PROJECT NAME: Sematco
DATE: 4-3-95
TYPE:
LOCATION:
TOTAL # SHEETS: 9
A/E FIRM: Engineering Concepts
OF SETS:

SEMATCO
NEW PLANT SITE DESIGN

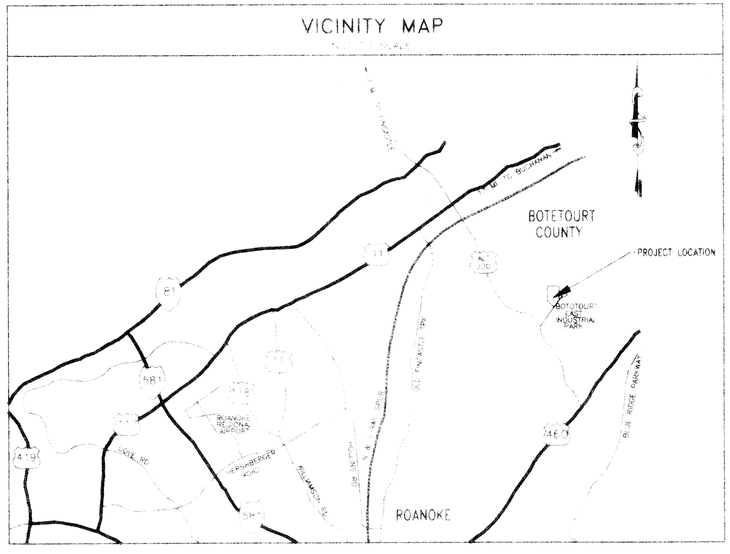
BOTETOURT COUNTY, VIRGINIA

OWNER:
JGK PROPERTIES, INC.
SEMATCO PLANT
P.O. BOX 220
BUCHANAN, VA. 24066
703-254-2676

ENGINEER:
ENGINEERING CONCEPTS, INC.
20 S. ROANOKE ST., SUITE 201
FINCASTLE, VIRGINIA 24090
703-473-1253

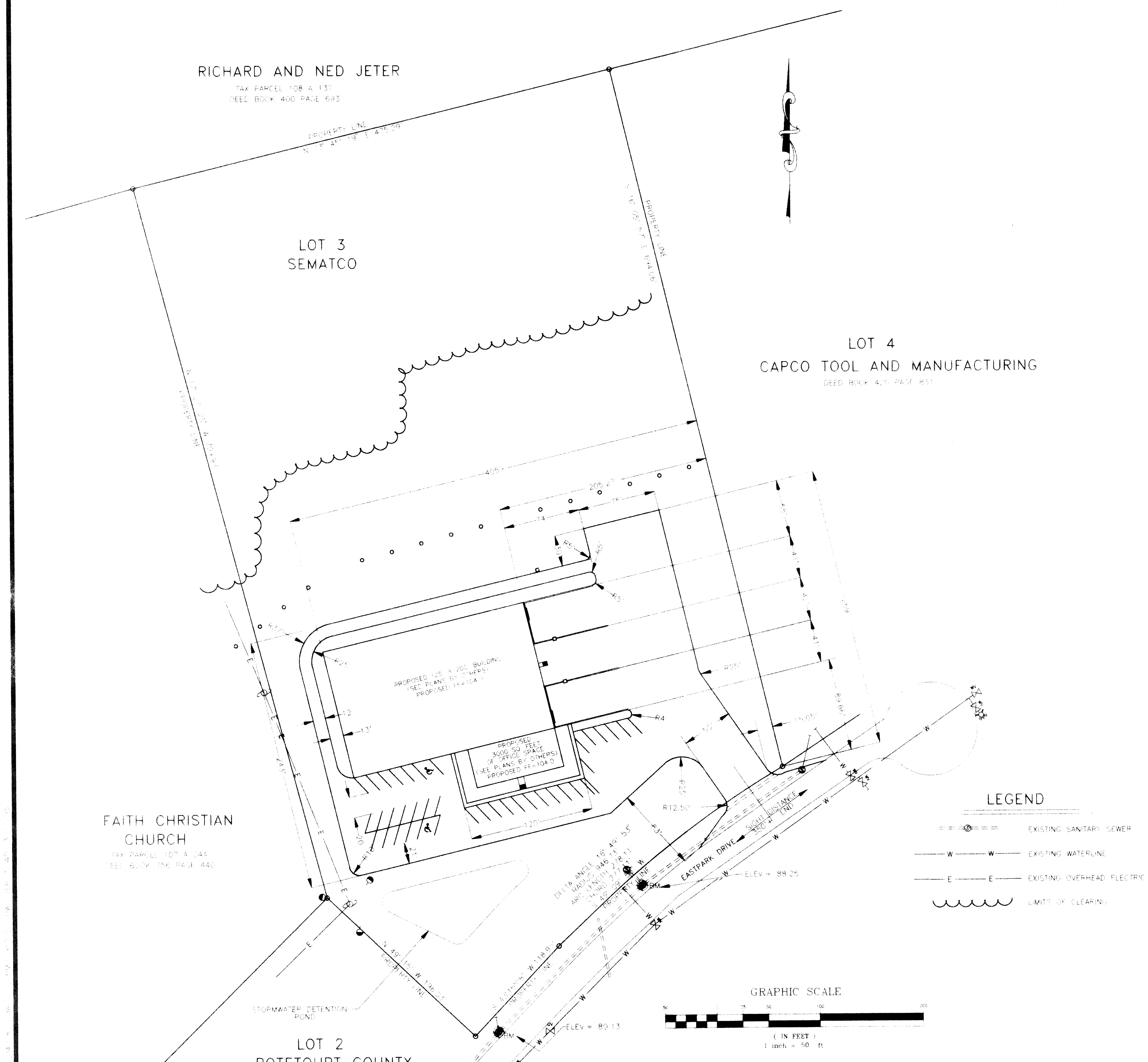
DATE: MARCH, 1995
PROJECT: 95005

VICINITY MAP



E&S Review Set

KRS 04/04/95 E&S



SITE LAYOUT

GENERAL NOTES

1. INFORMATION ON THESE DRAWINGS CONCERNING THE LOCATION AND ELEVATION OF EXISTING UTILITIES, STRUCTURES, AND OBSTRUCTIONS HAS BEEN PREPARED FROM THE MOST RELIABLE INFORMATION AVAILABLE TO THE ENGINEER. THE ACCURACY AND COMPLETENESS OF THIS INFORMATION ARE NOT GUARANTEED, HOWEVER, NOR DOES THE ENGINEER ACCEPT ANY RESPONSIBILITY WHATSOEVER FOR DEVIATIONS OF THE EXISTING UTILITIES, STRUCTURES, OTHER FACILITIES, AND OBSTRUCTIONS FROM THE LOCATIONS AND ELEVATIONS INDICATED OR FOR THE EXISTENCE OF UTILITIES, STRUCTURES, OTHER FACILITIES, AND OBSTRUCTIONS NOT INDICATED ON THESE DRAWINGS.

2. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO ELIMINATE ANY POSSIBILITY OF ANY DISTURBANCE OF OR DAMAGE TO PUBLIC AND PRIVATELY-OWNED UTILITIES, STRUCTURES, OTHER FACILITIES, AND OBSTRUCTION RESULTING FROM HIS ACTIVITIES. TO THIS END, CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, TAKE ALL MEASURES NECESSARY TO PROVIDE, AND SHALL BE SOLELY RESPONSIBLE FOR, TEMPORARY SUPPORT AND SHORING, ADEQUATE PROTECTION, AND MAINTENANCE OF CONTINUOUS OPERATION OF ALL UNDERGROUND AND ABOVEGROUND WATER, SEWER, AND GAS MAINS AND SERVICE LINES; PETROLEUM LINES; TELEPHONE, TELEVISION, AND ELECTRICAL LINES, CABLES, AND POLES, EQUIPMENT CABLES AND CONDUITS, STORM SEWERS; BUILDINGS, TANKS, FENCES, AND ALL OTHER UTILITIES, STRUCTURES, FACILITIES, AND OBSTRUCTIONS, WHETHER OR NOT INDICATED ON THESE DRAWINGS. ALL DISTURBED OR DAMAGED UTILITIES, STRUCTURES, OTHER FACILITIES, AND OBSTRUCTIONS SHALL BE IMMEDIATELY REPAIRED, REPLACED, OR COMPENSATED FOR BY THE CONTRACTOR TO OWNER'S SATISFACTION, AND AT NO ADDITIONAL COST TO THE OWNER.

3. THE CONTRACTOR SHALL BEAR SOLE RESPONSIBILITY FOR THE CHARACTER AND ACTUAL LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES, STRUCTURES, OTHER FACILITIES, AND OBSTRUCTIONS WITHIN THE PROJECT AREA. THE CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, CONTACT THE OWNERS/OPERATORS OF ALL UTILITIES AND ARRANGE FOR THE VERIFICATION AND MARKING OF UTILITY LOCATIONS BY SAID OWNERS/OPERATORS. THE CONTRACTOR SHALL ASSIST THE UTILITY OWNERS/OPERATORS BY EVERY MEANS POSSIBLE TO DETERMINE THE LOCATION OF UTILITIES. THE CONTRACTOR SHALL BEAR SOLE RESPONSIBILITY FOR ALL DISTURBANCE OF ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTOR'S FAILURE TO ARRANGE FOR THE LOCATION OF UTILITIES BY THE OWNERS/OPERATORS OF THE UTILITIES. CALL MISS UTILITY 1-800-552-7001.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL NEW ABOVE AND BELOW GRADE PIPING, STRUCTURES, ELECTRICAL EQUIPMENT AND CONDUIT, AND OTHER FACILITIES AT THE PROJECT SITE, FROM ALL DISTURBANCE OR DAMAGE WHICH MAY RESULT FROM THE PERFORMANCE OF WORK ON THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE REPAIR OR REPLACEMENT OF ALL NEW ABOVE AND BELOW GRADE PIPING, STRUCTURES, ELECTRICAL EQUIPMENT AND CONDUIT, AND OTHER FACILITIES AT THE PROJECT SITE WHICH MAY BE DISTURBED OR DAMAGED AS A RESULT OF THE PERFORMANCE OF WORK ON THIS PROJECT.

5. SITE CONDITIONS MAY NECESSITATE SLIGHT DEVIATIONS IN ALIGNMENT, GRADE, AND/OR LOCATION OF NEW FACILITIES FROM THE ALIGNMENT, GRADE, AND/OR LOCATION INDICATED ON THESE DRAWINGS. THE CONTRACTOR SHALL CONSTRUCT THE NEW FACILITIES TO SUCH DEVIATIONS AS DIRECTED BY THE ENGINEER WITHOUT INCREASE IN THE CONTRACT PRICE OR TIME.

6. THE CONTRACTOR SHALL MAINTAIN A CLEAR FLOW PATH TO AND THROUGH ALL SURFACE WATER AND STORM WATER DRAINAGE FACILITIES AT ALL TIMES.

7. THE CONTRACTOR SHALL GRADE, SEED, AND/OR SOD, AND MULCH THE ENTIRE AREA(S) DISTURBED BY CONSTRUCTION ACTIVITIES.

8. CONSTRUCTION AND START-UP OF ALL WORK SHALL NOT INTERFERE WITH THE OPERATION OF WATER AND SEWERAGE FACILITIES. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL WORK WITH THE OWNERS AS REQUIRED.

9. MINIMUM COVER ON ALL PIPE SHALL BE 3 FEET, UNLESS OTHERWISE SPECIFICALLY INDICATED ON THESE DRAWINGS. ALL PVC PIPE SHALL BE INSTALLED WITH COATED TRACER WIRE TO FACILITATE FUTURE LOCATION OF PIPE AFTER CONSTRUCTION IS COMPLETED.

10. WHERE IT IS NECESSARY TO DEFLECT PIPE EITHER HORIZONTALLY OR VERTICALLY, PIPE JOINT DEFLECTION OR BARREL BEND RADIUS SHALL NOT EXCEED 75% OF THE MANUFACTURER'S RECOMMENDED DEFLECTION ANGLE OR BEND RADIUS.

11. ALL PIPING SHALL BE PROPERLY SUPPORTED. ALL PIPING WHICH WILL BE PRESSURIZED DURING OPERATION SHALL BE PROPERLY RESTRAINED.

12. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE CURRENT BOCA AND/OR STATE AND LOCAL BUILDING CODES.

13. CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION AREA IN A MANNER ACCEPTABLE TO OWNER AND SHALL BE RESPONSIBLE FOR REMEDIATING ANY DAMAGES RESULTING FROM FAILURE TO DO SO.

14. ALL EXCAVATION SHALL BE UNCLASSIFIED. NO ADDITIONAL PAYMENT WILL BE CONSIDERED FOR ROCK EXCAVATION. ALL FILL SHALL BE PLACED TO ACHIEVE 95% COMPACTION, UNLESS OTHERWISE INDICATED.

15. CONTRACTOR SHALL MAINTAIN LIMITS OF CONSTRUCTION WITHIN THE BOUNDARIES OF THE PROPERTY AS INDICATED ON THE SITE PLAN.

DRAWING INDEX

SHEET #	DRAWING NAME
	COVER SHEET AND VICINITY MAP
1	GENERAL NOTES
2	EROSION AND SEDIMENT CONTROL PRE-DEVELOPMENT
3	EROSION AND SEDIMENT CONTROL POST-DEVELOPMENT
4	SITE PLAN GRADING
5	SITE PLAN PAVING
6	GENERAL DETAILS
7	GENERAL DETAILS
8	RETAINING WALL DETAIL
9	EROSION AND SEDIMENT CONTROL DETAILS

ENGINEERING CONCEPTS INC.

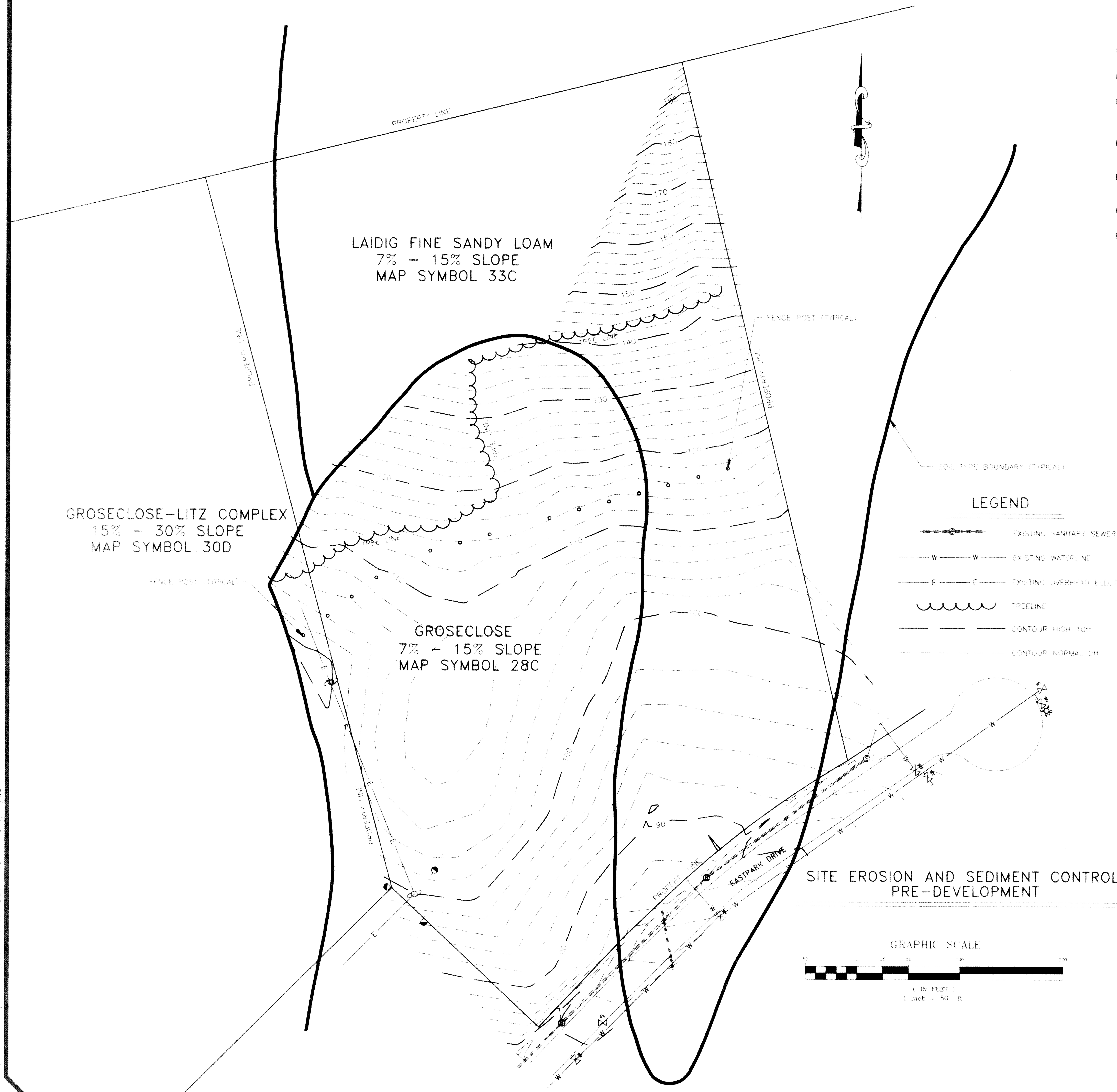
DESIGNED	SCG/WPJ
DRAWN	SCG
CHECKED	WPJ
APPROVED	HTB
SCALE	1"=50' HORZ
DATE	MARCH, 1995
PROJECT	94028/95005

REVISIONS

NO	DATE	BY
1	MARCH 1995	SCG

SEMATCO
NEW PLANT SITE DESIGN
GENERAL NOTES

SHEET NO. 1 OF 9



GENERAL NOTES

ES-1 UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS.

ES-2 THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRECONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3 ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4 A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5 PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

ES-6 THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7 ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8 DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9 THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUN-OFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIR OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

NOTES:

1. ALL TREES INSIDE OF PROPERTY LINE SHALL NOT BE REMOVED UNLESS OTHERWISE SPECIFIED OR REQUIRED FOR GRADING.
2. SOIL CLASSIFICATION TYPES INDICATE THAT THE SOIL CONDITIONS ON THE SITE ARE HIGHLY ERODIBLE. CONTRACTOR SHOULD USE ALL AVAILABLE RESOURCES TO MINIMIZE SOIL EROSION.
3. AN APPROVED E&S CONTROL PLAN MAY BE AMENDED BY THE PLAN APPROVING AUTHORITY IF ON-SITE INSPECTION INDICATES THAT THE APPROVED CONTROL MEASURES ARE NOT EFFECTIVE IN CONTROLLING EROSION AND SEDIMENTATION, OR IF, BECAUSE OF CHANGED CIRCUMSTANCES, THE APPROVED PLAN CAN NOT BE CARRIED OUT.
4. TOPOGRAPHIC SURVEY PROVIDED BY REID McMURRY, LS, DALEVILLE, VA.
5. REF. 1992 VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, DIVISION OF SOIL AND WATER CONSERVATION.
6. REF: SOIL SURVEY OF BOTETOURT COUNTY, VA., SHEET #40.

ACCEPTABLE TEMPORARY SEEDING PLANT MATERIALS

PLANTING DATES	SPECIES	RATE (LBS./ACRE)
SEPT.1-FEB.15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM) AND CEREAL (WINTER) RYE (SECALE CEREALE)	50-100
FEB.16-APR.30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)	60-100
MAY1-AUG.31	GERMAN MILLET (SETARIA ITALICA)	50

REF: 1992 VESC HANDBOOK, TABLE 3.31-B

PERMANENT SEEDING MIXTURES FOR APPALACHIAN/MOUNTAIN AREA

	TOTAL LBS. PER ACRE
MINIMUM CARE LAWN	
COMMERCIAL OR RESIDENTIAL	200-250 LBS.
- KENTUCKY 31 OR TURF-TYPE TALL FESCUE	90-100%
- IMPROVED PERENNIAL RYEGRASS*	0-10%
- KENTUCKY BLUEGRASS	0-10%
HIGH MAINTENENACE LAWN	
MINIMUM OF 3 UP TO FIVE VARIETIES OF BLUEGRASS FROM APPROVED LIST FOR USE IN VIRGINIA	125 LBS
GENERAL SLOPE (3:1 OR LESS)	
- KENTUCKY 31 FESCUE	128 LBS.
- RED TOP GRASS	2 LBS.
- SEASONAL NURSE CROP**	20 LBS.
	150 LBS
LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)	
- KENTUCKY 31 FESCUE	108 LBS
- RED TOP GRASS	2 LBS.
- SEASONAL NURSE CROP**	20 LBS.
- CROWNVETCH***	20 LBS.
	150 LBS

* PERENNIAL RYEGRASS WILL GERMINATE FASTER AND AT LOWER SOIL TEMPERATURES THAN FESCUE, THEREBY PROVIDING COVER AND EROSION RESISTANCE FOR SEEDBED.

** USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES STATED BELOW:
MARCH, APRIL, THROUGH MAY 15TH — — — ANNUAL RYE
MAY 16TH THROUGH AUGUST 15TH — — — FOXTAIL MILLET
AUGUST 16TH THROUGH SEPTEMBER, OCTOBER — — — ANNUAL RYE
NOVEMBER THROUGH FEBRUARY — — — WINTER RYE

*** IF FLATPEA IS USED, INCREASE TO 30 LBS./ACRE. ALL LEGUME SEED MUST BE PROPERLY INNOCULATED. WEEPING LOVEGRASS MAY ALSO BE INCLUDED IN ANY SLOPE OR LOW MAINTENANCE MIXTURE DURING WARMER SEEDING PERIODS; ADD 10-20 LBS./ACRE IN MIXES.

KRS 04/03/95 E4S

ENGINEERING CONCEPTS INC.

DESIGNED	TLR/WPJ
DRAWN	TLR
CHECKED	WPJ
APPROVED	HTB
SCALE	1"=50' HORZ.
DATE	MARCH, 1995
PROJECT	94028/95005

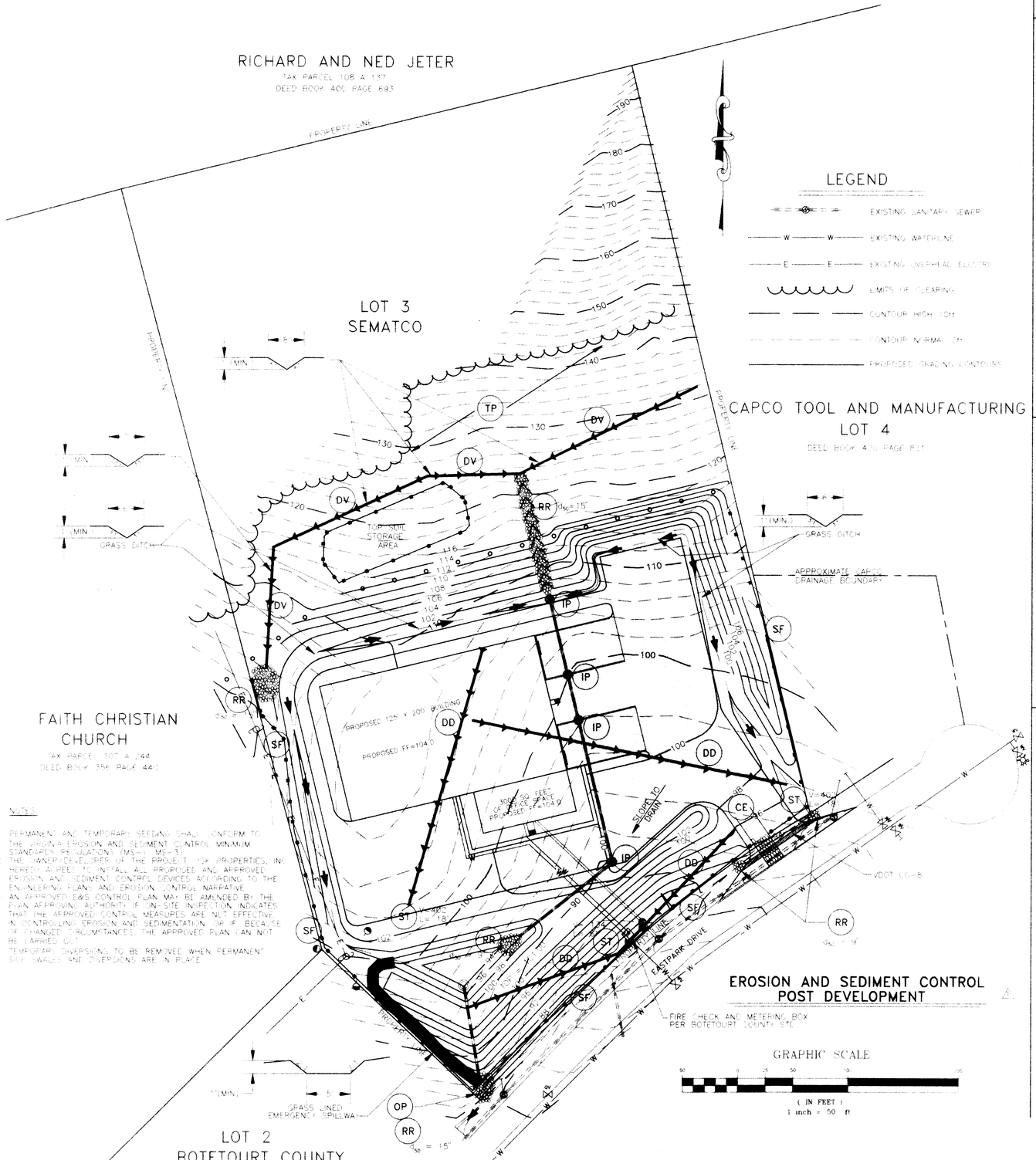
REVISIONS

NO	DATE	BY

SEMATCO
NEW PLANT SITE DESIGN
EROSION AND SEDIMENT CONTROL
PRE-DEVELOPMENT

3-20-95

SHEET NO. 2 OF 9



NOTES:

1. PERMANENT AND TEMPORARY SEEDING SHALL CONFORM TO THE VIRGINIA EROSION AND SEDIMENT CONTROL MINIMUM STANDARDS REGULATIONS (MS-1 - MS-3).
2. THE OWNER/DEVELOPER OF THE PROJECT (SP PROPERTIES, INC.) HEREBY AGREES TO INSTALL ALL PROPOSED AND APPROVED EROSION AND SEDIMENT CONTROL DEVICES ACCORDING TO THE ENGINEERING PLANS AND EROSION CONTROL NARRATIVE.
3. AN APPROVED E&S CONTROL PLAN MAY BE AMENDED BY THE PLAN APPROVING AUTHORITY IF ON-SITE INSPECTION INDICATES THAT THE APPROVED CONTROL MEASURES ARE NOT EFFECTIVE IN CONTROLLING EROSION AND SEDIMENTATION, OR IF, BECAUSE OF CHANGED CIRCUMSTANCES, THE APPROVED PLAN CAN NOT BE ADHERED TO.
4. TEMPORARY DIVERSIONS TO BE REMOVED WHEN PERMANENT SITE SWALES AND DIVERSIONS ARE IN PLACE.

EROSION AND SEDIMENT CONTROL POST DEVELOPMENT

GRAPHIC SCALE

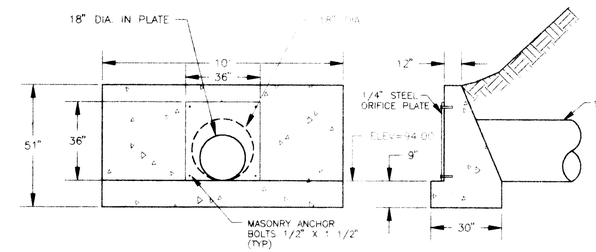
50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft

LEGEND

3.16	PF	PAVED FLUME
3.02	CE	TEMPORARY STONE CONSTRUCTION ENTRANCE
3.04	STB	STRAW BALE BARRIER
3.05	SF	SILT FENCE
3.06	BB	BRUSH BARRIER
3.07	IP	STORM DRAIN INLET PROTECTION
3.08	CIP	CULVERT INLET PROTECTION
3.12	DV	PERMENANT DIVERSION DIKE
3.09	DD	TEMPORARY DIVERSION DIKE
3.13	ST	TEMPORARY SEDIMENT TRAP V = VOLUME OF TRAP, CY L = LENGTH OF OVERFLOW WEIR
3.18	OP	OUTLET PROTECTION
3.19	RR	RIPRAP
3.20	CD	ROCK CHECK DAMS
3.30	TO	TOPSOILING
3.31	TS	TEMPORARY SEEDING
3.32	PS	PERMANENT SEEDING
3.35	MU	MULCHING
3.37	VEG	TREES, SHRUBS, VINES AND GROUND COVERS
3.38	TP	TREE PRESERVATION AND PROTECTION

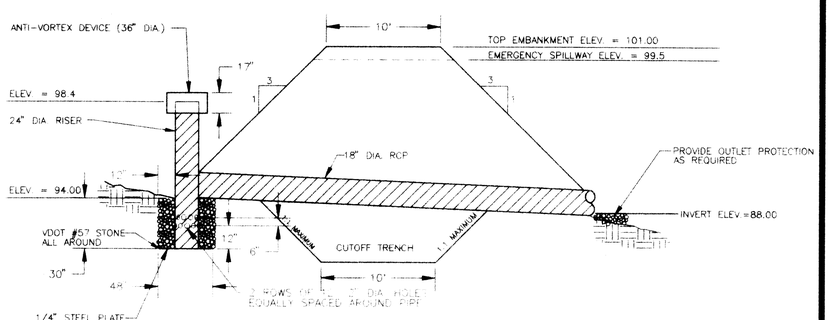
EXISTING 10 FT. CONTOUR
PROPOSED 2 ft. CONTOURS
PROPOSED CONTOUR
DITCH - GRASS LINING
STORM CULVERT RCP
PROPOSED PAVEMENT



(EW-1PC)

OUTLET STRUCTURE FOR DETENTION POND

NOT TO SCALE



SEDIMENT/DETENTION BASIN

NOT TO SCALE

NOTES:

1. RISER PIPE TO BE REMOVED AND REPLACED WITH EW-1PC AFTER PROJECT SITE HAS BEEN STABILIZED.
2. EXTEND CUTOFF TRENCH AT LEAST 1 FT. INTO STABLE, IMPERVIOUS LAYER AND HAVE A DEPTH OF LEAST 2 FT.
3. ALL FILL MATERIAL SHALL CONTAIN AT LEAST 20% CLAY PARTICLES BY WEIGHT. MATERIAL SHALL BE PLACED IN 6 INCH CONTINUOUS LAYERS OVER THE ENTIRE LENGTH OF FILL AND 95% COMPACTION SHALL BE ACHIEVED.

KES 04/05/95 F.95

ENGINEERING CONCEPTS INC.

DESIGNED	SCG, WPJ
DRAWN	SCG
CHECKED	WPJ
APPROVED	HTB
SCALE	1"=50' HORZ.
DATE	MARCH, 1995
PROJECT	94028/95004

REVISIONS

NO.	DATE	BY
1	MARCH, 1995	SCG

SEMATCO
NEW PLANT SITE DESIGN
EROSION AND SEDIMENT CONTROL
POST-DEVELOPMENT

COMMONWEALTH OF VIRGINIA
WILLIAM P. JOHNSON
No. 012434
REGISTERED PROFESSIONAL ENGINEER
4-20-95

SHEET NO.
3
OF
9

RICHARD AND NED JETER

PROPERTY LINE

LOT 4
CAPCO TOOL AND MANUFACTURING

LOT 3
SEMATCO

FAITH CHRISTIAN
CHURCH

LOT 2
BOTETOURT COUNTY

DIVERSION DITCHES (TYPICAL)

DROP INLET
TOP ELEVATION = 99.00
USE TYPE II GRATE - SEE SHT 7

CONSTRUCT WITH SUITABLE EXCESS MATERIAL

DROP INLET
TOP ELEVATION = 100.00
USE TYPE II GRATE - SEE SHT 7

24" RCP STORM CULVERT
(SEE STORM SEWER PROFILE FOR INVERTS)

PROPOSED 125 x 200' BUILDING
PROPOSED FF=104.0

MINIMUM FFE OF LOWEST SPACE PROPOSED FF=104.0

STUB TO DRAIN

30" DIA. STORM CULVERT R.C.P.
INVERT IN = 92.00
INVERT OUT = 91.50

VDOT CG-12

DROP INLET
TOP ELEVATION = 99.85
USE TYPE II GRATE - SEE SHT 7

EASTPARK DRIVE

ELEV. = 88.25
MANHOLE TOP

CORE & DRILL 4" SEWER LATERAL INTO MANHOLE
(SEE SANITARY SEWER PROFILE FOR INVERTS)

CONNECT 8" MAIN TO EXISTING 8" WATERLINE, FIELD VERIFY CONNECTION LOCATION AND ELEVATION

ELEV. = 80.13
MANHOLE TOP

LEGEND

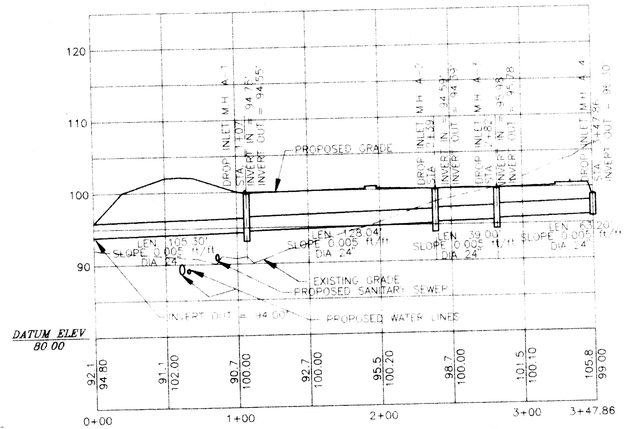
- EXISTING SANITARY SEWER
- W — W — EXISTING WATERLINE
- E — E — EXISTING OVERHEAD ELECTRIC
- LIMITS OF CLEARING
- CONTOUR HIGH 10 ft
- CONTOUR NORMAL 2 ft
- CONTOUR PROPOSED

SITE PLAN GRADING

GRAPHIC SCALE

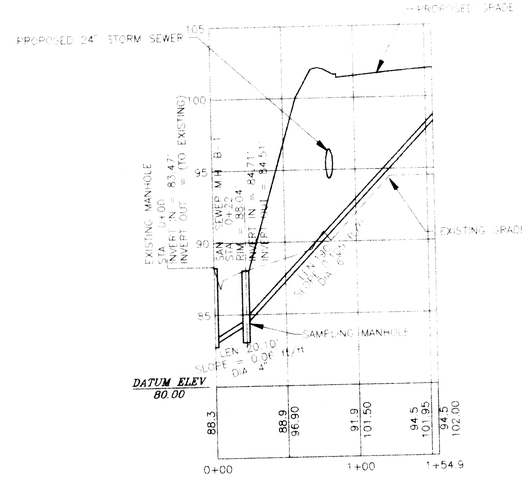
50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft



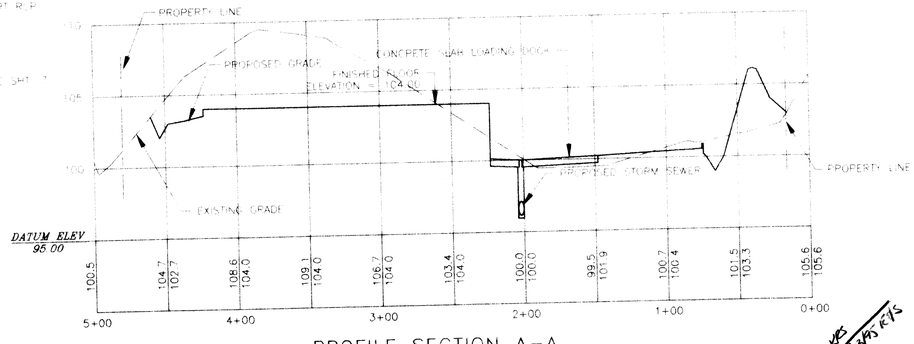
PROFILE STORM SEWER

VERTICAL SCALE 1" = 10'
HORIZONTAL SCALE 1" = 50'



PROFILE SANITARY SEWER

VERTICAL SCALE 1" = 5'
HORIZONTAL SCALE 1" = 50'



PROFILE SECTION A-A

VERTICAL SCALE 1" = 5'
HORIZONTAL SCALE 1" = 50'

KES 04/06/95 KES

ENGINEERING CONCEPTS INC.

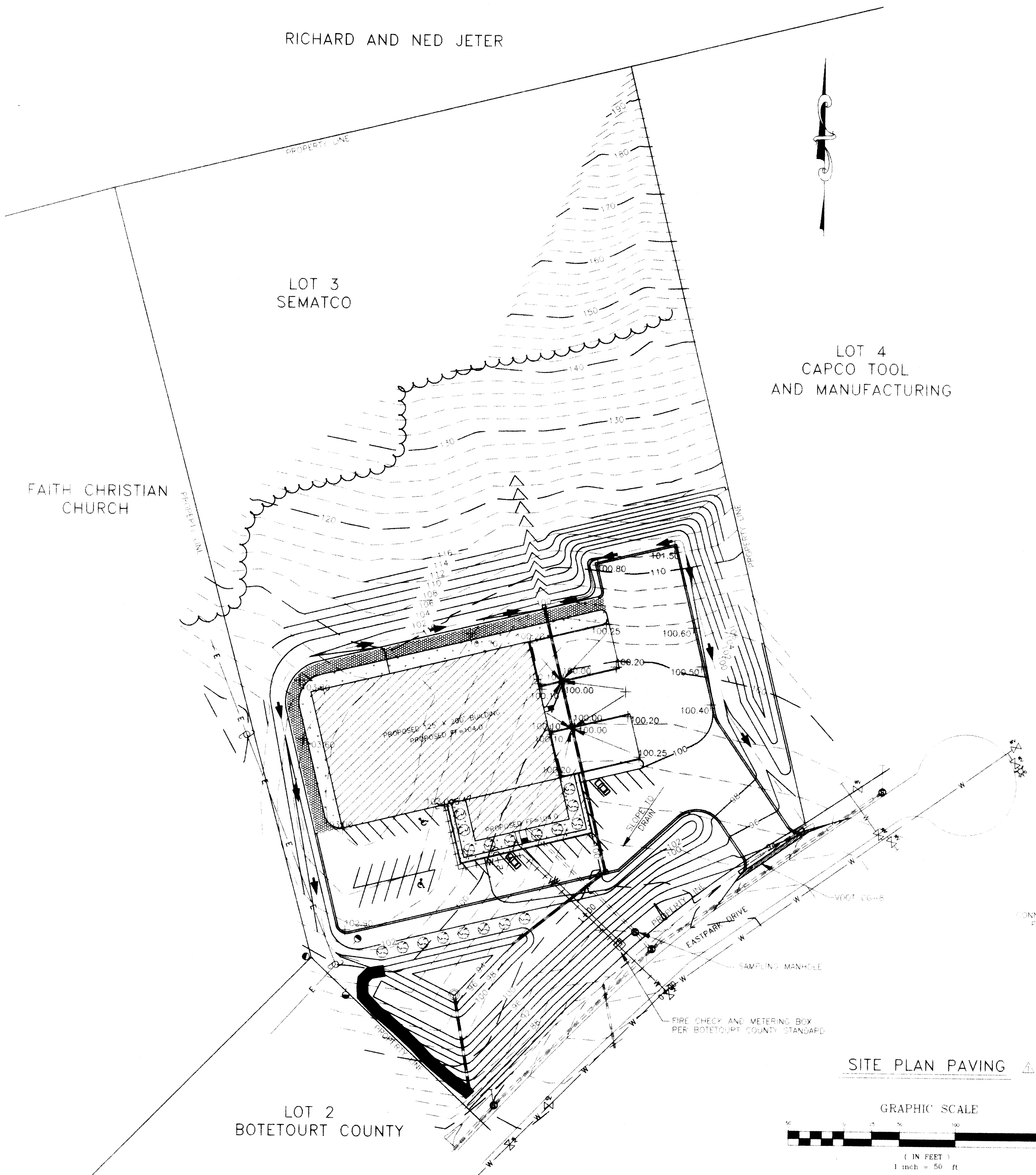
DESIGNED	SCG/WPJ
DRAWN	SCG
CHECKED	WPJ
APPROVED	HTB
SCALE	1"=50' HORZ
DATE	10/20/94
PROJECT	94028/95005

REVISIONS		
NO.	DATE	BY
1	MARCH 1995	SCG

SEMATCO
NEW PLANT SITE DESIGN
SITE PLAN GRADING

WILLIAM P. JOHNSON II
No. 024388
10-20-95
COMMONWEALTH OF VIRGINIA

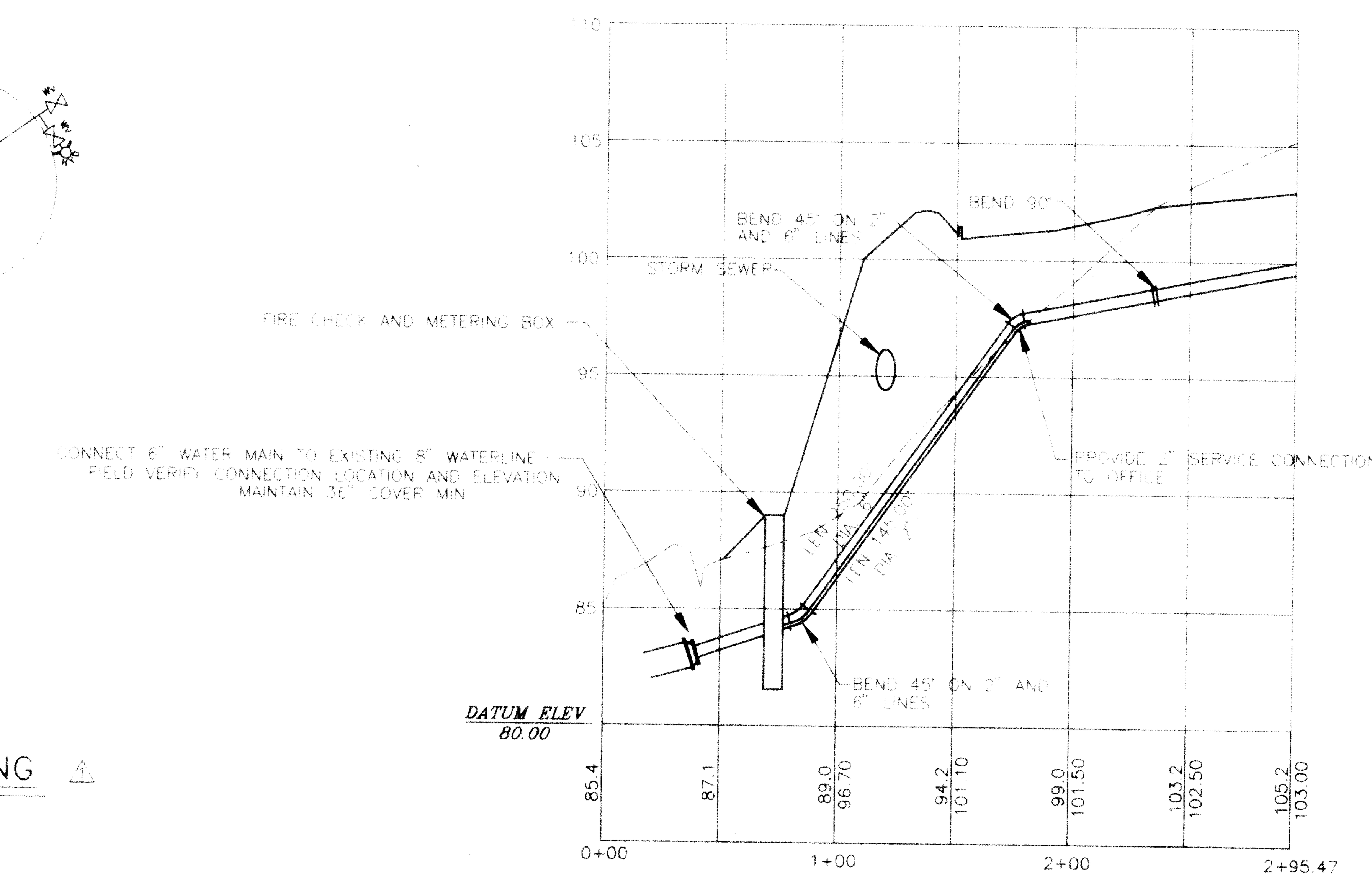
SHEET NO.
4
OF
9



SITE PLAN PAVING

LEGEND

ASPHALT PARKING AREA (LIGHT USE)	GRAVEL AREA
ASPHALT PARKING AREA (HEAVY DUTY USE)	PROPOSED BUILDING
CONCRETE PADS FOR TRUCK DOCKS	LANDSCAPED AREA
SIDEWALKS	CURBING
	EXISTING SANITARY SEWER
	EXISTING WATERLINE
CONTOUR HIGH 10 ft	EXISTING OVERHEAD ELECTRIC
CONTOUR	LIMITS OF CONSTRUCTION
PROPOSED GRADING CONTOURS	FINISHED GRADE SPOT



PROFILE WATER MAIN
VERTICAL SCALE 1" = 5'
HORIZONTAL SCALE 1" = 50'

ENGINEERING
CONCEPTS INC.

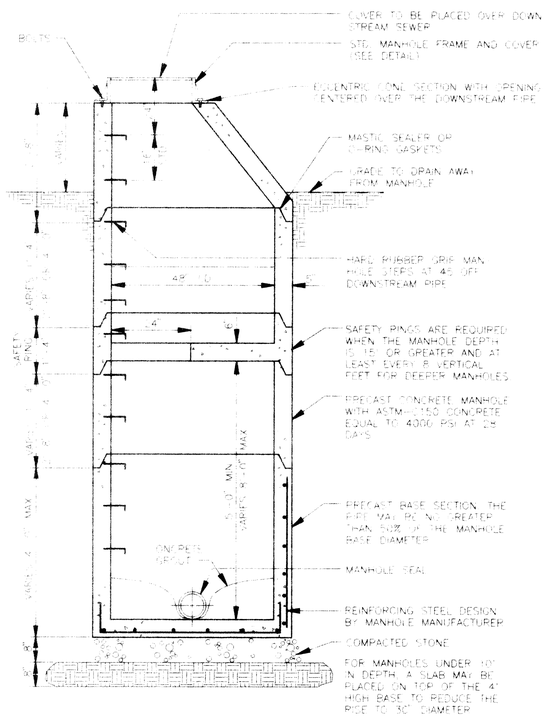
DESIGNED	SCG/WPJ
DRAWN	SCG
CHECKED	WPJ
APPROVED	HTB
SCALE	1"=50' HORZ.
DATE	MARCH, 1995
PROJECT	94028/95005

REVISIONS

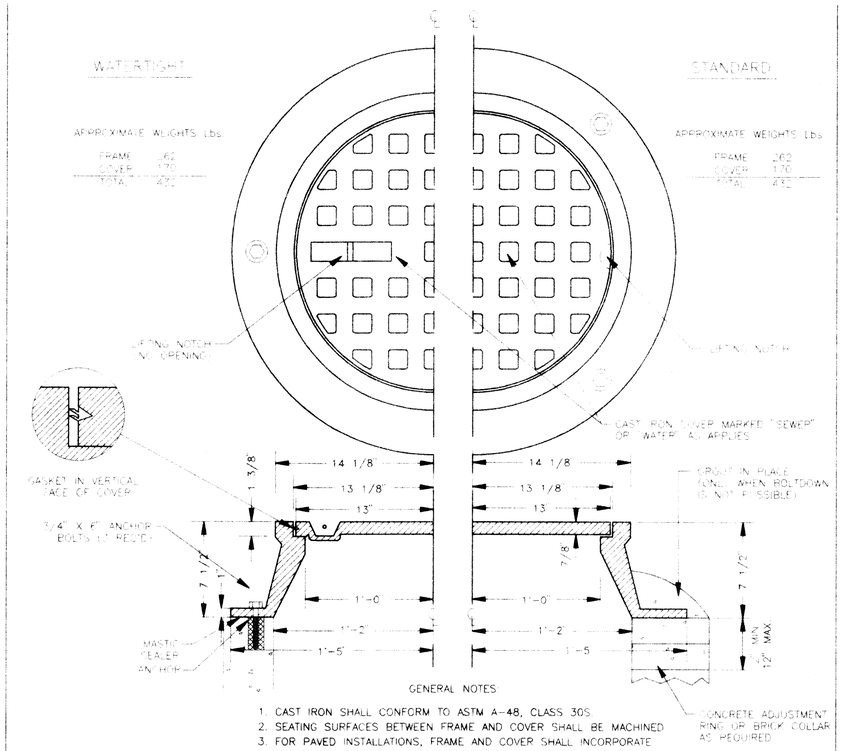
NO.	DATE	BY
1	MARCH 1995	SCG

SEMATCO
NEW PLANT SITE DESIGN
SITE PLAN PAVING

SHEET NO. 5 OF 9



PRECAST ECCENTRIC MANHOLE

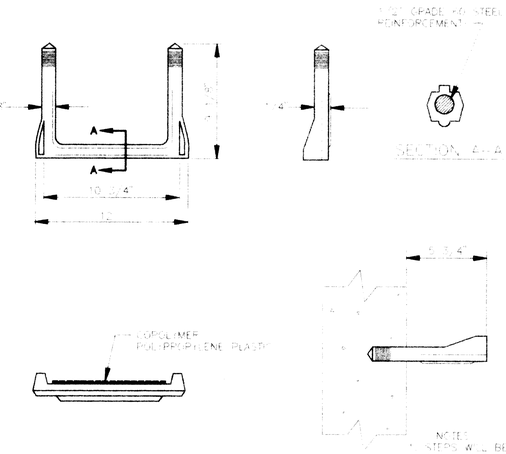


GENERAL NOTES

1. CAST IRON SHALL CONFORM TO ASTM A-48, CLASS 30S.
2. SEATING SURFACES BETWEEN FRAME AND COVER SHALL BE MACHINED.
3. FOR PAVED INSTALLATIONS, FRAME AND COVER SHALL INCORPORATE AN ELEVATABLE COVER DESIGN TO ALLOW COVER TO BE RAISED DURING REPAVING OPERATIONS.

MANHOLE FRAME AND COVER

NTS

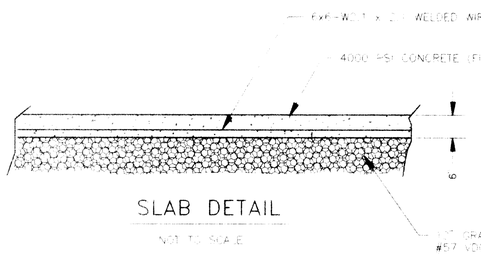


MANHOLE STEP DETAIL

NTS

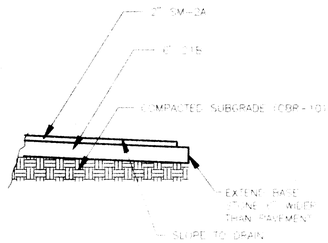
NOTES:

1. STEPS WILL BE REQUIRED IN ALL STRUCTURES WITH A DEPTH OF 4'-0" OR GREATER UNLESS OTHERWISE NOTED.
2. ALL STEPS SHALL PROTRUDE AT LEAST 4 1/2" FROM INSIDE FACE OF STRUCTURE WALL.
3. MAX. SPACING 12" CENTER TO CENTER.
4. STEPS ARE TO BE VERTICALLY ALIGNED AND UNIFORMLY SPACED FOR THE ENTIRE DEPTH OF ANY STRUCTURE.



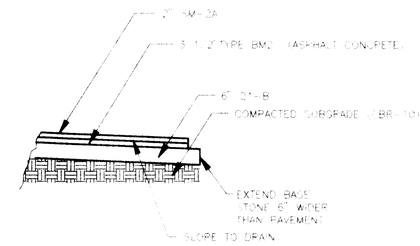
SLAB DETAIL

NOT TO SCALE



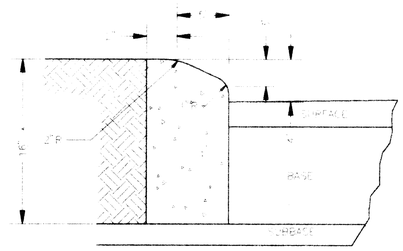
PAVEMENT DETAIL LIGHT USE

NTS



PAVEMENT DETAIL HEAVY USE

NTS



WHEN THIS STANDARD IS TO BE TIED INTO EXISTING BARRIER CURB, TRANSITION IS TO BE MADE WITHIN 10'-0" OF THE CHANGE IN STANDARDS MADE AT REGULAR OPENING.

THIS CURB SHALL BE USED WHEN DESIGN SPEED IS GREATER THAN 40 MPH ON RURAL HIGHWAYS AND 45 MPH IN DEVELOPED URBAN AND SUBURBAN AREAS.

NOTES

THIS ITEM MAY BE PRECAST OR CAST IN PLACE.

CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" OR DEPTH MAY BE INCREASED AS MUCH AS 3" (18" DEPTH) IN ORDER THAT THE BOTTOM OF CURB WILL COINCIDE WITH THE TOP OF SUBGRADE OR THE PAVEMENT SUBSTRUCTURE. OTHERWISE THE DEPTH IS TO BE 15" AS SHOWN.

STANDARD 4" CURB

NTS

KES 11-29-95 RJS

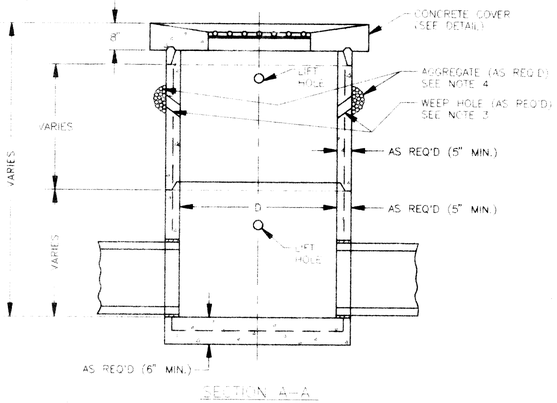
ENGINEERING CONCEPTS INC.

DESIGNED	TLB, WFJ
DRAWN	TLP
CHECKED	WFJ
APPROVED	HTB
SCALE	NTS
DATE	MARCH, 1995
PROJECT	94028/95006

REVISIONS		
NO.	DATE	BY

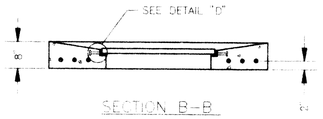
SEMATCO
NEW PLANT SITE DESIGN
GENERAL DETAILS

SHEET NO. 6 OF 9

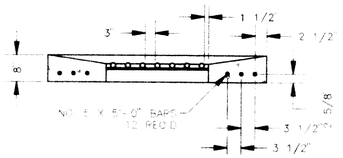


SECTION A-A

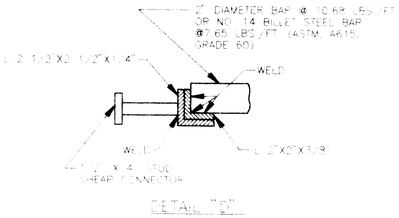
DETAILS OF CONCRETE COVER AND GRATE



SECTION B-B



SECTION C-C

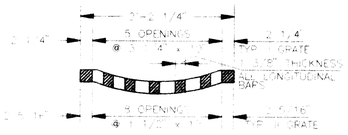


DETAIL "D"

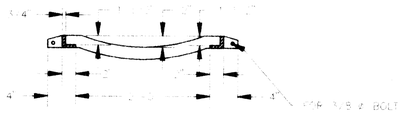
NOTE

CONCRETE COVER AND GRATE ARE TO BE FURNISHED AS A SINGLE UNIT. OUTSIDE DIMENSIONS OF GRATE ARE TO BE 3'-4" X 2'-11 3/4"

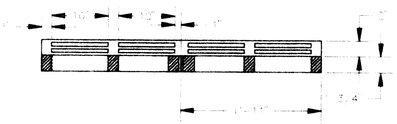
GRATE AND COLLAR ARE TO BE GALVANIZED



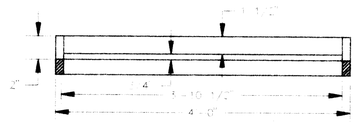
GRATE SECTION YY



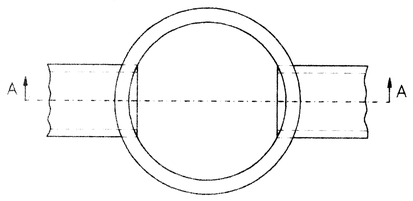
FRAME SECTION YY

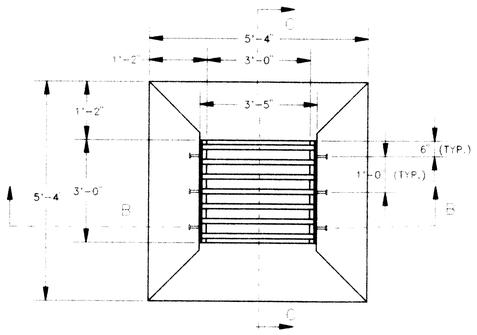


GRATE SECTION XX



FRAME SECTION XX



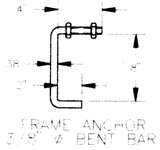


STANDARD MEDIAN DROP INLET

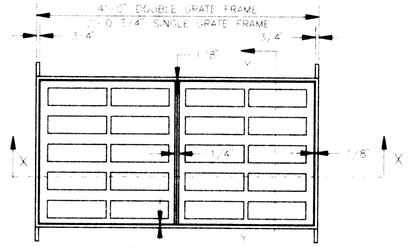
SOURCE: 1993 DOT ROAD AND BRIDGE STANDARDS SEC. 104.21 & 104.23

NOTES:

1. ALL PRECAST UNITS ARE TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO M199
2. CONCRETE SHALL BE 4000 PSI
3. 3" DIAMETER WEEP HOLE WITH 12" X 12" PLASTIC HARDWARE CLOTH 1/4" MESH OR GALVANIZED STEEL WIRE, MINIMUM WIRE DIAM. 0.03", NO. 4 MESH HARDWARE CLOTH ANCHORED FIRMLY TO OUTSIDE OF STRUCTURE
4. 4" DEPTH AGGREGATE #57, #78, OR #8 X 0" WIDTH



FRAME ANCHOR 3/8" ø BENT BAR



MULTI-GRATE DROP INLET

SOURCE: 1993 VDOT ROAD AND BRIDGE STANDARDS SEC. 104.19

TYPE I GRATE: LIMITED ACCESS AND RURAL, UNLIMITED ACCESS PEDESTRIAN ACCESS UNLIKELY
TYPE II GRATE: URBAN AREAS, PEDESTRIAN ACCESS LIKELY AREA

GENERAL NOTES

C1-12B NO GUTTER
C1-12L PERIPHERAL GUTTER
WHEN SPECIFIED ON PLANS THE INVERT IS TO BE SHAPED IN ACCORDANCE WITH STD. B1.1
IN THE EVENT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE
DEPTH (H) AND LENGTH (L) OF INLET IS TO BE SHOWN ON PLANS
PAVED DITCHES ARE TO BE TRANSITIONED TO MEET INLET GUTTER AS SHOWN IN STD. B1.1
THE "H" DIMENSION SHOWN IN THE STANDARDS AND SPECIFIED IN THE PLANS WILL BE MEASURED FROM THE INVERT OF THE OUTFALL PIPE TO THE TOP OF THE STRUCTURE
ALL REINFORCING STEEL TO BE #4 BARS WITH A MINIMUM OF 1 1/2" OF COVER

KES 04/03/95 KES

ENGINEERING CONCEPTS INC.

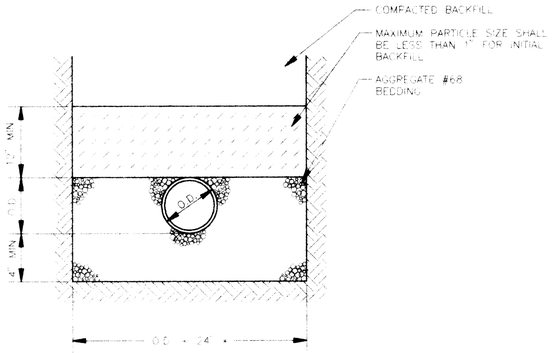
DESIGNED	SCC/WPJ
DRAWN	TLR
CHECKED	WPJ
APPROVED	HTB
SCALE	NTS
DATE	MARCH, 1995
PROJECT	94028/95005

REVISIONS

NO.	DATE	BY
1.	MARCH, 1995	SCC

SEMATCO
NEW PLANT SITE DESIGN
GENERAL DETAILS

SHEET NO. 7 OF 9

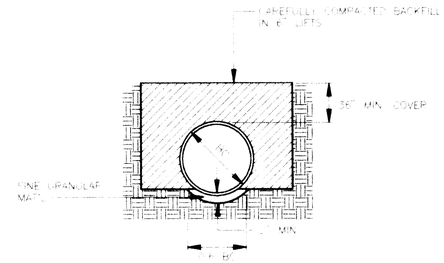


NOTES:

1. WHERE THE TRENCH BOTTOM IS IN ROCK, IT SHALL BE EXCAVATED TO A MINIMUM OF 6" BELOW THE BOTTOM OF THE PIPE AND BACKFILLED WITH BEDDING MATERIAL.
2. WHERE PIPE FOUNDATIONS ARE YIELDING, PIPE SHALL BE BEDDED ON A MINIMUM OF 6" BEDDING MATERIAL.
3. FOR PIPE LESS THAN 12" THE TRENCH WIDTH MAY BE 36" MAXIMUM.

SEWER LINE BEDDING DETAIL

REF. 1993 VDOT ROAD AND BRIDGE STANDARDS DETAIL 1401.01

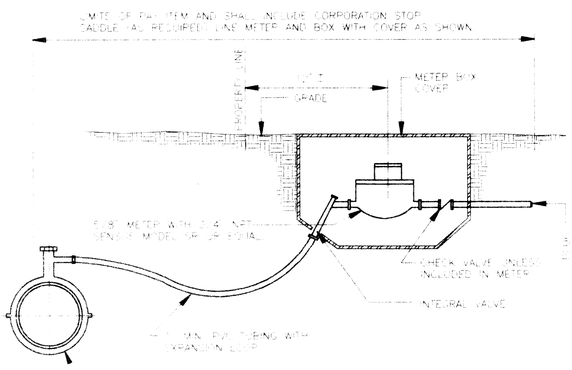


SHAPED BOTTOM
W/ TAMPED BACKFILL

NOTES:

1. WHERE THE TRENCH BOTTOM IS IN ROCK, IT SHALL BE EXCAVATED TO A MINIMUM OF 6" BELOW THE THE BOTTOM OF THE PIPE AND BACKFILLED WITH SUITABLE BEDDING MATERIAL.
2. WHERE PIPE FOUNDATIONS ARE YIELDING, PIPE SHALL BE BEDDED ON A MINIMUM OF 6" SUITABLE BEDDING MATERIAL.
3. SHAPE TRENCH BOTTOM FOR PIPE BARREL, JOINTS, AND FITTINGS TO PROVIDE CONTINUOUS SUPPORT AND NO POINT LOADING OF PIPE, JOINTS, AND FITTINGS.

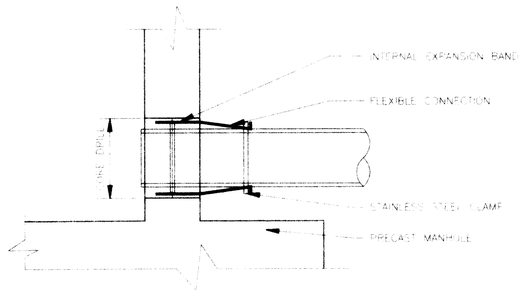
WATER LINE BEDDING DETAIL



ONE SERVICE PER TWO METERS, MAXIMUM, UNLESS OTHERWISE APPROVED
FOR 1" METER USE 1" SADDLE OR PVC PIPE
AND 1" MIN. FORD FJ400 CURVED STOPS OR EQUAL

NOTE:
METER BOX SHALL BE FORD 10KS BOX OR EQUAL
PROVIDE DOUBLE BOX INSTALATION WHERE EVER
POSSIBLE TO SERVE TWO CONNECTIONS FROM ONE LOCATION.

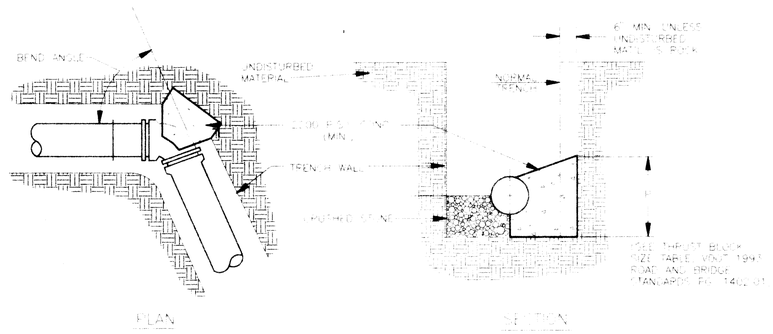
TYPICAL 5/8", 3/4" & 1" CONNECTION



ALL PIPELINE CONNECTIONS TO PRECAST MANHOLES SHALL BE MADE WITH A FLEXIBLE SEAL. THE BOOT SHALL MEET ASTM SPECIFICATION C-923. BOOT SHALL BE MADE FROM NEOPRENE RUBBER AND HAVE A 1/4" MINIMUM WALL THICKNESS THROUGHOUT. THE INTERNAL EXPANSION BAND TO SECURE THE BOOT IN PLACE SHALL CONFORM TO A MINIMUM MATERIAL SPECIFICATION PORT 316. THE EXTERNAL BAND TO CLAMP AND SEAL THE BOOT TO THE PIPE SHALL BE STAINLESS STEEL CORROSION RESISTANT CONFORMING TO ASTM SPECIFICATION A-167. THE PIPE TO RECEIVE THE BOOT SHALL BE CORE DRILLED AND SHALL ALLOW FOR LATERAL AND VERTICAL ANGULAR ADJUSTMENT THRU 20 DEGREES IN ALL DIRECTIONS. ALL FIELD INSTALLATION OF PIPE THRU FLEXIBLE CONNECTION SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.

FLEXIBLE CONNECTION DETAIL

REF. 1993 VDOT ROAD AND BRIDGE STANDARDS DETAIL 1410.02



NOTES:

1. THRUST BLOCKS ARE REQUIRED AT ALL BENDS OF MORE THAN 10°.
2. KEEP CONCRETE CLEAR OF JOINT AND UNCOVER JOINTS.
3. BEARING SURFACE OF THRUST BLOCKS MUST BE NORMAL TO RESULTANT THRUST OF BEND AND REACTION AGAINST UNDISTURBED MATERIAL.

HORIZONTAL THRUST BLOCK DETAIL

KBS 04/03/95 F95

ENGINEERING CONCEPTS INC.

DESIGNED	SCG/WPJ
DRAWN	TLR
CHECKED	WPJ
APPROVED	HTB
SCALE	NTS
DATE	MARCH, 1995
PROJECT	94028/95008

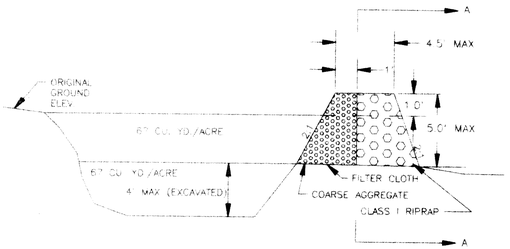
REVISIONS

NO.	DATE	BY
1	MARCH 1995	SCG

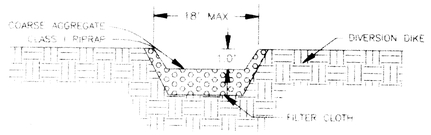
SEMATCO
NEW PLANT SITE DESIGN
GENERAL DETAILS

WILLIAM P. JOHNSTON JR.
No. 028
3-20-95
COMMONWEALTH OF VIRGINIA

SHEET NO 8 OF 9



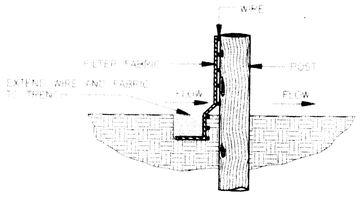
PROFILE



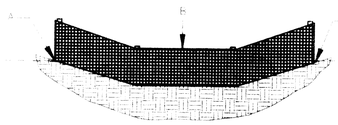
SECTION A-A

(ST) TEMPORARY SEDIMENT TRAP

SOURCE: 1992 VA EROSION AND SEDIMENT CONTROL HANDBOOK STD. & SPEC. 3.27



CROSS-SECTION



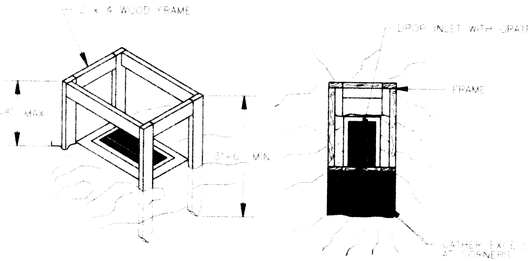
POINT A HIGHER THAN POINT B

PAVEMENT IN DRAINAGE WAY

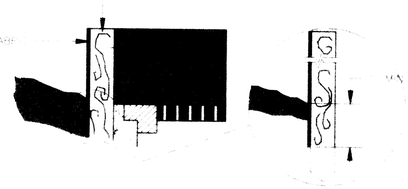
(SF) SILT FENCE

SOURCE: 1992 VA EROSION AND SEDIMENT CONTROL HANDBOOK STD. & SPEC. 3.05

SILT FENCE DROP INLET PROTECTION



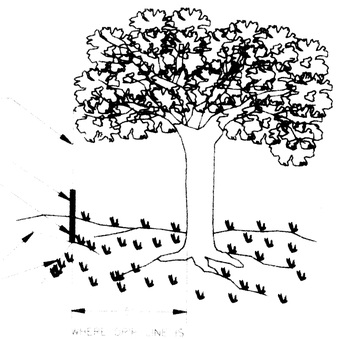
PERSPECTIVE VIEWS



ELEVATION OF STAKE AND FABRIC ORIENTATION

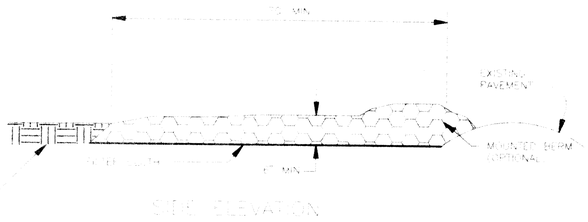
(IP) STORM DRAIN INLET PROTECTION

SOURCE: 1992 VA EROSION AND SEDIMENT CONTROL HANDBOOK STD. & SPEC. 3.07



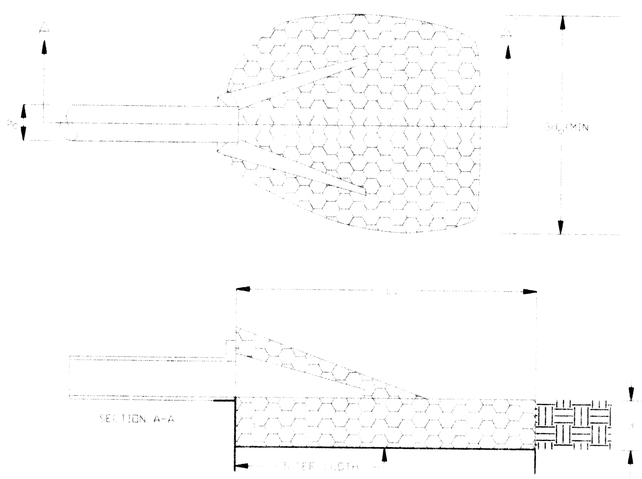
(TP) TREE PROTECTION

SOURCE: 1992 VA EROSION AND SEDIMENT CONTROL HANDBOOK STD. & SPEC. 3.08



(CE) CONSTRUCTION ENTRANCE

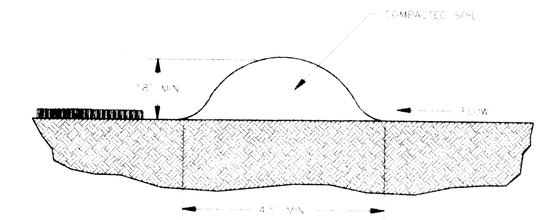
SOURCE: 1992 VA EROSION AND SEDIMENT CONTROL HANDBOOK STD. & SPEC. 3.02



NOTES:
1. APRON CAN BE RIPRAP, CRUSHED RIPRAP, GABION BASKET OR CONCRETE.
2. LENGTH OF THE RIPRAP APRON AS CALCULATED USING FIGS. 3.18 AND 3.19.
3. D50 = THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6 INCHES.

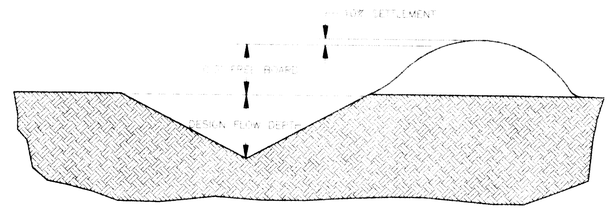
(OP) OUTLET PROTECTION

SOURCE: 1992 VA EROSION AND SEDIMENT CONTROL HANDBOOK STD. & SPEC. 3.18



(DD) TEMPORARY DIVERSION DIKE

SOURCE: 1992 VA EROSION AND SEDIMENT CONTROL HANDBOOK STD. & SPEC. 3.09



TYPICAL VEE-SHAPED DIVERSION

(DV) PERMENANT DIVERSION DIKE

SOURCE: 1992 VA EROSION AND SEDIMENT CONTROL HANDBOOK STD. & SPEC. 3.10

KBS 04/13/95 KBS

C:\94028\SEMATCO\SUBMIT\95.07.09.DWG WP: 3/17/95

ENGINEERING CONCEPTS INC.

DESIGNED	TLR, WP
DRAWN	TLR
CHECKED	HTB
APPROVED	WP
SCALE	NO SCALE
DATE	MARCH 1995
PROJECT	94-028-05/07

REVISIONS

NO	DATE	BY

SEMATCO
NEW PLANT SITE DESIGN
EROSION AND SEDIMENT CONTROL DETAILS

3-20-95

SHEET NO. 9 OF 9