

Plans prepared by:

T. J. Place

TJ Place
Drainage Technician

Plans approved by:

Douglas Reinhart
Professional Engineer
Professional Surveyor
Auglaize County Engineer

Auglaize County Engineer P.O. Box 59
1014 S. Blackhoof Street Wapakoneta,
Ohio 45895 (419) 739-6520

Plans authorized by:

Commissioner

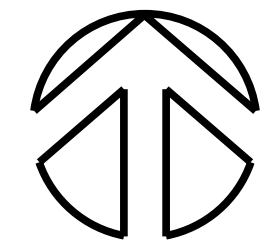
Commissioner

Commissioner

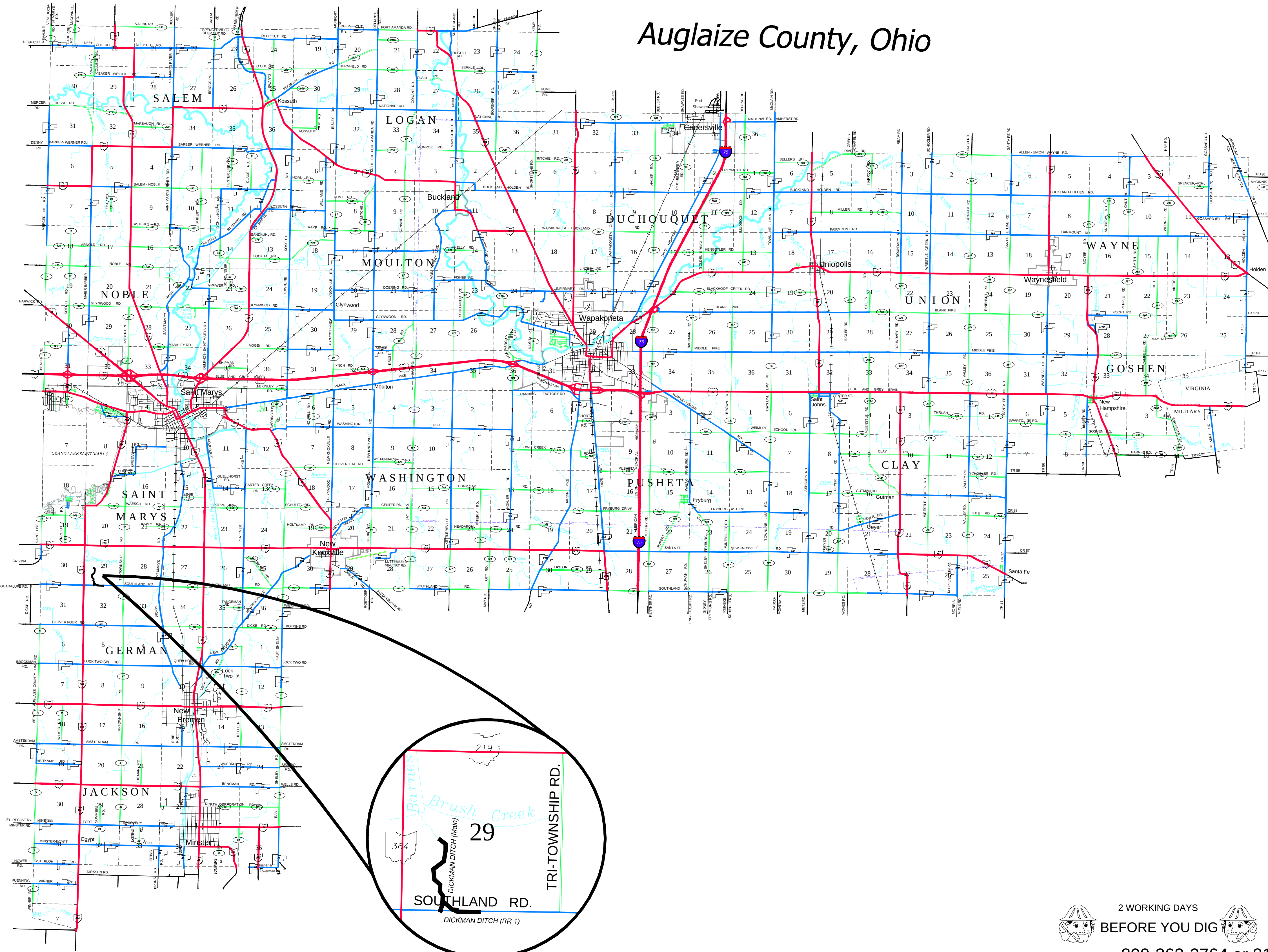
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DICKMAN DITCH COVER SHEET



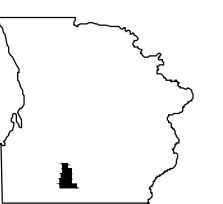
Auglaize County, Ohio



SITE

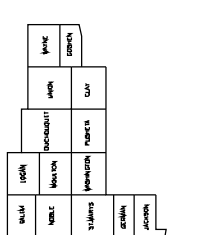
Date	2-2021	2-2021
Designed	<i>T. J. Place</i>	<i>T. J. Place</i>
Drawn		
Checked		
Revised		

COVER SHEET DICKMAN DITCH St. Marys Township & Section 29



Auglaize County
Engineer's Office

P.O. Box 59
1014 South Blackhoof Street
Wapakoneta, Ohio 45895
419-739-6520

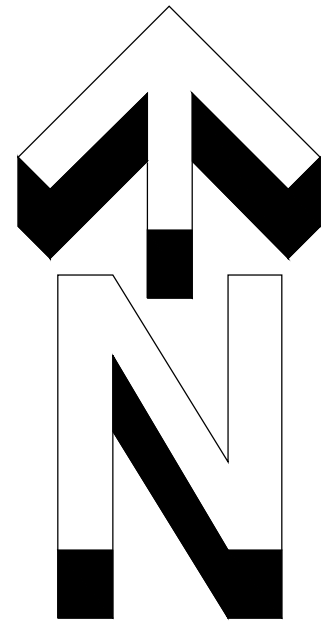
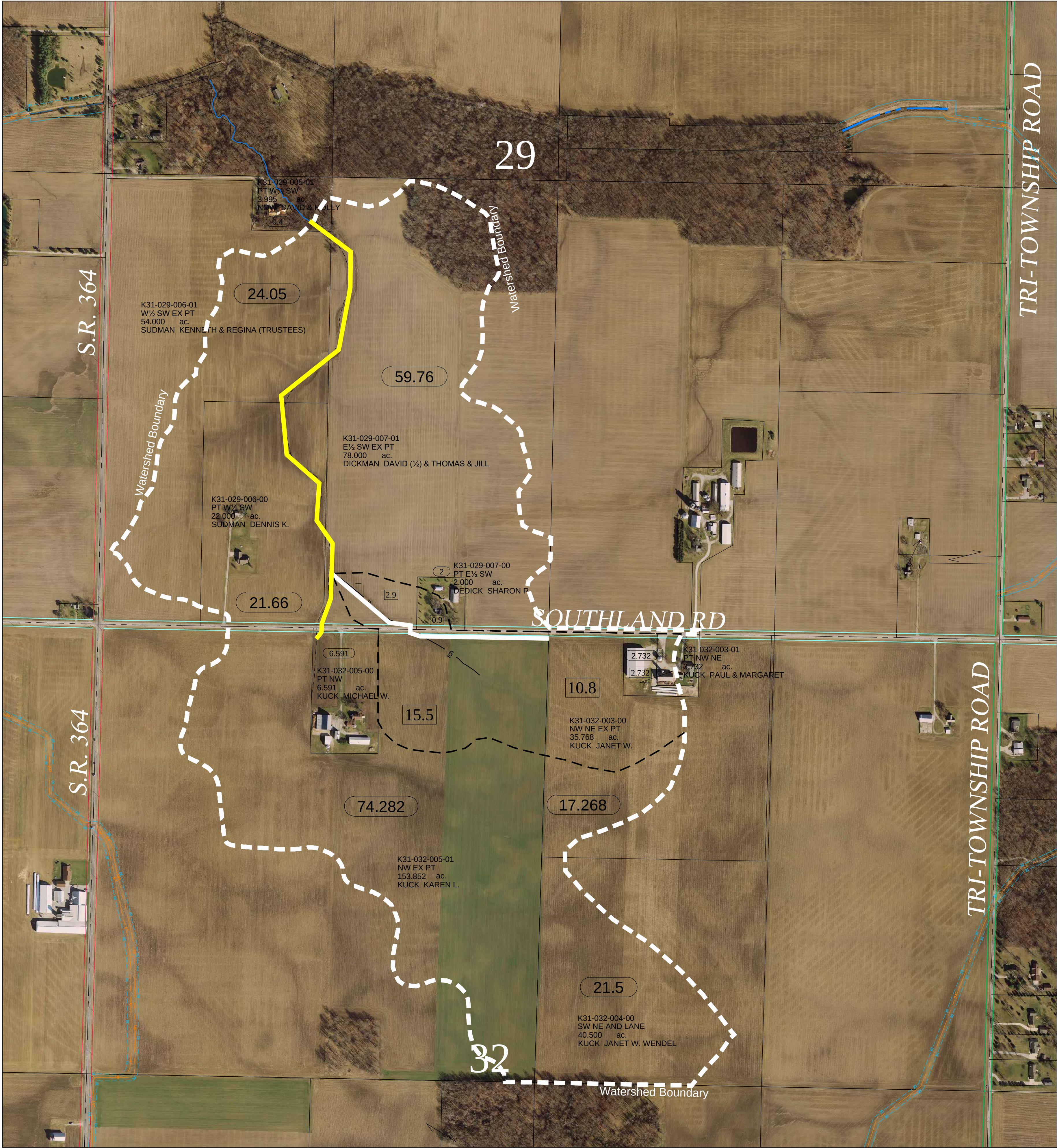


2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE 800-362-2764 or 811
OHIO UTILITIES PROTECTION SERVICE

Sheet
Number

1
8

WATERSHED AND LOCATION MAP



Legend

- TOWNSHIP R/W
 - COUNTY R/W
 - STATE R/W
 - CENTERLINE ROAD
 - PROPERTY LINE
 - SECTION LINE
 - SECTION HALF LINE
 - RIGHT OF WAY LINE
 - RAILROAD
 - EXISTING DRAIN
 - SUB MAINS
 - PROPOSED MAIN
 - PROPOSED BRANCH #1
 - WATERWAY
 - WATERSHED BOUNDARY
 - SUB-WATERSHED
- WATERSHED ACRES (Br 1 Tile) 3
- WATERSHED ACRES (Main Tile) 3
- BENCH MARK
- SECTION NUMBER

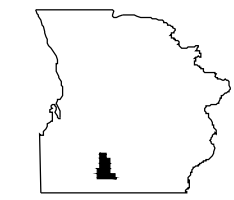
Note

Auglaize County will not be held liable for any damage that may occur to field tile.

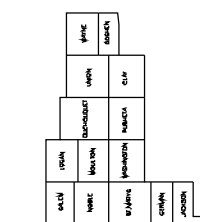
Note

All OSHA regulations will be observed during construction and will be the responsibility of the contractor to supervise his crew and conform to these regulations.

WATERSHED
Dickman Ditch
St. Marys Township & Section 29



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Engineer's Office



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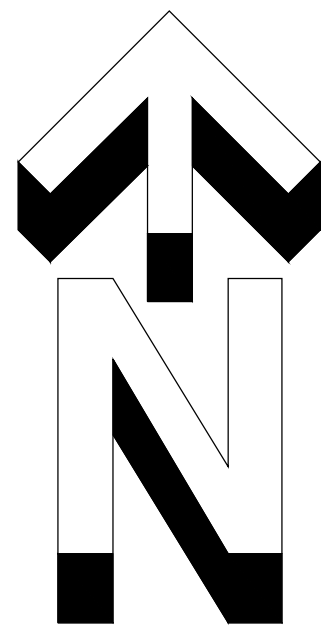
Date	2-2021	2-2021		
Designed	T.S. Place	T.S. Place	Checked	
Drawn			Revised	



29

S.R. 364

SOUTHLAND RD



BENCH MARK DESCRIPTION

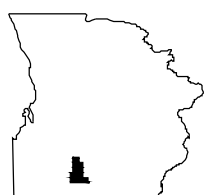
BM #1
Painted orange spot on top of North end
of existing 24" re-enforced concrete
culvert pipe under Southland Road.
Approximately 1,260 feet East of SR 364.

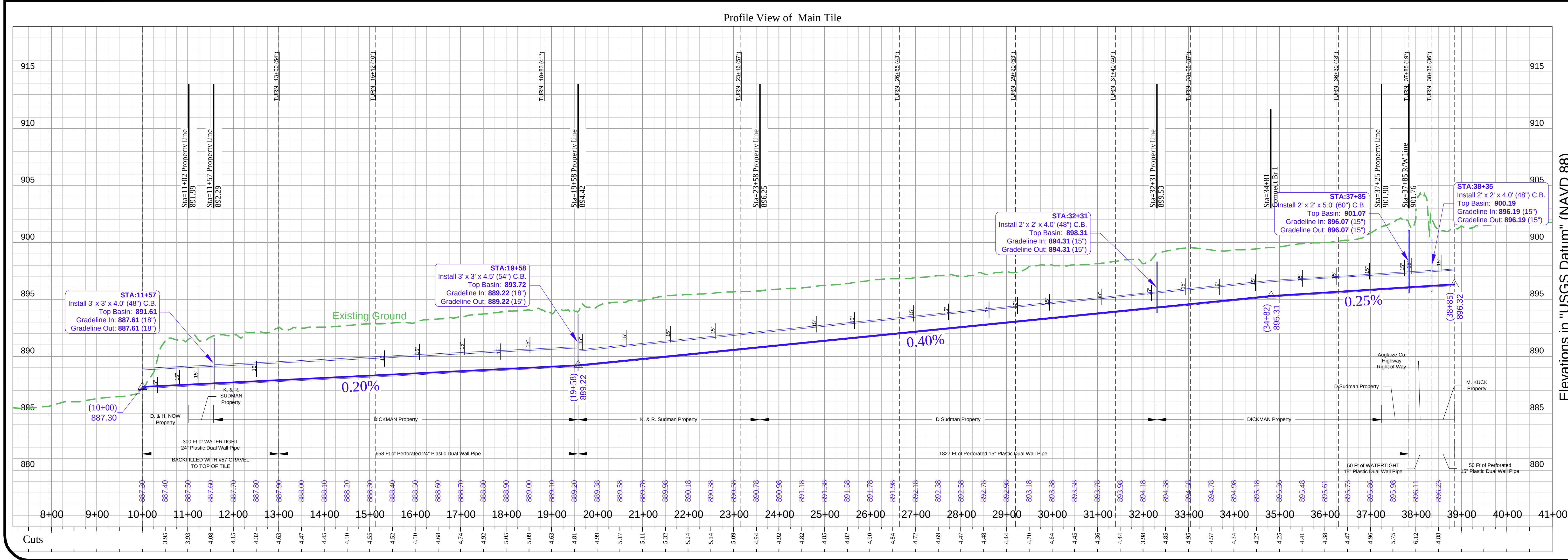
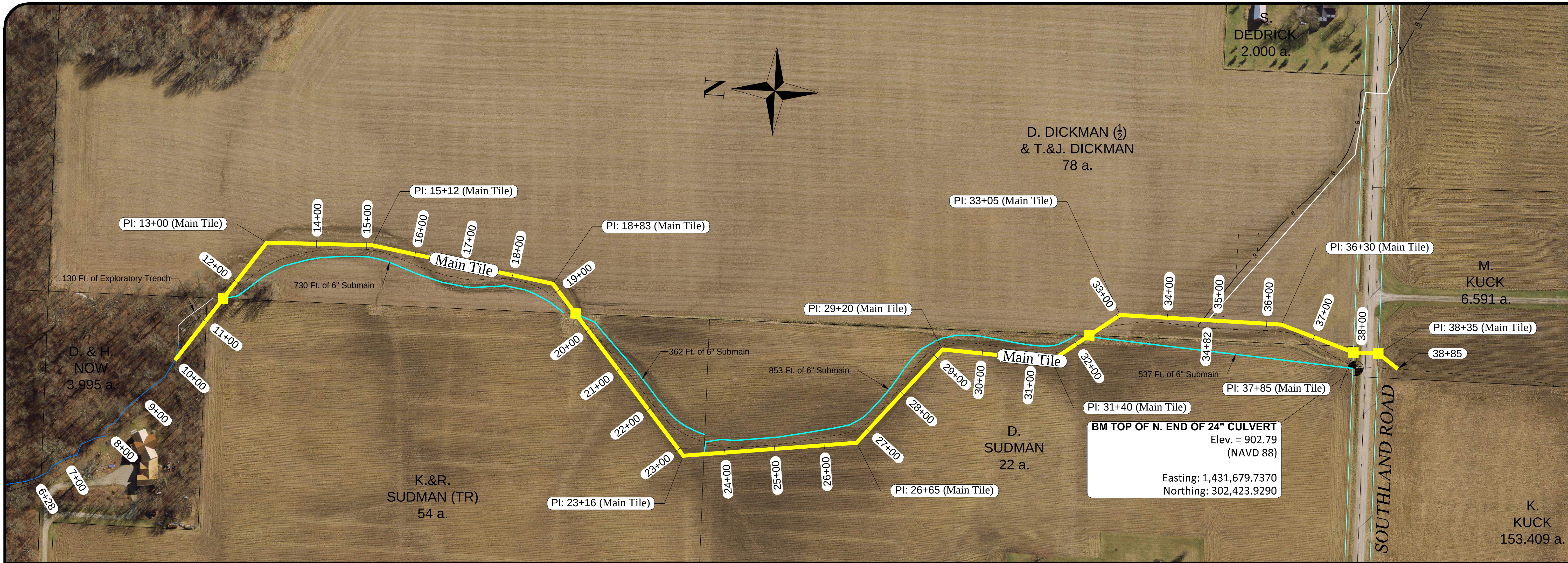
USGS Elev. = 902.79 (NAVD 88)

Date	2-2021
Designed	T. S. Placa
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PLAN VIEW
Dickman Ditch
St. Marys Township & Section 29

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PLAN & PROFILE (Main)

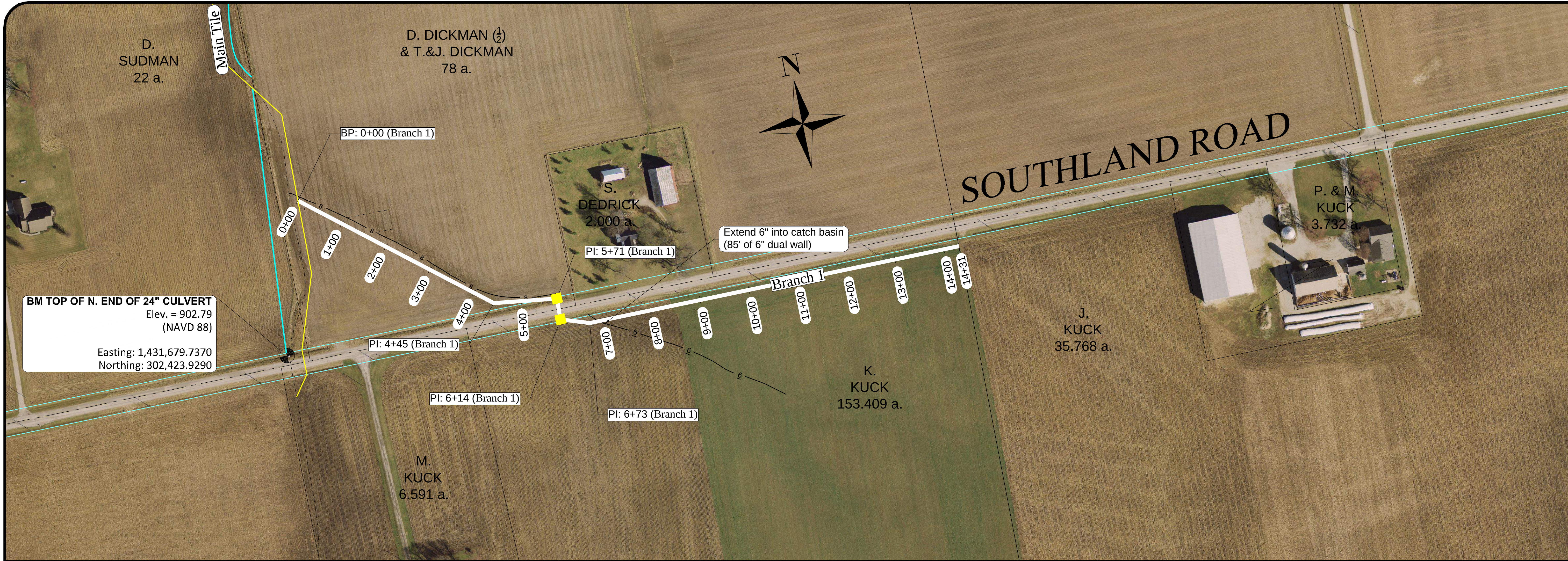
Dickman Ditch

St. Marys Township & Section 29

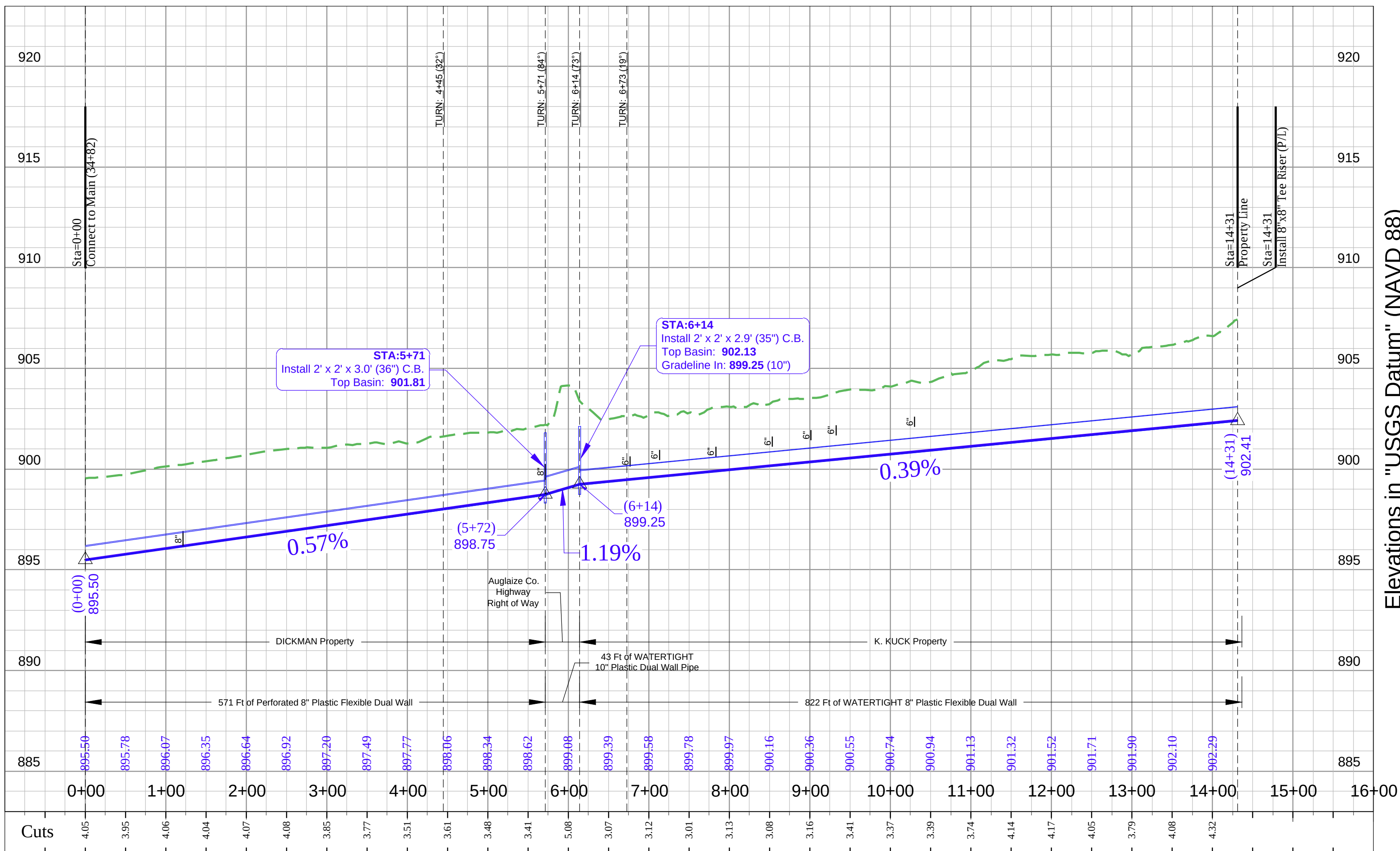
Auglaize County Engineer's Office

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Sheet Number **48**

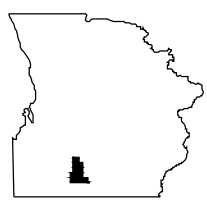


Profile View of Branch 1



Date	2-2021
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Revised	

PLAN & PROFILE (Br1)
Dickman Ditch
St. Marys Township & Section 29



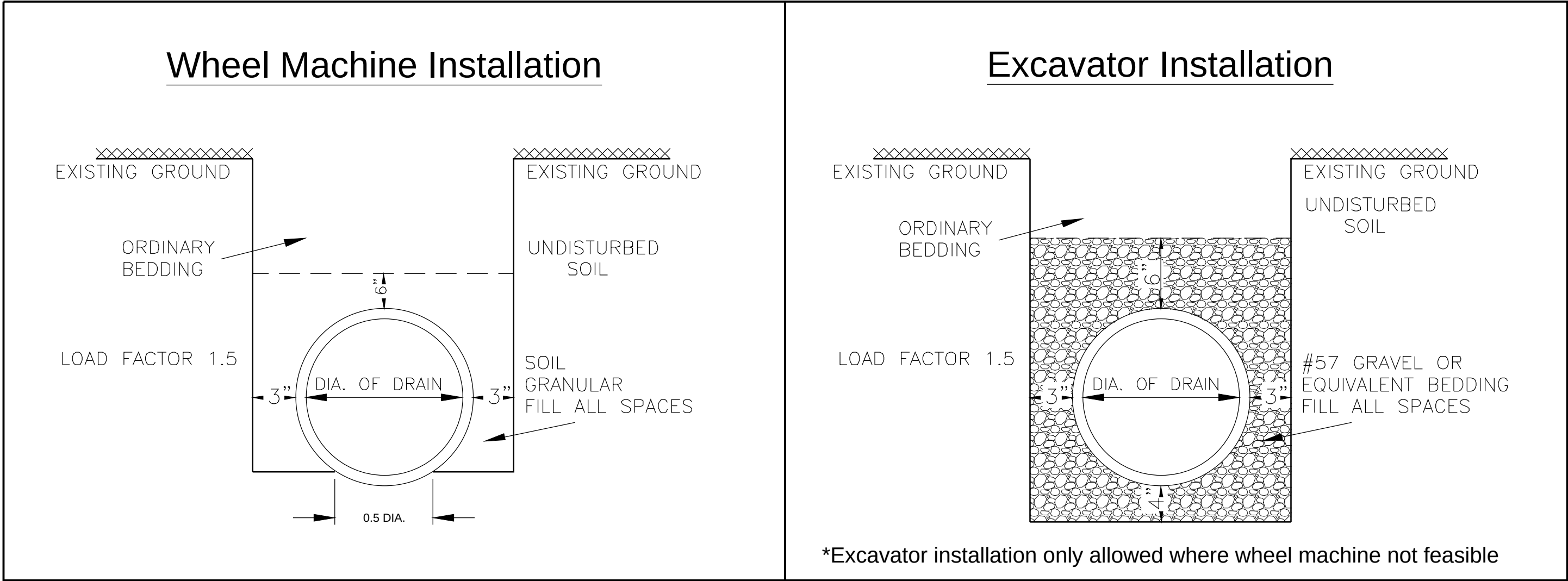
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DICKMAN DITCH

DESIGN INFORMATION

TYPICAL VIEW FOR TRENCH PREPARATION AND PIPE PLACEMENT

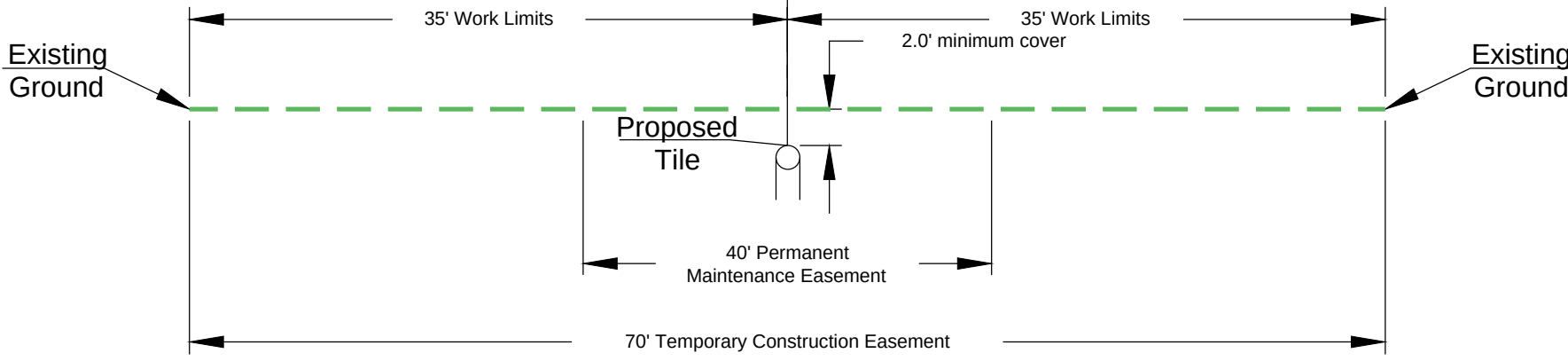


SUBSURFACE DRAIN DESIGN CHART

Line ID	Starting Station	Ending Station	Drainage Coeff.	Grade (%)	Acres (need)	Q (cfs) (need)	Q (cfs) (avail)	Acres (avail)	Size (in.)	N value	Velocity (fps)	Material
Main	10+00	19+58	1/2	0.20	223	4.68	6.11	291	18	0.010	3.46	Plastic Smooth Interior Pipe
Main	19+58	34+82	1/2	0.40	215	4.52	5.31	253	15	0.010	4.33	Plastic Smooth Interior Pipe
Main	34+82	38+85	1/2	0.25	189	3.97	4.20	200	15	0.010	3.42	Plastic Smooth Interior Pipe
Br1	0+00	5+78	1/2	0.57	33	0.69	1.19	56	8	0.010	3.40	Plastic Smooth Interior Pipe
Br1	5+78	6+28	1/2	1.19	29	0.61	3.11	148	10	0.010	5.70	Plastic Smooth Interior Pipe
Br1	6+28	14+36	1/2	0.39	29	0.61	0.98	47	8	0.010	2.81	Plastic Smooth Interior Pipe

Refer to ASTM F-449
Standard for subsurface
installation of corrugated
polyethylene pipe for ag
drainage.

TYPICAL CONSTRUCTION AND MAINTENANCE EASEMENTS FOR TILE DITCH

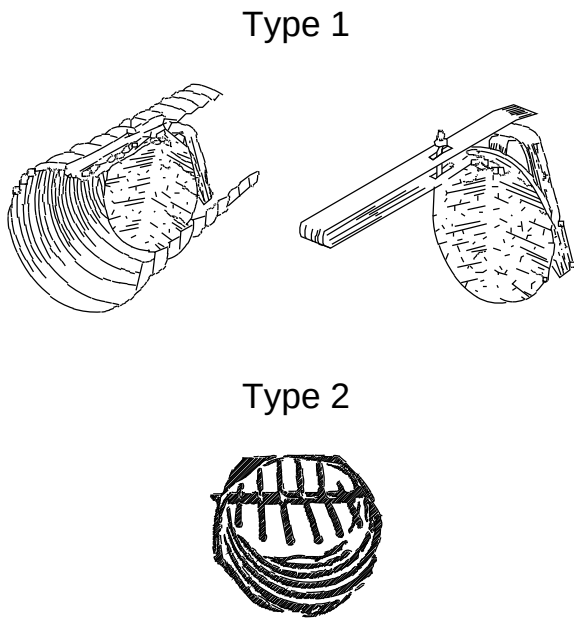


Easement Definition

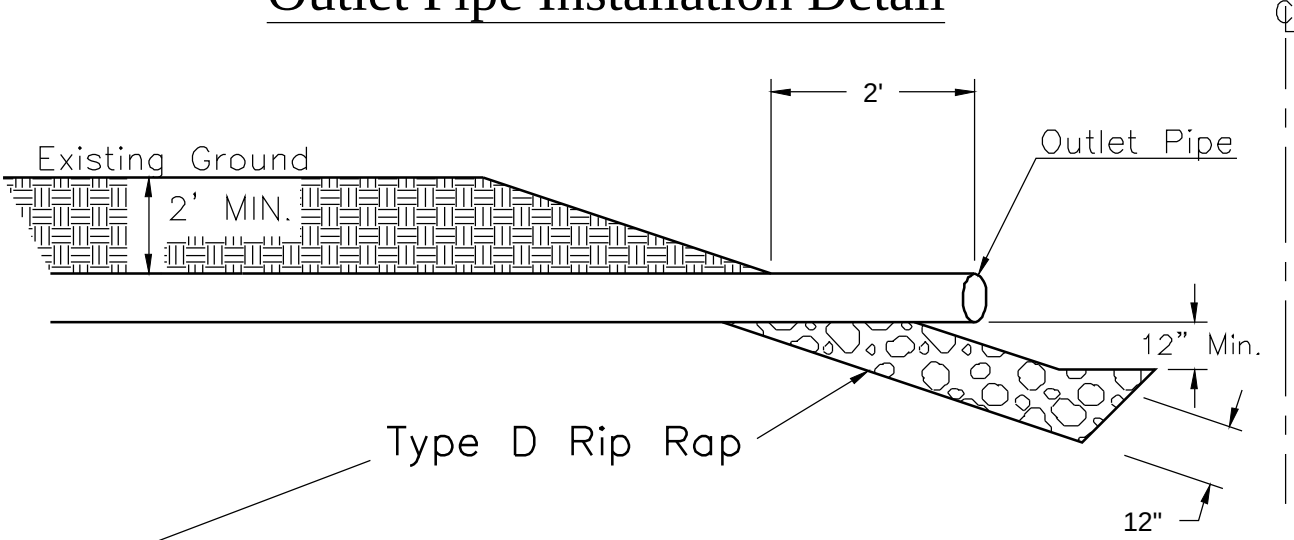
CONSTRUCTION EASEMENT
There shall be an 70 foot wide easement for construction and installation of the proposed tile Main and 4" & 6" submain tile lines.

PERMANENT MAINTENANCE EASEMENT
There shall be a 40 foot wide easement for the sole purpose of the permanent maintenance of the installed subsurface drainage tiles. Specifically, being 20 feet parallel and adjacent to each side of the proposed centerline alignment of the new tile main.

TYPES OF ANIMAL GUARDS TO BE USED



Outlet Pipe Installation Detail

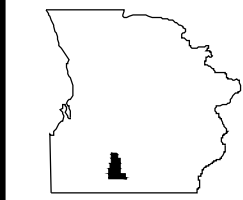


Type D shall consist of sizes such that at least 85 percent of the total material by weight shall be larger than a 3 inch (75 mm) but less than a 12 inch (0.3 m) square opening. At least 50 percent of the total material by weight shall be larger than a 6 inch (150 mm) square opening. The material smaller than a 3 inch (75 mm) square opening shall consist predominantly of rock spalls and rock fines and shall be free of soil.

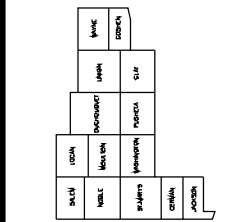
DETAILS & DESIGN

Dickman Ditch

St. Marys Township & Section 29



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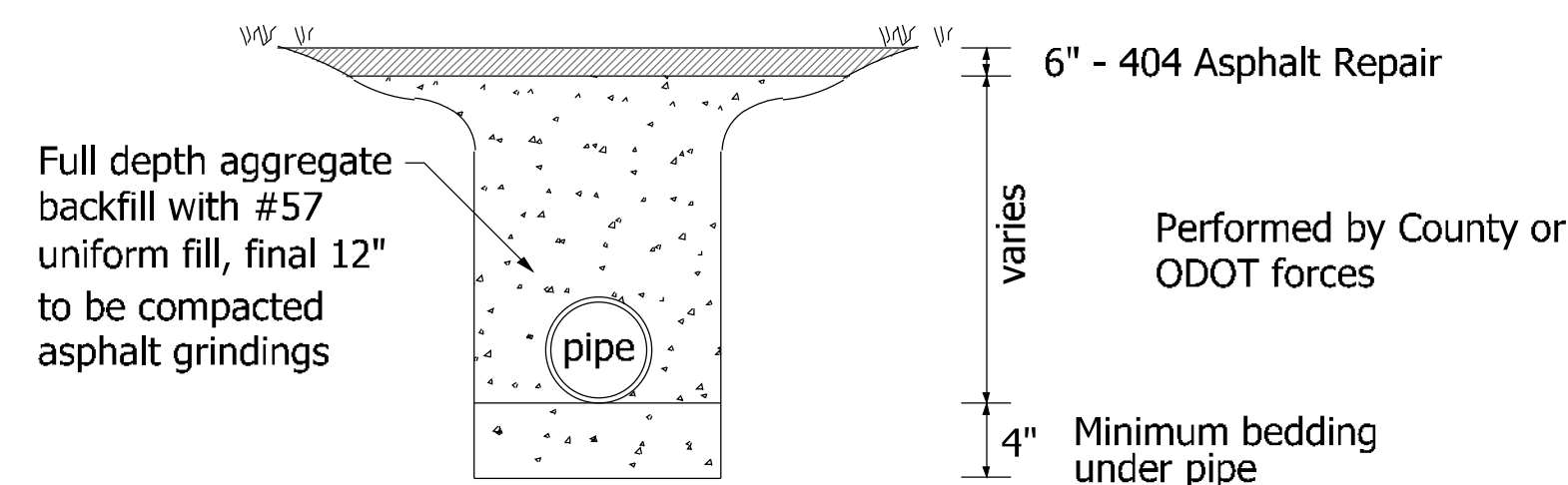
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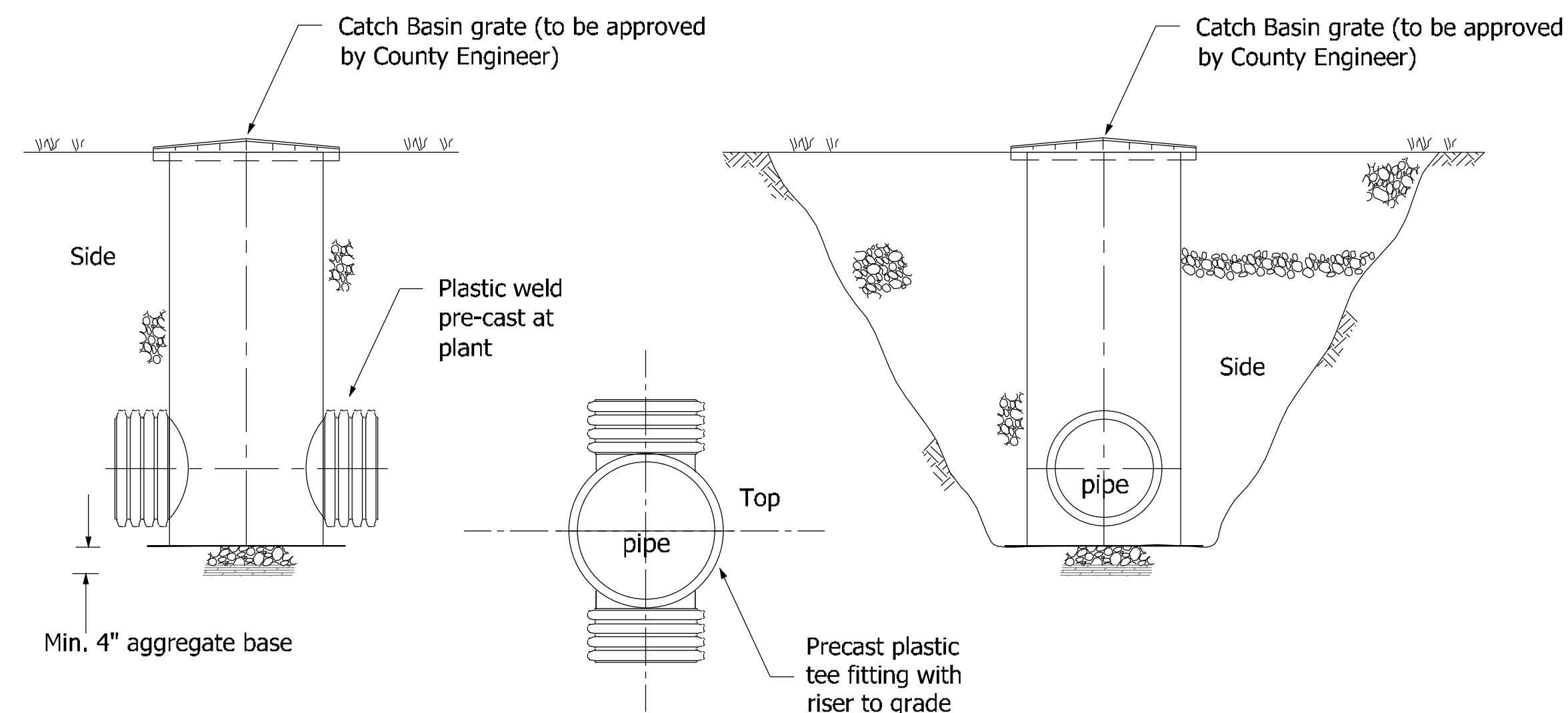
Date	2-2021
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Revised	

DICKMAN DITCH TYPICAL SECTIONS

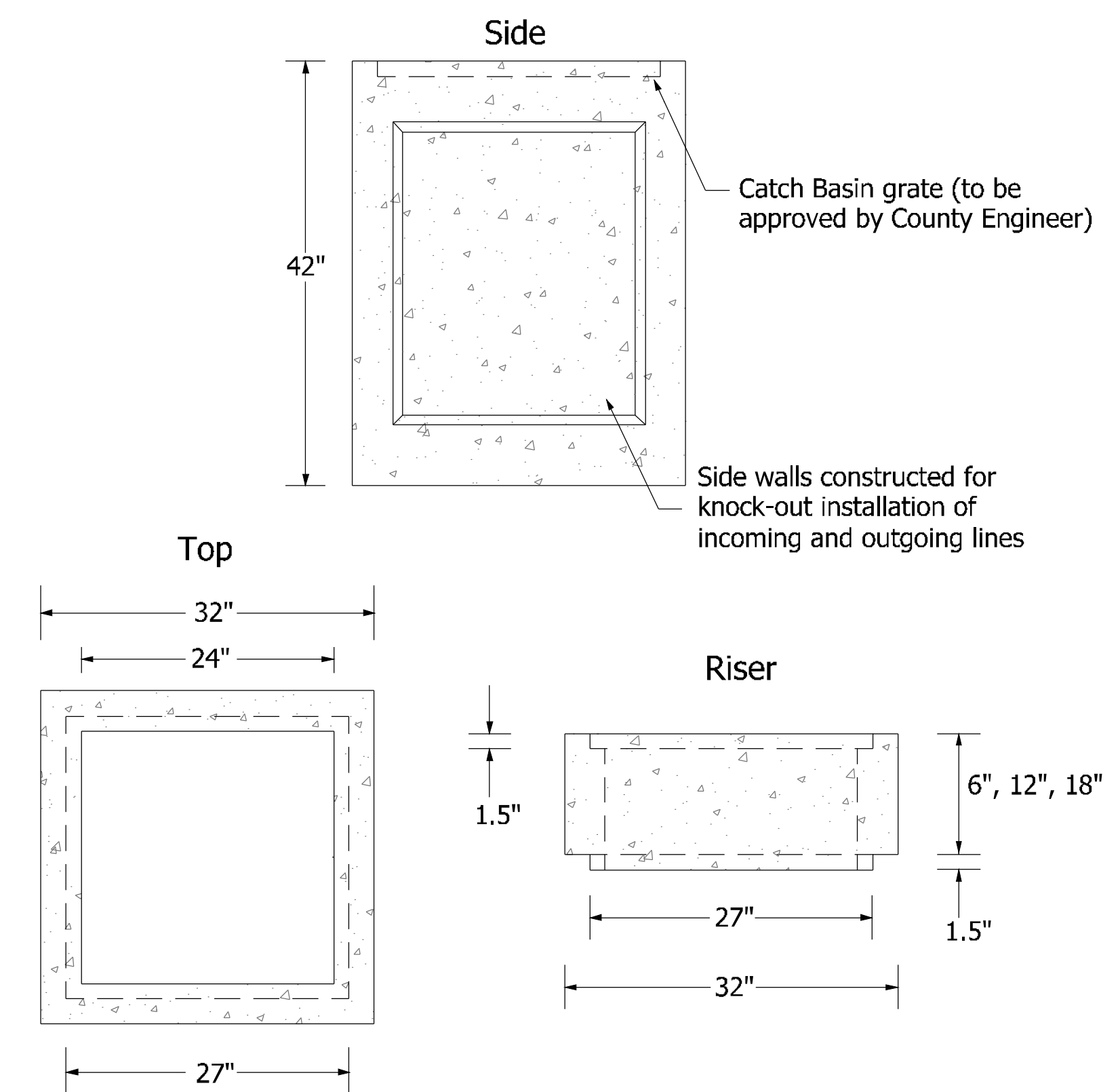
Typical Trench (Road Crossing)



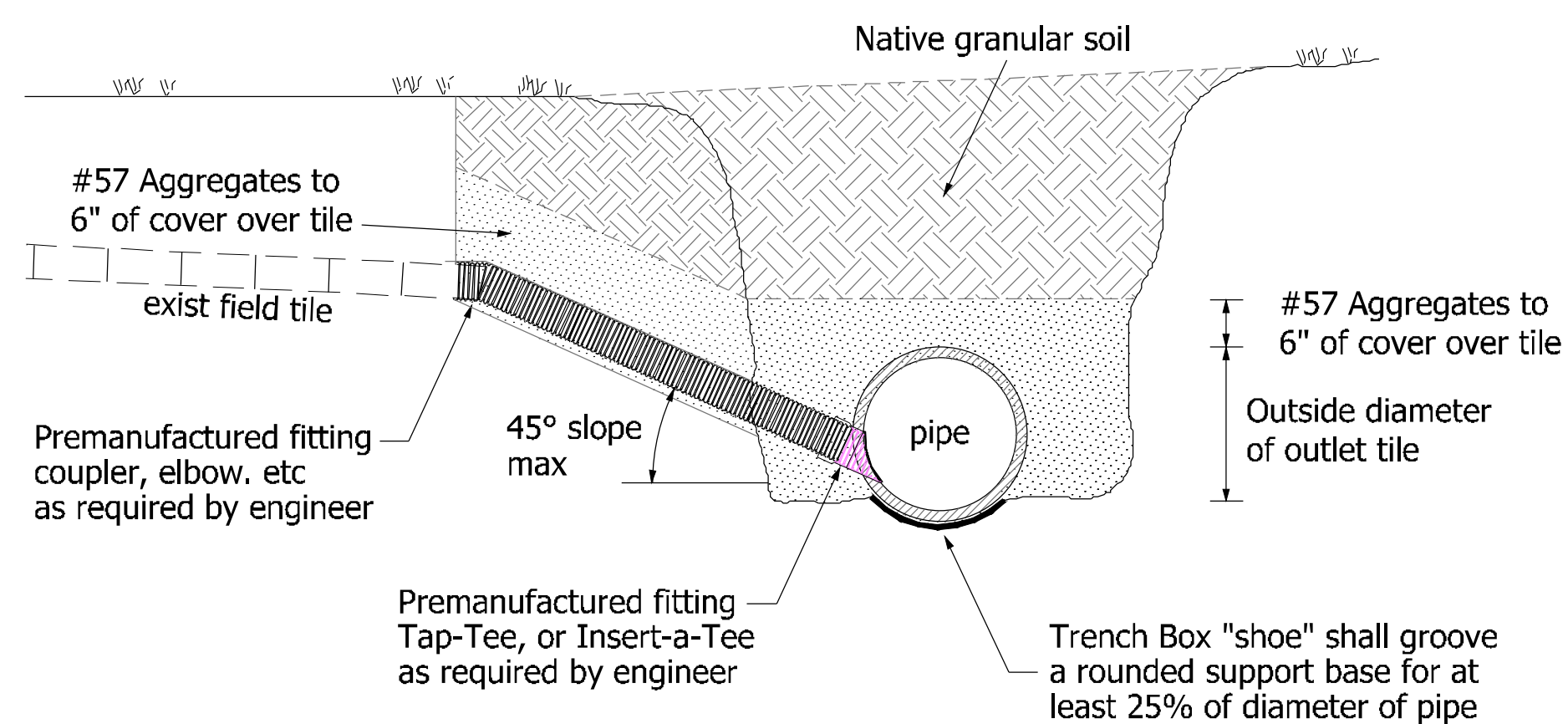
Typical Riser/Breather



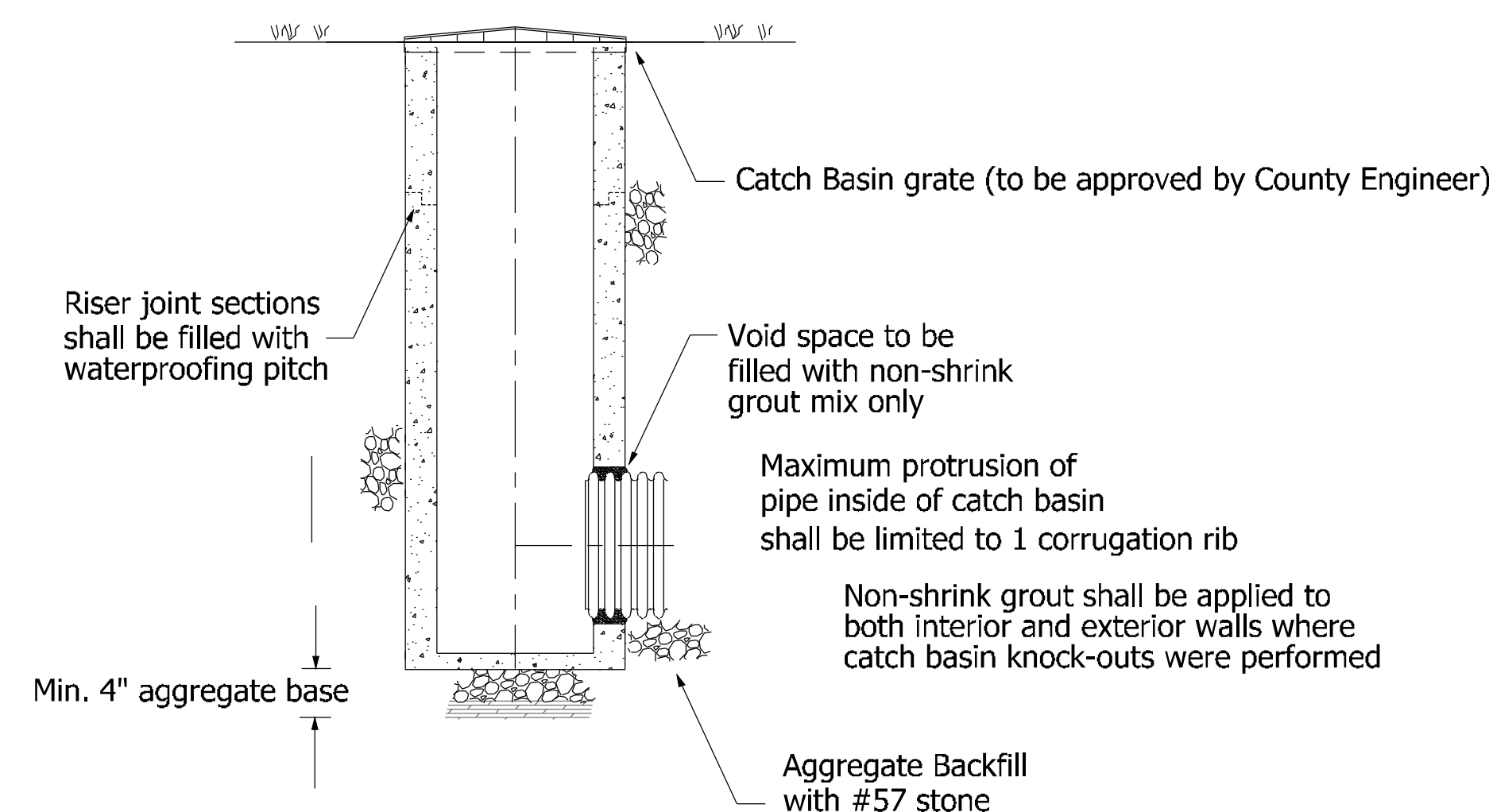
Typical Catch Basin



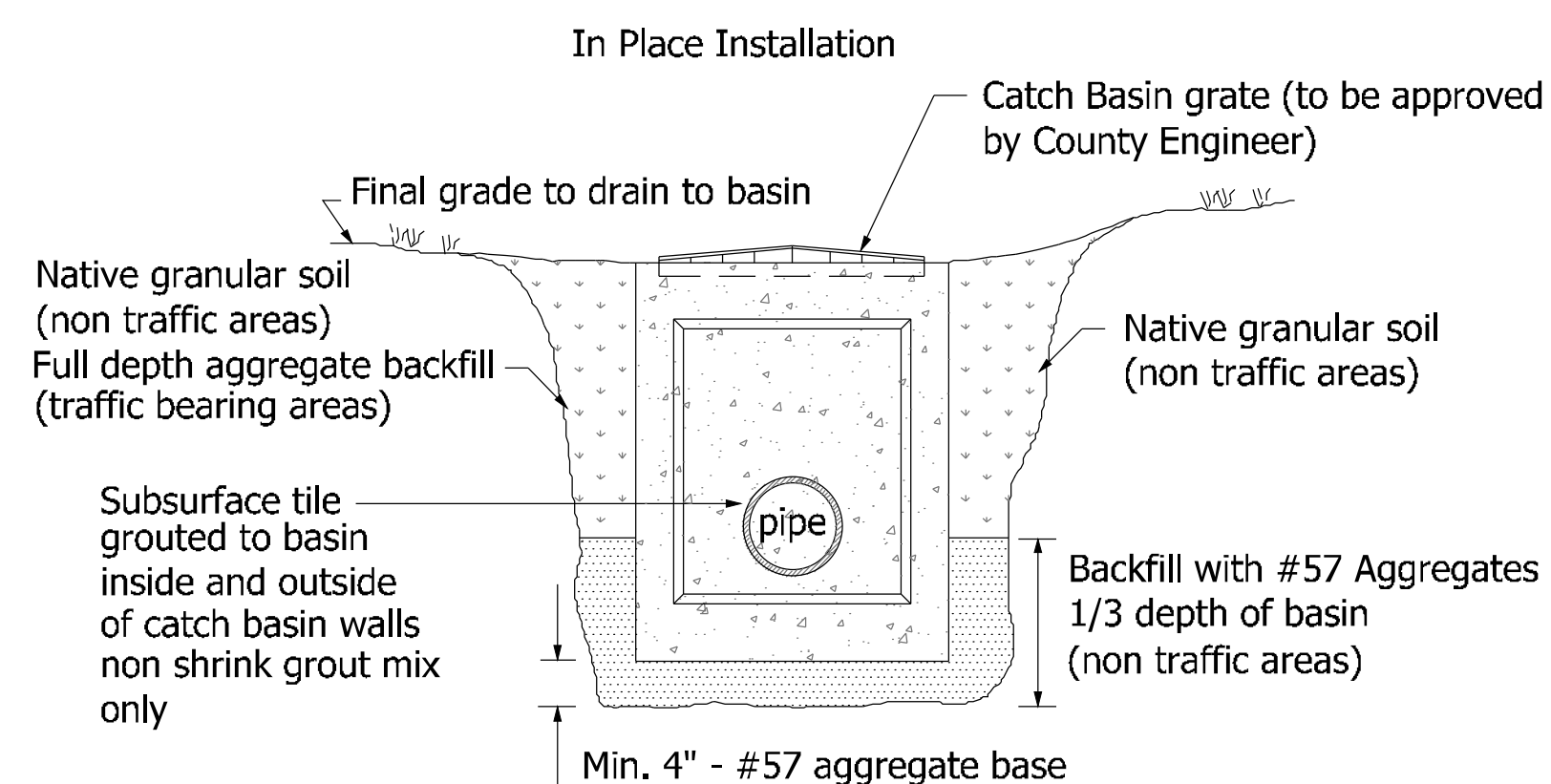
Lateral Tile Connections



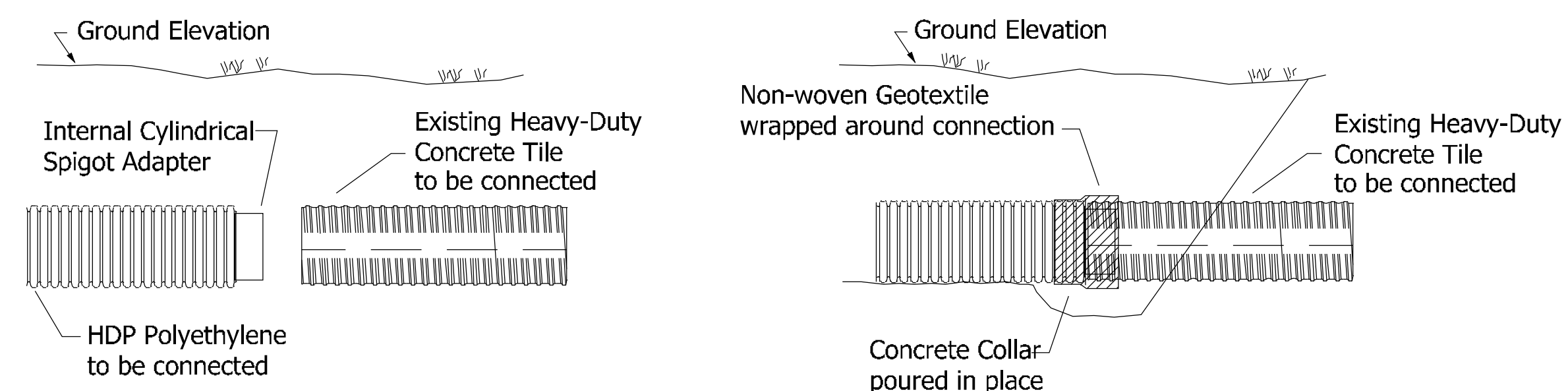
Catch Basin Details



Installed Catch Basin



HDP Polyethylene to Concrete or Clay Tile Connection



Pipe Specifications

1. SUBMAINS: Submains shall be heavy-duty single wall perforated polyethylene plastic tubing which meet ASTM F405 or ASTM F667 specifications.
2. MAINS: All tile mains smaller than 12" in diameter shall be dual wall polyethylene plastic pipe which meet AASHTO M252 specifications, no longer than 20' lengths. All tile mains 12" in diameter and larger shall be dual wall polyethylene plastic pipe which meet AASHTO M294 or ASTM F2306 specifications. Watertight joints shall meet ASTM F477 specifications. All supplied dual wall polyethylene plastic pipe shall be virgin material and meet ASTM D3350.

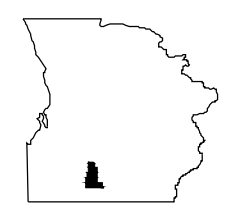
*Follow ASTM D2321 for all installation

	Date
<i>Designed</i>	<i>T. S. Place</i> 2-2021
<i>Drawn</i>	<i>T. S. Place</i> 2-2021
<i>Checked</i>	
<i>Revised</i>	

DETAILS

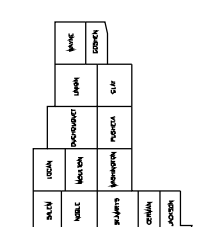
Dickman Ditch

St. Marys Township & Section 29



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Engineer's Office**

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419-739-6520



Sheet Number

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SUBSURFACE TILE SPECIFICATIONS

DICKMAN DITCH

Materials

(1) The Auglaize County Engineer will approve smooth wall polyethylene pipe manufactured by Advanced Drainage Systems (ADS N-12), Hancor, Inc (Hi-Q), Fratco (Smooth Corr), or Baughman (Dual Wall Pipe). All drainage pipe that is delivered to the site shall be inspected by the Auglaize County Engineer. Any pipe containing imperfections, cracks, holes, poor molding extrusions, or any other types of poor workmanship or quality control issues with the manufacturing process of the supplied pipe, shall be immediately rejected, either as individual sections, or rejected as an entire delivered load (or loads) of pipe. All pipe may be subject to a random, 3rd party, independent testing of the pipe materials for AASHTO specifications.

(2) There will not be permitted any type of outside band or coupling devices required to connect pipe end sections together for any pipe sections that are 8" diameter and greater. All specified pre-manufactured fittings, (Elbows, Wyes, Tees, Reducers and Risers) shall be smooth interior wall polyethylene plastic conforming to the same pipe materials, standards, and specifications for the pipe sections used on the project. Said fittings can have outside bands, but all such fittings must be bedded with 4" of #57 aggregate, and have 12" of #57 aggregate backfill cover.

(3) All polyethylene pipe, fittings, and connections delivered to the job site shall be subject to the inspection and approval of the Engineer before installation. Failure to allow the Engineer to inspect the quality and workmanship of said supplied pipe materials before installation shall result in non-payment for that amount of installed pipe. The Engineer reserves the right to accept or reject any or all polyethylene pipe products delivered to the site at his professional discretion.

(4) It shall be required from any Bidding Contractor who has never been awarded a Contract with the Auglaize County Commissioners, that as a part of their bid, the Contractor shall furnish a list of at least 6 personal references to a project that have been inspected & approved by either an Ohio Registered Engineer, an engineering staff employee of a County Engineer in Ohio, or by staff of an ODOT District Engineering Department. Said projects should be job specific for agricultural drainage tile mains, sub-mains, laterals, connections, and catch basins. The bidding contractor must also furnish as a part of this bid, any or all sub-contractors who may be performing work or supplying equipment for the benefit of the bidding contractor.

DUAL WALL PIPE SPECIFICATIONS							CORRUGATED SINGLE WALL				
PIPE Size (In.)	PIPE REQUIREMENTS	BELL & SPIGOT REQUIREMENTS	WATERTIGHT JOINT	MATERIAL PROPERTIES	FITTINGS	INSTALLATION	PIPE Size (In.)	PIPE REQUIREMENTS	MATERIAL PROPERTIES	FITTINGS	INSTALLATION
4	AASHTO M252	AASHTO M252	ASTM F477	VIRGIN MATERIAL	AASHTO M252	ASTM D2321	4	ASTM F405	HEAVY DUTY	ASTM F405 or ASTM F667	ASTM D2321
6		AASHTO M294		ASTM D3350	AASHTO M294		6				
8		or			or		8				
10		ASTM F2306			ASTM F2306		10				
12	AASHTO M294 or ASTM F2306						12		ASTM D3350 or ASTM D1248		
15							15				
18							18				
24							24				
30							30				
36							36				

Installation

This project is job specific for Agricultural Drainage only. Therefore all listed pipe materials shall be installed with a wheel trenching machine equipped with a laser gradient guidance system. It shall be required that the trench bottom or "shoe" of the trenching machine, or of the trench box cage, if so equipped, be conformed and shaped to the specific diameter size of the pipe being installed. It will be required that 100% of the trench be backfilled with granular soil material no larger than 2"-3" in diameter. Chunks, clods or masses of dirt, soil or debris any larger than this will not be permitted to be back filled into the excavated trench. The trench will be back filled at an angle of 45 degrees to the alignment of the trench in order to promote enveloping of the back fill material over and around the installed pipe.

Trenching machine installation is required to have a protected cage attached to the machine. The cage must be long enough for one stick of pipe to be installed with employees working in the cage connecting the pipe. A hydraulic ram is required to push larger diameter pipe together. Self tapping screws will be inserted through the bell of the pipe to prevent the pipe from pulling apart during installation.

A backhoe or excavator can only be used on this project for the following purposes:

- To install pipe at the upper and lower terminus of the project to make end connections;
- To place the first length of pipe leading into or out of a catch basin or receiver;
- To place the first length of pipe leading into or out of a pre manufactured elbow fitting;
- In any areas which a trench has unstable sub grade or base and requires additional excavation and placement of bedding materials;
- To install pipe through a road or driveway, where the trench will be totally backfilled with stone aggregates:

All pipe which has been installed by a back hoe of excavator in the accepted conditions as listed above, shall be bedded and backfilled over and under the installed pipe as shown on the typical trench detail of the engineering plans, profiles and specifications. All encountered existing tile laterals shall be connected to the new main or submain with insert-a-tee connectors. The connected tile shall be hole-sawed into the new main at an angle of 45 degrees above horizontal in the upper 1/3rd of the pipe being connected to, if possible.
- Making lateral connections:

The Tap-Tee and/or insert-a-tee connection shall not protrude more than 1/2-inch into the main tile being connected to. The excavated trench leading to the encountered tile lateral shall be dug at a 45 degree angle from horizontal until the elevation of the tile lateral is met. The entire connection shall be bedded and backfilled to a point 12 inches over the top of all exposed pipe material.

Liability

As required by the Board of County Commissioners of Auglaize County, all contracts let for bid by them for the purpose of ditch construction shall be supplied with the following insurance information by the awarded contractor:

- The limits of liability insurance shall not be less than \$ 500,000 for bodily injury, property damage, and personal injury
- The Policy shall be on comprehensive for including products, completed operations, and contractual liability.
- Before work is to begin by the contractor a Certificate of Insurance shall be on file with the Board of County Commissioners.

In the event that the contractor or anyone under his employment unlawfully damages any real property, he shall restore said property as to a condition equal to or better than the original. The contractor shall be responsible for all injuries to persons resulting from negligence of himself or any of his employees during the continuances of this contract and shall hold Auglaize County, the Board of Commissioners and the County Engineer harmless from any or all actions which would result from said damages or injuries, or both.

Right-of-Way & Construction Easement

The width of working right-of-way shall be limited to 35 feet from each side of the centerline of the proposed tile. The contractor has the privilege of using the right-of-way area during construction for purposes of ingress-egress, excavation and back filling, placement of seed, fertilizer, and mulch, etc. The contractor shall try to work with each individual property owner to eliminate or minimize disturbance to yard and landscaped areas within the recommendations and approval of the Auglaize County Engineer. The contractor may use additional area outside of the working right-of-way in order to properly repair tile laterals and connections if and only if direct permission is granted by that particular landowner. The contractor also retains a temporary easement of the same width along the existing tile main for the purpose of abandonment, crushing, and destroying under the direction of the engineer.

The width of working right-of-way shall be limited to the areas as shown on the Plan & Profile sheets. The contractor has the privilege of using the right-of-way area during construction for purposes of ingress-egress, excavation and back filling, placement of pipe, fittings, and catch basins. The contractor shall try to work with each individual property owner to eliminate or minimize disturbance to crops either by installing the proposed tile before the planting of crops, or after the harvesting of said crops during the current season. The contractor may use additional area outside of the working right-of-way in order to properly repair tile laterals and connections if and only if direct permission is granted by that particular landowner. The contractor also retains a temporary easement of the same width along the existing tile main for the purpose of abandonment, crushing, and destroying under the direction of the engineer.

Brush Removal & Disposal

All trees, stumps, and grubbing within 75 feet of the confines of the tile ditch alignment shall be removed in their entirety. There shall be no flush cutting allowed except where approved by the engineer. All brush to be removed as a part of this project shall be burned, buried, or disposed of in a satisfactory manner in convenient locations approved by the engineer on the project site. All materials buried on the site shall have a minimum 36" of clean, native soil backfill over the disposal site. All landowners adjacent to the open channel reserve the right to cut any or all brush for firewood as they feel is fit for such use. The contractor will not be allowed to remove any trees from the site without the written permission of the landowner.

If applicable, a burning permit shall be obtained from the local fire department or jurisdiction prior to the igniting of any brush pile. NO TIRES shall be used to ignite any brush pile.

Seeding & Fertilizing (Yards)

The contractor shall be responsible for a final seeding and fertilizing of the disturbed yard areas. Prior to seed and fertilizer application, a seed bed must be prepared by the contractor for the area to be seeded. The seed bed must be free of pockets rocks, roots, limbs, tile bats and other debris in general before final seeding and fertilizing takes place. A successful seeding will be considered if a minimum of 50 seedlings exist for 1 square foot of area. All permanent seeding shall take place between the dates of April 15th and September 15th. Temporary seedings are considered if applied between the dates of October 16th and May 14th and a permanent seeding shall be applied within the designated time frame. All temporary seedings are performed at the cost of the contractor and shall consist of a mixture which contains a minimum of 2 bushels of rye or wheat per acre.

SEED REQUIREMENT

(260#/ac for yards)

45% BENCHMARK PERENNIAL RYEGRASS
20% SPF-30 KENTUCKY BLUEGRASS
20% GAELIC KENTUCKY BLUEGRASS
15% ORACLE CREEPING RED FESCUE

FERTILIZER REQUIREMENT

(200#/ac)

18-46-0 (Nitrogen-Phosphorous-Potassium)

Partial Payment

The contractor may request payment for any or all materials which have been successfully delivered to the job site for any working sections which have been completed, or for any other types of labor, materials, or costs involved with the construction of the project before it is completed in it's entirety. A written request with all necessary bills of materials purchased by the contractor must be supplied to the Engineer. A minimum of 10%% retainage shall be applied to all partial payment to guarantee completion. Contractor shall provide proof that all material costs owed to a vendor or supplier of said materials are paid in full within 5 days after receiving said partial payment.

Contractor References

It shall be required from any bidding contractor who has never been awarded a contract with the Auglaize County Engineer, that, as a part of their bid, the contractor shall furnish a list of at least six (6) personal references to a project that have been inspected and approved by either an Ohio Registered Engineer, an engineering staff employee of a County Engineer in Ohio, or by the staff of an ODOT District Engineering Department. Said projects should be job specific for agricultural drainage tile mains, sub-mains, laterals, connections, catch basins and open ditches. The bidding contractor must also furnish as a part of his bid, aby or all subcontractors who may be performing work or supplying equipment for the benefit of the bidding contractor.

Permanent Easement

At the completion of the project, there shall be a permanent easement established of 40 feet in width, centered on the subsurface tile line installed. A Plat of Ditch Easements is filed annually by the Auglaize County Engineer to designate all prescribed easements which become into effect as a result of the acting of the Ditch Petition per Section 6131, Ohio Revised Code. Said easement is for the specific use of the Auglaize County Commissioners to inspect and maintain the installed items as a part of the construction of the petitioned ditch.

Inspection and Staking

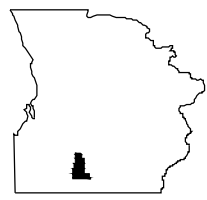
The County Engineer shall be responsible for all of the required construction staking of the alignment and grade for the proposed tile, submains, or known laterals, catch basins, elbows, fittings, and the locations for the abandonment of the old tile. The County Engineer shall inspect all installed tile, pipe, lateral connections, and abandonment excavations prior to back filling alltrenches. The County Engineer shall not inspect nor approve any work that is performed on weekends, without prior approval. No Sunday work will be permitted. Any or all work performed without the inspection and/or approval of the engineer shall be considered a NON-PERFORMED item.

Disclaimer

The specifications as listed on this sheet may only represent a portion of the total specifications for the project. Please refer to the Bidding documents for additional specifications required for this project. The Auglaize County Engineer reserves to the right to require all work to be performed in accordance to the STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, Construction and Material Specifications, as per the latest revision dated January 1, 2013.

SPECIFICATIONS
Dickman Ditch
St. Marys Township & Section 29

Date	2-2021
Designed	T. J. Place
Drawn	T. J. Place
Checked	
Revised	



**Auglaize County
Engineer's Office**

P.O. Box 59
1014 South Blackhoof Street
Wapakoneta, Ohio 45895
419-739-6520

