

LOCATION MAP



STATE OF OHIO, DELAWARE COUNTY
DELAWARE COUNTY ENGINEER

SLATE LICK LATERAL #1 DRAINAGE IMPROVEMENT PROJECT

DELAWARE COUNTY
KINGSTON & BROWN TOWNSHIP

INDEX OF SHEETS

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PROJECT DESCRIPTION

This project will include the improvement of surface drainage, the installation of subsurface drain, the destruction of existing subsurface drain tile, and the taking of temporary and permanent easements.

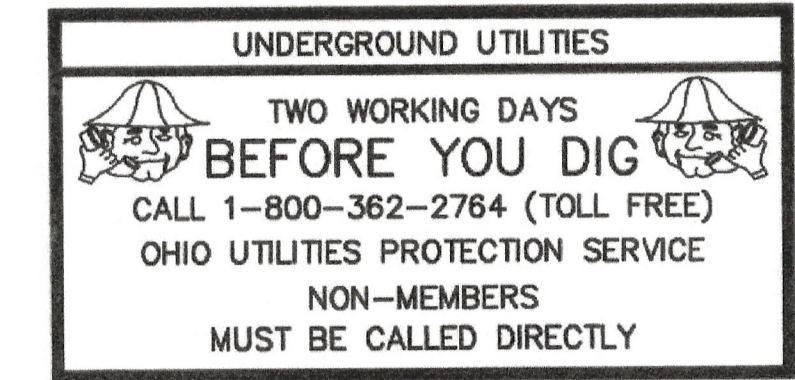
This project/improvement is being done pursuant to Ohio Revised Code Sections 6131 and 6137.

2023 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement. English units shall govern. Where noted, specifications of the USDA Natural Resources Conservation Service shall supplement the ODOT specifications.

CONSTRUCTION & MATERIAL SPECIFICATIONS

CONSTRUCTION & MATERIAL SPECIFICATIONS				SUPPLEMENTAL SPECIFICATIONS	
OHIO DEPARTMENT OF TRANSPORTATION		USDA NATURAL RESOURCES CONSERVATION SERVICE			
	DELAWARE COUNTY ENGINEER	CONSTRUCTION			
601	Slope and Channel Protection	326	Clearing & Snagging		
611	Pipe Culverts, Sewers, Drains, & Drainage Structures	410	Grade Stabilization Structure		
659	Seeding & Mulching	468	Lined Waterway	SPECIAL PROVISIONS	
707	Steel, Aluminum, and Plastic Pipe	484	Mulching		
		582	Open Channel Construction		Tile Connection
		606	Subsurface Drain		
		608	Grassed Waterway		
		610	Surface Drain		



PLAN JOINTLY PREPARED BY:

DELAWARE SOIL AND WATER
CONSERVATION DISTRICT
557A SUNBURY RD
DELAWARE, OHIO 43015
PHONE: (740)368-1921 EXT.4 FAX: (740)369-8321

DELAWARE COUNTY ENGINEER'S OFFICE
50 CHANNING STREET
DELAWARE, OHIO 43015
PHONE:(740) 833-2400 FAX: (740)833-2399

SLATE LICK LATERAL #1
DRAINAGE IMPROVEMENT PROJECT

DELAWARE COUNTY ENGINEER
DELAWARE COUNTY, OH

APPROVED *Chi Bausman*
DATE 3/7/25 COUNTY ENGINEER

APPROVED *Paula Lewis*
DATE 6/17/25 COUNTY COMMISSIONER

APPROVED *Jay Ward*
DATE 6/17/25 COUNTY COMMISSIONER

APPROVED _____
DATE _____ COUNTY COMMISSIONER

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
NONE

SLATE LICK LAT #1

1
5

DETAILS & NOTES

GENERAL CONSTRUCTION NOTES

1. 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.

2. The contractor will be responsible for ensuring that all relevant OSHA regulations are met prior to beginning any construction activities.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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.

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

11. 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.

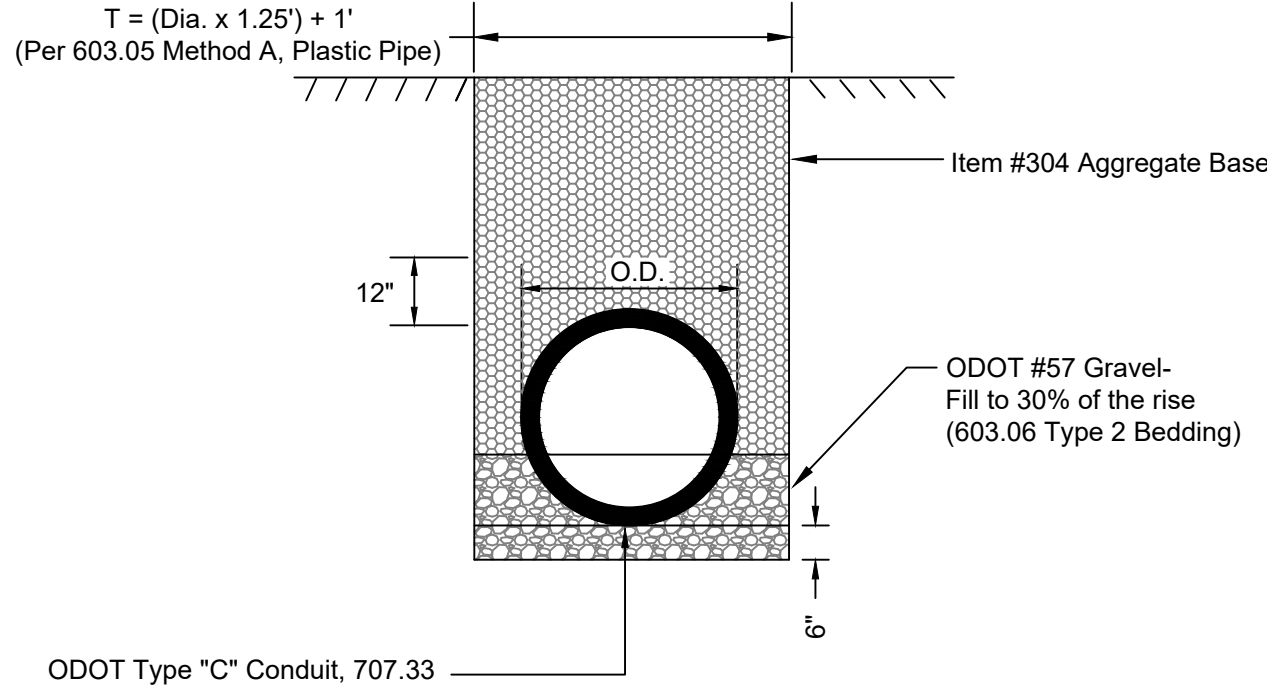
12. All trees to be saved will be marked prior to the start of construction by the construction inspector. Markings will be done in the manner requested by the contractor. Unless specifically designated as "Save" or "Do not disturb" in the plans or by the construction inspector, remove all trees and 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.

13. 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.

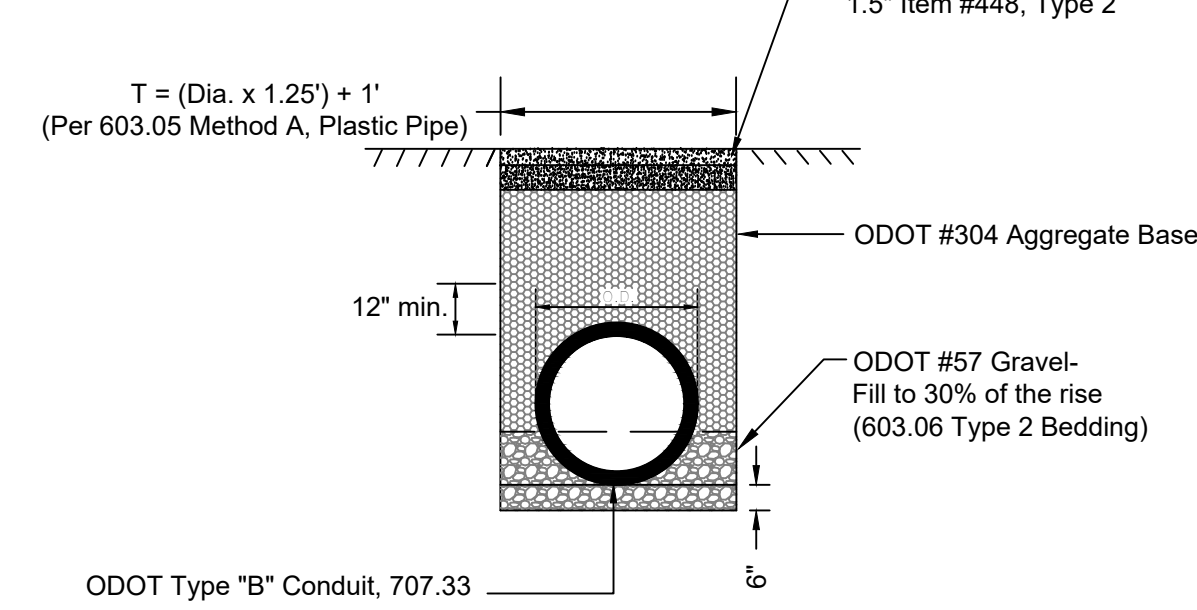
14. Excavation will/may be required to verify design elevations including, but not limited to, existing subsurface drain inverts. These excavations will be considered incidental to the overall construction of the project per ODOT CMS 105.02.

SUBSURFACE DRAIN (NRCS #606)

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

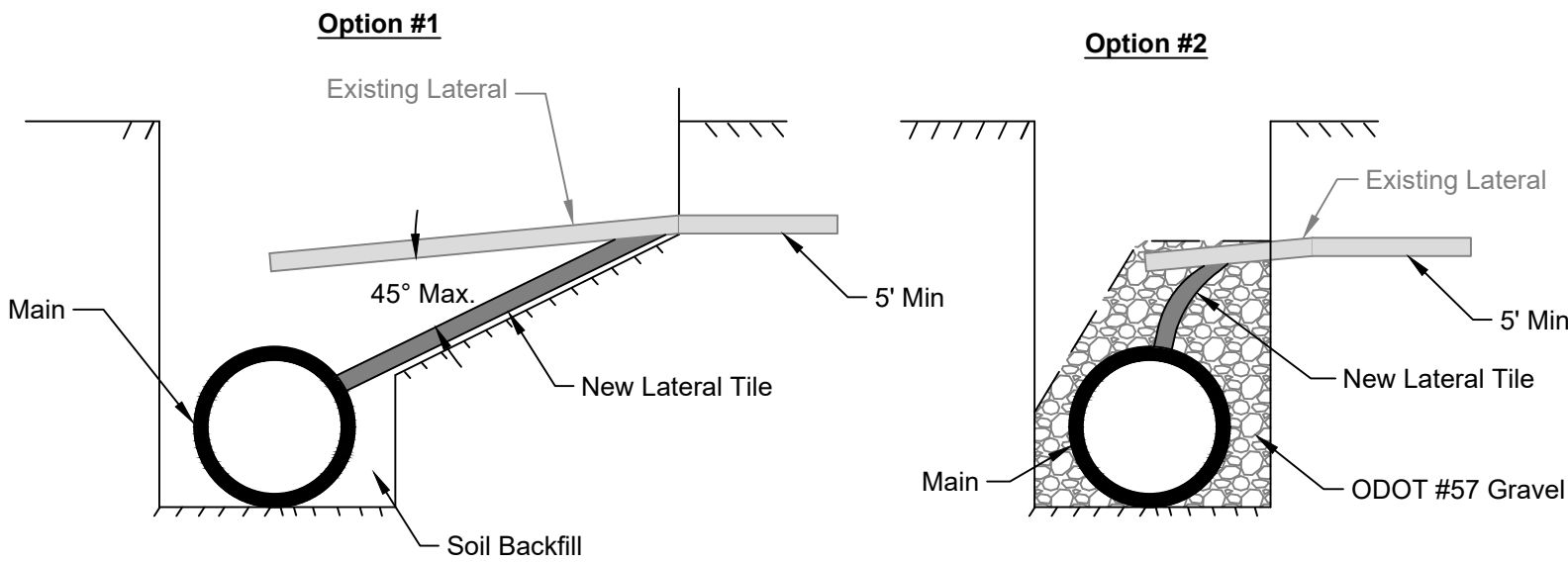


DRIVE CUT INSTALLATION DETAIL
ODOT 611, TYPE "B", 707.33 INSTALLATION

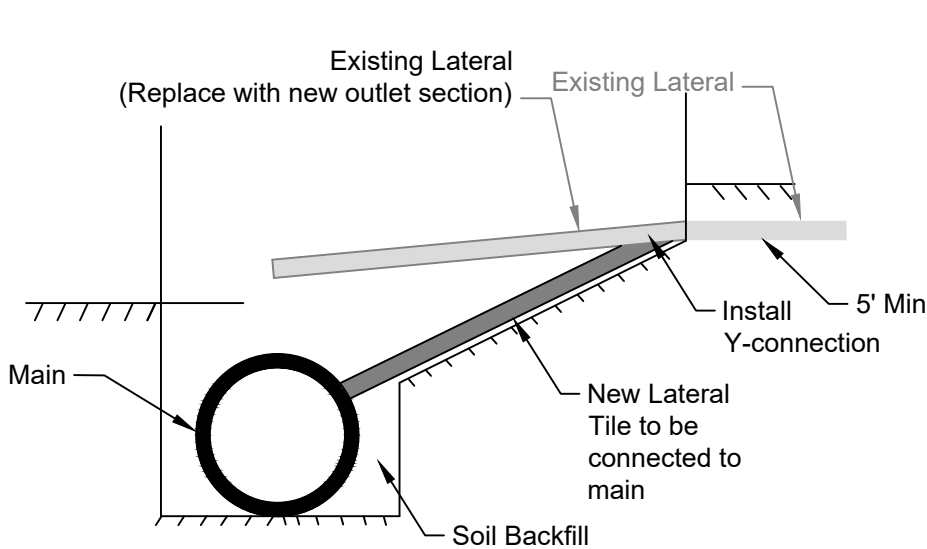


TYPICAL SUBSURFACE DRAIN LATERAL CONNECTION DETAILS (NRCS #606)
NOT TO SCALE

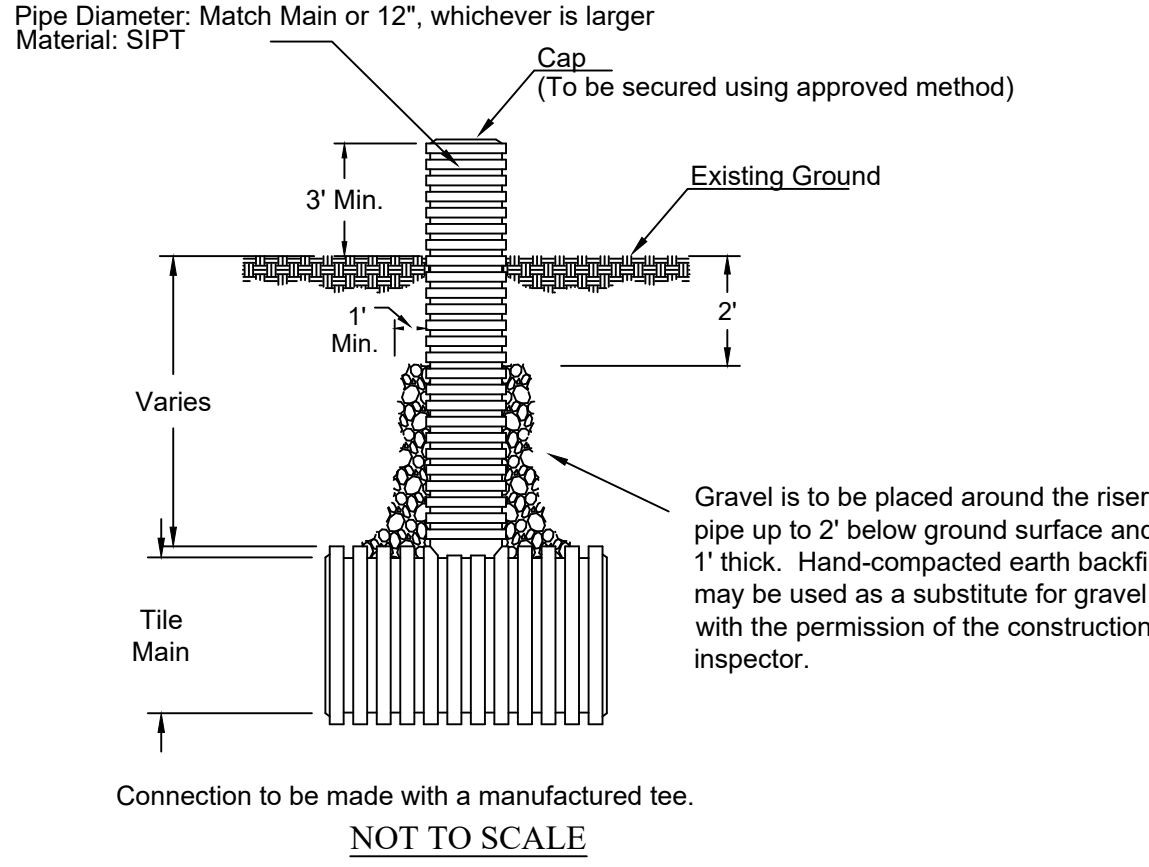
LATERALS WITH NO EXISTING SURFACE OUTLET



LATERALS WITH EXISTING SURFACE OUTLET



INSPECTION WELL DETAIL



NOTES

1. All tile shall be placed according to the Typical Subsurface Drain Installation Detail and the requirements of NRCS Specification #606.

2. Removal of residual lateral tile regardless of size and/or material shall be considered part of the payment for this item.

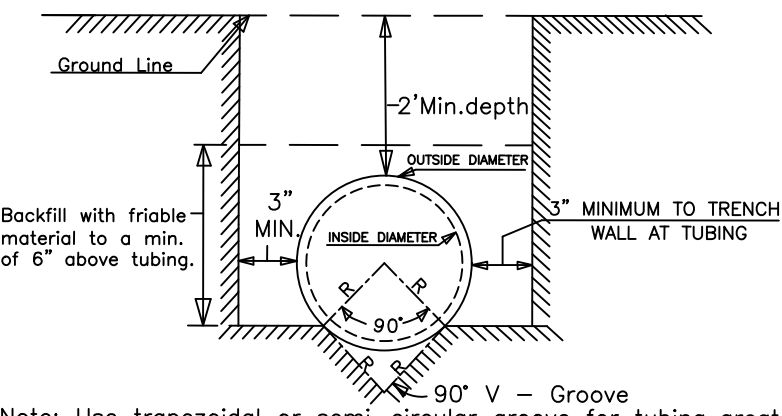
3. All connections shall be done using manufactured connectors.

4. 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.

5. 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.

6. Lateral types regarding having or not having a surface outlet will be marked by the construction inspector.

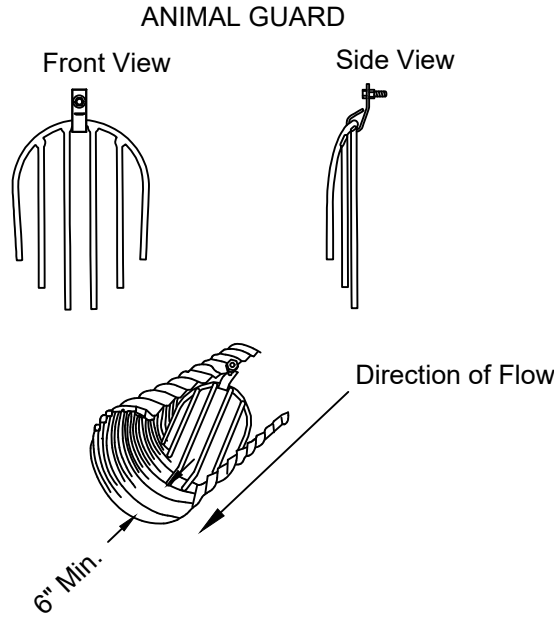
NRCS 606 PIPE
INSTALLATION DETAIL



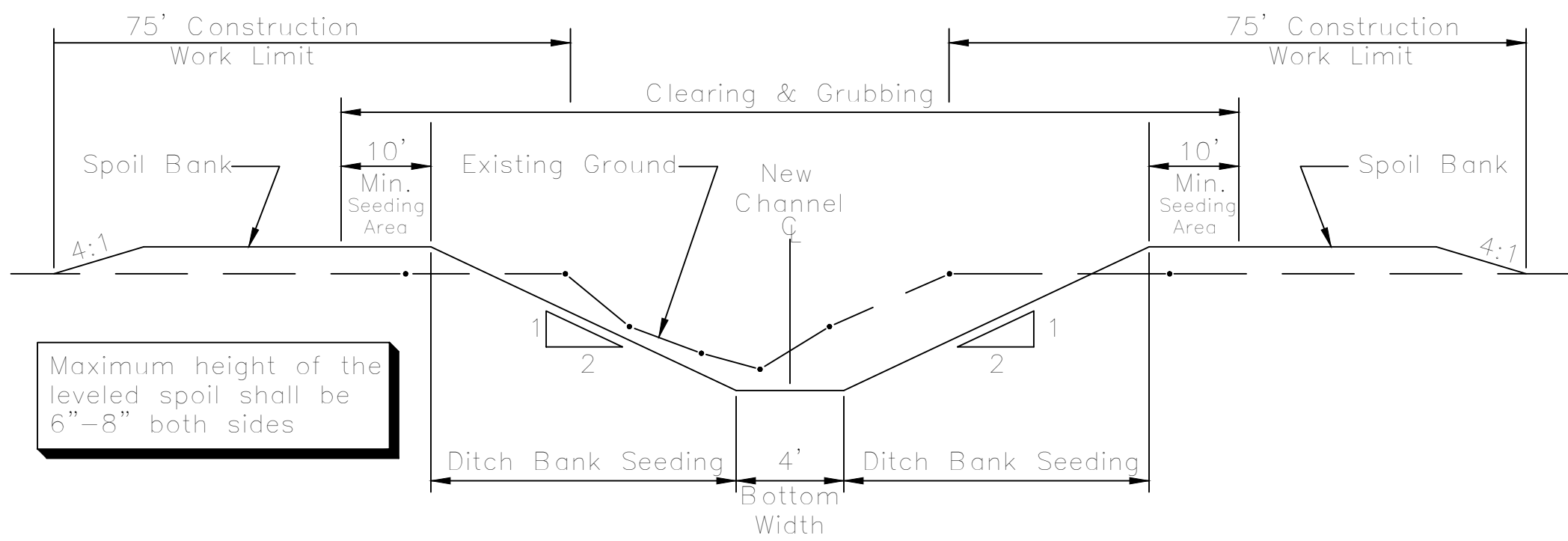
Note: Use trapezoidal or semi-circular groove for tubing greater than 8" diameter. Trenching shall comply with OSHA Std.1926 Subpart P

SLATE LICK LATERAL #1
DRAINAGE IMPROVEMENT PROJECT
ENGINEERING DRAWINGS

2
5

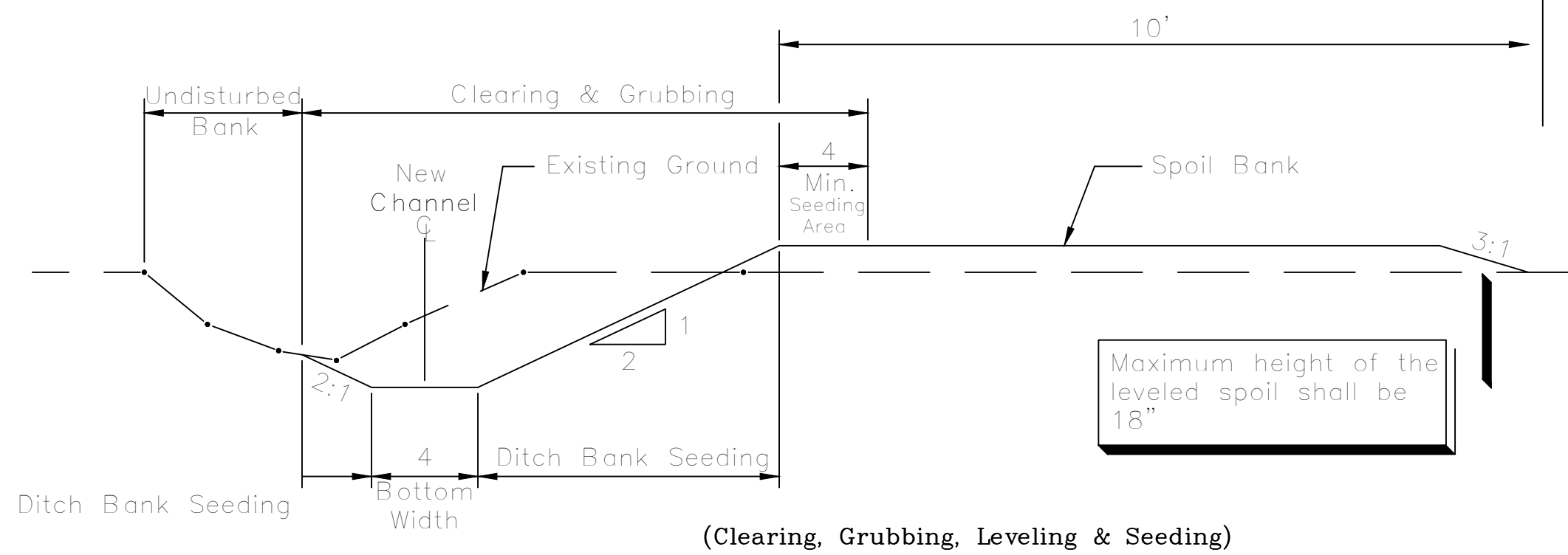


Open Channel (NRCS #582)



Typical Two-Sided Cross Section (Clearing, Grubbing, Leveling & Seeding)

Not to Scale



Typical One-Sided Construction Cross Section

Not to Scale

Surface Drain (NRCS #608)

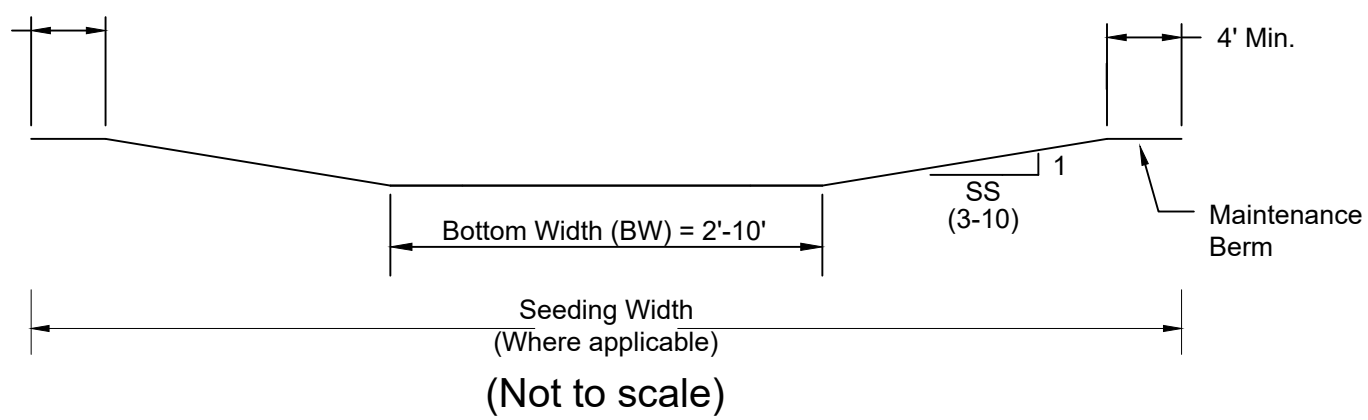
NOTES:

1. Where specified on the plans, the surface drain is to be seeded as stated in the construction notes and ODOT Specification #659. Any modifications to this seed mixture as stated in this Specification must be approved by the construction inspector prior to seed application.

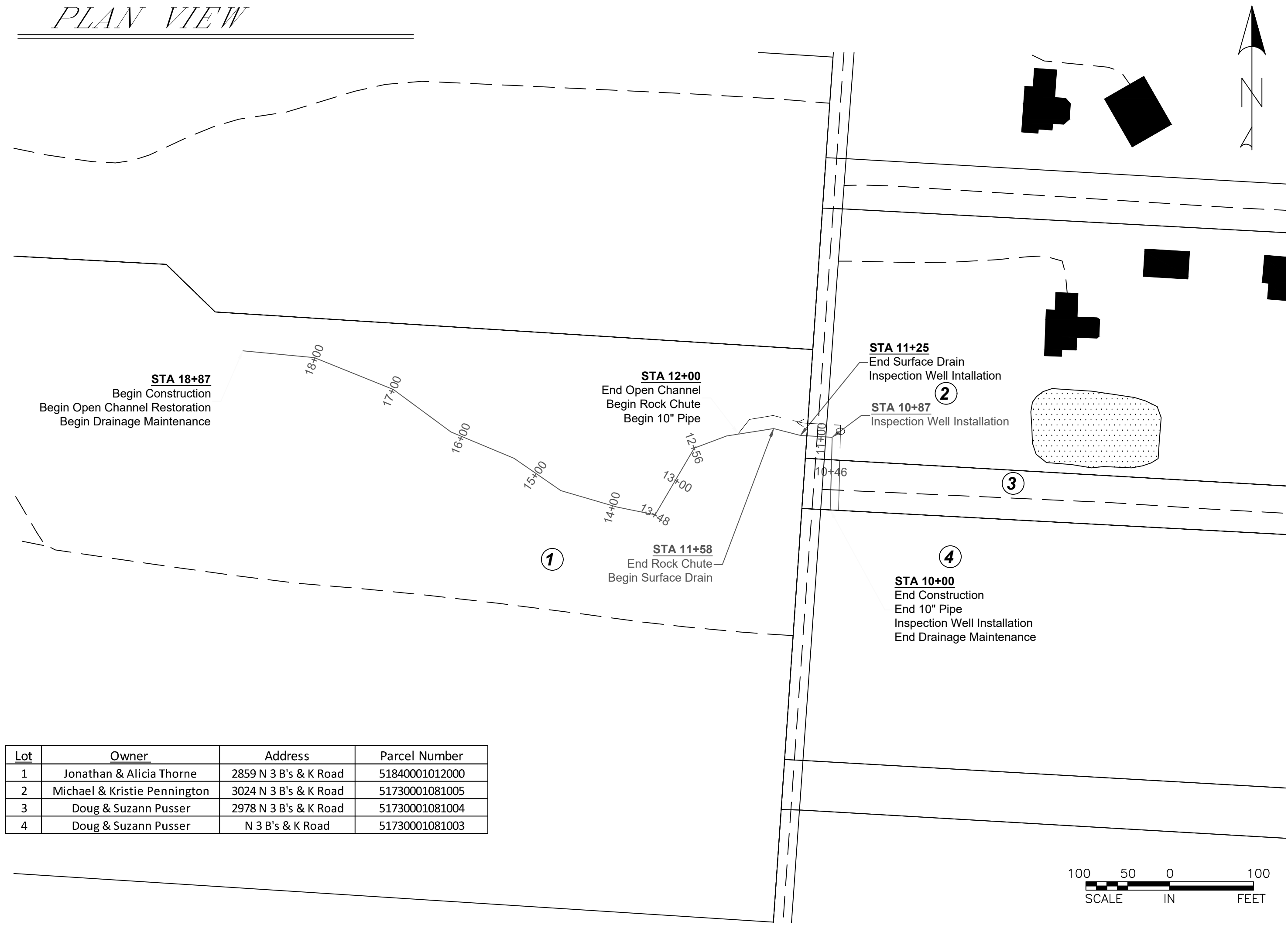
2. Side slopes may be modified to fit site specific conditions at the discretion of the construction inspector.

3. All spoil from within the typical surface drain cross section shall be disposed of according to the specifications of NRCS #608 - Surface Drainage Main.

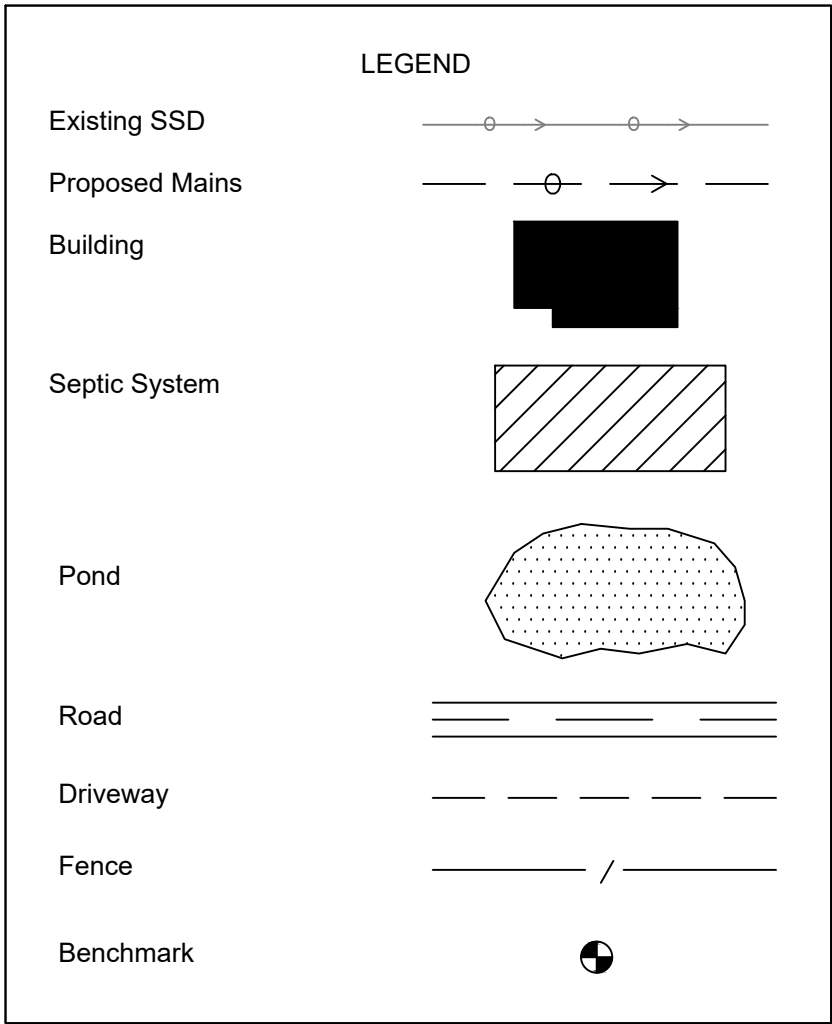
TYPICAL SURFACE DRAIN SWALE CROSS SECTION



PLAN VIEW

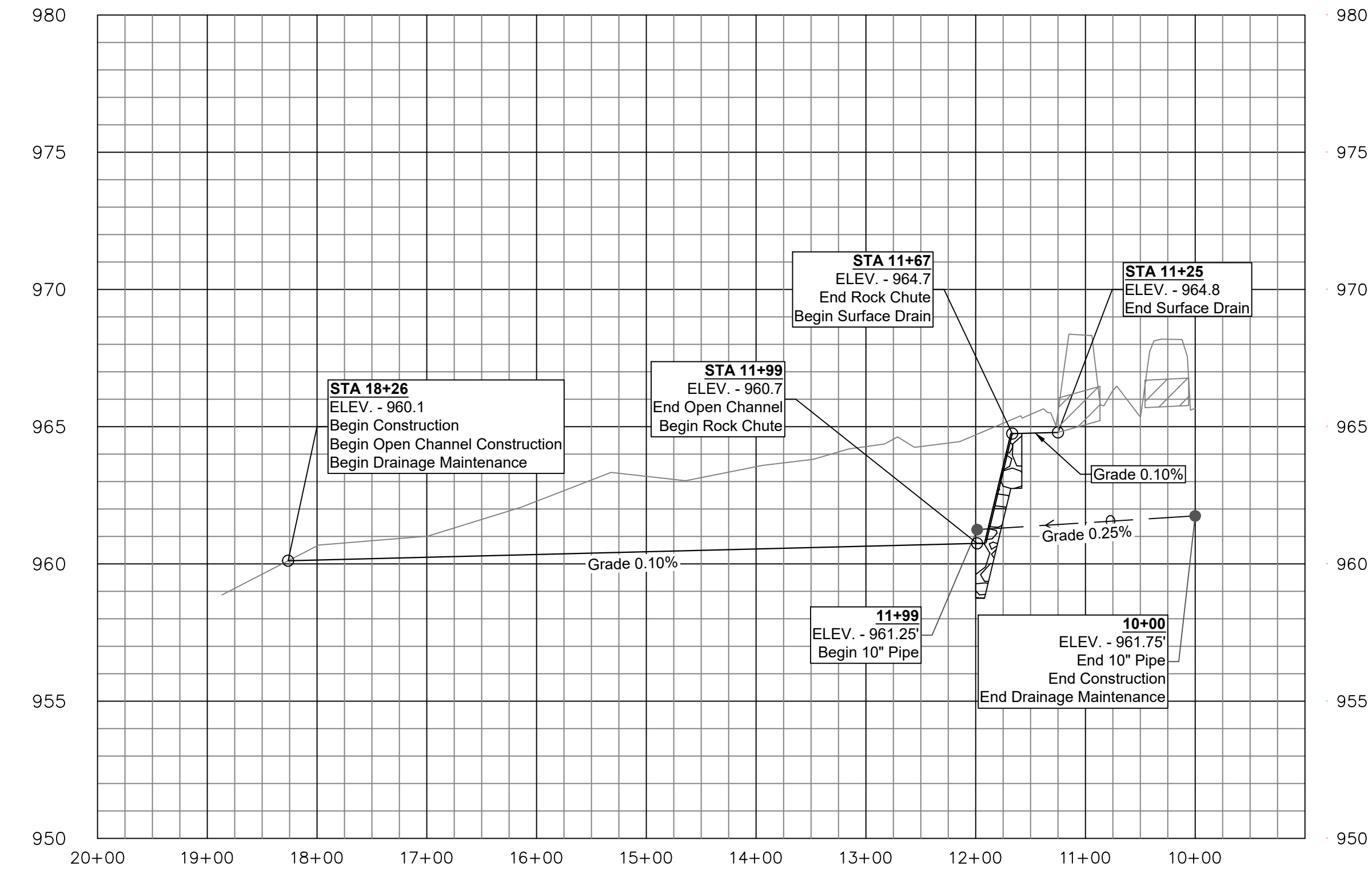


Lot	Owner	Address	Parcel Number
1	Jonathan & Alicia Thorne	2859 N 3 B's & K Road	51840001012000
2	Michael & Kristie Pennington	3024 N 3 B's & K Road	51730001081005
3	Doug & Suzann Pusser	2978 N 3 B's & K Road	51730001081004
4	Doug & Suzann Pusser	N 3 B's & K Road	51730001081003

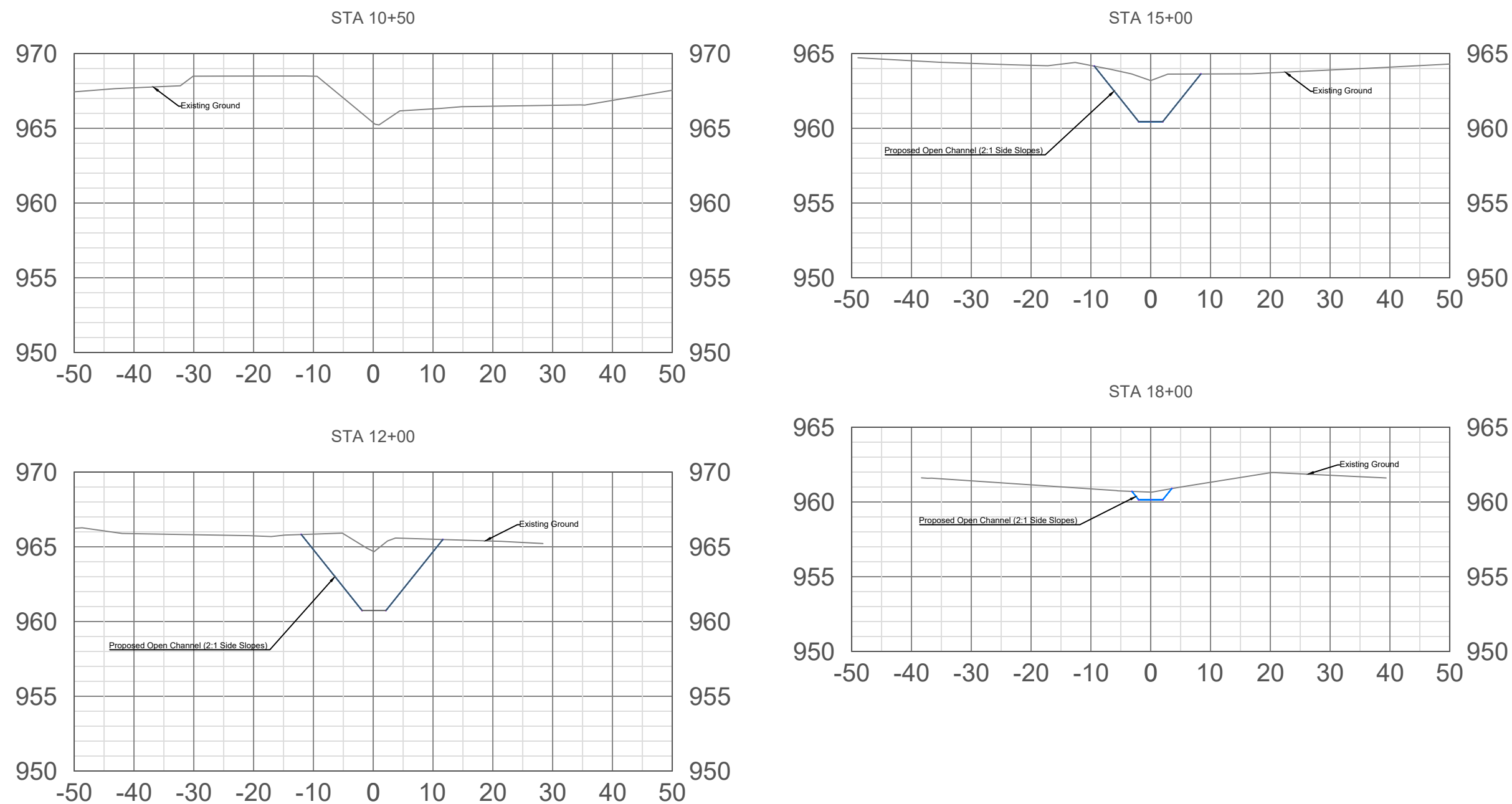


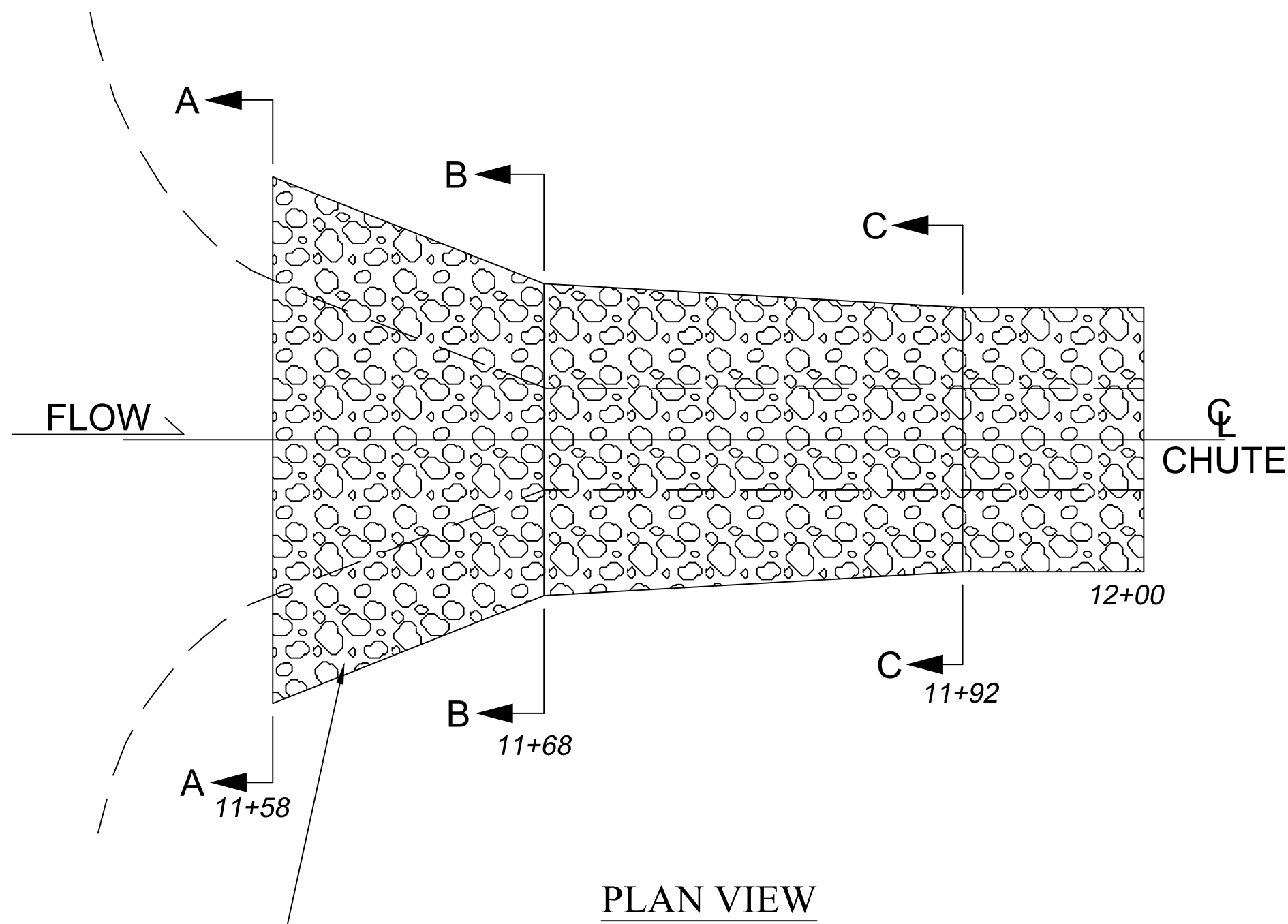
Slate Lick Lateral #1			
ESTIMATED QUANTITIES			
Item	Description	Quantity	Unit
NRCS 326	Clearing & Snagging	LUMP	N/A
NRCS 410	Grade Stabilization Structure - Rock Chute	1	Each
NRCS 582	Open Channel Construction	687	Lineal Feet
NRCS 606	10" Pipe, Non-Perforated	160	Lineal Feet
NRCS 606	10" Animal Guard	1	Each
NRCS 606	Tile Inspection Well	4	Each
NRCS 608	Surface Drain - Swale	33	Lineal Feet
ODOT 611	10" Pipe (707.33), Type B Installation, Asphalt Road	40	Lineal Feet
ODOT 659	Seeding & Mulching, Class 1 (No Anchoring)	4,000	Square yards

PROFILE

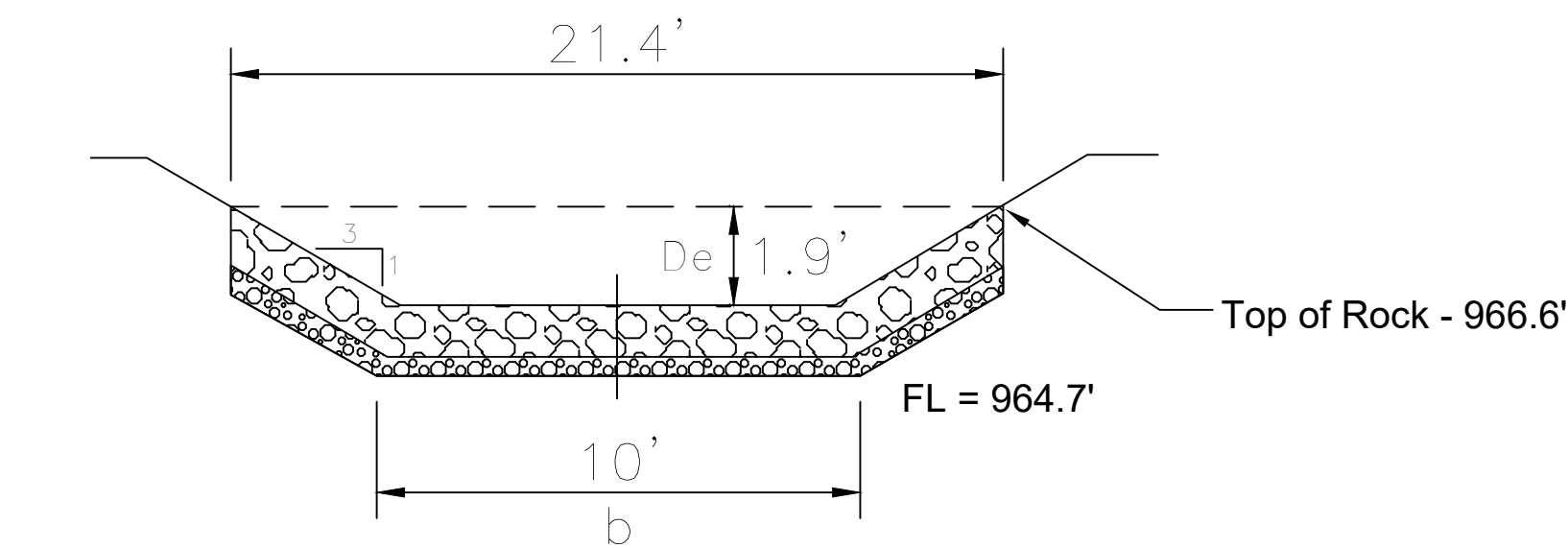
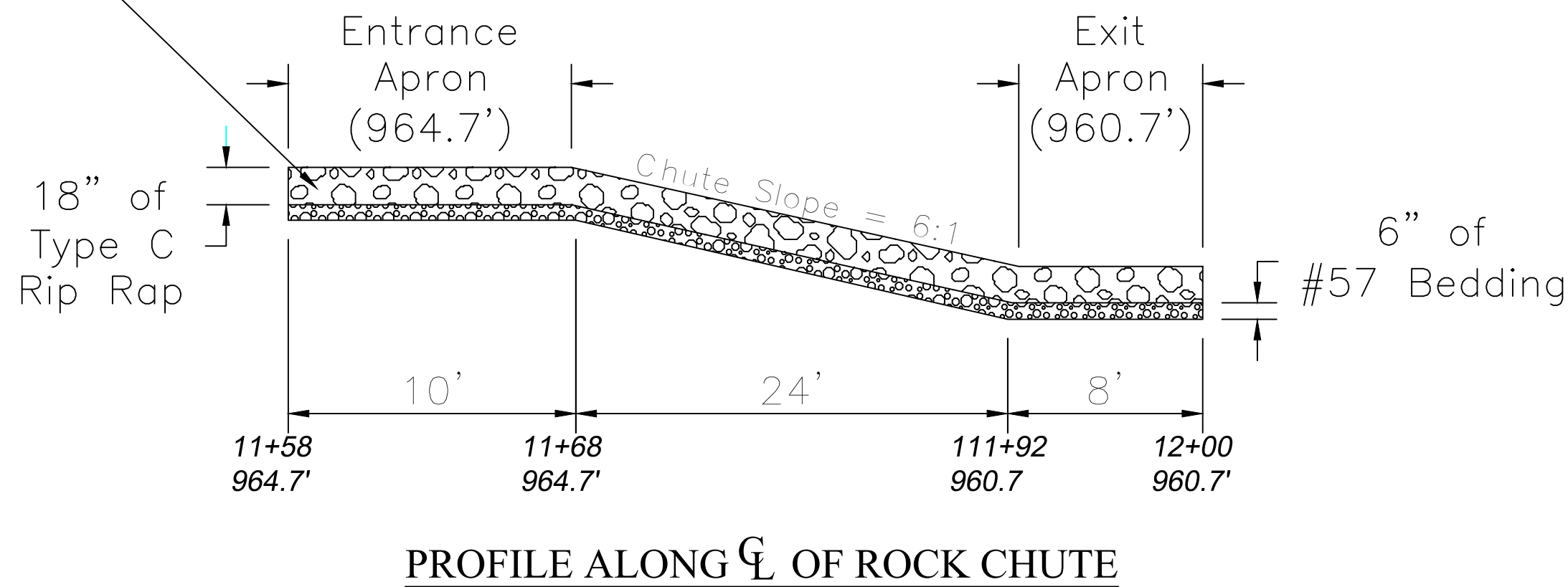


CROSS-SECTIONS

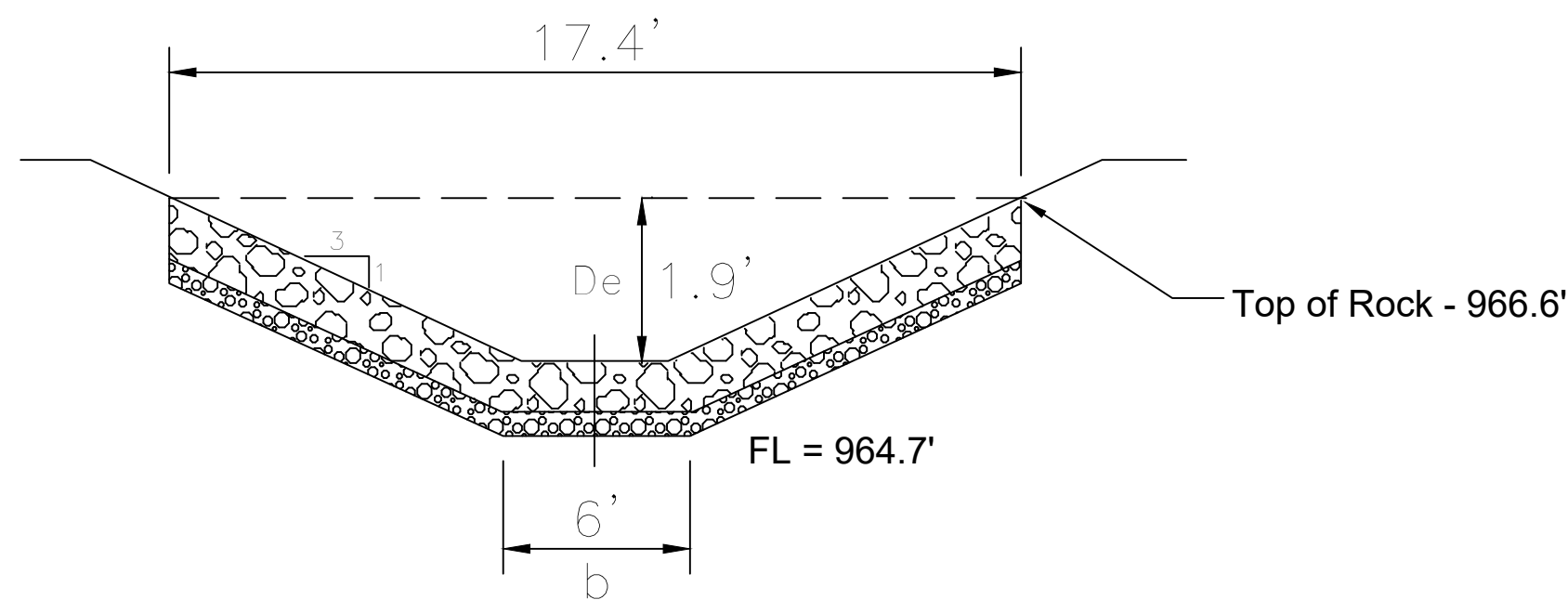




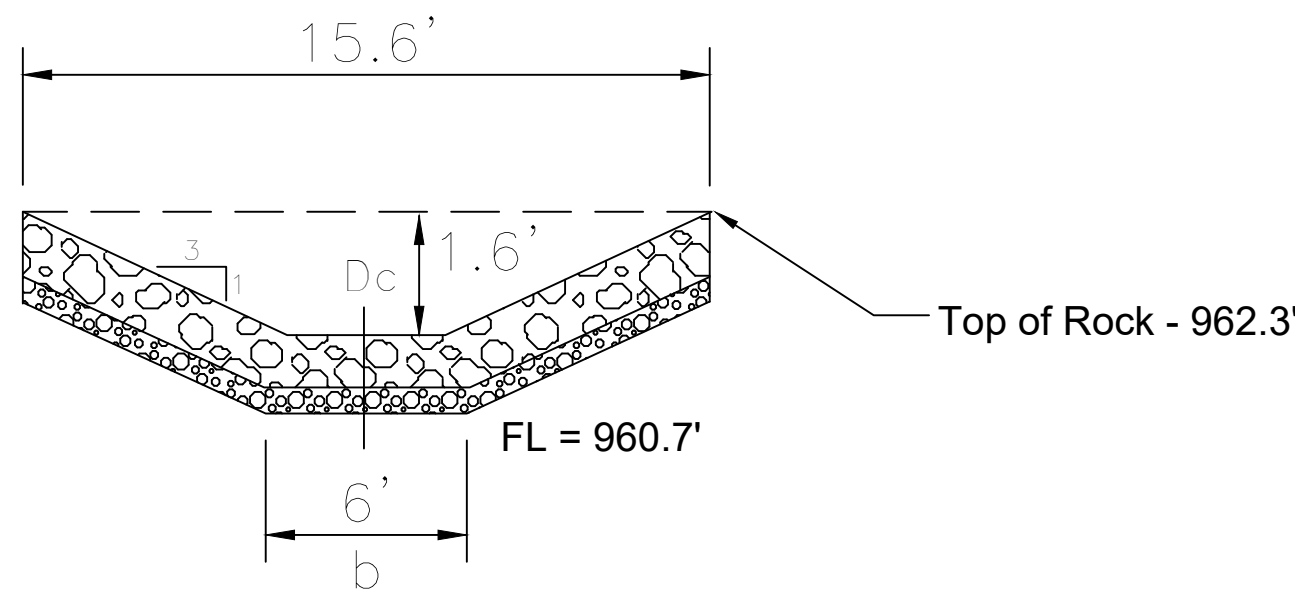
Type C shall consist of sizes such that at least 85 percent of the total material by weight shall be larger than an 6 inch (150 mm) but less than a 18 inch (0.5 m) square opening. At least 50 percent of the total material by weight shall be larger than a 12 inch (0.3 m) square opening. The material smaller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



SECTION C-C

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

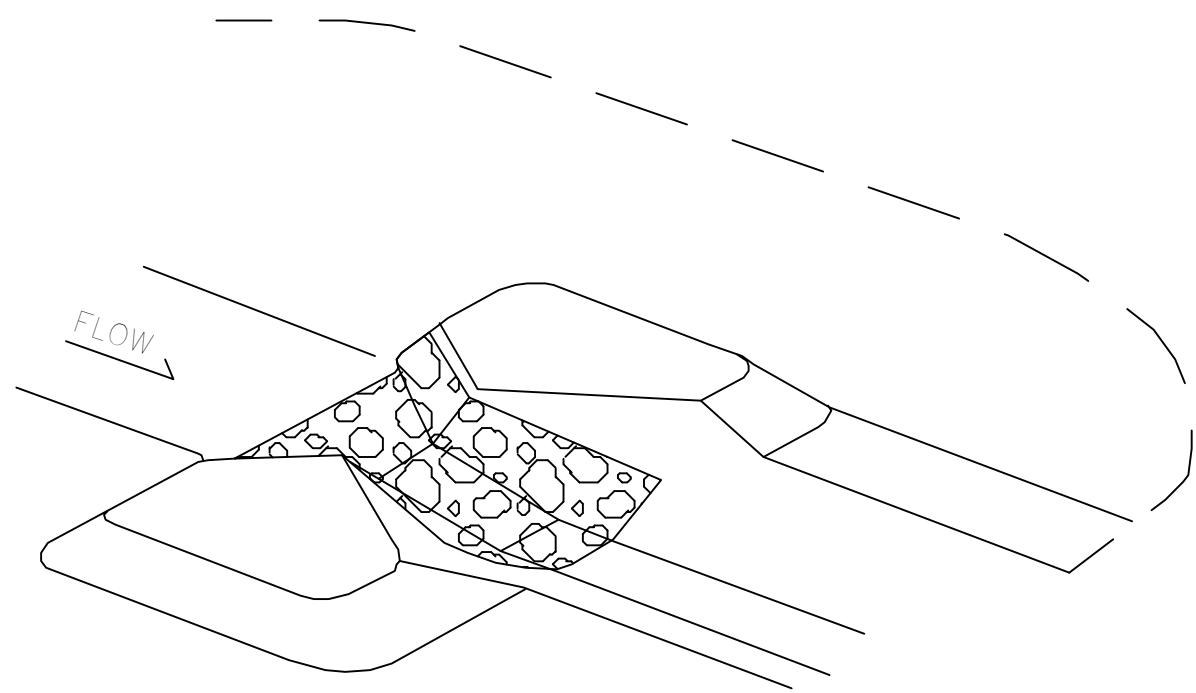
NOTES:

- 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	45
Chute Slope	6:1
Bottom Width (b) Varies	6'-10'
Side Slopes	3:1
De	1.9
Dc	1.6
V	9.1 FPS
Entrance Elevation	964.7'
Exit Apron Elevation	960.7'
Overfall	4.0'
Entrance Apron Length	10'
Exit Apron Length	8'
Type "C" Stone (Tons)	64
#57 Gravel Bedding (Tons)	22



ISOMETRIC VIEW

EASEMENTS & WORK LIMITS

