

## **The Reserve at Geist Sec. 1-GASB 34 Calculation**

**Canal Place Drain – The Reserve at Geist Sec. 1 Relocation of the Thomas West Arm = 1951ft**

**Canal Place Drain –The Reserve at Geist Sec. 1 = 10,822 ft**

**Total Footage : 12,773 ft**

**Bond Amount : \$219,500**

### **Value Calculations:**

**Canal Place Drain – The Reserve at Geist Sec. 1 Relocation of the Thomas West Arm = 15%**

**(\$219,500) = \$32,925.00**

**Canal Place Drain –The Reserve at Geist Sec. 1 = 85% (\$219,500) = \$186,575.00**



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*

December 17, 2003

To: Hamilton County Drainage Board

Re: Canal Place Drain, The Reserve at Geist, Section 1 Arm

Attached is a petition filed by Roger Tucker (Mac's Landing, LLC) along with a non-enforcement request, plans, calculations, quantity summary and assessment roll for The Reserve at Geist , Section 1 Arm, Canal Place Drain to be located in Fall Creek Township. I have reviewed the submittals and petition and have found each to be in proper form.

I have made a personal inspection of the land described in the petition. Upon doing so, I believe that the drain is practicable, will improve the public health, benefit a public highway, and be of public utility and that the costs, damages and expenses of the proposed drain will probably be less than the benefits accruing to the owners of land likely to be benefited. The drain will consist of the following:

6" SSD	7,936 ft.	15" RCP	444 ft.	48x67 ERCP	257 ft.
12" CMP	35 ft.	18" RCP	531 ft.	Open Ditch	5 ft.
12" RCP	1,288 ft.	30" RCP	326 ft.		

The total length of the drain will be 10,822 feet. The above lengths do not reflect the reconstruction/relocation of the Thomas West Arm which is covered by a separate report. The 12" CMP listed above is that which is located under 104<sup>th</sup> Street south of STR. 745. The open ditch listed above is that area between the 12" CMP under 104<sup>th</sup> Street and STR. 745.

The retention ponds located in Blocks B and C are not to be considered part of the regulated drain. Only the inlet and outlet will be maintained as part of the regulated drain. The maintenance of the ponds, such of mowing, will be the responsibility of the Homeowners Association. The Board will however retain jurisdiction for ensuring the storage volume for which the lake was designed will be retained. Thereby, allowing no fill or easement encroachments.

The subsurface drains (SSD) to be part of the regulated drain are those located under the curbs. Only the main SSD lines which are located within the right of way are to be maintained as regulated drain. Laterals for individual lots will not be considered part of the regulated drain.

I have reviewed the plans and believe the drain will benefit each lot equally. Therefore, I recommend each lot be assessed equally. I also believe that no damages will result to landowners by the construction of this drain. I recommend a maintenance assessment of \$ 5.00 per acre for common areas and \$50.00 for platted lots, \$10.00 per acre for roadways, with a \$ 50.00 minimum. With this assessment the total annual assessment for this drain/this section will be \$ 2,017.30.

The petitioner has submitted surety for the proposed drain at this time. Surety shall be submitted prior to the approval of the Hamilton County Board of Commissioners/commencement of construction. The sureties which are in the form of a Performance Bond are as follows:

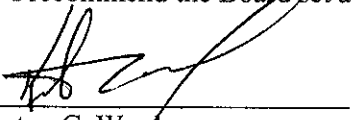
Agent: First Merchants Bank  
Date: October 20, 2003  
Number: FMB – 1383  
For: Phase I Storm Sewers  
Amount: \$215,000.00

Agent: First Merchants Bank  
Date: October 20, 2003  
Number: FMB – 1382  
For: Erosion Control  
Amount: \$4,500.00

I believe this proposed drain meets the requirements for Urban Drain Classification as set out in IC 36-9-27-67 to 69. Therefore, this drain shall be designated as an Urban Drain.

I recommend that upon approval of the above proposed drain that the Board also approve the attached non-enforcement request. The request is for the reduction of the regulated drain easement to those easement widths as shown on the secondary plat for The Reserve at Geist, Section 1 as recorded in the office of the Hamilton County Recorder.

I recommend the Board set a hearing for this proposed drain for January 26, 2004.



---

Kenton C. Ward  
Hamilton County Surveyor

KCW/pll

FINDINGS AND ORDER

CONCERNING THE MAINTENANCE OF THE

Canal Place Drain, The Reserve at Geist Section 1 Arm


On this *11th day of October 2004*, the Hamilton County Drainage Board has held a hearing on the Maintenance Report and Schedule of Assessments of the *Canal Place Drain, The Reserve at Geist Section 1 Arm*.

Evidence has been heard. Objections were presented and considered. The Board then adopted the original/amended Schedule of Assessments. The Board now finds that the annual maintenance assessment will be less than the benefits to the landowners and issues this order declaring that this Maintenance Fund be established.

HAMILTON COUNTY DRAINAGE BOARD



\_\_\_\_\_  
President



\_\_\_\_\_  
Member



\_\_\_\_\_  
Member

Attest:





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

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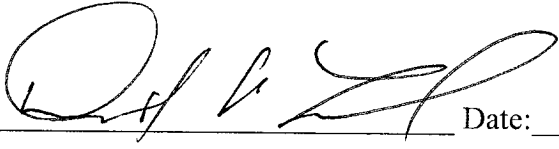
## CERTIFICATE OF COMPLETION AND COMPLIANCE

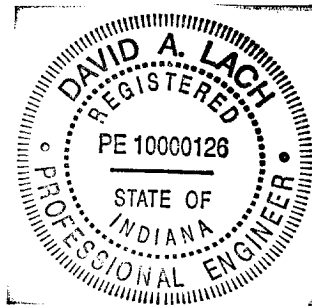
To: Hamilton County Surveyor

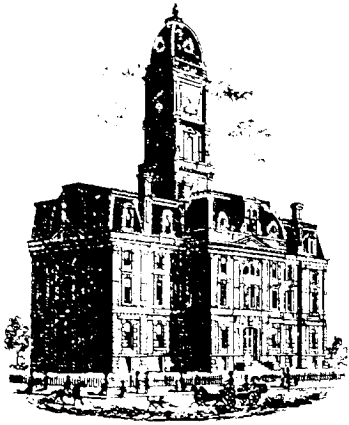
Re: Reserve at Geist- Phase 1

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: 11/19, 2004  
 David A. Lach, P.E. #10000126





SURVEYOR'S OFFICE

# Hamilton County

Kenton C. Ward, CFM  
 Surveyor of Hamilton County  
 Phone (317) 776-8495  
 Fax (317) 776-9628

Suite 188  
 One Hamilton County Square  
 Noblesville, Indiana 46060-2230

**To: Hamilton County Drainage Board**

**September 29, 2008**

**Re: Canal Place Drain: The reserve at Geist, Sec. 1**

Attached are as-builts, certificate of completion & compliance, and other information for Reserve at Geist Section 1. 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 December 17, 2003.. The report was approved by the Board at the hearing held October 11, 2004. (See Drainage Board Minutes Book 7, Page 591)

The changes are as follows:

Structure:	Length:	Size	Material:	Up Invert:	Dn Invert	Grade:	Changes:
703-704	223	67X48	ERCP	822.31	819.65	1.19	-34
708-707	65	15	RCP	823.73	822.82	1.39	-3
707-706	78	15	RCP	822.82	820.84	2.32	4
713-712	100	12	RCP	824.63	823.23	1.35	-2
712-711	255	15	RCP	823.23	822.25	0.9	200
711-710	28	18	RCP	822.55	822.44	0.38	4
710-709	42	18	RCP	822.44	820.28	5.17	-6
714-712	28	12	RCP	823.65	823.28	1.32	4
730-729	28	12	RCP	826.48	825.86	2.21	4
729-728	34	15	RCP	825.82	824.45	3.99	3
728-727	188	18	RCP	824.38	819.38	1.06	34
727-726	52	18	RCP	819.19	817.49	2.62	3
726-725	16	18	RCP	817.49	817.37	0.75	-1
725-724	28	18	RCP	817.17	817.22	0.18	4
724-720	164	18	RCP	817.22	813.31	2.38	-3
731-727	188	12	RCP	821.35	819.35	1.06	3
733-732	28	12	RCP	818.75	818.55	0.7	4
732-726	119	12	RCP	818.55	817.79	0.64	-4
738-737	104	12	RCP	819.54	818.37	1.13	-7
737-736	155	12	RCP	818.32	816.76	1.01	5

736-735a	138	15	RCP	814.63	805.61	6.53	-2
735A-735	44	15	RCP	805.33	804.87	1.48	-5
740-739	28	12	RCP	816.33	815.99	1.2	4
739-736	30	15	RCP	815.87	814.74	3.73	3
745-744	397	12	RCP	825.47	820.86	1.16	-2
744-743	25	18	RCP	820.78	820.34	1.73	-3
746-744	18	18	RCP	821.08	820.78	1.66	-2
752-751	100	12	RCP	824	823.15	1.18	
751-750	30	12	RCP	823.97	823.65	1.05	4

**SSD - Streets**

Franks Way	429.5
Keyesport	400
Proposal	1314
Crestmoore	337
Farmstead	420
	x2

**Total:** 5801

**RCP Pipe Totals:**

12	1305
15	644
18	561

**Total:** 2510

<b>Other Drain:</b>	
ERCP	223
12" CMP	51
<b>Total:</b>	<u>274</u>

The length of the drain due to the changes described above is now **8585 feet**.

The non-enforcement was approved by the Board at its meeting on October 11, 2004 and recorded under instrument #200500084920.

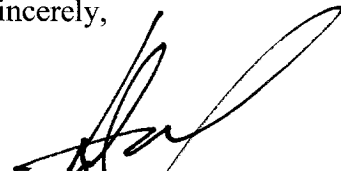
The following sureties were guaranteed by First Merchants Bank and expired on October 20, 2004.

**Bond-LC No:** FMB-1383  
**Insured For:** Storm Sewers  
**Amount:** \$215,000.00  
**Issue Date:** October 20, 2003

**Bond-LC No:** FMB-1382  
**Insured For:** Erosion Control  
**Amount:** \$4,500.00  
**Issue Date:** October 20, 2003

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

Sincerely,



\_\_\_\_\_  
Kenton C. Ward, CFM  
Hamilton County Surveyor

KCW/slm

**PLANNING MUNICIPALITY:**

**CITY OF NOBLESVILLE**

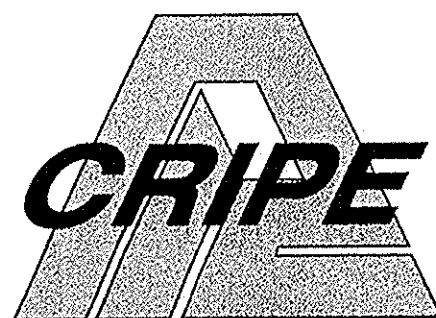
14701 CUMBERLAND ROAD, SUITE 300  
NOBLESVILLE, IN 46060  
PH (317) 776-6325  
FAX (317) 776-6363

**OWNER:**

**MAC'S LANDING, LLC.**

P.O. BOX 501128  
INDIANAPOLIS, IN. 46250  
Ph. (317) 514-4174 FAX (317) 485-6819

**ENGINEER:**



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

**STORM SEWER 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 STRAIGHT 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 28TH 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, PIPES AND SUB-SURFACE DRAINS 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.

**LEGAL DESCRIPTION**

A part of Instrument No. 8602402:

The northeast quarter of the northwest quarter of section 12, Township 17 north, range 5 east, containing 40 acres, Except one (1) acre in the southeast corner, owned by a church. Also, Except a strip one (1)

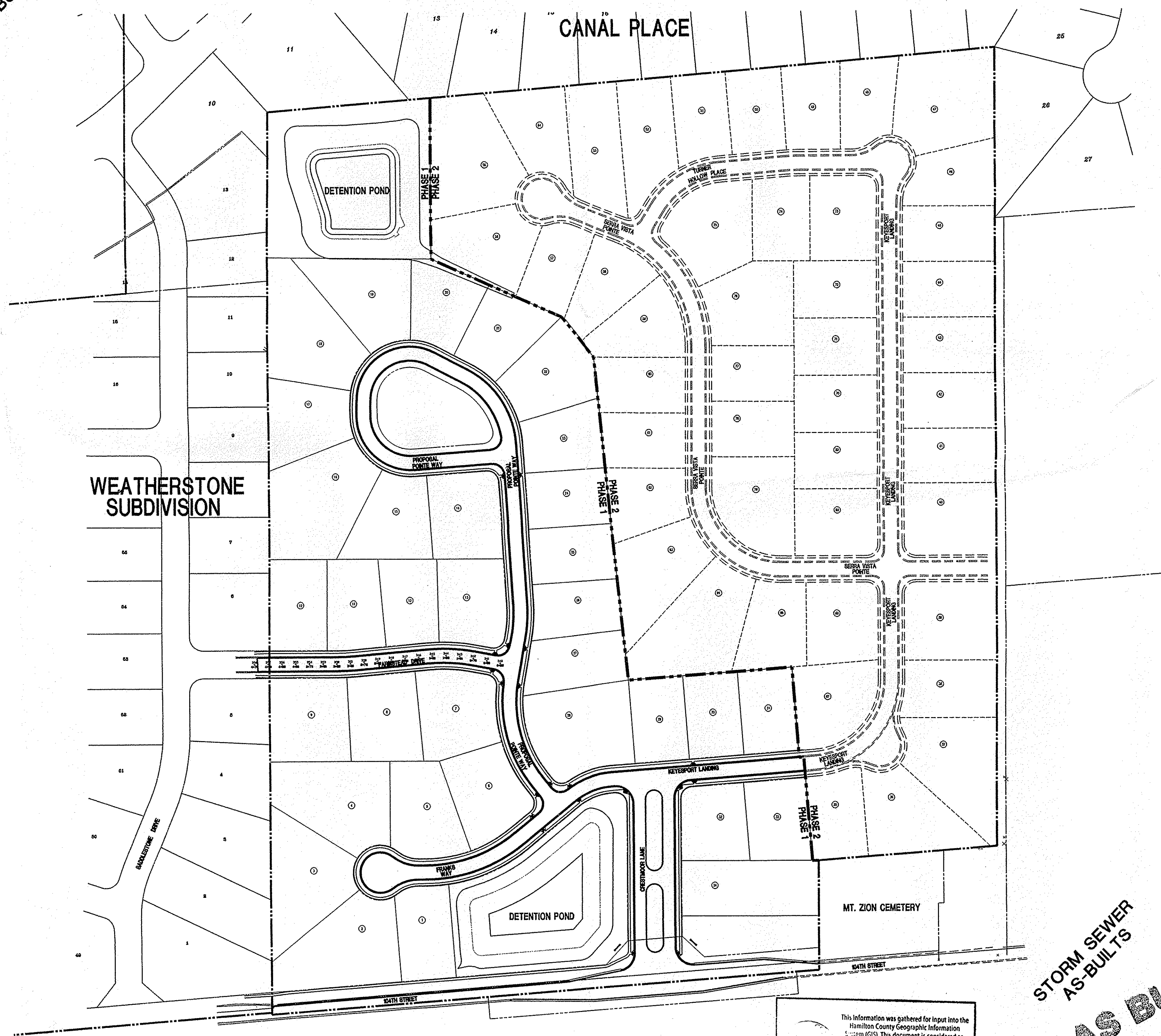
half of the southwest quarter of section 1, Township 17 North, Range 5 East, containing in all 48 acres, more or less.

Subject to all legal highways, right-of-way and easements of record.

The subject property does lie partially within a Flood Zone A as plotted by scale from FIRM, Flood Insurance Rate Map, Community Panel Number 180082 0030 E, City of Noblesville, Hamilton County, Indiana, effective date, September 24, 1982 as prepared by the Federal Emergency Management Agency. And, further modified by the Letter of Map Revision (LOMR) under case no. 00-05-1990P, dated June 5, 2001.

# CONSTRUCTION PLANS FOR THE RESERVE AT GEIST, PHASE ONE CITY OF NOBLESVILLE

STORM SEWER  
AS-BUILTS



**LOCATION PLAN**  
N.T.S.

This information was gathered for input into the Hamilton County Geographic Information System (GIS). This document is considered an official record of the GIS.  
Entry Date: May 2005  
Entered By: SLM

**AS BUILT**  
date 11/9/04

**PROJECT DATA**

Project Address: 104TH STREET APPROXIMATELY  
1/4 MILE EAST OF OLG ROAD  
NOBLESVILLE, IN  
Project Area: 48.0 Acres  
Proposed Land Use: Single-Family Residential  
Current Zoning: R1  
Lots: Total = 79  
Phase 1 = 34 Lots  
Phase 2 = 45 Lots  
Roadway Length: 1.16 Miles  
Phase 1 = 0.54 Miles  
Phase 2 = 0.62 Miles  
Design Speed: 25 - MPH (Miles per Hour)

**STORM INDEX**

SHT	DESCRIPTION
CS	COVER SHEET
G100	MAP SHEET
G101	EXISTING CONDITIONS
G102	EXISTING CONDITIONS
G103	DEMOLITION PLAN
G104	DEMOLITION PLAN
G201	SITE PLAN
G202	SITE PLAN
G203	SITE DETAILS
G204	SITE DETAILS
C205	DEVELOPMENT PLAN
C206	DEVELOPMENT PLAN
G301	GRADING PLAN
G302	GRADING PLAN
G401	EROSION CONTROL PLAN
G402	EROSION CONTROL PLAN
G403	EROSION CONTROL DETAILS
G404	EROSION CONTROL DETAILS
G501	UTILITY PLAN
G502	UTILITY PLAN
G601	ROAD PLAN AND PROFILE
G602	ROAD PLAN AND PROFILE
G603	ROAD PLAN AND PROFILE
G604	INTERSECTION AND CUL-DE-SAC DETAILS
G605	INTERSECTION AND CUL-DE-SAC DETAILS
G606	INTERSECTION DETAILS
G607	MAINTENANCE OF TRAFFIC PLAN
G608	TRAFFIC CONTROL PLAN
G609	TRAFFIC CONTROL PLAN
C701	STORM SEWER PLAN AND PROFILE
C702	STORM SEWER PLAN AND PROFILE
C703	STORM SEWER PLAN AND PROFILE
C704	STORM SEWER PLAN AND PROFILE
C705	STORM SEWER PLAN AND PROFILE DETAILS
C706	STORM SEWER PLAN AND PROFILE DETAILS
G801	SANITARY SEWER PLAN AND PROFILE
G802	SANITARY SEWER PLAN AND PROFILE
G803	SANITARY SEWER PLAN AND PROFILE
G804	SANITARY SEWER PLAN AND PROFILE
G805	GRAVITY SANITARY SEWER DETAILS
G806	GRAVITY SANITARY SEWER SPECIFICATIONS
G901	WATER LINE PLAN
G902	WATER LINE PLAN
G903	WATER LINE PLAN
G904	WATER LINE PROFILE
L101	LANDSCAPE PLANS

**BENCHMARKS**

REFERENCE: HSE10- HAMILTON SOUTHEASTERN (HSE) DISK IN CONCRETE SET AT THE ENTRANCE TO ASHFORD POINTE (IN HAMILTON COUNTY, IN) ON THE WEST SIDE OF DEERSTONE LANE, 17.0 FEET WEST OF THE BACK OF CURB, 29.4 FEET SOUTHWEST OF THE BACK OF CURB INLET AND 13.0 FEET SOUTH-EAST OF A FIRE HYDRANT. (TRANSFERRED USING GPS SURVEY METHODS).  
ELEV.: 802.20 (1988 HSE DATUM)  
SITE BM.: TOP OF CASTING ON A SANITARY MANHOLE LOCATED NEAR THE EAST LINE OF LOT "1" IN WEATHERSTONE SUBDIVISION, ON THE NORTHERLY LINE BETWEEN LOTS "1" AND "2".  
ELEV.: 833.15

**CONTACT CO. / PERSON FOR**

MAC'S LANDING PAUL L. CRIFE, INC. (CIVIL) NOBLESVILLE PLANNING DEPARTMENT ENGINEERING - HAMILTON COUNTY HWY DRAINAGE - HAMILTON COUNTY HAMILTON COUNTY SOIL & WATER CONCRETE HAMILTON SOUTHEASTERN UTILITIES INDIANAPOLIS WATER COMPANY AMERITECH VECTREN ENERGY INSIGHT COMMUNICATIONS	ROGER TUCKER RICK RADABAUGH JOYCEANNI YELTON JIM NEAL/STEVE BROGEMAN KENT WARD SHARON ROBERTS SHIRLEY HUNTER JIM HART PAM WAGGONER JUSTIN CONDON CHUCK SHUPPERD MATT STRINGER	(317) 514-4174 (317) 842-6777 (317) 776-6325 (317) 770-7770 (317) 776-8495 (317) 773-2181 (317) 776-6330 (317) 577-1150 (317) 283-6469 (317) 252-4267 (317) 776-5530 (317) 776-4487
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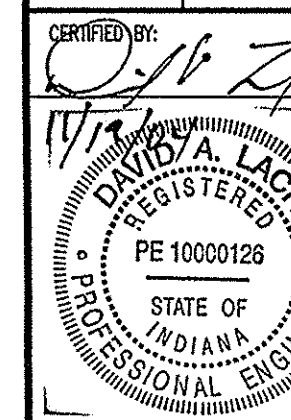
DWG. TYPE	FILE NUMBER
PROJECT MGR	651
PROJECT ENGR	729
PROJECT SURVEYOR	619
CAD TECH.	749
	679

**RECORD DRAWING**

ARCHITECTURE  
CIVIL ENGINEERS  
LANDSCAPE ARCHITECTURE  
LAND SURVEYORS  
TRANSPORTATION ENGINEERS  
GIS

7172 GRAHAM ROAD  
INDIANAPOLIS, INDIANA 46250  
(317) 842-6777 FAX (317) 841-4798  
E-Mail: picripe@picripe.com

COVER SHEET / STORM ASBUILTS  
THE RESERVE AT GEIST, PHASE ONE  
MAC'S LANDING, LLC  
P.O. BOX 501128  
INDIANAPOLIS, IN 46250



Drawn By: TAF  
Checked By:  
Quality Assurance:  
Scale: 0 Scale: 1" = 10'  
Sheet: CS  
Date: 11-11-04  
Project Number: 020424-20100





**SITE PLAN LEGEND**

**PROPOSED CONSTRUCTION**

BUILDING SETBACK LINE	---
EASEMENT LINE	---
RIGHT-OF-WAY	---
CENTERLINE	---
FENCE	---
CURB	---
D.E.	= DRAINAGE EASEMENT
S.D. & U.E.	= SANITARY, DRAINAGE AND UTILITY EASEMENT
U.E.	= UTILITY EASEMENT
B.L.	= BUILDING SETBACK LINE
D. & U.E.	= DRAINAGE & UTILITY EASEMENT
S.E.	= SANITARY EASEMENT
IRR. S.E.	= IRRIGATIONAL SANITARY EASEMENT
N.P.	= NORMAL POOL
100 YR	= 100 YEAR POOL STORAGE ELEVATION

LOT NUMBER 7  
LOT AREA 211,01.20 SQ. FT.  
0.48 ACRES

- EMERGENCY OVERFLOW ROUTE** →
- KEY NOTE**
- ROLL CURB AND GUTTER (SEE DETAIL C-1)
  - STRAIGHT CURB (SEE DETAIL PV-17)
  - EMERGENCY OVERFLOW SHALE FOR SOUTH DETENTION POND.
  - ACCESSIBLE SIDEWALK RAMP (SEE DETAIL PV-13)
  - 3' STONE SHOULDER (SEE DETAIL PV-20)
  - TYPICAL STREET SECTION (SEE DETAIL SR-10)
  - 4' SIDEWALK (SEE DETAIL PV-16)
  - CURB END TRANSITION (SEE DETAIL PV-7)
  - STOP BAR AND STRIPING LINE (SEE DETAIL TR-4)
  - 3' ROAD WIDENING AND 104TH STREET OVERLAY (SEE NOTE 7 ON C600 SERIES)
  - 104TH STREET RIGHT OF WAY LIMITS LINE. PAVEMENT TO THE SOUTH OF LIMITS LINE AND IN THE 104TH STREET RIGHT OF WAY MUST BE CONSTRUCTED USING DETAIL PV-37, ASPHALT PAVEMENT SECTION, SHEET C203. ALL OTHER PAVED AREA ON SITE WILL USE DETAIL PV-36, ASPHALT PAVEMENT SECTION, SHEET C203.

- SITE WORK GENERAL NOTES AND SPECIFICATIONS**
- NOTICES AND PERMITS**
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, OR VERIFYING, THAT ALL PERMITS AND APPROVALS ARE OBTAINED FROM THE RESPECTIVE CITY, COUNTY AND STATE AGENCIES PRIOR TO STARTING CONSTRUCTION.
  - IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES IN THE VICINITY OF THE CONSTRUCTION AREA PRIOR TO STARTING CONSTRUCTION.
  - IT SHALL BE THE CONTRACTORS RESPONSIBILITY FOR NOTIFICATION AND COORDINATION OF ALL CONSTRUCTION WITH RESPECTIVE UTILITY COMPANIES.
  - IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND CONTRACTOR TO MAINTAIN QUALITY CONTROL THROUGHOUT THE PROJECT; FAILURE TO DO SO MAY RESULT IN REMOVAL AND REPLACEMENT OF THE DEFECTIVE WORK. IT IS RECOMMENDED THAT THE DEVELOPER HAVE A QUALIFIED INSPECTOR ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.
  - IT IS ESSENTIAL THAT THE WORK TO BE DONE IN CONJUNCTION WITH THIS PROJECT SHALL BE INSTALLED ACCORDING TO THESE SPECIFICATIONS. THE ENGINEER WILL BE REQUIRED TO CERTIFY TO CERTAIN PORTIONS OF THIS PROJECT UPON COMPLETION. THEREFORE, IT IS NECESSARY TO OBTAIN APPROVAL AND ACCEPTANCE BY THE CITY THAT CONSTRUCTION WAS DONE IN COMPLIANCE WITH THESE PLANS AND SPECIFICATIONS.
  - ALL QUANTITIES GIVEN ON THE PRINTS, VERBALLY OR IN THE SCOPE OF WORK SECTION ARE ESTIMATES AND SHALL BE CONFIRMED BY THE BIDDING CONTRACTOR.
  - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS. FINAL RULE 29 CFR PART 1926, SUBPART "F" APPLIES TO ALL EXCAVATIONS EXCEEDING FIVE (5) FEET IN DEPTH.
  - EXCAVATIONS EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRE THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER.
  - LOCATIONS & ELEVATIONS OF "FLOODWAY LIMITS" AND "100 YEAR FLOOD LIMITS" ARE SHOWN FOR REFERENCE ONLY. DEVELOPER/BUILDER/INDIVIDUAL LOT OWNER TO REFER TO NATIONAL FLOOD HAZARD INSURANCE MAP (F.E.M.A.) TO DETERMINE FLOOD HAZARD POTENTIAL PRIOR TO INDIVIDUAL LOT/PROJECT CONSTRUCTION.
  - ALL RADI AND STREET DIMENSIONS SHALL BE MEASURED TO BACK OF CURB OR FACE OF INTERNAL CURB AND WALK. ALL DIMENSIONS TO THE BUILDING ARE TO THE OUTSIDE OF BUILDING FOUNDATION WALL.
  - BEARINGS, DIMENSIONS AND EASEMENTS ARE SHOWN FOR REFERENCE ONLY. SEE RECORD SURVEYS AND PLATS FOR EXACT INFORMATION.
  - TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL STANDARDS.
  - SEE UTILITY PLAN FOR SANITARY, STORM AND WATER STRUCTURE LOCATIONS.
  - SEE SHEETS C203 AND C204 FOR DETAILS REFERENCED.
  - ALL UTILITIES CROSSING AT CURBS SHALL BE STAMPED PER DETAIL C-6 ON SHEET C204.

**NOTE:**  
THE CONTRACTOR SHALL STAMP THE LETTER "SS" IN THE CURB PERPENDICULAR TO THE LATERAL MARKER.

**NOTE:**  
104TH STREET WILL NEED TO BE WIDENED BY 3' AND A 3' STONE SHOULDER ADDED. 104TH STREET WILL ALSO NEED TO BE RESURFACED FROM THE WEST PROPERTY LINE TO THE EAST PROPERTY LINE. THE RESURFACE OF 104TH STREET WILL CONSIST OF A 900-TON/MILE WEDGE AND LEVEL AND A 1" SURFACE. THE EXISTING PAVEMENT AT EACH END OF THE PROJECT WILL NEED TO BE MILLED TO PROVIDE A SMOOTH TRANSITION. THE EDGE OF THE EXISTING PAVEMENT WILL NEED TO BE SMOOTH. ALL PAVEMENT MARKINGS WILL NEED TO BE INSTALLED FOR THE RESURFACED SECTION OF ROAD. THE ACCELERATION AND DECELERATION LANES AND PASSING BLISTER PER HAMILTON COUNTY HIGHWAY STANDARDS.

**AS BUILT**  
date 11/19/04

**CAUTION**  
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**1-800-382-5544**  
**1-800-428-5200**  
FOR CALLS OUTSIDE OF INDIANA

**RECORD DRAWING**

**DEVELOPMENT PLAN**

**THE RESERVE AT GIST, PHASE ONE**

**MAC'S LANDING, LLC**  
P.O. BOX 501128  
INDIANAPOLIS, IN 46250

**7172 GRAHAM ROAD**  
INDIANAPOLIS, INDIANA 46250  
(317) 842-6777 FAX (317) 841-4798  
E-Mail: mlcr@macslc.com

**REGISTERED PROFESSIONAL ENGINEER**  
STATE OF INDIANA  
PE 10000126  
11/19/04

Drawn By: TAF  
Checked By:  
Quality Assurance:  
Scale: 1" = 50'  
Sheet: **C205**  
Date: 11/19/04  
Project Number: 020424-20100



**SITE PLAN LEGEND**

PROPOSED CONSTRUCTION	
BUILDING SETBACK LINE	---
EASEMENT LINE	---
RIGHT-OF-WAY	---
CENTERLINE	---
FENCE	X X X
CURB	---
D.E.	= DRAINAGE EASEMENT
S.D. & U.E.	= SANITARY, DRAINAGE AND UTILITY EASEMENT
U.E.	= UTILITY EASEMENT
B.L.	= BUILDING SETBACK LINE
D. & U.E.	= DRAINAGE & UTILITY EASEMENT
S.E.	= SANITARY EASEMENT
IRR. S.E.	= IRREGULAR SANITARY EASEMENT
N.P.	= NORMAL POOL
100 YR	= 100 YEAR POOL STORAGE ELEVATION

LOT NUMBER **7**  
 LOT AREA 211.0120 SQ. FT.  
 0.48 ACRES

EMERGENCY OVERFLOW ROUTE →

KEY NOTE	DESCRIPTION
1	ROLL CURB AND CUTTER (SEE DETAIL C-1)
2	STRAIGHT CURB (SEE DETAIL PV-17)
3	EMERGENCY OVERFLOW SWALE FOR SOUTH DETENTION POND.
4	ACCESSIBLE SIDEWALK RAMP (SEE DETAIL PV-13)
5	3" STONE SHOULDER (SEE DETAIL PV-20)
6	TYPICAL STREET SECTION (SEE DETAIL SR-10)
7	4' SIDEWALK (SEE DETAIL PV-16)
8	CURB END TRANSITION (SEE DETAIL PV-7)
9	STOP BAR AND STRIPING LINE (SEE DETAIL TR-4)
10	3" ROAD WIDENING AND 104TH STREET OVERLAY (SEE NOTE 7 ON C200 SERIES)
11	104TH STREET RIGHT OF WAY LIMITS LINE. PAVEMENT TO THE SOUTH OF LIMITS LINE AND IN THE 104TH STREET RIGHT OF WAY MUST BE CONSTRUCTED USING DETAIL PV-37, ASPHALT PAVEMENT SECTION, SHEET C203. ALL OTHER PAVED AREA ON SITE WILL USE DETAIL PV-36, ASPHALT PAVEMENT SECTION, SHEET C203.

- SITE WORK GENERAL NOTES AND SPECIFICATIONS**
- NOTICES AND PERMITS**
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, OR VERIFYING, THAT ALL PERMITS AND APPROVALS ARE OBTAINED FROM THE RESPECTIVE CITY, COUNTY AND STATE AGENCIES PRIOR TO STARTING CONSTRUCTION.
  - IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES IN THE VICINITY OF THE CONSTRUCTION AREA PRIOR TO STARTING CONSTRUCTION.
  - IT SHALL BE THE CONTRACTORS RESPONSIBILITY FOR NOTIFICATION AND COORDINATION OF ALL CONSTRUCTION WITH RESPECTIVE UTILITY COMPANIES.
  - IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND CONTRACTOR TO MAINTAIN QUALITY CONTROL THROUGHOUT THE PROJECT; FAILURE TO DO SO MAY RESULT IN REMOVAL AND REPLACEMENT OF THE DEFECTIVE WORK. IT IS RECOMMENDED THAT THE DEVELOPER HAVE A QUALIFIED INSPECTOR ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.
  - IT IS ESSENTIAL THAT THE WORK TO BE DONE IN CONNECTION WITH THIS PROJECT SHALL BE INSTALLED ACCORDING TO THESE SPECIFICATIONS. THE ENGINEER WILL BE REQUIRED TO CERTIFY TO CERTAIN PORTIONS OF THIS PROJECT UPON COMPLETION. THEREFORE, IT IS NECESSARY TO OBTAIN APPROVAL AND ACCEPTANCE BY THE CITY THAT CONSTRUCTION WAS DONE IN COMPLIANCE WITH THESE PLANS AND SPECIFICATIONS.
  - ALL QUANTITIES GIVEN ON THE PRINTS, VERBALLY OR IN THE SCOPE OF WORK SECTION ARE ESTIMATES AND SHALL BE CONFIRMED BY THE BIDDING CONTRACTOR.
  - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS, FINAL RULE 29 CFR PART 1926, SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING FIVE (5) FEET IN DEPTH.
  - EXCAVATIONS EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRE THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER.
  - LOCATIONS & ELEVATIONS OF "FLOODWAY LIMITS" AND "100 YEAR FLOOD LIMITS" ARE SHOWN FOR REFERENCE ONLY. DEVELOPER/BUILDER/INDIVIDUAL LOT OWNER TO REFER TO NATIONAL FLOOD HAZARD INSURANCE MAP (F.E.M.A.) TO DETERMINE FLOOD HAZARD POTENTIAL PRIOR TO INDIVIDUAL LOT/PROJECT CONSTRUCTION.
  - ALL PAVE AND STREET DIMENSIONS SHALL BE MEASURED TO BACK OF CURB OR FACE OF INTEGRAL CURB AND WALK. ALL DIMENSIONS TO THE BUILDING ARE TO THE OUTSIDE OF BUILDING FOUNDATION WALL.
  - BEARINGS, DIMENSIONS AND EASEMENTS ARE SHOWN FOR REFERENCE ONLY. SEE RECORD SURVEYS AND PLATS FOR EXACT INFORMATION.
  - TEMPORARY TRAFFIC CONTROL DURING CONSTRUCTION TO CONFORM TO APPLICABLE LOCAL STANDARDS.
  - SEE UTILITY PLAN FOR SANITARY, STORM AND WATER STRUCTURE LOCATIONS.
  - SEE SHEETS C203 AND C204 FOR DETAILS REFERENCED.
  - ALL UTILITIES CROSSING AT CURBS SHALL BE STAMPED PER DETAIL C-6 ON SHEET C204.

**NOTE:**  
 THE CONTRACTOR SHALL STAMP THE LETTER "SS" IN THE CURB PERPENDICULAR TO THE LATERAL MARKER.

**NOTE:**  
 104TH STREET WILL NEED TO BE WIDENED BY 3' AND A 3' STONE SHOULDER ADDED. 104TH STREET WILL ALSO NEED TO BE RESURFACED FROM THE WEST PROPERTY LINE TO THE EAST PROPERTY LINE. THE SURFACE OF 104TH STREET WILL CONSIST OF A 900-TON/MILE WEDGE AND LEVEL AND A 1" SURFACE. THE EXISTING PAVEMENT AT EACH END OF THE PROJECT WILL NEED TO BE WIDENED TO PROVIDE A SMOOTH TRANSITION. THE EDGE OF THE EXISTING PAVEMENT WILL NEED TO BE SAWCUT. ALL PAVEMENT MARKINGS WILL NEED TO BE INSTALLED FOR THE RESURFACED SECTION OF ROAD. THE ACCELERATION AND DECELERATION LANES AND PASSING BLISTER PER HAMILTON COUNTY HIGHWAY STANDARDS.

THIS INFORMATION WAS OBTAINED FROM THE HAMILTON COUNTY GEOGRAPHIC INFORMATION SYSTEM (GIS). THIS DOCUMENT IS CONDITIONED UPON THE ACCURACY OF THE DATA PROVIDED.  
 Entry Date: *May 2004*  
 Entered By: *SLM*

**AS BUILT**  
 date: *11/19/04*

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

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

**RECORD DRAWING**

Drawn By: TAF  
 Checked By:  
 Quality Assurance:  
 Scale: 0" = 1" = 50'  
 Sheet: **C206**  
 Date: 11/11/04  
 Project Number: 020424-20100

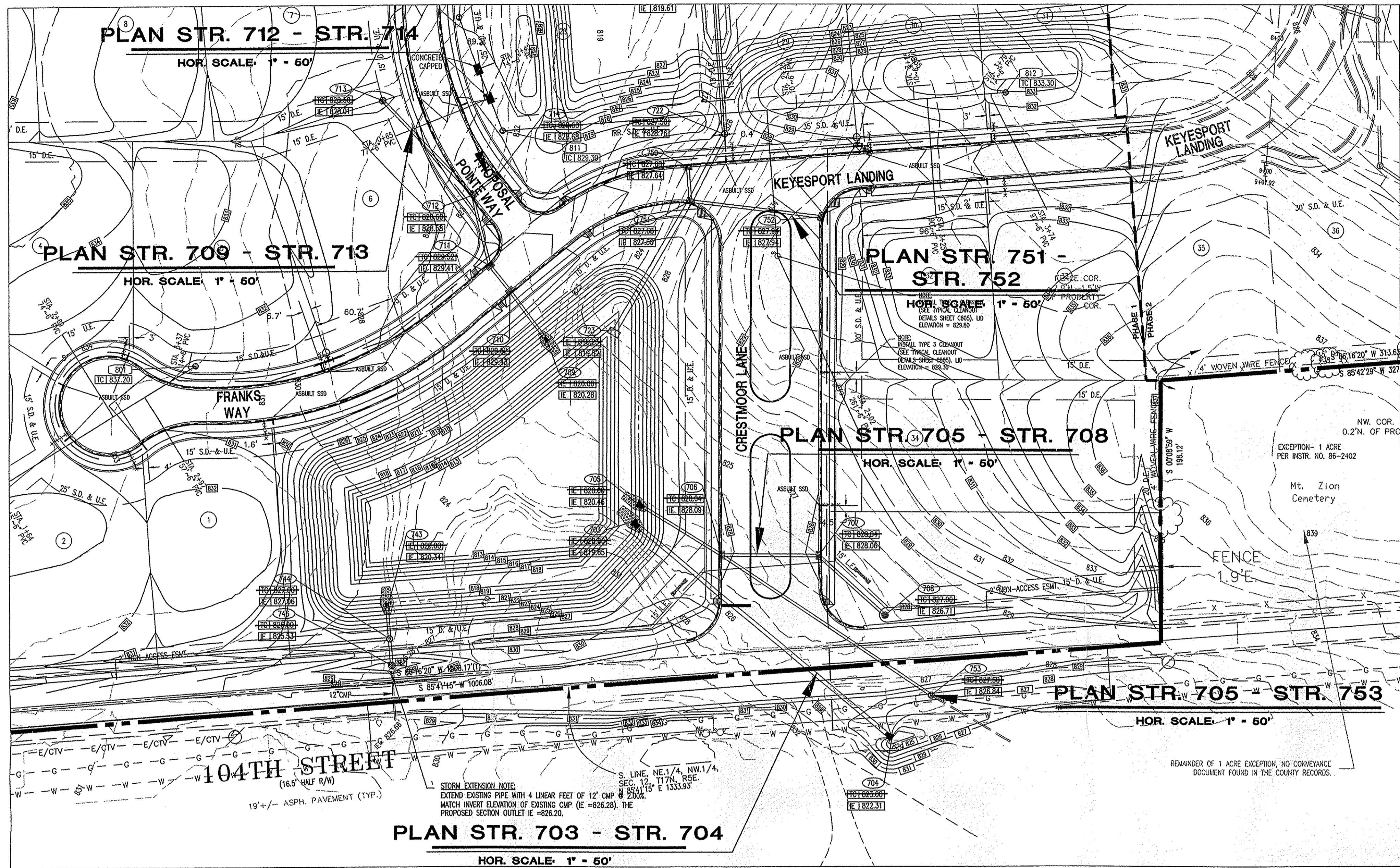
**DEVELOPMENT PLAN**  
**THE RESERVE AT GEIST, PHASE ONE**  
**MAC'S LANDING, LLC**  
 P.O. BOX 501128  
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ARCHITECTURE  
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 E-Mail: [picrpe@picrpe.com](mailto:picrpe@picrpe.com)

**CRPE**

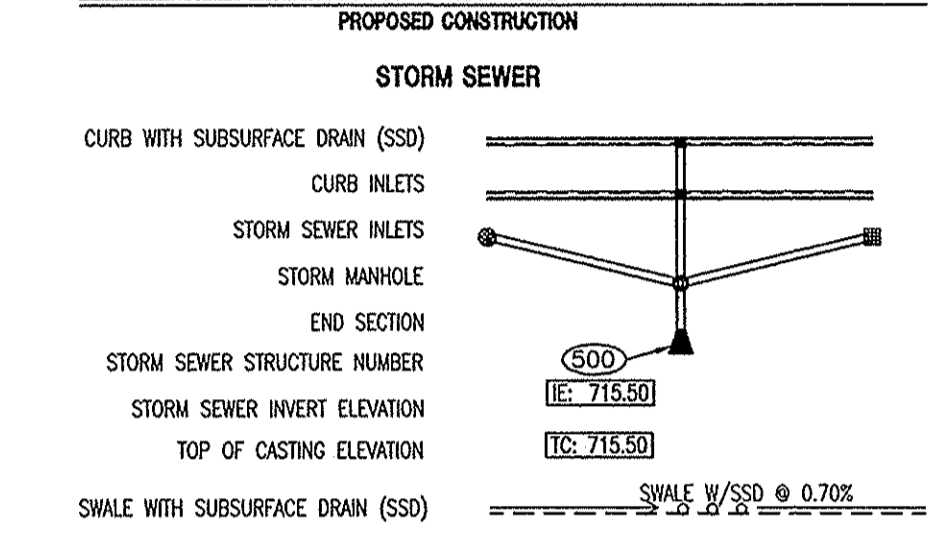
CERTIFIED BY: *[Signature]*  
 REGISTERED PROFESSIONAL ENGINEER  
 STATE OF INDIANA  
 PE 10000128



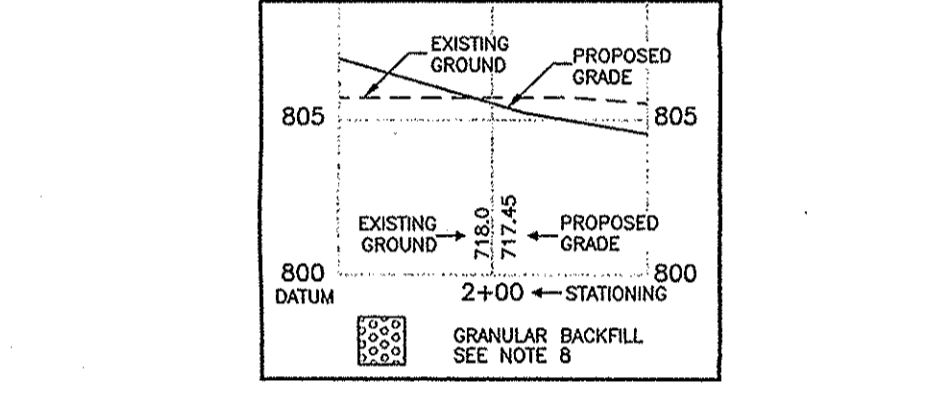
**STORM SEWER PLAN AND PROFILE NOTES:**

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- ALL STRUCTURES (IE: MANHOLES, INLETS) SHALL HAVE POURED FLOW LINES AND BENCH WALLS. THE FLOW LINES AND BENCH WALLS SHALL BE TROWELED SMOOTH AND BRUSH FINISHED.
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**UTILITY PLAN LEGEND**



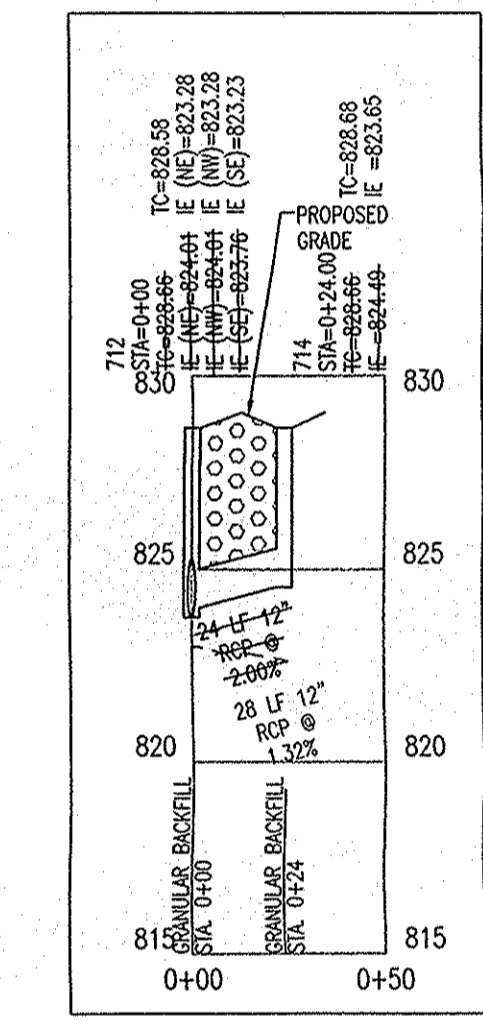
**PROFILE LEGEND**



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

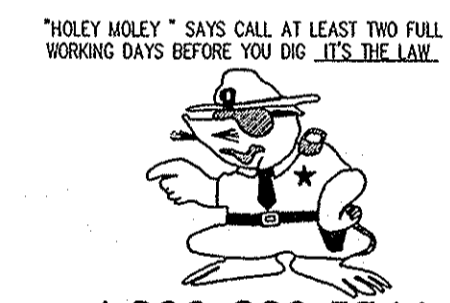
Entry Date: May 2008

Entered By: SLM



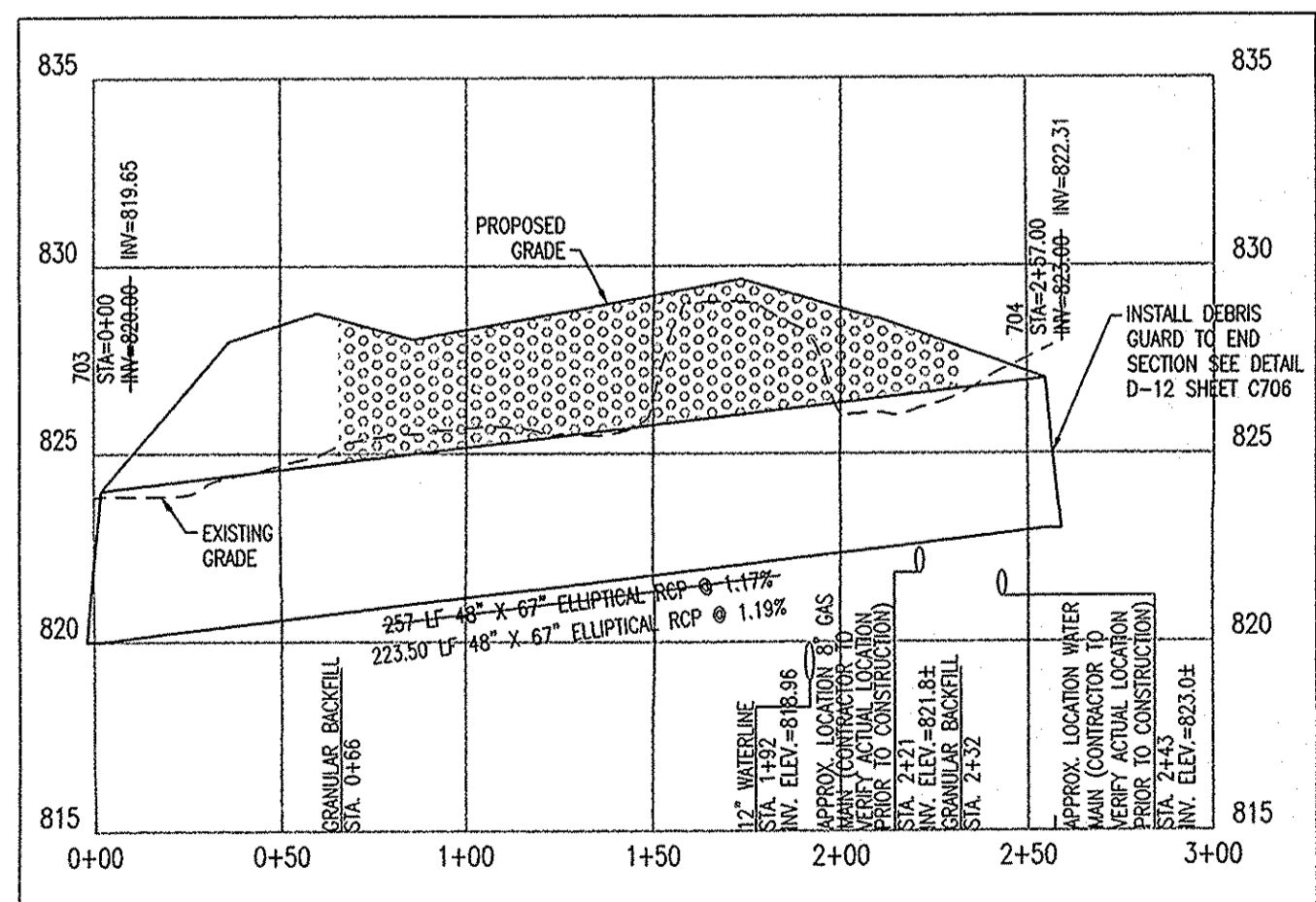
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VER. SCALE: 1" = 5'



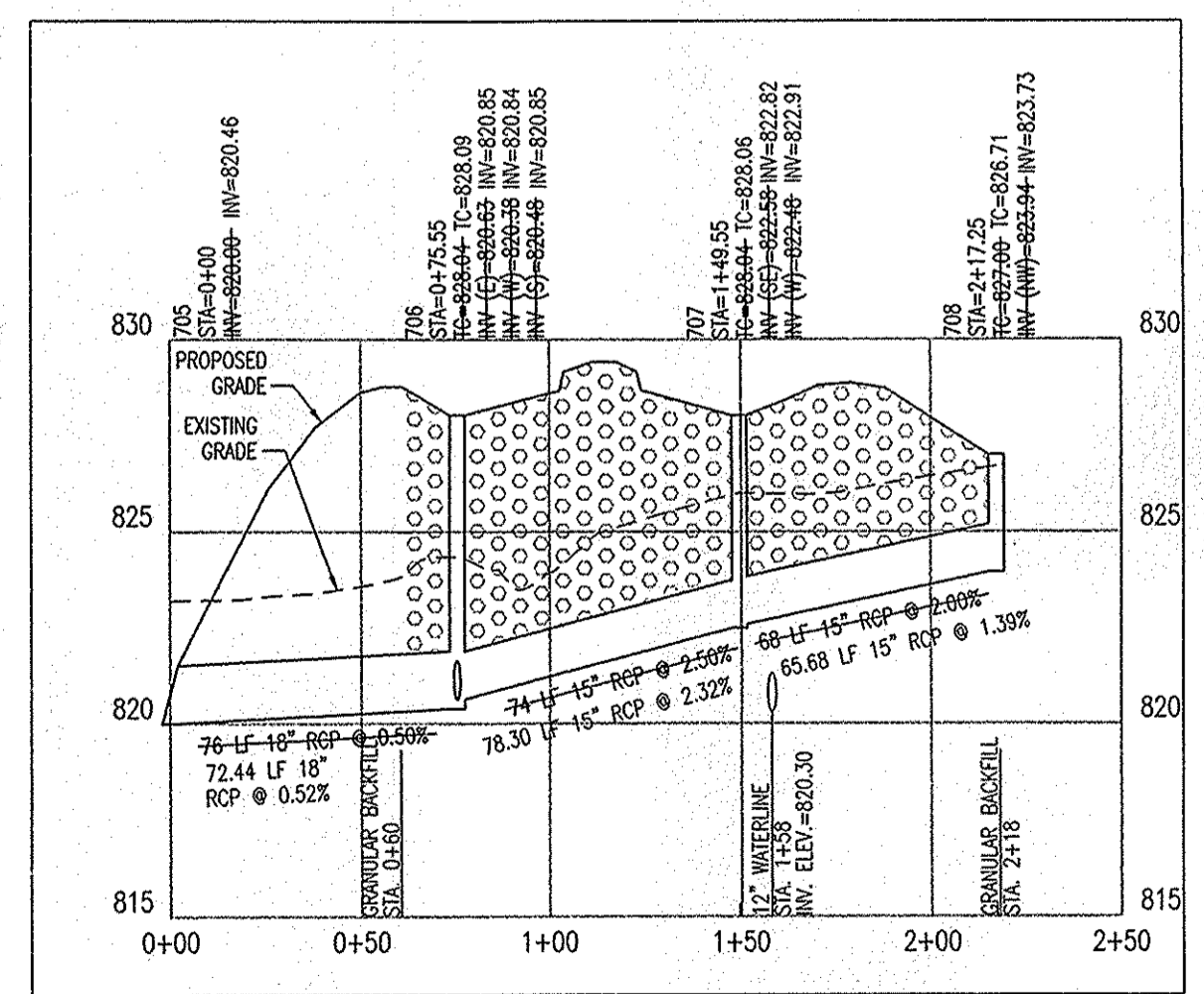
1-800-382-5544  
1-800-428-5200  
FOR CALLS OUTSIDE OF INDIANA

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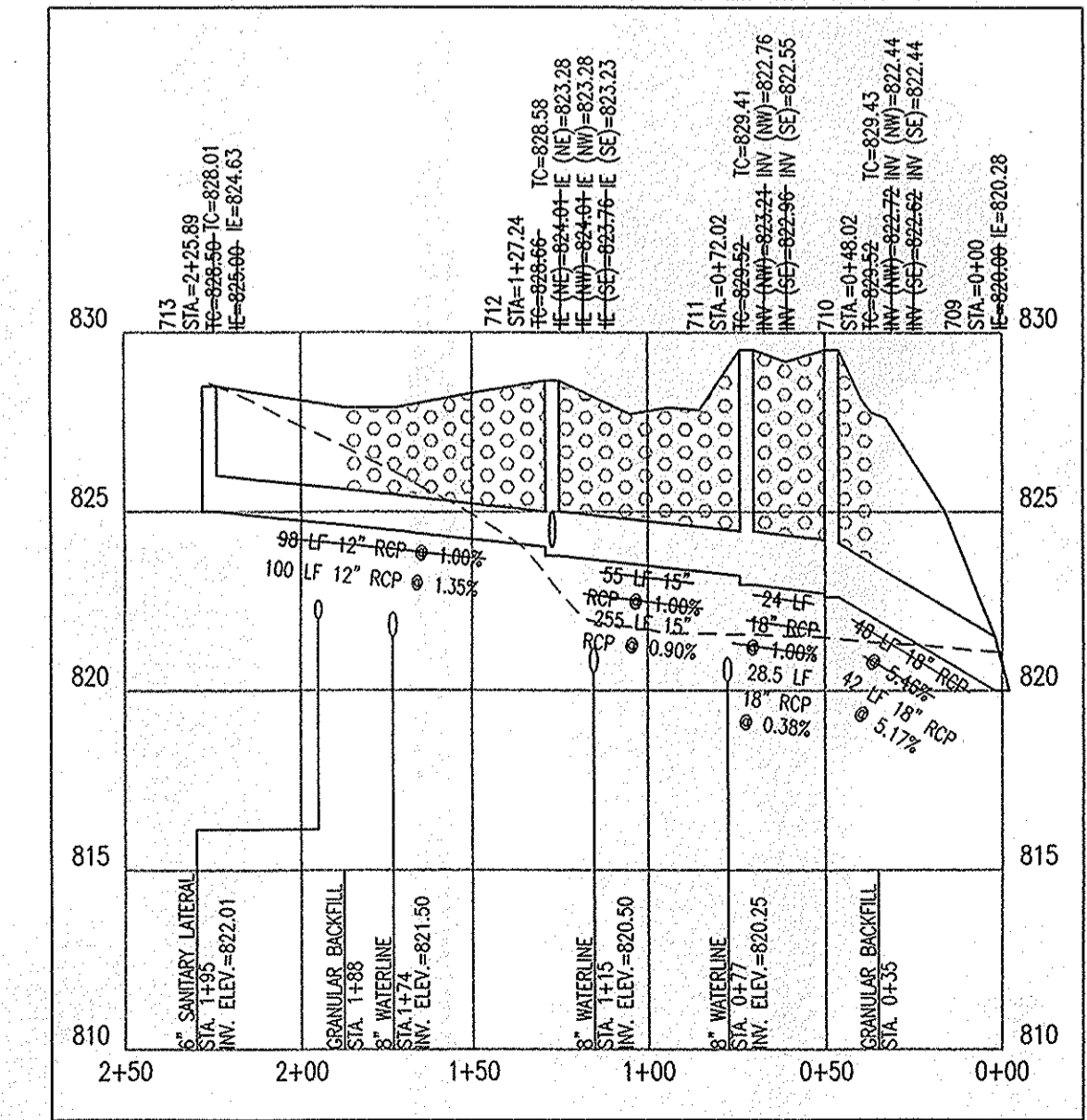
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VER. SCALE: 1" = 5'



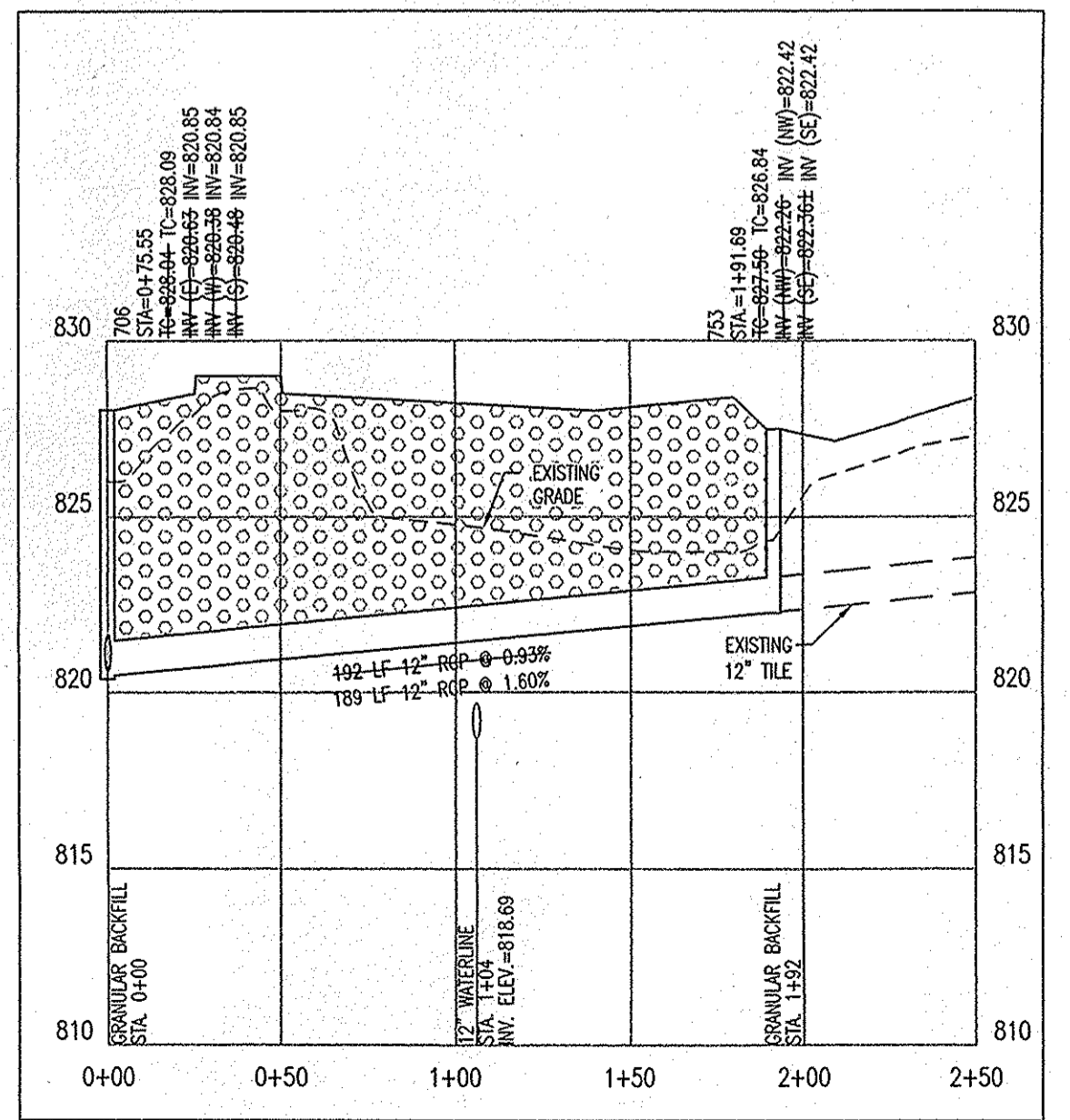
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HOR. SCALE: 1" = 50'  
VER. SCALE: 1" = 5'



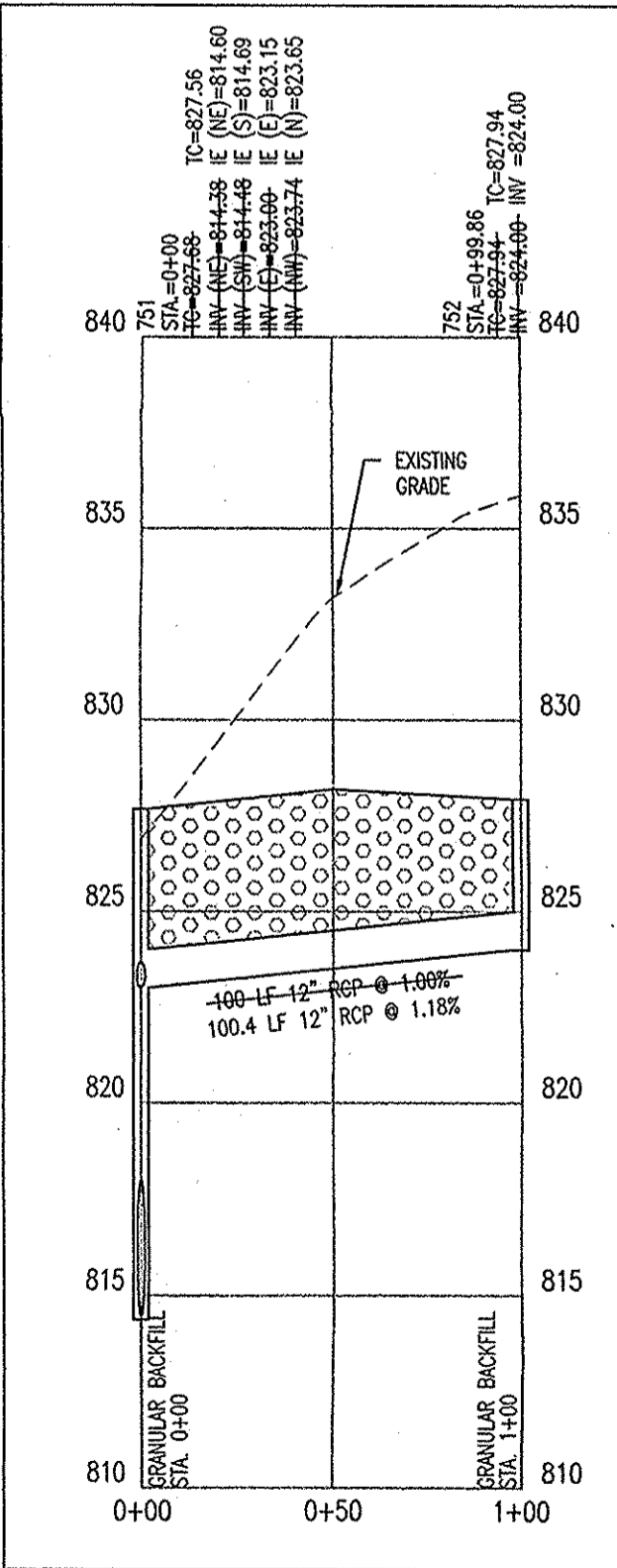
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HOR. SCALE: 1" = 50'  
VER. SCALE: 1" = 5'



**PROFILE STR. 706-STR. 753**

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



**PROFILE STR. 751-STR. 752**

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

Revisions	Date	Description

ARCHITECTURE  
CIVIL ENGINEERING  
LAND PLANNING  
LAND SURVEYING  
MECHANICAL ENGINEERING  
ELECTRICAL ENGINEERING

7172 GRAHAM ROAD  
INDIANAPOLIS, INDIANA 46250  
(317) 842-8777 FAX (317) 841-4798  
E-Mail: [picrpe@picrpe.com](mailto:picrpe@picrpe.com)

**STORM SEWER PLAN AND PROFILE**  
**THE RESERVE AT GEIST, PHASE ONE**  
**MAC'S LANDING, LLC**  
P.O. BOX 501128  
INDIANAPOLIS, IN 46250

date: 7/19/04

ASBULL

REGISTERED PROFESSIONAL ENGINEER  
STATE OF INDIANA  
PE 10001228

Drawn By: TAF

Checked By: \_\_\_\_\_

Quality Assurance: \_\_\_\_\_

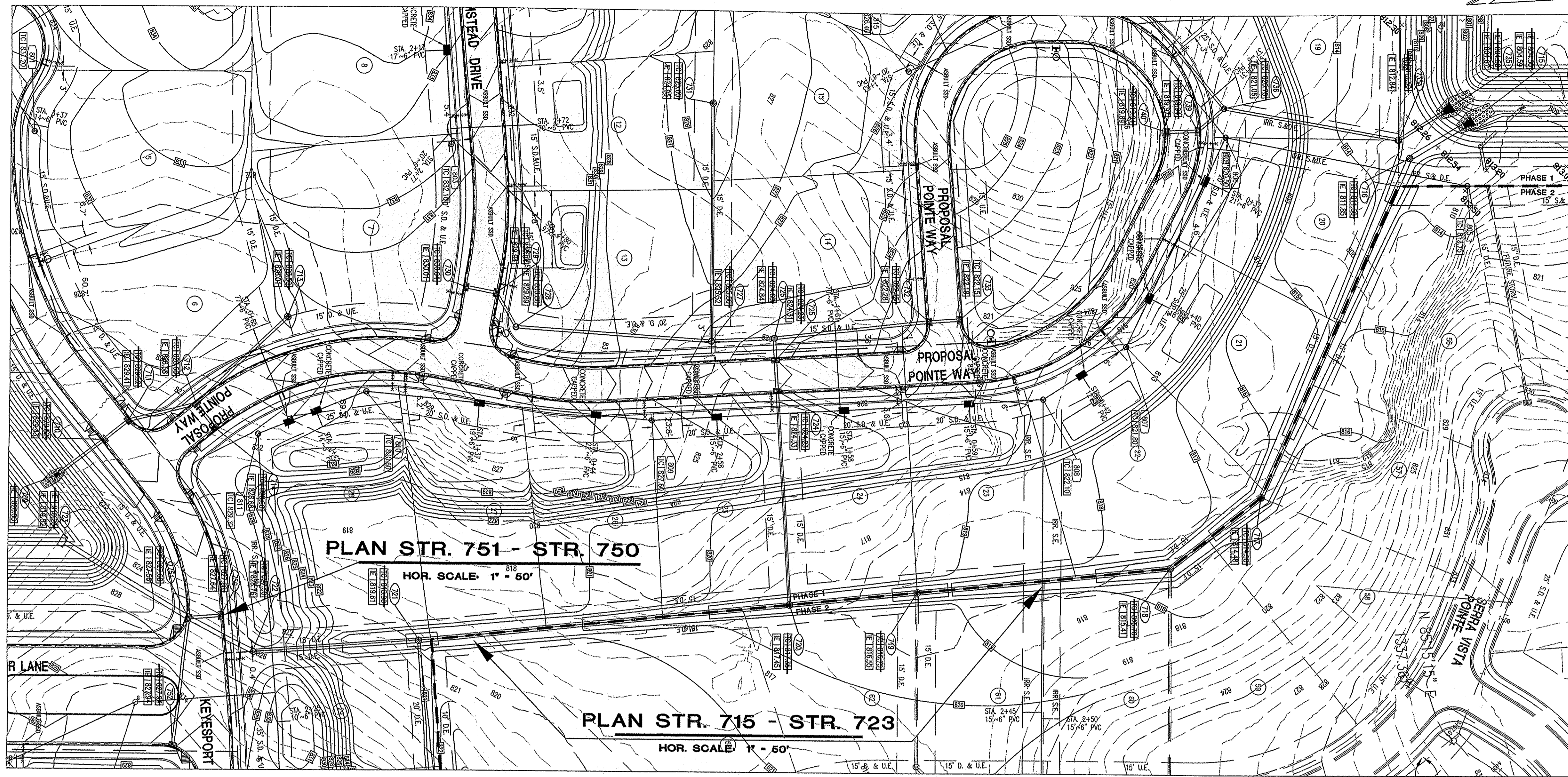
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Sheet: **C701**

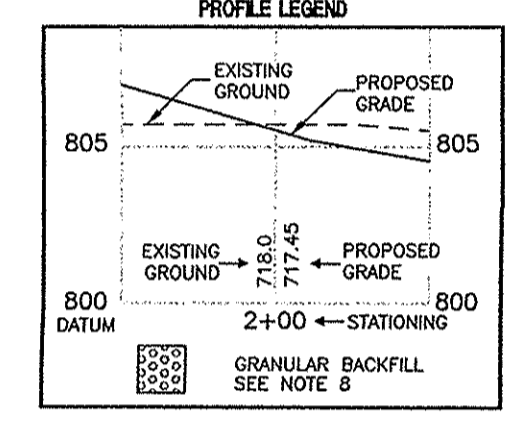
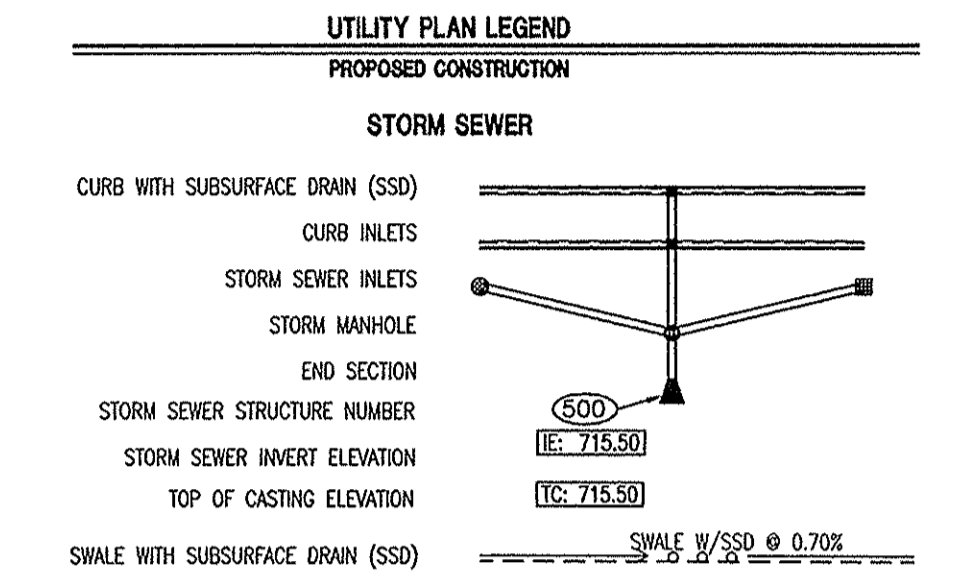
Date: 11-11-04

Project Number: 020424-20100

**RECORD DRAWING**



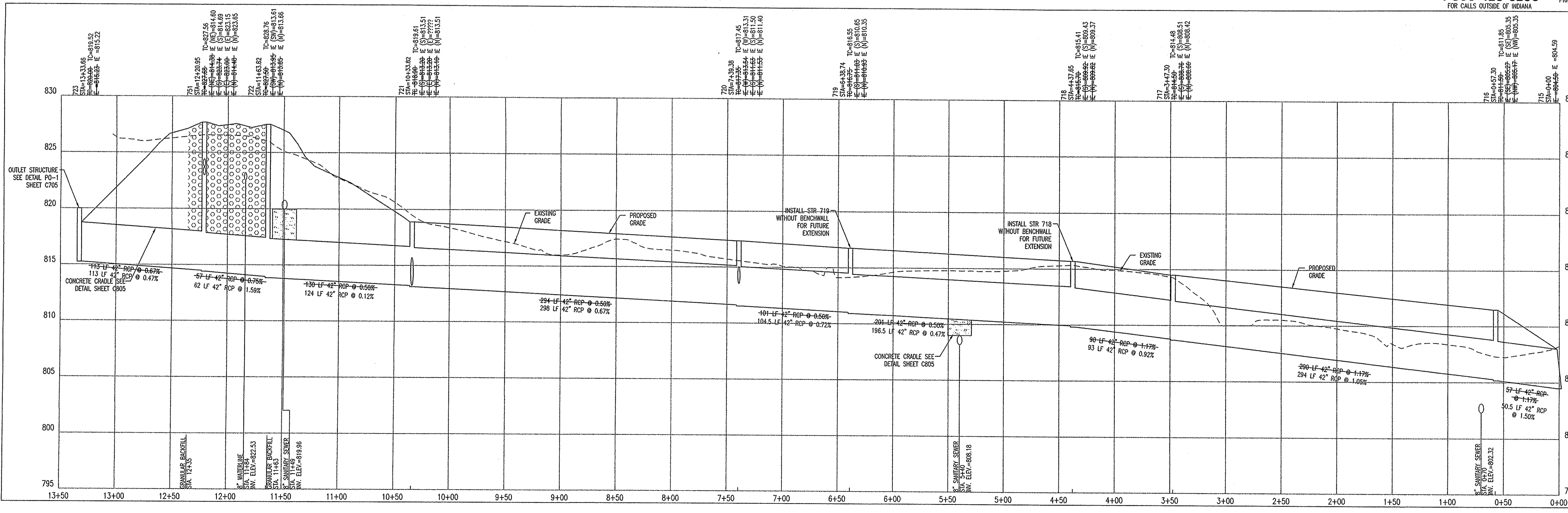
- STORM SEWER PLAN AND PROFILE NOTES:**
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**1-800-382-5544**  
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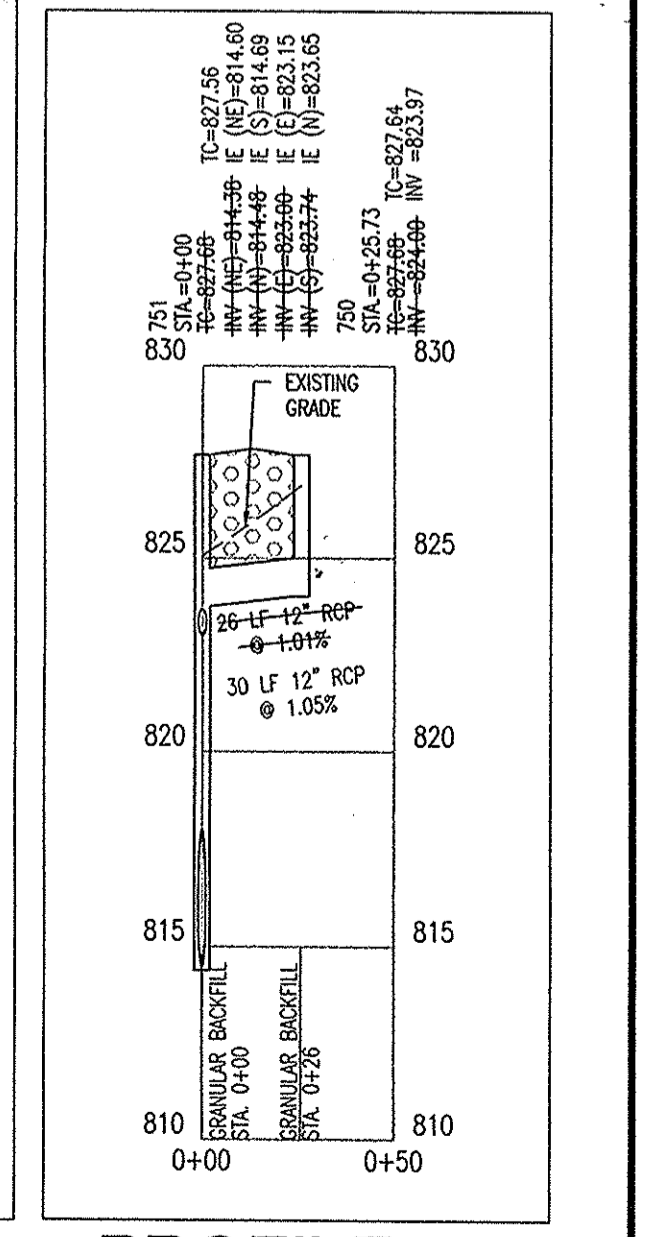


**AS BUILT**  
 date 11/19/04

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Entry Date: May 2008

Entered By: sm



**PROFILE STR. 715 - STR. 723**

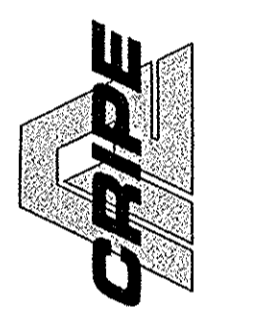
**PROFILE STR. 751 - STR. 750**

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 VER. SCALE: 1" = 5'

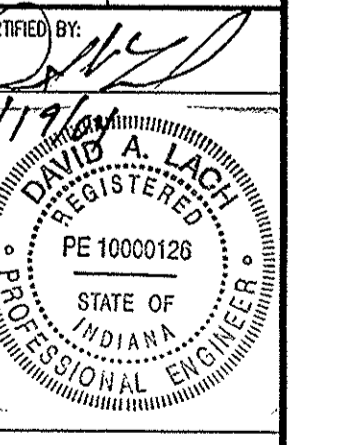
**RECORD DRAWING** HOR. SCALE: 1" = 50'  
 VER. SCALE: 1" = 5'

ARCHITECTURE  
 CIVIL ENGINEERS  
 LANDSCAPE ARCHITECTURE  
 LAND SURVEYORS  
 TRANSPORTATION ENGINEERS  
 GIS

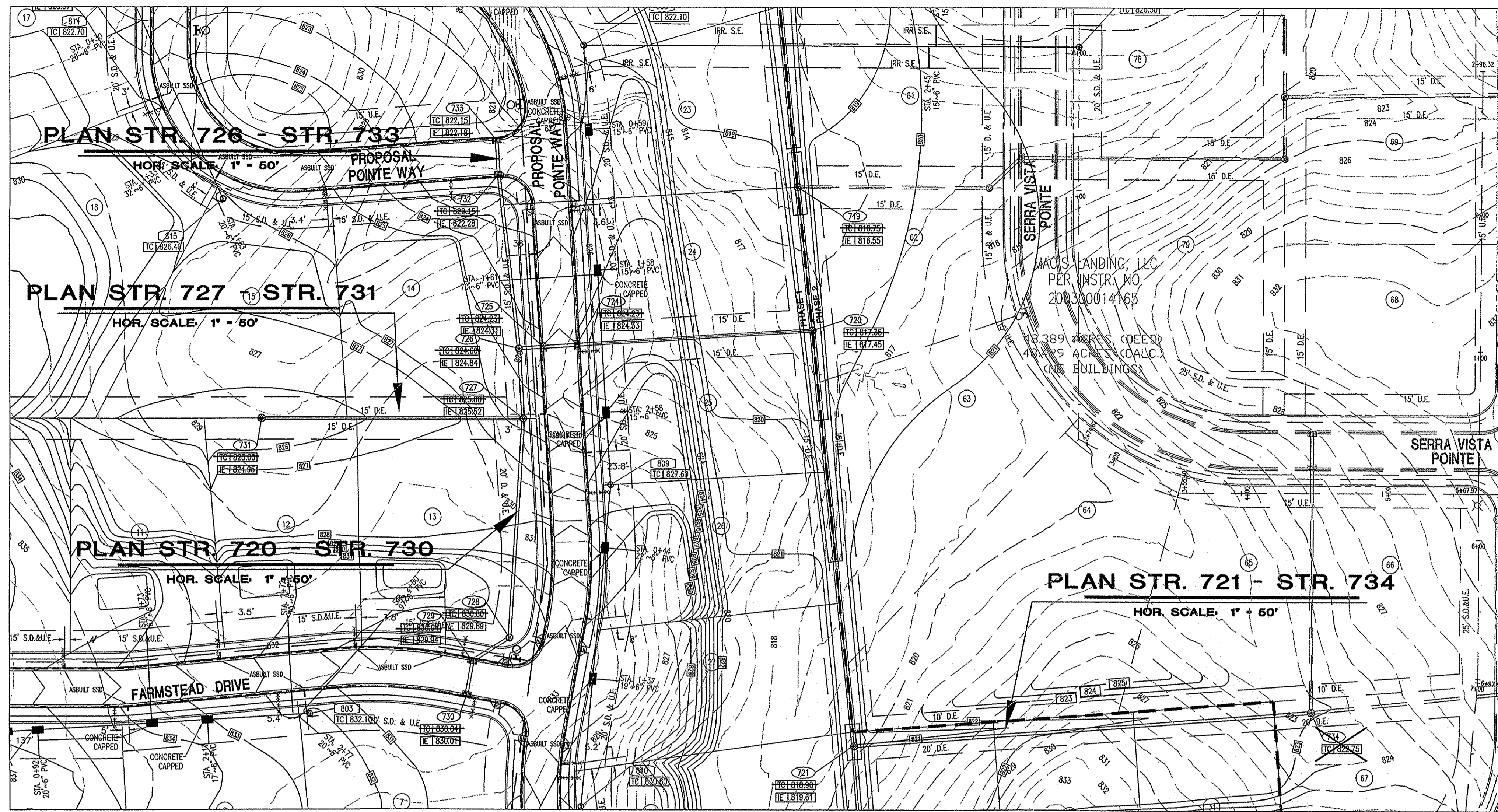
7172 GRAHAM ROAD  
 INDIANAPOLIS, INDIANA 46250  
 (317) 842-6777 FAX (317) 841-4798  
 E-Mail plcrpe@plcrpe.com



**STORM SEWER PLAN AND PROFILE**  
**THE RESERVE AT GEIST, PHASE ONE**  
**MAC'S LANDING, LLC**  
 P.O. BOX 501128  
 INDIANAPOLIS, IN 46250



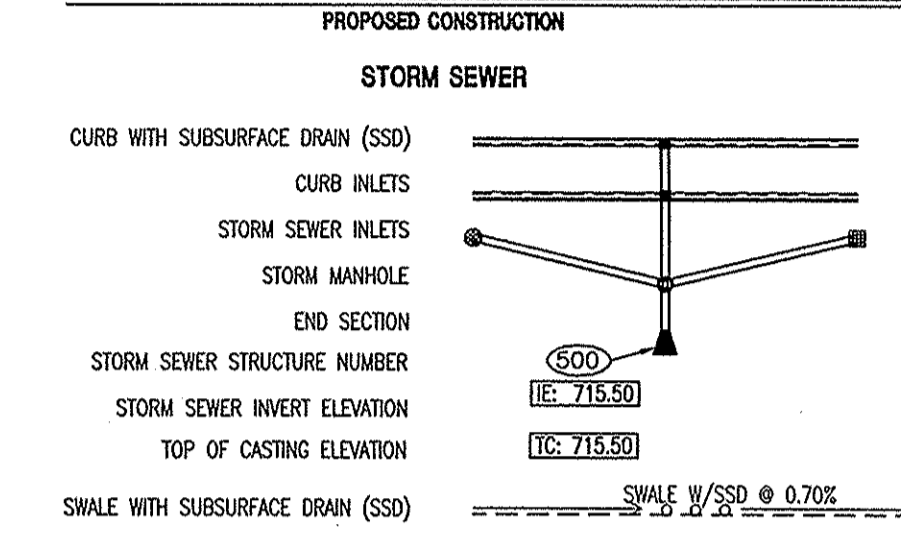
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 Sheet: **C702**  
 Date: 11-11-04  
 Project Number: 020424-20100



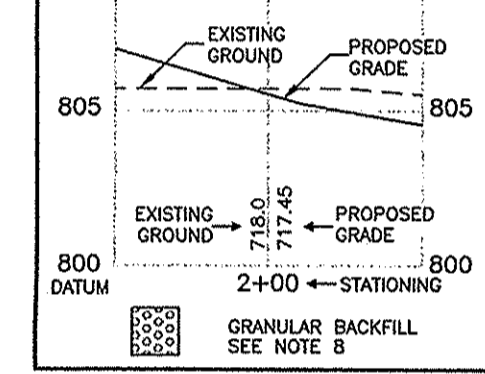
**STORM SEWER PLAN AND PROFILE NOTES:**

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**UTILITY PLAN LEGEND**



**PROFILE LEGEND**

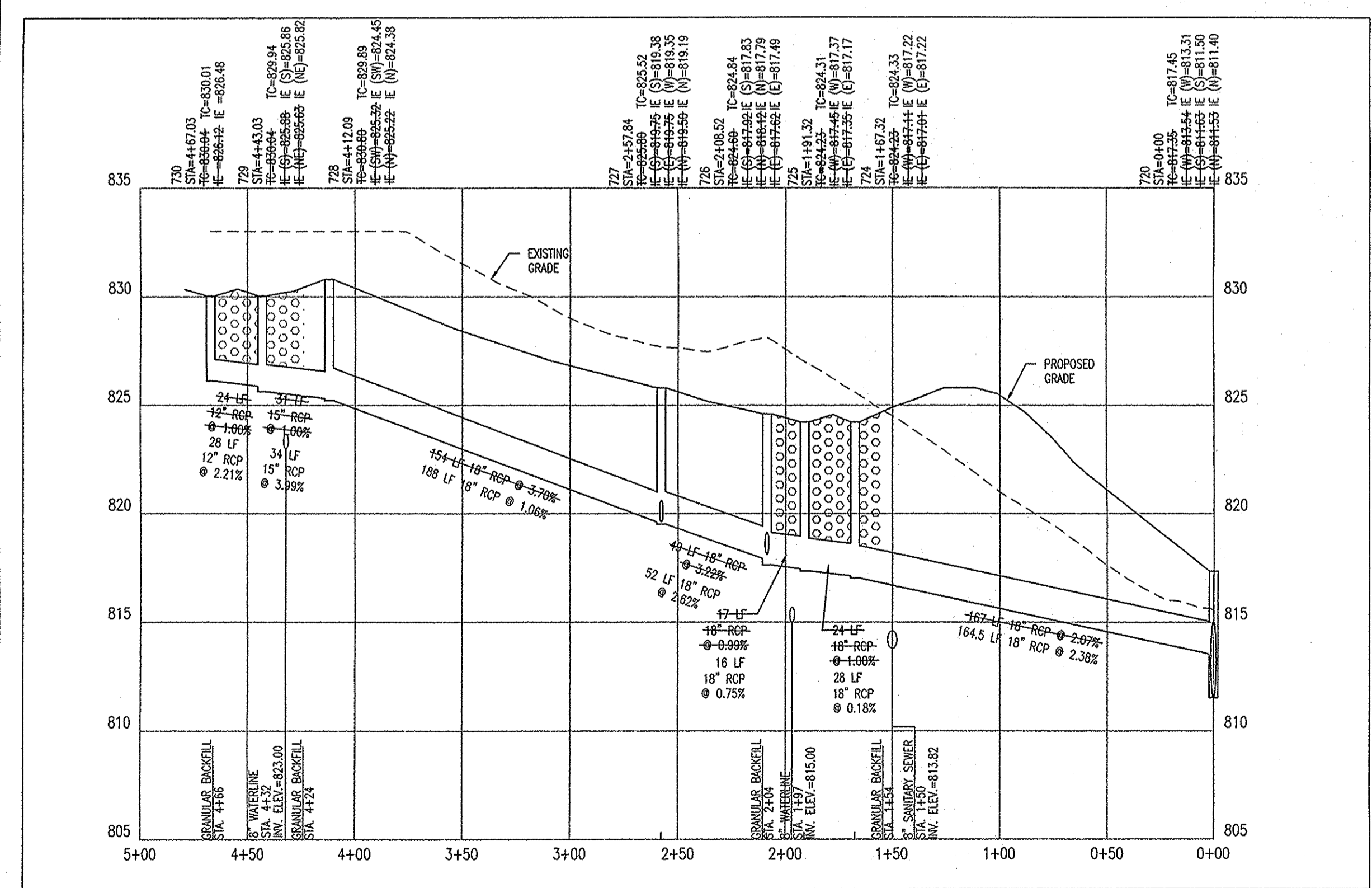


**AS BUILT**  
date 11/19/04

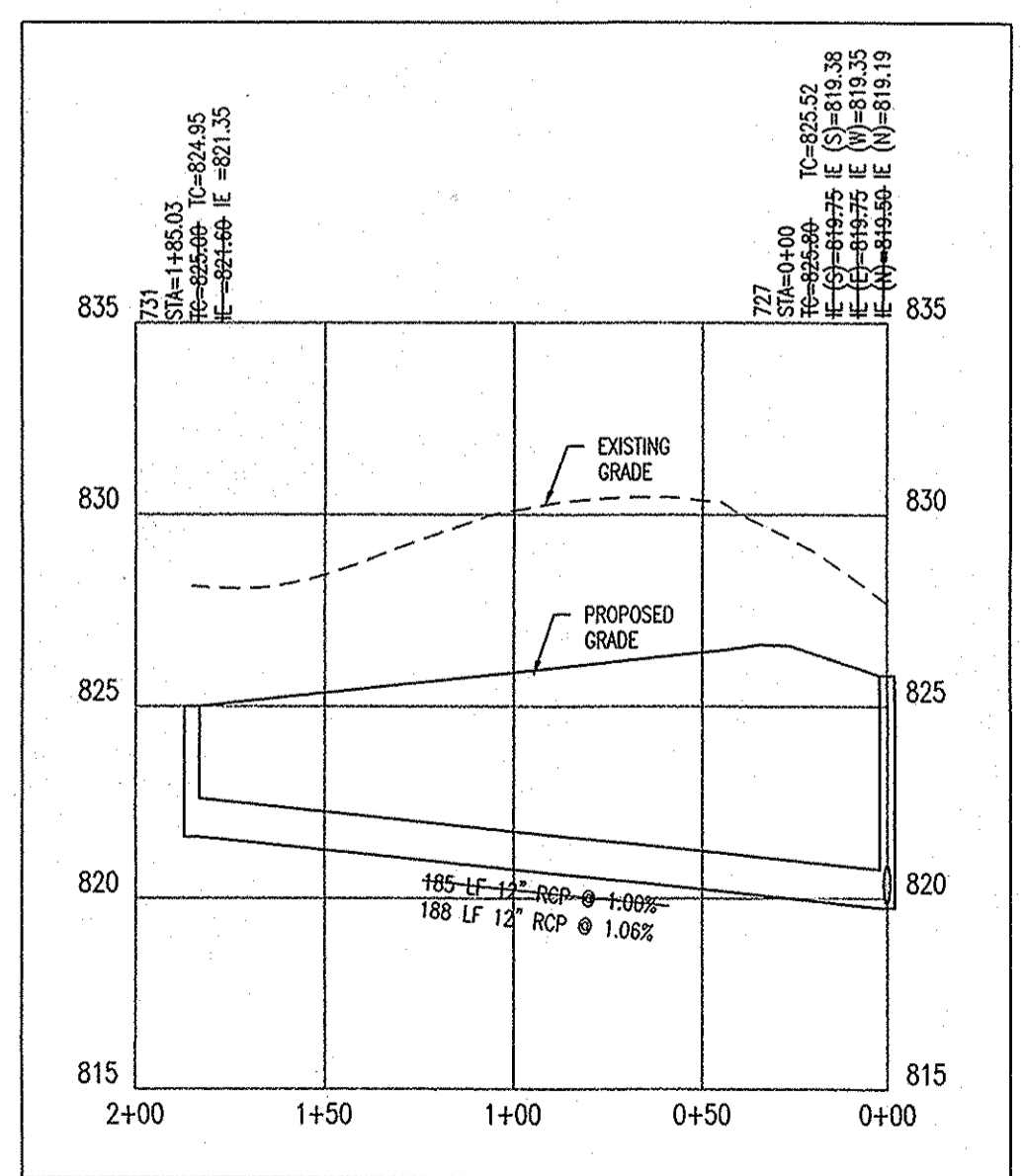
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Entered By: SLM

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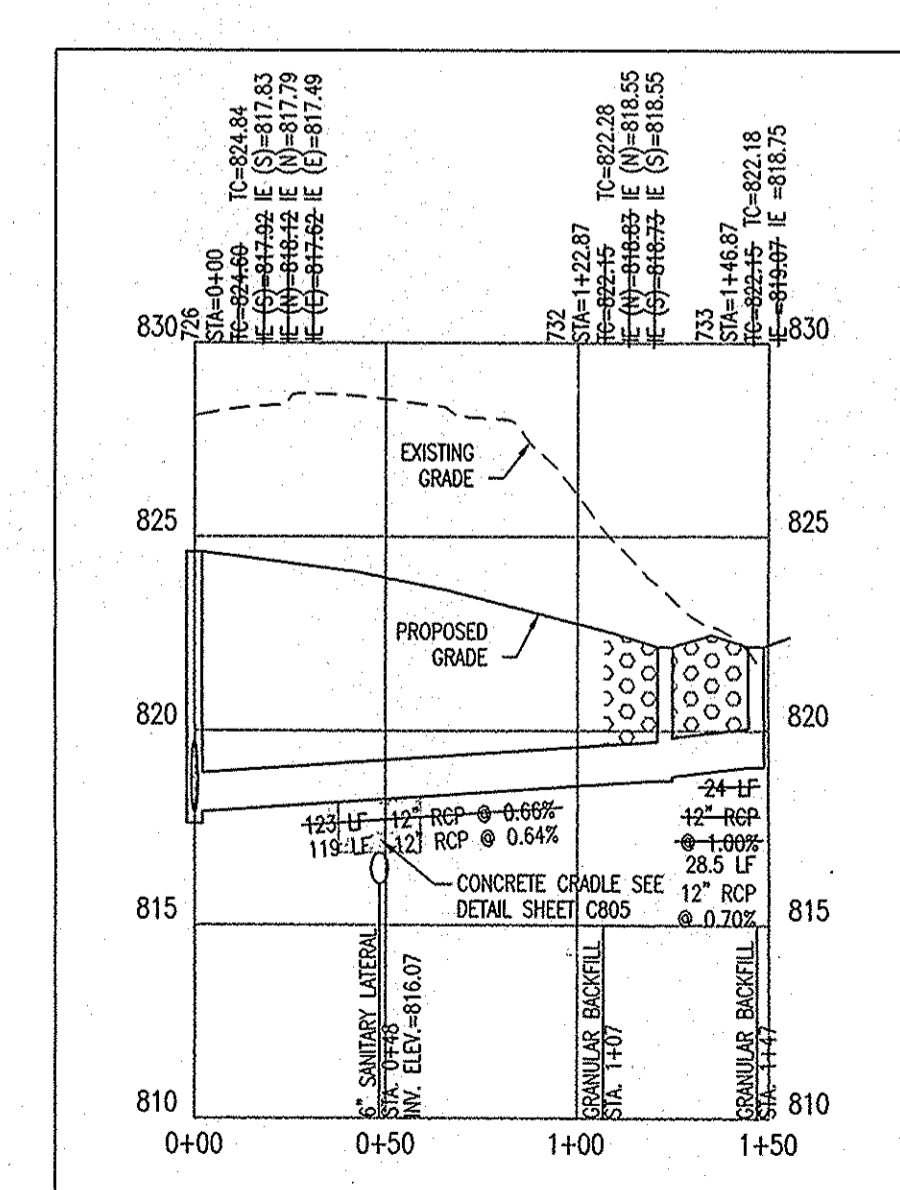
**CAUTION**  
LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (INCLUDING, BUT NOT LIMITED TO, MANHOLES, INLETS, VALVES, AND MARKS MADE UPON THE GROUND BY OTHERS) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES 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.



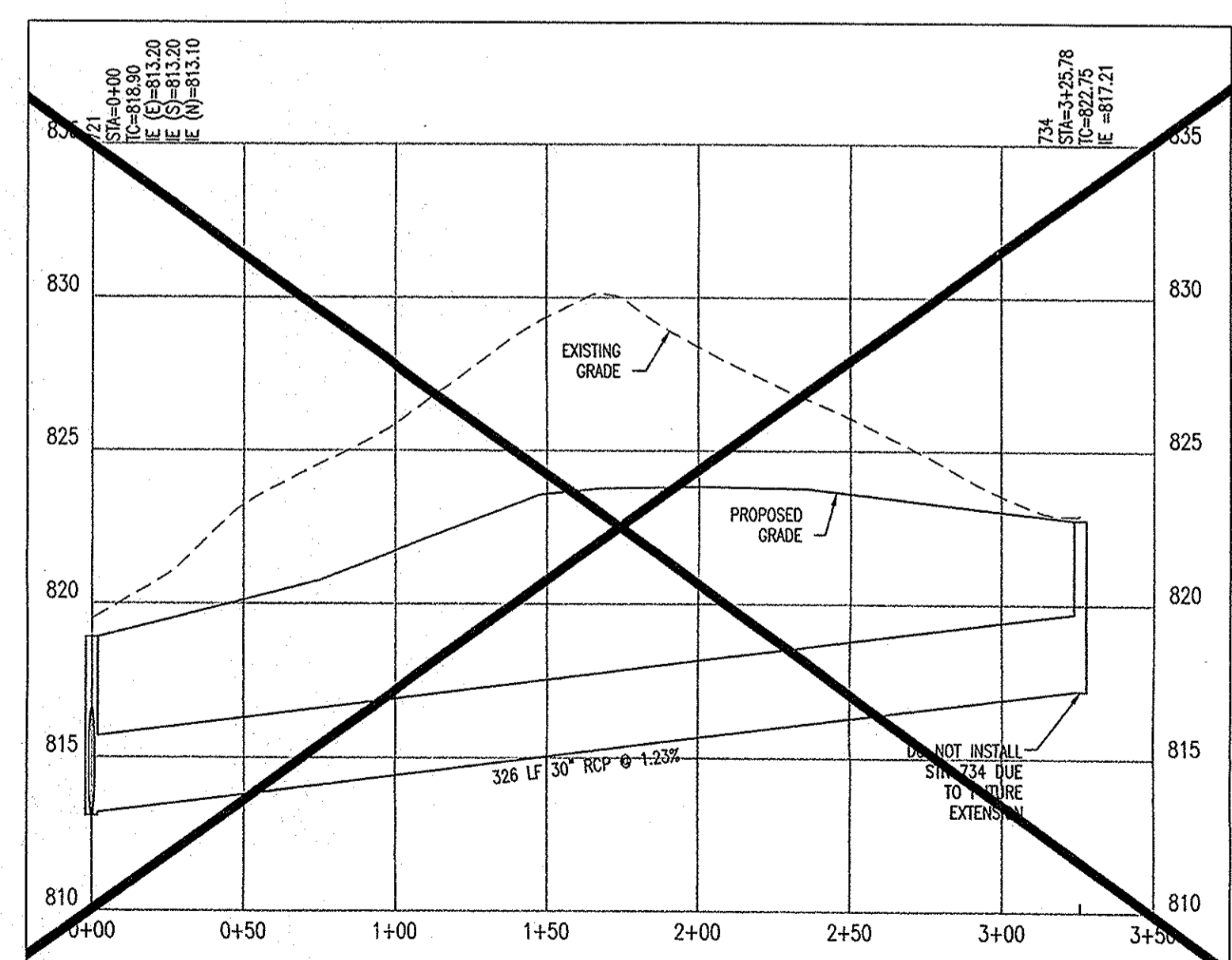
**PROFILE STR. 720 - STR. 730**  
HOR. SCALE: 1" = 50'  
VER. SCALE: 1" = 5'



**PROFILE STR. 727 - STR. 731**  
HOR. SCALE: 1" = 50'  
VER. SCALE: 1" = 5'



**PROFILE STR. 726 - STR. 733**  
HOR. SCALE: 1" = 50'  
VER. SCALE: 1" = 5'



**PROFILE STR. 721 - STR. 734**  
HOR. SCALE: 1" = 50'  
VER. SCALE: 1" = 5'

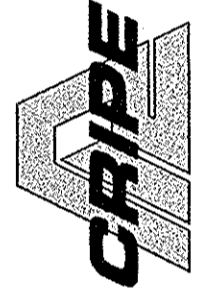
**STORM SEWER PLAN AND PROFILE**  
**THE RESERVE AT GEIST, PHASE ONE**  
**MAC'S LANDING, LLC**  
P.O. BOX 501128  
INDIANAPOLIS, IN 46250

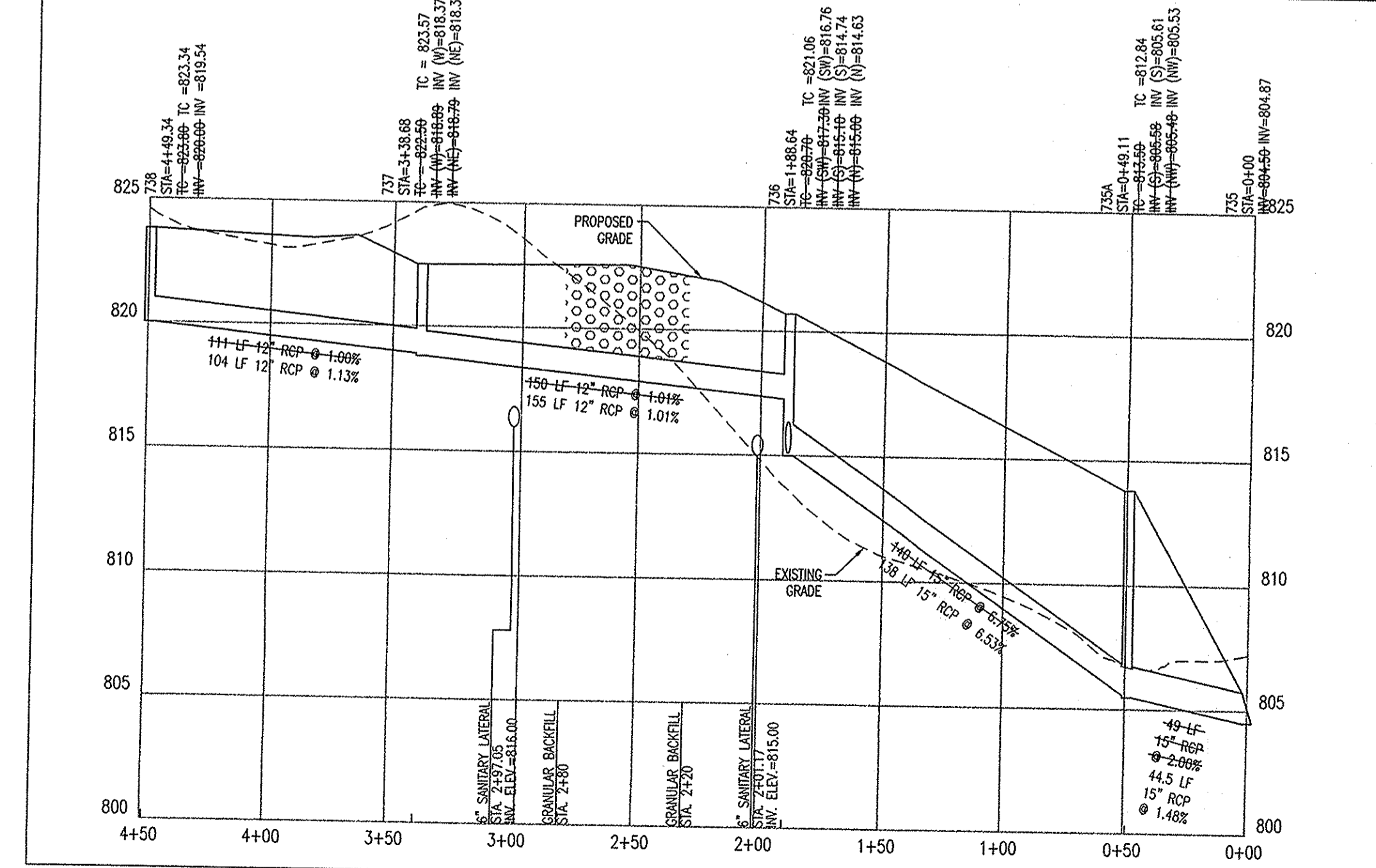
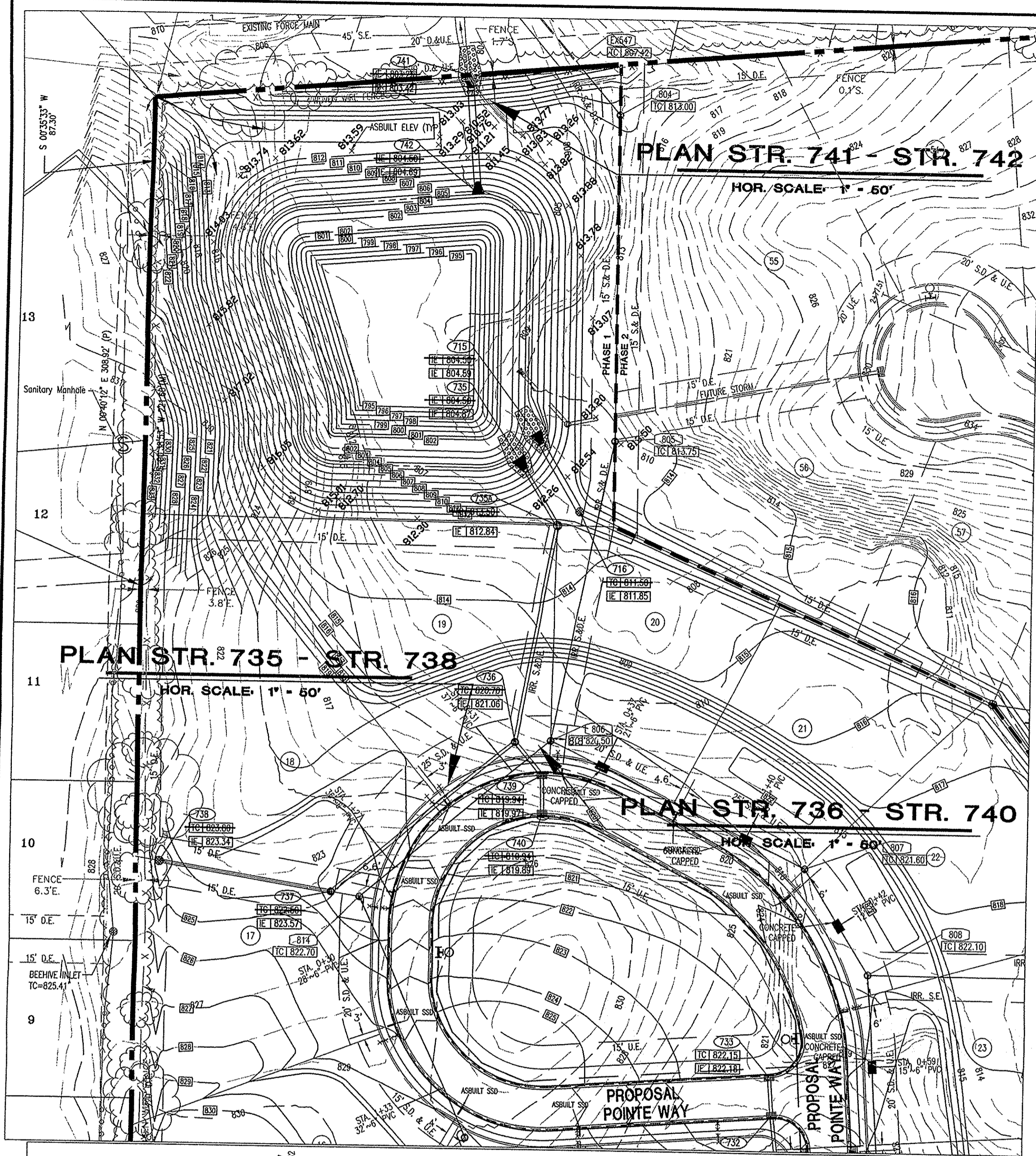
CERTIFIED BY  
  
DAVID A. LACHAR  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF INDIANA  
PE 10000128

Drawn By: TAF  
Checked By:  
Quality Assurance:  
Scale: 1" = 50'  
Sheet: C703

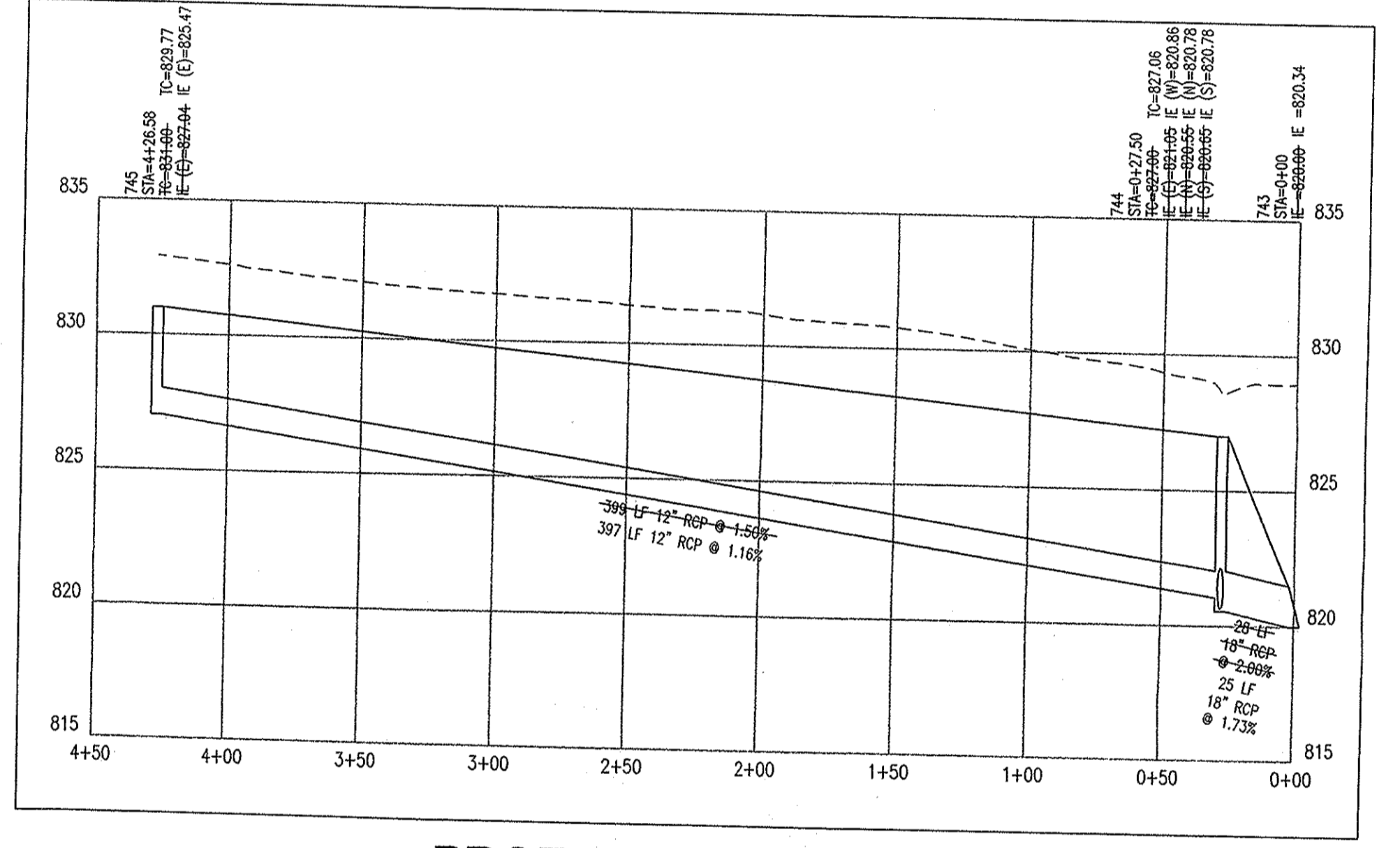
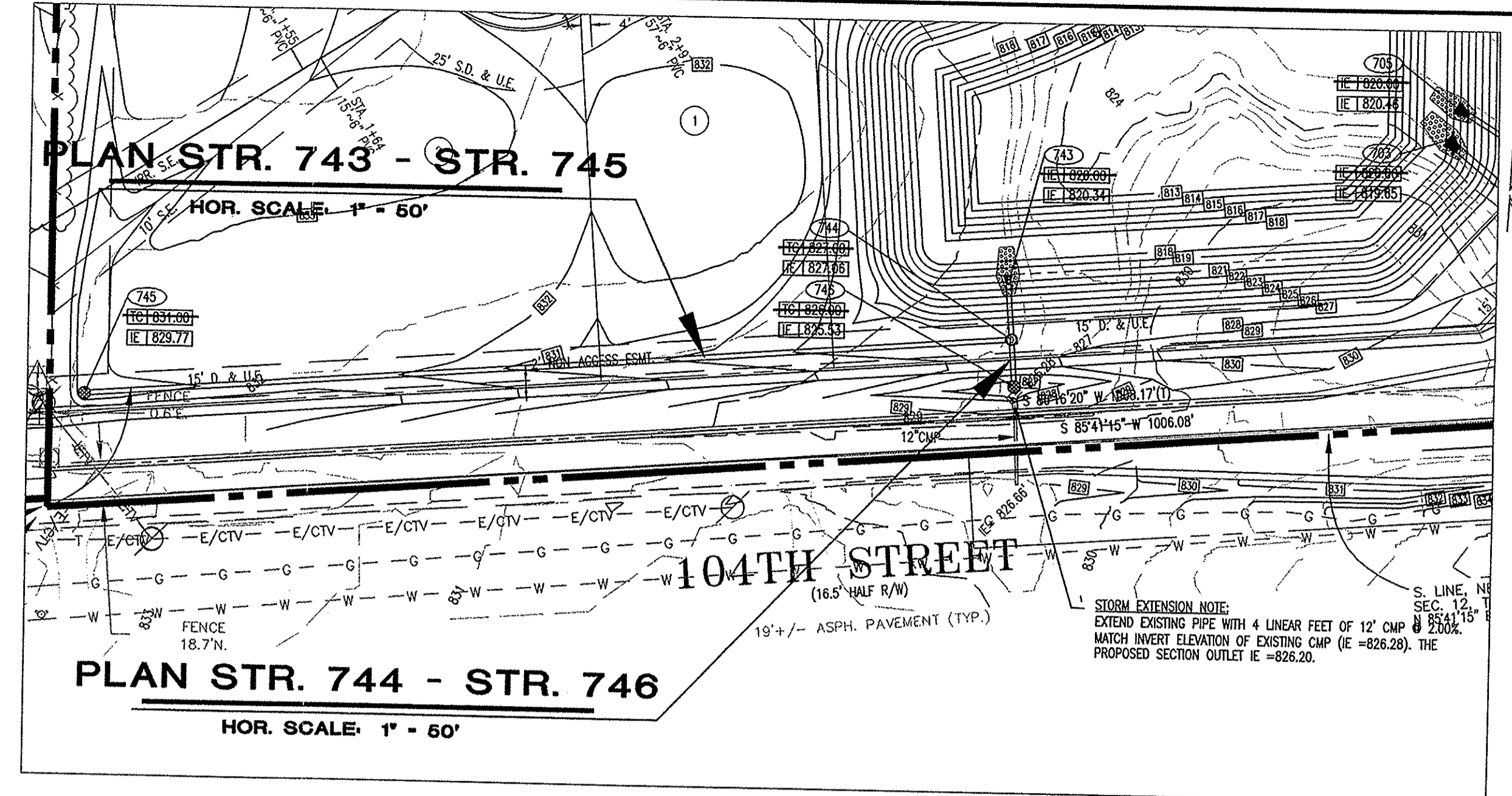
Date: 11-11-04  
Project Number: 020424-20100

ARCHITECTURE  
CIVIL ENGINEERS  
LANDSCAPE ARCHITECTURE  
LAND SURVEYORS  
TRANSPORTATION ENGINEERS  
GIS  
7172 GRAHAM ROAD  
INDIANAPOLIS, INDIANA 46250  
(317) 842-6777 FAX (317) 841-4798  
E-Mail: picrpe@picrpe.com

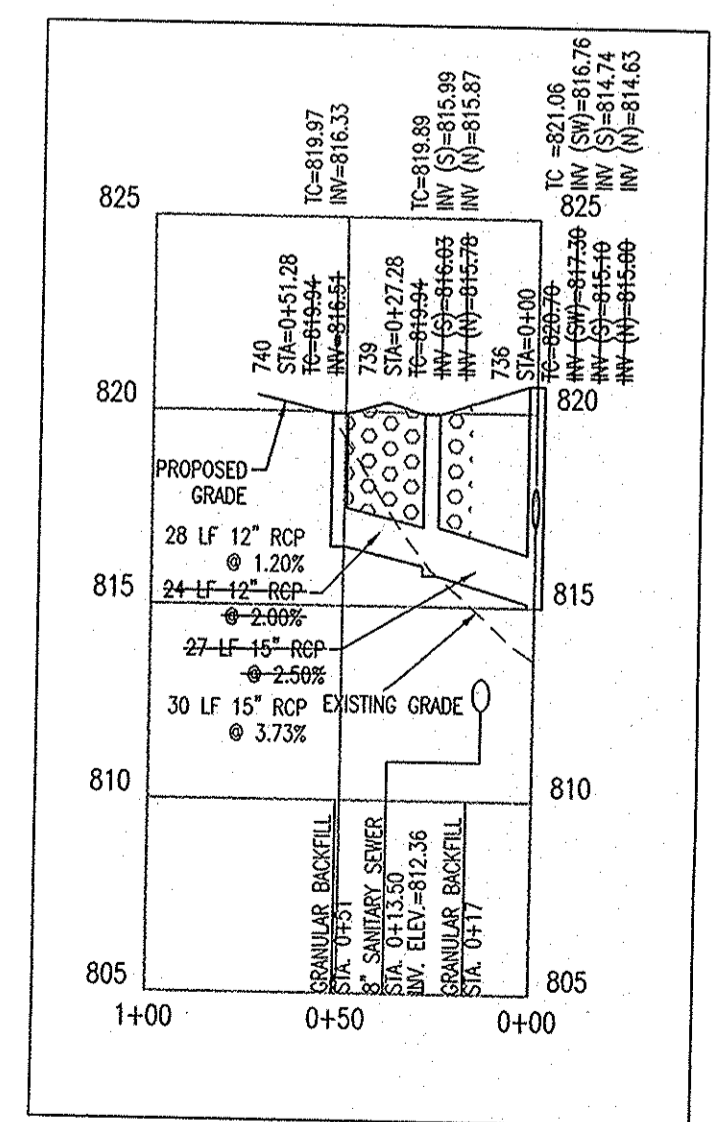




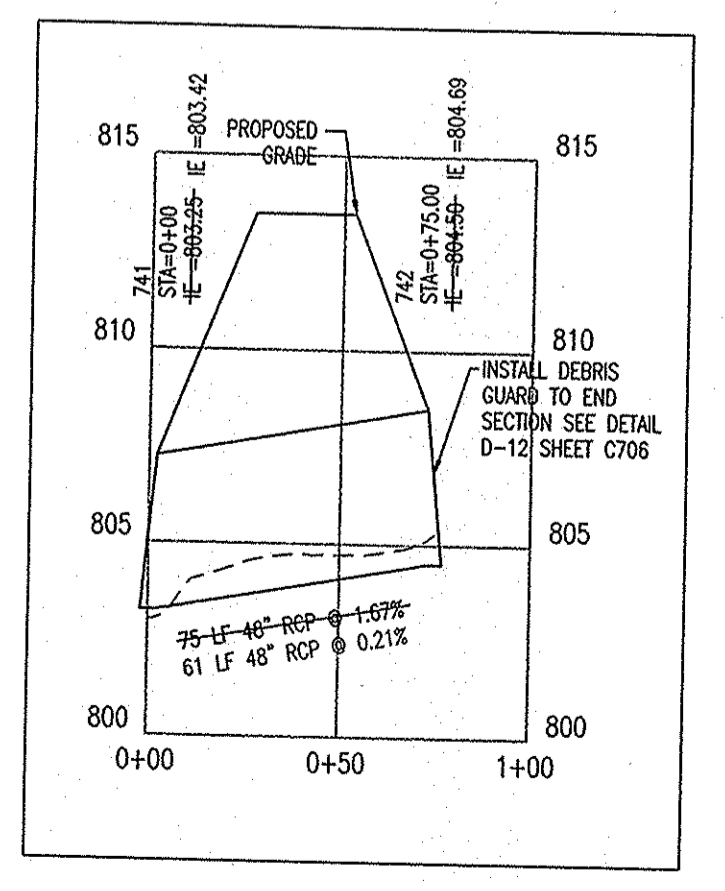
**PROFILE STR. 735 - STR. 738**  
 HOR. SCALE: 1" = 50'  
 VER. SCALE: 1" = 5'



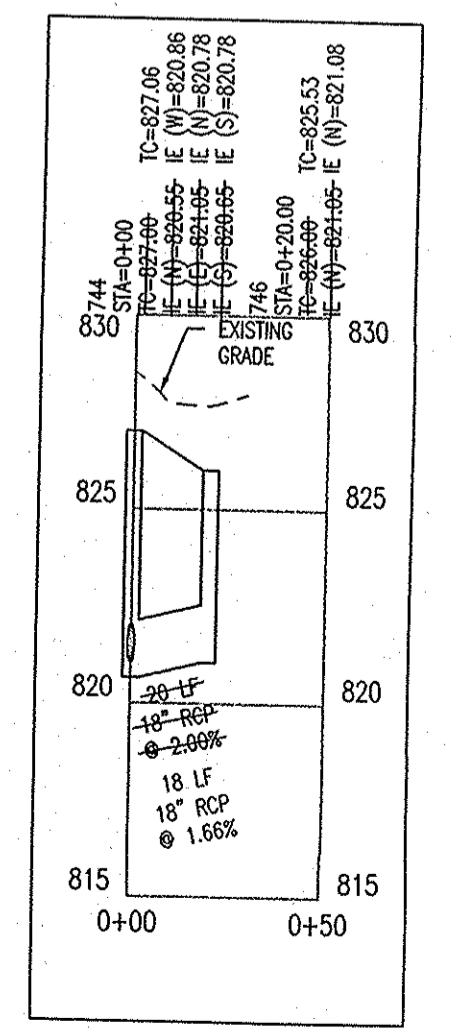
**PROFILE STR. 743 - STR. 745**  
 HOR. SCALE: 1" = 50'  
 VER. SCALE: 1" = 5'



**PROFILE STR. 736 - STR. 740**  
 HOR. SCALE: 1" = 50'  
 VER. SCALE: 1" = 5'

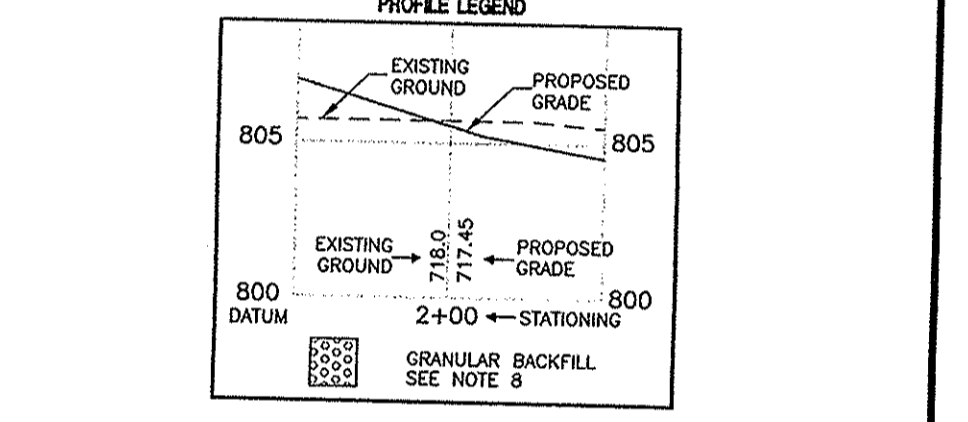
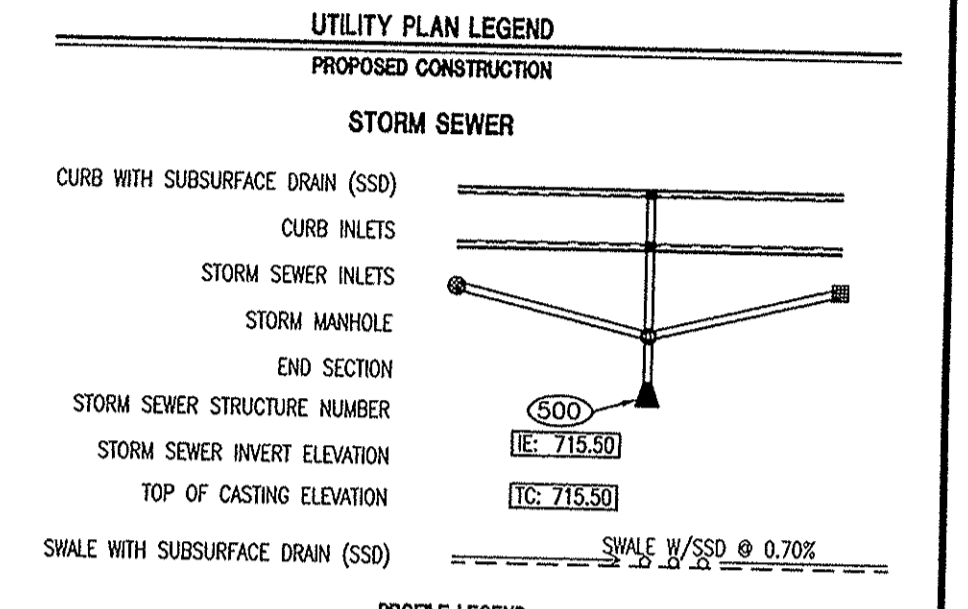


**PROFILE STR. 741 - STR. 742**  
 HOR. SCALE: 1" = 50'  
 VER. SCALE: 1" = 5'



**PROFILE STR. 744 - STR. 746**  
 HOR. SCALE: 1" = 50'  
 VER. SCALE: 1" = 5'

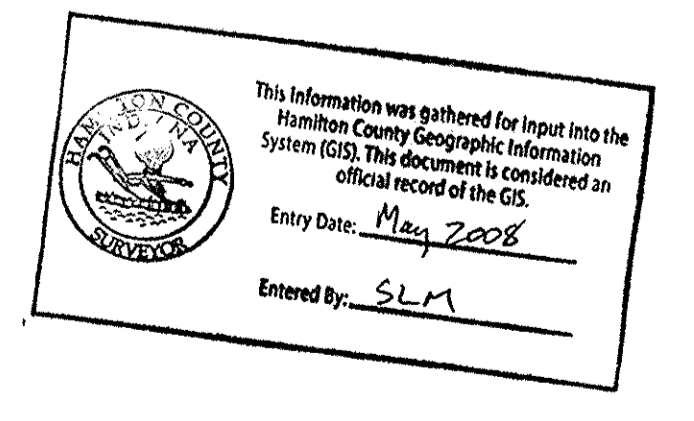
- STORM SEWER PLAN AND PROFILE NOTES:**
- OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS; FINAL RULE 29 CFR PART 1926, SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING FIVE (5) FEET IN DEPTH.
  - IN ADDITION, EXCAVATIONS EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRE THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER.
  - ALL STRUCTURES SHALL HAVE CASTINGS, JOINTS, LIFT RINGS, STEPS AND PIPE CONNECTIONS WELL GROUTED, TROWELED SMOOTH AND BRUSH FINISHED.
  - ALL STRUCTURES (IE: MANHOLES, INLETS) SHALL HAVE POURED FLOW LINES AND BENCH WALLS. THE FLOW LINES AND BENCH WALLS SHALL BE TROWELED SMOOTH AND BRUSH FINISHED.
  - FIELD ADJUSTMENTS OF TOP OF CASTING (T.C.) OF STRUCTURES MAY BE REQUIRED TO MEET FIELD CONDITIONS. ADJUSTMENTS EXCEEDING FIVE TENTHS (0.5) OF A FOOT MUST BE APPROVED BY THE ENGINEER TO DETERMINE THE INTEGRITY OF THE STRUCTURE AT NO COST TO THE OWNER.
  - STORM STRUCTURES WITH INLET CASTINGS SHALL BE SET TO MAINTAIN A NEGATIVE DRAINAGE FLOW INTO THE STRUCTURE.
  - STORM PIPE INVERTS AT OUTLET STRUCTURES (IE: END SECTIONS), AND PIPE LENGTHS MAY REQUIRE FIELD ADJUSTMENTS TO MEET ACTUAL FIELD CONDITIONS.
  - FULL DEPTH GRANULAR BACKFILL SHALL BE REQUIRED UNDER AND WITHIN (5) FEET OF ALL PAVED AREAS, INCLUDING CURBS, EDGE OF PAVEMENT, AND SIDEWALKS.
  - PIPE LENGTHS ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND INCLUDE END SECTIONS.
  - ALL CURB UNDERDRAINS SHALL BE CONNECTED TO THE STORM COLLECTION SYSTEM AT EITHER AN INLET OR A MANHOLE.



"HOLEY MOLEY" SAYS CALL AT LEAST TWO FULL WORKING DAYS BEFORE YOU DIG. LIT'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, VEHICLES, 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.

**1-800-382-6644**  
 CALL TOLL FREE  
**1-800-428-6200**  
 FOR CALLS OUTSIDE OF INDIANA



**AS BUILT**  
 date: 11/15/04

**STORM SEWER PLAN AND PROFILE**  
**THE RESERVE AT GEIST, PHASE ONE**  
**MAC'S LANDING, LLC**  
 P.O. BOX 501128  
 INDIANAPOLIS, IN 46250

7172 GRAHAM ROAD  
 INDIANAPOLIS, INDIANA 46250  
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 E-Mail: mlcr@picrpe.com

ARCHITECTURE  
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 TRANSPORTATION ENGINEERS  
 GIS

Drawn By: TAF  
 Checked By:  
 Quality Assurance:  
 Scale: 1" = 50'  
 Sheet: **C704**  
 Date: 11-11-04

**RECORD DRAWING**

SEE ASBUILTS

OFFICE OF THE HAMILTON COUNTY SURVEYOR  
BANK ARMORMENT AT OUTLET PIPE  
IN OPEN CHANNELS

CROSS SECTION

PLAN VIEW

(DRAWING NOT TO SCALE)

HAMILTON COUNTY SURVEYOR'S OFFICE  
REVISED: 1 JAN 2009  
APPROVED: KENTON C. WARD, HAMILTON COUNTY SURVEYOR 4 JAN 2009 DATE  
STANDARD PLAN 0-4

OFFICE OF THE HAMILTON COUNTY SURVEYOR  
STRUCTURE SIZING TABLE

PIPE SIZE (INCHES)	STRUCTURES LESS THAN 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-3501-N	CASTING *9501 TL & TR
12 TO 18	24 X 24	***	DESIGN APPROVAL	NO	YES	YES
18 TO 21	30 X 30	***	DESIGN APPROVAL	NO	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	***	DESIGN APPROVAL	NO	NO	YES
24 OR LARGER	DESIGN APPROVAL	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  
REVISED: 1 FEB 2002  
APPROVED: KENTON C. WARD, HAMILTON COUNTY SURVEYOR 2/1/02 DATE  
STANDARD PLAN D-18

OFFICE OF THE HAMILTON COUNTY SURVEYOR  
STRUCTURE DATA TABLE

STR. NO.	TC/RIM ELEV.	INV. IN.	INV. OUT.	DEPTH *	STR. SIZE	STR. TYPE	CASTING TYPE	PIPE SIZE	DIRECTION OF PIPE IN/OUT
703	N/A		82.00		48" x 67"	ST-3A	END SECTION	48" x 67"	NW OUT
704	N/A	82.00			48" x 67"	ST-3A	END SECTION	48" x 67"	NW IN
705	N/A		82.00		18"	ST-3A	END SECTION	18"	NW OUT
706	82.04	82.63	82.38	7.65	48"	D-20	R-3501-N	15", 18"	E/W
707	82.04	82.58	82.48	5.65	48"	D-20	R-3501-N	15"	SE/W
708	82.00	82.94	82.84	3.65	48"	D-20	R-3501-N	15"	NW OUT
709	N/A		82.00		18"	ST-3A	END SECTION	18"	SE OUT
710	82.52	82.72	82.62	6.60	48"	D-20	R-3501-N	15"	NW/SE
711	82.52	82.21	82.92	6.82	48"	D-20	R-3501-N	15", 18"	NW/SE
712	82.66	82.01	82.76	4.97	48"	D-20	R-3501-N	12", 15"	NW/SE
713	82.50		82.00	3.00	48"	D-20	R-3501-N	12"	SE OUT
714	82.66		82.48	4.97	48"	D-20	R-3501-N	12"	SW OUT
715	N/A		80.50		42"	ST-3A	END SECTION	42"	NW OUT
716	81.50	80.27	80.17	6.35	72"	D-21	R-4342	42"	SE/NW
717	81.50	80.76	80.66	5.84	72"	D-21	R-4342	42"	S/N
718	81.70	80.92	80.82	5.88	72"	D-21	R-4342	42"	S/N
719	81.75	81.03	81.93	5.82	72"	D-21	R-4342	42"	S/N
720	81.35	81.63	81.53	5.82	72"	D-21	R-4342	42"	S/N
721	81.80	81.20	81.10	5.00	72"	D-21	R-4342	42"	S/N
722	82.50	81.95	81.85	13.85	72"	D-21	R-1772	42"	SW/N
723	82.00		82.74		48"	D-20	R-3501-N	12"	NW OUT
724	82.23	81.11	81.01	7.22	48"	D-20	R-3501-N	18"	W/E
725	82.23	81.45	81.35	6.88	48"	D-20	R-3501-N	18"	W/E
726	82.60	81.92	81.82	6.88	48"	D-20	R-1772	18"	S/E
727	82.80	81.75	81.65	6.35	48"	D-20	R-1772	18"	S/N
728	83.80	82.32	82.22	5.58	48"	D-20	R-1772	15", 18"	SW/N
729	83.04	82.28	82.33	4.4	48"	D-20	R-3501-N	12", 15"	S/E

\* DEPTH = TC - (INV + DIA + THICKNESS)  
NOTE: TABLE TO BE LOCATED ON DEVELOPMENT PLAN

HAMILTON COUNTY SURVEYOR'S OFFICE  
REVISED: 1 FEB 2002  
APPROVED: KENTON C. WARD, HAMILTON COUNTY SURVEYOR 2/1/02 DATE  
STANDARD PLAN D-19

OFFICE OF THE HAMILTON COUNTY SURVEYOR  
STRUCTURE DATA TABLE

STR. NO.	TC/RIM ELEV.	INV. IN.	INV. OUT.	DEPTH *	STR. SIZE	STR. TYPE	CASTING TYPE	PIPE SIZE	DIRECTION OF PIPE IN/OUT
730	81.04		82.12	4.6	48"	D-20	R-3501-N	12"	N OUT
731	82.00		82.60	3.0	48"	D-20	R-3501-N	12"	E OUT
732	82.15	81.83	81.73	3.2	48"	D-20	R-3501-N	12"	N/S
733	82.15		81.07	3.8	48"	D-20	R-3501-N	12"	S OUT
734	82.75		81.21	5.4	60"	D-21	R-4342	30"	W OUT
735	N/A		80.50		15"	ST-3A	END SECTION	15"	NW OUT
735A	81.50	80.98	80.48	8.2	48"	D-20	R-1772	15"	S/NW
736	82.70	81.30	81.00	5.0	48"	D-20	R-4342	12", 15"	SW/N
737	82.50	81.69	81.79	3.1	48"	D-20	R-1772	12"	W/NE
738	82.50	81.69	81.79	3.0	48"	D-20	R-4342	12"	E OUT
739	81.94	81.03	81.78	4.8	48"	D-20	R-3501-N	12", 15"	S/N
740	81.94		81.51	3.3	48"	D-20	R-3501-N	12"	N OUT
741	N/A		80.25		48"	ST-3A	END SECTION	48"	N IN
742	N/A	80.50			48"	ST-3A	END SECTION	48"	N OUT
743	N/A		82.00		18"	ST-3A	END SECTION	18"	N OUT
744	82.00	82.05	82.55	6.5	48"	D-20	R-1772	12", 18"	E/N
745	83.00		82.04	3.6	48"	D-20	R-4342	12"	E OUT
746	83.00		82.05	4.5	48"	D-20	R-4342	18"	N OUT
747	FUTURE						END SECTION		NW OUT
748	FUTURE						R-1772		E/NW
749	FUTURE						R-3501-N		W OUT

\* DEPTH = TC - (INV + DIA + THICKNESS)  
NOTE: TABLE TO BE LOCATED ON DEVELOPMENT PLAN

HAMILTON COUNTY SURVEYOR'S OFFICE  
REVISED: 1 FEB 2002  
APPROVED: KENTON C. WARD, HAMILTON COUNTY SURVEYOR 2/1/02 DATE  
STANDARD PLAN D-19

OFFICE OF THE HAMILTON COUNTY SURVEYOR  
UNDERWATER DISCHARGE NOT ALLOWED

LAKE OUTLET DETAIL  
FOR LAKE CROSS-SECTION OPTION 2

(DRAWING NOT TO SCALE)

HAMILTON COUNTY SURVEYOR'S OFFICE  
REVISED: 1 JAN 2009  
APPROVED: KENTON C. WARD, HAMILTON COUNTY SURVEYOR 4 JAN 2009 DATE  
STANDARD PLAN D-10

NEENAH IN  
FOUNDRY COMPANY

R-1772  
Manhole Frame, Solid Lid

Heavy Duty  
Also available with Non-Rocking feature. See page 9 for illustration.

Also available with 36" diameter flange.

R-3501-N  
Inlet for Roll Type Curb

Heavy Duty  
Not recommended for bicycle traffic.

R-4342  
Ditch Grate, Stool Type

Light Duty

EDGE OF PAVEMENT, CURB, GUTTER OR SIMILAR STRUCTURE

LEGEND  
Bc = OUTSIDE DIAMETER  
D = INSIDE DIAMETER  
d = DEPTH OF BEDDING MATERIAL BELOW PIPE  
DEPTH OF BEDDING MATERIAL BELOW PIPE  
D d MIN.  
27" & SMALLER 3"  
30" TO 60" 4"  
66" & LARGER 6"

ST-32  
NO SCALE

RCP TRENCH DETAIL

AS BUILT  
date: 11/19/04

8' - 8"  
INLET GRATE\*

10' SAFETY LEDGE

4' + 8" INLET GRATE\*

T.C. ELEV. = 820.00 (NORMAL POOL)

24"

42" RCP OUTLET PIPE

3:1 SLOPE

818

IE = 815.23

42" RCP OUTLET PIPE

4" BENCH MIN.

4" BENCH WALL

L 6" OF #2 OR #8 STONE

FRONT ELEVATION  
NOT TO SCALE

PO-1  
NO SCALE

SOUTH POND OUTLET STRUCTURE

\*INLET GRATE SHALL BE GALVANIZED STEEL WELDED GRATING (2"x3/16") STEEL AT 1-3/16" CENTER TO CENTER OF BEARING BARS AND CROSS BARS AT 4" O.C.

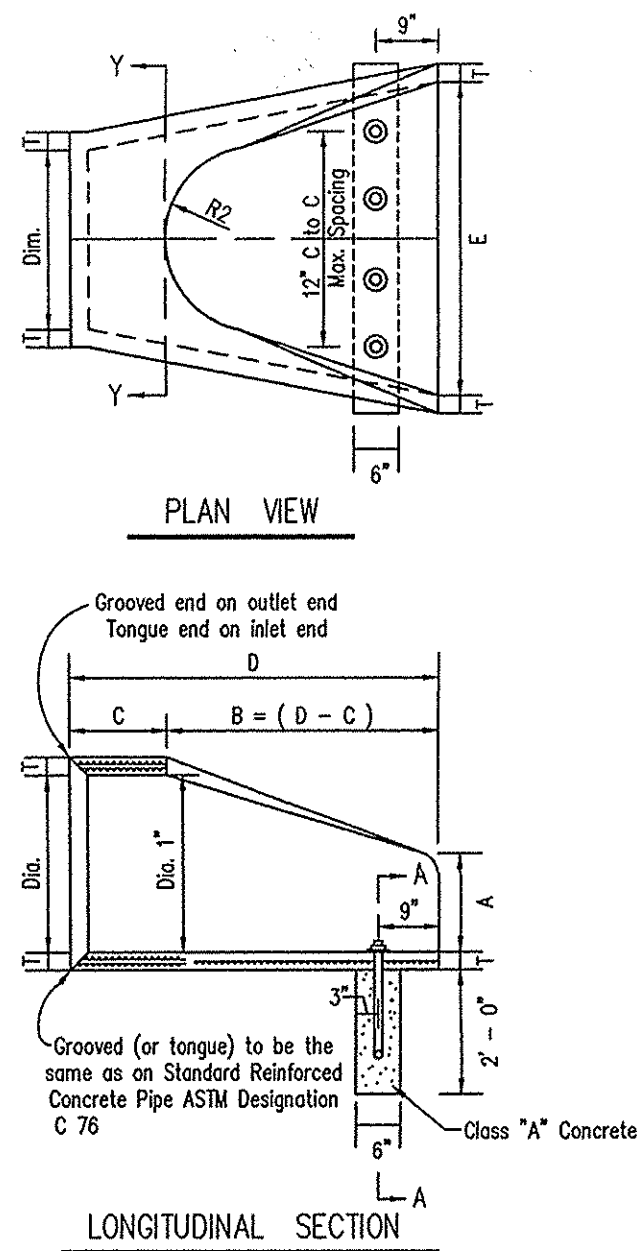
RECORD DRAWING

7172 GRAHAM ROAD  
INDIANAPOLIS, INDIANA 46250  
(317) 842-6777 FAX (317) 841-4798  
E-Mail: picpipe@picpipe.com

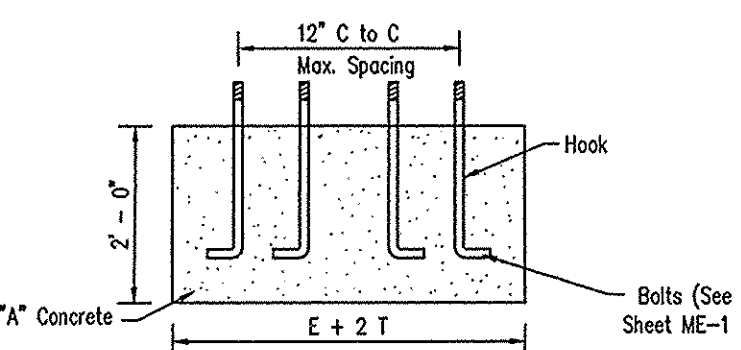
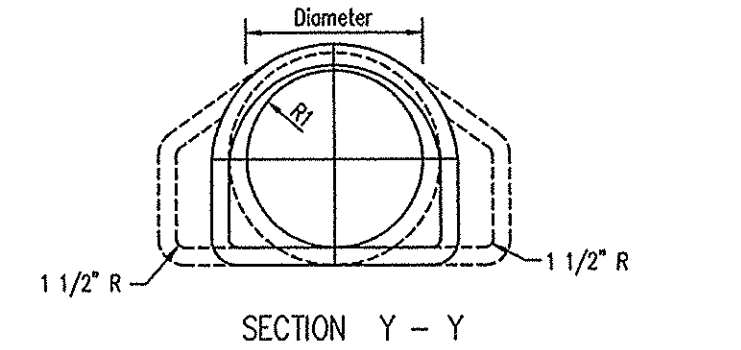
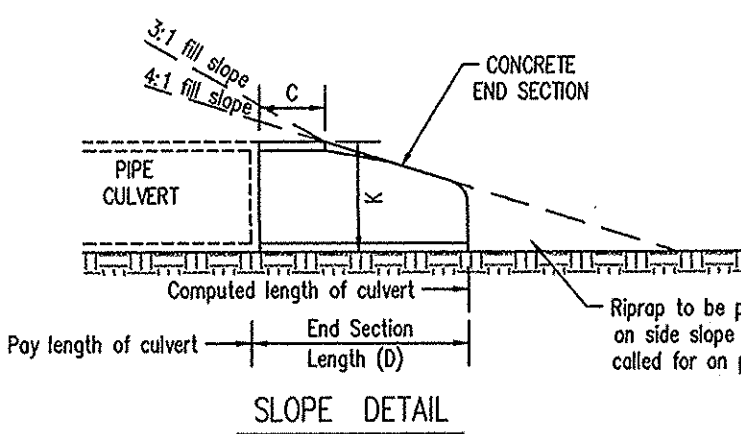
REGISTERED PROFESSIONAL ENGINEERS  
LANDSCAPE ARCHITECTURE  
LAND PLANNING  
TRANSPORTATION ENGINEERS  
GIS

STORM SEWER PLAN AND PROFILE DETAILS  
THE RESERVE AT GEIST, PHASE ONE  
MAC'S LANDING, LLC  
P.O. BOX 501128  
INDIANAPOLIS, IN 46250

CERTIFIED BY: [Signature]  
REGISTERED PROFESSIONAL ENGINEER  
PE 10000126  
STATE OF INDIANA  
DRAWN BY: TAF  
CHECKED BY:  
QUALITY ASSURANCE:  
SCALE: 1" = 10'  
SHEET: C705  
DATE: 11-11-04  
PROJECT NUMBER: 020424-20100



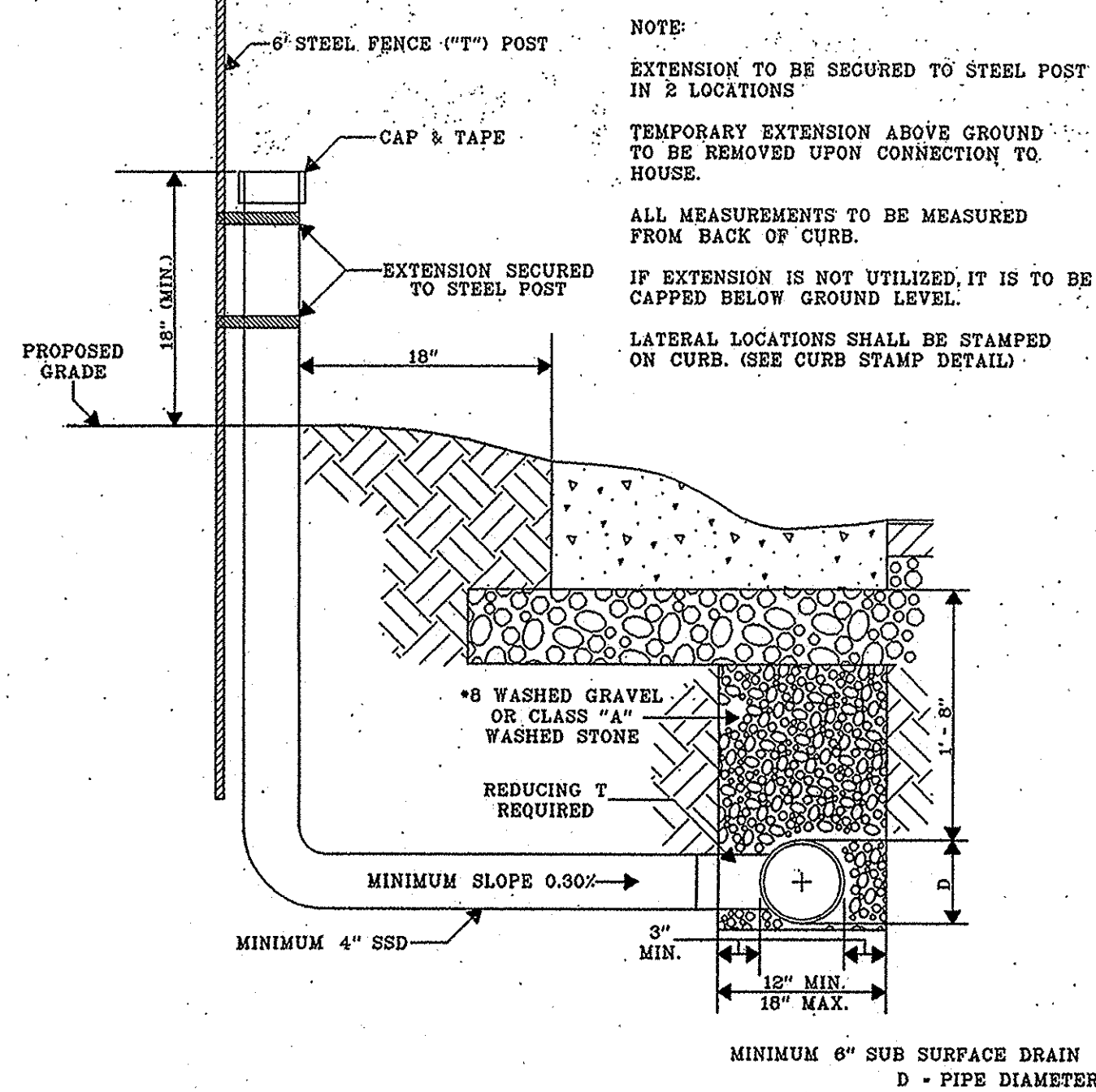
- CONCRETE IN THESE END SECTIONS SHALL BE THE SAME GRADE AND STRENGTH AS SPECIFIED FOR REINFORCED CONCRETE PIPE, ASTM DESIGNATION C 76 CLASS II. (as set out in the Standard Spec's.)
- REINFORCEMENT IN THE "C" PORTION SHALL BE THE SAME AS SPECIFIED FOR REINFORCED CONCRETE, ASTM DESIGNATION C 76, CLASS II FOR THE SIZE OF CONNECTING PIPE.
- REINFORCEMENT IN THE "B" PORTION SHALL HAVE A CROSS-SECTIONAL AREA EQUAL TO THAT OF ONE LAYER OF STEEL IN THE "C" 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 COMPLETELY FILLED WITH MORTAR.
- IN 3:1 OR 4:1 FILL SLOPE, CHANGE TO THE SLOPE OF THE END SECTION IN A SMOOTH, PLEASED TRANSITION APPROXIMATELY 10'-0" IN LENGTH.
- VARIATIONS IN DIMENSIONS - THE THICKNESS OF THE CONCRETE, THE POSITION OF STEEL, AND THE INTERNAL DIAMETER OF THE PIPE SHALL CONFORM WITH THE VARIATIONS IN DIMENSIONS AS PROVIDED IN THE SPECIFICATIONS FOR REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE, ASTM DESIGNATION C 76.
- WHERE VITRIFIED CLAY CULVERT OR CAST IRON CULVERT PIPE IS USED, A "PIPE END SECTION" COMPARABLE TO THAT AS SHOWN FOR METAL OR CONCRETE SHALL BE FURNISHED 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 TOE ANCHORS SHALL BE REQUIRED ON ALL CONCRETE PIPE SECTIONS. THE COST THEREOF SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER EACH FOR "PIPE END SECTIONS."
- DEBRIS GUARDS TO BE INSTALLED ON ALL OPEN ENDED INLETS AND AT ALL POND OUTFALL PIPES.



DIA.	T (min.)	A x	C x	D x	E x	K	R1	R2	Approx. Weight
12"	2"	5"	4'-3"	6'-2"	2'-0"	1.3	13 1/2"	9"	800
14"	2 1/4"	7"	4'-0"	6'-3"	2'-6"	1.5	12 1/2"	11"	1100
18"	2 1/2"	11"	4'-1"	6'-2"	3'-0"	1.8	15 1/2"	12"	1300
21"	2 3/4"	11"	3'-6"	6'-3"	3'-6"	2.1	16 1/8"	13"	1500
24"	3"	1'-0"	2'-8"	6'-3"	4'-0"	2.3	16 3/16"	14"	1800
27"	3 1/4"	1'-1"	2'-5"	6'-3"	4'-6"	2.6	18 9/16"	14 1/2"	2100
30"	3 1/2"	1'-2"	1'-10"	6'-3"	5'-0"	2.9	18 1/2"	15"	2400
33"	3 3/4"	1'-3"	3'-6"	6'-3"	5'-6"	3.1	23 3/4"	17 1/2"	4100
36"	4"	1'-5"	3'-1"	6'-3"	6'-0"	3.4	24 5/16"	20"	4200
42"	4 1/2"	1'-7"	2'-9"	6'-3"	6'-6"	3.9	27 1/4"	22"	5400
48"	5"	2'-0"	2'-2"	6'-3"	7'-0"	4.4	28 1/8"	22"	6600
54"	5 1/2"	2'-0"	2'-0"	6'-3"	7'-6"	4.9	32 7/8"	24"	8000
60"	6"	2'-5"	3'-3"	6'-3"	8'-0"	5.4	36 3/4"	24"	9800

x Tolerance ± 1"

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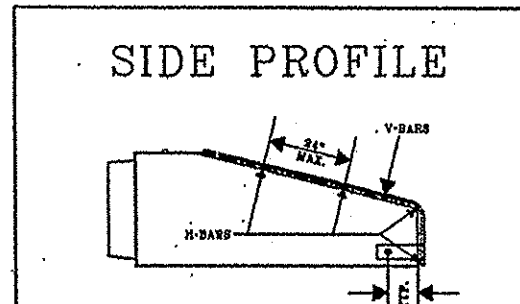
TYPICAL SSD LATERAL TO INDIVIDUAL LOTS ALONG STREETS

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APPROVED: *Kenton C. Ward* 4 JAN 00 DATE STANDARD PLAN SSD-1

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DEBRIS GUARD



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

Apron Size	V-bar Size	No. of H-bars	H-bar Size	Bolt Size	"A" Dim.
12	1/2	3	5/8	1/2	4
15	1/2	3	5/8	1/2	4 1/2
18	1/2	4	5/8	1/2	4 1/2
21	1/2	4	5/8	1/2	5
24	5/8	4	3/4	1/2	5
27	5/8	4	3/4	1/2	5 1/2
30	5/8	4	3/4	1/2	5 1/2
36	3/4	4	1	3/4	8
42	3/4	4	1	3/4	8
48	3/4	5	1	3/4	8
54	3/4	5	1 1/2	3/4	8
60	3/4	5	1 1/2	3/4	8
66	3/4	6	1 1/2	3/4	8
72	3/4	6	1 1/2	3/4	9
84	3/4	7	1 1/2	3/4	10
90	3/4	7	1 1/2	3/4	14

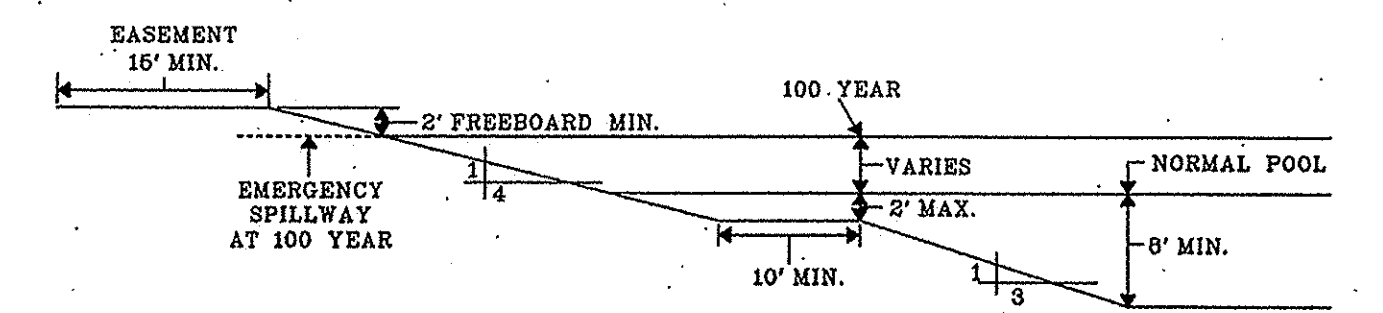
- BARS & PLATES ARE HOT-ROLLED STEEL.
- BARS, PLATES, & PIPE ARE FINISHED WITH 2 COATS OF ALUMINUM PAINT.
- BOLTS ARE GALVANIZED.
- NO REBAR THROUGH PIPES WILL BE ALLOWED.
- DEBRIS GUARD SHALL BE REMOVABLE.

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LAKE CROSS-SECTIONS OPTION 2

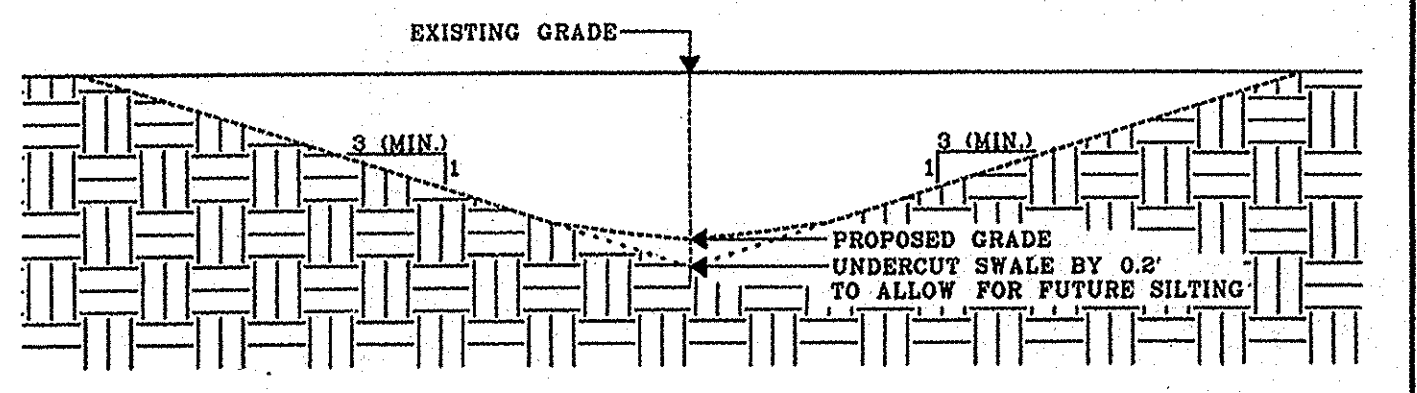


USE OUTLET OPTION 2

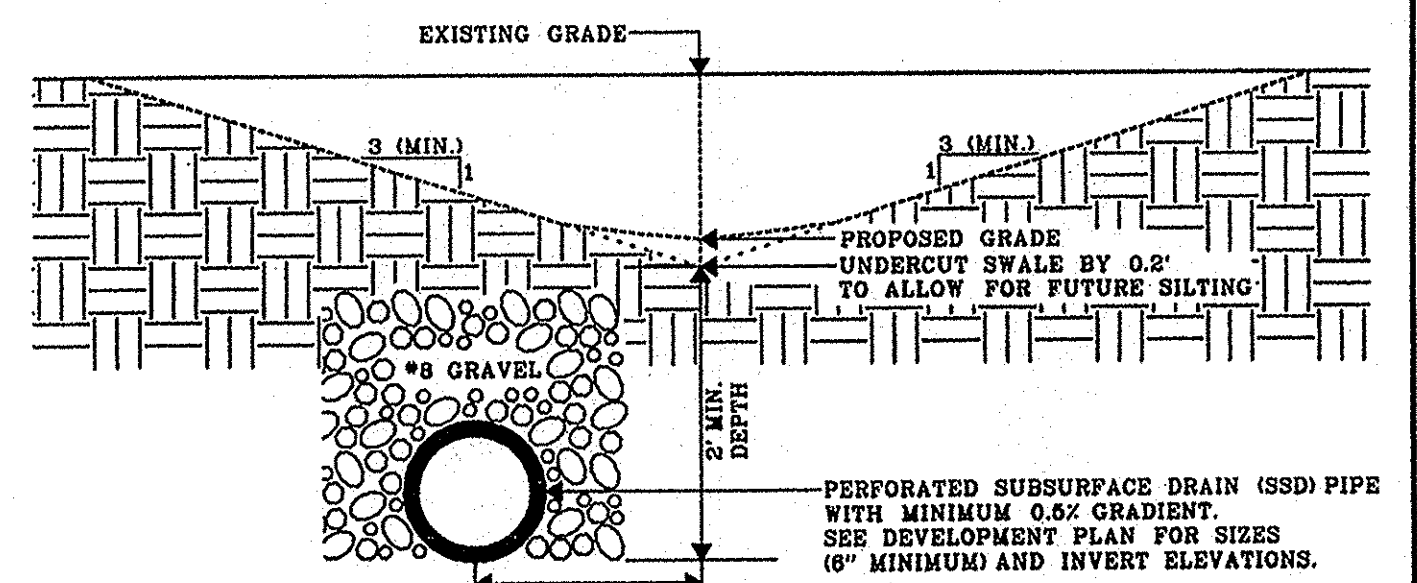
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UNDERDRAINS REQUIRED IN SWALES WITH LESS THAN 1% SLOPE



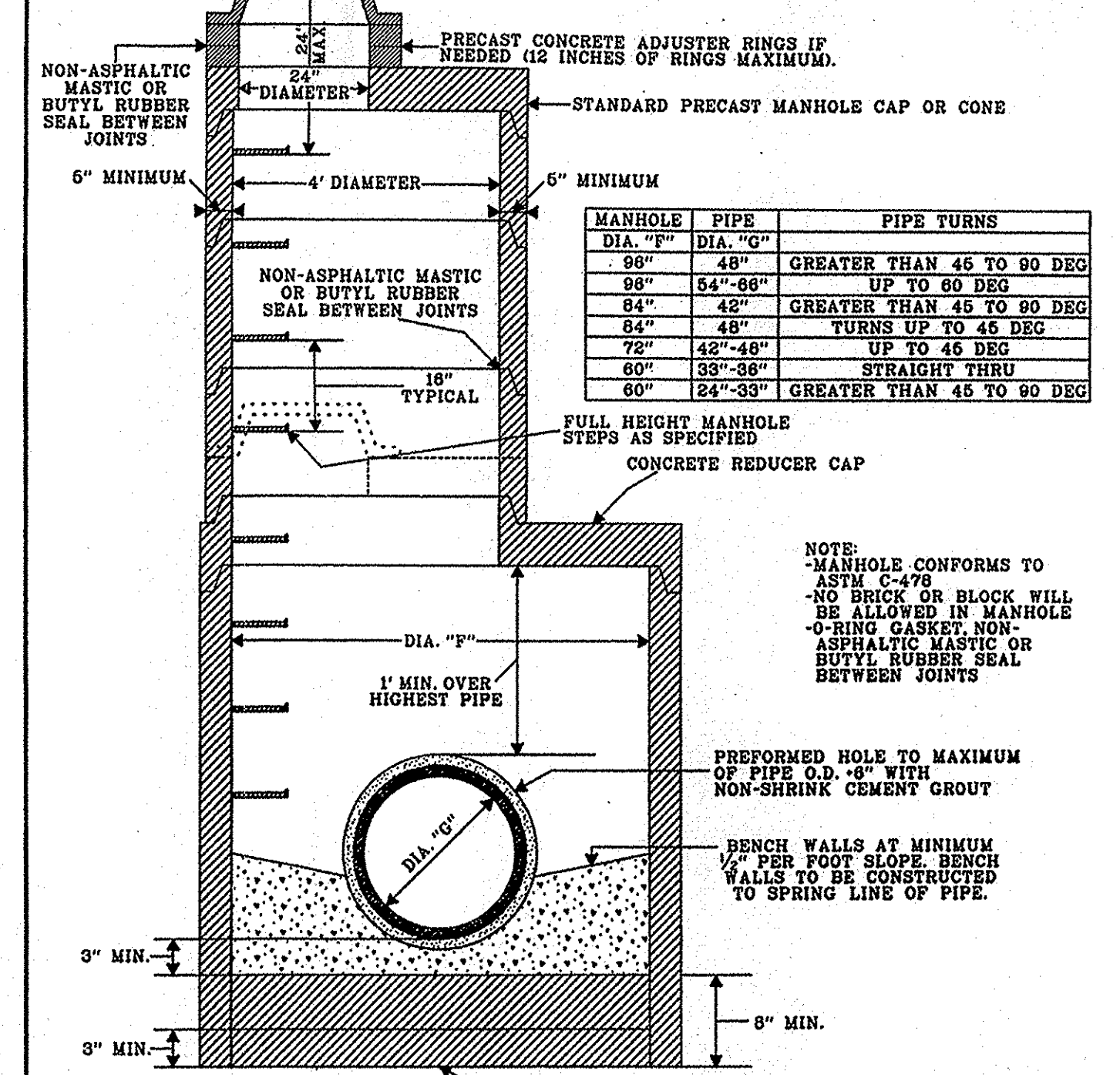
TYPICAL SWALE DETAIL

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STANDARD MANHOLE FOR PIPE SIZES 24" THRU 66"



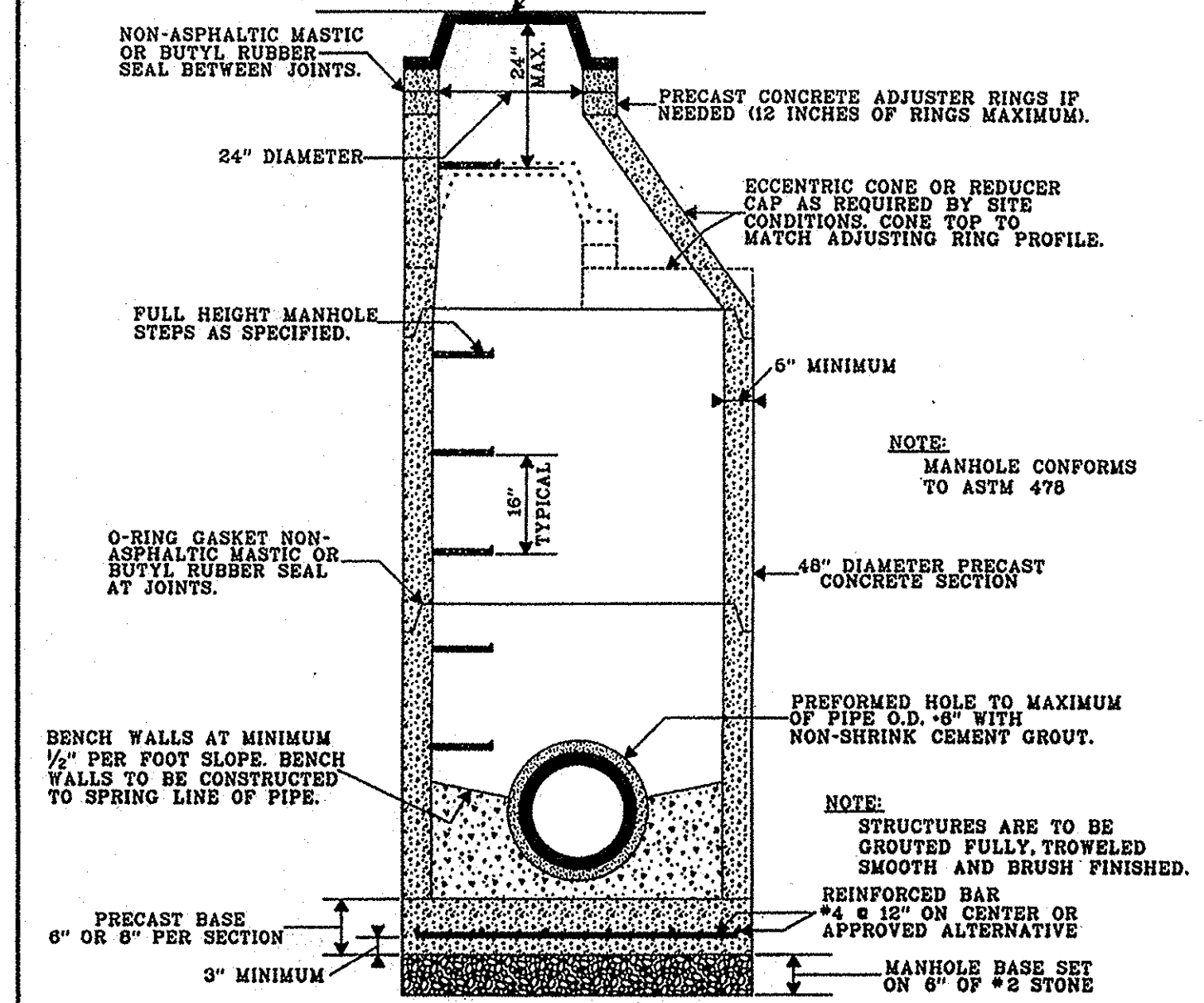
STANDARD MANHOLE FOR PIPE SIZES 24" THRU 66"

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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

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ST-3A PRECAST CONCRETE END SECTION NO SCALE

RECORD DRAWING

ARCHITECTURE  
CIVIL ENGINEERS  
LANDSCAPE ARCHITECTURE  
LAND SURVEYORS  
TRANSPORTATION ENGINEERS  
GIS

7172 GRAHAM ROAD  
INDIANAPOLIS, INDIANA 46250  
(317) 842-6777 FAX (317) 841-4798  
E-Mail: picrpe@picrpe.com

**CRPE**

STORM SEWER PLAN AND PROFILE DETAILS  
THE RESERVE AT GIST, PHASE ONE  
MAC'S LANDING, LLC  
P.O. BOX 501128  
INDIANAPOLIS, IN 46250

DATE: 2/1/02

Checked By: TAF  
Quality Assurance:  
Scale: 1" = 10'  
Sheet: C706  
Date: 11-11-04  
Project Number: 020424-20100