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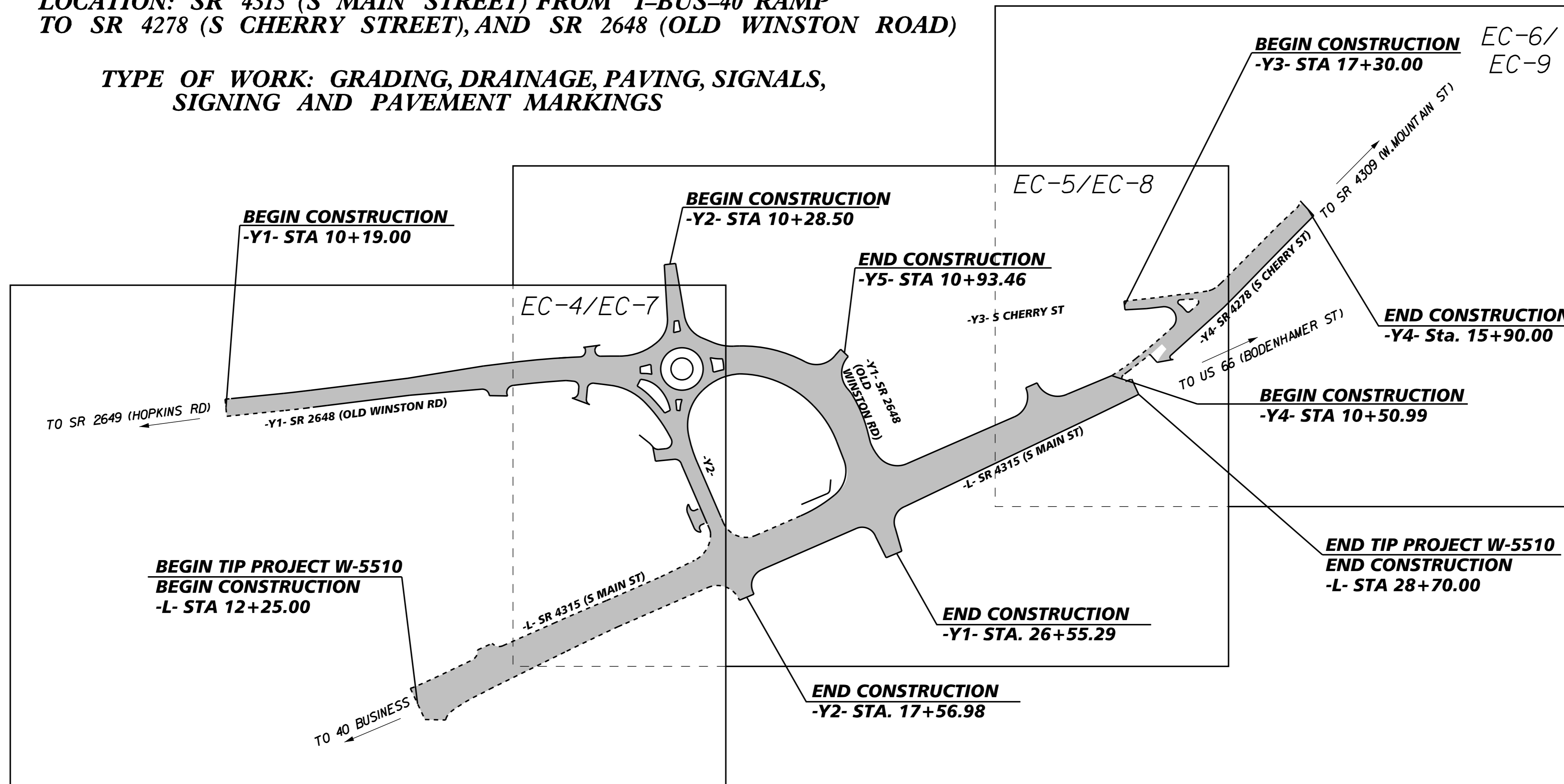
TIP PROJECT: W-5510

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
**PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5510	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

LOCATION: SR 4315 (S MAIN STREET) FROM I-BUS-40 RAMP TO SR 4278 (S CHERRY STREET), AND SR 2648 (OLD WINSTON ROAD)

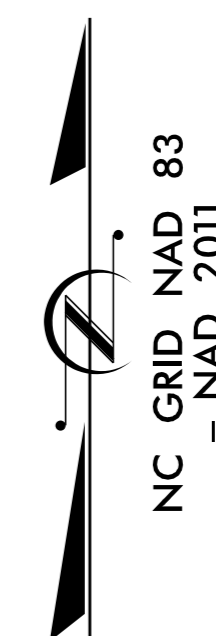
TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, SIGNING AND PAVEMENT MARKINGS



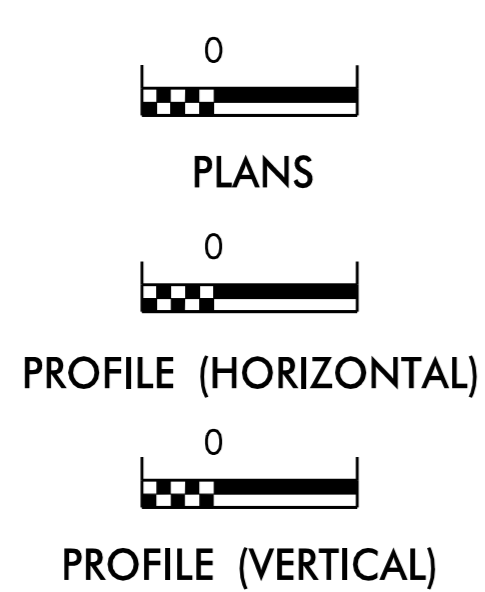
EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	▲▲▲▲▲
1622.01	Temporary Berms and Slope Drains	— T —
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	▨
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▨
1633.02	Temporary Rock Silt Check Type-B	▨
	Wattle/Coir Fiber Wattle	— W —
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	— W —
1634.01	Temporary Rock Sediment Dam Type-A	▨
1634.02	Temporary Rock Sediment Dam Type-B	▨
1635.01	Rock Pipe Inlet Sediment Trap Type-A	U
1635.02	Rock Pipe Inlet Sediment Trap Type-B	U
1630.04	Stilling Basin	▭
1630.06	Special Stilling Basin	▭
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	▭
	Tiered Skimmer Basin	▭
	Infiltration Basin	▭

THIS PROJECT CONTAINS
EROSION CONTROL PLANS
FOR CLEARING AND
GRUBBING PHASE OF
CONSTRUCTION.



GRAPHIC SCALE



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared In the Office of:

Kimley»Horn

Designed by:

ERIN THOMPSON, PE 3534
NAME LEVEL III CERTIFICATION NO.

Reviewed In the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2012 STANDARD SPECIFICATIONS

Reviewed by:

NATALIE CHAN

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"— Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01 Temporary Silt Fence	1632.03 Rock Inlet Sediment Trap Type C
1606.01 Special Sediment Control Fence	1633.02 Temporary Rock Silt Check Type B
1607.01 Gravel Construction Entrance	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.03 Temporary Silt Ditch	
1630.05 Temporary Diversion	
1631.01 Matting Installation	

CONSTRUCTION SCHEDULE

CONSTRUCTION SPECIFICATIONS

1. Obtain plan approval and other applicable permits including grading permits for borrow site. Refer to Section 230 "Borrow Excavation" in the 2012 NCDOT Standard Specifications.
2. Flag the work limits for protection.
3. Hold preconstruction conference at least one week prior to starting construction.
4. Prior to any land disturbing (including demolition) activities, install gravel and rip rap basin, temporary diversion, fabric/block and gravel drop inlet protection, temporary gravel construction entrance/exits, check dams, tree protection fence, and silt fence as shown on the erosion control plans.
5. In accordance with the erosion control plans and traffic control plans: grade roadway, install storm drain system, and place inlet protection at each catch basin and drop inlet. Until boxes are built and yard inlet devices installed, install and maintain storm drain under construction at end of day or onset of rain. Place outlet protection as shown on plans. Place additional check dams and stabilized ditches as indicated. Modify silt fence placement around pipe inlets and outlets as necessary, place silt fence around top of proposed headwalls.
6. Complete final grading for roads and stabilize with gravel.
7. Finish drainage inlets, place curb and gutter and pavement, and build shoulders.
8. Finish grading of slopes, topsoil critical areas and permanently vegetate, seed and mulch.
9. All graded areas will be seeded, fertilized and mulched according to NCDOT specifications to maintain a vigorous, dense, vegetative cover within 21 calendar days or sooner of completion of any phase of grading. If work on the project ceases for more than the aforementioned length of time, all disturbed areas shall have temporary vegetative ground cover established and erosion control devices maintained.
10. After seeding is established, the contractor shall call NC DENR and arrange for a final site inspection. Upon approval, all temporary erosion control measures shall be removed from the project.
11. All erosion and sediment control practices will be inspected weekly and after rainfall events. Needed repairs will be made immediately.
12. Estimated time before final stabilization is 12 months.
13. Site includes approximately XX acre of permanent vegetation area.
14. After site is stabilized, gravel and rip rap basin, temporary diversion, and construction staging and material area stockpile areas, shall be removed, restored as existing, and permanently vegetated as described in the maintenance and vegetative plan.

MAINTENANCE

Follow the construction sequence throughout project development. When changes in construction activities are needed, amend the sequence schedule in advance to maintain management control.

MAINTENANCE PLAN

1. The Contractor shall check all erosion and sediment control practices for stability and operation following every runoff producing rainfall but in no case less than once every week. Any needed repairs will be made immediately by the Contractor to maintain all practices as designed. Also per National Pollutant Discharge Elimination System (NPDES) general stormwater permit, a rain gauge must be installed on site. The rain gauge must be kept onsite and inspections by the contractor must be made and logged after every half inch of rainfall and once a week.
2. The Contractor shall remove sediment from sediment trap when storage capacity has been approximately 50% filled. Gravel will be cleaned or replaced when the sediment pool no longer drains properly.
3. The Contractor shall remove sediment from behind silt fence when it becomes 0.5 feet deep at the fence. Silt fence will be repaired as necessary to maintain a barrier.
4. The Contractor shall fertilize, reseed as necessary, and mulch all seeded areas according to specifications in the vegetative plan to maintain a vigorous, dense vegetative cover.
5. The Contractor shall provide ground cover on exposed slopes or other areas within 21 calendar days of completion of any phase of grading. Permanent ground cover is to be provided for all disturbed areas within 21 calendar days or sooner following completion of construction or development.

Special Sediment Control Fence:

Description:

The work covered by this section consists of the construction, maintenance, and removal of special sediment control fence. Place special sediment control fence as shown on the plans or as directed by the Engineer.

Materials:

(A) Posts:

Steel posts shall be at least 5 feet in length, approximately 1 3/8 inches wide measured parallel to the fence, and have a minimum weight of 1.25 lb/ft of length. The post shall be equipped with an anchor plate having a minimum area of 14.0 square inches, and shall have a means of retaining wire in the desired position without displacement.

(B) 1/4 inch Hardware Cloth:

Hardware cloth shall have 1/4 inch openings constructed from #24 gauge wire. Install hardware cloth according to the detail shown on the plans.

(C) Sediment Control Stone:

Sediment control stone shall meet the requirements of Section 1005. Install stone according to the detail shown on the plans.

Maintenance and Removal:

The Contractor shall maintain the special sediment control fence until the project is accepted or until the fence is removed, and shall remove and dispose of silt accumulations at the fence when so directed by the Engineer in accordance with Section 1630.

The quantity of posts, sediment control stone and hardware cloth as measured above will be paid for at the contract price for "Lump Sum for Erosion Control". Such price and payment will be full compensation for all work covered by this provision, including but not limited to, furnishing all materials, installation, and removal and disposal of silt accumulations and materials.

SAFETY FENCE:

Description

Safety Fence shall consist of furnishing, installing and maintaining polyethylene or polypropylene fence along the outside riparian buffer, wetland, or water boundary located within the construction corridor to mark the areas that have been approved to infringe within the buffer, wetland or water. The fence shall be installed prior to any land disturbing activities.

Materials

Polyethylene or polypropylene fence shall be a highly visible preconstructed safety fence approved by the Engineer. The fence material shall have an ultraviolet coating.

Either wood posts or steel posts may be used. Wood posts shall be hardwood with a wedge or pencil tip at one end, and shall be at least 5 ft. in length with a minimum nominal 2" x 2" cross section. Steel posts shall be at least 5 ft. in length, and have a minimum weight of 0.85 lb./ft. of length.

Construction Methods

No additional clearing and grubbing is anticipated for the installation of this fence; however, if any clearing and grubbing is required, it will be the minimum required for the installation of the safety fence. Such clearing shall include satisfactory removal and disposal of all trees, brush, stumps and other objectionable material.

The fence shall be erected to conform to the general contour of the ground. When determined necessary, minor grading along the fence line shall be performed to meet this requirement provided no obstructions to proper drainage are created.

Posts shall be set and maintained in a vertical position and may be hand set or set with a post driver. If hand set, all backfill material shall be thoroughly tamped. Wood posts may be sharpened to a dull point if power driven. Posts damaged by power driving shall be removed and replaced prior to final acceptance. The tops of all wood posts shall be cut at a 30-degree angle. The wood posts may, at the option of the Contractor, be cut at this angle either before or after the posts are erected.

The fence fabric shall be attached to the wood posts with one 2" galvanized wire staple across each cable or to the steel posts with wire or other acceptable means.

The Contractor shall be required to maintain the safety fence in a satisfactory condition for the duration of the project as determined by the Engineer.

Measurement and Payment

Safety Fence will be paid for at the contract price for "Lump Sum for Erosion Control". Such payment will be full compensation including but not limited to clearing and grading, furnishing and installing fence fabric with necessary posts and post bracing, staples, tie wires, tools, equipment and incidentals necessary to complete this work.

Kimley»Horn

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RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO. SHEET NO.

W-5510 EC-2

R/W SHEET NO.

REINFORCED TEMPORARY SILT FENCE DETAIL

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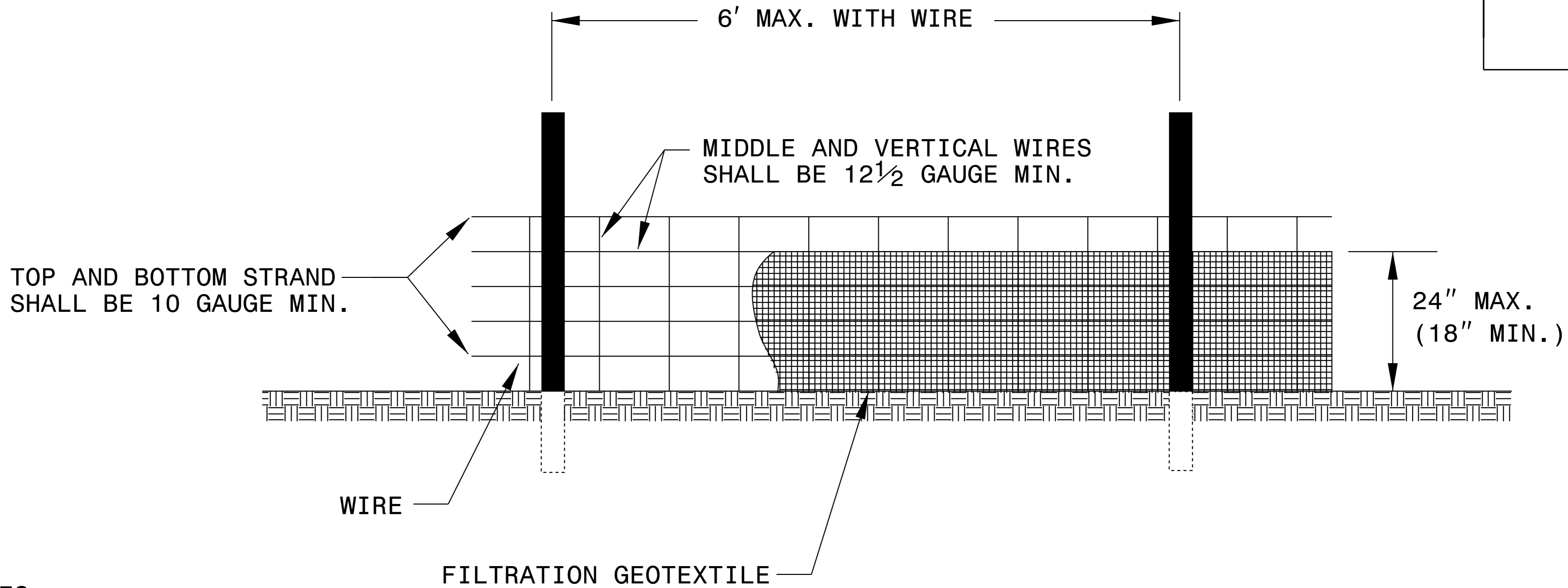
RIGHT-OF-WAY REV.

CONST. REV.

PROJECT REFERENCE NO. SHEET NO.

W-5510 EC-2A

R/W SHEET NO.



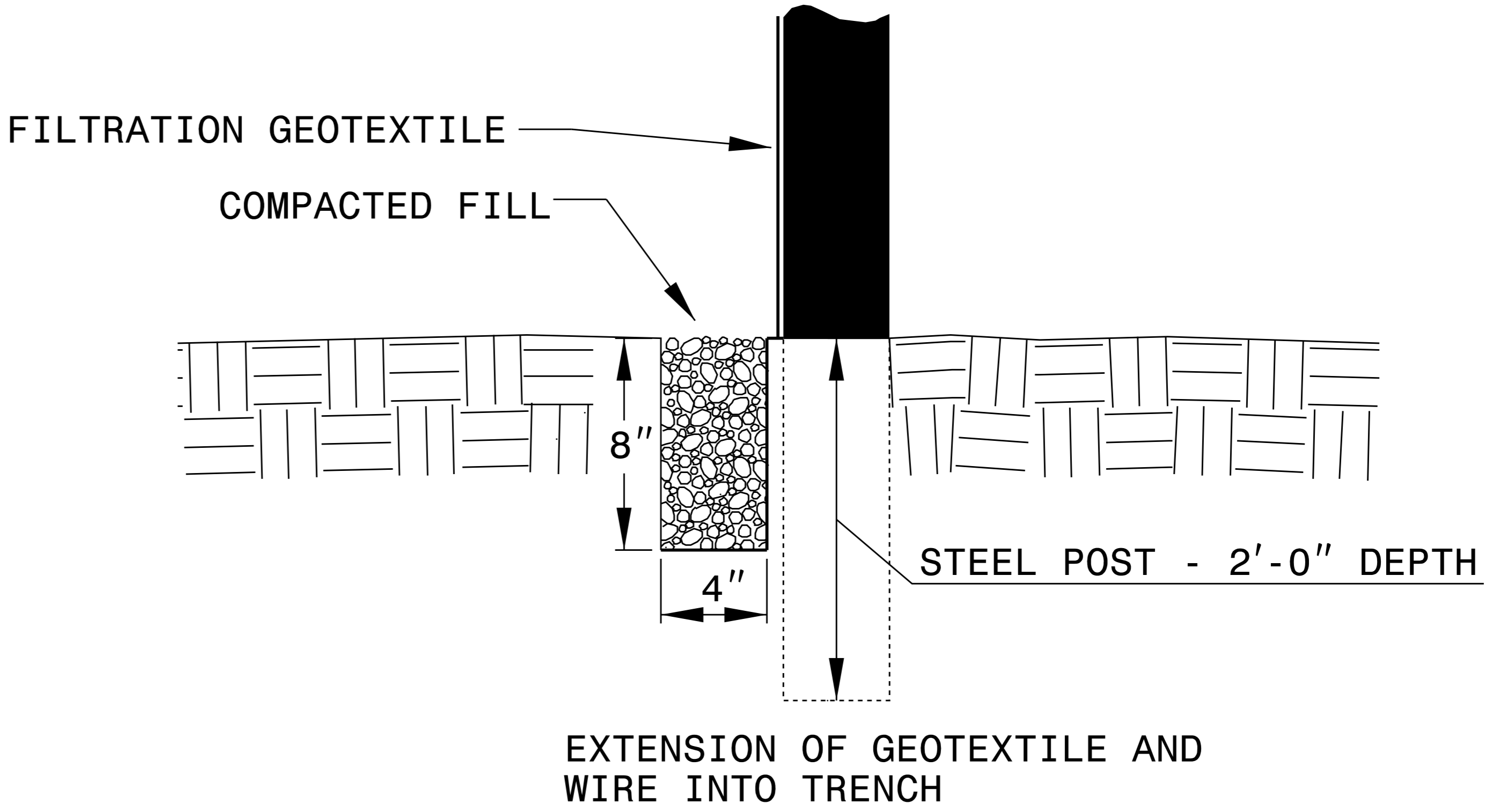
NOTES

USE FILTRATION GEOTEXTILE A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE POSTS AND WIRE AS DIRECTED.

USE WIRE A MINIMUM OF 32" IN WIDTH AND WITH A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.

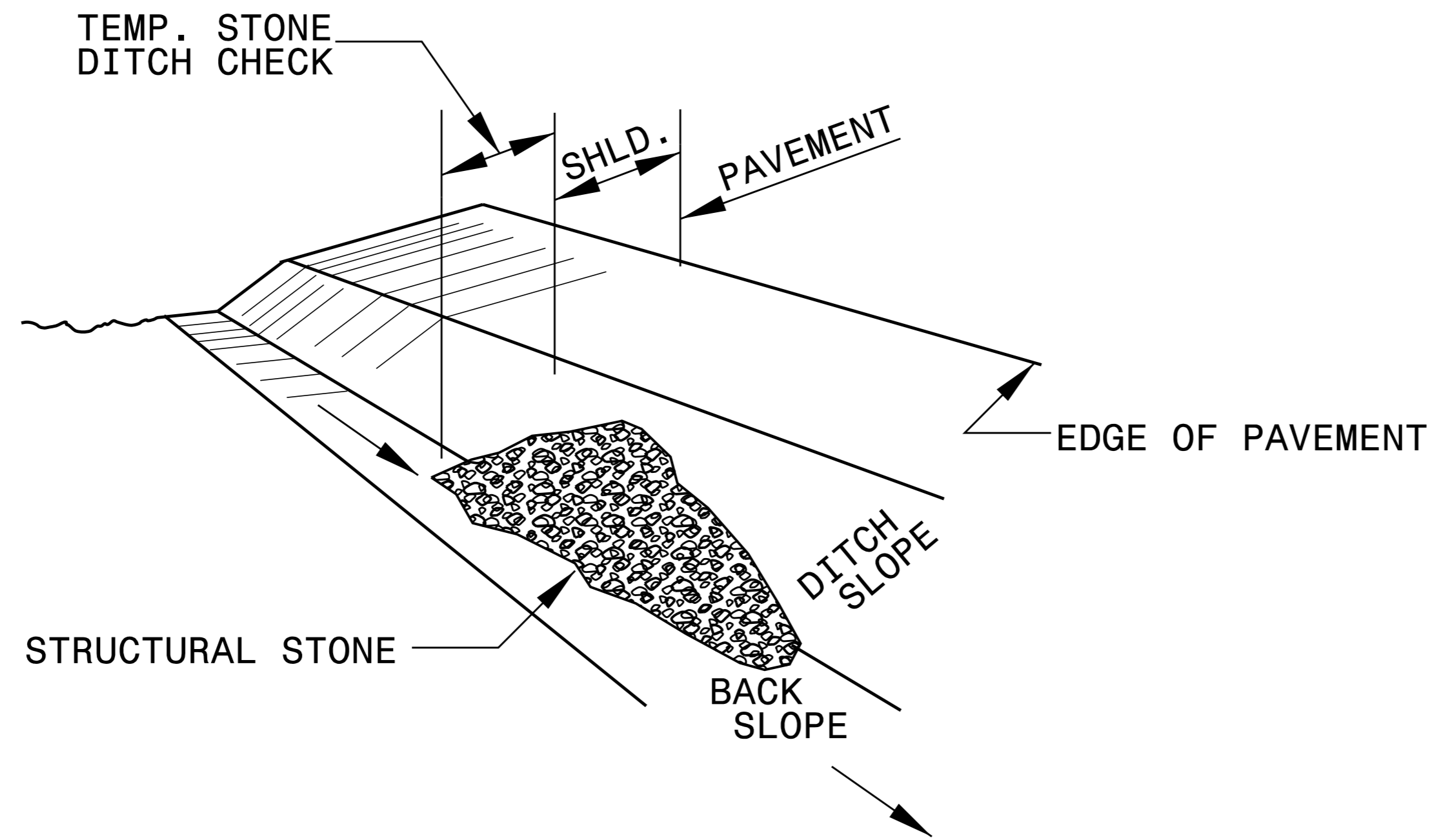
PROVIDE 5'-0" STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.

FOR MECHANICAL SLICING METHOD INSTALLATION, GEOTEXTILE SHALL BE A MAXIMUM OF 18" ABOVE GROUND SURFACE.



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TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

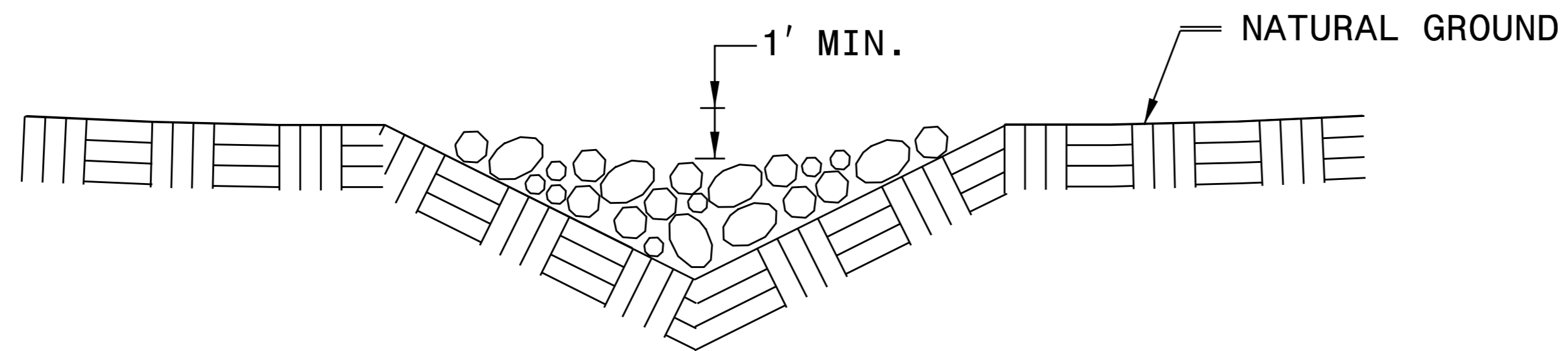


ISOMETRIC VIEW

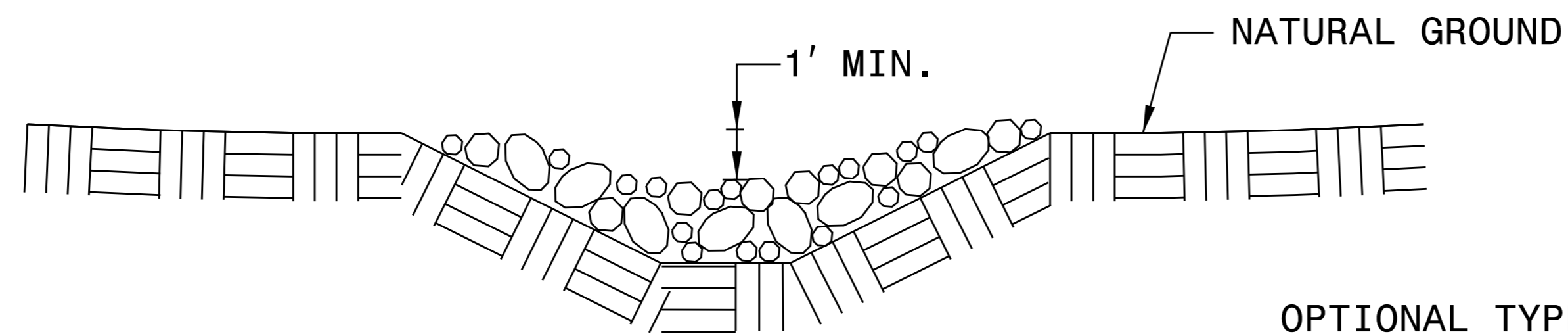
NOTES:

USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

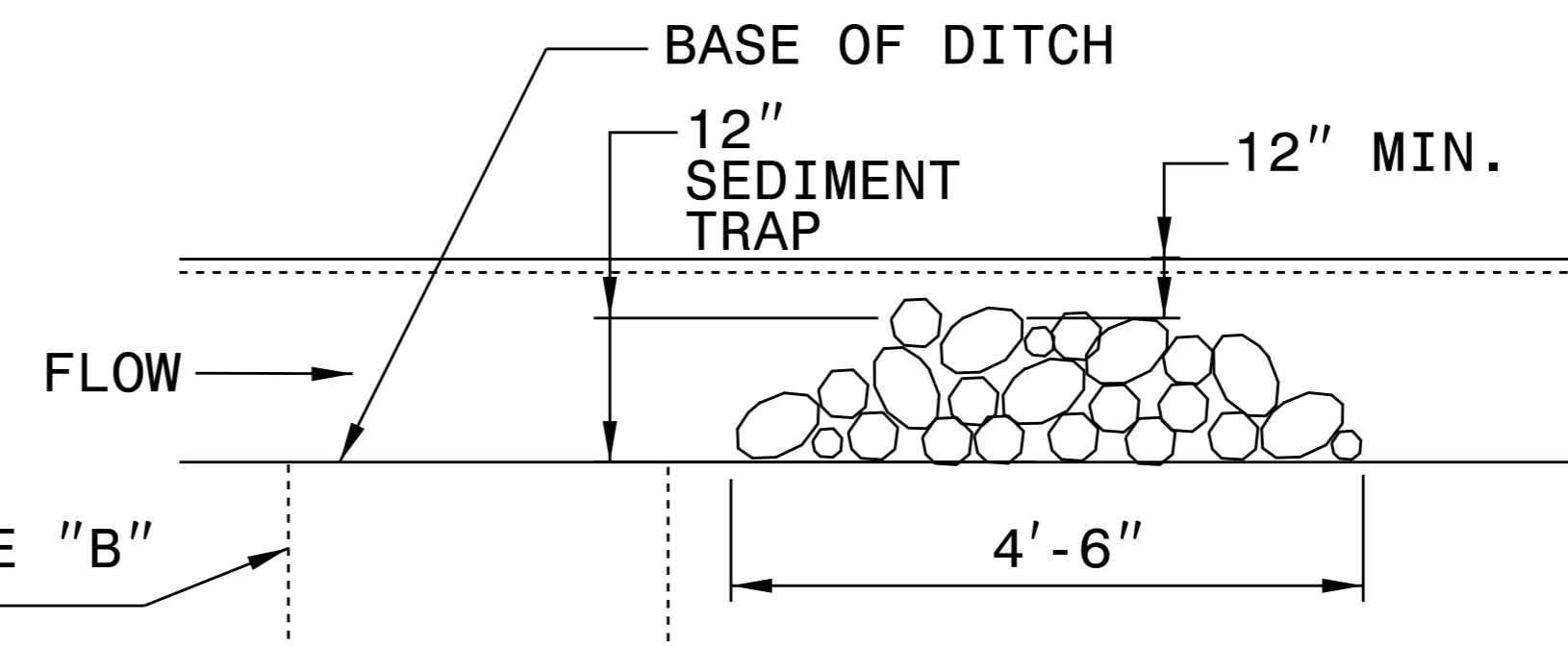
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



**CROSS SECTION
VEE DITCH**

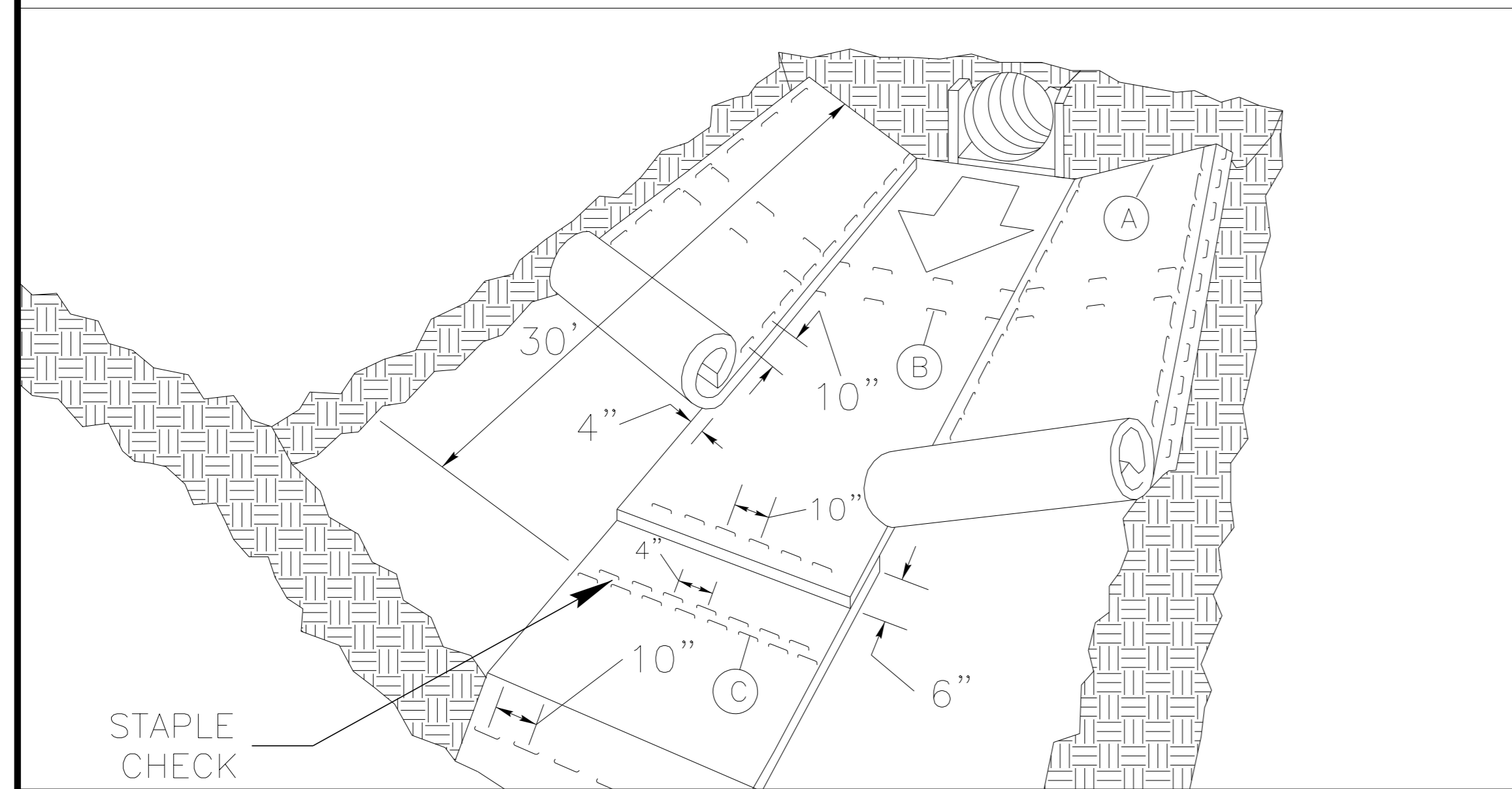


**CROSS SECTION
TRAPEZOIDAL DITCH**



ELEVATION VIEW

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

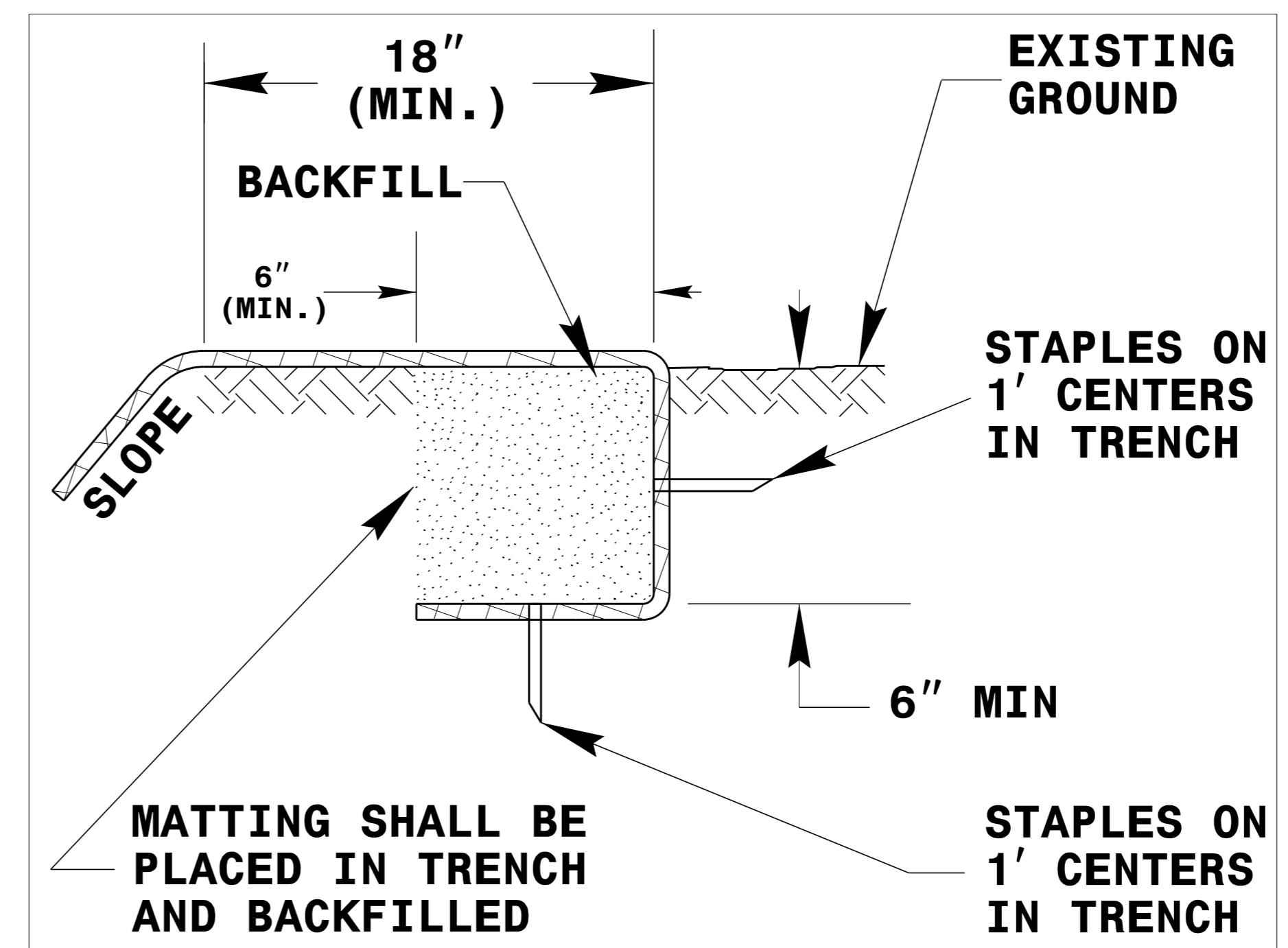
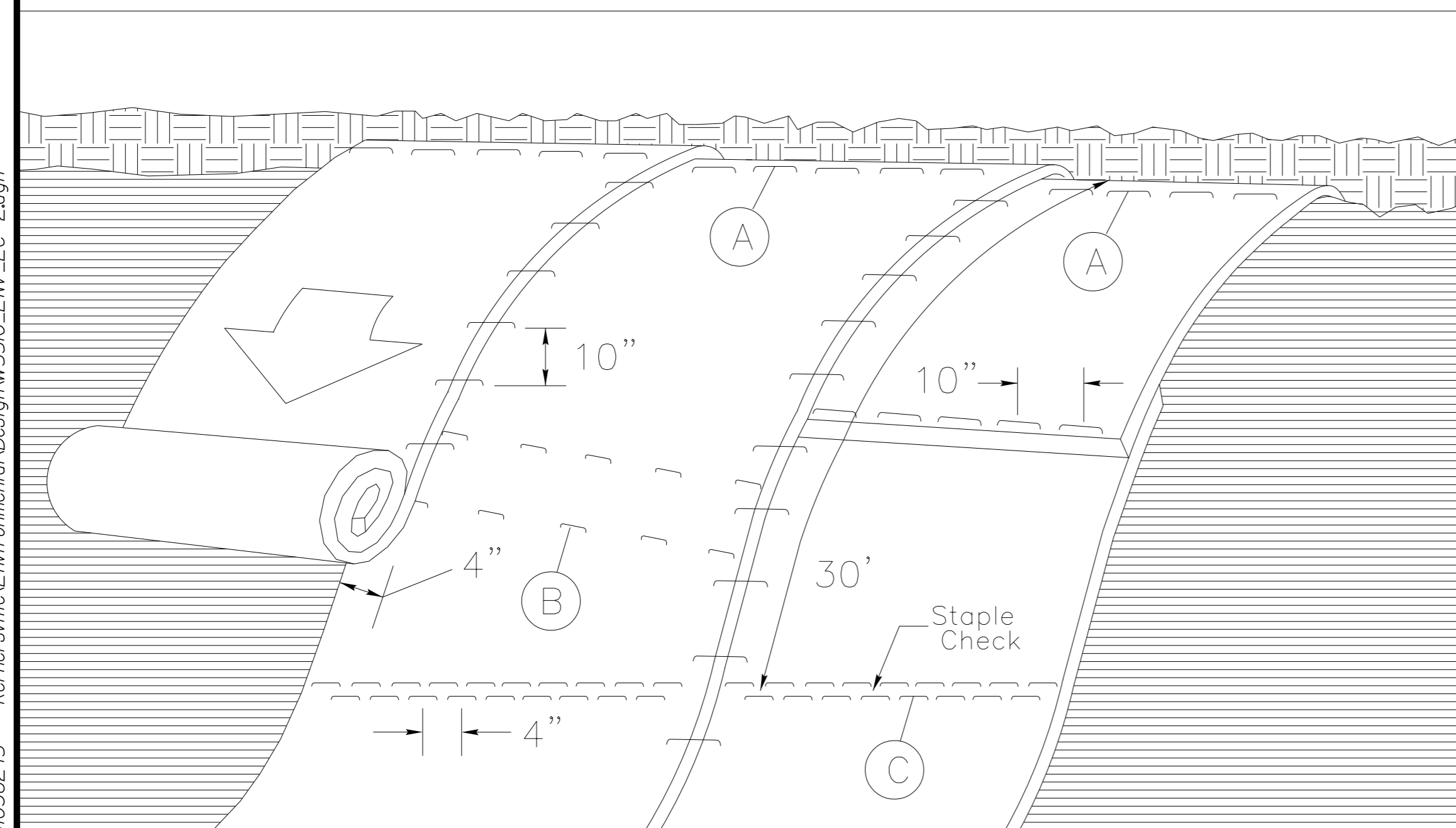


DIAGRAM (A)



MATTING ON SLOPES

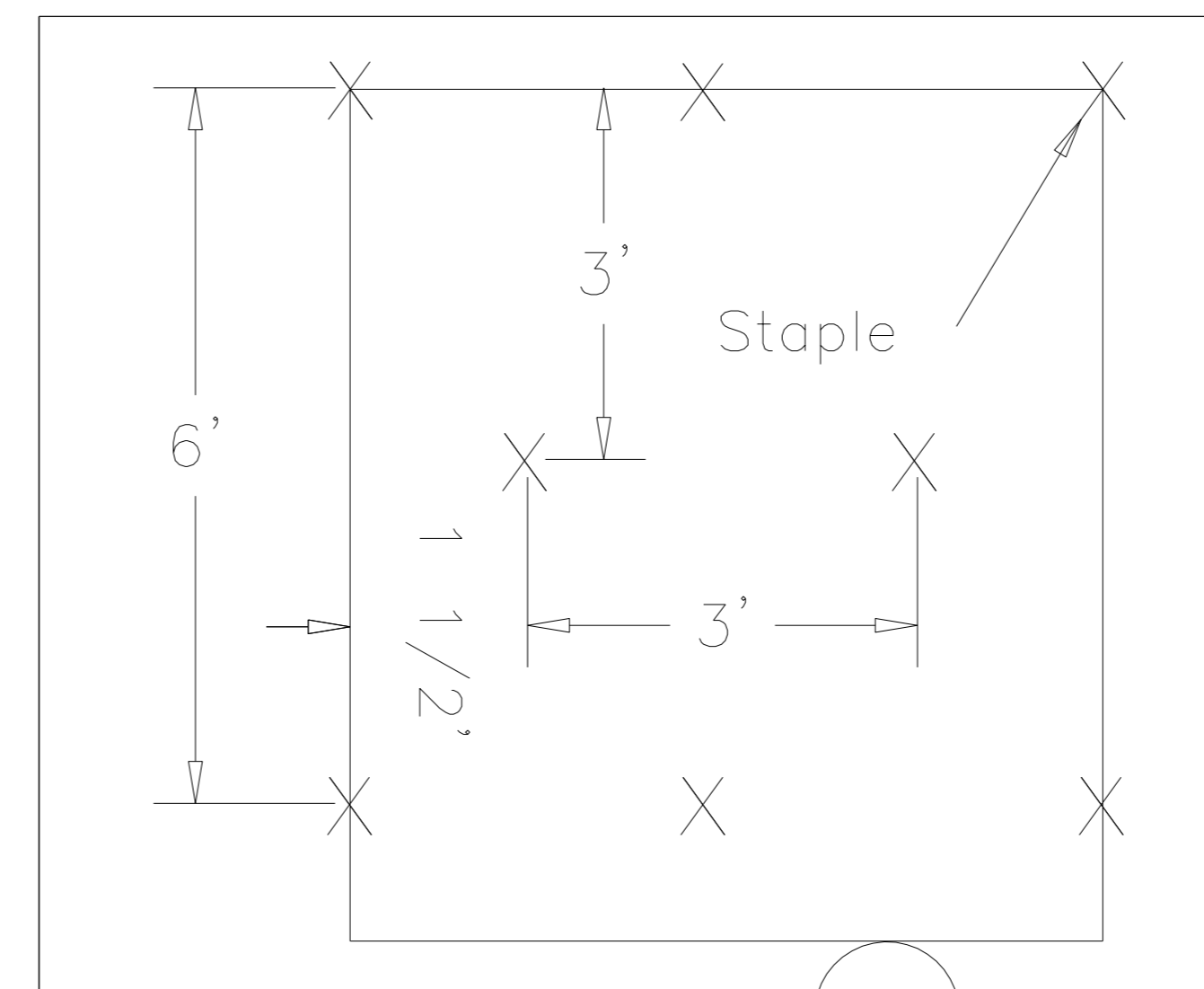


DIAGRAM B

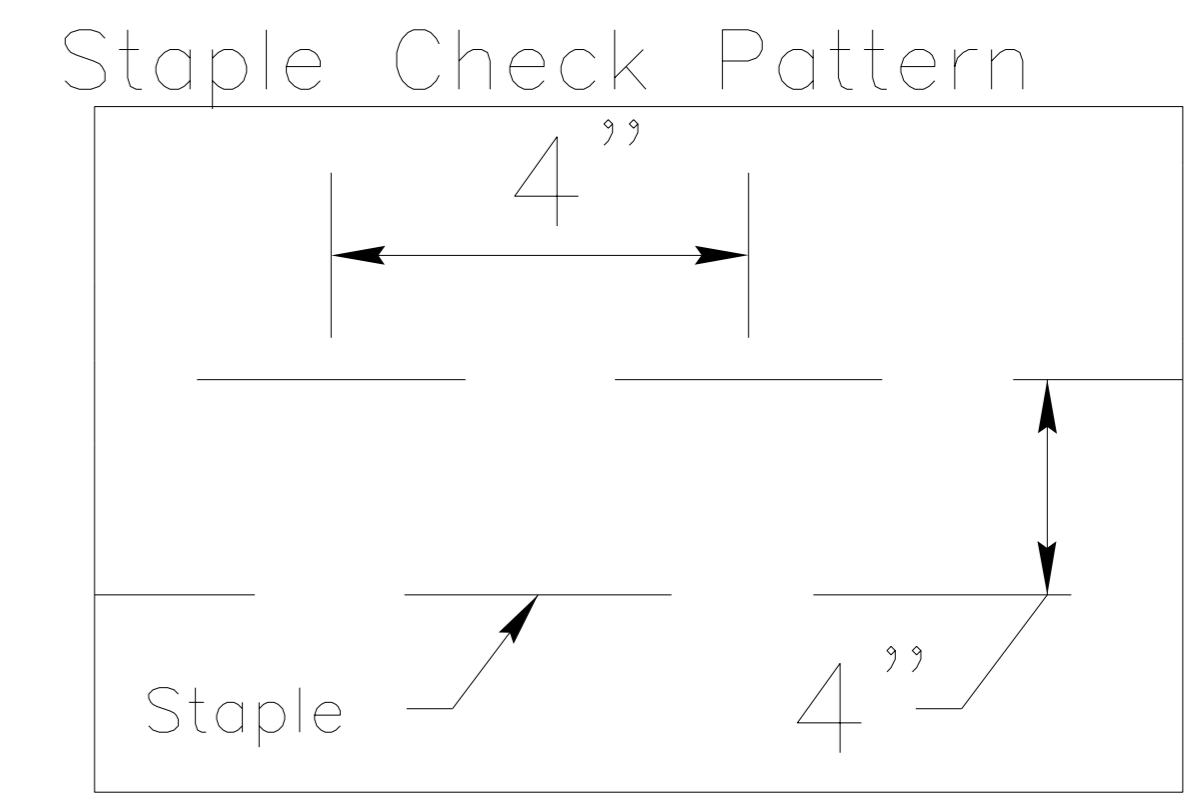


DIAGRAM (C)

NOTES:

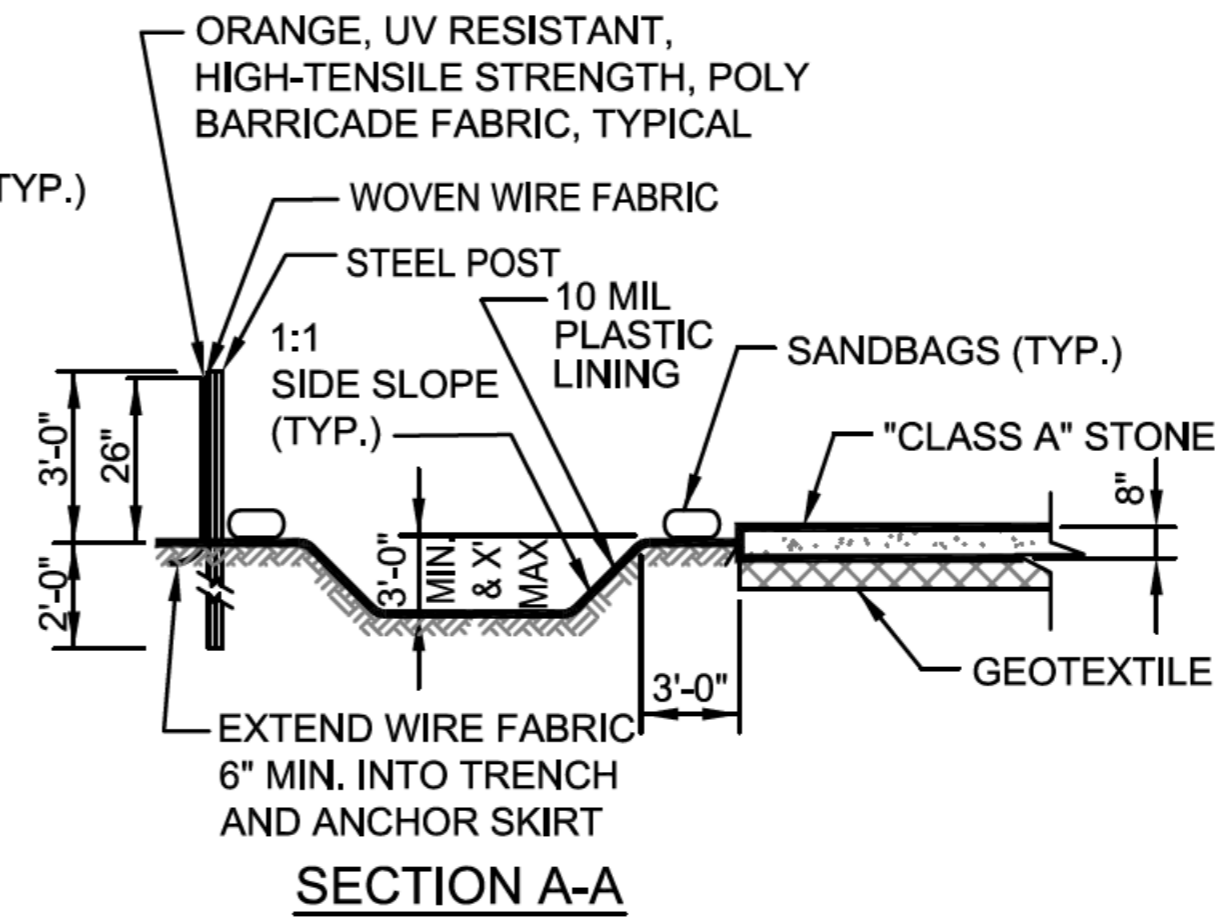
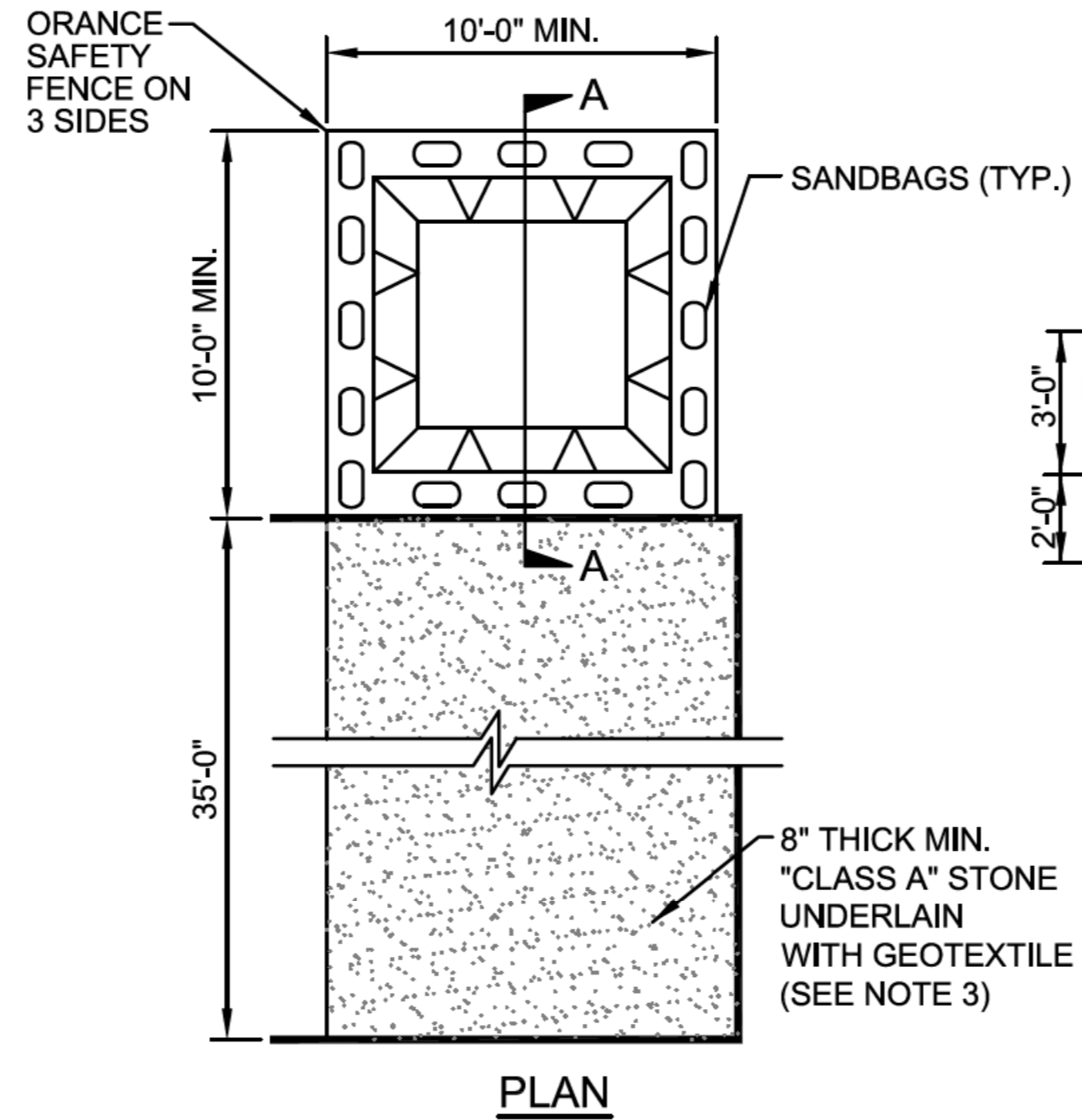
THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.
STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
W-5510	EC-2D
R/W SHEET NO.	

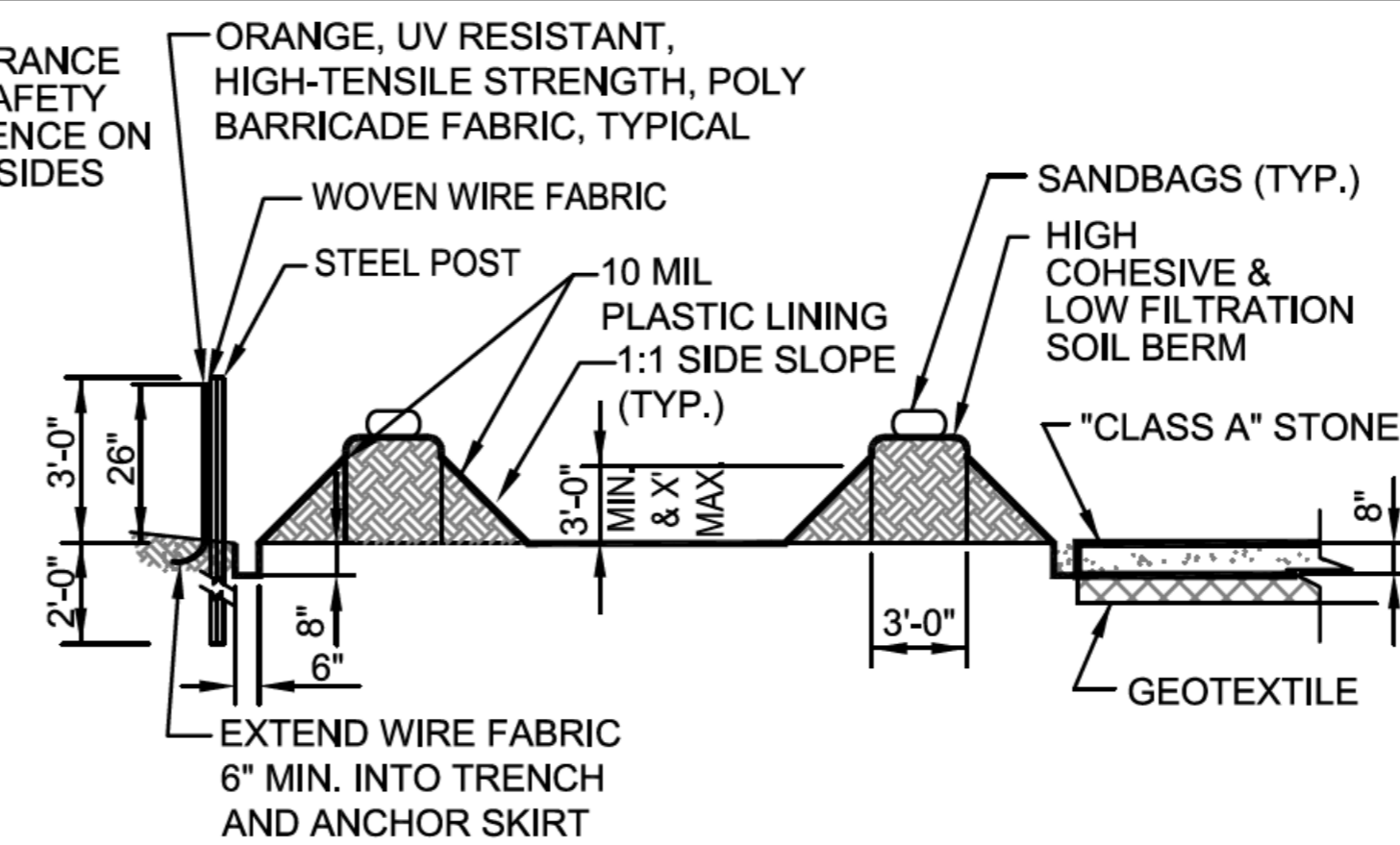
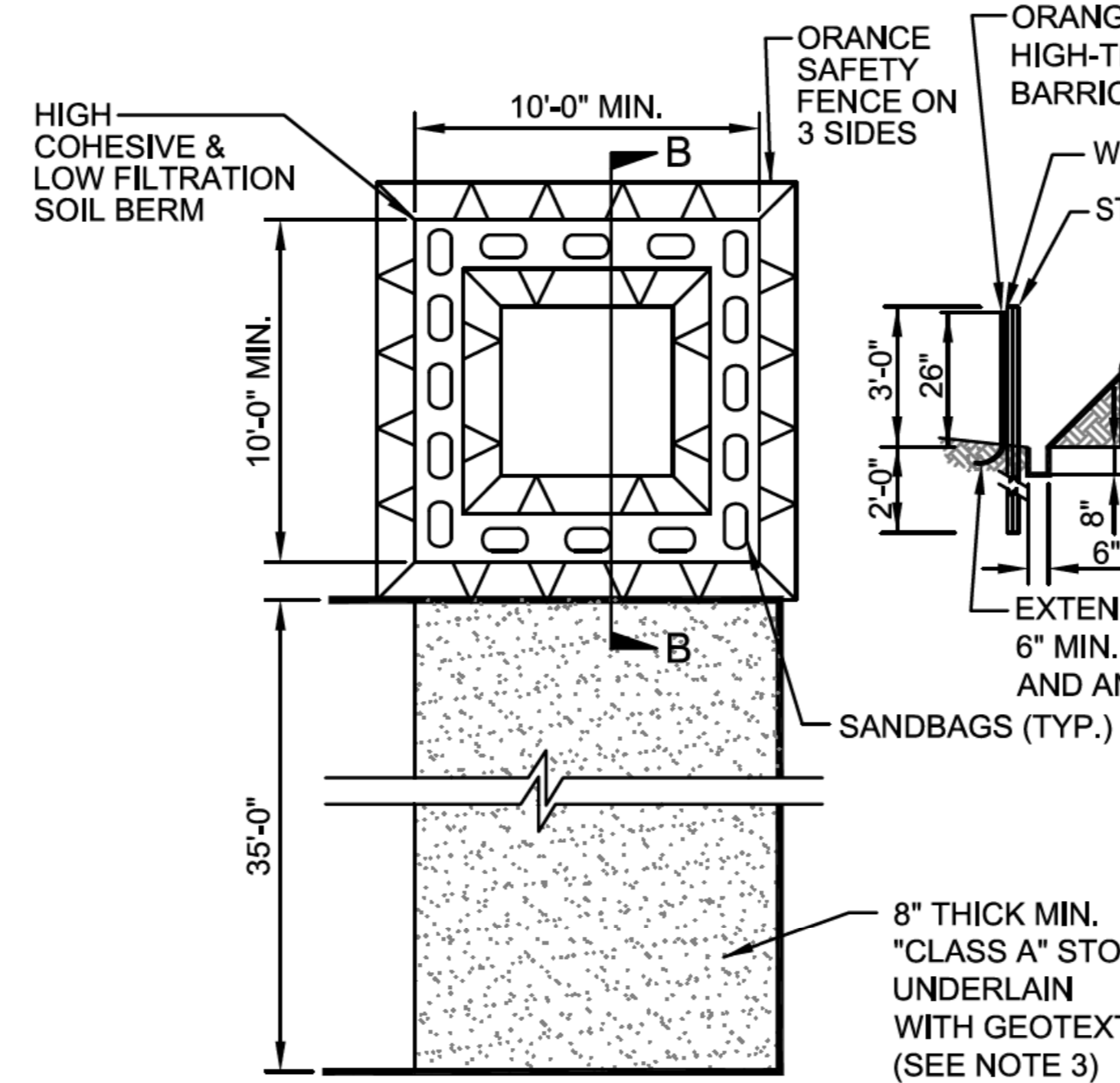
ONSITE CONCRETE WASHOUT STRUCTURE



- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM FREEBOARD OF 12 INCHES.
 3. STONE GRAVEL PAD CONSTRUCTED WITH "CLASS A" STONE OR OTHER AGGREGATE MATERIAL APPROVED BY ENGINEER.

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM FREEBOARD OF 12 INCHES.
 3. STONE GRAVEL PAD CONSTRUCTED WITH "CLASS A" STONE OR OTHER AGGREGATE MATERIAL APPROVED BY ENGINEER.



ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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CONST. REV.

PROJECT REFERENCE NO. W-5510	SHEET NO. EC-3A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
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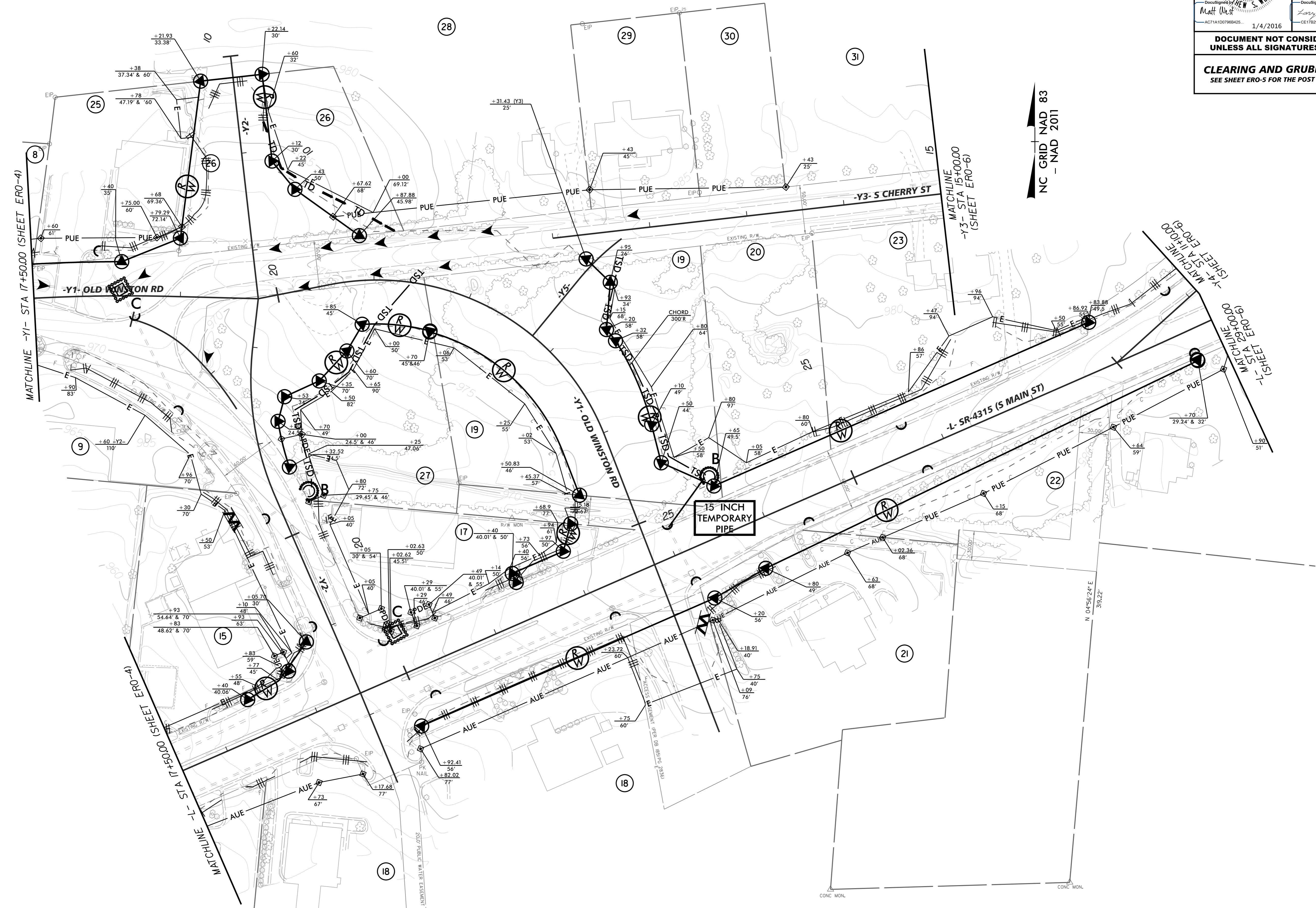
SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

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PROJECT REFERENCE NO. W-5510	SHEET NO. EC-5/CONST.5
R/W SHEET NO. 5	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
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CLEARING AND GRUBBING PHASE.
 SEE SHEET ERO-5 FOR THE POST GRADING PHASE.



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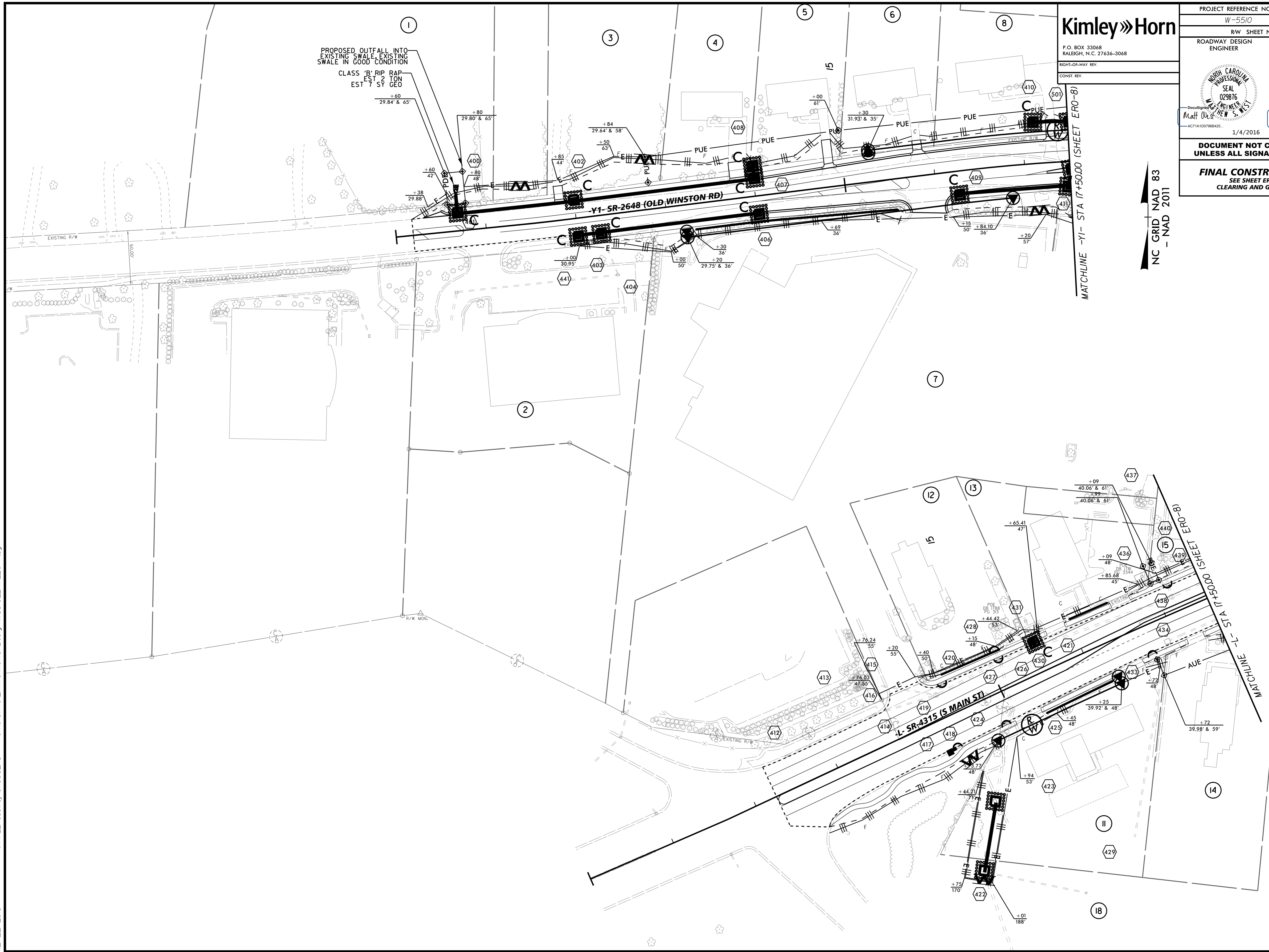


NC GRID NAD 83
- NAD 2011

PROJECT REFERENCE NO.		SHEET NO.	
W-5510		EC-6/CONST.6	
R/W SHEET NO. 6			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
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CLEARING AND GRUBBING PHASE. SEE SHEET ERO-6 FOR THE POST GRADING PHASE.			

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PROPOSED OUTFALL INTO
EXISTING SWALE, EXISTING
SWALE IN GOOD CONDITION
CLASS 'B' RIP RAP
EST 2 TON
EST 7 SY GEO

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CONST. REV.

PROJECT REFERENCE NO. W-5510		SHEET NO. EC-7/CONST.4	
RW SHEET NO. 4		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
1/4/2016		1/4/2016	
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FINAL CONSTRUCTION PHASE SEE SHEET ERO-1 FOR THE CLEARING AND GRUBBING PHASE.			



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- NAD 2011

MATCHLINE -Y1- STA 17+50.00 (SHEET ERO-8)

MATCHLINE -L- STA 17+50.00 (SHEET ERO-1)

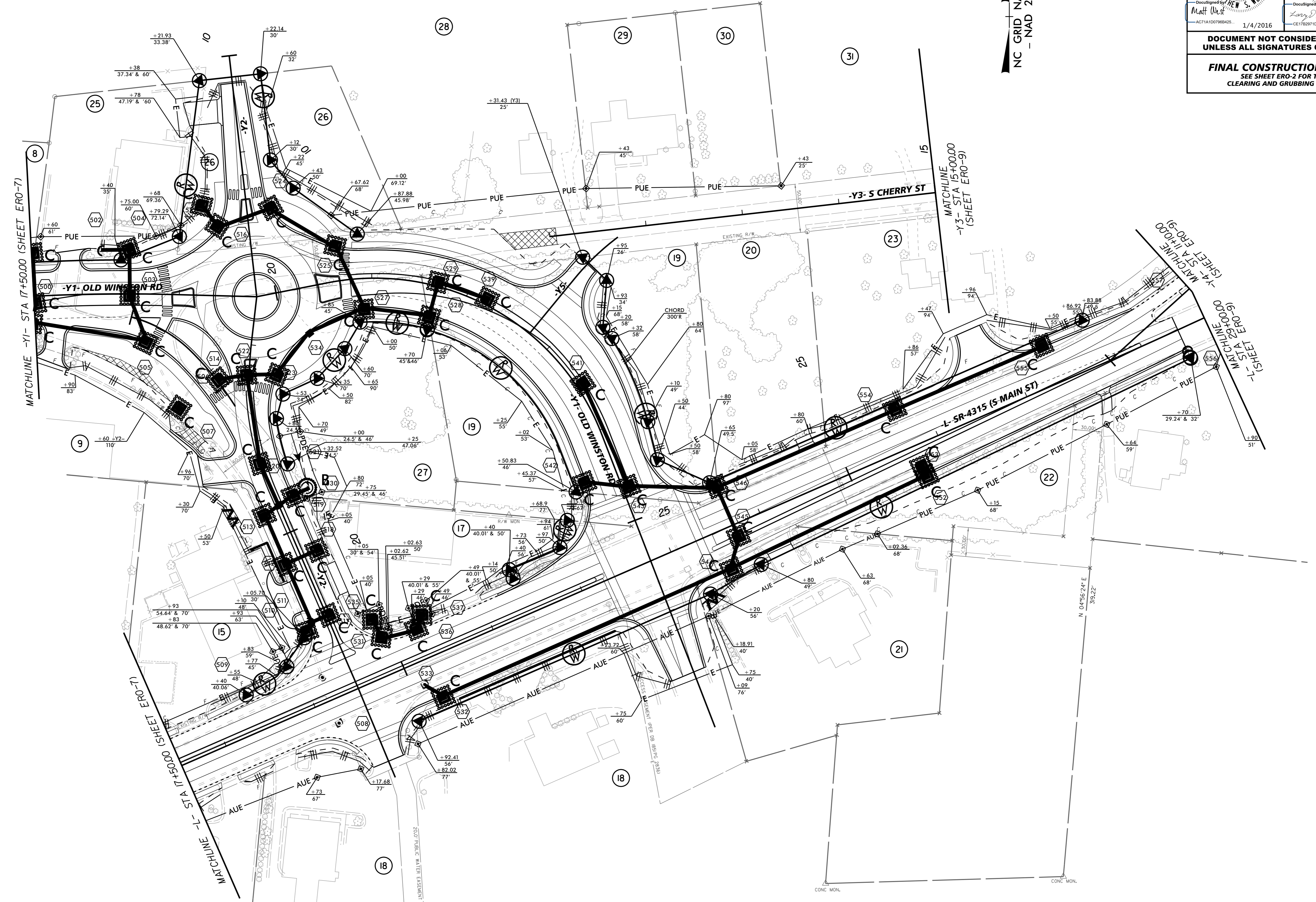
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CONST. REV.

PROJECT REFERENCE NO. W-5510	SHEET NO. EC-8/CONST.5
R/W SHEET NO. 5	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
1/4/2016	1/4/2016

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FINAL CONSTRUCTION PHASE
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12/22/2015



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PROJECT REFERENCE NO. W-5510	SHEET NO. EC-9/CONST.6
R/W SHEET NO. 6	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 Matt West 1/4/2016	 Larry Robinson 1/4/2016
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FINAL CONSTRUCTION PHASE SEE SHEET ERO-3 FOR THE CLEARING AND GRUBBING PHASE.	