

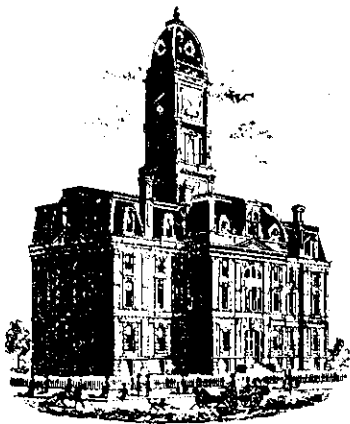
**Gasb 34 Footages for Historical Cost
Drain Length Log**

#F 275 Drain-Improvement: Bridgewater Relocation: Orville Keys Arm - Tile Removal

Drain Type:	Size:	Length	Length (DB Query)	Length Reconcile	If Applicable	
					Price:	Cost:
** Tile	18"	- 108'	- 108'	∅	* 6.50 LF	* 702 ⁰⁰
Sum:		<u>- 108</u>	<u>- 108</u>	<u>∅</u>		<u>* 702⁰⁰</u>

Final Report: N/A (Bridgewater Rel.)

Comments:
* Due to a change in the field 108' of 18" Tile was removed. The tile was then tied into str. 7402 with approx. 28' of 21" Tile (RCP). A junction box with an open grate was also set. It should also be noted that the Rockhouse structure at the outlet of the old tile was also removed.** There was 2125' of 18" Tile before this project - there is now 2017 Feet of 18" Tile. This affects the 1984 Improvement (Reconstruction)



SURVEYOR'S OFFICE

Hamilton County

Kenton C. Ward, Surveyor

Phone (317) 776-8495

Fax (317) 776-9628

Suite 188

One Hamilton County Square

Noblesville, Indiana 46060-2230

May 24, 2004

To: Hamilton County Drainage Board

Re: U.G. Mitchner, Orville Keys Arm

Attached is a petition and plans for the proposed relocation of the Orville Keys Arm drain. This drain is located in Washington Township. The relocation is being proposed by Eaton Investments. The proposal is to reconstruct the Orville Keys Drain along the west right of way for Gray Road from Sta. 27 + 70 of the U.G. Mitchner Drain to Sta. 10 of the Orville Keys Drain, Arm 2.

The new drain shall consist of those lengths of pipe between the following structures as shown on plans by Cripe Engineering date March 9, 2004, project Number 980516-20500 and on plans for Section 1 and 2 of Bridgewater dated August 13, 2003: Structure 7401 to 7402, 7403, 7403A, 7404, 7405, 7406, 7407, 7408, 7409, 7410, 7411, 7412, 7413, 7414, and 7485. Also to be included is the portions of pipe between Structures 7412, 7415, 7416, 7417, 7418, 7419, and 7420 along with the pipe section between Structures 7403A and 7403B and Structure 7408, 7433, and 7444.

The line will consist of the following lengths:

12" RCP	128 ft.	30" RCP	1,251 ft.
18" RCP	66 ft.	36" RCP	992 ft.
21" RCP	19 ft.	48" RCP	1,314 ft.
24" RCP	560 ft.	19 x 30 ERCP	292 ft.

The 1,750 feet of main drain per the original 1917 description between Sta. 6 + 50 and 24 + 00 shall be vacated. This also includes the 322 feet of drain reconstructed between Sta. 0 + 00 and Sta. 6 + 50 by Steckley per my report to the Board dated December 13, 1999. (Arm 2)

The total length of new storm sewer shall be 4,622 feet. The 600 feet of Arm 1 of the original drain between Sta. 0 + 00 and Sta. 6 + 00 shall be vacated. The 1,000 feet of 10 inch drain from Station 0 to Station 10 of Arm 2 of the drain as described in my reconstruction report to the Board dated March 29, 1984 shall be vacated. Total length of

drain vacated shall be ³⁴⁰⁰3,672 feet. This proposal will add an additional 950 feet to the drains total length.

There shall be an additional easement required across tract 08-10-17-00-00-006.000 owned by Louis I. & Dorothy R. Webster Trustee. The easement for the portion of new drain north of 151st Street will be as platted in the future sections of Bridgewater.

The cost of the relocation is to be paid by Eaton Investments. The existing maintenance assessment rates will not be changed due to this reconstruction.

The petitioner has provided the performance bond/letter of credit as follows:

Name of Bonding Company: Bond Safeguard Insurance Company

Bond/LC Number: 5011311

Bond/LC Date: March 29, 2004

Bond/LC Amount: \$172,443.70

Bond/LC Term (1 Year Max): March 29, 2005

I recommend the Board set a hearing for this item for June 28, 2004



Kenton C. Ward
Hamilton County Surveyor

KCW/pll

52,0

Hamilton County Drainage Board
Court House
Noblesville, Indiana

IN RE: Washington Township

Hamilton County, Indiana

PETITION FOR RELOCATION AND RECONSTRUCTION

Eaton Investments, Ltd (hereinafter "Petitioner"),

hereby petitions the Hamilton County Drainage Board for authority to relocate and improve a section of the Orville Keys Regulated Drain, and in support of said petition advises the Board that:

1. Petitioner owns real estate through which a portion of the Orville Keys Regulated Drain runs.
2. Petitioner plans to develop its real estate with roads, buildings, utilities, storm drains, sanitary sewers and other structures.
3. Petitioner's proposed development of its real estate will require relocation and reconstruction of a portion of the Orville Keys Drain, as specifically shown on engineering plans and specifications filed with the Hamilton County Surveyor.
4. The work necessary for the proposed relocation and reconstruction will be undertaken at the sole expense of the Petitioner and such work will result in substantial improvement to the Orville Keys Drain, without cost to other property owners on the watershed of the Orville Keys Regulated Drain.

WHEREFORE, Petitioner requests that an Order issue from the Hamilton County Drainage Board authorizing relocation and reconstruction of the Orville Keys Regulated Drain, in conformance with applicable law and plans and specifications on file with the Hamilton County Surveyor.

Eaton Investments, Inc.
by Steve Brown
Signed

Steve Brown
Printed Name



POINDEXTER
Excavating Inc.

POINDEXTER MEMO
Revised 2/10/04

To: Jason Challand
Chris White

From: Norman Taylor

Re: Bridgewater

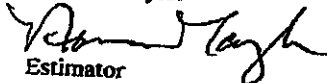
Based on our conversation on Friday I have itemized our bid for your use. The items are summarized as follows:

- Item 1. Offsite Sanitary Cost of \$95,545.00
Starting at existing str.#8016 and runs to str.#8410. 1200 LF of 10" PVC
 - Item 2. Offsite Storm along Gray Road Cost of \$156,767.00
Start at 48" end section, str.#7401 and runs to str.# 7414
 - Item 3. Collector Roadways Cost of \$295,070.00
 - Golf Club Boulevard \$102,750.00
 - Market Place Drive N-S \$160,317.00
 - Market Place Drive E-W \$32,003.00
 - Item 4. Construction of Section I-2 Cost of \$916,016.00
 - Sanitary sewer \$238,972.00
 - Storm Sewer \$166,297.00
 - Water Main \$139,290.00
 - Item 5. Construction of Section J Cost of \$892,867.00
 - Sanitary sewer \$167,000.00
 - Storm Sewer \$152,250.00
 - Water Main \$146,076.00
- Cost of a 3 year, 10 % Maintenance Bond on Sanitary, Storm and Water is \$5150.76

The additional cost to provide a construction road 400' long and 15' wide will be \$4,275.00 The road will be 6" of #2 stone capped with 2" of #53 stone.

If you have any other questions please feel free to call me. Thank you for allowing Poindexter to be a part of the team in this project.

Norman Taylor


Estimator

P.O. BOX 36399 ■ INDIANAPOLIS, IN 46236 ■ [PH] 317-823-6837 ■ [F] 317-823-4662

We Are an Equal Opportunity Employer

Chris White
510 Fox Lane
Carmel, IN 46032


CR White Development, LLC

Phone: 317-848-2830
Fax: 317-571-8840
Email: cwhite@indy.rr.com

March 29, 2004

Greg Hoyes
Hamilton County Surveyor
Suite 188
One Hamilton County Square
Noblesville, IN 46060

Re: Eaton Investments Project at Bridgewater Section I-2 and J ;Bonds for off-site storm
Orville Keys Regulated Drain Relocation

Dear Greg:

I have enclosed a copy of the storm sewer bond for I-2 and J sections of Bridgewater. The off-site storm legal drain is also broken out separately and is to the County Drainage Board. I have also enclosed the bid from Poindexter to confirm the bid amount of \$156,767.00. The bond is in the amount of 110% or \$172,443.70. Per your letter we are proceeding at our own risk until the legal drain relocation can be heard by the board. The existing tile will remain functional until we have approval. We are starting storm work on Tuesday March 30, 2004. The pre-construction meeting is set for Monday March 29, 2004 at 1:00 PM. Please feel free to call me at 523-6116 if you have any questions.

Sincerely,



Christopher R. White P.E.

CC: Jason Challand

BOND

HCDB-2004-00033

Bond No. 5011311



KNOW ALL MEN BY THESE PRESENTS, that we, Bridgewater Lakes, LLC of 12220 N. Meridian St., Carmel, IN 46032 as Principal, and Bond Safeguard Insurance Company, a corporation organized under the laws of the State of Illinois, having its principal office in the City of Lombard, IL, as Surety, are held and firmly bound unto Board of Hamilton County Commissioners, Hamilton County, Indiana, in the sum of One Hundred Seventy Two Thousand, Four Hundred Forty Three and 70/100 Dollars (\$172,443.70) lawful money of the United States, for which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has been granted a permit for Bridgewater, 1-2/J/Offsite: Off-Site Storm

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that is the above Principal shall indemnity and save harmless the Board of Hamilton County Commissioners, Hamilton County, Indiana against loss to which the Board of Hamilton County Commissioners, Hamilton County, Indiana may be subject by reason of said Principal's breach of any ordinance, rule or regulation relating to the above described license or permit, then this obligation shall be null and void, otherwise to remain in full force and effect.

The term of this bond is for a period beginning on the 29th day of March, 20 04 and ending on the 29th day of March 20 05.

No cause of action shall lie against the surety unless commenced within two years from the date the cause of action accrues against the principal.

Signed, sealed and dated this 29th day of March 20 04.

Bridgewater Lakes, LLC

Bond Safeguard Insurance Company
Liana M. Shelton
Liana M. Shelton, Attorney-In-Fact

Bond Safeguard

INSURANCE COMPANY



KNOW ALL MEN BY THESE PRESENTS, that **BOND SAFEGUARD INSURANCE COMPANY**, an Illinois Corporation with its principal office in Lombard, Illinois, does hereby constitute and appoint: **Philip R. Peterson, Daniel T. Touw**

Stuart Peterson, Donald C. Arbogast Jr., Liana M. Shelton, Norma J. Lerch

its true and lawful Attorney(s)-In-Fact to make, execute, seal and deliver for, and on its behalf as surety, any and all bonds, undertakings or other writings obligatory in nature of a bond.

This authority is made under and by the authority of a resolution which was passed by the Board of Directors of **BOND SAFEGUARD INSURANCE COMPANY** on the 7th day of November, 2001 as follows:

Resolved, that the President of the Company is hereby authorized to appoint and empower any representative of the Company or other person or persons as Attorney-In-Fact to execute on behalf of the Company any bonds, undertakings, policies, contracts of indemnity or other writings obligatory in nature of a bond not to exceed \$500,000.00, Five Hundred Thousand Dollars, which the Company might execute through its duly elected officers, and affix the seal of the Company thereto. Any said execution of such documents by an Attorney-In-Fact shall be as binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company. Any Attorney-In-Fact, so appointed, may be removed for good cause and the authority so granted may be revoked as specified in the Power of Attorney.

Resolved, that the signature of the President and the seal of the Company may be affixed by facsimile on any power of attorney granted, and the signature of the Vice President, and the seal of the Company may be affixed by facsimile to any certificate of any such power and any such power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certificate so executed and sealed shall, with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Company.

IN WITNESS THEREOF, **BOND SAFEGUARD INSURANCE COMPANY** has caused this instrument to be signed by its President, and its Corporate Seal to be affixed this 7th day of November, 2001.



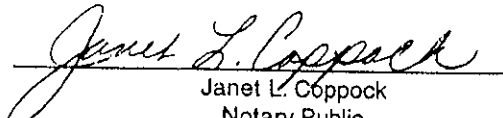
BOND SAFEGUARD INSURANCE COMPANY

BY 
David E. Campbell
President

ACKNOWLEDGEMENT

On this 7th day of November, 2001, before me, personally came David E. Campbell to me known, who being duly sworn, did depose and say that he is the President of **BOND SAFEGUARD INSURANCE COMPANY**, the corporation described in and which executed the above instrument; that he executed said instrument on behalf of the corporation by authority of his office under the By-laws of said corporation.



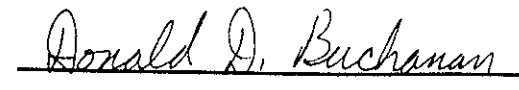

Janet L. Coppock
Notary Public

CERTIFICATE

I, the undersigned, Secretary of **BOND SAFEGUARD INSURANCE COMPANY**, An Illinois Insurance Company, DO HEREBY CERTIFY that the original Power of Attorney of which the foregoing is a true and correct copy, is in full force and effect and has not been revoked and the resolutions as set forth are now in force.

Signed and Sealed at Lombard, Illinois this 29th Day of March, 2004




Donald D. Buchanan
Secretary

HCDB - 2004-00033



Bond Safeguard INSURANCE COMPANY

1919 S. Highland Avenue, Bldg. A-Suite 300
Lombard, Illinois 60148-4979

BOND RIDER No. 5011311

To be attached to and form a part of Bond for Bridgewater Lakes, LLC
Bond No. 5011311 Dated 29th of March, 2004
Bridgewater Lakes, LLC, as Principal, and
BOND SAFEGUARD INSURANCE COMPANY, as surety, in favor of Board of Hamilton County Commissioners, Hamilton County, IN, as Obligee.

It is understood and agreed that the Bond is changed or revised in the particulars as indicated below:

Change the Description of the Work to read:

Orville Keyes Legal Drain Reconstruction

Said Bond shall be subject to all its terms, conditions, and limitations, except as herein expressly modified.

This Bond Rider shall become effective: March 29, 2004

IN WITNESS WHEREOF, BOND SAFEGUARD INSURANCE COMPANY has caused its corporate seal to be hereunto affixed this: April 12, 2004

BOND SAFEGUARD INSURANCE COMPANY

Attorney-in-Fact

Liana M. Shelton



Bond Safeguard INSURANCE COMPANY

KNOW ALL MEN BY THESE PRESENTS, that **BOND SAFEGUARD INSURANCE COMPANY**, an Illinois Corporation with its principal office in Lombard, Illinois, does hereby constitute and appoint: **Philip R. Peterson, Daniel T. Touw**

Stuart Peterson, Donald C. Arbogast Jr., Liana M. Shelton, Norma J. Lerch

Its true and lawful Attorney(s)-In-Fact to make, execute, seal and deliver for, and on its behalf as surety, any and all bonds, undertakings or other writings obligatory in nature of a bond.

This authority is made under and by the authority of a resolution which was passed by the Board of Directors of **BOND SAFEGUARD INSURANCE COMPANY** on the 7th day of November, 2001 as follows:


Resolved, that the President of the Company is hereby authorized to appoint and empower any representative of the Company or other person or persons as Attorney-In-Fact to execute on behalf of the Company any bonds, undertakings, policies, contracts of indemnity or other writings obligatory in nature of a bond not to exceed \$500,000.00, Five Hundred Thousand Dollars, which the Company might execute through its duly elected officers, and affix the seal of the Company thereto. Any said execution of such documents by an Attorney-In-Fact shall be as binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company. Any Attorney-In-Fact, so appointed, may be removed for good cause and the authority so granted may be revoked as specified in the Power of Attorney.

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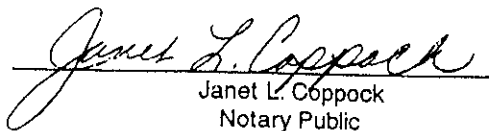
BOND SAFEGUARD INSURANCE COMPANY

BY 
David E. Campbell
President

ACKNOWLEDGEMENT

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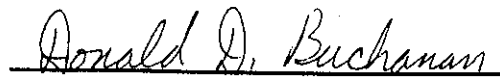

Janet L. Coppock
Notary Public

CERTIFICATE

I, the undersigned, Secretary of **BOND SAFEGUARD INSURANCE COMPANY**, An Illinois Insurance Company, DO HEREBY CERTIFY that the original Power of Attorney of which the foregoing is a true and correct copy, is in full force and effect and has not been revoked and the resolutions as set forth are now in force.

Signed and Sealed at Lombard, Illinois this 12th Day of April, 2004




Donald D. Buchanan
Secretary

STATE OF INDIANA)
) ss:
COUNTY OF HAMILTON)

BEFORE THE HAMILTON COUNTY
DRAINAGE BOARD
NOBLESVILLE, INDIANA

IN THE MATTER OF THE
RECONSTRUCTION OF THE
U. G. Mitchner Drain, Orville Keys Arm

FINDINGS AND ORDER FOR RECONSTRUCTION

The matter of the proposed Reconstruction of the *U. G. Mitchner Drain, Orville Keys Arm* came before the Hamilton County Drainage Board for hearing on *June 28, 2004*, on the Reconstruction Report consisting of the report and the Schedule of Damages and Assessments. The Board also received and considered the written objection of an owner of certain lands affected by the proposed Reconstruction, said owner being:

Evidence was heard on the Reconstruction Report and on the aforementioned objections.

The Board, having considered the evidence and objections, and, upon motion duly made, seconded and unanimously carried, did find and determine that the costs, damages and expenses of the proposed Reconstruction will be less than the benefits accruing to the owners of all land benefited by the Reconstruction.

The Board having considered the evidence and objections, upon motion duly made, seconded and unanimously carried, did adopt the Schedule of Assessments as proposed, subject to amendment after inspection of the subject drain as it relates to the lands of any owners which may have been erroneously included or omitted from the Schedule of Assessments.

The Board further finds that it has jurisdiction of these proceedings and that all required notices have been duly given or published as required by law.

Wherefore, it is ORDERED, that the proposed Reconstruction of the *U. G. Mitchner Drain, Orville Keys Arm* be and is hereby declared established.

Thereafter, the Board made inspection for the purpose of determining whether or not the lands of any owners had been erroneously included or excluded from the Schedule of Assessments. The Board finds on the basis of the reports and findings at this hearing as follows:

HAMILTON COUNTY DRAINAGE BOARD



PRESIDENT

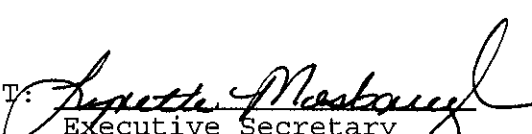


Member



Member

ATTEST:


Executive Secretary



7172 Graham Road
 Indianapolis, IN 46250
 317-842-6777
 FAX: 317-841-4798
 www.cripe.biz

- Architecture
- Construction Administration
- Engineering
- Geographic Information Services
- Landscape Architecture
- Land Planning
- Land Surveying
- Real Estate Consulting
- Transportation Engineering


CERTIFICATE OF COMPLETION AND COMPLIANCE

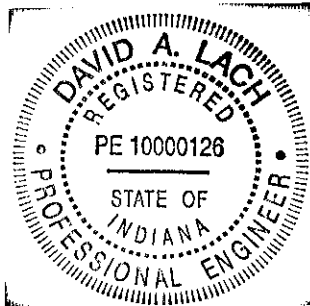
To: Hamilton County Surveyor

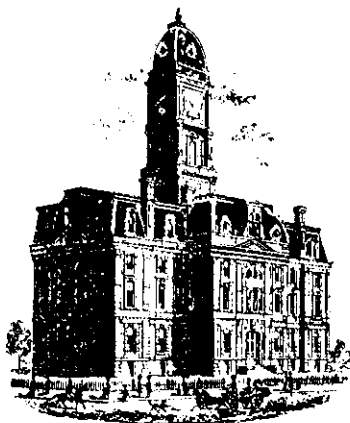
Re: Orville Keys Regulated Drain Reconstruction

I hereby certify that:

1. I am a Registered Engineer in the State of Indiana.
2. I am familiar with the plans and specifications for the above referenced subdivision.
3. I have personally observed and supervised the completion of the drainage facilities for the above referenced subdivision.
4. The drainage facilities within the above referenced subdivision to the best of my knowledge, information and belief have been installed and completed in conformity with all plans and specifications.

Signature:  Date: 11/23, 2004
 David A. Lach, P.E. #10000126





SURVEYOR'S OFFICE

Hamilton County

Kenton C. Ward, Surveyor

Phone (317) 776-8495

Fax (317) 776-9628

Suite 188

One Hamilton County Square

Noblesville, Indiana 46060-2230

To: Hamilton County Drainage Board

February 11, 2005

Re: UG Mitchner Drain: Bridgewater Section J Relocation of the Orville Keys Arm.

Attached are as-builts, certificate of completion & compliance, and other information for Bridgewater Sec. J Relocation of the Orville Keys Arm. An inspection of the drainage facilities for this section has been made and the facilities were found to be complete and acceptable.

During construction, changes were made to the drain, which will alter the plans submitted with my report for this drain-dated May 28, 2004. The report was approved by the Board at the hearing held June 28, 2004. (See Drainage Board Minutes Book 7, Pages 481-83)

The changes are as follows:

Structure:	T.C.:	I.E.:	Pipe:	Length:	Original Plans:	Difference:
7485	827.06	824.38				
7414	826.92	823.01	12	36.2	36	-0.2
7414	826.92	823.84				
7413	828.43	821.37	24	286.6	289	2.4
7413	828.43	821.37				
7412	831.63	819.58	19X30	291	292	1
7412	831.63	819.63				
7411	829.38	818.96	30	320	319	1
7411	829.38	818.99				
7410	827.68	817.54	30	399.3	400	0.7
7410	827.68	817.64				
7409	829.46	816.84	30	324		
7409	829.46	816.93				
7408	829.31	815.85	30	207.9	208	0.1
7408	829.31	816.38				
7407	826.54	815.3	36	190.2	192	1.8
7407	826.54	815.39				
7406	823.52	814.5	36	401.5	400	-1.5
7406	823.52	814.58				
7405	821.23	812.33	36	397.9	400	2.1
7405	821.23	812.33				

7404	817.95	811.4	48	390	398	8
7404	817.95	811.47				
7403A	817.42	811.01	48	182.1	180	-2.1
7403A	817.42	811.01				
7403	817.57	809.77	48	397.5	400	2.5
7403	817.57	809.81				
7402	815.33	809.17	48	221.9	221	-0.9
7402	815.33	809.17				
7401A	814.79	808.81	48	96.7	95	-1.7
7401A	814.79	808.81				
7401		808.79	48	15.3	20	4.7
7401A -7401B			21	28		Field Change

RCP Pipe Totals:

12	36.2
21	28
24	286.6
30	1251.2
36	989.6
48	1303.5

Other Drain:	
19X30 ERCP	291

The length of the drain due to the changes described above is now **4186.1 feet**. This project due to a field change removed 108 feet of the Orville Keys 18" tile drain.

The non-enforcement was approved by the Board at its meeting on June 28, 2004 and recorded under instrument #200400067086.

The following sureties were guaranteed by Bond Safeguard Insurance Co. and released by the Board on its February 14, 2005 meeting.

Bond-LC No: 5011311


Insured For: Storm Sewers, Erosion Control

Amount: \$172,433.70

Issue Date: March 29, 2004

I recommend the Board approve the drain's construction as complete and acceptable.

Sincerely,



Kenton C. Ward,
Hamilton County Surveyor

KCW/slm

COUNTY AGENCY:

**HAMILTON COUNTY
SURVEYOR'S OFFICE**
ONE HAMILTON COUNTY SQUARE
SUITE 146
NOBLESVILLE, IN 46060
PH (317) 776-8495
FAX (317) 776-9628

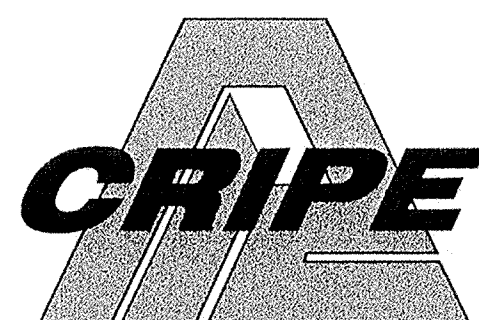
LOCAL MUNICIPALITY:

CITY OF WESTFIELD
130 PENN ST.
WESTFIELD, IN 46074
PH (317) 896-5577
FAX (317) 896-2791

OWNER:

EATON INVESTMENTS LTD., INC.
12220 NORTH MERIDIAN STREET
CARMEL, INDIANA 46032
PH. (317) 575-7991

ENGINEER:



7172 GRAHAM ROAD
INDIANAPOLIS, INDIANA 46250
Ph. (317) 842-6777 FAX (317) 841-4798

STORM AS-BUILT NOTES:

NOTE 1: ONLY THOSE PIPES THAT ARE VISIBLE AT THE STRUCTURE WERE AS-BUILT AS TO LOCATION BOTH HORIZONTAL AND VERTICAL. THERE IS NO GUARANTEE THAT THE PIPE IS IN A STRAIT LINE BETWEEN THE STRUCTURES, HOWEVER FOR PURPOSES OF CALCULATION THIS IS ASSUMED.

NOTE 2: ALL AS-BUILT ELEVATIONS SHOWN ARE WITHIN ±0.05 FEET ON HARD SURFACES AND WITHIN ±0.10 FEET ON SOFT SURFACES, UNLESS OTHERWISE NOTED.

NOTE 3: ALL AS-BUILT FIELD WORK WAS COMPLETED ON THE 8TH DAY OF OCTOBER, 2004.

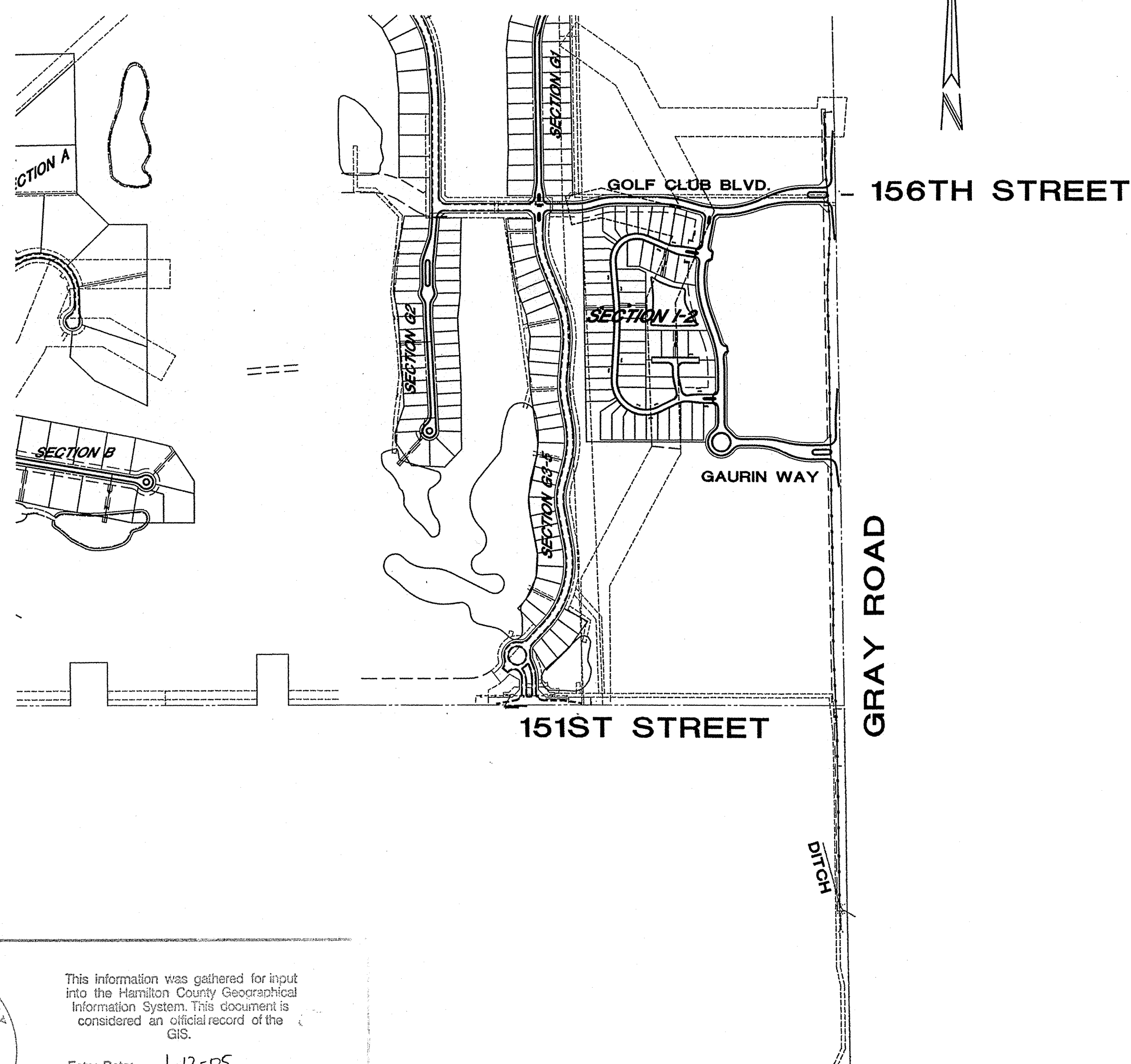
NOTE 4: DISTANCES ARE BASED UPON THE FIELD LOCATION OF THE STRUCTURE TO THE FIELD LOCATION OF THE STRUCTURE.

NOTE 5: CALCULATED PERCENT GRADES ASSUME THAT ALL FIELD LOCATED INVERT SHOTS ARE PLUS OR MINUS 0.05 FOOT AND INVERTS MAY BE ADJUSTED WITHIN THESE LIMITS TO MEET MINIMUM PIPE GRADES.

NOTE 6: ONLY AS-BUILT STORM SEWER STRUCTURES AND PIPES AS WELL AS ANY OTHER ITEMS SPECIFICALLY INCLUDED IN THE CONTRACT ARE CONSIDERED A PART OF THESE AS-BUILTS. THIS FIRM EXCLUDES ANY OTHER ITEMS IN THE PLAN SET FROM BEING CONSIDERED AS-BUILT PER THIS PLAN SET.

STORM AS-BUILTS

CONSTRUCTION PLANS FOR THE ORVILLE KEYS REGULATED DRAIN RECONSTRUCTION THE BRIDGEWATER CLUB WESTFIELD, IN



This information was gathered for input into the Hamilton County Geographical Information System. This document is considered an official record of the GIS.

Entry Date: 1-12-05

Entered by: Suzanne Mills

LOCATION PLAN
SCALE: 1" = 500'

STORM AS-BUILTS

PROJECT DATA

Project Address: GRAY ROAD APPROX. 1/2 MILE NORTH OF 151ST STREET
WESTFIELD, IN
Proposed Land Use: Residential with an 18 Hole Golf Course
Regulated Drain: Orville Keys
Regulated Drain Length: 4188 Feet

AS-BUILT INDEX

SHEET	DESCRIPTION
CS	COVER SHEET
-C100	MAP SHEET
-C401-C402	EROSION CONTROL PLAN
-C405	EROSION CONTROL DETAILS
C701-C704	STORM SEWER PLAN AND PROFILES
C713-C714	STORM SEWER DETAILS

BENCHMARKS

BENCHMARKS:

REFERENCE: N.G.S. DESIGNATION "4M 18" (PID= AE8503). TO REACH THE STATION FROM THE JUNCTION OF STATE ROAD 37 AND STATE ROAD 32, GO WEST ON STATE ROAD 32 FOR 0.90 MILES TO 10TH STREET IN NOBLESVILLE. TURN LEFT AND GO SOUTH FOR 0.10 MILES TO HANNIBAL STREET. TURN LEFT AND GO EAST FOR 200 FEET TO A PARK ON THE RIGHT AND STATION IS 144 FEET SOUTH OF THE CENTERLINE OF ROAD IN THE PARK. THE STATION IS DOWN 10 INCHES IN A SLEEDED CASING. IT IS AN ALUMINUM DISC INSCRIBED HAMILTON COUNTY SURVEYOR SECTION CORNER. AZIMUTH 0 DEGREES 144.05 FEET TO CENTERLINE OF ROAD. AZIMUTH 90 DEGREES 117.32 FEET TO CENTERLINE OF ROAD, AZIMUTH 192 DEGREES 75.56 FEET TO BASE AREA LIGHT, AZIMUTH 256 DEGREES 34.56 FEET TO BASE AREA LIGHT. STATION IS A BERTHISEN ROAD AND CAP 6-1/2, SET 6 FEET DEEP AND TOP 3 FEET IS IN CONCRETE. ELEV.: 770.59 (NGVD 1929 DATUM)

PROJECT BM. NO. 1: 16 PENNY NAIL IN THE EAST SIDE OF A 10 INCH DIAMETER WALNUT TREE APPROXIMATELY 60 FEET NORTHWEST OF THE 8TH GREEN OF THE GOLF COURSE. ELEV.: 845.06 (NGVD 1929 DATUM)

PROJECT BM. NO. 2: 16 PENNY NAIL IN THE NORTH SIDE OF A 12 INCH DIAMETER WALNUT TREE APPROXIMATELY 140 FEET EAST OF THE 1ST GREEN OF THE GOLF COURSE. ELEV.: 827.84 (NGVD 1929 DATUM)

PROJECT BM. NO. 3: 16 PENNY NAIL IN THE EAST SIDE OF A 12 INCH DIAMETER ASH TREE APPROXIMATELY 80 FEET EAST AND 180 FEET SOUTH OF THE SOUTHEAST CORNER OF A MAINTENANCE BUILDING AND 100 FEET WEST OF THE 1ST TEE OF THE GOLF COURSE. ELEV.: 831.70 (NGVD 1929 DATUM)

PROJECT BM. NO. 4: 16 PENNY NAIL IN THE SOUTHWEST SIDE OF A 12 INCH DIAMETER CHERRY TREE APPROXIMATELY 100 FEET NORTH OF AN ANGLE POINT IN THE 1ST FAIRWAY OF THE GOLF COURSE. ELEV.: 845.17 (NGVD 1929 DATUM)

PROJECT BM. NO. 118: SOUTHEAST CAP BOLT WITH "X" ON FIRST FIRE HYDRANT NORTH OF 151ST STREET ON THE EAST SIDE OF CAREY ROAD. ELEV.: 843.40 (NGVD 1929 DATUM)

PROJECT BM. NO. 121: NORTHEAST CAP BOLT WITH "X" ON THIRD FIRE HYDRANT NORTH OF 151ST STREET ON THE EAST SIDE OF CAREY ROAD DUE WEST OF THE COVERED BRIDGE. ELEV.: 839.48 (NGVD 1929 DATUM)

PROJECT BM. NO. 131: TOP OF EAST BOLT WITH SMALL "X" IN SOUTH SET OF FOUR BOLTS ON SOUTH SIDE OF METAL POWER POLE #A28308-1 W22 80-0 0546354 AT THE NORTH SIDE OF THE INTERSECTION OF 151ST STREET AND SETTERS ROAD E 40. ELEV.: 840.45 (NGVD 1929 DATUM)

CONTACT CO. / PERSON FOR

EATON INVESTMENTS LTD., INC.	STEVE BROWN	(317) 575-7991
PAUL L. CRIFE, INC. (CIVIL)	RICK RADABAUGH	(317) 842-6777
BROWNING DAY MULLINS DIERDORF, INC.	KEVIN FOSTER	(317) 635-5030
WESTFIELD PLANNING DEPARTMENT	KEVIN BUCHHEIT	(317) 896-5577
WESTFIELD UTILITIES & STREET DEPT.	BRUCE HANK	(317) 896-5452
WESTFIELD FIRE DEPARTMENT	JIM SPELBRING	(317) 896-2704
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INSIGHT COMMUNICATIONS	MATT STRINGER	(317) 776-4487
HAMILTON CO. SOIL & WATER	MARK MCCAULEY	(317) 773-1406
HAMILTON CO. SURVEYORS OFFICE	MIKE KOLE	(317) 776-8496

AS BUILT
date 11/27/04

RECORD DRAWING

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CIVIL ENGINEERS
LAND PLANNERS
LAND SURVEYORS
ENVIRONMENTAL CONSULTANTS
REGISTERED PROFESSIONAL ENGINEERS
CS

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INDIANAPOLIS, INDIANA 46250
(317) 842-6777 FAX (317) 841-4798
E-Mail: picripe@picripe.com

COVER SHEET
CONSTRUCTION PLANS - ORVILLE KEYS REGULATED DRAIN
THE BRIDGEWATER CLUB
EATON INVESTMENTS LTD., INC.
12220 NORTH MERIDIAN STREET
CARMEL, INDIANA 46032
PH. (317) 575-7991

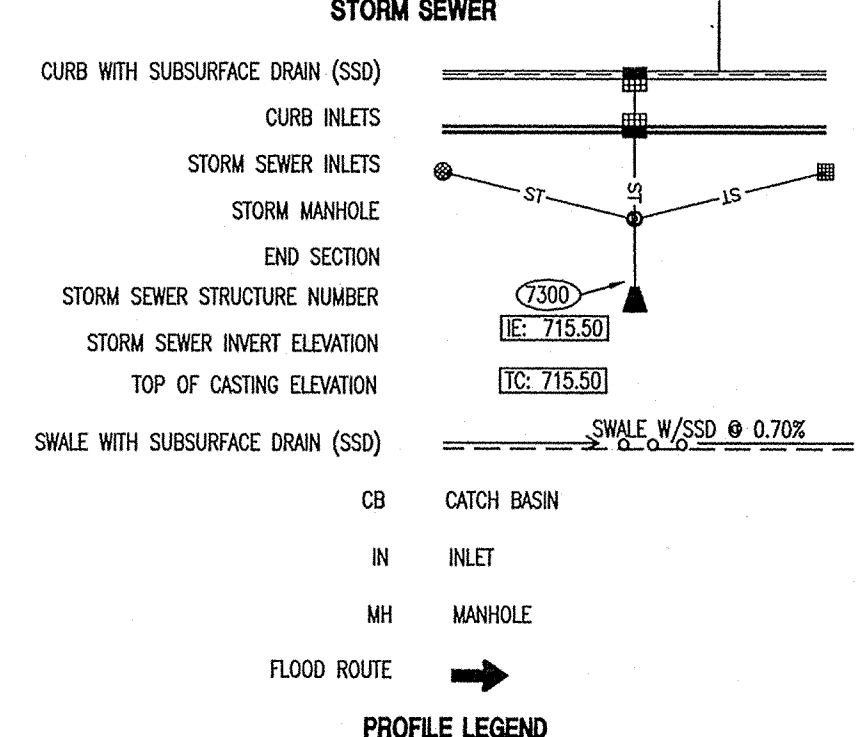
11/22/04
DAVID A. LACH
REGISTERED PROFESSIONAL ENGINEER
PE 10000129
STATE OF INDIANA

Drawn By: CMQ
Checked By:
Quality Assurance:
Scale: 1" = 500'
Sheet: CS
Date: 10/11/04
Project Number: 980516-30700

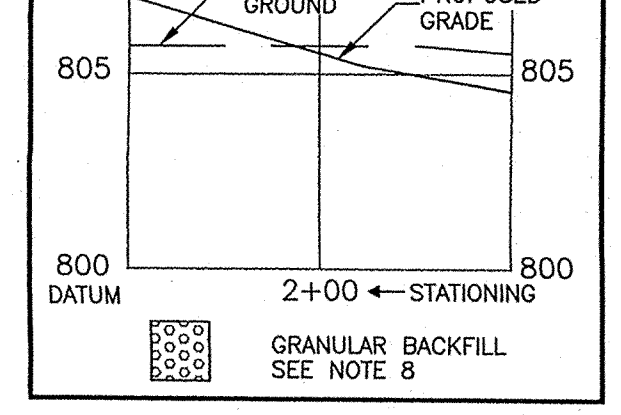
STORM SEWER PLAN AND PROFILE NOTES:

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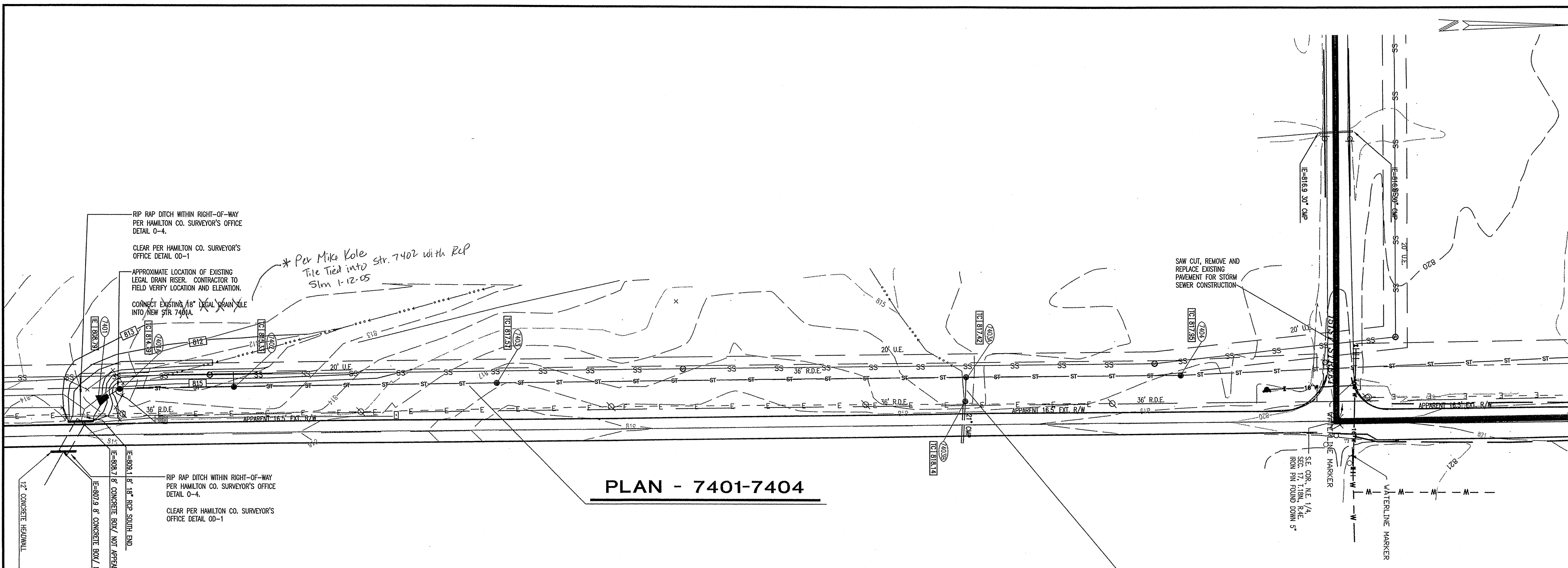
UTILITY PLAN LEGEND



PROFILE LEGEND



NOTE:
ALL STORM STRUCTURE TO BE COORDINATED AND CROSS REFERENCED WITH THE BRIDGEWATER CLUB SECTION 1-2 CONSTRUCTION DRAWINGS



PLAN - 7401-7404

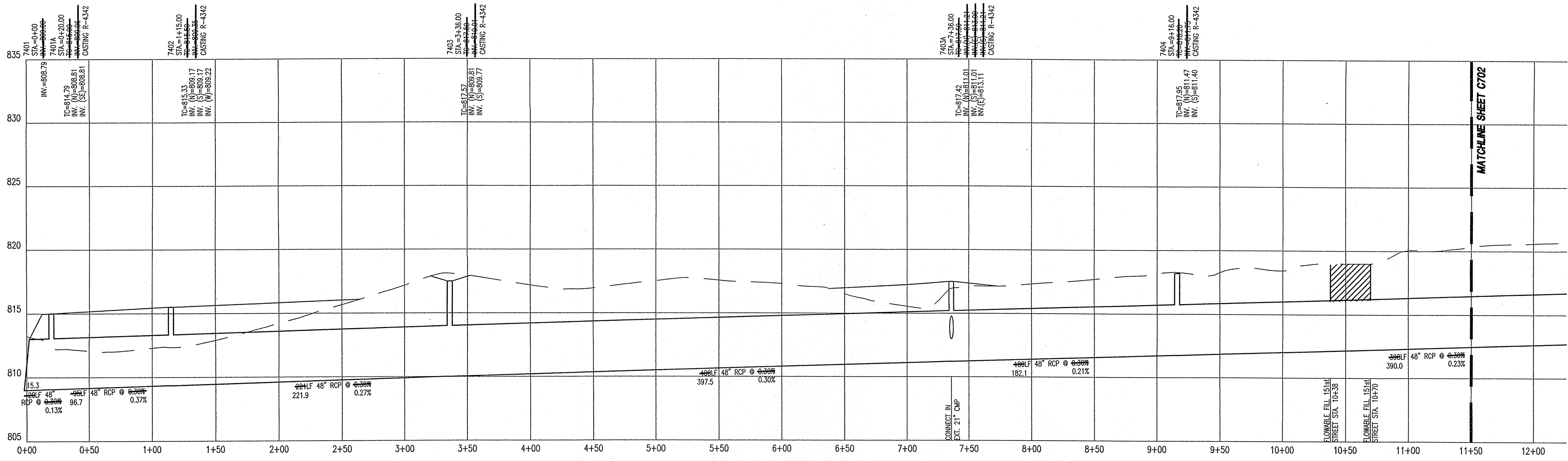
PLAN - 7403A-7403B

HOR. SCALE: 1" = 50'

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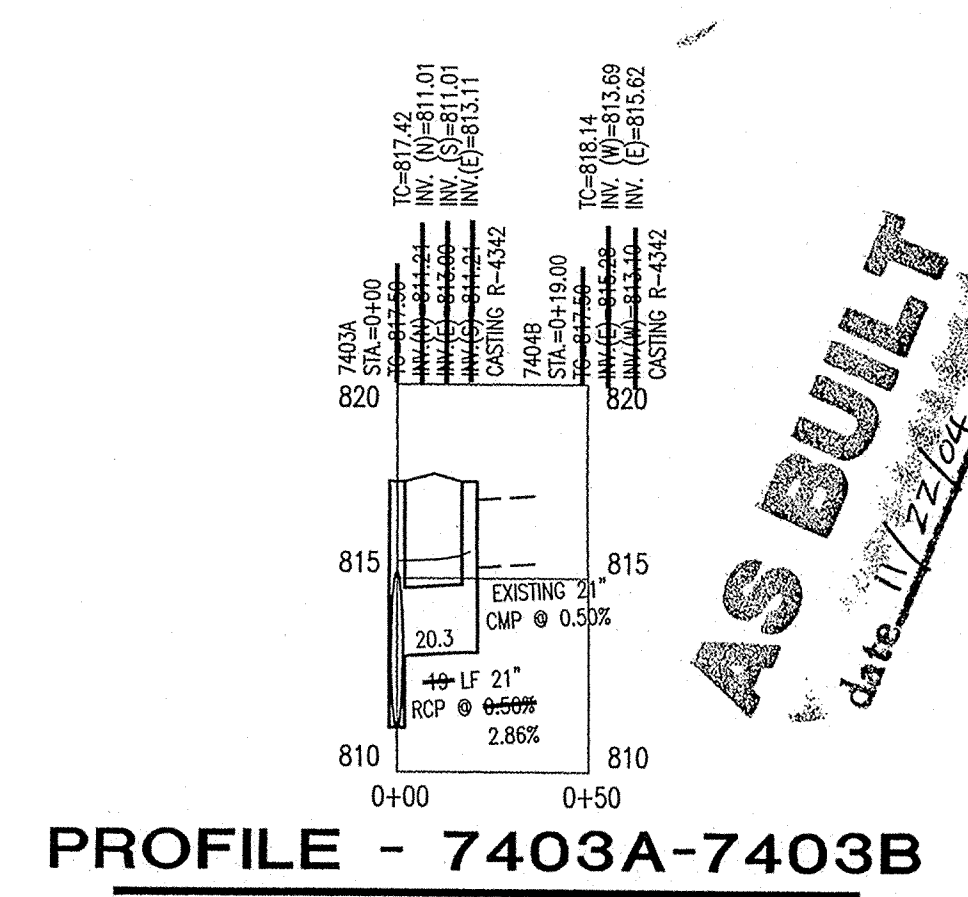
Entry Date: 1-12-05

Entered by: Suzanne C. Mills



PROFILE - 7401-7404

HOR. SCALE: 1" = 50'
VER. SCALE: 1" = 5'



PROFILE - 7403A-7403B

HOR. SCALE: 1" = 50'
VER. SCALE: 1" = 5'

"HOLEY MOLEY" SAYS CALL AT LEAST TWO FULL WORKING DAYS BEFORE YOU DIG. JTS. THE LAW.



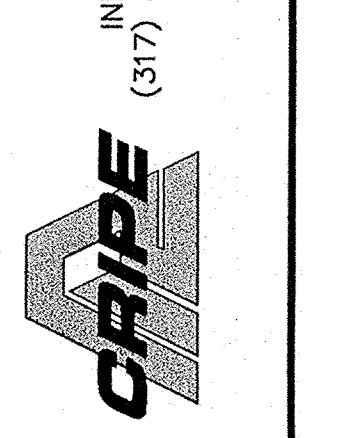
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RECORD DRAWING

Revision	Date	Description

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(317) 842-6777 FAX (317) 841-4798
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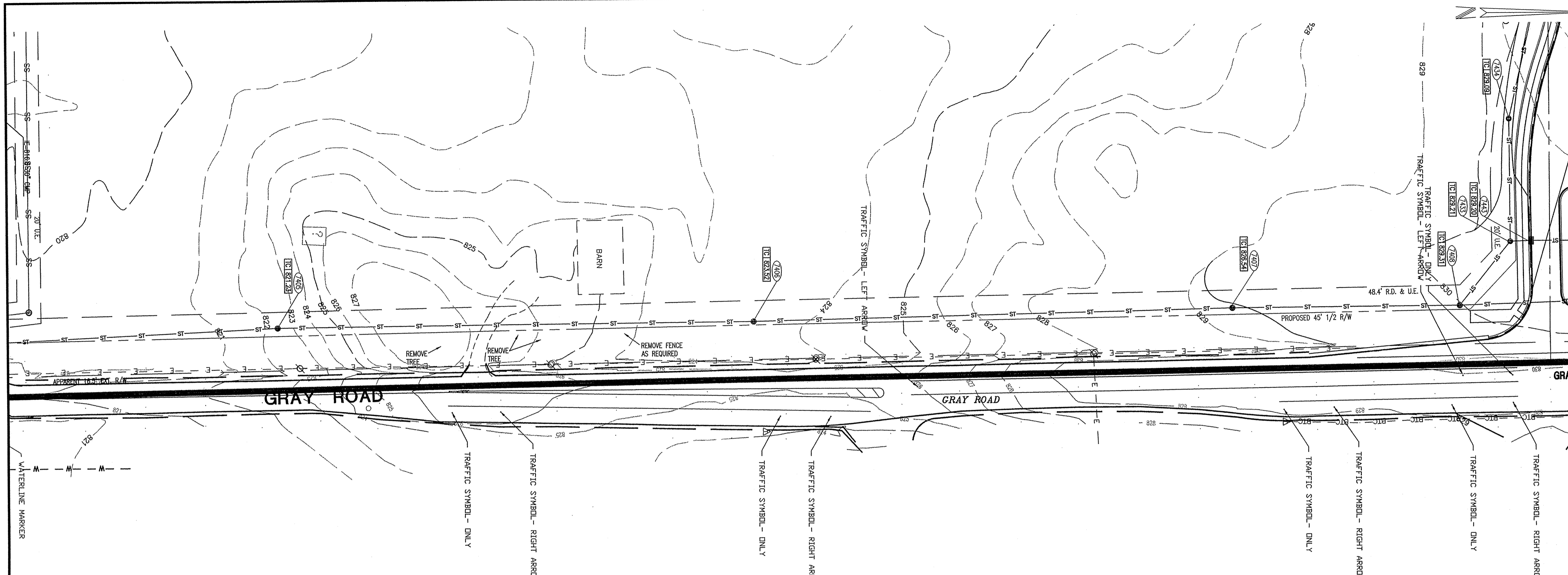
STORM SEWER PLAN AND PROFILE CONSTRUCTION PLANS - ORVILLE KEYS REGULATED DRAIN THE BRIDGEWATER CLUB

EATON INVESTMENTS LTD., INC.
12220 NORTH MERIDIAN STREET
CARMEL, INDIANA 46032
PH. (317) 675-7891

CERTIFIED BY: [Signature]


DAVID A. LACH
REGISTERED PROFESSIONAL ENGINEER
PE 10000128
STATE OF INDIANA

Drawn by: CMQ
Checked by:
Quality Assurance:
Scale: 1" = 50'
Sheet: C701
Date: 10/11/04
Project Number: 980516-30700



PLAN - 7404-7408

HOR. SCALE: 1" = 50'

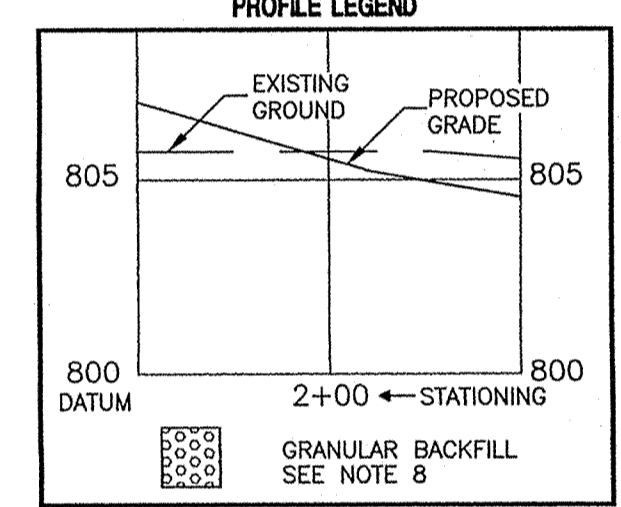
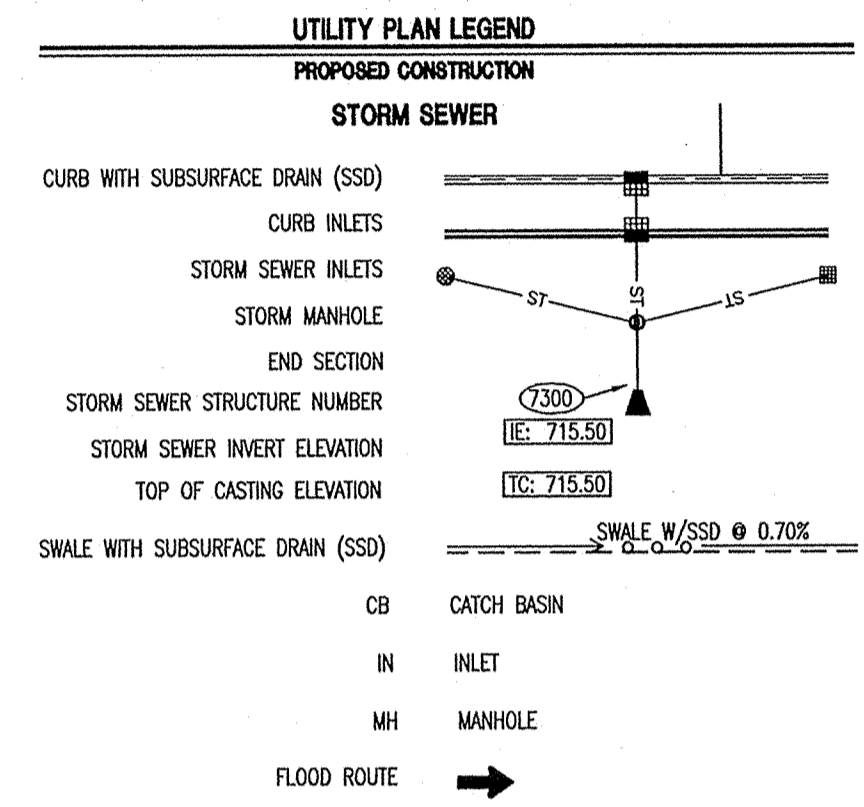


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Entry Date: 1-12-05

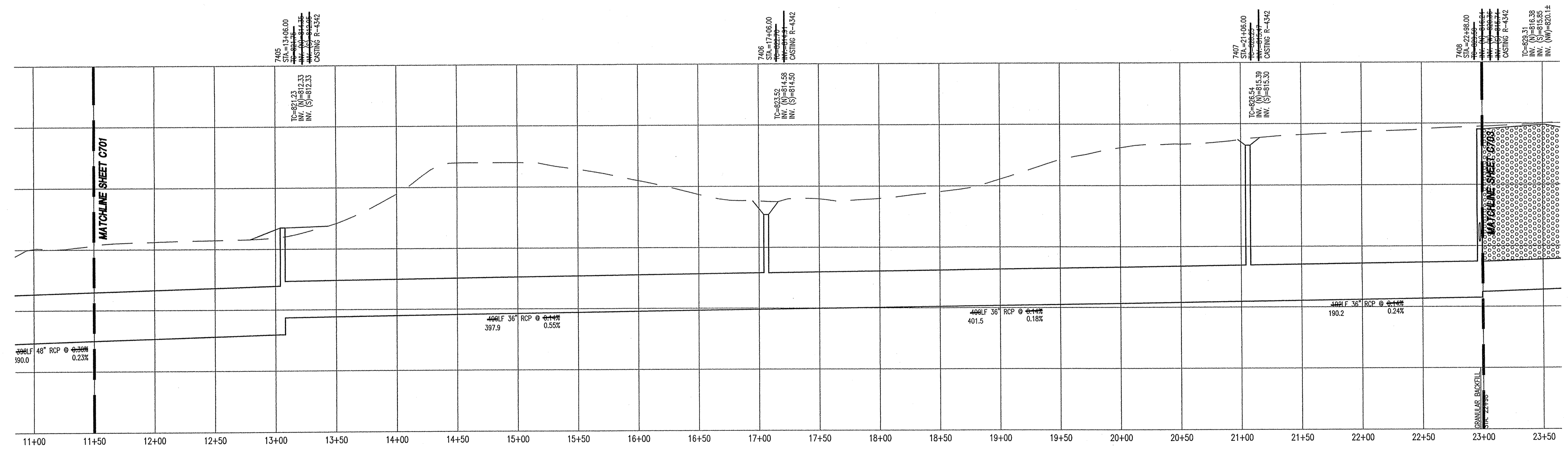
Entered by: Suzanne L. Mills

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NOTE:

ALL STORM STRUCTURE TO BE COORDINATED AND CROSS REFERENCED WITH THE BRIDGEWATER CLUB SECTION 12 CONSTRUCTION DRAWINGS



PROFILE - 7404-7408

HOR. SCALE: 1" = 50'
VER. SCALE: 1" = 5'

AS BUILT


date: 11/22/04

RECORD DRAWING

"HOLEY MOLEY" SAYS CALL AT LEAST TWO FULL WORKING DAYS BEFORE YOU DIG... IT'S THE LAW.

CAUTION

LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (INCLUDING, BUT NOT LIMITED TO, MANHOLES, INLETS, VALVES, AND MARKS MADE UPON THE GROUND BY OTHERS) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF SAID EXISTING UNDERGROUND UTILITIES SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

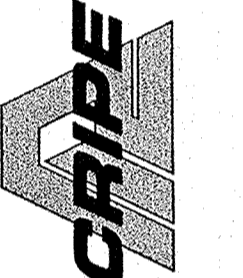


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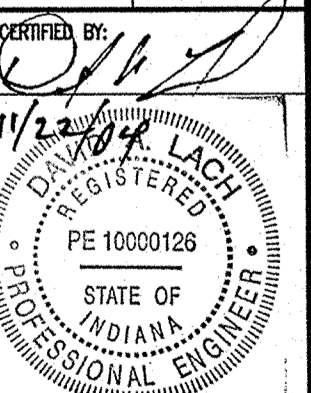


STORM SEWER PLAN AND PROFILE CONSTRUCTION PLANS - ORVILLE KEYS REGULATED DRAIN THE BRIDGEWATER CLUB

EATON INVESTMENTS LTD., INC.
12220 NORTH MERIDIAN STREET
CARMEL, INDIANA 46032
PH: (317) 876-7891

CERTIFIED BY: *[Signature]*

11/22/04



Orville Keys
REGISTERED PROFESSIONAL ENGINEER
STATE OF INDIANA
PE 10000126

Drawn By: CMQ

Checked By:

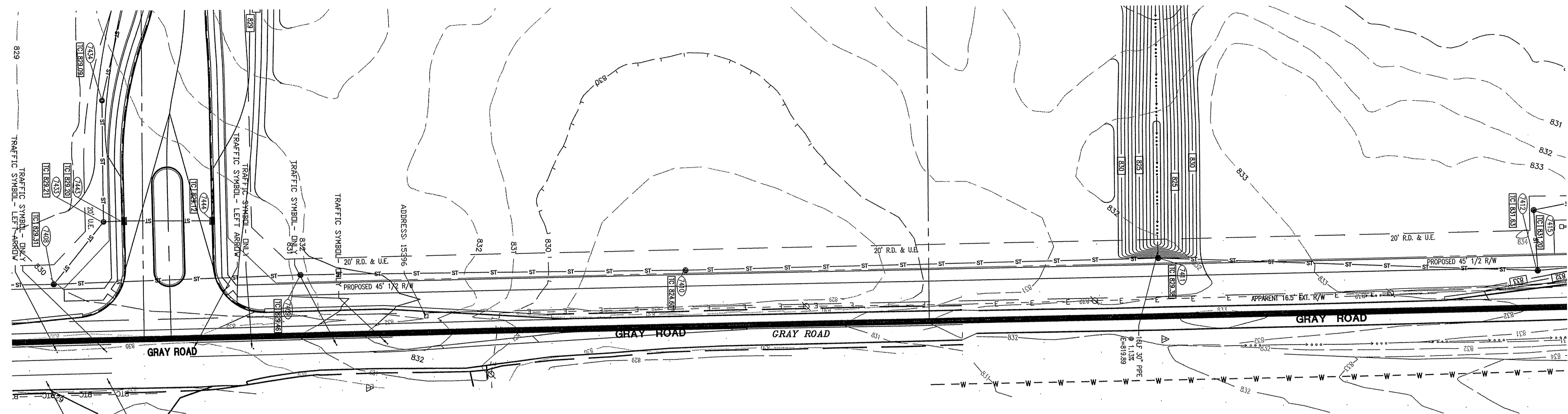
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Scale: 1" = 50'

Sheet: **C702**

Date: 10/11/04

Project Number: 980516-30700



PLAN - 7408-7412

HOR. SCALE: 1" = 50'

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Entry Date: 1-12-05

Entered by: Suzanne L. Mills

- STORM SEWER PLAN AND PROFILE NOTES:**
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UTILITY PLAN LEGEND

PROPOSED CONSTRUCTION

STORM SEWER

CURB WITH SUBSURFACE DRAIN (SSD)

CURB INLETS

STORM SEWER INLETS

STORM MANHOLE

END SECTION

STORM SEWER STRUCTURE NUMBER

STORM SEWER INVERT ELEVATION

TOP OF CASTING ELEVATION

SWALE WITH SUBSURFACE DRAIN (SSD)

SWALE W/SSD @ 0.70%

CB CATCH BASIN

IN INLET

MH MANHOLE

FLOOD ROUTE

PROFILE LEGEND

EXISTING GROUND

PROPOSED GRADE

805

800 DATUM

2+00 ← STATIONING

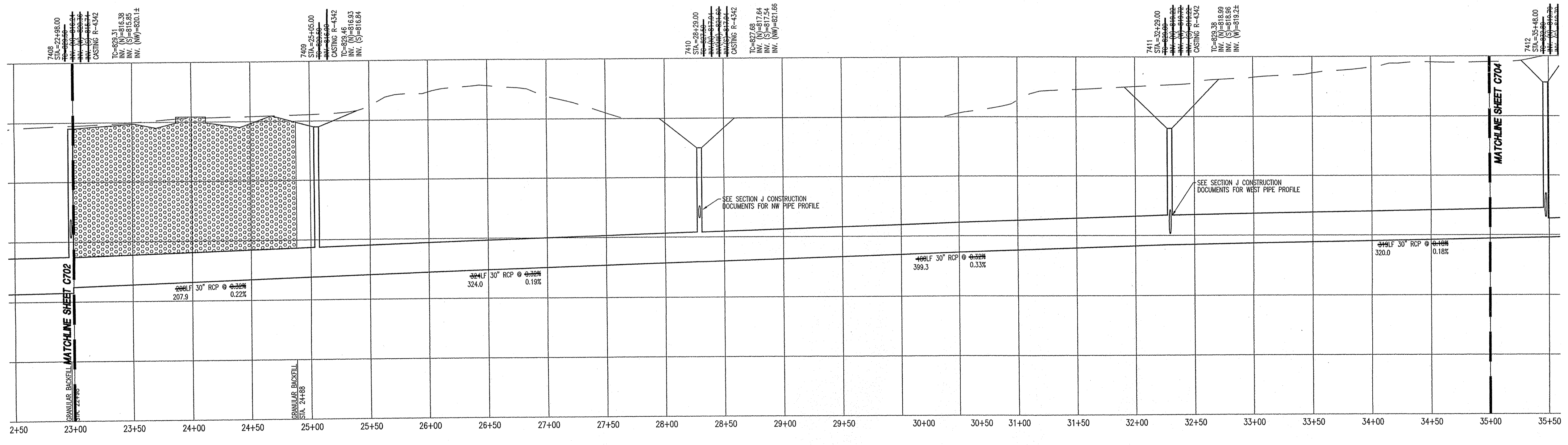
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GRANULAR BACKFILL

SEE NOTE 8

NOTE:

ALL STORM STRUCTURE TO BE COORDINATED AND CROSS REFERENCED WITH THE BRIDGEWATER CLUB SECTION I-2 CONSTRUCTION DRAWINGS



PROFILE - 7408-7412

HOR. SCALE: 1" = 50'
VER. SCALE: 1" = 5'

AS BUILT

date: 11/22/04

RECORD DRAWING

"HOLEY MOLEY" SAYS CALL AT LEAST TWO FULL WORKING DAYS BEFORE YOU DIG... IT'S THE LAW.

CAUTION

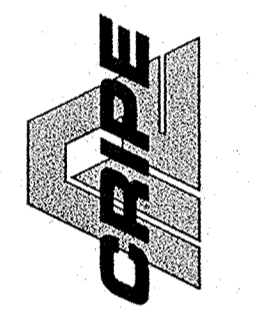
LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (INCLUDING, BUT NOT LIMITED TO, MANHOLES, INLETS, VALVES, AND MARKS MADE UPON THE GROUND BY OTHERS) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT LOCATIONS OF SAID EXISTING UNDERGROUND UTILITIES SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

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Revision	Mark	Date	Description

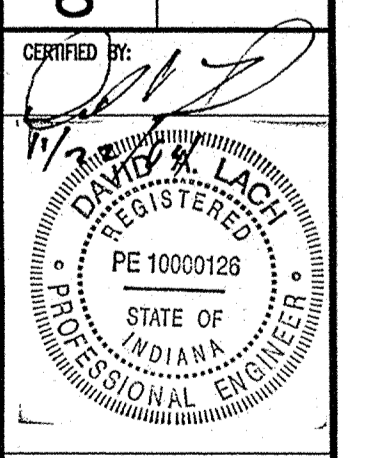
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STORM SEWER PLAN AND PROFILE CONSTRUCTION PLANS - ORVILLE KEYS REGULATED DRAIN THE BRIDGEWATER CLUB

EATON INVESTMENTS LTD., INC.
12220 NORTH MERIDIAN STREET
CARMEL, INDIANA 46032
PH: (317) 675-7881



CERTIFIED BY: *[Signature]*

Drawn By: CMQ

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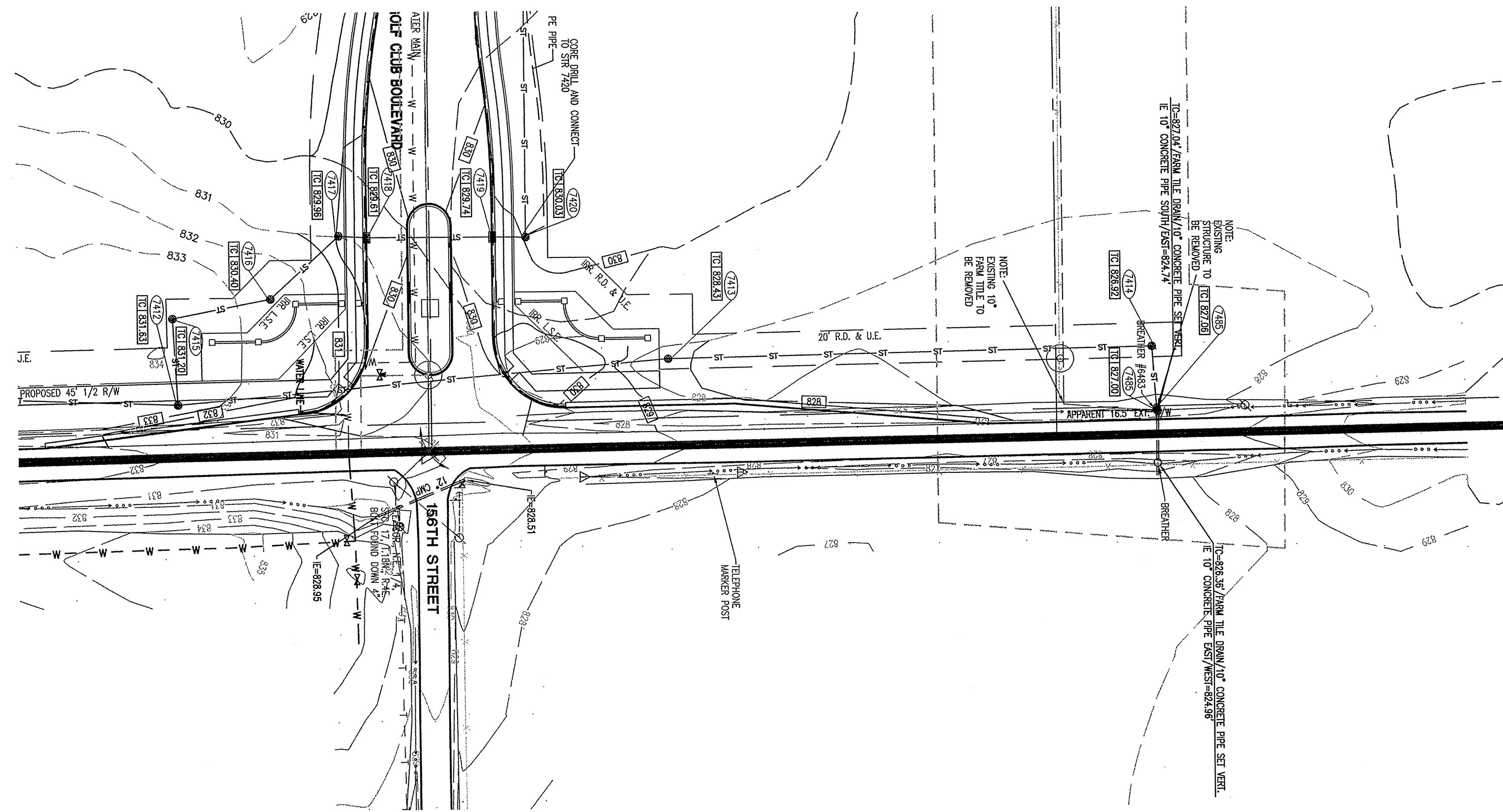
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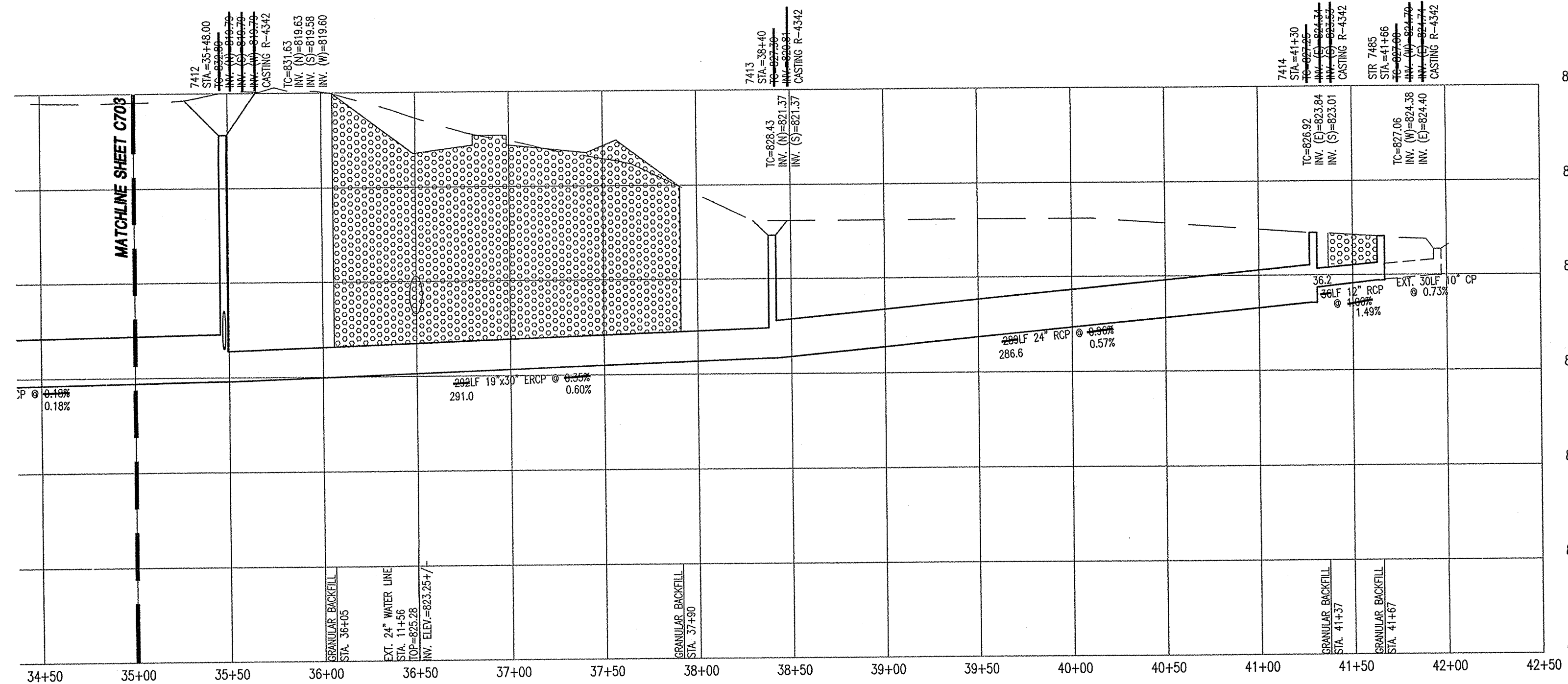
Date: 10/11/04

Project Number: 980516-30700



PLAN - 7412-7485

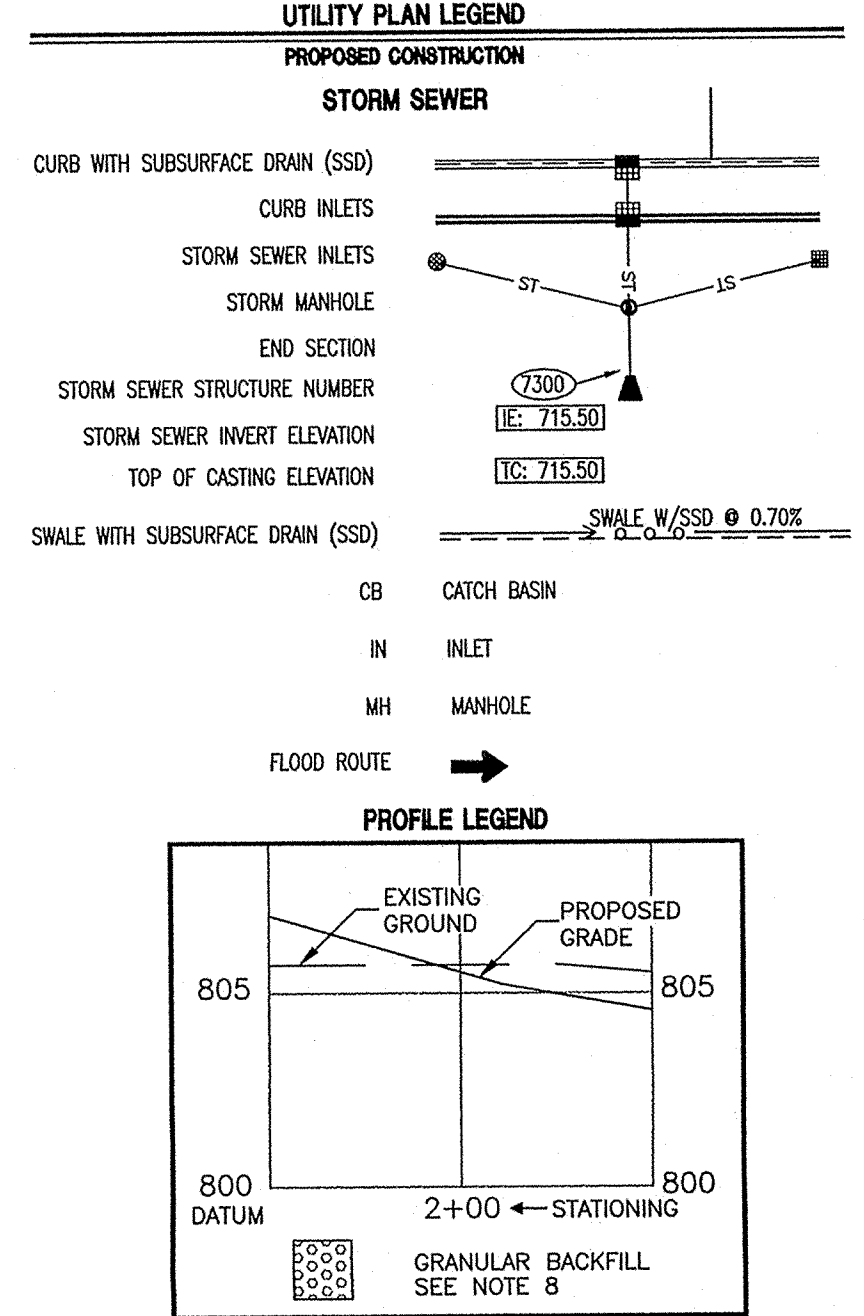
HOR. SCALE: 1" = 50'



PROFILE - 7412-7485

HOR. SCALE: 1" = 50'
VER. SCALE: 1" = 5'

- STORM SEWER PLAN AND PROFILE NOTES:**
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 - ALL EXISTING PRIVATE OFF-SITE DRAIN TILES, ENCOUNTERED DURING CONSTRUCTION, SHALL BE TIED INTO THE PROPOSED STORM SEWER SYSTEM WITH A POSITIVE OUTFLOW.



NOTE:
ALL STORM STRUCTURE TO BE COORDINATED AND CROSS REFERENCED WITH THE BRIDGEWATER CLUB SECTION #2 CONSTRUCTION DRAWINGS

This information was gathered for input into the Hamilton County Geographical Information System. This document is considered an official record of the GIS.

Entry Date: 1-12-05
Entered by: Suzanna Mills

AS BUILT
date: 1/22/06

RECORD DRAWING

"HOLEY MOLEY" SAYS CALL AT LEAST TWO FULL WORKING DAYS BEFORE YOU DIG... IT'S THE LAW.

CAUTION:
LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (including, but not limited to, manholes, shafts, valves, and marks made upon the ground by others) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR WHICH THERE IS NO ABOVE GROUND EVIDENCE OR FOR WHICH NO ABOVE GROUND EVIDENCE WAS OBSERVED. THE EXACT UTILITIES SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.

1-800-382-5544
CALL TOLL FREE
1-800-428-5200
FOR CALLS OUTSIDE OF INDIANA

ARCHITECTURE
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7172 GRAHAM ROAD
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CRPE

STORM SEWER PLAN AND PROFILE CONSTRUCTION PLANS - ORVILLE KEYS REGULATED DRAIN THE BRIDGEWATER CLUB

EATON INVESTMENTS LTD., INC.
12220 NORTH MERIDIAN STREET
CARMEL, INDIANA 46032
PH: (317) 676-7881

CERTIFIED BY: [Signature]

Drawn By: CMQ
Checked By:
Quality Assurance:
Scale: 1" = 50'
Sheet: **C704**
Date: 10/11/04
Project Number: 980516-30700

OFFICE OF THE HAMILTON COUNTY SURVEYOR

BANK ARMORMENT AT OUTLET PIPE IN OPEN CHANNELS

CROSS SECTION

PLAN VIEW

HAMILTON COUNTY SURVEYOR'S OFFICE
 REVISOR: 1 JAN 2000
 APPROVED: *Kenton C. Ward* 4 JAN 00
 KENTON C. WARD, HAMILTON COUNTY SURVEYOR DATE
 STANDARD PLAN 0-4

OFFICE OF THE HAMILTON COUNTY SURVEYOR

ANCHOR FOR CONCRETE END SECTIONS

SIDE PROFILE

TOP VIEW

END PROFILE

HAMILTON COUNTY SURVEYOR'S OFFICE
 REVISOR: 1 JAN 2000
 APPROVED: *Kenton C. Ward* 4 JAN 00
 KENTON C. WARD, HAMILTON COUNTY SURVEYOR DATE
 STANDARD PLAN 0-5

OFFICE OF THE HAMILTON COUNTY SURVEYOR

CLEARING SPECIFICATIONS

WHAT TO CLEAR

- Clear all woody vegetation; i.e. trees, willows, brush, briars and cattails.
- Clear both ditch banks to the top of the bank. Clear the ditch bottom and remove all debris and obstructions within the channel.
- On the working side, clear only enough room to complete the intended operation; such as spreading spoil or installing an erosion control structure. If more than 75 feet is needed, the Hamilton County Surveyor must be contacted before additional clearing can be done.

OTHER NOTES

- Cut trees as shown in the diagram below. Cut the stump flush with the ground, no more than 6 inches high. Cut the stump at the same angle as the ditch bank.
- Paint stumps with an approved EPA brush killer according to the contract specifications.
- Remove stumps if the bank is resloped or for proper channel alignment.

HAMILTON COUNTY SURVEYOR'S OFFICE
 REVISOR: 1 JAN 2000
 APPROVED: *Kenton C. Ward* 4 JAN 00
 KENTON C. WARD, HAMILTON COUNTY SURVEYOR DATE
 STANDARD PLAN OD-1

OFFICE OF THE HAMILTON COUNTY SURVEYOR

SUBDIVISION CLEARING

ALL OPEN DITCHES SHALL HAVE AN ONSITE INVESTIGATION WITH THE SURVEYOR'S OFFICE PLAN REVIEWER, INSPECTOR AND DEVELOPER. TREES GREATER THAN 18" (MEASURED AT BREAST HEIGHT) MAY BE SAVED IF APPROVED BY THE INSPECTOR. THE INSPECTOR SHALL BE CONTACTED FOR INVESTIGATION PRIOR TO FINAL INSPECTION FOR DETERMINATION.

NOTE: IF ON PROPERTY LINE, USE CONSERVATION ALTERNATE.

HAMILTON COUNTY SURVEYOR'S OFFICE
 REVISOR: 1 JAN 2000
 APPROVED: *Kenton C. Ward* 4 JAN 00
 KENTON C. WARD, HAMILTON COUNTY SURVEYOR DATE
 STANDARD PLAN OD-4

OFFICE OF THE HAMILTON COUNTY SURVEYOR

DEBRIS GUARD

SIDE PROFILE

TOP VIEW

Apron Size	V-bar Size	No. of H-bars	H-bar Size	Bolt Size	"A" Dim.
18	1/2	3	5/8	1/2	4
24	5/8	4	3/4	1/2	5
30	5/8	4	3/4	1/2	7 1/2
36	3/4	4	1	1/2	10 1/2
42	3/4	4	1	3/4	11
48	3/4	4	1 1/2 pipe	3/4	12
54	3/4	4	1 1/2 pipe	3/4	12
60	3/4	5	1 1/2 pipe	3/4	14
72	3/4	6	1 1/2 pipe	3/4	14
84	3/4	8	1 1/2 pipe	3/4	16

NOTES:
 1. BARS & PLATES ARE HOT-ROLLED STEEL.
 2. BARS, PLATES, & PIPE ARE FINISHED WITH 2 COATS OF ALUMINUM PAINT.
 3. BOLTS ARE GALVANIZED.
 4. NO REBAR THROUGH PIPES WILL BE ALLOWED.
 5. DEBRIS GUARD SHALL BE REMOVABLE.

HAMILTON COUNTY SURVEYOR'S OFFICE
 REVISOR: 1 JAN 2000
 APPROVED: *Kenton C. Ward* 4 JAN 00
 KENTON C. WARD, HAMILTON COUNTY SURVEYOR DATE
 STANDARD PLAN D-12

OFFICE OF THE HAMILTON COUNTY SURVEYOR

UNDERDRAINS REQUIRED IN SWALES WITH LESS THAN 1% SLOPE

TYPICAL SWALE DETAIL

HAMILTON COUNTY SURVEYOR'S OFFICE
 REVISOR: 1 FEB 2002
 APPROVED: *Kenton C. Ward* 2/1/02
 KENTON C. WARD, HAMILTON COUNTY SURVEYOR DATE
 STANDARD PLAN D-16

OFFICE OF THE HAMILTON COUNTY SURVEYOR

STANDARD MANHOLE FOR PIPE SIZES 12" THRU 24"

STANDARD MANHOLE FOR PIPE SIZES 12" THRU 24"

HAMILTON COUNTY SURVEYOR'S OFFICE
 REVISOR: 1 FEB 2002
 APPROVED: *Kenton C. Ward* 2/1/02
 KENTON C. WARD, HAMILTON COUNTY SURVEYOR DATE
 STANDARD PLAN D-20

OFFICE OF THE HAMILTON COUNTY SURVEYOR

STANDARD MANHOLE FOR PIPE SIZES 24" THRU 66"

STANDARD MANHOLE FOR PIPE SIZES 24" THRU 66"

MANHOLE DIA. "F"	PIPE DIA. "G"	PIPE TURNS
96"	48"	GREATER THAN 45 TO 90 DEG
96"	54"-66"	UP TO 90 DEG
84"	42"	GREATER THAN 45 TO 90 DEG
84"	48"	TURNS UP TO 45 DEG
72"	42"-48"	UP TO 45 DEG
60"	36"-38"	STRAIGHT THRU
60"	24"-38"	GREATER THAN 45 TO 90 DEG

HAMILTON COUNTY SURVEYOR'S OFFICE
 REVISOR: 1 FEB 2002
 APPROVED: *Kenton C. Ward* 2/1/02
 KENTON C. WARD, HAMILTON COUNTY SURVEYOR DATE
 STANDARD PLAN D-21

AS BUILT
 date 11/22/04

STORM SEWER DETAILS
 CONSTRUCTION PLANS - ORVILLE KEYS REGULATED DRAIN THE BRIDGEWATER CLUB
 EATON INVESTMENTS LTD., INC.
 12220 NORTH MERIDIAN STREET
 CARMEL, INDIANA 46032
 PH. 817 5757981

CREATED BY: *David A. Lach*
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF INDIANA
 PE 10000126

Drawn By: CMQ
 Checked By:
 Quality Assurance:
 Scale: 1" = 5'-0"
 Sheet: C713
 Date: 10/11/04
 Project Number: 980516-30700

OFFICE OF THE HAMILTON COUNTY SURVEYOR

STRUCTURE SIZING TABLE

PIPE SIZE (INCHES)	STRUCTURES LESS THAN 48" FROM T/C TO INVERT (INCHES)	STRUCTURES GREATER THAN 48" FROM T/C TO INVERT	ANGLE AND QUALITY OF PIPES WILL REQUIRE SPECIAL DESIGN	STEPS REQUIRED	CURB CASTING *R-300LN	CASTING *800 TL & TR
12 TO 18	24 X 24	***	DESIGN APPROVAL	NO	YES	YES
12 TO 21	30 X 30	***	DESIGN APPROVAL	NO	YES	YES
18 TO 21		MH/BOX	DESIGN APPROVAL	YES	YES	YES
21 TO 27	24 X 36 OR 36 X 36	***	DESIGN APPROVAL	NO	NO	YES
12 TO 24	36 X 36	***	DESIGN APPROVAL	NO	YES	YES
24 OR LARGER		***	DESIGN APPROVAL	NO	NO	YES
24 OR LARGER		MH/BOX	DESIGN APPROVAL	YES**	YES	YES

- * PIPES NO LARGER THAN 18" CAN BE USED IN THE 2' SIDE OF THIS BOX.
- **INCOMING AND OUT GOING PIPES EFFECT STEPS IN THIS STRUCTURE.
- ***SPECIAL NOTE: STRUCTURES DEEPER THAN 48" FROM T/C TO INVERT WILL BE A M.H. OR A BOX WITH STEPS UNLESS SPECIAL DESIGN IS APPROVED.
- SPECIAL NOTE: STRUCTURES WILL BE DESIGNED FOR MAXIMUM FLOW IN PIPES.
- SPECIAL NOTE: COUNTY MAY REQUIRE STEPS TO BE INSTALLED AFTER STRUCTURE IS SET, TO IMPROVE ACCESS.

HAMILTON COUNTY SURVEYOR'S OFFICE

APPROVED: *Kenton C. Ward* 2/1/02 DATE
 KENTON C. WARD, HAMILTON COUNTY SURVEYOR
 REVISED: 1 FEB 2002
 STANDARD PLAN D-18

STORM STRUCTURE DATA TABLE

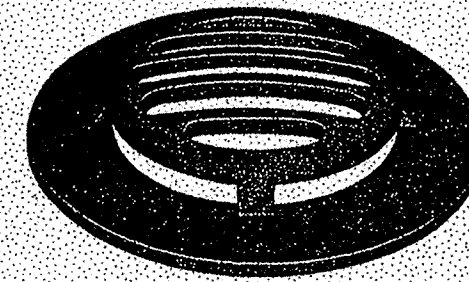
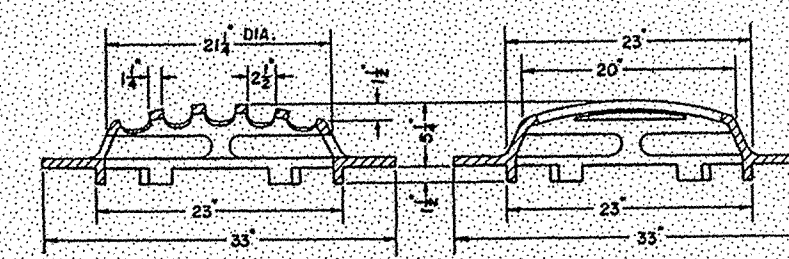
STR. NUMBER	STRUCTURE TYPE	CASTING*	STR. NOTES
7401	CONCRETE END SECTION	ST-3A	
7402	STORM SEWER MANHOLE	R-1772	SI-6
7403	STORM SEWER MANHOLE	R-1772	SI-6
7403A	STORM SEWER MANHOLE	R-4342	SI-6
7403B	STORM SEWER MANHOLE	R-4342	SI-6
7404	STORM SEWER MANHOLE	R-1772	SI-6
7405	STORM SEWER MANHOLE	R-1772	SI-6
7406	STORM SEWER MANHOLE	R-1772	SI-6
7407	MANHOLE TYPE 1	R-1772	
7408	MANHOLE TYPE 1	R-1772	
7409	MANHOLE TYPE 1	R-1772	
7410	MANHOLE TYPE 1	R-1772	
7411	MANHOLE TYPE 1	R-1772	
7412	MANHOLE TYPE 1	R-1772	
7413	STANDARD STORM MANHOLE	R-1772	
7414	STANDARD STORM MANHOLE	R-1772	

*CASTING TO BE NEENAH OR EQUAL PER WESTFIELD STANDARD DETAILS.

NEENAH FOUNDRY COMPANY

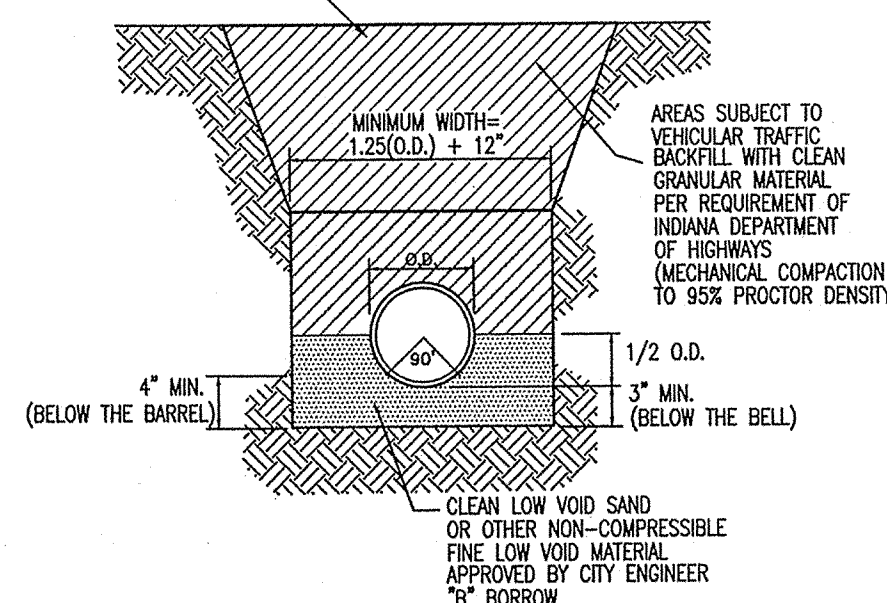
R-4342 Ditch Grate, Stool Type

Light Duty



NOTE: INSPECT ALL SEWERS AS TO ELEVATION, GRADIENT, ALIGNMENT & JOINT BY INSPECTING ENGINEER PRIOR TO BACKFILL OVER PIPE

AREAS NOT SUBJECT TO VEHICULAR TRAFFIC MAY BE BACKFILLED WITH CLEAN FILL MATERIAL, FREE OF ANY ROCKS LARGER THAN 6", FROZEN SOIL, WOOD OR OTHER EXTRANEIOUS MATERIALS.



ST-32 RIGID PIPE BEDDING DETAIL (STORM) NO SCALE CONCRETE PIPE AND CMP

OFFICE OF THE HAMILTON COUNTY SURVEYOR

STRUCTURE DATA TABLE

STR. NO.	TC/RIM ELEV.	INV. IN	INV. OUT	DEPTH * (FEET)	STR. SIZE	STR. TYPE	CASTING TYPE (NEENAH #)	PIPE SIZE (IN/OUT)	DIRECTION OF PIPE IN/OUT
7401	N/A		820.00			ST-3A		48"/48"	SE OUT
7401A	815.00	809.06	809.06	1.52	84"	D-21	R-4342	48"/48"	N/SE
7402	815.50	809.35	809.35	1.73	72"	D-21	R-4342	48"/48"	N/S
7403	817.50	810.01	810.01	3.07	72"	D-21	R-4342	48"/48"	N/S
7403A	817.50	811.21	811.21	1.87	96"	D-21	R-4342	48"/48"	N/S
		813.00						21"	W/S
7403B	817.50	815.28	813.10	2.42	48"	D-20	R-4342	21"/21"	E/W
7404	818.20	811.75	811.75	2.03	72"	D-21	R-4342	48"/48"	N/S
7405	821.75	814.35	812.95	4.38	72"	D-21	R-4342	36"/48"	N/S
7406	822.70	814.91	814.91	4.45	60"	D-21	R-4342	36"/36"	N/S
7407	828.25	815.47	815.47	9.44	60"	D-21	R-4342	36"/36"	N/S
7408	829.50	816.24	815.74	10.42	60"	D-21	R-4342	30"/36"	N/S
		820.36						18"	NW/S
7409	829.50	816.90	816.90	9.81	60"	D-21	R-4342	30"/30"	N/S
7410	827.50	817.94	817.94	6.77	60"	D-21	R-4342	30"/30"	N/S
		821.60						12"	NW/S
7411	829.00	819.72	819.22	6.99	60"	D-21	R-4342	24"/30"	N/S
		819.22						30"	W/S
7412	832.80	821.50	821.47	9.08	60"	D-21	R-4342	24"/24"	N/S
		821.47						24"	W/S
7413	827.30	822.50	822.50	2.53	48"	D-20	R-4342	24"/24"	N/S
7414	827.25	824.34	823.53	1.47	48"	D-20	R-4342	12"/24"	E/S
7485	827.00	824.74	824.70	1.13	48"	D-20	R-4342	10"/12"	E/W

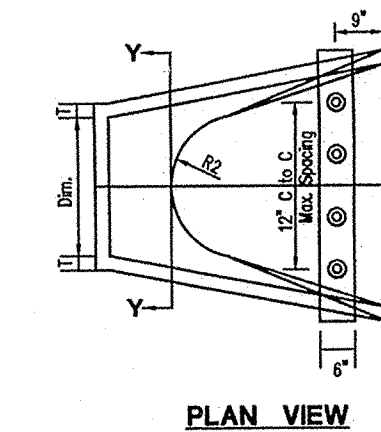
* DEPTH = TC - (INV + DIA + THICKNESS)

HAMILTON COUNTY SURVEYOR'S OFFICE

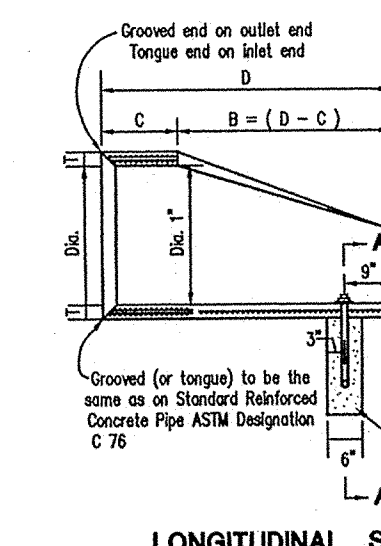
APPROVED: *Kenton C. Ward* 2/1/02 DATE
 KENTON C. WARD, HAMILTON COUNTY SURVEYOR
 REVISED: 1 FEB 2002
 STANDARD PLAN D-19

AS BUILT

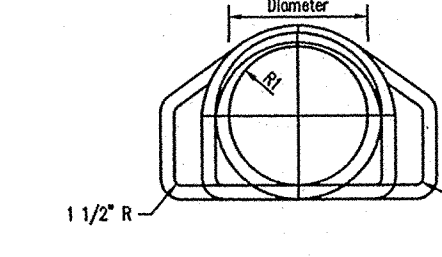
date 11/22/04



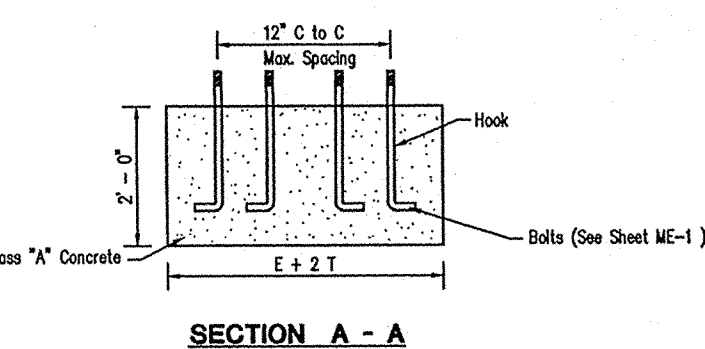
PLAN VIEW



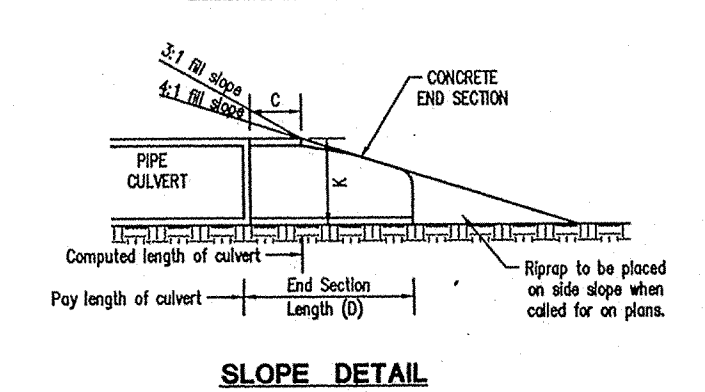
LONGITUDINAL SECTION



SECTION Y - Y



SECTION A - A



SLOPE DETAIL

NOTES:

- CONCRETE IN THIS END SECTION SHALL BE THE SAME GRADE AND SPECIFICATIONS AS SPECIFIED FOR REINFORCED CONCRETE PIPE, ASTM SPECIFICATION C 76 (OR AS NOTED BY THE DRAWING SHEET).
- REINFORCEMENT IN THE "T" PORTION SHALL BE THE SAME AS SPECIFIED FOR REINFORCED CONCRETE, ASTM SPECIFICATION C 76, CLASS B FOR THE USE OF CONCRETE PIPE.
- REINFORCEMENT IN THE "W" PORTION SHALL HAVE A CROSS-SECTIONAL AREA EQUAL TO THAT OF THE LAYER OF STEEL IN THE "T" SECTION.
- THE END OF PIPE CULVERT SHALL BE PLACED IN THE CONCRETE END SECTION SO THAT THE FLOW LINES ARE FLUSH. THE JOINT SHALL BE COMPLETED WITH BPA MORTAR.
- IN 31 OR 41 IN. SLOPE, CHANGE TO THE CURVE OF THE END SECTION IN A SMOOTH, FLUENT TRANSITION APPROXIMATELY 10' IN LENGTH.
- VARIATIONS IN DIMENSIONS - THE DIMENSIONS OF THE CONCRETE, THE POSITION OF STEEL, AND THE INTERNAL DIMENSIONS OF THE PIPE SHALL CONFORM WITH THE DIMENSIONS BY MANUFACTURER AS PROVIDED IN THE SPECIFICATIONS FOR REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE, ASTM SPECIFICATION C 76.
- MADE WITHOUT CLAY LINING OR CAST WITH CLAY PIPE IS SET. A PIPE END SECTION COMPARED TO THAT SET ABOVE FOR METHOD OF CONSTRUCTION SHALL BE PUMPED AND SHALL BE AS APPROVED BY THE PROJECT ENGINEER.
- END SECTIONS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR "PIPE END SECTION" COMPLETE IN PLACE AND ACCEPTED.
- CONCRETE PIPE FOR MANHOLE SHALL BE REQUIRED ON ALL CONCRETE PIPE SECTIONS. THE COST THEREOF SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH FOR "PIPE END SECTION".

DIMENSIONS OF PRECAST CONCRETE END SECTIONS

DIA	T (min)	A	C	X	D	E	K	R1	R2	Approx. Weight
12"	2"	5"	4'-3"	3'-2"	2'-0"	13	10 1/2"	9"	800	
15"	2 1/4"	7"	4'-4"	3'-3"	2'-4"	15	11 1/2"	11"	1300	
18"	2 1/2"	11"	4'-5"	3'-4"	3'-0"	18	12 1/2"	12"	1500	
21"	2 3/4"	15"	5'-0"	3'-5"	3'-0"	21	14 1/2"	13"	1900	
24"	3"	19"	5'-0"	3'-5"	3'-0"	23	16 3/8"	14"	2600	
27"	3 1/4"	23"	5'-0"	3'-5"	3'-0"	25	18 5/8"	14 1/2"	3200	
30"	3 1/2"	27"	5'-0"	3'-5"	3'-0"	29	19 1/2"	15"	4000	
33"	3 3/4"	31"	5'-0"	3'-5"	3'-0"	31	21 3/4"	17 1/2"	4800	
36"	4"	35"	5'-0"	3'-5"	3'-0"	34	24 5/8"	20"	6200	

ST-3A PRECAST CONCRETE END SECTION NO SCALE

RECORD DRAWING

STORM SEWER DETAILS
 CONSTRUCTION PLANS - ORVILLE KEYS REGULATED DRAIN
 THE BRIDGEWATER CLUB
 EATON INVESTMENTS L.T.D., INC.
 12220 NORTH MERIDIAN STREET
 CARMEL, INDIANA 46032
 PH. (317) 675-7891

DATE: 10/11/04
 PROJECT NUMBER: 980516-30700

ARCHITECTURE
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