

RIVERSIDE PARK

CONSTRUCTION DOCUMENTS

ISSUED FOR PERMITTING, NOT FOR CONSTRUCTION



SHEETS INCLUDED IN THIS SET:

LANDSCAPE ARCHITECTURE

- L0- PROJECT INFORMATION
- L1- SITE PLAN
- L2- SITE PREPERATION
- L3- LAYOUT PLAN
- L4- MATERIAL PLAN
 - SIGNAGE & WAYFINDING
- L5- GRADING & DRAINAGE
- L6- STORMWATER PLAN
- L7- PLANTING PLAN
- L8- DETAILS
- EC- EROSION CONTROL PLAN

STRUCTURAL ENGINEERING

- S- STRUCTURAL PLAN

CIVIL ENGINEERING

- C- WATER & SEWER LAYOUT PLAN

ELECTRICAL ENGINEERING

- E- ELECTRICAL LAYOUT PLAN

PLUMBING

- P- PLUMBING PLAN AND DETAILS

ARCHITECTURE

- A1- PLANS
- A2- ELEVATIONS
- A3- SECTIONS
- A5- DETAILS
- A6- FINISH SCHEDULE
- PE- STRUCTURE PLUMBING & ELECTRICAL

PREPARED FOR:



CLIENT/OWNER:
Town of Woodfin
90 Elk Mountain RD.
Woodfin, NC 28804
(828) 253-4887

PREPARED BY:



LANDSCAPE ARCHITECT:
Equinox
37 Haywood Street, Suite 100
Asheville, NC 28801
(828) 253-6856 (x202)
david@equinoxenvironmental.com

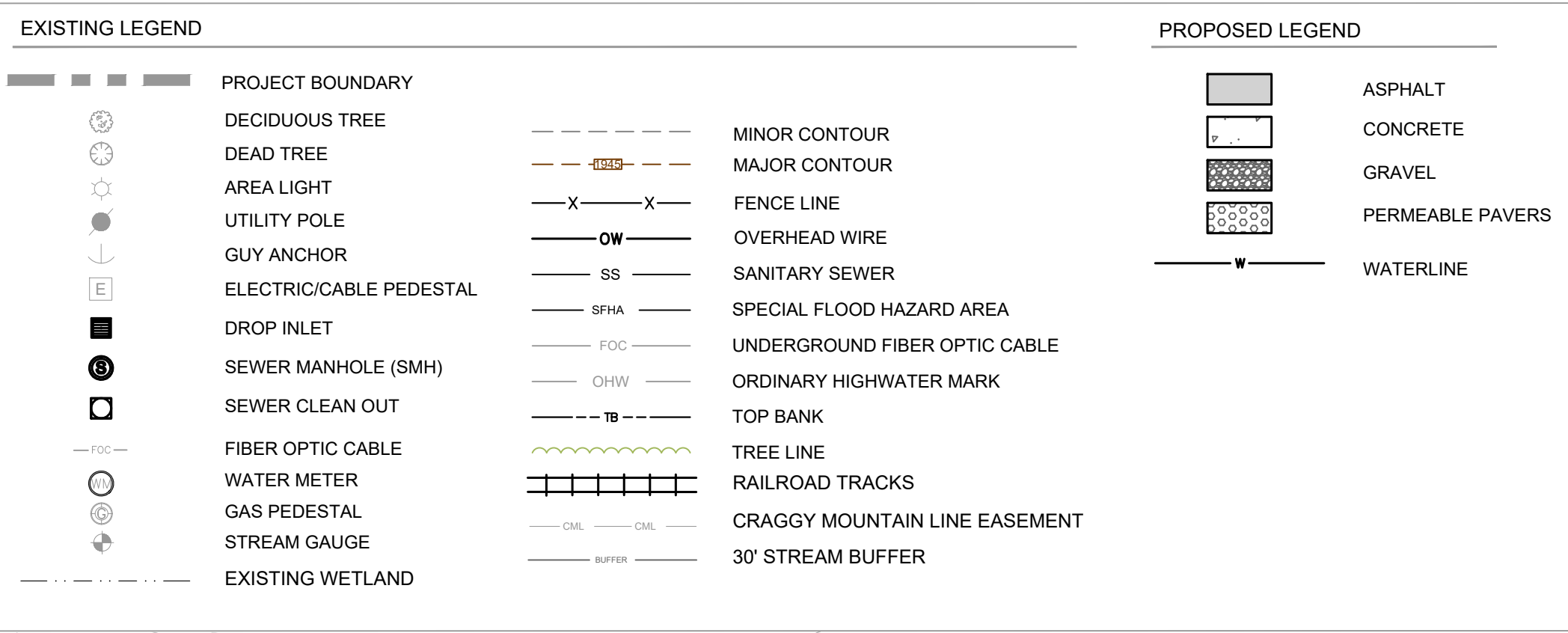
PROJECT INFORMATION:

ADDRESS:
1598 Riverside Dr.
Asheville, NC 28804

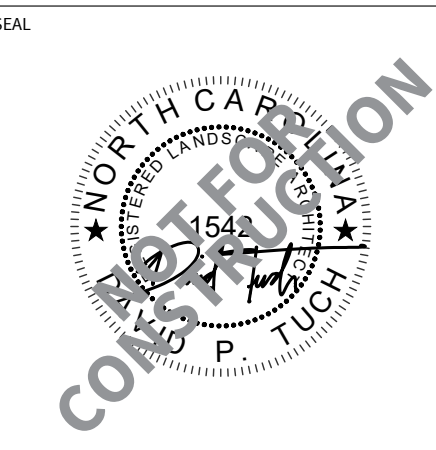
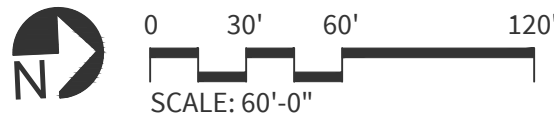
Latitude: 35.627678° N
Longitude: - 82.600733° W

PROJECT SIZE:
Approximately 9.15 Ac Total
Disturbance area is 8.31 Ac

All aspects of work shall be performed in accordance with all applicable local, state, and federal regulations pertaining to worker safety.



NOTE: ALL WORK IN THE RIVER OR ALONG THE BANKS TO BE PROVIDED BY OTHERS, UNLESS OTHERWISE NOTED.



NOTE: Drawings are invalid without signed stamp by professional

DESIGN BY:	DRAWN BY:	CHECKED BY:

Town of Woodfin
RIVERSIDE PARK
Woodfin, NC

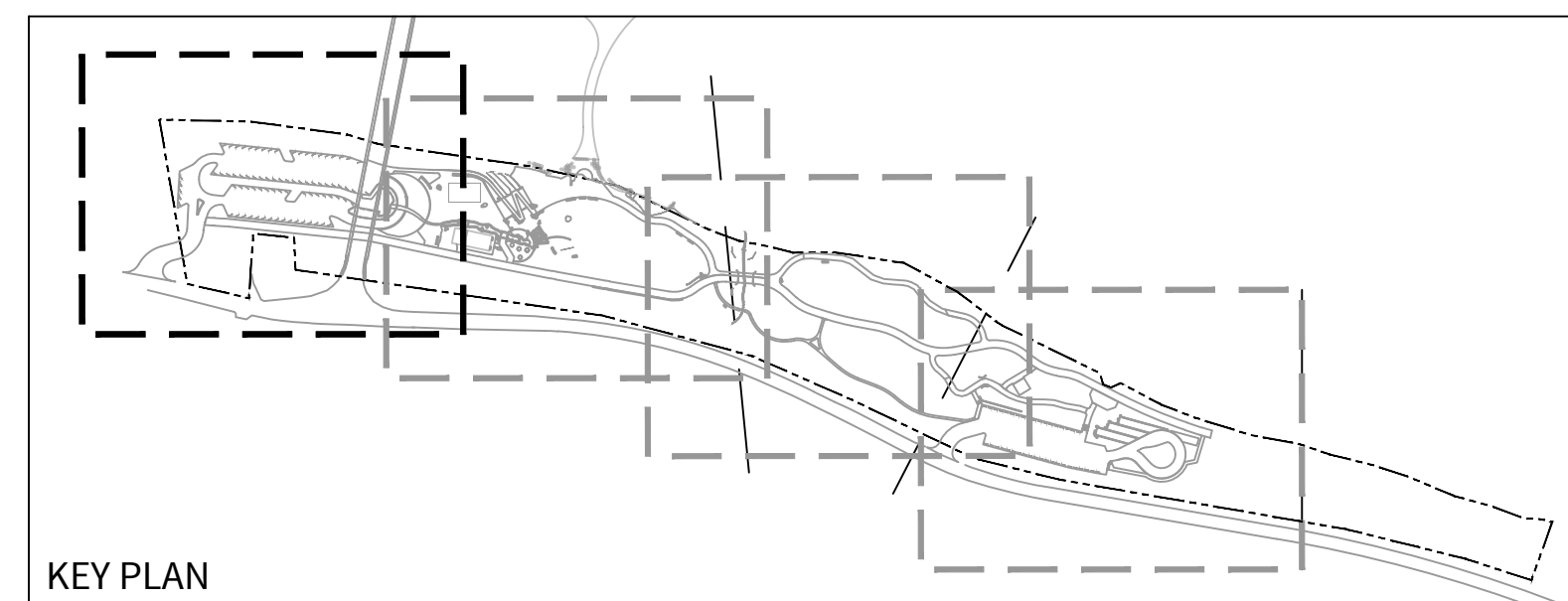
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PHASE	90%
DATE	September 30, 2022
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NOTE: if this drawing is not 24x36" it has been revised from its original size and the scales noted on drawings/details are no longer applicable.	
DRAWING NAME	

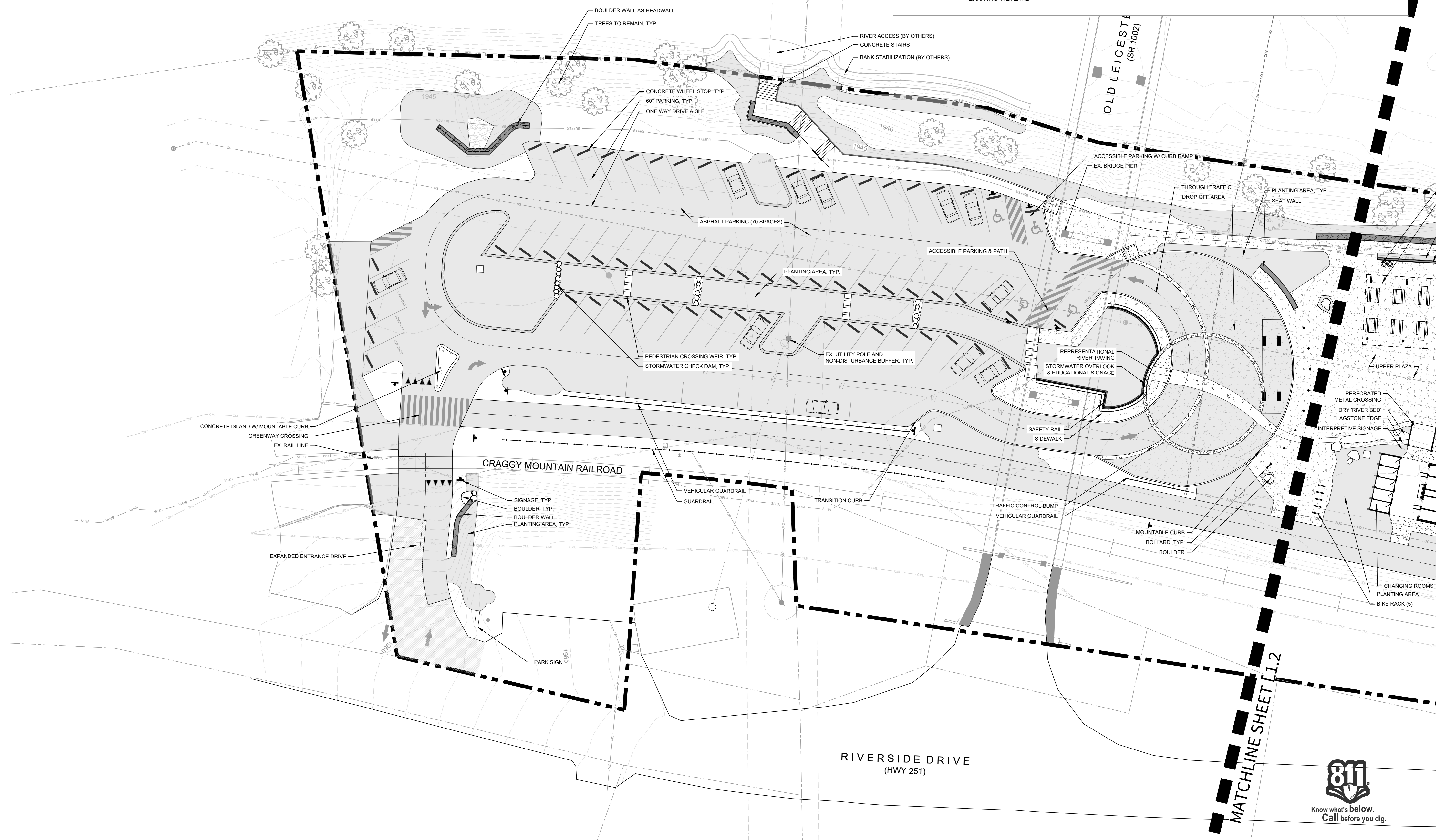
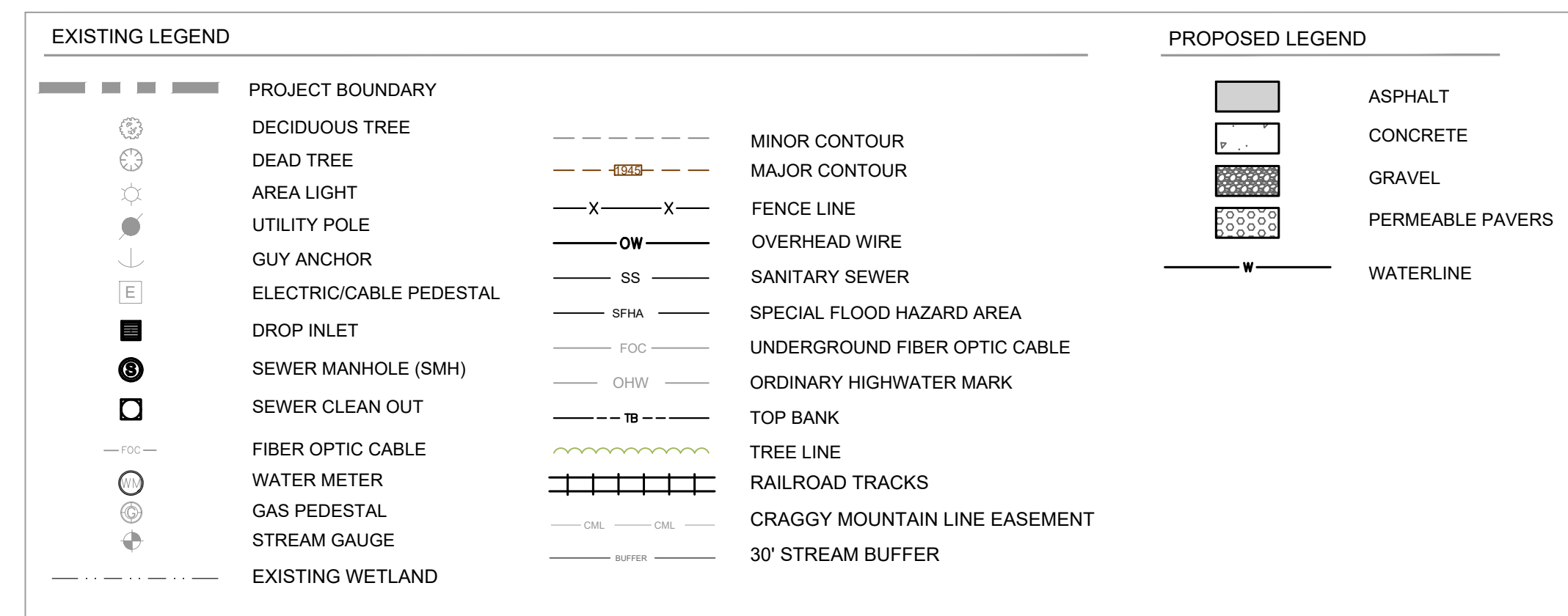
OVERALL SITE PLAN

L1.0

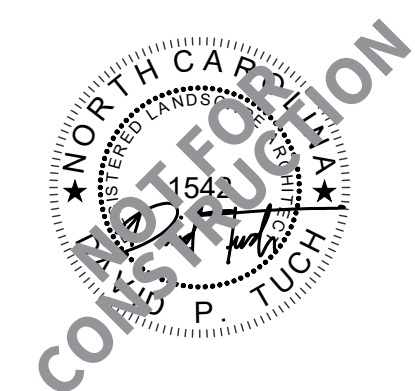




FRENCH BROAD
RIVER



37 Haywood St.
Suite 100
Asheville, NC 28801
t 828.253.6856
f 828.253.8256



NOTE: Drawings are invalid without signed stamp by professional

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DATE _____

REVISIONS

Town of Woodfin
RIVERSIDE PARK
Woodfin, NC

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PHASE	90%
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DATE
September 30, 2022

DRAWING SCALE

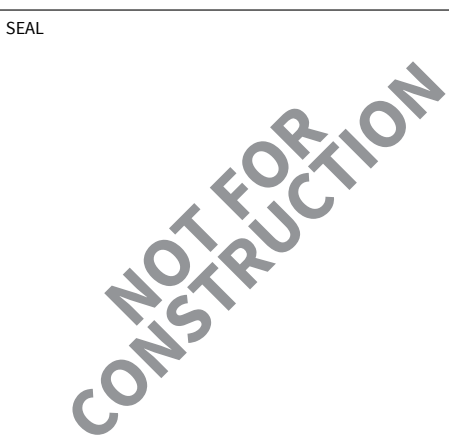
AS SHOWN

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DRAWING NAME

SITE PLAN

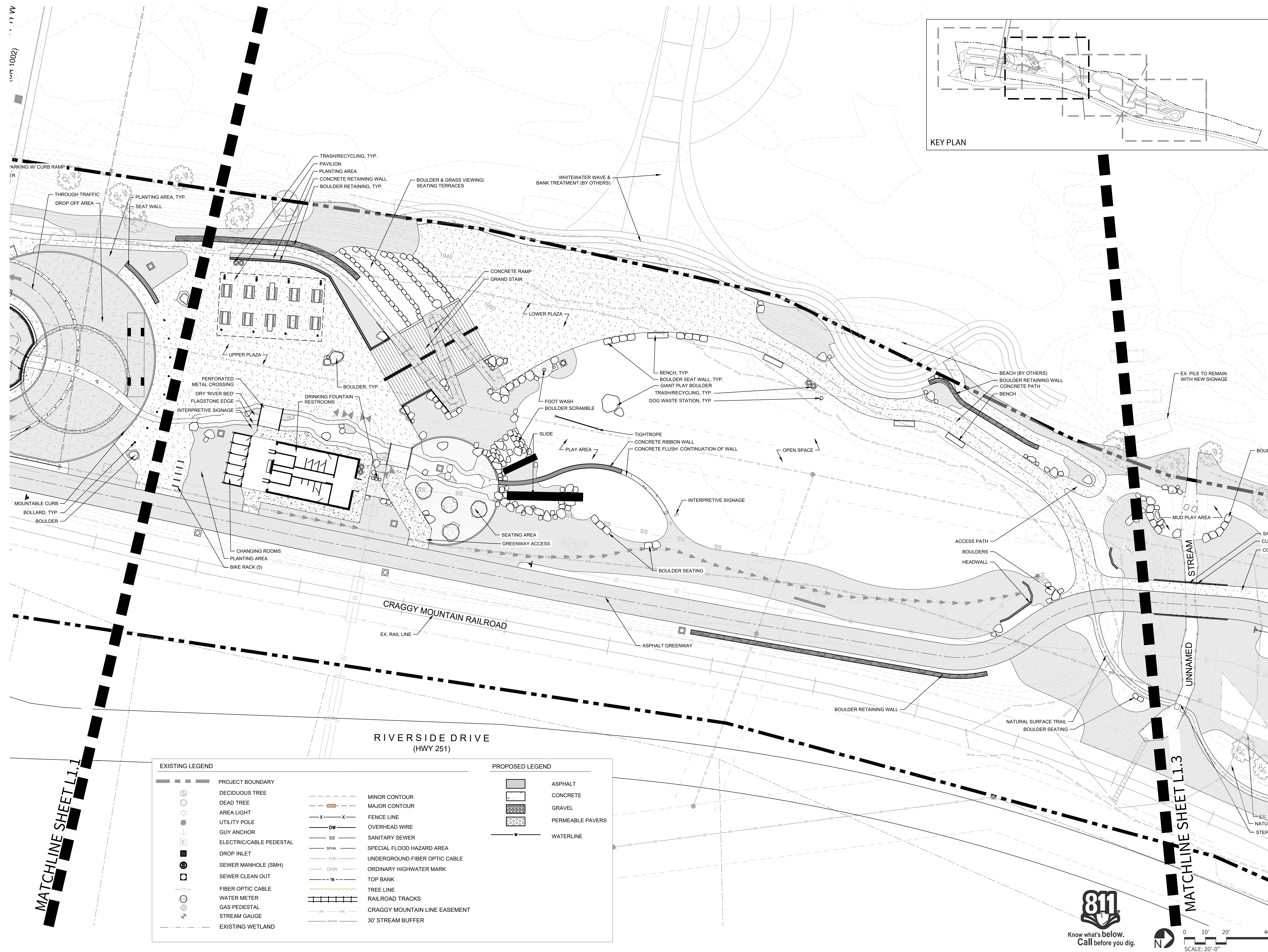
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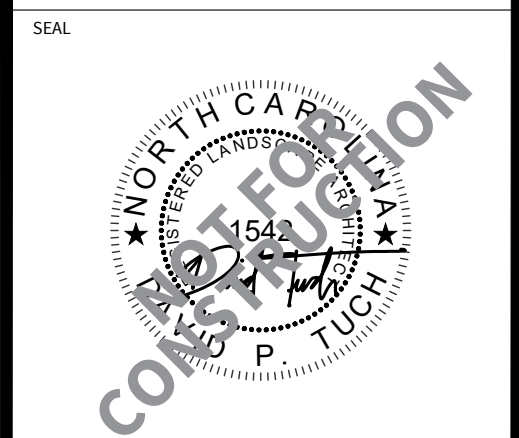
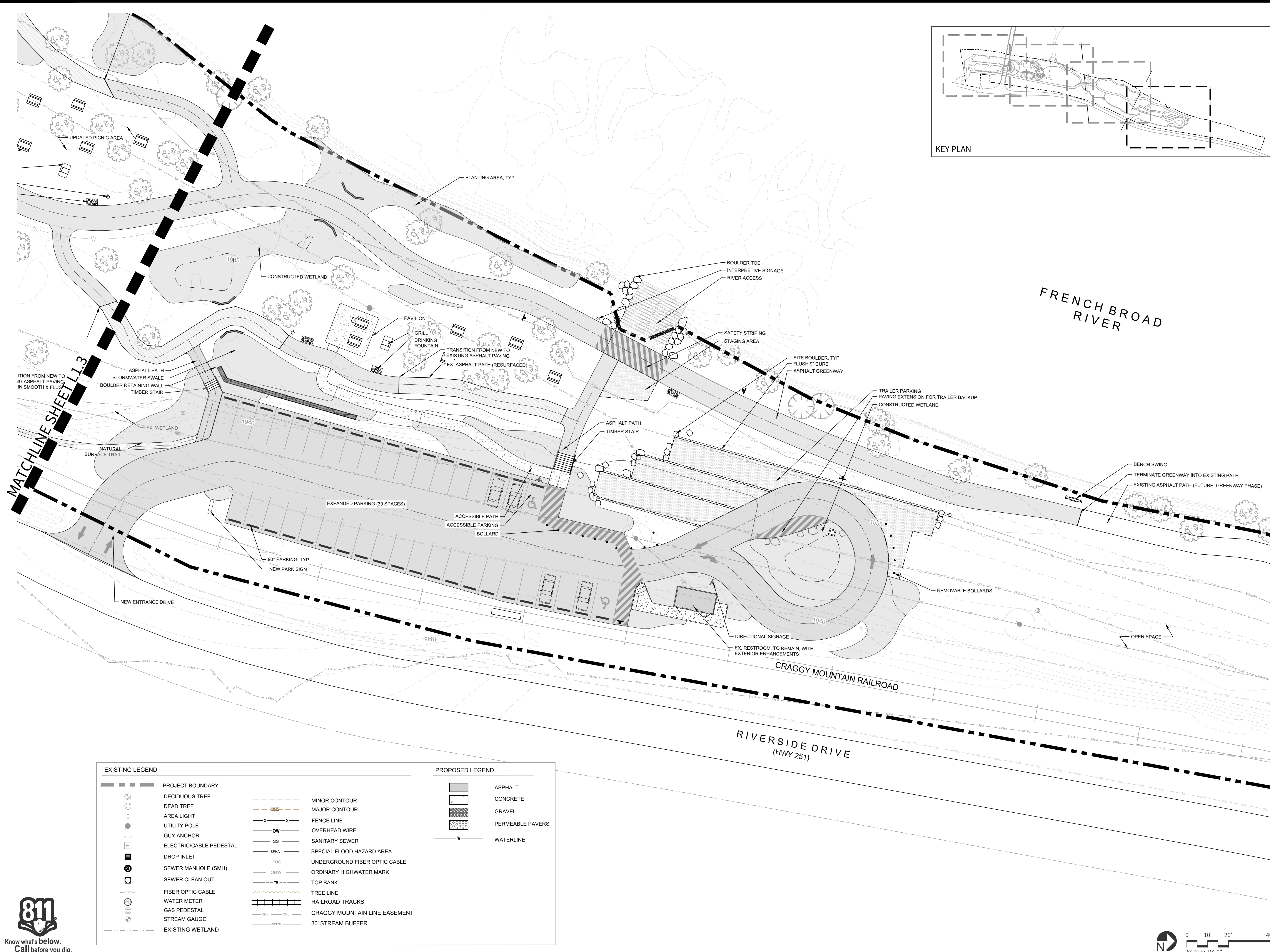


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RIVERSIDE PARK
Woodfin, NC

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DRAWING NAME	

L1.2





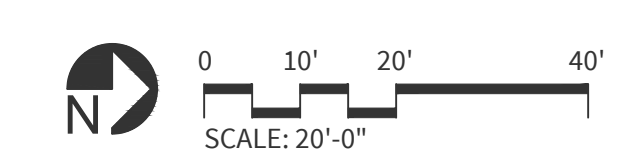
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DATE		
REVISIONS		

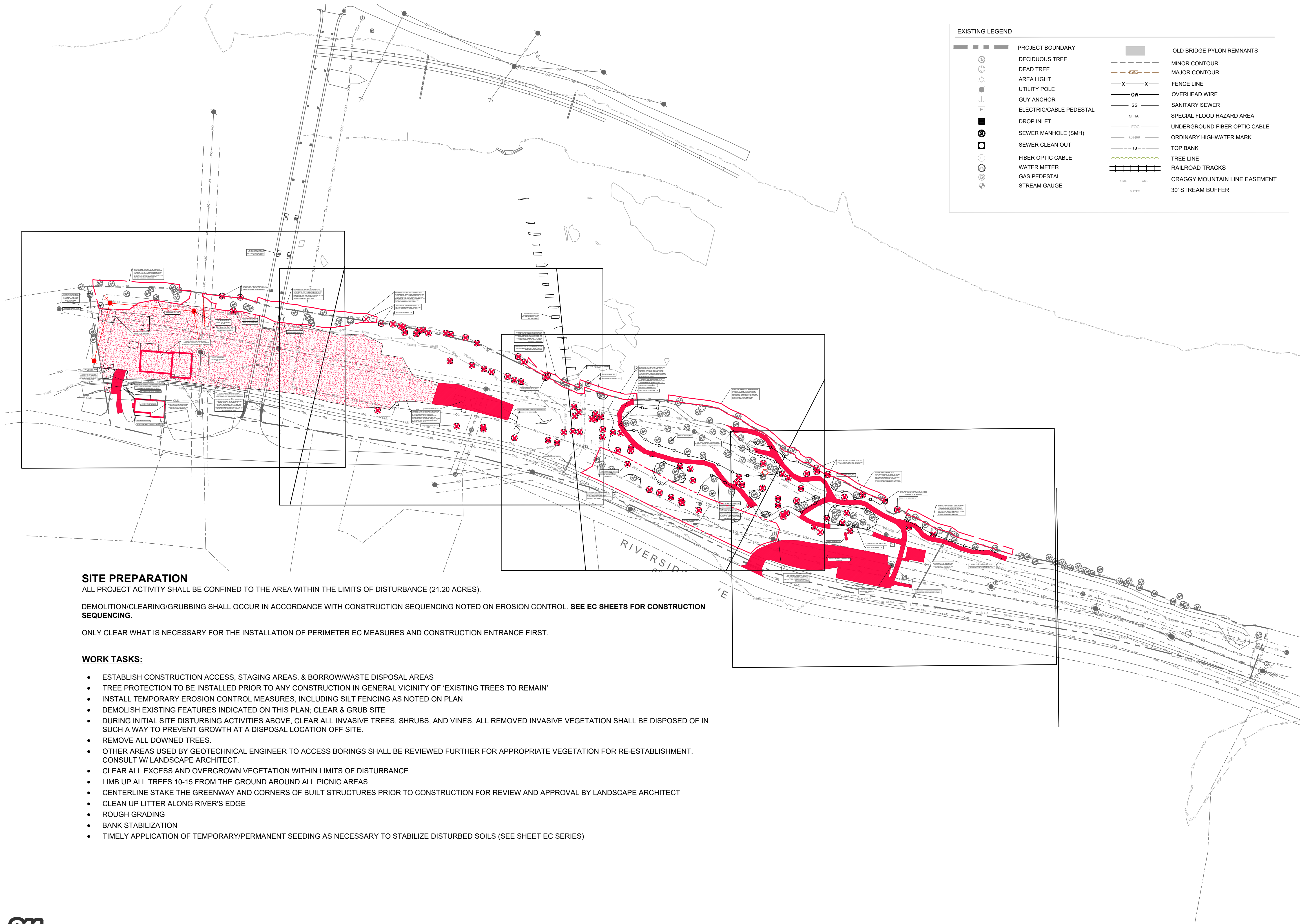
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RIVERSIDE PARK
Woodfin, NC

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DRAWING NAME



EXISTING LEGEND	PROPOSED LEGEND
PROJECT BOUNDARY	ASPHALT
DECIDUOUS TREE	CONCRETE
DEAD TREE	GRAVEL
AREA LIGHT	PERMEABLE PAVERS
UTILITY POLE	WATERLINE
GUY ANCHOR	
ELECTRIC/CABLE PEDESTAL	
DROP INLET	
SEWER MANHOLE (SMH)	
SEWER CLEAN OUT	
FIBER OPTIC CABLE	
WATER METER	
GAS PEDESTAL	
STREAM GAUGE	
EXISTING WETLAND	
MINOR CONTOUR	
MAJOR CONTOUR	
FENCE LINE	
OVERHEAD WIRE	
SANITARY SEWER	
SPECIAL FLOOD HAZARD AREA	
UNDERGROUND FIBER OPTIC CABLE	
ORDINARY HIGHWATER MARK	
TOP BANK	
TREE LINE	
RAILROAD TRACKS	
CRAGGY MOUNTAIN LINE EASEMENT	
30' STREAM BUFFER	





SITE PREPARATION

ALL PROJECT ACTIVITY SHALL BE CONFINED TO THE AREA WITHIN THE LIMITS OF DISTURBANCE (21.20 ACRES).

DEMOLITION/CLEARING/GRUBBING SHALL OCCUR IN ACCORDANCE WITH CONSTRUCTION SEQUENCING NOTED ON EROSION CONTROL. **SEE EC SHEETS FOR CONSTRUCTION SEQUENCING.**

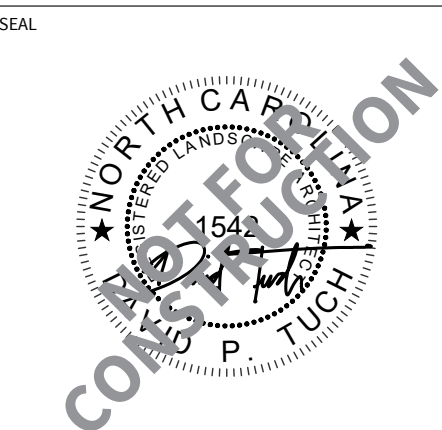
ONLY CLEAR WHAT IS NECESSARY FOR THE INSTALLATION OF PERIMETER EC MEASURES AND CONSTRUCTION ENTRANCE FIRST.

WORK TASKS:

- ESTABLISH CONSTRUCTION ACCESS, STAGING AREAS, & BORROW/WASTE DISPOSAL AREAS
- TREE PROTECTION TO BE INSTALLED PRIOR TO ANY CONSTRUCTION IN GENERAL VICINITY OF 'EXISTING TREES TO REMAIN'
- INSTALL TEMPORARY EROSION CONTROL MEASURES, INCLUDING SILT FENCING AS NOTED ON PLAN
- DEMOLISH EXISTING FEATURES INDICATED ON THIS PLAN; CLEAR & GRUB SITE
- DURING INITIAL SITE DISTURBING ACTIVITIES ABOVE, CLEAR ALL INVASIVE TREES, SHRUBS, AND VINES. ALL REMOVED INVASIVE VEGETATION SHALL BE DISPOSED OF IN SUCH A WAY TO PREVENT GROWTH AT A DISPOSAL LOCATION OFF SITE.
- REMOVE ALL DOWNED TREES.
- OTHER AREAS USED BY GEOTECHNICAL ENGINEER TO ACCESS BORINGS SHALL BE REVIEWED FURTHER FOR APPROPRIATE VEGETATION FOR RE-ESTABLISHMENT. CONSULT W/ LANDSCAPE ARCHITECT.
- CLEAR ALL EXCESS AND OVERGROWN VEGETATION WITHIN LIMITS OF DISTURBANCE
- LIMB UP ALL TREES 10-15 FROM THE GROUND AROUND ALL PICNIC AREAS
- CENTERLINE STAKE THE GREENWAY AND CORNERS OF BUILT STRUCTURES PRIOR TO CONSTRUCTION FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT
- CLEAN UP LITTER ALONG RIVER'S EDGE
- ROUGH GRADING
- BANK STABILIZATION
- TIMELY APPLICATION OF TEMPORARY/PERMANENT SEEDING AS NECESSARY TO STABILIZE DISTURBED SOILS (SEE SHEET EC SERIES)

EXISTING LEGEND

	PROJECT BOUNDARY		OLD BRIDGE PYLON REMNANTS
	DECIDUOUS TREE		MINOR CONTOUR
	DEAD TREE		MAJOR CONTOUR
	AREA LIGHT		FENCE LINE
	UTILITY POLE		OVERHEAD WIRE
	GUY ANCHOR		SANITARY SEWER
	ELECTRIC/CABLE PEDESTAL		SPECIAL FLOOD HAZARD AREA
	DROP INLET		UNDERGROUND FIBER OPTIC CABLE
	SEWER MANHOLE (SMH)		ORDINARY HIGHWATER MARK
	SEWER CLEAN OUT		TOP BANK
	FIBER OPTIC CABLE		TREE LINE
	WATER METER		RAILROAD TRACKS
	GAS PEDESTAL		CRAGGY MOUNTAIN LINE EASEMENT
	STREAM GAUGE		30' STREAM BUFFER



DESIGN BY: DRAWN BY: CHECKED BY:

DATE

REVISIONS

Town of Woodfin
RIVERSIDE PARK
Woodfin, NC

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PHASE

90%

DATE

September 30, 2022

DRAWING SCALE

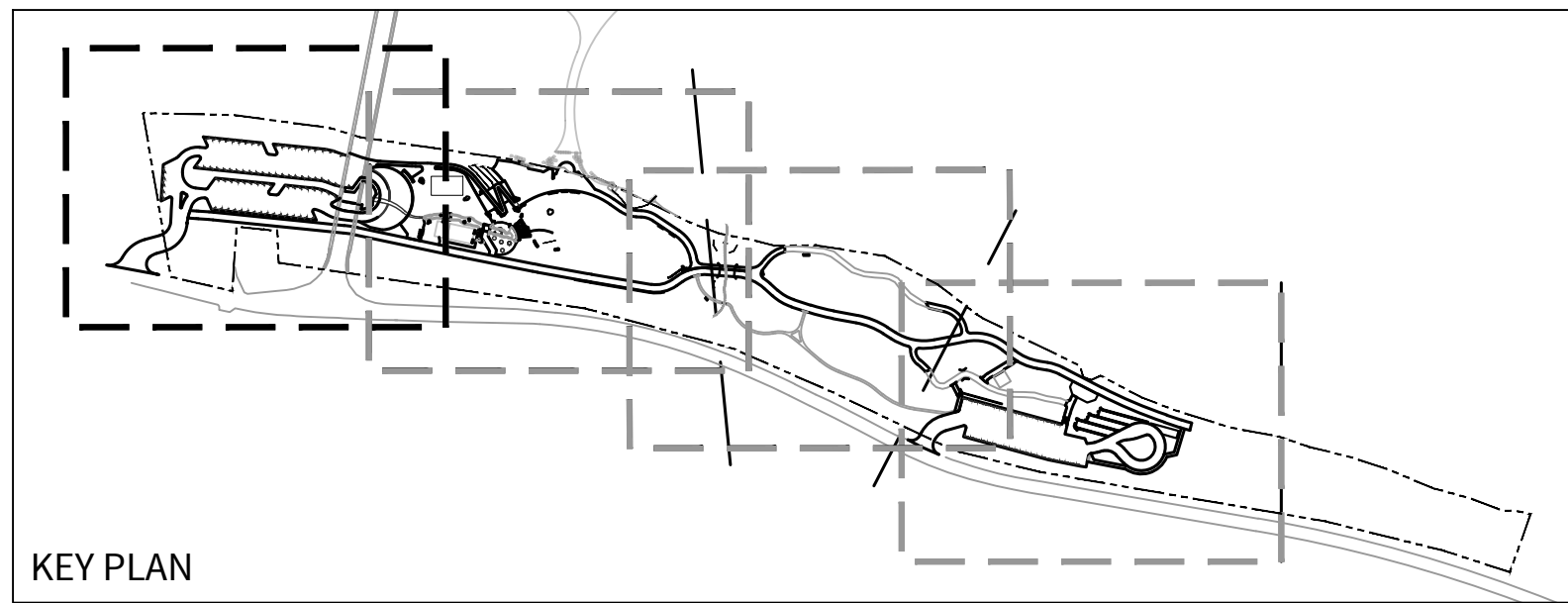
AS SHOWN

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DRAWING NAME

**THREE
LINE
TITLE**

L2.0



FRENCH BROAD RIVER

INVASIVE PLANT SPECIES TO BE REMOVED FROM EDGE OF CONSTRUCTION DISTURBANCE TO WATER. CUT ALL CLIMBING VINES AT 8' OFF THE GROUND AND REMOVE LOWER PORTION, LEAVING THE PORTION IN THE TREE CANOPY TO DIE. OR CAREFULLY REMOVE BY HAND WITHOUT DAMAGING TREE LIMBS.

FOR SITE PREPARATION DETAILS OF ITEMS WITHIN THE FRENCH BROAD RIVER, SEE 520 SHEETS.

TREES BELOW TOP OF BANK TO BE CUT NEAR THE BASE AND STUMP LEFT INTACT UNLESS REQUIRED TO BE REMOVED.

INVASIVE PLANT SPECIES TO BE REMOVED FROM EDGE OF CONSTRUCTION DISTURBANCE TO WATER. CUT ALL CLIMBING VINES AT 8' OFF THE GROUND AND REMOVE LOWER PORTION, LEAVING THE PORTION IN THE TREE CANOPY TO DIE. OR CAREFULLY REMOVE BY HAND WITHOUT DAMAGING TREE LIMBS.

FENCE AND ASSOCIATED FOOTINGS TO BE REMOVED TO PROPERTY LINE. TREE, FENCE ON NEIGHBORING PROPERTY TO BE PROTECTED.

POLES AND WIRES TO BE REMOVED BY DUKE ENERGY

TREE TO REMAIN, TYP.

UTILITY POLE TO BE PROTECTED, REMAIN IN PLACE.

AREA DRAIN AND ASSOCIATED PIPE TO BE REMOVED. SEE ENGINEERING DRAWINGS.

TREE TO REMAIN, TYP.

TREE TO BE REMOVED

DEBRIS TO BE REMOVED

STRUCTURES TO BE DEMOLISHED. ASSOCIATED UTILITIES TO BE REMOVED AS APPROPRIATE. SEE ENGINEERING DRAWINGS.

UTILITY POLE TO BE PROTECTED, REMAIN IN PLACE

DEBRIS TO BE REMOVED

STORAGE TANK TO BE REMOVED

FENCE AND ASSOCIATED FOOTINGS TO BE REMOVED TO PROPERTY LINE. FENCE ON NEIGHBORING PROPERTY TO BE PROTECTED.

Craggy Mountain Railroad

CONCRETE AND BASE COURSE TO BE REMOVED

ASPHALT TO BE REMOVED. BASE COURSE TO REMAIN AND BE REUSED AS ABL.

DECK AND STAIR TO BE REMOVED

FENCE AND ASSOCIATED FOOTINGS TO BE REMOVED

STRUCTURE TO BE DEMOLISHED. ASSOCIATED UTILITIES TO BE REMOVED AS APPROPRIATE. SEE ENGINEERING DRAWINGS.

DECK TO BE REMOVED

ASPHALT AND BASE COURSE TO BE REMOVED

STRUCTURE TO BE DEMOLISHED. ASSOCIATED UTILITIES TO BE REMOVED AS APPROPRIATE. SEE ENGINEERING DRAWINGS.

CONCRETE TO BE DEMOLISHED. OPTION FOR CONCRETE TO HAVE METAL REMOVED AND BE CRUSHED OR PROCESSED TO A GRADATION SIMILAR TO WCDOT ABC AND REMAIN ON-SITE AS BASE COURSE FOR FUTURE PARKING. CHOICE SLABS (18" - 30") TO BE REUSED FOR PAVING. SEE SHEET L4.2 (MP2) AND DETAIL 9/L8.0.

EXISTING LEGEND

- | | | | |
|--|-------------------------|--|-------------------------------|
| | PROJECT BOUNDARY | | OLD BRIDGE PYLON REMNANTS |
| | DECIDUOUS TREE | | MINOR CONTOUR |
| | DEAD TREE | | MAJOR CONTOUR |
| | AREA LIGHT | | FENCE LINE |
| | UTILITY POLE | | OVERHEAD WIRE |
| | GUY ANCHOR | | SANITARY SEWER |
| | ELECTRIC/CABLE PEDESTAL | | SPECIAL FLOOD HAZARD AREA |
| | DROP INLET | | UNDERGROUND FIBER OPTIC CABLE |
| | SEWER MANHOLE (SMH) | | ORDINARY HIGHWATER MARK |
| | SEWER CLEAN OUT | | TOP BANK |
| | FIBER OPTIC CABLE | | TREE LINE |
| | WATER METER | | RAILROAD TRACKS |
| | GAS PEDESTAL | | CRAGGY MOUNTAIN LINE EASEMENT |
| | STREAM GAUGE | | 30' STREAM BUFFER |

RIVERSIDE DRIVE
(HWY 251)

MATCHLINE SHEET L2.2

0 10' 20' 40'
SCALE: 20'-0"



DESIGN BY: DRAWN BY: CHECKED BY:

DATE	REVISIONS

Town of Woodfin
RIVERSIDE PARK
Woodfin, NC

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PHASE
90%

DATE
September 30, 2022

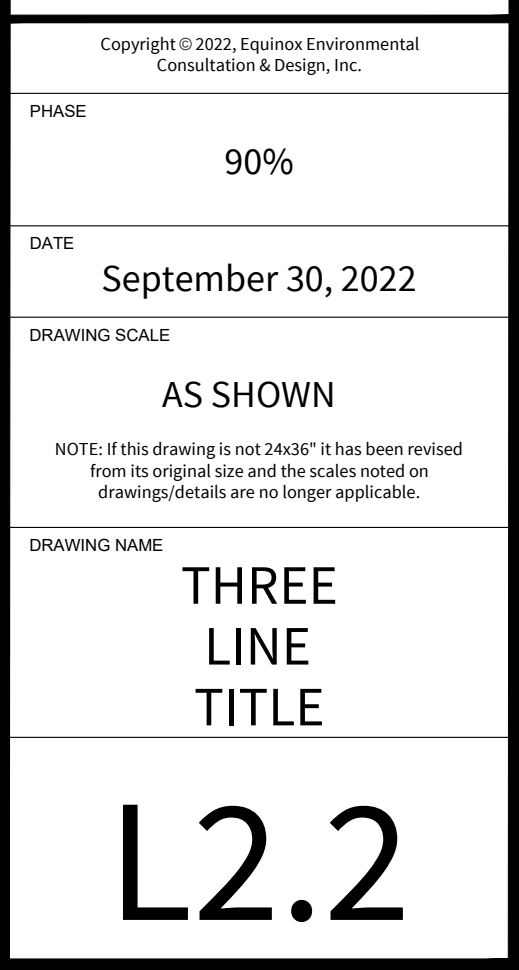
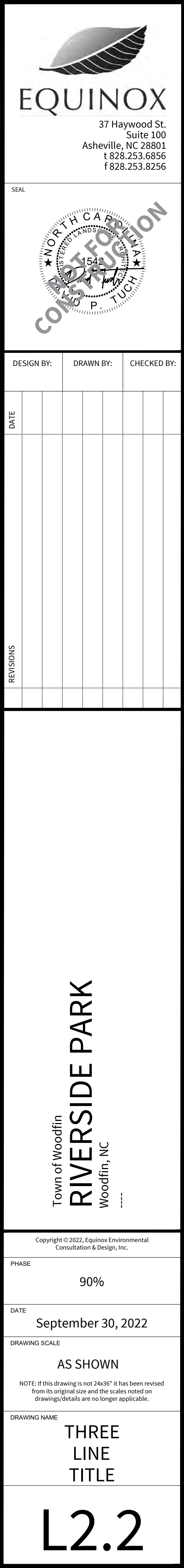
DRAWING SCALE
AS SHOWN

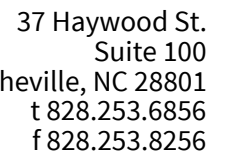
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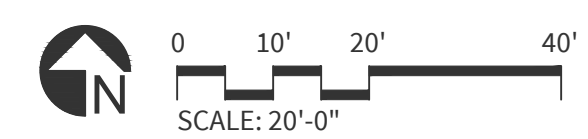
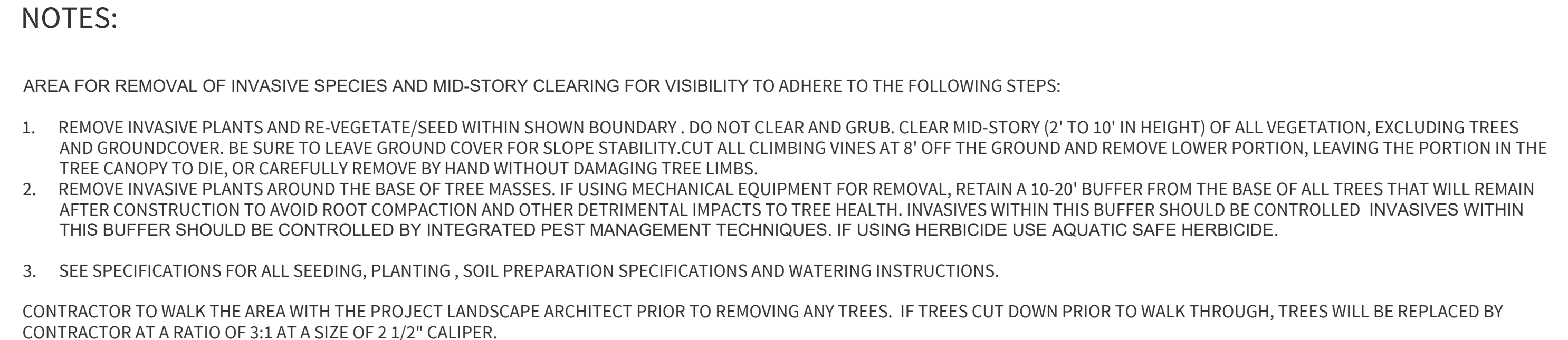
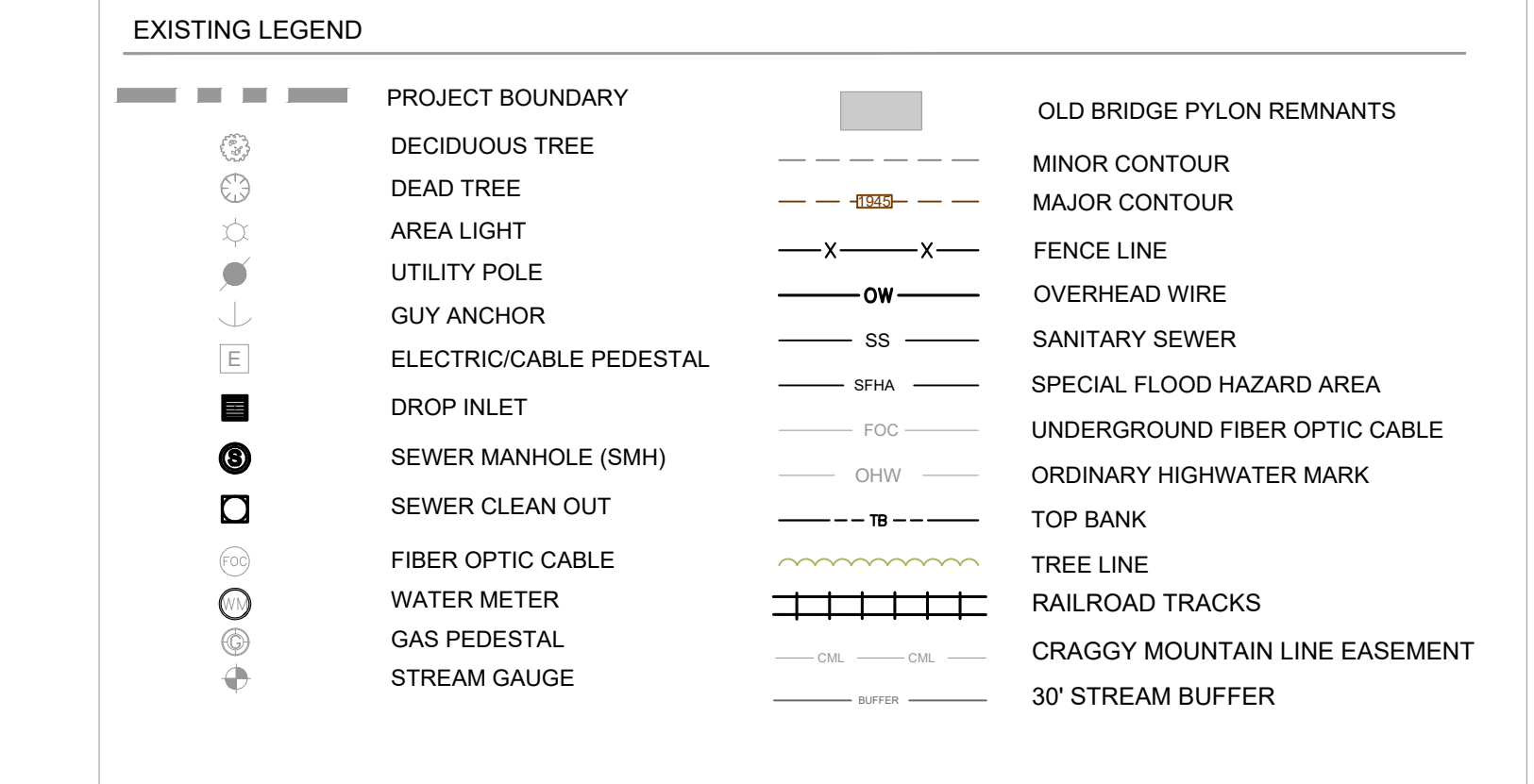
DRAWING NAME

SITE PREP

L2.1







Town of Woodfin
RIVERSIDE PARK
Woodfin, NC

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September 30, 2022

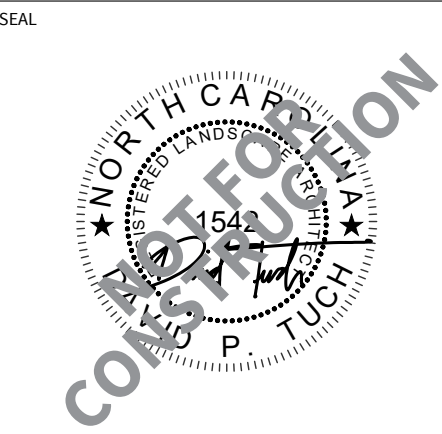
AS SHOWN

his drawing is not 24x36" it has been revised to its original size and the scales noted on wings/details are no longer applicable.

NAME

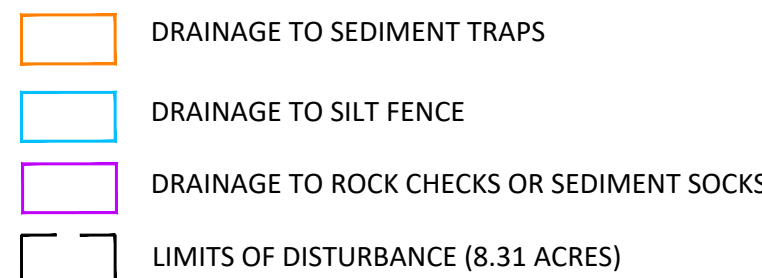
THREE
LINE
TITLE

L2.4

[illegible]

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EC 1.0



20. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS ARE EXPECTED TO BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE.

Town of Woodfin
90 Elk Mountain RD.
Woodfin, NC 28804
(828) 253-4887

LANDSCAPE ARCHITECT:
Equinox
37 Haywood Street, Suite 100
Asheville, NC 28801
(828) 253-6856 (x202)
david@equinoxenvironmental.com

ADDRESS:
1598 Riverside Dr.
Asheville, NC 28804

Latitude: 35.627678° N
Longitude: - 82.600733° W

PROJECT SIZE:
Approximately 9.15 Ac Total
Disturbance area is 8.31 Ac

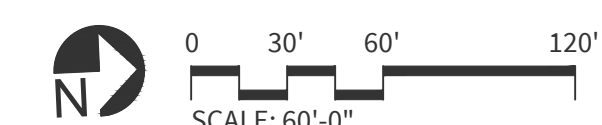
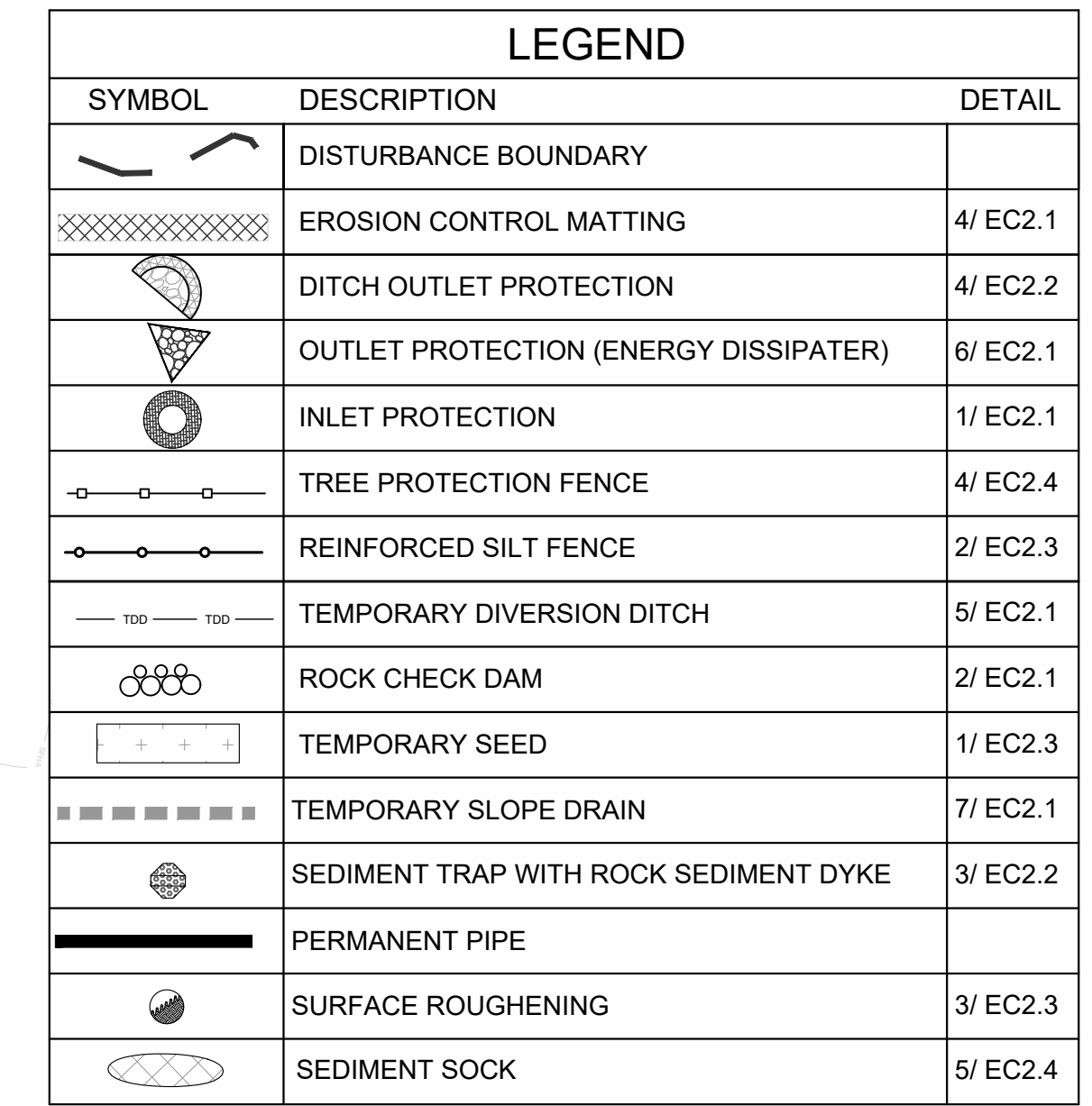
All aspects of work shall be performed in accordance with all applicable local, state, and federal regulations pertaining to worker safety.

Sediment Trap Schedule											
Trap	Drainage Area (AC)	Min. L/W Ratio	Designed L/W Ratio	Required Surface Area	Required volume	Minimum Storage Depth (with 1.5' min. excavation)	Bottom Surface Elev	Surface Area	Volume	Weir Width	weir Elevation
ST1	0.93	2 to 1	2 to 1	1352 SF	3348 CF	2.0'	1935	1745 SF	3873 CF	4'	1938.00
ST2	0.22	2 to 1	2 to 1	492 SF	792 CF	2.0'	1933	574 SF	893 CF	4'	1935.00

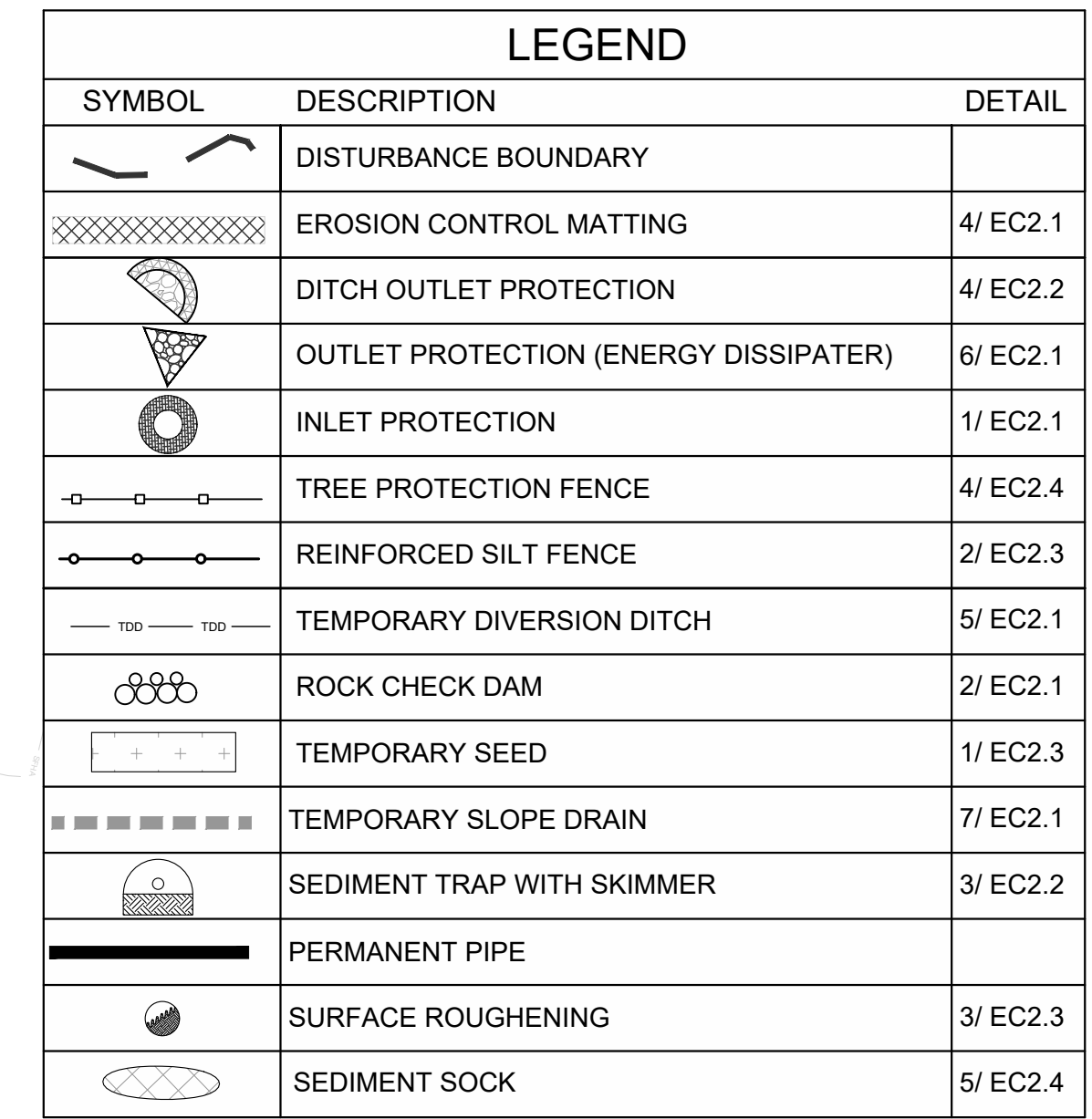
Skimmer Sizing


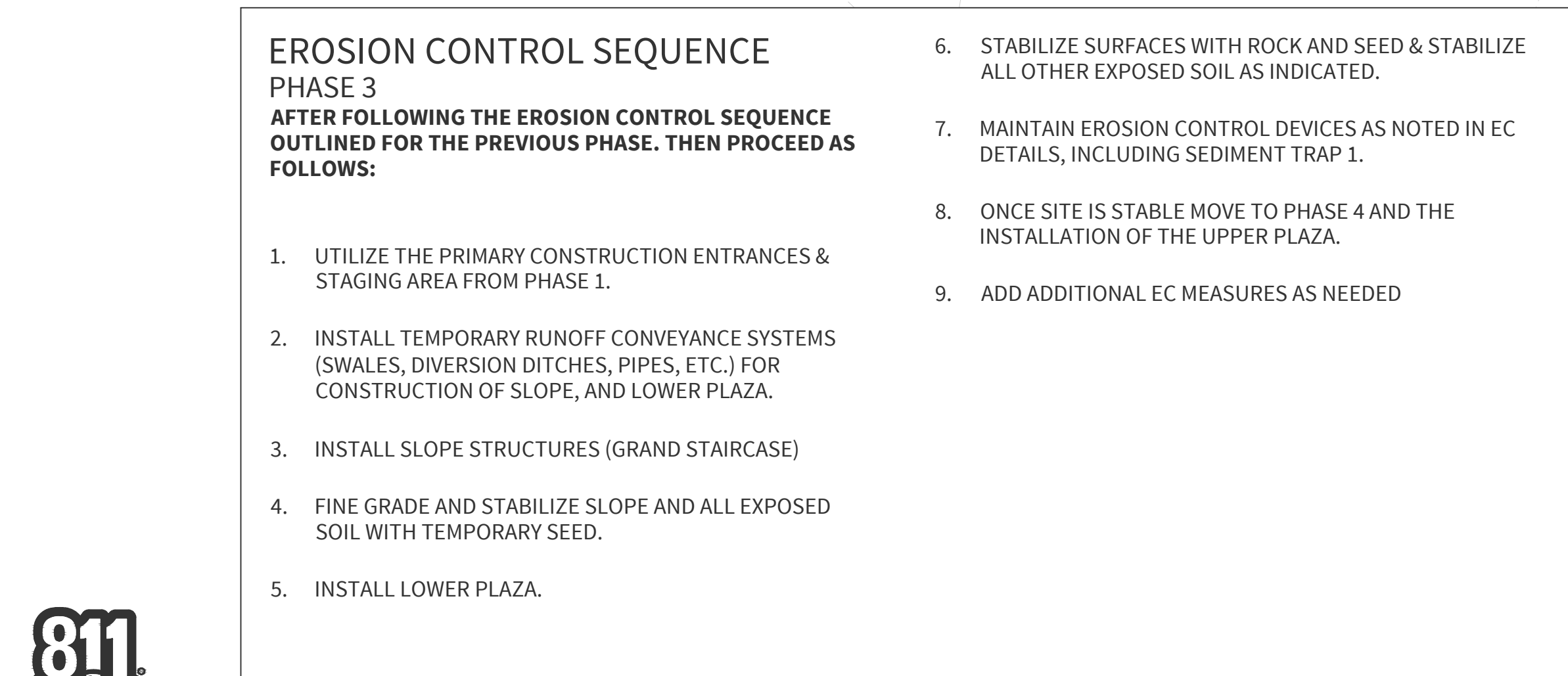
Trap	Drainage Area (AC)	Time to Drain	Required volume	Skimmer Size	Orifice Radius	Orifice Diameter
ST1	0.93	48 hrs	3348 CF	1.5 in	0.6 in	1.3 in
ST2	0.22	48 hrs	792 CF	1.5 in	0.3 in	0.6 in





EC 1.1






EQUINOX

37 Haywood St.
Suite 100
Asheville, NC 28801
t 828.253.6856
f 828.253.8256

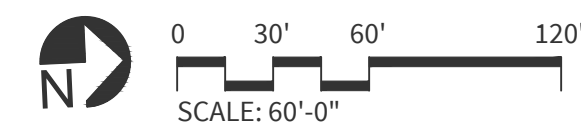
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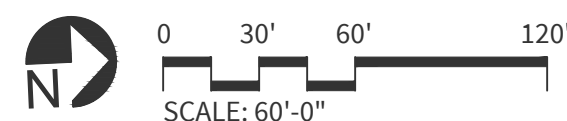
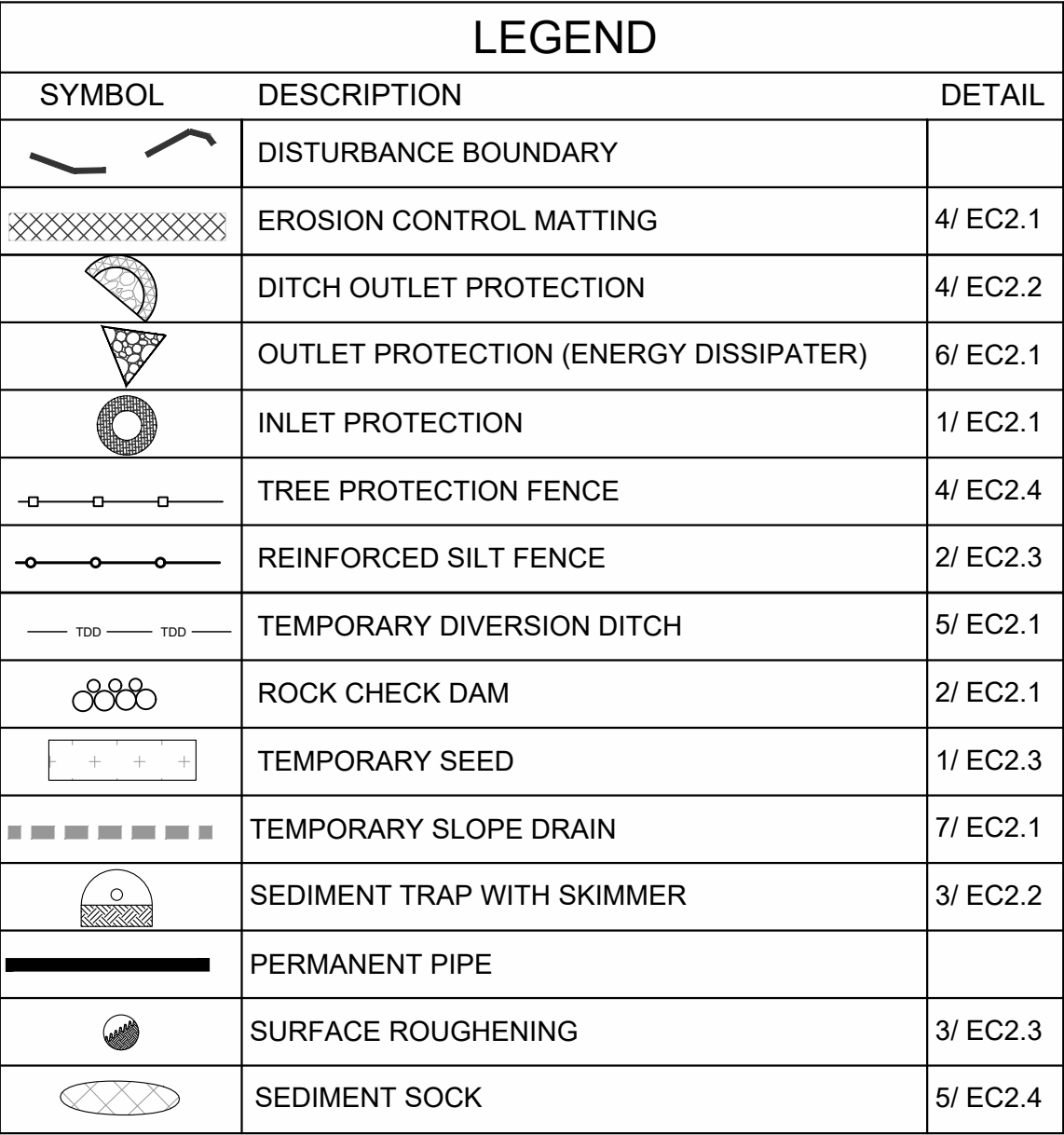


CONFIDENTIAL

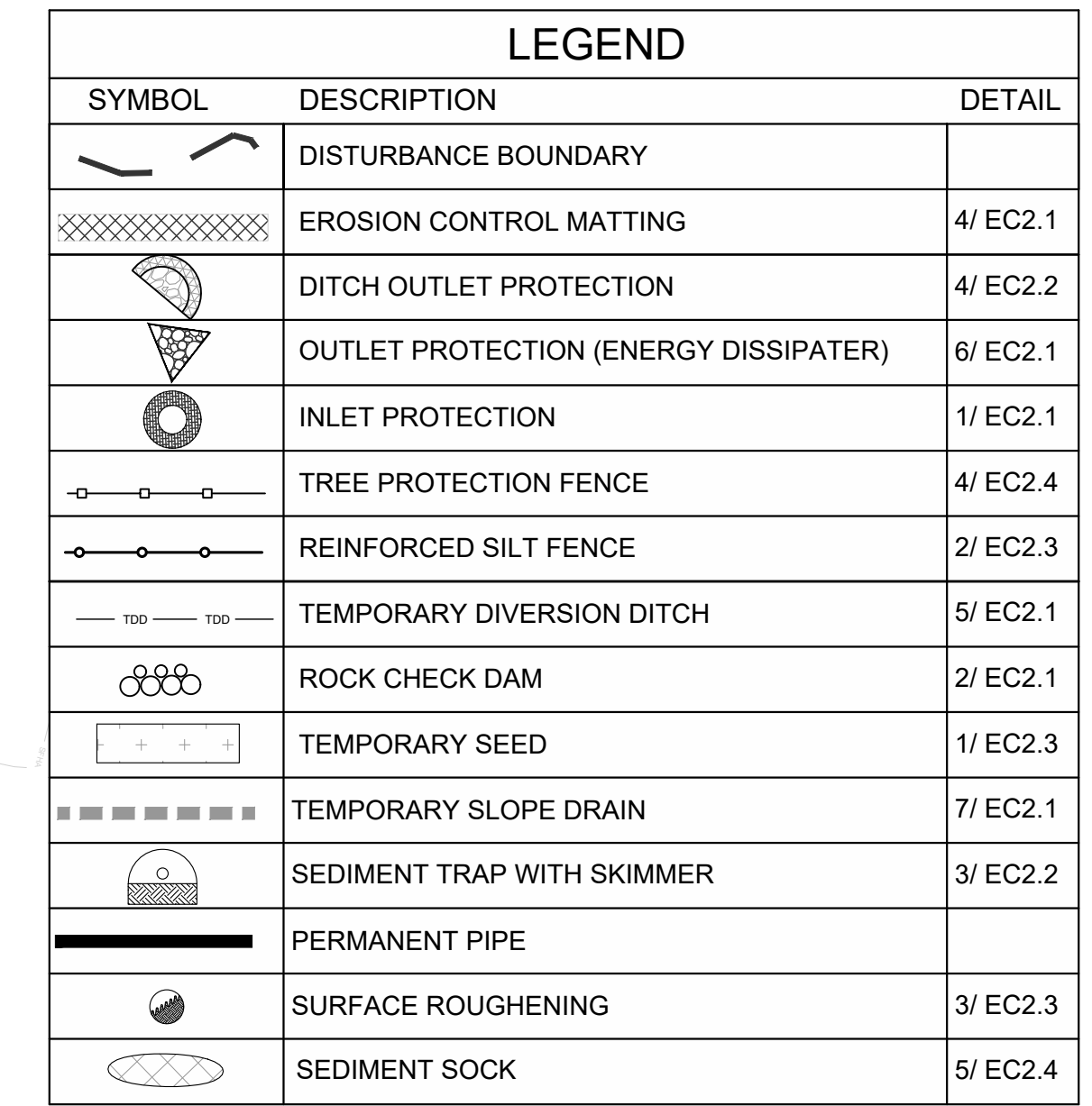
Town of Woodfin
RIVERSIDE PARK
Woodfin, NC

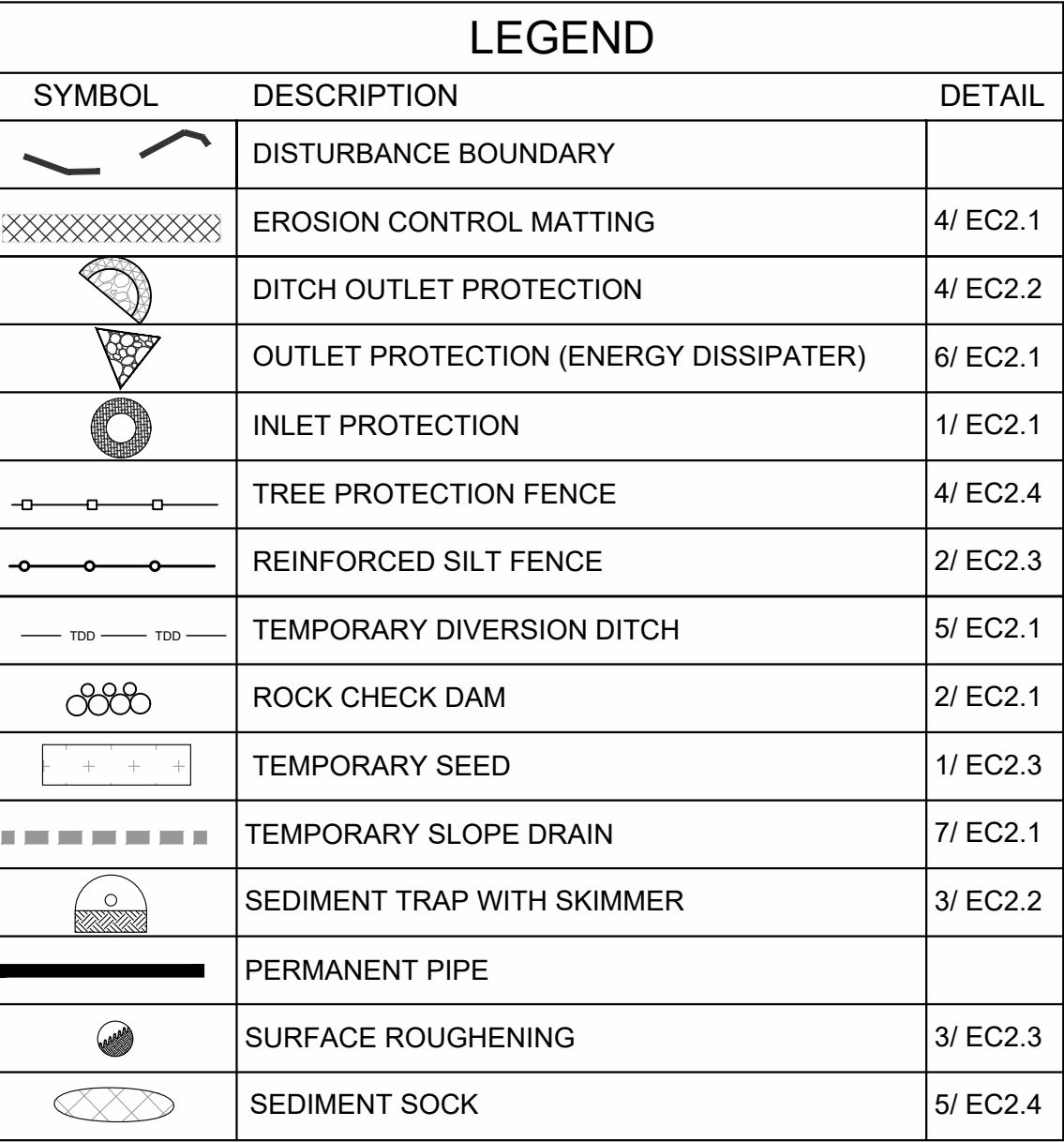
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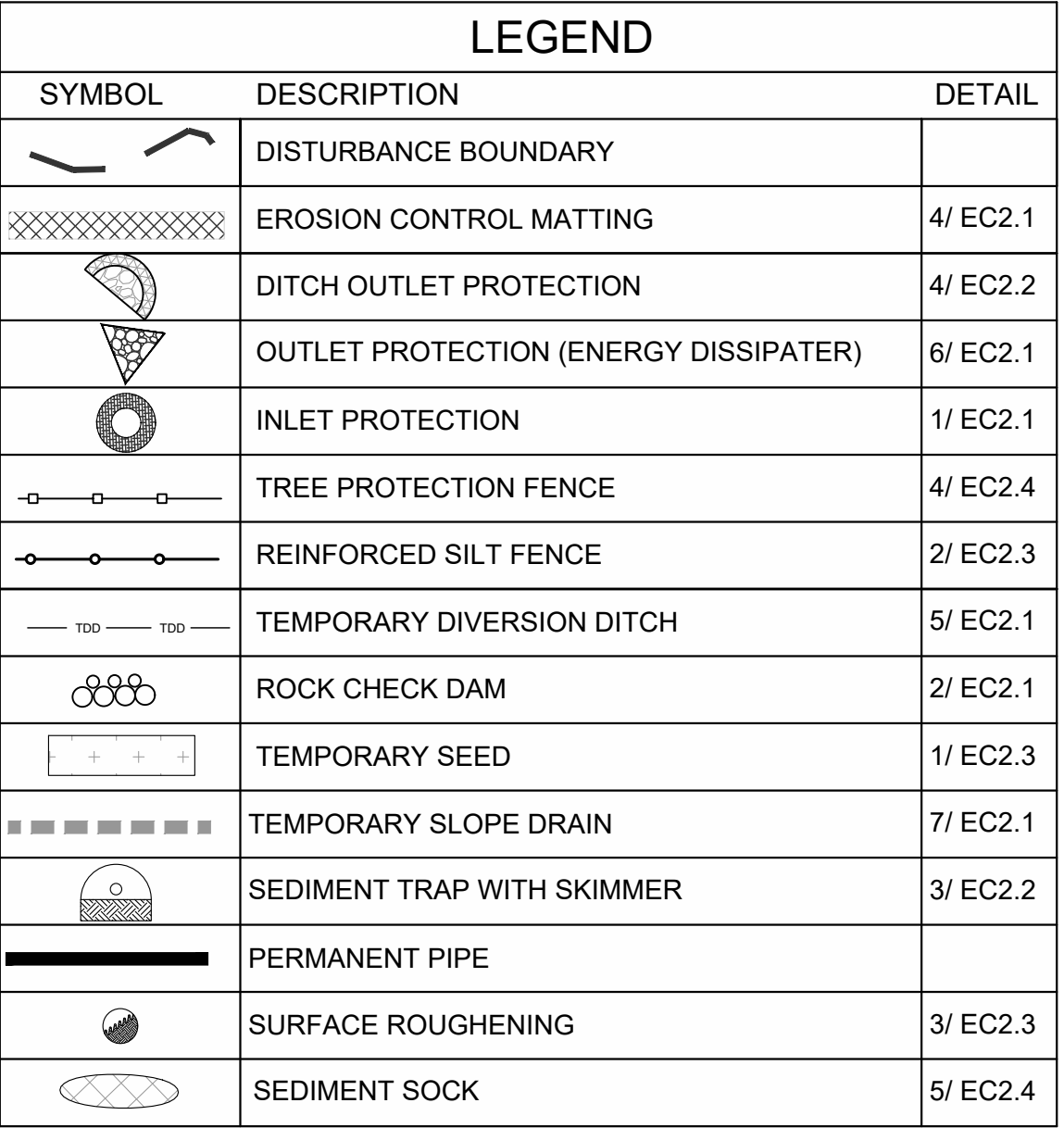


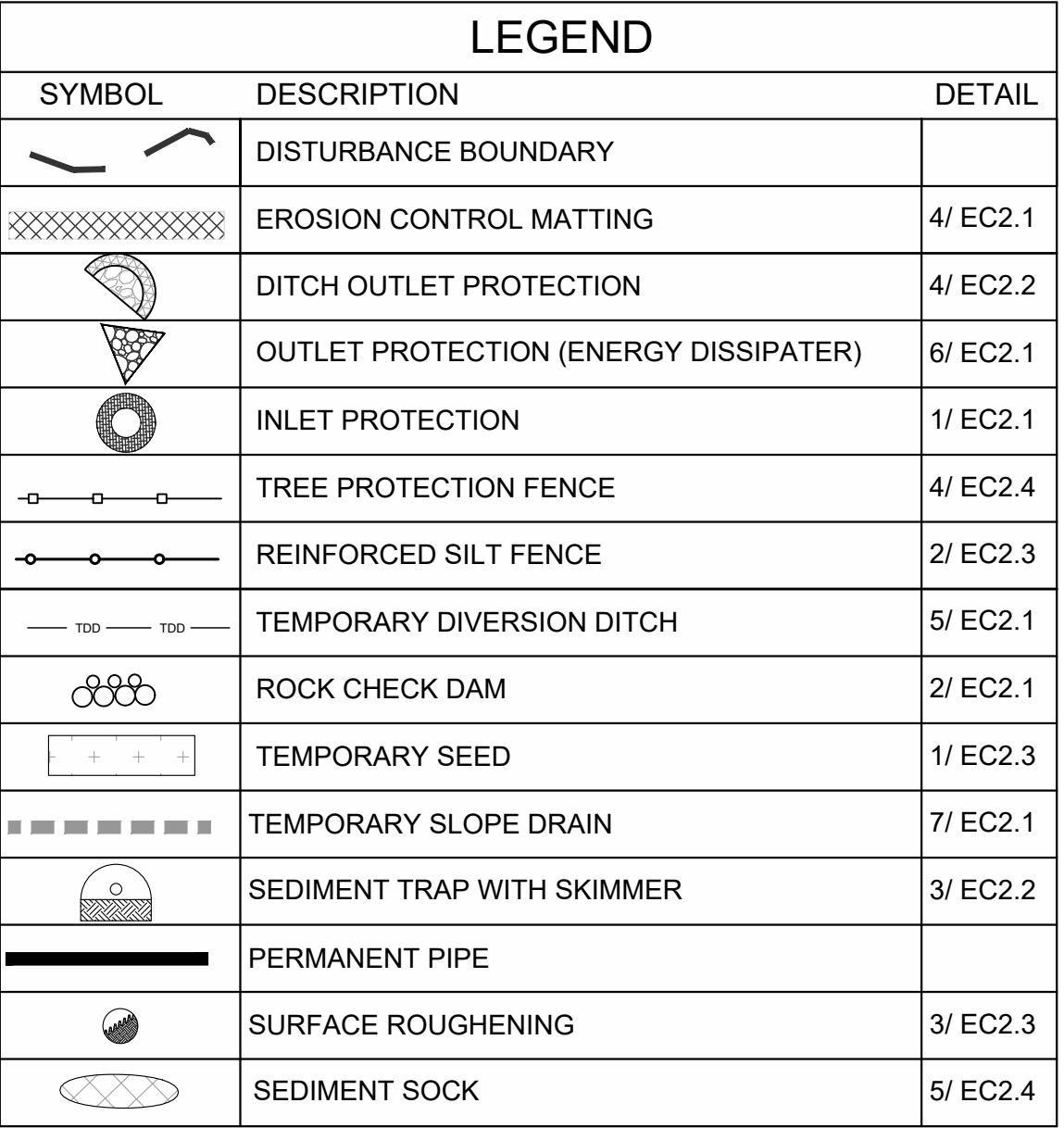


EC1.4



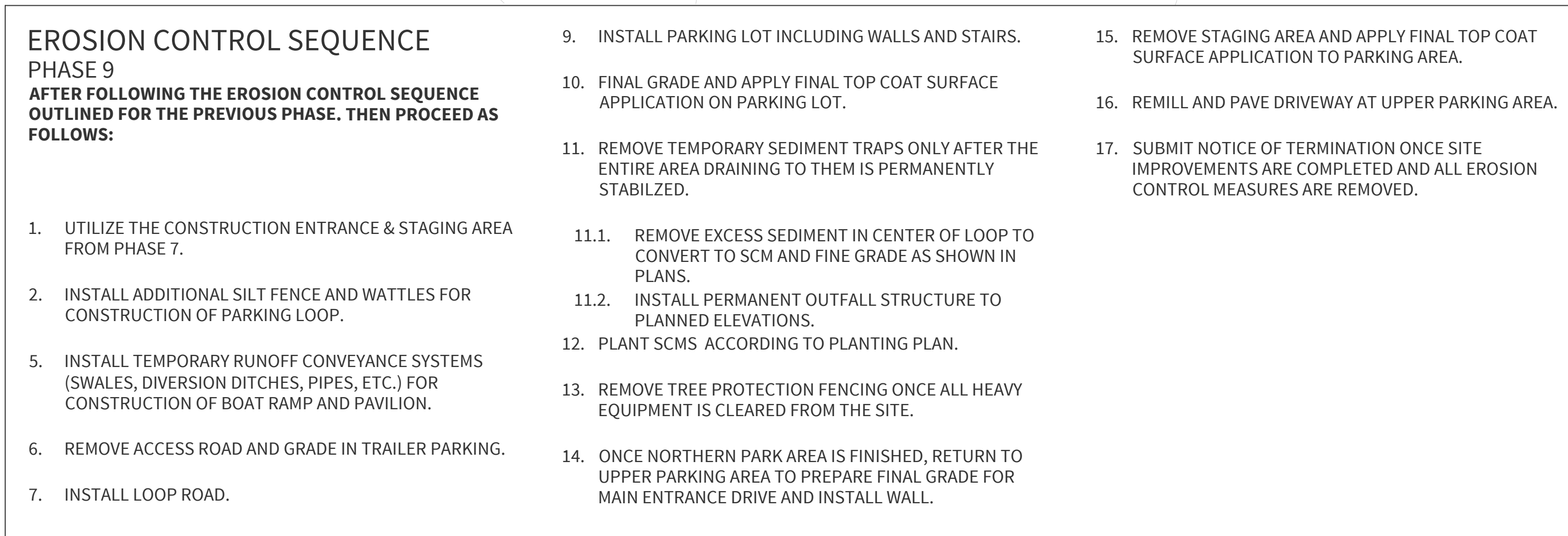




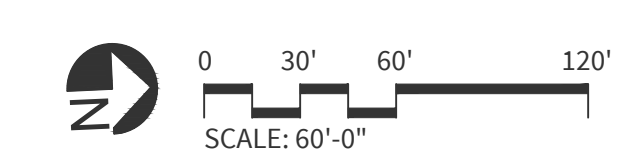


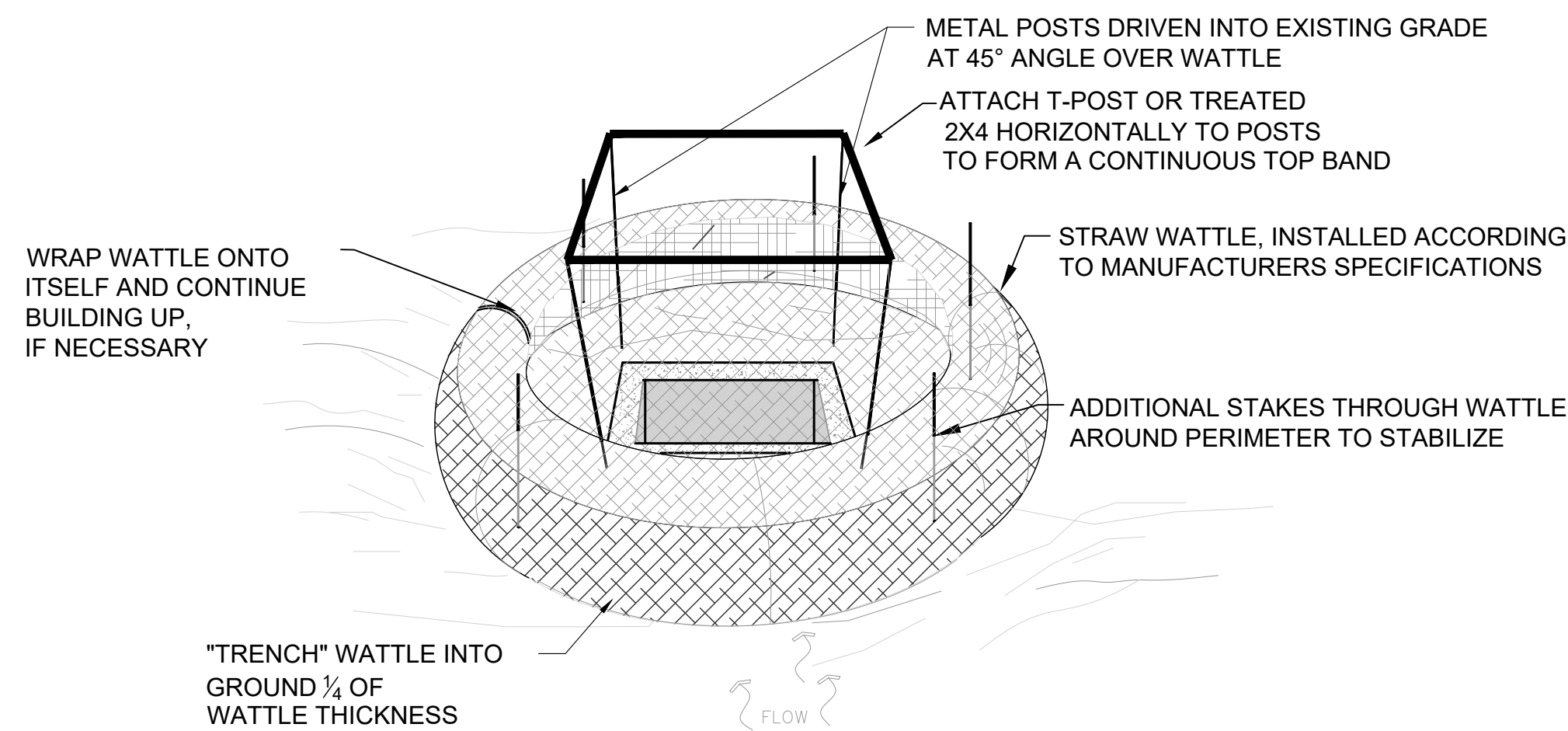
TURBIDITY CURTAIN





<

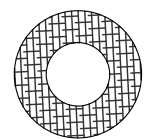




NOTE: ILLUSTRATION DEPICTS A LOW POINT CATCH BASIN. IF INLET PROTECTION IS APPLIED AT HEADWALL OR SINGLE-SIDED INLET STRUCTURE, METAL POSTS MAY NOT BE REQUIRED, HOWEVER, WATTLE IS TO BE KEYED INTO BANK ON BOTH SIDES OF INLET.

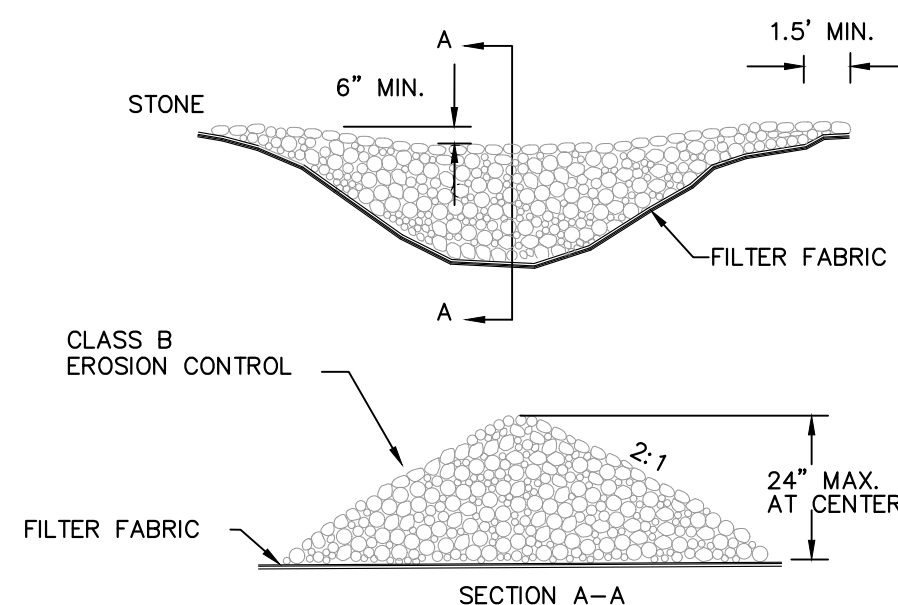
INSPECTION AND MAINTENANCE: REMOVE SEDIMENT ONCE IT HAS REACHED $\frac{1}{3}$ THE HEIGHT OF THE STRAW WATTLE.

PLAN SYMBOL



1 INLET PROTECTION

NOT TO SCALE



STONE SHOULD BE PLACED OVER THE CHANNEL BANKS TO KEEP WATER FROM CUTTING AROUND THE DAM.

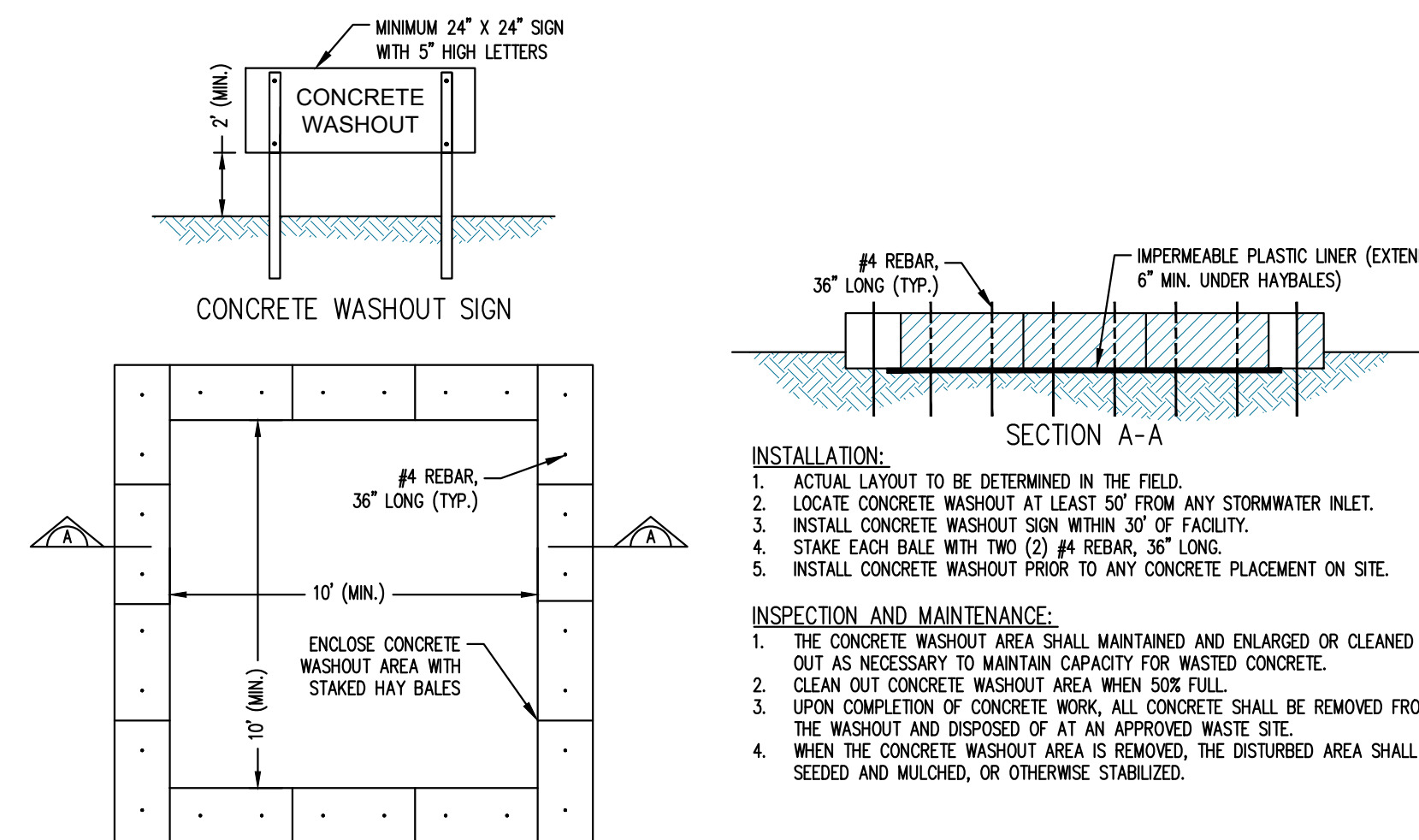
INSPECTION AND MAINTENANCE: REMOVE SEDIMENT ONCE IT HAS REACHED $\frac{1}{3}$ THE HEIGHT OF THE CHECK DAM.

PLAN SYMBOL



2 ROCK CHECK DAM

NOT TO SCALE



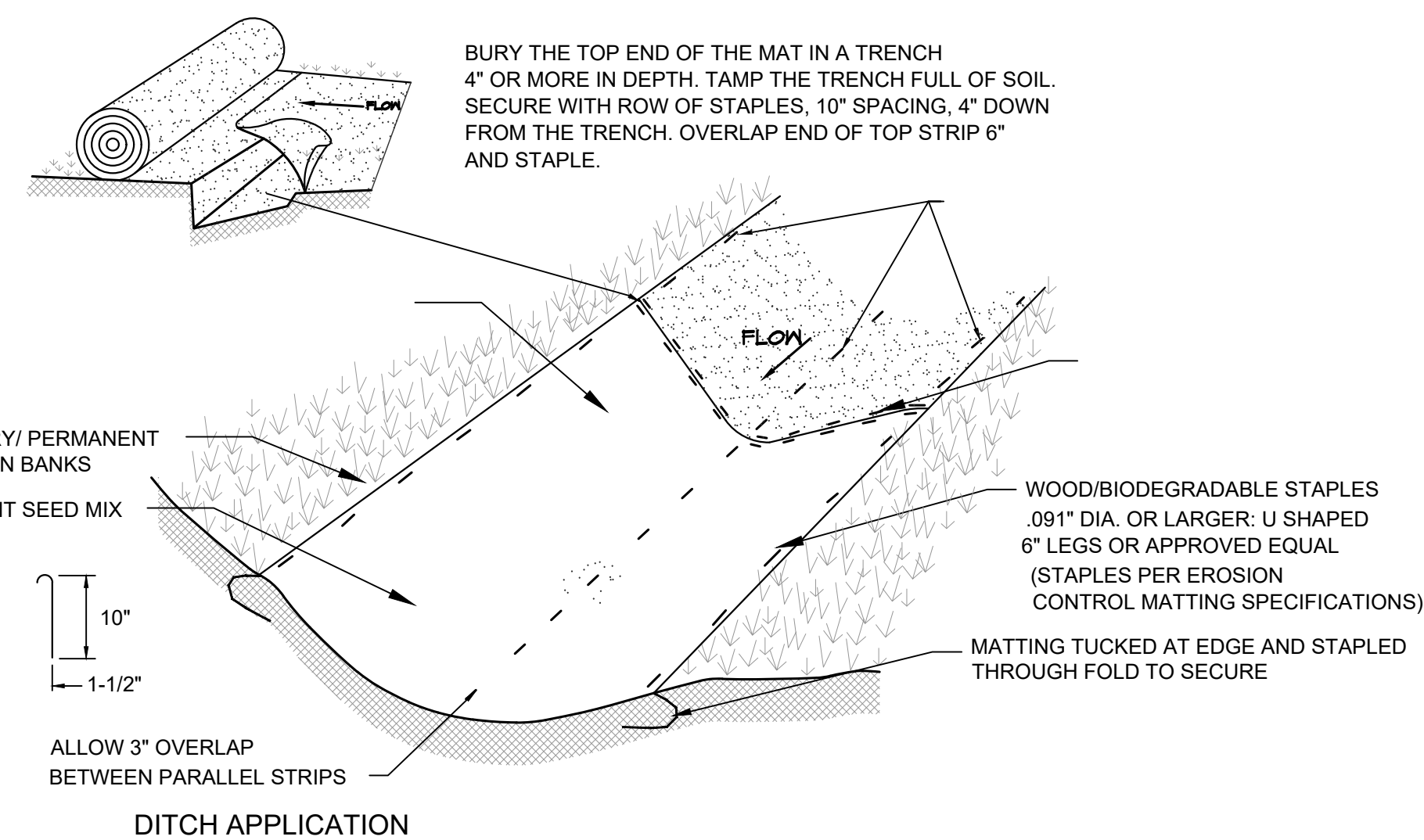
INSTALLATION:
1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. LOCATE CONCRETE WASHOUT AT LEAST 50' FROM ANY STORMWATER INLET.
3. INSTALL CONCRETE WASHOUT SIGN WITHIN 30' OF FACILITY.
4. STAKE EACH BALE WITH TWO (2) #4 REBAR, 36" LONG.
5. INSTALL CONCRETE WASHOUT PRIOR TO ANY CONCRETE PLACEMENT ON SITE.

INSPECTION AND MAINTENANCE:
1. THE CONCRETE WASHOUT AREA SHALL MAINTAINED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. CLEAN OUT CONCRETE WASHOUT AREA WHEN SOIL FULL.
3. UPON COMPLETION OF CONCRETE WORK, ALL CONCRETE SHALL BE REMOVED FROM THE WASHOUT AND DISPOSED OF AT AN APPROVED WASTE SITE.
4. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE SEEDING AND MULCHED, OR OTHERWISE STABILIZED.

PLAN VIEW

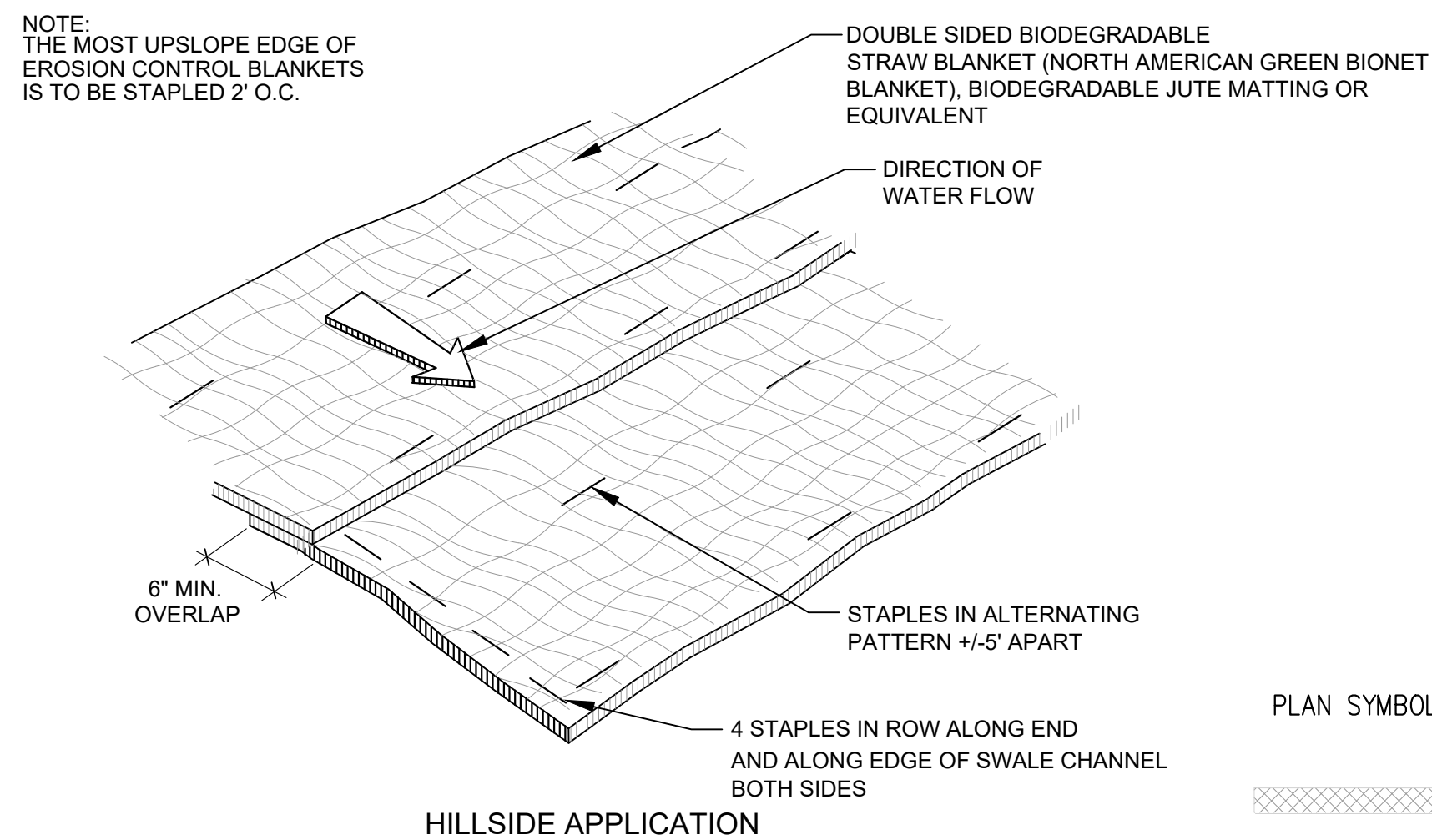
3 CONCRETE WASHOUT

NOT TO SCALE



4 EROSION CONTROL MATTING

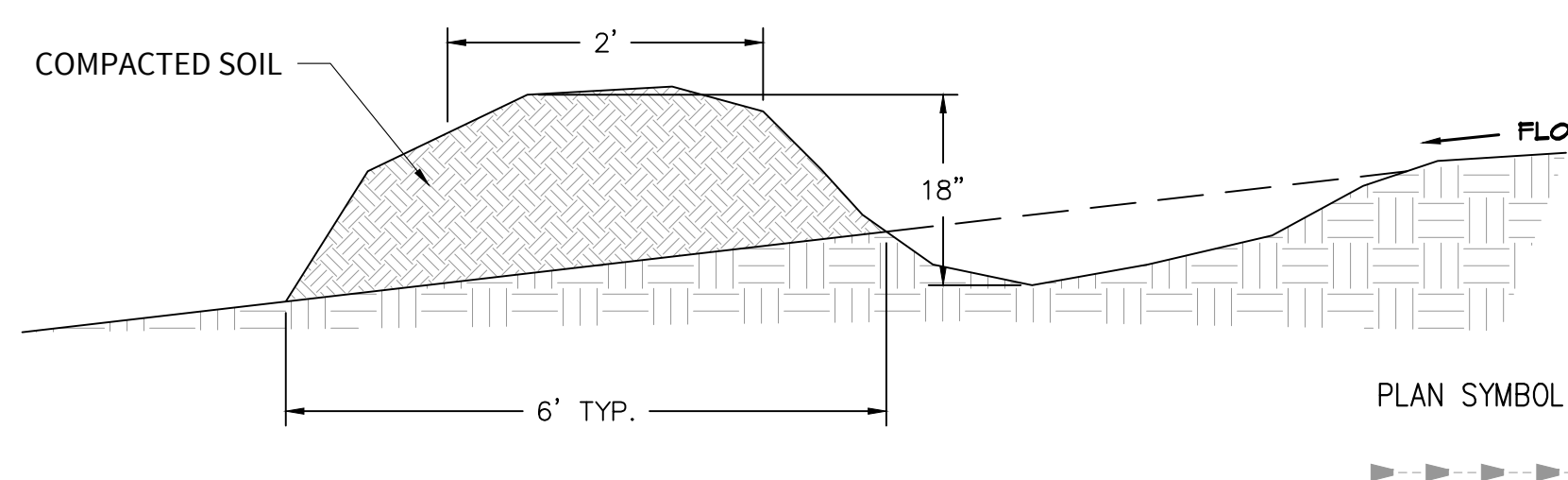
NOT TO SCALE



PLAN SYMBOL



HILLSIDE APPLICATION

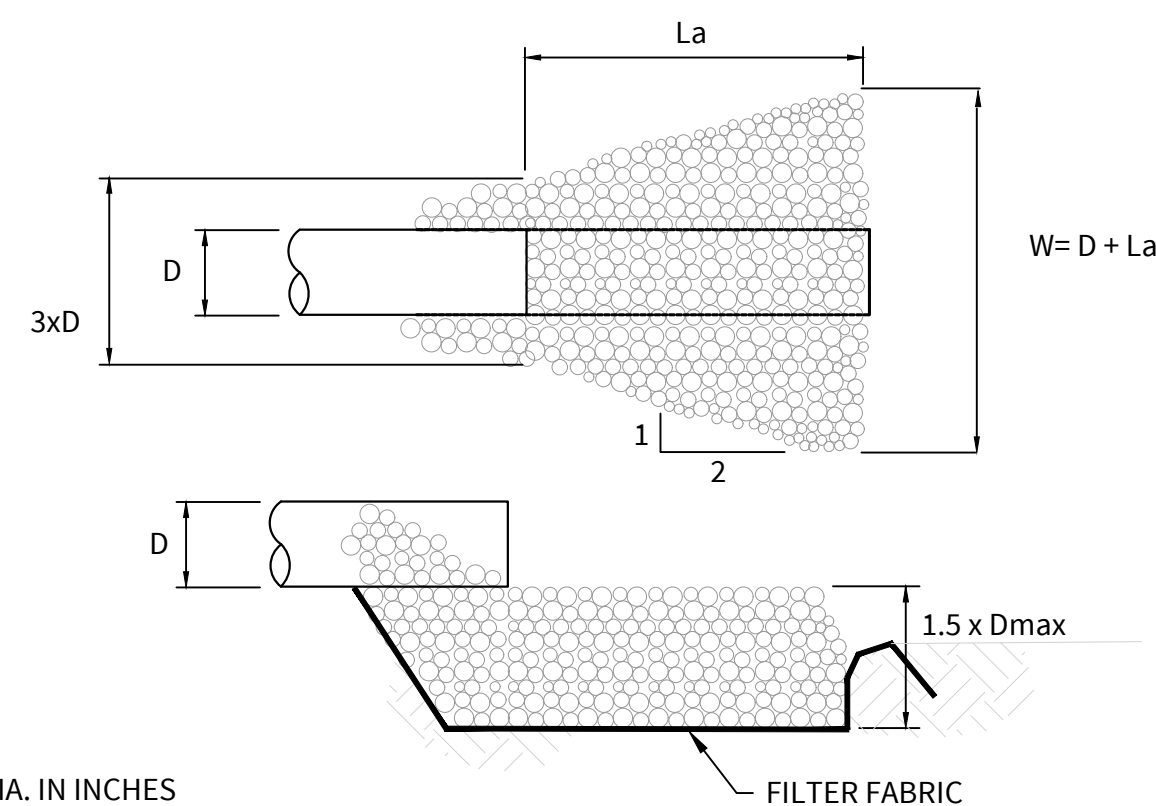


PLAN SYMBOL



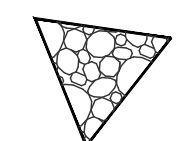
5 TEMPORARY DIVERSION DITCH

NOT TO SCALE



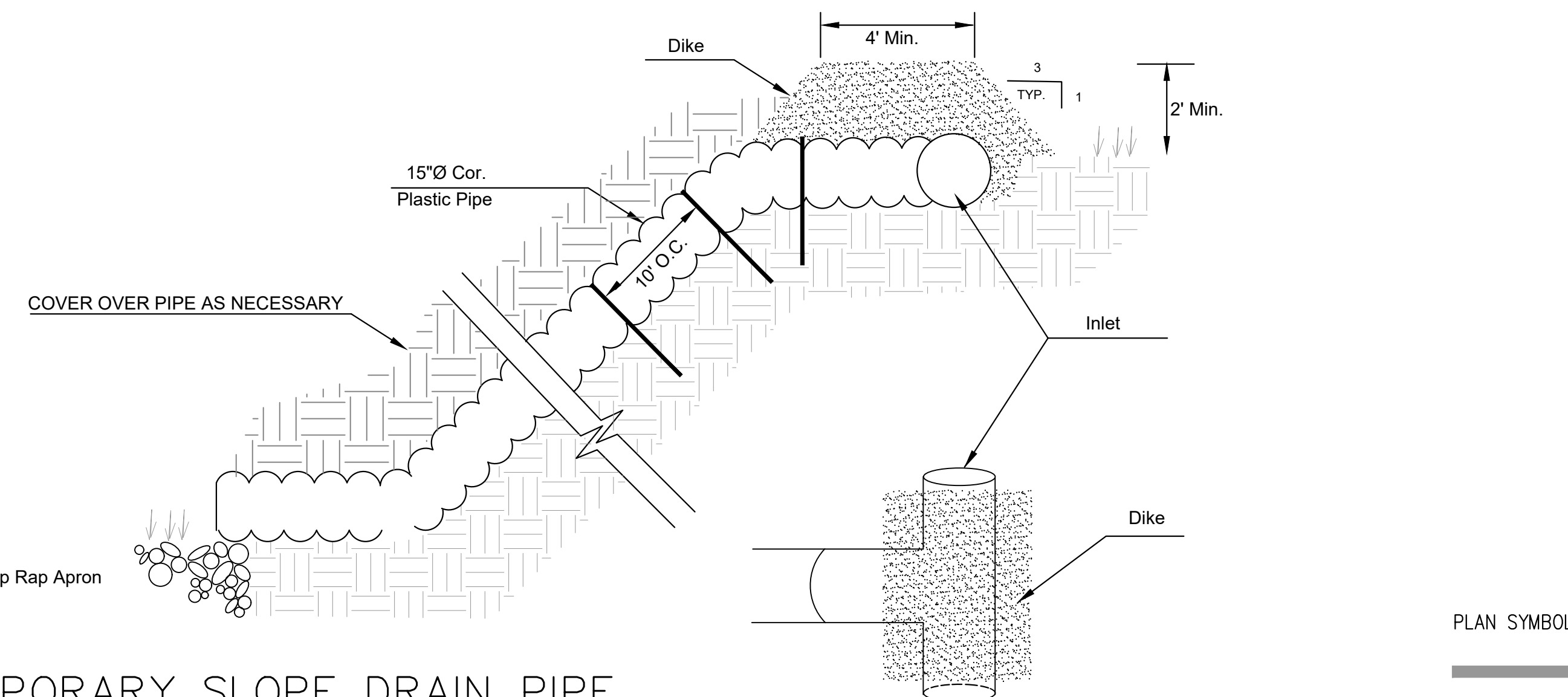
D = PIPE DIA. IN INCHES
Dmax = MAXIMUM STONE SIZE (1.5 x d50)

PLAN SYMBOL



6 OUTLET PROTECTION

NOT TO SCALE

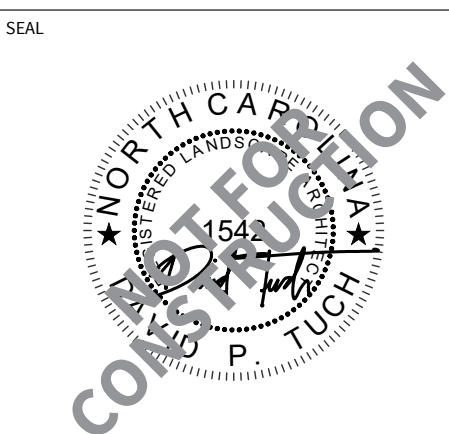


PLAN SYMBOL



7 TEMPORARY SLOPE DRAIN PIPE

NOT TO SCALE



DESIGN BY: DRAWN BY: CHECKED BY:

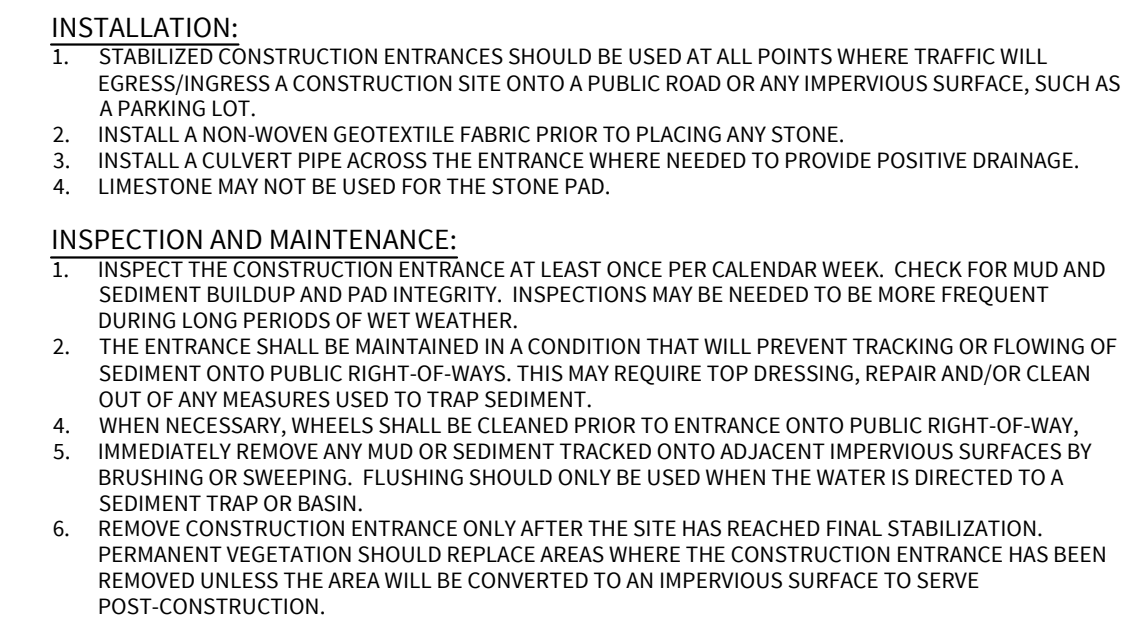
DATE

REVISIONS



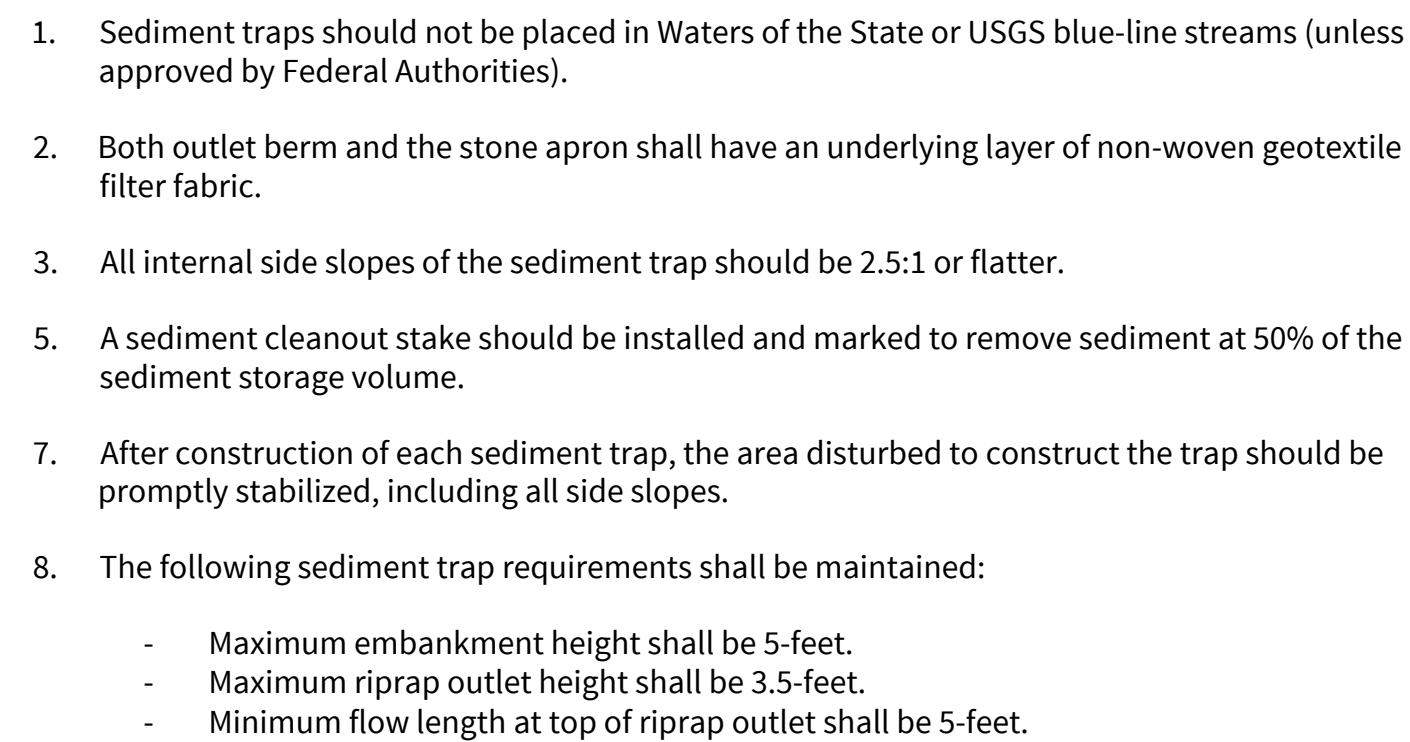
1. INSTALL SAND BAG ENERGY DISSIPATERS.
2. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DE-WATER ENTRAPPED AREA.
5. PERFORM CULVERT INSTALLATION WORK IN 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 DIKE FIRST).
7. ALL GRADING AND STABILIZATION MUST BE COMPLETED WITHIN THE PUMP-AROUND AREA BETWEEN THE IMPERVIOUS DIKES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE IMPERVIOUS DIKES.
8. REMOVE ENERGY DISSIPATERS AND BACKFILL. STABILIZED DISTURBED AREA WITH SEED AND MULCH.

1. ALL EXCAVATION SHALL BE PERFORMED IN ONLY DRY OR ISOLATED SECTIONS OF THE 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 OPERATION SHALL BE INCIDENTAL TO THE WORK. THIS INCLUDES SHEETING, DIVERSIONS PIPES, PUMPS AND HOSES.
5. PUMPS AND HOSES SHALL BE OF SUFFICIENT SIZE TO DEWATER THE WORK AREA.

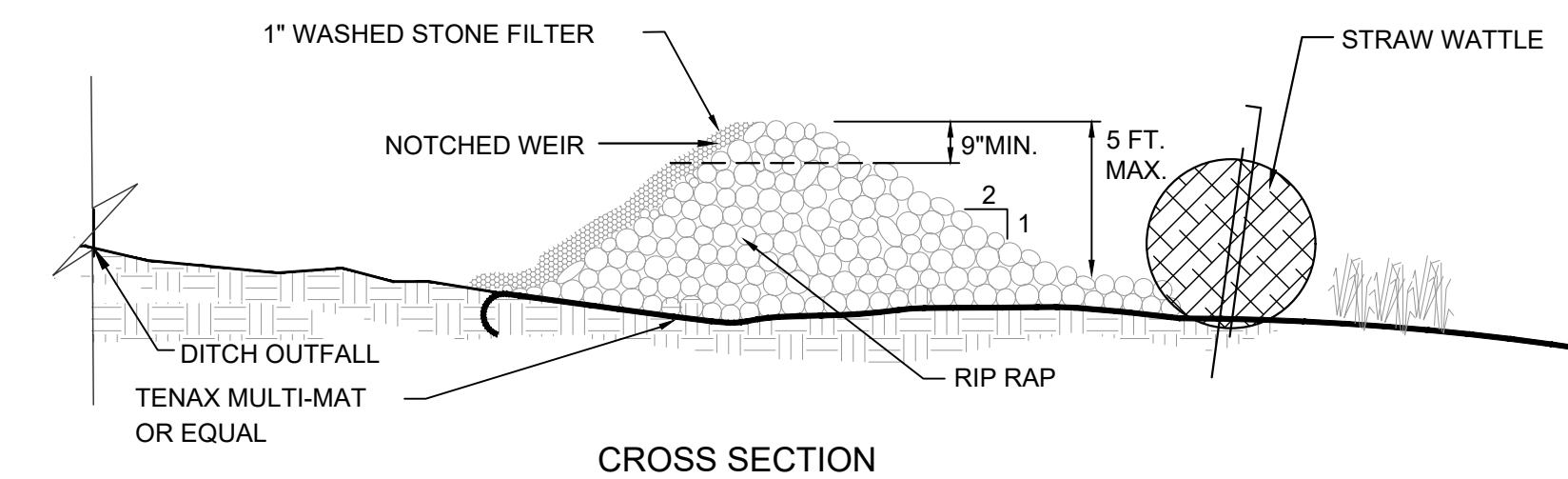


	LENGTH (MIN.)	WIDTH (MIN.)
PROJECT	100 FEET	24 FEET
INDIVIDUAL LOT	20 FEET	15 FEET

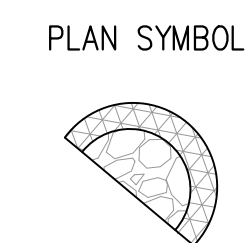
2 CONSTRUCTION ENTRANCE
NOT TO SCALE



1. The key to a functional sediment trap is weekly inspections, routine maintenance and regular sediment removal.
2. Attention to sediment accumulations within the trap is extremely important. Accumulated sediment deposition should be continually monitored in the trap and removed when necessary.
3. Remove accumulated sediment when it reaches 50% of the designed sediment storage volume as marked by the cleanout stake.
4. Removed sediment from the trap shall be placed in stockpile storage areas or spread thinly across the disturbed area. Stabilize the removed sediment after it is relocated.
5. Regular inspections of sediment traps should be conducted once every calendar week and, as recommended and within 24-hours after each rainfall event that produces ½-inch or more of precipitation.
6. Disturbed areas resulting from the removal of the sediment trap should be permanently stabilized and additional BMPs, such as silt fence, should be utilized to handle stormwater runoff from this disturbed area until final stabilization is reached.



INSPECTION AND MAINTENANCE: REMOVE SEDIMENT ONCE IT HAS REACHED 1/3 THE HEIGHT OF THE NOTCHED WEIR.



4 DITCH OUTLET PROTECTION

SIGN BY:	DRAWN BY:	CHECKED BY:
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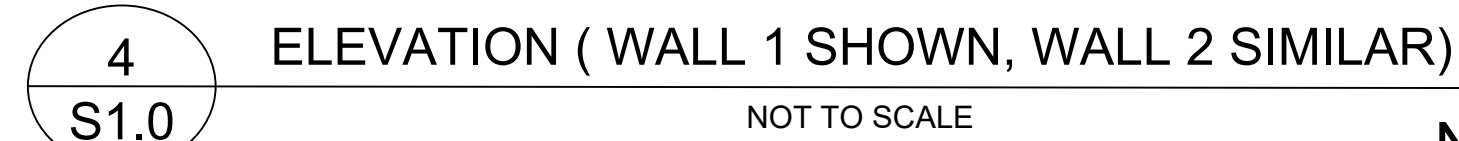
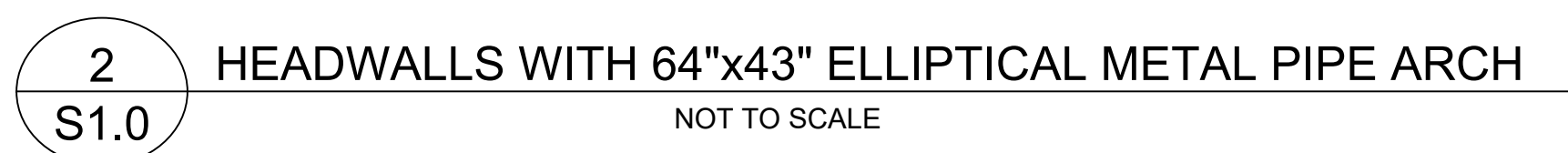
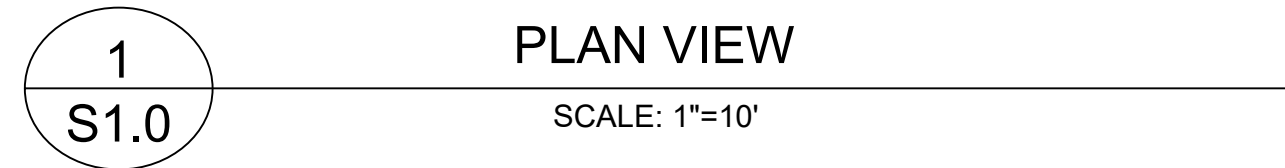
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E
September 30, 2022

AS SHOWN

NOTE: If this drawing is not 24x36" it has been revised from its original size and the scales noted on drawings/details are no longer applicable.

DRAWING NAME



S1.0

C:\USERS\RILEY\S2O DESIGN AND ENGINEERING\SCOTT SHIPLEY - DOCUMENTS\DOCUMENTS\SASHEVILLE, NC\FINAL DESIGN - WOODFIN\DESIGN\ACTIVE DRAWINGS\2022\0929 - WOODFIN\NC EROSION CONTROL.DWG

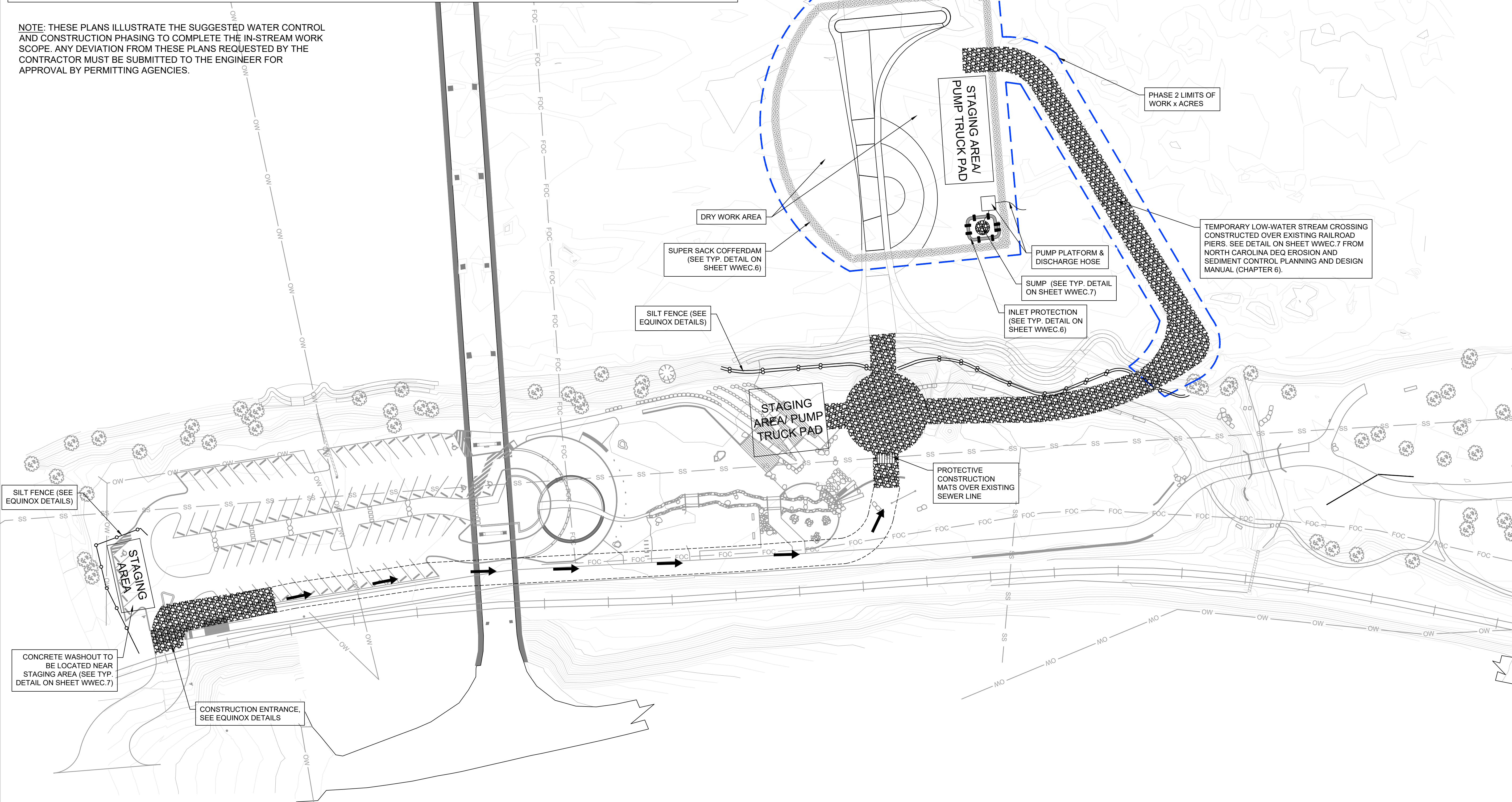
EROSION CONTROL SEQUENCE
PHASE 2
PROCEED AS FOLLOWS:

1. INSTALL LOW WATER ACCESS TO CENTRAL WORK ZONE IN THE WET FROM RIVER RIGHT BANK UTILIZING CULVERTS BETWEEN ABANDONED RAILROAD BRIDGE PIERS TO BUILD TEMPORARY ROAD.
2. INSTALL COFFERDAM FOR WATER CONTROL IN CENTRAL WORK ZONE USING SUPER SACK CONSTRUCTION DETAIL PROVIDED IN WHITEWATER PLAN SET. SUPER SACKS TO BE FILLED WITH GRAVEL OR SMALL COBBLE BASED ON CONTRACTOR PREFERENCE.
3. ALLOW WATER WITHIN ENCLOSED WORK AREA TO SETTLE PRIOR TO PRELIMINARY PUMP DOWN OF WORK AREA..
4. INSTALL SUMP IN LOW CORNER OF CLOSED OFF WORK ZONE AND INSTALL INLET PROTECTION MEASURES SHOWN IN WHITEWATER PLAN SET DETAILS. INSTALL ADDITIONAL MEASURES SUCH AS SILT FENCE OR SETTLING PONDS AS NEEDED TO MINIMIZE TURBIDITY OF WATER PUMPED BACK INTO THE RIVER FROM THE SUMP.
5. ONCE WATER CONTROL AND EROSION CONTROL MEASURES ARE IN PLACE AND FUNCTIONING PROPERLY, COMPLETE CONSTRUCTION OF

THE CENTRAL PORTION OF THE WAVE STRUCTURE IN THE DRY FROM THE RIVER RIGHT MEDIUM FLOW PLATE TO THE EDGE OF THE BYPASS CHANNEL INCLUDING THE ISLAND.

6. ENSURE THAT NO CEMENTITIOUS MATERIAL ENTERS THE WATERWAY DURING GROUTING OPERATIONS.
7. UPON COMPLETION OF THE CENTRAL PORTION OF THE WAVE STRUCTURE INSTALLATION AND MIN. 3-DAY GROUT CURE TIME PER PROJECT SPECIFICATIONS, COMPLETE FINAL GRADING AND REMOVE ALL EQUIPMENT AND FINALLY THE SUMP FROM THE WORK ZONE ALLOWING IT TO BACKWATER.
8. REMOVE 3 OF THE 4 WALLS OF THE SUPER SACK COFFER DAM AND ALL MATERIALS FROM THE RIVER. THE SUPER SACK WALL CLOSEST TO THE RIVER RIGHT BANK WILL REMAIN AND BE SHIFTED OVER AS PART OF THE NEXT PHASE OF CONSTRUCTION.
9. REMOVE THE TEMPORARY ROAD, CULVERTS AND ABANDONED BRIDGE PILINGS TO FINAL GRADE MOVING FROM THE CENTRAL WORK ZONE TOWARDS THE RIVER RIGHT ACCESS POINT.
10. PREPARE TO BEGIN THE NEXT PHASE OF WAVE CONSTRUCTION ALONG THE RIVER RIGHT BANK.

NOTE: THESE PLANS ILLUSTRATE THE SUGGESTED WATER CONTROL AND CONSTRUCTION PHASING TO COMPLETE THE IN-STREAM WORK SCOPE. ANY DEVIATION FROM THESE PLANS REQUESTED BY THE CONTRACTOR MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY PERMITTING AGENCIES.



S₂O Design and Engineering

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318 McConnell Drive
Lyons CO, 80540,
USA
(303) 819-3985

Client:
Town of Woodfin, NC

Project Name:
Woodfin Wave at Riverside Park

Status:
Erosion Control/Water
Control/Construction Sequence
Drawings for Permitting

Drawing Name:
Wave Construction Sequence 2

Revisions:
0

Drawn By:
Riley Adams

Checked By:
Scott Shipley

Date:
October 10, 2022

Status:
Issued For Permitting

Stamp:

NOT FOR CONSTRUCTION

Scale:
1" = 40'

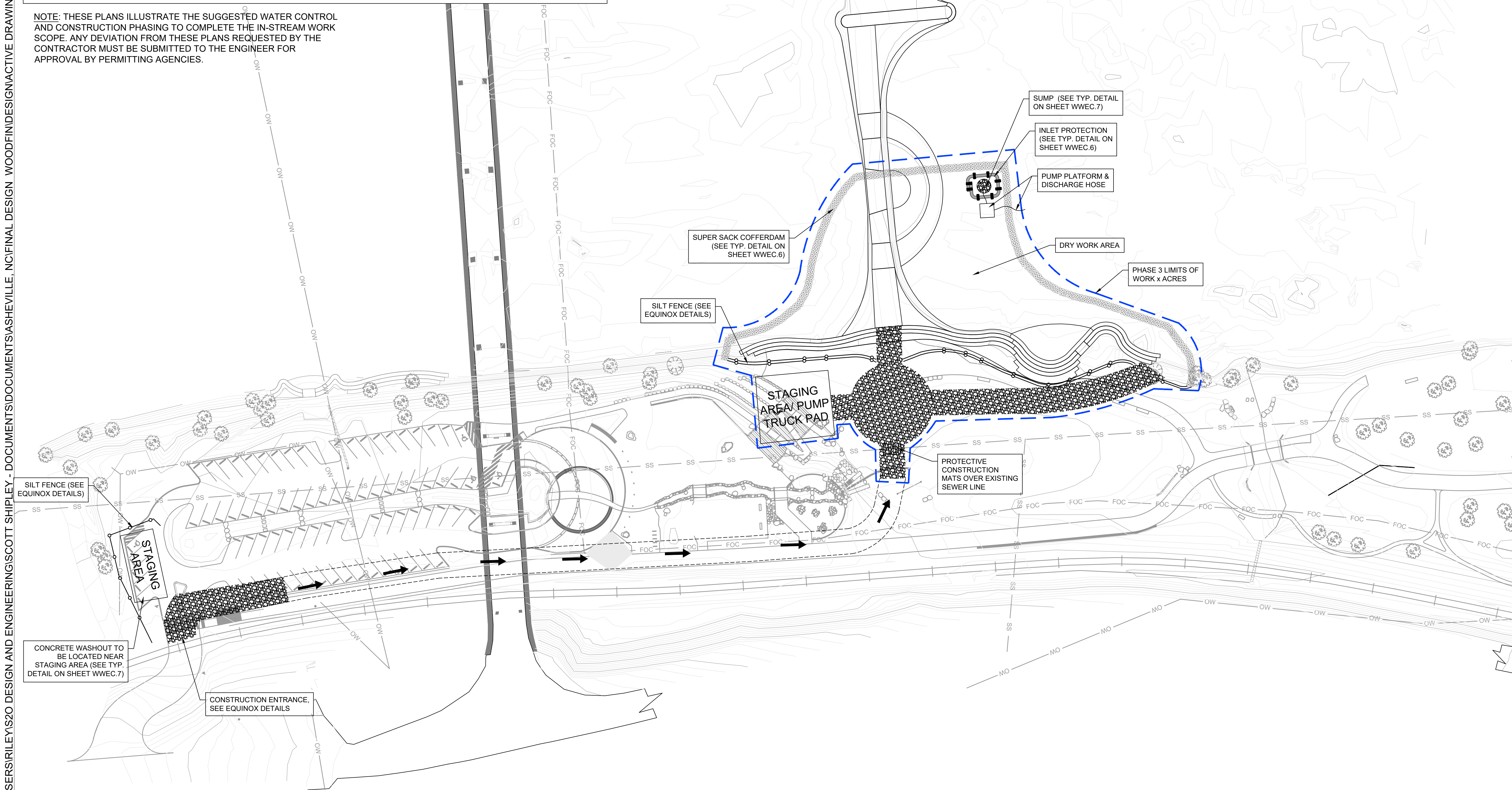
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EROSION CONTROL SEQUENCE
PHASE 3
PROCEED AS FOLLOWS:

1. INSTALL COFFERDAM FOR WATER CONTROL SURROUNDING RIVER RIGHT WORK ZONE USING SUPER SACK CONSTRUCTION DETAIL PROVIDED IN WHITEWATER PLAN SET. SHIFT THE EXISTING SUPER SACK WALL AT THE MEDIUM FLOW PLATE OVER TO THE LOW FLOW SLOT SO THAT THE REMAINDER OF THE WAVE STRUCTURE CAN BE COMPLETED. SUPER SACKS TO BE FILLED WITH GRAVEL OR SMALL COBBLE BASED ON CONTRACTOR PREFERENCE.
2. ALLOW WATER WITHIN ENCLOSED WORK AREA TO SETTLE PRIOR TO PRELIMINARY PUMP DOWN OF WORK AREA.
3. INSTALL SUMP IN LOW CORNER OF CLOSED OFF WORK ZONE AND INSTALL INLET PROTECTION MEASURES SHOWN IN WHITEWATER PLAN SET DETAILS. INSTALL ADDITIONAL MEASURES SUCH AS SILT FENCE OR SETTLING PONDS AS NEEDED TO MINIMIZE TURBIDITY OF WATER PUMPED BACK INTO THE RIVER FROM THE SUMP.
4. ONCE WATER CONTROL AND EROSION CONTROL MEASURES ARE IN PLACE AND FUNCTIONING PROPERLY, COMPLETE CONSTRUCTION OF THE RIVER RIGHT PORTION OF THE WAVE STRUCTURE IN THE DRY FROM THE RIVER RIGHT MEDIUM FLOW PLATE TO THE TOP OF BANK INCLUDING BOULDER TERRACING, BEACH AND TAKEOUT AREA.
5. ENSURE THAT NO CEMENTITIOUS MATERIAL ENTERS THE WATERWAY DURING GROUTING OPERATIONS FOR THE WAVE STRUCTURE.
6. UPON COMPLETION OF THE CENTRAL PORTION OF THE WAVE STRUCTURE INSTALLATION AND MIN. 3-DAY GROUT CURE TIME PER PROJECT SPECIFICATIONS, COMPLETE FINAL CHANNEL GRADING. REMOVE ALL EQUIPMENT AND FINALLY THE SUMP FROM THE WORK ZONE ALLOWING IT TO BACKWATER.
7. REMOVE SUPER SACK COFFER DAM AND ALL MATERIALS FROM THE RIVER.

NOTE: THESE PLANS ILLUSTRATE THE SUGGESTED WATER CONTROL AND CONSTRUCTION PHASING TO COMPLETE THE IN-STREAM WORK SCOPE. ANY DEVIATION FROM THESE PLANS REQUESTED BY THE CONTRACTOR MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY PERMITTING AGENCIES.



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Client:
Town of Woodfin, NC

Project Name:
Woodfin Wave at Riverside Park

Status:
Erosion Control/Water
Control/Construction Sequence
Drawings for Permitting

Drawing Name:
Wave Construction Sequence 3

Revisions:
0

Drawn By:
Riley Adams

Checked By:
Scott Shipley

Date:
October 10, 2022

Status:
Issued For Permitting

Stamp:

NOT FOR CONSTRUCTION

Scale:
1" = 40'

Sheet:
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EROSION CONTROL SEQUENCE
PHASE 4

PROCEED AS FOLLOWS:

1. INSTALL EC MEASURES AROUND AREAS TO BE DEMO-ED, INCLUDING SILT FENCE ADJACENT TO PUT-IN WORK AREA.

2. BREAK AND REMOVE HARD SURFACE AS NEEDED TO INSTALL ACCESS TO RIVER.

3. CUT ACCESS ROAD TO BUILD RIVER PUT-IN AREA.

4. CLEAR AND GRUB ONLY AREAS ADJACENT TO WAVE CONSTRUCTION ACCESS.

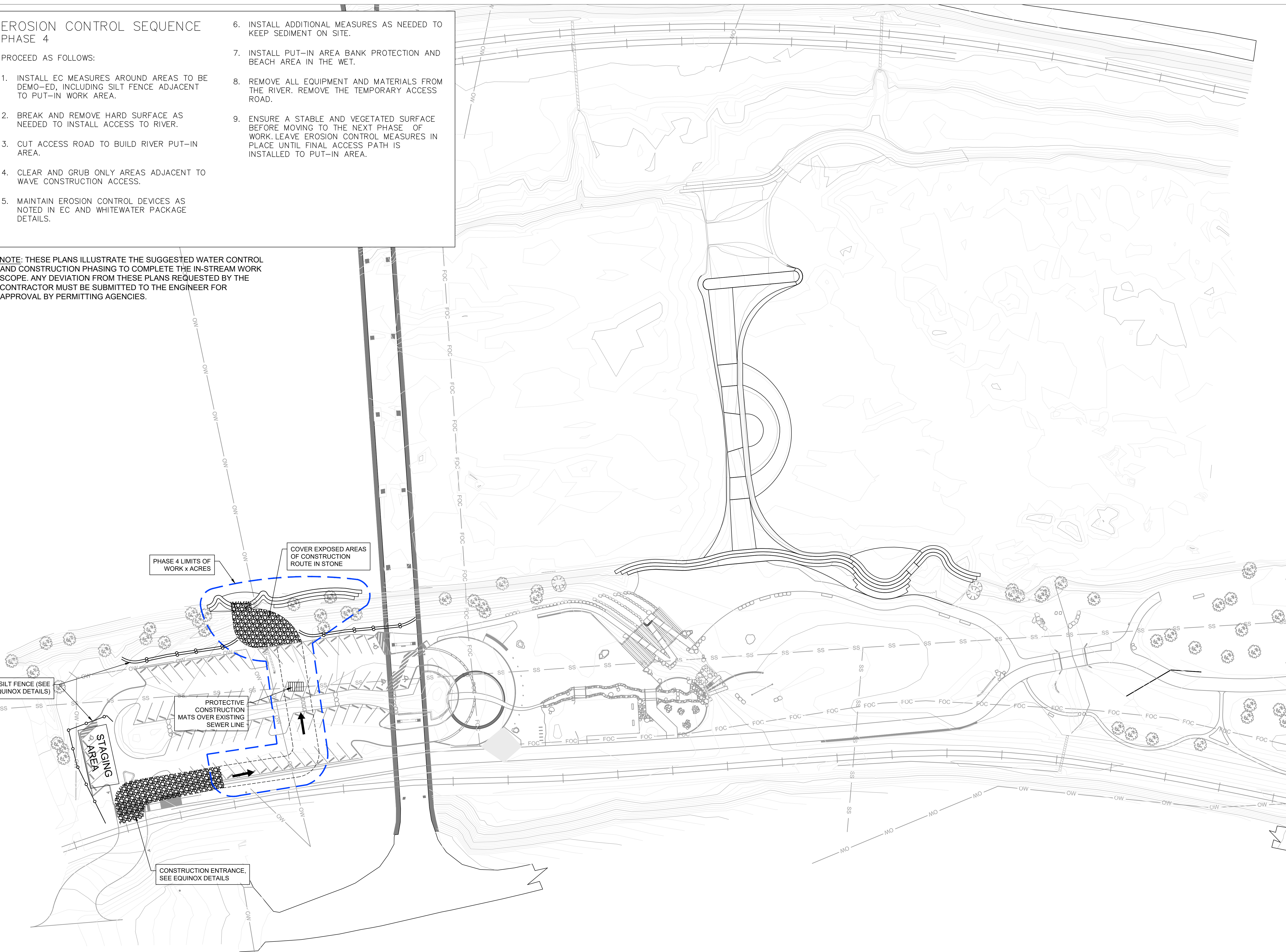
5. MAINTAIN EROSION CONTROL DEVICES AS NOTED IN EC AND WHITEWATER PACKAGE DETAILS.
6. INSTALL ADDITIONAL MEASURES AS NEEDED TO KEEP SEDIMENT ON SITE.

7. INSTALL PUT-IN AREA BANK PROTECTION AND BEACH AREA IN THE WET.

8. REMOVE ALL EQUIPMENT AND MATERIALS FROM THE RIVER. REMOVE THE TEMPORARY ACCESS ROAD.

9. ENSURE A STABLE AND VEGETATED SURFACE BEFORE MOVING TO THE NEXT PHASE OF WORK. LEAVE EROSION CONTROL MEASURES IN PLACE UNTIL FINAL ACCESS PATH IS INSTALLED TO PUT-IN AREA.

NOTE: THESE PLANS ILLUSTRATE THE SUGGESTED WATER CONTROL AND CONSTRUCTION PHASING TO COMPLETE THE IN-STREAM WORK SCOPE. ANY DEVIATION FROM THESE PLANS REQUESTED BY THE CONTRACTOR MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY PERMITTING AGENCIES.



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Client:
Town of Woodfin, NC

Project Name:
Woodfin Wave at Riverside Park

Status:
Erosion Control/Water
Control/Construction Sequence
Drawings for Permitting

Drawing Name:
Wave Construction Sequence 4

Revisions:
0

Drawn By:
Riley Adams

Checked By:
Scott Shipley

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October 10, 2022

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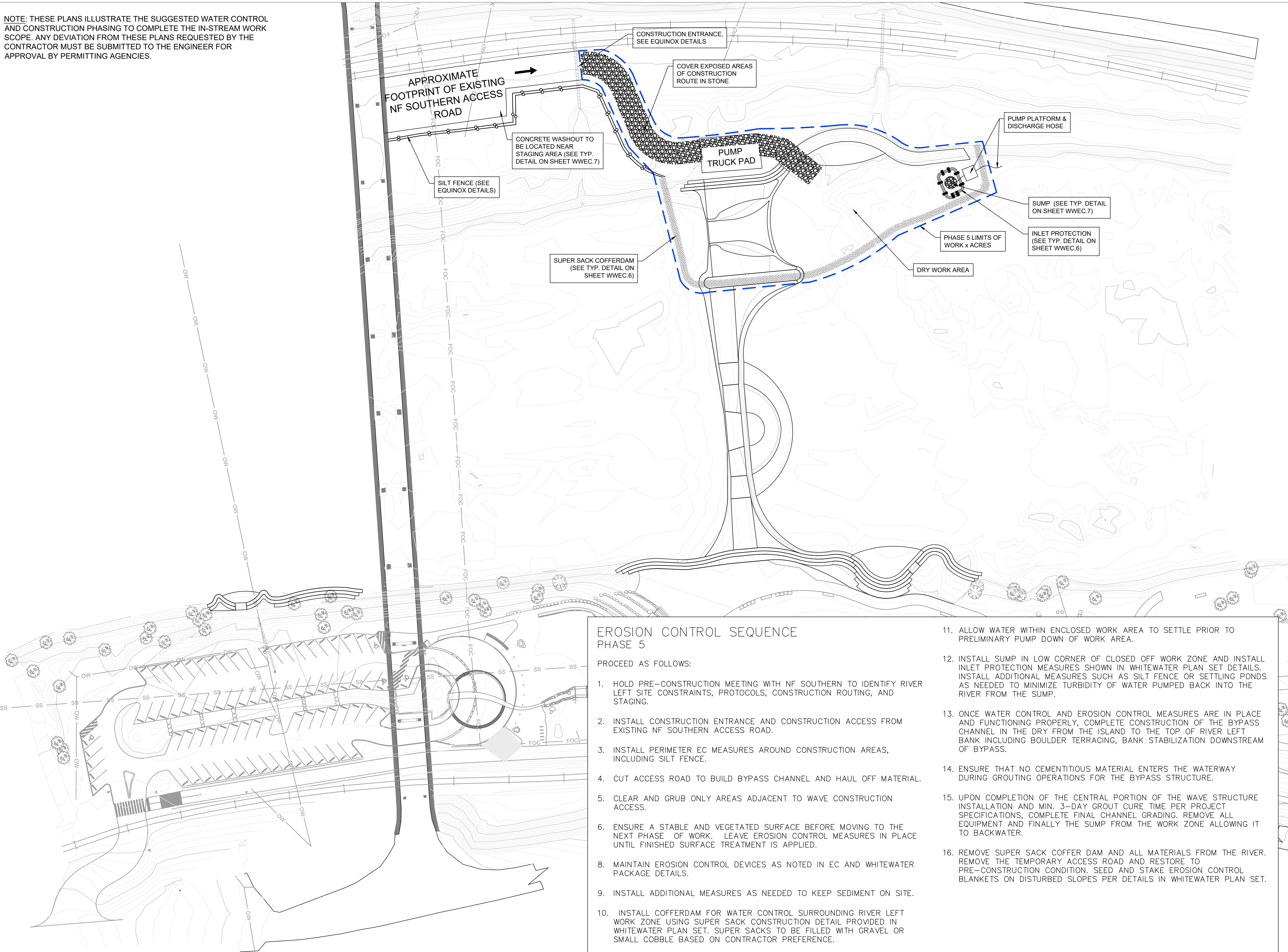
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1" = 40'

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NOTE: THESE PLANS ILLUSTRATE THE SUGGESTED WATER CONTROL AND CONSTRUCTION PHASING TO COMPLETE THE IN-STREAM WORK SCOPE. ANY DEVIATION FROM THESE PLANS REQUESTED BY THE CONTRACTOR MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY PERMITTING AGENCIES.



EROSION CONTROL SEQUENCE PHASE 5

PROCEED AS FOLLOWS:

1. HOLD PRE-CONSTRUCTION MEETING WITH NF SOUTHERN TO IDENTIFY RIVER LEFT SITE CONSTRAINTS, PROTOCOLS, CONSTRUCTION ROUTING, AND STAGING.
2. INSTALL CONSTRUCTION ENTRANCE AND CONSTRUCTION ACCESS FROM EXISTING NF SOUTHERN ACCESS ROAD.
3. INSTALL PERIMETER EC MEASURES AROUND CONSTRUCTION AREAS, INCLUDING SILT FENCE.
4. CUT ACCESS ROAD TO BUILD BYPASS CHANNEL AND HAUL OFF MATERIAL.
5. CLEAR AND GRUB ONLY AREAS ADJACENT TO WAVE CONSTRUCTION ACCESS.
6. ENSURE A STABLE AND VEGETATED SURFACE BEFORE MOVING TO THE NEXT PHASE OF WORK. LEAVE EROSION CONTROL MEASURES IN PLACE UNTIL FINISHED SURFACE TREATMENT IS APPLIED.
8. MAINTAIN EROSION CONTROL DEVICES AS NOTED IN EC AND WHITEWATER PACKAGE DETAILS.
9. INSTALL ADDITIONAL MEASURES AS NEEDED TO KEEP SEDIMENT ON SITE.
10. INSTALL COFFERDAM FOR WATER CONTROL SURROUNDING RIVER LEFT WORK ZONE USING SUPER SACK CONSTRUCTION DETAIL PROVIDED IN WHITEWATER PLAN SET. SUPER SACKS TO BE FILLED WITH GRAVEL OR SMALL COBBLE BASED ON CONTRACTOR PREFERENCE.
11. ALLOW WATER WITHIN ENCLOSED WORK AREA TO SETTLE PRIOR TO PRELIMINARY PUMP DOWN OF WORK AREA.
12. INSTALL SUMP IN LOW CORNER OF CLOSED OFF WORK ZONE AND INSTALL INLET PROTECTION MEASURES SHOWN IN WHITEWATER PLAN SET DETAILS. INSTALL ADDITIONAL MEASURES SUCH AS SILT FENCE OR SETTLING PONDS AS NEEDED TO MINIMIZE TURBIDITY OF WATER PUMPED BACK INTO THE RIVER FROM THE SUMP.
13. ONCE WATER CONTROL AND EROSION CONTROL MEASURES ARE IN PLACE AND FUNCTIONING PROPERLY, COMPLETE CONSTRUCTION OF THE BYPASS CHANNEL IN THE DRY FROM THE ISLAND TO THE TOP OF RIVER LEFT BANK INCLUDING BOULDER TERRACING, BANK STABILIZATION DOWNSTREAM OF BYPASS.
14. ENSURE THAT NO CEMENTITIOUS MATERIAL ENTERS THE WATERWAY DURING GROUTING OPERATIONS FOR THE BYPASS STRUCTURE.
15. UPON COMPLETION OF THE CENTRAL PORTION OF THE WAVE STRUCTURE INSTALLATION AND MIN. 3-DAY GROUT CURE TIME PER PROJECT SPECIFICATIONS, COMPLETE FINAL CHANNEL GRADING. REMOVE ALL EQUIPMENT AND FINALLY THE SUMP FROM THE WORK ZONE ALLOWING IT TO BACKWATER.
16. REMOVE SUPER SACK COFFER DAM AND ALL MATERIALS FROM THE RIVER. REMOVE THE TEMPORARY ACCESS ROAD AND RESTORE TO PRE-CONSTRUCTION CONDITION. SEED AND STAKE EROSION CONTROL BLANKETS ON DISTURBED SLOPES PER DETAILS IN WHITEWATER PLAN SET.



S₂O Design and Engineering

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Client:
Town of Woodfin, NC

Project Name:
Woodfin Wave at Riverside Park

Status:
Erosion Control/Water
Control/Construction Sequence
Drawings for Permitting

Drawing Name:
Wave Construction Sequence 5

Revisions:
0

Drawn By:
Riley Adams

Checked By:
Scott Shipley

Date:
October 10, 2022

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Stamp:

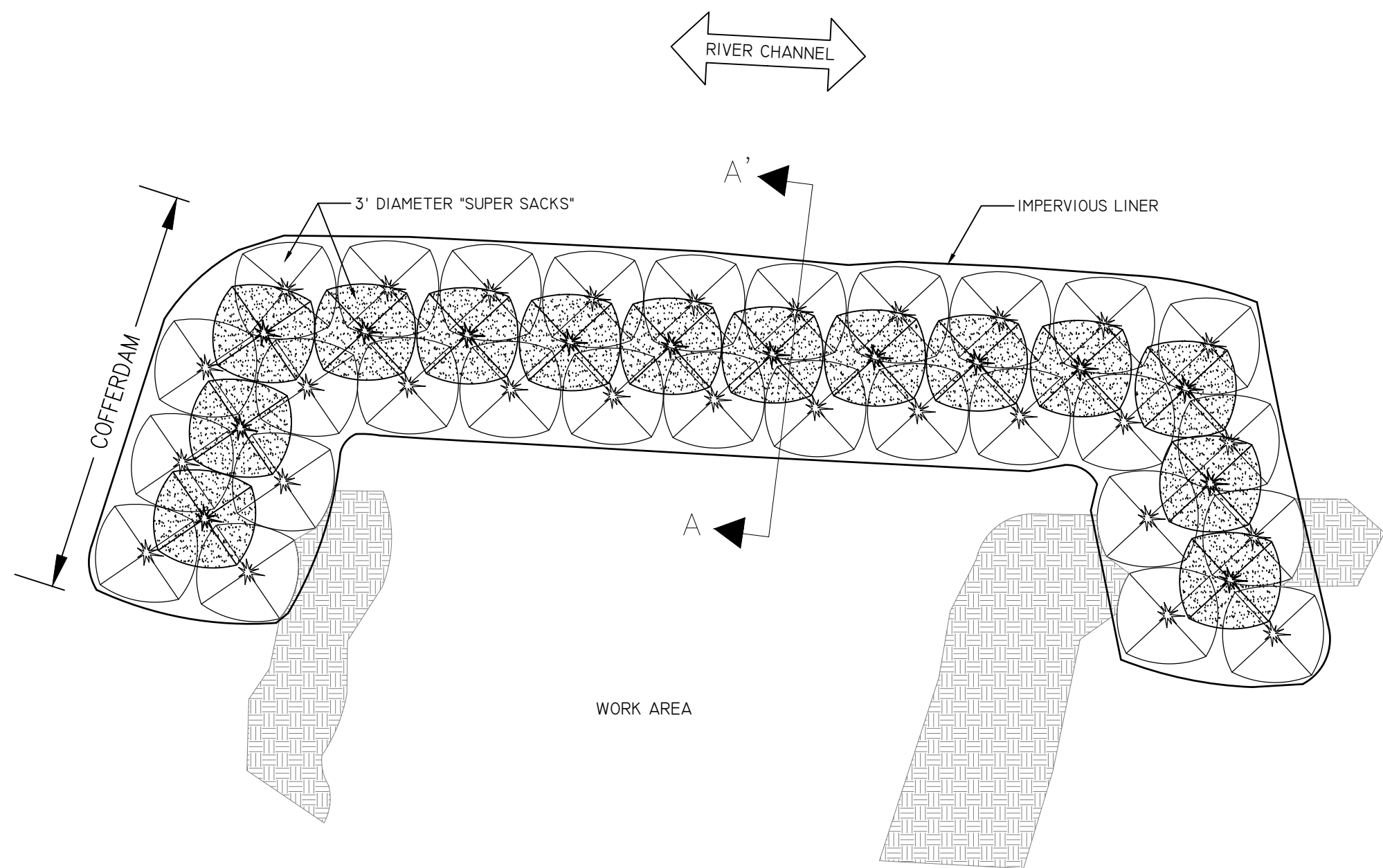
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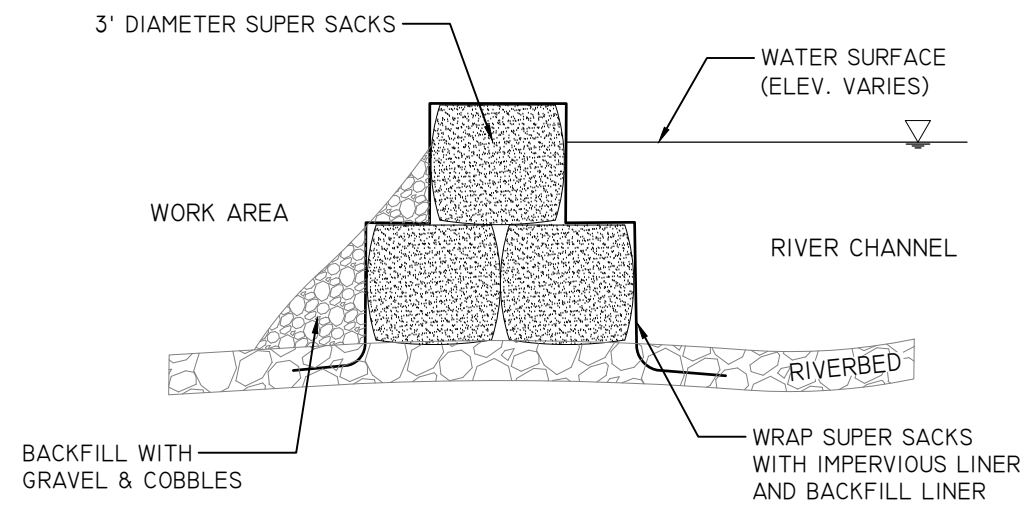
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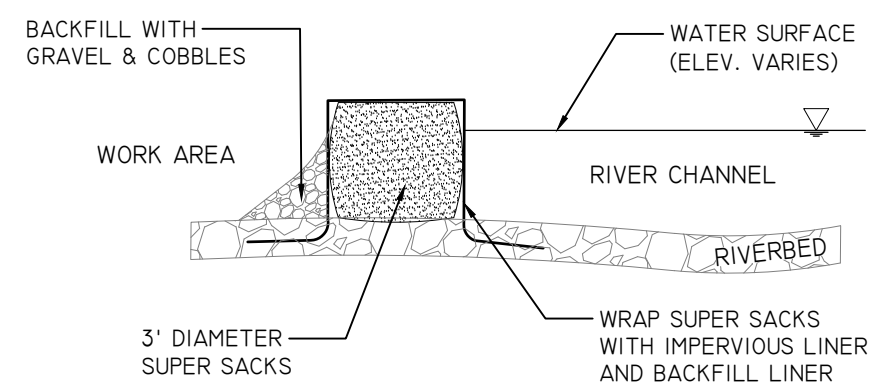


COFFERDAM NOTES:
(1) WRAP "SUPER SACKS" WITH IMPERVIOUS PLASTIC LINER TO PREVENT SEEPAGE.
(2) BACKFILL THE DOWNSTREAM SIDE OF THE COFFERDAM WITH NATIVE ADJACENT ALLUVIUM.
(3) USE "SUPER SACKS" AS A BUTTRESS AS REQUIRED.

"SUPER SACK" COFFERDAM TYPICAL DETAILS
PLAN SCALE: NTS

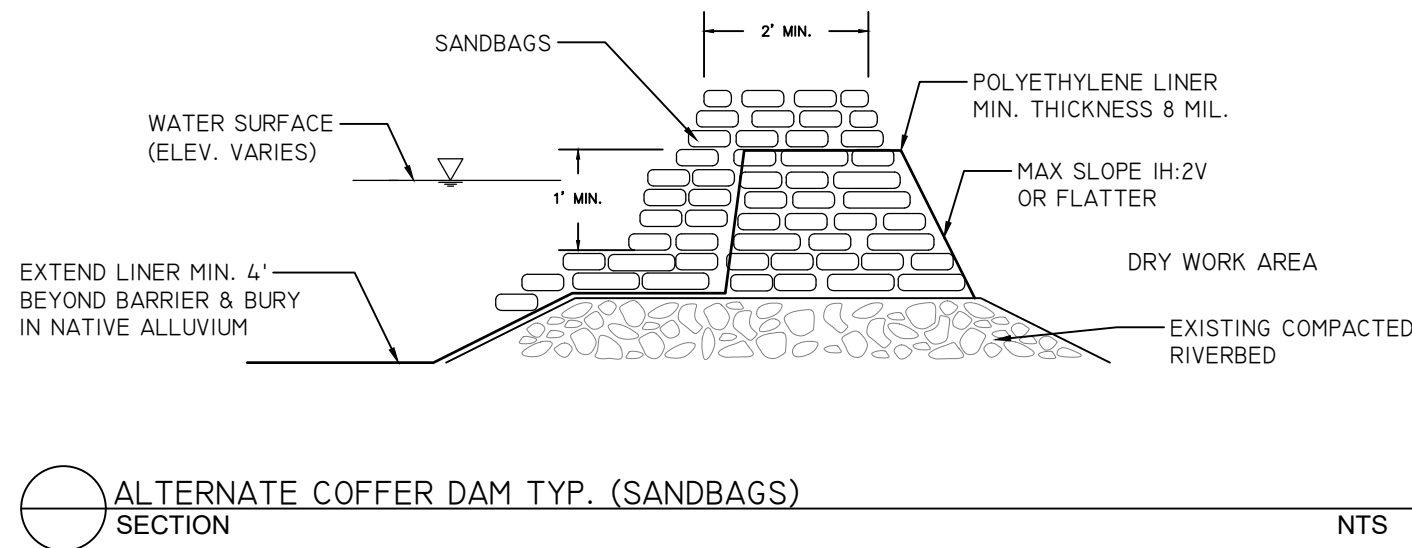


"SUPER SACK" COFFERDAM DOUBLE STACK
SECTION SCALE: NTS

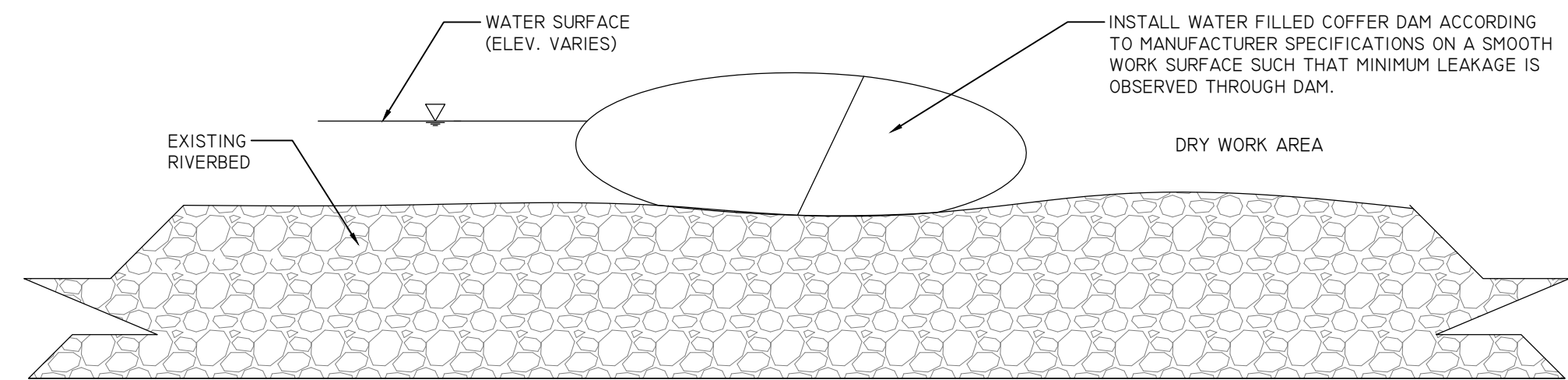


"SUPER SACK" COFFERDAM SINGLE STACK
SECTION SCALE: NTS

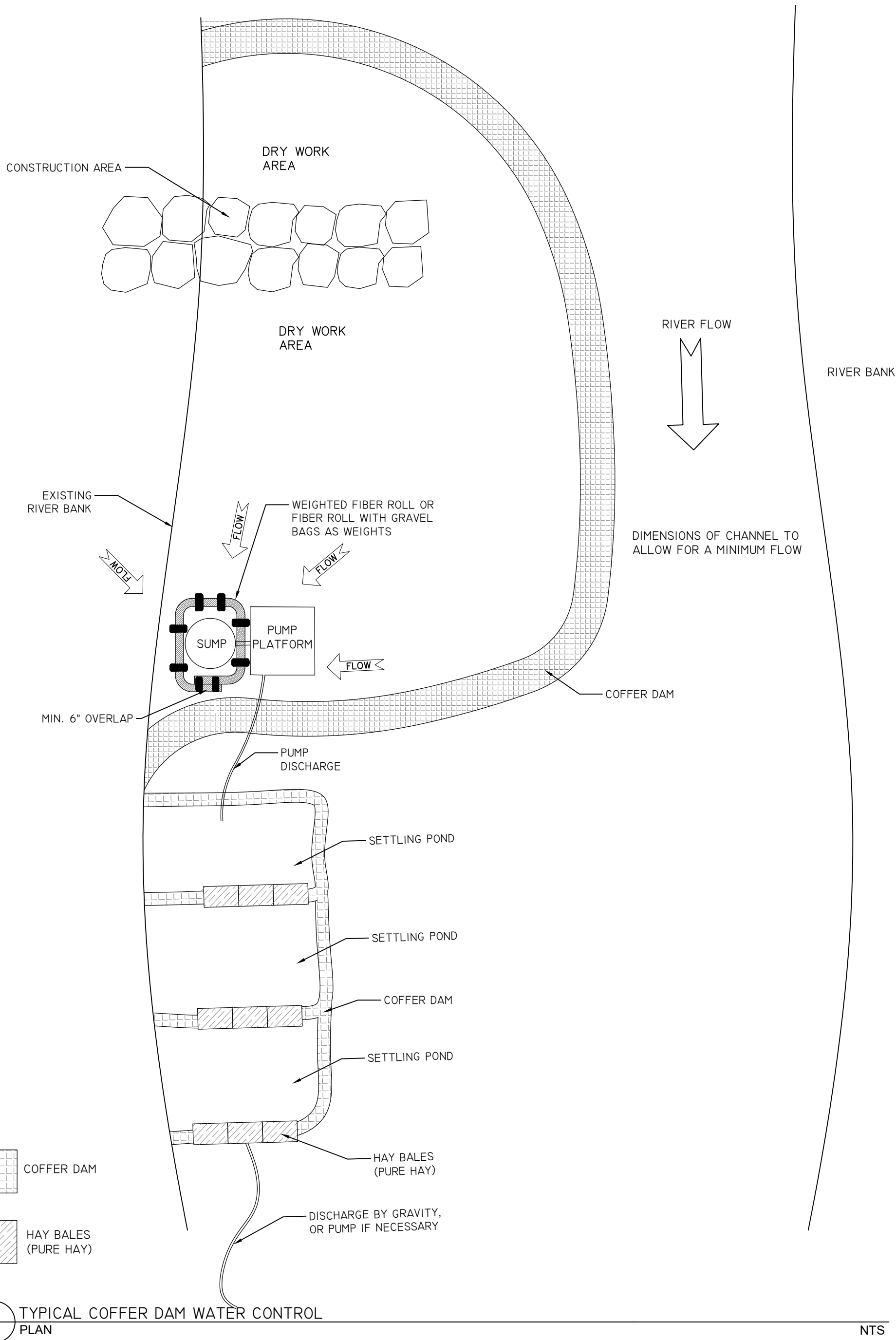
- GENERAL EROSION & SEDIMENT CONTROL NOTES:**
- (1) THE IMPLEMENTATION OF EROSION AND SEDIMENT CONTROL MEASURES AND BEST MANAGEMENT PRACTICES INCLUDING CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING ARE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED.
 - (2) THE DETAILS SHOWN ON THIS SHEET ARE AN EXAMPLE OF ACCEPTABLE METHODS TO USE DURING CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING AND SUBMITTING A COFFERDAM PLAN TO INCLUDE SUFFICIENT DETAIL OF MEANS AND METHODS SATISFACTORILY MEETING THE PROJECT SPECIFICATIONS AND PERMIT REQUIREMENTS. COFFERDAMS MAY CONSIST OF OTHER METHODS INCLUDING (BUT NOT LIMITED TO) SECLUSION FENCING, SAND BAGS, BULK BAGS, SUPER SACKS, SHEET PILE AND INFLATABLE BLADDERS. COFFERDAMS SHALL INCLUDE PLASTING LINER OR FINE MESH SILT FENCE TO REDUCE TURBIDITY AND FINES FROM ENTERING THE FREE FLOWING PORTION OF LIVE WATER.
 - (3) ALL PUMP INTAKES SHALL BE SCREENED FOR FISH PROTECTION AS REQUIRED BY REGULATORY AGENCIES.
 - (4) DEWATERING PUMP DISCHARGE FROM WITHIN COFFERDAM WORK AREAS SHALL BE RELEASED ONTO FLOODPLAIN AREAS AWAY FROM WETLANDS AND CONSTRUCTION ACTIVITIES. DISCHARGE SHALL NOT CAUSE EROSION OF TOPSOIL AND SHALL SHEET FLOW OVER THE FLOODPLAIN BEFORE RETURNING TO LIVE WATER DOWNSTREAM OF THE WORK AREA. ALL RETURN FLOWS MUST MEET PERMIT REQUIREMENTS FOR TURBIDITY.
 - (5) ALL EARTHWORK AND WOOD STRUCTURES CONSTRUCTION WITHIN THE ORDINARY HIGH CHANNEL SHALL CONFORM TO WATER QUALITY STANDARDS ESTABLISHED BY THE REGULATORY AGENCY PERMITS FOR THIS PROJECT.



ALTERNATE COFFER DAM TYP. (SANDBAGS)
SECTION NTS



ALTERNATE COFFER DAM TYP. WATER-FILLED BLADDER
SECTION NTS



COFFER DAM
HAY BALES (PURE HAY)

TYPICAL COFFER DAM WATER CONTROL
PLAN NTS



S₂O Design and Engineering

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Lyons CO, 80540,
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(303) 819-3985

Client:
Town of Woodfin, NC

Project Name:
Woodfin Wave at Riverside Park

Status:
Erosion Control/Water
Control/Construction Sequence
Drawings for Permitting

Drawing Name:
Erosion Control Details 1

Revisions:
0

Drawn By:
Riley Adams

Checked By:
Scott Shipley

Date:
October 10, 2022

Status:
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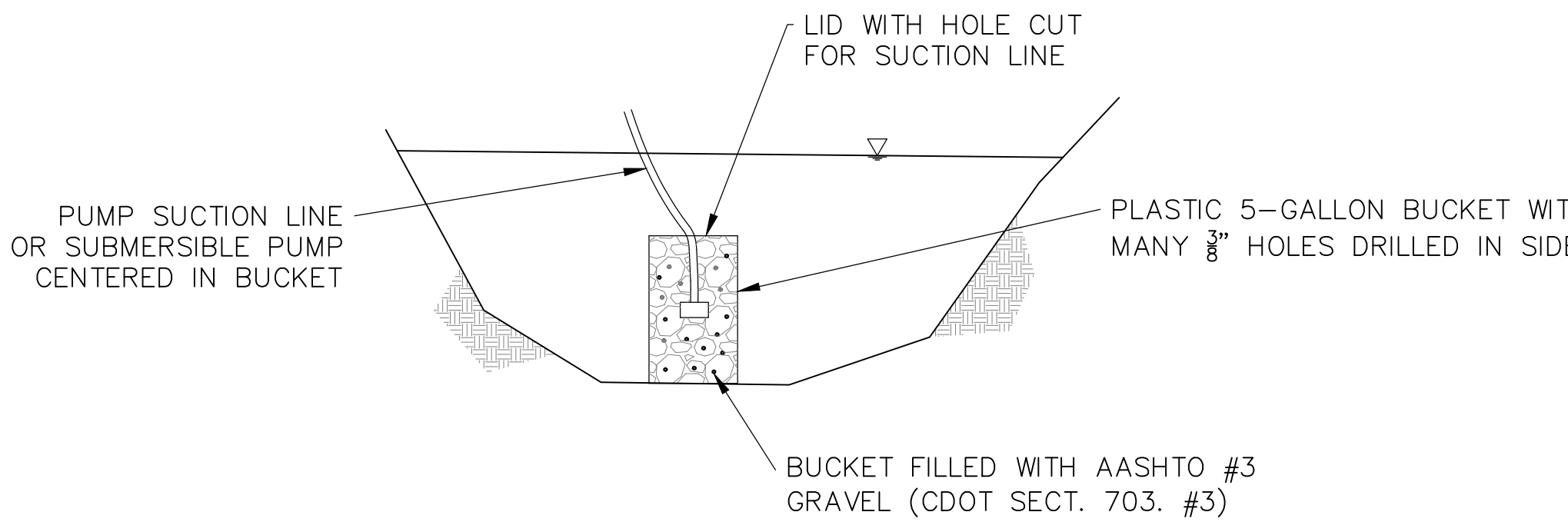
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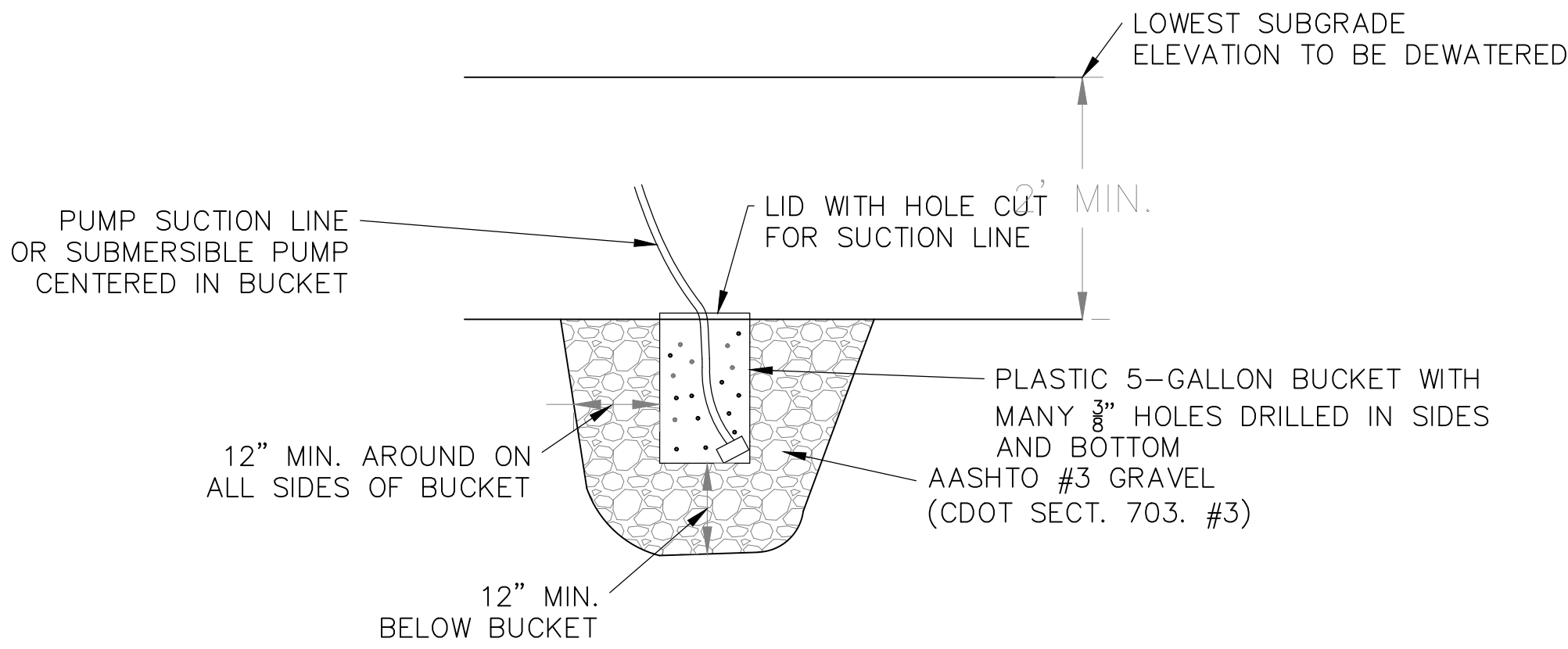
Scale:
1" = 40'

Sheet:
WWEC.6

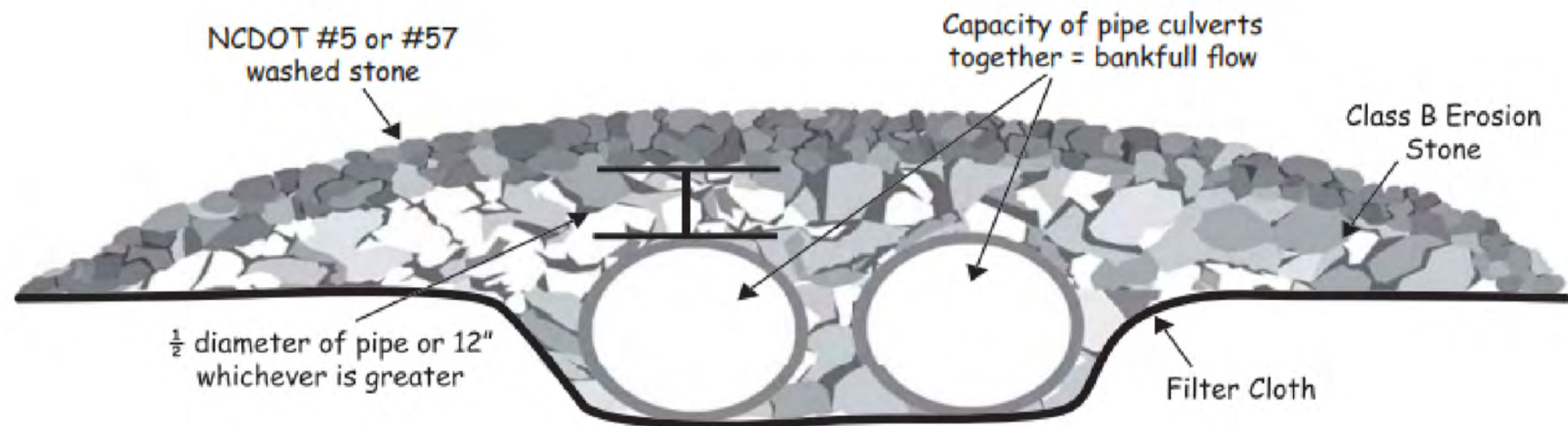
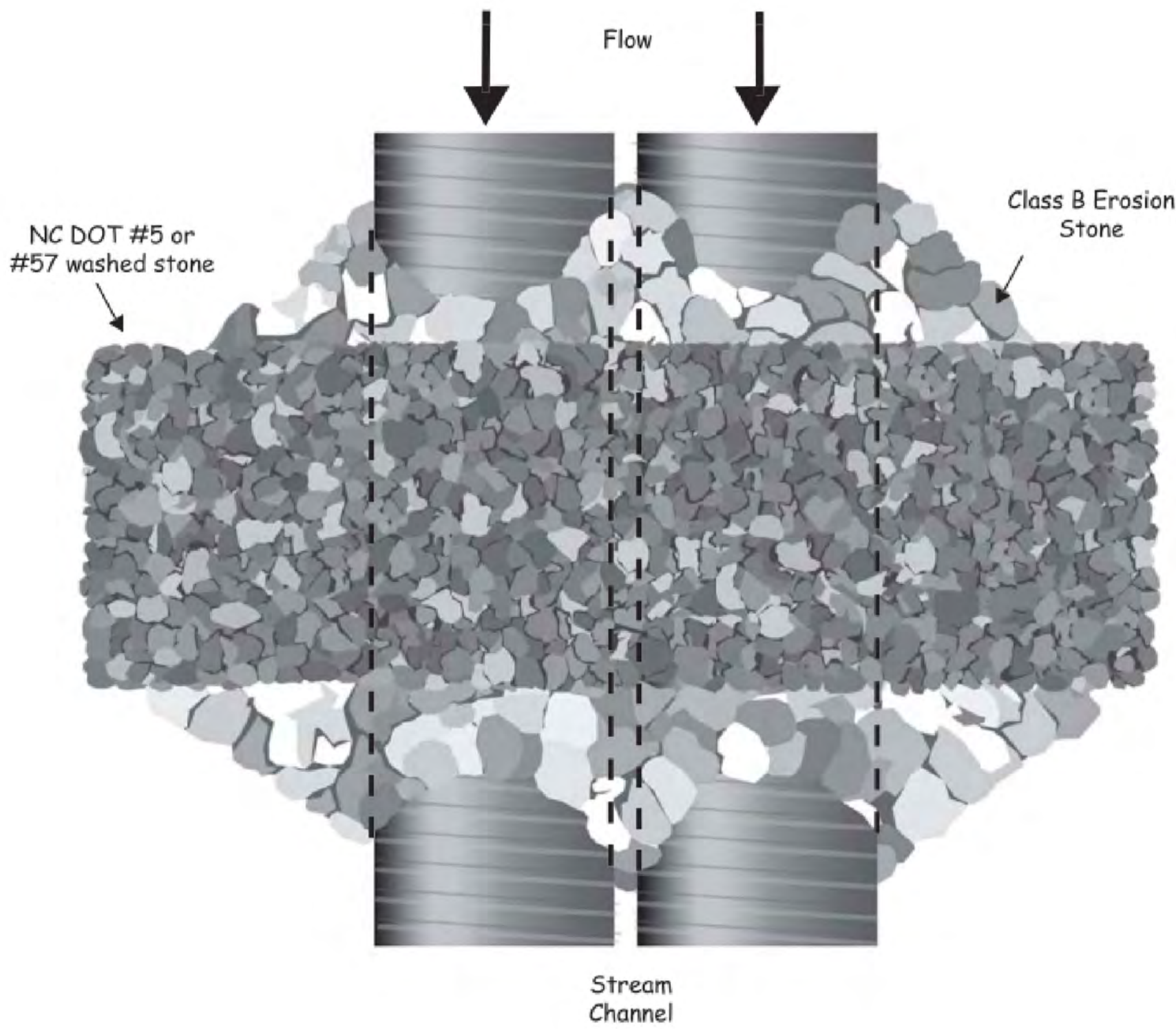
C:\USERS\RILEY\S2O DESIGN AND ENGINEERING\SCOTT SHIPLEY - DOCUMENTS\DOCUMENTS\SASHEVILLE, NC\FINAL DESIGN - WOODFIN\DESIGN\ACTIVE DRAWINGS\20220929_WOODFIN\NC EROSION CONTROL.DWG



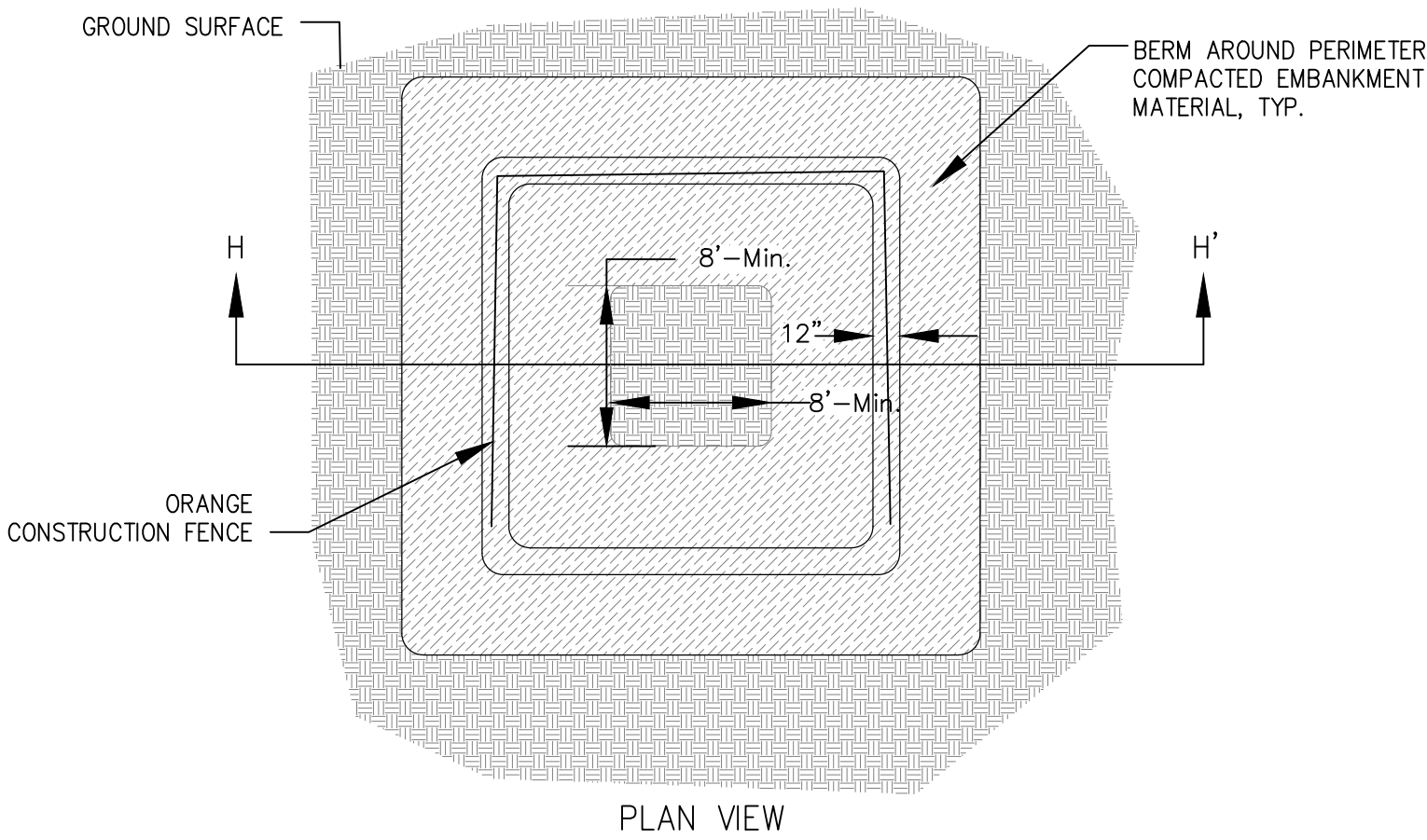
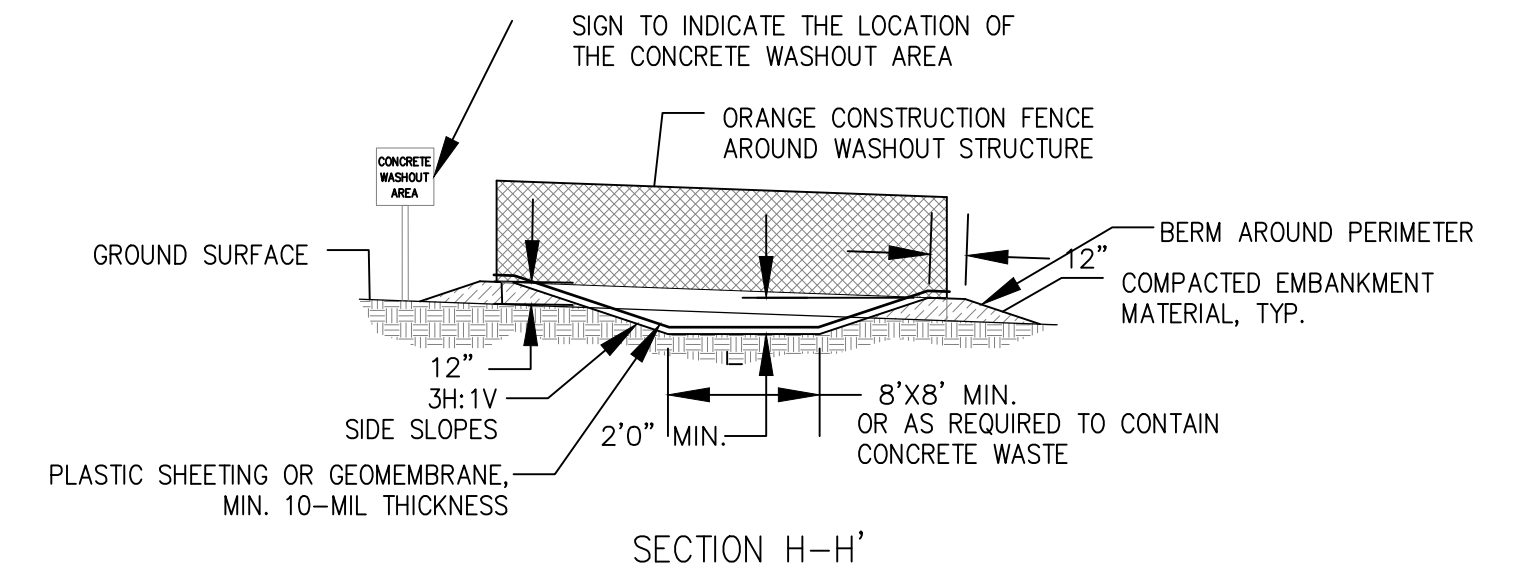
DEWATERING POND ALREADY FILLED WITH WATER
SECTION
NTS



DEWATERING SUMP FOR SUBMERSED PUMP
SECTION
NTS



TEMPORARY STREAM CROSSING/ACCESS ROAD
DETAIL
NTS



- NOTES:
1. CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE; PLACED A MINIMUM 50' FROM STATE WATERS.
 2. VEHICLE TRACKING CONTROL IS REQUIRED AT CONCRETE WASHOUT ENTRANCE IF ACCESS TO CONCRETE WASHOUT AREA IS OFF PAVEMENT.
 3. A PLASTIC SHEETING OR GEOMEMBRANE LINER SHALL BE PLACED. MINIMUM 10-MIL THICKNESS.
 4. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND/OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR WASTE CONCRETE.
 5. WASTE MATERIAL FROM CONCRETE WASHOUT OPERATIONS MUST BE REMOVED AND LEGALLY DISPOSED OF WHEN IT HAS ACCUMULATED TWO-THIRDS OF THE WET STORAGE CAPACITY OF THE STRUCTURE AND AT THE END OF CONSTRUCTION.
 6. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER ACCEPTED BY THE CLIENT.
 7. NO STORMWATER RUN-OFF SHALL DRAIN INTO CONCRETE WASHOUT AREA.

CONCRETE WASHOUT AREA
DETAIL
NTS



S₂O Design and Engineering

Scott Shipley, P.E.
318 McConnell Drive
Lyons CO, 80540,
USA
(303) 819-3985

Client:
Town of Woodfin, NC

Project Name:
Woodfin Wave at Riverside Park

Status:
Erosion Control/Water
Control/Construction Sequence
Drawings for Permitting

Drawing Name:
Erosion Control Details 2

Revisions:
0

Drawn By:
Riley Adams

Checked By:
Scott Shipley

Date:
October 10, 2022

Status:
Issued For Permitting

Stamp:

NOT FOR CONSTRUCTION

Scale:
1" = 40'

Sheet:
WWEC.7

WOTUS Impacts Narrative

The Riverside Park and Wave project is a 12.01ac park improvement project that will have impacts to waters of the United States. There will be both land based and water based impacts including tributary crossing, the addition and improvements of river access, and the implementation of an in-stream white water feature (the wave and bypass channel).

Water based impacts will be first in the construction sequencing. Impacts will be both temporary and permanent. Temporary impacts are necessary to construct the wave and bypass feature as well as bank tie-ins. These impacts will include a temporary low-flow road, coffer dams and dewatering zones to allow construction of the wave feature in the dry. The construction of the wave and bypass will be done in three sections. The project will commence with the lowering of the east bank to gain access for the wave and bypass construction. Once a temporary construction access is installed down to the east bank and where the abandoned railroad piles meet the east bank, a temporary low-flow road will be constructed along the existing remnants of the old railroad crossing. The low-flow road will be constructed by placing culverts between the abandoned railroad piles and filling over the culverts and between the piles with cobble. This road will be used to carry construction equipment and material to the first section of construction, the center of the wave, including the island separating the wave from the bypass. Once the road is complete, a coffer dam will be constructed surrounding this section on all sides and it will be dewatered. Once the construction of the first (center) section is complete, the coffer dam on the upstream side of this section will be relocated to the downstream side of the temporary low-flow road as well as portions of the upstream side of the road that may not have coffer dam. At this point, the road should have coffer dam on either side of it. The road will then be removed. While removing the road, the contractor will also pull out the abandoned bridge pilings. These pilings are to be removed for the safety of river users. Note, this area of road and piling removal will not be dewatered, however cofferdams will limit siltation and turbidity migrating downstream. The coffer dams will be removed as the road gets removed, backing back to the east bank.

The second section of the wave to be constructed will be the east side. This includes from the center of the wave feature to the east bank tie in and the east bank boulder toe. This section will be surrounded with coffer dam and dewatered. The portion of coffer dam furthest from the bank will be shifted coffer dam from the previous section of work, while the portions of coffer dam closer to the bank will be set from the bank and a built-up peninsula in the footprint of the wave. Once this portion of the wave is complete, all construction material temporary measures will be removed wrapping up with the coffer dams.

The third section (fish bypass) will be built from the west bank. Cofferdams will be installed to surround the limits of work which will be from the island to the west bank tie-in, including boulder toe and bank stabilization. This section will be dewatered, and construction of the bypass will be done in the dry. Once construction is complete, all construction equipment and temporary measures will be removed finishing with the coffer dam.

As part of other water-based impacts, the park improvements include two river access points. The south access will be constructed first and includes boulder toe/bank stabilization. This section will be surrounded by a coffer dam and dewatered. The north access will be a precast boat ramp that will be placed. This will not be done in the dry, however a turbidity curtain will be used to protect the river from construction activities on the bank.

Land based impacts include a tributary crossing. This crossing will be complete as part of other land-based activities and will be constructed in the dry using a pump around with dykes. The crossing will be an elliptical metal culvert that will be partially buried. Once the culvert is installed, the pump around and temporary dykes will be removed.



SEA



DATE _____

REVISIONS

Town of Woodfin
RIVERSIDE PARK
Woodfin, NC

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Consultation & Design, Inc.

PHASE

90%

DATE _____

September 30, 2022

DRAWING SCALE

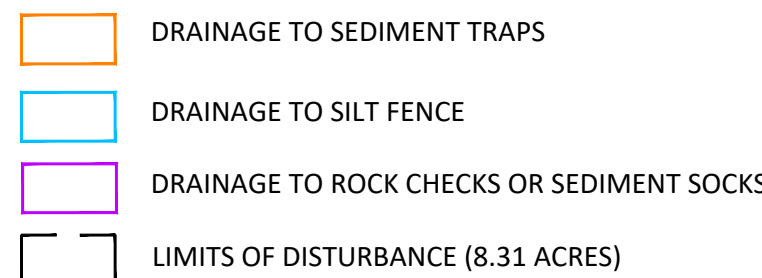
AS SHOWN

NOTE: If this drawing is not 24x36" it has been revised from its original size and the scales noted on drawings/details are no longer applicable.

DRAWING NAME

EC COVER

EC 1.0



EROSION CONTROL MEASURE NOTES:

1. THOROUGHLY REVIEW THE SEDIMENT AND EROSION CONTROL PLAN, ADDING EXTRA PROTECTION ALONG THE RIVER AND NEAR STREAMS (I.E. DOUBLE ROW SILT FENCE).
2. CONTRACTOR TO FINE GRADE AND ADD EROSION CONTROL MATTING AND NATURAL SITE DEBRIS AT ACCESS AREAS USED BY GEOTECHNICAL ENGINEERS FOR BORING SITES.
3. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN SEVEN (7) DAYS AFTER WORK HAS CEASED, EXCEPT AS STATED BELOW.
4. WHERE STABILIZATION BY THE 7TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.
5. WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH-DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 7 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.
6. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED EVERY CALENDAR WEEK. IF PERIODIC INSPECTION OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN INAPPROPRIATELY OR INCORRECTLY INSTALLED, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION. IF THIS OCCURS, NOTIFY LANDSCAPE ARCHITECT.
7. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION. FILL, COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER ENCOUNTERED WHILE TRENCHING, THE WATER SHOULD BE FILTERED TO REMOVE ANY SEDIMENTS BEFORE BEING PUMPED BACK INTO ANY WATERS OF THE STATE.
8. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
9. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO PAVED ROADWAY(S) FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.
10. TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT-LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS. THESE TEMPORARY BERMS AND DITCHES SHALL BE PROTECTED WITH A ROLLED EROSION AND SEDIMENT CONTROL PRODUCT UNTIL VEGETATION CAN BE ESTABLISHED.
11. ALL WATERS OF THE STATE (WOS), INCLUDING WETLANDS, ARE TO BE FLAGGED OR OTHERWISE CLEARLY MARKED IN THE FIELD. A DOUBLE ROW OF SILT FENCE IS TO BE INSTALLED IN ALL AREAS WHERE A 50-FOOT BUFFER CAN'T BE MAINTAINED BETWEEN THE DISTURBED AREA AND ALL WOS. A 10-FOOT BUFFER SHOULD BE MAINTAINED BETWEEN THE LAST ROW OF SILT FENCE AND ALL WOS.
12. LITTER, CONSTRUCTION DEBRIS, OILS, FUELS, AND BUILDING PRODUCTS WITH SIGNIFICANT POTENTIAL FOR IMPACT (SUCH AS STOCKPILES OF FRESHLY TREATED LUMBER) AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORM WATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE IN STORM WATER DISCHARGES.
13. A COPY OF THE INSPECTION RECORDS, AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR A NEARBY LOCATION EASILY ACCESSIBLE DURING NORMAL BUSINESS HOURS, FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO THE DATE THAT FINAL STABILIZATION IS REACHED.
14. INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3H:1V OR GREATER) WHERE LAND-DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 7 CALENDAR DAYS.
15. MINIMIZE SOIL COMPACTION AND, UNLESS UNFEASIBLE, PRESERVE TOPSOIL.
16. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN ALTERNATIVE CONTROL THAT PROVIDES EQUIVALENT OR BETTER TREATMENT PRIOR TO DISCHARGE.
17. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING OF TRENCHES AND EXCAVATED AREAS. THESE DISCHARGES ARE TO BE ROUTED THROUGH APPROPRIATE BMP'S (SEDIMENT BASIN, FILTER BAG, ETC).
18. MAINTAIN ALL BUFFER REQUIREMENTS AS INDICATED ON THE PLAN.
19. THE FOLLOWING DISCHARGES FROM SITES ARE PROHIBITED:
 - 19.1. WASTEWATER FROM WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL;
 - 19.2. WASTEWATER FROM WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS, AND OTHER CONSTRUCTION MATERIALS;
 - 19.3. FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE; AND
 - 19.4. SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING.
20. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS ARE EXPECTED TO BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE.

Sediment Trap Schedule											
Trap	Drainage Area (AC)	Min. L/W Ratio	Designed L/W Ratio	Required Surface Area	Required volume	Minimum Storage Depth (with 1.5' min. excavation)	Bottom Surface Elev	Surface Area	Volume	Weir Width	weir Elevation
ST1	0.93	2 to 1	2 to 1	1352 SF	3348 CF	2.0'	1935	1745 SF	3873 CF	4'	1938.00
ST2	0.22	2 to 1	2 to 1	492 SF	792 CF	2.0'	1933	574 SF	893 CF	4'	1935.00

Skimmer Sizing

Trap	Drainage Area (AC)	Time to Drain	Required volume	Skimmer Size	Orifice Radius	Orifice Diameter
ST1	0.93	48 hrs	3348 CF	1.5 in	0.6 in	1.3 in
ST2	0.22	48 hrs	792 CF	1.5 in	0.3 in	0.6 in



PREPARED FOR:

**CLIENT/OWNER:**

Town of Woodfin
90 Elk Mountain RD.
Woodfin, NC 28804
(828) 253-4887

PREPARED BY:

LANDSCAPE ARCHITECT:
Equinox

37 Haywood Street, Suite 100
Asheville, NC 28801
(828) 253-6856 (x202)
david@equinoxenvironmental.com

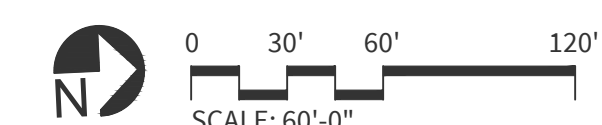
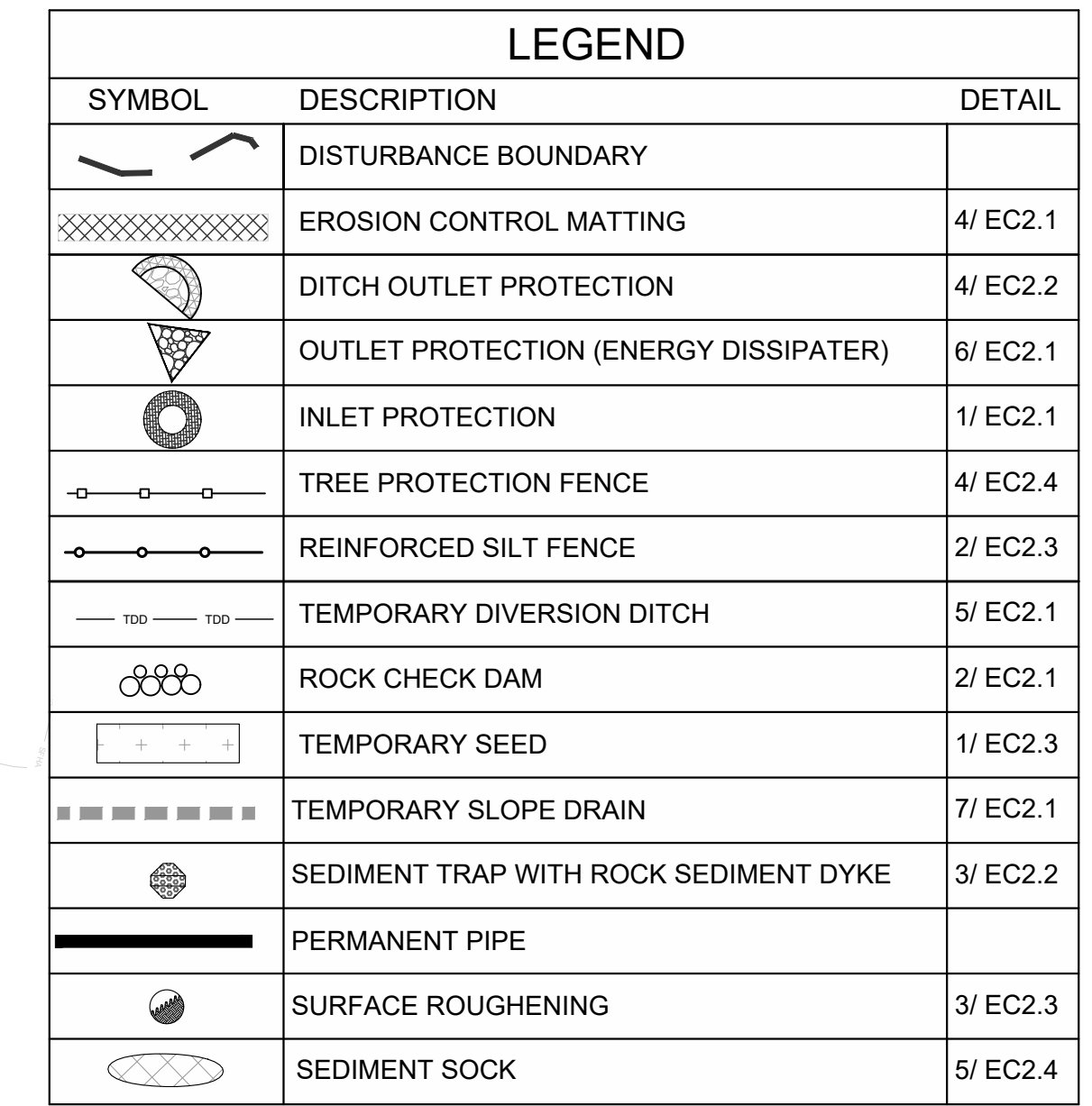
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1598 Riverside Dr.
Asheville, NC 28804

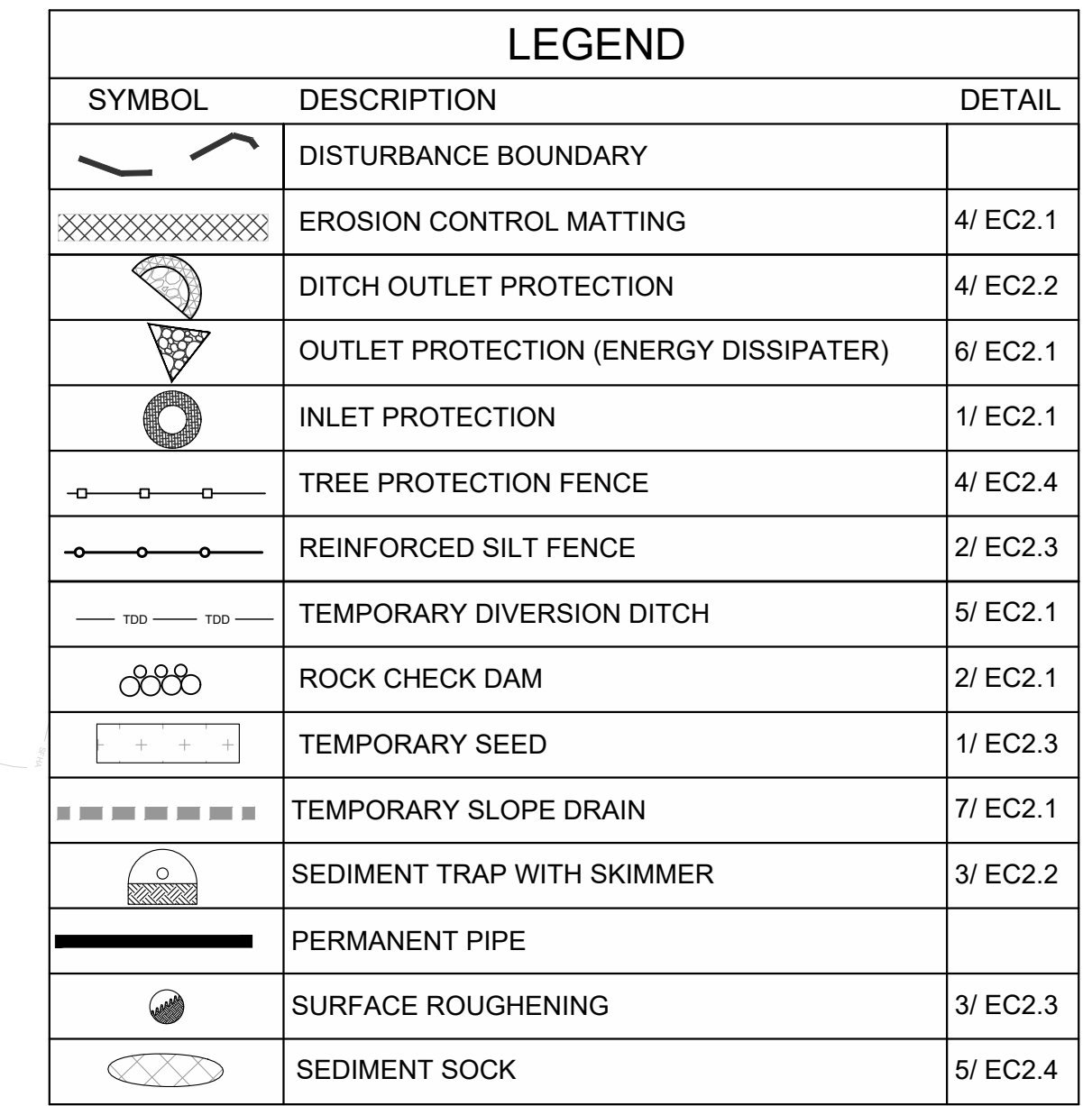
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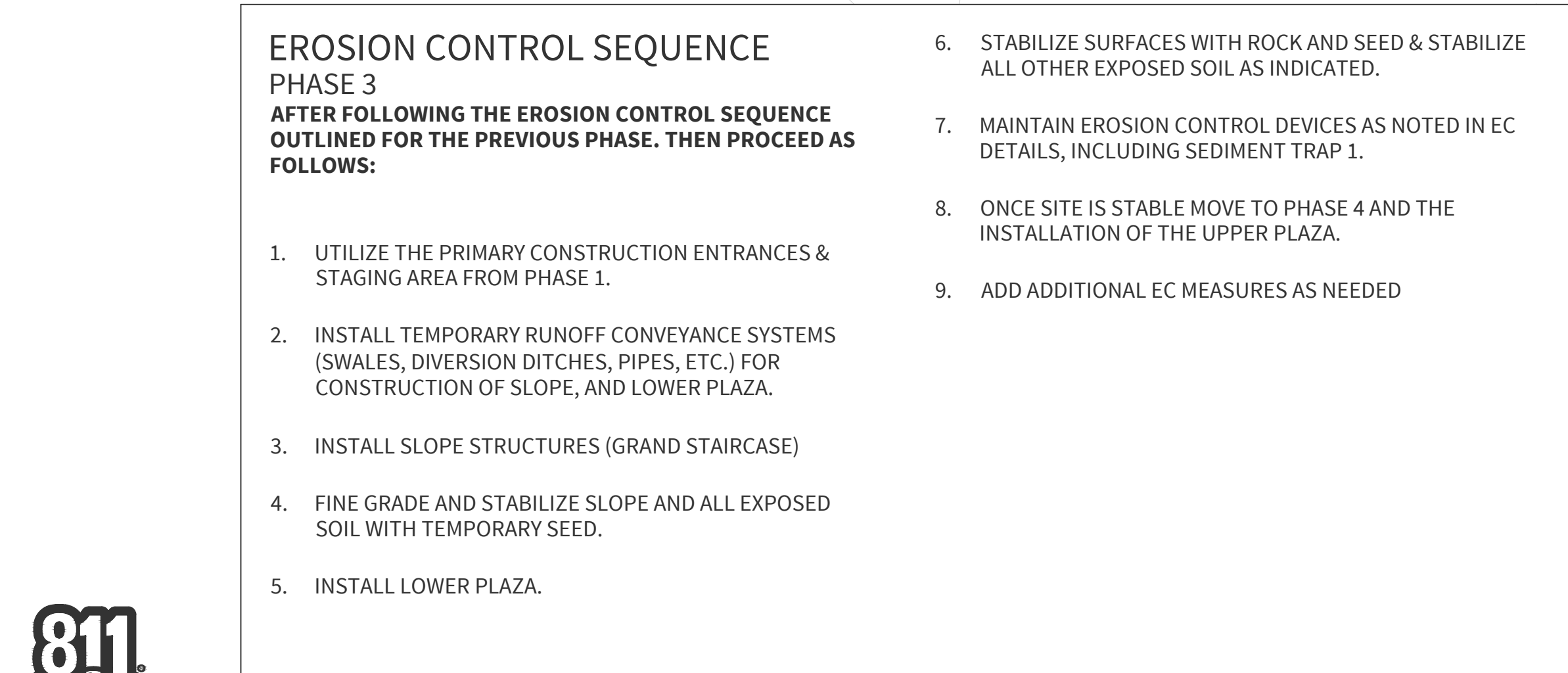
PROJECT SIZE:
Approximately 9.15 Ac Total
Disturbance area is 8.31 Ac

All aspects of work shall be performed in accordance with all applicable local, state, and federal regulations pertaining to worker safety.



EC 1.1



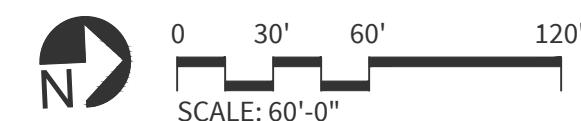


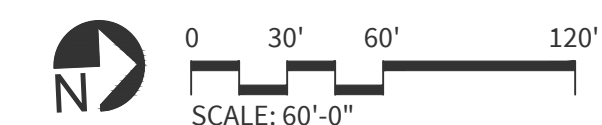
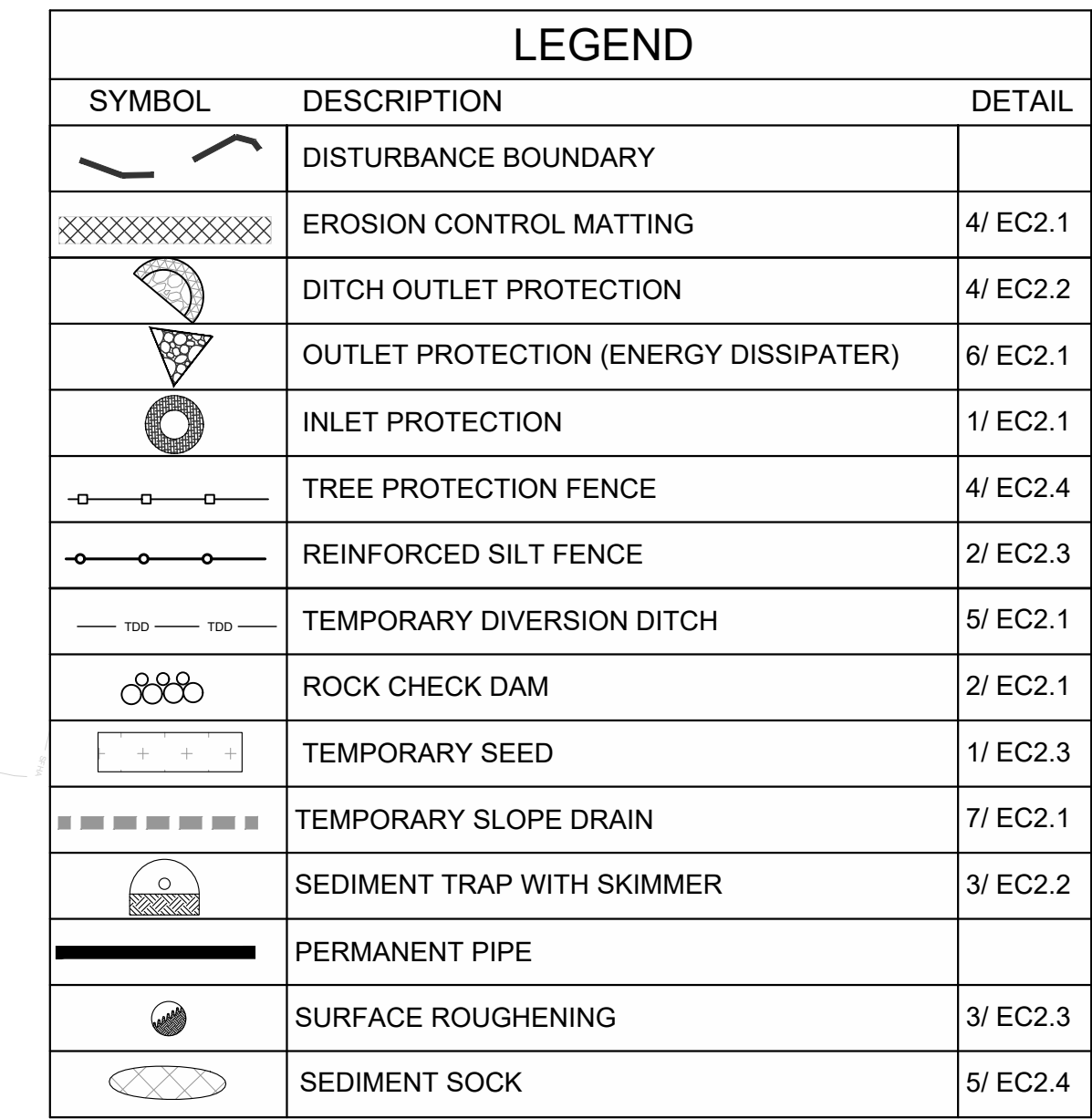
EQUINOX

37 Haywood St.
Suite 100
Asheville, NC 28801
t 828.253.6856
f 828.253.8256

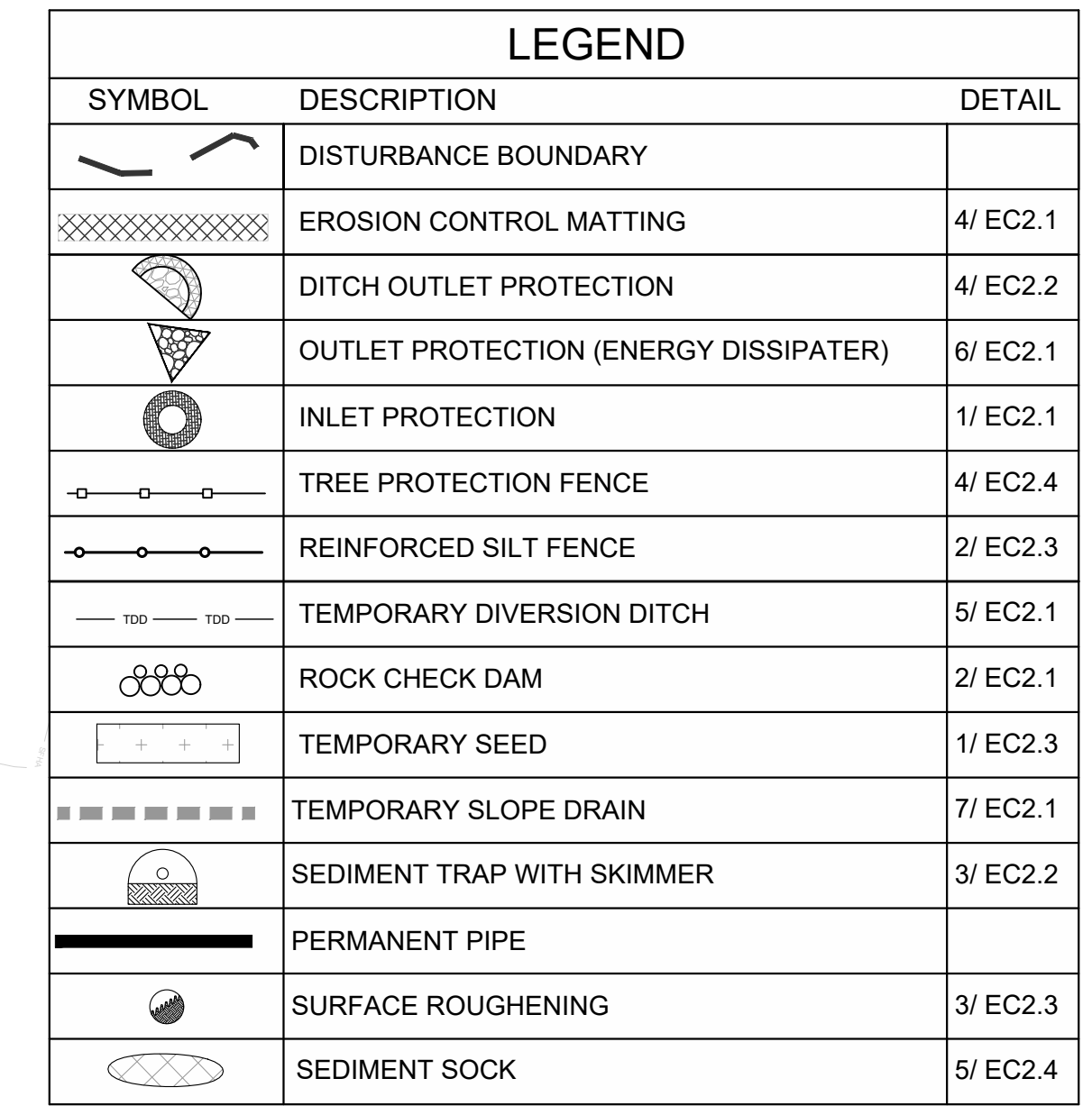
Town of Woodfin
RIVERSIDE PARK
Woodfin, NC

EC1.3



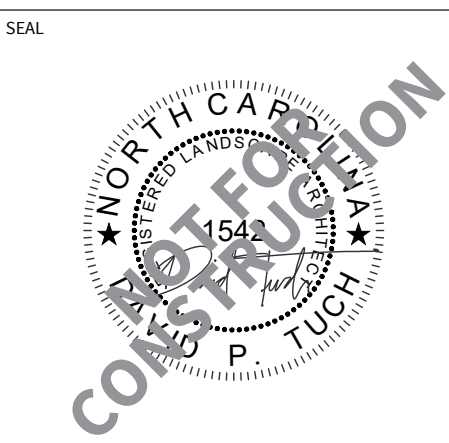


EC1.4

PHASE 5

1. UTILIZE THE PRIMARY CONSTRUCTION ENTRANCE.
2. ENSURE EROSION CONTROL MEASURES REMAIN IN PLACE TO PROTECT STORM PIPES AND INFILTRATION TRENCH.
3. INSTALL TEMPORARY RUNOFF CONVEYANCE SYSTEMS (SWALES, DIVERSION DITCHES) FOR CONSTRUCTION OF THE UPPER PARKING AREA.
4. INSTALL UPSTREAM RIVER ACCESS.
5. STABILIZE SURFACES WITH ROCK AND SEED & STABILIZE ALL OTHER EXPOSED SOIL AS INDICATED.

- 
- Know what's below.
Call before you dig.

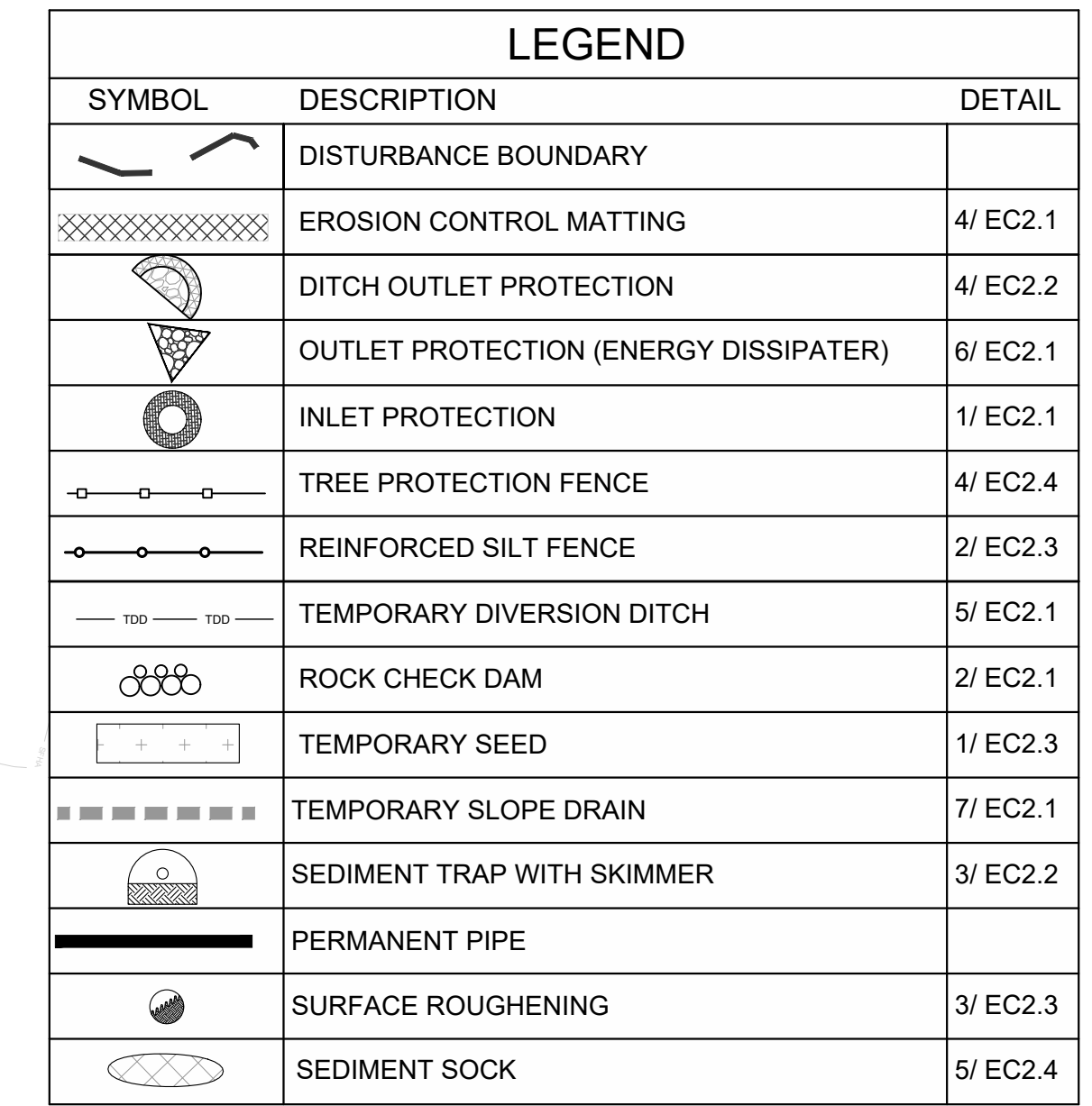


Town of Woodfin
RIVERSIDE PARK
Woodfin, NC

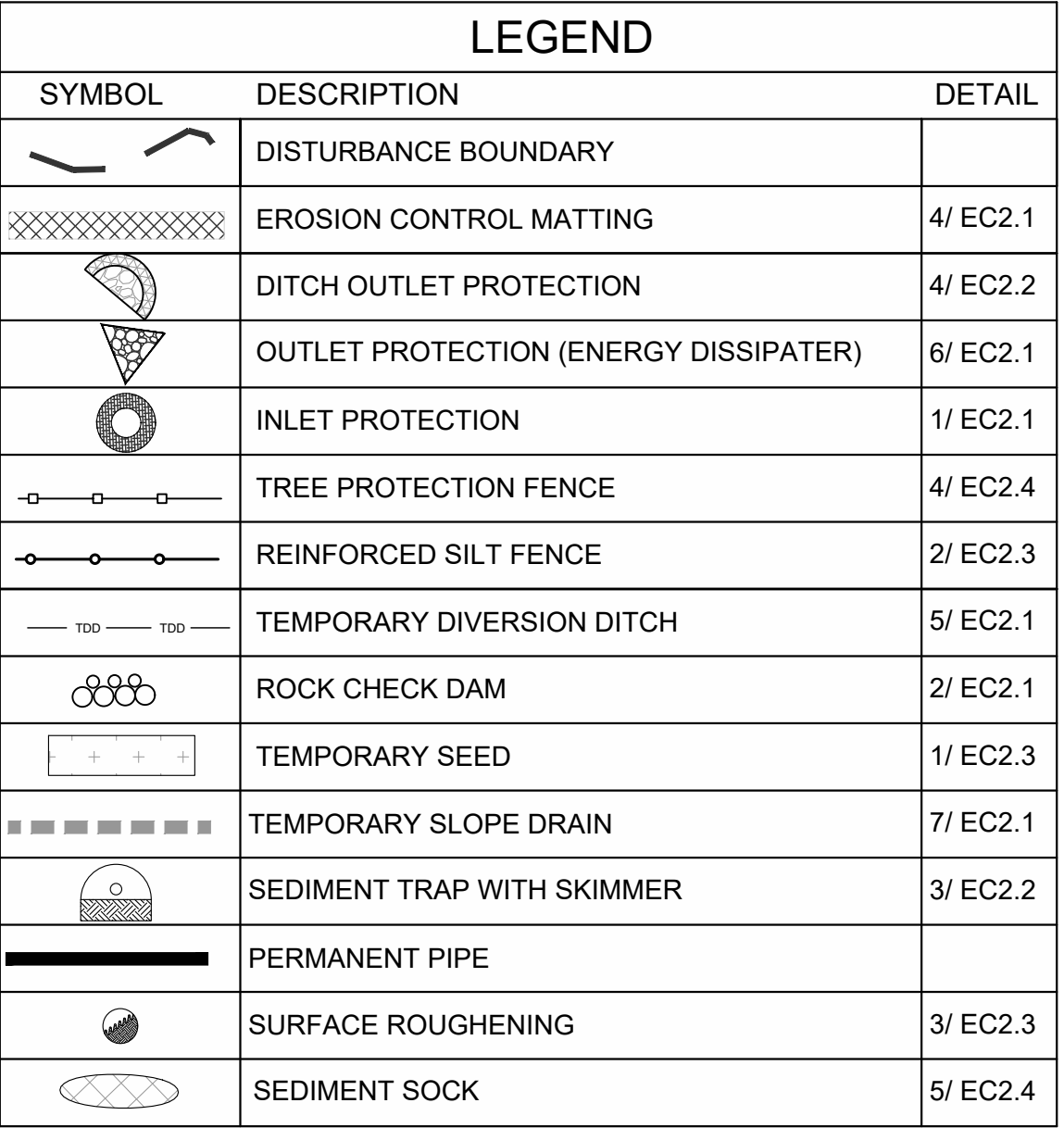
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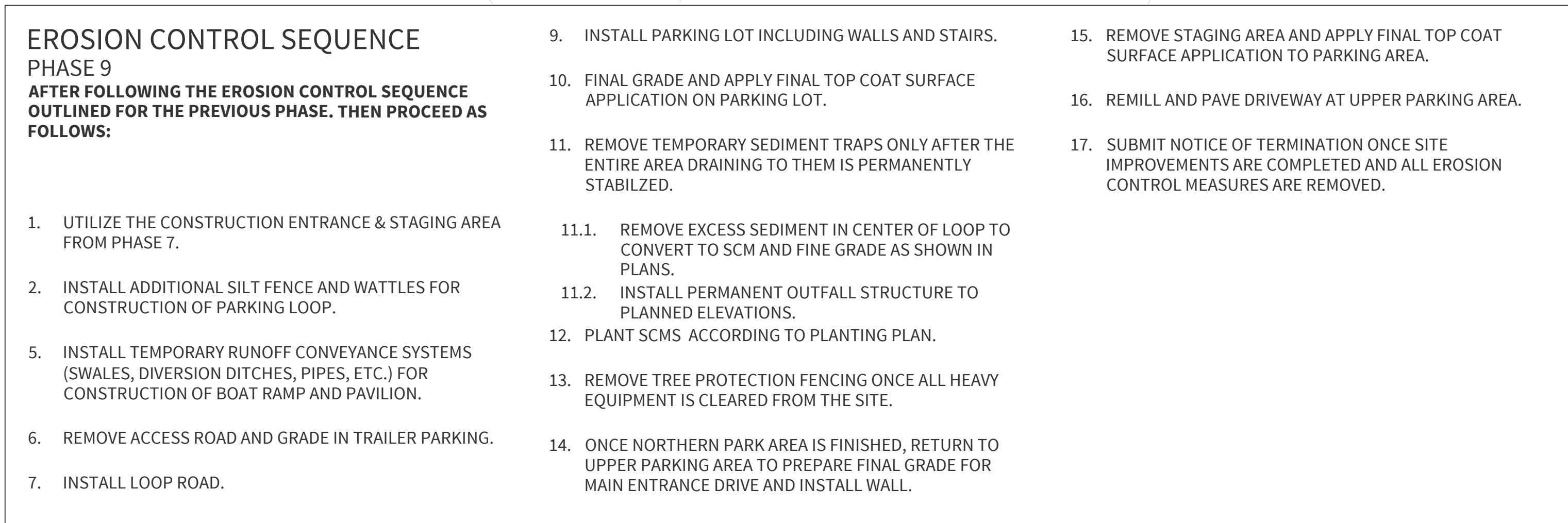
E&SC PH 5

EC1.5



EC1.6





EQUINOX

37 Haywood St.
Suite 100
Asheville, NC 28801
t 828.253.6856
f 828.253.8256

SEAL

NORTH CAROLINA

1542

STATE OF PROFESSIONAL ENGINEERS

P. E. TUCHMAN

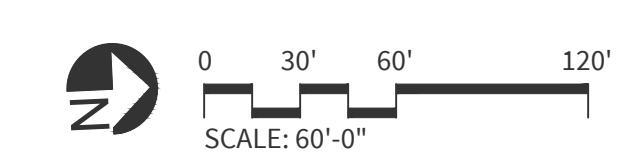
CONSULTATION

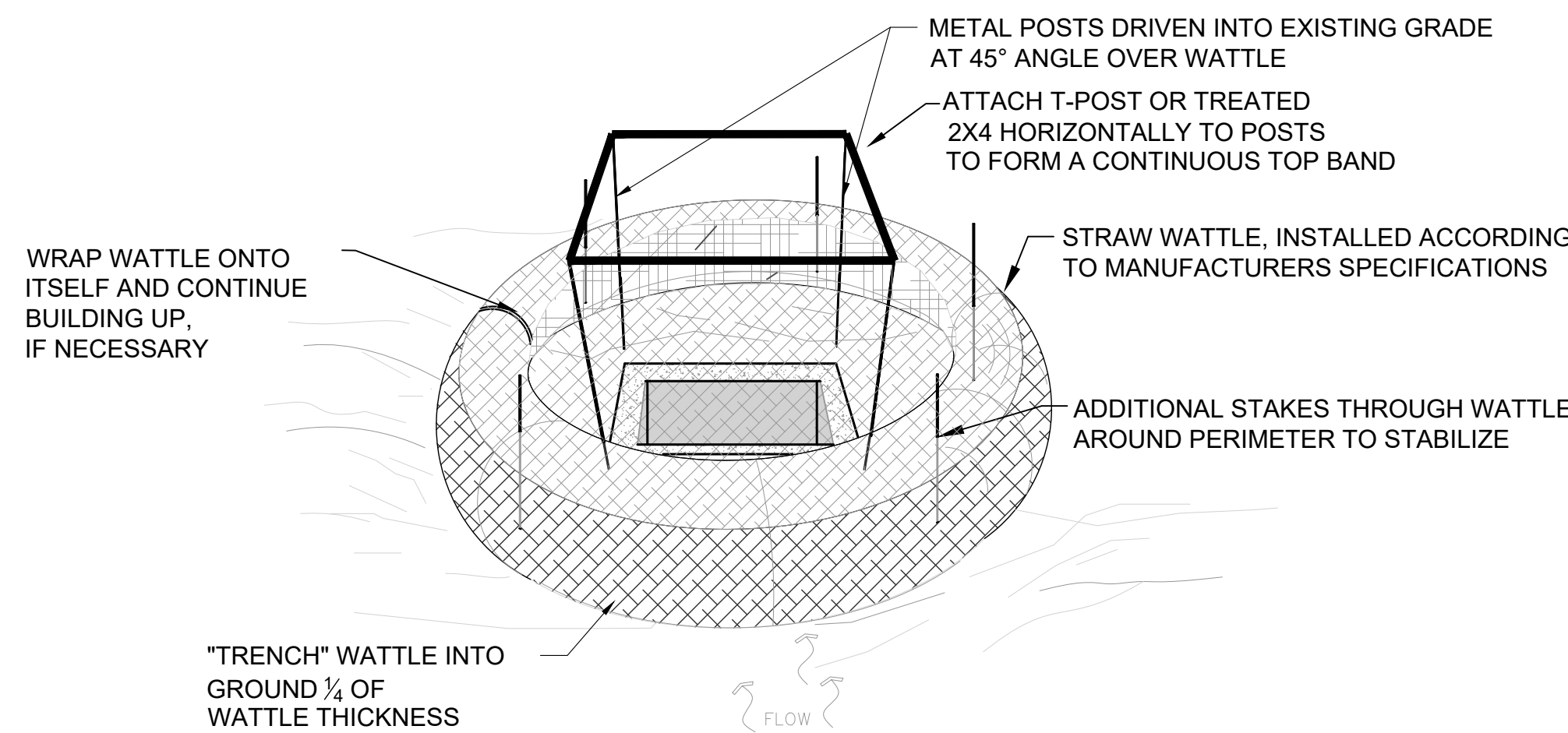
DESIGN BY:

DRAWN BY:

CHECKED BY:

DATE

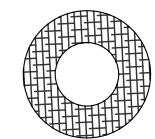




NOTE: ILLUSTRATION DEPICTS A LOW POINT CATCH BASIN. IF INLET PROTECTION IS APPLIED AT HEADWALL OR SINGLE-SIDED INLET STRUCTURE, METAL POSTS MAY NOT BE REQUIRED, HOWEVER, WATTLE IS TO BE KEYED INTO BANK ON BOTH SIDES OF INLET.

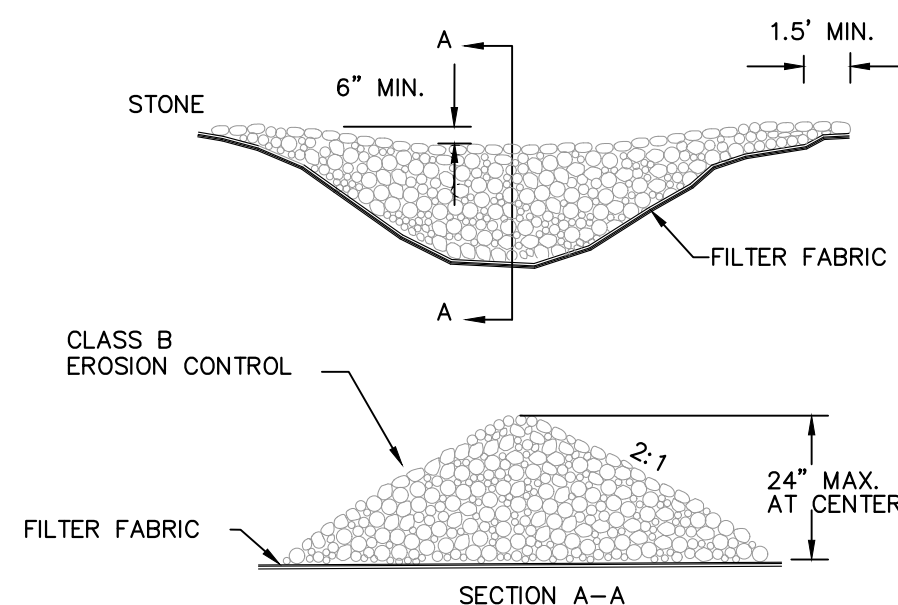
INSPECTION AND MAINTENANCE: REMOVE SEDIMENT ONCE IT HAS REACHED $\frac{1}{3}$ THE HEIGHT OF THE STRAW WATTLE.

PLAN SYMBOL



1 INLET PROTECTION

NOT TO SCALE



STONE SHOULD BE PLACED OVER THE CHANNEL BANKS TO KEEP WATER FROM CUTTING AROUND THE DAM.

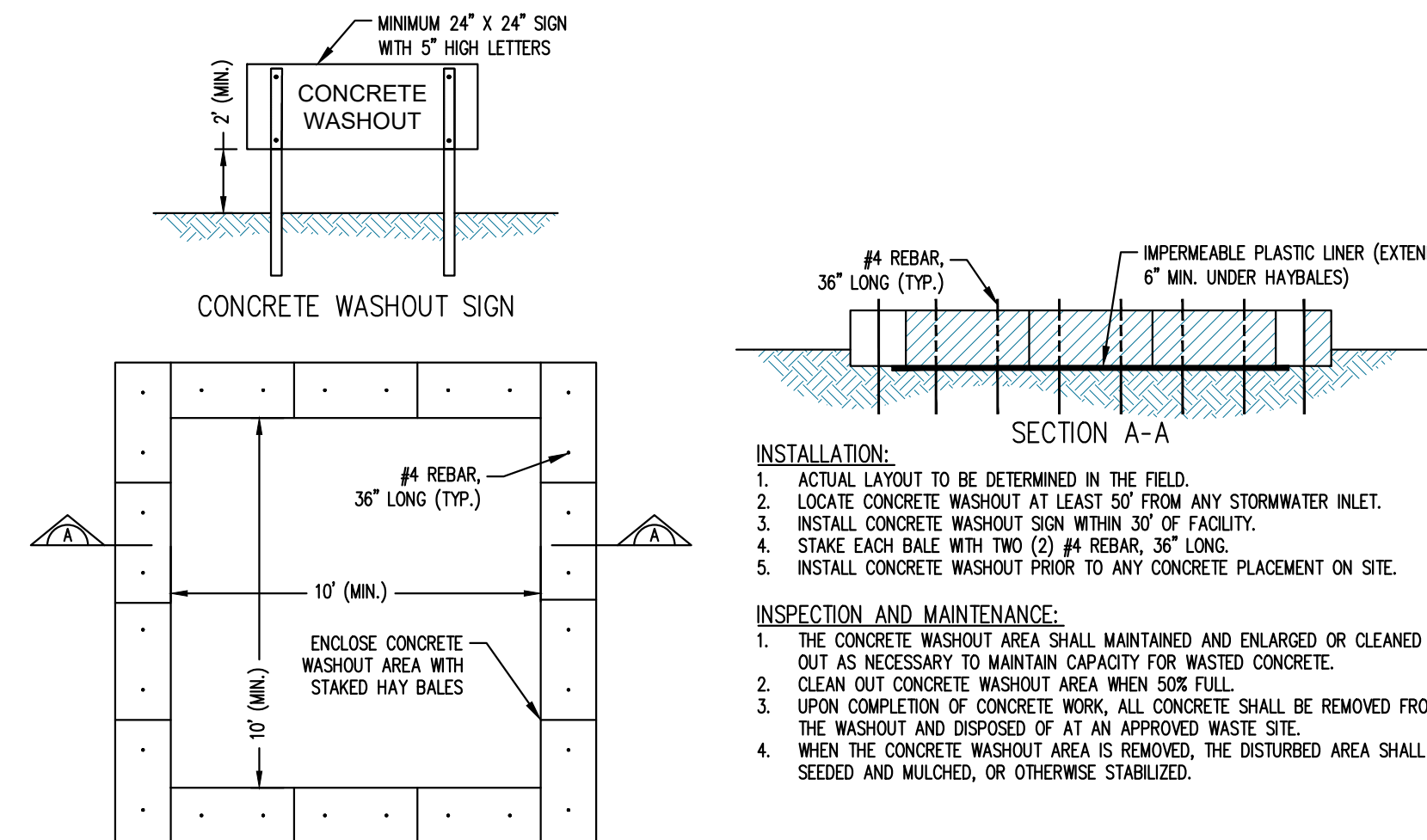
INSPECTION AND MAINTENANCE: REMOVE SEDIMENT ONCE IT HAS REACHED $\frac{1}{3}$ THE HEIGHT OF THE CHECK DAM.

PLAN SYMBOL



2 ROCK CHECK DAM

NOT TO SCALE



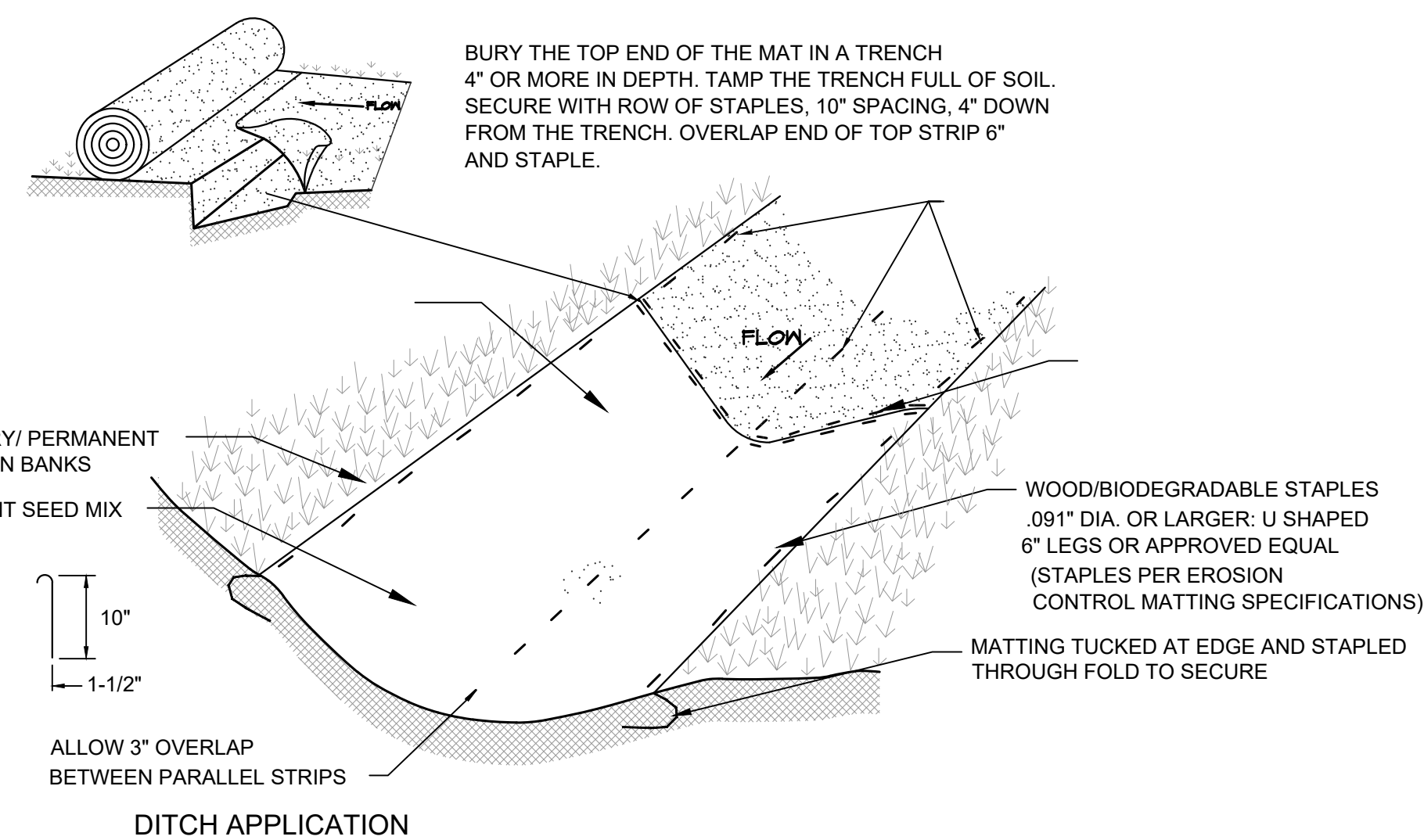
INSTALLATION:
1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. LOCATE CONCRETE WASHOUT AT LEAST 50' FROM ANY STORMWATER INLET.
3. INSTALL CONCRETE WASHOUT SIGN WITHIN 30' OF FACILITY.
4. STAKE EACH BALE WITH TWO (2) #4 REBAR, 36" LONG.
5. INSTALL CONCRETE WASHOUT PRIOR TO ANY CONCRETE PLACEMENT ON SITE.

INSPECTION AND MAINTENANCE:
1. THE CONCRETE WASHOUT AREA SHALL MAINTAINED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. CLEAN OUT CONCRETE WASHOUT AREA WHEN SOIL FULL.
3. UPON COMPLETION OF CONCRETE WORK, ALL CONCRETE SHALL BE REMOVED FROM THE WASHOUT AND DISPOSED OF AT AN APPROVED WASTE SITE.
4. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE SEEDDED AND MULCHED, OR OTHERWISE STABILIZED.

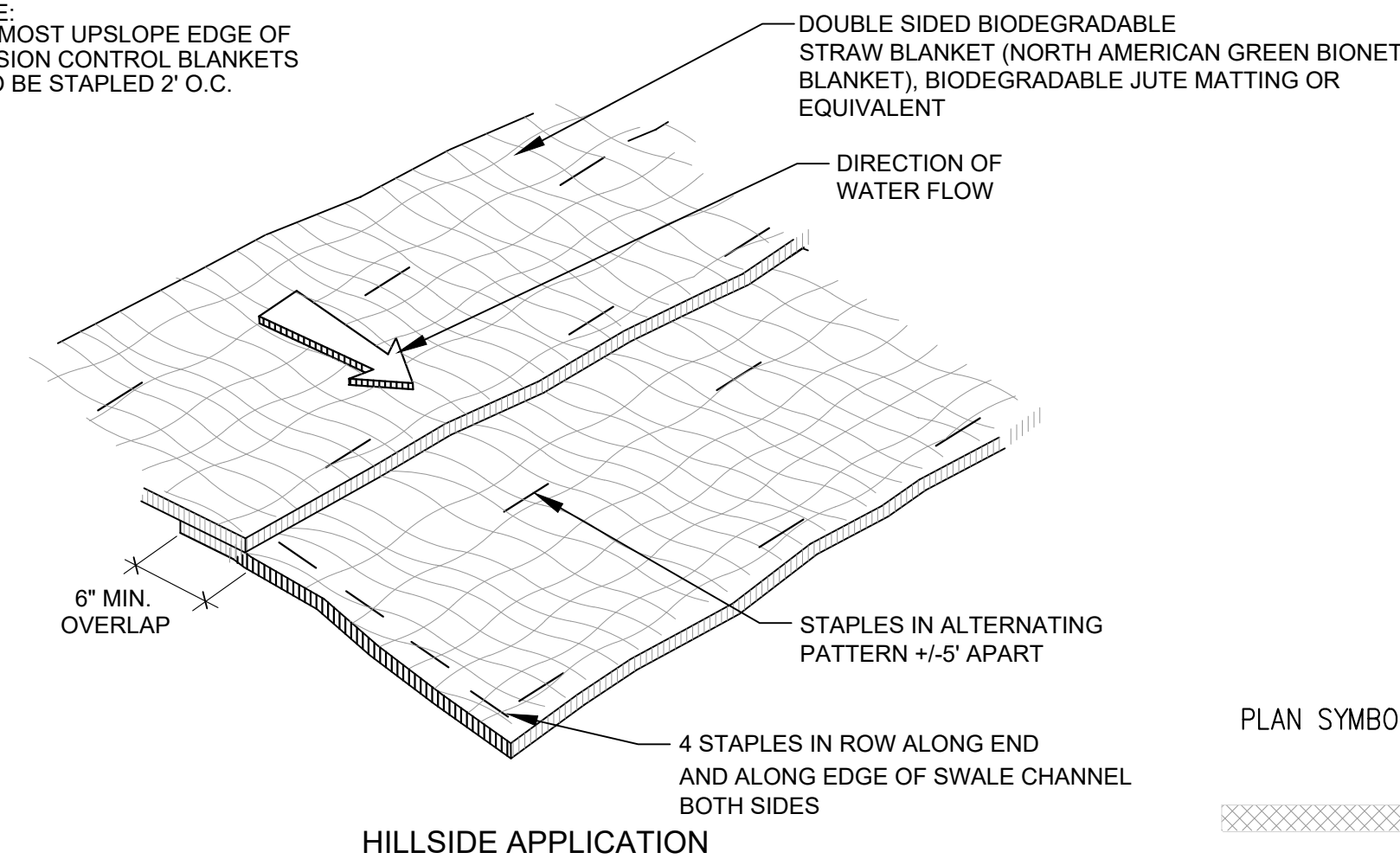
PLAN VIEW

3 CONCRETE WASHOUT

NOT TO SCALE



NOTE: THE MOST UPSLOPE EDGE OF EROSION CONTROL BLANKETS IS TO BE STAPLED 2' O.C.

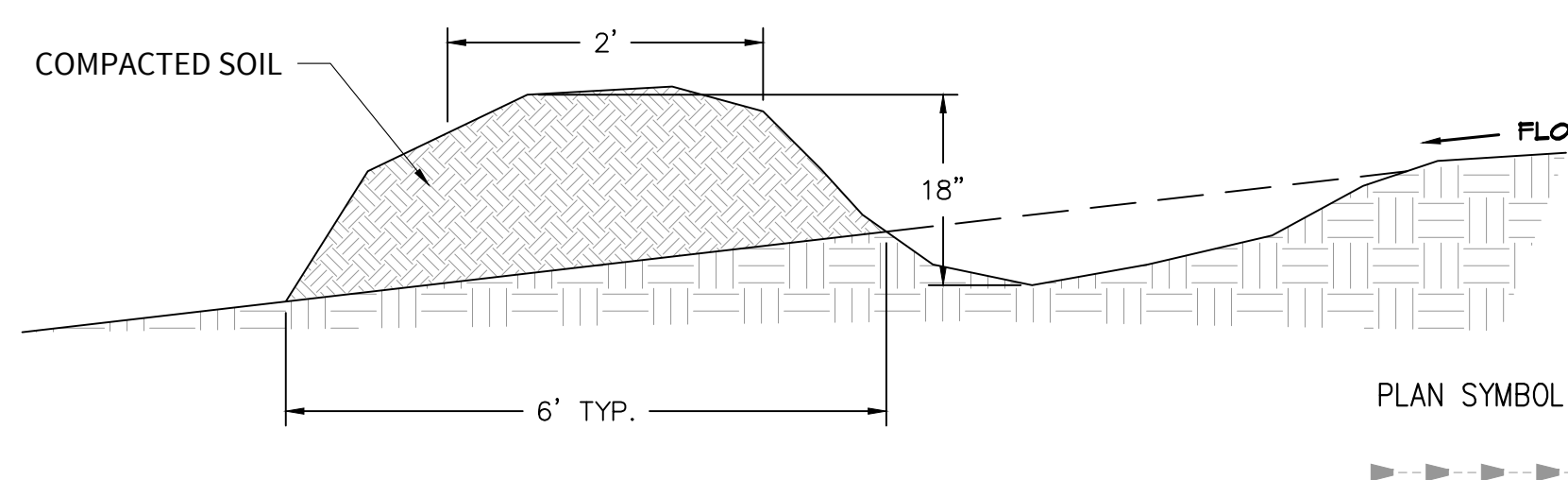


PLAN SYMBOL



4 EROSION CONTROL MATTING

NOT TO SCALE

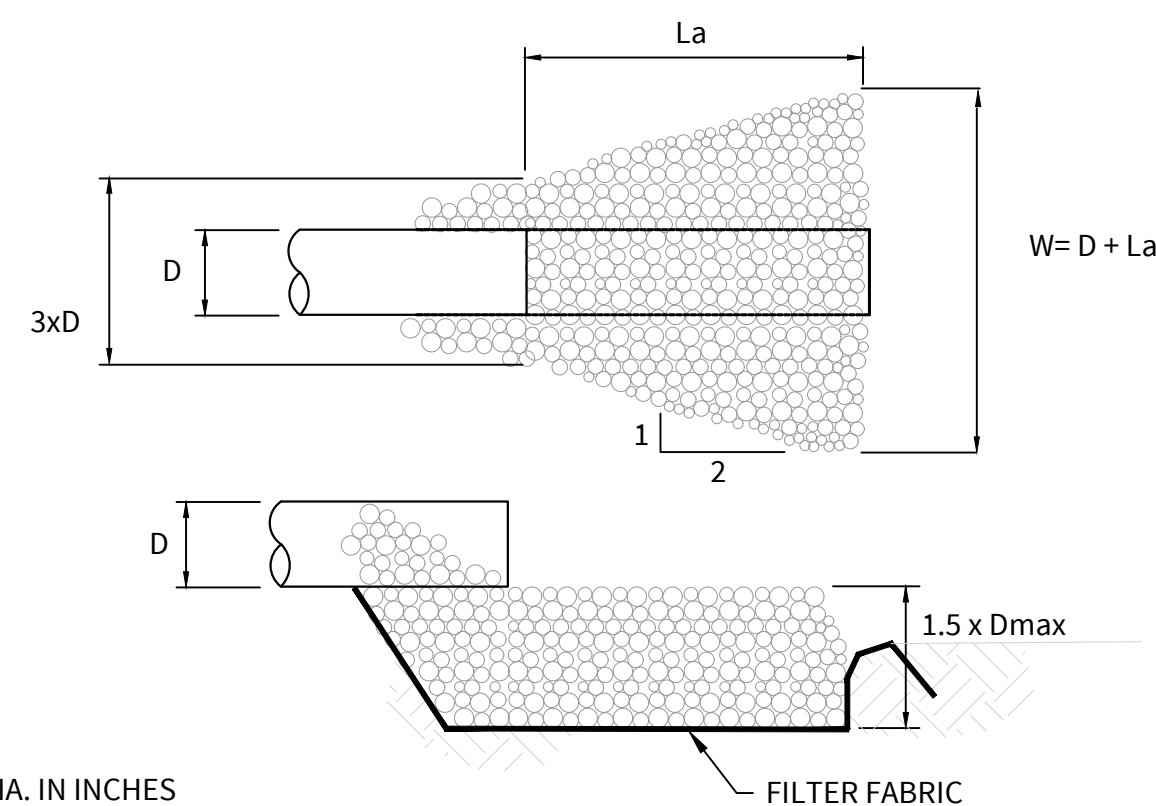


PLAN SYMBOL



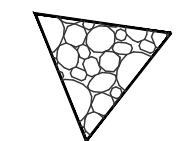
5 TEMPORARY DIVERSION DITCH

NOT TO SCALE



D = PIPE DIA. IN INCHES
Dmax = MAXIMUM STONE SIZE (1.5 x d50)

PLAN SYMBOL



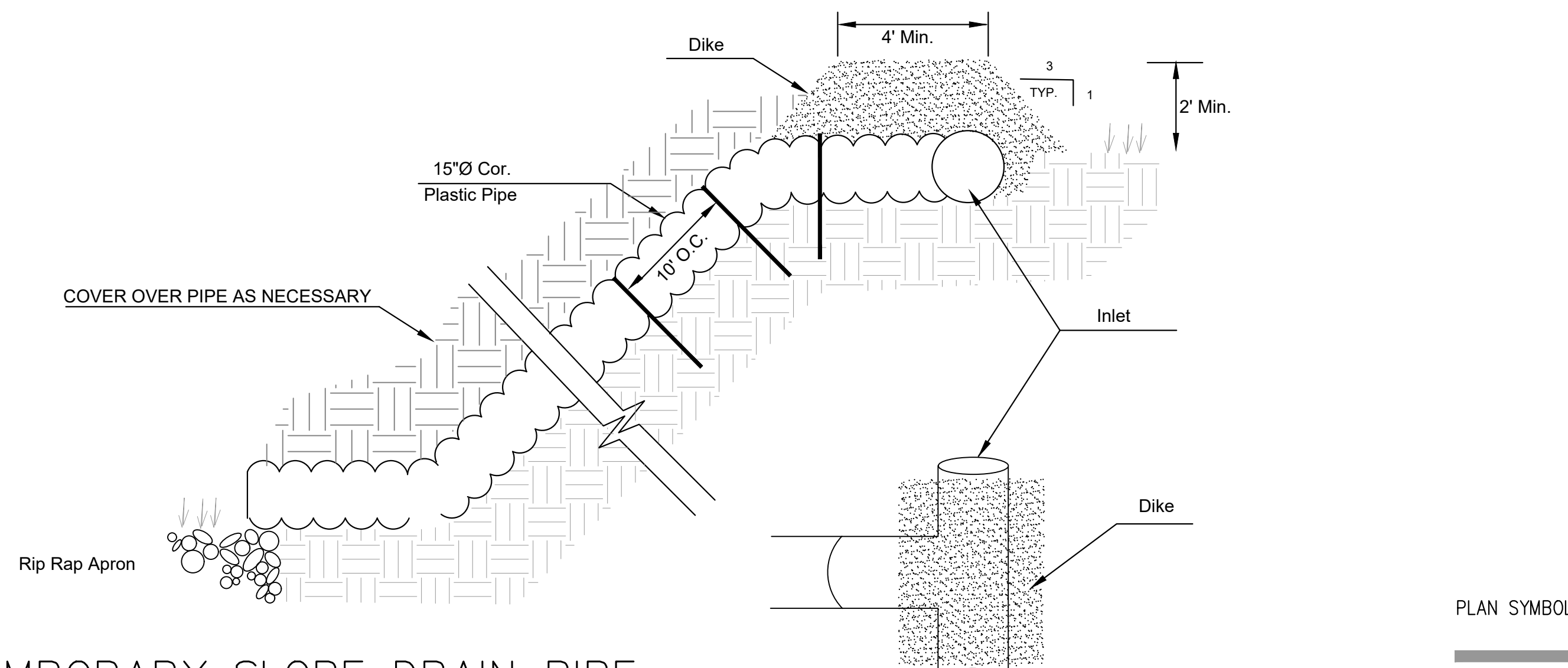
6 OUTLET PROTECTION

NOT TO SCALE

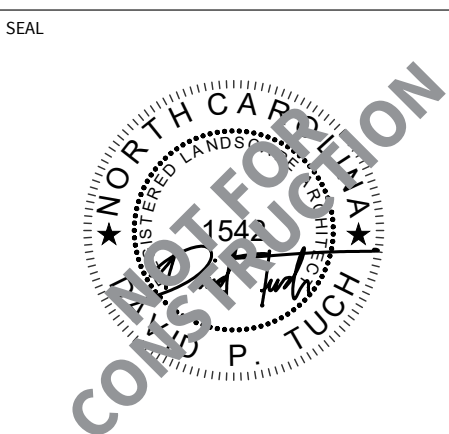
PIPE OUT/ CLASS	RIP RAP	La
PIPE 1	CLASS A	8'
PIPE 3	CLASS A	8'
PIPE 5	CLASS A	8'
PIPE 6	CLASS A	8'
PIPE 7	CLASS A	8'
PIPE 8	CLASS A	8'

7 TEMPORARY SLOPE DRAIN PIPE

NOT TO SCALE



PLAN SYMBOL



DESIGN BY: DRAWN BY: CHECKED BY:

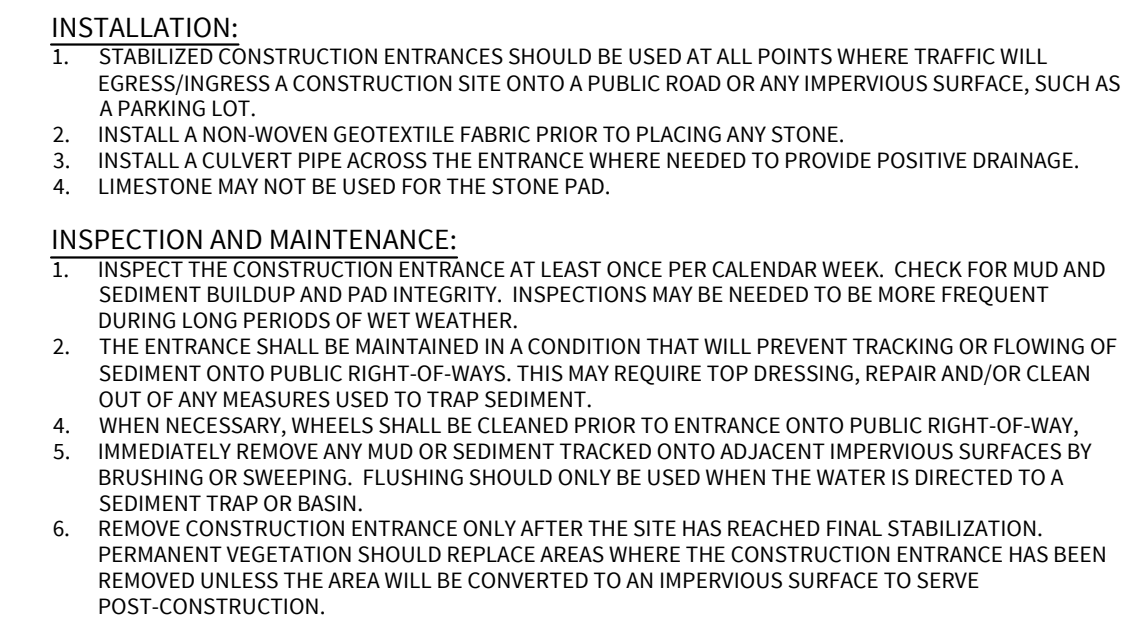
DATE

REVISIONS

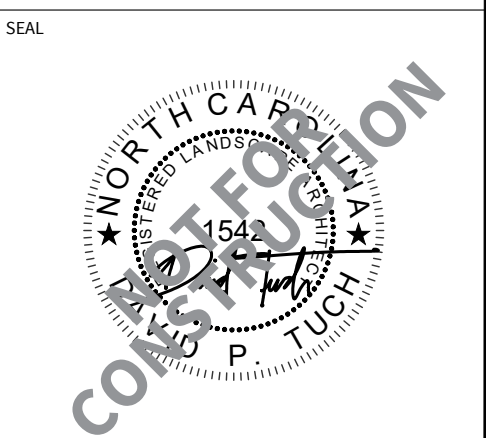
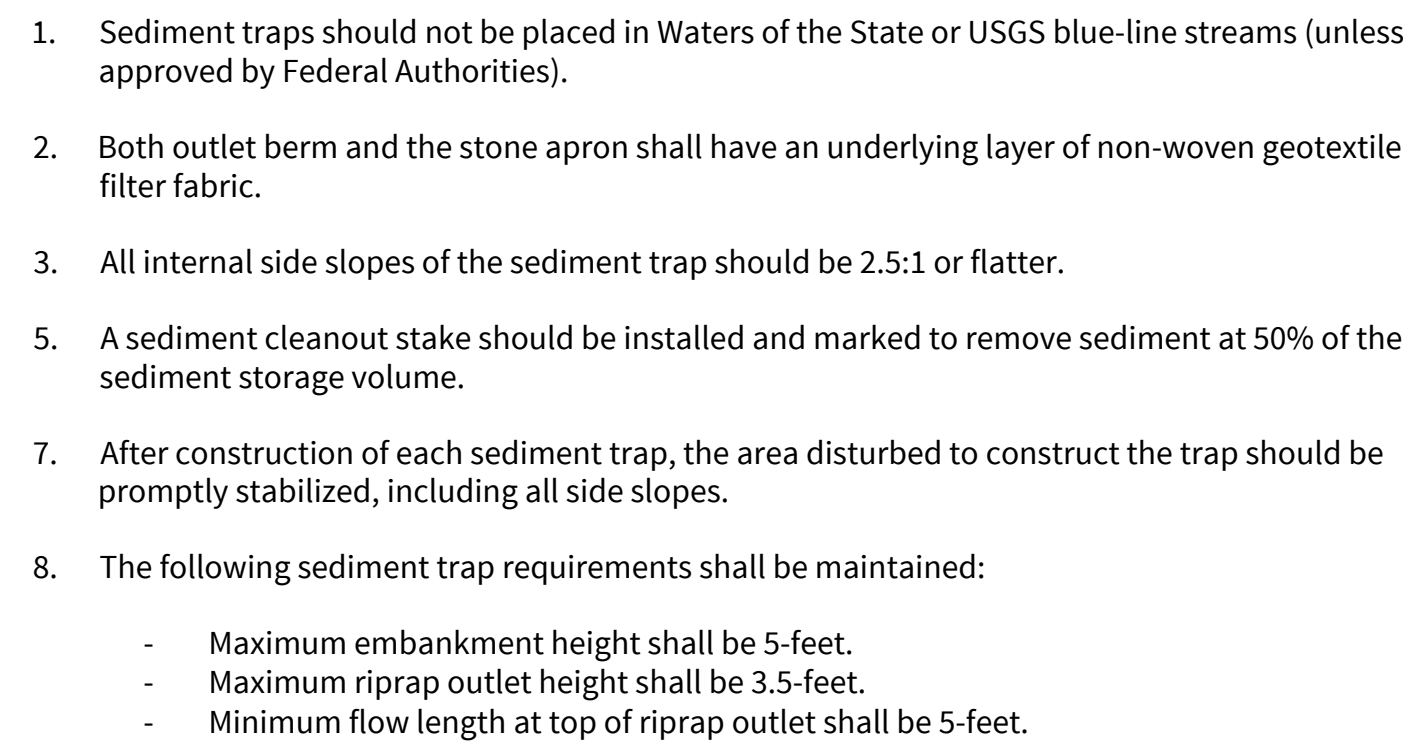


1. INSTALL SAND BAG ENERGY DISSIPATERS.
2. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DE-WATER ENTRAPPED AREA.
5. PERFORM CULVERT INSTALLATION WORK IN 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 DIKE FIRST).
7. ALL GRADING AND STABILIZATION MUST BE COMPLETED WITHIN THE PUMP-AROUND AREA BETWEEN THE IMPERVIOUS DIKES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF THE IMPERVIOUS DIKES.
8. REMOVE ENERGY DISSIPATERS AND BACKFILL. STABILIZED DISTURBED AREA WITH SEED AND MULCH.

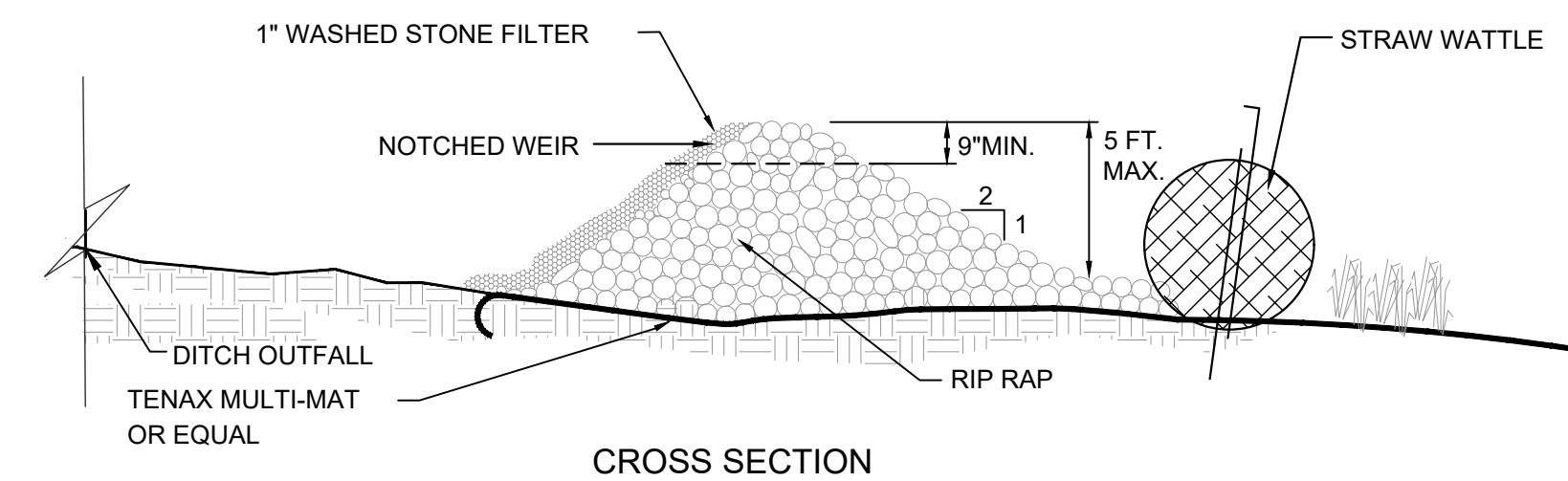
1. ALL EXCAVATION SHALL BE PERFORMED IN ONLY DRY OR ISOLATED SECTIONS OF THE CHANNEL.
2. IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW WHEN NECESSARY.
3. ALL GRADED AREAS SHALL BE STABILIZED WITHIN 24 HOURS.
4. MAINTENANCE OF STREAM FLOW OPERATION SHALL BE INCIDENTAL TO THE WORK. THIS INCLUDES SHEETING, DIVERSIONS PIPES, PUMPS AND HOSES.
5. PUMPS AND HOSES SHALL BE OF SUFFICIENT SIZE TO DEWATER THE WORK AREA.



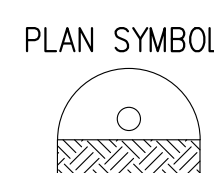
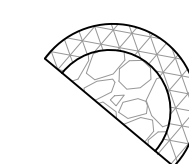
	LENGTH (MIN.)	WIDTH (MIN.)
PROJECT	100 FEET	24 FEET
INDIVIDUAL LOT	20 FEET	15 FEET

[illegible]

1. The key to a functional sediment trap is weekly inspections, routine maintenance and regular sediment removal.
2. Attention to sediment accumulations within the trap is extremely important. Accumulated sediment deposition should be continually monitored in the trap and removed when necessary.
3. Remove accumulated sediment when it reaches 50% of the designed sediment storage volume as marked by the cleanout stake.
4. Removed sediment from the trap shall be placed in stockpile storage areas or spread thinly across the disturbed area. Stabilize the removed sediment after it is relocated.
5. Regular inspections of sediment traps should be conducted once every calendar week and, as recommended and within 24-hours after each rainfall event that produces ½-inch or more of precipitation.
6. Disturbed areas resulting from the removal of the sediment trap should be permanently stabilized and additional BMPs, such as silt fence, should be utilized to handle stormwater runoff from this disturbed area until final stabilization is reached.



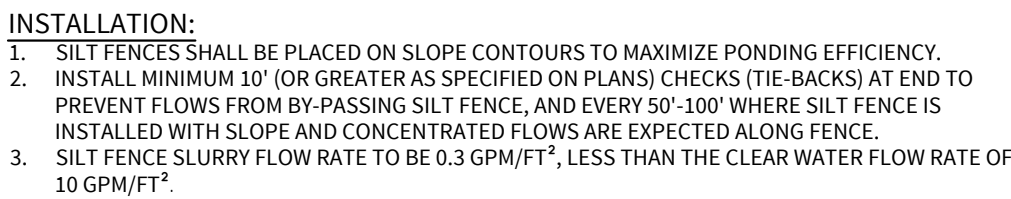
INSPECTION AND MAINTENANCE: REMOVE SEDIMENT ONCE IT HAS REACHED 1/3 THE HEIGHT OF THE NOTCHED WEIR.



4 NOT TO SCALE

1. SEE PLANTING & REVEGETATION SPECIFICATIONS FOR MORE INFORMATION ON SEED APPLICATION AND ESTABLISHMENT.
2. CONTRACTOR TO KEEP RECORD OF SEED PURCHASE AND APPLICATION RATES FOR FINAL INSPECTION (BAGS & RECEIPTS).
3. GROUND STABILIZATION REQUIRED IN (7) SEVEN DAYS ON PERIMETER AREAS AND SLOPES GREATER THAN 3:1, AND GROUND STABILIZATION IN (14) DAYS ON OTHER AREAS

PERMANENT SEEDING SCHEDULE
 PERMANENT SEEDING MUST OCCUR WITHIN 14 CALENDAR DAYS OF FINAL GRADING.
 COVER CROPS (TEMPORARY SEEDING) TO BE ADDED TO PERMANENT SEEDING MIXES IF NO
 TEMPORARY SEEDING HAS BEEN PLACED PREVIOUSLY.



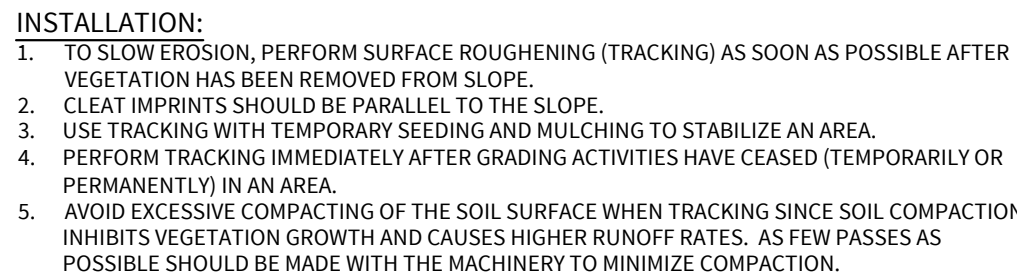
1. INSPECT AND REPAIR SILT FENCE AT LEAST ONCE EVERY CALENDAR WEEK..
2. SEDIMENT SHALL BE REMOVED WHEN IT IS 1/3 THE HEIGHT OF THE SILT FENCE.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
4. UPON PROJECT COMPLETION, THE SILT FENCE SHALL BE REMOVED AND HAULED OFF-SITE. ANY DEPOSITED SEDIMENT SHALL BE PROPERLY GRADED AND SEEDED.



NOT TO SCALE

SEEDING SCHEDULE

NOT TO SCALE



1. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED ONCE EVERY CALENDAR WEEK.
2. IF RILLS (SMALL WATERCOURSES THAT HAVE STEEP SIDES AND USUALLY ARE ONLY A FEW INCHES DEEP) APPEAR, RE-GRADE, RE-ROUGHEN AND RE-SEED IMMEDIATELY.



SURFACE ROUGHENING

NOT TO SCALE



SEAL



Town of Woodfin

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Consultation & Design, Inc.

PHASE

90%

DATE September 30, 2022

DRAWING SCALE

AS SHOWN

NOTE: If this drawing is not 24x36" it has been revised from its original size and the scales noted on drawings/details are no longer applicable.

DRAWING NAME

EC DETAILS

EC 2.3

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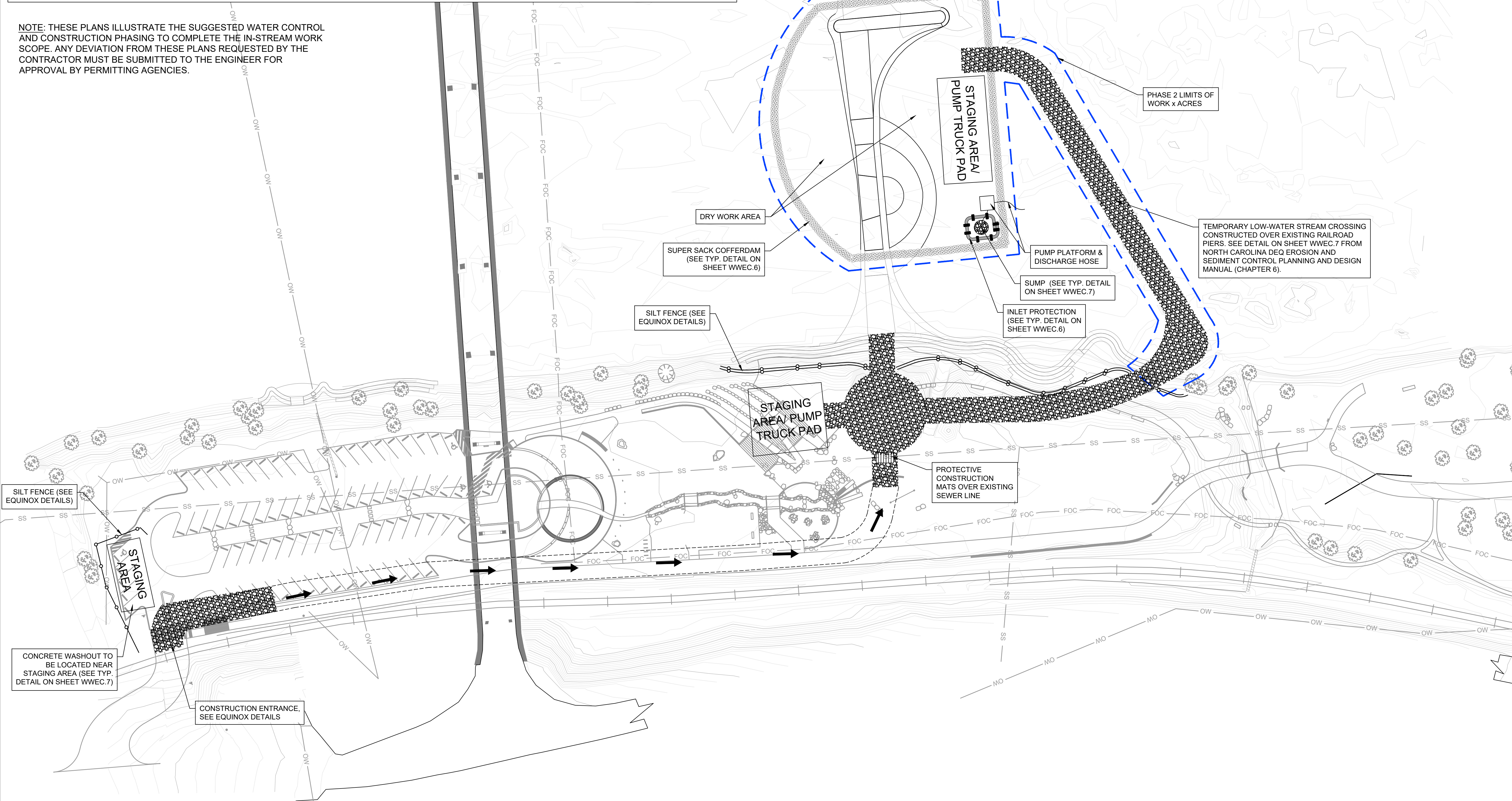
EROSION CONTROL SEQUENCE
PHASE 2
PROCEED AS FOLLOWS:

1. INSTALL LOW WATER ACCESS TO CENTRAL WORK ZONE IN THE WET FROM RIVER RIGHT BANK UTILIZING CULVERTS BETWEEN ABANDONED RAILROAD BRIDGE PIERS TO BUILD TEMPORARY ROAD.
2. INSTALL COFFERDAM FOR WATER CONTROL IN CENTRAL WORK ZONE USING SUPER SACK CONSTRUCTION DETAIL PROVIDED IN WHITEWATER PLAN SET. SUPER SACKS TO BE FILLED WITH GRAVEL OR SMALL COBBLE BASED ON CONTRACTOR PREFERENCE.
3. ALLOW WATER WITHIN ENCLOSED WORK AREA TO SETTLE PRIOR TO PRELIMINARY PUMP DOWN OF WORK AREA..
4. INSTALL SUMP IN LOW CORNER OF CLOSED OFF WORK ZONE AND INSTALL INLET PROTECTION MEASURES SHOWN IN WHITEWATER PLAN SET DETAILS. INSTALL ADDITIONAL MEASURES SUCH AS SILT FENCE OR SETTLING PONDS AS NEEDED TO MINIMIZE TURBIDITY OF WATER PUMPED BACK INTO THE RIVER FROM THE SUMP.
5. ONCE WATER CONTROL AND EROSION CONTROL MEASURES ARE IN PLACE AND FUNCTIONING PROPERLY, COMPLETE CONSTRUCTION OF

THE CENTRAL PORTION OF THE WAVE STRUCTURE IN THE DRY FROM THE RIVER RIGHT MEDIUM FLOW PLATE TO THE EDGE OF THE BYPASS CHANNEL INCLUDING THE ISLAND.

6. ENSURE THAT NO CEMENTITIOUS MATERIAL ENTERS THE WATERWAY DURING GROUTING OPERATIONS.
7. UPON COMPLETION OF THE CENTRAL PORTION OF THE WAVE STRUCTURE INSTALLATION AND MIN. 3-DAY GROUT CURE TIME PER PROJECT SPECIFICATIONS, COMPLETE FINAL GRADING AND REMOVE ALL EQUIPMENT AND FINALLY THE SUMP FROM THE WORK ZONE ALLOWING IT TO BACKWATER.
8. REMOVE 3 OF THE 4 WALLS OF THE SUPER SACK COFFER DAM AND ALL MATERIALS FROM THE RIVER. THE SUPER SACK WALL CLOSEST TO THE RIVER RIGHT BANK WILL REMAIN AND BE SHIFTED OVER AS PART OF THE NEXT PHASE OF CONSTRUCTION.
9. REMOVE THE TEMPORARY ROAD, CULVERTS AND ABANDONED BRIDGE PILINGS TO FINAL GRADE MOVING FROM THE CENTRAL WORK ZONE TOWARDS THE RIVER RIGHT ACCESS POINT.
10. PREPARE TO BEGIN THE NEXT PHASE OF WAVE CONSTRUCTION ALONG THE RIVER RIGHT BANK.

NOTE: THESE PLANS ILLUSTRATE THE SUGGESTED WATER CONTROL AND CONSTRUCTION PHASING TO COMPLETE THE IN-STREAM WORK SCOPE. ANY DEVIATION FROM THESE PLANS REQUESTED BY THE CONTRACTOR MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY PERMITTING AGENCIES.



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Client:
Town of Woodfin, NC

Project Name:
Woodfin Wave at Riverside Park

Status:
Erosion Control/Water
Control/Construction Sequence
Drawings for Permitting

Drawing Name:
Wave Construction Sequence 2

Revisions:
0

Drawn By:
Riley Adams

Checked By:
Scott Shipley

Date:
October 10, 2022

Status:
Issued For Permitting

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NOT FOR CONSTRUCTION

Scale:
1" = 40'

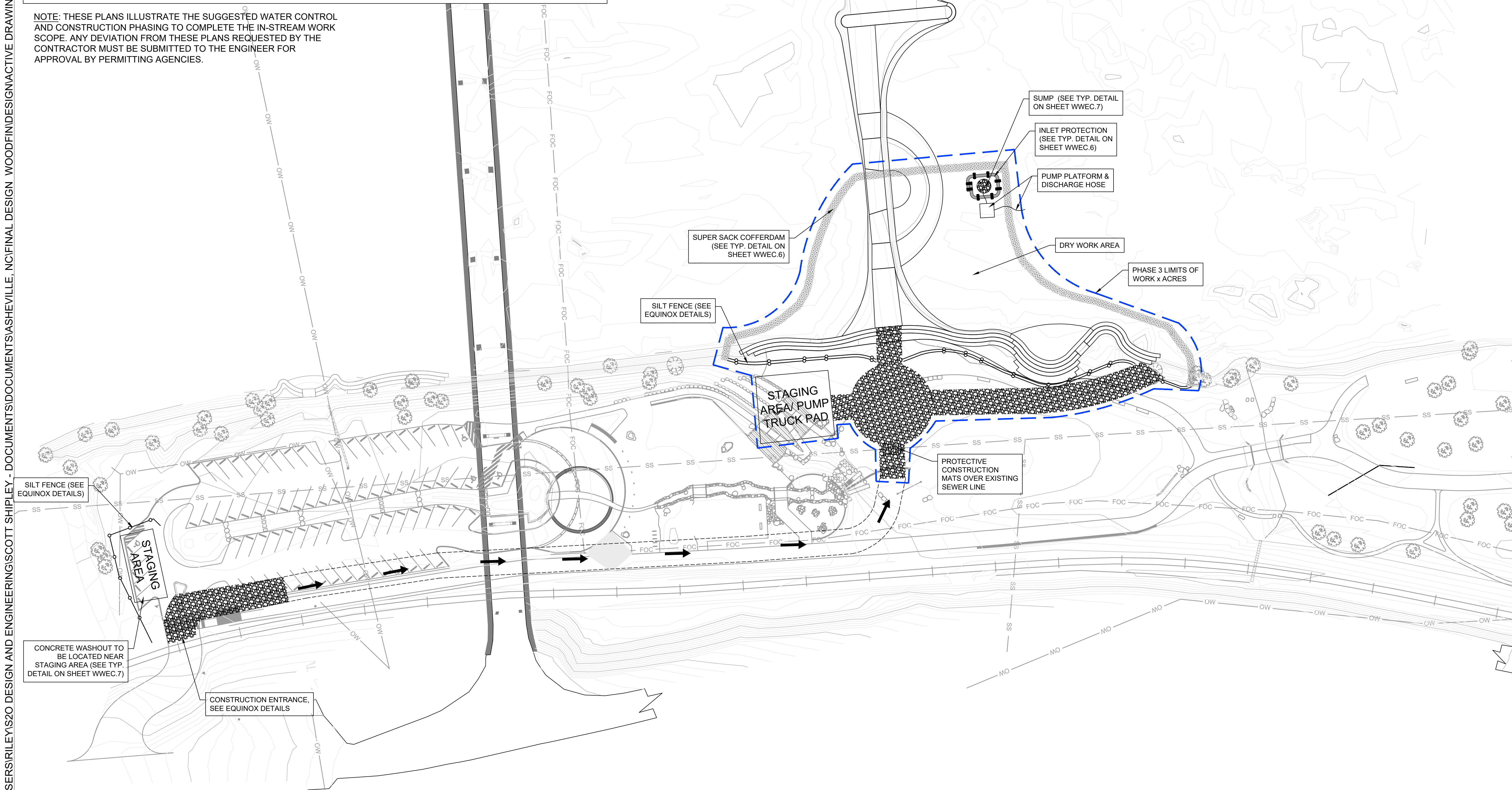
Sheet:
WVEC.2

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EROSION CONTROL SEQUENCE
PHASE 3
PROCEED AS FOLLOWS:

1. INSTALL COFFERDAM FOR WATER CONTROL SURROUNDING RIVER RIGHT WORK ZONE USING SUPER SACK CONSTRUCTION DETAIL PROVIDED IN WHITEWATER PLAN SET. SHIFT THE EXISTING SUPER SACK WALL AT THE MEDIUM FLOW PLATE OVER TO THE LOW FLOW SLOT SO THAT THE REMAINDER OF THE WAVE STRUCTURE CAN BE COMPLETED. SUPER SACKS TO BE FILLED WITH GRAVEL OR SMALL COBBLE BASED ON CONTRACTOR PREFERENCE.
2. ALLOW WATER WITHIN ENCLOSED WORK AREA TO SETTLE PRIOR TO PRELIMINARY PUMP DOWN OF WORK AREA.
3. INSTALL SUMP IN LOW CORNER OF CLOSED OFF WORK ZONE AND INSTALL INLET PROTECTION MEASURES SHOWN IN WHITEWATER PLAN SET DETAILS. INSTALL ADDITIONAL MEASURES SUCH AS SILT FENCE OR SETTLING PONDS AS NEEDED TO MINIMIZE TURBIDITY OF WATER PUMPED BACK INTO THE RIVER FROM THE SUMP.
4. ONCE WATER CONTROL AND EROSION CONTROL MEASURES ARE IN PLACE AND FUNCTIONING PROPERLY, COMPLETE CONSTRUCTION OF THE RIVER RIGHT PORTION OF THE WAVE STRUCTURE IN THE DRY FROM THE RIVER RIGHT MEDIUM FLOW PLATE TO THE TOP OF BANK INCLUDING BOULDER TERRACING, BEACH AND TAKEOUT AREA.
5. ENSURE THAT NO CEMENTITIOUS MATERIAL ENTERS THE WATERWAY DURING GROUTING OPERATIONS FOR THE WAVE STRUCTURE.
6. UPON COMPLETION OF THE CENTRAL PORTION OF THE WAVE STRUCTURE INSTALLATION AND MIN. 3-DAY GROUT CURE TIME PER PROJECT SPECIFICATIONS, COMPLETE FINAL CHANNEL GRADING. REMOVE ALL EQUIPMENT AND FINALLY THE SUMP FROM THE WORK ZONE ALLOWING IT TO BACKWATER.
7. REMOVE SUPER SACK COFFER DAM AND ALL MATERIALS FROM THE RIVER.

NOTE: THESE PLANS ILLUSTRATE THE SUGGESTED WATER CONTROL AND CONSTRUCTION PHASING TO COMPLETE THE IN-STREAM WORK SCOPE. ANY DEVIATION FROM THESE PLANS REQUESTED BY THE CONTRACTOR MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY PERMITTING AGENCIES.



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Client:
Town of Woodfin, NC

Project Name:
Woodfin Wave at Riverside Park

Status:
Erosion Control/Water
Control/Construction Sequence
Drawings for Permitting

Drawing Name:
Wave Construction Sequence 3

Revisions:
0

Drawn By:
Riley Adams

Checked By:
Scott Shipley

Date:
October 10, 2022

Status:
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Stamp:

NOT FOR CONSTRUCTION

Scale:

1" = 40'

Sheet:

WWEC.3

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EROSION CONTROL SEQUENCE
PHASE 4

PROCEED AS FOLLOWS:

1. INSTALL EC MEASURES AROUND AREAS TO BE DEMO-ED, INCLUDING SILT FENCE ADJACENT TO PUT-IN WORK AREA.

2. BREAK AND REMOVE HARD SURFACE AS NEEDED TO INSTALL ACCESS TO RIVER.

3. CUT ACCESS ROAD TO BUILD RIVER PUT-IN AREA.

4. CLEAR AND GRUB ONLY AREAS ADJACENT TO WAVE CONSTRUCTION ACCESS.

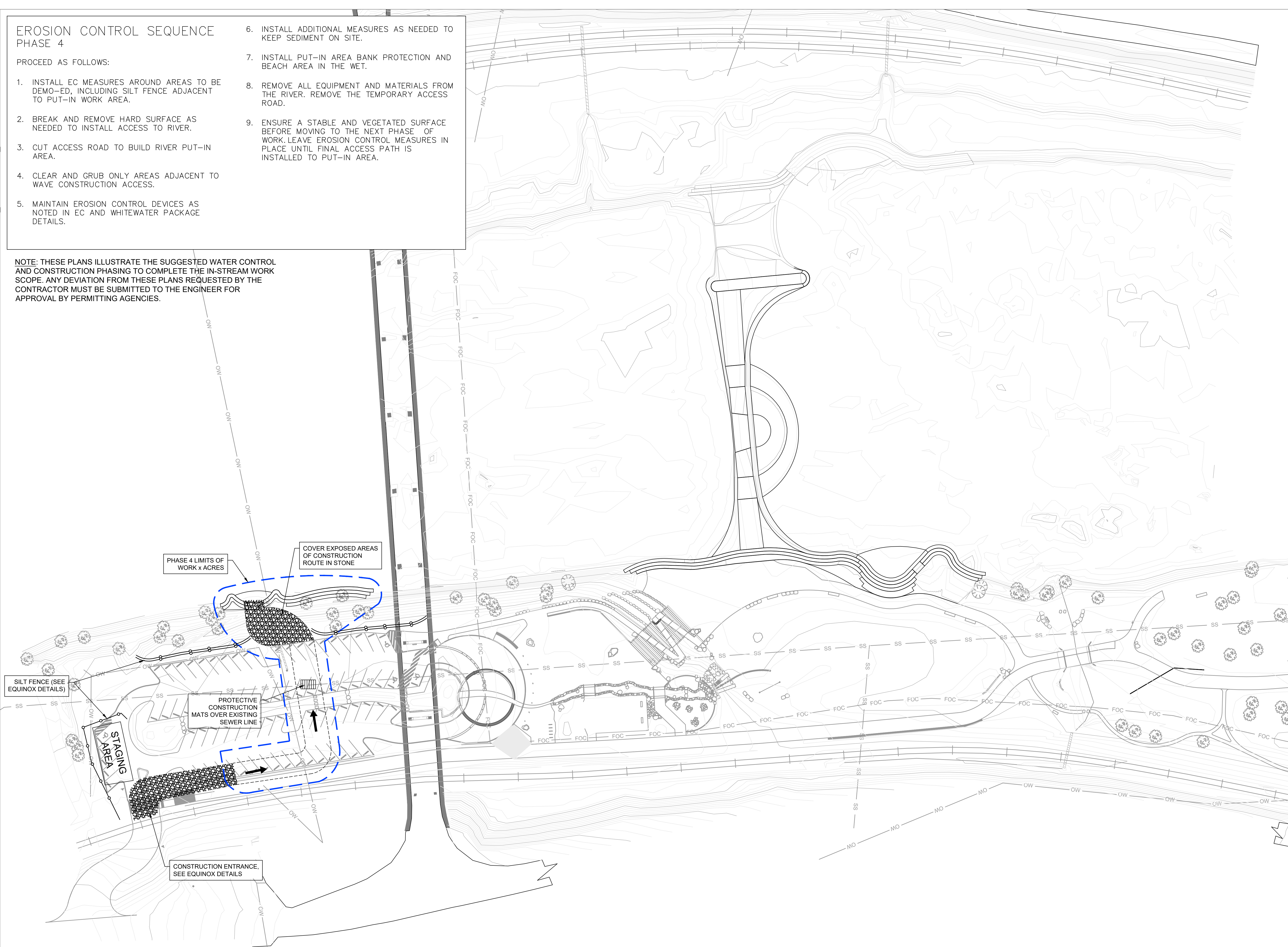
5. MAINTAIN EROSION CONTROL DEVICES AS NOTED IN EC AND WHITEWATER PACKAGE DETAILS.
6. INSTALL ADDITIONAL MEASURES AS NEEDED TO KEEP SEDIMENT ON SITE.

7. INSTALL PUT-IN AREA BANK PROTECTION AND BEACH AREA IN THE WET.

8. REMOVE ALL EQUIPMENT AND MATERIALS FROM THE RIVER. REMOVE THE TEMPORARY ACCESS ROAD.

9. ENSURE A STABLE AND VEGETATED SURFACE BEFORE MOVING TO THE NEXT PHASE OF WORK. LEAVE EROSION CONTROL MEASURES IN PLACE UNTIL FINAL ACCESS PATH IS INSTALLED TO PUT-IN AREA.

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Client:
Town of Woodfin, NC

Project Name:
Woodfin Wave at Riverside Park

Status:
Erosion Control/Water
Control/Construction Sequence
Drawings for Permitting

Drawing Name:
Wave Construction Sequence 4

Revisions:
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Riley Adams

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Scott Shipley

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October 10, 2022

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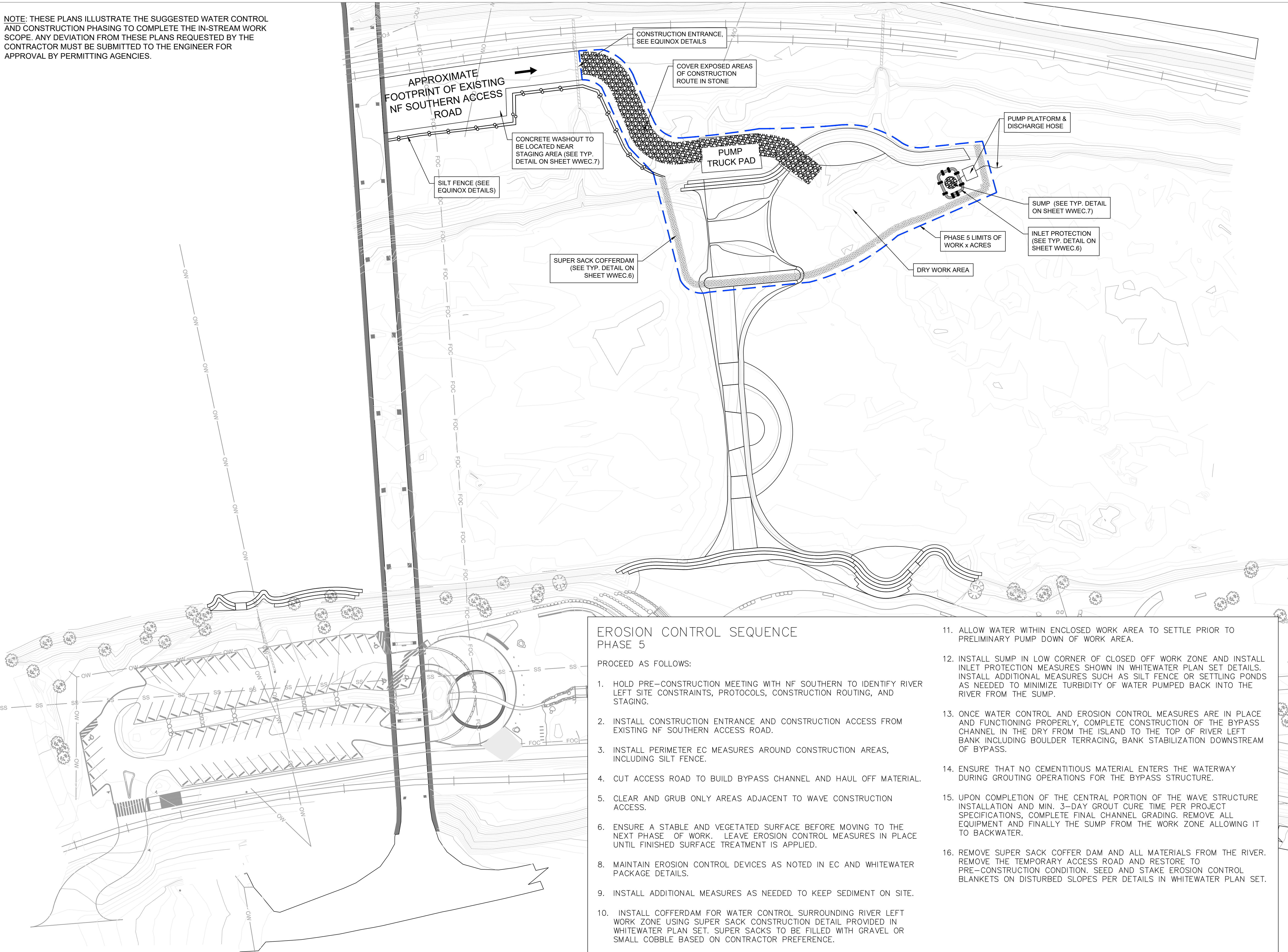
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NOTE: THESE PLANS ILLUSTRATE THE SUGGESTED WATER CONTROL AND CONSTRUCTION PHASING TO COMPLETE THE IN-STREAM WORK SCOPE. ANY DEVIATION FROM THESE PLANS REQUESTED BY THE CONTRACTOR MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY PERMITTING AGENCIES.



EROSION CONTROL SEQUENCE
PHASE 5

PROCEED AS FOLLOWS:

1. HOLD PRE-CONSTRUCTION MEETING WITH NF SOUTHERN TO IDENTIFY RIVER LEFT SITE CONSTRAINTS, PROTOCOLS, CONSTRUCTION ROUTING, AND STAGING.
2. INSTALL CONSTRUCTION ENTRANCE AND CONSTRUCTION ACCESS FROM EXISTING NF SOUTHERN ACCESS ROAD.
3. INSTALL PERIMETER EC MEASURES AROUND CONSTRUCTION AREAS, INCLUDING SILT FENCE.
4. CUT ACCESS ROAD TO BUILD BYPASS CHANNEL AND HAUL OFF MATERIAL.
5. CLEAR AND GRUB ONLY AREAS ADJACENT TO WAVE CONSTRUCTION ACCESS.
6. ENSURE A STABLE AND VEGETATED SURFACE BEFORE MOVING TO THE NEXT PHASE OF WORK. LEAVE EROSION CONTROL MEASURES IN PLACE UNTIL FINISHED SURFACE TREATMENT IS APPLIED.
8. MAINTAIN EROSION CONTROL DEVICES AS NOTED IN EC AND WHITEWATER PACKAGE DETAILS.
9. INSTALL ADDITIONAL MEASURES AS NEEDED TO KEEP SEDIMENT ON SITE.
10. INSTALL COFFERDAM FOR WATER CONTROL SURROUNDING RIVER LEFT WORK ZONE USING SUPER SACK CONSTRUCTION DETAIL PROVIDED IN WHITEWATER PLAN SET. SUPER SACKS TO BE FILLED WITH GRAVEL OR SMALL COBBLE BASED ON CONTRACTOR PREFERENCE.
11. ALLOW WATER WITHIN ENCLOSED WORK AREA TO SETTLE PRIOR TO PRELIMINARY PUMP DOWN OF WORK AREA.
12. INSTALL SUMP IN LOW CORNER OF CLOSED OFF WORK ZONE AND INSTALL INLET PROTECTION MEASURES SHOWN IN WHITEWATER PLAN SET DETAILS. INSTALL ADDITIONAL MEASURES SUCH AS SILT FENCE OR SETTLING PONDS AS NEEDED TO MINIMIZE TURBIDITY OF WATER PUMPED BACK INTO THE RIVER FROM THE SUMP.
13. ONCE WATER CONTROL AND EROSION CONTROL MEASURES ARE IN PLACE AND FUNCTIONING PROPERLY, COMPLETE CONSTRUCTION OF THE BYPASS CHANNEL IN THE DRY FROM THE ISLAND TO THE TOP OF RIVER LEFT BANK INCLUDING BOULDER TERRACING, BANK STABILIZATION DOWNSTREAM OF BYPASS.
14. ENSURE THAT NO CEMENTITIOUS MATERIAL ENTERS THE WATERWAY DURING GROUTING OPERATIONS FOR THE BYPASS STRUCTURE.
15. UPON COMPLETION OF THE CENTRAL PORTION OF THE WAVE STRUCTURE INSTALLATION AND MIN. 3-DAY GROUT CURE TIME PER PROJECT SPECIFICATIONS, COMPLETE FINAL CHANNEL GRADING. REMOVE ALL EQUIPMENT AND FINALLY THE SUMP FROM THE WORK ZONE ALLOWING IT TO BACKWATER.
16. REMOVE SUPER SACK COFFER DAM AND ALL MATERIALS FROM THE RIVER. REMOVE THE TEMPORARY ACCESS ROAD AND RESTORE TO PRE-CONSTRUCTION CONDITION. SEED AND STAKE EROSION CONTROL BLANKETS ON DISTURBED SLOPES PER DETAILS IN WHITEWATER PLAN SET.



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Client:
Town of Woodfin, NC

Project Name:
Woodfin Wave at Riverside Park

Status:
Erosion Control/Water
Control/Construction Sequence
Drawings for Permitting

Drawing Name:
Wave Construction Sequence 5

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Drawn By:
Riley Adams

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Scott Shipley

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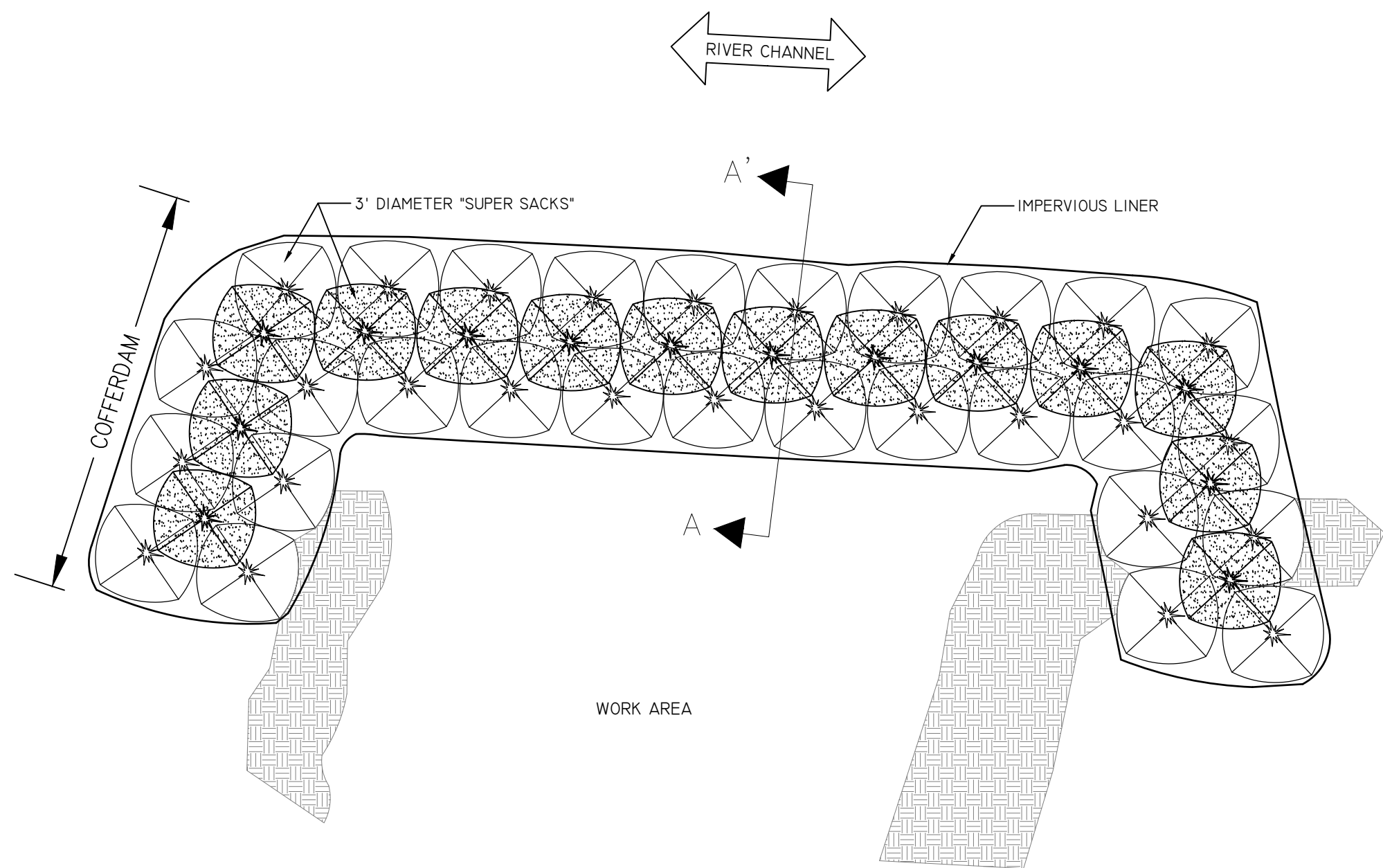
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WWEC.5

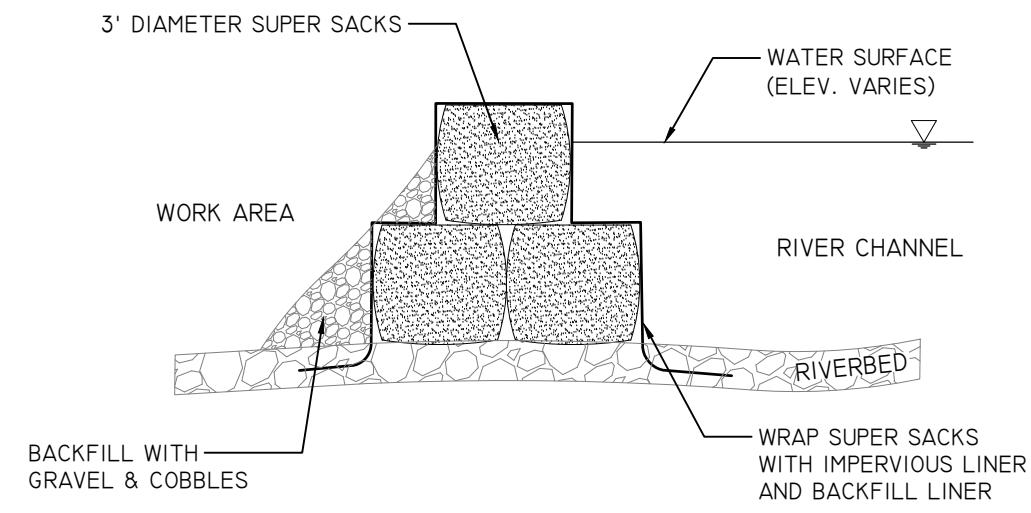
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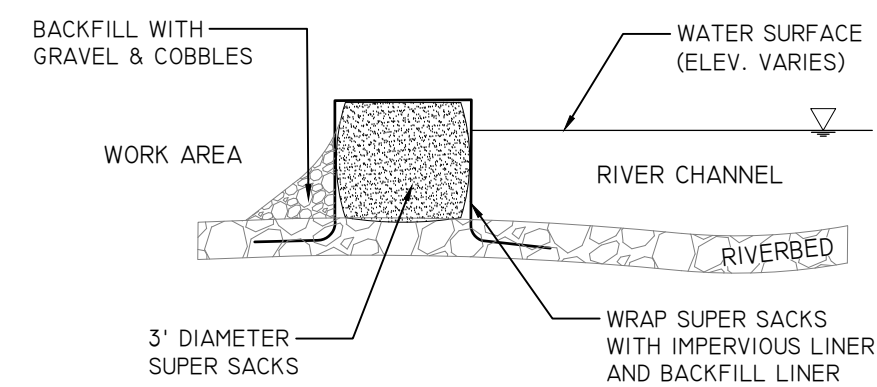
COFFERDAM NOTES:

- (1) WRAP "SUPER SACKS" WITH IMPERVIOUS PLASTIC LINER TO PREVENT SEEPAGE.
- (2) BACKFILL THE DOWNSTREAM SIDE OF THE COFFERDAM WITH NATIVE ADJACENT ALLUVIUM.
- (3) USE "SUPER SACKS" AS A BUTTRESS AS REQUIRED.

"SUPER SACK" COFFERDAM TYPICAL DETAILS
PLAN SCALE: NTS



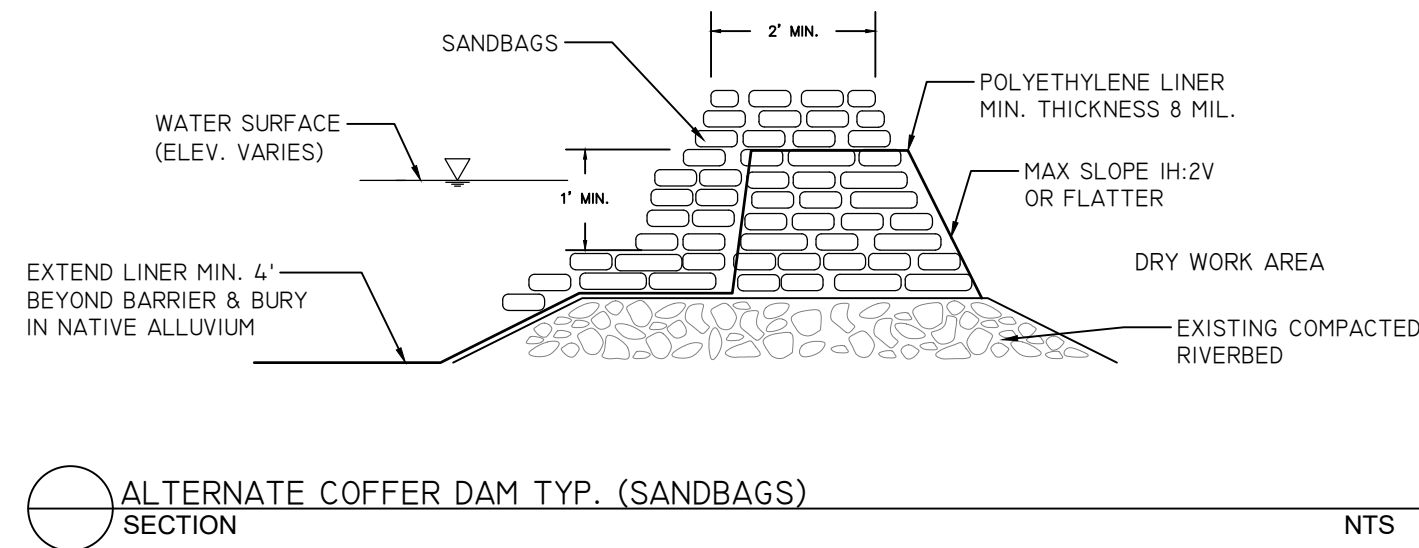
"SUPER SACK" COFFERDAM DOUBLE STACK
SECTION SCALE: NTS



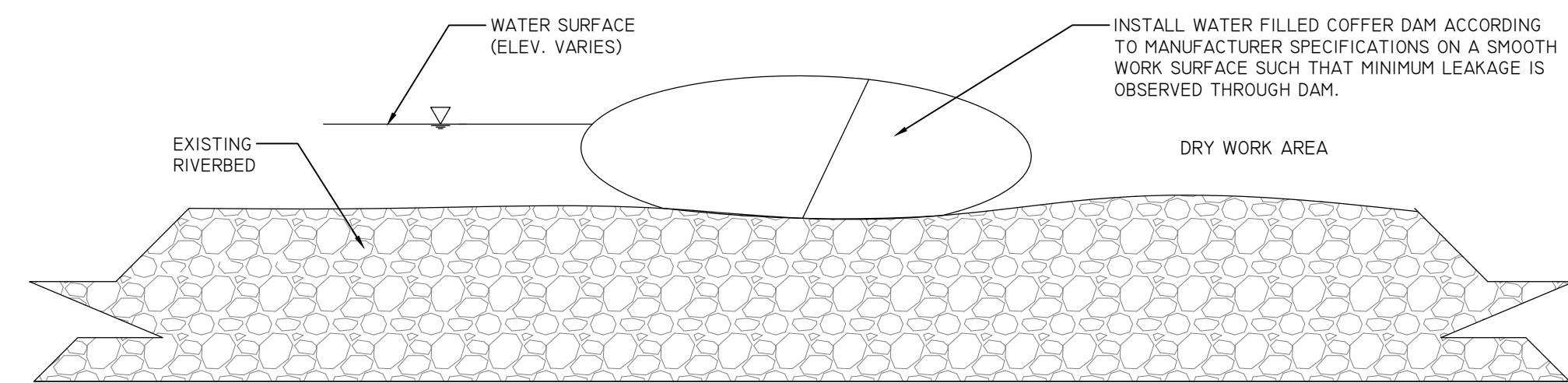
"SUPER SACK" COFFERDAM SINGLE STACK
SECTION SCALE: NTS

GENERAL EROSION & SEDIMENT CONTROL NOTES:

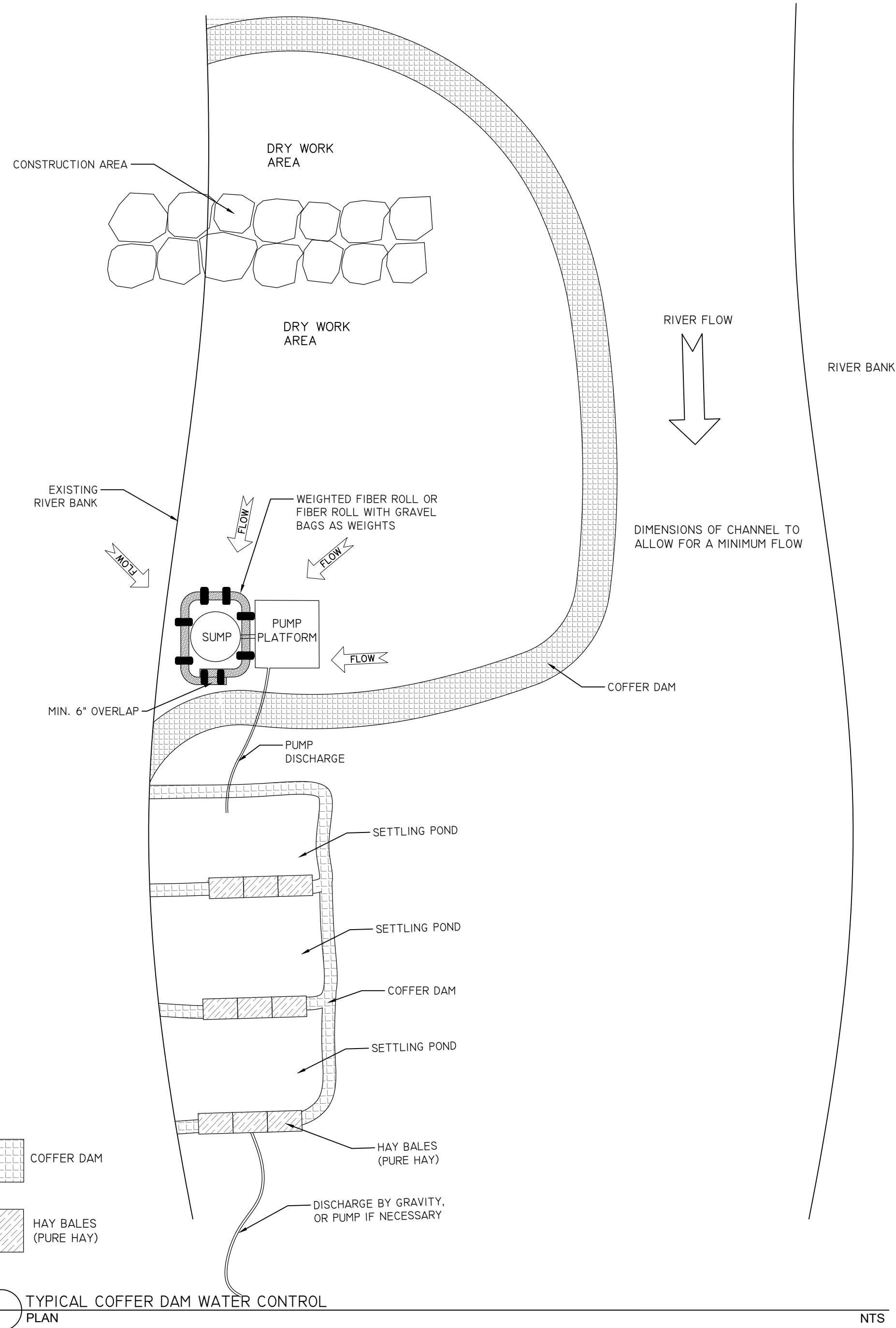
- (1) THE IMPLEMENTATION OF EROSION AND SEDIMENT CONTROL MEASURES AND BEST MANAGEMENT PRACTICES INCLUDING CONSTRUCTION, MAINTENANCE, REPLACEMENT AND UPGRADING ARE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED.
- (2) THE DETAILS SHOWN ON THIS SHEET ARE AN EXAMPLE OF ACCEPTABLE METHODS TO USE DURING CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING AND SUBMITTING A COFFERDAM PLAN TO INCLUDE SUFFICIENT DETAIL OF MEANS AND METHODS SATISFACTORILY MEETING THE PROJECT SPECIFICATIONS AND PERMIT REQUIREMENTS. COFFERDAMS MAY CONSIST OF OTHER METHODS INCLUDING (BUT NOT LIMITED TO) SECLUSION FENCING, SAND BAGS, BULK BAGS, SUPER SACKS, SHEET PILE AND INFLATABLE BLADDERS. COFFERDAMS SHALL INCLUDE PLASTING LINER OR FINE MESH SILT FENCE TO REDUCE TURBIDITY AND FINES FROM ENTERING THE FREE FLOWING PORTION OF LIVE WATER.
- (3) ALL PUMP INTAKES SHALL BE SCREENED FOR FISH PROTECTION AS REQUIRED BY REGULATORY AGENCIES.
- (4) DEWATERING PUMP DISCHARGE FROM WITHIN COFFERDAM WORK AREAS SHALL BE RELEASED ONTO FLOODPLAIN AREAS AWAY FROM WETLANDS AND CONSTRUCTION ACTIVITIES. DISCHARGE SHALL NOT CAUSE EROSION OF TOPSOIL AND SHALL SHEET FLOW OVER THE FLOODPLAIN BEFORE RETURNING TO LIVE WATER DOWNSTREAM OF THE WORK AREA. ALL RETURN FLOWS MUST MEET PERMIT REQUIREMENTS FOR TURBIDITY.
- (5) ALL EARTHWORK AND WOOD STRUCTURES CONSTRUCTION WITHIN THE ORDINARY HIGH CHANNEL SHALL CONFORM TO WATER QUALITY STANDARDS ESTABLISHED BY THE REGULATORY AGENCY PERMITS FOR THIS PROJECT.



ALTERNATE COFFER DAM TYP. (SANDBAGS)
SECTION NTS



ALTERNATE COFFER DAM TYP. WATER-FILLED BLADDER
SECTION NTS



COFFER DAM
HAY BALES (PURE HAY)

TYPICAL COFFER DAM WATER CONTROL
PLAN NTS



S₂O Design and Engineering

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Client:
Town of Woodfin, NC

Project Name:
Woodfin Wave at Riverside Park

Status:
Erosion Control/Water
Control/Construction Sequence
Drawings for Permitting

Drawing Name:
Erosion Control Details 1

Revisions:
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Drawn By:
Riley Adams

Checked By:
Scott Shipley

Date:
October 10, 2022

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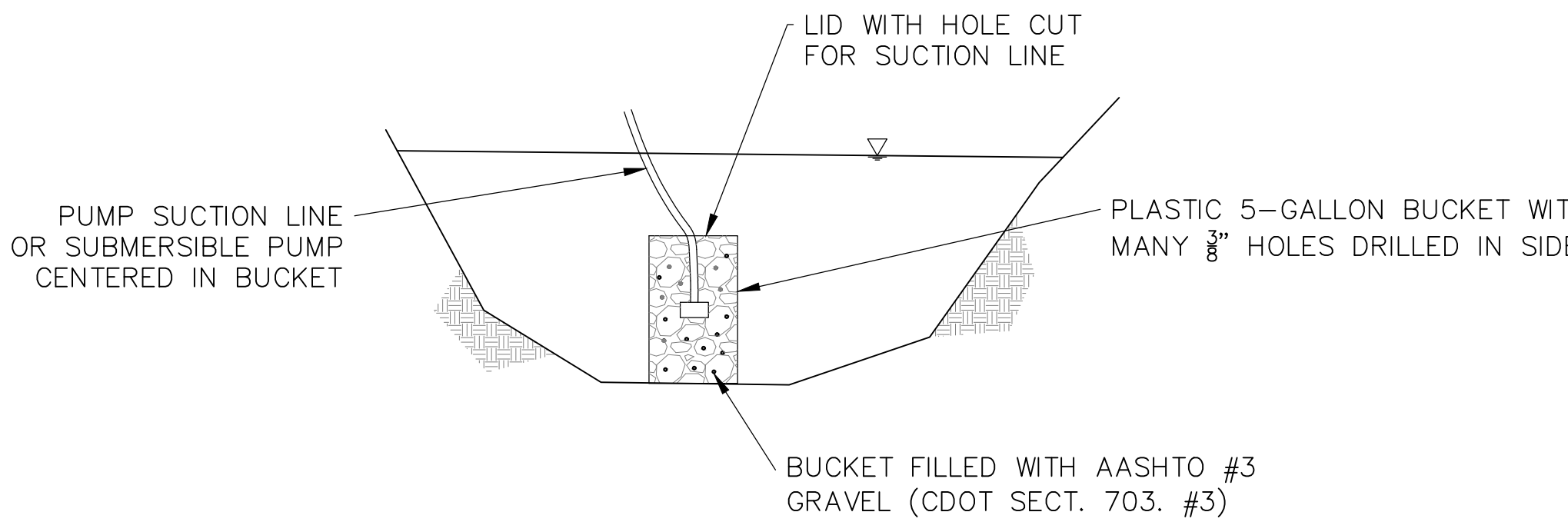
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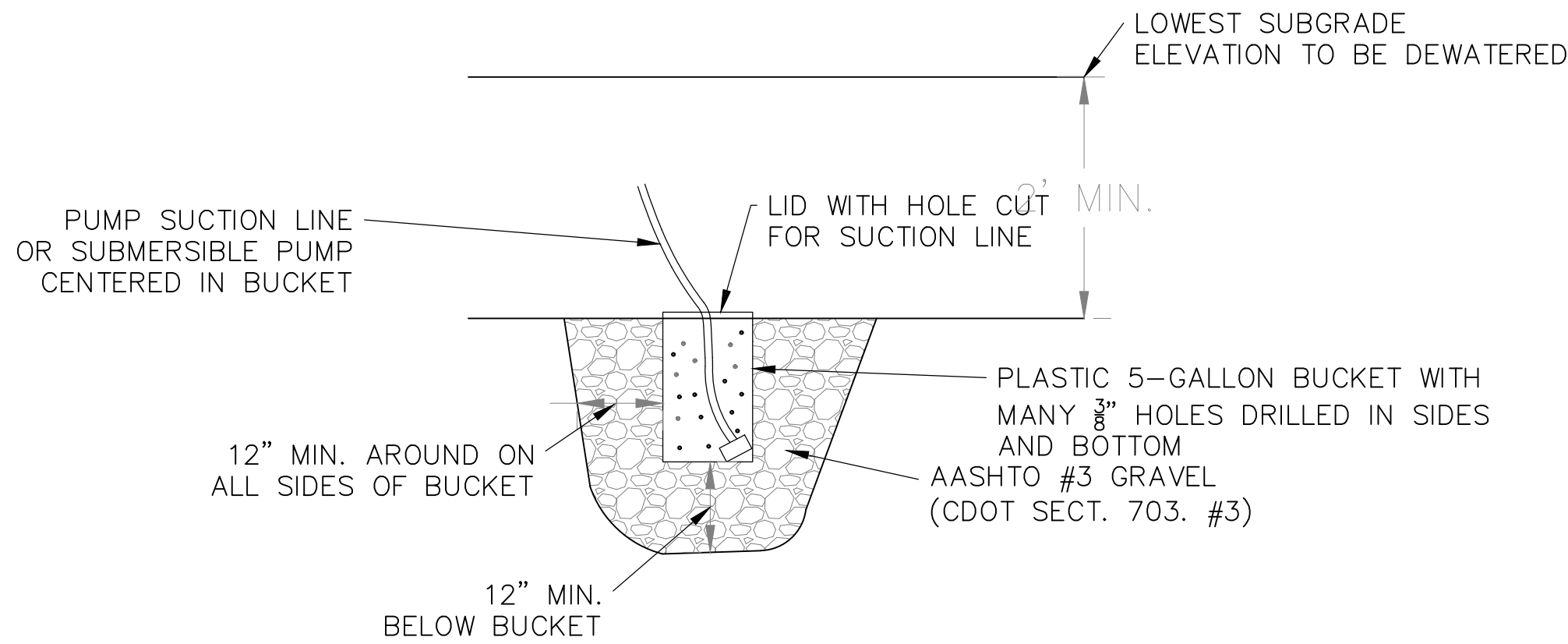
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1" = 40'

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WWEC.6

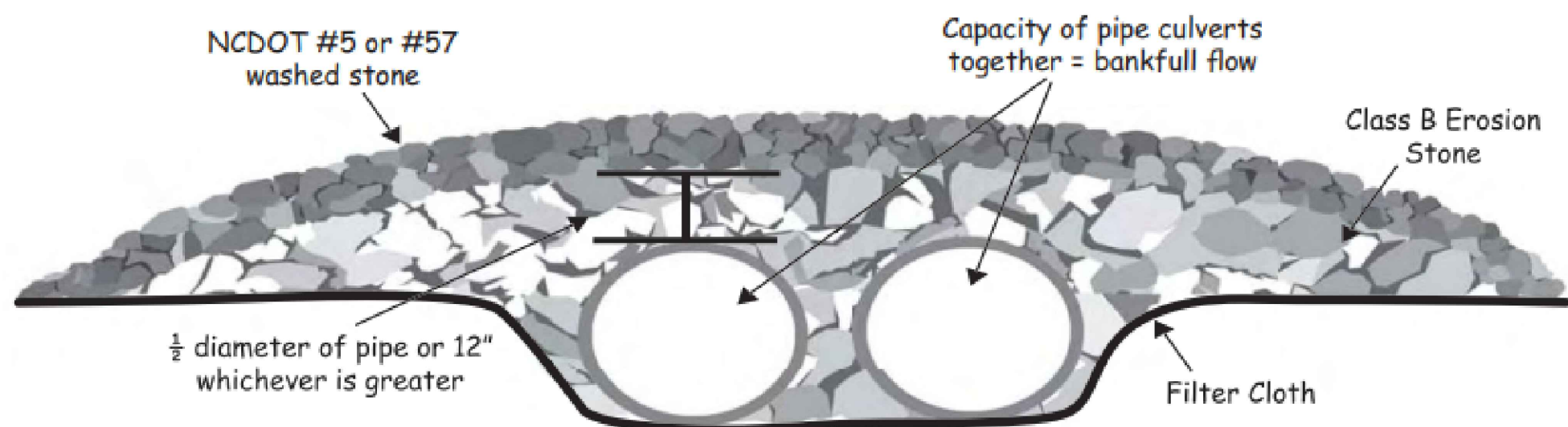
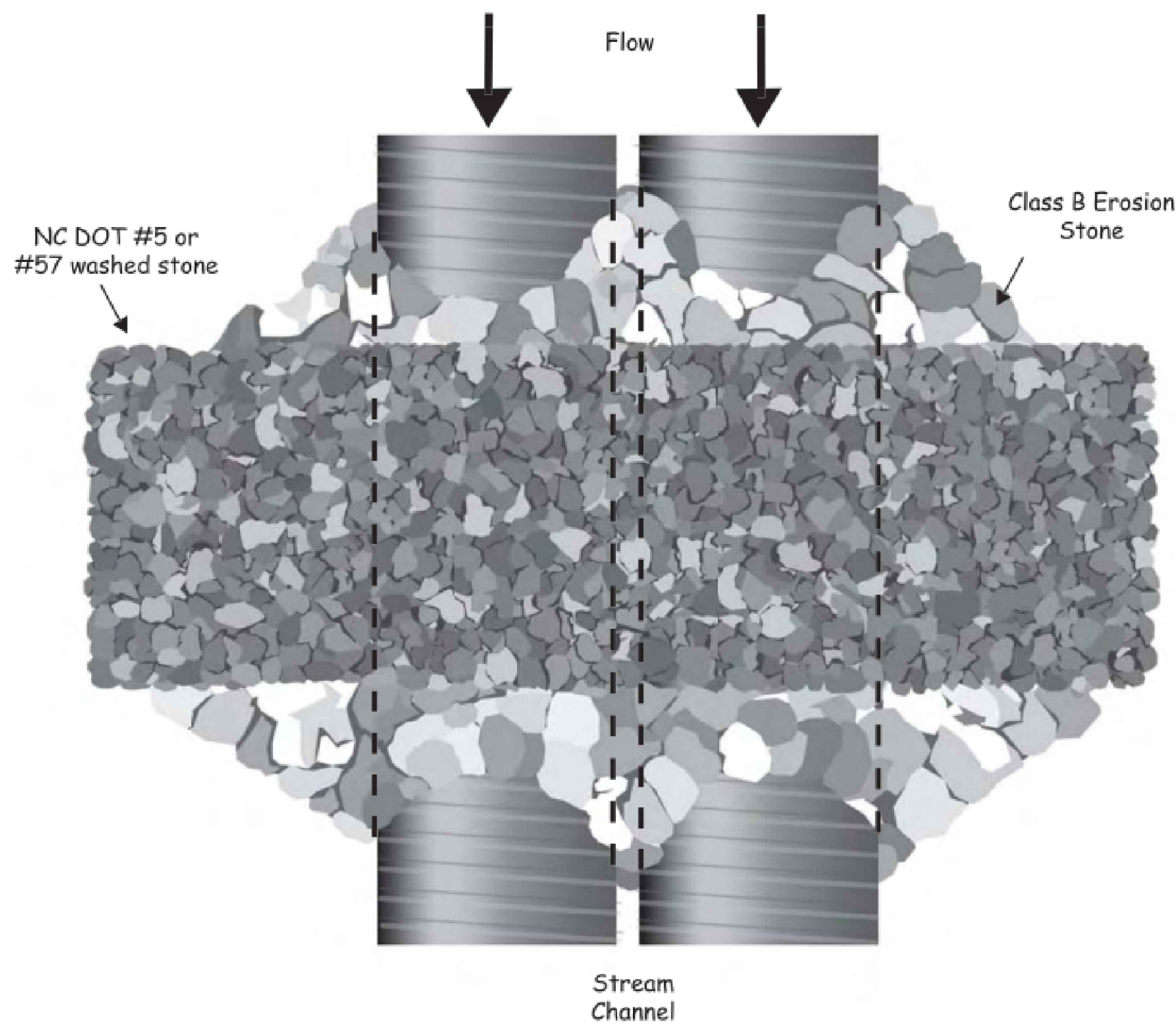
C:\USERS\RILEY\S2O DESIGN AND ENGINEERING\SCOTT SHIPLEY - DOCUMENTS\DOCUMENTS\SASHEVILLE, NC\FINAL DESIGN - WOODFIN\DESIGN\ACTIVE DRAWINGS\20220929_WOODFIN\NC EROSION CONTROL.DWG



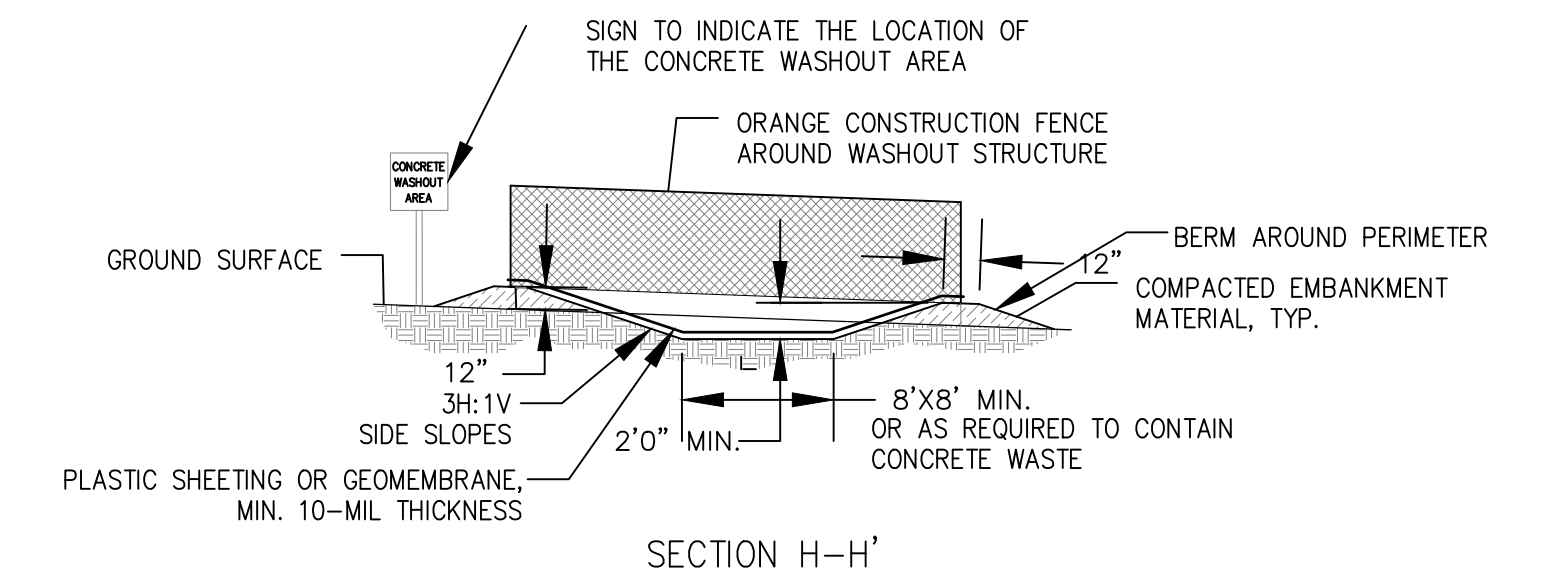
DEWATERING POND ALREADY FILLED WITH WATER
SECTION
NTS



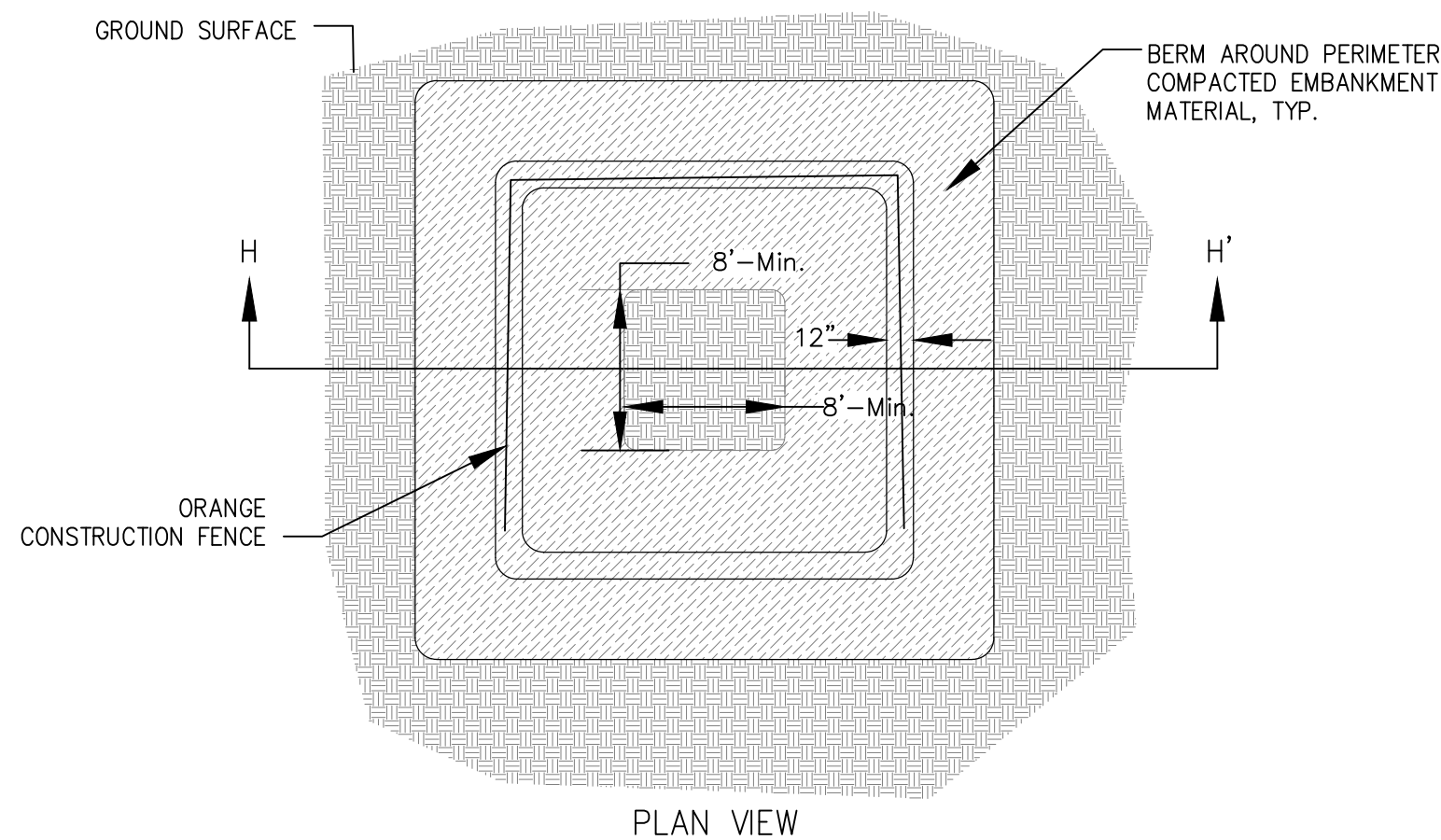
DEWATERING SUMP FOR SUBMERSED PUMP
SECTION
NTS



TEMPORARY STREAM CROSSING/ACCESS ROAD
DETAIL
NTS



SECTION H-H'



- NOTES:
1. CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE; PLACED A MINIMUM 50' FROM STATE WATERS.
 2. VEHICLE TRACKING CONTROL IS REQUIRED AT CONCRETE WASHOUT ENTRANCE IF ACCESS TO CONCRETE WASHOUT AREA IS OFF PAVEMENT.
 3. A PLASTIC SHEETING OR GEOMEMBRANE LINER SHALL BE PLACED. MINIMUM 10-MIL THICKNESS.
 4. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND/OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR WASTE CONCRETE.
 5. WASTE MATERIAL FROM CONCRETE WASHOUT OPERATIONS MUST BE REMOVED AND LEGALLY DISPOSED OF WHEN IT HAS ACCUMULATED TWO-THIRDS OF THE WET STORAGE CAPACITY OF THE STRUCTURE AND AT THE END OF CONSTRUCTION.
 6. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, THE DISTURBED AREA SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER ACCEPTED BY THE CLIENT.
 7. NO STORMWATER RUN-OFF SHALL DRAIN INTO CONCRETE WASHOUT AREA.

CONCRETE WASHOUT AREA
DETAIL
NTS



S₂O Design and Engineering

Scott Shipley, P.E.
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Lyons CO, 80540,
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(303) 819-3985

Client:
Town of Woodfin, NC

Project Name:
Woodfin Wave at Riverside Park

Status:
Erosion Control/Water
Control/Construction Sequence
Drawings for Permitting

Drawing Name:
Erosion Control Details 2

Revisions:
0

Drawn By:
Riley Adams

Checked By:
Scott Shipley

Date:
October 10, 2022

Status:
Issued For Permitting

Stamp:

NOT FOR CONSTRUCTION

Scale:
1" = 40'

Sheet:
WWEC.7