KINGSTON FOSSIL PLANT
COAL RECEIVING RAILROAD
PROJECT

STORM WATER
POLLUTION PREVENTION PLAN
FOR CONSTRUCTION ACTIVITY

Principal Officer's Certification Statement:

This form is to be signed by a principal executive officer of the Tennessee Valley Authority in accordance with Part (8)(h) of Rule 1200-4-10-.05. A copy of this certification statement must be maintained with this plan.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached document; and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. "

_____ _____

Signature Date

I. Construction

A. Nature of Activity

Kinston Fossil Plant is a coal fired electric power generation facility of the Tennessee Valley Authority (TVA) located in Roane County near Emory River Mile 2. In order to reduce fuel cost and to provide low sulfur fuel for environmental compliance, TVA has proposed construction of a railroad spur from the CSX yard in Harriman (Emory River Mile 10.7) to the plant site along a 5.0 mile corridor. Construction will require cut and fill of native materials, placement of riprap for slope protection, placement of ballast, and construction of the track using creosote wood ties, rail, and accessories. A total of three bridges will be constructed to cross Quarry Creek, Bullard Branch, and the Emory River.

B. Timetable of Activities

Construction is tentatively scheduled to begin in May 1998. The project is scheduled to be completed in June 2000. The schedule for major activities associated with this project that will disturb soil is as follows:

ACTIVITY	PROJECTED START DATE	PROJECTED END DATE	CONTRAC-TOR NAME*
Install Silt Fences			
Clear, Grub, and Stripping			

* A certification statement must be signed by each contractor. See Page 11 for certification form.

II. Area estimates

The total area covered by the project will be approximately 70 acres. About 58 acres of this total will undergo grading or excavation.

III. Changes in Impervious Area

3.6 acres of impervious surface will be added as a result of the project. Using TR-55 procedures, it was determined that the new grade will result in 0.22 inches (1.06 acre-feet) runoff from a one inch storm. Supporting calculations can be found in Attachment A.

IV. Fill Material

The majority of fill for the project will be composed of native soils that will be compacted to at least 90% of its maximum density as determined by the Standard Proctor test. Any slopes that will be adjacent to bodies of water will be covered with a 6 inch filter blanket of crushed stone and an 18" layer of ripap.

Fill between Station 79+00 and 89+00 will be rockfill revetment. Gradation of the rock will be such that minimal amounts of fines will be included. The surface of the existing bank in this area will not be disturbed prior to filling, and the rock will be dumped directly onto the bank as is. Fill construction will be staged and will proceed from the downstream end (Station 89+00) toward the upstream end to provide a barrier for sediment flow. These measures should minimize the amount of sediment entering the reservoir due to construction operations in this area.

V. Site Map

A map of the site can be found on the attached drawings 104W301-2 through 104W301-12, heretofore referenced as "drawing 2" through "drawing 12" . These plans show the drainage patterns and approximate slopes anticipated after major grading activities. Areas of disturbed soil, locations of structural controls (silt fences, staked hay bales, etc.), and areas to be stabilized are also shown.

VI. Receiving Waters

The Emory River will receive the storm water discharge from this project. Some storm water will be directed to tributaries of the Emory including Bullard Branch, Quarry Creek, and the Swan Pond Embayment.

VII. Construction Management Techniques/Sediment and Erosion Controls

Based on the major activities listed above which will disturb soils, the following techniques and controls will be used.

A. Construction Management Techniques

- Clearing and grubbing will be minimized to include only those areas necessary for construction.
- Construction will be sequenced to minimize exposure time of cleared land.
- Erosion and sediment control measures will be placed and operational before construction begins. These measures will be maintained throughout the construction period.
- All control measures will be checked and repaired as necessary throughout the entire construction period. Inspections will be made at least once every 7 calendar days in dry periods and within 24 hours after any rainfall that is 0.5 inches or greater within a 24 hour period. Daily checking and repairing will be required during prolonged rainfall events.
- Inspections will be conducted by qualified responsible person(s) designated by the constructor. This person shall maintain records of all checks and repairs. A log for checks and repairs can be found on page 8. See Section IX. for further details.

B. Vegetative Controls

- Pre-construction ground cover will not be destroyed, removed, or disturbed more than 20 calendar days prior to grading.
- Appropriate ground cover will be applied, to the most practical extent, within seven days of disturbance to areas that will remain unfinished for more than 30 calendar days. Typical cover may include sod, grass, straw, mulch, geotextiles, etc.
- Perennial vegetation will be planted on disturbed areas as soon as practicable after final grading.
- Whenever practicable, vegetated buffer zones will be used between disturbed areas and adjacent bodies of water such as streams or the Emory River to minimize sediment transport. Attempts will be made to maintain existing vegetation that will provide a natural buffer zone along the borders of adjacent water bodies.

C. Structural Controls

- All surface water flowing toward the construction site will be diverted using berms, ditches, and sediment traps as necessary.
- Silt fencing will be used to intercept sediment from storm water flowing over disturbed areas. Fencing will be placed beyond the toe of slope of fill areas and in any other critical areas where deemed necessary. Locations for fencing can be found on drawings 2 through 12 and sections and details for construction of the fencing are on drawing 1. Additional implementation locations may be identified in the field by the owner or constructor.

- Straw bale barriers will be used to detain sediment in areas of possible sheet or rill erosion. Locations for straw bale barrier placement can be found on drawings 2 through 12. Details and sections for installation of these structures are on drawing 1.

- All access and construction roads will be maintained with a cover of granular material to the extent that is feasible to prevent transport of sediment onto adjacent roadways.

VIII. Post Construction Storm Water Controls and Measures

Permanent structural practices will include rip rap placement for inlet and outlet protection, slope stabilization, and channel protection.

- Rip rap will be placed in the areas of concentrated flow, which include locations at the entrance and discharge of the culvert pipes.

- Any drainage ditches that have a grade greater than 6% will be paved to prevent scour of the channel bed. Riprap or other energy dissipators will be placed in areas of transition from paved gutter to non-paved ditch to reduce scour potential.

- All cut sections will be constructed with a 10 foot wide berm at each 25 foot vertical increment. This berm will intercept the sheet flow from the upper slope and direct it to a riprap channel along the edge of the cut which will guide the flow into the shoulder ditches for ultimate discharge. This system will help minimize erosion along the face of the slopes by not allowing a large quantity of water to accumulate on the face.

- All perennial vegetation that has been planted on disturbed areas, particularly slopes, will be inspected within 90 calendar days after construction has been completed. Any problem areas will be repaired and/or seeded again the following spring or fall, whichever is sooner.

IX. Maintenance and Inspection Requirements

A. Qualified Personnel

Inspections will be conducted by qualified responsible person(s) designated by the constructor.

B. Frequency of Inspection

Disturbed areas that have not been finally stabilized, structural controls measures and locations where vehicles enter or exit are to be inspected at least once every 7 calendar days and within 24 hours of the end of a storm event of ½ inch of precipitation or greater if final stabilization has not been achieved.

Where final stabilization of disturbed areas has occurred, inspections shall occur once every month.

C. Areas to Inspect

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of or the potential for pollutants (including sediment) entering the drainage system. Erosion and sediment control measures shall be observed to ensure that they are operating correctly. The discharge from the construction area shall be inspected to determine whether erosion control measures are effective in preventing significant impacts to the Emory River or its surrounding tributaries. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

D. Results of Inspection

The results of inspection are to be maintained for a period of 6 years after completion of the project and submittal of a notice of intent to terminate coverage under the general permit.

Based on results of the inspection, if the description of potential pollutant sources and the control measures identified change, the plan shall be appropriately modified as soon as practicable. These modifications shall provide for timely implementation of any changes to the plan within seven calendar days following the inspection.

E. Maintenance of Controls

Sediment and/or silt shall be removed and properly disposed of if it appears to:

a) Interfere with the effectiveness of the straw check dam; or
b) Attain a level of 1/3 to 1/2 of the height of the silt fence.

In both cases, care must be exercised to prevent damage to the erosion control devices during clean out. These maintenance activities shall be recorded on the appropriate inspection log pages that follow.

KINGSTON FOSSIL PLANT-COAL RECEIVING RAILROAD STORM WATER POLLUTION PREVENTION INSPECTION AND MAINTENANCE REPORT FORM - DISTURBED AREAS

Erosion/sediment controls, disturbed areas, and areas where vehicles enter and exit shall be inspected every 7 calendar days and within 24 hours of rainfall events of 0.5 inches or more. Record results of inspections (including measured rainfall amounts) and document maintenance performed on controls in table below. Present to plant environmental program administrator when sheet has been filled and/or construction is complete and area has been stabilized. Refer to Attachment 2 for original control structure designs.

Date	Measured Rainfall (inches)	Describe Condition	Maintenance or Repairs Needed	Date Repairs Done	Inspector's Signature/ Position Title

STORM WATER POLLUTION PREVENTION INSPECTION AND MAINTENANCE REPORT FORM - STABILIZED AREAS

Record results of inspections for temporarily or permanently stabilized areas below. Areas shall be inspected at least every month for the life of the permit. Maintenance/repair of stabilization measures shall be documented in the table below. Present to plant environmental program administrator when sheet has been filled.

Date	Describe Condition	Maintenance or Repairs Needed	Date Repairs Done	Inspector's Signature/ Position Title

IV. Non-Storm Water Discharges

There will be no non-storm water discharges that are combined with storm water discharges during construction.

V. Plan Modification

In addition to the modification of controls outlined in Part III.D of this plan, the permittee shall incorporate changes into this plan within 30 days if modification to design, construction, or operation of the pollution prevention elements are made.

Contractors' Certification Statement:

This form is to be signed by each contractor and/or subcontractor identified in the Storm Water Control Plan in accordance with Part (4)(d) of Rule 1200-4-10-.05 before conducting any professional service at the construction site. Copies of these certification statements must be maintained with this plan.

"I understand the terms and conditions of Rule 1200-4-10-.05 and that I, and my company, as the case may be, are responsible for and legally liable for complying with this and the applicable state and federal laws. I understand that State or EPA or private actions may be taken against me if the terms and conditions of the Rule are not met. "

_____ _____
Contractor Signature Date

_____
Name of Contracting Firm

_____
Address

_____ ( )_____
City/State/Zip Phone

ATTACHMENT A
RUNOFF CALCULATIONS FOR
A ONE INCH STORM EVENT

First, determine the runoff curve number for the total area. The area is assumed to have 3.6 acres of impervious surface (CN=98) and 54.4 acres of newly graded area within soil group B (CN=86).

$A1 := 54.4$ $A2 := 3.6$ $Atotal := 58$

$CN1 := 98$ $CN2 := 86$

$$CN := \frac{A1 \cdot CN1 + A2 \cdot CN2}{Atotal}$$

$$CN := \frac{98 \cdot (3.6) + 86 \cdot (54.4)}{58.0}$$

$CN := 87$

Next, determine the value of S, the potential maximum retention after runoff begins. This is equation 2-4 from the TR-55 "Urban Hydrology for Small Watersheds" Manual.

$$S := \frac{1000}{CN} - 10$$

$$S := \frac{1000}{87} - 10$$

$S := 1.49$

Now determine the runoff, Q, in inches using equation 2-3 from the TR-55 Manual. In this equation, P is the precipitation in inches (1 inch in this case).

$P := 1$

$$Q := \frac{(P - 0.2 \cdot S)^2}{(P + 0.8 \cdot S)}$$

$$Q := \frac{(1 - 0.2 \cdot 1.49)^2}{(1 - 0.8 \cdot 1.49)}$$

$Q := 0.22$ inches

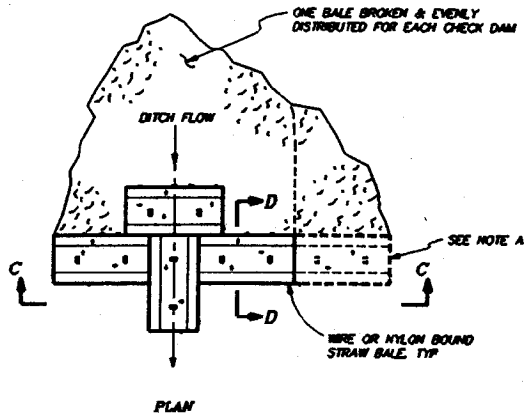
This can be converted into a volume by multiplying by the total area of the project (58.0 acres).

$Area := 58$

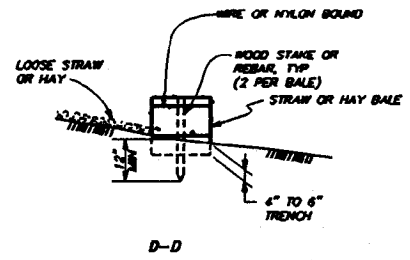
$Vol := Q \cdot Area$

$$Vol := 0.22 \cdot \frac{1}{12} \cdot 58.0$$

$Vol := 1.06$ acre-ft

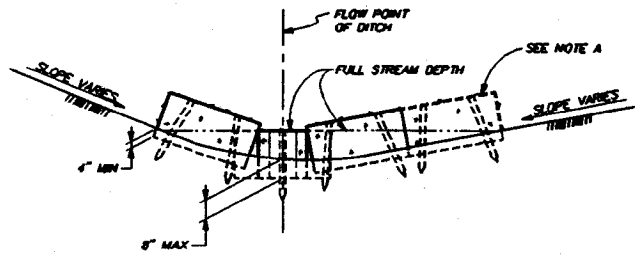


PLAN



D–D

NOTE A:
FOUR BALE MIN; USE ADDITIONS AS SIDE SLOPE REQUIRES

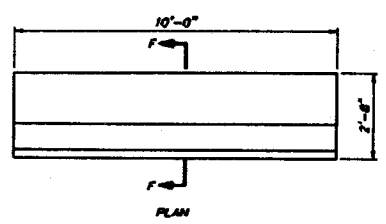


C–C

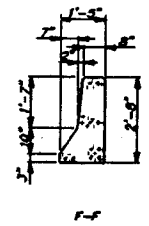
STRAW CHECK DAM

STRAW CHECK DAM NOTES

1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4" WITH THE SOIL COMPACTED TO PREVENT PIPING.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR REBARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED. INSPECT BALES AFTER EACH RAINFALL AND REMOVE SEDIMENT WHEN HALF THE HEIGHT OF THE BARRIER IS REACHED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
6. GAPS BETWEEN BALES SHALL BE FILLED BY WEDGING W/STRAW TO PREVENT WATER FROM ESCAPING BETWEEN BALES.



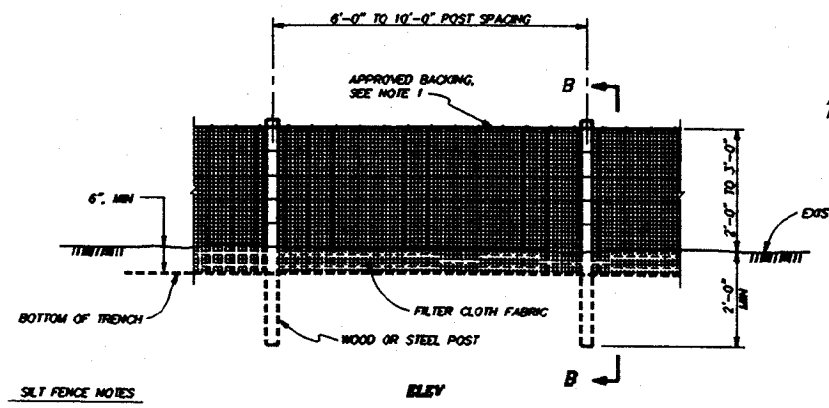
PLAN



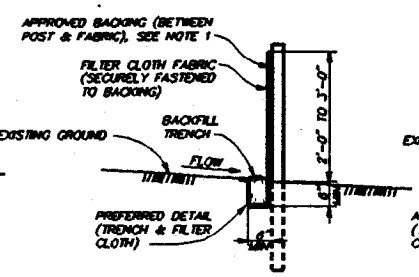
F–F

NEW JERSEY BARRIERS
1/2"=1'-0"

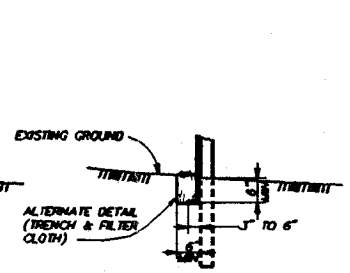
NOTES:
1. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR WITH THE FIRST STEP OF GRADING.
2. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND MULCHED IMMEDIATELY AFTER COMPLETION OF GRADING. ALL DENUDED AREAS SHALL HAVE AN ADEQUATE STAND OF VEGETATION PRIOR TO REMOVAL OF EROSION AND SEDIMENT CONTROLS.
3. EROSION CONTROL MEASURES SHALL BE INSTALLED AT LOCATIONS SHOWN ON DRAWINGS.
4. CRUSHED STONE FOR CONSTRUCTION ACCESS ROADS SHALL CONFORM TO SECTION 1032 OF T-1 SPECIFICATIONS.



ELEV



B–B
PREFERRED TRENCH



B–B
ALTERNATE TRENCH

SILT FENCE NOTES

1. FILTER CLOTH SHALL HAVE APPROVED BACKING OR A BUILT-IN REINFORCED STRUCTURE, AS RECOMMENDED BY THE MANUFACTURER TO SUPPORT THE FILTER CLOTH.
2. CLASS A FILTER FABRIC SHALL MEET THE REQUIREMENTS OF SECTION 371 OF THE T-1 SPECIFICATIONS.
3. A PREASSEMBLED SILT FENCE MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD CONSTRUCTED SILT FENCE.
4. SILT FENCE SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO IMPEDE STORM FLOW OR DRAINAGE.

SILT FENCE

SCALE: NTS — EXCEPT AS NOTED

COAL RECEIVING RAILROAD

TYPICAL DETAILS – SEDIMENT AND EROSION CONTROL

DESIGNED BY	DRAWN BY	CHECKED BY	SUPERVISED BY	RECOMMENDED BY	APPROVED BY	ISSUED BY
B.K.ELDER	D.C.LAWSON	R.D.POWELL	H.L.PETTY	K.W.BURNETT	R.C.JOHNSON	W.D.HALL

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

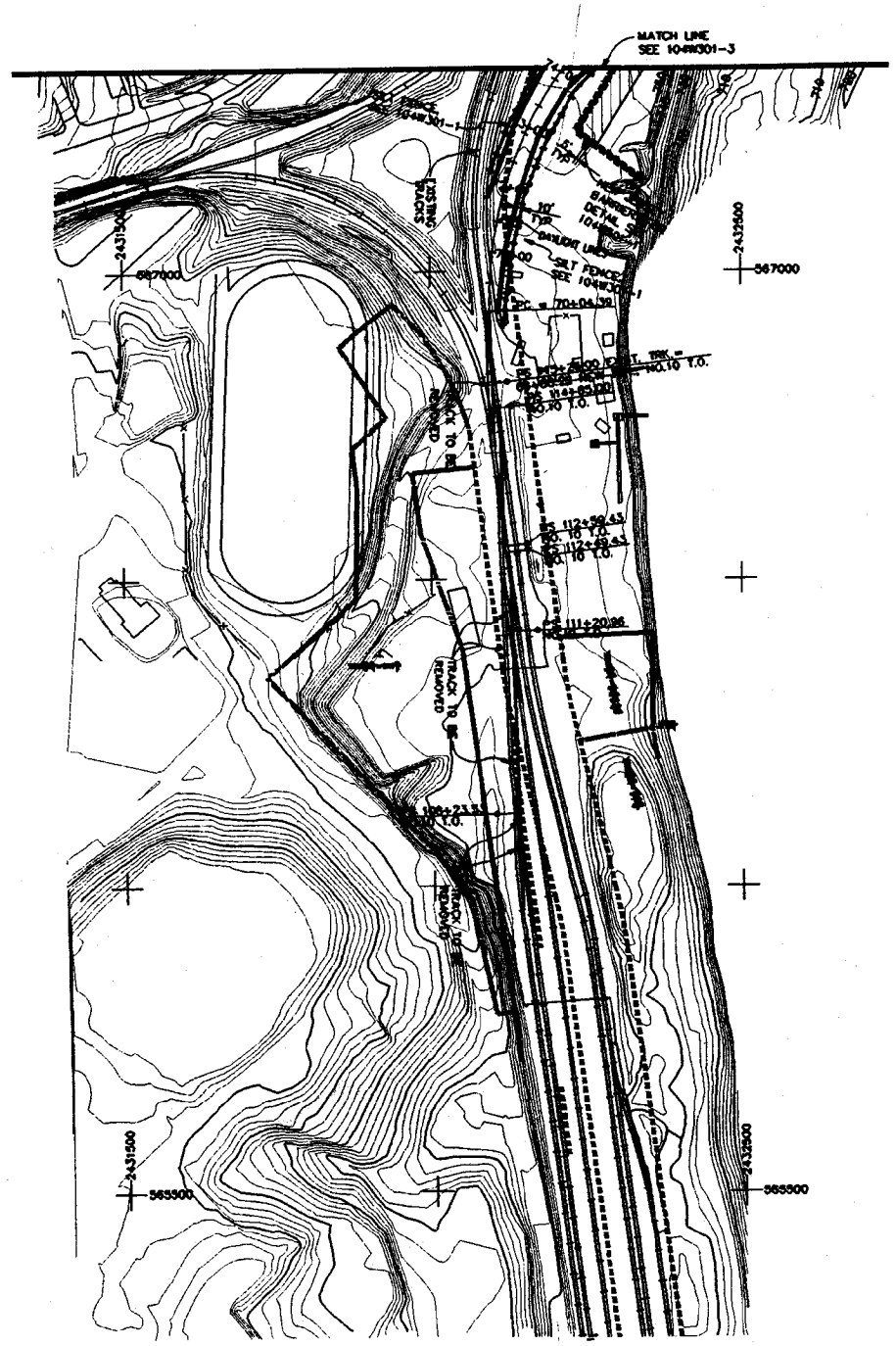
AUTOCAD R13	DATE	36	C	104W301-1	R 0

PLOT FACTOR: 1=1
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

TASK COMPLETED BY | REV NO.

W301-1.DWG



LEGEND:

- SILT FENCE
- HAY OR STRAW BALES
- STRAW CHECK DAM
- SILT TRAP

SCALE: 1"=100' EXCEPT AS NOTED

COAL RECEIVING RAILROAD

SEDIMENT AND EROSION CONTROL SHEET 1

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R13 | 36 | HR | 104W301-2 | R 0

PLOT FACTOR: 100

W301-2.DWG

C.A.D. DRAWING DO NOT ALTER MANUALLY

36 HR 104W301-3

2 3 4 5 6 7 8 9 10 11 12

A B C D E F G H

243200
569500

MATCH LINE, SEE 104W301-4

DAYLIGHT LINES

SILT FENCE, SEE 104W301-1

SILT FENCE, SEE 104W301-1

STRAW CHECK DAM, SEE 104W301-1

EMORY RIVER

SILT FENCE, SEE 104W301-1

STRAW CHECK DAM, SEE 104W301-1

QUARRY BRANCH

2433600
567500

MATCH LINE, SEE 104W301-2

LEGEND:

- SILT FENCE
- HAY OR STRAW BALES
- STRAW CHECK DAM
- SILT TRAP

SCALE: 1"=100' EXCEPT AS NOTED

COAL RECEIVING RAILROAD

SEDIMENT AND EROSION CONTROL SHEET 2

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R13 | 36 | HR | 104W301-3 | R 0

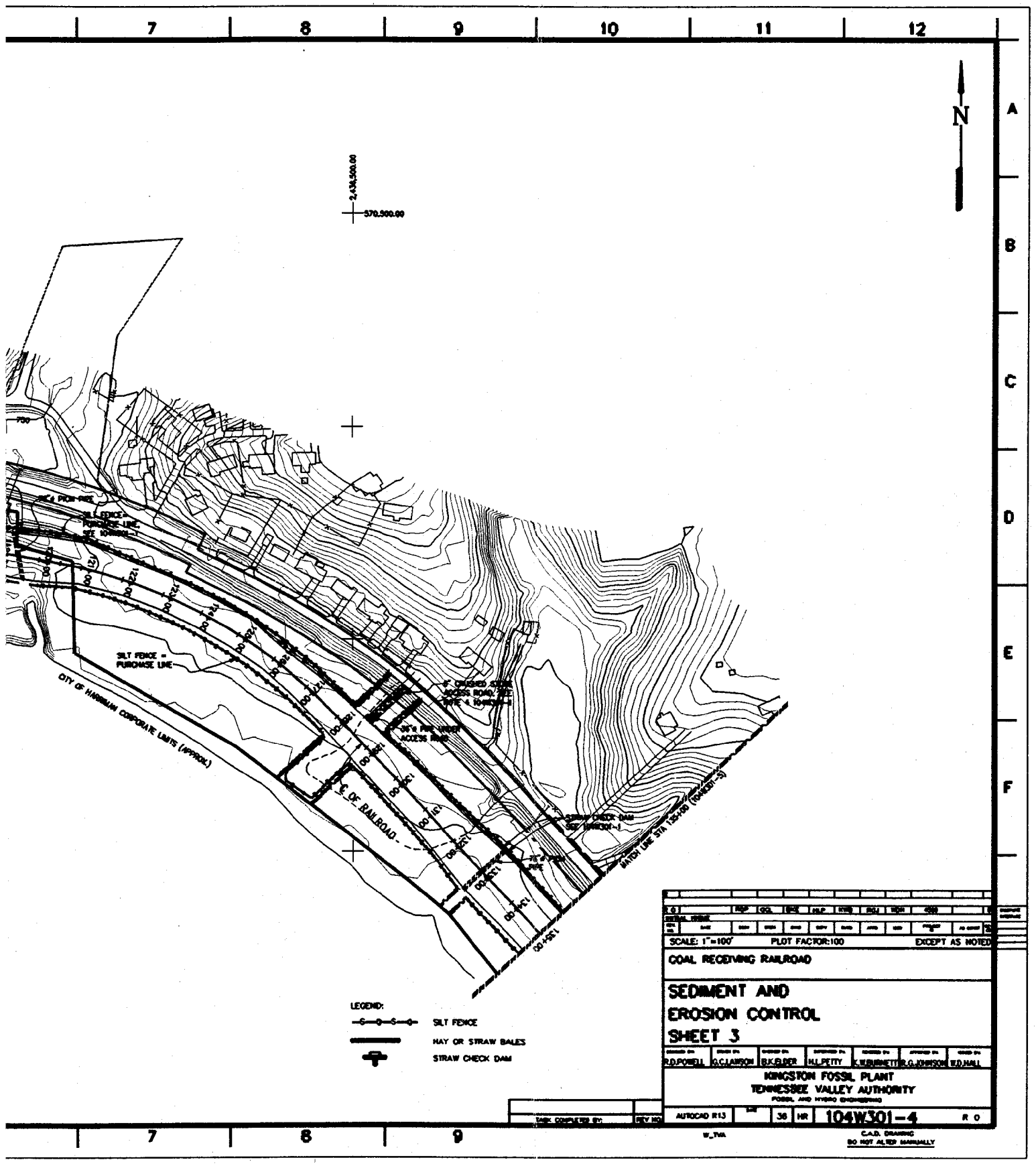
PLOT FACTOR:100
T_TVA

C.A.D. DRAWING DO NOT ALTER MANUALLY

TASK COMPLETED BY: | REV NO.

104W-3.DWG

TVA-00010318



36 HR 104W301-4

N

2,436,500.00

570,500.00

2,434,500.00

568,000.00

EMORY RIVER

CITY OF HARRIMAN CORPORATE LIMITS (APPROX.)

MATCH LINE, SEE 104W301-3

MATCH LINE STA 1324+50 (104W301-5)

SILT FENCE, SEE 104W301-1

STRAW CHECK DAM, SEE 104W301-1

SILT FENCE = PURCHASE LINE

% OF RAILROAD

LEGEND:

SILT FENCE

HAY OR STRAW BALES

STRAW CHECK DAM

SCALE: 1"=100' PLOT FACTOR:100 EXCEPT AS NOTED

COAL RECEIVING RAILROAD

SEDIMENT AND EROSION CONTROL SHEET 3

DESIGNED BY	DRAWN BY	CHECKED BY	SUPERVISED BY	REVIEWED BY	APPROVED BY	ISSUED BY
R.D.POWELL	G.C.LAWSON	B.K.ELDER	H.L.PETTY	K.W.BURNETTE	G.JOHNSON	W.D.HALL

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

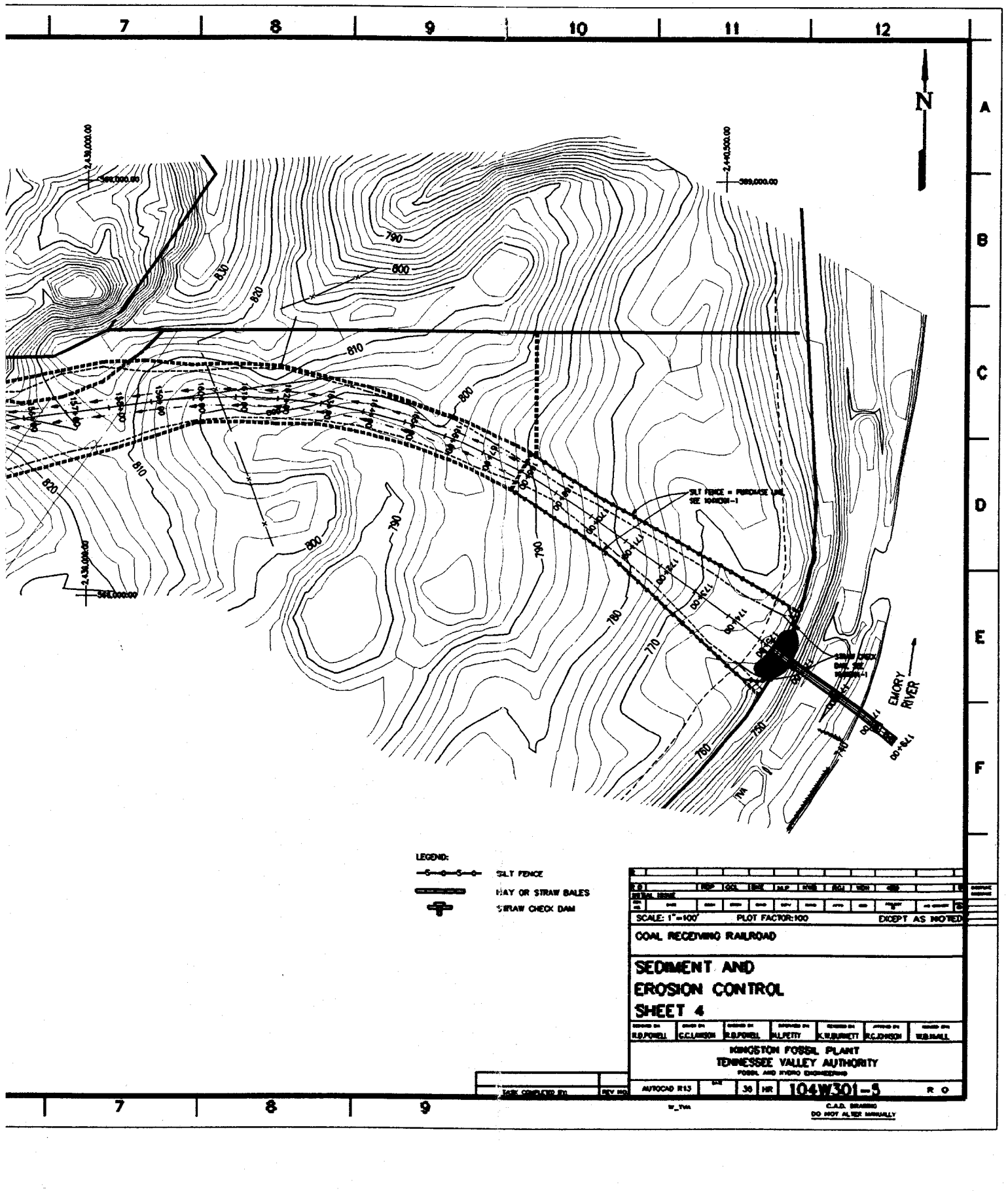
AUTOCAD R13 | SYS | 36 | HR | 104W301-4 | R 0

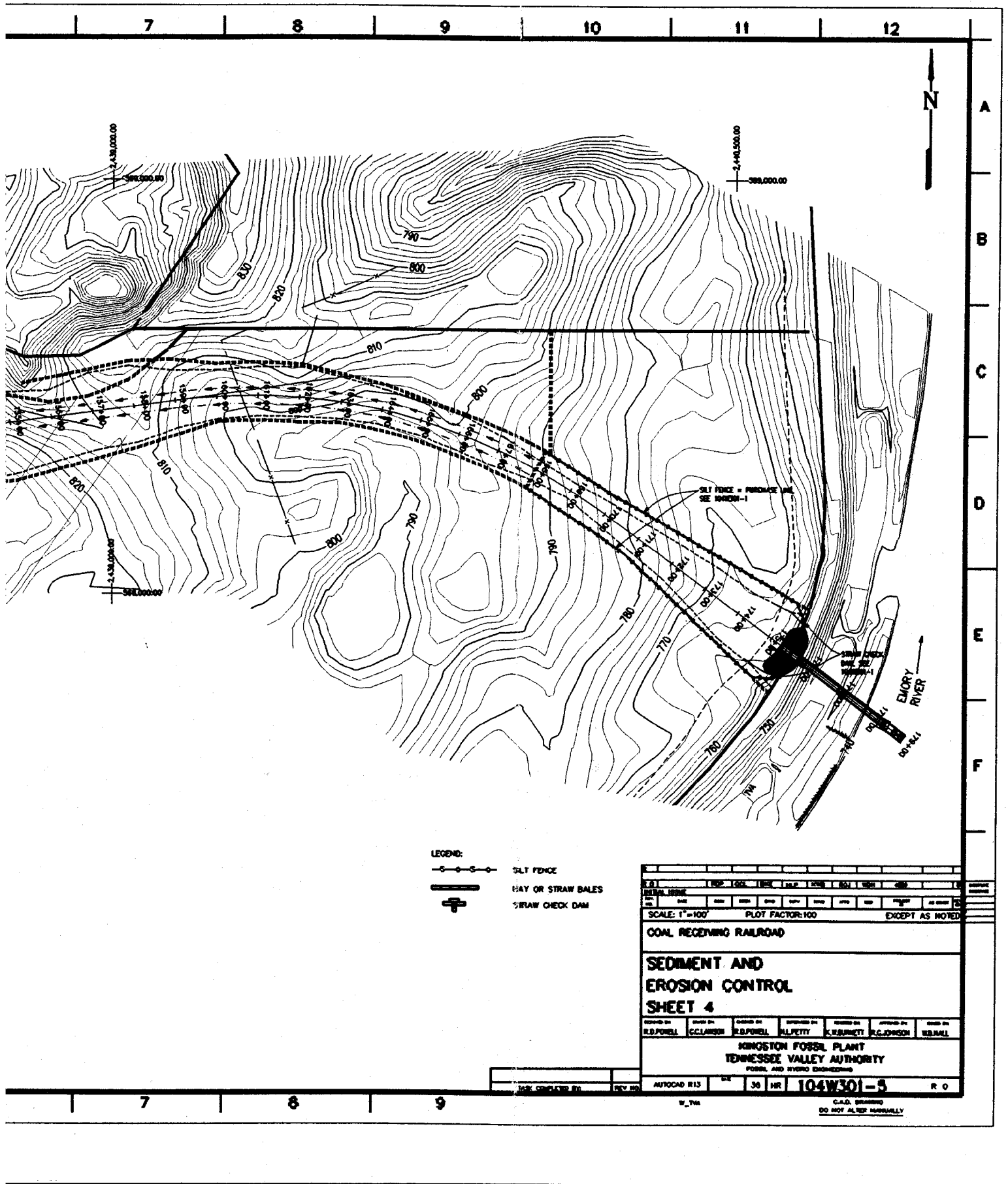
C.A.D. DRAWING
DO NOT ALTER MANUALLY

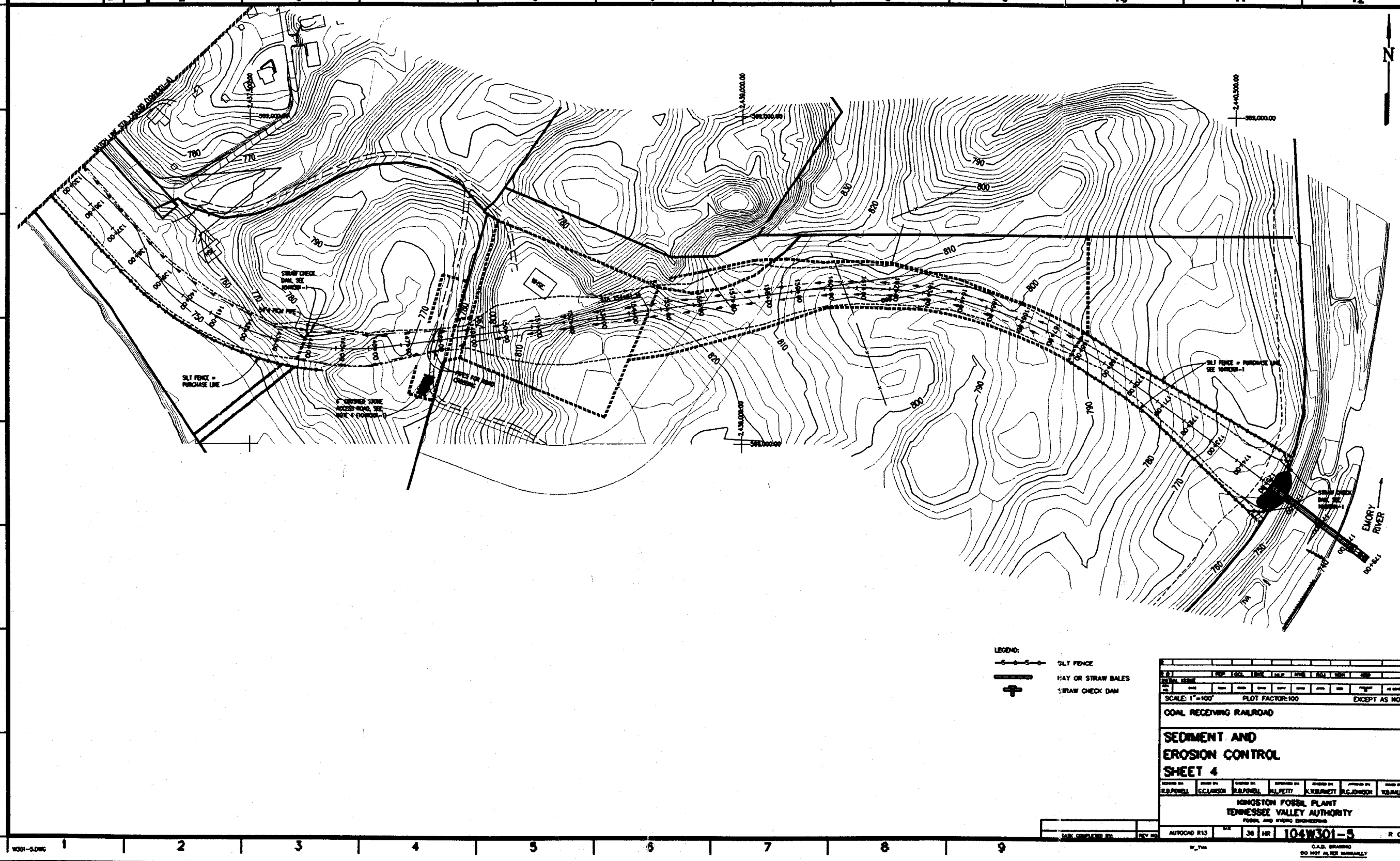
W_TVA

W301-4.DWG

TVA-00010320







SCALE: 1"=100' PLOT FACTOR:100 EXCEPT AS NOTED

COAL RECEIVING RAILROAD

SEDIMENT AND EROSION CONTROL SHEET 4

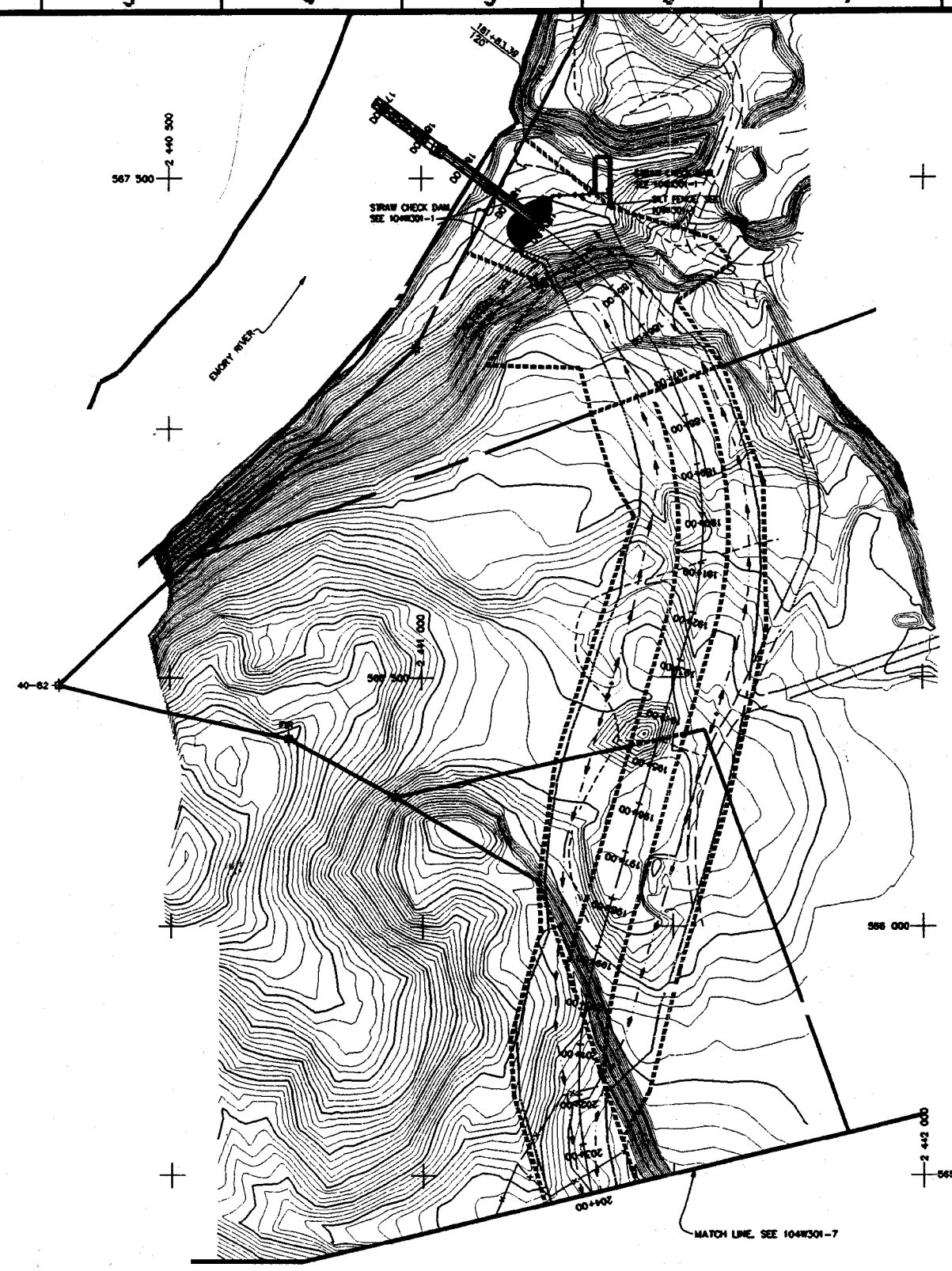
KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R13 | 36 | HR | 104W301-5 | R 0

C.A.D. DRAWING
DO NOT ALTER MANUALLY

W301-5.DWG

36 HR 104W301-6



N

LEGEND:
- SILT FENCE
- HAY OR STRAW BALES
- STRAW CHECK DAM

SCALE: 1"=100' PLOT FACTOR:100 EXCEPT AS NOTED

COAL RECEIVING RAILROAD

SEDIMENT AND EROSION CONTROL SHEET 5

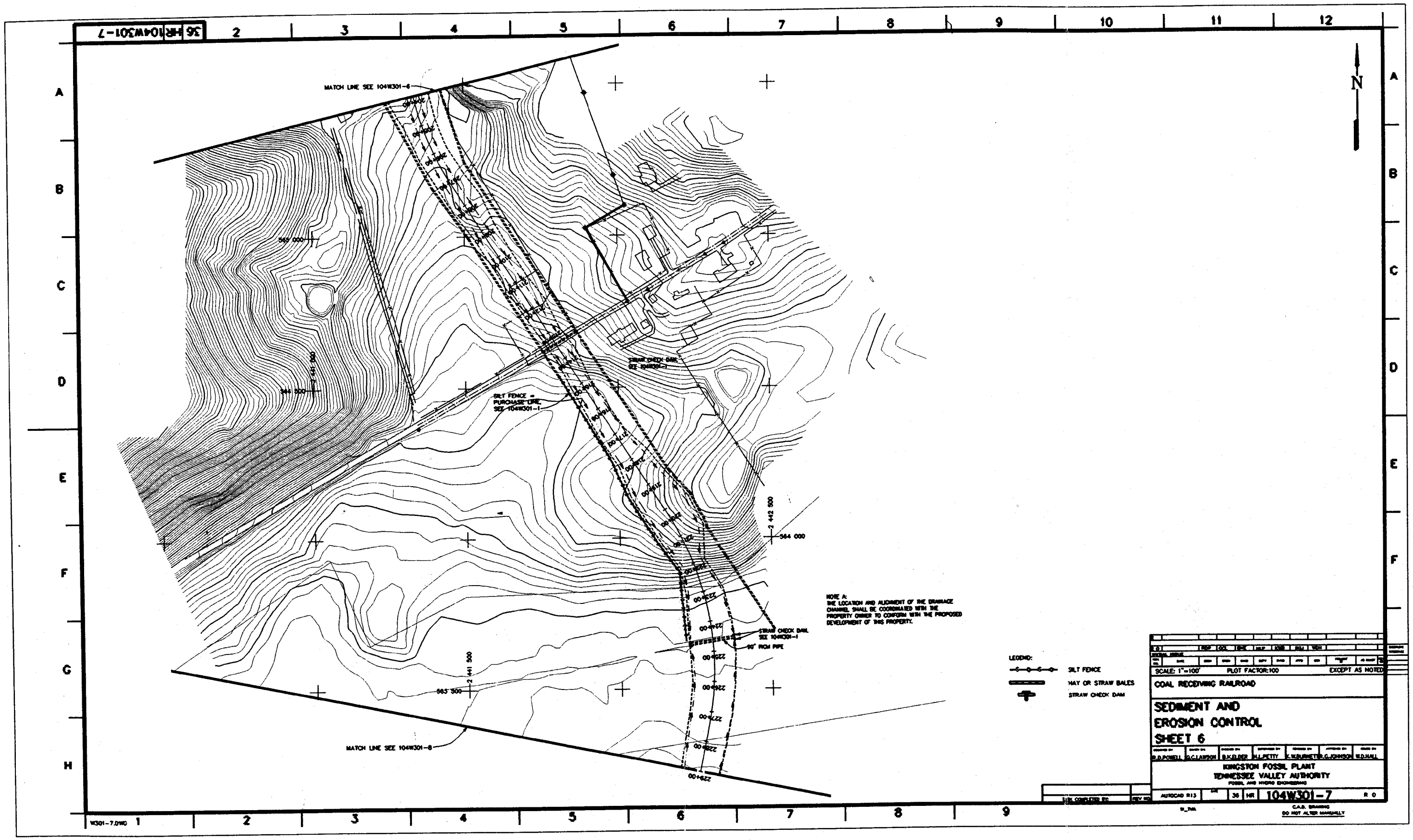
KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R13 | 36 | HR | 104W301-6 | R 0

C.A.D. DRAWING
DO NOT ALTER MANUALLY

W301-6.DWG

TVA-00010324



SEDIMENT AND EROSION CONTROL SHEET 7

COAL REDEVMNO RAILROAD

SCALE: 1"=100' PLOT FACTOR:100 EXCEPT AS NOTED

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
ROGER, ANN ARBOR ENGINEERING

104W301-8 R 0

CAD Drawing
Do not Alter manually

LEGEND:
SILT FENCE
HAY OR STRAW BALES
STRAW CHECK DAM

N

36 HR 104W301-9

N

MATCH LINE, SEE 104W301-8

PVT. RD. STA 284+00

6" PVC PIPE

6' 12" MACHINE GRADED FARM ROAD

40'-4"ø PRECAST CATTLE PASS

SILT FENCE - PURCHASE LINE, SEE 104W301-1

SWAMP CHECK DAMS SEE 104W301-1

560 000

2 439 500

KINGSTON CEMETERY

560 360

2 441 000

559 500

60" ø PIPE

STRAW CHECK DAMS SEE 104W301-1

TVA

MATCH LINE, SEE 104W301-10

LEGEND:

SILT FENCE

HAY OR STRAW BALES

STRAW CHECK DAM

SCALE: 1"=100' PLOT FACTOR:100 EXCEPT AS NOTED

COAL RECEIVING RAILROAD

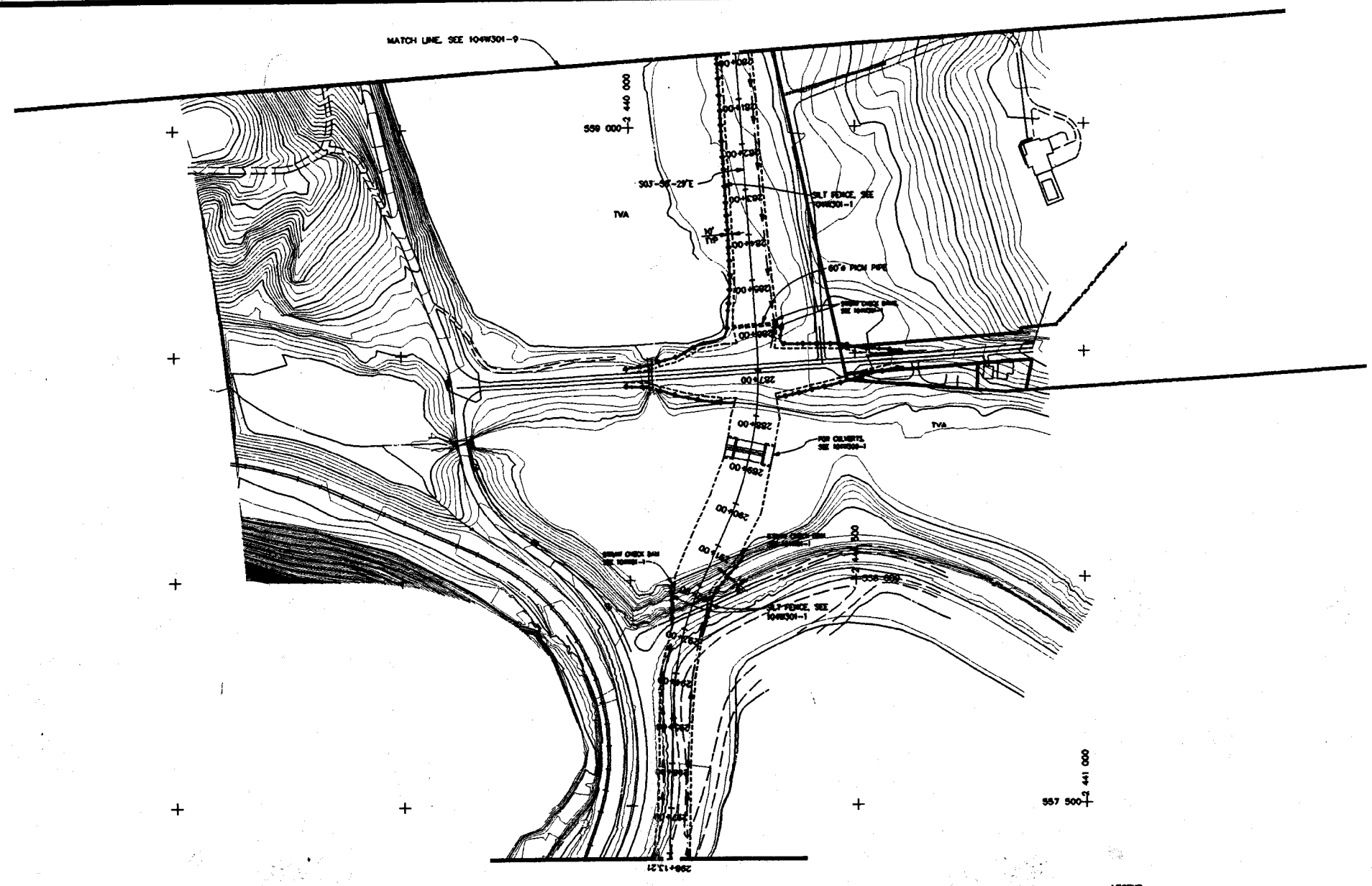
SEDIMENT AND EROSION CONTROL SHEET 8

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R13 | 36 | HR | 104W301-9 | R 0

C.A.D. Drawing
DO NOT ALTER MANUALLY

W301-9.DWG



N

SCALE: 1"=100' PLOT FACTOR:100 EXCEPT AS NOTED

COAL RECEIVING RAILROAD

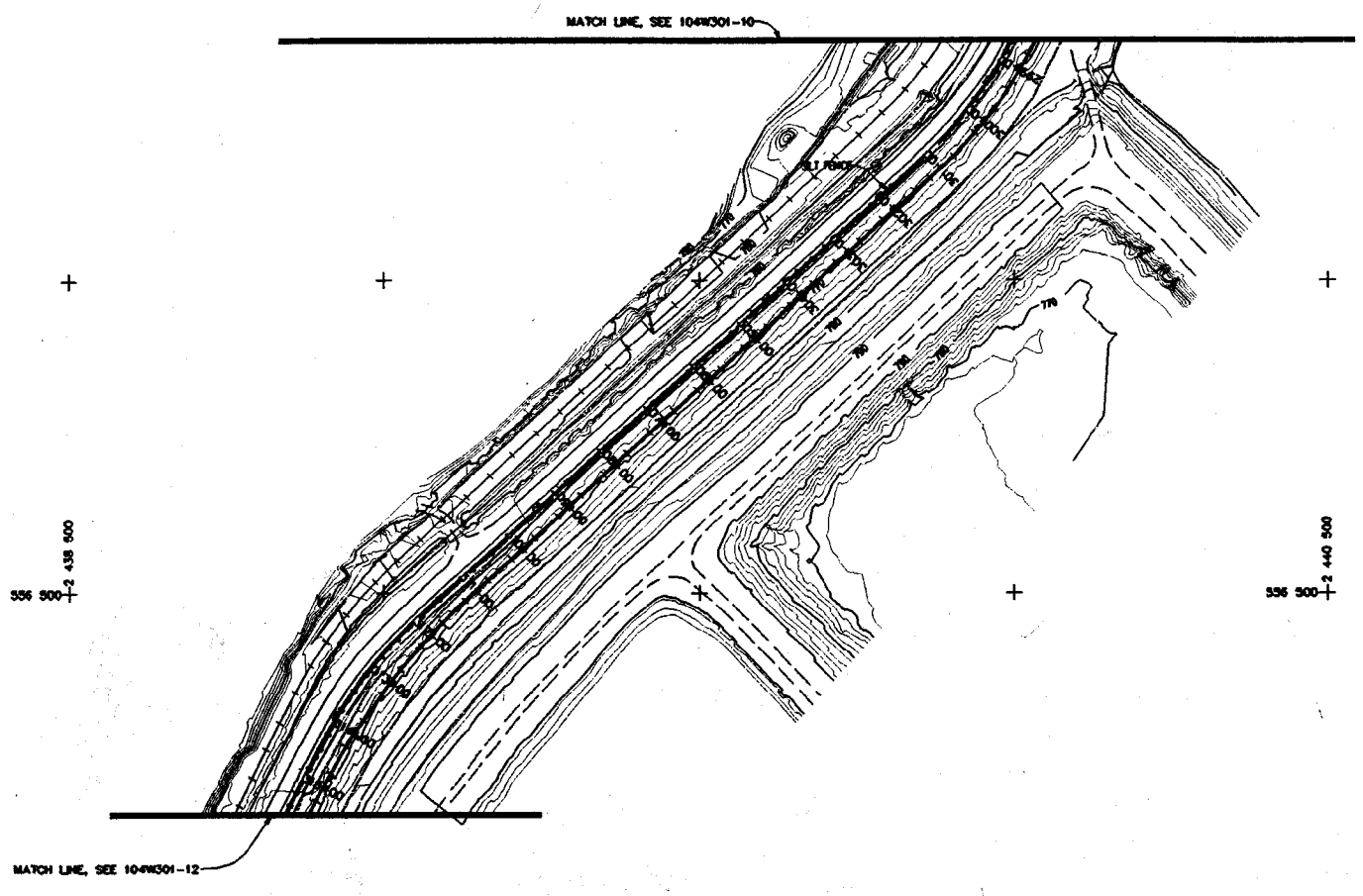
SEDIMENT AND EROSION CONTROL SHEET 9

DESIGNED BY	DRAWN BY	CHECKED BY	ENGINEER IN CHARGE	APPROVED BY	ISSUED BY
R.D.POWELL	C.C.LAWSON	B.K.ELDER	M.L.PETTY	K.M.BURNETT	R.C.JOHNSON	W.D.HALL

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R13	DWG	36	HR	104W301-10	R 0

C.A.D. DRAWING
DO NOT ALTER MANUALLY



LEGEND:

- SILT FENCE
- HAY OR STRAW BALES
- STRAW CHECK DAM
- SILT TRAP

SCALE: 1"=100' PLOT FACTOR:100 EXCEPT AS NOTED

COAL RECEIVING RAILROAD

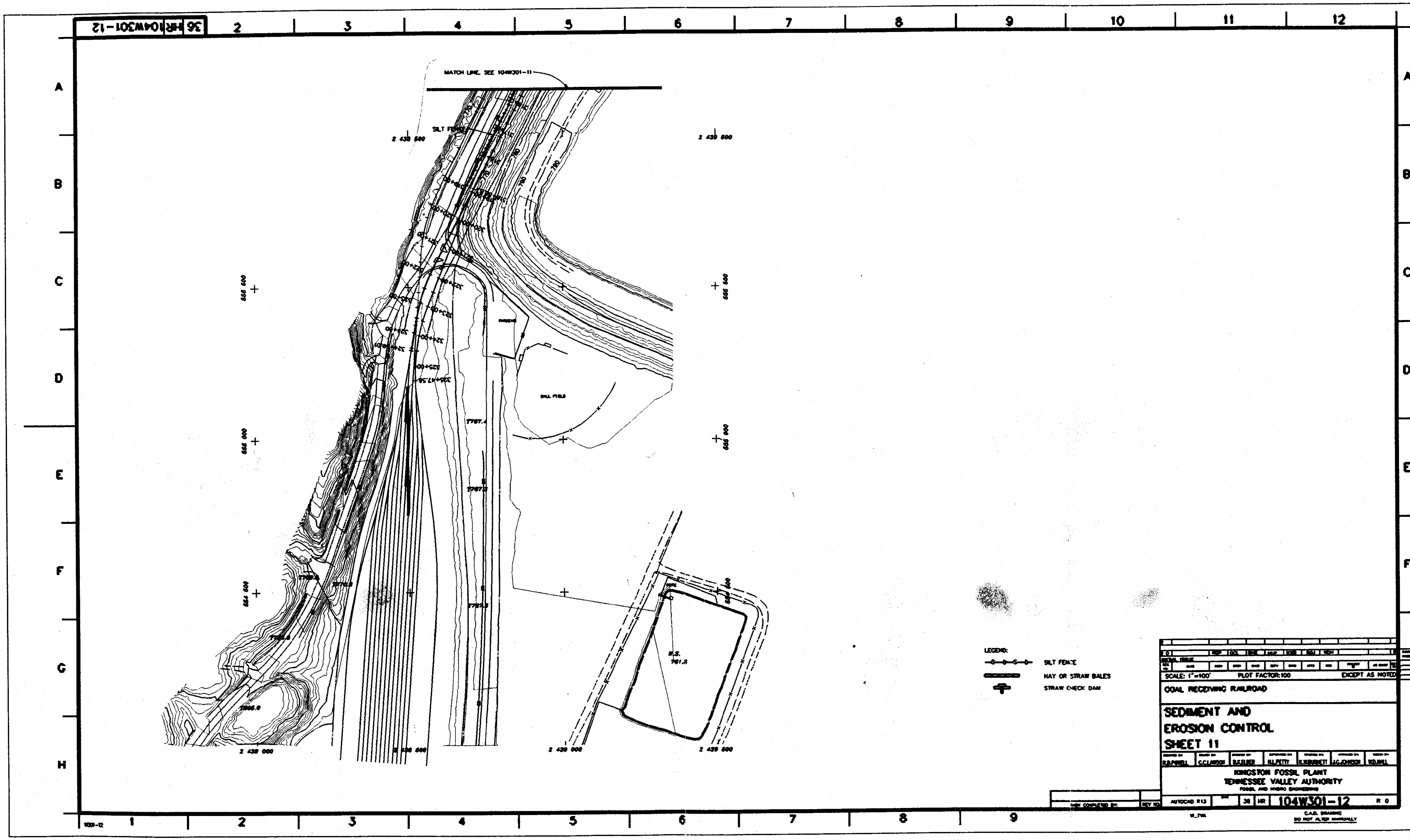
SEDIMENT AND EROSION CONTROL SHEET 10

DESIGNED BY	DRAWN BY	CHECKED BY	CHECKED BY	REVIEWED BY	APPROVED BY	ISSUED BY
R.A.POWELL	G.C.LAWSON	B.K.BLISS	M.L.PETTY	K.SUMMERETT	J.G.JOHNSON	W.M.HILL

KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R13	SIZE	36	DR	104W301-11	R 0

C.A.D. DRAWING
DO NOT ALTER MANUALLY


MATCH LINE, SEE 104W301-11
SILT FENCE
LEGEND:
SILT FENCE
HAY OR STRAW BALES
STRAW CHECK DAM
SCALE: 1"=100'
PLOT FACTOR:100
EXCEPT AS NOTED
COAL RECEIVING RAILROAD
SEDIMENT AND
EROSION CONTROL
SHEET 11
KINGSTON FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
36 HR 104W301-12
R 0

ATTACHMENT A
RUNOFF CALCULATIONS FOR
A ONE INCH STORM EVENT

First, determine the runoff curve number for the total area. The area is assumed to have 3.6 acres of impervious surface (CN=98) and 54.4 acres of newly graded area within soil group B (CN=86).

$A1 := 54.4 \quad A2 := 3.6 \quad Atotal := 58$

$CN1 := 98 \quad CN2 := 86$

$$CN := \frac{A1 \cdot CN1 + A2 \cdot CN2}{Atotal}$$

$$CN := \frac{98 \cdot (3.6) + 86 \cdot (54.4)}{58.0}$$

$CN := 87$

Next, determine the value of S, the potential maximum retention after runoff begins. This is equation 2-4 from the TR-55 "Urban Hydrology for Small Watersheds" Manual.

$$S := \frac{1000}{CN} - 10$$

$$S := \frac{1000}{87} - 10$$

$S := 1.49$

Now determine the runoff, Q, in inches using equation 2-3 from the TR-55 Manual. In this equation, P is the precipitation in inches (1 inch in this case).

$P := 1$

$$Q := \frac{(P - 0.2 \cdot S)^2}{(P + 0.8 \cdot S)}$$

$$Q := \frac{(1 - 0.2 \cdot 1.49)^2}{(1 - 0.8 \cdot 1.49)}$$

$Q := 0.22 inches$

This can be converted into a volume by multiplying by the total area of the project (58.0 acres).

$Area := 58$

$Vol := Q \cdot Area$

$$Vol := 0.22 \cdot \frac{1}{12} \cdot 58.0$$

$Vol := 1.0 acre\text{-}ft$