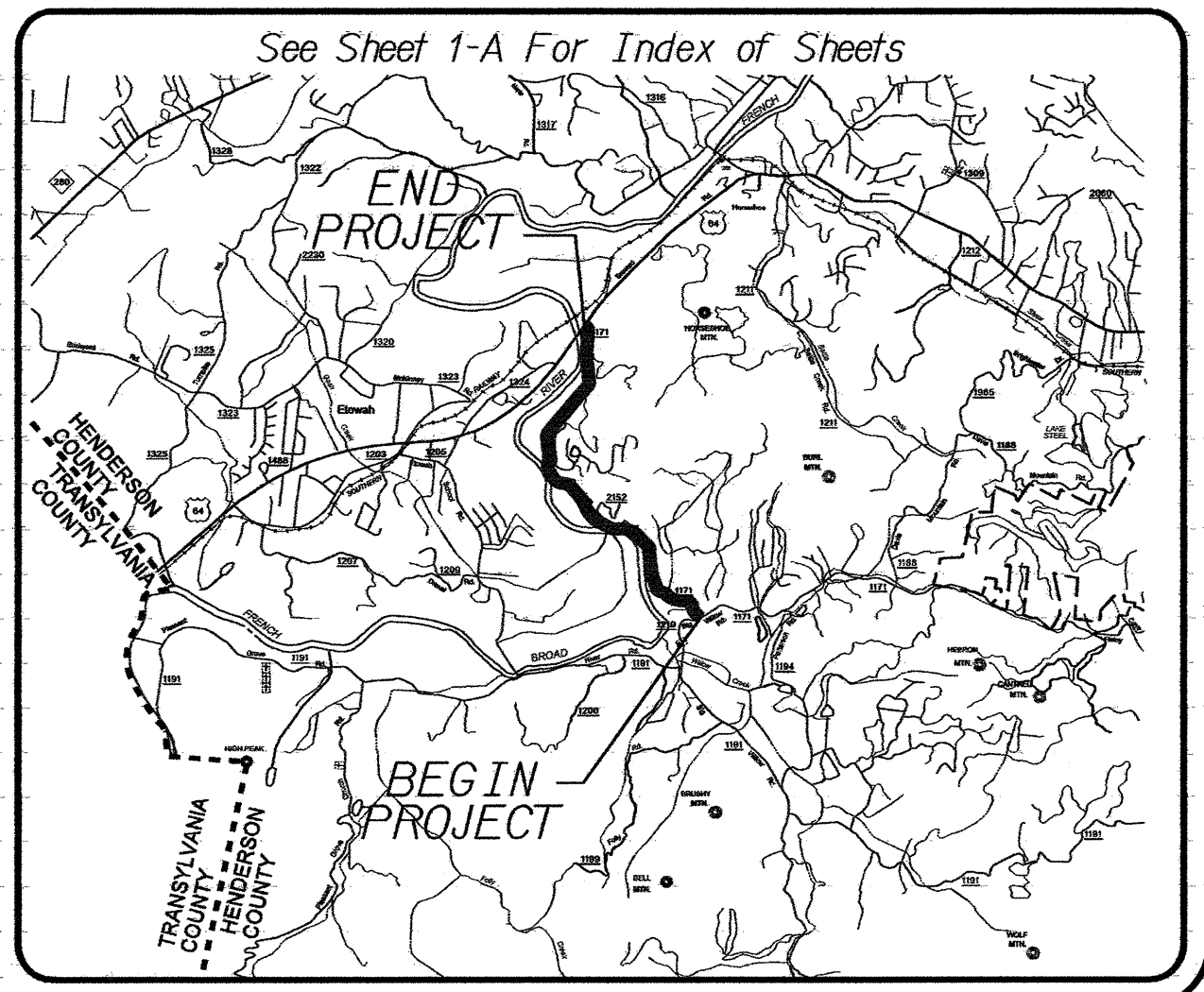
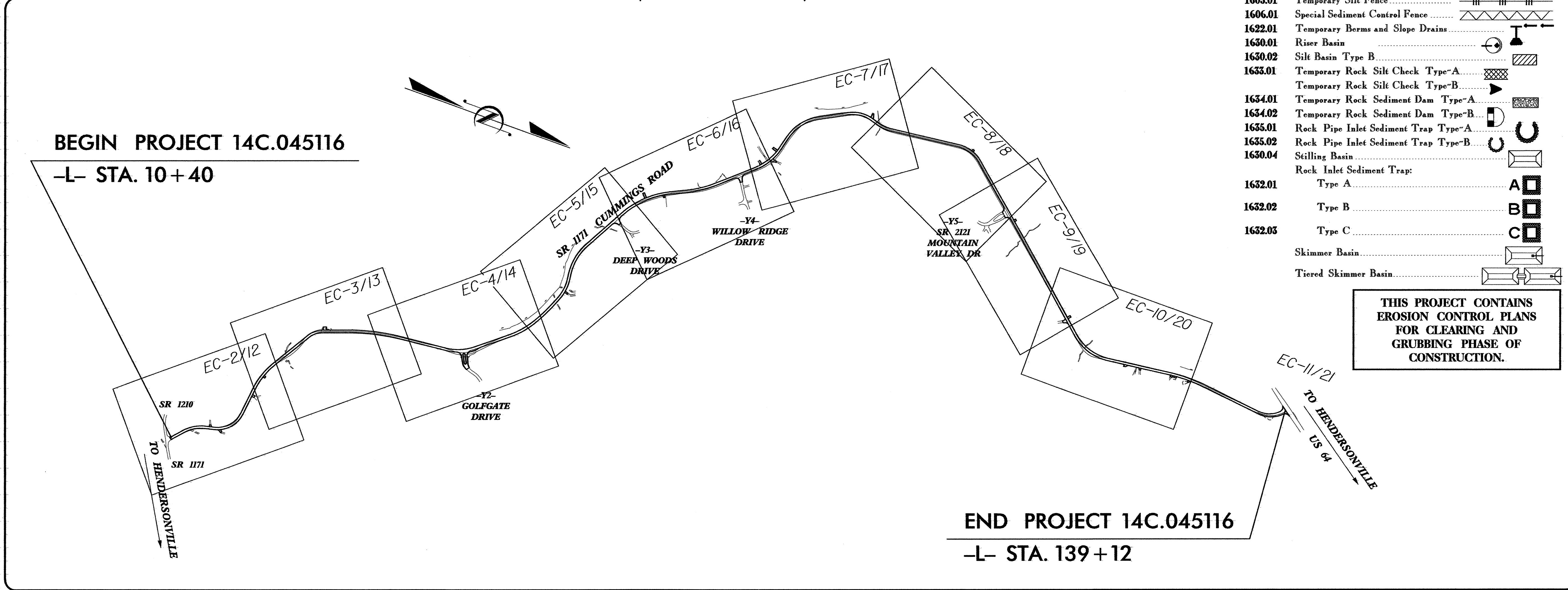


PROJECT: 14C.045116



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

**LOCATION: SR 1171 (CUMMINGS ROAD) FROM SR 1210 (BIG WILLOW ROAD)
TO US 64 (BREVARD ROAD)**

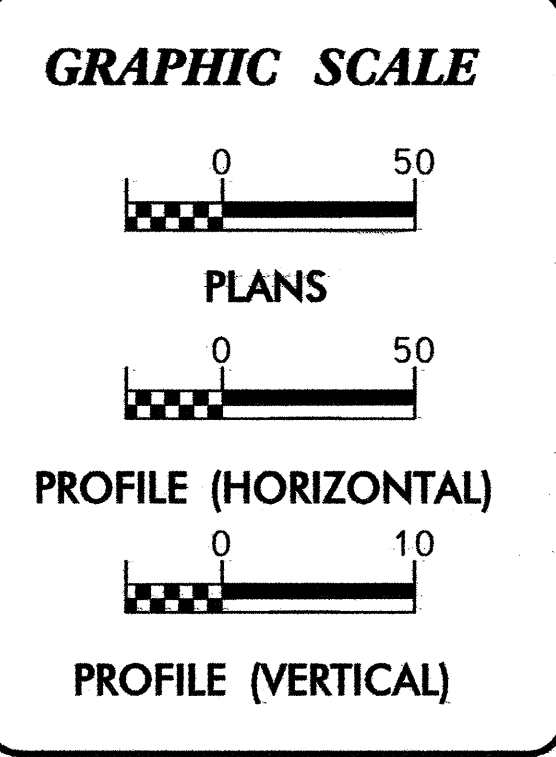


**THIS PROJECT CONTAINS
EROSION CONTROL PLANS
FOR CLEARING AND
GRUBBING PHASE OF
CONSTRUCTION.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	14C.045116	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
14C.045116			

EROSION AND SEDIMENT CONTROL MEASURES

Sed. #	Description	Symbol
	Streambank Reforestation	
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.01	Riser Basin	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-B	
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	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
	Rock Inlet Sediment Trap:	
	Type A	
1632.01	Type B	
1632.02	Type C	
	Skimmer Basin	
	Tiered Skimmer Basin	



ROADSIDE ENVIRONMENTAL
PROJECT ENGINEER

MARK S. ACUFF, PE
ROADSIDE ENVIRONMENTAL ENGINEER

W. HERBERT TURNER, JR., PE
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

R. KEVIN WILLIAMS, PE, PLS, CPESC
ROADSIDE ENVIRONMENTAL PROJECT DESIGN ENGINEER

Prepared In the Office of:
KO & ASSOCIATES, P.C.
5121 Kingdom Way, Suite 100, Raleigh NC, 27607

2006 STANDARD SPECIFICATIONS

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 July 18, 2006 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01 Temporary Silt Fence	1630.06 Special Stilling Basin
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	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.05 Temporary Diversion	1635.02 Rock Pipe Inlet Sediment Trap Type B

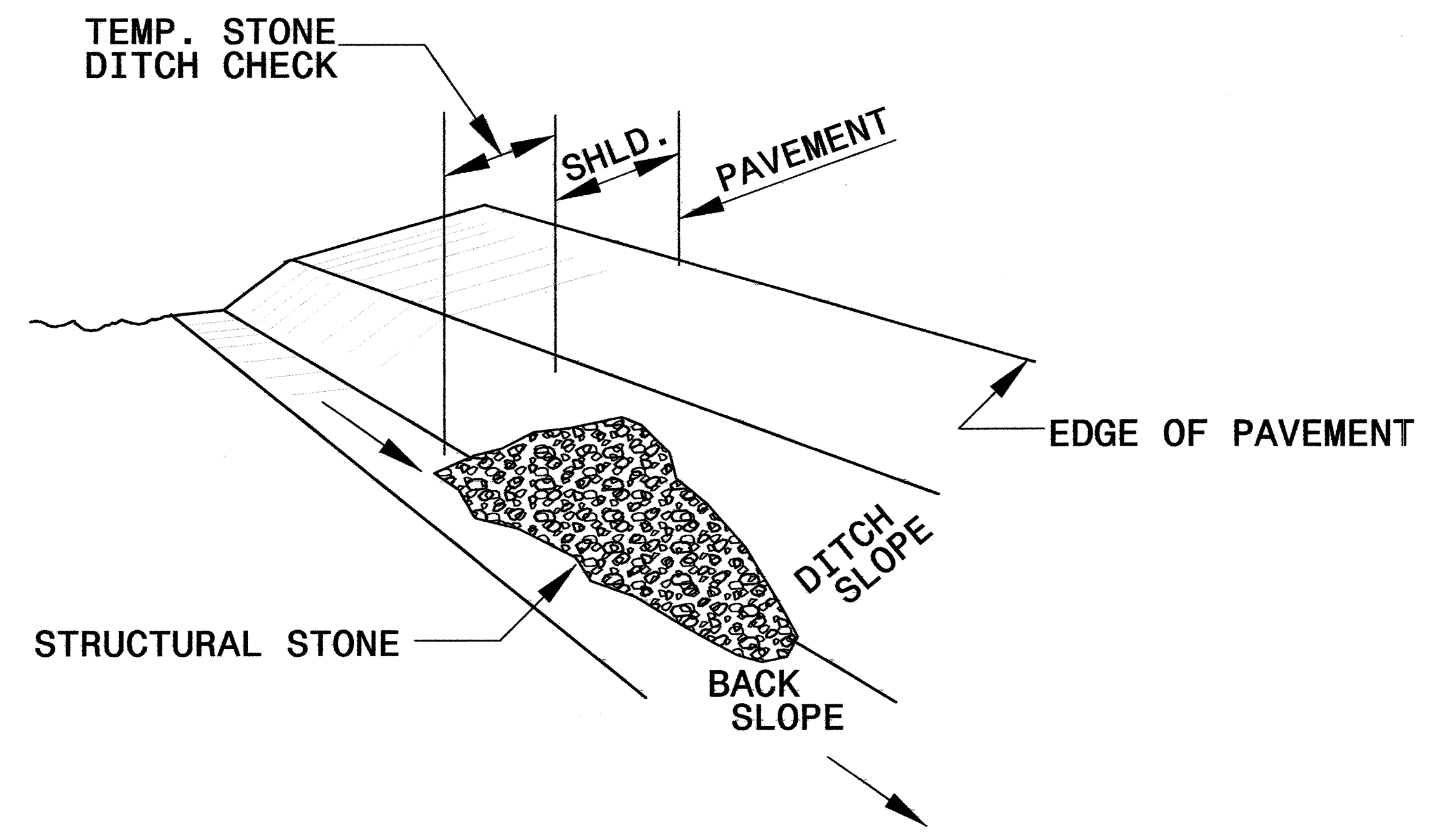
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5/14/99

3/10/2008
R:\Hydro\Utilities\vdgn\Erosion Control\CUMMINGS.ec.1a.dgn
KO & Associates, P.C.

PROJECT REFERENCE NO. 14C.045116	SHEET NO. EC-1A
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

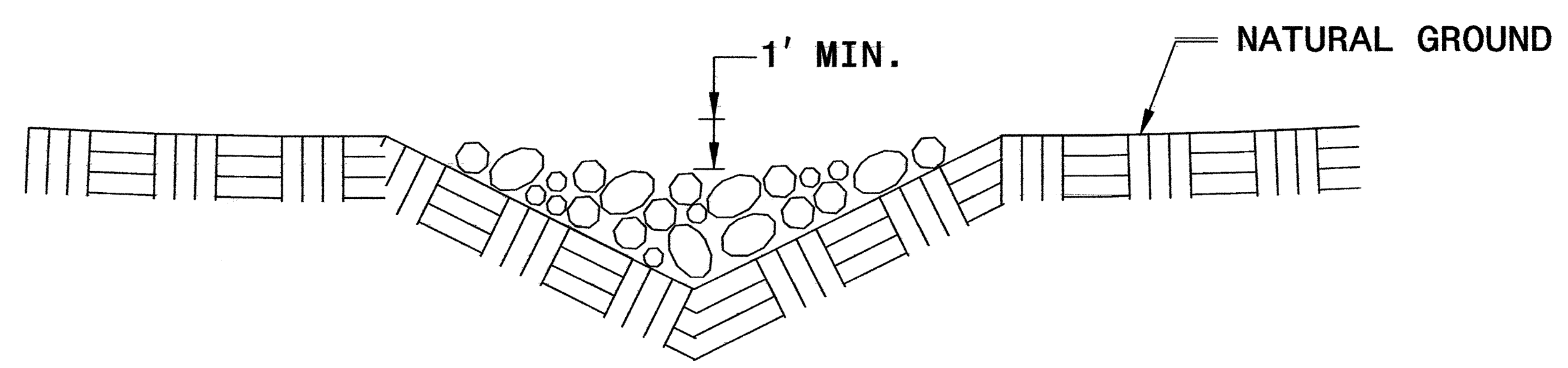


ISOMETRIC VIEW

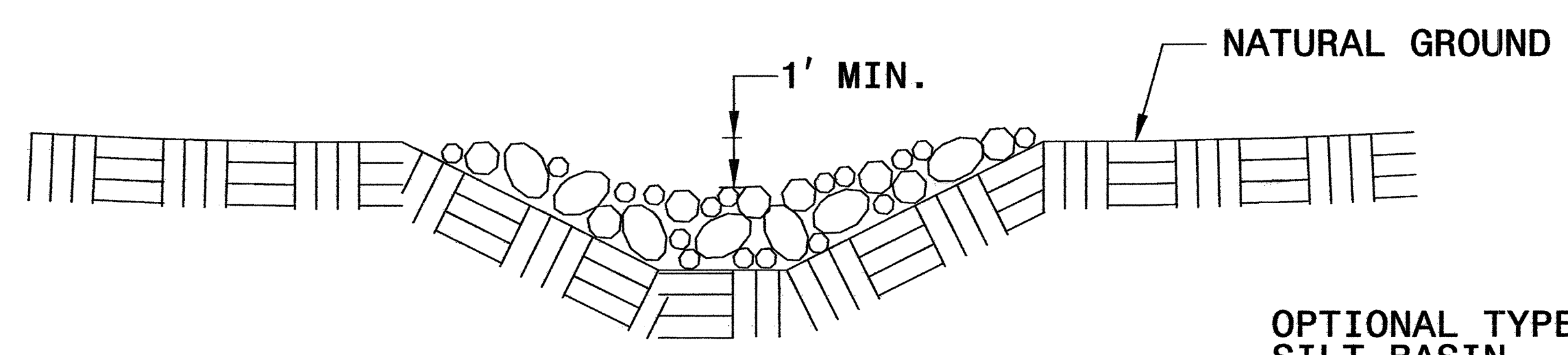
NOTES:

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

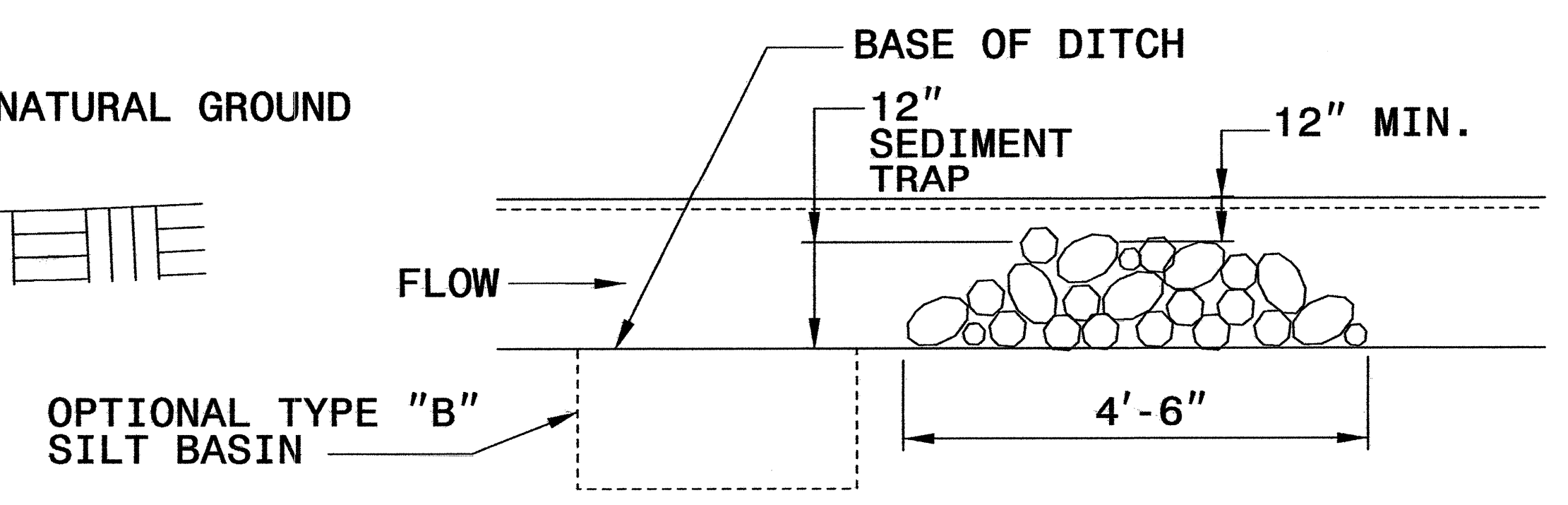
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH



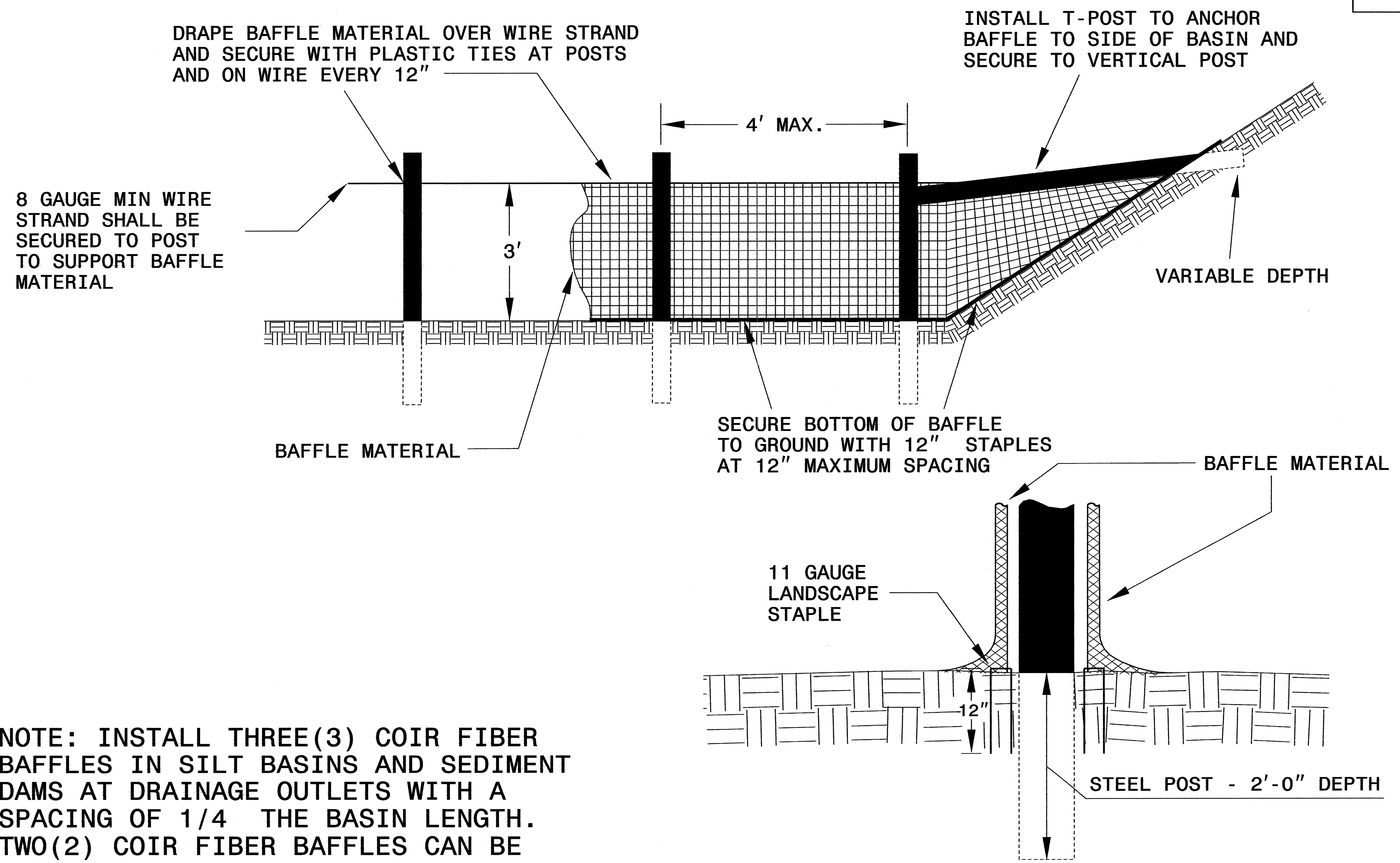
ELEVATION VIEW

Plans prepared by:
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 (919) 851-6066

5/14/99

PROJECT REFERENCE NO. 14C.045116	SHEET NO. EC-1B
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

COIR FIBER BAFFLE DETAIL



NOTE: INSTALL THREE (3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF 1/4 THE BASIN LENGTH. TWO (2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 THE BASIN LENGTH.

BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12" LANDSCAPE STAPLES

Plans prepared by:
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 Consulting Engineers
 5121 KINGDOM WAY, SUITE 100
 RALEIGH, N.C. 27607
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PROJECT REFERENCE NO.	SHEET NO.
14C.045116	EC-2/CONST.4
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

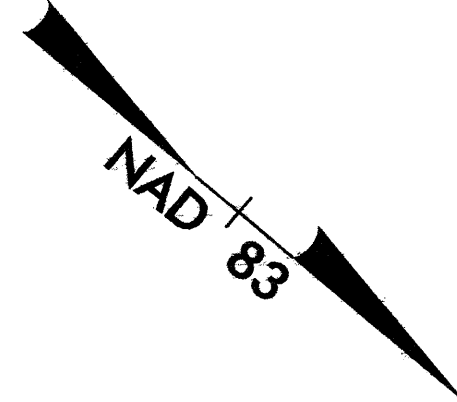
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE: CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE: ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.



-Y-
PI Sta 10+49.07
 $\Delta = 25^{\circ} 36' 58.1''$ (LT)
D = 26' 32" 41.9"
L = 96.50'
T = 49.07'
R = 215.84'

-Y-
PI Sta 11+68.97
 $\Delta = 3^{\circ} 59' 55.0''$ (LT)
D = 2' 45" 36.4"
L = 144.87'
T = 72.46'
R = 2,075.85'

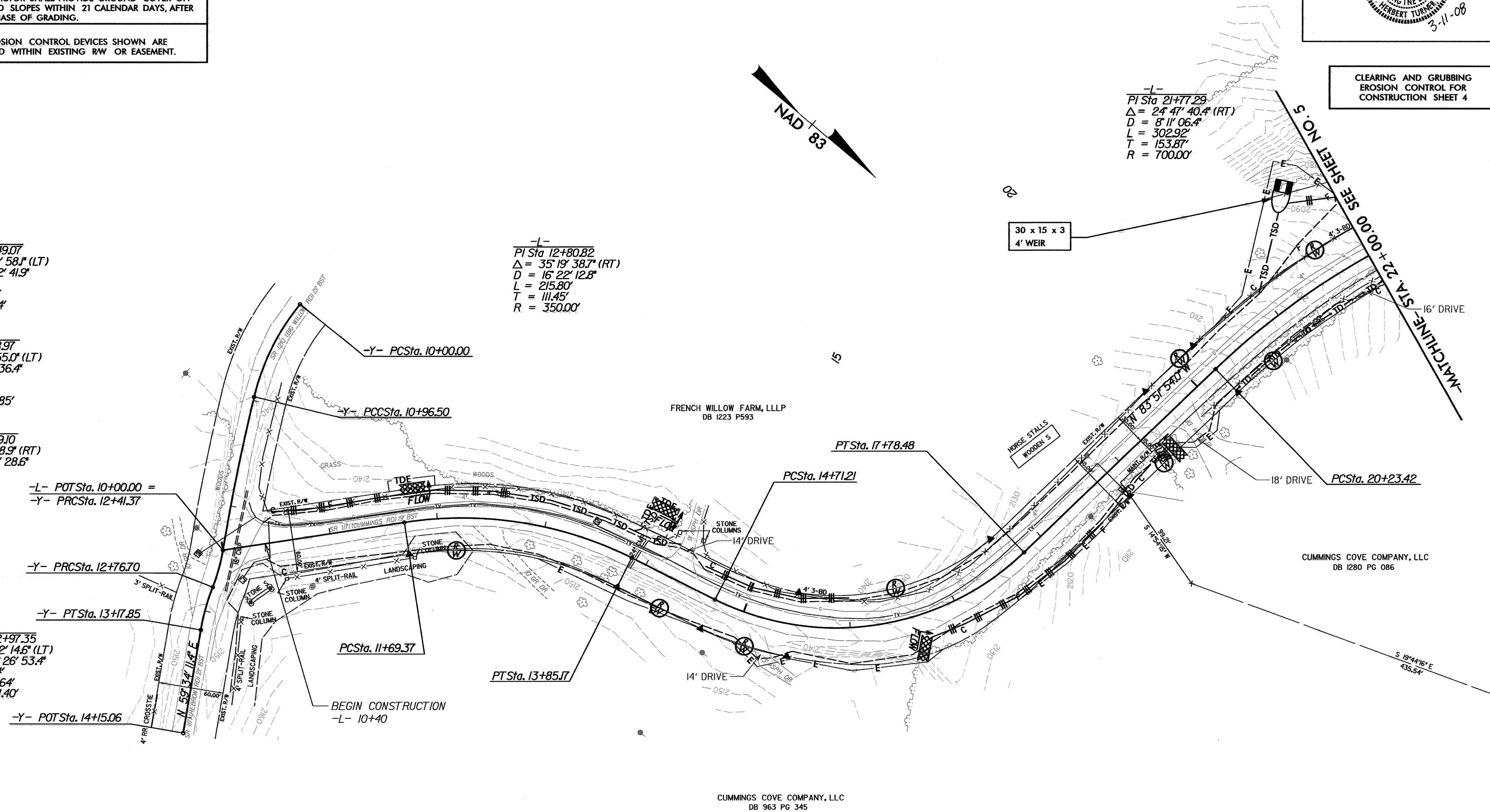
-Y-
PI Sta 12+59.10
 $\Delta = 11^{\circ} 49' 38.9''$ (RT)
D = 33' 28" 28.6"
L = 35.33'
T = 17.73'
R = 171.16'

-Y-
PI Sta 12+97.35
 $\Delta = 11^{\circ} 42' 14.6''$ (LT)
D = 28' 26" 53.4"
L = 41.14'
T = 20.64'
R = 201.40'

-L-
PI Sta 12+80.82
 $\Delta = 35^{\circ} 19' 38.7''$ (RT)
D = 16' 22" 12.8"
L = 215.80'
T = 111.45'
R = 350.00'

-L-
PI Sta 16+47.63
 $\Delta = 70^{\circ} 25' 11.2''$ (LT)
D = 22' 55" 05.9"
L = 307.26'
T = 176.42'
R = 250.00'

-L-
PI Sta 21+77.29
 $\Delta = 24^{\circ} 47' 40.4''$ (RT)
D = 8' 11" 06.4"
L = 302.92'
T = 153.87'
R = 700.00'



FOR -L- PROFILE, SEE SHEET NO. 14
FOR -Y- PROFILE, SEE SHEET NO. 19

Plans prepared by:
KO & ASSOCIATES, P.C.
Consulting Engineers
5121 KINGDOM WAY, SUITE 100
RALEIGH, N.C. 27607
(919) 851-6066

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PROJECT REFERENCE NO.	SHEET NO.
14C.045116	EC-3/CONST.5
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

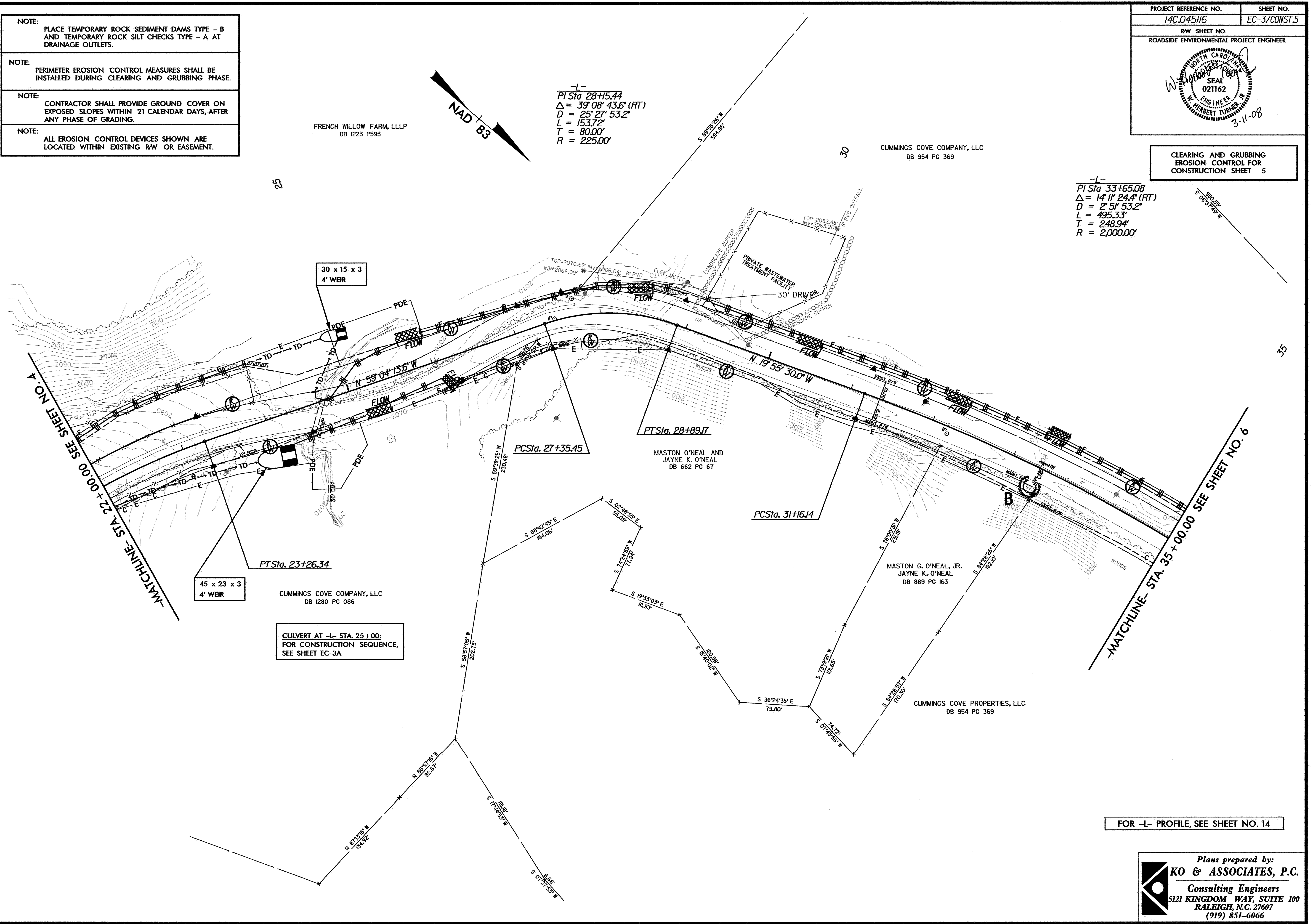
- NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.
- NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.
- NOTE: CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.
- NOTE: ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.

FRENCH WILLOW FARM, LLLP
DB 1223 P593

CUMMINGS COVE COMPANY, LLC
DB 954 PG 369

-L-
PI Sta 33+65.08
 $\Delta = 14' 11" 24.4" (RT)$
 $D = 2' 51' 53.2"$
 $L = 495.33'$
 $T = 248.94'$
 $R = 2,000.00'$

-L-
PI Sta 28+15.44
 $\Delta = 39' 08' 43.6" (RT)$
 $D = 25' 27' 53.2"$
 $L = 153.72'$
 $T = 80.00'$
 $R = 225.00'$



-MATCHLINE- STA 22+00.00 SEE SHEET NO. 4

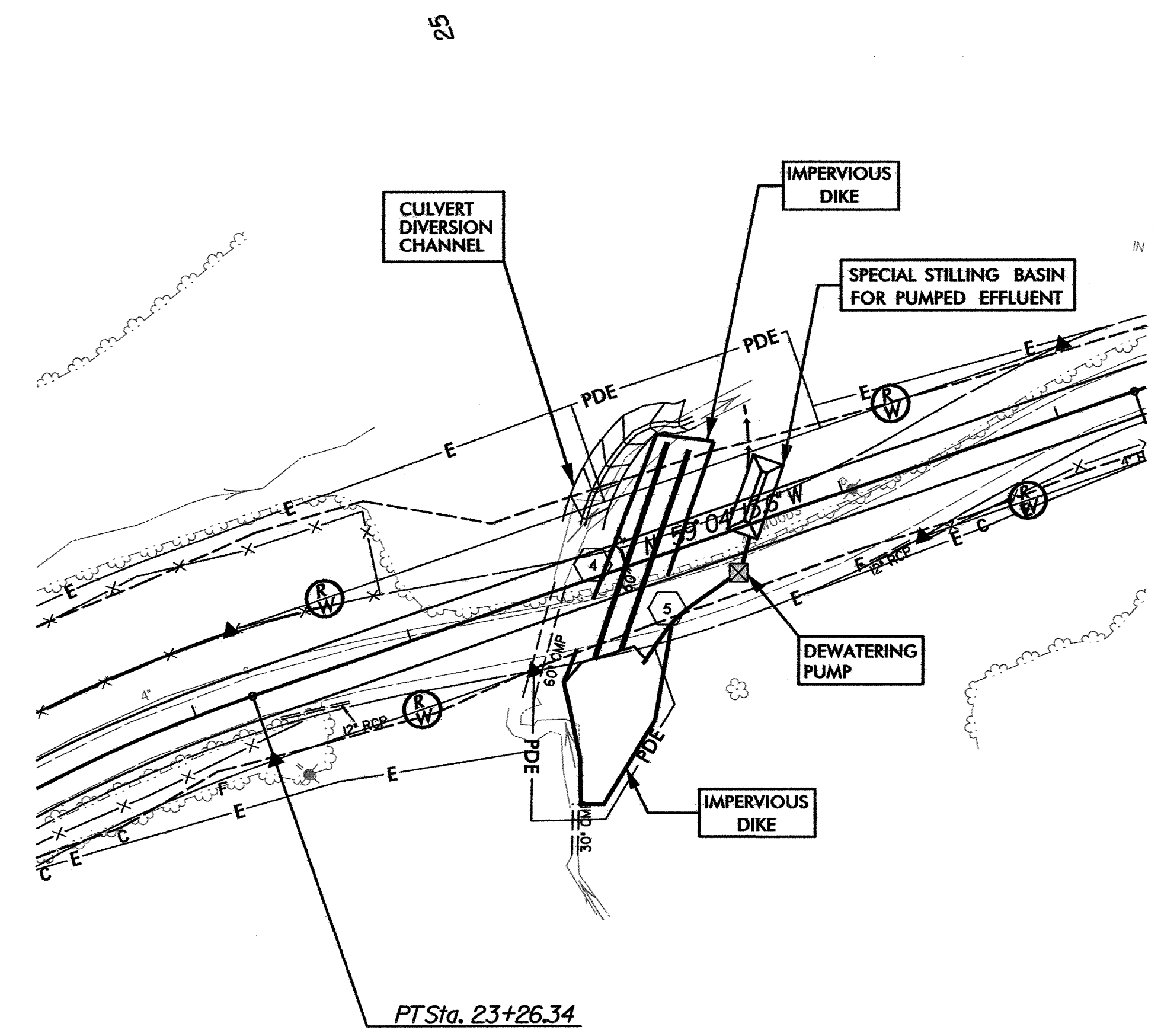
-MATCHLINE- STA 35+00.00 SEE SHEET NO. 6

CULVERT AT -L- STA 25+00:
FOR CONSTRUCTION SEQUENCE,
SEE SHEET EC-3A

FOR -L- PROFILE, SEE SHEET NO. 14

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Consulting Engineers
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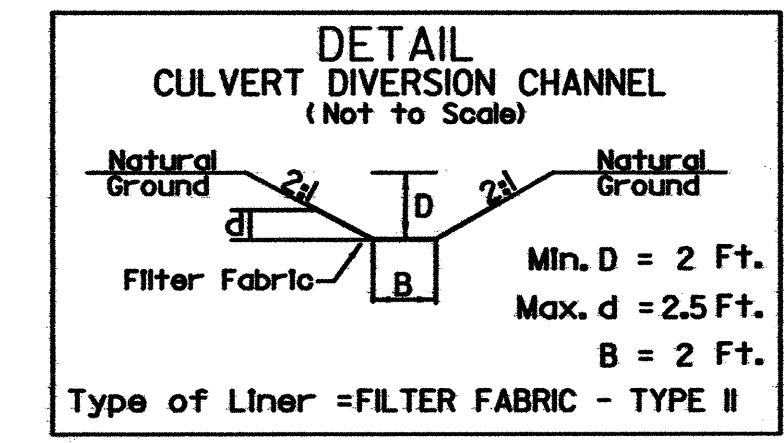
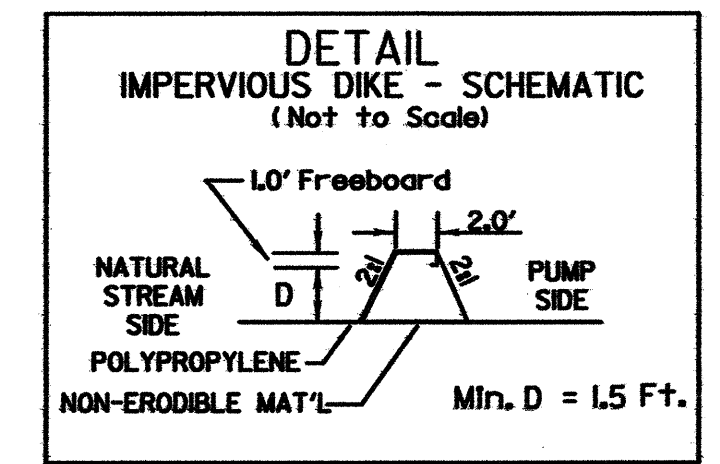


CONSTRUCTION SEQUENCE (STA. 25+00 -L-)

- (ROAD CLOSURE - MAINTENANCE OF TRAFFIC VIA OFFSITE DETOUR.)
1. INSTALL SPECIAL STILLING BASIN.
 2. PLACE UPSTREAM IMPERVIOUS DIKE.
 3. CONSTRUCT CULVERT DIVERSION CHANNEL.
 4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA.
 5. INSTALL REPLACEMENT CULVERTS AND HEADWALL.
 6. CONSTRUCT AND STABILIZE UPSTREAM CHANNEL IMPROVEMENTS. REFER TO ROADWAY PLANS FOR CHANNEL DETAIL.
 7. REMOVE IMPERVIOUS DIKE. DIVERT FLOW THROUGH REPLACEMENT CULVERT.
 8. REMOVE EXISTING PIPE CULVERT AND CULVERT DIVERSION CHANNEL.
 9. CONSTRUCT AND STABILIZE DOWNSTREAM CHANNEL IMPROVEMENTS. REFER TO ROADWAY PLANS FOR CHANNEL DETAILS.
 10. REMOVE SPECIAL STILLING BASIN. STABILIZE DISTURBED AREAS WITH SEED AND MULCH.
 11. COMPLETE ROADWAY.

NOTE:
THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DEWATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH SPECIAL STILLING BASIN.

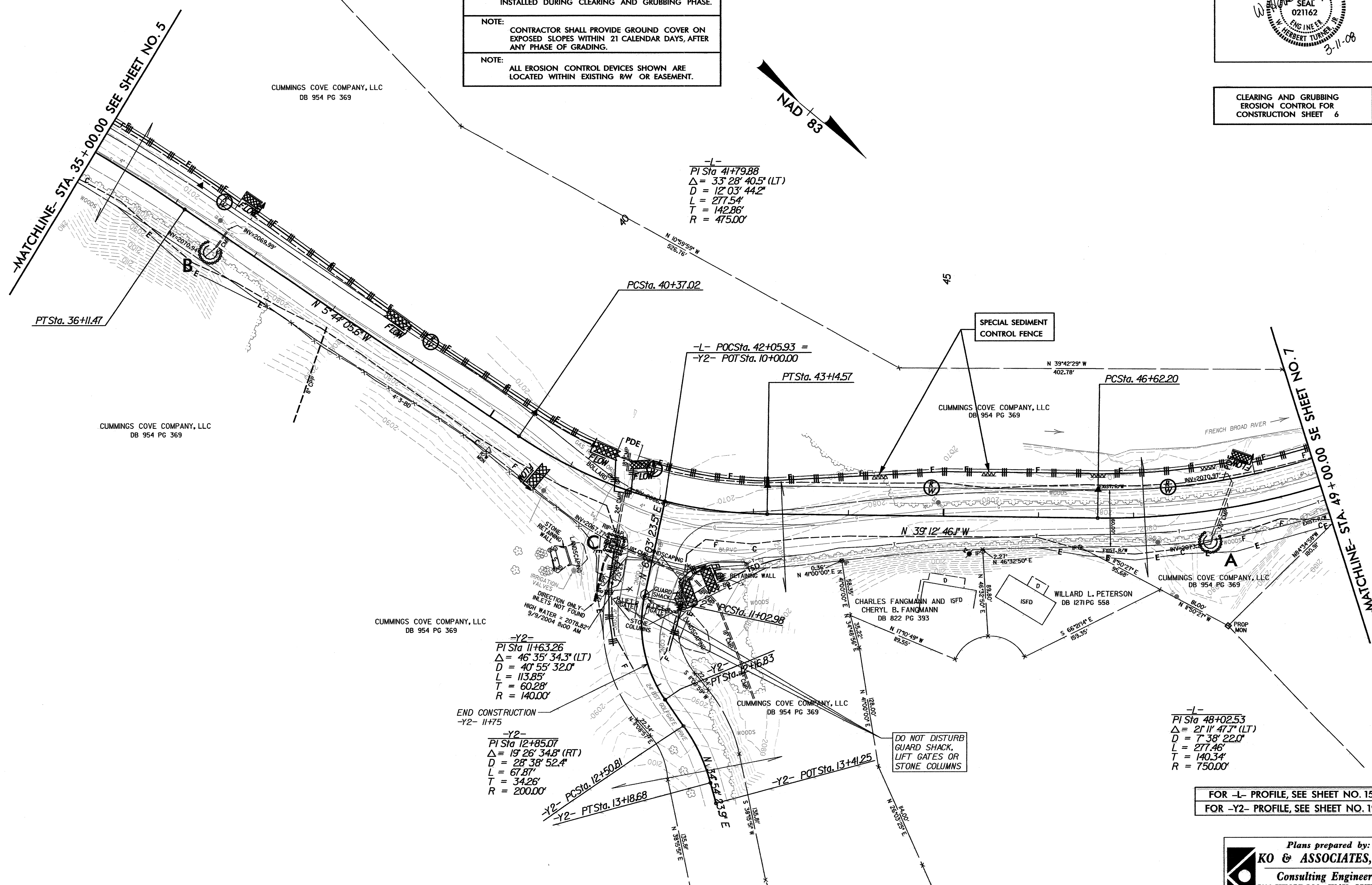
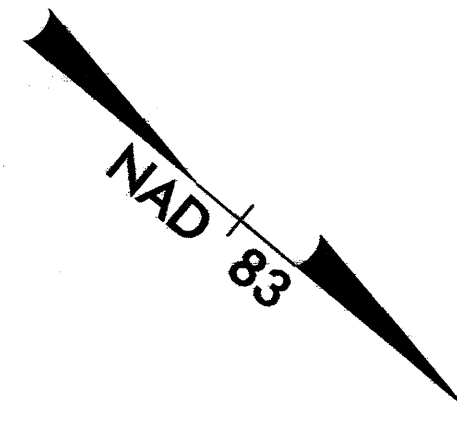
- NOTES:
1. PIPE REPLACEMENT SHALL BE PERFORMED IN ONLY DRY OR ISOLATED SECTIONS OF CHANNEL.
 2. IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW WHEN NECESSARY.
 3. ALL GRADED AREAS SHALL BE STABILIZED WITHIN 24 HOURS.
 4. MAINTENANCE OF STREAM FLOW OPERATIONS SHALL BE INCIDENTAL TO 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.
 6. THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DE-WATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH SPECIAL STILLING BASIN.
 7. FOR PUMP-AROUND OPERATION, THE CONTRACTOR MAY UTILIZE STABILIZED OUTLET INSTEAD OF SPECIAL STILLING BASIN IF PUMPING CLEAN WATER.



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CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6

- NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.
- NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.
- NOTE: CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.
- NOTE: ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.



-L-
PI Sta 41+79.88
Δ = 33° 28' 40.5" (LT)
D = 12' 03' 44.2"
L = 277.54'
T = 142.86'
R = 475.00'

-Y2-
PI Sta 11+63.26
Δ = 46° 35' 34.3" (LT)
D = 40' 55' 32.0"
L = 113.85'
T = 60.28'
R = 140.00'

END CONSTRUCTION
-Y2- 11+75

-Y2-
PI Sta 12+85.07
Δ = 19° 26' 34.8" (RT)
D = 28' 38' 52.4"
L = 67.87'
T = 34.26'
R = 200.00'

-L-
PI Sta 48+02.53
Δ = 21° 11' 47.7" (LT)
D = 7' 38' 22.0"
L = 277.46'
T = 140.34'
R = 750.00'

FOR -L- PROFILE, SEE SHEET NO. 15
FOR -Y2- PROFILE, SEE SHEET NO. 19

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NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

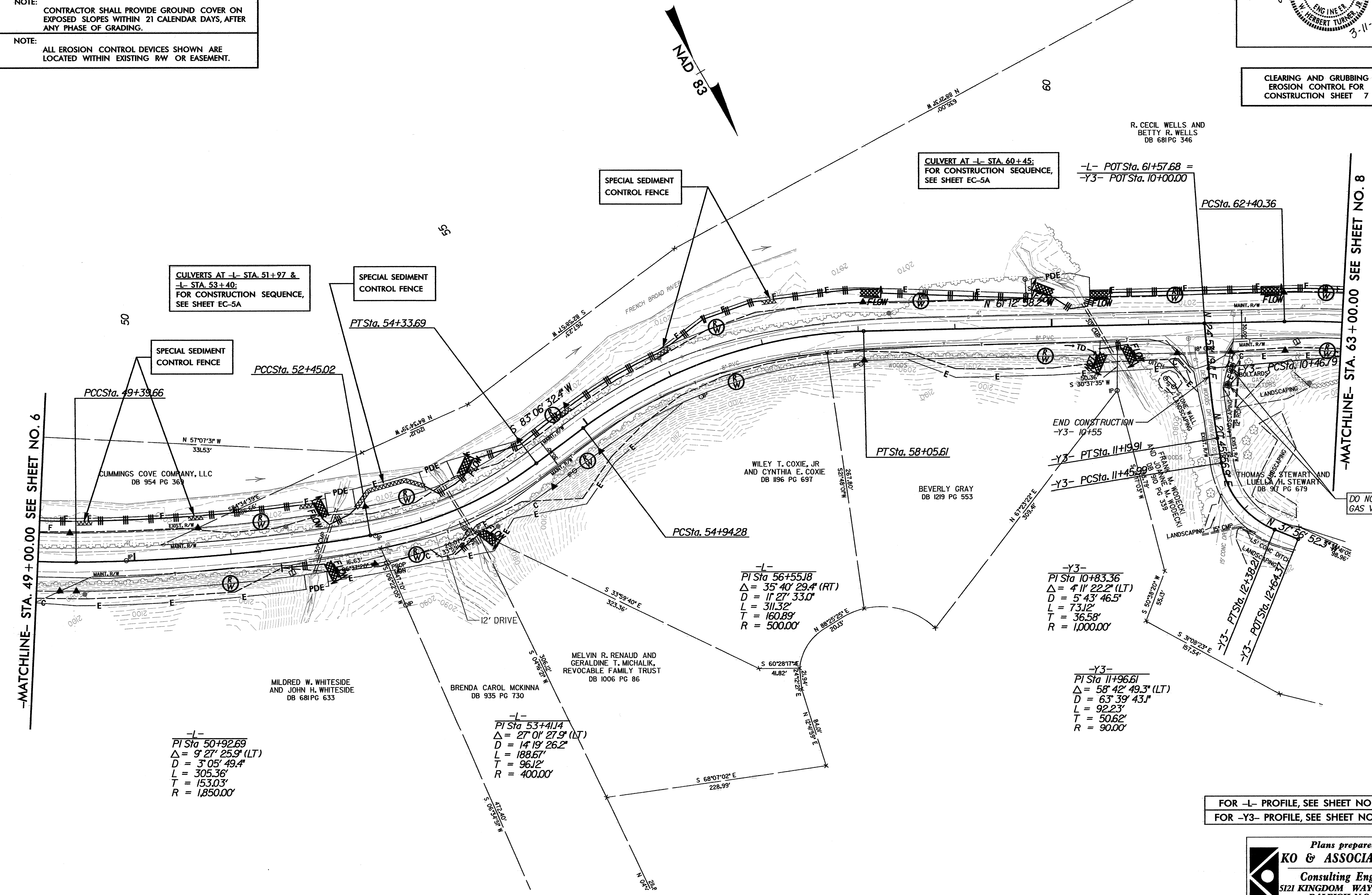
NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE: CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE: ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.

PROJECT REFERENCE NO. 14C.045116	SHEET NO. EC-5/CONST.7
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 7



CULVERTS AT -L- STA. 51+97 & -L- STA. 53+40: FOR CONSTRUCTION SEQUENCE, SEE SHEET EC-5A

CULVERT AT -L- STA. 60+45: FOR CONSTRUCTION SEQUENCE, SEE SHEET EC-5A

-L- POTSta. 61+57.68 =
-Y3- POTSta. 10+00.00

SPECIAL SEDIMENT CONTROL FENCE

SPECIAL SEDIMENT CONTROL FENCE

SPECIAL SEDIMENT CONTROL FENCE

DO NOT DISTURB GAS VALVES

-MATCHLINE- STA. 49+00.00 SEE SHEET NO. 6

-MATCHLINE- STA. 63+00.00 SEE SHEET NO. 8

-L-
PI Sta 50+92.69
Δ = 9° 27' 25.9" (LT)
D = 3° 05' 49.4"
L = 305.36'
T = 153.03'
R = 1,850.00'

-L-
PI Sta 53+41.4
Δ = 27° 01' 27.9" (LT)
D = 14° 19' 26.2"
L = 188.67'
T = 96.12'
R = 400.00'

-L-
PI Sta 56+55.8
Δ = 35° 40' 29.4" (RT)
D = 11° 27' 33.0"
L = 311.32'
T = 160.89'
R = 500.00'

-Y3-
PI Sta 10+83.36
Δ = 4° 11' 22.2" (LT)
D = 5° 43' 46.5"
L = 73.12'
T = 36.58'
R = 1,000.00'

-Y3-
PI Sta 11+96.61
Δ = 58° 42' 49.3" (LT)
D = 63° 39' 43.1"
L = 92.23'
T = 50.62'
R = 90.00'

FOR -L- PROFILE, SEE SHEET NO. 15
FOR -Y3- PROFILE, SEE SHEET NO. 20

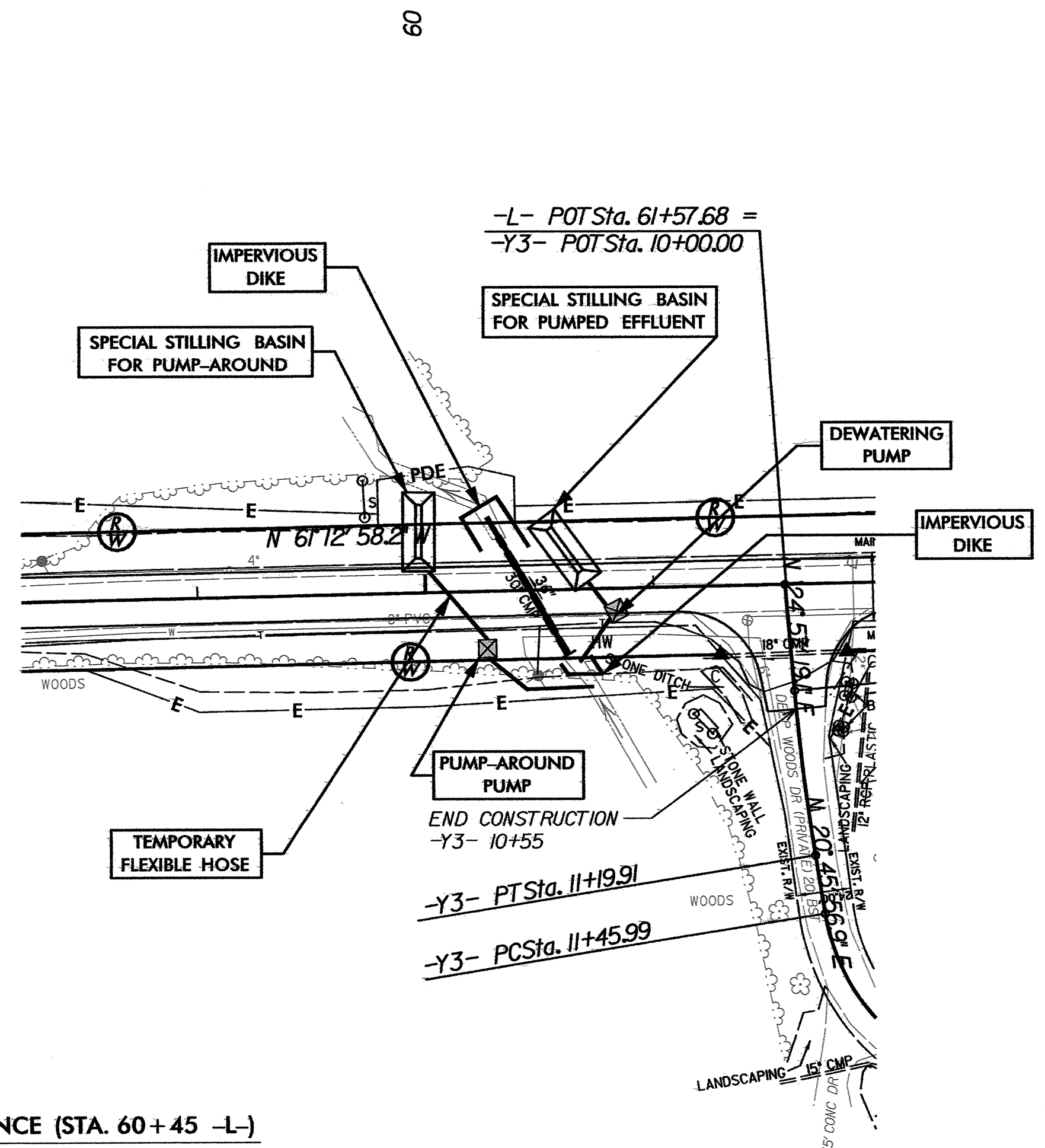
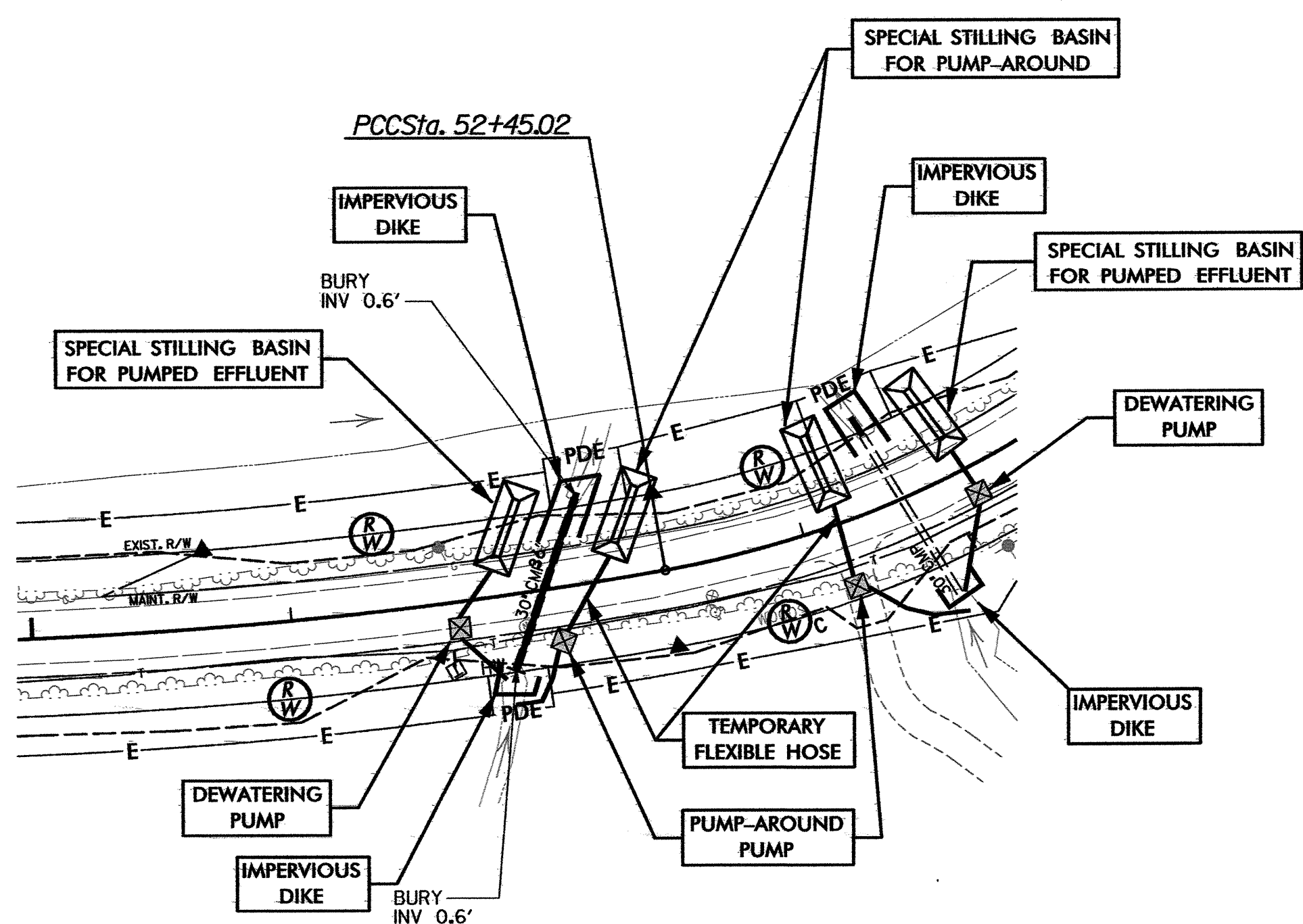
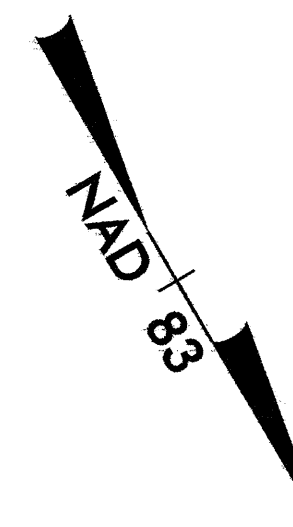
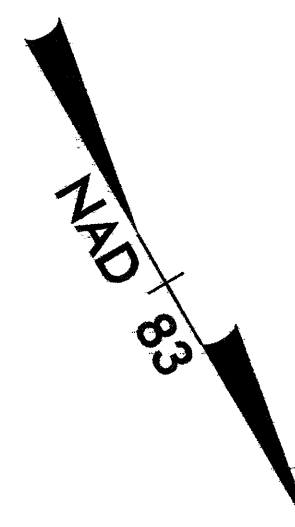
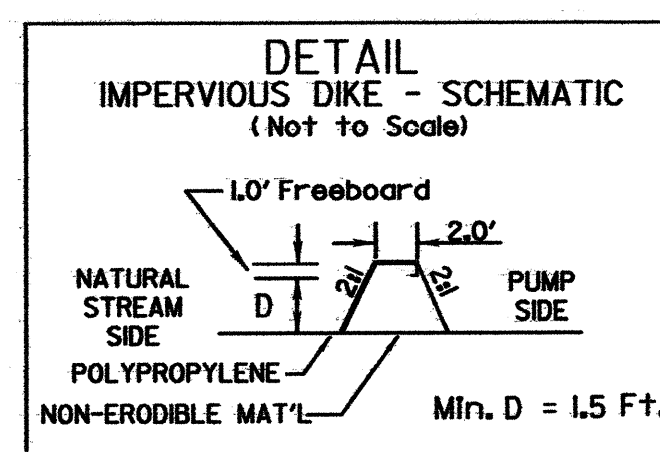
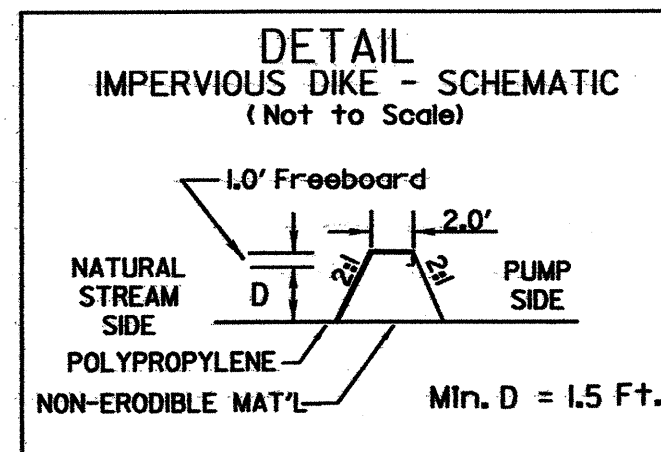
Plans prepared by:
KO & ASSOCIATES, P.C.
Consulting Engineers
5121 KINGDOM WAY, SUITE 100
RALEIGH, N.C. 27607
(919) 851-6066

5/14/99

CONSTRUCTION SEQUENCE (STA. 51+97 -L- & STA. 53+40 -L-)

(ROAD CLOSURE - MAINTENANCE OF TRAFFIC VIA OFFSITE DETOUR.)

1. INSTALL SPECIAL STILLING BASIN(S).
2. INSTALL UPSTREAM PUMP AND 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.
5. REMOVE EXISTING PIPE CULVERT.
6. INSTALL REPLACEMENT CULVERT AND HEADWALL.
7. CONSTRUCT AND STABILIZE CHANNEL IMPROVEMENTS. REFER TO ROADWAY PLANS FOR CHANNEL DETAILS.
8. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. DIVERT FLOW THROUGH REPLACEMENT CULVERT.
9. REMOVE SPECIAL STILLING BASIN(S). STABILIZE DISTURBED AREAS WITH SEED AND MULCH.
10. COMPLETE ROADWAY.



CONSTRUCTION SEQUENCE (STA. 60+45 -L-)

(ROAD CLOSURE - MAINTENANCE OF TRAFFIC VIA OFFSITE DETOUR.)

1. INSTALL SPECIAL STILLING BASIN(S).
2. INSTALL UPSTREAM PUMP AND 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.
5. REMOVE EXISTING PIPE CULVERT.
6. INSTALL REPLACEMENT CULVERT AND HEADWALL.
7. CONSTRUCT AND STABILIZE CHANNEL IMPROVEMENTS. REFER TO ROADWAY PLANS FOR CHANNEL DETAILS.
8. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. DIVERT FLOW THROUGH REPLACEMENT CULVERT.
9. REMOVE SPECIAL STILLING BASIN(S). STABILIZE DISTURBED AREAS WITH SEED AND MULCH.
10. COMPLETE ROADWAY.

- NOTES:
1. PIPE REPLACEMENT 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.
 6. THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DE-WATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH SPECIAL STILLING BASIN.
 7. FOR PUMP-AROUND OPERATION, THE CONTRACTOR MAY UTILIZE STABILIZED OUTLET INSTEAD OF SPECIAL STILLING BASIN IF PUMPING CLEAN WATER.

- NOTES:
1. PIPE REPLACEMENT 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.
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 6. THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DE-WATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH SPECIAL STILLING BASIN.
 7. FOR PUMP-AROUND OPERATION, THE CONTRACTOR MAY UTILIZE STABILIZED OUTLET INSTEAD OF SPECIAL STILLING BASIN IF PUMPING CLEAN WATER.

PROJECT REFERENCE NO. 14C.045116	SHEET NO. EC-5A/CONST.7
RW SHEET NO. ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

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KO & ASSOCIATES, P.C.
Consulting Engineers
5121 KINGDOM WAY, SUITE 100
RALEIGH, N.C. 27607
(919) 851-6066

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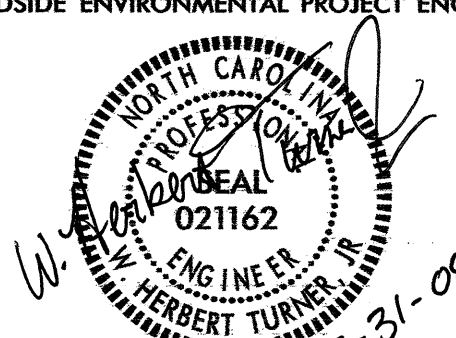
5/14/08
3/28/2008
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NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

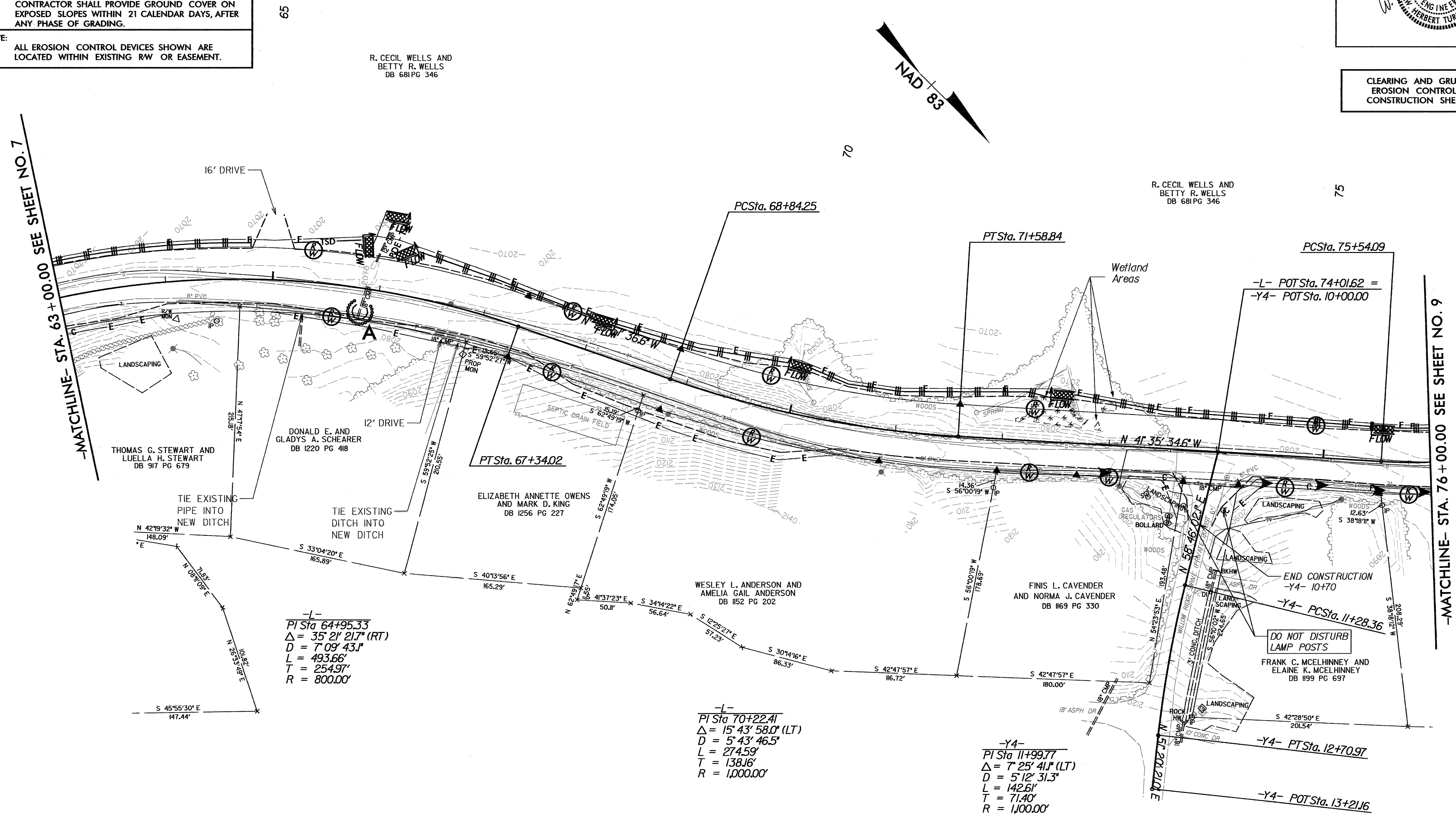
NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.

PROJECT REFERENCE NO. 14C.045116	SHEET NO. EC-6/CONST.B
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	
	

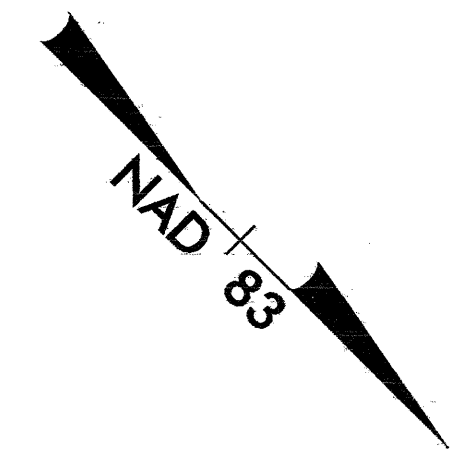
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 8



65

70

75



-L-
PI Sta 64+95.33
Δ = 35' 21' 21.7" (RT)
D = 7' 09' 43.1"
L = 493.66'
T = 254.97'
R = 800.00'

-L-
PI Sta 70+22.41
Δ = 15' 43' 58.0" (LT)
D = 5' 43' 46.5"
L = 274.59'
T = 138.16'
R = 1,000.00'

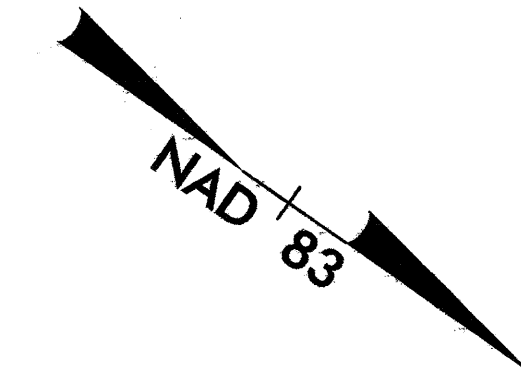
-Y4-
PI Sta 11+99.77
Δ = 7' 25' 41.1" (LT)
D = 5' 12' 31.3"
L = 142.61'
T = 71.40'
R = 1,000.00'

FOR -L- PROFILE, SEE SHEET NO. 16
FOR -Y4- PROFILE, SEE SHEET NO. 20

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5/14/09

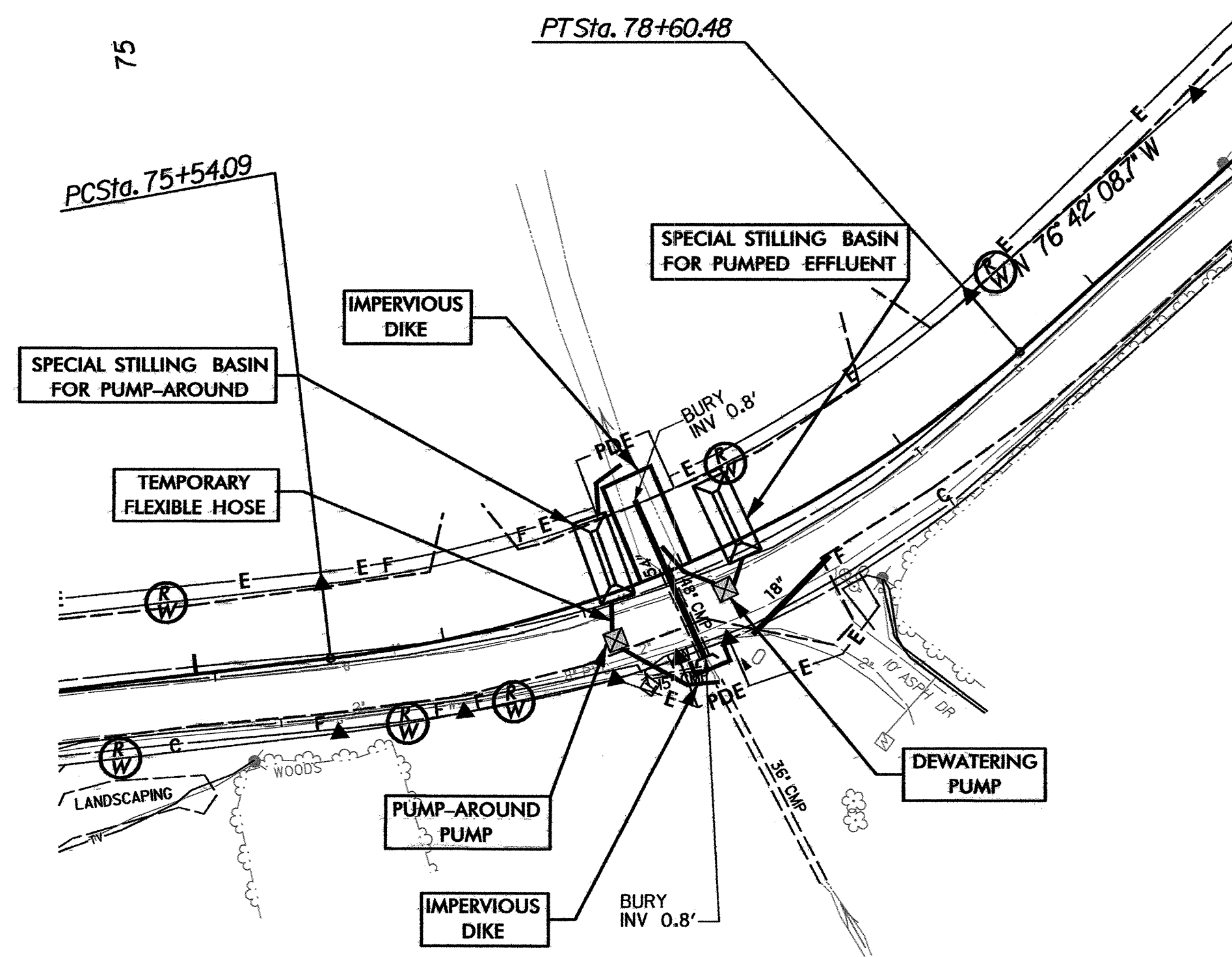
PROJECT REFERENCE NO.	SHEET NO.
14C.045116	EC-7A/CONST.9
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	



CONSTRUCTION SEQUENCE (STA. 76+96 -L-)

(ROAD CLOSURE - MAINTENANCE OF TRAFFIC VIA OFFSITE DETOUR.)

1. INSTALL SPECIAL STILLING BASIN(S).
2. INSTALL UPSTREAM PUMP AND 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.
5. REMOVE EXISTING PIPE CULVERT.
6. INSTALL REPLACEMENT CULVERT AND HEADWALL.
7. CONSTRUCT AND STABILIZE CHANNEL IMPROVEMENTS. REFER TO ROADWAY PLANS FOR CHANNEL DETAILS.
8. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. DIVERT FLOW THROUGH REPLACEMENT CULVERT.
9. REMOVE SPECIAL STILLING BASIN(S). STABILIZE DISTURBED AREAS WITH SEED AND MULCH.
10. COMPLETE ROADWAY.



PI Sta 77+12.27
 $\Delta = 35^\circ 06' 34.2''$ (LT)
 $D = 11' 27'' 33.0''$
 $L = 306.39'$
 $T = 158.17'$
 $R = 500.00'$

- NOTES:
1. PIPE REPLACEMENT 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.
 6. THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DE-WATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH SPECIAL STILLING BASIN.
 7. FOR PUMP-AROUND OPERATION, THE CONTRACTOR MAY UTILIZE STABILIZED OUTLET INSTEAD OF SPECIAL STILLING BASIN IF PUMPING CLEAN WATER.

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NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

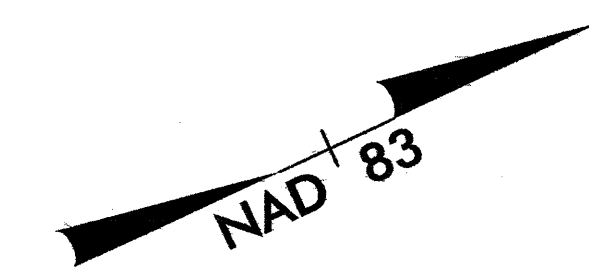
NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.

PROJECT REFERENCE NO. 14C.045116	SHEET NO. EC-8/CONST.10
RW SHEET NO. ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

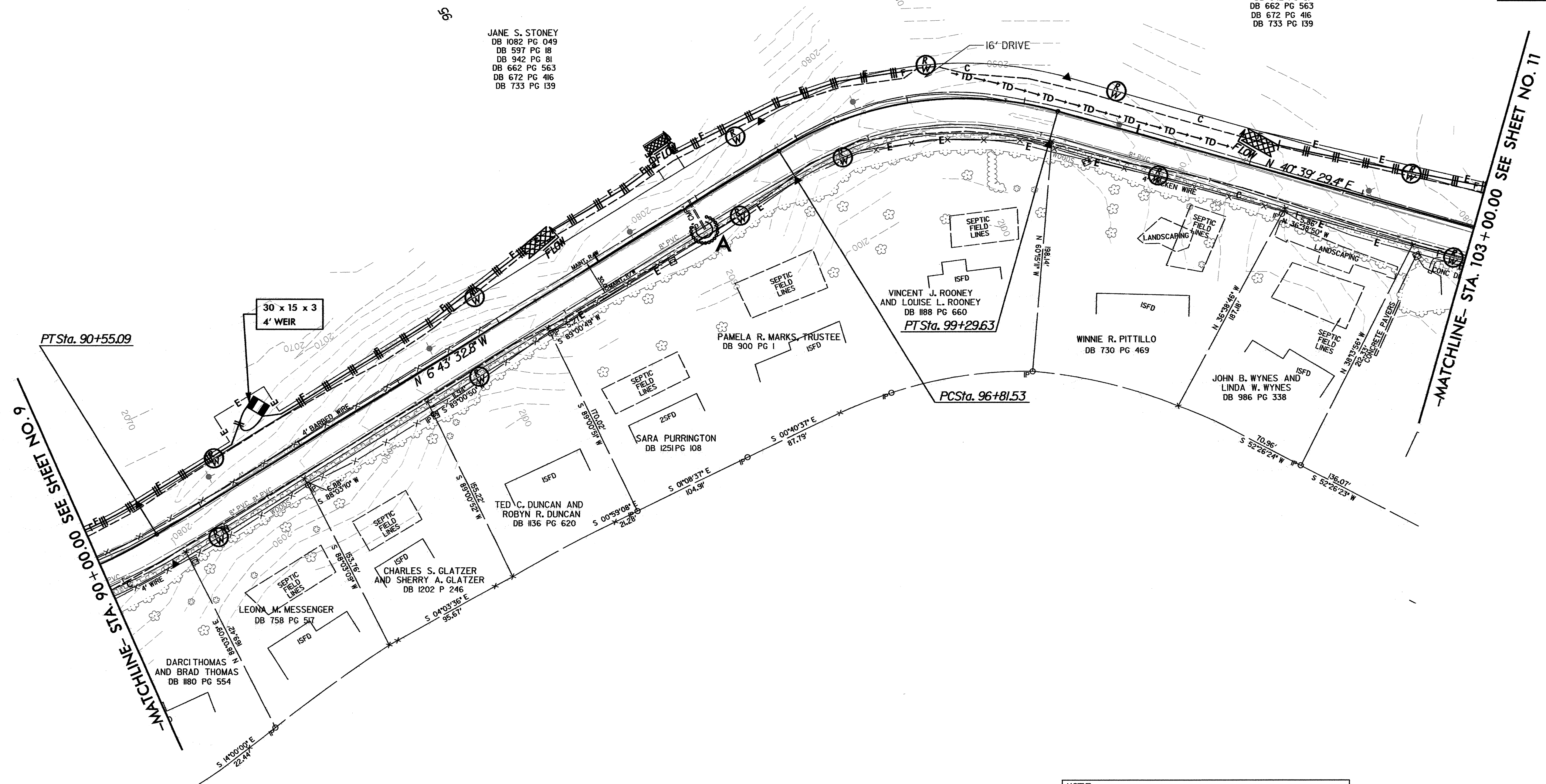
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 10

-L-
 $PI\ Sta\ 98+13.17$
 $\Delta = 47^\circ 23' 02.2'' (RT)$
 $D = 19' 05' 54.9''$
 $L = 248.10'$
 $T = 131.64'$
 $R = 300.00'$



JANE S. STONEY
DB 1082 PG 049
DB 597 PG 18
DB 942 PG 81
DB 662 PG 563
DB 672 PG 416
DB 733 PG 139

JANE S. STONEY
DB 1082 PG 049
DB 597 PG 18
DB 942 PG 81
DB 662 PG 563
DB 672 PG 416
DB 733 PG 139



PTSta. 90+55.09

PTSta. 99+29.63

PCSta. 96+81.53

-MATCHLINE- STA 90+00 SEE SHEET NO. 9

-MATCHLINE- STA. 103+00.00 SEE SHEET NO. 11

NOTE:
THE EXISTING CUT SLOPE ON PARCELS 28 THRU 31 SHALL NOT BE DISTURBED.

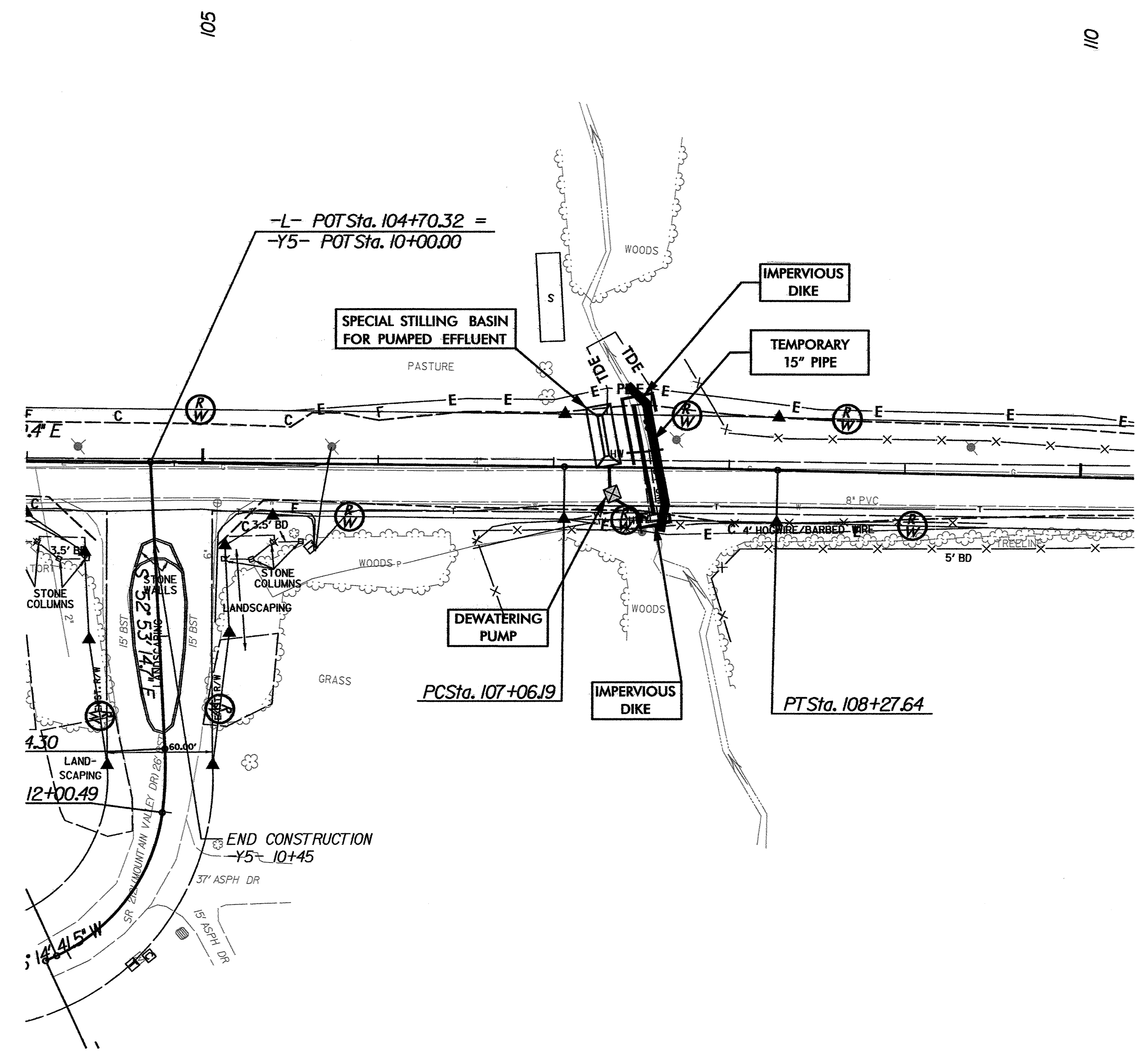
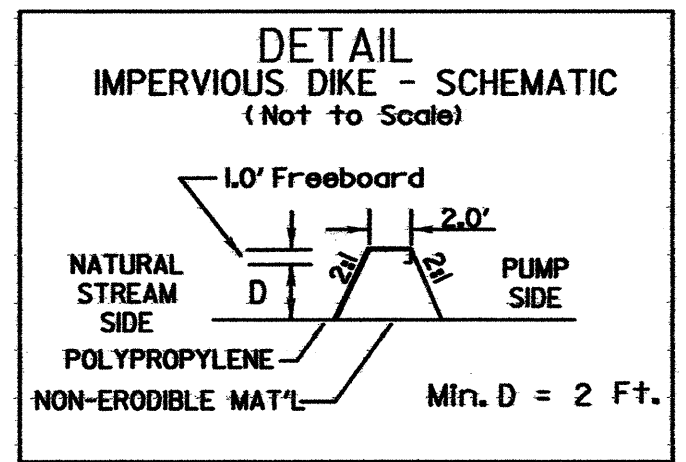
NOTE:
ON PARCELS 32 THRU 37 ALL FLAGGED TREES OR WITHIN THE ORANGE FENCE SHALL NOT BE CUT. THE BRUSH WITHIN THESE TREES CAN STAY.

FOR -L- PROFILE, SEE SHEET NO. 17

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
14C.045116	EC-9A/CONST.II
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	



CONSTRUCTION SEQUENCE (STA. 107+55 -L-)

- (ROAD CLOSURE - MAINTENANCE OF TRAFFIC VIA OFFSITE DETOUR.)
1. INSTALL SPECIAL STILLING BASIN.
 2. PLACE UPSTREAM IMPERVIOUS DIKE.
 3. EXCAVATE ROADWAY EMBANKMENT AND INSTALL 15" TEMPORARY PIPE.
 4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA.
 5. REMOVE EXISTING CULVERT.
 6. INSTALL REPLACEMENT CULVERT AND HEADWALL.
 7. REMOVE IMPERVIOUS DIKE. DIVERT FLOW THROUGH REPLACEMENT CULVERT.
 8. REMOVE 15" TEMPORARY PIPE.
 9. CONSTRUCT AND STABILIZE CHANNEL IMPROVEMENTS. REFER TO ROADWAY PLANS FOR CHANNEL DETAILS.
 10. REMOVE SPECIAL STILLING BASIN. STABILIZE DISTURBED AREAS WITH SEED AND MULCH.
 11. COMPLETE ROADWAY.

NOTE:
THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DEWATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH SPECIAL STILLING BASIN.

FOR PUMP-AROUND OPERATION, THE CONTRACTOR MAY UTILIZE STABILIZED OUTLET INSTEAD OF SPECIAL STILLING BASIN IF PUMPING CLEAN WATER.

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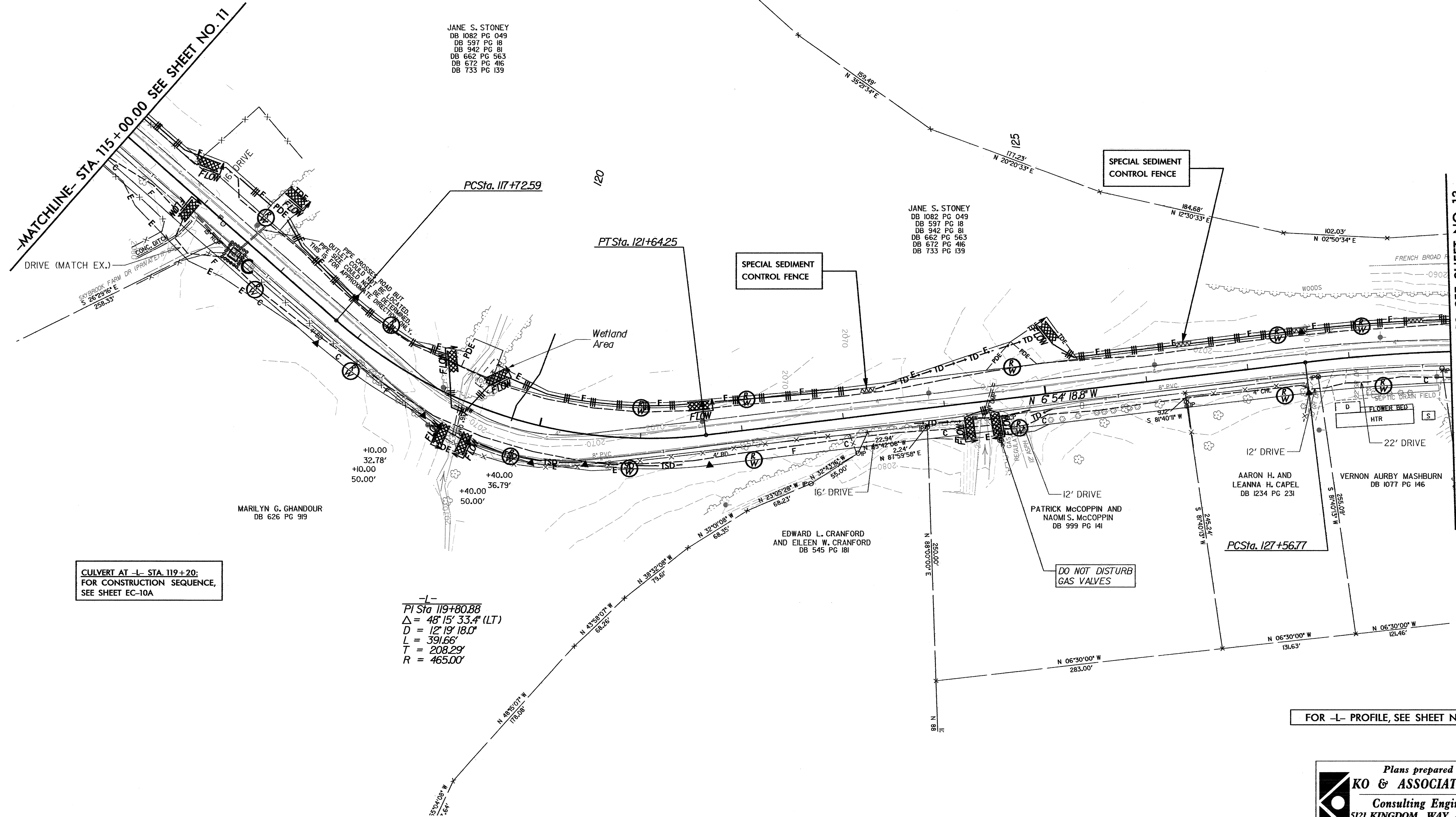
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(919) 851-6066

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- NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.
- NOTE:
PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.
- NOTE:
CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.
- NOTE:
ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.

PROJECT REFERENCE NO. 14C045116	SHEET NO. EC-10/CONST 12
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 12



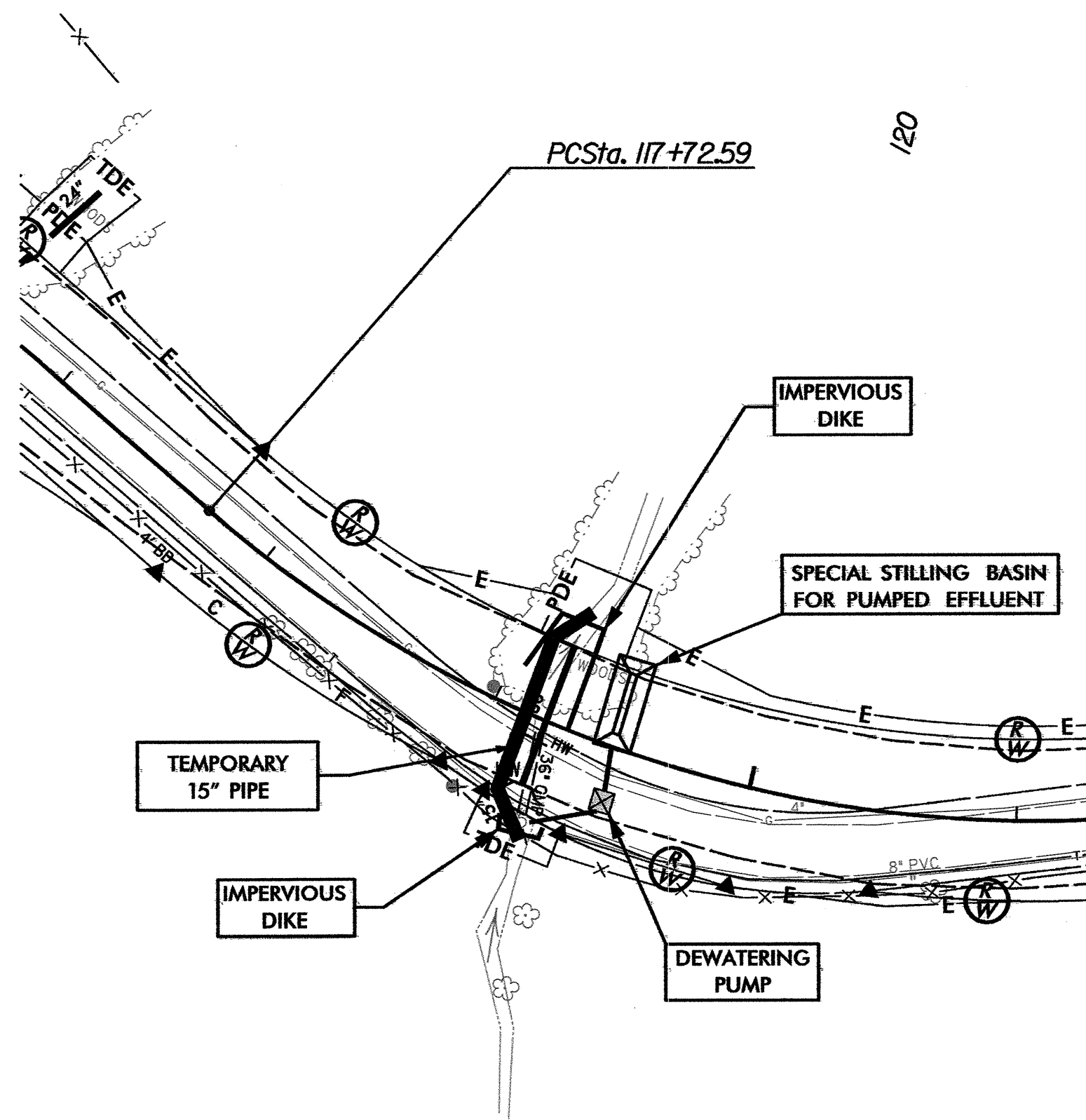
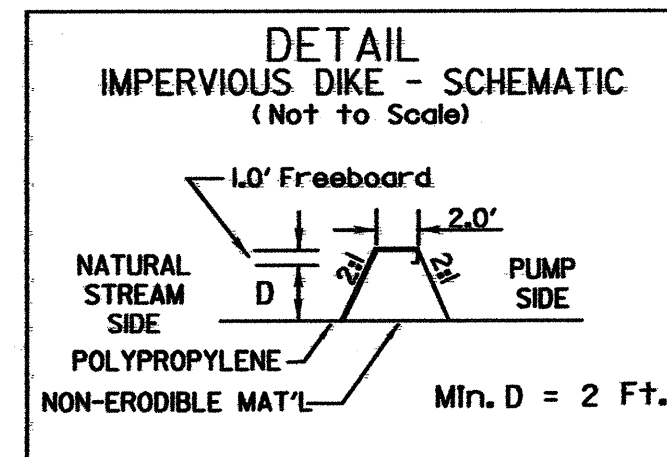
-L-
PI Sta 119+80.88
 $\Delta = 48' 15' 33.4''$ (LT)
D = 12' 19' 18.0"
L = 391.66'
T = 208.29'
R = 465.00'

FOR -L- PROFILE, SEE SHEET NO. 18

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PROJECT REFERENCE NO. 14C.045116	SHEET NO. EC-10A/CONST 12
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	



CONSTRUCTION SEQUENCE (STA. 119+20 -L-)

- (ROAD CLOSURE - MAINTENANCE OF TRAFFIC VIA OFFSITE DETOUR.)
1. INSTALL SPECIAL STILLING BASIN.
 2. PLACE UPSTREAM IMPERVIOUS DIKE.
 3. EXCAVATE ROADWAY EMBANKMENT AND INSTALL 15" TEMPORARY PIPE.
 4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA.
 5. REMOVE EXISTING CULVERT.
 6. INSTALL REPLACEMENT CULVERT AND HEADWALL.
 7. REMOVE IMPERVIOUS DIKE. DIVERT FLOW THROUGH REPLACEMENT CULVERT.
 8. REMOVE 15" TEMPORARY PIPE.
 9. CONSTRUCT AND STABILIZE CHANNEL IMPROVEMENTS. REFER TO ROADWAY PLANS FOR CHANNEL DETAILS.
 10. REMOVE SPECIAL STILLING BASIN. STABILIZE DISTURBED AREAS WITH SEED AND MULCH.
 11. COMPLETE ROADWAY.

NOTE:
THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DEWATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH SPECIAL STILLING BASIN.

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5/14/08

3/10/2008
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K&A Associates, P.C.

NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

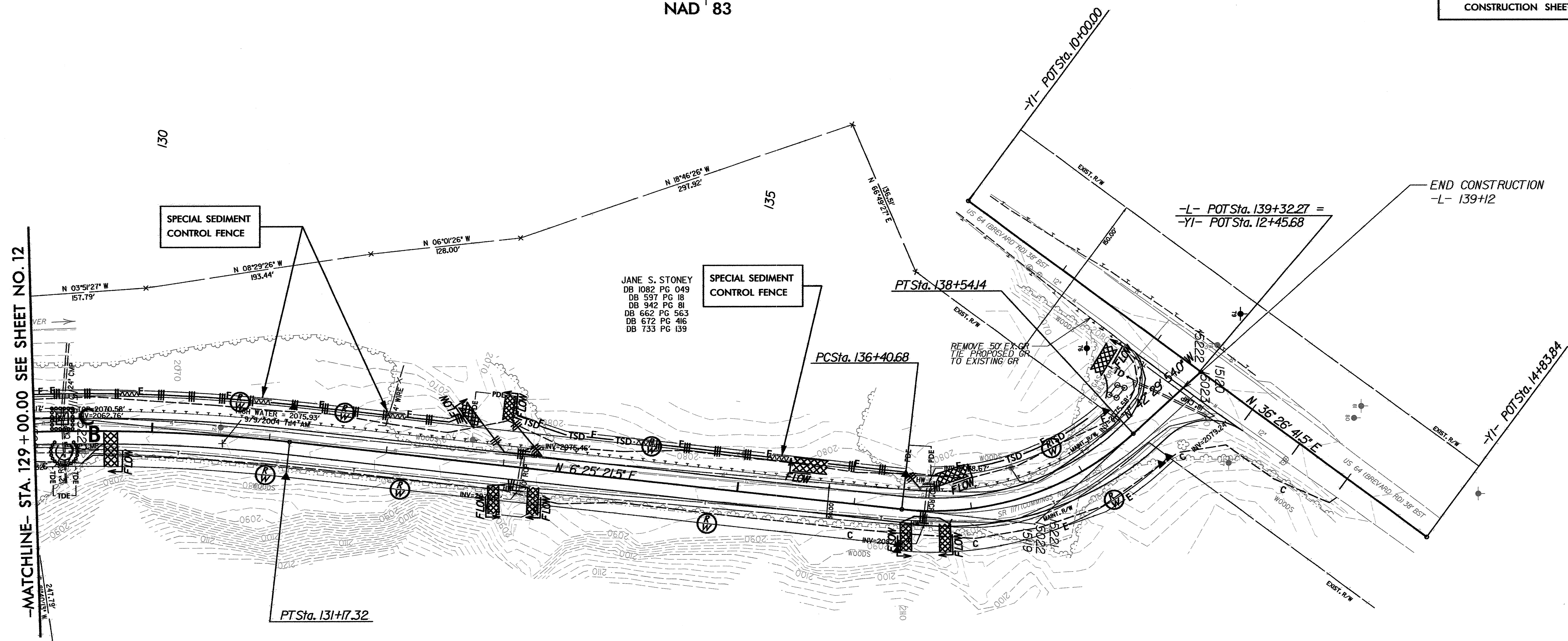
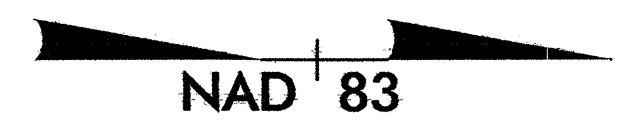
NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE: CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.

NOTE: ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.

PROJECT REFERENCE NO. 14C.045116	SHEET NO. EC-11/CONST.13
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 13



-MATCHLINE- STA. 129 + 00.00 SEE SHEET NO. 12

-L-
PI Sta 129+37.86
 $\Delta = 13^{\circ} 19' 40.3" (RT)$
 $D = 3^{\circ} 4' 47.4"$
 $L = 360.55'$
 $T = 181.09'$
 $R = 1,550.00'$

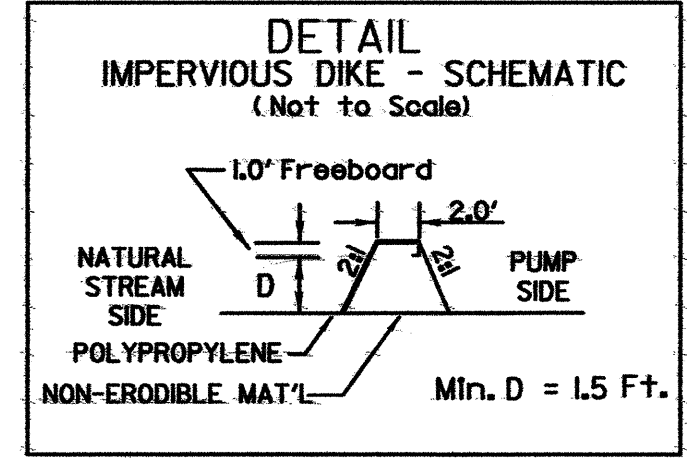
CULVERT AT -L- STA. 133+00:
FOR CONSTRUCTION SEQUENCE,
SEE SHEET EC-11A.

LOWELL J. GETTMAN, ET AL
DB 1236 PG 700
DB 1124 PG 367
DB 785 PG 377
DB 812 PG 715
DB 829 PG 13
DB 850 PG 209
DB 316 PG 263
DB 588 PG 449
DB 432 PG 55
DB 331 PG 89
DB 353 PG 213
DB 432 PG 81

-L-
PI Sta 137+54.41
 $\Delta = 48^{\circ} 55' 15.5" (LT)$
 $D = 22^{\circ} 55' 05.9"$
 $L = 213.46'$
 $T = 113.72'$
 $R = 250.00'$

FOR -L- PROFILE, SEE SHEET NO. 18
FOR -Y1- PROFILE, SEE SHEET NO. 19

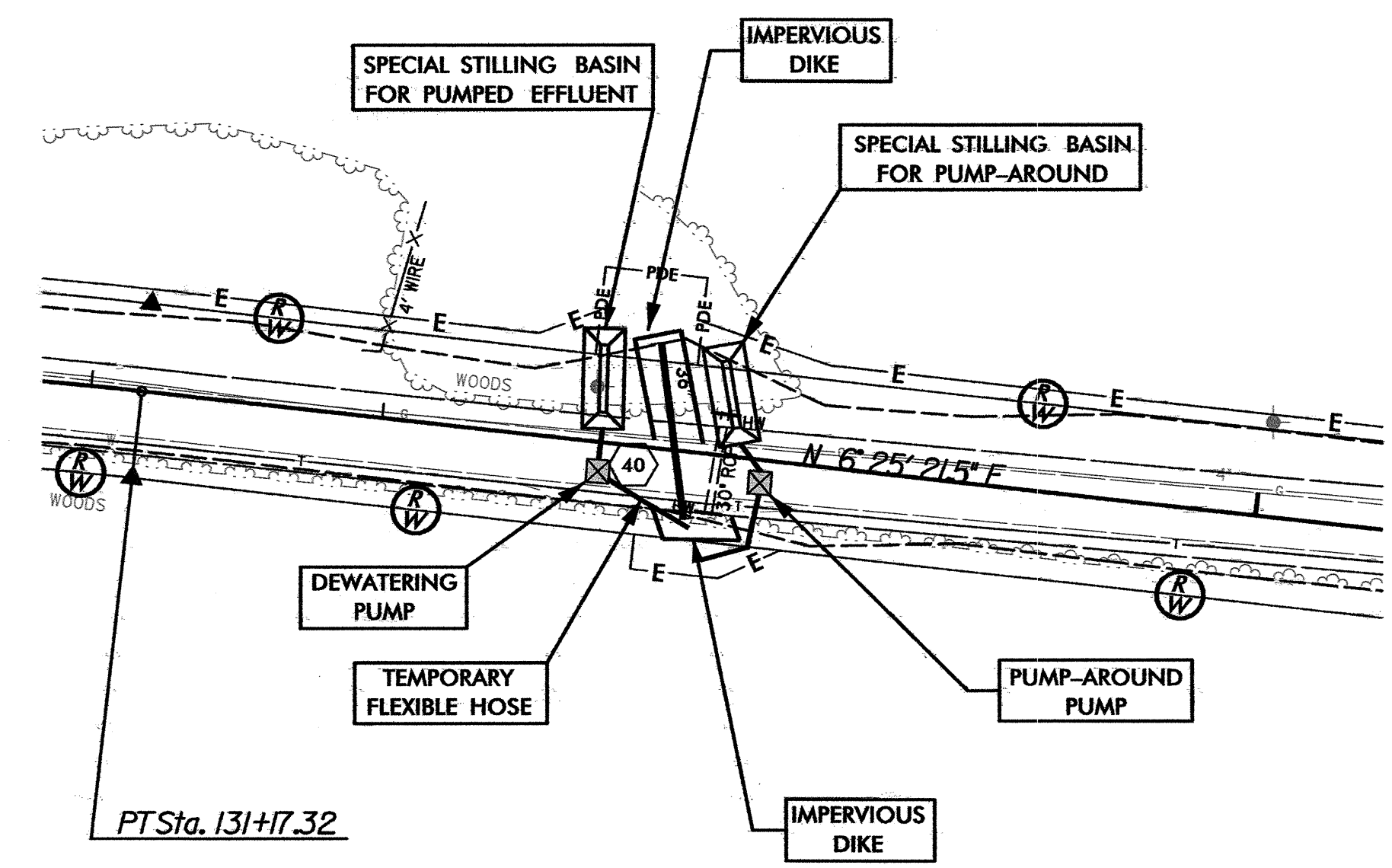
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CONSTRUCTION SEQUENCE (STA. 133+00 -L-)

- (ROAD CLOSURE - MAINTENANCE OF TRAFFIC VIA OFFSITE DETOUR.)
1. INSTALL SPECIAL STILLING BASIN(S).
 2. INSTALL UPSTREAM PUMP AND 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.
 5. REMOVE EXISTING PIPE CULVERT.
 6. INSTALL REPLACEMENT CULVERT AND HEADWALL.
 7. CONSTRUCT AND STABILIZE CHANNEL IMPROVEMENTS. REFER TO ROADWAY PLANS FOR CHANNEL DETAILS.
 8. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. DIVERT FLOW THROUGH REPLACEMENT CULVERT.
 9. REMOVE SPECIAL STILLING BASIN(S). STABILIZE DISTURBED AREAS WITH SEED AND MULCH.
 10. COMPLETE ROADWAY.

135

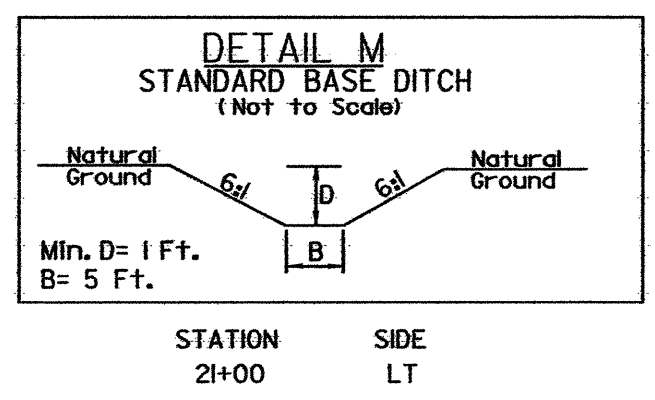


- NOTES:**
1. PIPE REPLACEMENT SHALL BE PERFORMED IN ONLY DRY OR ISOLATED SECTIONS OF CHANNEL.
 2. IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW WHEN NECESSARY.
 3. ALL GRADED AREAS SHALL BE STABILIZED WITHIN 24 HOURS.
 4. MAINTENANCE OF STREAM FLOW OPERATIONS SHALL BE INCIDENTAL TO 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.
 6. THE CONTRACTOR SHALL NOT PUMP SEDIMENT-LADEN WATER DIRECTLY INTO STREAM. FOR DE-WATERING OF CULVERT SITES, THE CONTRACTOR SHALL FILTER SEDIMENT-LADEN WATER THROUGH SPECIAL STILLING BASIN.
 7. FOR PUMP-AROUND OPERATION, THE CONTRACTOR MAY UTILIZE STABILIZED OUTLET INSTEAD OF SPECIAL STILLING BASIN IF PUMPING CLEAN WATER.

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3/10/2008
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 KO & Associates, P.C.

NOTE: CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.	NOTE: ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.
NOTE: CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.	NOTE: INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.
NOTE: CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.	



FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 4

-Y-
PI Sta 10+49.07
Δ = 25° 36' 58.1" (LT)
D = 26' 32" 41.9"
L = 96.50'
T = 49.07'
R = 215.84'

-Y-
PI Sta 11+68.97
Δ = 3° 59' 55.0" (LT)
D = 2' 45" 36.4"
L = 144.87'
T = 72.46'
R = 2,075.85'

-Y-
PI Sta 12+59.10
Δ = 1° 49' 38.9" (RT)
D = 33' 28" 28.6"
L = 35.33'
T = 17.73'
R = 171.16'

-L- POTSta. 10+00.00 =
-Y- PRCSta. 12+41.37

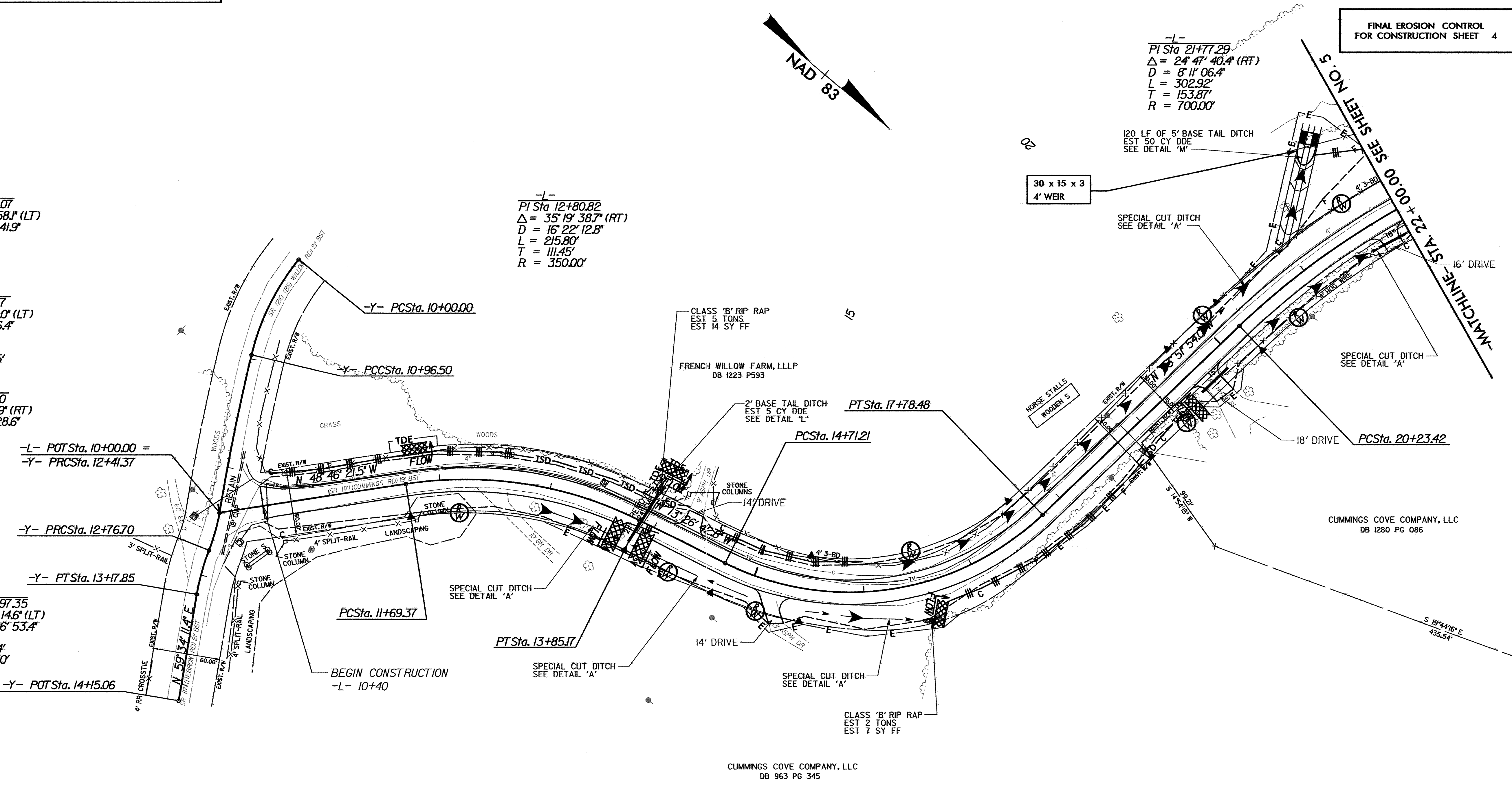
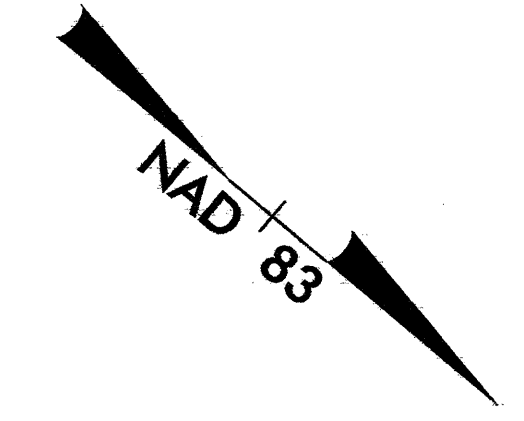
-Y- PRCSta. 12+76.70

-Y- PTSta. 13+17.85

-Y-
PI Sta 12+97.35
Δ = 1° 42' 14.6" (LT)
D = 28' 26" 53.4"
L = 41.14'
T = 20.64'
R = 201.40'

-Y- POTSta. 14+15.06

-L-
PI Sta 12+80.82
Δ = 35° 19' 38.7" (RT)
D = 16' 22" 12.8"
L = 215.80'
T = 111.45'
R = 350.00'

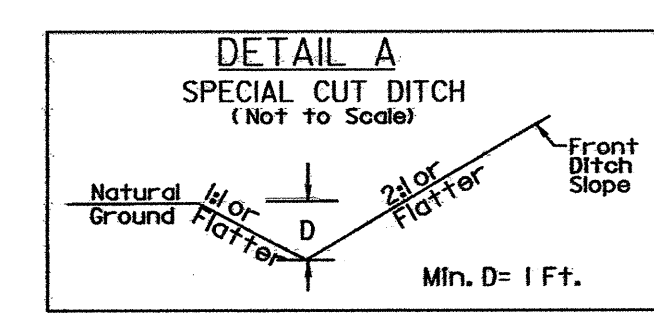


FOR -L- PROFILE, SEE SHEET NO. 14
FOR -Y- PROFILE, SEE SHEET NO. 19

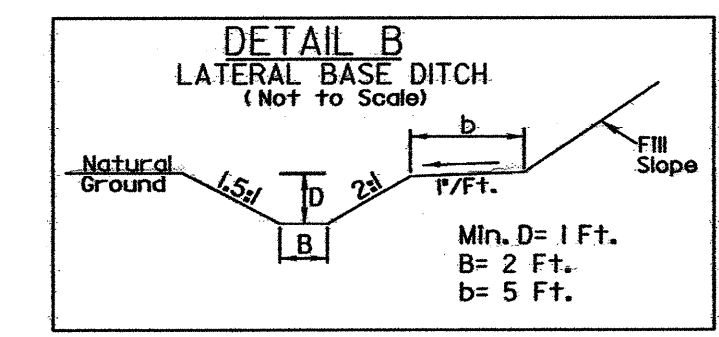
-L-
PI Sta 16+47.63
Δ = 70° 25' 11.2" (LT)
D = 22' 55" 05.9"
L = 307.26'
T = 176.42'
R = 250.00'

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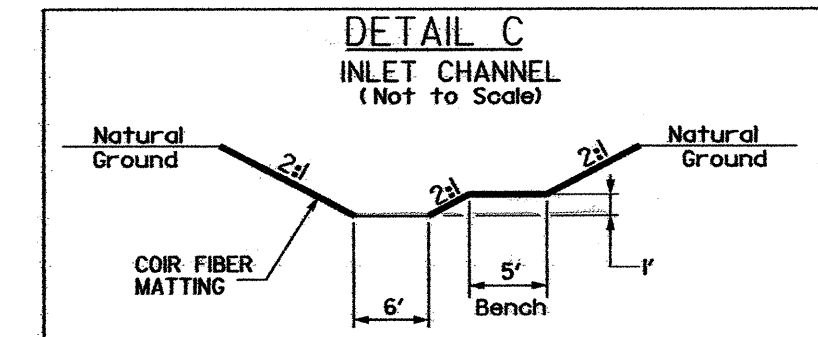
**FINAL EROSION CONTROL
FOR CONSTRUCTION SHEET 5**



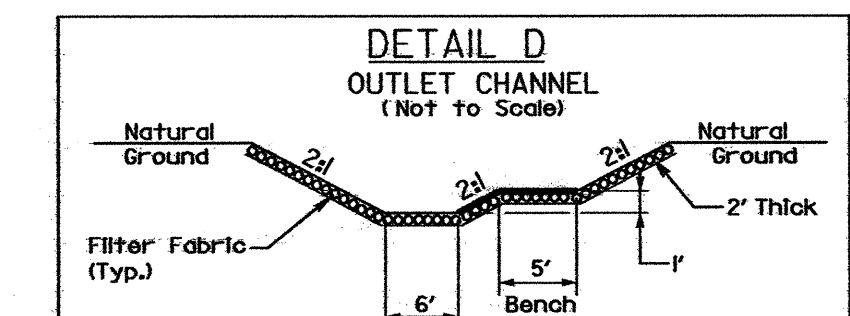
STATION TO STATION	SIDE
20+00 - 20+50	RT
26+25 - 27+50	RT
29+00 - 33+35	RT
33+35 - 35+00	RT



STATION TO STATION	SIDE
22+50 - 24+50	RT



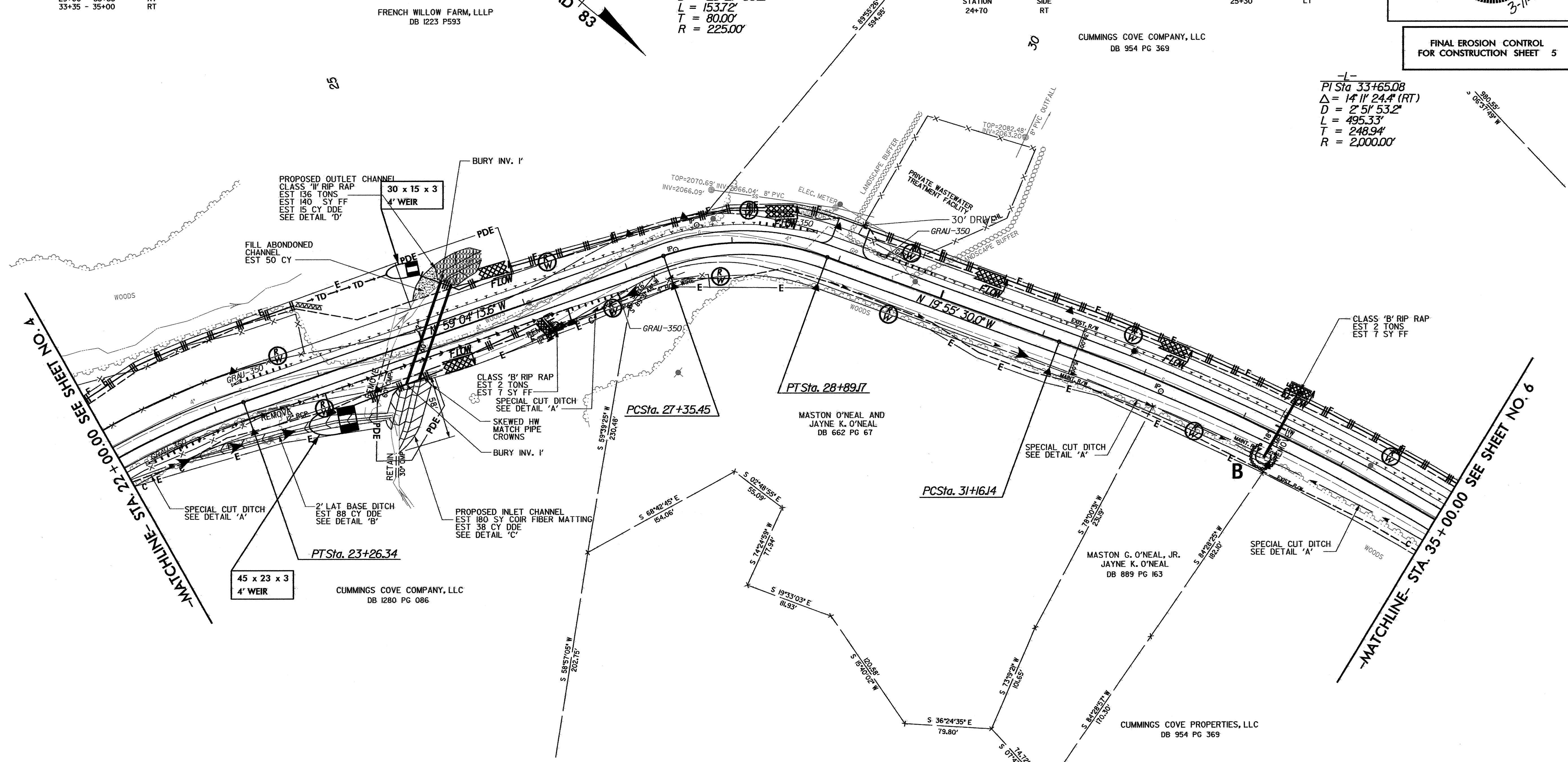
STATION	SIDE
24+70	RT



STATION	SIDE
25+30	LT

-L-
PI Sta 28+15.44
 $\Delta = 39' 08'' 43.6''$ (RT)
 $D = 25' 27'' 53.2''$
 $L = 153.72'$
 $T = 80.00'$
 $R = 225.00'$

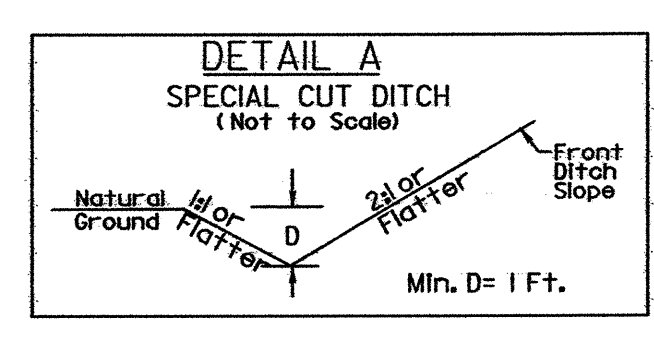
-L-
PI Sta 33+65.08
 $\Delta = 14' 11'' 24.4''$ (RT)
 $D = 2' 51'' 53.2''$
 $L = 495.33'$
 $T = 248.94'$
 $R = 2,000.00'$



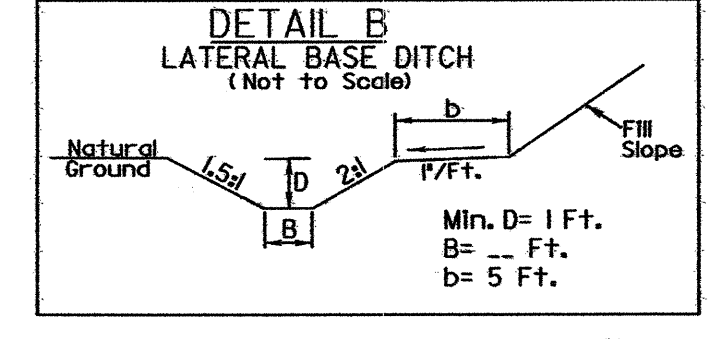
NOTE: CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.	NOTE: ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.
NOTE: CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.	NOTE: INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.
NOTE: CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.	

FOR -L- PROFILE, SEE SHEET NO. 14

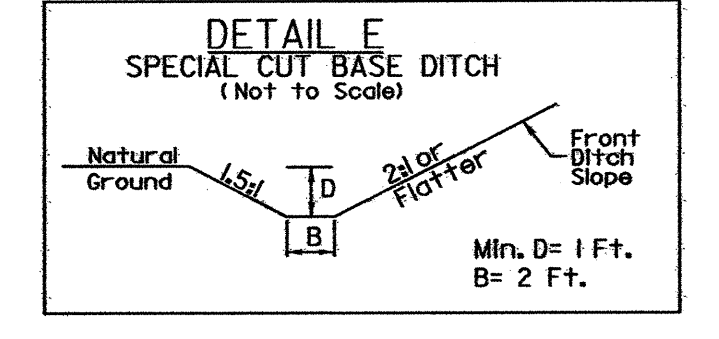
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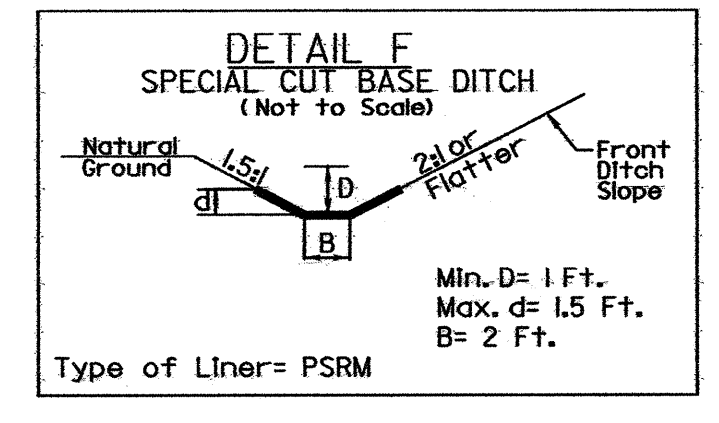
STATION TO STATION	SIDE
35+00 - 35+50	RT
35+50 - 36+60	RT
36+60 - 38+00	RT
45+50 - 47+00	RT



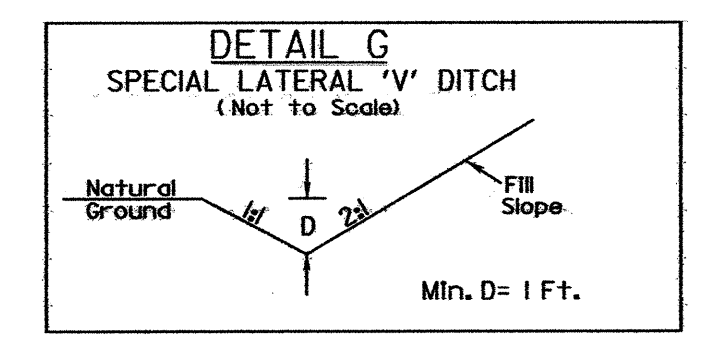
STATION TO STATION	SIDE	BASE
47+75 - 48+50	RT	2'



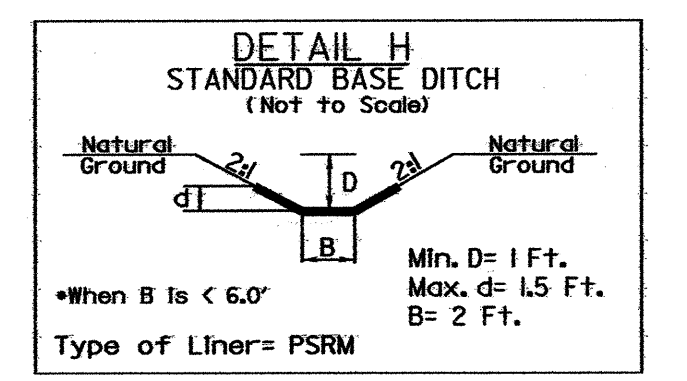
STATION TO STATION	SIDE
47+00 - 47+50	RT



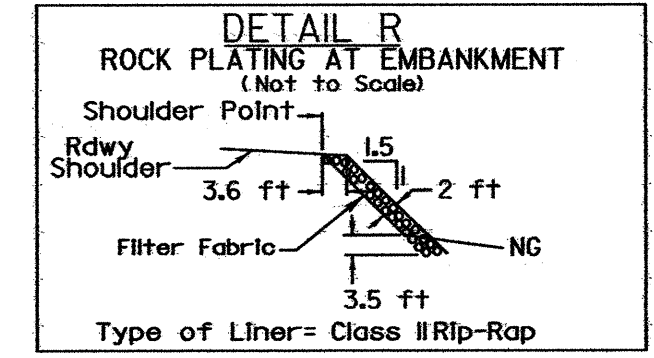
STATION TO STATION	SIDE
47+50 - 47+75	RT



STATION TO STATION	SIDE
39+50 - 40+75	RT
48+50 - 49+00	RT

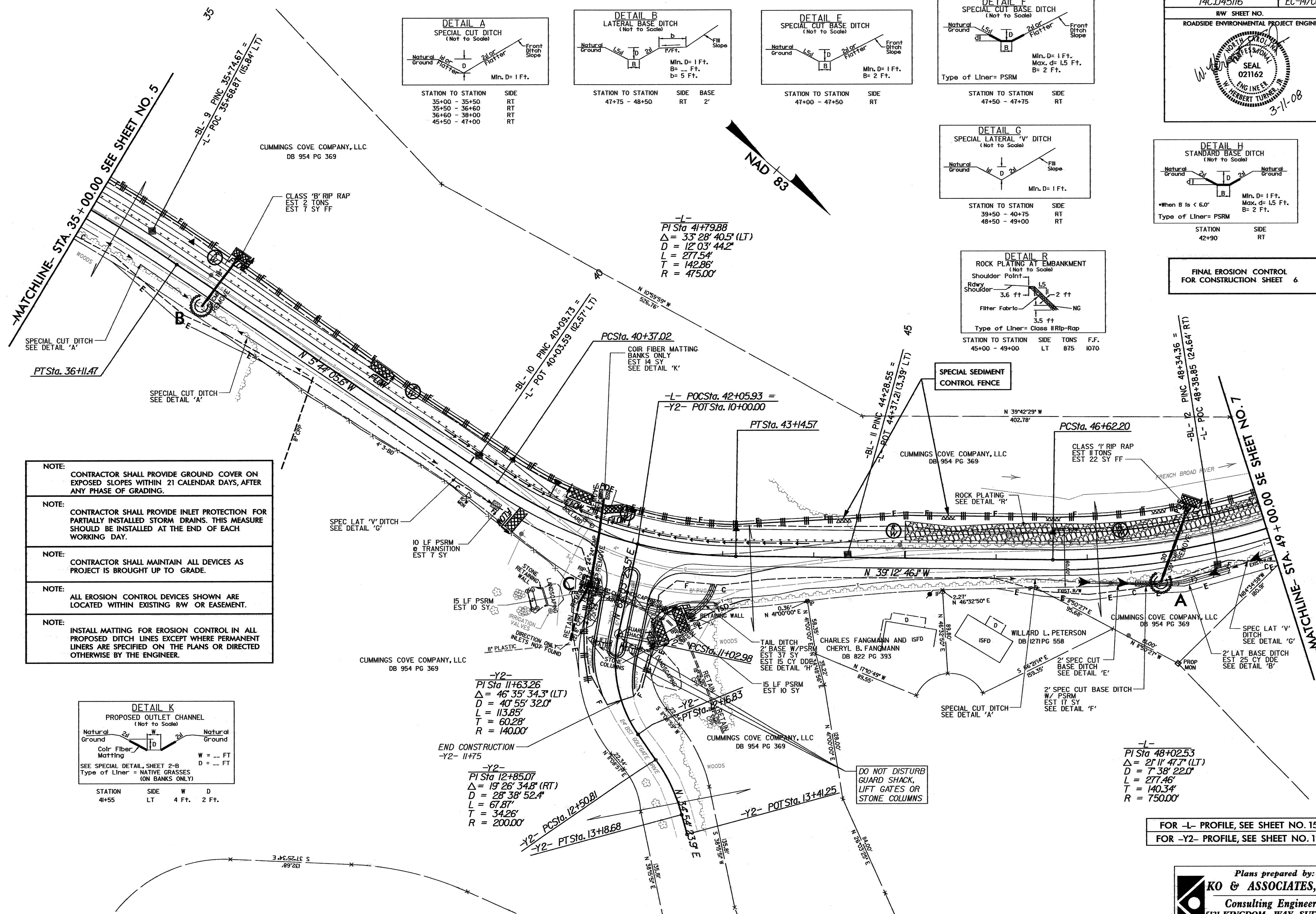


STATION	SIDE
42+90	RT

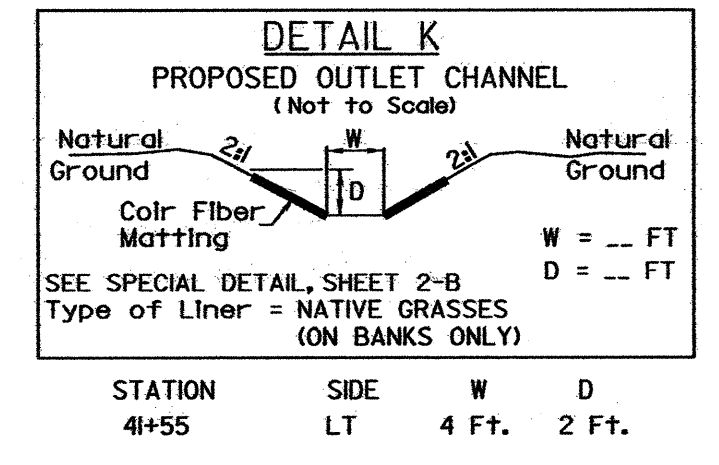


STATION TO STATION	SIDE	TONS	F.F.
45+00 - 49+00	LT	875	1070

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 6



- NOTE:** CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.
- NOTE:** CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.
- NOTE:** CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.
- NOTE:** ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING RW OR EASEMENT.
- NOTE:** INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.



STATION	SIDE	W	D
4+55	LT	4 Ft.	2 Ft.

-Y2-
PI Sta 11+63.26
Δ = 46° 35' 34.3" (LT)
D = 113.85'
L = 60.28'
R = 140.00'

-Y2-
PI Sta 12+85.07
Δ = 19° 26' 34.8" (RT)
D = 28° 38' 52.4"
L = 67.87'
T = 34.26'
R = 200.00'

-L-
PI Sta 41+79.88
Δ = 33° 28' 40.5" (LT)
D = 12° 03' 44.2"
L = 277.54'
T = 142.86'
R = 475.00'

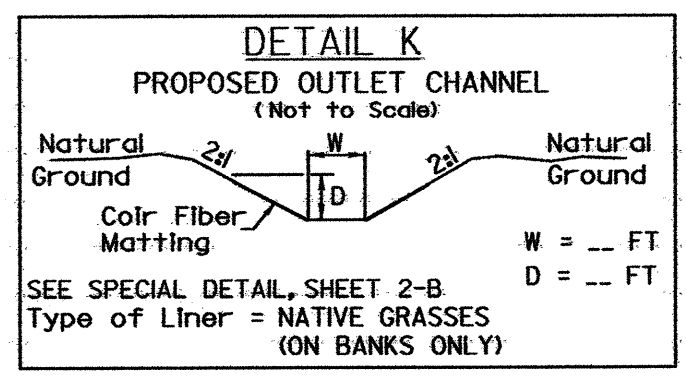
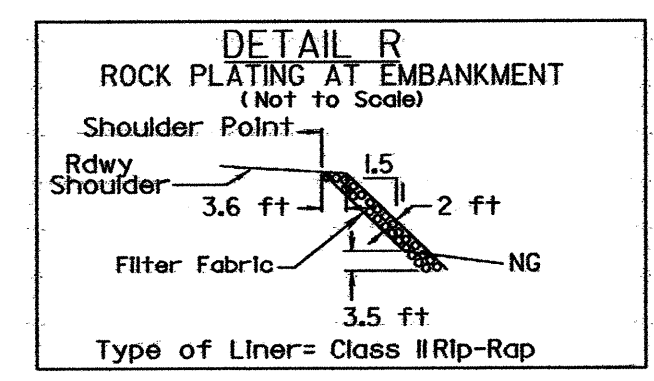
-L-
PI Sta 48+02.53
Δ = 21° 11' 47.7" (LT)
D = 7° 38' 22.0"
L = 277.46'
T = 140.34'
R = 750.00'

FOR -L- PROFILE, SEE SHEET NO. 15
FOR -Y2- PROFILE, SEE SHEET NO. 19

DO NOT DISTURB
GUARD SHACK,
LIFT GATES OR
STONE COLUMNS

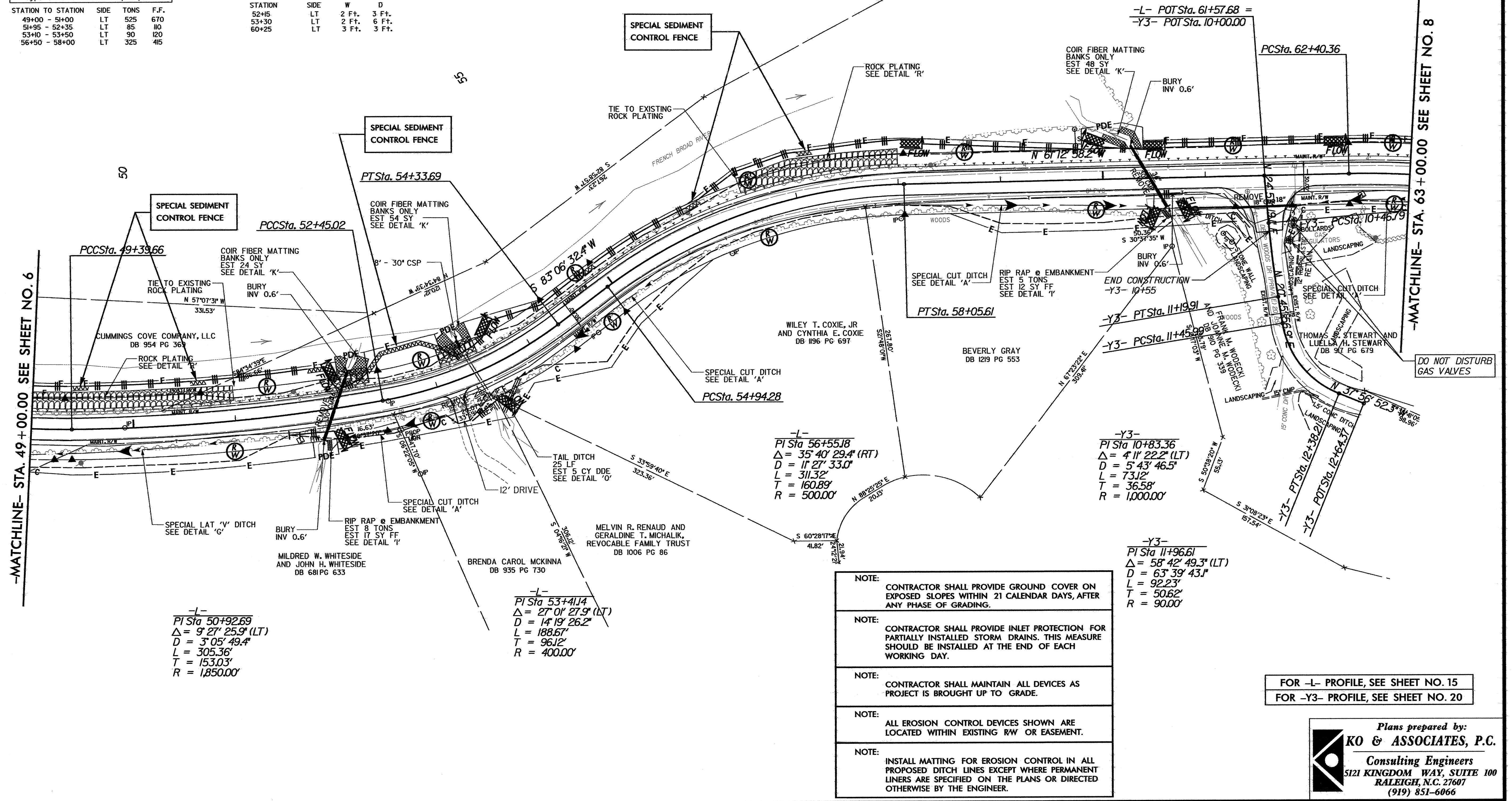
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FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 7



STATION TO STATION	SIDE	TONS	F.F.
49+00 - 51+00	LT	525	670
51+95 - 52+35	LT	85	110
53+10 - 53+50	LT	90	120
56+50 - 58+00	LT	325	415

STATION	SIDE	W	D
52+45	LT	2 Ft.	3 Ft.
53+30	LT	2 Ft.	6 Ft.
60+25	LT	3 Ft.	3 Ft.



-MATCHLINE- STA. 49+00.00 SEE SHEET NO. 6

-MATCHLINE- STA. 63+00.00 SEE SHEET NO. 8

DO NOT DISTURB GAS VALVES

-L-
 PI Sta 50+92.69
 $\Delta = 9' 27'' 25.9''$ (LT)
 $D = 3' 05'' 49.4''$
 $L = 305.36'$
 $T = 153.03'$
 $R = 1,850.00'$

-L-
 PI Sta 53+41.4
 $\Delta = 27' 01'' 27.9''$ (LT)
 $D = 14' 19'' 26.2''$
 $L = 188.67'$
 $T = 96.12'$
 $R = 400.00'$

-L-
 PI Sta 56+55.18
 $\Delta = 35' 40'' 29.4''$ (RT)
 $D = 11' 27'' 33.0''$
 $L = 311.32'$
 $T = 160.89'$
 $R = 500.00'$

-Y3-
 PI Sta 10+83.36
 $\Delta = 4' 11'' 22.2''$ (LT)
 $D = 5' 43'' 46.5''$
 $L = 73.12'$
 $T = 36.58'$
 $R = 1,000.00'$

-Y3-
 PI Sta 11+96.61
 $\Delta = 58' 42'' 49.3''$ (LT)
 $D = 63' 39'' 43.1''$
 $L = 92.23'$
 $T = 50.62'$
 $R = 90.00'$

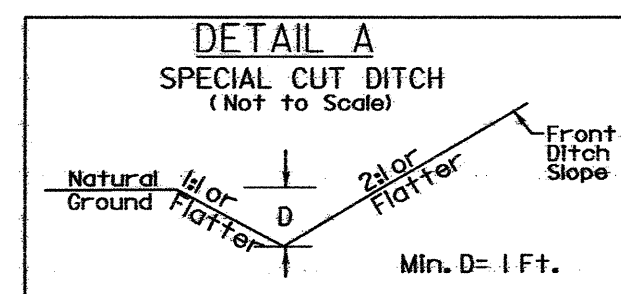
- NOTE: CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.
- NOTE: CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR PARTIALLY INSTALLED STORM DRAINS. THIS MEASURE SHOULD BE INSTALLED AT THE END OF EACH WORKING DAY.
- NOTE: CONTRACTOR SHALL MAINTAIN ALL DEVICES AS PROJECT IS BROUGHT UP TO GRADE.
- NOTE: ALL EROSION CONTROL DEVICES SHOWN ARE LOCATED WITHIN EXISTING R/W OR EASEMENT.
- NOTE: INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

FOR -L- PROFILE, SEE SHEET NO. 15
 FOR -Y3- PROFILE, SEE SHEET NO. 20

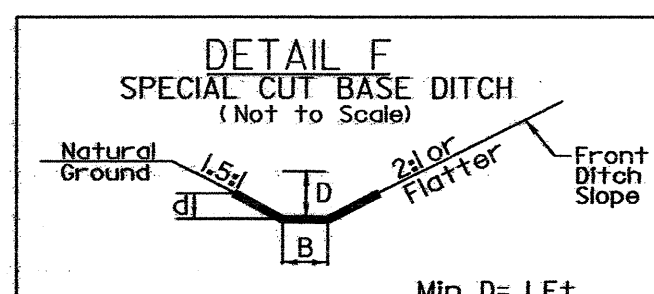
Plans prepared by:
KO & ASSOCIATES, P.C.
 Consulting Engineers
 5121 KINGDOM WAY, SUITE 100
 RALEIGH, N.C. 27607
 (919) 851-6066

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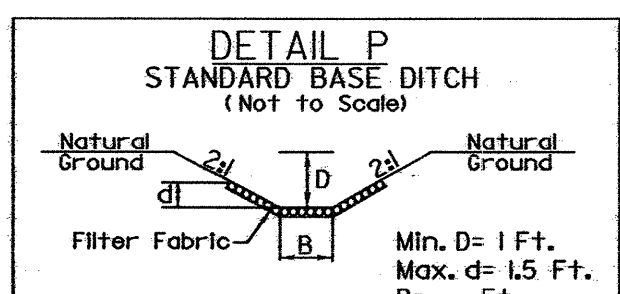
FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 8



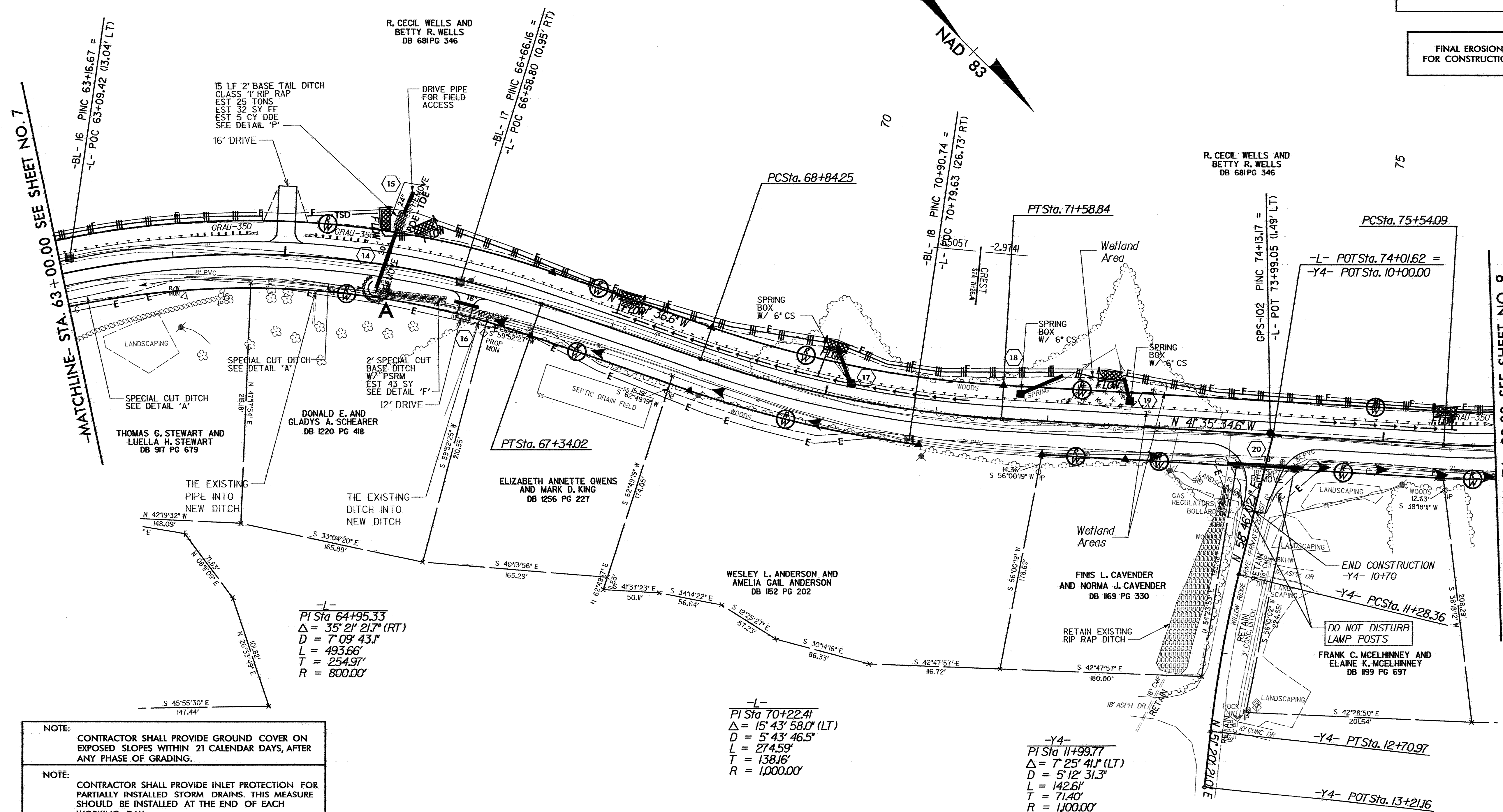
STATION TO STATION	SIDE
63+00 - 64+00	RT
65+00 - 65+85	RT



STATION TO STATION	SIDE
65+85 - 66+50	RT



STATION	SIDE	B
66+00	LT	2 Ft.

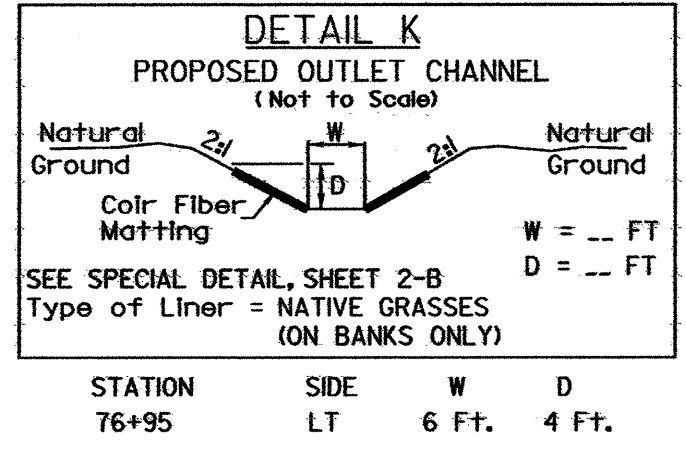
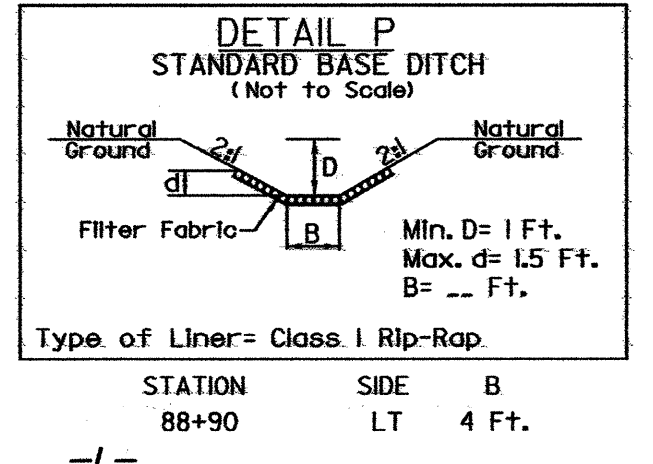
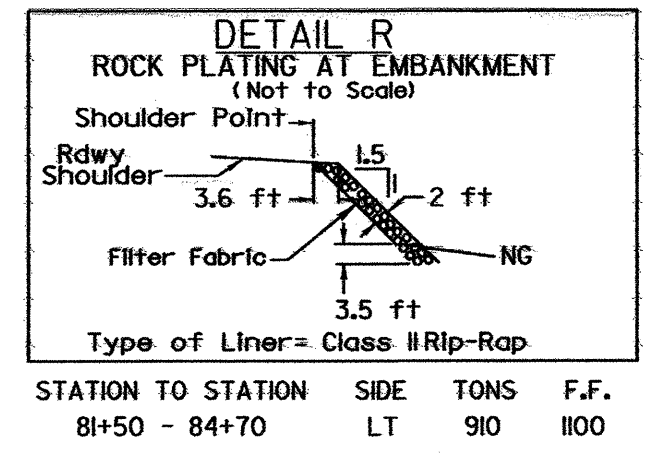
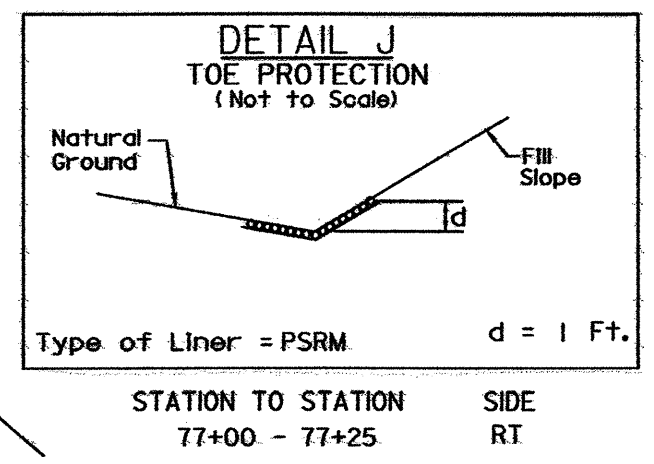
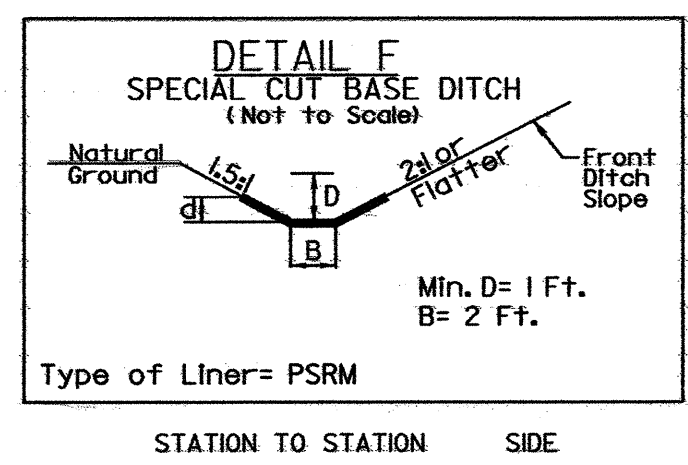
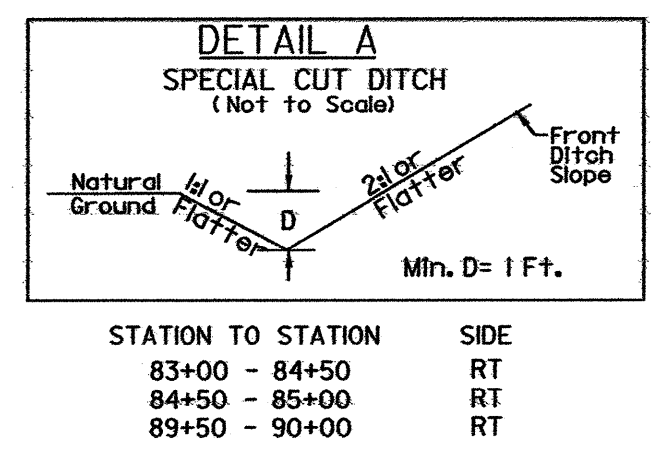


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- NOTE: INSTALL MATTING FOR EROSION CONTROL IN ALL PROPOSED DITCH LINES EXCEPT WHERE PERMANENT LINERS ARE SPECIFIED ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

FOR -L- PROFILE, SEE SHEET NO. 16
 FOR -Y4- PROFILE, SEE SHEET NO. 20

5/14/09
 3/28/2008
 C:\Users\jason\Documents\Erosion Control\CUMMINGS.ec.fina.16.dgn

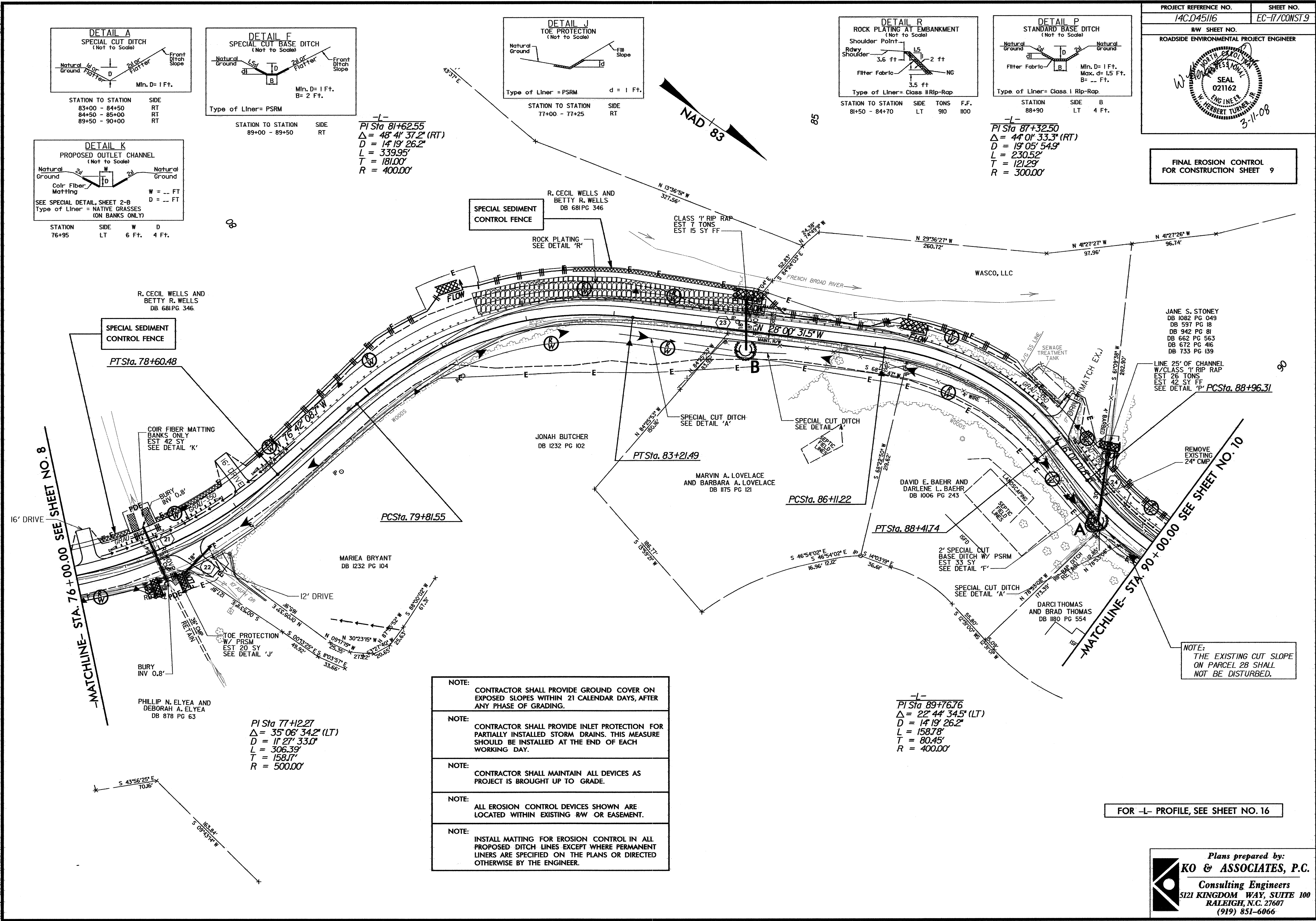
FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 9



-L-
PI Sta 81+62.55
Δ = 48° 41' 37.2" (RT)
D = 14' 19' 26.2"
L = 339.95'
T = 181.00'
R = 400.00'

-L-
PI Sta 87+32.50
Δ = 44° 01' 33.3" (RT)
D = 19' 05' 54.9"
L = 230.52'
T = 121.29'
R = 300.00'

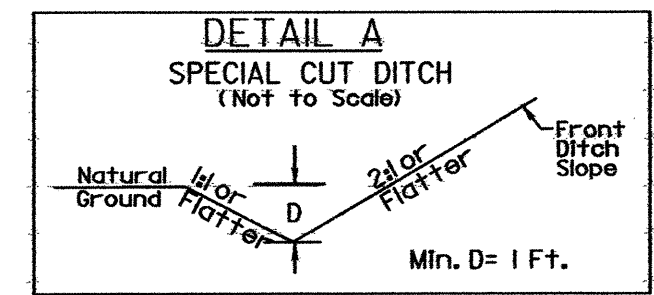
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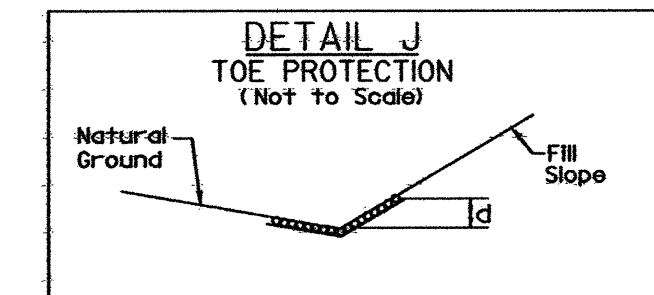
- NOTE: CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.
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FOR -L- PROFILE, SEE SHEET NO. 16

FINAL EROSION CONTROL
FOR CONSTRUCTION SHEET 10



STATION TO STATION	SIDE
90+00 - 91+00	RT
94+00 - 95+95	RT
95+95 - 97+50	RT

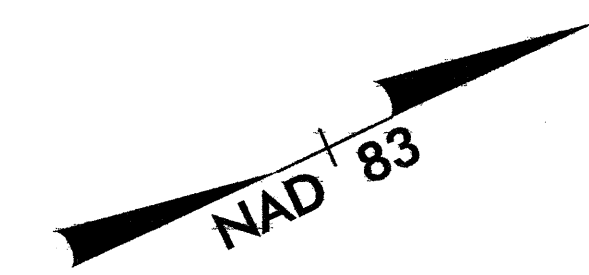


Type of Liner = PSRM

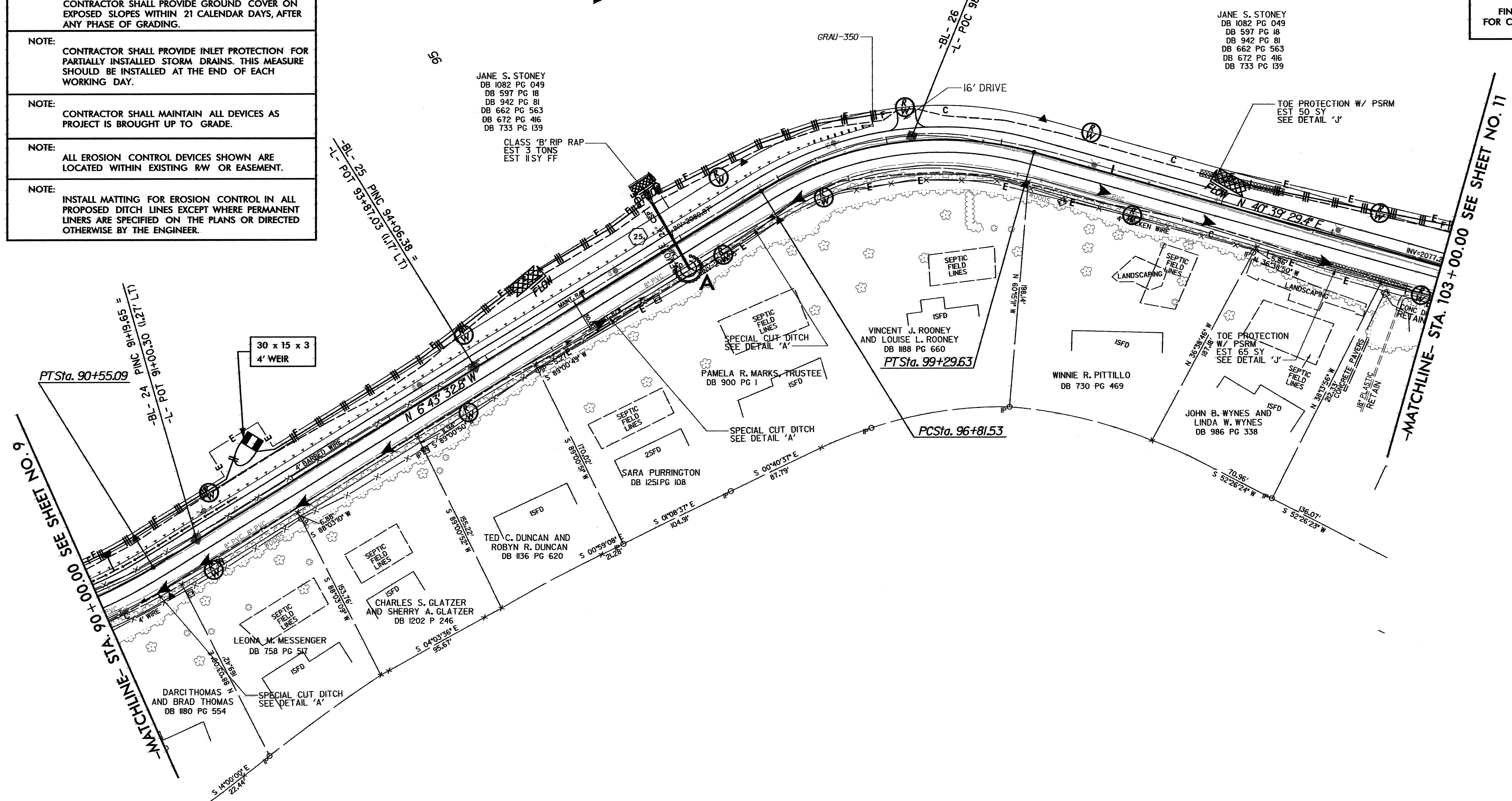
d = 1 Ft.

STATION TO STATION	SIDE
100+75 - 101+50	LT
101+50 - 102+75	RT

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-L-
 PI Sta. 98+13.17
 $\Delta = 47^{\circ} 23' 02.2''$ (RT)
 $D = 19^{\circ} 05' 54.9''$
 $L = 248.10'$
 $T = 131.64'$
 $R = 300.00'$



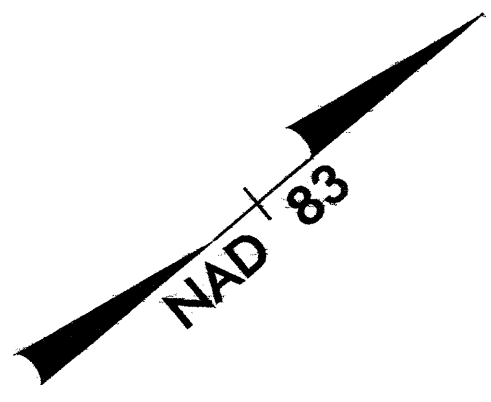
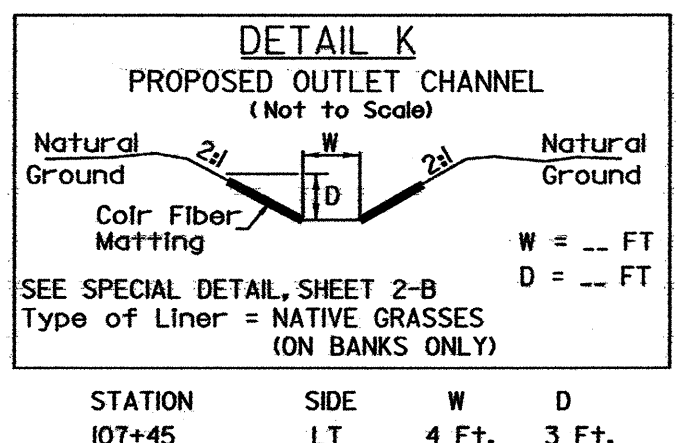
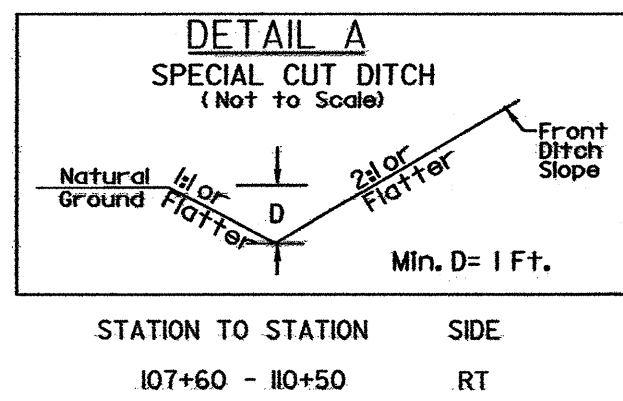
NOTE:
 THE EXISTING CUT SLOPE
 ON PARCELS 28 THRU 31
 SHALL NOT BE DISTURBED.

NOTE:
 ON PARCELS 32 THRU 37 ALL FLAGGED TREES OR
 WITHIN THE ORANGE FENCE SHALL NOT BE CUT.
 THE BRUSH WITHIN THESE TREES CAN STAY.

FOR -L- PROFILE, SEE SHEET NO. 17

3/10/2008
 C:\hydro\lca\dgn\erosion_control\1\CUMMINGS.ec.f.mel18.dgn
 KO & Associates, P.C.

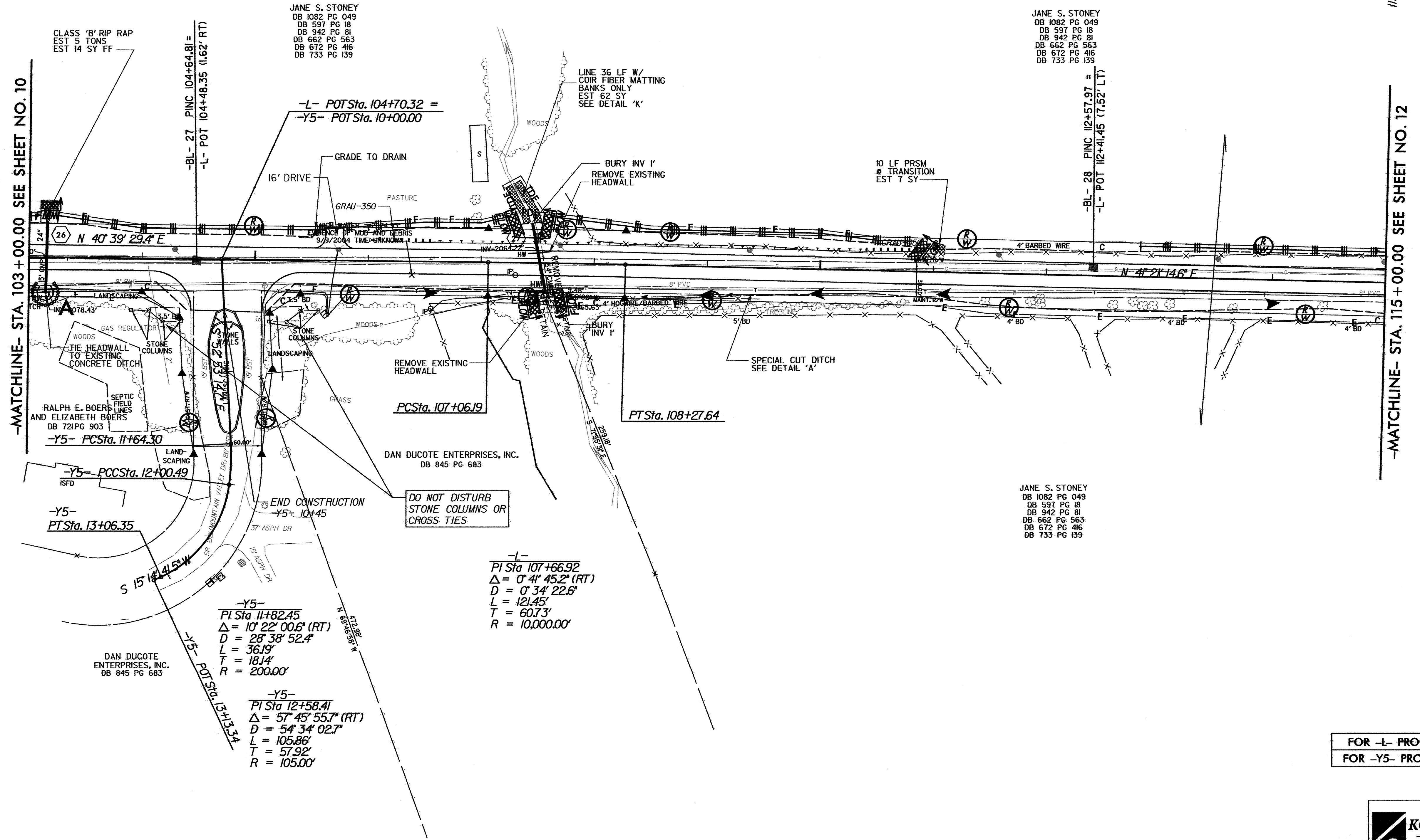
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- NOTE:** CONTRACTOR SHALL PROVIDE GROUND COVER ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS, AFTER ANY PHASE OF GRADING.
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PROJECT REFERENCE NO. 14C.045116	SHEET NO. EC-19/CONST II
RW SHEET NO.	
ROADSIDE ENVIRONMENTAL PROJECT ENGINEER	

FINAL EROSION CONTROL
FOR CONSTRUCTION SHEET 11



105

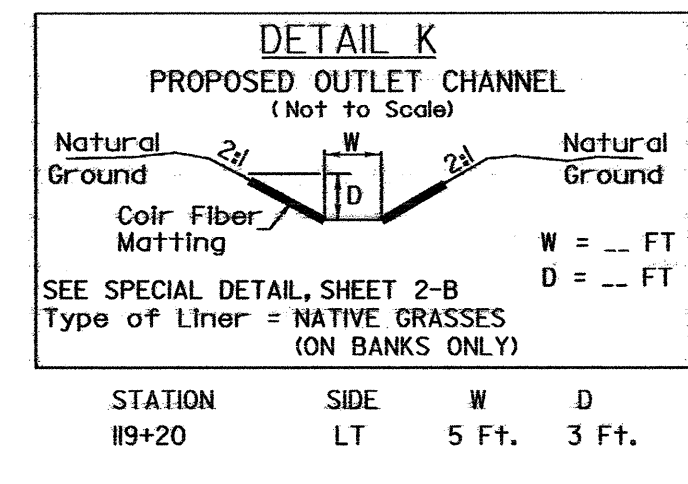
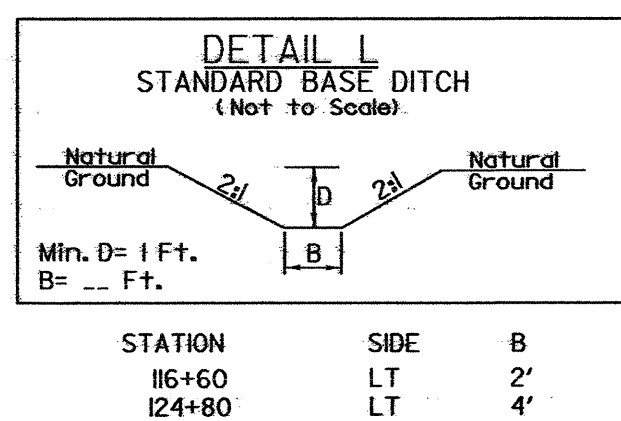
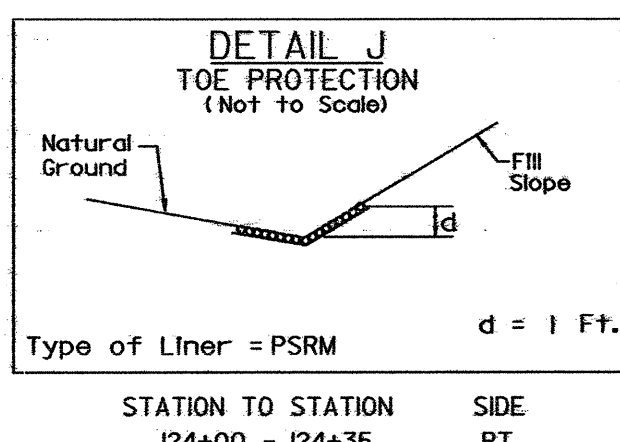
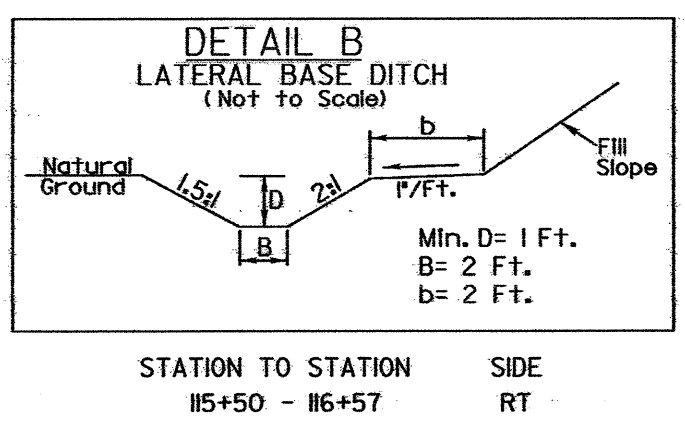
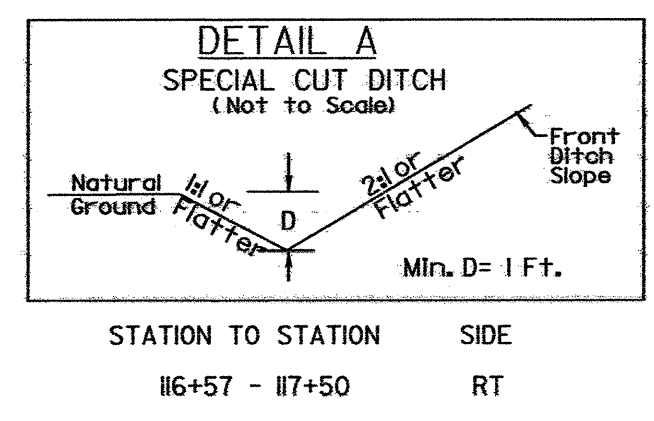
110

-MATCHLINE- STA. 103+00.00 SEE SHEET NO. 10

-MATCHLINE- STA. 115+00.00 SEE SHEET NO. 12

Plans prepared by:
KO & ASSOCIATES, P.C.
Consulting Engineers
5121 KINGDOM WAY, SUITE 100
RALEIGH, N.C. 27607
(919) 851-6066

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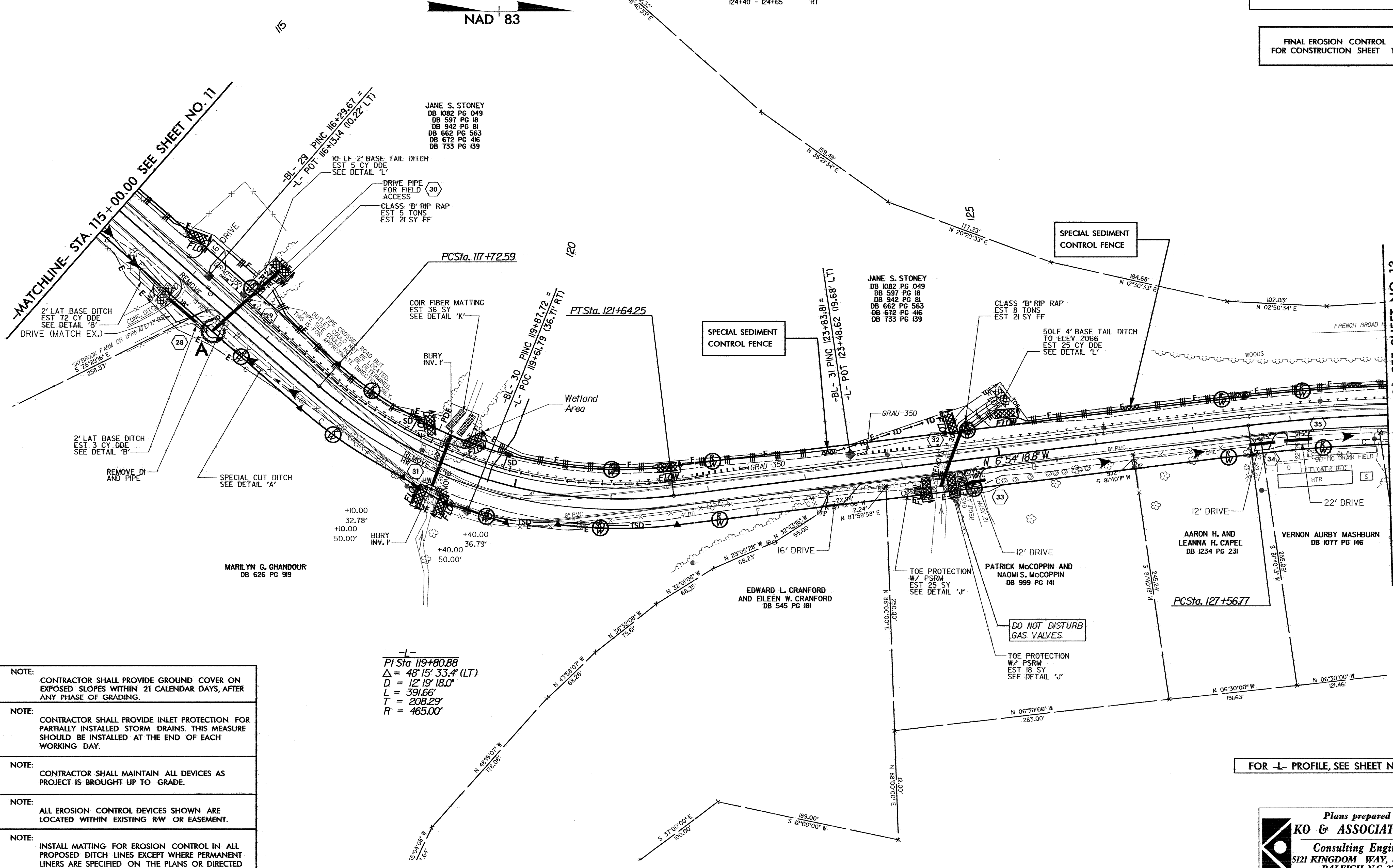


PROJECT REFERENCE NO. 14C.045116 SHEET NO. EC-20/CONST 12

RW SHEET NO. ROADSIDE ENVIRONMENTAL PROJECT ENGINEER

3-21-08

FINAL EROSION CONTROL FOR CONSTRUCTION SHEET 12



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-L-
 PI Sta 119+80.88
 $\Delta = 48' 15' 33.4''$ (LT)
 $D = 12' 19' 18.0''$
 $L = 391.66'$
 $T = 208.29'$
 $R = 465.00'$

FOR -L- PROFILE, SEE SHEET NO. 18

Plans prepared by:
KO & ASSOCIATES, P.C.
 Consulting Engineers
 5121 KINGDOM WAY, SUITE 100
 RALEIGH, N.C. 27607
 (919) 851-6066

