

Drain: SPRINGS OF CAMBRIDGE DRAIN **Drain #:** 262
Improvement/Arm: SPRINGS OF CAMBRIDGE-SECTION 6+6A
Operator: JDH **Date:** 7-2-04
Drain Classification: Urban/Rural **Year Installed:** 1996

GIS Drain Input Checklist

- Pull Source Documents for Scanning JDH
- Digitize & Attribute Tile Drains N/A
- Digitize & Attribute Storm Drains JDH
- Digitize & Attribute SSD JDH
- Digitize & Attribute Open Ditch N/A
- Stamp Plans JDH
- Sum drain lengths & Validate JDH
- Enter Improvements into Posse JDH
- Enter Drain Age into Posse JDH
- Sum drain length for Watershed in Posse JDH
- Check Database entries for errors JDH



SURVEYOR'S OFFICE

Hamilton County

Kenton C. Ward, Surveyor

Suite 146

776-8495

One Hamilton County Square

Noblesville, Indiana 46060-2230

April 18, 1996

To: Hamilton County Drainage Board

Re: Springs of Cambridge Drain, Section 6 & 6A Arm

Attached is a petition, non-enforcement request, plans, calculation, quantity summary and assessment roll for the Springs of Cambridge Section 6 & 6A Arm, Springs of Cambridge Drain. 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-4474 ft	15" RCP-181 ft
12" RCP-351 ft	18" RCP-429 ft

The total length of the drain will be 5435 feet.

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 \$30.00 per lot, \$5.00 per acre for roadways, with a \$30.00 minimum. With this assessment the total annual assessment for this drain/this section will be \$ 1568⁰⁰.

Parcels assessed for this drain may be assessed for the Bee Camp Creek Drain at sometime in the future.

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. This request is for the reduction of the regulated drain easement to those easement widths as shown on the secondary plat for Springs of Cambridge Sections 6 & 6A as recorded in the office of the Hamilton County Recorder.

I recommend the Board set a hearing for this proposed drain for June 1996.



Kenton C. Ward
Hamilton County Surveyor

KCW/ndw



PERFORMANCE BOND NO. 77780

ROCK HILL, NEW YORK 12775-8000
(A Stock Company)

KNOW ALL MEN BY THESE PRESENTS:

That THE MARINA LIMITED PARTNERSHIP

(hereinafter called Principal), as Principal, and the FRONTIER INSURANCE COMPANY, a corporation of the State of New York, with its Executive Office in Rock Hill, New York, (hereinafter called Surety), as Surety, are held and firmly bound unto

HAMILTON COUNTY BOARD OF COMMISSIONERS (hereinafter called Oblige), in the full and just sum of Thirty nine thousand, seven hundred ninety..... Dollars (\$ 39,790.00).

To the payment of which sum, well and truly to be made, the Principal and Surety bind themselves, their and each of their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Signed, sealed and dated this 2ND day of APRIL, 1996 .

WHEREAS, the Principal has entered into a certain written contract, dated the APRIL day of APRIL, A.D. 1996 , with the Oblige for

Storm Sewer Springs of Cambridge Section 6

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, That, if the Principal shall indemnify the Oblige against any and all loss or damage directly arising by reason of the failure of the Principal to faithfully perform said contract, then this obligation shall be void; otherwise to remain in full force and effect.

This bond is executed and accepted upon the following express conditions precedent:

1. That the Oblige shall faithfully and punctually perform all the terms and conditions of said contract to be performed by the Oblige.
2. That if the Principal shall abandon said contract or be lawfully compelled by reason of a default to cease operations thereunder, the Surety shall have the right at its option to complete said contract or to sublet the completion thereof.
3. That the Oblige shall notify the Surety by registered letter, addressed and mailed to it at its Executive Office, of any breach of said contract within a reasonable time after such breach shall have come to the knowledge of the Oblige, or the Architect, or Engineer.
4. That the Surety shall not be liable for any provisions of the contract or specifications respecting guarantees of efficiency or wearing qualities, or for maintenance or repairs, nor is the Surety obligated to furnish any other bond covering such provisions of the contract or specifications.
5. All suits at law or proceedings in equity to recover on this bond must be instituted within twelve months after the completion of said contract, and in any event within twelve months from the date fixed in said contract for its completion.

THE MARINA LIMITED PARTNERSHIP
PRINCIPAL

WITNESS _____

By Allen E. Rosenberg (Seal)
ALLEN E. ROSENBERG
FRONTIER INSURANCE COMPANY ^{THE} GENERAL PARTN

WITNESS Beth Johnson

By Stan Riegel
STAN RIEGEL Attorney-in-fact

FILED

APR 08 1996



PERFORMANCE BOND NO. 77781

FRONTIER INSURANCE COMPANY

ROCK HILL, NEW YORK 12775-8000
(A Stock Company)

KNOW ALL MEN BY THESE PRESENTS:

That THE MARINA LIMITED PARTNERSHIP

(hereinafter called Principal), as Principal, and the FRONTIER INSURANCE COMPANY, a corporation of the State of New York, with its Executive Office in Rock Hill, New York, (hereinafter called Surety), as Surety, are held and firmly bound unto

HAMILTON COUNTY BOARD OF COMMISSIONERS (hereinafter called Oblige), in the full and just sum of Twenty seven thousand dollars ----- Dollars (\$ 27,000.00).

To the payment of which sum, well and truly to be made, the Principal and Surety bind themselves, their and each of their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Signed, sealed and dated this 2ND day of APRIL, 1996 .

WHEREAS, the Principal has entered into a certain written contract, dated the APRIL day of APRIL, A.D. 1996 , with the Oblige for

Sub Surface Springs of Cambridge Section 6

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, That, if the Principal shall indemnify the Oblige against any and all loss or damage directly arising by reason of the failure of the Principal to faithfully perform said contract, then this obligation shall be void; otherwise to remain in full force and effect.

This bond is executed and accepted upon the following express conditions precedent:

1. That the Oblige shall faithfully and punctually perform all the terms and conditions of said contract to be performed by the Oblige.
2. That if the Principal shall abandon said contract or be lawfully compelled by reason of a default to cease operations thereunder, the Surety shall have the right at its option to complete said contract or to sublet the completion thereof.
3. That the Oblige shall notify the Surety by registered letter, addressed and mailed to it at its Executive Office, of any breach of said contract within a reasonable time after such breach shall have come to the knowledge of the Oblige, or the Architect, or Engineer.
4. That the Surety shall not be liable for any provisions of the contract or specifications respecting guarantees of efficiency or wearing qualities, or for maintenance or repairs, nor is the Surety obligated to furnish any other bond covering such provisions of the contract or specifications.
5. All suits at law or proceedings in equity to recover on this bond must be instituted within twelve months after the completion of said contract, and in any event within twelve months from the date fixed in said contract for its completion.

THE MARINA LIMITED PARTNERSHIP
PRINCIPAL

WITNESS _____

By Allen E. Rosenberg (Seal)
ALLEN E. ROSENBERG
FRONTIER INSURANCE COMPANY
Title GENERAL PARTNER

WITNESS Jamblynn A. Fisher

By Stan Riegel
STAN RIEGEL
Attorney-in-fact

FILED

APR 08 1996



PERFORMANCE BOND NO. 77782

ROCK HILL, NEW YORK 12775-8000
(A Stock Company)

KNOW ALL MEN BY THESE PRESENTS:

That THE MARINA LIMITED PARTNERSHIP

(hereinafter called Principal), as Principal, and the FRONTIER INSURANCE COMPANY, a corporation of the State of New York, with its Executive Office in Rock Hill, New York, (hereinafter called Surety), as Surety, are held and firmly bound unto

HAMILTON COUNTY BOARD OF COMMISSIONERS (hereinafter called Obligee), in the full and just sum

of Seven Thousand eight hundred twenty seven dollars----- Dollars (\$ 7,827.00).

To the payment of which sum, well and truly to be made, the Principal and Surety bind themselves, their and each of their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Signed, sealed and dated this 2ND day of APRIL, 1996 .

WHEREAS, the Principal has entered into a certain written contract, dated the APRIL day of

A.D. 1996 , with the Obligee for

Erosion Control Springs of Cambridge Section 6

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, That, if the Principal shall indemnify the Obligee against any and all loss or damage directly arising by reason of the failure of the Principal to faithfully perform said contract, then this obligation shall be void; otherwise to remain in full force and effect.

This bond is executed and accepted upon the following express conditions precedent:

1. That the Obligee shall faithfully and punctually perform all the terms and conditions of said contract to be performed by the Obligee.
2. That if the Principal shall abandon said contract or be lawfully compelled by reason of a default to cease operations thereunder, the Surety shall have the right at its option to complete said contract or to sublet the completion thereof.
3. That the Obligee shall notify the Surety by registered letter, addressed and mailed to it at its Executive Office, of any breach of said contract within a reasonable time after such breach shall have come to the knowledge of the Obligee, or the Architect, or Engineer.
4. That the Surety shall not be liable for any provisions of the contract or specifications respecting guarantees of efficiency or wearing qualities, or for maintenance or repairs, nor is the Surety obligated to furnish any other bond covering such provisions of the contract or specifications.
5. All suits at law or proceedings in equity to recover on this bond must be instituted within twelve months after the completion of said contract, and in any event within twelve months from the date fixed in said contract for its completion.

THE MARINA LIMITED PARTNERSHIP
PRINCIPAL

WITNESS _____

By Allen E. Rosenberg (Seal)
ALLEN E. ROSENBERG
FRONTIER INSURANCE COMPANY
Title GENERAL PARTNER

WITNESS Jamblynn K. Fisher

By Stan Riegel
STAN RIEGEL
Attorney-in-fact

FILED

APR 08 1996

CERTIFICATE OF COMPLETION AND COMPLIANCE

TO: HAMILTON COUNTY SURVEYOR

RE: The Springs of Cambridge, Section 6

I hereby certify that:

- 1.) I am a Registered Land Surveyor 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, and
- 4.) To the best of my knowledge, information and belief, the Drainage Facilities within the subdivision has been installed and completed in conformity with all plans and specifications.

Signature: Joseph A. Sharp Date: 9/8/97

Type or Printed Name: Joseph A. Sharp

Business Address: 7172 Graham Road, Indianapolis, IN 46250

Telephone: 317-842-6777

INDIANA REGISTERED NUMBER
15179

CERTIFICATE OF COMPLETION AND COMPLIANCE

TO: HAMILTON COUNTY SURVEYOR

RE: The Springs of Cambridge, Section 6A

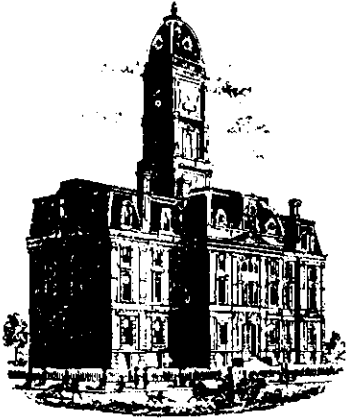
I hereby certify that:

- 1.) I am a Registered Land Surveyor 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, and
- 4.) To the best of my knowledge, information and belief, the Drainage Facilities within the subdivision has been installed and completed in conformity with all plans and specifications.

Signature: Joseph A. Sharp Date: 9/8/97Type or Printed Name: Joseph A. SharpBusiness Address: 7172 Graham Road, Indianapolis, IN 46250Telephone: 317-842-6777

INDIANA REGISTERED NUMBER

15179



SURVEYOR'S OFFICE
Hamilton County

Kenton C. Ward, Surveyor

Phone (317) 776-8495

Fax (317) 776-9628

Suite 146

One Hamilton County Square

Noblesville, Indiana 46060-2230

To: Hamilton County Drainage Board

September 25, 1997

Re: Springs of Cambridge Drain: Sec. 6 & 6A

Attached are as-builts, certificate of completion & compliance, and other information for Springs of Cambridge 6 & 6A. 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 April 18, 1996. The changes are as follows:

12"RCP 367 feet 15"RCP 181 feet 18"RCP 429 feet 6"SSD 4,474 feet

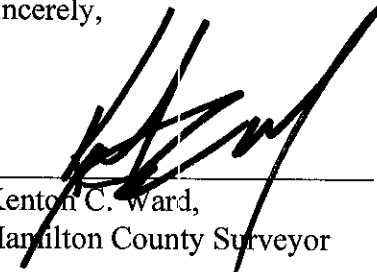
The length of the drain due to the changes described above is now **5,451 feet**.

The non-enforcement was approved by the Board at its meeting on June 10, 1996 and recorded under instrument #9709733316.

The bond or letter of credit from Frontier Insurance Company, number 77780 for storm sewers, 77781 for subsurface, 77782 for erosion control and 77783 for monumentation; in the amount of \$37,790.00, \$27,000.00, \$7,827.00, and \$3,000.00; was released September 8, 1997.

I recommend the Board approve the drains construction as complete and acceptable.

Sincerely,



Kenton C. Ward,
Hamilton County Surveyor

KCW/slm

CONSTRUCTION PLANS FOR THE SPRINGS OF CAMBRIDGE SECTIONS 3 & 3A

SITE WORK GENERAL NOTES AND SPECIFICATIONS

NOTICES AND PERMITS

A. LOCATION & 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.

B. 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.

C. 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.

D. IT SHALL BE THE CONTRACTORS RESPONSIBILITY FOR NOTIFICATION AND COORDINATION OF ALL CONSTRUCTION WITH RESPECTIVE UTILITY COMPANIES.

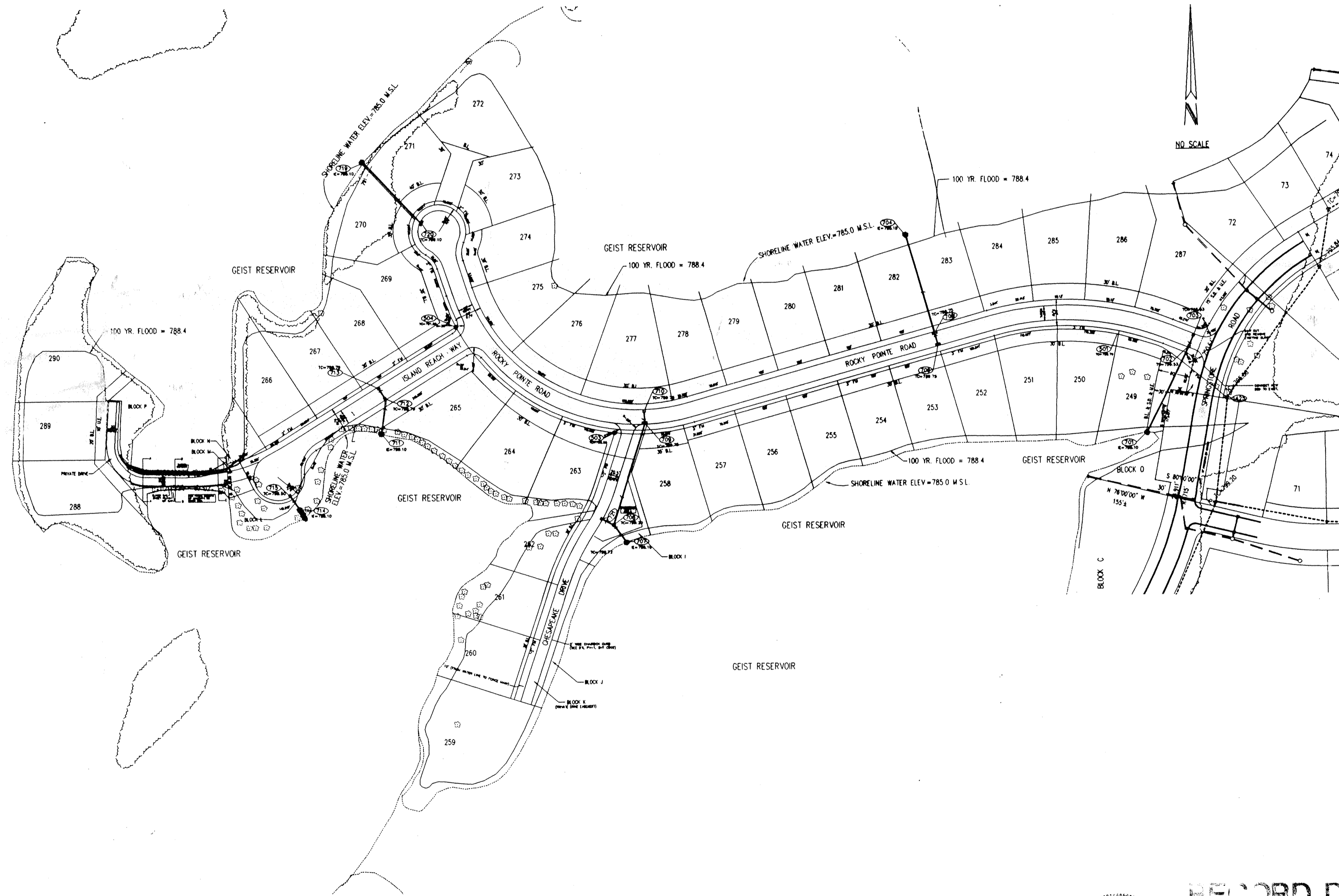
E. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER AND CONTRACTOR TO MAINTAIN QUALITY CONTROL THROUGHOUT THE PROJECT. FAILURE TO DO SO MAY RESULT IN REMOVAL AND REPLACEMENT OF THE DEFECTIVE WORK. IT IS RECOMMENDED THAT THE DEVELOPER HAVE A QUALIFIED INSPECTOR ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.

F. 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.

G. ALL QUANTITIES GIVEN ON THE PRINTS, VERBALLY OR IN THE SCOPE OF WORK SECTION ARE ESTIMATES AND SHALL BE CONFIRMED BY THE BIDDING CONTRACTOR.

H. 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.

I. IN ADDITION, EXCAVATIONS EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRE THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH THE ABOVE STATED REQUIREMENTS.



CONSTRUCTION SITE

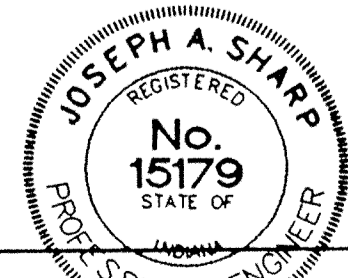
NO SCALE

RECORD DRAWING

AS BUILT

date 9-2-97 Storm Sewers

Joseph A. Sharp



CERTIFIED BY:
Joseph A. Sharp
2-19-96 DATE



PAUL I. CRIFE, INC.
7172 GRAHAM ROAD
INDIANAPOLIS, INDIANA 46250
(317) 842-6777

- CIVIL ENGINEERING
- LAND SURVEYING
- ARCHITECTURE
- LAND PLANNING

TECH. SERVICES OK.
John L. Schellenberger
2-19-96 DATE

DEVELOPED BY
MARINA LIMITED PARTNERSHIP
11691 FALL CREEK ROAD
INDIANAPOLIS, INDIANA 46256

PHONE NO.: 845-0270
FAX NO.: 845-0766

DATE
2-19-96

INDEX	
SHT	DESCRIPTION
CS	COVER SHEET
C201	SITE DEVELOPMENT PLAN
C202	EROSION CONTROL PLAN
C203	EROSION CONTROL PLAN
C204	EROSION CONTROL PLAN
C205	EROSION CONTROL DETAILS & SPECIFICATIONS
C301	STREET PLAN & PROFILE
C302	STREET PLAN & PROFILE
C303	STREET PLAN & PROFILE
C304	TYPICAL PAVEMENT SECTIONS
C305	TRAFFIC CONTROL PLAN
C401	INTERSECTION & CUL-DE-SAC DETAILS
C601	FORCE MAIN PLAN & PROFILE
C602	FORCE MAIN PLAN & PROFILE
C603	FORCE MAIN PLAN & PROFILE
C604	FORCE MAIN PLAN & PROFILE
C701	STORM SEWER PLAN & PROFILE
C702	STORM SEWER PLAN & PROFILE
C801	HAMILTON COUNTY STD. DETAILS
C901	P.I.C. STANDARD DETAILS
C902	STANDARD SPECIFICATIONS

BENCHMARKS	
BM MAR 91	IN MARION COUNTY @ GEIST RESERVOIR, 450' S.E. FROM THE N.W. END OF DIAM. 18" S.W. OF A SEARCH LIGHT, 14' ABOVE THE CEMENT SPILLWAY, 11.5' N.E. FROM STEPS, A STD. IND. FLOOD CONTROL & WATER RESOURCES COMM. BRONZE BENCH MARK TABLET, STAMPED "MAR 91 1956" ELEVATION=798.621
A STANDARD INDIANA FLOOD CONTROL & WATER RESOURCES COMMISSION BRONZE TABLET SET IN THE TOP OF THE SOUTHWEST BRIDGE SEAT OF FLORIDA ROAD OVER FALL CREEK	ELEVATION=793.16
SET A T.B.M. @ TOP OF 5/8" REBAR @ N1706262.265, E252831.513	ELEVATION=789.80

CONTACT PERSON FOR			
	NAME	PHONE NO.	FAX NO.
OWNER	ALEX ROSENBERG	845-0270	845-0766
DEVELOPER	GENE HEWIG	877-5513	877-4198
POWER	PSI ENERGY	800-521-2232	776-5330
GAS CO	INDIANA GAS CO., INC.	800-856-3096	252-5000
TELEPHONE	AMERITECH	AMERITECH	252-5000
DEPT OF PUBLIC WORKS	DRAINAGE BOARD	776-9627	776-9628
WATER CO	INDIANAPOLIS WATER CO	767-9328	263-6448
HIGHWAY DEPT	HAMILTON COUNTY HWY DEPT	773-7770	776-9814
CABLE TV	INSIGHT CABLE	776-0860	773-5438
CO SURVEYOR	KENTON WARD	776-8495	776-9628

DON'T DIG BLIND 1-800-382-5544
CALL TOLL FREE
1-800-428-5200
FOR CALLS OUTSIDE OF INDIANA

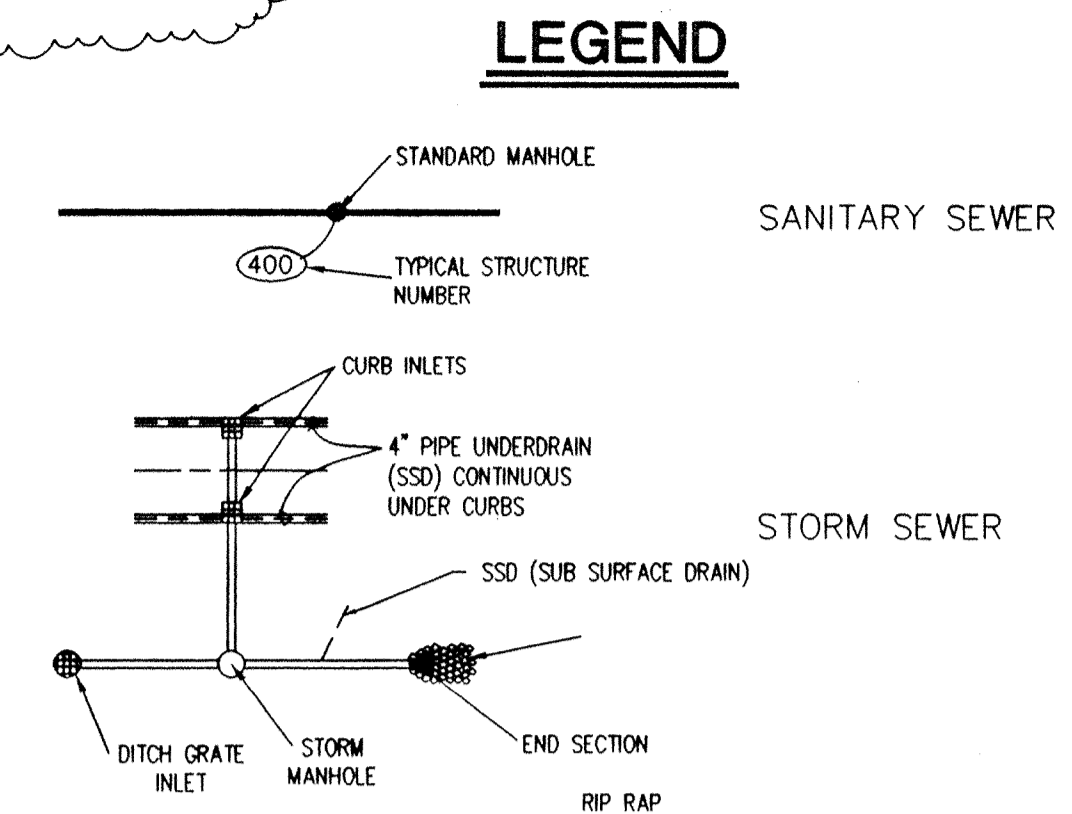
PAUL I. CRIFE TEAM			
	PHONE	FAX	
PROJECT MGR	BRUCE HAGEN	EXT. 881	
PROJECT ENGR	DAVID CLEVELAND	EXT. 873	
PROJECT SURVEYOR	TERRY MILLER	EXT. 834	
PROJECT LAND PLANNER	JIM SCHELLENBERGER	EXT. 882	
CAD TECH.	TOM SCHELLENBERGER	EXT. 822	

SET REVISIONS		
DWG. TYPE	FILE NUMBER	SHEET
		CS
JOB NUMBER		
81100-24000		

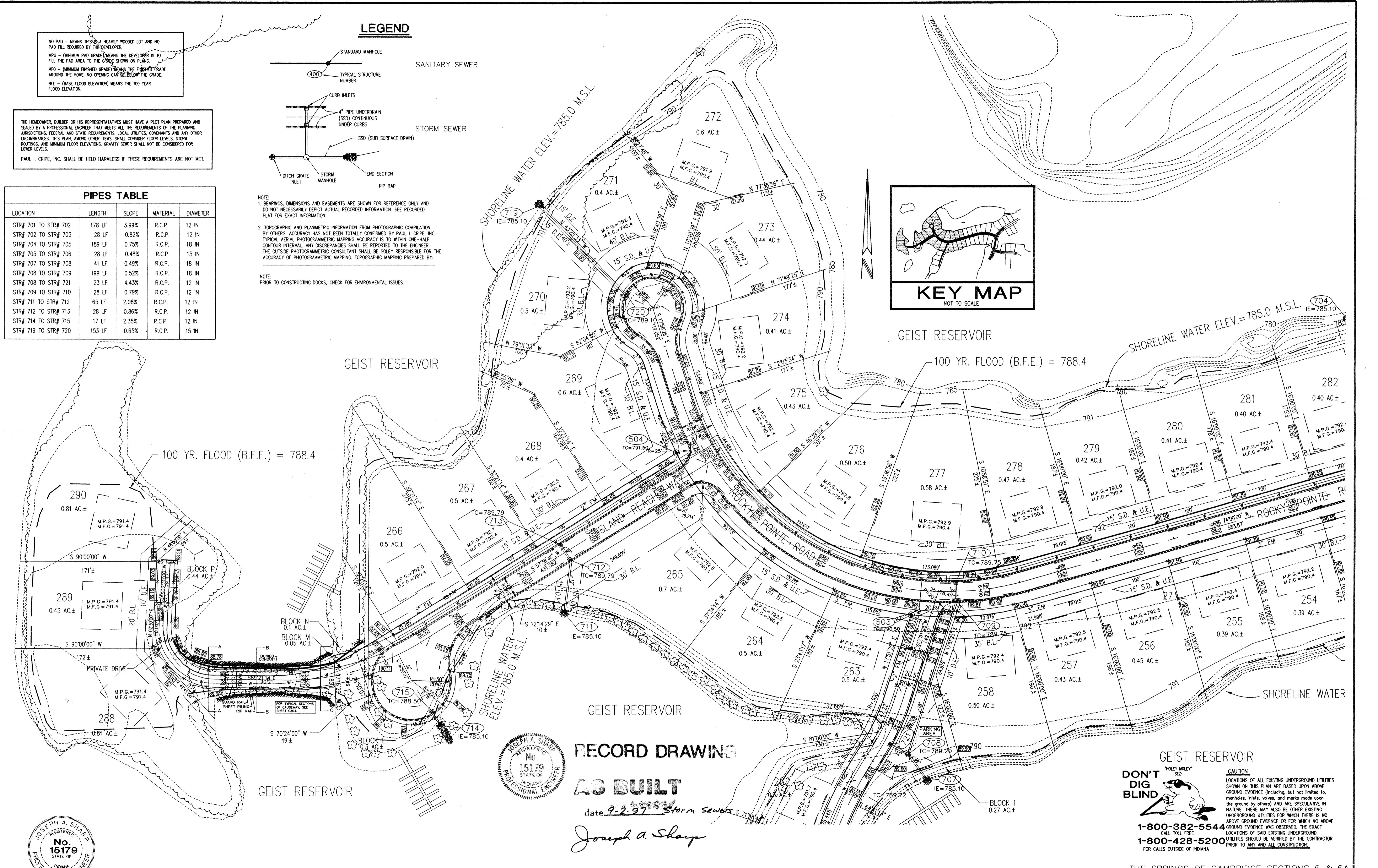
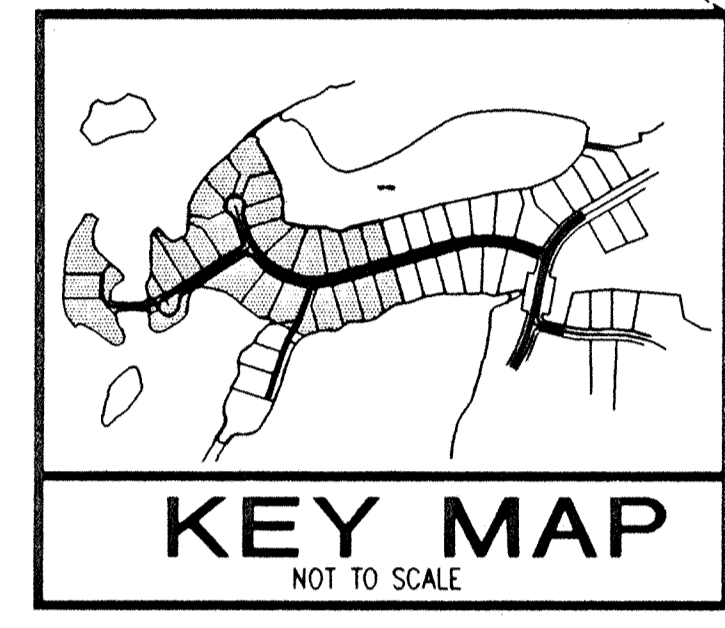
NO PAD - MEANS THIS IS A HEAVILY WOODED LOT AND NO PAD FILL REQUIRED BY THE DEVELOPER.
 M.P.G. - (MINIMUM PAD GRADE) MEANS THE DEVELOPER IS TO FILL THE PAD AREA TO THE GRADE SHOWN ON PLANS.
 M.F.G. - (MINIMUM FINISHED GRADE) MEANS THE FINISHED GRADE AROUND THE HOME. NO OPENING CAN BE BELOW THE GRADE.
 B.F.E. - (BASE FLOOD ELEVATION) MEANS THE 100 YEAR FLOOD ELEVATION.

THE HOMEOWNER, BUILDER OR HIS REPRESENTATIVES MUST HAVE A PLAT PREPARED AND SEALED BY A PROFESSIONAL ENGINEER THAT MEETS ALL THE REQUIREMENTS OF THE PLANNING JURISDICTIONS, FEDERAL AND STATE REQUIREMENTS, LOCAL UTILITIES, COVENANTS AND ANY OTHER ENCUMBRANCES. THIS PLAN, AMONG OTHER ITEMS, SHALL CONSIDER FLOOR LEVELS, STORM ROUTINGS, AND MINIMUM FLOOR ELEVATIONS. GRAVITY SEWER SHALL NOT BE CONSIDERED FOR LOWER LEVELS.
 PAUL I. CRIFE, INC. SHALL BE HELD HARMLESS IF THESE REQUIREMENTS ARE NOT MET.

PIPES TABLE				
LOCATION	LENGTH	SLOPE	MATERIAL	DIAMETER
STR# 701 TO STR# 702	178 LF	3.99%	R.C.P.	12 IN
STR# 702 TO STR# 703	28 LF	0.82%	R.C.P.	12 IN
STR# 704 TO STR# 705	189 LF	0.75%	R.C.P.	18 IN
STR# 705 TO STR# 706	28 LF	0.48%	R.C.P.	15 IN
STR# 707 TO STR# 708	41 LF	0.49%	R.C.P.	18 IN
STR# 708 TO STR# 709	199 LF	0.52%	R.C.P.	18 IN
STR# 708 TO STR# 721	23 LF	4.43%	R.C.P.	12 IN
STR# 709 TO STR# 710	28 LF	0.79%	R.C.P.	12 IN
STR# 711 TO STR# 712	65 LF	2.08%	R.C.P.	12 IN
STR# 712 TO STR# 713	28 LF	0.86%	R.C.P.	12 IN
STR# 714 TO STR# 715	17 LF	2.35%	R.C.P.	12 IN
STR# 719 TO STR# 720	153 LF	0.65%	R.C.P.	15 IN



NOTE:
 1. BEARINGS, DIMENSIONS AND EASEMENTS ARE SHOWN FOR REFERENCE ONLY AND DO NOT NECESSARILY DEPICT ACTUAL RECORDED INFORMATION. SEE RECORDED PLAT FOR EXACT INFORMATION.
 2. TOPOGRAPHIC AND PLANIMETRIC INFORMATION FROM PHOTOGRAPHIC COMPILATION BY OTHERS. ACCURACY HAS NOT BEEN TOTALLY CONFIRMED BY PAUL I. CRIFE, INC. TYPICAL AERIAL PHOTOGRAMMETRIC MAPPING ACCURACY IS TO WITHIN ONE-HALF CONTOUR INTERVAL. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER. THE OUTSIDE PHOTOGRAMMETRIC CONSULTANT SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY OF PHOTOGRAMMETRIC MAPPING. TOPOGRAPHIC MAPPING PREPARED BY:
 NOTE:
 PRIOR TO CONSTRUCTING DOCKS, CHECK FOR ENVIRONMENTAL ISSUES.



RECORD DRAWING
AS BUILT
 date 9-2-97 Storm Sewers S 719-720
 Joseph A. Sharp

CAUTION
DON'T DIG BLIND
 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 LOCATIONS OF SAID EXISTING UNDERGROUND UTILITIES SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY AND ALL CONSTRUCTION.
 1-800-382-5544
 1-800-428-5200
 FOR CALLS OUTSIDE OF INDIANA

CERTIFIED BY:
 Joseph A. Sharp
 5-22-96 DATE

REVISIONS	REVISIONS
05/22/96 REVISED ISLAND REACH WAY CUL-DE-SAC	EPG

PAUL I. CRIFE, INC.: CIVIL ENGINEERING LAND SURVEYING ARCHITECTURE LAND PLANNING
 7172 GRAHAM ROAD INDIANAPOLIS, INDIANA 46250
 (317) 842-6777

DATE: 2-19-96	DRAWING TITLE: SITE DEVELOPMENT PLAN SHEET 1 OF 2	DWG. TYPE	FILE NUMBER	SHEET: C201
SCALE: 1" = 50'		JOB NUMBER	81100-24000	

THE SPRINGS OF CAMBRIDGE SECTIONS 6 & 6A

NO PAD - MEANS THIS IS A HEAVILY WOODED LOT AND NO PAD FILL REQUIRED BY THE DEVELOPER.
 MFG - (MINIMUM PAD GRADE) MEANS THE DEVELOPER IS TO FILL THE PAD AREA TO THE GRADE SHOWN ON PLANS.
 MFG - (MINIMUM FINISHED GRADE) MEANS THE FINISHED GRADE AROUND THE HOME. NO OPENING CAN BE BELOW THE GRADE.
 BFE - (BASE FLOOD ELEVATION) MEANS THE 100 YEAR FLOOD ELEVATION.

THE HOMEOWNER, BUILDER OR HIS REPRESENTATIVES MUST HAVE A PLOT PLAN PREPARED AND SEALED BY A PROFESSIONAL ENGINEER THAT MEETS ALL THE REQUIREMENTS OF THE PLANNING JURISDICTIONS, FEDERAL AND STATE REQUIREMENTS, LOCAL UTILITIES, COVENANTS AND ANY OTHER ENCUMBRANCES. THIS PLAN, AMONG OTHER THINGS, SHALL CONSIDER FLOOR LEVELS, STORM ROUTINGS, AND MINIMUM FLOOR ELEVATIONS. GRAVITY SEWER SHALL NOT BE CONSIDERED FOR LOWER LEVELS.
 PAUL I. CRIFE, INC. SHALL BE HELD HARMLESS IF THESE REQUIREMENTS ARE NOT MET.

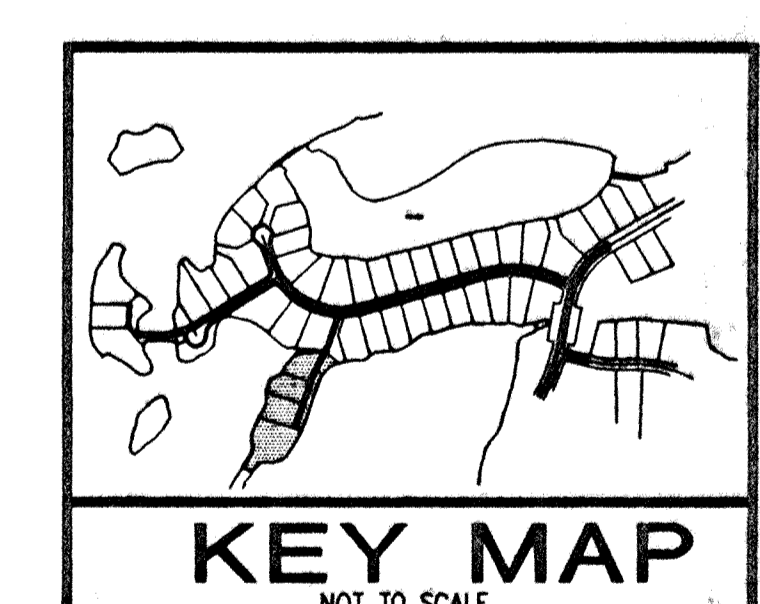
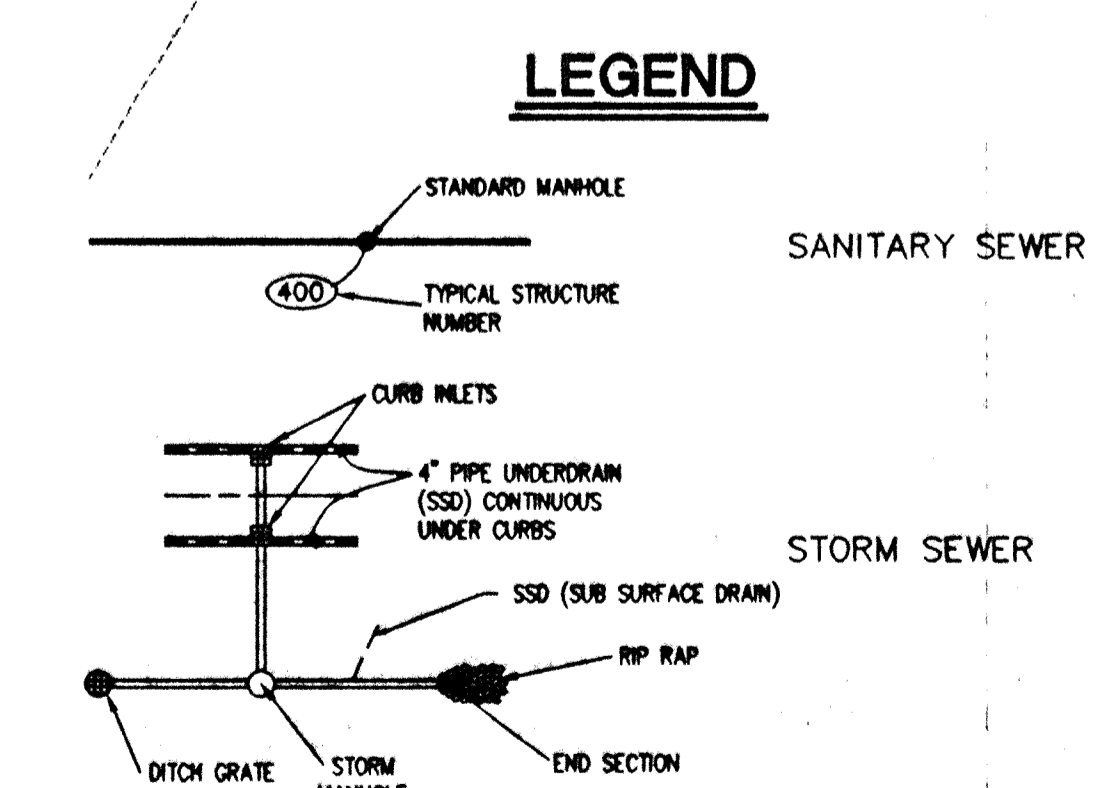
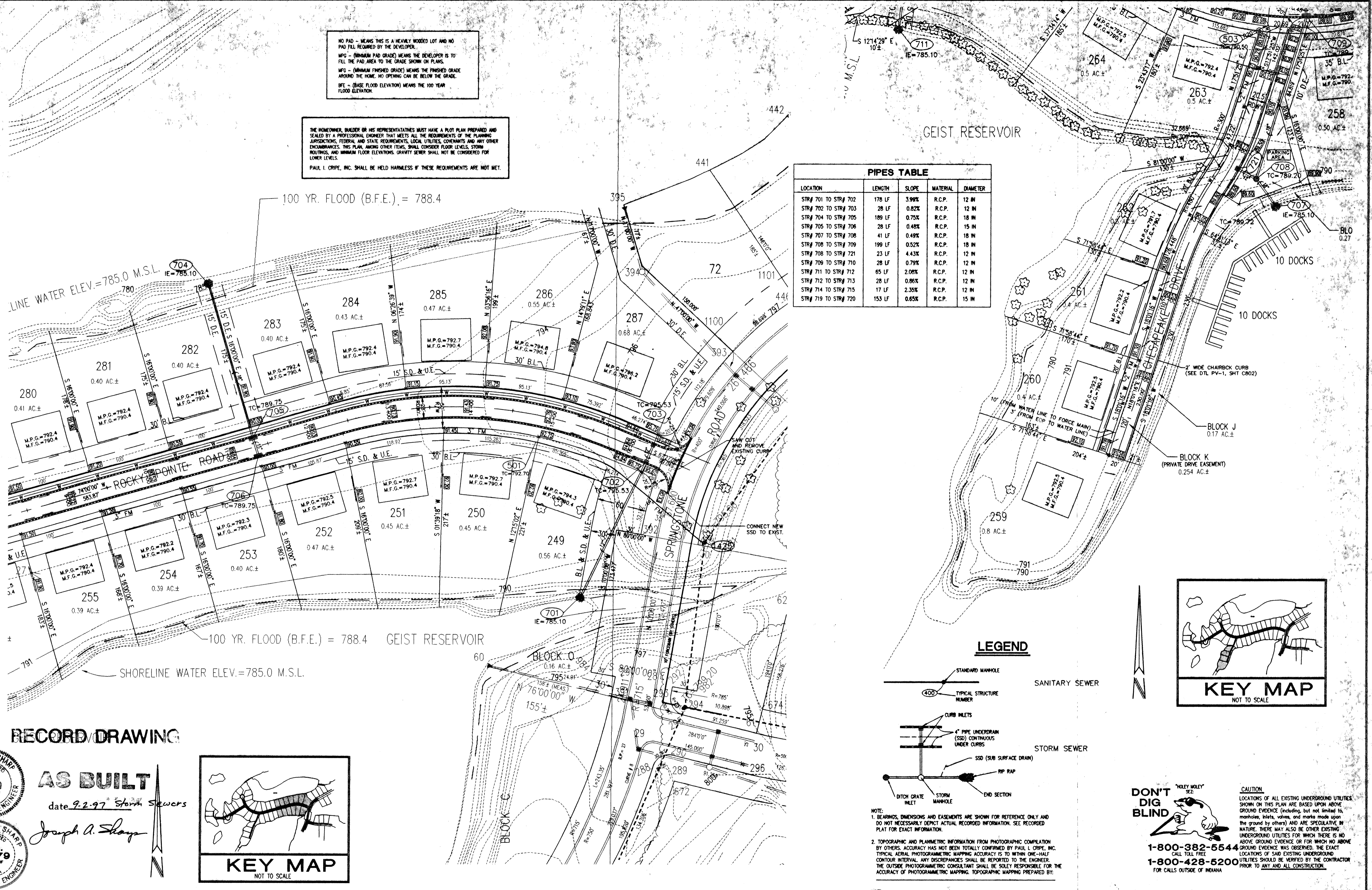
PIPES TABLE				
LOCATION	LENGTH	SLOPE	MATERIAL	DIAMETER
STR# 701 TO STR# 702	178 LF	3.98%	R.C.P.	12 IN
STR# 702 TO STR# 703	28 LF	0.82%	R.C.P.	12 IN
STR# 704 TO STR# 705	189 LF	0.75%	R.C.P.	18 IN
STR# 705 TO STR# 706	28 LF	0.48%	R.C.P.	15 IN
STR# 707 TO STR# 708	41 LF	0.49%	R.C.P.	18 IN
STR# 708 TO STR# 709	199 LF	0.52%	R.C.P.	18 IN
STR# 708 TO STR# 721	23 LF	4.43%	R.C.P.	12 IN
STR# 709 TO STR# 710	28 LF	0.79%	R.C.P.	12 IN
STR# 711 TO STR# 712	65 LF	2.06%	R.C.P.	12 IN
STR# 712 TO STR# 713	28 LF	0.86%	R.C.P.	12 IN
STR# 714 TO STR# 715	17 LF	2.35%	R.C.P.	12 IN
STR# 719 TO STR# 720	153 LF	0.65%	R.C.P.	15 IN

100 YR. FLOOD (B.F.E.) = 788.4

LINE WATER ELEV. = 785.0 M.S.L.
 IE = 785.10

100 YR. FLOOD (B.F.E.) = 788.4
 SHORELINE WATER ELEV. = 785.0 M.S.L.

GEIST RESERVOIR



NOTE:
 1. BEARINGS, DIMENSIONS AND EASEMENTS ARE SHOWN FOR REFERENCE ONLY AND DO NOT NECESSARILY DEPICT ACTUAL RECORDED INFORMATION. SEE RECORDED PLAN FOR EXACT INFORMATION.
 2. TOPOGRAPHIC AND PLANNIMETRIC INFORMATION FROM PHOTOGRAPHIC COMPIATION BY OTHERS. ACCURACY HAS NOT BEEN TOTALLY CONFIRMED BY PAUL I. CRIFE, INC. TYPICAL AERIAL PHOTOGRAMMETRIC MAPPING ACCURACY IS TO WITHIN ONE-HALF CONTOUR INTERVAL. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER. THE OUTSIDE PHOTOGRAMMETRIC CONSULTANT SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY OF PHOTOGRAMMETRIC MAPPING. TOPOGRAPHIC MAPPING PREPARED BY:

DON'T DIG BLIND
 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.
 1-800-382-5544
 CALL TOLL FREE
 1-800-428-5200
 FOR CALLS OUTSIDE OF INDIANA

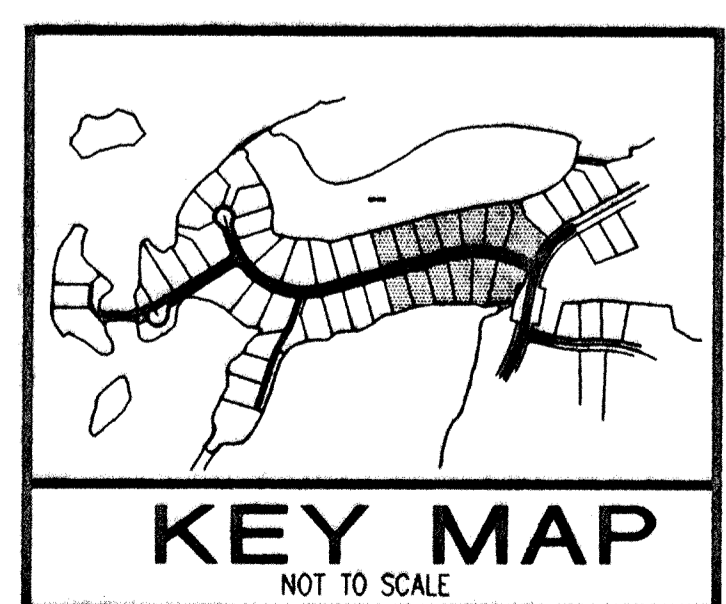
NOTE: PRIOR TO CONSTRUCTING DOCKS, CHECK FOR ENVIRONMENTAL ISSUES.

THE SPRINGS OF CAMBRIDGE SECTIONS 6 & 6A

RECORD DRAWING

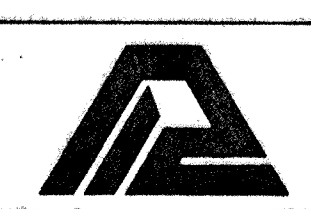
AS BUILT
 date 9-2-97 Storm Sewers

JOSEPH A. SHARP
 REGISTERED
 No. 15179
 STATE OF INDIANA
 PROFESSIONAL ENGINEER



CERTIFIED BY:
 Joseph A. Sharp
 5-22-96 DATE

REVISIONS	REVISIONS
05/22/96 REVISED STR. TABLE #714 TO #715	ETG



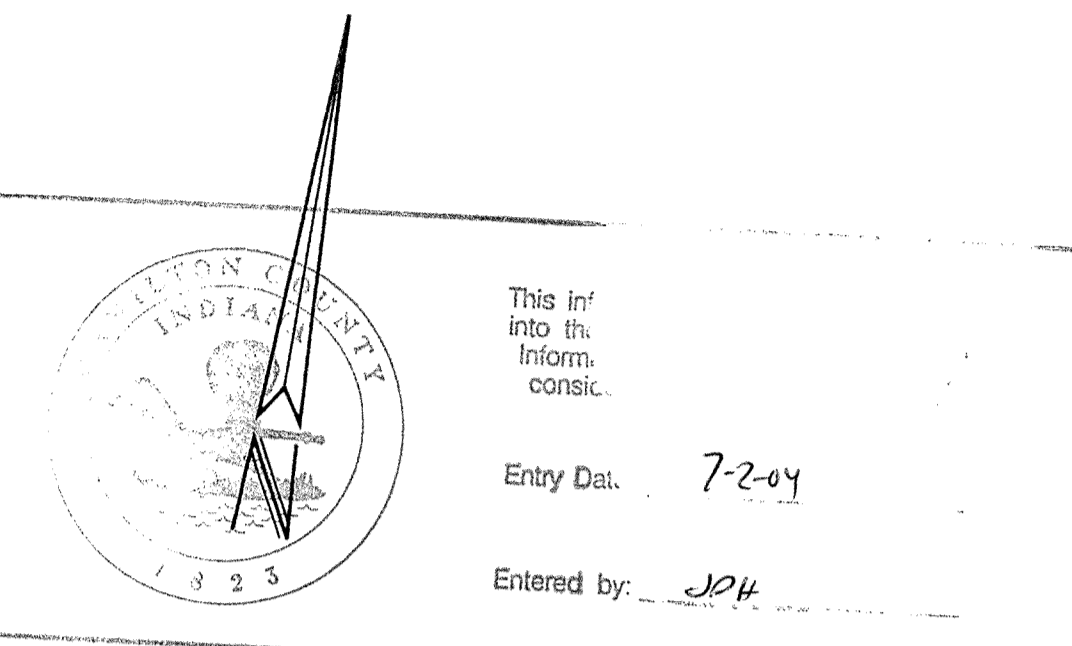
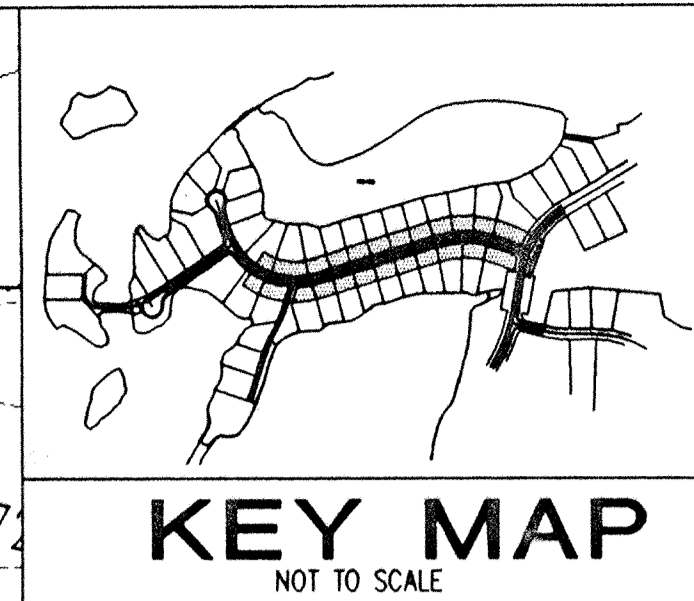
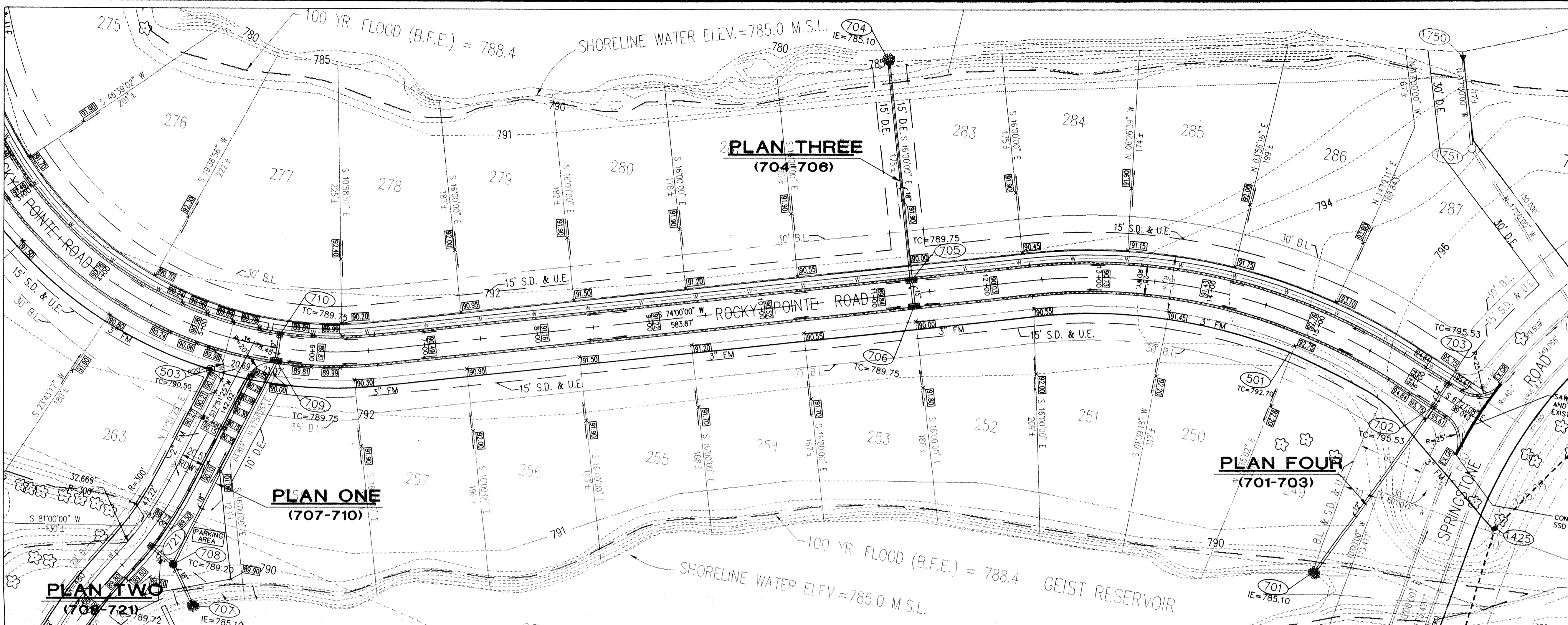
PAUL I. CRIFE, INC.: CIVIL ENGINEERING
 LAND SURVEYING
 ARCHITECTURE
 LAND PLANNING
 7172 GRAHAM ROAD
 INDIANAPOLIS, INDIANA 46250
 (317) 842-6777

TECH SERVICES CHECK:
 DATE:

DATE:
 2-19-96
 SCALE:
 1" = 50'

DRAWING TITLE:
 SITE DEVELOPMENT PLAN
 SHEET 2 OF 2

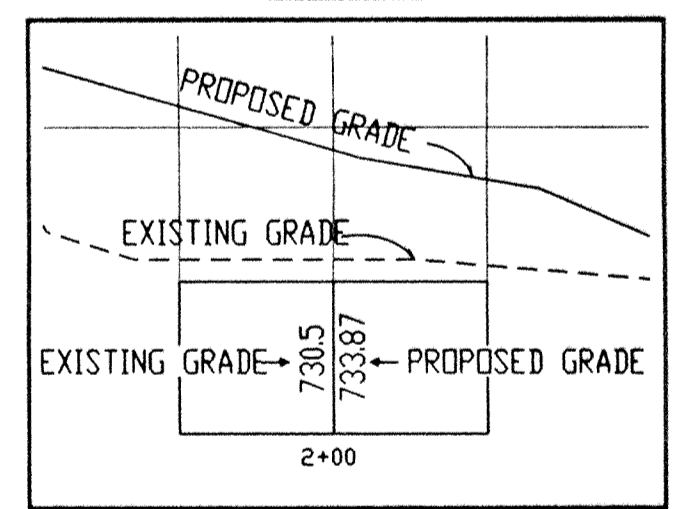
DWG. TYPE	FILE NUMBER	SHEET:
		C202
JOB NUMBER		81100-24000



- PLAN & 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.
 - STORM STRUCTURES WITH INLET CASTINGS SHALL BE SET TO MAINTAIN A POSITIVE DRAINAGE FLOW INTO THE STRUCTURE.
 - STORM PIPE INVERTS AT OUTLET STRUCTURES (IE. END SECTIONS), AND PIPE LENGTHS MAY REQUIRE FIELD ADJUSTMENTS TO MEET FIELD CONDITIONS.

NOTE: PIPE LENGTHS INCLUDE END SECTIONS.

LEGEND



GRANULAR BACKFILL

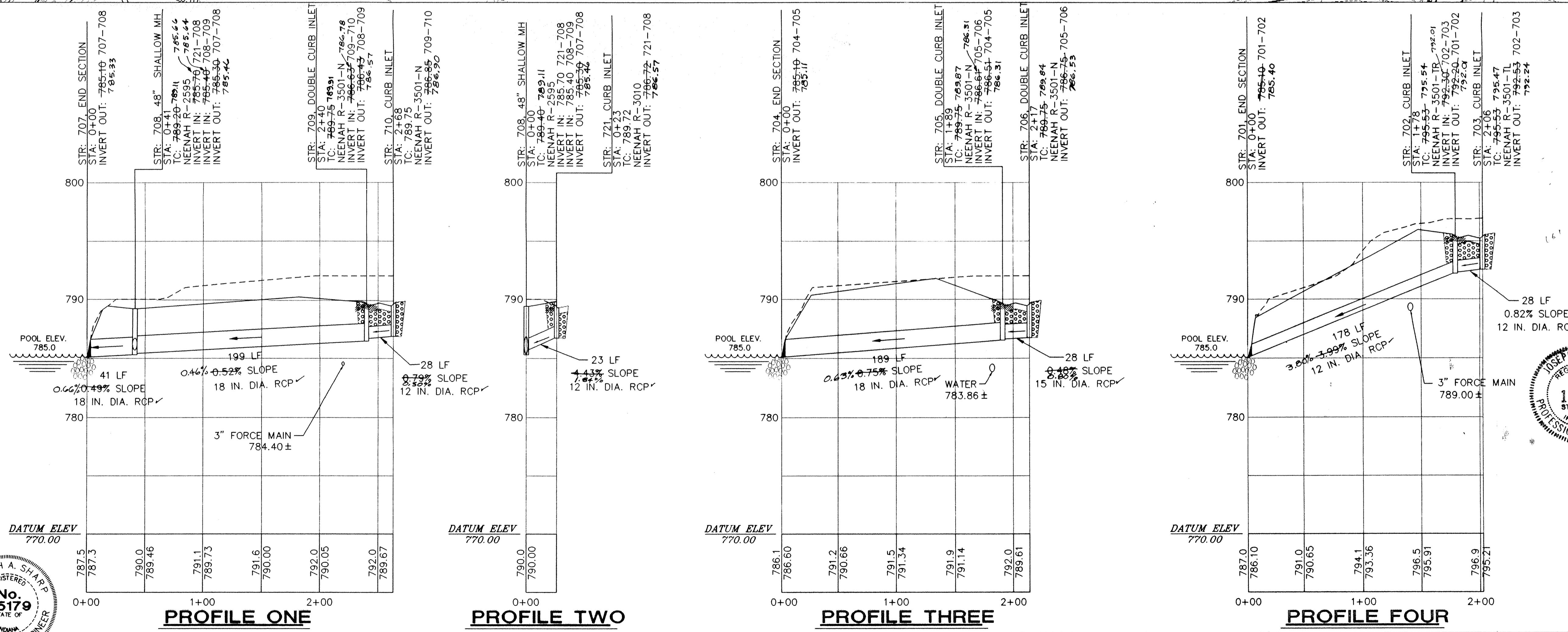
AS BUILT
date 9-2-07 Storm Sewer
Joseph A. Sharpe



DON'T DIG BLIND
CAUTION: LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (including, but not limited to, manholes, vaults, valves, and meter risers) 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.

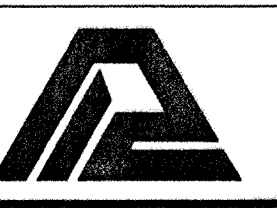
1-800-382-5544
CALL TOLL FREE
1-800-428-6200
FOR CALLS OUTSIDE OF INDIANA

RECORD DRAWING
THE SPRINGS OF CAMBRIDGE SECTIONS 6 & 6A



CERTIFIED
Joseph A. Sharpe
5.30.06

NO.	REVISIONS	DATE



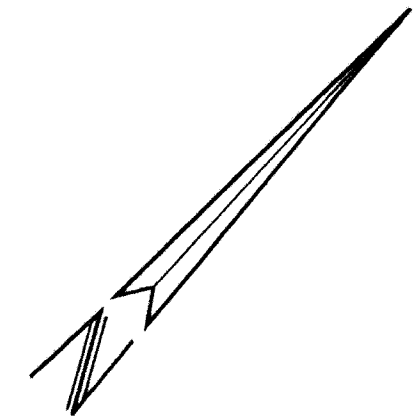
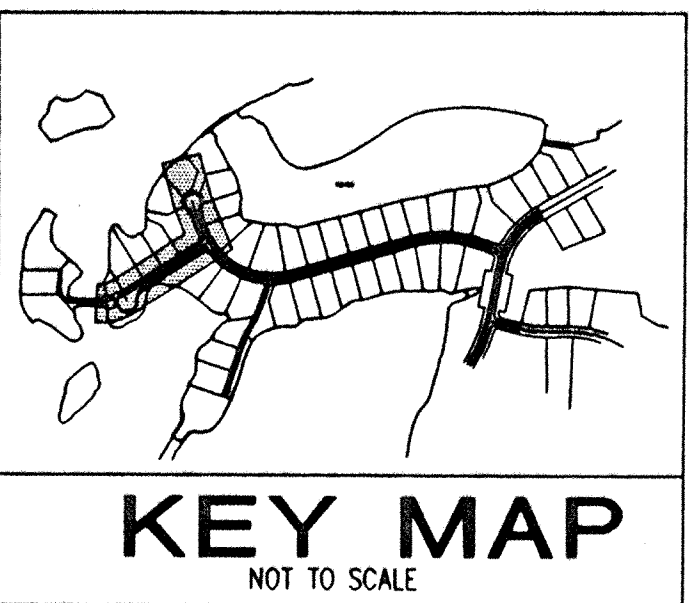
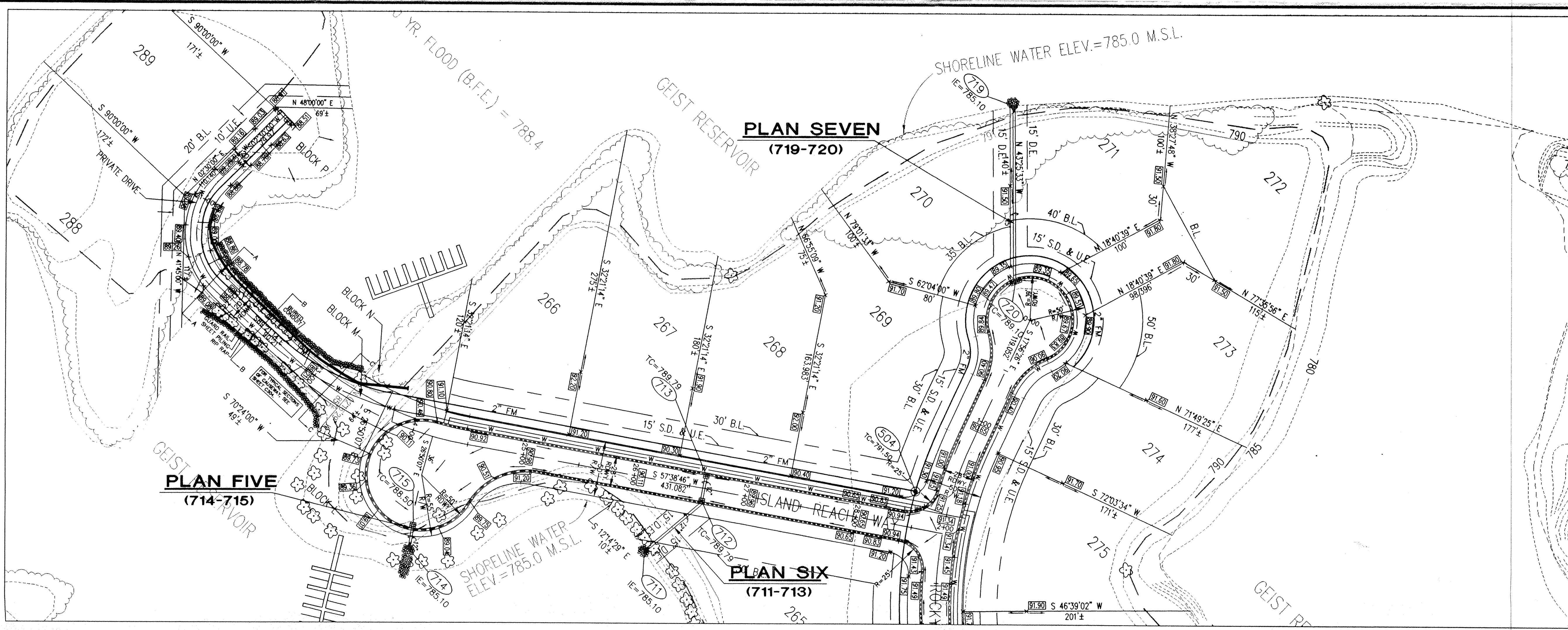
PAUL I. CRIFE, INC.: CIVIL ENGINEERING
LAND SURVEYING
7172 GRAHAM ROAD
INDIANAPOLIS, INDIANA 46250
(317) 842-6777

TECH SERVICES CHECK:
DATE: 2-19-96
SCALE: HORZ. 1"=50'
VERT. 1"=5'

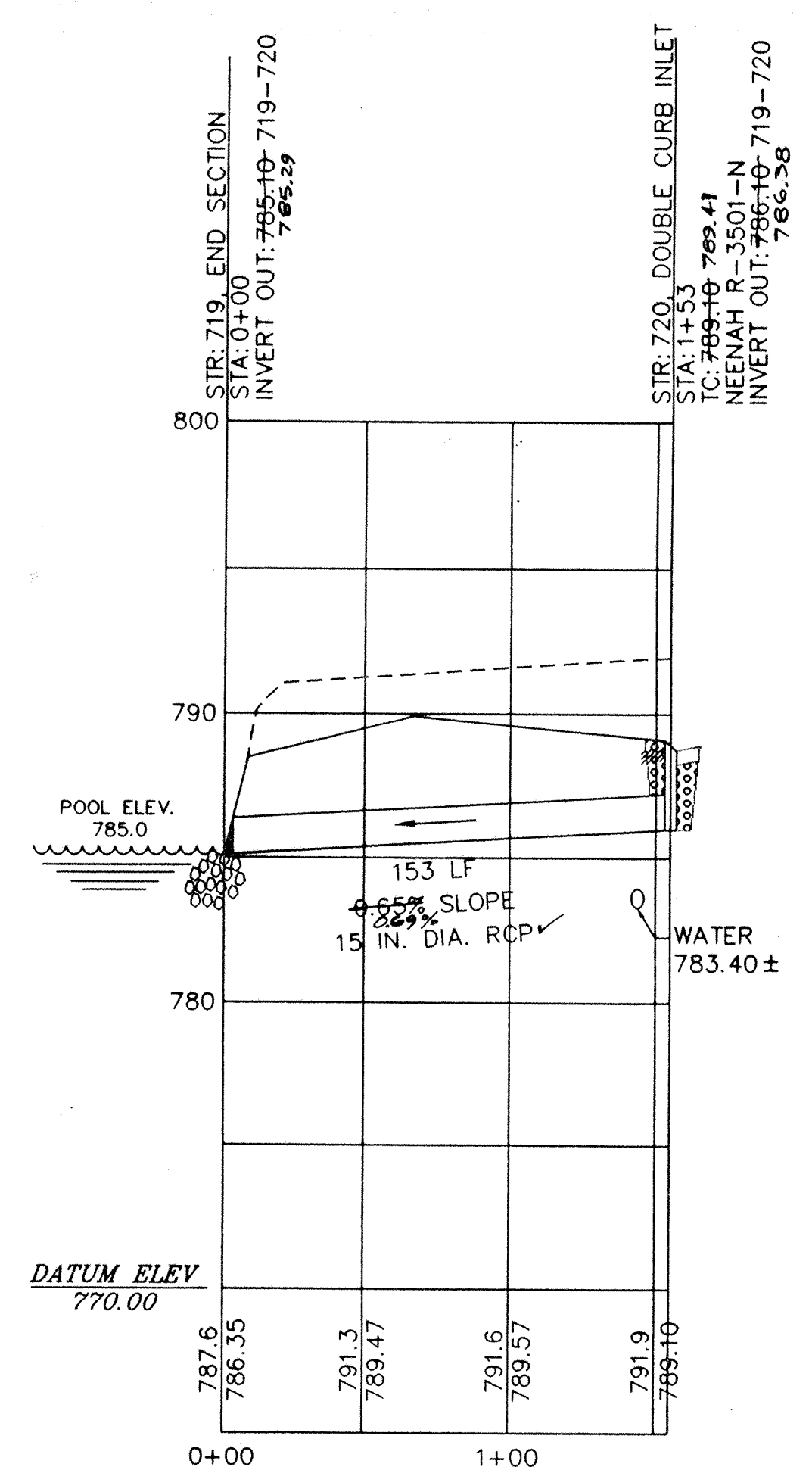
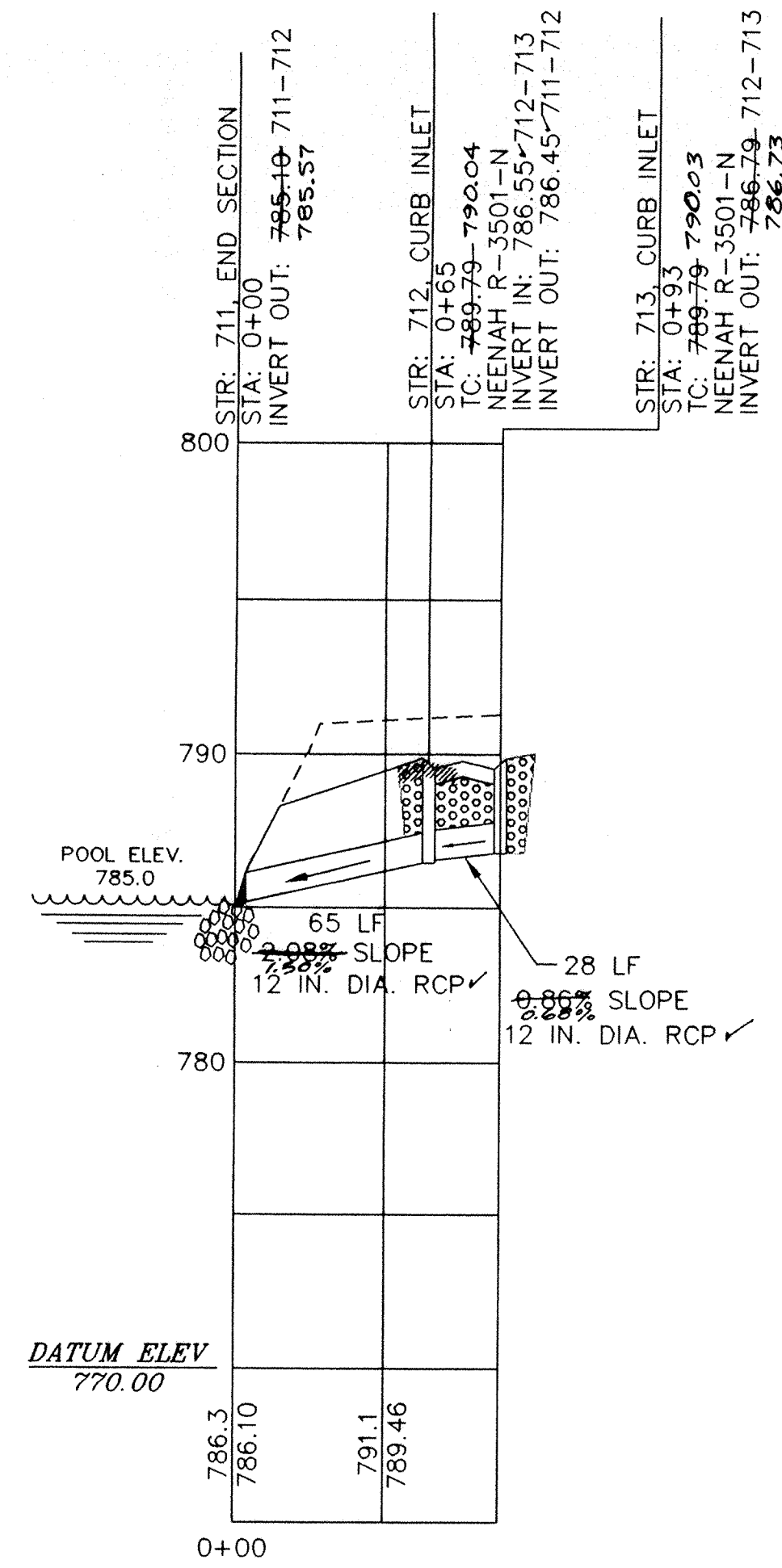
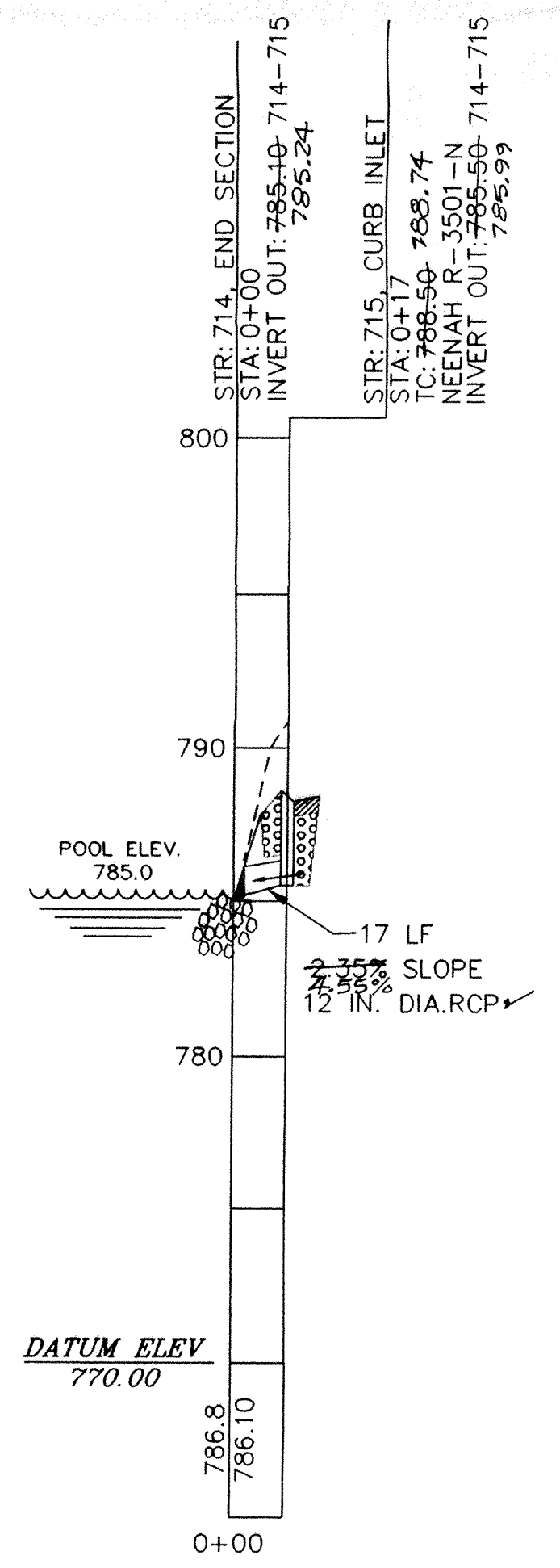
DRAWING TITLE:
STORM SEWER PLAN & PROFILE
SHEET 1 OF 2

DWG. TYPE	FILE NUMBER	SHEET

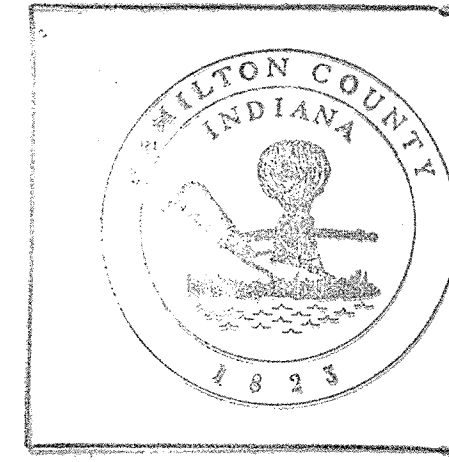
JOB NUMBER: 81100-24000



- PLAN & 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 GROUDED, 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.
 - STORM STRUCTURES WITH INLET CASTINGS SHALL BE SET TO MAINTAIN A POSITIVE DRAINAGE FLOW INTO THE STRUCTURE.
 - STORM PIPE INVERTS AT OUTLET STRUCTURES (IE: END SECTIONS), AND PIPE LENGTHS MAY REQUIRE FIELD ADJUSTMENTS TO MEET FIELD CONDITIONS.

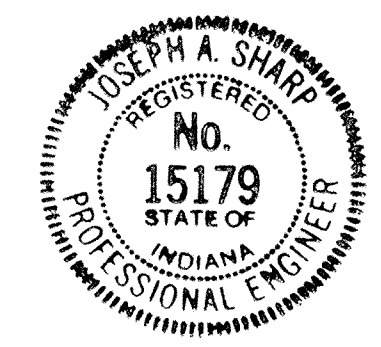
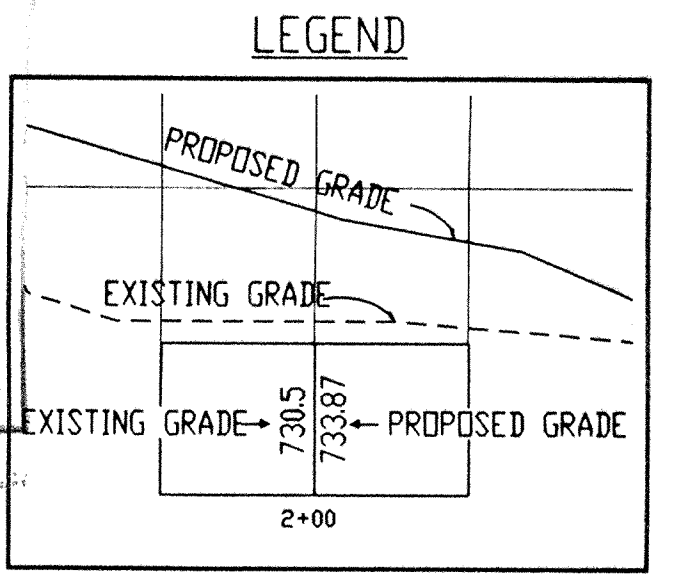


NOTE:
PIPE LENGTHS INCLUDE END SECTIONS.



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: 7-2-04
 Entered by: JDH



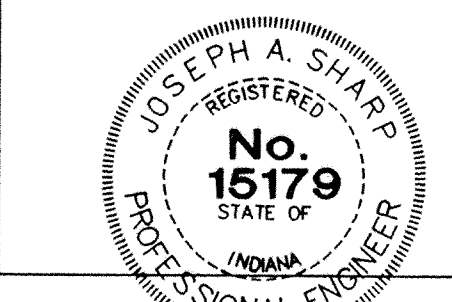
RECORD DRAWING
AS BUILT

date 9.2.97
 Joseph A. Sharp

DON'T DIG BLIND

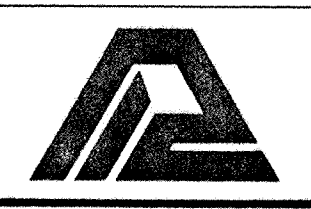
CAUTION
 LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED UPON ABOVE GROUND EVIDENCE (including, but not limited to, manholes, pits, valves, and marks made upon the ground by others) AND ARE SPECULATIVE IN NATURE. THERE MAY ALSO BE OTHER EXISTING UNDERGROUND UTILITIES FOR 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.

1-800-382-5644
 1-800-428-5200
 FOR CALLS OUTSIDE OF INDIANA



CERTIFIED BY
 Joseph A. Sharp
 5.22.96 DATE

REVISIONS	DATE	DESCRIPTION	BY
05/22/96		REVISION TO PROFILE FIVE	EFG



PAUL I. CRIFE, INC.: CIVIL ENGINEERING
 LAND SURVEYING
 ARCHITECTURE
 7172 GRAHAM ROAD
 INDIANAPOLIS, INDIANA 46250
 (317) 849-6777

TECH SERVICES CHECK:
 DATE:
 SCALE:
 HORIZ. 1"=50'
 VERT. 1"=5'

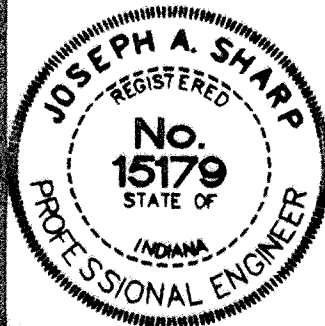
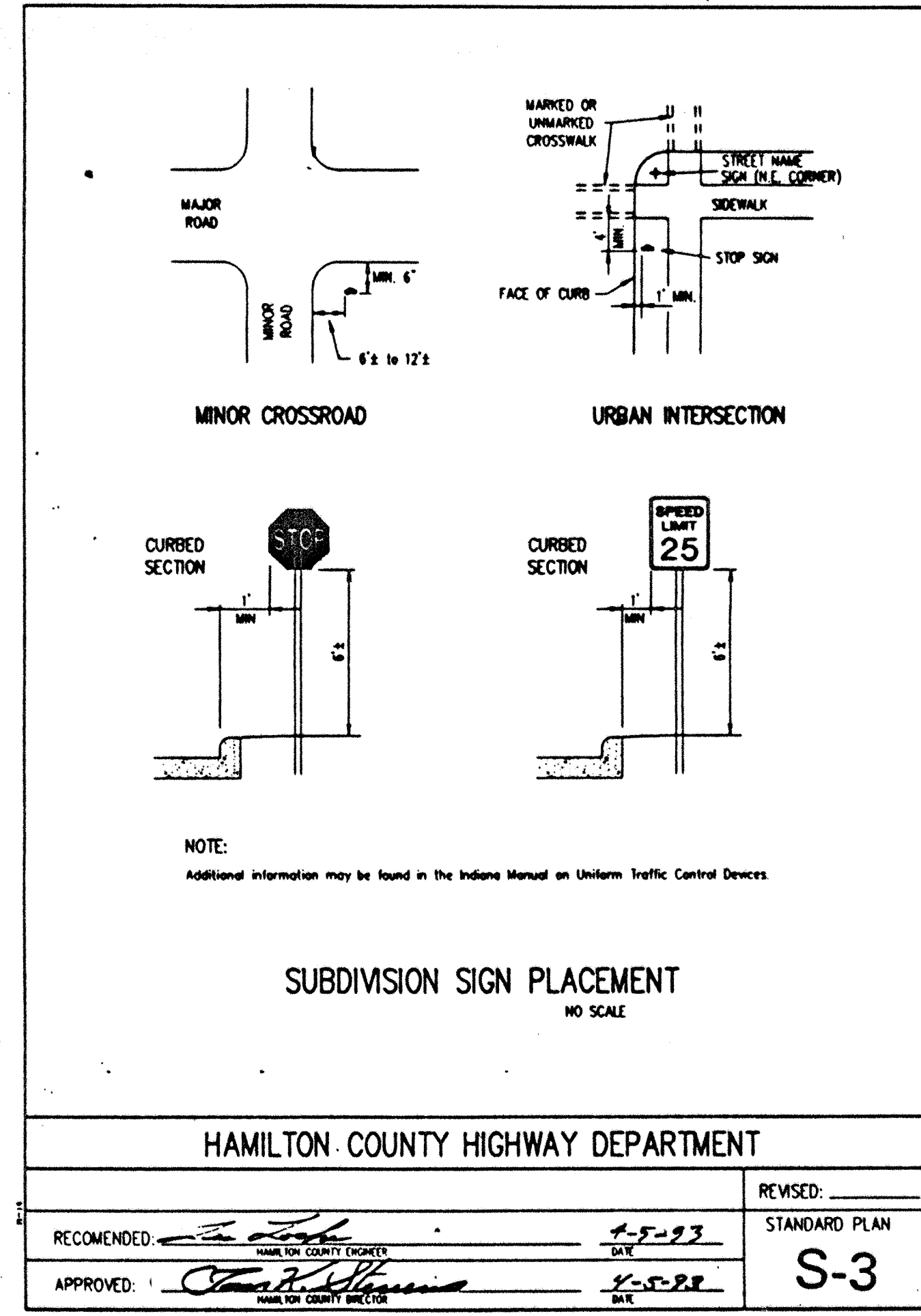
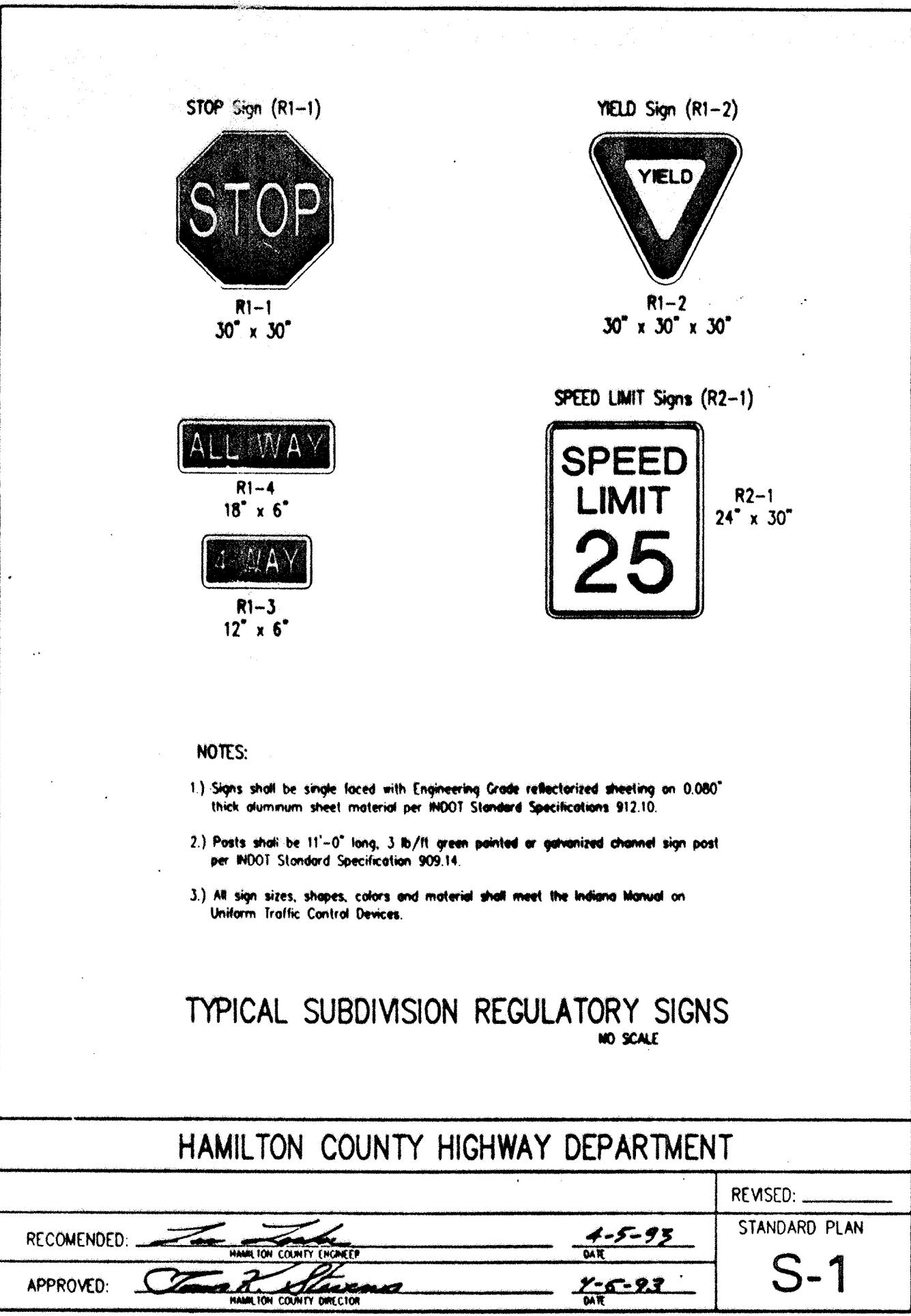
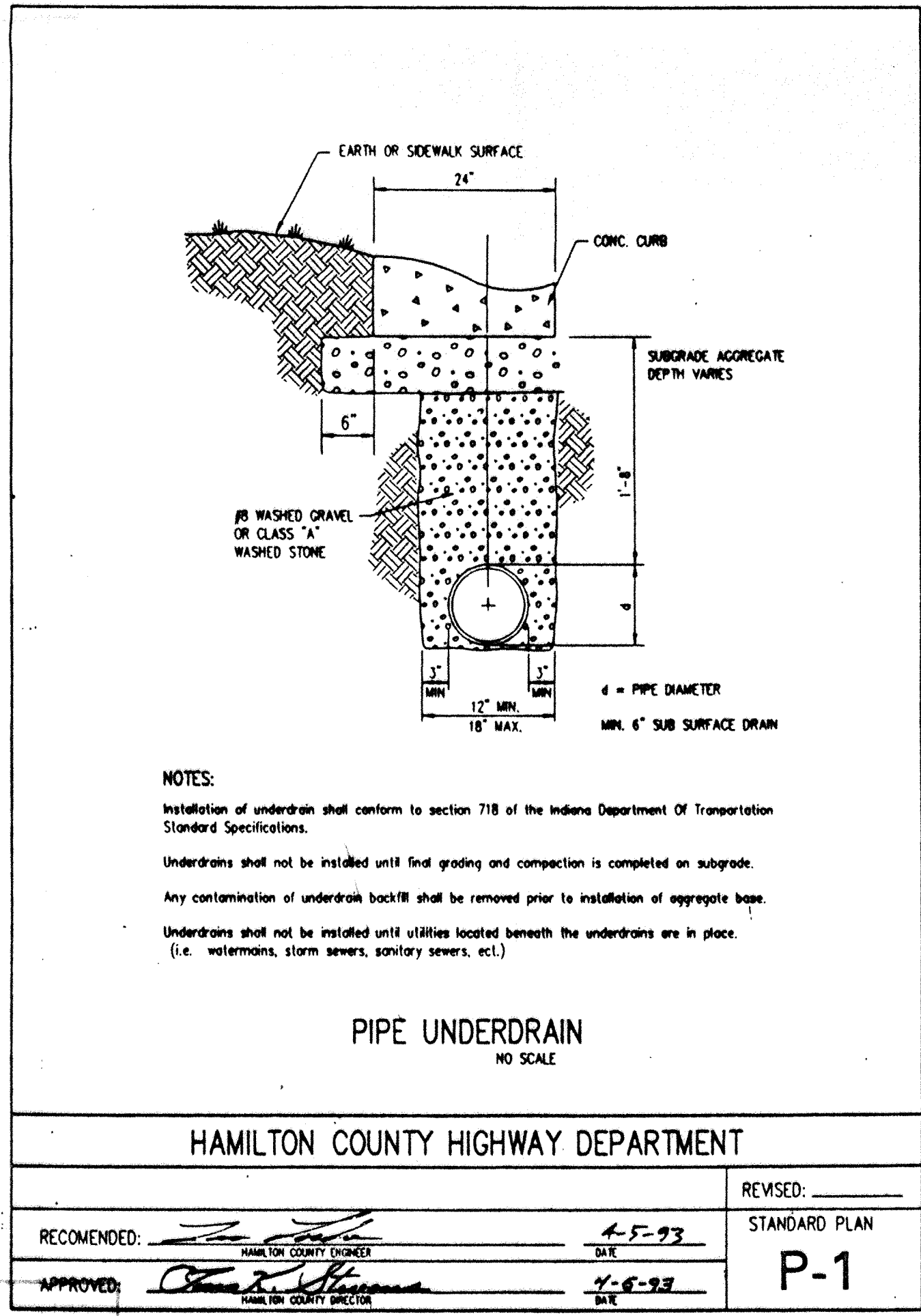
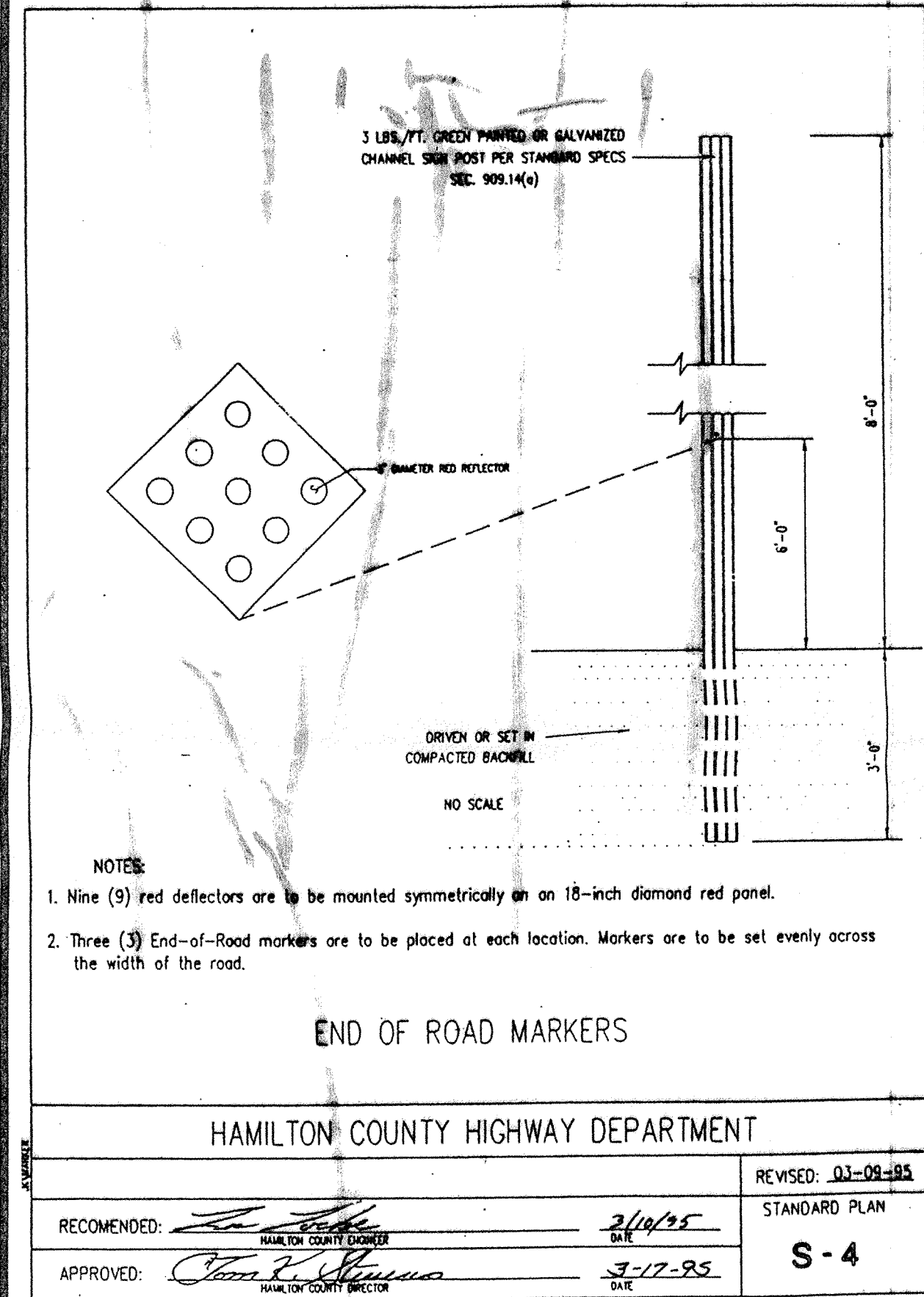
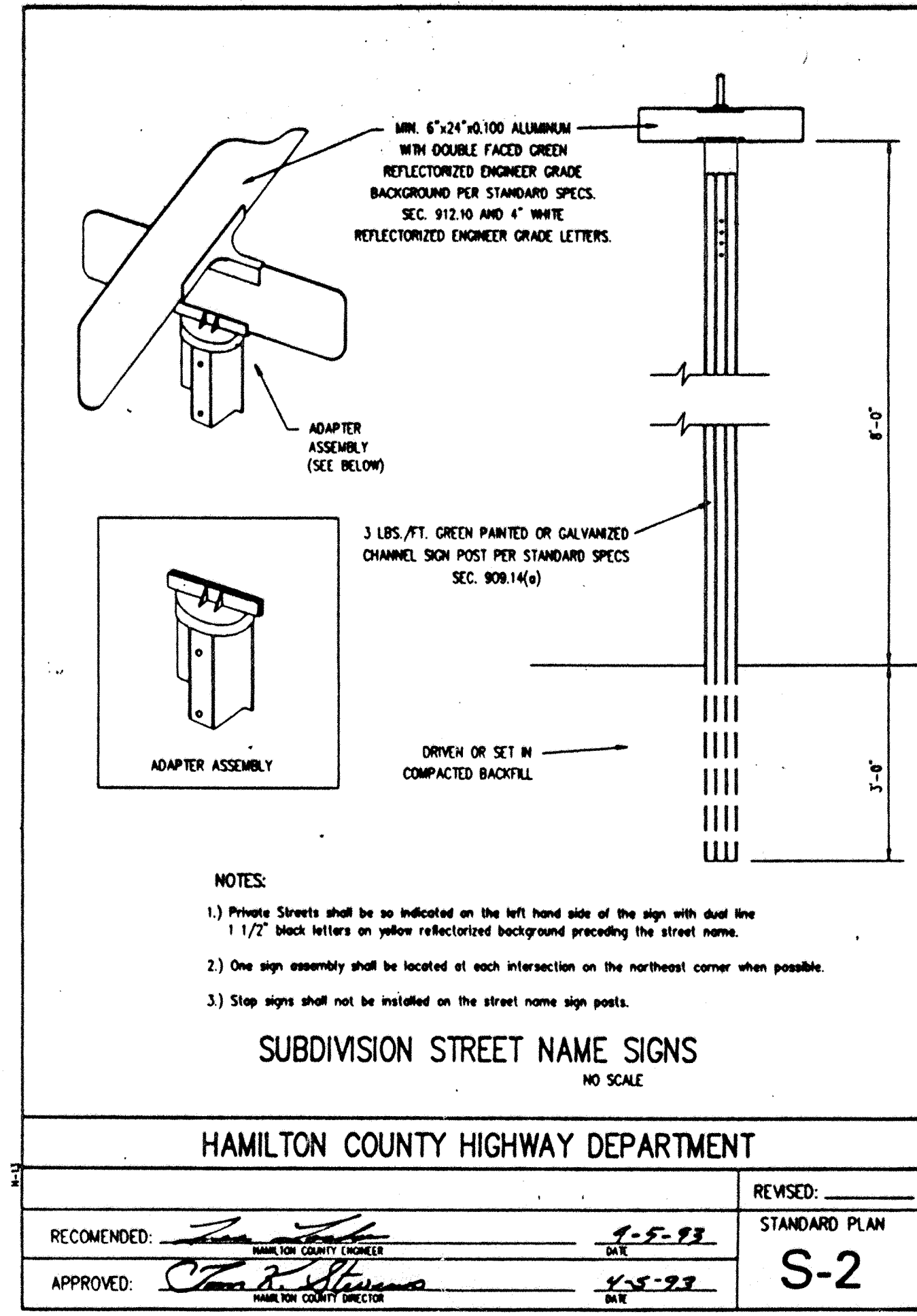
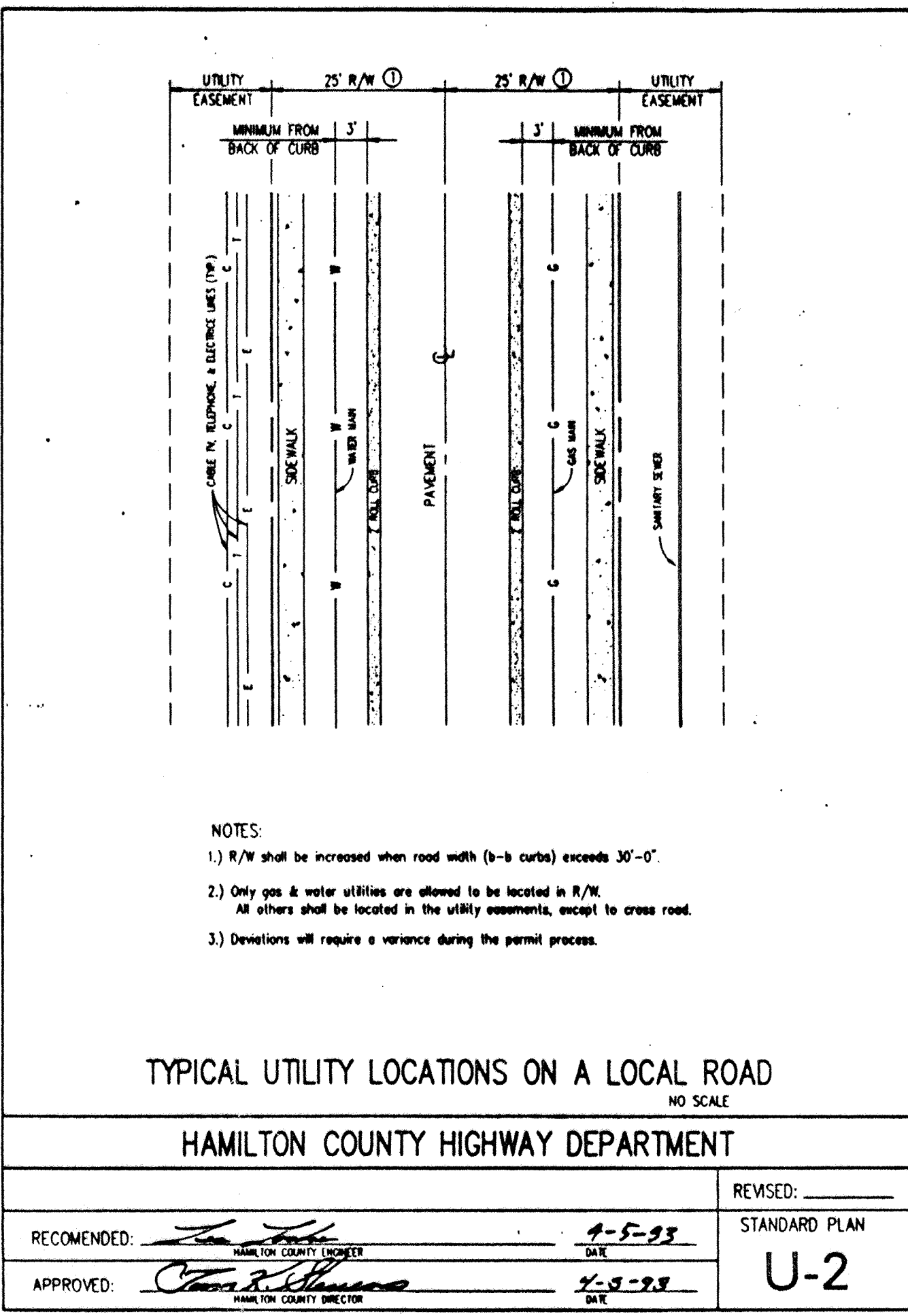
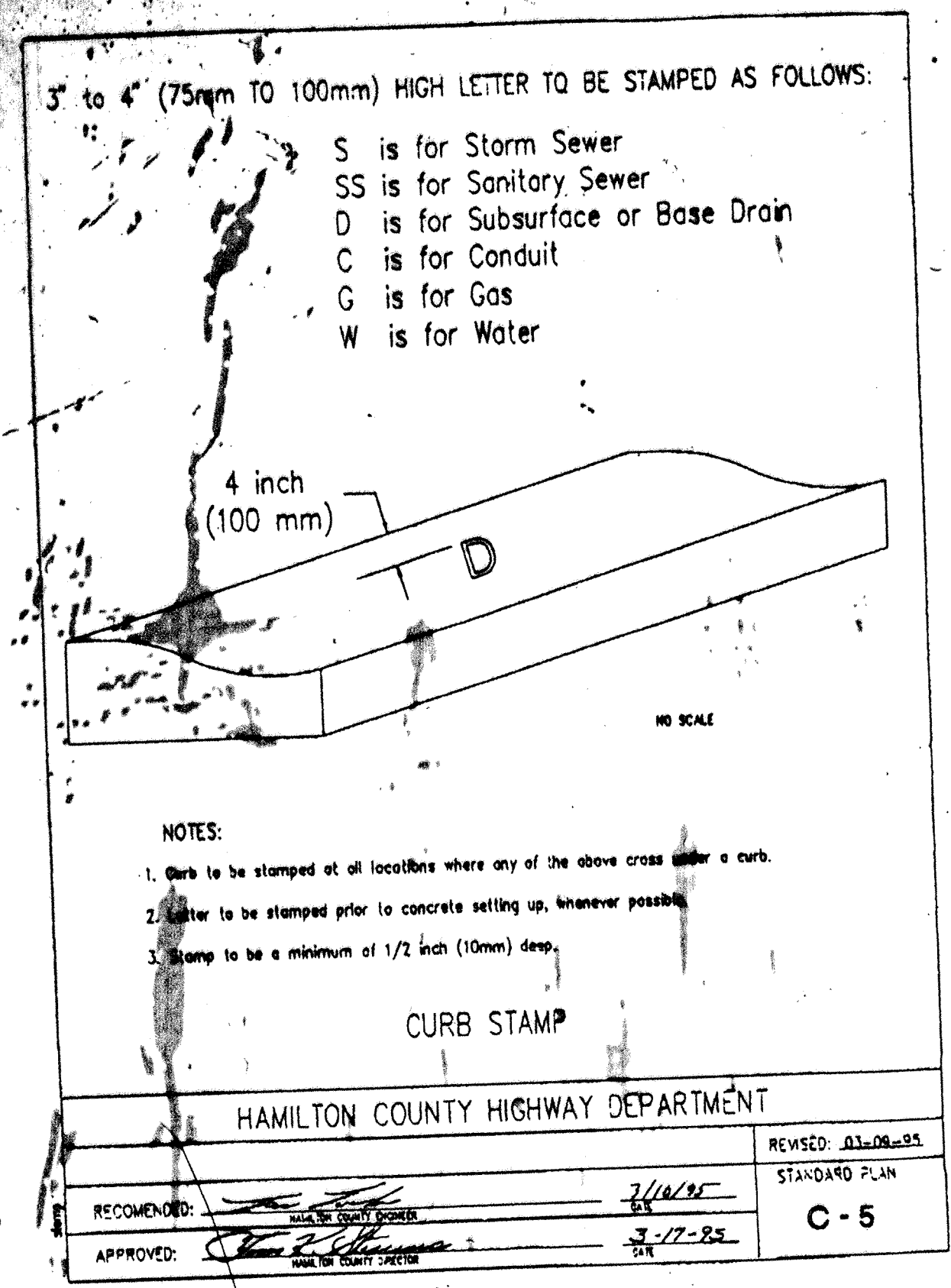
DRAWING TITLE:
 STORM SEWER PLAN & PROFILE
 SHEET 2 OF 2

DATE: 2-19-96
 SCALE: HORIZ. 1"=50'
 VERT. 1"=5'

DWG. TYPE	FILE NUMBER	SHEET:
		C702

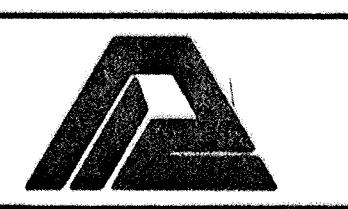
JOB NUMBER: 81100-24000

THE SPRINGS OF CAMBRIDGE SECTIONS 6 & 6A



CERTIFIED BY:
Joseph A. Sharp
 1-29-98 DATE

REVISIONS	REVISIONS



PAUL I. CRIFE, INC.
 7172 GRAHAM ROAD
 INDIANAPOLIS, INDIANA 46250
 (317) 842-6777

CIVIL ENGINEERING
 LAND SURVEYING
 ARCHITECTURE
 LAND PLANNING

TECH SERVICES CHECK:
Shona L. Schellaby
 DATE: 2-17-96

DATE: _____
 SCALE: NONE

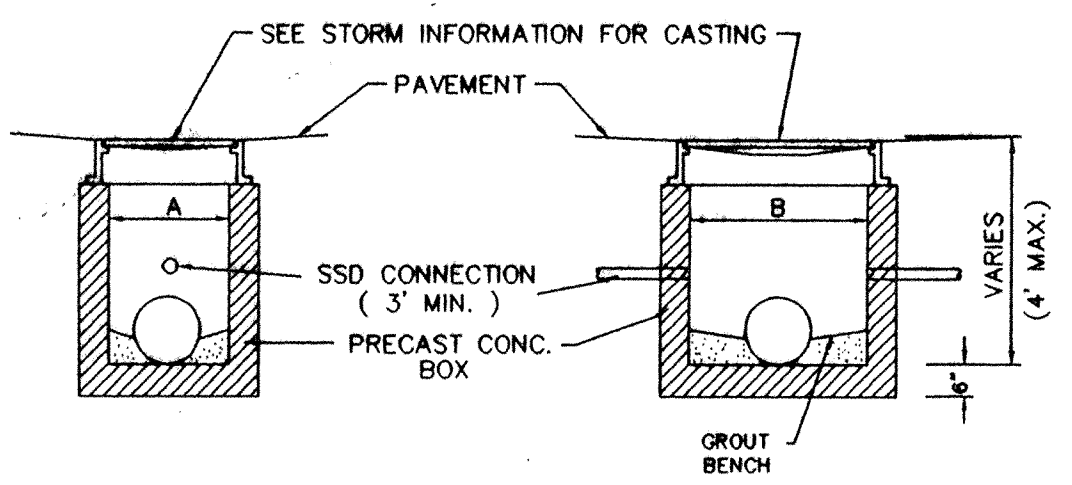
DRAWING TITLE:
HAMILTON COUNTY STANDARD DETAILS

THE SPRINGS OF CAMBRIDGE SECTIONS 6 & 6A

DWG. TYPE	FILE NUMBER	SHEET

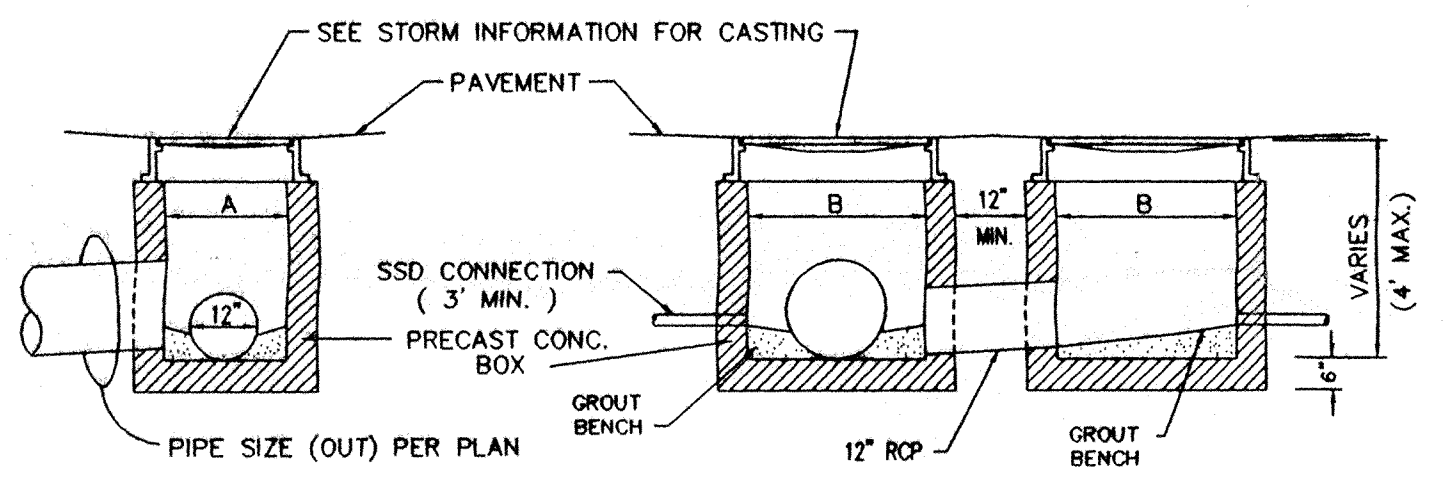
JOB NUMBER: 81100-24000
C801

E,W	NEENAH	TYPE	USE	A	B
1022-1 HD	R-1772-A	MANHOLE	GRADED AREAS	24"	24"
1022-3 HD	R-1772-C	MANHOLE	TRAFFIC AREAS	24"	24"
7490-M1	R-3501-N	ROLL CURB	LOW POINTS	24"	24"
7495-LH-RH	R-3501-TL-TR	ROLL CURB	FLOW LEFT OR RIGHT	25"	27"
7010	R-3040	CURB INLET	LOW POINTS	30"	30"
6489	R-4342	DITCH GRATE	SWALES	23"	23"

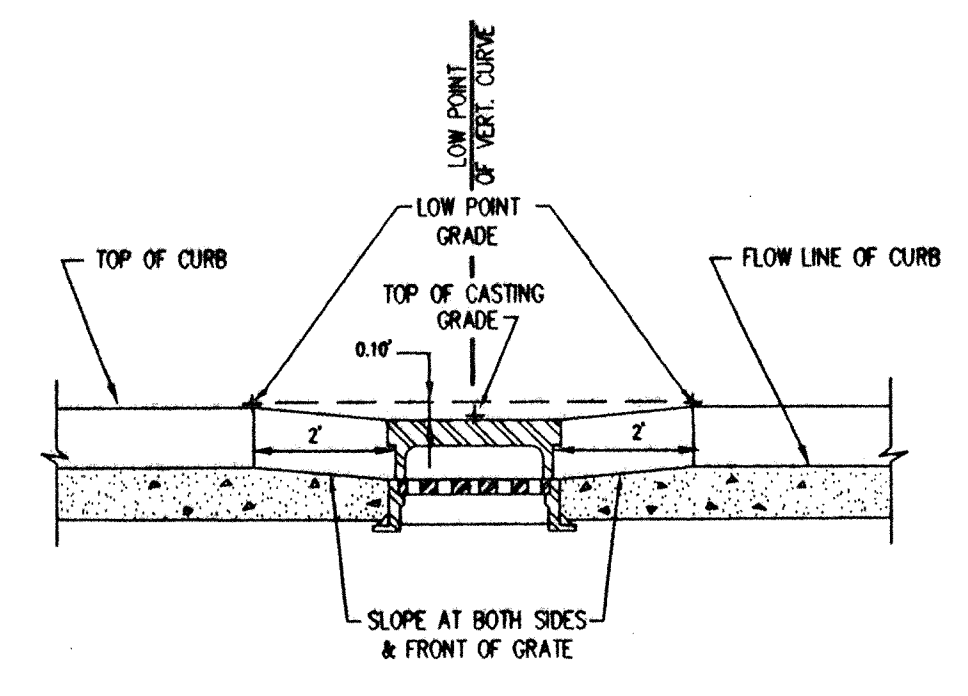


ST23 PRECAST SHALLOW INLET
NO SCALE

E,W	NEENAH	TYPE	USE	A	B
1022-1 HD	R-1772-A	MANHOLE	GRADED AREAS	24"	24"
1022-3 HD	R-1772-C	MANHOLE	TRAFFIC AREAS	24"	24"
7490-M1	R-3501-N	ROLL CURB	LOW POINTS	24"	24"
7495-LH-RH	R-3501-TL-TR	ROLL CURB	FLOW LEFT OR RIGHT	25"	27"
6489	R-4342	DITCH GRATE	SWALES	23"	23"

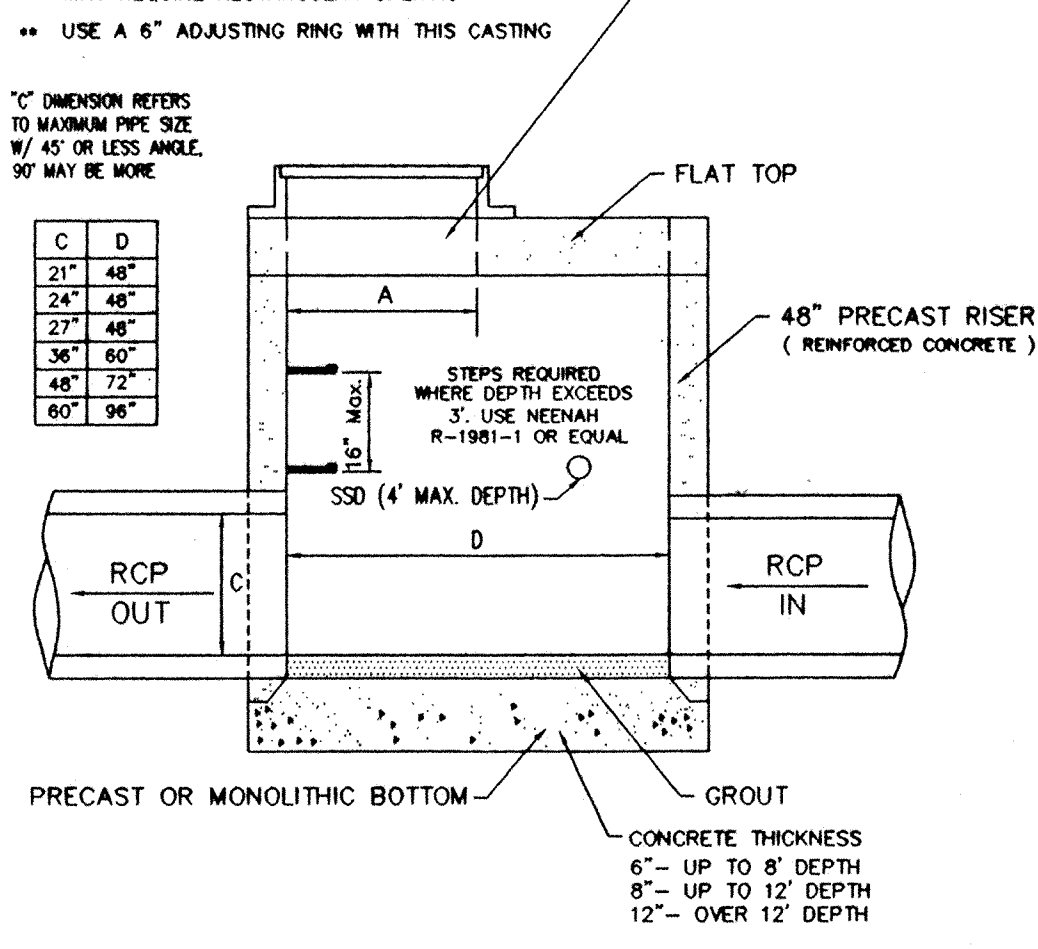


ST-31 DOUBLE SHALLOW INLET
NO SCALE

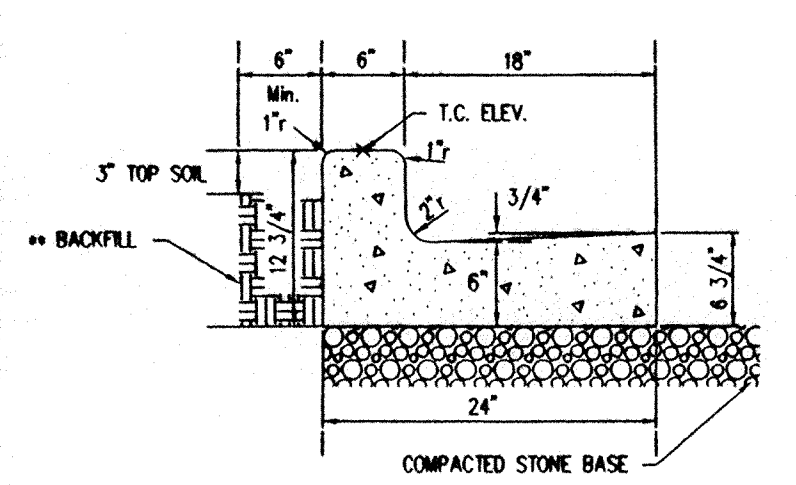


CA8 CURB INLET SETTING DETAIL
NO SCALE

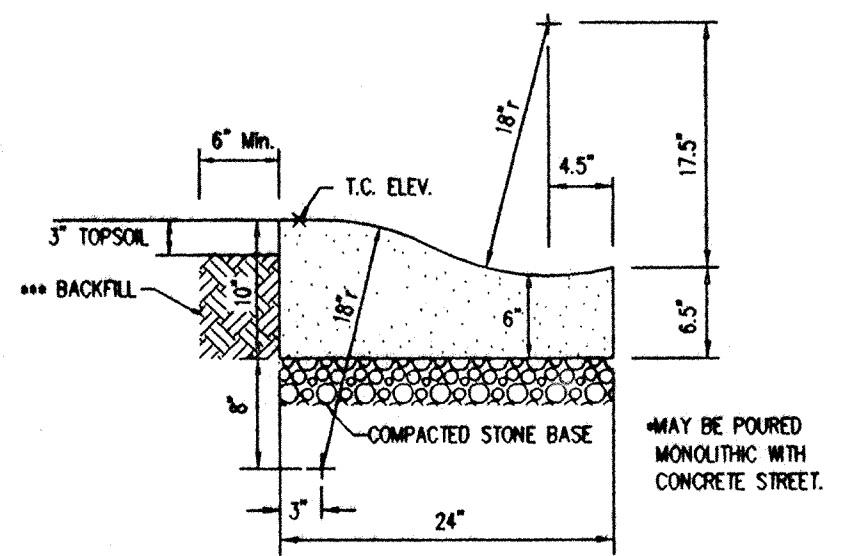
E,W	NEENAH	TYPE	USE	A
1022-1 HD	R-1772-A	MANHOLE	GRADED AREAS	24"
1022-3 HD	R-1772-C	MANHOLE	TRAFFIC AREAS	24"
7490-M1	R-3501-N	ROLL CURB	LOW POINTS	24" X 24"
7495-LH-RH	R-3501-TL-TR	ROLL CURB	FLOW LEFT OR RIGHT	25" X 27"
6489	R-4342	DITCH GRATE	SWALES	24"
-	R-3405	GRATE	TRAFFIC AREAS	25" X 25"
-	R-2560-C2	BEEHIVE	SWALES	24"



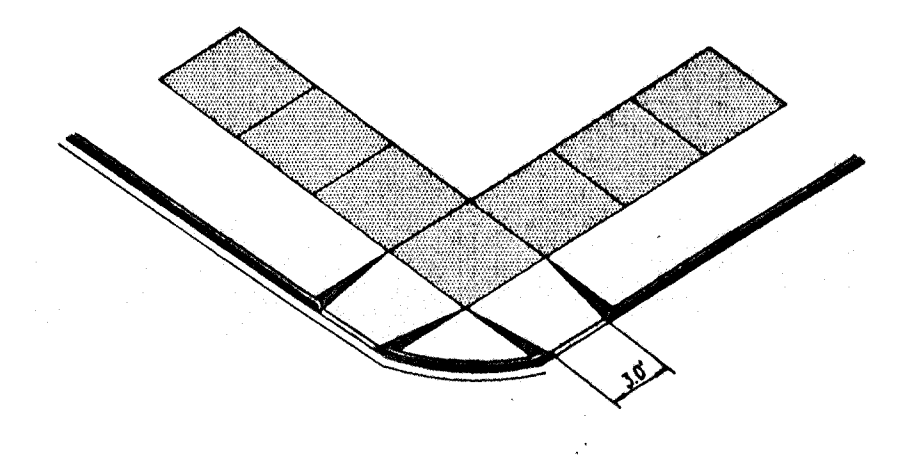
ST-6 SPECIAL SHALLOW MANHOLE
NO SCALE W/ FLAT TOP REDUCER



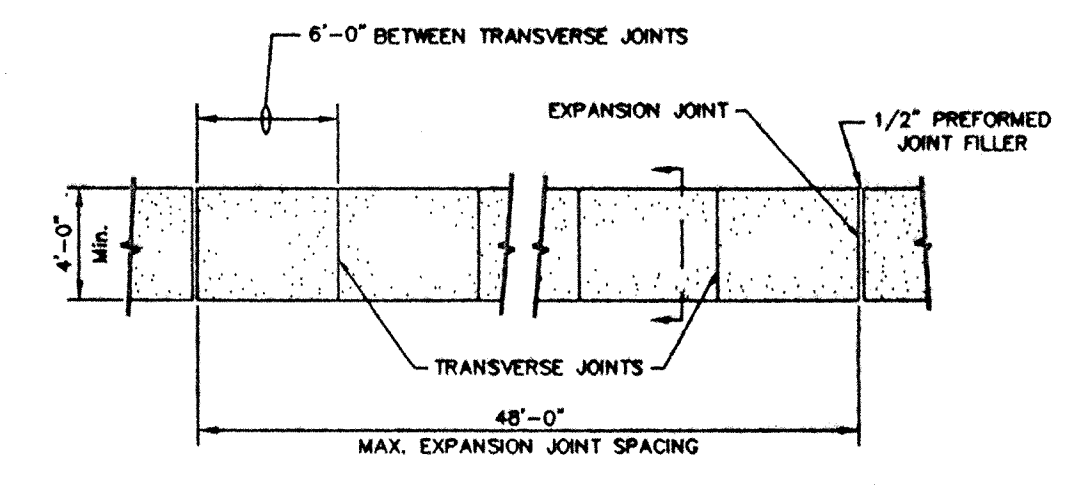
PV-1 CHAIRBACK CURB & GUTTER
NO SCALE DCAM 12-01 (TYPE II)



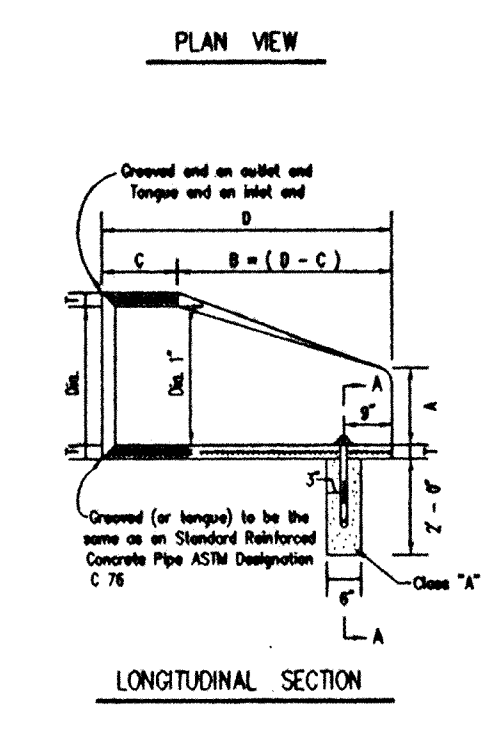
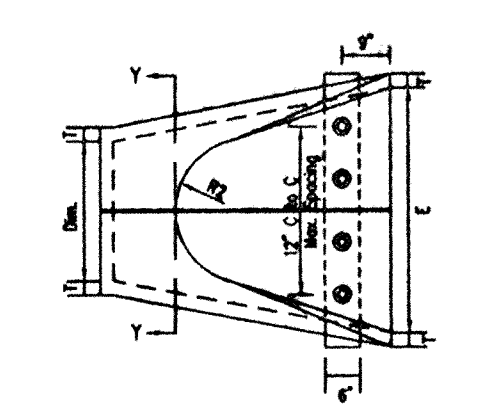
PV-5 CONCRETE ROLL CURB & GUTTER
NO SCALE DCAM 12-01 (TYPE I)



PV31 A.D.A. CURB RAMP DETAIL
NO SCALE



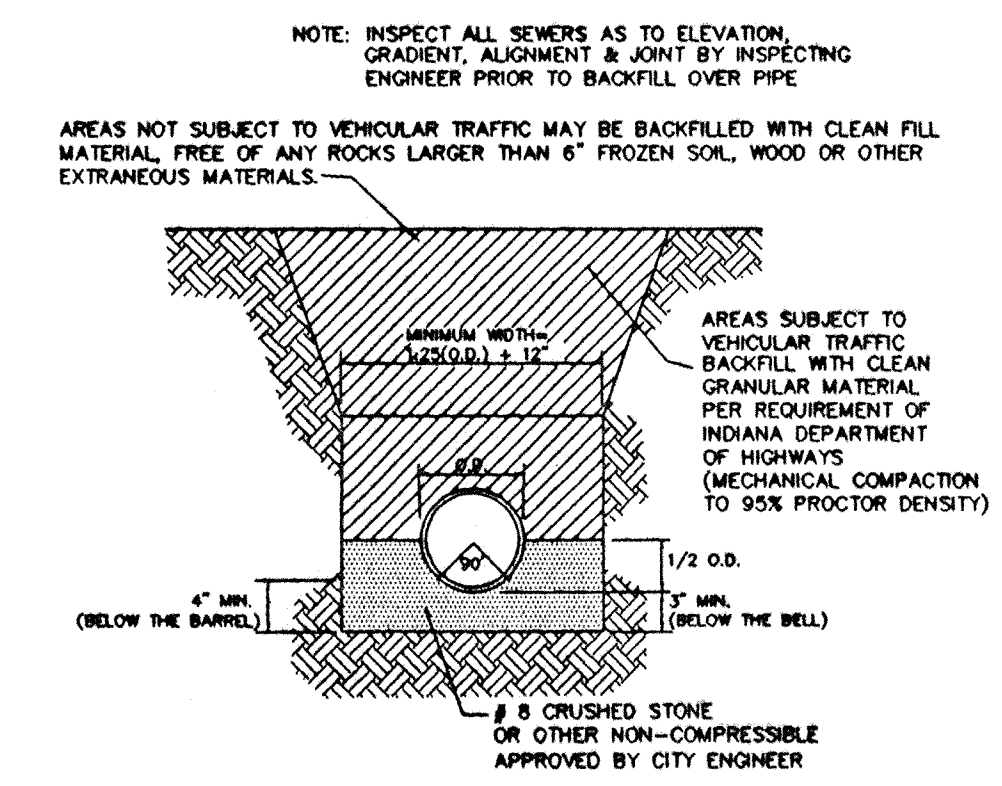
PV16 TYPICAL SIDEWALK DETAIL
NO SCALE



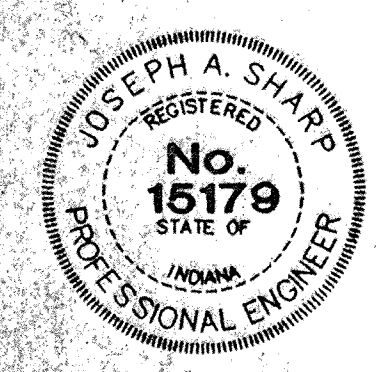
1. CONCRETE IN MANHOLE END SECTIONS SHALL BE THE SAME GRADE AND THICKNESS AS PROVIDED FOR REINFORCED CONCRETE PIPE, WITH SECTION C IN CLASS 1. (See also in the Standard Specification.)
 2. REINFORCEMENT IN THE 12\"/>

DA	T (min)	A x	C x	D x	E x	K	R1	R2	Approx. Weight
12"	2"	5"	4'-2"	6'-2"	2'-0"	1.3	19.1/2"	11"	800
15"	2 1/2"	5"	4'-2"	6'-2"	2'-0"	1.3	13.1/2"	11"	1100
18"	2 1/2"	5"	4'-2"	6'-2"	2'-0"	1.8	15.1/2"	12"	1300
24"	3 1/2"	5"	4'-2"	6'-2"	2'-0"	2.1	18.1/2"	13"	1500
24"	3"	5"	4'-2"	6'-2"	2'-0"	2.3	18.5/16"	14"	1600
27"	3 1/2"	5"	4'-2"	6'-2"	2'-0"	2.8	19.9/16"	14.1/2"	2100
30"	3 1/2"	5"	4'-2"	6'-2"	2'-0"	2.8	18.1/2"	15"	2400
36"	3 1/2"	5"	4'-2"	6'-2"	2'-0"	3.1	23.3/16"	17.1/2"	4100
36"	3"	5"	4'-2"	6'-2"	2'-0"	3.4	24.5/16"	20"	4200

ST3A PRECAST CONCRETE END SECTION
NO SCALE



ST32 RIGID PIPE BEDDING DETAIL (STORM)
NO SCALE CONCRETE PIPE



CERTIFIED BY:
Joseph A. Sharp
8.30.96 DATE

REVISIONS	REVISIONS

PAUL I. CRIFE, INC.: CIVIL ENGINEERING, LAND SURVEYING, ARCHITECTURE, LAND PLANNING
 7172 GRAHAM ROAD INDIANAPOLIS, INDIANA 46250
 (317) 842-6777

TECH SERVICES CHECK: _____ DATE: _____
 SCALE: NONE

DATE: 1-19-96

DRAWING TITLE: PIC STANDARD DETAILS

DWG. TYPE	FILE NUMBER	SHEET
JOB NUMBER		C802
81100-24000		

1.01 WORK INCLUDED
A. Demolish designated structures.
B. Remove materials from site.
C. Remove foundations and basement floor slabs as required.
D. Remove underground tanks and piping.
E. Disconnect, cap, and remove and identify utilities, i.e. gas, electric, telephone, sanitary, water, cable T.V., steam.
F. Remove other surface debris.

1.02 RELATED WORK
A. Section 01500 - Construction Facilities and Temporary Controls: Barricades, fences, and landscape protection.
B. Section 01500 - Construction Facilities and Temporary Controls: Dust control.
C. Section 01700 - Contract Closeout: Project record documents.
D. Section 02110 - Site Clearing: Site Clearing.
E. Section 02220 - Earthwork: Backfill materials.

1.03 SUBMITTALS
A. Submit demolition and removal procedures and schedule under provisions of Section 01300.
B. Submit record documents under provisions of Section 01700.
C. The Contractor shall obtain from the appropriate governmental authorities, necessary required permits, a copy of such permits to be furnished to the Owner prior to commencement of any work required herein.
D. The Contractor shall further furnish to the Owner proof that he has complied with the provisions of the Municipal Code of Hamilton County, Indiana.

1.04 EXISTING CONDITIONS
A. Conduct demolition to minimize interference with adjacent structures.
B. Provide, erect, and maintain temporary barriers and security devices.
C. Conduct operations with minimum interference to public or private thoroughfares. Maintain egress and access at all times.
D. Do not close or obstruct roadways and sidewalks without permits.
E. All material as a result of the general demolition shall be the property of the Contractor. The Contractor's lump sum bid price for the demolition shall take into account the salvageable value of materials and said bid price shall reflect said savings.

1.05 PRODUCTS
Not Used.
1.02 PROTECTION
A. Traffic: Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
B. Protection of Existing Improvements: Provide protections necessary to prevent damage to existing improvements intended to remain in place.
C. Protection of Existing Trees and Vegetation: Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line.
D. Protect bench marks and existing work from damage or displacement.

1.01 WORK INCLUDED
A. Clearing and grubbing shall consist of cutting, removal and satisfactory disposal of all trees, down timber, brush, projecting roots, stumps, rubbish, boulders, broken concrete, fencing (as designated), and other material on the project site.
B. The Contractor shall remove all topsoil in the areas to be occupied by roads, parking areas, walks buildings and designated future building fill areas.
C. The Contractor shall remove all topsoil in the areas to be occupied by roads, parking areas, walks buildings and designated future building fill areas.
D. The Contractor shall remove all topsoil in the areas to be occupied by roads, parking areas, walks buildings and designated future building fill areas.

1.02 RELATED WORK
A. Section 02120 - Earthwork
B. Section 02010 - Demolition
1.03 REGULATORY REQUIREMENTS
A. Conform to Hamilton County of Hamilton Ordinances for disposal of debris.
PART 2 PRODUCTS
Not Used.
PART 3 EXECUTION
3.01 CLEARING
A. Clear areas required for access to site and execution of work.
B. All debris generated from the clearing operations shall be removed and legally disposed of off the project site.
C. Materials shall not be disposed of by burning unless approved by the local Fire Marshal and the Construction Manager.
D. Topsoil shall be kept separate from suitable fill materials and shall not be used as fill under pavement and building areas.
E. Topsoil shall be stored at a location where it does not interfere with construction operations.
F. Topsoil shall be reasonably free from subsoil debris, stones, etc.
G. Excess topsoil to be stockpiled in the areas designated on the grading plan, or removed from the site if directed by the owner or engineer.

REVISIONS
REVISIONS

REVISIONS
REVISIONS

PAUL I. CRIPE, INC.
7172 GRAHAM ROAD
INDIANAPOLIS, INDIANA 46250
LAND SURVEYING
ARCHITECTURE
LAND PLANNING

DATE: 1-29-96
SCALE: NONE

STANDARD SPECIFICATIONS
SHEET 1 OF 2
JOB NUMBER: 81100-24000

SHEET: C901

1. Apply prime coat over compacted base stone. Apply material to penetrate and seal, but not flood, surface. Cure and dry as long as necessary to attain penetration and evaporation of volatile. Distribute at a rate of 0.2 to 0.5 gallons per square yard. Emulsified asphalt: AASHTO M140 (ASTM D 997) or M208 (D 2197); SS-1H, CSS-1 diluted with one part water to one part emulsified asphalt.

2.02 CONCRETE MATERIALS

A. Concrete: Plain concrete pavements shall be constructed in accordance with Section 501 of the Indiana Dept. of Highways Specifications. Concrete shall be ready-mixed concrete and shall be a mix of proportioned fine and coarse aggregates with Portland cement and water. Minimum cement content shall be 6 bags per cubic yard of concrete and maximum water content shall be 5.5 U.S. gallons per sack of cement, including moisture in the aggregate. Slump for normal weight concrete shall be a maximum of 4 inches and a minimum of 2 inches. The slump of machine placed concrete shall be no less than 1-1/2 inches nor more than 3 inches. Standard test ASTM C-143 shall be used to measure slump. Compressive strength of concrete at 28 days shall be 4000 psi. All exterior concrete shall have an entrainment of 5% to 8% by volume per ASTM C-260. Retempering of delivered concrete will not be allowed. Concrete shall be composed of:

1. Portland Cement: Conforming to ASTM C-150, Type IA or Type IIA.

2. Aggregates: Conforming to ASTM C-33.

3. Water: Shall be free from injurious amounts of oils, acids, alkalis, organic materials or other deleterious substances.

B. Welded Steel Wire Fabric: Where required for concrete reinforcement shall conform to ASTM A185.

02510
4 of 9

C. Pre-molded Joint Filler: Shall be of non-extruding type meeting ASTM D-544, except that pre-molded joint filler used in concrete slab construction may be either non-extruding or resilient.

2.03 SEALCOAT MATERIAL

Sealcoat shall be Jemnite J-16 or approved equal.

2.04 STRIPING MATERIALS

Traffic Paint, White, chlorinated rubber base, factory mixed, quick drying, non-soluble, conforming to Fed. Spec. TT-0-115C, Type III and conforming to ISHS Section 908.

PART 3 EXECUTION

3.01 PREPARING SURFACE

A. Grading: Do any necessary grading to that performed in accordance with Section 200, to bring subgrades, after final compaction, to the required grades and sections for site improvement.

B. Preparation of Subgrade: Remove spongy and otherwise unusable material and replace with stable material. No traffic will be allowed on prepared subgrade prior to paving.

C. Compaction of Subgrade: The first 6 inches below the subgrade shall be compacted to at least 93% of the maximum dry density as determined by the provisions of AASHTO T-99. Water shall be prevented from standing on the compacted subgrade. Clay and silty clay soil shall be compacted at a moisture content 1% to 2% above optimum moisture to reduce future volume changes.

C. Sweep and clean the entire surface of pavement using a power sweeper and a brush prior to seal coating.

3.02 INSTALLING - GENERAL

A. Place paving materials to the thicknesses and tolerances indicated on the Drawings. Thicknesses indicated are after compaction.

B. Slopes and Tolerances: Unless otherwise indicated on Drawings, place paving to the following tolerances:

1. Surfaces: Variation from plane shall not exceed 3/16 inch in 10 feet except where crowning or pitching is required, but in no case shall create low spots which will pond water.

2. Slopes: In parking areas maintain a minimum slope of 1/8 inch per foot (1/4 inch per foot preferred), see site grading plan for proposed elevations and slopes.

3.03 PLACING PAVING

A. General: Place bituminous paving in areas as indicated on Drawings in accordance with ISHS Sections 303 and 403. Do not roll over the unprotected edge of a spread. Perform rolling, or other approved techniques, as required, to produce a defect-free surface of uniform texture with no evidence of tool or machine marks, or both.

B. Compacted Aggregate Subbase: The thickness shown on the drawings is the minimum thickness of the fully compacted subbase. Compaction shall be accomplished by rolling with a smooth wheeled roller weighing 8 to 10 tons. Compact to 100% of maximum dry density in accordance with Section 04.05. All joints and walls and at all places not accessible to the roller, the aggregate material shall be tamped with mechanical tampers or with approved hand tampers.

C. Construction within Right-of-Way: All street construction within the lines of dedicated right-of-way shall be in accordance with the Specifications of the Town of Noblesville, County of Hamilton and/or State of Indiana, if within highway right of way.

D. Tack and Prime Coats: To assure bond between base and binder courses, or between binder and surface courses, apply complete tack and prime coating.

E. Binder and Surface Courses: Place binder and surface course only on solid, dry, and unfrozen sub-surfaces. Spread each course concurrently, within practical limits, using mechanical spreaders spreading by the manual methods. Spread binder course and surface course to required thicknesses as set out hereinbefore.

7. Join or abut adjacent surfaces and patch those paving surfaces which are disturbed by the construction and operations neatly and accurately using methods best suited for each particular condition.

3.04 PLACING CONCRETE

A. Subgrade: Place concrete only on a moist, compacted subgrade or base free from loose material. Place no concrete on a muddy or frozen subgrade.

Work surfaces shall be free from warp, tight enough to support a large and substantial enough to maintain their shape without springing or settling, when placed. Forms shall be clean and smooth immediately before concreting.

Work surfaces shall be deposited so as to provide a surface which is practically smooth. When placed at an atmospheric temperature of 40 degrees or less, paragraph 702.10 of the Indiana Department of Highways Specifications, latest revision shall apply.

D. Concrete Curb and Gutter:

1. Expansion Joints: Shall be 1/2 inch thick pre-molded at ends of all returns and at a maximum spacing of 100 feet.

2. Contraction Joints: Unless otherwise provided, contraction joints shall be sawed joints spaced 20 feet on center.

3. Finish: Tamp and screed concrete as soon as placed, and fill any honey combed place. Finish square corners to 1/4 inch radius and other corners to radii shown.

E. Concrete Walks and Exterior Steps conforming to Section 604 of the Indiana Dept. of Highways Specifications.

1. Slopes: Provide 1/4 inch per foot cross slope. Make adjustments in slopes at walk intersections as necessary to provide proper drainage.

2. Dimensions: Walks and steps shall be one course construction and of widths and details shown on the drawings.

3. Finish: Screed concrete and trowel with a steel trowel to a hard dense surface after surface water has disappeared. Apply medium broom finish and scribe control joints at 5 foot spacing. Provide 1/2 inch expansion joints where sidewalks intersect, and at a maximum spacing of 48 feet between expansion joints.

4. Wheel chair ramps shall be provided as detailed.

F. Curing Concrete: Expect as otherwise specified, cure all concrete by one of the methods described in Section 501.17 of the Indiana Department of Highways Specifications, latest revisions.

3.05 SEAL COAT

A. Thoroughly clean all asphaltic pavement to remove all foreign matter the same day the seal coat is to be applied. Seal coat shall not be applied when it is foggy or raining or when precipitation is anticipated before the sealer is dry or when the air or pavement temperatures are below 45 degrees F.

B. Application shall be made with medium soft rubber squeegee in two coats worked crosswise to each other to spread a total of 0.2 gallons of seal coat per square yard of pavement. Seal coat shall be sand slurry mix for the final coat only. Sand shall be clean, well-graded fine sand which shall be mechanically mixed with the emulsion at the rate of four (4) pounds of sand for each gallon of emulsion. The second coat for parking areas shall not be applied until the first coat is dry to touch and the second coat shall cure a minimum of 12 hours and until hard, before allowing any traffic on the pavement. No seal coat shall be applied without approval of the Architect.

3.06 STRIPING

A. Paint striping on parking lot as indicated on site plan. Lines shall be 4" wide.

3.07 STREET AND TRAFFIC CONTROL SIGNS

A. Street and Traffic Control Signs: Street name and traffic control signs shall be furnished at the developer's expense and installed prior to the start of construction. Performance bond or prior to the issuance of the first occupancy permit, whichever occurs first. The signs shall be installed on one pole at each street intersection as appropriate spot in the northeast corner wherever possible. Signs and posts shall be standard sizes and colors on reflective surfaces in accordance with Section D-471 of the Standard Specifications of the Indiana Dept. of Highways.

H. See standard detail sheet for construction dimensions of storm structures. Manholes, inlets and catch basins shall be constructed in accordance with Section 720. Precast concrete pipe for manholes and inlets shall be in accordance with ASTM C-478, latest revision. Six inch and 8" segmental block manholes shall be with 1/2" mortar on the entire inside surface of the manhole with ductile iron or aluminum integrally cast into precast catch basin sidewalls.

I. The Contractor shall provide a minimum of 1' of cover over all storm sewers.

J. Rip rap shall be a minimum 6" and a maximum of 17" in size and a minimum 18" in depth. Dimensions for rip rap on placement of rip rap shall be determined by field conditions and shall be in accordance with Section 616.

K. All drainage pipe and ditch outfalls to receiving streams shall be constructed in accordance with drawings, subject however, to any modification required by Engineer at the time installation is in progress and to any adjustments needed for field conditions not adequately anticipated by the design drawings.

L. Castings shall be as shown on detail sheet for Manhole, Electric, Telephone and Gas.

M. Install gaskets in accordance with manufacturer's recommendations for use of lubricants, cements and other special installation requirements.

N. Place plugs in ends of incomplete piping at end of work day or whenever work stops, and at stubs for future development.

O. Carry depth of trenches for piping to establish indicated flow lines and invert elevations. Notch under pipe bells where applicable to provide solid bearing for entire body of pipe.

P. Trenching: Lay all pipe in open trenches, except when the local authority permits tunneling or boring. Open the trench sufficiently ahead of pipe-laying to reveal any obstructions. The width of the trench shall be the inside pipe diameter plus 24 inches for 12 inches above the pipe. Sheet and backfill trench as necessary to protect workers and adjacent structures. All trenching to comply with Occupational Safety and Health Administration Standards. Keep trenches free from water while construction is in progress. Under no circumstances lay pipe or appurtenances in standing water. Conduct the discharge from trench dewatering to drains or natural drainage channels.

Q. All pipes on steep slopes shall have concrete anchor approximately 1/3 cu. yd. at maximum 40 foot intervals.

R. Backfilling: For a depth of at least 12 inches above the top of the pipe, backfill with earth or granular material in layers of large stones, fragments of rocks or sod. Tamp this backfill thoroughly, taking care not to disturb the pipe. For the remaining trench depth, backfill with earth or granular material in layers of rocks or rocks not larger than 4 inches. Backfill under walks, parking areas, driveways and streets shall be granular material only - thoroughly compacted, by approved methods.

2.01 STORM SEWER SPECIFICATIONS

A. Scope of Work

The work under this section includes all storm sewers, storm sewer inlets, and related items, including excavating and backfilling, necessary to complete the work shown on the drawings.

B. Standard specifications of County of Hamilton and Indiana Dept. of Highways Standard Specifications shall apply for all work and materials. Pipe shall be installed in accordance with Section 715 (ISHS).

C. All storm sewer pipe shall be reinforced concrete pipe conforming to ASTM designation C-76 Class III, unless otherwise noted, in accordance with Section 906. Joints shall conform to ASTM C-433 latest revision.

2.02 SANITARY SEWER SPECIFICATION

A. Scope of Work

The work under this section includes all sanitary sewers, manholes, castings, cleanouts, tapping, permits, governmental inspections and approvals, fees, surveying layout, and related items, including excavation, backfill, granular fill, and dewatering necessary to complete the work shown on the drawings.

D. Alternate pipe material shall be (aluminized) steel material conforming to the current AASHTO M36 for pipe 18 inches and smaller with a helical corrugation of 2 2/3" x 1/2" and AASHTO M196 for pipe 21 inches and larger with a helical HyFlo corrugation of 3/4" x 3/4" x 1/2".

All CMP pipe shall meet the following minimum gages unless specified otherwise:

12 inch thru 16 inch shall be 16 gage
12 inch thru 48 inch shall be 14 gage
54 inch thru 66 inch shall be 12 gage

All sewers shall be installed so as not to exceed the maximum allowable pipe strength per ASTM and manufacturer's requirements. If additional pipe strength is required for the probable earth line load condition, the Contractor shall use a higher strength or bedding method to satisfy the conditions.

E. Alternate pipe material shall be high density Polyethylene (HDPE) corrugated pipe with smooth interior (M-2072).
Pipe and fittings shall meet or exceed the requirements of Type III, Category 5, Grade P31 P34, Class C bedding per ASTM D1248. Joints shall be split corrugated couplings at least 7 corrugations wide and exceeding the soil thickness requirements of ASTM Standard Specifications for Highway Bridges, Section 23 (2.23.3). Backfill and installation shall comply with manufacturer's recommendations.

F. Subdrainage system shall be installed as shown on plans and in the area designated in Section 906 of Indiana Dept. of Transportation specifications as follows:

Pipes to be installed for subsurface drainage only may be one of the following:

1. Perforated Corrugated drainage pipe in accordance with ASTM D2522 AASHTO M 293 PVC manhole cell classification conforming to requirement of 12344-C ASTM D-1784.

2. Concrete drain tile in accordance with AASHTO M178.

3. Vitrified Clay tile in accordance with AASHTO M179.

Where pipe is to be used for a collector of other subsurface laterals and/or sump pumps and installed with provisions for cleaning, it shall be one of the following:

1. ABS Composite in accordance with ASTM D-2640.

2. PVC in accordance with ASTM D-3034 SDR-35.

3. PVC Corrugated with smooth interior in accordance with ASTM F949.

G. Backfill around all structures and cuts under paved areas and within 5 feet of pavement edges with granular material in accordance with Section 21.1 and 715.

H. Backfill around all structures and all cuts under paved areas with granular material opening within 5 feet of paved roadways shall be backfilled with granular material in accordance with Section 211.

I. The Contractor shall be responsible for verifying that all State, City and County permits have been obtained himself prior to start of construction.

K. The Contractor shall be required to furnish the Engineer with a set of prints, marked in red pencil, showing actual sewer location and invert, to include lateral location, depth and length. Such "as-built" prints must be received by the Engineer before the final contract payment can be authorized. The sanitary sewer laterals and stubs termination shall be indicated on the surface with a metal fence post set immediately above said termination point.

L. All sanitary sewer lines upon completion will be required to pass a low pressure air test or infiltration test, unless otherwise directed by the Engineer. Said test shall be conducted according to MCHD standards and shall be witnessed by an Engineer. Infiltration under test shall not exceed 100 gallons per inch of inside diameter of sewer pipe in 24 hours and 10 percent inclusive of all appurtenances within the section being tested such as manholes, house connections, etc.

M. Deflection tests shall be performed on all flexible pipe after the final backfill has been in place at least 30 days. No pipe shall exceed a vertical deflection of 5%.

N. All testing and inspections will be the responsibility of the Contractor and shall be observed by a Professional Engineer for certification. Accepting agency's assigned inspector shall also observe all testing.

O. The ends of laterals are to be plugged tight with plastic dip cap capable of withstanding a low pressure air test without leakage.

P. Class C bedding as described in ASTM C-12-74 (ANSI A 106.2) or ACP MOP No. 37 shall be used, except where specified otherwise. All precast manholes shall be bedded on a granular foundation (6 inches minimum).

Q. Water and sewer lines crossings and separations shall be in accordance with Ten State Standards and local codes.

1. Where water lines and sewer lines cross and the water line cannot be placed a minimum of 18" above the sewer line, with a minimum cover of 48", the sewer lines shall be constructed above the water works grade with mechanical joints.

2. Where water lines and sanitary sewer lines run parallel with a minimum of 10' horizontal separation shall be maintained.

R. Trench shall be opened sufficiently ahead of pipe laying to reveal obstructions, and shall be properly protected and/or barricaded when left unattended. Lay all pipe in open trenches, except when the local authority gives written permission for trenching to tunneling or boring. The trench shall be 1 1/4 times the outside diameter plus 12". Sheet and brace trench as necessary to protect workers and adjacent structures in accordance with Occupational Safety and Health Administration Standards. Keep trenches free from water while construction is in progress. Under no circumstances lay pipe or appurtenances in standing water. Conduct the discharge from trench dewatering to drains or natural drainage channels.

S. Forty-eight (48) hour notice shall be given to Municipal Partnership Utilities prior to the start of sewer construction. A four hour notice shall be given prior to any testing done on the sewer.

T. All connections to existing manholes shall be core drilled unless otherwise approved by accepting agency.

U. All pipe openings in manholes, including laterals, shall be fitted with rubber gaskets. Manhole sections shall have "O" rings, which shall meet ASTM C-433. Manhole waterstops shall be installed at all connections, where flexible-type manhole connections are not used.

V. The contractor will be required to provide as-built drawings to the accepting agency to certify the elevation and slope of sanitary sewers. Sewers installed at a grade less than required by Ten State Standards will not be accepted and will be the contractor's responsibility to install properly. Contractor shall provide periodic as-built checks on the sewer elevation during construction to assure that the design grade is being maintained.

W. The minimum thickness for concrete encasement shall be 6 inches.

X. Pipe bedding shall be a minimum of 12" of #8 stone above the pipe and a minimum of 4" below the pipe.

Y. The flow channels through manholes shall be U-shaped with the benchwalls extending to the crown of the incoming and outgoing pipes.

Z. All sanitary sewer pipe crossing bodies of water must be ductile iron pipe with mechanical joints. In addition, where there is less than 4 feet from the crown of the pipe to the stream bed, the pipe must be encased in concrete.

AA. No water shall be permitted to flow into the sanitary sewer system. All sanitary sewer lines shall be installed at a water level below the pipe. Pump discharge shall be directed to a storm outlet.

BB. Storm Water Connections: No roof drains, footing drains and/or surface water drains may be connected to the sanitary sewer systems, including temporary connections during construction.

CC. No building lateral connections shall be permitted until the sanitary sewer has been inspected and accepted by the governing agency. Failure to comply may result in the contractor being responsible for the cost of reworking and retesting of the fitting to be sponsored.

D. Standard specifications of the Municipal Partnership Utilities Sanitary District No. 12 shall govern for all installation and materials.

E. Sanitary sewer pipe shall be "CorTech-Truss-Pipe" conforming to ASTM, D-2680 or PVC in accordance with ASTM D-3034 (S.D.R. 35) and ASTM 2121. Minimum cell classification for PVC and Truss Pipe shall be 12454-B or 12454-C.

F. For all sanitary sewer joints, the Contractor shall use gasket type joints. No glue joints shall be allowed. Installed and manufactured in accordance with ASTM C-425.

G. All sanitary manholes shall be "precast concrete" manholes in accordance with ASTM C-478 and Section 720. Gasket seal shall be used at manhole section joints. The bedding beneath sewer manholes shall be a minimum of 6 inches of #8 stone beneath the manhole base.

H. The type of new manhole ring and cover shall be as specified on the standard detail sheet of these plans.

I. The casting elevations are set by plan. However, the castings are to be adjusted in the field by the Engineer's representative should a discrepancy occur between plan grade and existing grade. Castings should be set 1 inch above grade in unproved areas and graded for positive drainage away from manhole.

J. No construction of sanitary sewers will be allowed to commence until a valid construction permit per 327 I.A.C. Article 3 from the Indiana Dept. of Environmental Management is obtained.

K. Backfill around all structures and all cuts under paved areas with granular material opening within 5 feet of paved roadways shall be backfilled with granular material in accordance with Section 211.

L. The Contractor shall be responsible for verifying that all State, City and County permits have been obtained himself prior to start of construction.

M. The Contractor shall be required to furnish the Engineer with a set of prints, marked in red pencil, showing actual sewer location and invert, to include lateral location, depth and length. Such "as-built" prints must be received by the Engineer before the final contract payment can be authorized. The sanitary sewer laterals and stubs termination shall be indicated on the surface with a metal fence post set immediately above said termination point.

N. All sanitary sewer lines upon completion will be required to pass a low pressure air test or infiltration test, unless otherwise directed by the Engineer. Said test shall be conducted according to MCHD standards and shall be witnessed by an Engineer. Infiltration under test shall not exceed 100 gallons per inch of inside diameter of sewer pipe in 24 hours and 10 percent inclusive of all appurtenances within the section being tested such as manholes, house connections, etc.

O. Deflection tests shall be performed on all flexible pipe after the final backfill has been in place at least 30 days. No pipe shall exceed a vertical deflection of 5%.

P. All testing and inspections will be the responsibility of the Contractor and shall be observed by a Professional Engineer for certification. Accepting agency's assigned inspector shall also observe all testing.

Q. The ends of laterals are to be plugged tight with plastic dip cap capable of withstanding a low pressure air test without leakage.

R. Class C bedding as described in ASTM C-12-74 (ANSI A 106.2) or ACP MOP No. 37 shall be used, except where specified otherwise. All precast manholes shall be bedded on a granular foundation (6 inches minimum).

S. Water and sewer lines crossings and separations shall be in accordance with Ten State Standards and local codes.

1. Where water lines and sewer lines cross and the water line cannot be placed a minimum of 18" above the sewer line, with a minimum cover of 48", the sewer lines shall be constructed above the water works grade with mechanical joints.

2. Where water lines and sanitary sewer lines run parallel with a minimum of 10' horizontal separation shall be maintained.

Trench shall be opened sufficiently ahead of pipe laying to reveal obstructions, and shall be properly protected and/or barricaded when left unattended. Lay all pipe in open trenches, except when the local authority gives written permission for trenching to tunneling or boring. The trench shall be 1 1/4 times the outside diameter plus 12". Sheet and brace trench as necessary to protect workers and adjacent structures in accordance with Occupational Safety and Health Administration Standards. Keep trenches free from water while construction is in progress. Under no circumstances lay pipe or appurtenances in standing water. Conduct the discharge from trench dewatering to drains or natural drainage channels.

Forty-eight (48) hour notice shall be given to Municipal Partnership Utilities prior to the start of sewer construction. A four hour notice shall be given prior to any testing done on the sewer.

All connections to existing manholes shall be core drilled unless otherwise approved by accepting agency.

All pipe openings in manholes, including laterals, shall be fitted with rubber gaskets. Manhole sections shall have "O" rings, which shall meet ASTM C-433. Manhole waterstops shall be installed at all connections, where flexible-type manhole connections are not used.

The contractor will be required to provide as-built drawings to the accepting agency to certify the elevation and slope of sanitary sewers. Sewers installed at a grade less than required by Ten State Standards will not be accepted and will be the contractor's responsibility to install properly. Contractor shall provide periodic as-built checks on the sewer elevation during construction to assure that the design grade is being maintained.

The minimum thickness for concrete encasement shall be 6 inches.

Pipe bedding shall be a minimum of 12" of #8 stone above the pipe and a minimum of 4" below the pipe.

The flow channels through manholes shall be U-shaped with the benchwalls extending to the crown of the incoming and outgoing pipes.

All sanitary sewer pipe crossing bodies of water must be ductile iron pipe with mechanical joints. In addition, where there is less than 4 feet from the crown of the pipe to the stream bed, the pipe must be encased in concrete.

No water shall be permitted to flow into the sanitary sewer system. All sanitary sewer lines shall be installed at a water level below the pipe. Pump discharge shall be directed to a storm outlet.

Storm Water Connections: No roof drains, footing drains and/or surface water drains may be connected to the sanitary sewer systems, including temporary connections during construction.

No building lateral connections shall be permitted until the sanitary sewer has been inspected and accepted by the governing agency. Failure to comply may result in the contractor being responsible for the cost of reworking and retesting of the fitting to be sponsored.

D. Standard specifications of the Municipal Partnership Utilities Sanitary District No. 12 shall govern for all installation and materials.

E. Sanitary sewer pipe shall be "CorTech-Truss-Pipe" conforming to ASTM, D-2680 or PVC in accordance with ASTM D-3034 (S.D.R. 35) and ASTM 2121. Minimum cell classification for PVC and Truss Pipe shall be 12454-B or 12454-C.

F. For all sanitary sewer joints, the Contractor shall use gasket type joints. No glue joints shall be allowed. Installed and manufactured in accordance with ASTM C-425.

G. All sanitary manholes shall be "precast concrete" manholes in accordance with ASTM C-478 and Section 720. Gasket seal shall be used at manhole section joints. The bedding beneath sewer manholes shall be a minimum of 6 inches of #8 stone beneath the manhole base.

H. The type of new manhole ring and cover shall be as specified on the standard detail sheet of these plans.

I. The casting elevations are set by plan. However, the castings are to be adjusted in the field by the Engineer's representative should a discrepancy occur between plan grade and existing grade. Castings should be set 1 inch above grade in unproved areas and graded for positive drainage away from manhole.

J. No construction of sanitary sewers will be allowed to commence until a valid construction permit per 327 I.A.C. Article 3 from the Indiana Dept. of Environmental Management is obtained.

K. Backfill around all structures and all cuts under paved areas with granular material opening within 5 feet of paved roadways shall be backfilled with granular material in accordance with Section 211.

L. The Contractor shall be responsible for verifying that all State, City and County permits have been obtained himself prior to start of construction.

M. The Contractor shall be required to furnish the Engineer with a set of prints, marked in red pencil, showing actual sewer location and invert, to include lateral location, depth and length. Such "as-built" prints must be received by the Engineer before the final contract payment can be authorized. The sanitary sewer laterals and stubs termination shall be indicated on the surface with a metal fence post set immediately above said termination point.

N. All sanitary sewer lines upon completion will be required to pass a low pressure air test or infiltration test, unless otherwise directed by the Engineer. Said test shall be conducted according to MCHD standards and shall be witnessed by an Engineer. Infiltration under test shall not exceed 100 gallons per inch of inside diameter of sewer pipe in 24 hours and 10 percent inclusive of all appurtenances within the section being tested such as manholes, house connections, etc.

O. Deflection tests shall be performed on all flexible pipe after the final backfill has been in place at least 30 days. No pipe shall exceed a vertical deflection of 5%.

P. All testing and inspections will be the responsibility of the Contractor and shall be observed by a Professional Engineer for certification. Accepting agency's assigned inspector shall also observe all testing.

Q. The ends of laterals are to be plugged tight with plastic dip cap capable of withstanding a low pressure air test without leakage.

R. Class C bedding as described in ASTM C-12-74 (ANSI A 106.2) or ACP MOP No. 37 shall be used, except where specified otherwise. All precast manholes shall be bedded on a granular foundation (6 inches minimum).

S. Water and sewer lines crossings and separations shall be in accordance with Ten State Standards and local codes.

1. Where water lines and sewer lines cross and the water line cannot be placed a minimum of 18" above the sewer line, with a minimum cover of 48", the sewer lines shall be constructed above the water works grade with mechanical joints.

2. Where water lines and sanitary sewer lines run parallel with a minimum of 10' horizontal separation shall be maintained.

Trench shall be opened sufficiently ahead of pipe laying to reveal obstructions, and shall be properly protected and/or barricaded when left unattended. Lay all pipe in open trenches, except when the local authority gives written permission for trenching to tunneling or boring. The trench shall be 1 1/4 times the outside diameter plus 12". Sheet and brace trench as necessary to protect workers and adjacent structures in accordance with Occupational Safety and Health Administration Standards. Keep trenches free from water while construction is in progress. Under no circumstances lay pipe or appurtenances in standing water. Conduct the discharge from trench dewatering to drains or natural drainage channels.

Forty-eight (48) hour notice shall be given to Municipal Partnership Utilities prior to the start of sewer construction. A four hour notice shall be given prior to any testing done on the sewer.

All connections to existing manholes shall be core drilled unless otherwise approved by accepting agency.

All pipe openings in manholes, including laterals, shall be fitted with rubber gaskets. Manhole sections shall have "O" rings, which shall meet ASTM C-433. Manhole waterstops shall be installed at all connections, where flexible-type manhole connections are not used.

The contractor will be required to provide as-built drawings to the accepting agency to certify the elevation and slope of sanitary sewers. Sewers installed at a grade less than required by Ten State Standards will not be accepted and will be the contractor's responsibility to install properly. Contractor shall provide periodic as-built checks on the sewer elevation during construction to assure that the design grade is being maintained.

The minimum thickness for concrete encasement shall be 6 inches.

Pipe bedding shall be a minimum of 12" of #8 stone above the pipe and a minimum of 4" below the pipe.

The flow channels through manholes shall be U-shaped with the benchwalls extending to the crown of the incoming and outgoing pipes.

All sanitary sewer pipe crossing bodies of water must be ductile iron pipe with mechanical joints. In addition, where there is less than 4 feet from the crown of the pipe to the stream bed, the pipe must be encased in concrete.

No water shall be permitted to flow into the sanitary sewer system. All sanitary sewer lines shall be installed at a water level below the pipe. Pump discharge shall be directed to a storm outlet.

Storm Water Connections: No roof drains, footing drains and/or surface water drains may be connected to the sanitary sewer systems, including temporary connections during construction.

No building lateral connections shall be permitted until the sanitary sewer has been inspected and accepted by the governing agency. Failure to comply may result in the contractor being responsible for the cost of reworking and retesting of the fitting to be sponsored.

D. Standard specifications of the Municipal Partnership Utilities Sanitary District No. 12 shall govern for all installation and materials.

E. Sanitary sewer pipe shall be "CorTech-Truss-Pipe" conforming to ASTM, D-2680 or PVC in accordance with ASTM D-3034 (S.D.R. 35) and ASTM 2121. Minimum cell classification for PVC and Truss Pipe shall be 12454-B or 12454-C.

F. For all sanitary sewer joints, the Contractor shall use gasket type joints. No glue joints shall be allowed. Installed and manufactured in accordance with ASTM C-425.

G. All sanitary manholes shall be "precast concrete" manholes in accordance with ASTM C-478 and Section 720. Gasket seal shall be used at manhole section joints. The bedding beneath sewer manholes shall be a minimum of 6 inches of #8 stone beneath the manhole base.

H. The type of new manhole ring and cover shall be as specified on the standard detail sheet of these plans.

I. The casting elevations are set by plan. However, the castings are to be adjusted in the field by the Engineer's representative should a discrepancy occur between plan grade and existing grade. Castings should be set 1 inch above grade in unproved areas and graded for positive drainage away from manhole.

J. No construction of sanitary sewers will be allowed to commence until a valid construction permit per 327 I.A.C. Article 3 from the Indiana Dept. of Environmental Management is obtained.

K. Backfill around all structures and all cuts under paved areas with granular material opening within 5 feet of paved roadways shall be backfilled with granular material in accordance with Section 211.

L. The Contractor shall be responsible for verifying that all State, City and County permits have been obtained himself prior to start of construction.

M. The Contractor shall be required to furnish the Engineer with a set of prints, marked in red pencil, showing actual sewer location and invert, to include lateral location, depth and length. Such "as-built" prints must be received by the Engineer before the final contract payment can be authorized. The sanitary sewer laterals and stubs termination shall be indicated on the surface with a metal fence post set immediately above said termination point.

N. All sanitary sewer lines upon completion will be required to pass a low pressure air test or infiltration test, unless otherwise directed by the Engineer. Said test shall be conducted according to MCHD standards and shall be witnessed by an Engineer. Infiltration under test shall not exceed 100 gallons per inch of inside diameter of sewer pipe in 24 hours and 10 percent inclusive of all appurtenances within the section being tested such as manholes, house connections, etc.

O. Deflection tests shall be performed on all flexible pipe after the final backfill has been in place at least 30 days. No pipe shall exceed a vertical deflection of 5%.

P. All testing and inspections will be the responsibility of the Contractor and shall be observed by a Professional Engineer for certification. Accepting agency's assigned inspector shall also observe all testing.

Q. The ends of laterals are to be plugged tight with plastic dip cap capable of withstanding a low pressure air test without leakage.

R. Class C bedding as described in ASTM C-12-74 (ANSI A 106.2) or ACP MOP No. 37 shall be used, except where specified otherwise. All precast manholes shall be bedded on a granular foundation (6 inches minimum).

S. Water and sewer lines crossings and separations shall be in accordance with Ten State Standards and local codes.

1. Where water lines and sewer lines cross and the water line cannot be placed a minimum of 18" above the sewer line, with a minimum cover of 48", the sewer lines shall be constructed above the water works grade with mechanical joints.

2. Where water lines and sanitary sewer lines run parallel with a minimum of 10' horizontal separation shall be maintained.

Trench shall be opened sufficiently ahead of pipe laying to reveal obstructions, and shall be properly protected and/or barricaded when left unattended. Lay all pipe in open trenches, except when the local authority gives written permission for trenching to tunneling or boring. The trench shall be 1 1/4 times the outside diameter plus 12". Sheet and brace trench as necessary to protect workers and adjacent structures in accordance with Occupational Safety and Health Administration Standards. Keep trenches free from water while construction is in progress. Under no circumstances lay pipe or appurtenances in standing water. Conduct the discharge from trench dewatering to drains or natural drainage channels.

Forty-eight (48) hour notice shall be given to Municipal Partnership Utilities prior to the start of sewer construction. A four hour notice shall be given prior to any testing done on the sewer.

All connections to existing manholes shall be core drilled unless otherwise approved by accepting agency.

All pipe openings in manholes, including laterals, shall be fitted with rubber gaskets. Manhole sections shall have "O" rings, which shall meet ASTM C-433. Manhole waterstops shall be installed at all connections, where flexible-type manhole connections are not used.

The contractor will be required to provide as-built drawings to the accepting agency to certify the elevation and slope of sanitary sewers. Sewers installed at a grade less than required by Ten State Standards will not be accepted and will be the contractor's responsibility to install properly. Contractor shall provide periodic as-built checks on the sewer elevation during construction to assure that the design grade is being maintained.

The minimum thickness for concrete encasement shall be 6 inches.

Pipe bedding shall be a minimum of 12" of #8 stone above the pipe and a minimum of 4" below the pipe.

The flow channels through manholes shall be U-shaped with the benchwalls extending to the crown of the incoming and outgoing pipes.

All sanitary sewer pipe crossing bodies of water must be ductile iron pipe with mechanical joints. In addition, where there is less than 4 feet from the crown of the pipe to the stream bed, the pipe must be encased in concrete.

No water shall be permitted to flow into the sanitary sewer system. All sanitary sewer lines shall be installed at a water level below the pipe. Pump discharge shall be directed to a storm outlet.

Storm Water Connections: No roof drains, footing drains and/or surface water drains may be connected to the sanitary sewer systems, including temporary connections during construction.

No building lateral connections shall be permitted until the sanitary sewer has been inspected and accepted by the governing agency. Failure to comply may result in the contractor being responsible for the cost of reworking and retesting of the fitting to be sponsored.

D. Standard specifications of the Municipal Partnership Utilities Sanitary District No. 12 shall govern for all installation and materials.

E. Sanitary sewer pipe shall be "CorTech-Truss-Pipe" conforming to ASTM, D-2680 or PVC in accordance with ASTM D-3034 (S.D.R. 35) and ASTM 2121. Minimum cell classification for PVC and Truss Pipe shall be 12454-B or 12454-C.

F. For all sanitary sewer joints, the Contractor shall use gasket type joints. No glue joints shall be allowed. Installed and manufactured in accordance with ASTM C-425.

G. All sanitary manholes shall be "precast concrete" manholes in accordance with ASTM C-478 and Section 720. Gasket seal shall be used at manhole section joints. The bedding beneath sewer manholes shall be a minimum of 6 inches of #8 stone beneath the manhole base.

H. The type of new manhole ring and cover shall be as specified on the standard detail sheet of these plans.

I. The casting elevations are set by plan. However, the castings are to be adjusted in the field by the Engineer's representative should a discrepancy occur between plan grade and existing grade. Castings should be set 1 inch above grade in unproved areas and graded for positive drainage away from manhole.

J. No construction of sanitary sewers will be allowed to commence until a valid construction permit per 327 I.A.C. Article 3 from the Indiana Dept. of Environmental Management is obtained.

K. Backfill around all structures and all cuts under paved areas with granular material opening within 5 feet of paved roadways shall be backfilled with granular material in accordance with Section 211.

L. The Contractor shall be responsible for verifying that all State, City and County permits have been obtained himself prior to start of construction.

M. The Contractor shall be required to furnish the Engineer with a set of prints, marked in red pencil, showing actual sewer location and invert, to include lateral location, depth and length. Such "as-built" prints must be received by the Engineer before the final contract payment can be authorized. The sanitary sewer laterals and stubs termination shall be indicated on the surface with a metal fence post set immediately above said termination point.

N. All sanitary sewer lines upon completion will be required to pass a low pressure air test or infiltration test, unless otherwise directed by the Engineer. Said test shall be conducted according to MCHD standards and shall be witnessed by an Engineer. Infiltration under test shall not exceed 100 gallons per inch of inside diameter of sewer pipe in 24 hours and 10 percent inclusive of all appurtenances within the section being tested such as manholes, house connections, etc.

O. Deflection tests shall be performed on all flexible pipe after the final backfill has been in place at least 30 days. No pipe shall exceed a vertical deflection of 5%.

P. All testing and inspections will be the responsibility of the Contractor and shall be observed by a Professional Engineer for certification. Accepting agency's assigned inspector shall also observe all testing.

Q. The ends of laterals are to be plugged tight with plastic dip cap capable of withstanding a low pressure air test without leakage.

R. Class C bedding as described in ASTM C-12-74 (ANSI A 106.2) or ACP MOP No. 37 shall be used, except where specified otherwise. All precast manholes shall be bedded on a granular foundation (6 inches minimum).

S. Water and sewer lines crossings and separations shall be in accordance with Ten State Standards and local codes.

1. Where water lines and sewer lines cross and the water line cannot be placed a minimum of 18" above the sewer line, with a minimum cover of 48", the sewer lines shall be constructed above the water works grade with mechanical joints.

2. Where water lines and sanitary sewer lines run parallel with a minimum of 10' horizontal separation shall be maintained.

Trench shall be opened sufficiently ahead of pipe laying to reveal obstructions, and shall be properly protected and/or barricaded when left unattended. Lay all pipe in open trenches, except when the local authority gives written permission for trenching to tunneling or boring. The trench shall be 1 1/4 times the outside diameter plus 12". Sheet and brace trench as necessary to protect workers and adjacent structures in accordance with Occupational Safety and Health Administration Standards. Keep trenches free from water while construction is in progress. Under no circumstances lay pipe or appurtenances in standing water. Conduct the discharge from trench dewatering to drains or natural drainage channels.

Forty-eight (48) hour notice shall be given to Municipal Partnership Utilities prior to the start of sewer construction. A four hour notice shall be given prior to any testing done on the sewer.

All connections to existing manholes shall be core drilled unless otherwise approved by accepting agency.

All pipe openings in manholes, including laterals, shall be fitted with rubber gaskets. Manhole sections shall have "O" rings, which shall meet ASTM C-433. Manhole waterstops shall be installed at all connections, where flexible-type manhole connections are not used.

The contractor will be required to provide as-built drawings to the accepting agency to certify the elevation and slope of sanitary sewers. Sewers installed at a grade less than required by Ten State Standards will not be accepted and will be the contractor's responsibility to install properly. Contractor shall provide periodic as-built checks on the sewer elevation during construction to assure that the design grade is being maintained.

The minimum thickness for concrete encasement shall be 6 inches.

Pipe bedding shall be a minimum of 12" of #8 stone above the pipe and a minimum of 4" below the pipe.

The flow channels through manholes shall be U-shaped with the benchwalls extending to the crown of the incoming and outgoing pipes.

All sanitary sewer pipe crossing bodies of water must be ductile iron pipe with mechanical joints. In addition, where there is less than 4 feet from the crown of the pipe to the stream bed, the pipe must be encased in concrete.

No water shall be permitted to flow into the sanitary sewer system. All sanitary sewer lines shall be installed at a water level below the pipe. Pump discharge shall be directed to a storm outlet.

Storm Water Connections: No roof drains, footing drains and/or surface water drains may be connected to the sanitary sewer systems, including temporary connections during construction.

No building lateral connections shall be permitted until the sanitary sewer has been inspected and accepted by the governing agency. Failure to comply may result in the contractor being responsible for the cost of reworking and retesting of the fitting to be sponsored.

D. Standard specifications of the Municipal Partnership Utilities Sanitary District No. 12 shall govern for all installation and materials.

E. Sanitary sewer pipe shall be "CorTech-Truss-Pipe" conforming to ASTM, D-2680 or PVC in accordance with ASTM D-3034 (S.D.R. 35) and ASTM 2121. Minimum cell classification for PVC and Truss Pipe shall be 12454-B or 12454-C.

F. For all sanitary sewer joints, the Contractor shall use gasket type joints. No glue joints shall be allowed. Installed and manufactured in accordance with ASTM C-425.

G. All sanitary manholes shall be "precast concrete" manholes in accordance with ASTM C-478 and Section 720. Gasket seal shall be used at manhole section joints. The bedding beneath sewer manholes shall be a minimum of 6 inches of #8 stone beneath the manhole base.

H. The type of new manhole ring and cover shall be as specified on the standard detail sheet of these plans.

I. The casting elevations are set by plan. However, the castings are to be adjusted in the field by the Engineer's representative should a discrepancy occur between plan grade and existing grade. Castings should be set 1 inch above grade in unproved areas and graded for positive drainage away from manhole.

J. No construction of sanitary sewers will be allowed to commence until a valid construction permit per 327 I.A.C. Article 3 from the Indiana Dept. of Environmental Management is obtained.

K. Backfill around all structures and all cuts under paved areas with granular material opening within 5 feet of paved roadways shall be backfilled with granular material in accordance with Section 211.

L. The Contractor shall be responsible for verifying that all State, City and County permits have been obtained himself prior to start of construction.

M. The Contractor shall be required to furnish the Engineer with a set of prints, marked in red pencil, showing actual sewer location and invert, to include lateral location, depth and length. Such "as-built" prints must be received by the Engineer before the final contract payment can be authorized. The sanitary sewer laterals and stubs termination shall be indicated on the surface with a metal fence post set immediately above said termination point.

N. All sanitary sewer lines upon completion will be required to pass a low pressure air test or infiltration test, unless otherwise directed by the Engineer. Said test shall be conducted according to MCHD standards and shall be witnessed by an Engineer. Infiltration under test shall not exceed 100 gallons per inch of inside diameter of sewer pipe in 24 hours and 10 percent inclusive of all appurtenances within the section being tested such as manholes, house connections, etc.

O. Deflection tests shall be performed on all flexible pipe after the final backfill has been in place at least 30 days. No pipe shall exceed a vertical deflection of 5%.

P. All testing and inspections will be the responsibility of the Contractor and shall be observed by a Professional Engineer for certification. Accepting agency's assigned inspector shall also observe all testing.

Q. The ends of laterals are to be plugged tight with plastic dip cap capable of withstanding a low pressure air test without leakage.

R. Class C bedding as described in ASTM C-12-74 (ANSI A 106.2) or ACP MOP No. 37 shall be used, except where specified otherwise. All precast manholes shall be bedded on a granular foundation (6 inches minimum).

S. Water and sewer lines crossings and separations shall be in accordance with Ten State Standards and local codes.

1. Where water lines and sewer lines cross and the water line cannot be placed a minimum of 18" above the sewer line, with a minimum cover of 48", the sewer lines shall be constructed above the water works grade with mechanical joints.

2. Where water lines and sanitary sewer lines run parallel with a minimum of 10' horizontal separation shall be maintained.

Trench shall be opened sufficiently ahead of pipe laying to reveal obstructions, and shall be properly protected and/or barricaded when left unattended. Lay all pipe in open trenches, except when the local authority gives written permission for trenching to tunneling or boring. The trench shall be 1 1/4 times the outside diameter plus 12". Sheet and brace trench as necessary to protect workers and adjacent structures in accordance with Occupational Safety and Health Administration Standards. Keep trenches free from water while construction is in progress. Under no circumstances lay pipe or appurtenances in standing water. Conduct the discharge from trench dewatering to drains or natural drainage channels.

Forty-eight (48) hour notice shall be given to Municipal Partnership Utilities prior to the start of sewer construction. A four hour notice shall be given prior to any testing done on the sewer.

All connections to existing manholes shall be core drilled unless otherwise approved by accepting agency.

All pipe openings in manholes, including laterals, shall be fitted with rubber gaskets. Manhole sections shall have "O" rings, which shall meet ASTM C-433. Manhole waterstops shall be installed at all connections, where flexible-type manhole connections are not used.

The contractor will be required to provide as-built drawings to the accepting agency to certify the elevation and slope of sanitary sewers. Sewers installed at a grade less than required by Ten State Standards will not be accepted and will be the contractor's