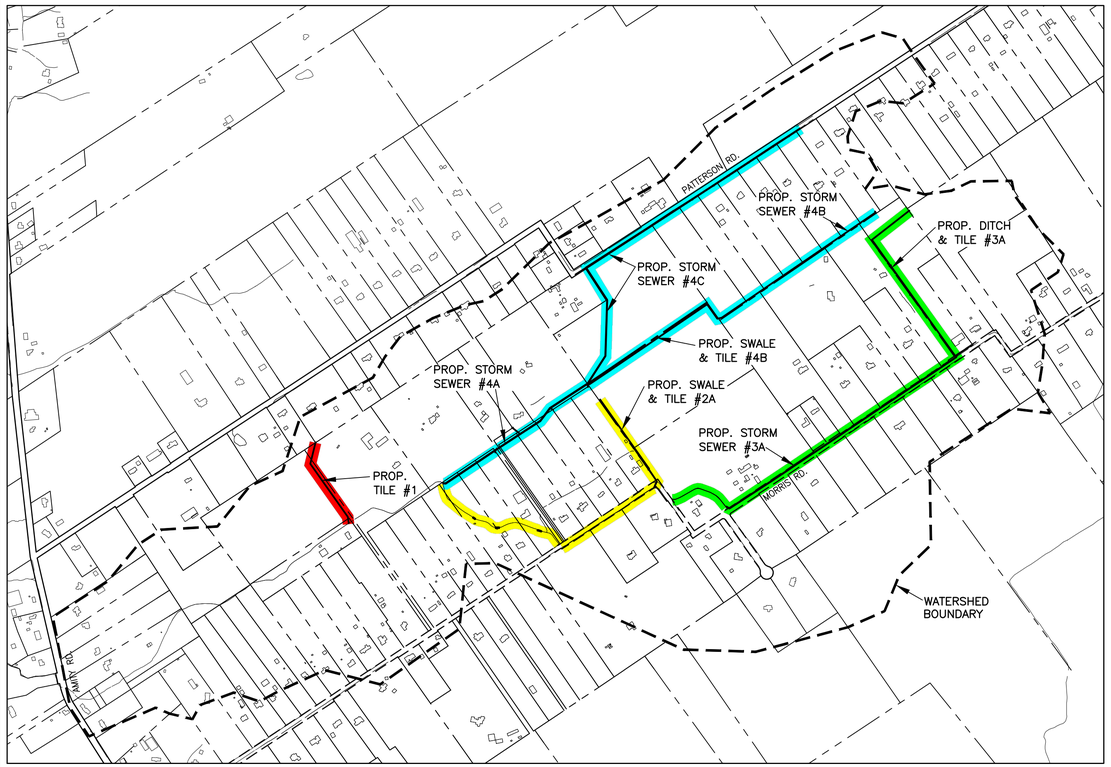
OFFICE OF THE FRANKLIN COUNTY DRAINAGE ENGINEER

MANDO DRAINAGE IMPROVEMENT PETITION

FRANKLIN COUNTY, OHIO
BROWN TOWNSHIP

LOCATION MAP



WATERSHED AND LOCATION MAP

NO SCALE

LATITUDE: N 37°47'45" LONGITUDE: W 89°19'00"

DISTURBED AREAS: AREA 1 = 0.10 AC.
AREA 2 = 0.23 AC.
AREA 3 = 0.69 AC.
AREA 4 = 2.42 AC.

TOWNSHIP ROAD
COUNTY ROAD

INDEX OF SHEETS

TITLE SHEET . . . 1
SCHEMATIC PLANS . . . 2–5
TYPICAL SECTIONS . . . 6
GENERAL NOTES . . . 7–8
MAINTENANCE OF TRAFFIC . . . 9
GENERAL SUMMARY . . . 10
AREA 1:
PLAN AND PROFILE . . . 11–12
SUBSUMMARY . . . 13
AREA 2:
DITCH MAINTENANCE PLAN . . . 14–15
PLAN AND PROFILE . . . 16
SUBSUMMARY . . . 17
STORM PROFILE . . . 18
CROSS SECTIONS . . . 19–20
AREA 3:
PLAN AND PROFILE – MORRIS RD STORM SEWER . . . 21–23
PLAN AND PROFILE – DITCH . . . 24–25
DETENTION BASIN DETAILS – ALTERNATE . . . 26
SUBSUMMARY . . . 27
STORM PROFILE . . . 28
CROSS SECTIONS . . . 29–32
AREA 4:
PLAN AND PROFILE – STORM SEWER & SWALE . . . 33–37
PLAN AND PROFILE – PATTERSON RD STORM SEWER . . . 38–41
DETENTION BASIN DETAILS – ALTERNATE . . . 42
SUBSUMMARY . . . 43
STORM PROFILES . . . 44–45
CROSS SECTIONS . . . 46–53

Notify OHIO811.org Before You Dig
Notify online using Remote Ticket Entry
To call dial 8-1-1 or 800-362-2764

PROJECT DESCRIPTION

This project will involve the construction of drainage swale, drainage tile, and storm sewer in response to the petition filed by Frank Mando. The project is divided into four independent sections which are to be individually reviewed and approved by the County Commissioners. The work on each segment is described on sheets 2–5.

SPECIFICATIONS

The 2023 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 require the closing to traffic on Morris Road and that provisions for the maintenance and safety of traffic will be as set forth in the plans and estimates.

FRANKLIN COUNTY APPROVALS

APPROVED _____
DATE _____ FRANKLIN COUNTY ENGINEER

APPROVED _____
DATE _____ FRANKLIN COUNTY CHIEF DEPUTY ENGINEER

APPROVED _____
DATE _____ FRANKLIN COUNTY DRAINAGE 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

STANDARD CONSTRUCTION DRAWINGS			SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
ODOT					
CB 2–2B			800	1–17–25	FRANKLIN COUNTY SECTION 100 GEN. PROVISIONS DATED 4–17–23
CB 2–3		COC 1441	832	7–15–22	
CB 2–4		COC AA–S166			
CB 2–5					
MH–3					
HW–2.2					
DM–1.1					
DM–4.4			PERMITS		
MT–97.10					
MT–97.11					
MT–101.60					
MT–101.70					
MT–101.90					

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

STATE OF OHIO MARK A. LARRIMER 69331 REGISTERED PROFESSIONAL ENGINEER

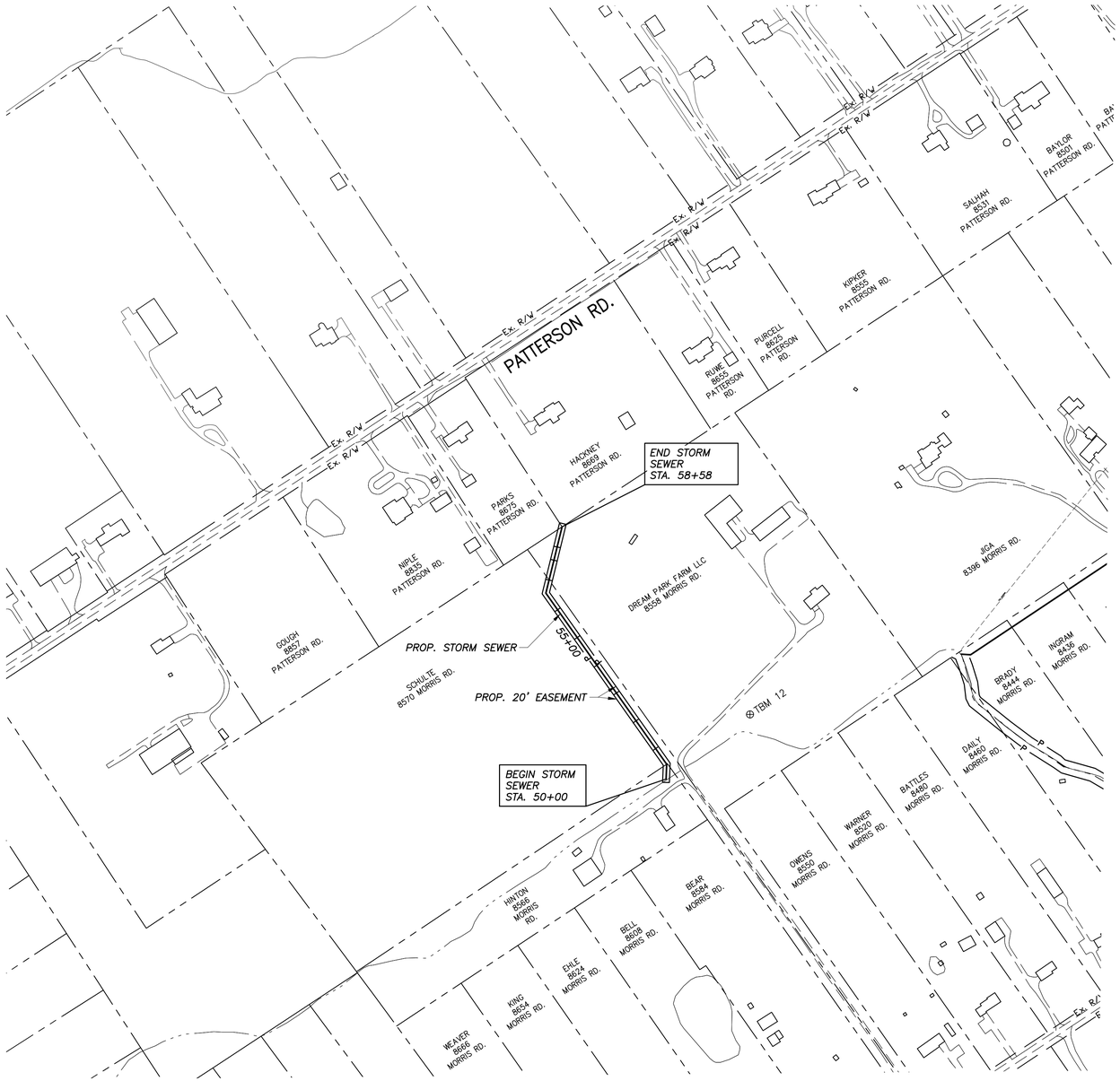
REGISTERED ENGINEER No. E69331

REVISIONS			
REV.	DESCRIPTION	INITIAL	DATE

DESIGN SERVICES WORK ID: 010821-010
ENGINEER'S ESTIMATE NO.: 2025-21
CONSTRUCTION PROJECT NO.: 9115
RAILROAD INVOLVEMENT: NONE

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2–Mando\CADD\20089 Mando 01–TITLE.dwg
June 16, 2025, 1:31pm



AREA 1 DESCRIPTION

This Area will involve the installation of 1400' of drainage tile.

DRIVEWAY NOTE

In the event the contractor accesses the project via private driveways/property, the contractor shall perform a thorough inspection of the access point prior to construction and document the predevelopment condition using photos and video. Upon completion of the project, the driveway/property shall be restored to the preexisting condition.

BENCH MARKS

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

SOURCE BENCHMARK MONUMENT No. T3 – ELEV.= 938.106
BRASS DISK SET IN THE TOP OF A CONCRETE MONUMENT ON THE WEST SIDE OF WALKER ROAD, 0.40 MILES NORTHWEST OF DAVIS ROAD, 29 FEET SOUTHEAST OF THE CENTER OF THE DRIVE TO RESIDENCE #3535, 24 FEET SOUTHWEST OF THE CENTERLINE, 4 FEET NORTHEAST OF A WITNESS POST, 1INCH BELOW THE GROUND.

SOURCE BENCHMARK MONUMENT No. N14RESET – ELEV.= 890.599
BRASS DISK IN THE SOUTH END OF THE WEST ENDWALL OF AMITY ROAD PIPE CULVERT BRO 12–8.06 OVER LEAP DITCH, 0.20 MILES SOUTH OF CARTER ROAD, 253 FEET NORTH OF THE CENTER OF THE DRIVE TO RESIDENCE #3535, 38.7 FEET WEST OF THE CENTERLINE.

SOURCE BENCHMARK MONUMENT No. J2TT – ELEV.= 920.242
BRASS DISK SET IN THE TOP OF A CONCRETE MONUMENT ON THE WEST SIDE OF AMITY ROAD, 0.45 MILES NORTH OF ROBERTS ROAD, 154 FEET NORTHWEST OF A UTILITY POLE, 25.9 FEET SOUTHWEST OF THE CENTERLINE, 12 FEET SOUTH OF UTILITY POLE #361A54, 1 FOOT EAST OF A WITNESS POST.

SOURCE BENCHMARK MONUMENT No. HI–13 – ELEV.= 940.490
ALUMINUM DISK ON THE NORTHEAST CORNER OF THE CONCRETE FOUNDATION OF A TRAFFIC SIGNAL POLE AT THE NORTHEAST CORNER OF ROBERTS ROAD EAST AND WALKER ROAD, AT BROWN ELEMENTARY SCHOOL, 54 FEET EAST OF THE CENTERLINE OF WALKER ROAD, 34.5 FEET NORTH OF THE CENTERLINE OF ROBERTS ROAD EAST.

TBM 12 – ELEV.= 921.48
PS IN NORTHWEST SIDE OF POWER POLE, 59.8 FEET SOUTH OF CENTERLINE GRAVEL DRIVE TO RESIDENCE #8558.

HORIZONTAL CONTROL

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

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BASIS OF BEARINGS: FCGS 1946 – FCGS 1951 = N13°16'09"W (AMITY ROAD AS–BUILT 0012–06,07)

N

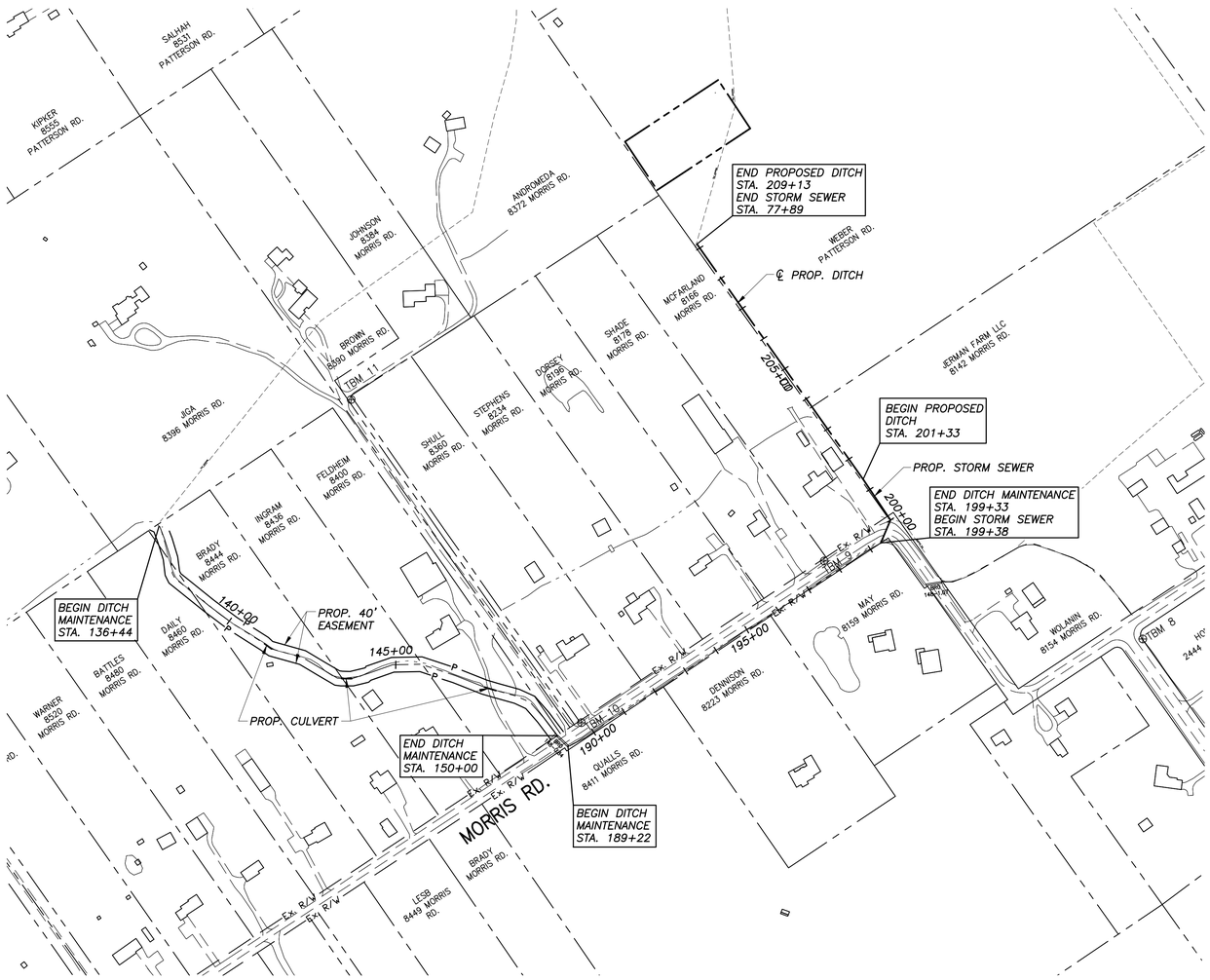
0 100 200 400
HORIZONTAL SCALE IN FEET

CALCULATED MAB
CHECKED MSL

SCHEMATIC PLAN - AREA 1

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando 02-05-SCHEMATIC PLAN.dwg
April 02, 2026, 8:45am



AREA 2 DESCRIPTION

This Area will involve the construction of 780' of drainage ditch, installation of 984' storm sewer, and 2367' existing ditch cleaning.

DRIVEWAY NOTE

In the event the contractor accesses the project via private driveways/property, the contractor shall perform a thorough inspection of the access point prior to construction and document the predevelopment condition using photos and video. Upon completion of the project, the driveway/property shall be restored to the preexisting condition.

BENCH MARKS

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BRASS DISK SET IN THE TOP OF A CONCRETE MONUMENT ON THE WEST SIDE OF AMITY ROAD, 0.45 MILES NORTH OF ROBERTS ROAD, 154 FEET NORTHWEST OF A UTILITY POLE, 25.9 FEET SOUTHWEST OF THE CENTERLINE, 12 FEET SOUTH OF UTILITY POLE #361A54, 1 FOOT EAST OF A WITNESS POST.

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TBM 9 – ELEV.= 928.50
PS IN NORTH SIDE OF POWER POLE #362A16, BETWEEN RESIDENCE #8166 & #8178, 17.5 FEET NORTH OF CENTERLINE MORRIS ROAD.

TBM 10 – ELEV.= 925.75
PS IN SOUTH SIDE OF POWER POLE #362A88 ON THE WEST PROPERTY LINE OF RESIDENCE #8360, 17.3 FEET NORTH OF CENTERLINE MORRIS ROAD.

HORIZONTAL CONTROL

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BASIS OF BEARINGS: FCGS 1946 – FCGS 1951 = N13°16'09"W (AMITY ROAD AS–BUILT 0012–06,07)

N

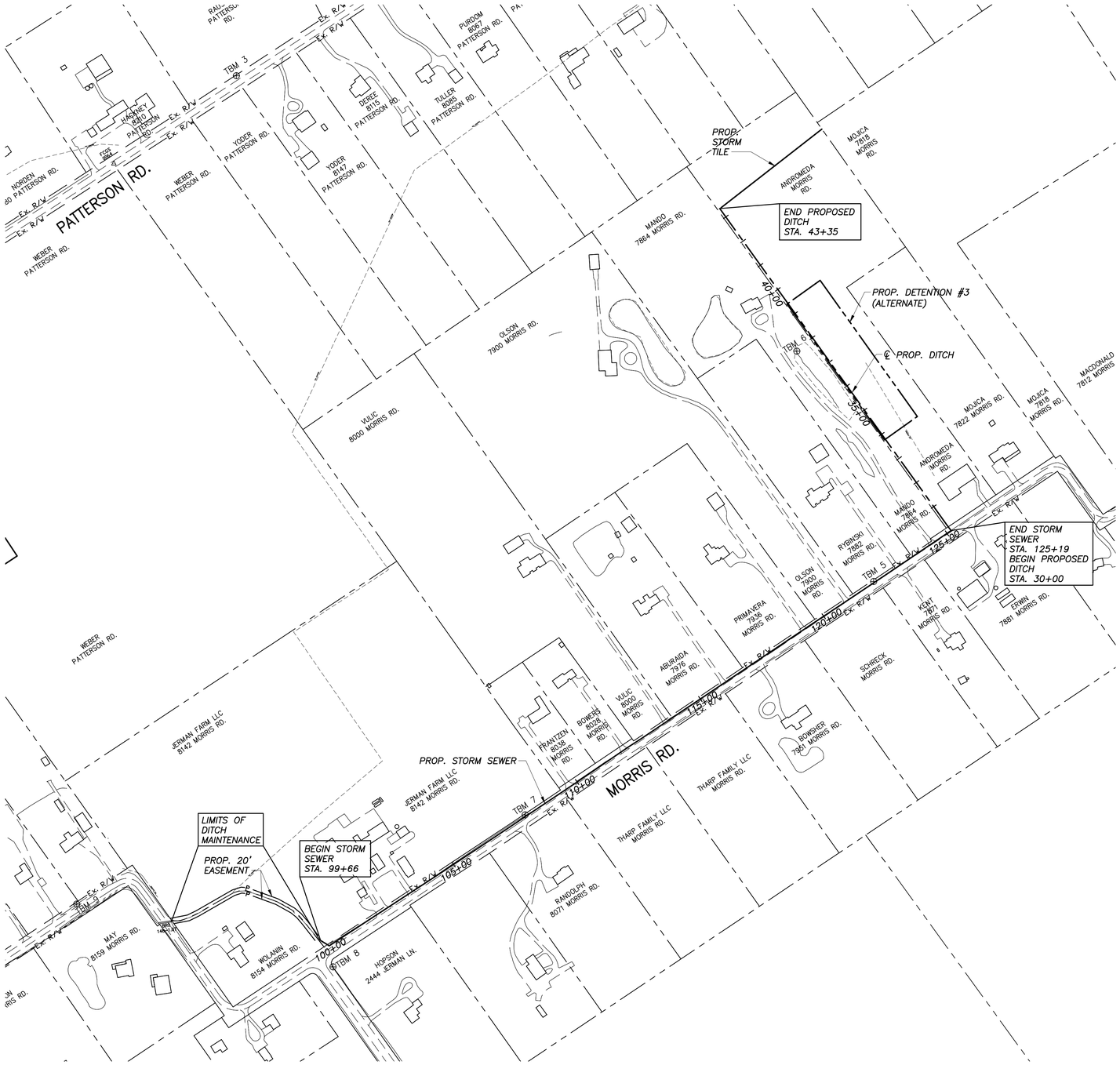
0 100 200 400
HORIZONTAL SCALE IN FEET

CALCULATED MAB
CHECKED MSL

SCHEMATIC PLAN - AREA 2

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando 02-05-SCHEMATIC PLAN.dwg
April 02, 2026, 8:47am



AREA 3 DESCRIPTION

This Area will involve the construction of 1335' of drainage ditch, installation of 2553' storm sewer, 1767' drainage tile, and 585' existing ditch cleaning.
Area 3 Alternate to install detention basin.

DRIVEWAY NOTE

In the event the contractor accesses the project via private driveways/property, the contractor shall perform a thorough inspection of the access point prior to construction and document the predevelopment condition using photos and video. Upon completion of the project, the driveway/property shall be restored to the preexisting condition.

BENCH MARKS

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TBM 5 – ELEV.= 938.27
PS IN SOUTHEAST SIDE OF POWER POLE IN FRONT OF RESIDENCE #7882, 17.5 FEET NORTH OF CENTERLINE MORRIS ROAD.

TBM 6 – ELEV.= 935.53
CHISELED SQUARE IN SOUTHWEST CORNER OF THE SOUTHEAST CORNER OF A CATCH BASIN REMNANT STRUCTURE, 44.0 FEET EAST OF CENTERLINE BLACKTOP DRIVE TO RESIDENCE #7864, 28.2 FEET WEST OF 24" WEEPING WILLOW.

TBM 7 – ELEV.= 934.81
PS IN SOUTH SIDE OF POWER POLE ACROSS FROM RESIDENCE #8071, 22.0 FEET NORTH OF CENTERLINE MORRIS ROAD.

TBM 8 – ELEV.= 929.42
CHISELED SQUARE NORTHEAST CORNER OF A CATCH BASIN AT THE SOUTHEAST CORNER OF MORRIS ROAD AND JERMAN LANE INTERSECTION, 30.0 FEET EAST OF CENTERLINE OF JERMAN LANE.

HORIZONTAL CONTROL

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N

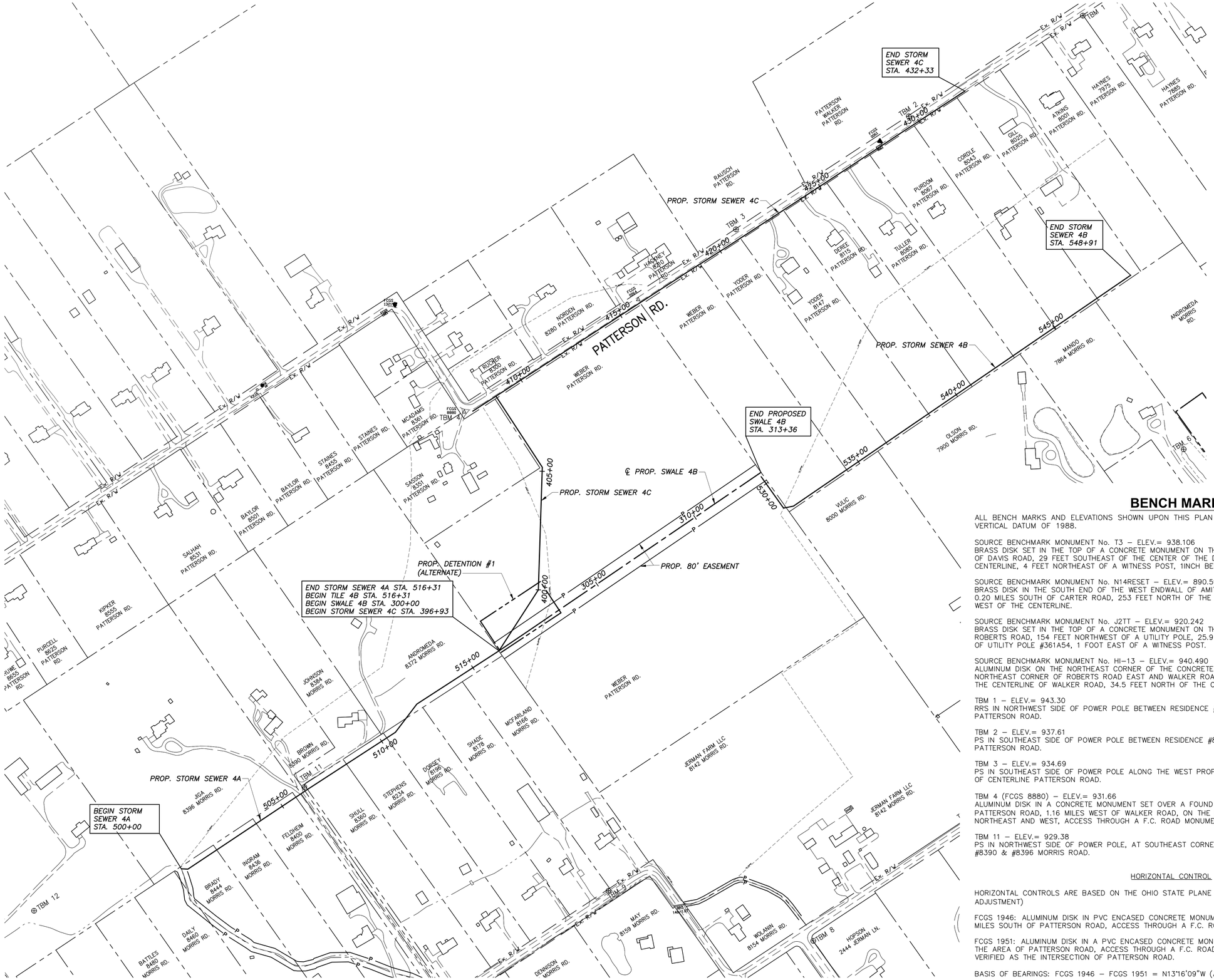
0 100 200 400
HORIZONTAL SCALE IN FEET

CALCULATED MAB
CHECKED MSL

SCHEMATIC PLAN - AREA 3

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando 02-05-SCHEMATIC PLAN.dwg
April 02, 2026, 9:34am



AREA 4 DESCRIPTION

This Area will involve the construction of 2929' of drainage swale, 1745' of drainage ditch, installation of 3584' storm sewer, and 3098' drainage tile. Area 4 Alternate to install detention basin.

DRIVEWAY NOTE

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TBM 1 – ELEV.= 943.30
RRS IN NORTHWEST SIDE OF POWER POLE BETWEEN RESIDENCE #7885 & #7975, 24.5 FEET SOUTHEAST OF CENTERLINE PATTERSON ROAD.

TBM 2 – ELEV.= 937.61
PS IN SOUTHEAST SIDE OF POWER POLE BETWEEN RESIDENCE #8043 & #8067, 26.0 FEET NORTHWEST OF CENTERLINE PATTERSON ROAD.

TBM 3 – ELEV.= 934.69
PS IN SOUTHEAST SIDE OF POWER POLE ALONG THE WEST PROPERTY LINE OF RESIDENCE #8147, 26.0 FEET NORTHWEST OF CENTERLINE PATTERSON ROAD.

TBM 4 (FCGS 8880) – ELEV.= 931.66
ALUMINUM DISK IN A CONCRETE MONUMENT SET OVER A FOUND STONE, AT AN ANGLE POINT IN THE CENTERLINE OF PATTERSON ROAD, 1.16 MILES WEST OF WALKER ROAD, ON THE ROAD CENTERLINE NORTH AND EAST, ON A P/L NORTHEAST AND WEST, ACCESS THROUGH A F.C. ROAD MONUMENT BOX.

TBM 11 – ELEV.= 929.38
PS IN NORTHWEST SIDE OF POWER POLE, AT SOUTHEAST CORNER OF GRAVEL DRIVE TO RESIDENCES #8372, #8384, #8390 & #8396 MORRIS ROAD.

HORIZONTAL CONTROL

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N

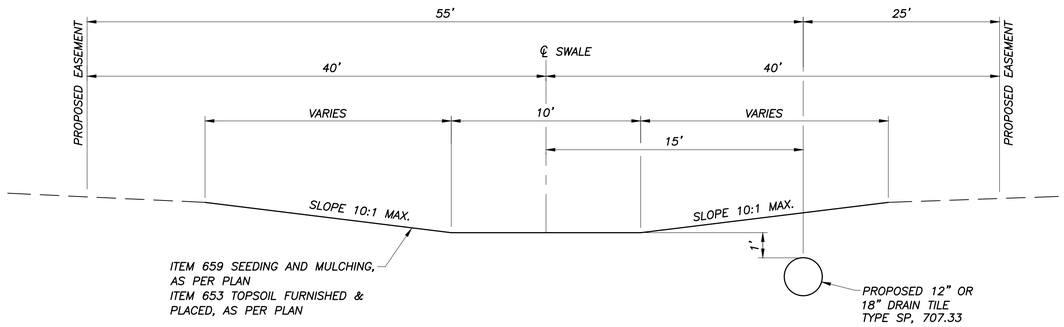
0 100 200 400
HORIZONTAL SCALE IN FEET

CALCULATED MAB
CHECKED MSL

SCHEMATIC PLAN - AREA 4

MANDO DITCH DRAINAGE IMPROVEMENT

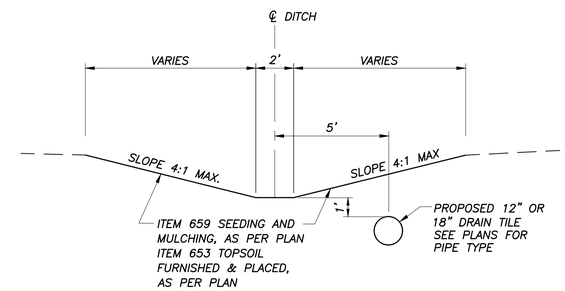
DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando 02-05-SCHEMATIC PLAN.dwg
June 16, 2026, 1:26pm



SWALE TYPICAL SECTION

NO SCALE

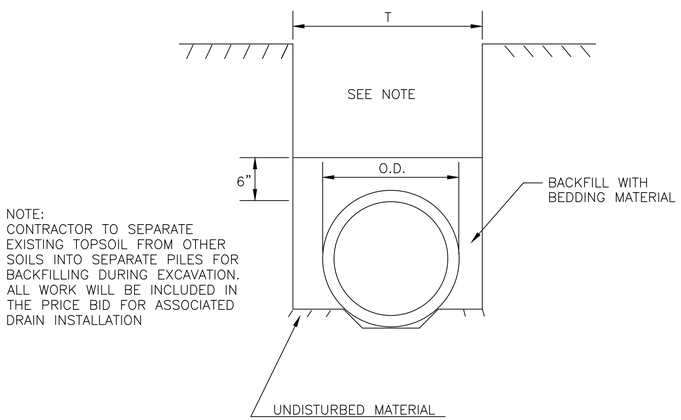
AREA 4B – STA. 301+00 TO STA. 313+36



DITCH TYPICAL SECTION

NO SCALE

AREA 2 – STA. 201+33 TO STA. 209+13
AREA 3 – STA. 30+00 TO STA. 43+35



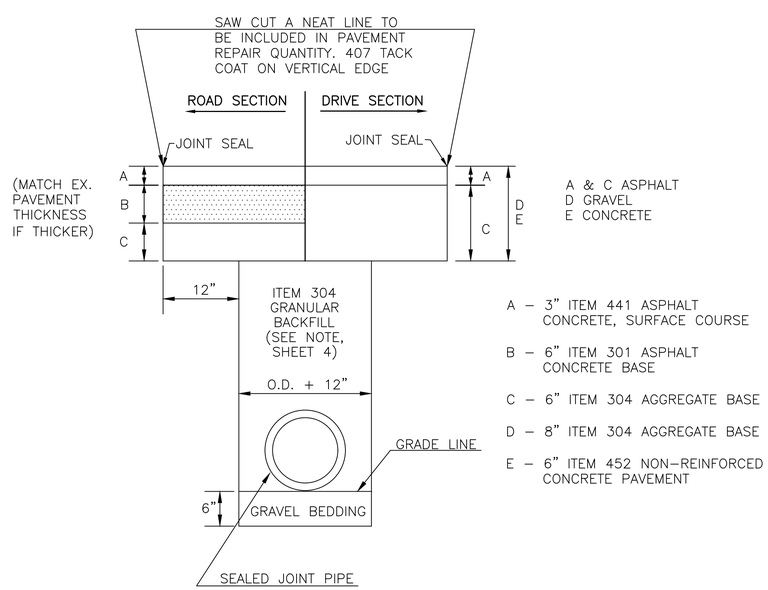
10 INCH DIAMETER OR LARGER

DRAIN TUBING TO HAVE TRAPEZOIDAL OR SIMI CIRCULAR GROVE

T = O.D. + 6" IN 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 – 6" ITEM 301 ASPHALT CONCRETE BASE

C – 6" ITEM 304 AGGREGATE BASE

D – 8" ITEM 304 AGGREGATE BASE

E – 6" ITEM 452 NON–REINFORCED CONCRETE PAVEMENT

TYPICAL ROAD/DRIVE CUT

CALCULATED MAB
CHECKED MSL

TYPICAL SECTIONS

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando 06-TYP SECTIONS.dwg
November 11, 2025, 2:37pm

SPECIFICATIONS

The 2023 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 614–525–7037.

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 Contractor Responsibility
The Contractor alone shall be responsible for the safety, efficiency, and adequacy of the work location, equipment, materials, and methods, and for any damage that may result from their improper construction, maintenance, or operations. The Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the work, proper safeguards for the protection of workers and the public and shall post danger warnings against any hazards created by the construction operations. The Contractor shall be responsible for the compliance of all Subcontractors according to these requirements.

2.0 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.

3.0 Competent Person
The Contractor is responsible for identifying the need for Qualified and/or Competent Persons for specific tasks as defined in 29 CFR 1926.

4.0 Subcontractor Compliance
The Contractor is responsible for screening all Subcontractors with respect to these safety requirements and responsibilities. In addition, the Contractor is responsible for monitoring and enforcing compliance of all Occupational Safety and Health Administration (OSHA) requirements to its Subcontractors. The Contractor shall be responsible for ensuring conformance of all subcontractors to the Contractor's comprehensive safety program.

5.0 Safety Supervisor
The Contractor shall designate, in writing, a Safety Supervisor responsible for administering the comprehensive safety program on–site. The Safety Supervisor shall have supervisory authority over the Contractor, Subcontractors, and suppliers. The Safety Supervisor shall have the responsibility for site safety and workers' health and shall have the authority to correct deficiencies and stop work, if necessary, until deficiencies are corrected. The Safety Supervisor shall immediately notify the FCEO Project Manager if/when an OSHA Inspector arrives on site.

6.0 CPR and First Aid
The Contractor shall have on site at all times when work is being performed at least one individual certified in CPR and First Aid.

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 with the associated work assignments.

8.0 Contractor and Subcontractor Reporting
The Contractor and Subcontractors shall comply with all legal and FCEO specific reporting requirements relating to Environmental Health and Safety (EHS) set forth in the Contract Documents. The Contractor will immediately report orally, and in writing within two (2) days, any EHS related loss, damage, or accident arising from the work to the FCEO Project Manager. The Contractor and its Subcontractors will immediately report to the FCEO Project Manager all non–incidental spills, and all other significant impacts to the environment (soil, water, air) in performance of the work. The Contractor will also immediately notify the FCEO Project Manager of any "failure to comply" with state and federal environmental laws, rules, and regulations.

9.0 Safety and Health Reporting
The Contractor's designated Safety Supervisor shall report all injury accidents and incidents to the FCEO Project Manager as they occur. If a death, hospitalization, amputation, loss of an eye, or injury involving a serious medical condition occurs, the incident shall be reported to the FCEO Project Manager within 30 minutes by the General Contractor's Safety Supervisor. Results of accident investigations and corrective actions shall be provided to FCEO Project Manager as soon as practical following the investigation.

10.0 Incident Investigation
In the event of an incident, the Contractor will conduct an incident investigation. The investigation will include a written report summarizing the results of the investigation, corrective actions taken to prevent a reoccurrence, and any lessons learned. The FCEO, may at its discretion, participate in and facilitate the incident investigation. Time and expense incurred by the Contractor performing an incident investigation will be at the Contractor's expense.

11.0 Progress Meeting – Safety
The FCEO Project Manager, the General Contractor's principal onsite representative, and designated members of respective staff 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. 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 comprehensive safety program.

12.0 Work Stoppage
If the FCEO Project Manager perceives the Contractor has created or is exposed to an imminent danger or a non–compliance situation, the FCEO Project Manager will suspend work until safe conditions are re–established. Such work stoppages will be at the expense of the Contractor and will not add cost or time to the completion date of the Contract.

13.0 Contractor's Expense
The Contractor, at its own cost and expense, shall undertake all necessary and appropriate efforts to prevent accidents at its work sites, including the placing and maintenance of proper guards, fences, barricades, security personnel and suitable and sufficient lighting. Safety deficiencies discovered after the award will be remedied at no cost to the FCEO and may, at the FCEO's discretion, be deducted from the contract amount.

14.0 Generated Waste
The Contractor shall manage all waste in performance of the Work in compliance with state and federal law. Further, the Contractor shall attempt to minimize the generation of all wastes and hazardous substances. All disposal and clean–up costs of spills of hazardous substances and non–hazardous debris/waste generated by the Contractor in the performance of the work will be at the expense of the Contractor.

ITEM 653, TOPSOIL FURNISHED & PLACED, AS PER PLAN

Contractor to remove and replace 6" minimum topsoil in excavated areas.
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 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.

All bends and fittings shall be included in the price bid for Item 611, Conduit

CALCULATED NAME CHECKED NAME

GENERAL NOTES

MANDO DITCH DRAINAGE IMPROVEMENT

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ITEM 201, CLEARING AND GRUBBING

All trees, fence posts, rocks, brush, stumps and fence within the construction limits of this project shall be removed unless marked "Do Not Disturb". Unless itemized separately, all of these items shall be removed under the lump sum price bid for Item 201, Clearing and Grubbing. Items within the construction limits that are marked "Do Not Disturb" or "DND" shall not be removed or damaged. The County reserve the right to order the removal of trees or stumps outside of the limits of the right-of-way and/or easement lines but within the work limits. Payment for the removal of these trees or stumps shall be included in the lump sum price bid for Item 201, Clearing and Grubbing.

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

AT&T
Steve Connell
111 North 4th Street
Columbus, OH 43215
Office: 614-312-2095
Repair Service: 888-611-4466
Prompt #1 then #5

American Electric Power
Robert Matthews
850 Tech Center Drive
Gahanna, OH 43230
740-647-2080
Solution Center: 800-277-2177

Charter Comm (Spectrum/Time Warner)
Anthony Adams
3760 Interchange Road
Columbus, OH 43204
614-827-7971

Marathon Petroleum
Blake A. Ross
Heath Area
Operations ROW Yechnician
blakeaross@marathonpetroleum.com
614-633-8678

Storm Sewer
Franklin County Engineer
Elizabeth Pyles
970 Dublin Road
Columbus, OH 43215
614-525-6187

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 OHIO811 excavation tickets and general construction of the project. Costs to expose utilities associated with OHIO811 excavation 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 their OHIO811 excavation ticket updated according to industry practices.

A contingency quantity of: ITEM SPECIAL HYDRO-EXCAVATION UTILITY EXPOSURE 5 each

EXISTING/UNIDENTIFIED STORM SEWERS

If any existing storm sewers or field tiles are encountered during construction, leave exposed and contact the Engineer/Inspector to have the existing tile's size, composition, horizontal location, and flowline recorded in the asbuilt plan.

UNTREATED SEPTIC CONNECTIONS

This plan makes no provision for connecting, nor shall the Engineer or contractor connect, any untreated septic drainage into the highway drainage system. Any pipe possibly carrying untreated septic flow shall be left exposed. Call Franklin County Health Dept. at (614) 525-3909 and the Franklin County Drainage Engineer's Office at (614) 525-7469 or (614) 525-2787 for direction on whether or not to tie the pipe into the highway drainage system or plug the pipe at R/W line w/ Class C concrete. Payment for plugging shall be included in contract price for the pertinent 202 or 203 item.

ITEM 832, STORM WATER POLLUTION PREVENTION PLAN and ITEM 832, EROSION CONTROL

This contract is subject to National Pollutant Discharge Elimination System (NPDES) and specifically the Ohio EPA Authorization for Storm Water Discharge Associated with Construction Activity under NPDES. Additionally, federal, state, and local regulations pertaining to storm water pollution prevention shall also apply.

An officer of the Contractor's company will be required to co-sign the Ohio EPA permit and Notice of Intent (NOI) as per NPDES requirements (if required). The Contractor shall have a supervisory employee onsite who is competent in proper, current erosion control practices during all earth disturbing activities. It is the Contractor's responsibility to notify his subcontractors of the Ohio EPA requirements, have them sign affidavits that they understand those requirements, and furnish copies to the Franklin County Engineer's Office (FCEO) before their associated work begins.

Once the apparent low bidder has been determined in writing in the form of a letter from the Franklin County Engineer, the Contractor shall submit a Storm Water Pollution Prevention Plan (SWP3) within 15 working days for approval by FCEO. The SWP3 shall be prepared, stamped, and signed by a Professional Engineer experienced and competent in the design and implementation of standard erosion and sediment controls and storm water management practices addressing all phases of construction. The officer of the Contractor's company, who signs the NOI, as mentioned above, shall also sign the SWP3. Submit five half size sets and one electronic PDF set of plans for review to FCEO. FCEO will review/approve or review/return comments within 10 working days. If comments are returned to the Contractor, they shall be incorporated and resubmitted for approval within 5 working days. FCEO will back check the SWP3 within 5 working days and ask for additional changes or approve the SWP3.

The SWP3 shall incorporate at a minimum the following:

- "Part III, Section G SWP3 Requirements of the Ohio EPA, Authorization for Storm Water Discharge Associated with Construction Activity under National Pollutant Discharge Elimination System (NPDES)."
- Current edition of ODNR's Rainwater & Land Development Manual.
- Detailed description and drawings of all Best Management Practices (BMP's) including plan views, section views, legend, and installation practices the Contractor plans to use.
- Procedure for self-reporting verbally and in writing to FCEO and OEPA when the contractor learns of actual or potential violations.
- Methods the contractor will use to train or inform all of the contractor's employees, subcontractors, and other persons affected by the SWP3 of the requirements of the plan including methods and techniques to be used to ensure implementation of the plan. As stated above, it is the Contractor's responsibility to notify his subcontractors of the Ohio EPA requirements, have them sign affidavits that they understand those requirements, and furnish copies to the Franklin County Engineer's Office (FCEO) before their associated work begins.
- Emergency contact information, the general permit number, a copy of the NOI (if required), and a copy of the approval letter from OEPA (if required).
- Listing of subcontractors and co-permittees.
- Schedule which describes the sequence of major earth moving construction operations; the implementation of erosion, sediment, and storm water management practices; and the removal of During Construction BMP's upon project completion.
- Locations of concrete truck washouts; construction entrances; material storage areas; solid, construction, and hazardous waste storage areas; vehicle maintenance and fueling areas; onsite overburden, borrow, and stockpile areas; stream, creek, or channel crossings; sediment and storm water management basins including their sediment settling volume and contributing drainage area; open burning locations; etc.
- Estimate of BMP's including type and quantities.
- Detailed dewatering plans.

Upon approval, submit five half size sets and one electronic PDF set of the SWP3 to FCEO. No commencement of construction will be allowed until the SWP3 has been approved. The co-permittee/Contractor shall inform FCEO in writing of all amended activities to the SWP3 whenever there is a change in design, construction, operation, or maintenance that has a significant effect on the potential for the discharge of pollutants to Ohio waters or if the SWP3 proves to be ineffective in achieving the general objectives of controlling pollutants in storm water. It is the responsibility of the co-permittee/Contractor to evaluate all sediment and erosion control activities to ensure that no turbid discharge is released to the waters of the State of Ohio. The co-permittee/Contractor shall update the SWP3's at his/her cost as construction progresses to reflect changing conditions and work areas.

The co-permittee/Contractor shall be fully responsible for all compliance activities for all areas outside of the designed FCEO construction site. These areas include locations where soils are stockpiled, excavated for the purpose of fill, or disposed of as fill outside of the work limits in the construction plans. The co-permittee/Contractor shall file an NOI with Ohio EPA regarding these off-project areas and furnish copies to FCEO.

FCEO will closely monitor the implementation of the SWP3 with emphasis on construction and continued maintenance of BMP's. FCEO will provide the co-permittee/Contractor notice of any deficiencies found during required inspections as required by the general permit. The Contractor shall install a rain gauge close to the Field Office, as directed by the engineer. FCEO stipulates the co-permittee/Contractor to make repairs within 24 hours of notification of deficiencies. If the contractor fails to remedy unsatisfactory sediment control and dewatering practices within 24 hours after receipt of such notice, FCEO may invoke the provision of ODOT CMS Section 105.15, correct the problem areas, and deduct the entire cost of the correction from monies due or to become due the contractor on the contract. Failure of the contractor to take corrective measures may result in enforcement actions and penalties as provided by NPDES, federal, state, and local laws. Any fines for non-compliance will be passed onto the contractor.

The Contractor shall submit to FCEO a description of the BMP's that will be employed prior to work beginning, and FCEO reserves the right to deny implementation of any BMP that is determined to be non-effective prior to or during construction activities.

The stipulations of ODOT SS 832 shall apply. The SWP3 for this project will not be Non-Performed and is required before construction can begin. If an SWP3 is required for off-project EDA, then it shall be furnished by the Contractor prior to off-project EDA at no cost to FCEO. Payment for all work associated with EROSION AND SEDIMENT CONTROL for on-project EDA shall follow ODOT SS 832 and will be paid for by FCEO based on field measurements. Work associated with erosion and sediment control for off-project EDA will not be paid for by FCEO.

The Contractor is hereby advised that stricter pollution control standards and enforcement have been imposed by the Ohio EPA since March 10, 2003 and with a revision in April 2018. Also, many private citizen environmental groups, who have been known to file civil legal actions, are present in the area and observe all construction operations. The pay items (silt fences, check dams, sediment basins, etc.) set-up in the contract shall be used to control silt pollution as shown in the plans, directed by the Engineer, and/or ordered by the Ohio EPA.

When a Contractor needs to dam any waterway for dewatering purposes, any dikes placed in the stream must be of clean non-erodible materials. Dams constructed of soil in the stream are not acceptable, even if the stream work area is cordoned off or by-passed. Dams in the stream shall be of durable bags filled with coarse granular sand or clean stone (such as #57 or #2) or other methods acceptable to the EPA that prevent pollution. The labor and material used to install bags of sand or stone for stream dewatering purposes shall be included in the bid price for COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN.

The Contractor will be required to build sediment basins or use equal methods to detain and clean water to acceptable EPA standards before releasing the water back into the stream. Sediment basin(s) shall be detailed in the SWP3 and are a listed item within the Erosion Control pay item.

Stone used for check dams for dewatering purposes in the stream shall be the ROCK CHANNEL PROTECTION (RCP) contingency set-up in the Erosion Controls pay item, the #2 Stone contingency set-up in the Erosion Controls pay item, or a combination of the RCP and #2 Stone contingency. Payment using the RCP and/or the #2 Stone contingency shall be at the measured quantity at the unit bid price for these items.

It is preferred to use permanent erosion control items as shown in the plans to control construction pollution when possible.

All items are to be maintained as per ODOT SS 832. Requirements to maintain sediment and erosion control items will be STRICTLY ENFORCED.

MAINTAINING AND REPLACEMENT OF MAILBOXES

In addition to the requirements of section 107.10 of the Franklin County General Provisions, the Contractor shall carefully remove the mailboxes and offer them to the property owners for later installation. The Contractor shall install temporary mailboxes during construction. If the property owners decide not to reuse the mailboxes, the Contractor shall replace the existing mailboxes with material supplied by the Franklin County Engineer. At a minimum they should be replaced with a 4"x4" wood post and steel box. The Contractor shall install the mailboxes in accordance with postal regulations. The Contractor shall obtain the necessary materials at 970 Dublin Rd.at which time details and installation requirements shall be furnished. Payment shall be included in the price bid for Item 690.

UTILITY POLE SUPPORT, AS PER PLAN

The Contractor shall coordinate utility pole support on poles with AEP as identified in the plans. The Contractor shall notify AEP 14 days prior to needing the pole support. The Contractor shall coordinate to install item 304 aggregate base, as directed by the Engineer to create a work pad for AEP to perform necessary pole supports while the Contractor installs storm sewer. removal and restoration of the work pads is incidental to utility pole support item. CDF or 304 backfill around the poles as shown in the plans is also incidental to utility pole support item.

The following Item is estimated for the Contractor's use:

Item 304, Aggregate Base as directed by the Engineer: 15 cy per pole

The existing utility poles are located within the existing right-of-way, near the anticipated trench excavation limits. AEP will hold the poles at no additional cost to the Contractor. All other work detailed above, including any inefficiencies experienced during the storm sewer installation related to the poles, shall be incidental to the bid price for utility pole support.

DITCH MAINTENANCE, AS PER PLAN

The Contractor shall perform maintenance on the ditch segment as shown in the plans, including the removal of obstructing vegetation and deadfall. Payment for maintenance shall be per lineal foot.

CALCULATED MAB
CHECKED MSL

GENERAL NOTES

MANDO DITCH DRAINAGE IMPROVEMENT

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ITEM 614 MAINTAINING TRAFFIC, AS PER PLAN

These plans provide a suggested method of maintaining traffic for this project. The Contractor may submit an alternate MOT plan at the preconstruction meeting showing how they plan to maintain traffic in accordance with the OMUTCD and these traffic maintenance notes. These plans will need 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-4pm) 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.

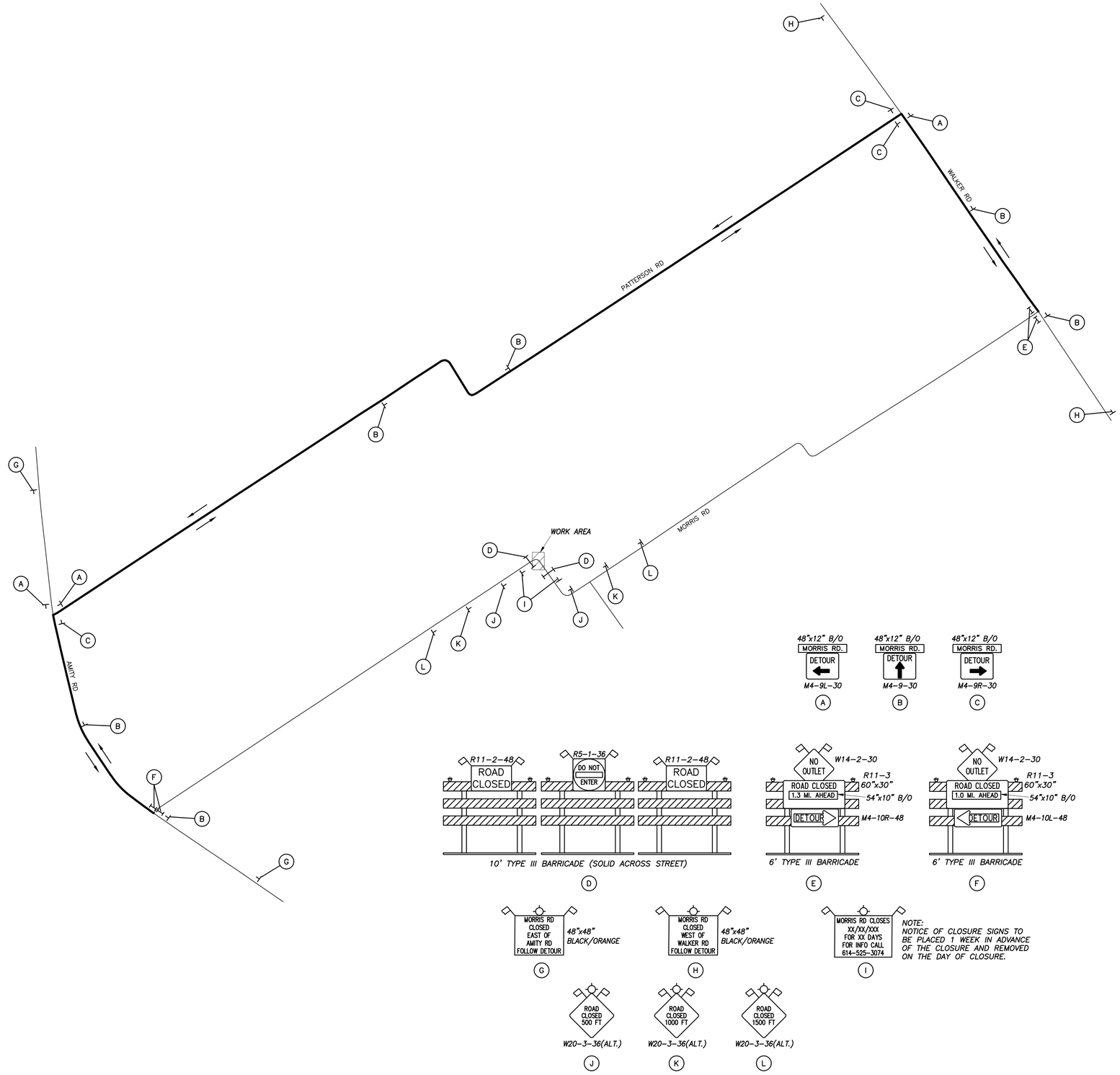
LOCAL ACCESS

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.



MORRIS ROAD DETOUR

CALCULATED MAB
CHECKED MSL

MAINTENANCE OF TRAFFIC

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando 09-MOT.dwg
February 11, 2026, 2:04pm

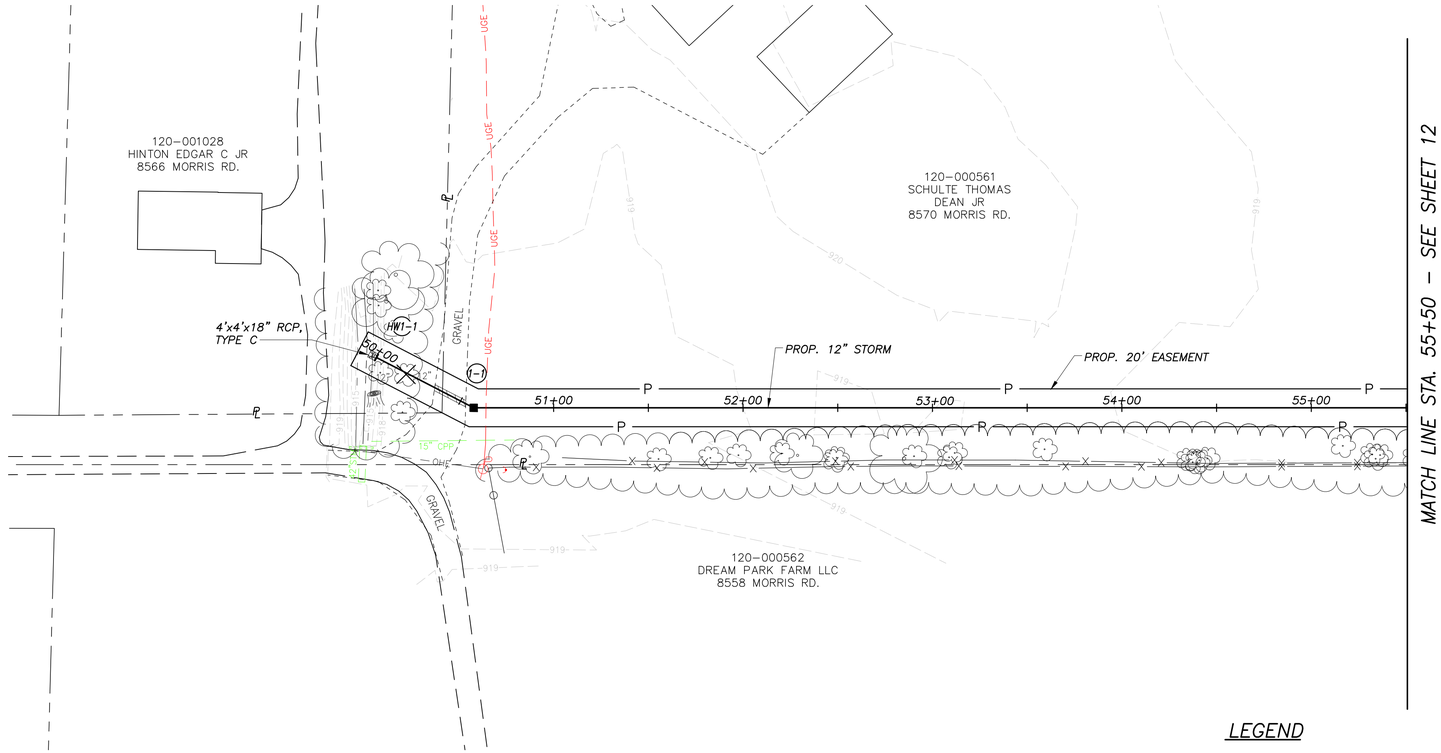
AREA 1	AREA 2	AREA 3	AREA 4	ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
								ROADWAY
				201	11000	1	L.S.	CLEARING AND GRUBBING
5	1		2	201	21800	8	EACH	TREE REMOVED, 18" SIZE
	1			201	23000	1	EACH	TREE REMOVED, 30" SIZE
		2341	521	202	35100	2862	FT.	PIPE REMOVED 24" AND UNDER
	104			202	35200	104	FT.	PIPE REMOVED 24" AND OVER
		2	3	202	58100	5	EACH	CATCH BASIN REMOVED
120		10	214	202	75200	344	FT.	FENCE REMOVED AND REPLACED
	255	451	5000	203	10000	5706	C.Y.	EXCAVATION
				203	10000	200	C.Y.	EXCAVATION (USED AS DIRECTED BY ENGINEER)
				203	20000	100	C.Y.	EMBANKMENT (USED AS DIRECTED BY ENGINEER)
				203	35000	50	C.Y.	EMBANKMENT #2 STONE (USED AS DIRECTED BY ENGINEER)
				203	35000	50	C.Y.	EMBANKMENT #57 STONE (USED AS DIRECTED BY ENGINEER)
	180	289	1064	653	10001	1533	C.Y.	TOPSOIL FURNISHED AND PLACED, AS PER PLAN
	12.5			606	16500	12.5	FT.	GUARDRAIL, REBUILT, TYPE 5
		10	8	690	50350	18	EACH	MAILBOX REMOVED AND RESET
				SPEC		5	EACH	HYDRO EXCAVATING UTILITY EXPOSURE (USED AS DIRECTED BY ENGINEER)
								EROSION CONTROL
			9	601	11000	9	S.Y.	RIPRAP USING 6" REINFORCED CONCRETE SLAB
1	2	2	1	601	32200	6	C.Y.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
481	1126	3350	11735	659	00501	16692	S.Y.	SEEDING AND MULCHING, AS PER PLAN
3	6	17	63	659	35001	89	M.GAL.	WATER, AS PER PLAN
				832	30000	17000	EACH	EROSION CONTROL
				SPEC	15000	1	L.S.	SWPPP
								DRAINAGE
0.21	0.46	0.60	1.09	602	20000	2.36	C.Y.	CONCRETE MASONRY
			116	611	04600	116	FT.	12" CONDUIT, TYPE B, 707.33
801	6	332	1691	611	04600	2830	FT.	12" CONDUIT, TYPE C, 707.33
		1700		611	04600	1700	FT.	12" CONDUIT, TYPE C PERFORATED (707.33, TYPE SP)
58	789			611	04600	847	FT.	12" CONDUIT, TYPE C, 706.02
			1392	611	07400	1392	FT.	18" CONDUIT, TYPE B, 707.33
			1809	611	07600	1809	FT.	18" CONDUIT, TYPE C PERFORATED (707.33, TYPE SP)
	133			611	07600	133	FT.	18" CONDUIT, TYPE C, 706.02
	62		967	611	10400	1029	FT.	24" CONDUIT, TYPE B, 707.33
			1180	611	10600	1180	FT.	24" CONDUIT, TYPE C, 707.33
		2519		611	13400	2519	FT.	30" CONDUIT, TYPE B, (PE-HP DUAL WALL)
		34		611	13600	34	FT.	30" CONDUIT, TYPE C, 706.02
			1631	611	21100	1631	FT.	48" CONDUIT, TYPE C, 707.33
	93			611	53200	93	FT.	48"x76" CONDUIT, TYPE A, 706.04
			2	611	99574	2	EACH	MANHOLE, NO. 3
3	2	4	17	611	98470	26	EACH	CATCH BASIN (CB 2-2B)
	1		3	611	98510	4	EACH	CATCH BASIN (CB 2-3)
		9		611	98540	9	EACH	CATCH BASIN (CB 2-4)
			7	611	98570	7	EACH	CATCH BASIN (CB 2-5)
				611	00201	50	FT.	4" CONDUIT, TYPE C, SCHEDULE 40 PVC, AS PER PLAN
				611	01101	50	FT.	6" CONDUIT, TYPE C, SCHEDULE 40 PVC, AS PER PLAN
				611	02001	50	FT.	8" CONDUIT, TYPE C, SCHEDULE 40 PVC, AS PER PLAN
	2367	585		SPEC		2952	FT.	DITCH MAINTENANCE, SEE NOTE SHEET 14 & 15
								PAVEMENT
	14			253	01000	14	S.Y.	PAVEMENT REPAIR (ROADWAY), SEE DETAIL, SHEET 6
6	12	163	74	253	01000	255	S.Y.	PAVEMENT REPAIR (DRIVES), SEE DETAIL, SHEET 6
								TRAFFIC CONTROL
	2			630	85100	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION
								INCIDENTALS
				614	11001	1	L.S.	MAINTAINING TRAFFIC, AS PER PLAN
				623	10000	1	L.S.	CONSTRUCTION LAYOUT STAKES AND SURVEYING
				624	15000	1	L.S.	MOBILIZATION

CALCULATED MAB
CHECKED MSL

GENERAL SUMMARY

MANDO DITCH DRAINAGE IMPROVEMENT

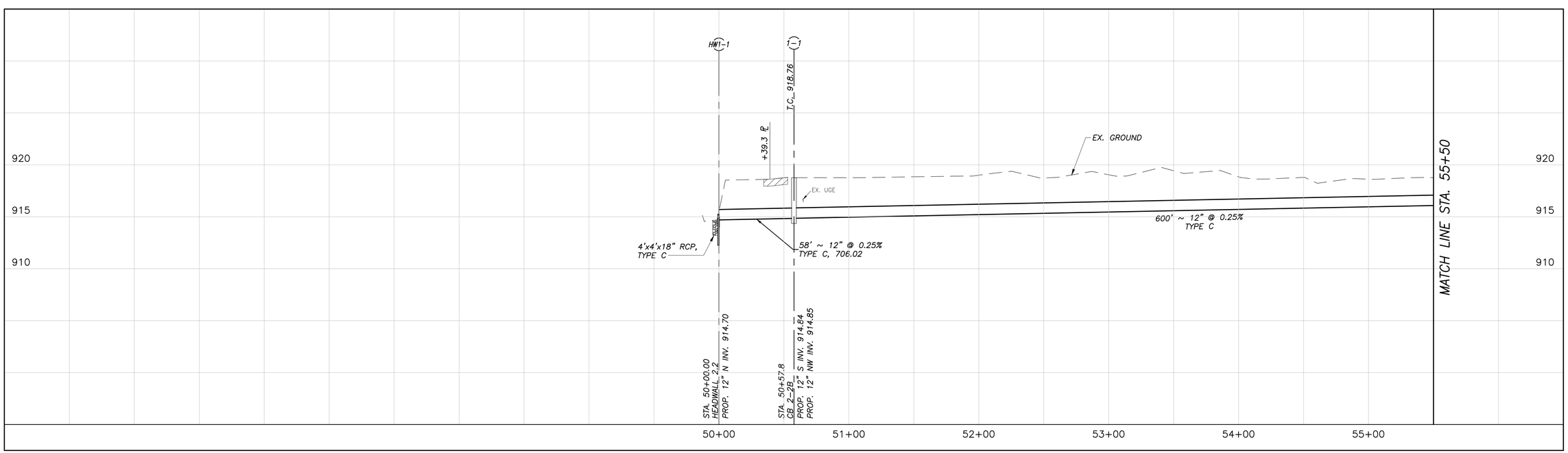
DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando 10-General Summary.dwg
August 05, 2026, 10:00am



LEGEND

PAVEMENT REPAIR

—— P —— PROPOSED EASEMENT



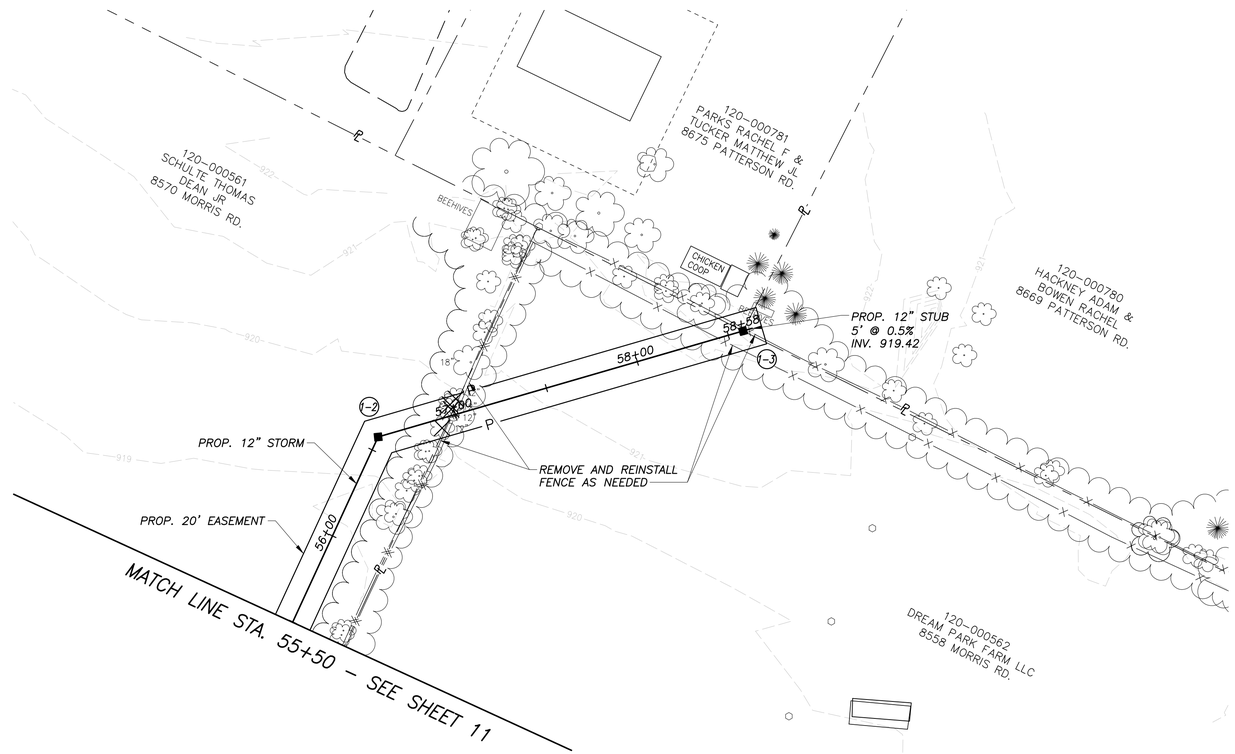
0 20 40 80
HORIZONTAL SCALE IN FEET

CALCULATED MAB
CHECKED MSL

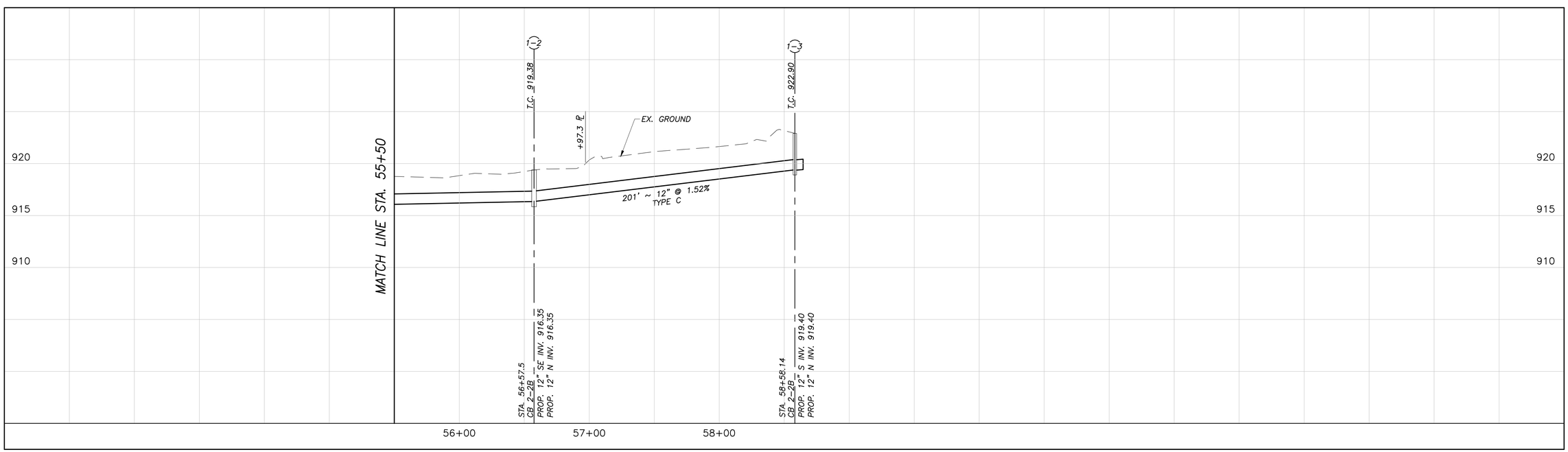
PLAN AND PROFILE - TILE #1
STA. 50+00 TO STA. 55+50

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 bm-Mando.dwg
February 16, 2026, 10:15am



STORM SEWER MANHOLE GROUND COORDINATES BASED ON NAD83 OHIO SOUTH (NSRS 2007)				
Structure No.	PLAN Northing	PLAN Easting	AS-BUILT Northing	AS-BUILT Easting
HW1-1	728859.75	1761860.31		
1-1	728917.01	1761852.40		
1-3	729601.70	1761554.30		
1-2	729406.88	1761506.43		



HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - TILE #1
STA. 55+50 TO STA. 58+61

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 bm-Mando.dwg
February 16, 2026, 10:16am

ESTIMATE OF QUANTITIES

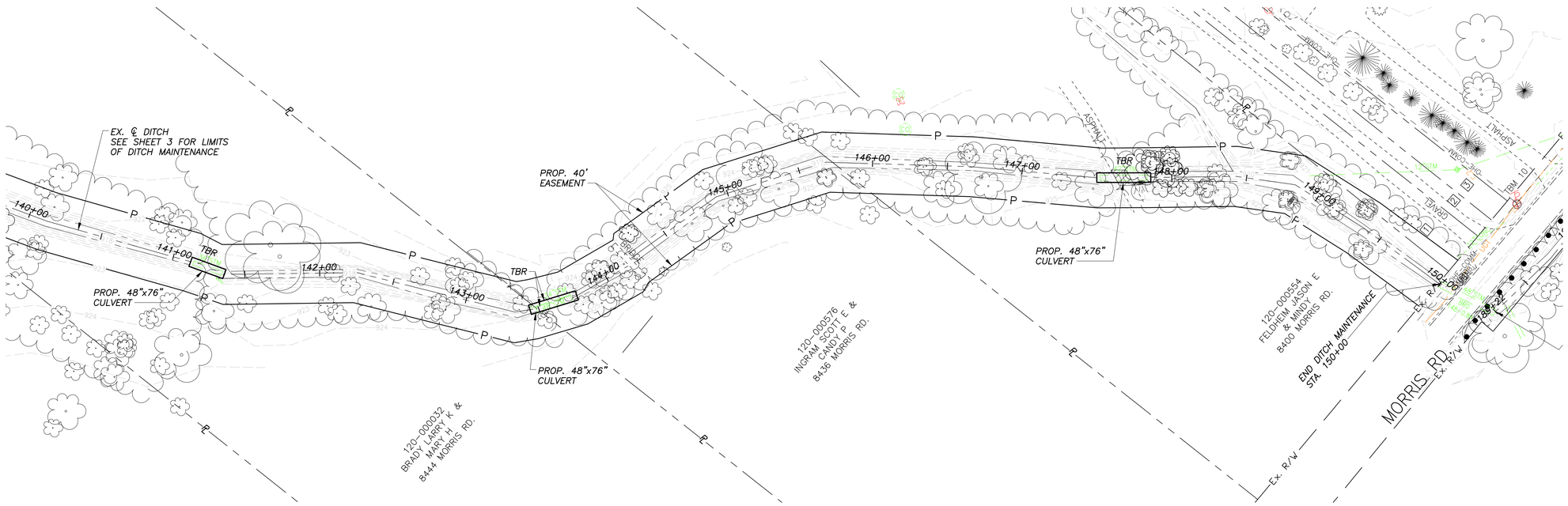
ITEM	QUANTITY	UNIT	DESCRIPTION
201	1	L.S.	CLEARING AND GRUBBING
201	5	EACH	TREE REMOVED, 18" SIZE
202	120	FT.	FENCE REMOVED AND REPLACED
601	1	C.Y.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
659	481	S.Y.	SEEDING AND MULCHING, AS PER PLAN
659	3	M.GAL.	WATER, AS PER PLAN
602	0.21	C.Y.	CONCRETE MASONRY
611	58	FT.	12" CONDUIT, TYPE C, 706.02
611	801	FT.	12" CONDUIT, TYPE C, 707.33
611	3	EACH	CATCH BASIN (CB 2-2B)
253	6	S.Y.	PAVEMENT REPAIR (DRIVES), SEE DETAIL SHEET 6

CALCULATED MAB
CHECKED MSL

SUBSUMMARY - AREA 1

MANDO DITCH DRAINAGE IMPROVEMENT

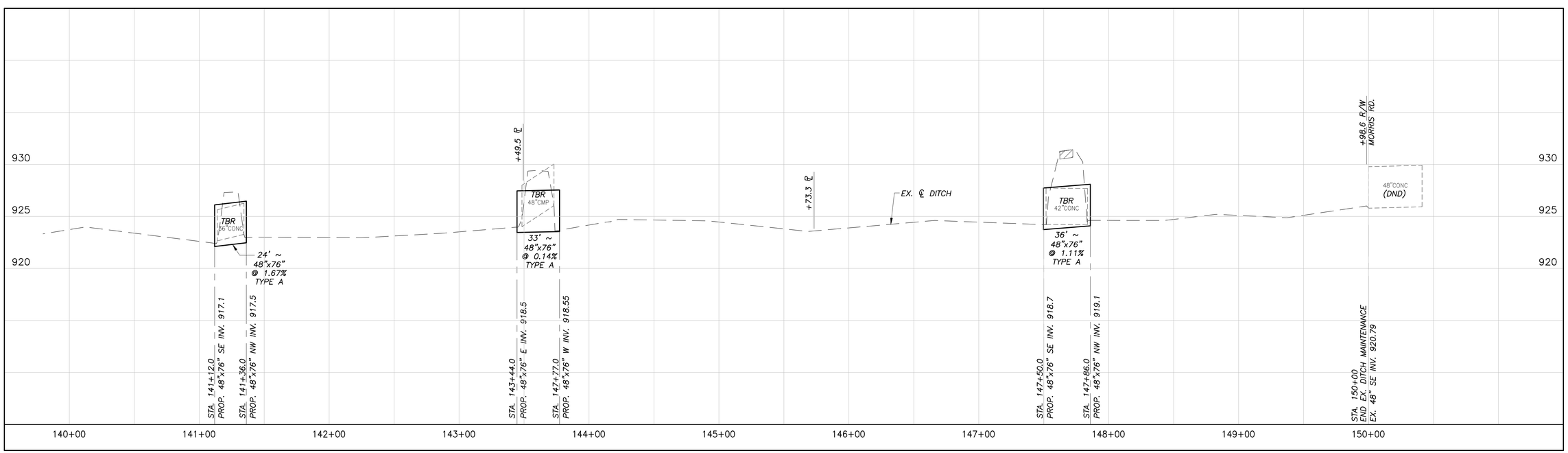
DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-Subsummary-AREA1.dwg
February 11, 2026, 1:59pm



NOTE:
CONTRACTOR TO PERFORM DITCH MAINTENANCE ON EX. DITCH RUNNING NORTHWEST FROM MORRIS ROAD FROM STA. 136+44 TO 150+00 INCLUDING REMOVAL OF OBSTRUCTING VEGETATION AND DEADFALL.

LEGEND

PAVEMENT REPAIR



0 20 40 80
HORIZONTAL
SCALE IN FEET

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - AREA 2
MORRIS ROAD DITCH

MANDO DITCH DRAINAGE IMPROVEMENT

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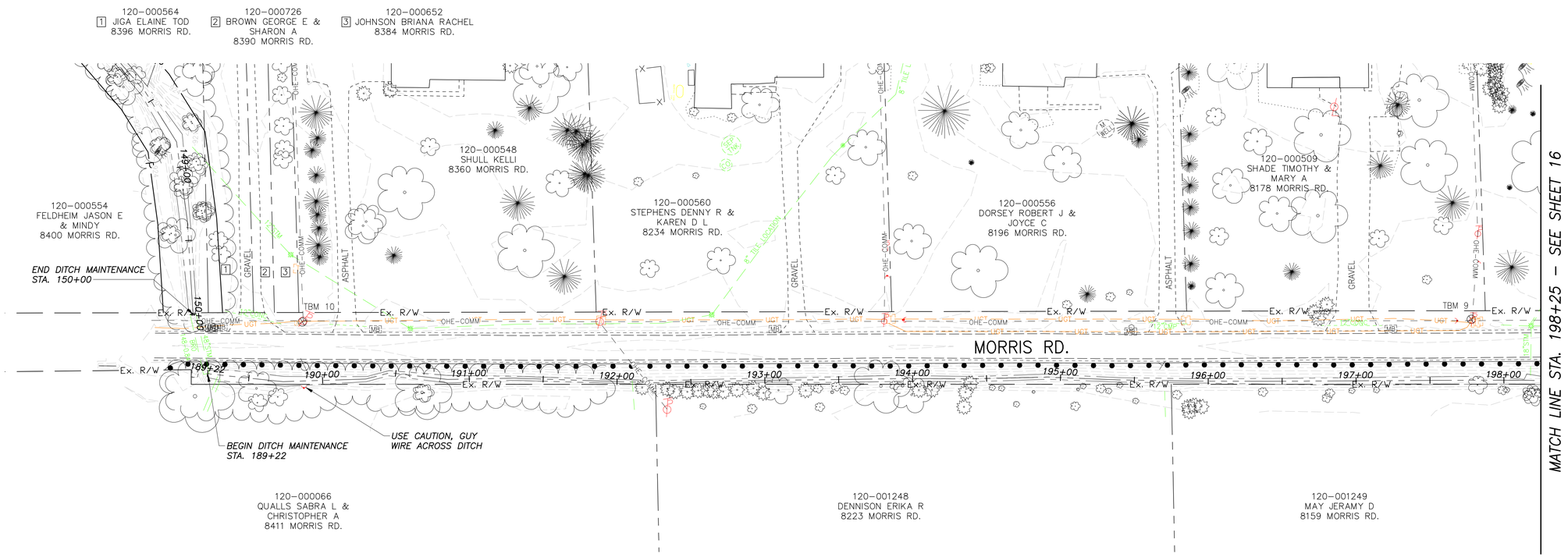
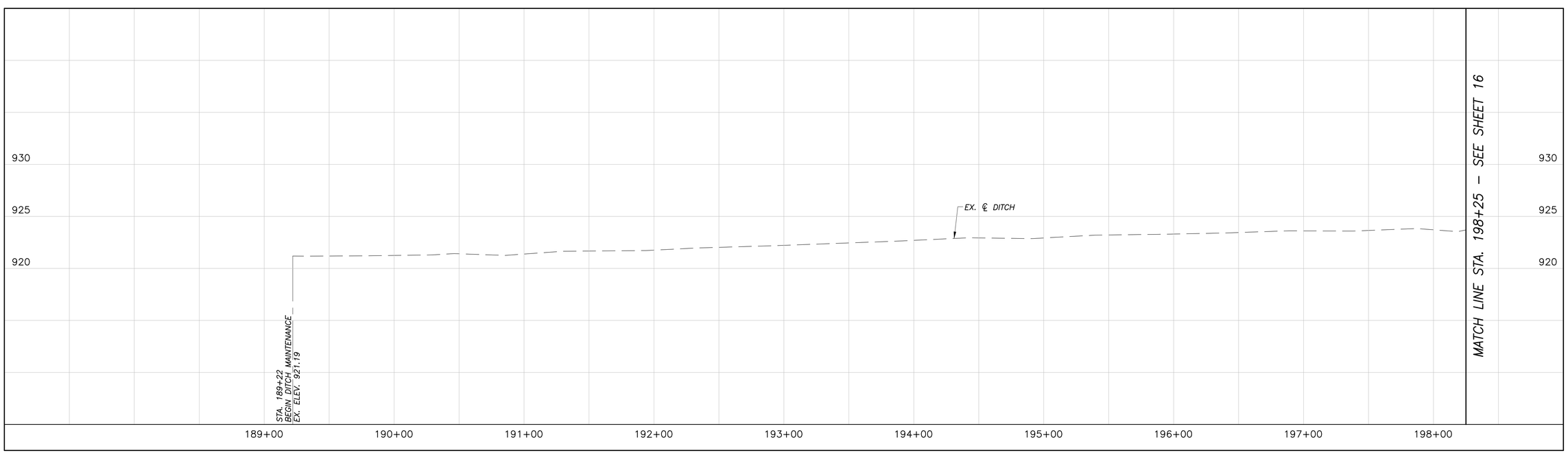
April 02, 2026, 8:54am



NOTE:
CONTRACTOR TO PERFORM DITCH MAINTENANCE ON THE SOUTH SIDE OF MORRIS ROAD FROM STA. 189+22 TO 199+33 INCLUDING REMOVAL OF OBSTRUCTING VEGETATION AND DEADFALL.



HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - AREA 2
MORRIS ROAD DITCH

MANDO DITCH DRAINAGE IMPROVEMENT

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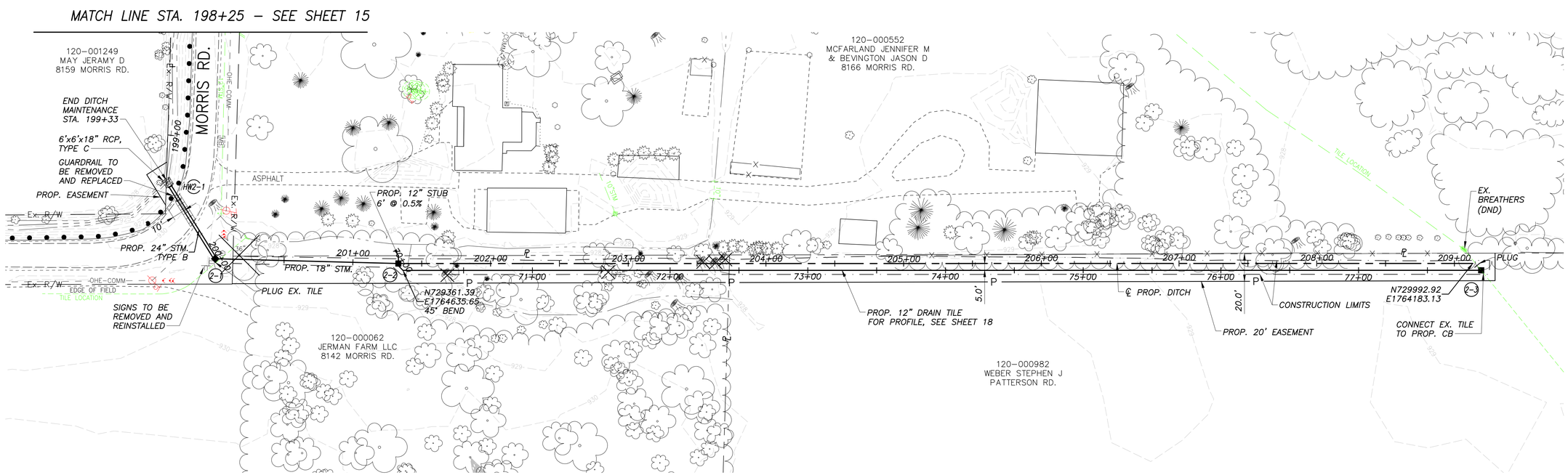
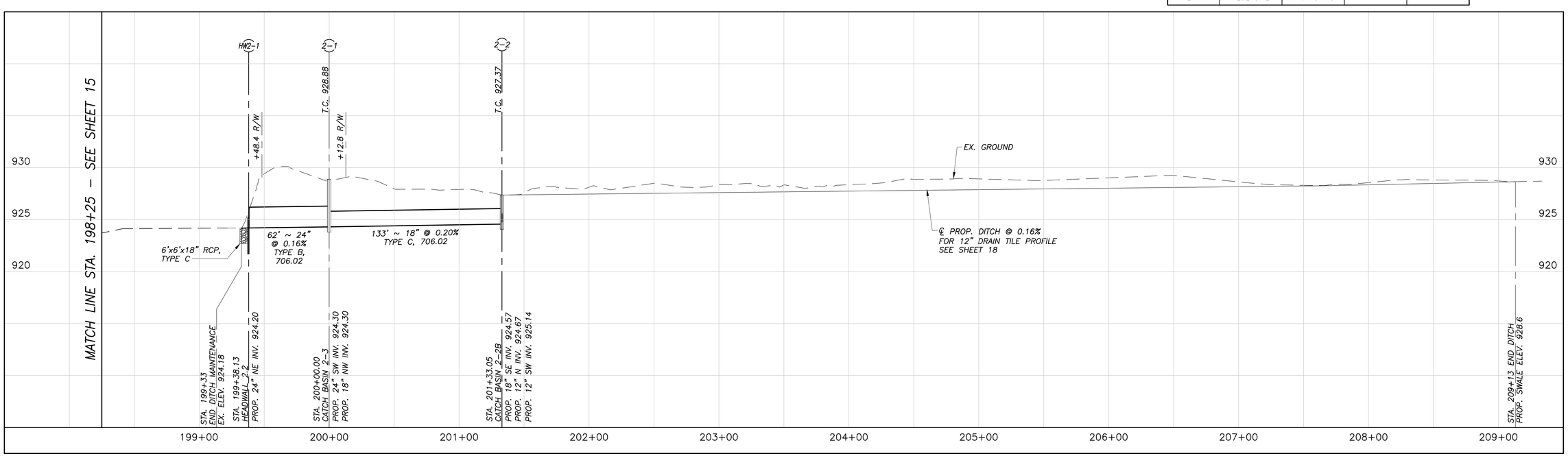
April 02, 2026, 8:56am



LEGEND

PAVEMENT REPAIR

STORM SEWER MANHOLE GROUND COORDINATES BASED ON NAD83 OHIO SOUTH (NSRS 2007)				
Structure No.	PLAN Northing	PLAN Easting	AS–BUILT Northing	AS–BUILT Easting
HW2–1	729188.12	1764683.35		
2–3	730000.80	1764183.68		
2–2	729355.74	1764633.52		
2–1	729245.12	1764707.43		



HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - SWALE #2
STA. 199+40 TO STA. 209+13

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2–Mando\CADD\20089 bm–Mando.dwg
February 11, 2026, 1:52pm

ESTIMATE OF QUANTITIES

ITEM	QUANTITY	UNIT	DESCRIPTION
201	1	L.S.	CLEARING AND GRUBBING
201	1	EACH	TREE REMOVED, 18" SIZE
201	1	EACH	TREE REMOVED, 30" SIZE
202	104	FT.	PIPE REMOVED 24" AND OVER
203	255	C.Y.	EXCAVATION
653	180	C.Y.	TOPSOIL FURNISHED AND PLACED, AS PER PLAN
606	12.5	FT.	GUARDRAIL, REBUILT, TYPE 5
601	2	C.Y.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
659	1126	S.Y.	SEEDING AND MULCHING, AS PER PLAN
659	6	M.GAL.	WATER, AS PER PLAN
602	0.46	C.Y.	CONCRETE MASONRY
611	6	FT.	12" CONDUIT, TYPE C, 707.33
611	789	FT.	12" CONDUIT, TYPE C, 706.02
611	133	FT.	18" CONDUIT, TYPE C, 706.02
611	62	FT.	24" CONDUIT, TYPE B, 706.02
611	93	FT.	48"x76" CONDUIT, TYPE A, 706.04
611	2	EACH	CATCH BASIN (CB 2-2B)
611	1	EACH	CATCH BASIN (CB 2-3)
SPEC	2367	FT.	DITCH MAINTENANCE, SEE NOTE SHEETS 14 & 15
253	14	S.Y.	PAVEMENT REPAIR (ROADWAY), SEE DETAIL SHEET 6
253	12	S.Y.	PAVEMENT REPAIR (DRIVES), SEE DETAIL SHEET 6
630	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION

CALCULATED MAB
CHECKED MSL

SUBSUMMARY - AREA 2

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-Subsummary-AREA2.dwg
November 14, 2025, 10:02am

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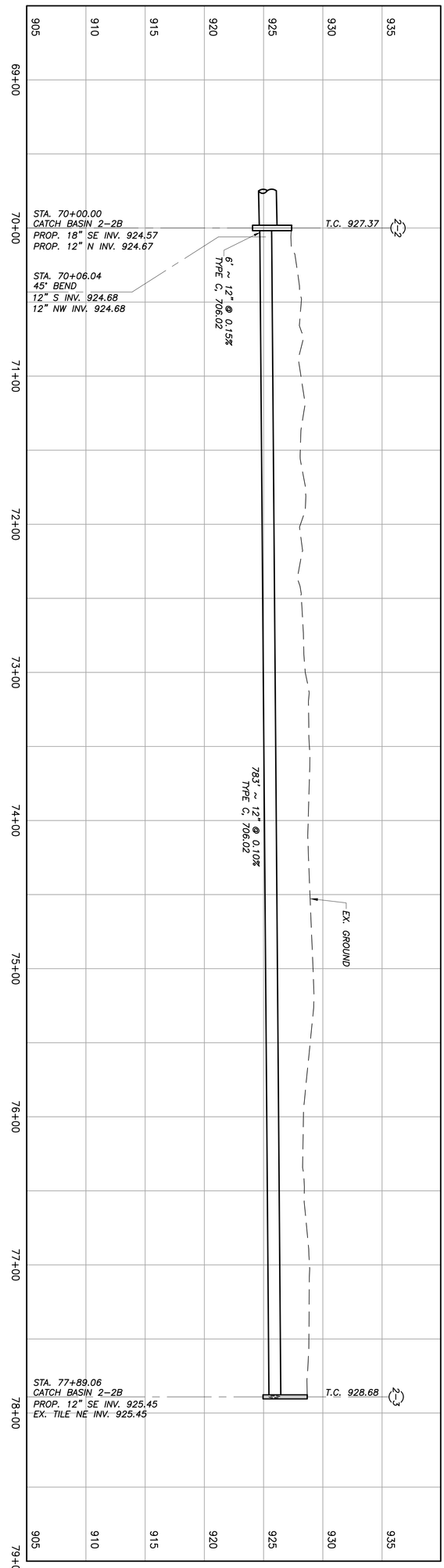
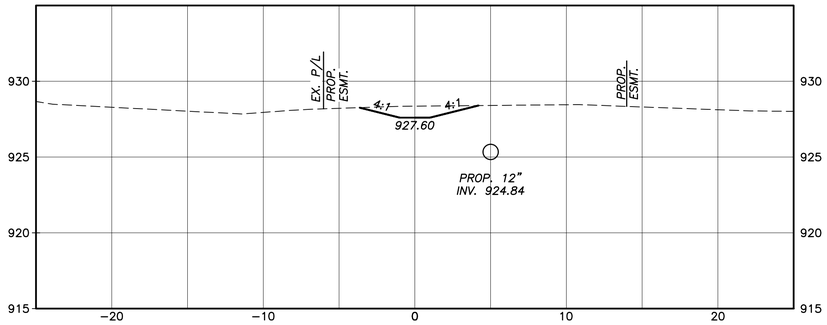
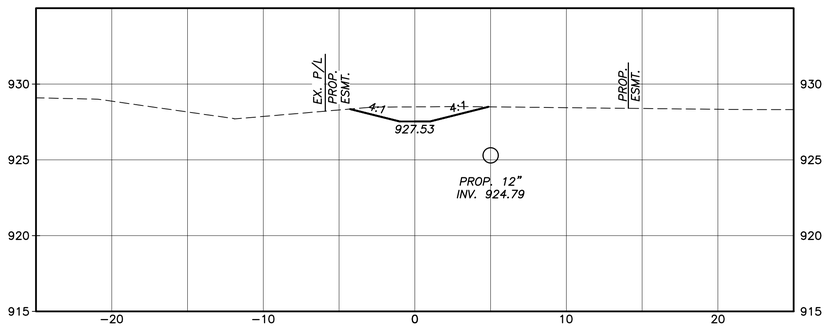
February 11, 2026, 1:48pm



18 / 53	**MANDO DITCH DRAINAGE IMPROVEMENT**	**STORM PROFILE - TILE #2**	CALCULATED MAB CHECKED MSL	0 20 40 80 HORIZONTAL SCALE IN FEET



203+00.00



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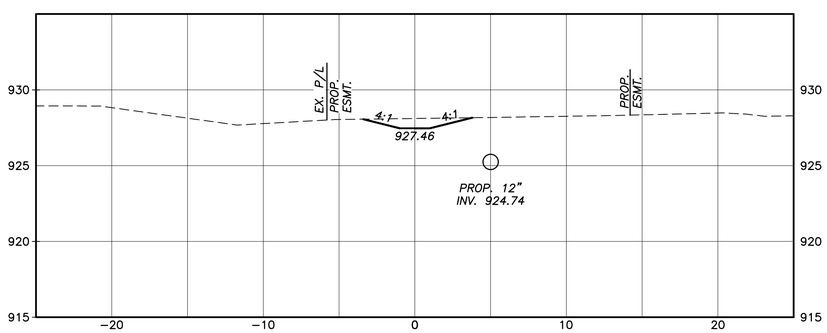
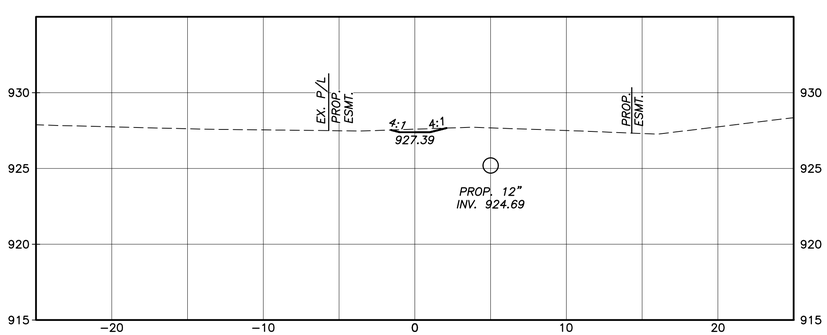
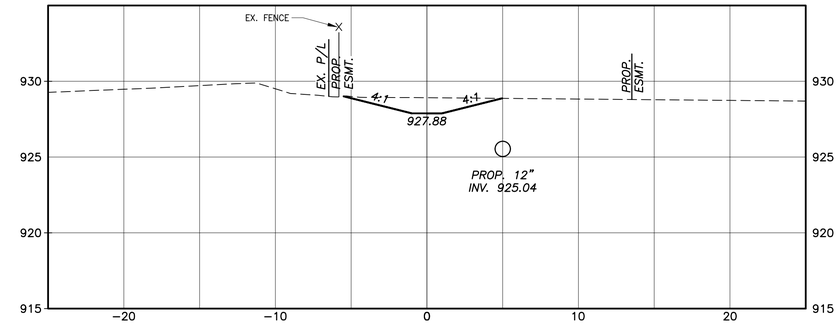


202+00.00



201+50.00



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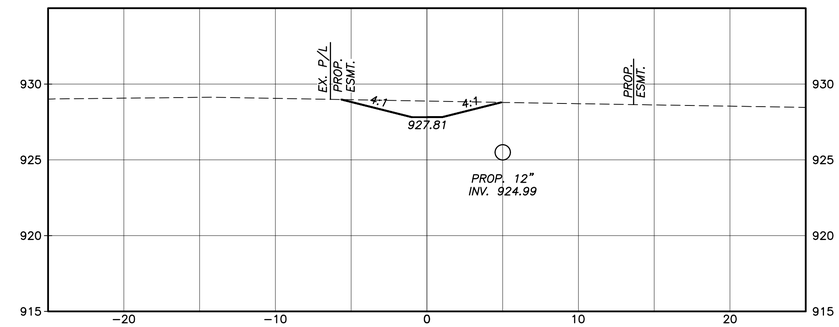

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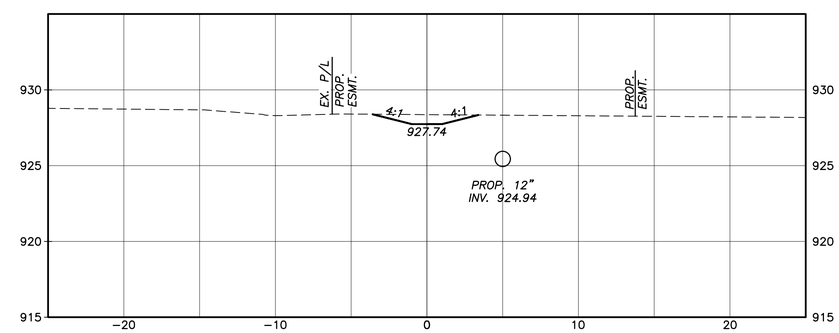
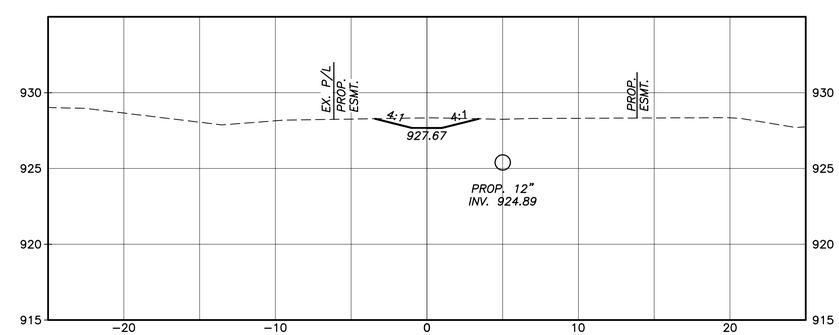


204+00.00



203+50.00

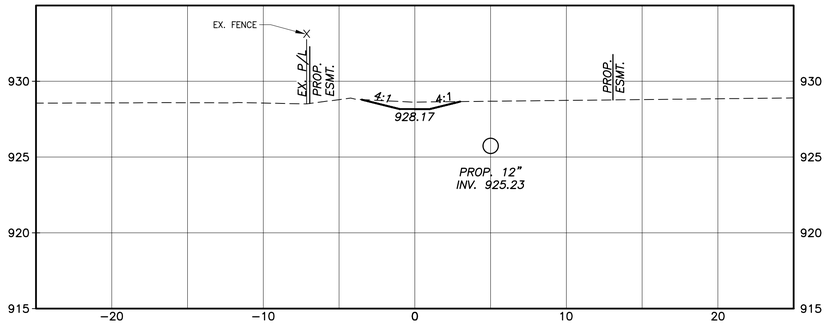
HORIZONTAL SCALE IN FEET
0 5 10

CALCULATED MAB
CHECKED MSL

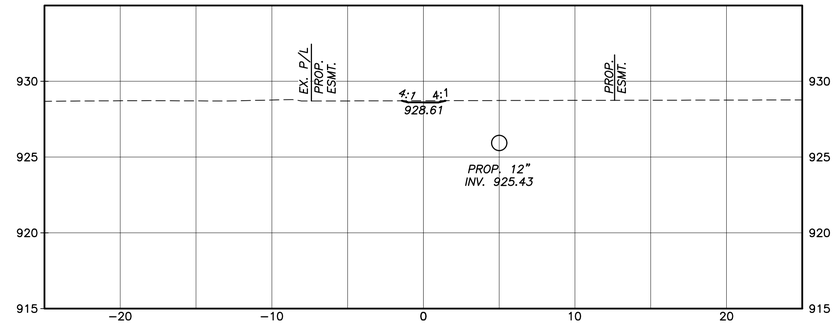
CROSS SECTIONS - AREA 2
STA. 201+50 TO STA. 205+00

MANDO DITCH DRAINAGE IMPROVEMENT

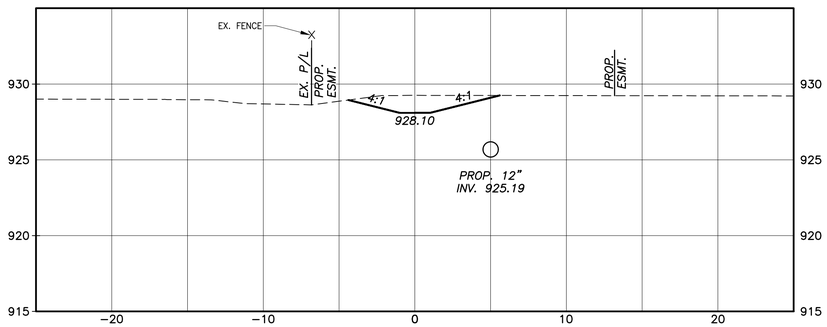
DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-XSECT-AREA2.dwg
February 11, 2026, 1:44pm



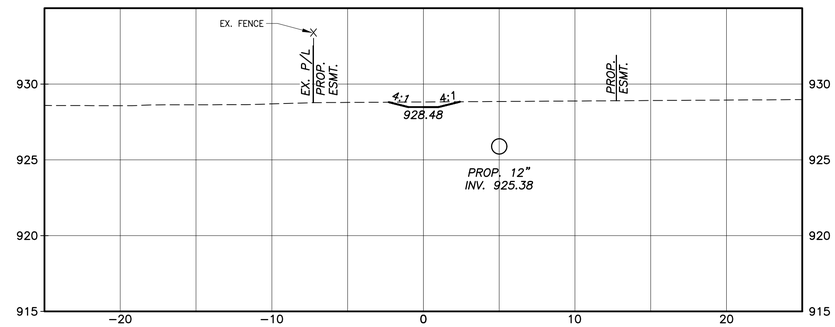
207+00.00



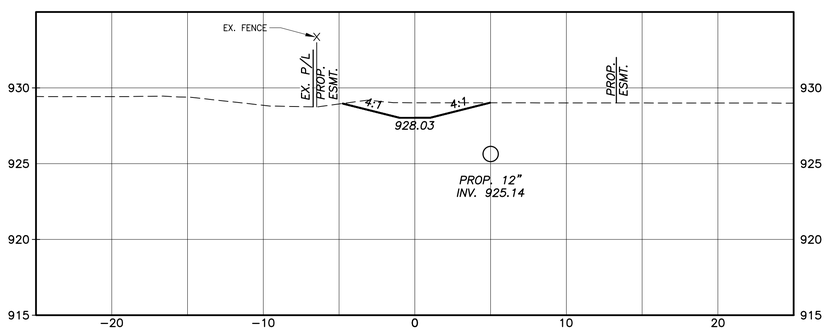
209+00.00



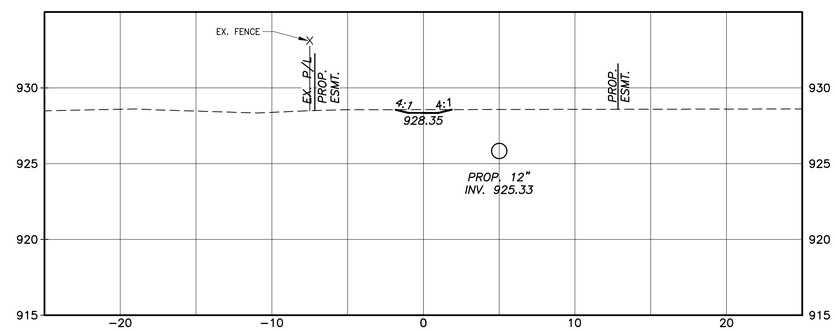
206+50.00



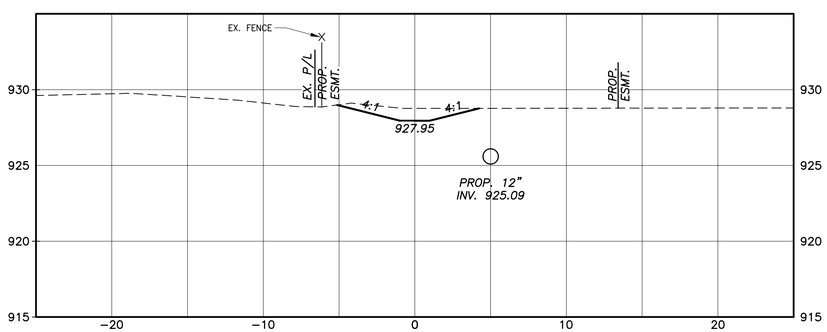
208+50.00



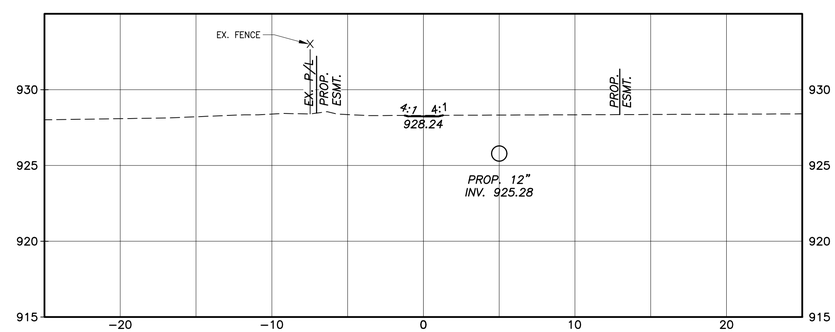
206+00.00



208+00.00



205+50.00



207+50.00

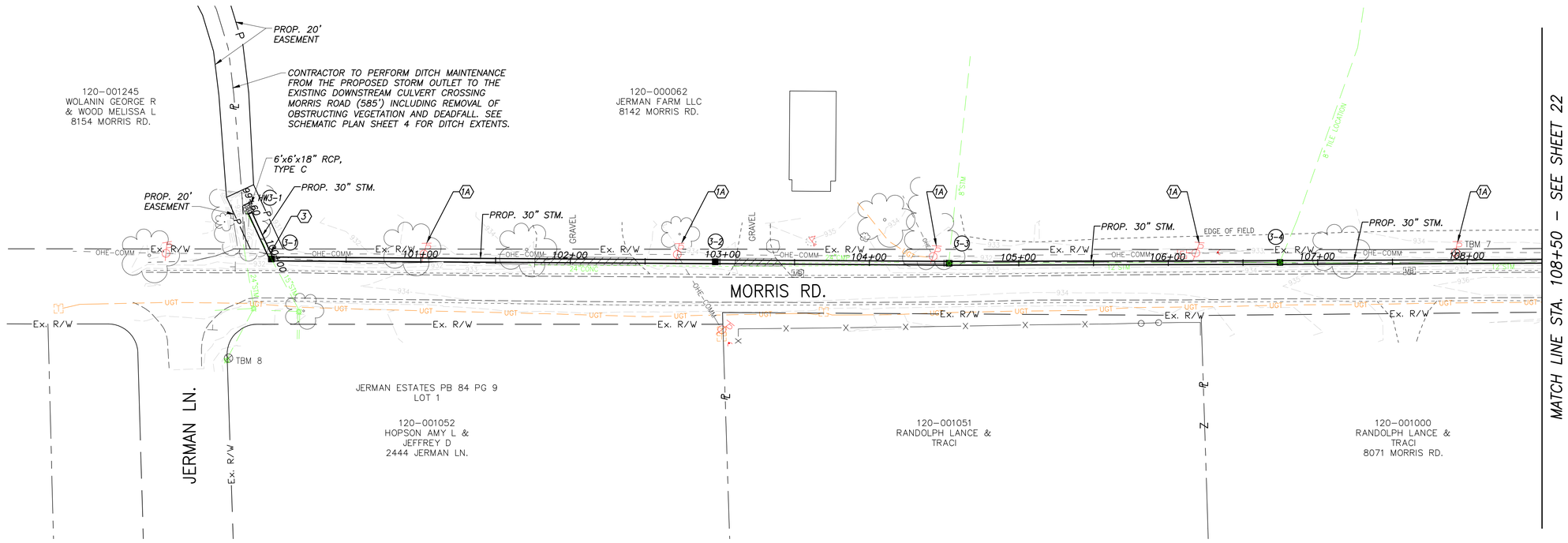
HORIZONTAL SCALE IN FEET
0 5 10

CALCULATED MAB
CHECKED MSL

CROSS SECTIONS - AREA 2
STA. 205+50 TO STA. 209+00

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-XSECT-AREA2.dwg
February 11, 2026, 1:41pm



LEGEND

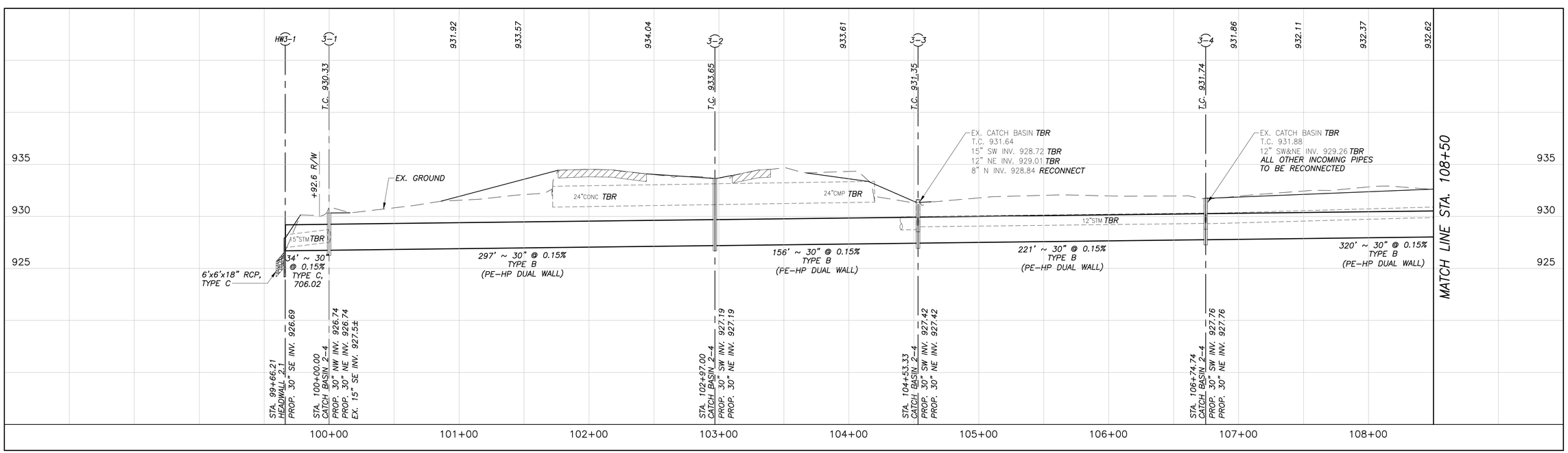
PAVEMENT REPAIR

CODED NOTES

1A UTILITY POLE TO BE RELOCATED BY OTHERS

2 MAILBOX TO BE REMOVED AND REINSTALLED

3 USE CAUTION WHILE WORKING, LOW OVERHEAD LINES



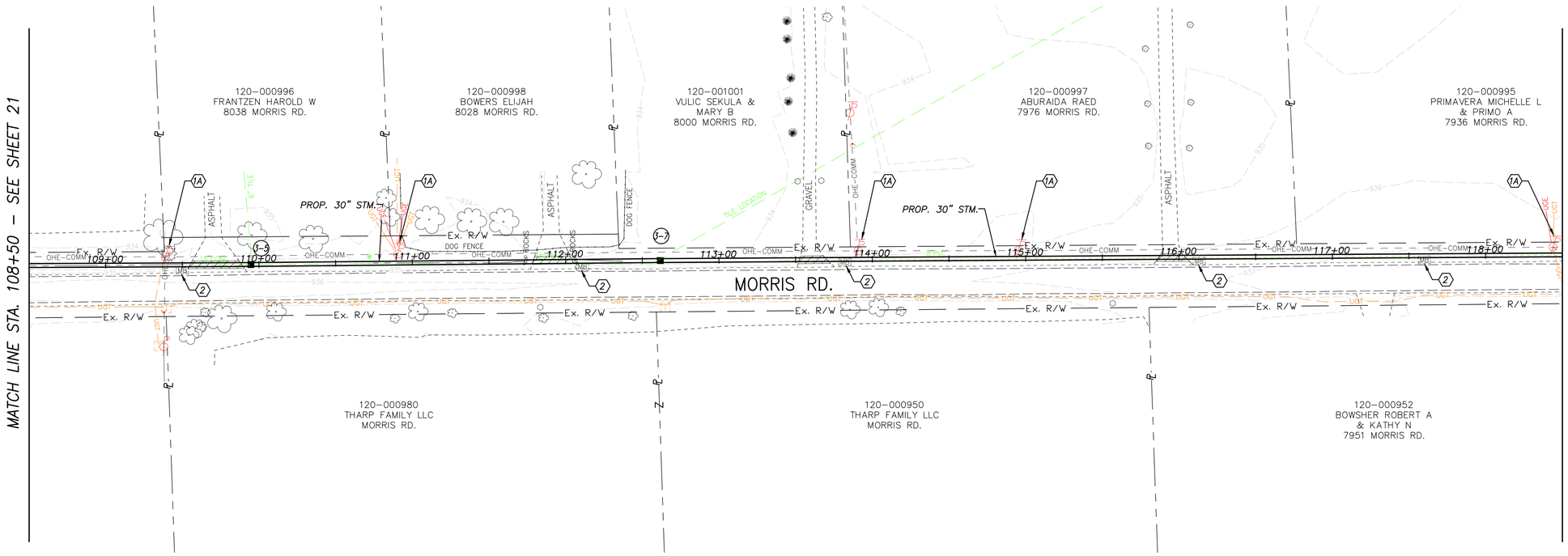
HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - STORM #3A
STA. 99+66 TO STA. 108+50

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 bm-Mando.dwg
April 02, 2026, 9:39am



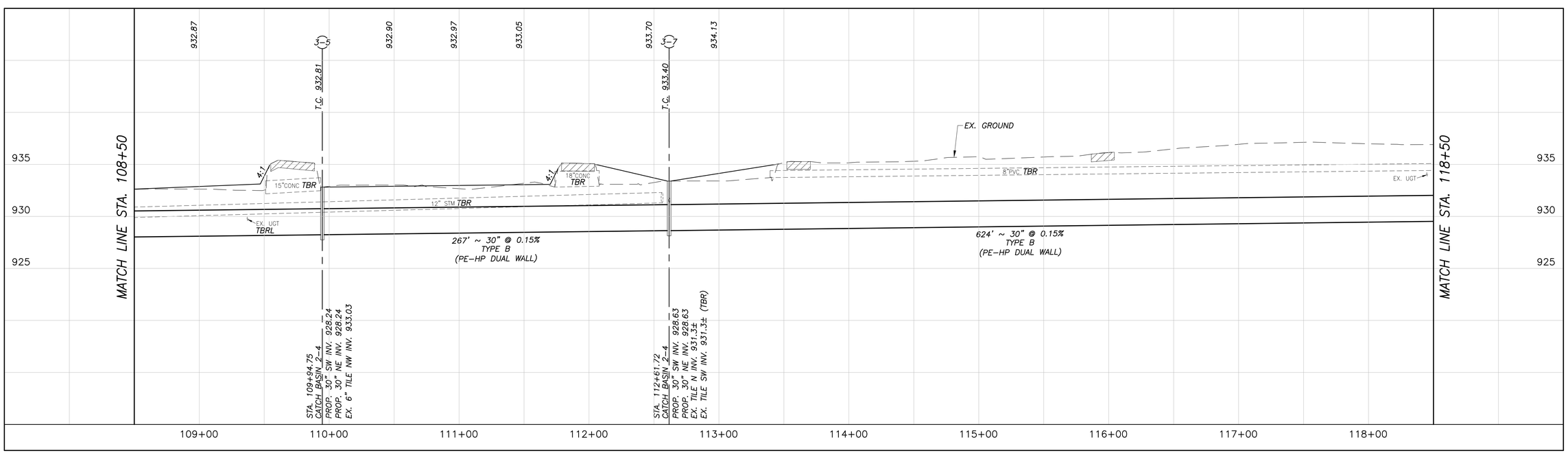
LEGEND

PAVEMENT REPAIR

CODED NOTES

(1A) UTILITY POLE TO BE RELOCATED BY OTHERS

(2) MAILBOX TO BE REMOVED AND REINSTALLED



HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - STORM #3A
STA. 108+50 TO STA. 118+50

MANDO DITCH DRAINAGE IMPROVEMENT

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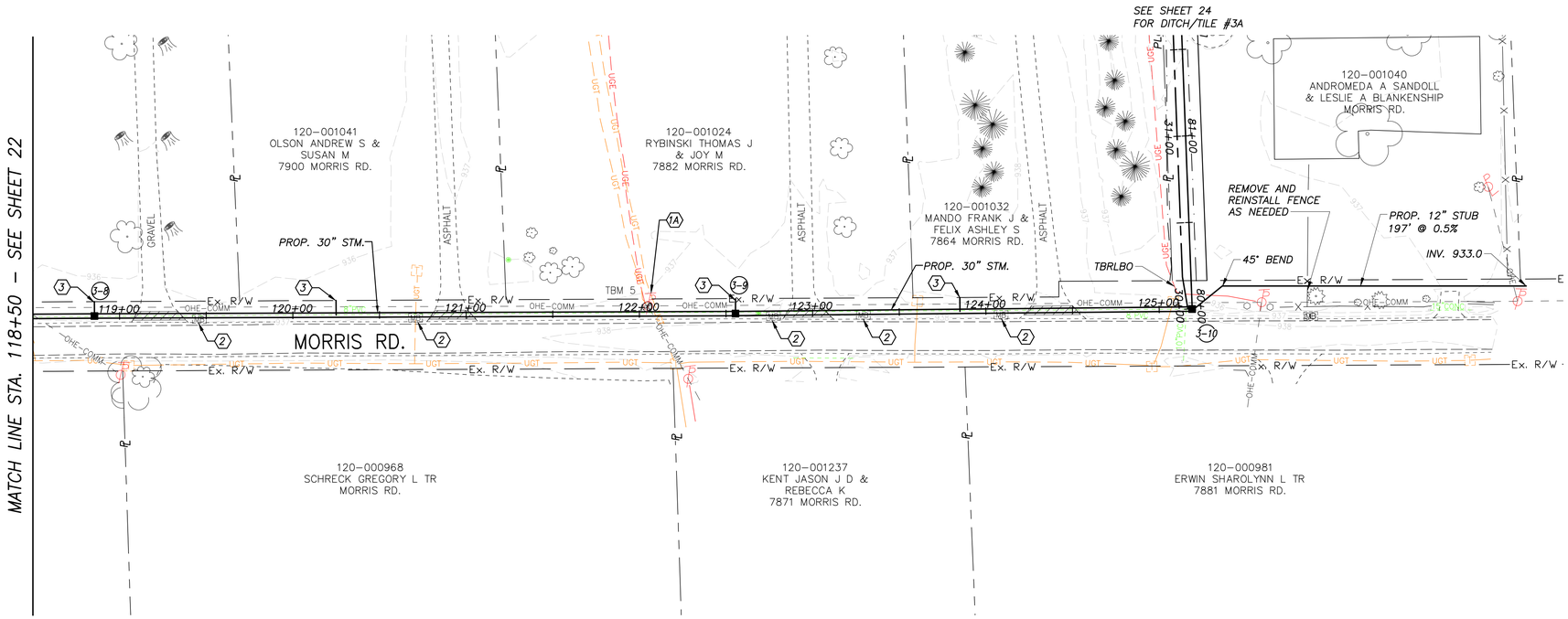
February 11, 2026, 1:32pm



LEGEND

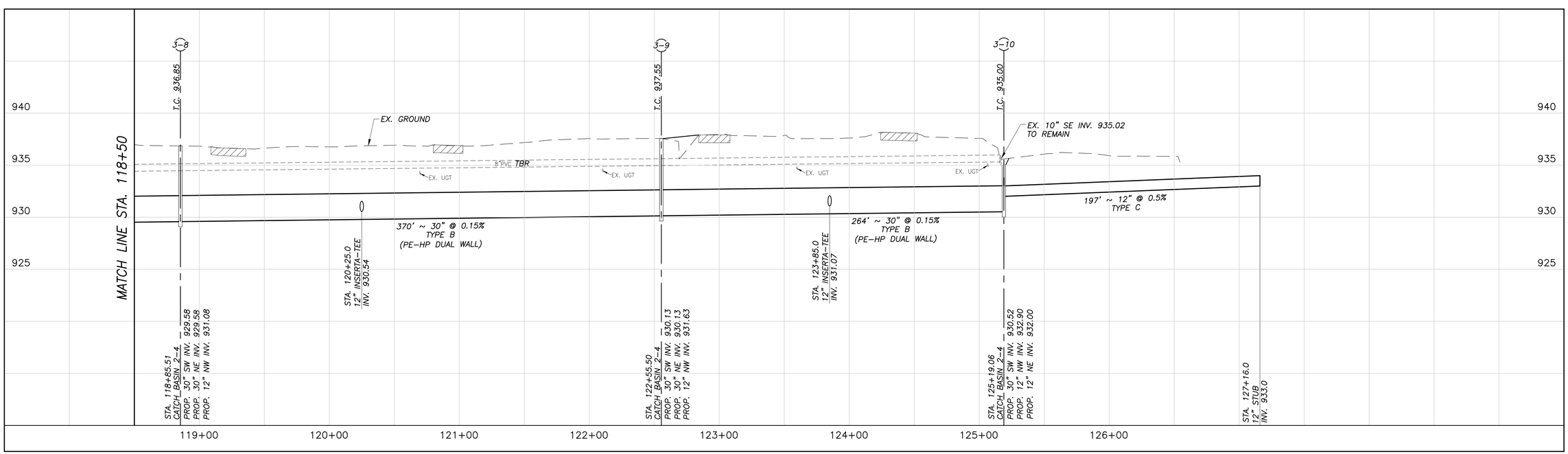
PAVEMENT REPAIR

CODED NOTES

1A UTILITY POLE TO BE RELOCATED BY OTHERS

2 MAILBOX TO BE REMOVED AND REINSTALLED

3 PROVIDE A 12" STUB AT 0.5% SLOPE TO THE R/W LINE



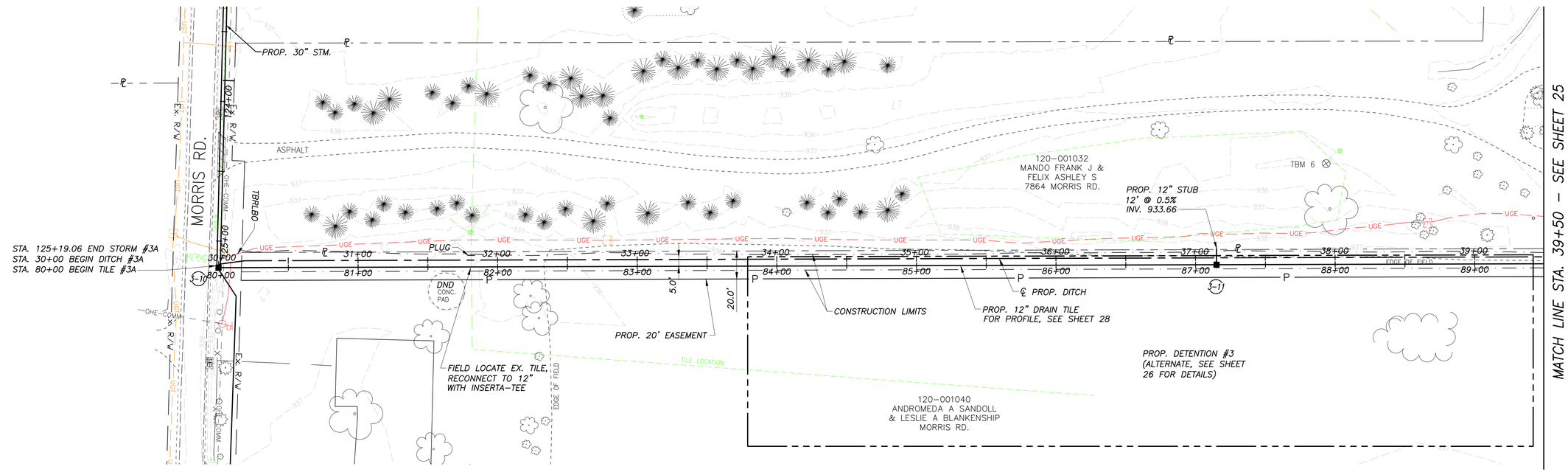
HORIZONTAL SCALE IN FEET
0 20 40 80

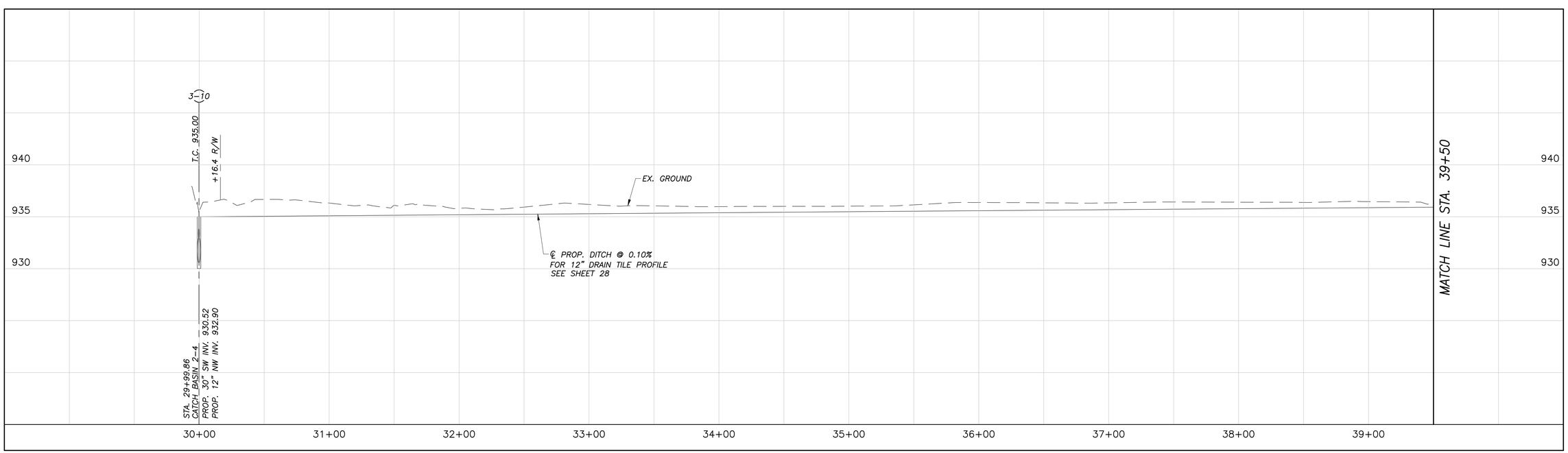
CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - STORM #3A
STA. 118+50 TO STA. 125+17

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2–Mando\CADD\20089 bm–Mando.dwg
April 02, 2026, 9:49am





HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - DITCH/TILE #3A
STA. 30+00 TO STA. 39+50

MANDO DITCH DRAINAGE IMPROVEMENT

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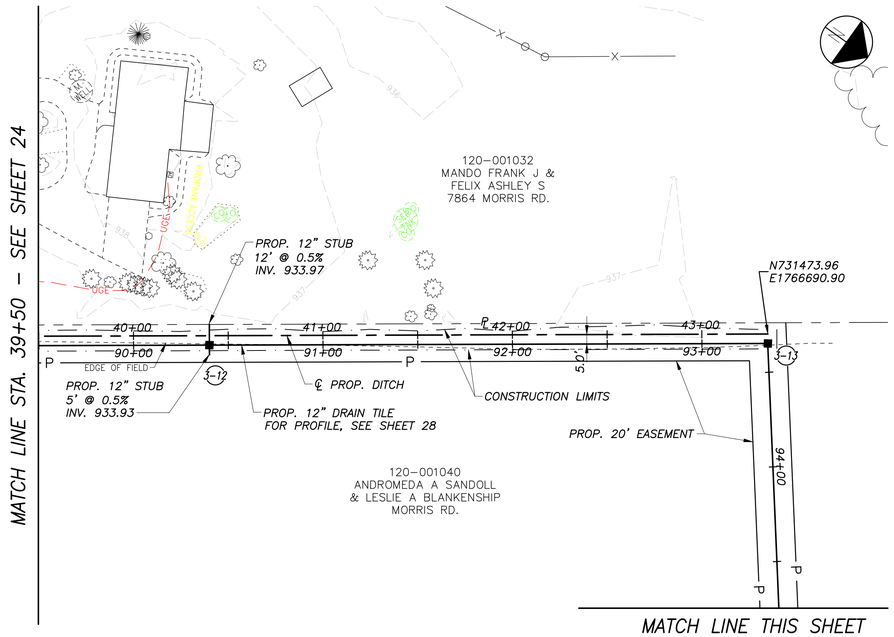
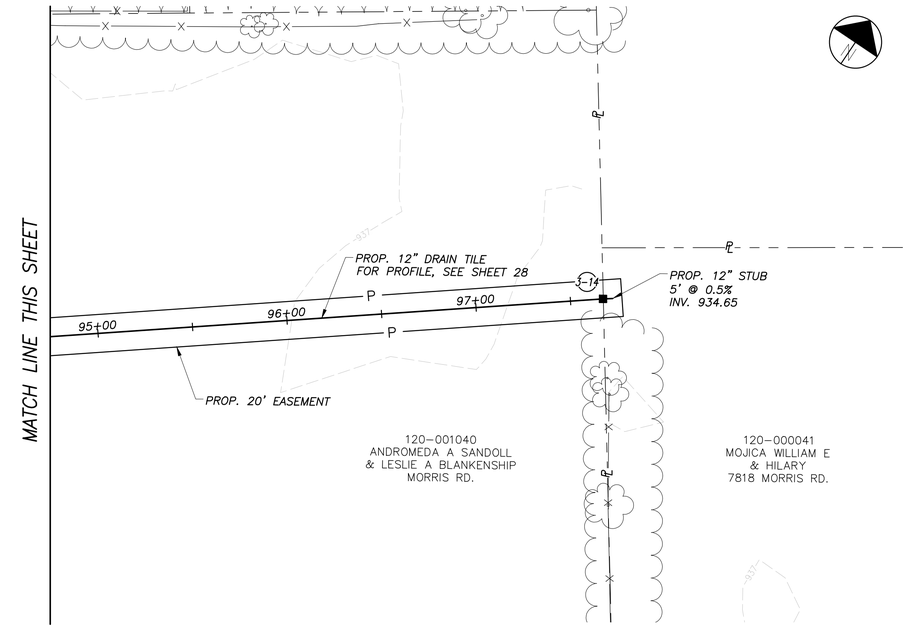
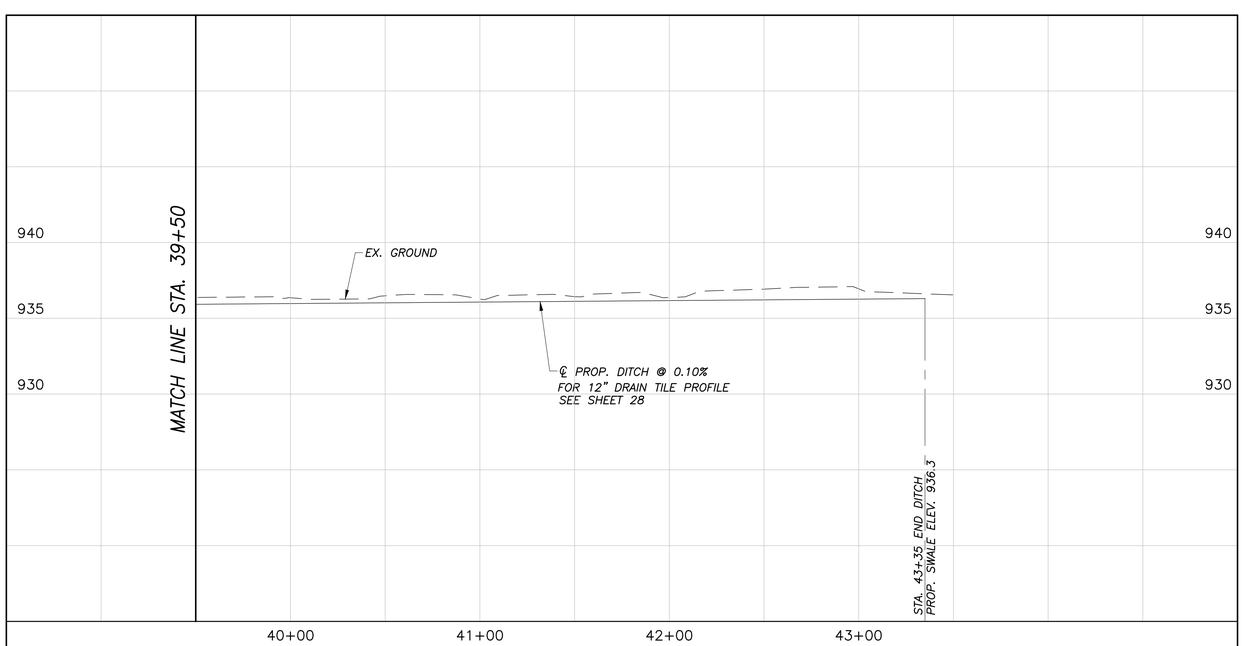
February 11, 2026, 1:29pm







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

Structure No.	PLAN Northing	PLAN Easting	AS–BUILT Northing	AS–BUILT Easting
3–1	728994.11	1765378.07		
3–2	729156.46	1765626.77		
3–3	729241.91	1765757.68		
3–4	729364.56	1765942.02		
3–5	729542.41	1766208.05		
3–7	729691.90	1766429.23		
3–8	730039.46	1766947.22		
3–9	730244.85	1767254.97		
3–10	730392.49	1767473.30		
3–11	730973.34	1767056.38		
3–12	731237.37	1766866.87		
3–13	731476.88	1766694.96		
3–14	731742.53	1767036.14		
HW3–1	729011.87	1765349.34		

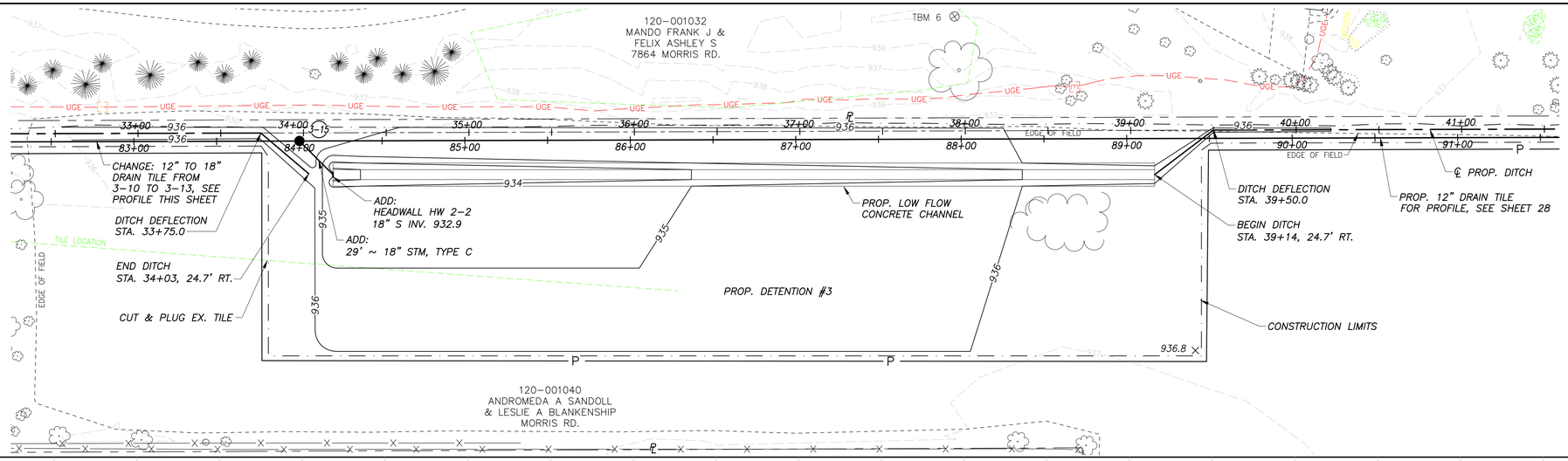
0 20 40 80
HORIZONTAL SCALE IN FEET

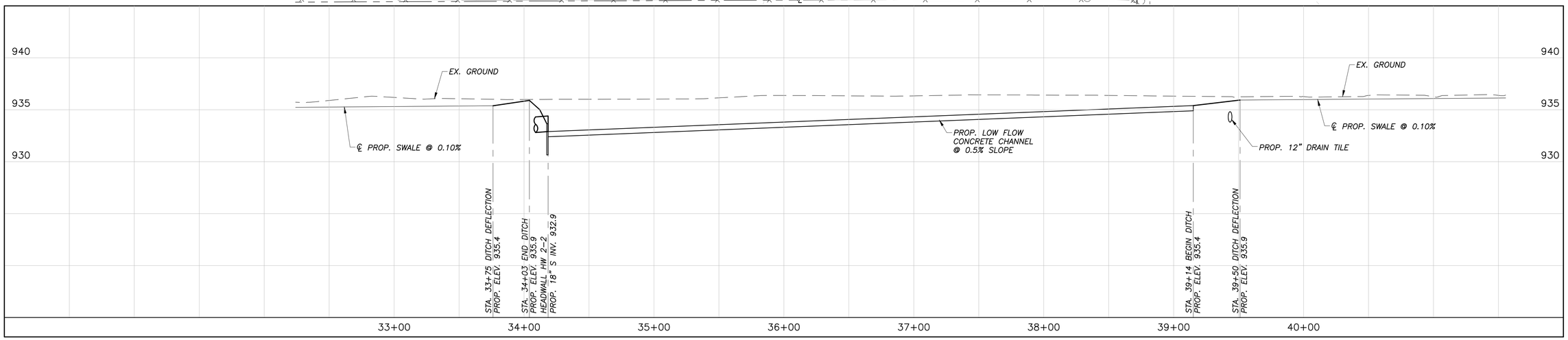
CALCULATED MAB
CHECKED MSL

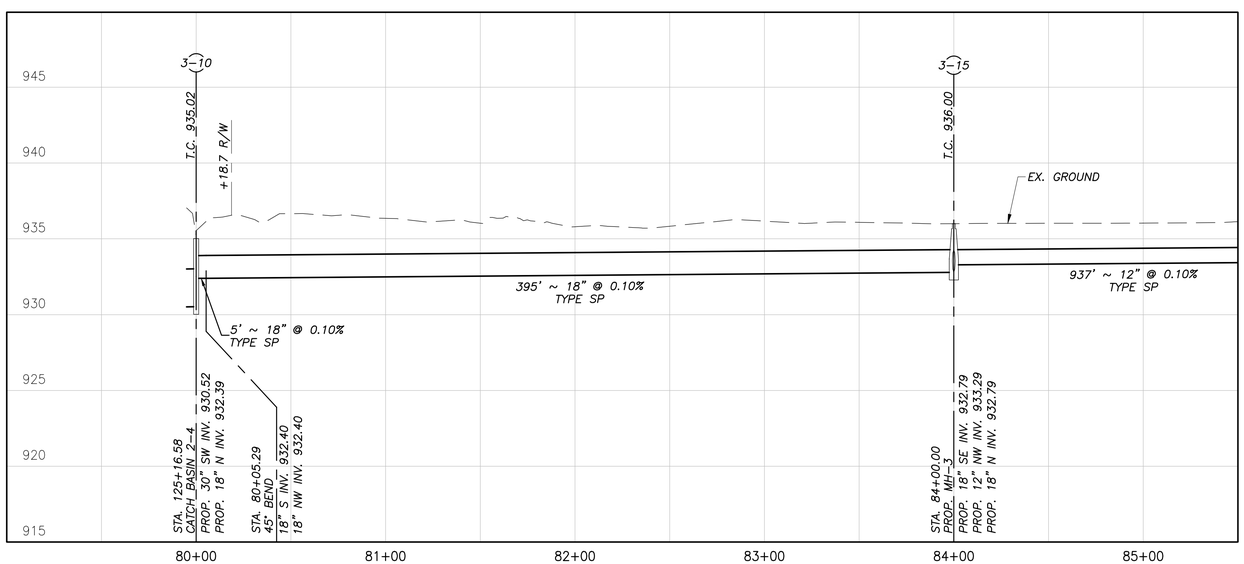
PLAN AND PROFILE - DITCH/TILE #3A
STA. 39+50 TO STA. 43+35

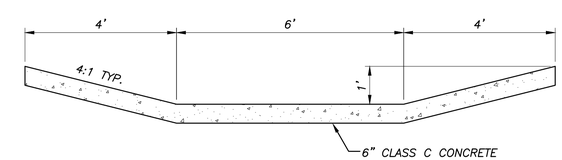
MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 bm-Mando.dwg
February 16, 2026, 1:44pm









LOW FLOW CHANNEL DETAIL
NO SCALE

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

DETENTION BASIN #3 DETAILS
ALTERNATE - AREA 3

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-with detention.dwg
February 16, 2026, 1:42pm

ALTERNATE – DETENTION BASIN #3

ESTIMATE OF QUANTITIES

ITEM	QUANTITY	UNIT	DESCRIPTION
203	3634	C.Y.	EXCAVATION
653	1200	C.Y.	TOPSOIL FURNISHED AND PLACED, AS PER PLAN
659	7199	S.Y.	SEEDING AND MULCHING, AS PER PLAN
659	39	M.GAL.	WATER, AS PER PLAN
602	129	C.Y.	CONCRETE CHANNEL, SEE DETAIL SHEET 26
602	0.33	C.Y.	CONCRETE MASONRY
611	–400	FT.	12" CONDUIT, TYPE C PERFORATED (707.33, TYPE SP)
611	29	FT.	18" CONDUIT, TYPE C, 706.02
611	400	FT.	18" CONDUIT, TYPE C, PERFORATED (707.33, TYPE SP)
611	1	EACH	MANHOLE, NO. 3

THE QUANTITIES SHOWN HERE REPRESENT THE ADDITIONAL AND DEDUCT QUANTITY ONLY FROM THE BASE ESTIMATE OF QUANTITIES.

ESTIMATE OF QUANTITIES

ITEM	QUANTITY	UNIT	DESCRIPTION
201	1	L.S.	CLEARING AND GRUBBING
202	2341	FT.	PIPE REMOVED 24" AND UNDER
202	2	EACH	CATCH BASIN REMOVED
202	10	FT.	FENCE REMOVED AND REPLACED
203	451	C.Y.	EXCAVATION
653	289	C.Y.	TOPSOIL FURNISHED AND PLACED, AS PER PLAN
SPEC	10	EACH	MAILBOX REMOVED AND RESET
601	2	C.Y.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
659	3350	S.Y.	SEEDING AND MULCHING, AS PER PLAN
659	17	M.GAL.	WATER, AS PER PLAN
602	0.60	C.Y.	CONCRETE MASONRY
611	332	FT.	12" CONDUIT, TYPE C, 707.33
611	1700	FT.	12" CONDUIT, TYPE C PERFORATED (707.33, TYPE SP)
611	2519	FT.	30" CONDUIT, TYPE B, (PE–HP DUAL WALL)
611	34	FT.	30" CONDUIT, TYPE C, 706.02
611	4	EACH	CATCH BASIN (CB 2–2B)
611	9	EACH	CATCH BASIN (CB 2–4)
SPEC	585	FT.	DITCH MAINTENANCE
253	163	S.Y.	PAVEMENT REPAIR (DRIVES), SEE DETAIL SHEET 6

CALCULATED MAB
CHECKED MSL

SUBSUMMARY - AREA 3

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-Subsummary-AREA3.dwg
April 02, 2026, 10:15am

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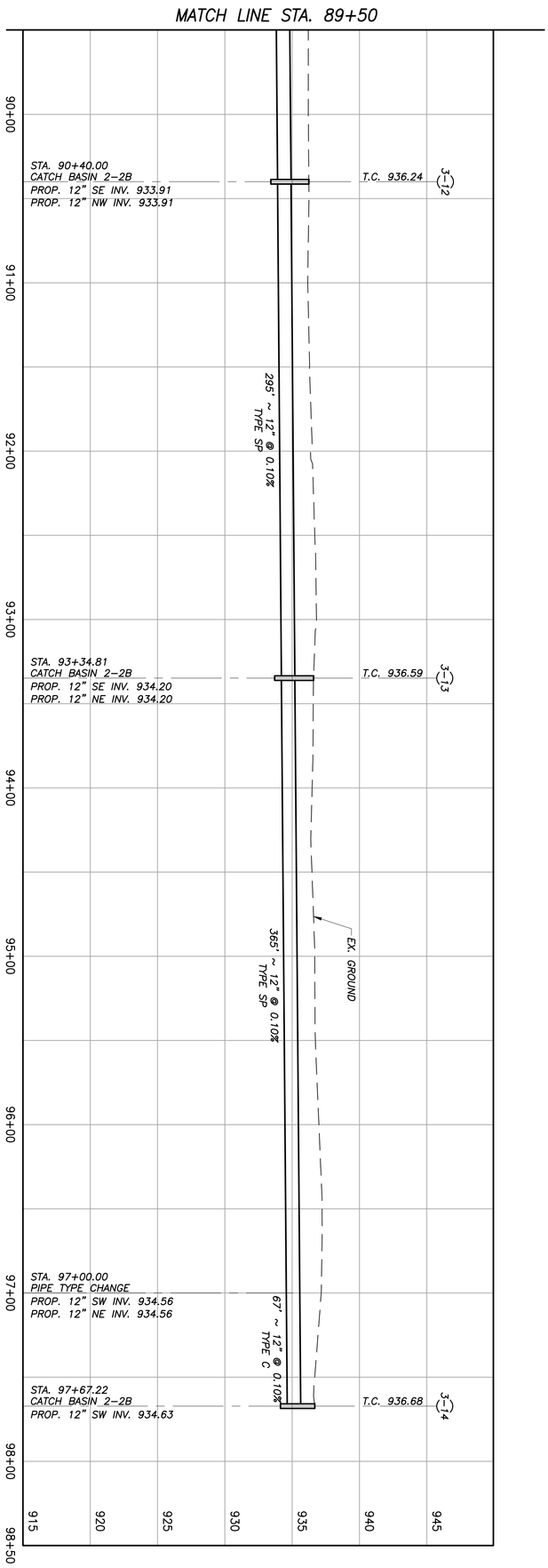
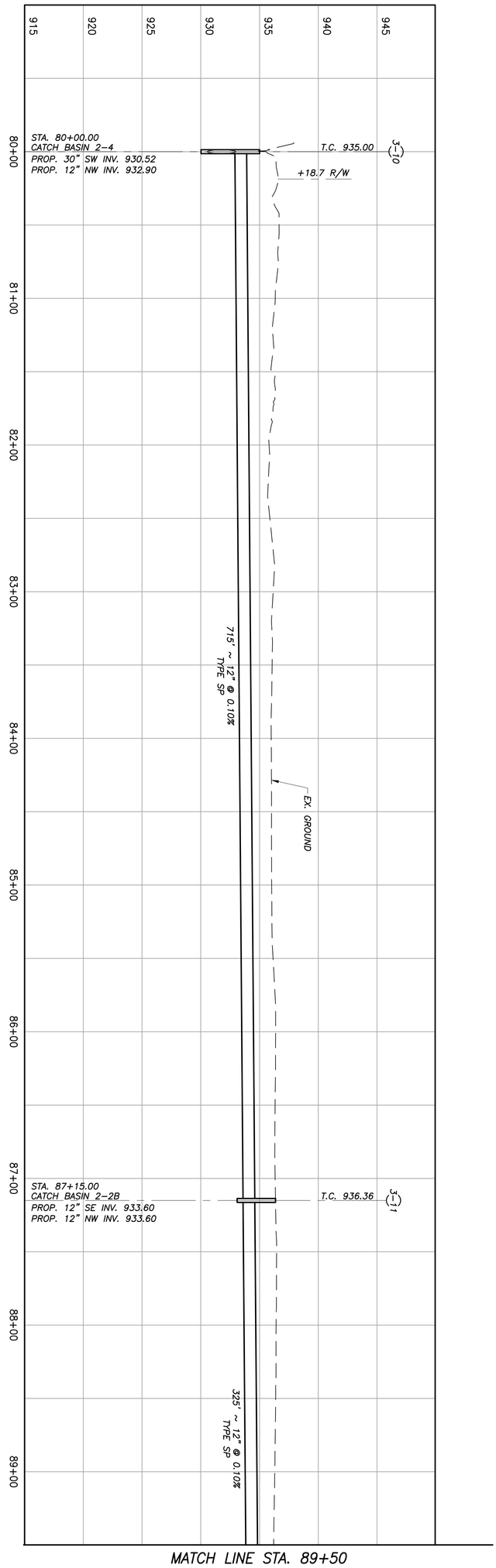
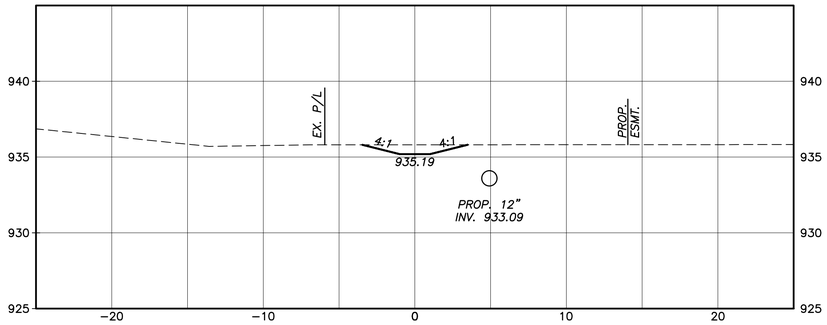
November 11, 2025, 1:58pm

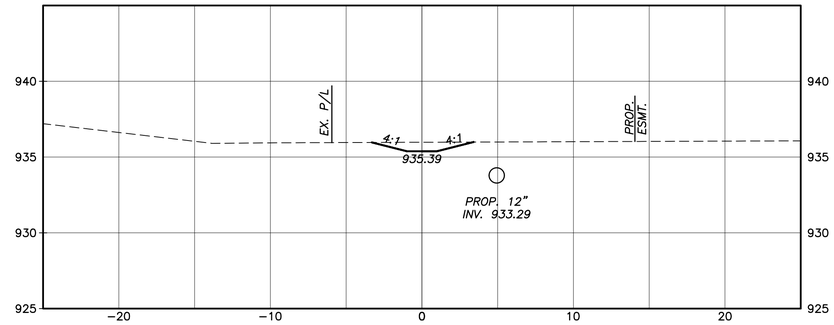




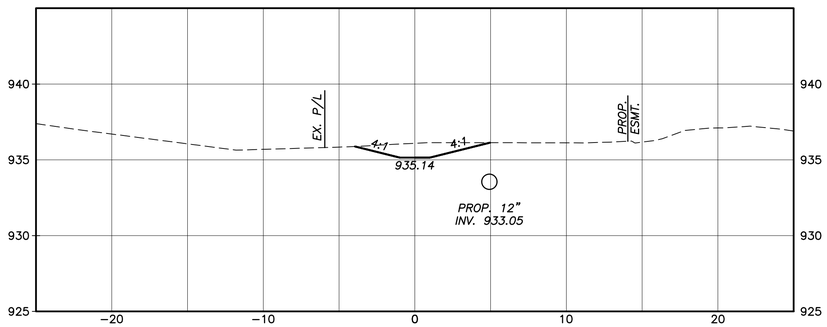
28 / 53	**MANDO DITCH DRAINAGE IMPROVEMENT**	**STORM PROFILE - TILE #3A**	CALCULATED MAB CHECKED MSL	0 20 40 80 HORIZONTAL SCALE IN FEET



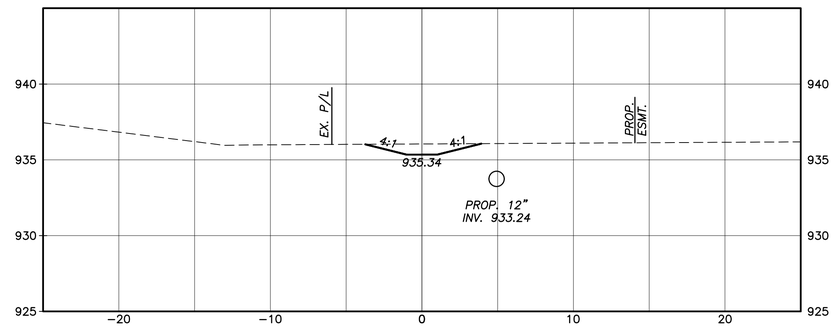
32+00.00



34+00.00



31+50.00



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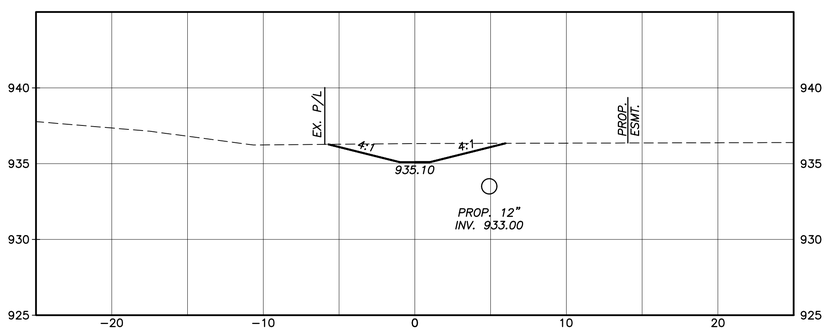

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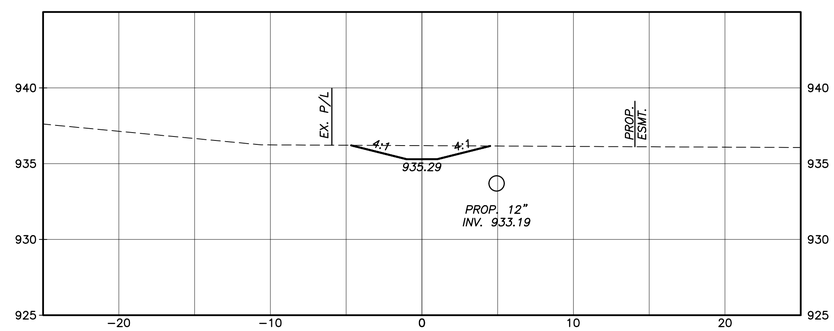
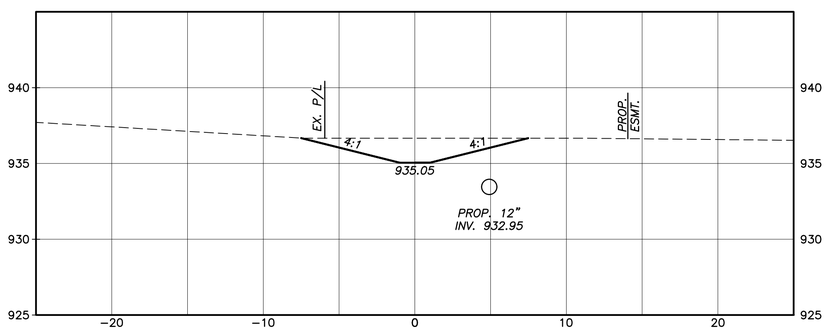
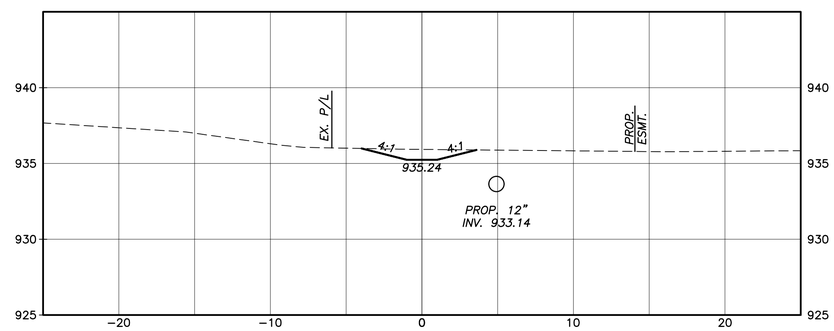


33+00.00



30+50.00



32+50.00

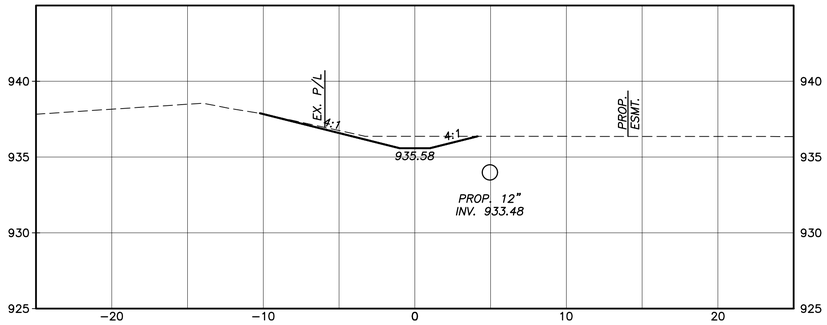
HORIZONTAL SCALE IN FEET
0 5 10

CALCULATED MAB
CHECKED MSL

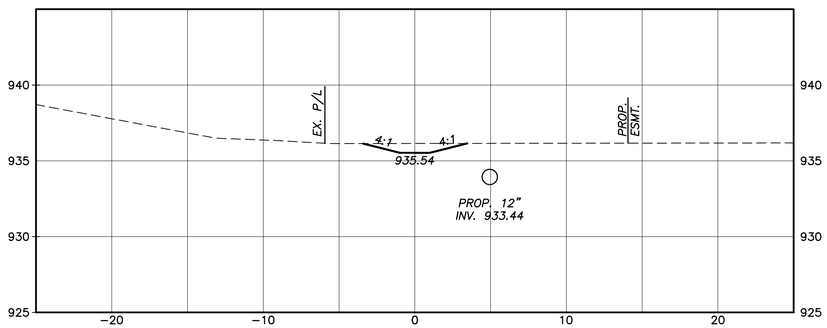
CROSS SECTIONS - AREA 3
STA. 30+50 TO STA. 34+00

MANDO DITCH DRAINAGE IMPROVEMENT

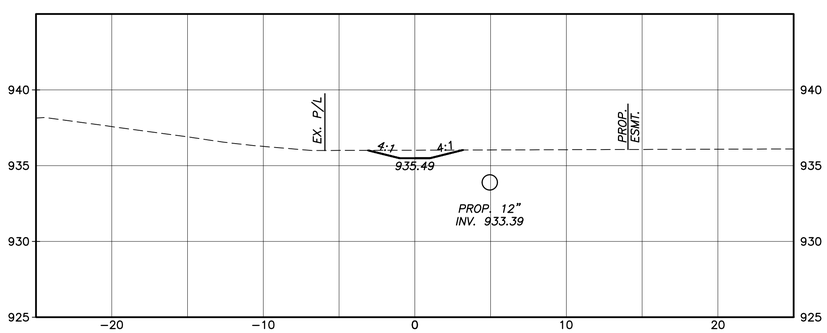
DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xs-XSECT-AREA3.dwg
November 11, 2025, 1:45pm



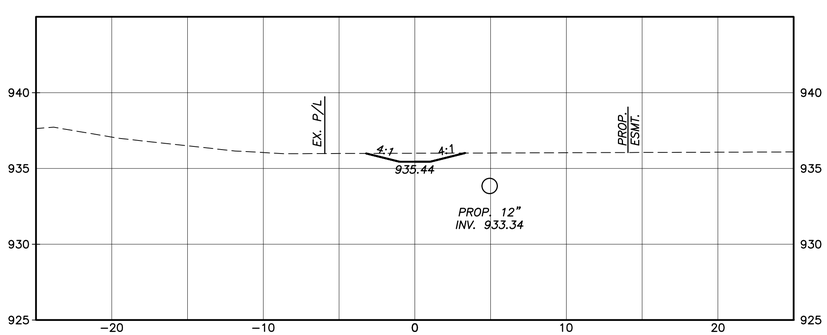
36+00.00



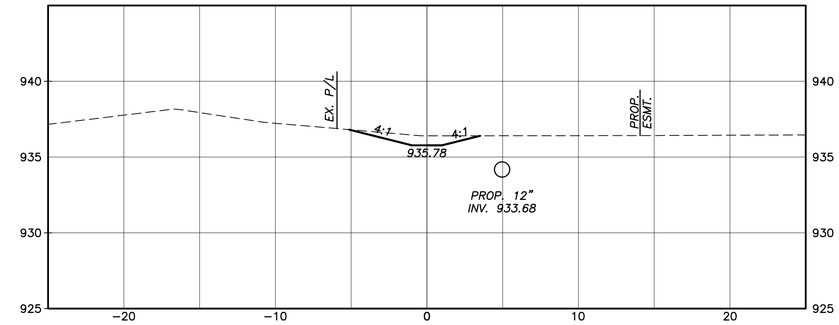
35+50.00



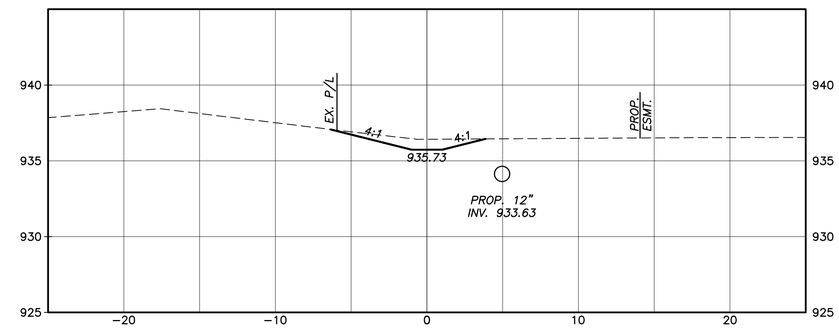
35+00.00



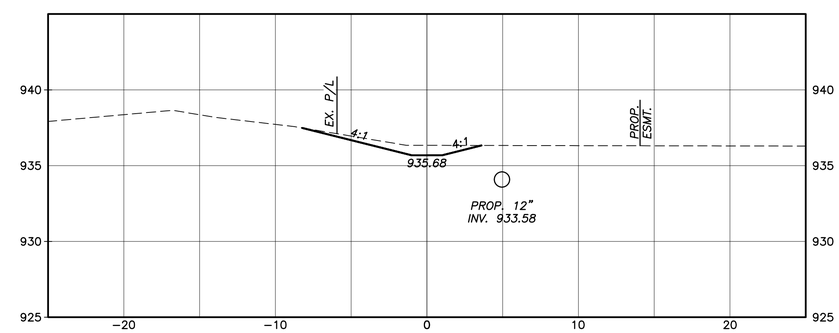
34+50.00



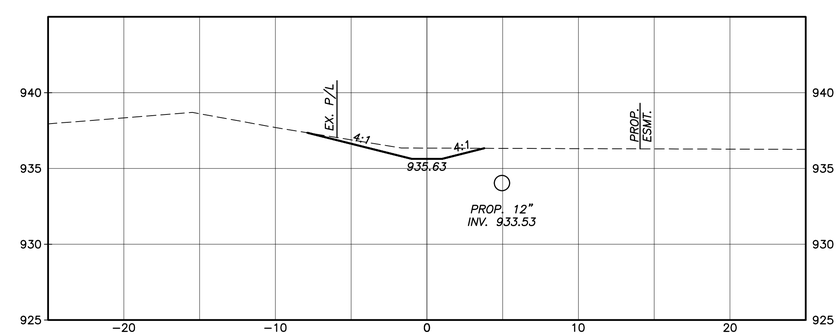
38+00.00



37+50.00



37+00.00



36+50.00

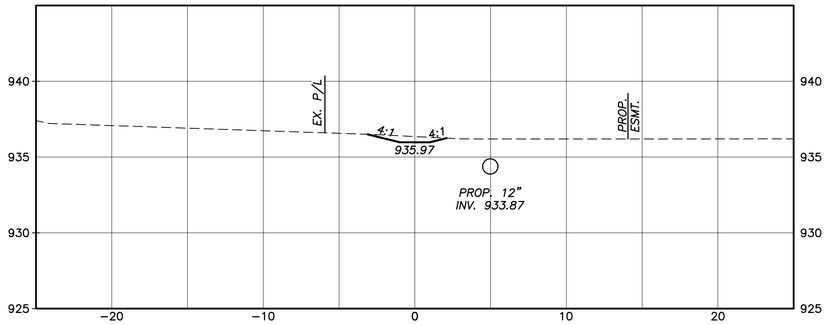
HORIZONTAL SCALE IN FEET
0 5 10

CALCULATED MAB
CHECKED MSL

CROSS SECTIONS - AREA 3
STA. 34+50 TO STA. 38+00

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xs-XSECT-AREA3.dwg
November 11, 2025, 1:42pm



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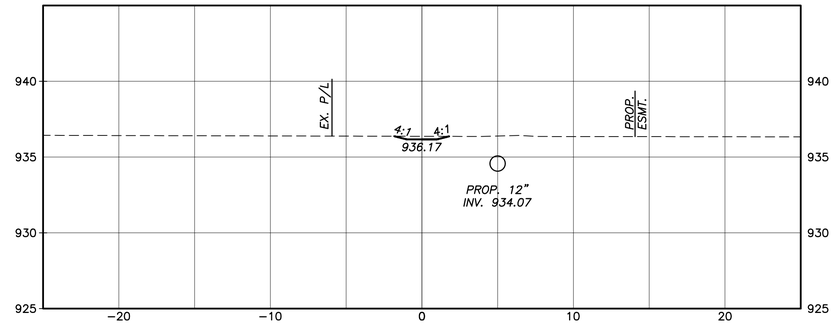

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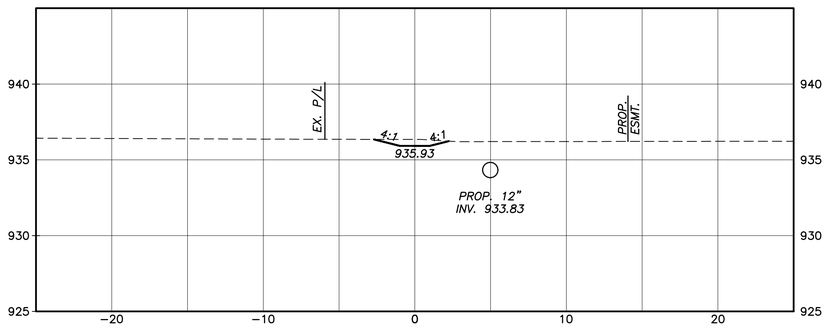

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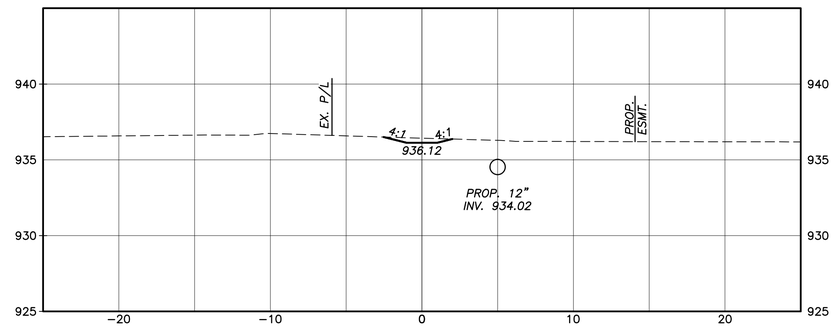

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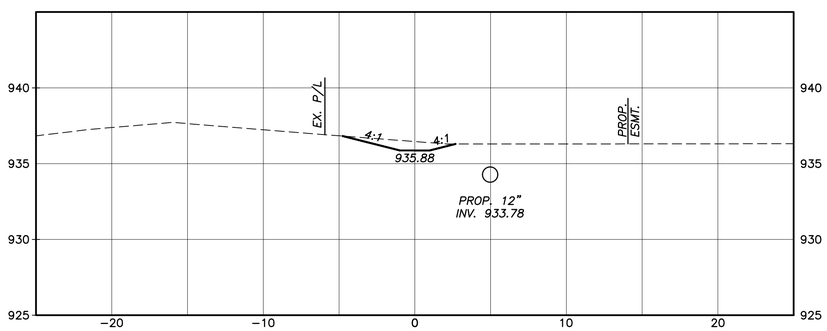

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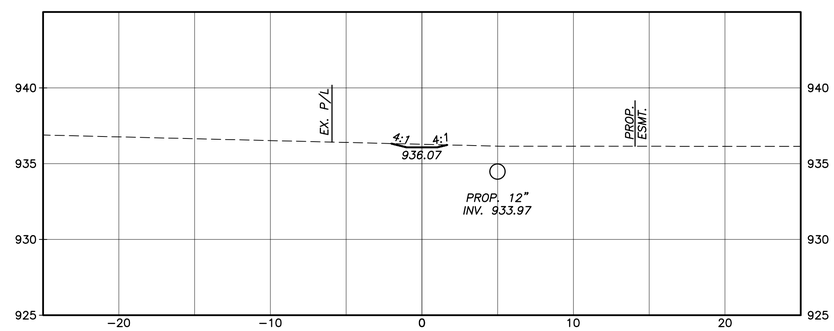

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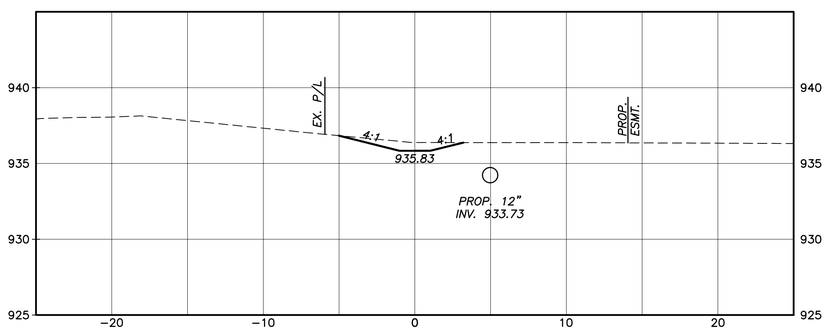
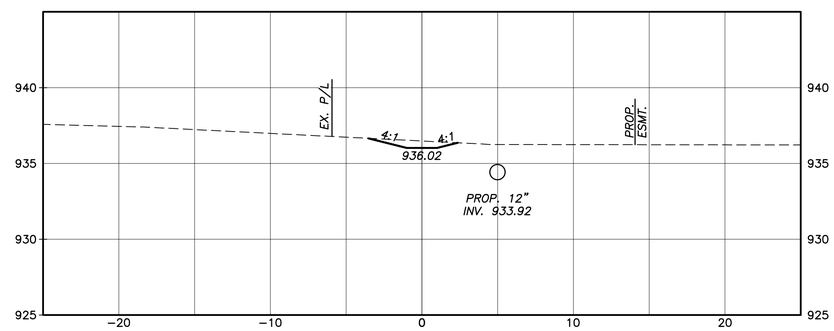


38+50.00



40+50.00

HORIZONTAL SCALE IN FEET
0 5 10

CALCULATED MAB
CHECKED MSL

CROSS SECTIONS - AREA 3
STA. 38+50 TO STA. 42+00

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEQ GES\Task 2-Mando\CADD\20089 Mando xs-XSECT-AREA3.dwg
November 11, 2025, 1:39pm

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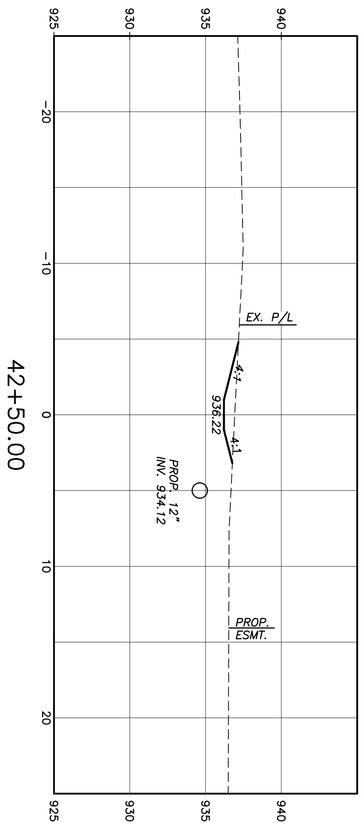
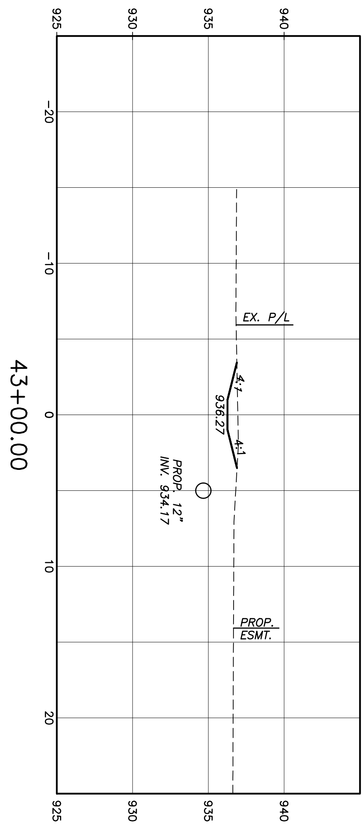
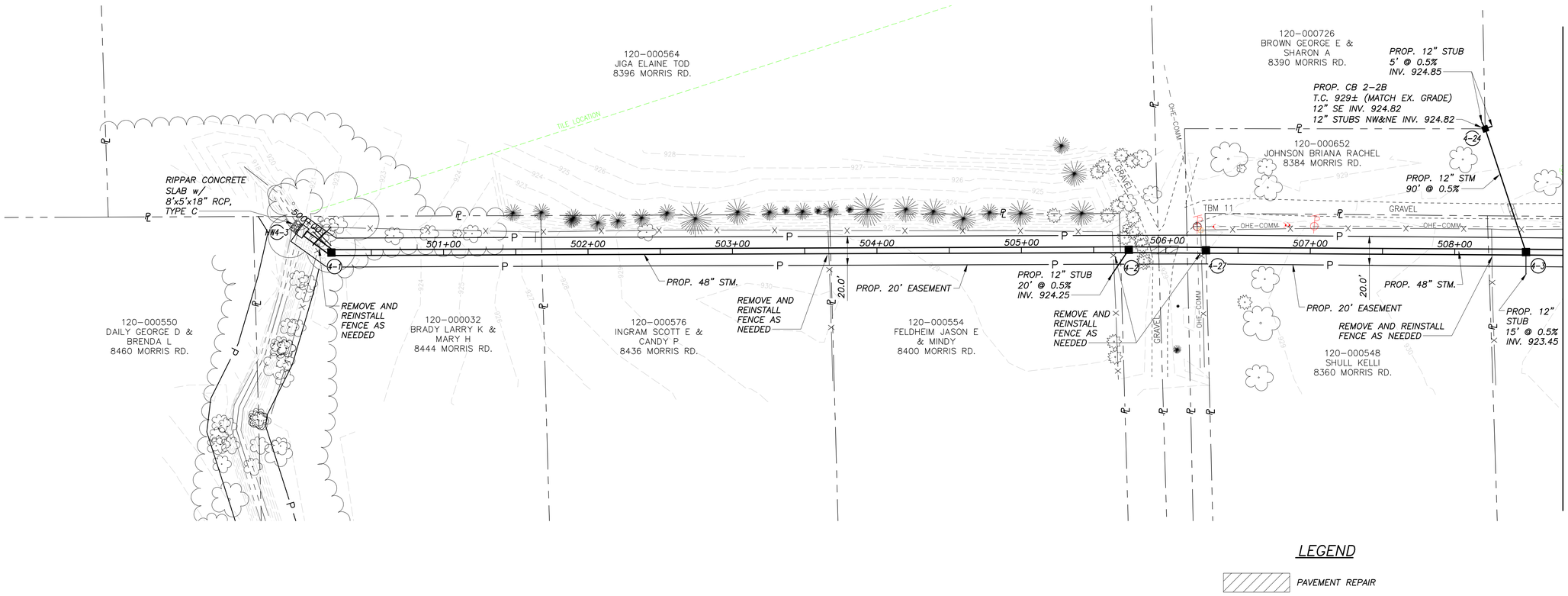
November 11, 2025, 1:36pm



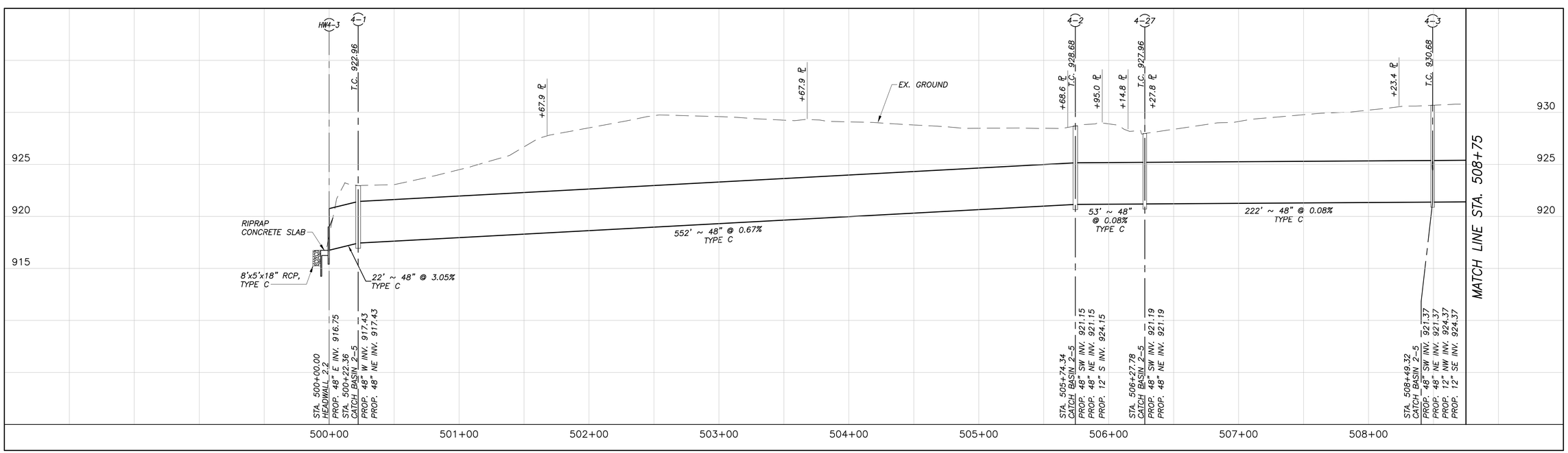


32/53	**MANDO DITCH DRAINAGE IMPROVEMENT**	**CROSS SECTIONS - AREA 3** **STA. 42+50 TO STA. 43+00**	CALCULATED *MAB* CHECKED *MSL*	0 5 10 HORIZONTAL SCALE IN FEET



LEGEND

PAVEMENT REPAIR



HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - STORM #4A
STA. 500+00 TO STA. 508+75

MANDO DITCH DRAINAGE IMPROVEMENT

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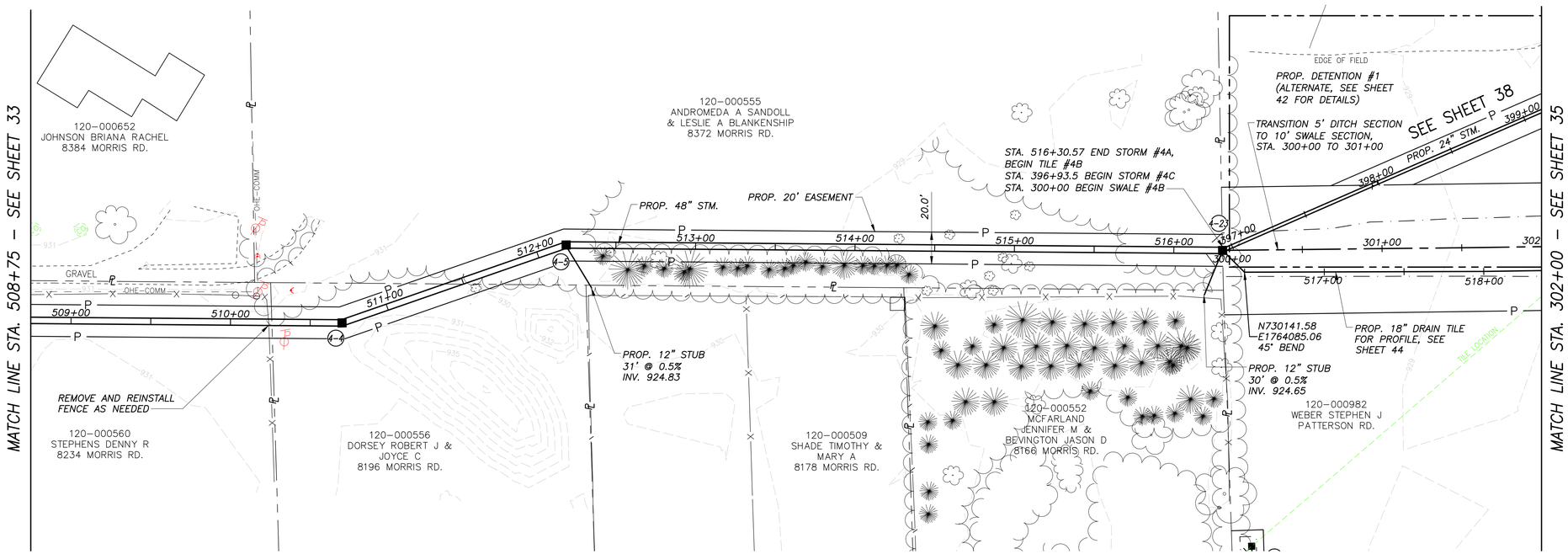
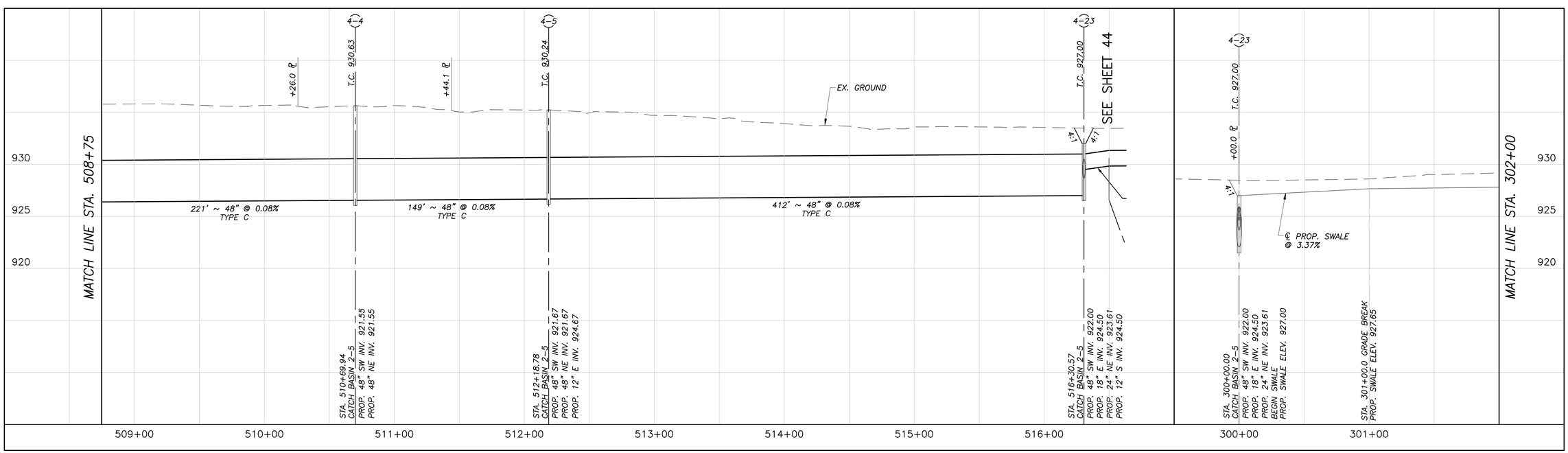
April 08, 2026, 8:39am





HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE
STORM #4A STA. 508+75 TO STA. 516+30.57
SWALE #4B STA. 300+00 TO STA. 302+00

MANDO DITCH DRAINAGE IMPROVEMENT

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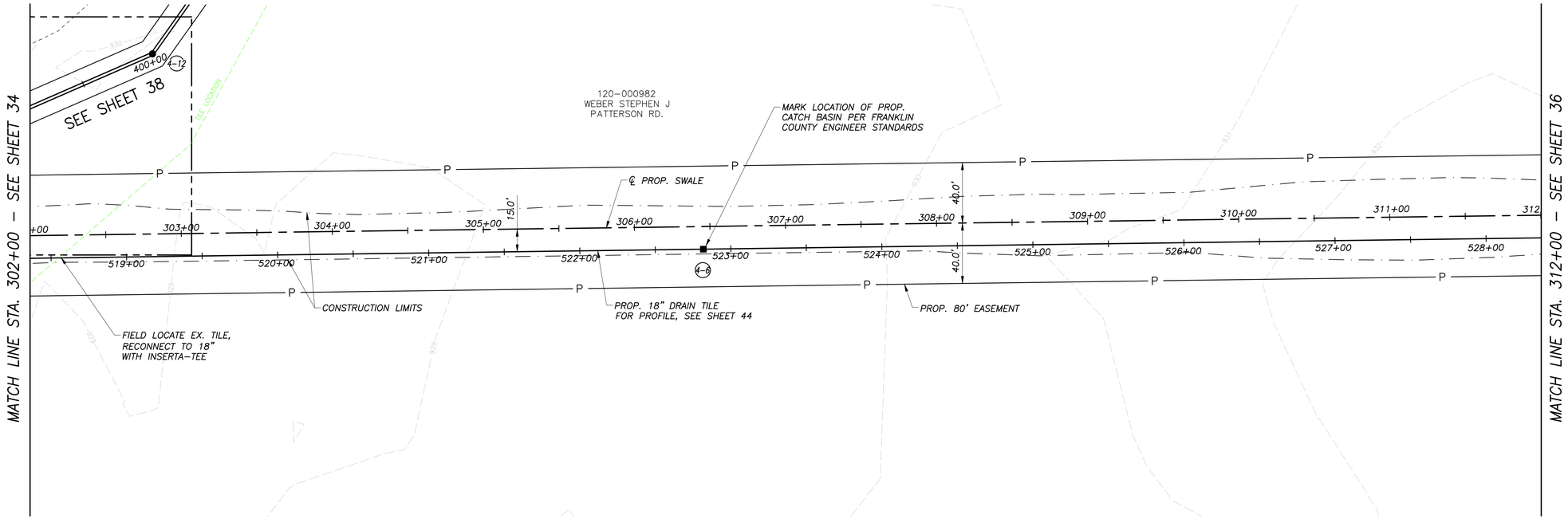
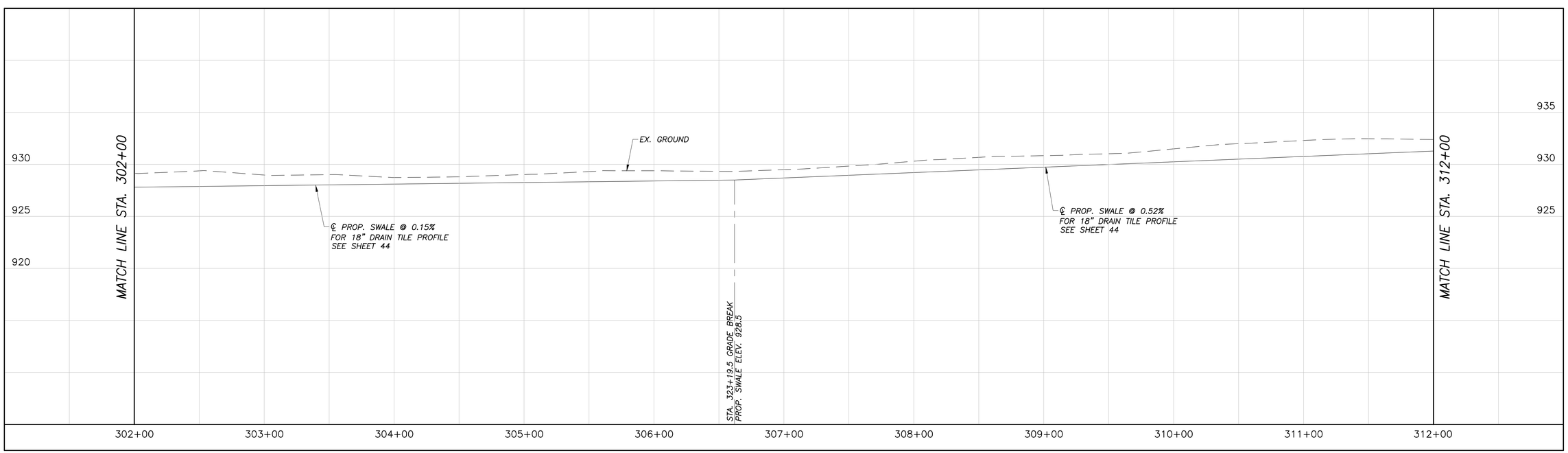




HORIZONTAL SCALE IN FEET
0 20 40 80

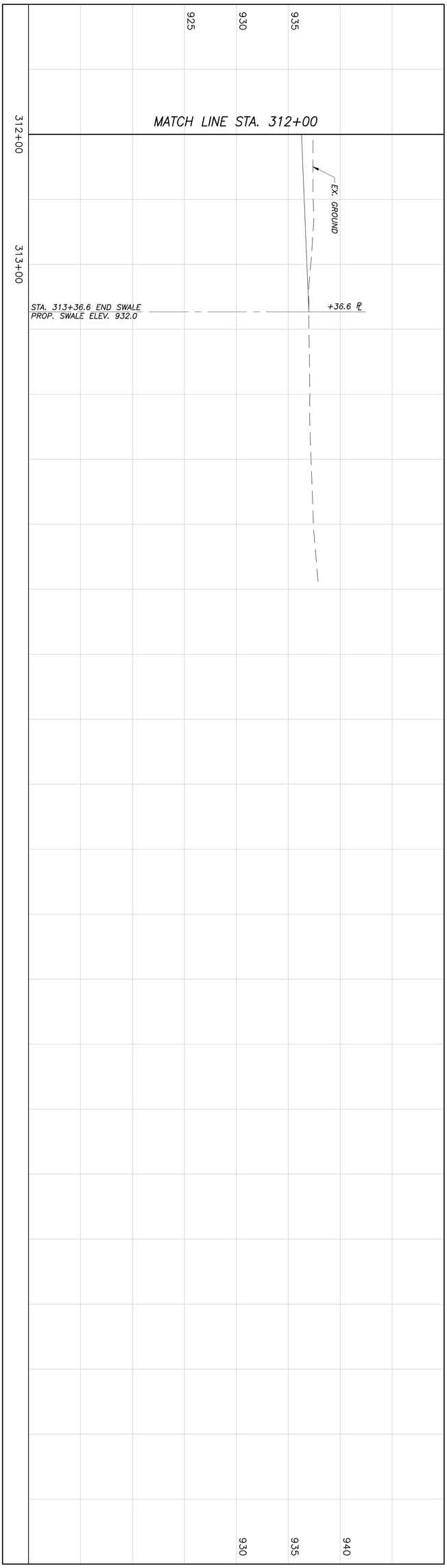
CALCULATED MAB
CHECKED MSL

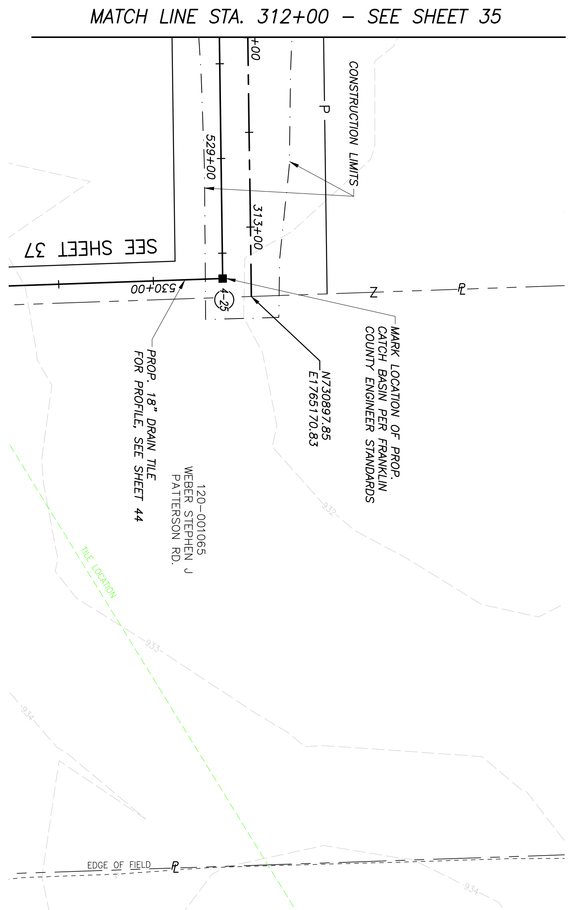
PLAN AND PROFILE - SWALE/TILE #4B
STA. 302+00 TO STA. 312+00

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 bm-Mando.dwg
June 16, 2026, 1:21pm

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 bm-Mando.dwg
February 16, 2026, 11:57am





36 / 53	**MANDO DITCH DRAINAGE IMPROVEMENT**	**PLAN AND PROFILE - SWALE/TILE #4B STA. 312+00 TO STA. 313+37**	CALCULATED MAB / CHECKED MSL	0 20 40 80 HORIZONTAL SCALE IN FEET

HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN - TILE #4B
STA. 529+63 TO STA. 548+91

MANDO DITCH DRAINAGE IMPROVEMENT

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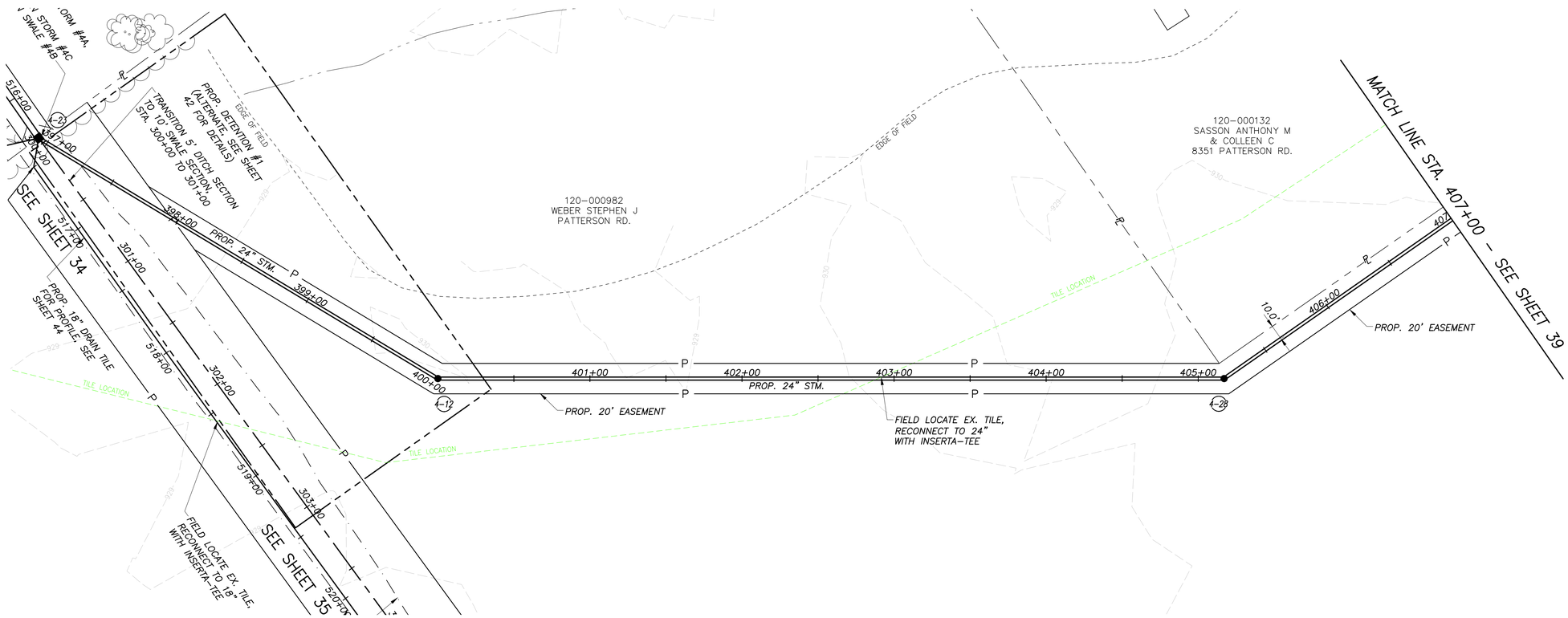
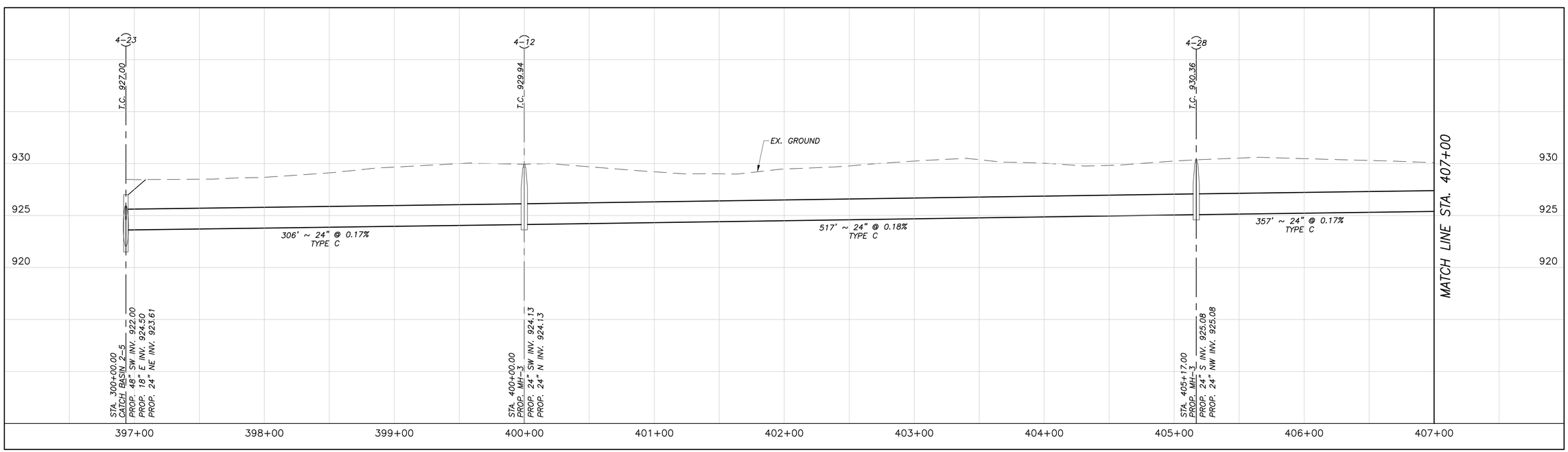
February 16, 2026, 11:55am





HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - STORM #4C
STA. 396+93 TO STA. 407+00

MANDO DITCH DRAINAGE IMPROVEMENT

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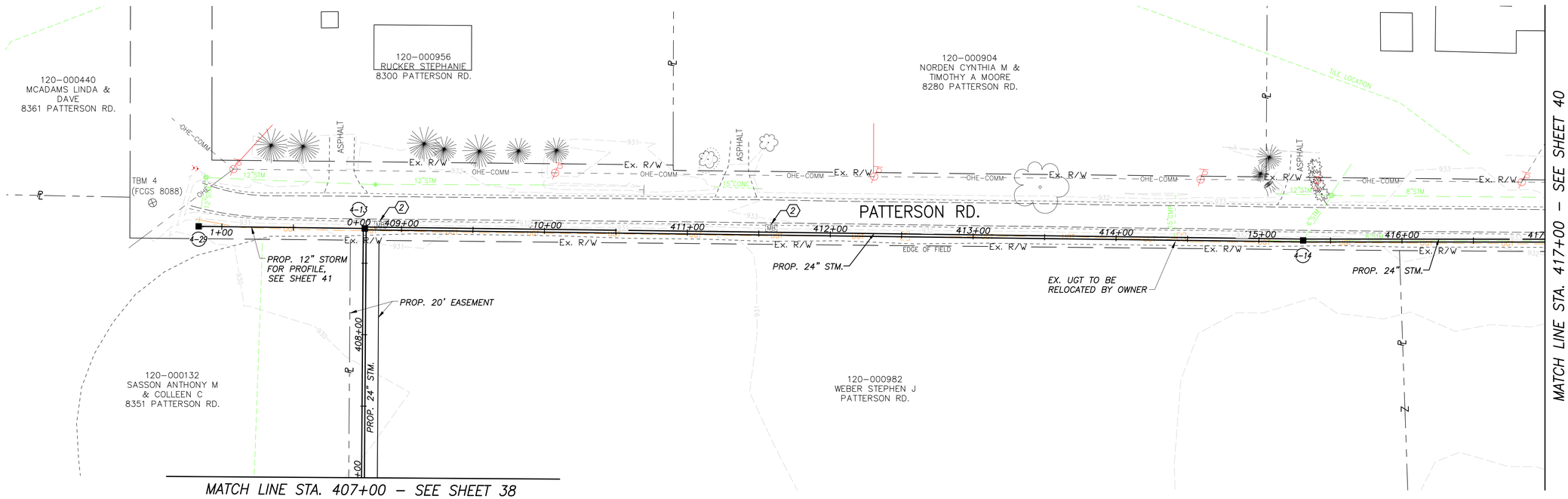
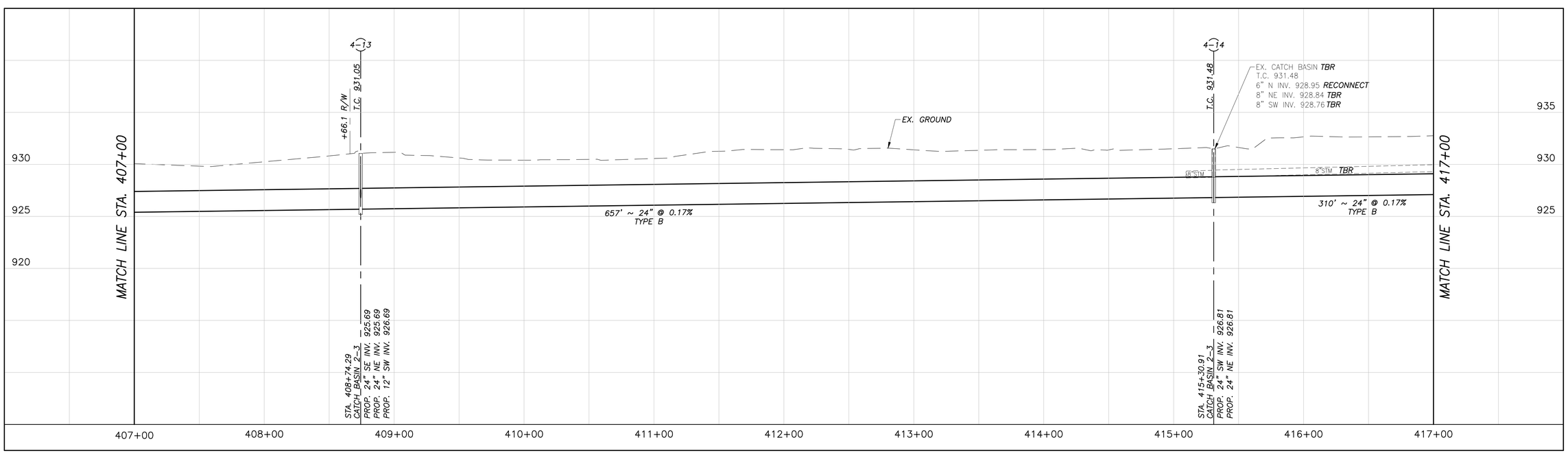


CODED NOTES

(2) MAILBOX TO BE REMOVED AND REINSTALLED



HORIZONTAL SCALE IN FEET
0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - STORM #4C
STA. 407+00 TO STA. 417+00

MANDO DITCH DRAINAGE IMPROVEMENT

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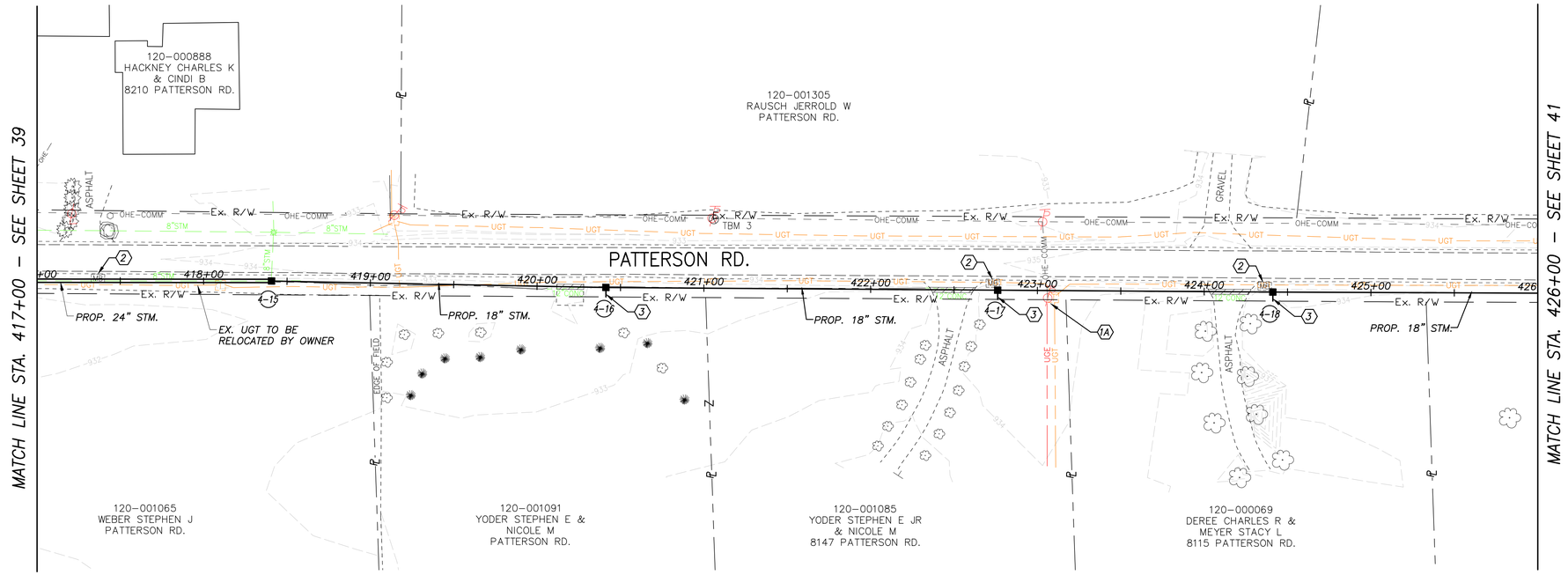


LEGEND

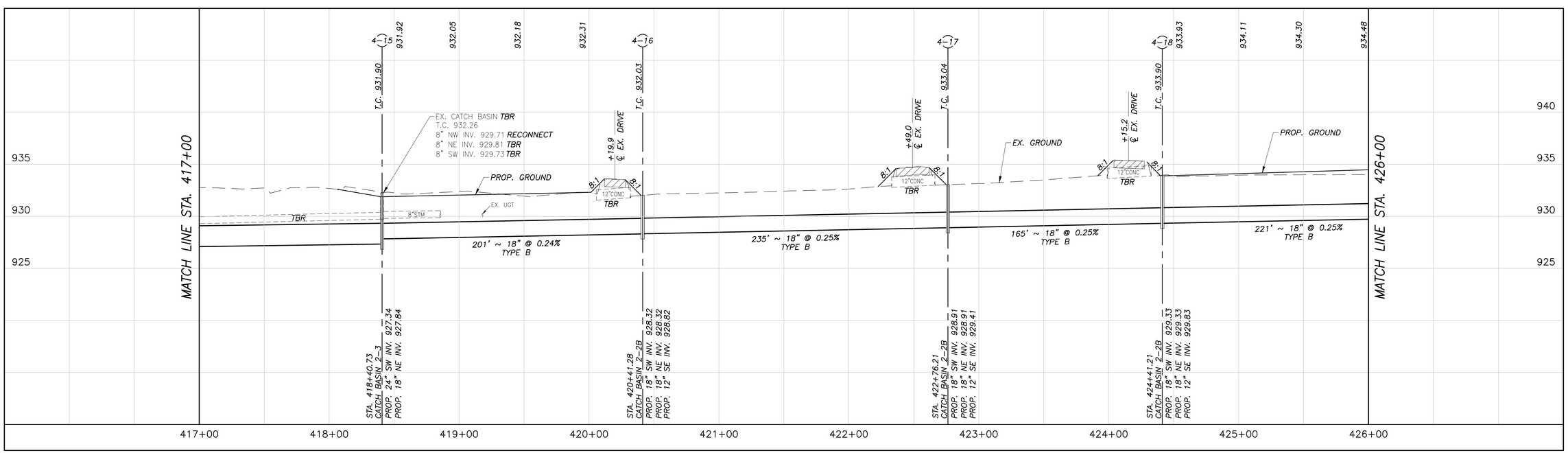
PAVEMENT REPAIR

CODED NOTES

(1A) UTILITY POLE TO BE RELOCATED BY OTHERS

(2) MAILBOX TO BE REMOVED AND REINSTALLED

(3) PROVIDE A 12" STUB AT 0.5% SLOPE TO THE R/W LINE



HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - STORM #4C
STA. 417+00 TO STA. 426+00

MANDO DITCH DRAINAGE IMPROVEMENT

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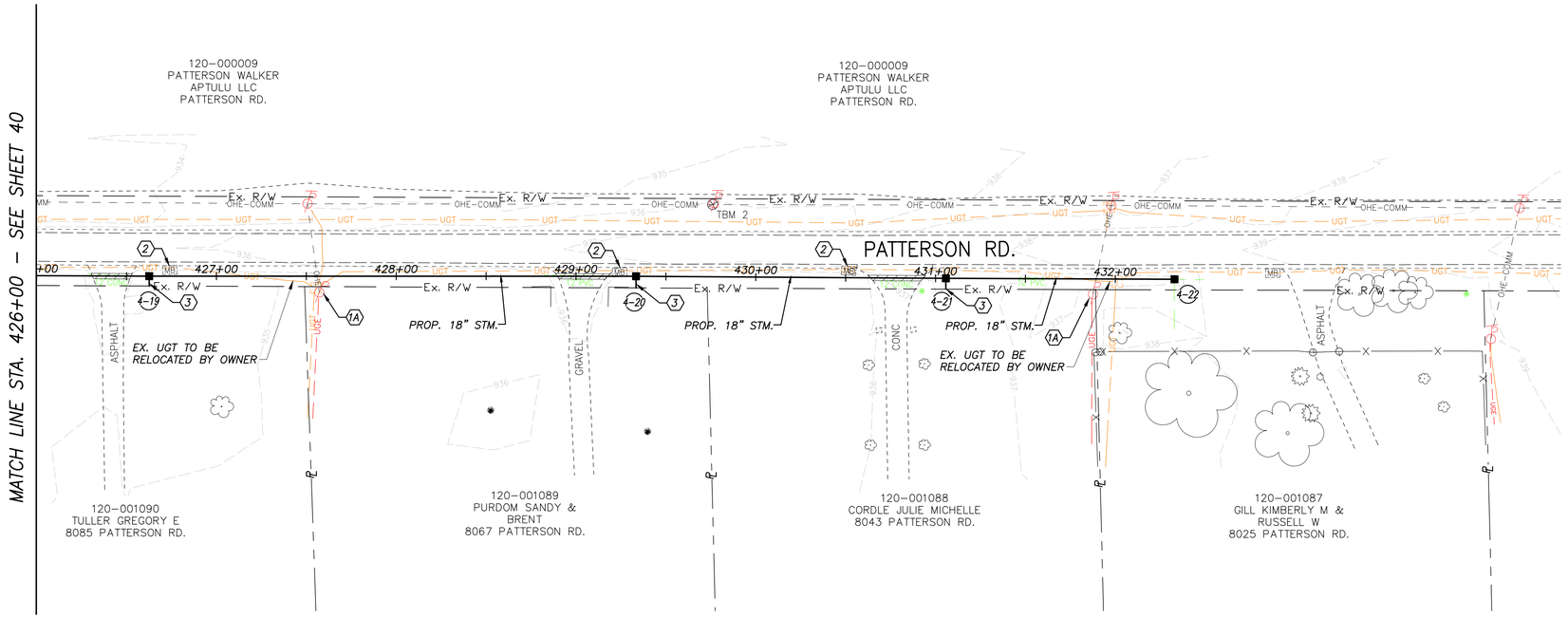


STORM SEWER MANHOLE GROUND COORDINATES BASED ON NAD83 OHIO SOUTH (NSRS 2007)				
Structure No.	PLAN Northing	PLAN Easting	AS–BUILT Northing	AS–BUILT Easting
HW4–3	729226.69	1762733.84		
4–22	732505.48	1766030.67		
4–21	732435.71	1765924.37		
4–20	732341.54	1765780.02		
4–19	732192.15	1765554.18		
4–18	732070.77	1765368.98		
4–17	731980.61	1765230.80		
4–16	731852.32	1765033.98		
4–15	731744.88	1764864.64		
4–14	731574.14	1764606.13		
4–13	731218.74	1764053.99		
4–12	730402.69	1764232.61		
4–11	731728.98	1766728.97		
4–10	731509.81	1766408.73		
4–9	731267.31	1766054.43		
4–8	731145.30	1765876.14		
4–7	730909.20	1765531.19		
4–23	730145.38	1764066.09		
4–5	729920.93	1763720.84		
4–4	729802.60	1763630.55		
4–3	729682.36	1763445.58		
4–2	729531.95	1763215.38		
4–1	729225.66	1762756.18		
4–26	730747.33	1765265.90		
4–25	730880.01	1765171.27		
4–24	729737.90	1763375.00		
4–6	730496.16	1764608.09		
4–29	731155.86	1763956.29		
4–27	729561.14	1763260.15		
4–28	730919.43	1764249.09		

LEGEND

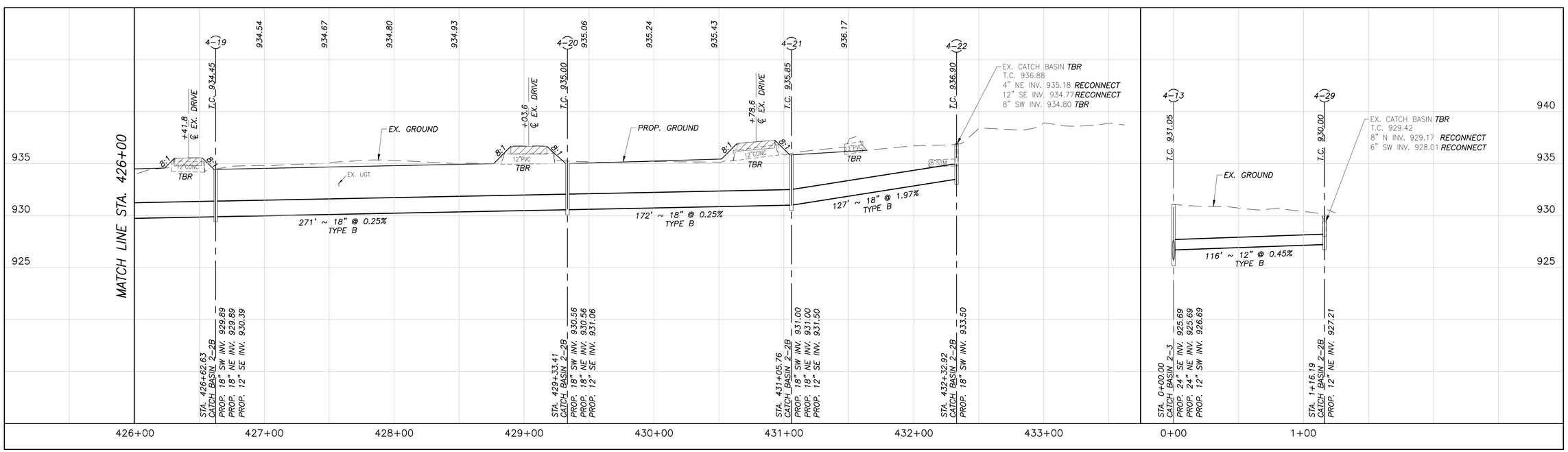
PAVEMENT REPAIR

CODED NOTES

1A UTILITY POLE TO BE RELOCATED BY OTHERS

2 MAILBOX TO BE REMOVED AND REINSTALLED

3 PROVIDE A 12" STUB AT 0.5% SLOPE TO THE R/W LINE



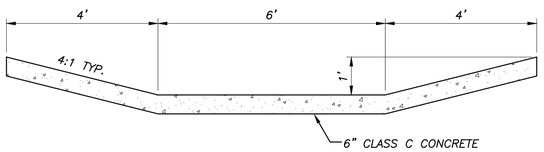
HORIZONTAL SCALE IN FEET 0 20 40 80

CALCULATED MAB
CHECKED MSL

PLAN AND PROFILE - STORM #4C
STA. 426+00 TO STA. 432+33

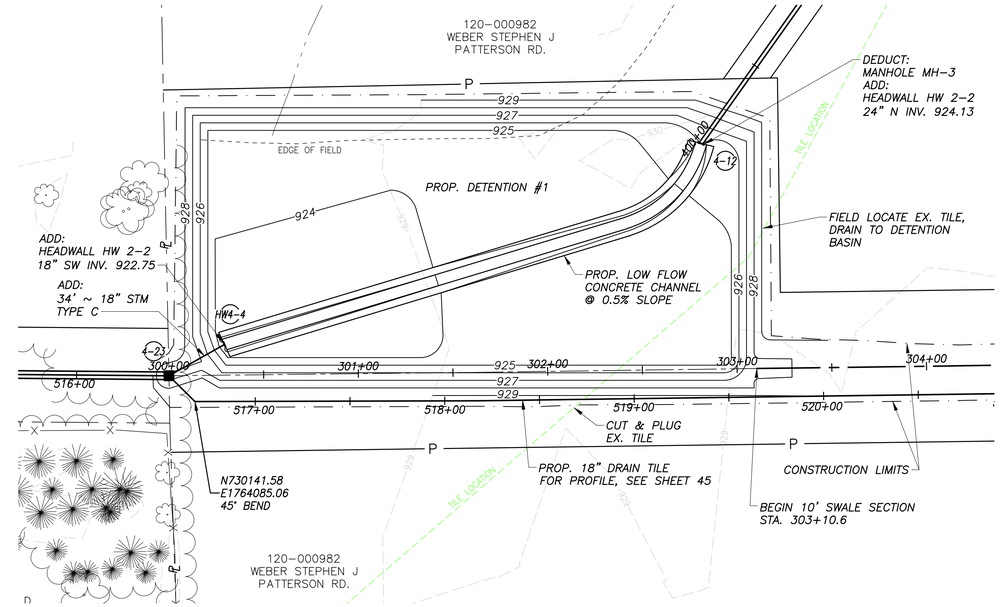
MANDO DITCH DRAINAGE IMPROVEMENT

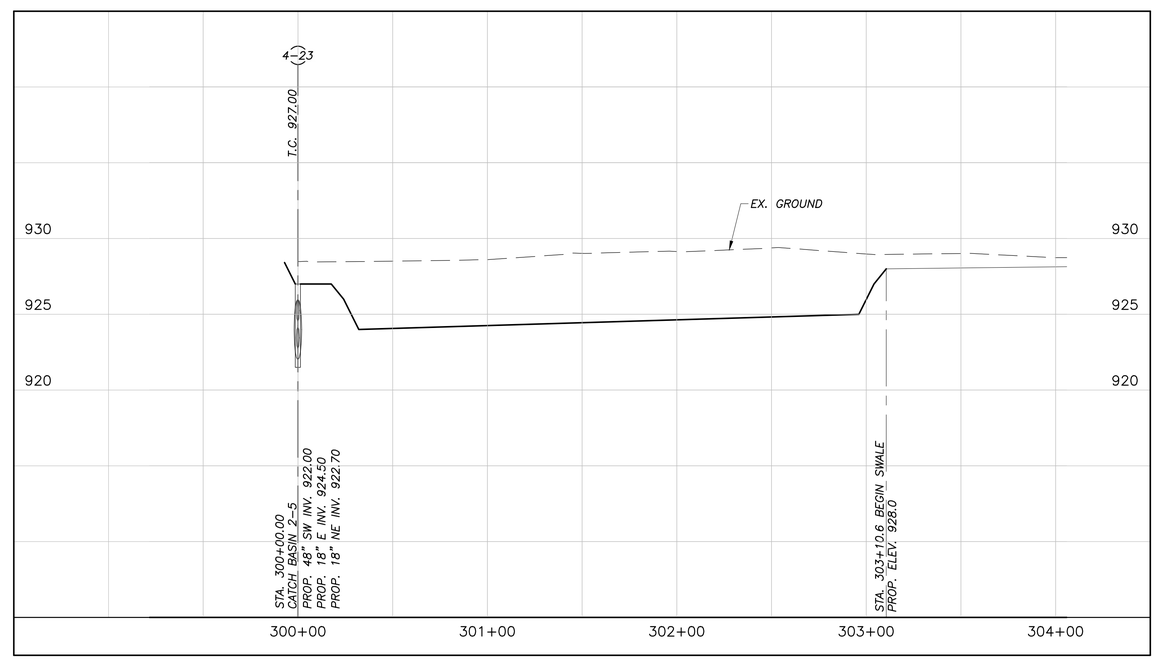
DRAWING: P:\20089 FCEO GES\Task 2–Mando\CADD\20089 bm–Mando.dwg
June 16, 2026, 1:14pm



LOW FLOW CHANNEL DETAIL

NO SCALE





0 20 40 80
HORIZONTAL SCALE IN FEET

CALCULATED MAB
CHECKED MSL

DETENTION BASIN #1 DETAILS
ALTERNATE - AREA 4

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-with detention.dwg
June 16, 2026, 1:12pm

ALTERNATE – DETENTION BASIN #1

ESTIMATE OF QUANTITIES

ITEM	QUANTITY	UNIT	DESCRIPTION
203	8961	C.Y.	EXCAVATION
653	996	C.Y.	TOPSOIL FURNISHED AND PLACED, AS PER PLAN
659	4291	S.Y.	SEEDING AND MULCHING, AS PER PLAN
659	23	M.GAL.	WATER, AS PER PLAN
602	73	C.Y.	CONCRETE CHANNEL, SEE DETAIL SHEET 42
602	0.79	C.Y.	CONCRETE MASONRY
611	34	FT.	18" CONDUIT, TYPE C, 707.33
611	–306	FT.	24" CONDUIT, TYPE C, 707.33
611	–1	EACH	MANHOLE, NO. 3

THE QUANTITIES SHOWN HERE REPRESENT THE ADDITIONAL AND DEDUCT QUANTITY ONLY FROM THE BASE ESTIMATE OF QUANTITIES.

ESTIMATE OF QUANTITIES

ITEM	QUANTITY	UNIT	DESCRIPTION
201	1	L.S.	CLEARING AND GRUBBING
201	2	EACH	TREE REMOVED, 18" SIZE
202	521	FT.	PIPE REMOVED 24" AND UNDER
202	3	EACH	CATCH BASIN REMOVED
202	214	FT.	FENCE REMOVED AND REPLACED
203	5000	C.Y.	EXCAVATION
653	1064	C.Y.	TOPSOIL FURNISHED AND PLACED, AS PER PLAN
SPEC	8	EACH	MAILBOX REMOVED AND RESET
601	9	S.Y.	RIPRAP USING 6" REINFORCED CONCRETE SLAB
601	1	C.Y.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
659	11735	S.Y.	SEEDING AND MULCHING, AS PER PLAN
659	63	M.GAL.	WATER, AS PER PLAN
602	1.09	C.Y.	CONCRETE MASONRY
611	116	FT.	12" CONDUIT, TYPE B, 707.33
611	1691	FT.	12" CONDUIT, TYPE C, 707.33
611	1392	FT.	18" CONDUIT, TYPE B, 707.33
611	1809	FT.	18" CONDUIT, TYPE C PERFORATED (707.33, TYPE SP)
611	967	FT.	24" CONDUIT, TYPE B, 707.33
611	1180	FT.	24" CONDUIT, TYPE C, 707.33
611	1631	FT.	48" CONDUIT, TYPE C, 707.33
611	17	EACH	CATCH BASIN (CB 2–2B)
611	3	EACH	CATCH BASIN (CB 2–3)
611	7	EACH	CATCH BASIN (CB 2–5)
611	2	EACH	MANHOLE, NO. 3
253	74	S.Y.	PAVEMENT REPAIR (DRIVES), SEE DETAIL, SHEET 6

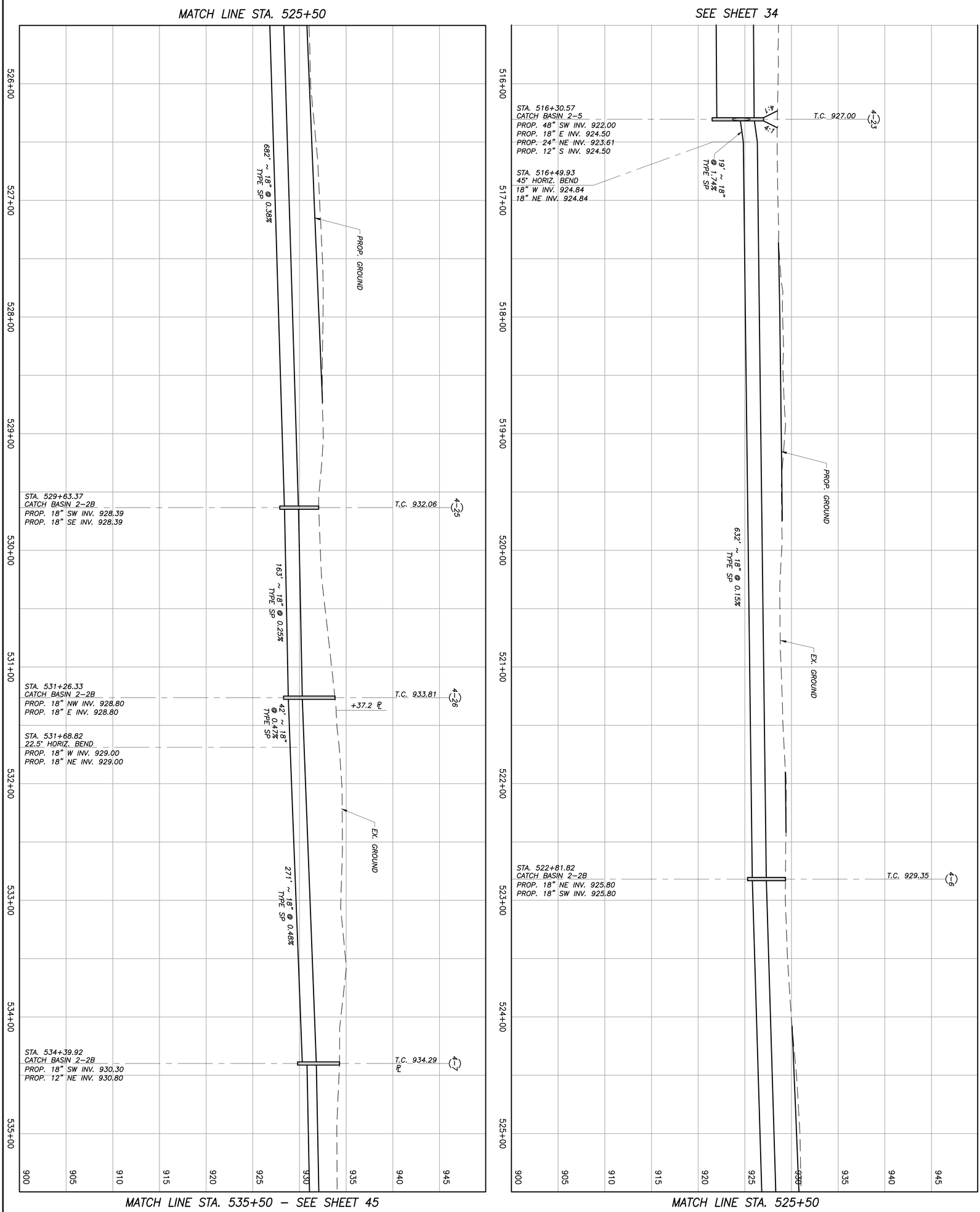
CALCULATED MAB
CHECKED MSL

SUBSUMMARY - AREA 4

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-Subsummary-AREA4.dwg
August 05, 2026, 9:40am

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-STM PROF-AREA4.dwg
February 16, 2026, 11:48am



44 / 53	**MANDO DITCH DRAINAGE IMPROVEMENT**	**STORM PROFILE - TILE #4B**	CALCULATED MAB / CHECKED MSL	0 20 40 80 HORIZONTAL SCALE IN FEET

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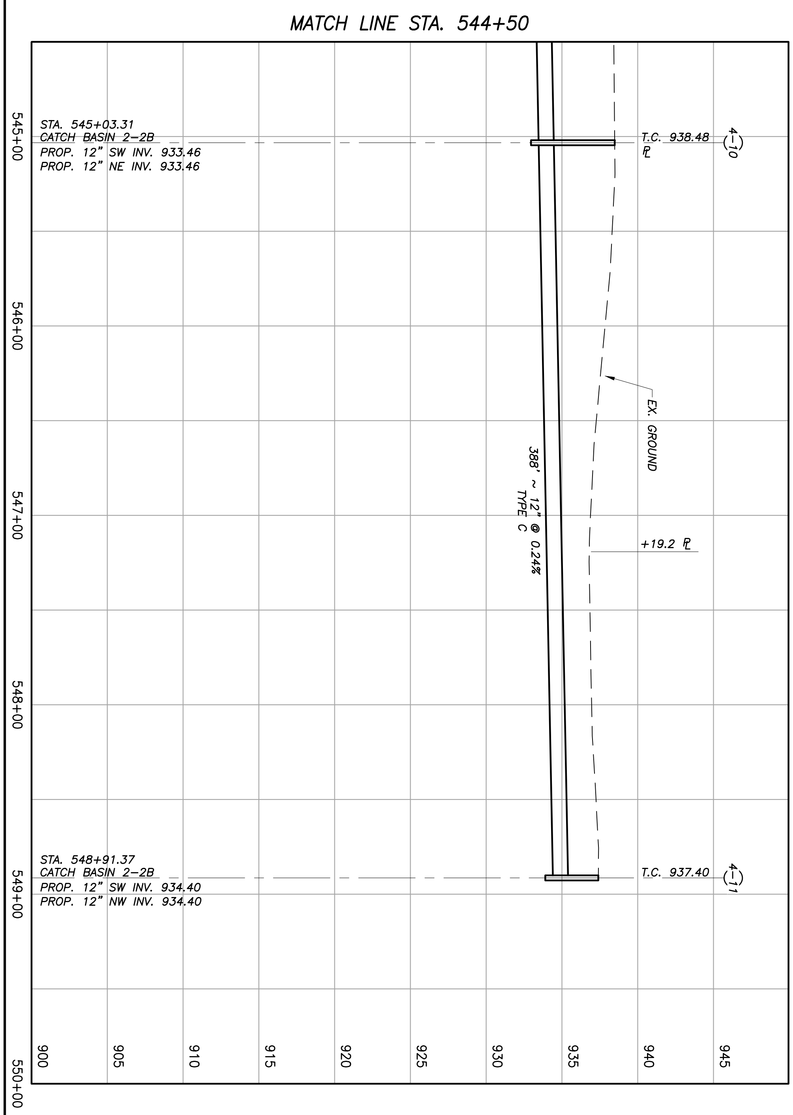
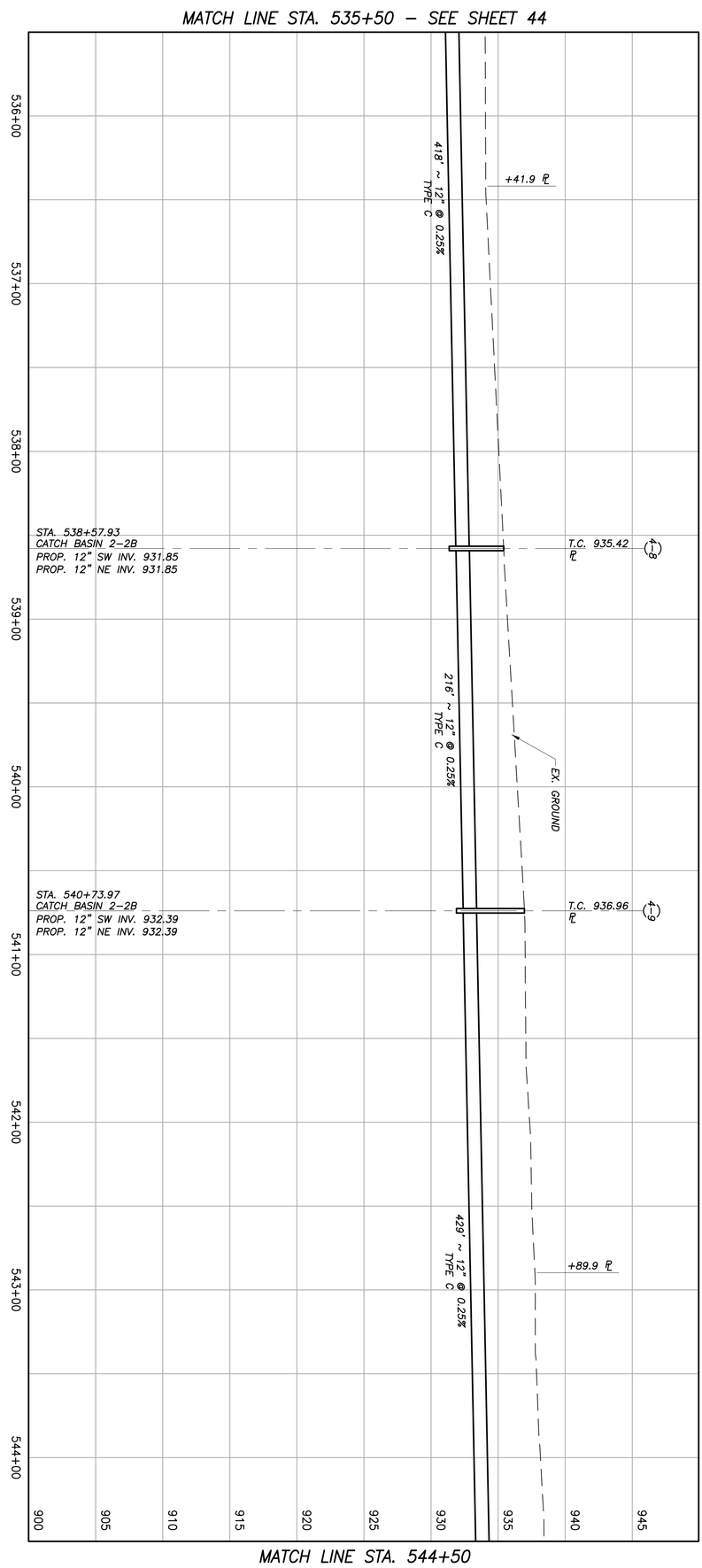
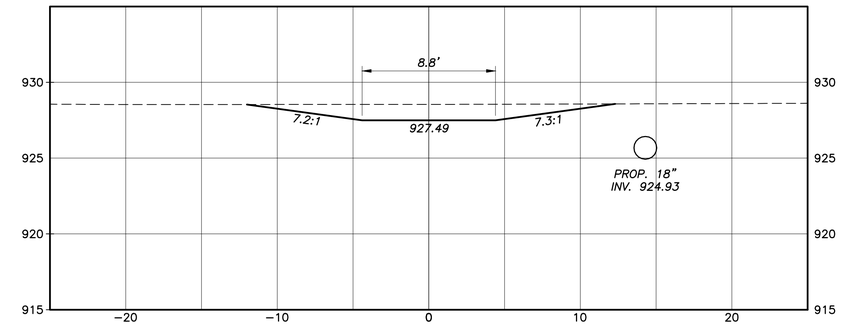


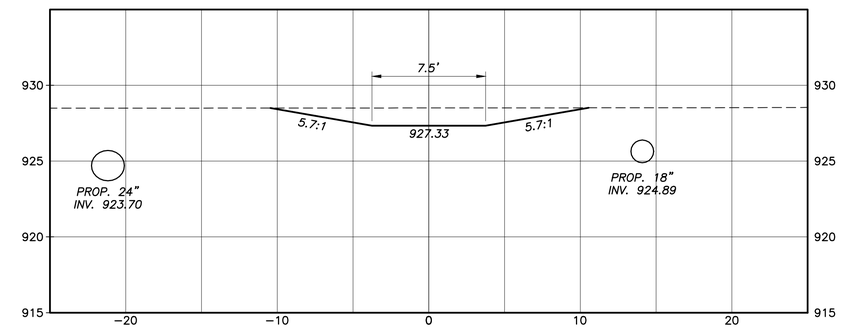


45 / 53	**MANDO DITCH DRAINAGE IMPROVEMENT**	**STORM PROFILE - TILE #4B**	CALCULATED MAB CHECKED MSL	0 20 40 80 HORIZONTAL SCALE IN FEET

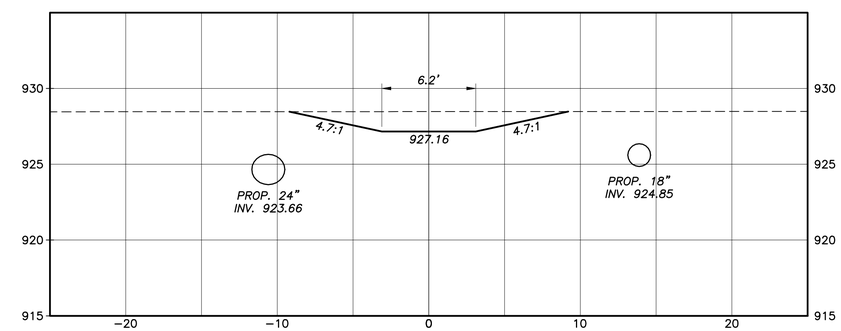
END DITCH TRANSITION STA. 301+00



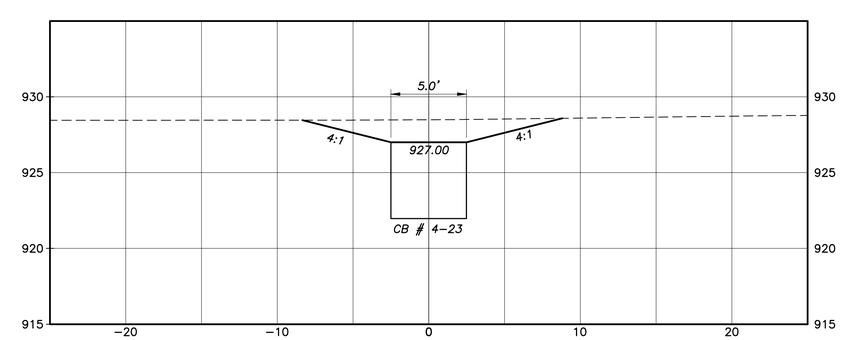
300+75.00



300+50.00



300+25.00



300+00.00

BEGIN DITCH TRANSITION AT STA. 300+00

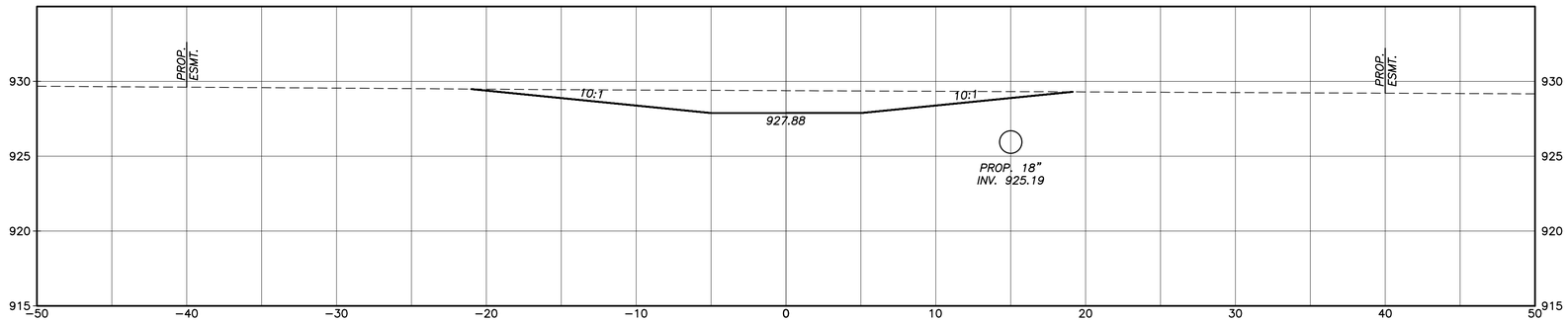
HORIZONTAL SCALE IN FEET
0 5 10

CALCULATED MAB
CHECKED MSL

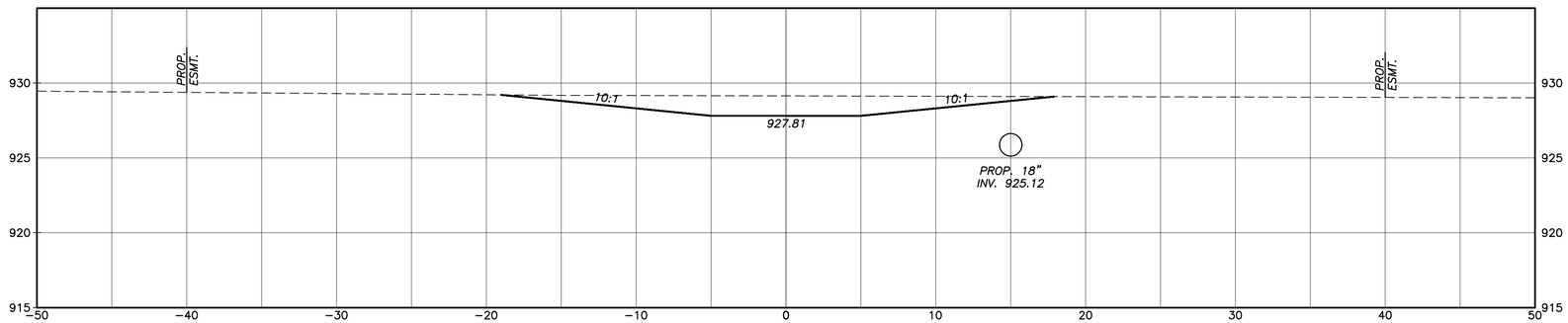
CROSS SECTIONS - AREA 4B
STA. 300+00 TO STA. 300+75

MANDO DITCH DRAINAGE IMPROVEMENT

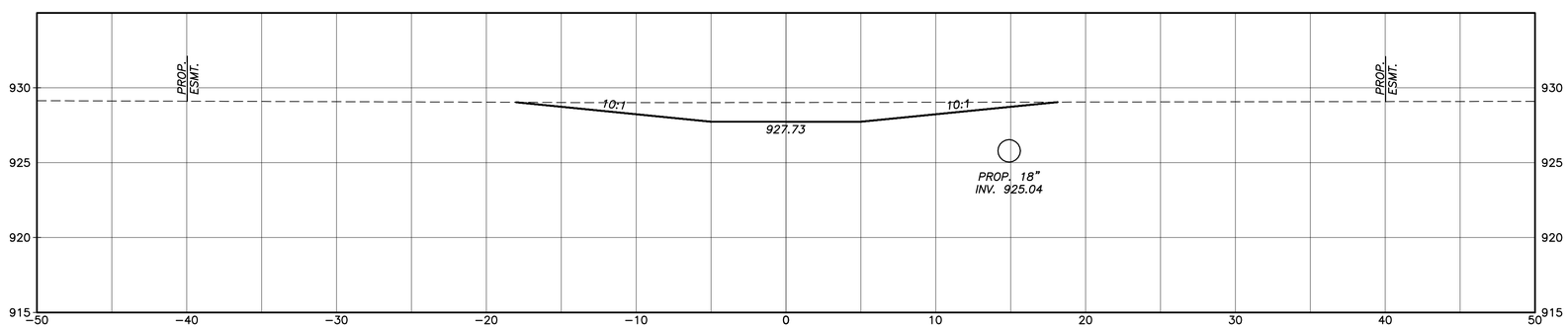
DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-XSECT-AREA4a-transition.dwg
November 11, 2025, 11:18am



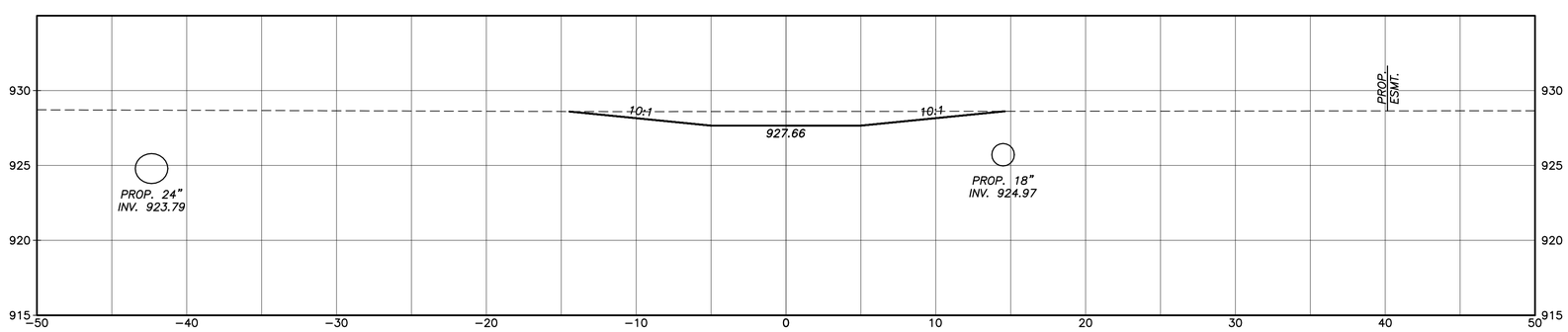
302+50.00



302+00.00



301+50.00



301+00.00

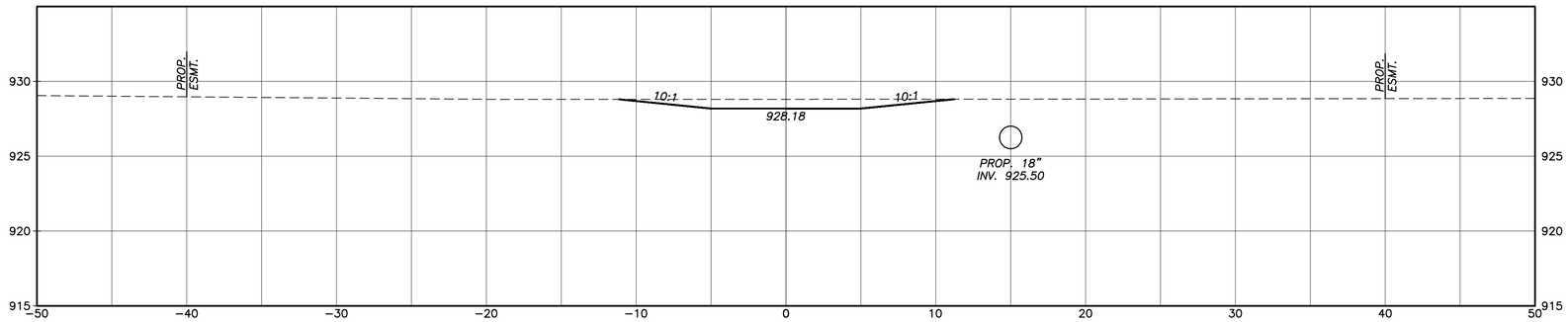
HORIZONTAL SCALE IN FEET
0 5 10

CALCULATED MAB
CHECKED MSL

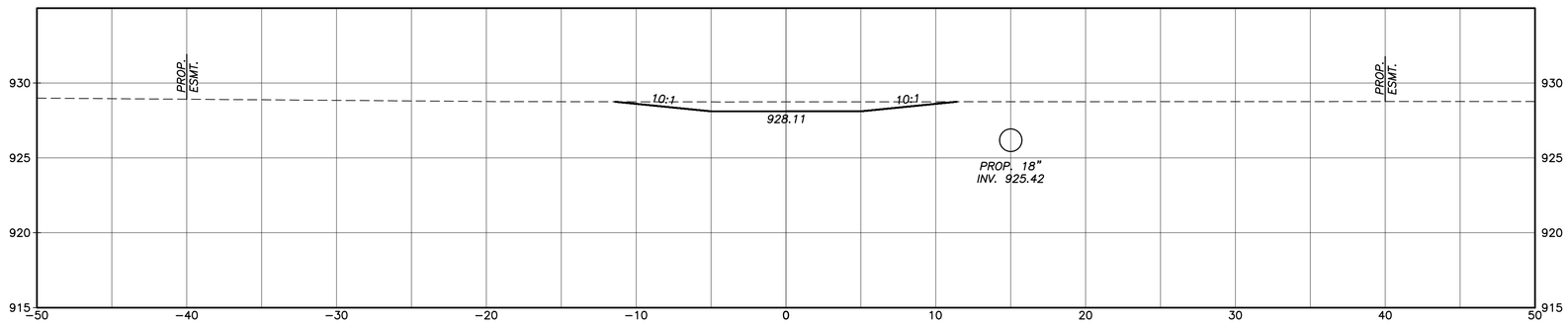
CROSS SECTIONS - AREA 4B
STA. 301+00 TO STA. 302+50

MANDO DITCH DRAINAGE IMPROVEMENT

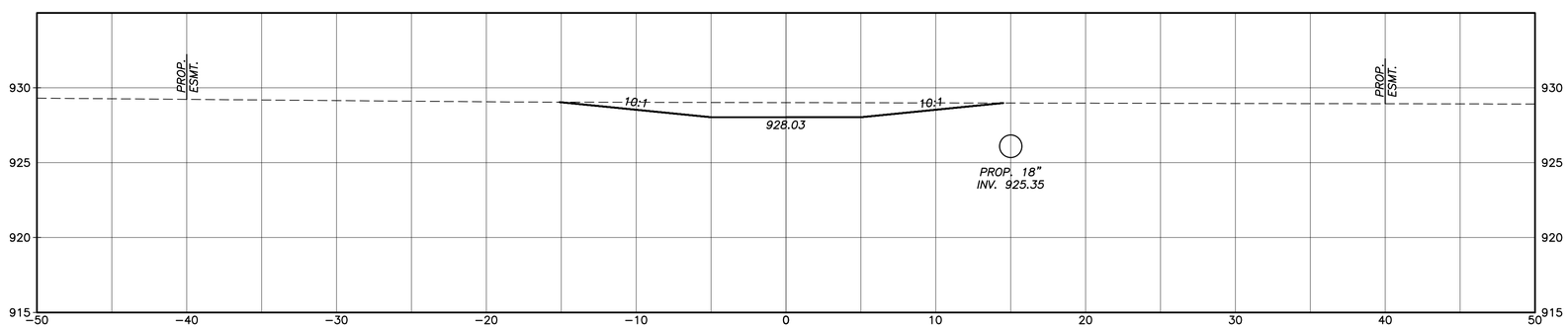
DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-XSECT-AREA4b.dwg
November 11, 2025, 11:07am



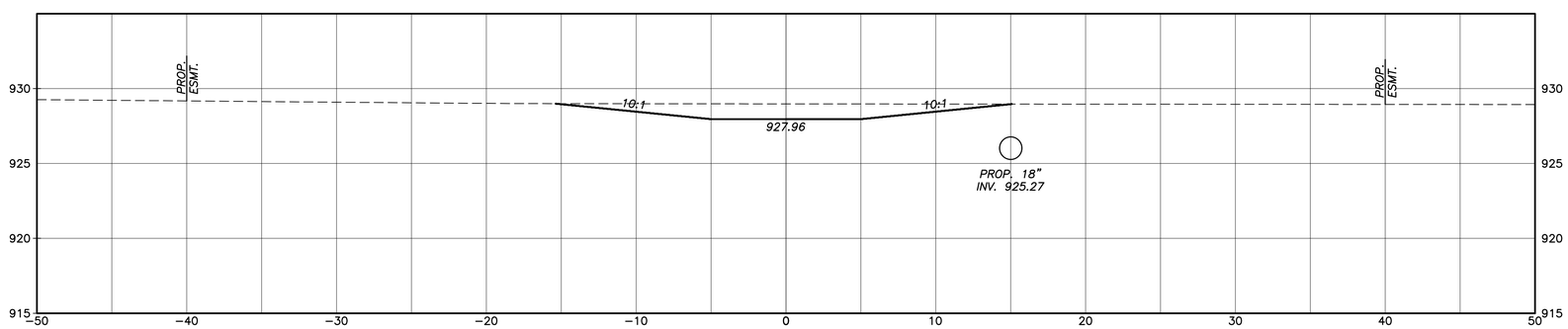
304+50.00



304+00.00



303+50.00



303+00.00

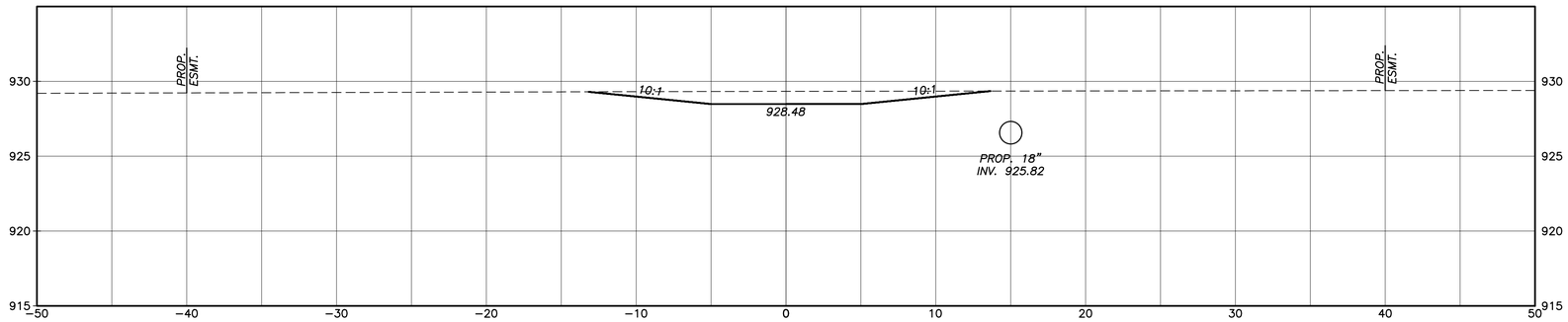
HORIZONTAL SCALE IN FEET
0 5 10

CALCULATED MAB
CHECKED MSL

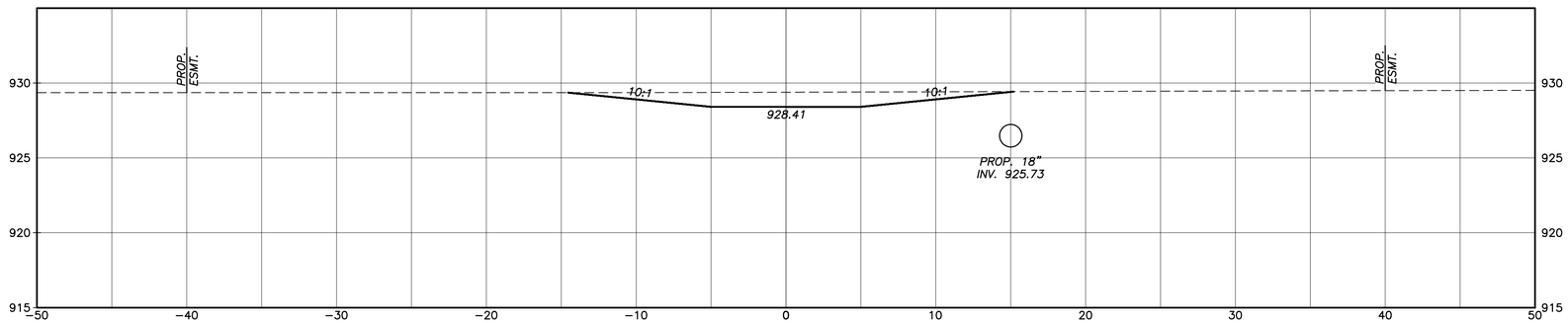
CROSS SECTIONS - AREA 4B
STA. 303+00 TO STA. 304+50

MANDO DITCH DRAINAGE IMPROVEMENT

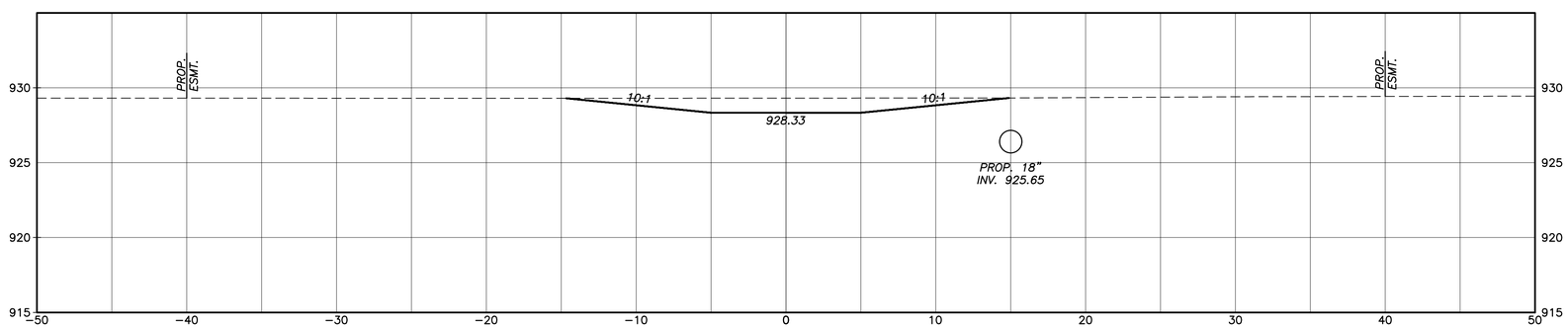
DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-XSECT-AREA4b.dwg
November 11, 2025, 11:04am



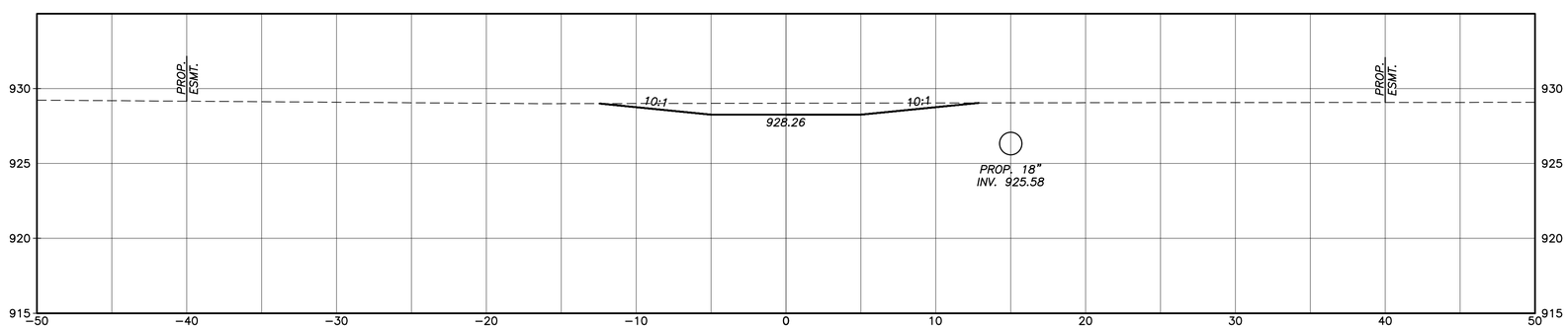
306+50.00



306+00.00



305+50.00



305+00.00

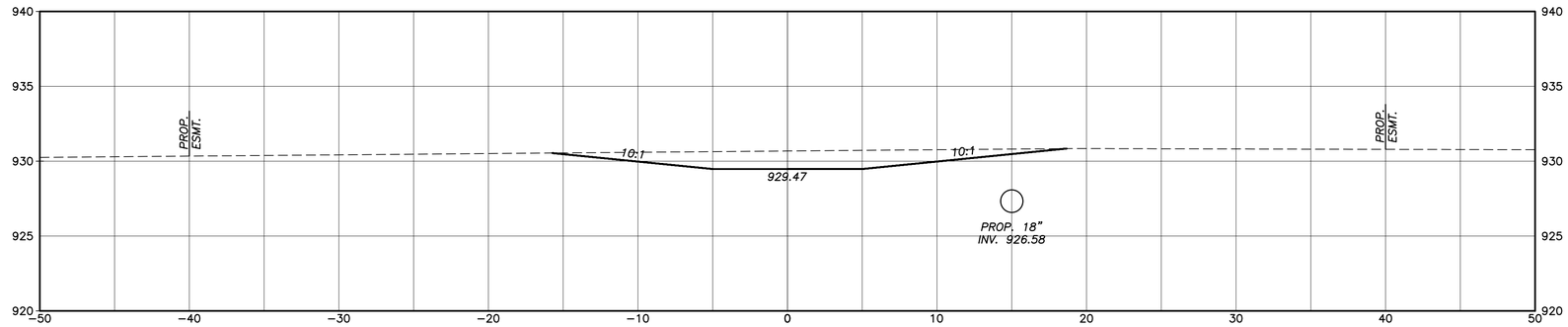
HORIZONTAL SCALE IN FEET
0 5 10

CALCULATED MAB
CHECKED MSL

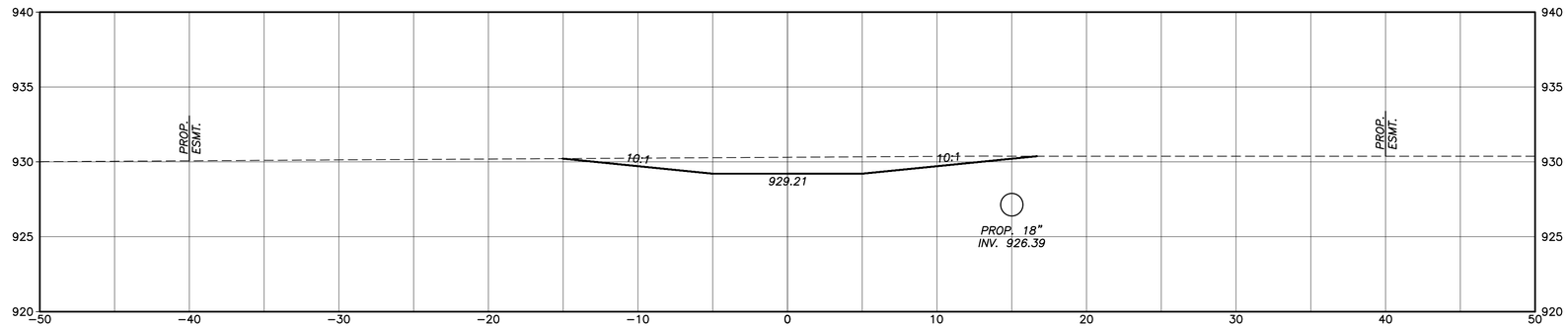
CROSS SECTIONS - AREA 4B
STA. 305+00 TO STA. 306+50

MANDO DITCH DRAINAGE IMPROVEMENT

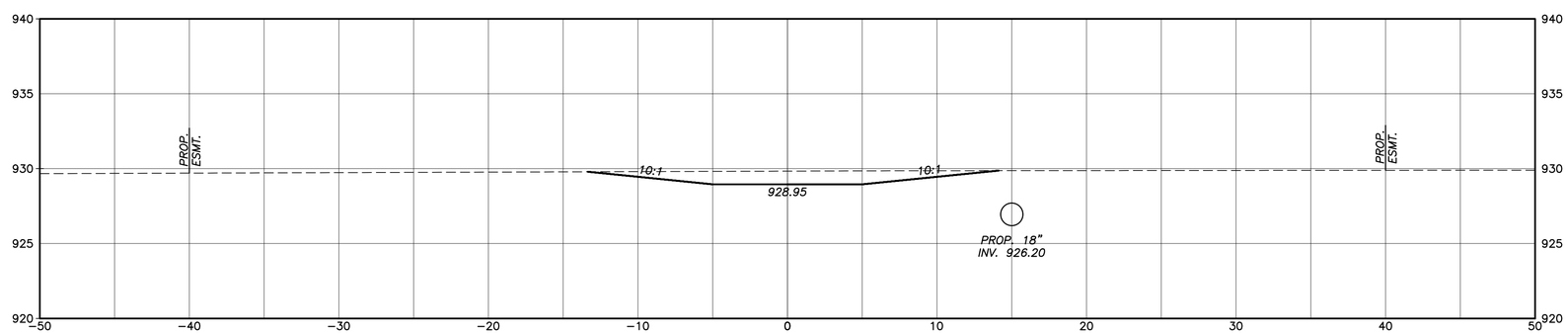
DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-XSECT-AREA4b.dwg
November 11, 2025, 11:00am



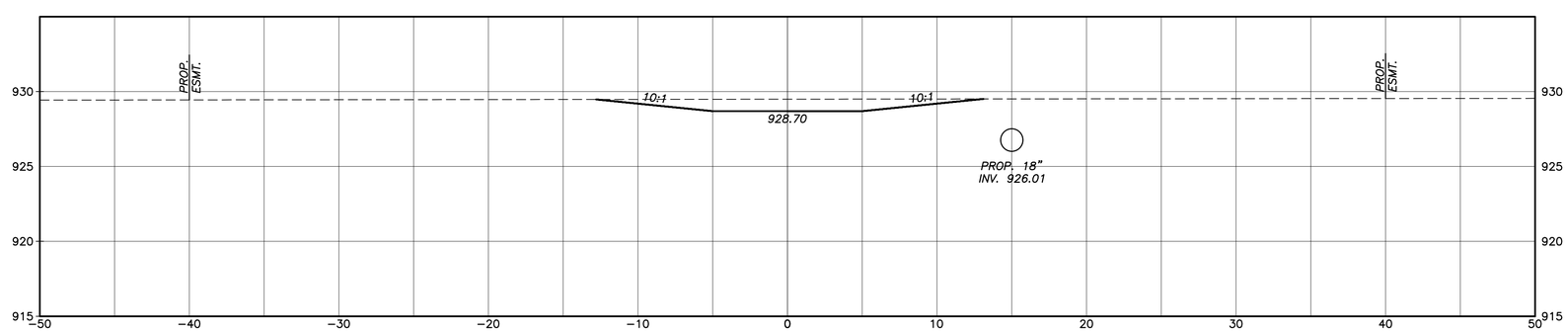
308+50.00



308+00.00



307+50.00



307+00.00

HORIZONTAL SCALE IN FEET

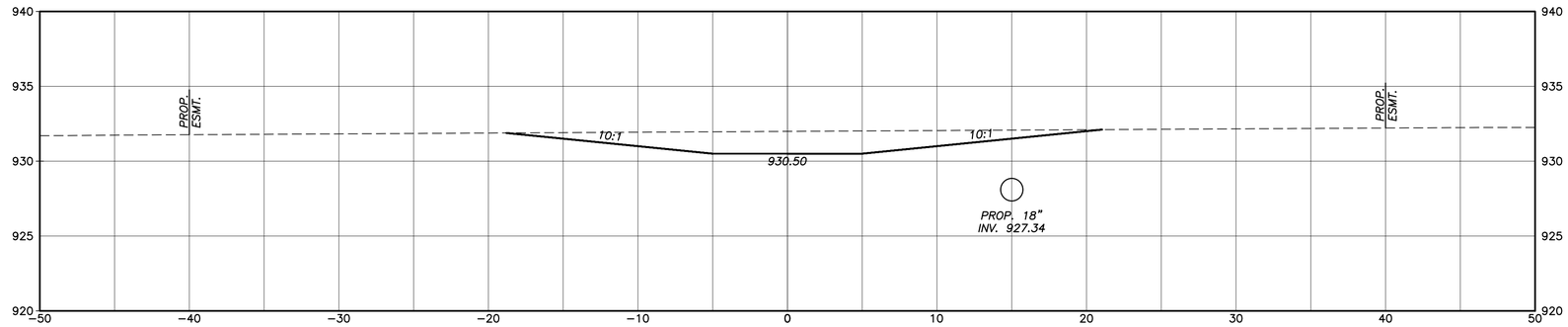
CALCULATED MAB

CHECKED MSL

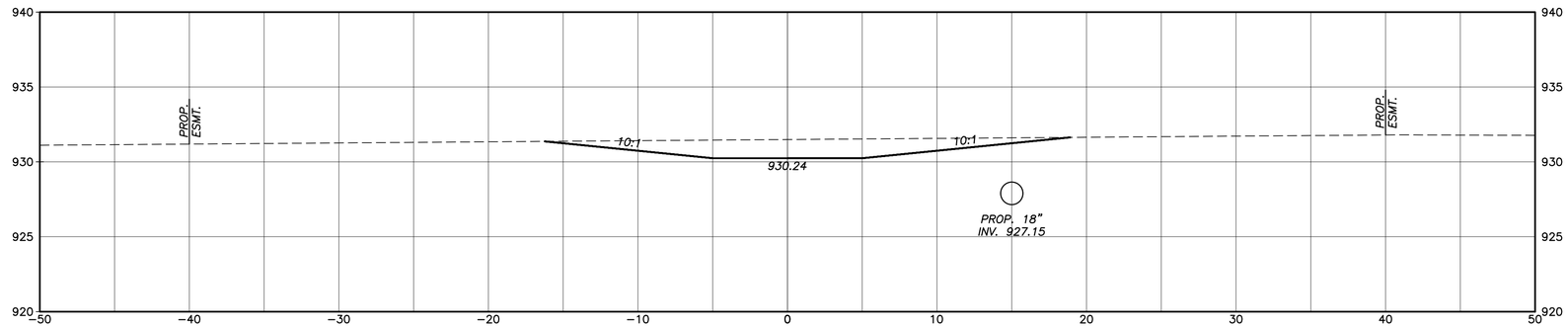
CROSS SECTIONS - AREA 4B
STA. 307+00 TO STA. 308+50

MANDO DITCH DRAINAGE IMPROVEMENT

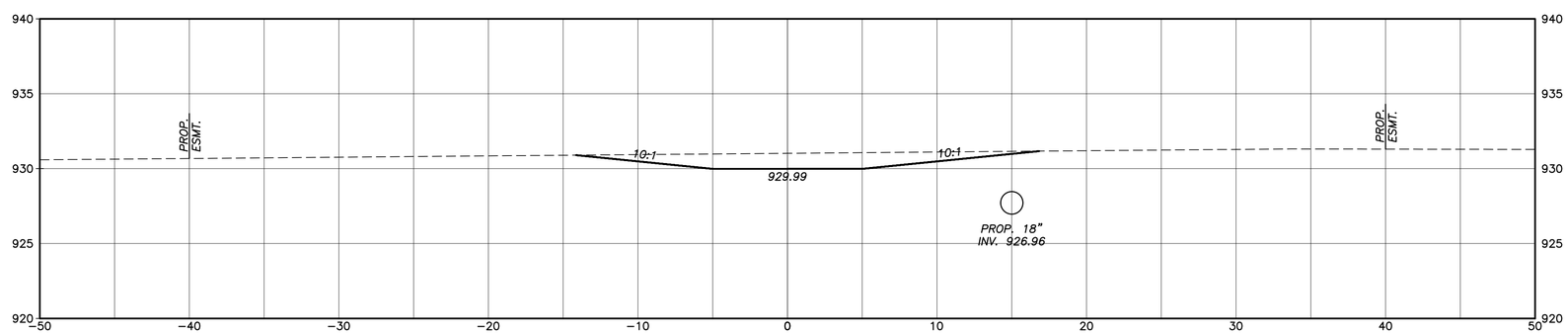
DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-XSECT-AREA4b.dwg
February 16, 2026, 11:36am



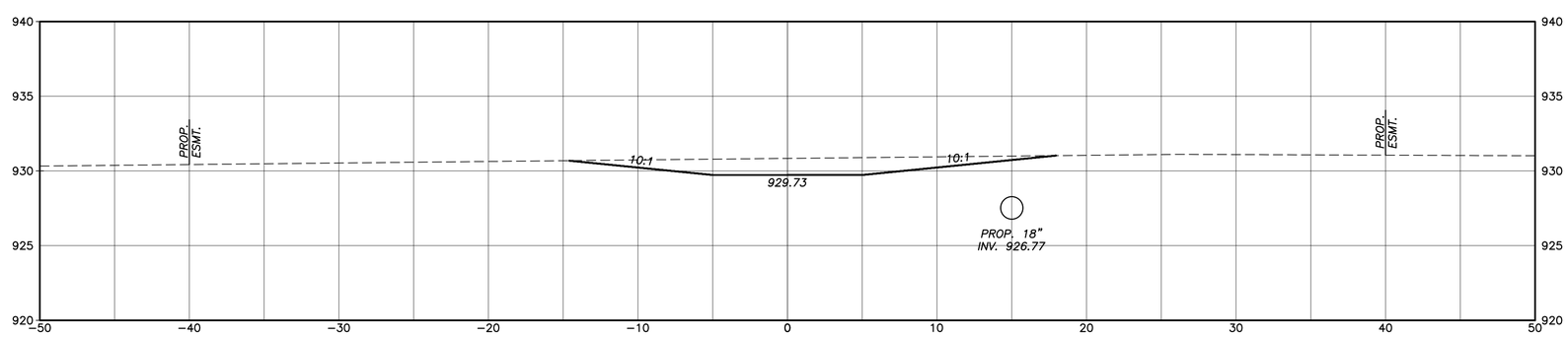
310+50.00



310+00.00



309+50.00



309+00.00

HORIZONTAL SCALE IN FEET

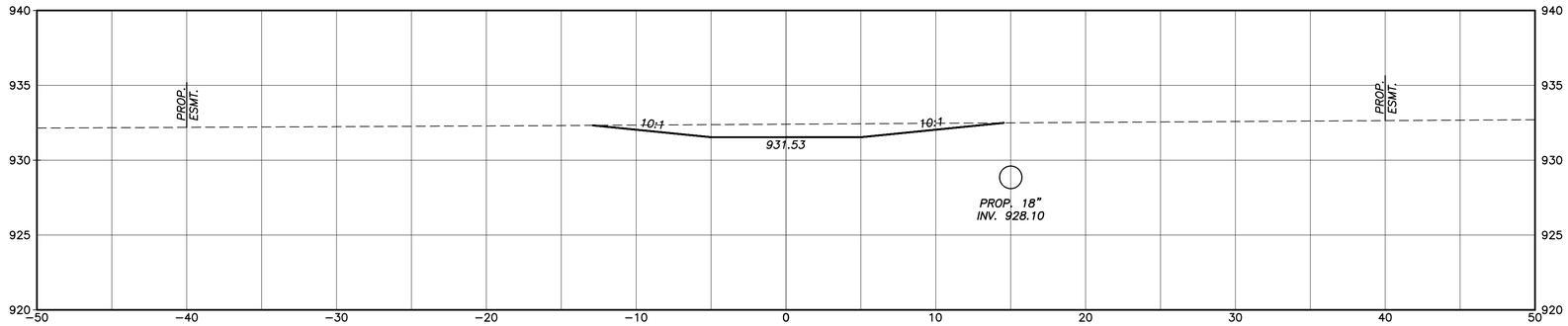
CALCULATED MAB

CHECKED MSL

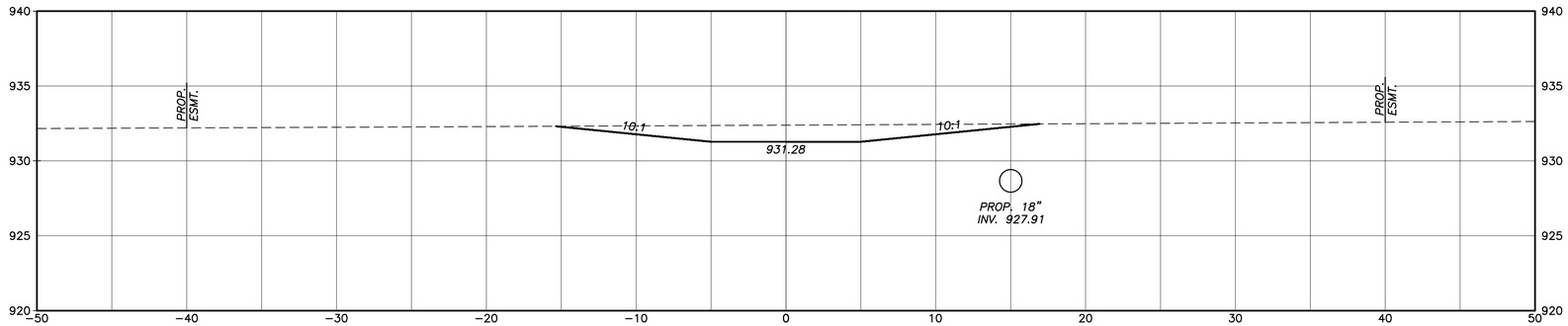
CROSS SECTIONS - AREA 4B
STA. 309+00 TO STA. 310+50

MANDO DITCH DRAINAGE IMPROVEMENT

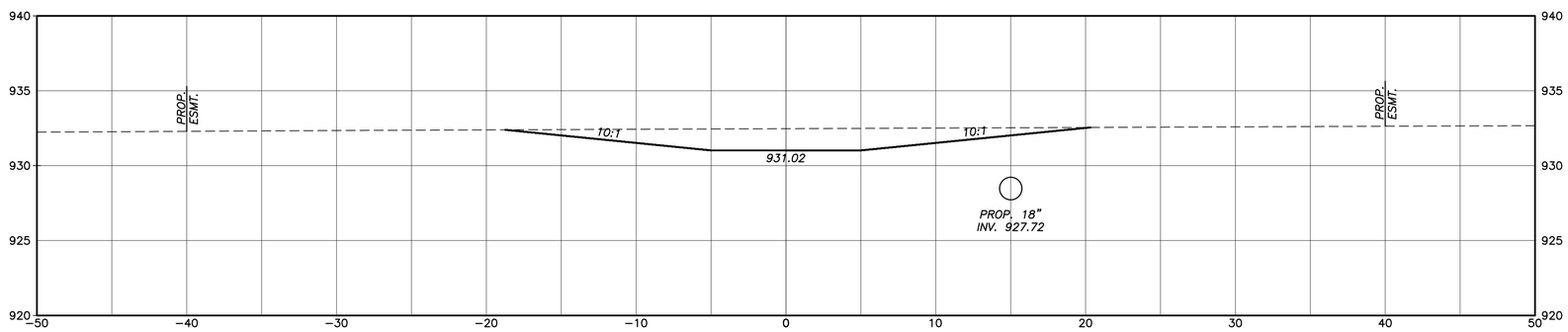
DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-XSECT-AREA4b.dwg
February 16, 2026, 11:34am



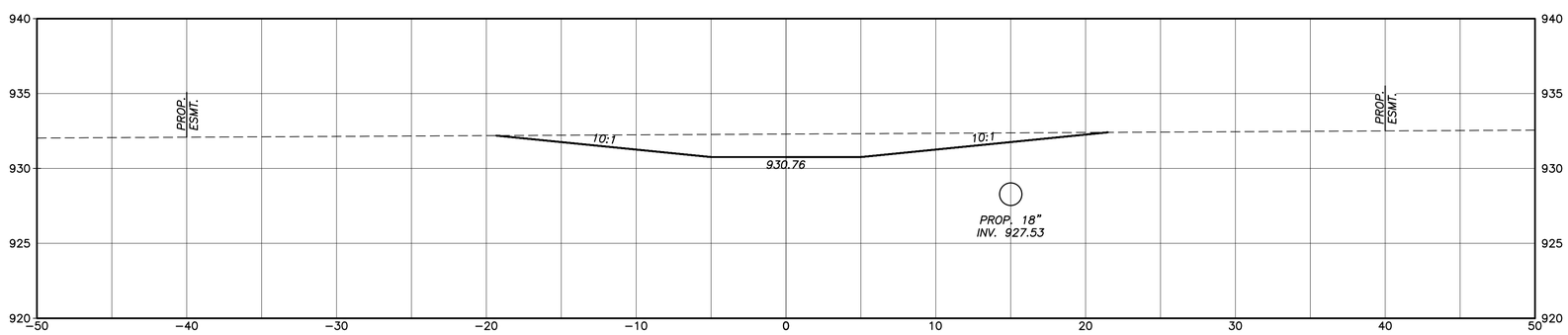
312+50.00



312+00.00



311+50.00



311+00.00

HORIZONTAL SCALE IN FEET

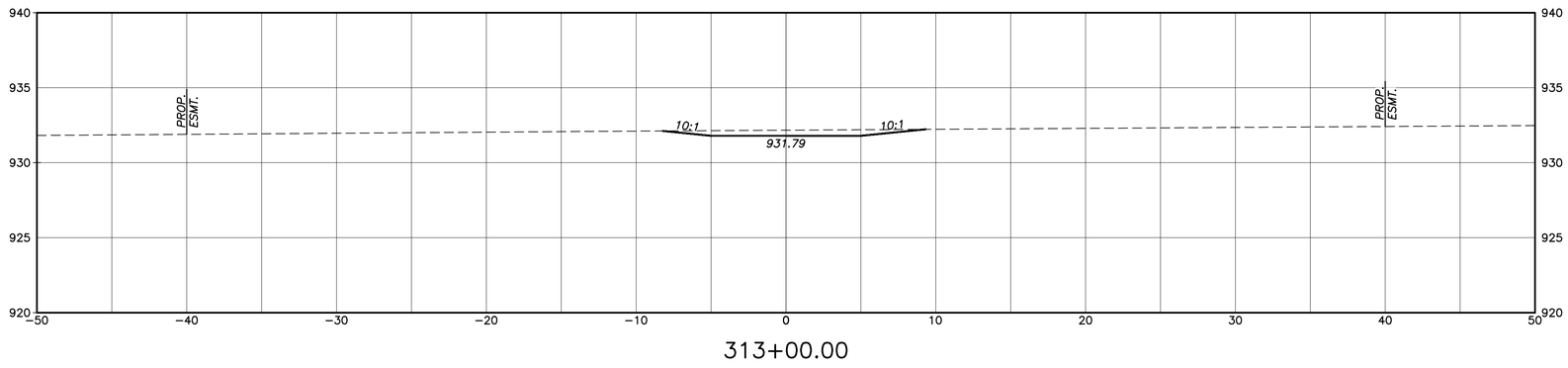
CALCULATED MAB

CHECKED MSL

CROSS SECTIONS - AREA 4B
STA. 311+00 TO STA. 312+50

MANDO DITCH DRAINAGE IMPROVEMENT

DRAWING: P:\20089 FCEO GES\Task 2-Mando\CADD\20089 Mando xx-XSECT-AREA4b.dwg
February 16, 2026, 11:31am



0 5 10
HORIZONTAL SCALE IN FEET

CALCULATED MAB
CHECKED MSL

CROSS SECTIONS - AREA 4B
STA. 313+00

MANDO DITCH DRAINAGE IMPROVEMENT

53
53

DRAWING: P:\20089 FCED GES\Task 2-Mando\CADD\20089 Mando xs-XSECT-AREA4b.dwg
November 11, 2025, 10:49am