

DETAILS & NOTES

GENERAL CONSTRUCTION NOTES

- The construction right-of-way for this project will be 75' right and left of the project centerline unless otherwise marked by the Construction Inspector. Certain items of work may require an extended right-of-way in order to properly complete them. This work should not be done without prior consent of the construction inspector, and any consent given will be specific to a particular item of work. Additional right-of-way for construction access may be identified and approved by the construction inspector as deemed necessary for the completion of the project. All areas disturbed by the construction activities which are outside of the critical path including but not limited to area used for staging, stockpiling of materials, and access will be cleaned and returned to its pre-construction state at the sole responsibility of the contractor as per the requirements of ODOT CMS 104.04.

- The contractor will be responsible for ensuring that all relevant OSHA regulations are met prior to beginning any construction activities.
- Temporary easements for construction access may be identified and approved by the construction inspector as deemed necessary for the completion of the project. Any access easement not connected to the work limits of the project will be returned to its pre-construction state at the sole responsibility of the contractor.

- All ground disturbed by excavation shall be returned to its pre-construction vegetative state and grade unless otherwise directed by the plans and/or the construction inspector.
- Spoil from excavation of the surface drain (NRCS #608) and open channel (NRCS #582) construction shall be exported from the site at the expense of the contractor. Payment for spoil and debris disposal will be considered as included in payment for NRCS #608 and NRCS #582 items. The contractor is free to negotiate with landowners to dispose of spoil and debris materials on-site provided that any disposal site is outside of the work limits for this project. Delaware County will not be considered party to any such agreements made between the contractor and landowners.

- Unless otherwise noted on these plans or instructed by the construction inspector, debris from clearing and snagging within the typical cross sections is to be disposed of off-site by the contractor unless permission to place brush and logs adjacent to the construction right-of-way is granted by the landowners. Payment for hauling and disposal shall be considered part of payment for NRCS #326-Clearing and Snagging. For the purposes of on-site disposal, a log will be defined as "a section of a tree bole (the main trunk of the tree) at least 8 feet long, not containing a fork, sufficiently straight and sound enough to yield at least an 8-foot board. Anything not considered a log by the above definition will be considered brush.

- Pipe quantities listed on the Plan and Profile views represent cumulative quantities for both perforated and non-perforated pipe. The quantity table shall be the reference for the specific amounts of perforated and non-perforated pipe. The applicable specification and the instructions of the construction inspector will govern the placement of each type of pipe. All lineal quantities of pipe shall be considered to be inclusive of all necessary elbows, couplers, and other fittings unless otherwise stated by these plans and/or the bid documents.

- All lateral tile cut by the installation of the new tile shall be reconnected to the new tile at the point where they are cut or collected with a submain (size to be determined) and outletted into the new tile at the next downstream breather as specified by the construction inspector and per the requirements of NRCS #606-Subsurface Drain. Any connections made to any tile included on the Drainage Maintenance Program after completion of the project will require the approval of the Drainage Maintenance Department.

- Seeding and Mulching will be done as per the specifications of ODOT #659 with the following stipulations/exceptions:
 - Seed mixture to be used will be Class-Type #1.
 - Soil testing will not be required.
 - Liming will not be required.
 - Compost will not be required.
 - The use of straw mulch will be acceptable for the entire project.
 - Watering will not be required.
 - Mulch anchoring will not be required except where specified.

- Linear alignments of all surface and subsurface features may be modified to fit site specific conditions at the discretion of the construction inspector.

- The contractor shall contact the Delaware County Engineer's Office a minimum of seven (7) working days prior to beginning any work within the road right-of-way. It will be the sole responsibility of the contractor to secure any permits necessary for work within the road right-of-way.

- All trees to be saved will be marked prior to the start of construction by the construction inspector. Markings will be done in the manner requested by the contractor. Unless specifically designated as "Save" or "Do not disturb" in the plans or by the construction inspector, remove all trees and stumps within the cross section under the lump sum bid for NRCS Item #326-Clearing and Snagging. Trees marked to be saved shall be protected with protective cover such as filter fabric or other suitable material. Replacement of any tree damaged or removed that was otherwise marked to be saved will be the responsibility of the contractor.

- Scale bars as shown on the Plan Views shall be considered to be accurate for surveyed features including, but not necessarily limited to, project centerline, tile lines, and benchmark locations. Property lines, drive centerlines, building footprints, and road centerlines as shown on the Plan Views were derived from other sources and are shown for general reference only and should not be used to scale the location of any constructed feature.

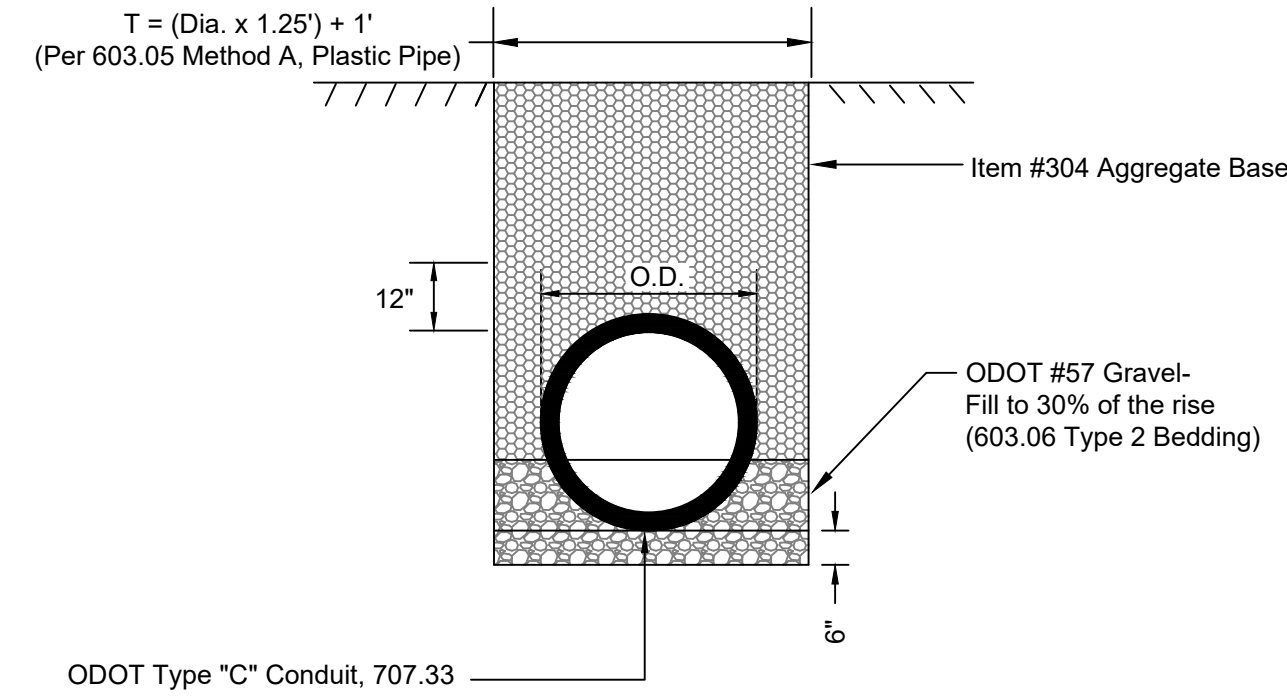
- Excavation will/may be required to verify design elevations including, but not limited to, existing subsurface drain inverts. These excavations will be considered incidental to the overall construction of the project per ODOT CMS 105.02.

Temporary & Permanent Easements

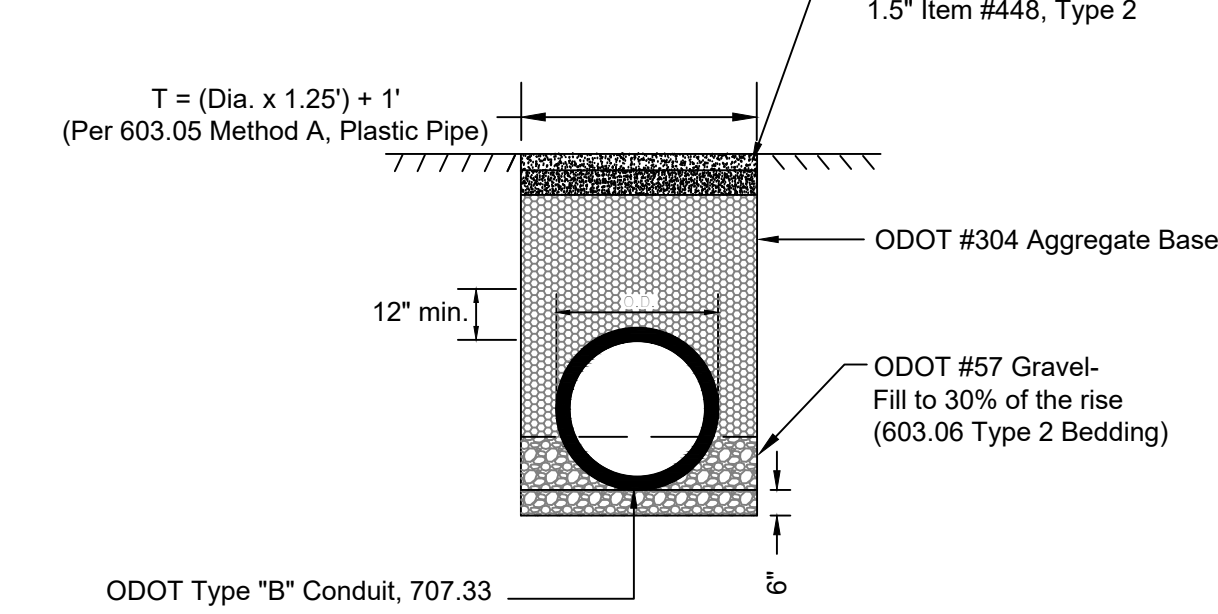
- The width of the temporary easement for construction shall be seventy-five feet as measured from the top of bank of the open channel, seventy-five feet as measured from the top of bank of the surface drain, and seventy-five feet as measured from the centerline of the subsurface drain where no surface drain cross-section is specified.
- A permanent easement will be established for maintenance and cleaning of the constructed improvement per ORC 6137.12. The width of the permanent easement will be based on the type of improvement constructed. For Open Channel and Surface Drain Swales, the permanent easement will be twenty-five feet from the top of bank on both sides of the channel, measured at right angles thereto. For closed ditches (subsurface drain installation only), the permanent easement shall be a maximum of eighty feet centered on the centerline of the improvement. The permanent easement for access shall be a maximum width of thirty feet and length as necessary to connect to the improvement as shown on these drawings.

SUBSURFACE DRAIN (NRCS #606)

STONE DRIVE, SINGLE PIPE ODOT 611, TYPE "B" GRAVEL DRIVE, 707.33 INSTALLATION

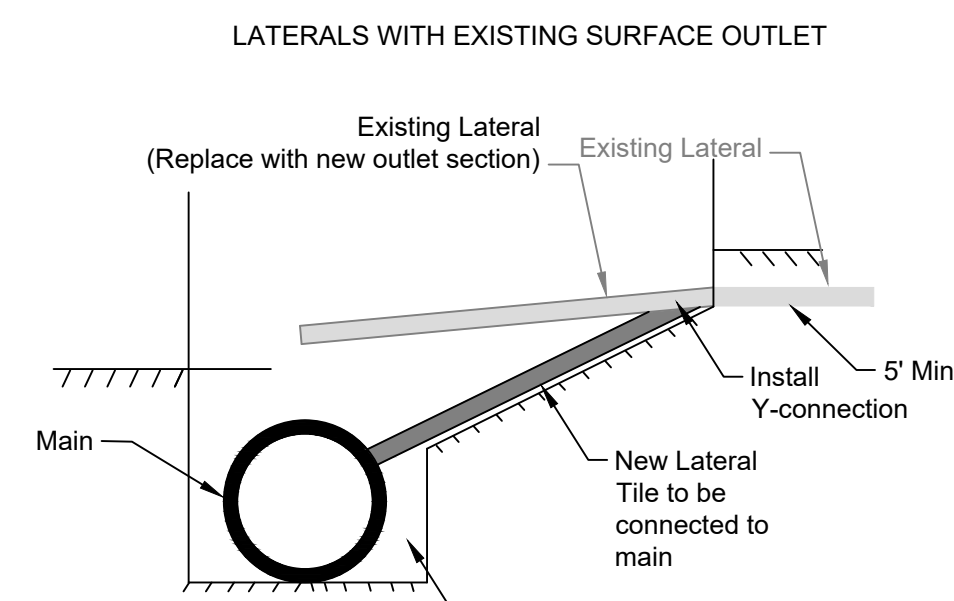
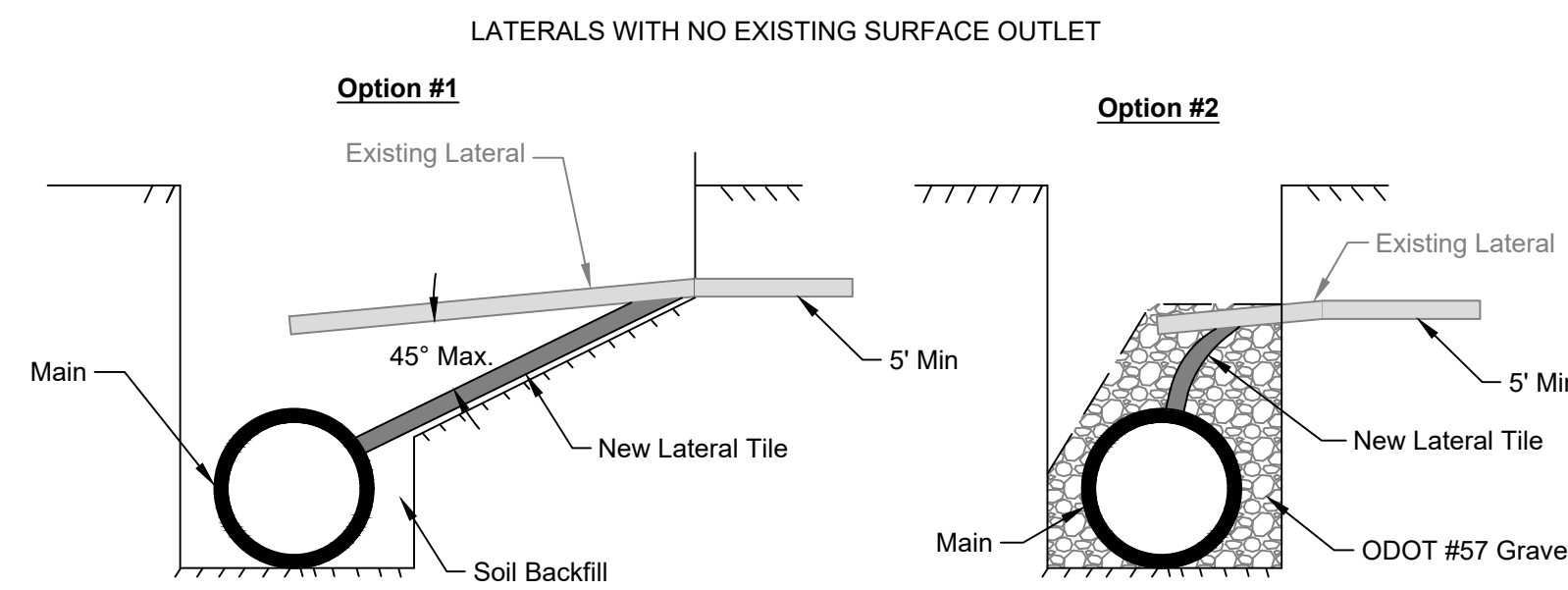


DRIVE CUT INSTALLATION DETAIL ODOT 611, TYPE "B" , 707.33 INSTALLATION

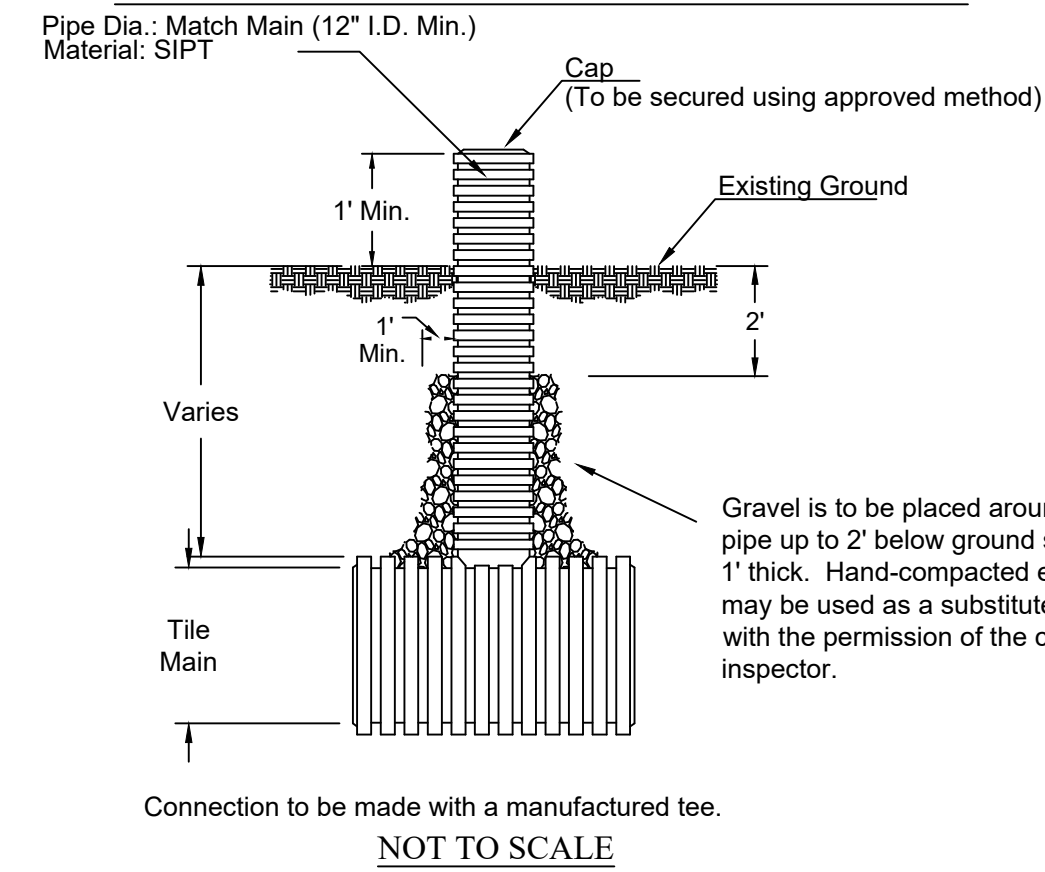


TYPICAL SUBSURFACE DRAIN LATERAL CONNECTION DETAILS (NRCS #606)

NOT TO SCALE

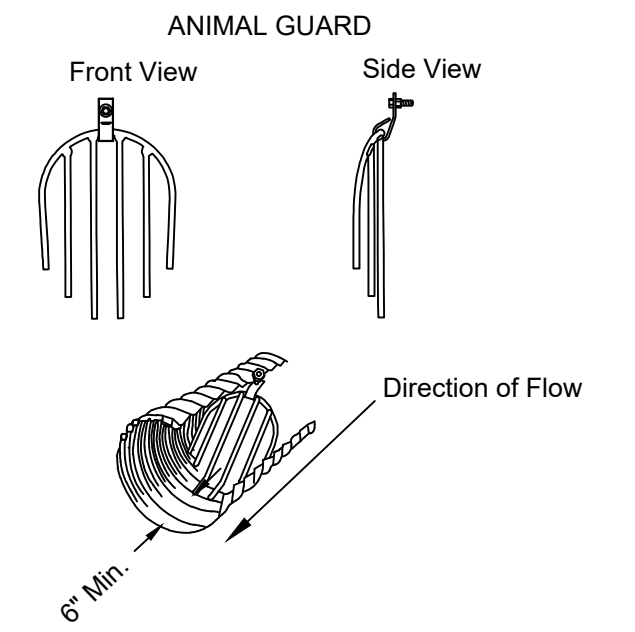


INSPECTION WELL DETAIL



WEBSTER-ARNOLD #355
DRAINAGE IMPROVEMENT PROJECT
ENGINEERING DRAWINGS

2
8



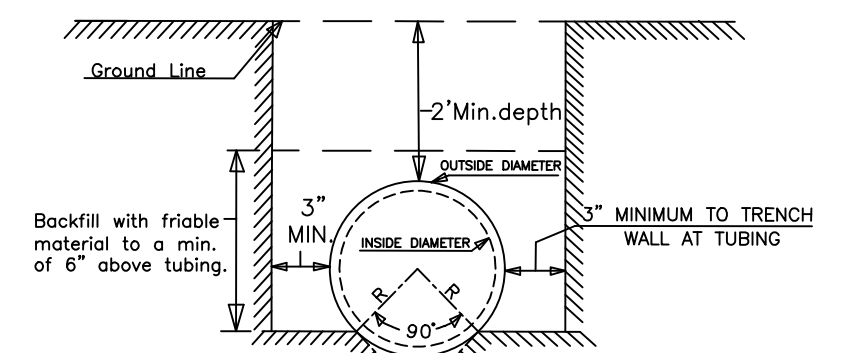
NOTES

- All tile shall be placed according to the Typical Subsurface Drain Installation Detail and the requirements of NRCS Specification #606.
- Removal of residual lateral tile regardless of size and/or material shall be considered part of the payment for this item.
- All connections shall be done using manufactured connectors.
- Any quantity of gravel used to make connections utilizing Option #2 shall be considered part of the payment for this item. Determining the quantity of gravel needed for making connections using this option shall be the sole responsibility of the contractor. Cleanup of gravel stockpile areas shall be as per the requirements of ODOT CMS 104.04.
- The contractor shall note on a dedicated copy of the plans, as provided by the construction inspector, the station, size, material, and connection option used to make all lateral connections.
- Lateral types regarding having or not having a surface outlet will be marked by the construction inspector.

Note:

Tile Main Breather shall have 20 evenly spaced 1 inch perforations per foot in the riser section. The surrounding ground will be graded to drain to the structure as per the instructions of the Construction Supervisor.

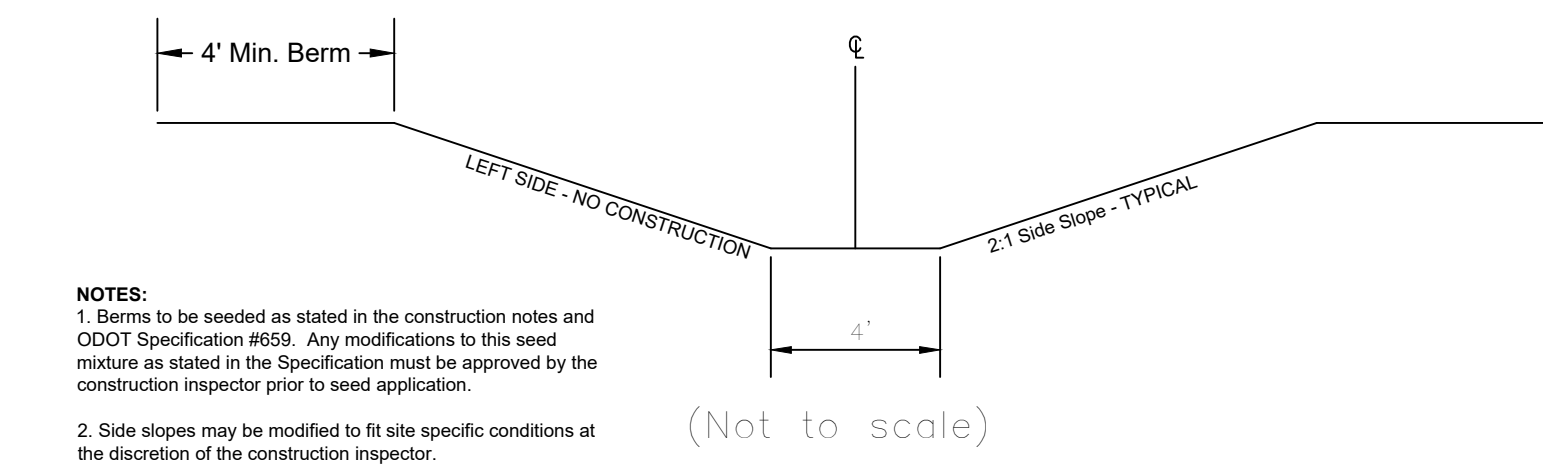
NRCS 606 PIPE INSTALLATION DETAIL



Note: Use trapezoidal or semi-circular groove for tubing greater than 8\"/>

Open Channel (NRCS #582) - STA 121+25 - 130+40

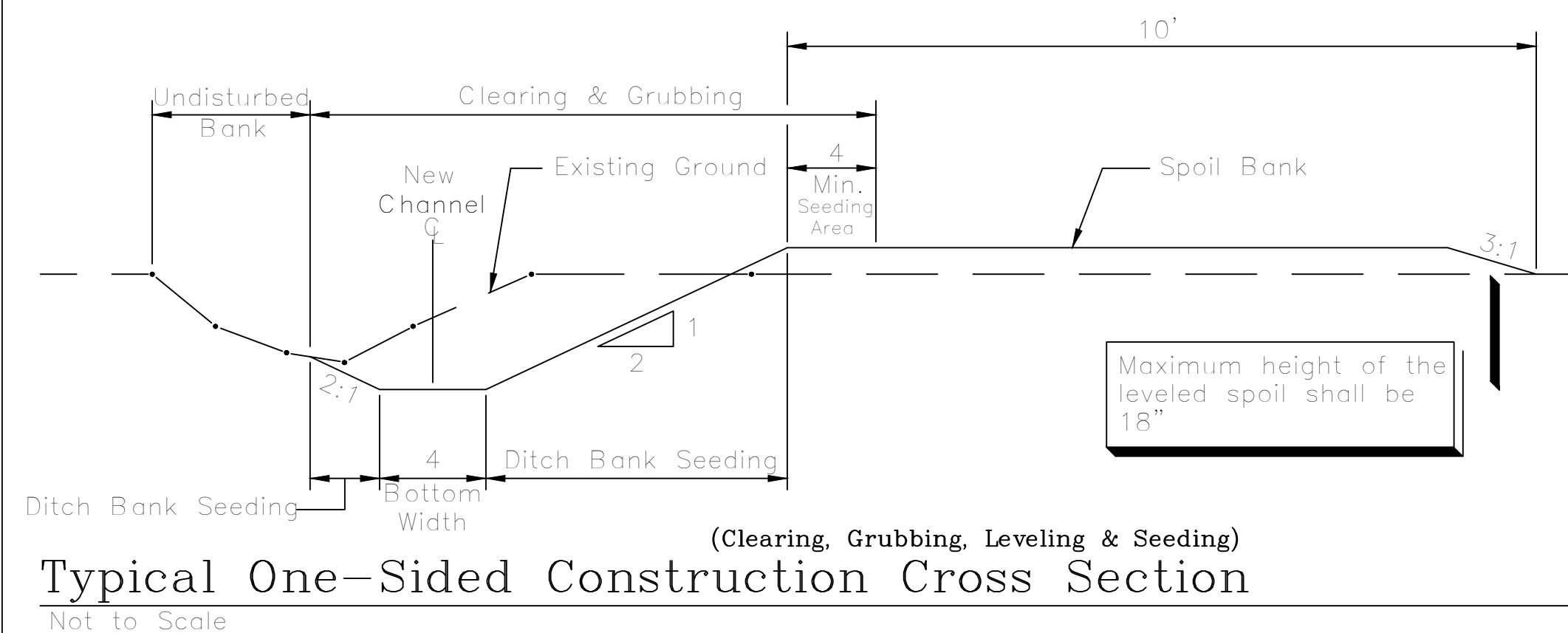
TYPICAL OPEN CHANNEL CROSS SECTION



NOTES:

1. Berms to be seeded as stated in the construction notes and ODOT Specification #659. Any modifications to this seed mixture as stated in the Specification must be approved by the construction inspector prior to seed application.

2. Side slopes may be modified to fit site specific conditions at the discretion of the construction inspector.



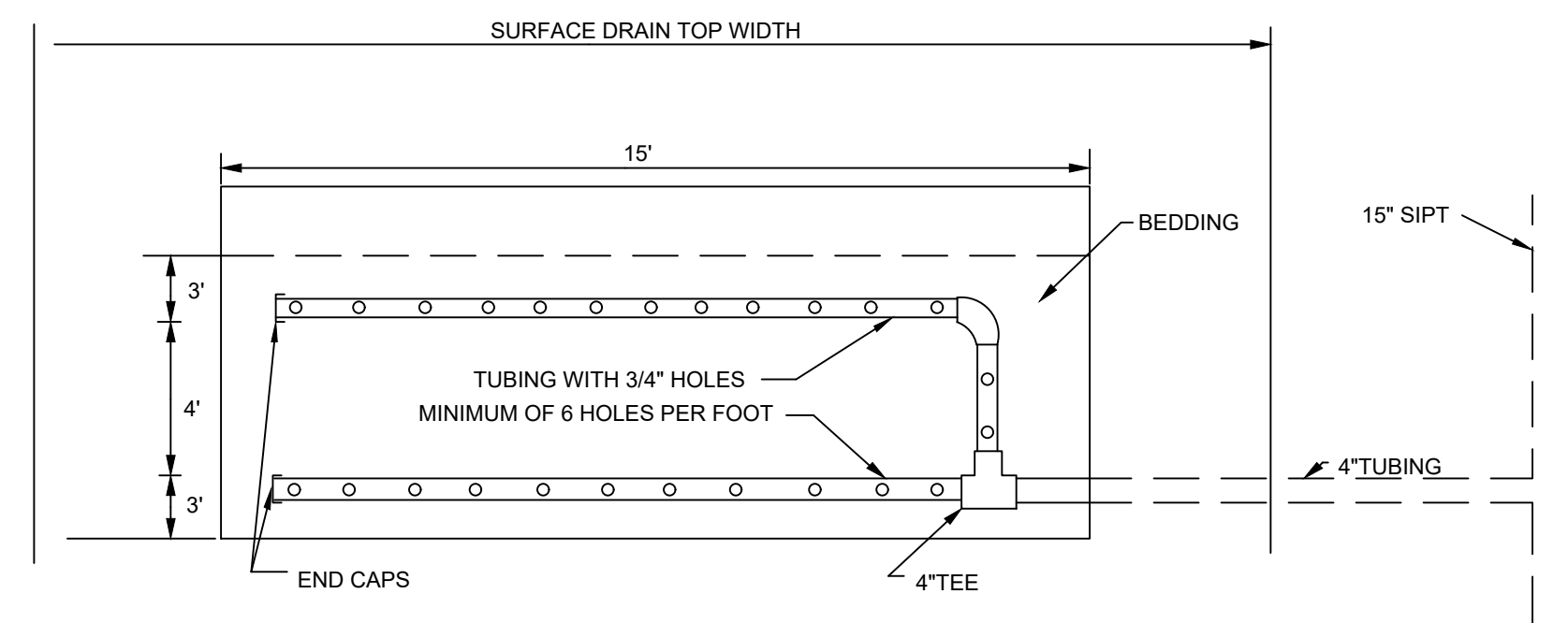
Typical One-Sided Construction Cross Section

Not to Scale

Blind Inlet (NRCS #620) - STA 115+10

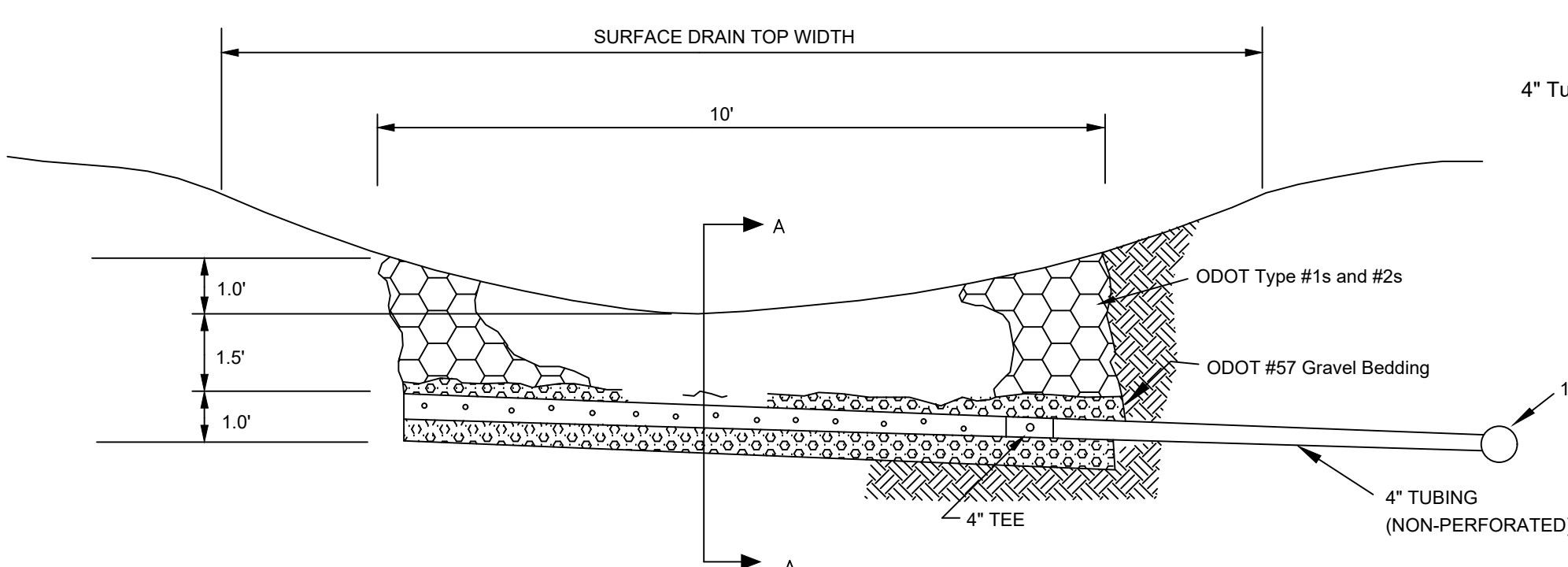
Typical Plan View

(NOT TO SCALE)



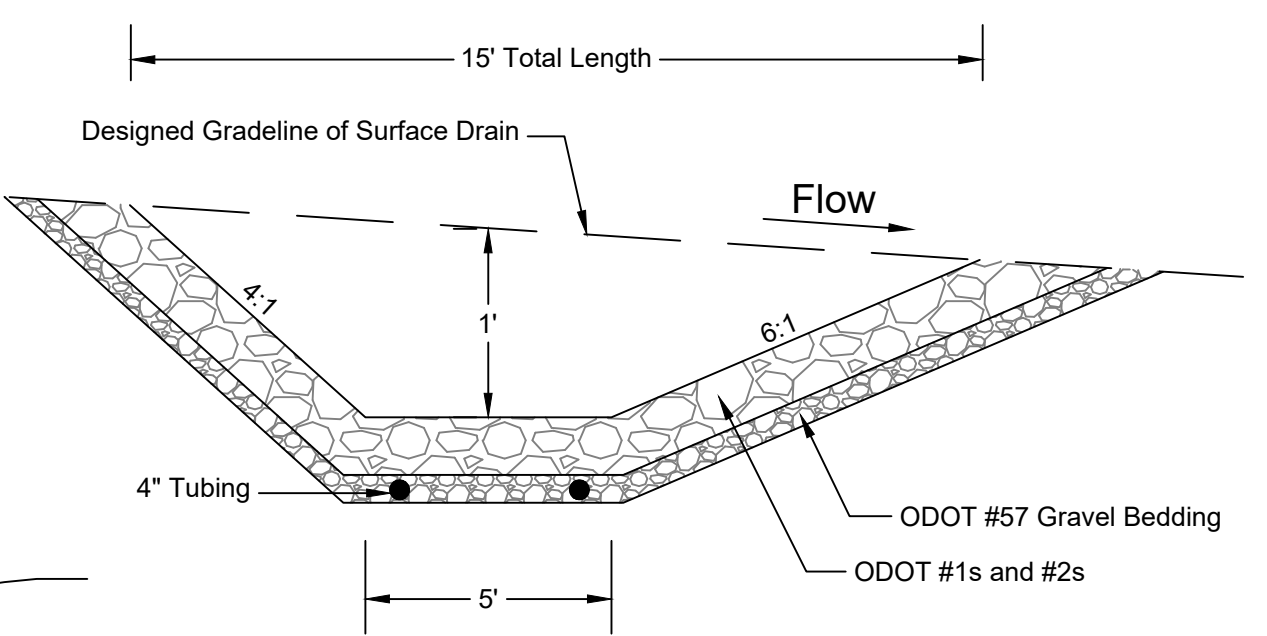
Typical Cross Section

(NOT TO SCALE)



Typical Profile View

(NOT TO SCALE)



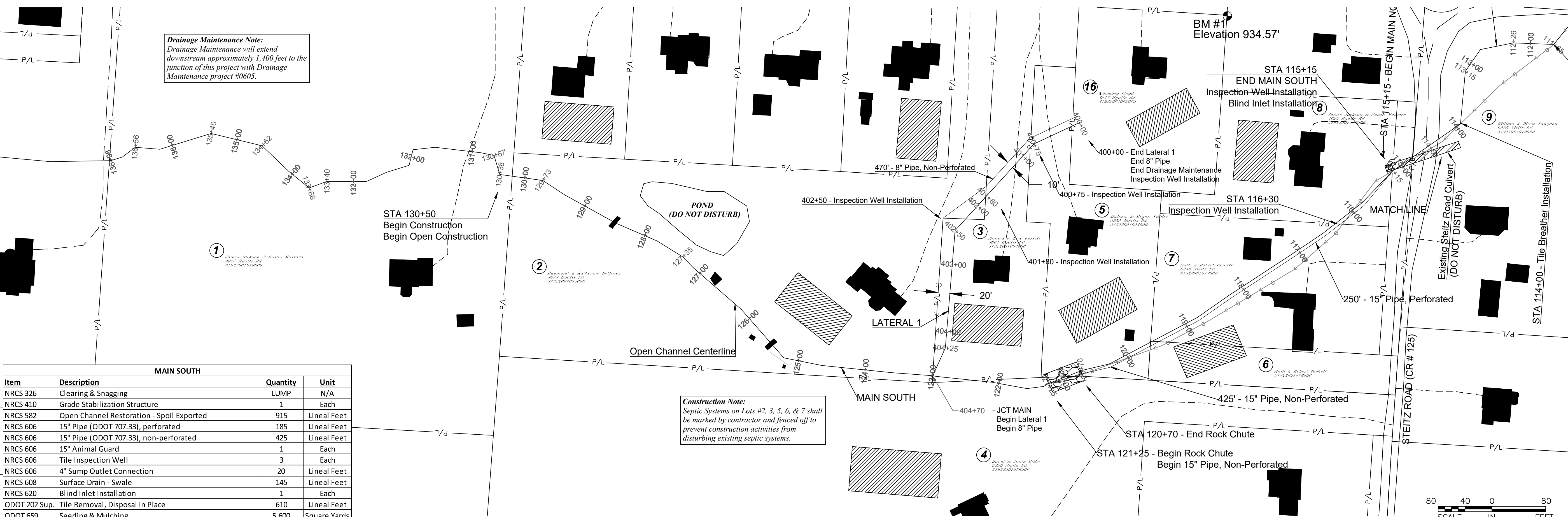
MAIN SOUTH PLAN VIEW

Drainage Maintenance Note:
Drainage Maintenance will extend downstream approximately 1,400 feet to the junction of this project with Drainage Maintenance project #0605.

LEGEND

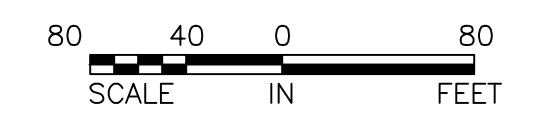
- Existing SSD
- Proposed Mains
- Fence
- Road
- Driveway
- Benchmark

Construction Note:
Sump Pump Pipe at approx. STA 116+15 shall be connected to new 15" Pipe

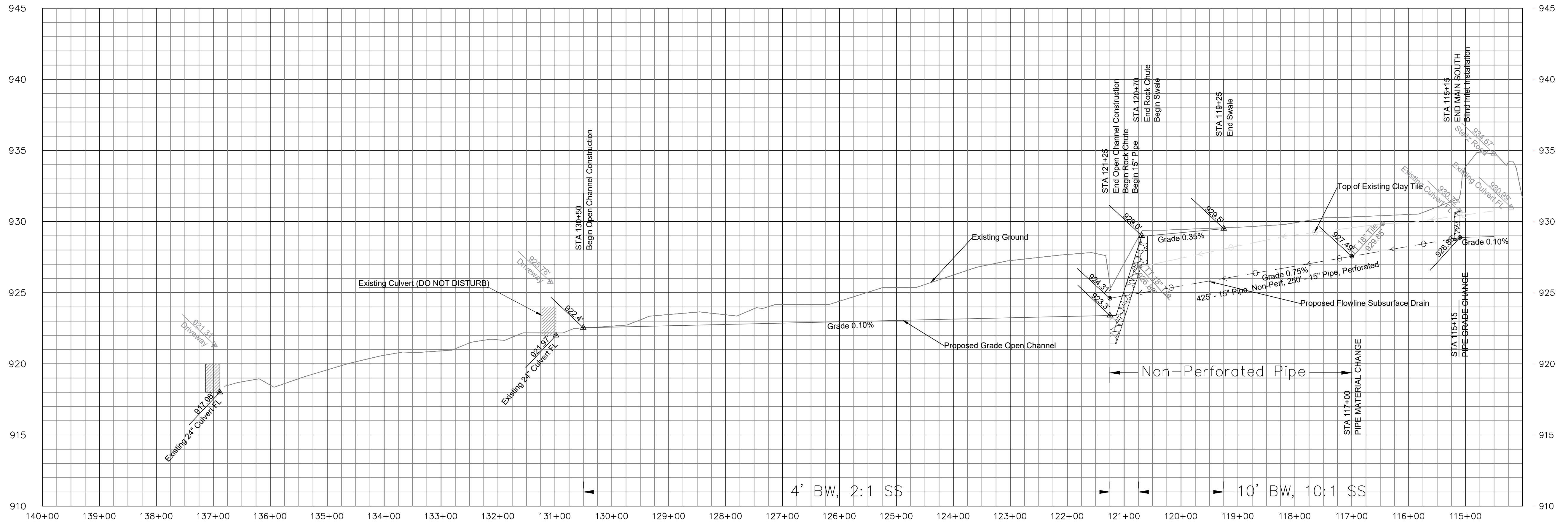


MAIN SOUTH			
Item	Description	Quantity	Unit
NRCS 326	Clearing & Snagging	LUMP	N/A
NRCS 410	Grade Stabilization Structure	1	Each
NRCS 582	Open Channel Restoration - Spoil Exported	915	Lineal Feet
NRCS 606	15" Pipe (ODOT 707.33), perforated	185	Lineal Feet
NRCS 606	15" Pipe (ODOT 707.33), non-perforated	425	Lineal Feet
NRCS 606	15" Animal Guard	1	Each
NRCS 606	Tile Inspection Well	3	Each
NRCS 606	4" Sump Outlet Connection	20	Lineal Feet
NRCS 608	Surface Drain - Swale	145	Lineal Feet
NRCS 620	Blind Inlet Installation	1	Each
ODOT 202 Sup.	Tile Removal, Disposal in Place	610	Lineal Feet
ODOT 659	Seeding & Mulching	5,600	Square Yards

Construction Note:
Septic Systems on Lots #2, 3, 5, 6, & 7 shall be marked by contractor and fenced off to prevent construction activities from disturbing existing septic systems.



MAIN SOUTH PROFILE



4' BW, 2:1 SS

Non-Perforated Pipe

Proposed Flowline Subsurface Drain

Grade 0.10%

Grade 0.35%

Grade 0.75%

Grade 0.10%

Grade 0.10%

Grade 0.10%

Grade 0.10%

Grade 0.10%

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Grade 0.10%

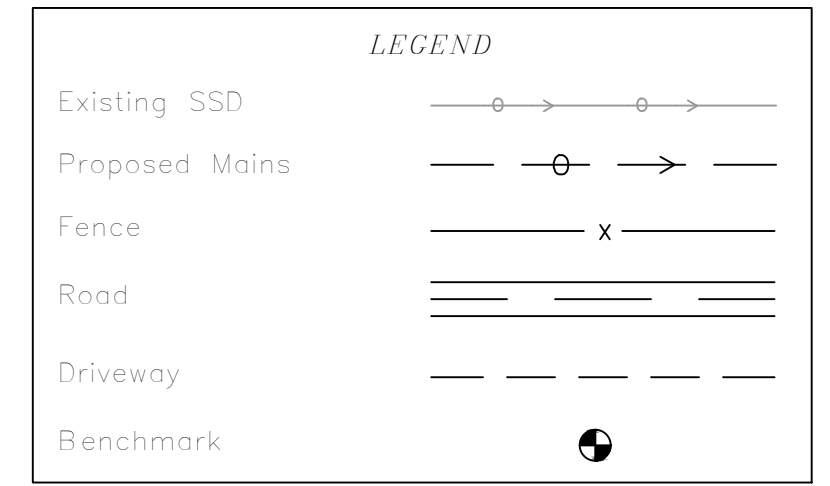
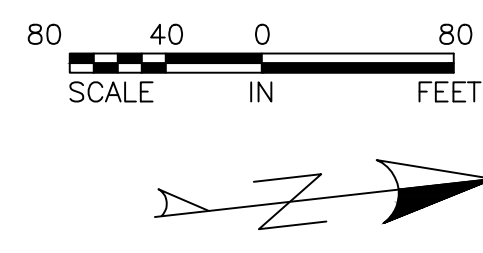
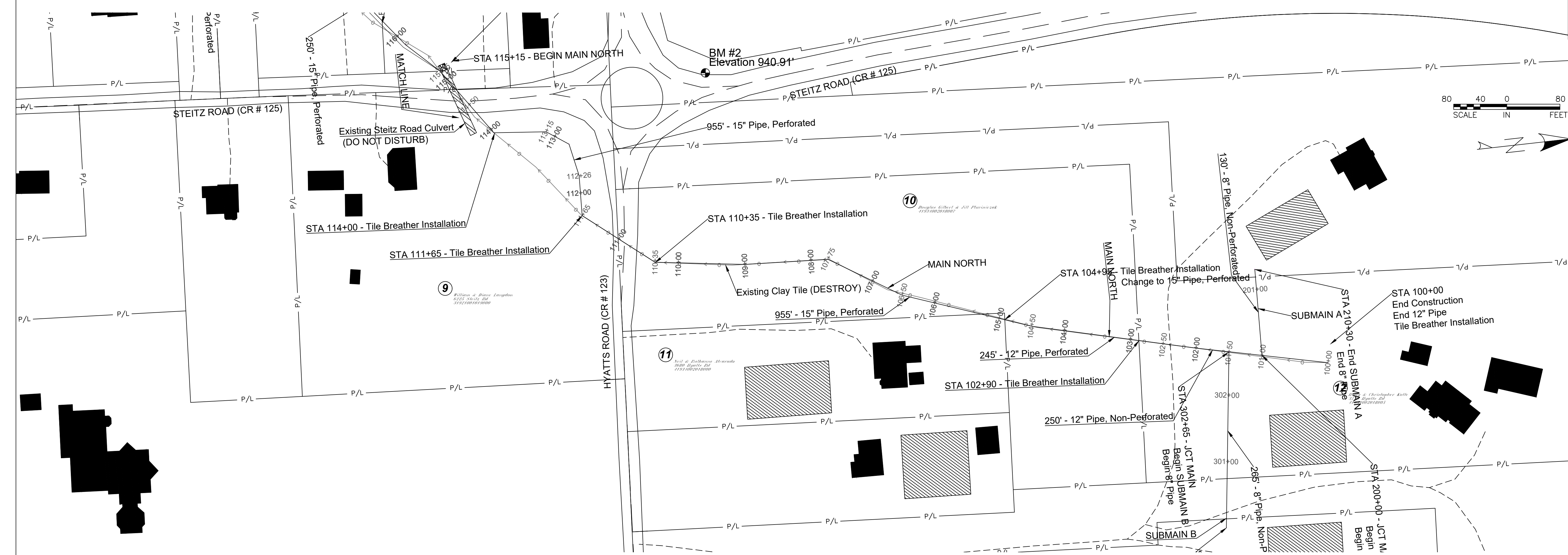
Grade 0.10%

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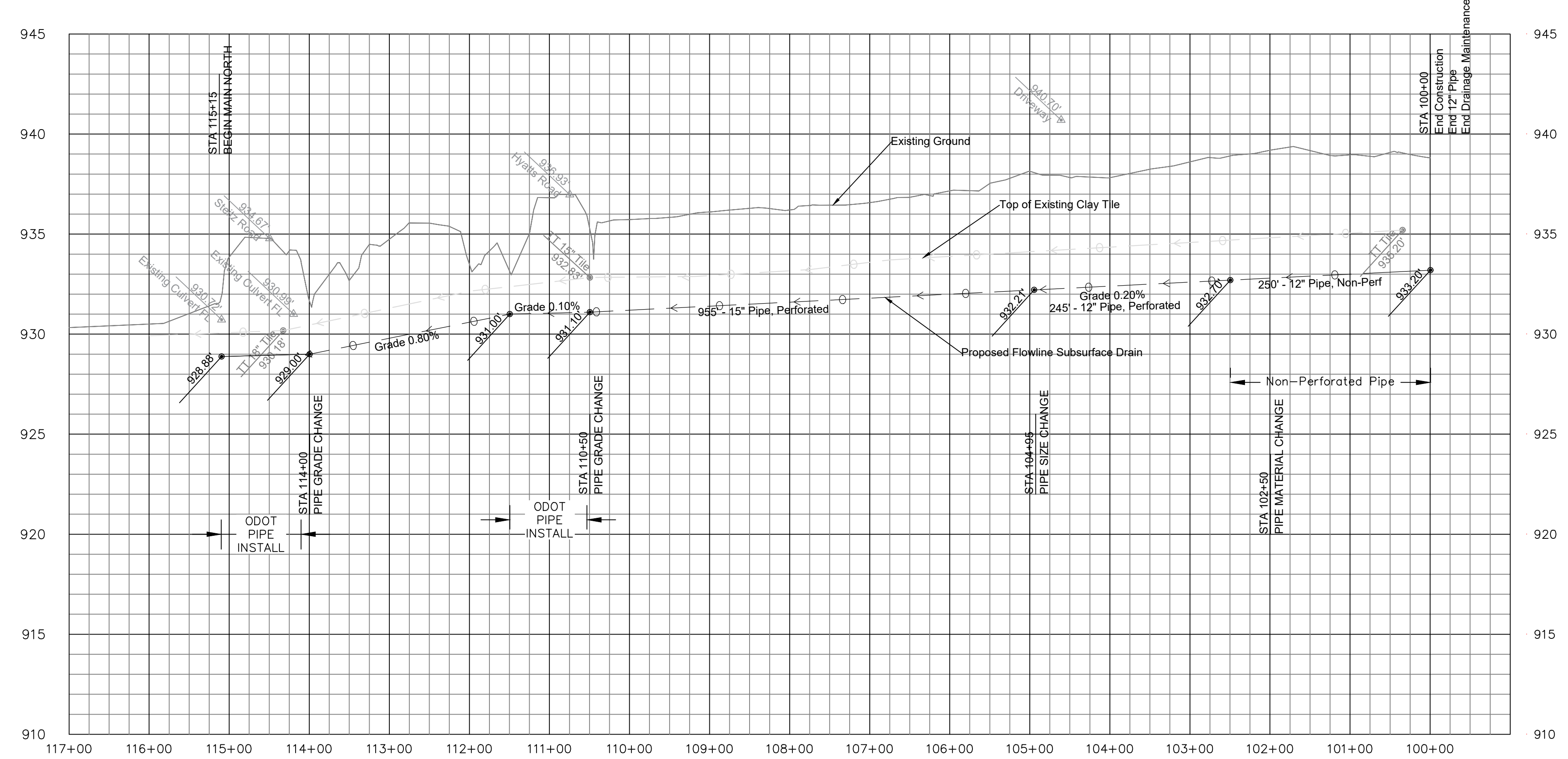
Grade 0.10%

MAIN NORTH PLAN VIEW



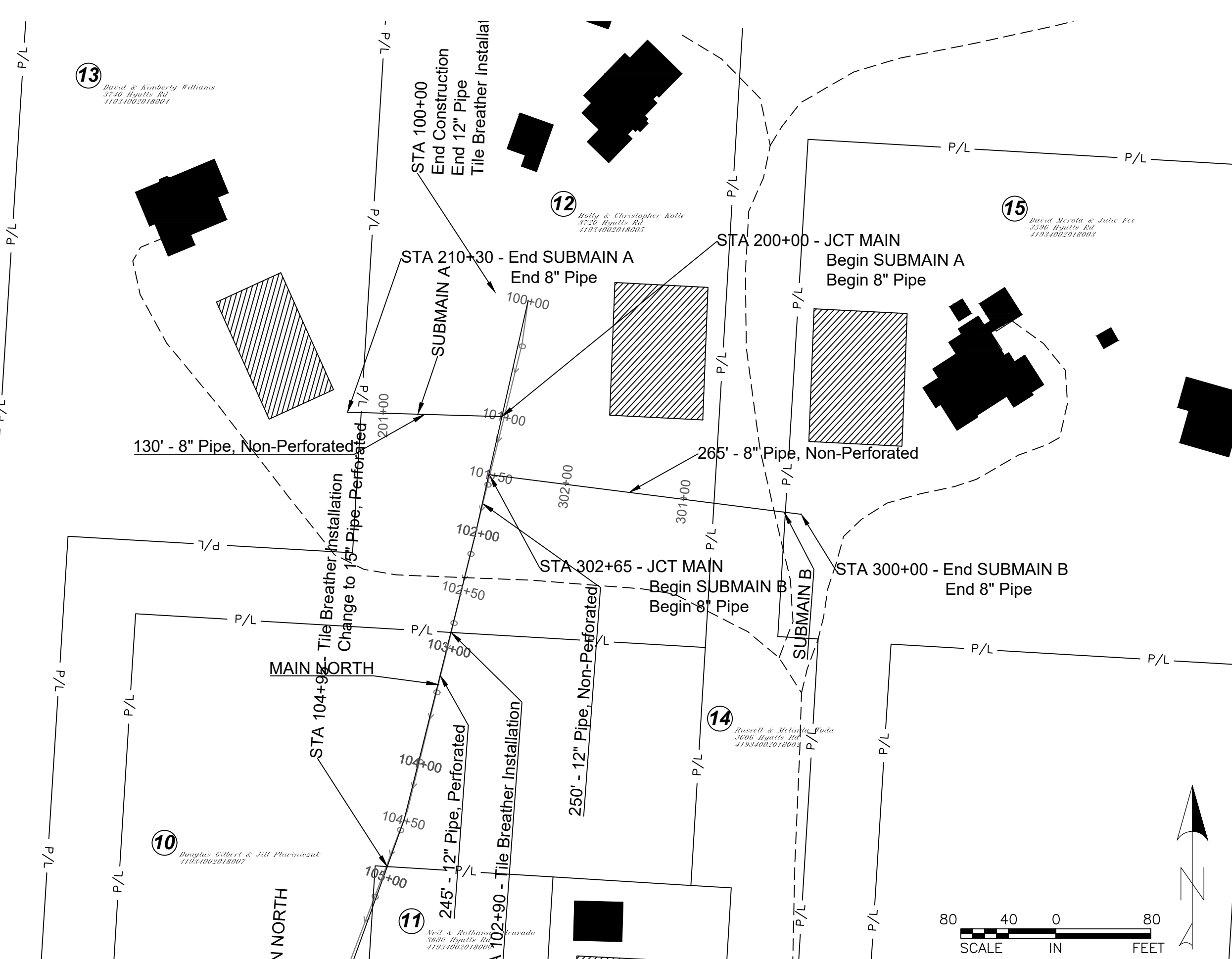
NOTE:
Submain A and Submain B,
see Sheet 5 of 8

MAIN NORTH PROFILE

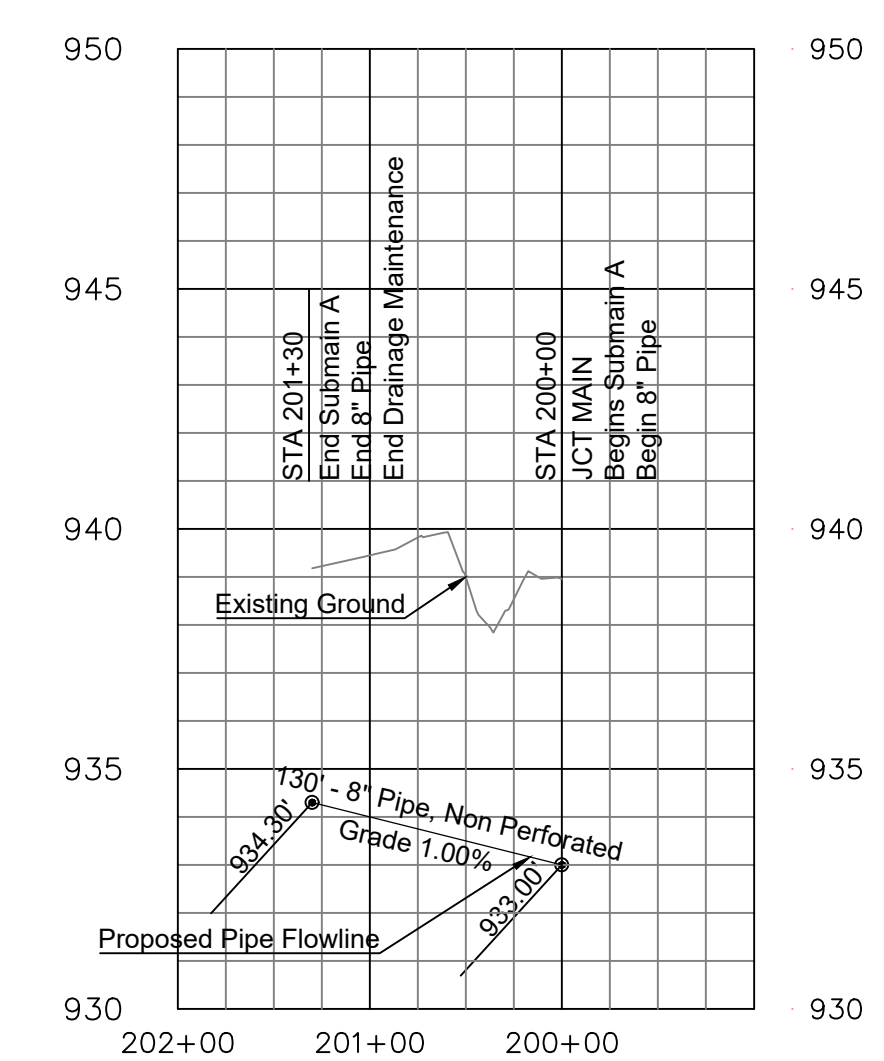


MAIN NORTH			
Item	Description	Quantity	Unit
NRCS 606	15" Pipe (ODOT 707.33), perforated	755	Lineal Feet
NRCS 606	12" Pipe (ODOT 707.33), non-perforated	250	Lineal Feet
NRCS 606	12" Pipe (ODOT 707.33), perforated	245	Lineal Feet
NRCS 606	8" Pipe (ODOT 707.33), non-perforated	395	Lineal Feet
NRCS 606	Tile Inspection Well	12	Each
ODOT 202 Sup.	Tile Removal, Disposal in Place	1,035	Lineal Feet
ODOT 611	15" Pipe (ODOT 707.33), Type B Installation, Paved Road	200	Lineal Feet
ODOT 659	Seeding & Mulching	5,150	Square Yards

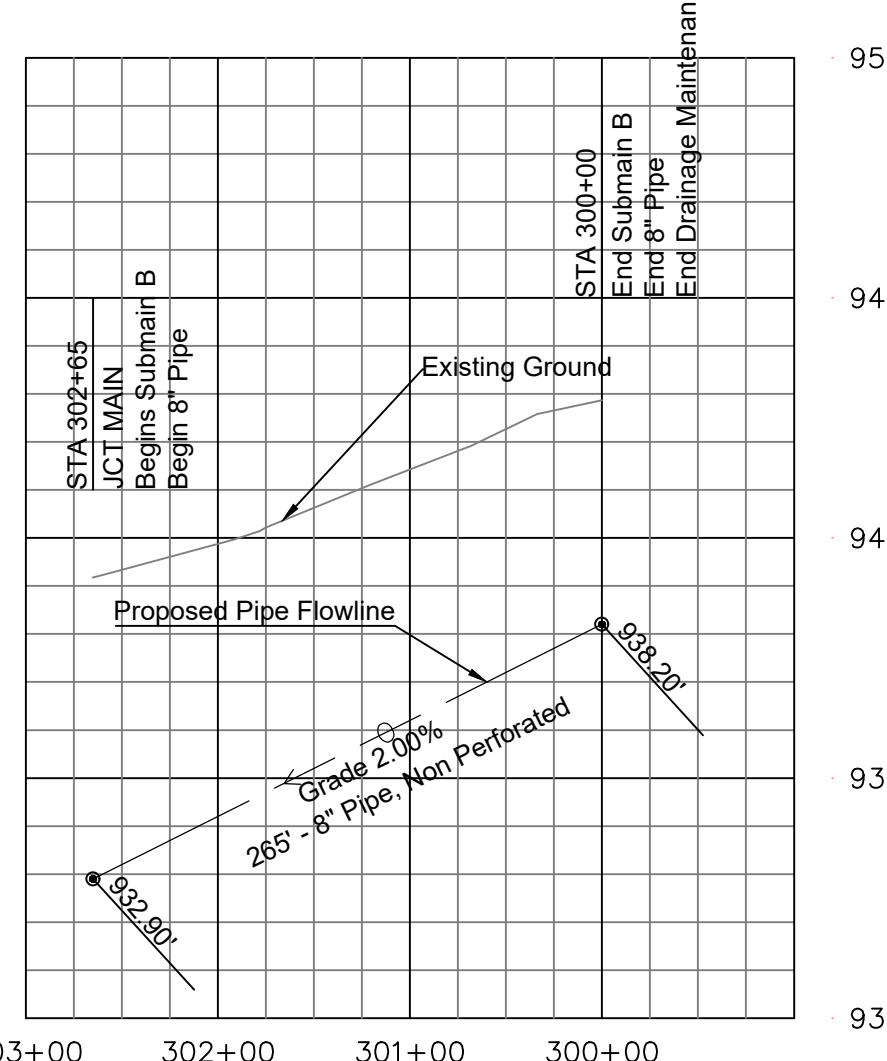
SUBMAINS A & B PLAN VIEW



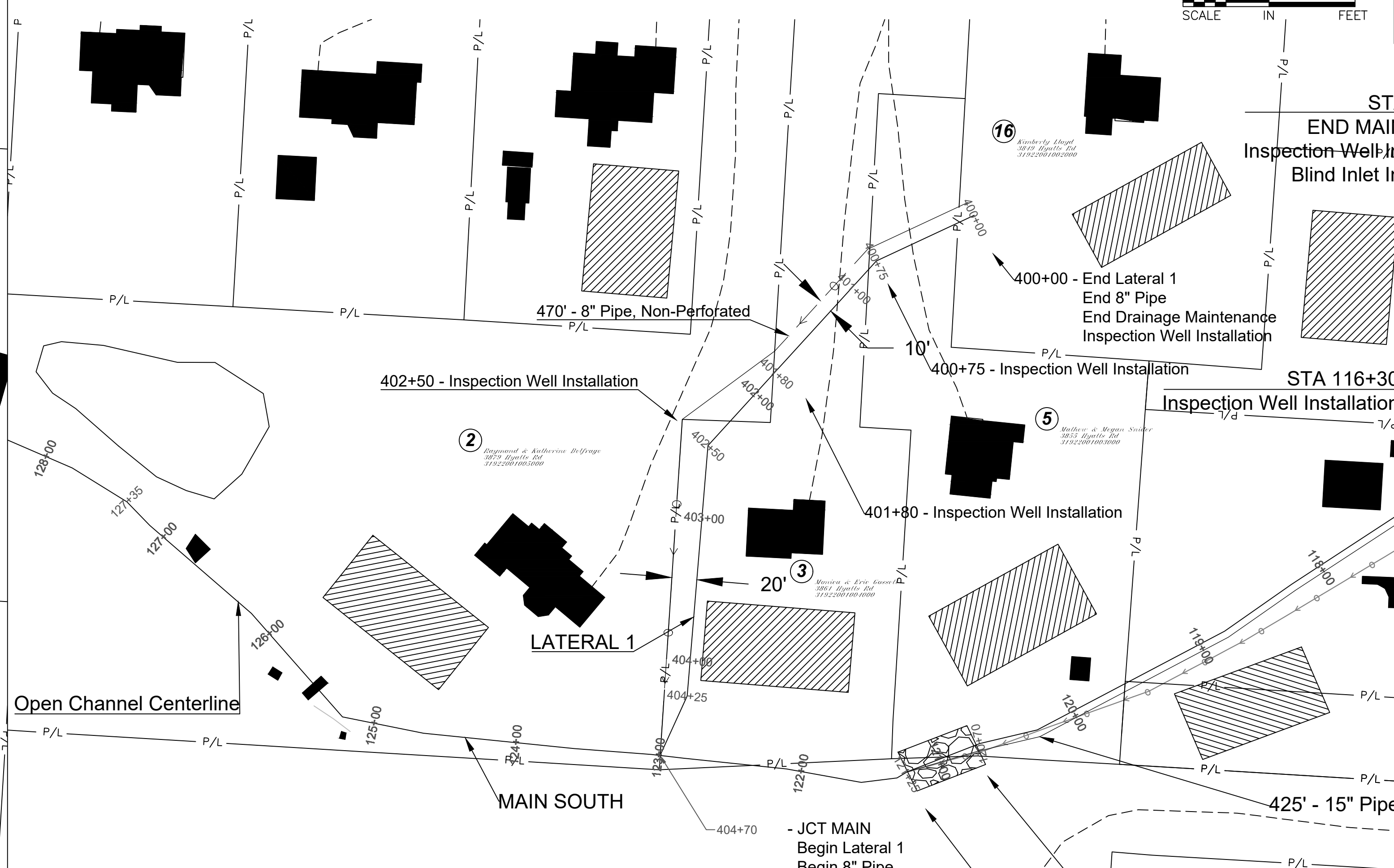
SUBMAIN A PROFILE



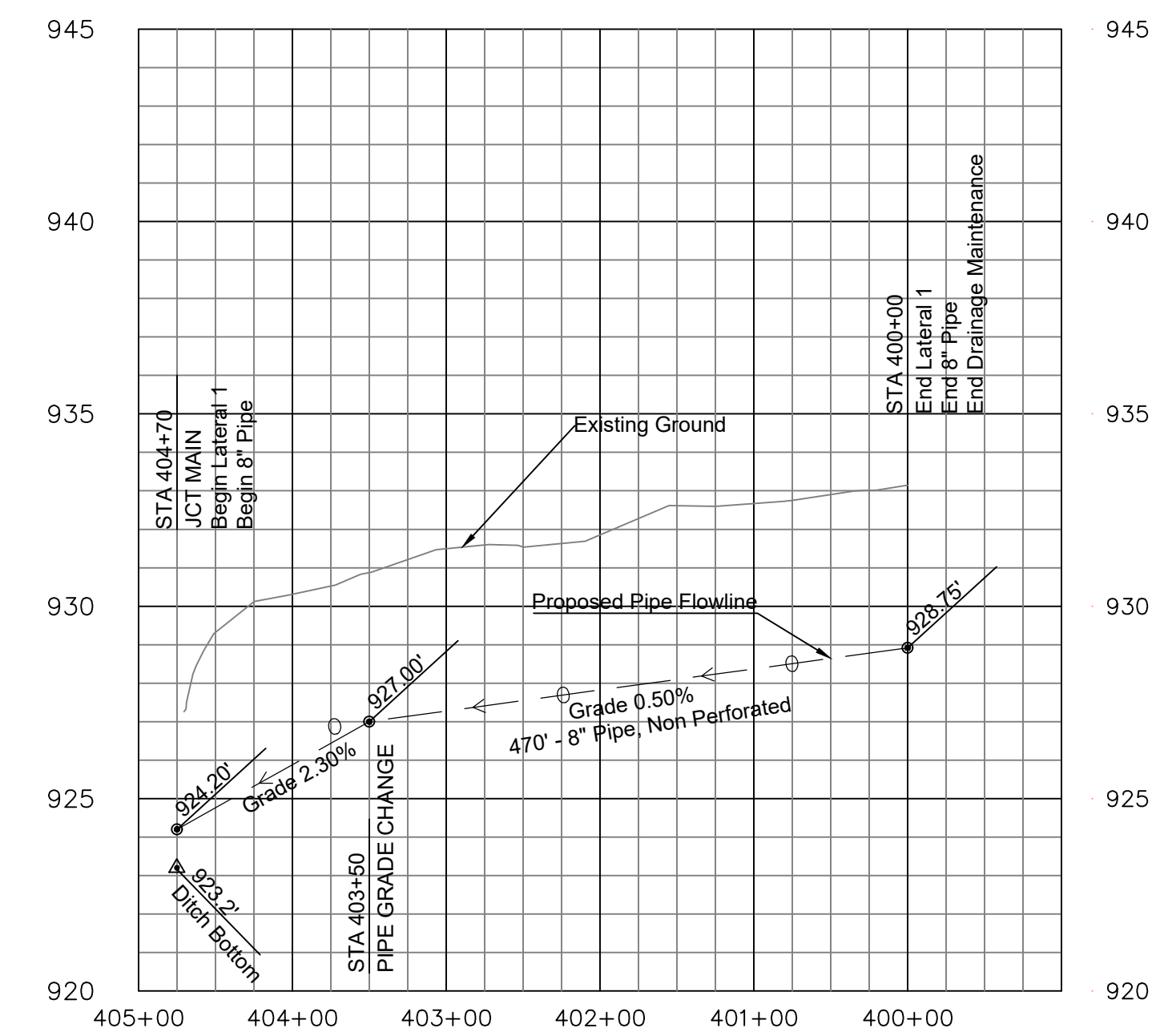
SUBMAIN B PROFILE



LATERAL 1 PLAN VIEW PLAN VIEW



LATERAL 1 PROFILE

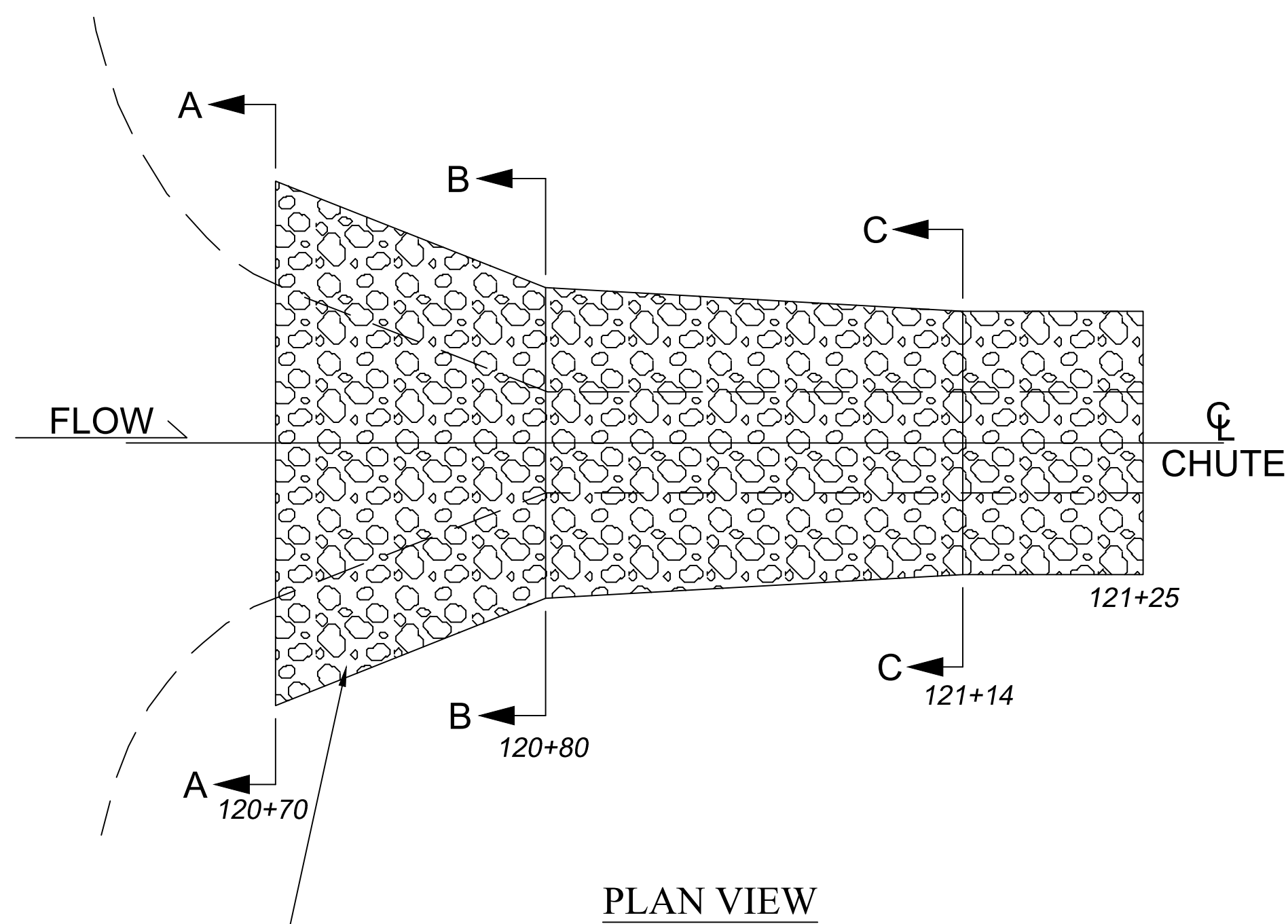


LEGEND

Existing SSD	
Proposed Mains	
Fence	
Road	
Driveway	
Benchmark	

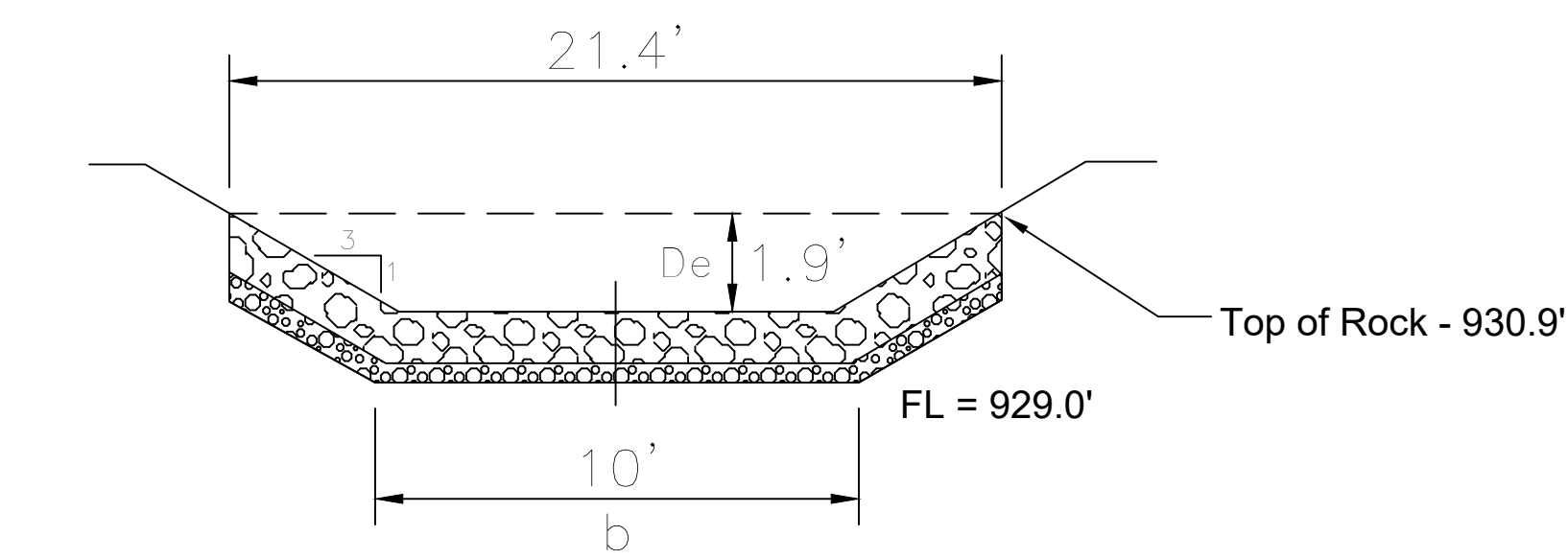
LATERAL #1			
Item	Description	Quantity	Unit
NRCS 606	8" Pipe (ODOT 707.33), non-perforated	470	Lineal Feet
NRCS 606	Tile Inspection Well	4	Each
ODOT 659	Seeding & Mulching	1,100	Square Yards

NOTE:
Estimated quantities for Submain A and Submain B are included in the estimated quantities for Main North.

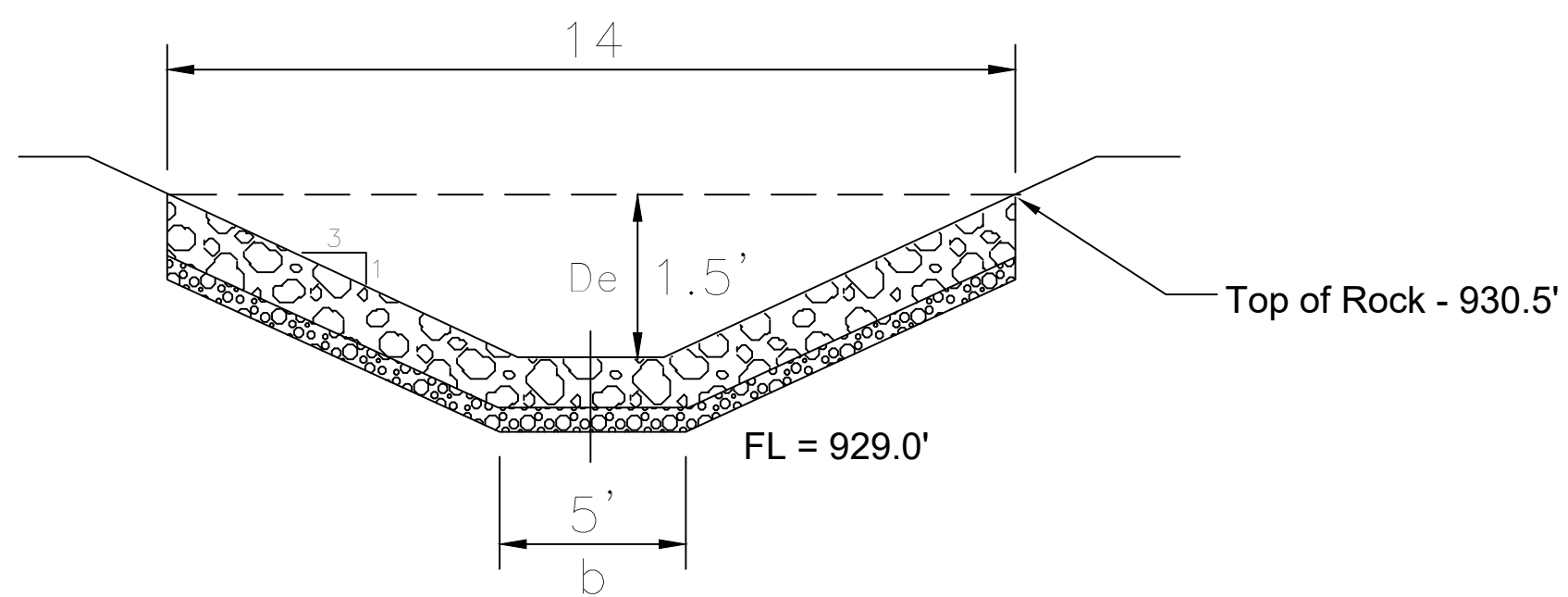


PLAN VIEW

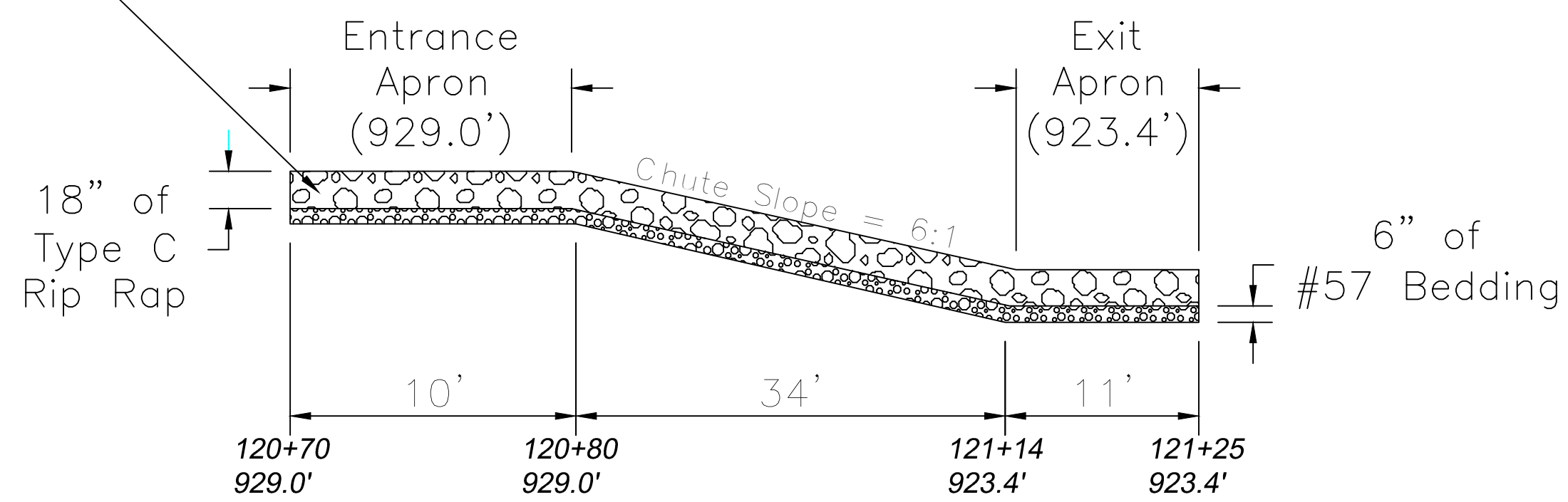
Type C shall consist of sizes such that at least 85 percent of the total material by weight shall be larger than an 6 inch (150 mm) but less than a 18 inch (0.5 m) square opening. At least 50 percent of the total material by weight shall be larger than a 12 inch (0.3 m) square opening. The material smaller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



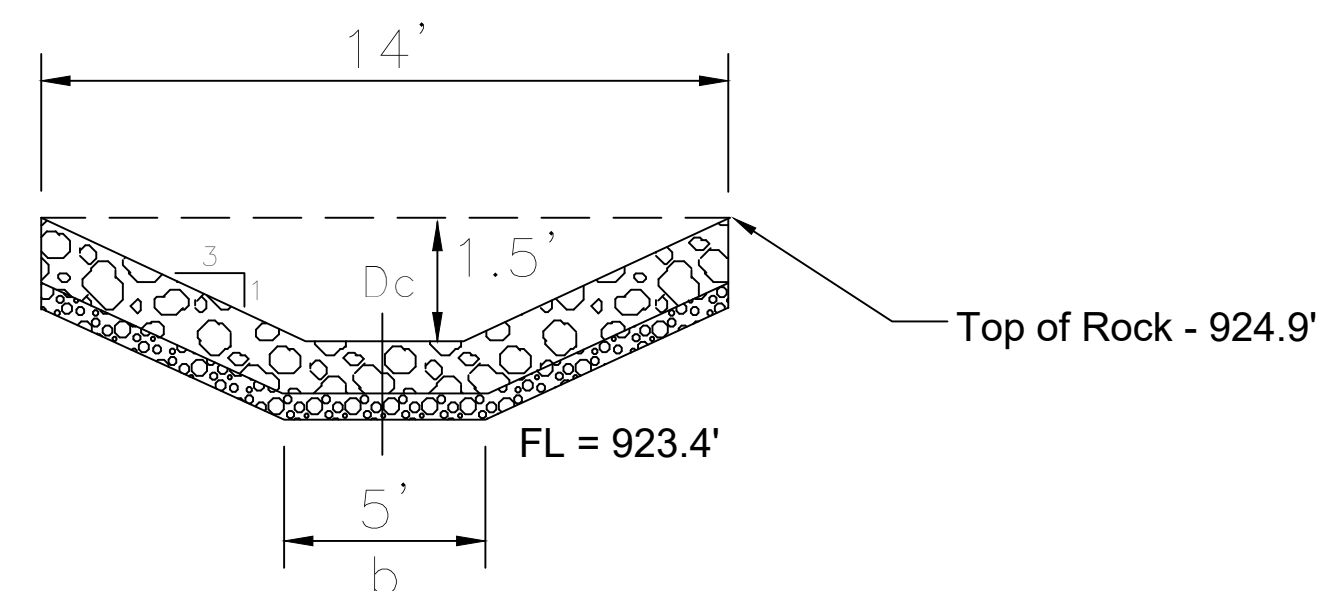
SECTION A-A



SECTION B-B



PROFILE ALONG CL OF ROCK CHUTE



SECTION C-C

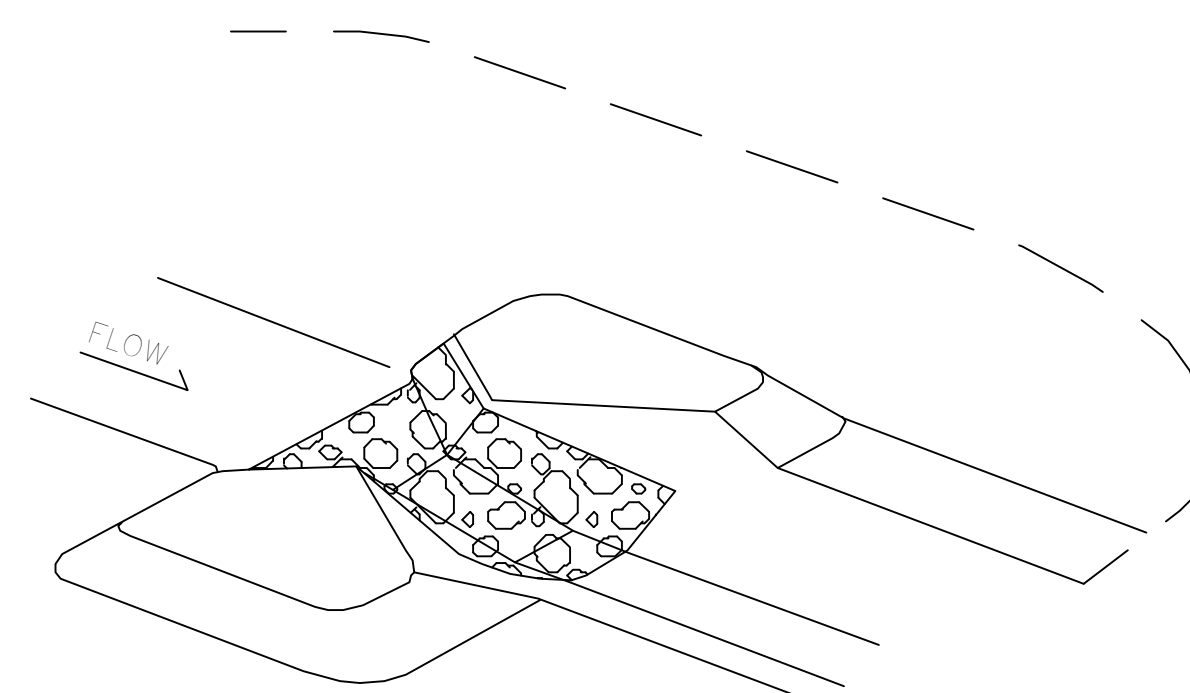
NOTES:

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

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

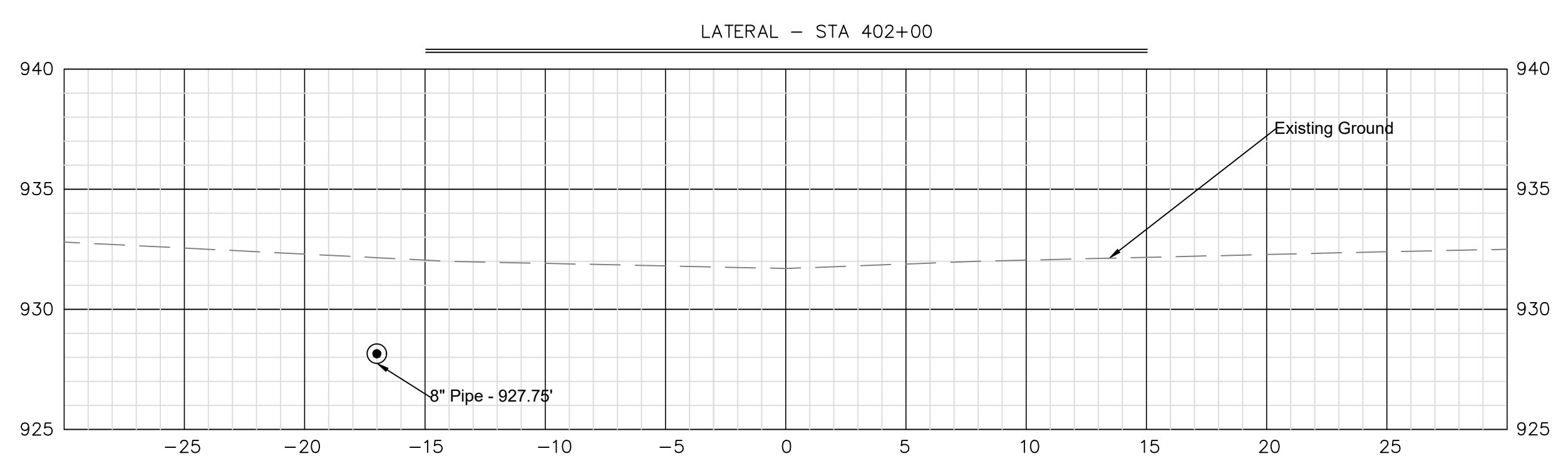
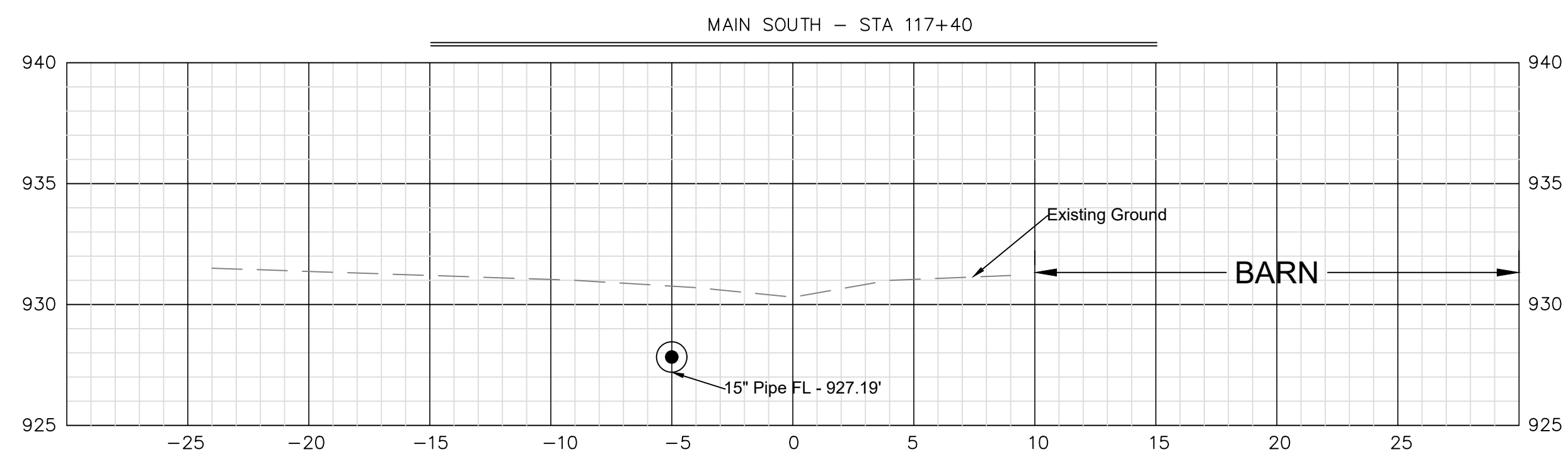
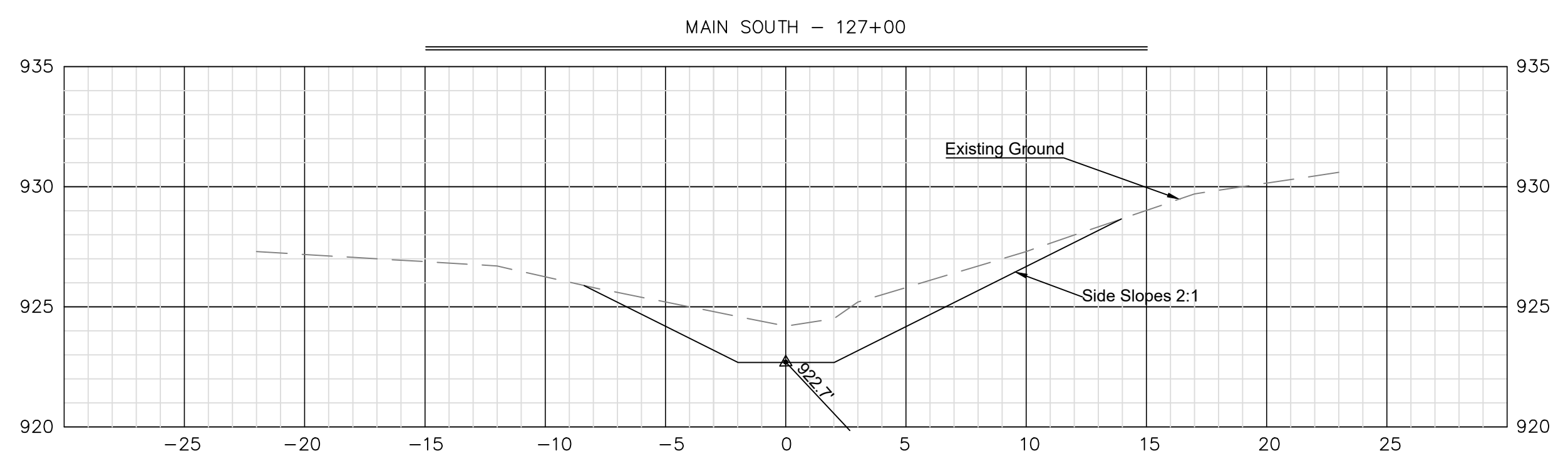
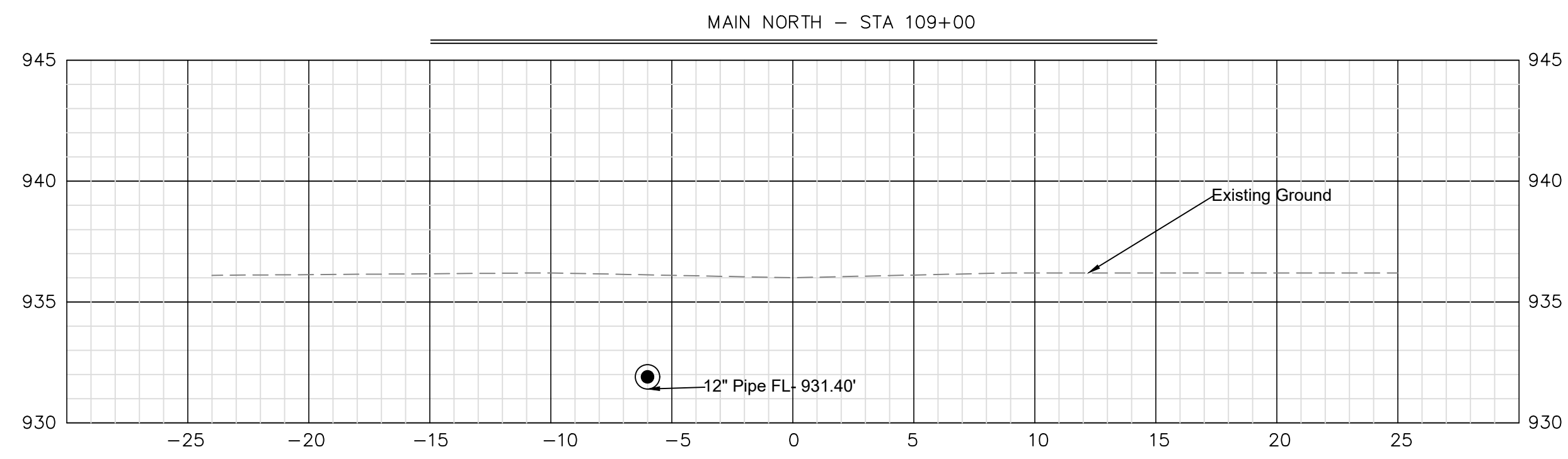
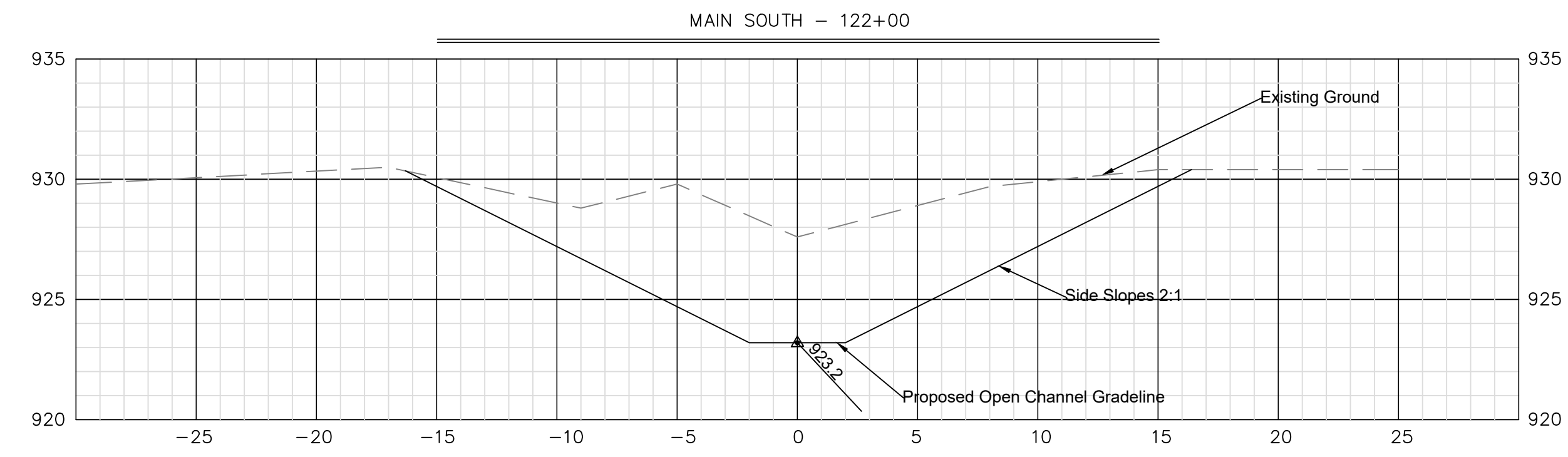
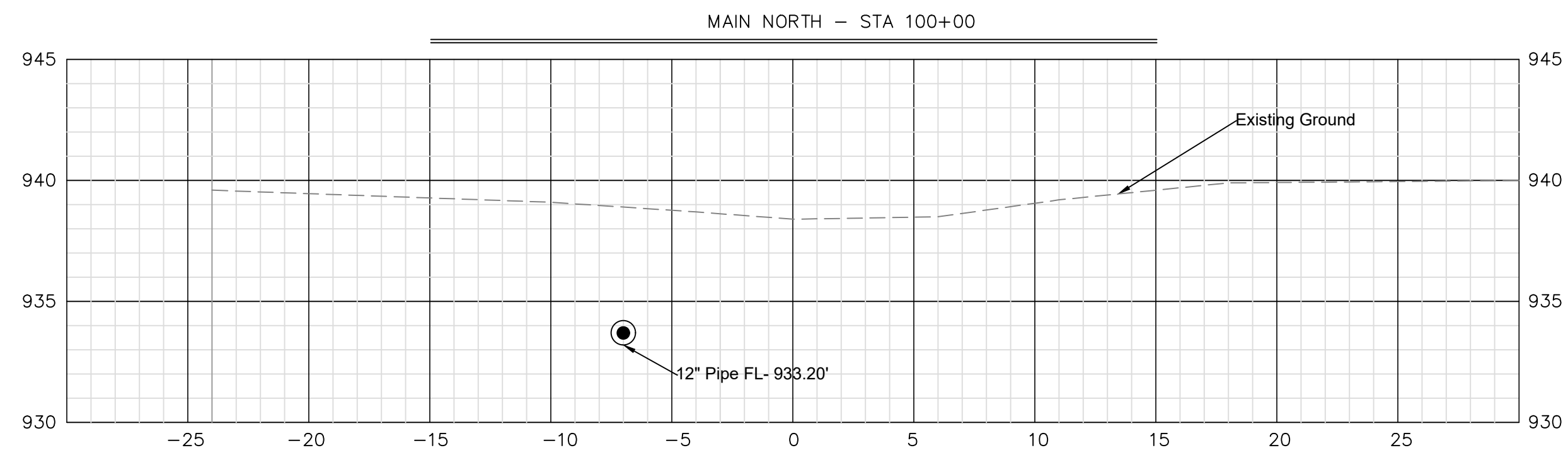
Design Data

Acres Drained	19
Chute Slope	6:1
Bottom Width (b) Varies	5'
Side Slopes	3:1
De	1.9'
Dc	1.5'
V	8.6 FPS
Entrance Elevation	929.0'
Exit Apron Elevation	923.4'
Overfall	5.6'
Entrance Apron Length	10'
Exit Apron Length	11'
Type "C" Stone (Tons)	74.7
#57 Gravel Bedding (Tons)	24.9



ISOMETRIC VIEW

CROSS-SECTIONS



SCALE
HORIZ: 1" = 10'
VERT: 1" = 5'

