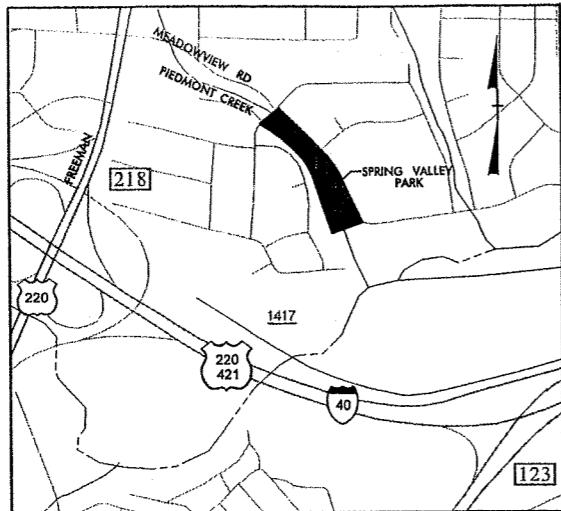


09/08/99

See Sheet 1-A For Index of Sheets

U-2524WM



VICINITY MAP

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROPOSED STREAM RESTORATION

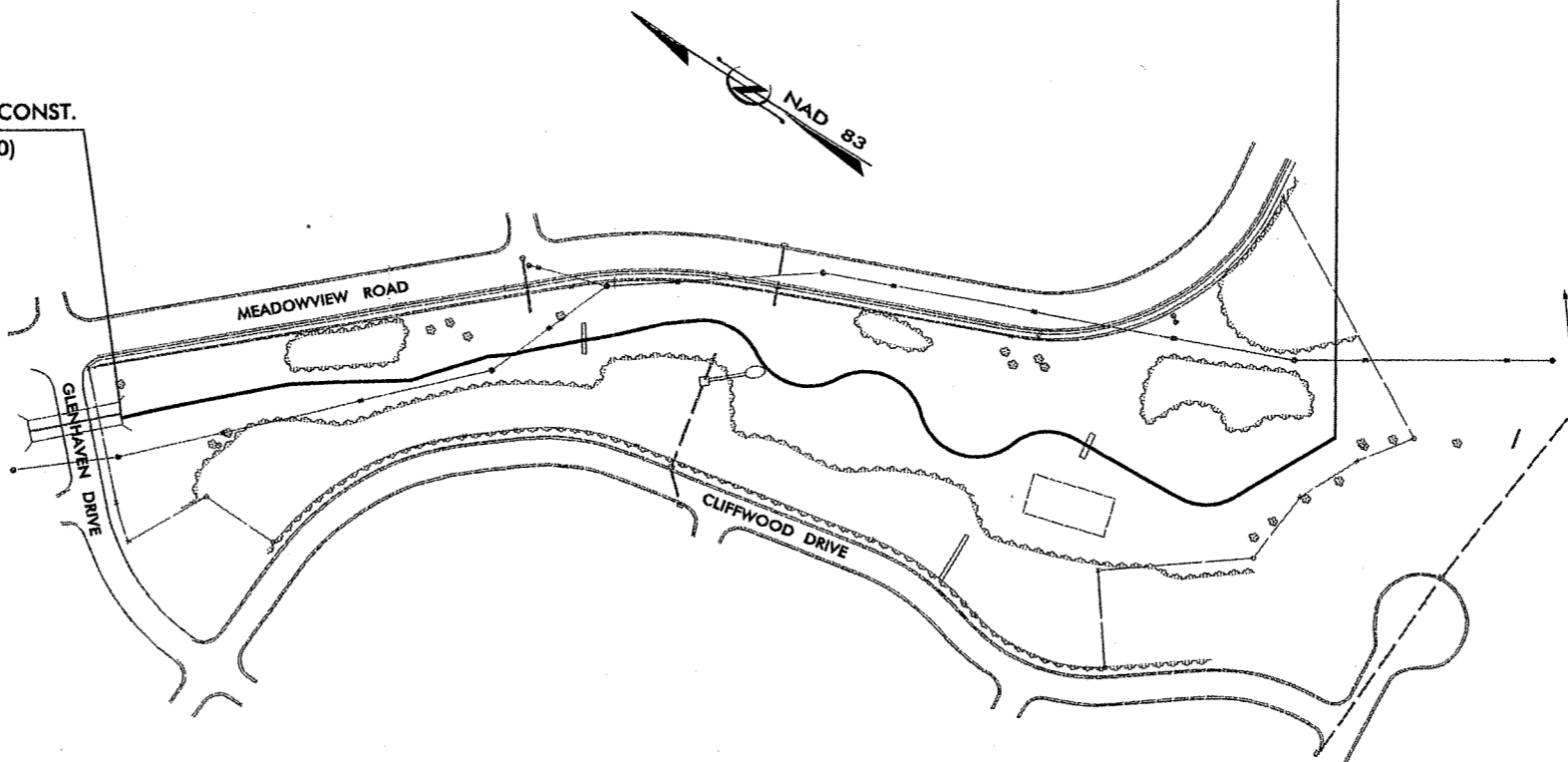
LOCATION: SPRING VALLEY PARK
 TYPE OF WORK: STREAM RESTORATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2524WM	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
8.U492107	NHS-124-1 (8)	P.E.	
8.U492109	NHS-124 (10)	R/W	
8.U492111	NHS-124-1 (10)	Const.	

AS-BUILT

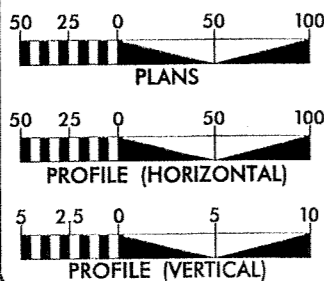
STA 10+00 -L- BEGIN STATE PROJ. 8.U492111-CONST.
 STA 10+00 -L- BEGIN F.A. PROJ. NHS-124-1 (10)

STA 24+09 -L- END STATE PROJ. 8.U492111-CONST.
 STA 24+09 -L- END F.A. PROJ. NHS-124-1 (10)



NCDOT CONTACT - JAMIE LANCASTER, P.E.

GRAPHIC SCALES



DESIGN DATA

PROJECT LENGTH 8.U492111 = 1409 LINEAR FEET
 F.A. PROJECT NHS-124-1 (10) = 1409 LINEAR FEET

PLANS PREPARED BY:



2002 STANDARD SPECIFICATIONS

DESIGN ENGINEER



SIGNATURE: *William R. Wilhelm* P.E.

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER
 DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED DIVISION ADMINISTRATOR DATE

09:29:20 AM R:\PROJECTS\Plan\U2524WM.TSH USERNAME

PROJECT: 8.U492111



SPRING VALLEY PARK INDEX OF SHEETS

I	TITLE SHEET
IA	INDEX OF SHEETS, LIST OF STANDARDS & GENERAL NOTES
IB	SYMBOL SHEET
2A	TYPICAL SECTIONS
2B	DETAILS -ROCK CROSS VANE -ROOT WAD -FLARED END SECTION
2C	-CHANNEL BLOCK -MATTING INSTALLATION GUIDE -TEMPORARY GRAVEL CONSTRUCTION ENTRANCE -COIR FIBER MAT DETAIL
2D	DETAILS - PUMP AROUND OPERATION
3	QUANTITIES
4	EXISTING CONDITIONS
5	PROPOSED ALIGNMENT
5A	PROPOSED CONSERVATION EASEMENT
6	STRUCTURE LOCATIONS
7	GRADING PLAN
8	PROFILE SHEET
EC-1	EROSION CONTROL COVER SHEET
EC-2	EROSION CONTROL PLAN SHEET
L1	PLANTING PLAN
L2	PLANTING DETAILS
X-0	CROSS SECTION SUMMARY
X-1- X-8	CROSS SECTIONS

ROADWAY STANDARD DRAWINGS:

(REV. JAN. 2002)

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - ROADWAY DESIGN UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2002 AND THE LATEST REVISION THERETO ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	
838.80	PRECAST CONCRETE END WALLS
840.00	CONC. BASE PAD FOR DRAINAGE STRUCTURES
840.53	BRICK MANHOLE
840.54	MANHOLE FRAME AND COVER
840.66	DRAINAGE STRUCTURE STEPS
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS
876.04	DRAINAGE DITCHES WITH CLASS 'B' RIP RAP (VEE DITCH)
1101.05	WORK ZONE VEHICLE ACCESS
1110.02	PORTABLE WORK ZONE SIGNS
1150.01	FLAGGERS
1605.01	TEMPORARY SILT FENCE
1636.01	ROCK SILT SCREEN

GENERAL NOTES:

SUBSURFACE PLANS:

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

*S.U.E = SUBSURFACE UTILITY ENGINEER

CONVENTIONAL SYMBOLS

ROADS & RELATED ITEMS

Edge of Pavement
Curb
Prop. Slope Stakes Cut	-----
Prop. Slope Stakes Fill	-----
Prop. Woven Wire Fence
Prop. Chain Link Fence
Prop. Barbed Wire Fence
Prop. Wheelchair Ramp
Curb Cut for Future Wheel
Exist. Guardrail	-----
Prop. Guardrail	-----
Equality Symbol	⊕
Pavement Removal	XXXXXX

RIGHT OF WAY

Baseline Control Point	◆
Existing Right of Way Marker	△
Exist. Right of Way Line w/Marker	△-----
Prop. Right of Way Line with Proposed	-----
RW Marker (Iron Pin & Cap)	▲
Prop. Right of Way Line with Proposed	-----
(Concrete or Granite) RW Marker	⊙
Exist. Control of Access Line	⊙
Prop. Control of Access Line	⊙
Exist. Easement Line	-----
Prop. Temp. Construction Easement Line	-----
Prop. Temp. Drainage Easement Line	-----
Prop. Perm. Drainage Easement Line	-----

HYDROLOGY

Stream or Body of Water	-----
River Basin Buffer	-----
Flow Arrow	→
Disappearing Stream	-----
Spring	○
Swamp Marsh	-----
Shoreline	-----
Falls, Rapids	-----
Prop Lateral, Tail, Head Ditches	-----

STRUCTURES

MAJOR	
Bridge, Tunnel, or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW

MINOR

Head & End Wall	CONC HW
Pipe Culvert	=====
Footbridge	-----
Drainage Boxes	CB
Paved Ditch Gutter	-----

UTILITIES

Exist. Pole	•
Exist. Power Pole	○
Prop. Power Pole	○
Exist. Telephone Pole	○
Prop. Telephone Pole	○
Exist. Joint Use Pole	•
Prop. Joint Use Pole	•
Telephone Pedestal	T
UG Telephone Cable Hand Hold	H
Cable TV Pedestal	C
UG TV Cable Hand Hold	H
UG Power Cable Hand Hold	H
Hydrant	⊕
Satellite Dish	⊕
Exist. Water Valve	⊕
Sewer Clean Out	⊕
Power Manhole	⊕
Telephone Booth	⊕
Cellular Telephone Tower	⊕
Water Manhole	⊕
Light Pole	⊕
H-Frame Pole	⊕
Power Line Tower	⊕
Pole with Base	⊕
Gas Valve	⊕
Gas Meter	⊕
Telephone Manhole	⊕
Power Transformer	⊕
Sanitary Sewer Manhole	⊕
Storm Sewer Manhole	⊕
Tank; Water, Gas, Oil	⊕
Water Tank With Legs	⊕
Traffic Signal Junction Box	⊕
Fiber Optic Splice Box	⊕
Television or Radio Tower	⊕
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	TS

Recorded Water Line	-----
Designated Water Line (S.U.E.*)	-----
Sanitary Sewer	-----
Recorded Sanitary Sewer Force Main	-----
Designated Sanitary Sewer Force Main(S.U.E.*)	-----
Recorded Gas Line	-----
Designated Gas Line (S.U.E.*)	-----
Storm Sewer	-----
Recorded Power Line	-----
Designated Power Line (S.U.E.*)	-----
Recorded Telephone Cable	-----
Designated Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Unknown Utility (S.U.E.*)	-----
Recorded Television Cable	-----
Designated Television Cable (S.U.E.*)	-----
Recorded Fiber Optics Cable	-----
Designated Fiber Optics Cable (S.U.E.*)	-----
Exist. Water Meter	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to U/G Record	ATTUR
End of Information	E.O.I.

BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	PL
Exist. Iron Pin	EIP
Property Corner	+
Property Monument	ECM
Property Number	123
Parcel Number	6
Fence Line	-----
Existing Wetland Boundaries	WW & ISBW
High Quality Wetland Boundary	HQ WLB
Medium Quality Wetland Boundaries	MQ WLB
Low Quality Wetland Boundaries	LQ WLB
Proposed Wetland Boundaries	WLB
Existing Endangered Animal Boundaries	EAB
Existing Endangered Plant Boundaries	EPB

BUILDINGS & OTHER CULTURE

Buildings	-----
Foundations	-----
Area Outline	-----
Gate	-----
Gas Pump Vent or U/G Tank Cap	-----
Church	-----
School	-----
Park	-----
Cemetery	-----
Dam	-----
Sign	-----
Well	-----
Small Mine	-----
Swimming Pool	-----

TOPOGRAPHY

Loose Surface	-----
Hard Surface	-----
Change in Road Surface	-----
Curb	-----
Right of Way Symbol	R/W
Guard Post	GP
Paved Walk	-----
Bridge	-----
Box Culvert or Tunnel	-----
Ferry	-----
Culvert	-----
Footbridge	-----
Trail, Footpath	-----
Light House	-----

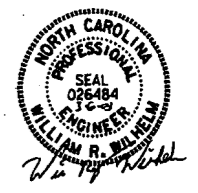
VEGETATION

Single Tree	-----
Single Shrub	-----
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

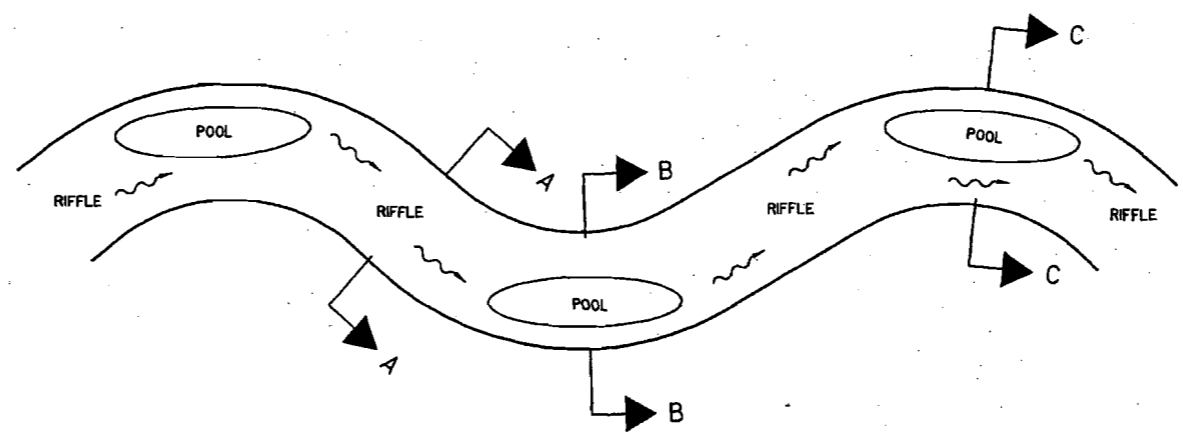
RAILROADS

Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----

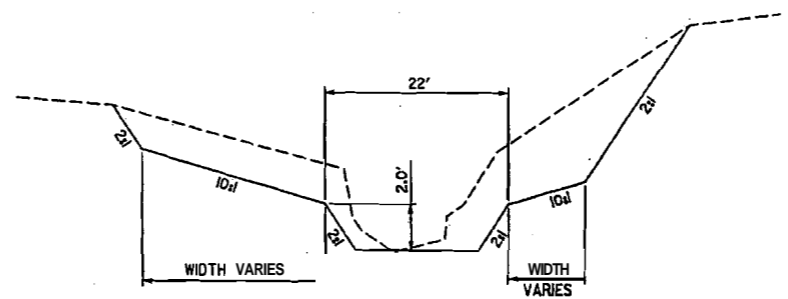
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SPRING VALLEY PARK TYPICAL SECTIONS

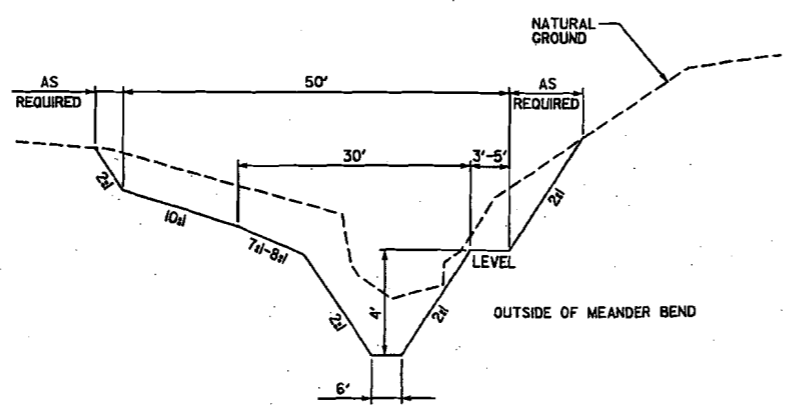


TYPICAL PLAN VIEW SCHEMATIC

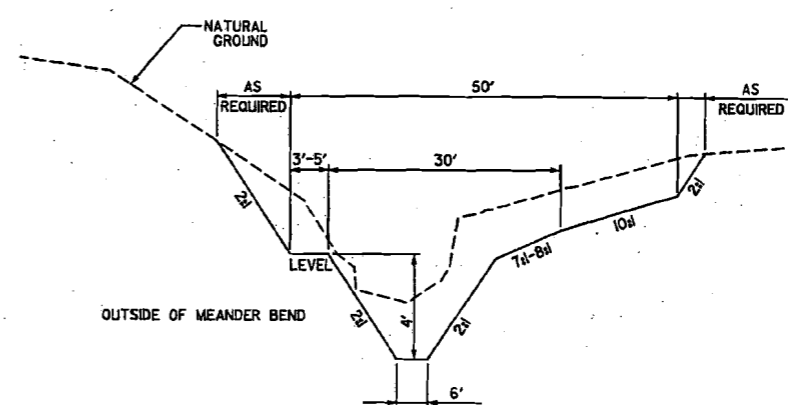


RIFFLE SECTION A-A

NOTD
TYPICAL SECTIONS ARE PROVIDED TO GIVE THE GENERAL DIMENSIONS OF THE CHANNEL. FINAL GRADING WILL GIVE THE CHANNEL A MORE 'NATURAL' APPEARANCE AND ALLOW A SMOOTH TRANSITION FROM MISTING CHANNEL TO NEW CHANNEL.
REFER TO CROSS SECTIONS (SHEETS X-1 TO X-8) FOR ADDITIONAL INFORMATION.



POOL SECTION B-B

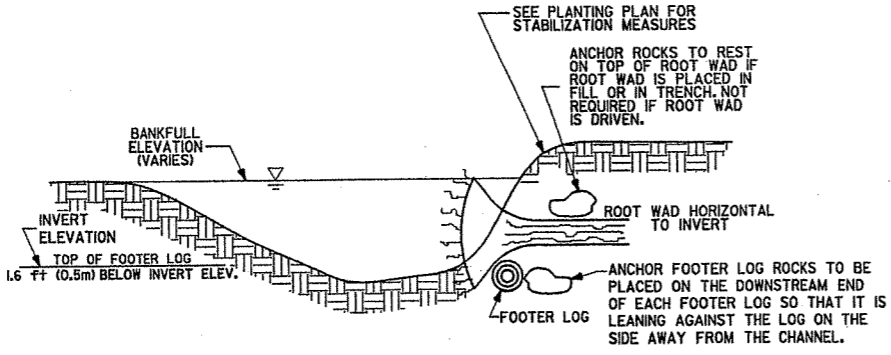
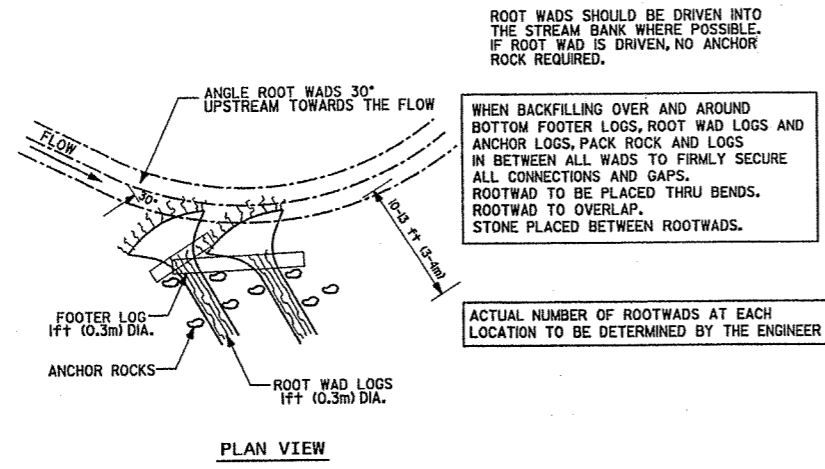
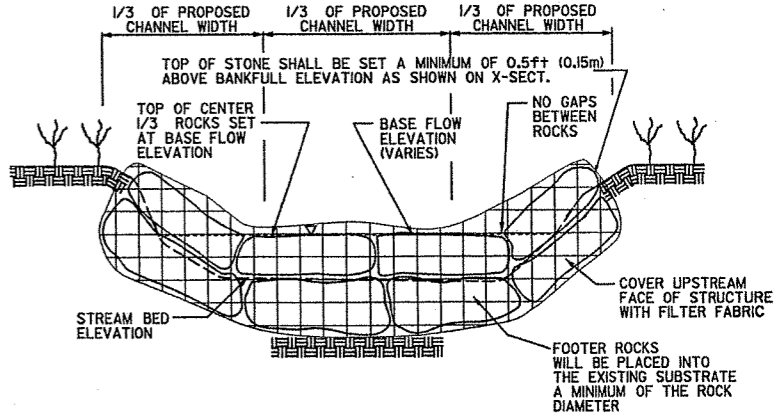
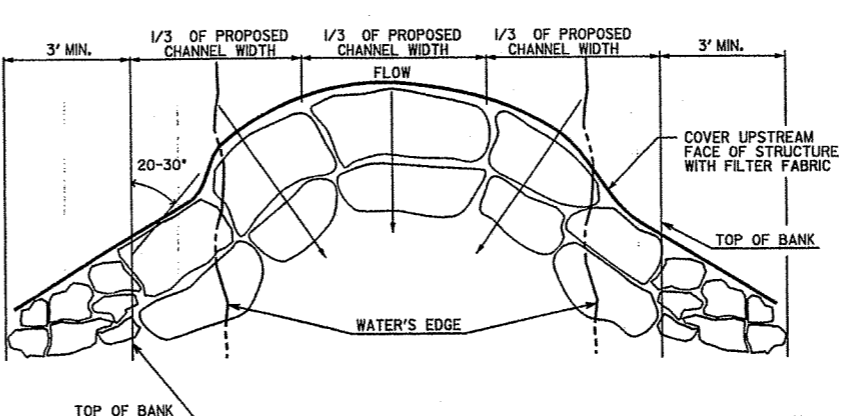
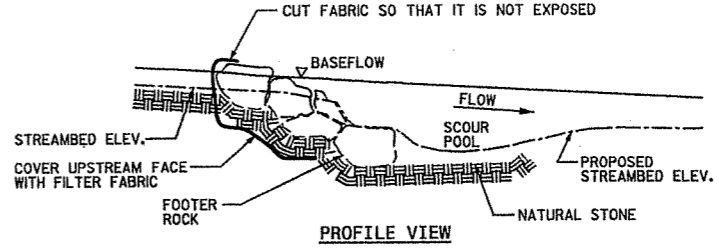


POOL SECTION C-C

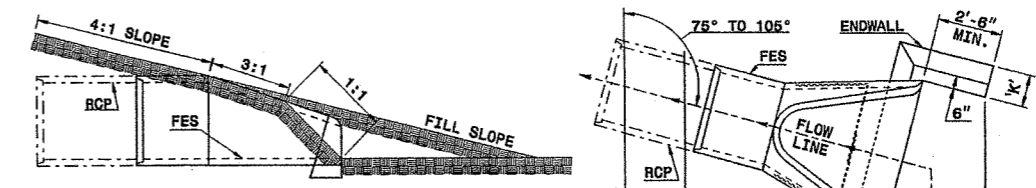
RESTORED BANKFULL CHANNEL TYPICAL SECTIONS

D:\1408 PM\02524\U2524\MTYP.PSH

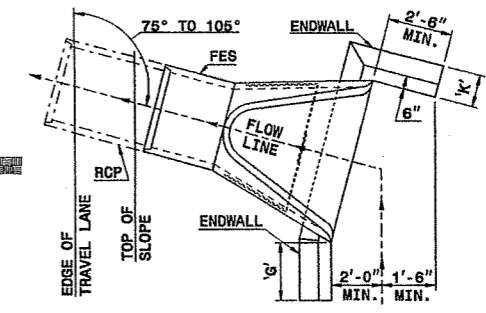
SPRING VALLEY PARK DETAILS



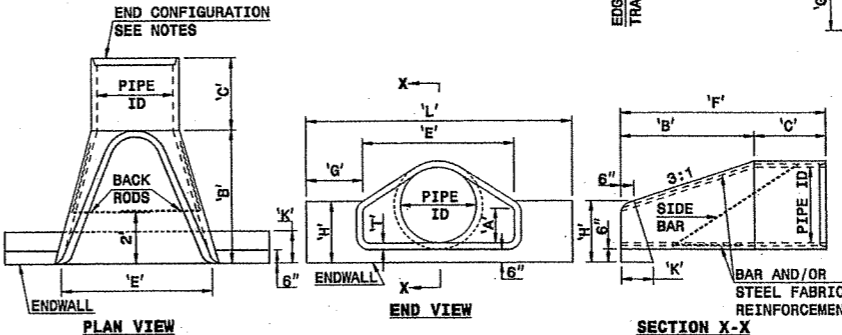
ROOT WADS - CROSS SECTION (CUT)



INSTALLATION SECTION VIEW
 PREFERRED METHOD OF FILL SLOPE PLACEMENT



SECTION X-X



DIMENSIONS AND CONCRETE QUANTITIES FOR END SECTIONS AND ENDWALLS

PIPE I.D.	END SECTIONS					STRAIGHT ENDWALLS (COMMON DIM.)					SKEWED ENDWALLS			
	A	B	C	E	F	G	H	K	L	YD ³	B	L	YD ³	
12"	4"	2'-0"	4'-1"	2'-0"	8'-1"	12'	1'-2"	1'-8"	0'-9"	4'-4"	0.1	1'-0"	8'-4"	0.2
15"	6"	2'-3"	3'-10"	2'-3"	8'-1"	12'	1'-2"	1'-9"	0'-9"	4'-10"	0.1	1'-0"	8'-10"	0.2
18"	8"	2'-3"	3'-10"	3'-0"	8'-1"	2'	1'-5"	1'-9"	0'-11"	8'-10"	0.2	1'-3"	7'-7"	0.3
24"	10"	3'-8"	2'-6"	4'-0"	8'-2"	2 1/2'	1'-8"	1'-10"	0'-11"	7'-4"	0.2	1'-5"	8'-9"	0.3
30"	1'-0"	4'-8"	1'-8"	8'-0"	8'-2"	2 3/4'	1'-11"	2'-1"	1'-1"	8'-10"	0.3	1'-8"	10'-0"	0.4
36"	1'-3"	5'-3"	2'-11"	8'-0"	8'-2"	3'	2'-3"	2'-8"	1'-3"	10'-6"	0.4	2'-0"	11'-4"	0.6
42"	1'-10"	6'-3"	2'-11"	8'-6"	8'-2"	3 1/2'	2'-9"	2'-11"	1'-6"	12'-0"	0.7	2'-6"	12'-4"	0.9
48"	2'-1"	8'-0"	2'-2"	7'-0"	8'-2"	4'	3'-4"	3'-3"	1'-8"	19'-8"	1.0	3'-0"	19'-4"	1.2

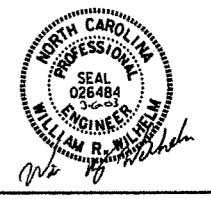
FLARED END SECTIONS - REINFORCEMENT

PIPE DIA.	QTY. & DIM. OF RODS	STEEL #s	FABRIC
12"	(2) #3x4'-0" SIDE RODS	3.0	18" 2x8 - w2.1 x w1.7
15"	(2) #3x4'-0" SIDE RODS	3.0	18" 2x8 - w2.1 x w1.7
18"	(2) #3x4'-0" SIDE RODS	3.0	18" 2x8 - w2.1 x w1.7
24"	(2) #3x6'-0" SIDE RODS	4.5	24" 2x8 - w2.9 x w2.9
30"	(2) #4x6'-0" SIDE RODS	6.0	30" 2x8 - w4.0 x w2.9
36"	(2) #4x8'-0" SIDE RODS	10.7	42" 2x8 - w4.0 x w2.9
42"	(2) #4x8'-0" SIDE RODS	10.7	48" 2x8 - w4.5 x w2.9
48"	(2) #4x8'-0" SIDE RODS	10.7	48" 2x8 - w4.5 x w2.9
36" - 48"	(2) #4x8'-0" BACK RODS	8.0	N/A

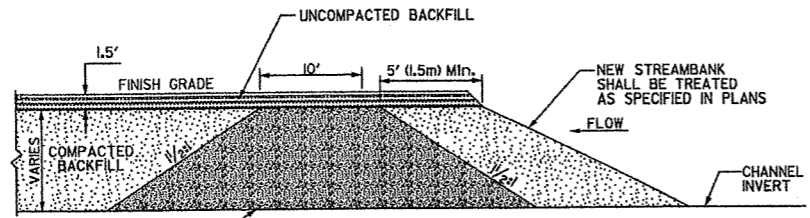
FLARED END SECTION
 SCALE: NTS

GENERAL NOTES:
 - END SECTIONS TO BE USED AS SHOWN BY PLANS OR AS DIRECTED BY THE ENGINEER.
 - ENDWALLS TO BE USED AS SHOWN BY PLANS OR AS DIRECTED BY THE ENGINEER.
 - CLASS 'B' CONCRETE TO BE USED IN ENDWALLS.
 - CHAMFER ALL EXTERIOR CORNERS 1".
 - FLARED END SECTIONS ARE NORMALLY USED ON PIPES WITH SKEW ANGLES FROM 75° TO 105°. FLARED END SECTION - END CONFIGURATION
 INLET LOCATION - TONGUE
 OUTLET LOCATION - GROOVE

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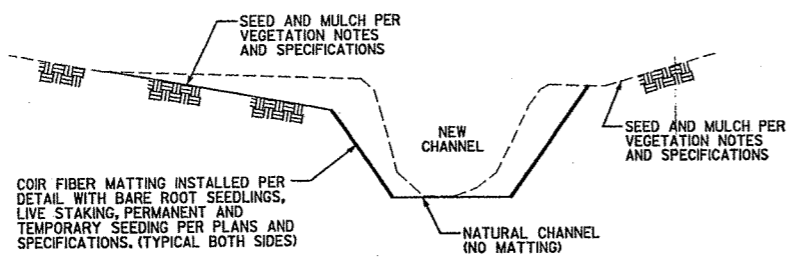


SPRING VALLEY PARK DETAILS

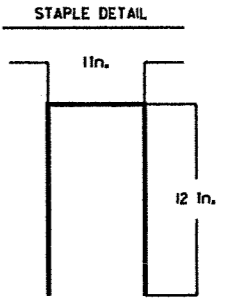
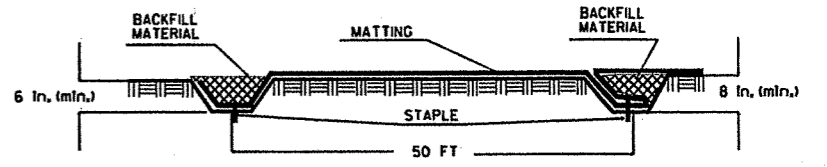
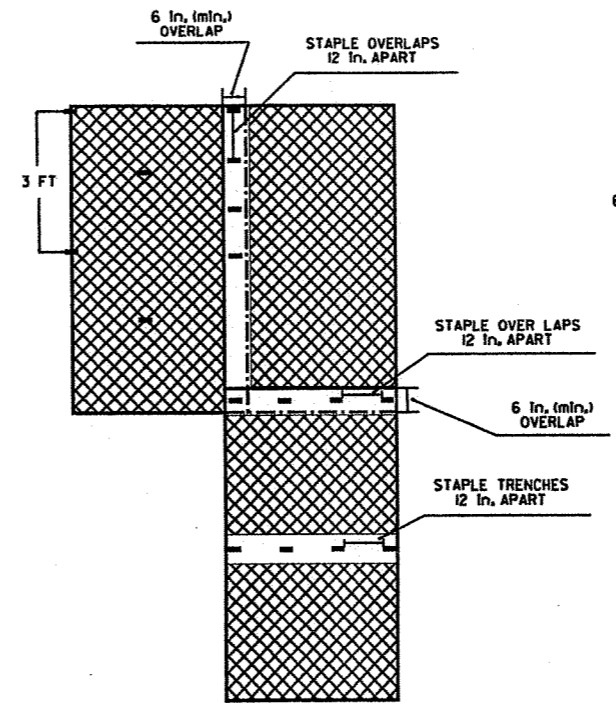


IMPERVIOUS SELECT MATERIAL (SEE PROJECT SPECIAL PROVISIONS)

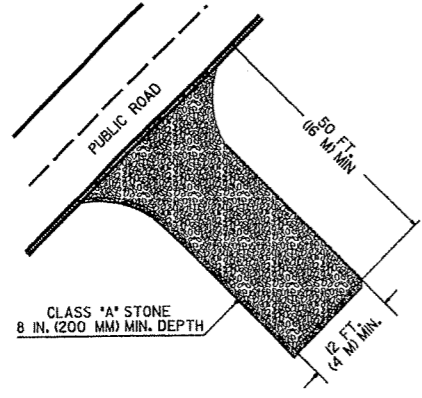
CHANNEL BLOCK
 SCALE: NTS



MATTING INSTALLATION GUIDE
 SCALE: NTS



COIR FIBER MAT DETAIL

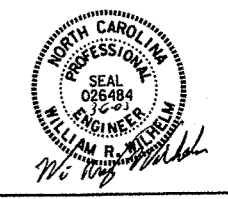


- NOTES:
1. TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS SHALL BE PROVIDED.
 2. ENTRANCE(S) SHOULD BE LOCATED TO PROVIDE FOR UTILIZATION BY ALL CONSTRUCTION VEHICLES.
 3. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE WILL BE NECESSARY.
 4. ANY MATERIAL TRACKED ONTO THE ROADWAY MUST BE CLEANED UP IMMEDIATELY.
 5. GRAVEL CONSTRUCTION ENTRANCE SHALL BE LOCATED AT ALL POINTS OF INGRESS AND EGRESS UNTIL SITE IS STABILIZED. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE MUST BE PROVIDED.
 6. NUMBER AND LOCATION OF CONSTRUCTION ENTRANCES TO BE DETERMINED BY THE ENGINEER.
 7. ACCESS TO THE PROJECT AREA IS LIMITED TO THE SITE SPECIFIED IN THE PLANS. CARE WILL BE TAKEN TO PRESERVE THE CONCRETE CURB AND GUTTER AND ASPHALT ROADWAY FROM CONSTRUCTION TRAFFIC. ANY DAMAGE CAUSED TO THE FACILITY BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED TO AT LEAST IT'S ORIGINAL CONDITION AT NO EXPENSE TO THE DEPARTMENT.

NOTE: FILTER FABRIC TO BE PLACED BENEATH STONE

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

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 USER:ENGINEER

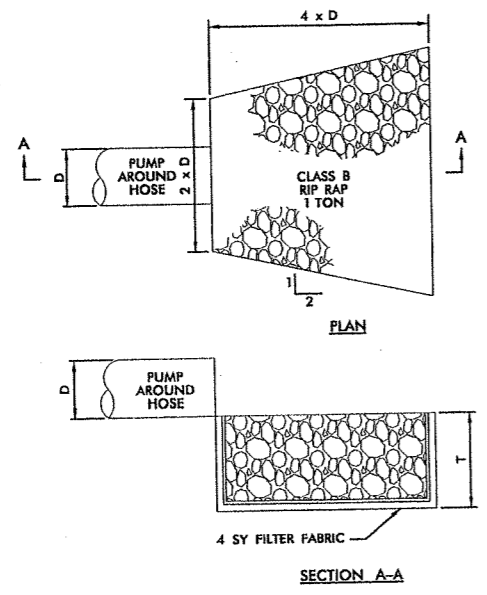


SPRING VALLEY PARK DETAILS - PUMP AROUND OPERATION

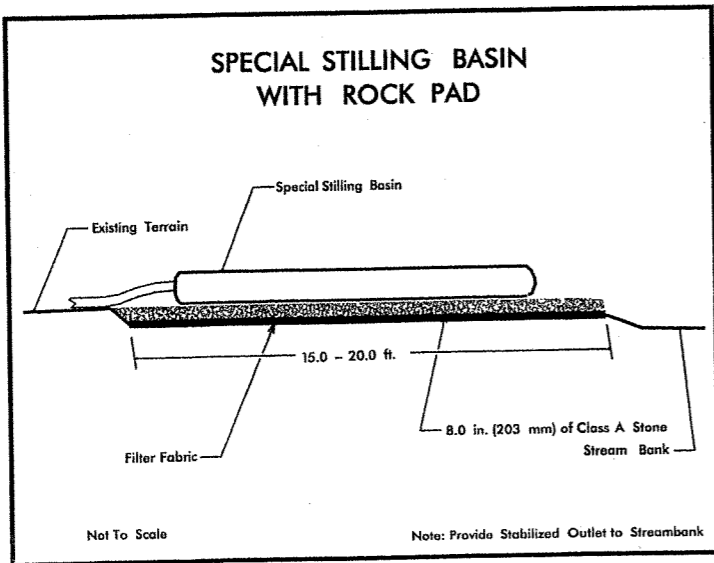
NOTES:

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

EXAMPLE OF PUMP-AROUND OPERATION

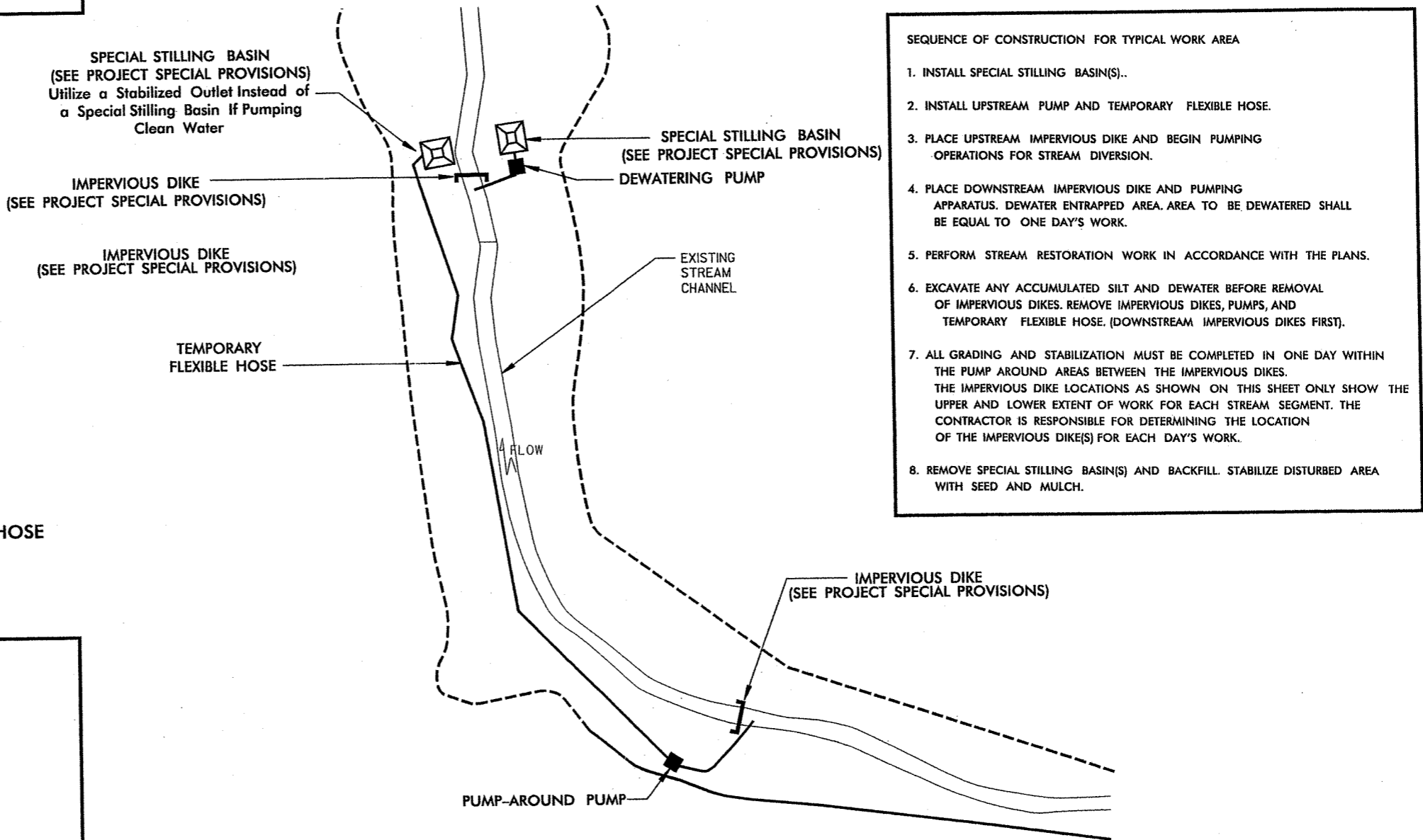


**ENERGY DISSIPATOR FOR PUMP AROUND HOSE
(IF CLEAN WATER)**
NTS



Not To Scale

Note: Provide Stabilized Outlet to Streambank




SEQUENCE OF CONSTRUCTION FOR TYPICAL WORK AREA

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

6/2/98

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PROJECT REFERENCE NO. U-2524WM	SHEET NO. 3
RW SHEET NO.	
DESIGN ENGINEER	
	

SPRING VALLEY PARK SUMMARY OF QUANTITIES

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SUMMARY OF QUANTITIES

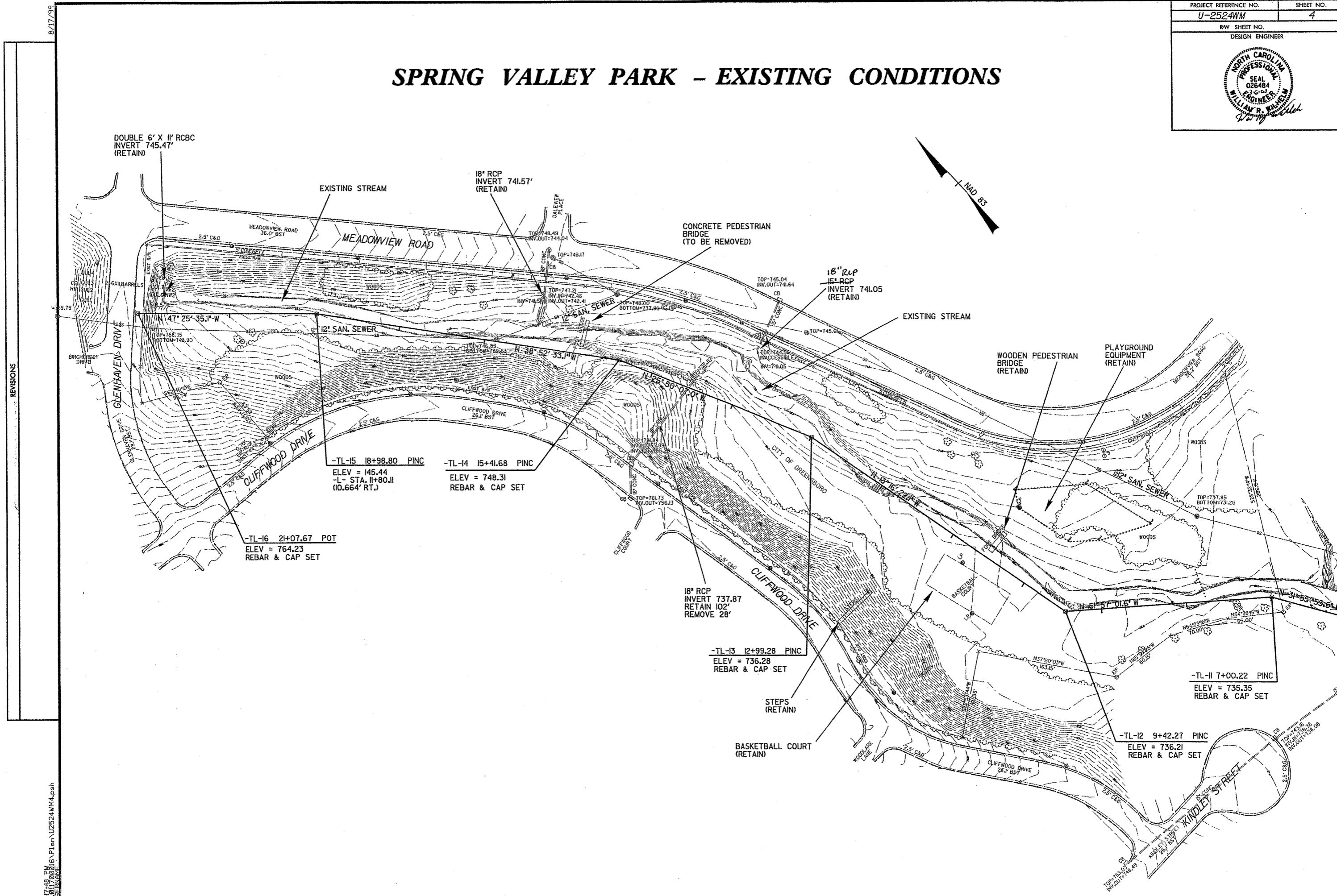
SECTION	QUANTITY	UNIT	DESCRIPTION
800	1	LS	Mobilization/Demobilization
801	1	LS	Surveys and Layout
200	1	LS	Clearing, Tree Removal, & Site Preparation
226	1	LS	Grading (2400 CY Excavation, 2000 CY Fill)
SP	135	CY	Impervious Select Material
310	40	LF	18" R.C. Pipe Culvert, Class III
340	28	LF	Pipe Removal
SP	1	LS	Removal/Demolition of Pedestrian Bridge
SP	1	EA	18" RC Flared End Section
SP	1	EA	15" RC Flared End Section
840	1	EA	Manhole Frame With Cover, Std. 840.54
840	1	EA	Masonry Drainage Structure, Std 840.32
840	4.5	LF	Masonry Drainage Structure, Std 840.32
840	1	EA	Concrete Base Pad for Drainage Structure
876	1250	SY	Filter Fabric For Drainage
876	110	TN	Plain Rip Rap, Class B
SP	285	TN	Stone, Class Boulder
SP	8	EA	Root Wads
SP	2,080	SY	Coir Fiber Matting
1605	500	LF	Silt Fence
SP	3900	LF	Safety Fence
1610	75	TN	Stone for Erosion Control, Class A
1610	40	TN	Stone for Erosion Control, Class B
1610	345	TN	Sediment Control Stone, #57
1615	4	Ac	Temporary Mulching
1620	150	LB	Seed for Temporary Seeding
1620	0.75	TON	Fertilizer for Temporary Seeding
1630	50	CY	Silt Excavation
1660	4.0	AC	Seed and Mulch
1670	1.7	AC	Buffer Reforestation
SP	0.5	AC	Streambank Reforestation (Zone 1)
SP	0.1	AC	Streambank Reforestation (Zone 2)
SP	15	EA	Special Stilling Basin
SP	1	LS	Diversion Pumping

REVISIONS

8/17/99

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SPRING VALLEY PARK - EXISTING CONDITIONS



REVISIONS

8/17/99

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US ENGINE

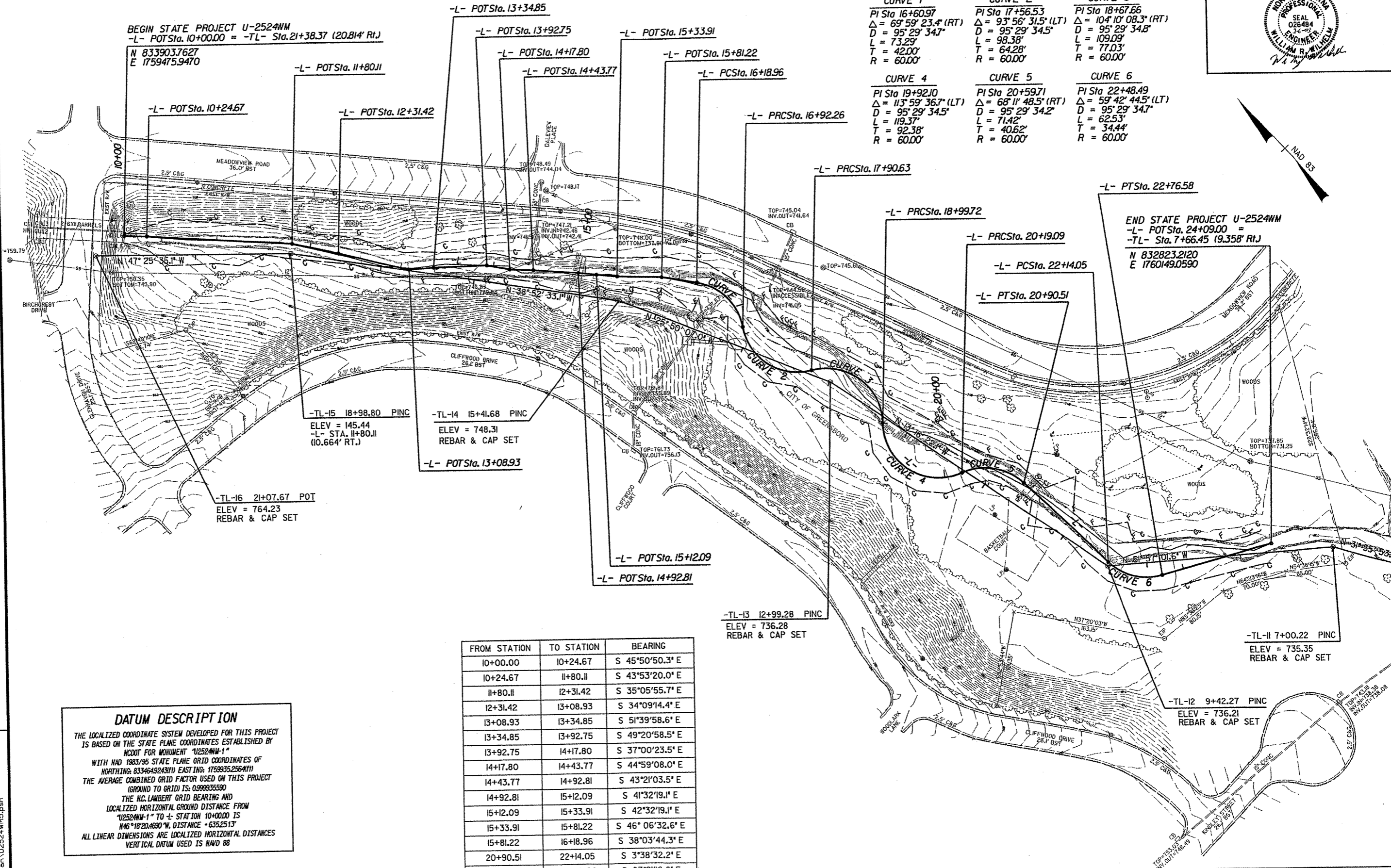
SPRING VALLEY PARK - PROPOSED ALIGNMENT -L-

BEGIN STATE PROJECT U-2524WM
 -L- POTSta. 10+00.00 = -TL- Sta. 21+38.37 (20.814' RT.)
 N 833903.7627
 E 1759475.9470

END STATE PROJECT U-2524WM
 -L- POTSta. 24+09.00 =
 -TL- Sta. 7+66.45 (9.358' RT.)
 N 832823.2120
 E 1760149.0590

CURVE 1	CURVE 2	CURVE 3
PI Sta 16+60.97	PI Sta 17+56.53	PI Sta 18+67.66
$\Delta = 69^{\circ}59'23.4"$ (RT)	$\Delta = 93^{\circ}56'31.5"$ (LT)	$\Delta = 104^{\circ}10'08.3"$ (RT)
D = 95'29'34.7"	D = 95'29'34.5"	D = 95'29'34.8"
L = 73.29'	L = 98.38'	L = 109.09'
T = 42.00'	T = 64.28'	T = 77.03'
R = 60.00'	R = 60.00'	R = 60.00'

CURVE 4	CURVE 5	CURVE 6
PI Sta 19+92.10	PI Sta 20+59.71	PI Sta 22+48.49
$\Delta = 113^{\circ}59'36.7"$ (LT)	$\Delta = 68^{\circ}11'48.5"$ (RT)	$\Delta = 59^{\circ}42'44.5"$ (LT)
D = 95'29'34.5"	D = 95'29'34.2"	D = 95'29'34.7"
L = 119.37'	L = 71.42'	L = 62.53'
T = 92.38'	T = 40.62'	T = 34.44'
R = 60.00'	R = 60.00'	R = 60.00'



-TL-15 18+98.80 PINC
 ELEV = 145.44
 -L- STA. 11+80.11
 (10.664' RT.)

-TL-14 15+41.68 PINC
 ELEV = 748.31
 REBAR & CAP SET

-TL-16 21+07.67 POT
 ELEV = 764.23
 REBAR & CAP SET

-L- POTSta. 15+12.09
 -L- POTSta. 14+92.81

-TL-13 12+99.28 PINC
 ELEV = 736.28
 REBAR & CAP SET

-TL-11 7+00.22 PINC
 ELEV = 735.35
 REBAR & CAP SET

-TL-12 9+42.27 PINC
 ELEV = 736.21
 REBAR & CAP SET

FROM STATION	TO STATION	BEARING
10+00.00	10+24.67	S 45°50'50.3" E
10+24.67	11+80.11	S 43°53'20.0" E
11+80.11	12+31.42	S 35°05'55.7" E
12+31.42	13+08.93	S 34°09'14.4" E
13+08.93	13+34.85	S 51°39'58.6" E
13+34.85	13+92.75	S 49°20'58.5" E
13+92.75	14+17.80	S 37°00'23.5" E
14+17.80	14+43.77	S 44°59'08.0" E
14+43.77	14+92.81	S 43°21'03.5" E
14+92.81	15+12.09	S 41°32'19.1" E
15+12.09	15+33.91	S 42°32'19.1" E
15+33.91	15+81.22	S 46°06'32.6" E
15+81.22	16+18.96	S 38°03'44.3" E
20+90.51	22+14.05	S 3°38'32.2" E
22+76.58	24+09.00	S 63°21'16.8" E

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U2524WM-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 8334649243(11) EASTING: 1759935256(11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999935590 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U2524WM-1" TO ± STATION 10+00.00 IS N46°18'20.4690"W, DISTANCE = 635.2513' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAD 88

NOTE:
 SEE SHEET 8 FOR -L- PROFILE

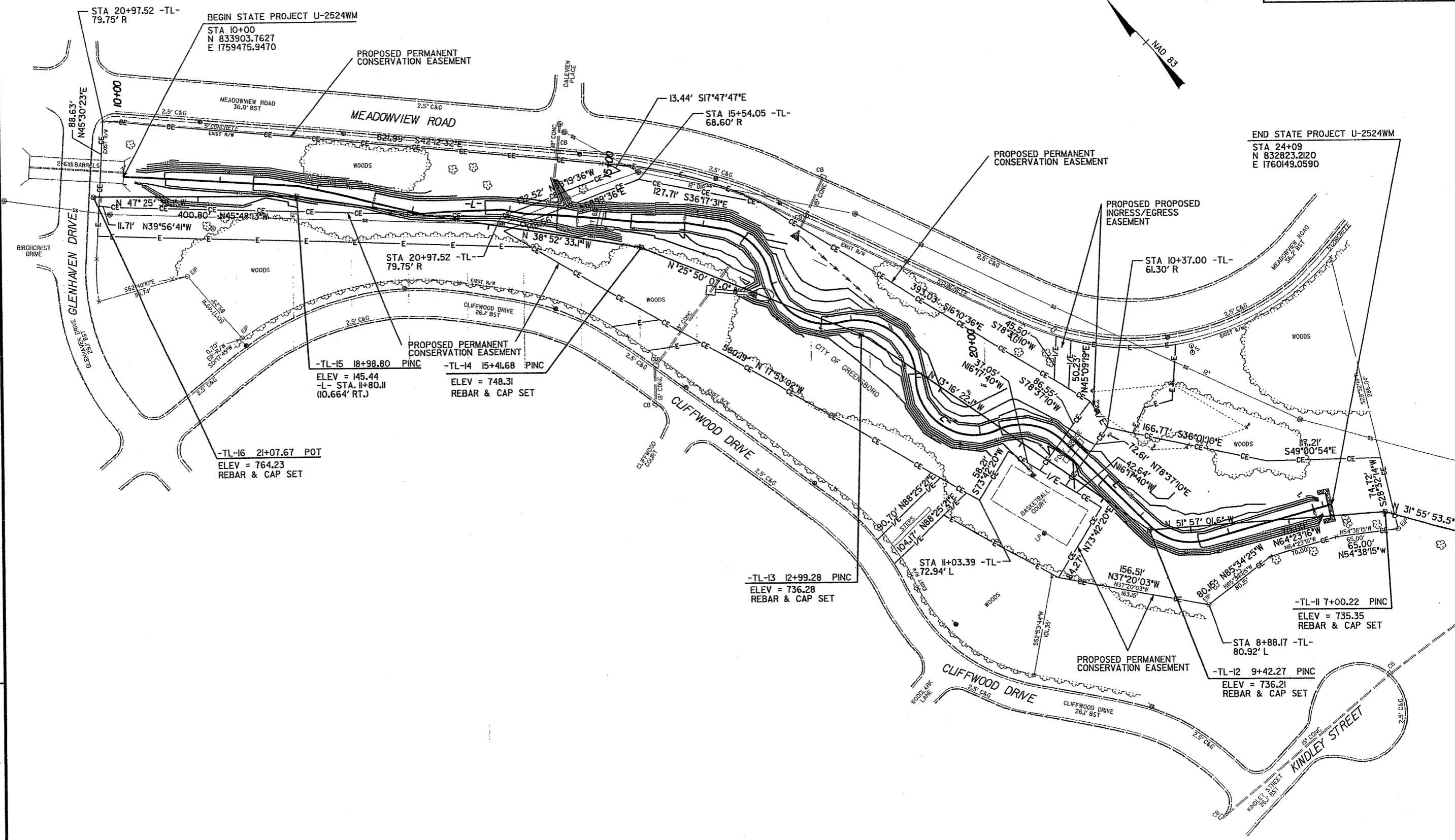
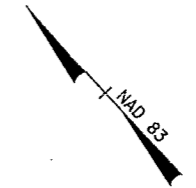
REVISIONS

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SPRING VALLEY PARK PROPOSED CONSERVATION EASEMENT

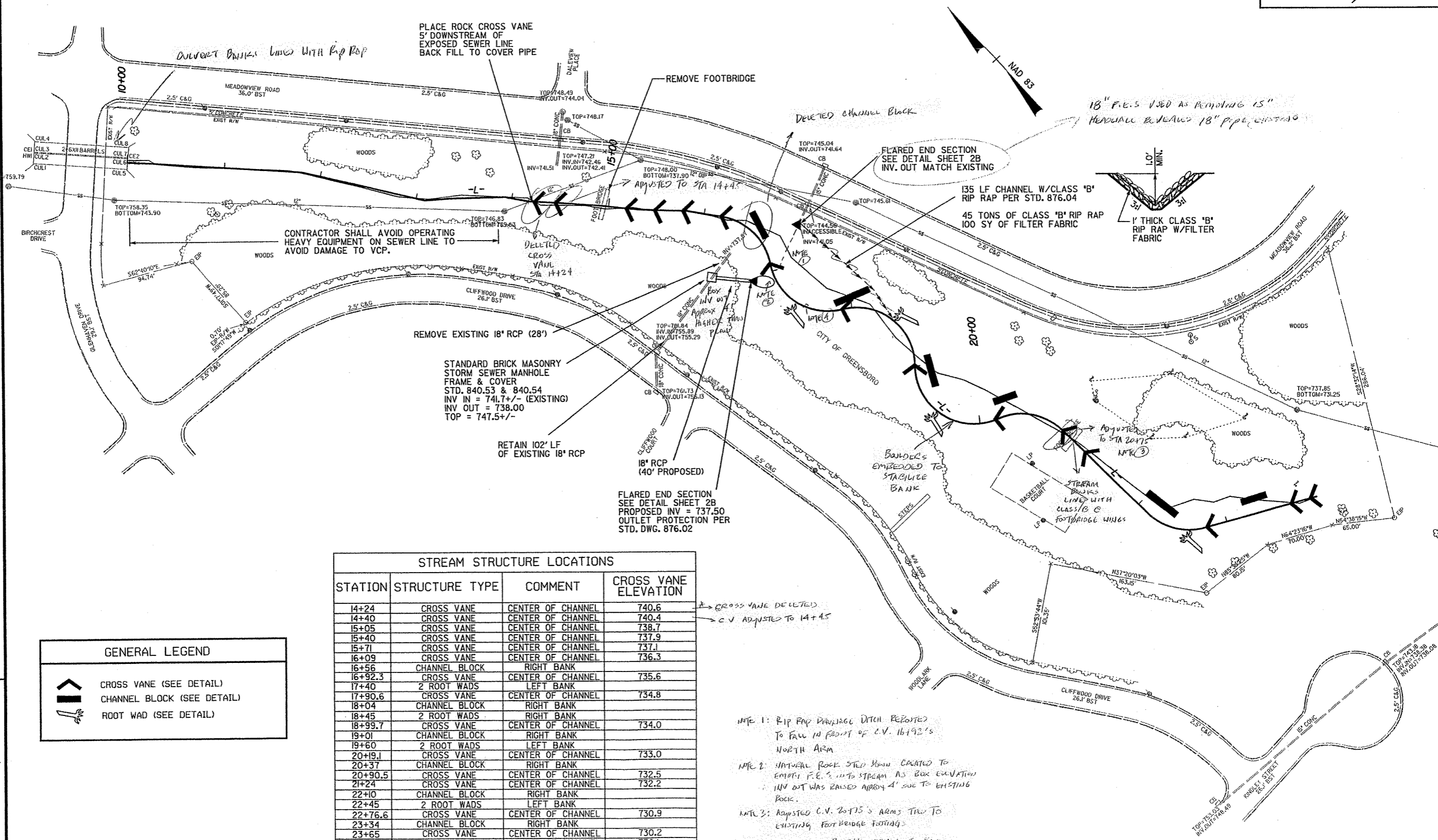


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8/17/99

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SPRING VALLEY PARK STRUCTURE & DEMOLITION LOCATIONS



GENERAL LEGEND

- CROSS VANE (SEE DETAIL)
- CHANNEL BLOCK (SEE DETAIL)
- ROOT WAD (SEE DETAIL)

STREAM STRUCTURE LOCATIONS			
STATION	STRUCTURE TYPE	COMMENT	CROSS VANE ELEVATION
14+24	CROSS VANE	CENTER OF CHANNEL	740.6
14+40	CROSS VANE	CENTER OF CHANNEL	740.4
15+05	CROSS VANE	CENTER OF CHANNEL	738.7
15+40	CROSS VANE	CENTER OF CHANNEL	737.9
15+71	CROSS VANE	CENTER OF CHANNEL	737.1
16+09	CROSS VANE	CENTER OF CHANNEL	736.3
16+56	CHANNEL BLOCK	RIGHT BANK	
16+92.3	CROSS VANE	CENTER OF CHANNEL	735.6
17+40	2 ROOT WADS	LEFT BANK	
17+90.6	CROSS VANE	CENTER OF CHANNEL	734.8
18+04	CHANNEL BLOCK	RIGHT BANK	
18+45	2 ROOT WADS	RIGHT BANK	
18+99.7	CROSS VANE	CENTER OF CHANNEL	734.0
19+01	CHANNEL BLOCK	RIGHT BANK	
19+60	2 ROOT WADS	LEFT BANK	
20+19.1	CROSS VANE	CENTER OF CHANNEL	733.0
20+37	CHANNEL BLOCK	RIGHT BANK	
20+90.5	CROSS VANE	CENTER OF CHANNEL	732.5
21+24	CROSS VANE	CENTER OF CHANNEL	732.2
22+10	CHANNEL BLOCK	RIGHT BANK	
22+45	2 ROOT WADS	LEFT BANK	
22+76.6	CROSS VANE	CENTER OF CHANNEL	730.9
23+34	CHANNEL BLOCK	RIGHT BANK	
23+65	CROSS VANE	CENTER OF CHANNEL	730.2
23+80	CROSS VANE	CENTER OF CHANNEL	730.1

* CROSS VANE DELETED
 * C.V. ADJUSTED TO 14+45

- NOTE 1: RIP RAP DRAINAGE DITCH REPORTED TO FAIL IN FRONT OF C.V. 16+92'S NORTH ARM
- NOTE 2: NATURAL ROCK STU BANK CREATED TO EMULI F.E.'S INTO STREAM AS BOX ELEVATION INV OUT WAS RAISED APPROX 4' SW TO EXISTING ROCK.
- NOTE 3: ADJUSTED C.V. 20+15'S ARMS TRN TO EXISTING FOOTBRIDGE FOOTING.
- NOTE 4: ADDITIONAL ROOT WAD DEMO WAS MADE TO PROTECT MUSEUM OF GROUND.

* SEE PLANTING PLAN *

NOTE: ELEVATION GIVEN IS TOP OF CENTER ROCK, AND IS 0.2' ABOVE PROPOSED STREAM CENTERLINE ELEVATION.

REVISIONS

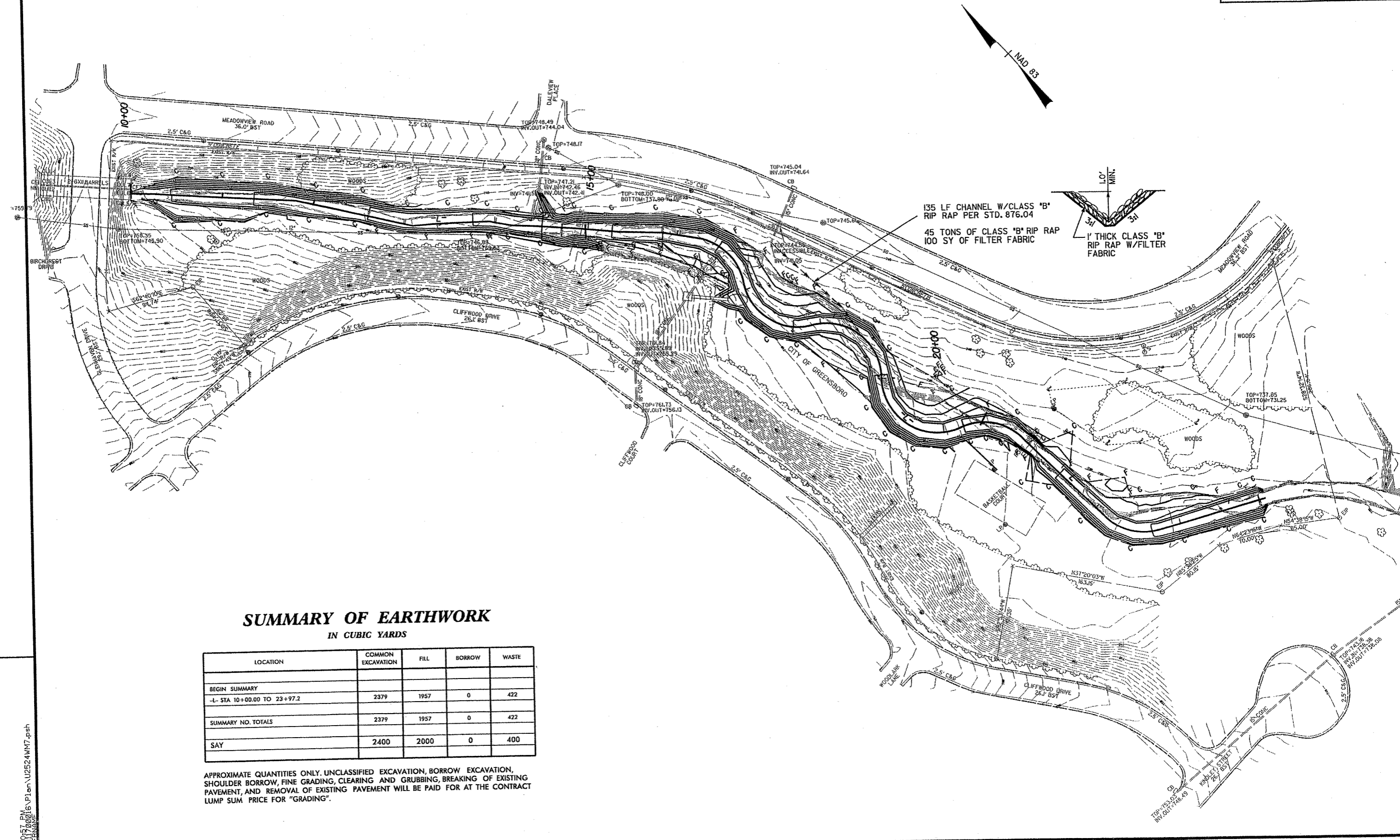
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SPRING VALLEY PARK - GRADING PLAN

8/17/99

REVISIONS



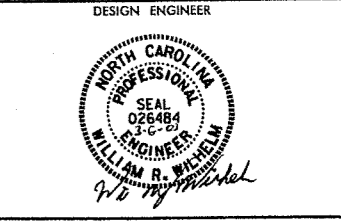
135 LF CHANNEL W/CLASS 'B' RIP RAP PER STD. 876.04
 45 TONS OF CLASS 'B' RIP RAP
 100 SY OF FILTER FABRIC
 1' THICK CLASS 'B' RIP RAP W/FILTER FABRIC

SUMMARY OF EARTHWORK IN CUBIC YARDS

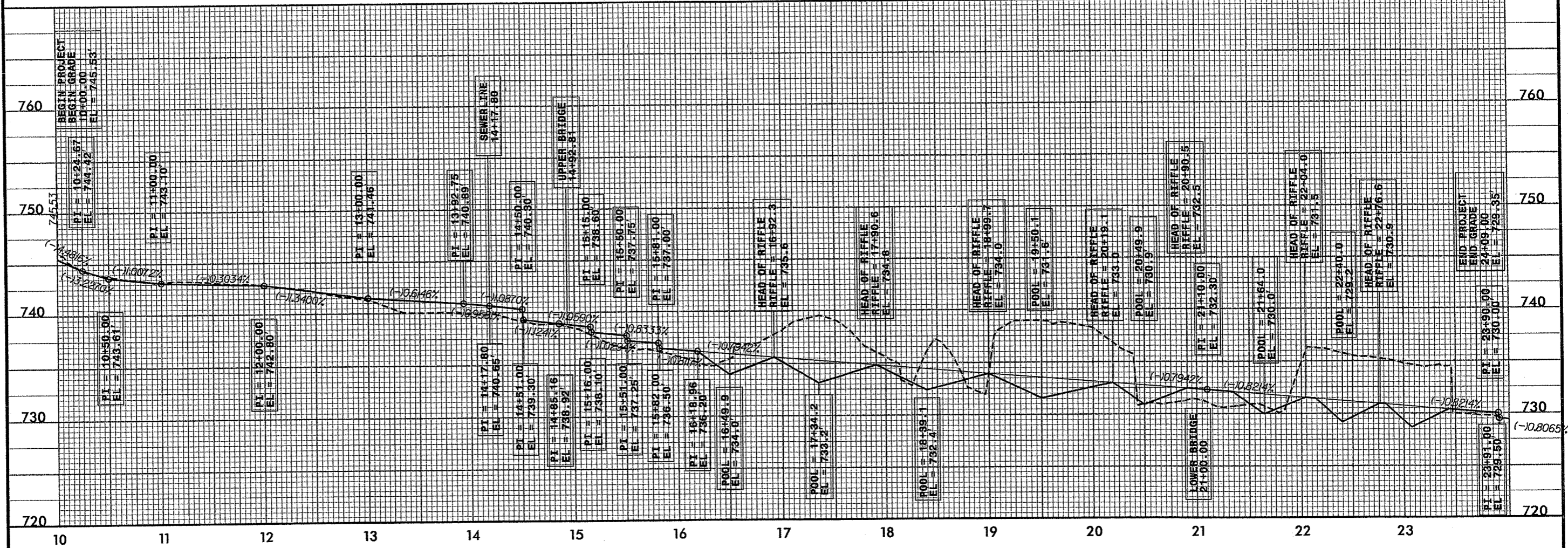
LOCATION	COMMON EXCAVATION	FILL	BORROW	WASTE
BEGIN SUMMARY				
-L- STA 10+00.00 TO 23+97.2	2379	1957	0	422
SUMMARY NO. TOTALS	2379	1957	0	422
SAY	2400	2000	0	400

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, SHOULDER BORROW, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING PAVEMENT, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

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SPRING VALLEY PARK - PROFILE -L-



U-2524WM

PROJECT: 8.U492111

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

 PLAN FOR PROPOSED
 HIGHWAY EROSION CONTROL

GUILFORD COUNTY

LOCATION: SPRING VALLEY PARK

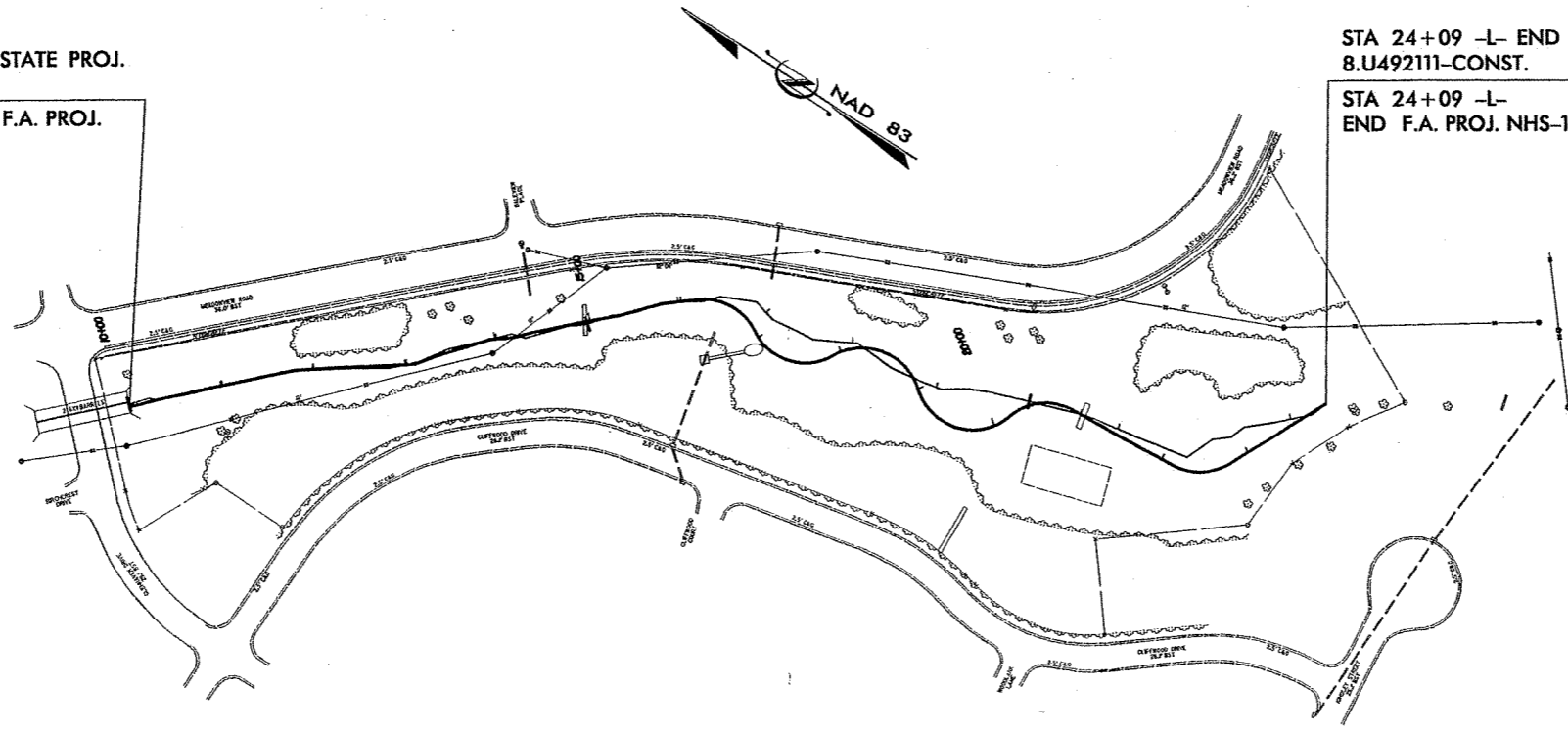
TYPE OF WORK: STREAM RESTORATION

STA 10+00 -L- BEGIN STATE PROJ.
8.U492111-CONST.

STA 10+00 -L- BEGIN F.A. PROJ.
NHS-124-1 (10)

STA 24+09 -L- END STATE PROJ.
8.U492111-CONST.

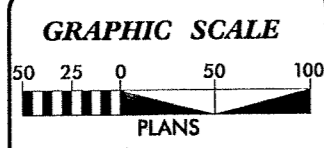
STA 24+09 -L-
END F.A. PROJ. NHS-124-1 (10)



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2524WM	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
8.U492107	NHS-124-1 (8)	P.E.	
8.U492109	NHS-124 (10)	R /W	
8.U492111	NHS-124-1 (10)	Const.	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
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	
1633.02	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	
1636.01	Rock Silt Screen	
1630.04	Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	OR
1632.02	Type B	OR
1632.03	Type C	OR



ROADSIDE ENVIRONMENTAL UNIT
 DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

Prepared In the Office of:
ROADSIDE ENVIRONMENTAL UNIT
 1 South Wilmington St.
 Raleigh, NC 27611
2002 STANDARD SPECIFICATIONS

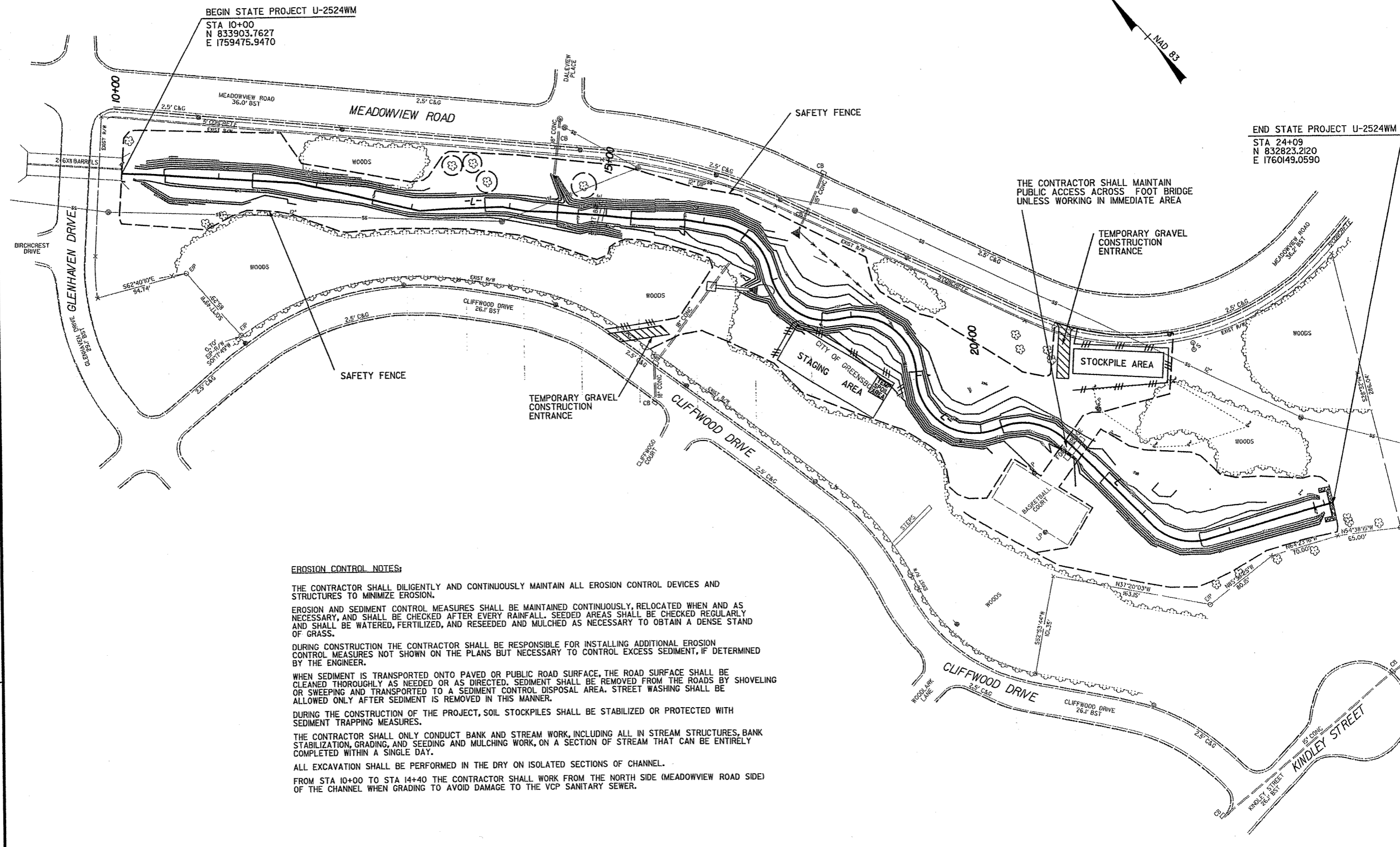
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 20, 2002 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01 Temporary Silt Fence	1632.01 Rock Inlet Sediment Trap Type A
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1622.01 Temporary Berms and Slope Drains	1633.01 Temporary Rock Silt Check Type A
1630.01 Riser Basin	1633.02 Temporary Rock Silt Check Type B
1630.02 Silt Basin Type B	1634.01 Temporary Rock Sediment Dam Type A
1630.03 Temporary Silt Ditch	1634.02 Temporary Rock Sediment Dam Type B
1630.04 Stilling Basin	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.05 Temporary Diversion	1636.01 Rock Silt Screen

SPRING VALLEY PARK EROSION & SEDIMENT CONTROL PLAN

8/17/99



BEGIN STATE PROJECT U-2524WM
 STA 10+00
 N 833903.7627
 E 1759475.9470

END STATE PROJECT U-2524WM
 STA 24+09
 N 832823.2120
 E 1760149.0590

THE CONTRACTOR SHALL MAINTAIN PUBLIC ACCESS ACROSS FOOT BRIDGE UNLESS WORKING IN IMMEDIATE AREA

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

CITY OF GREENSBORO STAGING AREA

STOCKPILE AREA

EROSION CONTROL NOTES:

- THE CONTRACTOR SHALL DILIGENTLY AND CONTINUOUSLY MAINTAIN ALL EROSION CONTROL DEVICES AND STRUCTURES TO MINIMIZE EROSION.
- EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY, AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDING AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, AND RESEEDED AND MULCHED AS NECESSARY TO OBTAIN A DENSE STAND OF GRASS.
- DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL EROSION CONTROL MEASURES NOT SHOWN ON THE PLANS BUT NECESSARY TO CONTROL EXCESS SEDIMENT, IF DETERMINED BY THE ENGINEER.
- WHEN SEDIMENT IS TRANSPORTED ONTO PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AS NEEDED OR AS DIRECTED. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.
- DURING THE CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES.
- THE CONTRACTOR SHALL ONLY CONDUCT BANK AND STREAM WORK, INCLUDING ALL IN STREAM STRUCTURES, BANK STABILIZATION, GRADING, AND SEEDING AND MULCHING WORK, ON A SECTION OF STREAM THAT CAN BE ENTIRELY COMPLETED WITHIN A SINGLE DAY.
- ALL EXCAVATION SHALL BE PERFORMED IN THE DRY ON ISOLATED SECTIONS OF CHANNEL.
- FROM STA 10+00 TO STA 14+40 THE CONTRACTOR SHALL WORK FROM THE NORTH SIDE (MEADOWVIEW ROAD SIDE) OF THE CHANNEL WHEN GRADING TO AVOID DAMAGE TO THE VCP SANITARY SEWER.

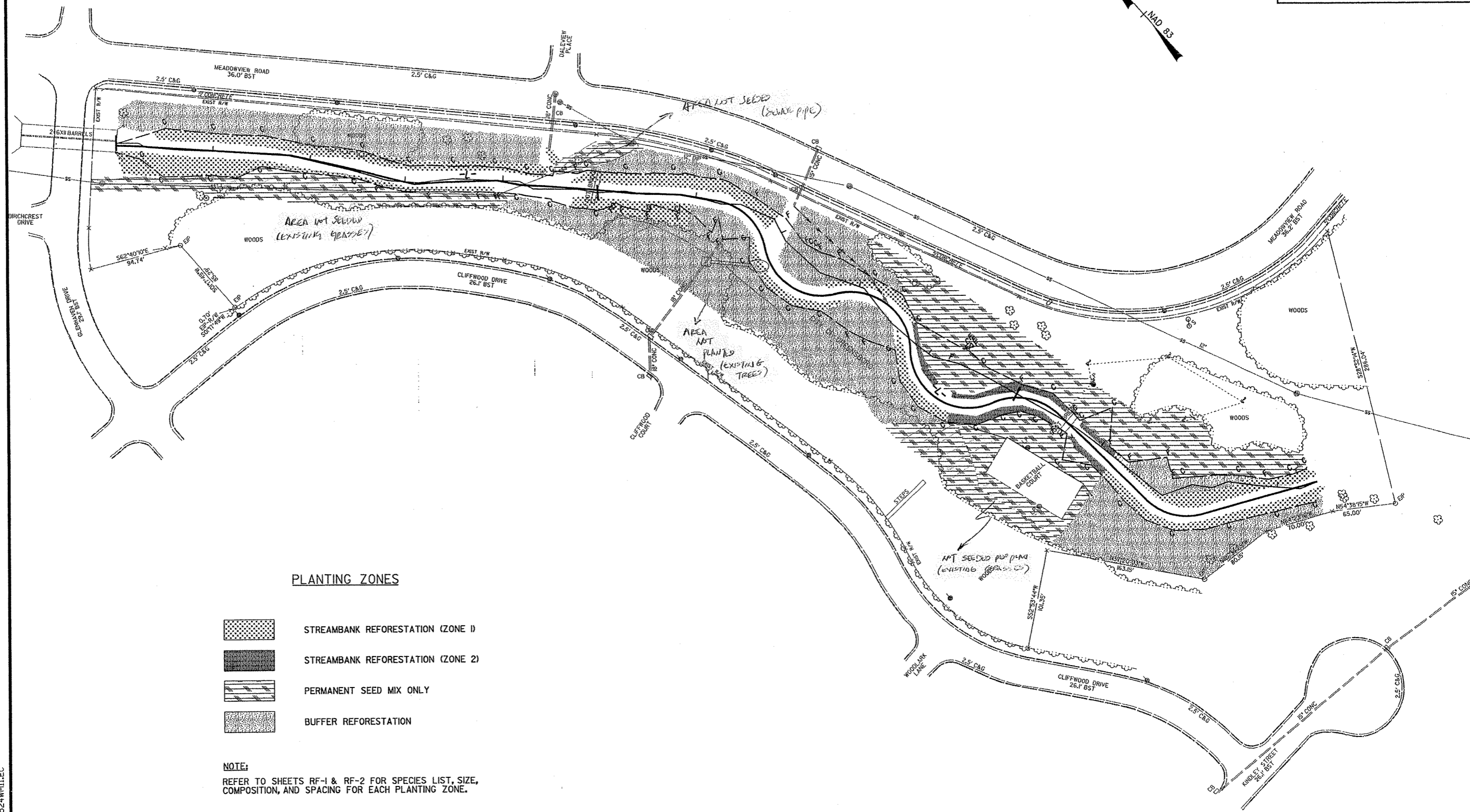
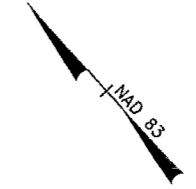
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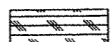

DESIGN ENGINEER



SPRING VALLEY PARK - PLANTING PLAN



PLANTING ZONES

-  STREAMBANK REFORESTATION (ZONE 1)
-  STREAMBANK REFORESTATION (ZONE 2)
-  PERMANENT SEED MIX ONLY
-  BUFFER REFORESTATION

NOTE:
REFER TO SHEETS RF-1 & RF-2 FOR SPECIES LIST, SIZE, COMPOSITION, AND SPACING FOR EACH PLANTING ZONE.

6/2/99

10:33:50 AM 6/2/99 16:11:06 P1.m U2524MM11.EC
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PROJECT REFERENCE NO. U-2524WM	SHEET NO. L-2
RW SHEET NO.	
DESIGN ENGINEER	

SPRING VALLEY PARK PLANTING DETAILS

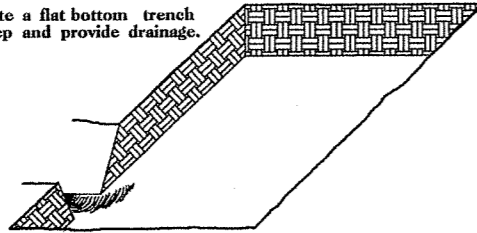
SEEDLING / LINER BAREROOT PLANTING DETAIL

SPECIES LIST

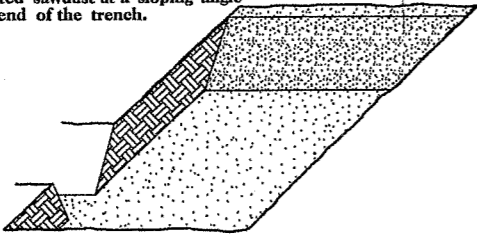
HEALING IN

1. Locate a healing-in site in a shady, well protected area.

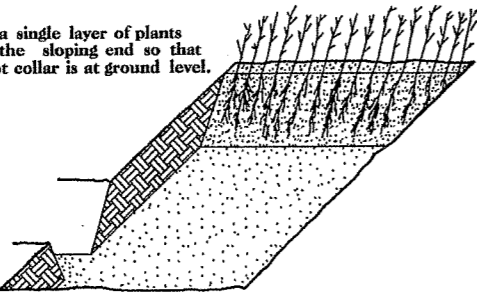
2. Excavate a flat bottom trench 12" deep and provide drainage.



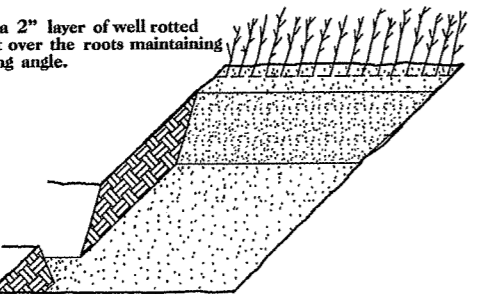
3. Backfill the trench with 2" well rotted sawdust. Place a 2" layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

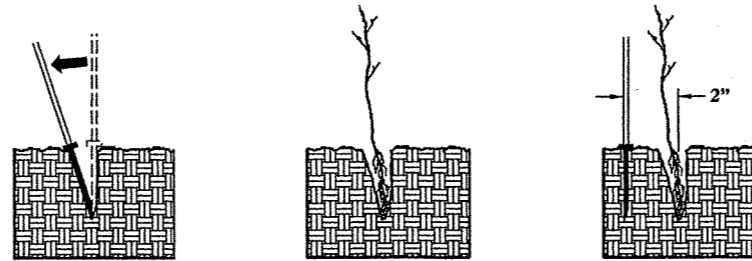


5. Place a 2" layer of well rotted sawdust over the roots maintaining a sloping angle.



6. Repeat layers of plants and sawdust as necessary and water thoroughly.

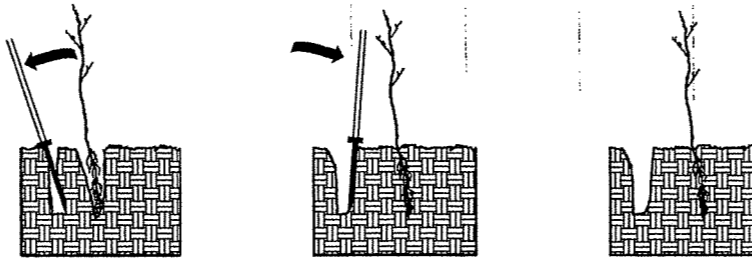
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.

2. Remove planting bar and place seedling at correct depth.

3. Insert planting bar 2" toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.

5. Push handle forward firming soil at top.

6. Leave compaction hole open. Water thoroughly.

Buffer Reforestation

Species (Bare roots)	Percent Composition	Size (minimum)
<i>Betula nigra</i> (river birch)	20	18"-36"
<i>Quercus michauxii</i> (Swamp Chestnut Oak)	20	18"-36"
<i>Liriodendron tulipifera</i> (Yellow Poplar)	20	18"-36"
<i>Platanus occidentalis</i> (American Sycamore)	20	18"-36"
<i>Quercus phellos</i> (willow oak)	20	18"-36"

Bare rooted shrubs and trees will be planted on eight foot centers.

Streambank Reforestation (Zone 1)

Species (Bare Roots)	Percent Composition	Size (minimum)
<i>Cornus amomum</i> (silky dogwood)	33.3	12"-18"
<i>Salix nigra</i> (black willow)	33.3	12"-18"
<i>Alnus serrulata</i> (Tag Alder)	33.3	12"-18"

Streambank Reforestation (Zone 2)

Species (Bare roots)	Percent Composition	Size (Minimum)
<i>Callicarpa Americana</i> (American BeautyBerry)	33.3	12"-18"
<i>Itca Virginica</i> (Virginia Willow)	33.3	12"-18"
<i>Xanthorhiza simplicissima</i> (Yellowroot)	33.3	12"-18"

ZONE 1 AND ZONE 2 STREAMBANK REFORESTATION SHALL BE PLANTED 3 FT. TO 5 FT. ON CENTER, RANDOM SPACING, AVERAGING 4 FT. ON CENTER, APPROXIMATELY 2724 PLANTS PER ACRE.

NOTE: ZONE 1 AND ZONE 2 STREAMBANK REFORESTATION SHALL BE PAID FOR AS "STREAMBANK REFORESTATION"

SEE PLANTING PLAN SHEET L-1 FOR AREAS TO BE PLANTED

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12" long, 4" wide and 1" thick at center.



ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches (10") below the root collar.

REVISIONS

8/17/99

SPRING VALLEY PARK CROSS-SECTION SUMMARY

IN CUBIC YARDS

PROJECT REFERENCE NO. SHEET NO.

U-2524WM X-0

RW SHEET NO.
DESIGN ENGINEER

STATION	COMMON EXCAVATION	FILL
-L-		
10+00	0	0
10+25	0	0
10+50	42	0
10+75	75	0
11+00	63	0
11+25	53	0
11+50	41	0
11+75	29	0
12+00	22	0
12+25	19	0
12+50	21	2
12+75	19	4
13+00	16	6
13+25	14	11
13+50	10	18
13+75	7	19
13+92.75	3	14
14+00	1	6
14+17.80	1	12
14+25	1	3
14+50	4	12
14+51	1	0
14+75	27	1
14+85	14	0
15+00	20	1
15+15	14	3
15+16	1	0
15+25	8	2
15+50	24	10
15+51	1	0
15+75	35	6
15+81	8	2
15+82	2	0
16+00	31	4
16+18.96	28	11

APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, SHOULDER BORROW, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING PAVEMENT, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

STATION	COMMON EXCAVATION	FILL
-L-		
16+25	6	5
16+50	15	42
16+75	13	59
17+00	39	66
17+25	71	80
17+50	79	80
17+75	59	85
18+00	26	93
18+25	11	77
18+50	31	58
18+75	31	49
19+00	20	70
19+25	73	120
19+50	129	126
19+75	136	103
20+00	127	83
20+25	94	75
20+50	41	54
20+75	12	24
21+00	5	16
21+10	0	5
21+25	15	9
21+50	37	19
21+75	30	26
22+00	46	39
22+25	71	57
22+50	95	65
22+75	104	64
23+00	98	63
23+25	86	54
23+50	63	31
23+75	38	11
23+90	21	2
23+91	2	0
SUMMARY TOTALS	2,379	1,957

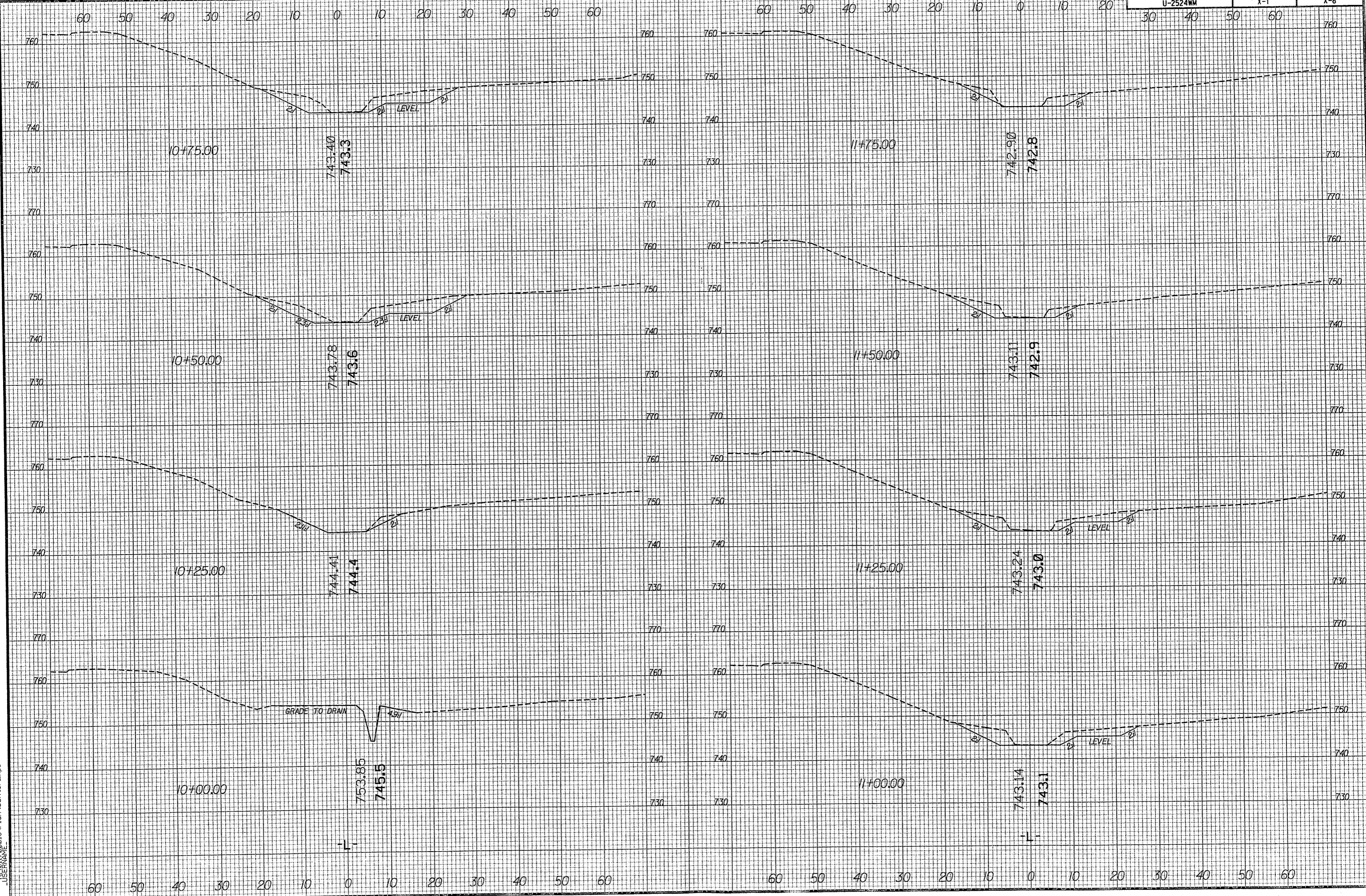
APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, SHOULDER BORROW, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING PAVEMENT, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

REVISIONS

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 W. R. WILLIAMS

02/23/98

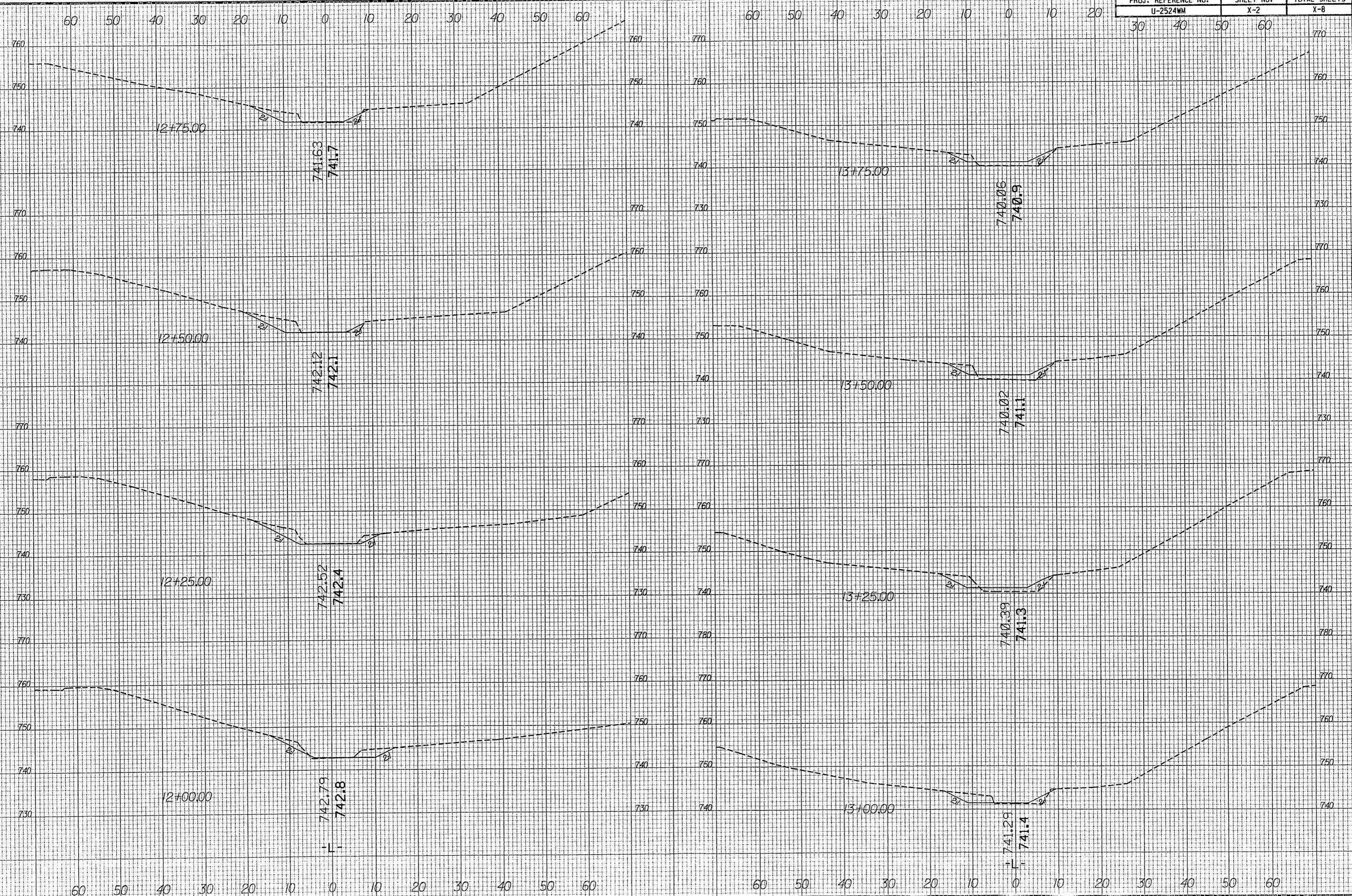
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02/03/08

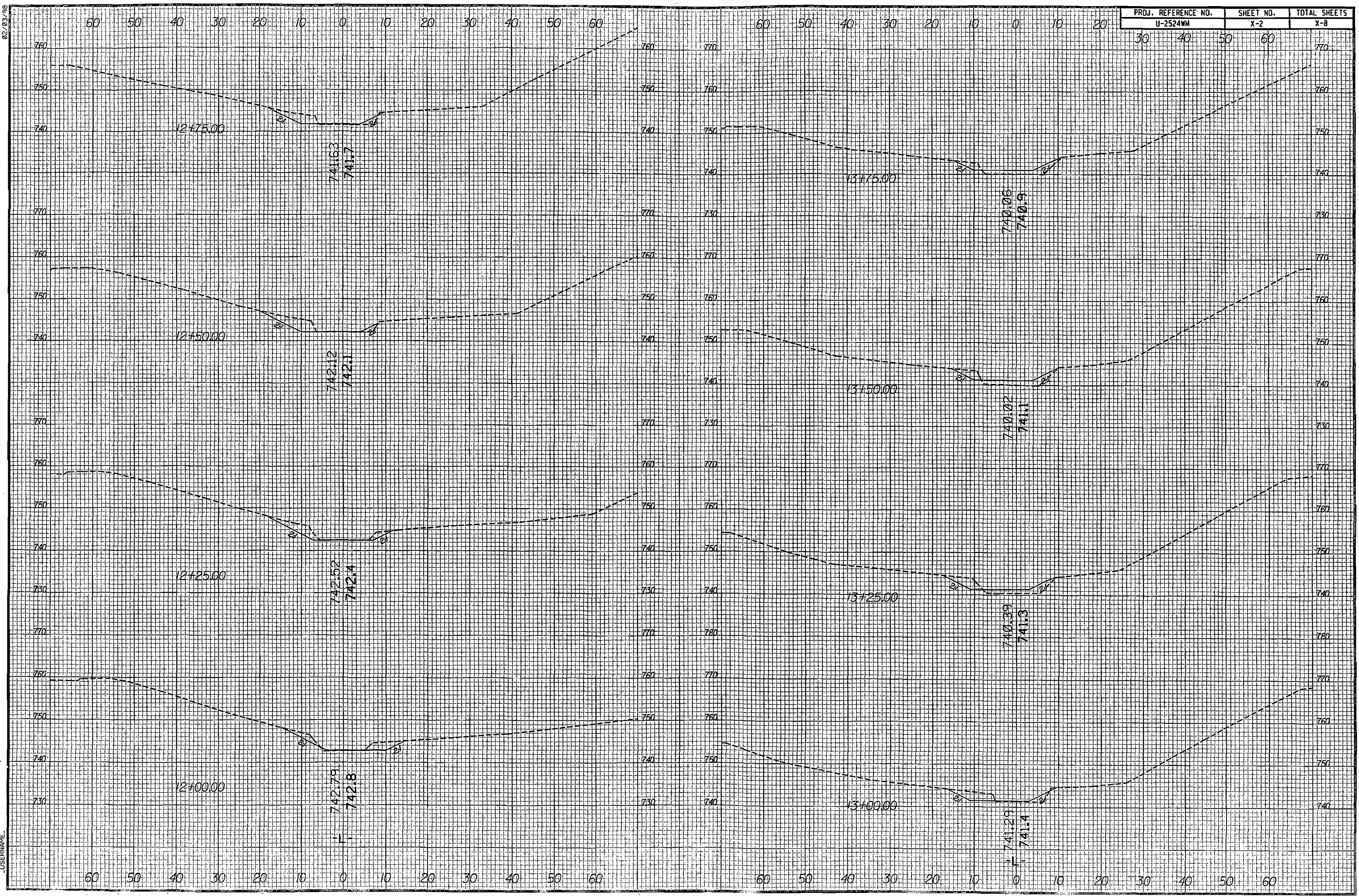
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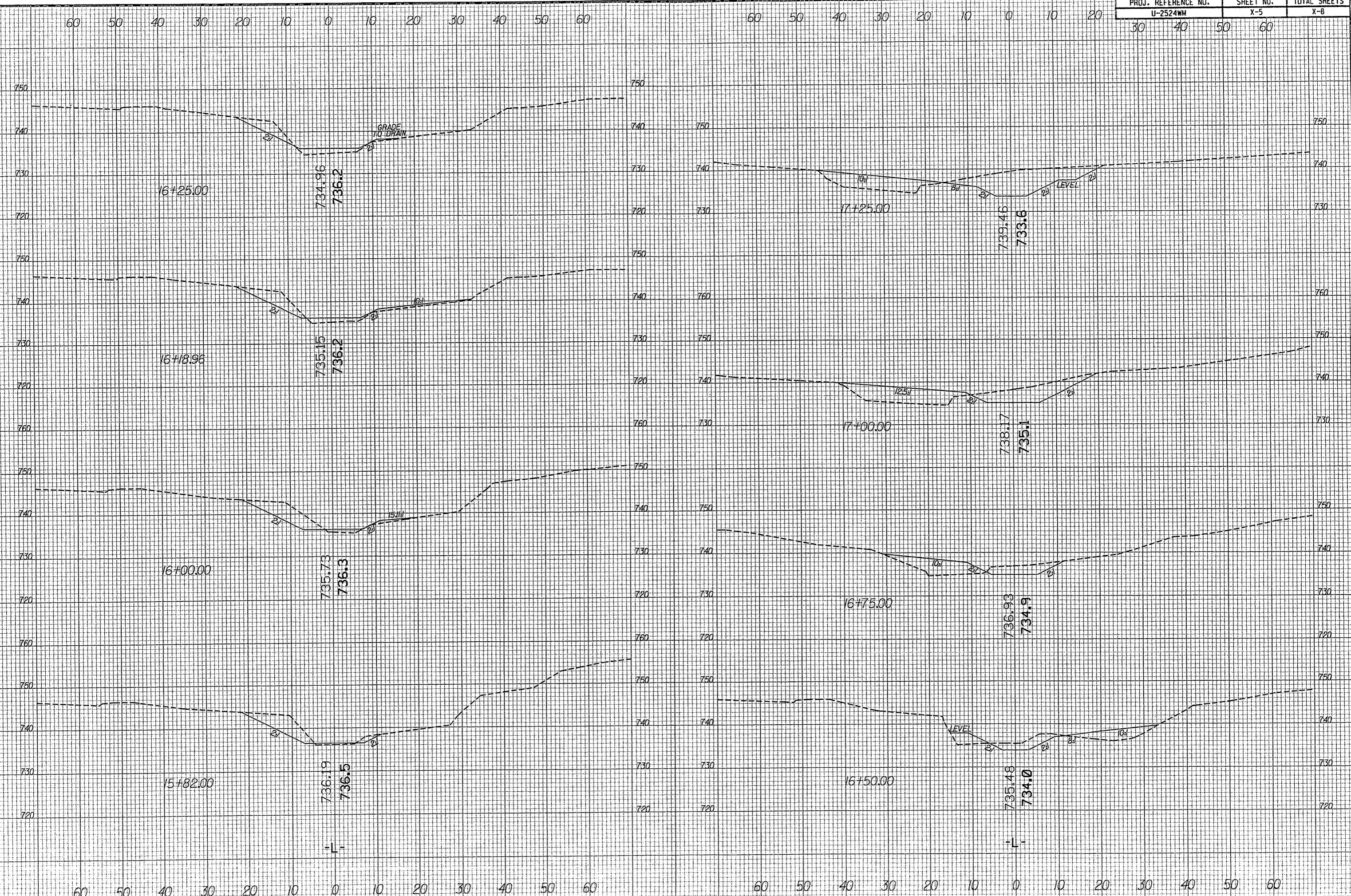
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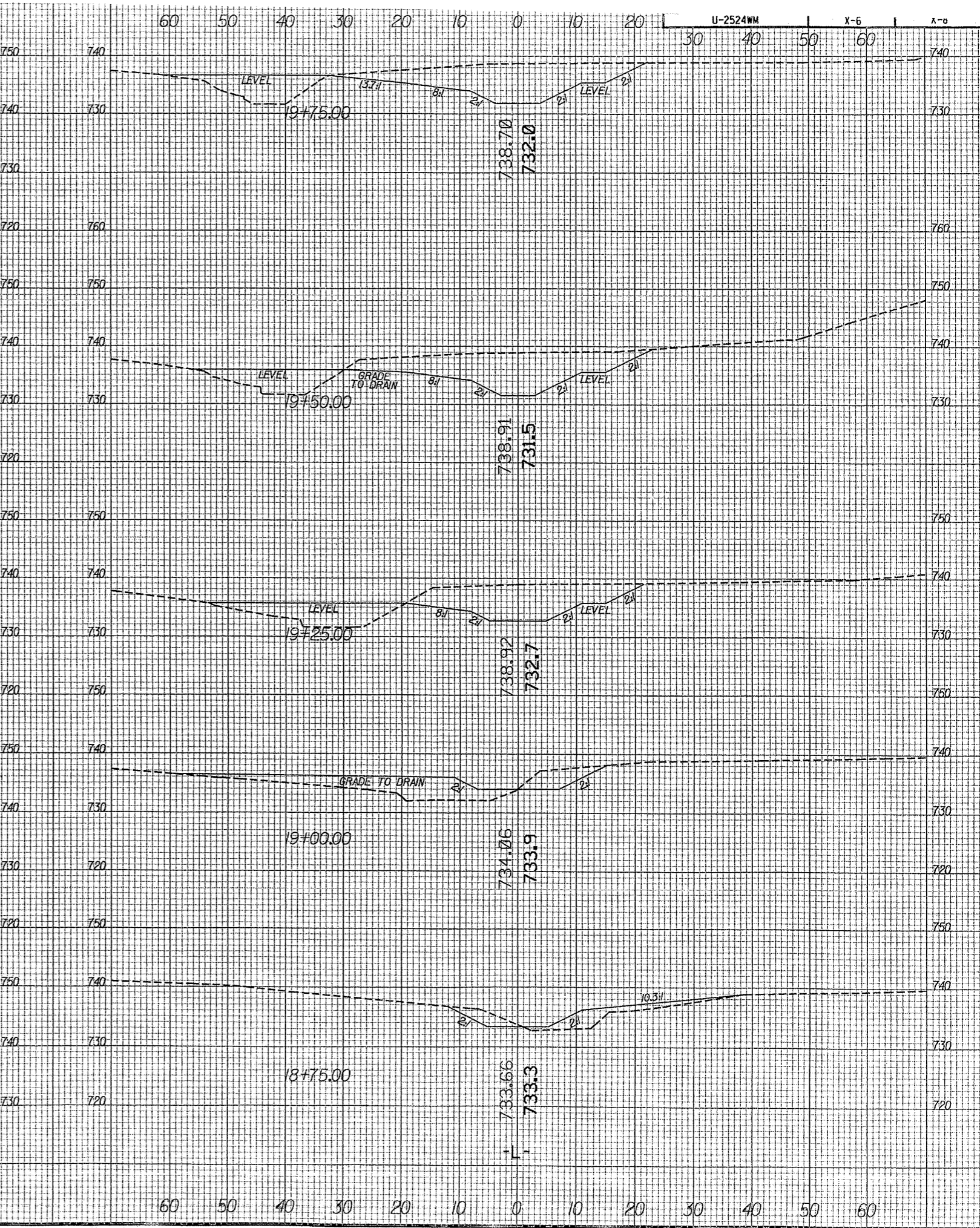
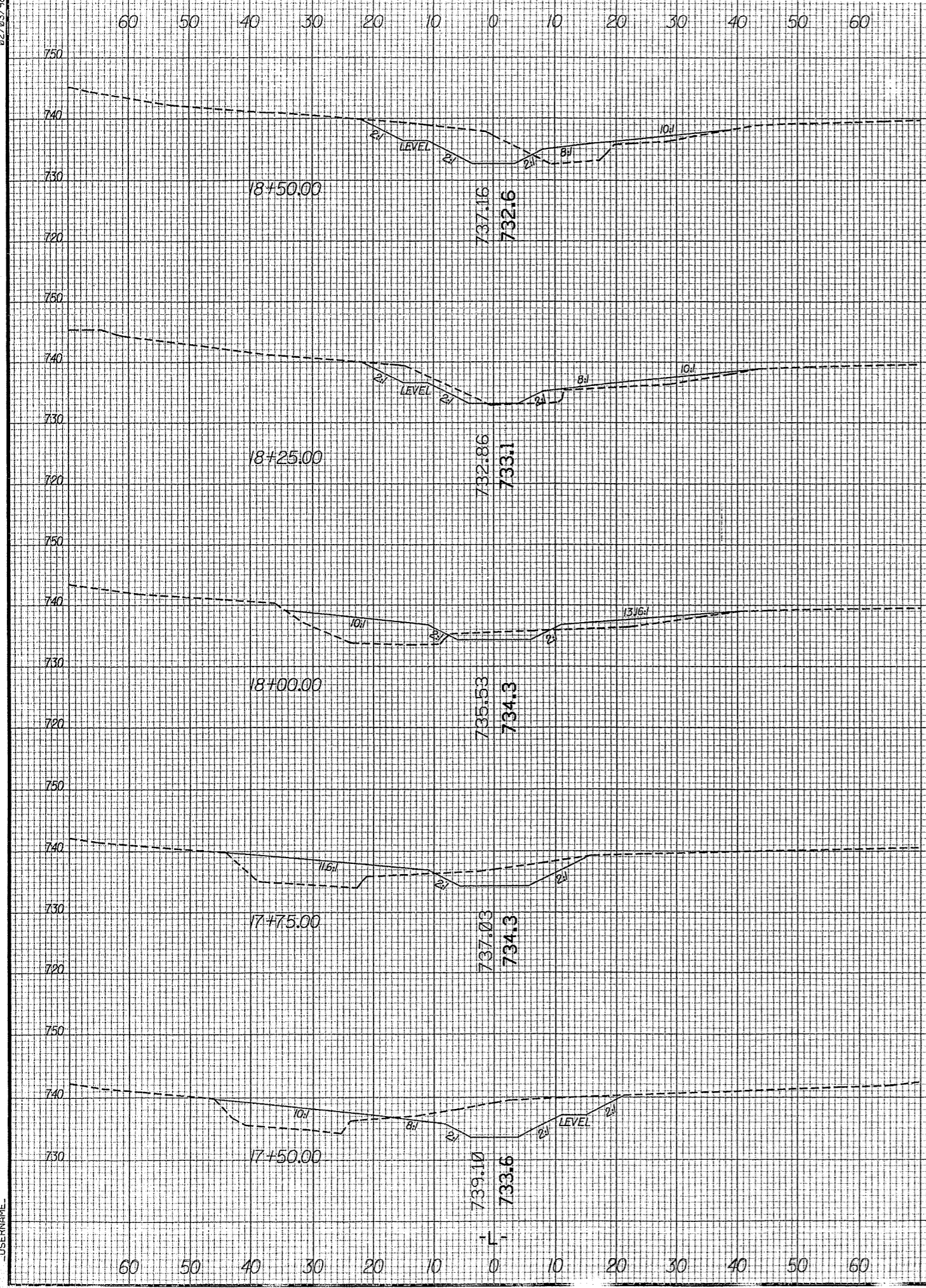
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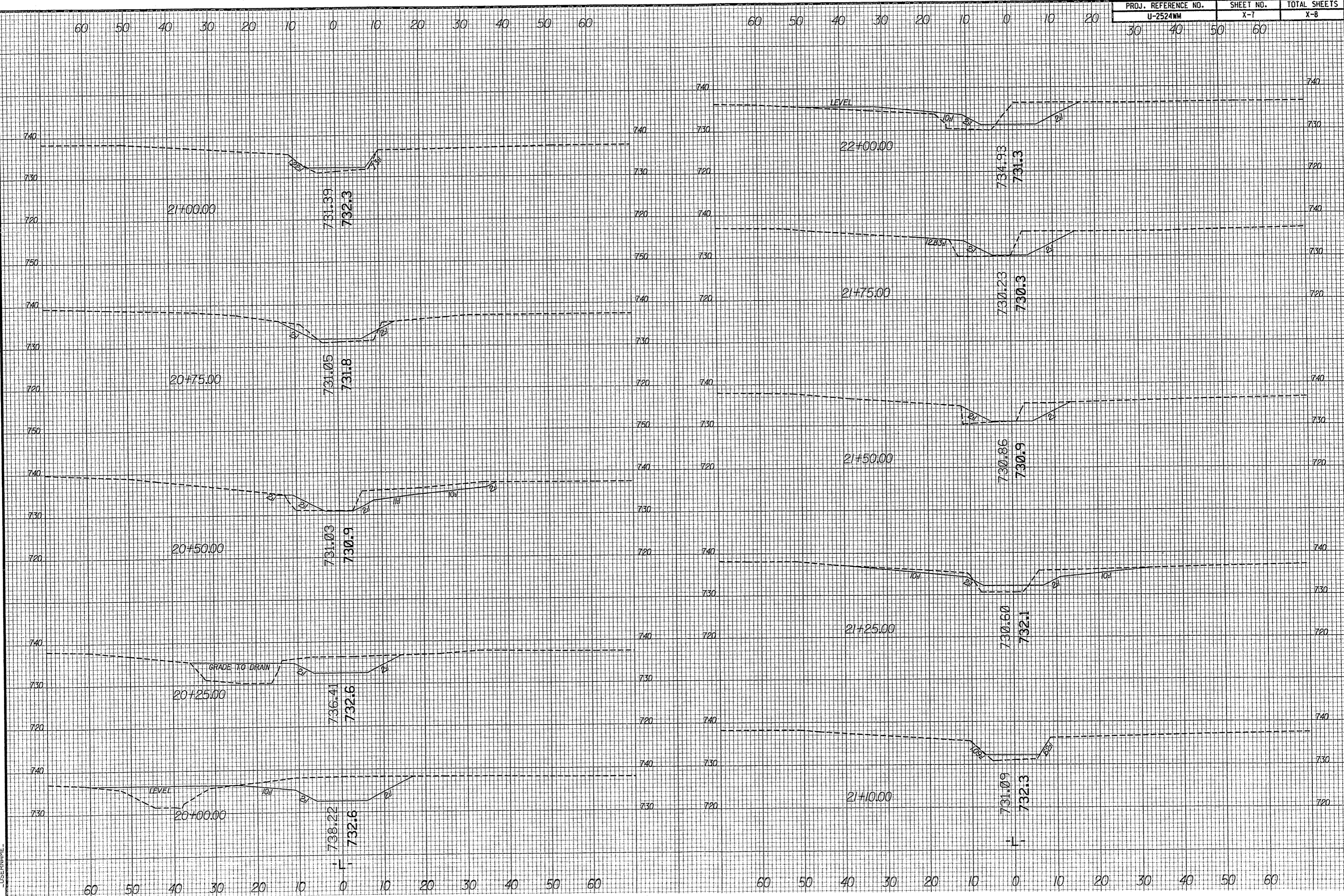
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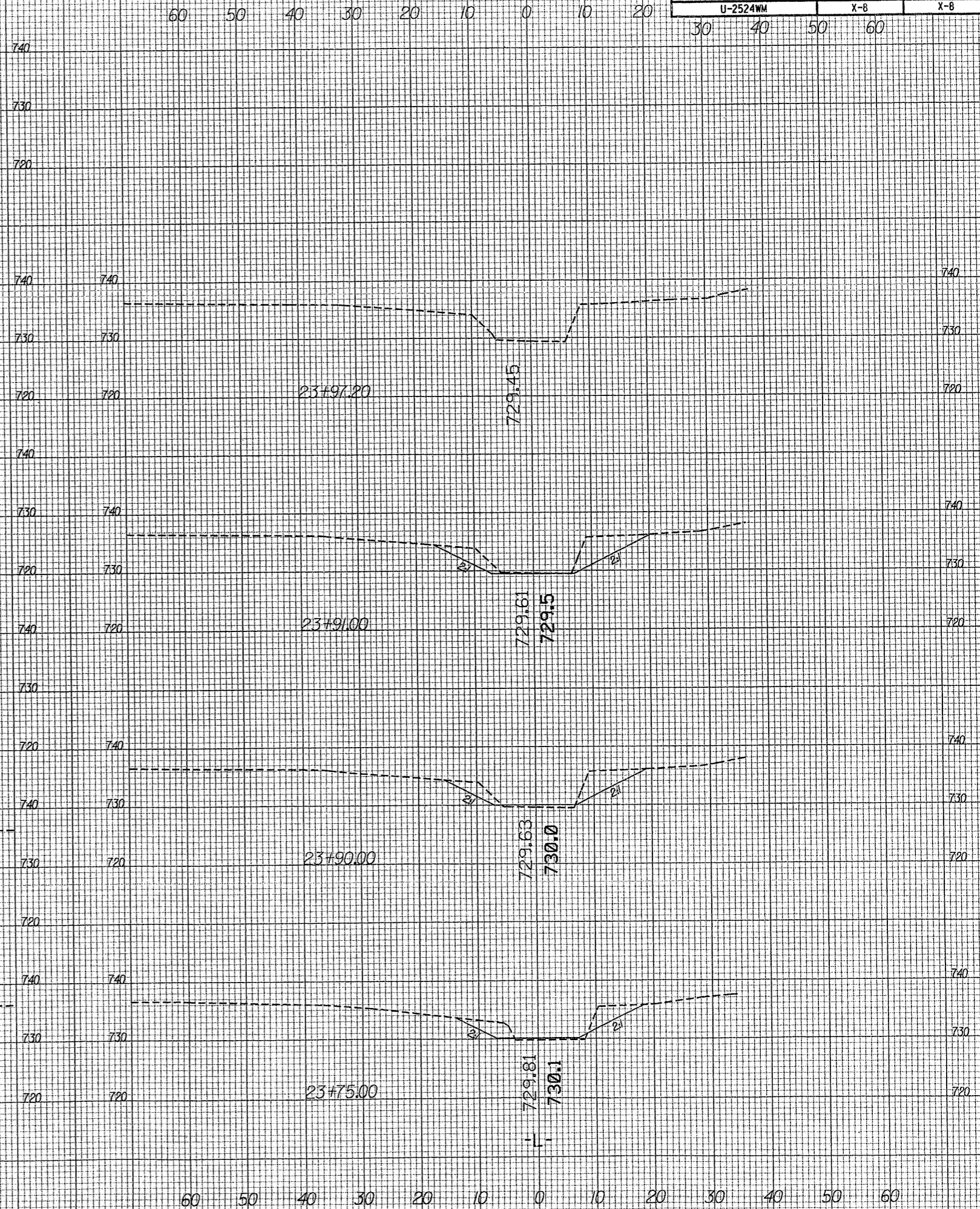
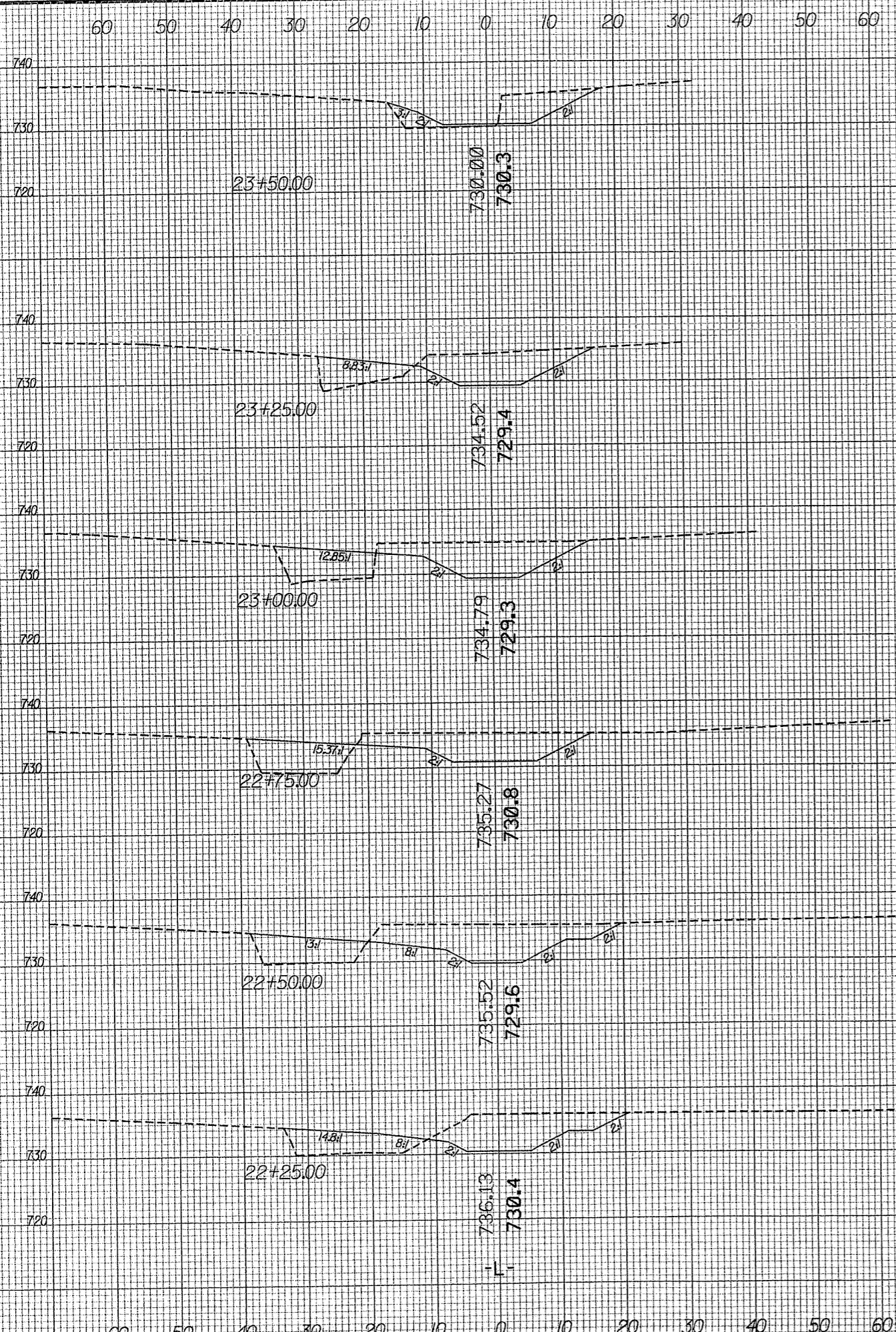
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02/03/98

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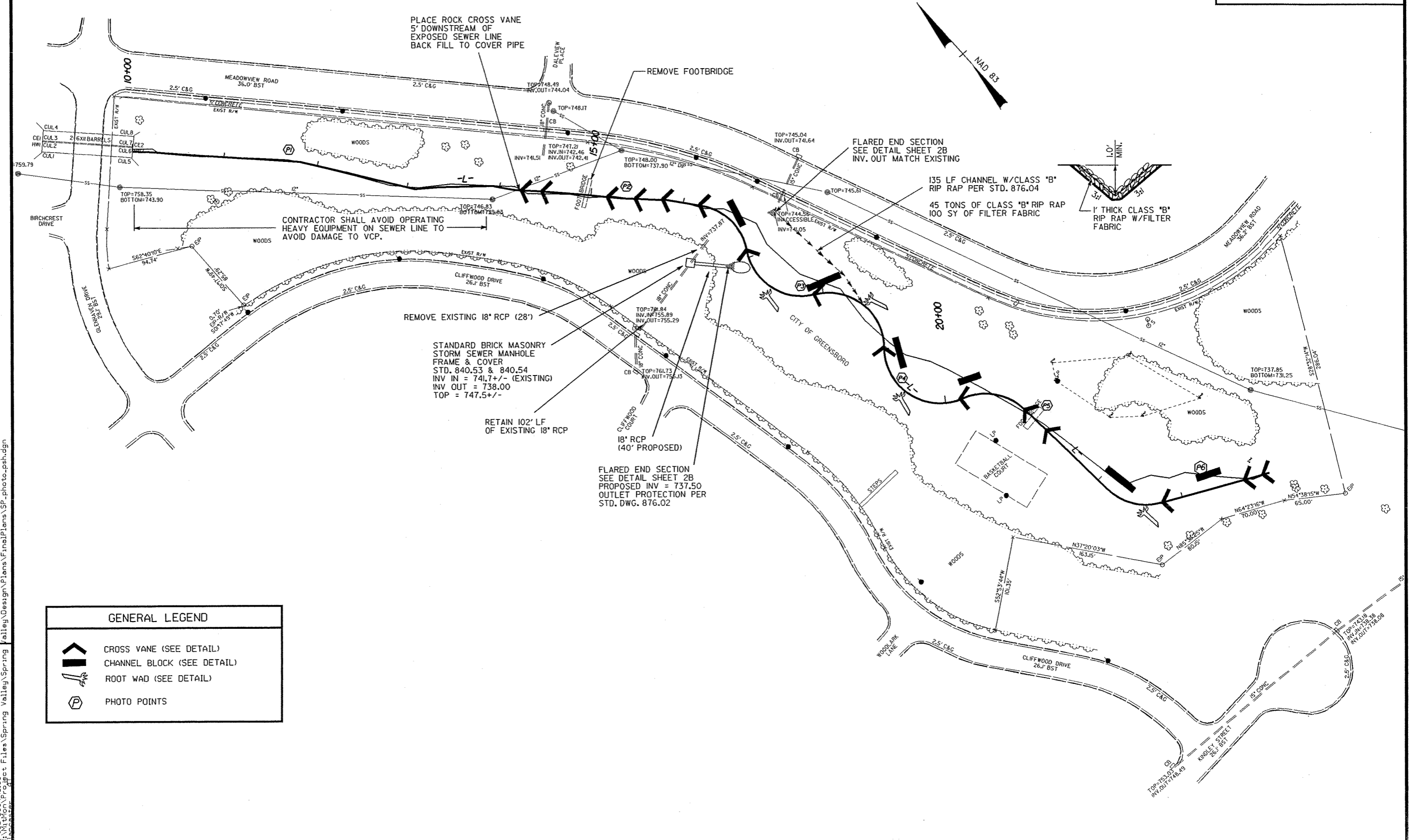


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U-2524WM	
R/W SHEET NO.	
DESIGN ENGINEER	

SPRING VALLEY PARK PHOTO LOCATIONS

8/17/99



CONTRACTOR SHALL AVOID OPERATING HEAVY EQUIPMENT ON SEWER LINE TO AVOID DAMAGE TO VCP.

REMOVE EXISTING 18" RCP (28')

STANDARD BRICK MASONRY STORM SEWER MANHOLE FRAME & COVER
STD. 840.53 & 840.54
INV IN = 741.7+/- (EXISTING)
INV OUT = 738.00
TOP = 747.5+/-

RETAIN 102' LF OF EXISTING 18" RCP

18" RCP (40' PROPOSED)

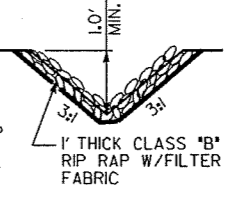
FLARED END SECTION
SEE DETAIL SHEET 2B
PROPOSED INV = 737.50
OUTLET PROTECTION PER STD. DWG. 876.02

PLACE ROCK CROSS VANE 5' DOWNSTREAM OF EXPOSED SEWER LINE BACK FILL TO COVER PIPE

REMOVE FOOTBRIDGE

FLARED END SECTION
SEE DETAIL SHEET 2B
INV. OUT MATCH EXISTING

135 LF CHANNEL W/CLASS "B" RIP RAP PER STD. 876.04
45 TONS OF CLASS "B" RIP RAP
100 SY OF FILTER FABRIC



GENERAL LEGEND	
	CROSS VANE (SEE DETAIL)
	CHANNEL BLOCK (SEE DETAIL)
	ROOT WAD (SEE DETAIL)
	PHOTO POINTS

REVISIONS

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