

Drainage Area	Area (SF)	% Impervious
1	20,003	75%
2	410,328	95%
3	129,283	95%

STORMWATER MANAGEMENT REQUIREMENTS

SITE AREA: 14.61 AC
 EX IMPERVIOUS AREA: 12.0 AC
 (SITE IS GREATER THAN 40% IMPERVIOUS, RE-DEVELOPMENT CRITERIA APPLIES)

PROPOSED IMPERVIOUS AREA: 12.2 AC
 NET IMPERVIOUS: +0.2 AC

ESDV REQUIREMENT = 50% * 12.0 AC = 6.0 AC (1" TREATMENT) + 0.2 AC (2" TREATMENT) = 0.501 AC-FT

EX POND
 PER SDP-48-65 THE EXISTING STORMWATER POND PROVIDES STORMWATER TREATMENT FOR 2 ACRES OF IMPERVIOUS DRAINAGE. THE STORMWATER MANAGEMENT PROVIDED IN THIS POND WILL BE PROVIDED ELSEWHERE ON THE SITE.

MGV REQUIREMENT = 1" TREATMENT FOR 2 AC. = 0.158 AC-FT
 CPV REQUIREMENT = 0.26 AC-FT

EX STONE PIT
 PER SDP-84-238 THE STONE PIT PROVIDES APPROXIMATELY 1500 CU-FT OF STORAGE. THIS WILL BE ADDED TO THE MGV REQUIREMENT FOR THE SITE.

TOTAL SWM REQUIREMENTS
 ESD/MGV TREATMENT = 0.501 AC-FT + 0.158 AC-FT + 1500 CF (STONE PIT) = 30,449 CF (0.699 AC-FT)
 CPV REQUIREMENT = 0.26 AC-FT

STORMWATER MANAGEMENT PROVIDED BY DEVICE

DEVICE	WQV	CPV
MICRO-BIORETENTION	0.037 AC-FT	0.044 AC-FT
GRAVEL WETLAND	0.587 AC-FT	0.000 AC-FT
UNDERGROUND STORAGE	0.000 AC-FT	0.226 AC-FT
STORMCEPTOR	0.075 AC-FT*	0.000 AC-FT
TOTALS	0.699 AC-FT	0.270 AC-FT

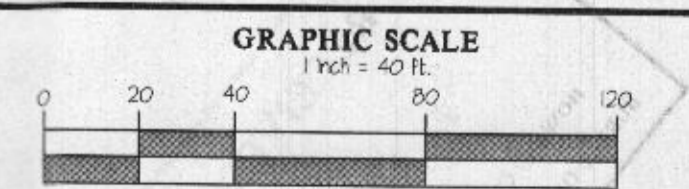
* THE REMAINING WQV REQUIREMENT WILL BE PROVIDED BY STORMCEPTORS WHICH HAS BEEN DESIGNED TO TREAT THE ENTIRE 1 YEAR STORM FOR DRAINAGE AREAS 2 & 3

LEGEND

TYPE
 P.D.V. - ESD SWM DEVICE
 TYPES OF DEVICES:
 MBR - MICRO-BIORETENTION
 GW - GRAVEL WETLAND
 UP - IMPERVIOUS PAVEMENT
 NRD - NON-ROOFTOP DISCONNECT

--- ESD DRAINAGE DIVIDE

NOTE: ALL SOILS ON SITE ARE 'D' TYPE SOILS



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director _____ Date _____
 Chief, Division of Land Development _____ Date _____
 Chief, Development Engineering Division _____ Date _____

PARCEL E-2
 SECTION 2
 PATUXENT INDUSTRIAL PARK
 PLAT NO. 6256
 ZONING: M-2

PREPARED FOR:
 Patuxent 8235, LLC
 898 AIRPORT PARK RD
 SUITE 210
 GLEN BURNE MD 21061
 DAVE LAZAS
 410-347-7170

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975, EXPIRATION DATE: MAY 25, 2014.

STORMWATER MANAGEMENT DRAINAGE AREA MAP
PATUXENT PARK INDUSTRIAL AREA
PARCELS A
OFFICE/WAREHOUSE BUILDING
 PLAT NO: _____
OFFICE & WAREHOUSE BUILDINGS

ELECTION DISTRICT No. 6
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE NO.
1"=40'	M-2	12014
DATE	TAX MAP - GRID	SHEET
JUN., 2013	48-3	11 OF 15

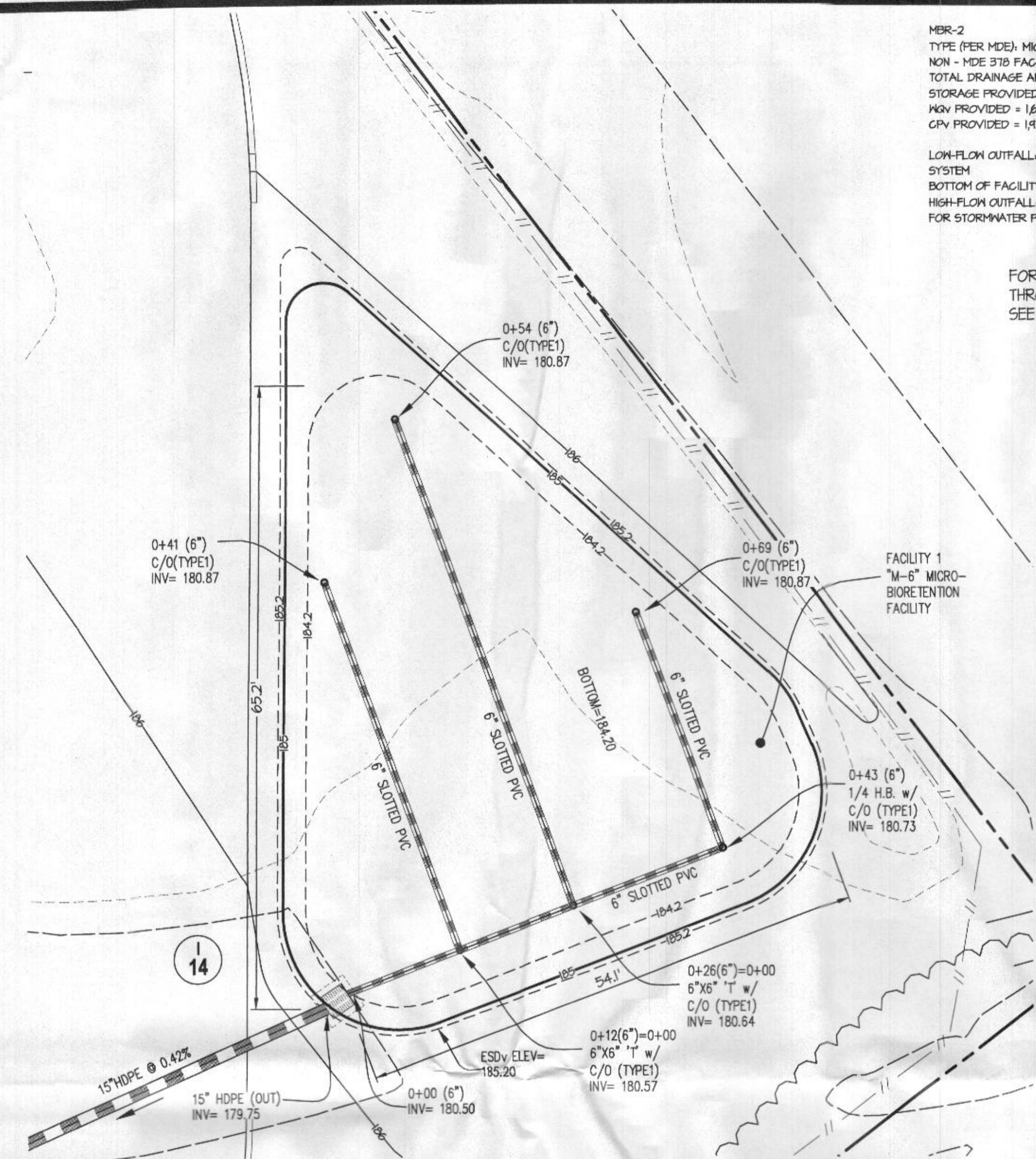
GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTNSVILLE OFFICE PARK
 BURTNSVILLE, MARYLAND 20866
 TEL: 301-421-4024 (BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186)

L:\CADD\DRAWINGS\2014\PLANS BY GLW\SDP\2014-SM DWA.dwg DES. dds DRN. dds CHK. _____ DATE _____ REVISION _____ BY _____ APPR. _____

MBR-2
 TYPE (PER MDE), MICRO BIORETENTION SYSTEM (M6)
 NON - MDE 378 FACILITY
 TOTAL DRAINAGE AREA TO FACILITY = 20,003 SF
 STORAGE PROVIDED = 2,691 CU-FT @105.20
 INV PROVIDED = 140 CU-FT
 INV PROVIDED = 193 CU-FT

LOW-FLOW OUTFALL: PERFORATED UNDERDRAIN SYSTEM
 BOTTOM OF FACILITY = 104.20
 HIGH-FLOW OUTFALL: 1/4" INLET, TOP = 105.20
 FOR STORMWATER PLANTINGS, SEE LANDSCAPE PLAN

FOR TYPICAL SECTION THROUGH BIO-RETENTION, SEE DETAIL THIS SHEET



**S.D. PIPE SUMMARY TABLE (SHEET 12)
 PRIVATELY OWNED AND MAINTAINED**

SIZE (INCHES)	TYPE	QUANTITY (L.F.)	REMARKS
6	PVC	24	SCHEDULE 40
6	SLOTTED PVC	164	SCHEDULE 40

APPENDIX B.1.1 - SUPPLEMENTAL POND SPECIFICATIONS (NON-378)

SUPPLEMENTAL STORMWATER PONDS AND WETLAND SPECIFICATIONS (NON-378)
 THESE NOTES AND SPECIFICATIONS ARE IN ADDITION TO THE MD-378 SPECIFICATIONS. IF THERE IS ANY QUESTION AS TO THE APPLICABILITY, THE MD-378 SPECIFICATIONS SUPERCEDE.

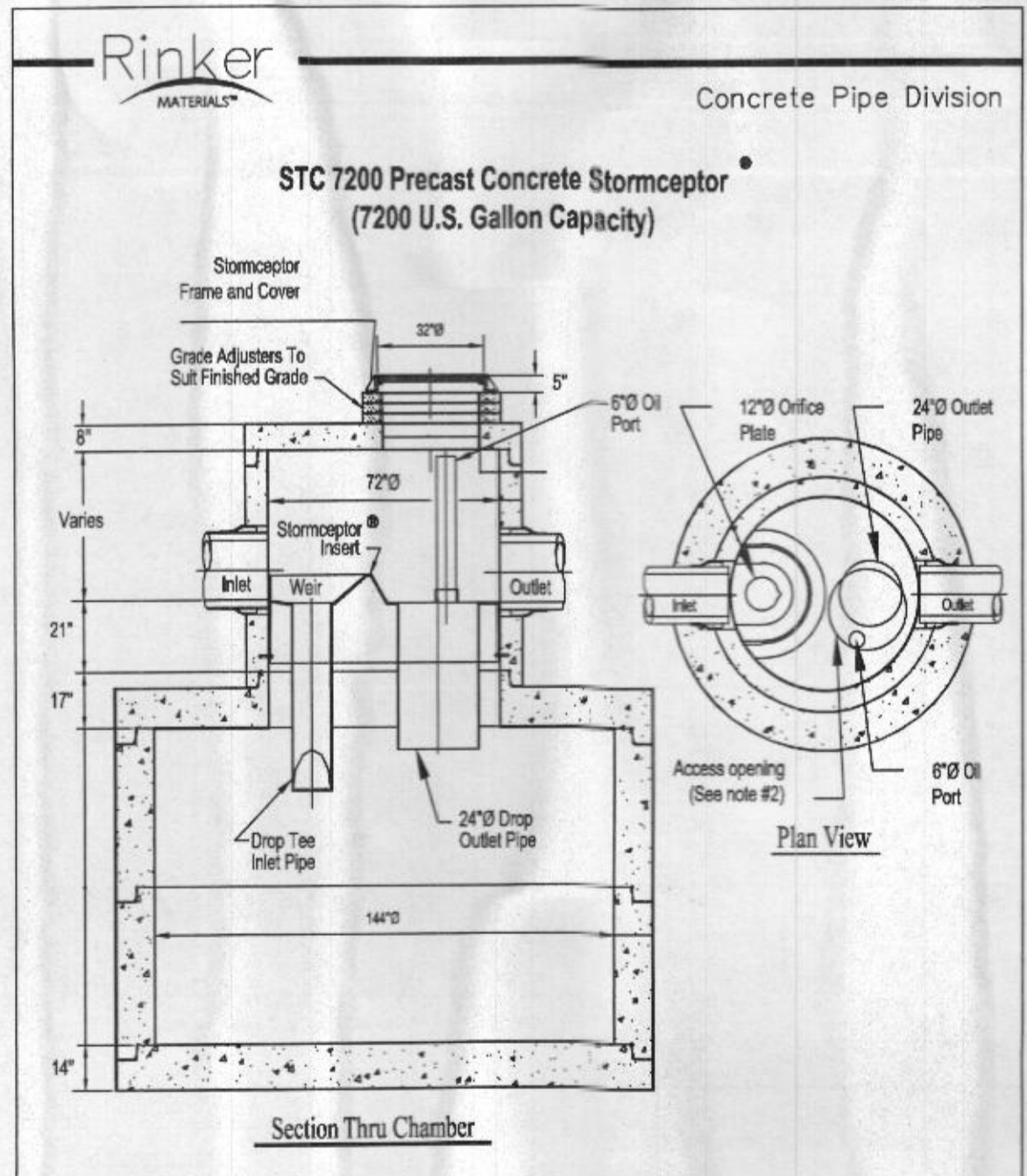
- IT IS PREFERRED TO USE THE SAME MATERIAL IN THE EMBANKMENT AS IS BEING INSTALLED FOR THE CORE TRENCH. IF THIS IS NOT POSSIBLE BECAUSE THE APPROPRIATE MATERIAL IS NOT AVAILABLE, A DAM CORE WITH A SHALL MAY BE USED. THE CROSS-SECTION OF THE STORMWATER FACILITY SHOULD SHOW THE LIMITS OF THE DAM CORE (UP TO 10-YEAR WATER SURFACE ELEVATION) AS WELL AS THE ACCEPTABLE MATERIALS FOR THE SHELL. THE SHAPE OF THE DAM CORE AND THE MATERIAL TO BE USED IN THE SHELL SHOULD BE PROVIDED BY THE GEOTECHNICAL ENGINEER.
- IF THE COMPACTION TESTS FOR THE SITE IMPROVEMENTS IS USING MODIFIED PROCTOR (AASHTO T-99), THEN TO MAINTAIN ON-SITE CONSISTENCY, THE MODIFIED PROCTOR MAY BE USED IN LIEU OF A STANDARD PROCTOR (AASHTO T-99). THE MINIMUM DENSITY USING THE MODIFIED PROCTOR TEST METHOD SHALL BE AT LEAST 82% OF THE MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT OF ±2% OF THE OPTIMUM. THE MINIMUM REQUIRED DENSITY USING THE STANDARD PROCTOR TEST METHOD SHALL BE AT LEAST 95% OF THE MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT OF ±2% OF THE OPTIMUM.
- FOR ALL STORMWATER MANAGEMENT FACILITIES, A GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE MUST BE PRESENT TO VERIFY COMPACTION IN ACCORDANCE WITH THE SELECTED TEST METHOD. THIS INFORMATION NEEDS TO BE PROVIDED IN A REPORT TO THE DESIGN ENGINEER, SO THAT CERTIFICATION OF THE CONSTRUCTION OF THE FACILITY, IN ACCORDANCE WITH MD-378 SPECIFICATIONS, CAN BE MADE.
- A 4-INCH LAYER OF TOPSOIL SHALL BE PLACED ON ALL DISTURBED AREAS OF THE DAM EMBANKMENT. SEEDING, LIMING, FERTILIZING, MULCHING, ETC. SHALL BE IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SERVICE MD-342 OR THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, PERMANENT SEEDING, SECTION IN CHAPTER 20. THE PURPOSE OF THE TOPSOIL IS TO ESTABLISH A GOOD GROWTH OF GRASS, WHICH IS NOT ALWAYS POSSIBLE WITH SOME OF THE MATERIALS THAT MAY BE PLACED FOR THE EMBANKMENT FILL.
- GEOTEXTILE PLACED BENEATH RIP-RAP SHALL BE CLASS "C" GEOTEXTILE OR BETTER (SEE SECTION 24.1, MATERIAL SPECIFICATIONS, 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, MDE, 1994). SOME ACCEPTABLE GEOTEXTILES THAT MEET THE CLASS "C" CRITERIA INCLUDE:
 AMOCO 4552 CARTRIDGE TX-705
 GELON N70 MIRAFI 180-N
 WEBTEC N07
 THIS IS ONLY A PARTIAL LISTING OF AVAILABLE GEOTEXTILES BASED ON INFORMATION PROVIDED BY THE MANUFACTURERS OF THE 1997 SPECIFIER'S GUIDE DATED DECEMBER 1996. IT IS THE RESPONSIBILITY OF THE ENGINEER TO VERIFY THE ADEQUACY OF THE MATERIAL, AS THERE ARE CHANGES IN THE MANUFACTURING PROCESS AND THE TYPE OF FABRIC USED, WHICH MAY AFFECT THE CONTINUED ACCEPTANCE.
- A RULE OF THUMB TO DETERMINE WHEN AN EXCAVATED POND MAY NEED TO BE CONSIDERED AN EMBANKMENT POND IS AS FOLLOWS:
 PROVIDE CALCULATION OF 10H + 20 FEET = L, WHERE H HEIGHT FROM POND BOTTOM TO TOP OF DAM. IF THE PROJECTION OF L DOWNSTREAM IS A HORIZONTAL LINE FROM THE UPTHEAM TOE OF SLOPE IS BELOW ZERO, THE POND CAN BE CONSIDERED AN EXCAVATED POND. IN ADDITION, THE EXISTING GROUND SLOPE, DOWNSTREAM OF THE TOE, MUST BE LESS THAN 10%.
- THE DESIGN ENGINEER AND GEOTECHNICAL ENGINEER SHOULD MAKE THE DETERMINATION THAT THE SETTLEMENT OF THE POND WILL NOT CAUSE EXCESSIVE JOINT EXTENSION. FOR FURTHER INFORMATION ON JOINT ANALYSIS, SEE NRCE PUBLICATION TR-18.
- FILL PLACEMENT SHALL NOT EXCEED A MAXIMUM 8-INCH. EACH LIFT SHALL BE CONTINUOUS FOR THE ENTIRE LENGTH OF THE EMBANKMENT.
- THE EMBANKMENT FILL SHALL NOT BE PLACED HIGHER THAN THE CENTERLINE OF THE PRINCIPAL SPILLWAY UNTIL AFTER THE PRINCIPAL SPILLWAY HAS BEEN INSTALLED. IF THE EMBANKMENT NEEDS TO BE EXCAVATED TO INSTALL THE PRINCIPAL SPILLWAY, THE SIDE SLOPE SHALL BE NO LESS THAN 2:1.
- THE SIDE SLOPES OF A CUT TO REPAIR A DAM, INSTALL A PRINCIPAL SPILLWAY FOR AN EXCAVATED POND, OR OTHER REPAIR WORK, SHALL BE NO LESS THAN 2:1.

GENERAL NOTES

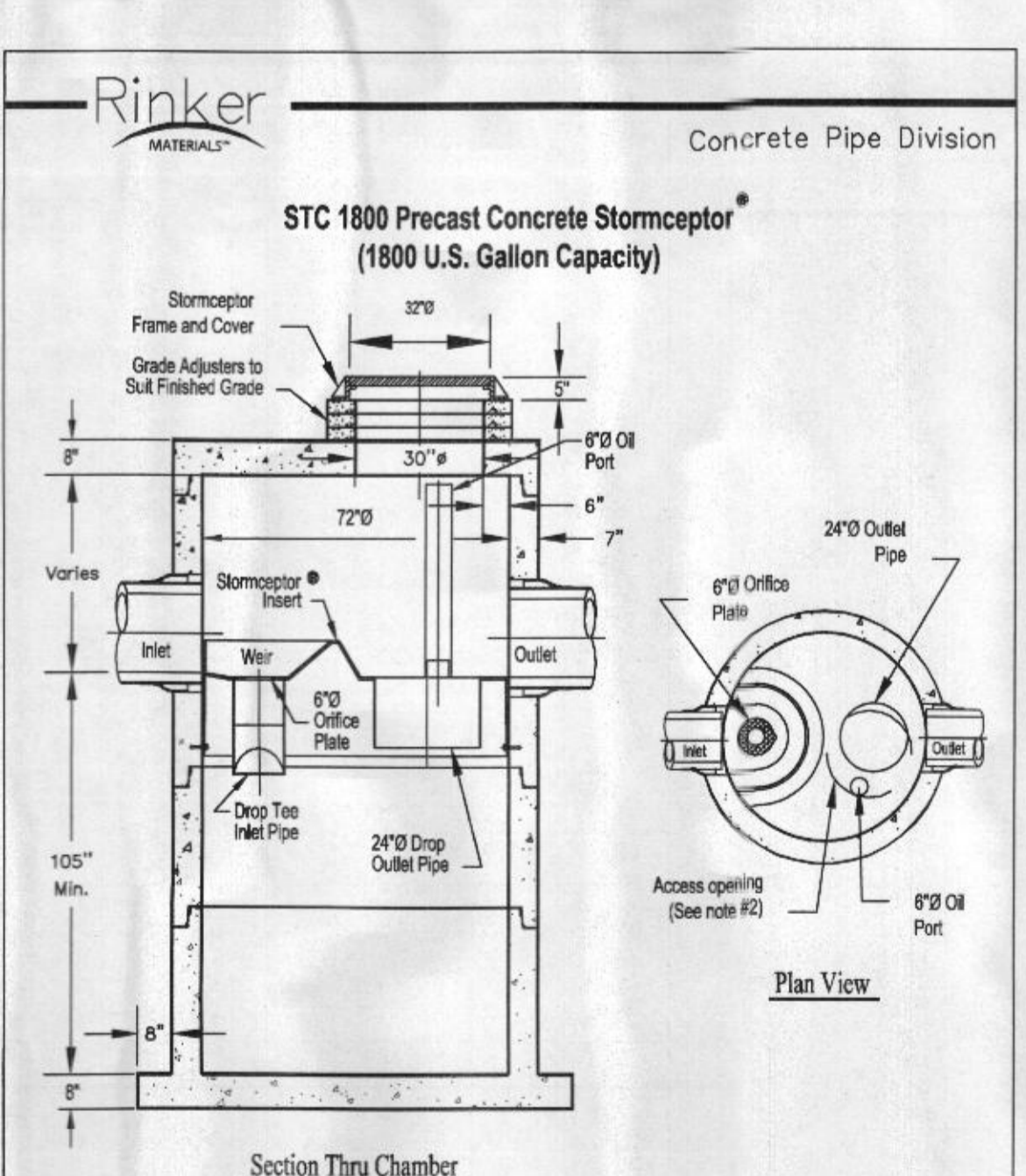
- MATERIAL SPECIFICATIONS**
 THE ALLOWABLE MATERIALS TO BE USED IN BIORETENTION AREA ARE DETAILED IN TABLE B.1.2.
- PLANTING SOIL**
 THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED INTO THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDERANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.06.01.05. THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
 PH RANGE 5.2 - 7.0
 ORGANIC MATTER 1.5 - 4% (BY WEIGHT)
 MAGNESIUM 35 LB./AC.
 PHOSPHORUS (PHOSPHATE - P205) 75 LB./AC.
 POTASSIUM (POTASH - K2O) 85 LB./AC.
 SOLUBLE SALTS NOT TO EXCEED 500 PPM
 ALL BIORETENTION AREAS SHALL HAVE A MINIMUM OF ONE TEST. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, PHOSPHORUS, AND POTASSIUM AND ADDITIONAL TESTS OF ORGANIC MATTER AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE LOCATED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOP SOIL WAS EXCAVATED.
 SINCE DIFFERENT LABS CALIBRATE THEIR TESTING EQUIPMENT DIFFERENTLY, ALL TESTING RESULTS SHALL COME FROM THE SAME TESTING FACILITY. SHOULD THE PH FALL OUT OF THE ACCEPTABLE RANGE, IT MAY BE MODIFIED (HIGHER) WITH LIME OR (LOWER) WITH IRON SULFATE PLUS SULFUR.
- COMPACTION**
 IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL WHEN POSSIBLE. USE EXCAVATION HOES TO RELOOSE ORIGINAL SOIL. IF BIORETENTION APPENDIX B.3 CONSTRUCTION SPECIFICATIONS FOR SAND FILTERS, BIORETENTION AND OPEN CHANNELS B.3.5 ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TIRE THRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.
 COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOIL PROFILE THROUGHOUT THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.
 ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY POKED WATER BEFORE PREPARING (ROTOTILLING) BASE.
 WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.
 WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
- PLANT MATERIAL**
 SEE LANDSCAPE PLAN, THIS 50P SET.
- PLANT INSTALLATION**
 MULCH SHOULD BE PLACED TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND KNOCK CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.
 ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED 50% OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.
 TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.
 GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.
 THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDS THIS GOAL. ONLY ADD FERTILIZER IF KNOCK CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL AREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.
- UNDERDRAINS**
 UNDERDRAINS ARE TO BE PLACED ON A 3'-0" WIDE SECTION OF FILTER CLOTH. PIPE IS PLACED NEXT, FOLLOWED BY THE GRAVEL BEDDING. THE ENDS OF UNDERDRAIN PIPES NOT TERMINATING IN AN OBSERVATION WELL SHALL BE CAPPED.
 THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.3%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).
 1. MISCELLANEOUS
 THE BIORETENTION FACILITY MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

MICRO-BIORETENTION 1 DETAILS SCALE: 1" = 10'

MICRO-BIORETENTION 2 DETAILS SCALE: 1" = 10'



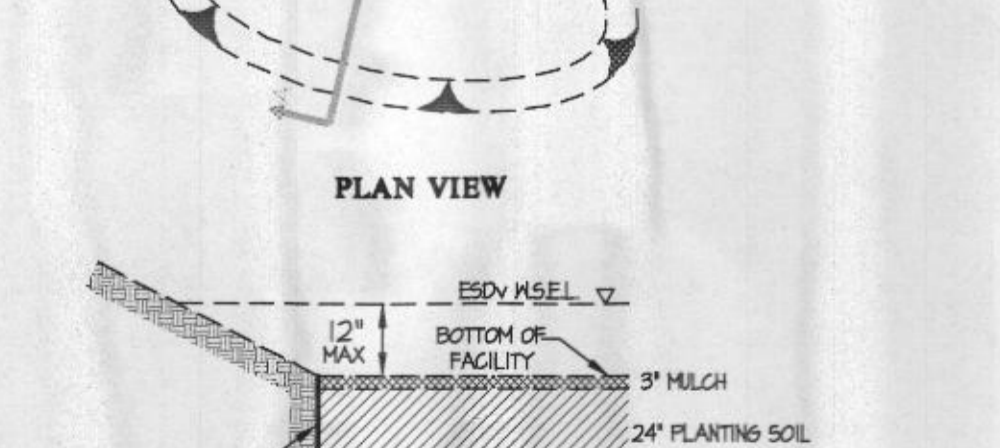
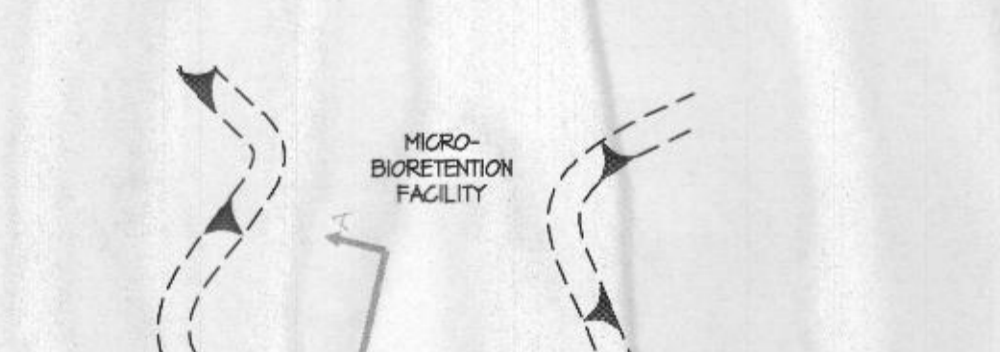
- Notes:**
- The Use of Flexible Connection is Recommended at the Inlet and Outlet Where Applicable.
 - The Cover Should be Positioned Over the Outlet Drop Pipe and the Oil Port.
 - The Stormceptor System is protected by one or more of the following U.S. Patents: #4985148, #5498331, #5725760, #5751115, #5849181, #6068765, #6371690.
 - Contact a Concrete Pipe Division representative for further details not listed on this drawing.



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MICRO-BIORETENTION SUMMARY TABLE

MBR #	TOP FLOW ELEV.	OVER FLOW ELEV.	ESD V. ELEV.	BOTTOM ELEV.	MULCH (BY 104.20 - 103.95 - 101.95 - 101.62 - 100.00) (IN) ELEV. VARIES	PLANTING SOIL (24") (101.95 - 101.62)	NO. 4 STONE (101.62 - 100.00) (IN) ELEV. VARIES	NO. 57 STONE	UNDERDRAIN SIZE/INVERT
1	105.20	105.20	105.20	104.20	104.20 - 103.95 - 101.95 - 101.62 - 100.00	101.95 - 101.62	101.62 - 100.00	100.00	6"



OPERATION AND MAINTENANCE SCHEDULE FOR UNDERGROUND STORMWATER MAINFOLD SYSTEMS

- THE UNDERGROUND STORMWATER MANAGEMENT FACILITY IS PRIVATELY OWNED AND IT SHALL BE THE RESPONSIBILITY OF THE OWNER, PERIODICALLY INSPECT AND CLEAN THE FACILITY TO MAINTAIN ITS OPERATION AND FUNCTION.
- THE UNDERGROUND STORMWATER MANAGEMENT FACILITY AND LOW FLOW OUTLET IN STR-3 SHALL BE INSPECTED YEARLY AT A MINIMUM AND AFTER ESPECIALLY SEVERE STORM EVENTS.
- WHEN SEDIMENT ACCUMULATION OF MORE THAN 2" IS OBSERVED OR ANY DEBRIS THAT MIGHT OBSTRUCT THE OUTFALL IS OBSERVED, THE FACILITY SHALL BE CLEANED.
- THE FACILITY SHALL BE CLEANED IMMEDIATELY AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES NOTIFYING THEM OF THE SPILL AND CLEANUP OPERATION.
- THE SEDIMENT AND DEBRIS SHALL BE REMOVED FROM THE UNDERGROUND STORMWATER MANAGEMENT FACILITY BY VACUUM TRUCK OR OTHER MANUAL MEANS. THE OWNER SHALL FOLLOW PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIAL AND LIQUID.
- THE INLET AND OUTLET PIPES SHALL BE CHECKED FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX (6) MONTHS. IF OBSTRUCTIONS ARE FOUND, THE OWNER SHALL HAVE THEM REMOVED AND PROPERLY DISPOSED OF.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMCEPTOR WATER QUALITY DEVICE

- THE OWNER SHALL INSPECT THE STORMCEPTOR WATER QUALITY DEVICE PERIODICALLY AND CLEAN IT TO MAINTAIN PROPER OPERATION AND FUNCTION. THE OWNER SHALL INSPECT THE STORMCEPTOR UNIT YEARLY AT A MINIMUM UTILIZING THE STORMCEPTOR INSPECTION/MONITORING FORM. INSPECTIONS SHALL BE DONE BY USING A CLEAR PLEXIGLASS TUBE ("SLUDGE JUDGE") TO EXTRACT A WATER COLUMN SAMPLE. WHEN THE SEDIMENT DEPTHS EXCEED THE LEVEL SPECIFIED IN TABLE 6 OF THE STORMCEPTOR TECHNICAL MANUAL, THE STORMCEPTOR UNIT MUST BE CLEANED.
- THE OWNER SHALL CHECK AND CLEAN IMMEDIATELY THE STORMCEPTOR WATER QUALITY STRUCTURE AFTER PETROLEUM SPILLS. THE OWNER SHALL CONTACT THE APPROPRIATE REGULATORY AGENCIES AND CLEAN THE PETROLEUM SPILLS IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.
- THE MAINTENANCE OF THE STORMCEPTOR UNIT SHALL BE DONE USING A VACUUM TRUCK WHICH WILL REMOVE THE WATER, SEDIMENT, DEBRIS, FLOATING HYDROCARBONS AND OTHER MATERIALS IN THE STORMCEPTOR UNIT. THE OWNER SHALL FOLLOW ALL REQUIREMENTS FOR THE PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID.
- THE OWNER SHALL CHECK THE INLET AND OUTLET PIPES FOR ANY OBSTRUCTIONS AT LEAST ONCE EVERY SIX (6) MONTHS. IF OBSTRUCTIONS ARE FOUND, THE OWNER SHALL HAVE THEM REMOVED. THE OWNER SHALL REPAIR THE STRUCTURAL PARTS OF THE STORMCEPTOR UNIT AS NEEDED.
- THE OWNER SHALL RETAIN AND MAKE THE STORMCEPTOR INSPECTION/MONITORING FORMS AVAILABLE TO THE HOWARD COUNTY OFFICIALS UPON THEIR REQUEST.

OPERATION AND MAINTENANCE SCHEDULE FOR LANDSCAPE INFILTRATION (M-3) MICRO-BIORETENTION (M-6), RAIN GARDENS (M-7), BIORETENTION SHALE (M-8), ENHANCED FILTERS (M-4)

- THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4J AND 2.
 - THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.
 - THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
 - THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.
- DURING THE FIRST YEAR OF OPERATION, THE OWNER SHALL INSPECT THE FACILITY AFTER EVERY HEAVY STORM AND REPLACE VEGETATION AS NEEDED.
 - THE OWNER SHALL REMOVE SEDIMENT ACCUMULATED IN THE PRE-TREATMENT AREAS AS NECESSARY.
 - SIGNS OF UNEVEN FLOW WITHIN THE WETLAND MAY MEAN THAT THE GRAVEL OR UNDERDRAIN IS CLOGGED. THE GRAVEL OR UNDERDRAIN SHALL BE REMOVED, CLEANED, AND REPLACED, AS NEEDED.
 - THE OWNER SHALL ENSURE A DENSE STAND OF WETLAND VEGETATION IS MAINTAINED THROUGHOUT THE LIFE OF THE FACILITY AND REPLACE VEGETATION AS NEEDED.
 - THE OWNER SHALL ENSURE THE INLETS AND OUTLETS TO EACH GRAVEL/WETLAND CELL ARE FREE FROM DEBRIS.
 - THE OWNER SHALL REPAIR EROSION AT INFLOW POINTS AND ENSURE FLOW SPLITTERS ARE FUNCTIONAL TO PREVENT STORM WATER FROM BYPASSING THE FACILITY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director _____ Date _____
 Chief, Division of Land Development _____ Date _____
 Chief, Development Engineering Division _____ Date _____

GLWGUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 FAX: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

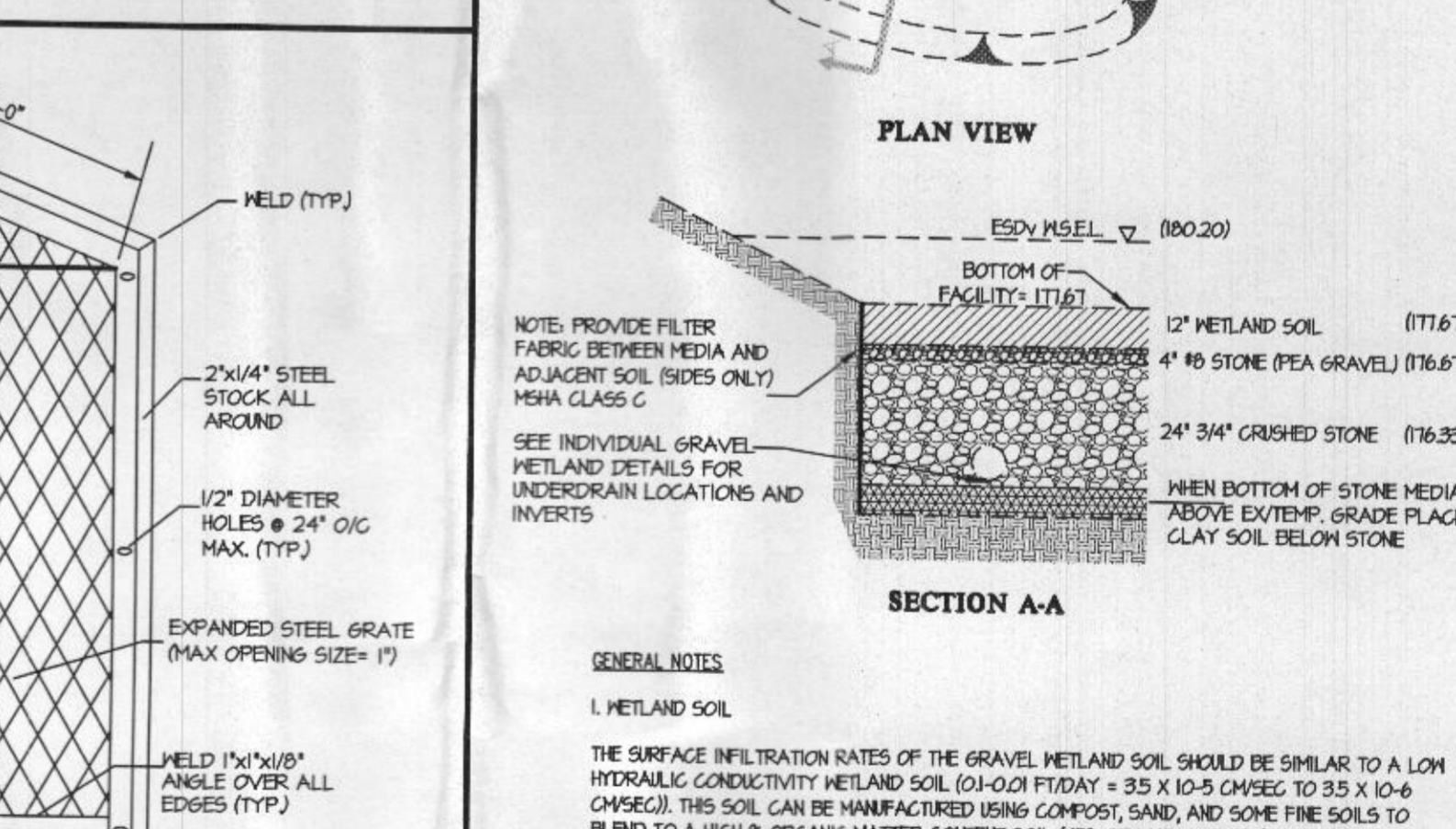
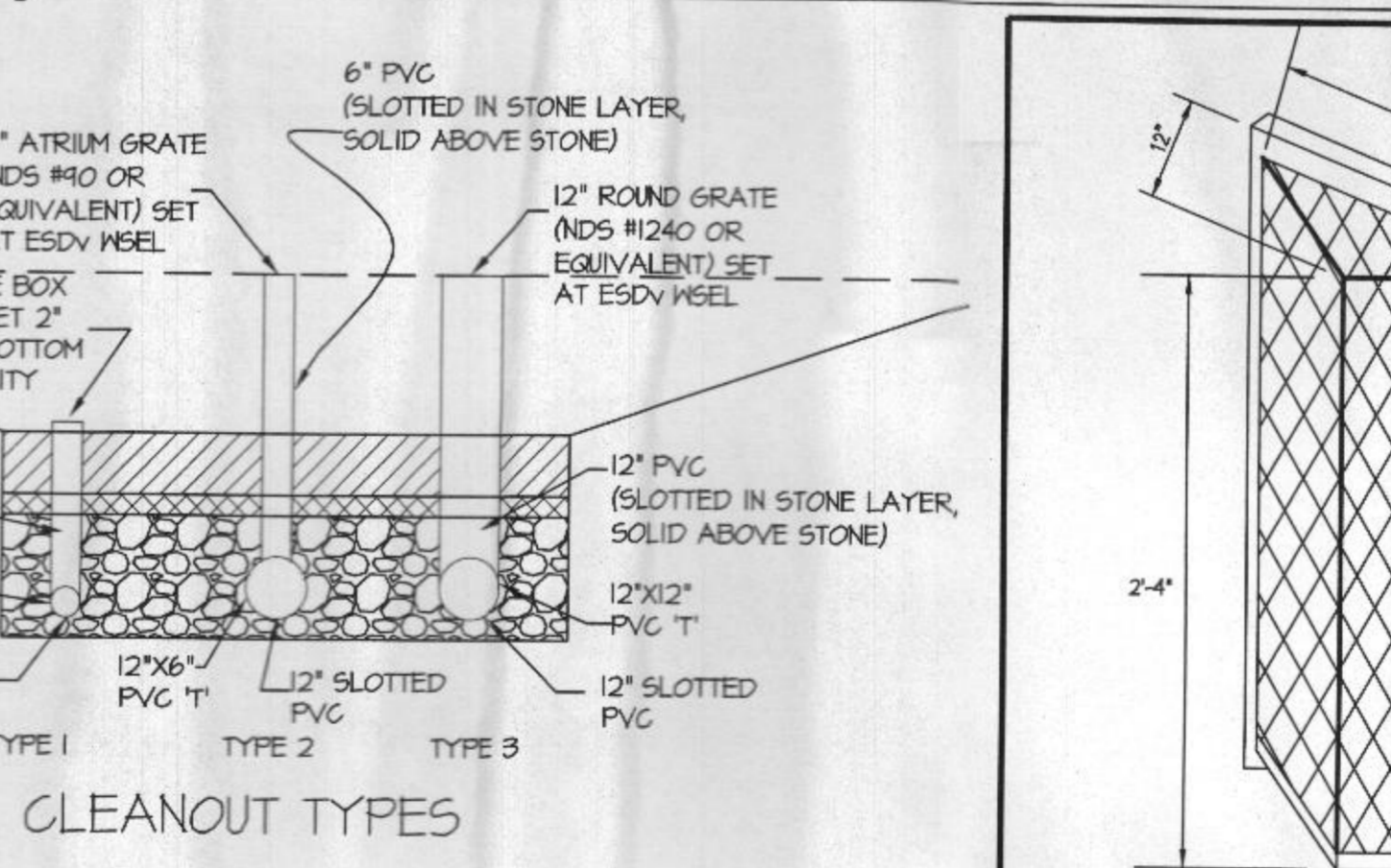
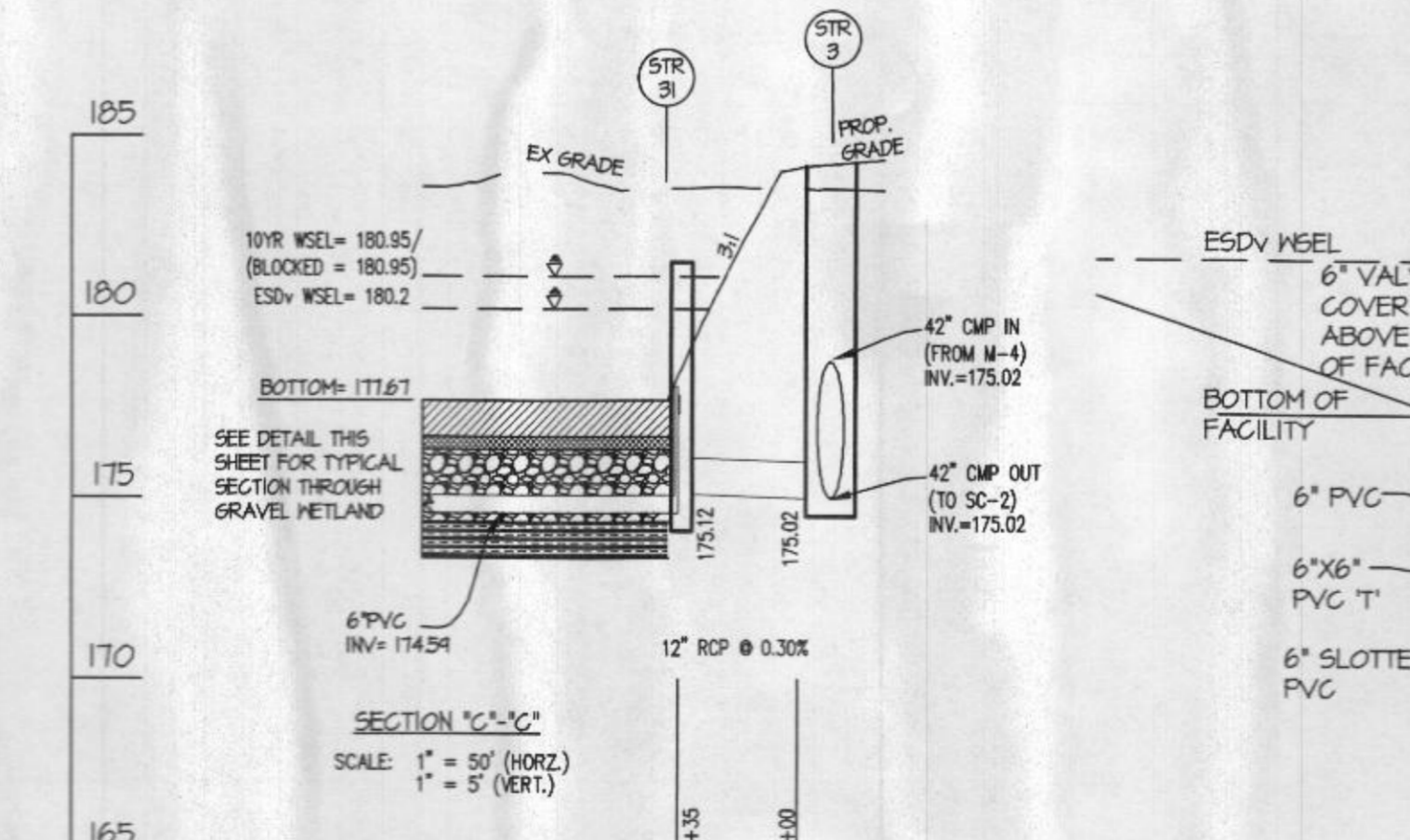
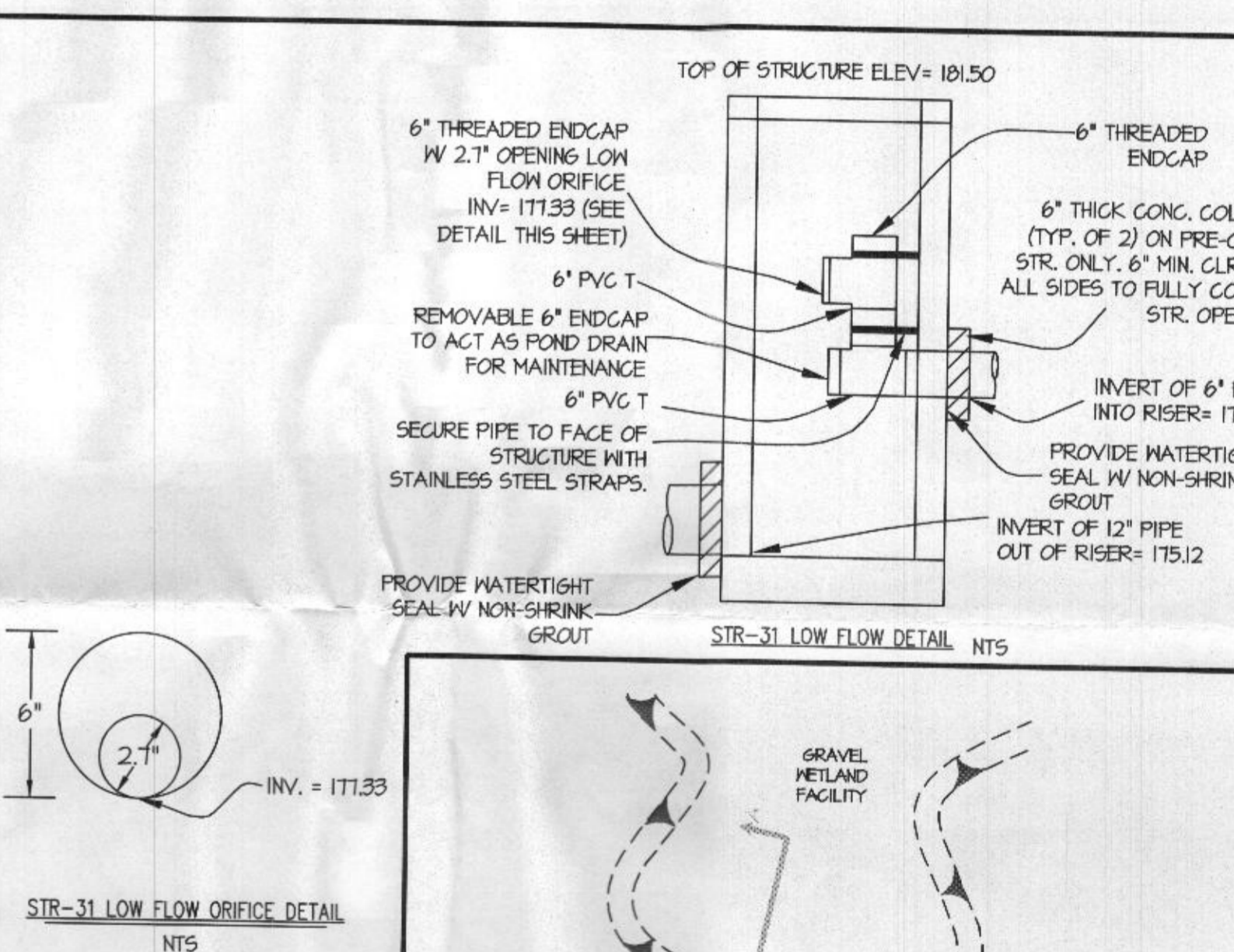
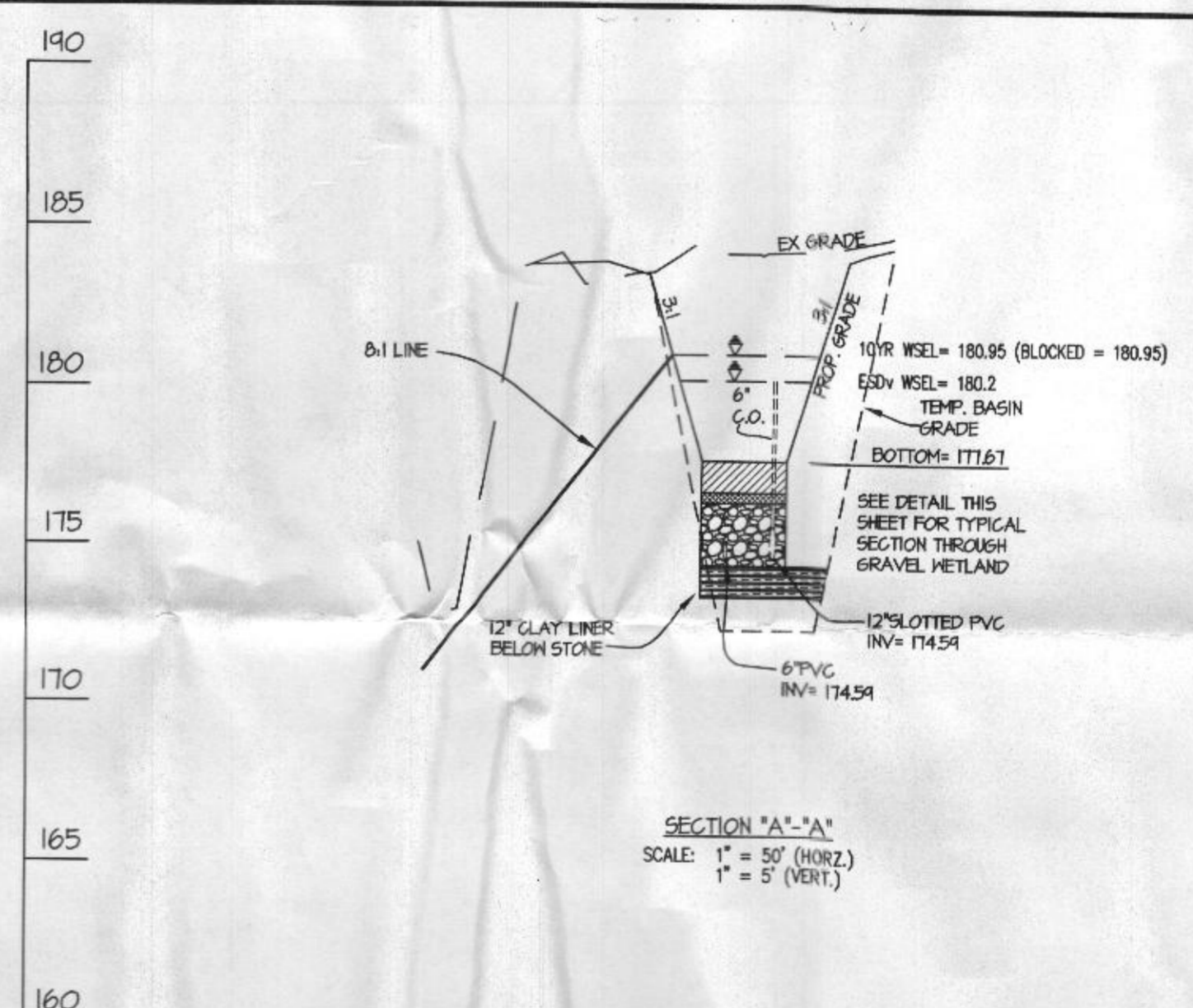
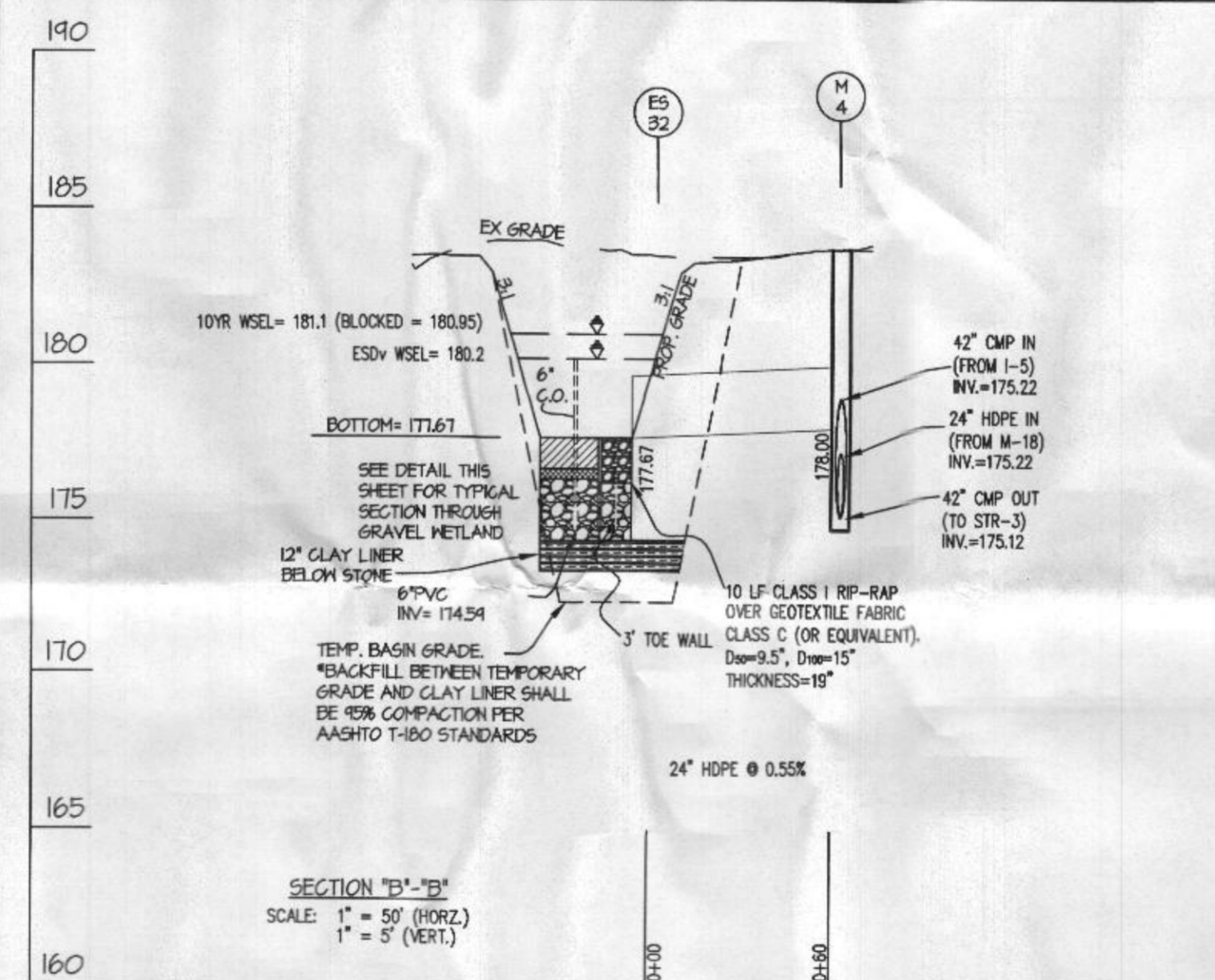
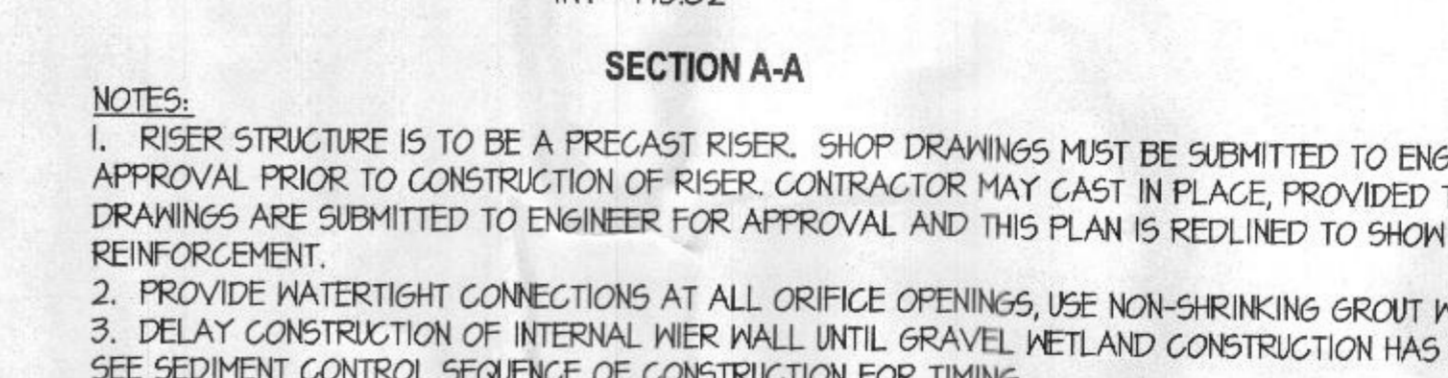
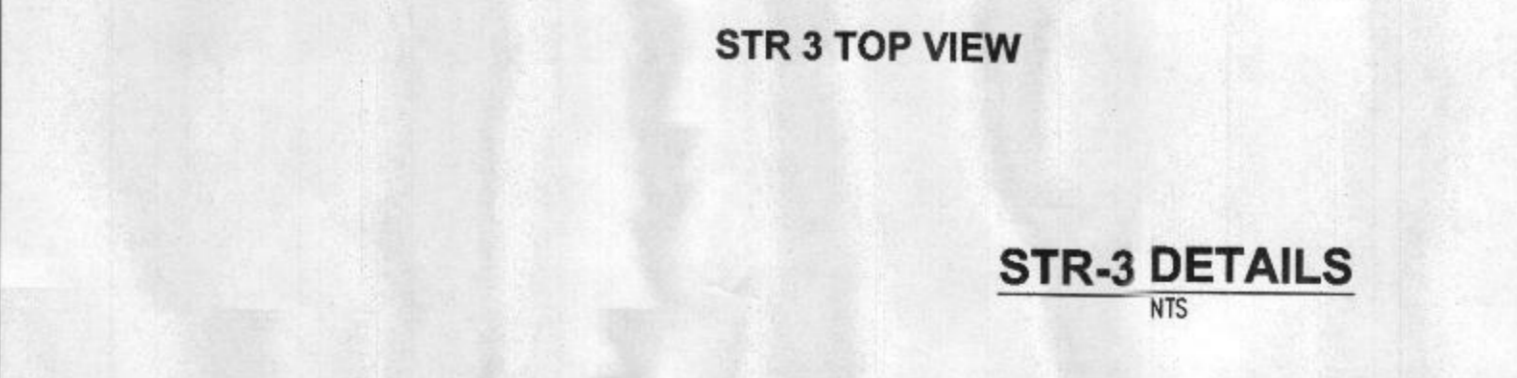
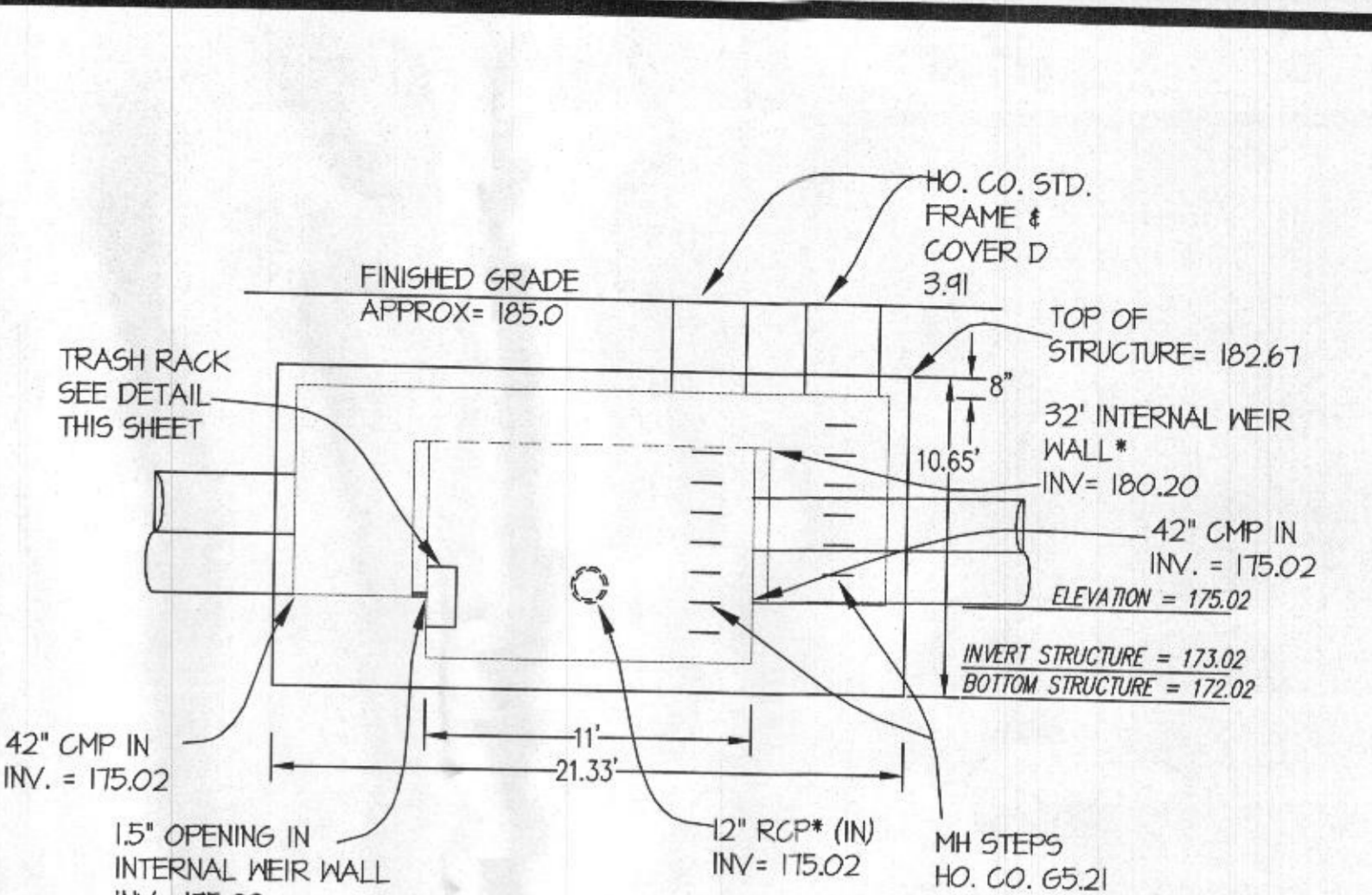
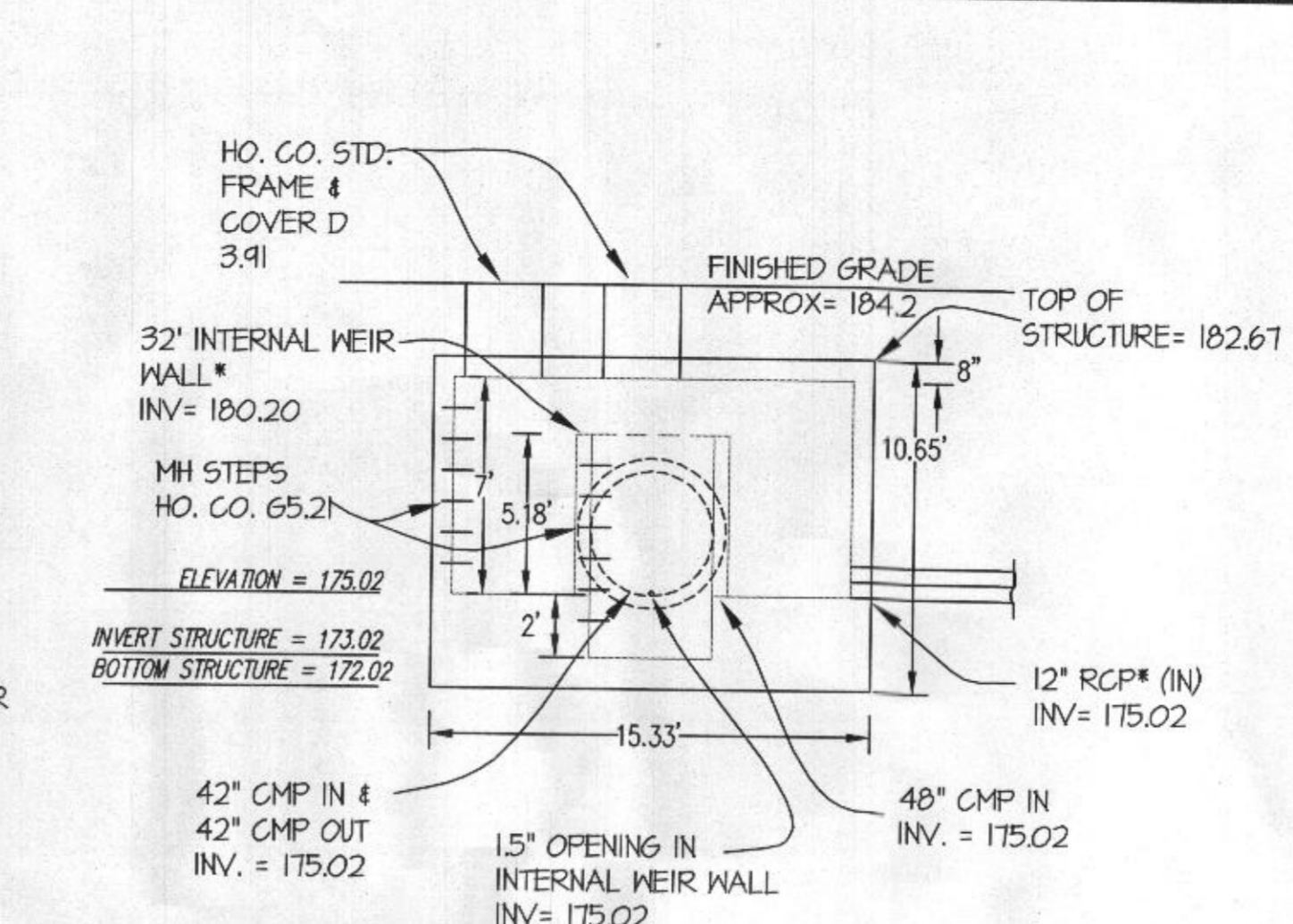
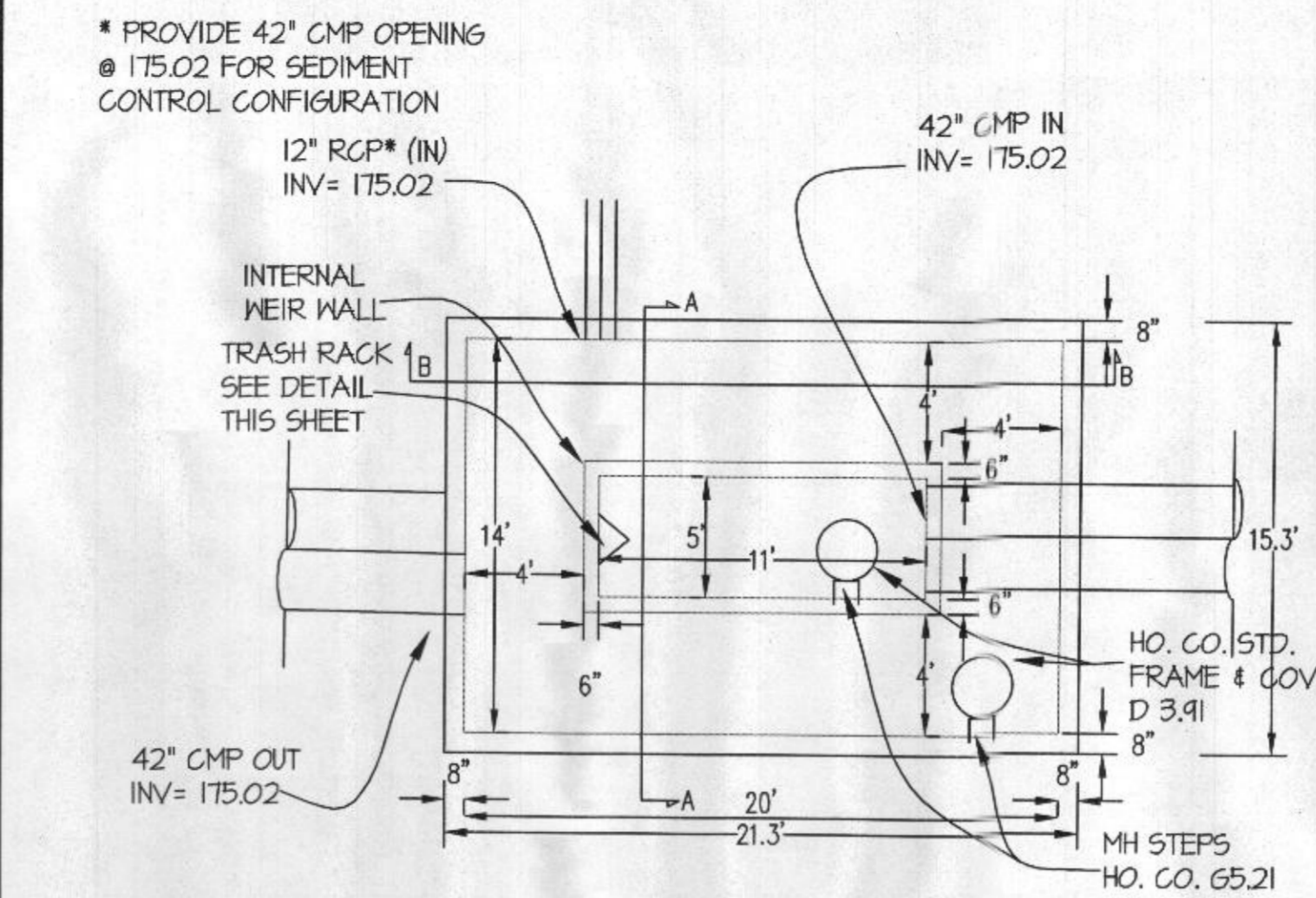
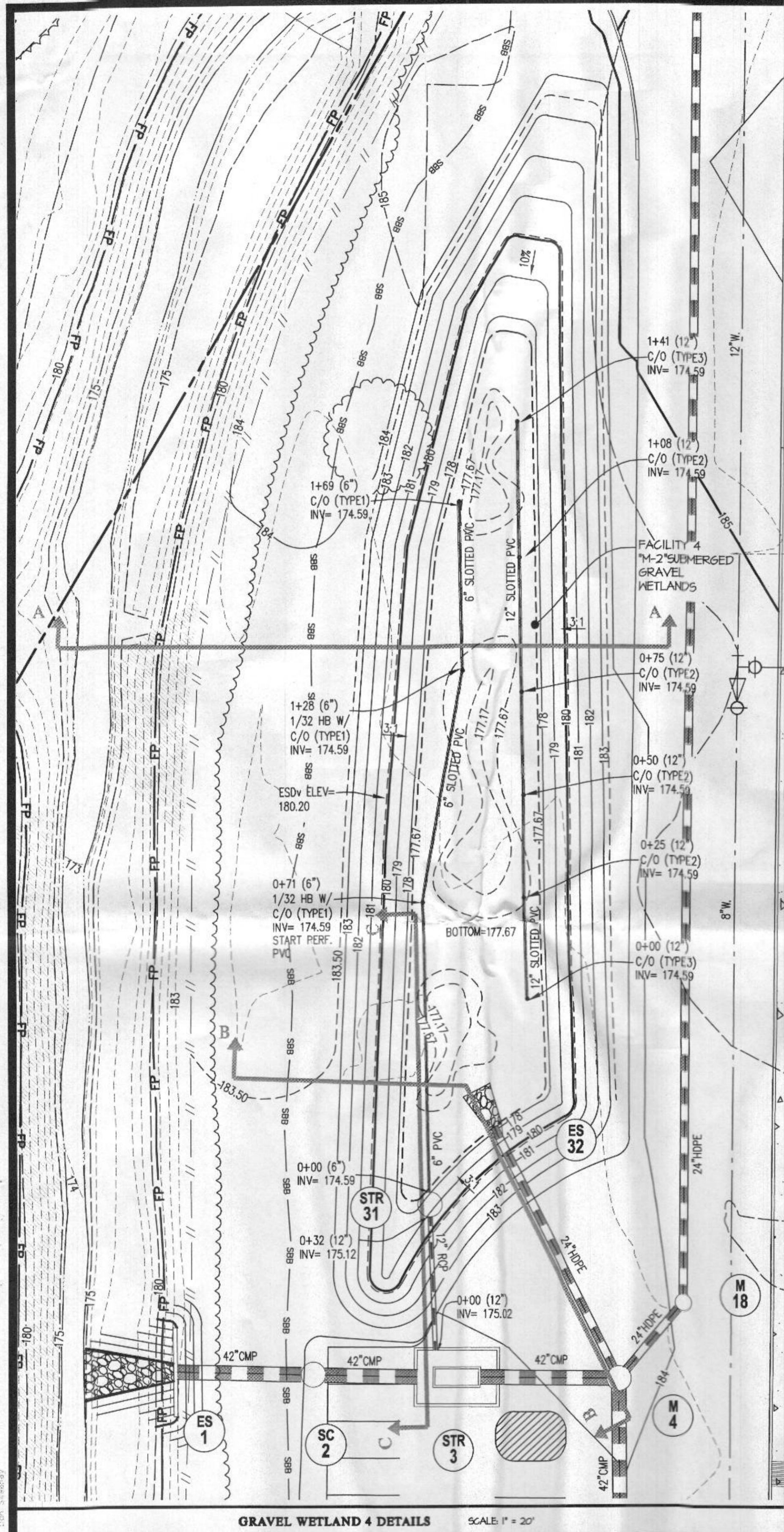
PREPARED FOR:
 Patuxent 8235, LLC
 898 AIRPORT PARK RD
 SUITE 210
 GLEN BURNIE, MD 21061
 DAVE LAZAS
 410-347-7170

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12979
 EXPIRATION DATE: MAY 26, 2014

STORMWATER MANAGEMENT DETAILS
PATUXENT PARK INDUSTRIAL AREA
PARCELS A
OFFICE/WAREHOUSE BUILDING
 PLAT NO: _____
 OFFICE & WAREHOUSE BUILDINGS
 ELECTION DISTRICT No. 6

SCALE: AS SHOWN
 ZONING: M-2
 DATE: JUN, 2013
 TAX MAP - GRID: 48-3
 SHEET: 12 OF 15

G. L. W. FILE NO. 12014
 SHEET 12 OF 15
 HOWARD COUNTY, MARYLAND



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director _____ Date _____

Chief, Division of Land Development _____ Date _____

Chief, Development Engineering Division _____ Date _____

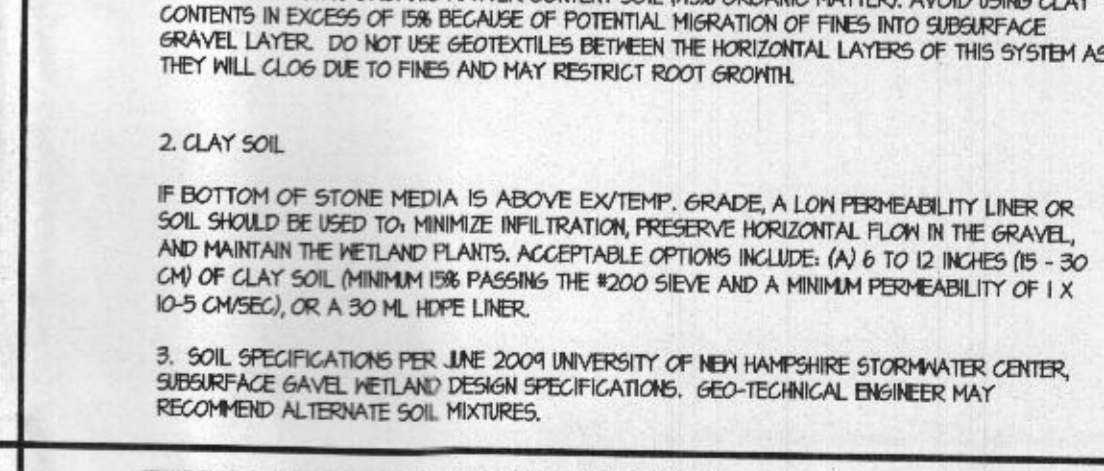
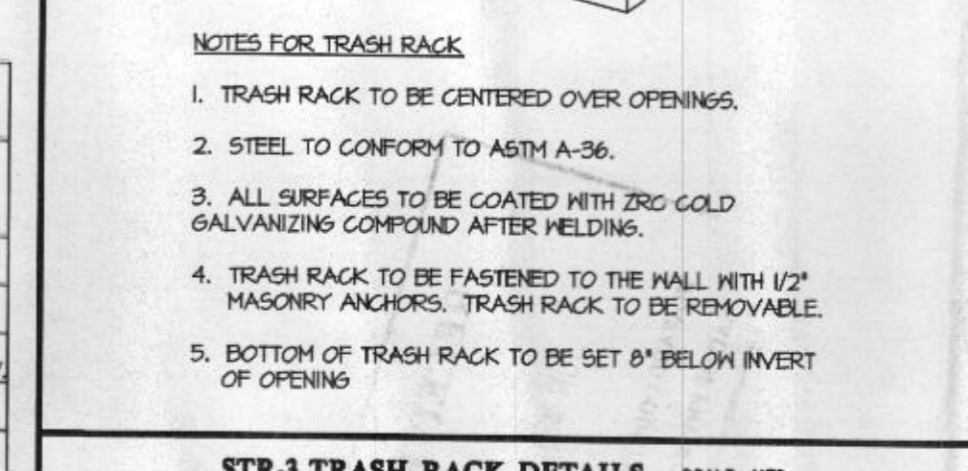
**SD PIPE SUMMARY TABLE (SHEET 13)
PRIVATELY OWNED AND MAINTAINED**

SIZE (INCHES)	TYPE	QUANTITY (L.F.)	REMARKS
6	PVC	43	SCHEDULE 40
6	SLOTTED PVC	105	SCHEDULE 40
12	PVC	6	SCHEDULE 40
12	SLOTTED PVC	145	SCHEDULE 40
12	RCP	32	ASTM C-361

SH-1 TYPE (PER M2), SUBMERGED GRAVEL WETLANDS (M2) NON - WIDE 370 FACILITY
TOTAL DRAINAGE AREA TO FACILITY = 10.64 ACRES
WQV PROVIDED = 25,651 G/FT
LOW-FLOW OUTFALL: 2.1' OPENING
HIGH-FLOW OUTFALL: STR-3 (32") WEIR ELEV = 180.20
10 YR WSEL = 180.45
10 YR BLOCKED WSEL = 180.45
T.O.D. = 183.00
FOR STORMWATER PLANNING, SEE LANDSCAPE PLAN

STRUCTURE SCHEDULE

NO.	TYPE	WIDTH (INSIDE)	TOP ELEVATION		INVERT ELEVATION		STANDARD DETAIL	OWNERSHIP & MAINTENANCE	NOTES
			UPPER	LOWER	UPPER	LOWER			
ES-32	HOPE END SECTION	---	178.92	---	171.67	---	---	PRIVATE	---
STR-31	MANHOLE	6'	181.50	---	174.54	174.25	HO. CO. G. 5.13	PRIVATE	NEEBAH FOUNDRY-R-2554 INLET FRAME & GRATE OR EQUIV.



GLWGUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

PREPARED FOR:
Patuxent 8235, LLC
898 AIRPORT PARK RD
SUITE 210
GLEN BURNIE MD 21061
DAVE LAZAS
410-347-7170

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975
EXPIRATION DATE: MAY 28, 2014

STORMWATER MANAGEMENT DETAILS
PATUXENT PARK INDUSTRIAL AREA
PARCELS A
OFFICE/WAREHOUSE BUILDING
PLAT NO: _____
OFFICE & WAREHOUSE BUILDINGS

SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	M-2	12014
DATE	TAX MAP - GRID	SHEET
JUN., 2013	48-3	13 OF 15

LANDSCAPE NOTES

- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16J24 OF THE HOWARD COUNTY CODE & THE HOWARD COUNTY LANDSCAPE MANUAL.
- CONTRACTOR SHALL NOTIFY ALL UTILITIES AT LEAST (5) FIVE DAYS BEFORE STARTING WORK. ALL GENERAL NOTES, ESPECIALLY THOSE REGARDING UTILITIES, ON SHEET NO.1 SHALL APPLY.
- FIELD VERIFY UNDERGROUND UTILITY LOCATIONS AND EXISTING CONDITIONS BEFORE STARTING PLANTING WORK. CONTACT CONSTRUCTION MANAGER OR OWNER IF ANY RELOCATIONS ARE REQUIRED.
- PLANT QUANTITIES SHOWN ON THE PLANT LIST ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON THE PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN SHALL TAKE PRECEDENCE.
- ALL PLANT MATERIAL SHALL BE FULL HEAVY, WELL FORMED, SYMMETRICAL, AND CONFORM TO THE A.A.N. SPECIFICATIONS. IN ADDITION, ALL REQUIRED PLANTING FOR THE LANDSCAPE ISLANDS IN THE PARKING LOT SHALL CONFORM TO THE HOWARD COUNTY LANDSCAPE MANUAL. ALL PLANT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THIS PLAN. SEE THIS SHEET FOR PLANTING DETAILS.
- NO SUBSTITUTION SHALL BE MADE WITHOUT PRIOR APPROVAL FROM HOWARD COUNTY DPZ AND THE OWNER OR HIS REPRESENTATIVE.
- ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES BUT NOT OTHERWISE PLANTED, PAVED, OR MULCHED SHALL BE SOLOPED OR SEEDED IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATION. A MINIMUM OF 4" OF TOPSOIL SHALL BE PROVIDED TO ALL PLANTING AREAS.
- THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING IF HE/SHE ENCOUNTERS SOIL DRAINAGE CONDITIONS THAT MAY BE DETRIMENTAL TO THE GROWTH OF THE PLANTS.
- ALL EXPOSED EARTH WITHIN THE LIMITS OF PLANTING BEDS SHALL BE MULCHED WITH SHREDDED HARDWOOD MULCH PER THE PLANTING DETAILS.
- DO NOT PLANT WITHIN THE PUBLIC WATER, SEWER AND UTILITY EASEMENT.
- VERIFY THE LOCATION AND DEPTH OF THE COMMUNICATION LINES WITHIN THE AT&T R/W PRIOR TO ANY PLANTING WITHIN THIS R/W. THE CONTRACTOR SHALL CONTACT 611 FOR ANY NECESSARY RELOCATION OF PLANT MATERIALS.
- SCHEDULES A & B ARE PROVIDED FOR LANDSCAPE SURETY CALCULATION PURPOSES. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPM DEVELOPERS AGREEMENT IN THE AMOUNT OF \$10,000.00 FOR THE FOLLOWING PLANTS:
35 REQUIRED SHADE TREES @ \$300/TREE = \$10,500.00

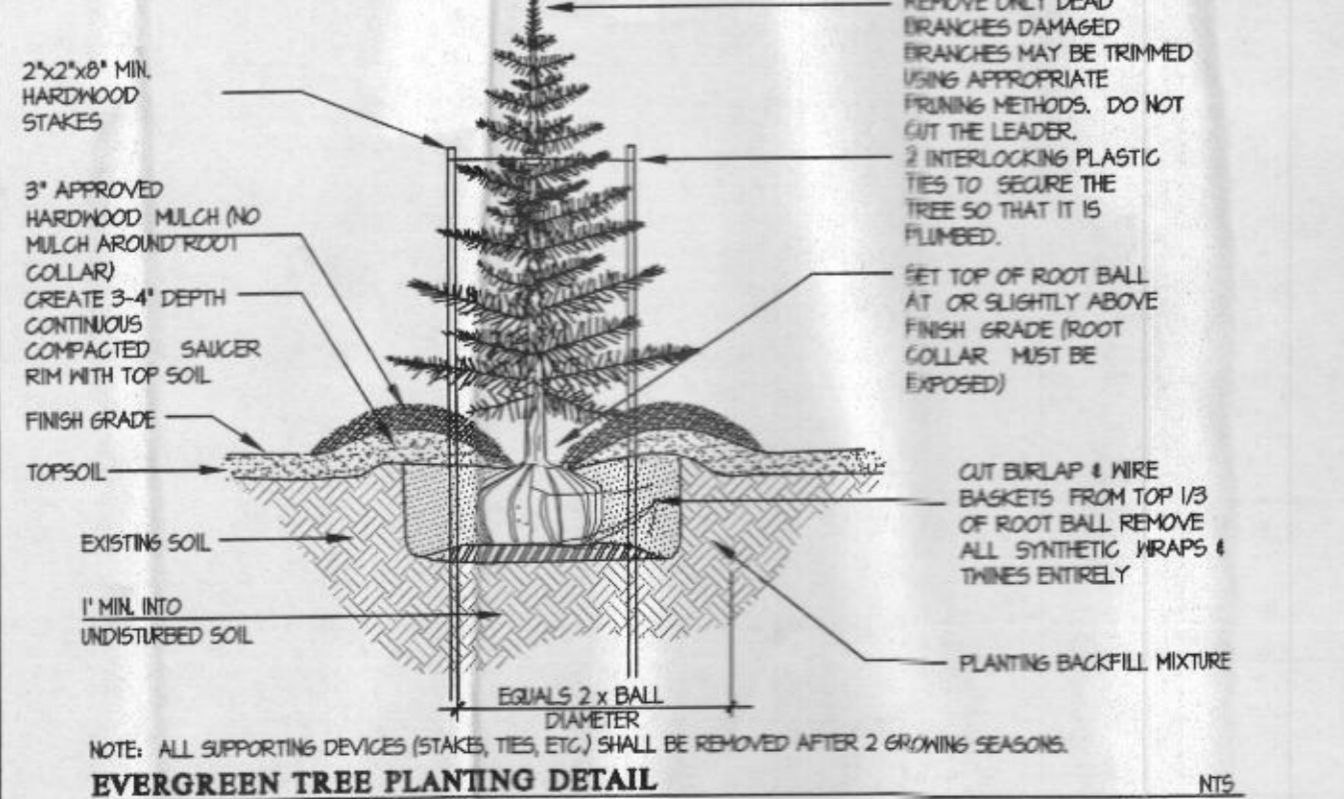
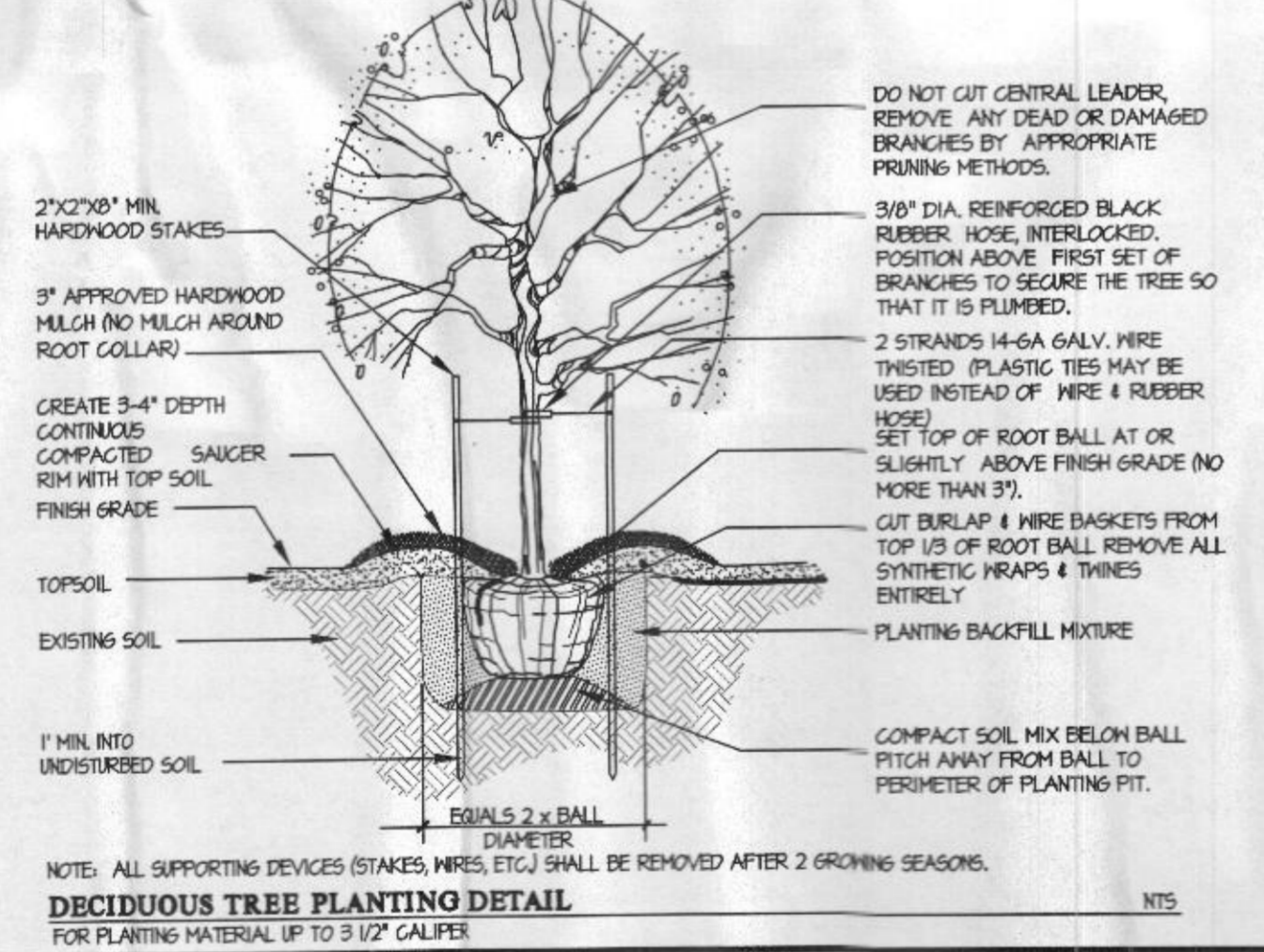
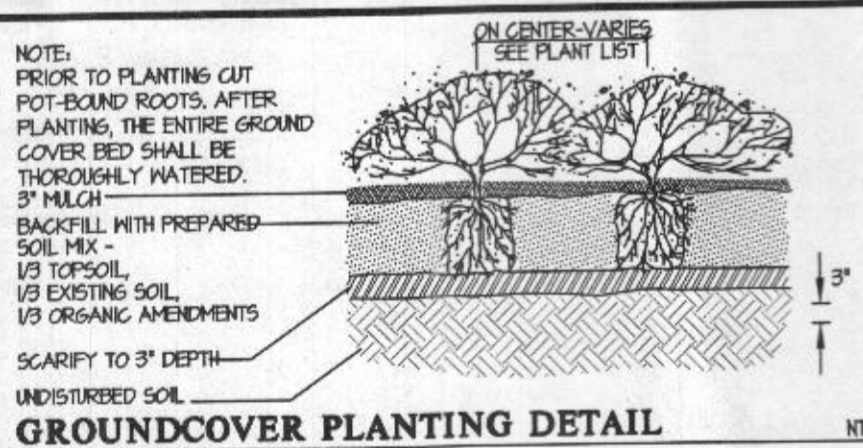
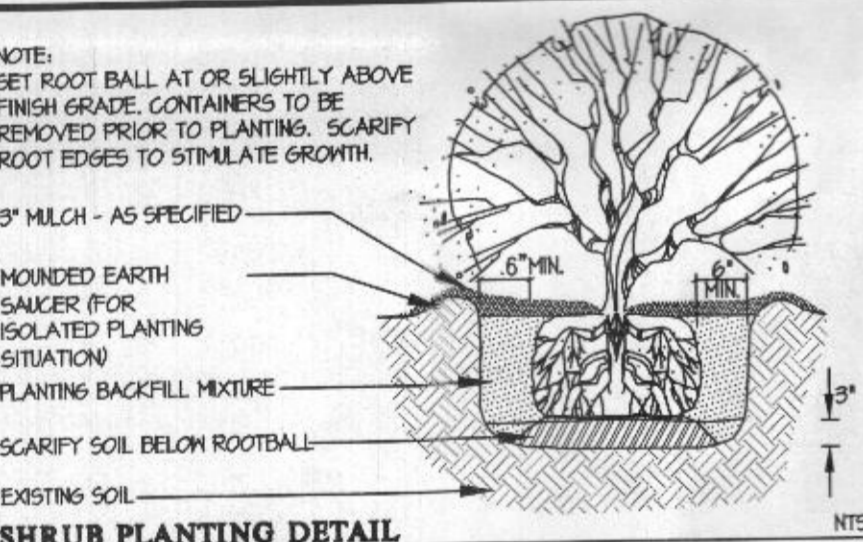
PLANT LIST				
SYMBOL	QTY.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	ROOT/COMMENTS
SHADE TREE				
	35	ZELKOVA SEBRATA VILLAGE GREEN/ VILLAGE GREEN ZELKOVA	2 1/2-3" CAL	B&B
BIO-RETENTION FACILITY TREES				
	2	ACER NESINDO/ BOX ELDER	2 1/2-3" CAL	B&B
BIO-RETENTION & WETLAND FACILITY SHRUB				
	56	CORNUS SERICEA RUBY/ RUBY RED OSIER DOGWOOD	18"-24" SPR.	CONTAINER
WETLAND HERBACEOUS				
	545	CAREX GRINITA / FRINGED SEDGE	18" O.C. MAX	2" PLUG
	305	CAREX STRICTA/ UPRIGHT SEDGE	18" O.C. MAX	2" PLUG

SCHEDULE-A: PERIMETER LANDSCAPE EDGE	
PERIMETER No.	1
USE SITUATION	COMMERCIAL/INDUSTRIAL ADJ. TO SAME
LANDSCAPE TYPE	A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	1648'
CREDIT FOR EXISTING VEGETATION	NO
CREDIT FOR WALL, FENCE OR BERM	NO
NUMBER OF PLANTS REQUIRED	27
SHADE TREES	0
EVERGREEN TREES	0
SHRUBS	0
NUMBER OF PLANTS PROVIDED	27
SHADE TREES	0
EVERGREEN TREES	0
OTHER TREES (@ 2:1 substitution)	0
SHRUBS (@1:1 substitution)	0

NOTE: BIO-RETENTION TREES THAT ARE AT LEAST 25" CAL CAN BE COUNTED TOWARDS REQUIRED INTERNAL 1 PERIMETER LANDSCAPING

SCHEDULE B - PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	161 SPACES
NUMBER OF TREES REQUIRED	B (1 SHADE TREE PER 20 PARKING SPACES)
NUMBER OF TREES PROVIDED	B
SHADE TREES	N/A
OTHER TREES (2:1 substitution)	N/A

DIETARY TYPE	SHADE TREES/LF	EVS. TREES/LF	SHRUBS/LF
A	1:60	0	0
B	1:50	1:40	0
C	1:40	1:20	0
D	1:60	1:10	0
E	1:40	0	1:4



SPECIFICATIONS: PLANT MATERIALS AND PLANTING METHODS

A. PLANT MATERIALS
THE LANDSCAPE CONTRACTOR SHALL FURNISH AND INSTALL AND/OR DIG, BALL, BURLAP AND TRANSPORT ALL OF THE PLANT MATERIALS CALLED FOR ON DRAWINGS AND/OR LISTED IN THE PLANT SCHEDULE.

1. PLANT NAMES
PLANT NAMES USED IN THE PLANT SCHEDULE SHALL CONFORM WITH "A.A.N." STANDARDS.

2. PLANT STANDARDS
ALL PLANT MATERIAL SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE USA STANDARD FOR NURSERY STOCK LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN HERE-AFTER REFERRED TO AS A.A.N. STANDARDS. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY. SHALL HAVE A NORMAL HABIT OF GROWTH AND SHALL BE FIRST QUALITY, SOUND, VIGOROUS, WELL-BRANCHED AND WITH HEALTHY, WELL-FURNISHED ROOT SYSTEMS. THEY SHALL BE FREE OF DISEASE, INSECT PESTS AND MECHANICAL INJURIES.

3. PLANT MEASUREMENTS
ALL PLANTS SHALL CONFORM TO THE MEASUREMENTS SPECIFIED IN THE PLANT SCHEDULE.

A. CALIPER MEASUREMENTS SHALL BE TAKEN SIX INCHES (6") ABOVE GRADE FOR TREES UP TO FOUR-INCH (4") CALIPER AND TWELVE (12") ABOVE GRADE FOR TREES GREATER THAN FOUR INCHES (4") IN CALIPER.

B. MINIMUM BRANCHING HEIGHT FOR ALL SHADE TREES SHALL BE SIX FEET (6'), MAXIMUM EIGHT FEET (8').

C. CALIPER, HEIGHT, SPREAD AND SIZE OF BALL SHALL BE GENERALLY AS FOLLOWS:

CALIPER	HEIGHT	SPREAD	SIZE OF BALL
2" - 2.5"	12'-14'	5'-6'	28" DIAMETER
3" - 3.5"	14'-16'	6'-8'	32" DIAMETER
3.5" - 4"	14'-16'	8'-10'	36" DIAMETER
4" - 4.5"	16'-18'	8'-10'	40" DIAMETER
4.5" - 5"	16'-17'	10'-12'	44" DIAMETER
5" - 5.5"	18'-20'	10'-12'	48" DIAMETER
5.5" - 6"	18'-20'	12'-14'	52" DIAMETER

ALL PLANT MATERIAL SHALL GENERALLY AVERAGE THE MEDIAN FOR THE SIZE RANGES INDICATED ABOVE AS INDICATED IN THE "A.A.N." STANDARDS.

4. PLANT IDENTIFICATION
LABELS SHALL BE ATTACHED TO ALL SHADE TREES, MINOR TREES, SPECIFIC SHRUBS AND BUNDLES OR BOXES OF OTHER PLANT MATERIAL. PRINTS THE BOTANICAL AND COMMON NAMES, SIZE AND QUANTITY OF EACH. EACH SHIPMENT OF PLANTS SHALL BEAR CERTIFICATES OF INSPECTION AS REQUIRED BY FEDERAL, STATE AND COUNTY AUTHORITIES.

5. PLANT INSPECTIONS
THE OWNER MAY REQUEST, AT LEAST TEN (10) DAYS PRIOR TO THE INSTALLATION OF ANY PROPOSED PLANT MATERIAL, TO INSPECT ALL PROPOSED PLANT MATERIAL AT THE SOURCE OF ORIGIN.

B. PLANTING METHODS
ALL PROPOSED PLANT MATERIALS THAT MEET THE SPECIFICATIONS IN SECTION A ARE TO BE PLANTED IN ACCORDANCE WITH THE FOLLOWING METHODS DURING THE PROPER PLANTING SEASONS AS DESCRIBED IN THE FOLLOWING:

1. PLANTING SEASONS
THE PLANTING OF DECIDUOUS TREES, SHRUBS AND VINES SHALL BE FROM MARCH 15TH TO JUNE 15TH AND FROM SEPTEMBER 15TH TO DECEMBER 15TH. PLANTING OF DECIDUOUS MATERIAL MAY BE CONTINUED DURING THE WINTER MONTHS PROVIDING THERE IS NO FROST IN THE GROUND AND FROST-FREE TOPSOIL. PLANTING MIXTURES ARE USED.

THE PLANTING OF EVERGREEN MATERIAL SHALL BE FROM MARCH 15TH TO JUNE 15TH AND FROM AUGUST 15TH TO DECEMBER 15TH. NO PLANTING SHALL BE DONE WHEN THE GROUND IS FROZEN OR EXCESSIVELY MOIST. NO FROZEN OR WET TOPSOIL SHALL BE USED AT ANY TIME.

2. DIGGING
ALL PLANT MATERIAL SHALL BE DUG, BALLED AND BURLAPPED (B&B) IN ACCORDANCE WITH THE "A.A.N. STANDARDS".

3. EXCAVATION OF PLANT PITS
THE LANDSCAPING CONTRACTOR SHALL EXCAVATE ALL PLANT PITS, HEDGE TRENCHES AND SHRUB BEDS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

A. LOCATIONS OF ALL PROPOSED PLANT MATERIAL SHALL BE STAKED AND APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT BEFORE ANY OF THE PROPOSED PLANT MATERIAL IS INSTALLED BY THE LANDSCAPE CONTRACTOR.

B. ALL PITS SHALL BE GENERALLY CIRCULAR IN OUTLINE. VERTICAL SIDES; DEPTH SHALL NOT BE LESS THAN 6" DEEPER THAN THE ROOT BALL DIAMETER SHALL NOT BE LESS THAN TWO TIMES THE DIAMETER OF THE ROOT BALL AS SET FORTH IN THE FOLLOWING SCHEDULE.

C. IF AREAS ARE DESIGNATED AS SHRUB BEDS OR HEDGE TRENCHES, THEY SHALL BE EXCAVATED TO AT LEAST 18" DEPTH MINIMUM. AREAS DESIGNATED FOR GROUND COVERS AND VINES SHALL BE EXCAVATED TO AT LEAST 12" IN DEPTH MINIMUM.

D. DIAMETER AND DEPTH OF TREE PITS SHALL GENERALLY BE AS FOLLOWS:

PLANT SIZE	ROOT BALL	PIT DIA.	PIT DEPTH
2" - 2.5" CAL.	28"	36"	24"
3" - 3.5" CAL.	32"	40"	28"
3.5" - 4" CAL.	36"	44"	32"
4" - 4.5" CAL.	40"	48"	36"
4.5" - 5" CAL.	44"	52"	40"
5" - 5.5" CAL.	48"	56"	44"
5.5" - 6" CAL.	52"	60"	48"

A 20% COMPACTION FIGURE OF TOPSOIL TO BE REMOVED IS ASSUMED AND WILL BE ALLOWED IN CALCULATION OF EXTRA TOPSOIL. THE TABULATED PIT SIZES ARE FOR PURPOSES OF UNIFORM CALCULATION AND SHALL NOT OVERRIDE THE SPECIFIED DEPTHS BELOW THE BOTTOMS OF THE ROOT BALLS.

4. STAKING, GUYING AND WRAPPING
ALL PLANT MATERIAL SHALL BE STAKED OR GUYED, AND WRAPPED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

A. STAKES SHALL BE SOUND WOOD 2" X 2" ROUGH SAWN OAK OR SIMILAR. DURABLE WOODS, OR LENGTHS, MINIMUM 7'-0" FOR MAJOR TREES AND 5'-0" MINIMUM FOR MINOR TREES.

B. WIRE AND CABLE WIRE SHALL BE NO. 6A GALVANIZED OR BETHANIZED ANNEALED STEEL WIRE. FOR TREES OVER 3" CALIPER, PROVIDE 5/16" TURN BUCKLES, EYE AND EYE WITH 4" TAKE-UP. FOR TREES OVER 5" CALIPER, PROVIDE 3/8", 1 STRAND CABLE GALVANIZED PLATED STEEL, WITH GALVANIZED "EYE" THIMBLES OF WIRE AND HOSE ON TREES UP TO 3" IN CALIPER.

C. HOSE SHALL BE NEW 2 PLY REINFORCED RUBBER HOSE, MINIMUM 1/2" I.D. "PLASTIC LOCK TIES" OR "PAUL'S TREES BRACES" MAY BE USED IN PLACE OF WIRE AND HOSE ON TREES UP TO 3" IN CALIPER.

D. ALL TREES UNDER 3" IN CALIPER ARE TO BE PLANTED AND STAKED IN ACCORDANCE WITH THE ATTACHED PLANTING DETAILS.

5. PLANT PRUNING, EDGING AND MULCHING
A. EACH TREE, SHRUB OR VINE SHALL BE PRUNED IN AN APPROPRIATE MANNER TO ITS PARTICULAR REQUIREMENTS, IN ACCORDANCE WITH ACCEPTED STANDARD PRACTICE. BROKEN OR BROISE BRANCHES SHALL BE REMOVED WITH CLEAN CUTS FLUSH WITH THE ADJACENT TRUNK OR BRANCHES. ALL CUTS OVER 1" IN DIAMETER SHALL BE PAINTED WITH AN APPROVED ANTISEPTIC TREE WOUND DRESSING.

B. ALL TRENCHES AND SHRUB BEDS SHALL BE EDGED AND CULTIVATED TO THE LINES SHOWN ON THE DRAWING. THE AREAS AROUND ISOLATED PLANTS SHALL BE EDGED AND CULTIVATED TO THE FULL DIAMETER OF THE PIT. SOIL WHICH HAS BEEN REMOVED AND STACKED SHALL BE USED TO TRIM THE EDGES OF ALL EXCAVATED AREAS TO THE NEAT LINES OF THE PLANT PIT SAUCERS, THE EDGES OF SHRUB AREAS, HEDGE TRENCHES AND VINE POCKETS.

C. AFTER CULTIVATION ALL PLANT MATERIALS SHALL BE MULCHED WITH A 3" LAYER OF FINE, SHREDDED PINE BARK, PEAT MOSS, OR ANOTHER APPROVED MATERIAL OVER THE ENTIRE AREA OF THE BED OR SAUCER.

6. PLANT INSPECTION AND ACCEPTANCE
THE DESIGN REVIEW COMMITTEE SHALL BE RESPONSIBLE FOR INSPECTING ALL PLANTING PROJECTS ON A PERIODIC BASIS TO ASSURE THAT ALL WORK IS PROCEEDING IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.

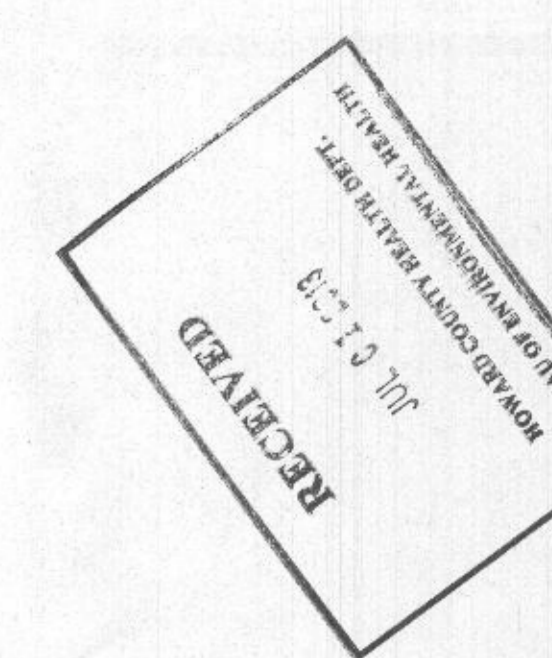
7. PLANT GUARANTEE
ALL PLANT MATERIAL SHALL BE GUARANTEED FOR THE DURATION OF ONE FULL GROWING SEASON AFTER FINAL INSPECTION AND ACCEPTANCE OF THE WORK IN THE PLANTING PROJECT. PLANTS SHALL BE ALIVE AND IN SATISFACTORY GROWING CONDITION AT THE END OF THE GUARANTEE PERIOD.

A. FOR THIS PURPOSE, THE "GROWING SEASON" SHALL BE THAT PERIOD BETWEEN THE END OF THE "SPRING" PLANTING SEASON AND THE COMMENCEMENT OF THE "FALL" PLANTING SEASON.

B. GUARANTEE FOR PLANTING PERFORMED AFTER THE SPECIFIED END OF THE "SPRING" PLANTING SEASON, SHALL BE EXTENDED THROUGH THE END OF THE NEXT FOLLOWING "SPRING" PLANTING SEASON.

SOODING
ALL SOODING SHALL BE IN ACCORDANCE TO THE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" LATEST EDITION APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS.

ALL SOOD SHALL BE STRONGLY ROOTED SOOD, NOT LESS THAN TWO YEARS OLD AND FREE OF NEEDS AND UNDESIRABLE NATIVE GRASSES. PROVIDE ONLY SOOD CAPABLE OF GROWTH DEVELOPMENT WHEN PLANTED AND IN STRIPS NOT MORE THAN 18" WIDE X 4' LONG. PROVIDE SOOD COMPOSED PRINCIPALLY OF IMPROVED STRAIN KENTUCKY BLUEGRASS, SUCH AS, COLUMBIA, VICTA, OR ESCORT.



* THE EXISTING DRAINAGE & UTILITY EASEMENT ALONG THE WEST SIDE OF PARCEL 'A' PREVENTS CREATING A FOREST CONSERVATION EASEMENT TO PROTECT ANY OF THE EXISTING FOREST ON THE NET TRACT AREA OF THIS PARCEL. THEREFORE, ALL THE EXISTING FOREST (0.244 AC.) ON THE NET TRACT IS PRESUMED TO BE CLEARED EVEN THOUGH LESS THAN 0.24 ACRES IS ACTUALLY PROPOSED TO BE CLEARED (AS SHOWN ON SHEET 14).

* FOREST CONSERVATION OBLIGATIONS FOR THIS PROJECT SHALL BE FULFILLED IN ACCORDANCE WITH SECTION 16J20 OF THE FOREST CONSERVATION MANUAL UNDER SDP-13-013 BY THE PAYMENT OF A FEE IN LIEU IN THE AMOUNT OF \$17,122.50 FOR THE 103,830 SQ. FT. OF FOREST CONSERVATION OBLIGATION.

DEVELOPER'S/BUILDER'S CERTIFICATE
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16J24 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL AND THE M.F. LANDSCAPE DESIGN CRITERIA. I/WE FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME _____ DATE _____

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Director _____ Date _____

Chief, Division of Land Development _____ Date _____

Chief, Development Engineering Division _____ Date _____

GLWGutschick Little & Weber, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-889-2324 FAX: 301-421-4186

PREPARED FOR:
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898 AIRPORT PARK RD
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THIS PLAN IS FOR PLANTING PURPOSES ONLY

LANDSCAPE NOTES and DETAILS
PATUXENT PARK INDUSTRIAL AREA
PARCELS A
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