

Garden Lane Water Treatment Plant

City of Portage, Michigan

CONTROLS AND BENCHMARKS

GLAZA LAND SURVEYS, LLC

Control Point #10
Description: 1/2" rebar with cap marked "Glaza Trm. Pt."
Coordinates: N: 260500.9283 E: 12795315.1986 Elevation: 848.63"
Witnesses:
S48°E 46.33" NE corner of brick building
S28°E 36.33" NW corner of brick building
S76°W 101.21" South end 18" culvert
S27°W 2.46" North edge of bituminous drive

Control Point #12
Description: 1/2" rebar with cap marked "Glaza Trm. Pt."
Coordinates: N: 260467.3418 E: 12794818.9138 Elevation: 850.77"
Witnesses:
N11°E 36.20" SE corner utility box
N52°W 98.09" Centerline of sanitary sewer manhole
N32°W 91.12" Spike in SW side utility pole
N30°E 2.93" Northern edge of bituminous shoulder

Control Point #14
Description: 1/2" rebar with cap marked "Glaza Trm. Pt."
Coordinates: N: 260490.7344 E: 12794475.0402 Elevation: 850.39"
Witnesses:
N19°E 32.61" Spike in Southern side of utility pole
S27°E 63.12" Centerline of fire hydrant
N57°W 153.12" Centerline of sanitary sewer manhole
N33°E 1.86" Northern edge of bituminous shoulder

Control Point #16
Description: 1/2" rebar with cap marked "Glaza Trm. Pt."
Coordinates: N: 260801.4800 E: 12794024.9921 Elevation: 848.59"
Witnesses:
N22°E 46.79" Centerline light pole
S22°E 167.17" Centerline of fire hydrant
S27°W 25.56" Centerline of sanitary sewer manhole
S20°E 36.09" Centerline of water valve

Control Point #18
Description: 1/2" rebar with cap marked "Glaza Trm. Pt."
Coordinates: N: 261180.4594 E: 12794232.7000 Elevation: 847.63"
Witnesses:
N63°W 56.89" Northern corner of brick building
S70°W 36.03" Eastern corner of brick building
S14°E 42.75" Centerline of light pole
S46°W 51.78" Southern fence corner

Control Point #20
Description: 1/2" rebar with cap marked "Glaza Trm. Pt."
Coordinates: N: 261380.6476 E: 12794630.1708 Elevation: 847.83"
Witnesses:
N21°W 23.30" Spike in West side of utility pole
N64°E 22.49" Centerline of sign post
S10°W 95.49" Centerline of light pole
S57°W 135.60" Centerline of light pole

Control Point #22
Description: 1/2" rebar with cap marked "Glaza Trm. Pt."
Coordinates: N: 261788.3003 E: 12794612.3942 Elevation: 845.68"
Witnesses:
N06°E 30.15" Spike in West side of utility pole
N07°E 146.34" Centerline of utility pole
S22°E 208.23" Centerline of utility pole
N09°E 145°2" Centerline of 2-track

Control Point #24
Description: 1/2" rebar with cap marked "Glaza Trm. Pt."
Coordinates: N: 262198.6460 E: 12794604.9442 Elevation: 844.78"
Witnesses:
S04°E 72.23" Spike in West side of utility pole
N77°W 23.04" Centerline of water manhole
S57°W 18.52" Northern fence corner
S06°W 06.68" Southeast corner of brick building

LAND & RESOURCE BENCHMARKS

Benchmark #10
Staff of spike in West side of 12" Locust
Coordinates: N: 260528.91 E: 12795250.96 Elevation: 848.63"

Benchmark #11
Fire hydrant, top of flange bolt under "T" in "City"
Coordinates: N: 260502.14 E: 12795024.37 Elevation: 848.64"

Benchmark #12
Staff of local spike in SW side of a utility pole
Coordinates: N: 260544.59 E: 12794770.58 Elevation: 848.15"

Benchmark #13
Northwest corner of porch platform, main entrance to House Number 7605, Garden Lane. (From 1969 Williams & Works sanitary sewer plan, sheet 3 of 14)
Elevation: 839.54"

Benchmark #14
Staff of railroad spike in Southwest side of utility pole
Coordinates: N: 260721.59 E: 12794485.61 Elevation: 848.19"

Benchmark #15
Fire hydrant, top of flange bolt under "T" in "City"
Coordinates: N: 260803.59 E: 12794172.89 Elevation: 850.14"

Benchmark #16
"□" cut on top of concrete on Northwest side of utility pole
Coordinates: N: 261143.83 E: 12794205.58 Elevation: 848.95"

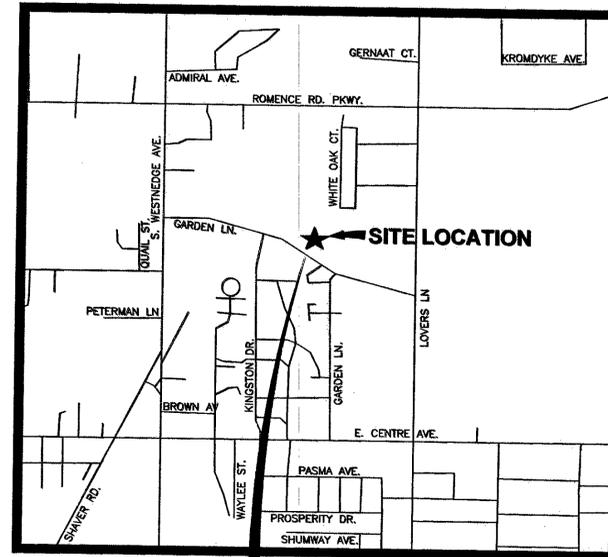
Benchmark #17
Staff of railroad spike in West side of utility pole
Coordinates: N: 261412.42 E: 12794621.86 Elevation: 848.47"

Benchmark #18
Staff of railroad spike in West side of utility pole
Coordinates: N: 261788.29 E: 12794615.31 Elevation: 847.78"

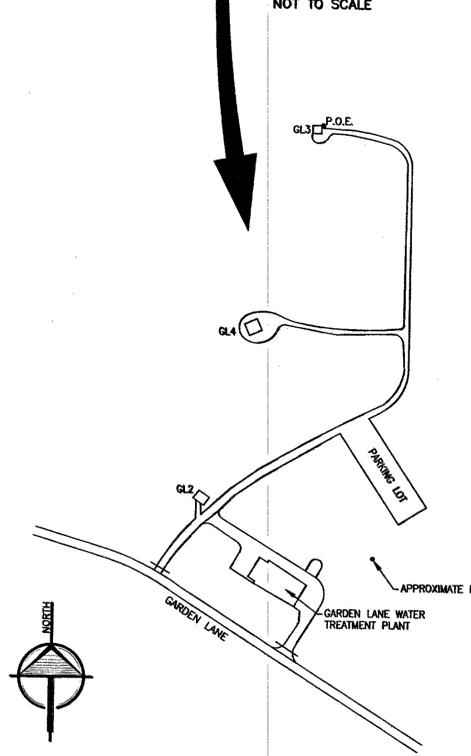
Benchmark #19
Staff of railroad spike in West side of utility pole
Coordinates: N: 262126.81 E: 12794610.24 Elevation: 844.43"

1) HORIZONTAL CONTROL IS BASED ON THE AEROCOON PHOTOGRAMMETRIC SERVICES MAPS OF THE CITY OF PORTAGE. THESE MAPS WERE SUPPLIED TO US BY EARTH-TECH.

2) VERTICAL CONTROL IS BASED ON THE 1969 WILLIAMS AND WORKS SANITARY SEWER PLAN. FOUND BENCHMARK - NORTHWEST CORNER OF PORCH PLATFORM, MAIN ENTRANCE TO HOUSE NUMBER 7605, GARDEN LANE. ELEVATION = 839.54"



LOCATION MAP
NOT TO SCALE



NOT TO SCALE

INDEX OF SHEETS

- 1 - COVER SHEET
- 2 - PLAN & PROFILE
- 3 - PLAN & PROFILE
- 4 - DETAILS

TOPOGRAPHIC SURVEY BY:
LAND AND RESOURCE ENGINEERING, INC.
3800 W. RIVER DRIVE, STE. A.
COMSTOCK PARK, MICHIGAN

GENERAL PLAN NOTES GARDEN LANE WATER MAIN REPLACEMENT PROJECT

UNDERGROUND UTILITIES

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH THE PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL DIAL 1-800-482-7171 OR 811 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THIS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

EXISTING UTILITY ELEVATIONS

THE EXACT LOCATION AND ELEVATIONS OF THE VARIOUS UTILITIES ARE NOT KNOWN. THE CONTRACTOR MAY BE REQUIRED TO DO SOME EXPLORATORY EXCAVATION TO VERIFY THE LOCATION AND ELEVATIONS. THIS WORK WILL BE PAID FOR AS EXPLORATORY TRENCHING.

TOPSOIL STRIPPING

STRIP EXISTING TOPSOIL TO THE LIMITS OF CONSTRUCTION PRIOR TO EXCAVATION OF EARTH. TOPSOIL STRIPPING IS INCLUDED IN PAYMENT FOR MACHINE GRADING, MODIFIED.

SAWCUTTING

PAYMENT FOR ALL SAW CUTS SHALL BE INCLUDED IN PAVEMENT REMOVAL, CURB AND GUTTER REMOVAL OR EARTHWORK / GRADING ITEMS AND WILL NOT BE PAID FOR SEPARATELY.

PAVEMENT REMOVAL

PAVEMENT REMOVAL LIMITS ARE ON THE DRAWINGS AT THE DISCRETION OF THE DIRECTOR OR THE ENGINEER. AREAS OF PAVEMENT MAY BE LEFT IN PLACE, OR ADDITIONAL AREAS ADDED TO PROVIDE THE PROPER CROSS-SECTION AND BASE. CHANGES CAN BE MADE IN THE QUANTITIES.

SOIL EROSION MEASURES

PLACE SEED AND MULCH AS SOON AS POSSIBLE. CRITICAL DITCH GRADES SHOULD BE PROTECTED WITH EITHER SOD OR SEED/MULCH AS DIRECTED BY THE ENGINEER. PAVED STREETS SHALL BE KEPT REASONABLY CLEAN AND THE CONTRACTOR SHALL REMOVE ACCUMULATIONS OF DEBRIS CAUSED BY HIS OPERATIONS. THE PAVEMENT SHALL BE CLEANED AT THE END OF EACH DAY. ALL CATCH BASIN INLETS SHALL BE PROTECTED WITH INLET PROTECTION DEVICES.

EMERGENCY & GENERAL ACCESS

THE CONTRACTOR SHALL AT ALL TIMES PROVIDE EMERGENCY ACCESS TO THE PROPERTY IN THE VICINITY OF THE CONSTRUCTION FOR POLICE AND FIRE EQUIPMENT. REASONABLE ACCESS AS DETERMINED BY THE ENGINEER, MUST BE MAINTAINED TO COMMERCIAL ESTABLISHMENTS AND RESIDENCES AT ALL TIMES. THE CONTRACTOR SHALL GIVE PROPERTY OWNERS WRITTEN NOTICE 3 WORKING DAYS PRIOR TO DRIVEWAY CONSTRUCTION OR CLOSURES.

APPLICABLE SPECIFICATIONS

THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF PORTAGE CONTRACT CONDITIONS AND SPECIFICATIONS, CURRENT EDITION, UNLESS SUPERCEDED BY SPECIAL PROVISIONS IN THE CONTRACT DOCUMENTS.

PUBLIC UTILITIES

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THESE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AS OBTAINED ON OUR SURVEYS. THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO BE SATISFIED AS TO ITS ACCURACY AND THE LOCATION OF EXISTING UTILITIES.

NAME OF OWNER	KIND OF UTILITY
CITY OF PORTAGE 7719 S. WESTNEDGE PORTAGE, MI 49002	STORM SEWER & STREETS
AT&T 2919 MILLCORK ROAD KALAMAZOO, MI 49001	TELEPHONE & FIBER OPTIC
CHARTER COMMUNICATIONS 4176 COMMERCIAL AVENUE KALAMAZOO, MI 49001	CABLE TELEVISION
CONSUMERS ENERGY 2500 EAST CORK STREET KALAMAZOO, MI 49001	ELECTRIC & GAS
UNITED WATER 7719 S. WESTNEDGE AVE. PORTAGE, MI 49002	WATER & SEWER (CONTRACTOR OPERATOR)

PREPARED UNDER SUPERVISION OF

W. Christopher Barnes
W. CHRISTOPHER BARNES, P.E.
DIRECTOR, TRANSPORTATION & UTILITIES



6/11/15
DATE

LAND & RESOURCE
ENGINEERING INC.

Common Sense • Lasting Solutions
3800 West River Drive, Ste. A, Comstock Park, MI 49311 Phone: 616.301.2889

R=STREET PROJECT	P=PLATS	A=AS BUILT	NO.	DESCRIPTION	DATE	BY
U=STREET CONSTR.	Q=1/4 SECTIONS	P=PROPOSED				
F=SIDEWALK	M=MISCELLANEOUS	S=SEALED				
W=WATER MAINS	A=SITE PLANS	C=CONSTRUCTION				
S=SANITARY SEWER	L=STREET LIGHTS	B=BASE				
D=DRAIN SEWERS	K=K.C.C.R. ROADS					
T=M.D.O.T. TRUNKLINES						

DESIGN BY: KJV	CHECKED BY: MPB	DATE: FEBRUARY, 2015	FIELD NOTES BOOK	PAGE

SECTION NO.	TYPE	STATUS

72 HOURS
BEFORE YOU DIG
CALL MISS DIG
800-482-7171
(TOLL FREE)

CITY OF PORTAGE
TRANSPORTATION & UTILITIES DEPARTMENT
7719 SOUTH WESTNEDGE AVENUE PORTAGE, MICHIGAN
PROVIDE THREE WORKING DAYS NOTICE FOR STAKING AND INSPECTION. CALL THE CITY OF PORTAGE ENGINEERING DEPARTMENT AT 329-4422

Garden Lane Water Treatment Plant
Garden Lane, City of Portage, Michigan

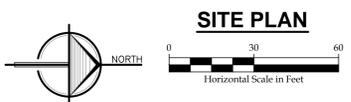
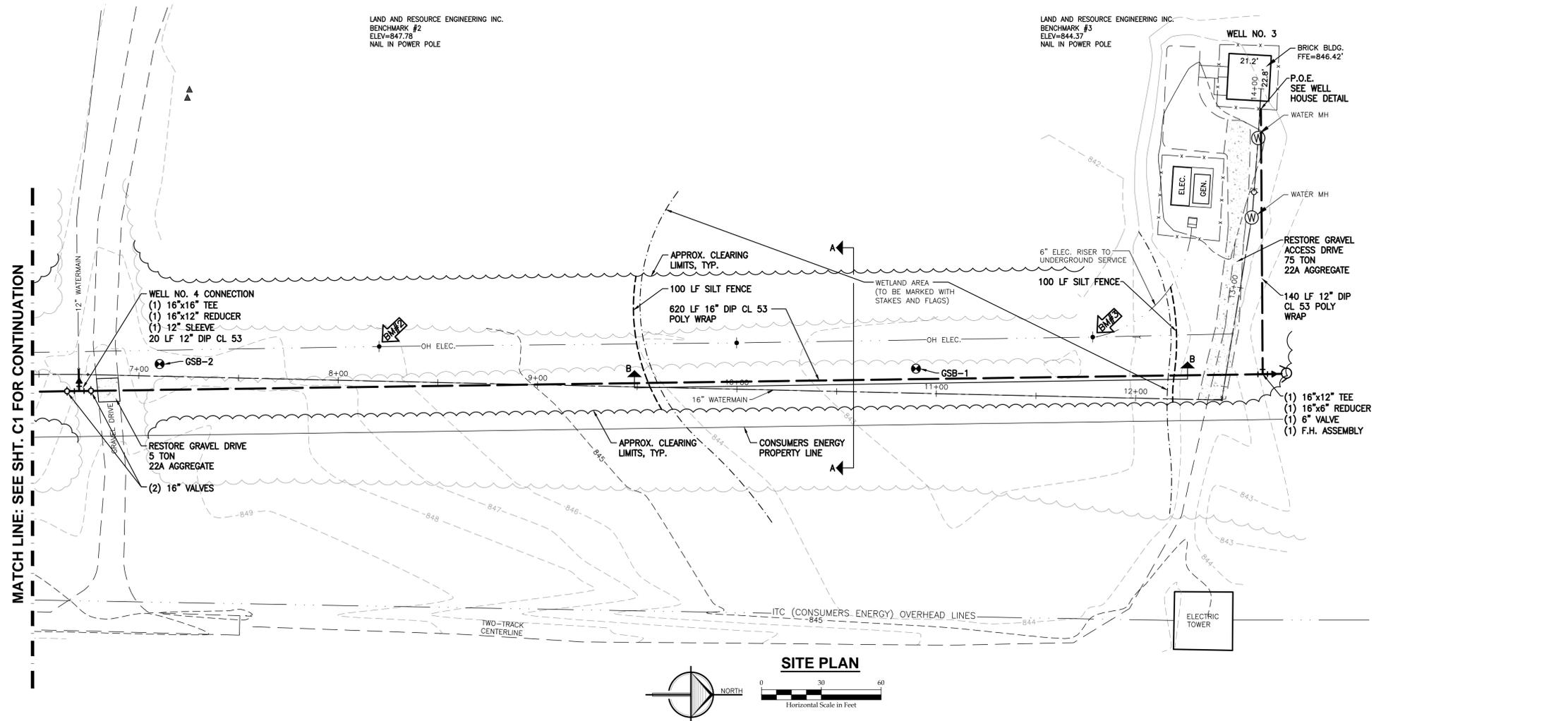
COVER SHEET

SCALE
HORIZ.
SCALE
VERT.
SHEET 1 OF 4
DRAWING NO. 14-124

LAND AND RESOURCE ENGINEERING INC.
BENCHMARK #2
ELEV=847.76
NAIL IN POWER POLE

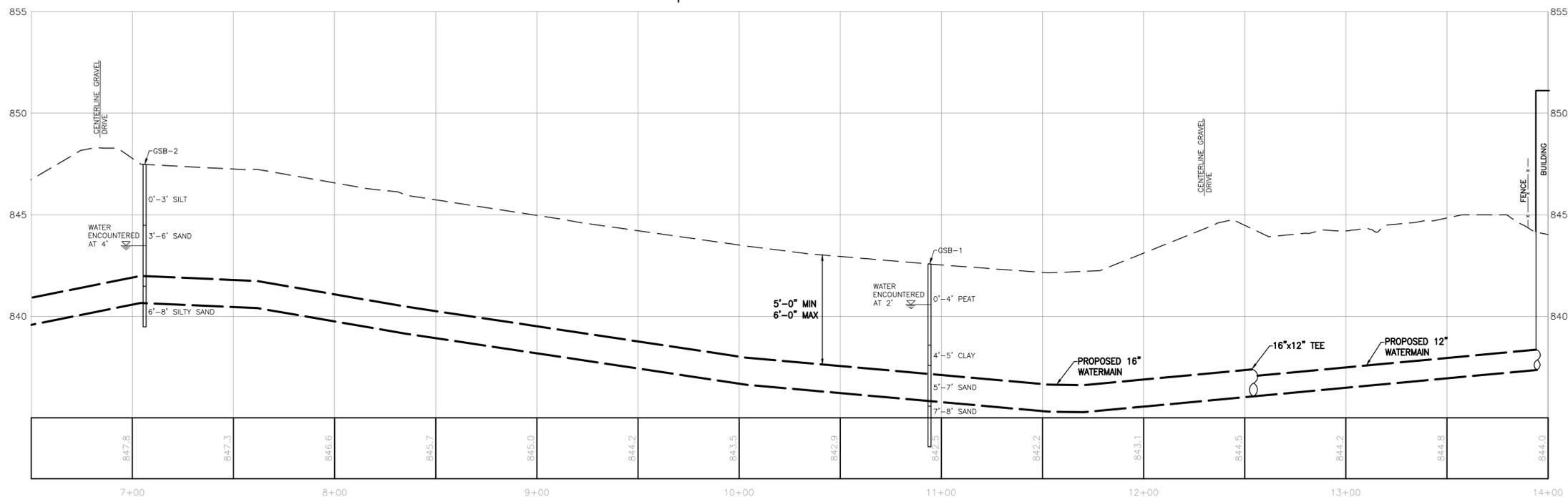
LAND AND RESOURCE ENGINEERING INC.
BENCHMARK #3
ELEV=844.37
NAIL IN POWER POLE

MATCH LINE: SEE SHT. C1 FOR CONTINUATION



LEGEND

▲ - WELL	○ - FIRE HYDRANT
● - MONUMENT	◇ - WATER VALVE
⊙ - SIGN	⊠ - GAS METER
⊞ - RR SIGN	⊞ - WATER METER
⊙ - GUY POLE	⊞ - TELEPHONE RISER
⊙ - GUY ANCHOR	⊞ - CATCH BASIN
⊙ - UTILITY POLE	⊞ - ROUND CATCH BASIN
⊙ - LIGHT POLE	⊞ - UTILITY MANHOLE
⊙ - SOIL BORING	⊞ - STORM MANHOLE
	⊞ - SANITARY MANHOLE
	--- WATER UTILITY LINE
	--- TELEPHONE UTILITY LINE
	--- ELECTRIC UTILITY LINE
	--- GAS UTILITY LINE
	--- STORM UTILITY LINE
	--- SANITARY UTILITY LINE
	--- OVERHEAD UTILITY LINE



CENTERLINE PROFILE
SCALE: HORIZONTAL: 1" = 30'
VERTICAL: 1" = 10'

PLAN & PROFILE

LAND & RESOURCE ENGINEERING INC.
Common Sense • Lasting Solutions
3820 West River Drive, Ste. A, Commerce Park, MI, 49711 Ph:616-301-1988

R=STREET PROJECT	P=PLATS	A=AS BUILT
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T=M.D.O.T.TRUNKLINES		

NO.	DESCRIPTION	DATE	BY

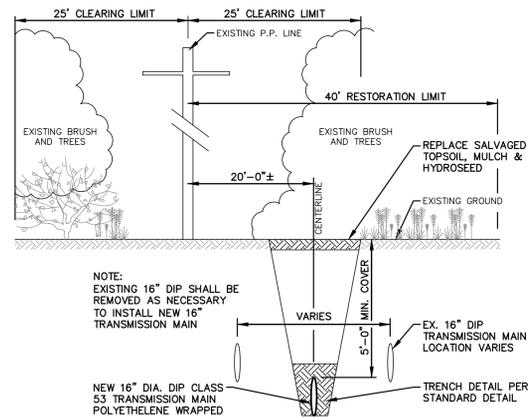
DRAWN BY: NDJ
DESIGN BY: KJV
CHECKED BY: MPB
DATE: FEBRUARY, 2015
FIELD NOTES BOOK PAGE

72 HOURS
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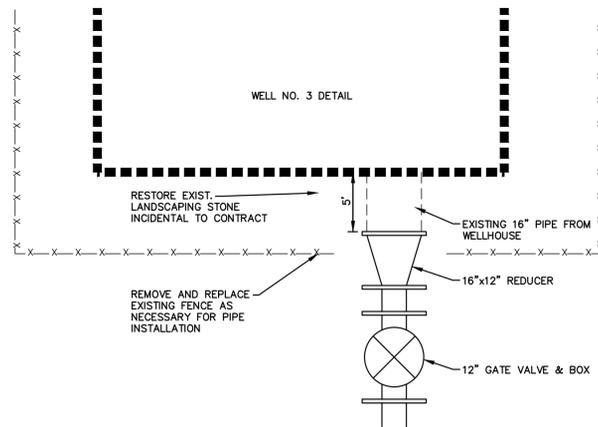
CITY OF PORTAGE
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Garden Lane, City of Portage, Michigan

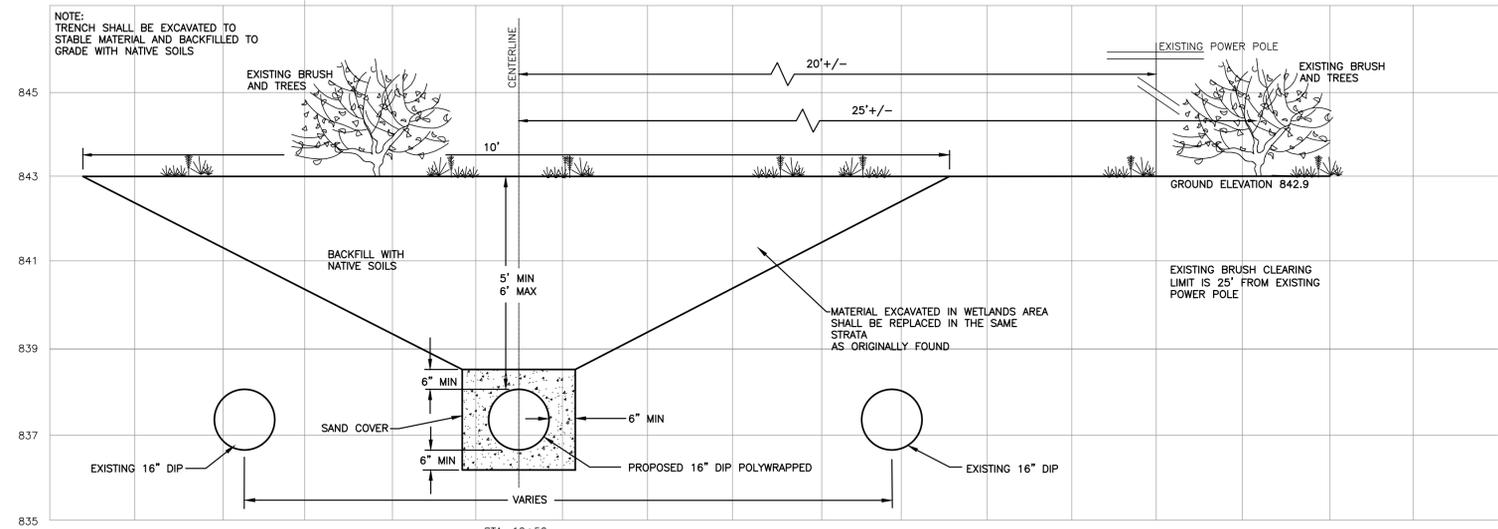
SCALE	HORIZ.
SCALE	VERT.
SHEET 3 OF 4	
DRAWING NO. 14-124	



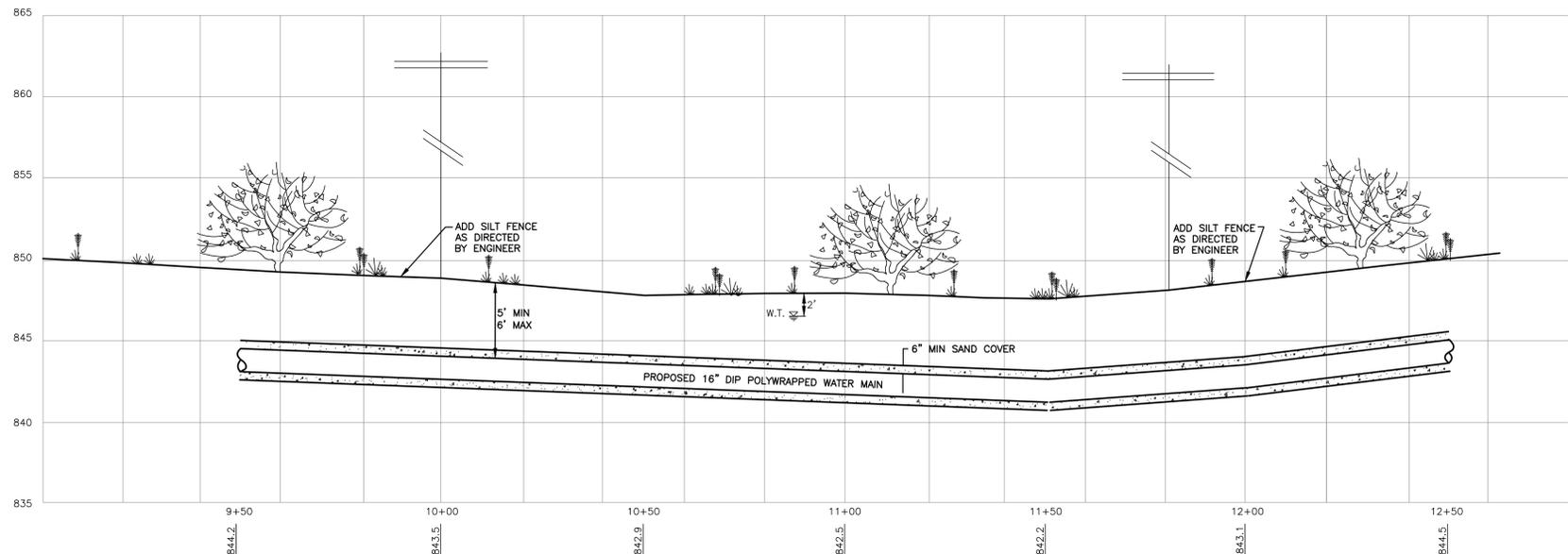
**GARDEN LANE WELL NO. 3 TRANSMISSION MAIN
TYPICAL SECTION (FACING NORTH)**
NOT TO SCALE



WELL NO. 3 CONNECTION DETAIL
NOT TO SCALE



SECTION A-A (FACING SOUTH)
SCALE: 1"=2' (VERTICAL AND HORIZONTAL)



SECTION B-B
SCALE:
HORIZONTAL: 1"= 20'
VERTICAL: 1"=5'

ZYLMAN AVENUE STORM SEWER EXTENSION

CITY OF PORTAGE, MICHIGAN

GENERAL PLAN NOTES ZYLMAN STORM SEWER EXTENSION PROJECT

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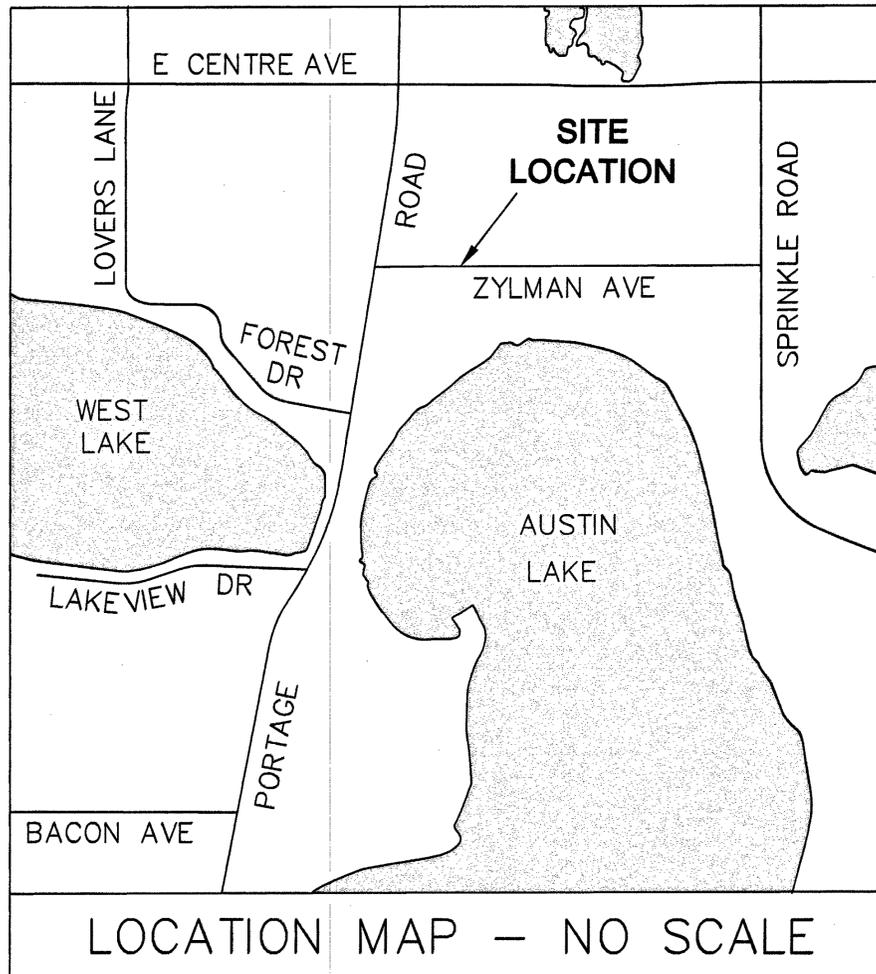
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CHARTER COMMUNICATIONS 4176 COMMERCIAL AVENUE KALAMAZOO, MI 49001	CABLE TELEVISION
CONSUMERS ENERGY 2800 EAST CORK STREET KALAMAZOO, MI 49001	ELECTRIC & GAS
UNITED WATER 7719 S. WESTNEDGE AVE. PORTAGE, MI 49002	WATER & SEWER (CONTRACTOR OPERATOR)



TOPOGRAPHIC SURVEY BY:
DRIESENGA & ASSOCIATES, INC.
502 SOUTH 8TH STREET
KALAMAZOO, MI 49009

POINT NUMBER	NORTHING (ASSUMED)	EASTING (ASSUMED)	ELEVATION (NAVD '88)
59	8785.8412'	5013.3484'	805.09'
60	9299.0874'	5055.6280'	887.47'
68	9266.8060'	5801.4917'	884.78'
69	9420.2407'	6172.2251'	891.51'
70	9402.2522'	6486.4123'	860.98'

PREPARED UNDER SUPERVISION OF:

W. Christopher Barnes
W. CHRISTOPHER BARNES, P.E.
DIRECTOR, TRANSPORTATION & UTILITIES



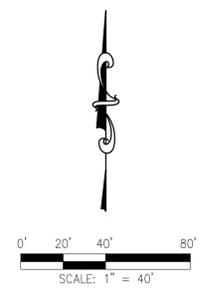
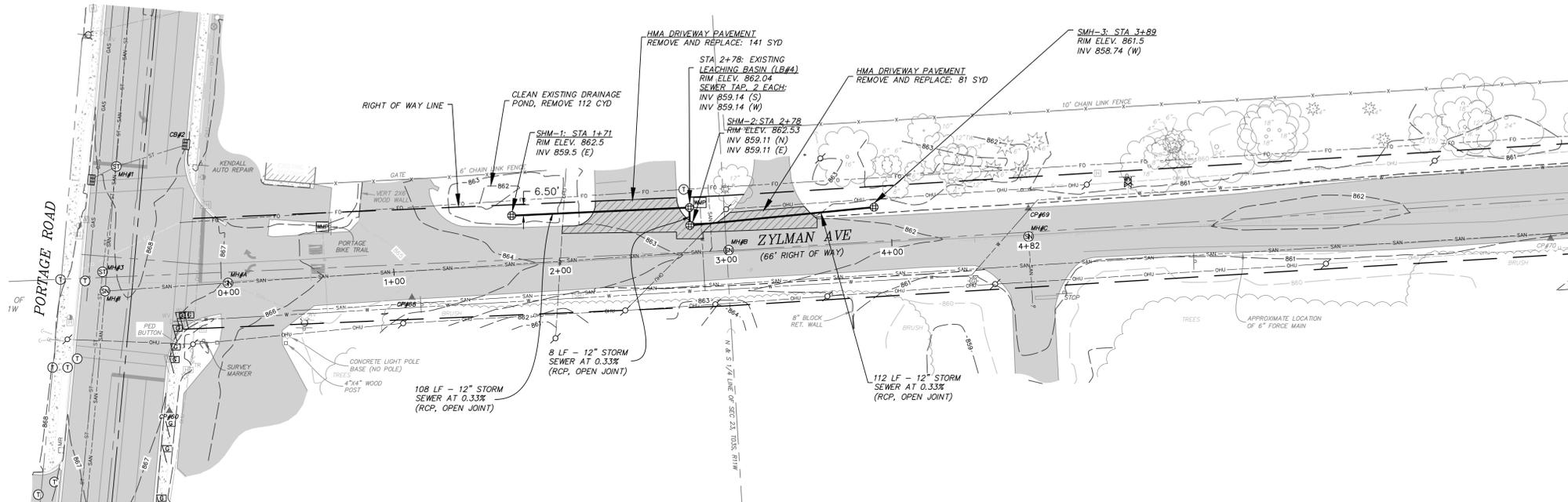
6/11/15
DATE

LOCATION MAP - NO SCALE

COVER SHEET

R=STREET PROJECT I=STREET CONSTR. F=SIDEWALK W=WATER MAINS S=SANITARY SEWER D=STORM SEWERS T=M.D.O.T. TRUNKLINES	P=PLATS Q=1/4 SECTIONS M=MISCELLANEOUS A=SITE PLANS L=STREET LIGHTS K=K.C.R.C. ROADS	A=AS BUILT P=PROPOSED S=SEALED C=CONSTRUCTION B=BASE	NO. DESCRIPTION DATE BY	DRAWN BY WLB DESIGN BY CHECKED BY DATE MAY, 2015 FIELD NOTES PAGE	72 HOURS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE)	CITY OF PORTAGE TRANSPORTATION & UTILITIES DEPARTMENT 7719 SOUTH WESTNEDGE AVENUE, PORTAGE, MICHIGAN PROVIDE THREE WORKING DAYS NOTICE FOR STAKING AND INSPECTION. CALL THE CITY OF PORTAGE ENGINEERING DEPARTMENT AT 329-4422.	SCALE HORIZ. 1" = 40' VERT. 1" = 4' SHEET 1 of 2 DRAWING NO.
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ZYLMAN AVENUE
STORM SEWER EXTENSION



TOPOGRAPHIC SURVEY BY:
DRIESENGA & ASSOCIATES, INC.
552 SOUTH 8TH STREET
KALAMAZOO, MI 49009

LEGEND

- BENCHMARK
- CONTROL POINT
- STORM SEWER MANHOLE
- CATCH BASIN
- SANITARY SEWER MANHOLE
- TELEPHONE MANHOLE
- FIRE HYDRANT
- WATER VALVE
- WATER METER PIT
- UTILITY POLE
- LIGHT POLE
- GUY POLE
- GUY ANCHOR
- TRANSFORMER
- HAND HOLE (ELECTRIC)
- SIGNAL BOX
- MAIL BOX
- POST
- SIGN
- UNDERGROUND GAS MARKER
- UNDERGROUND CABLE MARKER
- BOLLARD POST
- "MISS DIG" FLAG - GAS
- "MISS DIG" FLAG - WATER
- GUARDRAIL
- FENCE LINE
- ELECTRIC
- GAS LINE
- EXISTING WATER LINE
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- BITUMINOUS SURFACE
- CONCRETE SURFACE
- CONIFEROUS TREE
- DECIDUOUS TREE

BENCH MARK DATA

CITY OF PORTAGE DATUM, DATED: 02/17/77

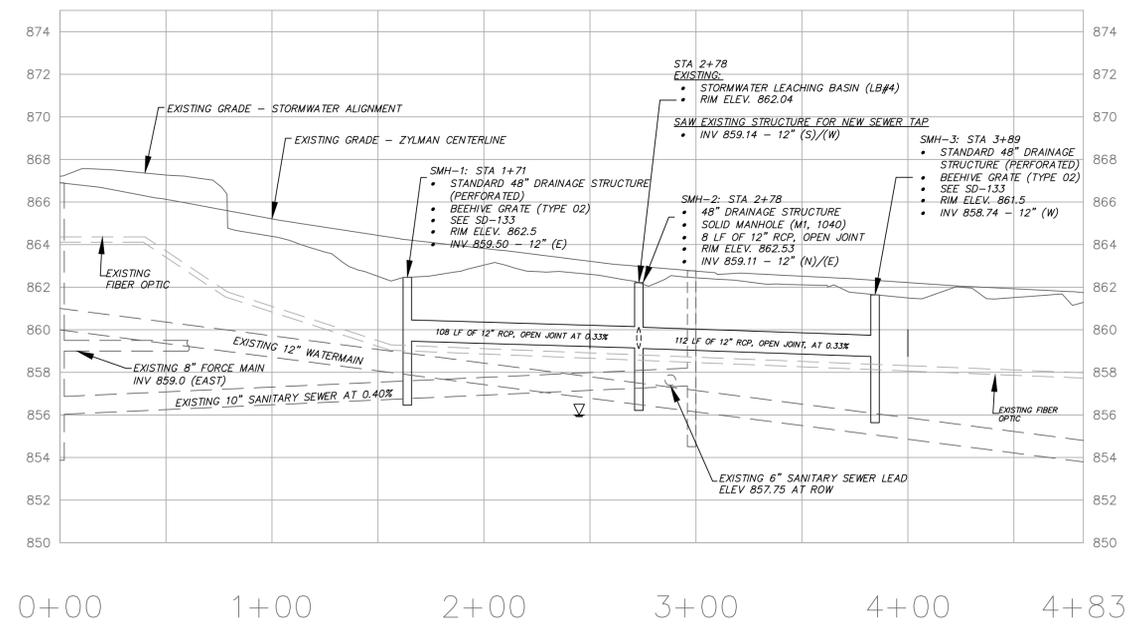
BM #1 EL= 860.27
CHISELED "X" ON NORTHEAST FLANGE BOLT ON HYDRANT, UNDER THE LETTER "E" IN "EJIW"

BM #2 EL= 858.52
CHISELED "X" ON SOUTHWEST FLANGE BOLT ON HYDRANT, UNDER THE LETTER "W" IN "EJIW"

BM #8 EL= 866.82
TOP OF HEAD OF RAILROAD SPIKE IN WEST SIDE POWER POLE, 30' EAST OF CL PORTAGE AND 10' NORTH OF CL DRIVE AT BUILDING #858 (NOT SHOWN)

BM #9 EL= 869.89
TOP OF HEAD OF RAILROAD SPIKE IN WEST SIDE POWER POLE, 30' EAST OF CL PORTAGE AND 10' NORTH OF CL DRIVE AT HOUSE #8435 (NOT SHOWN)

ZYLMAN AVE STORMWATER PROFILE



VERTICAL SCALE: 1"=4'
HORIZONTAL SCALE: 1"=40'

STORM STRUCTURE DATA

CB #1 - STORM WATER MANHOLE
RIM 865.17
INV (SW) 12"=864.07 (PER PROVIDED AS-BUILT 04/19/02)
INV (NE) 12"=862.52 (PER PROVIDED AS-BUILT 04/19/02)
INV (S) 12"=861.85 (PER PROVIDED AS-BUILT 04/19/02)
INV (N) 15"=860.51 (PER PROVIDED AS-BUILT 04/19/02)

CB #2 - STORM WATER CATCH BASIN
RIM 867.90
INV (SW) 12"=865.28 (PER PROVIDED AS-BUILT 04/19/02)

MH #3 - STORM WATER MANHOLE
RIM 867.83
INV (S) 12"=863.04 (PER PROVIDED AS-BUILT 04/19/02)
INV (N) 12"=862.37 (PER PROVIDED AS-BUILT 04/19/02)

LB #4 - STORM WATER LEACHING BASIN
RIM 862.04
NO PIPES VISIBLE

SANITARY STRUCTURE DATA

MH #A - SANITARY MANHOLE
4' Ø PRECAST
RIM 866.90
INV (ESE) 10"=869.10
INV (E) 10"=866.02
INV (E) 8"=854.20 (PER PROVIDED AS-BUILT 04/19/02)
INV (W) 10"=853.95

MH #B - SANITARY MANHOLE
4' Ø PRECAST
RIM 862.59
INV (W) 8" PVC=857.69

MH #C - SANITARY MANHOLE
4' Ø PRECAST
RIM 861.66
INV (N) 6" PVC (DROP)=852.36
INV (S) 10"=837.16
INV (W) 10"=848.16
INV (W) 8"=837.16
INV (E) 10"=837.16

SURVEY CONTROL

POINT NUMBER	NORTHING (ASSUMED)	EASTING (ASSUMED)	ELEVATION (NAVD '88)
59	8765.8412'	5613.3484'	865.99'
60	9299.0674'	5655.6280'	867.47'
68	9366.8060'	5801.4917'	864.78'
69	9420.2407'	6172.2251'	861.51'
70	9402.2522'	6486.4123'	860.96'

R=STREET PROJECT I=STREET CONSTR. F=SIDEWALK W=WATER MAINS S=SANITARY SEWER D=STORM SEWERS T=M.D.O.T.TRUNKLINES	P=PLATS Q=1/4SECTIONS M=MISCELLANEOUS A=SITE PLANS L=STREET LIGHTS K=K.C.R.ROADS	A=AS BUILT P=PROPOSED S=SEALED C=CONSTRUCTION B=BASE	NO. DESCRIPTION DATE BY	DESIGN BY CHECKED BY DATE FIELD NOTES BOOK	DRAWN BY WLB 72 HOURS BEFORE YOU DIG CALL MISS DIG 800-482-7171 (TOLL FREE) SECTION NO. TYPE STATUS	CITY OF PORTAGE TRANSPORTATION & UTILITIES DEPARTMENT 7719 SOUTH WESTNEDGE AVENUE PORTAGE, MICHIGAN PROVIDE THREE WORKING DAYS NOTICE FOR STAKING AND INSPECTION. CALL THE CITY OF PORTAGE ENGINEERING DEPARTMENT AT 329-4422	ZYLMAN AVENUE STORM SEWER EXTENSION	SCALE HORZ. 1" = 40' VERT. 1" = 4' SHEET 2 OF 2 DRAWING NO.
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