ADDRESS CHART	
PARCEL NO.	STREET ADDRESS
485 & 425	6240 HIDDEN CLEARING

PERMIT INFO CHART					
OWNER: HOWARD COUNTY, MD. 3450 COURT HOUSE DR. ELLICOTT CITY, MD 21043 410-313-2040					PARCEL 425 & 485
DEED REF.	BLOCK NO. 17	ZONE R-SC	TAX ZONE 36	ELECT. DIST. 6TH	CENSUS TRACT 6006.02
WATER CODE		SEWER CODE			

SEWELL'S ORCHARD COMMUNITY PARK

PHASE I - POND IMPROVEMENTS, CONCRETE WEIRS, WOODEN BRIDGES & CONCRETE SPILLWAYS CONSTRUCTION AND WETLAND CREATION

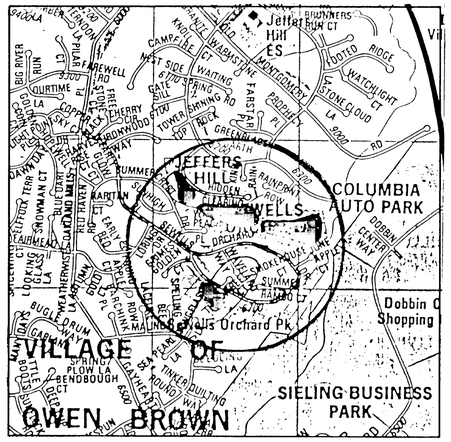
CAPITAL PROJECT NO.: N-3090

GENERAL NOTES:

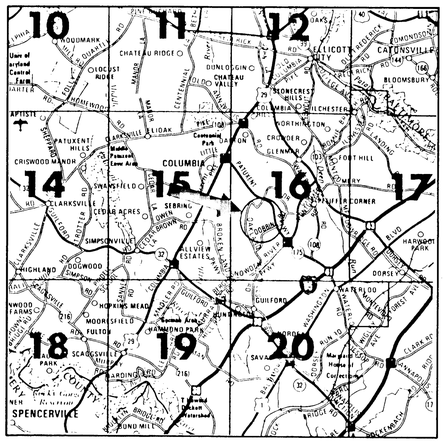
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY AND MSHA STANDARDS AND SPECIFICATION, IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
4. PROJECT BACKGROUND:
   LOCATION: SEWELL'S ORCHARD PARK
   TAX MAP NO. 36, PARCEL NO. 425 & 485
   ZONING: R-SC RESIDENTIAL
   SITE AREA: 25 ACRES +/-
5. FIELD SURVEY PERFORMED BY JOHN E. HARMS, ASSOCIATES, INC. APRIL 27, 1994.
6. EXISTING UTILITIES WERE LOCATED BY FIELD SURVEY.
7. COORDINATES BASED ON NAD 83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL

STATION	COORDINATES	ELEVATION
36E4	N 560,264.353 E 1,359,398.738	414.288
36E5	N 558,664.734 E 1,359,171.287	406.930

8. NO TRAFFIC STUDY IS REQUIRED FOR THIS SITE.
9. A JOINT PERMIT APPLICATION HAS BEEN SUBMITTED FOR THIS PROJECT. THE TRACKING NUMBER IS 199569131



VICINITY MAP
SCALE: 1" = 1000'



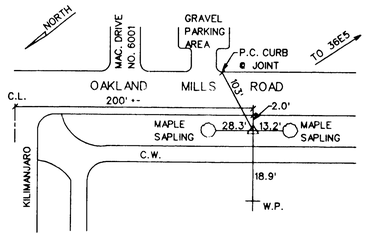
LOCATION MAP
SCALE: 1" = 2.5 MILES

LIST OF ABBREVIATIONS

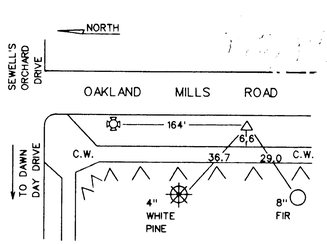
AC	ACRES
B&B	BALLED AND BURLAPPED
BL	BASELINE
BLDG.	BUILDING
CAL.	CALIPER
CB MH	CABLE MANHOLE
C&G	CURB AND GUTTER
C/L	CENTERLINE
CONC.	CONCRETE
C.I.-L.P.	CAST IRON LOW PRESSURE GAS LINE
Ø OR DIA.	DIAMETER
D.G.S.A.B.	DENSE GRADED STABILIZED AGGREGATE BASE
E.	EAST
E.C.	ELECTRICAL CONDUIT
E.J.	EXPANSION JOINT
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EX.	EXISTING
F.H.	FIRE HYDRANT
F.L.	FLOW LINE
GV	GAS VALVE
H.C.	HANDICAPPED
HT.	HEIGHT
HORI.	HORIZONTALLY
L.P.	LINEAR PROFILE
M.H.	MANHOLE
MAX.	MAXIMUM
MIN.	MINIMUM
N.T.S.	NOT TO SCALE
P.G.L.	PROPOSED GRADE LINE
PSI	POUNDS PER SQUARE INCH
R	RADIUS
R.R.	RAILROAD
R/W	RIGHT-OF-WAY
S.D.	STORM DRAIN
S.MH	SANITARY MANHOLE
S.S.	SANITARY SEWER
S	SANITARY
SQ.FT.	SQUARE FEET
SPEC.	SPECIFICATIONS
STA.	STATION
STL	STEEL
T.C.	TELEPHONE CONDUIT
TELE MH	TELEPHONE MANHOLE
TYP.	TYPICAL
VERT.	VERTICAL
W.	WATER MAIN
W/	WITH
W.M.	WATER METER
V.	VALVE

LIST OF DRAWINGS

36E4



36E5



SURVEY CONTROL STATIONS

C1854A01-P

BY THE OWNER/ DEVELOPER

" I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT."

SIGNATURE OF OWNER/ DEVELOPER — DATE 6/18/96
PRINT NAME BELOW SIGNATURE

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFFESIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT PLAN" OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER
TIMOTHY J. LYNG — DATE 5-31-96

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

USDA-NATUR L RESOURCES CONSERVATION SERVICE — DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DIVISION OF DEVELOPMENT REGULATION — DATE
CHIEF, DIVISION OF LAND DEVELOPMENT AND REGULATION — DATE
DIRECTOR — DATE 7/3/96

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

DIRECTOR — DATE

CHIEF, BUREAU OF ENGINEERING — DATE 6/18/96

APPROVED:

DIRECTOR, DEPARTMENT OF RECREATION & PARKS — DATE

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES: TJL
DRN: RCJ
CHK: TJL
DATE: 04-26-96

BY	NO.	REVISION	DATE

COVER SHEET

600' SCALE NO. _____ BLOCK NO. _____

SEWELL'S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD. 21045
ELECTION DISTRICT: 6 TAX MAP NO.: 36 PARCEL NO.: 425 & 485
PHASE I

Capital Project No.: N-3090 — Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 — PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 1 OF 26

MATCH LINE SEE SHEET 3 OF 26

SCALE: 1" = 40'

MD. STATE PLANE MERIDIAN

COURT

HIDDEN CLEARING

PLACE

WHITEPEACH

IRONWOOD WAY

SUMMERCREST DRIVE

TO TAMAR DRIVE

POND I
WATER SURFACE ELEV.= 357.65'
P. 480

POND II
WATER SURFACE ELEV.= 349.24'
P. 480

100 YR. FLOODPLAIN

20' SEWER EASEMENT

20' DRAINAGE/UTILITY EASEMENT

4' MACADAM PATH

E848100

N497700

E847800

N497400

*6218 HECKEL

*6222 NORTH

*6230 FRANCIS

*6234 PENN

*6238 CARBALLO

*6226 COSNER

*6221 WESTMORELAND

*6225 LEWIS

*6229 McKINDRA

*6233 HAIN

*6237 SCHNEIDER

*6241 WILSON

*6245 HENRY

*6249 PERRY

*6254 HUTCHINS

*6258 McGIVERN

*6250 LEE

*6429 ZALDUMBIDE

*6425 BLEWETT

*6421 CAMP

*6417 BARTLETT

*6413 BLOSSER

*6353 HOLLY

*6349 O'CONNOR

*6345 WANG

*6341 STEINBERG

*6337 WALWORTH

*6333 TABORSKY

*6329 LEVINE

*6325 MARAJ

*6321 HUX

*6317 JACOBS

*6313 STOLTZFUS

36"CONC. NTH TOP = 364.98' NTH INV. = 361.57' STH TOP = 365.58' STH INV. = 362.00'

PIPE TOP ELEV.=361.43 INV. ELEV.=359.93'

SSMH TOP ELEV.= 363.86'

SSMH TOP ELEV.= 366.18'

SSMH TOP ELEV.= 366.96'

SSMH TOP ELEV.= 356.01'

SSMH TOP ELEV.= 372.42' INV. IN ELEV.= 366.59' INV. IN ELEV.= 363.58'

SSMH TOP ELEV.= 368.61' INV. IN ELEV.= 361.31' INV. OUT ELEV.= 361.19'

SSMH TOP ELEV.= 368.18' INV. IN ELEV.= 362.35' INV. OUT ELEV.= 361.93'

SSMH TOP ELEV.= 383.15' INV. IN = 371.28' INV. OUT = 378.63'

30"C.M.P. END TOP ELEV.= 359.62' INV. ELEV.= 356.87'

30"C.M.P. END TOP ELEV.= 359.16' INV.= 356.41'

27"C.M.P. INV.= 349.02'

15" RISER CREST ELEV.= 357.65'

TRAV 187 ELEV.= 362.58'

TRAV 189 ELEV.= 382.77'

10' INLET

24" CONC.

15" CONC.

NOTES:

1. CONTOURS WITHIN ALL PONDS ARE APPROXIMATE. HOWEVER PONDS II & III ELEVATIONS WERE INCLUDED IN THE LATEST FIELD SURVEY. CONTRACTOR SHALL VERIFY POND FLOOR ELEVATIONS PRIOR TO HIS WORK, TO HIS SATISFACTION.
2. PONDS I-IV ARE PUBLIC STORMWATER MANAGEMENT(SWM) FACILITIES.

LEGEND:

- EDGE OF WATER
- 100 YR. FLOODPLAIN
- EX. 1' CONTOURS
- EX. 5' CONTOURS
- PARK BOUNDARY
- R/W LINE
- LOT LINE
- EX. WETLAND
- EX. TREE
- EX. RIP-RAP

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/3/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/3/96

DIRECTOR — DATE 7/3/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96

CHIEF - BUREAU OF ENGINEERING — DATE 6/16/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE ,SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES: TJL				
DRN: JAH, RCJ				
CHK: TJL				
DATE: 04-26-96	BY	NO.	REVISION	DATE

EXISTING CONDITIONS PLAN (1)

SCALE: 1"=40'

600' SCALE NO.____ BLOCK NO.____

SEWELL S ORCHARD COMMUNITY PARK

SEWELL'S ORCHARD DRIVE, COLUMBIA, MD. 21045
ELECTION DISTRICT 6 TAX MAP NO. 36, PARCEL NO. 473, 480 & 485

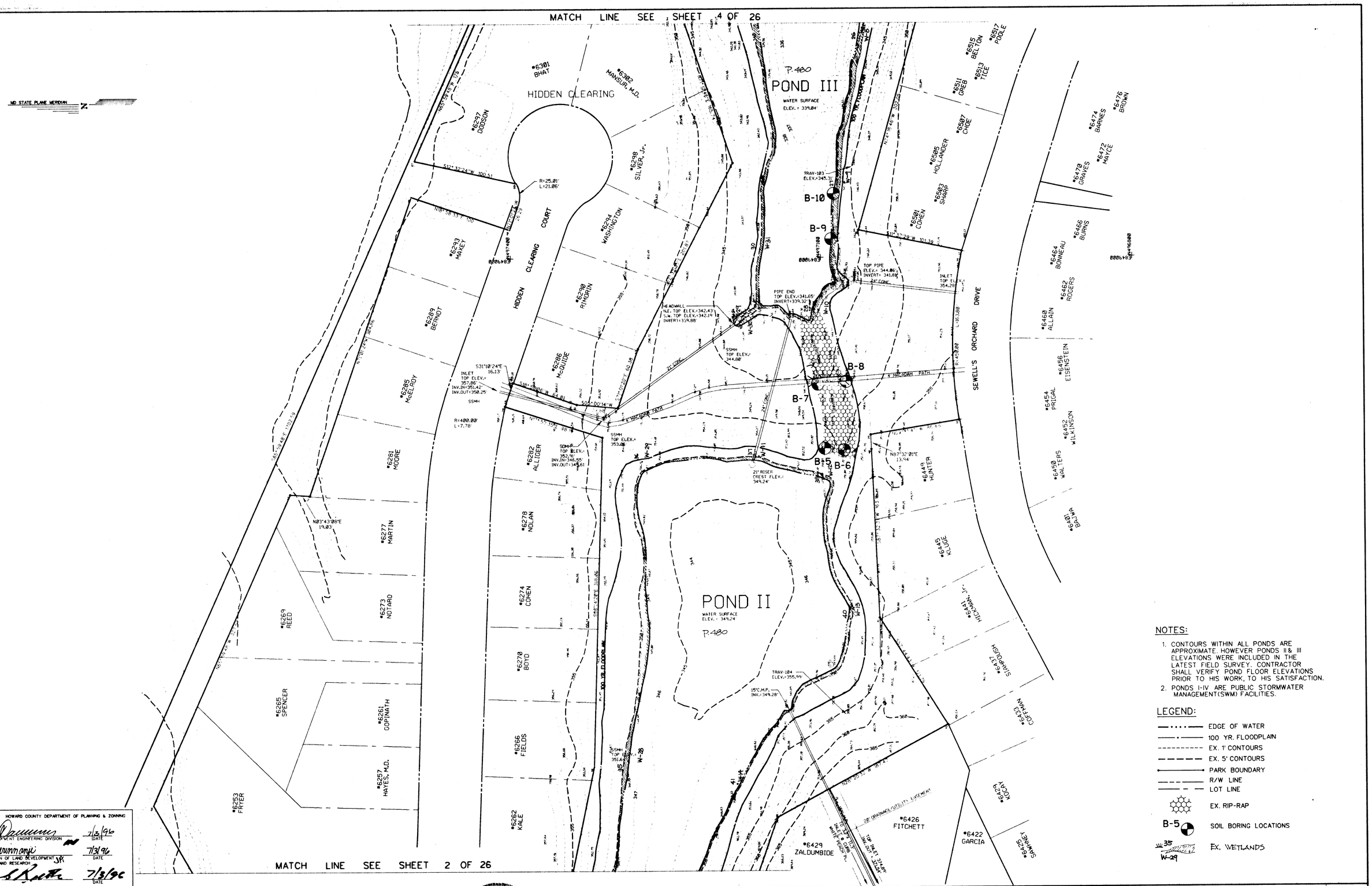
PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 2 OF 26

SDP-96-112



NOTES:

1. CONTOURS WITHIN ALL PONDS ARE APPROXIMATE. HOWEVER PONDS II & III ELEVATIONS WERE INCLUDED IN THE LATEST FIELD SURVEY. CONTRACTOR SHALL VERIFY POND FLOOR ELEVATIONS PRIOR TO HIS WORK, TO HIS SATISFACTION.
2. PONDS I-IV ARE PUBLIC STORMWATER MANAGEMENT(SWM) FACILITIES.

LEGEND:

- EDGE OF WATER
- 100 YR. FLOODPLAIN
- EX. 1' CONTOURS
- EX. 5' CONTOURS
- PARK BOUNDARY
- R/W LINE
- LOT LINE
- EX. RIP-RAP
- B-5 SOIL BORING LOCATIONS
- W-29 EX. WETLANDS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/3/96

CHIEF, DIVISION OF LAND DEVELOPMENT, SR AND RESEARCH — DATE 7/3/96

DIRECTOR — DATE 7/3/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96

CHIEF - BUREAU OF ENGINEERING — DATE 6/18/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

STATE OF MARYLAND — TIMOTHY JOSEPH LILLY — No. 17095 — REGISTERED PROFESSIONAL ENGINEER

DES: TL, LT, EL				
DRN: JAH, RCJ				
CHK: TJL				
DATE: 04-28-96	BY	NO.	REVISION	DATE

EXISTING CONDITIONS PLAN (2)

SCALE: 1"=40'

600' SCALE NO. _____ BLOCK NO. _____

SEWELL S ORCHARD COMMUNITY PARK

SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
6th ELECTION DISTRICT TAX MAP NO. 36 PARCEL NO. 470, 480 & 485

PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 3 OF 26

SDP-96-112

NOTES:

1. CONTOURS WITHIN ALL PONDS ARE APPROXIMATE, HOWEVER PONDS II & III ELEVATIONS WERE INCLUDED IN THE LATEST FIELD SURVEY. CONTRACTOR SHALL VERIFY POND FLOOR ELEVATIONS PRIOR TO HIS WORK, TO HIS SATISFACTION.
2. PONDS I-IV ARE PUBLIC STORMWATER MANAGEMENT(SWM) FACILITIES.

LEGEND:

- EDGE OF WATER
- 100 YR. FLOODPLAIN
- EX. 1' CONTOURS
- EX. 5' CONTOURS
- PARK BOUNDARY
- R/W LINE
- LOT LINE
- EX. WETLAND
- EX. TREE
- B-12 SOIL BORING LOCATIONS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 7/2/96 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — 7/3/96 DATE

DIRECTOR — 7/3/96 DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — 6/18/96 DATE
CHIEF - BUREAU OF ENGINEERING — 6/18/96 DATE

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-336-7392

DES: TL, LT, EL
DRN: JAH, RCJ
CHK: TJL
DATE: 04-28-96

BY	NO.	REVISION	DATE

EXISTING CONDITIONS
PLAN (3) - POND III
SCALE 1"-40'

600' SCALE NO. ______ BLOCK NO. ______

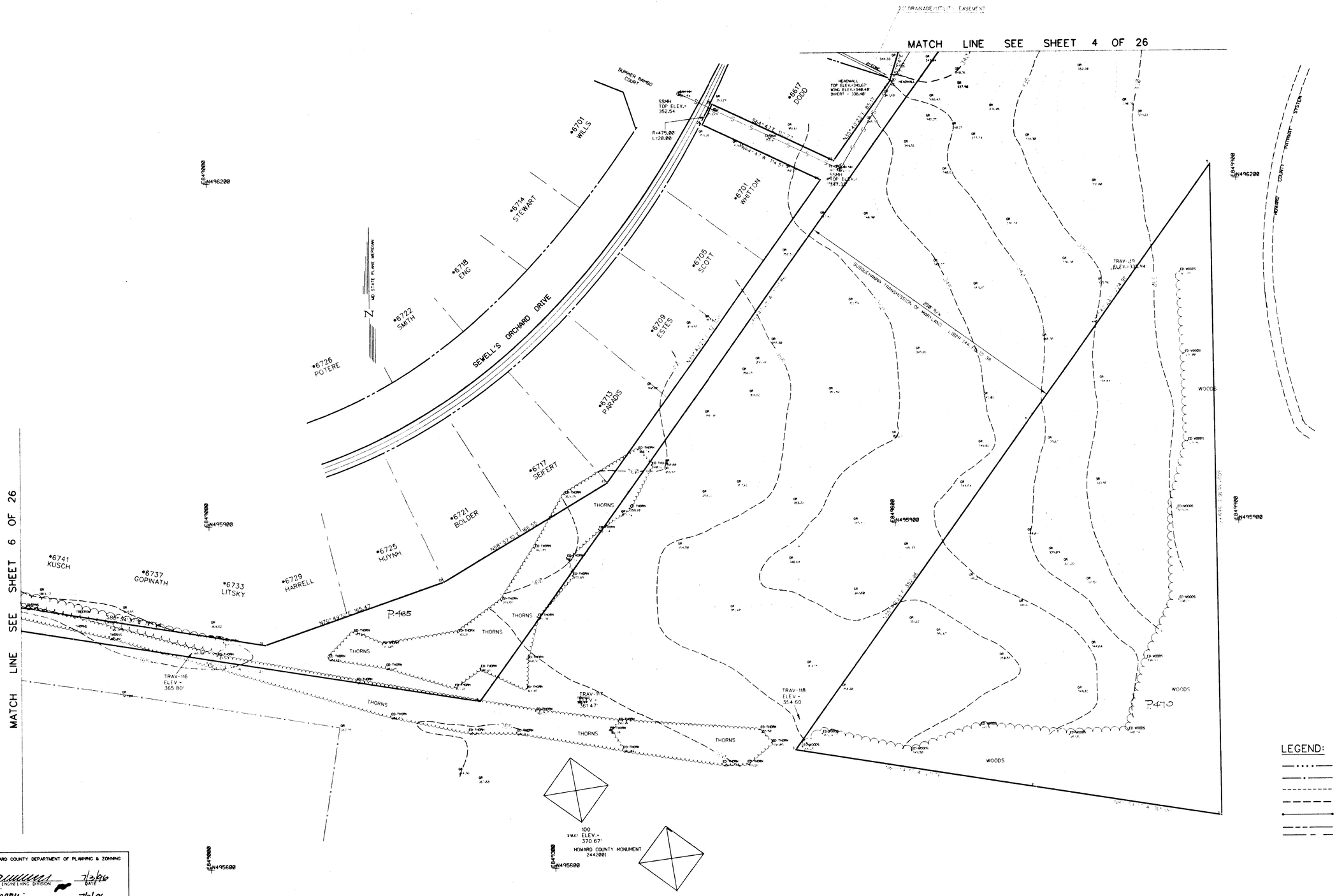
SEWELL'S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
ELECTION DISTRICT: 6 TAX MAP NO.: 36 PARCEL NO.: 470, 480 & 485
PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 4 OF 26

SDP-96-112



LEGEND:

- EDGE OF WATER
- 100 YR. FLOODPLAIN
- EX. 1' CONTOURS
- EX. 5' CONTOURS
- PARK BOUNDARY
- R/W LINE
- LOT LINE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/3/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/3/96

DIRECTOR — DATE 7/3/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96

CHIEF - BUREAU OF ENGINEERING — DATE 6/18/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD. 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES: TL, LT, EL & PM
DRN: JAH, RCJ
CHK: TJL
DATE: 04-26-96

BY	NO.	REVISION	DATE

EXISTING CONDITIONS PLAN (4)

SCALE: 1"=40'

600' SCALE NO._____ BLOCK NO._____

SEWELL'S ORCHARD COMMUNITY PARK

SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
6th ELECTION DISTRICT TAX MAP NO. 36 PARCEL NO.: 470, 480, 485

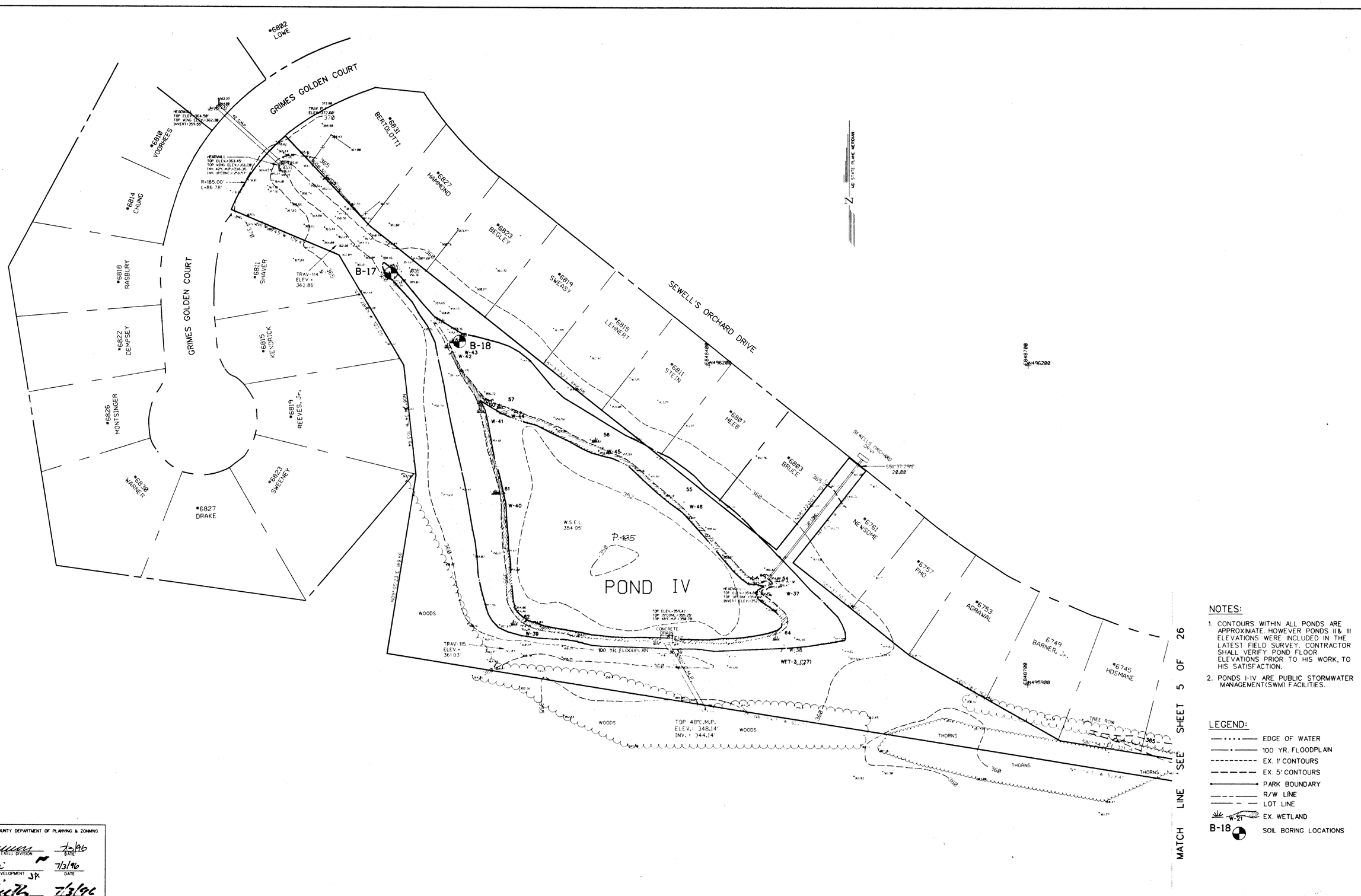
PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 5 OF 26

SDP-96-112



MATCH LINE - SEE SHEET 5 OF 26

NOTES:

1. CONTOURS WITHIN ALL PONDS ARE APPROXIMATE. HOWEVER PONDS II & III ELEVATIONS WERE INCLUDED IN THE LATEST FIELD SURVEY. CONTRACTOR SHALL VERIFY POND FLOOR ELEVATIONS PRIOR TO HIS WORK, TO HIS SATISFACTION.
2. PONDS I-IV ARE PUBLIC STORMWATER MANAGEMENT(SWM) FACILITIES.

LEGEND:

- EDGE OF WATER
- 100 YR. FLOODPLAIN
- EX. 1' CONTOURS
- EX. 5' CONTOURS
- PARK BOUNDARY
- R/W LINE
- LOT LINE
- EX. WETLAND
- B-18 SOIL BORING LOCATIONS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 7-3-96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH	DATE 7/3/96
DIRECTOR	DATE 7/3/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96
CHIEF - BUREAU OF ENGINEERING — DATE 6/18/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES: TL, LT, EL
DRN: JAH, RCJ
CHK: TJL
DATE: 04-26-96

BY	NO.	REVISION	DATE

EXISTING CONDITIONS PLAN (5) - POND IV
SCALE: 1"=40'
600' SCALE NO. _____ BLOCK NO. _____

SEWELL S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
6th ELECTION DISTRICT TAX MAP NO. 36 PARCEL NO.: 470, 480, 485
PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 6 OF 26

SDP-96-112

MATCH LINE SEE SHEET 8 OF 26
SCALE: 1" = 40'
MD. STATE PLANE MERIDIAN
POND II
POND I
WATER SURFACE ELEV. 357.65
100 YR. FLOODPLAIN
HIDDEN CLEARING COURT
WHITEPEACH PLACE
SUMMERCREST DRIVE
IRONWOOD WAY
S.P.
L.O.D.
CF
E848100
N497700
E847800
N497400
INSTALL STABILIZED CONSTRUCTION ENTRANCE.
CONSTRUCT WETLAND GABION BARRIER. TOP ELV.=349.00 L= 200'+/-
WETLAND PLANTING AREA = 3,750 S.F.
GRADE POND TO ELEVATIONS SHOWN FOR CREATING WETLANDS.
PLACE RIP-RAP AS ENERGY DISSIPATER SEE DETAIL ON SHEET 15 OF 26.
PLANT CROWN VETCH ALONG SPILLWAY WHERE SIDESLOPES ≥ 3:1
REMOVE EX. RIP-RAP & CONSTRUCT CONC. SPILLWAY SEE DETAIL, SHEET 15 OF 26.
CONSTRUCT CONC. WEIR, ABUTMENTS, WOODEN BRIDGE & GRADE AROUND STRUCTURES, SEE DETAIL, SHEET 14 OF 26.
INSTALL POND DRAIN SYSTEM. SEE SPILLWAY DETAILS FOR POND I & PROFILE SHEET 19 OF 26.
DRAIN POND TO ELEV. 350+/- PRIOR TO OTHER POND OR SPILLWAY CONSTRUCTION ACTIVITIES. INSTALL TEMPORARY BYPASS OF BASE FLOW TO POND II. REMOVE DEBRIS FROM POND I.
CONSTRUCT GABION WETLANDS BARRIER. TOP ELEV.= 357.00 SEE SHEET 22 FOR DETAILS.
GRADE TO ELEVATIONS SHOWN FOR WETLAND CREATION. ALSO SEE SHEET 22 FOR DETAILS.
WETLAND PLANTING AREA = 13,175 S.F.
MAINTAIN POSITIVE DRAINAGE FROM END OF EXIST. 30" CMP.

HYDROLOGIC CRITERIA-POND I

PRINCIPAL SPILLWAY: 2, 10, 100 YEAR — 2, 10, 100 YEAR REQUIRED
FREEBOARD 100 YEAR — >100 YEAR H.W. + 1.00' REQUIRED

STRUCTURE DATA:

TYPE: WET/RETENTION/EMBANKMENT POND
STRUCTURE CLASSIFICATION: "A"
DRAINAGE AREA TO POND: 105.2 ACRES
FREEBOARD: 3.14'

ADDITIONAL WATER QUALITY PROVIDED IN WETLAND FOREBAY.

DESIGN SUMMARY

DESIGN STORM	EX. DISCHARGE @POND 3 OUTFALL (CFS)	FACILITY INFLOW (CFS)	FACILITY DISCHARGE (CFS)	WATER SURFACE ELEV	STORAGE VOLUME AC-FT	PROPOSED DISCHARGE @ POND 3 OUTFALL (CFS)
2 YR	49	144	64	359.26	3.34	18
10 YR	202	329	212	360.52	6.07	131
100 YR	415	546	386	361.61	8.72	285

NOTES:

1. CONTOURS WITHIN ALL PONDS ARE APPROXIMATE. HOWEVER PONDS II & III ELEVATIONS WERE INCLUDED IN THE LATEST FIELD SURVEY. CONTRACTOR SHALL VERIFY POND FLOOR ELEVATIONS PRIOR TO HIS WORK, TO HIS SATISFACTION.
2. PONDS I-IV ARE PUBLIC STORMWATER MANAGEMENT(SWM) FACILITIES.
3. FOR COORDINATE VALUES FOR NEW POND DRAIN, WEIR AND BRIDGE, SEE SHEET 15 OF 26.
4. FOR STABILIZATION REQUIREMENTS, SEE SHEET 12 OF 26.

LEGEND:

- EDGE OF WATER
- 100 YR. FLOODPLAIN
- EX. 1' CONTOURS
- EX. 5' CONTOURS
- PARK BOUNDARY
- R/W LINE
- LOT LINE
- EX. WETLAND
- EX. TREE
- EX. RIP-RAP
- CF — CONSTRUCTION FENCING
- L.O.D. — LIMIT OF DISTURBANCE
- CREATED WETLAND
- S.P. — SUMP PIT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

[signature] 7/3/96
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Gino Iurinnanzi 7/3/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE

[signature] 7/3/96
DIRECTOR — DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[signature] 6/18/96
DIRECTOR OF PUBLIC WORKS — DATE

[signature] 6/18/96
CHIEF - BUREAU OF ENGINEERING — DATE

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE ,SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

REGISTERED PROFESSIONAL ENGINEER

DES: TJL
DRN: JAH, RCJ
CHK: TJL
DATE: 04-26-96

BY	NO.	REVISION	DATE

600' SCALE NO.________ BLOCK NO.________

SITE PLAN (1)

SCALE: 1"=40'

SEWELL'S ORCHARD COMMUNITY PARK

SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
ELECTION DISTRICT: 6 TAX MAP NO.: 36 No. 4 PARCEL NO.: 470, 480 & 465
PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

SDP-96-112

MATCH LINE SEE SHEET 9 OF 26

MD STATE PLANE MERIDIAN

HYDROLOGIC CRITERIA-POND II

PRINCIPAL SPILLWAY: 2, 10, 100 YEAR — 2, 10, 100 YEAR REQUIRED
FREEBOARD 100 YEAR — >100 YEAR H.W. + 1.00' REQUIRED

STRUCTURE DATA:

TYPE: WET/RETENTION/EMBANKMENT POND
STRUCTURE CLASSIFICATION: "A"
DRAINAGE AREA TO POND: 105.2 ACRES
FREEBOARD: 3.14'

ADDITIONAL WATER QUALITY PROVIDED IN WETLAND FOREBAY.

DESIGN SUMMARY

DESIGN STORM	EX. DISCHARGE @POND 3 OUTFALL (CFS)	FACILITY INFLOW (CFS)	FACILITY DISCHARGE (CFS)	WATER SURFACE ELEV	STORAGE VOLUME AC-FT	PROPOSED DISCHARGE @ POND 3 OUTFALL (CFS)
2 YR	49	69	51	350.11	2.07	18
10 YR	202	227	190	351.16	4.17	131
100 YR	415	424	362	352.13	6.01	285

NOTE RE: EX. RIP RAP

THE CONTRACTOR SHALL MAKE SURE THAT THERE WILL BE AT LEAST THREE (3) CLEAR DAYS BASED ON WEATHER FORECAST PRIOR TO THE REMOVAL OF EX. RIP RAP.

SEDIMENT TRAPPING EFFICIENCY

DA (Ac)	Vol (C.F.) Req'd	Vol (C.F.) Provided
10	20,900	18,000

NOTE

FOR CONTOURS FOR BRIDGE, AND POND SYSTEM, SEE SHEET 18 OF 26.

DREDGING NOTES

1. CONTRACTOR TO TRANSPORT EXCESS DREDGED MATERIAL OFFSITE TO:

   ALPHA RIDGE LANDFILL
   235 MARRIOTSVILLE ROAD
   MARRIOTSVILLE, MD 21104

2. DREDGED MATERIAL SHALL BE SUFFICIENTLY DRIED SO AS TO TRANSPORT IN DUMP TRUCKS WITHOUT LEAKAGE. AS AN ALTERNATE, FOR TRANSPORTING OF DREDGED SLURRY (UP TO 75% MAXIMUM MOISTURE CONTENT) THE CONTRACTOR MUST USE FULLY ENCLOSED TRUCK WITH SEALS.

3. CONTRACTOR TO STOCK PILE MATERIAL AS DIRECTED BY THE HOWARD COUNTY BUREAU OF WASTE MANAGEMENT.

PARTIALLY REMOVE RISER TO ELEVATION 345 +/-. BLOCK OUTLET END 24" BARREL & SECURE FIRMLY IN PLACE. FILL BARREL & RISER WITH CONCRETE SLURRY BY MEANS OF PUMPING.

INSTALL GABION BARRIER WALL TOP ELV.=339.0 L= 135'+/-

FILL AND GRADE POND TO ELEVATIONS SHOWN PLANTING DETAIL AS PER SHEET 22 OF 26.

WETLAND PLANTING AREA = 8,560 S.F.

GRADE & FILL AREA BEHIND GABION BARRIERS TO ELEVATIONS SHOWN

CONSTRUCT RIP-RAP ENERGY DISSIPATER. SEE DETAILS, SHEET 18 OF 26.

PLANT CROWN VETCH ALONG SPILLWAY WHERE SIDE SLOPES ≥ 3:1 (4 AREAS) (2,150 S.F.)

CONSTRUCT NEW CONC. SPILLWAY WITH CREEKS FLATS AND BOULDERS. SEE DETAILS SHEETS 15 & 18 OF 26.

INSTALL STABILIZED CONSTRUCTION ENTRANCE SEE DETAILS, SHEET 12 OF 26.

CONSTRUCT NEW BRIDGE ABUTMENT, AND WOODEN BRIDGE AND GRADE AS SHOWN. SEE DETAILS SHEET 16 OF 26.

CONSTRUCT NEW CONC. WEIR & WINGWALLS SEE DETAILS, SHEET 17 OF 26.

INSTALL 4" POND DRAIN SYSTEM. SEE DETAILS & PROFILE, SHEET 19 OF 26.

DREDGE POND II AND GRADE BOTTOM & SIDES TO ELEVATIONS SHOWN

DRAIN POND II PRIOR TO OTHER POND OR SPILLWAY CONSTRUCTION ACTIVITIES BY-PASS POND II WITH TEMPORARY DIVERSION DEVICES FROM POND I TO POND III.

INSTALL SILT FENCE AT LOCATIONS SHOWN ON PLANS.

LEGEND:

- EDGE OF WATER
- 100 YR. FLOODPLAIN
- EX. 1' CONTOURS
- EX. 5' CONTOURS
- PARK BOUNDARY
- R/W LINE
- LOT LINE
- EX. RIP-RAP
- CREATED WETLAND
- CF — CONSTRUCTION FENCING
- L.O.D. — LIMIT OF DISTURBANCE
- S.P. — SUMP PIT
- EX. WETLANDS

MATCH LINE SEE SHEET 7 OF 26

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/8/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/8/96
DIRECTOR — DATE 7/8/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96
CHIEF - BUREAU OF ENGINEERING — DATE 6/18/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES: TL, LT, EL
DRN: JAH, RCJ
CHK: TJL
DATE: 04-26-96

BY	NO.	REVISION	DATE

SITE PLAN (2)

SCALE: 1"=40'

600' SCALE NO. _____ BLOCK NO. _____

SEWELL'S ORCHARD COMMUNITY PARK

SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
6th ELECTION DISTRICT TAX MAP NO. 36
PARCEL NO.: 420, 480 & 485
PHASE I

Capital Project No.: N-3090 — Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 — PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 8 OF 26

SDP-96-112

MD STATE PLANE MERIDIAN

HYDROLOGIC CRITERIA-POND III

PRINCIPAL SPILLWAY: 2, 10, 100 YEAR — 2, 10, 100 YEAR REQUIRED
FREEBOARD 100 YEAR — >100 YEAR H.W. + 1.00' REQUIRED

STRUCTURE DATA:

TYPE: WET/RETENTION/EMBANKMENT POND
STRUCTURE CLASSIFICATION "A"
DRAINAGE AREA TO POND: 105.2 ACRES
FREEBOARD: 3.14'

DESIGN SUMMARY

DESIGN STORM	EX. DISCHARGE @ POND 3 OUTFALL (CFS)	FACILITY DISCHARGE (CFS)	WATER SURFACE ELEV	STORAGE VOLUME AC-FT	PROPOSED DISCHARGE @ POND 3 OUTFALL (CFS)
2 YR	49	18	340.12	3.83	18
10 YR	202	131	340.92	7.07	131
100 YR	415	285	341.39	9.05	285

SEDIMENT TRAPPING EFFICIENCY

D.A. (Ac)	Vol (CF) Req'd	Vol (CF) Provided
28	624,400	50,400

DREDGING NOTES

1. CONTRACTOR TO TRANSPORT EXCESS DREDGED MATERIAL OFFSITE TO:

   ALPHA RIDGE LANDFILL
   235 MARRIOTSVILLE ROAD
   MARRIOTSVILLE, MD 21104

2. DREDGED MATERIAL SHALL BE SUFFICIENTLY DRIED SO AS TO TRANSPORT IN DUMP TRUCKS WITHOUT LEAKAGE. AS AN ALTERNATE, FOR TRANSPORTING OF DREDGED SLURRY (UP TO 75% MAXIMUM MOISTURE CONTENT) THE CONTRACTOR MUST USE FULLY ENCLOSED TRUCK WITH SEALS.

3. CONTRACTOR TO STOCK PILE MATERIAL AS DIRECTED BY THE HOWARD COUNTY BUREAU OF WASTE MANAGEMENT.

DREDGE POND TO ELEVATIONS SHOWN

TOP 24" C.M.P. ELEV.=327.12'

BIKE PATH

END OF 18"PIPE TOP ELEV.=328.32' INVERT = 326.82'

SSMH TOP ELEV.= 329.85'

SSMH TOP ELEV.= 333.11'

SUSQUEHANNA TRANSMISSION 400' R/W LIBER 144, FOLIO 38

TOP OF DAM

POND III
WATER SURFACE ELEV. = 339.84'

100 YR. FLOODPLAIN

EX. 20' SEWER EASEMENT

18"X24" C.M.P. TOP ELEV.= 343.33' INVERT= 341.83'

INSTALL RIP RAP & FILTER CLOTH 10' X 40' X 18"

TRAV 120 ELEV.= 360.49'

TRAV. 120 ELEV.= 347.4

TRAV. 120 ELEV.= 343.99

JUNE APPLE COURT

SEWELL'S ORCHARD DRIVE

SMOKEHOUSE COURT

*6609 LAPELLE
*6605 DOHERTY
*6601 KLINEFELTER
*6537 DESHIELDS
*6533 COHEN
*6535 COHEN
*6531 SARAVIA
*6527 ABRAHAM
*6525 WALKER
*6523 BASINGER
*6521 TIRABASSI
*6502 GRANTHAM
*6609 BOOCKHOLDT
*6613 LEVELEY
*6604 TEASLEY
*6608 LUTZ, Jr.
*6612 FICO
*6501 ZURICK
*6502 FREEMAN

MATCH LINE SEE SHEET 8 OF 26

MATCH LINE SEE SHEET 10 OF 26

LEGEND:

- EDGE OF WATER
- 100 YR. FLOODPLAIN
- EX. 1' CONTOURS
- EX. 5' CONTOURS
- PARK BOUNDARY
- R/W LINE
- LOT LINE
- EX. WETLAND
- EX. TREE
- S.P. SUMP PIT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/2/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/2/96
DIRECTOR — DATE 7/3/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96
CHIEF - BUREAU OF ENGINEERING — DATE 6/18/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD. 21218
TEL: 410-366-7300
FAX: 410-336-7392

PROFESSIONAL ENGINEER

DES: TL, LT, EL					
DRN: JAH, RCJ					
CHK: TJL					
DATE: 04-26-96	BY	NO.	REVISION	DATE	600' SCALE NO. ____ BLOCK NO. ____

SITE PLAN (3)

SCALE 1"=40'

SEWELL'S ORCHARD COMMUNITY PARK

SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
6TH ELECTION DISTRICT TAX MAP NO. 36 PARCEL NO.: 470, 480, & 485
PHASE I

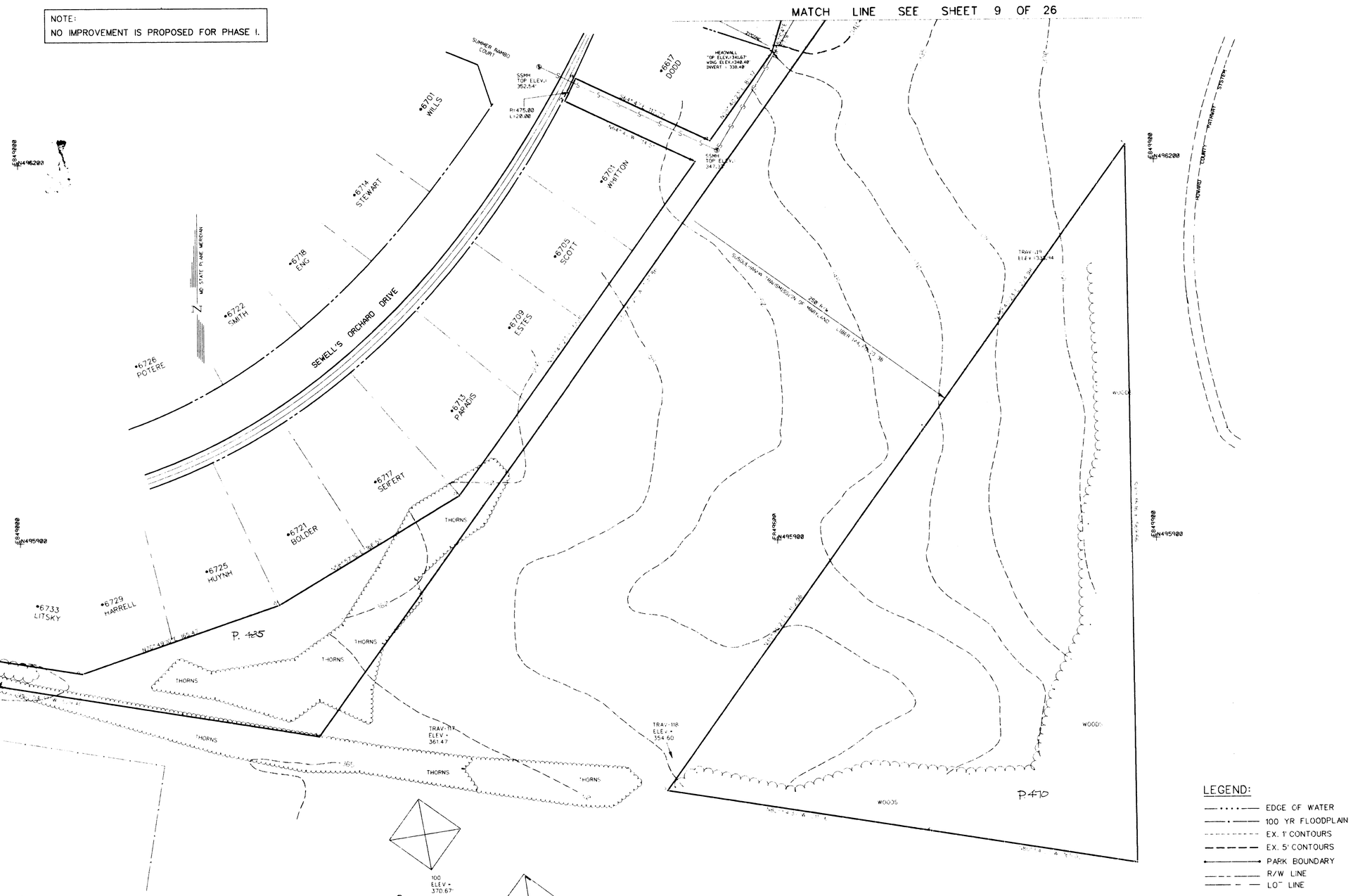
Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 9 OF 26

SDP-96-112

NOTE:
NO IMPROVEMENT IS PROPOSED FOR PHASE I.



LEGEND:
- EDGE OF WATER
- 100 YR FLOODPLAIN
- EX. 1' CONTOURS
- EX. 5' CONTOURS
- PARK BOUNDARY
- R/W LINE
- LOT LINE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENG. DIVISION — DATE 7/3/96

CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH — DATE 7/3/96

DIRECTOR — DATE 7/3/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96

CHIEF - BUREAU OF ENGINEERING — DATE

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD. 21218
TEL: 410-366-7300
FAX: 410-366-7392

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

DES:
DRN: JAH, RCJ
CHK: TJL
DATE: 04-26-96

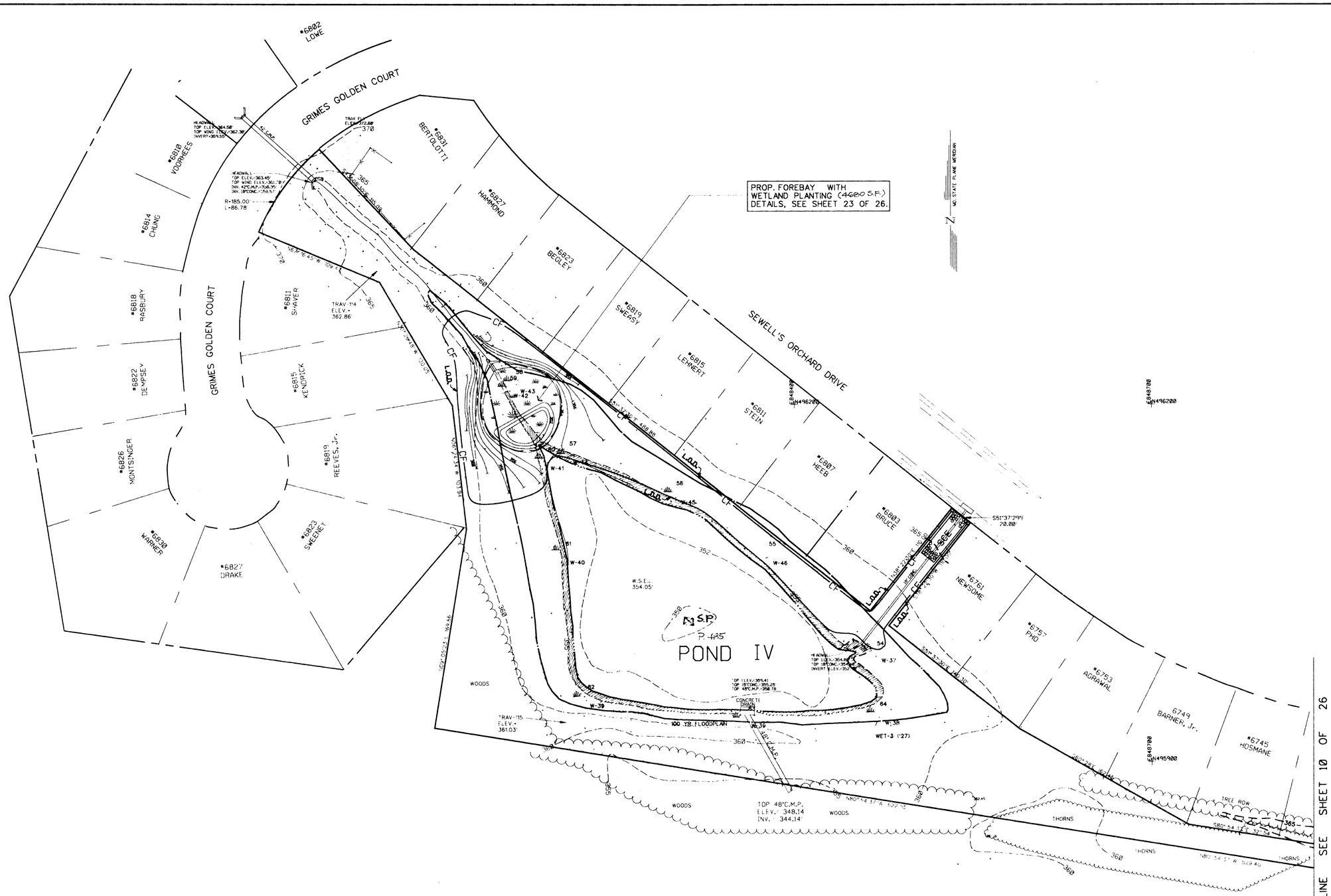
BY	NO.	REVISION	DATE

SITE PLAN (4)
SCALE: 1"=40'
600' SCALE NO. _____ BLOCK NO. _____

SEWELL'S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
6th ELECTION DISTRICT TAX MAP NO. 36
PARCEL NO. 410, 480, 435
PHASE I
Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN
SHEET 10 OF 26

SDP-96-112



NOTES:

1. CONTOURS WITHIN ALL PONDS ARE APPROXIMATE. HOWEVER PONDS II & III ELEVATIONS WERE INCLUDED IN THE LATEST FIELD SURVEY. CONTRACTOR SHALL VERIFY POND FLOOR ELEVATIONS PRIOR TO HIS WORK, TO HIS SATISFACTION.
2. PONDS I-IV ARE PUBLIC STORMWATER MANAGEMENT(SWM) FACILITIES.
3. FOR STABILIZATION REQUIREMENTS, SEE SHEET 12 OF 26.

LEGEND:

- EDGE OF WATER
- 100 YR. FLOODPLAIN
- EX. 1' CONTOURS
- EX. 5' CONTOURS
- PARK BOUNDARY
- R/W LINE
- LOT LINE
- W-21 EX. WETLAND
- CF CONSTRUCTION FENCING
- L.O.D. LIMIT OF DISTURBANCE
- S.P. SUMP PIT
- CREASTED WETLANDS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 7-2-96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH	DATE 7/3/96
DIRECTOR	DATE 7/3/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96
CHIEF - BUREAU OF ENGINEERING — DATE 6/18/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES: TL, LT, EL					
DRN: JAH, RCJ					
CHK: TJL					
DATE: 04-26-96	BY	NO.	REVISION	DATE	

SITE PLAN (5)
SCALE: 1"=40'
600' SCALE NO. _____ BLOCK NO. _____

SEWELL S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
6th ELECTION DISTRICT TAX MAP NO. 36
PARCEL NO.: 424, 425, & 426
PHASE 1
Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 11 OF 26

SDP-96-112.

GENERAL NOTES

1. REFER TO "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE SPECIFIED HEREIN.

2. WITH THE APPROVAL OF SEDIMENT CONTROL INSPECTOR, MINOR FIELD ADJUSTMENTS CAN AND WILL BE MADE TO INSURE THE CONTROL OF ANY SEDIMENT CHANGES IN SEDIMENT CONTROL PRACTICES REQUIRE PRIOR APPROVAL OF SEDIMENT CONTROL INSPECTOR AND THEHOWARD COUNTY SOIL CONSERVATION DISTRICT.

3. AT THE END OF EACH WORKING DAY, ALL SEDIMENT CONTROL PRACTICES WILL BE INSPECTED AND LEFT IN OPERATIONAL CONDITION.

4. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN (A) SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND (B) FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

5. ANY CHANGE TO THE GRADING PROPOSED ON THIS PLAN REQUIRES RE-SUBMISSION TOHOWARD COUNTY SOIL CONSERVATION DISTRICT FOR APPROVAL.

6. DUST CONTROL WILL BE PROVIDED FOR ALL DISTURBED AREAS REFER TO "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", P.P. 62.01 AND 62.02 FOR ACCEPTABLE METHODS AND SPECIFICATIONS FOR DUST CONTROL.

7. ANY VARIATION FROM THE SEQUENCE OF OPERATIONS STATED ON THIS PLAN REQUIRES THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND THE HOWARD COUNTY SOIL CONSERVATION DISTRICT PRIOR TO THE INITIATION OF THE CHANGE.

8. ANY EXCESS CUT OR BORROW MATERIAL WILL BE TAKEN TO OR BROUGHT FROM A SITE WITH AN APPROVED SEDIMENT CONTROL PLAN.

9. TOTAL AREA OF TRACT: 25 ACRES +/-

10. TOTAL DISTURBED AREA: 9 ACRES +/-

11. REFER TO "MARYLAND GUIDELINES TO WATERWAY CONSTRUCTION" BY THE WATER RESOURCES ADMINISTRATION (WRA), DATED JANUARY, 1986 FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE SPECIFIED HEREIN FOR WATERWAY CONSTRUCTION.

SEDIMENT CONTROL NOTES

1) A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction, (313-1855).

2) All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.

3) Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.

4) All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.

5) All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

6) All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

7) Site Analysis:

Total Area of Site	25(+/-) Acres
Area Disturbed	9(+/-) Acres
Area to be roofed or paved	<1/2 Acres
Area to be vegetatively stabilized	1½ Acres
Total Cut	8500 Cu. Yds.
Total Fill	3000 Cu. Yds.
Offsite waste/borrow area location	Alpha Ridge

8) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9) Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.

10) On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

11) Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

J.G. Warfield /GS. 7/2/96
USDA-NATURAL RESOURCES CONSERVATION SERVICE — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Larry Schneider — 7/2/96
CHIEF, DIVISION OF ENGINEERING — DATE

Gina Swarmack — 7/8/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE

DIRECTOR — DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

Robert G. Zieha /GS. 7/2/96
HOWARD SOIL CONSERVATION DISTRICT — DATE

TEMPORARY SEEDING NOTES

SEEDBED PREPARATION:
LOOSEN UPPER 3 INCHES BY DISCING, RAKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS:
APPLY 600 LBS. PER ACRE (14 LBS./1,000 SQ. FT.) OF 10-10-10 FERTILIZER.

SEEDING:
FOR PERIODS MARCH 1 THRU APRIL 30, AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BU. PER ACRE OF ANNUAL RYE (3.2 LBS./1,000 SQ.FT.)
FOR THE PERIOD MAY 1 THRU AUG 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (.07 LBS./1,000 SQ.FT.) FOR PERIOD NOV. 16 THRU FEB. 28.
PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING:
APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 218 GALLONS PER ACRE (5 GALLONS/1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER USE 348 GALLONS PER ACRE (8 GALLONS/1,000 SQ.FT.) FOR ANCHORING.

PERMANENT SEEDING NOTES

FOR PERMANENT SEEDING NOTES SEE SPECIFICATIONS SECTION 02480, SEEDING AND SODDING.

SEQUENCE OF CONSTRUCTION, PONDS I THROUGH III

		Task Duration (Days)
1.	Obtain a grading permit	1
2.	Advise Howard County Department of Inspections, Licenses and Permits, Sediment Control Division, 48 hours prior to start of construction at tel 880-3450.	1
3.	Advise Miss Utility 72 Hours prior to start of construction at tel 1-800-257-7777	1
4.	Install sediment and erosion control devices, and orange construction fencing.	3
5.	Notify Sediment Control Inspector and obtain approval before proceeding any further.	1
6.	Lower Pond I to elevation 350.0 by means of pumping and siphoning to spillway. Maintain water elevation at 350.0 by means of pump or siphon. Allow to dry.	45
7.	Consult with environmental scientist to determine suitability of dredged soil for use in wetland areas to be created.	1
8.	Excavate for foundation of Pond I bridge and weir. Install 4" drain, manholes and valve.	10
9.	Continue with construction of the bridge and weir, forming and pouring the concrete abutments, wingwalls, and weir. Install rip-rap retaining wall at end of proposed wetland, Pond I.	20
10.	Construct Spillway I to finished grades.	10
11.	Dismantle the riser pipe to the elevation shown on the Plan. Fill riser & barrel with concrete.	5
12.	Allow Pond I to refill to elevation 357.65 and pump discharge post Pond II to Pond III.	3
13.	Lower Pond II water elevation to 346.0(+/-), allow to dry.	45
14.	Excavate for foundations of Pond II bridge and weir. Install 4" drain, manhole and valve. Block inlet temporarily.	10
15.	Continue with construction of the bridge and weir, forming and pouring the concrete abutments, wingwalls, and weir.	30
16.	Dismantle the riser pipe to the elevation shown on the Plan. Fill riser & barrel with concrete.	5
17.	Dredge Pond II to elevations shown on the Plans. Material not reused shall be hauled to an approved disposal site.	15
18.	Place reusable dredged material in proposed wetland areas to elevations shown on the Plans. Complete grading of Pond II.	10
19.	Construct Spillway II to finished grades.	10
20.	Allow Pond II to refill to elevation 348.90.	3
21.	Plant wetland areas in Ponds I through III, per sheet no. 22	5
22.	By-pass Pond III by pumping water from Pond II to area just below Pond III spillway.	2
23.	Lower Pond III water elevation to 331 +/-, allow to dry.	45
24.	Dredge Pond III to elevations shown on the plans.	5
25.	Dismantle by-pass operation (step 19) and allow Pond III to refill to normal levels.	10
26.	Stabilize all disturbed areas, not previously stabilized per specifications.	5
27.	When all disturbed areas are stabilized and with permission of Howard County Sediment Control Inspector, remove all Sediment Control devices, except orange construction fencing.	1

SEQUENCE OF CONSTRUCTION, POND IV

		Task Duration (Days)
1.	Follow steps 1-5 as listed for Ponds I through III.	7
2.	Lower Pond IV elevation to 350 +/- and maintain by means of pumping or siphoning. Allow soils to dry.	45
3.	Consult with environmental scientist to determine suitability of dredge soil for use in forebay area to be created.	1
4.	Shape forebay to elevations shown, install gabion wetland barrier, and plant wetland plants.	5
5.	Construct rip-rap energy dissipater.	1
6.	Haul any unusable excavated material to approved landfill.	2
7.	Allow pond to refill to normal water elevation.	3
8.	Stabilize all disturbed areas, not previously stabilized per specifications.	3
9.	When all disturbed areas are stabilized and with permission of Howard County Sediment Control Inspector, remove all Sediment Control devices.	1

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION WITH SOD

1. CLASS OF TURFGRASS SOD SHALL BE MARYLAND OR VIRGINIA STATE CERTIFIED OR MARYLAND OR VIRGINIA STATE APPROVED SOD.

2. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/4 INCH, AT THE TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH.

3. STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.

4. INDIVIDUAL PIECES OF SOD SHALL BE CUT TO THE SUPPLIERS WIDTH AND LENGTH. MAXIMUM ALLOWABLE DEVIATION FROM STANDARD WIDTHS AND LENGTHS SHALL BE 5 PERCENT. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.

5. SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.

6. SOD SHALL BE HARVESTED, DELIVERED AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD SHALL BE INSPECTED AND APPROVED PRIOR TO ITS INSTALLATION.

I. SITE PREPARATION

FERTILIZER AND LIME APPLICATION RATES SHALL BE DETERMINED BY SOIL TESTS UNDER UNUSUAL CIRCUMSTANCES WHERE THERE IS INSUFFICIENT TIME FOR A COMPLETE SOIL TEST, FERTILIZER AND LIME MATERIALS MAY BE APPLIED IN AMOUNTS SHOWN UNDER B, BELOW.

A. PRIOR TO SODDING, THE SURFACE SHALL BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES, AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.

B. WHERE THE SOIL IS ACID OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 2 TONS/ACRE OR 100 POUNDS PER 1,000 SQUARE FEET. IN ALL SOILS, 1,000 POUNDS PER ACRE OR 25 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 FERTILIZER OR EQUIVALENT SHALL BE UNIFORMLY APPLIED AND MIXED INTO THE TOP 3 INCHES OF SOIL WITH THE REQUIRED LIME.

C. ALL AREAS RECEIVING SOD SHALL BE UNIFORMLY FINE GRADED. HAND RAKED EARTH SHALL BE SMOOTHED PRIOR TO PLACEMENT OF SOD.

II. SOD INSTALLATION

A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE THE SOIL SHALL BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING OF SOD.

B. THE FIRST ROW OF SOD SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. INSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.

C. ON SLOPING AREAS WHERE EROSION MAY BE A PROBLEM, SOD SHALL BE LAID WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERED JOINTS. SECURE THE SOD BY TAMPING AND PEGGING OR OTHER APPROVED METHODS.

D. AS SODDING IS COMPLETED IN ANY ONE SECTION, THE ENTIRE AREA SHALL BE ROLLED OR TAMPED TO INSURE SOLID CONTACT OF ROOTS WITH THE SOIL SURFACE. SOD SHALL BE WATERED IMMEDIATELY AFTER ROLLING OR TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN EIGHT HOURS.

III. SOD MAINTENANCE

A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS often AS NECESSARY DURING THE FIRST WEEK AND IN SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES. WATERING SHOULD BE DONE DURING THE HEAT OF THE DAY TO PREVENT WILTING.

B. AFTER THE FIRST WEEK, SOD SHALL BE WATERED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE AND INSURE ESTABLISHMENT.

C. FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF SHALL BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED.

D. MAINTENANCE OF ESTABLISHED SOD SHOULD FOLLOW SPECIFICATIONS OUTLINED IN TABLE 54.1.

BY THE OWNER/ DEVELOPER

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT."

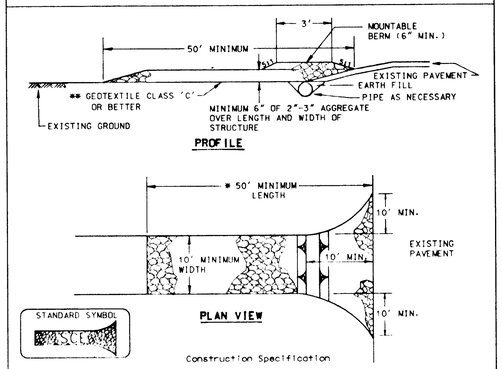
Ronald A. Seppman — 6/18/96
SIGNATURE OF OWNER/DEVELOPER — DATE
PRINT NAME BELOW SIGNATURE

BY THE ENGINEER:

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFFESIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT PLAN" OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER — DATE
TIMOTHY J. LYNG

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

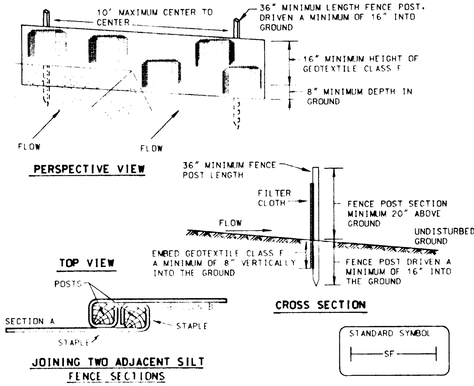
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 - SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1½" x 1½" square (minimum) cut, or 1¾" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — 6/18/96 DATE
CHIEF - BUREAU OF ENGINEERING — 6/18/96 DATE

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD. 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES: TJL, MK
DRN: JAH, RCJ
CHK: TJL
DATE: 04-26-96

BY	NO	REVISION	DATE

SEDIMENT & EROSION CONTROL
DETAILS AND NOTES

600' SCALE NO. _____ BLOCK NO. _____

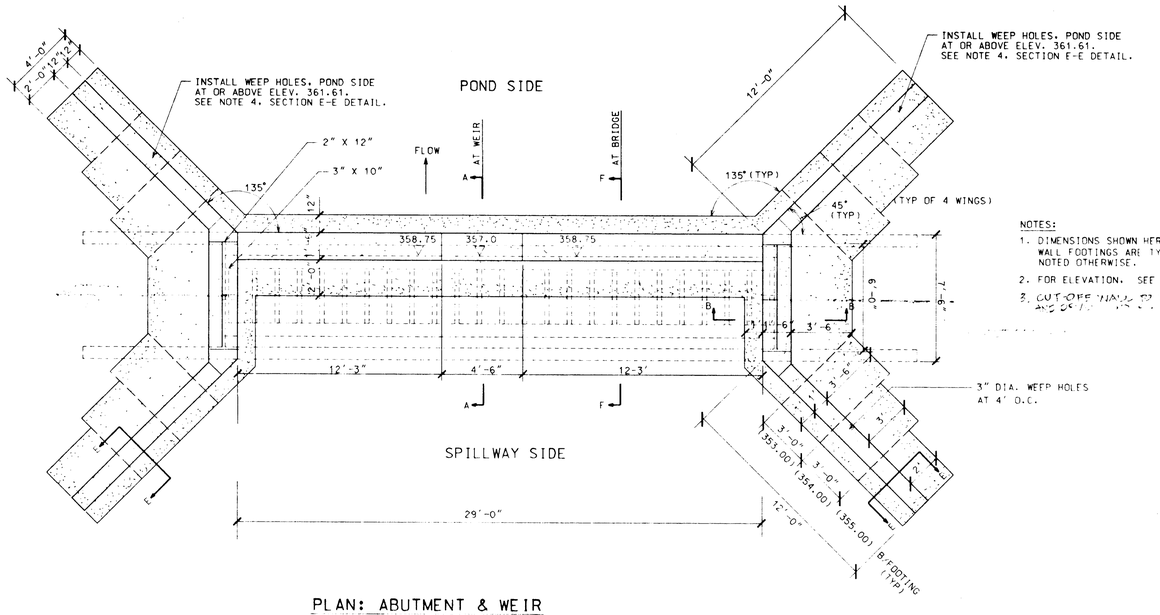
SEWELL'S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 12 OF 26

6-18-96-1:2



NOTES:

1. DIMENSIONS SHOWN HERE FOR WING WALL FOOTINGS ARE TYPICAL. UNLESS NOTED OTHERWISE.
2. FOR ELEVATION, SEE SHT. 14 OF 26.
3. CUT-OFF WALL TO BE STEEL SHEET PILE OR CONCRETE.

PLAN: ABUTMENT & WEIR

SCALE: 1/4"=1'

NOTES:

1. ALL TIMBER MEMBERS SHALL BE PRESSURE TREATED, PER STANDARDS FROM AMERICAN WOOD PRESERVERS ASSOCIATION.
2. ALL STEEL MATERIALS SHALL BE HOT-DIPPED GALVANIZED PER ASTM STANDARDS ON HOT DIP GALVANIZED COATINGS.
3. ALL CONCRETE SURFACES WHICH WILL BE EXPOSED TO VIEW SHALL BE SANDBLASTED TO A MAXIMUM REVEAL OF 1/4". SEE SPECIFICATION SECTION 03300.

NOTES:

ALLOWABLE STRESSES FOR LAMINATED MEMBERS

-BENDING STRESS =2400 psi
-SHEAR STRESS =165 psi
-MODULE OF ELASTICITY = 1,700.00 psi

•ALL OTHER MATERIALS, INCLUDING DECKING, SHALL BE SOUTHERN PINE NO. 2 OR BETTER WITH FOLLOWING PROPERTIES:

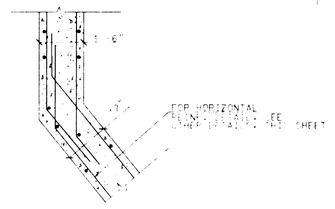
-DECK 3"x6" : 1350 psi. ALLOWABLE BENDING STRESS
-JOISTS 3"x10" : 1200 psi. ALLOWABLE BENDING STRESS

NOTES:

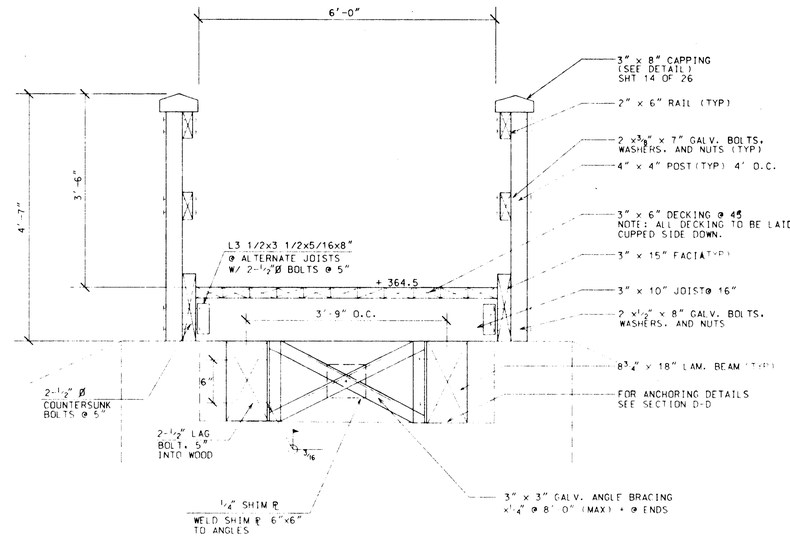
ALL CONNECTIONS SHALL BE APPROVED BY THE ENGINEER BEFORE ANY ERECTION STARTS.

DESIGN LOADS

BICYCLES : 85 LBS/SQ.FT.
VEHICLES : 4000 LBS. MAXIMUM

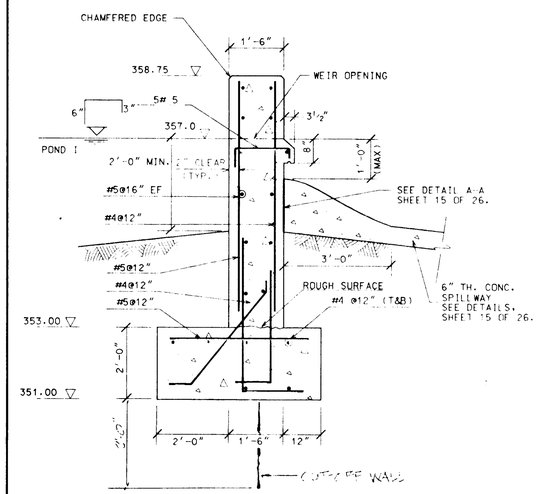


TYPICAL HORIZONTAL REINF. DETAIL AT A CHANGE OF GEOMETRY IN A WALL



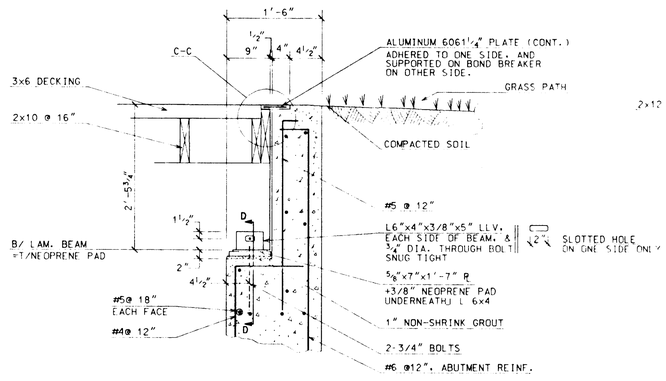
SECTION F-F

WOODEN BRIDGE SECTION



SECTION A-A

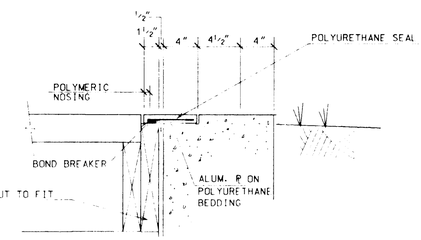
SCALE: 1/2" =1'



NOTE:
ALL DECKING TO BE LAID CUPPED SIDE DOWN.

SECTION B-B

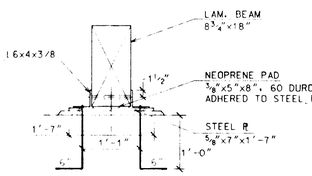
SCALE: 3/4" = 1"-0"



SECTION C-C

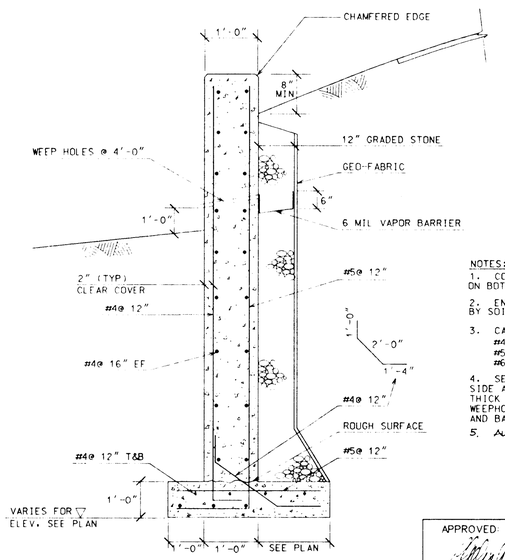
SCALE: 1 1/2" = 1'-0"

NOTE: EXPANSION JOINT SHALL BE EQUIVALENT TO HARRY S. PETERSON PRODUCT.



SECTION D-D

SCALE: 3/4" = 1"-0"



SECTION E-E

SCALE: 1/2" =1'

NOTES:

1. COMPACT SOILS IN 8" INCREMENTS ON BOTH SIDES OF WALLS SIMUTANEOUSLY.
2. ENGINEERED FILL SHALL BE APPROVED BY SOILS ENGINEER.
3. CAP LENGTH
   #4 BAR = 1'-8"
   #5 BAR = 2'-2"
   #6 BAR = 2'-9"
4. SECTION WILL BE MODIFIED FOR POND SIDE ABUTMENT WALLS BY ELIMINATING 12" THICK GRADED STONE AND GEOFABRIC. MOVE WEEPHOLES TO INV. ELEV. 361.61 OR ABOVE, AND BACKFILL WALL WITH CLAY MATERIAL.
5. ALL CONCRETE SHALL BE MIX NO. 3.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/3/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/3/96

DIRECTOR — DATE 7/3/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF, BUREAU OF ENGINEERING — 6/18/96 DATE

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD. 21218
TEL. 410-366-7300
FAX. 410-366-7392

DES. PM
DRN. JAH, RCJ
CHK. TJL, PM
DATE 04-26-96

BY	NO.	REVISION	DATE

600' SCALE NO. _____ BLOCK NO. _____

POND I BRIDGE & WEIR DETAILS (1)

SEWELL'S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD. 21045

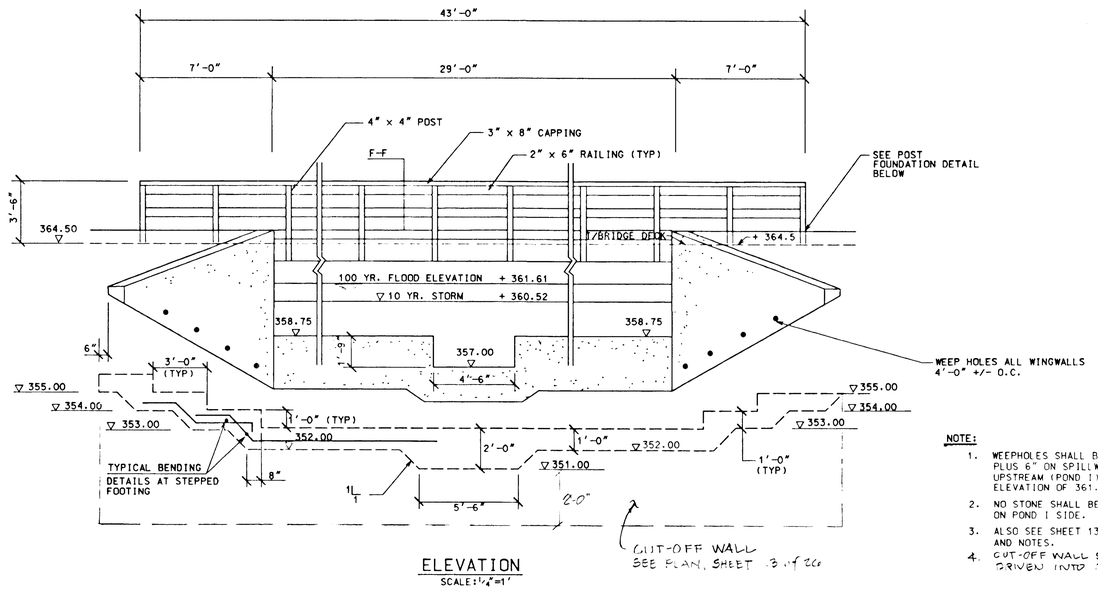
PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 P.E.L.A. Project No.: 93.16

SCALE AS SHOWN

SHEET 13 OF 26

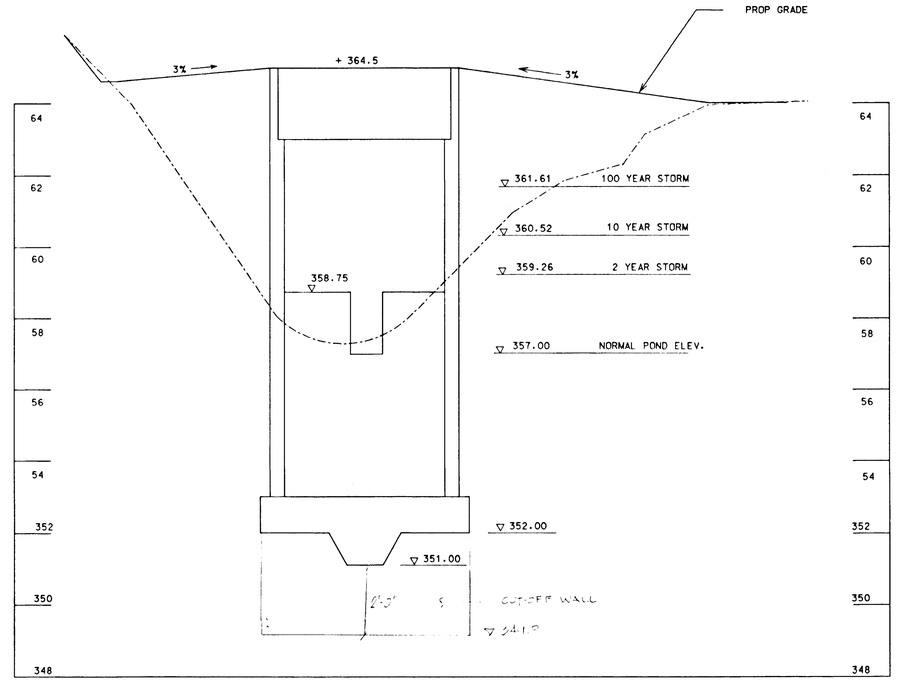
DPW-96-112



ELEVATION
SCALE: 1/4"=1'

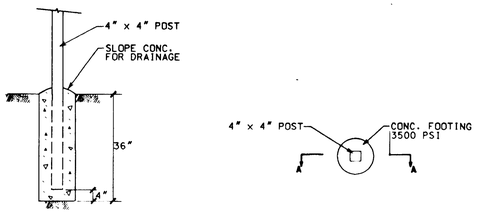
NOTE:

1. WEEPHOLES SHALL BE OUTLET AT FINISHED GRADE PLUS 6" ON SPILLWAY SIDE. WEEPHOLES ON UPSTREAM (POND 1) SIDE SHALL BE ABOVE W.S. ELEVATION OF 361.61.
2. NO STONE SHALL BE PLACED BEHIND WINGWALLS ON POND 1 SIDE.
3. ALSO SEE SHEET 13 FOR ADDITIONAL DETAILS AND NOTES.
4. CUT-OFF WALL SHALL BE SHEET STEEL DRIVEN INTO PLACE.



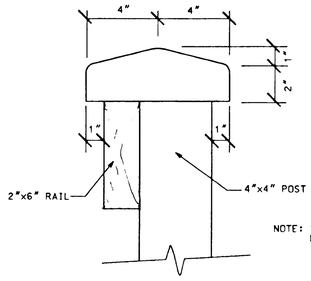
PROFILE ON WEIR CENTERLINE

SCALE: HORZ. 1"=10'
VERT. 1"=2'



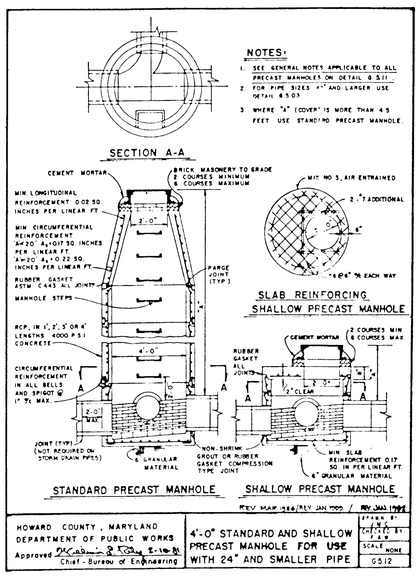
SECTION A-A PLAN

POST FOUNDATION DETAIL
SCALE: 3/4" = 1'

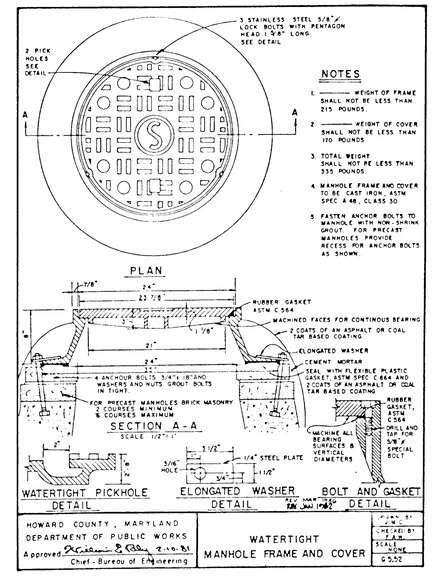


NOTE: LUMBER DIMESIONS AND OTHER DIMENSIONS SHOWN ARE NOMINAL.

CAPPING DETAIL
SCALE 3" =1'-0"



HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Approved ... Chief - Bureau of Engineering	4'-0" STANDARD AND SHALLOW PRECAST MANHOLE FOR USE WITH 24" AND SMALLER PIPE	DESIGN BY JAH CHECKED BY TJL SCALE NONE G 5.12



HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Approved ... Chief - Bureau of Engineering	WATERTIGHT MANHOLE FRAME AND COVER	DESIGN BY JAH CHECKED BY TJL SCALE NONE G 5.02

PRECAST MANHOLE DETAILS
NTS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH	DATE
DIRECTOR	DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE

CHIEF - BUREAU OF ENGINEERING — DATE

P.E.L.A. DESIGN, INC.
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FAX: 410-366-7392

DES: PM, TJL, PM
DRN: JAH, RCJ
CHK: TJL
DATE: 04-26-96

BY	NO.	REVISION	DATE

POND I BRIDGE & WEIR DETAILS (2)

600' SCALE NO. _____ BLOCK NO. _____

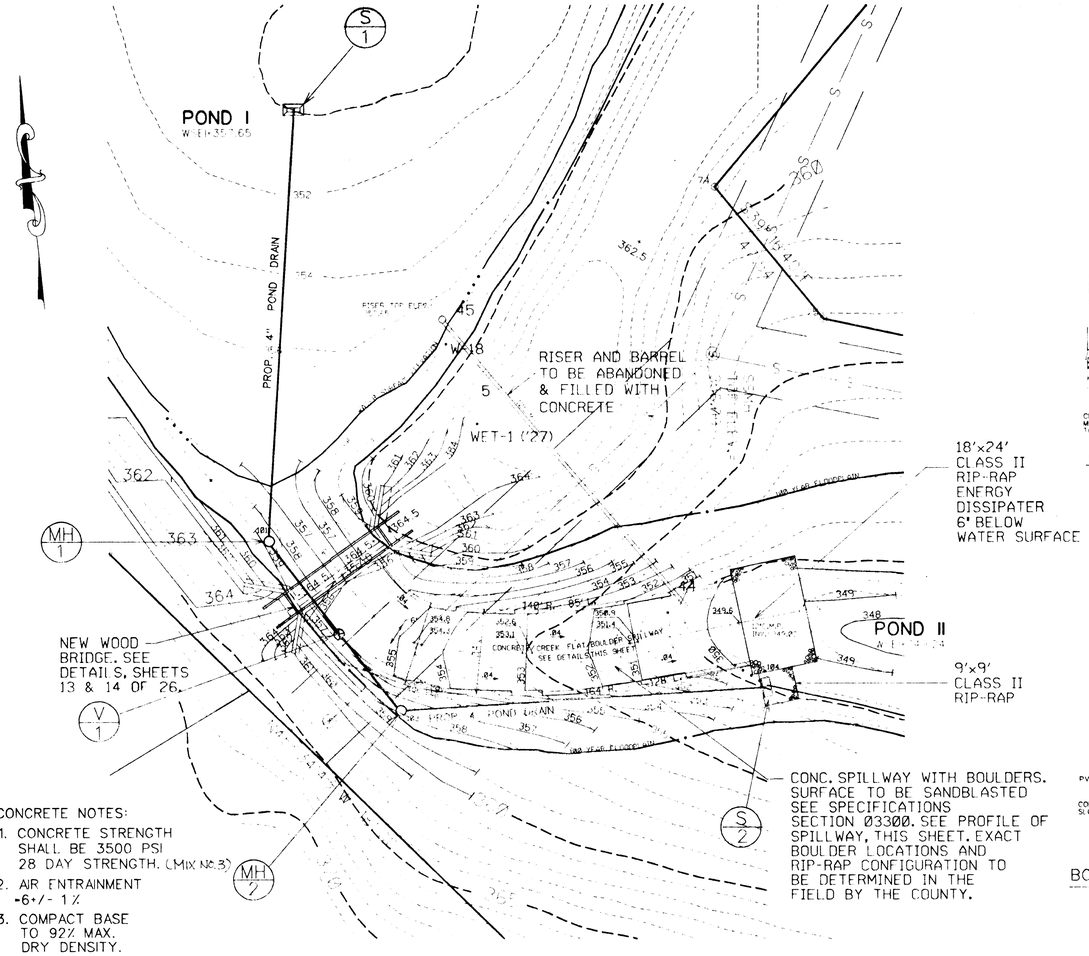
SEWELL S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045

PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

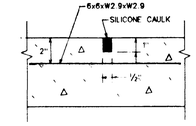
SCALE AS SHOWN

SHEET 14 OF 26

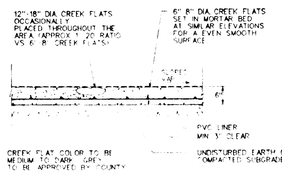


CONCRETE NOTES:

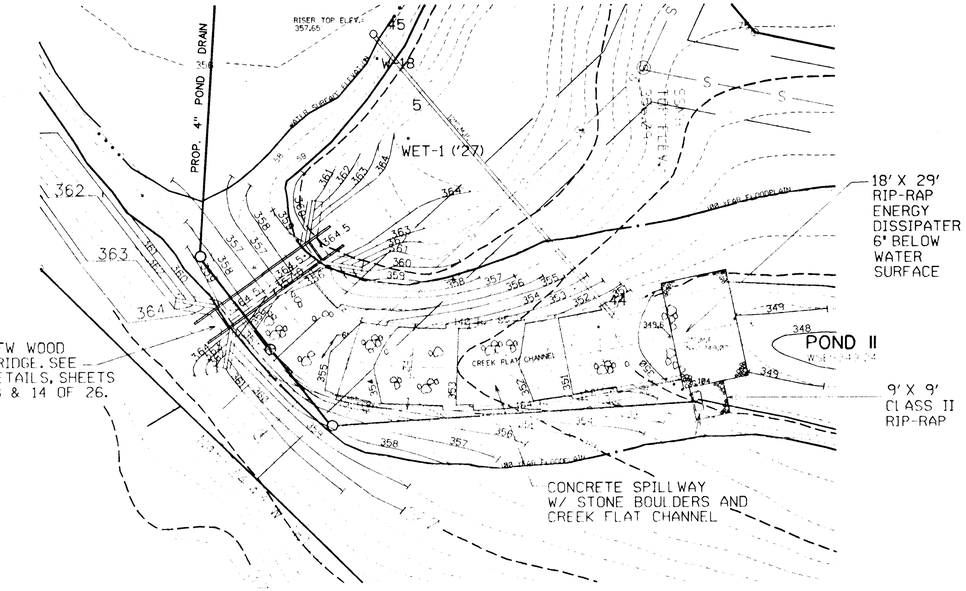
1. CONCRETE STRENGTH SHALL BE 3500 PSI 28 DAY STRENGTH. (MIX NO. 3)
2. AIR ENTRAINMENT -6+/- 1%
3. COMPACT BASE TO 92% MAX. DRY DENSITY.
4. CONTROL JOINT @ 15' SPACING E.A. DIRECTION.



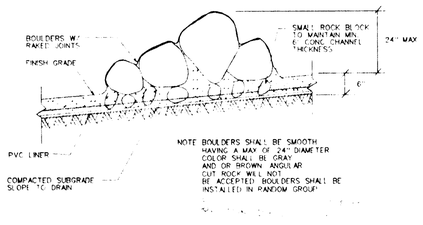
CONTROL JOINT DETAIL
NTS



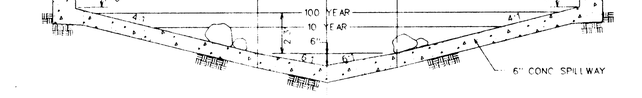
CREEK FLAT PAVING DETAIL
NTS



ILLUSTRATIVE PLAN
SCALE 1" = 20'



BOULDER INSTALLATION DETAIL
NTS

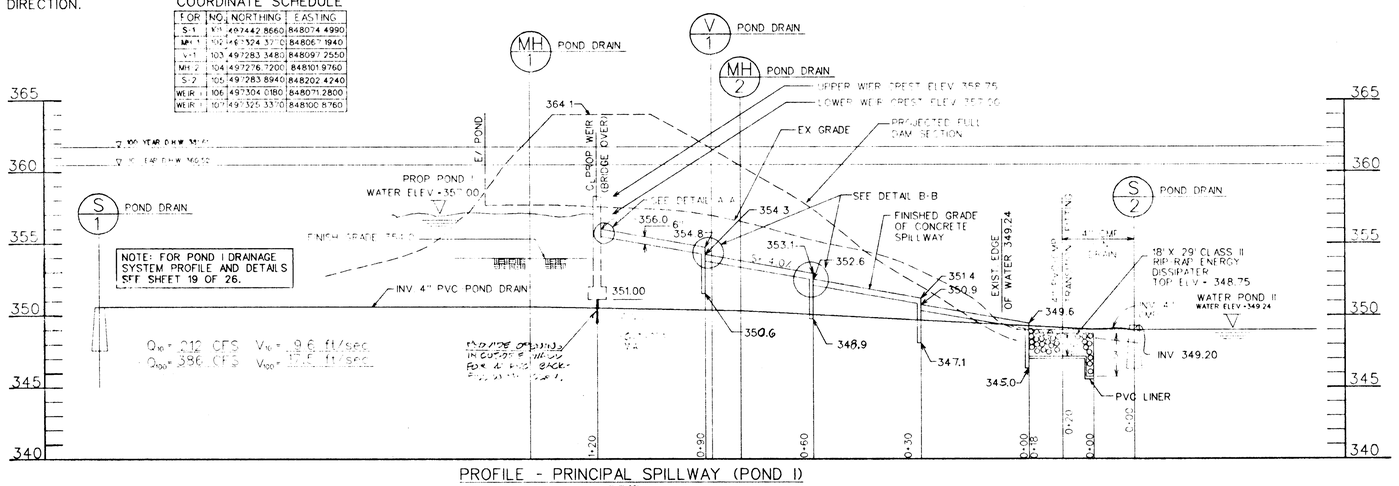


TYPICAL SPILLWAY SECTION (LOOKING DOWNSTREAM)
NTS

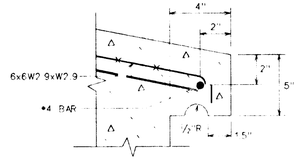
SITE PLAN
SCALE 1" = 20'

COORDINATE SCHEDULE

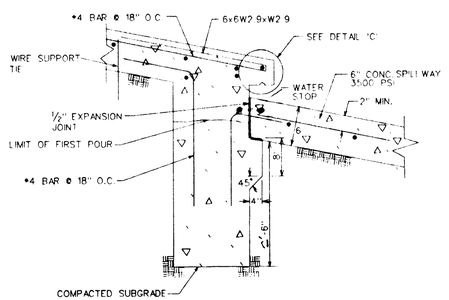
FOR	NO.	NORTHING	EASTING
S-1	101	497442.8660	848074.4990
MH-1	102	497324.3710	848067.1940
V-1	103	497283.3480	848097.2550
MH-2	104	497276.7200	848101.9760
S-2	105	497283.8940	848202.4240
WEIR	106	497304.0180	848071.2800
WEIR	107	497325.3370	848100.8760



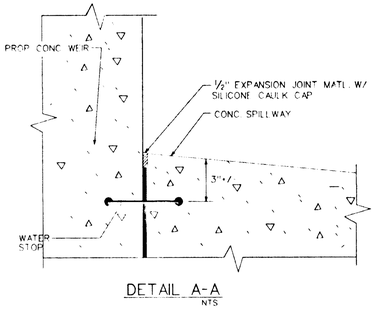
PROFILE - PRINCIPAL SPILLWAY (POND I)
SCALE H 1"=20' V 1"=5'



DETAIL 'C'- SPILLWAY NOSING DETAIL
NTS



DETAIL B-B
NTS



DETAIL A-A
NTS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

DIRECTOR — DATE 7/3/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/3/96

CHIEF, BUREAU OF ENGINEERING — DATE 7/3/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/10/96

CHIEF, BUREAU OF ENGINEERING — DATE 6/18/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES: TJL, LT
DRN: JAH, RCJ
CHK: TJL
DATE: 04-26-96

BY	NO.	REVISION	DATE

POND I SPILLWAY DETAILS

600' SCALE NO. _____ BLOCK NO. _____

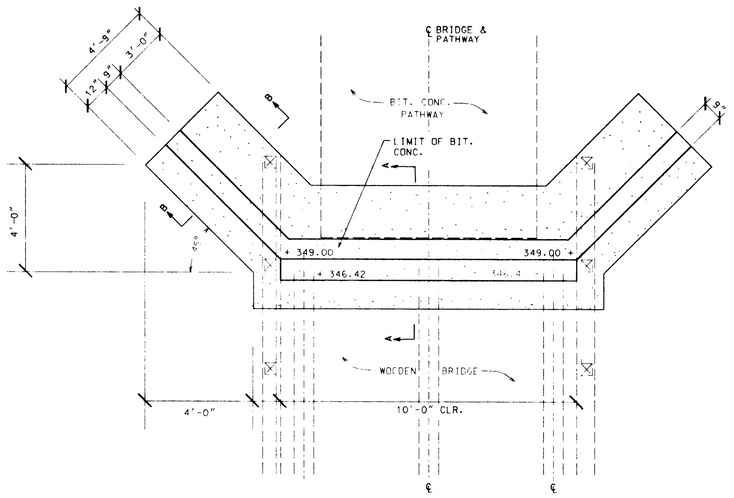
SEWELL'S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

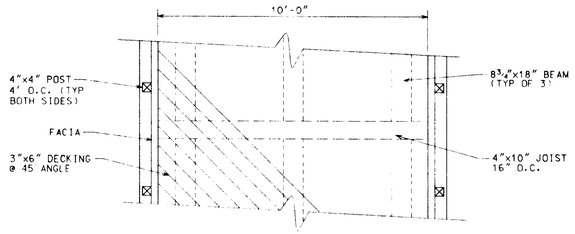
SHEET 15 OF 26

SDP-96-112



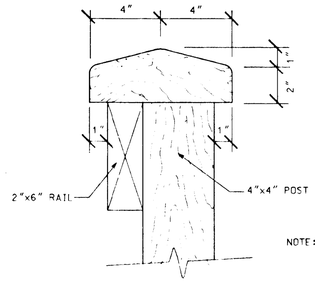
ABUTMENT PLAN

SCALE 3/8" = 1'-0"



DECKING PLAN

N.T.S.

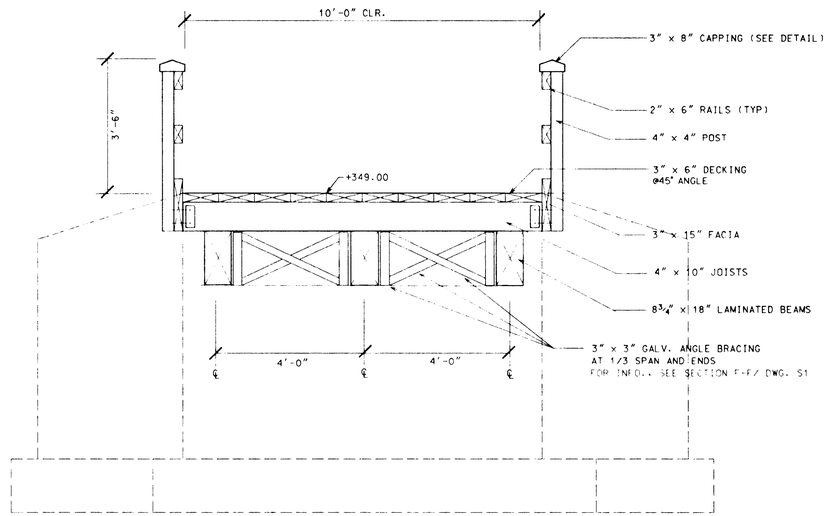


NOTE: LUMBER DIMENSIONS & OTHER DIMENSIONS SHOWN ARE NOMINAL.

CAPPING DETAIL

SCALE 3" = 1'-0"

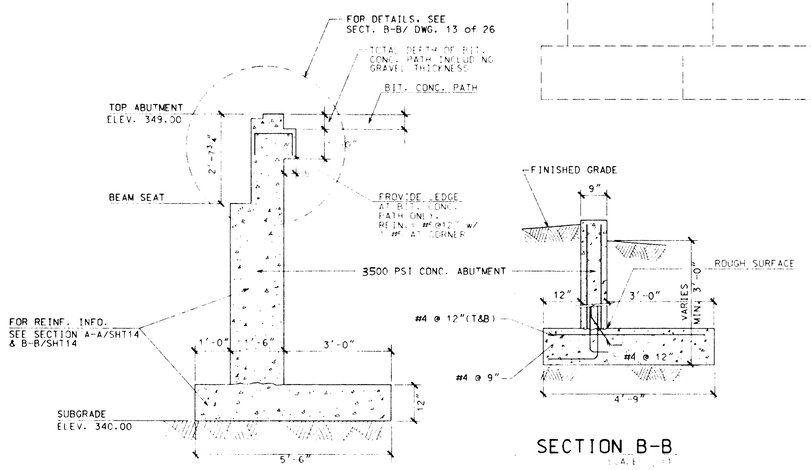
NOTE: ALL DECKING SHALL BE LAID CUPPED SIDE DOWN



SECTION A-A

SCALE 3/8" = 1'-0"

NOTE: FOR INFO. NOT SHOWN. SEE SECT. F-F/ DWG. 13 OF 26



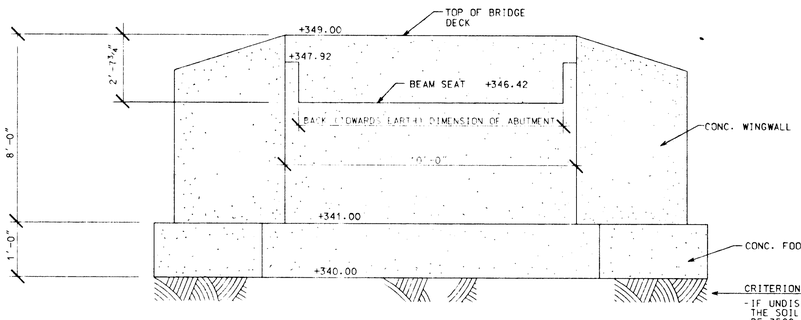
SECTION A-A

SCALE 3/8" = 1'-0"

SECTION B-B

SCALE 3/8" = 1'-0"

NOTES:
WALL REINFORCING:
- VERT. REINF.: #4 @ 12" EF
- HOR. REINF.: #4 @ 18" EF
- DOWELS : SAME AS VERT. REINF.
LAP LENGHT : #4= 1'-8"



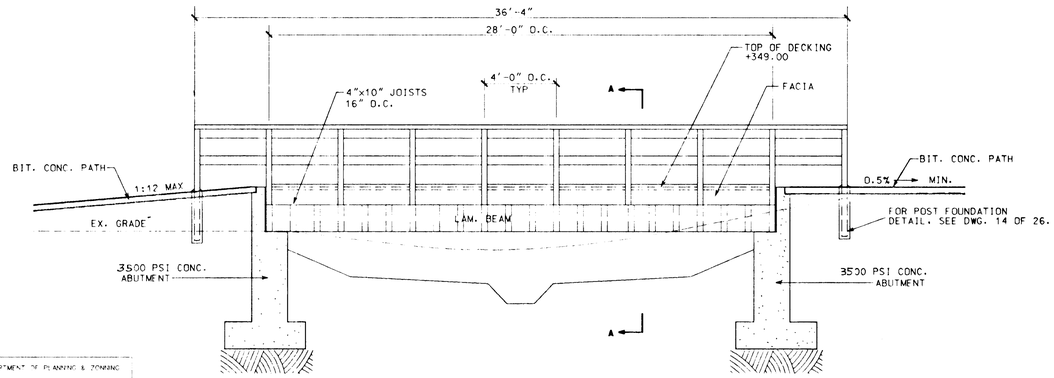
CRITERION FOR SOILS: (TYP.)
- IF UNDISTURBED SOIL IS AVAILABLE THE SOILS BEARING CAPACITY SHALL BE 3500 lbs/sq. ft.
- IF THE SOIL IS A "FILL" MATERIAL, IT SHALL BE REMOVED AND ENGINEERED FILL (APPROVED BY SOILS ENGINEER) SHALL BE IMPORTED AND COMPACTED TO 95% MDD IN 12" LAYERS. BEARING CAPACITY= 3500 lbs/sq. ft.

NOTE: ALL TIMBER MEMBERS SHALL BE PRESSURE TREATED, SEE SPECIFICATIONS.

ALL CONCRETE IS MIX NO. 3.

ABUTMENT ELEVATION

SCALE 3/8" = 1'-0"



ELEVATION

SCALE 1/4" = 1'-0"

RECOMMENDED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Development Engineering Division — 7/3/96

Chief, Bureau of Development Planning and Research — 7/3/96

Chief, Bureau of Engineering — 7/5/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works — 6/18/96

P.E.L.A. DESIGN, INC.
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2204 MARYLAND AVENUE, SUITE 300
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TEL: 410-366-7300
FAX: 410-366-7392

DES: TL.LT.PM
DRN: JAH. RCJ
CHK: TJL
DATE 04-26-96

BY	NO.	REVISION	DATE

POND II
BRIDGE DETAILS

600' SCALE NO. _____ BLOCK NO. _____

SEWELL S ORCHARD COMMUNITY PARK
SEWELL S ORCHARD DRIVE, COLUMBIA, MD. 21045

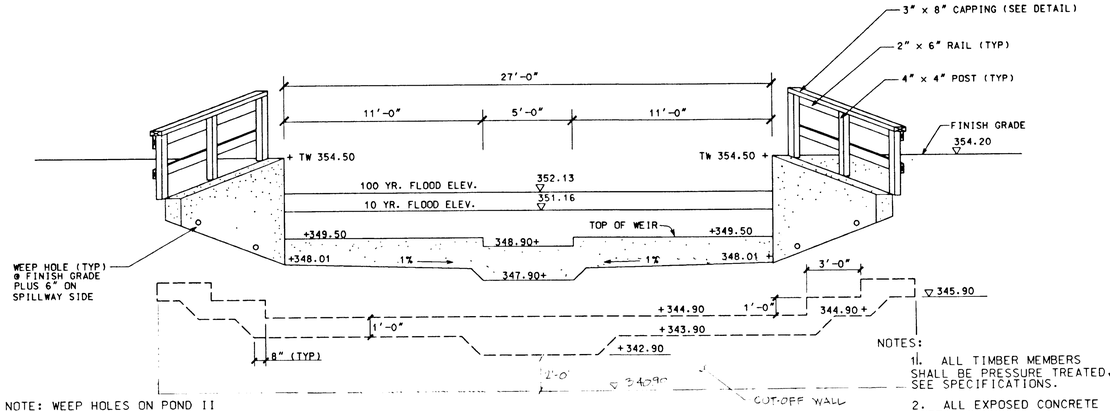
PHASE I

Capital Project No. N-3090 Contract Agreement No. CA-93-52
Purchase Order No. 19484 PELA Project No. 93.16

SCALE AS SHOWN

SHEET 16 OF 26

45.29'-1.2



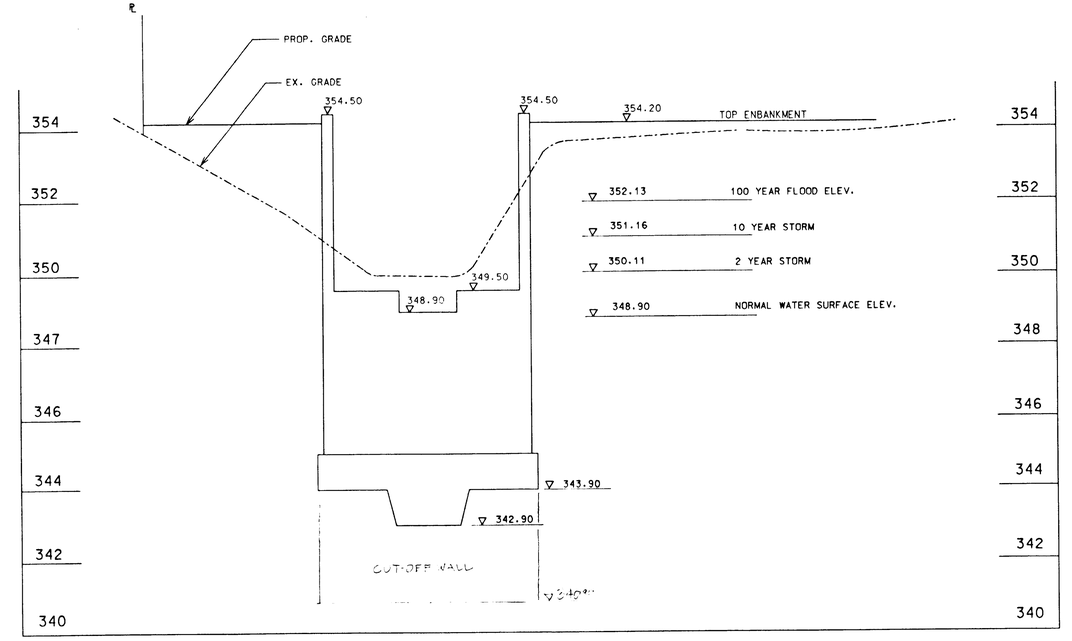
NOTE: WEEP HOLES ON POND II SIDEWALL SHALL BE LOCATED ABOVE THE 100 YEAR W.S. ELEV. OF 352.13

ELEVATION (FROM SPILLWAY)

SCALE: 1/4" = 1'

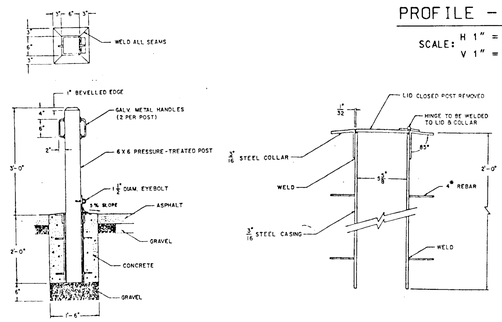
NOTES:

1. ALL TIMBER MEMBERS SHALL BE PRESSURE TREATED, SEE SPECIFICATIONS.
2. ALL EXPOSED CONCRETE SURFACES SHALL BE SAND BLASTED, SEE SPECIFICATIONS.
3. ALL CONCRETE TO BE MIX NO. 3.
4. CUT-OFF WALL TO BE SHEET STEEL DRIVEN INTO PLACE.



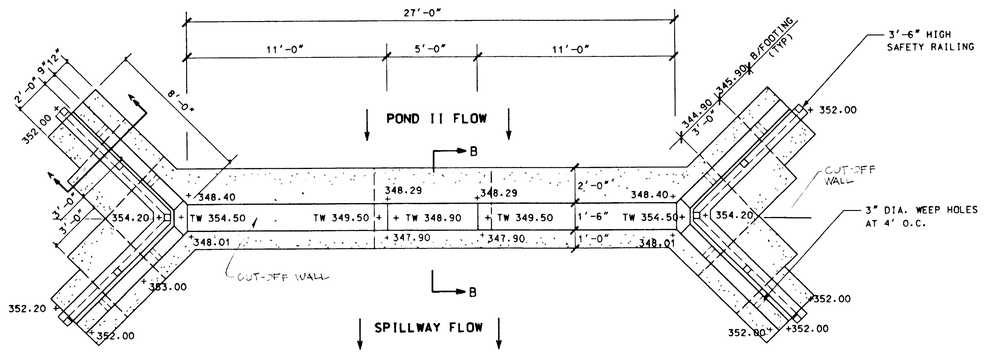
PROFILE - ℄ WEIR

SCALE: H 1" = 10'
V 1" = 2'



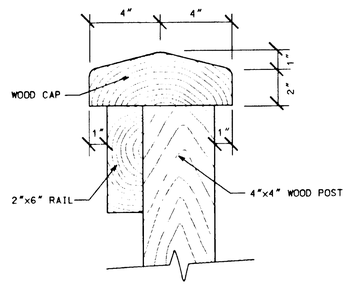
REMOVABLE BOLLARD DETAIL

N.T.S.



PLAN

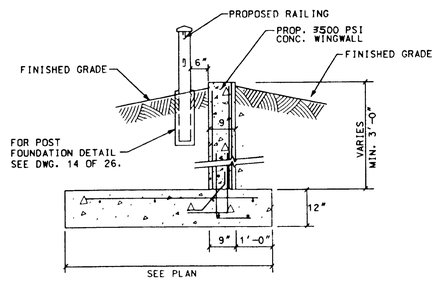
SCALE: 1/4"=1'



CAPPING DETAIL

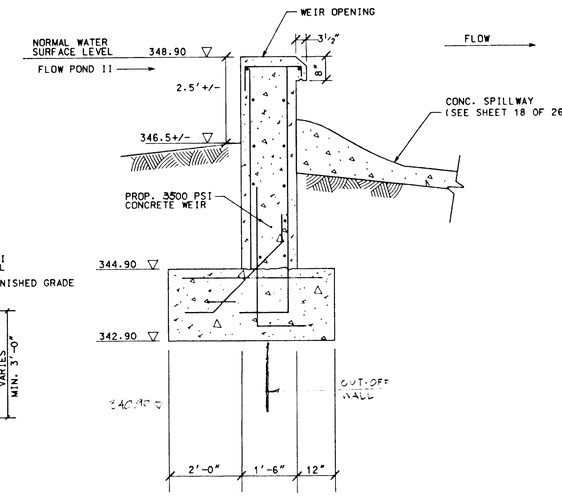
SCALE 3" =1'-0"

NOTE: WOOD GRAIN AS SHOWN FOR CAP AND RAIL.



SECTION A-A

SCALE: 1/2" =1'



SECTION B-B

SCALE: 1/2" =1'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE

DIRECTOR — DATE 7/9/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE

CHIEF - BUREAU OF ENGINEERING — DATE 7/12/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
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BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES: TL, LT, PM				
DRN: JAH				
CHK: TJL				
DATE: 04-26-96	BY	NO	REVISION	DATE

POND II WEIR & SPILLWAY DETAILS

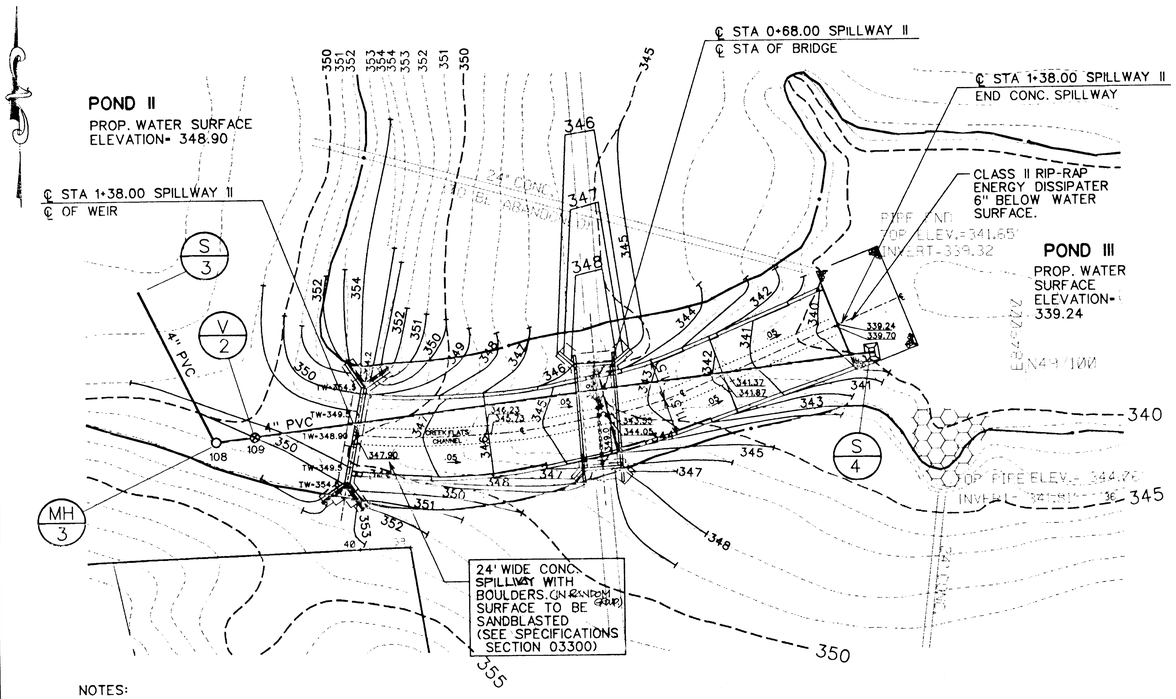
600' SCALE NO. _____ BLOCK NO. _____

SEWELLS ORCHARD COMMUNITY PARK
SEWELLS ORCHARD DRIVE, COLUMBIA, MD 21045
PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 17 OF 26



NOTES:

1. FOR POND DRAINAGE SYSTEM PROFILE AND DETAILS, SEE SHEET 19 OF 26.
2. FOR CREEK FLAT AND BOULDER DETAILS, SEE SHEET 15 OF 26
3. FOR GRADING INSIDE POND II, SEE SHEET 8 OF 26.

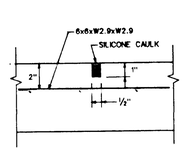
CONCRETE NOTES:

1. CONCRETE 28 DAY STRENGTH SHALL BE AS SPECIFIED IN SECTION 3300 OF THE SPECIFICATIONS.
2. AIR ENTRAINMENT=6+/- 1%
3. COMPACT BASE TO 92% MAX. DRY DENSITY.
4. CONTROL JOINT @ 15' SPACING EA. DIRECTION.
5. SEE DETAILS, SHEET 15, FOR CREEK FLAT PAVING, & OTHER SPILLWAY DETAILS.

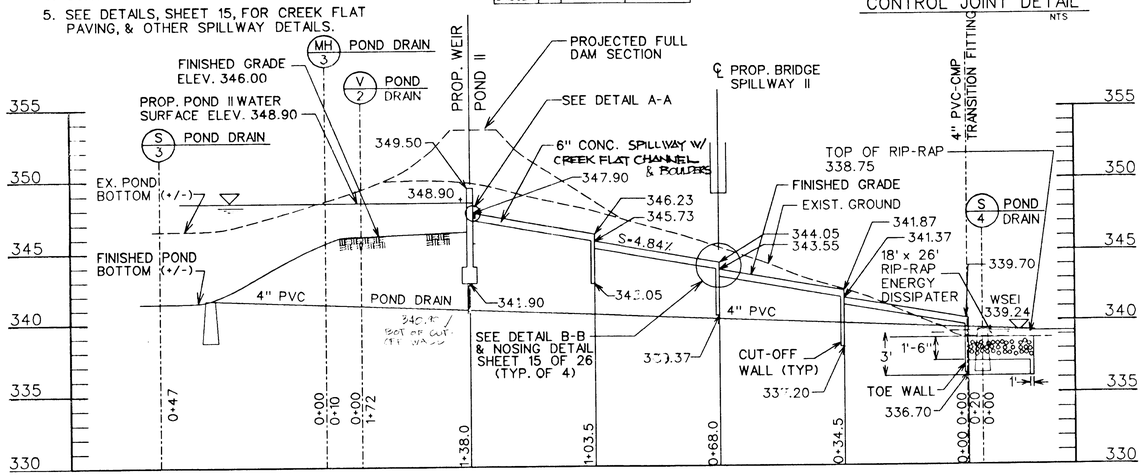
SITE PLAN
SCALE: 1"=20'

COORDINATE SCHEDULE

FOR	NO.	NORTHING	EASTING
S-3	107	497124.2740	848754.4550
MH-3	108	497082.5770	848775.4620
V-2	109	497083.7440	848785.5120
S-4	110	497105.9160	848956.2240
WLIR II	110	497105.9160	848816.7550
WEIR II	111	497070.9040	848811.6680
BRIDGE II	112	497109.0770	84880.1500
BRIDGE II	113	497078.6450	848882.2260



CONTROL JOINT DETAIL
NTS



℄ PROFILE- POND II SPILLWAY
SCALE: HORIZONTAL- 1"=20'
VERTICAL- 1"=5'

Q_{10} =190 CFS V_{10} =9.6 ft/sec
Q_{100} =362 CFS V_{100} =12.2 ft/sec

NOTE: RIP-RAP TO BE CLASS II WITH FILTER CLOTH.

MARYLAND CODE 378 SPECIFICATIONS

378-12 Pond

SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall oe cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within ±2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

1. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

   Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

   Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

   All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 48" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12" wide huggor type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 48" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill."

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361. An approved equivalent is AWWA Specification C-302.

2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.

4. Backfilling shall conform to "Structure Backfill."

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Polyvinyl Chloride (PVC) Pipe - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.

2. Joints and connections to anti-seep collars shall be completely watertight.

378-12 Pond

SPECIFICATIONS

3. Helically corrugated pipe shall have either continuously welded seams or have lock seams.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill."

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361. An approved equivalent is AWWA Specification C-302.

2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.

4. Backfilling shall conform to "Structure Backfill."

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Polyvinyl Chloride (PVC) Pipe - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.

2. Joints and connections to anti-seep collars shall be completely watertight.

378-14 Pond

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "Structure Backfill."

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3

Rock Riprap

All rock shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. The rock fragments shall be angular to subrounded in shape. The least dimension of an individual rock fragment shall be not less than one-third the greatest dimension of the fragment.

The rock shall have the following properties:

1. Bulk specific gravity (saturated surface-dry basis) not less than 2.5.
2. Absorption not more than three percent.
3. Soundness: Weight loss in five cycles not more than 20 percent when sodium sulfate is used.

Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 88.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

OPERATION AND MAINTENANCE:

AN OPERATION AND MAINTENANCE PLAN WILL BE PREPARED BY HOWARD COUNTY FOR ALL PONDS. AS A MINIMUM, THE DAM INSPECTION CHECKLIST LOCATED IN MD-378 SPECIFICATIONS SHALL BE INCLUDED AS PART OF THE OPERATION AND MAINTENANCE PLAN AND PERFORMED AT LEAST ANNUALLY.

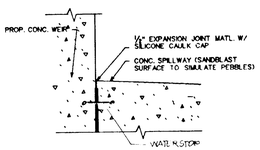
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

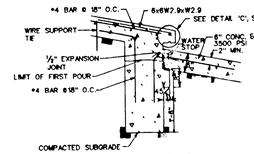
CHIEF, DIVISION OF LAND DEVELOPMENT AND REGULATION — DATE

DIRECTOR — DATE

NOTE: CONCRETE AGGREGATE STONE TO BE SMOOTH, NOT ANGULAR.

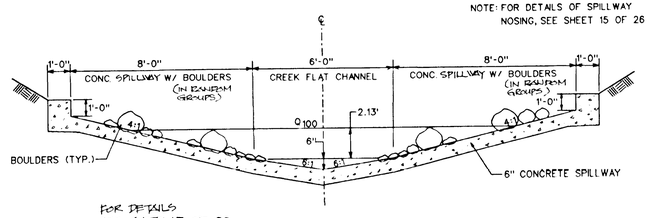


DETAIL A-A
NTS



DETAIL B-B
NTS

NOTE: FOR DETAILS OF SPILLWAY NOSING, SEE SHEET 15 OF 26



FOR DETAILS SEE SHEET 15 OF 26

TYPICAL SPILLWAY SECTION (LOOKING DOWNSTREAM)
NTS

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/6/96

CHIEF - BUREAU OF ENGINEERING — DATE 6/13/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES: TJL
DRN: JAH, RCJ
CHK: TJL
DATE: 04-26-96

BY	NO.	REVISION	DATE

POND II SPILLWAY DETAILS

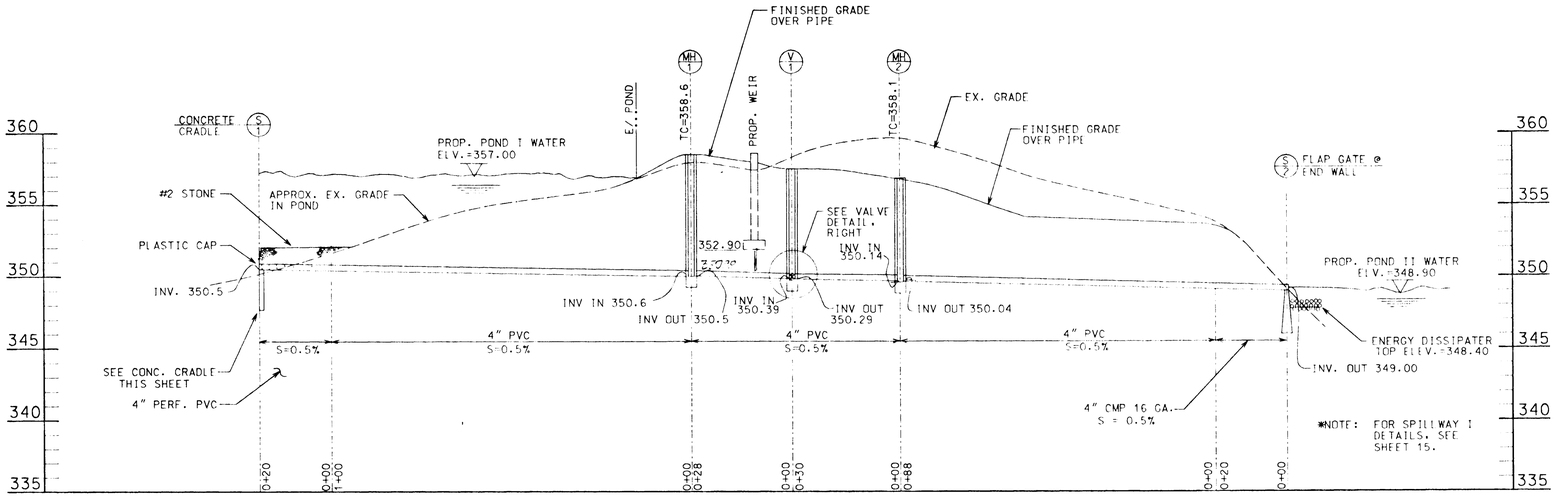
600' SCALE NO. _____ BLOCK NO. _____

SEWELL'S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

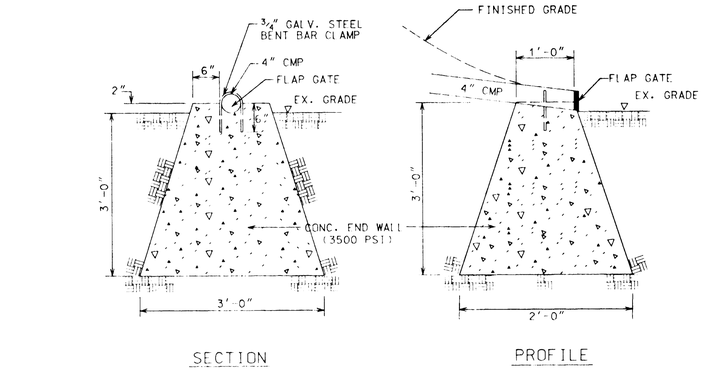
SHEET 18 OF 26



PROFILE: POND I DRAIN SYSTEM

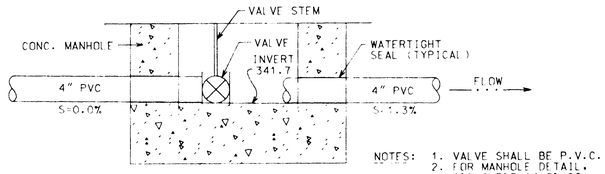
SCALE: H 1"=20'-0"
V 1"=5'-0"

NOTE: MANHOLE COVERS SHALL BE WATERTIGHT CONSTRUCTION. SEE DETAIL SHEET 14.



DETAILS-CONCRETE END WALL

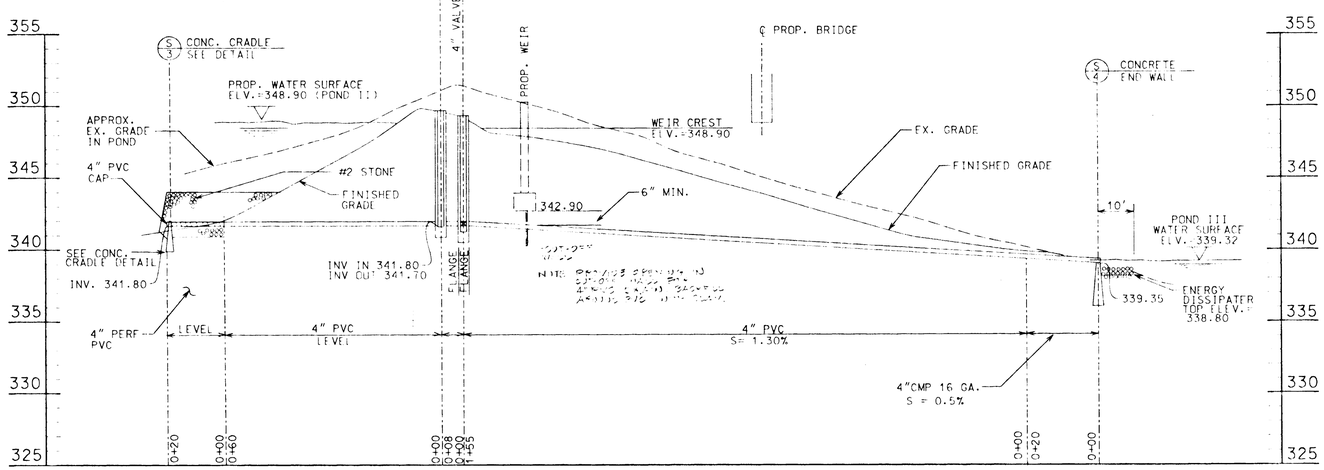
NTS



NOTES: 1. VALVE SHALL BE P.V.C.
2. FOR MANHOLE DETAIL, SEE SHEET 14 OF 26.

VALVE DETAIL-SECTION

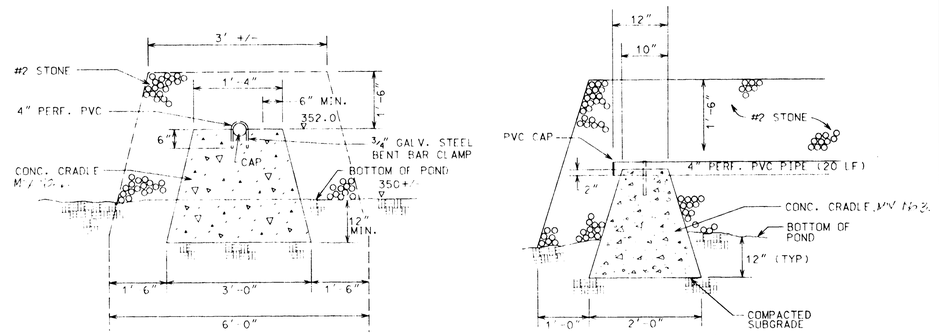
NTS



PROFILE: POND II DRAIN SYSTEM

SCALE: H 1"=20'-0"
V 1"=5'-0"

NOTE: MANHOLE COVERS SHALL BE WATERTIGHT CONSTRUCTION.



DETAILS-CONCRETE CRADLE

NTS

NOTE: FOR WATERTIGHT MANHOLE DETAILS, SEE SHEET 14 OF 26.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/5/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/3/96

DIRECTOR — DATE 7/3/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/6/96

CHIEF, BUREAU OF ENGINEERING — DATE 6/18/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD. 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES: TJL					
DRN: JAH, RCJ					
CHK: CDB					
DATE: 04-26-96	BY	DATE	REVISION	DATE	

PONDS I&II DRAINAGE SYSTEM DETAILS

600' SCALE NO. _____ BLOCK NO. _____

SEWELL S ORCHARD COMMUNITY PARK
SEWELL S. ORCHARD DRIVE, COLUMBIA, MD. 21045
PHASE I

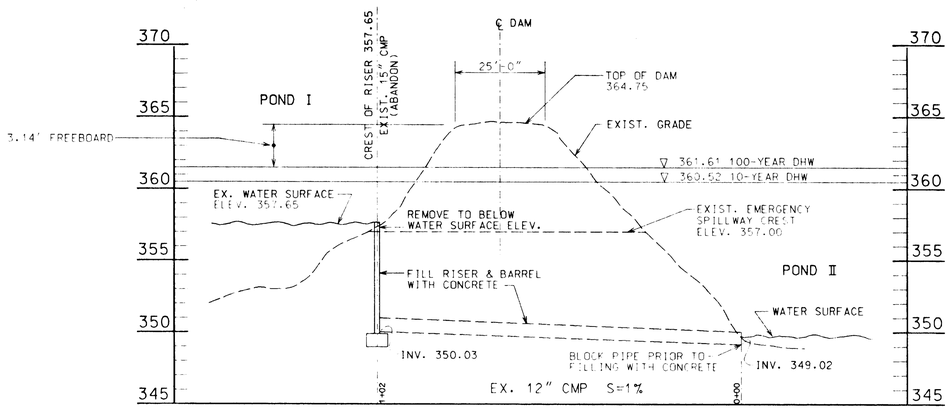
Capital Project No.: N. 3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

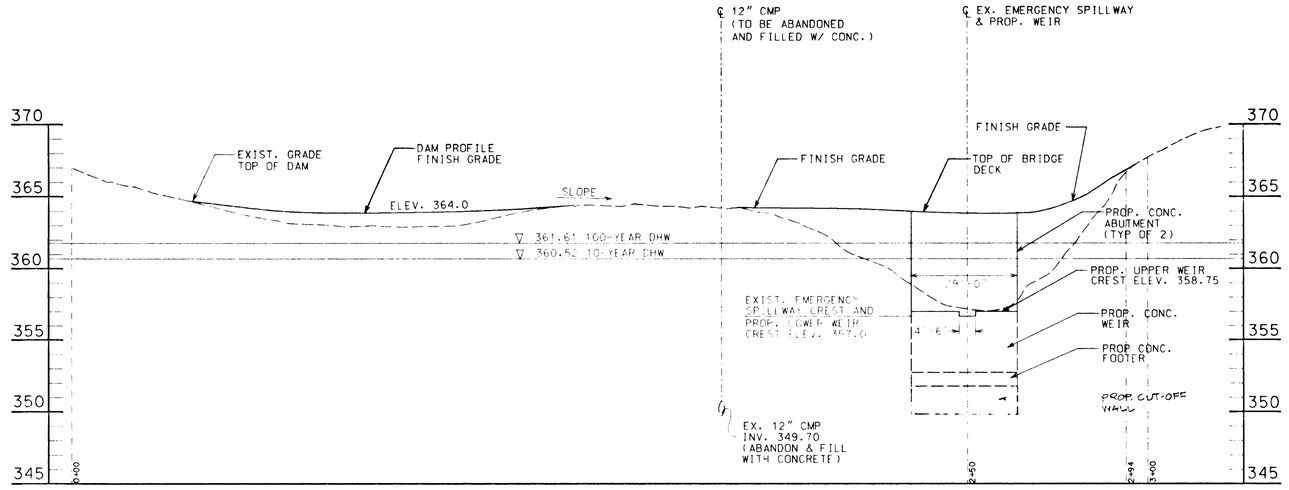
SHEET 19 OF 26

DPW 96-115

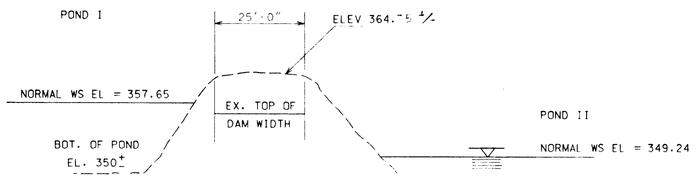
NOTE: EXIST. RISER AND BARREL SHALL BE SEALED WITH CONCRETE AND ABANDONED.



EXISTING PRINCIPAL SPILLWAY PROFILE (POND I)

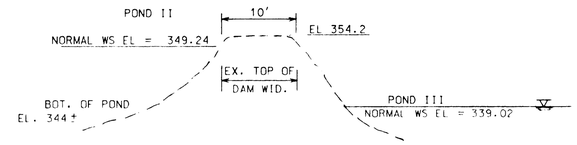


TOP OF DAM PROFILE (POND I)



TYPICAL EMBANKMENT SECTION (POND I)

NTS



TYPICAL EMBANKMENT SECTION (POND II)

NTS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

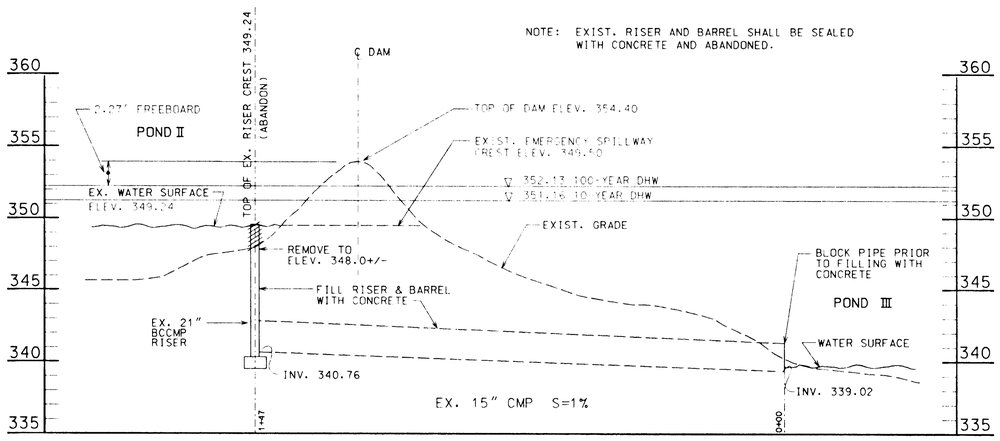
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/8/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/3/96

DIRECTOR — DATE 7/8/96

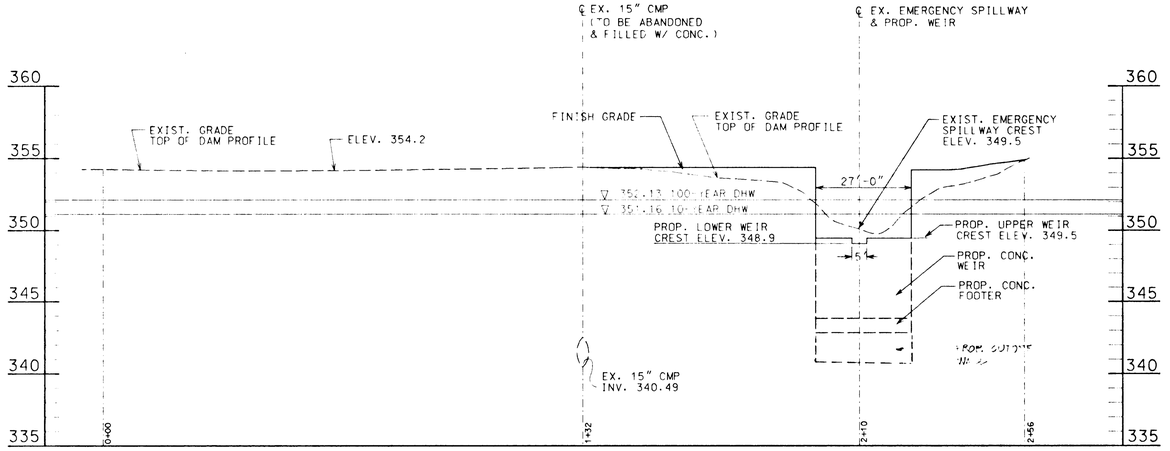
NOTE: FOR ADDITIONAL SECTIONS & PROFILES ALONG PROPOSED CONCRETE WEIRS, SEE DRAWINGS, SHEET NO.'s 18&19 OF 26

NOTE: EXIST. RISER AND BARREL SHALL BE SEALED WITH CONCRETE AND ABANDONED.



EXISTING PRINCIPAL SPILLWAY PROFILE (POND II)

NOTE: TOP WIDTHS OF EMBANKMENTS FOR BOTH POND I AND POND II EXCEED MD. CODE 378 REQUIREMENTS FOR MINIMUM TOP WIDTHS



TOP OF DAM PROFILE (POND II)

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96

BUREAU OF ENGINEERING — DATE 6/18/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD. 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES. TJL	
DRN. JAH	
CHK. CDB	
DATE 04-26-96	

BY	DATE	REVISION	DATE

DAM PROFILES (PONDS I & II)

SCALE: H 1"=20'-0"
V 1"=5'-0"

600' SCALE NO. _____ BLOCK NO. _____

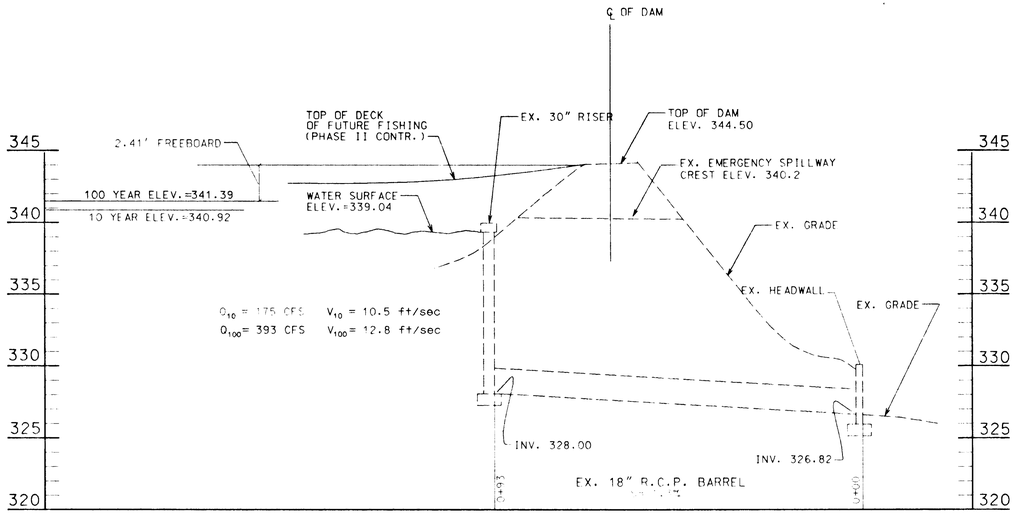
SEWELL S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD. 21045
PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

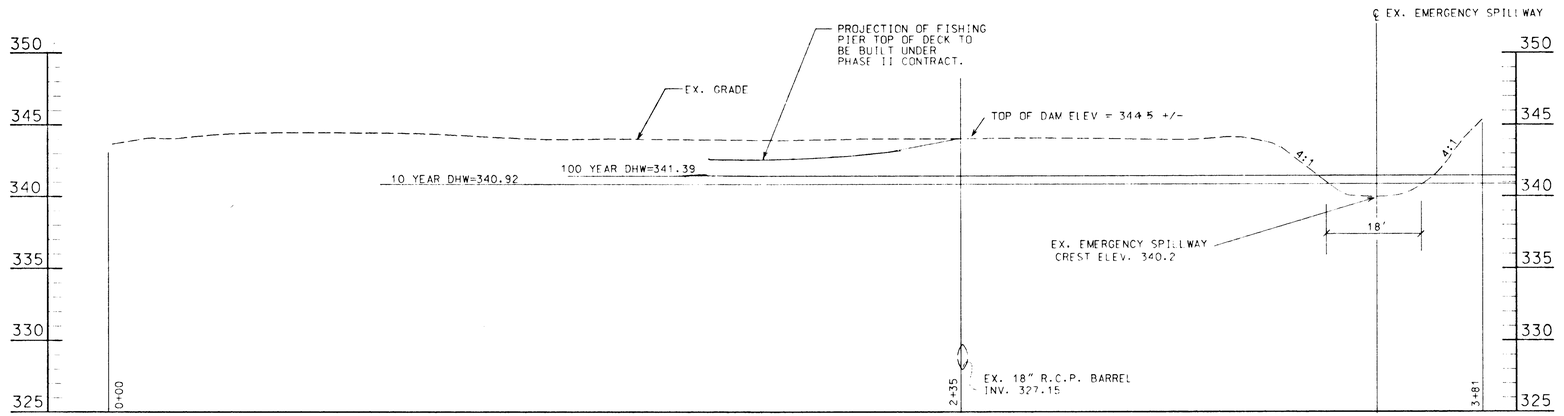
SCALE AS SHOWN

SHEET 20 OF 26

96-112



EXISTING EMERGENCY SPILLWAY (POND III)



TOP OF DAM PROFILE (POND III)

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/8/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/8/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/6/96

CHIEF, BUREAU OF ENGINEERING — DATE 6/18/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD. 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES: TJL
DRN: JAH, RCJ
CHK: CDB
DATE: 04-26-96

BY	DATE	REVISION	DATE

DAM PROFILES (PONDS III)

600 SCALE NO. _____ BLOCK NO. _____

SEWELL'S ORCHARD COMMUNITY PARK

SEWELL'S ORCHARD DRIVE, COLUMBIA, MD. 21045

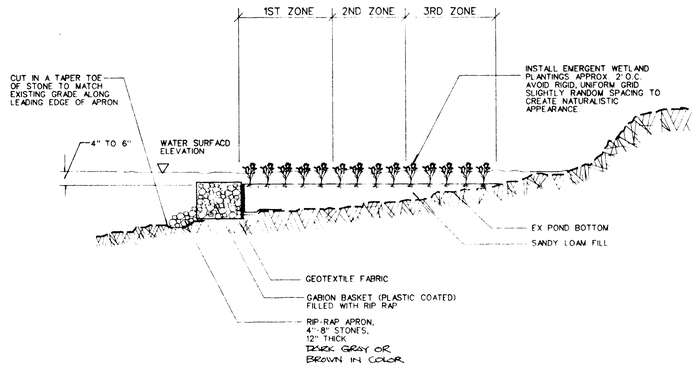
PHASE 1

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 21 OF 26

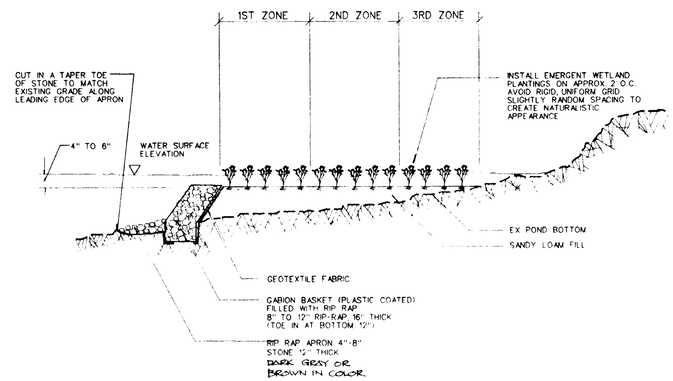
4SR-96-112



TYPICAL WETLAND CREATION & PLANTING DETAILS (1)

NOT TO SCALE

NOTES: USE EITHER OPTION WHERE APPLICABLE.



WETLAND CREATION & PLANTING DETAILS (2)

NOT TO SCALE

EMERGENT WETLAND PLANTING NOTE

Each proposed emergent wetland planting site will be divided into three planting zones following the shoreline edge. The first zone will be located within the one-third of the site closest to and parallel with the existing shoreline edge. Within this zone, bare root transplants of Scirpus validus shall be installed spaced 2 feet on center within rows spaced 2 feet apart.

The second planting zone shall be the one-third of the site lying between the shoreline edge and the limit of the proposed emergent wetland site. Within this area, peat potted transplants of Scirpus pungens shall be installed on 2-foot centers within rows spaced 2 feet apart.

The third planting zone shall consist of one-third of the proposed emergent wetland planting site located furthest from the shoreline edge. Within this zone, bare root transplants of Sagittaria latifolia and Peltandra virginica shall be installed on 2-foot centers within rows 2 feet apart, intermix at random to ensure the naturalistic appearance.

PLANT:

All bare root transplants shall be growing stock. No dormant stock shall be used. Peat potted transplants shall consist of a 1¾" peat pot containing at least four live stems per pot, 4 to 6 inches tall. The transplant shall be well rooted through the pot.

All transplants shall be planted to a depth of 3 to 4 inches. At the time of planting, each transplant shall receive a subsurface application of 30 grams of 8- to 9-month release, 18-6-12 fertilizer. Soil around each transplant shall be leveled and firmly packed by hand so as to prevent transplants from washing out.

TIME:

Transplanting of emergent wetlands shall occur only during the period of April 1 through July 1. Earthwork operations should be planned sufficiently in advance to meet this planting schedule.

WETLAND PLANT SCHEDULE

BOTANICAL/COMMON NAMES	SIZE	ROOT	SPACING	ZONE	QUAN. (S.F.)
Peltandra virginica/ Arrow Arum	4"-6" Ht.	Bare Root	2' O.C.	3RD	5,027.5
Sagittaria latifolia/ Duck Potato	4"-6" Ht.	Bare Root	2' O.C.	3RD	5,027.5
Scirpus Pungens/ Common Three Square	4"-6" Ht.	1¾" Pot	2' O.C.	2ND	10,055.0
Scirpus validus/Soft Stem Bulrush	4"-6" Ht.	Bare Root	2' O.C.	1ST	10,055.0

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/3/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/3/96

DIRECTOR — DATE 7-3-96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96

CHIEF, BUREAU OF ENGINEERING — DATE 6/18/96

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD. 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES	LT, EL				
DRN	PT/CADD				
CHK	LT, EL				
DATE	04-26-96	BY	NO	REVISION	DATE

600' SCALE NO. _____ BLOCK NO. _____

WETLAND PLANTING DETAILS, NOTES & PLANT SCHEDULE

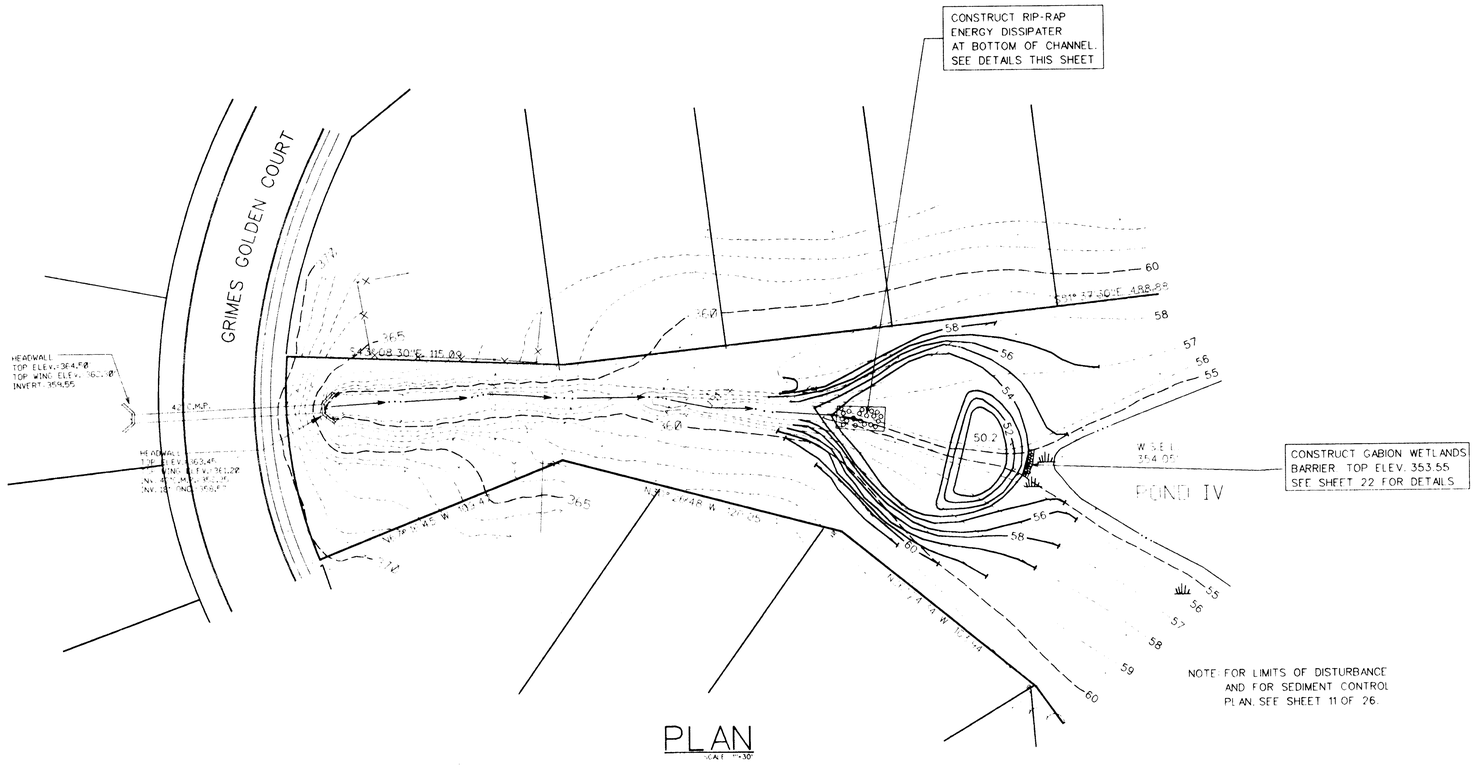
SEWELL S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE COLUMBIA, MD. 21045
PHASE I

Capital Project No.: N-3090 — Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 — PELA Project No.: 93.16

SCALE AS SHOWN

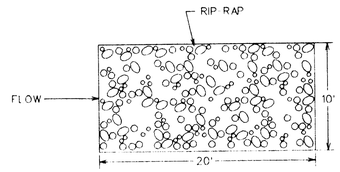
SHEET 22 OF 26

7-3-96-11



PLAN

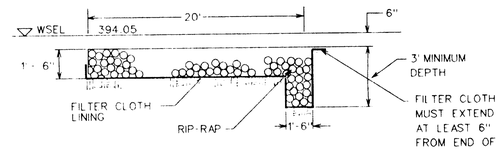
SCALE 1"=30'



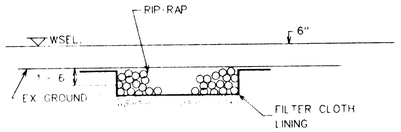
PLAN

NOTE:

RIP-RAP SHALL BE DARK GRAY OR BROWN IN COLOR SIZE 4'-8" X 12"



ELEVATION



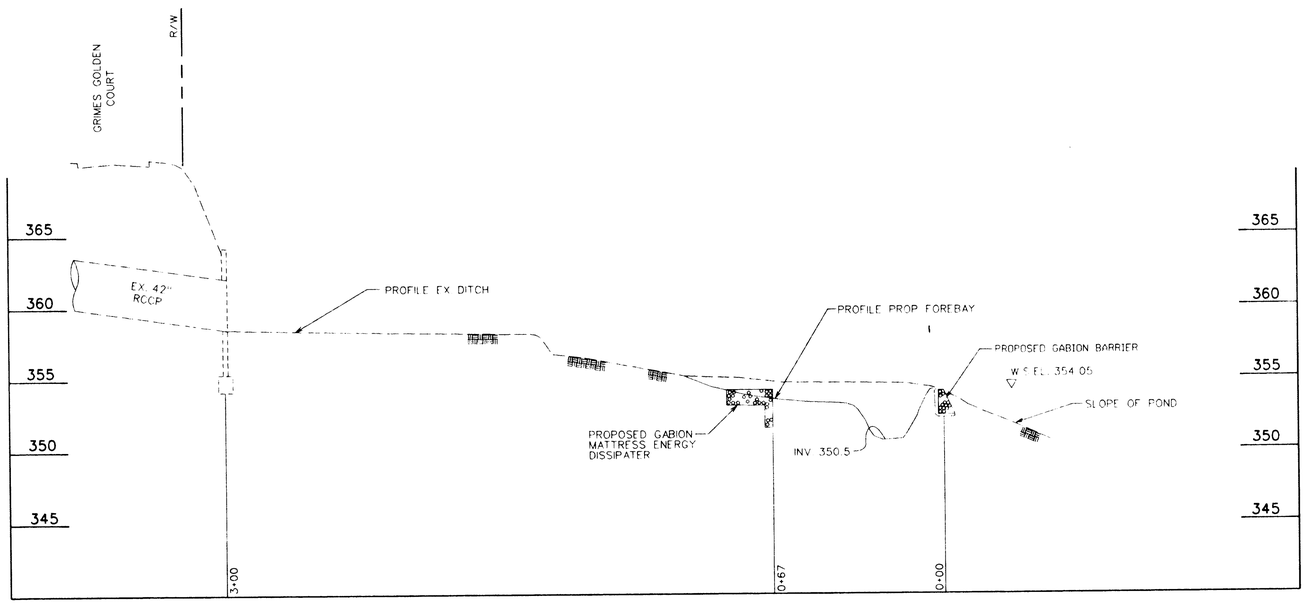
FILTER CLOTH LINING MUST EXTEND AT LEAST 6" FROM EDGE OF RIPRAP AND BE EMBEDDED AT LEAST 4" AT SIDES OF RIPRAP

SECTION A-A

NOTE STONE FOR RIP-RAP SHALL BE DARK GRAY OR BROWN IN COLOR

RIP-RAP ENERGY DISSIPATER

N.S.



PROFILE- FOREBAY IV TO POND IV

SCALES HORIZ. 1"=30' VERT. 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/3/96

CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE 7/3/96

DIRECTOR — DATE 7/3/96

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 6/18/96

CHIEF, BUREAU OF ENGINEERING — DATE

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD. 21218
TEL: 410-366-7300
FAX: 410-366-7392

PROFESSIONAL ENGINEER — REG. NO. 17006

DES: TL, LT	
DRN: JAH, RCJ	
CHK: TJL	
DATE: 04-26-96	

BY	NO.	REVISION	DATE

POND IV
FOREBAY IV DESIGN DETAILS

600' SCALE NO. _____ BLOCK NO. _____

SEWELL'S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD. 21045
PHASE I

Capital Project No.: N-3090 Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 23 OF 26

SDP-96-112

Howard County MARYLAND

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 358.0
DATES: START: 3/1/94 — FINISH: 3/1/94 — INSPECTOR: JR
GROUNDWATER LEVELS (DEPTH/DATE): 2' Below Surface Elevation at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
2"				Topsoil	
1.5	S-1	4-1-4	2"-3.5'	Dark brown clayey silt, silty clay, some fine sand, micaceous, moist, fill, soft, M.C. 21.6%, "CL"	
5.0	S-2	4-7-15	3.5'-8.0'	Dark gray silty sand, sandy silt, moist, friable, fill, medium dense, M.C. 17.2%, "SM"	
10.0	S-3	30-51/4	8.0'-20.0'	Dark brown, white sandy silt, few gravel, friable, possible pork, trace of clay, moist, possible fill, very dense, M.C. 20.5%, "SM"	
15.0	S-4	51/2		Dark greenish black, silty sand, friable, very mile petroleum smell, moist, possible, fill 2" recovery, very dense, M.C. 11.0%, "SM"	
20.0	S-5	51/3		Same as S-4, 3" recovery, very dense M.C. 12.8%, "SM"	

GENERAL REMARKS: Caved in at 7' from surface elevation. Groundwater depth at 6' below surface elevation at completion of drilling. End of boring at 20.0 feet.

BORING NO.: 1
SHEET 1 OF 1

Howard County MARYLAND

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 357.9
DATES: START: 3/1/94 — FINISH: 3/1/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): 2' Below Surface Elevation at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
2"				Topsoil	
1.5	S-1	4-2-3	2"-3.5'	Dark brown clayey silt, silty clay, trace of fine sand, micaceous, moist, fill, soft, M.C. 22.1%, "CL"	
5.0	S-2	5-9-16	3.5'-8.0'	Dark gray silty sand, sandy silt, moist, friable, fill, medium dense, M.C. 18.3%, "SM"	
10.0	S-3	25-51/3	8.0'-20.0'	Dark brown whitish sandy silt, trace of gravel, friable, possible fill, moist, very dense, MC 18.4%, "SM"	
15.0	S-4	51/3		Dark green silty sand, friable, moist, possible fill, 3" recovery, very dense, M.C. 11.3%, "SM"	
20.0	S-5	51/2		Same as S-4, 3" recovery, very dense, M.C. 11.2%, "SM"	

GENERAL REMARKS: Caved in at 8'. Groundwater depth at 5' below surface elevation after completion of drilling. End of boring at 20.0 feet.

BORING NO.: 2
SHEET 1 OF 1

Howard County MARYLAND

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 350.1
DATES: START: 2/2/94 — FINISH: 2/2/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): See Sheet 1 of 2

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
25.0	S-6	51/3		Light brown decomposed rock silty sand, sandy, moist, 3" recovery, very dense, M.C. 13.1%, "SM"	
				End of boring at 25.0 feet.	

GENERAL REMARKS: See Sheet 1 of 2

BORING NO.: 3
SHEET 2 OF 2

Howard County MARYLAND

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 350.1
DATES: START: 2/2/94 — FINISH: 2/2/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): 2.5' Below Surface Elevation at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
8"			0-8"	Organic Topsoil	
1.5	S-1	4-4-4	8"-8.5'	Organic peat, wet, loose, M.C. 60.1%	
5.0	S-2	3-2-1		Same as S-1, wet, very loose, M.C. 54.5%	
10.0	S-3	12-13-19	8.5'-12'	Yellowish brown/black micaceous sandy silt, silt, friable, moist, dense, M.C. 17.8%, "SM"	
15.0	S-4	16-18-28	12'-25.0'	Salt and pepper silty sand, sandy silt, decomposed diabase, moist, dense, M.C. 13.2%, "SM"	
20.0	S-5	51/4		Brown tanish silty sand, moist, very dense, M.C. 10.7%, "SM"	

GENERAL REMARKS: Caved in at 4.0 feet. Watertable at 8.5' below surface elevation after completion of drilling.

BORING NO.: 3
SHEET 1 OF 2

Howard County MARYLAND

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 348.4
DATES: START: 2/2/94 — FINISH: 2/2/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): 0.5' Below Surface Elevation at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
8"			0-8"	Organic topsoil	
1.5	S-1	3-4-5	8"-8.5'	Organic peat, wet, loose" M.C. 58.9%	
5.0	S-2	2-1-1		Same as S-1, wet, very loose, M.C. 56.7%	
10.0	S-3	10-11-22	8.5'-12'	Yellowish black brown micaceous sandy silt, silt, friable, moist, dense, M.C. 15.3%, "SM"	
15.0	S-4	14-20-24	12'-25.0'	Salt and pepper silty sand, sandy silt, decomposed diabase, moist, dense, M.C. 15.6%, "SM"	
20.0	S-5	51/2		Light brown, tanish silty sand, moist, 2" recovery , very dense, M.C. 11.9% "SM"	

GENERAL REMARKS: Caved in at 1.5' from surface elevation. Groundwater depth 6' below surface elevation at completion of drilling.

BORING NO.: 4
SHEET 1 OF 2

Howard County MARYLAND

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 348.4
DATES: START: 2/2/94 — FINISH: 2/2/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): See Sheet 1 of 2

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
25.0	S-6	51/2		Light brown decomposed rock, silty sand, sand, moist, 2" recovery, very dense, M.C. 13.6%, "SM"	
				End of boring at 25.0 feet.	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/3/96
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE
DIRECTOR — DATE 7/3/96

GENERAL REMARKS: See Sheet 1 of 2

BORING NO.: 4
SHEET 2 OF 2

Howard County MARYLAND

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 353.3
DATES: START: 2/2/94 — FINISH: 2/2/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): 9' Below Surface Elevation at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
1.5	S-1	9-6-9	0-2'	Organic topsoil, wet, M.C. 34.1%	
5.0	S-2	3-4-5	2'-15'	Greenish gray silty clay, for gravel, (fill) moist, medium stiff, M.C. 27.4%, "CL"	
10.0	S-3	4-3-3		Light greenish clayey silt, muck, (fill) moist, medium stiff, M.C. 19.9%, "CL"	
15.0	S-4	2-4-6		Brown silty sandy clay, trace of gravel (fill) moist, medium stiff, M.C. 19.9%, "CL"	
				End of boring at 15.0 feet.	

GENERAL REMARKS: Caved in at 10' from surface elevation. No ground water at the completion of drilling.

BORING NO.: 5
SHEET 1 OF 1

Howard County MARYLAND

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 350.6
DATES: START: 2/2/94 — FINISH: 2/2/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): 6' Below Surface Elevation at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
1.5	S-1	7-7-8	0-2'	Organic topsoil, wet, M.C. 36.8%	
5.0	S-2	5-3-6	2'-11'	Greenish gray silty clay, trace of gravel, (fill) moist, medium dense, M.C. 28.9%, "CL"	
10.0	S-3	6-3-5		Dark grayish clayey silt, (fill) moist, medium stiff, M.C. 30.5% "CL"	
15.0	S-4	3-5-8	11'-15'	Brown silty sandy clay, trace of gravel (fill) moist, medium stiff, M.C. 21.3%, "CL"	
				End of boring test at 15.0 feet.	

GENERAL REMARKS: Caved in at 7'. No ground water encountered after completion of drilling.

BORING NO.: 6
SHEET 1 OF 1

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 7/3/96 — CHIEF - BUREAU OF ENGINEERING — DATE 7/3/96

P.E.L.A. DESIGN, INC
PLANNERS ENGINEERS, & LANDSCAPE ARCHITECT
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES:				
DRN: RCJ				
CHK: TJL				
DATE: 04-26-96	BY	NO.	REVISION	DATE

BORING LOGS I

SEWELL S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
6th ELECTION DISTRICT TAX MAP NO. 36
PHASE I
Capital Project No.: N-3090 — Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 — PELA Project No.: 93.16

600' SCALE NO. ____ BLOCK NO. ____

SCALE AS SHOWN

SHEET 24 OF 26

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 346.1
DATES: START: 2/2/94 — FINISH: 2/2/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): 1.5' Below Surface Elevation at 24-hr Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
3"			0-3"	Organic topsoil	
1.5	S-1	12-16-8	3"-7.5'	Grayish brown clayey silt, silty clay, organic, trace of gravel and sand, fill, moist, very stiff, M.C. 22.8%, "CL"	
5.0	S-2	11-9-16		Grayish brown silty clay micaceous, clayey silt, trace of sand and gravel, fill, moist, very stiff, M.C. 17.4% "CL"	
10.0	S-3	13-24-22	7.5'-15'	Greenish decomposed diabase, silty, moist, dense, M.C. 23.1%, "SM"	
15.0	S-4	26-34-47		Same as S-3, moist, very dense, M.C. 17.3%, "SM"	
				End of boring at 15.0 feet.	

GENERAL REMARKS: Caved in at 10'. Watertable encountered at 6.0 feet after completion of drilling.

BORING NO.: 7
SHEET 1 OF 1

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 347.7
DATES: START: 2/2/94 — FINISH: 2/2/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): 2.5' Below Surface Elevation at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
2"			0-2"	Organic topsoil	
1.5	S-1	14-14-7	2"-7.5'	Grayish brown clayey silt, silty clay, some organic, trace of gravel and sand, fill, moist, very stiff, M.C. 24.4%, "CL"	
5.0	S-2	8-9-13		Grayish brown micaceous silty clay, clayey silt, trace of gravel and sand, fill, moist, very stiff, M.C. 18.6%, "CL"	
10.0	S-3	10-21-18	7.5'-15'	Greenish decomposed diabase, silty, moist, dense, M.C. 25.4%, "SM"	
15.0	S-4	28-32-44		Same as S-3, moist, very dense, M.C. 17.7%, "SM"	
				End of boring at 15.0'.	

GENERAL REMARKS: Caved in at 11' from surface elevation. Groundwater depth 7' below surface elevation at completion of drilling.

BORING NO.: 8
SHEET 1 OF 1

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 339.7
DATES: START: 2/10/94 — FINISH: 2/10/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): At Surface, Surface Runoff

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
2"				Organic Topsoil	
1.5'	S-1	12-8-6	0-2'	Brown organic, sandy silt, wet, medium dense M.C. 41.5%	
5.0	S-2	3-4-5	2'-7'	Greenish clayey silt, silty clay, some fine sand, moist, medium stiff, M.C. 24.4%, "CL"	
10.0	S-3	2-4-4	7'-16'	Yellowish green decomposed diabase, sandy silt, moist/wet, loose, M.C. 31.5%, "SM"	
15.0	S-4	12-10-12	16'-25'	Yellowish brown sandy silt, trace of clay, moist, friable, medium dense, M.C. 33.2%, "SM"	
20.0	S-5	18-22-26		Greenish pepper and salt decomposed diabase, moist, sandy silt, silty sand, dense, M.C. 23.6%, "SM"	

GENERAL REMARKS: Surface runoff in the test hole at 13.0' after completion of drilling.

BORING NO.: 9
SHEET 1 OF 2

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 339.7
DATES: START: 2/10/94 — FINISH: 2/10/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): At Surface, Surface Runoff

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
25.0	S-5	16-18-26		Same as S-4, moist" dense, M.C. 25.3%, "SM"	
				End of boring at 25.0 feet.	

GENERAL REMARKS: See Page 1 of 2

BORING NO.: 9
SHEET 2 OF 2

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 339.7
DATES: START: 2/10/94 — FINISH: 2/10/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): At Surface, Surface Runoff

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
2"			0-2"	Organic topsoil	
1.5	S-1	6-8-10	2'-12'	Brown silty clay, loam top soil, moist, stiff, M.C. 28.1%	
5.0	S-2	7-9-11		Yellowish brown silty sand, medium sand, trace of clay, possible fill, medium dense, M.C. 13.6%, "SM"	
10.0	S-3	8-10-12	12'-20'	Moderate to light bronw micaceous sandy silt, friable, possible fill, moist, medium dense, M.C. 39.1%, "SM"	
15.0	S-4	12-16-20		Greenish decomposed diabase, silty, moist, dense, M.C. 32.9%, "SM"	
20.0	S-5	18-22-26		Same as S-4, moist, very dense, M.C. 16.7%, "SM"	

GENERAL REMARKS: See Sheet 1 of 2

BORING NO.: 10
SHEET 2 OF 2

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE
DIRECTOR — DATE

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 350.70
DATES: START: 2/10/94 — FINISH: 2/10/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): At Surface at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
4"				Topsoil	
1.5	S-1	6-5-7	0-2.5'	Brown silty clay, loam top soil, moist, stiff, M.C. 28.1%	
5.0	S-2	11-8-10	2.5'-12'	Yellowish brown silty sand, medium sand, trace of clay, possible fill, medium dense, M.C. 13.6%, "SM"	
10.0	S-3	7-11-11		Moderate to light bronw micaceous sandy silt, friable, possible fill, moist, medium dense, M.C. 39.1%, "SM"	
15.0	S-4	9-18-29	12'-20'	Greenish decomposed diabase, silty, moist, dense, M.C. 32.9%, "SM"	
20.0	S-5	23-31-51/6		Same as S-4, moist, very dense. M.C. 16.7%, "SM"	

GENERAL REMARKS: Groundwater encountered at 16.5 feet at completic of drilling. Caved in at 8' below ground surface. End of boring at 20.0 feet.

BORING NO.: 11
SHEET 1 OF 1

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 341.7
DATES: START: 3/1/94 — FINISH: 3/1/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): 8.5' Below Surface Elevation at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
5"			0-5"	Topsoil	
1.5	S-1	14-6-6	5"-7.0'	Brown silty clay, trace of medium sand, fill, moist, stiff, M.C. 27.6%, "CL"	
5.0	S-2	11-11-8		Grayish brown silty clay, trace of sand, fill, moist, very stiff, M.C. 26.5%, "CL"	
10.0	S-3	8-12-8	7.0'-20.0'	Brown micaceous sandy silt, friable, possible fill, moist, medium dense, M.C, 25.1%, "SM"	
15.0	S-4	9-16-28		Greenish decomposed diabase, silty sand, moist, dense, 29.8%, "SM"	
20.0	S-5	20-30-51/7		Same as S-4, moist' very dense, M.C. 15.4%, "SM"	

GENERAL REMARKS: Caved in at 9.0 feet. Watertable at 12.5 feet after completion of drilling. End of boring at 20.0 feet.

BORING NO.: 12
SHEET 1 OF 1

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — DATE

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES:
DRN: RCJ
CHK: TJL
DATE: 04-26-96

BY	NO.	REVISION	DATE

BORING LOGS II

SEWELL'S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
6th ELECTION DISTRICT TAX MAP NO. 35
PHASE I

Capital Project No.: N-3090 — Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 — PELA Project No.: 93.16

600' SCALE NO. _____ BLOCK NO. _____

SCALE AS SHOWN

SHEET 25 OF 26

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 342.5
DATES: START: 3/1/94 — FINISH: 3/1/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): 9.5' Below Ground Elevation at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
5"			0-5"	Topsoil	
1.5	S-1	16-7-7	5"-8'	Brown silty clay, clayey silt, some medium sand, some organic, fill, moist, stiff, M.C. 30.3%, "CL"	
5.0	S-2	9-6-11		Grayish brown, silty clay, trace of sand, fill, moist, very stiff, M.C. 29.5%, "CL"	
10.0	S-3	6-7-10	8'-18'	Same as S-2, fill, moist, very stiff, M.C. 25.2%, "CL"	
15.0	S-4	1-3-3		Brown silty clay, trace of sand, fill, moist, medium stiff, M.C. 29.7%, "CL"	
20.0	S-5	21-25-20	18'-30'	Pepper and salt decomposed diabase, moist, dense, M.C. 17.9%, "SM"	

GENERAL REMARKS: Caved in at 18'. Groundwater encountered at 20' after completion of drilling.

BORING NO.: 14
SHEET 1 OF 2

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 342.5
DATES: START: 3/1/94 — FINISH: 3/1/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): See Sheet 1 of 2

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
25.0	S-6	9-9-18		Same as S-5, moist, medium dense, M.C. 21.7%, "SM"	
30.0	S-7	20-31-36		Same as S-5, moist, very dense, M.C. 17.2%, "SM"	
				End of boring at 30.0 feet.	

GENERAL REMARKS: See Sheet 1 of 2

BORING NO.: 14
SHEET 2 OF 2

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 345.1
DATES: START: 3/1/94 — FINISH: 3/1/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): No water table at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
				No topsoil	
1.5	S-1	6-3-4	0-3.5'	Brown silty loam, some organics, trace of clay and sand, fill, moist, loose, M.C. 22.2%, "SM"	
5.0	S-2	20-20-30	3.5'-5.5'	White broken aggregates, sand and gravel, fill, damp, very dense, M.C. 35.9%, "GP"	
10.0	S-3	12-10-17	5.5'-15'	Greenish micaceous silt, trace of clay, moist, medium dense, M.C. 27.0%, "SM"	
15.0	S-4	28-18-23		Same as S-3, moist, dense, M.C. 16.7%, "SM"	
				End of boring at 15.0 feet.	

GENERAL REMARKS: Caved in at 11 feet. Ground water encountered at 10.5' after completion of drilling.

BORING NO.: 15
SHEET 1 OF 1

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 340.3
DATES: START: 3/1/94 — FINISH: 3/1/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): No Water Table at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
				No topsoil	
1.5	S-1	8-4-5	0-3.5'	Brownish silty loam, organic, trace of sand and clay, fill, moist, loose, M.C. 18.9%, "SM"	
5.0	S-2	14-9-16	3.5-6.0'	Brown silty sand, trace of clay, medium dense, moist, M.C. 24.1%, "SM"	
10.0	S-3	8-12-15	6.0'-15.0'	Greenish micaceous silt, trace of clay, moist, medium dense, M.C. 28.2%, "SM"	
15.0	S-4	30-20-25		Same as S-3, moist dense, M.C. 15.4%, "SM"	
				End of boring at 15.0 feet.	

GENERAL REMARKS: Caved in at 8.5 feet. Water table encountered at 11.0 feet after completion of drilling.

BORING NO.: 16
SHEET 1 OF 1

TEST BORING LOG

PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 356.7
DATES: START: 3/3/94 — FINISH: 3/3/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): 2.0' Below Surface Elevation at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
1.5	S-1	4-3-5	0-3.5'	Brown silty clay, possible fill, medium stiff, moist, M.C. 26.5%, "CL"	
5.0	S-2	8-15-12	3.5'-6.0'	Brown silty sand, trace of clay, medium dense, moist, M.C. 21.2%, "SM"	
10.0	S-3	6-8-16	6.0'-15.0'	Greenish micaceous silty clay, very stiff, moist, M.C. 19.8%, "CL"	
15.0	S-4	12-24-25		Clean washed sand and gravel, wet, dense, M.C. 32.1%, "SM"	
				End of boring at 15.0 feet.	

GENERAL REMARKS: Caved in at 8.0'. Water table at 4.5' after completion of drilling.

BORING NO.: 17
SHEET 1 OF 1

TEST BORING LOG

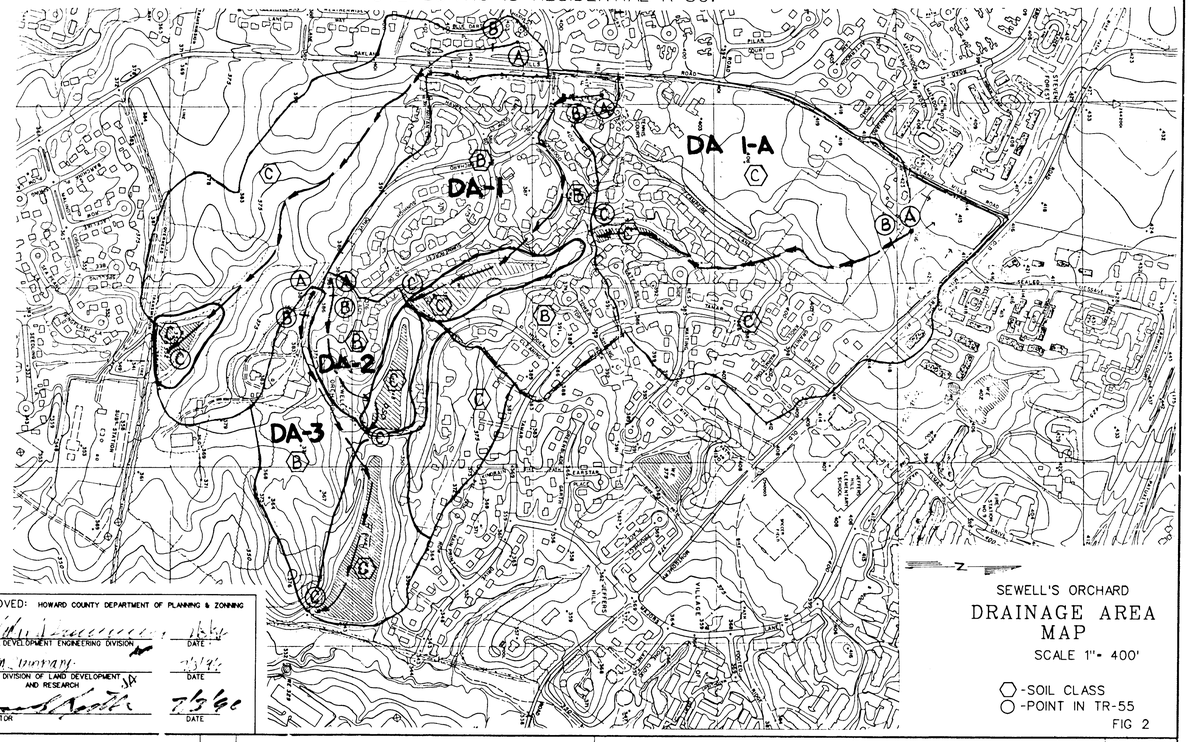
PROJECT: Sewell's Orchard — PROJECT NO.: N-3090
ELEVATION: N/A — OFFSET: N/A — SURFACE ELEVATION: 358.5
DATES: START: 3/3/94 — FINISH: 3/3/94 — INSPECTOR: JK
GROUNDWATER LEVELS (DEPTH/DATE): 1.5' Below Surface Elevation at 24-Hour Reading

Depth (ft)	Sample No. Length Type	Blow Counts Recovery (%)	Strata Depth	Strata Identification	RQD
1.5	S-1	Hand Auger	0-1.5'	Brown silty clay organic soil, possible fill, moist, M.C. 27.6%	
5.0	S-2	Hand Auger	1.5'-7.5'	Dark gray high expansive clay, fill, moist, M.C. 33.7%, "CL"	
9.5	S-3	Hand Auger	7.5'-9.5'	Clean washed sand and gravel, trace of silt and clay, wet, M.C. 27.2%, "SM"	
				Auger Refusal at 9.5 feet.	

GENERAL REMARKS: Caved in at 7'. Water table at 3.5' after completion of drilling.

BORING NO.: 18
SHEET 1 OF 1

NOTE: ZONING IS RESIDENTIAL R-SC.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH — DATE
DIRECTOR — DATE

SEWELL'S ORCHARD
DRAINAGE AREA MAP
SCALE 1"= 400'

⬡ -SOIL CLASS
○ -POINT IN TR-55

FIG 2

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — DATE

P.E.L.A. DESIGN, INC.
PLANNERS, ENGINEERS, & LANDSCAPE ARCHITECTS
2204 MARYLAND AVENUE, SUITE 300
BALTIMORE, MD, 21218
TEL: 410-366-7300
FAX: 410-366-7392

DES:
DRN: RCJ
CHK: TJL
DATE: 04-26-96

BY	NO.	REVISION	DATE

600' SCALE NO. — BLOCK NO.

BORING LOGS III AND DRAINAGE AREA MAP

SEWELL'S ORCHARD COMMUNITY PARK
SEWELL'S ORCHARD DRIVE, COLUMBIA, MD 21045
6th ELECTION DISTRICT — TAX MAP NO. 36
PHASE I

Capital Project No.: N-3090 — Contract Agreement No.: CA-93-52
Purchase Order No.: 19484 — PELA Project No.: 93.16

SCALE AS SHOWN

SHEET 26 OF 26