

VICINITY MAP  
N.T.S.

SECTION 22	
PROJECT AREA	11.013 ACRES
AREA IN BUILDING LOTS	5.118 ACRES
AREA IN OPEN SPACE LOTS	4.768 ACRES
AREA IN R/W	1.127 ACRES

SETBACKS						
SECTION	LOTS	MINIMUM WIDTH	TYPICAL FRONT AREA	FRONT SIDE	TOTAL REAR	BOTH SIDES
22	613-634	60'	8,000 S.F.	20'	-	8' 20'

THE TOTAL NUMBER OF LOTS IN SECTION 22 INCLUDING OPEN SPACE IS 24.

CURRENT ZONE:	SECTION 22 R-PUD
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**GENERAL NOTES**

1. ALL WORK SHALL BE DONE UNDER THE SUPERVISION OF THE BUTLER COUNTY ENGINEER AND THE AUTHORITY HAVING RESPONSIBILITY FOR UTILITIES IN THE AREA AND IN ACCORDANCE WITH THE RULES AND REGULATIONS FOR SUBDIVISION.

2. STORM SEWERS SHALL BE A MATERIAL WITH A MANUFACTURER'S MANNINGS "N" OF 0.011 OR LOWER AND A MATERIAL AS NOTED IN APPENDIX D, TABLE D-6 IN THE BUTLER COUNTY SUBDIVISION REGULATIONS ADOPTED NOVEMBER 24, 1997. (NOTE - CORRUGATED METAL PIPE NOT INCLUDED) STEPS SHALL BE INSTALLED IN CATCH BASINS AND MANHOLES IN EXCESS OF FOUR FEET.

3. CONSTRUCTION WORK SHALL BE IN ACCORDANCE WITH THE OHIO DEPARTMENT OF TRANSPORTATION "CONSTRUCTION AND MATERIAL SPECIFICATIONS" DOT 1997 STANDARDS OR BUTLER COUNTY REQUIREMENTS AND STANDARDS FOR SUBDIVISIONS. WHEN IN CONFLICT, THE COUNTY REQUIREMENTS SHALL PREVAIL.

4. SUMP COLLECTOR LINES SHALL BE CONSTRUCTED SDR 35 PVC, ARMO CO 2000 OR APPROVED EQUAL.

5. A PRE-CONSTRUCTION MEETING IS REQUIRED WITH THE BUTLER COUNTY ENGINEER'S OFFICE PRIOR TO THE START OF CONSTRUCTION.

6. SANITARY SEWER MATERIALS AND INSTALLATION AS PER BUTLER COUNTY WATER & SEWER SPECIFICATIONS USING SECTION 3110 FOR PVC, SDR-35 & 26 PIPE; SECTION 3140 FOR ABS PVC COMPOSITE PIPE. SECTION 3410 FOR MANHOLES.

7. SANITARY LATERALS SHALL BE EXTENDED TO AT LEAST TEN (10) FEET BEYOND THE PROPERTY/ RIGHT-OF-WAY LINE OR TO THE EDGE OF THE EASEMENT, WHICHEVER IS GREATER.

8. THE UPSTREAM TERMINUS OF THE SANITARY SEWER LATERALS SHOWN HERE ON ARE TO BE 12 FEET BELOW THE ELEVATION OF THE BACK OF CURB.

9. WATER MAIN SHALL HAVE 4" MINIMUM DEPTH TO TOP OF PIPE. ALL WATER MAINS TO BE DUCTILE IRON PIPE, CL. 53 AWWA C-151. WATER MAIN MATERIALS, VALVES, FIRE HYDRANTS, FITTINGS, APPURTENANCES, AND INSTALLATION TO BE AS BUTLER COUNTY SPECIFICATIONS, AND SHALL HAVE RESTRAINED JOINTS. ALL WATER MAIN VALVES TO HAVE A MINIMUM DEPTH OF 2.5 AND A MAXIMUM OF 4.0' FROM PROPOSED GRADE TO THE TOP OF THE VALVE OPERATING NUT.

10. WATER MAIN SHALL HAVE 10' HORIZONTAL & 18" VERTICAL SEPARATION (OUTSIDE EDGE TO EDGE) WITH ALL OTHER PIPE.

11. ALL DOWNSPOUT LINES SHALL BE ON SPLASHBLOCKS AND MAY NOT BE CONNECTED TO THE CURB.

12. ALL TRENCHES WITHIN THE RIGHT-OF-WAY AND UTILITY EASEMENTS SHALL BE COMPACTED AND BACKFILLED IN ACCORDANCE WITH ITEM 203 AND 603 IN THE CURRENT OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS MANUAL.

13. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE INSTALLATION OF CONDUITS OF THE FULL WIDTH OF THE PUBLIC RIGHT-OF-WAY AS CALLED FOR ON THE TYPICAL SECTION FOR USE BY THE ELECTRIC, TELEPHONE, AND CABLE TELEVISION SERVICES. THE DEVELOPER SHALL COORDINATE THE LOCATION OF THE LINES WITH EACH UTILITY COMPANY.

14. ALL ELECTRICAL TRANSFORMERS SHALL BE LOCATED SO THAT THEY DO NOT INTERFERE WITH EXISTING MANHOLES OR WATER MAIN APPURTENANCES.

15. STORM SEWER PIPE SHALL BE TYPE "B" & "C" CONDUIT, 707.42 PVC, ALL DIA. (CONTECH A200 OR EQUAL), 707.33 PVC, UP TO & INCLUDING 24" DIA (HANCOR, ADS, OR EQUAL), 707.01 CMP, ALL DIA., 706.02, REINFORCED CONCRETE PIPE, ALL DIA.

16. BUTLER COUNTY WATER & SEWER DOES NOT ACCEPT ANY RESPONSIBILITY FOR THE RELOCATION, REPAIR OR REPLACEMENT OF ANY OTHER UTILITY INSTALLED WITHIN FIVE (5) FEET OF THE CENTERLINE OF ANY SANITARY MAIN SEWER OR WATER MAIN.

17. PRIVATE DRIVEWAYS, PARKING LOTS AND OTHER PAVED AREAS, EARTHEN BERMS OR STRUCTURES SHOULD NOT BE CONSTRUCTED OVER PRIVATE WATER OR SEWER SERVICE LINES WITHIN THE PUBLIC ROAD RIGHT OF WAY OR WITHIN EASEMENT AREAS FOR THE PUBLIC UTILITIES. SHOULD THIS OCCUR, THE PROPERTY OWNER WILL BE HELD RESPONSIBLE FOR THE PROTECTION AND REPAIR OF AND FOR PROVIDING ACCESS TO ANY CURB STOPS, METER PITS, MANHOLES, CLEANOUTS, ETC. INSTALLED IN CONJUNCTION WITH THESE PRIVATE SERVICE LINES AND FOR ANY DAMAGE OR RESTORATION OF THE PAVED SURFACES OR STRUCTURES THAT MAY RESULT FROM THE FUTURE OPERATION, MAINTENANCE, REPAIR OR REPLACEMENT OF SAID SERVICE LINES AND APPURTENANCES.

18. LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY GROUND CONDITIONS AND EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION.

19. THE EXISTING UTILITIES SHOWN ARE FOR CONTRACTOR'S CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE OWNER ASSUMES NO RESPONSIBILITY FOR THE LOCATION OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

20. BUTLER COUNTY ASSUMES NO MAINTENANCE RESPONSIBILITY FOR PRIVATE DRIVES.

- 1 SURFACE COURSE OF ITEM 448 ASPHALTIC CONCRETE, SEE NOTE #4
- 2 1 1/2" LEVELING COURSE OF ITEM 448 ASPHALTIC CONCRETE
- 3 6" BASE COURSE OF ITEM 301 BITUMINOUS AGGREGATE BASE
- 4 COMPACTED SUBGRADE, ITEM 203.13
- 5 ROLL TYPE CURB & GUTTER, ITEM 609 (BUTLER CO. STANDARD C-1)
- 6 4" THICK CLASS "C" CONCRETE WALK, 6" WIDE, ITEM 608 WALK TO BE 1/2" HIGHER THAN SOD
- 7 SEEDING & MULCHING, ITEM 659
- 8 TACK COAT, ITEM 407 - TO BE APPLIED AT A RATE OF 0.05 GAL. PER SQ. YARD, SEE NOTE #4
- 9 TACK COAT SHALL BE APPLIED TO FRONT FACE OF CURB PRIOR TO THE INSTALLATION OF THE 301 BITUMINOUS AGGREGATE BASE. ALSO TO BE APPLIED TO THE CURB JOINT AFTER THE INSTALLATION OF 448 LEVELING COURSE
- 10 6" BASE COURSE OF ITEM 304 AGGREGATE BASE
- 11 4" BASE COURSE OF ITEM 301 BITUMINOUS AGGREGATE BASE
- 12 ITEM 605, 4" UNDERDRAIN CONNECT UNDERDRAIN TO FRONT FACE OF NEAREST CATCH BASIN

BUTLER COUNTY WILL NOT BE RESPONSIBLE FOR ANY PAVEMENT OR STORM SEWER REPAIRS RESULTING FROM WATER MAIN REPAIRS. BUTLER COUNTY ALSO WILL NOT BE RESPONSIBLE FOR ADJUSTING VALVES, FIRE HYDRANTS, METER PITS, ETC. AS A RESULT OF GRADE CHANGES. THE GRANTOR SHALL BE RESPONSIBLE FOR THE PROPER ADJUSTMENT OF VALVES, FIRE HYDRANTS, METER PITS, ETC., TO THE SATISFACTION OF BUTLER COUNTY, DUE TO GRADE CHANGES, PAVING, REPAIRING, ETC., INITIATED BY THE GRANTOR.

ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.

ALL BUILDINGS TO BE SERVED BY THE PUBLIC SEWER SYSTEM SHALL BE CONSTRUCTED SO AS TO PROVIDE A MINIMUM OF FOUR FEET (4') OF VERTICAL SEPARATION BETWEEN THE PUBLIC SANITARY SEWER, AT THE POINT OF CONNECTION, AND THE LOWEST BUILDING LEVEL SERVED BY A GRAVITY SEWER CONNECTION. IN ADDITION, SAID BUILDING LEVEL SHALL BE AT LEAST ONE FOOT (1') ABOVE THE LOWEST POINT OF FREE-OVERFLOW (NON-SEALED MANHOLE COVER) UPSTREAM OF ANY TREATMENT FACILITY OR WASTEWATER PUMPING FACILITY THAT RECEIVES THE DISCHARGE FROM SAID BUILDING. SAID MINIMUM SERVICE LEVELS SHALL BE RECORDED ON THE "AS BUILT" PLANS FOR THE DEVELOPMENT WHICH WILL BE KEPT ON FILE IN THE OFFICE OF THE BUTLER COUNTY SANITARY ENGINEER.

SANITARY SEWER LATERALS, WHICH SHALL INCLUDE ALL PIPE AND APPURTENANCES FROM THE BUILDING TO THE PUBLIC SEWER MAIN, AND CONNECTION TO THE PUBLIC SEWER MAIN SHALL BE CONSIDERED PRIVATE AND THE RESPONSIBILITY OF THE PROPERTY OWNER TO MAINTAIN THE CONNECTION TO THE SEWER WOULD BE ANY PIPING THAT EXTENDS OUT FROM THE MAIN BARREL OF THE SEWER MAIN.

ALL GROUND SURFACE AREAS THAT HAVE BEEN EXPOSED OR LEFT BARE AS A RESULT OF CONSTRUCTION AND ARE TO FINAL GRADE AND ARE TO REMAIN SO, SHALL BE SEEDED AND MULCHED AS SOON AS PRACTICAL IN ACCORDANCE WITH STATE OF OHIO SPECIFICATIONS, ITEM 659.

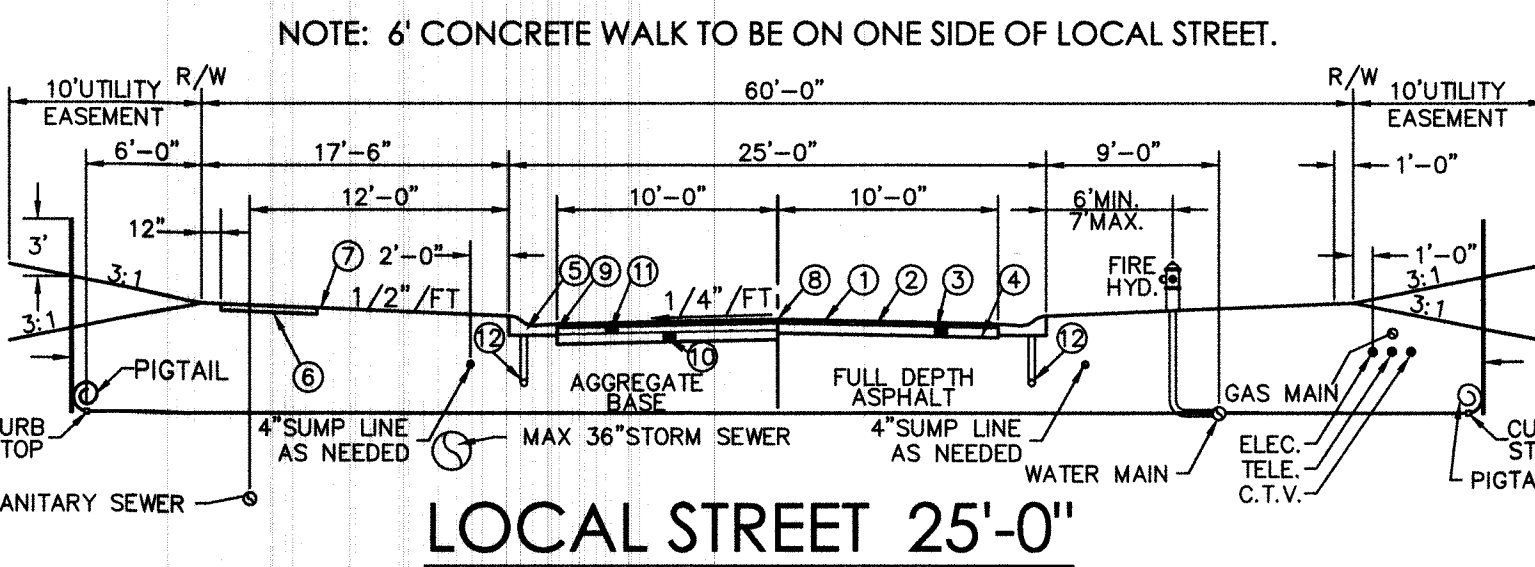
THE CONTRACTOR SHALL SEED AND MULCH DISTURBED GRASS AREAS WITH:  
3 LBS. WHEAT OR RYE PER 1000 SQ. FT.  
10 LBS. 12-12-12 FERTILIZER PER 1000 SQ. FT.  
2 OR 3 BALES OF STRAW PER 1000 SQ. FT.

THE CONTRACTOR SHALL ALSO PROVIDE OTHER EROSION CONTROL MEASURES AS MAY BE REQUIRED BY BUTLER COUNTY ENGINEER DURING THE CONSTRUCTION PHASE.

SEEDING - SPECIFICATIONS AT DETENTION BASIN:  
RED FESCUE 1 LB. PER 1000 SQ. FT.  
KENTUCKY BLUEGRASS 1/2 LB. PER 1000 SQ. FT.  
PERENNIAL RYEGRASS 1/2 LB. PER 1000 SQ. FT.  
FERTILIZER: 12-12-12  
MULCH - 3 BALES OF STRAW PER 1000 SQ. FT.  
MULCH TIE DOWN: LIQUID ASPHALT (R.C. 70, 25 OR 800) 40 GALS. PER 1000 SQ. YDS. OR PLASTIC MULCH NETTING, STAPLED IN PLACE.  
SOD: TO BE STAKED IN PLACE.

**NOTES**

1. ITEM NUMBERS REFER TO THE OHIO DEPARTMENT OF HIGHWAYS CONSTRUCTION AND MATERIAL SPECIFICATIONS, AND ALL CONSTRUCTION WORK SHALL BE DONE ACCORDING TO SAID SPECIFICATIONS OR BUTLER COUNTY REQUIREMENTS AND STANDARDS FOR SUBDIVISIONS. WHEN IN CONFLICT, THE COUNTY REQUIREMENTS SHALL PREVAIL.
2. ITEMS THAT PERTAIN TO UNDERGROUND UTILITIES SUCH AS WATERMAIN PIPE, SANITARY SEWER PIPE, WATER VALVES AND MANHOLE FRAMES AND COVERS, ETC. WILL REMAIN UNDER SPECIFICATIONS OF THE UTILITY SERVING THE AREA. STORM SEWERS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUTLER COUNTY ENGINEER.
3. ALL TRENCHES WITHIN THE RIGHT OF WAY AND UTILITY EASEMENTS SHALL BE COMPACTED AND BACKFILLED IN ACCORDANCE WITH ITEMS 203 AND 603 IN THE STATE SPECIFICATIONS.
4. SURFACE COURSE (ITEM 448) AND TACK COAT (ITEM 407) ARE TO BE APPLIED NO SOONER THAN NINE (9) MONTHS AFTER THE LEVELING COURSE (ITEM 448), AND FIFTY (50) PERCENT OF THE HOMES ARE COMPLETED. IF AFTER TWO (2) YEARS, FIFTY (50) PERCENT OF THE HOMES HAVE NOT BEEN COMPLETED, THEN THE TOP COURSE MAY BE APPLIED.
5. A MINIMUM 10' UTILITY EASEMENT SHALL BE SHOWN ON THE RECORD PLAT PARALLEL AND IMMEDIATELY ADJACENT TO THE RIGHT OF WAY LINE ALLOWING FOR INSTALLATION, OPERATION AND MAINTENANCE OF SEWERS, WATER, ELECTRIC AND TELEPHONE CONDUIT AND ANY OTHER PUBLIC OR QUASI PUBLIC UTILITY.
6. DEVELOPER SHALL BE RESPONSIBLE FOR THE INSTALLATION OF CONDUITS FOR THE FULL WIDTH OF THE PUBLIC RIGHT OF WAY AT A DEPTH OF 36" FOR USE BY THE ELECTRIC, TELEPHONE AND CABLE TV SERVICES. THE LOCATION OF THESE LINES SHALL BE COORDINATED WITH UTILITY COMPANIES BY THE DEVELOPER.
7. SANITARY LATERALS SHALL BE EXTENDED BEYOND THE LIMITS OF THE UTILITY EASEMENTS, BUT NOT TO EXCEED 12' FROM THE RIGHT OF WAY LINE.
8. ALL ELECTRICAL TRANSFORMERS SHALL BE LOCATED SO THAT THEY DO NOT INTERFERE WITH THE EXISTING MANHOLES.
9. SUMP LINE CONDUITS ARE TO BE SDR 35.
10. THE SANITARY SEWER SHALL BE PLACED IN SUCH A MANNER THAT THE SANITARY MANHOLE COVER DOES NOT CONFLICT WITH THE SIDEWALK.



ITEM	DEPTH TOP OF PIPE
Underdrain	18"
Gas	24" - 30"
Water	24" - 30"
Electric	48" - 54"
Telephone	36" - 40"
Cable TV	36" - 40"

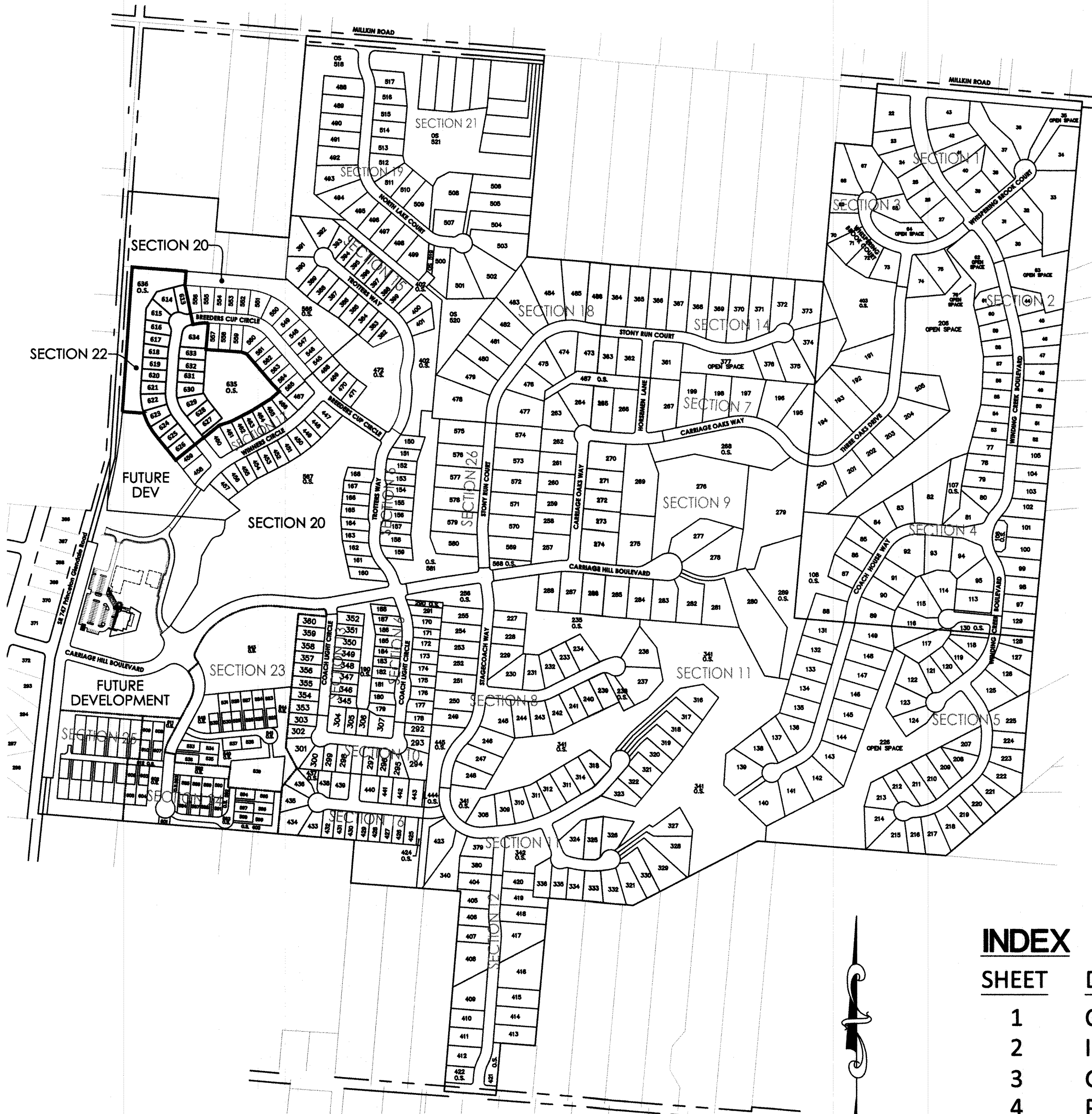
# WINDING CREEK

## SECTION 22

# AKA CARRIAGE HILL

## SECTION 22

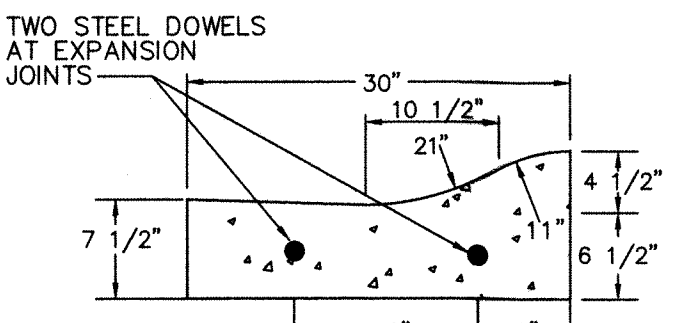
SECTION 2, TOWN 2, RANGE 3  
LIBERTY TOWNSHIP  
BUTLER COUNTY, OHIO



OVERALL PROJECT MAP  
1"=500'

**INDEX**

SHEET	DESCRIPTION
1	COVER SHEET
2	IMPROVEMENT PLAN
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4	PROFILE & DETAILS
5-6	BUTLER COUNTY WATER & SEWER STANDARD DETAILS
7	EROSION CONTROL NOTES & DETAILS



STD BUTLER COUNTY CURB & GUTTER  
N. T. S.

GENERAL: THIS DRAWING SHOWS THE STANDARD TYPE OF CURB THAT SHOULD BE USED ON MOST TYPES OF PAVEMENT. TYPICAL SECTION OF PROJECT SHOWS THE TYPE TO BE USED. ALSO THE THICKNESS OF THE EDGE OF THE PAVEMENT OR THE EDGE OF THE CURB AND GUTTER SECTION.

JOINTS: ONE INCH EXPANSION JOINTS SHALL EXTEND UP TO TOP OF THE CURB AND SHALL BE CONSTRUCTED IN THE CURB AND GUTTER SECTION IN SUCH A MANNER THAT THE JOINT SEAL WILL EXTEND THE FULL WIDTH OF THE GUTTER AND INTO THE CURB FACE A SUFFICIENT DISTANCE TO SEAL THE JOINT TO AN ELEVATION OF AT LEAST TWO (2) INCHES ABOVE THE FLOW LINE OF THE GUTTER SECTION AT EXPANSION JOINTS. ALL JOINTS SHALL BE CONSTRUCTED PERPENDICULAR TO THE EDGE OF THE CURB AND TO THE SURFACE OF THE PAVEMENT. TRANSVERSE EXPANSION JOINT MATERIAL SHALL MEET THE REQUIREMENTS OF 705.03. EXPANSION MATERIAL AND JOINT SEALER IS NOT REQUIRED WHEN CURB IS ADJACENT TO FLEXIBLE TYPE PAVEMENT.

NOTE: ALL LOTS SHALL BE SERVED BY SANITARY SEWER AND PUBLIC WATER SYSTEMS.

PROJECT BENCHMARK = CENTERLINE NAIL LOCATED AT THE INTERSECTION OF CARRIAGE HOUSE BOULEVARD AND STAGECOACH WAY. ELEVATION = 790.52



**MSP DESIGN**  
McGill Smith Punshon

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- Engineering Cincinnati, OH 45243
- Landscape Architecture Phone 513.759.0004
- Planning www.mspsdesign.com
- Surveying

Project Manager RA  
Drawn By NAK  
DWG 04476064-IMP-SECTION 22  
X-Ref(s) 04476063-TOP-2014 MAY 14

Issue/Revision	No.	Date

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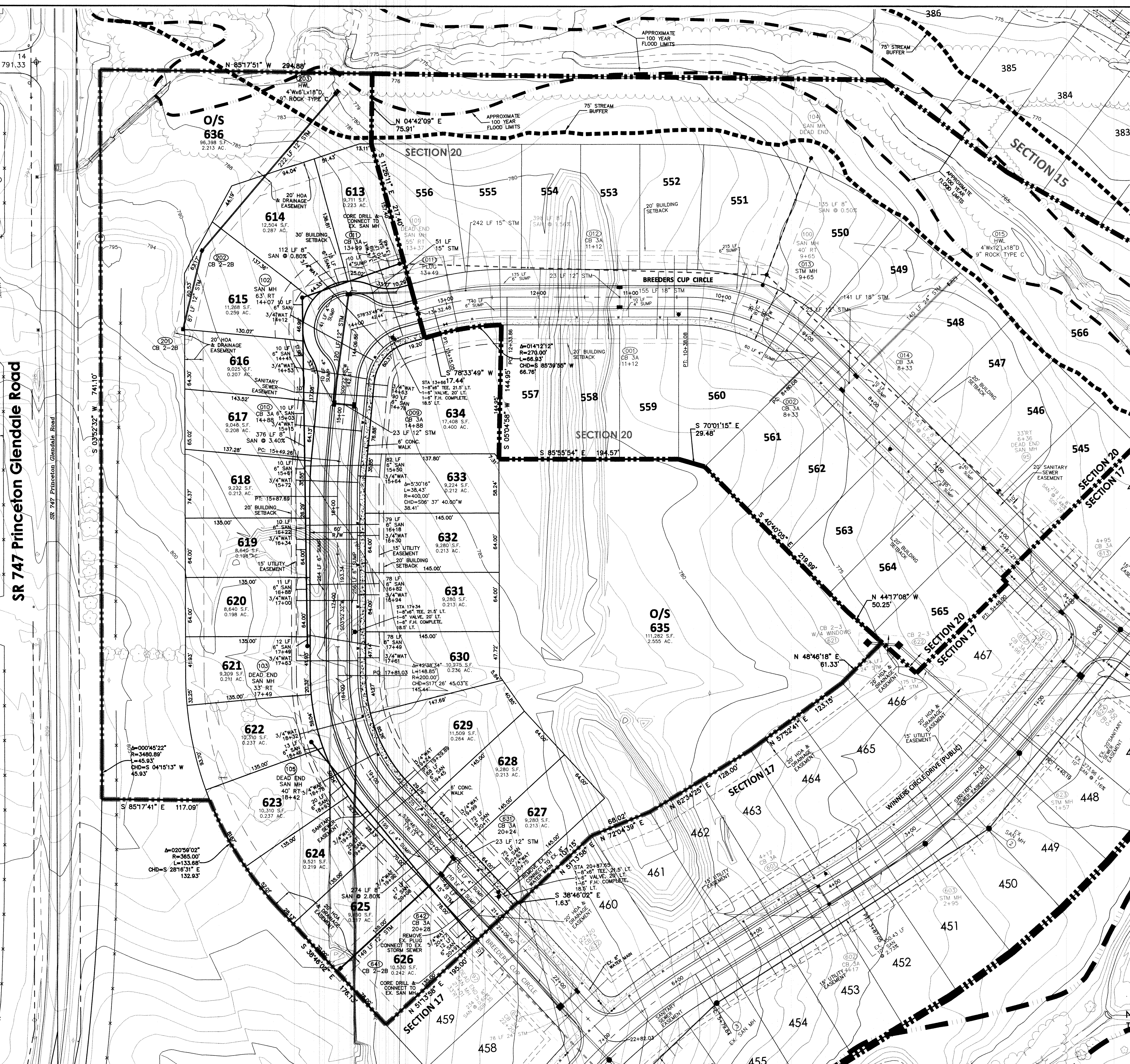
**WINDING CREEK**  
**SECTION 22**  
**AKA CARRIAGE HILL**  
**SECTION 22**  
**SECTION 2, TOWN 2, RANGE 3**  
**LIBERTY TOWNSHIP**  
**BUTLER COUNTY, OHIO**

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**COVER SHEET**

Project Number 04476.06  
Drawing Scale AS NOTED  
Sheet Number 1/7  
File Number 04476

Issue/Revision	No.	Date



NOTE:  
HIGH WATER TABLES ARE APPARENT  
IN THIS AREA. IF BASEMENTS ARE  
CONSTRUCTED, IT IS THE RESPONSIBILITY  
OF THE BUILDER TO TAKE SPECIAL  
PRECAUTION TO ENSURE THE  
BASEMENTS STAY DRY.

NO DRIVEWAY MAY BE PLACED OVER WATER SERVICE.  
NO DRIVEWAY MAY BE PLACED OVER SANITARY SEWER MANHOLE.

LENGTH OF PIPE TO BE RESTRAINED IN EACH DIRECTION FROM CENTERLINE OF BEND, EXCEPT AS NOTED BELOW		LENGTH OF PIPE TO BE RESTRAINED IN EACH DIRECTION FROM CENTERLINE OF BEND, EXCEPT AS NOTED BELOW	
DESCRIPTION	8"	DESCRIPTION	8"
90° BEND	59'	11 1/4" UP BEND	6'
45° BEND	24'	11 1/4" DOWN BEND	11'
22 1/2° BEND	12'	22 1/2° UP BEND	12'
11 1/4° BEND	5'	22 1/2° DOWN BEND	22'
8" x 6" TEE	41' BRANCH	45° UP BEND	24'
		45° DOWN BEND	45'
		DEAD END	54'

**HORIZONTAL  
PIPE RESTRAINTS  
SCHEDULE FOR JOINTS**

**VERTICAL**

NOTE: CONSTRUCTION TRAFFIC FROM  
TROTTERS WAY IS PROHIBITED.



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**WINDING CREEK  
SECTION 22  
AKA CARRIAGE HILL  
SECTION 22**  
SECTION 2, TOWN 2, RANGE 3  
LIBERTY TOWNSHIP  
BUTLER COUNTY, OHIO

Sheet Title

**IMPROVEMENT PLAN**

Project Number 04476.06  
Drawing Scale 1"=50'  
Sheet Number 2/7  
File Number 04476

SR 747 Princeton Glendale Road

SECTION 15

SECTION 20

SECTION 20

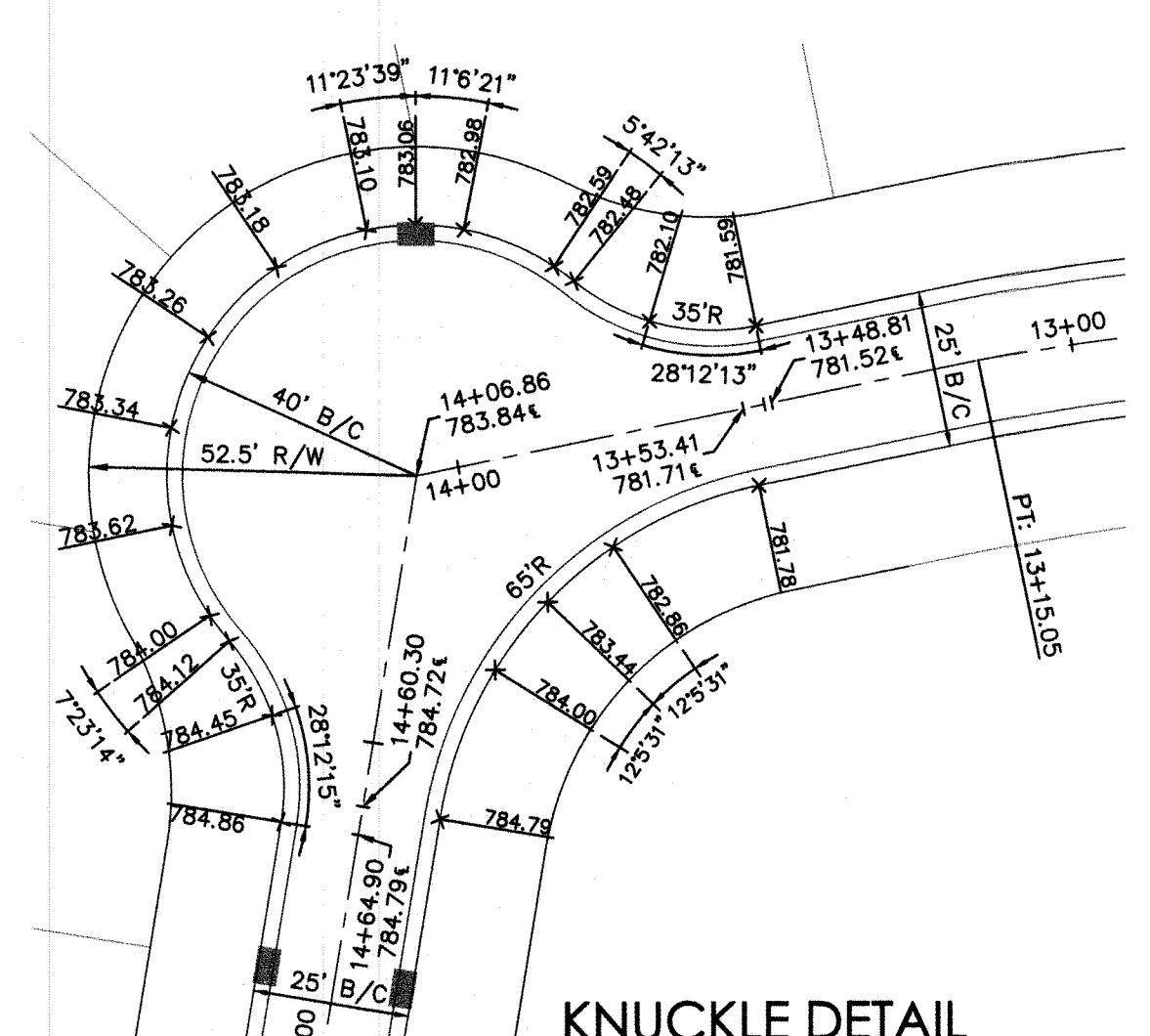
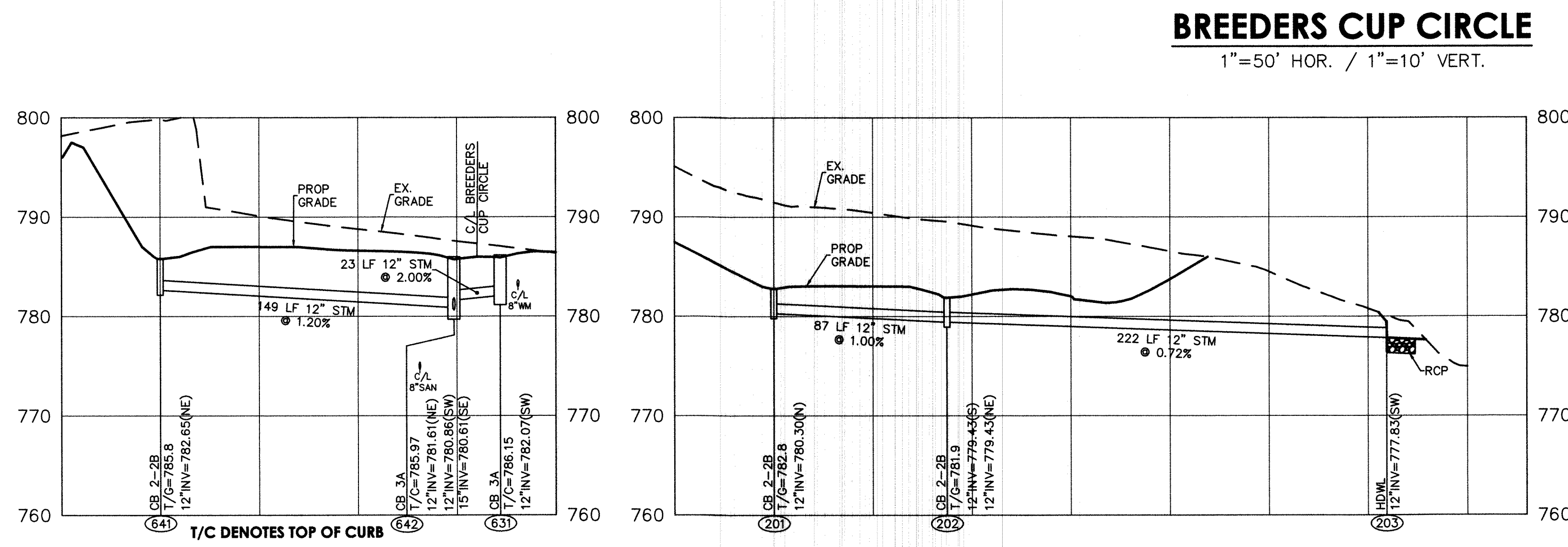
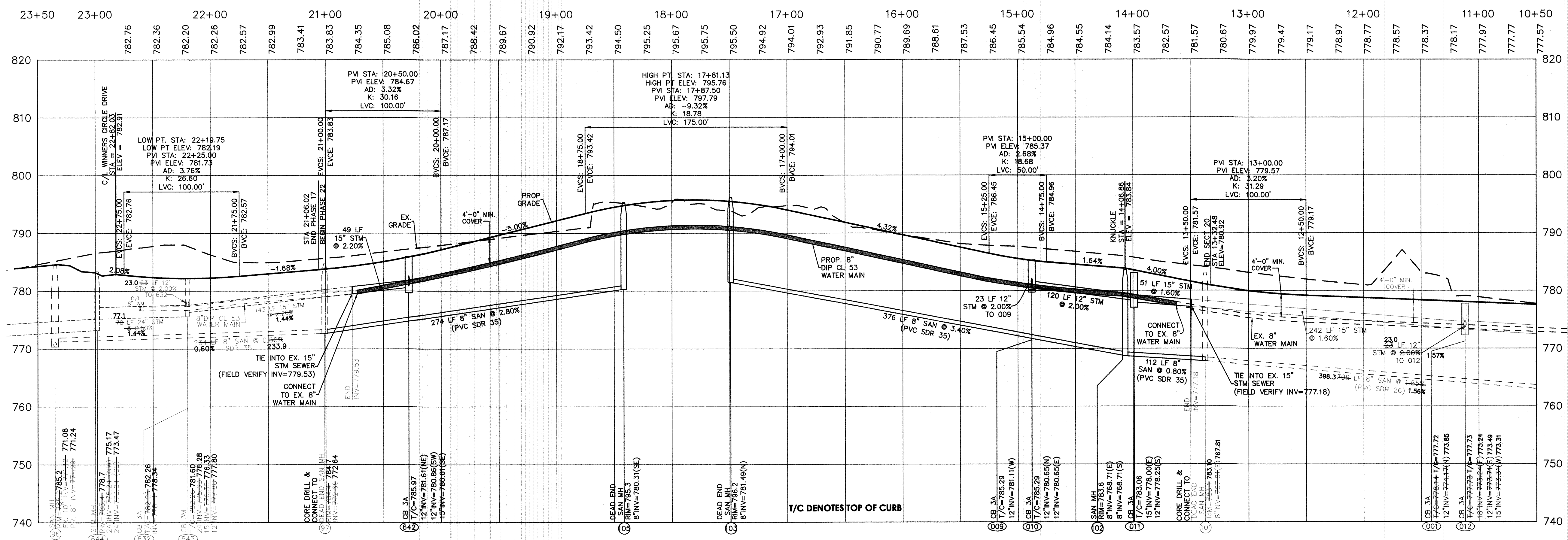
SECTION 17

SECTION 20

SECTION 17

SECTION 17





PIPE DIA. (W/OUT WRAPS)	DIMENSIONS							CLASS CONC	REIN. STEEL
	C	E	F	L	W	T	X		
12"	1'-0"	2'-0"	2'-0"	2'-0"	4'-0"	4'-0"	2"	15'	0.58
15"	1'-0"	3'-0"	2'-0"	2'-0"	4'-0"	4'-0"	2 1/2"	15'	0.68
18"	2'-0"	3'-0"	3'-0"	4'-0"	5'-0"	5'-0"	3"	15'	0.93
21"	2'-0"	3'-0"	4'-0"	5'-0"	6'-0"	6'-0"	3 1/2"	15'	1.14
24"	2'-0"	3'-0"	5'-0"	6'-0"	7'-0"	7'-0"	4"	15'	1.07
27"	2'-0"	4'-0"	4'-0"	5'-0"	6'-0"	6'-0"	3"	15'	1.30
30"	2'-0"	4'-0"	4'-0"	5'-0"	7'-0"	7'-0"	3 1/2"	15'	1.51

**NOTES**

- DIMENSIONS AND QUANTITIES ARE BASED ON CONCRETE PIPE AND WILL VARY INSIGNIFICANTLY FOR CORRUGATED METAL PIPE.
- REINFORCING STEEL: MINIMUM GRADE 40, BARS EVENLY SPACED.
- 6 - NO. 4 x 1'-0" DOWEL BARS.
- 2" - NO. 4 x 1'-0" DOWEL BARS.
- PIPE SHALL BE TAPPED TO FIT HEADWALL WHEN PIPE IS SKEWED AND/OR NORMAL SLOPE VARIES FROM 5%.
- JOINTS SHALL BE BY PIPE COMPANIES USING INSIDE DIAMETER OF PIPE.
- PIPE ANGLES AND/OR DIMENSIONS MAY BE ALTERED DURING CONSTRUCTION TO ACCOMMODATE FLOW OF WATER.
- APRON BETWEEN TINGS SHALL BE PROPTED IN DIRECTION OF FLOW EQUAL TO SLOPE OF THE FRONT FACE OF HEADWALL SHALL REMAIN VERTICAL.

**ENERGY DISSIPATION BLOCKS (OPTIONAL)**

**CONSTRUCTION JT. REQUIRED**

**CUT OFF TOP WALL AT ROCK LINE WHEN ENCOUNTERED.**

**ISOMETRIC VIEW**

**TOE OF SLOPES:**  
 a. STEEPER THAN 2:1  
 b. 2:1  
 c. FLATTER THAN 2:1

**REVISIONS**

NO.	DATE	DESCRIPTION

CHK. BY: G.W. EFFECTIVE DATE: 11-11-2020  
 BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY

**STORM SEWER 641-642 & 631**  
 1"=50' HOR. / 1"=10' VERT.

**STORM SEWER 201-203**  
 1"=50' HOR. / 1"=10' VERT.

**KNUCKLE DETAIL BREEDER'S CUP LANE**  
 SCALE: 1"=30'  
 ANGLES SHOWN ARE 22.5° UNLESS NOTED OTHERWISE  
 ELEVATIONS SHOWN TOP OF CURB UNLESS NOTED OTHERWISE

**PLAN VIEW**

**PERPENDICULAR CURB RAMP DETAIL**

**SECTION VIEW**

**REVISIONS**

NO.	DATE	DESCRIPTION

CHK. BY: C.A.M. EFFECTIVE DATE: 08-18-04  
 BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY

**NOTES:**

- CURB RAMP SHALL BE DESIGN A OR DESIGN E PER FOOT DRAWING 11-12-02. SHEETS 1 THRU 3. TRUNCATED CONES ARE TO MEET THE SPECIFICATIONS OF ODOT DRAWING 7-12-02 SHEET 3.
- DETECTABLE WARNING (TRUNCATED CONES) ARE TO BE INSTALLED AT THE LOCATION SHOWN. DIMENSIONS OF THE CONES ARE 24" FROM THE BACK OF THE CURB BY THE WIDTH OF THE RAMP.
- MINIMUM LANDING 4'-0" BY 4'-0" IS PREFERRED. SLOPE OF THE RAMP IS PREFERRED TO BE 1:21 OR FLATTER RELATED TO THE HORIZONTAL, BUT THE MINIMUM SLOPE SHALL BE 1:21 RELATIVE TO THE EXISTING OR PROPOSED WALK SLOPE.

**SETTLEMENT REPAIR FOR PIPE GREATER THAN 4' IN DEPTH**

**WATER, SANITARY, UTILITY & STORM REPAIR DETAIL**

**ITEM SPECIAL - LOW STRENGTH MORTAR BACKFILL MATERIAL**

DESCRIPTION: THIS WORK SHALL CONSIST OF THE PLACEMENT OF A FLOWABLE MIXTURE OF PORTLAND CEMENT, FLY ASH AND SAND FOR BACK-FILLING CONDUIT OR AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS SPECIFIED. THE WORK SHALL BE IN ACCORDANCE WITH ODOT ITEMS 603 AND 499 UNLESS OTHERWISE SPECIFIED HEREIN.

**MATERIALS:** MATERIALS SHALL BE:  
 A. CEMENT 701.01 OR 701.04  
 B. FLY ASH SHALL MEET ASTM C-618  
 C. FINE AGGREGATE SHALL BE NEUTRAL SAND OR SAND MANUFACTURED FROM STONE, GRAVEL OR AIR-COOLED SLAG. THE GRADUATION OF THE SAND SHALL MEET THE REQUIREMENTS OF 703.05. THE SAND SHALL BE FINE ENOUGH TO STAY IN SUSPENSION IN THE MIXTURE TO THE EXTENT REQUIRED FOR PROPER FLOW. THE ENGINEER RESERVES THE RIGHT TO REJECT THE SAND IF THE FLOWABLE MIXTURE CANNOT BE PRODUCED.  
 D. WATER USED FOR MORTAR BACKFILL SHALL BE FREE FROM OIL, ACID, STRONG ALKALIDES OR VEGETABLE MATTER.  
 E. SLUMPS MEASURED IN THE ORDINARY WAY WILL BE 8" OR HIGHER FOR PROPER PLACEMENT OF THE FLOWABLE MATERIAL.

**MORTAR MIX PROPORTIONING:** THE INITIAL TRIAL MIXTURE SHALL CONSIST OF THE FOLLOWING QUANTITIES OF MATERIALS PER CUBIC YARD:

CLASS LSM - 50	50 LBS.
CEMENT	250 LBS.
FLY ASH	2910 LBS.
SAND	500 LBS.
WATER (TARGET)	500 LBS.

ADJUSTMENTS OF THE PROPORTIONS MAY BE MADE BY THE ENGINEER PROVIDING THE TOTAL ABSOLUTE VOLUME OF THE MATERIALS IS MAINTAINED. THIS ITEM WILL BE INCLUDED IN THE STANDARD 603 INSULATION. THIS WILL NOT BE AN ADDITIONAL PAY ITEM, BUT REPLACEMENT FOR THE NORMAL BACKFILL.

**REVISIONS**

NO.	DATE	DESCRIPTION

CHK. BY: G.W. EFFECTIVE DATE: 11-11-2020  
 BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY

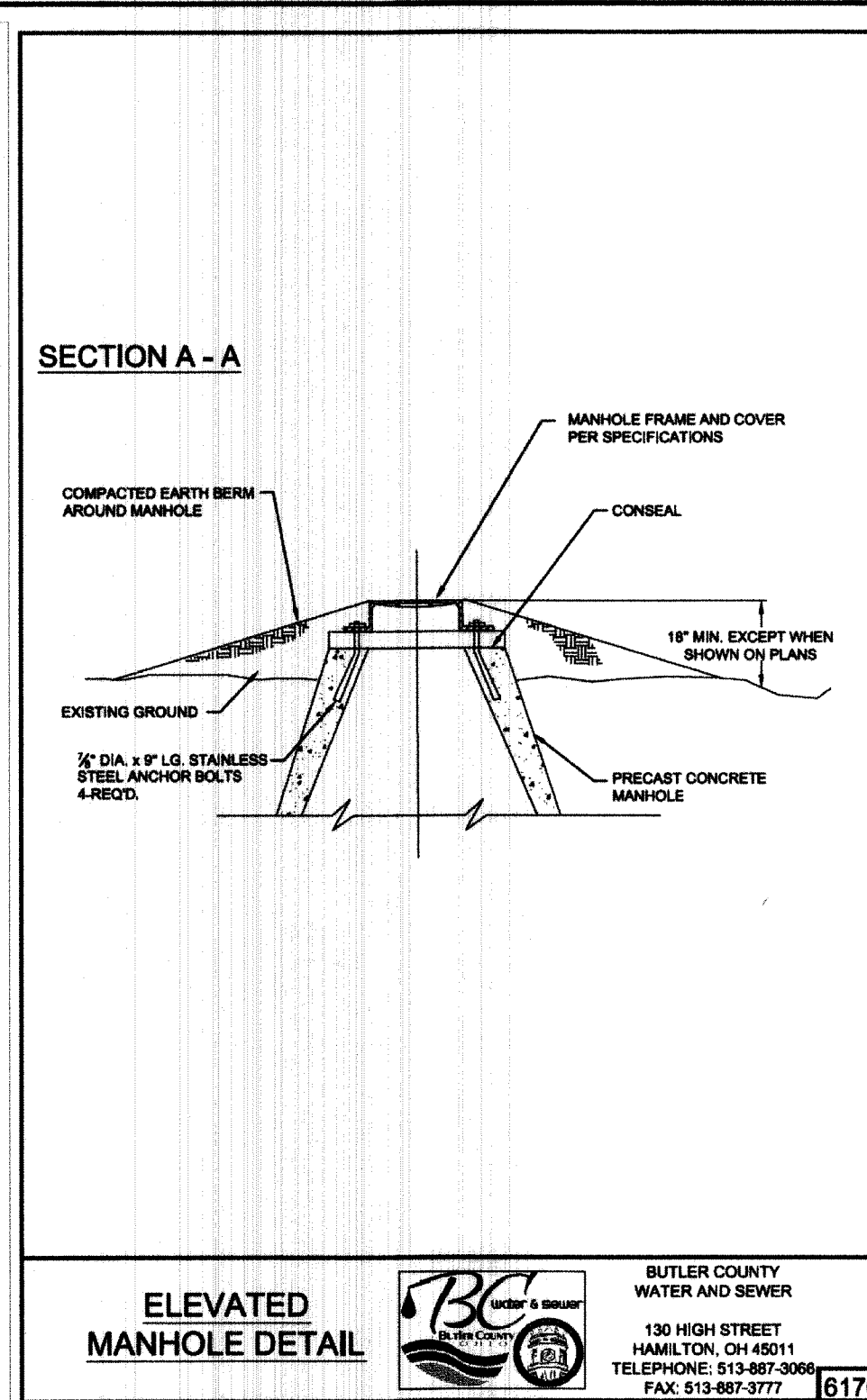
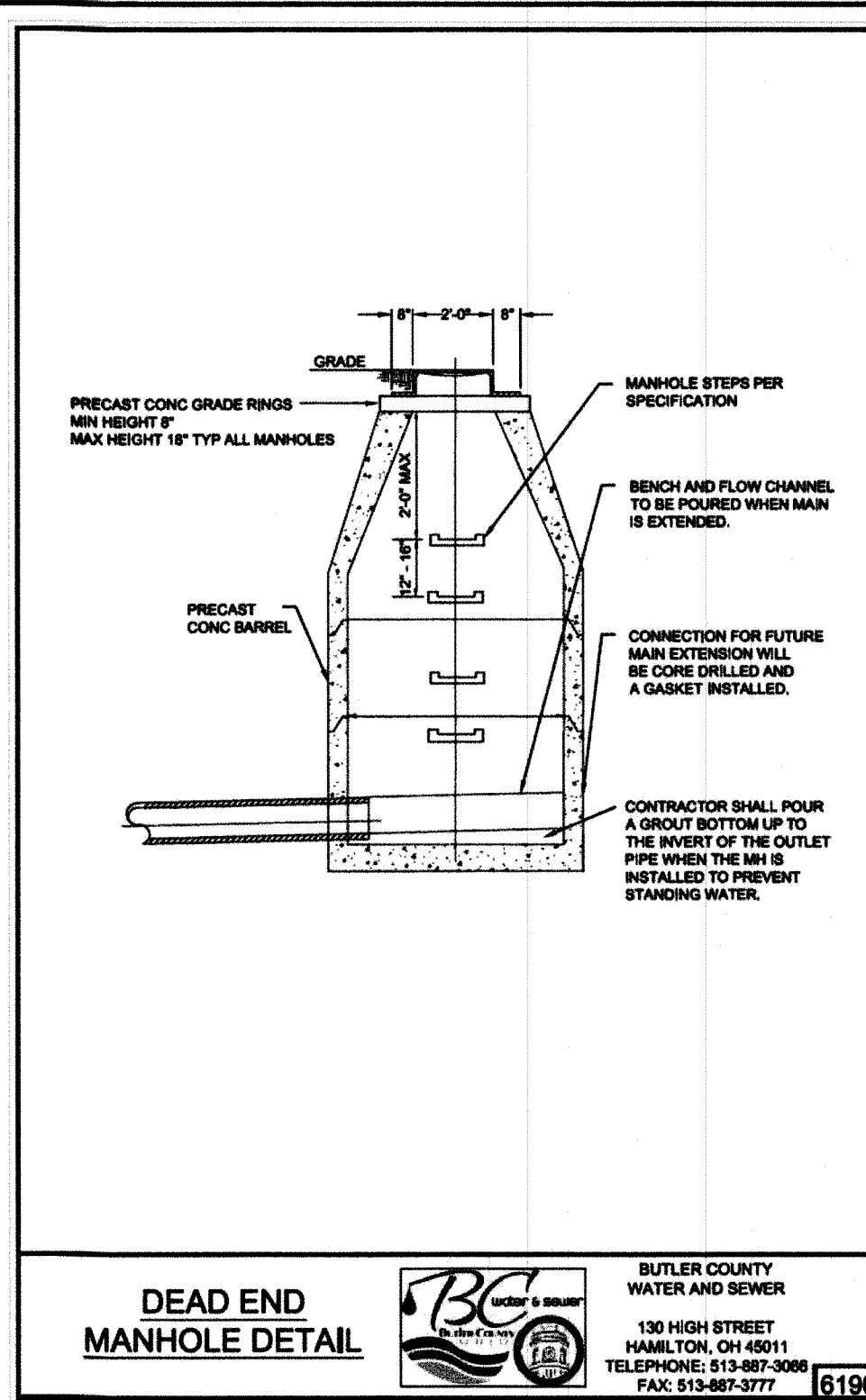
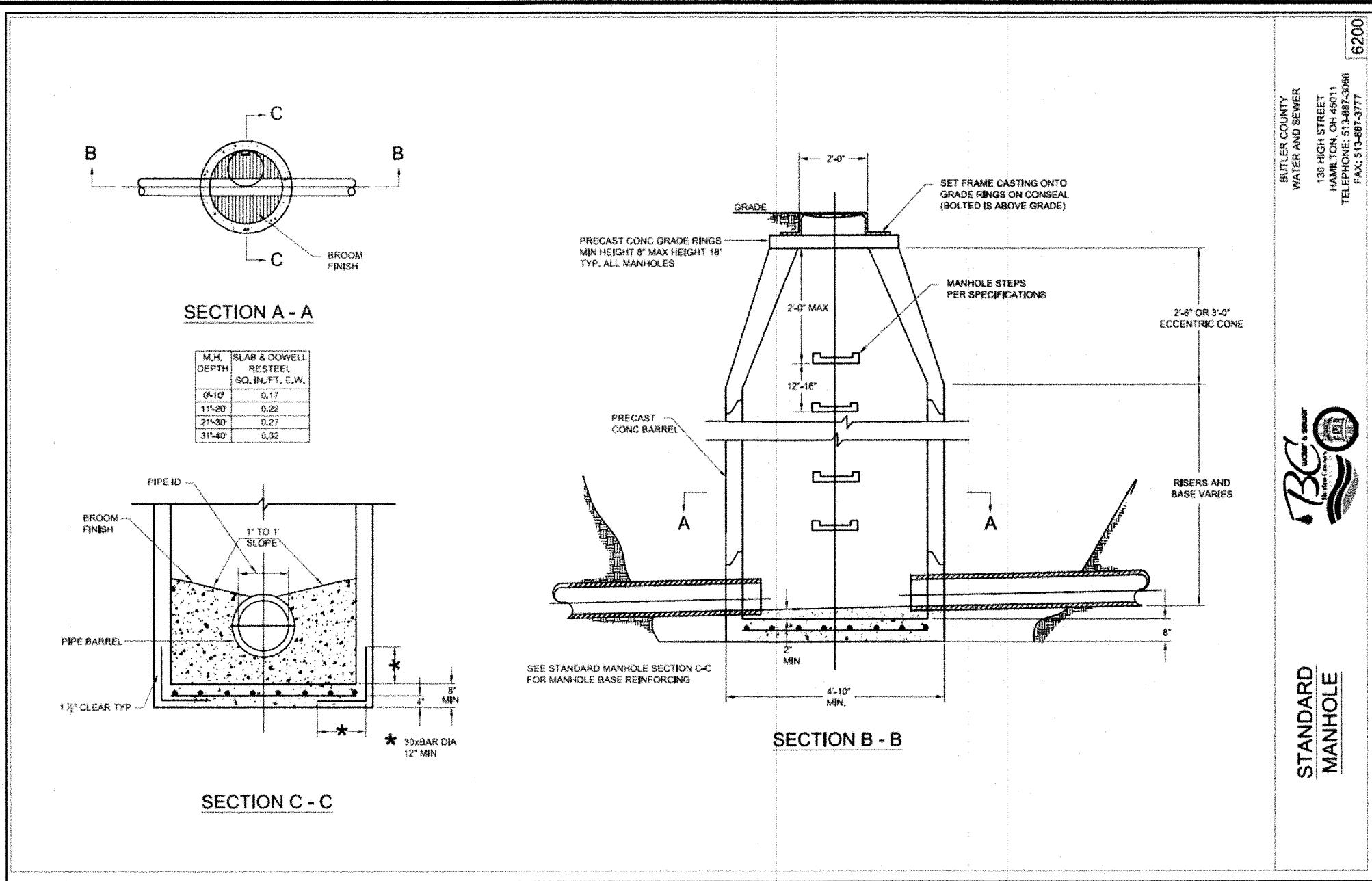
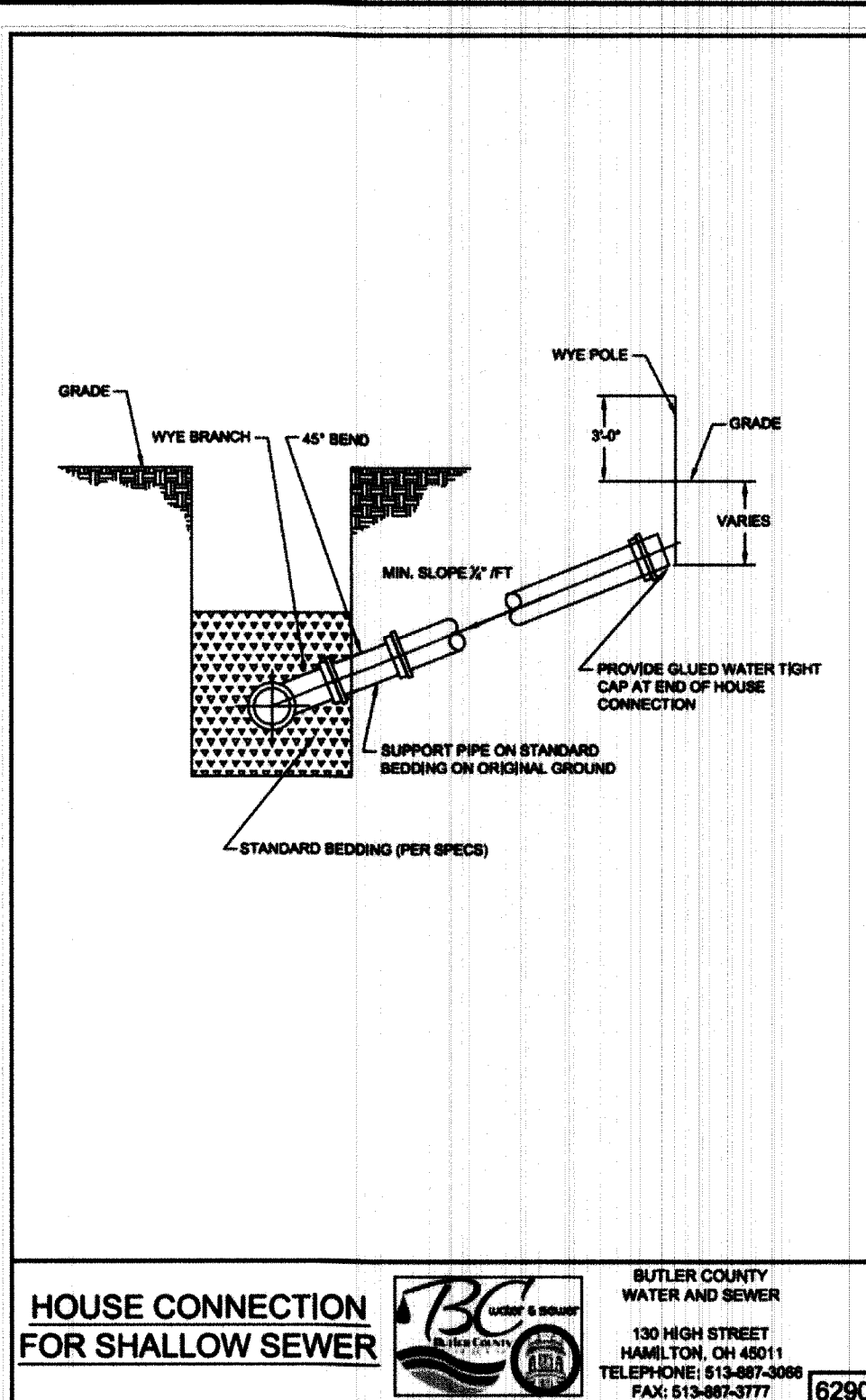
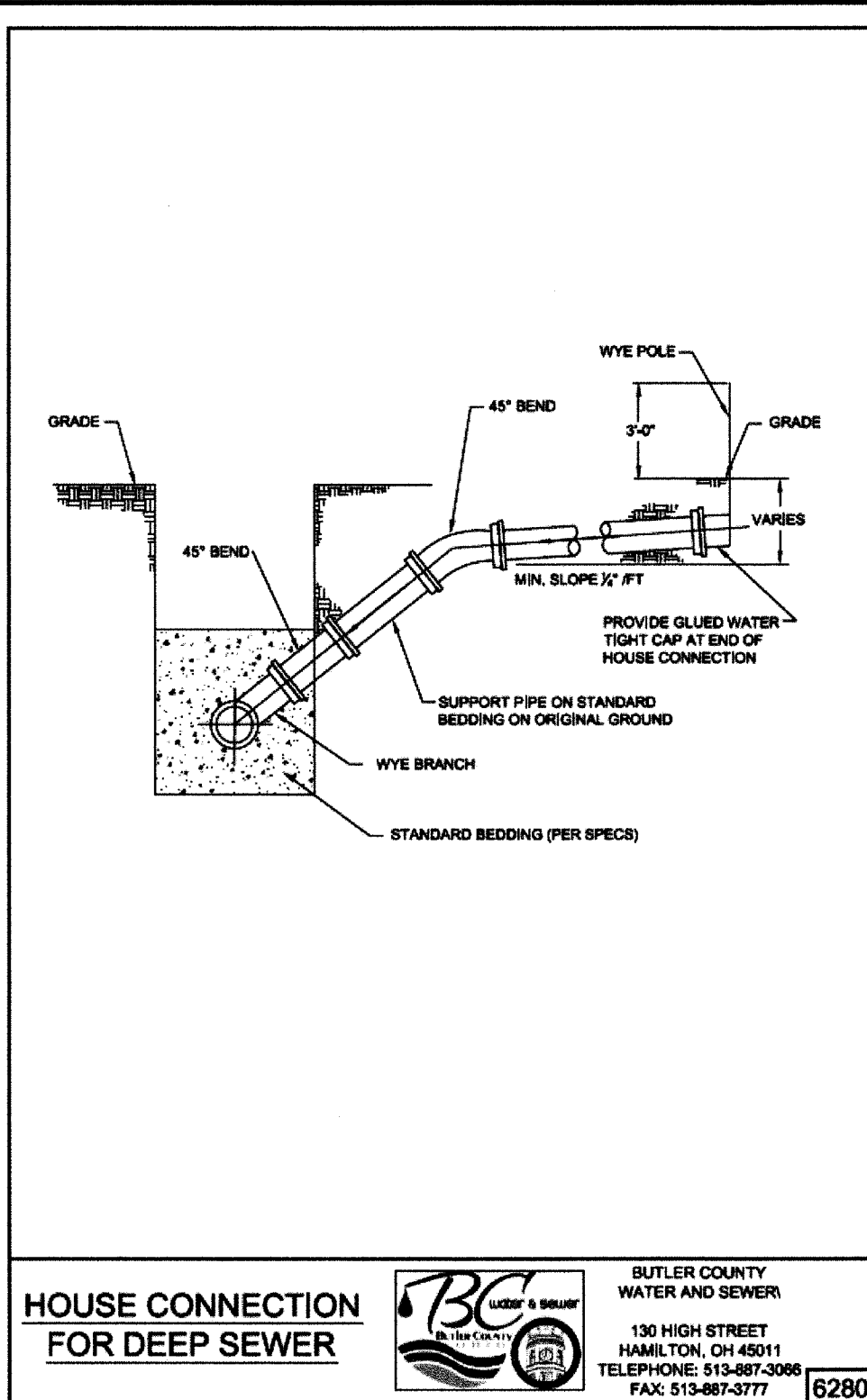
**ROADWAY SETTLEMENT REPAIR STANDARD**

Project Manager RA  
 Drawn By NAK  
 DWG 04476064-IMP-SECTION 22  
 X-Ref(s) N/A

Issue/Revision	No.	Date

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**WINDING CREEK SECTION 22**  
**AKA CARRIAGE HILL SECTION 22**  
 SECTION 2, TOWN 2, RANGE 3  
 LIBERTY TOWNSHIP  
 BUTLER COUNTY, OHIO



HOUSE CONNECTION FOR DEEP SEWER

Butler County Water and Sewer logo and contact info: 130 HIGH STREET HAMILTON, OH 45011 TELEPHONE: 513-857-3006 FAX: 513-857-3777 6290

HOUSE CONNECTION FOR SHALLOW SEWER

Butler County Water and Sewer logo and contact info: 130 HIGH STREET HAMILTON, OH 45011 TELEPHONE: 513-857-3006 FAX: 513-857-3777 6290

DEAD END MANHOLE DETAIL

Butler County Water and Sewer logo and contact info: 130 HIGH STREET HAMILTON, OH 45011 TELEPHONE: 513-857-3006 FAX: 513-857-3777 6190

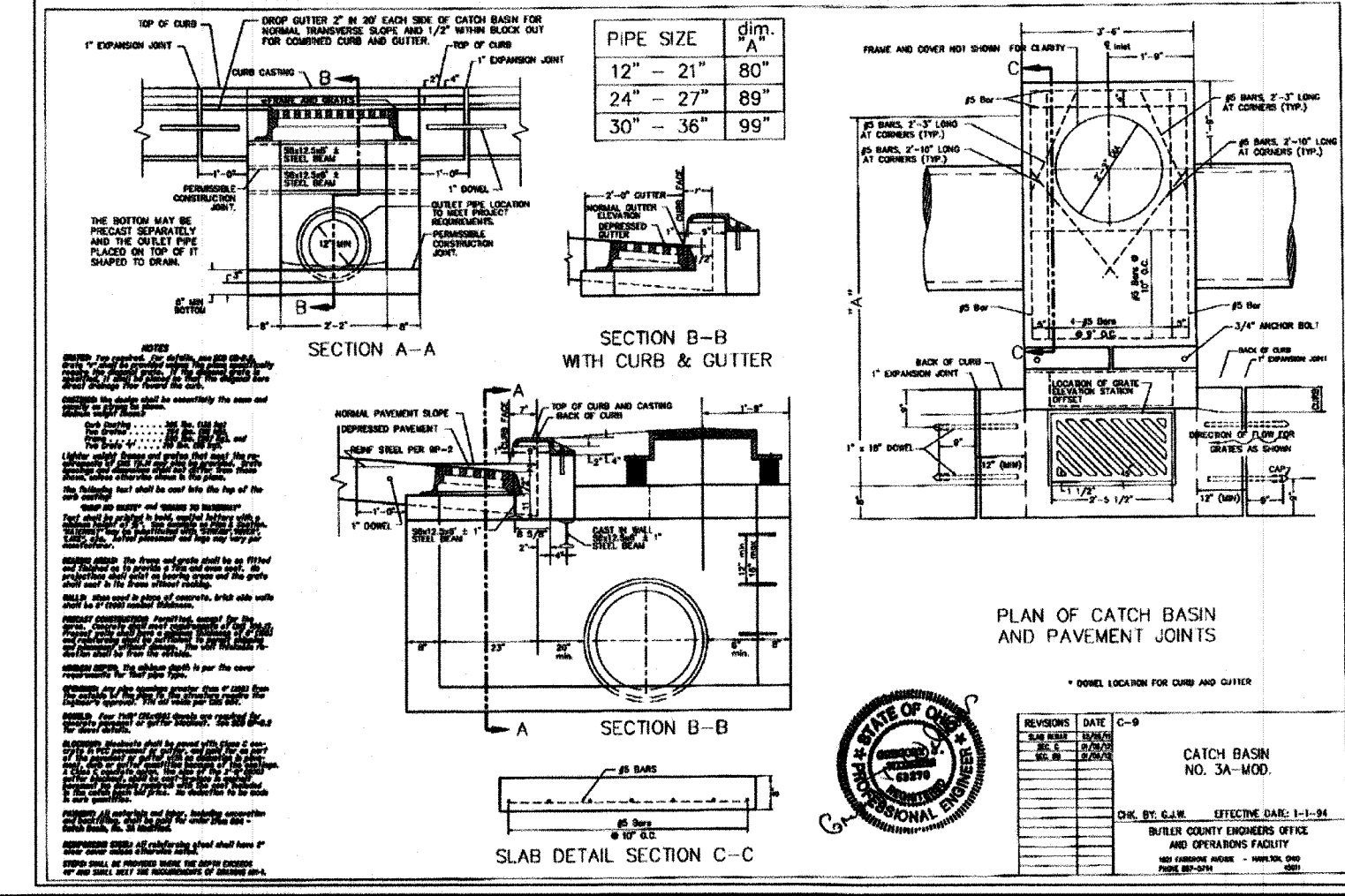
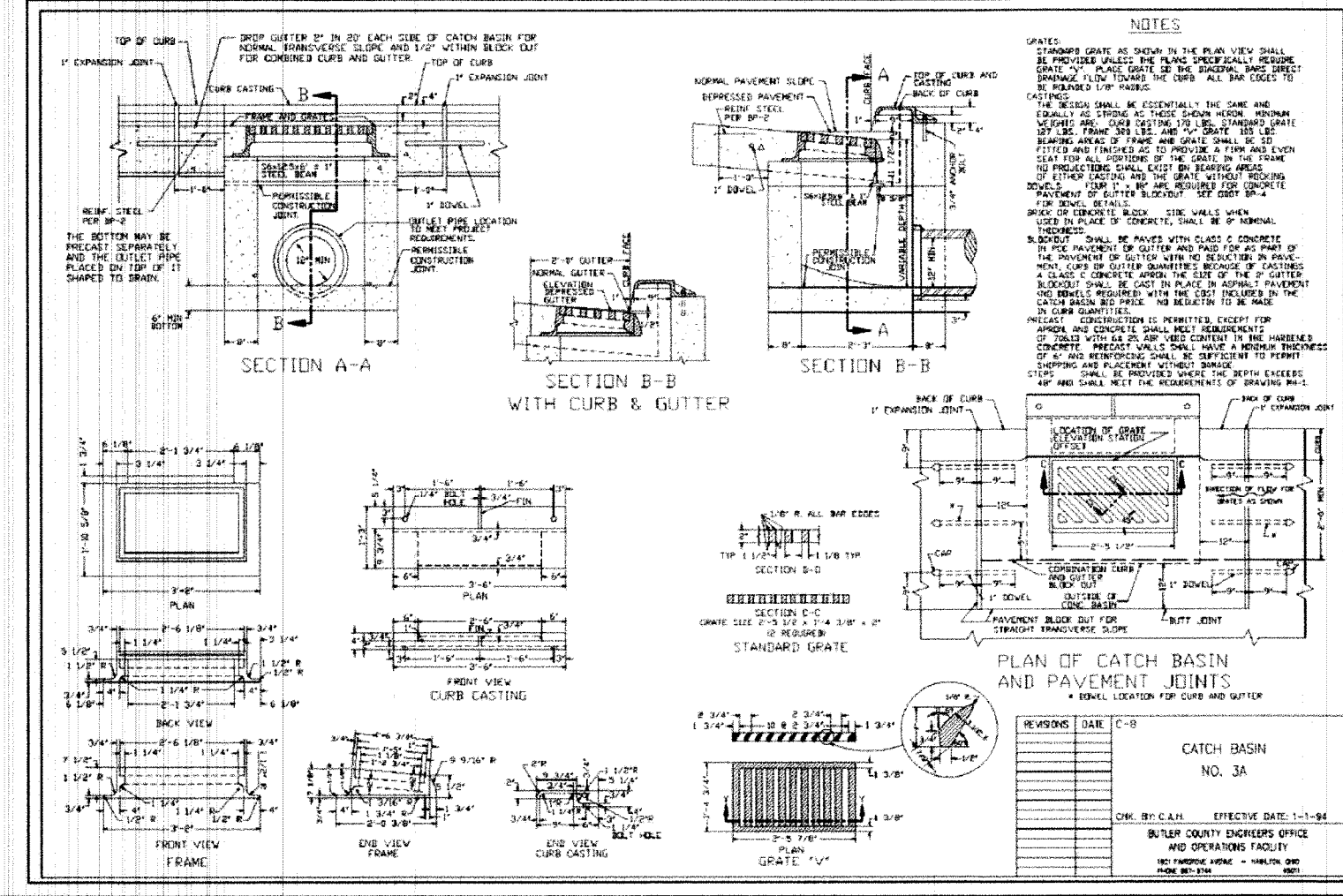
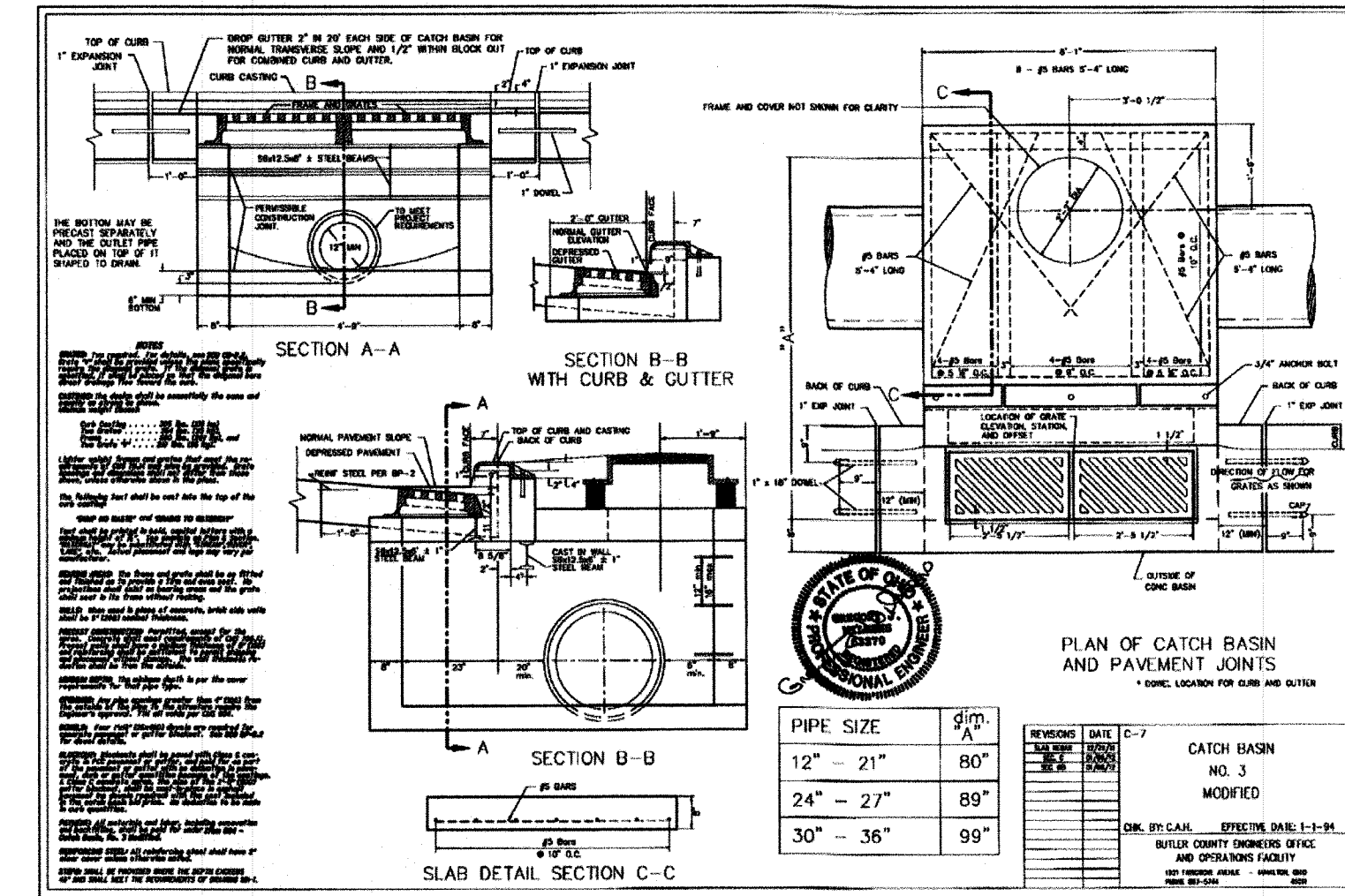
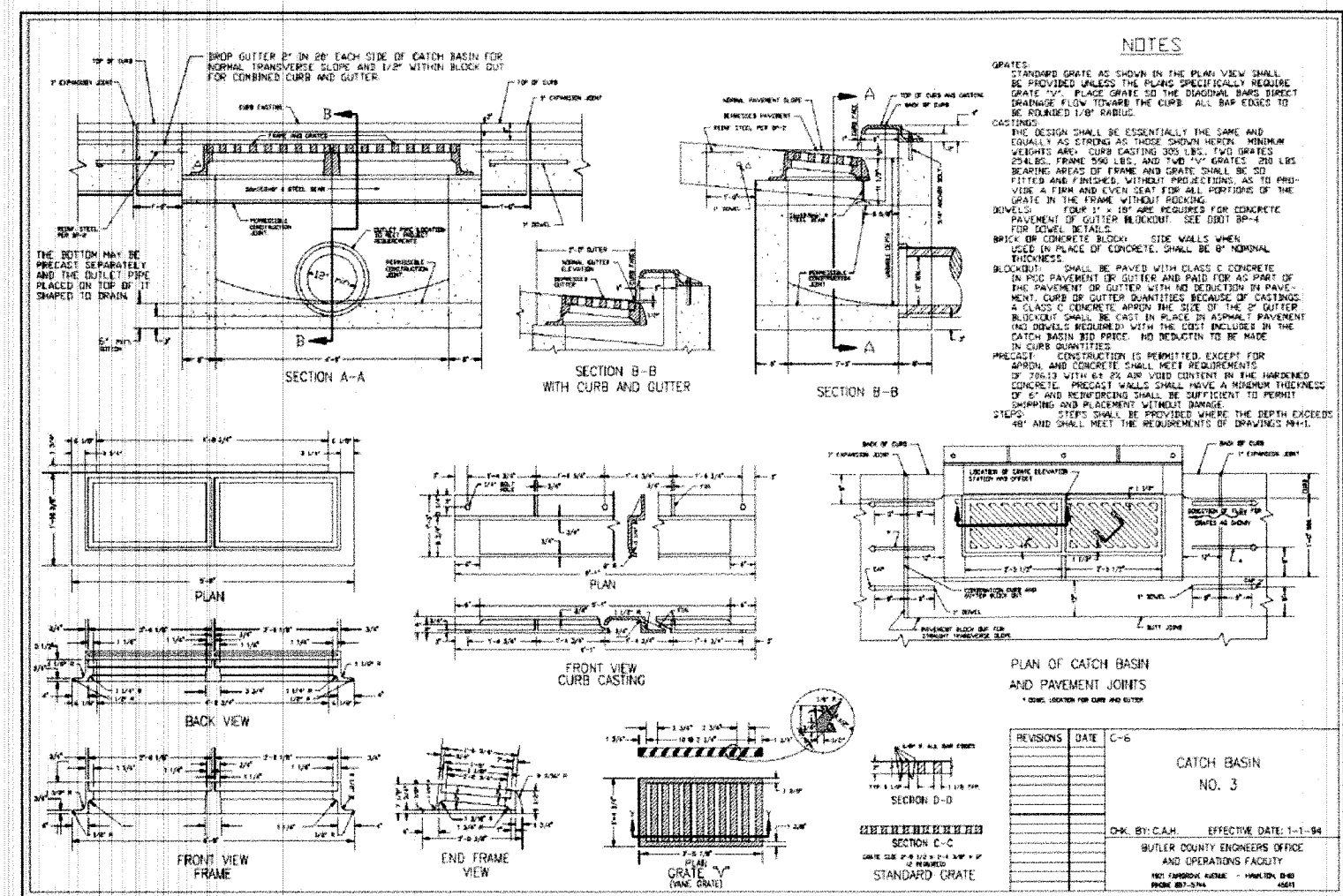
ELEVATED MANHOLE DETAIL

Butler County Water and Sewer logo and contact info: 130 HIGH STREET HAMILTON, OH 45011 TELEPHONE: 513-857-3006 FAX: 513-857-3777 6170

Project Manager RA  
Drawn By NAK  
DWG 04476064-IMP-SECTION 22  
X-Ref(s) N/A

Issue/Revision	No.	Date

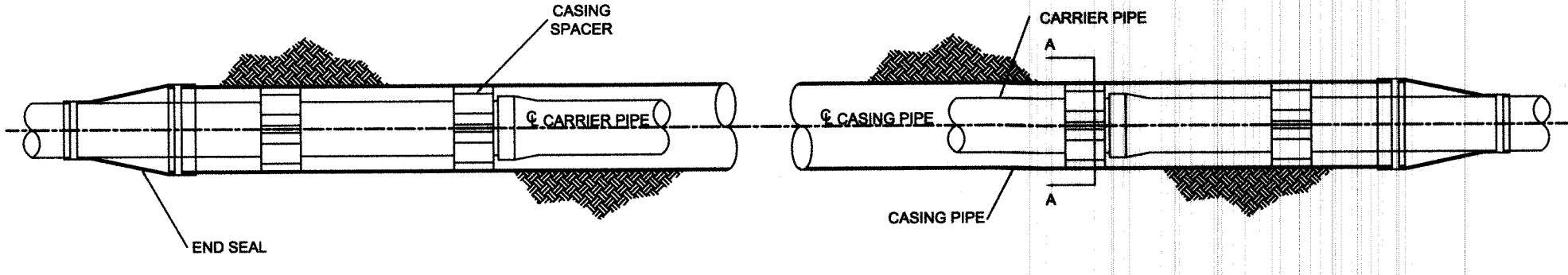
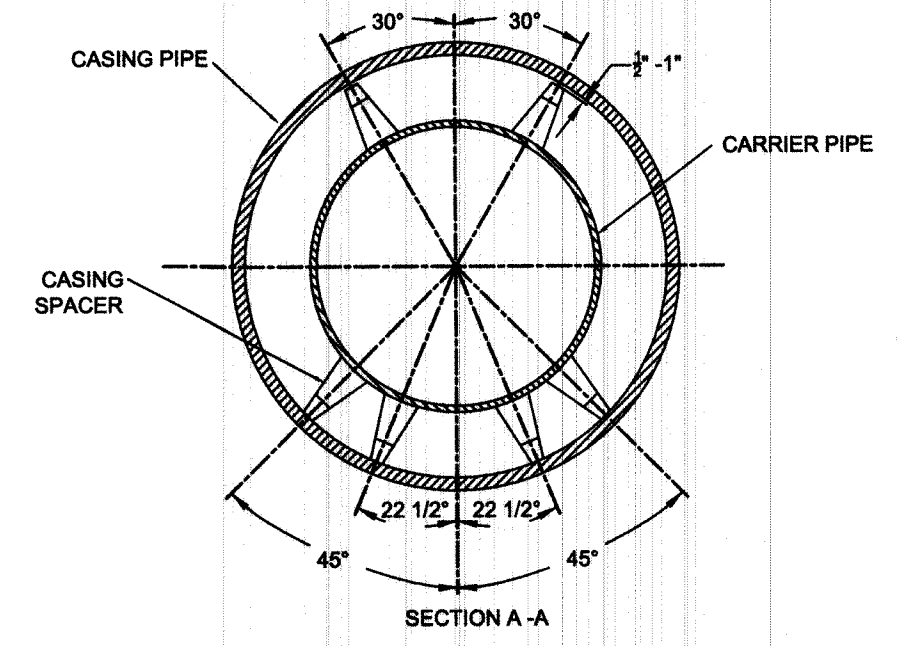
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**WINDING CREEK SECTION 22 AKA CARRIAGE HILL SECTION 22**  
SECTION 2, TOWN 2, RANGE 3  
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BUTLER COUNTY, OHIO

CASING SPACERS SHALL BE INSTALLED WITHIN ONE (1) FOOT OF EACH SIDE OF CARRIER PIPE JOINTS, WITHIN ONE (1) FOOT OF EACH END OF THE CASING PIPE AND ON 6 FOOT CENTERS THEREAFTER.

- THE CARRIER PIPE SHALL BE BRACED WITHIN THE CASING PIPE WITH STAINLESS STEEL CASING SPACERS THAT PLACE THE CARRIER PIPE IN A "RESTRAINED" POSITION TO PRECLUDE POSSIBLE FLOATATION WHILE PROVIDING 1/2" CLEARANCE BETWEEN THE TOP RUNNERS AND THE CASING PIPE.
- 
- THERE SHALL BE TWO (2) RUNNERS ON TOP AND TWO (2) RUNNERS ON BOTTOM OF CASING SPACER FOR CARRIER PIPE DIAMETERS OF 4'-12" OR TWO (2) RUNNERS ON TOP AND FOUR (4) RUNNERS ON BOTTOM FOR CARRIER PIPE DIAMETERS OF 14'-36". CASING SPACERS SHALL BE CASCADE WATERWORKS MODEL CSS.
- AT EACH END OF THE CASING PIPE, THE CARRIER AND CASING PIPE SHALL BE WRAPPED WITH CASCADE WATERWORKS MODEL CCE END SEALS.

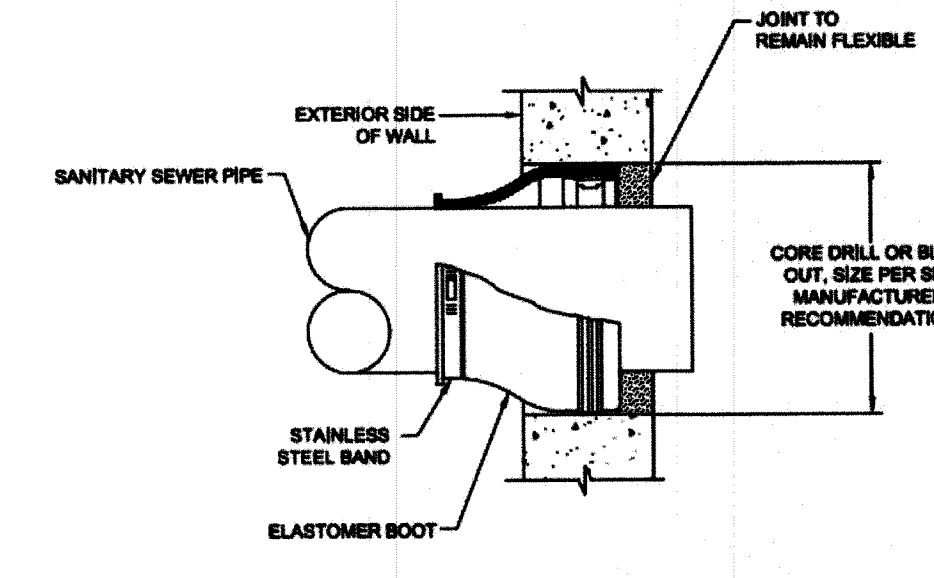


BUTLER COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

**SEWER FORCE MAIN & WATER MAIN ENCASEMENT DETAIL**

4370

**TYPE-4**



NOTE: WALL PENETRATIONS SHALL BE LOCATED WITHIN A RISER SECTION AND NOT A WALL JOINT.

**CONNECTION TO EXISTING MANHOLE**



BUTLER COUNTY WATER AND SEWER  
130 HIGH STREET  
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TELEPHONE: 513-887-3066  
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5150

**DEAD END DETAIL W/ PERMANENT F.H.**



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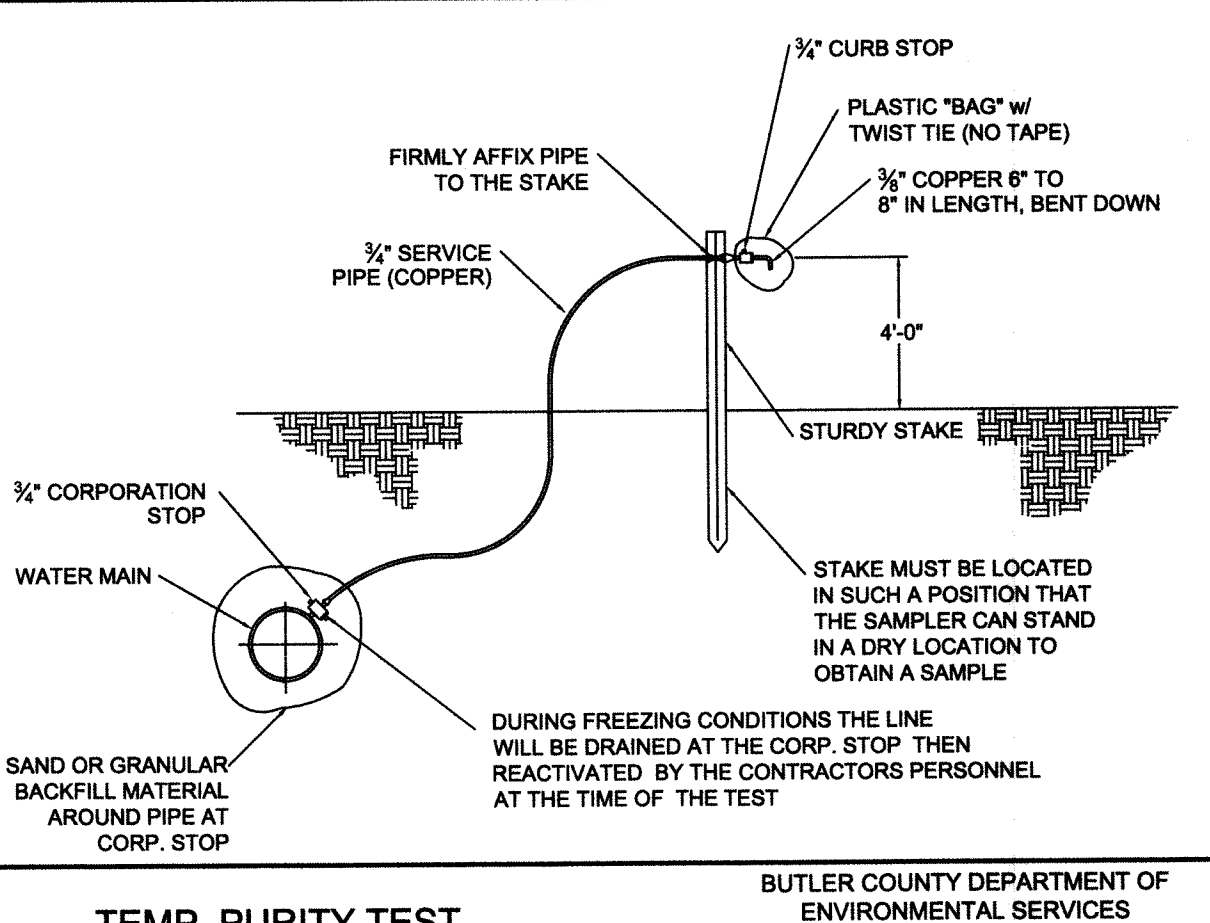
5130

**DEAD END DETAIL W/ TEMP F.H.**



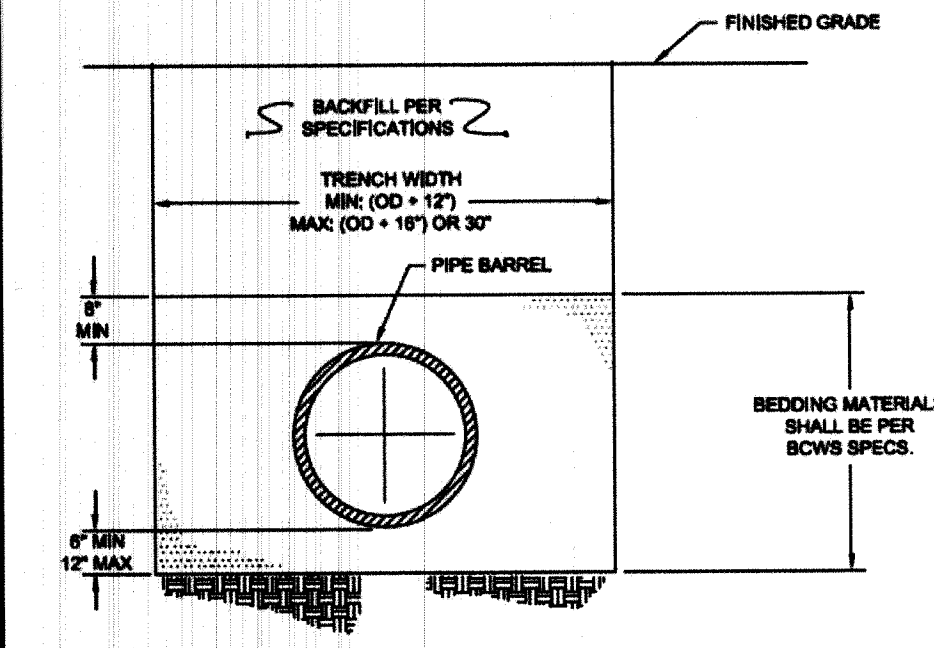
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HAMILTON, OH 45011  
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5140



BUTLER COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES  
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5260

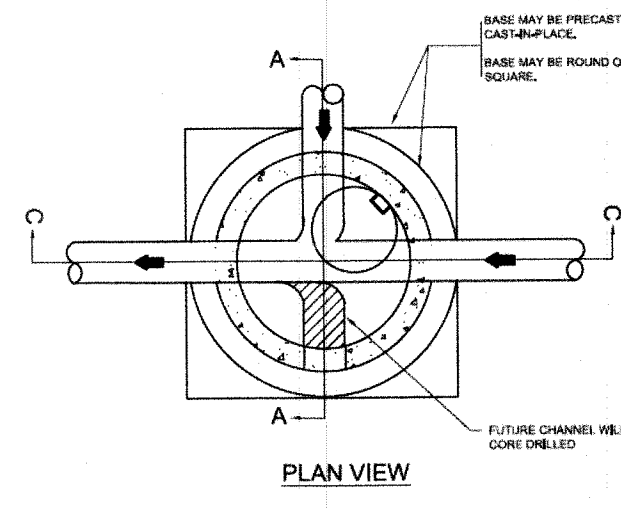


**TYPICAL TRENCH DETAIL SEWER INSTALLATION**



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6270

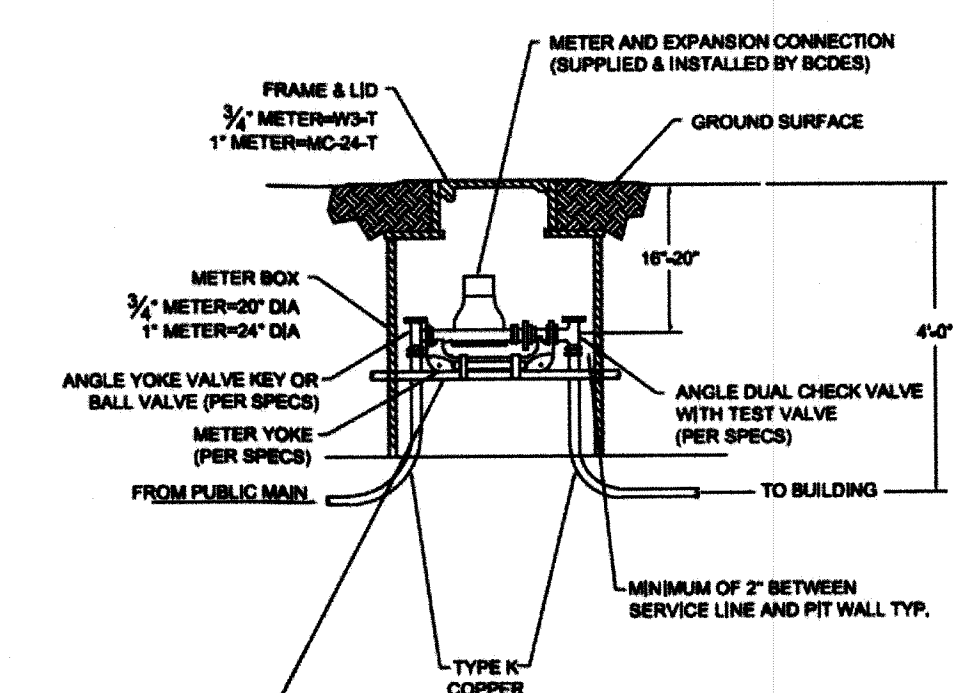


**STANDARD CAST IN-PLACE MANHOLE**



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130 HIGH STREET  
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TELEPHONE: 513-887-3066  
FAX: 513-887-3777

6130

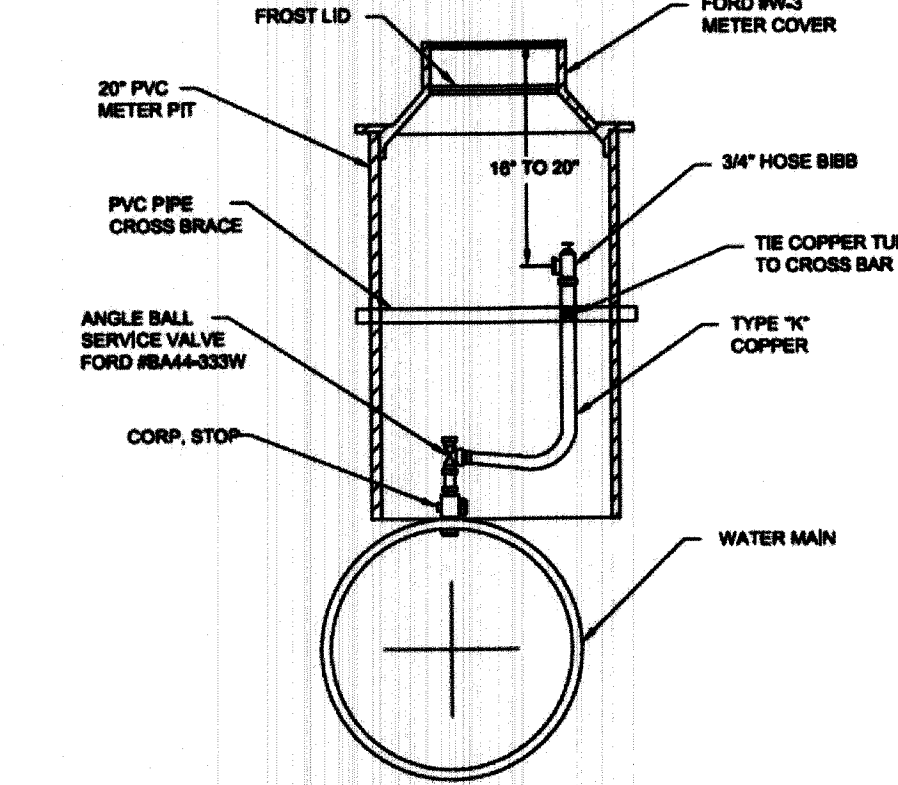


**STANDARD INSTALLATION FOR 3/4\"/>**



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5150

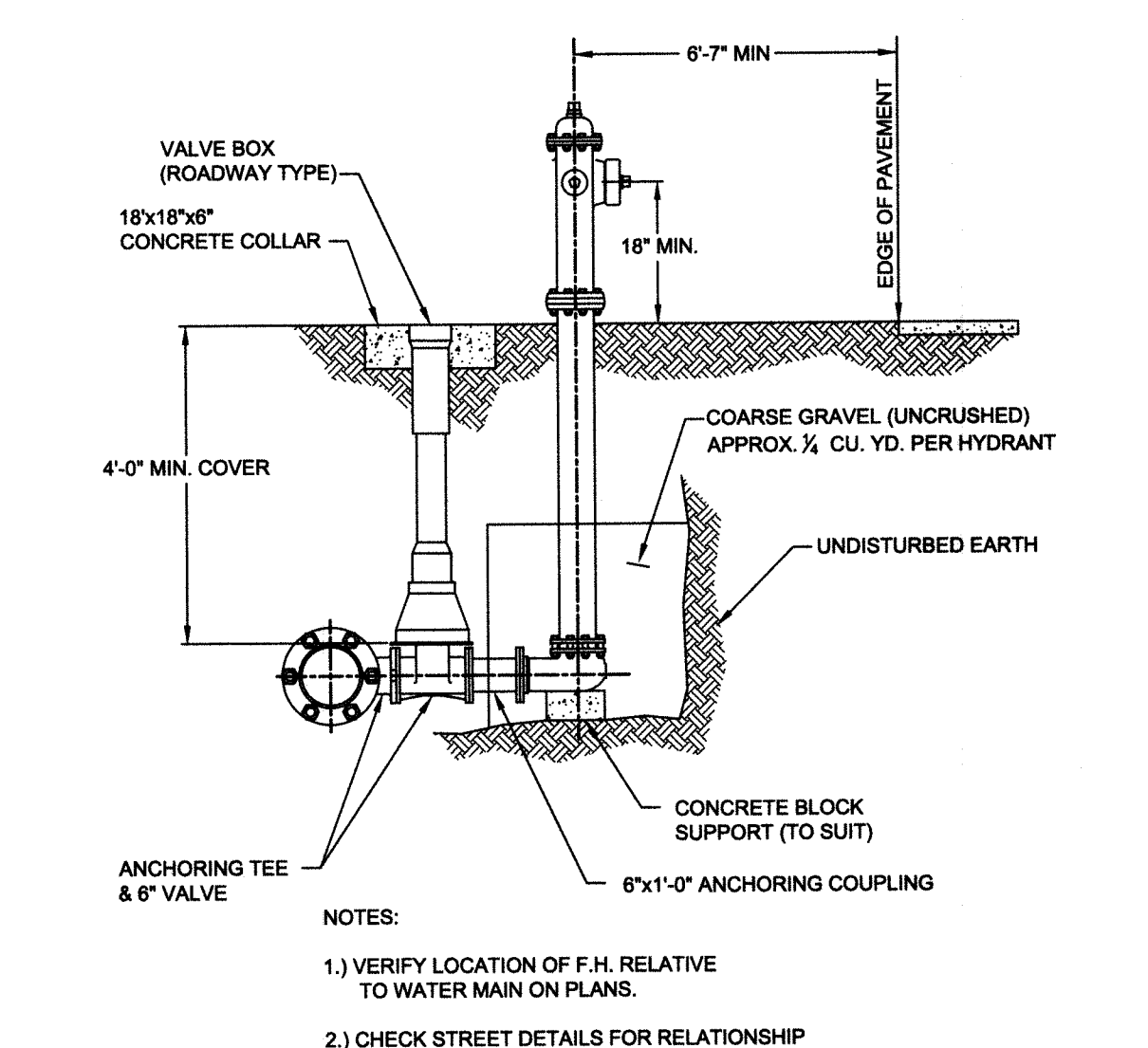


**MANUAL AIR RELEASE VALVE DETAIL**



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130 HIGH STREET  
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FAX: 513-887-3777

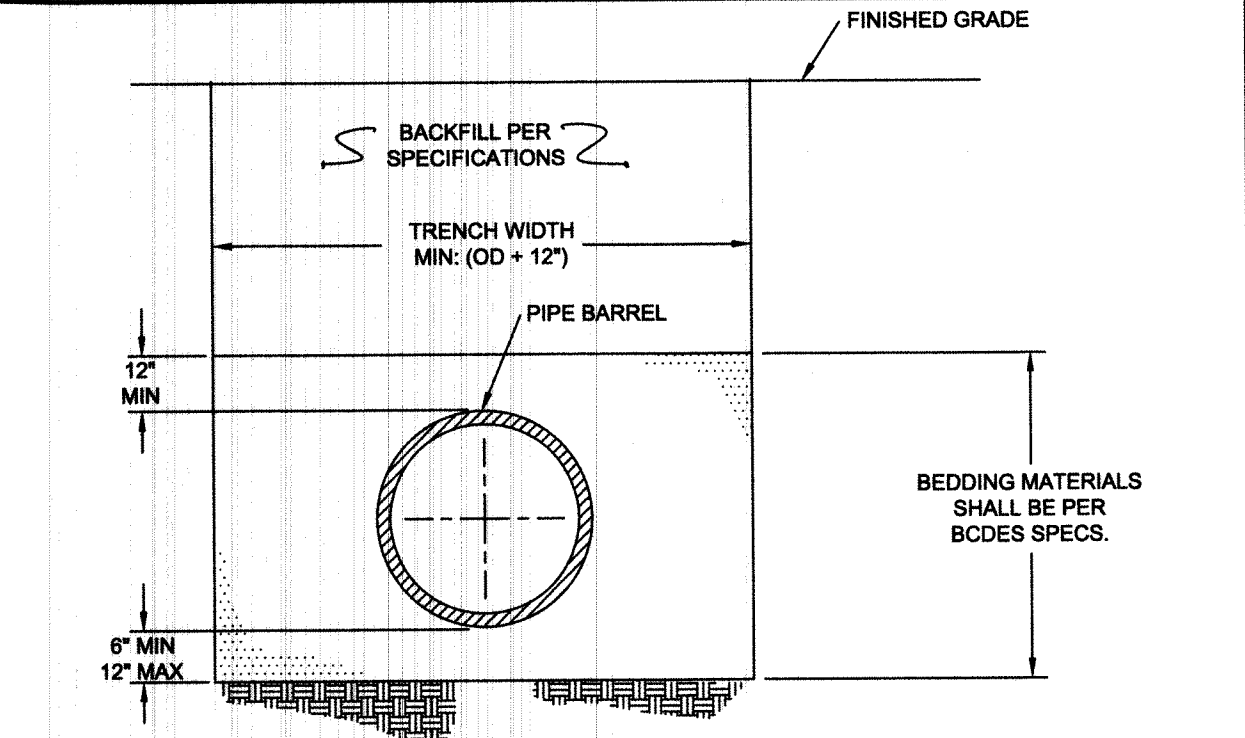
5290



**TYPICAL FIRE HYDRANT INSTALLATION**

BUTLER COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

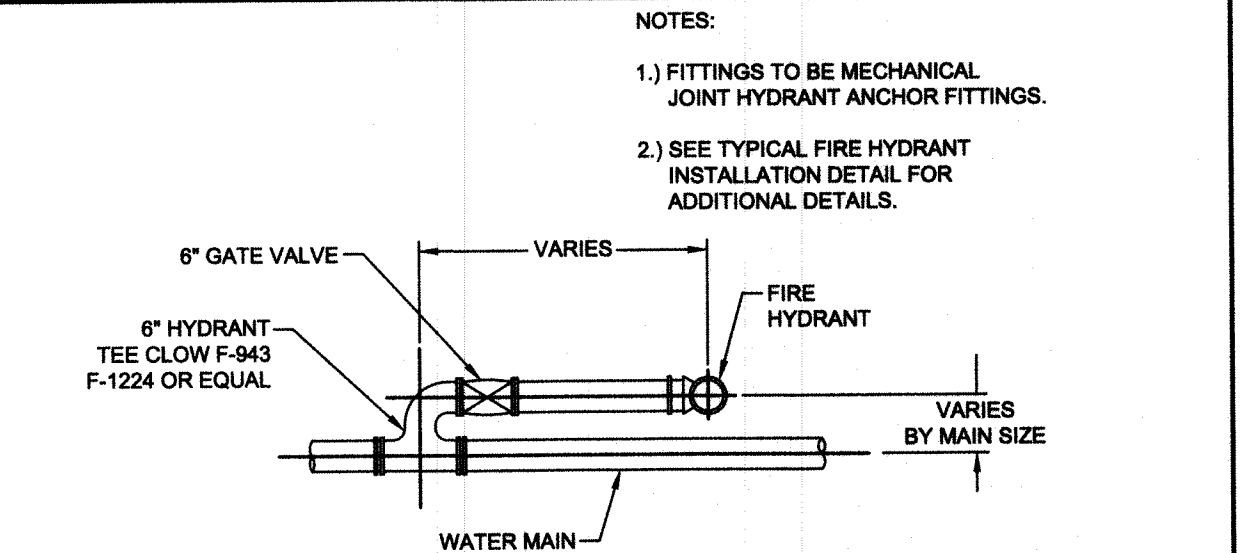
5110



**TYPICAL TRENCH DETAIL WATER MAIN INSTALLATION**

BUTLER COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

5280



**SETTING FOR HYDRANT ADJACENT TO MAIN**

BUTLER COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES  
130 HIGH STREET  
HAMILTON, OH 45011  
TELEPHONE: 513-887-3066  
FAX: 513-887-3777

5120

Project Manager RA  
Drawn By NAK  
DWG 04476064-IMP-SECTION 22  
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**WINDING CREEK SECTION 22  
AKA CARRIAGE HILL SECTION 22  
SECTION 2, TOWN 2, RANGE 3  
LIBERTY TOWNSHIP  
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