FRANKLIN COUNTY, OHIO

OFFICE OF THE COUNTY ENGINEER

COOK TRI-COUNTY DITCH

DRAINAGE IMPROVEMENT PROJECT

FRANKLIN COUNTY

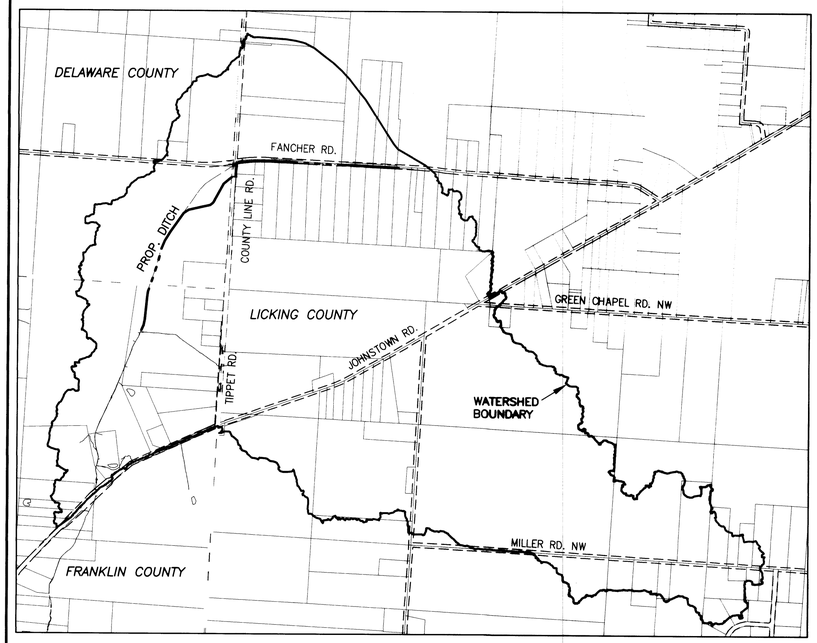
PLAIN TWP.

DELAWARE COUNTY

HARLEM TWP.

LICKING COUNTY

MONROE TWP.



WATERSHED AND LOCATION MAP
NO SCALE

DISTURBED AREA = 3.5 AC.
(NO NPDES PERMIT IS REQUIRED)

INDEX OF SHEETS

BENCH MARKS

ALL BENCH MARKS AND ELEVATIONS SHOWN UPON THIS PLAN ARE BASED ON THE (NAVD88) NORTH AMERICAN VERTICAL DATUM OF 1988.

BENCHMARK No. 07–0109 – ELEV.= 1119.791
BRASS DISK IN CONCRETE MONUMENT AT THE SOUTHWEST CORNER OF FANCHER ROAD AND SOUTH COUNTY LINE ROAD IN DELAWARE COUNTY, 0.3 MILES NORTH OF THE SOUTHEAST CORNER OF DELAWARE COUNTY; 37.2 FEET NORTH OF A POWER POLE, 29.7 FEET SOUTH OF THE CENTERLINE OF FANCHER ROAD, 28 FEET WEST OF THE CENTERLINE OF SOUTH COUNTY LINE ROAD, 3 INCHES ABOVE THE GROUND. DELAWARE COUNTY DISC IS STAMPED "07–0109".

BENCHMARK No. 95WSM – ELEV.= 1104.790
BRASS PLUG IN CONCRETE MONUMENT AT THE NORTHWEST CORNER OF FANCHER ROAD AND GREEN COOK ROAD IN DELAWARE COUNTY, 36.5 FEET NORTH OF FANCHER ROAD, 17.5 FEET WEST OF GREEN COOK ROAD, 2 FEET LOWER THAN THE CROSSROADS, FLUSH WITH THE GROUND.

HORIZONTAL CONTROL

HORIZONTAL CONTROLS ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD83 (2007 ADJUSTMENT)

FRANK 81: STATION IS A STAINLESS STEEL ROD DRIVEN TO A DEPTH OF 20 FEET, ON THE NORTHERLY SIDE OF U.S. 62, 0.1 MILES SOUTHWEST OF TIPPET ROAD TO RESIDENCE #11775, 24.3 FEET NORTH OF THE CENTERLINE OF U.S. 62, 11.1 FEET NORTHWEST OF THE NORTHERLY EDGE OF PAVEMENT, 46.6 FEET SOUTHWEST OF A 10 FOOT TALL EVERGREEN ON THE EAST SIDE OF THE DRIVEWAY, 14.5 FEET WEST OF A BOULDER, 2 FEET SOUTH OF A WITNESS POST, ACCESS THROUGH ALUMINUM COVER, SEE "FRANK181" AZIMUTH.

FRANK181: ALUMINUM PLUG IN CONCRETE MONUMENT ON THE SOUTH SIDE OF THE INTERSECTION OF U.S. 62 AND TIPPET ROAD, 27.7 FEET SOUTHEAST OF THE CENTERLINE OF U.S. 62, 9.2 FEET SOUTHWEST OF POWER POLE, 1 FOOT NORTHEAST OF A COUNTY LINE SIGN, 1 INCH BELOW THE GROUND. DISK STAMPED "FRANK 81 AZ MK 1987".

BASIS OF BEARINGS: FRANK 81 – FRANK181 = N69°03'10"E

MOODY ENGINEERING
300 SPRUCE STREET
SUITE 200
COLUMBUS, OHIO 43215
P: 614 280 8999
MOODY-ENG.COM

STATE OF OHIO · MARK S. LARRIMER · 69331 · REGISTERED PROFESSIONAL ENGINEER

Mark Larrimer 69331
REGISTERED ENGINEER No. E69331

OHIO811.org Before You Dig

REVISIONS			
REV.	DESCRIPTION	INITIAL	DATE

STANDARD CONSTRUCTION DRAWINGS			SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
ODOT				
			800 4–16–21	FRANKLIN COUNTY SECTION 100 GEN. PROVISIONS DATED 6–15–21
MH–1.2	NRCS 410	COC 1441	832 10–19–18	
HW–2.1	NRCS 606			
MT–97.10				
MT–97.11				
MT–101.60				
MT–101.70				
MT–101.90			PERMITS	

PROJECT DESCRIPTION

This project will involve the construction of closed storm sewer and structures, the installation of drain tile, the removal of existing drain tile and ditch rehabilitation.

SPECIFICATIONS

The 2019 Standard Specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement unless noted otherwise.

Signatures below signify only concurrence with the general purpose and general location of the project. All technical details remain the responsibility of the engineer preparing the plans.

I approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth in the plans and estimates.

FRANKLIN COUNTY

JKR APPROVED
DATE 10/10/2022 Connell R Roberts — FRANKLIN COUNTY ENGINEER

APPROVED
DATE 10/10/2022 W. Fig — FRANKLIN COUNTY CHIEF DEPUTY ENGINEER

We, the Commissioners of Franklin County in formal session, hereby approve these plans.

APPROVED
DATE _____ FRANKLIN COUNTY COMMISSIONER

APPROVED
DATE _____ FRANKLIN COUNTY COMMISSIONER

APPROVED
DATE _____ FRANKLIN COUNTY COMMISSIONER

DELAWARE COUNTY

APPROVED
DATE 9/29/22 Chi Bamm — DELAWARE COUNTY ENGINEER

APPROVED
DATE _____ DELAWARE COUNTY COMMISSIONER

APPROVED
DATE _____ DELAWARE COUNTY COMMISSIONER

APPROVED
DATE _____ DELAWARE COUNTY COMMISSIONER

LICKING COUNTY

APPROVED
DATE 9/28/2022 Jared C. Knecht — LICKING COUNTY ENGINEER

APPROVED
DATE _____ LICKING COUNTY COMMISSIONER

APPROVED
DATE _____ LICKING COUNTY COMMISSIONER

APPROVED
DATE _____ LICKING COUNTY COMMISSIONER

DESIGN SERVICES WORK ID: WO-050420-014
P. I. D.: 2020-14
CONSTRUCTION PROJECT NO.: 4022
RAILROAD INVOLVEMENT: NONE

COOK TRI-COUNTY DITCH

DRAWING: P:\18174 Franklin County Engineer Task Order\Task 3\CADD\BASE\18174-T3 01-TITLE.dwg
10/3/2022 8:10:00am

HORIZONTAL SCALE IN FEET
0 125 250 500

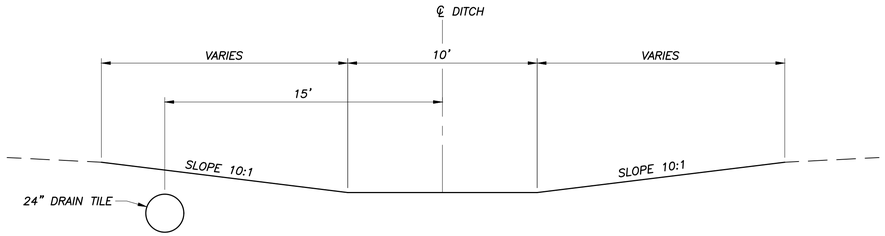
CALCULATED MAB
CHECKED MSL

SCHEMATIC PLAN

COOK TRI-COUNTY DITCH

2
29

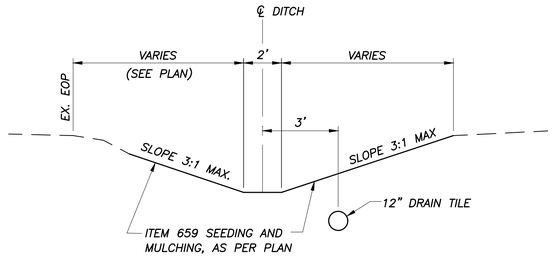
DRAWING: P:\18174 Franklin County Engineer Task Order\Task 3\CADD\BASE\18174-T3 02-SCHEMATIC PLAN.dwg
April 16, 2021, 9:52am



DITCH "A" TYPICAL SECTION

STA. 00+00 TO STA. 26+54

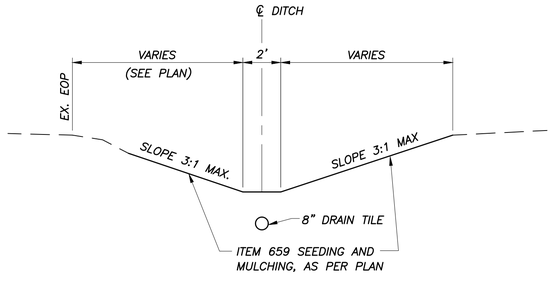
NO SCALE



DITCH "B" TYPICAL SECTION

STA. 50+00 TO STA. 72+59

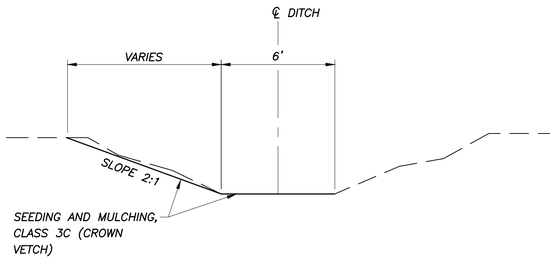
NO SCALE



DITCH "C" TYPICAL SECTION

STA. 300+00 TO STA. 301+87

NO SCALE

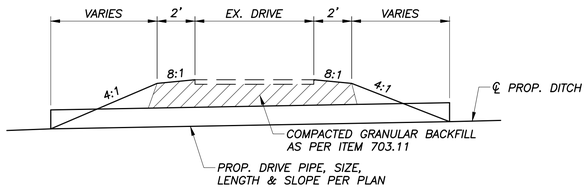


DITCH "F" TYPICAL SECTION

STA. 200+00 TO STA. 210+19

WEST SIDE BANK AND DITCH BOTTOM
ONLY TO BE REDRESSED
(ALL WORK TO BE INCLUDED IN
ITEM–DITCH REHABILITATION)

NO SCALE



DRIVE PIPE TYPICAL SECTION

NO SCALE

CALCULATED

CHECKED

TYPICAL SECTIONS

COOK TRI-COUNTY DITCH

SPECIFICATIONS

The 2019 Construction and Material Specifications of the State of Ohio, Department of Transportation, including changes and Supplemental Specifications listed in the proposal, shall govern this improvement, except where noted otherwise.

WORK LIMITS

The work limits shown on these plans are for physical construction only. Provide the installation and operation of all work zone traffic control and work zone traffic control devices required by these plans whether inside or outside these work limits.

HOURS OF OPERATION

Contractor's work hours shall be limited to 7:00 A.M. to 7:00 P.M. Monday through Saturday, unless permission is granted by the Engineer in writing. The Contractor shall be required to adhere to all local noise ordinances.

PRECONSTRUCTION MEETING AND EEO–PREVAILING WAGE SESSION

The contractor shall meet for a preconstruction meeting scheduled by the County as per Franklin County General Provision 108.02. An EEO–prevailing wage session will be held in conjunction with the general preconstruction meeting discussion of contract documents, affected third party concerns, schedule, proposed subcontractors–suppliers submittals, and possible pre–award safety meeting etc. Prevailing wage coordinator Raelynn McCown 614–525–2438.

STORM SEWER, WATERLINE & SANITARY SEWER BACKFILL

Trench backfill under all pavements (roadways, driveways, and sidewalks) and under influence lines of said pavements shall be Item 304 or Low Strength Mortar Backfill (LSMB). Recycled 304 may be used as per ODOT CMS 703.11 where permissible for trench backfill only; recycled material cannot be used as 304 Aggregate Base. LSMB shall follow the mix proportioning in ODOT CMS 613.03 Type III. All pipe to be subject to 611 performance inspection.

Backfill shall be placed as follows:

The minimum trench width shall be 3' to allow room for mechanical compaction equipment: hoe tamps, jumping jacks, etc.

Provide compaction equipment that compacts the material under the haunch of the pipe. Use shovel slicing and spud bars in conjunction with the compaction operations to compact the material and to manipulate the material under the haunch of the pipe.

Item 304 shall be used as the granular material and shall extend up to the bottom of the roadway subgrade. Except as noted below.

Where the new storm sewer, waterline, or sanitary sewer crosses under an existing utility line, No. 57 Stone or LSMB shall be used vertically from the bottom of the new trench to 6" above the top of the existing utility and horizontally 5' on each side of the existing utility (10' total).

The granular backfill shall be placed and compacted in lifts not to exceed 8" for 304 and 24" for No. 57 Stone.

Watering devices shall be onsite and used on 304 that has moisture content below optimum, as directed by the backfill inspector.

For trenches deeper than 10' use LSMB in the bottom of the trench to a point such that the compacted granular backfill the rest of the way up is no deeper than 10'.

All costs for ITEM 304, NO. 57 STONE, and LSMB backfill shall be included in the unit bid prices of the associated pipe.

EXPOSE NOTE

Where plans provide for a proposed conduit, storm sewer, waterline, or other construction to cross over or under an existing sewer or underground utility, the contractor shall locate the existing pipes or utilities both as to line and grade before starting to lay the proposed conduit, storm sewer, waterline, or other construction. If it is determined that the existing conduit or existing appurtenance to be connected differs from the plan elevation or results in a change in the planned work, the engineer shall be notified before starting construction of any portion of the proposed work which will be affected by the variance in the existing elevations. Payment for all the operations described above shall be included in the contract price for the pertinent items.

OVERNIGHT TRENCH CLOSING

Should work require that trenches remain open during non–work hours, the contractor shall use stone wedges and PCB per SCD MT–101.90 and MT 101.70 accordingly. When the pavement is removed and the contractor is unable to complete the required replacement in time for it to be opened to traffic as indicated in the specifications, the excavation shall be filled with a bituminous patch material with a durable surface or properly plated (as per City of Columbus standard drawing 1441, sheet 7). The contractor will be required to maintain these patches while they are in service. The cost of placing, maintaining, removing and disposing of the temporary patches or plates will be at the contractor's expense.

SAFETY REQUIREMENTS AND RESPONSIBILITIES

The contractor is responsible for ensuring that all work under this contract meets or exceeds the Occupational Safety & Health Administration (OSHA) standards in addition to complying with the recognized best practice within the construction industry.

1.0 Certification Requirements
The manufacturer of safety systems (shoring, protective systems, fall protection) or a professional engineer (PE) must certify that the design of major or critical facilities, equipment, support structures, or systems, embankments, shoring systems, and formwork (false work) is structurally suitable for the intended use. This certification must be in writing and submitted to the FCEO Project Manager before construction or use of such facilities, equipment, or support systems.

2.0 Required Safety Programs and MSDS Submittals
The contractor must submit a comprehensive written safety program covering all aspects of onsite and applicable offsite operations and activities associated with the contract. In addition, the contractor shall submit Material Safety Data Sheets (MSDS) prior to bringing chemicals on site. The Contractor Written Safety Program will be used to evaluate compliance and ensure that the contractor has a program in place to deal with all safety and health related requirements. The contractor is fully responsible for its content and implementation. Onsite work must not begin until the FCEO Project Manager has received the program or appropriate supplementary submittals. The submission of the program in no ways relieves the contractor of the responsibility for providing employees with a safe and healthful work environment or compliance with OSHA standards.

3.0 Required Safety Meetings

3.1 Pre–Construction Safety Program Review
The contractor shall submit the Written Safety Program for review at a Pre–Construction Meeting prior to starting any site activities. The contractor must be prepared to discuss in detail the procedures to control the hazards likely to happen during major phases of the work, and the organizational assignments involved in administering the safety program.

3.2 Progress Meeting Safety
The FCEO Project Manager, the contractor's principal onsite representative, and designated members of respective staffs responsible for safety will review site safety concerns at the Progress Meetings. The safety segment of the meeting will review the contractor's safety effort, resolve health and safety problems relating to current operations, and provide a forum for planning safe future activities.

4.0 Safety and Health Responsibility
The contractor must designate, in writing, a Safety Coordinator to administer the safety program on site and who has supervisory authority over the general contractor, subcontractors, and suppliers. This person shall have responsibility of site safety and worker health, and shall have the authority to correct deficiencies and stop work, if necessary, until deficiencies are corrected.

5.0 Accident and Incident Investigating and Reporting
The contractor's Safety Coordinator shall report all injury accidents and incidents to the FCEO Project Manager as they occur. If a death or injury involving a serious medical condition occurs, the incident shall be reported to the FCEO Project Manager and next of kin within 30 minutes by the contractor's Safety Coordinator. Results of accident investigations and corrective actions shall be provided to FCEO Project Manager as soon as practical following the investigation.

6.0 Safety Orientation.
The contractor must give employees training containing pertinent provisions of the site safety and health program. Additionally, all sub–contractor and their employees are required to have training before working on the site. The contractor is responsible for the content of the training and shall make available the training for FCEO review.

7.0 Refusal to Comply With Occupational Safety and Health Requirements
The contractor must remove employees who refuse or repeatedly fail to comply with safe work practices and standards, or supervisors who fail to enforce compliance, from the associated work assignments.

ITEM 653, TOPSOIL FURNISHED & PLACED, AS PER PLAN

Contractor to separate topsoil during excavation. Contractor to place topsoil as final lift during backfill procedure.
Contractor to have rockhound / soil condition ran over before topsoil and/or seeding and mulching is placed.
Payment for ITEM 653, TOPSOIL FURNISHED AND PLACED, AS PER PLAN, shall be the unit price bid per cubic yard 6" depth, and shall include any necessary excavation to place the topsoil and any incidentals necessary to complete the work. This material shall be pulverized topsoil meeting ODOT CMS 653.02 and manufactured at a processing plant. Onsite processing operations will not be allowed. Topsoil Furnished and Placed shall be measured by the number of cubic yards furnished after compaction.

ITEM 659 SEEDING AND MULCHING, AS PER PLAN and ITEM 659 WATER, AS PER PLAN

The Contractor shall maintain all seeded areas until the Engineer accepts a vigorous grass grown area. This includes protection of the area from wind and fire. The areas shall be watered every other day (rain or shine) for three weeks after seeding. Work for eroded areas due to no fault of the Contractor shall be performed as stated in the ODOT–CMS SECTION 659. No payment shall be made for **ITEM 659, SEEDING AND MULCHING, AS PER PLAN** unless all the watering applications specified herein are made and until the grass exhibits a vigorous growth. Only when all of the above criteria are met, will payment be made for **ITEM 659, SEEDING AND MULCHING, AS PER PLAN**. All watering costs to be paid under the **ITEM 659, WATER, AS PER PLAN.**

Seed certification of grass seed shall be provided by seed vendor for each grass–seed mixture stating the botanical and common name, percentage by weight of each species and variety; and percentage of purity, germination, and weed seed. Include the year of production and date of packaging. Furnish National Turfgrass Evaluation Program (NTEP) data for each species to be used. A NTEP score of 6.0 or higher should be used for all turf tall fescue, a NTEP score of 5.8 or higher should be used for all Kentucky Blue Grass and a NTEP score of 6.0 or higher should be used for Perennial Rye Grass.

Grass seed must be fresh, clean, dry, new–crop seed complying with the A.O.S.A. "Journal of Seed Technology" rules for testing seeds for purity and germination tolerances.

Seed species shall be as follows, with not less than 90 percent germination, not less than 90 percent pure seed, and not more than 0.5 percent weed seed. for Kentucky Blue Grass a germination of, not less than 85 percent. The seed used should be a proprietary cultivar of a turf seed producer.

An example of a proprietary cultivar turfgrass seed mix proportioned by weight:

A. ~40% Jamboree Turf Tall Fescue
B. ~35% Essential Turf Tall Fescue
C. ~12.5% Katie Kentucky Blue
D. ~12.5% All* Star 3 Perennial Rye

All proprietary cultivar turfgrass seed mixes shall be approved by the Engineer before seeding and mulching takes place.

Contractor to run a rockhound / soil on any native soil prior to seeding.

SEEDING. Sow seed at a total rate of 7–9 lb. / 1,000 s.f. with a spreader or seeding machine. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.

HYDRO–MULCHING. The use of hydro–mulch (seeding, fertilizer, mulch, and water together) applications may be used only if straw is applied on top of the hydro–mulch at the rate as per ODOT–CMS 659 at no additional cost to the County. The contractor is totally responsible to ensure vigorous growth of the hydro–mulch at his/her own expense.

TURF MAINTENANCE. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, and replanting to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide the same materials and installation as those used in the original installation.

Mow turfgrass seed mix areas as soon as top growth is tall enough to cut. REPEAT Mowing to maintain specified height without cutting more than 1/3 of grass height. Mow areas to a height of 2 to 3 inches.

DRAINAGE CONNECTIONS

All conduits paid for under this item shall be considered and bid as an "As Per Plan" item. See note below.

All drains, which are encountered during construction, shall be provided with unobstructed outlets. Existing drains which are located below the roadway ditch elevation, and which cross the roadway, shall be replaced within construction limits using Item 611 Conduit, Type B, one commercial size larger than the existing conduit.

Existing collectors and isolated farm drains, which are encountered above the elevation of roadway ditches, shall be outletted into the roadway ditch by Item 611 Type C Conduit. The optimum outlet elevation shall be 12" above the flow line elevation of the ditch.

All lateral connections outside the road ROW should be performed under NRCS 606 using ODOT 707.33 pipe material (N–12).

The location, type, size and grade of replacements shall be determined by the Engineer and payment shall be made on final measurements.

Tie–ins to existing conduits shall use a rubber boot connection and hardware as approved by the Engineer. All conduits shall be Schedule 40 Polyvinyl Chloride Plastic Pipe (PVC). Blind tap connections and cutting into curb or drainage structures shall be included in the linear foot price bid for each item.

Erosion control pads and animal guards shall be provided at the outlet end of all drains as per Standard Construction Drawing DM–1.1M, except when they outlet into a drainage structure. Payment for the erosion control pads and animal guards shall be included for payment in the pertinent conduit items.

The following estimated quantities have been included in the General Summary for the work noted above

ITEM 611	4" CONDUIT, TYPE B, SCHEDULE 40 PVC, AS PER PLAN 50 LIN FT
ITEM 611	6" CONDUIT, TYPE B, SCHEDULE 40 PVC, AS PER PLAN 50 LIN FT
ITEM 611	8" CONDUIT, TYPE B, SCHEDULE 40 PVC, AS PER PLAN 50 LIN FT
ITEM 611	4" CONDUIT, TYPE C, SCHEDULE 40 PVC, AS PER PLAN 50 LIN FT
ITEM 611	6" CONDUIT, TYPE C, SCHEDULE 40 PVC, AS PER PLAN 50 LIN FT
ITEM 611	8" CONDUIT, TYPE C, SCHEDULE 40 PVC, AS PER PLAN 50 LIN FT

Necessary bends, branches and rubber boot connectors shall be included in the price bid for each item. The Contractor shall not order any of the above materials unless approved by the Engineer.

Contractor to provide northing and easting for all tie–ins to the new main. Will also denote type and size of pipe. Price to be included in the price bid with the associated LF of item used.

CALCULATED | CHECKED

GENERAL NOTES

COOK TRI-COUNTY DITCH

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April 16, 2021 9:54am

UTILITIES

The identity and location of existing underground utilities located in and around the construction area have been shown and labeled on the plans by using information provided by the respective utility owners. The county and the consulting engineer will not assume responsibility for the accuracy of location or depth of existing underground utilities as shown on the plan.

Support and protection of all utilities and appurtenances shall be the responsibility of the contractor. Costs for the repair and restoration of existing utilities damaged by the contractor shall be the responsibility of the contractor. The contractor is responsible for locating all service laterals and lines. Costs associated with the above work and responsibilities shall be included in the price bid for various items.

Prior to excavation, the contractor shall give a 48–hour notice to the Ohio Utilities Protection Service (OUPS) by calling (800) 362–2764 and 811. A 48–hour notice shall also be given to the owners of underground utilities shown on the plans who are not members of a registered underground protection service.

Listed below are utility companies that have facilities located within the work limits of this project and subscribe to OUPS.

COLUMBIA GAS
MIKE SUCHARSKI
3350 JOHNNY APPLESEED CT.
COLUMBUS, OH 43231
OFFICE: 614–818–2104
CUSTOMER SERVICE: 800–344–4077
DAMAGE PREVENTION: 866–632–6243

AMERICAN ELECTRIC POWER
ROD SLONEKER
850 TECH CENTER DRIVE
GAHANNA, OH 43230
614–833–6817
SOLUTION CENTER: 800–277–2177

ASPIRE ENERGY
ANTHONY DEGIDIO
300 TRACY BRIDGE ROAD
ORVILLE, OH 44667
330–439–8508

CONSOLIDATED ELECTRIC
4993 S.R. 521
DELAWARE, OH 43015
740–363–2641

LICKING RURAL ELECTRIC
1500 GRANVILLE ROAD
NEWARK, OH 43055
740–348–1288

AT&T
111 NORTH 4TH STREET
COLUMBUS, OH 43215
OFFICE: 614–223–5316
REPAIR SERVICE: 888–611–4466
PROMPT #1 THEN #5

SPECTRUM
RAY MAURER
3760 INTERCHANGE ROAD
COLUMBUS, OH 43204
614–481–5262

CENTURY LINK
1–800–244–1111

NATIONAL GAS AND ELECTRIC
749–348–2641

STORM SEWER
FRANKLIN COUNTY ENGINEER
STEVE BUSKIRK
970 DUBLIN ROAD
COLUMBUS, OH 43215
614–525–3063

ITEM SPECIAL, HYDRO–EXCAVATING UTILITY EXPOSURE

The Contractor shall expose utilities as directed by the Engineer utilizing Hydro–Excavating methods. The unit price bid for this pay item shall include all costs for labor, equipment, backfill of the exposure holes utilizing Flowable Controlled Density Fill as per Columbus 2012 CMS 613.04 Type I or Type III, and any incidentals necessary to complete the work.

This is a special pay item to be used as directed by the Engineer and not to be used for usual utility exposures associated with OUPS tickets and general construction of the project. Costs to expose utilities associated with OUPS tickets and general construction of the project shall be included in the unit bid prices for the items of work affected. The Contractor is reminded to keep his/her OUPS ticket updated according to industry practices.

SUBSURFACE DRAIN DESTRUCTION & REMOVAL SUPPLEMENTAL TO ODOT #202

Should there be any discrepancy discovered between the intentions of these specifications and any other specification prepared for this Contract, the Engineer shall be the deciding authority, and his decision shall be final. The right is reserved by the Engineer to correct any error or omissions in the plans or specifications. The Contractor shall be paid for extra work on unit bid price. The right is also reserved for non–performance and shall be deducted from the contract at unit price.

Destruction of Clay or Non–reinforced Concrete Subsurface Drain:
Excavate soil material from the ground surface to the top of the subsurface drain separating topsoil material from subsoil material. Collapse the clay subsurface drain within the existing trench. Replace the soil material into the trench.

Payment for the destruction of clay subsurface drain shall be per lineal foot.

Removal of Clay Tile Debris from Site:
All clay tile debris remaining on the ground surface following tile destruction and exceeding 2" in size in any dimension shall be removed from the site.

Removal of clay tile debris shall be considered incidental to payment for destruction of clay subsurface drain.

ITEM 202, SPECIAL – FILL AND PLUG EXISTING CONDUIT

This work consists of leaving specified lengths in place and constructing masonry bulkheads or placing precast stoppers and filling the pipe's internal void. The fill material shall be controlled density fill mix. Payment for Pipe to be Abandoned shall be per lineal foot.

ITEM 690, SPECIAL – MAILBOX REMOVED AND RESET

This work shall consist of removal and replacement of mailbox and supports. Due care shall be exercised in such an operation, and the contractor shall be responsible for repairing or replacing any box damaged by improper handling on his part, as judged and directed by the engineer. Any damaged mailbox or post shall be replaced as follows:

Wood posts shall be nominal 4 inches by 4 inches square or 4.5 inches diameter round, and conform to 710.14.

Steel posts shall be nominal pipe size 2 inches i.d., and conform to AASHTO M 181.

All hardware including but not limited to plates, screws, bolts, and etc. shall be commercial–grade galvanized steel.

Posts shall be set per the first paragraph of 606.03, and shall in no instance be encased in concrete.

Support hardware shall accommodate either a single or a double mailbox installation, and no more than two boxes may be mounted on a single post.

The mailbox shall be securely and neatly attached by the contractor to the support. The contractor shall furnish all necessary attachment hardware (nuts, bolts, plates, spacers, and washers) as necessary to accommodate the complete installation.

The contractor shall be responsible for coordinating with the local post master regarding the timing of the movement of any mailbox to a new location.

Payment under this item shall be limited to final permanent installations. Temporary installations shall be in accordance with 107.10. However, the same material and size limitations as for permanent installations shall apply.

ESTIMATE OF QUANTITIES

ITEM	QUANTITY	UNIT	DESCRIPTION
			ROADWAY
201	1	L.S.	CLEARING AND GRUBBING
202	3	EACH	HEADWALL REMOVED
202	1595	FT.	PIPE REMOVED 24" AND UNDER
202	77	FT.	SPECIAL – FILL AND PLUG EXISTING CONDUIT (24" PIPE)
202	58	FT.	SPECIAL – FILL AND PLUG EXISTING CONDUIT (12" PIPE)
SPEC	559	FT.	SUBSURFACE DRAIN DESTRUCTION & REMOVAL
203	5292	C.Y.	EXCAVATION
203	100	C.Y.	EXCAVATION (USED AS DIRECTED BY ENGINEER)
203	26	C.Y.	EMBANKMENT
203	100	C.Y.	EMBANKMENT (USED AS DIRECTED BY ENGINEER)
203	50	C.Y.	EMBANKMENT #2 STONE (USED AS DIRECTED BY ENGINEER)
203	50	C.Y.	EMBANKMENT #57 STONE (USED AS DIRECTED BY ENGINEER)
653	186	C.Y.	TOPSOIL FURNISHED AND PLACED, AS PER PLAN
690	9	EACH	SPECIAL – MAILBOX REMOVED AND RESET
SPEC	10	EACH	HYDRO EXCAVATING UTILITY EXPOSURE (USED AS DIRECTED BY ENGINEER)
			EROSION CONTROL
601	8.0	C.Y.	ROCK CHANNEL PROTECTION, TYPE C WITH FABRIC FILTER
659	5005	S.Y.	SEEDING AND MULCHED, AS PER PLAN
659	1132	S.Y.	SEEDING AND MULCHING, TYPE 3C (CROWN VETCH)
659	27	M.GAL.	WATER, AS PER PLAN
832	10000	EACH	EROSION CONTROL (USED AS DIRECTED BY ENGINEER)
			DRAINAGE
NRCS 410	1	EACH	GRADE STABILIZATION STRUCTURE
NRCS 606	2688	FT.	24" HDPE DRAIN TILE
NRCS 606	11	EACH	TILE MAIN BREATHER
NRCS 606	10	EACH	TILE MAIN BREATHER (USED AS DIRECTED BY ENGINEER)
602	0.46	C.Y.	CONCRETE MASONRY
611	187	FT.	8" CONDUIT, TYPE C PERFORATED (707.33, TYPE SP)
611	4289	FT.	12" CONDUIT, TYPE C PERFORATED (707.33, TYPE SP)
611	210	FT.	12" CONDUIT, TYPE D, 706.02
611	130	FT.	15" CONDUIT, TYPE D, 706.02
611	38	FT.	18" CONDUIT, TYPE A, 707.33
611	39	FT.	18" CONDUIT, TYPE B, 707.33
611	48	FT.	24" CONDUIT, TYPE B, 707.33
611	135	FT.	24" CONDUIT, TYPE C PERFORATED (707.33, TYPE SP)
611	86	FT.	24" CONDUIT, TYPE C, 707.33
611	1	EACH	INLET FRAME AND GRATE, AS PER PLAN, SHEET 10
611	4	EACH	MANHOLE, NO. 3
611	50	FT.	4" CONDUIT, TYPE B, SCHEDULE 40 PVC, AS PER PLAN
611	50	FT.	4" CONDUIT, TYPE C, SCHEDULE 40 PVC, AS PER PLAN
611	50	FT.	6" CONDUIT, TYPE B, SCHEDULE 40 PVC, AS PER PLAN
611	50	FT.	6" CONDUIT, TYPE C, SCHEDULE 40 PVC, AS PER PLAN
611	50	FT.	8" CONDUIT, TYPE B, SCHEDULE 40 PVC, AS PER PLAN
611	50	FT.	8" CONDUIT, TYPE C, SCHEDULE 40 PVC, AS PER PLAN
SPEC	1178	FT.	DITCH MAINTENANCE, SEE NOTE SHEET 13
SPEC	1019	FT.	DITCH REHABILITATION, SEE NOTE SHEET 14
			PAVEMENT
253	38	S.Y.	PAVEMENT REPAIR (ROADWAY)
253	121	S.Y.	PAVEMENT REPAIR (DRIVES), AS PER PLAN, SHEET 29
			TRAFFIC CONTROL
630	7	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION
			INCIDENTALS
614	1	L.S.	MAINTAINING TRAFFIC, AS PER PLAN
623	1	L.S.	CONSTRUCTION LAYOUT STAKES AND SURVEYING
624	1	L.S.	MOBILIZATION

CALCULATED | CHECKED

GENERAL NOTES
ESTIMATE OF QUANTITIES

COOK TRI-COUNTY DITCH

ITEM 614 MAINTAINING TRAFFIC, AS PER PLAN

These plans provide a suggested method of maintaining traffic for this project. The Contractor may, in lieu of this method of operation or sequence of construction, submit their own, in writing, to the Engineer for review and approval. However, the Contractor shall provide at the preconstruction conference a set of reproducible prints (scale 1"=40' or 1"=20') showing how they plan to maintain traffic in accordance with the OMUTCD and these traffic maintenance notes. These plans will have to be reviewed and approved by the Franklin County Engineer's Office. The Contractor will be advised as to the review results in writing within thirty (30) days.

A minimum of two 10' lanes (one lane of traffic in each direction) shall be maintained on all roads during non-working hours and peak periods (7am-9am and 4pm-6pm). If this requirement cannot be met, traffic shall be detoured using ODOT Standard Construction Drawing MT-101.60 and OMUTCD Chapter 6H (Figure 6H-20).

Two-way one-lane traffic is permitted during working non-peak hours (9am-3:30pm) in accordance with ODOT Standard Construction Drawing MT-97.10 or MT-97.11.

The Contractor shall notify the County Engineer's Mobility Department at 614-525-6036 two weeks prior to beginning work, and weekly thereafter, to discuss any changes to the maintenance of traffic plan and/or completion date. Before work is started on this project the Contractor shall submit a written schedule of operation and a traffic maintenance control plan for approval. No work will be started that will restrict any lane usage unless it is the intent of the Contractor to work full time with a full force in order to complete the work without unnecessary delays.

The following devices must meet NCHRP 350 or MASH-08 before the devices are installed on the project: drums, cones, vertical panels and the panel support, portable sign supports, temporary impact attenuators, temporary concrete barrier, and barricades.

All construction signing shall be installed and covered before construction begins. After construction sign installation, the Contractor shall notify the Franklin County Engineer's Office Mobility Department at 614-525-6036 three working days before work begins and request an inspection of all signing.

Faces of construction signs and reflective sheeting on barricades shall be Type H (VIP). All orange construction signs shall be fluorescent orange. All sheeting will be tested for reflectivity per ODOT 730.192. Vertical panels and drum bands shall be reflectorized with Type G (high intensity) sheeting complying with the requirements of 730.19. All signs and barricades, vertical panels, and drums will be like new and in good condition in conformance with "Quality Guidelines for Temporary Traffic Control Devices and Features" published by ATSSA.

Maintenance of all Contractor-supplied signs, barricades, vertical panels and drums is the Contractor's responsibility. If the Contractor fails to correct deficiencies within four hours of notification, Franklin County shall correct or hire someone to correct the deficiencies. The Contractor shall then be back charged per ODOT Specification 614. In the case that back charging the Contractor is not applicable, the County will rescind and withhold all permits issued to the Contractor to work within County right-of-way until the issue is settled. These provisions shall not in any way relieve the Contractor of any of their legal responsibilities or liabilities for the safety of the public.

All barricades at closures shall have yellow Type A low intensity flashing warning lights and two flags. Reflective material is required on both sides of all barricades.

Cones are approved for daytime use only. Drums shall be used at night and have yellow Type C steady burn lights. Cones and Drums shall be placed as follows: 25' c/c on tangents, 15' c/c on tapers, and 8' c/c in radii, or as specified in MT-97.10 or MT-95.30.

All signs nine square feet (36" x 36") and over shall have yellow Type A low intensity flashing warning lights and two flags.

All work and traffic control devices shall be in accordance with ODOT CMS 614 and other applicable portions of the specifications, as well as the latest version of the OMUTCD. Payment for all labor, equipment and materials shall be included in the lump sum contract price for Item 614, Maintaining Traffic, as Per Plan, unless separately itemized in the plan.

LOCAL ACCESS

Ingress and egress shall be maintained to all residential and commercial properties. Driveway closures may be necessary to enable work on, or in front of, a drive. The Contractor will be responsible for notifying owners, residents, or business operators, in writing, at least 7 days, prior to closure per ORC 6131.47. The Engineer shall be given a list of the persons that were given notices with the date of notice included. Closure is permitted only during work hours and access must be returned at the end of each working day. Properties with multiple drives may have one drive closed at a time, while work is performed in the area of the closed drive.

Individual drive closures shall be kept to the minimum time needed for construction activities. Every effort must be made to accommodate the owner's need for access. No weekend closures.

EXISTING TRAFFIC SIGN MAINTENANCE

Special care shall be taken to maintain existing street name signs and stop signs. If necessary, the Contractor shall relocate these signs out of the way of construction, but in conformance with OMUTCD. Any damaged sign shall be replaced at the expense of the Contractor.

REMOVAL OF PAVEMENT MARKINGS

Removal of existing or work zone pavement markings from the final surface course using water blasting or grinding is not permitted. Removal of markings shall be by means of full-width milling and overlaying to a depth of 1 1/2" before the permanent markings are applied. All replacement pavement markings shall comply with ODOT Item 644 – Thermoplastic Pavement Marking, applied at the widths shown below:
Edge Lines – 6" White
Channelizing Lines – 12" White
Center Lines – 6" Yellow

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC NOTES

COOK TRI-COUNTY DITCH

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

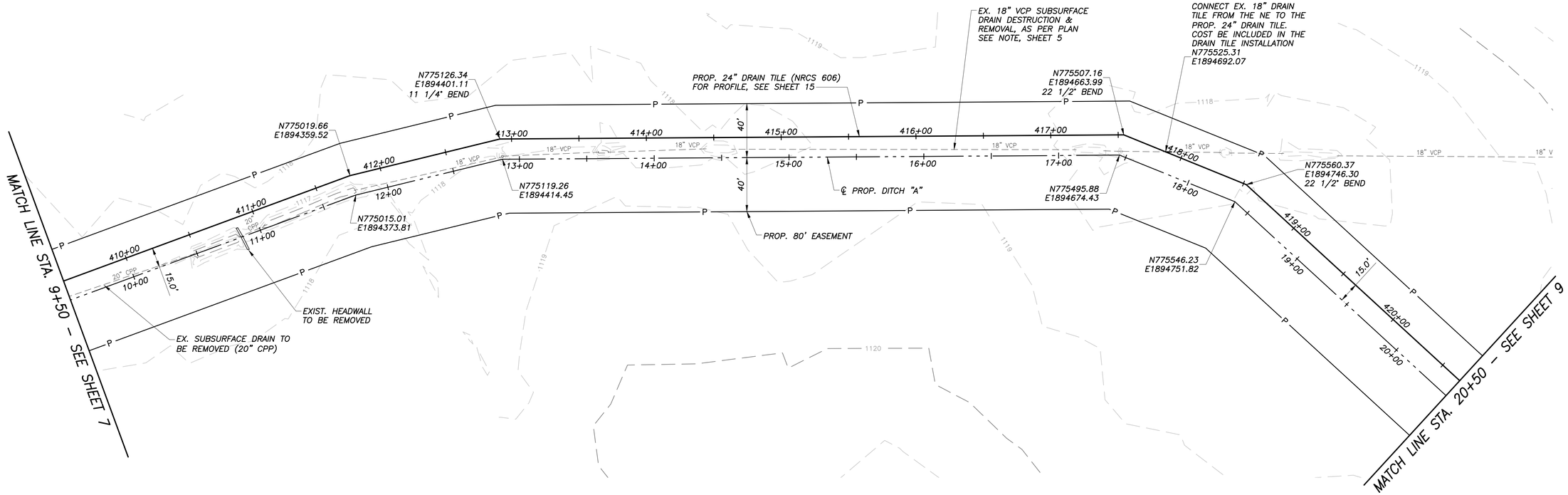
PLAN AND PROFILE
STA. 0+00 TO STA. 9+50

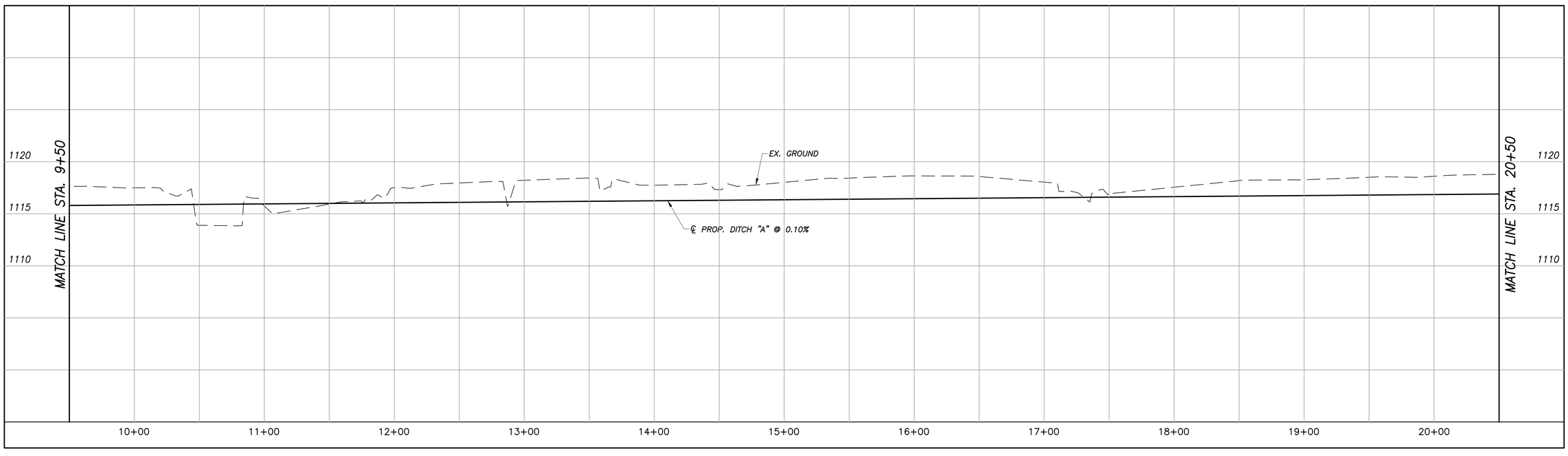
COOK TRI-COUNTY DITCH

7
29

DRAWING: P:\18174 Franklin County Engineer Task Order\Task 3\CADD\BASE\18174-T3 bm.dwg
April 16, 2021 9:36am

316-440-01-054
SUNDANCE REAL ESTATE
INVESTMENTS LLC
FANCHER RD.





HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE
STA. 9+50 TO STA. 20+50

COOK TRI-COUNTY DITCH

8
29

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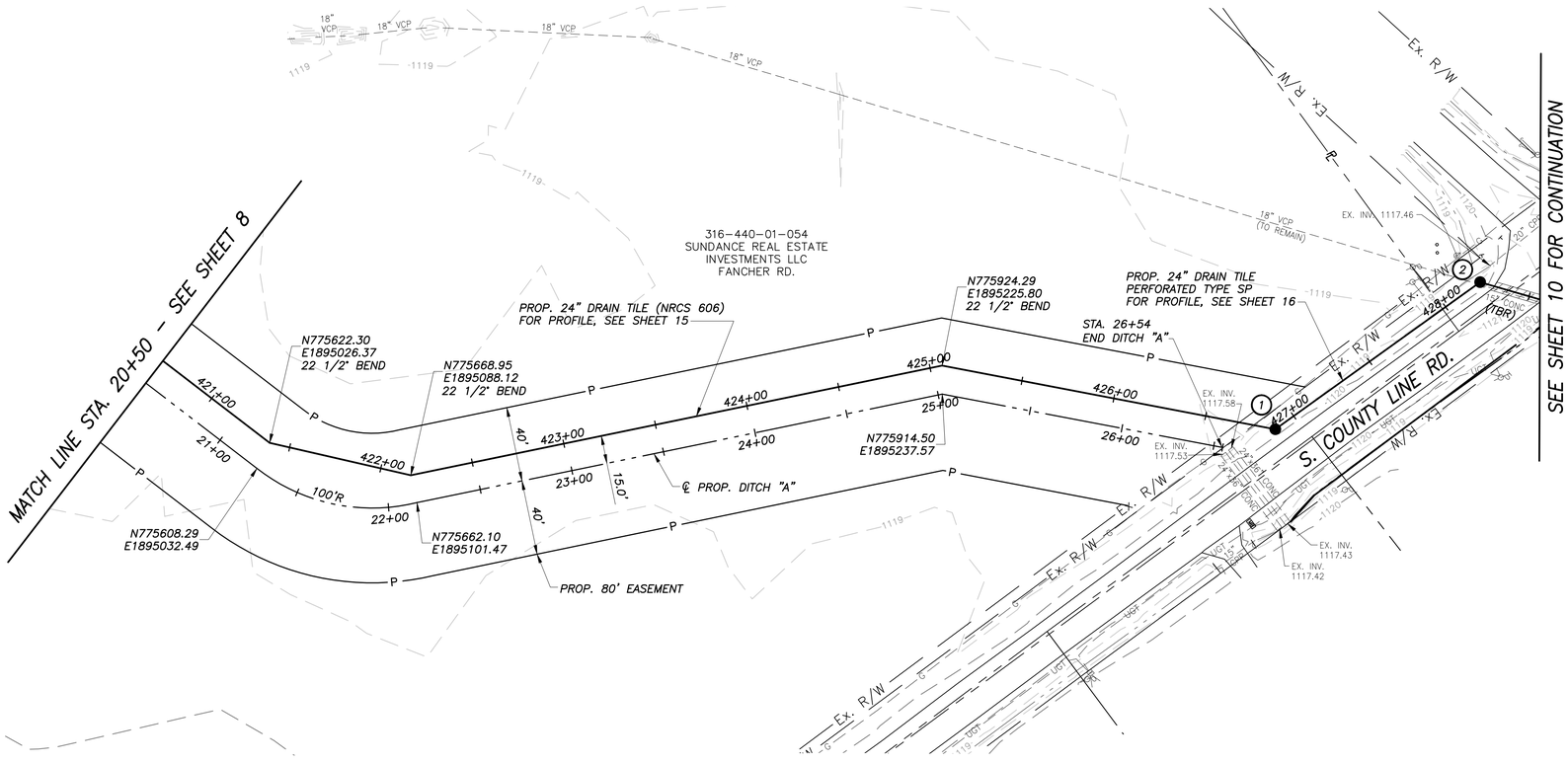
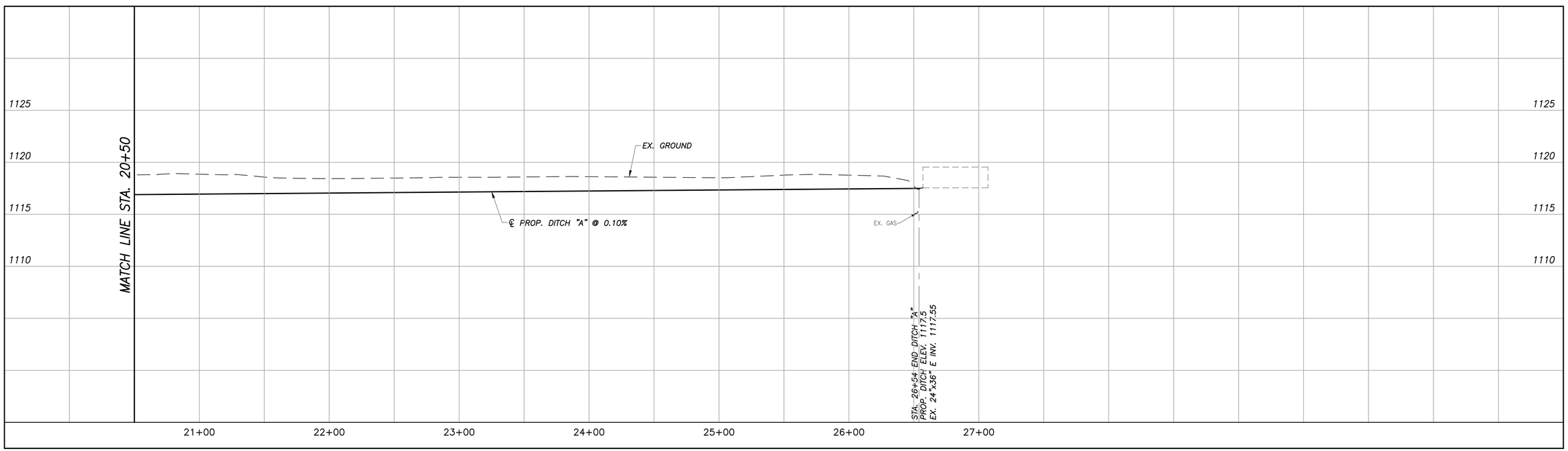
April 16, 2021, 9:59am





HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE
STA. 20+50 TO STA. 26+54

COOK TRI-COUNTY DITCH

9
29

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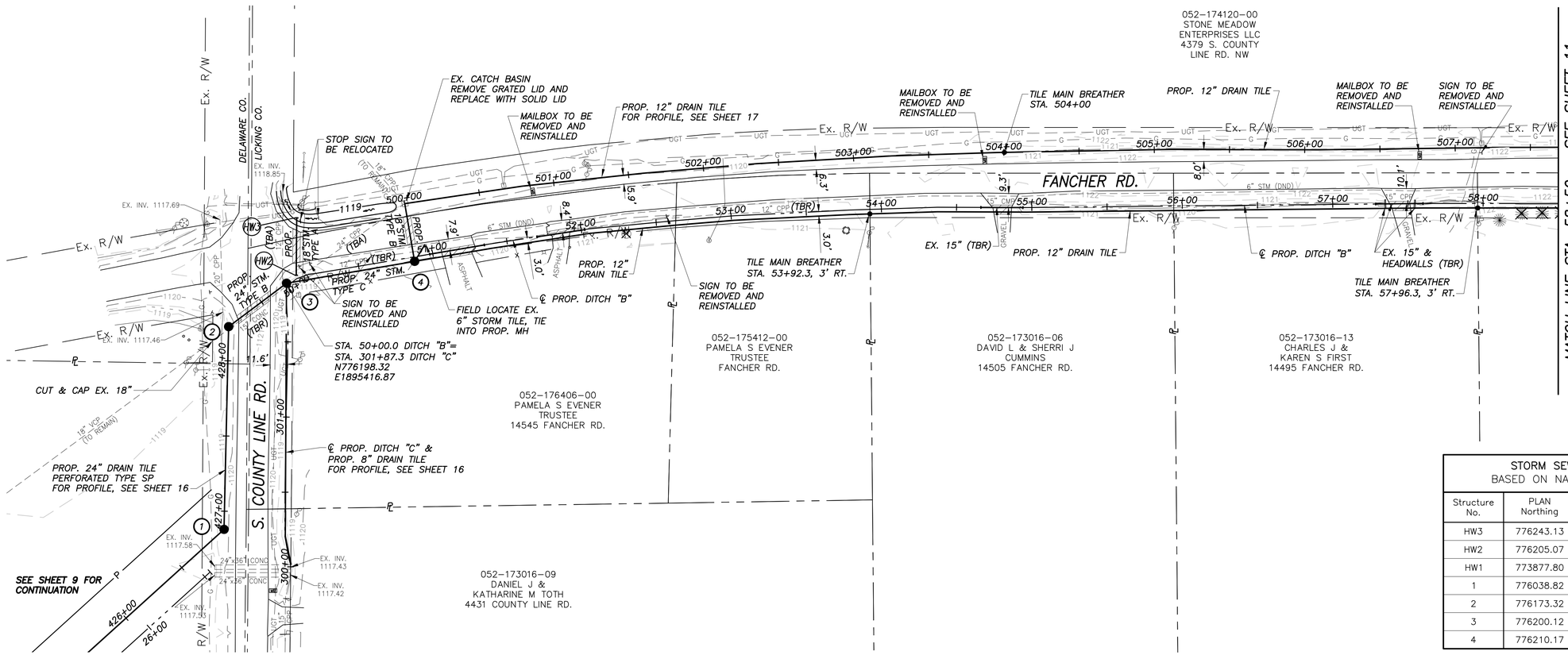
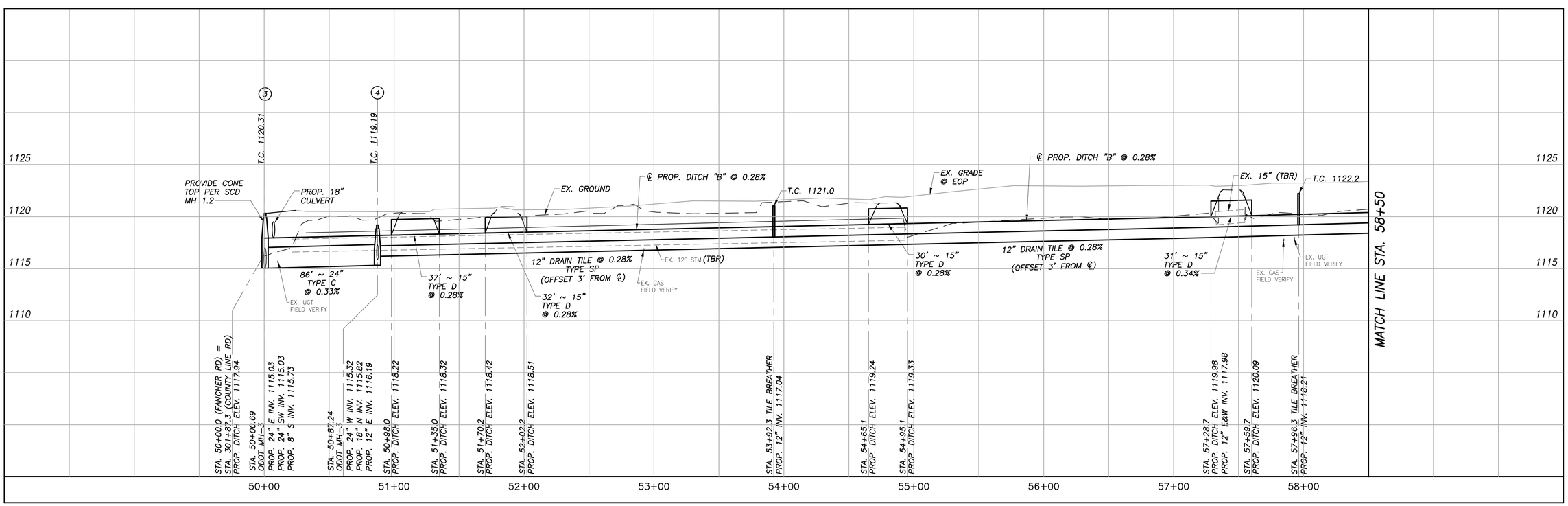
April 16, 2021 10:00pm



STORM SEWER MANHOLE COORDINATES
BASED ON NAD83 OHIO SOUTH (NSRS 2007)

Structure No.	PLAN Northing	PLAN Easting	AS-BUILT Northing	AS-BUILT Easting
HW3	776243.13	1895425.55		
HW2	776205.07	1895423.23		
HW1	773877.80	1894096.71		
1	776038.82	1895366.40		
2	776173.32	1895376.56		
3	776200.12	1895416.46		
4	776210.17	1895502.24		



HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB CHECKED MSL

PLAN AND PROFILE STA. 50+00 TO STA. 58+50

COOK TRI-COUNTY DITCH

10
29

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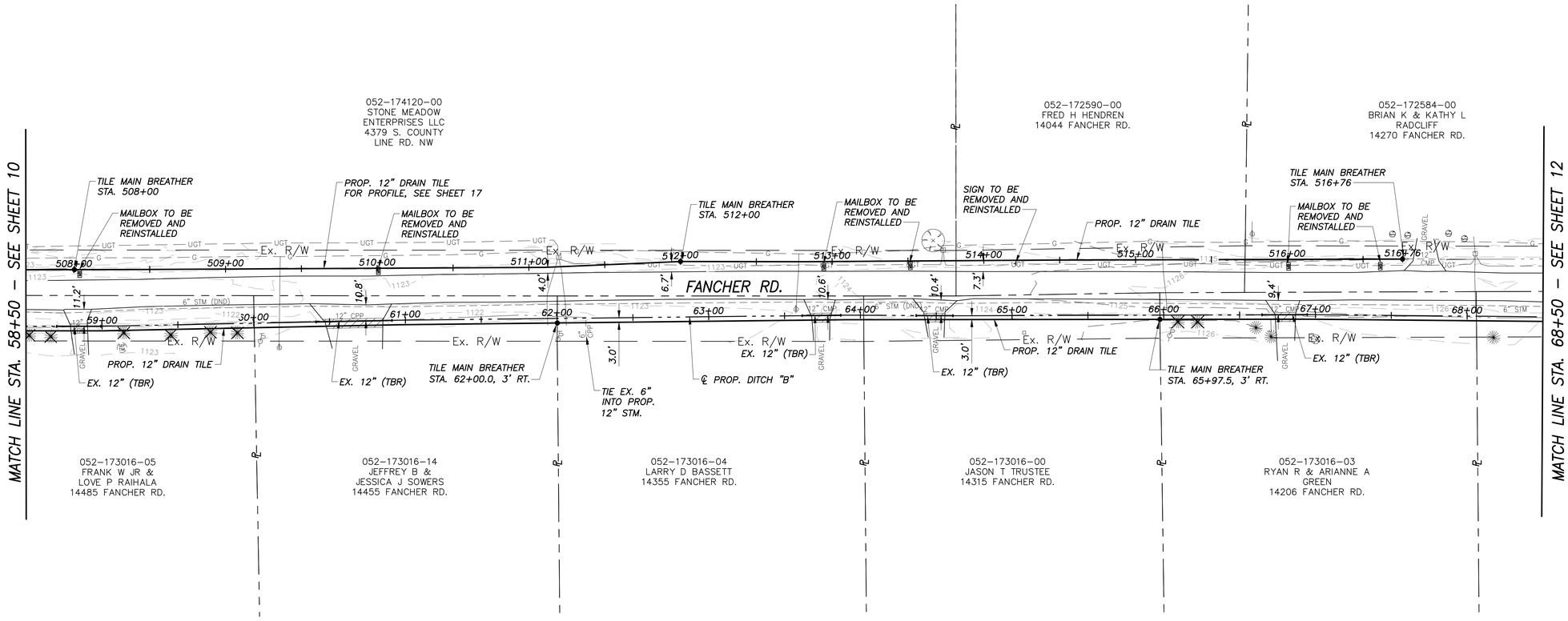
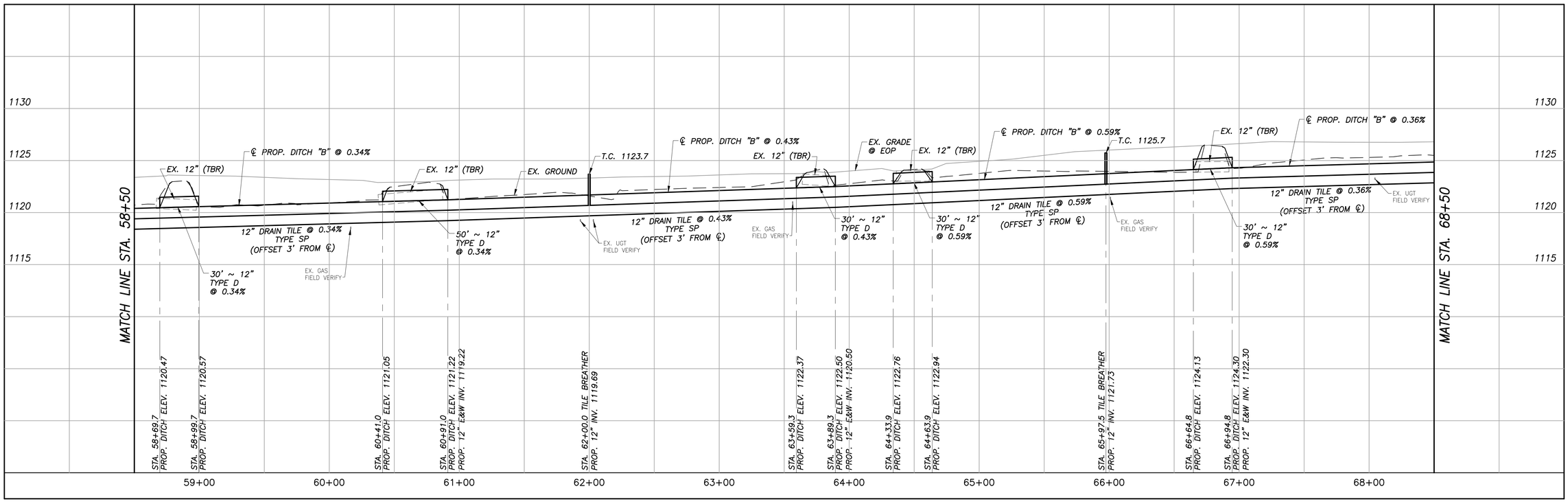
July 13, 2021 - 1:12pm





0 20 40 80 HORIZONTAL SCALE IN FEET

CALCULATED MAB CHECKED MSL

PLAN AND PROFILE STA. 58+50 TO STA. 68+50

COOK TRI-COUNTY DITCH

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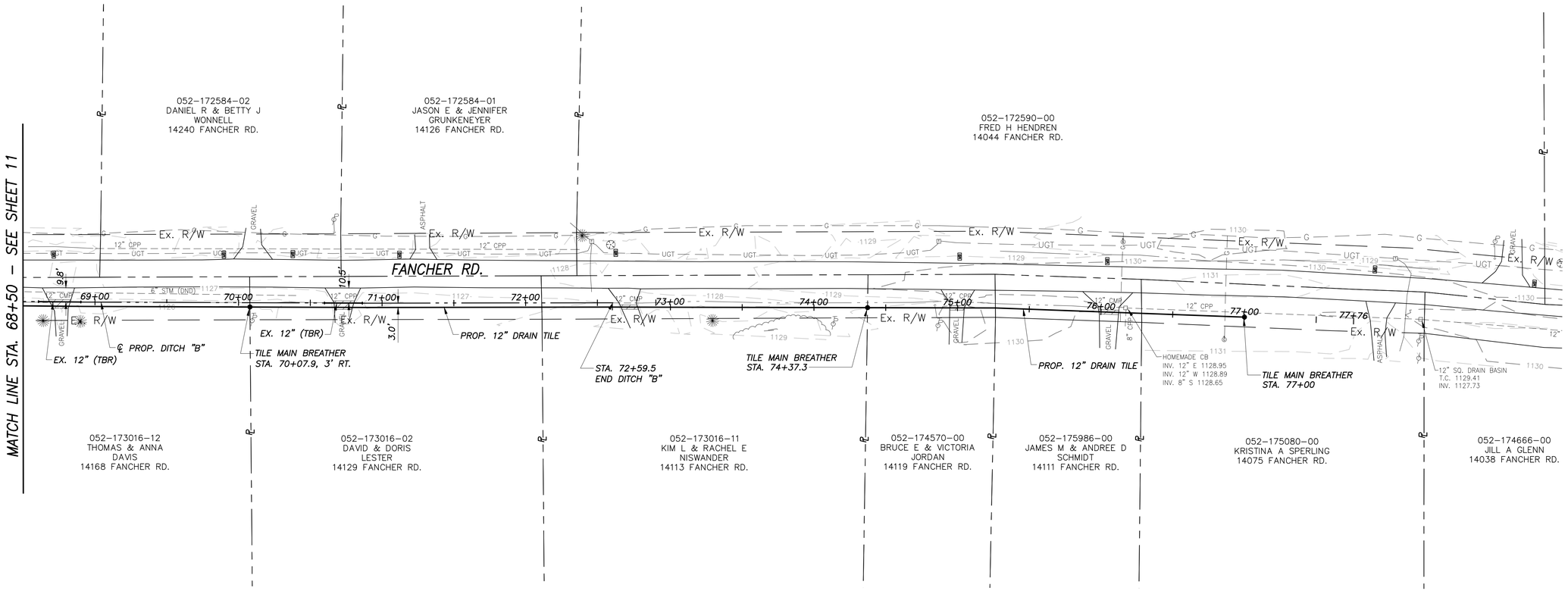
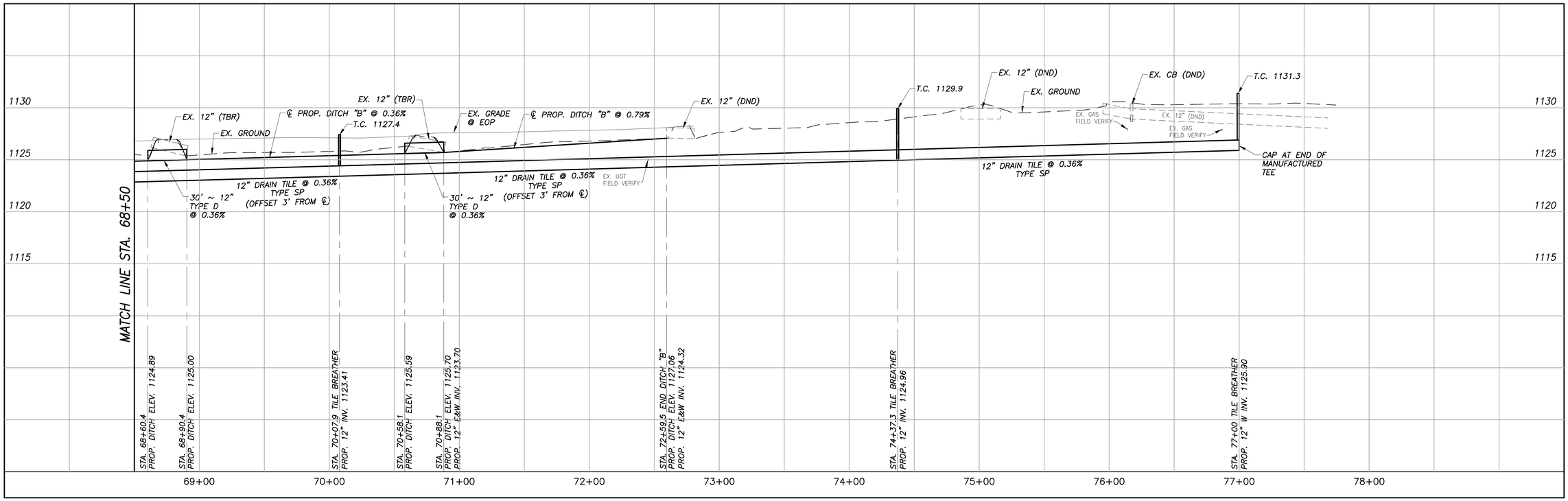
April 16, 2021 10:12pm





HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE
STA. 68+50 TO STA. 77+00

COOK TRI-COUNTY DITCH

12
29

DRAWING: P:\18174 Franklin County Engineer Task Order\Task 3\CADD\BASE\18174-T3 bm.dwg
April 16, 2021 10:14am

220-002183
PURDIE JAMES LAWRENCE TR
11673 JOHNSTOWN RD.

220-001948
NEW ALBANY SELF STORAGE LLC
11681 JOHNSTOWN RD.

220-002191
JLP JOHNSTOWN ROAD LLC
JOHNSTOWN RD.

JOHNSTOWN RD

EX. DRIVE

EX. DRIVE

Ex. R/W

Ex. R/W

Ex. R/W

Ex. R/W

Ex. R/W

℄ EX. DITCH

℄

℄

12" STM

ESMT

ESMT

EX. 48" CIP
INV. 1108.94

EX. 48"x72" CIP
INV. 1107.27

EX. 48" CIP
INV. 1108.79

24"

24"

INV. 1109.44

INV. 1109.56

EXIST. 48" CMP

INV. 1109.35

100+00

101+00

102+00

103+00

104+00

105+00

106+00

107+00

108+00

109+00

110+00

111+00

1111

1108

1112

1113

1109

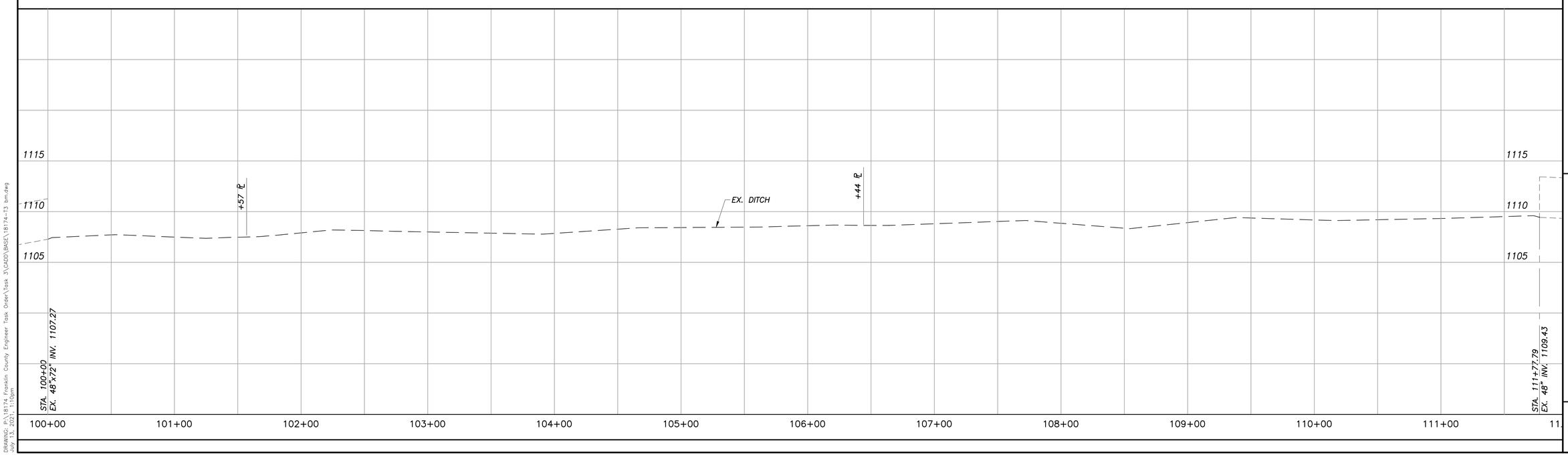
1115

1110

1114

NOTE:
CONTRACTOR TO PERFORM MAINTENANCE ONLY ON THIS DITCH SEGMENT INCLUDING REMOVAL OF OBSTRUCTING VEGETATION AND DEADFALL

SEE SHEET 14 FOR CONTINUATION



HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE
DITCH MAINTENANCE

COOK TRI-COUNTY DITCH

13
29

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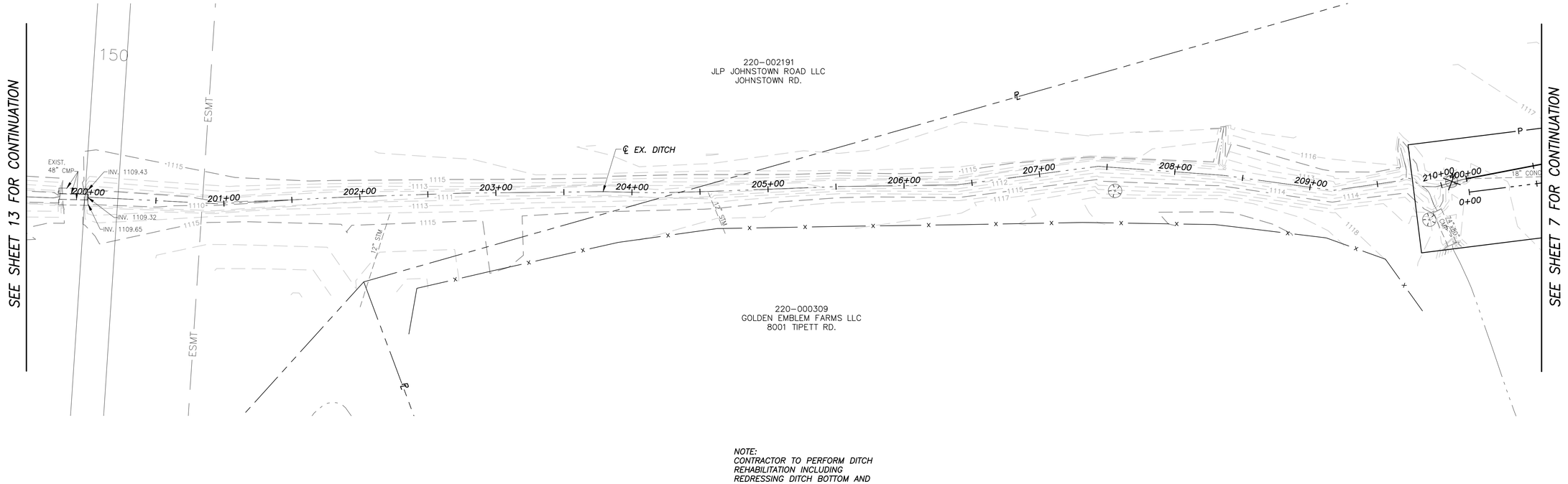
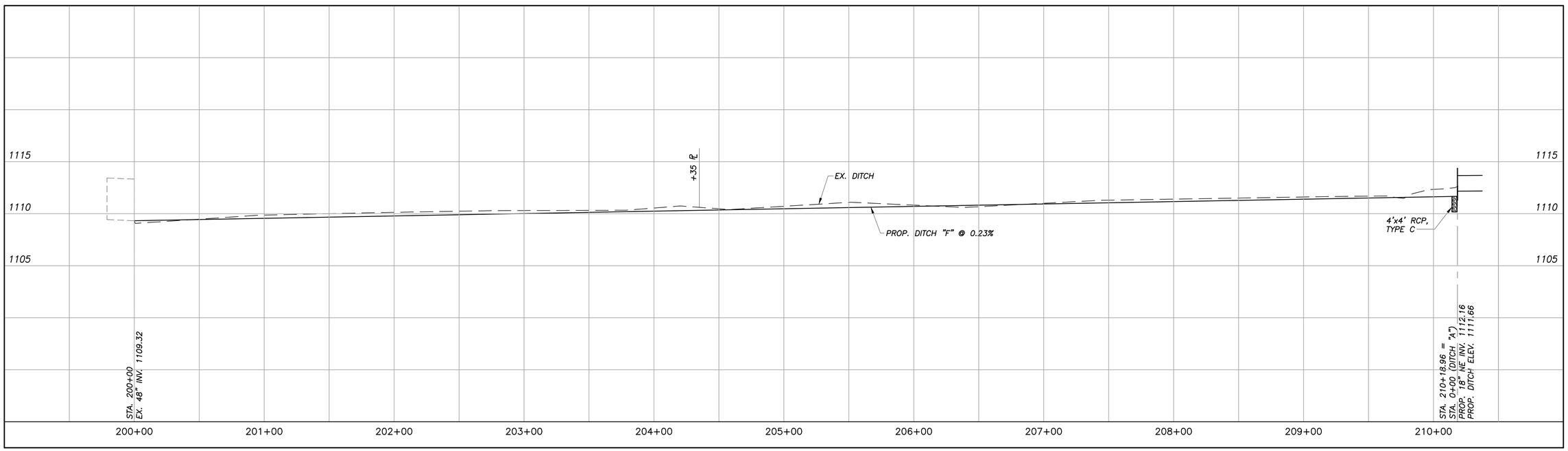
July 13, 2021 - 1:19pm



NOTE:
CONTRACTOR TO PERFORM DITCH REHABILITATION INCLUDING REDRESSING DITCH BOTTOM AND WEST BANK. REFER TO PROFILE, THIS SHEET AND TYPICAL SECTION, SHEET 3 FOR BOTTOM GRADE AND BANK SLOPE.



HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE DITCH REHABILITATION

COOK TRI-COUNTY DITCH

14
29

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July 13, 2021 1:08pm

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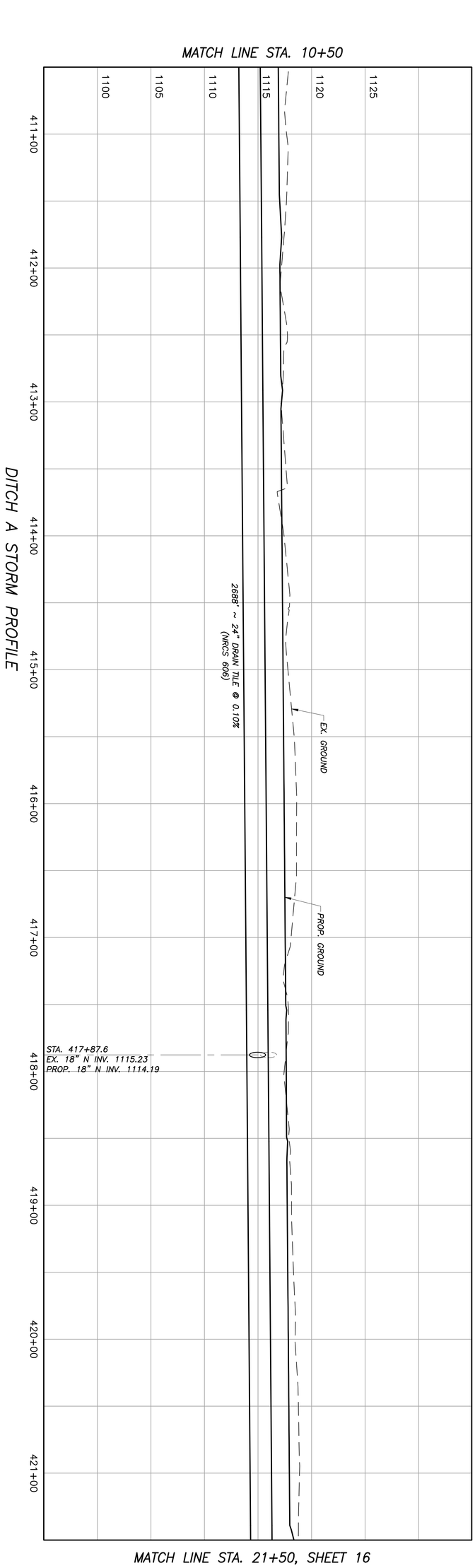
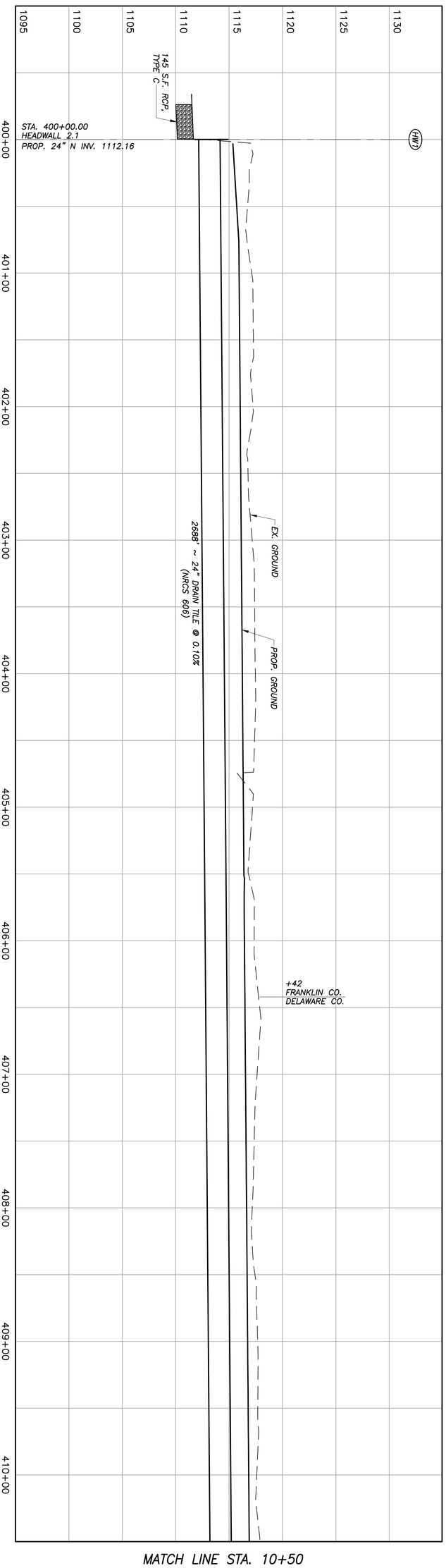
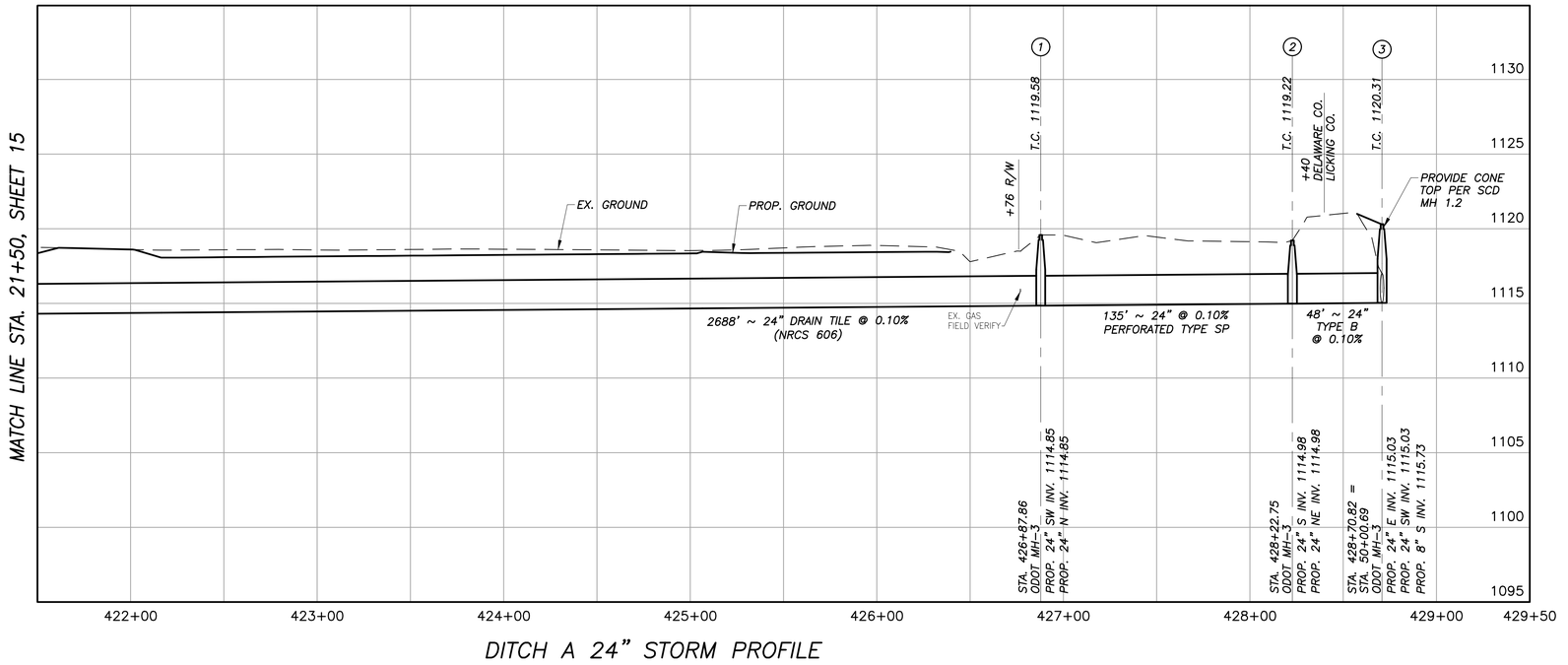
July 13, 2021, 8:13am



DITCH A STORM PROFILE



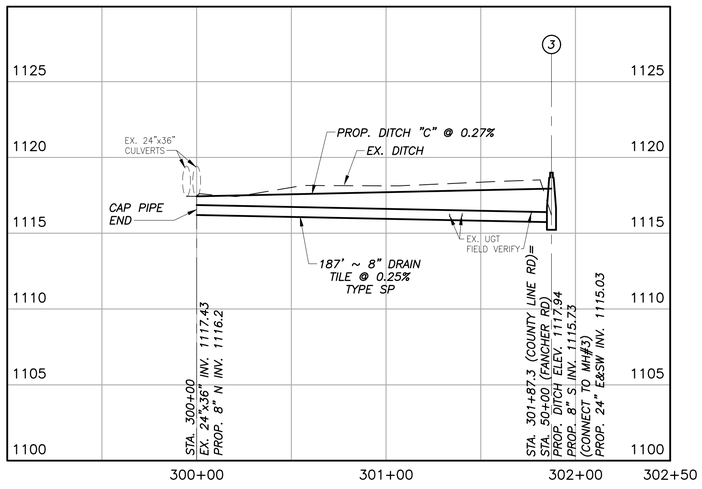
15 / 29	**COOK TRI-COUNTY DITCH**	**PROFILES DITCH "A" 24" STORM**	CALCULATED MAB CHECKED MSL	0 40 20 80 HORIZONTAL SCALE IN FEET



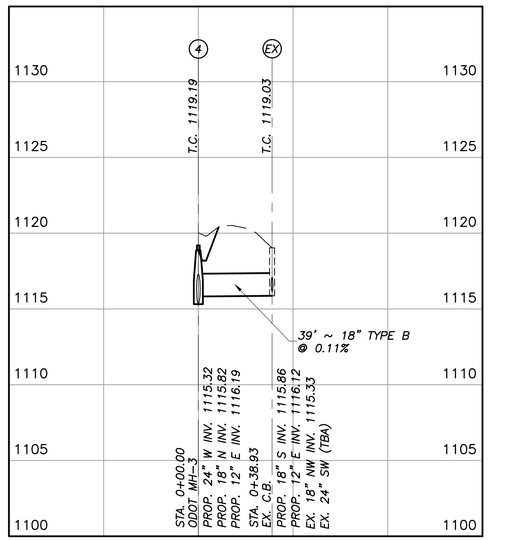
DITCH A 24" STORM PROFILE

EXPOSE NOTE

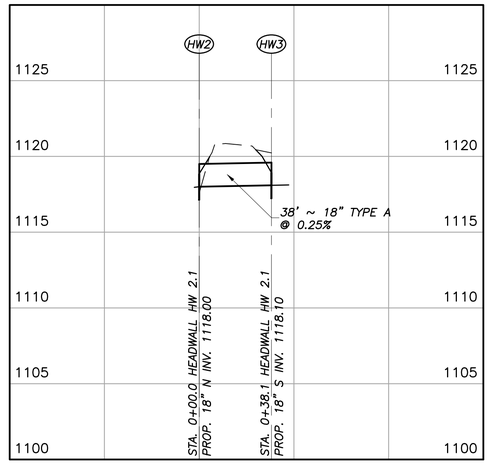
Where plans provide for a proposed conduit, storm sewer, waterline, or other construction to cross over or under an existing sewer or underground utility, the contractor shall locate the existing pipes or utilities both as to line and grade at the beginning of the project. If it is determined that the existing conduit or existing appurtenance to be connected differs from the plan elevation or results in a change in the planned work, the engineer shall be notified before starting construction of any portion of the proposed work which will be affected by the variance in the existing elevations. Payment for all the operations described above shall be included in the contract price for the pertinent items.



DITCH C PROFILE



FANCHER RD. CROSSING



18 CULVERT PROFILE

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

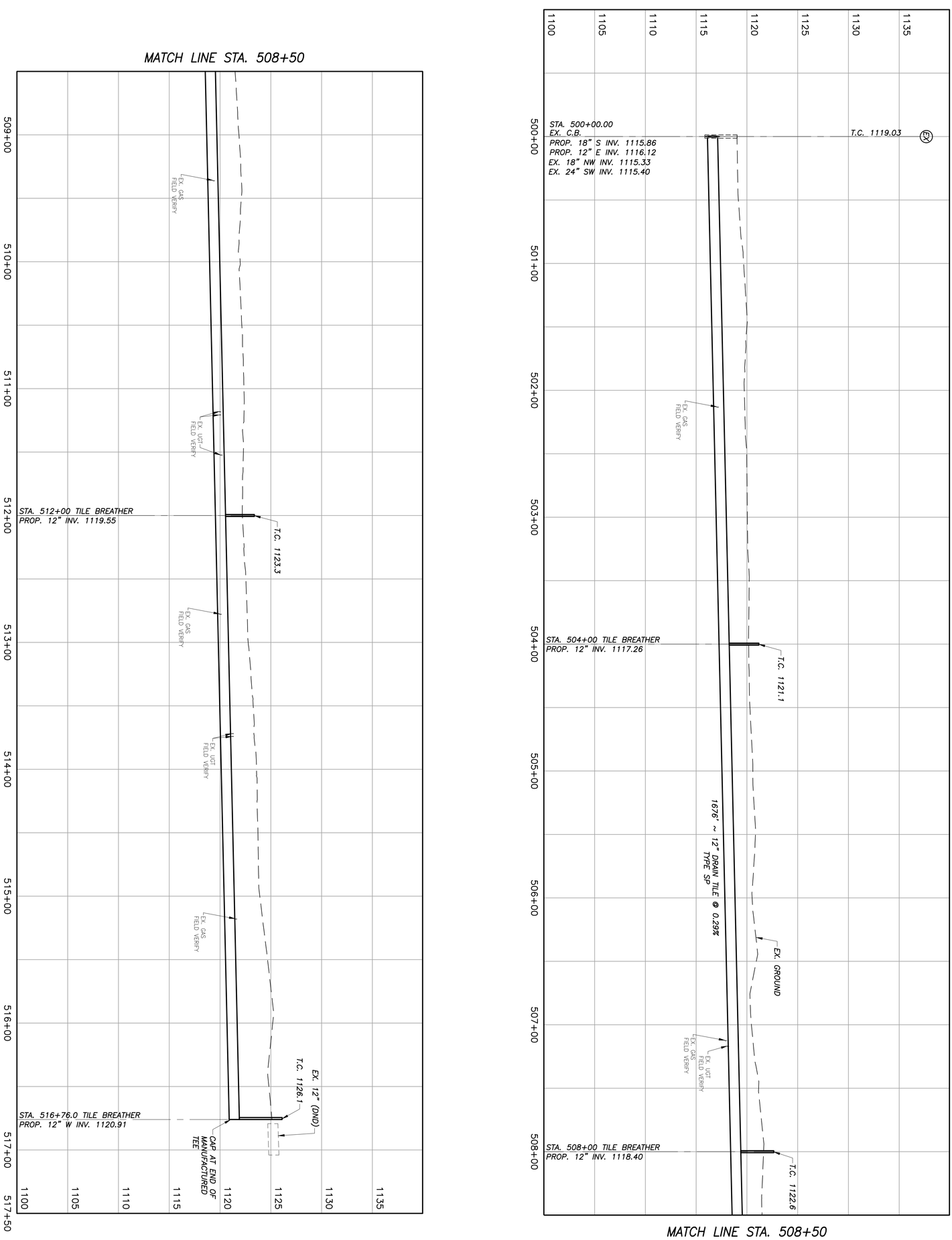
PROFILES
DITCH "A" (CONT.), DITCH "C", 18" CULVERT

COOK TRI-COUNTY DITCH

16
29

DRAWING: P:\18174 Franklin County Engineer Task Order\Task 3\CADD\BASE\18174-T3 15-17-PROFILES.dwg
July 13, 2021, 8:12pm

DRAWING: P:\18174 Franklin County Engineer Task Order\Task 3\CADD\BASE\18174-T3 15-17-PROFILES.dwg
July 13, 2021, 8:11am



17/29	**COOK TRI-COUNTY DITCH**	**PROFILES** **FANCHER RD. NORTH SIDE 12" STORM**	CALCULATED MAB CHECKED MSL	0 40 20 80 HORIZONTAL SCALE IN FEET

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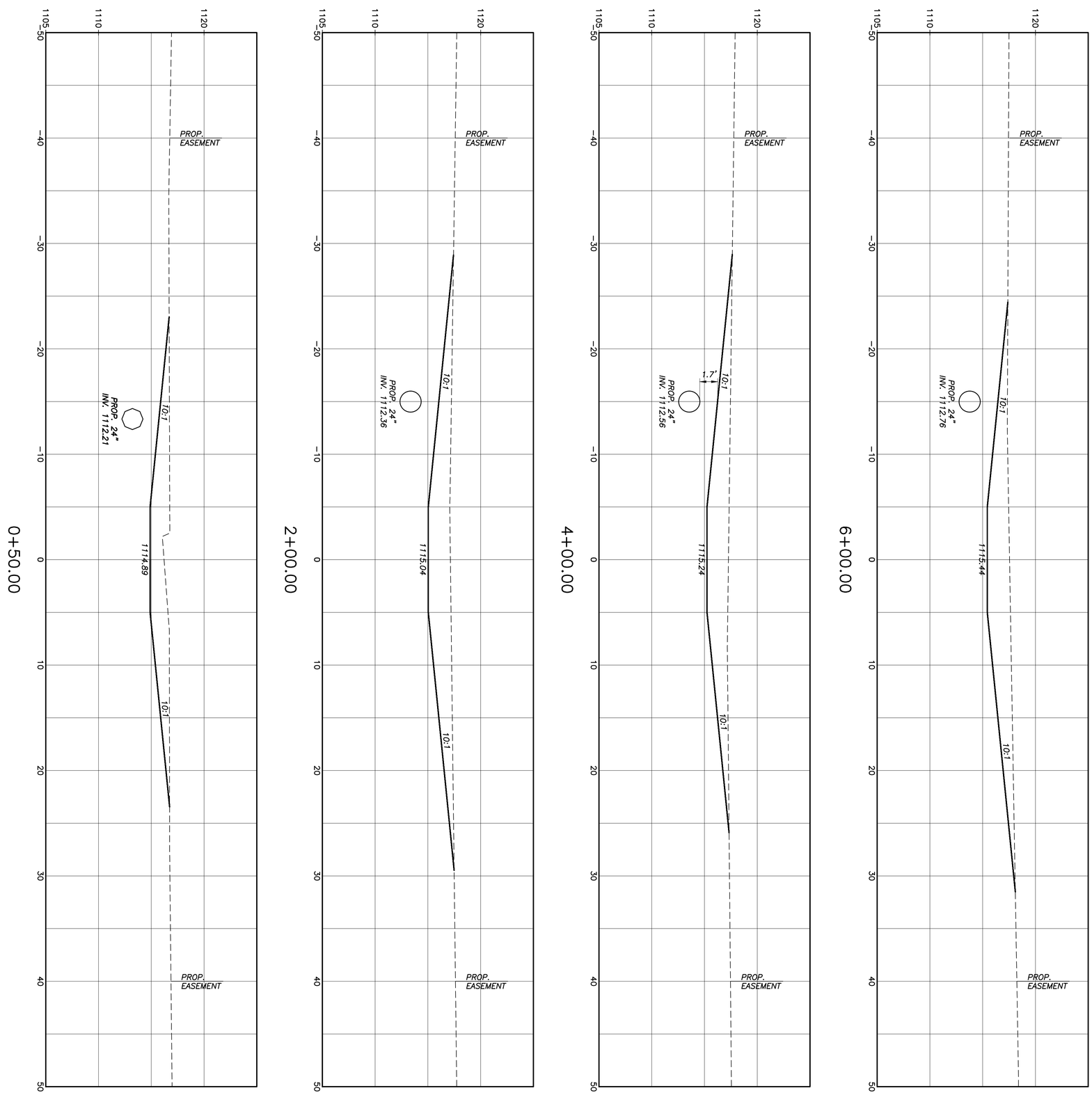
July 13, 2021, 8:03am



18 / 29	**COOK TRI-COUNTY DITCH**	**CROSS SECTIONS DITCH "A" STA. 0+50 TO STA. 6+00**	CALCULATED MAB / CHECKED MSL	0 5 10 HORIZONTAL SCALE IN FEET

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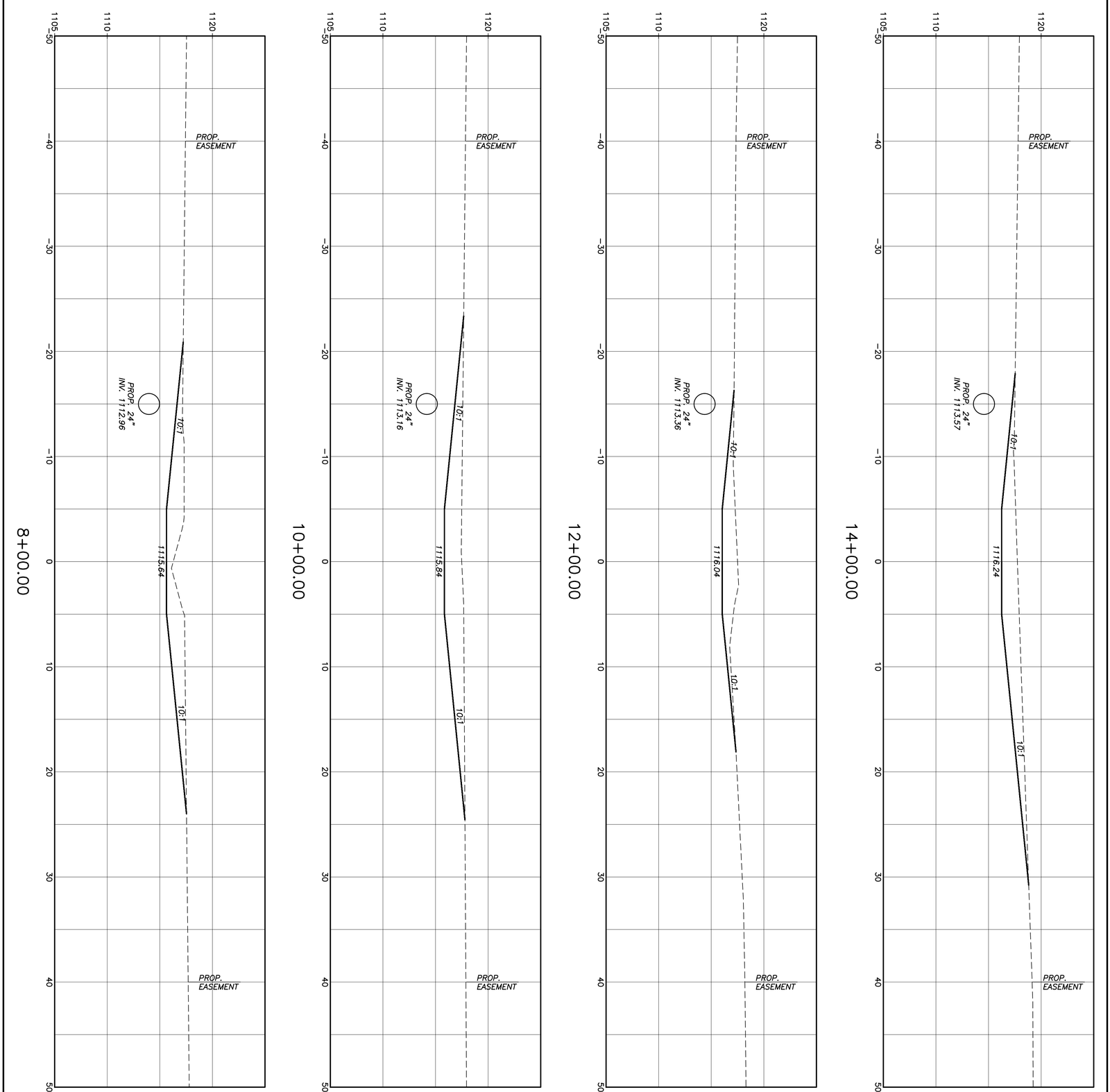
July 13, 2021, 8:05am



COOK TRI-COUNTY DITCH

CROSS SECTIONS
DITCH "A" STA. 8+00 TO STA. 14+00

CALCULATED MAB
CHECKED MSL

0 5 10
HORIZONTAL SCALE IN FEET

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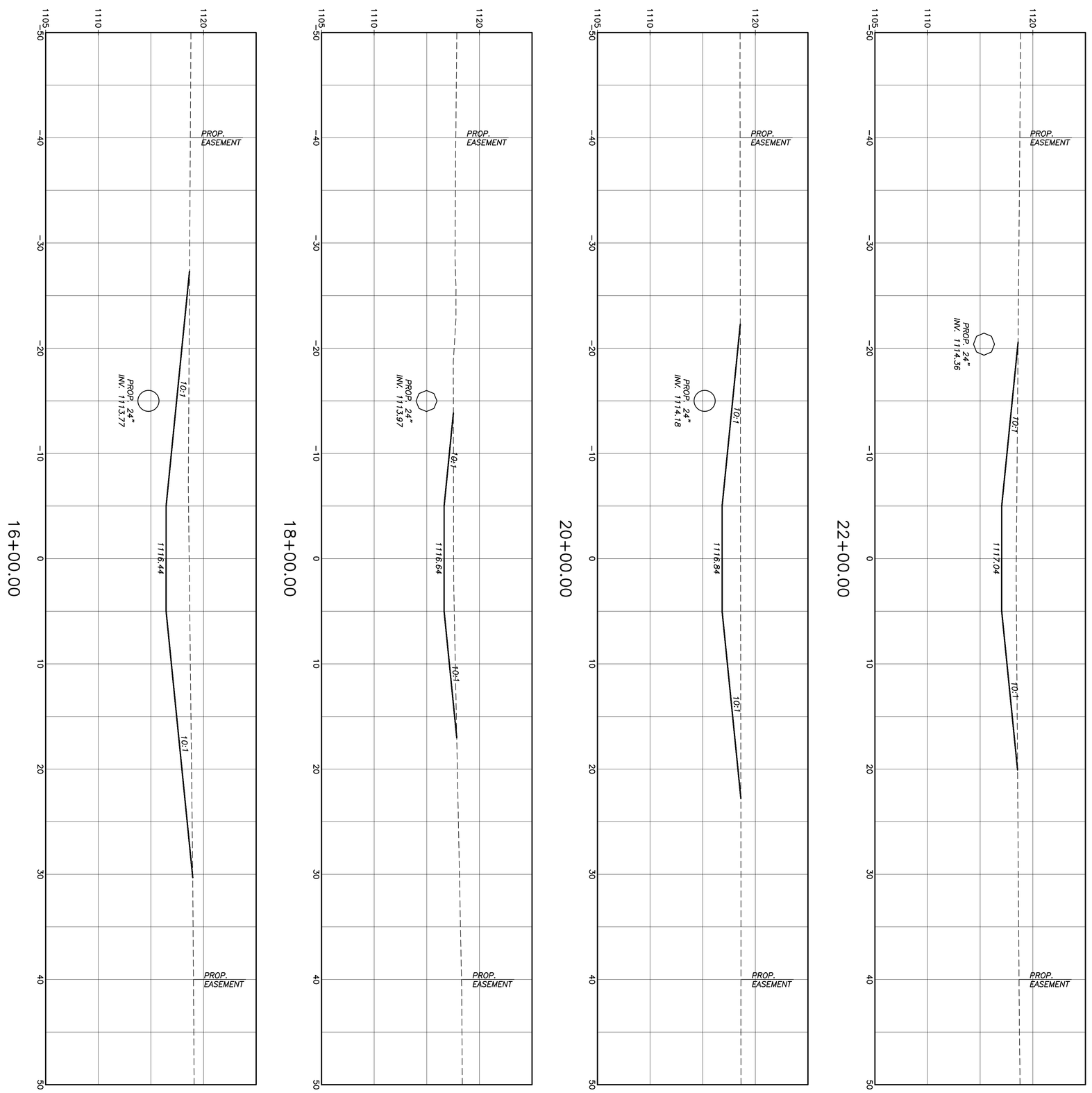
July 13, 2021, 8:06am



20 of 29	**COOK TRI-COUNTY DITCH**	**CROSS SECTIONS DITCH "A" STA. 16+00 TO STA. 22+00**	CALCULATED MAB / CHECKED MSL	0 5 10 HORIZONTAL SCALE IN FEET

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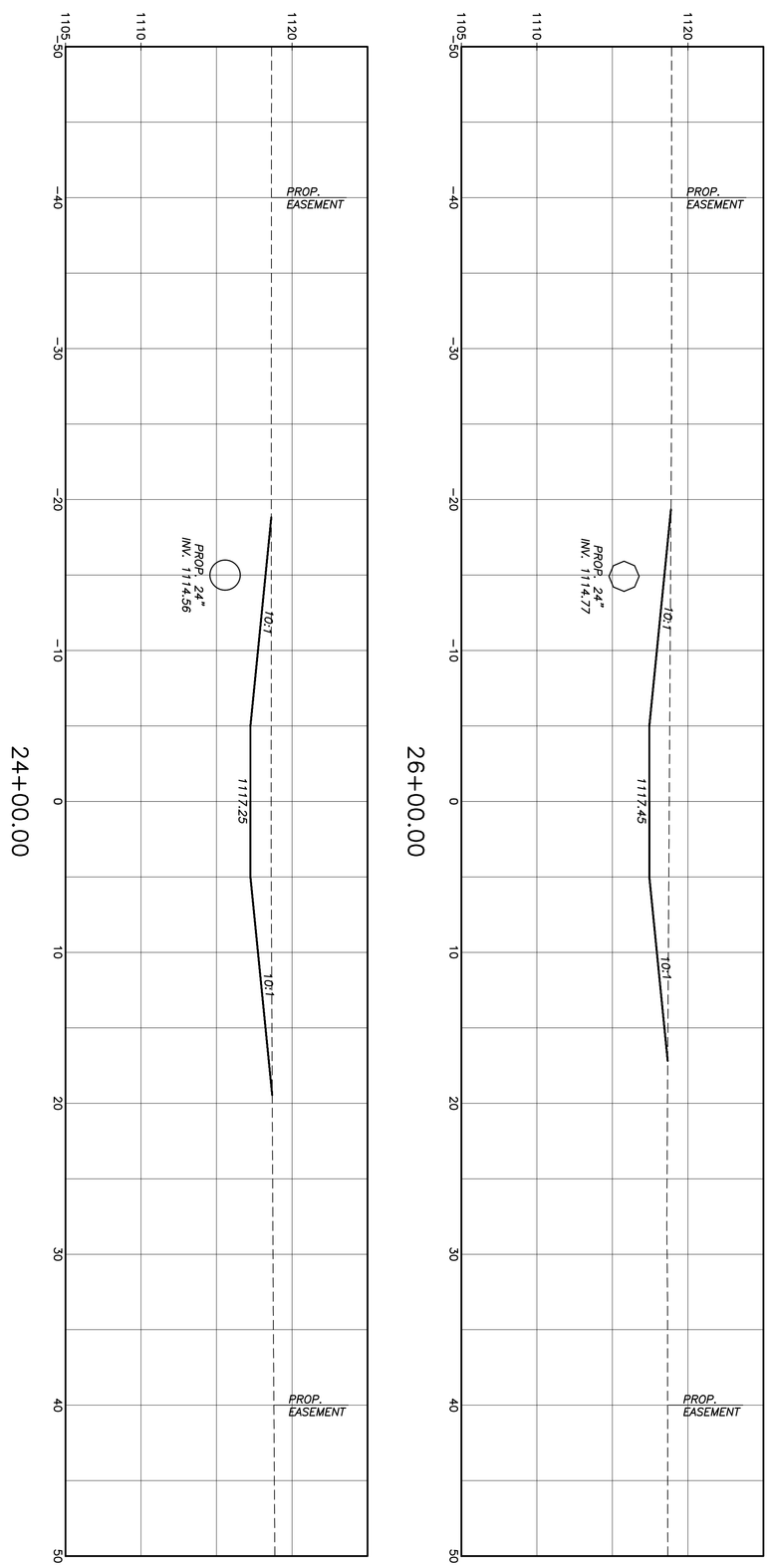

21 / 29	**COOK TRI-COUNTY DITCH**	**CROSS SECTIONS DITCH "A" STA. 24+00 TO STA. 26+00**	CALCULATED *MAB* / CHECKED *MSL*	0 5 10 HORIZONTAL SCALE IN FEET

51+00.00

52+50.00

50+50.00

52+00.00

50+25.00

51+50.00

HORIZONTAL
SCALE IN FEET
0
5
10

CALCULATED MAB
CHECKED MSL

CROSS SECTIONS
FANCHER RD. STA. 50+25 TO STA. 52+50

COOK TRI-COUNTY DITCH

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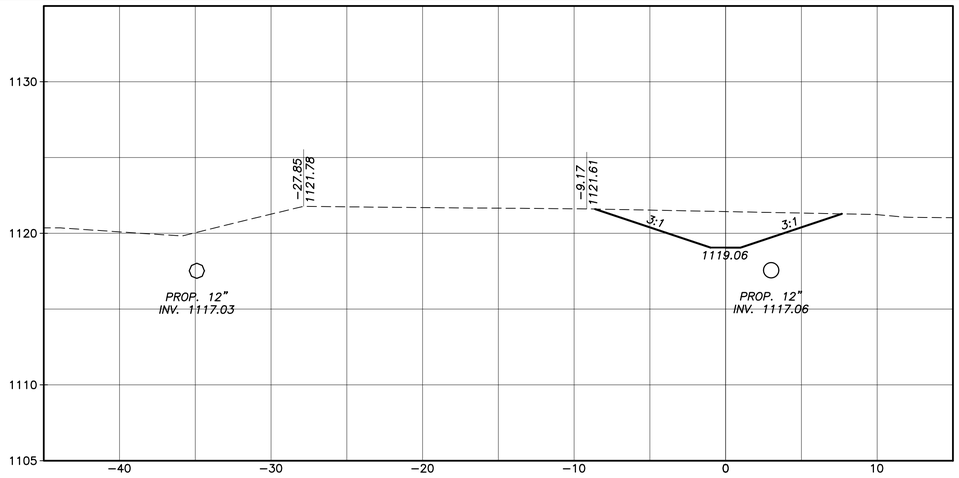
May 27, 2021, 3:53pm



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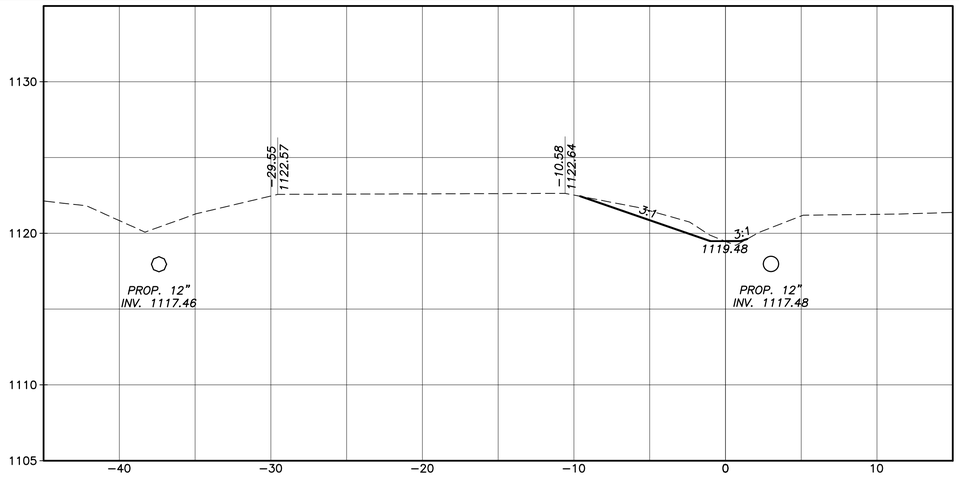

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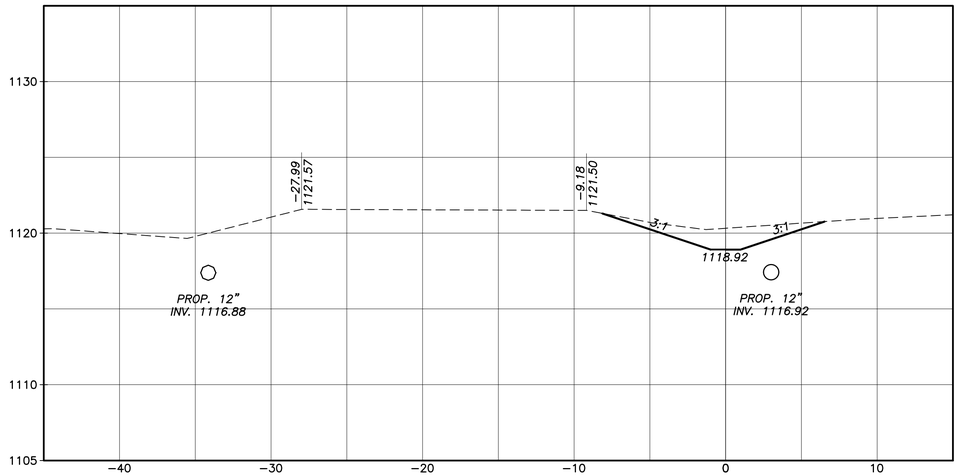

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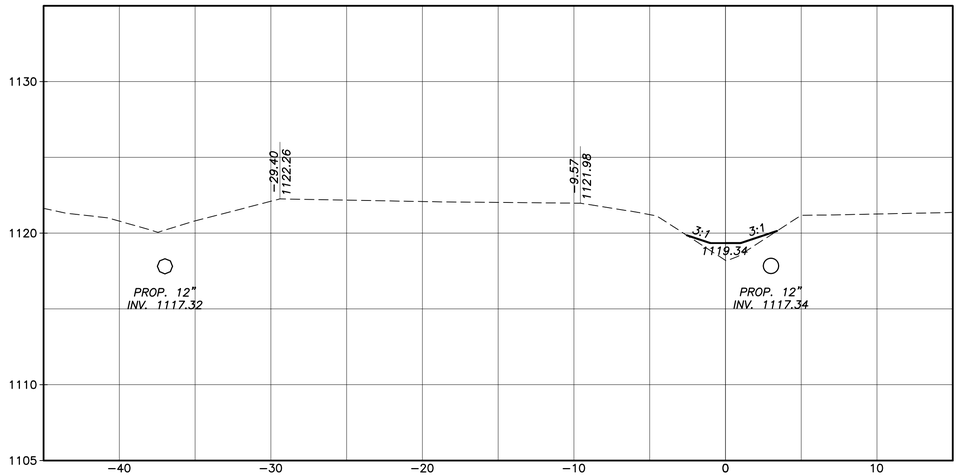

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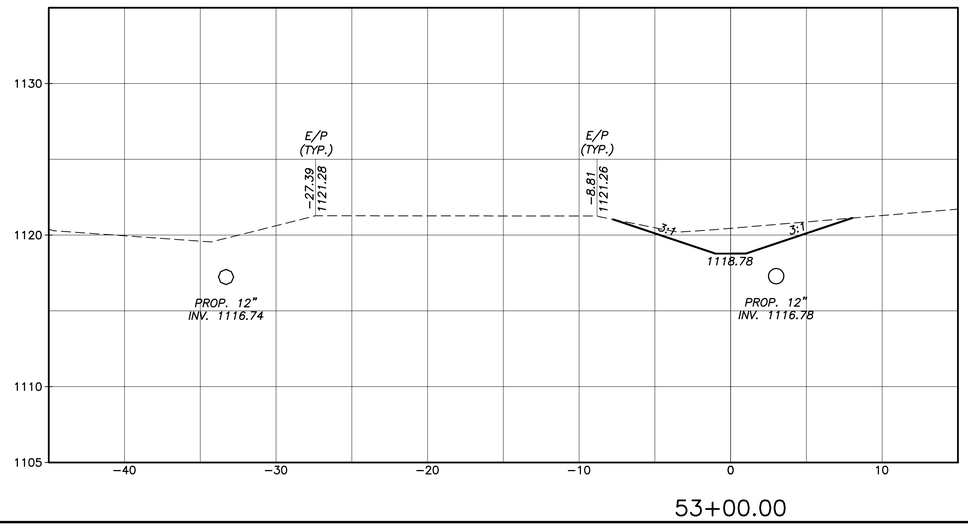

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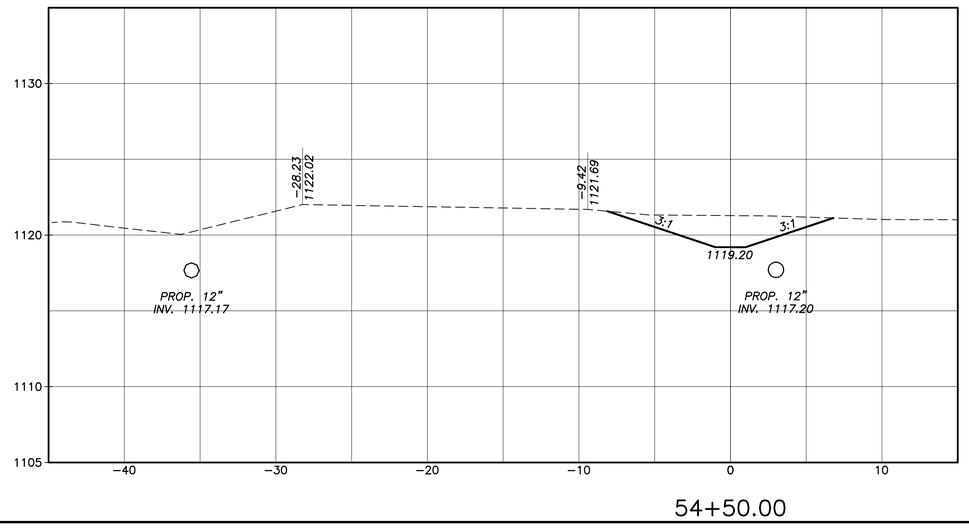

54+50.00

HORIZONTAL
SCALE IN FEET
0
5
10

CALCULATED
MAB
CHECKED
MSL

CROSS SECTIONS
FANCHER RD. STA. 53+00 TO STA. 55+50

COOK TRI-COUNTY DITCH

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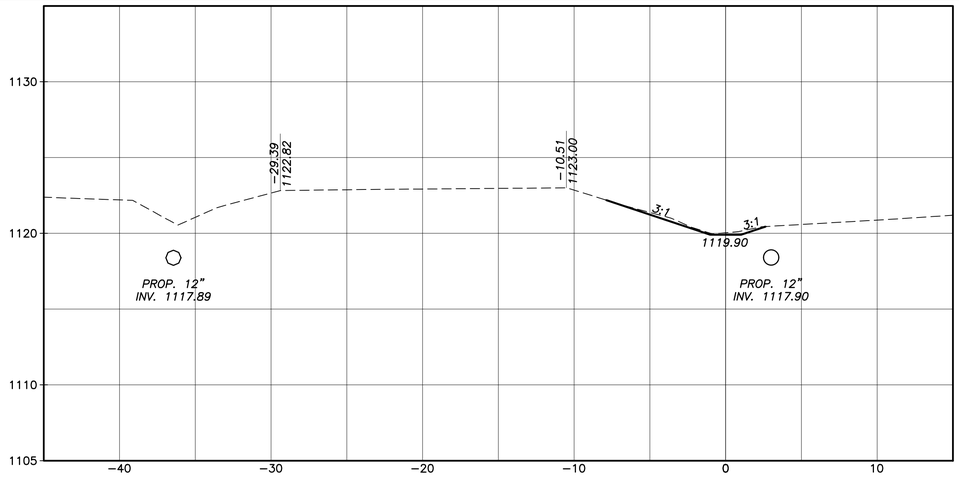
April 16, 2021, 10:34am



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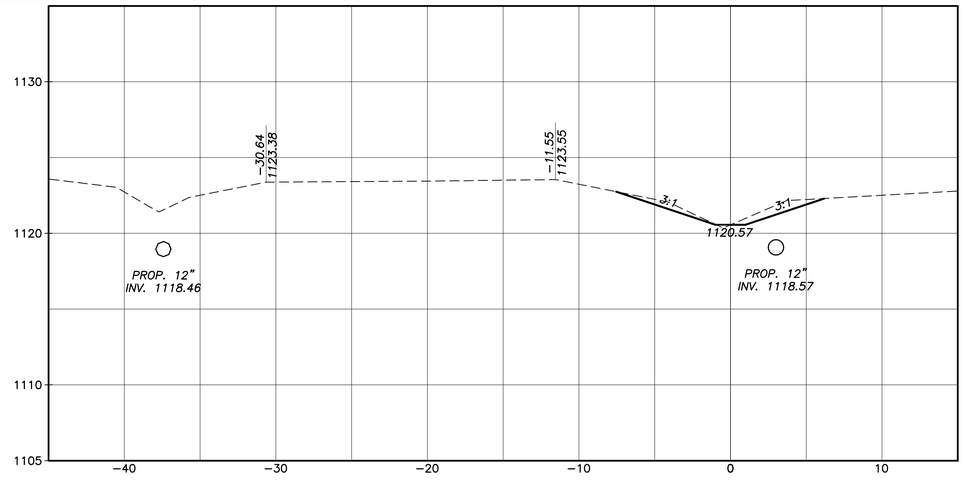

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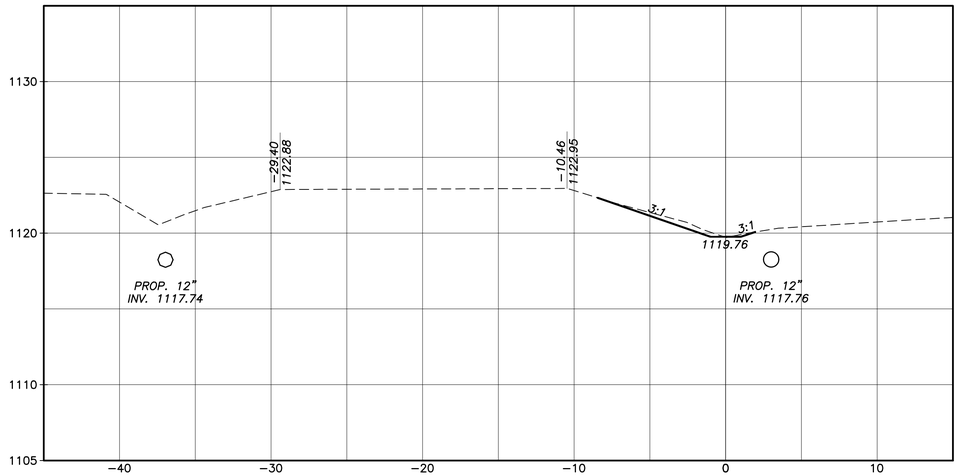

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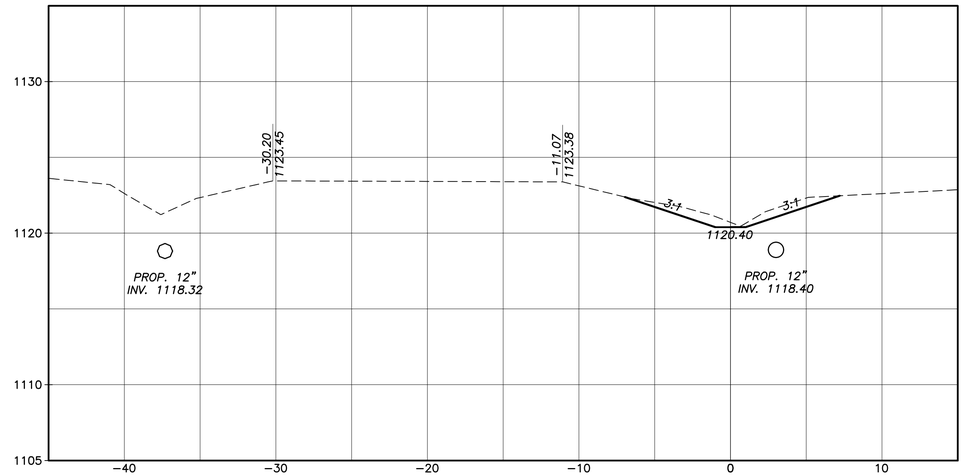

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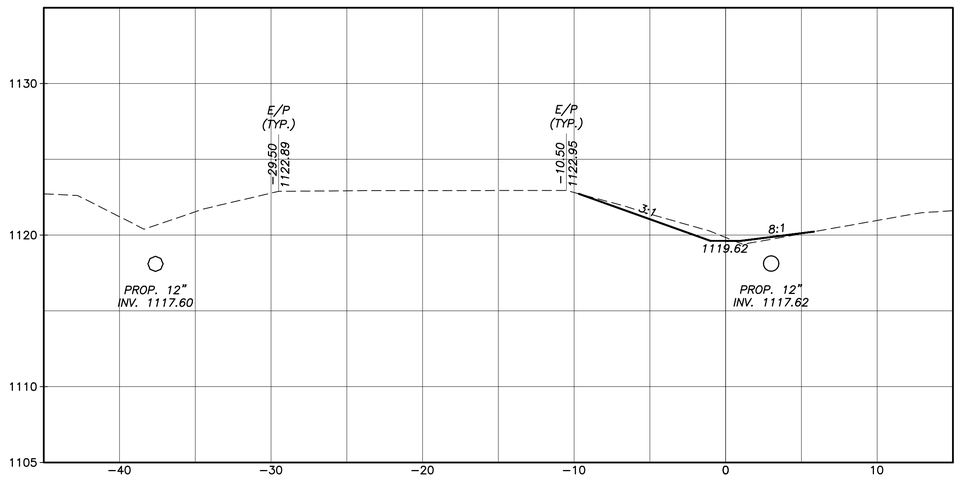

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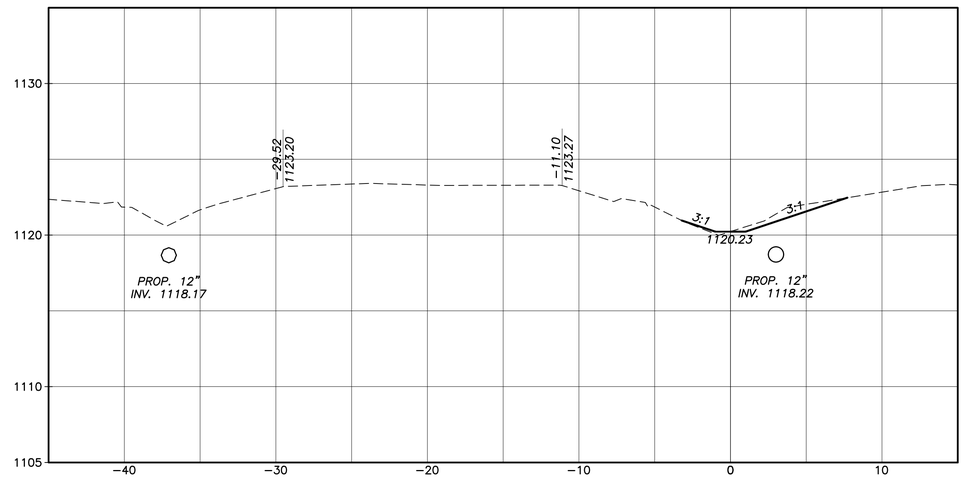


58+00.00

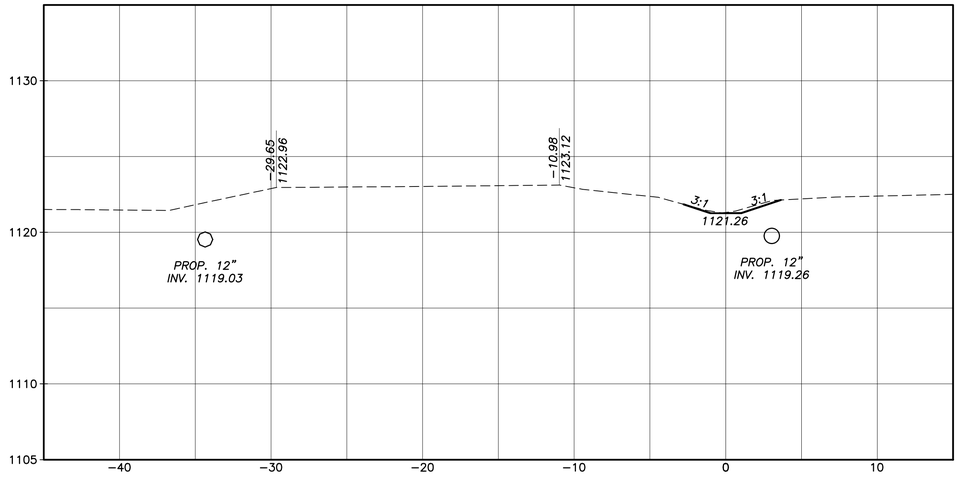
HORIZONTAL
SCALE IN FEET
0
5
10

CALCULATED MAB
CHECKED MSL

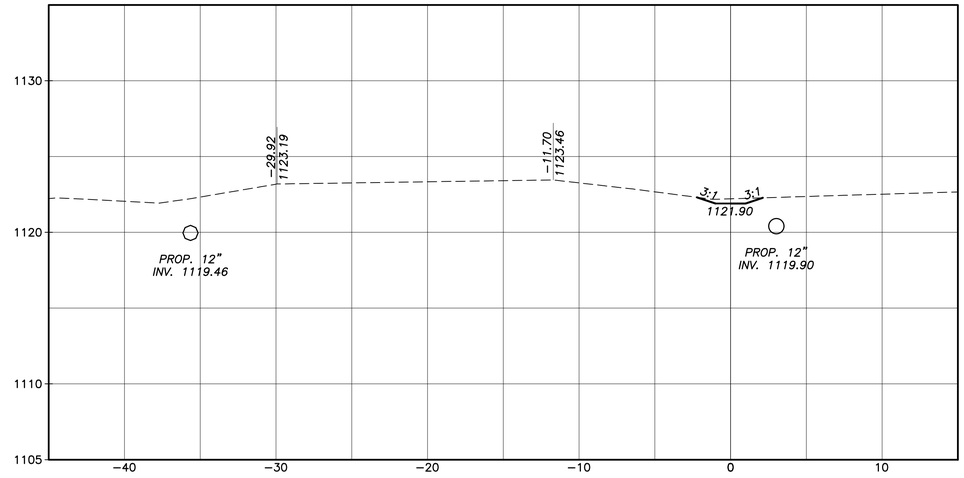
CROSS SECTIONS
FANCHER RD. STA. 56+00 TO STA. 59+00

COOK TRI-COUNTY DITCH

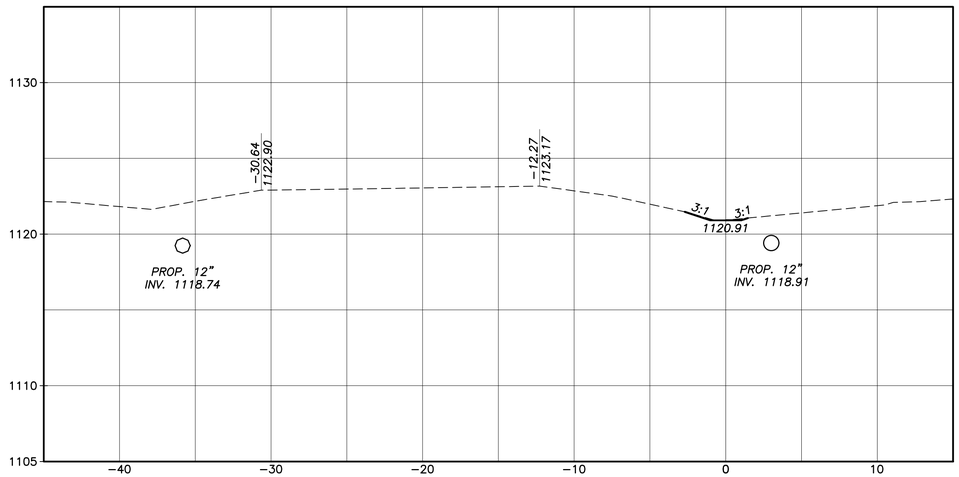
DRAWING: P:\18174 Franklin County Engineer Task Order\Task 3\CADD\BASE\18174-T3 22-28-XSECT FANCHER.dwg
April 16, 2021, 10:36am



61+00.00



62+50.00



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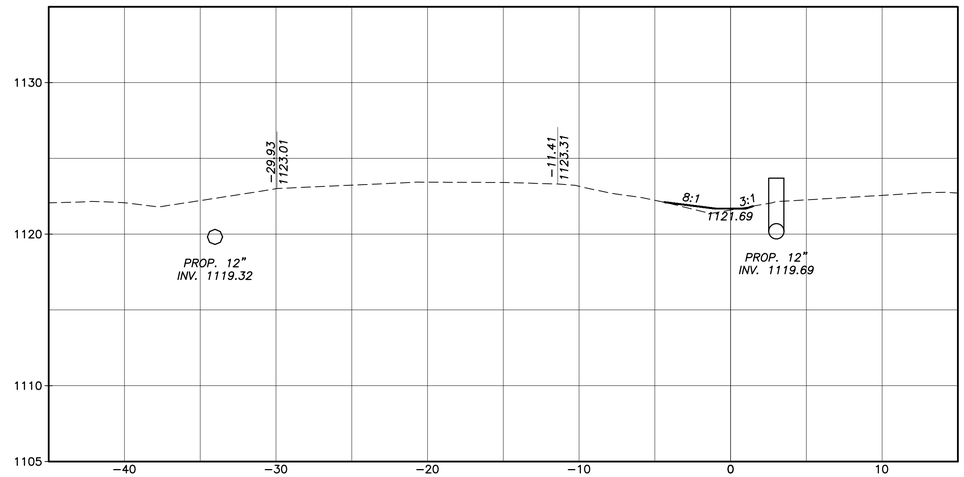

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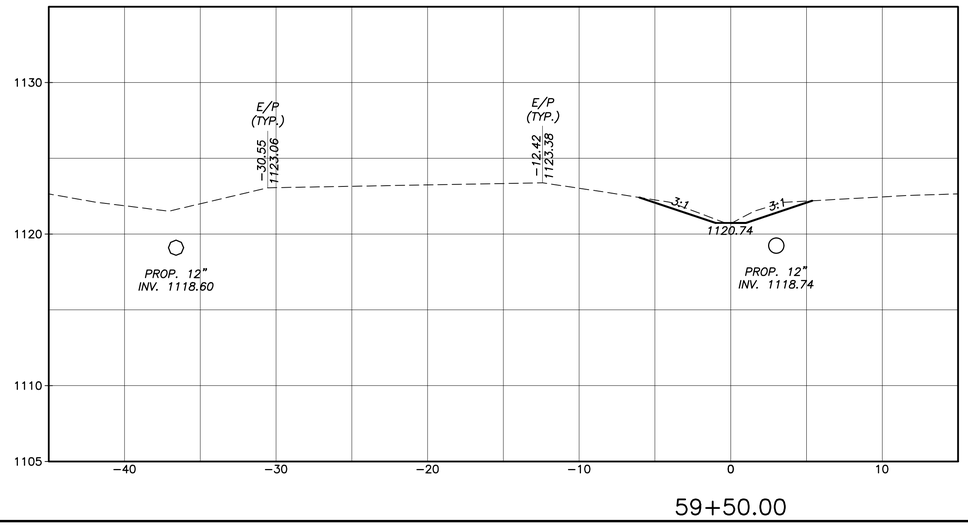
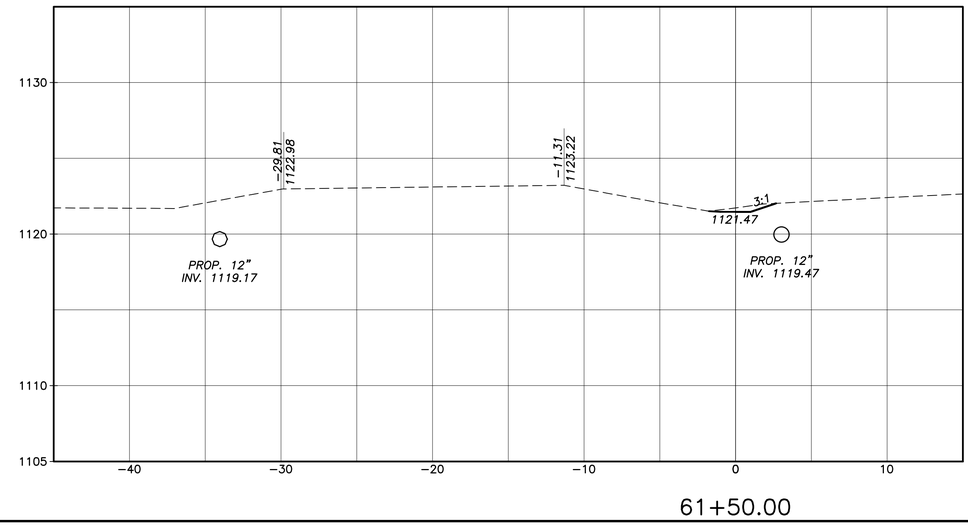


59+50.00



61+50.00

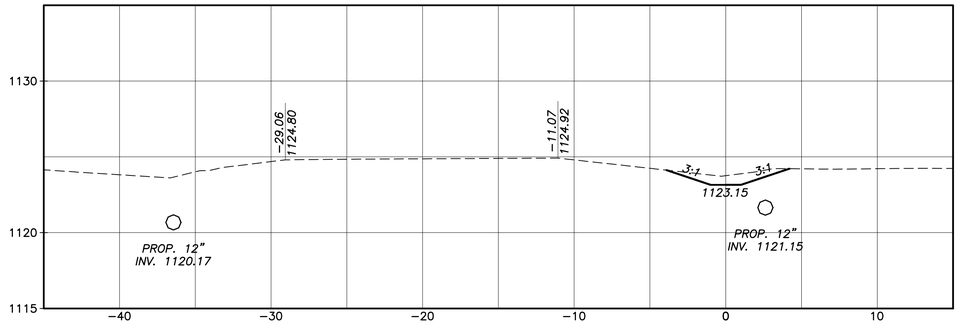
HORIZONTAL
SCALE IN FEET
0
5
10

CALCULATED MAB
CHECKED MSL

CROSS SECTIONS
FANCHER RD. STA. 59+50 TO STA. 62+50

COOK TRI-COUNTY DITCH

DRAWING: P:\18174 Franklin County Engineer Task Order\Task 3\CADD\BASE\18174-T3 22-28-XSECT FANCHER.dwg
April 16, 2021 10:37pm



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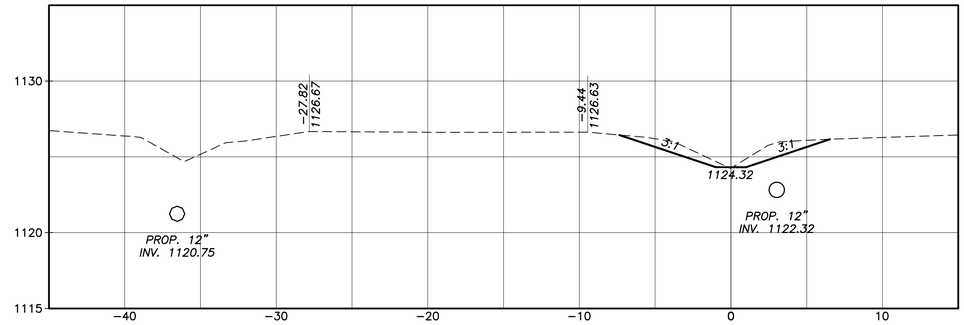
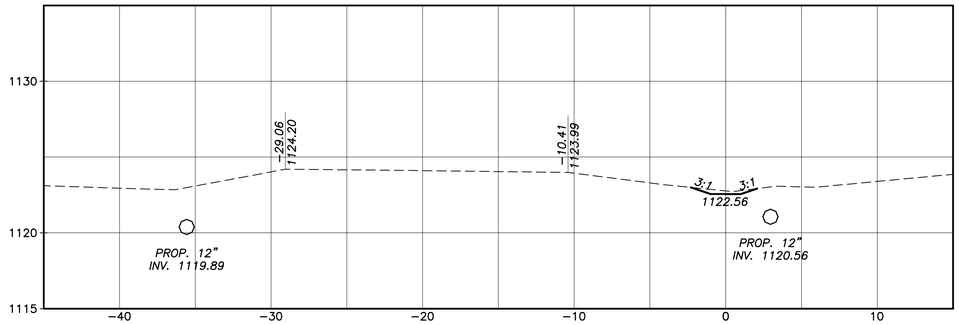


67+00.00



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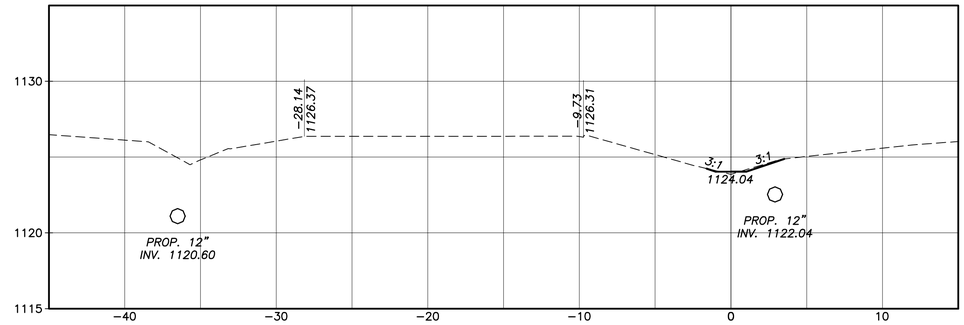

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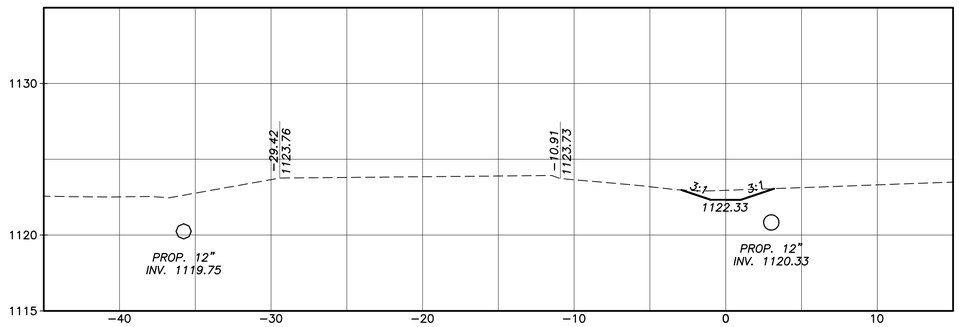

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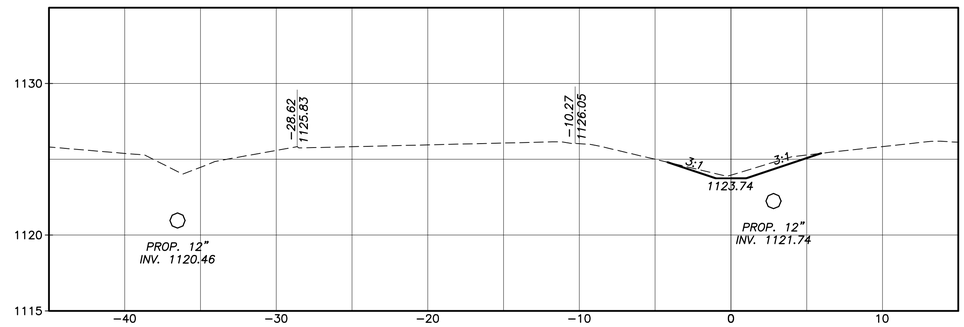

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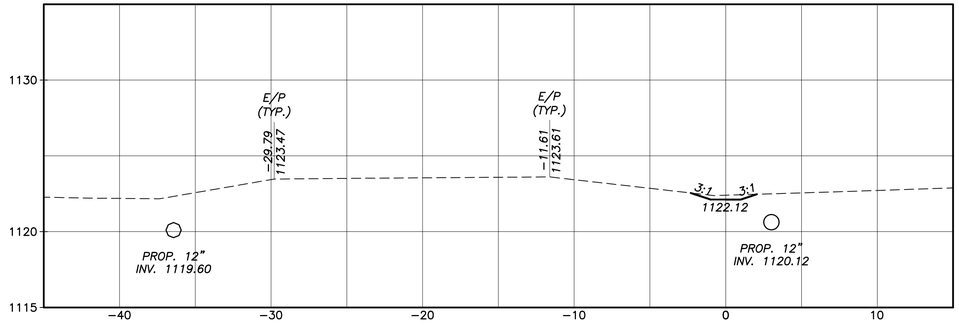

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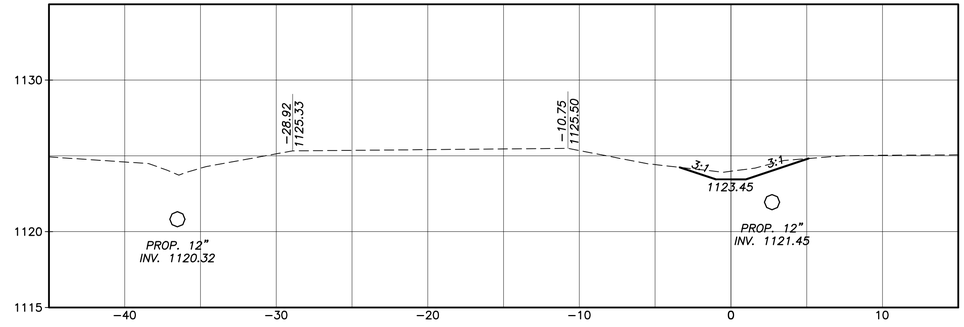

65+50.00

HORIZONTAL
SCALE IN FEET
0
5
10

CALCULATED
MAB
CHECKED
MSL

CROSS SECTIONS
FANCHER RD. STA. 63+00 TO STA. 67+00

COOK TRI-COUNTY DITCH

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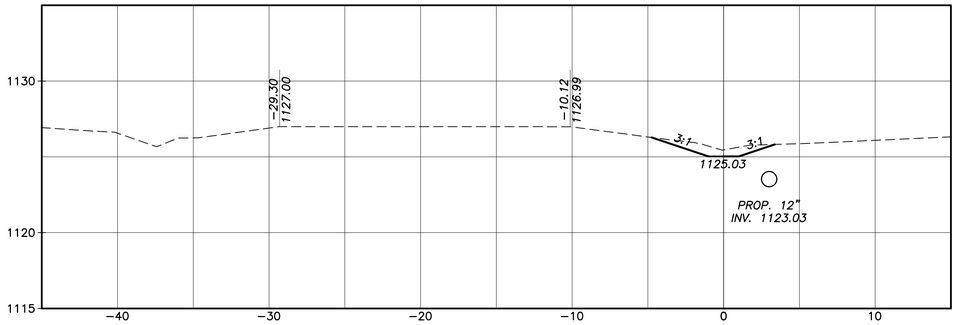
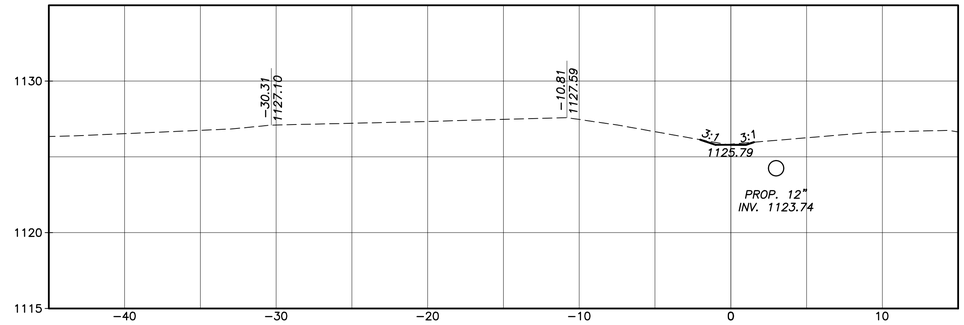
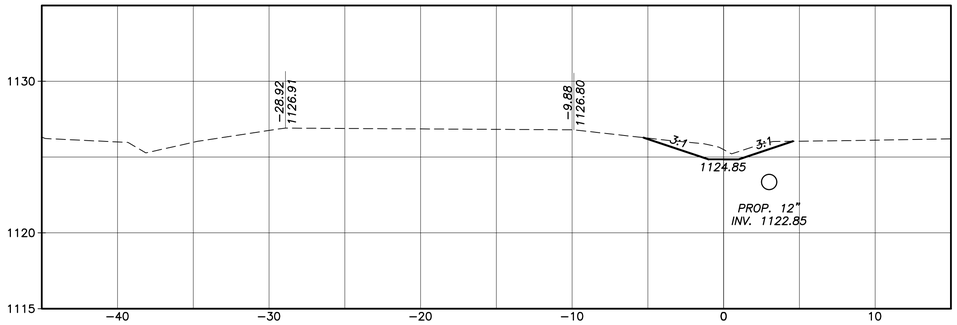


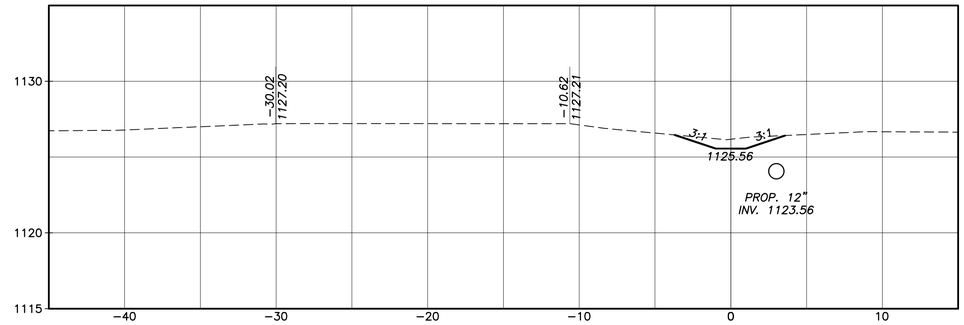
69+00.00



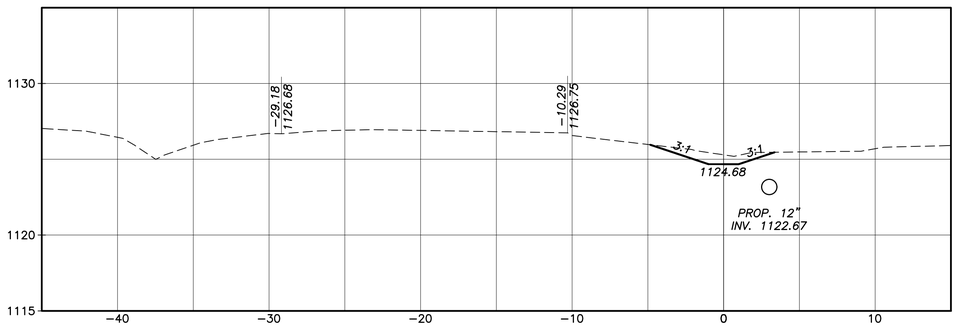
71+00.00



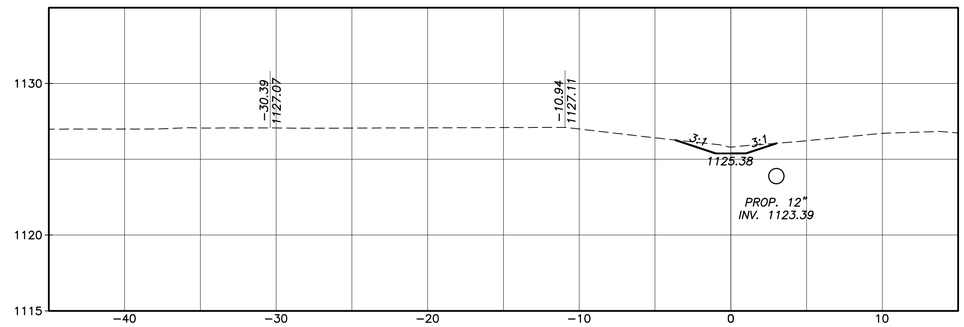
68+50.00



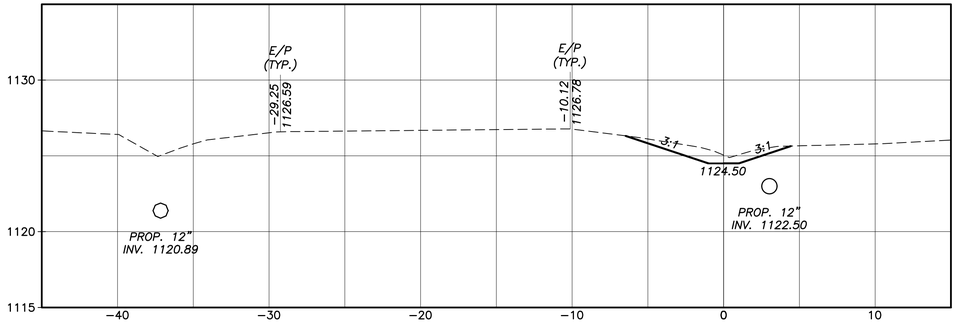
70+50.00



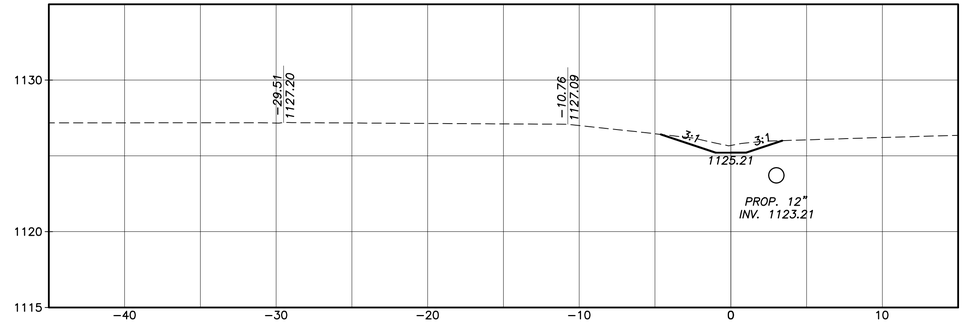
68+00.00



70+00.00



67+50.00



69+50.00

HORIZONTAL SCALE IN FEET
0 5 10

CALCULATED MAB
CHECKED MSL

CROSS SECTIONS
FANCHER RD. STA. 67+50 TO STA. 71+00

COOK TRI-COUNTY DITCH

DRAWING: P:\18174 Franklin County Engineer Task Order\Task 3\CADD\BASE\18174-T3 22-28-XSECT FANCHER.dwg
April 16, 2021, 10:51am

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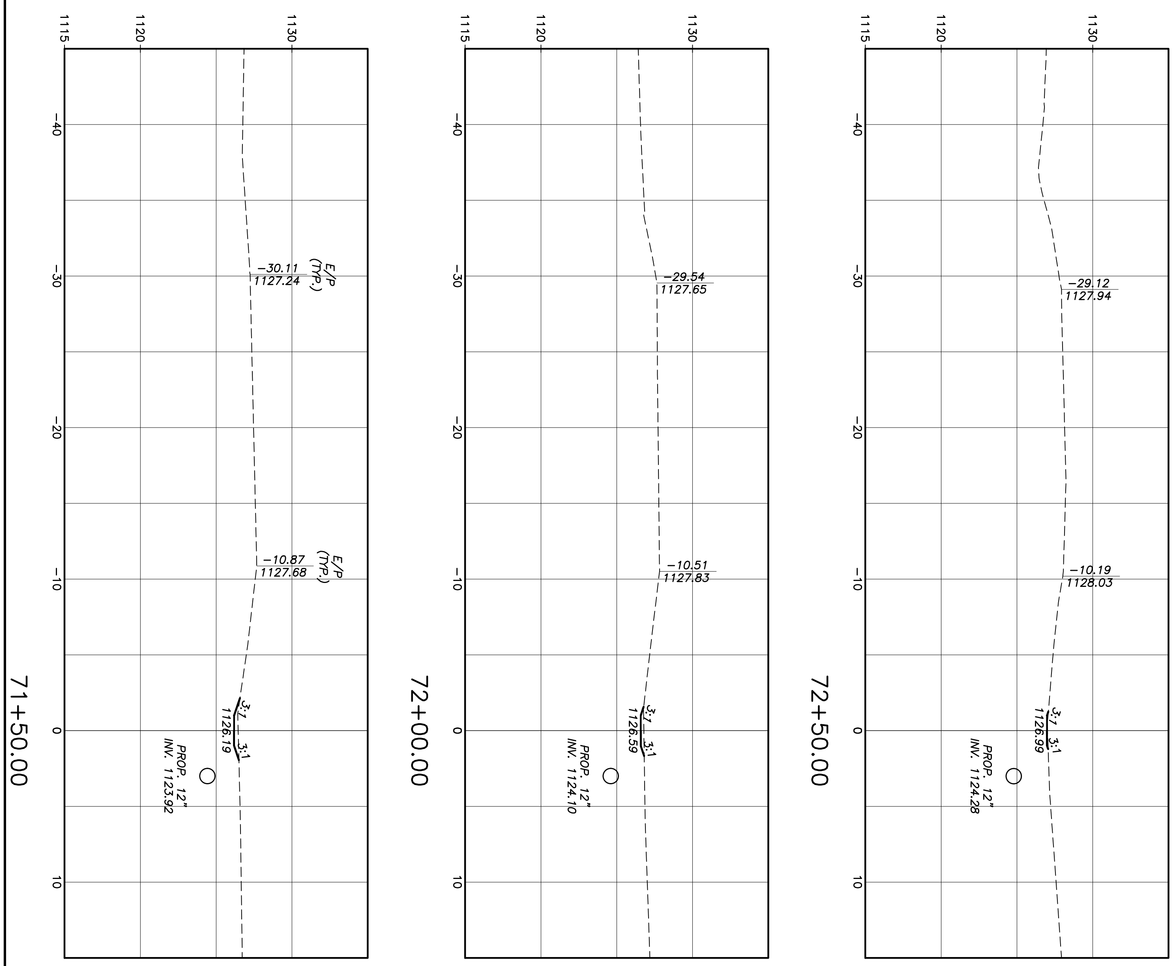
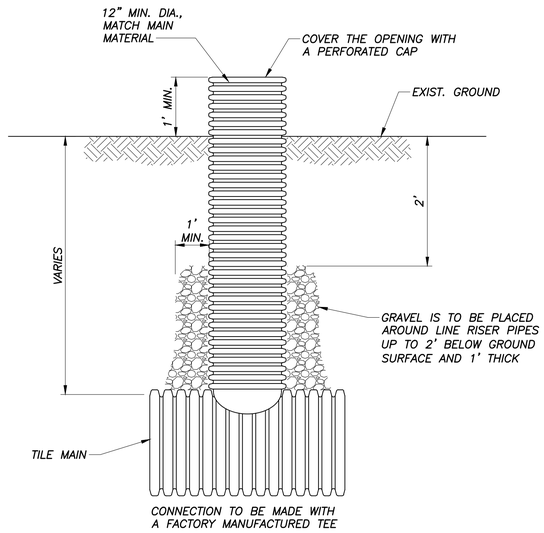
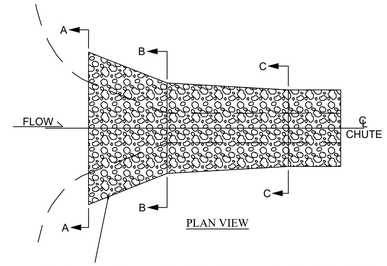


28 / 29	**COOK TRI-COUNTY DITCH**	**CROSS SECTIONS FANCHER RD. STA. 71+50 TO STA. 72+50**	CALCULATED *MAB* / CHECKED *MSL*	0 5 10 HORIZONTAL SCALE IN FEET

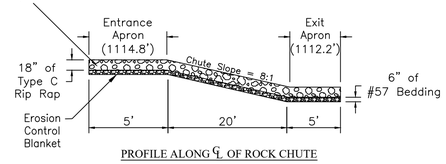


TILE MAIN BREATHER

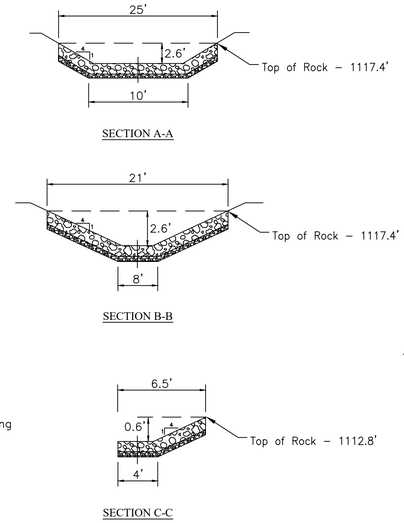
NO SCALE



Type C shall consist of sizes such that at least 85 percent of the total material by weight shall be larger than an 6 inch (150 mm) but less than a 18 inch (0.5 m) square opening. At least 50 percent of the total material by weight shall be larger than a 12 inch (0.3 m) square opening. The material smaller than a 6 inch (150 mm) square opening shall consist predominantly of rock spalls and rock fines and shall be free of soil.



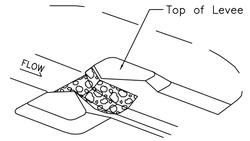
PROFILE ALONG ℄ OF ROCK CHUTE



GRADE STABILIZATION STRUCTURE

NO SCALE

MATERIAL GRADATIONS	
RIPRAP	
WEIGHT OF INDIVIDUAL PIECES (LBS)	PERCENT OF NUMBER OF PIECES
150-200	4
100-150	6
50-100	20
10-50	30
0-10	40
GRAVEL BEDDING(EQUIVALENT TO NO.57)	
SIZE-(INCHES)	PERCENT PASSING
1 1/2	100
1	95-100
1/2	25-60
NO. 4	0-10
NO. 8	0-5

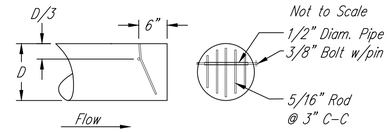


ISOMETRIC VIEW

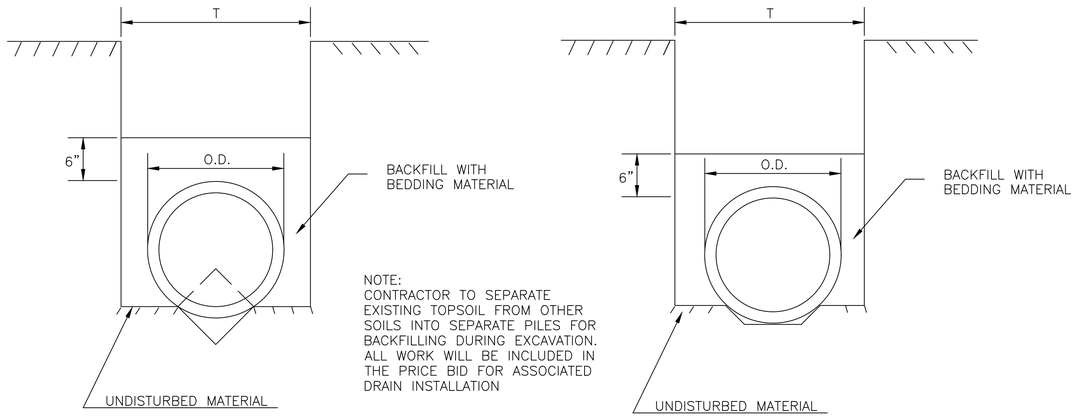
EQUIVALENT ROCK SIZES (165 pcf)		
WEIGHT (LBS)	TYPICAL DIMENSIONS (INCHES)	COMMON SIZE (INCHES)
200	8 X 15 X 18	15
150	8 X 12 X 16	12
100	7 X 10 X 14	10
50	6 X 8 X 11	8
10	3 X 6 X 6	6

NOTES:

1. ALL FILL SHALL BE COMPACTED IN 12" LAYERS WITH TWO PASSES OF WHEELED HEAVY EQUIPMENT OVER ALL THE SURFACE OF THE LAYER.
2. BEDDING AND RIPRAP SHALL BE DENSE, DURABLE, ANGULAR ROCK. BEDDING SHALL BE PLACED AND INSPECTED BEFORE PLACING RIPRAP. RIPRAP SHALL BE PLACED TO A UNIFORM DEPTH.



ANIMAL GUARD DETAIL



3 TO 8 INCH DIAMETER

T = O.D. + 6" 1N FINE GRAINED FRIABLE OR SANDY SOILS

T = O.D. + 12 INCHES IN CLODDY SOILS

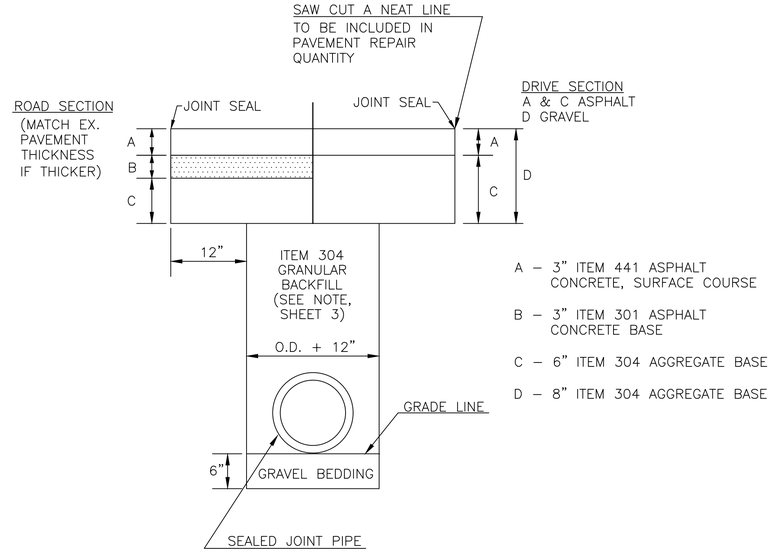
10 INCH DIAMETER OR LARGER

DRAIN TUBING TO HAVE TRAPEZOIDAL OR SIMI CIRCULAR GROVE

T = O.D. + 6" 1N FINE GRAINED FRIABLE OR SANDY SOILS

T = O.D. + 12 INCHES IN CLODDY SOILS

TYPICAL SUBSURFACE DRAIN INSTALLATION



A – 3" ITEM 441 ASPHALT CONCRETE, SURFACE COURSE

B – 3" ITEM 301 ASPHALT CONCRETE BASE

C – 6" ITEM 304 AGGREGATE BASE

D – 8" ITEM 304 AGGREGATE BASE

TYPICAL ROAD CUT

CALCULATED

CHECKED

DETAILS

COOK TRI-COUNTY DITCH

29
29

DRAWING: P:\18174 Franklin County Engineer Task Order\Task 3\CADD\BASE\18174-T3 29-DETAILS.dwg
April 16, 2021, 10:35am