**DEVELOPER** LIBERTY LAND COMPANY, LLC. 5342 CARRIAGE HOUSE BOULEVARD LIBERTY TOWNSHIP, OHIO 45011

**OWNERS** TERRY LAND COMPANY 5342 CARRIAGE HOUSE BOULEVARD LIBERTY TOWNSHIP. OHIO 45011

LOTS 575-585, 589-592, 594, 595

NOTE: A SINGLE FAMILY RESIDENCE EXISTS ON LOT 597.

**SETBACKS** FRONT SIDE REAR AREA 5,300 S.F.

**BETTY TERRY** 5107 CARRIAGE HOUSE BOULEVARD LIBERTY TOWNSHIP, OHIO 45011

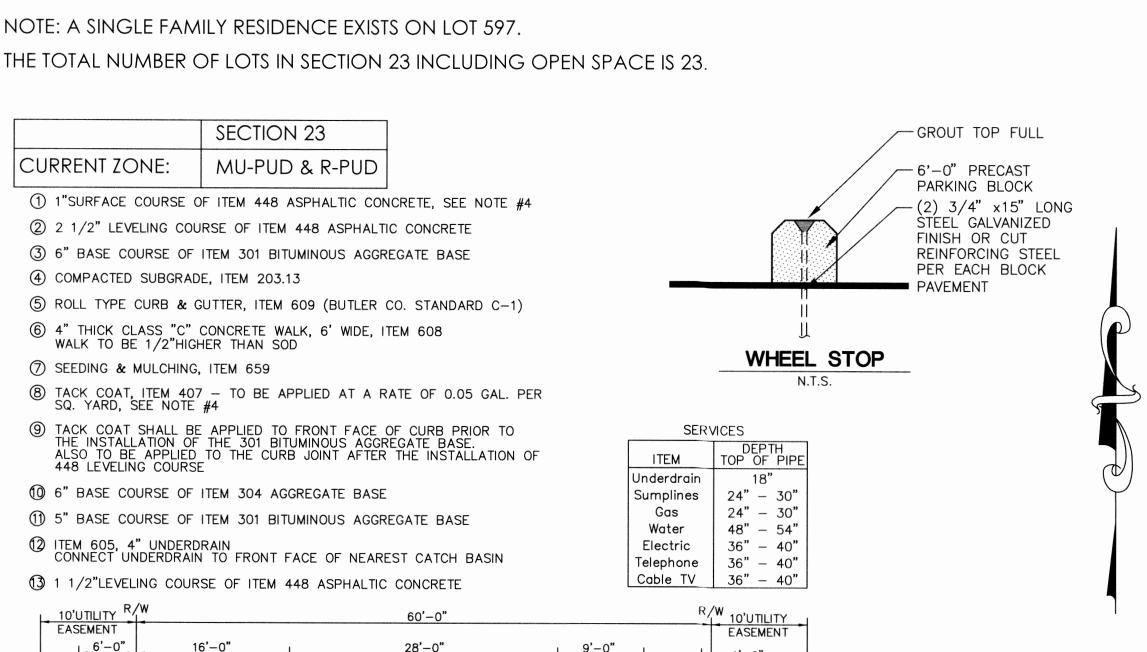
# WINDING CREEK AKA CARRIAGE HILL **SECTION 23**

MILLIKIN RD

SECTION

3 440 441 442 443 44

NOTES



SECTION 23 MU-PUD & R-PUD (1) 1"SURFACE COURSE OF ITEM 448 ASPHALTIC CONCRETE, SEE NOTE #4

- 3 6" BASE COURSE OF ITEM 301 BITUMINOUS AGGREGATE BASE

(2) 2 1/2" LEVELING COURSE OF ITEM 448 ASPHALTIC CONCRETE

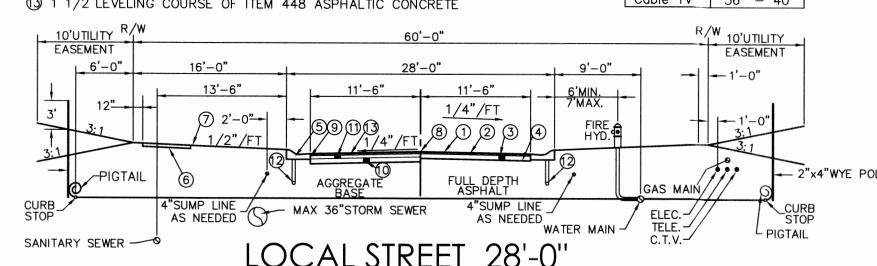
(4) COMPACTED SUBGRADE, ITEM 203.13

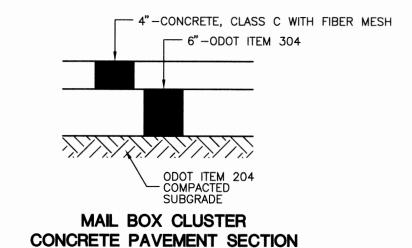
CURRENT ZONE:

SECTION

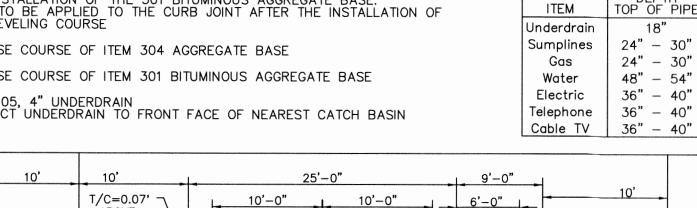
- ⑤ ROLL TYPE CURB & GUTTER, ITEM 609 (BUTLER CO. STANDARD C-1)
- (6) 4" THICK CLASS "C" CONCRETE WALK, 6' WIDE, ITEM 608 WALK TO BE 1/2"HIGHER THAN SOD
- 7 SEEDING & MULCHING, ITEM 659
- 8 TACK COAT, ITEM 407 TO BE APPLIED AT A RATE OF 0.05 GAL. PER SQ. YARD, SEE NOTE #4
- (9) TACK COAT SHALL BE APPLIED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

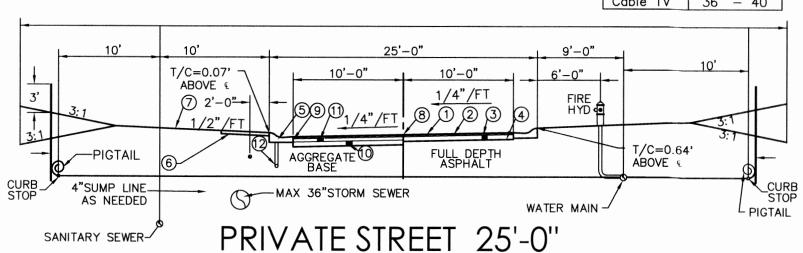


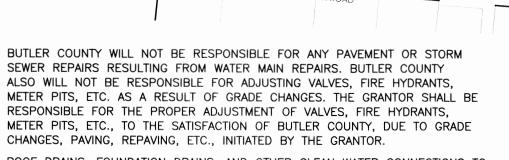


- 1 1"SURFACE COURSE OF ITEM 448 ASPHALTIC CONCRETE, SEE NOTE #4
- ② 1 1/2" LEVELING COURSE OF ITEM 448 ASPHALTIC CONCRETE
- 3 6" BASE COURSE OF ITEM 301 BITUMINOUS AGGREGATE BASE
- (4) COMPACTED SUBGRADE, ITEM 203.13
- (5) ROLL TYPE CURB & GUTTER, ITEM 609 (BUTLER CO. STANDARD C-1)
- 6 4" THICK CLASS "C" CONCRETE WALK, 4' WIDE, ITEM 608 WALK TO BE 1/2"HIGHER THAN SOD
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- (1) 6" BASE COURSE OF ITEM 304 AGGREGATE BASE
- 1 4" BASE COURSE OF ITEM 301 BITUMINOUS AGGREGATE BASE
- CONNECT UNDERDRAIN TO FRONT FACE OF NEAREST CATCH BASIN



SERVICES





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"

BUTLER COUNTY WATER AND SEWER DEPARTMENT. 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.

PLANS FOR THE DEVELOPMENT WHICH WILL BE KEPT ON FILE IN THE OFFICE OF THE

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.

THE CONTRACTOR SHALL ALSO PROVIDE OTHER EROSION CONTROL MEASURES

10 LBS. 12-12-12 FERTILIZER PER 1000 SQ. FT. 2 OR 3 BALES OF STRAW PER 1000 SQ. FT.

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 1/2 LB. PER 1000 SQ. FT. KENTUCKY BLUEGRASS 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 SOD: TO BE STAKED IN PLACE.

335 334 333 332 321

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 BUTCHER COUNTY REQUIREMENTS AND TANDARDS FOR SUBDIVISIONS. WHEN IN CONFLICT, THE COUNTY REQUIREMENTS SHALL PREVAIL

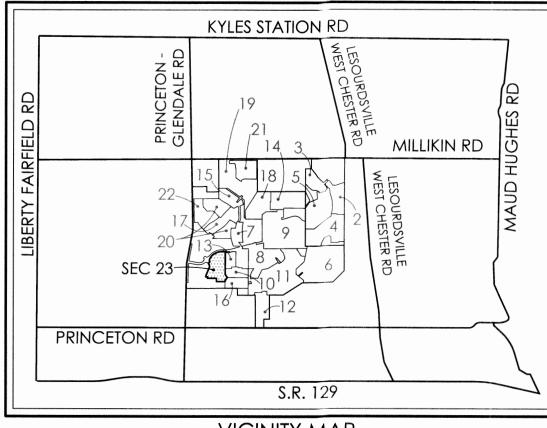
MILLIKIN RD

206 OPEN SPACE

215 216 217

SCALE IN FEET

- 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.
- ALL TRENCHES WITHIN THE RIGHT OF WAY AND 10'UTILITY EASEMENTS SHALL BE COMPACTED AND BACKFILLED IN ACCORDANCE WITH ITEMS 203 AND 603 IN THE
- 4. SURFACE COURSE (ITEM 448) AND TACK COAT (ITEM 407 ARE TO BE APPLIED NO SOONER THAN NINE (12) 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.
- 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 ÚTILITY.
- 6. DEVELOPER SHALL BE RESPONSIBLE FOR THE INSTALLATION OF CONDUITS FOR THE FULL WIDTH OF THE PUBLIC RIGHT OF WAY AT A DEPTH OF 38"FOR USE BY THE ELECTRIC, TELEPHONE AND CABLE TV SERVICES. THE LOCATION OF THESE LINES SHALL BE COORDINATED WITH UTILITY COMPANIES BY THE
- 7. SANITARY LATERALS SHALL BE EXTENDED BEYOND THE LIMITS OF THE UTILITY EASEMENTS, BUT NOT TO EXCEED 12' FROM THE RIGHT OF WAY LINE.
- 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.



VICINITY MAP N.T.S.

# **GENERAL NOTES**

WHICHEVER IS GREATER.

CONCRETE PIPE, ALL DIA.

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

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.

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

SUMP COLLECTOR LINES SHALL BE CONSTRUCTED SDR 35 PVC, ARMCO 2000 OR APPROVED EQUAL. A PRE-CONSTRUCTION MEETING IS REQUIRED WITH THE BUTLER COUNTY ENGINEER'S

OFFICE PRIOR TO THE START OF CONSTRUCTION. 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 SANITARY LATERALS SHALL BE EXTENDED TO AT LEAST TEN (10) FEET BEYOND

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

THE PROPERTY/ RIGHT-OF-WAY LINE OR TO THE EDGE OF THE EASEMENT,

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 SHALL BE PER 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.

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

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

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. 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.

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

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

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.

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.

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

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. BUTLER COUNTY ASSUMES NO MAINTENANCE RESPONSIBILITY FOR PRIVATE DRIVES.

# **INDEX**

# DESCRIPTION

- **COVER SHEET**
- LAYOUT PLAN
- UTILITY PLAN & STREET DETAILS
- **GRADING & SWP 3**
- **PROFILES**
- STANDARD DETAILS



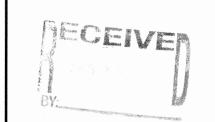


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Issue/Revision No. Date 10/09/18 COMMENT 11/27/18 **COMMENTS** 

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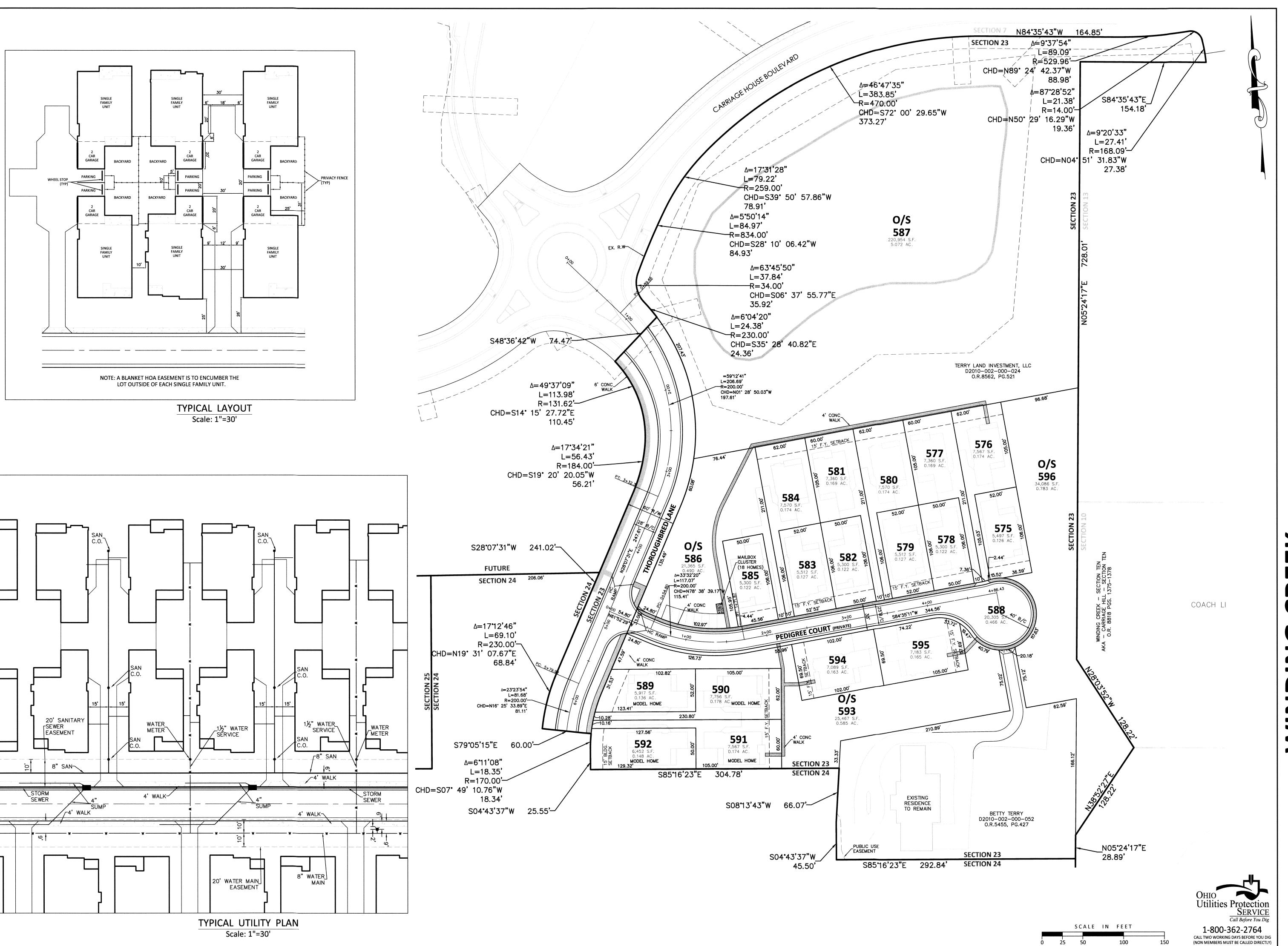


Sheet Title

COVER SHEET

Project Number 04476.00 AS NOTED Drawing Scale

Sheet Number File Number



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**Project Manager** Drawn By 04476064-LAY-SECTIONS 23 04476064-TOP-CH MI BDY-28\_3861, IMP SECTIONS 23&24

Issue/Revision No. Date

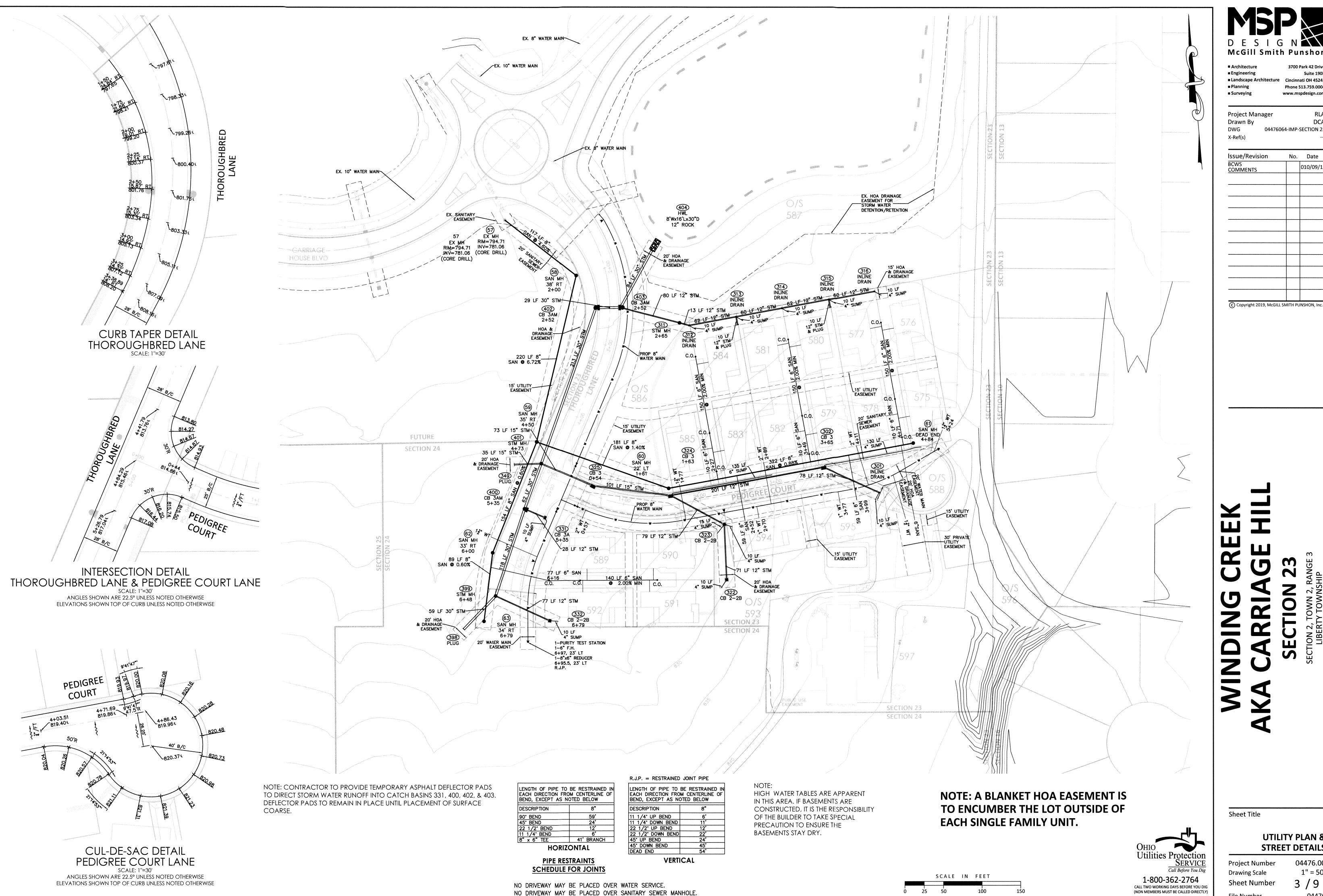
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**LAYOUT PLAN** 

04476.06 **Project Number** 1" = 50' **Drawing Scale** 2/9 **Sheet Number** 04476

File Number

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**Sheet Title** 

# **UTILITY PLAN &** STREET DETAILS

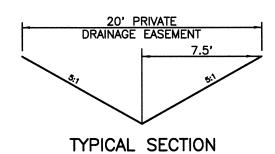
04476.00 **Project Number** 1" = 50' **Drawing Scale Sheet Number** 

File Number

## GENERAL NPDES NOTES MAINTENANCE OF CONTROLS: 1. PROJECT INVOLVES THE CONSTRUCTION AND ASSOCIATED 1. SILT FENCE AND FILTER BARRIERS SHALL BE INSPECTED INFRASTRUCTURE FOR A LOW DENSITY SINGLE FAMILY SUBDIVISION. IMMEDIATELY AFTER EACH RAINFALL AND DAILY DURING A PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE 2. AREA TO BE DISTURBED IS APPROXIMATELY 10 ACRES. 3. APPROXIMATELY 4.2 OF IMPERVIOUS SURFACE IS PROPOSED 2. SHOULD THE FABRIC ON A FENCE OR FILTER BARRIER RESULTING IN 42 PERCENT OF IMPERVIOUSNESS. DECOMPOSE OR BECOME INEFFECTIVE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY. 4. PRE-CONSTRUCTION RUNOFF COEFFICIENT IS 0.30. POST-CONSTRUCTION RUNOFF COEFFICIENT IS 0.56. 3. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. 5. THE PRIMARY SOIL TYPE IS RUSSELL - MIAMIAN SILT LOAM. 4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE FENCE 6. THE PRIOR LAND USE IS FARM CROPS. OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE AND PREPARED FOR 7. STONY RUN IS THE FIRST NAMED STREAM RECEIVING RUNOFF FROM THIS SITE. RUNOFF IS ULTIMATELY RECEIVED BY GREGORY 8. NPDES STORM WATER GENERAL PERMIT NUMBER: 1GC06947\*AG 1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES BEFORE UPSLOPE CLEARING 9. PROJECT DURATION: THRU 2021 2. GRADING AND STRIPPING OF THE REMAINING AREAS OF THE DEVELOPMENT SITE OR POOL WSL=789.82 100 TR WSL=792.1 PROJECT AREA. LIBERTY LAND COMPANY, LLC. 10. SITE OPERATOR: 5342 CARRIAGE HOUSE BOULEVARD 3. INSTALL STORMWATER MANAGEMENT SYSTEM. LIBERTY TOWNSHIP, OH 45011 4. TEMPORARY VEGETATIVE STABILIZATION OF EROSION AND SEDIMENT CONTROL (513) 894-4455 MEASURES. 5. GRADING OF SUBDIVISION STREET. 6. INSTALLATION OF ALL UTILITIES. 11. SWPPP CONTACT: LIBERTY LAND COMPANY, LLC. 7. SITE CONSTRUCTION. 5342 CARRIAGE HOUSE BOULEVARD LIBERTY TOWNSHIP, OH 45011 8. FINAL GRADING, STABILIZATION, AND LANDSCAPING. (513) 894-4455 9. REMOVAL OF EROSION AND SEDIMENT CONTROLS MEASURES. EXISTING POND 71 TO BE UTILIZED FOR STORM WATER QUALITY & QUANTITY CONTROL 12. UNLESS OTHERWISE NOTED, STANDARDS AND SPECIFICATIONS DUE TO THE DYNAMICS AND STAGING OF EARTH MOVEMENT. CONTRACTOR MAY ESTABLISHED IN THE LATEST EDITION OF THE OHIO DEPARTMENT NEED TO ALTER THE EROSION CONTROL MEASURES AS SHOWN HEREON. CONTRACTOR OF NATURAL RESOURCES "RAINWATER AND LAND DEVELOPMENT" TO APPLY (B.M.P.) BEST MANAGEMENT PRACTICES IN ORDER TO CONTROL THE RUNOFF OF SILT AND SEDIMENT. MANUAL. CURRENT EDITION, SHALL GOVERN THE EROSION AND SEDIMENT CONTROL INSTALLATIONS SPECIFIED ON THIS PLAN. ADDITIONAL SILT FENCE MAY BE REQUIRED AS SITE CONDITIONS DETERMINE. 13. THE DEVELOPER AND CONTRACTOR SHALL ABIDE BY THE RULES IF A TEMPORARY STOCKPILE IS CREATED, SILT FENCE SHALL BE PLACED AT THE TOE AND REGULATIONS SET FOURTH IN THE OHIO EPA PERMIT NO. OF SLOPE OHCOOOOO5- "AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" UNDER THE NATIONAL SILT FENCE SUBJECT AREA IS TRIBUTARY TO EXISTING POND 72 TO BE UTILIZED FOR STORM WATER QUALITY POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES). PRIOR TO COMMENCEMENT OF CONSTRUCTION OPERATIONS, ALL ROCK CHECK -SEDIMENTATION AND EROSION CONTROL FEATURES SHALL BE IN DAM (TYP) 15. SEDIMENT CONTROL STRUCTURES SHALL BE FUNCTIONAL THROUGHOUT THE COURSE OF EARTH DISTURBING ACTIVITY. AND SHALL CONTINUE TO FUNCTION UNTIL THE UP SLOPE DEVELOPMENT AREA IS RESTABLISHED. AS CONSTRUCTION PROGRESSES AND THE TOPOGRAPHY IS ALTERED, APPROPRIATE CONTROLS MUST BE CONSTRUCTED OR EXISTING CONTROLS ALTERED TO ADDRESS THE CHANGING DRAINAGE PATTERNS. 16. ALL GROUND SURFACE AREAS THAT HAVE BEEN EXPOSED OR LEFT BARE AS A RESULT OF DEMOLITION AND ARE TO FINAL GRADE AND TO REMAIN SO, SHALL BE SEEDED AND MULCHED AS SOON AS PRACTICAL IN ACCORDANCE WITH STATE OF OHIO 3:1 SLOPE SPECIFICATION ITEM 659, AND IN ACCORDANCE WITH THE CONDITIONS OF THE NPDES STORM WATER GENERAL PERMIT.

# **SUMP LINE SCHEDULE**

# LOT NUMBER DIRECTION SUMP TO LINE TRIB. TO CB 302 SUMP TO LINE TRIB. TO CB 316 576 SUMP TO LINE TRIB. TO CB 315 SUMP TO LINE TRIB. TO CB 302 SUMP TO LINE TRIB. TO CB 302 579 SUMP TO LINE TRIB. TO CB 314 580 SUMP TO LINE TRIB. TO CB 313 SUMP TO LINE TRIB. TO CB 324 SUMP TO LINE TRIB. TO CB 324 SUMP TO LINE TRIB. TO CB 312 585 SUMP TO LINE TRIB. TO CB 324 SUMP TO LINE TRIB. TO CB 331 SUMP TO LINE TRIB. TO CB 323 SUMP TO LINE TRIB. TO CB 322 592 SUMP TO LINE TRIB. TO CB 332 594 SUMP TO LINE TRIB. TO CB 323 SUMP TO LINE TRIB. TO CB 301



EMERGENCY FLOOD ROUTE

PROPOSED GRADING SHOWN HEREON ARE DEVELOPER GRADES.

LOT DRAINAGE ARROWS SHOWN HEREON ARE BASED ON DIRECTION OF DRAINAGE AFTER COMPLETION OF RESIDENTIAL CONSTRUCTION.

ESTABLISH VEGETATION ON ALL BARE AREAS AS PER O.E.P.A. N.P.D.E.S. REGULATIONS.

CONTRACTOR IS RESPONSIBLE FOR N.P.D.E.S. INSPECTIONS DURING CONSTRUCTION PERIOD.

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.





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**Sheet Title** 

SERVICE

Call Before You Dig

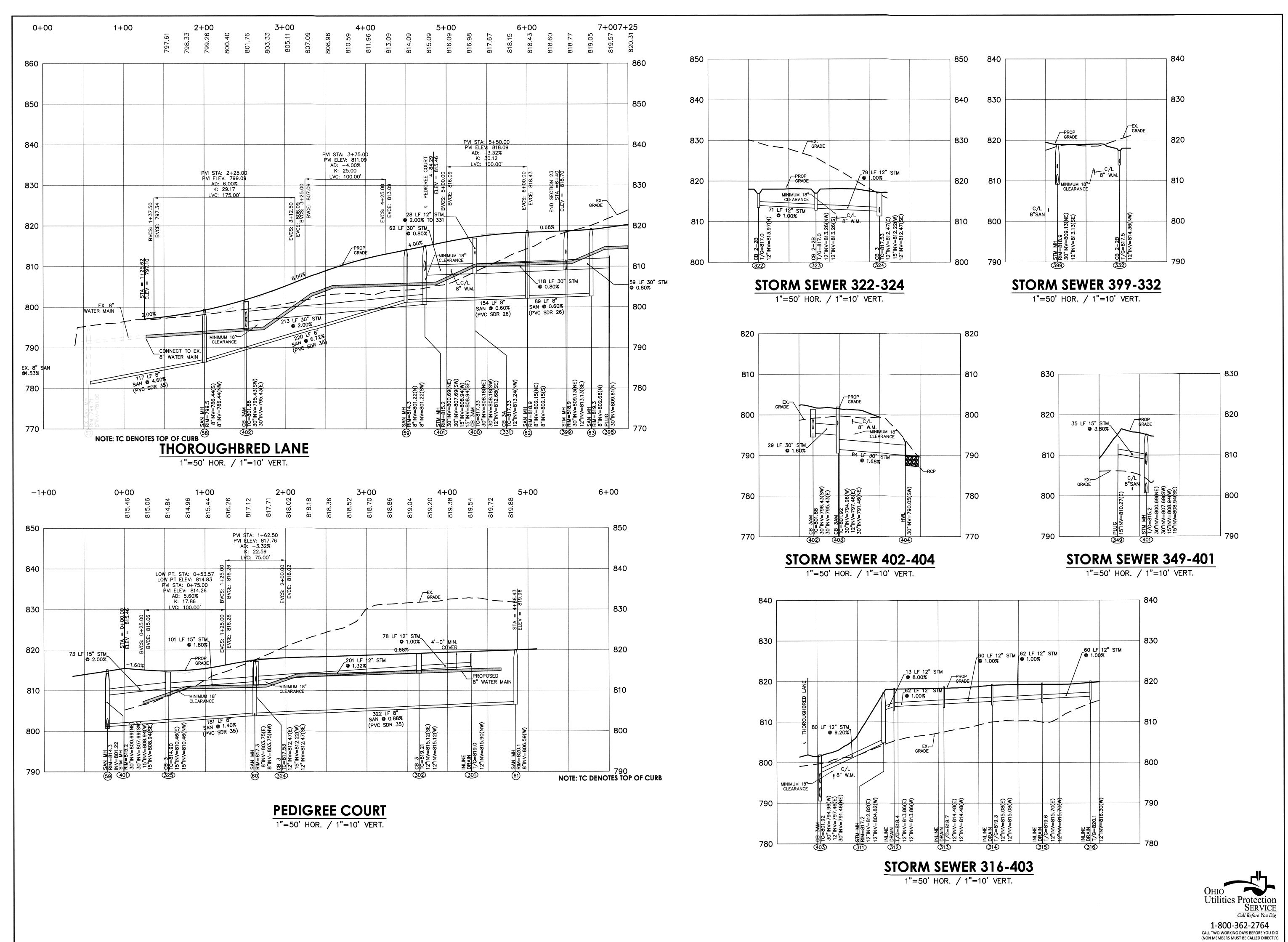
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**GRADING & SWP3** 

04476.00 **Project Number** 1" = 50' **Drawing Scale** 4/9 **Sheet Number** 

File Number

04476





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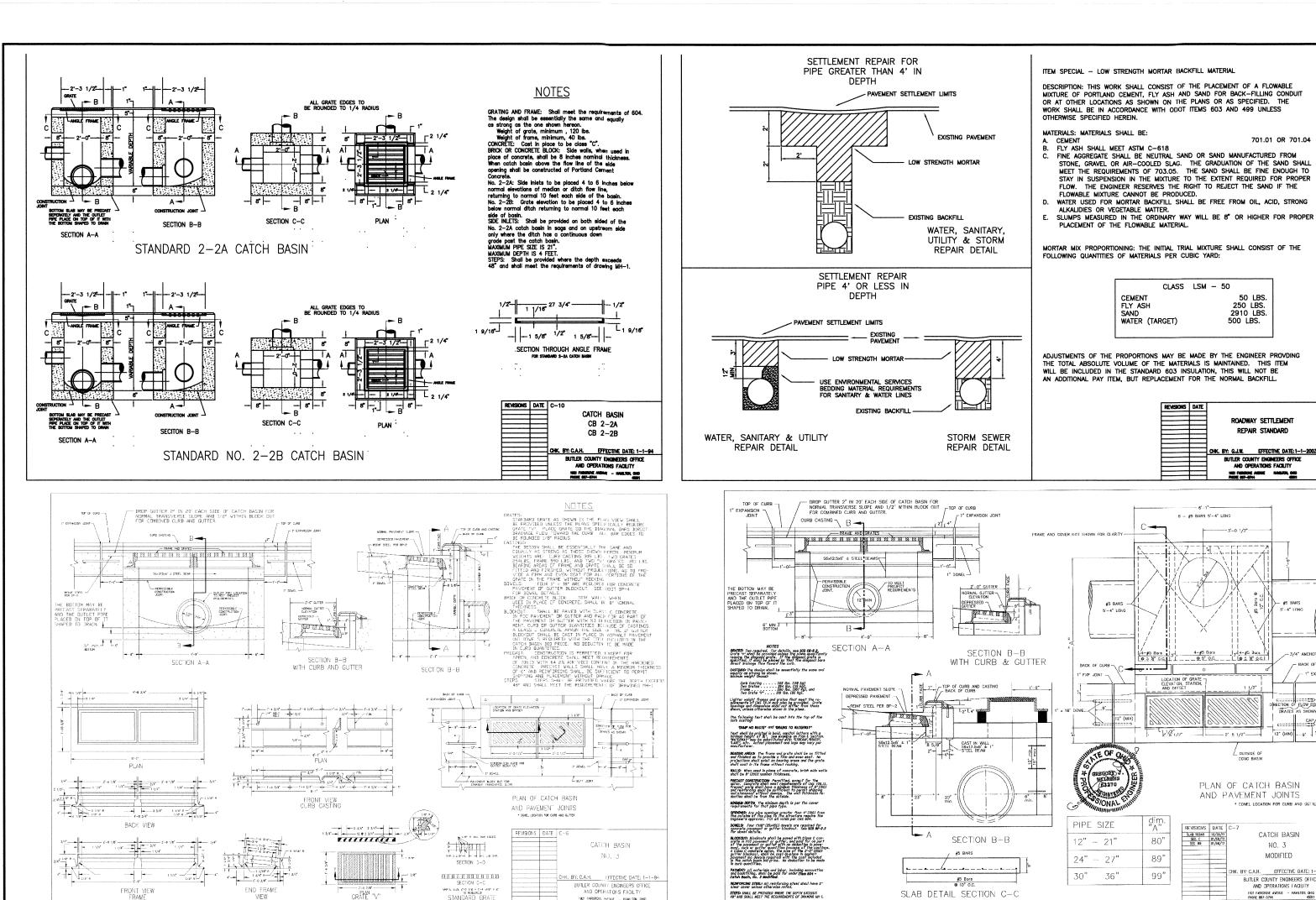
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**PROFILES** 

04476.00 **Project Number** AS NOTED **Drawing Scale** 5/9 **Sheet Number** File Number

04476



MALES

LOCATION OF SPATE ELEVATION STATION

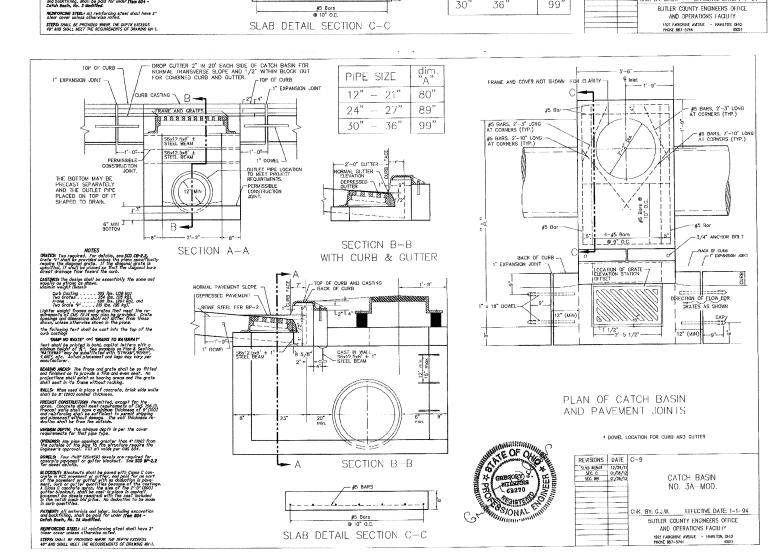
PLAN OF CATCH BASIN

SECTION A-A

SECTION B-B

WITH CURB & GUTTER

TYP 1 1/2 - 1 1/8 TYP.
SECTION D D

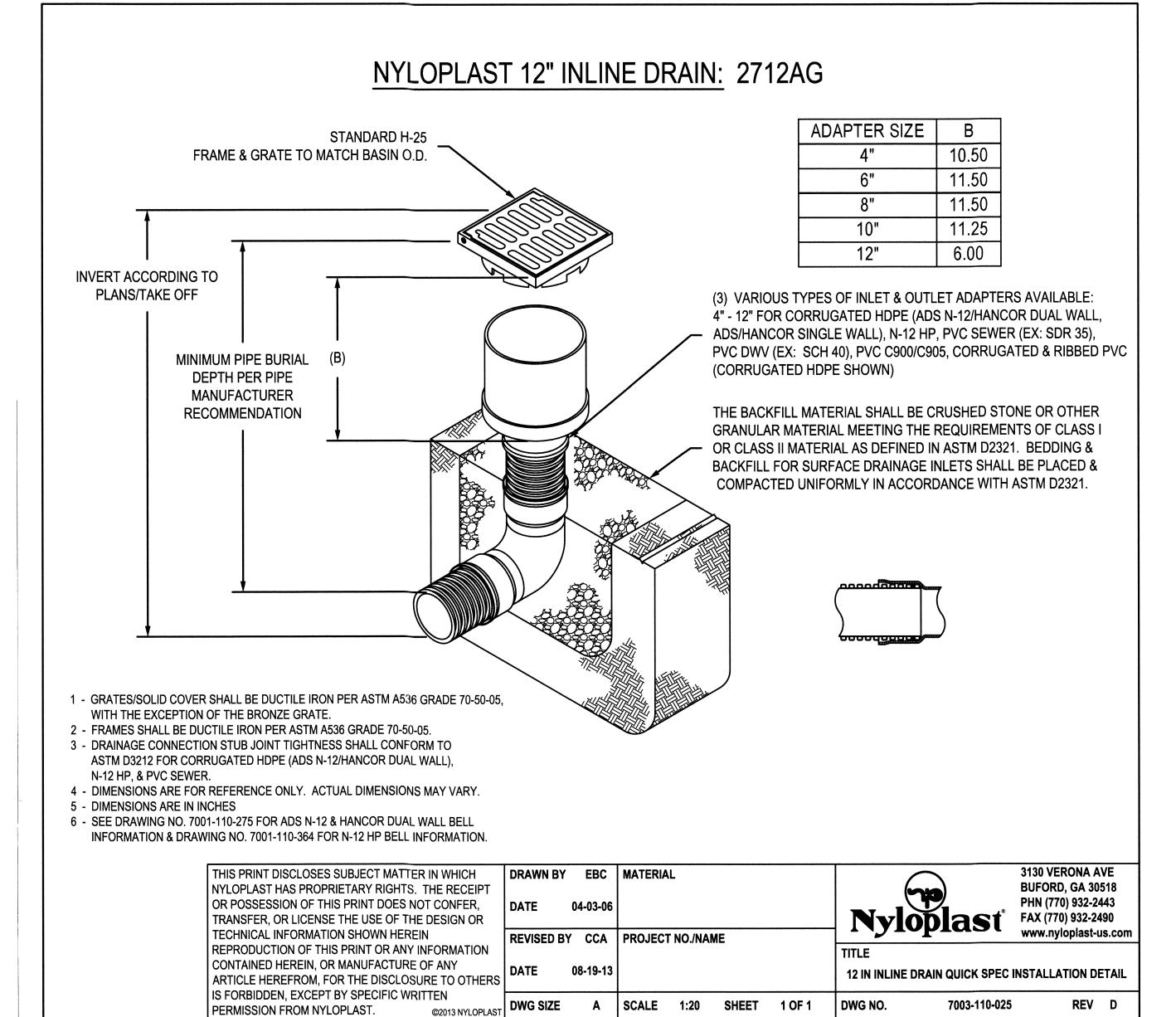


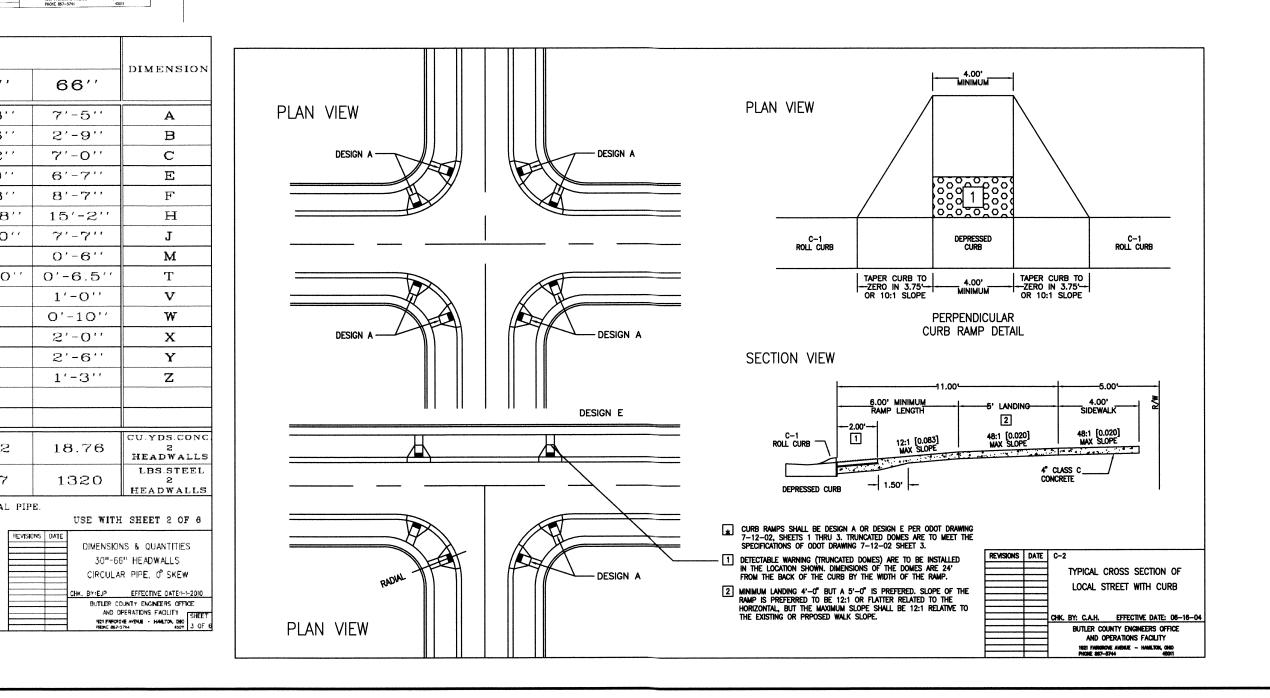
THIO, PX2 "T T

CATCH BASIN

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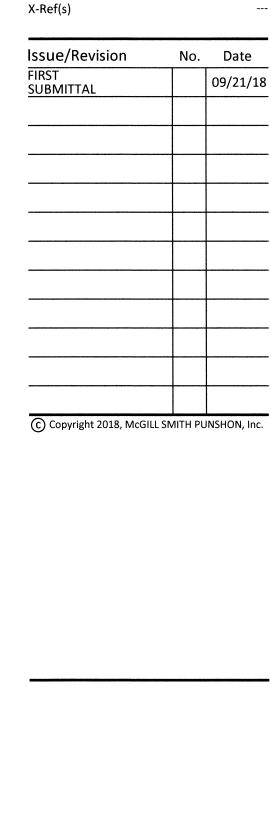
FRONT VIEW END VIEW END VIEW CURB CACTI	7	CHK. BY: C.A.H. E. FECTIVE DATE: "-1—94  BUTLER COUNTY ENGINEERS OFFICE  AND OPERATIONS FACULTY  1931 FARRONS ANNUE - HANLED 340  PROF. 867-3744	PAYBERT All, materials and loger, and took officials, and took officials, and to point for its point for cover cales at the wise and stay of the cover cales at the wise and stay of the cover cales at the wise and stay of the coverage when the coverage with the coverage	otael shall hove 2"	(	#5 Bors \$10° O.C. SLAB DETAIL SEC	TION C-C	Constitution marining	C4	SY: G.J.W. EFFECTIVE DATE BUTLER COUNTY ENGINEERS OF AND OPERATIONS FACILITY 1921 FARGROWS AVERUE - HAMILTON, PHONE 867-5744	FFICE Y
B Q				DIAMETER OF PIPE							
± ∠w		(A)	DIMENSION	30′′	36''	42''	48''	54''	60''	66′′	DIMENS
x x		2" TYP.	A	3'-9''	4'-4''	4'-11''	5'-6''	6'-1''	6'-8''	7'-5''	A
	8 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ROUGHENED V	В	1'-3''	1'-6''	1'-9''	2'-0''	2'-3''	2'-6''	2'-9''	В
90 } r		N JOINT TO	С	3'-6''	4'-0''	4'-7''	5'-1''	5′-8′′	6'-2''	7'-0''	С
30			E	3′-1′′	3'-8''	4'-3''	4'-10''	5'-5''	6'-0''	6'-7''	E
		(N)	F	4'-4''	5'-0''	5'-8''	6'-4''	7'-0''	7'-8''	8'-7''	F
В	(P) (H) (G)	WING SECTION 30" TO 60" CIRCULAR PIPE	H	7'-6''	8'-8''	10'-0''	11'-2''	12'-6''	13'-8''	15′-2′′	H
J E W	SECTION A-A	30" TO 72" NON-CIRCULAR PIPE	J	3'-9''	4'-4''	5'-0''	5'-7''	6'-3''	6'-10''	7'-7''	J
PLAN VIEW	2" TE	- Z - W - X - 1	М		<del></del>	- <del></del>	-5''	Т	T	0'-6''	M
E E	BORV F	(A) (B)	T	0'-3.5''	0'-4.0''		0'-5.0''	0'-5.5''	0'-6.0''	0'-6.5''	T
		2" TYP	V				-8''			1'-0''	V
		ROUGHENED CONSTRUCTION C	W				-8''			2'-0''	W X
6''	# + + + + +   <del> </del>	1 1-0 M	Y				-O''			2'-6''	Y
	# # # # # # # # # # # # # # # # # # #	4"J	Z							1'-3''	Z
	M N P R	P N								1 0	
	SECTION B-B	WING SECTION 66" TO 108" CIRCULAR PIPE									
© ∰ ® © FRONT ELEVATION ENER	GY DISSIPATION - 12" -		CU.YDS.CONC. 2 HEADWALLS	3.36	4.30	5.35	6.53	7.82	9.22	18.76	CU.YDS.C 2 HEADWA
BLOC	GY DISSIPATION KS (OPTIONAL)	DIA. 30" 36" 42" 48" 54" 60" Y 21" 24" 27" 30" 33" 36"	LBS.STEEL 2 HEADWALLS	281	363	430	496	583	687	1320	LBS.ST 2 HEADWA
(1) DIAMETER OF CIRCULAR PIPE OR SPAN OF NON-CIRCULAR 1 (2) DIAMETER OF CIRCULAR PIPE OR RISE OF NON-CIRCULAR P	PIPE		DIMENSIONS AND	QUANTITIES AR	E BASED ON CON	CRETE PIPE AND	WILL VARY SLIGE	ITLY FOR CORRU	GATED METAL PIF		
3. CILL APPLIES TO 66" DIAMETER AND GREATER. (CIRCULAR F 4. SEE CURRENT STANDARD DRAWINGS FOR DIMENSIONS, QUANT		(LAYOUT AND STEEL PATTERN) REVISIONS DATE							SEVIS	USE WIT:	H SHEET 2 C
5. DIMENSIONS FROM FACE OF CONCRETE TO STEEL SHALL BE 6. ENCIRCLED LETTERS INDICATE STEEL BAR LOCATIONS	2" CLEAR DISTANCE.	PIPE CULVERT HEADWALLS								DIMENSIC	ONS & QUANTITIE
7. BARS B C ,G P ,W (V ARE SPACED 1'-0" O.C. ALL OTHE 8. BARS B AND V ARE PLACED IN ORDER OF INCREASING LEN	R BARS SHALL BE EVENLY SPACED. IGTHS BEGINNING AT THE END OF EACH WING	0° SKEW 30" - 56"									56" HEADWALLS AR PIPE, O <sup>®</sup> SKE
9 BARS CARE PLACED IN ORDER OF INCREASING LENGTHS, B 10 HEADWALLS LOCATED AT EDGE OF SHOULDER SHALL BE PA	EGINNING AT THE TOP OF EACH WING.	CHK. 9Y:EJP EFFECTIVE DATE1-1-2010								CHK. BY:EJP	EFFECTIVE DATES
11.APRON BETWEEN WINGS SHALL BE SLOPED IN DIRECTION OF HEADWALL AND ENDS OF WINGS SHALL REMAIN VERTICAL		CE BUTLER COUNTY ENGINEERS OFFICE  AND OPERATIONS FACILITY  THE PROPORT WHITE - HARLTON JOH  HOWE BIT-5744  450H  2 OF 5								AND	COUNTY ENGINEERS OF OPERATIONS FACILITY HOVE AVENUE - HANLTON, OH 2-5744 450





PERMISSION FROM NYLOPLAST.





Project Manager

Drawn By

3700 Park 42 Drive

Cincinnati OH 45241

Phone 513.759.0004

www.mspdesign.com

04476064-IMP-SECTION 23

Suite 190B

DCA

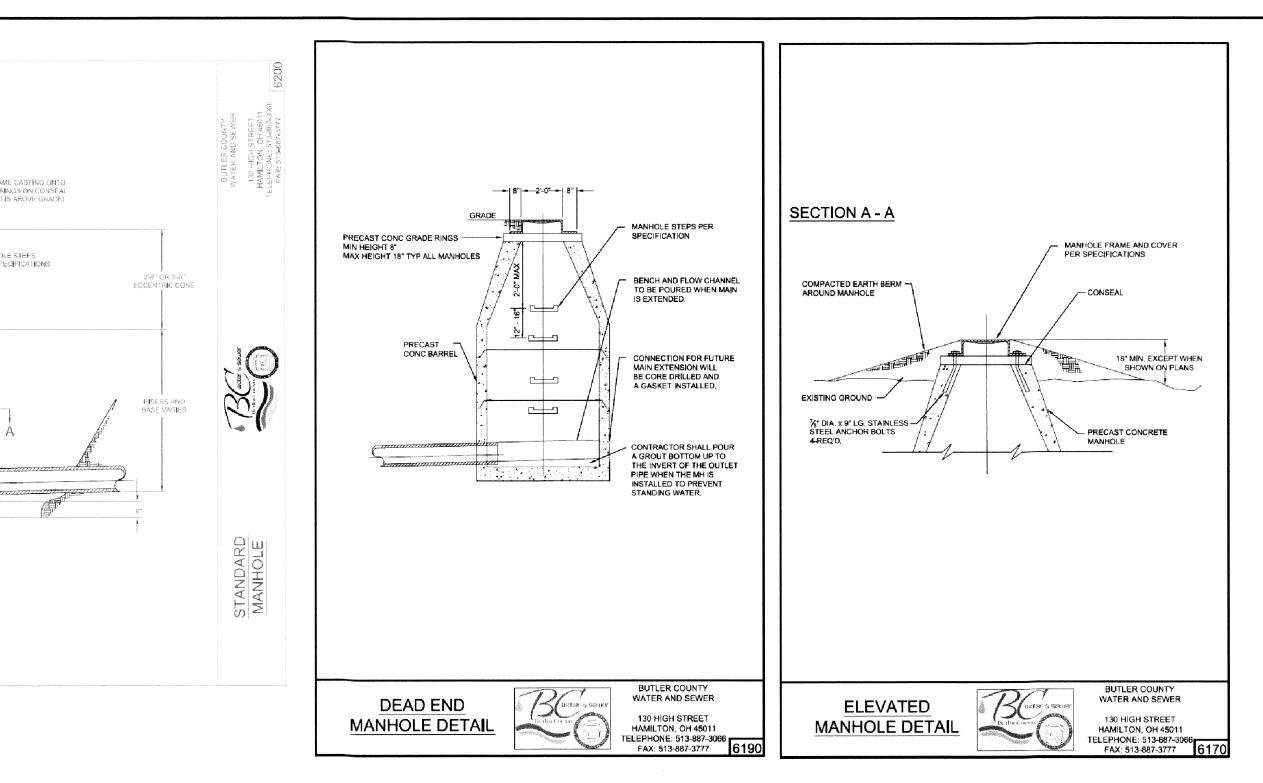
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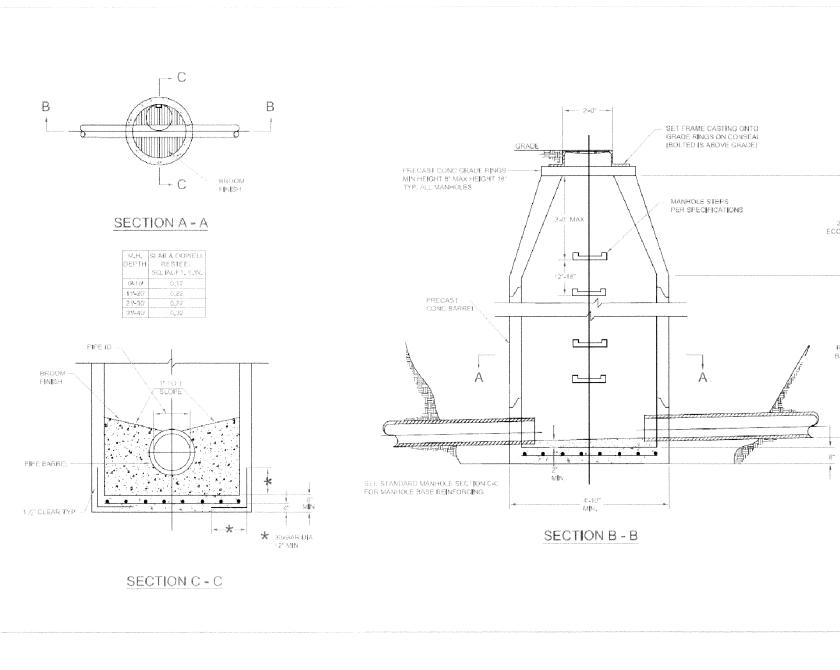
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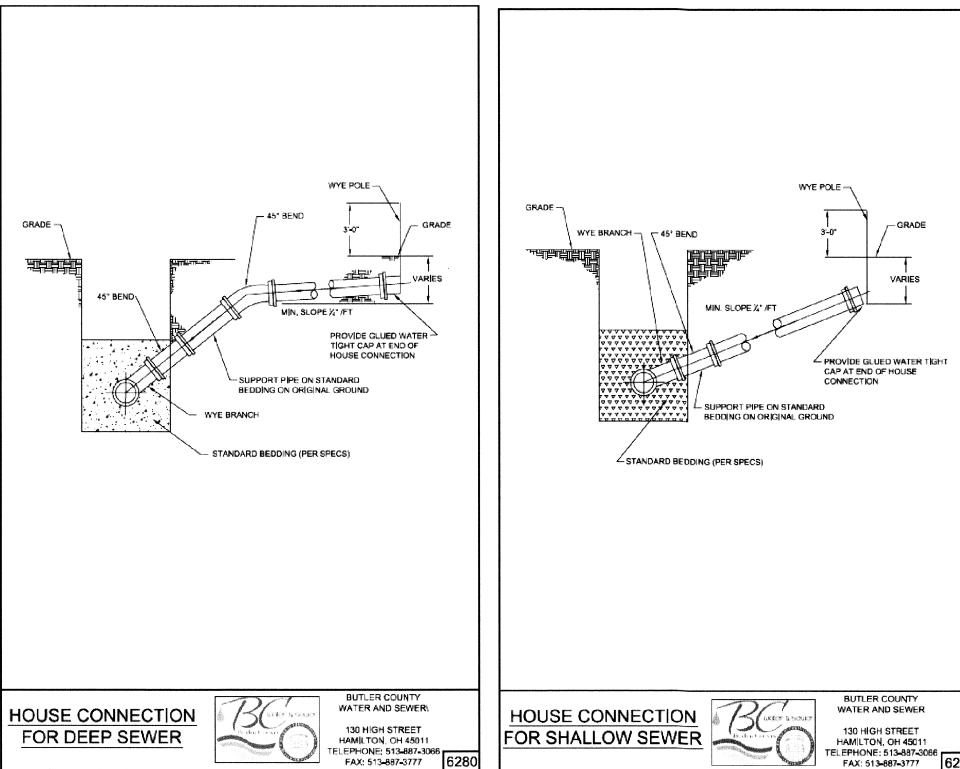
STANDARD DETAILS

04476.00 **Project Number AS NOTED Drawing Scale** 6/9 **Sheet Number** 

04476







PIPE OD + 16"

PIPE OD + 16\*

BUTLER COUNTY

WATER AND SEWER

130 HIGH STREET

HAMILTON, OH 45011

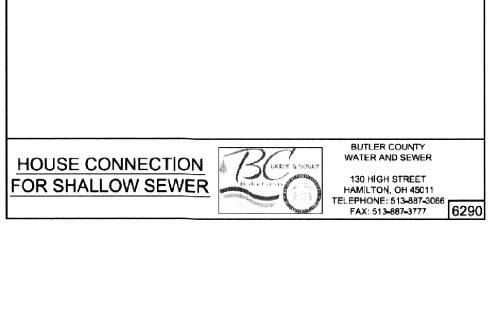
TELEPHONE: 513-887-3066 FAX: 513-887-3777 6240

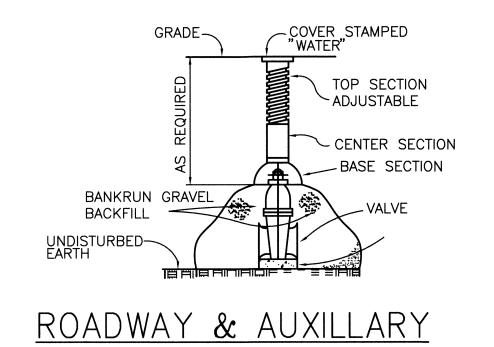
-- #3 (TYP)

SIDE OF TRENCH -

CONCRETE

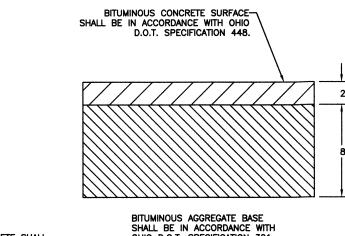
ENCASEMENT

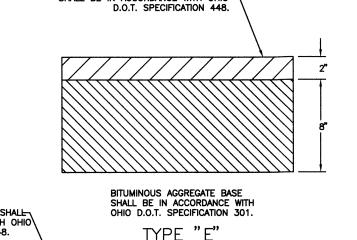




VALVE BOX DETAIL

CONCRETE ... CONCRETE SIDEWALKS SHALL BE IN ACCORDANCE WITH OHIO D.O.T. SPECIFICATION 608 WALK REPLACEMENT DETAILS NOT TO SCALE



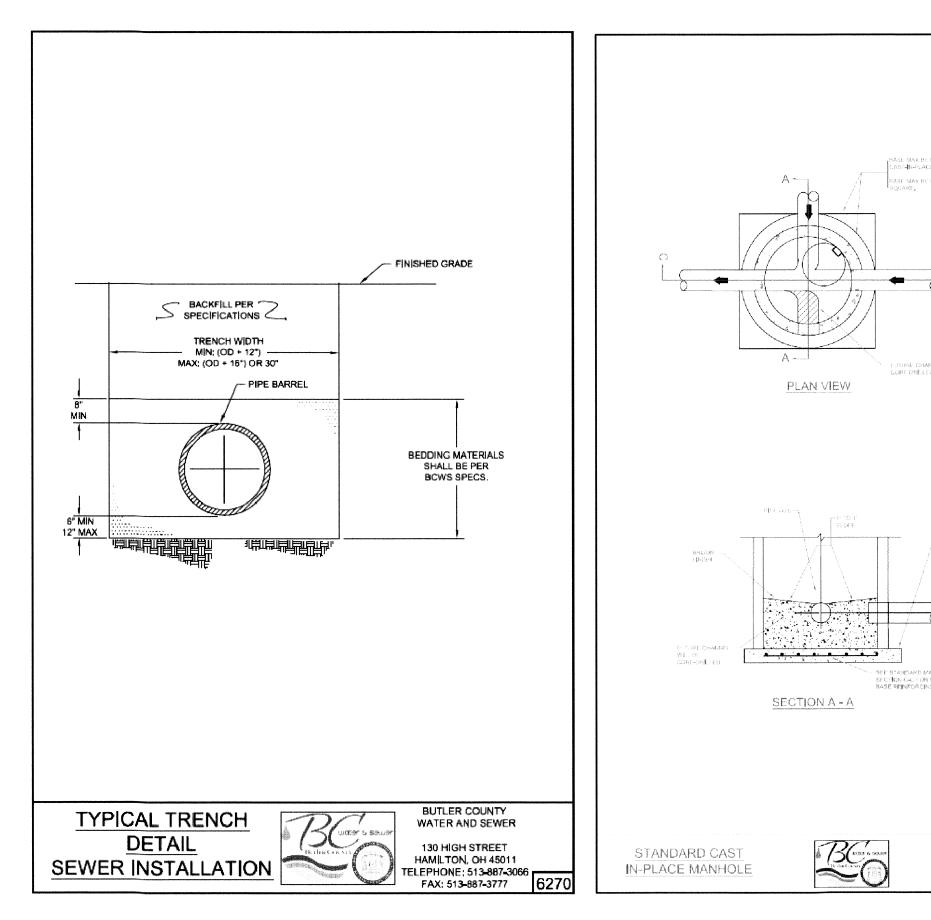


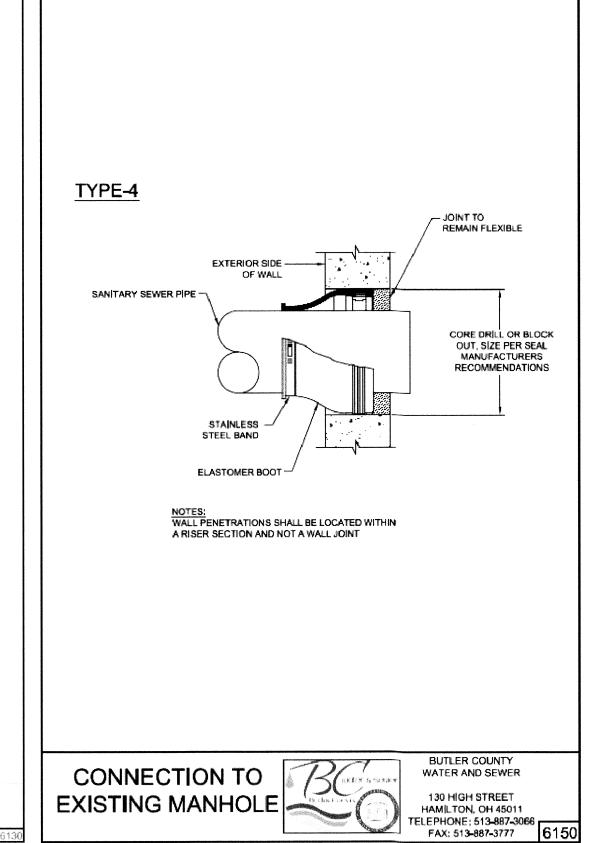
BITUMINOUS CONCRETE SHALL-BE IN ACCORDANCE WITH OHIO D.O.T. SPECIFICATION 448. TYPE "E" CRUSHED STONE BASE SHALL BE IN ACCORDANCE WITH OHIO D.O.T. SPECIFICATION 304 TYPE "D" TYPE "C"

PORTLAND CEMENT CONCRETE BASE SHALL BE IN ACCORDANCE WITH OHIO D.O.T. SPECIFICATION PORTLAND CEMENT CONCRETE BASE SHALL BE IN ACCORDANCE WITH OHIO D.O.T. SPECIFICATION 305. TYPE "B" TYPE "A" PAVEMENT REPLACEMENT DETAILS

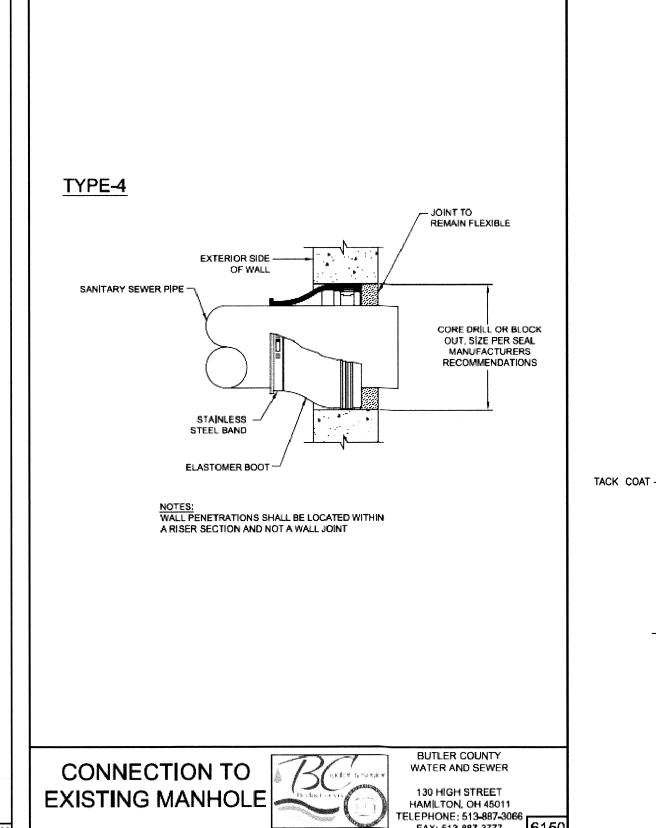
NOT TO SCALE







BUTLER COUNTY WATER AND SEWER





BITMINOUS CONCRETE SURFACE— SHALL BE IN ACCORDANCE WITH OHIO DEPT. OF TRANSPORTATION (D.O.T.) SPECIFICATION 448.

1-800-362-2764

(NON MEMBERS MUST BE CALLED DIRECTLY)

# Sheet Title **BUTLER COUNTY WATER**

**DETAILS** 04476.00 **Project Number** AS NOTED Drawing Scale **Sheet Number** 

File Number

& SEWER STANDARD

04476064-IMP-SECTION 23 Issue/Revision No. Date 09/21/18

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DCA

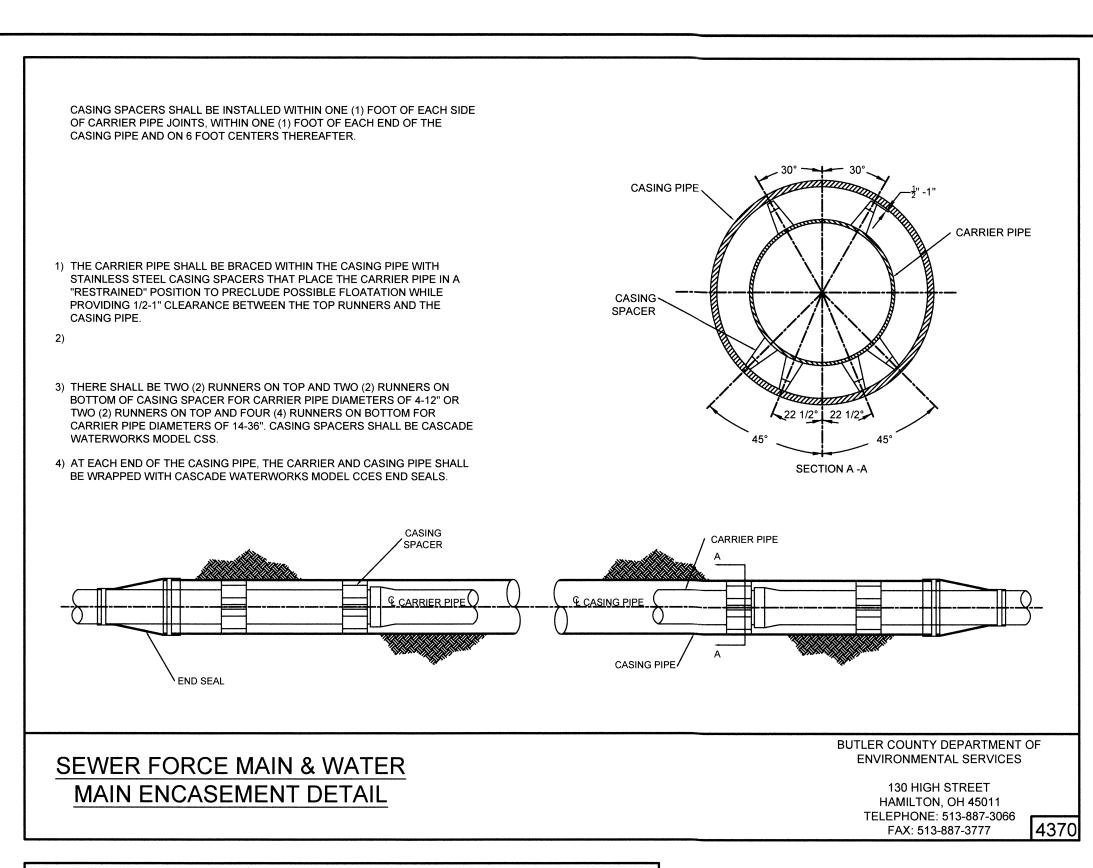
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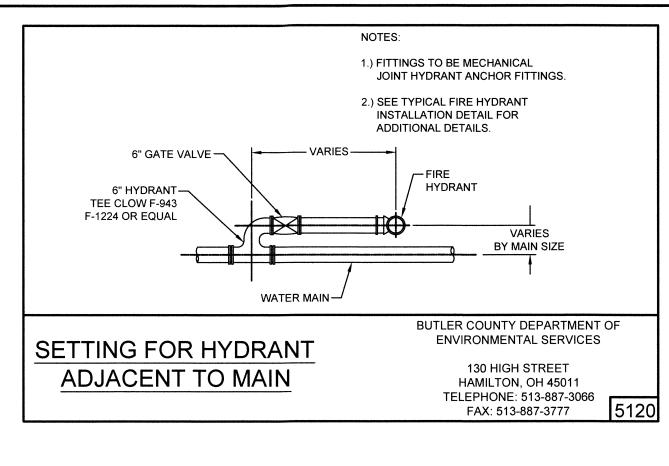
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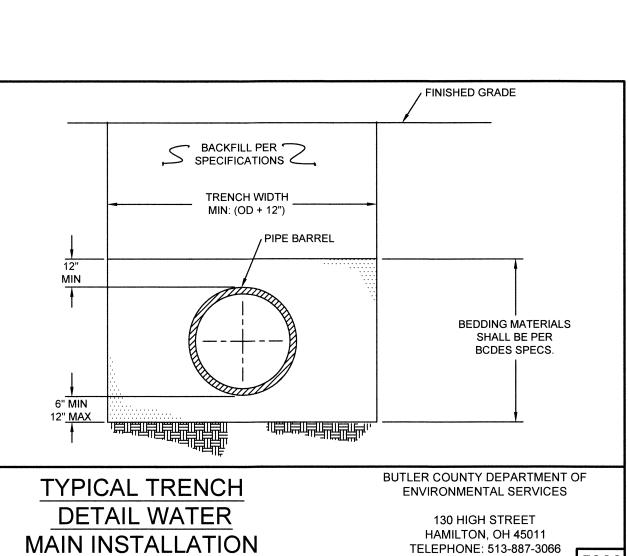
**Project Manager** 

Drawn By

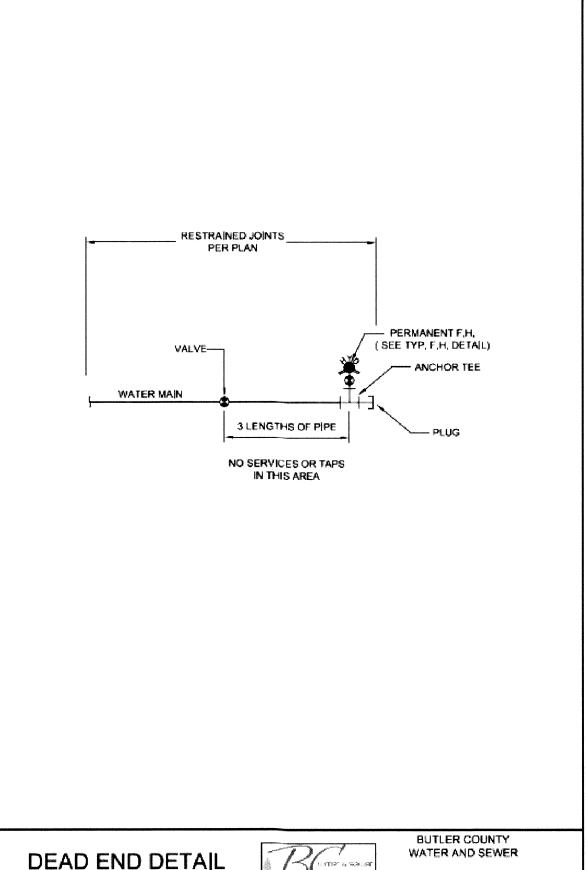
X-Ref(s)







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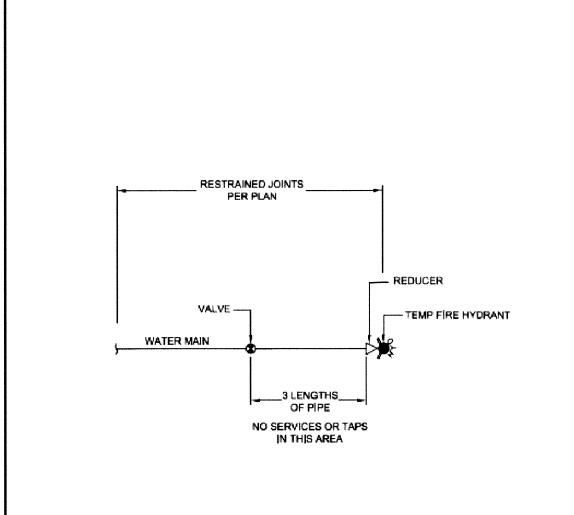


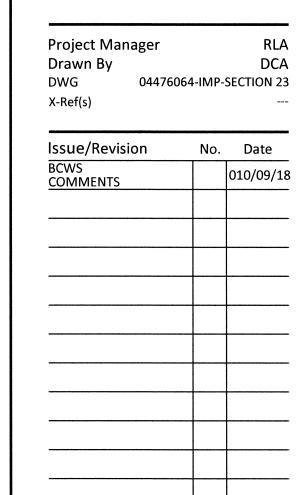
130 HIGH STREET

HAMILTON, OH 45011

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Architecture

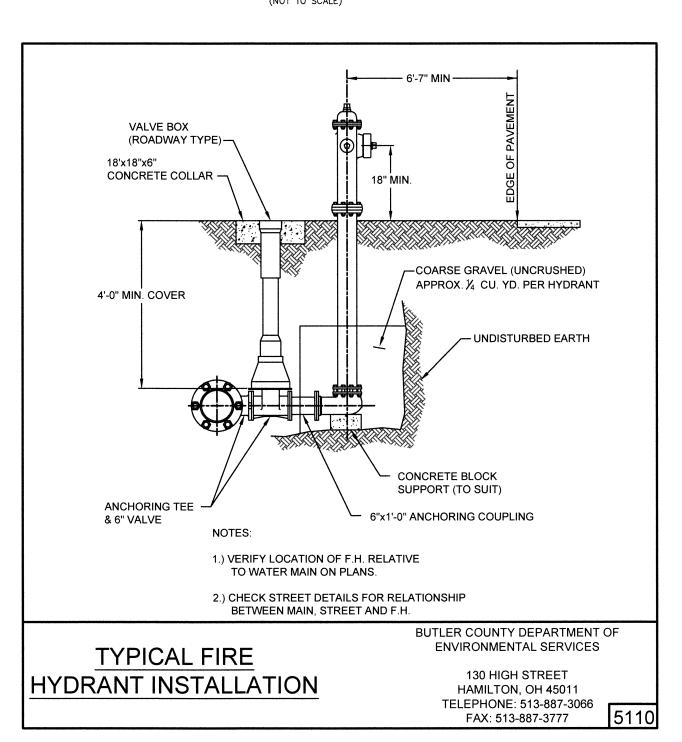
Engineering

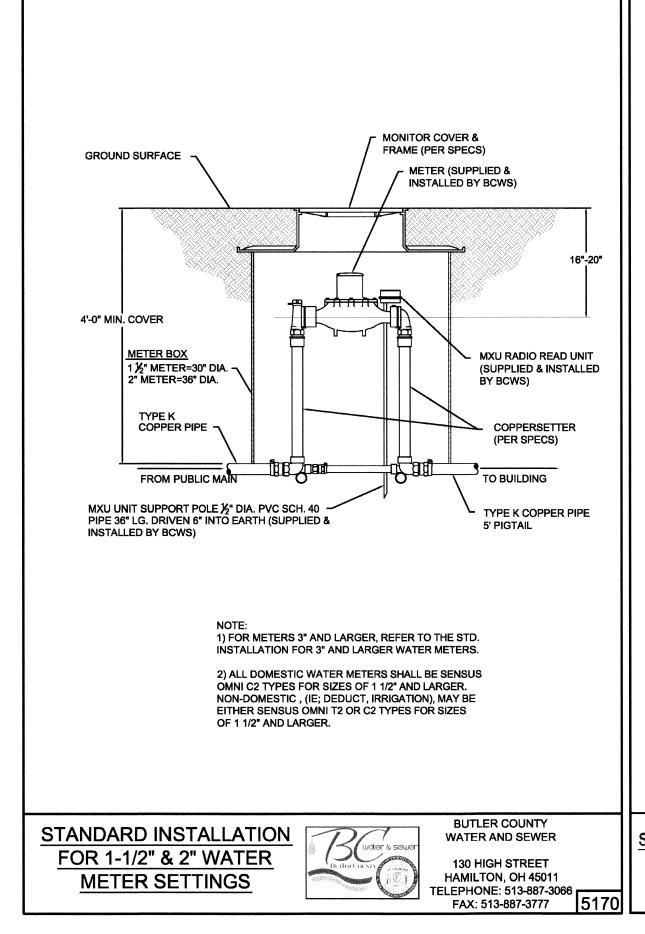
■ Surveying

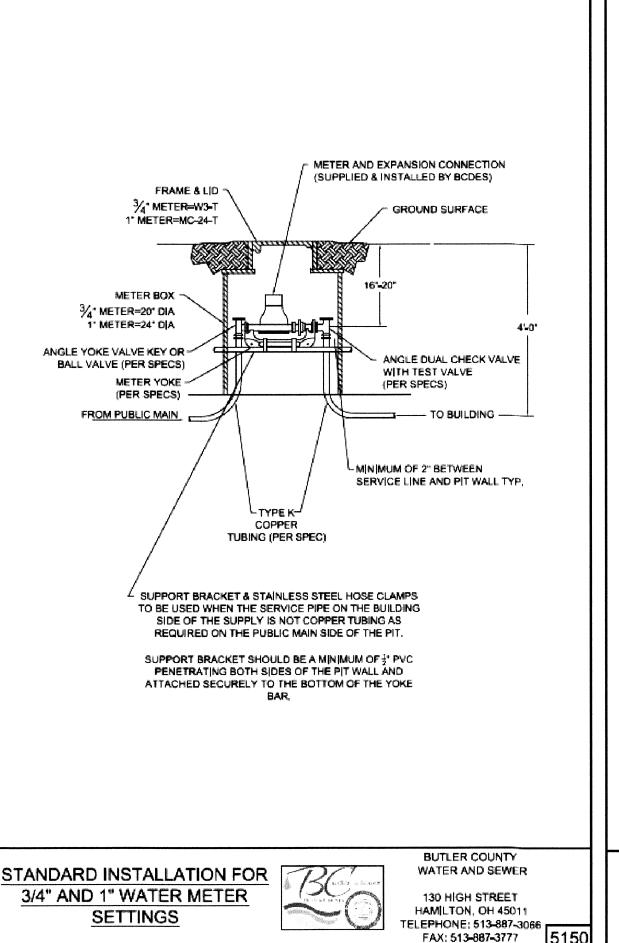
■ Landscape Architecture

## 13/4" CURB STOP , PLASTIC "BAG" w/ TWIST TIE (NO TAPE) FIRMLY AFFIX PIPE ¾" COPPER 6" TO TO THE STAKE 8" IN LENGTH, BENT DOWN ¾" SERVICE > PIPE (COPPER) STURDY STAKE 3/4" CORPORATION STAKE MUST BE LOCATED WATER MAIN IN SUCH A POSITION THAT THE SAMPLER CAN STAND IN A DRY LOCATION TO OBTAIN A SAMPLE DURING FREEZING CONDITIONS THE LINE WILL BE DRAINED AT THE CORP. STOP THEN SAND OR GRANULAR REACTIVATED BY THE CONTRACTORS PERSONNEL BACKFILL MATERIAL AT THE TIME OF THE TEST AROUND PIPE AT CORP. STOP BUTLER COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES TEMP. PURITY TEST **STATION** 130 HIGH STREET HAMILTON, OH 45011 TELEPHONE: 513-887-3066 FAX: 513-887-3777

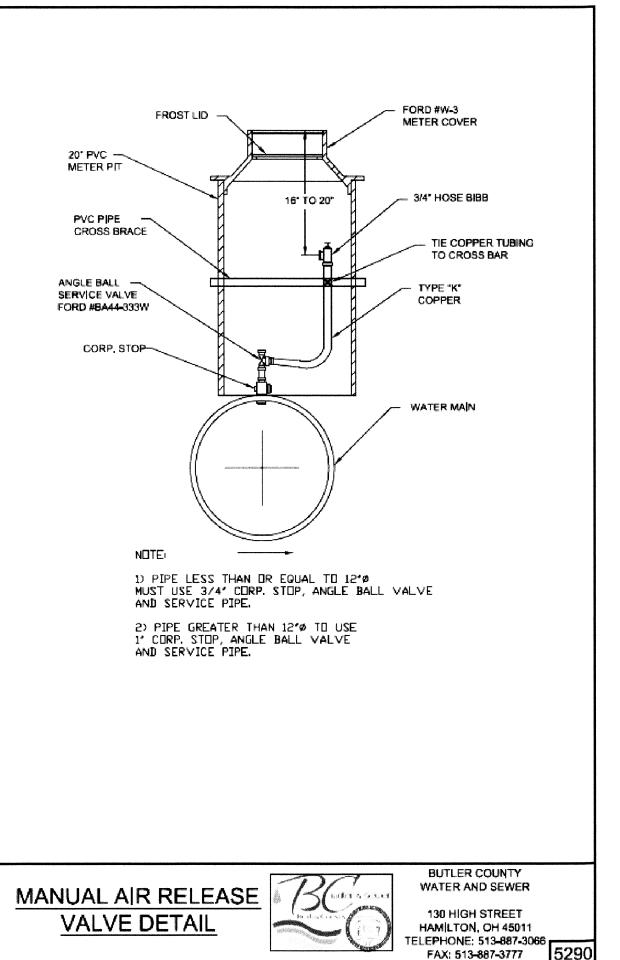
# PURITY TEST STATION







W/ PERMANENT F.H.



DEAD END DETAIL

W/ TEMP F.H

**Utilities Protection** SERVICE Call Before You Dig 1-800-362-2764

CALL TWO WORKING DAYS BEFORE YOU DIG (NON MEMBERS MUST BE CALLED DIRECTLY)

BUTLER COUNTY

WATER AND SEWER

130 HIGH STREET

HAMILTON, OH 45011

TELEPHONE; 513-887-3066 \_\_\_\_

FAX: 513-887-3777

5140

Sheet Title **BUTLER COUNTY WATER** & SEWER STANDARD

**DETAILS** 04476.00 **Project Number Drawing Scale Sheet Number** 

File Number

# SITE PREPARATION

1. A subsoiler, plow or other implement shall be used to reduce compaction and allow maximum infiltration. (Maximizing infiltration whelp control both runoff rate and water quality.) Subsoiling should be done when the soil moisture is low enough to allow the soil to crack a fracture. Subsoiling shall not be done on slip-prone areas where soil preparation should be limited to what is necessary for establishing

2. The site shall be graded as needed to permit the use of conventional equipment for seedbed preparation

## 3. Resoil shall be applied where needed to establish vegetation.

SEEDBED PREPARATION

1. Lime-Agricultural ground limestone shall be applied to acid soil as recommended by a soil test. In lie of a soil test, lime shall be applied at the rate of 100 lbs./1,000 sq. ft. or 2 tons/ac.

2. Fertilizer-Fertilizer shall be applied as recommended by a soil test. In lieu of a soil test, fertilizer shall be applied at a rate of 12 lb./1,000 sq ft. or 500 lb./ac/ of 10-10-10 or 12-12-12 analysis.

3. The lime and fertilizer shall be worked into the soil with a disk harrow, spring—tooth harrow, or other suitable field implement to a depth of 3 in. On sloping land the soil shall be worked on the contour.

# SEEDING DATES AND SOIL CONDITIONS

Seeding should be done March 1 to May 31 or Aug. 1 to September 30 These seeding dates are ideal but, with the use of additional mulch and irrigation, seedings may be made any time throughout the growing season. Tillage/ seedbed preparation should be done when the soil is dry enough to crumble and not form ribbons when compressed by hand. For winter seeding, see the following section on dormant seeding.

DORMANT SEEDINGS

 Seedings shall not be planted from October 1 through November 20.

During this period the seeds are likely to germinate, but probably will not be able to survive the winter.

2. The following methods may be used for "Dormant Seeding":

\* From October 1 through November 20, prepare the seedbed, and the required amounts of lime and fertilizer, then mulch and anchor. 15, broadcast the selected seed mixture, mulch and anchor. Increas the seeding rates by 50% for this

\* From November 20 through March 15, when soil conditions permit, prepare the seedbed, lime and fertilize, apply the selected seed mixture, mulch and anchor. Increase the seeding rates by 50% for this

\* Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder, or hydro-seeder (slurry may include seed and fertilizer) on a firm, moist

\* Where feasible, except when a cultipacker type seeder is used, the seedbed should be firmed following seeding operations with a cultipack roller or light drag. On sloping land seeding operations should be on the contour where feasible.

1. Mulch material shall be applied immediately after seeding. Seedings made during optimum seeding dates and with favorable soil conditions and on very flat areas may not need mulch to achieve adequate stabilization. Dormant seeding shall

2. Materials \* Straw-If straw is used it shall be unrotted small—grain straw applied of the rate of 2 tons/ac. or 90 lb./1,000 sq. ft. (two to three bales The mulch shall be spread uniformly by hand or mechanically so the so surface is covered. For uniform distribution of hand-spread mulch divide area into approximately 1,000-sq.-ft. sections and spread two 45-lb. bales of straw in each

\* Hydroseeders-If wood cellulose fibe is used, it shall be used at 2,000 lb./ac/ or 46 lb./1,000 sq. ft.

# \* Other-Other acceptable mulche include mulch mattings applied according to manufacturer's recommendations or wood chips

3. Straw Mulch Anchoring Methods Straw mulch shall be anchored immediately to minimize loss by wind

\* Mechanical—A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not b finely chopped but, generally, be left

\* Mulch Nettings-Netting shall be used according to the manufacturer's recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff and or critical slopes.

\* Asphalt Emulsion-Asphalt shall be applied as recommended by the manufacturer or at the rate of 160

\* Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Tack or equivalent may be used at rate: recommended by manufacturer.

\* Wood Cellulose Fiber-Wood cellulose fiber binder shall be applied at a net dry weight of 750 lb./ac. The wood cellulose fiber shall be mixed with water and the mixture shall contain maximum of 50 lbs./100 gal.

1. Permanent seeding shall include irrigation to establish vegetation during dry or hot weather or on adverse site conditions as needed adequate moisture for seed germination and plant growth.

2. Excessive irrigation rates shall be avoided and irrigation monitored to prevent erosion and damage from

## Permanent Seeding Seeding Rate lb./ac. | lb./1.000 f General Use Creeping Red Fescue Domestic Ryegrass 1/2-1 1/4-1/2 1/4-1/2 20-40 10-20 Domestic Ryegrass Kentucky Bluegrass Tall Fescue 40 Dwarf Fescue 40 Steep Banks or Cut Slope Tall Fescue 40 Tall Fescue Road Ditches and Swale Tall Fescue 40 Dwarf Fescue Kentucky Bluegrass 2 1/4 90 Lawns Kentucky Bluegrass Perennial Ryegrass 1 1/2 1 1/2 Kentucky Bluegrass Creeping Red Fescue 1 1/2 1 1/2 For shaded areas Note: Other approved seed species may be substituted.

# **Specifications** Permanent Seeding

1. Permanent seeding shall not be considered established for at least full year from the time of planting. Seeded areas shall be inspected failure and reestablished as needed. Depending on site conditions, it may be necessary to irrigate, fertilize, overseed, or reestablish plantings in order to provide permanent vegetation for adequate assessments. adequate erosion control.

Maintenance fertilization rates sho be established by soil test recommendations or by using the rates shown in the following table

Mixture	Formula lb./ac. lb./1.000 ft. <sup>2</sup>		lb./1.000 ft. <sup>2</sup>	Time	Mowing	
Creeping Red Fescue Ryegrass Kentucky Bluegrass	10-10-10	500	12		Not closer than 3"	
Tall Fescue	10-10-10	500	12	Fall, yearly or as needed.	Not closer than 4"	
Dwarf Fescue	10-10-10	500	12		Not closer than 2"	
Crown Verch Fescue	0-20-20	400	10	Spring, yearly following establish—	Do not mow	
Flat Pea Fescue	0-20-20	400	10	ment and every 4-7 yr. thereafter.	Do not mow	

## Specifications for Temporary Seedina

Seeding Dates	Species	lb./1.000 ft. <sup>2</sup>	4 bushel 40 lb. 40 lb.	
March 1 to August 15	Oats Tall Fescus Annual Ryegrass	3 1 1		
	Perennial Ryegrass	1	40 lb.	
	Tall Fescus	1	40 lb.	
	Annual Ryegrass	1	40 lb.	
August 16 to November 1	Rye	3	2 bushel	
	Tall Fescus	1	40 lb.	
	Annual Ryegrass	1	40 lb.	
	Wheat	3	2 bushel	
	Tall Fescus	1	40 lb.	
	Annual Ryegrass	1	40 lb.	
	Perennial Ryegrass	1	40 lb.	
	Tall Fescus	1	40 lb.	
	Annual Ryegrass	1	40 lb.	

1. Structural erosion and sediment control practices such as diversions and sediment traps shall be installed and stabilized with temporary seeding prior to grading the rest of the

2. Temporary seed shall be applied between construction operations on soil that will not be graded or reworked for 21 days or more. These idle areas should be seeded a soon as possible after grading or shall be seeded within 7 days. Several applications of temporar seeding are necessary on typica

3. The seedbed should be pulverized and loose to ensure the success establishing vegetation. However, temporary seeding shall not be postponed if ideal seedbed preparation is not possible.

4. Soil Amendments-Applications temporary vegetation shall establish adequate stands of vegetation that amendments. Soil tests should be taken on the site to predict the need

5. Seeding Method—Seed shall be applied uniformly with a cyclone seeder, drill, cultipacker seeder, or that has been broadcast shall be covered by raking and dragging and then lightly tamped into place using roller or cultipacker. If hydroseeding is used, the seed and fertilizer will be mixed on site and the seeding shall be done immediately and without interruption

# MULCHING TEMPORARY SEEDING

1. Applications of temporary seeding shall include mulch that shall be applied during or immediately after seeding. Seedings made during optimum seeding dates and with favorable soil conditions and on very flat areas may not need mulch to achieve adequate stabilization.

\* Straw-If straw is used, it shall be unrotted small-grain straw applied o the rate of 2 tons/ac. or 90 lbs./1,000 sq. ft. (two to three bales). The mulch shall be spread the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximatel 1,000 sq. ft. sections and spread tw 45 lb. bales of straw in each section

\* Hydroseeders-If wood cellulose fiber is used, it shall be used at 2,000 lb./ac. or 46 lb./1,000 sq. ft.

\* Other-Other acceptable mulches include mulch matting applied according to manufacturer's recommendations or wood chips applied at 6 tons/ac.

3. Straw mulch shall be anchored immediately to minimize loss by wind

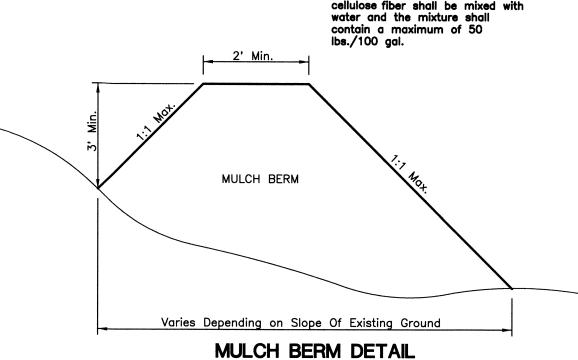
4. Anchoring Methods:

\* Mechanical-A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but generally, be left

\* Mulch Nettings-Netting shall be used according to the manufacturer's recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff and on

 Asphalt Emulsion—Asphalt shall be applied as recommended by the manufacturer or at the rate of 160

\* Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri—Tac), DCA—70, Petroset, Terra Tack or equivalent may be used at rates recommended by manufacturer. Wood Cellulose Fiber—Wood cellulose fiber binder shall be applied at a net dry weight of 750 lb./ac. The wood



Specifications Mulchina

1. Mulch and/or other appropriate vegetative practices shall be applied to disturbed areas within 7 days of grading if the area is to remain dormant (undisturbed) for more anchored shall not be finely than 45 days or on areas and portions of the site which can be brought to final grade.

2. Mulch shall consist of one of the

\* Straw-Straw shall be unrotted small—grain straw applied at the rate of 2 tons/ac. or 90 lbs./1,000 sq. ft. (two to three bales). mulch shall be spread uniformly hand or mechanically so the soi surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately sq. ft. sections and spread two 45 bales of straw in each section.

\* Hydroseeders-Wood cellulose fiber should be used at 2,000 lb./ac. or

\* Other-Other acceptable mulches

include mulch matting applied

according to manufacturer's

recommendations or wood chips applied at 10-20 tons/ac. 3. Mulch Anchoring—Mulch shall be anchored immediately to minimize loss by wind or runoff. The

following are accepted methods for

anchoring mulch:

\* Mechanical—Use a disk, crimper, or similar type tool set straight to punch or anchor the mulch materic into the soil. Straw mechanically chopped but generally be left longer

\* Mulch Nettings—Use according to the manufacturer's recommendations, following al placement and anchoring suggestions. Use in areas of water concentration and steep slopes to

hold mulch in place. Asphalt Emulsion—For straw mulch, apply at the rate of 160 gal. /ac. (0.1 gal. /sy) into the mulch as it is being applied or as recommended by the manufacturer

mulch, synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Tack or equivalent may be used at rates recommend by manufacturer.

\* Wood Cellulose Fiber-Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 lb./acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lbs./100 gal.

in a straight line with subsequent

rows placed parallel to and tightly

wedged against each other. Latera joints shall be staggered in a brick—like pattern. Ensure that so is not stretched or overlapped and

that all joints are butted tight in

order to prevent voids which would

4. On sloping areas where erosion

with the long edge parallel to the

contour and with staggered joints.

may be a problem, sod shall be laid

## **Specifications** for Sodding

MATERIALS 1. Sod shall be harvested, delivered and installed within a period of 48 hrs. Sod not transplanted within this period shall be inspected and approved prior to installation.

2. The sod shall be kept moist of covered during hauling and preparation for placement on the

3. Sod shall be machine cut at a uniform soil thickness of 0.75 in., plus or minus 0.25 in., at the time of cutting. Measurements for thickness shall exclude top growth

# SITE PREPARATION

1. A subsoiler, plow or other implement shall be used to reduce soil compaction and allow maximum infiltration. (Maximizing infiltration will help control both runoff rate and water quality.) Subsoiling shall not be done on slip-prone areas where soil preparation should be limited to what is necessary fo establishing vegetation.

2. The area shall be graded and resoiling shall be done where

3. Soil Amendments: \* Lime-Agricultural ground limestone shall be applied to acid soil as recommended by a soil test. In lie of a soil test, lime shall be applied at the rate of 100 lbs./1,000 sq. ft.

 Fertilizer—Fertilizer shall be applied as recommended by a soil test. lieu of a soil test, fertilizer shall be applied at a rate of 12 lb./1,000 sq. ft. or 500 lb./ac. of 10-10-10 or 12-12-12 analysis.

+ The lime and fertilizer shall be worked into the soil with a disk harrow, spring—tooth harrow, or other suitable field implement to a depth

4. Before laying sod, the surface shall be uniformly graded and cleared of all debris, stones and clods larger than 3 in. in diameter.

# of at least 18 in.

SOD INSTALLATION 1. During periods of excessively high temperatures, the soil shall be lightly irrigated immediately prior to laying 2. Sod shall not be placed on frozei

3. The first row of sod shall be laid

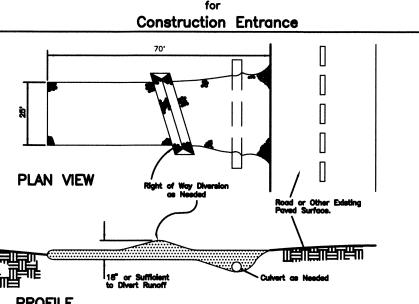
strength to support fabric with water fully impounded against it. shall be stretched tightly around the frame and fastened securely to the

5. As sodding is completed in any one section, the entire area shall rolled or tamped to ensure solid surface. Sod shall be watered immediately after rolling or tamping until the sod and soil surface below the sod is thoroughly wet. The operations of laying, tamping and irrigating for any place of sod shall be completed within 8 hrs.

1. In the absence of adequate daily or as often as necessary during the first week and in sufficient quantities to maintain moist soil to a

2. After the first week, sod shall be watered as necessary to maintain adequate moisture and to ensure

3. The first mowing shall not be attempted until sod is firmly rooted.



**Specifications** 

**PROFILE** . Stone Size—Two—inch stone shall

2. Length-The construction entrance shall be 70' long. . Thickness—The stone layer shall be at least 6 in. thick.

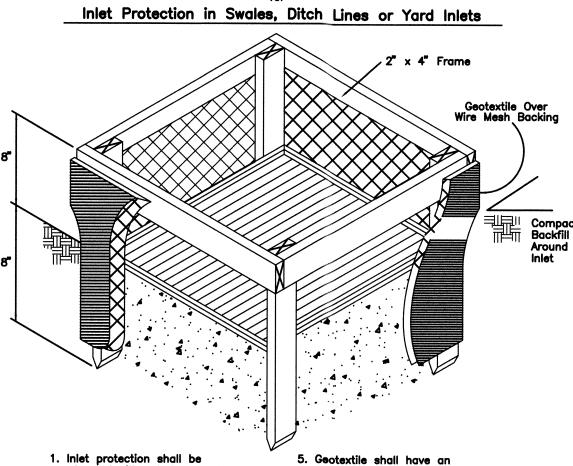
4. Width-The entrance shall be 25'wide. 5. Bedding-A geotextile shall be placed over the entire area prior to placing stone. It shall have a Grab Tensile Strength of at least 200 lb. and a Mullen Burst Strength of at

6. Culvert-A pipe or culvert shall be constructed under the entrance if needed to prevent surface water flowing across the entrance from being directed out onto paved

7. Water Bar-A water bar shall be constructed as part of the construction entrance if needed to prevent surface runoff from flowing the length of the construction

additional stone shall be applied a conditions demand. Mud spilled, public roads, or any surface where runoff is not checked by sediment controls, shall be removed immediately. Removal shall be accomplished by scraping or sweepin

9. Construction entrances shall not be relied upon to remove mud from vehicles and prevent off—site tracking. Vehicles that enter and leave the construction site shall be restricted from muddy areas.



**Specifications** 

1. Inlet protection shall be constructed either before upslope land disturbance begins or before the storm drain becomes

2. The earth around the inlet shall be excavated completely to a depth

3. The wooden frame shall be constructed of 2-by-4 in. construction grade lumber. The 2-by-4 in. posts shall be driven ft. into the ground at four corners of the inlet and the top portion of 2-by-4 in. frame assembled using the overlap joint shown. The top the frame shall be at least 6 in. below adjacent roads if ponded water would pose a safety hazard

4. Wire mesh shall be of sufficient

overlap across one side of the inle so the ends of the cloth are not fastened to the same post. 6. Backfill shall be placed around the inlet in compacted 6-in. layers until the earth is even with notch elevation on ends and top elevation 7. A compacted earth dike or a check dam shall be constructed in

equivalent opening size of 20-40 sieve and be resistant to sunlight.

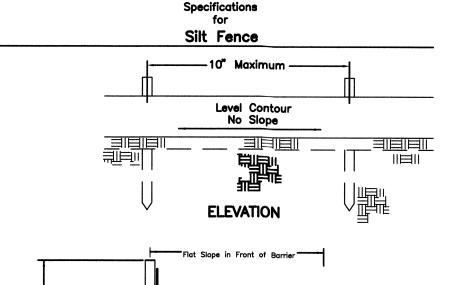
It shall be stretched tightly around

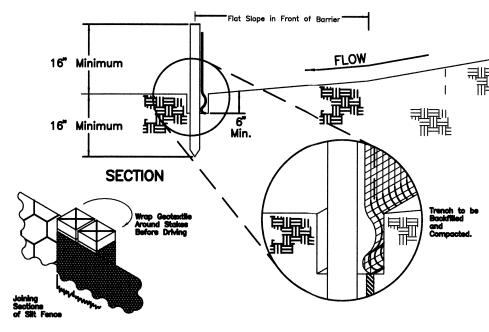
frame to 18 in. below the inlet notch elevation. The geotextile shall

the frame and fastened securely.

shall extend from the top of the

the ditch line below the inlet if the nlet is not in a depression and if runoff bypassing the inlet will not flow to a settling pond. The top of the earth dikes shall be at least ( n. higher than the top of the





**Specifications** for Silt Fence Silt fence shall be constructed

before upslope land disturbance 2. All silt fences shall be placed close to the contour as possible that water will not concentrate at points in the fence and so that small swales or depressions, which may carry small concentrated flows to the silt fence, are dissipated along its

To prevent water ponded by the silt fence from flowing around the ends, each end shall be constructe upslope so that the ends are at a higher elevation.

4. Where possible, silt fence shall be placed on the flattest area available. 5. Where possible, vegetation shall be preserved for 5 ft. (or as much as possible) upslope from the silt fence. If vegetation is removed, it shall be reestablished within 7 days from the installation of the silt fence.

6. The height of the silt fence shall be a minimum of 16 in. above the original around surface. 7. The silt fence shall be placed in a trench cut a minimum of 6 in. deep. The trench shall be cut with a trencher, cable laying machine, or other suitable device that will ensure

an adequately uniform trench depth 8. The silt fence shall be placed with the stakes on the downslope side of the geotextile and so that 8-in. of cloth are below the around surface Excess material shall lie on the bottom of the 6-in. deep trench. The trench shall be backfilled and

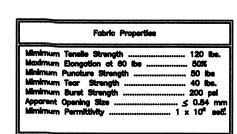
9. Seams between section of silt fence shall be overlapped with the

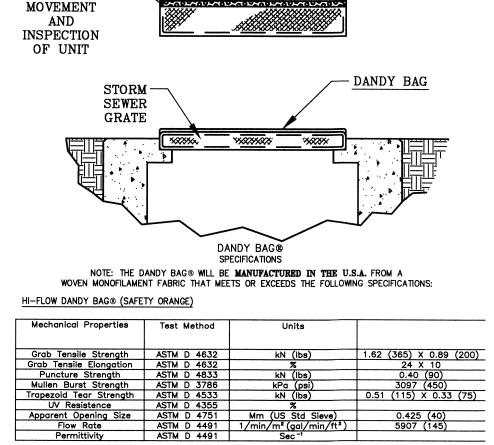
10. Maintenance—Silt fence shall allow runoff to pass only as diffuse flow through the geotextile. If runoff overtops the silt fence, flows under or around ends, or in any other wa pecomes a concentrated flow, on o the following shall be performed, as appropriate: 1) The layout of the silt fence shall be changed, 2) Accumulated sediment shall be removed, or 3) Other practices shall

Criteria for Silt Fence Materials 1. Fence Posts—The length shall be a minimum of 32 in. long. Wood posts will be 2—by—2 in. of hardwood of sound quality. The maximum spacing

be installed.

Silt Fence Fabric shall be ODOT Type C Geotextile Fabric or as





DANDY BAG®

STORM-

SEWER

GRATE

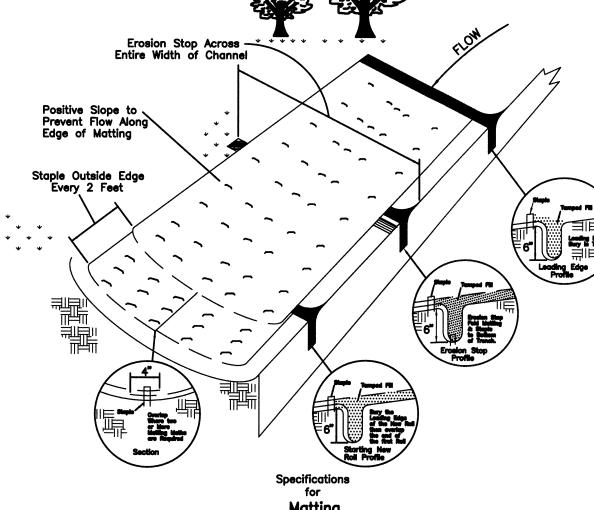
LIFT STRAPS-

USED FOR

EASY

\*Note: All Dandy Bags® can be ordered with our optional oil absorbent pillows

Matting



I. Material-Excelsior matting shall be 48 in. wide and weigh an average o 0.75 lb./sq. yd. or greater. Jute weigh and average of 1.2 lb./yd. or greater. Matting made of other material and providing equal or greater stabilization than the above

2. Site Preparation—After the site has been shaped and graded, a seedbed shall be prepared that is clods or rocks that are greater than 1.5 in. in diameter. The site shall be prepared to ensure that the matting has good soil contact and the matting will not "bridge" or "tent"

3. Matting shall be held in place as recommended by the manufacturer as adequate for the site conditions or with sod staples. Sod staples are U-shaped wire staples used for fastening sod, jute or excelsior matting and other erosion—contro materials to the soil surface. Sod staples shall be No. 11 gauge or heavier and be 6-10 in. in length. In loose or sandy soils, longer staples shall be used.

4. Planting—Lime and fertilizer shall be used according to the recommendation of a soil test or the seeding plan. Seed according to the manufacturer's recommendations; or, for excelsior matting, seed area to be protected before installation; or when using jute matting, apply half the seed before and half the seed after installation.

5. Matting shall be installed as specified by the manufacturer as appropriate for the site conditions or

\* After the site is prepared and erosion stops are installed, start laying the mat from the top of the slope or channel and unroll the

\* Secure the matting by burying the top ends in a trench 6 in. deep and staple the folded ends to the bottom of the trench. Backfill and tamp firmly to the established grade.

 Staple matting every 12—in. across the width beginning at the edges and every 2 ft. in rows the entire length of the matting. Every other row of staples running the length of the matting should be staggered.

trench to anchor the end of the new roll and secure it the same as the top roll. Overlap the end of the previous roll 18—in. over the new roll. Continue to staple as described

\* When using excelsior matting, the plastic netting shall be on top of the

recommended by the matting manufacturer and on areas specified where high-erosion potential may cause undermining and gullies to form beneath the matting.

Erosion stops shall be made of strips of matting placed in narrow trenches 6-12 in. deep that cover the full cross section of the channel They shall be spaced according to the manufacturer's recommendations or by the following: \* 3 ft. down the channel from each point of entry of concentrated flow at points where change in gradier or direction of channel occurs, and \* on long slopes at spacing from 20-100 ft. depending on the erodibility of the soil, velocity and

\* Erosion stops shall extend beyon the channel liner to the full desigr width of the channel. This will check any rills that might form outside or along the edge of the channel lining

Erosion stops shall be constructed with a 6 in. deep trench, backfilled and tamped firmly to conform to the cross section of the channel.

\* If seeding has been done prior to installation of erosion stops, reseed disturbed areas prior to placement of



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No. Date

09/21/18

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RLA

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■ Architecture

**■** Engineering

■ Planning

■ Surveying

Drawn By

X-Ref(s)

■ Landscape Architecture

**Project Manager** 

Issue/Revision

**SUBMITTAI** 

**EROSION CONTROL** NOTES & DETAILS

Sheet Title

File Number

04476.00 Project Number 1" = 50' Drawing Scale 9/9 Sheet Number