

GENERAL NOTES

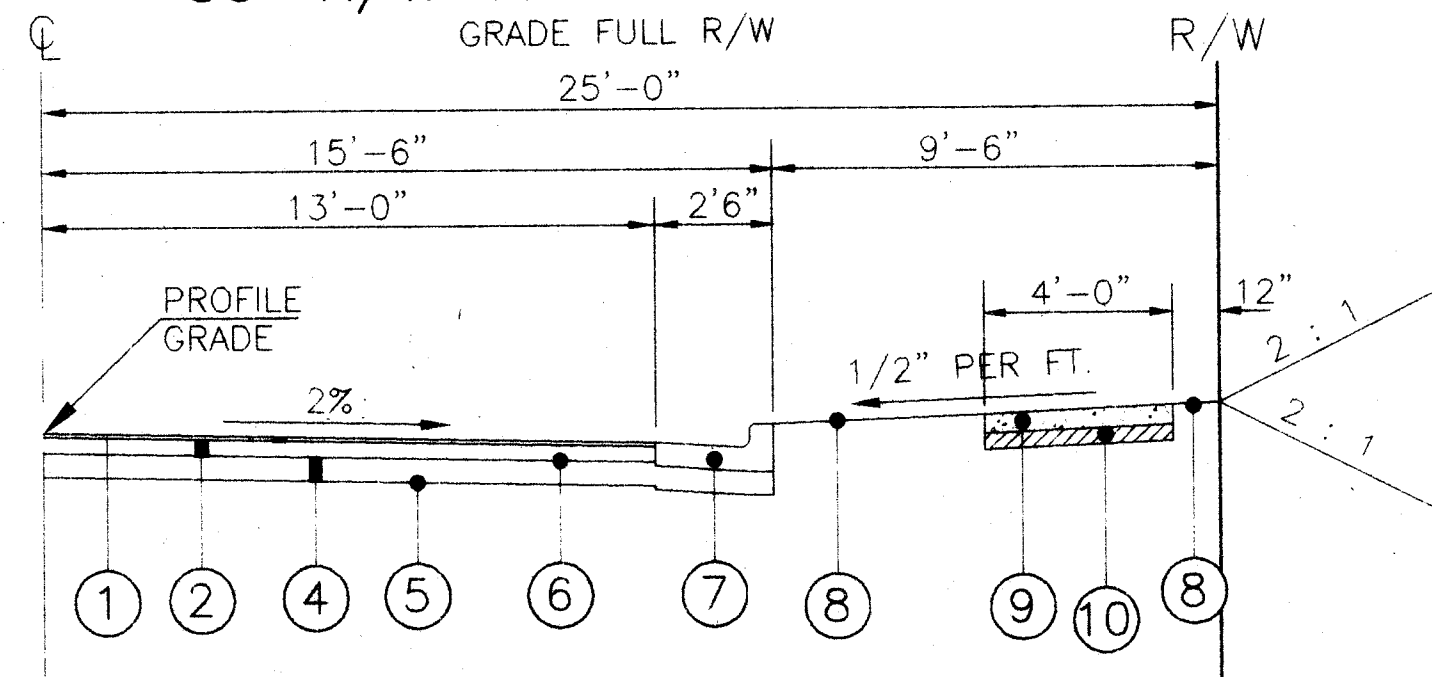
- CONTRACTOR SHALL CHECK DETAIL DRAWINGS FOR MINIMUM GRADE AND BACKFILL REQUIREMENTS.
- ALL COMBINATION CONCRETE CURB AND GUTTER TO BE MASSILLON STANDARD EXCEPT WHERE VARIATIONS ARE TO BE EXTENDED OR MET - SEE SPECIFICATION BOOK AND PLANS.
- EXCAVATION FOR COMBINATION CONCRETE CURB AND GUTTER SHALL BE INCLUDED IN THE COST PER LINEAL FOOT OF SAID CURB AND GUTTER.
- ALL COMBINATION CONCRETE CURB AND GUTTER TO BE CONSTRUCTED BEFORE EXCAVATION IS STARTED, WHEN EXCAVATION DOES NOT EXCEED 1'-0" IN DEPTH. ROADWAY EXCAVATION TO BE 2" TO 4" BELOW FINISHED GRADE OF STREET AT THE DISCRETION OF THE CITY ENGINEER.
- ALL CATCH BASINS AND MANHOLES TO BE ADJUSTED TO GRADE WHERE NECESSARY.
- ALL CONCRETE TO BE 1:2; 4-6 BAG MIX. 28 DAY - 3000 PSI COMPRESSIVE STRENGTH; MAX. SLUMP TO BE 4".
- CONTRACTOR SHALL PAY INSPECTOR(S) AT THE RATE OF TIME AND ONE HALF OF REGULAR RATE AFTER 4:30 P.M. MONDAY THRU FRIDAY. SATURDAYS ALL DAY AT TIME AND ONE HALF.
- ALL MATERIALS USED WILL BE NEW - NO SALVAGED MATERIAL WILL BE ACCEPTED EXCEPT CASTINGS.
- IF CONTRACTOR EXCAVATES DEEPER THAN NECESSARY FOR CURB AND GUTTER, CONTRACTOR WILL FURNISH ODOT 304 AGGREGATE AND TAMP BEFORE CURB AND GUTTER IS CONSTRUCTED.
- IF SUBGRADE IS UNSUITABLE, CONTRACTOR WILL EXCAVATE AND REPLACE SUCH MATERIAL WITH CRUSHED RUN GRAVEL, AT THE DISCRETION OF THE INSPECTOR OR CITY ENGINEER. THIS FILL TO BE PLACED IN 6" LAYERS OR LESS; SAID FILL TO BE COMPACTED TO 95% MAXIMUM LABORATORY DRY WEIGHT BEFORE ANY ADDITIONAL LAYERS ARE ADDED. CONTRACTOR WILL BE PAID FOR EXTRA GRAVEL AND EXCAVATION. THIS COMPACTION TO BE DONE BEFORE FORMS ARE PLACED.
- ALL EXTRA PAY ITEMS WILL HAVE THE APPROVAL OF THE BOARD OF CONTROL BEFORE EXTRA ITEMS ARE INSTALLED.
- CONTRACTOR TO BACKFILL CURB IMMEDIATELY AFTER CURB HAS BEEN IN PLACE FOR 48 HOURS.
- CONTRACTOR WILL NOTIFY ENGINEER WHEN HE IS IN NEED OF CONSTRUCTION STAKES AND THIS OFFICE WILL COMPLY WITHIN A PERIOD OF 48 HOURS.
- CIRCLE CURB WHEN RADIUS IS 175 FT. OR LESS.
- ALL STORM SEWER PIPES WITHIN PAVEMENT LIMITS OR WITHIN 5' OF B/C LINE SHALL BE REINFORCED CONCRETE PIPE (ODOT 706.02) (* SEE BELOW) AND SHALL BE TYPE 'B' CONDUIT WITH GRANULAR BACKFILL TO WITHIN 1' OF FINISH GRADE IN ACCORDANCE WITH ODOT 603 CLASS B BEDDING AND GRANULAR BACKFILL. ALL STORM SEWERS NOT WITHIN 5' OF B/C SHALL BE SMOOTH LINED CORRUGATED POLYETHYLENE (ODOT 944) OR REINFORCED CONCRETE PIPE (ODOT 706.02) AND SHALL BE TYPE 'C' CONDUIT IN ACCORDANCE WITH ODOT 603 WITH CLASS B BEDDING AND SUITABLE SOIL BACKFILL.

* OR SMOOTH LINED CORRUGATED POLYETHYLENE(ODOT 944)

DOWNSPOUT HEADERS SHALL BE 6" PVC(SDR 21) PIPE (UNLESS OTHERWISE NOTED ON THE PLANS) AND SHALL BE DIRECTLY CONNECTED TO THE STORM SEWER WITH APPROVED TEE OR SADDLE CONNECTION. HEADERS SHALL EXTEND 10' INTO THE LOT.

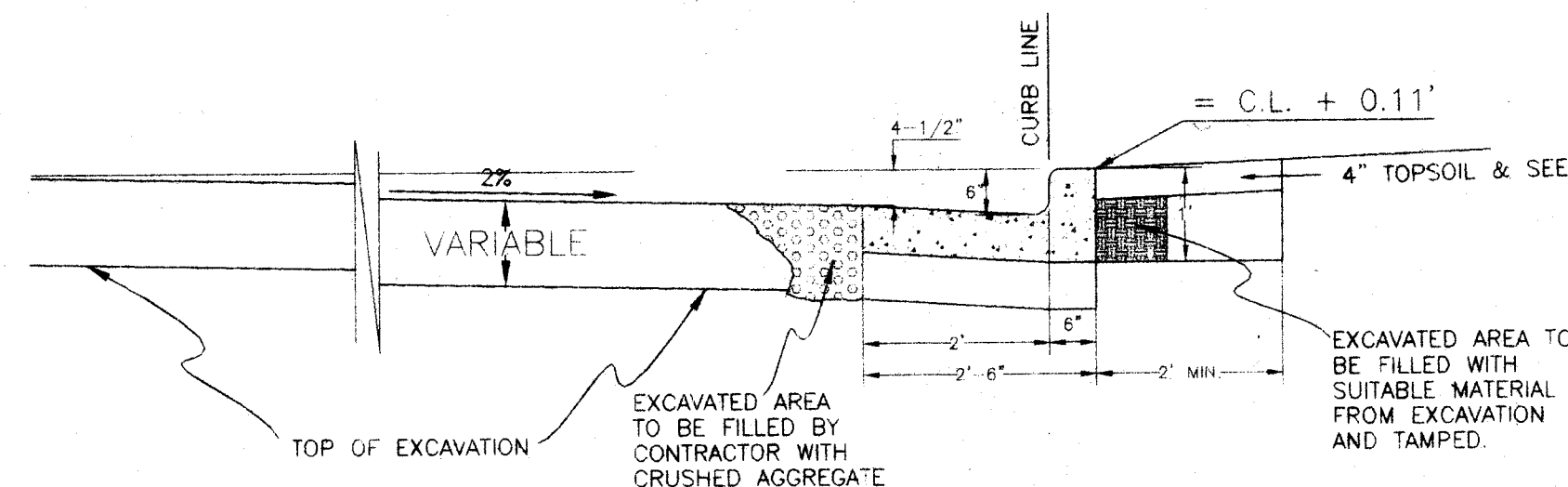
- CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES BEFORE ANY WORK IS BEGUN. THE CITY OF MASSILLON IS NOT RESPONSIBLE FOR ANY LOST TIME DUE TO UTILITY RELOCATION.
- MANHOLES AND CATCH BASINS SHALL BE CONSTRUCTED IN CONFORMANCE WITH MASSILLON CITY STANDARDS (FILE NO. 581) AVAILABLE FROM THE CITY ENGINEER.
- CONTRACTOR SHALL CONTACT CITY OF MASSILLON ENGINEERING DEPT. AT 330-830-1722 AT LEAST 2 DAYS PRIOR TO THE INITIATION OF CONSTRUCTION TO SCHEDULE A PRE-CONSTRUCTION MEETING.
- STREET LIGHTING IS REQUIRED. DEVELOPER SHALL CO-ORDINATE WITH ELECTRIC UTILITY COMPANY FOR POLE LOCATION AND TYPE.
- THE DEVELOPER SHALL INSTALL, AT HIS COST, STREET SIGNS REPRESENTING THE NAMES OF ALL STREETS AT ALL INTERSECTIONS. DEVELOPER ALSO RESPONSIBLE FOR STOP SIGNS AND DIRECTIONAL SIGNS AS NECESSARY. ALL SIGNS SHALL CONFORM WITH CITY OF MASSILLON REGULATIONS.
- THERE IS TO BE NO CONSTRUCTION TRAFFIC UTILIZING EXISTING ROADWAY WITHIN UNIVERSITY VILLAGE PHASE I. ALL CONSTRUCTION TRAFFIC MUST USE THE EXISTING CONSTRUCTION ROAD FROM RICHVILLE DRIVE.

50' R/W TYPICAL HALF SECTION



- ITEM 404 1-1/2" ASPHALT CONCRETE SURFACE
- ITEM 301 4" BITUMINOUS AGGREGATE BASE
- ITEM 304 6" AGGREGATE BASE (2-3" COURSES)
- ITEM 203 COMPACTED SUBGRADE
- ITEM 408 BITUMINOUS PRIME COAT(0.4 GAL/SY)
- ITEM 609 MASSILLON STANDARD CURB AND GUTTER (ODOT TYPE 2)
- ITEM 659 SEEDING AND MULCHING
- ITEM 608 4" CONCRETE WALK (TO BE PERFORMED BY HOMEBUILDER)
- ITEM 304 4" AGGREGATE BASE UNDER WALK (TO BE PERFORMED BY HOMEBUILDER)

MASSILLON STANDARD CURB AND GUTTER DETAIL (ODOT TYPE 2)

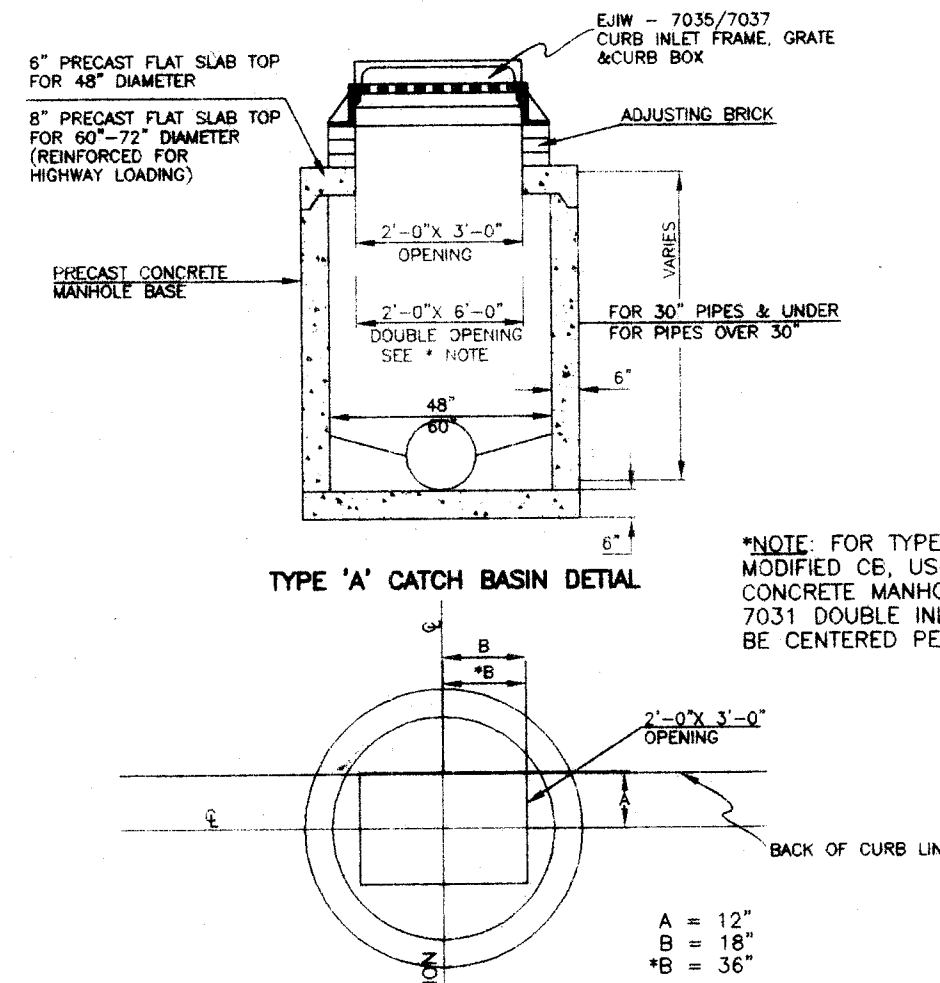


SANITARY SEWER TESTING SPECIFICATIONS:

- AIR LEAKAGE TEST TO BE PERFORMED ON SEWER LINES.
 - DEFLECTION TESTING TO BE PERFORMED ON ALL FLEXIBLE PIPE AND NO PIPE SHALL EXCEED A DEFLECTION OF FIVE PERCENT (5%).
 - WATER TESTING FOR LEAKAGE OF MANHOLES TO BE PERFORMED.
- ALL TESTING SHALL BE IN ACCORDANCE WITH CITY OF MASSILLON ENGINEERING DEPARTMENT AND THE OHIO ENVIRONMENTAL PROTECTION AGENCY SPECIFICATIONS.

SANITARY SEWER NOTES

- ALL SANITARY SEWERS AND APPURTENANCES SHALL BE CONSTRUCTED ACCORDING TO MASSILLON CITY ENGINEERING DEPARTMENT SPECIFICATIONS IN EFFECT AT THE TIME OF CONSTRUCTION.
- ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.
- FIRST FLOOR ELEVATION FOR BUILDING AT THE BUILDING SETBACK LINE SHALL BE A MINIMUM OF 6" ABOVE STREET CENTERLINE GRADE.
- MINIMUM COVER OVER ALL SANITARY SEWER MUST BE 4.0 FEET.
- ALL SANITARY SEWERS, 8" DIAMETER AND LARGER, MUST PASS INTERNAL TELEVISION INSPECTION. THE CONTRACTOR SHALL PROVIDE COMPLETE INTERNAL INSPECTION VIDEO TAPE TO THE SANITARY ENGINEERING DEPARTMENT. THE VIDEOTAPE PROCEDURE MUST BE IN ACCORDANCE WITH STARK COUNTY SANITARY ENGINEERING DEPARTMENT SPECIFICATIONS.
- PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE CITY OF MASSILLON ENGINEERING DEPT. (330-830-1722) TO SCHEDULE A PRE-CONSTRUCTION MEETING. A MINIMUM OF 72 HOURS NOTICE IS REQUIRED TO SCHEDULE THIS MEETING.
- SANITARY SEWER MAY BE ANY OF THE FOLLOWING MATERIALS, HOWEVER THE COMPLETE SYSTEM MUST BE UNIFORM IN PIPE MATERIAL:
 - V.C.P. EXTRA STRENGTH A.S.T.M. C-700 WITH COMPRESSION TYPE JOINTS IN CONFORMANCE WITH A.S.T.M. C-425
 - A.B.S. COMPOSITE PIPE A.S.T.M. D-2680 WITH CHEMICALLY WELDED PREMIUM JOINTS ASTM D-2680
 - P.V.C. PIPE A.S.T.M. D-3034, S.D.R. 35 MAXIMUM WITH GASKETED PREMIUM JOINTS ASTM D-3212
- A BULKHEAD SHALL BE CONSTRUCTED IN THE EXISTING MANHOLE AT THE ENTRANCE OF THE PROPOSED SEWER PIPE AND REMAIN IN PLACE UNTIL THE NEW SEWER LINE IS COMPLETE, TESTED AND APPROVED BY THE MASSILLON CITY ENGINEER, AT WHICH TIME THE BULKHEAD SHALL BE REMOVED.
- LEAKAGE LIMIT TEST TO BE 100 GAL./IN./MI./DAY.
- MANHOLE AND TRENCHES SHALL BE PER MASSILLON DETAILS. DRAWINGS. SANITARY SEWER PIPE TO BE PVC PER ASTM-3034 WITH JOINTS PER ASTM-3212. BEDDING PER ASTM-2321.
- SANITARY SERVICE LATERALS SHALL EXTEND INTO THE LOT 10' BEYOND R/W.



FLAT SLAB DETAIL

FOR TYPE 'A' CATCH BASIN OR APPROVED PRECAST 2' x 3' BOX W/ENW 7035/7037

* NOTE: ALTERNATE RECTANGULAR STRUCTURES ARE PERMITTED, AS APPROVED.

WATERLINE NOTES:

- ALL WATERLINES AND APPURTENANCES SHALL BE CONSTRUCTED ACCORDING TO CONSUMERS OHIO WATER COMPANY SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION OF ALL WATER MAINS AND THE SERVICE CONNECTIONS FROM ALL 2" WATER MAINS. CONSUMER OHIO WATER COMPANY WILL BE RESPONSIBLE FOR CONSTRUCTION OF ALL WATER SERVICE CONNECTIONS FROM 8" WATER MAINS.
- WATER MAIN MATERIALS SHALL CONFORM TO AWWA C151 FOR DUCTILE CAST IRON PIPE.
- WATER MAINS SHALL BE INSTALLED AND PRESSURE TESTED IN ACCORDANCE WITH AWWA C600.
- WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651.

APPROVED BY CONSUMERS OHIO WATER COMPANY THIS 14 DAY OF January, 1999.

Donald L. Snyder, COWC

NOTE: CONTRACTOR MUST CONSTRUCT ALL WATER LINES AND WATER SERVICE LINES SUCH THAT A MINIMUM OF 18" VERTICAL AND 10' HORIZONTAL CLEARANCE BETWEEN SANITARY SEWER AND A MINIMUM OF 12" VERTICAL AND 4' HORIZONTAL BETWEEN STORM SEWER IS MAINTAINED.

ESTIMATED QUANTITIES

ITEM	QTY.	UNIT	DESCRIPTION
EARTHWORK			
203	7343	S.Y.	SUBGRADE COMPACTION
203	7845	C.Y.	ROADWAY EXCAVATION NOT INCL. EMBANK. CONST.
203	-	C.Y.	ROADWAY EMBANKMENT
ROADWAY			
301	705	C.Y.	BITUMINOUS AGGREGATE BASE(4")
304	1224	C.Y.	6" AGGREGATE BASE (2-3" COURSES)
404	264	C.Y.	1-1/2" ASPHALT CONCRETE
408	2539	GAL	PRIME COAT (0.4 GAL. PER SQ. YD.)
409	-	C.Y.	SEAL COAT COVER AGGREGATE (0.008 C.Y./SQ.YD.)
409	-	GAL	SEAL COAT BITUMINOUS MATERIAL (0.3 GAL./SQ. YD.)
604	6	EACH	STANDARD CITY MONUMENTS (ODOT STANDARD)
609	3588	L.F.	MASSILLON STANDARD CURB AND GUTTER
609	-	L.F.	CONC. CHANNEL(REF. SECT. A-A DET. BASIN)
659	2734	S.Y.	SEEDING AND MULCHING (ROADWAY)
608	N/A	EACH	CURB RAMP (TO BE PERFORMANCE BY HOMEBUILDER)
608	N/A	S.F.	4" CONCRETE WALK(TO BE PERFORMANCE BY HOMEBUILDER)
304	N/A	C.Y.	4" AGG. BASE UNDER WALK(TO BE PERFORMANCE BY HOMEBUILDER)
SANITARY SEWER			
8C	899	L.F.	6" SANITARY SEWER PIPE (LATERALS)
8	1558	L.F.	8" SANITARY SEWER PIPE
8A	21	EACH	8" x 6" WYES
16	54.25	V.F.	(6) SANITARY MANHOLES (COMPLETE)
16	-	V.F.	(-) 8" DROP ATTACHMENT
16	1	EACH	8" P-UG & MARKER
STORM SEWER			
603	424	L.F.	12" STORM SEWER (SEE NOTE 16) TYPE 'B'
603	507	L.F.	12" STORM SEWER (SEE NOTE 16) TYPE 'C'
603	805	L.F.	15" STORM SEWER (SEE NOTE 16) TYPE 'B'
603	633	L.F.	18" STORM SEWER (SEE NOTE 16) TYPE 'B'
603	-	L.F.	15" STORM SEWER (SEE NOTE 16) TYPE 'C'
603	70	L.F.	24" STORM SEWER (SEE NOTE 16) TYPE 'B'
603	-	L.F.	30" STORM SEWER (SEE NOTE 16) TYPE 'B'
603	-	L.F.	30" STORM SEWER (SEE NOTE 16) TYPE 'C'
603	-	L.F.	10" PVC STORM
603	745	L.F.	6" PVC DOWNSPOUT LATERAL
604	15	EACH	CATCH BASIN TYPE 'A'
604	2	EACH	CATCH BASIN TYPE 'A' (MOD.)
604	-	EACH	CATCH BASIN TYPE 'A' (DBL.)
604	2	EACH	CATCH BASIN TYPE 2-2-B
604	1	EACH	CATCH BASIN TYPE 2-2-A
604	1	EACH	STORM MANHOLE (COMPLETE)
604	-	EACH	STORM SEWER CLEANOUT
604	-	EACH	HEADWALL ODOT TYPE 4B 30" DIA. PIPE (MOD. FULL HEIGHT)
604	-	EACH	HEADWALL ODOT TYPE 4B 10" DIA. PIPE (MOD. FULL HEIGHT)
601	0.83	C.Y.	DUMPED ROCK CHANNEL PROTECTION TYPE 'C'
608	-	L.F.	DETENTION BASIN CONCRETE CHANNEL
207	LUMP	L.S.	EROSION AND SEDIMENT CONTROL AS REQUIRED
WATERLINE			
814	-	L.F.	4" DUCTILE IRON PIPE, ANSI PRESSURE CLASS 350 W/POLYWRAP
814	1840	L.F.	8" DUCTILE IRON PIPE, ANSI PRESSURE CLASS 350 W/POLYWRAP
814	240	EACH	2" T-PE 'K' COPPER TUBING OR PVC W/TRACER WIRE
814	-	EACH	1" WATER SERVICE (COMPLETE W/CURB BOX)
814	-	EACH	8" x 8" MJ CROSS
814	2	EACH	8" x 8" MJ TEE
814	-	EACH	4" GATE VALVE W/BOX
814	6	EACH	8" GATE VALVE W/BOX
814	1	EACH	2" CURB STOP
814	-	EACH	" x " TAPPING SLEEVE
814	1	EACH	8" x 2" TAPPED TEE
814	-	EACH	8" 11-1/4" BEND
814	2	EACH	8"-45° BEND
814	-	EACH	" BEND
814	-	EACH	" BEND
814	1	EACH	2" CAP W/2" TAP BLOW OFF
814	2	EACH	8" POJ PLUG W/2" TAP BLOW OFF
814	1	EACH	8" POJ PLUG & MARKER
814	-	EACH	FIRE HYDRANT REMOVED AND RESET
814	3	EACH	FIRE HYDRANT ASSEMBLY, COMPLETE
814	3	EACH	WATER SERVICE CONNECTION W/CURB BOX (830/1") BY CONTRACTOR
814	25	EACH	WATER SERVICE CONNECTION W/CURB BOX (830/1") BY OTHERS

APPROVED BY THE MASSILLON CITY ENGINEER

THIS 14 DAY OF January, 1999

James J. Bunker
MASSILLON CITY ENGINEER

TYPICAL SECTION AND QUANTITIES

97203B

TYPICAL SECTION & QUANTITIES
UNIVERSITY VILLAGE
PHASE 2

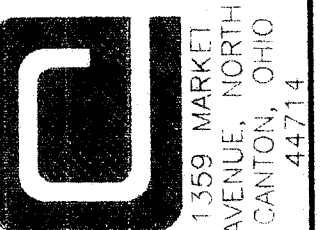
CITY OF MASSILLON
STARK COUNTY, OHIO
FOR : P.R.M.D.C. LTD.



CITY OF MASSILLON	DATE	BY	REVISIONS
COMC	1/11	S.R.	
COMC	1/11	S.R.	

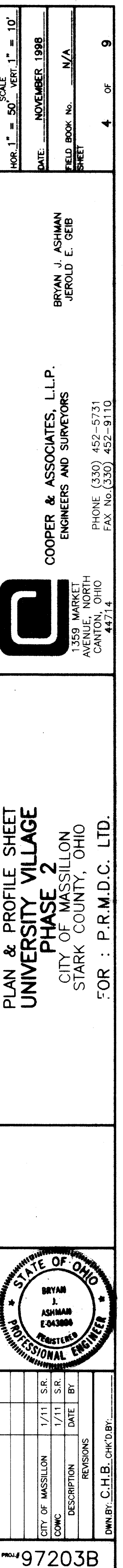
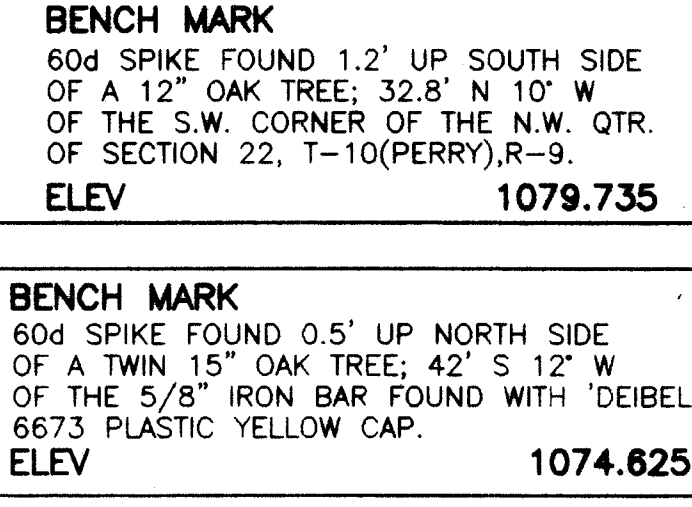
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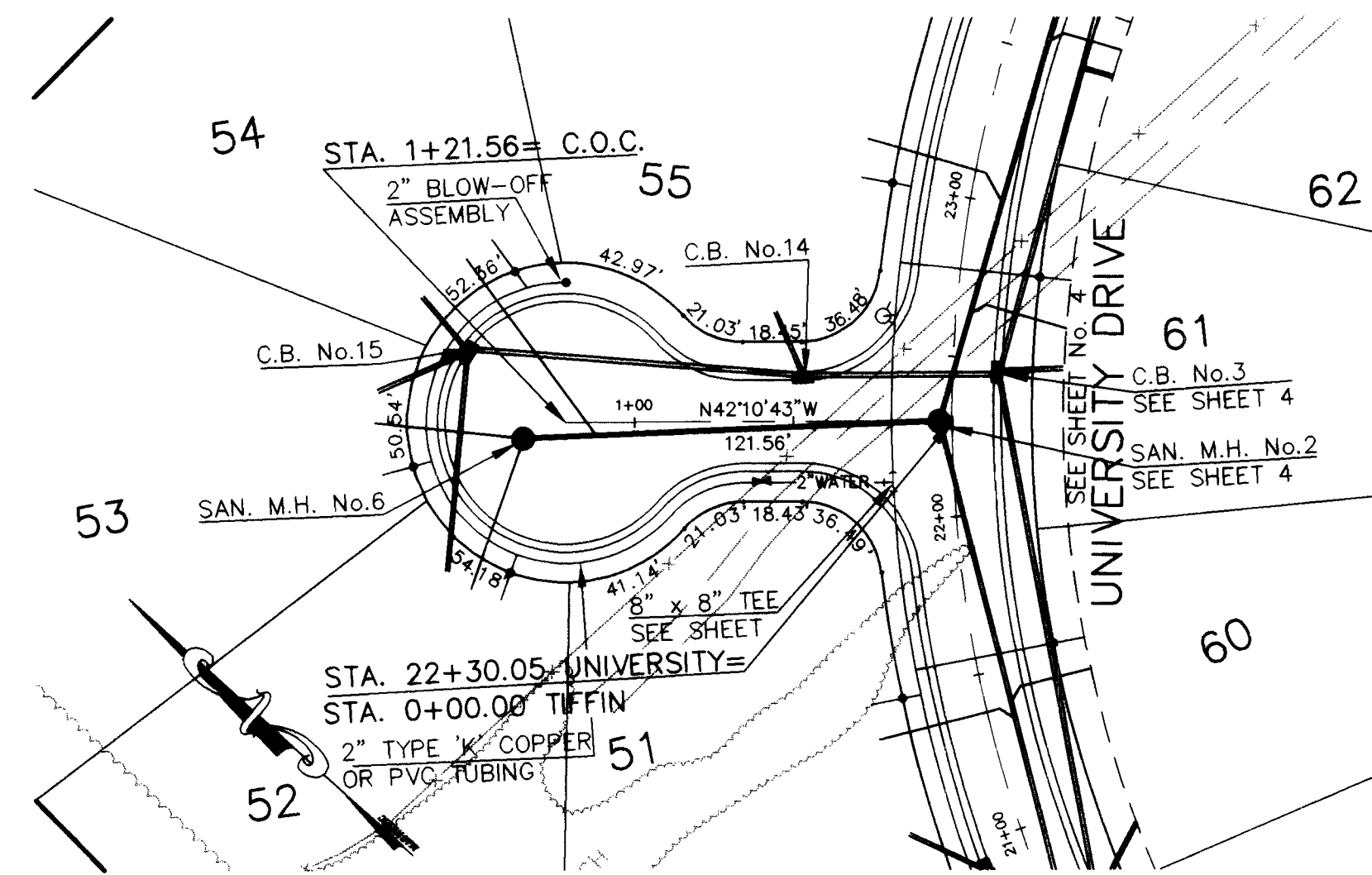
BRYAN J. ASHMAN
JEROLD E. GEIB
COOPER & ASSOCIATES, L.L.P.
ENGINEERS AND SURVEYORS
PHONE: (330) 442-5731
FAX: (330) 452-9110
42714



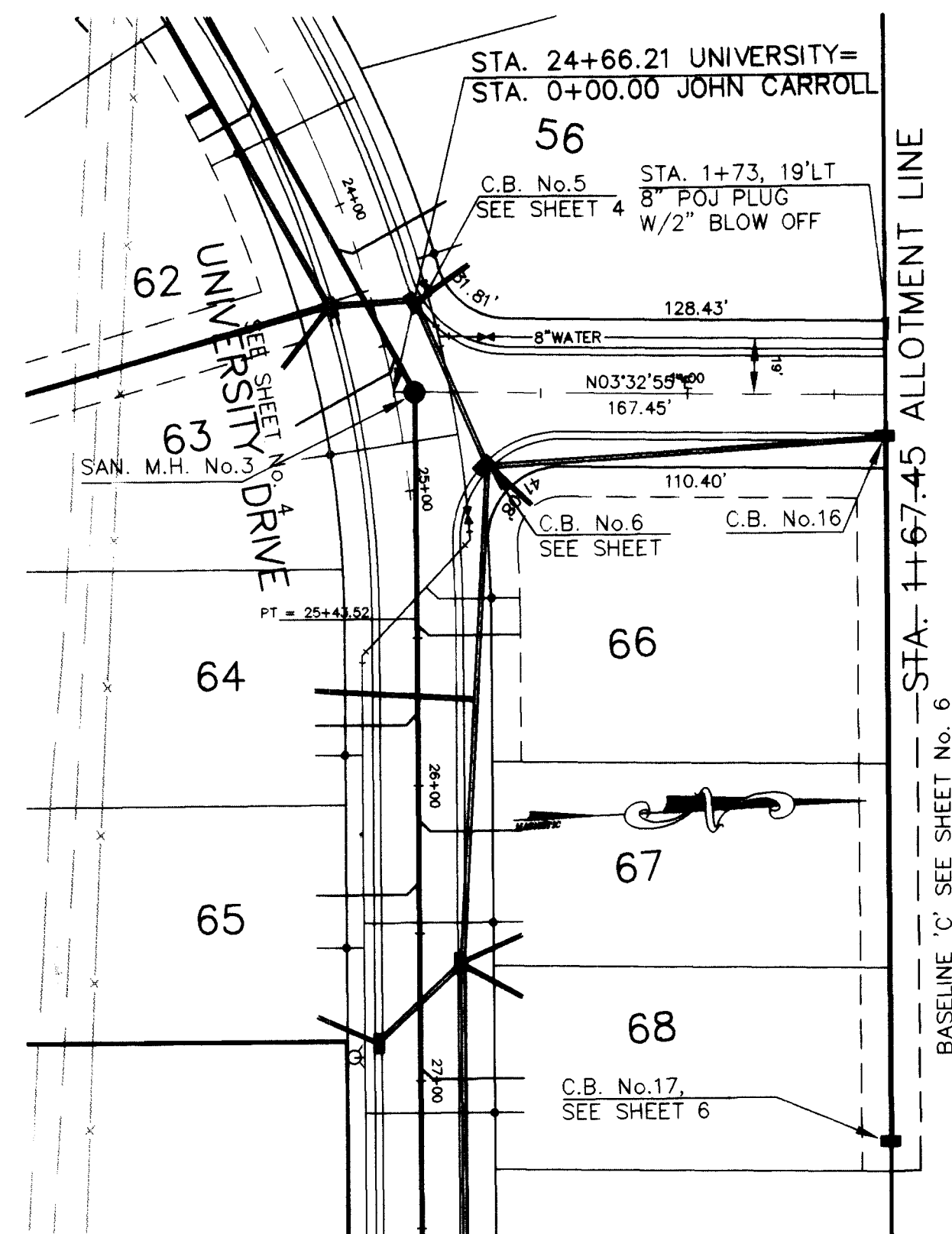
1359 MARKET
AVENUE, NORTH
CANTON, OHIO
44704

DATE	NOVEMBER 1998
FIELD BOOK NO.	N/A
SHEET	3 OF 9

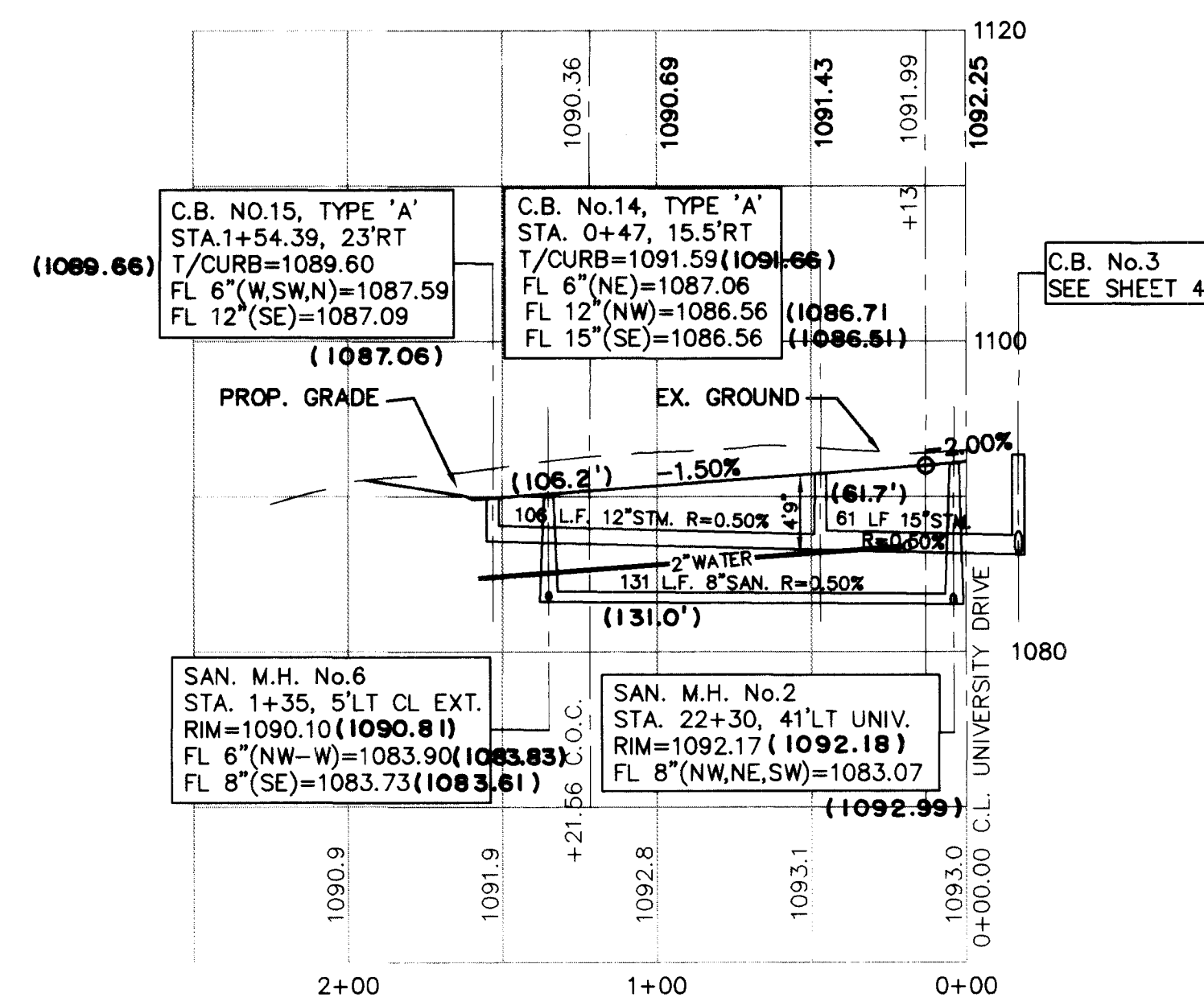




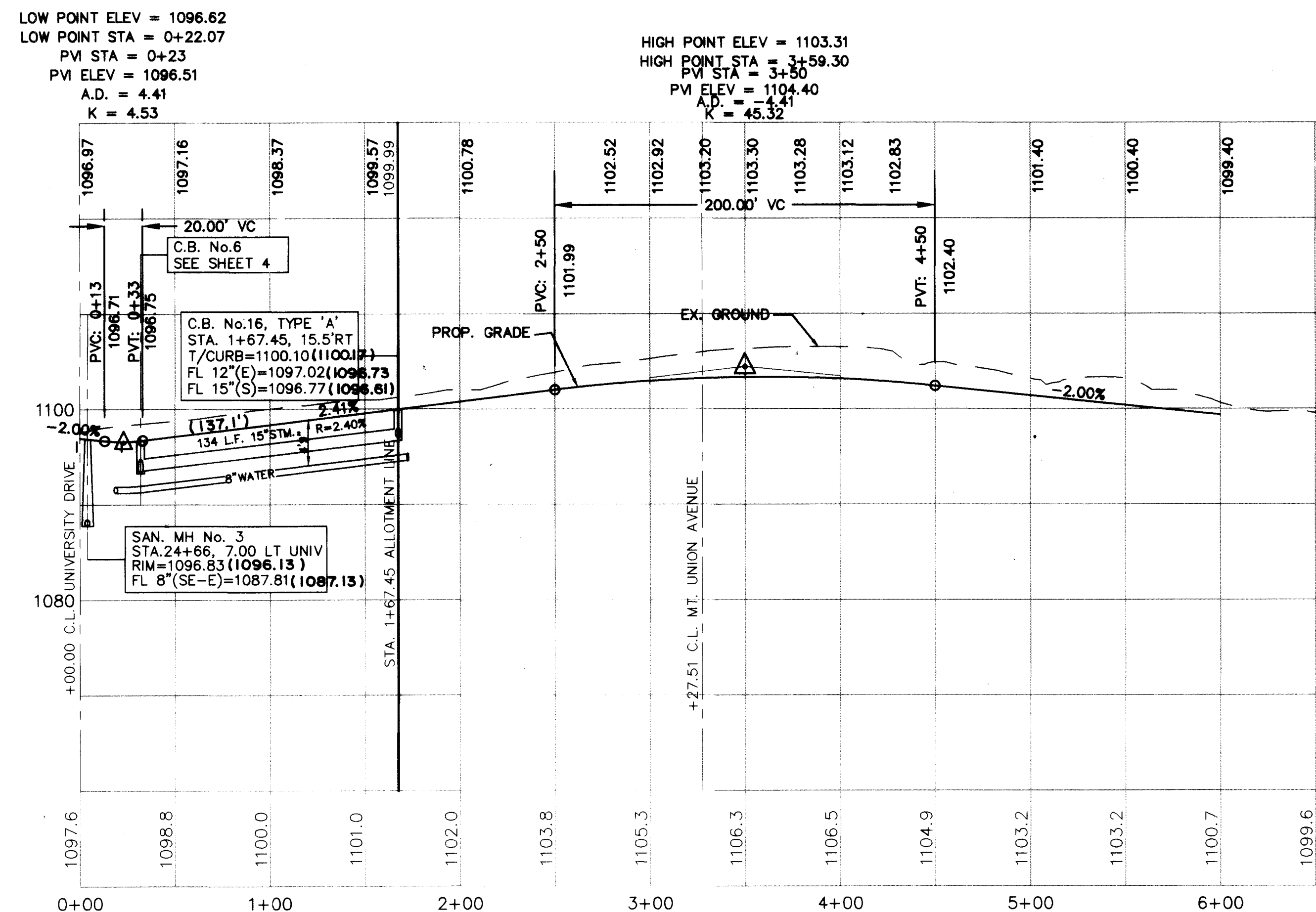
TIFFIN CIRC. S.E. - 50'



JOHN CARROLL DRIVE S.E. - 50'



* A MINIMUM DISTANCE OF 12" VERTICAL AND 4' HORIZONTAL SEPARATION BETWEEN WATERLINE AND STORM SEWERS MUST BE MAINTAINED.
* A MINIMUM DISTANCE OF 18" VERTICAL AND 10' HORIZONTAL SEPARATION BETWEEN WATERLINE AND SANITARY SEWERS MUST BE MAINTAINED.



TIFFIN CIRC. / JOHN CARROLL DRIVE

BENCH MARK
60d SPIKE FOUND 1.2' UP SOUTH SIDE OF A 12" OAK TREE; 32.8' N 10' W OF THE S.W. CORNER OF THE N.W. QTR. OF SECTION 22, T-10(PERRY), R-9.
ELEV 1079.735

BENCH MARK
60d SPIKE FOUND 0.5' UP NORTH SIDE OF A 12" OAK TREE; 42' S 12' W OF THE 5/8" IRON BAR FOUND WITH 'DEIBEL' 6673 PLASTIC YELLOW CAP.
ELEV 1074.625

SCALE: HORIZ. 1" = 50' VERT. 1" = 10'

DATE: NOVEMBER 1998

FIELD BOOK NO. N/A

SHEET 5 OF 9

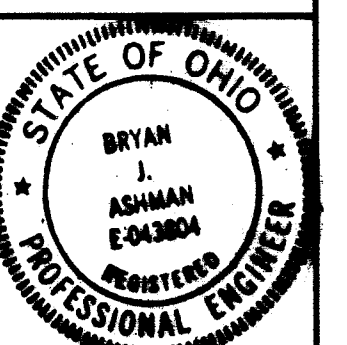
BRYAN J. ASHMAN
JEROLD E. GIBB

COOPER & ASSOCIATES, L.L.P.
ENGINEERS AND SURVEYORS

PHONE (330) 452-5731
FAX (330) 452-9110

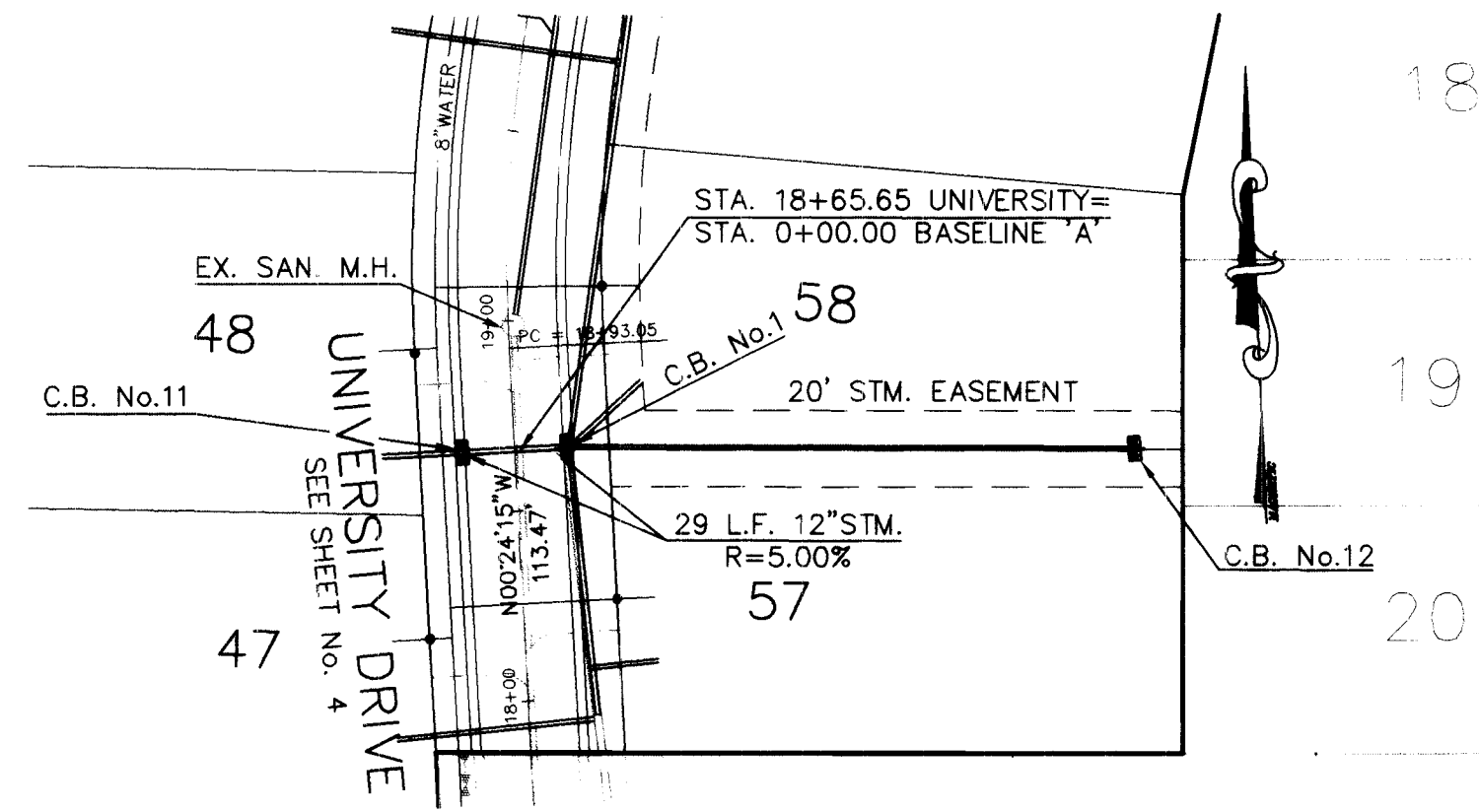
1359 MARKET AVENUE, NORTH CANTON, OHIO 44714

PLAN & PROFILE SHEET
UNIVERSITY VILLAGE
PHASE 2
CITY OF MASSILLON
STARK COUNTY, OHIO
FOR: P.R.M.D.C. LTD.

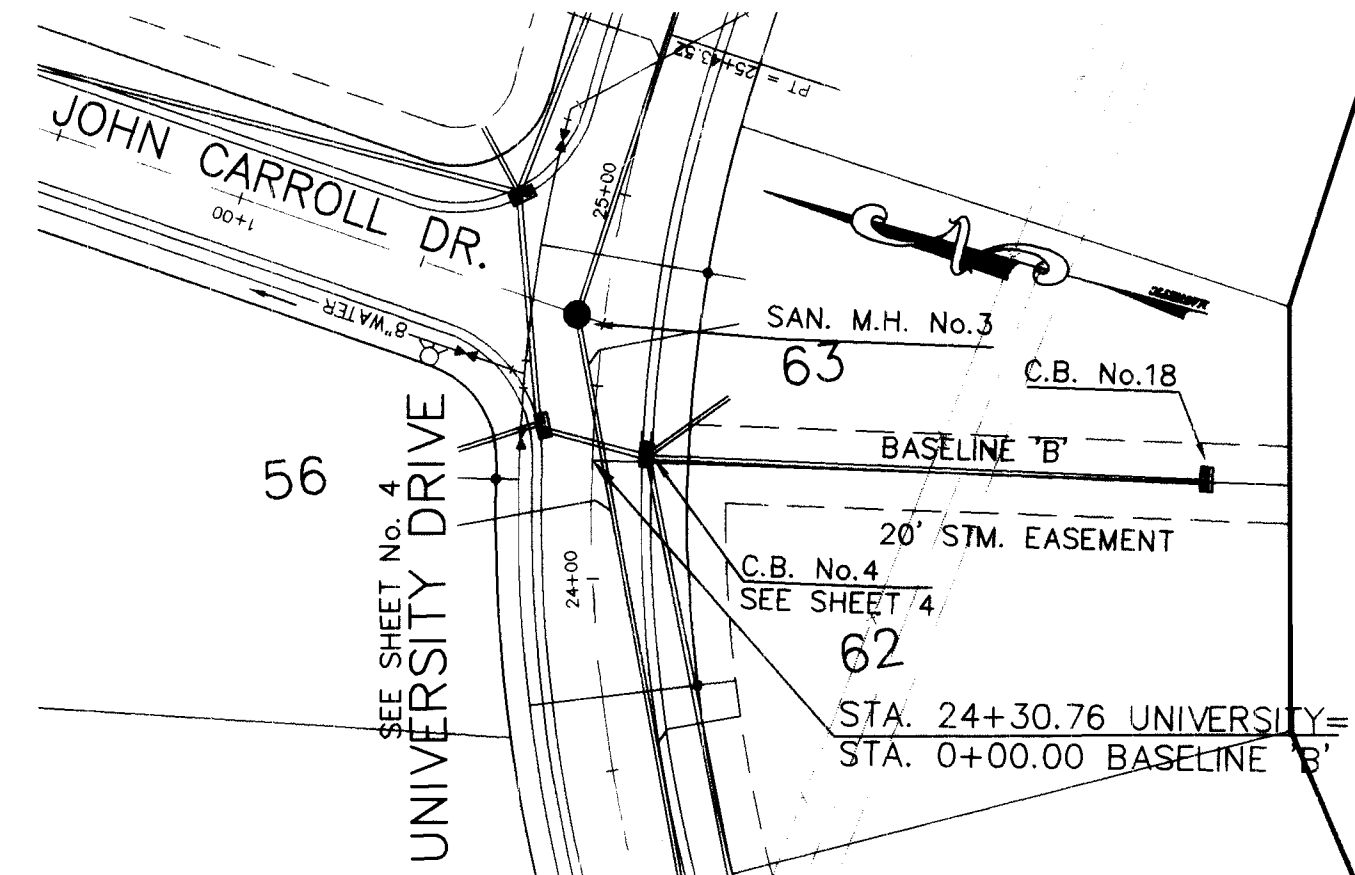


NO.	DATE	BY	REVISIONS
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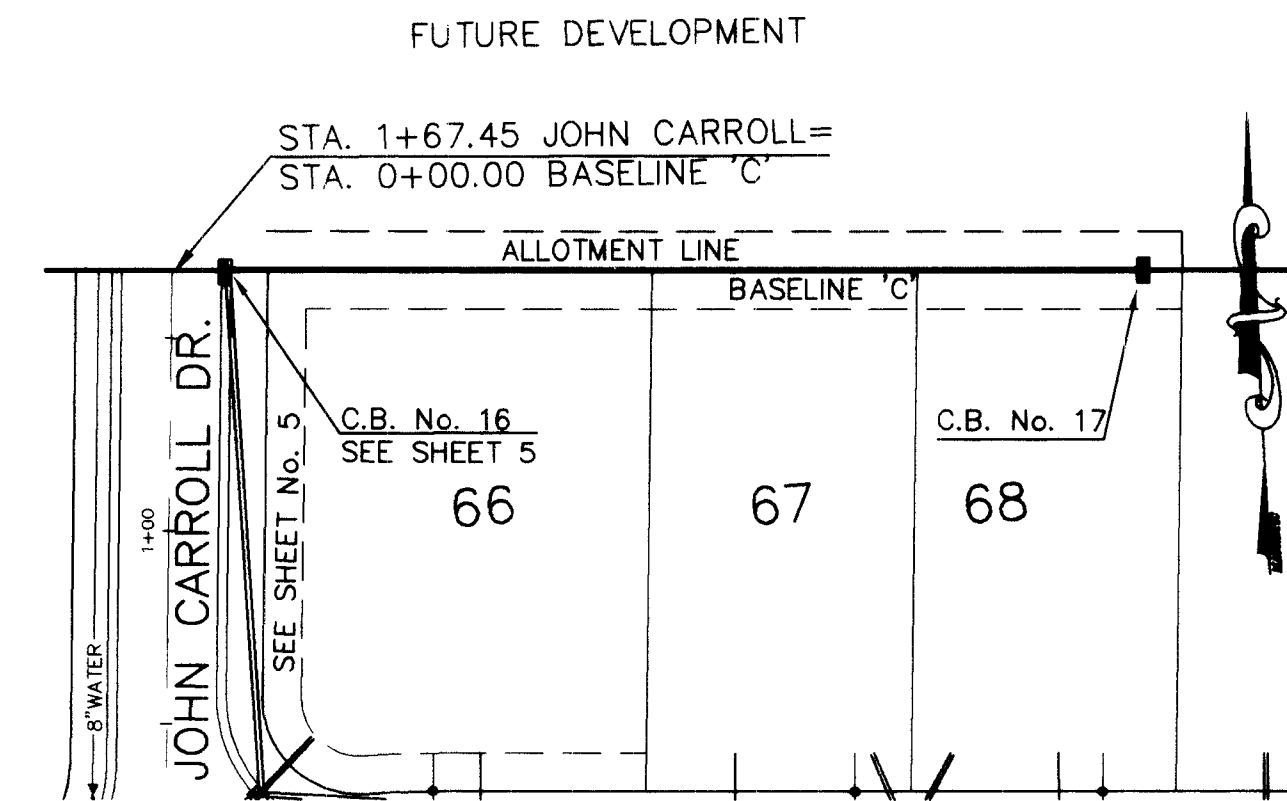
PROJECT: 97203B



BASELINE 'A'

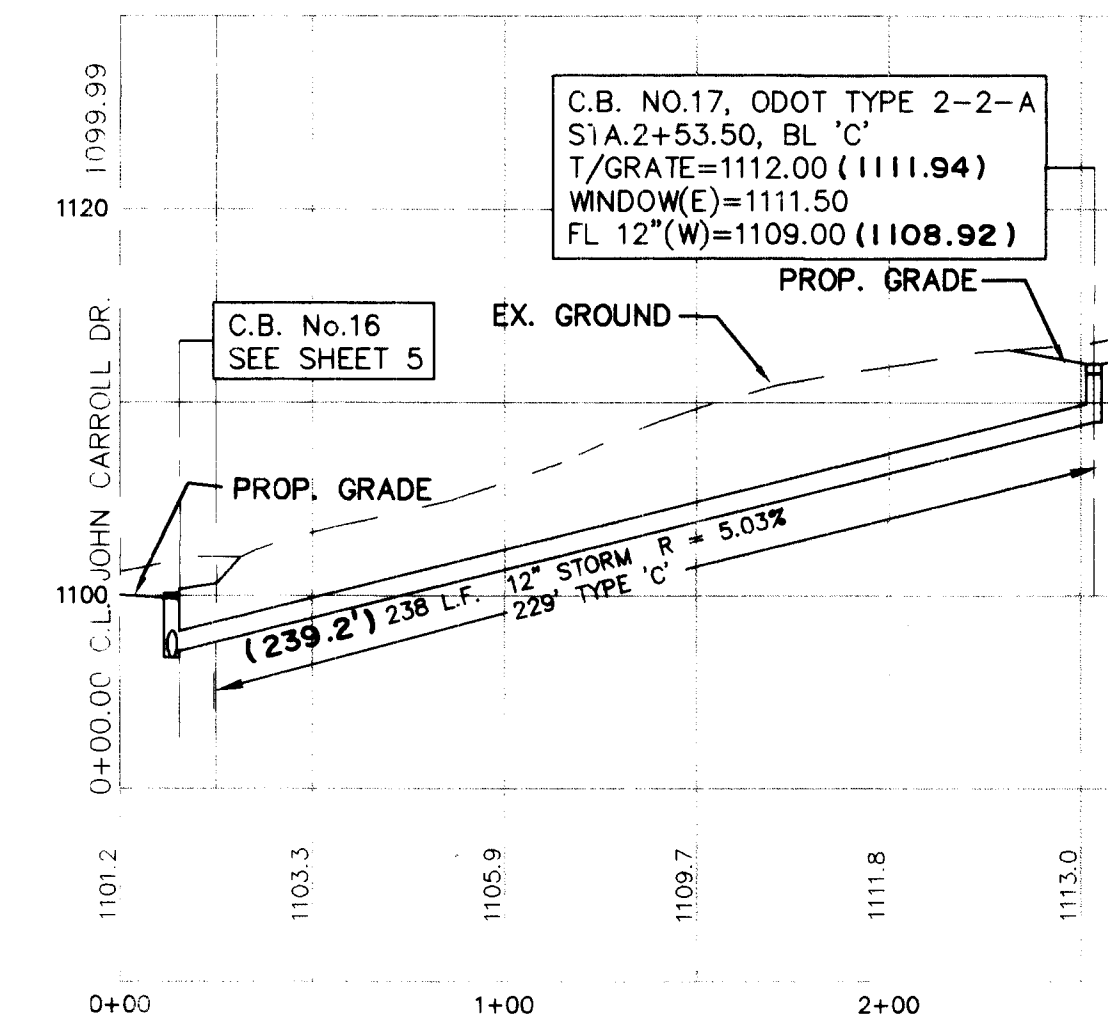
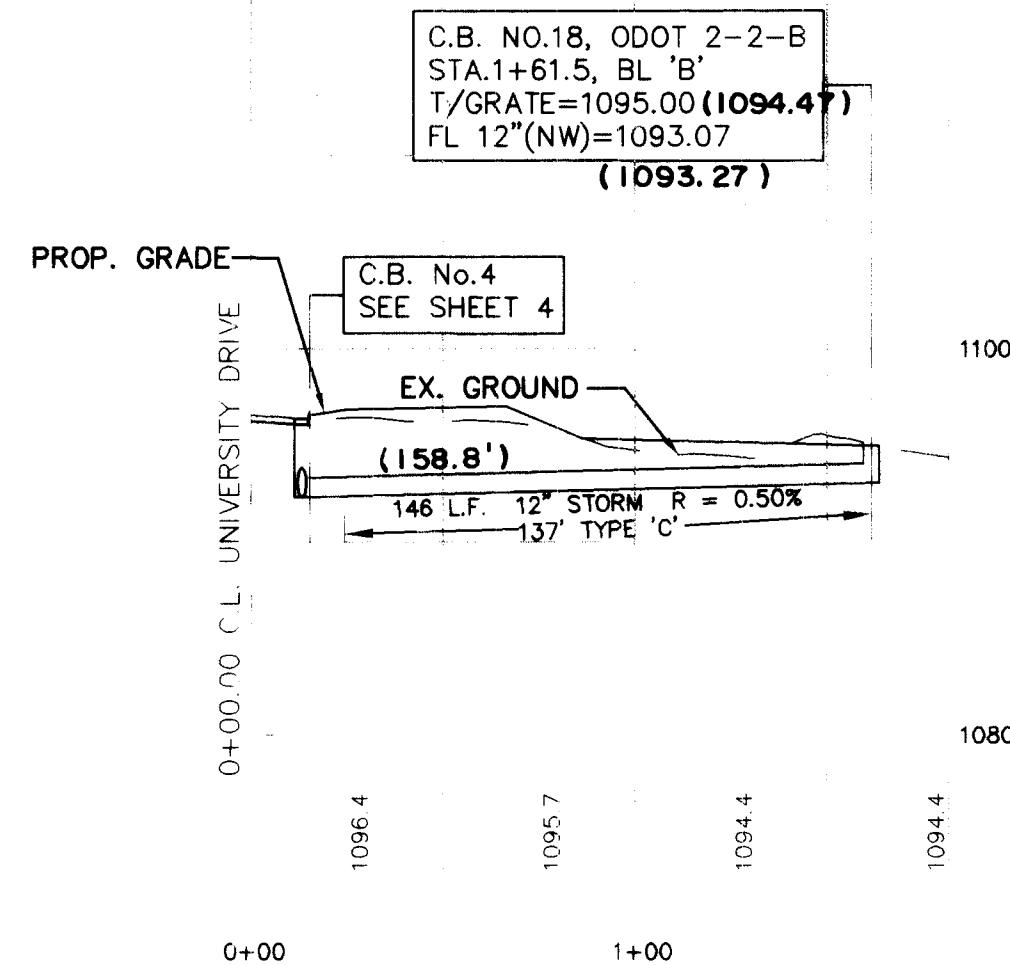
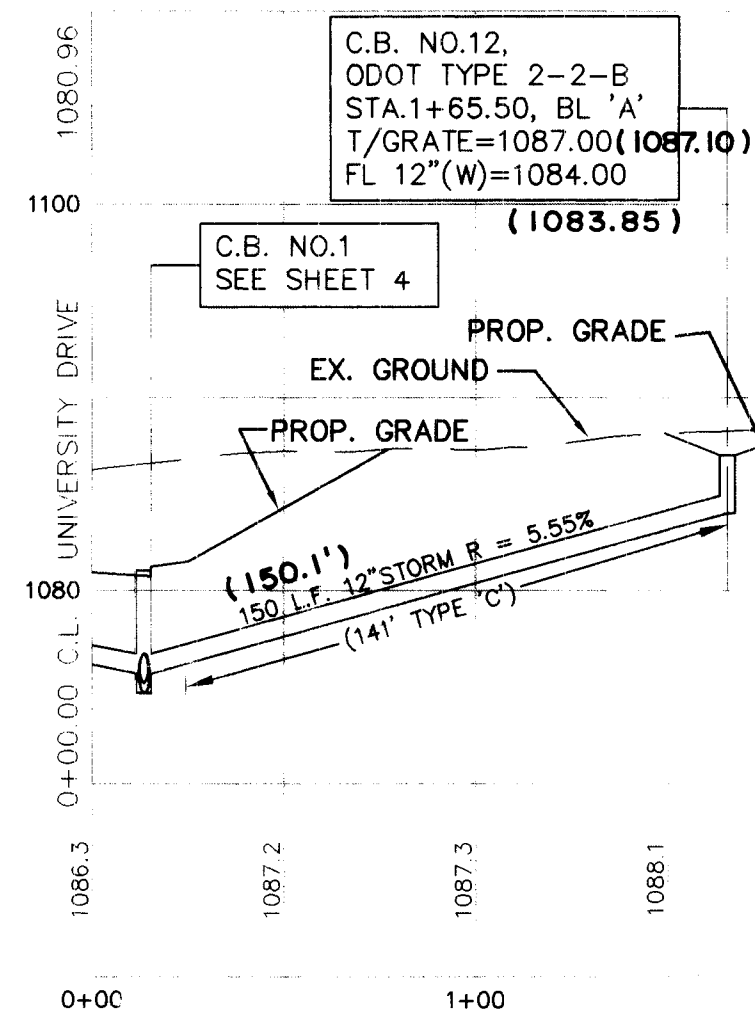


BASELINE 'B'



BASELINE 'C'

- * A MINIMUM DISTANCE OF 12" VERTICAL AND 4" HORIZONTAL SEPARATION BETWEEN WATERLINE AND STORM SEWERS MUST BE MAINTAINED.
- * A MINIMUM DISTANCE OF 18" VERTICAL AND 10' HORIZONTAL SEPARATION BETWEEN WATERLINE AND SANITARY SEWERS MUST BE MAINTAINED.



BENCH MARK
60d SPIKE FOUND 1.2' UP SOUTH SIDE OF A 12" OAK TREE; 32.8' N 10' W OF THE S.W. CORNER OF THE N.W. QTR. OF SECTION 22, T-10(PERRY), R-9.
ELEV 1079.735

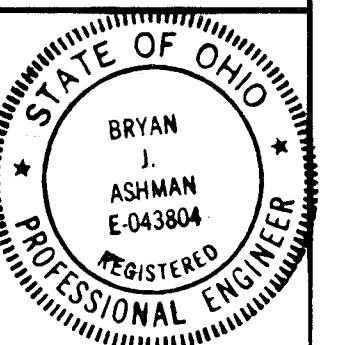
BENCH MARK
60d SPIKE FOUND 0.5' UP NORTH SIDE OF A TWIN 15" OAK TREE; 42' S 12' W OF THE 5/8" IRON BAR FOUND WITH 'DEIBEL' 6673 PLASTIC YELLOW CAP.
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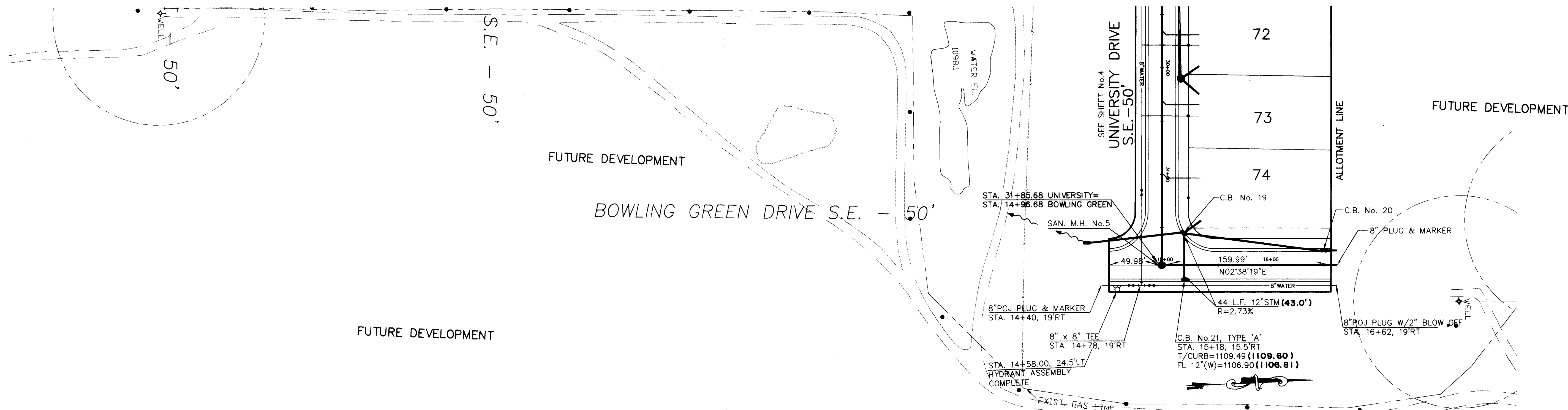
HOR. 1" = 50'	VERT. 1" = 10'
DATE: NOVEMBER, 1998	FIELD BOOK No. N/A
	SHEET 6 OF 9

BRYAN J. ASHMAN
JEROLD E. GEB

COOPER & ASSOCIATES, L.L.P.
ENGINEERS AND SURVEYORS
1359 MARKET AVENUE, NORTH CANTON, OHIO 44714
PHONE (330) 452-5731
FAX No. (330) 452-9110

STORM BASELINE PLAN & PROFILE SHEET
UNIVERSITY VILLAGE
PHASE 2
CITY OF MASSILLON
STARK COUNTY, OHIO
FOR : P.R.M.D.C. LTD.

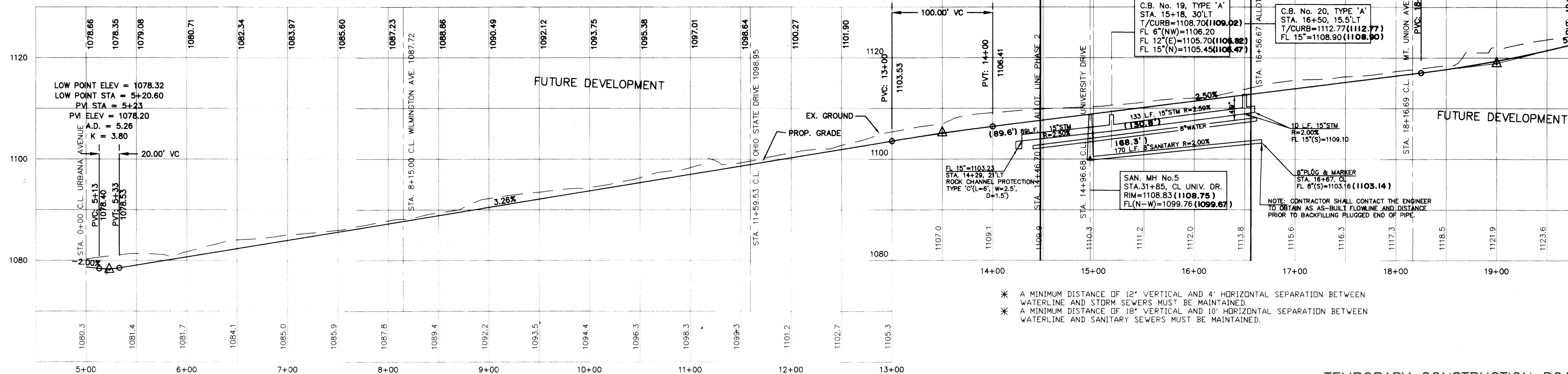




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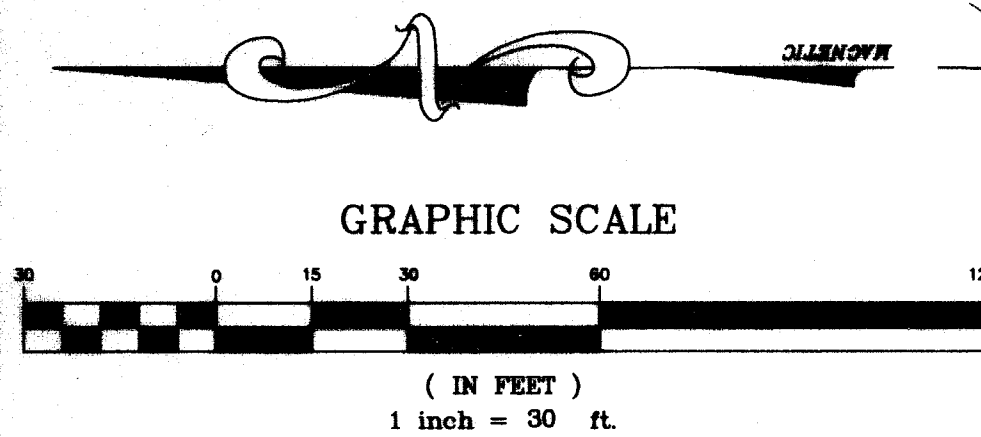
BOWLING GREEN DRIVE N.W. - 50'



TEMPORARY CONSTRUCTION ROAD
 BOWLING GREEN DRIVE

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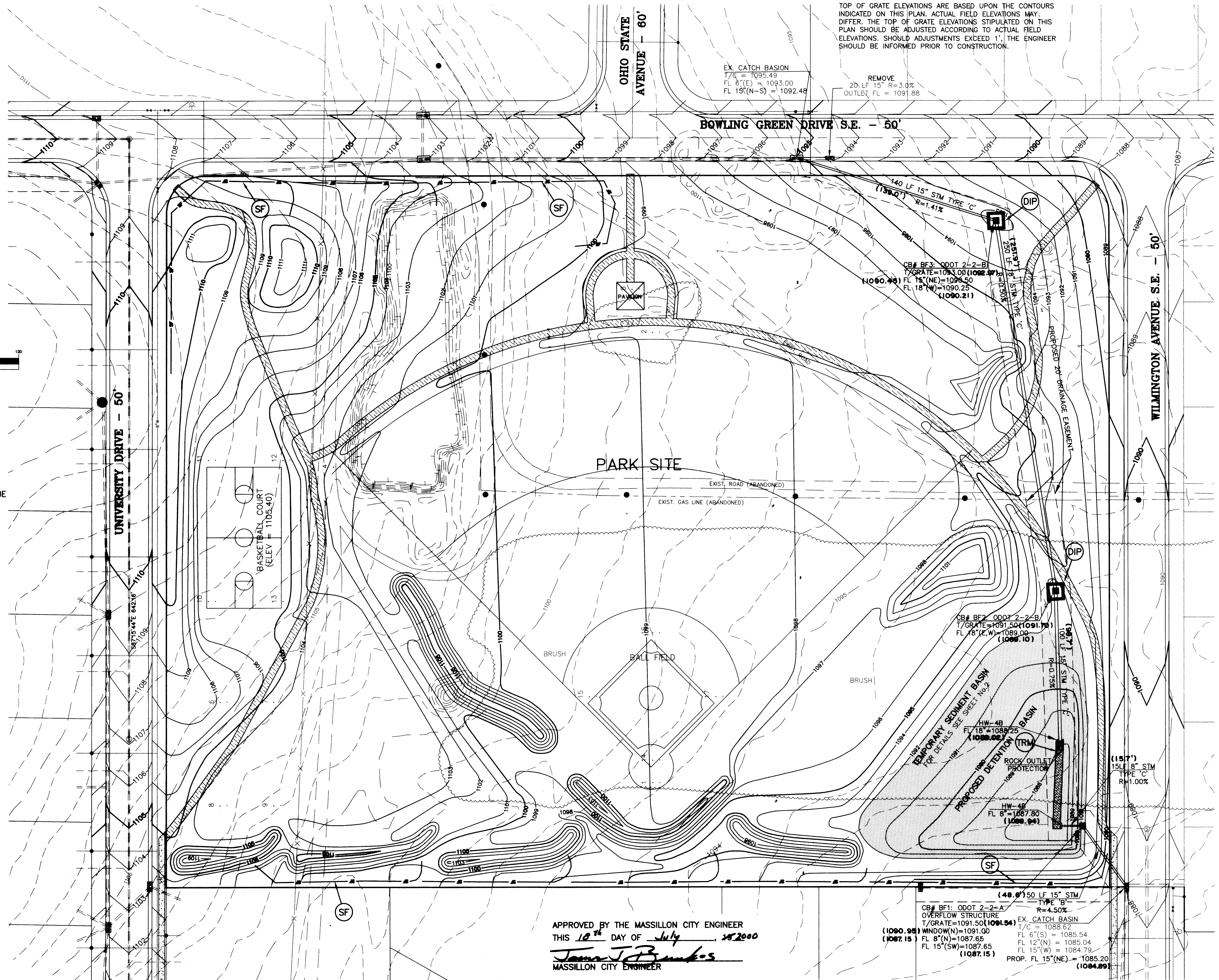
EROSION AND SEDIMENT CONTROL

ALL DISTURBED AREAS SHALL BE PERMANENTLY
STABILIZED WITH SEED AND MULCH WITHIN SEVEN
DAYS OF FINAL GRADING.

A TEMPORARY CONSTRUCTION ENTRANCE SHALL BE
CONSTRUCTED AT THE LOCATION WHERE
CONSTRUCTION VEHICLES INGRESS AND EGRESS
THE SITE ONTO PAVED SURFACES. THE LOCATION
OF THE CONSTRUCTION IS AT THERE DISCRETION
OF THE CONTRACTOR BUT ALL CONSTRUCTION
VEHICLES WILL BE RESTRICTED TO USING THAT
ONE LOCATION.

- (DIP) = DROP INLET PROTECTION
- (SF) = SILT FENCE
- (TRM) = TURF REINFORCEMENT MAT
(RECOMMENDED ALTERNATIVE TO
DUMPED ROCK OUTLET PROTECTION)
- (CE) = TEMP. CONSTRUCTION ENTRANCE

FOR E & SC NOTES AND DETAILS
SEE SHEET No.3



CATCH BASIN NOTE:
TOP OF GRATE ELEVATIONS ARE BASED UPON THE CONTOURS
INDICATED ON THIS PLAN. ACTUAL FIELD ELEVATIONS MAY
DIFFER. THE TOP OF GRATE ELEVATIONS STIPULATED ON THIS
PLAN SHOULD BE ADJUSTED ACCORDING TO ACTUAL FIELD
ELEVATIONS. SHOULD ADJUSTMENTS EXCEED 1', THE ENGINEER
SHOULD BE INFORMED PRIOR TO CONSTRUCTION.

EX. CATCH BASIN
T/G = 1095.49
FL 6"(E) = 1093.00
FL 15"(N-S) = 1092.48

REMOVE
20' LF 15" R=3.0%
OUTLET FL = 1091.88

CB# BF3: ODOT 2-2-B
T/GRADE=1093.00(1092.48)
FL 15"(NE)=1096.50
FL 18"(W)=1090.25
(1090.21)

CB# BF2: ODOT 2-2-B
T/GRADE=1091.50(1091.70)
FL 18"(E-W)=1089.00
(1089.10)

CB# BF1: ODOT 2-2-A
OVERFLOW STRUCTURE
T/GRADE=1091.50(1091.54)
(1090.98) WINDOW(N)=1091.00
(1087.15) FL 8"(N)=1087.65
FL 15"(SW)=1087.65
(1087.15)

EX. CATCH BASIN
T/C = 1088.62
FL 6"(S) = 1085.54
FL 12"(N) = 1085.04
FL 15"(W) = 1084.79
PROP. FL 15"(NE) = 1085.20
(1084.89)

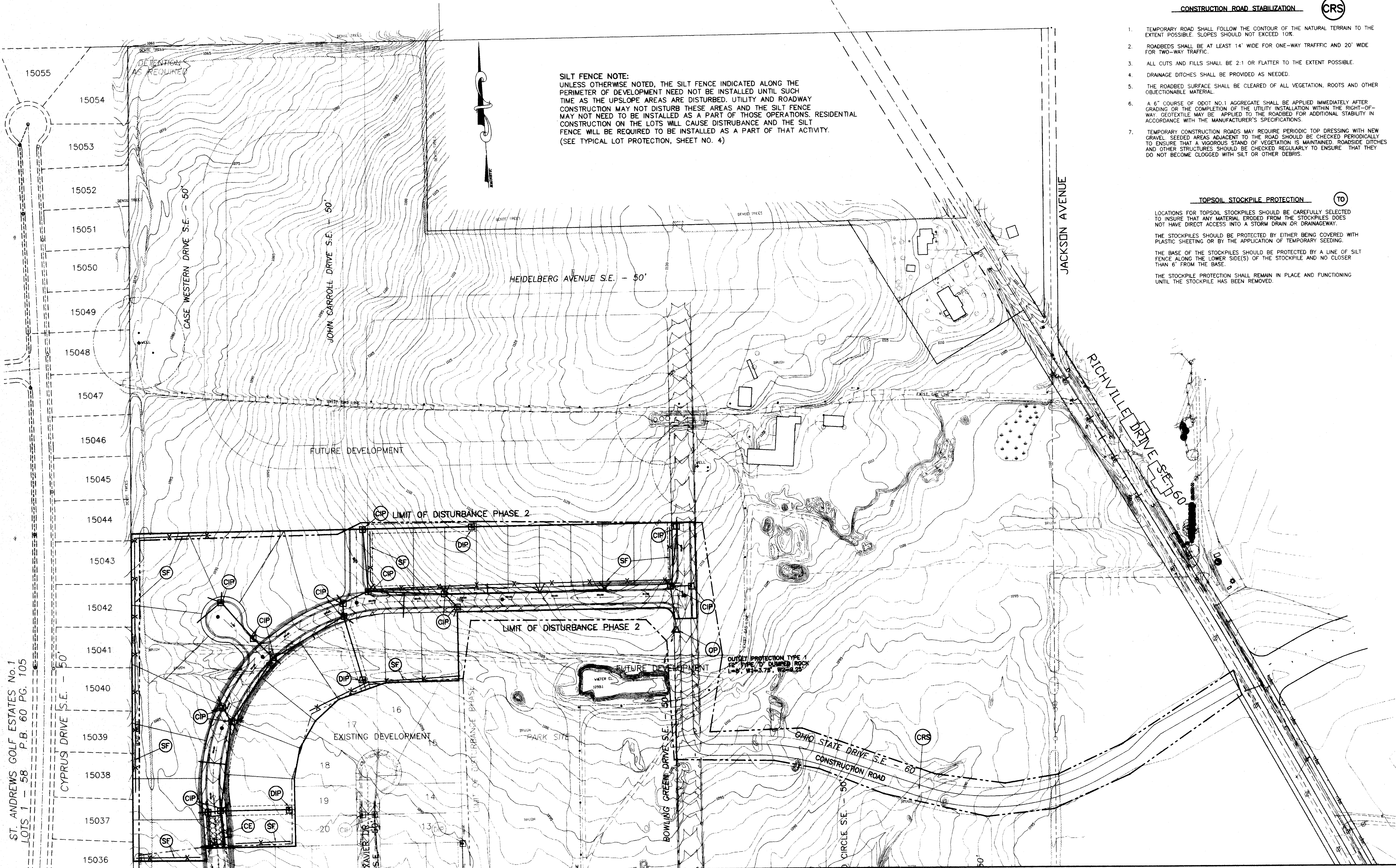
APPROVED BY THE MASSILLON CITY ENGINEER
THIS 10th DAY OF July, 2000
James J. Bunko
MASSILLON CITY ENGINEER

DRAINAGE AND EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1" = 30' - 1" = 30' - 1" = 30'		DATE: JUNE 2000		FIELD BOOK NO.		SHEET 1 OF 3	
BRYAN J. ASHMAN		COOPER & ASSOCIATES, LLP		ENGINEERS AND SURVEYORS		PHONE (330) 452-5731 FAX NO. (330) 452-9110	
JEROLD E. GEIB		1359 MARKET ALBANY, OHIO CANTON, OHIO 44714		DRAINAGE AND EROSION AND SEDIMENT CONTROL PLAN		UNIVERSITY VILLAGE ASSOCIATION PROPERTY	
SIDWALKS	6/7	CHB	10/13	CHB	DATE	BY	REVISIONS
ADD BALL FIELD	10/13	CHB					
DWG BY: CHB_CHK'D BY: BJA				97203BF			

PROJ.# 97203AE

STORM WATER POLLUTION PREVENTION PLAN
UNIVERSITY VILLAGE



SILT FENCE NOTE:
UNLESS OTHERWISE NOTED, THE SILT FENCE INDICATED ALONG THE PERIMETER OF DEVELOPMENT NEED NOT BE INSTALLED UNTIL SUCH TIME AS THE UPSLOPE AREAS ARE DISTURBED. UTILITY AND ROADWAY CONSTRUCTION MAY NOT DISTURB THESE AREAS AND THE SILT FENCE MAY NOT NEED TO BE INSTALLED AS A PART OF THOSE OPERATIONS. RESIDENTIAL CONSTRUCTION ON THE LOTS WILL CAUSE DISTURBANCE AND THE SILT FENCE WILL BE REQUIRED TO BE INSTALLED AS A PART OF THAT ACTIVITY. (SEE TYPICAL LOT PROTECTION, SHEET NO. 4)

CONSTRUCTION ROAD STABILIZATION



1. TEMPORARY ROAD SHALL FOLLOW THE CONTOUR OF THE NATURAL TERRAIN TO THE EXTENT POSSIBLE. SLOPES SHOULD NOT EXCEED 10%.
2. ROADBEDS SHALL BE AT LEAST 14' WIDE FOR ONE-WAY TRAFFIC AND 20' WIDE FOR TWO-WAY TRAFFIC.
3. ALL CUTS AND FILLS SHALL BE 2:1 OR FLATTER TO THE EXTENT POSSIBLE.
4. DRAINAGE DITCHES SHALL BE PROVIDED AS NEEDED.
5. THE ROADBED SURFACE SHALL BE CLEARED OF ALL VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. A 6" COURSE OF ODOT NO. 1 AGGREGATE SHALL BE APPLIED IMMEDIATELY AFTER GRADING OR THE COMPLETION OF THE UTILITY INSTALLATION WITHIN THE RIGHT-OF-WAY. GEOTEXTILE MAY BE APPLIED TO THE ROADBED FOR ADDITIONAL STABILITY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
7. TEMPORARY CONSTRUCTION ROADS MAY REQUIRE PERIODIC TOP DRESSING WITH NEW GRAVEL. SEEDED AREAS ADJACENT TO THE ROAD SHOULD BE CHECKED PERIODICALLY TO ENSURE THAT A WOODED STAND OF VEGETATION IS MAINTAINED. ROADSIDE DITCHES AND OTHER STRUCTURES SHOULD BE CHECKED REGULARLY TO ENSURE THAT THEY DO NOT BECOME CLOGGED WITH SILT OR OTHER DEBRIS.

TOPSOIL STOCKPILE PROTECTION



LOCATIONS FOR TOPSOIL STOCKPILES SHOULD BE CAREFULLY SELECTED TO INSURE THAT ANY MATERIAL ERODED FROM THE STOCKPILES DOES NOT HAVE DIRECT ACCESS INTO A STORM DRAIN OR DRAINAGEWAY.

THE STOCKPILES SHOULD BE PROTECTED BY EITHER BEING COVERED WITH PLASTIC SHEETING OR BY THE APPLICATION OF TEMPORARY SEEDING.

THE BASE OF THE STOCKPILES SHOULD BE PROTECTED BY A LINE OF SILT FENCE ALONG THE LOWER SIDE(S) OF THE STOCKPILE AND NO CLOSER THAN 6' FROM THE BASE.

THE STOCKPILE PROTECTION SHALL REMAIN IN PLACE AND FUNCTIONING UNTIL THE STOCKPILE HAS BEEN REMOVED.

MATCH LINE SHEET No. 3

ST. ANDREWS GOLF ESTATES No. 1
LOTS 1 - 58 P.B. 60 PG. 105

PROJ. #97203AE

ADD 98203 PHASE B 11/2/98 C.H.B.

DESCRIPTION DATE BY
REVISIONS
DRAWN BY: C.H.B., CHK'D BY:

STORM WATER POLLUTION PREVENTION PLAN
UNIVERSITY VILLAGE
PHASE 2
CITY OF MASSILLON
STARK COUNTY, OHIO
FOR : P.R.M.D.C. Ltd.

COOPER & ASSOCIATES, LLP.
ENGINEERS AND SURVEYORS
1359 MARKET AVENUE, NORTH CANTON, OHIO 44714
PHONE (330) 452-5731
FAX (330) 452-9110

BRYAN J. ASHMAN
JEROLD E. GEB

DATE: DECEMBER 1998
FIELD BOOK NO. N/A
SHEET 2 OF 6

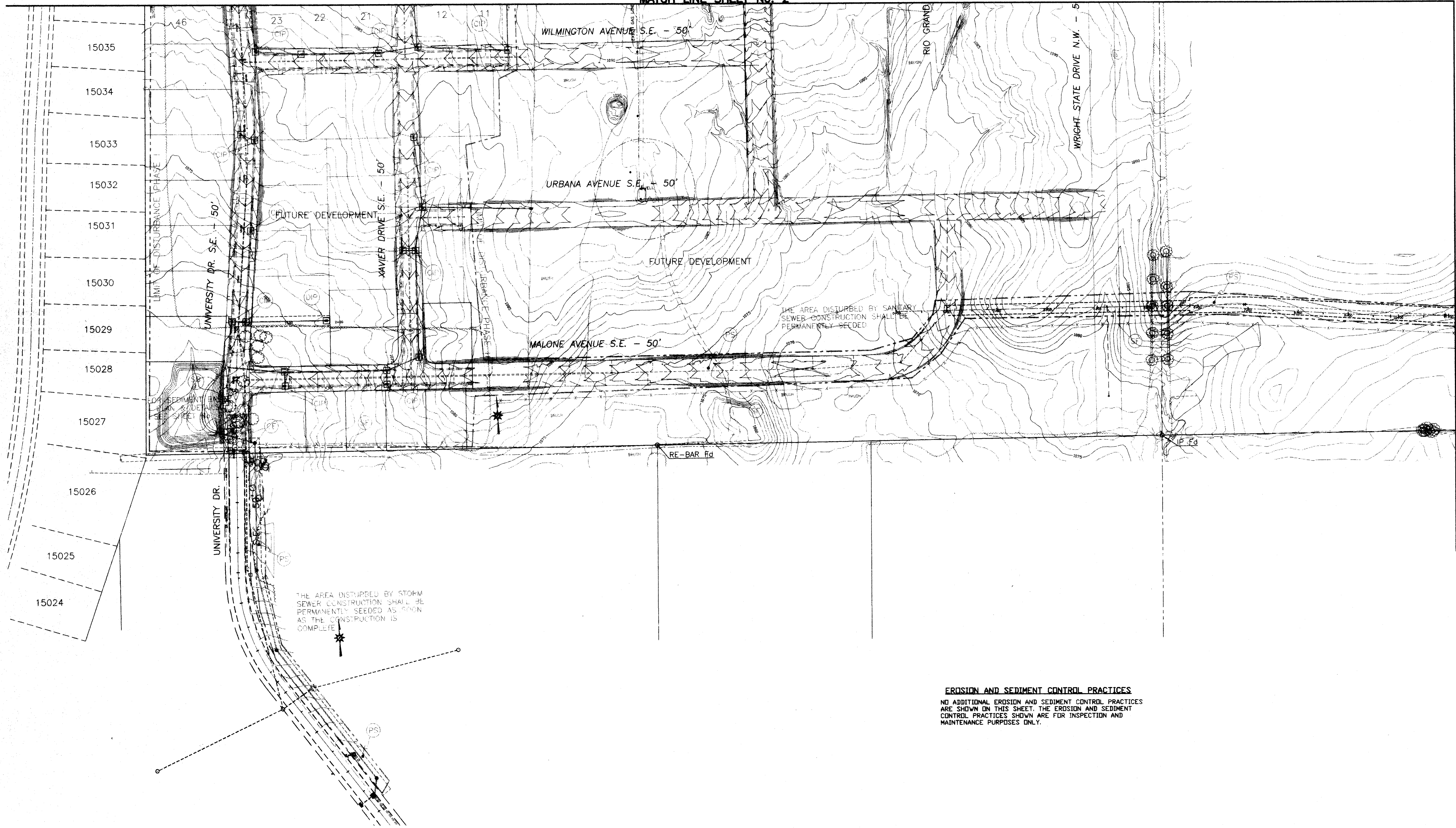
SCALE: 1" = 100' VERT. 1" = 100' HORIZ.

CRS

TO

STORM WATER POLLUTION PREVENTION PLAN
UNIVERSITY VILLAGE

MATCH LINE SHEET No. 2



EROSION AND SEDIMENT CONTROL PRACTICES

NO ADDITIONAL EROSION AND SEDIMENT CONTROL PRACTICES ARE SHOWN ON THIS SHEET. THE EROSION AND SEDIMENT CONTROL PRACTICES SHOWN ARE FOR INSPECTION AND MAINTENANCE PURPOSES ONLY.

MATCH LINE SHEET No. 4

ADD 98203 PHASE 2	12/9	CHB

STORM WATER POLLUTION PREVENTION PLAN
UNIVERSITY VILLAGE
PHASE 2
CITY OF MASSILLON
STARK COUNTY, OHIO
FOR : P.R.M.D.C. Ltd.



COOPER & ASSOCIATES, L.L.P.
ENGINEERS AND SURVEYORS
1359 MARKET AVENUE, NORTH CANTON, OHIO 44714
PHONE (330) 452-5731
FAX No. (330) 452-9110

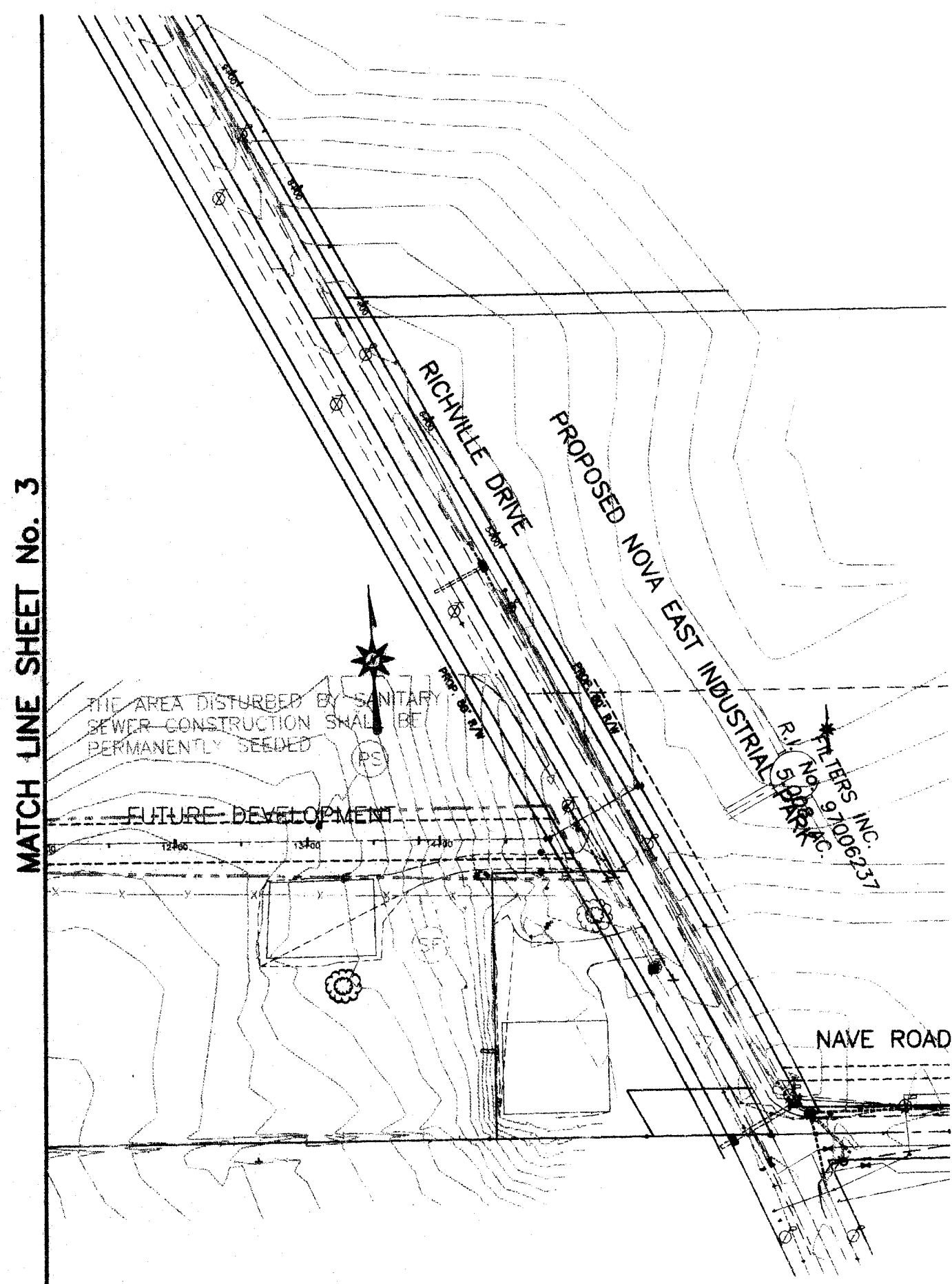
BRYAN J. ASHMAN
JEROLD E. GEIB

DATE	DECEMBER 1998
FIELD BOOK No.	N/A
SHEET	3 OF 6

HOR. 1"=100' SCALE VERT. 1"=10' CNTRS.

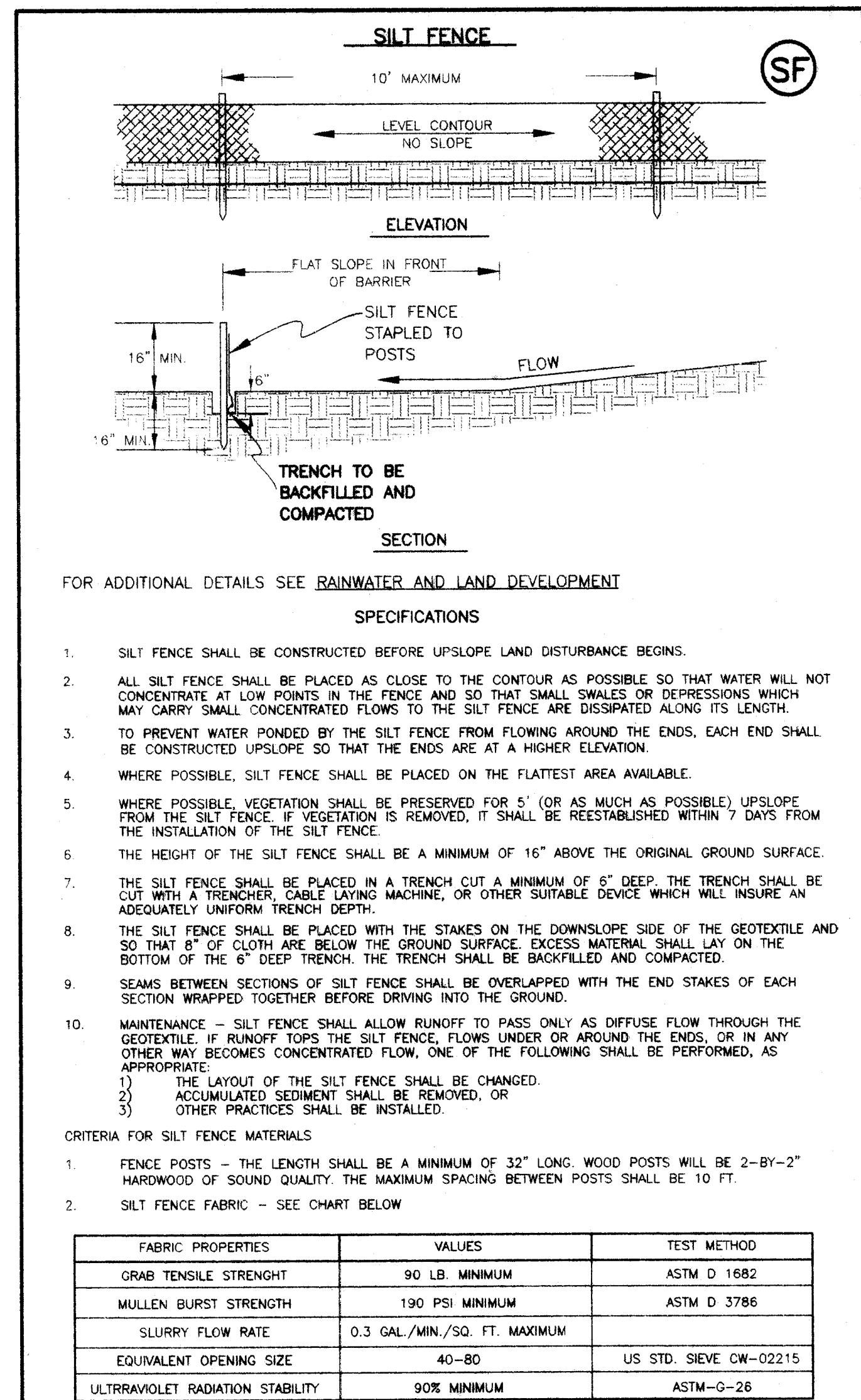
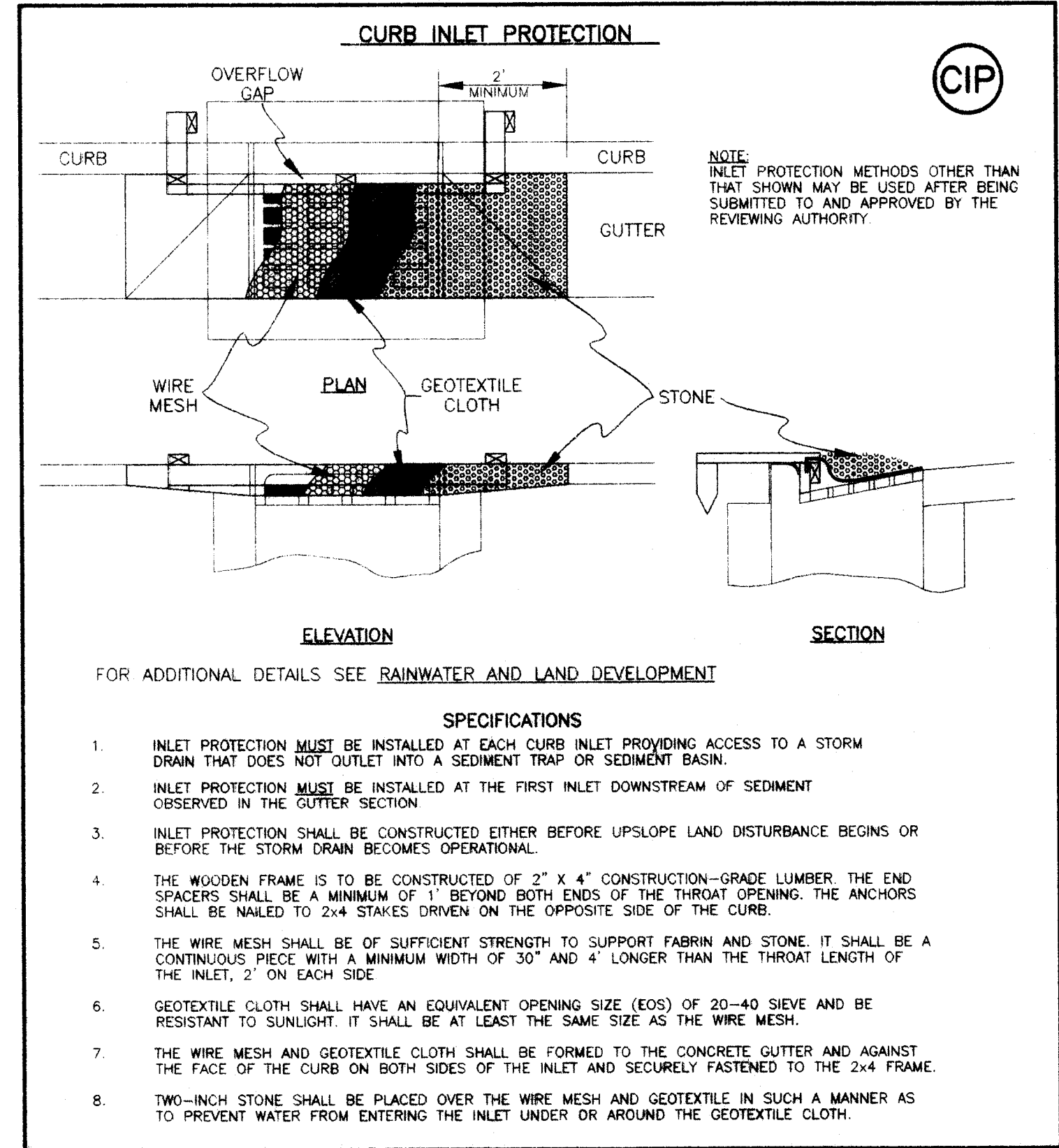
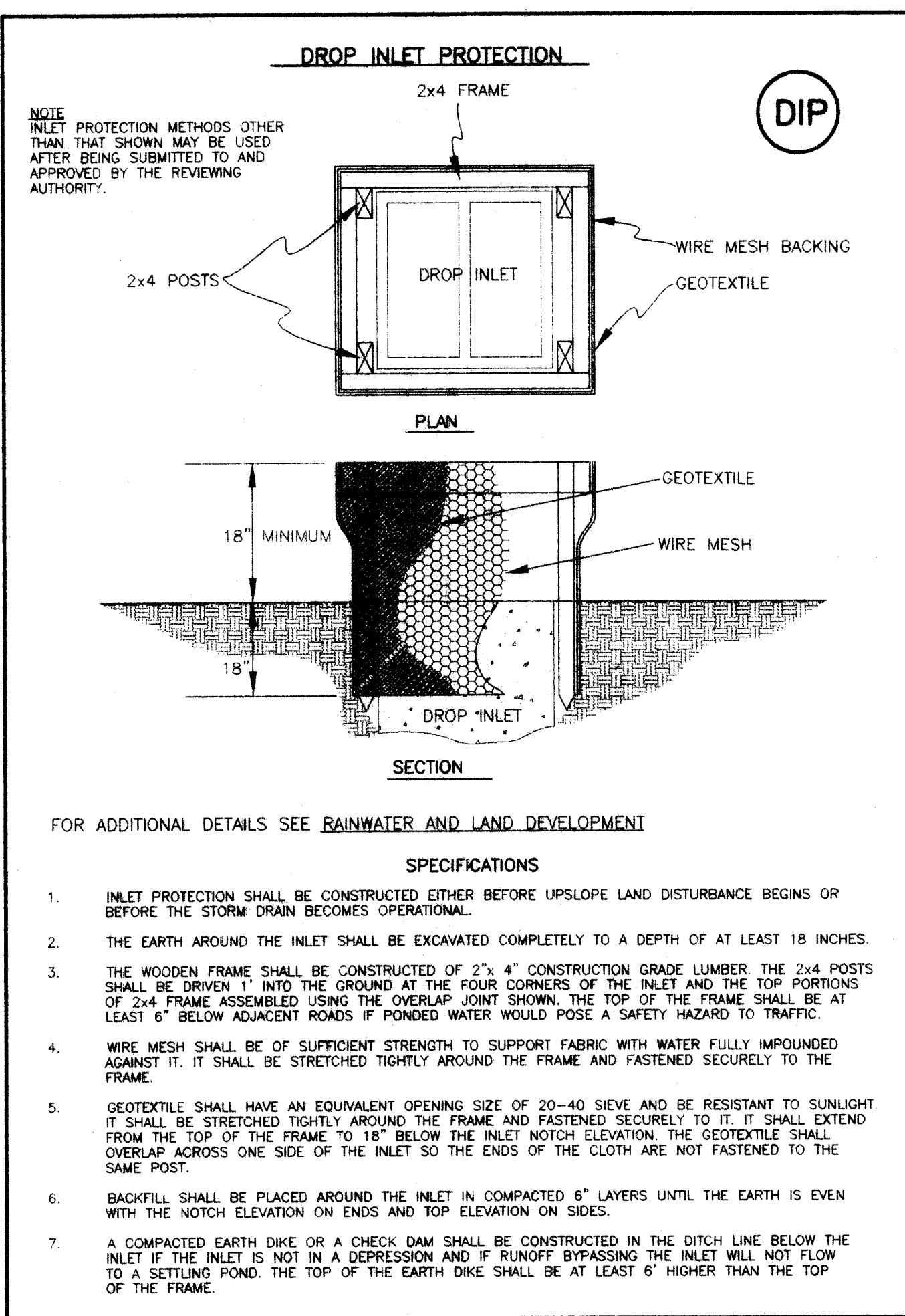
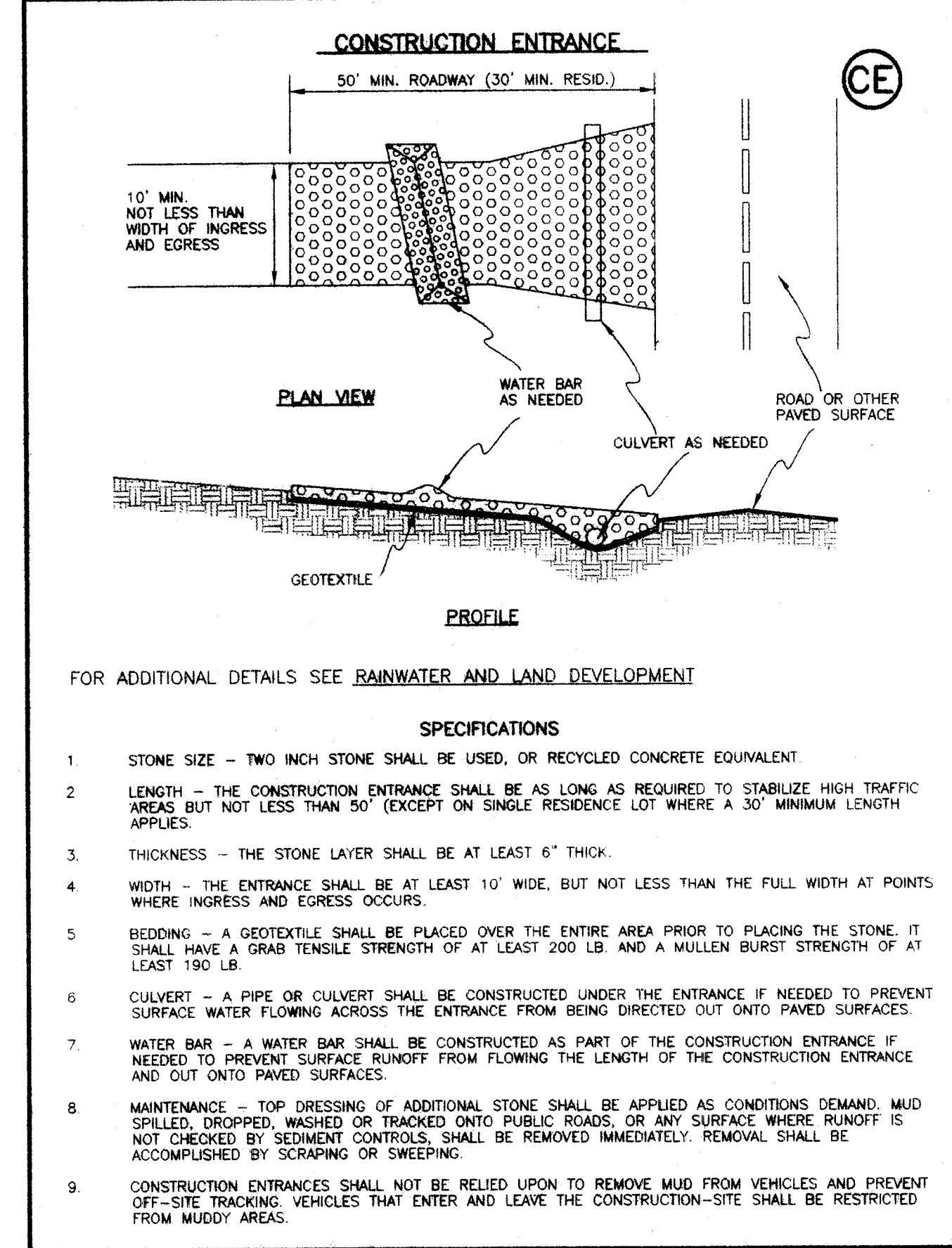
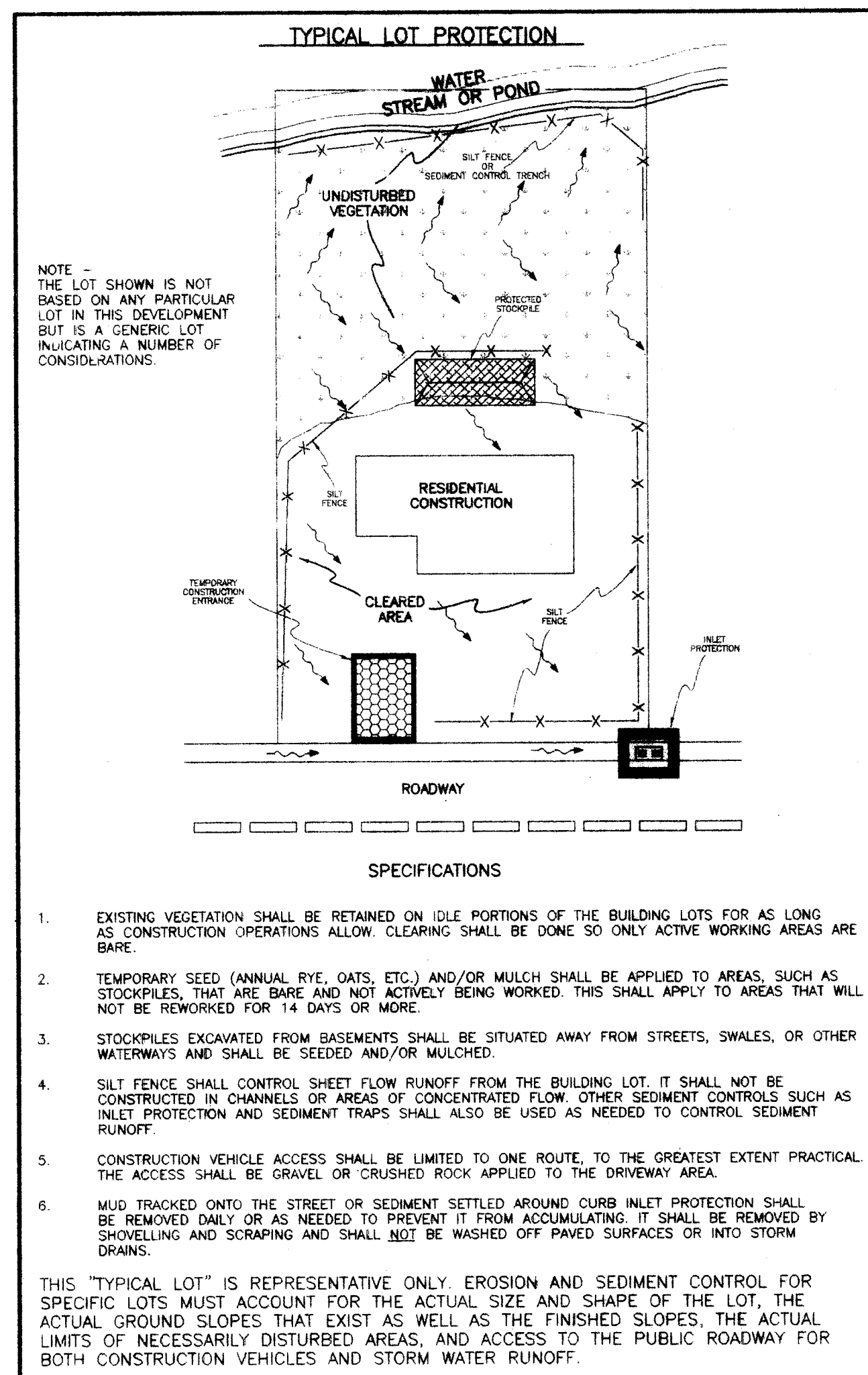
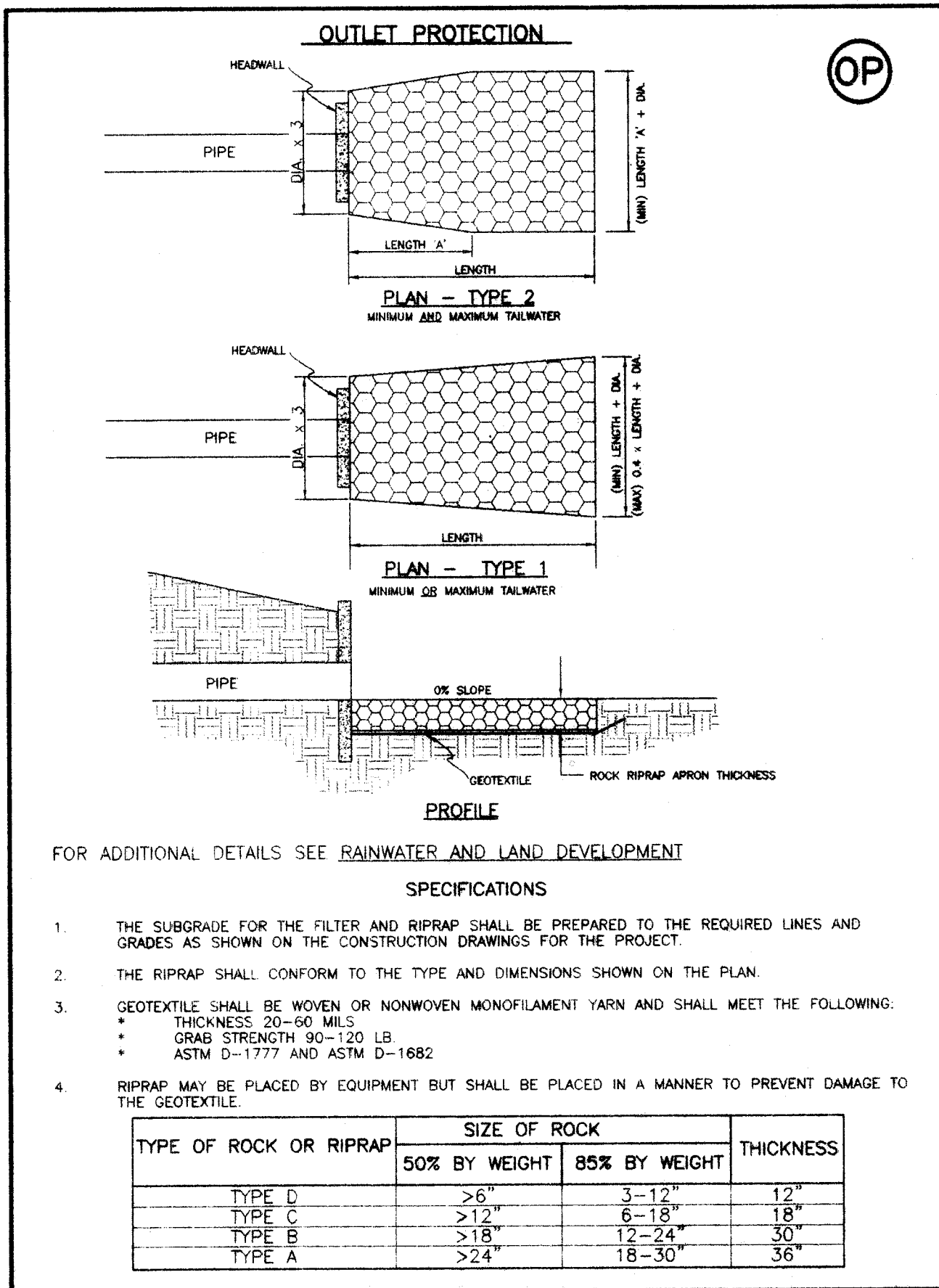
STORM WATER POLLUTION PREVENTION PLAN
UNIVERSITY VILLAGE

MATCH LINE SHEET No. 3



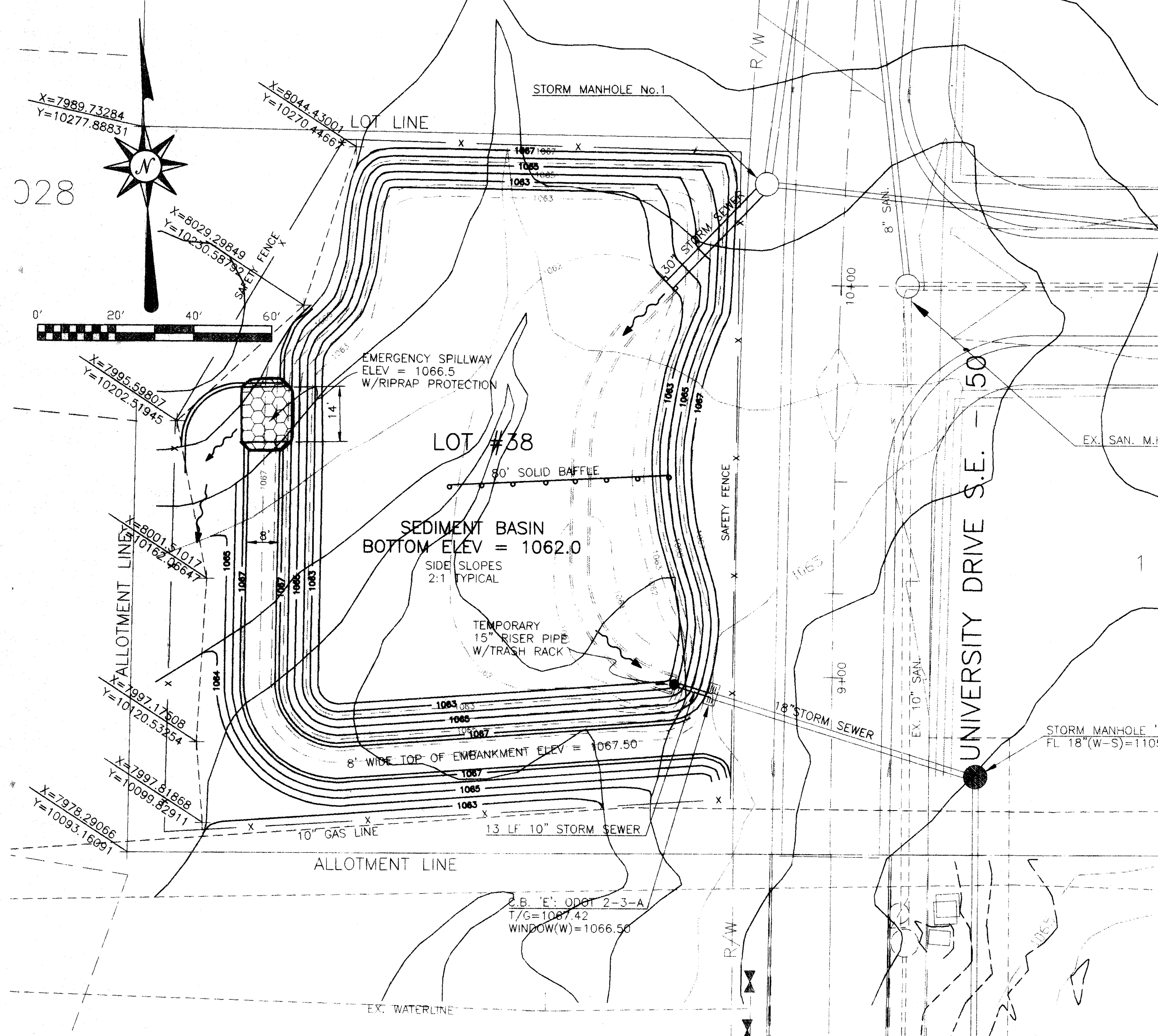
SCALE 1" = 100'

EROSION AND SEDIMENT CONTROL PRACTICES
NO ADDITIONAL EROSION AND SEDIMENT CONTROL PRACTICES
ARE SHOWN ON THIS PLAN. THE EROSION AND SEDIMENT
CONTROL PRACTICES SHOWN ARE FOR INSPECTION AND
MAINTENANCE PURPOSES ONLY.



STORM WATER POLLUTION PREVENTION PLAN

FOR STORM SEWER AND DETENTION
BASIN PLANS AND DETAILS, SEE
SHEET No. 5 AND 10 OF THE
UNIVERSITY VILLAGE PHASE I
CONSTRUCTION DRAWINGS.



SEDIMENT BASIN DESIGN DATA	
DRAINAGE AREA	30.75 AC.
SEDIMENT VOLUME REQUIRED	2,060 C.Y.
EMBANKMENT TOP WIDTH	8'
EMBANKMENT TOP ELEVATION	1067.50
EMBANKMENT SIDE SLOPES	1:1
EMERGENCY SPILLWAY ELEVATION	1066.50
EMERGENCY CHIMNEY WIDTH	10'
RISER CREST ELEVATION	1065.5
DEWATERING ELEVATION	N/A 100%
PIPE OUTLET ELEVATION	1060.07
SEDIMENT CLEANOUT ELEVATION	1063.25
TRASH RACK REQUIRED	YES
BAFFLE REQUIRED	YES
ANTI-DEPTH REQUIRED	NO
WALL REQUIRED	NO

1. SEDIMENT BASINS SHALL BE CONSTRUCTED AND OPERATIONAL BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. SITE PREPARATION---THE AREA UNDER THE EMBANKMENT SHALL BE CLEARED, LOGGED, AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED AS NEEDED TO FACILITATE SEDIMENT CLEANOUT, GULLIES AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. THE SURFACE OF THE FOUNDATION AREA WILL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF THE EMBANKMENT MATERIAL.
3. CUT-OFF TRENCH (IF REQUIRED ON THE PLANS)---THE CUT-OFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF THE EMBANKMENT. THE MINIMUM DEPTH SHALL BE 2 FT. UNLESS SPECIFIED DEEPER ON THE PLANS OR AS A RESULT OF SITE CONDITIONS. THE MINIMUM BOTTOM WIDTH SHALL BE 4 FT., BUT WIDE ENOUGH TO PERMIT OPERATION OF COMPACTION EQUIPMENT. THE TRENCH SHALL BE KEPT FREE OF STANDING WATER DURING BACKFILL OPERATIONS.
4. EMBANKMENT---THE FILL MATERIAL SHALL BE FREE OF ALL SOD, ROOTS, FROZEN SOIL, STONES OVER 6" IN DIAMETER AND ALL OTHER UNDESIRABLE OR OBJECTIONABLE MATERIAL. THE PLACING AND SPREADING OF THE FILL MATERIAL SHALL BE STARTED AT THE LOWEST POINT OF THE FOUNDATION AND THE FILL SHALL BE BROUGHT UP IN APPROX. 6" HORIZONTAL LAYERS OR OF SUCH A THICKNESS THAT THE REQUIRED COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED. CONSTRUCTION OF THE EMBANKMENT SHALL BE OPERATED OVER EACH LAYER IN A WAY THAT WILL RESULT IN THE REQUIRED COMPACTION. SPECIAL EQUIPMENT SHALL BE USED WHEN THE REQUIRED COMPACTION CANNOT BE OBTAINED WITHOUT IT. THE MOISTURE CONTENT OF FILL MATERIAL SHALL BE SUCH THAT THE REQUIRED DEGREE OF COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED.
5. PIPE SPILLWAY---THE PIPE CONDUIT BARREL SHALL BE PLACED ON A FIRM FOUNDATION TO THE LINES AND GRADES SHOWN ON THE PLANS. CONNECTIONS BETWEEN THE RISER AND THE BARREL, THE ANTI-SEEP COLLARS (IF REQUIRED ON THE PLANS) AND BARREL AND ALL PIPE JOINTS SHALL BE WATER-TIGHT. SELECTED BACKFILL MATERIAL SHALL BE PLACED AROUND THE CONDUIT IN LAYERS AND EACH LAYER SHALL BE COMPACTED TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. ALL COMPACTION WITHIN 2' OF THE PIPE SPILLWAY SHALL BE ACCOMPLISHED WITH HAND-OPERATED TAMPING EQUIPMENT.
6. RISER PIPE BASE---THE RISER PIPE SHALL BE SET A MINIMUM OF 6" IN THE CONCRETE BASE.
7. TRASH RACKS---BOTH THE TOP OF THE RISER AND THE DEWATERING ORIFICE SHALL BE FITTED WITH TRASH RACKS FIRMLY FASTENED TO THE RISER PIPE.
8. EMERGENCY SPILLWAY---THE EMERGENCY SPILLWAY SHALL BE CUT IN UNDISTURBED GROUND. ACCURATE CONSTRUCTION OF THE SPILLWAY ELEVATION AND WIDTH IS CRITICAL AND SHALL BE WITHIN A TOLERANCE OF 0.2 FT.
9. SEED AND MULCH---THE SEDIMENT BASIN SHALL BE STABILIZED IMMEDIATELY FOLLOWING ITS CONSTRUCTION. IN NO CASE SHALL THE EMBANKMENT OR EMERGENCY SPILLWAY REMAIN BARE FOR MORE THAN 7 DAYS.
10. SEDIMENT CLEANOUT---SEDIMENT SHALL BE REMOVED AND THE SEDIMENT BASIN RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS FILLED ONE-HALF OF THE POND'S ORIGINAL DEPTH OR AS INDICATED ON THE PLANS. SEDIMENT REMOVED FROM THE BASIN SHALL BE PLACED SO THAT IT WILL NOT ERODE.
11. FINAL REMOVAL---TEMPORARY STRUCTURES OR MODIFICATIONS USED FOR SEDIMENT CONTROL DURING CONSTRUCTION SHALL BE REMOVED ONLY AFTER THE UPSTREAM DRAINAGE AREA IS STABILIZED OR AS INDICATED IN THE PLANS. DEWATERING AND REMOVAL SHALL NOT CAUSE SEDIMENT TO BE DISCHARGED.
12. SEDIMENT SHALL BE REMOVED AS NEEDED TO ACHIEVE THE DESIGN DEPTH AND DIMENSIONS OF THE PERMANENT POND.

SAFETY NOTE:
SEDIMENT BASINS AND SEDIMENT TRAPS ARE VERY HAZARDOUS INSTALLATIONS, ESPECIALLY FOR CHILDREN.
IT IS ESSENTIAL THAT SEDIMENT BASINS AND SEDIMENT TRAPS BE FENCED TO PREVENT UNAUTHORIZED
PERSONS FROM GAINING ACCESS TO THE POOL AREA. THE FENCE SHOULD REMAIN IN PLACE UNTIL THE
SEDIMENT TRAP OR SEDIMENT BASIN IS COMPLETELY REMOVED.

EXISTING SEDIMENT BASIN PLAN

THE SEDIMENT BASIN SHOWN ON THIS PLAN WAS CONSTRUCTED WITH UNIVERSITY VILLAGE PHASE 1. THIS PLAN IS INCLUDED FOR INSPECTION AND MAINTENANCE PURPOSES ONLY.

BENCH MARK

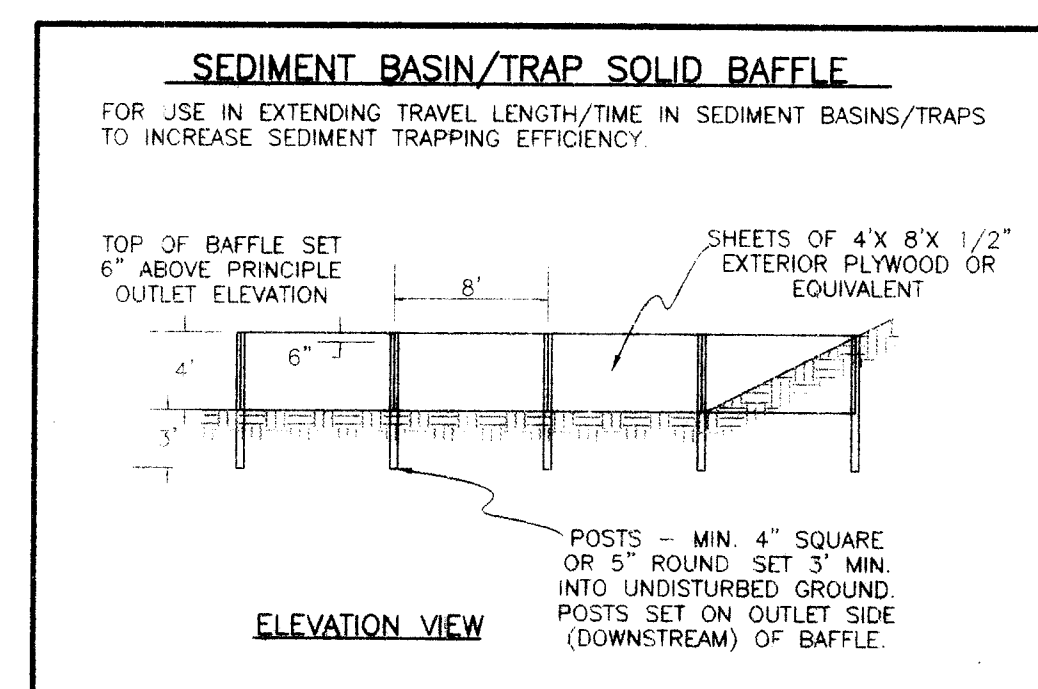
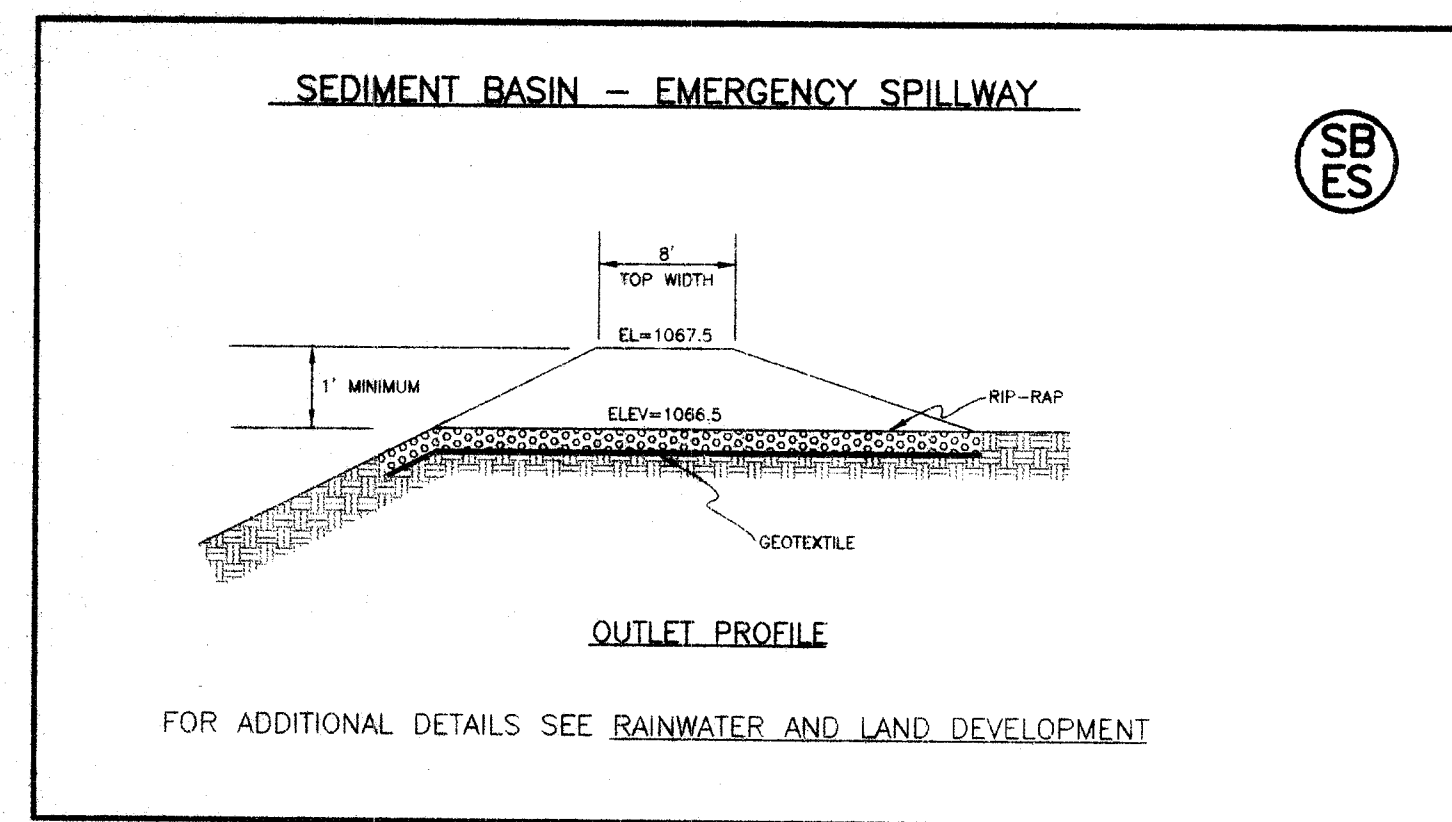
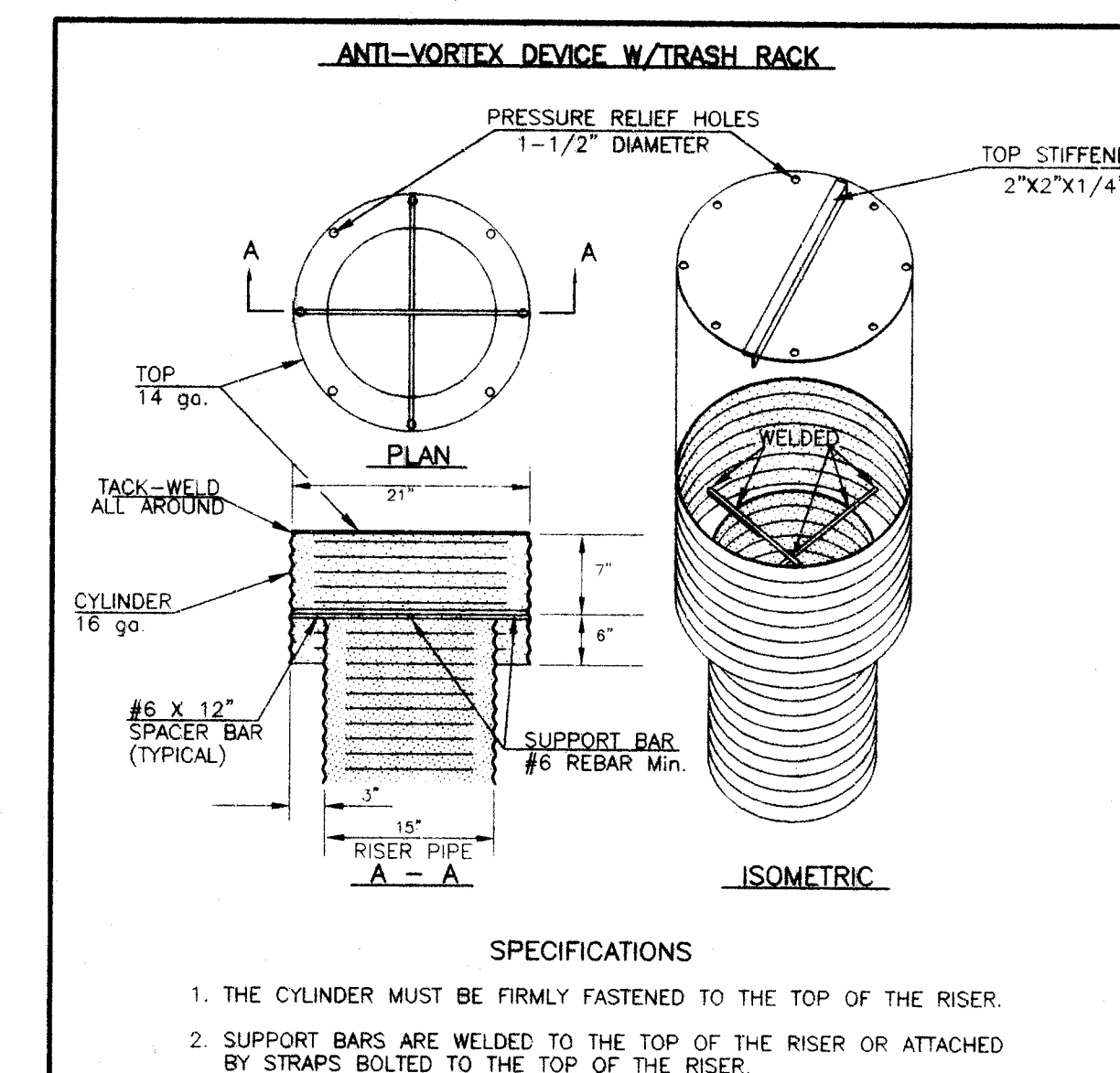
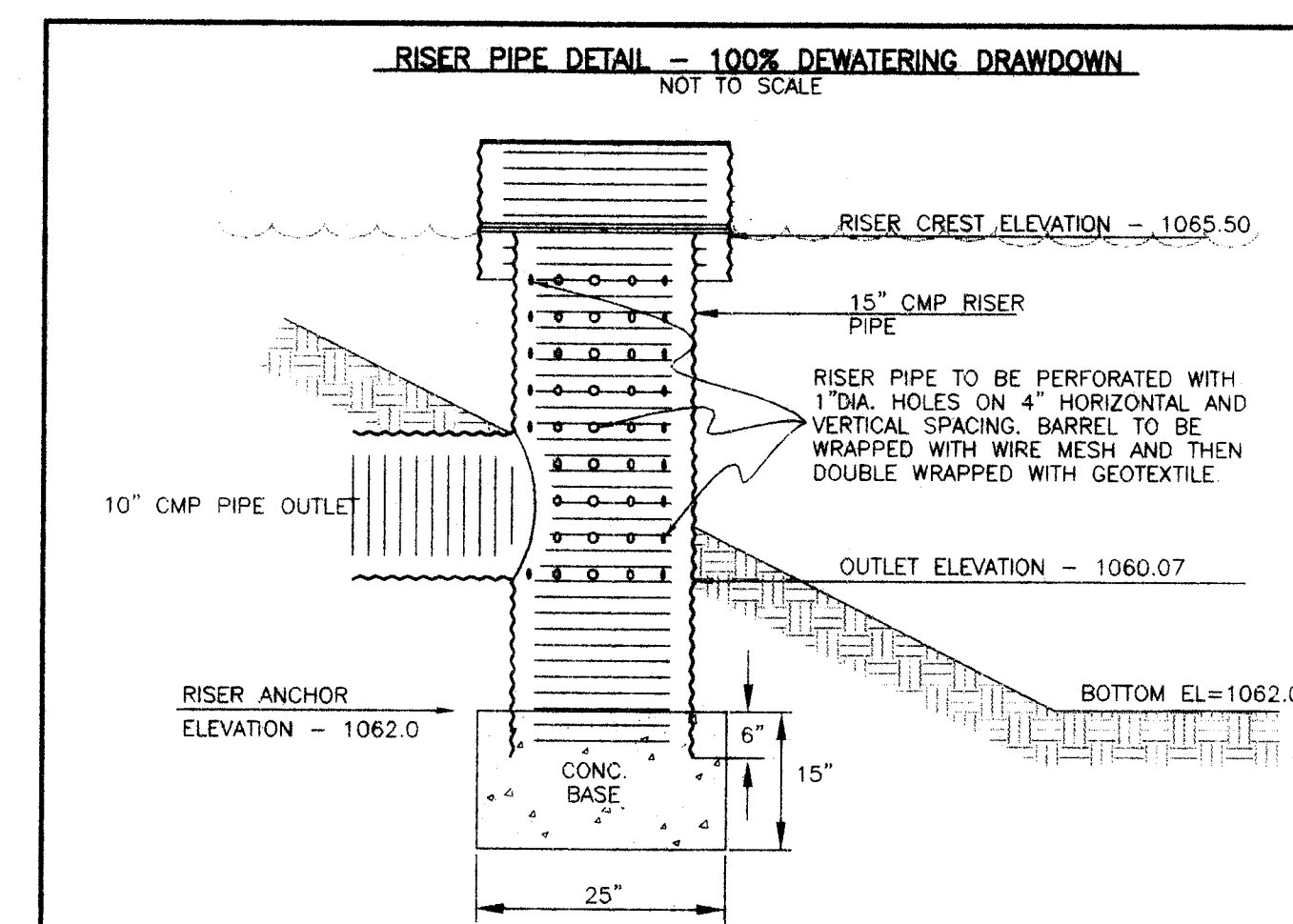
60d SPIKE FOUND 1.2' UP SOUTH SIDE
OF A 12" OAK TREE; 32.8' N 10° W
OF THE S.W. CORNER OF THE N.W. QTR.
OF SECTION 22, T-10(PERRY),R-9.

ELEV 1079.735

BENCH MARK

60d SPIKE FOUND 0.5' UP NORTH SIDE
OF A TWIN 15" OAK TREE; 42' S 12' W
OF THE 5/8" IRON BAR FOUND WITH 'DEIBEL'
6673 PLASTIC YELLOW CAP.

ELEV 1074.625



MULCH

(M)

- MULCH AND/OR OTHER APPROPRIATE VEGETATIVE PRACTICES SHALL BE APPLIED TO DISTURBED AREAS WITHIN 7 DAYS OF GRADING. IF THE AREA IS TO REMAIN DORMANT (UNDISTURBED) FOR MORE THAN 45 DAYS OR ON AREAS AND PORTIONS OF THE SITE WHICH CAN BE BROUGHT TO FINAL GRADE.
- MULCH SHALL CONSIST OF ONE OF THE FOLLOWING:
 - STRAW --- STRAW UNROTTED SMALL GRAIN STRAW APPLIED AT THE RATE OF 2 TONS/AC. OR 90 LB./1,000 SQ. FT. (TWO TO THREE BALES). THE STRAW MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED.
 - HYDROSEEDERS --- WOOD CELLULOSE FIBER SHOULD BE USED AT 2,000 LB./AC. OR 46 LB./1,000 SQ. FT.
 - OTHER --- OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 10-20 TONS/AC.
- MULCH ANCHORING --- MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR RUNOFF. THE FOLLOWING ARE ACCEPTABLE METHODS FOR ANCHORING MULCH:
 - MECHANICAL --- USE A DISK, CRIMPER, OR SIMILAR TYPE TOOL SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT BE LEFT GENERALLY LONGER THAN 6 IN.
 - MULCH NETTINGS --- USE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, FOLLOWING ALL PLACEMENT AND ANCHORING INSTRUCTIONS. USE IN AREAS OF WATER RUNOFF, CONCENTRATION AND STEEP SLOPES TO HOLD MULCH IN PLACE.
 - ASPHALT EMULSION --- FOR STRAW MULCH, APPLY AT THE RATE OF 160 GAL./AC. (0.1 GAL./SQ. YD.) INTO THE MULCH AS IT IS BEING APPLIED OR AS RECOMMENDED BY THE MANUFACTURER.
 - SYNTHETIC BINDERS --- FOR STRAW MULCH, SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TACK OR EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER.
 - WOOD CELLULOSE FIBER --- WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LB./ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB./GAL. OF WOOD CELLULOSE FIBER.

TEMPORARY SEEDING

(TS)

- STRUCTURAL EROSION --- AND SEDIMENT-CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION-SITE.
- TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR 45 DAYS OR MORE. THESE IDLE AREAS SHOULD BE SEEDS AS SOON AS POSSIBLE AFTER GRADING OR SHALL BE SEEDS WITHIN 7 DAYS. SEVERAL APPLICATIONS OF TEMPORARY SEEDING ARE NECESSARY ON TYPICAL CONSTRUCTION PROJECTS.
- THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. HOWEVER, TEMPORARY SEEDING SHALL NOT BE POSTPONED IF IDEAL SEEDBED IS NOT POSSIBLE.
- SOIL AMENDMENTS --- APPLICATIONS OF TEMPORARY VEGETATION SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. SOIL TESTS SHOULD BE TAKEN ON THE SITE TO PREDICT THE NEED FOR LIME AND FERTILIZER.
- SEEDING METHOD --- SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SPREADER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON-SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

TEMPORARY SEEDING SPECIES SELECTION			
SEEDING DATES	SPECIES	LB./1,000 SQ. FT.	PER ACRE
MARCH 1 TO AUGUST 15	OATS	3	4 BUSHEL
	TALL FESCUE	1	40 LBS.
	ANNUAL RYEGRASS	1	40 LBS.
	PERENNIAL RYEGRASS	1	40 LBS.
	TALL FESCUE	1	40 LBS.
AUGUST 16 TO NOVEMBER 1	RYE	3	2 BUSHEL
	TALL FESCUE	1	40 LBS.
	ANNUAL RYEGRASS	1	40 LBS.
	WHEAT	1	2 BUSHEL
	TALL FESCUE	1	40 LBS.
NOV. 1 TO SPRING SEEDING	PERENNIAL RYEGRASS	1	40 LBS.
	TALL FESCUE	1	40 LBS.
	ANNUAL RYEGRASS	1	40 LBS.
	MULCH, SODDING OR DORMANT SEEDING ONLY		
	NOTE : OTHER APPROVED SPECIES MAY BE SUBSTITUTED		

MULCHING

SEE MULCH ABOVE.

(PS)

PERMANENT SEEDING

SITE PREPARATION

- A SUBSOILER, PLOW OR OTHER IMPLIMENT SHALL BE USED TO REDUCE SOIL COMPACTION AND ALLOW MAXIMUM INFILTRATION. SUBSOILING SHOULD BE DONE WHEN THE SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING SHALL NOT BE DONE ON SLIP-PRONE AREAS WHERE SOIL PREPARATION SHOULD BE LIMITED TO WHAT IS NECESSARY FOR ESTABLISHING VEGETATION.
- THE SITE SHALL BE GRADED AS NEEDED TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION AND SEEDING.
- RESOIL SHALL BE APPLIED WHERE NEEDED TO ESTABLISH VEGETATION.

SEEDBED PREPARATION

- LIME --- AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ACID SOIL AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF 100 LB./1,000 S.F. OR 2 TONS/ACRE.
- FERTILIZER --- FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AT A RATE OF 12 LB./1,000 SQ. FT. OR 500 LB./AC. OF 10-10-10 OR 12-12-12 ANALYSIS.
- THE LIMESTONE AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING-TOOTH HARROW, OR OTHER IMPLIMENT TO A DEPTH OF 3 INCHES. ON SLOPING LAND THE SOIL SHALL BE WORKED ON THE CONTOUR.

SEEDING DATES AND SOIL CONDITIONS

- SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 OR AUGUST 1 TO SEPTEMBER 30. THESE SEEDING DATES ARE IDEAL BUT, WITH THE USE OF ADDITIONAL MULCH AND IRRIGATION SEEDINGS MAY BE MADE ANY TIME THROUGHOUT THE GROWING SEASON. TILLAGE/SEEDBED PREPARATION SHOULD BE DONE WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND.

DORMANT SEEDINGS

- SEEDINGS SHALL NOT BE PLANTED FROM OCTOBER 1 THROUGH NOVEMBER 20.
- THE FOLLOWING METHODS MAY BE USED FOR "DORMANT SEEDING":
 - FROM OCTOBER 1 THROUGH NOVEMBER 20, PREPARE THE SEEDBED, ADD THE REQUIRED AMOUNTS OF LIME AND FERTILIZER, THEN MULCH AND ANCHOR. AFTER NOVEMBER 20, AND BEFORE MARCH 15, BROADCAST THE SELECTED SEED MIXTURE. INCREASE THE SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING.
 - FROM NOVEMBER 20 THROUGH MARCH 15, WHEN SOIL CONDITIONS PERMIT, PREPARE THE SEEDBED, LIME AND FERTILIZE, APPLY THE SELECTED SEED MIXTURE, MULCH AND ANCHOR. INCREASE THE SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING.
 - APPLY SEED UNIFORMLY WITH A CYCLONE SPREADER, DRILL, CULTIPACKER SEEDER, OR HYDRO-SEEDER (SLURRY MAY INCLUDE SEED AND FERTILIZER) ON A FIRM, MOIST SEEDBED.
 - WHERE FEASIBLE, EXCEPT WHEN A CULTIPACKER TYPE SEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A CULTIPACKER, ROLLER, OR LIGHT DRAG. ON SLOPING LAND, SEEDING OPERATIONS SHOULD BE ON THE CONTOUR WHERE FEASIBLE.

PERMANENT SEEDING			
SEED MIX	SEEDING RATE		NOTES:
	LB./ACRE	LB./1,000 S.F.	
GENERAL USE			
CREEPING RED FESCUE	20-40	1/2 - 1	
DOMESTIC RYEGRASS	10-20	1/4 - 1/2	
KENTUCKY BLUEGRASS	10-20	1/4 - 1/2	
TALL FESCUE	40	1	
DWARF FESCUE	40	1	
STEEP BANKS OR CUT SLOPES			
TALL FESCUE	40	1	
CROWN VETCH	10	1/4	
TALL FESCUE	20	1/2	NOT LATER THAN AUGUST
FLAT PEA	20	1/2	
TALL FESCUE	20	1/2	NOT LATER THAN AUGUST
ROAD DITCHES AND SWALES			
TALL FESCUE	40	1	
DWARF FESCUE	90	2 1/4	
KENTUCKY BLUEGRASS	5		
LAWNS			
KENTUCKY BLUEGRASS	60	1 1/2	
PERENNIAL RYEGRASS	60	1 1/2	
KENTUCKY BLUEGRASS	60	1 1/2	
CREEPING RED FESCUE	60	1 1/2	FOR SHADED AREAS

NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED

MULCHING

SEE MULCH ABOVE

IRRIGATION

- PERMANENT SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY OR HOT WEATHER OR ON ADVERSE SITE CONDITIONS AS NEEDED FOR ADEQUATE MOISTURE FOR SEED GERMINATION AND PLANT GROWTH.
- EXCESSIVE IRRIGATION RATES SHALL BE AVOIDED AND IRRIGATION MONITORED TO PREVENT EROSION AND DAMAGE FROM RUNOFF.

MAINTENANCE OF PERMANENT SEEDING

- PERMANENT SEEDING SHALL NOT BE CONSIDERED ESTABLISHED FOR AT LEAST 1 FULL YEAR FROM THE TIME OF PLANTING. SEEDS AREAS SHALL BE INSPECTED FOR FAILURE AND VEGETATION REESTABLISHED AS NEEDED. DEPENDING ON SITE CONDITIONS, IT MAY BE NECESSARY TO IRRIGATE, FERTILIZE, OVERSEED, OR REESTABLISH PLANTINGS IN ORDER TO PROVIDE PERMANENT VEGETATION FOR ADEQUATE EROSION CONTROL.
- MAINTENANCE FERTILIZATION RATES SHALL BE ESTABLISHED BY SOIL TEST RECOMMENDATIONS OR BY USING THE RATES SHOWN IN THE FOLLOWING TABLE.

FERTILIZATION AND MOWING				
MIXTURE	FORMULA	LB./AC.	LIME	MOWING
CREeping RED FESCUE RYEGRASS KENTUCKY BLUEGRASS	10-10-10	500	FALL, YEARLY OR AS NEEDED	NOT CLOSER THAN 3"
TALL FESCUE	10-10-10	500		NOT CLOSER THAN 4"
DWARF FESCUE	10-10-10	500		NOT CLOSER THAN 2"
CROWN VETCH FESCUE	0-20-20	400	SPRING, YEARLY FOLLOWING ESTABLISH- MENT AND EVERY 4-7 YEARS THEREAFTER	DO NOT MOW
FLAT PEA FESCUE	0-20-20	400		DO NOT MOW

NOTE: SOIL TEST RECOMMENDATIONS PREFERRED OVER ABOVE

MATTING

(MT)

- MATERIAL --- EXCELSIOR MATTING SHALL BE 48" WIDE AND WEIGH AN AVERAGE OF 0.75 LB./SY OR GREATER. JUTE MATTING SHALL BE 48" WIDE AND WEIGH AN AVERAGE OF 1.2 LB./SY OR GREATER. MATTING MADE OF OTHER MATERIAL AND PROVIDING EQUAL OR GREATER STABILIZATION THAN THE ABOVE MAY BE SUBSTITUTED.
- SITE PREPARATION --- AFTER THE SITE HAS BEEN SHAPED AND GRADED, A SEEDBED SHALL BE PREPARED THAT IS RELATIVELY FREE OF FOREIGN MATERIAL, CLODS OR ROCKS THAT ARE GREATER THAN 1.5" IN DIAMETER. THE SITE SHALL BE PREPARED TO INSURE THAT THE MATTING HAS GOOD SOIL CONTACT AND THE MATTING WILL NOT "BRIDGE" OR "TEXT" OVER OBSTRUCTIONS.
- MATTING SHALL BE HELD IN PLACE AS RECOMMENDED BY THE MANUFACTURER AS ADEQUATE FOR THE SITE CONDITIONS OR WITH SOD STAPLES. SOD STAPLES SHALL BE NO.11 GAUGE OR HEAVIER AND BE 6-10" IN LENGTH. IN LOOSE OR SANDY SOILS LONGER STAPLES SHALL BE USED.
- PLANTING --- LIME AND FERTILIZER SHALL BE USED TO THE RECOMMENDATION OF A SOIL TEST OR A SEEDING PLAN. SEED ACCORDING TO THE MATTING MANUFACTURER'S RECOMMENDATIONS; OR, FOR EXCELSIOR MATTING, SEED AREA TO BE PROTECTED BEFORE INSTALLATION; OR, WHEN USING JUTE MATTING, APPLY HALF THE SEED BEFORE AND HALF THE SEED AFTER INSTALLATION.
- MATTING SHALL BE INSTALLED AS SPECIFIED BY THE MANUFACTURER AS APPROPRIATE FOR THE SITE CONDITIONS OR THE FOLLOWING PROCEDURE MAY BE USED:
 - AFTER THE SITE IS PREPARED AND EROSION STOPS ARE INSTALLED, START LAYING THE MAT FROM THE TOP OF THE SLOPE OR CHANNEL AND UNROLL THE MATTING ALLOWING 4" OVERLAPS AT THE EDGES.
 - SECURE THE MATTING BY BURYING THE TOP ENDS IN A TRENCH 6" DEEP AND STAPLE THE FOLDED ENDS TO THE BOTTOM OF THE TRENCH. BACKFILL AND TAMP FIRMLY TO THE ESTABLISHED GRADE.
 - STAPLE MATTING EVERY 12" ACROSS THE WIDTH BEGINNING AT THE EDGES AND EVERY 2' IN ROWS THE ENTIRE LENGTH OF THE MATTING. EVERY OTHER ROW OF STAPLES RUNNING THE LENGTH OF THE MATTING SHOULD BE STAGGERED.
 - TO JOIN TWO ROLLS TOGETHER, CUT A TRENCH TO ANCHOR THE END OF THE NEW ROLL AND SECURE IT THE SAME AS THE TOP ROLL. OVERLAY THE END OF THE PREVIOUS ROLL 18" OVER THE NEW ROLL. CONTINUE TO STAPLE AS DESCRIBED ABOVE.
 - WHEN USING EXCELSIOR MATTING, THE PLASTIC NETTING SHALL BE ON TOP OF THE WOOD FIBER.
- EROSION STOPS SHALL BE USED WHERE RECOMMENDED BY THE MANUFACTURER AND ON AREAS SPECIFIED WHERE HIGH-EROSION POTENTIAL MAY CAUSE UNDERMINING AND GULLIES TO FORM BENEATH THE MATTING.
 - EROSION STOPS SHALL BE MADE OF STRIPS OF MATTING PLACED IN NARROW TRENCHES 6-12" DEEP THAT COVER THE FULL CROSS SECTION OF THE CHANNEL. THEY SHALL BE SPACED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS OR BY THE FOLLOWING:
3' DOWN THE CHANNEL FROM EACH POINT OF ENTRY OF CONCENTRATED FLOW,
AT POINTS WHERE CHANGES IN GRADIENT OR DIRECTION OF CHANNEL OCCURS, AND
ON LONG SLOPES AT SPACING FROM 20-100' DEPENDING UPON THE ERODIBILITY OF THE SOIL, VELOCITY AND VOLUME OF FLOW.
 - EROSION STOPS SHALL EXTEND BEYOND THE CHANNEL LINER TO THE FULL DESIGN WIDTH OF THE CHANNEL.
 - EROSION STOPS SHALL BE CONSTRUCTED WITH 6" DEEP TRENCH, STAPLED TO THE BOTTOM OF THE TRENCH, BACKFILLED AND TAMPED FIRMLY TO CONFORM WITH THE CROSS SECTION OF THE CHANNEL.
 - IF SEEDING HAS BEEN DONE PRIOR TO INSTALLATION OF EROSION STOPS, RESEED DISTURBED AREAS PRIOR TO PLACEMENT OF CHANNEL LINER.

NON-SEDIMENT POLLUTION CONTROL

CONSTRUCTION PERSONNEL, INCLUDING SUBCONTRACTORS WHO MAY USE OR HANDLE HAZARDOUS OR TOXIC MATERIALS, MUST BE MADE AWARE OF THE FOLLOWING GUIDELINES:

- CONTAINERS SHALL BE PROVIDED FOR COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS TO BE USED ON SITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL.
- NO WASTE MATERIALS SHALL BE BURIED ON-SITE. SITE PERSONNEL, INCLUDING SUBCONTRACTORS SHALL BE NOTIFIED THAT NO CONSTRUCTION-RELATED MATERIALS ARE TO BE BURIED ON-SITE.
- MIXING, PUMPING, TRANSFERRING OR OTHERWISE HANDLING CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH OR STORM DRAIN.
- EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC., SHALL BE PERFORMED AWAY FROM WATERCOURSES, DITCHES OR STORM DRAINS. IN AN AREA DESIGNATED FOR THAT PURPOSE, THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILL.
- CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW INTO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER.
- IF HAZARDOUS SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY LANDFILL (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SANDWUST OR KITTY LITTER AND DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. CONTACT OHIO EPA (1-800-282-9378).
- SPILLS OF 25 GAL. OR MORE OF PETROLEUM PRODUCTS SHALL BE REPORTED TO OHIO EPA (1-800-282-9378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MIN. OF THE DISCOVERY OF THE RELEASE.

RIPRAP

(RR)

RIPRAP TYPE	MEAN D50 SPHERICAL DIAMETER (FT)	MEAN D15 SPHERICAL DIAMETER (FT)
	1.5	1.5
TYPE 'A'	2	1.0
TYPE 'B'	1.5	0.5
TYPE 'C'	1.0	0.5
TYPE 'D'	0.5	0.25

THICKNESS: THE MINIMUM THICKNESS OF THE RIPRAP SHALL BE 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6 INCHES.

QUALITY: STONE FOR RIPRAP SHALL CONSIST OF FIELD STONE OR ROUGH UNHEWN QUARRY STONE OF RECTANGULAR SHAPE. THE SPECIFIC GRAVITY OF INDIVIDUAL STONES SHALL BE 2.5. RUBBLE CONCRETE MAY BE USED PROVIDED IT HAS A DENSITY OF AT LEAST 150 POUNDS PER CUBIC FOOT.

FILTER BLANKET: PLASTIC FILTER BLANKET MATERIAL WILL CONFORM TO THE FOLLOWING PARTICLE SIZE RELATIONSHIPS:

- ADJACENT TO GRANULAR MATERIALS CONTAINING LESS THAN 50% FINE PARTICLES (0.075mm) BY WEIGHT:
 - A. d85 BASE (mm)/EOS+ FILTER (mm) = GREATER THAN 1
 - B. TOTAL OPEN AREA OF FILTER IS LESS THAN 36%
- ADJACENT TO ALL OTHER SOILS:
 - A. EOS+ LESS THAN U.S. STANDARD SIEVE No. 70
 - B. TOTAL OPEN AREA LESS THAN 10%

EOS+ = EQUIVALENT OPENING SIZE TO A U.S. STANDARD SIEVE SIZE.

SUBGRADE PREPARATION: THE SUBGRADE FOR THE RIPRAP OR FILTER MATERIAL SHALL BE PREPARED TO THE REQUIRED LINES OR GRADES OR EMBEDDED IN EXISTING GROUND. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY EQUAL TO THAT OF THE SURROUNDING GROUND. BRUSH, TREES, STUMPS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED.

FILTER BLANKET: PLACEMENT OF THE FILTER BLANKET SHOULD BE DONE IMMEDIATELY AFTER SLOPE PREPARATION. THE CLOTH SHOULD BE PLACED DIRECTLY ON THE PREPARED SLOPE. THE EDGES OF THE SHEETS SHOULD OVERLAP BY AT LEAST 12 INCHES. ANCHOR PINS, 15 INCHES LONG, SHOULD BE SPACED EVERY 3 FEET ALONG THE OVERLAP. THE UPPER AND LOWER ENDS OF THE SHEETS SHOULD BE BURIED A MINIMUM OF 12 INCHES DEEP. FOR STONES 12 INCHES AND LARGER, AN ADDITIONAL 4 INCH LAYER OF GRAVEL MAY BE REQUIRED TO PROTECT THE CLOTH.

STONE PLACEMENT: PLACEMENT OF THE RIPRAP SHOULD IMMEDIATELY FOLLOW THE PLACEMENT OF THE FILTER. THE FINISHED SLOPE SHOULD BE FREE OF POCKETS OF SMALL STONE OR CLUSTERS OF LARGE STONES. HAND PLACING MAY BE NECESSARY TO ACHIEVE THE DESIRED GRADES AND A GOOD DISTRIBUTION OF STONE SIZES.

MAINTENANCE: THE RIPRAP SHOULD BE INSPECTED PERIODICALLY TO DETERMINE IF HIGH FLOWS HAVE CAUSED SCOUR BENEATH THE FILTER BLANKET OR DISLODGED ANY OF THE STONE. IF REPAIRS ARE NEEDED, THEY SHOULD BE ACCOMPLISHED IMMEDIATELY.

DESIRABLE CONSTRUCTION SEQUENCE

- INSTALL SOIL STABILIZATION AND SEDIMENT CONTROL PRACTICES
CONSTRUCTION ROAD ENTRANCE(S)
DETENTION/ SEDIMENT BASINS
SEDIMENT TRAPS
DIVERSIONS
APPROPRIATE SEDIMENT BARRIERS
- GRADE SITE/STOCKPILE TOPSOIL
RIGHT OF WAY DIVERSIONS/WATER BARS
APPLY VEGETATIVE COVER TO AREAS TO BE DORMANT FOR 45 DAYS OR MORE
- PRESERVE AND PROTECT EXISTING VEGETATION
- INSTALL STORMWATER MANAGEMENT MEASURES
STORM SEWERS
DROP INLET PROTECTION
DITCHES AND DITCH LININGS
- INSTALL PUBLIC UTILITIES
- TEMPORARY VEGETATIVE STABILIZATION
TEMPORARY SEEDING
VEGETATIVE FILTERS
MULCHING
- INSTALL PARKING AND ROAD SUBGRADE
AGGREGATE COVER
- SITE CONSTRUCTION WORK
CURB AND GUTTER
RESIDENTIAL/COMMERCIAL CONSTRUCTION
RIGHT OF WAY GRADING
TEMPORARY SEEDING
CURB INLET PROTECTION
- SURFACE ROADS AND PARKING (PAVING)
- PERMANENT VEGETATIVE STABILIZATION
PERMANENT OR DORMANT SEEDING
SODDING (WHERE REQUIRED)
- FINAL SITE STABILIZATION
FINAL LANDSCAPING
REMOVE TEMPORARY SEDIMENT CONTROL MEASURES
DISPOSE OF TRAPPED SEDIMENT
- FINAL SITE INSPECTION
45 DAYS AFTER FINAL SITE STABILIZATION IS COMPLETE

STORM WATER POLLUTION PREVENTION PLAN

UNIVERSITY VILLAGE

CITY OF MASSILLON

STARK COUNTY, OHIO

FOR: P.R.M.D.C. Ltd.

COOPER & ASSOCIATES, L.L.P.

ENGINEERS AND SURVEYORS

1359 MARKET

AVENUE, NORTH

CANTON, OHIO

44714

BRYAN J. ASHMAN

JEROLD E. GEB

SCALE: HORIZ. N/A

VERT. N/A

DATE: JULY 1998

FIELD BOOK No.

SHEET

6 OF 6

STORM WATER POLLUTION PREVENTION PLAN

97203AE