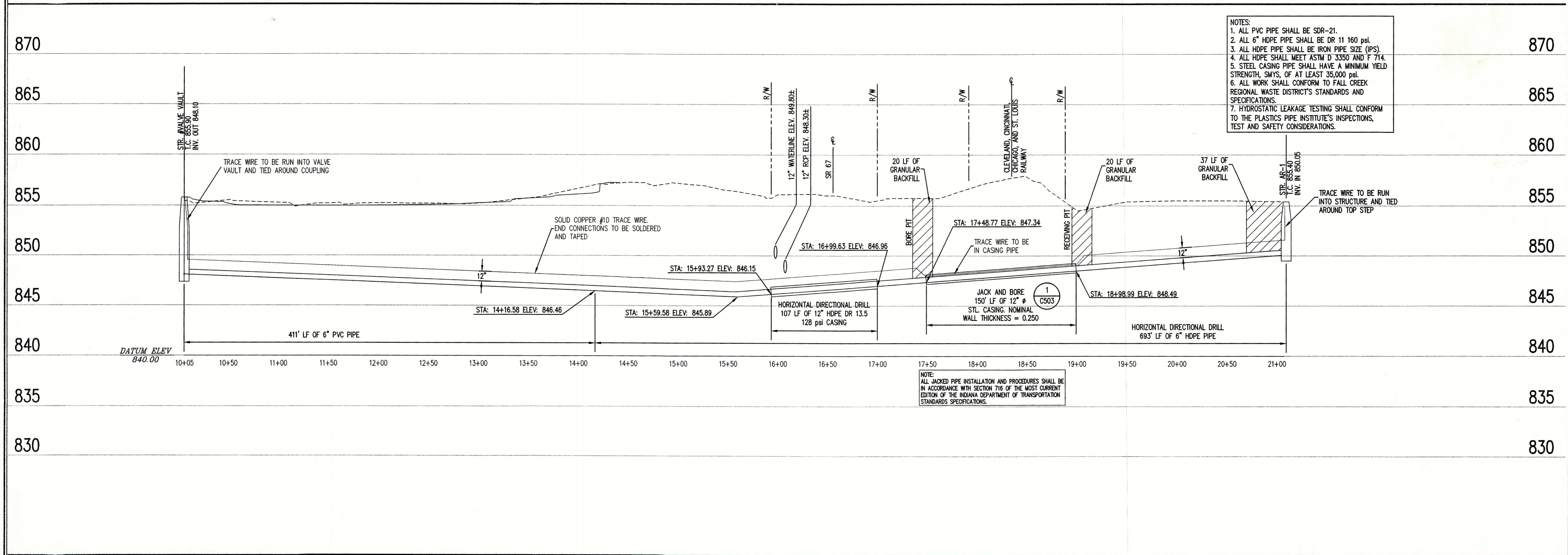


FORCE MAIN PLAN

SCALE: 1"=50'

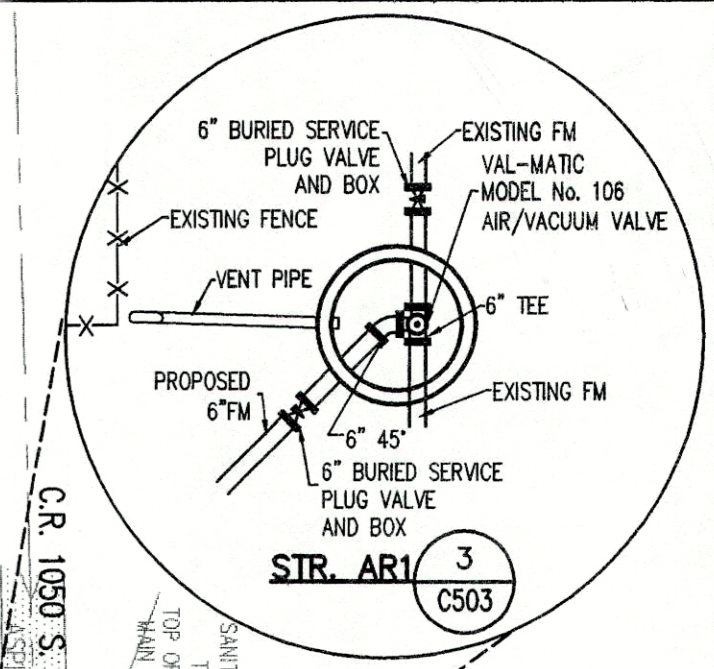


FORCE MAIN PROFILE

LEGEND		
	Existing Grade	
	New Grade	
	Granular Backfill	

SCALE: HORZ.: 1"=50'
VERT.: 1"=5'

Contents To Be Handled	Carrier Pipe	Casing Pipe
Outside Diameter	Wastewater	N/A
Pipe Material	HDPE	Steel
Specification And Grade	Dr 9 - 200 Psi	35,000 Psi Yield Strength
Wall Thickness	0.736"	0.25"
Actual Working Pressure	45 psi	N/A
Type Of Joint	Bolted Flange Weld	Welded
Coating	N/A	Jack & Bore
Methods Of Installation	Pulled	Jack & Bore
Seals: Both Ends	Type: Brick & Mortar	
Bury: Base Of Rail To Top Of Casing	9 Ft. 0 In.	
Type, Size And Spacing Of Insulators Or Supports	N/A	
Distance C.L. Track To Face Of Jacking/receiving Pits	65 ft. 0 in.	
Bury: Base Of Rail To Bottom Jacking/receiving Pits	10 ft. 6 in.	
Cathodic Protection:	No	



BENCHMARK

BM - ABOUT 3.05 MILES NORTH ALONG STATE HIGHWAY 13 FROM ITS JUNCTION WITH STATE ROAD 330 AT FORTVILLE, ABOUT 0.55 MILE NORTH OF A BRIDGE OVER FALL CREEK, AT THE JUNCTION OF A ROAD LEADING WEST 30 FEET WEST OF THE CENTERLINE OF THE HIGHWAY, SOUTH OF A CONCRETE HIGHWAY RIGHT-OF-WAY MARKER POST, 1.5 FEET SOUTH OF THE CENTERLINE OF THE SIDE ROAD, 14.5 FEET EAST OF THE FENCE LINE, 1.5 FEET SOUTH OF A WHITE WOODEN WINDSHIELD POST, ABOUT 10 FEET SOUTH OF THE TOP OF A CONCRETE POST PROJECTING ABOUT 6 INCHES, BEING A STANDARD DISK STAMPED "1028 1047" ELEVATION = 850.48 (NGVD 29)

- NOTE: 1 - CUT "Y" ON THE NORTHERN MOST BENCHMARK BOLT OF A FIRE HYDRANT ON THE EAST SIDE OF COUNTY ROAD 750 WEST, ABOUT 850 FEET NORTH OF COUNTY ROAD 1000 NORTH. ELEVATION = 850.975 (NGVD 29)
- NOTE: 2 - MAG NAIL 1.0 FEET UP ON THE EAST SIDE OF POWER POLE #47-300 ON THE SOUTH SIDE OF STATE ROAD 67, ABOUT 1300 FEET SOUTH OF STATE ROAD 67. ELEVATION = 858.075 (NGVD 29)
- NOTE: 3 - MAG NAIL 1.0 FEET UP ON THE NORTH SIDE OF POWER POLE #47-300 ON THE SOUTH SIDE OF STATE ROAD 67, ABOUT 1300 FEET SOUTHWESTERLY OF COUNTY ROAD 750 WEST. ELEVATION = 854.48 (NGVD 29)
- NOTE: 4 - MAG NAIL 1.0 FEET UP ON THE EAST SIDE OF A 60 INCH OAK TREE IN THE NORTHWEST CORNER OF THE SUBJECT TRACT. ELEVATION = 858.12 (NGVD 29)

- NOTES:
1. ALL PVC PIPE SHALL BE SDR-21.
 2. ALL 6" HDPE PIPE SHALL BE DR 11 160 psi.
 3. ALL HDPE PIPE SHALL BE IRON PIPE SIZE (IPS).
 4. ALL HDPE SHALL MEET ASTM D 3350 AND F 714.
 5. STEEL CASING PIPE SHALL HAVE A MINIMUM YIELD STRENGTH, SMYS, OF AT LEAST 35,000 psi.
 6. ALL WORK SHALL CONFORM TO FALL CREEK REGIONAL WASTE DISTRICT'S STANDARDS AND SPECIFICATIONS.
 7. HYDROSTATIC LEAKAGE TESTING SHALL CONFORM TO THE PLASTICS PIPE INSTITUTE'S INSPECTIONS, TEST AND SAFETY CONSIDERATIONS.

REVISIONS:
REVISED NOTES 4 AND 7. MONITOR STR. AR-1 MANHOLE DETAIL. BUB
8-18-03 REVISED PER FALL CREEK REGIONAL WASTE DISTRICT REVIEW COMMENTS. BUB

ANDREW C. COCHRANE
REGISTERED
No. 19900094
STATE OF INDIANA
PROFESSIONAL ENGINEER

DATE: 8/19/03

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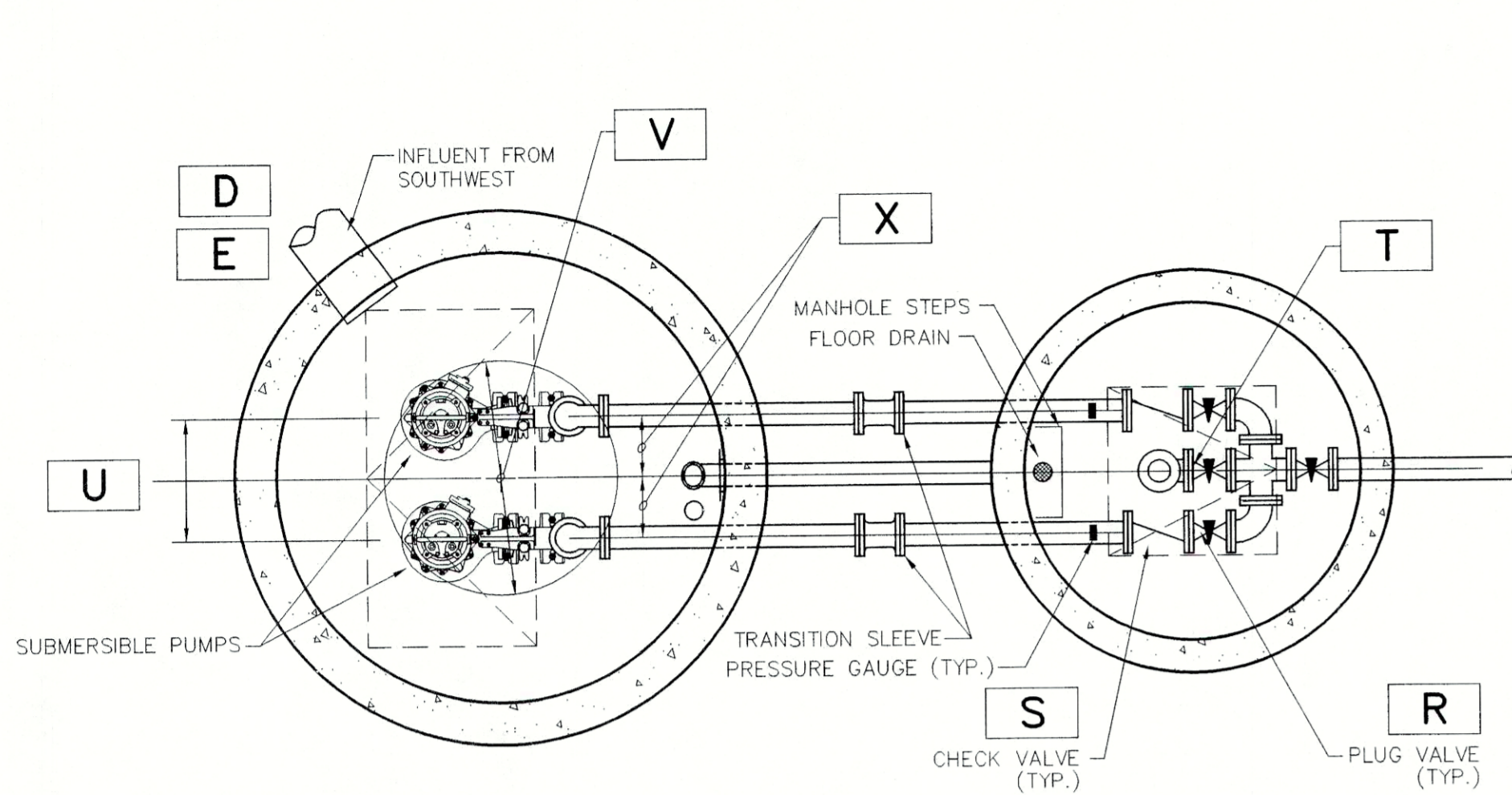
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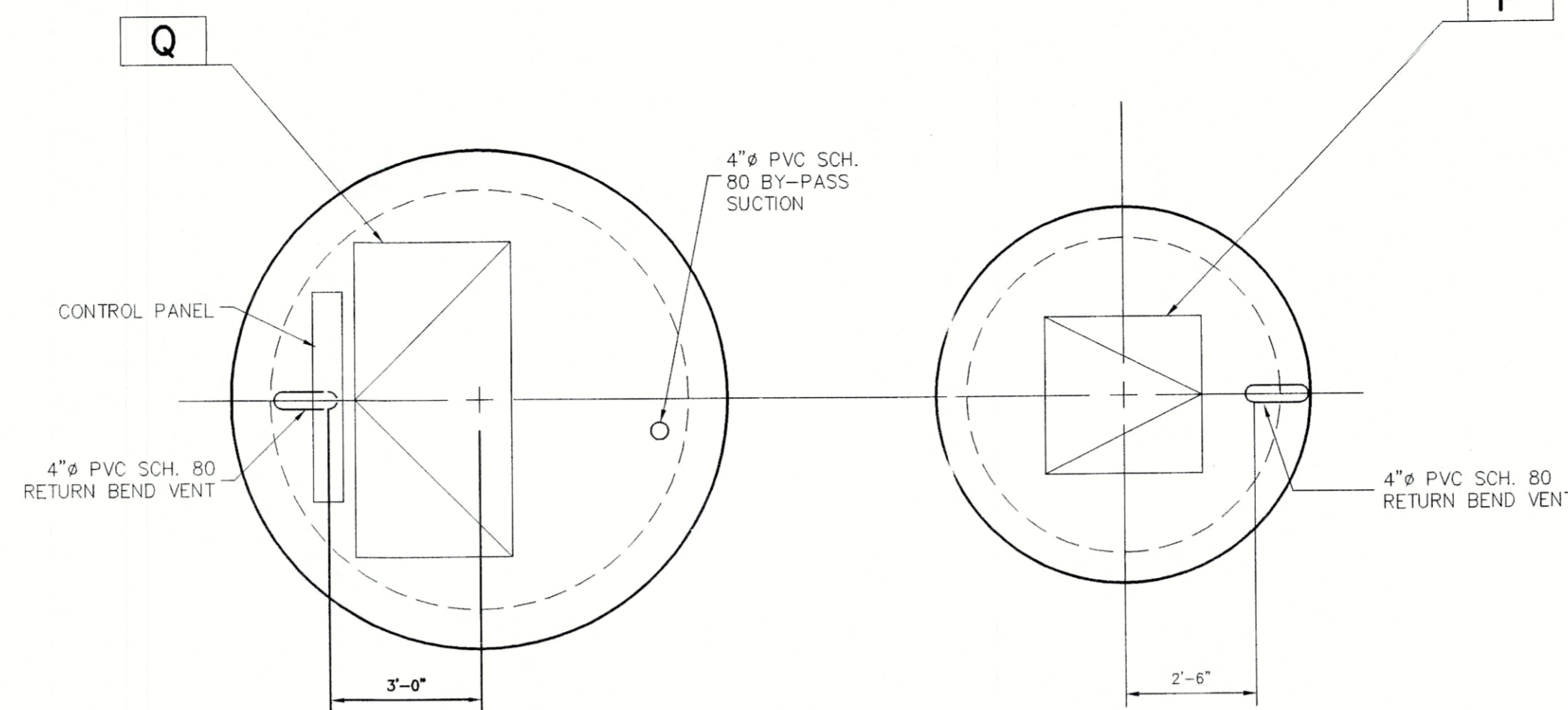
PRAIRIE HOLLOW
SECTION 1
INGALLS, INDIANA

C. P. MORGAN COMMUNITIES, L.P.
4670 HAVEN POINT BLVD., INDIANAPOLIS, IN 46280

DATE: 7/1/03 PROJECT NO.: 4496.001
DRAWN BY: BAB CHECKED BY: ACC
SHEET TITLE: FORCE MAIN PLAN AND PROFILE
DRAWING FILES:
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XREF: R:\44\4496\001\dwg\1185.dwg
XREF: R:\44\4496\001\dwg\SAN_03.dwg
SHEET NO.: C501



PLAN SECTION 3
SCALE: NONE
C502



TOP SLAB PLAN
SCALE: NONE



DESCRIPTION	SYMBOL		
PUMP MODEL NUMBER		S40	HYDRAMATIC
PUMP CAPACITY - GPM EACH (VARIABLE)		321	
TOTAL DYNAMIC HEAD - FT.		109	
PUMP DISCHARGE SIZE Ø		4"	
MOTOR H.P.		25	
MOTOR RPM		1750	
WET WELL DIAMETER	A	10'	
DISCHARGE PIPE DIAMETER	B	6"	
FORCE MAIN DIAMETER	C	6"	
GRAVITY INFLUENT PIPE DIAMETER	D	8"	
GRAVITY INFLUENT INV. EL. - FT.	E	834.05	
WET WELL TOP OF STRUCTURE EL.	F	855.90	
WET WELL FLOOR EL.	G	827.50	
HIGH WATER ALARM EL. LEVEL TRANSDUCER	H	832.00	
LAG PUMP START EL. LEVEL TRANSDUCER	I	831.00	
LEAD PUMP START EL. LEVEL TRANSDUCER	J	830.00	
PUMPS OFF EL. LEVEL TRANSDUCER	K	829.00	
BASE SLAB THICKNESS	L	12"	
VALVE PIT DIAMETER	M	6'	
VALVE PIT TOP OF STRUCTURE EL.	N	855.90	
VALVE PIT FLOOR EL.	O	848.20	
VALVE PIT HATCH SIZE (W X L)	P	36" x 36"	
WET WELL HATCH SIZE (W X L)	Q	SEE TOWN STANDARDS	
VALVE PIT PLUG VALVE	R	6"	
CHECK VALVE	S	6"	
BYPASS PUMPING PLUG VALVE	T	6"	
DISTANCE BETWEEN PUMPS	U	BY PUMP MANUFACTURER	
DIAMETER OF GROUT CIRCLE	V	BY PUMP MANUFACTURER	
DISTANCE BETWEEN W.W. & V.P.	W	5'	
PUMP CENTERLINE SPACING	X	BY PUMP MANUFACTURER	
DISCHARGE ELBOW SIZE	Z	4" x 6"	

BENCHMARK

BM - ABOUT 5.05 MILES NORTH ALONG STATE HIGHWAY 15 FROM ITS JUNCTION WITH STATE ROAD 250 AT FORTVILLE, ABOUT 0.55 MILES NORTH OF A BRIDGE OVER FALL CREEK, AT THE JUNCTION OF A ROAD LEADING WEST 30 FEET WEST OF THE CENTERLINE OF THE HIGHWAY 31 FEET SOUTH OF THE CENTERLINE OF THE SIDE ROAD, 14.5 FEET SOUTH OF A CONCRETE HIGHWAY RIGHT-OF-WAY MARKER POST, 1.5 FEET EAST OF THE FENCE LINE, 1.5 FEET SOUTH OF A WHITE WOODEN WITNESS POST, ABOUT LEVEL WITH THE HIGHWAY AND SET IN THE TOP OF A CONCRETE POST PROJECTING SOUTH 6 INCHES, BEING A STANDARD DISK STAMPED "1026 1947" ELEVATION = 860.46 (NOV 2005)

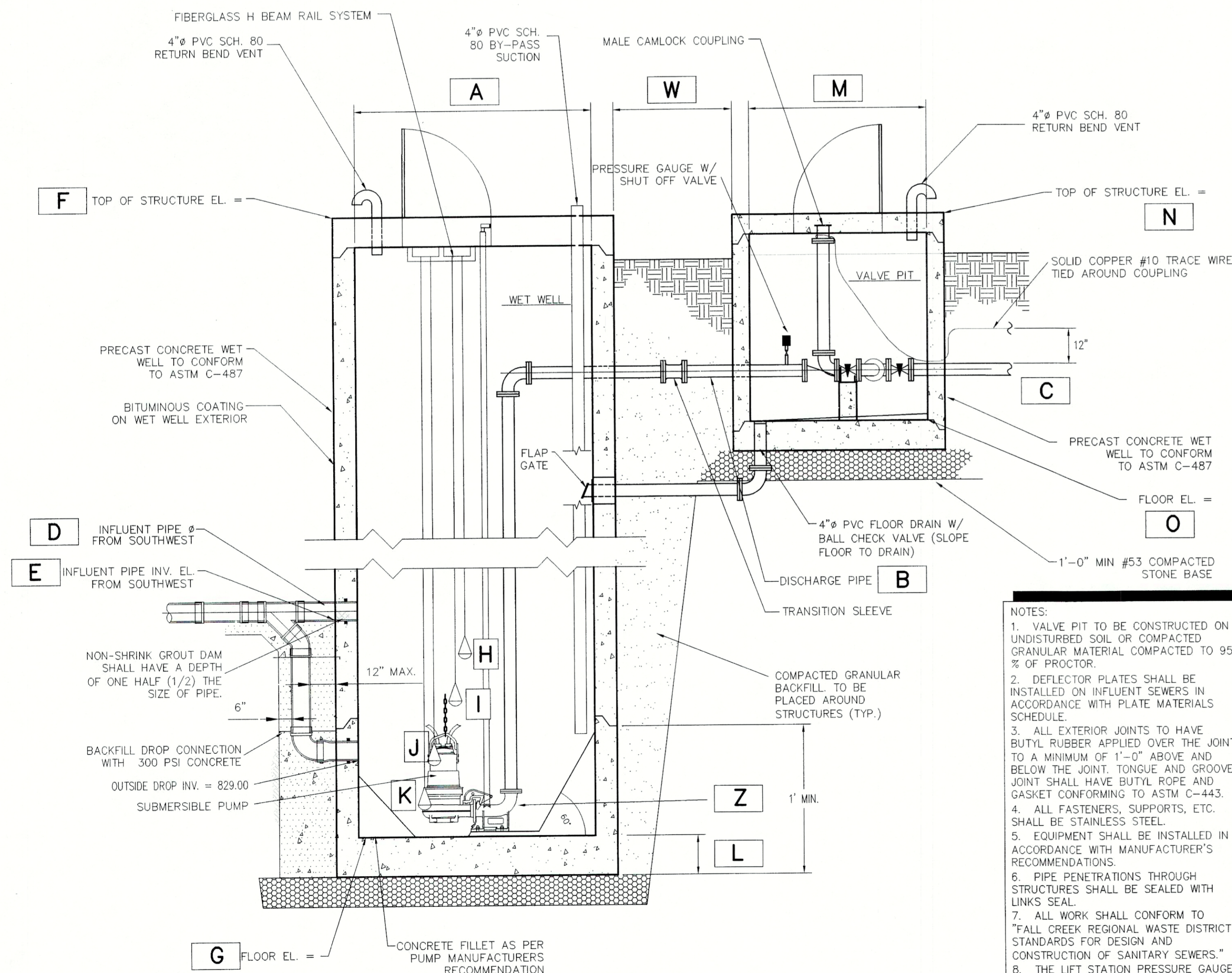
TM 1 - CUT "T" ON THE NORTHWEST CORNER BOLT OF A FIRE HYDRANT ON THE EAST SIDE OF COUNTY ROAD 750 WEST, ABOUT 850 FEET NORTH OF COUNTY ROAD 1100 NORTH ELEVATION = 860.75 (NOV 20)

TM 2 - MAG NAIL 1.0 FEET UP ON THE EAST SIDE OF POWER POLE #47-306 ON THE WEST SIDE OF COUNTY ROAD 750 WEST, ABOUT 200 FEET SOUTH OF STATE ROAD 67 ELEVATION = 858.075 (NOV 20)

TM 3 - MAG NAIL 1.0 FEET UP ON THE NORTH SIDE OF POWER POLE #47-300 ON THE SOUTH SIDE OF STATE ROAD 67, ABOUT 1300 FEET SOUTHWESTERLY OF COUNTY ROAD 750 WEST ELEVATION = 854.68 (NOV 20)

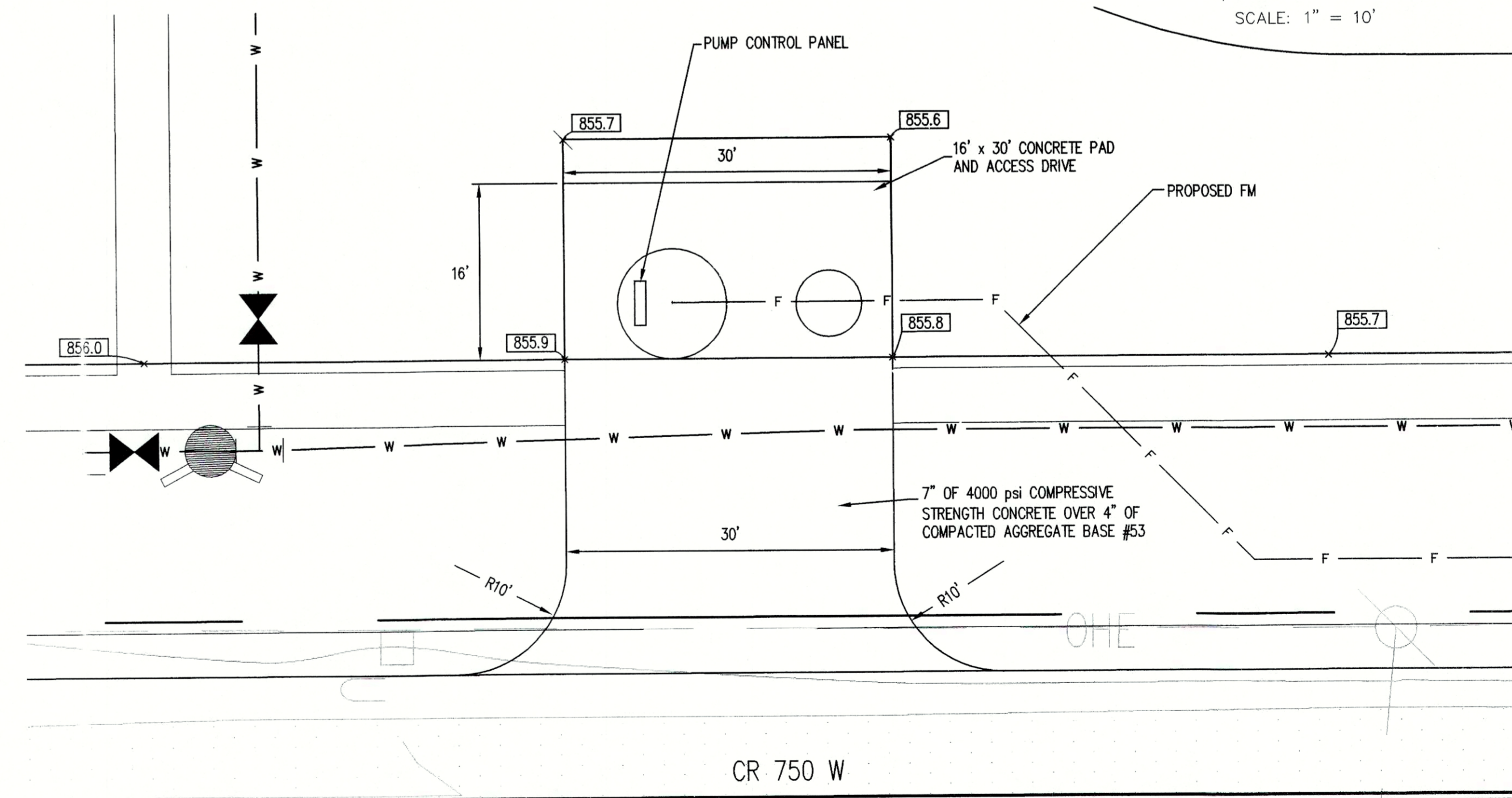
TM 4 - MAG NAIL 1.0 FEET UP ON THE EAST SIDE OF A 60 INCH OAK TREE IN THE NORTHWEST CORNER OF THE SUBJECT TRACT ELEVATION = 858.12 (NOV 20)

NOTE:
VFD'S SHALL BE SAFTRONICS, TOSHIBA, OR EQUAL MODEL TO BE RECOMMENDED BY MANUFACTURER.



ILLUSTRATIVE SECTION 2
SCALE: NONE
C502

- NOTES:
1. VALVE PIT TO BE CONSTRUCTED ON UNDISTURBED SOIL OR COMPACTED GRANULAR MATERIAL COMPACTED TO 95 % OF PROCTOR.
 2. DEFLECTOR PLATES SHALL BE INSTALLED ON INFLUENT SEWERS IN ACCORDANCE WITH PLATE MATERIALS SCHEDULE.
 3. ALL EXTERIOR JOINTS TO HAVE BUTYL RUBBER APPLIED OVER THE JOINT TO A MINIMUM OF 1'-0" ABOVE AND BELOW THE JOINT. TONGUE AND GROOVE JOINT SHALL HAVE BUTYL ROPE AND GASKET CONFORMING TO ASTM C-443.
 4. ALL FASTENERS, SUPPORTS, ETC. SHALL BE STAINLESS STEEL.
 5. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 6. PIPE PENETRATIONS THROUGH STRUCTURES SHALL BE SEALED WITH LINKS SEAL.
 7. ALL WORK SHALL CONFORM TO "FALL CREEK REGIONAL WASTE DISTRICT STANDARDS FOR DESIGN AND CONSTRUCTION OF SANITARY SEWERS."
 8. THE LIFT STATION PRESSURE GAUGE WITH VALVE AND FITTINGS SHALL BE STAINLESS STEEL OR BRASS.
 9. THE CONCRETE LIFT STATION BASE SHALL BE MANUFACTURED WITH THE BASE AND THE FIRST ONE (1) FOOT MINIMUM OF BARREL ABOVE THE BASE POURED MONOLITHICALLY.



SITE PLAN 1
SCALE: 1" = 10'
C502

REVISIONS:
08-07-03 PER ADDED INTERIOR DROP IN WET WELL
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REGISTERED
No. 19900094
STATE OF INDIANA
PROFESSIONAL ENGINEER
Andrew C. Cochran
DATE: 8/26/03
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PRAIRIE HOLLOW
SECTION 1
INGALLS, INDIANA
C. P. MORGAN COMMUNITIES, L.P.
4670 HAVEN POINT BLVD., INDIANAPOLIS, IN 46280

DATE: 7/1/03 PROJECT NO.: 4496.001
DRAWN BY: BAB CHECKED BY: ACC
SHEET TITLE: LIFT STATION PLAN & DETAILS
DRAWING FILES:
R:\44\4496\001\DWG\SANITARY_05\C502.DWG
XREF: R:\44\4496\001\DWG\4496001S.dwg
XREF: R:\44\4496\001\DWG\1BS.dwg
XREF: R:\44\4496\001\DWG\SAN_05.dwg
SHEET NO.:
C502

SUBMERSIBLE LIFT STATION
GENERAL SPECIFICATION GUIDE
FALL CREEK REGIONAL WASTE DISTRICT
DUPLEX NON-CLOG SEWAGE LIFT STATION – CONCRETE WELL

I. Scope of Work:

- A. Furnish all labor, equipment and material to construct one duplex submersible pumping station consisting of pumps, motors, wet basin, separate valve pit, valves, piping, hatches, guide rails, pump removal components, control center, float switches, remote monitor, interconnecting electrical wiring, incoming power supply, and other features regularly and normally required as a part of a complete and functional facility. All work shall be in accordance with site requirements, details in the plans, these specifications and the manufacturer's recommendations.

II. General Requirements:

- A. All of the mechanical and electrical equipment shall be an integral package supplied by the pump manufacturer with local representation so as to provide undivided responsibility. The package shall be Hydromatic Pump equipment and USEMCO Controls.
- B. The contractor shall submit to the Project Engineer for review and approval, three (3) sets of shop drawings, detailed specifications, pump warranty and performance characteristics for all of the equipment and fixtures to be furnished and installed. The Project Engineer will review the submittal and render a decision in writing as to the acceptability of the equipment. Without prior written engineering approval, the item of work may not be accepted.
- C. Any exceptions to this standard or associated approved plans shall be submitted in writing and clearly stated. The exceptions must be approved by the Engineer prior to proceeding with the work.
- D. All components of the lift station that are exposed to weather shall be constructed of material that is resistant to corrosion and will not surface protection throughout the expected life of the lift station.

Operating Conditions:

- A. Each pump shall have a capacity of 321 gallons per minute at a total dynamic head of 109 feet when operating. The pump motor shall be a minimum 25 horsepower, 1750 RPM, 480 volt, 3 phase, 60 cycle. Each pump shall be provided with 50 feet of power cable and sensor cable. The pump shall be a pump model S4C as manufactured by Hydromatic.

IV. Pumping Equipment:

- A. Pumps shall be of the submersible type for handling raw unscreened sewage. Pump volute, motor and seal housing are to be high quality gray cast iron. Impeller shall be either cast iron or cast bronze of a non-clog design capable of handling minimum three (3) inch sphere solids, fibrous material, heavy sludge and other matter found in normal sewage applications. Impeller shall have pump out vanes on the back shroud of the impeller to keep pumped material away from the seal area and increase operating life. Impeller shall be either slip fit or taper fit with key to securely lock the impeller to the driving shaft. The pump volute shall be fit with a replaceable bronze wear ring to minimize wear on the impeller and help achieve longer balanced operating life. All fasteners shall be of stainless steel.

- B. All mating surfaces where water tight sealing is required shall be machined and fitted with nitrile rubber O-rings. Sealing shall be accomplished when metal-to-metal contact is made, resulting in controlled compression of the rubber O-rings without requirement of a specific torque limit.

- C. The pump shall be provided with a mechanical rotating shaft seal system running in an oil reservoir having separate, constantly lubricated lapped seal faces. The lower seal unit between the pump and oil chamber shall consist of one (1) stationary seal and one (1) rotating ring held in place by its own spring. The lower seal shall be removable without disassembling the seal chamber. The upper seal between the motor and the seal chamber shall be of the same design with its own separate spring system. The seals shall require neither maintenance nor adjustment, but shall be easily inspected and replaceable. Shaft seals with conventional double seal utilizing a single spring between the two seals and requiring a pressure differential to offset external pressure shall not be considered acceptable nor equal to the dual independent seal system specified. The shaft sealing system shall be capable of operating submerged to pressures equivalent to two hundred (200) feet. No seal damage shall result from operating the pump unit out of its liquid environment. The seal system shall not rely upon the pumped media for lubrication. Pumps with bronze bushing between mechanical seals will not be acceptable. The seal chamber shall also be equipped with a seal failure sensor probe which will sense water intrusion through the lower seal. This sensor is to be connected to an alarm in the control panel to indicate lower seal failure.

- D. The stator winding, rotor and bearings are to be mounted in a sealed submersible type housing. Insulation heated in the stator windings shall be class F with maximum temperature capability of 155 degrees Centigrade. Motor housing shall be filled with a high dielectric oil to give superior heat transfer and allow the bearings to run in a clean, well lubricated environment; or the housing shall be air filled with grease lubricated bearings. The pump and motor are to be specifically designed so that they may be operated partially or completely submerged in the liquid being pumped. The pump should not require cooling water jackets. Stators shall be securely held in place with a removable end ring and threaded fasteners so that it may be easily removed in the field without use of heat or a press without exception.

Shaft shall be of stainless steel and supported by ball bearings. Motor shall be provided with heat sensing units (attachments) to the motor windings, which shall be connected to the control panel to shut down the pump if overheating occurs.

- E. Pump motor cable and heat sensor / seal failure sensor cable shall be suitable for submersible pump applications and this shall be indicated by a code or legend permanently embossed on the cable. Cable sizing shall conform to NEC specifications for pump motors and shall be of adequate size to allow motor voltage conversion without replacing the cable. Cable of the proper length shall be provided to eliminate the need for splices or junction boxes between pump and 'Control Center'. The cable shall enter the motor through a cord cap assembly which is double-sealed allowing disassembly and disconnect of the wires at the motor and still not damage the sealed characteristics of the motor housing. Each individual conductor shall be color coded in accordance with generally accepted industry standards. The color coding shall designate the application of the conductor.

- F. The pump mounting base shall include adjustable guide rail supports and a discharge connection with a one hundred twenty-five (125) pound standard flange. The base and the discharge piping shall be permanently mounted in place.

- G. A rail system shall be provided for easy removal of the pump and motor assembly for inspection and service. The system shall not require a man to enter the wet well to remove the pump and motor assembly. One (1) H type fiberglass reinforced plastic (FRP) I-Beam shall be provided for each pump.

- H. The pumps shall be equipped with sliding brackets or rail guides. To insure easy removal of the pumps, the rail guides attached to each pump shall not encircle the rails. A stainless steel lifting chain of adequate length for the basin depth shall be provided for each pump.
- I. The rails and rail guides shall function to allow the complete weight of the pumping unit to be lifted on dead center without binding and stressing the pump housing. The rail system shall function to automatically align the pumping unit to the discharge connection by a simple downward movement of the pump. No twisting or angle approach will be considered acceptable. The actual sealing of the discharge interface will be of the hydraulically sealing diaphragm type assembly with removable Buna-N diaphragm as supplied by Hydromatic Pump.

- J. Pump warranty shall be provided by the pump manufacturer and shall warrant the units being supplied to the Owner against defects in workmanship and materials for a period of five (5) years under normal use, operation and service. The warranty shall be in printed form and apply to all similar units. A copy of the warranty statement shall be submitted with the approval drawings.

V. Basin, Valve Pit and Accessories:

- A. The basin and valve pit are to be constructed of precast concrete. The actual arrangement of the structures is to be as shown in the approved plans. The wet well basin top shall be provided with a four (4) inch PVC vent having a downward pointing inlet and screen over the inlet opening.
- B. The basin, valve pit, flat tops and base slabs are to be constructed of precast reinforced concrete manhole sections conforming to ASTM C-478. All joints between precast sections shall be made with an approved rubber O-ring in accordance with ASTM C-443 and a 1/2 inch diameter non-asphaltic mastic conforming to AASHTO M-198 and Federal Specification SS-521-A. In addition, the outside wall below grade is to be coated with aluminum waterproofing material. The top and bottom of the chambers shall be precast or may be poured in place concrete if approved by the Engineer.
- C. The pump supplier shall provide an aluminum two (2) door access hatch frame and door assembly to be installed in the concrete basin top. This door assembly shall provide access for removal of the pumps and shall support the guide rails. The doors shall be provided with lifting handle, safety latch to hold door in the open position and a hasp suitable for a padlock. The doors shall have a non-skid finish, designed for light, medium or heavy duty, depending on the location of the pumping station.
- D. An aluminum single door access hatch frame and door assembly, similar to the one described above, shall be provided for use as entry to the valve pit. Minimum opening for the valve box entry shall be thirty-six (36) inches by thirty-six (36) inches.
- E. A swing check valve with external swing arm and an eccentric plug valve shall be installed in the valve pit in each pump's discharge piping. A minimum clearance of twelve (12) inches shall be allowed from the bottom of the valves to invert of the pit. A drain pipe and ball valve shall be installed to drain the valve pit back to the wet basin, but not allow the wet basin liquid to enter the valve pit.

- F. A 4" PVC schedule 80 pump suction line shall be provided from within 12" of the basin floor up through the basin top casting for use as an emergency pump suction connection as shown on the plans. The suction line shall terminate 12" above the top of the casting with a 90 degree elbow and quick disconnect flange matching the Fall Creek Regional District portable pumping equipment. The 4" Camlock quick disconnect shall also be provided with an air tight cap.

- G. The discharge piping in the valve pit shall be provided with a 4" plug valve and a 4" Camlock quick disconnect fitting in the common discharge pipe, after the individual pump plug valves, for use as an emergency pump discharge connection as shown on the plans. The quick disconnect fitting shall match the Fall Creek Regional Waste District portable pumping equipment.

VI. Disconnect Switch:

- A. A single main disconnect switch of adequate size to provide power for the 'Control Center' and its related components shall be provided by the Contractor.
- B. The disconnect switch shall be housed in a NEMA 4X stainless steel enclosure.

VII. Transfer Switch

- A. A manual transfer switch of adequate size to provide power via incoming electrical service or emergency generator power shall be provided.
- B. The transfer switch shall be built in the same enclosure as the main control center.
- C. A receptacle shall be provided to fit the Fall Creek Regional Waste District generator. Contact Tim Mccurdy at the Waste District for correct size.

VIII. Control Center:

- A. The control center shall be built in a NEMA 4X stainless steel enclosure and shall be suitable for the specified horsepower and voltage for the pumping equipment. The outer door of the panel shall be hinged dead front with provisions for locking with a padlock. Inside shall be a separate hinged panel to protect all electrical components.
- B. The control center shall include a micro-processor base pump controller manufactured by USEMCO model 11928-5 (Without Exceptions) to control the pumps and to maintain the level in the wet well. The controller shall also receive a signal from the back-up floats and automatically switch to back-up if the 4-20ma signal is lost. Also shall include all necessary components for above controller to operate.
- C. A circuit breaker and magnetic starter (NEMA Rated) with three (3) leg overload protection (2 leg overload for single phase applications) and manual reset shall be provided for each pump. Starters shall have auxiliary contacts, on three phase applications, to operate both pumps on over-ride condition. A separate circuit breaker shall be supplied for power to the control circuit. The control center shall include a control voltage transformer to reduce supply to 115 volt, single (1) phase. An alternating relay shall be provided to alternate pumps on each successive cycle of operation. A green light and H-O-A switch shall be provided for each pump. A terminal strip shall be provided to make field connections of pump power leads, float switches, seal sensor leads, and remote monitor panel interconnections.

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- D. A time delay relay shall be provided to delay start of second pump should power outage occur.
- E. The control center shall incorporate connections for heat sensors which are installed in the pumps. The connection shall disconnect the starter upon high temperature signal, and will automatically reconnect when condition has been corrected.
- F. The control center shall incorporate connections for seal failure sensors which are installed in the pumps. The panel will have a seal failure alarm light for each pump. This alarm indicates failure of the lower mechanical seal in the pump. This will be a alarm light only and will not shut down the pump.

- H. The control center shall have a high water alarm built-in the main enclosure. The high water alarm shall consist of a flashing alarm light with red Lexan plastic cover or red glass globe with metal guard mounted on top of the enclosure such that it is visible from all directions. An alarm horn shall be mounted on the side of the enclosure. A push to test horn and light button as well as a push to silence horn button shall be provided and mounted on the side of the enclosure.

- I. The control center shall include a condensate heater to protect against condensation inside the enclosure. The heater shall be placed so as not to damage any other component or wiring in the control center.

- J. The control center shall include lightning protection.

- K. The control center shall incorporate an alternator selector switch to allow selection of automatic alternation or manual selection of the lead pump.

- L. The control center shall include a GFI convenience outlet with a 20 AMP breaker and suitable transformer or power supply to provide 110 single (1) phase power to the convenience outlet.

- M. The control center shall be suitable for connection to a remote monitor package as described in the section titled 'Remote Monitor Package'. The main control must include the following interconnection capability:

1. Circuit breaker to power remote monitor panel as described above.
2. Relay contact to signal high water alarm.
3. Relay contact to signal tripping of the overload of any of the pumps.
4. Relay contact to transmit signal of seal failure trip of any of the pumps.
5. Current transformer to provide amperage reading to signal Pump #1 run.
6. Current transformer to provide amperage reading to signal Pump #2 run.

- N. A minimum four (4) inch PVC schedule 40 wall conduit shall be provided from the wet well basin to the control center which will allow the pump power cables, sensor cables and float switch cables to be pulled through without difficulty and allow the use of one (1) piece cables from the pumps and float switches to the control center. The conduit shall be sealed at the control center to avoid entrance of sewer gases into the control panel.

- O. The control center and associated components shall be mounted on a non-maintenance type pedestal or mounting stand constructed of aluminum. The control center shall be located so as to provide safe access to the panel while wet well hatch doors are opened, and shall be positioned so as not to be between the access drive and the wet well.

- P. All components of the control center shall be American made and available from local sources. In particular, items such as circuit breakers, overload protection, relays, etc. shall be available and in stock by local sources.

- Q. In order to maintain unit responsibility and warranty on the pumping equipment and control center, the control center must be accepted in writing by the pump manufacturer, as suitable for operation with the pumping equipment.

- R. The control panel shall bear a UL label and meet UL508-698A criteria.

IX. Level Controls

- A. The liquid level of the wet well shall be sensed by a submersible level transducer model 6100 as manufactured by Sigma. The transducer shall be a 2-wire type to operate from a supply voltage of 15 to 45 VDC and produce a 4-20 mA instrumentation signal in direct proportion to the measured level excursion over a factory-calibrated range which will be indicated by readout on the front panel. It shall be of the head-pressure sensing type, suitable for continuous submerged, operation and shall be installed in accordance with the manufacturer's instructions. The bottom diaphragm face of the sensor will be installed where shown on the plans. The diaphragm, face shall be a minimum of 2.5 inches outside diameter.

X. Backup Mercury Float Switches:

- A. Sealed float type mercury switches shall be supplied to control sump level and alarm signal. The mercury tube switches shall be sealed in a solid polyurethane float for corrosion and shock resistance. The support wire shall have a heavy Neoprene jacket and a weight shall be attached to the cord above the float to hold the float in place in the sump. The floats shall also be capable of supporting themselves from a stainless steel float bracket.

XI. Backup System Operation:

- A. On sump level rise, the lower mercury switch shall first be energized, then the upper level switch shall next energize and start the lead pump. With the lead pump operating, sump level shall lower to lowest switch and turn off the pump. The alternating relay in the 'Control Center' shall index on stopping of the pump so that the lag pump will start on the next operation. If pump level continues to rise when lead pump is operating, the override switch shall energize and start the lag pump. Both lead and lag pumps shall operate together until low level switch turns off both pumps. If the level continues to rise when both pumps are operating, alarm level switch shall energize and signal the alarm. If one pump should fail for any reason, the second pump shall operate on the override switch. All level switches shall be adjustable for level setting from the surface.

Special Construction Control for Prairie Hollow

RADIO TELEMETRY
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- H. The control center shall have a high water alarm built-in the main enclosure. The high water alarm shall consist of a flashing alarm light with red Lexan plastic cover or red glass globe with metal guard mounted on top of the enclosure such that it is visible from all directions. An alarm horn shall be mounted on the side of the enclosure. A push to test horn and light button as well as a push to silence horn button shall be provided and mounted on the side of the enclosure.

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X. Backup Mercury Float Switches:

- A. Sealed float type mercury switches shall be supplied to control sump level and alarm signal. The mercury tube switches shall be sealed in a solid polyurethane float for corrosion and shock resistance. The support wire shall have a heavy Neoprene jacket and a weight shall be attached to the cord above the float to hold the float in place in the sump. The floats shall also be capable of supporting themselves from a stainless steel float bracket.

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X. Backup Mercury Float Switches:

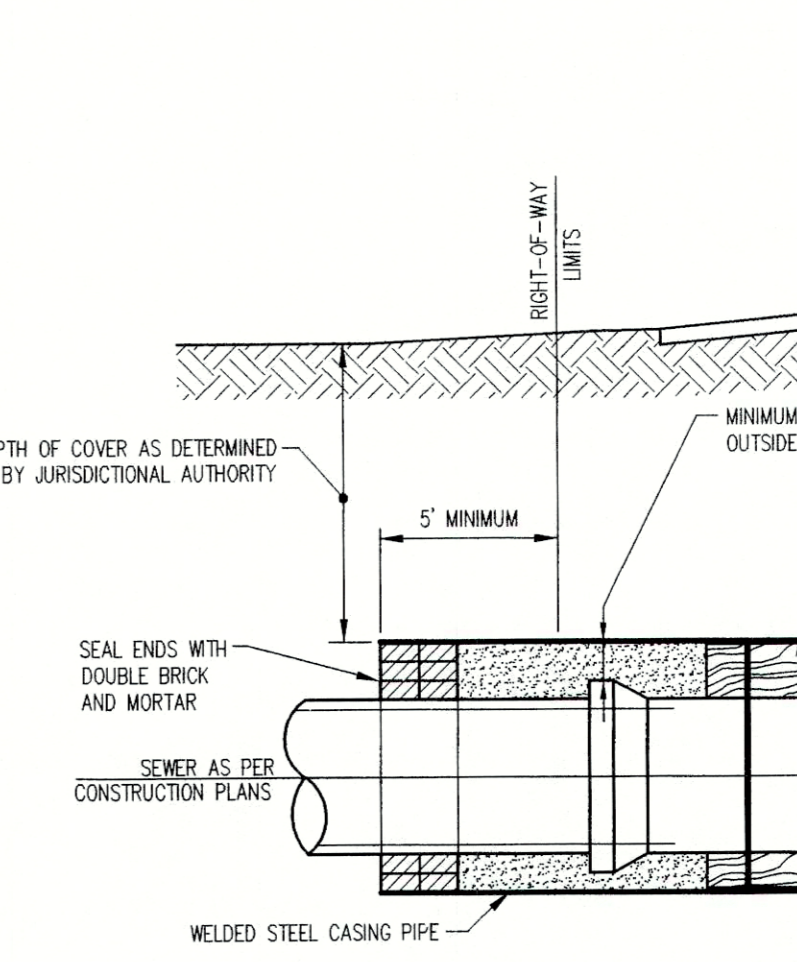
- A. Sealed float type mercury switches shall be supplied to control sump level and alarm signal. The mercury tube switches shall be sealed in a solid polyurethane float for corrosion and shock resistance. The support wire shall have a heavy Neoprene jacket and a weight shall be attached to the cord above the float to hold the float in place in the sump. The floats shall also be capable of supporting themselves from a stainless steel float bracket.

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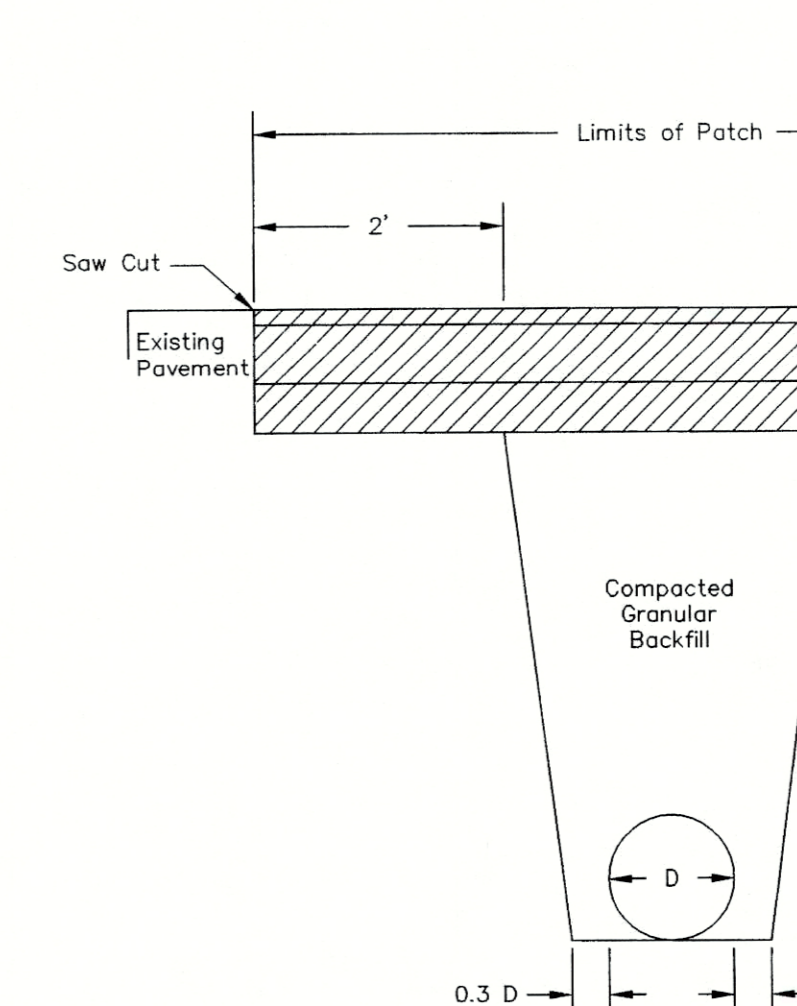
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Special Construction Control for Prairie Hollow

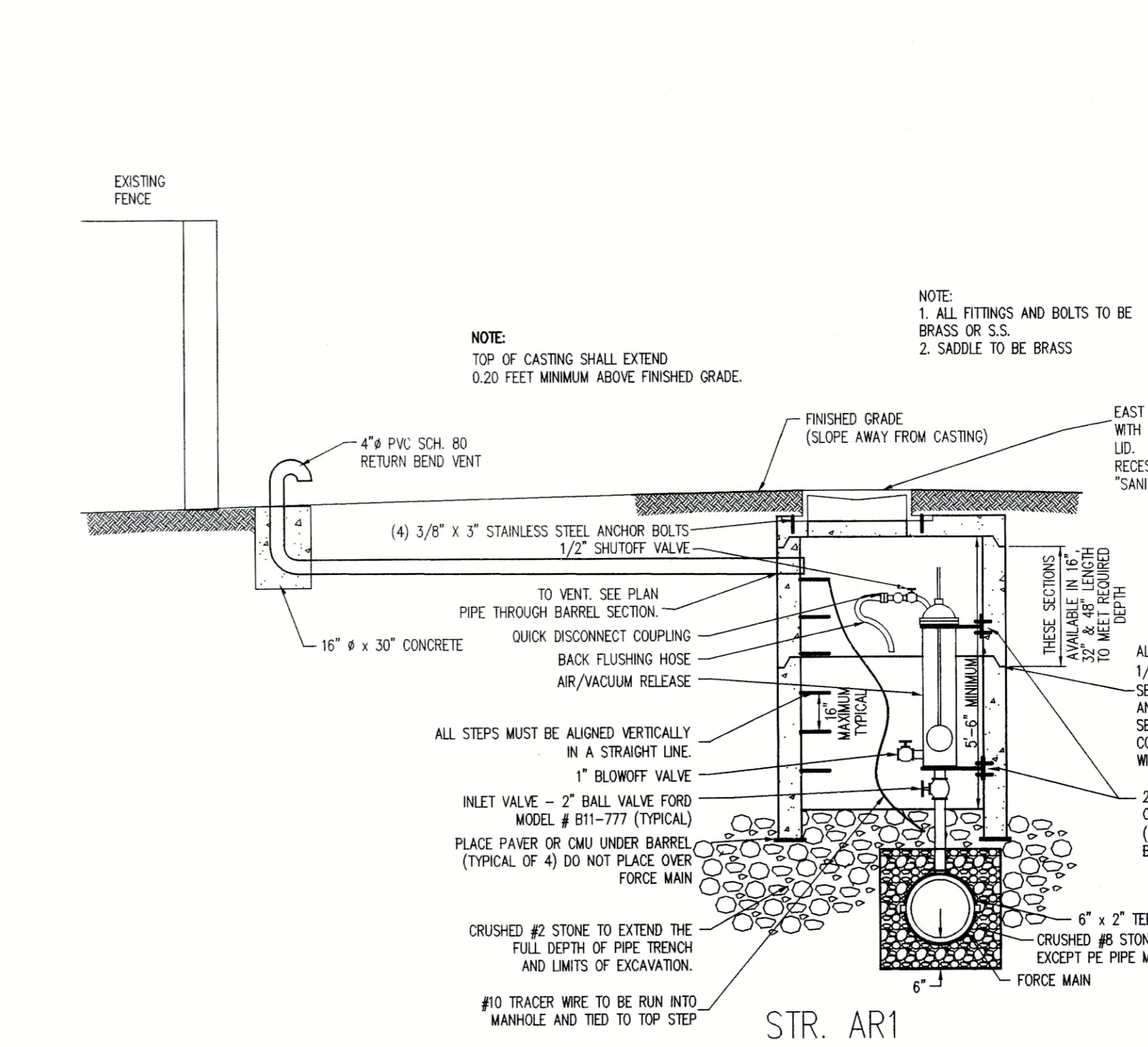
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TYPICAL BORING DETAIL 1 C503 NO SCALE



PAVEMENT REPAIR SECTION DETAIL 2 C503 NO SCALE



STR. AR1 OPEN BOTTOM AIR/VACUUM RELEASE MANHOLE DETAIL 3 C503 NO SCALE

REVISIONS:
8-7-03 ADDED SPECIFICATIONS AND STR. AR1- DETAIL, BAG
8-18-03 REVISED PER FALL CREEK REGIONAL WASTE DISTRICT
8-29-03 REVISED PER FINAL ASSOC. COMMENTS, BAG

REGISTERED
No. 19900094
STATE OF INDIANA
PROFESSIONAL ENGINEER
Andrew C. Cochran
DATE: 8/26/03
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Environmental Engineering
Geotechnical Services
GIS + LIS
Home Builder Services
Interior Design
Land Surveying
Landscape Architecture
Transportation Engineering

PRairie HOLLOW
SECTION 1
INGALLS, INDIANA
C. P. MORGAN COMMUNITIES, L.P.
4670 HAVEN POINT BLVD., INDIANAPOLIS, IN. 46280

DATE: 7/1/03 PROJECT NO.: 4496.001
DRAWN BY: CHECKED BY:
SHEET TITLE: OFFSITE FORCE MAIN SPECIFICATIONS & DETAILS
DRAWING FILES: R:\4496\001\DWGS\SANITARY_OS\C503.DWG
SHEET NO.:
C503

THERE ARE NO DRINKING WATER WELLS WITHIN 100' RADIUS OF ANY GRAVITY SANITARY SEWER LINES OR MANHOLES ON THIS PROJECT.

Sheet	Date	Description
C802	1	Precast Reinforced Concrete Manhole
C802	3	Sanitary Sewer Bedding Detail
C802	5	Service Connection for Deep Sewer
C802	4	Service Connection for Shallow Sewer

NOTE



BENCHMARK

BM - ABOUT 3.05 WEST NORTH ALONG STATE HIGHWAY 13 FROM ITS JUNCTION WITH STATE ROAD 238 AT FORTVILLE, ABOUT 0.55 MILE NORTH OF A BRIDGE OVER FALL CREEK, AT THE JUNCTION OF A ROAD LEADING WEST 30 FEET WEST OF THE CENTERLINE OF THE HIGHWAY, 31 FEET SOUTH OF THE CENTERLINE OF THE SIDE ROAD 14.5 FEET SOUTH OF A CONCRETE HIGHWAY RIGHT-OF-WAY MARKER POST, 1.5 FEET EAST OF THE FENCE LINE, 1.5 FEET SOUTH OF A WHITE WOODEN WIPES POOL, ABOUT LEVEL WITH THE HIGHWAY AND SET IN THE TOP OF A CONCRETE POST PROJECTING ABOUT 6 INCHES, BEING A STANDARD DOW STAMPED "7038 11447" ELEVATION = 860.48 (NGVD 1929)

TM 1 - CUT "X" ON THE NORTHERN MOST BOLLARD OF A FIRE HYDRANT ON THE EAST SIDE OF COUNTY ROAD 750 WEST, ABOUT 800 FEET NORTH OF COUNTY ROAD 100 NORTH. ELEVATION = 860.075 (NGVD 20)

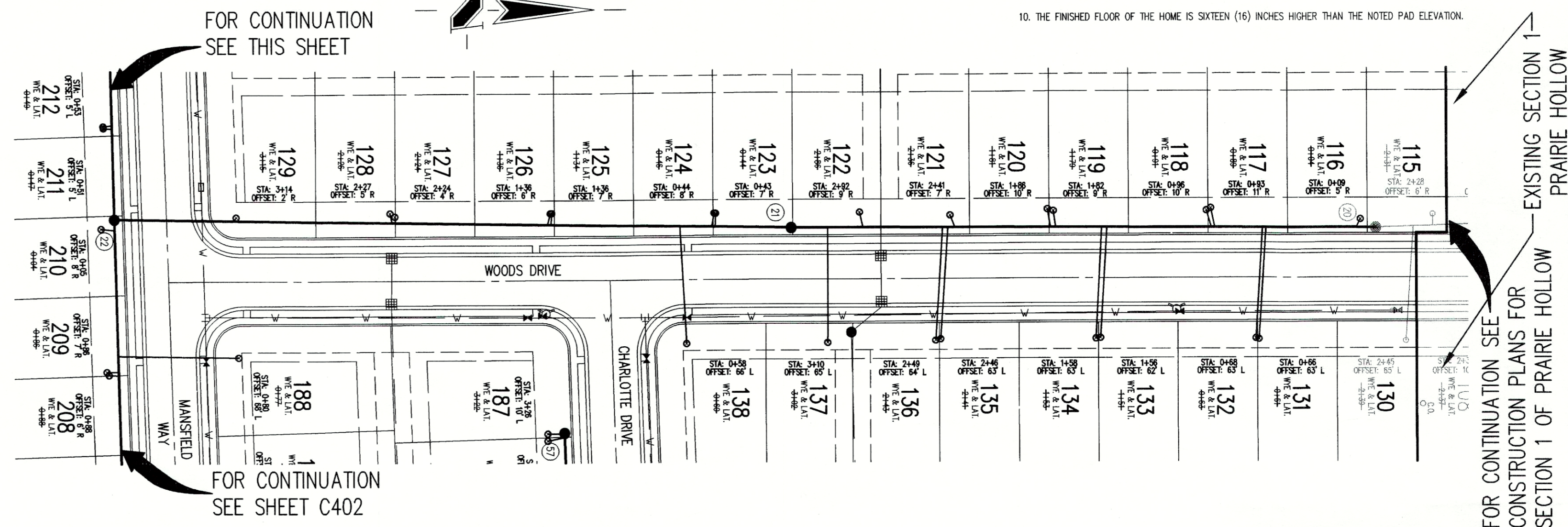
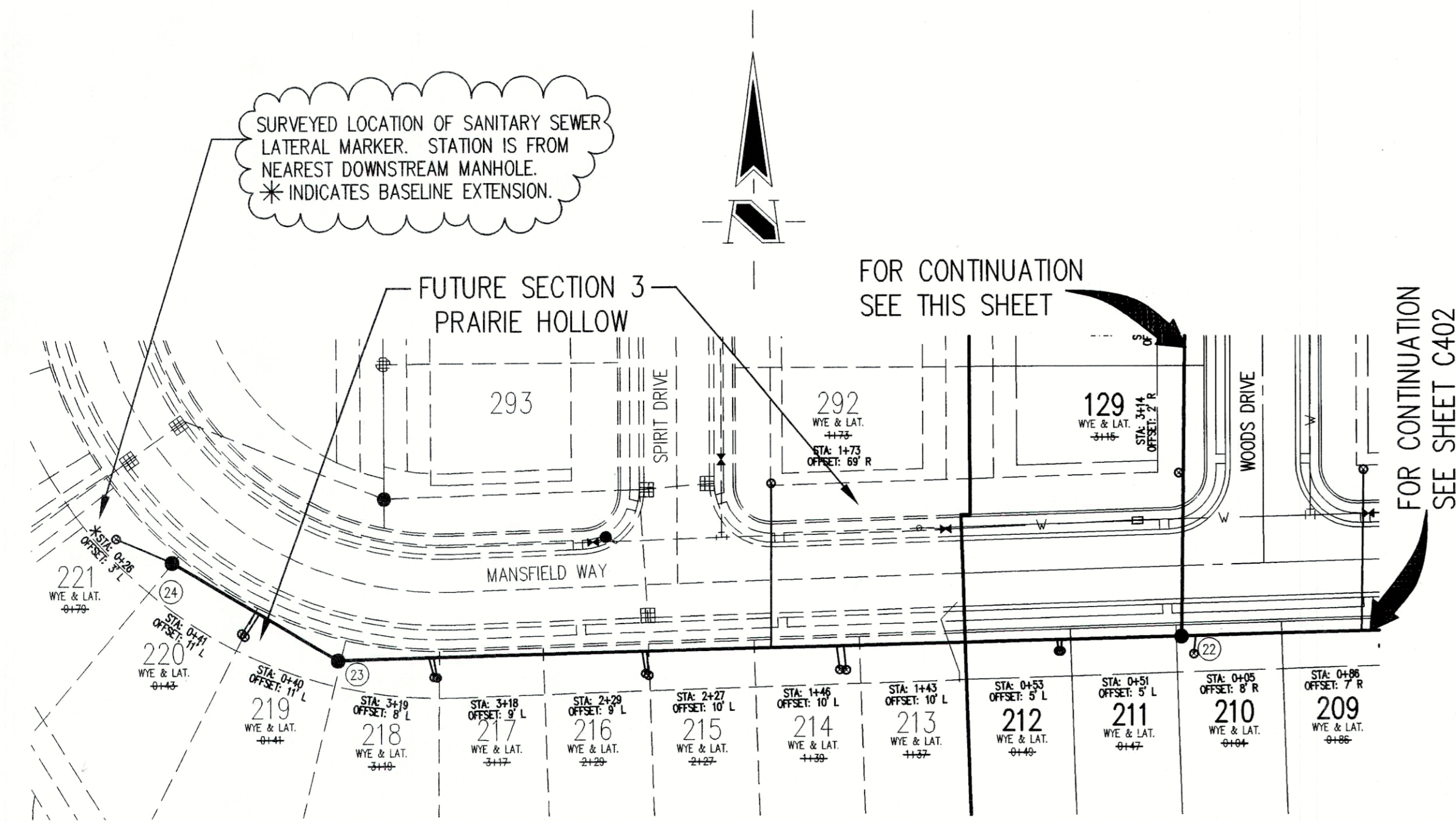
TM 2 - 4" GAL. 1.0 FEET UP ON THE EAST SIDE OF POWER POLE #41-388 ON THE WEST SIDE OF COUNTY ROAD 750 WEST, ABOUT 200 FEET SOUTH OF STATE ROAD 67. ELEVATION = 860.075 (NGVD 20)

TM 3 - 4" GAL. 1.0 FEET UP ON THE NORTH SIDE OF POWER POLE #41-388 ON THE SOUTH SIDE OF STATE ROAD 67, ABOUT 1500 FEET SOUTHWESTERLY OF COUNTY ROAD 750 WEST. ELEVATION = 860.48 (NGVD 20)

TM 4 - 4" GAL. 1.0 FEET UP ON THE EAST SIDE OF A 60 INCH OAK TREE IN THE NORTHWEST CORNER OF THE SUBJECT TRACT. ELEVATION = 860.12 (NGVD 20)

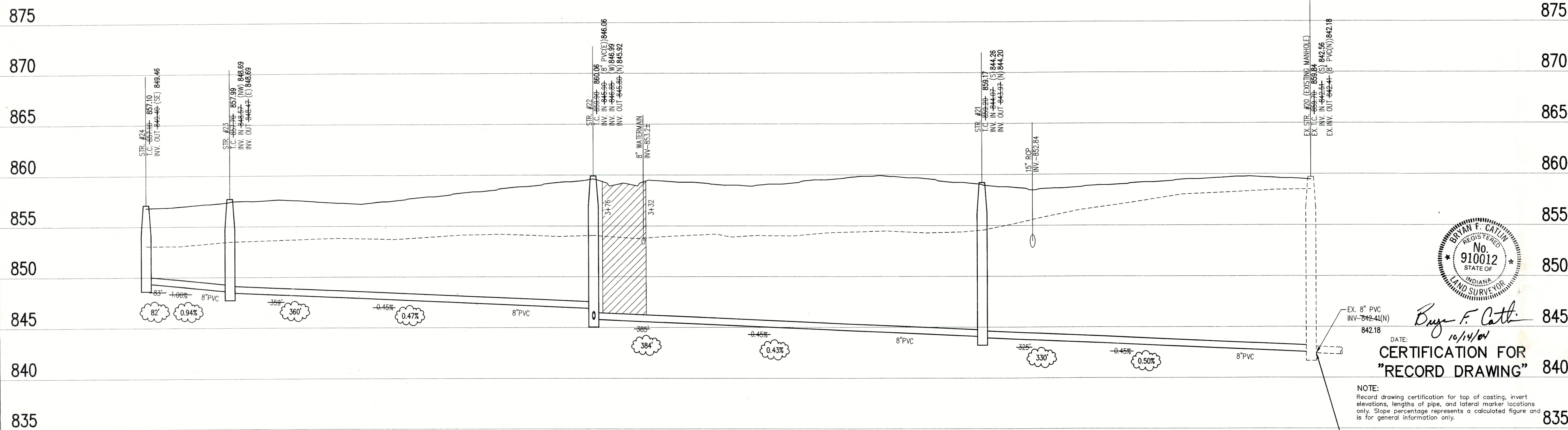
GENERAL NOTES

1. ALL WYE, LATERAL AND PROFILE STATIONS ARE FROM THE NEAREST DOWNSTREAM MANHOLE. (MH)
2. WYES AND LATERALS TO BE 6" PIPE UNLESS OTHERWISE SPECIFIED.
3. ALL WYE CONNECTIONS SHALL HAVE A MINIMUM OF FIVE FOOT LATERAL EXTENSION CONNECTED TO THE WYE, OR EXTEND TO THE UTILITY AND DRAINAGE EASEMENT OF THE LOT, WHICHEVER IS GREATER, BUT IN NO CASE SHOULD BE CLOSER THAN 7' TO THE PAD/BUILDING LINE. THE END OF THE LATERAL SHALL BE PLUGGED OR CAPPED, UNLESS OTHERWISE NOTED.
4. LATERALS RUNNING TO THE OPPOSITE SIDE OF STREET SHALL EXTEND TO THE UTILITY AND DRAINAGE EASEMENT OF THE LOT, BUT IN NO CASE SHOULD BE CLOSER THAN 7' TO THE PAD/BUILDING LINE, UNLESS OTHERWISE NOTED.
5. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL UTILITY LOCATIONS BEFORE CONSTRUCTION BEGINS.
6. TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL AND STATE STANDARDS.
7. ALL CONSTRUCTION ACTIVITY ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.
8. CONTRACTOR SHALL MINIMIZE DAMAGE TO EXISTING TREES.
9. THE LOWEST FLOOR ELEVATION OF A HOME TO HAVE A GRAVITY SANITARY SEWER CONNECTION MUST BE A MINIMUM OF ONE (1) FOOT ABOVE THE TOP OF CASTING ELEVATION OF EITHER THE FIRST UPSTREAM OR DOWNSTREAM MANHOLE ON THE PUBLIC SEWER TO WHICH THE CONNECTION IS TO BE MADE, OR A GRINDER PUMP SHALL BE REQUIRED.
10. THE FINISHED FLOOR OF THE HOME IS SIXTEEN (16) INCHES HIGHER THAN THE NOTED PAD ELEVATION.



SANITARY SEWER PLAN

SCALE: 1"=50'



SANITARY SEWER RECORD DRAWING

SANITARY SEWER PROFILE

LEGEND		
Existing Grade	New Grade	Granular Backfill

SCALE: HORZ.: 1"=50'
VERT.: 1"=5'

REVISIONS:
1. DATE: 10/14/03
2. UPDATED PER RECORD DRAWING INFORMATION

DATE:
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Home Builder Services
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Landscape Architecture
Transportation Engineering

PRAIRIE HOLLOW
SECTION 2

INGALLS, INDIANA

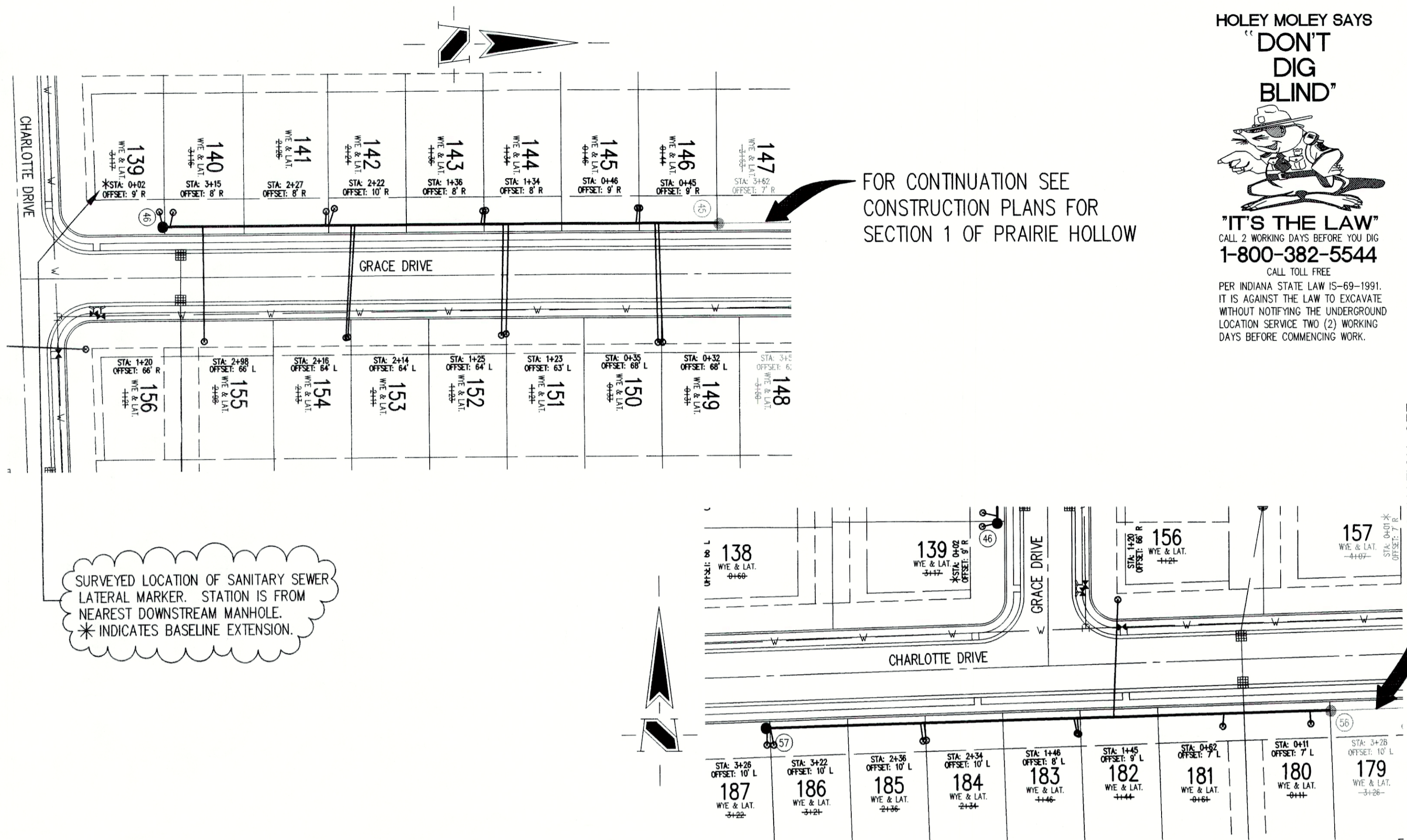
C. P. MORGAN COMMUNITIES, L.P.
4670 HAVEN POINT BLVD., INDIANAPOLIS, IN. 46280

DATE: 11/14/03
PROJECT NO.: 4496.002
DRAWN BY: DTR
CHECKED BY:

SHEET TITLE:
SANITARY SEWER
PLAN & PROFILES

DRAWING FILES:
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XREF: R:\4496\4496\001\DWG\115
XREF: R:\4496\4496\002\DWG\125
XREF: R:\4496\4496\003\DWG\SANITARY
XREF: R:\4496\4496\003\DWG\365

SHEET NO.:
C401



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PER INDIANA STATE LAW IS-69-1991,
IT IS AGAINST THE LAW TO EXCAVATE
WITHOUT NOTIFYING THE UNDERGROUND
LOCATION SERVICE TWO (2) WORKING
DAYS BEFORE COMMENCING WORK.

BENCHMARK

BM - ABOUT 3.00 MILES NORTH ALONG STATE HIGHWAY 13 FROM ITS
JUNCTION WITH STATE ROAD 238 AT FORTVILLE, ABOUT 0.55 MILE
NORTH OF A BRIDGE OVER FALL CREEK, AT THE JUNCTION OF A ROAD
LOOKING WEST, 30 FEET WEST OF THE CENTERLINE OF THE HIGHWAY,
3 FEET SOUTH OF THE CENTERLINE OF THE SIDE ROAD, 14.5 FEET
SOUTH OF A CONCRETE HIGHWAY POST, OF A WHITE WOODEN
WHIPPOST, ABOUT 15 FEET SOUTH OF A WHITE WOODEN
WHIPPOST, ABOUT 15 FEET SOUTH OF THE HIGHWAY AND SET IN THE TOP
OF A CONCRETE POST PROJECTING ABOUT 4 INCHES, BEING A
STANDARD DISK STAMPED "7026 1947"
ELEVATION = 850.45 (NGVD 1929)

TM 1 - CUT "7" ON THE NORTHWEST CORNER BOLT OF A FIRE
HYDRANT ON THE EAST SIDE OF COUNTY ROAD 750 WEST, ABOUT 850
FEET NORTH OF COUNTY ROAD 1100 NORTH.
ELEVATION = 850.975 (NGVD 29)

TM 2 - MAG NAIL 1.0 FEET UP ON THE EAST SIDE OF POWER POLE
#47-358 ON THE WEST SIDE OF COUNTY ROAD 750 WEST, ABOUT 200
FEET SOUTH OF STATE ROAD 67.
ELEVATION = 854.60 (NGVD 29)

TM 3 - MAG NAIL 1.0 FEET UP ON THE NORTH SIDE OF POWER POLE
#47-358 ON THE SOUTH SIDE OF STATE ROAD 67, ABOUT 1300 FEET
SOUTHWESTERLY OF COUNTY ROAD 750 WEST.
ELEVATION = 854.60 (NGVD 29)

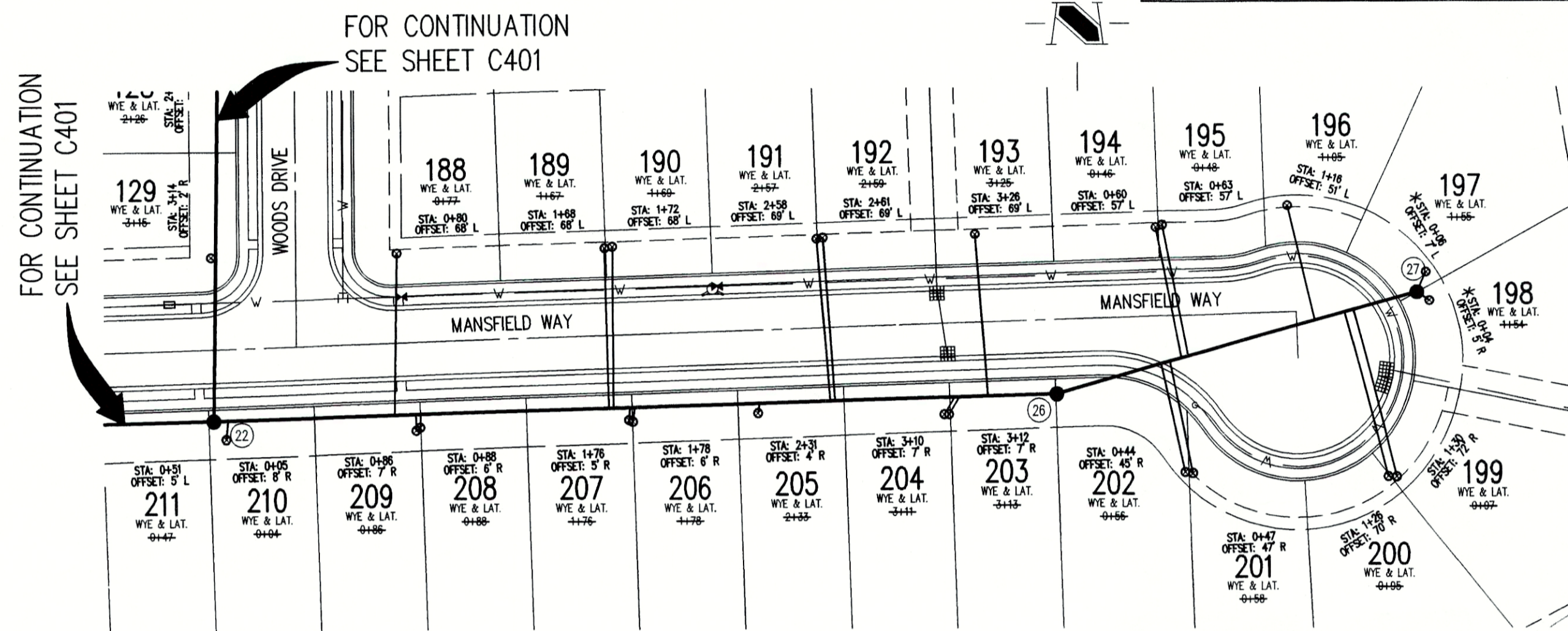
TM 4 - MAG NAIL 1.0 FEET UP ON THE EAST SIDE OF A 60 INCH
OAK TREE IN THE NORTHWEST CORNER OF THE SUBJECT TRACT.
ELEVATION = 858.12 (NGVD 29)

- GENERAL NOTES**
- ALL WYE, LATERAL AND PROFILE STATIONS ARE FROM THE NEAREST DOWNSTREAM MANHOLE (MH).
 - WYES AND LATERALS TO BE 6" PIPE UNLESS OTHERWISE SPECIFIED.
 - ALL WYE CONNECTIONS SHALL HAVE A MINIMUM OF FIVE FOOT LATERAL EXTENSION CONNECTED TO THE WYE, OR EXTEND TO THE UTILITY AND DRAINAGE EASEMENT OF THE LOT, WHICHEVER IS GREATER, BUT IN NO CASE SHOULD BE CLOSER THAN 7' TO THE PAD/BUILDING LINE. THE END OF THE LATERAL SHALL BE PLUGGED OR CAPPED, UNLESS OTHERWISE NOTED.
 - LATERALS RUNNING TO THE OPPOSITE SIDE OF STREET SHALL EXTEND TO THE UTILITY AND DRAINAGE EASEMENT OF THE LOT, BUT IN NO CASE SHOULD BE CLOSER THAN 7' TO THE PAD/BUILDING LINE, UNLESS OTHERWISE NOTED.
 - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL UTILITY LOCATIONS BEFORE CONSTRUCTION BEGINS.
 - TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL AND STATE STANDARDS.
 - ALL CONSTRUCTION ACTIVITY ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.
 - CONTRACTOR SHALL MINIMIZE DAMAGE TO EXISTING TREES.
 - THE LOWEST FLOOR ELEVATION OF A HOME TO HAVE A GRAVITY SANITARY SEWER CONNECTION MUST BE A MINIMUM OF ONE (1) FOOT ABOVE THE TOP OF CASTING ELEVATION OF EITHER THE FIRST UPSTREAM OR DOWNSTREAM MANHOLE ON THE PUBLIC SEWER TO WHICH THE CONNECTION IS TO BE MADE, OR A GRINDER PUMP SHALL BE REQUIRED.
 - THE FINISHED FLOOR OF THE HOME IS SIXTEEN (16) INCHES HIGHER THAN THE NOTED PAD ELEVATION.

LEGEND/DETAILS

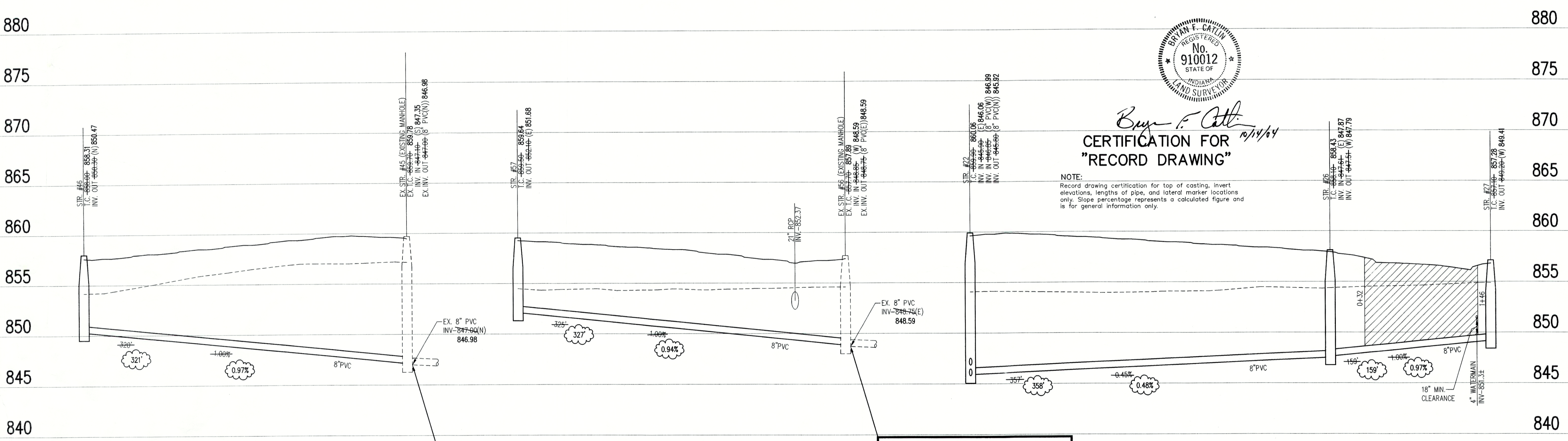
Sheet	Detail	Description
C802	1	Precast Reinforced Concrete Manhole
C802	3	Sanitary Sewer Bedding Detail
C802	4	Service Connection for Shallow Sewer

NOTE: THERE ARE NO DRINKING WATER WELLS WITHIN 100' RADIUS OF ANY GRAVITY SANITARY SEWER LINES OR MANHOLES ON THIS PROJECT.



SANITARY SEWER PLAN

SCALE: 1"=50'



Bryan F. Catlin
CERTIFICATION FOR
"RECORD DRAWING"
7/14/03

NOTE:
Record drawing certification for top of casting, invert elevations, lengths of pipe, and lateral marker locations only. Slope percentage represents a calculated figure and is for general information only.

CONTRACTOR MUST FIELD VERIFY EXISTING INVERTS PRIOR TO CONSTRUCTION. IF A VARIATION EXISTS, THEN CONTACT THE ENGINEER IMMEDIATELY.

**SANITARY SEWER
RECORD DRAWING**

SANITARY SEWER PROFILE

LEGEND

Existing Grade	New Grade	Granular Backfill

SCALE: HORZ.: 1"=50'
VERT.: 1"=5'

DATE:
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**PRAIRIE HOLLOW
SECTION 2**
INGALLS, INDIANA

C. P. MORGAN COMMUNITIES, L.P.
4670 HAVEN POINT BLVD., INDIANAPOLIS, IN. 46280

DATE: 11/14/03 PROJECT NO: 4496.002
DRAWN BY: DTR CHECKED BY:
SHEET TITLE: SANITARY SEWER PLAN & PROFILES
DRAWING FILES: R:\AK\4496\002\DWG\CA91-2
XREF: R:\AK\4496\001\DWG\11B5
XREF: R:\AK\4496\002\DWG\2B5
XREF: R:\AK\4496\002\DWG\SANITARY
XREF: R:\AK\4496\003\DWG\3B5
SHEET NO: C402

SURVEYED LOCATION OF SANITARY SEWER LATERAL MARKER. STATION IS FROM NEAREST DOWNSTREAM MANHOLE. * INDICATES BASELINE EXTENSION.

GENERAL NOTES

1. ALL WYE, LATERAL AND PROFILE STATIONS ARE FROM THE NEAREST DOWNSTREAM MANHOLE (MH).
2. WYES AND LATERALS TO BE 6" PIPE UNLESS OTHERWISE SPECIFIED.
3. ALL WYE CONNECTIONS SHALL HAVE A MINIMUM OF FIVE FOOT LATERAL EXTENSION CONNECTED TO THE WYE, OR EXTEND TO THE UTILITY AND DRAINAGE EASEMENT OF THE LOT, WHICHEVER IS GREATER, BUT IN NO CASE SHOULD BE CLOSER THAN 7' TO THE PAD/BUILDING LINE. THE END OF THE LATERAL SHALL BE PLUGGED OR CAPPED, UNLESS OTHERWISE NOTED.
4. LATERALS RUNNING TO THE OPPOSITE SIDE OF STREET SHALL EXTEND TO THE UTILITY AND DRAINAGE EASEMENT OF THE LOT, BUT IN NO CASE SHOULD BE CLOSER THAN 7' TO THE PAD/BUILDING LINE, UNLESS OTHERWISE NOTED.
5. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL UTILITY LOCATIONS BEFORE CONSTRUCTION BEGINS.
6. TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL AND STATE STANDARDS.
7. ALL CONSTRUCTION ACTIVITY ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.
8. CONTRACTOR SHALL MINIMIZE DAMAGE TO EXISTING TREES.
9. THE LOWEST FLOOR ELEVATION OF A HOME TO HAVE A GRAVITY SANITARY SEWER CONNECTION MUST BE A MINIMUM OF ONE (1) FOOT ABOVE THE TOP OF CASTING ELEVATION OF EITHER THE FIRST UPSTREAM OR DOWNSTREAM MANHOLE ON THE PUBLIC SEWER TO WHICH THE CONNECTION IS TO BE MADE, OR A GRINDER PUMP SHALL BE REQUIRED.
10. THE FINISHED FLOOR OF THE HOME IS SIXTEEN (16) INCHES HIGHER THAN THE NOTED PAD ELEVATION.



Bryan F. Catlin
1/24/06

CERTIFICATION FOR "RECORD DRAWING"

NOTE:
Record drawing certification for top of casting, invert elevations, lengths of pipe, and lateral marker locations only. Slope percentage represents a calculated figure and is for general information only.

BENCHMARK

BM - ABOUT 3.05 MILES NORTH ALONG STATE HIGHWAY 13 FROM ITS JUNCTION WITH STATE ROAD 238 AT FORTALE, ABOUT 0.55 MILE NORTH OF A BRIDGE OVER FALL CREEK AT THE JUNCTION OF A ROAD LEADING WEST, 30 FEET WEST OF THE CENTERLINE OF THE HIGHWAY, 31 FEET SOUTH OF THE CENTERLINE OF THE SIDE ROAD, 14.5 FEET SOUTH OF A CONCRETE HIGHWAY RIGHT-OF-WAY MARKER POST, 1.5 FEET EAST OF THE FENCE LINE, 1.5 FEET SOUTH OF A WHITE WOODEN WINDSHIELD POST, ABOUT LEVEL WITH THE HIGHWAY AND SET IN THE TOP OF A CONCRETE POST PROJECTING ABOUT 8 INCHES, BEING A STANDARD DISK STAMPED "1338 1947"
ELEVATION = 880.48 (NGVD 1929)

BM 1 - CUT "X" ON THE NORTHERN MOST BURNET BOLT OF A FIRE HYDRANT ON THE EAST SIDE OF COUNTY ROAD 750 WEST, ABOUT 850 FEET NORTH OF COUNTY ROAD 1100 NORTH.
ELEVATION = 880.975 (NGVD 29)

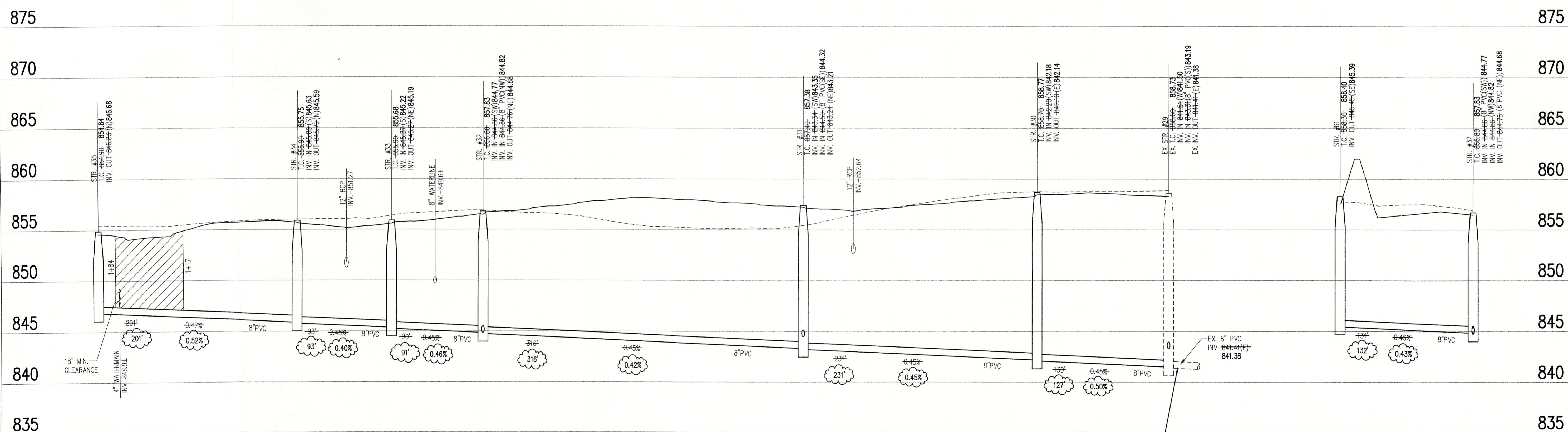
BM 2 - MAG NAIL 1.0 FEET UP ON THE EAST SIDE OF POWER POLE #47-300 ON THE WEST SIDE OF COUNTY ROAD 750 WEST, ABOUT 200 FEET SOUTH OF STATE ROAD 67.
ELEVATION = 880.975 (NGVD 29)

BM 3 - MAG NAIL 1.0 FEET UP ON THE NORTH SIDE OF POWER POLE #47-300 ON THE SOUTH SIDE OF STATE ROAD 67, ABOUT 1200 FEET SOUTHWESTERLY OF COUNTY ROAD 750 WEST.
ELEVATION = 854.88 (NGVD 29)

BM 4 - MAG NAIL 1.0 FEET UP ON THE EAST SIDE OF A 60 INCH OAK TREE IN THE NORTHWEST CORNER OF THE SUBJECT TRACT.
ELEVATION = 885.12 (NGVD 29)

SANITARY SEWER PLAN

SCALE: 1"=50'



SANITARY SEWER RECORD DRAWING

LEGEND		
	Existing Grade	
	New Grade	
	Granular Backfill	

SCALE: HORZ.: 1"=50'
VERT.: 1"=5'

SANITARY SEWER PROFILE

REVISIONS:
1. DWA 8/20/04-LOWERED SITE GRADING, REVISED SLOPE OF SANITARY PIPE FROM MH TO MANHOLE, AND ADJUSTED PER RECORD DRAWING INFORMATION.
2. TAIL 1/26/06, UPDATED PER RECORD DRAWING INFORMATION.

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PRAIRIE HOLLOW
SECTION 3
INGALLS, INDIANA
C. P. MORGAN COMMUNITIES, L.P.
4670 HAVEN POINT BLVD., INDIANAPOLIS, IN. 46280

DATE: 12/05/03 PROJECT NO.: 4496.003
DRAWN BY: DMW CHECKED BY:
SHEET TITLE: SANITARY SEWER PLAN & PROFILES
DRAWING FILES: R:\4K\4496\003\DWG\SC\4496-3
XREF: R:\4K\4496\001\DWG\1B5
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XREF: R:\4K\4496\003\DWG\5B5
SHEET NO.:
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DAYS BEFORE COMMENCING WORK.

BENCHMARK
BM - ABOUT 3.05 MILES NORTH ALONG STATE HIGHWAY 13 FROM ITS
JUNCTION WITH STATE ROAD 228 AT FORTVILLE, ABOUT 0.25 MILE
NORTH OF A BRIDGE OVER PAUL CREEK AT THE JUNCTION OF A ROAD
LEADING WEST, 30 FEET WEST OF THE CENTERLINE OF THE HIGHWAY,
31 FEET SOUTH OF THE CENTERLINE OF THE SIDE ROAD, 14.5 FEET
SOUTH OF A CONCRETE HIGHWAY RIGHT-OF-WAY MARKER POST, 1.5
FEET EAST OF THE FENCE LINE, 13 FEET SOUTH OF A WHITE WOODS
WITNESS POST, ABOUT LEVEL WITH THE HIGHWAY AND SET IN THE TOP
OF A CONCRETE POST PROJECTING ABOUT 8 INCHES, BEING A
STANDARD DISK STAMPED "7638 1947"
ELEVATION = 860.48 (NGVD 1929)
TBM 1 - CUT "X" ON THE NORTHERN MOST BOREHOLE BOLT OF A TREE
HYDANT ON THE EAST SIDE OF COUNTY ROAD 750 WEST, ABOUT 850
FEET NORTH OF COUNTY ROAD 100 NORTH
ELEVATION = 860.75 (NGVD 29)
TBM 2 - MAG NAIL 1.0 FEET UP ON THE EAST SIDE OF POWER POLE
#17-506 ON THE WEST SIDE OF COUNTY ROAD 750 WEST, ABOUT 200
FEET SOUTH OF STATE ROAD 67
ELEVATION = 858.075 (NGVD 29)
TBM 3 - MAG NAIL 1.0 FEET UP ON THE NORTH SIDE OF POWER POLE
#47-380 ON THE SOUTH SIDE OF STATE ROAD 67, ABOUT 1300 FEET
SOUTHWEST OF COUNTY ROAD 750 WEST
ELEVATION = 854.88 (NGVD 29)
TBM 4 - MAG NAIL 1.0 FEET UP ON THE EAST SIDE OF A 40 INCH
OAK TREE IN THE NORTHWEST CORNER OF THE SUBJECT TRACT
ELEVATION = 858.12 (NGVD 29)

GENERAL NOTES

1. ALL WYE, LATERAL AND PROFILE STATIONS ARE FROM THE NEAREST DOWNSTREAM MANHOLE. (MH)
2. WYES AND LATERALS TO BE 6" PIPE UNLESS OTHERWISE SPECIFIED.
3. ALL WYE CONNECTIONS SHALL HAVE A MINIMUM OF FIVE FOOT LATERAL EXTENSION CONNECTED TO THE WYE, OR EXTEND TO THE UTILITY AND DRAINAGE EASEMENT OF THE LOT, WHICHEVER IS GREATER, BUT IN NO CASE SHOULD BE CLOSER THAN 7' TO THE PAD/BUILDING LINE. THE END OF THE LATERAL SHALL BE PLUGGED OR CAPPED, UNLESS OTHERWISE NOTED.
4. LATERALS RUNNING TO THE OPPOSITE SIDE OF STREET SHALL EXTEND TO THE UTILITY AND DRAINAGE EASEMENT OF THE LOT, BUT IN NO CASE SHOULD BE CLOSER THAN 7' TO THE PAD/BUILDING LINE, UNLESS OTHERWISE NOTED.
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8. CONTRACTOR SHALL MINIMIZE DAMAGE TO EXISTING TREES.
9. THE LOWEST FLOOR ELEVATION OF A HOME TO HAVE A GRAVITY SANITARY SEWER CONNECTION MUST BE A MINIMUM OF ONE (1) FOOT ABOVE THE TOP OF CASTING ELEVATION OF EITHER THE FIRST UPSTREAM OR DOWNSTREAM MANHOLE ON THE PUBLIC SEWER TO WHICH THE CONNECTION IS TO BE MADE, OR A GRINDER PUMP SHALL BE REQUIRED.
10. THE FINISHED FLOOR OF THE HOME IS SIXTEEN (16) INCHES HIGHER THAN THE NOTED PAD ELEVATION.

THERE ARE NO DRINKING WATER WELLS
WITHIN 100' RADIUS OF ANY GRAVITY
SANITARY SEWER LINES OR MANHOLES
ON THIS PROJECT.

Sheet	Serial Number	Description
C802	1	Precast Reinforced Concrete Manhole
C802	3	Sanitary Sewer Bedding Detail
C802	4	Service Connection for Shallow Sewer

LEGEND/DETAILS

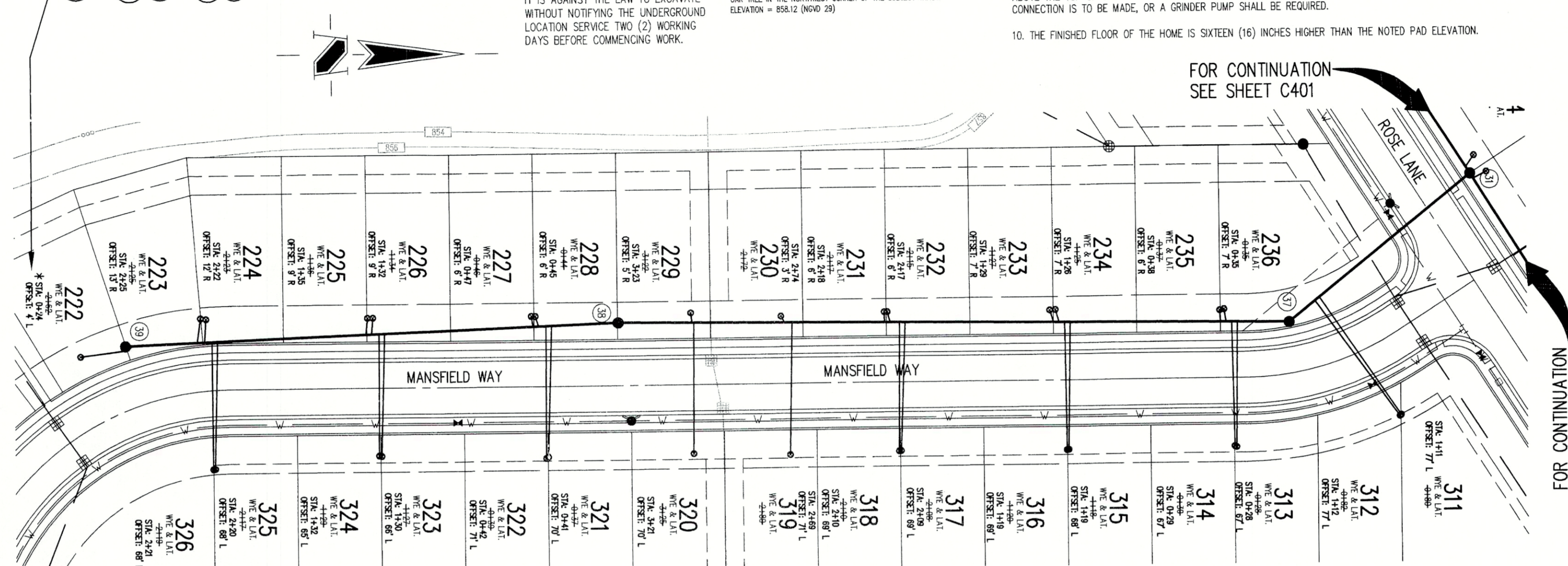


Bryan F. Catlin
1/24/06

CERTIFICATION FOR "RECORD DRAWING"

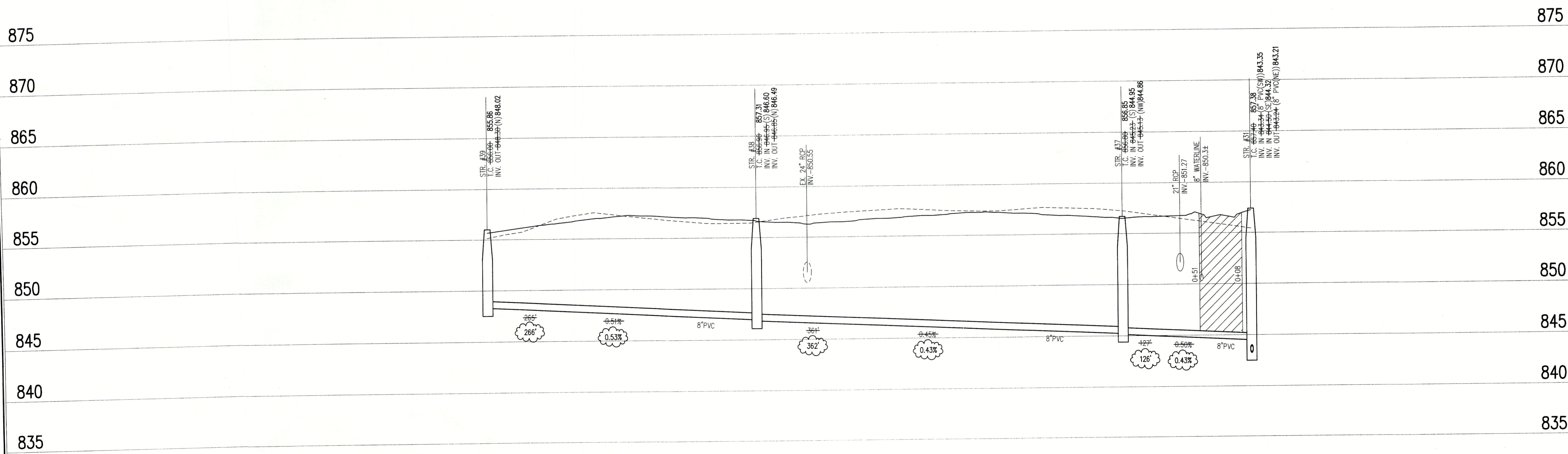
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SURVEYED LOCATION OF SANITARY SEWER
LATERAL MARKER. STATION IS FROM
NEAREST DOWNSTREAM MANHOLE.
* INDICATES BASELINE EXTENSION.



SANITARY SEWER PLAN

SCALE: 1"=50'



SANITARY SEWER RECORD DRAWING

SANITARY SEWER PROFILE

LEGEND		
Existing Grade	New Grade	Granular Backfill

SCALE: HORIZ.: 1"=50'
VERT.: 1"=5'

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C. P. MORGAN COMMUNITIES, L.P.
4670 HAVEN POINT BLVD., INDIANAPOLIS, IN 46280

DATE: 12/05/03 PROJECT NO.: 4496.003
DRAWN BY: DMW CHECKED BY:
SHEET TITLE: SANITARY SEWER
PLAN & PROFILES
DRAWING FILES:
R:\V\4496\003\DWG\SC\401-3
XREF: R:\V\4496\003\DWG\SC\285
XREF: R:\V\4496\003\DWG\SC\285
XREF: R:\V\4496\003\DWG\SC\285
XREF: R:\V\4496\003\DWG\SC\285

SHEET NO.:
C402

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WITHOUT NOTIFYING THE UNDERGROUND
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DAYS BEFORE COMMENCING WORK.

BENCHMARK

BM - ABOUT 3.00 MILES NORTH ALONG STATE HIGHWAY 13 FROM ITS
JUNCTION WITH STATE ROAD 236 AT FORTVILLE, ABOUT 0.15 MILE
NORTH OF A BRIDGE OVER FALL CREEK, AT THE JUNCTION OF A ROAD
LEADING WEST 50 FEET WEST OF THE CENTERLINE OF THE HIGHWAY,
31 FEET SOUTH OF THE CENTERLINE OF THE SIDE ROAD, 14.5 FEET
SOUTH OF A CONCRETE HIGHWAY RIGHT-OF-WAY MARKER POST, 1.5
FEET EAST OF THE FENCE LINE, 1.5 FEET SOUTH OF A WHITE WOODEN
WINDS POST, ABOUT LEVEL WITH THE HIGHWAY AND SET IN THE TOP
OF A CONCRETE POST PROJECTING ABOUT 8 INCHES ABOVE A
STANDARD DISK STAMPED "2535 1847"
ELEVATION = 850.48 (NGVD 1985)

TM 1 - CUT "C" ON THE NORTHERN MOST BONNET BOLT OF A FIRE
HYDRANT ON THE EAST SIDE OF COUNTY ROAD 750 WEST, ABOUT 850
FEET SOUTH OF STATE ROAD 67.
ELEVATION = 858.075 (NGVD 29)

TM 2 - WAS NAIL 1.0 FEET UP ON THE EAST SIDE OF POWER POLE
#17-386 ON THE WEST SIDE OF COUNTY ROAD 750 WEST, ABOUT 1200 FEET
SOUTHWESTERLY OF COUNTY ROAD 750 WEST.
ELEVATION = 858.12 (NGVD 29)

TM 3 - WAS NAIL 1.0 FEET UP ON THE NORTH SIDE OF POWER POLE
#17-386 ON THE SOUTH SIDE OF STATE ROAD 67, ABOUT 1200 FEET
SOUTHWESTERLY OF COUNTY ROAD 750 WEST.
ELEVATION = 858.12 (NGVD 29)

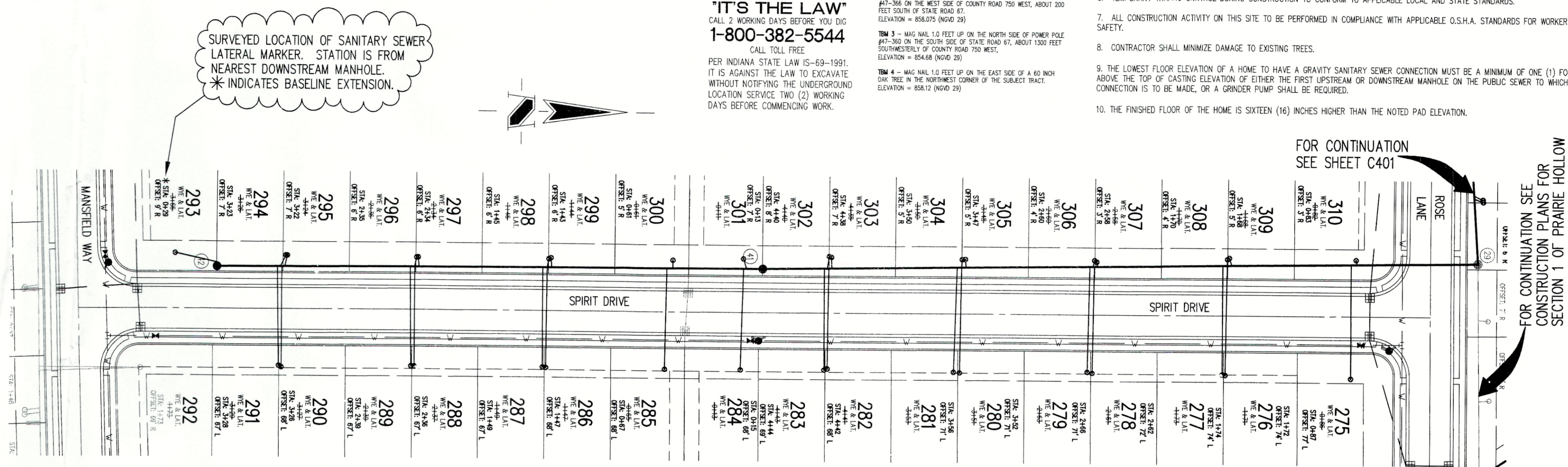
TM 4 - WAS NAIL 1.0 FEET UP ON THE EAST SIDE OF A 60 INCH
OAK TREE IN THE NORTHWEST CORNER OF THE SUBJECT TRACT.
ELEVATION = 858.12 (NGVD 29)

- GENERAL NOTES**
1. ALL WYE, LATERAL AND PROFILE STATIONS ARE FROM THE NEAREST DOWNSTREAM MANHOLE. (WH)
 2. WYES AND LATERALS TO BE 6" PIPE UNLESS OTHERWISE SPECIFIED.
 3. ALL WYE CONNECTIONS SHALL HAVE A MINIMUM OF FIVE FOOT LATERAL EXTENSION CONNECTED TO THE WYE, OR EXTEND TO THE UTILITY AND DRAINAGE EASEMENT OF THE LOT, WHICHEVER IS GREATER, BUT IN NO CASE SHOULD BE CLOSER THAN 7' TO THE PAD/BUILDING LINE. THE END OF THE LATERAL SHALL BE PLUGGED OR CAPPED, UNLESS OTHERWISE NOTED.
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 7. ALL CONSTRUCTION ACTIVITY ON THIS SITE TO BE PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.
 8. CONTRACTOR SHALL MINIMIZE DAMAGE TO EXISTING TREES.
 9. THE LOWEST FLOOR ELEVATION OF A HOME TO HAVE A GRAVITY SANITARY SEWER CONNECTION MUST BE A MINIMUM OF ONE (1) FOOT ABOVE THE TOP OF CASTING ELEVATION OF EITHER THE FIRST UPSTREAM OR DOWNSTREAM MANHOLE ON THE PUBLIC SEWER TO WHICH THE CONNECTION IS TO BE MADE, OR A GRINDER PUMP SHALL BE REQUIRED.
 10. THE FINISHED FLOOR OF THE HOME IS SIXTEEN (16) INCHES HIGHER THAN THE NOTED PAD ELEVATION.

THERE ARE NO DRINKING WATER WELLS
WITHIN 100' RADIUS OF ANY GRAVITY
SANITARY SEWER LINES OR MANHOLES
ON THIS PROJECT.

LEGEND/DETAILS

Sheet	Detail	Description
C802	1	Precast Reinforced Concrete Manhole
C802	3	Sanitary Sewer Bedding Detail
C802	4	Service Connection for Shallow Sewer

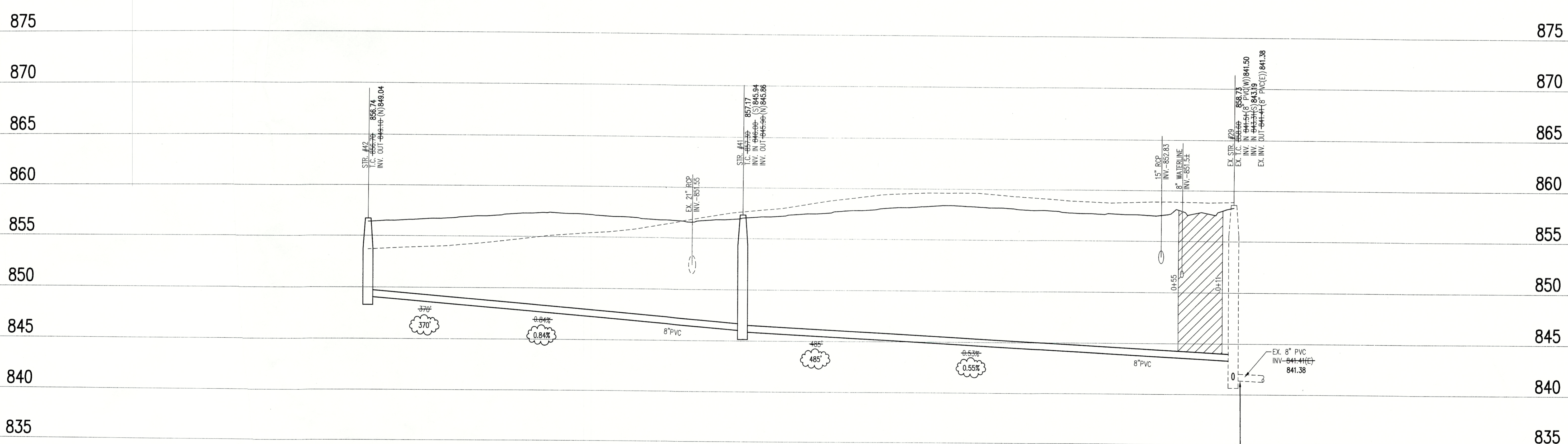


Bryan F. Catlin 4/24/06
**CERTIFICATION FOR
"RECORD DRAWING"**

NOTE:
Record drawing certification for top of casting, invert
elevations, lengths of pipe, and lateral marker locations
only. Slope percentage represents a calculated figure and
is for general information only.

SANITARY SEWER PLAN

SCALE: 1"=50'



**SANITARY SEWER
RECORD DRAWING**

CONTRACTOR MUST FIELD VERIFY EXISTING INVERTS
PRIOR TO CONSTRUCTION. IF A VARIATION EXISTS,
THEN CONTACT THE ENGINEER IMMEDIATELY.

SANITARY SEWER PROFILE

LEGEND

Existing Grade	New Grade	Granular Backfill

SCALE: HORZ.: 1"=50'
VERT.: 1"=5'

REVISIONS
1. DATE: 8/20/04 - LOWEST SITE GRADING BEHIND SLOPE OF SANITARY PIPE FROM M.H.
#2 TO #41, AND TICS OF ALL M.H.S.
2. TAD: 1/25/06 - UPDATED PER RECORD DRAWING INFORMATION.

DATE:
THIS DRAWING AND THE IDEAS, DESIGNS AND
CONCEPTS CONTAINED HEREIN ARE THE EXCLUSIVE
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**PRAIRIE HOLLOW
SECTION 3
INGALLS, INDIANA**

C. P. MORGAN COMMUNITIES, L.P.
4670 HAVEN POINT BLVD., INDIANAPOLIS, IN. 46290

DATE: 12/05/03
PROJECT NO.: 4496.003
DRAWN BY: DMW
CHECKED BY:
SHEET TITLE:
SANITARY SEWER
PLAN & PROFILES
DRAWING FILES:
R:\4K\4496\003\DWG\0401-3
XREF: R:\4K\4496\003\DWG\0385
XREF: R:\4K\4496\003\DWG\0385
XREF: R:\4K\4496\003\DWG\0385
XREF: R:\4K\4496\003\DWG\0385

SHEET NO.:
C403