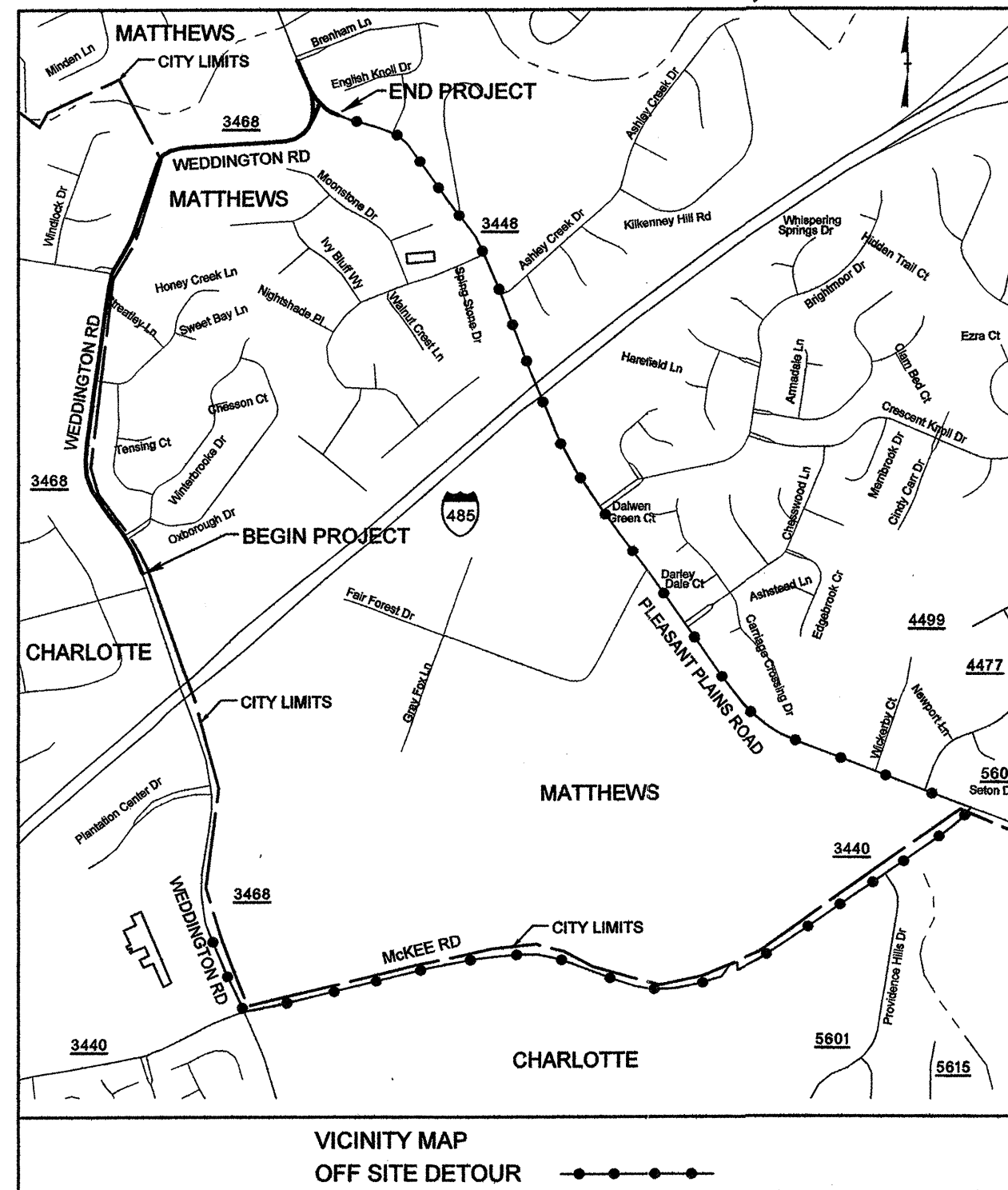


CONTRACT NO.: C201995
U-5025, 37162

See Sheet 1-A For Index of Sheets



VICINITY MAP
OFF SITE DETOUR

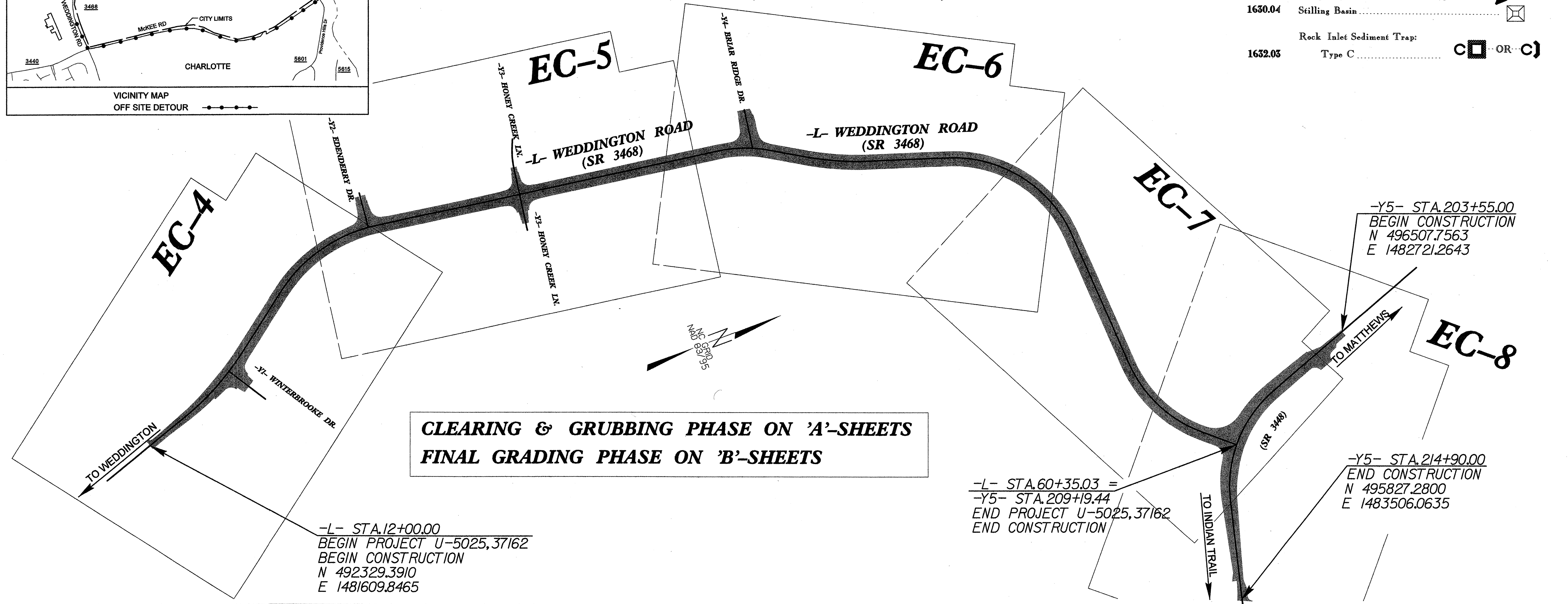
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MECKLENBURG COUNTY

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

**LOCATION: WEDDINGTON ROAD (SR 3468) FROM SOUTH OF I-485
TO THE INTERSECTION OF PLEASANT PLAINS RD. (SR 3448)**

TYPE OF WORK: GRADING, PAVING, CURB & GUTTER, DRAINAGE AND CULVERT

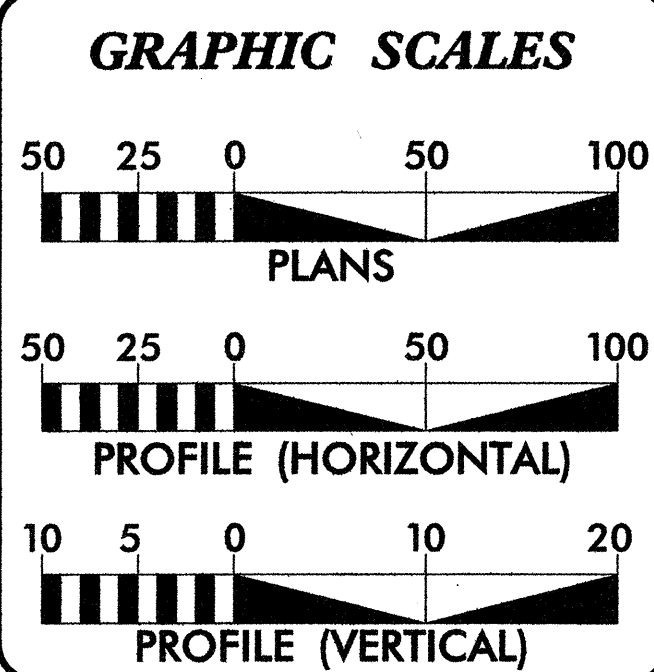


**CLEARING & GRUBBING PHASE ON 'A'-SHEETS
FINAL GRADING PHASE ON 'B'-SHEETS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5025, 37162	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1650.05	Temporary Silt Ditch	TD
1606.01	Special Sediment Control Fence	[Symbol]
1607.01	Gravel Construction Entrance	[Symbol]
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	[Symbol]
1622.01	Temporary Berms and Slope Drains	[Symbol]
1633.01	Temporary Rock Silt Check Type-A	[Symbol]
1633.02	Temporary Rock Silt Check Type-B	[Symbol]
1630.04	Stilling Basin	[Symbol]
Rock Inlet Sediment Trap:		
1632.05	Type C	C OR C)



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	1630.05 Temporary Diversion
1606.01 Special Sediment Control Fence	1630.06 Special Stilling Basin
1607.01 Gravel Construction Entrance	1632.03 Rock Inlet Sediment Trap Type C
1622.01 Temporary Berms and Slope Drains	1633.01 Temporary Rock Silt Check Type A
1630.03 Temporary Silt Ditch	1633.02 Temporary Rock Silt Check Type B
1630.04 Stilling Basin	

MULKEY ENGINEERS & CONSULTANTS
7815 E. INDEPENDENCE BOULEVARD
SUITE 100 CHARLOTTE, NC 28227
(704) 537-7300 (704) 537-2811 (FAX)
WWW.MULKEYINC.COM

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 08-25-06

LETTING DATE: 02-19-08

SCOTT S. CHINERY, PE
PROJECT ENGINEER

DAVID P. BOCKER, PE
HYDRAULIC ENGINEER

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
ROADSIDE ENVIRONMENTAL ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED DIVISION ADMINISTRATOR

DATE

1/4/2008
 SYSTEMS
 DGN
 USER NAME

EROSION CONTROL STANDARD DRAWINGS

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

ENGLISH STANDARD DRAWING FOR TEMPORARY SILT FENCE

8' MAX. WITH WIRE (6' MAX. WITHOUT WIRE)

MIDDLE AND VERTICAL WIRES SHALL BE 12½ GAUGE MIN.

TOP AND BOTTOM STRAND SHALL BE 10 GAUGE MIN.

WIRE FILTER FABRIC

NOTES
 USE WIRE A MINIMUM OF 32" IN WIDTH AND WITH A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
 USE FILTER FABRIC A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE WIRE AS DIRECTED BY THE ENGINEER.
 PROVIDE 5'-0" STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.

WIRE FILTER FABRIC COMPACTED FILL

STEEL POST - 2'-0" DEPTH

EXTENSION OF FABRIC AND WIRE INTO TRENCH

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

ENGLISH STANDARD DRAWING FOR TEMPORARY SILT FENCE

SHEET 1 OF 1 1605.01

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

ENGLISH STANDARD DRAWING FOR TEMPORARY DIVERSION

COMPACTED SOIL

2' MINIMUM

1'-6" MINIMUM

FLOW

6' TYPICAL

CROSS SECTIONAL VIEW

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

ENGLISH STANDARD DRAWING FOR TEMPORARY DIVERSION

SHEET 1 OF 1 1630.05

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

ENGLISH STANDARD DRAWING FOR ROCK INLET SEDIMENT TRAP TYPE 'C'

1/4" WIRE MESH

MAXIMUM POST SPACING 4 FT.

12"

14"

14" WIRE MESH

SEE NOTE FOR POST DESCRIPTION

NOTE
 USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL.
 USE 24 GAUGE MINIMUM WIRE MESH HARDWARE CLOTH WITH 1/4 INCH MESH OPENINGS.
 PLACE TOP OF WIRE MESH A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR ANY DIVERSION POINT.
 INSTALL WIRE MESH UNDER SEDIMENT CONTROL STONE.
 USE 5" STEEL POST, INSTALLED 1.5' DEEP MINIMUM, AND OF THE SELF-FASTENER ANGLE STEEL TYPE.
 SPACE POST A MAXIMUM OF 4'.

SEDIMENT CONTROL STONE

1'-6"

2'

6"

14"

WIRE MESH

FILTERED WATER

AVERAGE BOX DIMENSION VARIABLE

SECTION A-A

MULTI-DIRECTIONAL FLOW

SEDIMENT CONTROL STONE

1'-6"

2'

6"

14"

WIRE MESH

FILTERED WATER

AVERAGE BOX DIMENSION VARIABLE

SECTION Y-Y

SINGLE-DIRECTIONAL FLOW

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

ENGLISH STANDARD DRAWING FOR ROCK INLET SEDIMENT TRAP TYPE 'C'

SHEET 1 OF 1 1632.03

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

ENGLISH STANDARD DRAWING FOR TEMPORARY ROCK SILT CHECK TYPE 'A'

SEDIMENT CONTROL STONE

STRUCTURAL STONE

FLOW

L=3xH

PLAN

NOTE
 USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.
 USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL.

2/3 CHANNEL WIDTH

2' MIN

SECTION A-A

SECTION B-B

H = 12" MIN.

2' MIN

12"

*T = 12" MIN., 18" MAX.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 7-06

ENGLISH STANDARD DRAWING FOR TEMPORARY ROCK SILT CHECK TYPE 'A'

SHEET 1 OF 1 1633.01

6/2/99

1/4/2008

SYSTEMS DESIGN

EROSION CONTROL STANDARD DRAWINGS AND DETAILS

6/2/09

1/4/2008

L. W. JONES

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

7-08

ENGLISH STANDARD DRAWING FOR
GRAVEL CONSTRUCTION ENTRANCE

SHEET 1 OF 1
1607.01

CLASS "A" STONE
8 IN. MIN. DEPTH

50 FT.

12 FT.

PUBLIC ROAD

NOTES:

1. PROVIDE TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS.
2. LOCATE ENTRANCE(S) TO PROVIDE FOR UTILIZATION BY ALL CONSTRUCTION VEHICLES.
3. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE WILL BE NECESSARY.
4. ANY MATERIAL TRACKED ONTO THE ROADWAY MUST BE CLEANED UP IMMEDIATELY.
5. LOCATE GRAVEL CONSTRUCTION ENTRANCE AT ALL POINTS OF INGRESS AND EGRESS UNTIL SITE IS STABILIZED. PROVIDE FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE.
6. NUMBER AND LOCATION OF CONSTRUCTION ENTRANCES TO BE DETERMINED BY THE ENGINEER.
7. USE CLASS 'A' STONE OR OTHER COARSE AGGREGATE APPROVED BY THE ENGINEER.

NOTE: PLACE FILTER FABRIC BENEATH STONE

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

7-08

ENGLISH STANDARD DRAWING FOR
GRAVEL CONSTRUCTION ENTRANCE

SHEET 1 OF 1
1607.01

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

7-08

ENGLISH STANDARD DRAWING FOR
GUIDE FOR TEMPORARY BERMS
AND SLOPE DRAIN

SHEET 1 OF 1
1622.01

INLET PROTECTION OPTION #1

INLET PROTECTION OPTION #2

TEMPORARY SLOPE DRAIN SECTION A-A

ISOMETRIC VIEW

NOTES:

1. OPEN END PIPE WITH MINIMUM SETBACK AND PROPER COMPACTION IS AN ACCEPTABLE INLET TREATMENT FOR STAGED CONSTRUCTION WHEN NOT LEFT IN PLACE FOR MORE THAN 30 DAYS.
2. DESIGN INLET PROTECTION OPTION #2 FOR 1800 CUBIC FOOT OF SEDIMENT STORAGE PER DISTURBED ACRE.
3. DESIGN SILT BASINS WITH A 2:1 LENGTH TO WIDTH RATIO MINIMUM.
4. USE CLASS B STONE FOR EROSION CONTROL AT OUTLET LOCATIONS SUBJECT TO SCOURING. SILT BASINS AND/OR OTHER EROSION CONTROL DEVICES MAY ALSO BE UTILIZED TO PREVENT SCOUR AT OUTLET LOCATIONS.
5. USE MAXIMUM SLOPE DRAIN SPACING OF 200 FT.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

7-08

ENGLISH STANDARD DRAWING FOR
GUIDE FOR TEMPORARY BERMS
AND SLOPE DRAIN

SHEET 1 OF 1
1622.01

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

7-08

ENGLISH STANDARD DRAWING FOR
STILLING BASIN FOR PUMPED EFFLUENT

SHEET 1 OF 1
1630.04

GENERAL NOTES:

- CONSTRUCT THE COIR FIBER BAFFLES WITH A MATERIAL THAT MEETS THE SPECIFICATIONS OF THE COIR FIBER MAT SPECIAL PROVISION PROVIDED IN THE CONTRACT.
- PROVIDE 5' STEEL POSTS OF THE SELF-FASTENER ANGLE STEEL TYPE. INSTALL STEEL POSTS WITH NO MORE THAN 3" OF THE POST APPEARING ABOVE THE GROUND.
- ATTACH THE COIR FIBER MAT TO THE STEEL POSTS WITH WIRE OR OTHER ACCEPTABLE MEANS AND STAPLED INTO THE BOTTOM AND SIDE SLOPES OF THE STILLING BASIN WITH 12" STAPLES.
- INSTALL THE TOP OF THE COIR FIBER BAFFLE A MINIMUM OF 6" LOWER THAN THE TOP OF THE STILLING BASIN BERMS.
- USE THE TYPICAL SECTION SHOWN FOR THE STILLING BASIN AS A GUIDE. THE BASIN MAY HAVE ANY TYPE CONFIGURATION AS LONG AS SUFFICIENT VOLUME IS PROVIDED AND PROVISIONS ARE MADE FOR A PERMEABLE STONE DRAIN.
- DO NOT EXCEED 5 FT. IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR STILLING BASINS. ADDITIONAL DEPTHS MAY BE ATTAINED BY EXCAVATING BELOW THE NATURAL GROUND LEVEL.
- THE STILLING BASIN SIZE IS VARIABLE AND DEPENDENT ON SPECIFIC SITE REQUIREMENTS AS WELL AS PROPOSED CONSTRUCTION OPERATIONS.
- SUBMIT THE SIZE, LOCATION AND PERMEABLE STONE DRAIN MATERIAL FOR APPROVAL PRIOR TO CONSTRUCTION.
- PUMP THE EFFLUENT INTO THE STILLING BASIN TO A MAXIMUM DEPTH OF 3 FEET.

COIR FIBER BAFFLES

STEEL POST

PERMEABLE STONE DRAIN

EARTH DIKE

PLAN

TYPICAL SECTION VIEW

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

7-08

ENGLISH STANDARD DRAWING FOR
STILLING BASIN FOR PUMPED EFFLUENT

SHEET 1 OF 1
1630.04

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

7-08

ENGLISH STANDARD DRAWING FOR
TEMPORARY ROCK SILT CHECK TYPE 'B'

SHEET 1 OF 1
1633.02

ISOMETRIC VIEW

CROSS SECTION VEE DITCH

CROSS SECTION TRAPEZOIDAL DITCH

ELEVATION VIEW

NOTES:

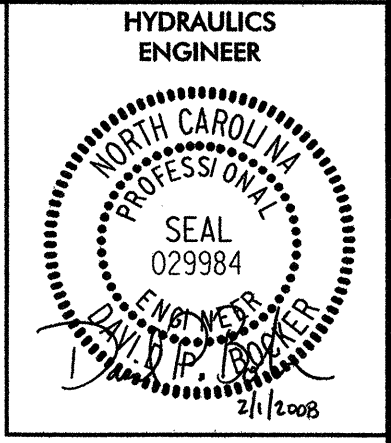
- USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.
- THE ENGINEER MAY DIRECT THE OPTION OF CLASS 'A' STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.
- USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL. PLACE SEDIMENT CONTROL STONE AS DIRECTED BY THE ENGINEER.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

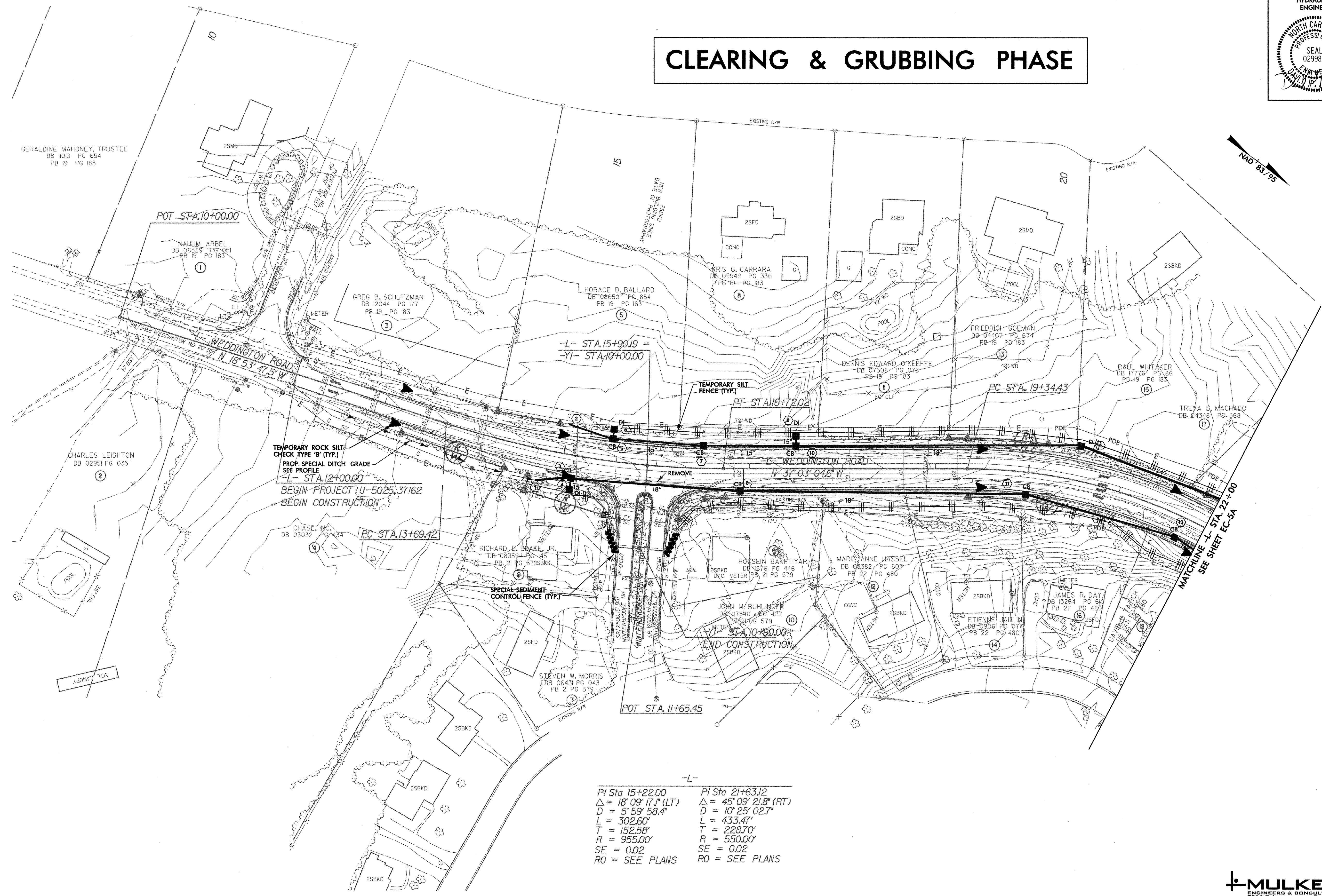
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ENGLISH STANDARD DRAWING FOR
TEMPORARY ROCK SILT CHECK TYPE 'B'

SHEET 1 OF 1
1633.02



CLEARING & GRUBBING PHASE

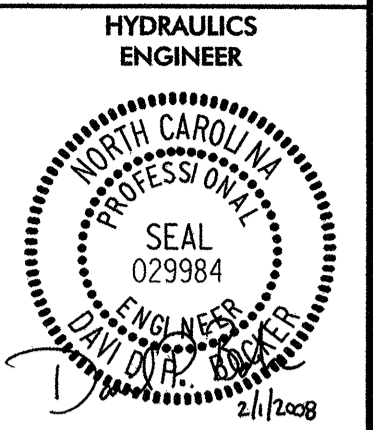


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$D = 5^{\circ} 59' 58.4''$	$D = 10^{\circ} 25' 02.7''$
$L = 302.60'$	$L = 433.47'$
$T = 152.58'$	$T = 228.70'$
$R = 955.00'$	$R = 550.00'$
$SE = 0.02$	$SE = 0.02$
$RO = \text{SEE PLANS}$	$RO = \text{SEE PLANS}$

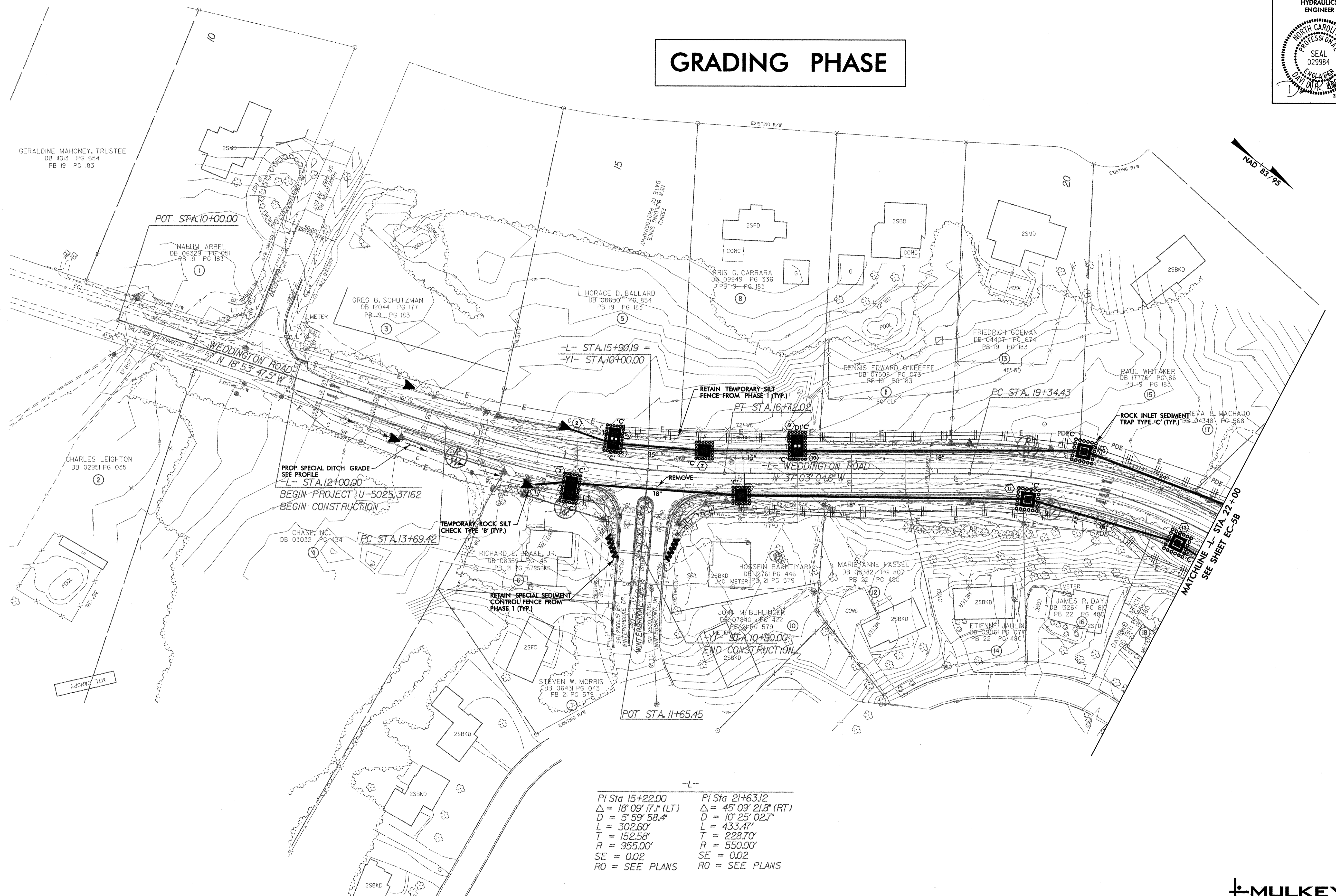
8/17/99

2/4/2008

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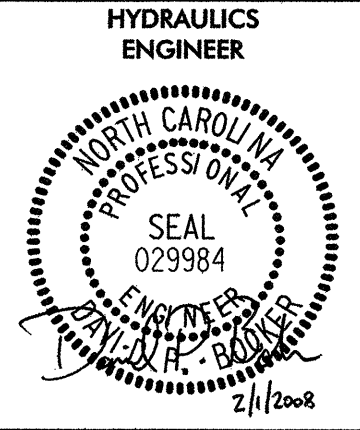


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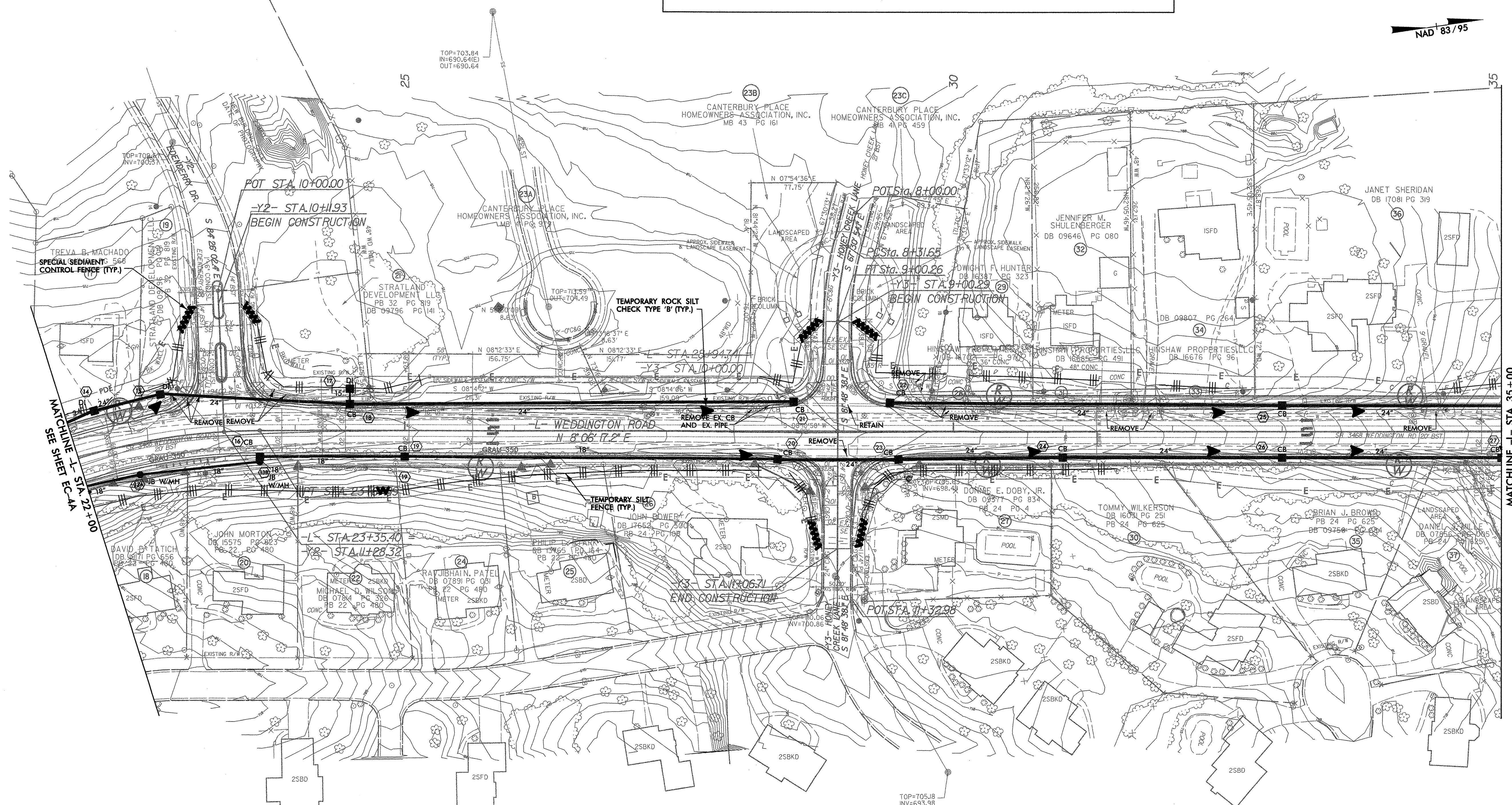
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$\Delta = 18^{\circ} 09' 17.1''$ (LT)	$\Delta = 45^{\circ} 09' 21.8''$ (RT)
D = 5' 59' 58.4"	D = 10' 25' 02.7"
L = 302.60'	L = 433.47'
T = 152.58'	T = 228.70'
R = 955.00'	R = 550.00'
SE = 0.02	SE = 0.02
RO = SEE PLANS	RO = SEE PLANS

MATCHLINE -L- STA. 22 + 00
SEE SHEET EC-5B



CLEARING & GRUBBING PHASE

NAD 83/95



MATCHLINE -L- STA. 22+00
SEE SHEET EC-4A

MATCHLINE -L- STA. 35+00
SEE SHEET EC-6A

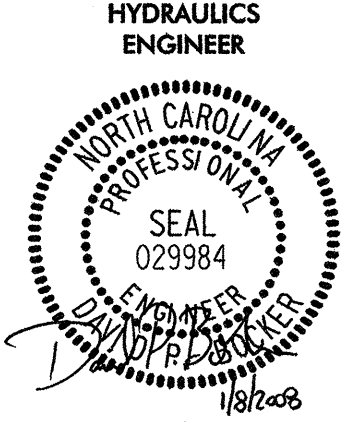
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D = 10' 25' 02.7"	D = 20' 50' 05.4"
L = 433.47'	L = 68.61'
T = 228.70'	T = 34.49'
R = 550.00'	R = 275.00'
SE = 0.02	
RO = SEE PLANS	

300' SETBACKS

8/17/99

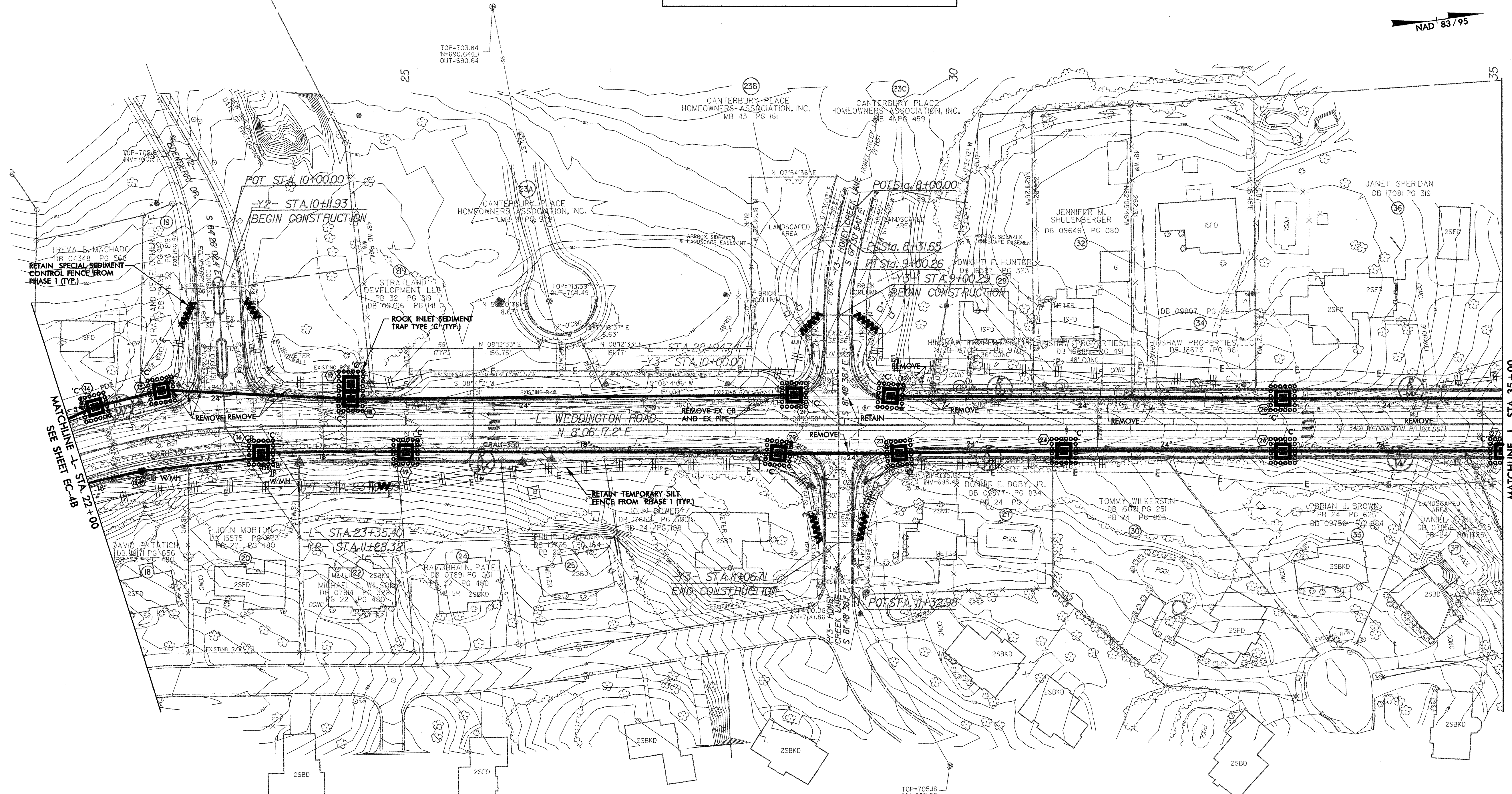
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SYTIME



GRADING PHASE

NAD 83/95



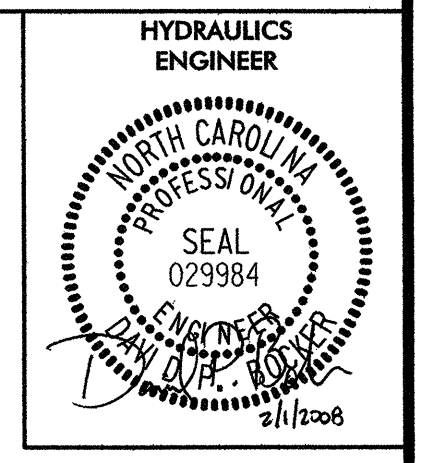
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SEE SHEET EC-6B

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$L = 433.4'$	$L = 68.6'$
$T = 228.70'$	$T = 34.49'$
$R = 550.00'$	$R = 275.00'$
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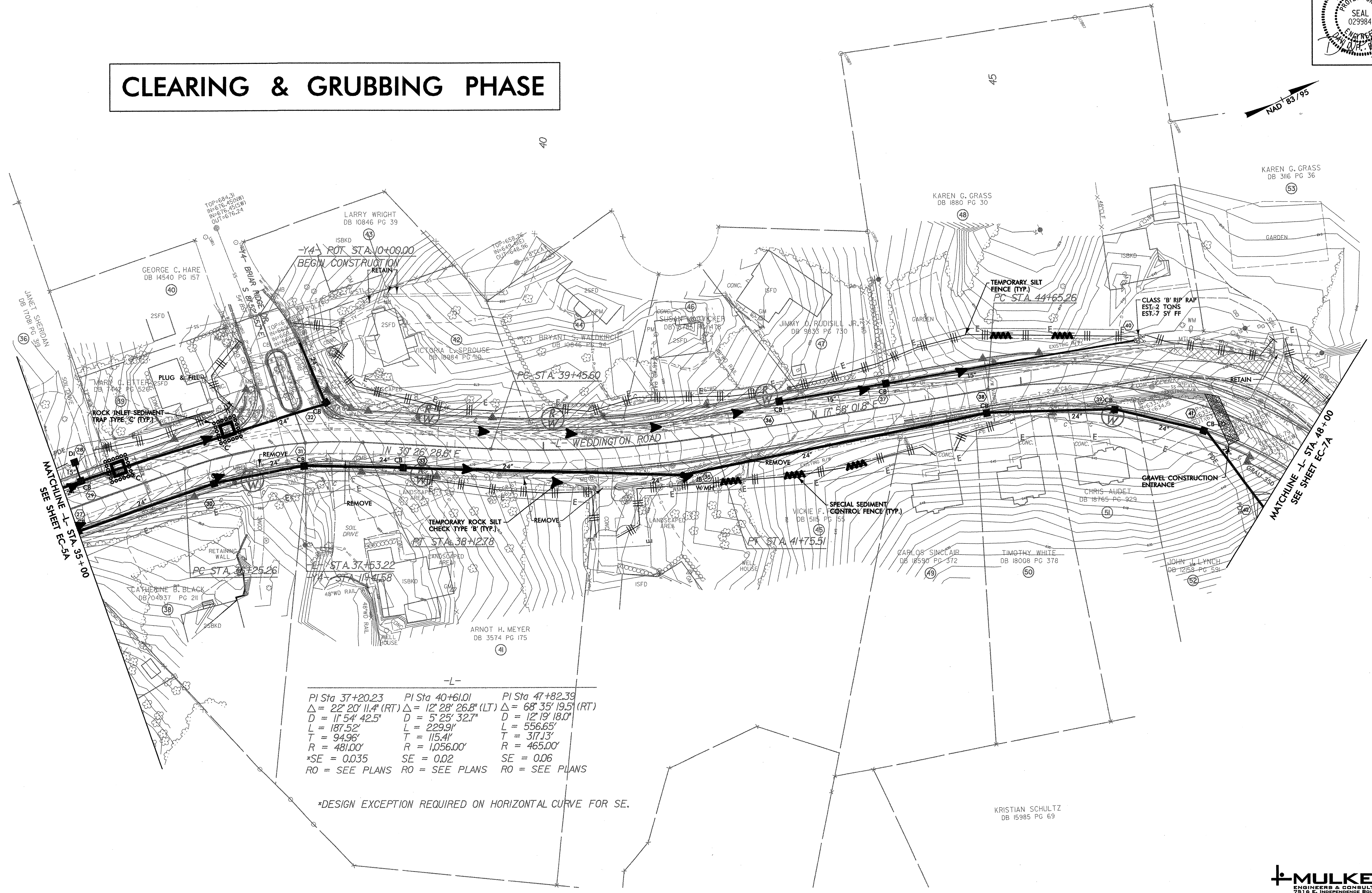
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1/4/2008

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CLEARING & GRUBBING PHASE



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SEE SHEET EC-5A

MATCHLINE - L - STA. 48+00
SEE SHEET EC-7A

-L-

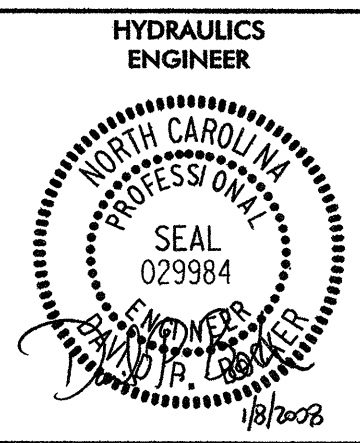
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D = 11' 54' 42.5"	D = 5' 25' 32.7"	D = 12' 19' 18.0"
L = 187.52'	L = 229.91'	L = 556.65'
T = 94.96'	T = 115.41'	T = 317.13'
R = 481.00'	R = 1,056.00'	R = 465.00'
*SE = 0.035	SE = 0.02	SE = 0.06
RO = SEE PLANS	RO = SEE PLANS	RO = SEE PLANS

*DESIGN EXCEPTION REQUIRED ON HORIZONTAL CURVE FOR SE.

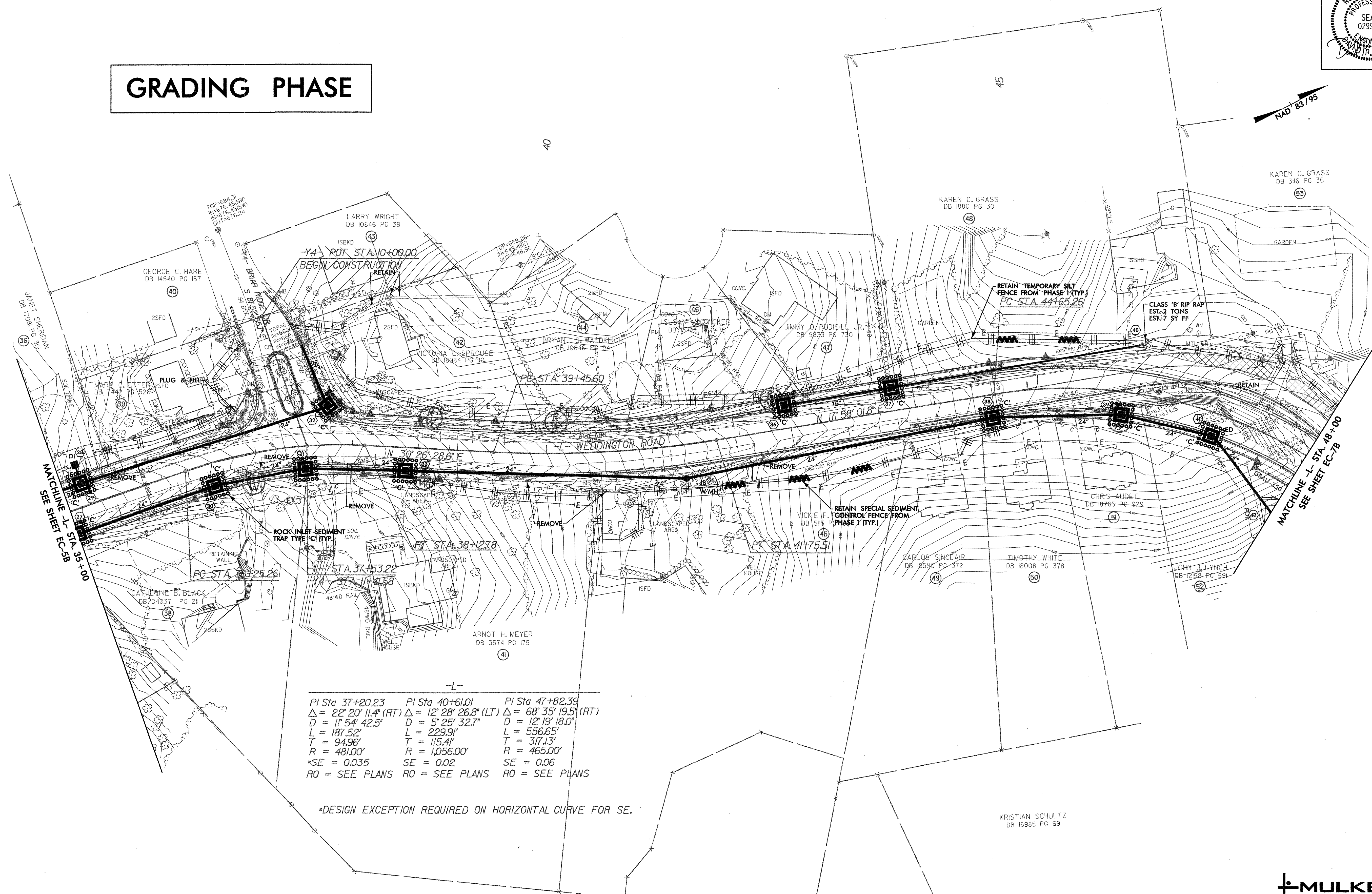
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GRADING PHASE



-L-

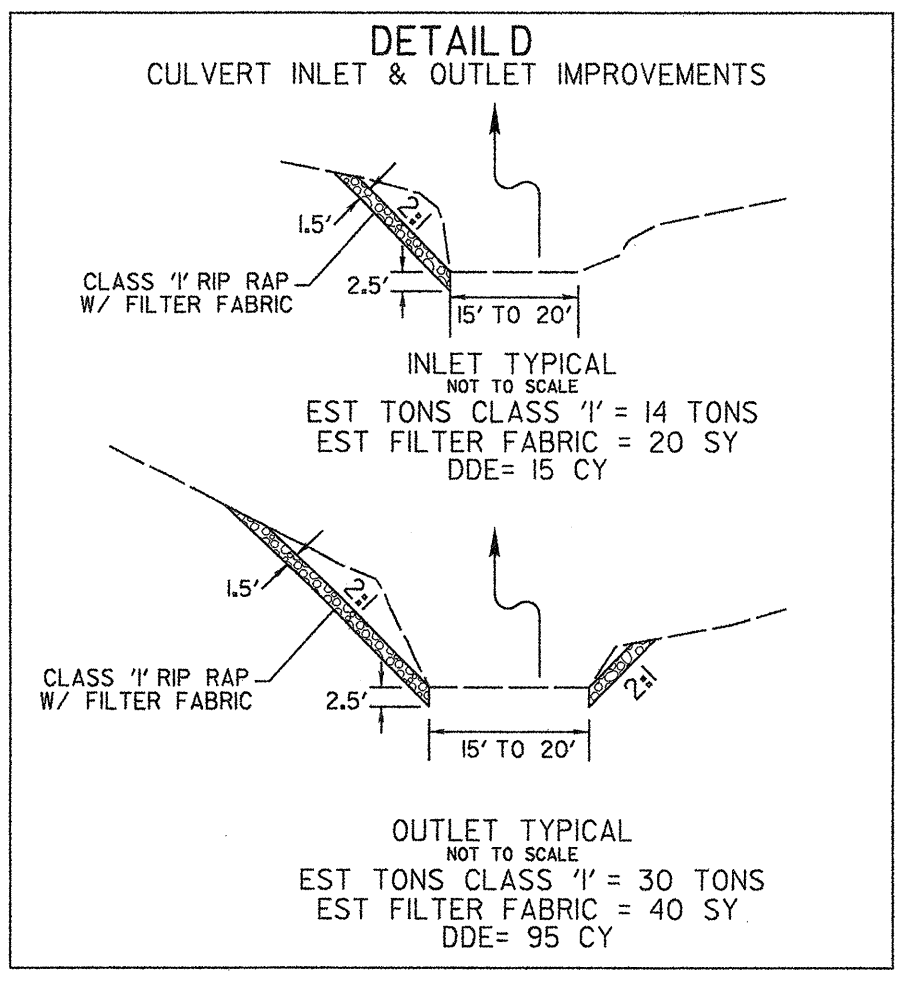
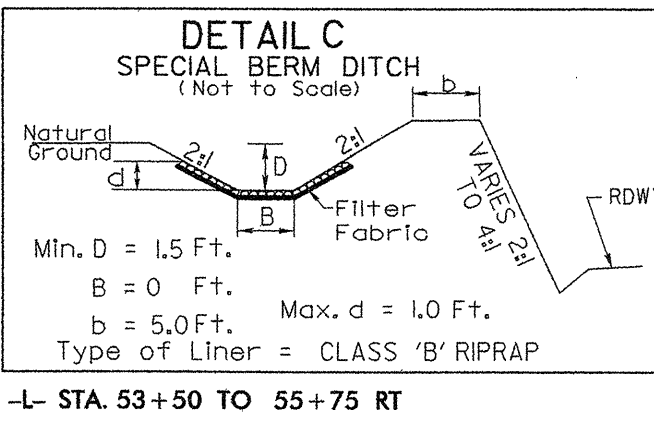
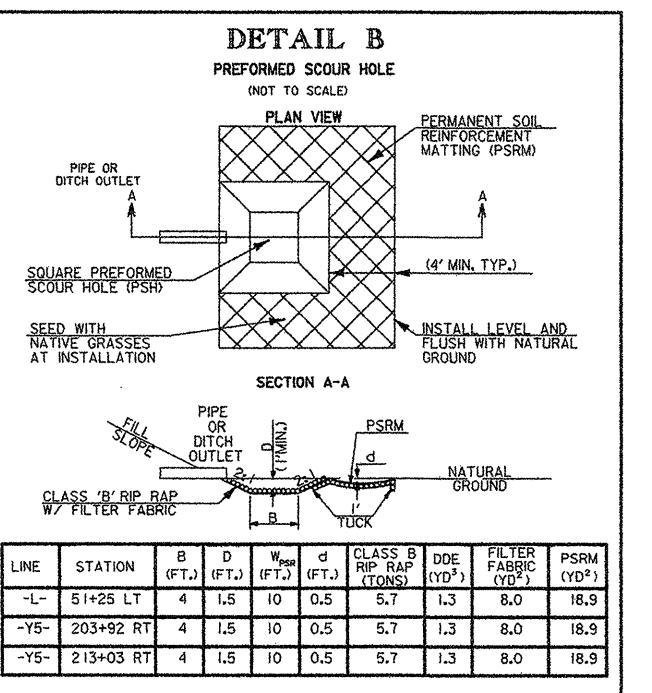
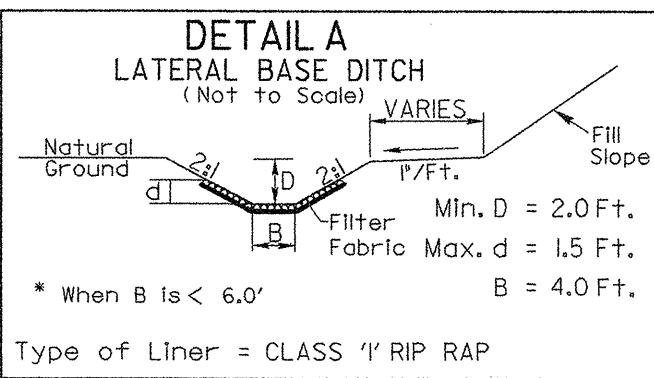
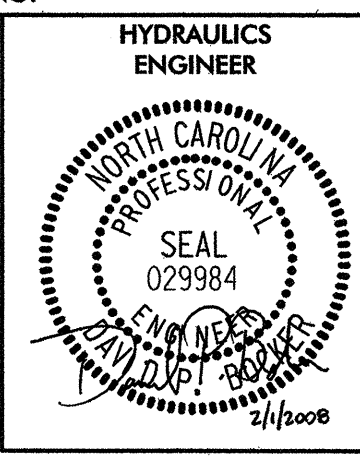
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R = 481.00'	R = 1,056.00'	R = 465.00'
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RO = SEE PLANS	RO = SEE PLANS	RO = SEE PLANS

*DESIGN EXCEPTION REQUIRED ON HORIZONTAL CURVE FOR SE.

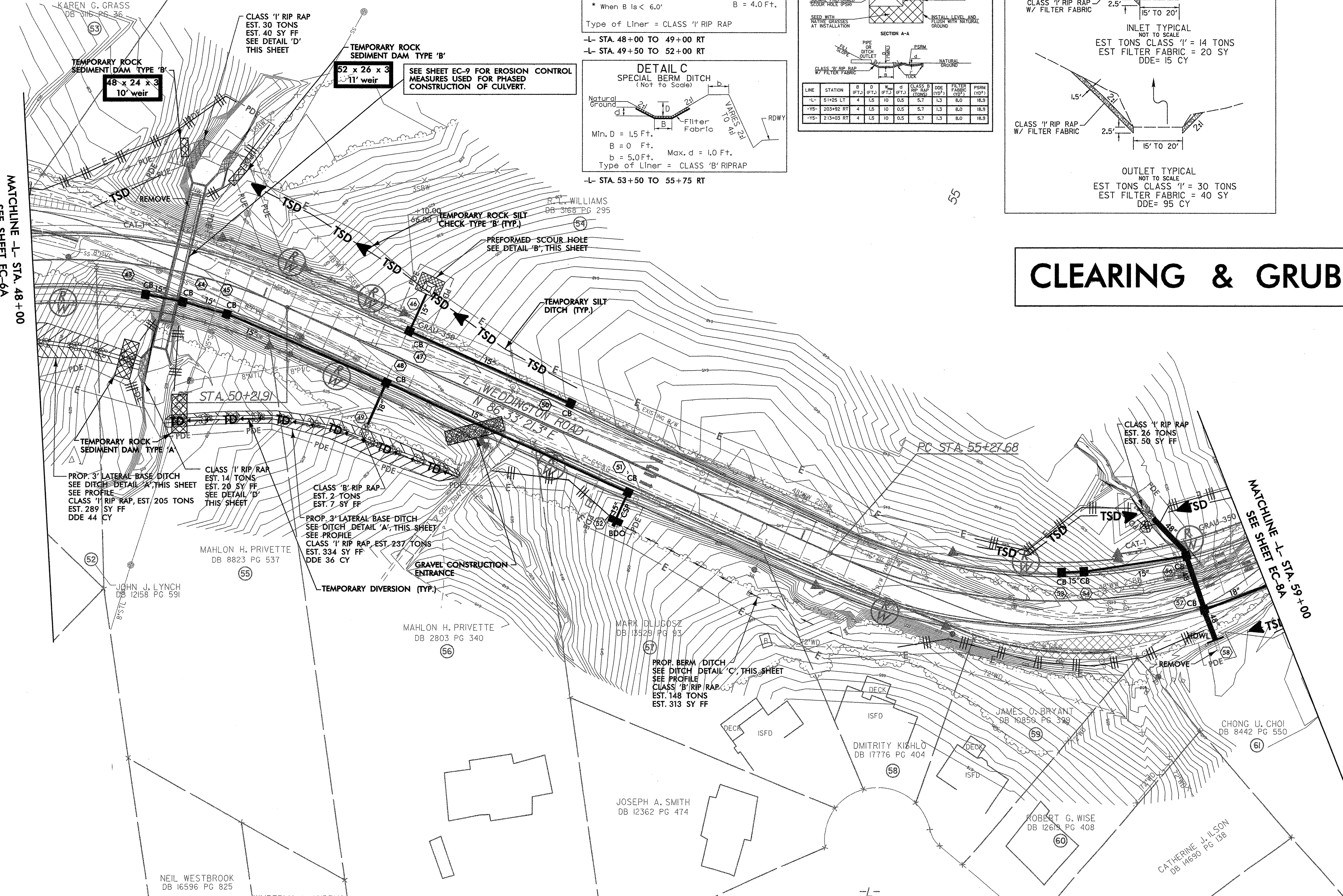
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 SYSTEMS



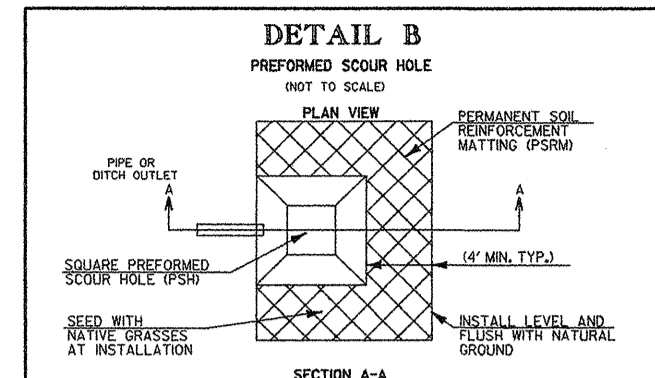
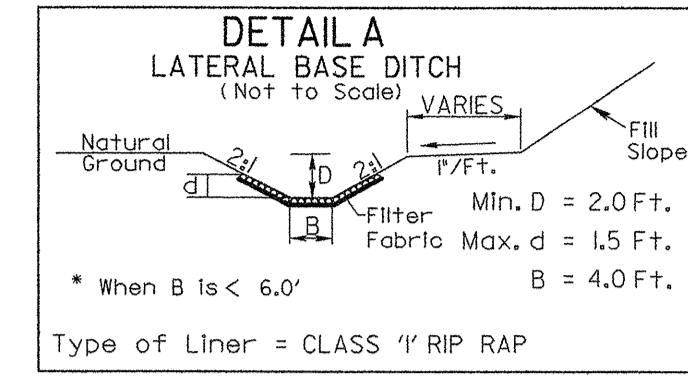
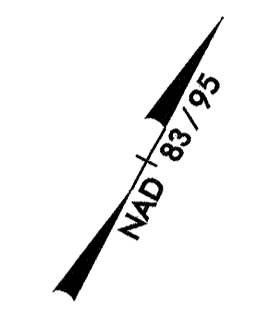
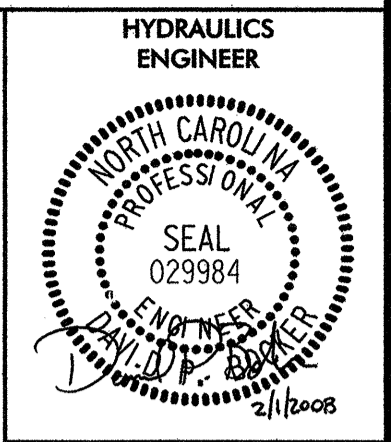
CLEARING & GRUBBING PHASE



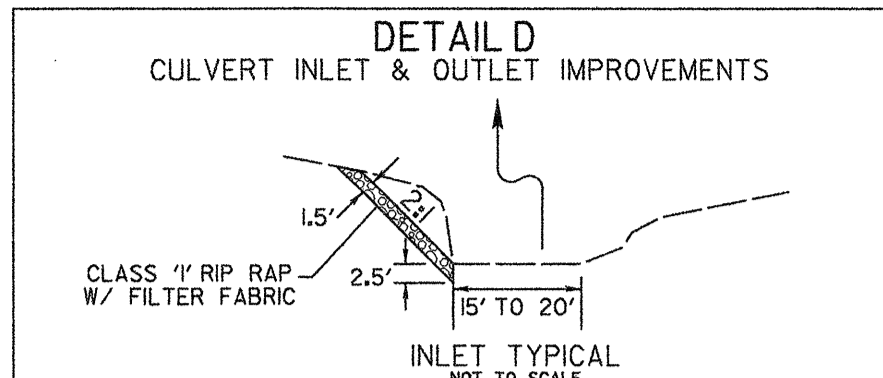
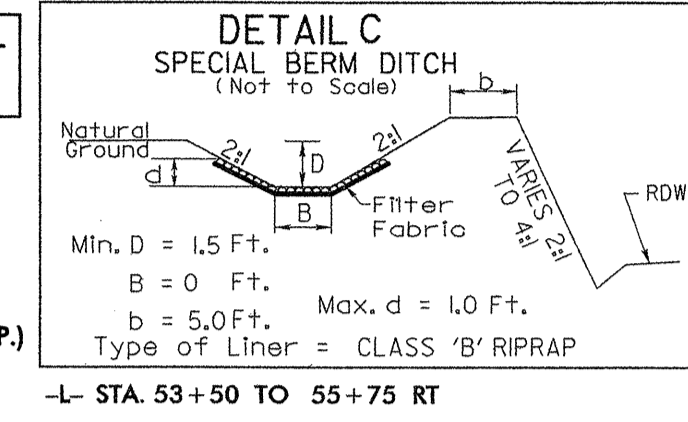
---L----

PI Sta 47+82.39 Δ = 68° 35' 19.5" (RT) D = 12' 19' 18.0" L = 556.65' T = 317.13' R = 465.00' SE = 0.06 RO = SEE PLANS	PI Sta 57+26.58 Δ = 46° 18' 55.7" (LT) D = 12' 19' 18.0" L = 375.89' T = 198.89' R = 465.00' SE = 0.06 RO = SEE PLANS
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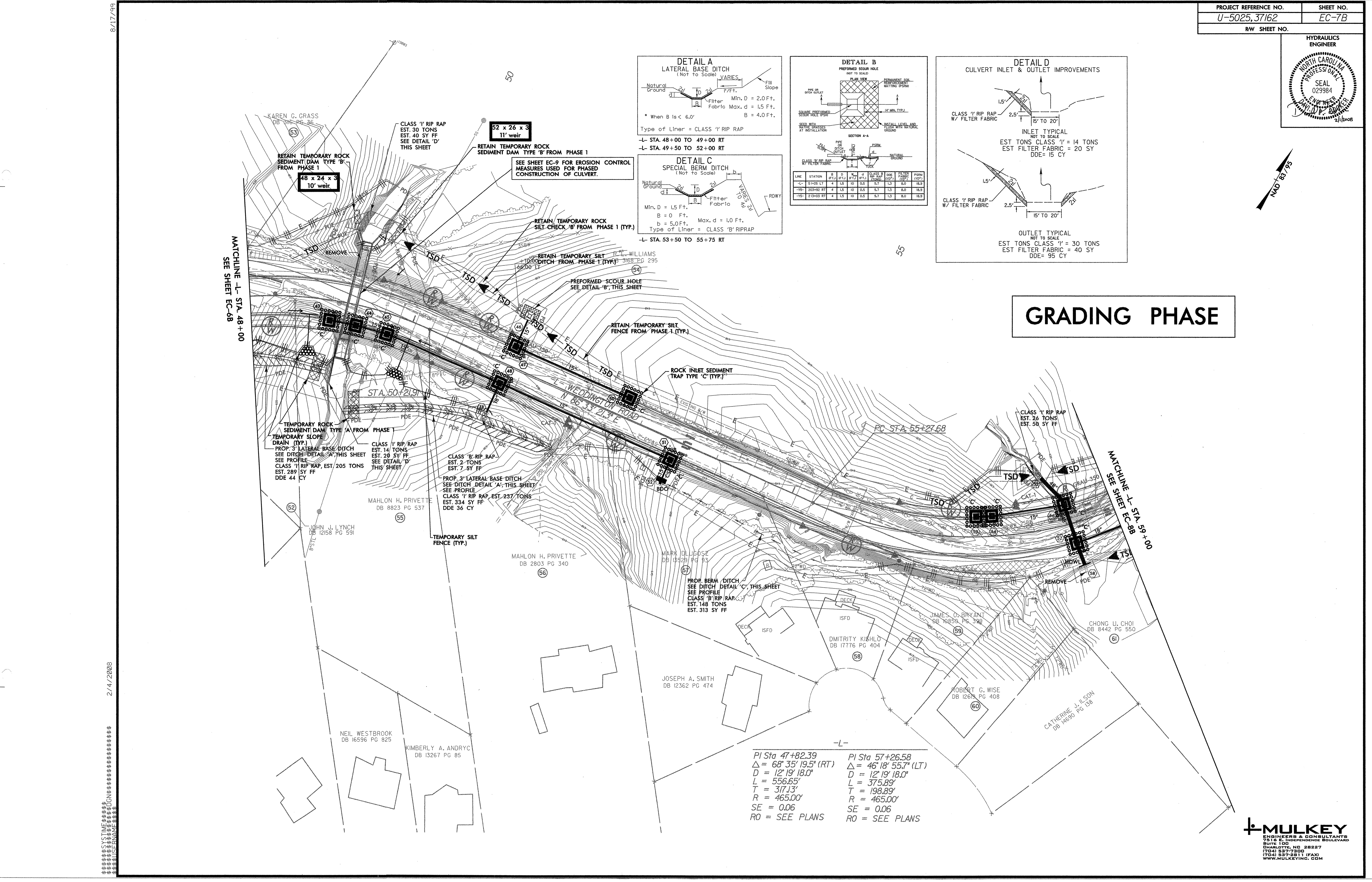
8/17/99
 2/4/2008
 C:\STIME\3162\3162.DGN (USE EXACT NAME)
 \$\$\$SYTIME\$\$\$\$\$



LINE	STATION	D (FT.)	L (FT.)	N (FT.)	E (FT.)	CLASS 'I' RIP RAP (TONS)	EST. FILTER FABRIC (CY)	FORM (CY)
-L-	51+25 LT	4	1.5	10	0.5	5.7	1.3	8.0
-R-	20+42 RT	4	1.5	10	0.5	5.7	1.3	8.0
-R-	21+43 RT	4	1.5	10	0.5	5.7	1.3	8.0

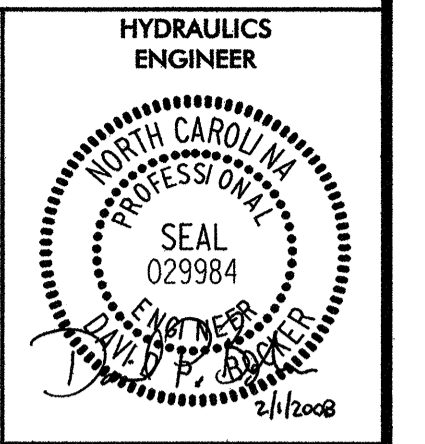


GRADING PHASE

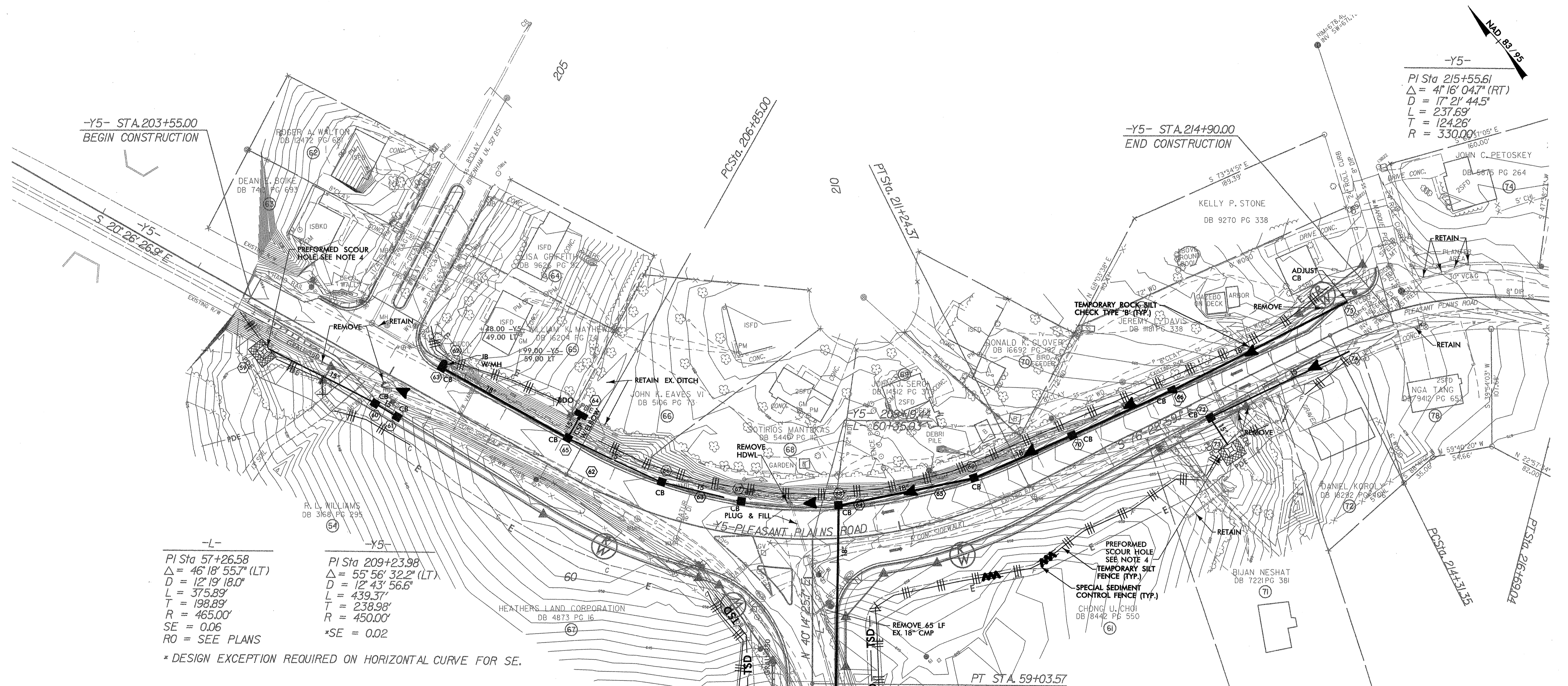


-L-

PI Sta 47+82.39 $\Delta = 68^{\circ} 35' 19.5''$ (RT) $D = 12' 19'' 18.0''$ $L = 556.65'$ $T = 317.13'$ $R = 465.00'$ $SE = 0.06$ $RO = \text{SEE PLANS}$	PI Sta 57+26.58 $\Delta = 46^{\circ} 18' 55.7''$ (LT) $D = 12' 19'' 18.0''$ $L = 375.89'$ $T = 198.89'$ $R = 465.00'$ $SE = 0.06$ $RO = \text{SEE PLANS}$
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CLEARING & GRUBBING PHASE



-Y5- STA.203+55.00
BEGIN CONSTRUCTION

-Y5- STA.214+90.00
END CONSTRUCTION

-Y5-
PI Sta 215+55.61
Δ = 41° 16' 04.7" (RT)
D = 17' 21' 44.5"
L = 237.69'
T = 124.26'
R = 330.00'

-L-
PI Sta 57+26.58
Δ = 46° 18' 55.7" (LT)
D = 12° 19' 18.0"
L = 375.89'
T = 198.89'
R = 465.00'
SE = 0.06
RO = SEE PLANS

-Y5-
PI Sta 209+23.98
Δ = 55° 56' 32.2" (LT)
D = 12° 43' 56.6"
L = 439.37'
T = 238.98'
R = 450.00'
*SE = 0.02

* DESIGN EXCEPTION REQUIRED ON HORIZONTAL CURVE FOR SE.

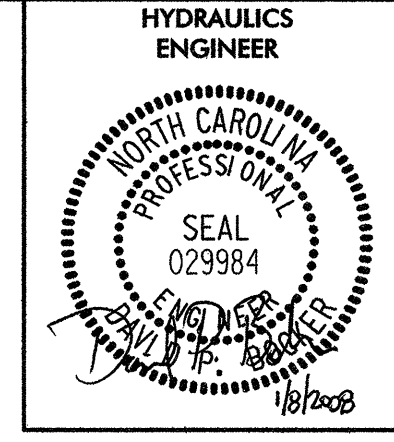
MATCHLINE -L- STA. 59+00
SEE SHEET EC-7A

8/17/99

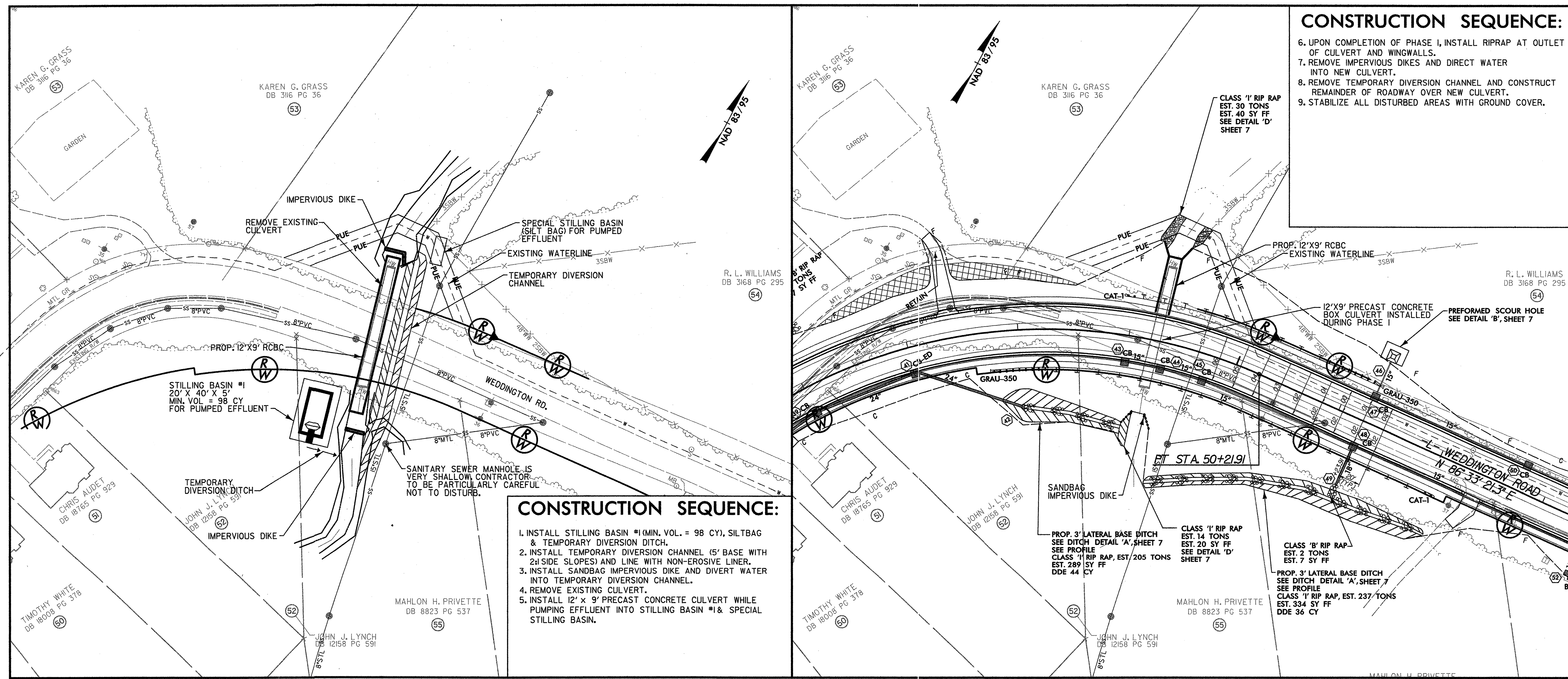
2/4/2008
SYDNEY W. BROWN
PROJECT ENGINEER

8/17/99
 1/4/2008
 *****SYTIME*****
 *****DCGN*****
 *****US*****
 *****LE*****
 *****L*****

PROJECT REFERENCE NO. U-5025,37162	SHEET NO. EC-9
RW SHEET NO.	



CULVERT CONSTRUCTION PHASING FOR 12' X 9' PRECAST CONCRETE BOX CULVERT STA. 49+24 -L-



CONSTRUCTION SEQUENCE:

6. UPON COMPLETION OF PHASE 1, INSTALL RIPRAP AT OUTLET OF CULVERT AND WINGWALLS.
7. REMOVE IMPERVIOUS DIKES AND DIRECT WATER INTO NEW CULVERT.
8. REMOVE TEMPORARY DIVERSION CHANNEL AND CONSTRUCT REMAINDER OF ROADWAY OVER NEW CULVERT.
9. STABILIZE ALL DISTURBED AREAS WITH GROUND COVER.

CONSTRUCTION SEQUENCE:

1. INSTALL STILLING BASIN #1 (MIN. VOL. = 98 CY), SILTBAG & TEMPORARY DIVERSION DITCH.
2. INSTALL TEMPORARY DIVERSION CHANNEL (5' BASE WITH 2:1 SIDE SLOPES) AND LINE WITH NON-EROSIVE LINER.
3. INSTALL SANDBAG IMPERVIOUS DIKE AND DIVERT WATER INTO TEMPORARY DIVERSION CHANNEL.
4. REMOVE EXISTING CULVERT.
5. INSTALL 12' X 9' PRECAST CONCRETE CULVERT WHILE PUMPING EFFLUENT INTO STILLING BASIN #1 & SPECIAL STILLING BASIN.

PHASE 1

PHASE 2

