US EPA RECORDS CENTER REGION 5
478673

2/4/91 W.6

LANG, FEENEY and ASSOCIATES, INC.
LAND SURVEYING – CONSTRUCTION ENGINEERING
715 SOUTH MICHIGAN STREET • SOUTH BEND, INDIANA 46618
TELEPHONE 219/233-1841

WILLIAM D. LANG, PRES.
JOHN B. FEENEY, L.S.
TERANCE D. LANG, L.S.
GEORGE J. MITCHELL, L.S.

SUB-DIVISIONS
BOUNDARY SURVEYS
TOPOGRAPHIC SURVEYS
CONSTRUCTION SURVEYS

4 February, 1991

Ms. Vanessa Harris
Donohue & Associates, Inc.
111 N. Canal St.
Suite 305
Chicago, Il 60606

Re: Transmittal - Final Documentation
Himco Dump Site - Elkhart, In.

Dear Ms. Harris,

Transmitted herewith via EXPRESS MAIL, please find the following drawings documents and data associated with the above mentioned project:

1 ea. 3 1/2" disk in Autocad V.10 format of project drawings
10 ea. Mylars of drawings required by contract with information on individual levels as specified by Donohue
40 ea. prints of original drawings of project site
2 ea. copies of Autocad Layer Names and Layer Descriptions
1 ea. copy of field notes used in this project
1 ea. set of keys for project site and lockable well caps

Pursuant to our contract with Donohue, we are transmitting our statement for services rendered pursuant to this contract to the attention of Mr. Patrick Butler of your firm.

We believe the information transmitted with this submittal fulfills the requirements of the original contract with Donohue regarding Final Submittals of work performed. However, if we have erred in any way, please feel free to contact this office at your earliest convenience.

It has been our pleasure to work with you and the other members of your organization. If we can be of any service to you on future projects in Region V, please fell free to contact us.

Sincerely,

J. Bernard Feeney

J. Bernard Feeney

ENC
cc: Pat Butler

LANG, FEENEY and ASSOCIATES, INC.

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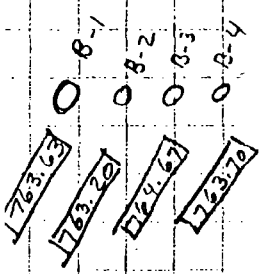
CONSTRUCTION SURVEYS

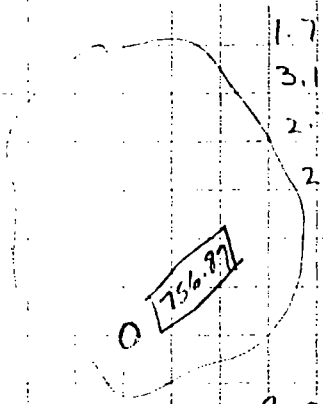
DESCRIPTION	LAYER NAME
Study Area Boundary	0
Coordinates	BRGTXT
Distances & bearings	DISTXT
Property lines	Final
Line descriptions	Existing
Owners property lines and names	Owners

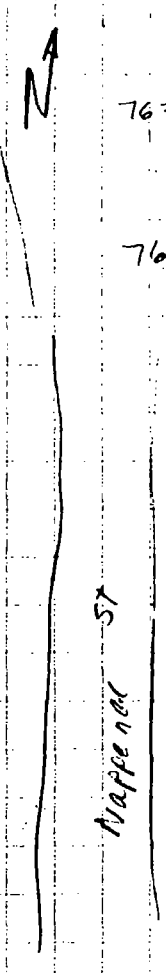
Code	Description	Layer Name
898	- Cross Hatching	"HATCH"
899	- Pass points	"PASS-PNTS"
900	- Mapping boundry	"MAP-BORDER"
910	- Vertical control point	"T-CNTRL-VER"
911	- Horizontal conrol point	"T-CNTRL-HOR"
912	- Hor/Ver control point	"CNTRL-HOR-VER"
913	- Supplemental horizontal control point	"T-CNTRL-SUP-HOR"
1000	- Roads - paved	"ROADS-PVD"
1001	- - curbed road	"ROADS-CRBD"
1002	- - unpaved (dash)	"ROADS-UNPVD"
1003	- - under construction	"ROADS-UC"
1005	- - label	"T-ROADS-NAME"
1007	- Conc. slab	"CONC-SLAB"
1008	- Paved shoulder	"SHLDR-PVD"
1009	- Unpaved shoulder	"SHLDR-UNPVD"
1013	- Bridge	"BRIDGE"
1030	- Driveways - paved	"DRIVES-PVD"
1031	- - unpaved	"DRIVES-UNPVD"
1041	- Walls - retaining	"WALLS-RETAIN"
1042	- - not retaining	"WALLS"
1050	- Sidewalks - paved	"CONC-WALKS"
1052	- Trails (foot path) (dash)	"TRAIL"
1060	- Parking Area - paved	"PARKING"
1061	- - unpaved	"PARKING-DIRT"
1100	- Fence	"FENCE"
1110	- Guard rails	"GUARDRAIL"
1111	- Double guard rail	"GUARDRAIL-DBL"
1200	- Property lines	"PROP-LINES"
1300	- Poles - power	"POLE-POWER"
1301	- - light	"POLE-LIGHT"
1302	- - flag	"T-POLE-FLAG"
1303	- - post	"POLE-POST"
1304	- Traffic Light	"POLE-TRAF-LT"
1305	- Antenna	"POLE-ANTENNA"
1306	- Gaging Station	"GAGING-STAT"
1310	- Mine	"MINE"
1400	- Railroads - active	"RR"
1401	- - inactive	"RR-INACT"
1500	- Signs - symbol	"POLE-SIGN"
1501	- - outline	"SIGN-LINE"
1600	- Catch Basins - square	"CB-SQU"
1601	- - round	"CB-RND"
1610	- Manhole - square	"MH"
1620	- Hydrant - symbol	"FIRE-HYD"
1999	- Mobile homes	"BLDGS-MOBILE"
2000	- buildings - solid	"BLDGS"
2001	- - dashed (ruins)	"BLDGS-RUINS"
2002	- - dashed (under construction)	"BLDGS-UC"
2003	- Electric tower	"ELEC-TOWER"
2012	- Platform	"MISC-PLAT"
2030	- Steps	"CONC-STEPS"
2070	- Swimming pool	"MISC-POOL"
2071	- Tennis Court	"MISC-TENNIS"
2100	- Tanks - water	"BLDGS-TANK"
2212	- Sports field	"MISC-SPORTS"
2230	- Pipeline	"MISC-PIPES"

2260	- Stockpile	"MISC-PILES"
3100	- Shoreline - lake	"WATER-SHORE"
3102	- - elevation	"T-WATER-ELEV"
3200	- Stream (single line) - definite	"WATER-STREAM"
3310	- Culverts - outline	"CULV-LINE"
3311	- - symbol	"CULVERT-SYM"
3400	- Swamps - outline	"SWAMP-LINE"
3420	- - symbol	"SWAMP-SYM"
4000	- Treelines	"TREE-LINE"
4001	- Tree symbol	"TREE-SYM"
4030	- - shrub line	"SHRUB-LINE"
5000	- Contour - definite index	"CON-INDEX"
5001	- - index label	"T-CON-INDEX-LBL"
5002	- - inter label	"T-CON-INTER-LBL"
5010	- - definite intermediate	"CON-INTER"
5011	- - supplemental intermediate	"CON-SP-INTER"
5020	- - questionable index	"CON-QU-INDEX"
5022	- - questionable intermediate	"CON-QU-INTER
5030	- - definite depression index	"CON-DEP-INDEX"
5032	- - definite depression intermediate	"CON-DEP-INTER"
5033	- - supp depression intermediate	"CON-SDE-INTER"
5040	- - quest. depression index	"CON-QDE-INDEX"
5042	- - quest. depression intermediate	"CON-QDE-INTER"
5043	- - quest. supp depression intermediate	"CON-QSD-INTER"
5100	- Spot elevation	"SPOT"
5101	- Spot tablet	"SPOT"
6000	- General text	"T-TEXT"
6002	- North arrow	"NORTHARROW"
6003	- CEWA Logo	"CEWA-LOGO"
6018	- Text 18	"T-TEXT-18"
6025	- Text 25	"T-TEXT-25"
6035	- Text 35	"T-TEXT-35"
6050	- Text 50	"T-TEXT-50"
6070	- Text 70	"T-TEXT-70"
32001	- Inner boarder lines	"INNER-BOARDER"
32002	- Outer boarder lines	"OUTER-BOARDER"
32003	- Grid lines	"GRID-LINES"
32025	- Lines 25	"LINES-25"
32035	- Lines 35	"LINES-35"
32050	- Lines 50	"LINES-50"
32070	- Lines 70	"LINES-70"

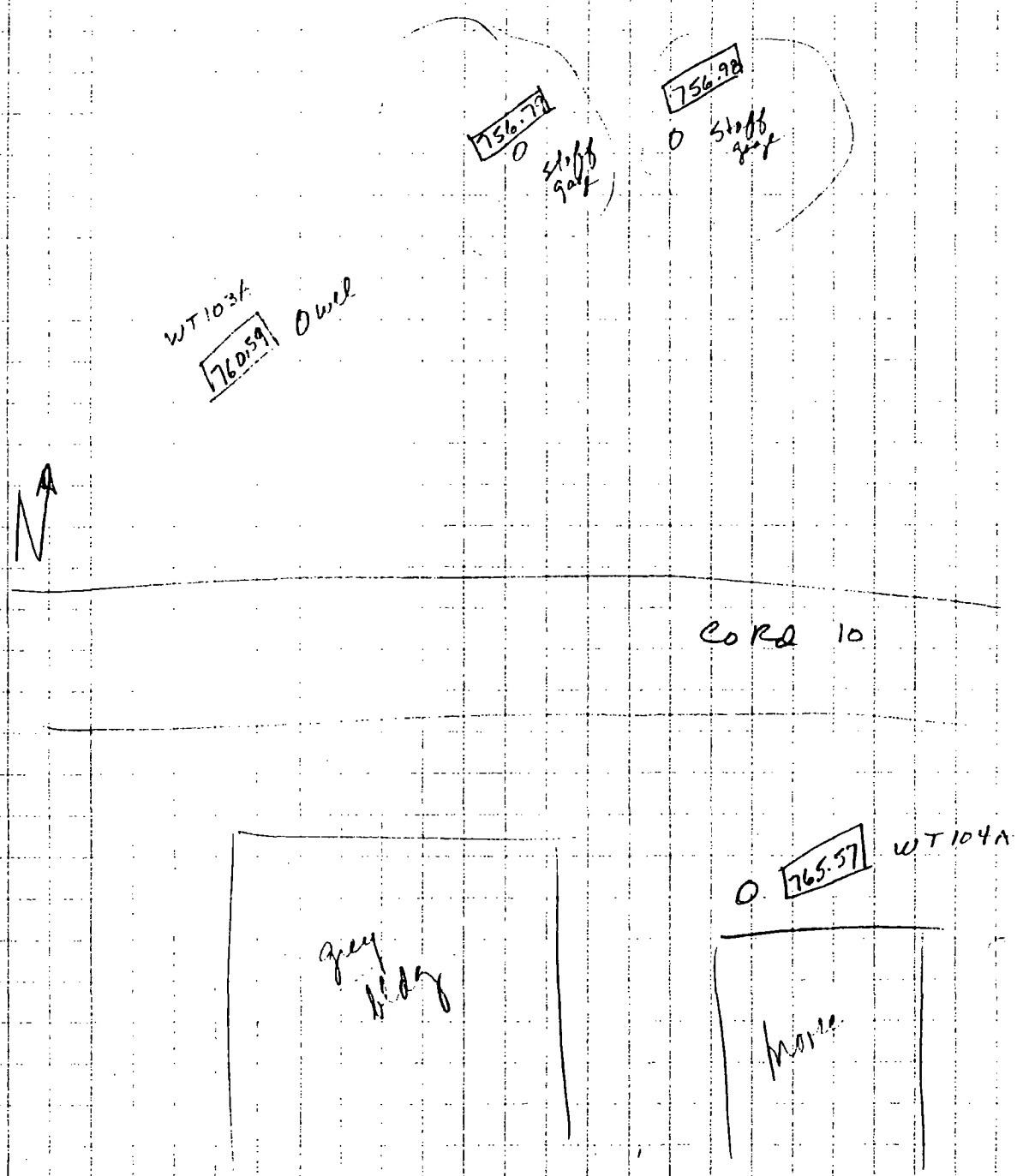
			ELE	DESC
			771.55	PK nail
2.12	773.67			
		17.65	756.02	⊙
12.06	768.02			
		11.15	756.87	staff gage
			771.58	cut
3.20	774.78			
		3.67	771.11	E1
		3.63	771.15	E2
		3.67	771.11	E3
		6.17	768.61	⊙
9.59	769.10			
		5.35	763.45	⊙
2.99	766.44			
		4.75	761.69	⊙
4.49	766.38			
		2.68	763.70	B-1
		1.71	764.67	B-2
		3.18	763.20	B-3
		2.15	[illegible]	B-4
		2.32	764.06	⊙
4.89	768.95			
		3.06	[illegible]	⊙
5.06	770.95			







4.55	767.85		763.30	PK in P.P
		2.28	765.57	WT104A well
			763.30	
2.29	765.59			
		5.00	760.59	well WT103A and O
1.70	762.29			
		5.50	756.79	staff gage
		5.31	756.98	staff gage



	T@#52	ES#	19	0/00/00		
#54 1	179	58	32			TRAVERSE HUB IN FIELD NEAR SECTION CORNER
4	359	54	03			
MEAN 4 RT.	179	58	31		654.15	
	T@#54	BS#	52	0/00/00		
#55	137	46	08		97.96	STONE @ POSSIBLE SEC. CORNER

NO. 446
TELEDYNE

SE COR

+ 3.28 Bdt TRAFFIC POST NE COR

− 4.68 TARGET

SW COR

763.30 PIC PWP NORTH

761.43 TARGET

ROM ALL
JMW

HIMCO DUMP

TRENCH LOCATION

WELL LOCATION

BORING LOCATION

+

ELEVATIONS

TELEDYNE NO. 446

well 1	771.11	
well 2	771.15	
WELL 3	771.11	
WELL B-4	763.70	
WELL B-3	764.67	
WELL B-2	763.20	
WELL B-1	763.63	
WT 102-A	769.08	
P ~~WT~~ 102-B	768.83	
P ~~WT~~ 102-C	769.25	
WT 104 A	765.57	
WT 105 A	762.94	
M-1	770.32	
M-2	769.46	
WT 101 A	764.35	
WELL ~~133~~ P101B	764.29	
WELL ~~134~~ P101C	764.16	
well ~~140~~ WT106A	761.47	
STAFF GAGE 150	756.87	
WT 103 A	760.59	
STAFF GAGE 161	756.79	
STAFF GAGE 162	756.98	
WELL 01	763.33	
WELL P	761.19	

WELL	E-3	118	765.78
"	"	119	764.31
"	"	120	765.49

HMCO PUMP ①

π 14 BS 12 0-0-0

to 156-17-19	well 1	30.35	103 ✓
166-04-25	well 2	46.53	104 ✓
168-40-00	well 3	56.78	105 ✓
to TRAV PT A	94-11-15	1942.33	107 ✓
to TRAV PT B	48-49-19	1121.19	106 ✓

π A BS 14 0-0-0

to 46-40-35	well B-4	117.35	108 ✓
49-58-10	well B-3	110.47	109 ✓
52-23-22	well B-2	105.42	110 ✓
55-55-52	well B-1	101.96	111 ✓

NO. 446 TELEDYNE

E. Molnar 291-5329
185 Renfrew Dr.

820.17
819.16
.01

804.27
801.95
2.32

820.17
819.61

9.65

HIMCO DUMP (2)

to TRAN PT "C" 269-44-22 1147.94 112

TC BS B 0-0-0

228-18-58 wt 102-A 32.13 113

213-26-33 wt 102-C 39.85 114

204-11-00 wt 102-B 47.80 115

T26 BS12 0-0-0 (2283.50)

to TRAN PT "D" 0-46-58 1446.04 116

38-27-16 WT 104A 453.41 117

TD BS 22 0-0-0
See next page

HINCO DUMP (3)

T D 65 24	0-0-0		
64-24-20	E-3	77.85	118
65-54-25		82.89	119
69-33-55		95.25	120
264-31-20	TRAY "E"	298.97	121
88-04-25	TRAY "F"	389.62	122
TE "B" "F"	0-0-0		
9[illegible]-14-55	WT105A	18.78	123
T F "B" "D"	0-0-0		
91-27-58	M-1	139.16	124
91-30-25	M-2	141.61	125
~~146-45-5[illegible]~~	~~[illegible]~~	~~21.6~~	

NO. 446 TELEDYNE

HMCO DUMP (11)

TF BSD 0-0-0

297-33-45	trend 7-8	165.97	126 ✓
308-31-55	trend 7-8	205.86	127 ✓
235-13-32	trend 5-6	348.85	128 ✓
240-02-35	trend 5-6	338.53	129 ✓
274-28-25	trend 1-4	324.82	130 ✓
256-47-55	trend 1-4	369.54	131 ✓
266-20-15	WT 10A	[illegible]	132 ✓
287-27-00		455.50	133 ✓
288-31-45		467.97	134 ✓
~~[illegible]-27-55~~	~~[illegible]~~		
144-04-55	trend 10-11	352.03	135

NO. 448 TELEDYNE

NAD 83 GEODETIC AND STATE PLANE COORDINATES

QIDQSN	STATION NAME	LATITUDE (NORTH)	LONGITUDE (WEST)	NORTHING METERS*	EASTING METERS*	ZONE	CONVERGENCE	SCALE FACTOR	ELEV. (M)	GEOID HT(M)
410862340007	CIHAK 1952	41 13 45.73238	086 27 59.74494	664338.872	32933.614	IN E	-0 31 38.04	1.0000220	229 SC	-33.07
				664213.721	951707.434	IN W	0 24 23.35	0.9999996		
410874430009	CLARENDON HILLS E MUN TANK	41 47 48.22893	087 57 24.97454	569594.222	331282.985	IL E	0 15 3.12	0.9999870		
410874140021	CLARK	41 55 8.03496	087 38 12.91472	583329.261	357770.230	IL E	0 27 54.97	1.0000161	298.	-32.41
410861420001	CLEAR 1952	41 45 11.13694	086 21 21.56772	722424.542	42670.460	IN E	-0 27 32.58	1.0000071	274 SC	-32.61
410871330006	CO-OP 1952	41 30 21.70102	087 28 14.87617	694827.678	867652.155	IN W	-0 15 24.39	0.9999795	192 SC	-32.28
				537598.475	372010.175	IL E	0 34 17.85	1.0000388		
410861210003	COBUS 1952	41 40 54.40639	086 03 41.98650	714349.839	67112.784	IN E	-0 15 45.62	0.9999800	228.92	-32.46
410872320002	COLFAX 1952	41 03 9.20783	087 21 58.07773	644433.302	876226.312	IN W	-0 11 8.63	0.9999736	210 SC	-32.31
410872330001	CONRAD 1952	41 04 43.98370	087 26 56.30172	647382.802	869274.566	IN W	-0 14 24.95	0.9999783	204 SC	-32.20
				490178.937	374315.615	IL E	0 34 52.10	1.0000429		
410862430003	CONVENT ANCILLA DOMINI SPIRE	41 20 15.34799	086 26 42.75141	676341.913	34834.494	IN E	-0 30 51.27	1.0000189		
				676245.937	953412.218	IN W	0 25 17.36	1.0000018		
410874130042	COOK	41 52 18.89127	087 40 28.45975	578086.064	354686.948	IL E	0 26 22.97	1.0000118	236.	-32.38
410861210001	COOK 1952	41 38 14.93438	086 00 10.62768	709409.241	71981.832	IN E	-0 13 24.36	0.9999763	252 SC	-32.48
410874210005	CORBETT	41 39 23.07672	087 33 20.94610	554233.133	364761.693	IL E	0 31 0.49	1.0000266	178.	-32.31
410863440001	CORBURG 1948	41 29 57.01280	086 57 39.03720	694000.806	910227.208	IN W	0 04 52.19	0.9999680	240 SC	-32.66
410874220013	COTTAGE GROVE 1952	41 30 21.29760	087 35 45.21125	537489.389	361566.592	IL E	0 29 19.38	1.0000216	206 SC	-32.25
				694869.592	857208.565	IN W	-0 20 22.84	0.9999892		
410874220012	COTTAGE GROVE 2 1954	41 30 21.07902	087 35 45.22186	537482.644	361566.403	IL E	0 29 19.37	1.0000216	206 SC	-32.25
				694862.850	857208.279	IN W	-0 20 22.84	0.9999892		
410863210001	CRAIG 1952	41 12 57.45388	086 37 15.44881	662644.064	938773.545	IN W	0 18 16.78	0.9999852	217 SC	-33.05
410874240015	CRESCENT	41 41 48.65630	087 40 35.45970	558640.825	354674.061	IL E	0 26 12.91	1.0000118	203.	-32.27
410872430002	CRESTON 1952	41 19 31.41852	087 28 8.54809	674766.065	867709.568	IN W	-0 15 16.91	0.9999795	232 SC	-32.26
				517538.585	372357.133	IL E	0 34 14.69	1.0000394		
410873140001	CRETE MUNICIPAL TANK	41 26 39.71797	087 37 58.76590	530627.819	358524.679	IL E	0 27 48.83	1.0000171		
410873140004	CRETE USLS 1879	41 24 53.53407	087 38 40.08235	527344.336	357591.668	IL E	0 27 20.53	1.0000158	243 SC	-32.21
				684783.288	853087.626	IN W	-0 22 16.32	0.9999937		
410872410005	CROWN POINT 1952	41 24 15.70604	087 22 6.88383	683503.615	876148.869	IN W	-0 11 19.15	0.9999737	234 SC	-32.34
410872410001	CROWN POINT COURTHOUSE DOME	41 25 2.57308	087 21 53.72203	684948.441	876459.275	IN W	-0 11 10.62	0.9999735		
410872410007	CROWN POINT MUNICIPAL TANK	41 24 55.45944	087 21 45.06612	684728.338	876659.576	IN W	-0 11 4.87	0.9999734		
410872410002	CROWN POINT RADIO KSA 22B MAST	41 25 0.34888	087 21 11.59962	684876.711	877437.232	IN W	-0 10 42.75	0.9999729		
410872410006	CROWN POINT ST MARYS CATH CH	41 24 57.84111	087 21 40.51109	684801.471	876765.592	IN W	-0 11 1.86	0.9999733		
410861330003	CRUM 1952	41 35 19.66051	086 24 42.94252	704215.574	37860.427	IN E	-0 29 40.94	1.0000142	227.27	-32.74
				704165.036	955981.380	IN W	0 26 44.44	1.0000052		
410862340016	CULVER 1920	41 13 6.14747	086 25 5.77778	663081.567	36974.610	IN E	-0 29 42.98	1.0000155	228.24	-33.08
				663022.446	955768.313	IN W	0 26 17.67	1.0000049		
410862340004	CULVER MILITARY ACAD CH SPIRE	41 13 30.20828	086 24 11.57152	663813.009	38243.529	IN E	-0 29 7.49	1.0000136		
				663774.460	957025.134	IN W	0 26 53.60	1.0000067		
410862340012	CULVER MILITARY ACADEMY TANK	41 13 30.25073	086 24 24.61971	663816.900	37939.638	IN E	-0 29 16.09	1.0000140		
				663773.398	956721.223	IN W	0 26 45.00	1.0000062		
410862340013	CULVER MUNICIPAL TANK	41 13 6.06325	086 25 20.12920	663081.866	36640.299	IN E	-0 29 52.44	1.0000151		
				663017.299	955434.045	IN W	0 26 8.21	1.0000045		
410874130027	DALEY	41 48 37.43162	087 39 2.37780	571280.169	358111.202	IL E	0 27 58.46	1.0000165	182.	-32.36
410861410001	DAVID 1932	41 54 32.79917	086 20 50.46651	47377.394	3835672.250	MI S	-1 20 52.49	1.0000507	243 SC	-32.50

* For conversion of meters to U.S. Survey Feet multiply the meters by 39.37/12.0 which is 3.28083333333 to 12 significant figures

* For conversion of meters to International Feet multiply the meters by 100.0/30.48 which is 3.28083989501 to 12 significant figures

APRIL 1960
U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
REV: JAN 1972

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

QUAD 410861 STATION 1011
IND-MICH
LATITUDE 41°30' TO 42°00'
LONGITUDE 86°00' TO 86°30'
DIAGRAM NK 16-8 CHICAGO

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
FORM 525
REV. AUG. 1948

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: COBUS STATE: Indiana COUNTY: St. Joseph

CHIEF OF PARTY: L.W. Swanson YEAR: 1952 Described by: J.W. Leckey

NOTE.*	HEIGHT OF TELESCOPE ABOVE STATION MARK	31 METERS.†	HEIGHT OF LIGHT ABOVE STATION MARK	34 METERS.

NOTE	Surface-station mark, Underground-station mark	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
	OBJECT	BEARING	DISTANCE feet	DISTANCE meters	DIRECTION‡ ° ′ ″
	EBY				0 00 00.0
11a	R.M. No. 2	W	93.28	28.432	88 49 25
16a	Azimuth Mark, 0.25 mile	N			173 05 06.0
11a	R.M. No. 1	S	100.15	30.526	358 21 20

Detailed description:

Station is located 5 miles east of Mishawaka and 5 miles west of Elkart on the west side of State Highway 219 and on the highway right-of-way. It is set in a small triangle formed by Highway 219 and a paved T-road, west, 0.15 mile north of a bridge over the St. Joseph River, 84 feet west of the intersection of Highway 219 and the paved T-road, 56 feet south of the center of the T-road and 34 feet south of a white witness post and a power line pole. The mark is flush and the disk is stamped COBUS 1952.

Reference mark No. 1 is 110 feet west of the center of the highway and 31 feet north of the center of the T-road. The mark is flush and the disk is stamped COBUS NO 1 1952.

Reference Mark No. 2 is 28 feet north of the center of the T-road and 1 foot south of a fence line. The mark is flush and the disk is stamped COBUS NO 2 1952.

Azimuth Mark is 62 feet south of the center of the south entrance drive to an outdoor theater, 35 feet east of the center of Highway 219, 2 feet north of a white witness post and 1 foot south of a telephone pole. The mark is flush and the disk is stamped COBUS 1952.

To reach the station from the intersection of State Highway 219 and U.S. Highway 33, 5 miles east of Mishawaka, go north on Highway 219 for 1.15 mile to the station on the left as described, continue for 0.25 mile to the azimuth mark on the right as described.

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: COBUS
ESTABLISHED BY: L.W.S. YEAR: 1952 STATE: Indiana BENCH MARK ALSO ☐
RECOVERED BY:* L.F. Smith YEAR: 1971 COUNTY: St Joseph
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: About 5 miles west of Elkart
HEIGHT OF TELESCOPE ABOVE STATION MARK 5 FEET. HEIGHT OF LIGHT ABOVE STATION MARK 5 FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION					
NOTE	OBJECT	BEARING	DISTANCE FEET	DISTANCE METERS	DIRECTION
11a	R.M. No. 1	S	100.13	30.520	00 00 00.0
11a	R.M. No. 2	W	93.30	28.438	90 27 45

All marks were recovered and found in good condition. The line of sight to the azimuth mark is obstructed by trees. The distance to the reference marks checked as did the direction between them. A new description follows:

The station is located about 5 miles east of Mishawaka, 76 feet west of the centerline of State Highway 218, 33 feet south of a power pole, 56 feet southeast of the centerline of north bound lane of Jefferson Road, 1 foot east of a metal witness post, in a grassy triangle formed by the intersection of State Highway 218 and Jefferson Road, 0.45 miles south of the junction of U.S. Highway 20 and State Highway 218. The monument is flush and the disk is stamped COBUS 1952. (note 1a' 7a)

Reference mark 1 is 110 feet west of the centerline of the highway, 63 feet northwest of a power pole and 30 feet northeast of the centerline of the south bound lane of Jefferson Road. The monument is flush and the disk is stamped COBUS NO 1 1952.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: COBUS YEAR: 1952

STATE: Indiana LOCALITY: Northern Indiana Plymouth Area

Second-ORDER Triangulation SOURCE: G-10366 G-11590 FIELD SKETCH: Ind. 14

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ (OR Δα) ANGLE	MARK
STATE: Ind. ZONE: E CODE: 1301	x 392,098.71 y 1,523,407.98	184°32'43" - 0 15 46	AZIMUTH MARK
STATE: Mich. ZONE: C CODE: 2102	x 414,867.67 y 66,366.81	184 29 23 - 0 12 26	AZIMUTH MARK
STATE: Mich. ZONE: S CODE: 2113	x 1,527,814.84 y 71,078.69	185° 27' 31" - 1 10 34	

GEODETIC DATA	POSITION	SECONDS IN METERS	ELEVATION
	LATITUDE: 41°40'54".2260 NORTH LONGITUDE: 86 03 41.9969 WEST		METERS FEET

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE (Meters)
	SECOND-ORDER	
EBY	11°11'50".91	7,767.056
KENNEDY	86 09 37.56	5,629.088
	THIRD-ORDER	
AZIMUTH MARK	184 16 57.0	

Reference mark 2 is 28 feet north of the centerline of the north bound lane and 1 foot southwest of a fence. The monument projects 3 inches and the disk is stamped COBUS NO 2 1952.

The azimuth mark is 62 feet south of the centerline of the south driveway of drive-in theatre, 35 feet east of the centerline of State Highway 218, 1 foot south of a telephone pole and 1 foot west of a metal witness post. The monument is flush and the disk is stamped COBUS 1952.

To reach the azimuth mark from the station, go north on Highway 2.8 for 0.25 mile to the mark on the right.

Floyd K. Stuart

					HIMCO DUMP SITE PC - R. JUSTICE, T. SCHUMAN	10-11-90 RDP - J. PETERSAK
		Λ@#2	BS#1	0/00/00	1257.32	#1 AZ MARKER COBUS #2 COBUS
			∡RT			
#3	1	00	52	10		#3 SET PK E. SIDE
	4	03	28	30		ST. RD. #218
MEAN ∡RT		00	52	08	860.09	
		Λ@#3	BS #2	0/00/00	860.095	
#4	1	173	50	20		#4 SET PK EAST SIDE
	4	335	20	46		ROAD @ CTY LINE & S.
MEAN ∡RT.		173	50	12	2878.81	OF RR TRACKS.
		Λ@#4	BS #3	0/00/00		
#5	1	269	52	46		#5 IS HUB SET ON
	4	359	30	32		NORTH SIDE OF RR TRACKS
MEAN ∡RT.		269	52	38	3024.83	

(2)

		⊼ @ #5 BS #4		0/00/00		
#6	1	180	16	42		#6 HUB & TACK 8' N. of TRKS 500' E. of CR #1
	4	01	05	~~26~~	18	
MEAN ½ RT.					28 28.86	
		180	16	31		
		01	05	18		
		180	16	20		
		⊼ @ #6 BS #5		0/00/00		
#7	1	180	43	29		#7 HUB & TACK 12' SOUTH of RR TRACKS 1/2 mi. E. of CR #1
	4	02	53	~~20~~	11	
MEAN ½ RT		180	43	20	2560.40	
		⊼ @ #7 BS #6		0/00/00		
#8	1	178	36	56		#8 HUB & TACK N. of RR TRACKS W. SIDE of CR #3
	4	354	27	07		
MEAN ½ RT.		178	36	47	2066.34	

(2)

		TA @ #8	BS #7	0/00/00	
#9		181	27	09	
		05	47	28	2070.82
MEAN & RT.		181	26	52	
		TA @ #9	BS #8	0/00/00	
#10	1	178	49	50	
	4	355	18	02	
MEAN & RT.		178	49	36	1639.10
		TA @ #10	BS #9	0/00/00	
#11	1	174	15	06	
	4	336	59	57	
MEAN & RT.		174	15	00	1642.37

3

#9 HUB & TACK 10' S. of SOUTH RR

#10 IS HUB & TACK 14'± S. of S. RAIL BY YODER CONC.

#11 HUB & TACK W. SIDE MAHONING ST 10' N. of N. RAIL of RR TRKS.

		T@#11	BS #10	0/00/00	B.S. DIST. 1642.38	
#12	1	96	38	20		
	4	26	32	36		#12 PK IN ISLAND @
MEAN RT.		96	38	09	3808.52	NAPPANEE ST & CR #10
		T@	#12 BS #11		3808.48	
#13	1	104	23	31		#13 NUB & TACK N. SIDE
	4	57	32	57		CR #10 NEAR TELEPHON
MEAN RT		104	23	15	2465.88	POLE ACROSS FROM
						NEW BLDG.
		00	00	00		
	D	104	23	41		
		104	23	41		
	±	208	47	21		
		00	00	00		
	0	255	36	56		
	±	255	36	56		
		151	13	59		

4

		Λ@ #12	BS #11	0/00/00		
#14	1	177	15	54		#14 IS HUB & TACK ON W. SIDE RD. @ N.E. COR. OF HIMCO DUMP PROPERTY.
	4	349	02	21	2359.63	
		177	15	40		
		Λ@ #13	BS #12	0/00/00		
#15	1	179	14	32	B.S. DISTANCE 2465.89	#15 IS HUB & TACK ON S. SIDE CR #10 @ CURVE IN RD. W. OF PROP.
	4	356	57	53		
MEAN ∠ RT		179	14	28	829.71	
		Λ@ #15	BS #13	0/00/00		
#16	1	185	45	54	B.S. DISTANCE 829.74	#16 IS HUB & TACK CR #3 15' W. OF E.P. 150'± S. OF INTER CR 10 & CR #3
	4	23	02	28		
MEAN ∠ RT		185	45	37	856.75	
		185	45	56		
		23	02	22		

5

		T@ #16	BS #15	0/00/00		856.74	
#17	1	70	06	08			
	4	280	23	29			
MEAN & RT		70	05	53		4095.25	#17 HUB & TACK S. SIDE CR #12 @ INTER. CR #3 & CR #12
	1	70	06	02			
	4	280	23	27			
MEAN & RT		70	05	53			
		T@ #17	BS #16	0/00/00		4095.22	
#19	1	270	54	09			
	4	03	36	21			
MEAN & RT		270	54	05		3892.24	

6

		T@ #18	BS #17	0/00/00	B.S. DISTANCE 3892.21	
#19	1	179	56	43		#18 HUB & TACK NEAR SE COR PHILLIPS ST. & CR #12.
	4	359	46	43		
MEAN & RT		179	56	41	3715.56	
		T@ #19	BS #18	0/00/00	B/S DISTANCE 3715.53	#19 HUB & TACK S. SIDE CR #12 IN FRONT OF ABC SHARPENING.
#20	1	180	35	00		
	4	002	19	36		#20 HUB & TACK N. SIDE CR #12 1300'± E. of CTN LINE
MEAN & RT.		180	34	54	2502.64	
		T@ #20	BS #19	0/00/00	B/S DISANCE 2502.63	
#21	1	146	08	21		#21 HUB & TACK NW COR. RR TRES OF CTN LINE IN 4'E. of TEL POLE
	4	224	32	56		
MEAN & RT		146	08	14	2110.24	

		T@#	21	BS#	20	0/00/00	B/S DISTANCE 2110.23
#1	1	121	12	19			
	4	124	49	31			
MEAN		121	12	22			2527.56
		T@#	1	BS#	21	0/00/00	B/S DISTANCE 2527.56
#2	1	186	24	55			
	4	25	39	23			
MEAN		186	24	51			1257.32

#21 HUB & TACK @ NW COR RR TRACKS ON CTY LINE RD.

	T @ #13	BS #15 ∠ RT	0/00/00			
#25	356	36	20		H. DIST. 278.00	P.K. NAIL @ ℄ CO. RD. 10
#26	176	55	25		182.87	PROPERTY IRON
#27	178	00	53		292.75	PROPERTY IRON
#28	180	30	16		1367.43	R.R. SPIKE ℄ CO. RD. #10
~~#29~~ #30	180	26	17		1512.68	R.R. SPIKE " "
	180	18	56		1912.81	" " "

STA	+	HI	−	ELEV.	
BM #8				756.20	SPIKE IN PWP @ STA 87+72 49' RT SR # 112 FROM HIGHWAY PLANS.
	5.30	761.50			
			4.63	756.87	
	6.83	763.70			
T.B.M.			2.25	761.45	P.K. NAIL IN CONCRETE ISLAND @ S.E. INTERSECTION OF NAPPANEE ST. & CO. RD. 10 (NAIL IS 6' S.E. OF N.W. CORNER OF ISLAND)
	6.37	767.82			
			0.82	767.00	
	4.31	771.31			
			5.78	765.53	
	5.05	770.58			
			2.53	768.05	
	8.02	776.07			
T.B.M.			4.49	771.58	SQUARE CUT IN CONCRETE ISLAND 1' E. OF CURB 2' S. OF GRASS SPACE 300'± N. OF PLAINFIELD DRIVE
	4.23	775.81			
T.B.M.			4.26	771.55	P.K. NAIL E. FACE 1¢M POLE W. SIDE NAPPANEE ST. & 25' S. OF ℄ PLAINFIELD DR. E 187-154
	0.94	772.49			
			6.59	765.90	
	4.15	770.05			
			2.77	767.28	
	4.00	771.28			
			7.19	764.09	
	2.85	766.94			
TBM.			5.49	761.45	P.K. NAIL IN CONCRETE ISLAND @ SE. INTERSECTION OF NAPPANEE ST. & CO. ROAD. 10
	5.60	767.05			

			3.96	763.09	
	5.03	768.12			
			5.64	762.48	
	5.14	767.62			P.K. NAIL IN P.W.POLE N. SIDE CO.RD.10
T.B.M.			3.86	763.76	WEST EDGE OF WOODS
	5.65	769.41			
			5.27	764.14	
	4.28	768.42			
			6.33	762.09	P.K. NAIL IN N.FACE P.W.POLE N.SIDE CO.RD.10
	4.43	766.52			ACROSS FROM BRAND NEW GREY POLE BLDG.
T.BM.			3.22	763.30	12' N. OF PV.MNT. BETWEEN TWO 20" OAK TREES
	3.21	766.51			
			5.55	760.96	
	4.75	765.71			
T.B.M.			4.91	760.80	P.K. NAIL IN N. FACE P.W. POLE E-187-10
	4.96	765.76			S.SIDE CO.RD.10 60' E ± OF FENCED IN
			4.45	761.31	BASKETBALL COURTS
	5.47	766.78			
			3.58	763.20	
	5.57	768.77			
			4.26	764.51	
	3.93	768.44			
			6.31	762.13	
	6.76	768.89			
			5.70	763.19	

	4.35	767.54			
			6.11	761.43	
	5.27	766.70			
T.B.M.			3.86	762.84	TOP OF SOUTH BOLT ANCHORING OVERHEAD TRAFFIC SIGNAL BASE AT N.E. CORNER WAPPANEE ST. & CO. RD. 10
	1.49	764.33			
			6.04	758.29	
	3.71	762.00			
			5.43	756.57	
T.B.M.	4.96	761.53			
			5.33	756.20	SPIKE IN P.W. POLE @ STA. 87+72 49'RT. S.R.#112 FROM HIGHWAY PLANS

10-29-90 RJ, JC, JP

HIMCO DUMP SITE

NO. 446

TELEDYNE

TC	#14	BS #12	0/00/00			
#50	267	35	55		IRON ON EAST SIDE OF NAPPANEE ST. 90.89	
51	194	45	39		413.59	IRON ON EAST SIDE OF NAPPANEE ST.
#52 1	93	30	07		1828.50	TRAVERSE PT. IN FIELD
4	13	59	15			
MEAN & PT	93	30	00			
					BS. DIST 1828.46	
TC #52	BS #14	0/00/00				
#53	134	16	00		75.5	FENCE POST ON NORTH LINE

NO. 446 TELEDYNE

HMCO DUMP (5)

145-16-48 trench 10-11 298.13 136

T 12PK BS 14 Hub North 0-0-0

358-50-30 well 01 1129.91 137

328-30-15 well "P" 150.76 138

313-58-00 boring 407.91 139

209-08-31 well 593.51 140

T B BS 14 0-0-0

90-38-12 trench 20 389.15 141

93-44-22 trench 20 417.03 142

TO TP "G" 210-45-05 955.76 143

TELEDYNE NO. 446

(6)

π B BS 14 0-0-0

207-21-02	trench 9	813.17	144 ✓
207-51-05	trench 9	767.18	145 ✓
214-16-00	trench 18	485.91	146 ✓
213-23-08	trench 18	435.23 ?	147 ✓
229-30-10	trench 19	696.20	148 ✓
231-07-05	trench 19	663.87	149 ✓
12-58-05	stabilized gray	257.92	150 ✓

π 6 BS 0-0-0

51-52-40	trench 12-13	859.59	151 ✓
56-14-35	trench 12-13	864.74	152 ✓

NO. 446 TELEDYNE

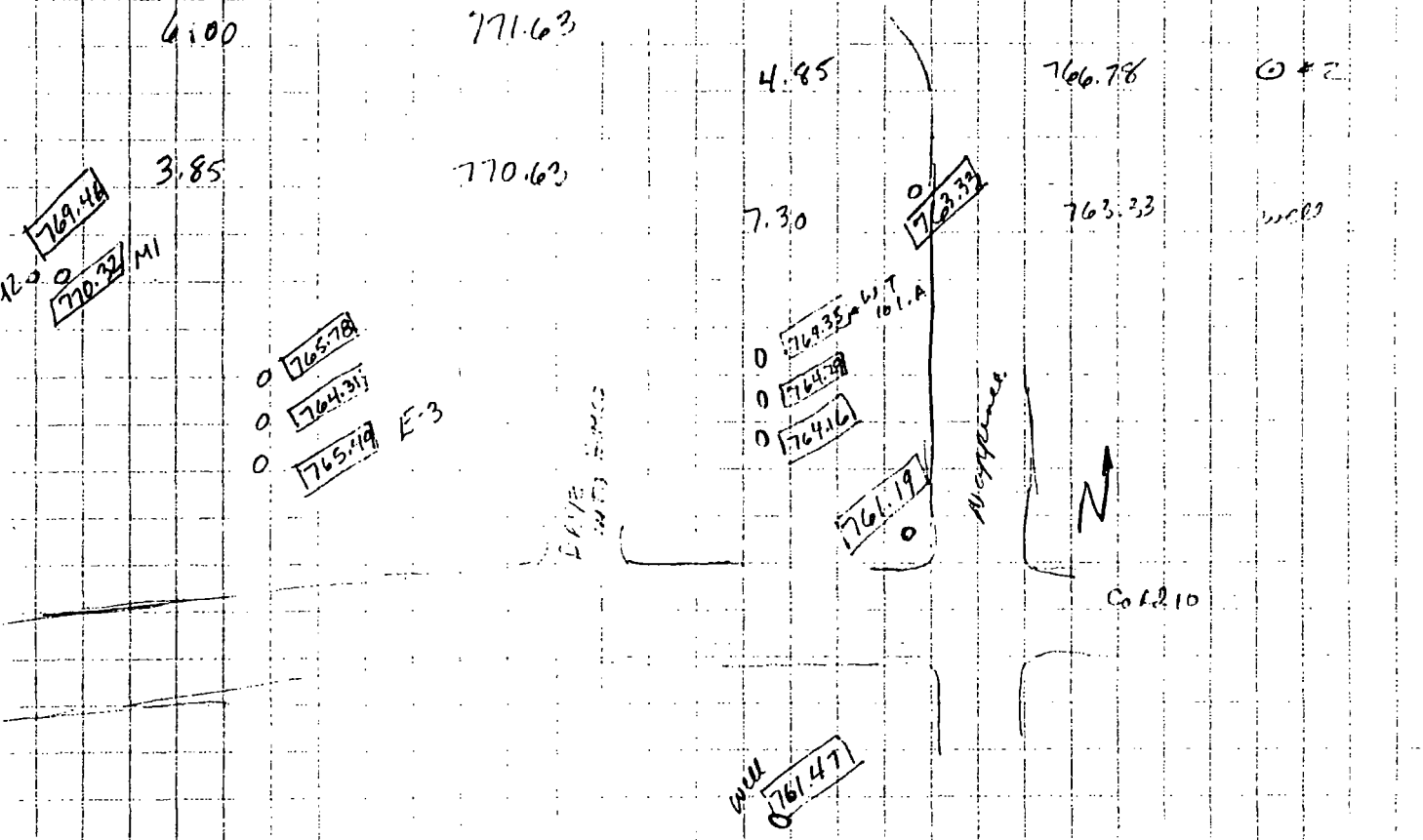
(7)
HIMCO

TG BS B 0-0-0

49-05-15	trend 17	724.34	153 ✓
50-20-30	trend 17	693.25	154 ✓
64-34-40	trend 16	513.12	155 ✓
64-05-25	trend 16	470.10	156 ✓
176-29-03	trend 14-15	315.48	157 ✓
175-02-15	trend 14-15	256.55	158 ✓
183-05-50	[illegible]	575.22	159 ✓
177-40-30	bowing	600.88	160 ✓
209-51-48	slight gap	691.17	161 ✓
212-29-02	staff gap	522.35	162 ✓

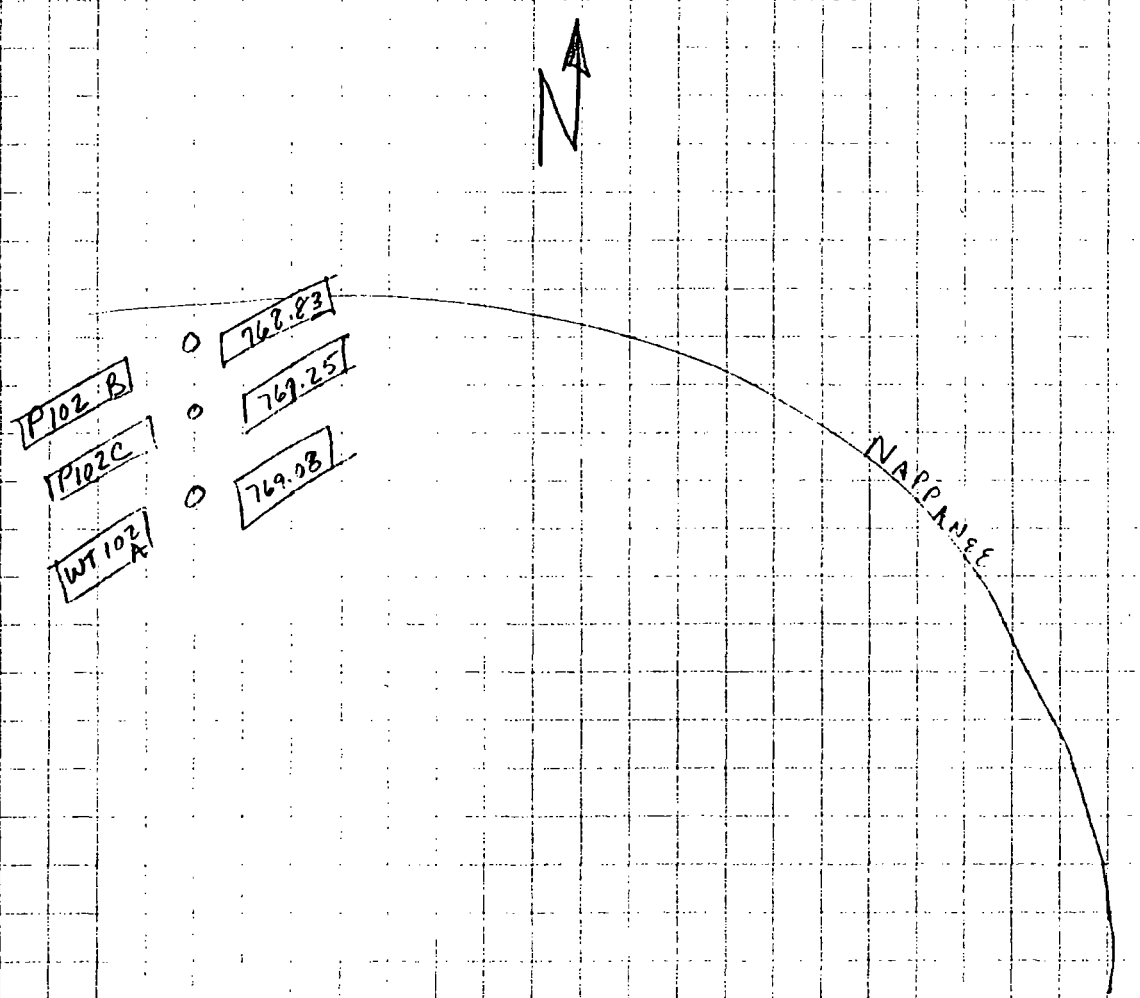
NO. 446 TELEDYNE

+	Hi	-	ELE	Desc.
			761.45	PK in island
2.75	764.20			
		2.73	761.47	well
			761.45	
5.71	767.16			
		5.97	761.19	well
		1.53	765.63	⊙ #1
4.00	771.63			
		4.85	766.78	⊙ #2
3.85	770.63			
		7.30	763.33	well
		1.96	764.16	well
		1.83	764.29	well
		1.77	764.35	well
		3.68	762.44	⊙
4.67	766.12			
			761.45	



+	H.I.	−	ELE	DESC.
5.39	767.83			
		2.34	765.49	well
		3.52	764.31	well
		2.05	765.78	well
		4.05	763.78	O PK in Concrete Pole
4.33	769.11			
		5.17	762.94	well WT105A
		4.74	763.37	HUB "D"
4.82	768.19			
		4.12	764.07	O
8.86	772.93			
		3.37	769.56	top of WCAP
		3.82	769.11	top of HUB "F"
			769.56	
3.92	773.48			
		3.16	770.32	M-1
		4.02	769.46	M-2

+	HI	-	EIE	
	770.95			
		1.87	769.08	WT102 A
		1.70	769.25	P 102 C
		2.12	768.83	P 102 B



DONOHUE & ASSOCIATES, INC.

CONSULTING ENGINEERS

CLIENT USEPA DATE 11-30-90

PROJECT HIMCO DUMP BY G.S., SS CHKD

PROJECT NO. 20026.023 PAGE NO. 1 of 2

SURFACE WATER/SOIL SEDIMENT AND WETLAND SOILS SURVEY

SAMPLE LOCATION	BEARING	GRID LOCATION	DISTANCE	~~TYPE~~
WS-03	185	S-5	23.0	164
WS-01	145	T-0	18.0	165
WS-02	16	R-2	16.5	166
WS-04	124	Q-5	47.25	167
WS-05	100	M-6	64.0	168
WS-06	75	WS-05	110.25	169
SS-07	318	U-3	50.5	170
SS-08	93	WS-04	48.0	171
SS-01	313	Q-0	52.5	172
SS-02	351	Q-0	158.5	173
SS-04	355	Q-0	335.5	174
Hub 1 ~~SVS-05~~	115	HVS-05	91.5	175
SS-03	117	Hub 1	137.0	176
SS-05	134	Hub 1	134.0	177
SS-06	13	Q-3		
	338	R-2		
	295	Q-0		
WT-14	57	I-10	64.25	178
WS-13	282	F-13	33.25	179
WS-16	23	D-15	13.0	180
WS-15	265	F-15	46.0	181

DONOHUE & ASSOCIATES, INC.

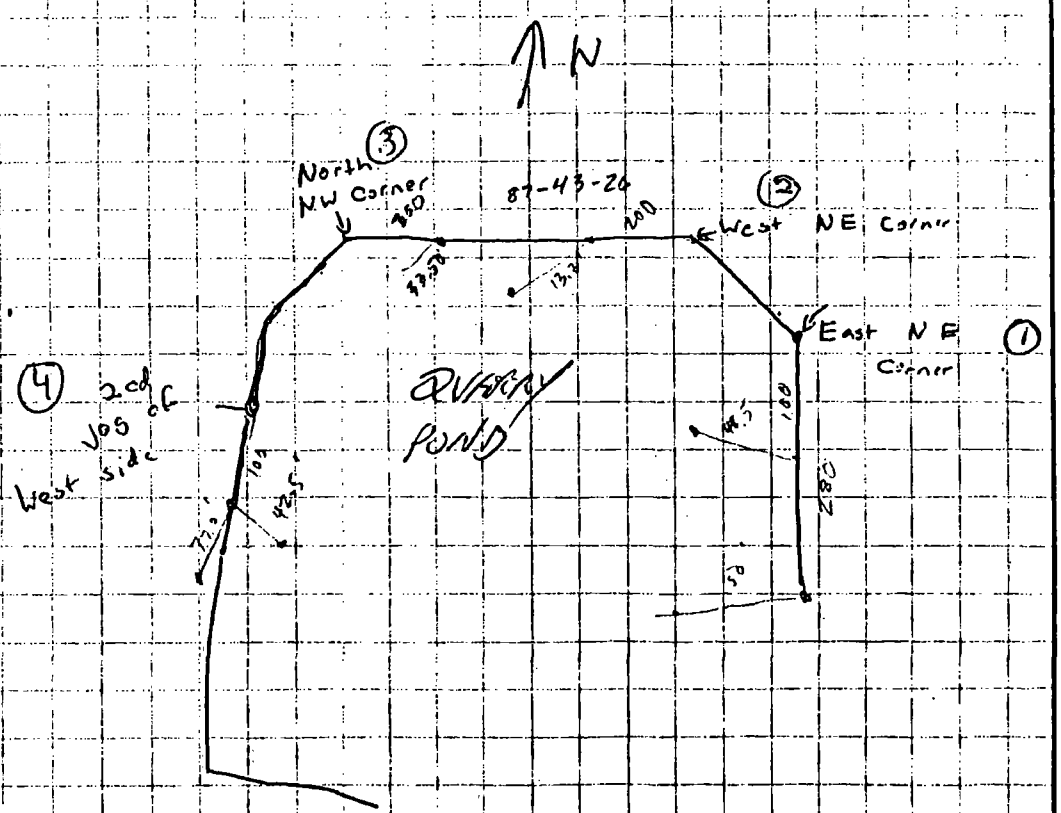
CONSULTING ENGINEERS

CLIENT USEPA DATE 12-1-90

PROJECT Hinco DUMP BY E.S., SS CHKD

PROJECT NO. 2026.023 PAGE NO. 2 of 2

SAMPLE LOCATION	BEARING	GRID LOCATION	DISTANCE		
SS-11	203	P-19	(77) + 5 = 82	182	✓
WS-12	190	P-19	56 + 5 = 61	183	✓
WS-07	177	P-22	200	184	✓ #25
SS-10	83 East	280 ft from NE Corner of fense (1)	50 ~~250 from NE corner of fe~~		
WS-08	113 East	100 ft from NE Corner of fense (1)	48.5		
WS-09	77	200 ft from West NE Corner of fense (2)	13.3		
SS-09	33	200 ft from North NW Corner of fence (3)	33.50		
SS-12	290	100 ft. from West Corner (4) 2cd Jog of fence	42.5		
WS-10	9	100 ft from West Corner (4) 2cd Jog of fence	77.0		
WS-11	180	Q-17	74.0		✓



B-25

C-25

D-25

E-25

F-25 missing F-21

G-25

H-25

I-25

J-25

K-25

L-25

M-25 M line is at edge of fenceline + S of roadway to east

N-25 soil sample site 30' NNW

O-25

P-25 40' SSW soil sample

80' N of P line is fence corner

70' NW of P line soil boring 10'-15' S of fence

P-22 falls appr 30' S of fenceline

Q 17 falls so. of fence by 3' fence is NW'ly

Q 16

R-16 would fall 25' N of fence <u>not put in</u>

R-15 is apprx 12'-15' W of where fence goes N.
apprx 20' S of fence

Everything on line is flagged

P-15, O-15, N-15, M-15, L-15 is Hub indicates 500' +

EW line is flagged

L-15, L-16, L-17, L-18, L-19, L-20 is hub 500' mark

L-21, L-22, L-23, L-24, L-25 all in

N 24 line 5' No. is soil boring

N 25 30' NNW soil boring

O 24 25-30' So. soil boring

200' N. + 40' W of fence on E edge of pond
of SE corn fence

260' N + 50 W of fence labeled as 280 from NE corn
of SE corn or
280' from NE

APPRX 70' S of NE corner + 50' W of fence soil sample
possibly @ waters edge

200' W of NNE corner + 30' S of fence

330' W of NNE corner + 40' S of fence

190' E of NNW + 12-15' S of fence

75' S of NNW corn + 7' S of fence (inside fence)

appx 100' S of NNW corner

T-7 T-8 T-9

S-9 S-10 S-11 S-12

R-12 R-1

R-11 R-15

O-15 Q-16 Q-17

P-18 P-19

~~C20~~

D-19

E18 E17 E16 E15 E14 E-13

F

G

H

I-12 I-11

J-10

K10 K9 K-8 K7

Q3

R-1

S-1

U-0

T-0
S-0
R-0

Q-0 Q-2 Q3 Q4 Q5 Q6

P-4 P5 P-6

O-5 O-6
N 6
M 6
L 6
K-6 K-7 K8 K9

B-25 B-24 B 23 B 22 B21 B-20

C 19

D 18

Section Cor Location

0-00-00

T at PK SE Cor Intersection BS Hub at N E Cor of Top

To Sec Cor 182-42-54 ~ 330.84

ce

Bm CIRCUIT RUN

NE HUB 769.92

+4.29 774.21

-6.83 767.38

+2.40 769.78

-5.58 764.20

+4.67 768.87

-6.93 761.94

+4.82 766.76

-5.02 761.74

+4.72 766.46

-4.86 761.60

+3.92 765.52

NW HUB -5.55 759.97 -.01

759.96

NW HUB

+5.98 765.95

-4.60 761.35

+5.36 766.71

-4.94 761.77

+4.99 766.76

-5.00 761.76

+7.06 768.82

-4.85 763.97

+5.33 769.30

-3.75 765.55

+7.56 773.11

-3.70 769.41

+4.73 774.13

NE HUB -4.24 769.89

65.82 65.85

NE HUB + 5.49

Bm - 3.83

Dist 12 - 56 330.86

Tat 14 BS 12 0-00-00 ~ 2359.65

31 47-45-56 ~ 38.81 8" Iron Post Filled w/Conc.

156-13-05 ~ 30.32 well

166-03-31 ~ 46.57 well

168-42-18 ~ 56.80 well

32 87-40-48 ~ 322.96 8" Iron Post Filled w/conc

33 118-18-06 ~ 803.24 Random Hub

Tat RH BS 14 00-00-00 ~ 803.24

Repeat — 2-38-38 ~ 791.145 8" Iron Pipe Filled w/conc.

34 4-58-23 ~ 736.22 Fence T Post

35 10-20-26 ~ 637.425 " " "

Repeat — 17-20-47 ~ 550.630 8" Iron Pipe Filled w/conc.

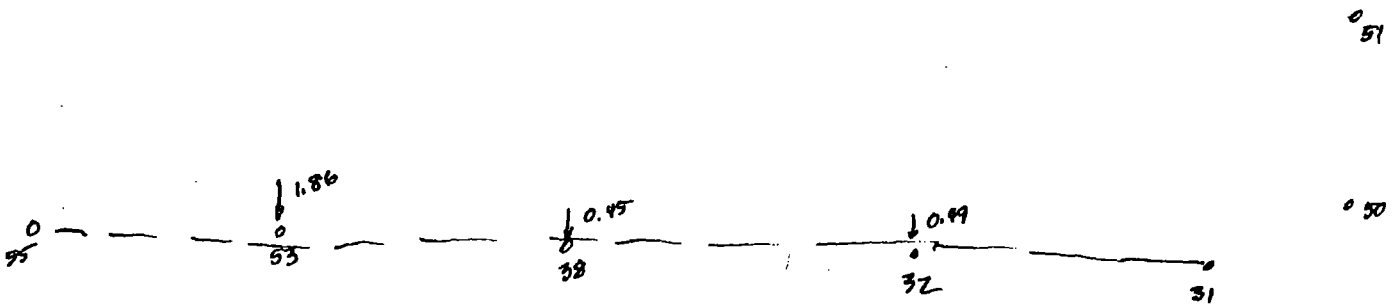
36 27-03-50 - 472.295 Fence T. Post

37 38-42-37 ~ 417.19 " " "

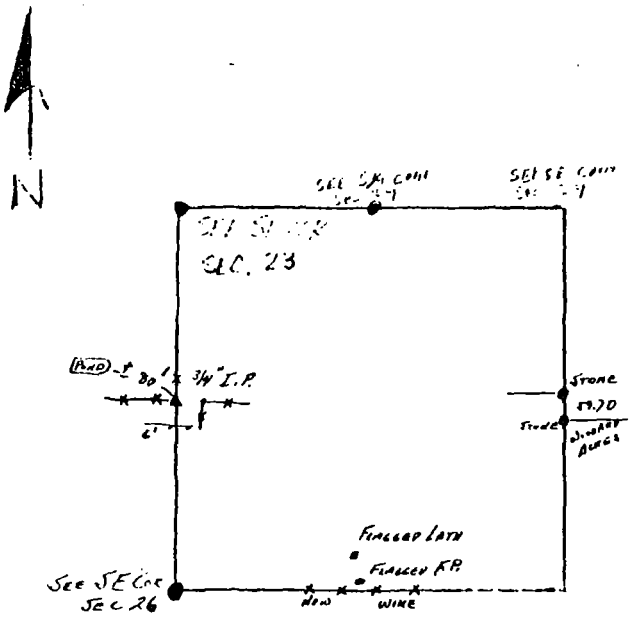
38 63-52-48 ~ 375.81 8" Iron Pipe Filled w/conc.

39 83-54-11 ~ 398.62 Remnants of old Fence Locust Row

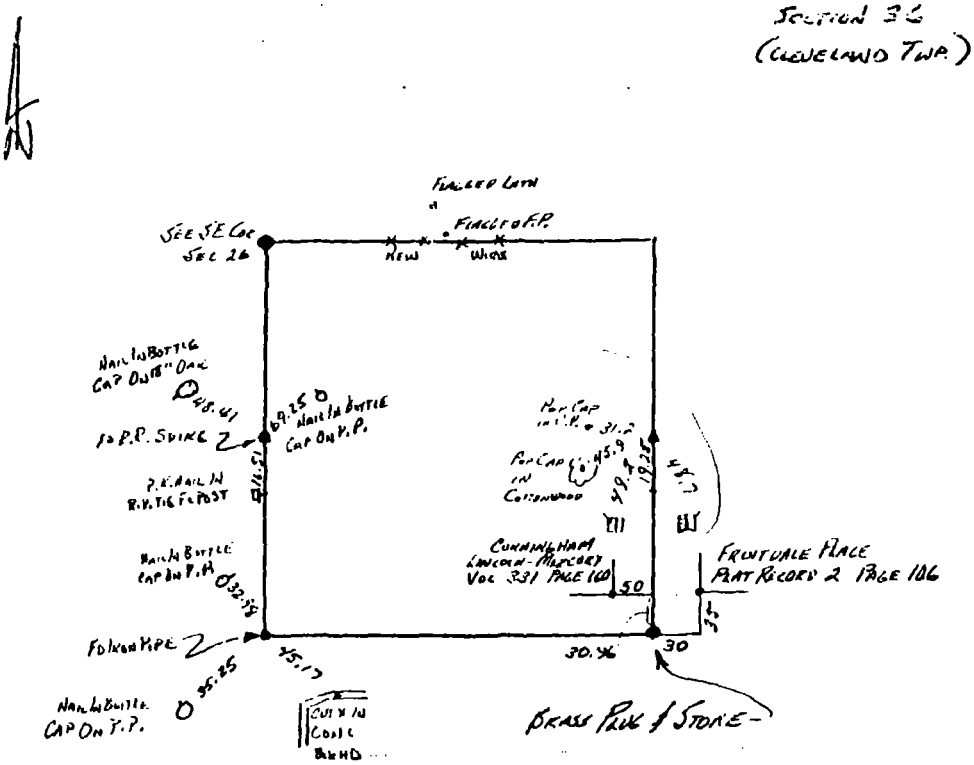
40 100-38-55 ~ 465.66 " " " " " "



SECTION 25
(CLEVELAND TWP)



SECTION 36
(CLEVELAND TWP.)



RDM & CV
11-19-90

Hub D Hub C #14 N

A Hub #13 B #12

∡ ABC

1st 73 - 17 - 36 ~ 2743.160 Dist A-B

① 4th 293 - 09 - 55

Mn Rt ∡ 73 - 17 - 29

1st ~~73 - 17 - 20~~

② 4th ~~293 - 08 - 57~~

Mn Rt ∡ ~~73 - 17 - 14~~

1st 73 - 17 - 32

③ 4th 293 - 09 - 51

Mn Rt ∡ 73 - 17 - 28

∡ BCD

93 - 29 - 24 ~ Dist CD 2482.63

① 13 - 57 - 26 CB 2359.61

93 - 29 - 22