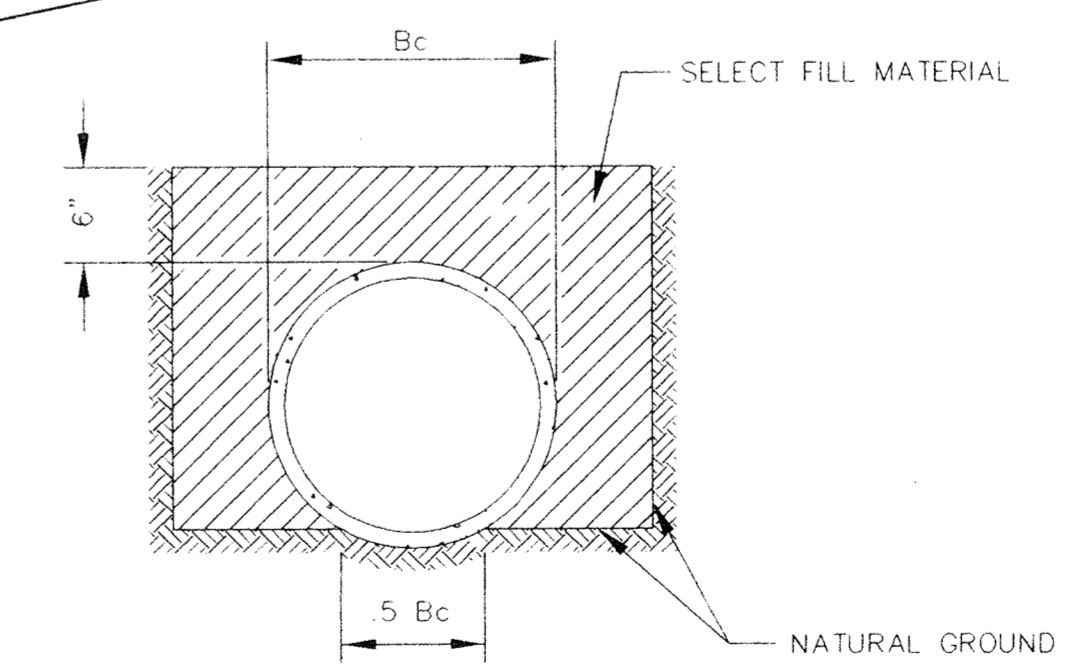
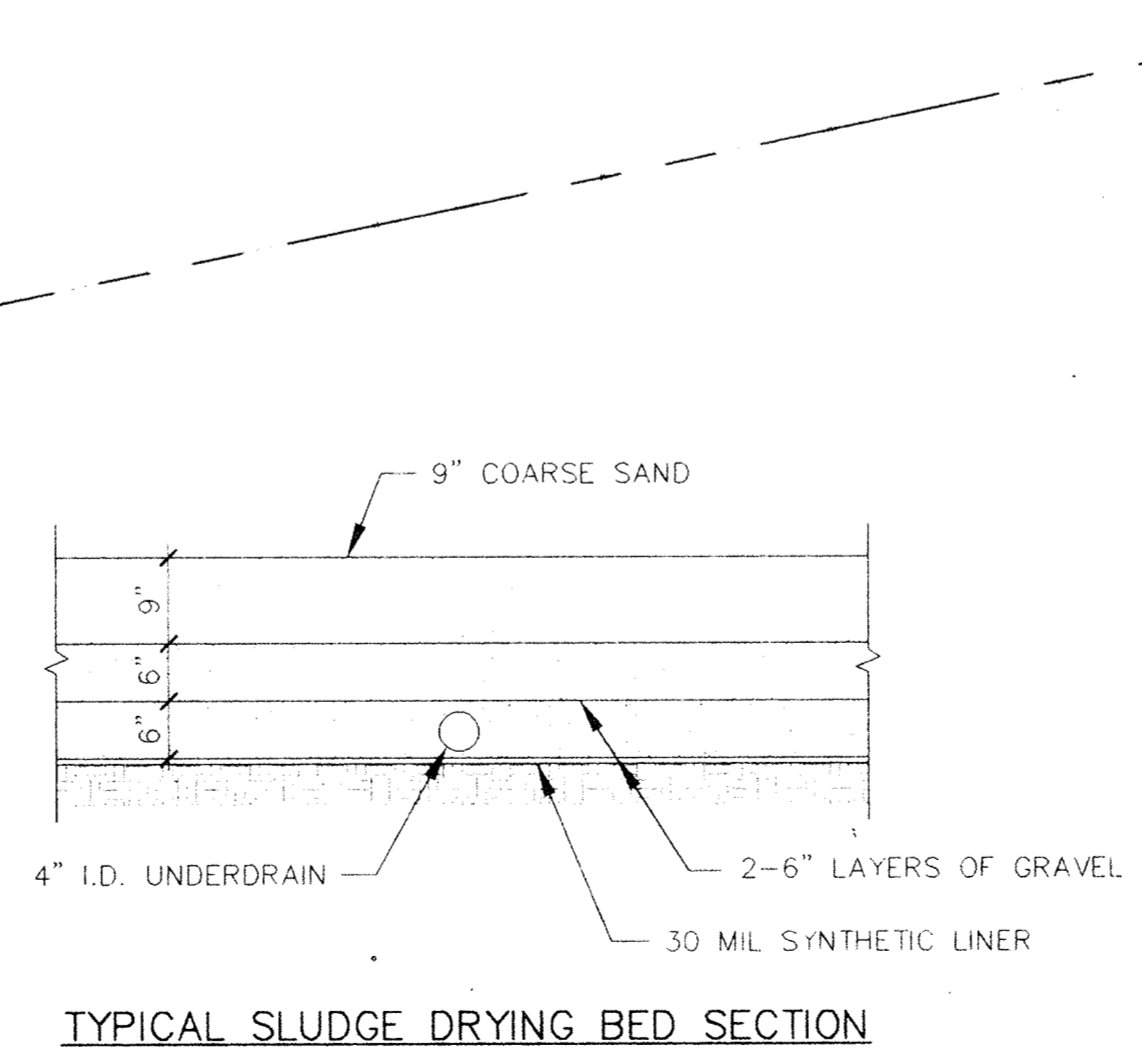


**COORDINATE LIST - EXISTING**

POINT NO.	N	E	LOCATION
1	1000.00	1000.00	NW PROPERTY CORNER
2	670.77	1223.74	SW PROPERTY CORNER
3	754.38	1624.72	SE PROPERTY CORNER
4	994.26	1626.91	NE PROPERTY CORNER
5	944.27	1194.70	SW CORNER PRE-TREATMENT BLDG.
6	944.17	1229.54	SE CORNER PRE-TREATMENT BLDG.
7	973.51	1229.78	NE CORNER PRE-TREATMENT BLDG.
8	973.86	1194.96	NW CORNER PRE-TREATMENT BLDG.
9	916.29	1128.99	CENTER PRIMARY DIGESTER
10	915.27	1207.00	CENTER SECONDARY DIGESTER
11	966.39	1297.19	CENTER PRIMARY CLARIFIER NO. 2
12	829.33	1218.38	SW CORNER CONTROL BLDG.
13	829.42	1236.27	SE CORNER CONTROL BLDG.
14	855.22	1236.60	NE CORNER CONTROL BLDG.
15	855.48	1218.56	NW CORNER CONTROL BLDG.
16	802.64	1159.61	SW CORNER DISINFECTION BLDG.
17	802.41	1209.06	SE CORNER DISINFECTION BLDG.
18	825.38	1209.19	NE CORNER DISINFECTION BLDG.
19	825.60	1159.76	NW CORNER DISINFECTION BLDG.
20	767.38	1202.75	CENTER FINAL CLARIFIER NO. 1
21	767.07	1262.79	CENTER FINAL CLARIFIER NO. 2
22	769.74	1306.95	SW CORNER RBC BLDG.
23	768.38	1437.01	SE CORNER RBC BLDG.
24	807.87	1437.54	NE CORNER RBC BLDG.
25	809.25	1307.30	NW CORNER RBC BLDG.
26	903.26	1248.42	SW CORNER PRIMARY CLARIFIER NO. 1
27	902.92	1286.90	SE CORNER PRIMARY CLARIFIER NO. 1
28	925.88	1287.05	NE CORNER PRIMARY CLARIFIER NO. 1
29	926.23	1248.74	NW CORNER PRIMARY CLARIFIER NO. 1
30	848.80	1286.55	CENTER TRICKLING FILTER
31	943.13	1583.50	SW CORNER ELEC. BLDG.
32	943.14	1607.58	SE CORNER ELEC. BLDG.
33	963.36	1607.44	NE CORNER ELEC. BLDG.
34	963.36	1583.55	NW CORNER ELEC. BLDG.
35	768.12	1503.64	SW CORNER GARAGE
36	783.64	1577.54	SE CORNER GARAGE
37	819.27	1569.94	NE CORNER GARAGE
38	803.57	1496.14	NW CORNER GARAGE
39	951.07	1520.51	SW CORNER STORAGE BLDG.
40	951.17	1538.48	SE CORNER STORAGE BLDG.
41	963.38	1538.39	NE CORNER STORAGE BLDG.
42	963.36	1520.50	NW CORNER STORAGE BLDG.

- KEYNOTES**
- (A) REMOVE EXISTING 18" PLUG AND CONNECT 18" D.I.P. FINAL EFFLUENT RECYCLE.
  - (B) PRIOR TO PIPE CROSSING OR CONNECTION, THE EXISTING PIPE SHALL BE EXPOSED TO DETERMINE ELEVATION AND LOCATION. THE INVERT ELEVATION & COORDINATES SHALL BE PROVIDED TO THE ENGINEER. CONSTRUCTION SHALL NOT PROCEED WITHOUT THE AUTHORIZATION OF THE ENGINEER.
  - (C) INSTALL 18" M.J. VALVE WITH VALVE BOX
  - (D) INSTALL 14" M.J. VALVE WITH VALVE BOX & CUTTING-IN SLEEVE AS NECESSARY
  - (E) INSTALL 18" X 14" M.J. REDUCER
  - (F) CONTRACTOR SHALL PROTECT EXISTING ELECTRICAL CABLES & CONDUITS DURING CONSTRUCTION. ALL EXISTING ELECTRICAL SERVICE SHALL BE MAINTAINED UNLESS APPROVED BY THE ENGINEER.
  - (G) CONSTRUCT 48" Ø MANHOLE (SEE DETAIL ABOVE LEFT)
  - (H) INSTALL 1 1/2" POLYETHYLENE WATER PIPE TO YARD HYDRANT IN COMMON TRENCH WITH PRIMARY CLARIFIER EFFLUENT.
  - (I) INSTALL 18" M.J. PLUG
  - (J) INSTALL 14" M.J. PLUG
  - (K) 1" FROST-PROOF YARD HYDRANT WITH ALUM. "NON-POTABLE WATER" SIGN
  - (L) REMOVE EXISTING 18" 90° ELBOW AND INSTALL NEW 18" M.J. TEE, EXTEND 18" D.I.P. AS SHOWN.



NOTE: THE BOTTOM OF THE TRENCH SHALL BE SHAPED TO FIT THE PIPE BARREL FOR AT LEAST 50% OF THE OUTSIDE DIAMETER. THE REMAINDER OF THE PIPE IS SURROUNDED TO A HEIGHT OF AT LEAST 6" ABOVE ITS TOP BY SELECT FILL MATERIAL, PLACED BY HAND TOOLS AND COMPACTED TO COMPLETELY FILL ALL SPACES UNDER AND ADJACENT TO THE PIPE.

ALL COSTS OF EXCAVATION BELOW GRADE AND PLACEMENT OF GRANULAR BEDDING MATERIAL SHALL BE INCLUDED IN THE BID PRICES FOR PIPE ITEMS

**NOTES**

ALL MECHANICAL JOINTS SHALL BE RESTRAINED BY JOINT TIES, RETAINER GLANDS OR APPROVED RESTRAINED JOINT PIPE.

CONTRACTOR IS RESPONSIBLE FOR FURNISHING ANY FITTINGS OR APPURTENANCES NECESSARY FOR MAKING CONNECTIONS TO EXISTING PIPE.

**COORDINATE LIST - PROPOSED**

POINT NO.	N	E	LOCATION
101	938.08	1423.26	CENTER TRICKLING FILTER NO. 1
102	901.33	1451.18	SW CORNER TRICKLING FILTER PUMP STA.
103	901.09	1477.68	SE CORNER TRICKLING FILTER PUMP STA.
104	924.45	1477.89	NE CORNER TRICKLING FILTER PUMP STA.
105	924.83	1451.40	NW CORNER TRICKLING FILTER PUMP STA.
106	909.19	1392.80	18" PRIMARY CLARIFIER EFFLUENT 90° BEND
107	937.04	1393.05	18" PRIMARY CLARIFIER EFFLUENT 90° BEND
108	937.12	1383.13	18" X 14" PRIMARY CLARIFIER EFFLUENT WYE
109	937.73	1315.68	14" PRIMARY CLARIFIER EFFLUENT 45° BEND
110	891.21	1448.09	18" FINAL EFFLUENT RECYCLE 90° BEND
111	892.02	1357.51	18" FINAL EFFLUENT RECYCLE TEE
112	892.63	1289.96	18" FINAL EFFLUENT RECYCLE TEE
113	892.94	1255.00	18" FINAL EFFLUENT RECYCLE 90° BEND
114	865.08	1254.75	18" FINAL EFFLUENT RECYCLE 90° BEND
115	865.45	1213.58	18" FINAL EFFLUENT RECYCLE 90° BEND
116	830.86	1213.27	18" FINAL EFFLUENT RECYCLE CONNECTION
117	907.90	1535.49	18" TRICKLING FILTER EFFLUENT 90° BEND
118	824.05	1534.74	18" TRICKLING FILTER EFFLUENT TEE
119	824.55	1478.77	48" T.F. AERATION TANK EFFLUENT MANHOLE
120	825.76	1343.87	18" T.F. AERATION TANK EFFLUENT TEE
121	943.67	1259.45	1 1/2" NON-POTABLE WATER CONNECTION
122	906.30	1440.59	1 1/2" NON-POTABLE WATER YARD HYDRANT

\* APPROXIMATE LOCATION (FINAL LOCATION TO BE VERIFIED PRIOR TO CONSTRUCTION)

1326 ENERGY PARK DRIVE  
ST. PAUL, MINNESOTA 55108  
(612) 644-4389

9800 DELAWARE PARKWAY  
MINNEAPOLIS, MINNESOTA 55441  
(612) 549-0432

**MSA**  
CONSULTING ENGINEERS

DESIGNED BY: G.G.  
CHECKED BY: T.A.P.  
DRAWN BY: G.G.

GRAPHIC SCALE  
HORIZ: 2" = 100'  
VERT: 2" = 10'

**CITY OF ELK RIVER**  
**WASTEWATER TREATMENT FACILITIES**  
**INTERIM SITE PIPING PLAN**

DATE: DEC. 1993 SHEET: 3 OF 41

Bill Chas  
3/2/94 REG. NO. 22610