Drain: SPRINGMUL VIULAGES ORAIN Drain #: 268
Improvement/Arm: THE CROSSINGS - SECTION - 4
Operator: JOH Date: 5-18-04
Drain Classification: Urban/Rural Year Installed: 1996

GIS Drain Input Checklist

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

7"

All

gr

971

Gasb 34 Footages for Historical Cost <u>Drain Length Log</u>

Drain-Improvement: Sprintium VILLIAGES DIAMN - THE CRESTINGS - SECTION Y

Drain Type:	Size:	Length	Length (DB Query)	Length		nie bes
550	6"	3314	3314'	Recorrcile	Price:	Cost:
RCP	124	35.	35'	8		6,628.0
	154	146'	1461	Ø	7.25 9.50	253,8
	18"	211'	211'		10,50	1,387.00
	244	2281	228'	Ø	18,00	2215,50
	30"	214'	214'			4,104.00
	36"	143'	143'		<u>24.60</u> 32.25	5,264.40
					J E, ES	4611.75
			·			
<u> </u>		·				
						
· · · · · · · · · · · · · · · · · · ·		·				
	Sum:	4,29/	4,291'	Ø	S	24,464.4
al Report:				·— ·—	-	
nments:						





Kenton C. Ward, Surveyor

Suite 146

776-8495

One Hamilton County Square

Noblesville, Indiana 46060-22381 nuary 8, 1996

TO: Hamilton County Drainage Board

RE: Springmill Village Drain-The Crossings Section 4

Attached is a petition, non-enforcement request, plans, calculations, quantity summary and assessment roll for the The Crossings sec 4,Springmill Village 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	3314	feet	24"	RCP	228	feet
12"	RCP	40	feet	30"	RCP	216	feet
15"	RCP	151	feet	36"	RCP	144	feet
18"	RCP	210	feet				

The total length of the drain will be 4,303 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 $$\frac{870}{}$

Parcels assessed for this drain may be assessed for the Overman-Harvey and/or Village Farms 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 The Crossings, Section 4 at Springmill Villages as recorded in the office of the Hamilton County Recorder.

I recommend the Board set a hearing for this proposed drain for $\frac{2}{2} \frac{1}{2} \frac{1}{9} \frac{1}{5} \frac{9}{200} \frac{200}{6} \frac{1}{100}$.

Kenton C. Ward Hamilton County Surveyor KCW/no

CERTIFICATE OF COMPLETION AND COMPLIANCE

TO: HAMILTON COUNTY SURVEYOR

RE: The Crossings at Springmill Villages Section 4

I hereby certify that:

- 1.) I am a Registered Engineer in the State of Indiana,
- 2.) I am familiar with the plans and specifications for the above referenced subdivision,
- 3.) I have personally observed and supervised the completion of the Drainage Facilities for the above referenced subdivision, 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: Type or Prin	nted Name: David K. Sexton		ate:	12.13.95	
	dress: Schneider Engineering Corp. 3	3020 N. Pos	t Road,	Indianapolis, IN 46226	
Celephone: _	317-898-8282	•			
		INDIAN	A REGIS	TRATION NUMBER	

9500028

SEAL







Henton C. Ward, Surveyor Phone (317) 776-8495 Fax (317) 776-9628

Suite 146 One Hamilton County Square Tloblesville, Indiana 46060-2230

July 23, 1996

TO: Hamilton County Drainage Board

RE: Springmill Villages Drain-The Crossing Section 4

Attached are As-Builts, Certificate of Completion and Compliance, and other information for Springmill Villages Drain-The Crossing Section 4. 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 January 8, 1996. The changes are as followed:

STR 236 to Ex Man Hole 15" RCP lengthened from 85' to 86 feet 15" RCP, shortened from 26 feet STR 236 to 235 28' to STR 223 to Ex Man Hole RCP lengthened from 138' to 140 feet STR 223 to 222 30" RCP shortened from 28' to 26 feet STR 222 to 221 30" shortened from 50' to 48 feet RCP STR 231 to 230 15" 34 feet RCP shortened from 38' to STR 232 to 230 12" shortened from 40' to 35 feet RCP 18" STR 230 to 229 RCP lengthened from 38' to 41 feet 172' to 170 feet STR 229 to 221 18" shortened RCP from36" 144' to 143 feet STR 221 to 220 RCP shortened from

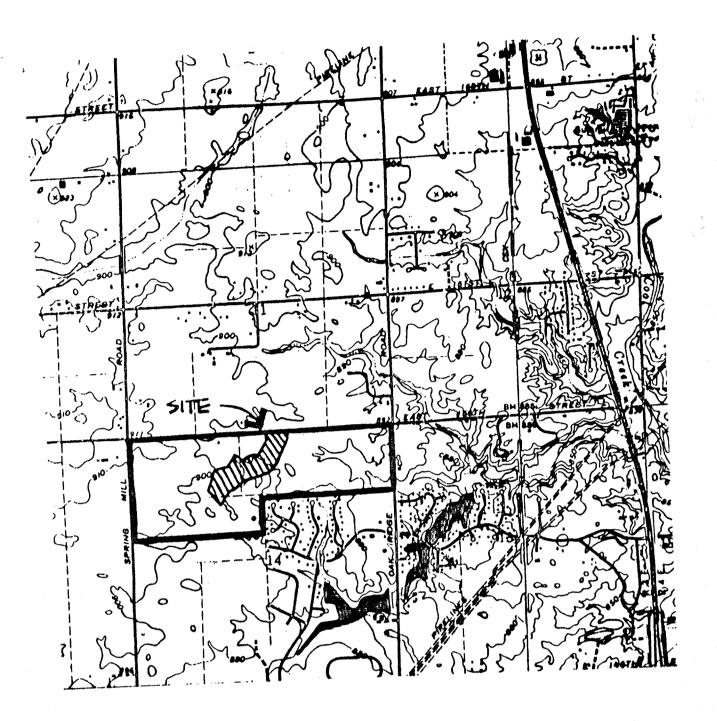
The length of the drain due to the changes described above is now 4,291 feet.

The non-enforcement request was approved by the Board at its meeting on February 26, 1996.

A Bond of Letter of Credit from Brenwick Development was not required for this section.

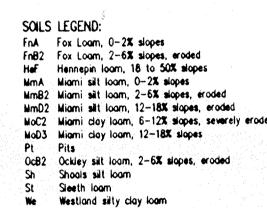
. I recommend the Board approve the drains construction as complete and acceptable.

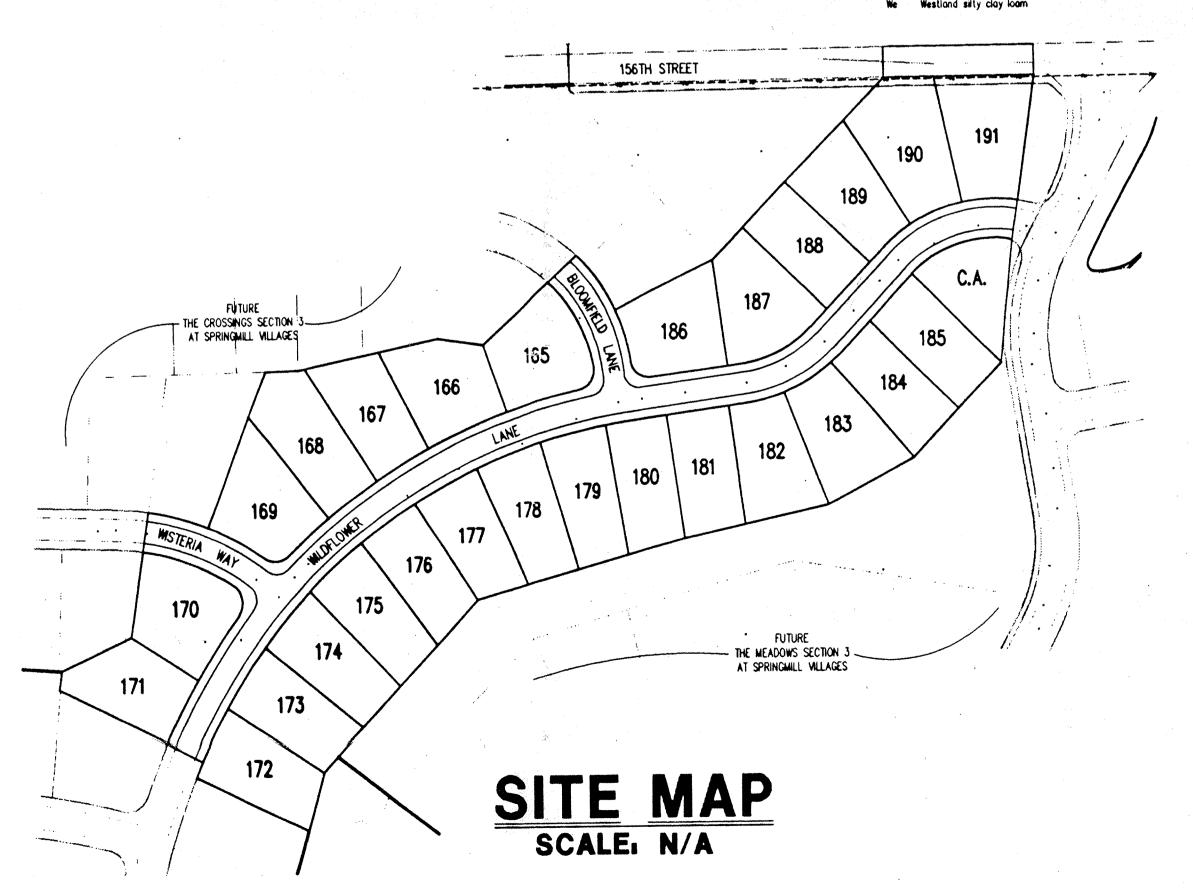
Hamilton County Surveyor KCW/no



AREA MAP NOT TO SCALE

SOILS MAP NOT TO SCALE





SECTION 14-18N-3E

THE CROSSINGS SPRINGMILL VILLAGES SECTION 4

(CONSTRUCTION PLANS)

WASHINGTON TOWNSHIP HAMILTON COUNTY, INDIANA DEVELOPER:

BRENWICK DEVELOPMENT CO., INC.

12722 HAMILTON CROSSING BLVD. CARMEL, INDIANA 46032 (317) 574-3400

Engineer:

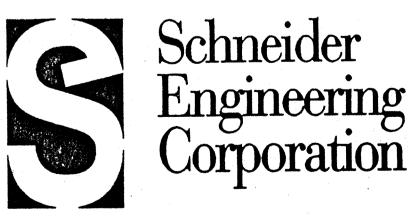
SCHNEIDER ENGINEERING CORP.

3020 NORTH POST ROAD INDIANAPOLIS, INDIANA 46226 [317] 898-8282 FAX (317) 899-8010

	INDEX
SHEET No.	DESCRIPTION
S-1	TITLE SHEET
S-2	DEVELOPMENT PLAN
S-3	EROSION CONTROL PLAN
S-4,5	STREET PLAN & PROFILES
S-6	INTERSECTION DETAIL
S-7	SANITARY SEWER PLAN & PROFILES
S-8	STORM SEWER PLAN & PROFILES
S-9	WATER DISTRIBUTION PLAN
S-10	WATER DIST. DETAILS & SPEC.
S-11	HAMILTON COUNTY DETAILS
S-12	GENERAL DETAILS
S-13	SPECIFICATIONS

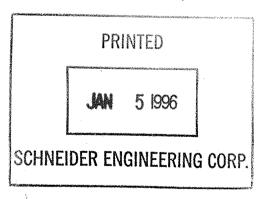
STORM

12-13.95



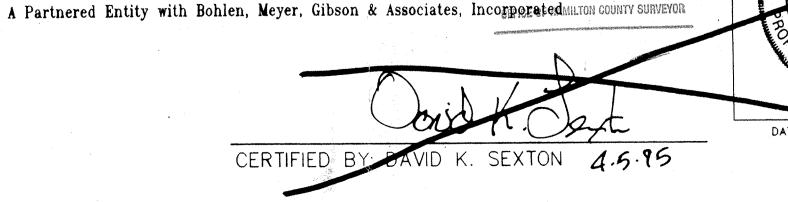
3020 North Post Road Indianapolis, Indiana 46226-0068 317-898-8282 317-899-8010 Fax

ad Engineering
a Surveying
GIS © LIS
Geology



JAN 05 1996

r, Gibson & Associates, Incorporated MILTON COUNTY SURVEYOR



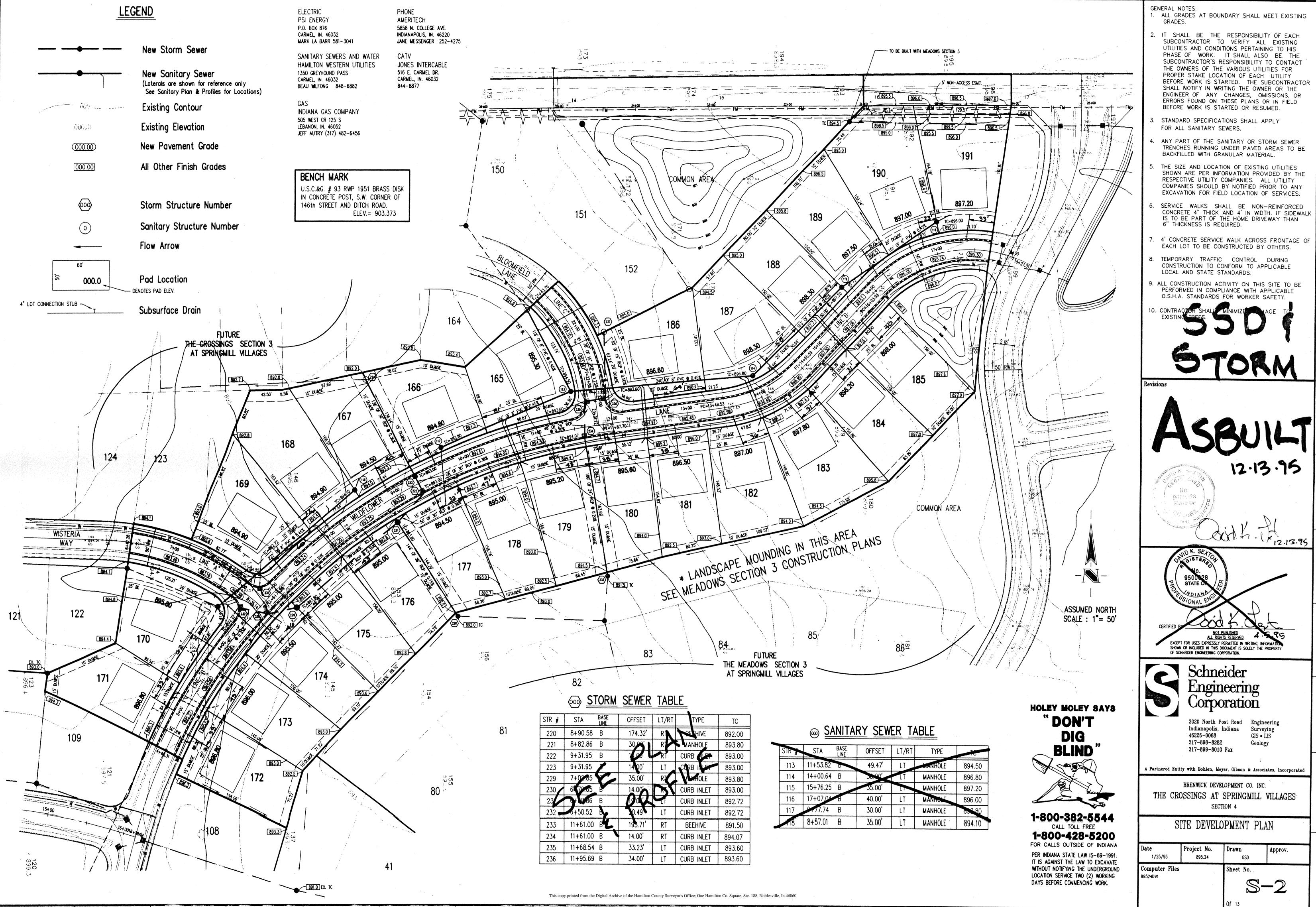
DATE:

PROJECT MANAGER: DKS

CHECKED BY: _____ DATE CHECKED: ____

(JOB No. 895.24)

13



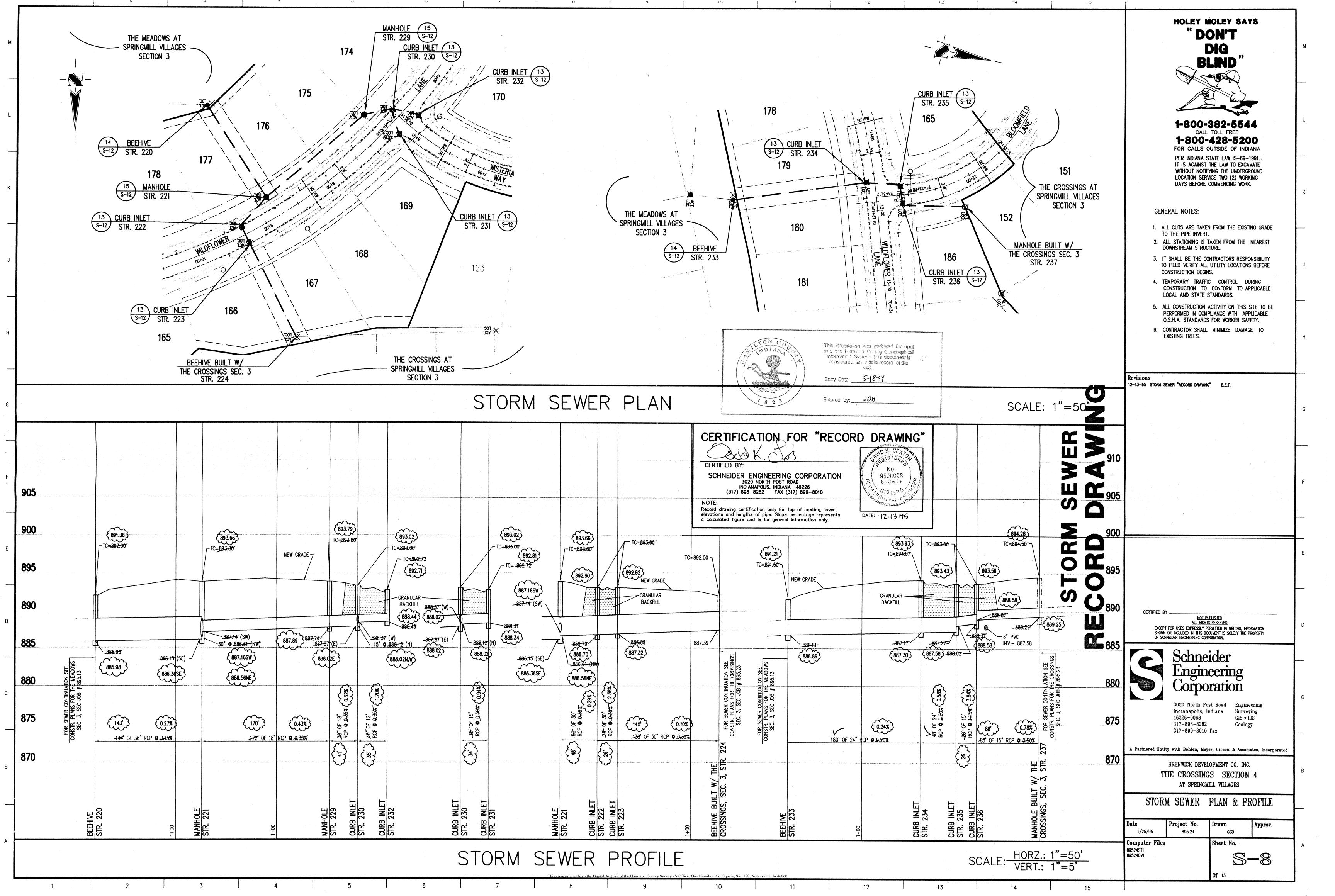
1. ALL GRADES AT BOUNDARY SHALL MEET EXISTING

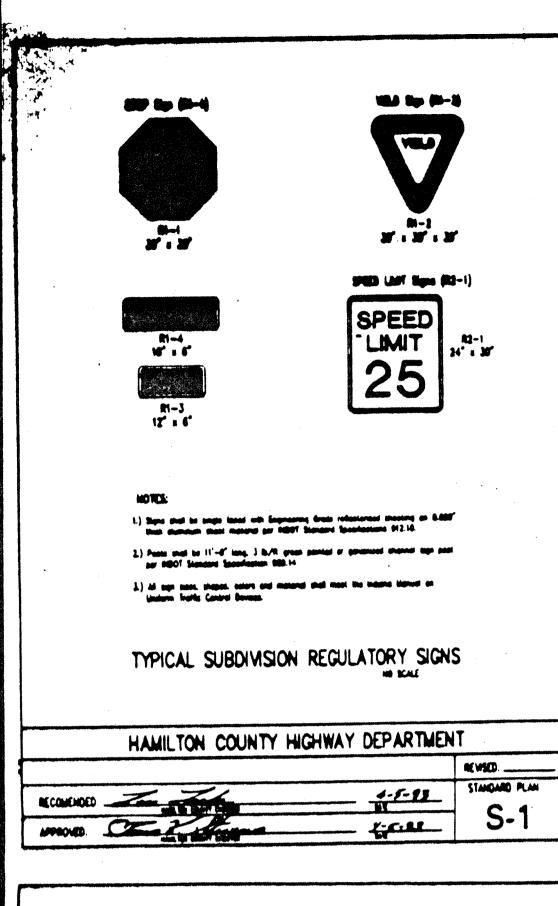
- SUBCONTRACTOR TO VERIFY ALL EXISTING UTILITIES AND CONDITIONS PERTAINING TO HIS PHASE OF WORK. IT SHALL ALSO BE THE SUBCONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNERS OF THE VARIOUS UTILITIES FOR PROPER STAKE LOCATION OF EACH UTILITY BEFORE WORK IS STARTED. THE SUBCONTRACTOR SHALL NOTIFY IN WRITING THE OWNER OR THE
- ANY PART OF THE SANITARY OR STORM SEWER TRENCHES RUNNING UNDER PAVED AREAS TO BE
- THE SIZE AND LOCATION OF EXISTING UTILITIES SHOWN ARE PER INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES. ALL UTILITY COMPANIES SHOULD BY NOTIFIED PRIOR TO ANY
- SERVICE WALKS SHALL BE NON-REINFORCED CONCRETE 4" THICK AND 4' IN WIDTH. IF SIDEWALK IS TO BE PART OF THE HOME DRIVEWAY THAN 6" THICKNESS IS REQUIRED.
- TEMPORARY TRAFFIC CONTROL DURING
- PERFORMED IN COMPLIANCE WITH APPLICABLE O.S.H.A. STANDARDS FOR WORKER SAFETY.

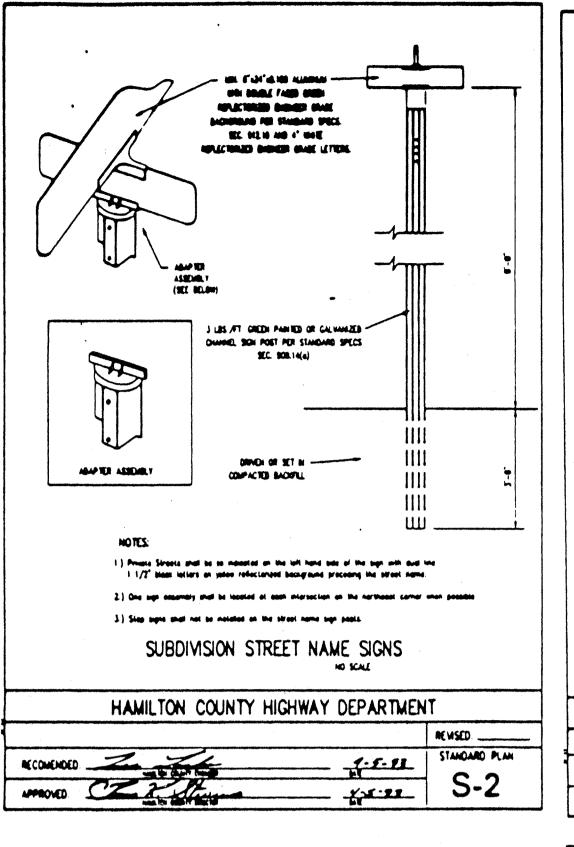
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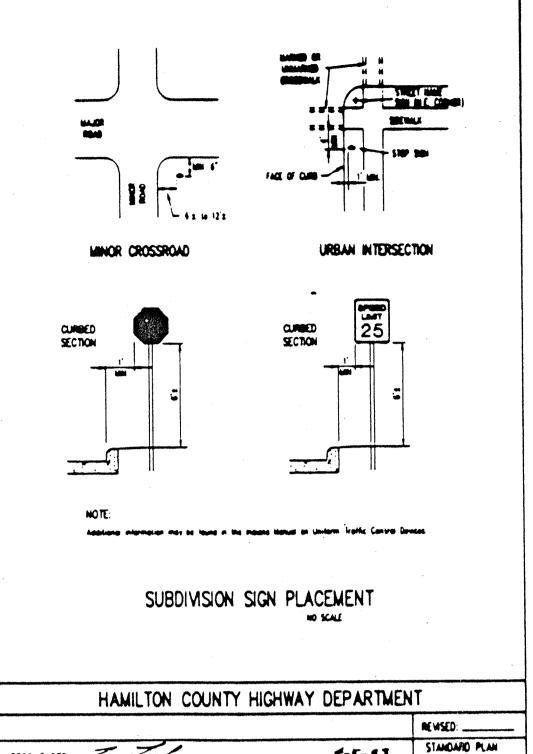
THE CROSSINGS AT SPRINGMILL VILLAGES

Date 1/25/95	Project No. 895.24	Drawn GSD	Approv.
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952 4DV 1		S	-2





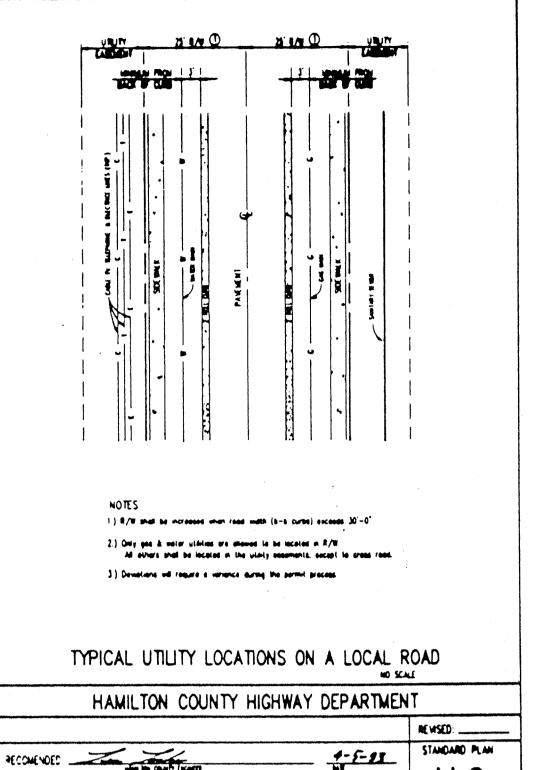




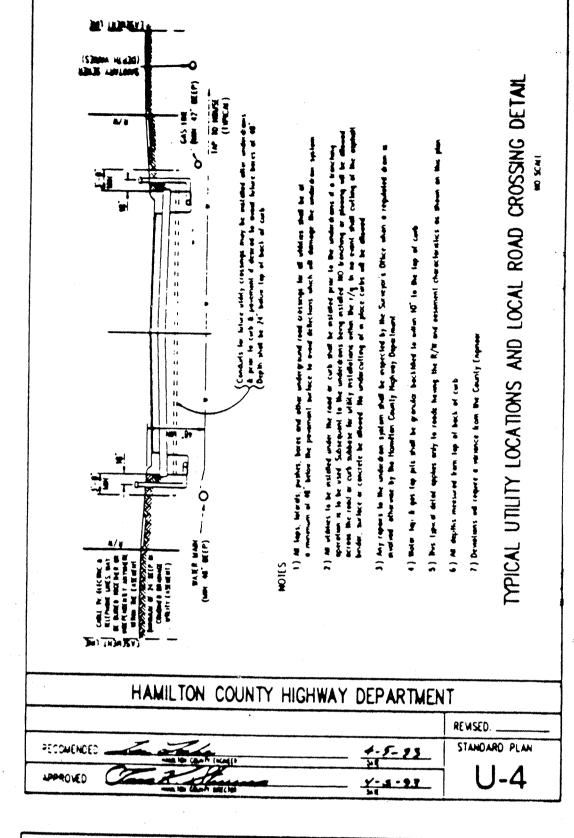
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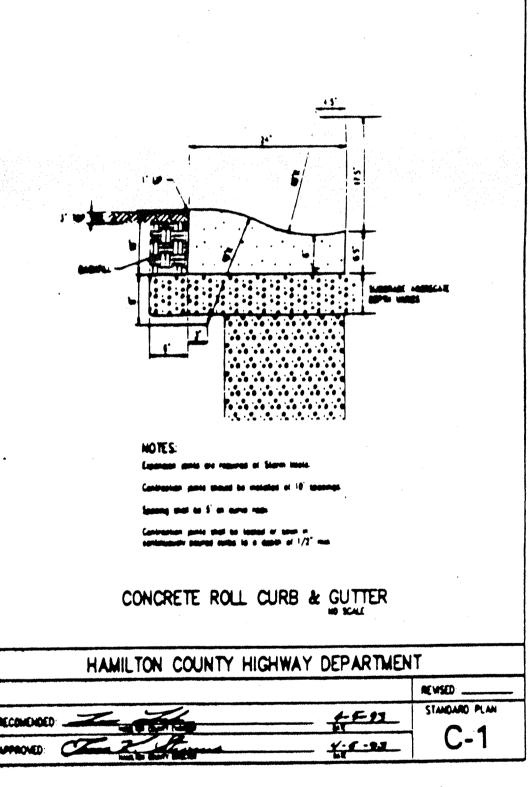
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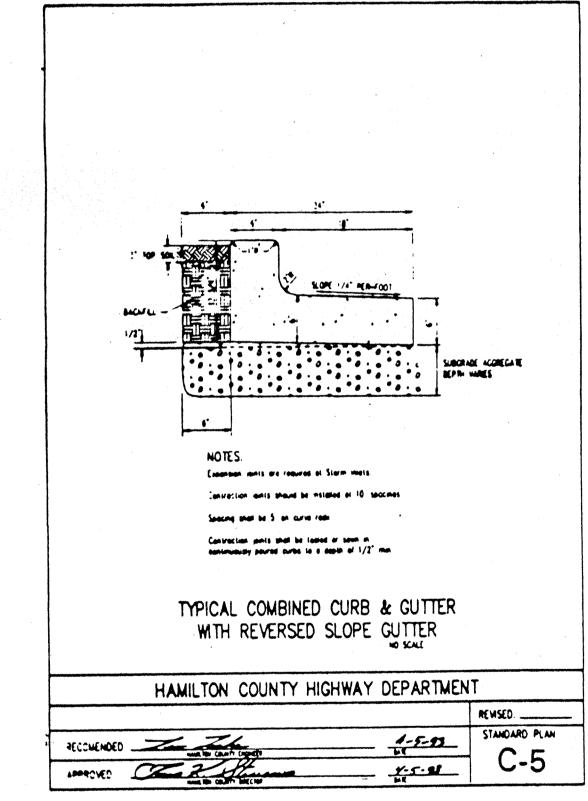
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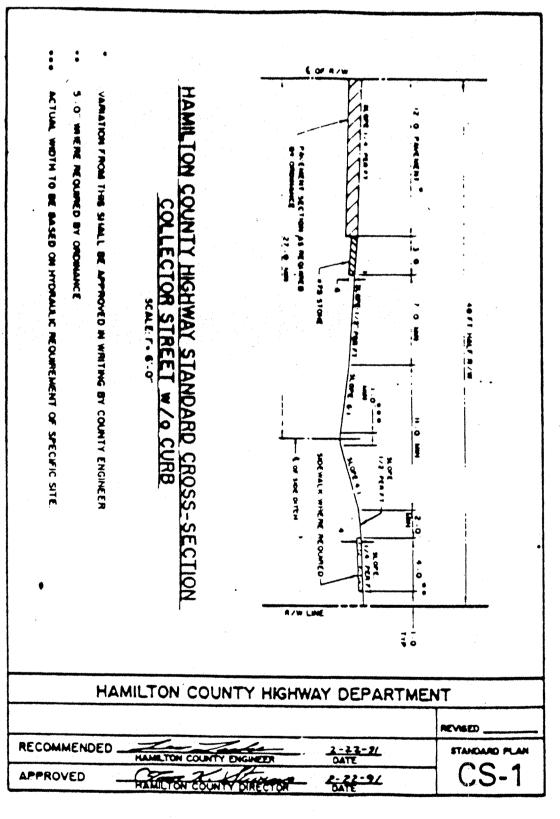


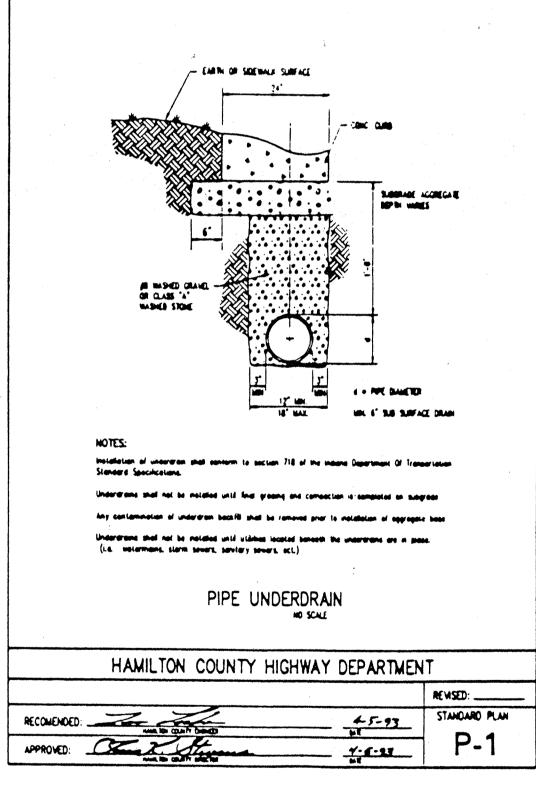
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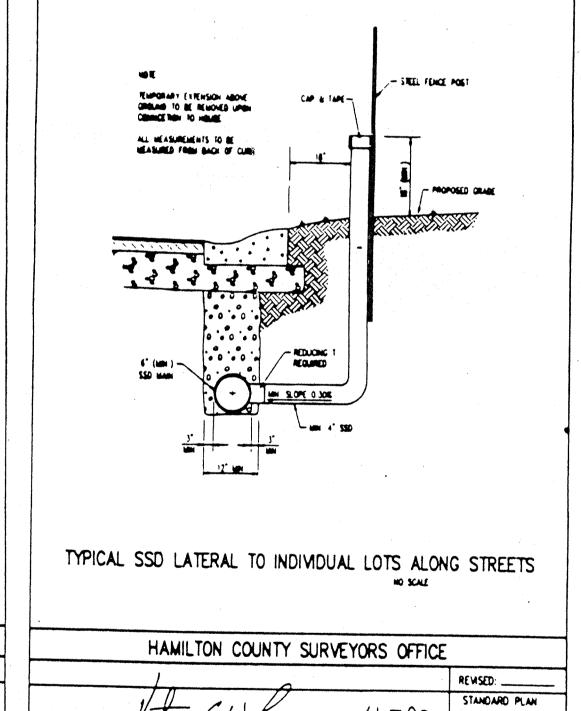


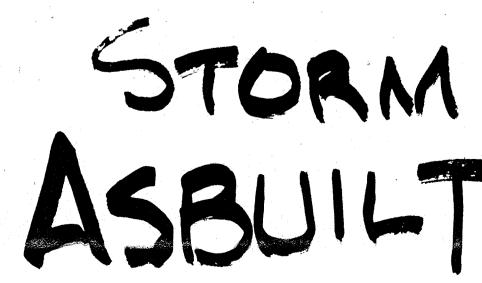




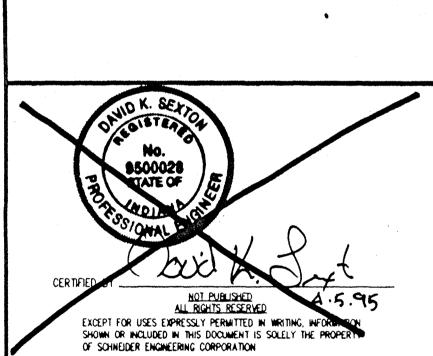


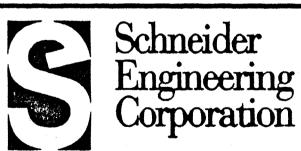






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3020 North Post Road Engineering 48226-0068 317-898-8282

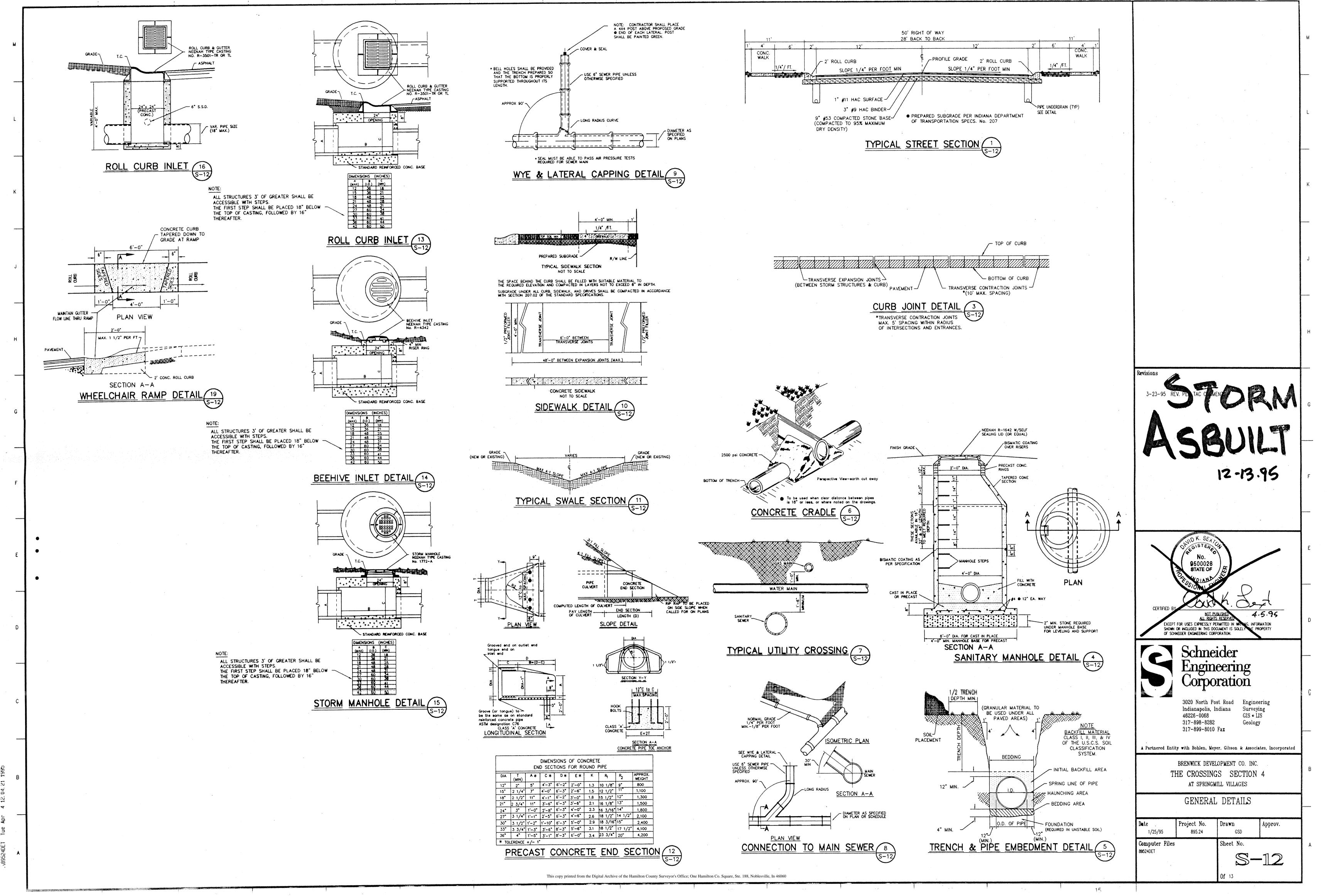
317-899-8010 Fax

A Partnered Entity with Bohlen, Meyer, Gibson & Associates, Incorporated

BRENWICK DEVELOPMENT CO. INC. THE CROSSINGS SECTION 4 AT SPRINGMILL VILLAGES

HAMILTON COUNTY DETAILS

Project No. GSO 1/25/95 Computer Files 89523WDT Sheet No. S-11



EARTHWORK

M

1. SCOPE OF WORK

- A. Extent: The work required under this section consists of all excavating, filling, rough grading and related items necessary to complete the work indicated on the drawings and described in the specifications. The Contractor shall notify in writing the owners and the Engineer of any changes, errors, or omissions found on the plans or in the field, before work is started or resumed.
- In general, the items of work to be performed under this section shall include: clearing and grubbing, removal of trees and stumps (where required), protection of trees to remain, stripping and storage of topsoil, fill compaction and rough grading of entire site.
- 2. Excavated material that is suitable may be used for fills. All unsuitable material and all surplus excavated material not required shall be removed from the site. The location of dump and length of haul shall be the Contractor's responsibility.
- 3. Provide and place any additional fill material from off the site as may be necessary to produce the grades required. Fill obtained from off site shall be of kind and quality as specified for fills herein and the source approved by the Owner.
- The Contractor shall accept the site as he finds it and shall remove all trash, rubbish and debris from the site prior to starting excavation.
- B. Work not included: The following items of related work are specified and included in other sections of these specifications:
- Excavation, grading and backfilling for
- 2. Storm drainage systems
- 3. Sanitary sewer systems
- 4. Streets and paving
- 5. Water supply system

2. BENCH MARKS

Maintain carefully all bench marks, monuments and other reference points; if disturbed or destroyed, contractor shall contact engineer.

3. REMOVAL OF TREES

- A. Remove all trees and stumps from area to be occupied by road and surfaced areas. Removal of trees outside these areas shall only be done as noted on drawings or approved by the Owner.
- B. All brush, stumps, wood and other refuse from the trees shall be buried onsite or removed to disposal areas off of the site. Disposal by burning shall not be permitted unless proper permits are obtained (where applicable). The location of on site bury pits shall be designated by the owner or the Engineer.

4. PROTECTION OF TREES

A. General Protection: The Contractor shall be responsible for the protection of tops, trunks and roots of existing trees on the project site that are to remain. Existing trees subject to construction damage shall be boxed, fenced or otherwise protected before any work is started; do not stockpile within branch spread. Remove interfering branches without injury to trunks and cover scars with tree paint.

5. HANDLING OF TOPSOIL

- A. Remove all organic material from the areas to be occupied by buildings, roads, walks and parking areas. Pile and store topsoil at a location where it will not interfere with construction operations. Topsoil shall be reasonably free from subsoil, debris, weeds, grass, stones, ect.
- B. After completion of site grading and subsurface utility installation, top soll shall be replaced in areas designated on the erosion control plan for seeding and/or sodding. Any remaining top soil shall be used for finished grading around structures and landscaping areas.

6. DISPOSITION OF UTILITIES:

- A. Rules and regulations governing the respective utilities shall be observed in executing all work under this section.
- B. If active utilities are encountered but not shown on the drawings, the Engineer shall be advised before work is continued.
- C. Inactive and obandoned utilities encountered in excavating and grading operations shall be reported to the Engineer. They shall be removed, plugged or capped as directed by the Utility Company and the Engineer.
- D. It shall be the responsibility of each contractor to verify all existing utilities and conditions pertaining to his phase of the work. It shall also be the contractors responsibility to contact the owners of the various utilities before work is started.

7. SITE GRADING:

D

- A. Grades: Contractor shall perform all cutting, filling, compacting of fills and rough grading required to bring entire project area to grade as shown on the drawings.
- B. Rough Grading: the tolerance for paved areas shall not exceed 0.10 feet plus or minus above the established subgrade. All other areas shall not exceed 0.10 feet plus or minus the established grade. All banks and other breaks in grade shall be rounded at top and bottom.

C. Compaction Requirements:

- All building pad areas shall be compacted to standards specified by local and/or state building codes.
- For compaction requirements of paved areas, see street specifications.

8. Earth Work Balance
The Contractor shall confirm all earthwork quantities prior to start of construction. If an excess or shortage of earth is encountered, the Contractor shall confirm with the Owner and Engineer the requirements for stockpiling, removal or importing of earth.

Minor adjustments to the grades may be required to earthwork balances when minor excess material or shortages are encountered. It is recognized by the parties hereto that the calculations of the Engineer in determining earthwork quantities shall be accomplished in accordance with the American Society of Civil Engineers Standards for such calculations. Further, that these calculations are subject to the interpretations of soil borings as the physical limits of the various soil types, also the allowable variation in finish grade and compaction permitted the contractor, and that all of these parameters may cause either an excess or shortage of actual earthwork materials to complete the project. If such an actual minor excess or shortage of materials occurs, the contractor shall contact the engineer to determine if adjustment can be made to correct the imbalance of earth.

SANITARY SEWER SYSTEMS

1. SCOPE OF WORK

The work under this section includes all sanitary sewers, manholes, cleanouts and related items including excavating and backfilling, necessary to complete the work shown in the drawings, starting five feet outside the building walls. The ends of sewers shall be tightly plugged or capped at the terminal points, adjacent to buildings, pending the connecting of all such lines to the building drain as specified in the plumbing specifications and architectural drawings.

2. MATERIALS

- A. Sanitary Sewers
 - All gravity plastic sewer pipe and fittings shall conform to ASTM D3034, SDR-35 and meet a cell classification of 12454 B in accordance with ASTM 1784.

3. Manholes

- 1. Precast reinforced concrete manhole sections and steps shall conform to ASTM C-478 latest revision
- 2. Castings shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage distortion or other defects. They shall be smooth and well—cleaned by shot—blasting or by some other approved method. They shall be coated with asphalt paint which shall result in a smooth coating, tough and tenacious when cold, not tacky or brittle. They shall be gray iron meeting ASTM A-48 latest revision. Manhole covers for sanitary sewer shall be Neenah Type R-1642 with "f" concealed pickhole.
- Joints manhole sections shall be jointed with sealed "o" rings. The "o" rings shall meet ASTM C-443 latest revisions.
- 4. Bismatic coating shall be applied around each manhole joint from 6 inches above to 6 inches below each joint. Inside joints to be filled with precoat plug material.

3. APPLICATION

- A. Permits and Codes The intent of this section of the specifications is that the contractor's bid on the work covered merein shall be based upon the drawings and specifications but that the work shall comply with all applicable codes and regulations as amended by any waivers. Contractor shall furnish all bonds necessary to get permits for cuts and connections to existing sewers.
- B. Local Standards The term "local standards" as used herein means the standards of design and construction of the respective municipal department of utility company.
- C. Existing Improvements Maintain in operating condition all active utilities, sewers and other drains encountered in the sewer installation.

 Repair to the satisfaction of the owner any damage to existing active improvements.
- D. Workmanship To conform to all local, state and national codes and to be approved by all local and state agencies having jurisdiction.
- E. Trenching Lay all pipe in open trenches, except when the local authority gives written permission for tunneling. 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 brace trench as necessary to protect workmen 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 shall pipe or appurtenances be laid in standing water. Conduct the discharge from trench dewatering to drains or natural drainage channels.
- F. Special Supports Whenever, in the opinion of the Engineer, the soil at or below the pipe grade is unsuitable for supporting sewers and appurtenances specified in this section, such special support, in addition to those shown or specified, shall be provided as the Engineer may direct, and the contract will be adjusted.
- G. Backfilling for a depth of at least 12 inches above the top of the pipe, backfill with granular material free from large stones, rock fragments, roots or sod. Compact this backfill thoroughly, taking care not to disturb the pipe. for the remaining trench depth, backfill with earth or granular material containing stones or rocks not larger than 4 inches. Backfill under and within 5° of walks, parking areas, driveways and streets shall be granular material only thoroughly compacted, by approved methods.
- H. Flow Channels The flow channels within manholes shall be an integral part of the precast base. The channels shall be shaped and formed for a clean transition with proper hydraulics to allow the smooth conveyance of flow through the manhole. The bench wall shall be formed to the crown of the inlet and outlet pipes to form a "U" shaped channel. The bench wall shall slope back from the crown at 1/2 inch per foot to the manhole wall.
- I. Infiltration The contractor shall furnish necessary equipment to test sewers for infiltration. Infiltration rates shall not exceed the Local Standards. All sanitary sewer lines upon completion will be required to pass a low pressure air test, unless otherwise directed by Hamilton Western Utilities. Said test shall be conducted according to NCPI Standard Method, and shall be witnessed by an inspector authorized by Hamilton Western Utilities. Infiltration under test shall not exceed 200 gallons per inch of inside diameter of sewer pipe per mile of sewer 24 hours and inclusive of all appurtenances within the section being tested such as manholes, connections,

- J. Flushing Sewers Flush all sanitary sewers except building sewers with water to obtain free flow through each line. Remove all silt and trash from appurtenances just prior to acceptance of work.
- K. Plastic Sewer Pipe Installation Plastic sewer pipe shall be installed in a accordance with ASTM D2321 per latest revision and no plastic pipe shall exceed a deflection of 5%.
- L. 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.
- M. Waterline Crossing Where water lines and sanitary sewers cross and water lines cannot be placed above the sewer with a minimum of 18 inches vertical clearance, the sewer must be constructed of water works grade ductile iron pipe with mechanical joints within 10 feet of the water
- N. Utilities It shall be the responsibility of each contractor to verify all existing utilities and conditions pertaining to his phase of the work. It shall also be the contractors responsibility to contact the owners of the various utilities before work is started. The contractor shall notify in writing the owners and the engineer of any changes, errors or omissions found on these plans or in the field before work is started or resumed.
- O. Service Laterals Individual lot service lines shall be 6" in diameter and of material equal to that specified in 2A of this section. Service lines shall be connected to the main sewer by a wye at locations shown on plan & profile sheets. Unless otherwise noted, lateral ends shall be extended to edge of easement. Location of laterals shall be marked on curb by stamping curb with "SA" at time of curb placement. Letters shall be 2" in height & painted with green paint after concrete is cured. Ends of lines shall be marked with a wood 4x4 painted green.
- P. New Sanitary Sewer Main Construction Contractor shall record dimensions of each service line stub from nearest downstream manhole measured along the sanitary sewer main. The locations of manholes and service lines along with any other construction changes are to be incorporated on the original construction drawings and "Record Drawing" prints submitted to the City of Carmel and the engineer as soon after completion of construction as possible.

STORM SEWER SYSTEMS

1. SCOPE OF WORK

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

2. MATERIALS

A. Storm Sewers

Reinforced concrete sewer pipe shall confirm to ASTM C-76 latest revision, with joints conforming to ASTM C-443 latest revision. When storm pipe is submerged

B. Manhole

- Precast reinforced concrete manhole sections and steps shall conform to ASTM C-478 latest revision
- 2. Casting shall be of uniform quality, free from blow holes, porosity, hard spots, shrinkage distortion or other defects. They shall be smooth and well cleaned by shot—blasting or by some other approved method. They shall be coated with asphalt paint which shall result in a smooth coating, tough and tenacious when cold, not tacky or brittle. They shall be gray iron meeting ASTM A-48 latest revision.
- Joints Manhole sections shall be jointed with rubber type gaskets. The rubber type gaskets shall meet ASTM C-443 latest revision. When manhole and storm pipe are continuously in water.

C. SUBDRAINS

 Perforated plastic pipe subdrains shall conform to ASTM F-405.

3. APPLICATION

- A. Permits and Codes The intent of this section of the specifications is that the contractor's bid on the work covered herein shall be based upon the drawings and specifications but that the work shall comply with all applicable codes and regulations as amended by any waivers. Contractor shall furnish all bonds necessary to get permits for cuts and connections to existing sewers.
- construction of the respective municipal department or utility company.

 C. Existing Improvements Maintain in operating condition all active utilities, sewers and other

B. Local Standards — the term "Local Standards" as

used herein means the standards of design and

drains encountered in the sewer installation.
Repair to the satisfaction of the owner any damage to existing active improvements.

D. Workmanship — To conform to all local, state and national codes and to be approved by all local and

state agencies having jurisdiction.

- E. Trenching Lay all pipe in open trenches, except when the local authority gives written permission for tunneling. Open the trench sufficient ahead of pipelaying 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 brace trench as necessary to protect workmen 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
- F. Special Supports Whenever in the opinion of the Engineer the soil at or below the pipe grade is unsuitable for supporting sewers and appurtenances specified in this section, such special support, in addition to those shown of specified, shall be provided as the Engineer may direct, and the contract will be adjusted.

- G. Backfilling for a depth of at least 12 inches above the top of the pipe, backfill with earth or granular material free from large stones, rock fragments, roots or sod. Tamp this backfill thoroughly, taking care not to disturb the pipe. For the remaining trench depth, backfill with earth or granular material containing stones or rocks not larger than 4 inches. Backfill under and within 5' of walks, parking areas, driveways and street shall be granular material only thoroughly compacted by approved methods.
- H. Manhole Inverts Construct manhole flow channels of concrete sewer pipe or brick, smoothly finished and of semi—circular section conforming to the inside diameter of the connecting sewers. Make changes in size or grade gradually and changes in direction by true curves. Provide such channels for all connecting sewers at each manhole.
- Subdrains All subdrains shall be of the size shown on the plans and shall be constructed to the grades shown. All drains constructed off-site as part of the outlet drain will be located as shown.
- J. Utilities It shall be the responsibility of each contractor to verify all existing utilities and conditions pertaining to his phase of the work. It shall also be the contractors responsibility to contact the owners of the various utilities before work is started. The contractor shall notify in writing the owners or the engineer of any changes, errors or omissions found on these plans or in the field before work is started or resumed.
- K. Contractor to grout joints inside storm structures where pipes enter or exit and between structure and casting.

CTDEETC

 Note: If a conflict arrises between these specs, and the Hamilton County Highway Dept. specs., the Hamilton County Highway Specs, will prevail.

1. SCOPE OF WORK

The work required under this section includes all concrete and bituminous paving and related items necessary to complete the work indicated on drawings and described in the specifications, including but not limited to:

All streets, parking areas in contract limits
Curbs and gutters
Sidewalks and concrete slabs, exterior steps

2. MATERIALS

- A. Concrete 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 1-1/4 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 air entrainment of 5% to 8% by volume per ASTM C -260. Retempering of delivered concrete will not be allowed. Concrete shall be composed of:
- Portland cement Conforming to ASTM C-150, Type IA or Type IIIA.
- 2. Aggregates: Conforming to ASTM C-33
- 3. Water Shall be clear and free from injurious amounts of oils, acids, alkalies organic materials or other deleterious substances.
- B. Welded Steel Wire Fabric Where required for concrete reinforcement shall conform to ASTM A185.
- C. Premoulded Joint Filler Shall be of non
 —extruding type meeting ASTM D—544 except that
 premoulded joint filler used in concrete walk
 construction may be either non—extruding or
 resilient
- D. Bituminous Pavement Materials All materials proposed for the construction of bituminous pavements shall comply with the Indiana Department of Transportation specifications, per latest
- E. Compacted Aggregate Subbase: Shall be crushed stone or gravel. Crushed gravel shall be a minimum of 35% crushed material. Chert shall be limited to a maximum of 8% of the total. Material shall be free from an excess of flat, elongated, thinly laminated, soft or disintegrated pieces; and shall be free from fragments coated with dirt. Compacted aggregate shall be graded as follows:

Compacted	499, 09010	0	g. 0000 00
SIEVE	SIZE		% PASSING
1-1/ 1" 3/4" 1/2" #4 #8 #30 #200	•		100 80-100 70-90 55-80 35-60 25-50 12-30 5-10
,,			

3. APPLICATION

- A. Grading Do any necessary grading in addition to that performed in accordance with Earthwork Section, to bring subgrades, after final compaction, to the required grades and sections for site improvement.
- B. Preparation of Subgrade Remove spongy and otherwise unsuitable 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 100% of the maximum dry density as determined by the provisions of AASHO T—99. Water shall be prevented from standing on the compacted subgrade.
- D. Utility Structures Check for correct elevation of all manhole covers, valve boxes and similar structures located within areas to be paved, and make, or have made, any necessary adjustments in such structures.
- E. Placing Concrete
- Subgrade Place concrete only on a moist, compacted subgrade or base free from loose material. Place no concrete on a muddy or frozen subgrade.
- 2. Forms All forms shall be free from warp, tight enough to prevent leakage and substantial enough to maintain their shape and position without springing or settling, when concrete is placed. Forms shall be clean and smooth immediately before concreting.

3. Placing Concrete — Concrete shall be deposited so as to require as little rehandling as practicable. When concrete is to be placed at an atmospheric temperature of 35 degrees F. or less, paragraph 702.10 of the Indiana Department of Transportation Specifications latest revision shall be

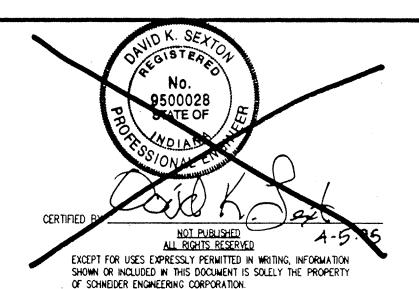
F. Concrete Curb

- 1. Expansion Joints Shall be 1/2 inch thick premoulded between storm structures & curb
- 2. Contraction/Control Joints Unless otherwise provided, contraction joints shall be sawed or scored joints spaced 10 feet on center, except for intersection radii where joints shall be placed 5' o.c.
- Finish Tamp and screed concrete as soon as placed, and fill any honey combed places.
 Finish square corners to 1/4" radius and other corners to radii shown.

G. Concrete Walks and Exterior Steps

- Slopes Provide 1/4 inch per foot cross slope. Make adjustments in slopes at walk intersections as necessary to provide proper drainage.
- Dimensions Walks and steps shall be one course construction and of widths and details shown on the drawings.
- 5. 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" expansion joints where sidewalks intersect, and at a maximum spacing of 48 feet between expansion joints.
- Curing Concrete Except as otherwise specified, cure all concrete by one of the methods described in Section 501.17 of the Indiana Department of Transportation Specifications. latest revision.
- Bituminous Pavement Hot asphalt concrete pavement shall be as specified in Section 403 of the Indiana Department of Transportation Specifications latest revisions. Paving will not be permitted during unfavorable weather or when the temperature is 40 degrees F. and falling.
- J. 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 90% compaction using Standard Testing Procedures. Along curbs, headers and walls and at all placed not accessible to the roller, the aggregate material shall be tamped with mechanical tampers or with approved hand tampers.

3-23-95 REV. STORMA ASBULLI 12-13-96





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Indianapolis, Indiana Surveying

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BRENWICK DEVELOPMENT CO. INC.

THE CROSSINGS SECTION 4

AT SPRINGMILL VILLAGE

GENERAL SPECIFICATIONS

Date | Project No. | Drawn | GSD | Approv. |

Computer Files | 895.24 | Sheet No. |

89523SPC | Sheet No. | Sheet

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