VILLAGE OF POWELL, OHIO
DELAWARE COUNTY
SANITARY SEWER IMPROVEMENT
FOR
LAKES OF POWELL, SECTION 6
8" FORCE MAIN, PUMP STATION AND GRAVITY SEWER
2001

GENERAL NOTES

The current County of Delaware requirements, together with the Specifications of the Ohio Department of Transportation, the Village of Powell, and the City of Columbus including all supplements thereto, in force on the date of contract, shall govern all construction items that are a part of this plan. The Contractor shall refer to the "Standard Plans and Specifications for Construction of Sanitary Facilities in Delaware County, Ohio" for all necessary construction details.

Sewer trenches shall be de-watered to 2" below bell of pipe prior to installation of pipe.

Any field tile disturbed during construction shall be replaced as directed by the County, with ABS pipe spanning the trench. The trench shall be filled with Compacted Granular Material. Cost of this work is to be included in the price bid for the various items.

Roof drains, foundation drains and other clean water connections to the Sanitary Sewer are prohibited on this project.

TESTING

Force mains shall be tested by a hydrostatic pressure and leakage test. With the main subjected to a hydrostatic pressure of 125 psi at its lowest elevation, allowable leakage shall not exceed 20 gallons per inch diameter per mile per 24 hours.

The Contractor shall cooperate with the Delaware County Sanitary Engineer and shall provide all necessary equipment to perform all testing.

TREES

All trees, whether shown or not shown on the plans, are to be preserved unless approval to remove is given in writing by the Engineer or their removal has been designated thusly: ⊗ on the plans. The Contractor shall use special precautions to avoid damage to all other trees. When, in the opinion of the Engineer, trunks or branches of trees would be endangered by the use of mechanical excavation devices, hand excavation will be required. The cost of tree removal and disposal and the cost of tree protection shall be included in the price bid for Trees Removed and Disposed of.

SAFETY REQUIREMENTS

The Contractor and Sub-Contractor shall be solely responsible for all federal, state and local safety requirements, together with exercising precautions at all times for the protection of persons (including employees) and property. It is also the sole responsibility of the Contractor and Sub-Contractor to initiate, maintain and supervise all safety requirements, precautions and programs in connection with the work.

EXISTING UTILITIES

The identity and location of the existing underground utility facilities known to be located in the construction area have been shown on the plans as accurately as provided by the Owner of the underground utility. Delaware County and/or the Engineer assume no responsibility as to the accuracy of the underground facilities shown on the plans.

Support, protection and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor. The cost of this work shall be included in the price bid for the various items.

The Contractor shall cause notice to be given to the Ohio Utilities Protection Service (O.U.P.S.) (Telephone 1-800-362-2764 toll free) and to the Owners of underground utility facilities shown on the plans who are not members of a registered underground protection service in accordance with Section 153.64 of the Revised Code. The above mentioned notice shall be given at least 48 hours prior to start of construction.

The following utilities are located within the work limits of this project and the Owners do not subscribe to a registered underground utility protection service.

UTILITY	OWNER	TELEPHONE
Water Mains	Delco Water Co. 6773 Olentangy River Road Delaware, Ohio 43015	(740) 548-7746
Sanitary Sewers	Delaware County Sanitary Engineer 50 Channing Street Delaware, Ohio 43015	(740) 833-2240
Storm Sewers	Village of Powell 47 Hall Street Powell, Ohio 43065	(614) 885-5380

AREA RESTORATION

All areas within the public right-of-way, including fence, that are disturbed by this project, shall be restored to original or better condition, per Item 659 (Seeding and Mulching), Item 607 (Fence), or other applicable specification.

STORAGE OF EQUIPMENT AND MATERIALS

No materials, including pipe, shall be stored within twenty (20) feet of the edge of pavement of Liberty Road nor within fifty (50) feet of any intersecting street or driveway. During non-working hours, storage of equipment shall comply with these same requirements. Compliance with these requirements shall not in any way relieve the Contractor of his legal responsibilities or liabilities for the safety of the public.

EXPOSE

The Contractor shall expose the utility or structure indicated sufficiently in advance of laying the proposed sewer in order to verify the proposed location. Cost to be included in the price bid for the various sewer items.

NON-RUBBER TIRED VEHICLES

No non-rubber tired vehicles shall be moved on public streets.

SIGNS, FENCES, DRAINAGE STRUCTURES, ETC.

All signs, fences, shrubs, drainage structures, or other physical features disturbed or damaged during work under this Contract shall be restored to their original condition by the Contractor. Unless otherwise provided in the Contract, the cost of all such work shall be included in the price bid for the various sewer items.

SANITARY FACILITIES

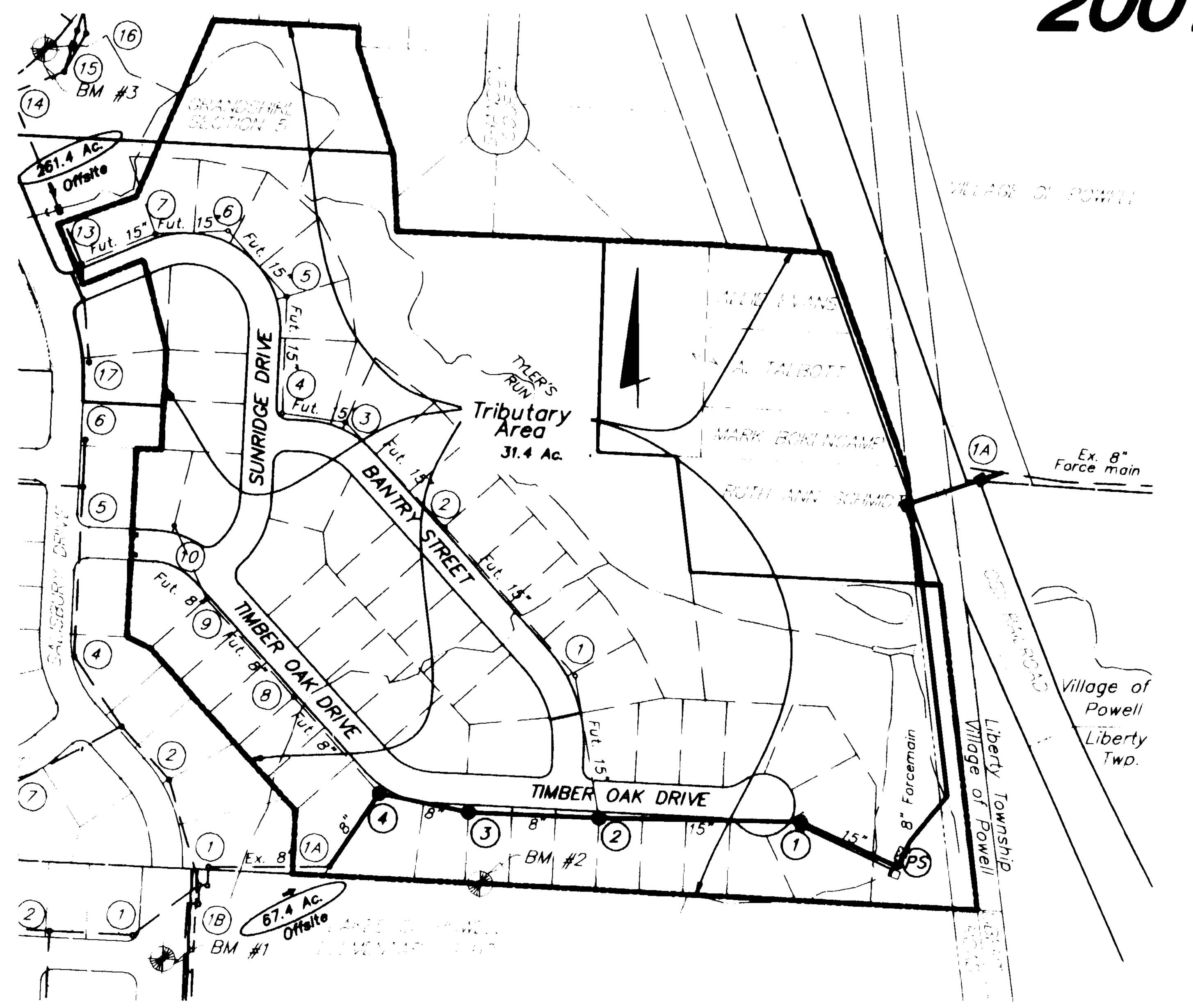
The Contractor shall furnish and maintain sanitary convenience facilities for the workmen and inspectors for the duration of the work.

EXTRA COMPENSATION

No extra compensation will be paid the Contractor by reason of compliance with any of the requirements indicated on the plans, but payment shall be deemed to be included among the several items, as bid upon, unless otherwise specifically provided.

RIGHTS OF WAY

In addition to direct requirements of the Contract Documents, the Contractor shall observe and conform to the specific requirements of all rights-of-way including easements, court entries, rights of entry or action filed in court in accordance with the code of the applicable governing agency. The cost of the operations necessary to fulfill such requirements shall be included in the price bid for the various items of the contract unless specific provision is made in the Contract Documents for the measurement of and payment for such cost specific items of the Contract.



TRIBUTARY/INDEX MAP
Scale: 1"=200'

TRAFFIC

All traffic control devices shall be furnished, erected, maintained and removed by the Contractor in accordance with the "Ohio Manual of Uniform Traffic Control Devices for Streets and Highways", copies of which are available from the Ohio Department of Transportation, Bureau of Traffic, 1980 E. Broad Street, Columbus, Ohio 43215.

Type "C" Steady Burn Lights shall be used on all barricades, drums and similar traffic control devices in use at night.

All trenches shall be backfilled or securely plated during non-working hours.

Ingress and egress shall be maintained at all times to public and private property.

MAINTAIN DRAINAGE

The flow in all sewers, drains and watercourses encountered shall be maintained by the Contractor at his own expense, and whenever such watercourses and drains are disturbed or destroyed during the prosecution of the work they shall be restored by the Contractor at his own cost and expense to a condition satisfactory to the Engineer.

BACKFILL

Generally, all backfill shall be in accordance with Section 901.17 of C.O.C. CMS.

All trenches under pavement within public right-of-way or where the front face of trenches, paralleling the pavement is located within the pavement influence shall be backfilled with materials as per CMSC City of Columbus Item 912.

The first 36" of backfill above the top of pipe shall be filled with a material meeting the following gradation:

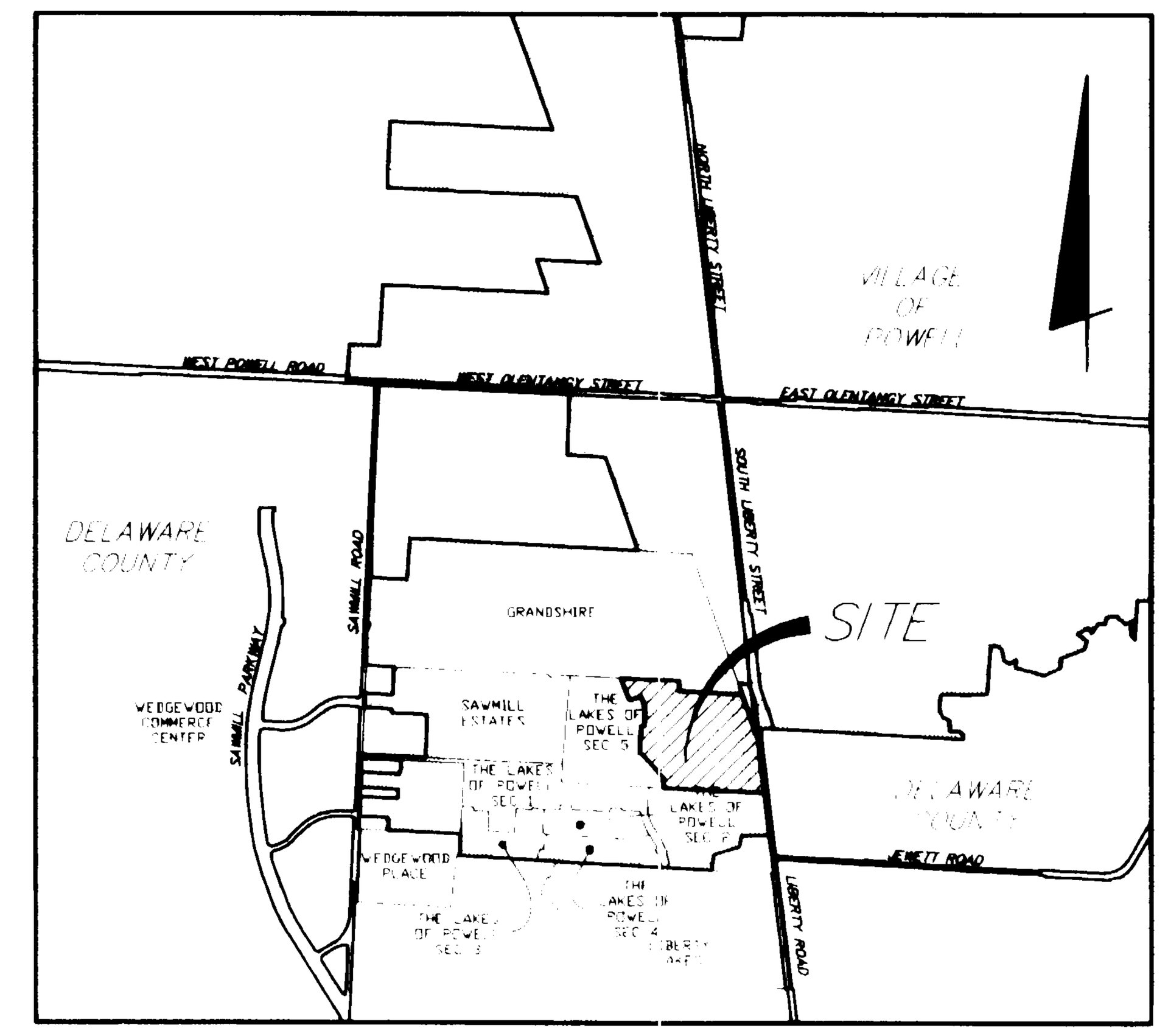
Sieve	Total Passing % by Weight
1"	100
No.8	3-5

or Control Density Fill per 912.02. Elsewhere within the right-of-way backfill shall be as per Item 911 CMSC City of Columbus.

Granular Material shall be used above the top of pipe to a sufficient depth to achieve compaction without crushing the pipe. Item 912 shall be used under Pavement Crossing as shown on the Compacted Backfill Detail and between sanitary pipe and other underground conduit, i.e. storm sewer, waterline, etc.

The contractor shall be required to submit testing results for backfill compaction to The Village Engineer for approval. Soil Engineer shall be approved by The Village Engineer.

Where utilities are under or within five (5) feet of proposed streets, roads or drives the trench backfill shall be placed to within six inches of the proposed finish grade outside the pavement area and to the subgrade within pavement area in accordance with Item 912 CMSC (City of Columbus).



LOCATION MAP
No Scale

Developer

M/I Homes, Inc.
3 Easton Oval
Suite 540
Columbus, Ohio 43219

INDEX OF SHEETS

BENCH MARKS
(NGVD 1929)

B.M. #1: PK Nail at C/L Int. of Salisbury Drive (Formerly Liberty Parkway) & Stamford Drive, Lakes of Powell, Sec. 1
Elev. = 903.69

B.M. #2: R.R.S. S. Side of 26" Ash 500'± E. of Salisbury Drive on S. P/L
Elev. = 906.20

STANDARD CONSTRUCTION DRAWINGS

The Standard Construction Drawings Listed On These Plans Shall Be Considered A Part Thereof.

DELAWARE COUNTY
01 02 03 04 05 06
14 20 23 24 25

CITY OF COLUMBUS
AA-S106 AA-S149
AA-S107 AA-S150

O.D.O.T
2-2-B

PIPE MATERIALS

All Force Mains shall be Cast Iron Pipe meeting the requirements of ANSI Specifications A21.6 (AWWA C106) or A21.8 (AWWA C108); Ductile Iron Pipe meeting the requirements of ANSI A21.51 (AWWA C151); PE Plastic Pipe meeting the requirements of ASTM Specification D-1248 and D-2837 or PVC Pipe Meeting the requirements of ASTM D-1784 and ASTM D-2241 and shall be a minimum SDR 21. Cast Iron Pipe and Ductile Iron Pipe minimum barrel thickness shall be calculated meeting the requirements of the Standard Plans and Specifications for Construction of Sanitary Facilities in Delaware County, Ohio.

ESTIMATE OF QUANTITIES

ITEM	QUANTITY	UNIT	DESCRIPTION
201	LUMP	SUM	Clearing and Grubbing
207	715	Lin. Ft.	Sedimentation Control – Filter Fabric Fence
252	12	Sq. Yds.	Driveway Pavement Replacement, Type IIIA
304	105	Cu. Yds.	8" Aggregate Base
402	40	Tons	Asphalt Concrete (1 1/2")
404	40	Tons	Asphalt Concrete (1 1/2")
408	475	Sq. Yds.	Bituminous Prime Coat
604	4	Each	Precast Type "A" Manhole
609	15	Lin Ft.	Extruded Asphalt Curb
659	4,700 ***	Sq. Yds.	Seeding and Mulching
901	490	Lin Ft.	15" San. Sewer
901	500	Lin Ft.	8" San. Sewer
914	135 **	Lin Ft.	6" Riser Pipe
915	10	Each	15"x6" Wye
915	5	Each	8"x6" Wye
918	180 *	Lin Ft.	6" Service Lateral (2 per trench in R/W)
918	180 *	Lin Ft.	6" Service Lateral (1 per trench in R/W)
918	15 *	Lin Ft.	6" Service Lateral (1 per trench outside R/W)
919	135	Sq. Yds.	Watercourse Erosion Protection
SPEC	LUMP	SUM	Pump Station and Valve Chamber, Complete
SPEC	2	Each	Automatic Air Release Valve & Manhole
SPEC	755	Lin Ft.	8" Sewage Force Main
⚠ 909	130	Lin Ft.	16" Steel Casing Pipe, Bored and Jacked
SPEC	LUMP	SUM	Bioxide System, Complete
SPEC	LUMP	SUM	Landscaping – Pump Station

Calc. By: AEF Date 3/29/01 Chkd. By: ______ Date ______

Notes: The quantities shown on this plan are the Engineers best determination of the work to be performed. The Contractor, in making his bid, should make his own determination of the quantities and discuss any differences with the Engineer prior to bidding.

* Actual pipe length required rather than trench length

** The length of the riser is the measurement from the invert of the main to the top of the riser.

*** Seeding and mulching to be placed over all areas disturbed by construction.

Signatures below signify only concurrence with the general purpose of this project. All technical details are the responsibility of Evans, Mechwart, Hambleton, & Tilton, Inc., Consulting Engineers and Surveyors.

Approved this 16 day of April ,2001 — County Commissioner

Approved this 16 day of April ,2001 James D. Ward — County Commissioner

Approved this 16 day of April ,2001 — County Commissioner

Approved this 4th day of April ,2001 Jack Smelker — Delaware County Sanitary Engineer

Village of Powell:

The signatures below signify only concurrence with general purposes and general location of the project. All technical details remain the responsibility of the Engineer preparing the plans.

Approved this 6TH day of APRIL ,2001 — Village Engineer

Approved this 11th day of April ,2001 — Mayor

Approved this 6TH day of APRIL ,2001 — Planning & Zoning Commission

PREPARED BY
EVANS, MECHWART, HAMBLETON & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS
GAHANNA, OHIO

STATE OF OHIO — BRIAN E. MACY 63396 — REGISTERED PROFESSIONAL ENGINEER

Registered Engineer — No. 63396 — Date March 29, 2001

⚠ Rev. 5-14-01. Quantity Change to Steel Casing Pipe

CHANGE ORDER SCHEDULE

Approved	Prepared	Change	Date	Items	Sheet No.
J. S.	aaf	⚠	5-14-01	Various - See Individual Sheets	1,2,4,5,8-10

2000-0493.01

Revised as Constructed 3/18/02 - Wye Locations, T.C.'s and Inverts; Force Main (V&H)

GENERAL NOTES (CONT.)

The Contractor shall investigate and locate all utilities prior to construction.

The Contractor shall notify the Village Engineer's office seventy-two (72) hours prior to any construction.

Contractor shall post "Construction Traffic 20 mph" signs and provide periodic street sweeping.

The proposed elevations of pipes and the estimated lengths of pipes may be adjusted by the Engineer during the entire improvement of this project. Basis of payment for possible adjustments shall be included in the unit price bid for various sanitary sewers to be adjusted.

Sanitary structures are to be as per the Delaware County Sanitary standards.

The Contractor shall include in the unit price bid for Item 901 all trenching, backfilling as per plan, and the removal and disposal of brush, trees, and stumps within the area of excavation of the trench.

The Contractor shall provide and install wye poles at all wye locations as constructed. Wye poles shall extend above existing or proposed grade, whichever is higher, a minimum of 2'-0".

All items of work for which no specific method of payment is provided, including the restoration of disturbed or damaged property to its original state, shall be performed by the Contractor and the cost of same shall be included in the price for the various related bid items.

The Contractor shall obtain all necessary permits.

The Contractor is responsible to coordinate the relocation of any utilities as required by the plan with the utility company.

Access to all adjoining properties shall be maintained at all times.

Finish grade at all sanitary manholes shall be 6" below top of casting to avoid unnecessary infiltration into the sanitary sewer system.

All manhole castings shall have the word "Sanitary" stamped into them.

Service risers shall be installed where depth from wye fitting to the existing or proposed surface elevation exceeds 10 feet. Top of riser shall be 9'± below existing or proposed surface, whichever is higher unless otherwise noted on plan.

All sanitary main 6" through 15" shall have Vitrified Clay Pipe meeting the requirements of ASTM C-700. If the entire length between adjacent manholes is 28' deep or less PVC sewer pipe meeting the requirements of ASTM D-679 or concrete sewer pipe meeting the requirements of ASTM C76, Wall B. All 6" sanitary sewer services shall be in compliance with ASTM D-3034.

The sanitary sewer shall be tested by the exfiltration method. Allowable leakage shall not exceed 100 gallows per inch of pipe diameter per mile per 24 hours. Contractor shall cooperate with Delaware County Engineer and provide all necessary equipment to perform sewer test.

All sanitary sewer line installed on this project using PVC pipe will be subject to deflection testing by pulling an approved mandrel. Acceptable deflection versus time criteria are located in Section 5.5 of the Delaware County Standard Plans and Specifications for Construction of sanitary facilities.

No down spouts, surface inlets, foundation drains, subsurface drains any other source of ground or surface water shall be connected, either directly or indirectly, to or discharge into any part of the sanitary sewage system. Such drains, inlets and down spouts shall be constructed as to drain or be pumped into the street, gutter, ditch or storm sewer.

No connection shall be made to receiving sanitary system until the project has been fully installed, tested and approved.

CONSTRUCTION LAYOUT: All construction layout shall be performed by an engineer or surveyor, registered in the State of Ohio, at no cost to the Village. Cut sheets shall be prepared for all sewers and waterlines following the format established by the Village. At least one (1) copy of all cut sheets shall be delivered to the Village Engineer and Delaware County Sanitary Engineer two (2) working days prior to beginning any work. The Contractor is responsible for maintaining layout stakes during construction. All disturbed stakes shall be replaced by a Registered Surveyor prior to any construction activity. Cost for restaking shall be the Contractor's responsibility.

CONSTRUCTION TRAFFIC: Construction traffic shall be confined within a development as described herein and routed through the Village as directed by the Village Engineer. During construction of, and prior to the final acceptance of the streets which are to become public, construction traffic shall be controlled as follows:

(a) The Developer shall post signs at entry points of a major development directing construction traffic in accordance with this project.

The Developer of The Lakes of Powell Section 6 will preserve as many existing trees as possible during the course of construction on The Lakes of Powell Section 6. To prevent mechanical and compaction injury to existing trees not exempt under Article XXIII Landscaping - per Village of Powell Zoning Code, the Developer will require the Contractor and Builders to install snow fencing or barrier around a tree or group of trees to protect the trees and forest floor. Tree protection shall be placed before any construction or grading is begun and shall be maintained in repair during construction. The fencing shall be located as far out from the trunk as the dripline to restrict construction within that area.

All disturbed surface areas not covered by structures or a hard surface improvement shall be covered with stone or shall be seeded or sodded, per EPA and Village of Powell Erosion & Sedimentation Control Requirements and sloped to drain. All grass or stone areas shall have a minimum slope or grade of eight-tenths percent; except that the ground next to buildings shall slope away from the building at a five percent grade for a minimum of ten feet.

In addition to all of the above, the Contractor shall read chapter 107 of The Village of Powell's Development Regulations, and abide by required specifications listed in same.

A preconstruction conference shall be held at the Village Engineer's office at least 15 calendar days before any work is begun. Representatives of the Owner, Design Engineer, and Contractor shall be in attendance. A schedule of sequence of events, during construction, must be submitted for review at least 3 days prior to this meeting.

SEEDING

Permanent Seeding shall be done between March 15 and October 15. If any seeding is done between October 15, and March 15, it shall be classified as "Temporary Seeding" (100% Annual Rye Grass). Seed Mixtures shall be approved by Village Engineer prior to placement. Fescue seed will not be permitted.

The Seeding (temporary) shall be commenced within 7 days after the overland street and lot grading is completed and are to remain undisturbed for more than 45 days.

Rates of application of 659 Items shall be as follows:
Seed: 4Lb/1,000 Sq. Ft.
Fertilizer: 20 Lbs/1,000 Sq. Ft. (12-12-12).
Mulch (Straw): 2 Tons/Acre

Based on construction start up date, and Contractor's schedule of events, the seeding mixture and sediment control may be changed by the Village Engineer, due to a nongrowing season at time of start up.

SURVEY GENERAL NOTES

Sources of recorded survey data are the records of the Delaware County, Ohio, Recorder referenced in the plan and text of this plan.

The following utility companies may have facilities located on this project:

GTE
550 Leader Street
Marion, Ohio 43302
(740) 383-0551

COLUMBIA GAS CO.
939 West Goodale Blvd.
Columbus, Ohio 43212
(614)460-2156

AMERITECH
150 East Gay Street, Rm. 7A
Columbus, Ohio 43215
(800)362-2764

SUBURBAN NATURAL GAS
2626 Lewis Center Road
Lewis Center, Ohio 43035
(614)548-2450

COAXIAL COMMUNICATIONS
3770 East Livingston Avenue
Columbus, Ohio 43227
(614)236-1292

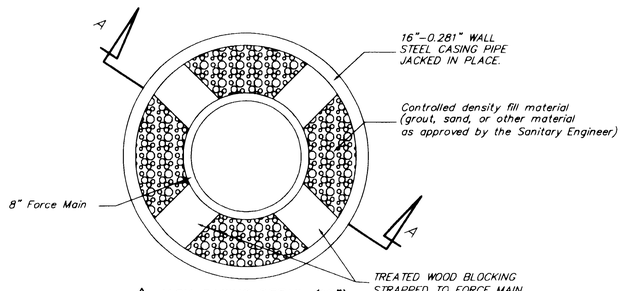
AMERICAN ELECTRIC POWER
215 North Front Street
Columbus, Ohio 43215
(614)836-2570

WARNER CABLE
1266 Dublin Road
Columbus, Ohio 43216
(614)481-5050

NOTE: WELD ALL ENCASEMENT PIPE JOINTS.

BORING DETAIL SECTION A-A

NOTE: TREATED WOOD BLOCKING TO BE 6 INCHES LONG
No Scale

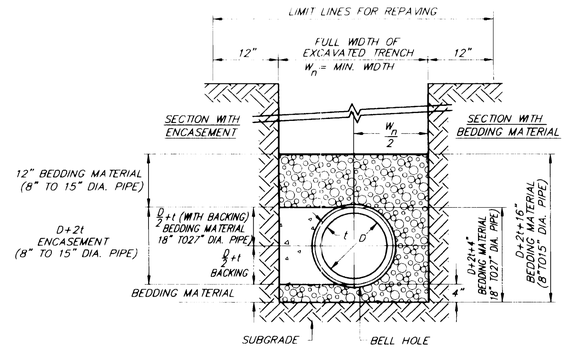


⚠ JACK CASING DETAIL (16")

NOTES:

1. TREATED WOOD BLOCKING TO BE 8 INCHES LONG BANDED TO EACH LENGTH OF PIPE, 8'-0" MAXIMUM C/C. ALLOW 1 INCH MAXIMUM CLEARANCE BETWEEN BLOCKS AND CASING PIPE.

2. STEEL CASING PIPE TO BE 16" IN DIAMETER UNLESS APPROVED IN WRITING BY THE ENGINEER. MINIMUM YIELD STRENGTH=35,000 PSI; NOMINAL WALL THICKNESS = 0.281" UNLESS CALCULATIONS ARE SUBMITTED THAT JUSTIFY OTHER WALL THICKNESSES.



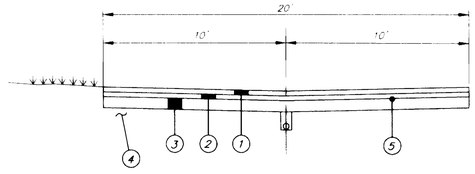
NOTES:
SECTIONS SYMMETRICAL ABOUT ℄.
DIMENSIONS ARE EXPRESSED IN INCHES.
BACKING OR ENCASEMENT TO BE CLASS "A" CONCRETE, COLUMBUS CMS ITEM 905.
ON SANITARY SEWER CONSTRUCTION TRENCH DAMS ARE REQUIRED AS SPECIFIED UNDER 901.11.

D	W_n
6	30
8	30
10	30
12	36
15	45

INCHES

SANITARY SEWER BEDDING DETAIL

No Scale

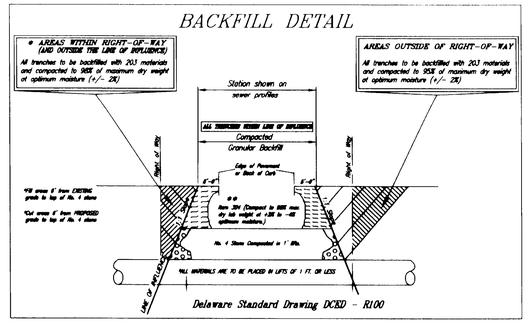


PUMP STATION ACCESS DRIVE TYPICAL PAVEMENT SECTION

No Scale

1. 1 1/2" Asphalt Concrete, Item 404
2. 1 1/2" Asphalt Concrete, Item 402
3. 8" Aggregate Base, Item 304
4. Subgrade, Item 203
5. Bituminous Prime Coat, Item 408

BACKFILL DETAIL



Delaware Standard Drawing DCBD - R100

⚠ Rev. 5/14/01
Change from PVC to Steel Casing Pipe.

VILLAGE OF POWELL, OHIO

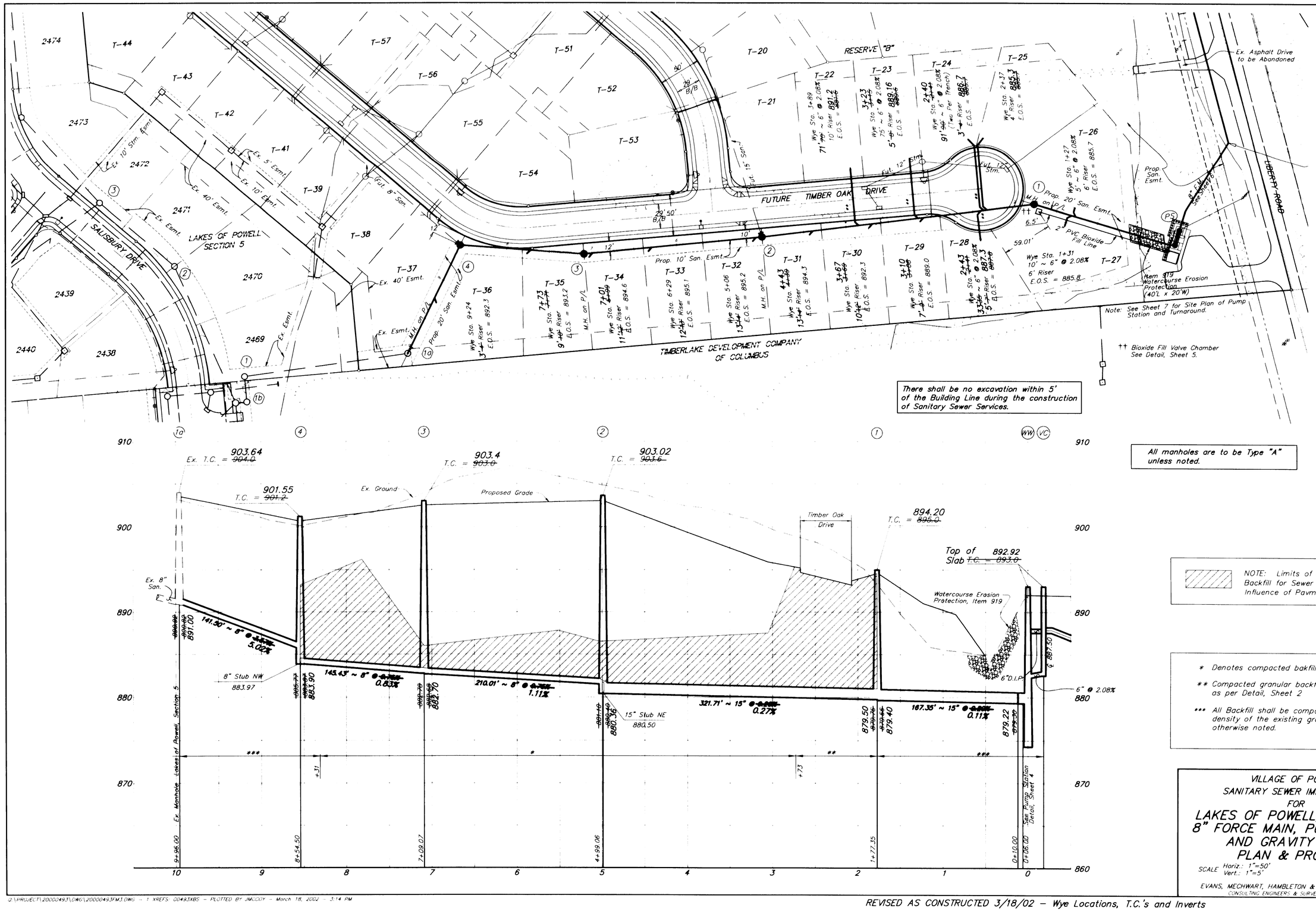
SANITARY SEWER IMPROVEMENT

FOR

THE LAKES OF POWELL, SECTION 6
8" FORCE MAIN, PUMP STATION AND GRAVITY SEWER

SCALE: As Shown

EVANS, MECHWART, HAMBLETON, & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS



NOTE: Limits of Granular Backfill for Sewer Within Influence of Pavment.

* Denotes compacted bakfill per Item 911.

** Compacted granular backfill per Item 912 as per Detail, Sheet 2

*** All Backfill shall be compacted to the density of the existing ground unless otherwise noted.

VILLAGE OF POWELL
SANITARY SEWER IMPROVEMENT
FOR
LAKES OF POWELL, SECTION 6
8" FORCE MAIN, PUMP STATION AND GRAVITY SEWER
PLAN & PROFILE

SCALE Horiz.: 1"=50'
Vert.: 1"=5'

EVANS, MECHWART, HAMBLETON & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS

3/10

D:\PROJECT\2000493\DWG\2000493FM3.DWG - 1 XREFS: 00493XBS - PLOTTED BY JMCCOY - March 18, 2002 - 3:14 PM

REVISED AS CONSTRUCTED 3/18/02 – Wye Locations, T.C.'s and Inverts

2000-0493.01

PUMP STATION GENERAL NOTES

All General Notes are to be hereby considered for the construction work of the sewage pump station, where applicable.

The Contractor shall comply with material and construction requirements of Delaware County Sanitary Engineer. The Contractor shall obtain any and all permits required, and pay cost for any and all fees.

The Contractor shall furnish all materials, labor, tools, transportation, incidentals and appurtenances to complete in every detail and leave in working order all items of work called for and/or shown on the accompanying drawings. Any material or work not specifically mentioned or shown on the drawings, but necessary to complete the work, shall be furnished.

The Contractor is required to visit the site and fully inform himself concerning all conditions affecting the scope of the work. Failure to visit the site shall not relieve him from any responsibility in the performance of this Contract.

The Contractor shall investigate and locate all existing utilities and notify all utility companies a minimum of 48 hours prior to construction.

The Contractor shall provide 4" to 6" sand or grit leveling base under each concrete structure and shall place granular fill as required, dependent on soil conditions.

Contractor shall grade area to drain surface water away from station.

All disturbed areas shall be seeded and mulched after final grading by Contractor.

Roof drains, foundation drains, and other clean water connections to the sanitary system are prohibited.

All General Notes shown on Sheet 1 and 2 are to be hereby considered for the construction work of the wastewater pump station, where applicable.

1.0 PUMP STATION SPECIFICATIONS

1.01 GENERAL

A. Scope of Work

Work under this section includes furnishing and installing the pump station, complete as shown on the Drawings and as specified herein.

1.02 WET WELL AND VALVE CHAMBER

A. The wet well valve chamber shall be constructed of 8' x 8' precast concrete vault. Concrete shall comply with ACI Committee 350 requirements for Sanitary Structures and ODOT CMS Item 511 – Concrete For Structures; reinforcing steel per ODOT CMS Item 709 – Reinforcing Steel. Concrete shall test minimum 4500 psi at 28 days and finish shall be free of spills, chips, and honeycombs. Openings for piping, sumps, roof hatches, electrical conduit and sensor lines shall be cast smoothly into the structure. Chipping or punching openings will not be allowed under any circumstances.

Asphaltic tar based mastic sealant shall be neatly applied between precast sections before the next section is installed. Two coats of Thoroseal waterproofing shall be liberally applied on all section seams, inside and outside, after which two complete coats shall be applied to all exterior concrete surfaces. Drying time between successive coats shall be the minimums recommended by the manufacturer. Silicon caulking shall be applied at all perpendicular joints.

Contractor shall submit 6 sets of supplier's shop drawings with all dimensions and pertinent information included.

1.03 ACCESS LID AND FRAME ASSEMBLIES

A. The wet well top shall be fitted with double leaf 36" x 48" and a 24" x 30" Heavy-Duty Access Covers "Safehatch" by Flygt.®

B. Each door shall have a handle, a latch to hold it in the open position, and lockable hasp.

C. The access covers, cover frames, and top slab shall be designed for a 300 p.s.f. live load

D. The frame assemblies shall be placed in the concrete wet well top when it is poured.

1.04 PIPING

A. The Contractor shall supply and install all piping and valves required in the concrete valve chamber as shown on the Drawings. Flanged Joint–Ductile Iron Pipe shall be Class 52 (min.) conforming to AWWA C–110, C–150 and C–151 w/ rubber gaskets per C–111.

1.05 PUMPS – (Explosion proof motors & electrical items are required per Class 1, Div. 1, Group D requirements.)

A. Furnish and install two (2) submersible pumps as called for on the Drawings and as specified herein. Pumps shall be Model NP–3127 as manufactured by ITT Flygt.

B. Pump impellers shall be Model 421.

C. Each pump shall have a capacity to pump 475 GPM at a total dynamic head (TDH) of 40 feet. Pump shut off head shall exceed 64 feet. Pump motors shall be non–overloaded over the entire range of the pump performance curve. Pump efficiency at 475 GPM shall exceed 65%.

D. Motors shall be 10 HP (max.), 1760 RPM (max.) designed to operate on 460 volt, three phase 60 hertz power. Motors shall have two (2) heavy duty ball bearings; design life shall be 50,000 hours (B–10). Heat sensors shall be imbedded in each motor winding to stop motor if winding exceeds a temperature of 125°C; motor to be re–energized when temperature returns to safe operating temperature. The common pump/ motor shaft shall be 416 stainless steel.

E. Seals – Each motor shall be protected by two (2) mechanical seal assemblies, in tandem, with a seal chamber between the seals. Seal chambers shall be oil filled to lubricate seal faces and to transmit heat from shafts to outer shells. Seal faces shall be carbon and ceramic and lapped to a flatness of one light band. Lower seal faces shall be tungsten carbide. A double electrode shall be mounted in the seal chamber to detect any water entering the chamber through the bottom seal. Water in the chamber shall illuminate a warning light in the control panel and also activate a fault circuit of the automatic phone dialer; this signaling shall not stop motor. A Mini CAS (Control and Status) monitoring unit shall be mounted in the control panel and connected to the thermal switches and Float Leakage Sensor (FLS).

F. Pump monitoring shall incorporate the use of Flygt's SUBMEG–D, automatic motor insulation device, to protect the electrical motor.

G. Pump volute cases shall be cast iron with 6" discharge flange. Wearing surfaces shall be fitted with replaceable bronze wearing rings. Provide each pump with a 4" X 6" "Slide–Away" base elbow if required by the pump manufacturer.

H. Pump and motor castings shall be high tensile strength cast iron treated with phosphate and chromate rinse. All fasteners, for each assembled pump and motor unit, shall be 302 stainless steel.

I. Pumps shall include ITT Flygt 4901 flush valve.

J. Power Cables – Each power cord and control cord shall be double sealed. The power & control conductor shall be single strand sealed with epoxy potting compound and then clamped in place with rubber seal bushing to seal outer jacket against leakage and to provide for strain pull. Cords shall withstand a pull of 300 pounds. Insulation of power and control cords shall be type SO, SOW, or SOW–A. Both control and power cords shall have a green carrier ground conductor that attaches to motor frame. Contractor shall field measure for requirements of cable lengths to connection points; no field splicing of cables will be allowed.

K. Lift–Out Rail system – Provide two (2) pump slide assembly units including 4" x 6" flanged elbows and mounting bases. The design of this system shall be such that a minimum up or down force, via lifting chains, exerted between the stationary base elbow and the pump discharge flange will be sufficient to remove or place the pumps into proper position for leak–proof operation.

A seal plate shall be attached to each pump and with an "O" ring embedded in machined face to mate against base elbows. Tapered lug connections shall allow for positive leak–proof seals as well as easy removal and replacement. Provide two (2) pump connection units.

Two (2) rail pipes shall be used to guide the pump from the surface to the discharge base connection. The guide rails shall be 2–inch schedule 40 stainless steel pipe. The weight of the pump shall bear solely on the discharge base and not on the guide rails. Rail systems which require the pump to be supported by legs which might interfere with the flow of solids into the pump suction will not be considered. The guide rail shall be firmly attached to the access hatch frame. Systems deeper than 21 feet shall use an intermediate guide for each 21 feet of wet well depth.

An adequate length of 1/4" diameter stainless steel lifting chain shall be supplied for removing each pump. The chain shall be of sufficient length and shall include an adequate number of lifting rings for easy removal. Provide and install chain for two (2) pump units. Chain shall be rated at 1600# (Min.) safe working load capacity.

L. Operation and Maintenance Manuals: Three (3) copies of the manufacturer's O & M manuals, for the specified pumps, shall be delivered to the Owner to familiarize themselves with the operation of these pumps.

1.06 PUMP CONTROLS

A. Level Controls

1. A Multitrode Liquid level control system as supplied by Flygt shall also be mounted in the wet well to control the All Pumps OFF Level, Lead Pump ON Level, High Water Alarm Level and Standby Pump ON Level.

2. Ultrasonic Level controller shall be suspended in the wet well to provide backup level control monitors.

B. Control Panel

1. Control Panel shall be Multitrode MT2PC Duplex Pump Controller as manufactured by Flyght. Flyght Mod–Bus is required as part of the Flyght controlling/monitoring system.

△1 **1.07 CIRCULAR CHART RECORDER**

A. The Contractor shall install a DR 4500 A Truline Circular Chart Recorder per Deleware County Sanitary Engineer Specifications.

1.08 CONFINED SPACE ENTRY SIGNS

A. Confined space entry signs shall be provided and installed at both sides of entry doors at the following locations:

1. Wet Well

A. Sign posts shall be 4" x 4" (nominal) meeting the requirements of ODOT CMS Item 710.14 x 7'–0" pressure treated lumber.

B. Installation

1. Posts – install posts on opposite sides of each structure near each access opening as directed on site by the Engineer. Posts to be placed in 8" diameter holes at depths of 3.0' (min.) below finished grade. Posts shall be set plumb, centered in holes with concrete around them to within 6" from finished grade.

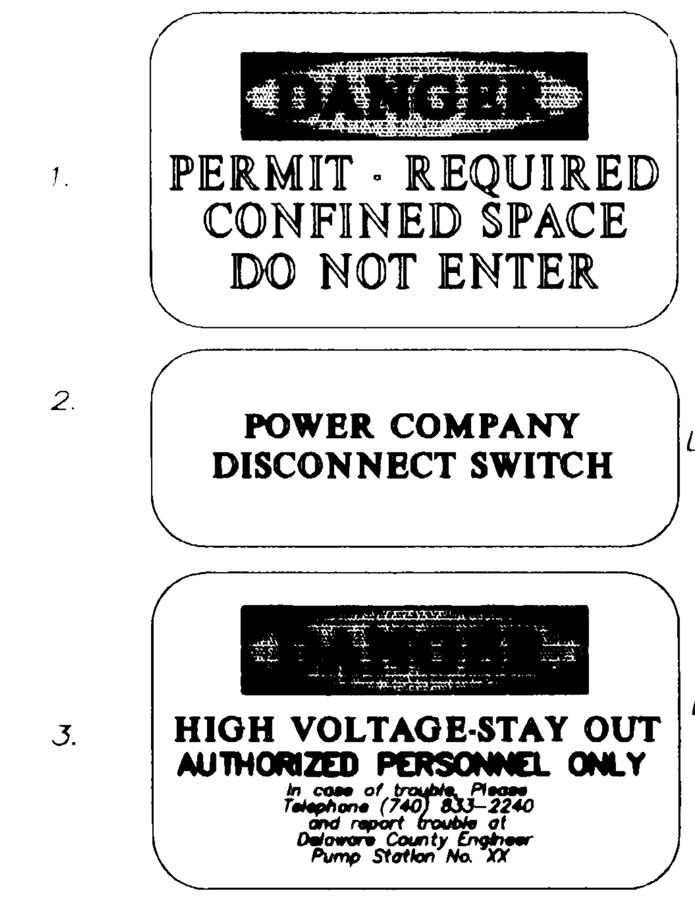
2. Secure each sign near top of posts that extend 4' above finished grade; use 2–3/8" x 3" cadmium plated lag screws and washers for attachment. Signs shall be readable from sides facing away from structures. A total of two (2) signs are required at each of the structures.

2. Valve Chamber

A. Signs shall be secured to building at door location.

B. Signs shall meet the requirements of Item 630 (ODOT) and be as follows.

1. Sign material shall be 0.063" thick aluminum.
2. Paint colors shall be red and black on white, non–reflective.
3. Approximate sign size: 11"x 16" wide.
4. Text and style: As follows:



LOCATION: UTILITY DISCONNECT SWITCH

LOCATION: CONTROL PANEL FRONT DOOR △1

1.09 PAINTING

A. All valve chamber piping and valves shall be painted (except flanges and machined edges). All painting preparations and application shall be in accordance with standard practice and per paint manufacturer's recommendations.

B. Paint brand types shall be ICI DeVoe Coatings (stated); equivalent types by Sherwin–Williams, Detroit Graphite, Rustoleum or equal.

C. Application

1. Priming

a. Piping – One (1) coat of (Tar Stop)
b. Valves – One (1) coat of (Rust Penetrating Primer No. 622)

2. Finish Coats – Brown color
Two (2) coats of (Glamortex Enamel)

1.10 PRESSURE GAUGES

A. Pump pressure gauges shall be provided and installed on the discharge lines of each pump furnished and placed on the project. Locations of gauges shall be on tops of the horizontal discharge piping, inside the valve chamber and upstream from each check valve.

B. Gauge and Accessory Requirements

1. Pressure gauges shall be solid front, liquid filled gauges with clear glass windows, bottom 1/4" NPT outlet and stainless steel Bourdon tube. All gauges shall be dual–calibrated in feet of water and psig. Gauges shall be 4 1/2" diameter. All gauges shall be fitted with an approved impulse dampener. Gauges shall be No. 1279SL with No. 1106S impulse dampener, by Ashcroft, or approved equal by U.S. Gauge, H.O. Trerice Co., Helicoid of Robertshaw.

2. Pump discharge side gauges shall have full dial registration for 0 to 50 psig / 0 to 100 feet.

C. Pressure Gauge Connections – At all pressure gauge connections, as denoted on the Drawings, furnished and installed pressure gauge connectors shall consist of brass gauge cocks with 1/4" brass union ends, No. 1094 by Ashcroft, or approved equal.

1.11 START–UP

A. The Contractor shall arrange and conduct a Pump Station Start–Up meeting with the Owner prior to discharge of sewerage to Pump Station.

B. All aspects of the pump station operation shall be tested and documented.

2.0 ODOR CONTROL SPECIFICATIONS

2.01 ODOR CONTROL SYSTEM (BIOXIDE DRIP)

The contractor shall provide the required items for a bioxide odor control system, as manufactured and installed by US Filter, to be installed adjacent to the wet well. The bioxide odor control system will consist of a storage tank and a closing pump that feeds directly to the wet well. The Contractor shall provide all electrical, tubing, and mounting requirements for the proper operation of the odor control system as required by the drawings and supplemental specifications.

3.0 HYDRAULIC POWERED GRINDER

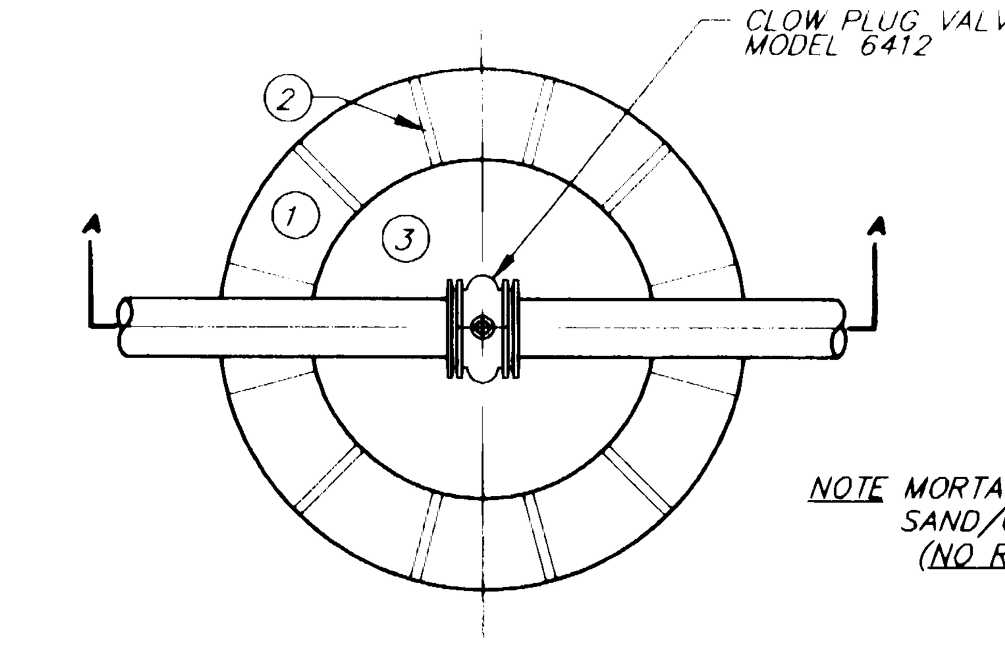
3.01 MUFFIN MONSTER

A hydraulic powered grinder (Muffin Monster) as manufactured by JWC Environmental shall be provided. The installation of the grinder shall include a stainless steel frame and retrieval system mounted on the interior wall of the wet well at the invert of the influent line. All controls and hydraulic power supply will be installed complete as part of the grinder installation.

PLAN OF FOUNDATION

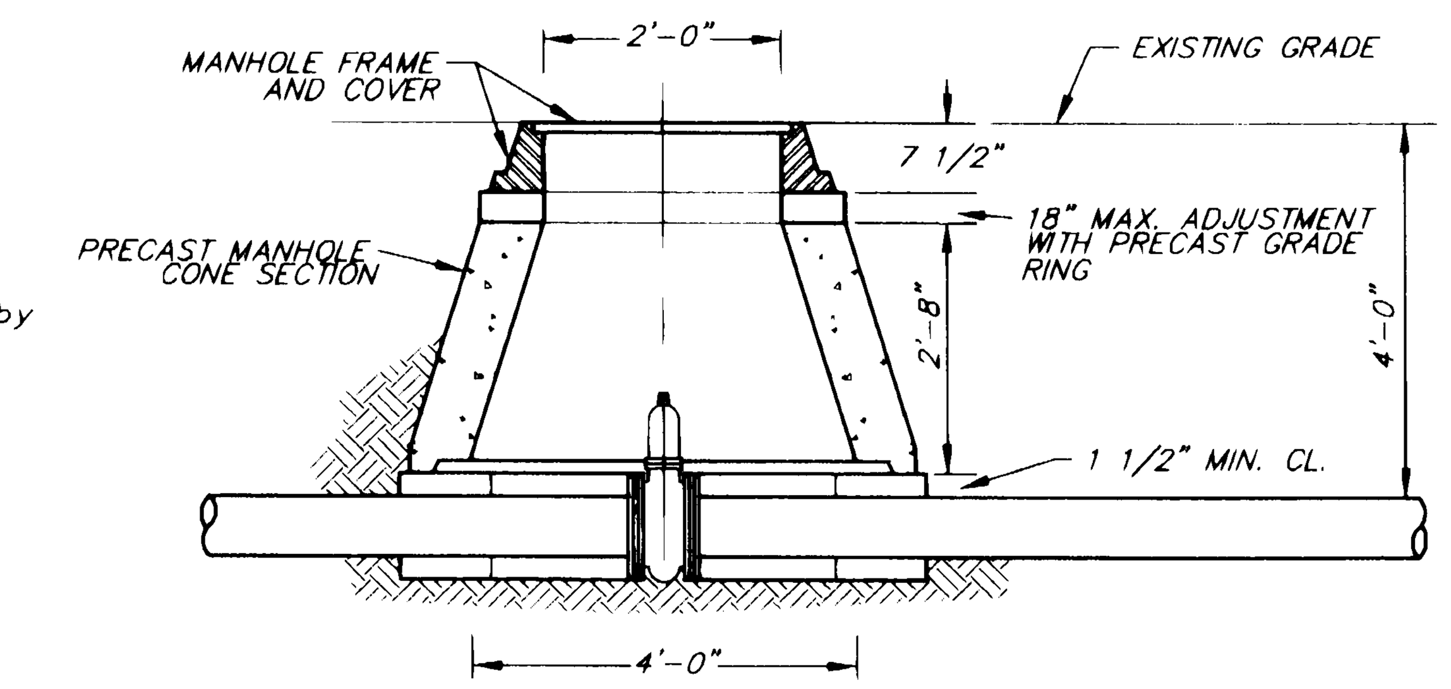
(1) BARREL BLOCK FOUNDATION
(2) MORTARED JOINTS
(3) OPEN BOTTOM FOR DRAINAGE

MANHOLE FRAME/LID
EAST JORDAN IRON WORKS, HEAVY DUTY, MACHINED BEARING SURFACE, TYPE 1000, 1600, OR EQUAL WITH VENTED LID WITH TYPE B, C, OR TYPE E LID, OR NEENAH R–1412–A1A OR UTILITY APPROVED



NOTE MORTARED JOINTS SHALL BE SAND/CEMENT MIXTURE. (NO RICH MORTAR)

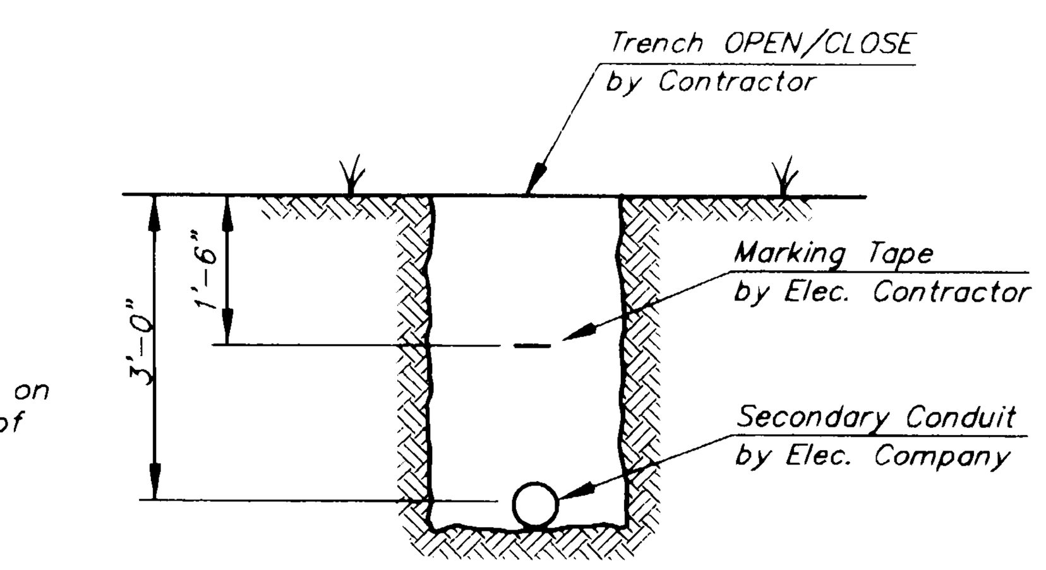
PLAN



SECTION A–A

PRECAST VALVE CHAMBER

Not to Scale



ELECTRICAL TRENCH DETAIL

Not to Scale
All Work by Electrical Contractor

△1 Rev. 5/14/01
Added Circular Chart Recorder Note; Revised Control Panel Front Door Sign.

VILLAGE OF POWELL, OHIO

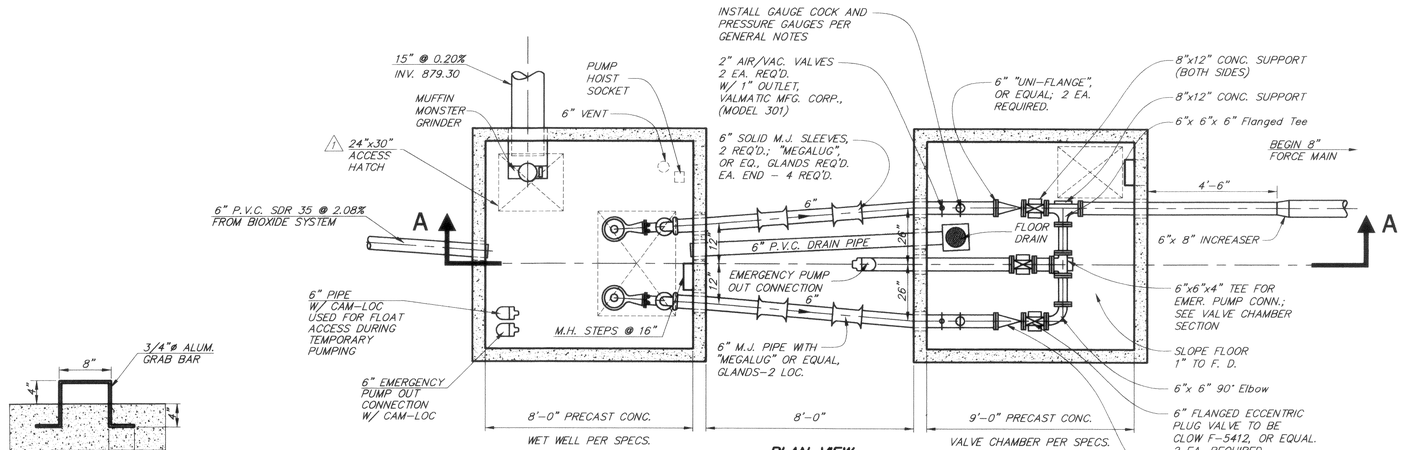
SANITARY SEWER IMPROVEMENT

FOR

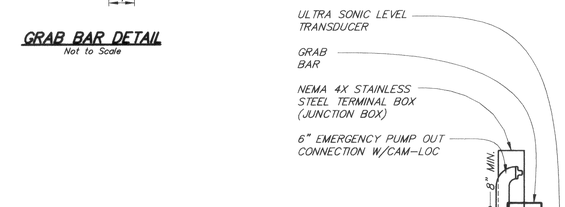
THE LAKES OF POWELL, SECTION 6
8" FORCE MAIN, PUMP STATION AND GRAVITY SEWER

SCALE: As Shown

EVANS, MECHWART, HAMBLETON, & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS



PLAN VIEW
Not to Scale



GRAB BAR DETAIL
Not to Scale

SECTION A-A
Not to Scale

NOTE: *ALUMINUM IN CONTACT WITH CONCRETE SHALL BE COVERED WITH A BITUMASTIC MATERIAL.*

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANTI-FLOTATION METHODS NEEDED DURING CONSTRUCTION UNTIL EARTH BACKFILL IS PROPERLY PLACED.

PUMP SCHEDULE

EMERGENCY PUMP "ON"	EL. 879.10
ALARM "ON"	EL. 878.85
LOW LEVEL PUMP "ON"	EL. 878.60
PUMP(S) "OFF"	EL. 875.80

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE

⚠ Rev. 5/14/01
Reduced Pumps to 10 H.P. Motors;
Revised Access Hatch Size.

VILLAGE OF POWELL, OHIO

SANITARY SEWER IMPROVEMENT

FOR

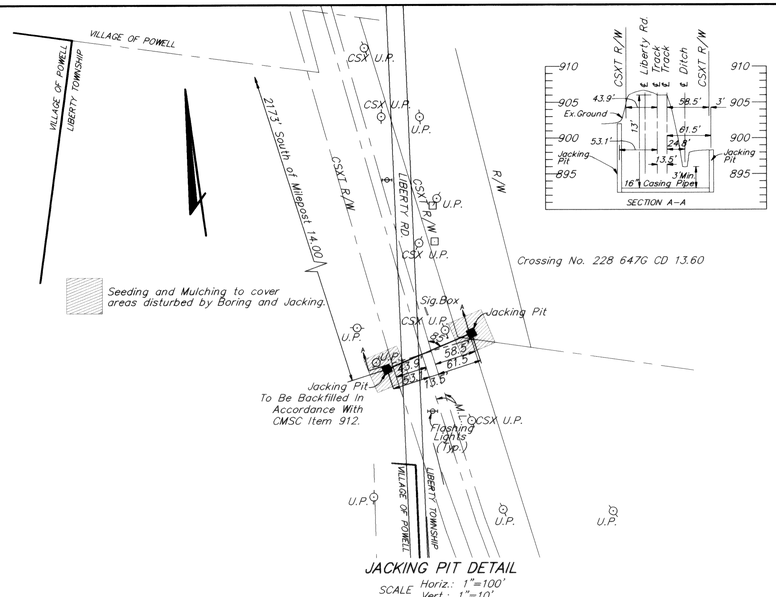
THE LAKES OF POWELL, SECTION 6 8" FORCE MAIN, PUMP STATION AND GRAVITY SEWER

SCALE: As Shown

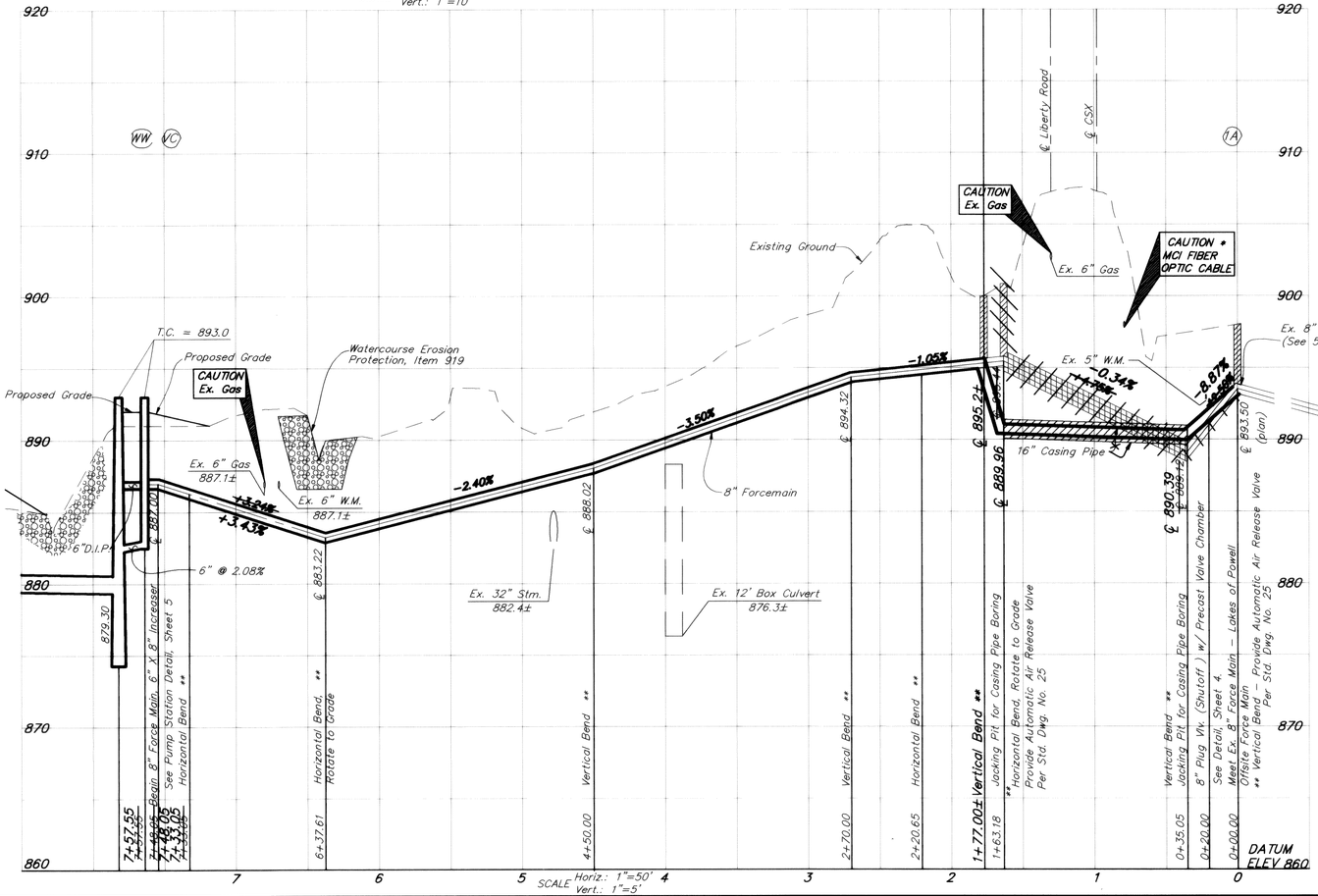
EVANS, MECHWART, HAMBLETON, & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS

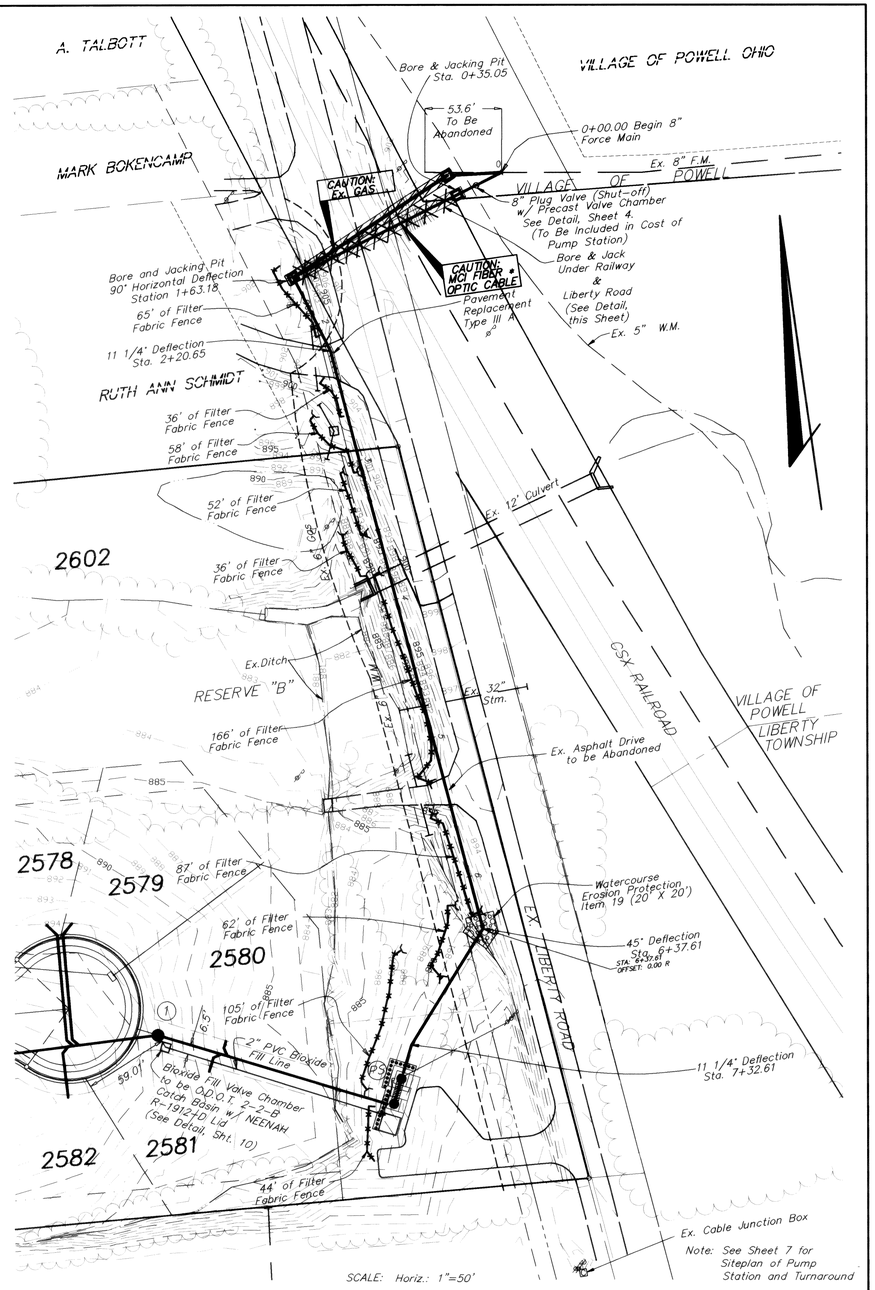
5
10

REVISED AS CONSTRUCTED 3/18/02 - Top of Slab Elevation



Note: Utility Crossing Locations Are Approximate Only. Contact O.U.P.S. Before Excavating.





** All Horizontal and Vertical Bends Shall Conform to DCSE Std. Dwg. No. 23 & 24

* Before Excavating, MCI Worldcom Contact: Marvin Muncy (419) 324-4015

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE

VILLAGE OF POWELL
SANITARY SEWER IMPROVEMENT
FOR
LAKES OF POWELL, SECTION 6
8" FORCE MAIN, PUMP STATION AND GRAVITY SEWER
PLAN & PROFILE

SCALE: As Noted

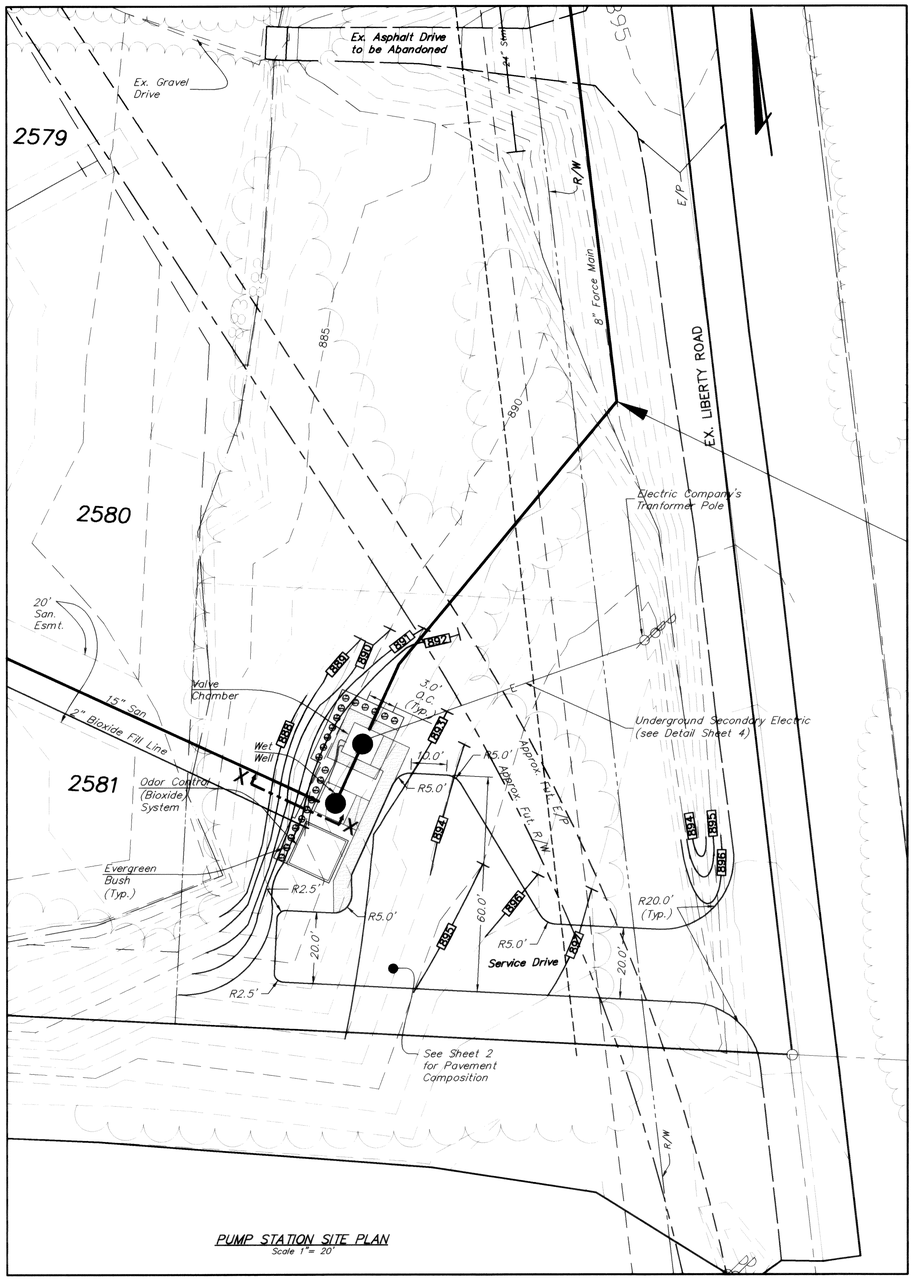
EVANS, MECHWART, HAMBLETON & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS

6/10

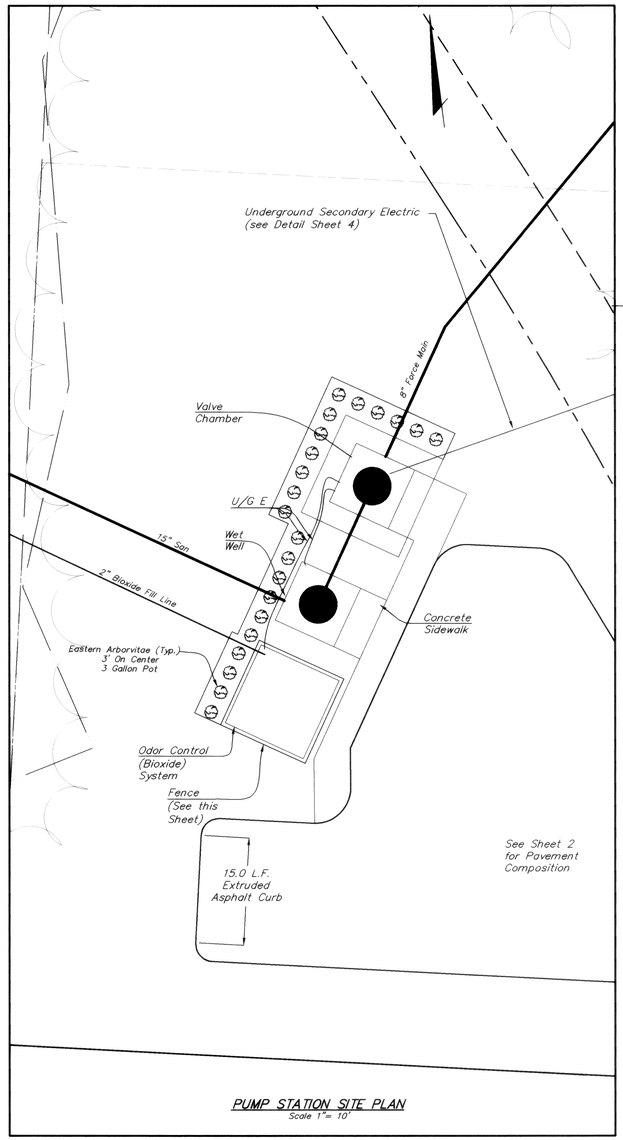
REVISED AS CONSTRUCTED 3/18/02 – FORCEMAIN (VERTICAL & HORIZONTAL)

2000-0493.01

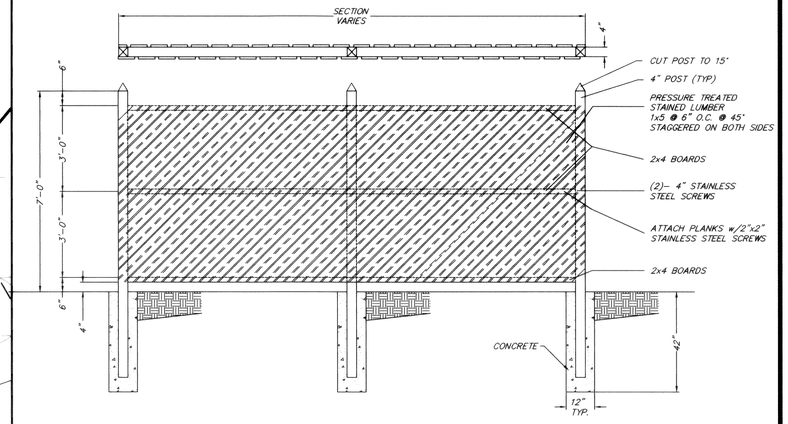
Q:\PROJECT\2000049.3\DWG\20000493FM6.DWG – 2 XREFS: 0049.3XBS 0049.3TP1 – PLOTTED BY JMCCOY – March 18, 2002 – 3:07 PM



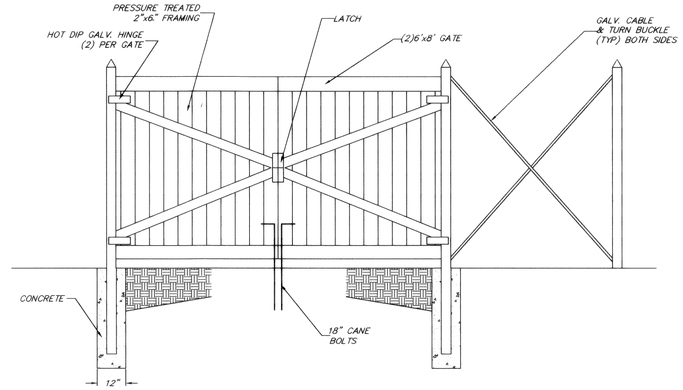
PUMP STATION SITE PLAN
Scale 1"= 20'



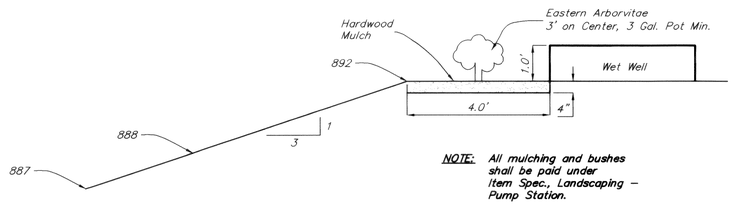
PUMP STATION SITE PLAN
Scale 1"= 10'



FENCE DETAIL
NO SCALE



GATE DETAIL
NO SCALE



SECTION X–X
Not to Scale

NOTE: All mulching and bushes shall be paid under Item Spec., Landscaping – Pump Station.

NOTE:

THE CONTRACTOR SHALL PRESERVE TREES IN THE AREA OF THE PROPOSED PUMP STATION AND SERVICE DRIVE AS REQUIRED BY THE VILLAGE OF POWELL DIRECTOR OF DEVELOPMENT AND/OR VILLAGE ENGINEER. **PRIOR TO ANY TREE CLEARING,** THE CONTRACTOR SHALL STAKE THE LOCATION OF THE PUMP STATION AND SERVICE DRIVE AND CONTACT THE VILLAGE OF POWELL DIRECTOR OF DEVELOPMENT AND/OR VILLAGE ENGINEER (614–885–5380) TO ARRANGE A FIELD MEETING TO DETERMINE SPECIFIC TREE REMOVAL, REPLACEMENT AND SCREENING REQUIREMENTS. IF TREE REMOVAL IS NECESSARY THAT REMOVES SCREENING BETWEEN THE PUMP STATION AND LIBERTY ROAD. THE AREA SHALL BE RE–PLANTED TO PROVIDE HEAVY SCREENING AS DIRECTED BY THE VILLAGE OF POWELL DIRECTOR OF DEVELOPMENT AND/OR VILLAGE ENGINEER.

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE 800–362–2764
OHIO UTILITIES PROTECTION SERVICE

VILLAGE OF POWELL, OHIO

SANITARY SEWER IMPROVEMENT

FOR

THE LAKES OF POWELL, SECTION 6 8" FORCE MAIN, PUMP STATION AND GRAVITY SEWER

SCALE: As Shown

EVANS, MECHWART, HAMBLETON, & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS

7/10

ELECTRICAL CONTROL PANEL NOTES

CONTROL PANEL BY FLYGT SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING TO CONTROL TWO PUMPS WITH FEATURES (OPERATING, SAFETY & MONITORING) AS LISTED:

1. EACH PUMP SHALL BE CONTROLLED BY HAND-OFF-AUTO SELECTOR SWITCHES.
2. PROVIDE TWO PUMP ALTERNATOR WITH MANUAL OVER-RIDE.
3. PUMPS SHALL BE MONITORED FOR SEAL LEAK, OVER-TEMPERATURE AND INSULATION RESISTANCE.
4. MOTOR STARTERS WITH OVERLOADED RELAYS.
5. CONTROLLER TO ACCEPT MULT-PROBE AND ULTRA-SONIC LEVEL DETECTOR INPUTS.
6. DRY CONTACT OUTPUT CONTACTS TO REPORT ABNORMAL CONDITIONS.
7. ELAPSED TIME METERS (RESETTABLE).
8. COMPLETE IN ALL RESPECTS WITH BATTERY BACK-UP FOR REPORTING FEATURES, RELAYS, FUSING & INTERNAL WIRING.
9. PUMP SEQUENCE:

   LEVEL LOW LEVEL (ALL PUMPS OFF)
   LEVEL LEAD PUMP ON
   LEVEL LAG PUMP ON
   LEVEL HIGH LEVEL ALARM

   NOTE: LEVELS ARE SHOWN ON WET WELL SECTION.

10. THE FOLLOWING FAULT CONDITIONS SHALL BE REPORTED:

    A. POWER FAILURE

    B. PUMP CONDITIONS (TWO)

       SEAL FAILURE
       OVERHEAT
       INSULATION BREAKDOWN

    C. MUFFIN MONSTER JAM

    D. HIGH LEVEL

11. CONTRACTOR SHALL PROVIDE A DUPLEX GROUNDING TYPE RECEPTACLE – 20 AMP, 125 VAC MANUFACTURED BY HUBBELL, MODEL NUMBER GF53521. RECEPTACLE SHALL BE CENTRALLY LOCATED ON THE WEST WALL OF THE VALVE CHAMBER IN ACCORDANCE WITH ALL REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION, AND UNDERWRITER LABORATORIES INC.

△1 12. 5.0KVA POWER & CONTROL TRANSFORMER

△1 13. FUSES FOR EMERGENCY POWER FEED. SINGLE PHASE PROTECTION.

△1 14. INSTALL TELEMETRY ITEMS IN CUSTOM CONTROL PANEL.

△1 15. INSTALL AN ELECTRIC PANEL OR CIRCUIT BREAKER FOR ALL 120 VOLT POWER & CONTROL CIRCUITS.

ELECTRICAL TELEMETRY NOTES

TELEMETERING:

A. ONE (1) – WESTERMAN CT-4000 MICROPROCESSOR BOARD OR EQUAL

B. THREE (3) – WESTERMAN UO-4480 INPUT/OUTPUT BOARD OR EQUAL

C. ONE (1) – WESTERMAN I/O-4240 ANALOG INPUT BOARD OR EQUAL

D. ONE (1) – METICOM SPREAD SPECTRUM DATA RADIO, MODEL 20043 OR EQUAL

E. ONE (1) – WESTERMAN CA-1511 9600 BAUD MODEM OR EQUAL

F. ONE (1) – FABRICATED BACK PANEL

G. ONE (1) – NEMA 4/12 ENCLOSURE

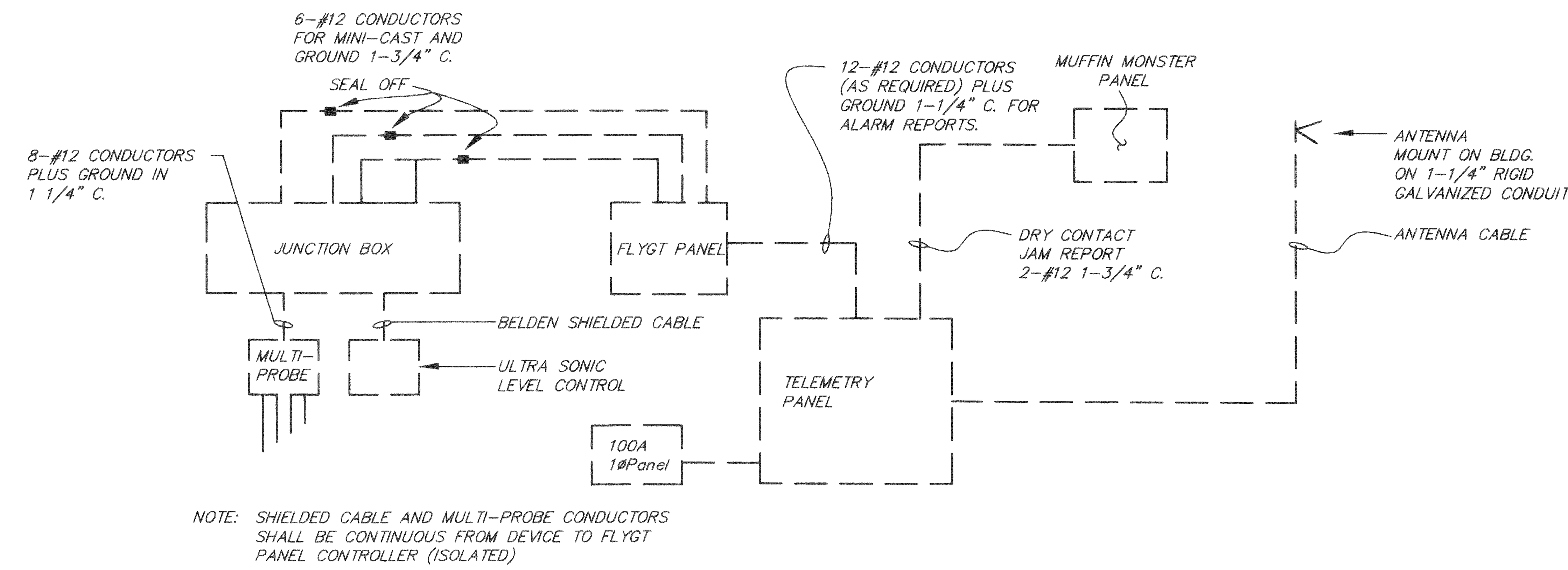
H. ONE (1) – WOODEN POLE (IF REQUIRED) AND ONINI ANTENNA

I. ALL RELATED CONDUIT, WIRE, CABLING, AND INSTALLATION

J. ONE (1) – POWER SONIC 10 AH BATTERY

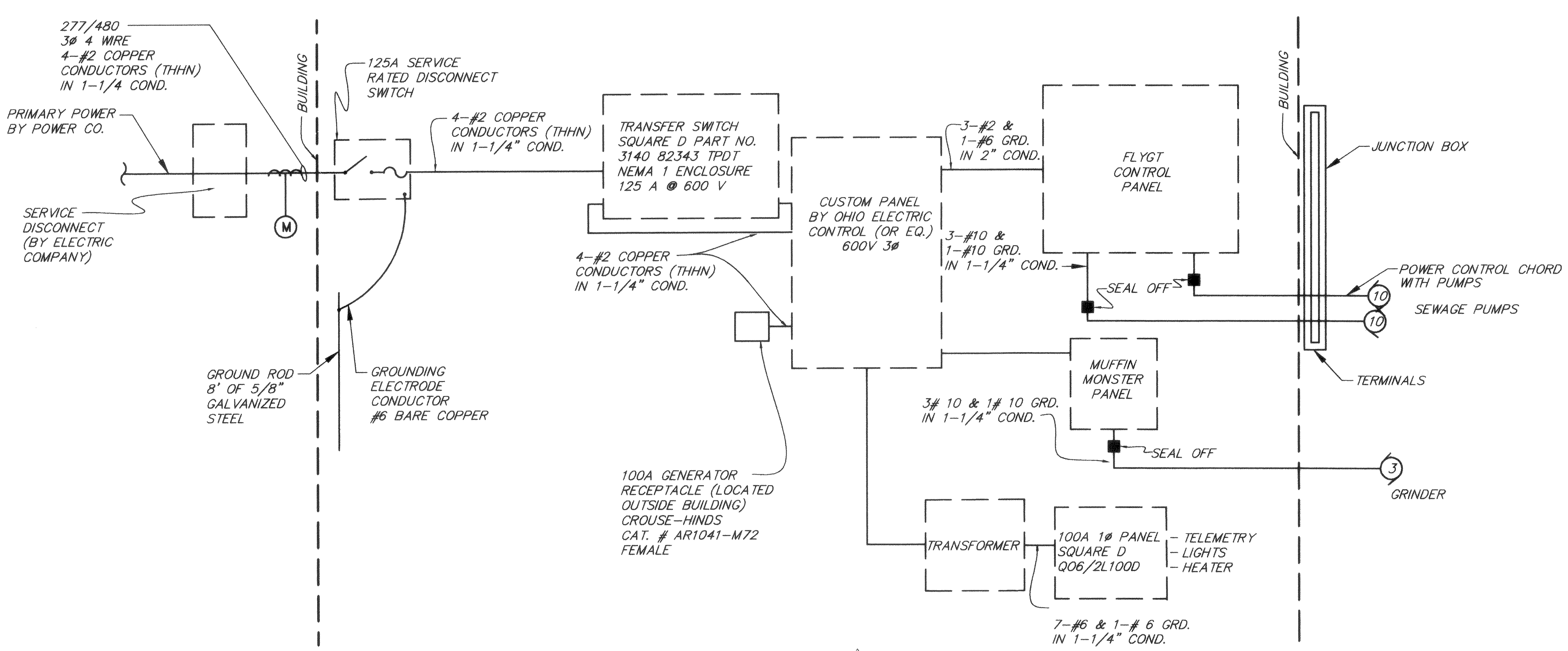
K. ONE (1) – ENCLOSURE STRIP HEATER

L. ALL – CRYDON STYLE RELAYS



NOTE: SHIELDED CABLE AND MULTI-PROBE CONDUCTORS SHALL BE CONTINUOUS FROM DEVICE TO FLYGT PANEL CONTROLLER (ISOLATED)

TELEMETRY SCHEMATIC DIAGRAM △2
Not to Scale



ELECTRICAL SCHEMATIC DIAGRAM △2
Not to Scale

2 WORKING DAYS BEFORE YOU DIG
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE

△2 Rev. 2/01/02 – Revised Diagrams.
△1 Rev. 5/14/01 – Added Notes 12-15.

STATE OF OHIO — PAUL M. BLACKBURN 28795 — REGISTERED PROFESSIONAL ENGINEER

VILLAGE OF POWELL, OHIO

SANITARY SEWER IMPROVEMENT

FOR

THE LAKES OF POWELL, SECTION 6 8" FORCE MAIN, PUMP STATION AND GRAVITY SEWER

SCALE: As Shown

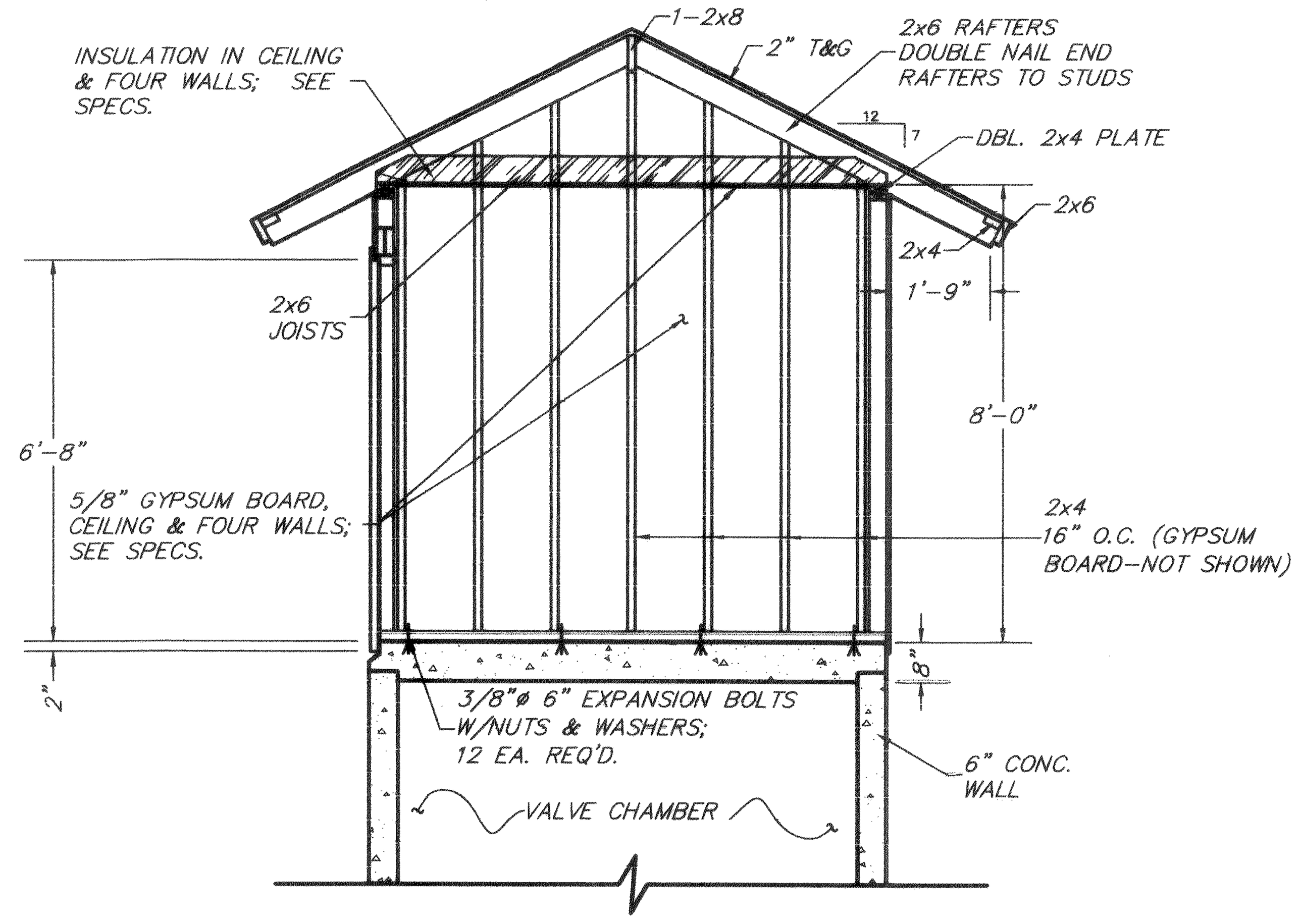
EVANS, MECHWART, HAMBLETON, & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS

8 / 10

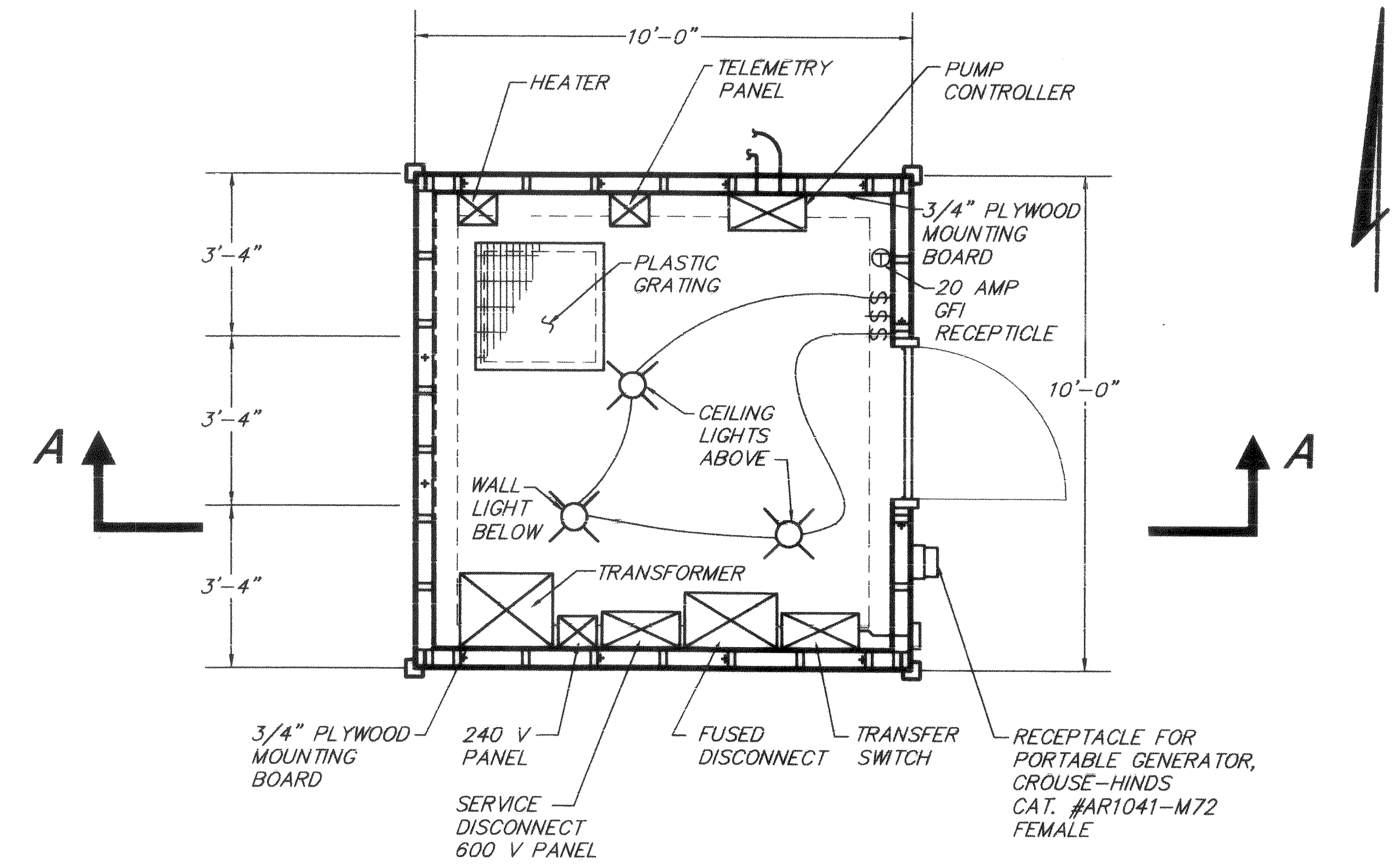
\\SERVERS\BGHMING\PROJECT\20000493\DWG\00493508.DWG – 0 XREFS – PLOTTED BY AMARTIN – January 28, 2002 – 3:44 PM

NOTES

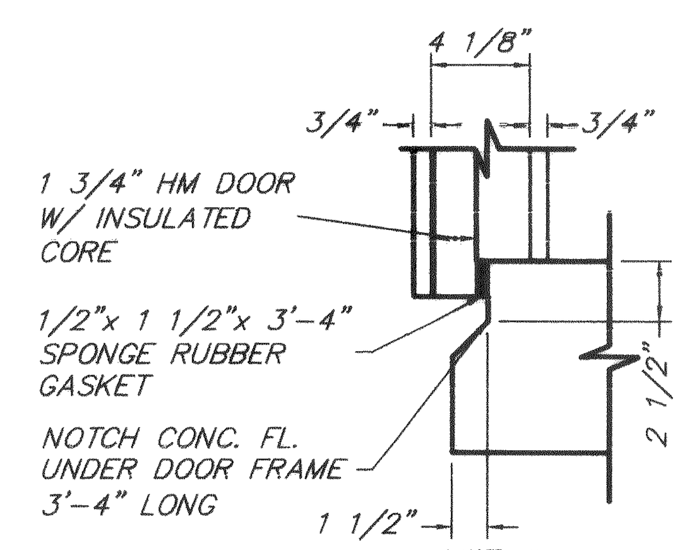
1. CEILING LIGHTS SHALL BE CEW 8" SQUARE, GCS3805–M, 120V, 50W, MH WITH CAST ALUMINUM BASE AND HIGH IMPACT POLYCARBONATE LENS.
2. ALL 120 VOLT CKTS ORIGINATE TO THE CUSTOM CONTROL PANEL.
3. (Rev. 1) HEATER: A HEATER, MODEL MUH–35 460 VOLTS, FEED FROM CUSTOM CONTOL PANEL MANUFACTURED BY QMARK, SHALL BE INSTALLED IN THE UTILITY BUILDING.
4. THE CONTRACTOR SHALL EMPLOY A QUALIFIED TECHNICIAN TO TEST, ADJUST, START–UP AND TUNE THE SYSTEM.
5. POWER AND CONTROL CORDS (LENGTH AS REQUIRED). CORDS FURNISHED WITH PUMP MOTORS. PROVIDE STAINLESS KELLUM GRIP FOR EACH CORD AT THE TOP OF THE WET WELL.
6. FLOAT CORDS: INSTALL STAINLESS STEEL CORD SUPPORT BRACKET WITH INDIVIDUAL INSULATED CABLE SUPPORT GRIPS. PROVIDE SLACK FOR REQUIRED ADJUSTMENT (CORD LENGTH 25' + AS REQUIRED). WEIGHT CORDS FOR NEGATIVE BUOYANCY TO MAINTAIN POSITION AND ALIGNMENT.
7. (Rev. 2) THE PROPOSED CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 11 OBBC AND THE "AMERICANS WITH DISABILITIES ACT ACCESSIBLITY GUIDELINES" (ADAAG) AS MODIFIED BY SECTIONS 1102.2 AND 1103.0 OBBC.
8. (Rev. 2) INSTALLATION OF PLUMBING EQUIPMENT AND SYSTEMS SHALL COMPLY WITH OBBC CHAPTER 29 AND THE OHIO PLUMBING CODE (OPC).
9. (Rev. 2) MECHANICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ITS UNDERWRITER APPROVAL, THE MANUFACTURER'S RECOMMENDATIONS, SPECIFICATIONS AND GOOD ENGINEERING PRACTICES; ARTICLES M–401 ANDM–403.1 OF THE OBMC.
10. (Rev. 2) ALL ELECTRICAL WORK WILL COMPLY WITH THE REQUIREMENTS OF ARTICLE 27 OBBC AND THE NATIONAL ELECTRIC CODE NFiPA 70, OBBC APPROVED EDITION AND IS SUBJECT TO THE APPROVAL OF THE STATE ELECTRICAL INSPECTOR ASSIGNED BY CONSTRUCTION COMPLIANCE, IN ACCORDANCE WITH SECTIONS 2701.1, 3404.0 AND 3404.2.4 OF THE OBBC.
11. (Rev. 2) THE GROUNDING AND BONDING OF THE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH NEC 250 AND NFiPA 70, LISTED IN OBBC CHAPTER 35. PLEASE PROVIDE REVISED DRAWINGS.
12. (Rev. 2) TRANSFORMER INSTALLATIONS SHALL COMPLY WITH NEC 450. TRANSFORMER PRIMARY AND SECONDARY OVERCURRENT PROTECTION SHALL COMPLY WITH NEC 450–3. CONDUCTORS TAPPED TO A TRANSFORMER SECONDARY SHALL COMPLY WITH NEC 240–21(b) OR 240–21(d). PLEASE PROVIDE DRAWINGS.
13. (Rev. 2) NO ELECTRICAL WORK (CONDUITS, CABLES OR OTHER ELECTRICAL APPARATUS) MAY BE COVERED OR CONCEALED WITHOUT VISUAL INSPECTION AND APPROVAL BY THE ELECTRICAL FIELD INSPECTOR AS PER OBBC 2704.2.
14. (Rev. 2) FOR ALL ELECTRICAL LAYOUT, SEE SHEET 8/10.



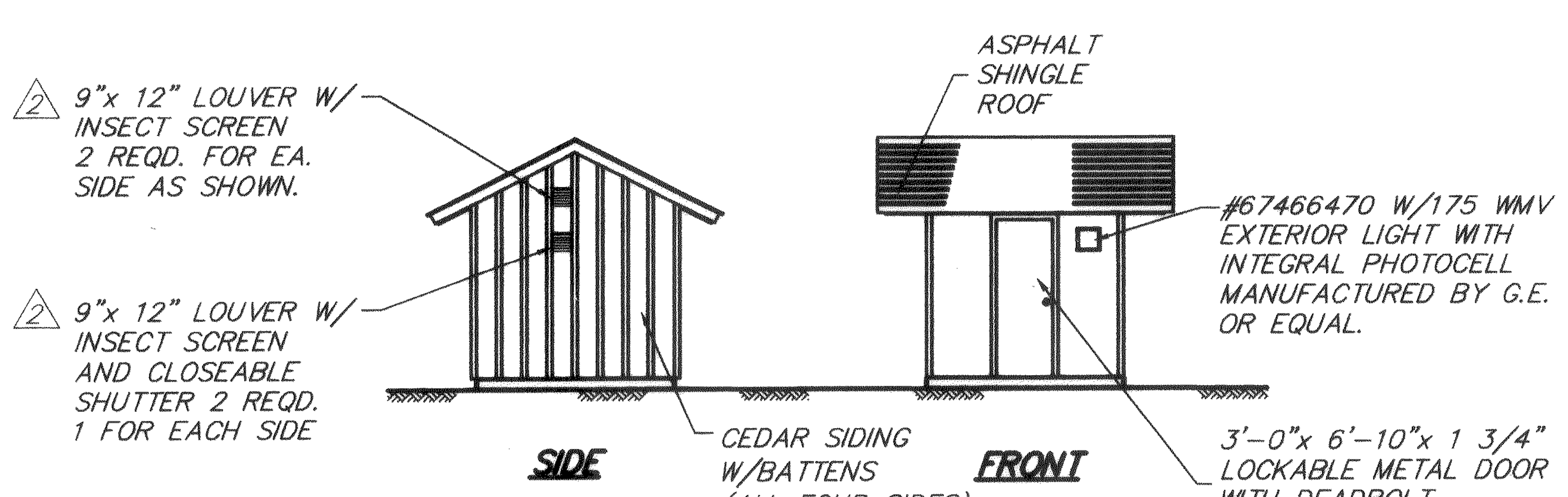
SECTION A–A



PLAN



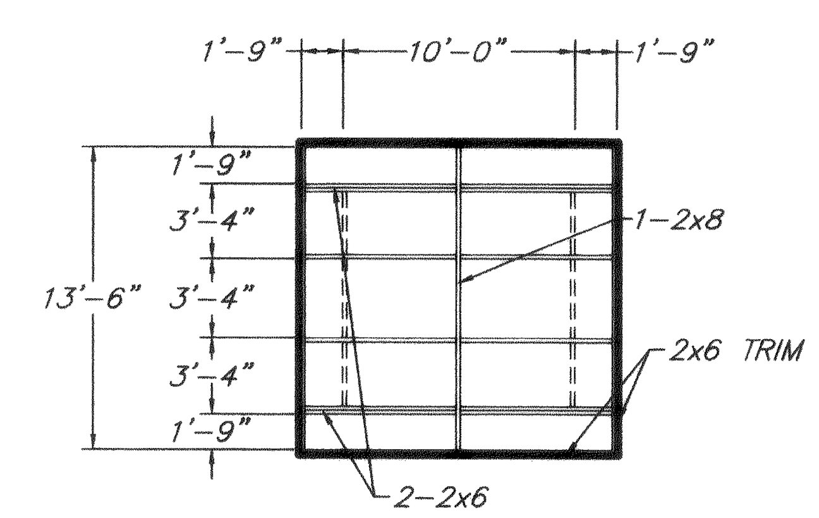
DETAIL



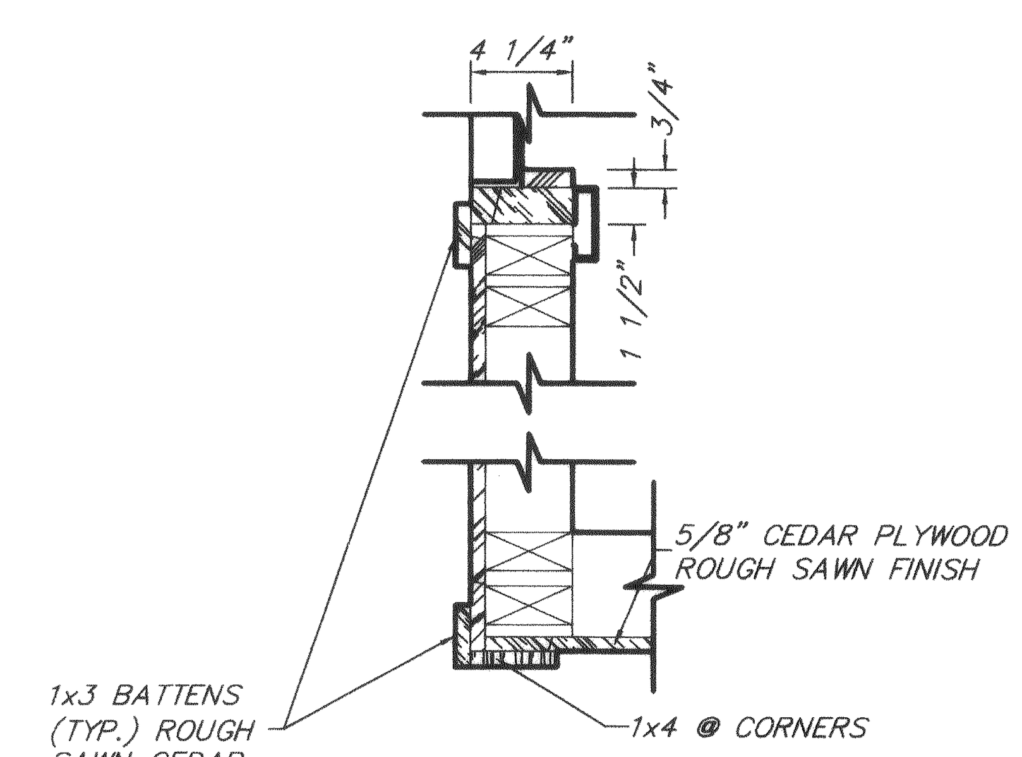
SIDE

FRONT

ELEVATIONS



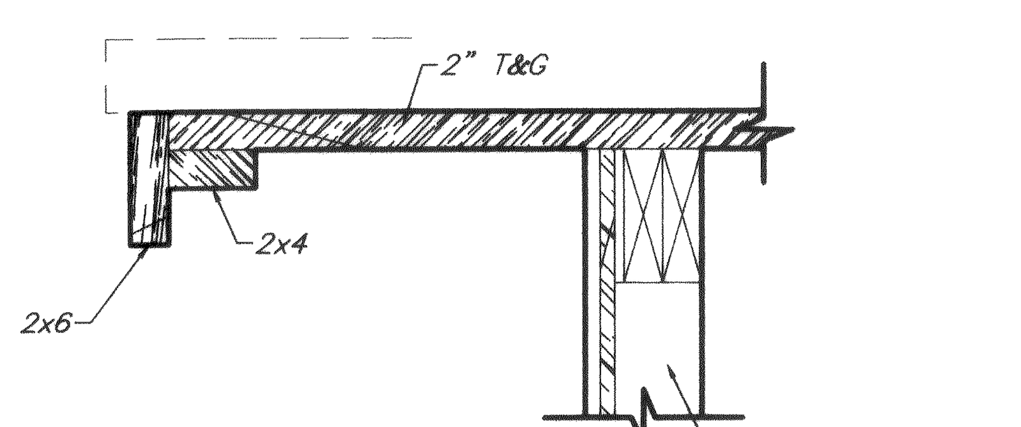
ROOF FRAMING PLAN



TYPICAL CORNER

UTILITY BUILDING

Not to Scale



RAKE SECTION

(Rev. 2) Rev. 2/01/02 – Various Revisions

(Rev. 1) Rev. 5/14/01 – Revised Note 3.

2 WORKING DAYS BEFORE YOU DIG
CALL TOLL FREE 800–362–2764
OHIO UTILITIES PROTECTION SERVICE

VILLAGE OF POWELL, OHIO

SANITARY SEWER IMPROVEMENT

FOR

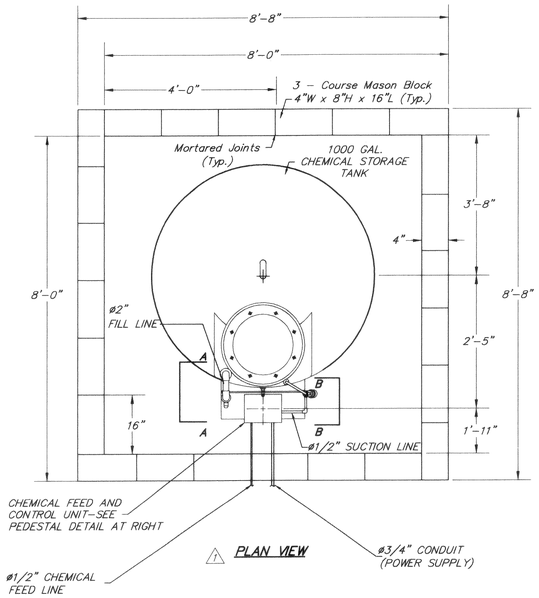
THE LAKES OF POWELL, SECTION 6
8" FORCE MAIN, PUMP STATION AND GRAVITY SEWER

SCALE: As Shown

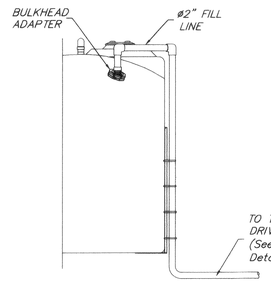
EVANS, MECHWART, HAMBLETON, & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS

NOTES

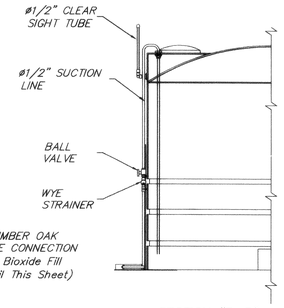
1. U.S. FILTER SHALL PROVIDE 1,000 GALLON BIOXIDE SYSTEM.
2. CONTRACTOR TO FURNISH CONCRETE PAD WITH ALL IN-SLAB PIPING AND CONDUIT.
3. ALL PIPING AND APPURTENANCES SHALL BE PVC, SCH 80.
4. ALL ELECTRICAL CONDUIT AND WIRING BY CONTRACTOR.
5. UTILIZE SWEEPS ONLY (NO ELBOWS) FOR CONDUIT DIRECTIONAL CHANGES.
6. CONTRACTOR TO FURNISH AND INSTALL ALL NECESSARY SLAB OPENINGS, SLEEVES AND SEALANT.
7. CONTRACTOR TO FURNISH AND INSTALL ALL NECESSARY HANGERS, SUPPORTS, AND BLOCKING FOR PIPING.
8. ALL HARDWARE REQUIRED FOR INSTALLATION SHALL BE STAINLESS STEEL, FURNISHED AND INSTALLED BY CONTRACTOR.
9. SEE SUPPLEMENTAL STANDARD DETAILS FOR CHEMICAL FEED UNIT, CALIBRATION PEDESTAL, PIPING SUPPORT, STORAGE TANK, LEVEL GAUGE AND VARIOUS OTHER COMPONENTS.



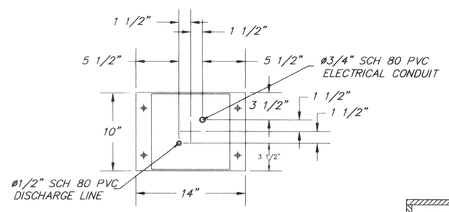
⚠ **PLAN VIEW**



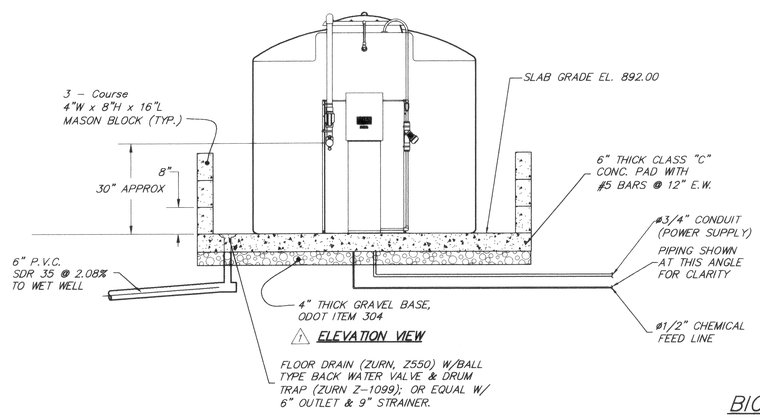
SECTION "A-A"



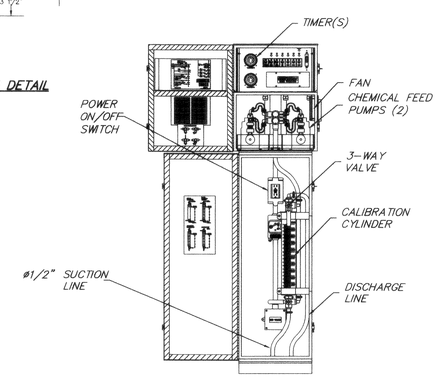
SECTION "B-B"



RISER/SLAB PENETRATION DETAIL



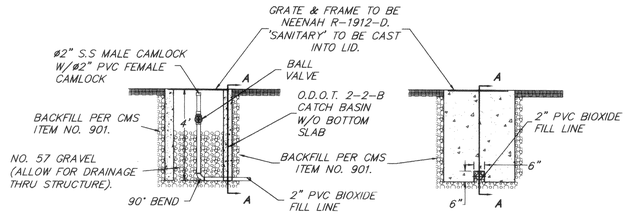
⚠ **ELEVATION VIEW**



ELEVATION VIEW

BIOXIDE SYSTEM DETAIL

Not to Scale



VALVE BOX **SECTION A-A**

BIOXIDE FILL DETAIL AT TIMBER OAK DRIVE

Not to Scale

⚠ Rev. 5/14/01
Removed Containment Wall Detail and Notes; Revision to Bioxide System Plan and Elevation Views.

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICE

VILLAGE OF POWELL, OHIO

SANITARY SEWER IMPROVEMENT

FOR

THE LAKES OF POWELL, SECTION 6 8" FORCE MAIN, PUMP STATION AND GRAVITY SEWER

SCALE: As Shown

EVANS, MECHWART, HAMBLETON, & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS

10
10