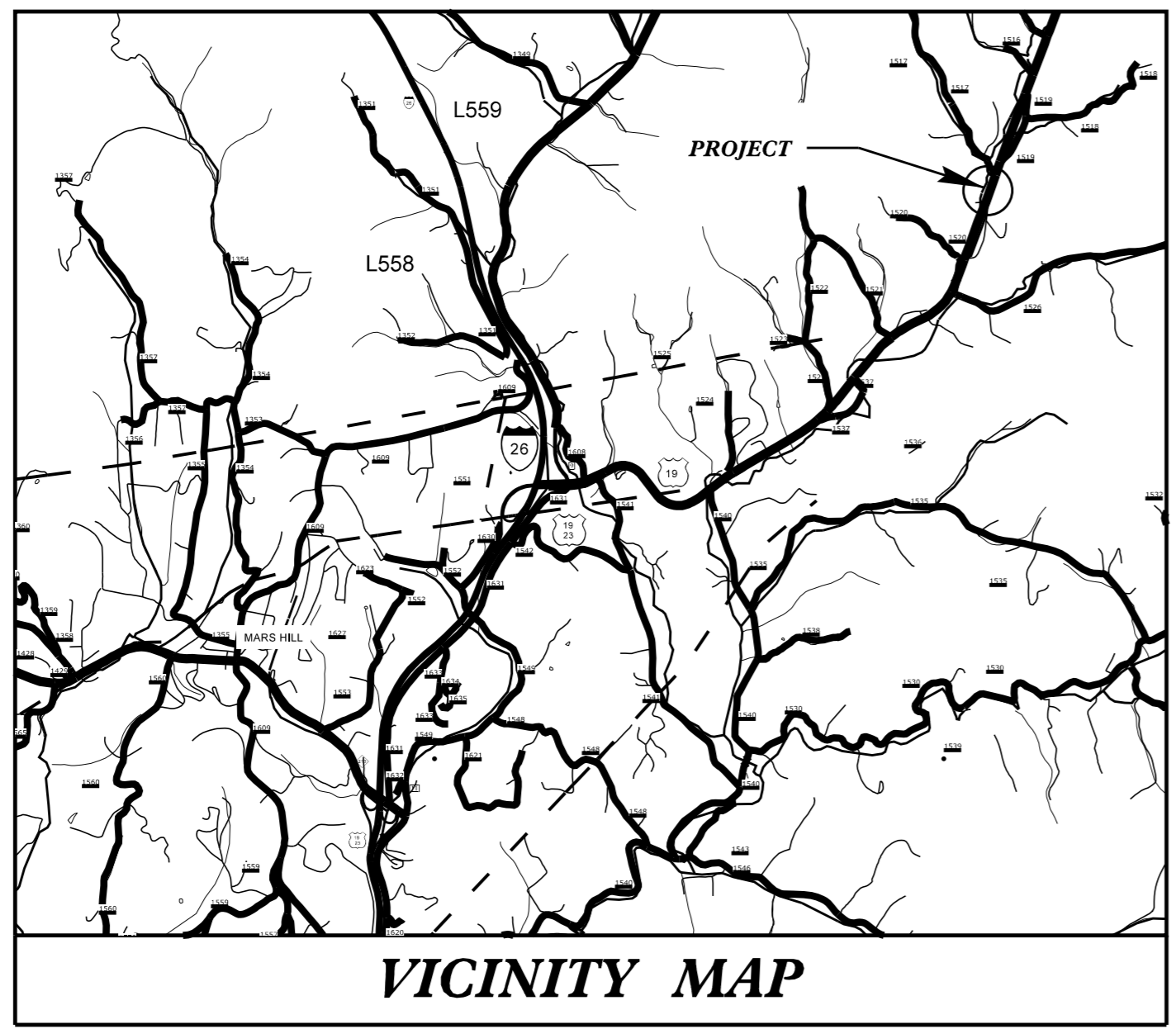


11/16/21

TIP PROJECT: R-2518WM

CONTRACT: DM00339

See Sheet IA For Index of Sheets
See Sheet IB For Conventional Symbols



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

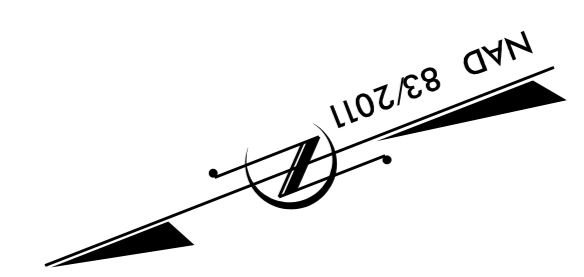
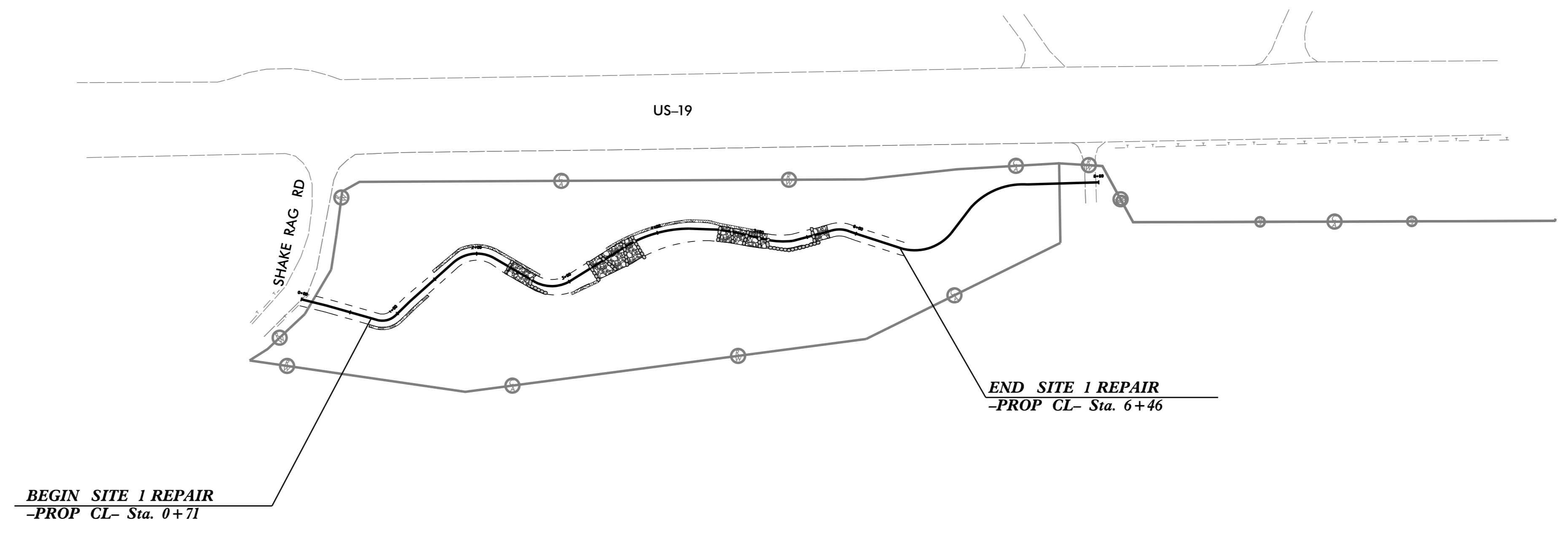
**PLAN FOR ON-SITE MITIGATION REPAIR
MADISON COUNTY**

LOCATION: SITE IS ADJACENT TO US-19 AND
SHAKE RAG ROAD (SR 1517)
EAST OF MARS HILL

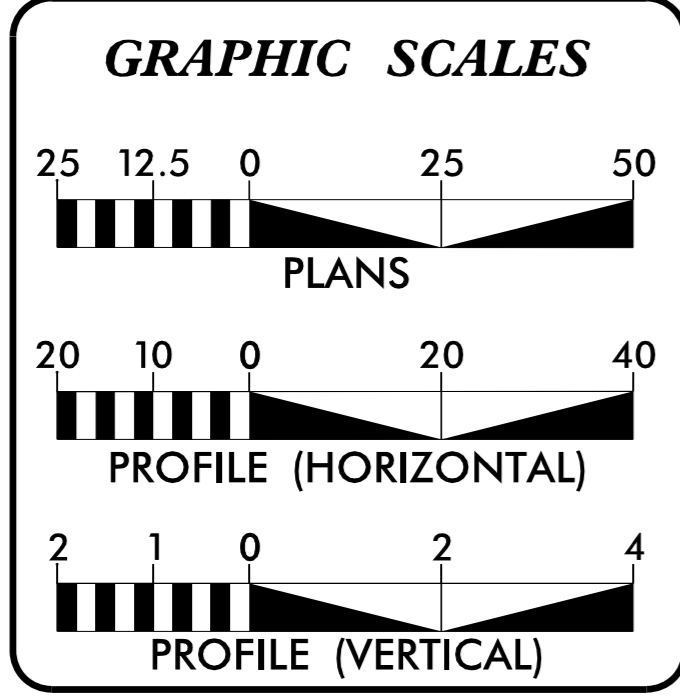
TYPE OF WORK: STREAM REPAIR /RESTORATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2518WM	OSM-1	16
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34445.3.1			

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



NC DOT CONTACT: BYRON MOORE



DESIGN DATA

--

PROJECT LENGTH

MITIGATION TYPE	LENGTH
REPAIR /RESTORATION	575 LF

PLANS PREPARED FOR THE NCDOT BY:

Kimley Horn

2018 STANDARD SPECIFICATIONS

NO. 10000000-0100
200 SOUTH TRYON STREET, SUITE 200
CHARLOTTE, NORTH CAROLINA 28203
PHONE: (704) 333-5151

DESIGN ENGINEER

Jason Lee Clouse

DocuSigned by:
Jason Lee Clouse
11/16/2021

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

11/16/21

GENERAL NOTES

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

- A) NORTH CAROLINA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, DATED JANUARY 2018, AND ANY SUPPLEMENTS THERETO ISSUED PRIOR TO THE DATE OF RECEIPT OF BIDS.
- B) NORTH CAROLINA DEPARTMENT OF TRANSPORTATION "ROADWAY STANDARD DRAWINGS, ENGLISH" DATED JANUARY 2018, AND ANY SUPPLEMENTS ISSUED THERETO PRIOR TO THE DATE OF RECEIPT OF BIDS.

ALL RIGHT OF WAY CORNER MARKERS OR FENCING SHALL BE PLACED BY OTHERS AS NECESSARY.

CONTRACTOR SHALL BE PREQUALIFIED TO NCDOT 1601 WORK CODE.

THE CONTRACTOR IS RESPONSIBLE FOR AVOIDING ANY DISTURBANCE OR DAMAGE TO EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING ANY DAMAGES AT NO COST TO THE DEPARTMENT.

THE CONTRACTOR MAY UTILIZE THE DESIGNATED STAGING AREA AND THE AREA INSIDE THE PROPOSED RIGHT OF WAY FOR STAGING AND STOCKPILING EQUIPMENT AND MATERIALS.

THE STREAM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TYPICAL SECTIONS.

SUBSURFACE PLANS: NO SUBSURFACE PLANS ARE AVAILABLE ON THE PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

CONSTRUCTION SEQUENCING

LAYOUT LOCATION OF THE NEW STREAM CHANNEL, CONSTRUCTION EASEMENT LIMITS, AND GRADE STAKES. THE ENGINEER MUST INSPECT AND APPROVE ALL LAYOUT WORK BEFORE CONSTRUCTION MAY BEGIN.

MOBILIZE EQUIPMENT AND MATERIALS TO THE SITE.

INSTALL CONSTRUCTION ENTRANCE PER EROSION CONTROL PLAN.

ESTABLISH STAGING AREAS AND MARK CONSTRUCTION EQUIPMENT ACCESS LOCATIONS WITH VISIBLE MARKERS. CONSTRUCTION EQUIPMENT SHALL BE CONTAINED WITHIN THE LIMITS OF CONSTRUCTION AS DEPICTED IN THE PLANS OR SPECIFIED BY THE ENGINEER.

INSTALL TEMPORARY EROSION CONTROL MEASURES.

CONSTRUCTION SHALL PROCEED IN SUCCESSIVE REACHES WITH THE UPSTREAM REACH BEING COMPLETED PRIOR TO INITIATING CONSTRUCTION OF THE ADJACENT DOWNSTREAM REACH. EACH REACH SHALL BE LIMITED IN LENGTH TO WORK THAT CAN BE COMPLETED BEFORE ALLOWING WATER TO FLOW THROUGH THAT REACH. COMPLETION OF A REACH SHALL CONSIST OF CHANNEL CONSTRUCTION, FLOODPLAIN GRADING, IN-STREAM STRUCTURE INSTALLATION, BED MATERIAL INSTALLATION, AND EROSION CONTROL MEASURES. CONSTRUCTION SHALL BE DONE IN THE DRY, WITH THE CHANNEL FLOW PUMPED AROUND THE REACH UNDER CONSTRUCTION AS NECESSARY.

AT THE END OF EACH DAYS CONSTRUCTION WORK, THE CONTRACTOR SHALL SEED ALL DISTURBED AREAS AND COVER THE STREAM BANKS AND BANKFULL BENCHES WITH COIR FIBER MATTING. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY EROSION CONTROL MEASURES ON A DAILY BASIS THROUGHOUT THE CONSTRUCTION PROCESS.

AFTER ALL IN-STREAM WORK IS COMPLETED, THE CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL MEASURES AND TEMPORARY STREAM ACCESS AND SCARIFY ANY COMPACTED AREAS AS DIRECTED BY THE ENGINEER. ALL PORTIONS OF THE SITE SHALL BE STABILIZED WITH TEMPORARY EROSION CONTROL MEASURES.

PREPARED IN THE OFFICE OF:



NC LICENSE #P-0102
200 SOUTH TRYON STREET, SUITE 200
CHARLOTTE, NORTH CAROLINA 28202
PHONE: (704) 333-5131

PROJECT REFERENCE NO. **R-2518WM** SHEET NO. **OSM-1A**

PROJECT ENGINEER

APPROVED BY: _____

DATE: _____

Jason Lee (Sealed)
11/16/2021

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS, CONSTRUCTION SEQUENCING, AND GENERAL NOTES

INDEX OF SHEETS

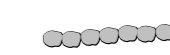
OSM-1	TITLE SHEET
OSM-1A	INDEX OF SHEETS, CONSTRUCTION SEQUENCING, GENERAL NOTES
OSM-1B	CONVENTIONAL PLAN SHEET SYMBOLS
OSM-2	TYPICAL SECTIONS
OSM-2A	DETAILS -CONSTRUCTED RIFFLE -J-HOOK VANE -ROCK TOE PROTECTION -BOULDER TOE PROTECTION
OSM-2B	-DIVERSION PUMPING
OSM-2C	CURVE DATA SHEET
OSM-2D	EXISTING CONDITIONS
OSM-3	SUMMARY OF QUANTITIES SUMMARY OF EARTHWORK
OSM-4	PLAN SHEET
OSM-5	PROFILE SHEET
EC-1	EROSION CONTROL TITLE SHEET
EC-2	SILT FENCE COIR FIBER WATTLE BREAK DETAIL
EC-3	COIR FIBER MATTING DETAIL
EC-4	SOIL STABILIZATION TIMEFRAME
EC-5	EROSION CONTROL PLAN SHEET

STREAM SYMBOLS

PLAN VIEW SYMBOLS



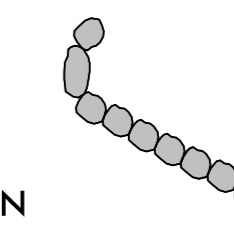
PROPOSED CONSTRUCTED RIFFLE



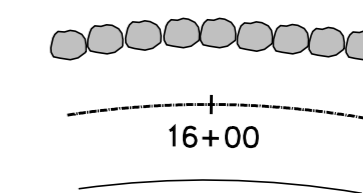
PROPOSED ROCK SILL



PROPOSED ROCK TOE PROTECTION



PROPOSED J-HOOK VANE



PROPOSED BOULDER TOE PROTECTION

PROFILE SYMBOLS



EXISTING GROUND ELEVATION



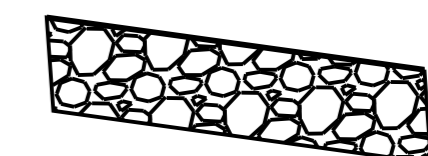
PROPOSED GROUND ELEVATION



EXISTING ROCK SILL



PROPOSED ROCK SILL



PROPOSED CONSTRUCTED RIFFLE



PROPOSED J-HOOK VANE

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

Table listing symbols for State Line, County Line, Township Line, City Line, Reservation Line, Property Line, Existing Iron Pin, Property Corner, Property Monument, Parcel/Sequence Number, Existing Fence Line, Proposed Woven Wire Fence, Proposed Chain Link Fence, Proposed Barbed Wire Fence, Existing Wetland Boundary, Proposed Wetland Boundary, Existing Endangered Animal Boundary, Existing Endangered Plant Boundary.

BUILDINGS AND OTHER CULTURE:

Table listing symbols for Gas Pump Vent or U/G Tank Cap, Sign, Well, Small Mine, Foundation, Area Outline, Cemetery, Building, School, Church, Dam.

HYDROLOGY:

Table listing symbols for Stream or Body of Water, Hydro, Pool or Reservoir, Jurisdictional Stream, Buffer Zone 1, Buffer Zone 2, Flow Arrow, Disappearing Stream, Spring, Wetland, Proposed Lateral, Tail, Head Ditch, False Sump.

RAILROADS:

Table listing symbols for Standard Gauge, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY:

Table listing symbols for Baseline Control Point, Existing Right of Way Marker, Existing Right of Way Line, Proposed Right of Way Line, Proposed Right of Way Line with Iron Pin and Cap Marker, Proposed Right of Way Line with Concrete or Granite Marker, Existing Control of Access, Proposed Control of Access, Existing Easement Line, Proposed Temporary Construction Easement, Proposed Temporary Drainage Easement, Proposed Permanent Drainage Easement, Proposed Permanent Drainage / Utility Easement, Proposed Permanent Utility Easement, Proposed Temporary Utility Easement, Proposed Permanent Easement with Iron Pin and Cap Marker.

ROADS AND RELATED FEATURES:

Table listing symbols for Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Wheel Chair Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equality Symbol, Pavement Removal.

VEGETATION:

Table listing symbols for Single Tree, Single Shrub, Hedge, Woods Line, Orchard, Vineyard.

EXISTING STRUCTURES:

Table listing symbols for MAJOR: Bridge, Tunnel or Box Culvert; Bridge Wing Wall, Head Wall and End Wall; MINOR: Head and End Wall, Pipe Culvert, Footbridge, Drainage Box: Catch Basin, DI or JB, Paved Ditch Gutter, Storm Sewer Manhole, Storm Sewer.

UTILITIES:

Table listing symbols for POWER: Existing Power Pole, Proposed Power Pole, Existing Joint Use Pole, Proposed Joint Use Pole, Power Manhole, Power Line Tower, Power Transformer, U/G Power Cable Hand Hole, H-Frame Pole, Recorded U/G Power Line, Designated U/G Power Line (S.U.E.*).

TELEPHONE:

Table listing symbols for Existing Telephone Pole, Proposed Telephone Pole, Telephone Manhole, Telephone Booth, Telephone Pedestal, Telephone Cell Tower, U/G Telephone Cable Hand Hole, Recorded U/G Telephone Cable, Designated U/G Telephone Cable (S.U.E.*), Recorded U/G Telephone Conduit, Designated U/G Telephone Conduit (S.U.E.*), Recorded U/G Fiber Optics Cable, Designated U/G Fiber Optics Cable (S.U.E.*).

WATER:

Table listing symbols for Water Manhole, Water Meter, Water Valve, Water Hydrant, Recorded U/G Water Line, Designated U/G Water Line (S.U.E.*), Above Ground Water Line.

TV:

Table listing symbols for TV Satellite Dish, TV Pedestal, TV Tower, U/G TV Cable Hand Hole, Recorded U/G TV Cable, Designated U/G TV Cable (S.U.E.*), Recorded U/G Fiber Optic Cable, Designated U/G Fiber Optic Cable (S.U.E.*).

GAS:

Table listing symbols for Gas Valve, Gas Meter, Recorded U/G Gas Line, Designated U/G Gas Line (S.U.E.*), Above Ground Gas Line.

SANITARY SEWER:

Table listing symbols for Sanitary Sewer Manhole, Sanitary Sewer Cleanout, U/G Sanitary Sewer Line, Above Ground Sanitary Sewer, Recorded SS Forced Main Line, Designated SS Forced Main Line (S.U.E.*).

MISCELLANEOUS:

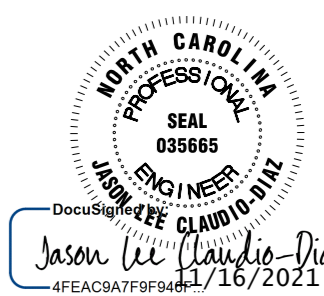
Table listing symbols for Utility Pole, Utility Pole with Base, Utility Located Object, Utility Traffic Signal Box, Utility Unknown U/G Line, U/G Tank; Water, Gas, Oil, A/G Tank; Water, Gas, Oil, U/G Test Hole (S.U.E.*), Abandoned According to Utility Records, End of Information.

11/16/21

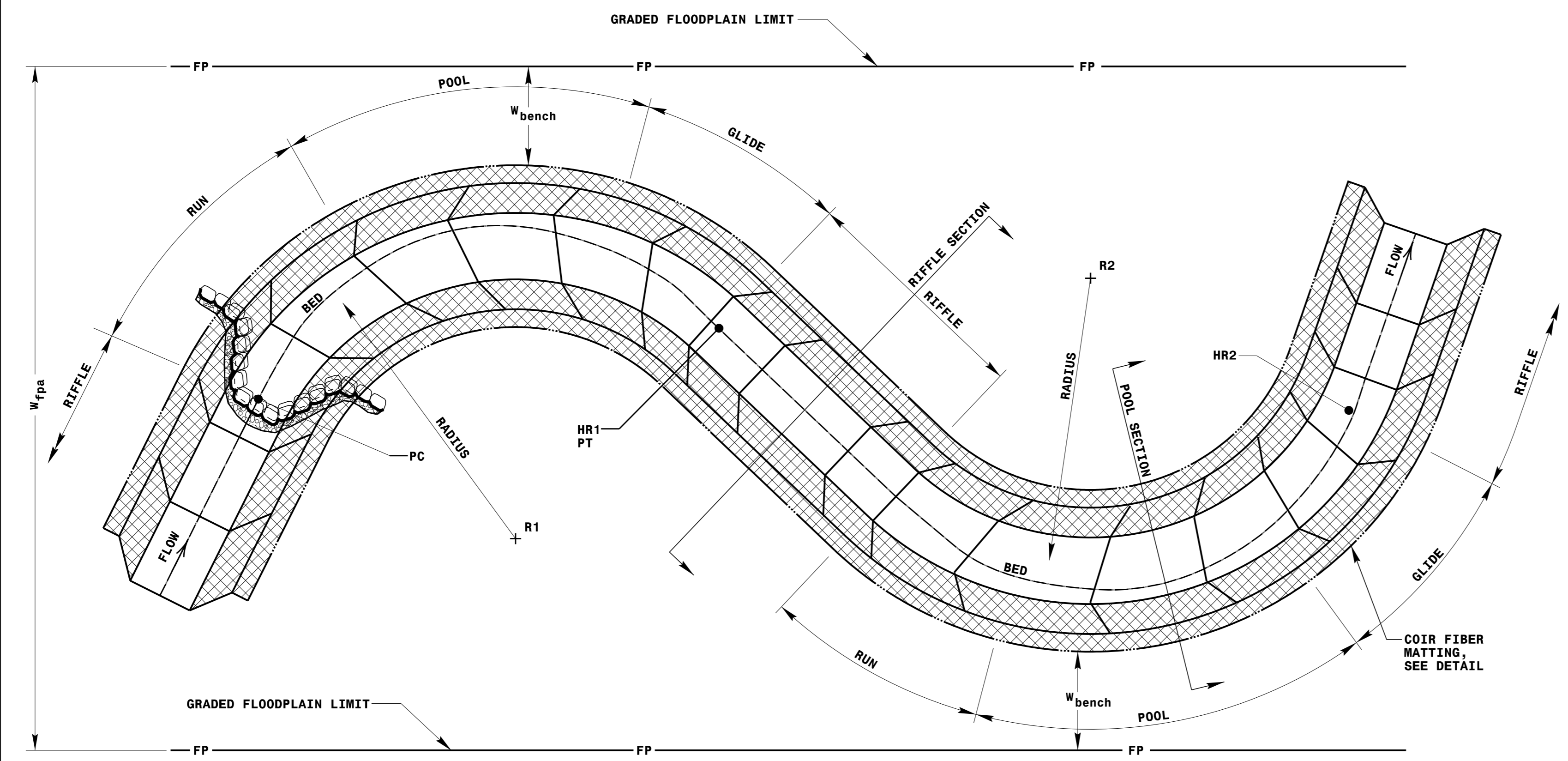
PREPARED IN THE OFFICE OF:

Kimley » Horn

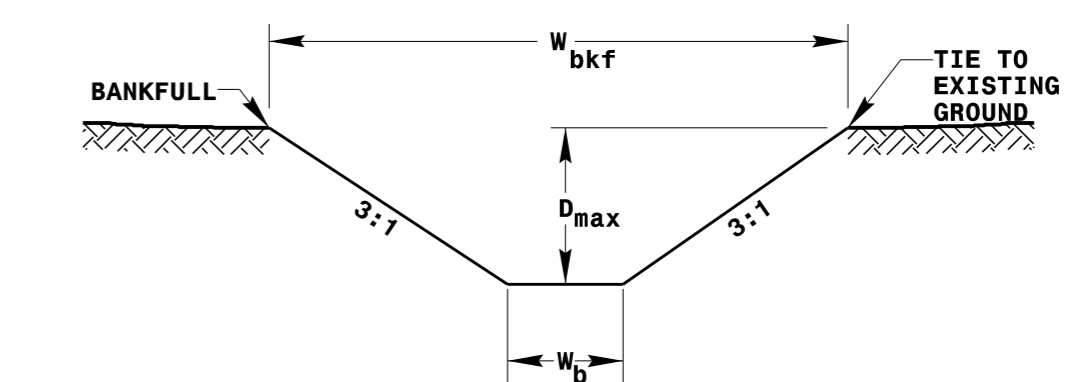
NC LICENSE #F-0102
200 SOUTH TRYON STREET, SUITE 200
CHARLOTTE, NORTH CAROLINA 28202
PHONE: (704) 333-5131

PROJECT REFERENCE NO. R-2518WM	SHEET NO. OSM-2
PROJECT ENGINEER	
APPROVED BY:	
DATE:	
	
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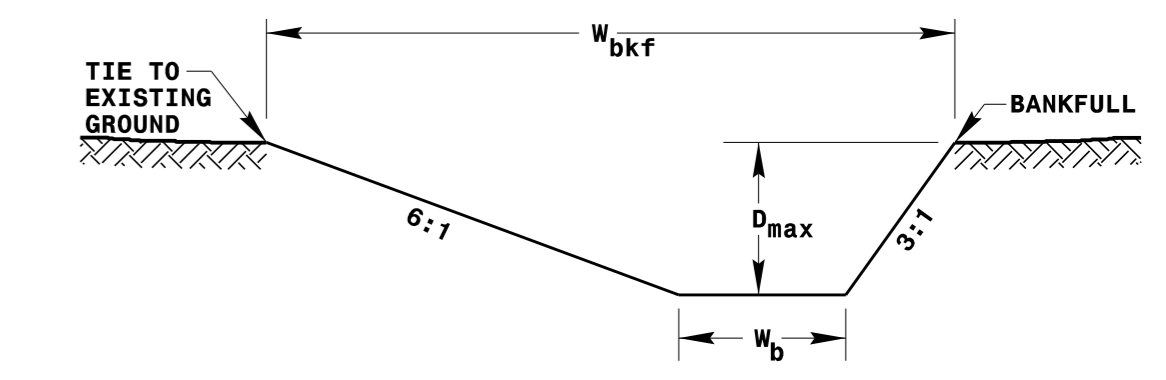
TYPICAL SECTIONS



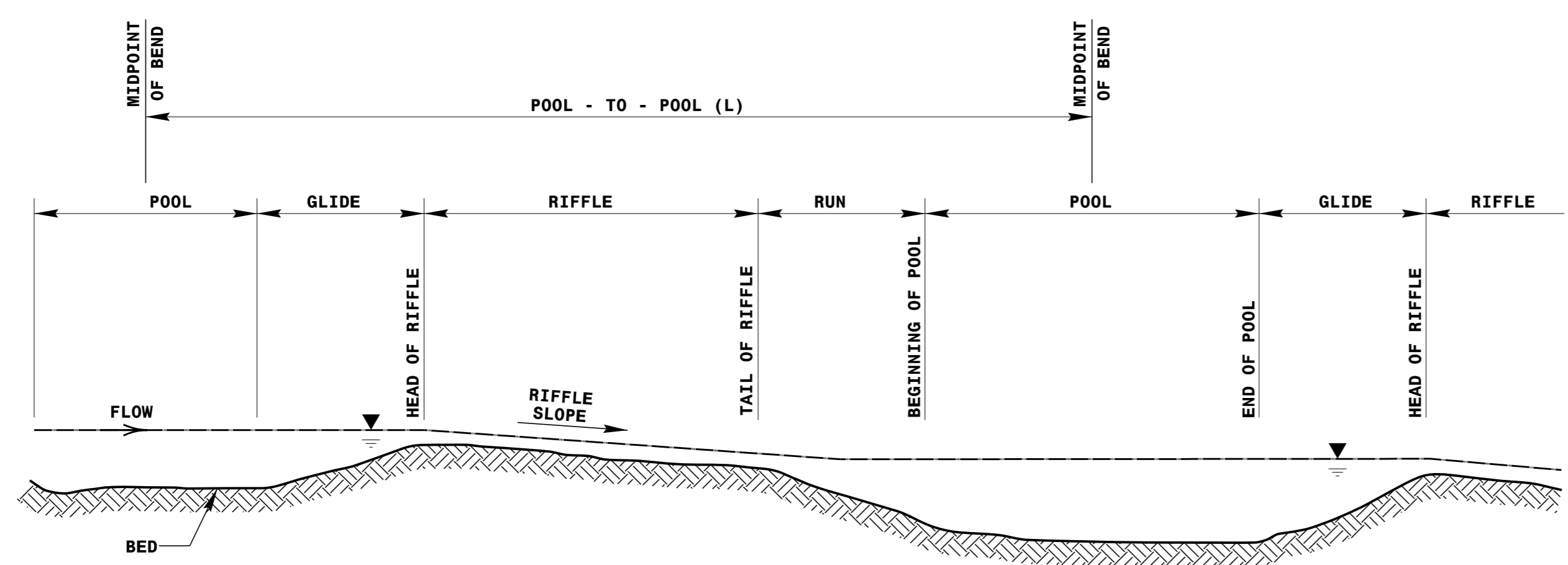
TYPICAL PLAN



TYPICAL RIFFLE



TYPICAL POOL



TYPICAL PROFILE

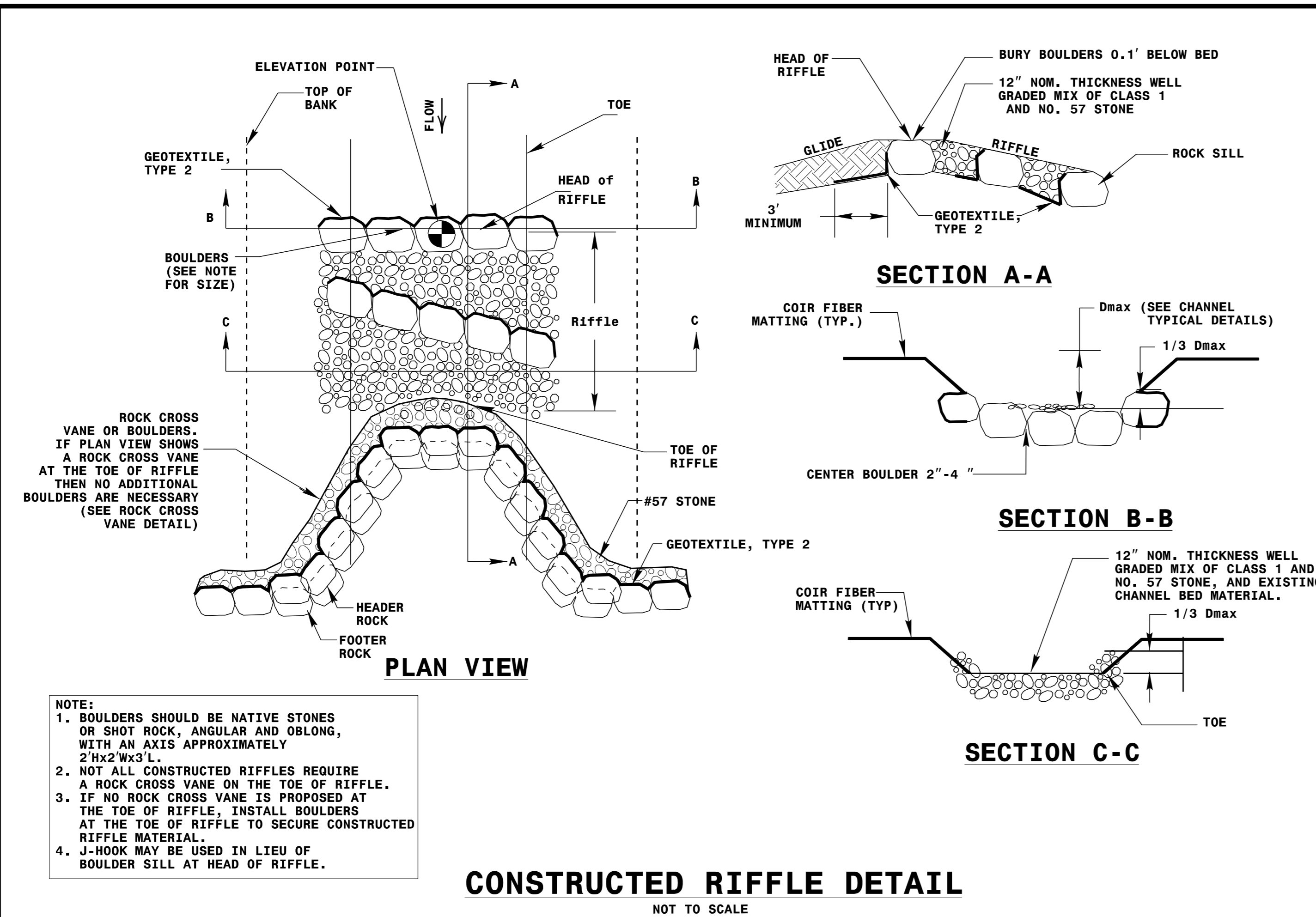
CHANNEL TYPICAL DETAIL

NOT TO SCALE

- w_{bkf} = BANKFULL WIDTH
- D_{max} = MAXIMUM DEPTH
- w_b = BOTTOM WIDTH
- w_{lf} = LOW FLOW WIDTH
- D_{lf} = LOW FLOW DEPTH

REACH	RIFFLE			POOL		
	w _{bkf}	D _{max}	w _b	w _{bkf}	D _{max}	w _b
SEE PLAN SHEETS FOR DRAFT STATIONS	28.2	2.2	14.5	29.6	4	2

11/16/21



PREPARED IN THE OFFICE OF:

Kimley » Horn

NC LICENSE #F-0102
200 SOUTH TRYON STREET, SUITE 200
CHARLOTTE, NORTH CAROLINA 28202
PHONE: (704) 333-5131

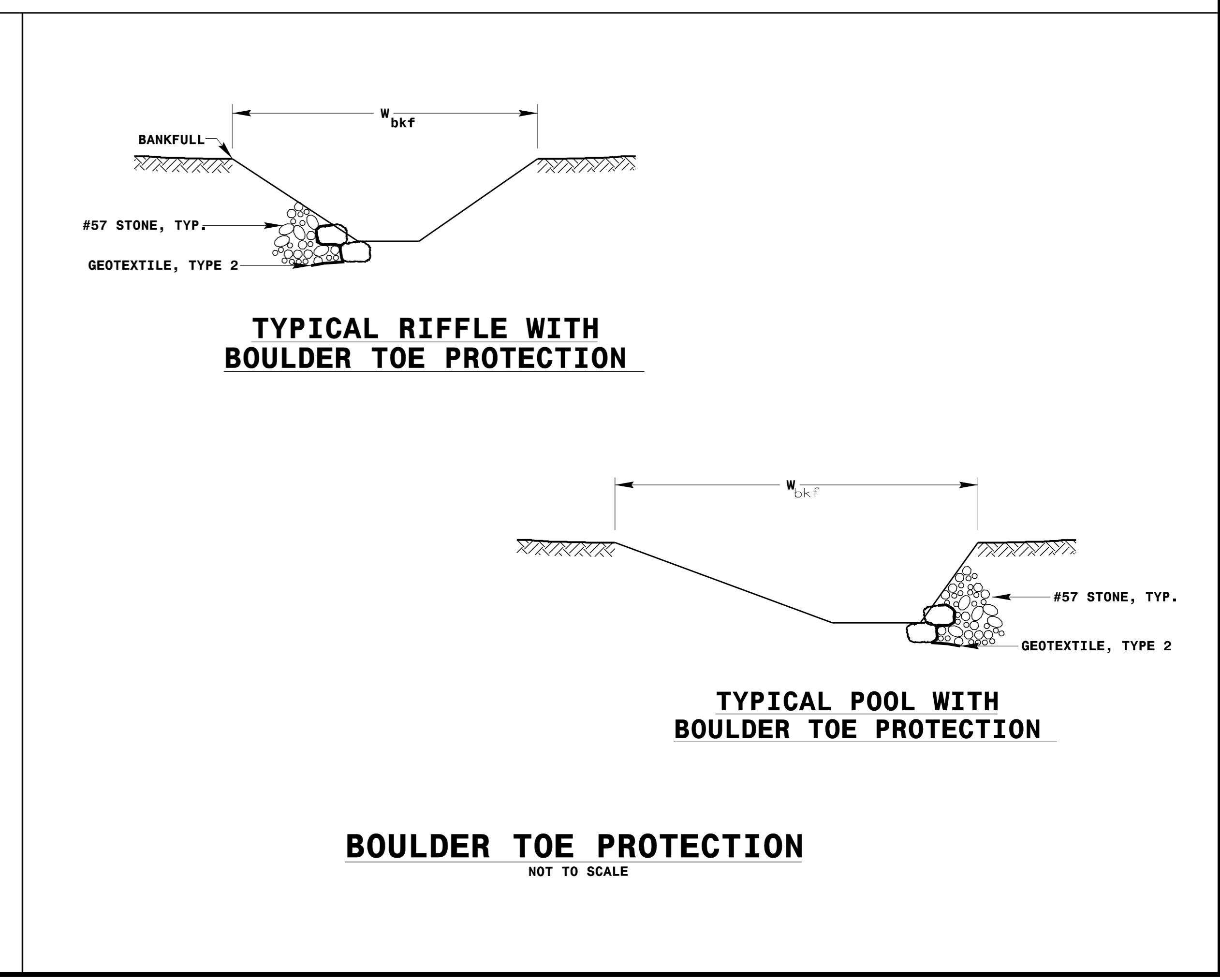
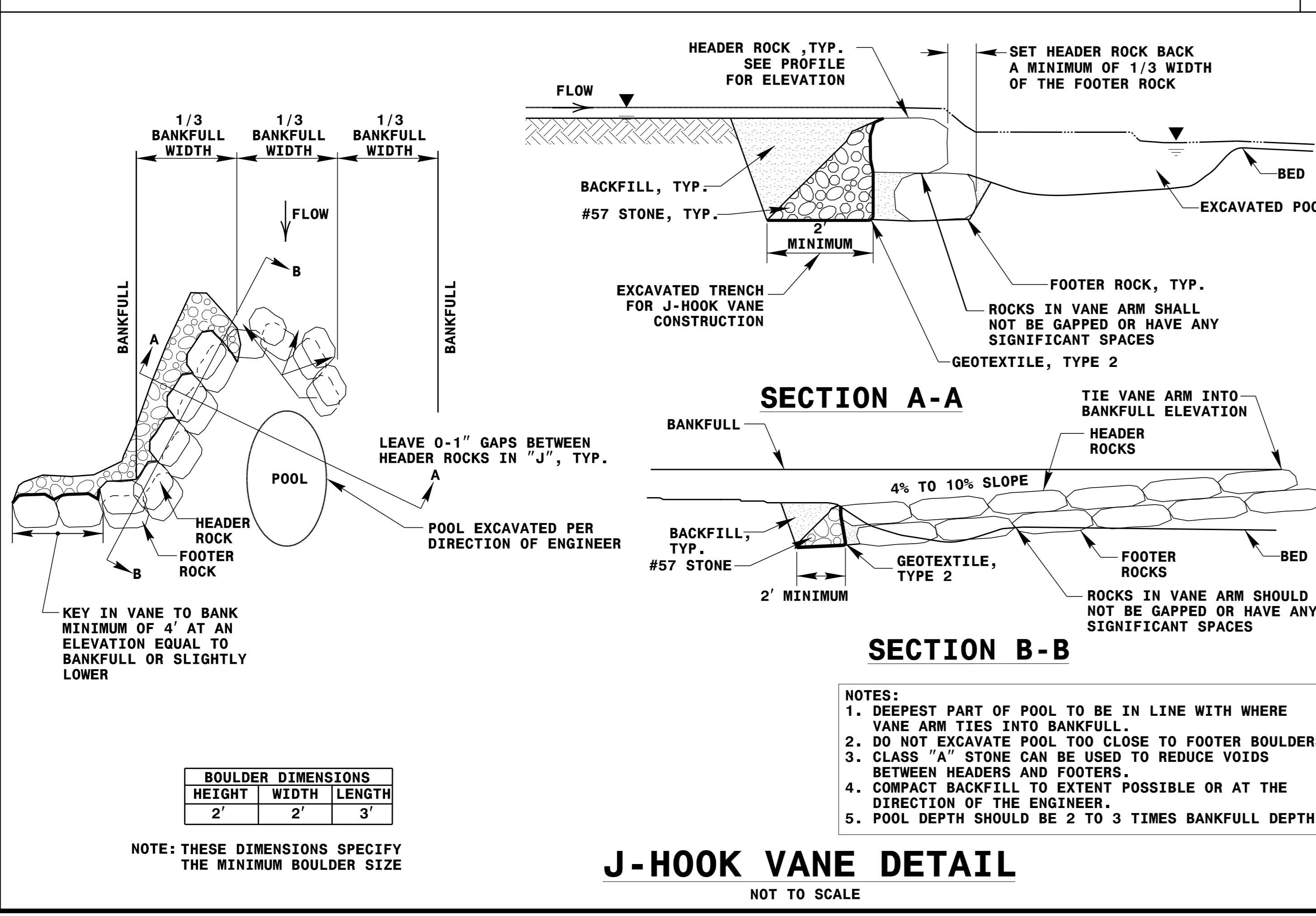
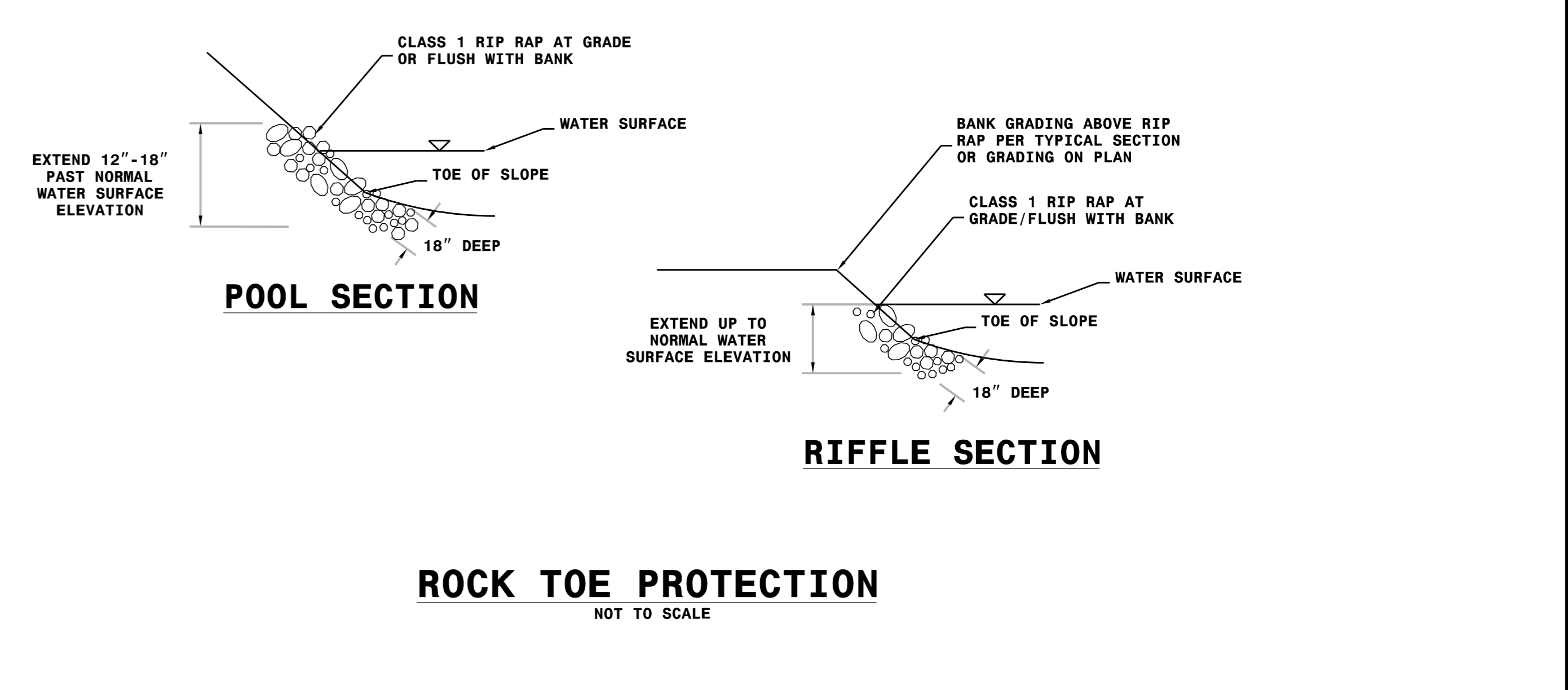
PROJECT REFERENCE NO. **R-2518WM** SHEET NO. **OSM-2A**

PROJECT ENGINEER

APPROVED BY:

DATE:

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PREPARED IN THE OFFICE OF:



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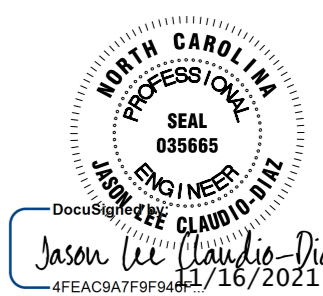
NC LICENSE #P-0102
200 SOUTH TRYON STREET, SUITE 200
CHARLOTTE, NORTH CAROLINA 28202
PHONE: (704) 333-5131

PROJECT REFERENCE NO. <i>R-2518WM</i>	SHEET NO. <i>OSM-2B</i>
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PROJECT ENGINEER

APPROVED BY: _____

DATE: _____



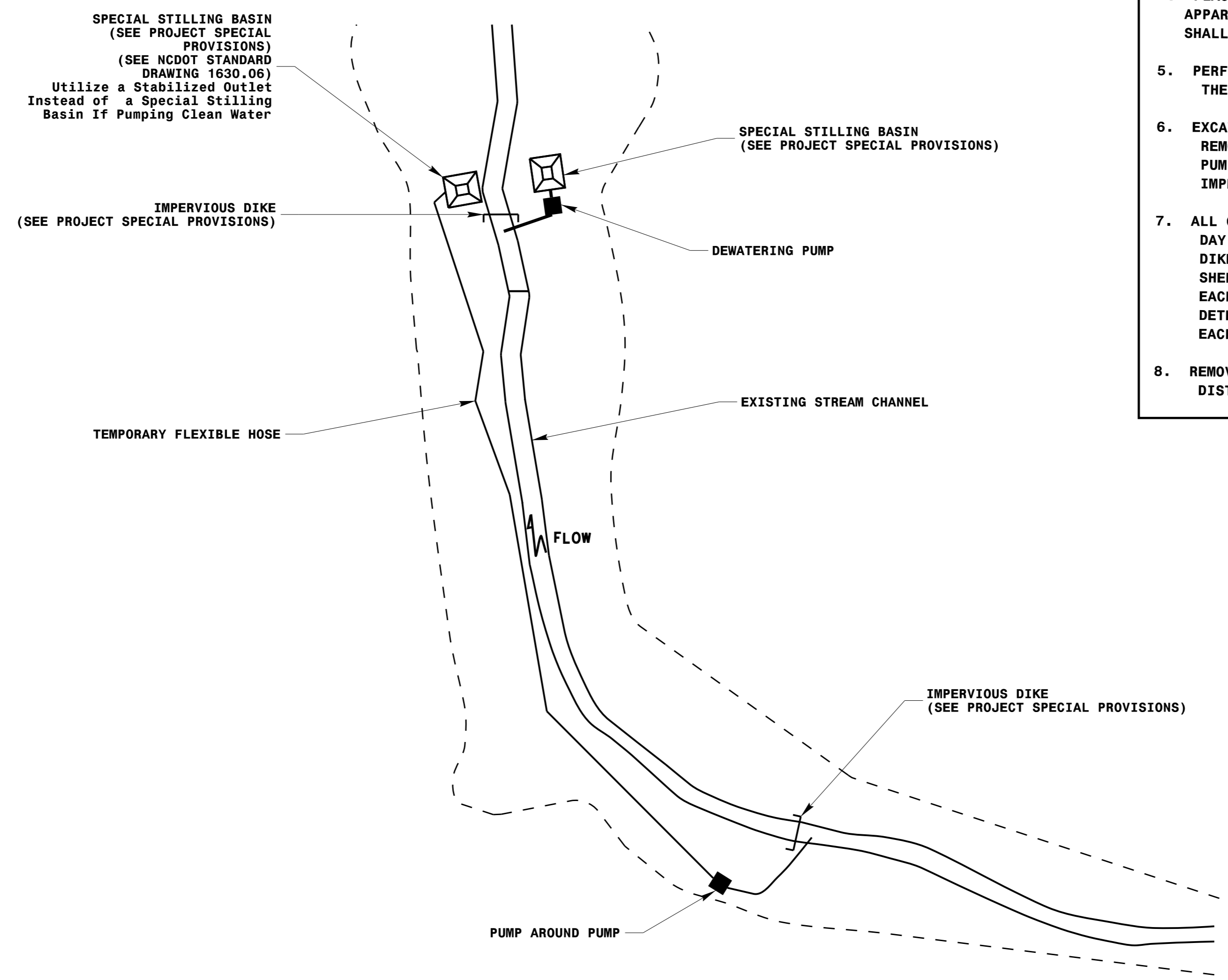
Jason Lee
11/16/2021

DETAILS 2 OF 2

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- NOTES:**
- 1) All excavation shall be performed in only dry or isolated sections of channel.
 - 2) Impervious dikes are to be used to isolate work from stream flow when necessary.
 - 3) All graded areas shall be stabilized within 24 hours.
 - 4) Maintenance of stream flow operations shall be incidental to the work. This includes polyethylene sheeting, diversion pipes, pumps and hoses.
 - 5) Pumps and hoses shall be of sufficient size to dewater the work area.

- SEQUENCE OF CONSTRUCTION FOR PUMP AROUND OPERATION**
1. INSTALL SPECIAL STILLING BASIN(S).
 2. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
 3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
 4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
 5. PERFORM STREAM RESTORATION WORK IN ACCORDANCE WITH THE PLANS.
 6. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. (DOWNSTREAM IMPERVIOUS DIKES FIRST).
 7. ALL GRADING AND STABILIZATION MUST BE COMPLETED IN ONE DAY WITHIN THE PUMP AROUND AREAS BETWEEN THE IMPERVIOUS DIKES. THE IMPERVIOUS DIKE LOCATIONS AS SHOWN ON THIS SHEET ONLY SHOW THE UPPER AND LOWER EXTENT OF WORK FOR EACH STREAM SEGMENT. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE IMPERVIOUS DIKE(S) FOR EACH DAY'S WORK.
 8. REMOVE SPECIAL STILLING BASIN(S) AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH.

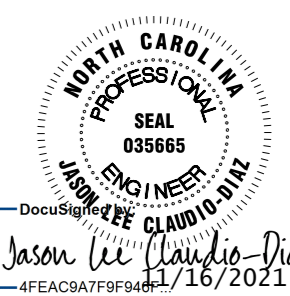


EXAMPLE OF PUMP-AROUND OPERATION
NOT TO SCALE

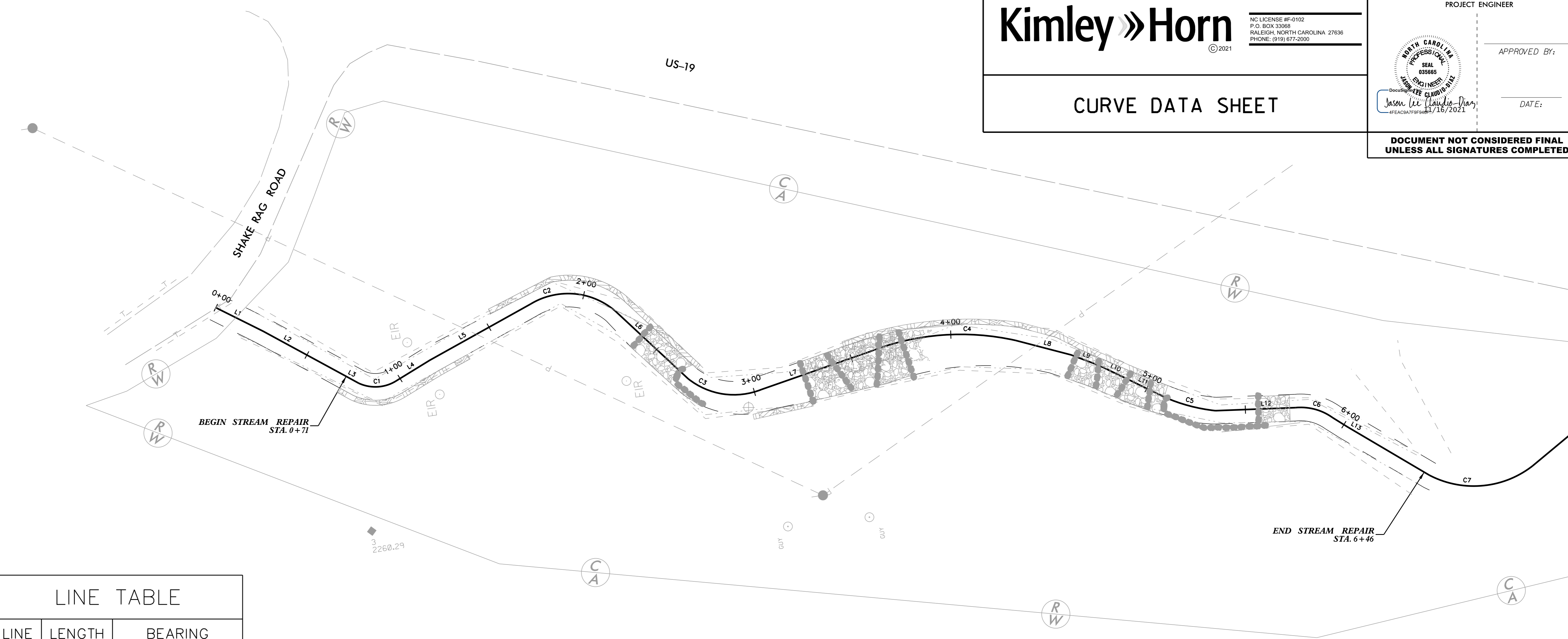
11/16/21



NC LICENSE #F-0102
P.O. BOX 33968
RALEIGH, NORTH CAROLINA 27636
PHONE: (919) 677-2000

PROJECT REFERENCE NO. R-2518WM	SHEET NO. OSM-2C
PROJECT ENGINEER	
APPROVED BY:	
DATE:	
 Jason Lee, P.E. 11/16/2021	
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CURVE DATA SHEET



LINE TABLE		
LINE	LENGTH	BEARING
L1	25.82	S35°05'47.75"W
L2	45.68	S37°08'20.95"W
L3	7.19	S37°17'14.23"W
L4	19.66	S22°58'25.77"E
L5	56.19	S20°32'45.57"E
L6	48.34	S51°30'52.45"W
L7	55.76	S10°40'12.94"E
L8	27.86	S23°12'44.43"W
L9	14.37	S29°23'17.29"W
L10	17.05	S34°09'12.77"W
L11	18.38	S34°41'58.09"W
L12	38.99	S6°27'22.31"W
L13	46.51	S39°07'18.65"W

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	19.10'	18.68'	S5°44'01"W	17.95'	56°03'31"	10.17'
C2	35.23'	44.27'	S13°26'33"W	41.42'	72°00'13"	25.60'
C3	35.79'	37.83'	S16°56'23"W	36.09'	60°33'58"	20.90'
C4	121.79'	72.41'	S4°12'32"W	71.35'	34°03'58"	37.31'
C5	83.92'	25.91'	S23°32'45"W	25.81'	17°41'25"	13.06'
C6	26.70'	19.14'	S23°35'15"W	18.73'	41°04'33"	10.00'
C7	46.65'	53.32'	S3°29'24"W	50.46'	65°29'20"	30.00'
C8	69.28'	62.49'	S1°11'15"E	60.39'	51°40'32"	33.55'

CONTROL POINT TABLE			
PT	ELEVATION	NORTHING	EASTING
1	2286.98	786602.5900	967042.7816
2	2285.70	786287.8554	966976.7907
3	2260.29	786774.4530	967151.2188

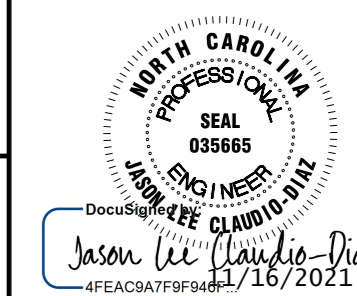
NOTE: CONTROL POINT TABLE REFERS TO HORIZONTAL AND VERTICAL CONTROL SHOWN ON SURVEY (NAD83 NC STATE PLANE).

11/16/21



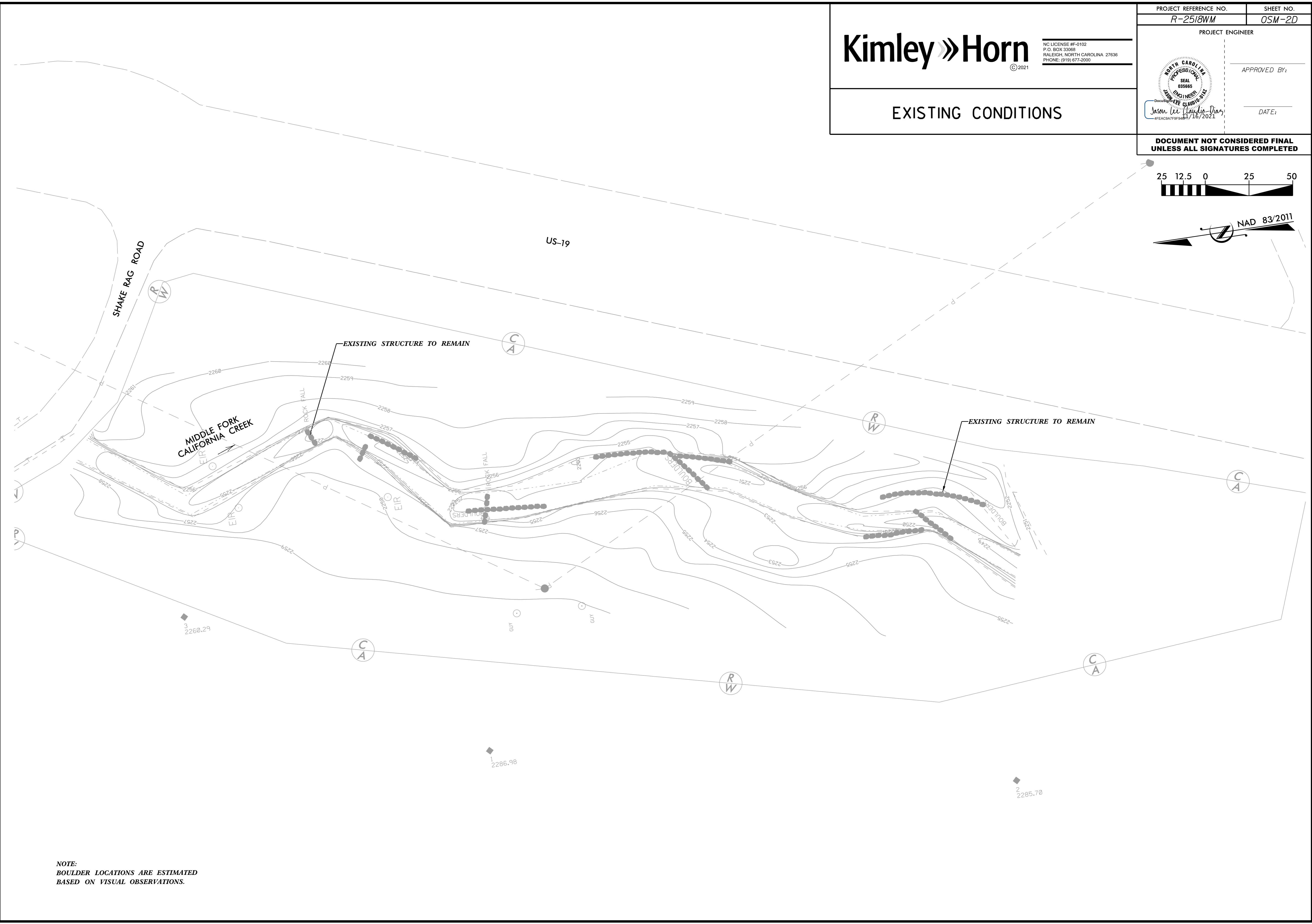
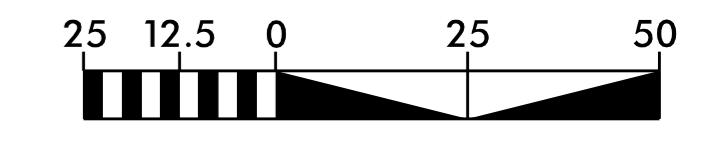
NC LICENSE #F-0102
P.O. BOX 33068
RALEIGH, NORTH CAROLINA 27636
PHONE: (919) 677-2000

PROJECT REFERENCE NO. <i>R-2518WM</i>	SHEET NO. <i>OSM-2D</i>
PROJECT ENGINEER	
APPROVED BY:	
DATE:	



EXISTING CONDITIONS

**DOCUMENT NOT CONSIDERED FINAL
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NOTE:
BOULDER LOCATIONS ARE ESTIMATED
BASED ON VISUAL OBSERVATIONS.

11/16/21

SUMMARY OF QUANTITIES

DESCRIPTION	SECTION	QUANTITY	UNIT	ITEM DESCRIPTION
0000100000-N	800	1	LS	MOBILIZATION
0000900000-N	SP	1	LS	CONSTRUCTION SURVEYING FOR MITIGATION
0248000000-N	SP	1	LS	GRADING FOR MITIGATION
1077000000-E	SP	295	TON	#57 STONE
3566000000-E	867	135	LF	WOVEN WIRE FENCE RESET
3628000000-E	876	355	TON	RIP RAP, CLASS 1
3642000000-E	876	10	TON	RIP RAP, CLASS A
3651000000-E	SP	150	TON	BOULDERS
3656000000-E	876	340	SY	GEOTEXTILE FOR DRAINAGE, TYPE 2
6000000000-E	1605	700	LF	TEMPORARY SILT FENCE
6006000000-E	1610	110	TON	STONE FOR EROSION CONTROL CLASS A
6009000000-E	1610	110	TON	STONE FOR EROSION CONTROL CLASS B
6012000000-E	1610	10	TON	SEDIMENT CONTROL STONE
6015000000-E	1615	2.5	ACR	TEMPORARY MULCHING
6018000000-E	1620	125	LB	SEED FOR TEMPORARY SEEDING
6021000000-E	1620	0.5	TON	FERTILIZER FOR TEMPORARY SEEDING
6029000000-E	SP	750	LF	SAFETY FENCE
6036000000-E	1631	185	SY	MATTING FOR EROSION CONTROL
6037000000-E	SP	530	SY	COIR FIBER MAT
6070000000-N	1639	4	EA	SPECIAL STILLING BASINS
6071012000-E	SP	60	LF	COIR FIBER WATTLE
6084000000-E	1660	2.5	ACR	SEEDING & MULCHING
6087000000-E	1660	2	ACR	MOWING
6090000000-E	1661	125	LB	SEED FOR REPAIR SEEDING
6093000000-E	1661	0.7	TON	FERTILIZER FOR REPAIR SEEDING
6096000000-E	1662	125	LB	SEED FOR SUPPLEMENTAL SEEDING
6108000000-E	1665	0.7	TON	FERTILIZER TOPDRESSING
6114500000-N	1667	30	MHR	SPECIALIZED HAND MOWING
6133000000-N	SP	1	LS	DIVERSION PUMPING


NOTE:
 ABOVE QUANTITIES REFLECT THE TOTAL VOLUME OF BOULDERS AND RIP-RAP TO FULLY CONSTRUCT THE PROPOSED (NOT EXISTING) STRUCTURES. THE CONTRACTOR WILL BE ALLOWED TO UTILIZE THE ONSITE RIP-RAP MATERIAL AND BOULDERS TO THE EXTENT POSSIBLE AS APPROVED BY ENGINEER. IT IS ANTICIPATED THAT MOST OF THE CLASS 1 RIP-RAP WILL NEED TO BE IMPORTED TO THE SITE. IT IS ALSO ANTICIPATED THAT HALF OF THE BOULDERS WILL BE FOUND ON SITE.

PREPARED IN THE OFFICE OF:

Kimley » Horn

NC LICENSE #F-0102
 200 SOUTH TRYON STREET, SUITE 200
 CHARLOTTE, NORTH CAROLINA 28202
 PHONE: (704) 333-5131

SUMMARY OF QUANTITIES SUMMARY OF EARTHWORK

PROJECT REFERENCE NO. <i>R-2518WM</i>	SHEET NO. <i>OSM-3</i>
PROJECT ENGINEER	
	
APPROVED BY:	DATE:
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SUMMARY OF EARTHWORK

UNCLASSIFIED EXCAV. (CU.YD.)	BORROW (CU.YD.)	EMBANKMENT (CU.YD.)	WASTE (CU.YD.)
986	0	0	986

NOTE:
 APPROXIMATE QUANTITIES ONLY, UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING AND CLEARING AND GRUBBING WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING FOR MITIGATION".

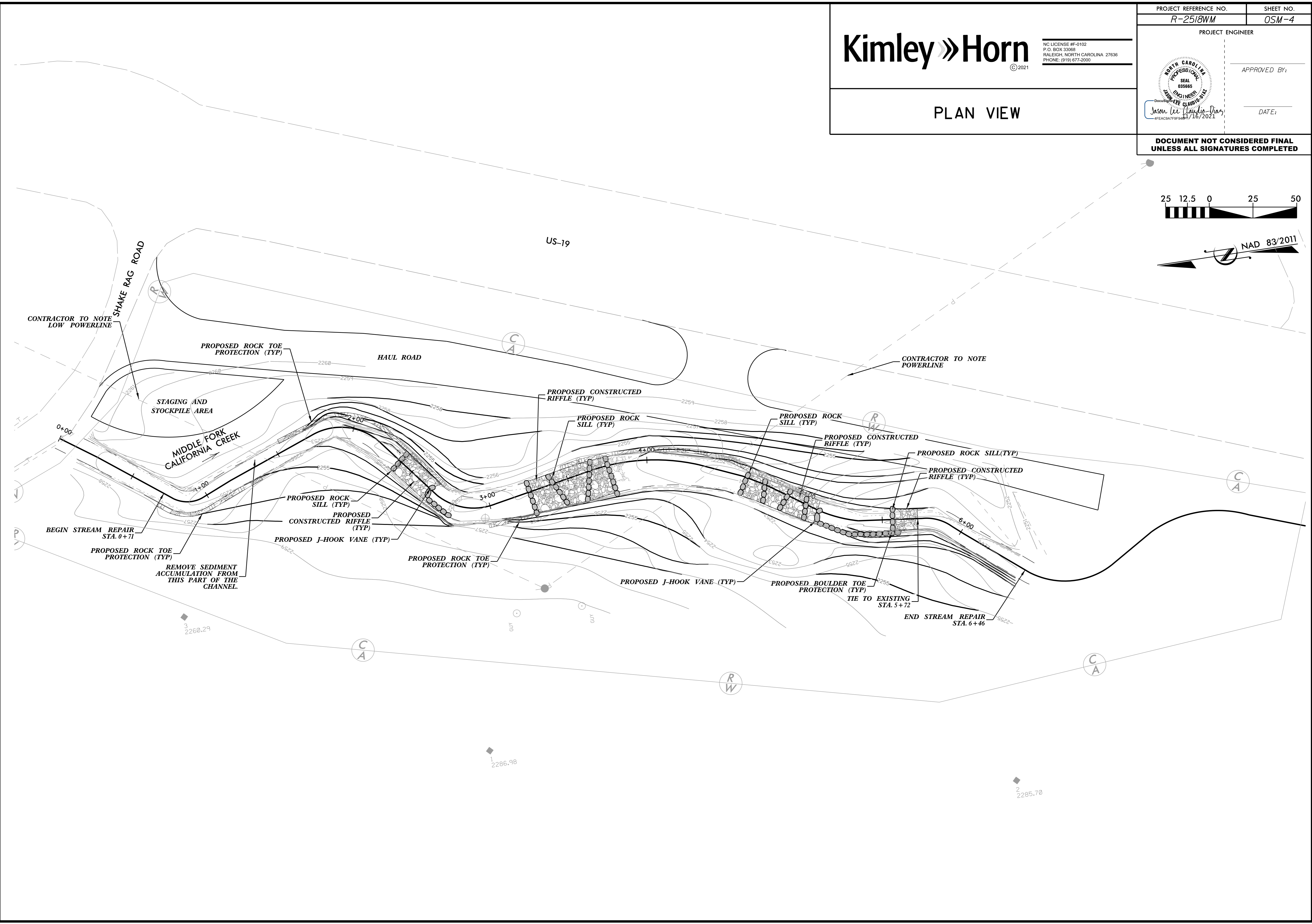
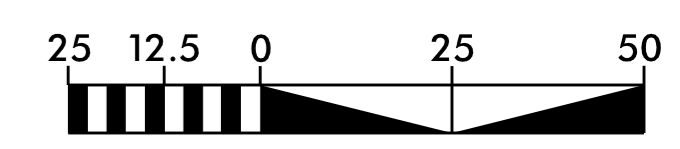
11/16/21

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PROJECT REFERENCE NO. R-2518WM	SHEET NO. OSM-4
PROJECT ENGINEER	
APPROVED BY:	
DATE:	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	

PLAN VIEW



CONTRACTOR TO NOTE
LOW POWERLINE

CONTRACTOR TO NOTE
POWERLINE

BEGIN STREAM REPAIR
STA. 0+71

PROPOSED ROCK TOE
PROTECTION (TYP)

REMOVE SEDIMENT
ACCUMULATION FROM
THIS PART OF THE
CHANNEL.

STAGING AND
STOCKPILE AREA

MIDDLE FORK
CALIFORNIA CREEK

PROPOSED ROCK
SILL (TYP)

PROPOSED
CONSTRUCTED
RIFFLE
(TYP)

PROPOSED J-HOOK VANE (TYP)

PROPOSED ROCK TOE
PROTECTION (TYP)

PROPOSED CONSTRUCTED
RIFFLE (TYP)

PROPOSED ROCK
SILL (TYP)

PROPOSED ROCK
SILL (TYP)

PROPOSED CONSTRUCTED
RIFFLE (TYP)

PROPOSED ROCK SILL(TYP)

PROPOSED CONSTRUCTED
RIFFLE (TYP)

PROPOSED J-HOOK VANE (TYP)

PROPOSED BOULDER TOE
PROTECTION (TYP)

TIE TO EXISTING
STA. 5+72

END STREAM REPAIR
STA. 6+46

US-19

HAUL ROAD

SHAKE RAG ROAD

C
A

R
W

C
A

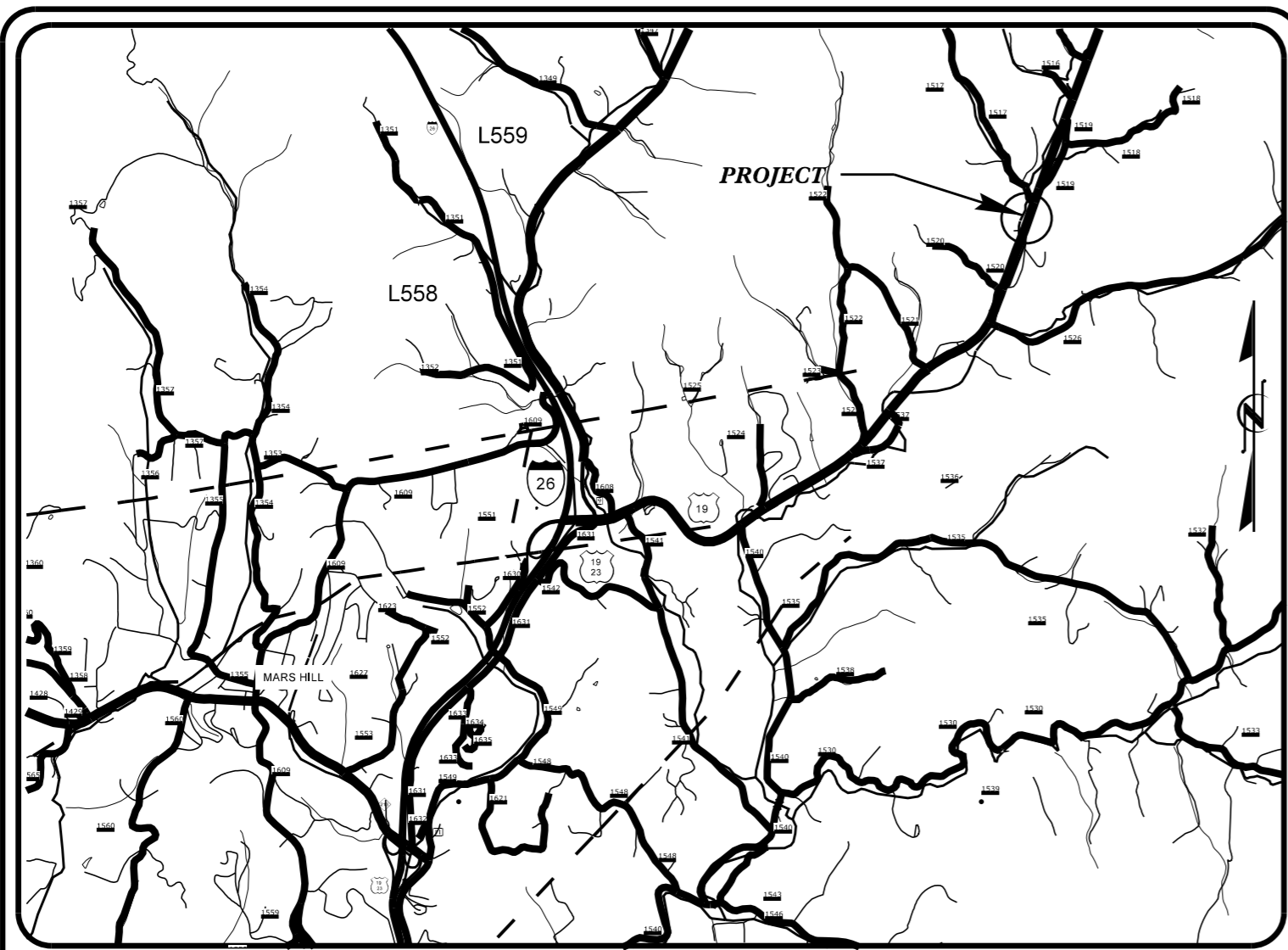
2260.29

2286.98

2285.70

TIP PROJECT: R-2518WM

CONTRACT: DM0039



VICINITY MAP
NOT TO SCALE

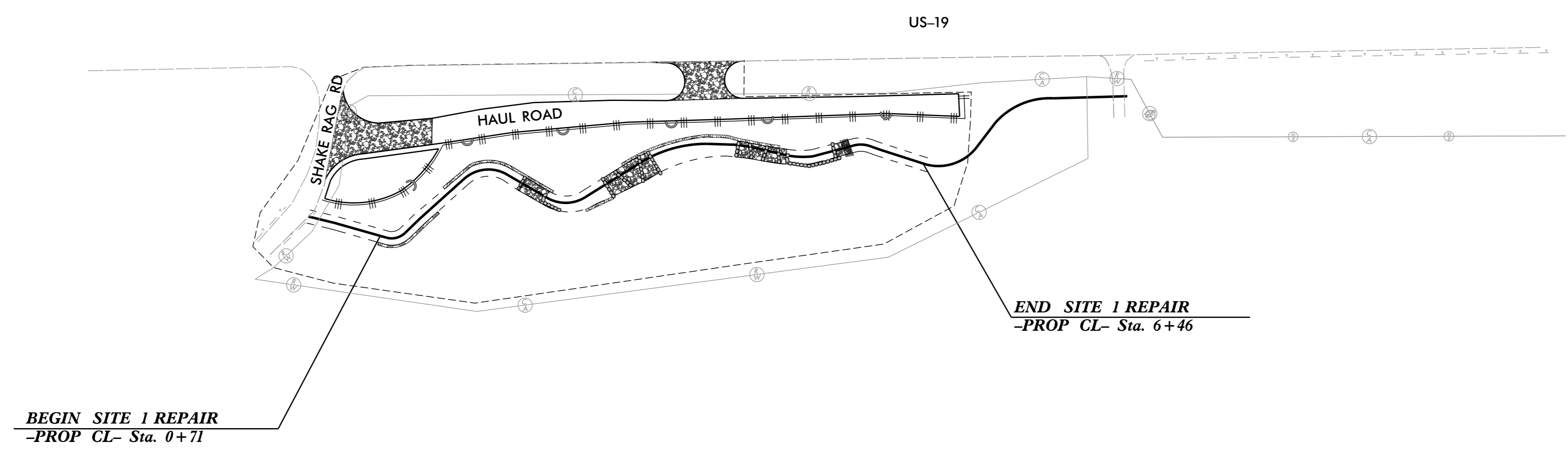
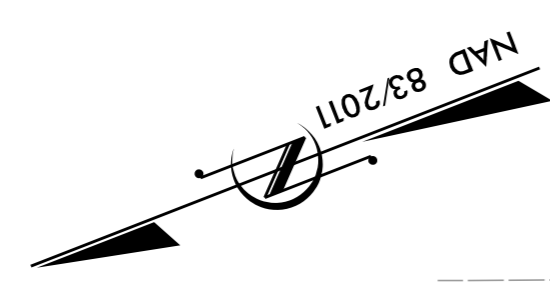
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PLAN FOR PROPOSED HIGHWAY EROSION CONTROL

MADISON COUNTY

LOCATION: SITE IS ADJACENT TO US-19
AND SHAKE RAG ROAD (SR 1517)
EAST OF MARS HILL

TYPE OF WORK: STREAM REPAIR /RESTORATION



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2518WM	EC-1	16
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34445.3.1			

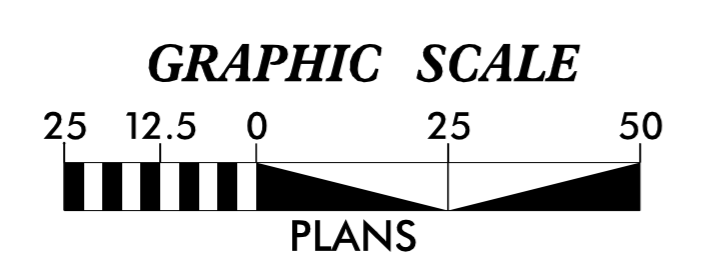
EROSION AND SEDIMENT CONTROL MEASURES

Sta. #	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	TBD
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.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT
Refer To E. C. Special Provisions for Special Considerations.



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

Kimley»Horn

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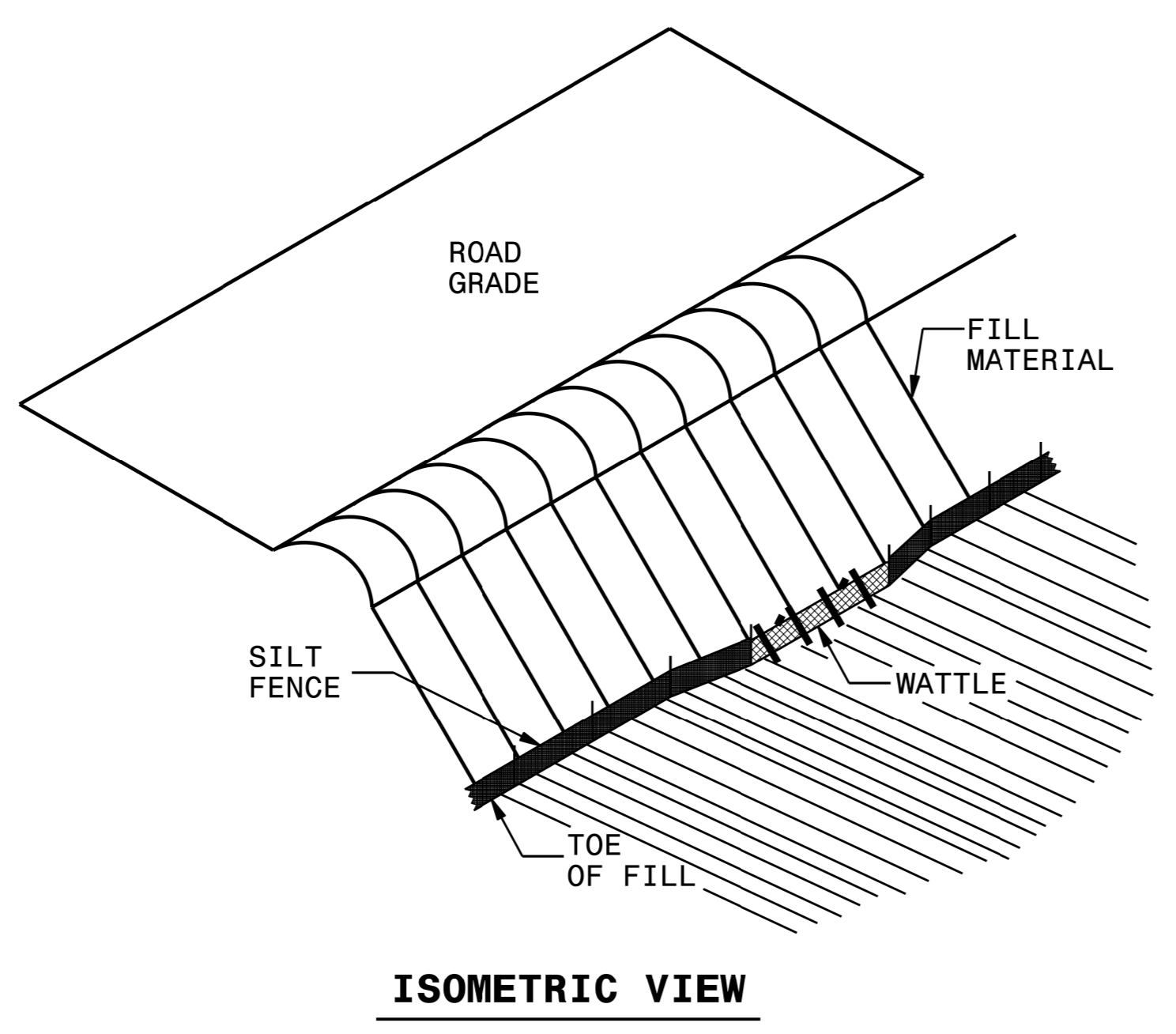
Prepared in the Office of:
KIMLEY HORN
200 S Tryon St #200
Charlotte, NC 28202

Designed by:
SPENCER GREEN 4424
NAME LEVEL III CERTIFICATION NO.

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 2019 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type A
1622.01 Temporary Berms and Slope Drains	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type 3	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Wattle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	



NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

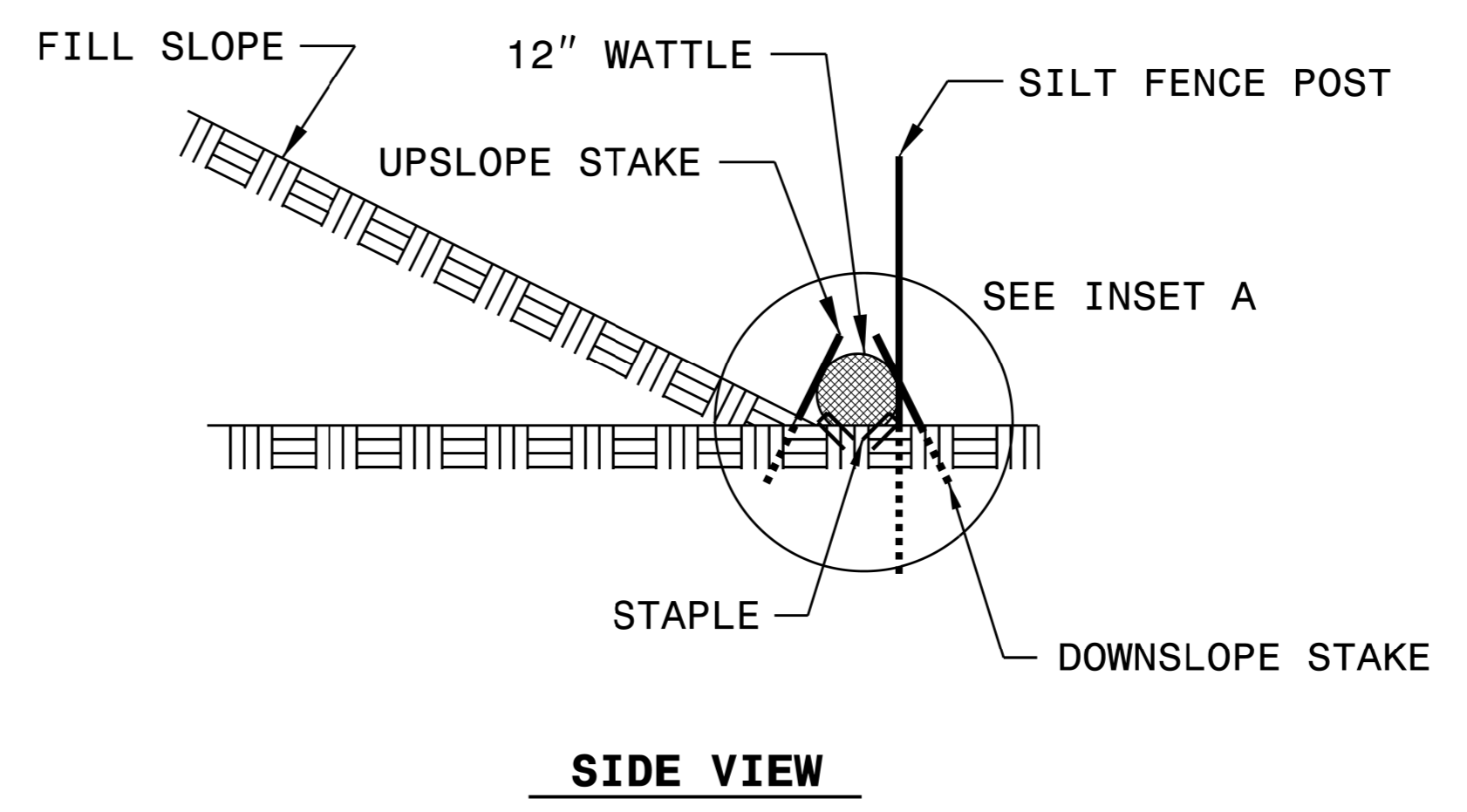
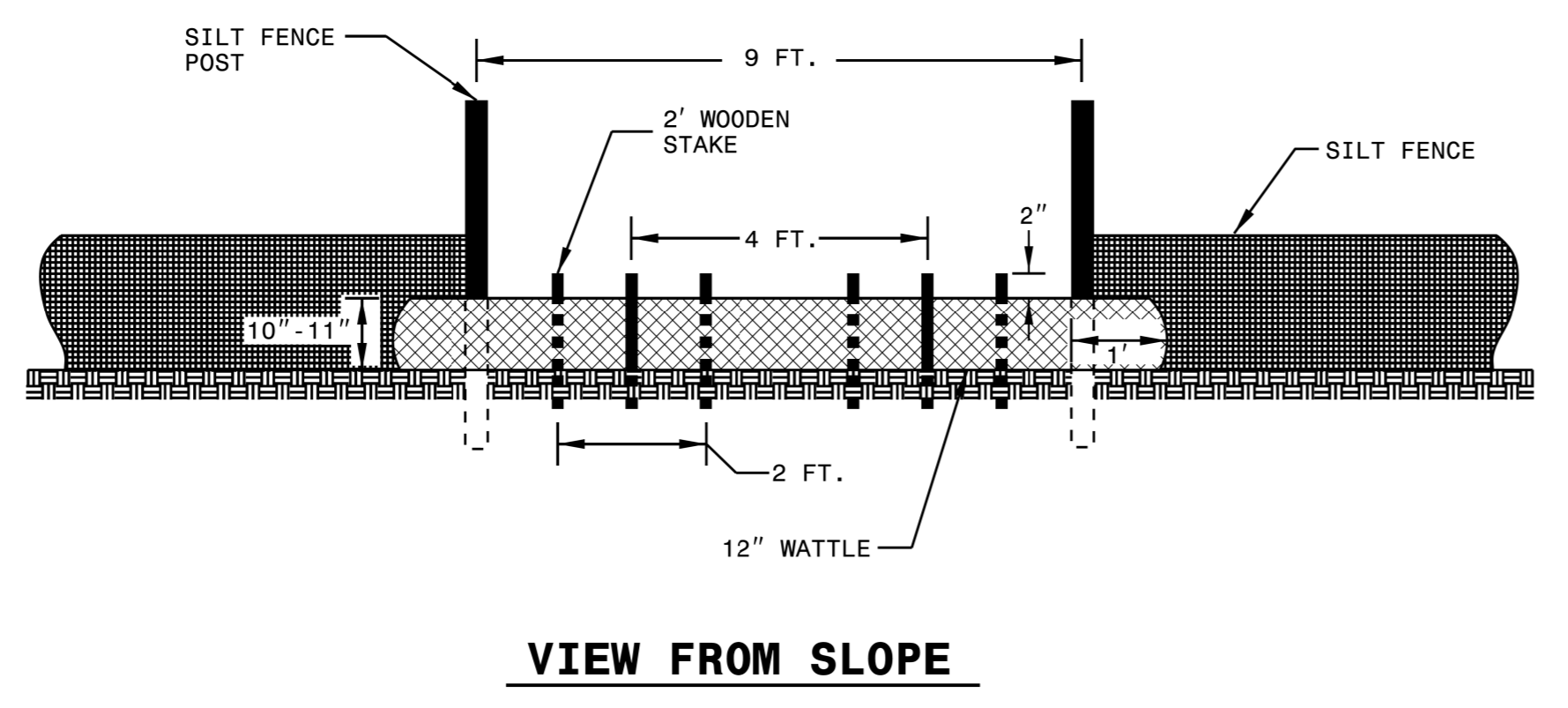
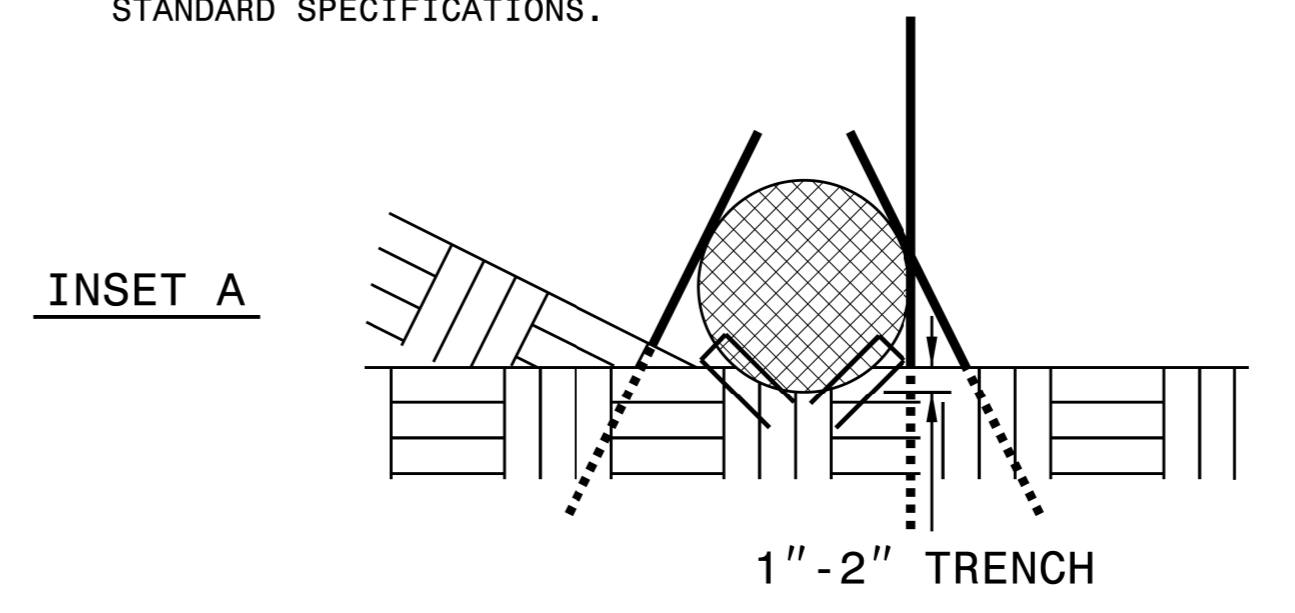
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

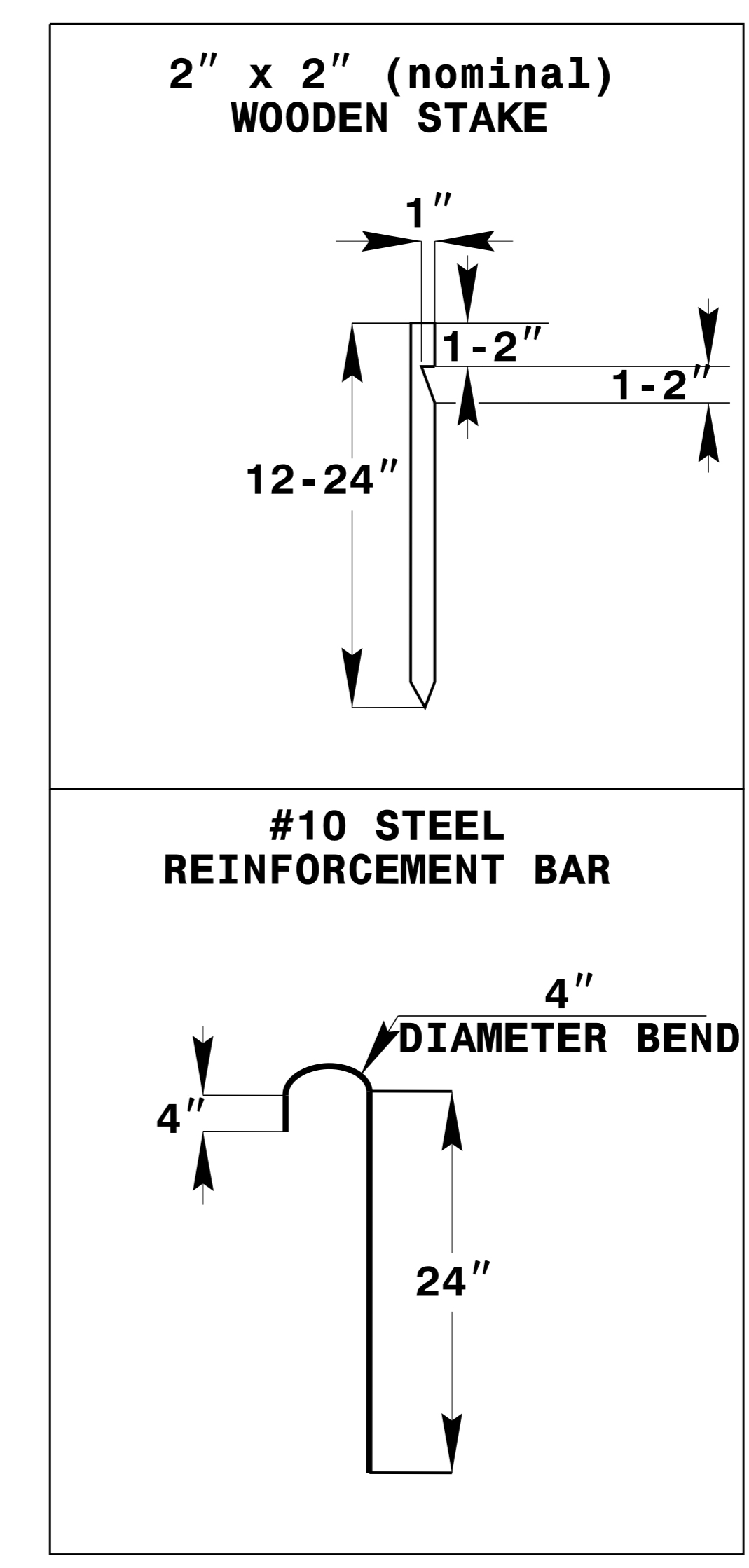
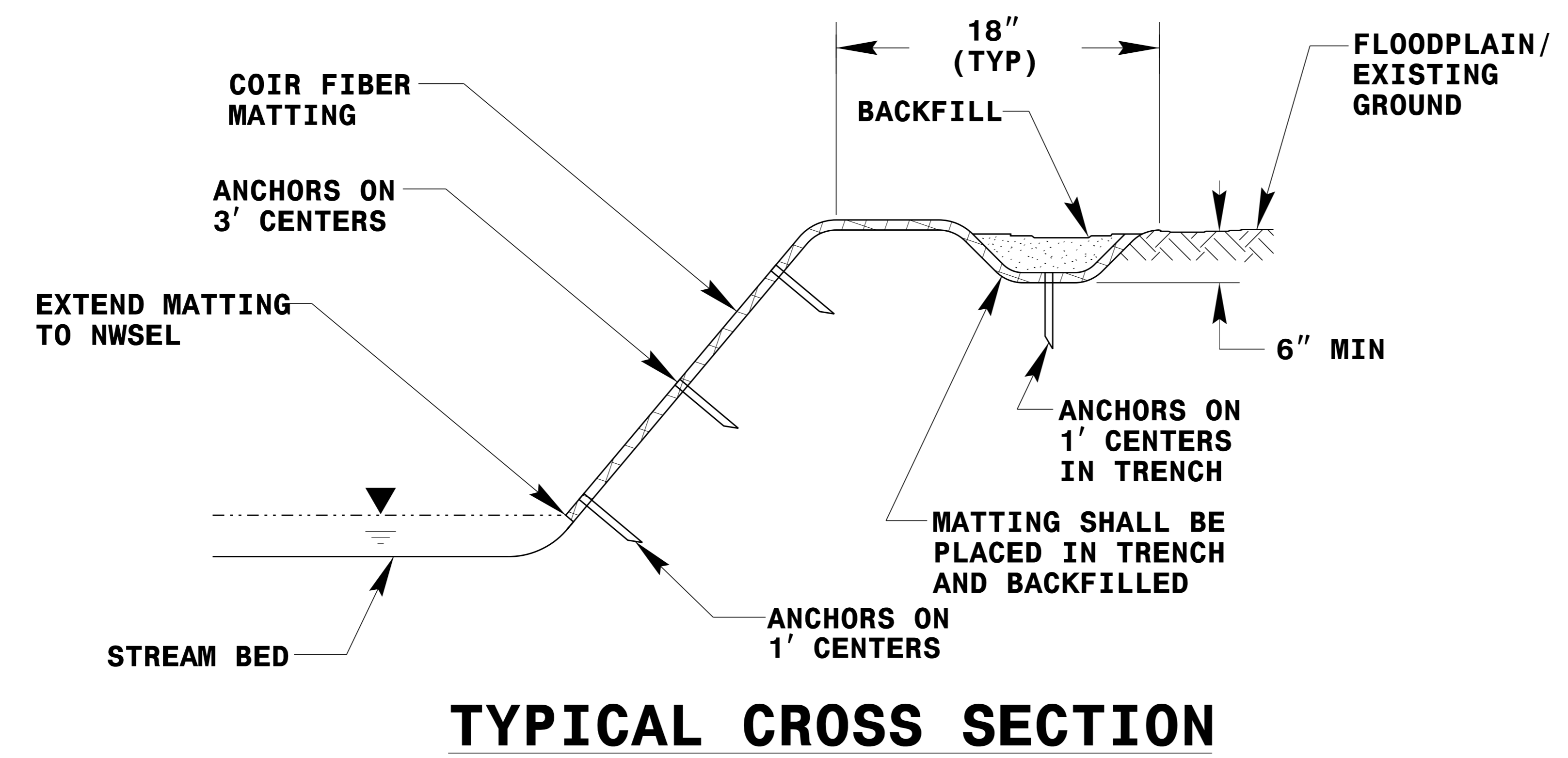
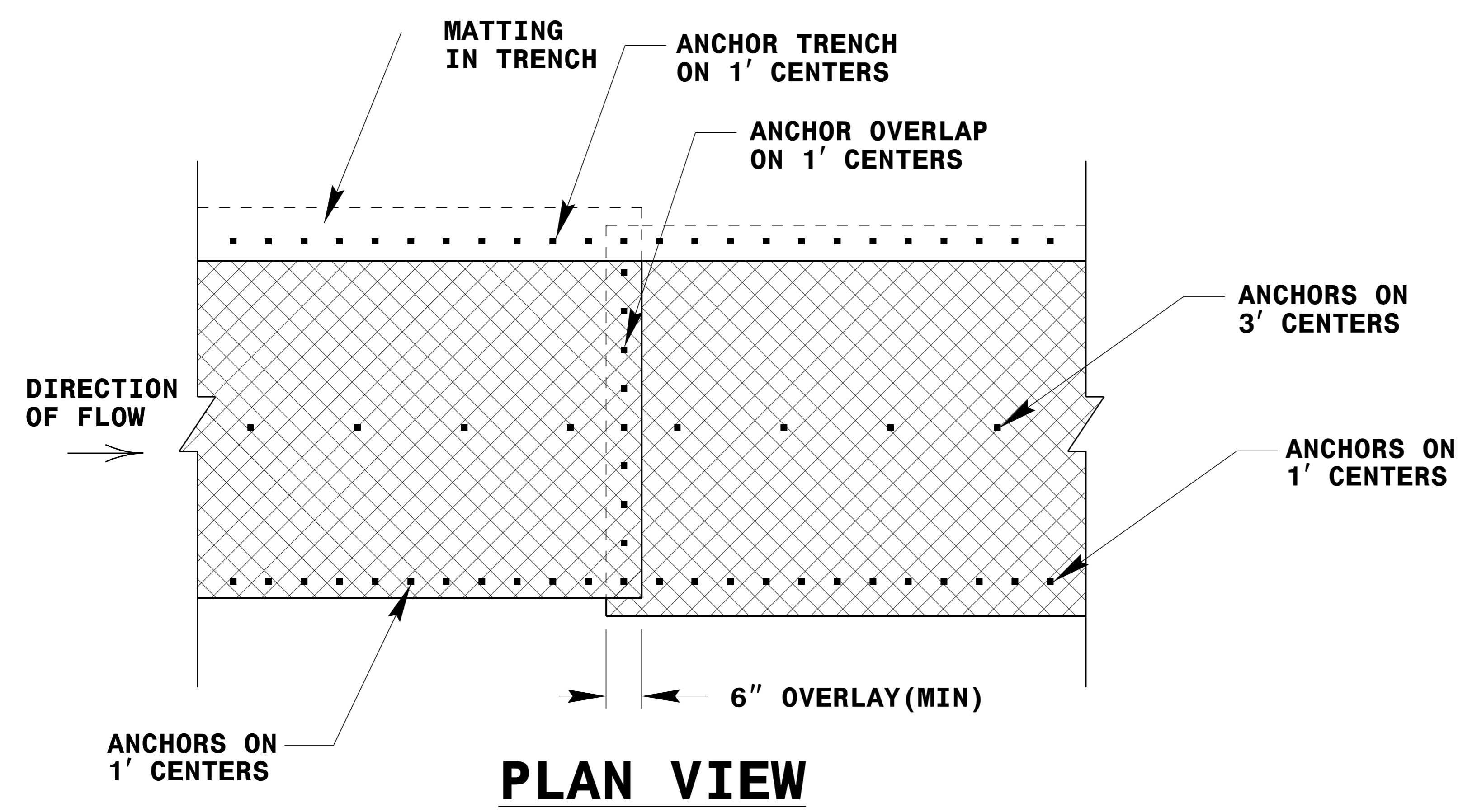
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.



SILT FENCE COIR FIBER WATTLE BREAK DETAIL



COIR FIBER MATTING DETAIL
NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA


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.

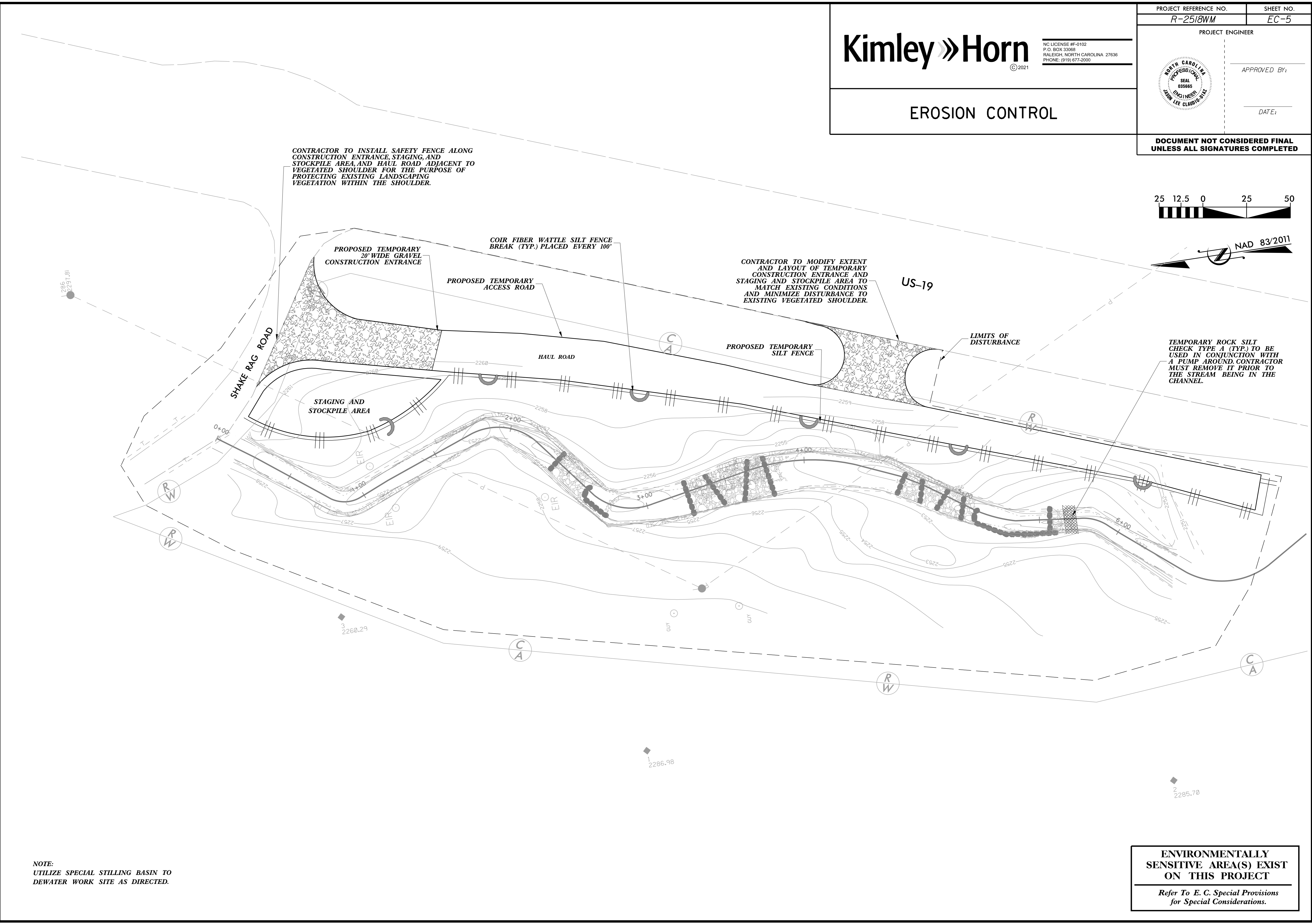
11/16/21



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PROJECT REFERENCE NO. R-2518WM	SHEET NO. EC-5
PROJECT ENGINEER	
APPROVED BY:	
DATE:	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

EROSION CONTROL



NOTE:
UTILIZE SPECIAL STILLING BASIN TO DEWATER WORK SITE AS DIRECTED.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT
Refer To E. C. Special Provisions for Special Considerations.