE IN INVERT ELEVATIONS IS GREATER THAN 2'-0".

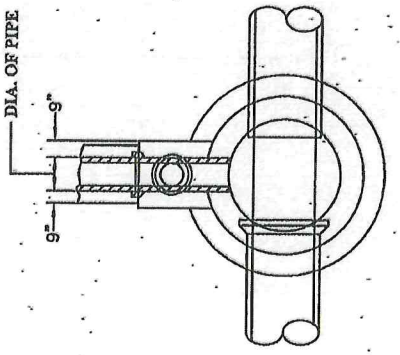
B. ALL NOTES AND ASTM REFERENCES FOR TYPE 3 SANITARY MANHOLE ON PAGE 200-4 APPLY TO THE TYPE D SANITARY DROP MANHOLE.

SEWER SIZE	DROP SIZE
8"	8"
10"	10"
12"-15"-18"	12"
21"-24"	15"
27"-30"-36"	18"



DROP MANHOLE DETAIL

NOTE: MANHOLE FRAME AND LID NOT SHOWN



PLAN

CITY OF VAN WERT	TYPE D SANITARY DROP MANHOLE	DATE	PAGE NO.
		8/01/2006	500-2

NOTES

A: SEPTIC TANKS, WHEN ABANDONED, SHALL BE DEWATERED AND PROPERLY FILLED WITH GRANULAR MATERIAL WITH ALL TILES BEING PLUGGED WITH CONCRETE.

B. ANY INDIVIDUAL OR CONTRACTOR INSTALLING SEWER CONNECTIONS SHALL BE REGISTERED WITH THE CITY

C. BEFORE BEGINNING WORK, A SEWER TAP PERMIT MUST BE OBTAINED.

D. WHEN THE BUILDING CONNECTION MUST ENTER INTO A PAVED PORTION OF THE STREET OR ALLEY, A STREET CUT PERMIT MUST BE OBTAINED BEFORE BEGINNING WORK.

E. WATER SERVICES SHALL BE A MINIMUM OF 10'-0" MEASURED HORIZONTALLY FROM THE SEWER SERVICE AND SHALL BE A MINIMUM OF 18" VERTICAL SEPARATION WHERE THE WATER SERVICE CROSSES THE SEWER MAIN.

F. PIPE SIZES FOR BUILDING CONNECTIONS SHALL BE 6" MINIMUM AND THE LATERALS SHALL BE RAN TO WITHIN 3'-0" OF THE OUTSIDE OF THE BUILDING UNLESS OTHERWISE APPROVED BY THE WASTEWATER COLLECTION SUPERINTENDENT.

G. SADDLES SHALL ONLY BE USED ON EXISTING VCP OR CONCRETE PIPE.

H. ALL TAPS INTO PLASTIC PIPE SHALL BE IN-LINE FITTING AND SLEEVED.

I. NO TAPS SHALL BE PERMITTED INTO THE TOP OF AN EXSTING OR NEW SANITARY SEWER MAIN UNLESS APPROVED BY THE WASTEWATER COLLECTION SUPERINTENDENT.

INSPECTION

A. A TAP INSPECTION SHALL BE REQUIRED ON ALL NEW BUILDING CONNECTIONS AND ALSO ON THE REPLACEMENT OF EXISTING BUILDING CONNECTIONS.

B. WHEN THE BUILDING SEWER IS READY FOR INSPECTION, THE CITY SHALL BE GIVEN 24 HOURS ADVANCE NOTICE. THE PIPE SHALL BE LEFT UNCOVERED UNTIL AN INSPECTION HAS BEEN MADE AND APPROVED.

C. ANY NEW BUILDING CONNECTION INSTALLED WITHOUT AN INSPECTION SHALL RESULT IN NO ISSUANCE OF A WATER METER FOR THE BUILDING. IF THIS OCCURS, THE ENTIRE LATERAL SHALL BE UNCOVERED SO THAT A PROPER INSPECTION CAN BE MADE.

D. A TAP FEE IS REQUIRED FOR ALL SEWER CONNECTIONS. AN INSPECTION WILL BE REQUIRED. THE SEWER COLLECTION DEPARTMENT SHALL INSPECT THE ENTIRE BUILDING CONNECTION FROM THE BUILDING TO THE MAIN SEWER.

E. WHEN A SADDLE IS TO BE INSTALLED, THE INSPECTOR SHALL BE PRESENT WHILE THE SANITARY SEWER MAIN IS BEING CUT INTO. CONTACT THE CITY TO DETERMINE WHICH SADDLE TYPE IS TO BE USED. ALWAYS COMPLETELY ENCASE CONNECTIONS AT ANY DEPTH 12' AND OVER AS APPROVED BY THE CITY.

TESTING

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TESTING FROM THE CONNECTION TO THE EXISTING OF EXISTING BUILDING CONNECTIONS.

B. AT THE SPECIFIC REQUEST OF THE CITY ENGINEER ALL NEW BUILDING CONNECTIONS SHALL BE TESTED WITH AIR AT 4 PSI PRESSURE.

C. THE SEWER TEST SHALL BE FROM THE CLEANOUT TO THE PROPERTY LINE CONNECTION OR TO THE MAIN SEWER WHICHEVER IS APPLICABLE.

D. WHEN A SUBSTANTIAL AMOUNT OF AN EXISTING LATERAL IS REPLACED, THE NEW PORTION OF THE LATERAL SHALL REQUIRE A TEST UNLESS OTHERWISE APPROVED.

PIPE LAYING

A. THE JOINING OF PIPE WITH CONCRETE SHALL NOT BE PERMITTED.

B. IN THE CASE WHERE A 90° CORNER IS REQUIRED IN THE BUILDING CONNECTION LINE, 2 45° BENDS SHALL BE USED IN LIEU OF A 90° BEND. A CLEANOUT WILL BE REQUIRED.

C. THE BUILDING CONNECTION LINE SHALL BE LAID IN AS STRAIGHT A LINE, FROM THE BUILDING TO THE EXISTING LATERAL, AS POSSIBLE.

D. ALL NEW CONSTRUCTION SHALL HAVE SANITARY LATERALS INSTALLED.

E. DRAWINGS SHOWING LATERAL LOCATIONS SHALL BE SUBMITTED WITH A BUILDING PERMIT.

LOW PRESSURE AIR TEST

A. AFTER BACKFILLING, THE AIR PRESSURE TEST SHALL BE CONDUCTED BETWEEN TWO CONSECUTIVE MANHOLES. ALL PIPE OUTLETS MUST BE PLUGGED IN THE SECTION BEING TESTED WITH SUITABLE TEST PLUGS. ONE OF THE PLUGS USED AT A MANHOLE MUST BE TAPPED AND EQUIPPED FOR AN AIR INLET CONNECTION FOR FILLING THE LINE FROM AN AIR COMPRESSOR. AIR SHALL BE SUPPLIED SLOWLY TO THE TEST SECTION UNTIL THE INTERNAL PRESSURE REACHES APPROXIMATELY 4 PSI. IF THE PIPE IS BELOW EXISTING GROUNDWATER LEVEL, THE INTERNAL PRESSURE SHALL BE INCREASED BY THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY BE OVER THE PIPE, BUT IN NO CASE SHOULD THE INTERNAL PRESSURE EVER EXCEED 5 PSI.

B. AT LEAST 2 MINUTES SHALL BE ALLOWED FOR THE AIR PRESSURE TO STABILIZE. WHEN THE PRESSURE HAS STABILIZED AND IS AT OR ABOVE 3.5 PSI, THE AIR SUPPLY SHALL BE DISCONNECTED AND TIMING SHALL BEGIN WITH A STOP WATCH. THE STOP WATCH SHALL BE ALLOWED TO RUN UNTIL THE PRESSURE HAS DROPPED 1.0 PSI. IF THE TIME SHOWN ON THE STOP WATCH IS GREATER THAN THE SPECIFIED MINIMUM TIME, THE SECTION SHALL BE CONSIDERED TO HAVE PASSED THE TEST. TIME MAY BE INTERPOLATED FROM THE FIGURES LISTED BELOW.

SPECIFICATION TIME FOR LENGTH (L) SHOWN (MIN:SEC)

PIPE DIA. (IN)	100 FT	150 FT	200 FT	250 FT	300 FT
4	1:53	1:53	1:53	1:53	1:53
6	2:50	2:50	2:50	2:50	2:50
8	3:47	3:47	3:47	3:47	3:48
10	4:43	4:43	4:43	4:57	5:56
12	5:40	5:40	5:42	7:08	8:33
15	7:05	7:05	8:54	11:08	13:21
18	8:30	9:37	12:49	16:01	19:41
21	9:55	13:05	17:27	21:49	26:11
24	11:24	17:57	22:48	28:30	34:11

DEFLECTION TEST

A. DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE PIPE. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS TO PERMIT STABILIZATION OF THE SOIL-PIPE SYSTEM.

B. NO PIPE SHALL EXCEED A DEFLECTION OF 5 %. IF DEFLECTION EXCEEDS 5%, REPLACEMENT OR CORRECTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF APPROVING AGENCY.

C. THE RIGID BALL OR MANDREL USED FOR THE DEFLECTION TEST SHALL HAVE A DIAMETER NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE DEPENDING ON WHICH IS MANUFACTURED. THE PIPE SHALL BE MEASURED IN COMPLIANCE WITH ASTM D-2122 STANDARD TEST METHOD OF DETERMINING DIMENSIONS OF THERMOPLASTIC PIPE AND FITTINGS. THE TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES.

TESTING

A. BEFORE ANY SEWER LINE IS PLACED INTO SERVICE OR ACCEPTED BY THE CITY, IT SHALL BE SUBJECTED TO AND PASS LOW PRESSURE AIR TEST. EACH RUN BETWEEN MANHOLES, WITH ALL SERVICE LATERALS STUBBED INTO PROPERTY LINES, SHALL BE TESTED BEFORE BEING ACCEPTED. THE CONTRACTOR OR DEVELOPER SHALL FURNISH ALL EQUIPMENT AND MATERIAL NECESSARY TO CONDUCT ALL SANITARY SEWER TESTING. THE TRENCH SHALL BE COMPLETELY BACKFILLED BEFORE TESTING.

B. ANY ITEM NOT SPECIFICALLY NOTED IN THESE STANDARDS SHALL BE COVERED UNDER NATIONAL ASSOCIATION OF SEWER SERVICE COMPANIES.

C. VIDEO TESTING WILL BE DONE BY THE CITY ON ALL NEW SANITARY MAIN LINE INSTALLATION. THE SEWER CONTRACTOR WILL BE CHARGED $1.00 PER FOOT PAYABLE TO THE CITY. AN ADDITIONAL COST OF $0.50 PER FOOT WILL BE CHARGED IF CLEANING IS REQUIRED.

D. BEFORE FINAL ACCEPTANCE BY THE CITY AND BEFORE ANY SERVICE LINE IS PUT INTO USE, ALL SANITARY SEWERS AND MANHOLES SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER BY USE OF A SEWER-JET, OR EQUAL, TYPE OF EQUIPMENT.

MANHOLE VACUUM TEST

ALL SANITARY SEWER MANHOLES SHALL BE VACUUM TESTED USING THE FOLLOWING PROCEDURES FROM ASTM C-1244

A. PREPARATION OF THE MANHOLE.

1. ALL LIFT HOLES SHALL BE PLUGGED.

2. ALL PIPES ENTERING THE MANHOLE SHALL BE TEMPORARILY PLUGGED TAKING CARE TO SECURELY BRACE THE PIPES AND PLUGS TO PREVENT THEM FROM BEING DRAWN INTO THE MANHOLE.

B. PROCEDURE

1. THE TEST HEAD SHALL BE PLACED AT THE TOP OF THE MANHOLE IN THE CASTING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

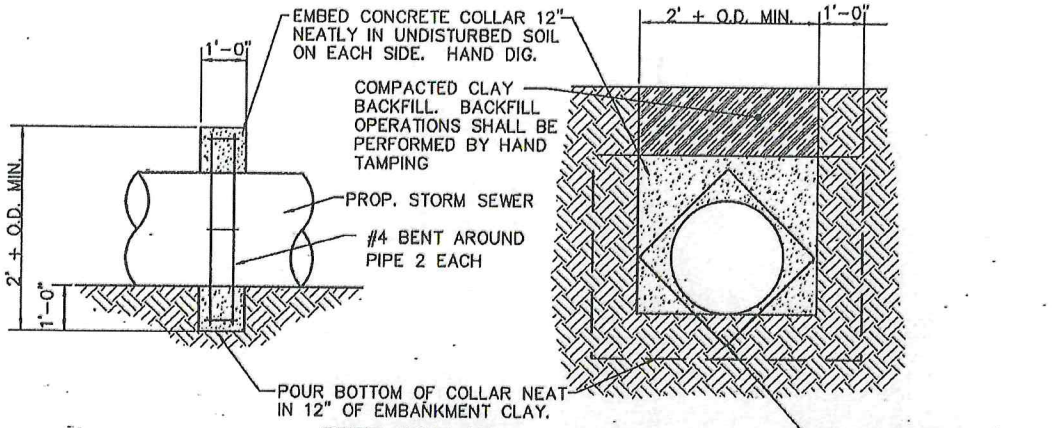
2. A VACUUM OF 10" OF MERCURY (4.0 PSI) SHALL BE DRAWN ON THE MANHOLE, THE VALVE ON THE VACUUM LINE OF THE TEST HEAD CLOSED, AND THE VACUUM PUMP SHUT OFF. THE TIME SHALL BE MEASURED FOR THE VACUUM TO DROP TO 9" OF MERCURY (4.4 PSI).

3. THE MANHOLE SHALL PASS IF THE TIME FOR THE VACUUM READING TO DROP FROM 10" OF MERCURY (4.0 PSI) TO 9" OF MERCURY (4.4 PSI) MEETS OR EXCEEDS THE VALUES INDICATED ON THE TABLE.

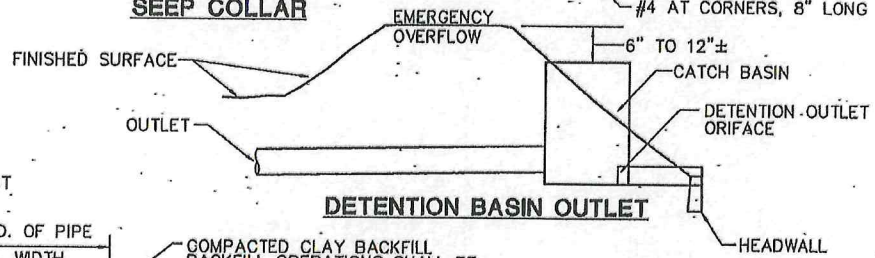
4. IF THE MANHOLE FAILS THE INITIAL TEST, NECESSARY REPAIRS SHALL BE MADE BY AN APPROVED METHOD. THE MANHOLE SHALL THEN BE RETESTED UNTIL A SATISFACTORY TEST IS OBTAINED.

MINIMUM TEST TIMES FOR VARIOUS MANHOLE DIAMETERS

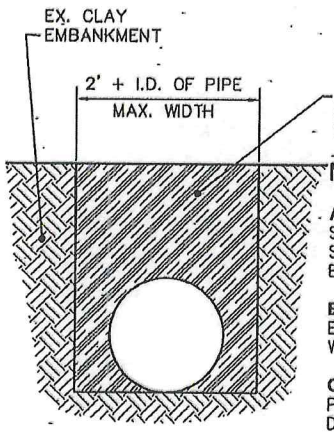
DEPTH (FT)	DIAMETER, INCHES 48	60	72
	TIME (SECONDS)		
8 OR LESS	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	67
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121



SEEP COLLAR



DETENTION BASIN OUTLET



NOTES

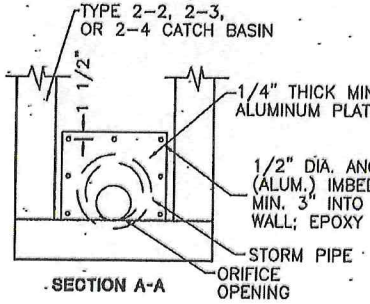
A. EXTRA COMPACTION AND CARE SHALL BE TAKEN TO ENSURE WATER SEALING OF DIKE AND PROPER CLAY BEDDING OF PIPE.

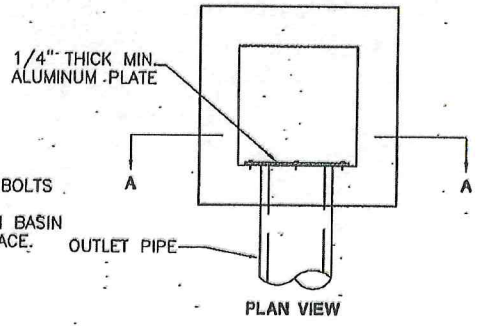
B. COMPACTION REQUIREMENTS SHALL BE 95% STANDARD MAXIMUM DRY WEIGHT DENSITY.

C. THIS SHALL BE REQUIRED AT ALL PIPES ENTERING OR EXITING THE DETENTION BASIN.

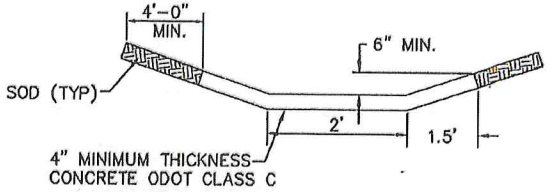
D. PAYMENT FOR THESE ITEMS SHALL BE INCIDENTAL TO ITEM 603.

CLAY TRENCH DETAIL THROUGH DETENTION BASIN





DETENTION OUTLET ORIFICE



PAVED CONCRETE CHANNEL DETAIL

NOTES

A. ANY DETENTION BASINS WITH SLOPES LESS THAN 1% REQUIRE CONCRETE CHANNEL.

B. DIFFERENT SHAPE OR SIZE OF CONCRETE CHANNEL MAY BE REQUIRED DEPENDING ON DESIGN.

C. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY SPECIFICATIONS.

D. BOTTOM OF DRAINAGE DITCH SHALL BE FORMED BEFORE PLACING CONCRETE, ALL FORMS SHALL BE SET TO GRADE AND ALIGNMENT.

E. TRANSVERSE CONTRACTION JOINTS SHALL BE SPACED AT 6 FOOT INTERVALS. THE GROOVES SHALL BE SAW CUT TO A MINIMUM DEPTH OF 1 INCH.

CITY OF VAN WERT

CHOICE ONE ENGINEERING

DETENTION BASIN DETAILS

REVISIONS:

DATE APPROVED: AUG. 1998

PAGE No. 600-7