

BM-1 ELEV. 587.41
NAIL IN E. SIDE 10" PINE

SYMBOL LEGEND		REFERENCE POINTS				
TREE	•	R.P. #	NORTH	EAST	ELEV.	DESC.
VALVE	○	1	1000.00	1000.00	585.16	COR. CONC.
TRUNK	—	2	1411.41	1000.00	585.16	PK NAIL
HEMLOCK	◊	3	1506.84	830.20	588.85	IRON
OAK	◊	4	2006.04	744.95	628.56	IRON
PINE	◊					

LEGEND
 --- PROPOSED CONTOURS
 - - - EXISTING 5' CONTOUR
 - - - EXISTING 1' CONTOUR

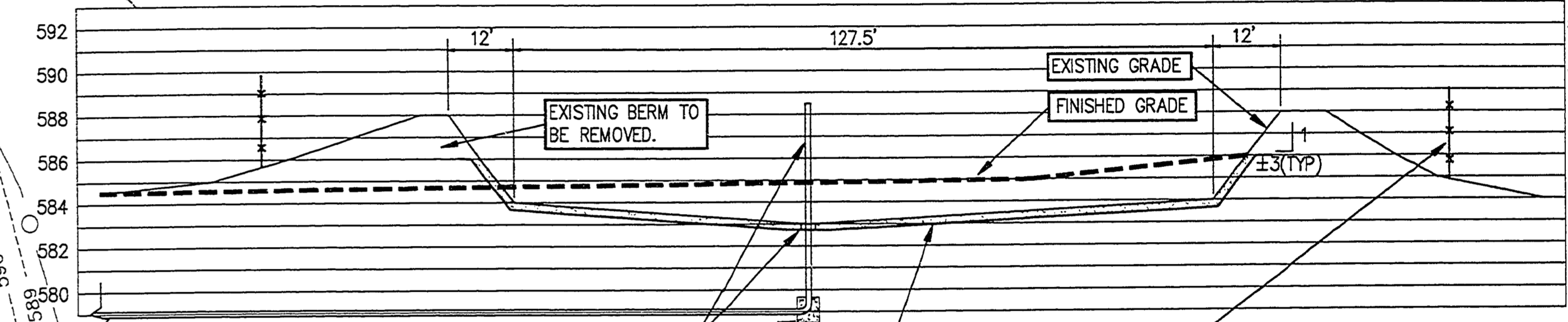
PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL STAKE CLEARING LIMITS FOR THE ACCESS ROAD. THE CLEARING LIMITS SHALL BE APPROVED IN WRITING BY THE PROJECT MANAGER PRIOR TO THE START OF CLEARING OPERATIONS.

CONTRACTOR SHALL VERIFY IF SLUDGE OR LINER REMOVAL IS REQUIRED IN SMALL LAGOON NORTH OF NEW ABSORPTION BEDS PRIOR TO CONSTRUCTION.

CONTRACTORS NOTE: ADDITIONAL FILL MATERIAL MAY BE REQUIRED TO PROVIDE POSITIVE DRAINAGE.

PUMP LAGOON WASTEWATER TO EXISTING ABSORPTION BEDS AND UNIFORMLY SPRAY WITHIN DESIGNATED LIMITS ONLY.

2' WATER, 1' SLUDGE
MEASUREMENTS TAKEN 9/22/95.



REMOVE EXISTING SOIL PIPE, CONCRETE PAD, CONCRETE THRUST BLOCK AND ASSOCIATED FORCEMAIN TO BULKHEAD LOCATION.

EXISTING 8 MIL VIRGIN VINYL PLASTIC LINER WITH 4" SAND ON TOP OF LINER TO BE REMOVED.

SALVAGE EXISTING WOVEN WIRE FENCE, POSTS, ASSOCIATED GATES AND SIGNS WITHOUT DAMAGE. STOCKPILE AS DIRECTED BY PARK MANAGER.

REMOVE EXISTING RESIDUAL SLUDGE, 8 MIL VIRGIN VINYL PLASTIC LINER WITH 4" SAND PLACED ON TOP OF LINER, MISCELLANEOUS PIPING AND CONCRETE STRUCTURES BELOW THE EXISTING LAGOONS AND BERMS OR AS SHOWN ON THE DRAWING.

THE CONTRACTOR SHALL NOT DRIVE ON EXISTING ABSORPTION BEDS WITH VEHICLES OF ANY KIND.

DEWATERING NOTES:

1. THE CONTRACTOR SHALL PUMP LAGOON WASTEWATER TO THE EXISTING ABSORPTION BEDS AND UNIFORMLY SPRAY OVER SOIL WITHIN DESIGNATED LIMITS ONLY. HAY BALES SHALL BE CONTINUOUSLY PLACED AROUND DESIGNATED AREAS TO CONTAIN THE SPRAYED WASTEWATER WITHIN THE LIMITS AS SPECIFIED ON THE DRAWING. THE HAY BALES SHALL BE REMOVED UPON COMPLETION OF LAGOON DEWATERING. THE CONTRACTOR SHALL MOW THE ABSORPTION BED GRASS AND REMOVE CLIPPINGS IF OVER 0.5" OF GROWTH HAS OCCURRED DURING DEWATERING.
2. THE DEWATERING FLOW, COMBINED WITH THE PARKS DAILY FLOW, SHALL NOT EXCEED 10,000 GPD, OR 0.5 GPD/SFT OF SPRAY AREA. ABSOLUTELY NO SLUDGE SHALL BE TRANSFERRED THROUGH THE PUMPS ON TO THE ABSORPTION BEDS.
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN ADDRESSING THE CONTRACTORS METHOD OF METERING THE PARKS DAILY FLOW AND DEWATERING FLOW, AS WELL AS SPRAYING AND MONITORING OF THE DECANTED WASTEWATER OVER THE ABSORPTION BEDS. THE PLAN SHALL BE APPROVED IN WRITING BY THE PROJECT MANAGER PRIOR TO THE START OF DEWATERING.
4. THE PUMPING SHALL PRECLUDE REMOVAL OF THE ACCUMULATED SLUDGE. IF PUMPING OF THE WASTEWATER IS NOT PRACTICAL OR FEASIBLE, ALL WASTEWATER SHALL BE REMOVED WITH THE SLUDGE OR TAKEN TO A WASTEWATER TREATMENT FACILITY.
5. THE CONTRACTOR SHALL PLACE EIGHT (8) TEMPORARY "DANGER - NO TRESSPASSING" SIGNS AROUND ABSORPTION BEDS. PLACE ONE SIGN EACH SIDE OF AREA.
6. IN NO CASE SHALL SANITARY WASTEWATER BE SPRAYED IN A MANNER THAT RESULTS IN POOLING OR RUNOFF.
7. ABSORPTION BEDS SHALL BE INSPECTED AT LEAST DAILY, PRIOR TO, DURING, AND AFTER SPRAYING OF THE WASTEWATER TO MAKE AN EVALUATION OF POOLING, PONDING, RUNOFF, AND ODORS. IN THE CASE OF RUNOFF OUT OF SPRAY AREA LIMITS, SPRAYING TO THE AREA IN USE SHALL BE DISCONTINUED IMMEDIATELY AND PROVISIONS MADE TO REPAIR EROSION CONDITIONS AND PREVENT REOCCURRENCE OF RUNOFF.
8. SPRINKLERS SHALL BE EXAMINED AT LEAST DAILY TO ASSURE THAT THEY OPERATE PROPERLY AND ARE NOT CLOGGED.

CONTRACTOR SHALL INSTALL ±990 LFT OF 3' HIGH TEMPORARY SILT FENCE PRIOR TO CONSTRUCTION. SILT FENCE SHALL BE MAINTAINED UNTIL SEED COVER IS ESTABLISHED OVER ENTIRE AREA.

PROTECT SAND DUNES TO NORTH



REMOVE EXISTING 4" PIPES AND VALVE. CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION.

EXISTING LAGOON WATER ELEV. 585.7 12-91

SLOPE

LIMITS OF WASTEWATER SPRAY AREA. CONTRACTOR SHALL PLACE HAY BALES CONTINUOUSLY AROUND PERIMETER.

EXISTING CONTOURS-TYPICAL

PROTECT SAND DUNES TO WEST

PROPOSED CONTOURS-TYPICAL

REMOVE EXISTING SOIL PIPE, CONCRETE PAD, CONCRETE THRUST BLOCK AND ASSOCIATED FORCEMAIN TO BULKHEAD LOCATION.

SALVAGE EXISTING WOVEN WIRE FENCE, POSTS, ASSOCIATED GATES AND SIGNS REMAINING IN AREA WITHOUT DAMAGE. STOCKPILE AS DIRECTED BY PARK MANAGER.

LOCATE EXISTING FORCEMAIN ± 20' FROM LAGOON AND BULKHEAD. SEE DETAIL SHEET 1.

APPROXIMATE LOCATION OF ACCESS TO LAGOON SITE. THE CONTRACTOR SHALL STAY OFF NEW GRAVEL DRIVE AT SEPTIC TANKS. THE CONTRACTOR SHALL LIMIT REMOVAL OF EXISTING TREES. ALL CUT TREES LARGER THAN 2" SHALL BE CUT IN 8' LENGTHS AND STORED ON-SITE AS DIRECTED BY PROJECT MANAGER. ALL CUT TREES SMALLER THAN 2" SHALL BE CHIPPED AND STORED ON-SITE AS DIRECTED BY PROJECT MANAGER. ALL OTHER TREES SHALL BE PROTECTED. RESTORE TO EXISTING CONDITION UPON COMPLETION OF CONSTRUCTION.

PROTECT EXISTING SEPTIC TANKS, PUMP STATION AND GRAVEL DRIVE.

PROTECT EXISTING FORCEMAIN

CONTRACTOR SHALL LEAVE EXISTING BERMS ON NORTH, EAST & WEST SIDES OF LAGOON IN PLACE.

ESTIMATED QUANTITIES INDICATED ON THE PLANS ARE INCLUDED FOR GENERAL REFERENCE ONLY. THE CONTRACTOR SHALL USE HIS INDEPENDENT JUDGEMENT AS TO THE ACCURACY OF THE ESTIMATED QUANTITIES STATED ON THE PLANS. THE CONTRACTOR SHALL NOTE THAT NO ADJUSTMENTS TO THE LUMP SUM PRICE WILL BE MADE FOR AS CONSTRUCTED QUANTITIES WHICH ARE IN EXCESS OF THE ESTIMATED QUANTITIES INDICATED ON THE PLANS.

FILE NO.: 11581A23
 PLOT DATE: 9-28-95
 UPDATED BY: KM

DRN BY:	IDENTIFICATION NO.	ISSUED FOR	DATE
KM	PROJECT - MUSKEGON	PRELIMINARY	9-28-95
DES. BY:	STATE ACCOUNT	CONSTRUCTION	9-29-95
OK'D BY:		FINAL RECORD	
APP'D BY:	607-75-2450-400		



STATE OF MICHIGAN
 DEPARTMENT OF MANAGEMENT AND BUDGET
 Office of Facilities

QUALITY OF LIFE RECREATION BOND
 MICHIGAN DEPARTMENT OF NATURAL RESOURCES
 PARKS DIVISION - STATE ACCT. NO. 607-75-2450-400

MUSKEGON STATE PARK
 WASTEWATER LAGOON ABANDONMENT
 CHANNEL CAMPGROUND LAGOON

SCALE: 1"=20'
 PROJ. NO.: 91159.03
 SHEET 2 OF 2

Heartland
 Professional Construction Services, Inc.
 1800 Michigan National Tower • Lansing, Michigan 48933 • 517-482-6100

DEPARTMENT OF NATURAL RESOURCES
 APPROVED BY: Robert Helmer, 9/29/95
 DATE: 9/29/95
 CHIEF, PARKS & RECREATION DIVISION

AREA 2B - MUSKEGON STATE PARK - LAGOON ABANDONMENT & CLOSURE