Request for Proposal

For

Professional Qualifications

For

THE

RECONSTRUCTION OF COCHRAN ROAD

Statement of Qualifications

Accepted until February 9, 2022

Office of the City Engineer

2310 Second Street

Cuyahoga Falls, Ohio 44221

REQUEST FOR PROPOSAL

For

PROFESSIONAL QUALIFICATIONS

RECONSTRUCTION OF COCHRAN ROAD
STATE ROAD TO CAVALIER TRAIL

I. INTRODUCTION

The City of Cuyahoga Falls proposes the reconstruction of Cochran Road from State Road to Cavalier Trail. Cuyahoga Falls must prepare project construction documents for said construction.

Cuyahoga Falls requests proposals to prepare preliminary and final design construction documents and all document preparation associated therewith.

II. BASIC SCOPE OF SERVICES

The basic scope of services shall include providing tools, materials and labor to perform the following work:

It is anticipated the project will include centerline and right-of-way survey, field location survey, new typical pavement section, storm sewers as required and integration of previously designed sanitary sewers.

It is anticipated the improved road will be designed to accommodate truck traffic, and closely match the typical sections which were completed near the eastern end of the roadway. Special consideration should be given to alleviating flooding concerns that are common in this area, as identified in the October 2018 Drainage Study (attached). Also included are plans from previous projects on this road, including roadway and utility improvements/extensions.

The work shall be in two (2) phases. Phase One will include preliminary drawings, meetings with City personnel for comments and estimate of probable cost. Phase Two shall be submittal of final construction drawings in a format suitable for bidding purposes by the City,

including but not limited to, construction drawings, specifications, bid quantities and estimate. The final submittal shall address all comments. The work shall include but is not limited to:

A. Prepare centerline layout drawings based on previous surveys and design work, supplemented as needed by field surveys plus any proposed right-of-way acquisitions. At this time the Consultant shall recommend to the City a proposed typical pavement section that is in keeping with the character of the area and stays within existing right-of-way and budget.

B. Prepare plan and profile sheets for the reconstruction of Cochran Road as a two-lane facility.

C. Prepare plans to extend Summit County sanitary sewer on Cochraod Road to State Road.

III. GENERAL PROJECT PARAMETERS

1. Design

All design and drafting work shall be performed in accordance with Ohio Department of Transportation (ODOT) for review and approval by the City.

2. Progress Documents

Submit three (3) interim sets of documents to the City.

3. Governmental Approval

Submit one (1) complete set of plans to all utility companies within the project area and revised in accordance with their comments. A letter from each utility acknowledging acceptance of the improvements shall be submitted to the City.

IV. OBJECTIVE

The objective is to request a Statement of Qualifications (SOQ's) to select a qualified engineering firm to complete the engineering services required to design and prepare construction documents for the reconstruction of Sourek Trail. Because the services are

professional services, because qualified consulting engineering efforts could reduce the overall project cost and because the quality of the public improvements depends on the qualifications of the consultant, selection of the engineering consulting firm will be based upon a predetermined set of weighted criteria.

V. EVALUATION CRITERIA

The following are the primary evaluation criteria the City plans to utilize to select the best-qualified firm. In addition to the evaluation criteria, the city will be looking at design and engineering experience in roadway design. Selection is very subjective in many areas and the decision of the City Administration will be final and not subject to re-evaluation by the firms submitting a Statement of Qualifications.

- Responsibility and stability – such considerations as length of time firm has been in business, length of time principals have been with firm, financial responsibility, professional liability coverage, etc.
- Experience – such considerations as other similar projects completed by the firm, similar design projects completed by key personnel of the firm, support staff abilities, range of in-house capabilities, etc.
- Location – Such consideration as location of firm's office that will be responsible for project coordination, previous work in the general geographic area, key project personnel office location, etc. Lower project costs should result if limited travel expenses are required and better communication can be maintained which should result in a higher quality project.
- Quality of work – Such considerations as adequateness of material supplied to permit evaluation, evaluation, quality of presentation, cooperation, concern, etc.
- Time schedule and anticipated man-hours to complete the project.

The City will accept SOQ's until 4:00 p.m. Wednesday February 9, 2022. Consultants must submit their SOQ's electronically to the City of Cuyahoga Falls Engineering Department Email, at Engineering@cityofcf.com. The subject line of the email should read "Statement of Qualifications for Professional Engineering Services, Design of the Reconstruction of Cochran Road."

The City retains the option of rejecting or accepting any Statement of Qualifications. Should a firm be selected and the City can not negotiate a contract with the selected firm ranked best qualified, the City shall inform the firm in writing of the termination of negotiations and enter into negotiations with the firm ranked next best qualified. If negotiations again fail, the same procedure shall be followed with each next best-qualified firm selected until a contract is negotiated. However, the City retains the right to reject all SOQ's and initiate the process of obtaining SOQ's from qualified engineering firms at a later date.

VI. Statement of Qualifications

The specific format of the Statement of Qualifications (SOQ's) shall be per the responding firm's judgment. However, shall include the following data:

1. Two-page project summary narrative defining the firm's interpretation of the scope of the project and approach to engineering and design.
2. Project personnel organization.
3. Firm Profile.
4. Principal Profile.
5. Technical Expertise Profile.
6. General anticipated project schedule or time line.
7. General anticipated man-hours to complete the project based on past experience.
8. Additional pertinent information

The City requests that, in addition to a general list of representative projects, responding firms select one or two of its completed projects of similar size and scope. The selected project shall be a project that has been completed for at least three years but no more than five years. A detailed description of services rendered, the name, mailing address and phone number of the client's project manager, and the name and mailing of the general contractor.

The responding firms are also requested to provide a proposed project team that will most likely work on this project. Members should include personnel from the partner down to the engineer-in-training level. Sub-professional: level employees not providing a significant role on the project do not need to be included.

A resume of each member of the team is needed and should detail relevant experience, length of service with the firm, educational background, and professional background. Sub-consultant's roles on the project should also be listed.

VII. INTERVIEWS

The City reserves the right to conduct face-to-face interviews with any, all, or none of the responding firms. In the event the City selection committee deems interviews necessary to select the best firm, the City will establish a meeting at a mutually acceptable time at City office. The City selection committee will meet key members of the firm's proposed project team. It shall be the selection committee's sole decision on whether any interviews are held and with which firms interviews are held.

Engineering Design Services to Reconstruct Cochran Road

EVALUATION CRITERIA	Max Points	Firm A	Firm B	Firm C	Firm D	Firm E	Firm F
Section 1 - Min Qualifications							
Prequalification Met	**Yes/No**						
Section 2 - Firm's Experience	**30**						
Section 3 - Staff Experience							
Project Manager	**20**						
Support Staff	**20**						
Section 4 - Primary Firm Location	**10**						
Project Schedule	**20**						
TOTAL	**100**	**X**	**X**	**X**	**X**	**X**	**X**

IMPROVEMENT PLANS

FOR

COCHRAN RD.

PART OF

WYOGA LAKE BUSINESS PARK

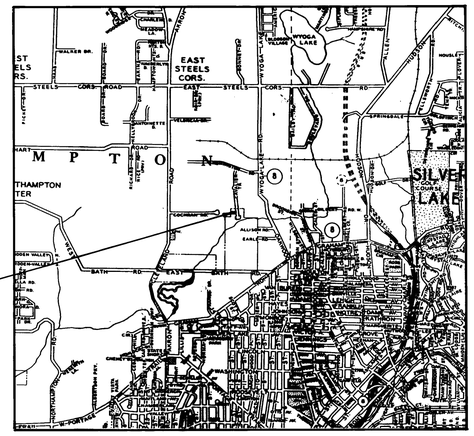
LOCATED IN

CITY OF CUYAHOGA FALLS

D.O.E.S. SANITARY SEWER PROJECT Nº. _____

D.O.E.S. WATER PROJECT Nº. _____

INDEX TO DRAWINGS



LOCATION PLAN

SCALE

5000 4000 3000 2000 1000 0

1 MILE 3/4 1/2 1/4 0

CITY OF CUYAHOGA FALLS APPROVALS

Robert W. Kern DATE 4/29/87

SERVICE DIRECTOR

Gerald T. Dzurilla DATE 4/29/87

CITY ENGINEER

WATER SYSTEM APPROVALS

_____ DATE _____

DIRECTOR OF ENVIRONMENTAL SERVICES

_____ DATE _____

WATER ADMINISTRATOR

SEWERAGE SYSTEM APPROVALS

_____ DATE _____

DIRECTOR OF ENVIRONMENTAL SERVICES

_____ DATE _____

SEWER DESIGN ADMINISTRATOR

PLANS PREPARED AND RECOMMENDED BY

GPD ASSOCIATES

ENGINEERS & SURVEYORS
345 WHITE POND DRIVE
AKRON, OHIO 44320
PHONE Nº 836-9922

Ralph A. Hendrick DATE 6-3-87

RALPH A. HENDRICK P.E. Nº 33588

STATE OF OHIO — RALPH A. HENDRICK — Nº 33588 — REGISTERED — PROFESSIONAL ENGINEER

STANDARD DRAWINGS	
O.D.O.T. DWG. Nº.	DESCRIPTION
BP-6	DRIVEWAYS
GR-1	GUARDRAIL DETAILS
GR-2B	TYPE 5 GUARDRAILS
HW-4B	CONCRETE PIPE HEADWALL
MC-4	DRAINS & SEWERS
MC-11	TEMPORARY EROSION CONTROL
MH-3	Nº 3 MANHOLE
CITY OF AKRON Nº.	
A5430-S	Nº 3 INLET

SUPPLEMENTAL SPECIFICATIONS
SUMMIT COUNTY DIRECTOR OF ENVIRONMENTAL SERVICES SPECS.

3166

GENERAL NOTES

COUNTY OF SUMMIT, OHIO
D.O.E.S.

SANITARY SEWER AND APPURTENANCES GENERAL NOTES

1. ALL SANITARY SEWER AND APPURTENANCES SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH CURRENT STANDARDS AND SPECIFICATIONS OF THE SUMMIT COUNTY DEPT. OF ENVIRONMENTAL SERVICES (D.O.E.S.).
2. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.
3. APPROVAL BY THE D.O.E.S. OFFICE CONSTITUTES NEITHER EXPRESSED NOR IMPLIED WARRANTIES AS TO THE FITNESS, ACCURACY, OR SUFFICIENCY OF PLANS, DESIGNS OR SPECIFICATIONS.
4. SEE WATERLINE GENERAL NOTES # 10.
5. ALL SANITARY SEWERS SHALL PASS THE AIR ACCEPTANCE TEST PER D.O.E.S. STANDARDS PRIOR TO ACCEPTANCE BY D.O.E.S. COST TO BE INCLUDED IN THE COST OF SANITARY SEWER.
6. ALL SANITARY SEWERS SHALL BE COLOR FILMED BY THE CONTRACTOR AND FOUND TO BE FREE OF DEFECTS AND FOREIGN MATTER AND IN PROPER ALIGNMENT PRIOR TO FORMAL ACCEPTANCE BY D.O.E.S. COST TO BE INCLUDED IN THE COST OF SANITARY SEWER.
7. ALL MANHOLES SHALL BE SUPPLIED WITH SOLID LIDS EXCEPT IN EASEMENTS WHERE MANHOLE COVERS SHALL BE THE SOLID-LOCKING TYPE.
8. ALL SANITARY SEWER LATERALS SHALL BE LAID AT NO LESS THAN 1% GRADE.
9. SANITARY SEWER MATERIALS SHALL CONFORM TO D.O.E.S. STANDARDS.
10. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL DAMAGE TO THE EXISTING SEWERAGE SYSTEM RESULTING FROM NONCONFORMANCE WITH SUMMIT COUNTY STANDARDS OR GENERAL NEGLIGENCE.
11. WHERE INLET AND OUTLET PIPES CONNECT TO MANHOLES, A FLEXIBLE WATERTIGHT JOINT AS APPROVED BY THE D.O.E.S. IS REQUIRED.
12. SANITARY SEWER MATERIALS SHALL CONSIST OF P.V.C. PIPE PER ASTM D-3034 WITH THE JOINTS CONFORMING TO ASTM D-3212. THE PVC SEWER SHALL HAVE A MINIMUM WALL THICKNESS CONFORMING TO SDR 35 OR ASTM D-3034. BEDDING SHALL BE PER D.O.E.S. STANDARD NO. SC.
13. THE CONTRACTOR MUST ALERT THE UTILITIES PROTECTION SERVICE AT 1-800-362-2764 AT LEAST 48 HOURS BEFORE ANY EXCAVATING HAS BEGUN.
14. ALL ROUGH GRADING (WITHIN 6" OF FINISHED GRADE) SHALL BE COMPLETED WITHIN THE RIGHT OF WAY PRIOR TO SANITARY SEWER AND WATER LINE CONSTRUCTION.
15. ALL SUMMIT COUNTY INSPECTION FEES ASSOCIATED WITH THIS CONSTRUCTION SHALL BE PAID BY THE CITY OF CUYAHOGA FALLS.
16. SANITARY LATERAL CONSTRUCTION CANNOT TAKE PLACE UNTIL THE MAIN SEWER LINE IS COMPLETED AND ACCEPTED.
17. DEFLECTION TEST
DEFLECTION TESTS MAY BE RUN NOT LESS THAN 60 DAYS AFTER FINAL FULL BACKFILL HAS BEEN PLACED.
THE PROJECT WILL NOT BE ACCEPTED AND NO PERMITS WILL BE ISSUED UNTIL THE DEFLECTION TEST HAS BEEN PASSED.
18. 1ST GRADE ADJUSTMENT OF MANHOLES PERMITTED WITH GRADE RINGS. A MAXIMUM OF 2 COURSE OF BRICK IS PERMITTED IF NECESSARY. MAXIMUM ADJUSTMENT IS NOT TO EXCEED 18".
19. NO SEWER CONSTRUCTION WILL BE PERMITTED UNTIL SUCH TIME THAT THE PLANS ARE APPROVED BY D.O.E.S. AND THE OHIO E.P.A. INCLUDING PAYMENT OF REVIEW AND "PERMIT TO INSTALL" FEES REQUIRED BY OHIO E.P.A.
20. ALL SANITARY SEWERS CONTAINED HEREIN ARE TO BE PUBLICLY OWNED AND MAINTAINED.

COUNTY OF SUMMIT, OHIO
D.O.E.S.

WATERLINE GENERAL NOTES

1. ALL WATERLINES AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS ESTABLISHED BY THE CITY OF AKRON. PIPE SHALL BE CLASS 53, CEMENT LINED, DUCTILE IRON WITH PUSH ON JOINTS; HOWEVER, POURED LEAD BELL AND SPIGOT FITTINGS MUST BE USED FOR ALL FITTINGS, VALVES AND HYDRANTS. TIE RODS OR POURED CONCRETE THRUST BLOCKS MUST BE CONSTRUCTED WHERE NECESSARY. ALL VALVES MUST HAVE BOXES.
2. WHEN DIRECTED BY THE D.O.E.S., NEW WATERLINES AND APPURTENANCES SHALL BE COMPLETELY WRAPPED WITH POLYETHYLENE ENCASEMENT, AS SPECIFIED IN AWWA C105. THIS GENERALLY OCCURS IN AREAS WITH POOR OR ACIDIC SOIL CONDITIONS.
3. ALL ROUGH GRADING (WITHIN 6" OF FINAL GRADE) SHALL BE COMPLETED PRIOR TO BEGINNING WATERLINE CONSTRUCTION.
4. THE CONTRACTOR SHALL SUPPLY A TEMPORARY SAFE WATER SERVICE TO ANY HOME THAT WILL HAVE ITS WATER SERVICE INTERRUPTED BY THIS CONSTRUCTION.
5. NO TAPS FOR WATER SERVICES SHALL BE MADE UNTIL AFTER THE MAIN LINE HAS BEEN TESTED AND STERILIZED. ALL TAPS, 2" D AND SMALLER, SHALL BE MADE BY THE DEPARTMENT OF ENVIRONMENTAL SERVICES.
6. ANY SIDEWALK THAT MUST BE REMOVED BY THE D.O.E.S. IN ORDER TO INSTALL A WATER SERVICE TAP MUST BE REPLACED BY OTHERS AT NO COST TO THE COUNTY.
7. COMPACTED PREMIUM BACKFILL IS REQUIRED FOR UNDERGROUND CONSTRUCTION UNDER ANY PROPOSED OR EXISTING PAVEMENT OF SIDEWALK AND WITHIN 3 FEET OF ANY EXISTING OR PROPOSED PAVEMENT. THE METHOD OF BACKFILLING SHALL BE AS DIRECTED BY THE D.O.E.S. AND SHALL CONFORM TO SECTION 603.08 - BACKFILLING FOR CONDUIT, AS SPECIFIED IN THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS, LATEST EDITION.
8. ALL WATER MAIN CONSTRUCTION SHALL BE INSPECTED BY THE DEPARTMENT OF ENVIRONMENTAL SERVICES. NOTIFY THE D.O.E.S. AT LEAST 24 HOURS PRIOR TO BEGINNING WATERLINE CONSTRUCTION
9. NOTIFY THE OHIO UTILITIES PROTECTION SERVICES (1-800-362-2764) AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
10. THE DESIGN ENGINEER CERTIFIES THAT ALL UTILITIES IN EXISTING AND PROPOSED RIGHT OF WAYS AND EASEMENTS ARE SHOWN FROM AVAILABLE INFORMATION, BUT NO GUARANTEE IS EXTENDED AS TO THEIR ACCURACY OR LOCATION.
11. APPROVAL BY THE D.O.E.S. CONSTITUTES NEITHER EXPRESSED NOR IMPLIED WARRANTIES AS TO THE FITNESS, ACCURACY, OR SUFFICIENTY OF THE PLANS, DESIGNS, OR SPECIFICATIONS.
12. FIRE HYDRANTS SHALL CONFORM TO CITY OF AKRON STANDARDS.
13. PRIOR TO ACCEPTANCE, ALL WATER LINES SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA C-600 AND DISINFECTED IN ACCORDANCE WITH AWWA C-601.

STANDARD NOTES

1. THE CONSTRUCTION OF THIS PROJECT SHALL BE GOVERNED BY THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (1987) SUPPLEMENTED WHERE APPLICABLE BY THE CITY OF CUYAHOGA FALLS SPECIFICATIONS.
2. FOR ALL PROPOSED TRENCHES LOCATED UNDER AN EXISTING OR PROPOSED PAVEMENT, AND WHEN THE NEAREST EDGE OF THE PROPOSED TRENCH IS WITHIN THREE (3) FEET OF AN EXISTING OR PROPOSED PAVEMENT, THEY SHALL BE FILLED WITH COMPACTED GRANULAR MATERIAL. THE METHOD OF BACKFILLING AS DIRECTED BY THE CITY OF CUYAHOGA FALLS ENGINEER SHALL CONFORM TO SECTION "603.08 - BACKFILLING", AS SPECIFIED IN THE O.D.O.T. CONSTRUCTION AND MATERIALS SPECIFICATIONS (1987).
3. TEMPORARY WATER POLLUTION, SOIL EROSION AND SILTATION CONTROL SHALL BE REQUIRED IN ACCORDANCE WITH ITEM 207 OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (1987) AS DIRECTED BY THE CITY OF CUYAHOGA FALLS ENGINEER.
4. ALL STORM SEWERS ARE TO BE REINFORCED CONCRETE PIPE, SECTION 706.02 AS SPECIFIED IN THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (1987) UNLESS OTHERWISE NOTED ON THE PLANS. ALL CULVERTS ARE TO BE REINFORCED CONCRETE PIPE UNLESS OTHERWISE NOTED ON PLANS. ALL REINFORCED CONCRETE PIPE SHALL BE CLASS III (MINIMUM 0.01 INCH CRACK LOAD OF 1350 LB./LIN. FT./FT. OF PIPE DIAMETER) UNLESS OTHERWISE SPECIFIED.
5. BEFORE ACCEPTANCE OF THE SUBGRADE BY THE CITY OF CUYAHOGA FALLS ENGINEER, THERE SHALL BE NUCLEAR COMPACTION TESTS PERFORMED AT THE LOCATIONS DESIGNATED BY THE CITY OF CUYAHOGA FALLS ENGINEER AND PROOF-ROLLING SHALL BE REQUIRED PER SECTIONS 203.15 AND 203.14 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (1987). THESE SHALL BE APPROVED BY THE CITY OF CUYAHOGA FALLS ENGINEER BEFORE ANY PAVEMENT CONSTRUCTION.
6. ALL CONDUIT NOT MEETING THE REQUIREMENTS OF ITEM 4 ABOVE SHALL BE BACKFILLED WITH SUITABLE EXCAVATED MATERIAL. BACKFILLING AND COMPACTION SHALL CONFORM TO SECTION 603.08 OF O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS (1987).

GPD ASSOCIATES
ARCHITECTS AND CONSULTING ENGINEERS
345 WHITE POND DRIVE
AKRON, OHIO 44320

WYOGA LAKE BUSINESS PARK
COCHRAN ROAD IMPROVEMENTS

GENERAL NOTES

	DATE
DESIGNED LCK	JUNE, 1987
DRAWN LCK	JUNE, 1987
CHECKED LTF	JUNE, 1987

JOB NO 8734.00

3167

SEE CROSS SECTIONS

TYPICAL SECTION

TYPICAL 23'-0" (UNLESS IN CURVED ROAD ALIGNMENT)

TYPICAL 20'-0" (UNLESS IN CURVED ROAD ALIGNMENT)

4'-0" R/W

60'-0" R/W

12'-0"

CURB GRADE

1'-0"

18'-0"

10'-0"

SLOPE 3/4" PER FOOT

PROFILE DATUM LINE

SLOPE 0.0208 F/F

SANITARY SEWER

WATER LINE

STORM SEWER

KEY JOINT, LONGITUDINAL JOINT SEE (1) BELOW

LONGITUDINAL CONTRACTION JOINT SEE (2) BELOW

LONGITUDINAL CONTRACTION JOINT SEE (2) BELOW

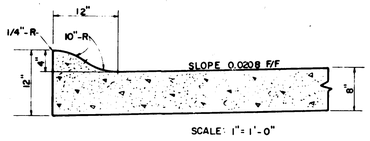
SEE CROSS SECTIONS

LEGEND

(1) 8" TYPE 452 CONCRETE PAVEMENT W/INTEGRAL TYPE 3A CURB & GUTTER

(2) EXISTING GROUND (COMPACTED PER ITEM 203 SUBGRADE COMPACTION.)

(3) ITEM 659 SEEDING AND MULCHING

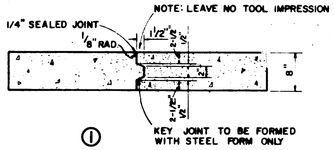


CURB DETAIL

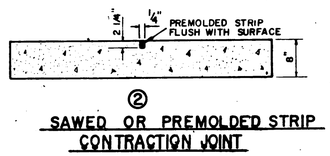
TYPE 3A CURB DETAIL

COCHRAN ROAD

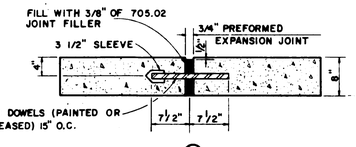
ITEM	UNIT	DESRIPTION	QUANTITY
201	LUMP	CLEARING AND GRUBBING	LUMP
202	SY	PAVEMENT REMOVED	120.84
202	EA	INLET REMOVED	1.00
203	CY	EXCAVATION (N.I.E.C.)	4532.60
203	CY	EMBANKMENT	379.20
203	SY	SUBGRADE COMPACTION	2077.70
207	EA	STRAW OR HAY BALES	16.00
207	SY	TEMP. SEEDING & MULCHING	506.36
452	SY	8" PLAIN CONC. PAVEMENT	1961.80
452	SY	PAVMNT RESTORATION (DRIVE)	43.33
606	LF	GUARDRAIL TYPE 5	37.50
623	LUMP	CONSTR. LAYOUT STAKES	LUMP
659	MSF	MOWING	56.97
659	SY	REPAIR SEEDING & MULCHING	126.59
659	MGAL	WATERING (TEMP. & PERM.)	3.82
659	SY	SEEDING AND MULCHING	2531.80
659	TON	COMERCIAL FERTILIZER	0.25
659	TON	AGRICULTURAL LIMING	1.14
603	LF	12" STORM SEWER (TYPE C)	68.00
603	LF	15" STORM SEWER (TYPE B)	63.00
603	LF	15" STORM SEWER (TYPE C)	320.00
603	LF	18" STORM SEWER (TYPE B)	40.00
603	LF	21" STORM SEWER (TYPE B)	10.00
603	LF	21" STORM SEWER (TYPE C)	46.00
	EA	INLET (AKRON-#3)	4.00
604	EA	MANHOLE, STD.#3 (FLAT TOP)	1.00
602	CY	CONCRETE MASONRY	0.25
		SANITARY SEWER	
LF	8"	PVC PIPE (D-3034)	434.44
LF	8"	SAN. SEWER REMOVED	81.00
EA		STANDARD SAN. MANHOLE	2.00
EA		MANHOLE ADJUST TO GRADE	1.00
		WATERMAIN	
EA	8"	TAPPED PLUG	1.00
EA	8"x 8"x 6"	TEE W/M.J.	2.00
EA	6"	GATE VALVE AND BOX	2.00
EA		FIRE HYDRANT	2.00
LF	8"	WATERMAIN (CLASS 51)	385.00
EA		CONNECTION OF 8" W. MAINS	1.00



① CENTERLINE LONGITUDINAL JOINT

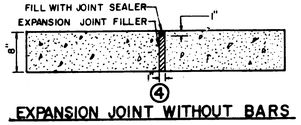


② SAWED OR PREMOLDED STRIP CONTRACTION JOINT

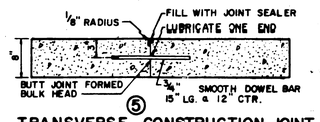


③ EXPANSION JOINT

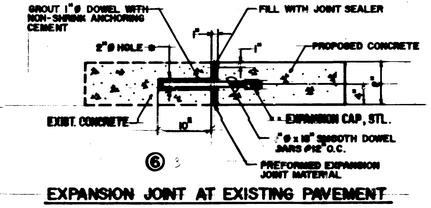
(PLACED AT EACH SIDE OF INTERSECTIONS ONLY)



④ EXPANSION JOINT WITHOUT BARS



⑤ TRANSVERSE CONSTRUCTION JOINT



⑥ EXPANSION JOINT AT EXISTING PAVEMENT

◆ ACTUAL DIA. OF HOLE ACCORDING TO ANCHORING CEMENT MANAFACTURES RECOMENDATIONS.

GPD ASSOCIATES

ARCHITECTS AND CONSULTING ENGINEERS

345 WHITE POND DRIVE
AKRON, OHIO 44320

WYOGA LAKE BUSINESS PARK
COCHRAN ROAD IMPROVEMENTS

TYPICAL SECTION & DETAILS

	DATE
DESIGNED LCK	JUNE, 1987
DRAWN LCK	JUNE, 1987
CHECKED J.T.F.	JUNE, 1987

JOB NO 8734.00

3168

A A BLUE Print, Akron

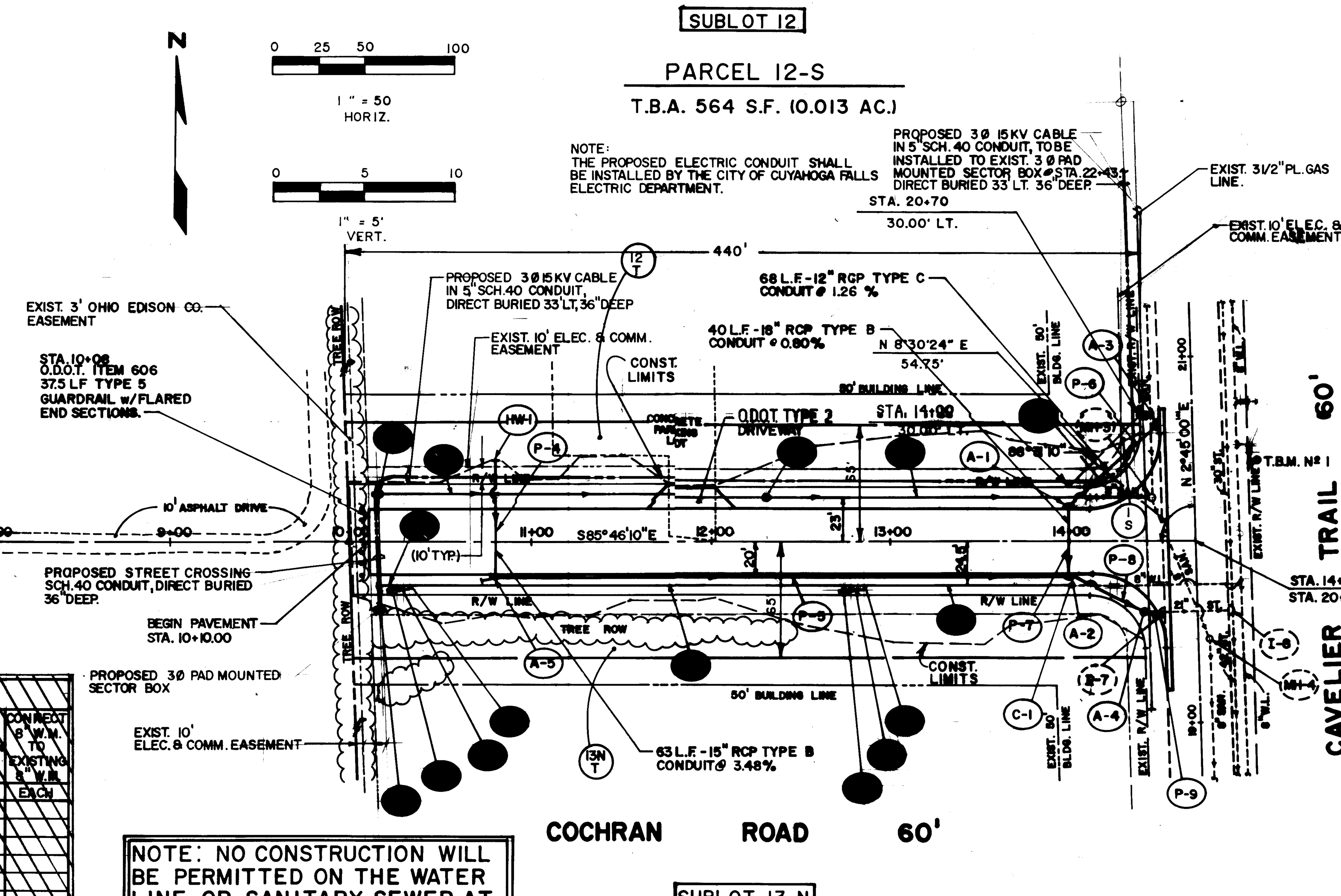
SANITARY SEWER QUANTITIES

CODE	LOCATION FROM	LOCATION TO	SIDE	STANDARD SANITARY MANHOLE (EACH)	MANHOLE ADJUSTED TO GRADE (EACH)	8" PVC PIPE PER ASTM D-3034 (L.F.)	8" SANITARY SEWER REMOVED (L.F.)
MH-1	10+45		LT.	1			
MH-2	12+30		LT.	1			
MH-3	14+45		LT.		1		
SA-1	MH-1	MH-2	LT.			215.07	
SA-2	MH-2	MH-3	LT.			216.07	
SR-1	14+15	MH-3	LT.				31.00
SUBTOTAL				2	1	431.14	31.00

WATER LINE QUANTITIES

CODE	LOCATION FROM	LOCATION TO	SIDE	6" TAPPED PLUG W/ BLEEDER & T.B. (EACH)	8"x8"x6" TEE W/ T.B. (EACH)	6" GATE VALVE & BOX (EACH)	6" FIRE HYDRANT (EACH)	8" CLASS 53 D.I. WATERMAIN CEMENT LINED (L.F.)	CONNECT 8" W.M. TO EXISTING 8" W.M. (EACH)
PL-1	10+15		RT.	1					
T-1	10+33		RT.		1				
T-2	12+85		RT.		1				
V-1	10+33		RT.			1			
V-2	12+85		RT.			1			
H-1	10+33		RT.				1		
H-2	12+85		RT.				1		
P-1	10+15	T-1	RT.					18.00	
P-2	T-1	T-2	RT.					252.00	
P-3	T-2	[illegible]	RT.					115.00	
C-1	14+00		RT.						1
SUBTOTAL				1	2	2	2	385.00	1

NOTE: NO CONSTRUCTION WILL BE PERMITTED ON THE WATER LINE OR SANITARY SEWER AT THIS TIME, THESE ITEMS HAVE BEEN DELETED FROM CONSTRUCTION OF COCHRAN ROAD.



STORM SEWER QUANTITIES

CODE	LOCATION FROM	LOCATION TO	SIDE	202 INLET REMOVED (EACH)	602 CONCRETE MASONRY (C.Y.)	CITY OF AKRON STANDARD INLET TYPE 3 (EACH)	603 21" CONC. PIPE TYPE B (L.F.)	603 21" CONC. PIPE TYPE C (L.F.)	603 18" CONC. PIPE TYPE B (L.F.)	603 12" CONC. PIPE TYPE C (L.F.)	603 15" CONC. PIPE TYPE B (L.F.)	603 15" CONC. PIPE TYPE C (L.F.)
I-7	19+60.87		LT.	1								
HW-1	10+80		LT.		0.25							
A-1	14+00.20		LT.			1						
A-2	14+00.20		RT.			1						
A-3	20+64.50		LT.			1						
P-4	HW-1	A-5	L/R								63	
P-5	A-5	A-2	RT.									320
P-6	A-3	A-1	LT.							68		
P-7	A-1	A-2	L/R						40			
P-8	A-2	A-4	RT.					46				
P-9	A-4	I-7	RT.				10					
A-5	10+80		RT			1						
SUBTOTAL				1	0.25	4	10	46	40	68	63	320

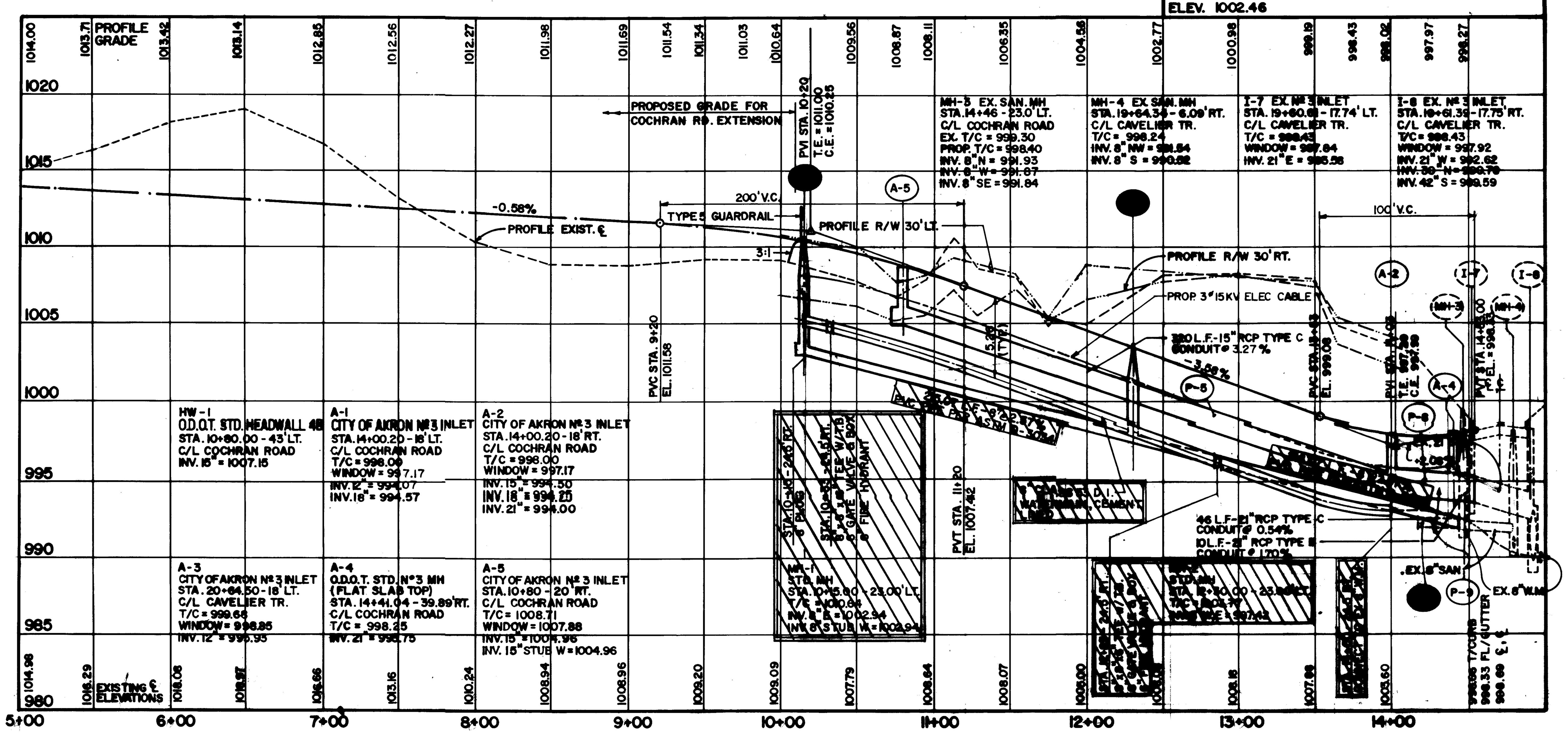
CODE	LOCATION FROM	LOCATION TO	SIDE	604 O.D.O.T. Nº 3 M.H. EACH
A-4	14+41.04		RT.	1
SUBTOTAL				1

OWNERSHIP

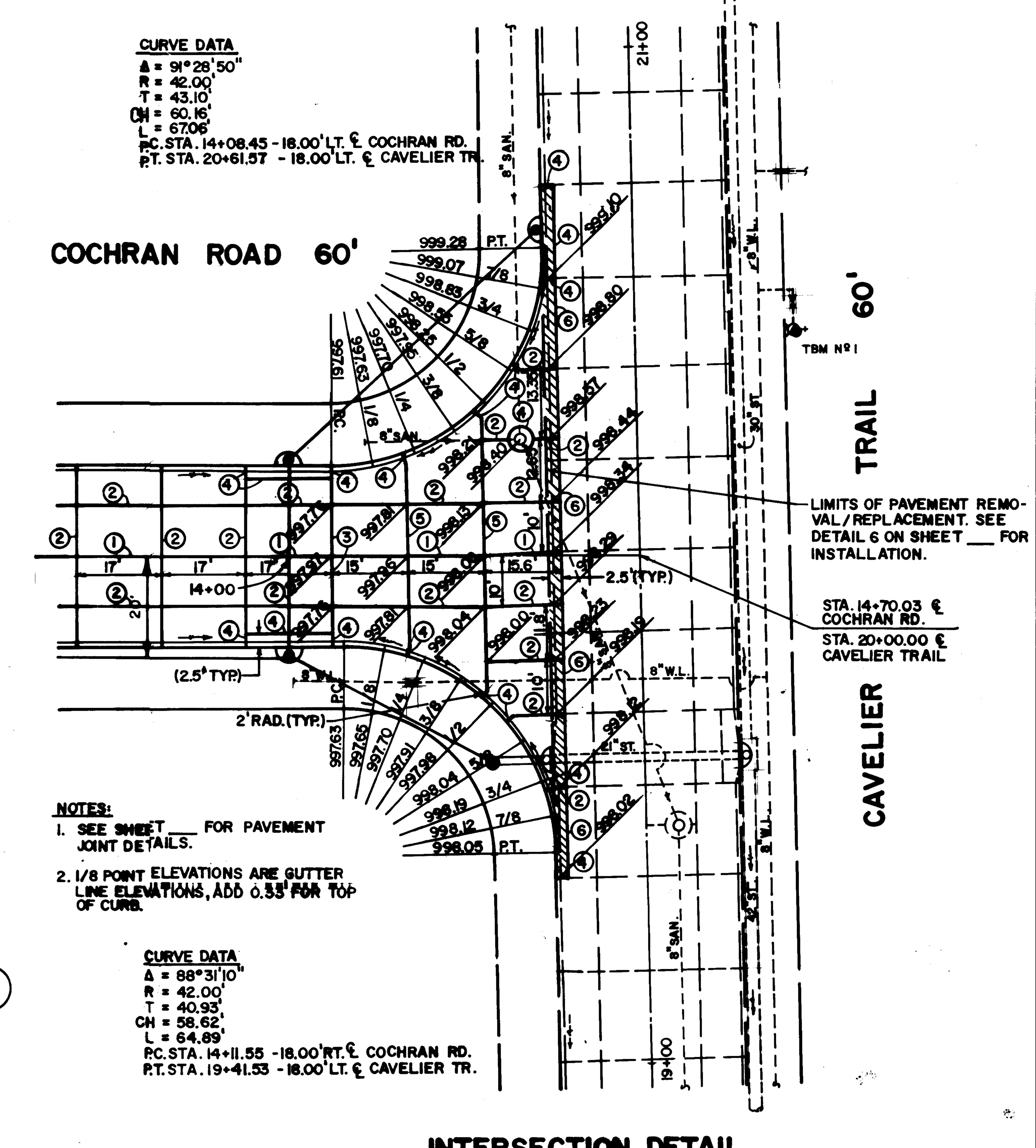
(12)

(13N)

T.B.M. Nº 1
ARROW ON TOP OF FIRE HYDRANT STA. 20+43.85 - 31.51' RIGHT OF CAVELIER TRAIL.
ELEV. 1002.46



CURVE DATA
Δ = 91°28'50"
R = 42.00'
T = 43.10'
CH = 60.16'
L = 67.06'
P.C. STA. 14+08.45 - 18.00' LT. ℄ COCHRAN RD.
P.T. STA. 20+61.57 - 18.00' LT. ℄ CAVELIER TR.



NOTES:
1. SEE SHEET ___ FOR PAVEMENT JOINT DETAILS.
2. 1/8 POINT ELEVATIONS ARE GUTTER LINE ELEVATIONS, ADD 0.33' FOR TOP OF CURB.

CURVE DATA
Δ = 88°31'10"
R = 42.00'
T = 40.93'
CH = 58.62'
L = 64.89'
P.C. STA. 14+11.55 - 18.00' RT. ℄ COCHRAN RD.
P.T. STA. 19+41.53 - 18.00' LT. ℄ CAVELIER TR.

INTERSECTION DETAIL
SCALE 1" = 20'

GLAUS PYLE SCHOMER BURNS AND DEHAVEN INC.
GPD ASSOCIATES
ARCHITECTS AND CONSULTING ENGINEERS
345 WHITE POND DRIVE
AKRON, OHIO 44320

WYOGA LAKE BUSINESS PARK
COCHRAN ROAD IMPROVEMENTS

COCHRAN ROAD PLAN & PROFILE

	DATE
DESIGNED AMH	JUNE, 1987
DRAWN LCK	JUNE, 1987
CHECKED LTF	JUNE, 1987

JOB Nº 8734.00

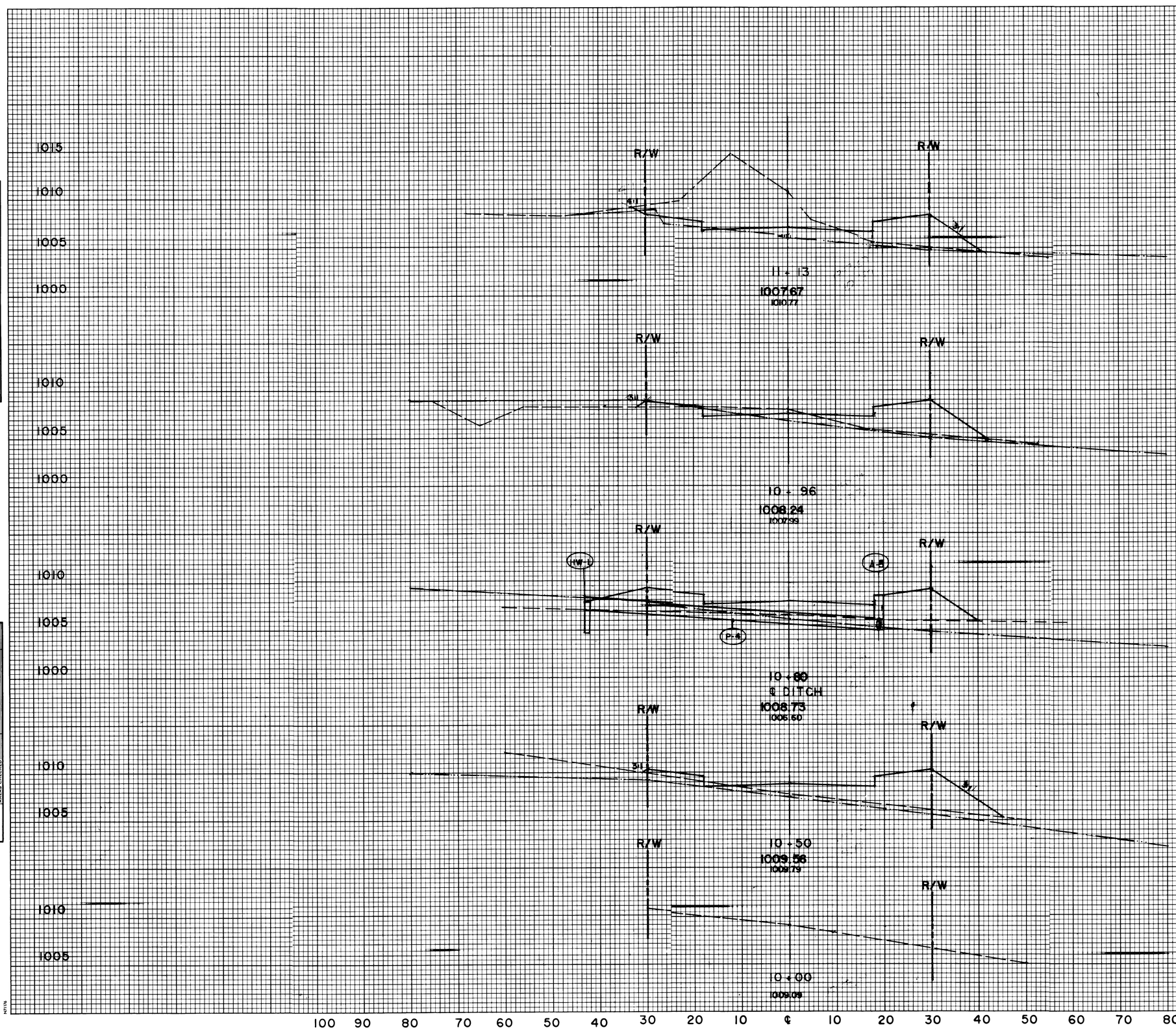
3169

CALC. BY _____ DATE _____
CHK'D. BY _____ DATE _____

FHWA REGION	STATE	PROJECT	
5	OHIO		

FINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO. — BY — DATE

ORIGINAL SURVEY — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, NOTE BOOK, NO. — BY — DATE



	END AREA SQ. FT.		VOLUME CU. YD.	
	CUT	FILL	CUT	FILL
			6	35
		5	90	
			3	60
		5	100	
			3	79
		5	65	
			3	178
		0	155	
			0	144
		0	0	
TOTAL		17	496	

Proposed Grade
Original Exist. Grade
Exist. Grade on 5/29/87

COCHRAN RD.
CROSS SECTIONS
STA. 10+00 TO STA 11+13

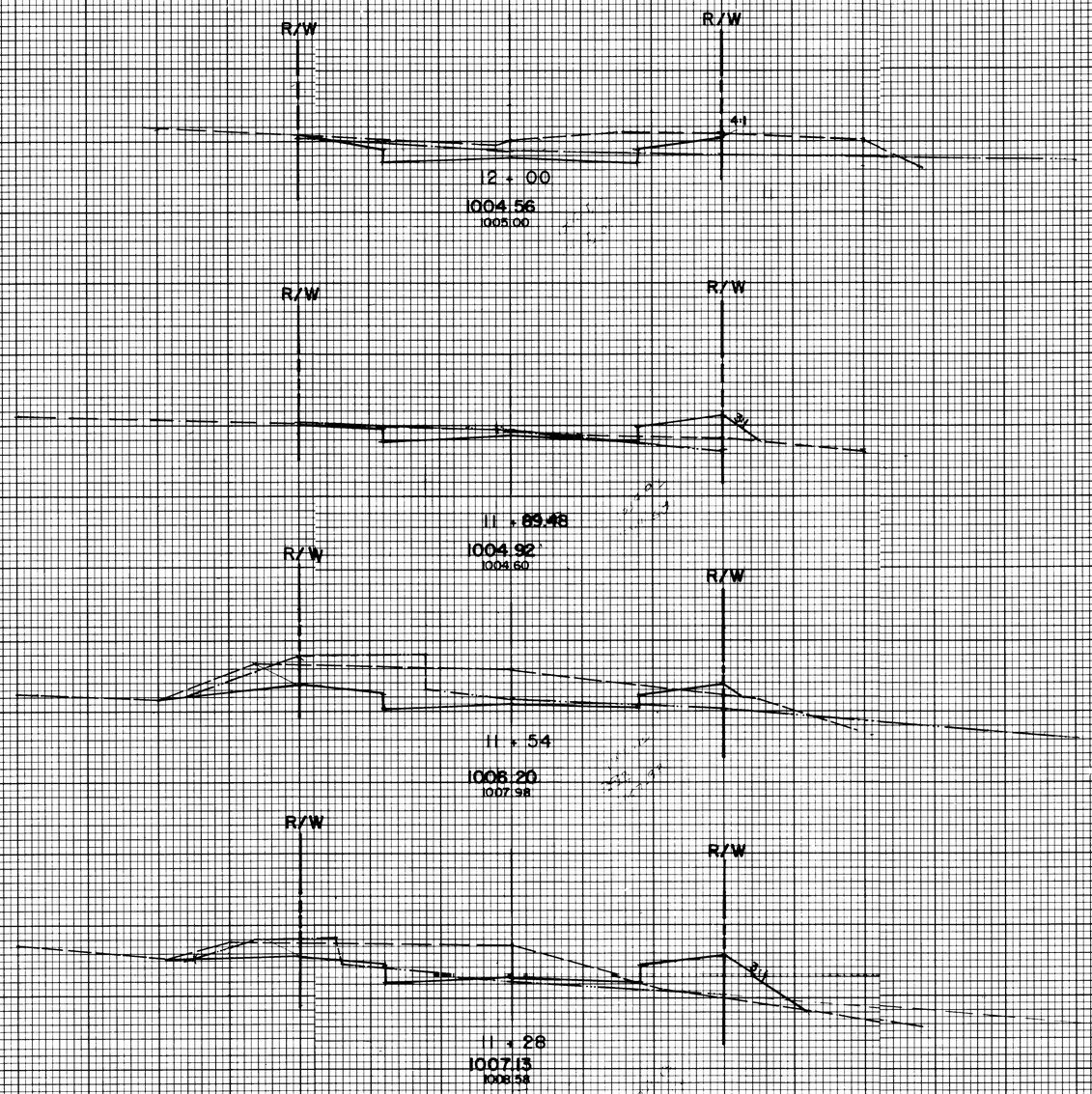
3170

CALC. BY	DATE	FHWA REGION	STATE	PROJECT	
CHK'D. BY	DATE	5	OHIO		

FINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED — PLOTTED — TEMPLATE — AREAS — AREAS CHECKED — BY — DATE

1010
1005
1000
1010
1005
1000
1010
1005
1000
1010
1005
1000



END AREA SQ. FT.		VOLUME CU. YD.	
CUT	FILL	CUT	FILL
		139	19
		30	20
		10	15
		20	46
		69	43
		86	20
		53	27
		28	36
TOTAL		27	102

Proposed Grade
Original Exist. Grade
Exist. Grade on 8/28/87

COCHRAN RD.
CROSS SECTIONS
STA. 11+28 TO STA. 12+00

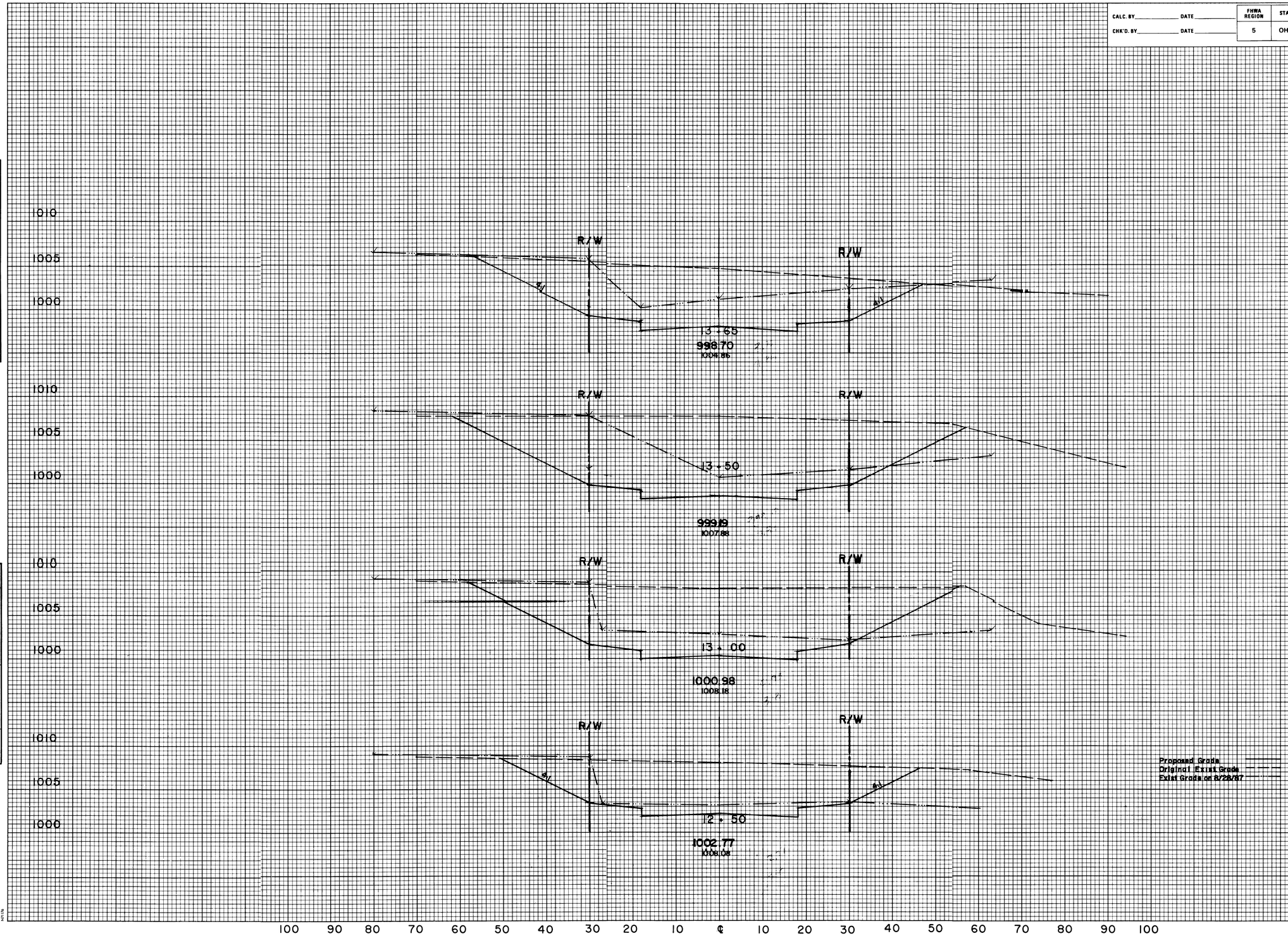
100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100

N71176

CALC. BY	DATE	FHWA REGION	STATE	PROJECT	
CHK'D. BY	DATE	5	OHIO		

FINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — NOTE BOOK NO. — BY — DATE

ORIGINAL SURVEY — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — NOTE BOOK NO. — BY — DATE



END AREA SQ. FT. CUT	END AREA SQ. FT. FILL	VOLUME CU. YD. CUT	VOLUME CU. YD. FILL
		602	0
335	0		
		20	0
390	0		
		565	0
240	0		
		333	0
120	0		
TOTAL		1719	0

COCHRAN RD.
CROSS SECTIONS
STA. 12+50 TO STA. 13+65

N7178

CALC. BY _____ DATE _____
CHK'D. BY _____ DATE _____

FHWA REGION	STATE	PROJECT	
5	OHIO		

END AREA SQ. FT.		VOLUME CU. YD.	
CUT	FILL	CUT	FILL
0	0		
45	0		
180	0		
229	0		
315	0		
TOTAL		272	0

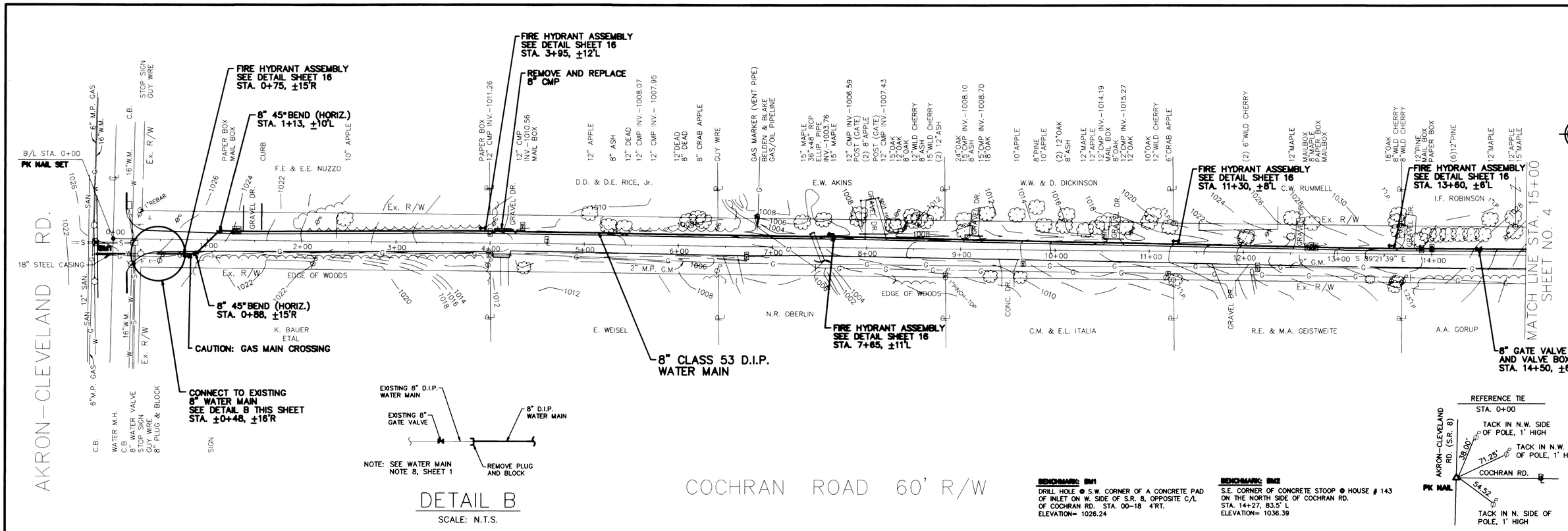
FINAL SURVEY
SURVEYED
PLOTTED
NOTE BOOK
TEMPLATE
AREAS
NO.
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
SURVEYED
PLOTTED
NOTE BOOK
TEMPLATE
AREAS
NO.
AREAS CHECKED
BY
DATE

1005
1000
995
14 + 53
998.33
998.33
1005
1000
995
14 + 40
998.11
1000.56
1005
1000
995
14 + 15
997.96
1003.06
R/W
R/W
R/W
Proposed Grade
Original Exist. Grade
Exist. Grade on 8/28/97
100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100

COCHRAN RD.
CROSS SECTIONS
STA. 14+15 TO STA. 14+53

3173



DETAIL B

SCALE: N.T.S.

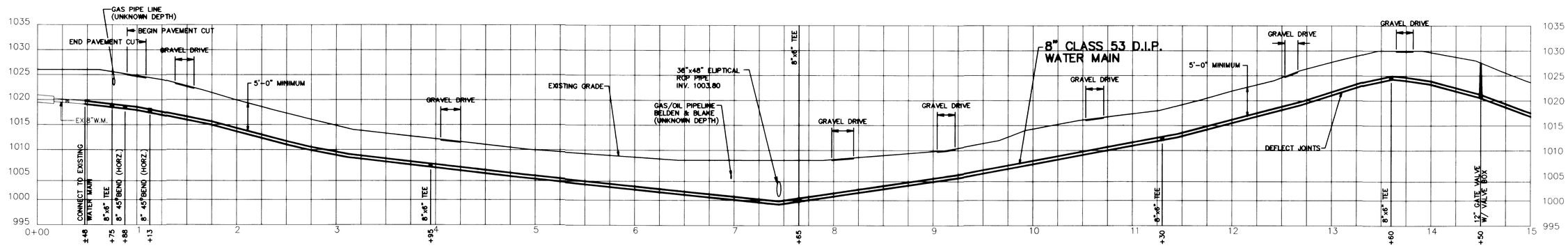
COCHRAN ROAD 60' R/W

BENCHMARK: BM1
DRILL HOLE @ S.W. CORNER OF A CONCRETE PAD OF INLET ON W. SIDE OF S.R. 8, OPPOSITE C/L OF COCHRAN RD. STA. 00-18 4'RT.
ELEVATION= 1026.24

BENCHMARK: BM2
S.E. CORNER OF CONCRETE STOOP @ HOUSE # 143 ON THE NORTH SIDE OF COCHRAN RD.
STA. 14+27, 83.5' L
ELEVATION= 1036.39

PLAN

SCALE: HORIZONTAL: 1"=50'
CONTOUR INTERVAL: 2'



PROFILE

SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=10'

OHIO UTILITIES PROTECTION SERVICE: 1-800-362-2764
TICKET NUMBER: 0618-025-096-00

RECORD DRAWING (JAN. 20, 1998)
AS CONSTRUCTED BY W.G. LOCKHART AND BASED ON INFORMATION PROVIDED BY W.G. LOCKHART

No.	DESCRIPTION	DATE	BY
	REVISIONS		

DESIGNED	TRACED	SCALE
MDH		AS NOTED
DRAWN	CHECKED	APPROVED
JAF	ADK	ADK / RAS

Garrett Fleming
ENGINEERS AND PLANNERS

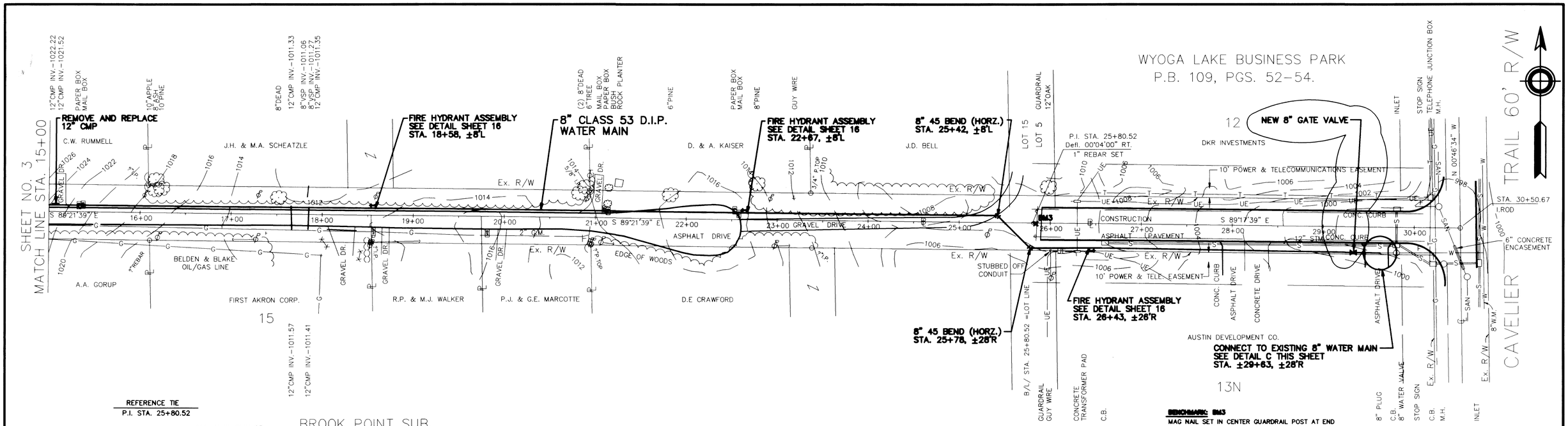
CITY OF CUYAHOGA FALLS
SUMMIT COUNTY, OHIO

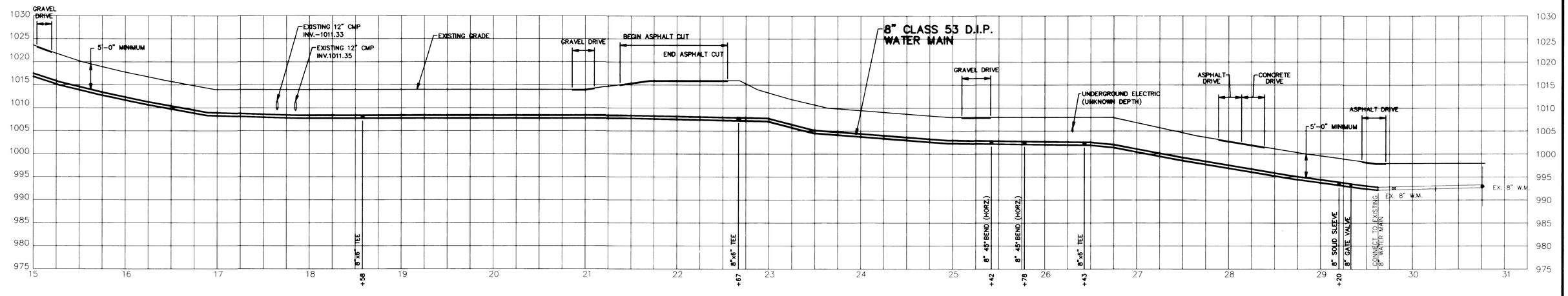
WATER DISTRIBUTION EXPANSION PROJECT

8" D.I.P. WATER MAIN
COCHRAN ROAD PLAN AND PROFILE
STATION 0+00 TO STATION 15+00

JOB No.	SHEET No.
31214	3
DATE	DRAWING NO.
APRIL, 1997	P-00003

3965





PROFILE
SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=10'

OHIO UTILITIES PROTECTION SERVICE: 1-800-362-2764
TICKET NUMBER: 0918-035-066-00

RECORD DRAWING (JAN. 20, 1998)
AS CONSTRUCTED BY W.G. LOCKHART AND BASED ON INFORMATION PROVIDED BY W.G. LOCKHART

No.	DESCRIPTION	DATE	BY
	REVISIONS		

DESIGNED	TRACED	SCALE
MDH		AS NOTED
DRAWN	CHECKED	APPROVED
JAF	ADK	ADK / RAS

Gannett Fleming
ENGINEERS AND PLANNERS

CITY OF CUYAHOGA FALLS
SUMMIT COUNTY, OHIO

WATER DISTRIBUTION EXPANSION PROJECT

8" D.I.P. WATER MAIN COCHRAN ROAD PLAN AND PROFILE STATION 15+00 TO STATION 29+63

JOB No.	SHEET No.
31214	4
DATE	DRAWING NO.
APRIL, 1997	P-00004

3966

COCHRAN ROAD
SANITARY SEWER MAIN EXTENSION

CITY OF CUYAHOGA FALLS, SUMMIT COUNTY, OHIO

PUBLIC SANITARY SEWER EXTENTION PLANS

D.O.E.S. PROJECT No. 3379

ENGINEER:

WOHLWEND ENGINEERING GROUP, Ltd.
4216 KARG INDUSTRIAL PARKWAY
KENT, OH 44240
(330) 673-2400

MAY 2015

AKRON W.P.C.S.

INDEX OF SHEETS

CONTACT INFORMATION

CITY OF CUYAHOGA FALLS – ENGINEERING
2310 SECOND STREET
CUYAHOGA FALLS, HIO 44221
(330) 971-8180

DOMINION EAST OHIO GAS
22000 MILES ROAD
CLEVELAND, OHIO 44128
(216) 662-1257

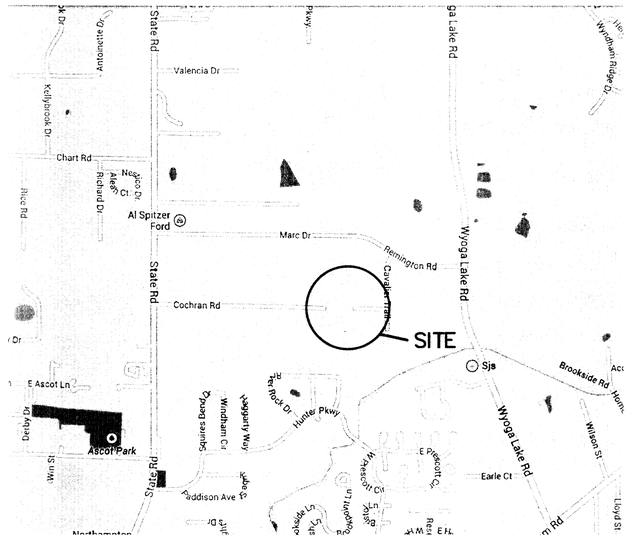
TIME WARNER
12556 ROCKSIDE ROAD
CLEVELAND, OHIO 44125
(877) 772-2253

SUMMIT COUNTY SOIL AND WATER
CONSERVATION DISTRICT
2525 STATE ROAD
CUYAHOGA FALLS, OHIO 44223
(330) 929-2871

WINDSTREAM
(800) 843-9214

AT&T
(888) 901-2779

SUMMIT COUNTY DEPT. OF ENVIRONMENTAL SERVICES
2525 STATE ROAD
CUYAHOGA FALLS, HIO 44223
(330) 643-2485



VICINITY MAP
NO SCALE

SEWER APPROVED BY: OEPA BY LETTER THIS ____ DAY OF _____, 2014

SUBMITTED BY:

STATE OF OHIO
MICHAEL J. WOHLWEND
E-68183
REGISTERED
PROFESSIONAL ENGINEER

8/4/2015
DATE

MICHAEL J. WOHLWEND
OF WOHLWEND ENGINEERING GROUP, LTD.
ITS REGISTERED ENGINEER

SUMMIT COUNTY D.O.E.S SANITARY SEWER APPROVAL:

APPROVED BY: _____ 8/5/15
DIRECTOR DATE

CITY OF CUYAHOGA FALLS

APPROVED BY: _____ 8/4/2015
ENGINEER DATE

SURVEY PERFORMED BY:
CAMPBELL & ASSOCIATES, INC.
Surveying - Engineering
3485 Fortune Drive, Suite 100
Green, Ohio 44312
(330) 945-4117
www.campbellsurvey.com

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE: 811
OHIO UTILITIES PROTECTION SERVICE

As-Builts

No.	DATE	REVISION	BY
1			
2			
3			

DATE: 05-29-2015
SCALE:
SCALE:
DRAWN: JJF
CHECKED: MJW

COCHRAN ROAD SANITARY SEWER MAIN EXTENSION
TITLE SHEET

PROJECT NUMBER 20130077

4216 KARG INDUSTRIAL PKWY
KENT, OH 44240
(330) 673-2400
wohlwend engineering group

1
7

5465

GENERAL NOTES

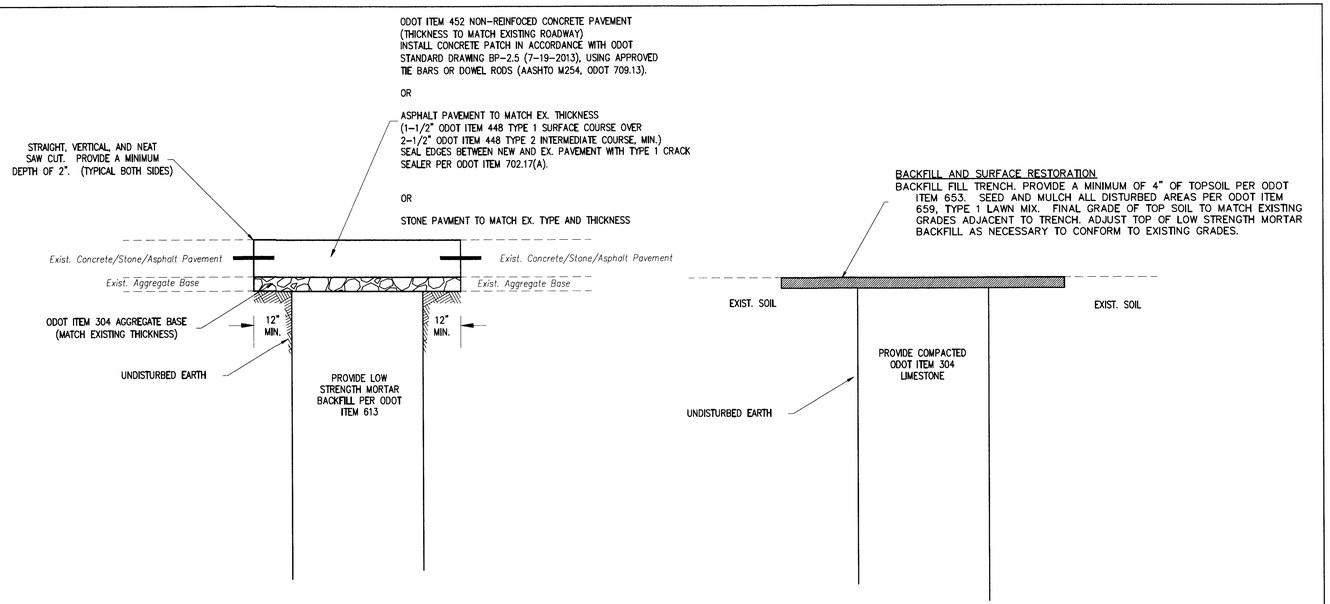
1. LOCAL GOVERNMENT REQUIREMENTS TOGETHER WITH THE LATEST EDITION OF THE STATE OF OHIO, DEPT. OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) SHALL GOVERN ALL CONSTRUCTION ITEMS THAT ARE A PART OF THIS PLAN, UNLESS OTHERWISE NOTED. IF THERE ARE ANY DISCREPANCIES, THE LOCAL GOVERNMENT REQUIREMENTS SHALL GOVERN. ALL FIELD TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR (MATERIAL COMPOSITION, MATERIAL COMPACTION, CONCRETE TESTING, ETC.).
2. ANY MODIFICATION TO THE SPECIFICATIONS OR CHANGES TO THE WORK AS SHOWN ON THESE DRAWINGS MUST HAVE PRIOR WRITTEN APPROVAL OF THE LOCAL GOVERNMENT AUTHORITY.
3. THE CONTRACTOR AND SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS ALSO THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTORS TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK.
4. THE CONTRACTOR SHALL NOTIFY THE CUYAHOGA FALLS ENGINEER AND SUMMIT COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION.
5. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, PRIOR TO CONSTRUCTION.
6. EXISTING UTILITIES SHOWN ARE FROM BEST AVAILABLE RECORDS AND FIELD INVESTIGATION, AND ARE NOT NECESSARILY COMPLETE OR EXACT. THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL EXPOSE ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL EFFECT ON THE PROPOSED CONSTRUCTION, AND SHALL MAKE ADJUSTMENTS IN ELEVATIONS TO PROVIDE SUFFICIENT CLEARANCE BETWEEN THE PROPOSED AND EXISTING UTILITIES. THE CONTRACTOR SHALL CALL THE OHIO UTILITIES PROTECTION SERVICE (811) THREE WORKING DAYS PRIOR TO WORK.
7. ANY PROPERTY CORNER PINS OR PERMANENT SURVEY MARKINGS DISTURBED DURING CONSTRUCTION SHALL BE RESET BY AN OHIO REGISTERED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
8. THE TRACKING OR SPILLAGE OF MUD, DIRT, OR DEBRIS UPON STREETS IS PROHIBITED AND ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR. IF THE CONTRACTOR FAILS TO KEEP THE WORK AREA CLEAN OF DEBRIS, OR FAILS TO CLEAN MUD OR DIRT OFF OF STREETS, THE VILLAGE OR COUNTY MAY TAKE ACTION AND ASSESS THE DEVELOPER FOR THE COSTS THAT ARE INCURRED.
9. NO NON-RUBBER TIRE VEHICLE SHALL BE MOVED ON STREETS; EXCEPTIONS MAY BE GRANTED WHERE SHORT DISTANCES AND SPECIAL CIRCUMSTANCES ARE INVOLVED. GRANTING OF EXCEPTIONS MUST BE IN WRITING AND ANY RESULTING DAMAGE MUST BE REPAIRED TO THE SATISFACTION OF THE VILLAGE AND/OR COUNTY.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING MAIL SERVICE WITHIN THE CONSTRUCTION AREA.
11. ALL ITEMS OF WORK CALLED FOR ON THE PLANS FOR WHICH NO SPECIFIC METHOD OF PAYMENT IS PROVIDED SHALL BE PERFORMED BY THE CONTRACTOR AND THE COST OF SAME SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS RELATED ITEMS.
12. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING IN THE VICINITY OF EXISTING TREES, TAKING ALL MEASURES POSSIBLE TO PROTECT AND PRESERVE THEM. THE CONTRACTOR SHALL BE GOVERNED BY THE PROVISIONS OF THE CONTRACTOR'S CONTRACT WITH THE OWNER.
13. ALL FIELD TILE BROKEN DURING EXCAVATION SHALL BE REPLACED TO ITS ORIGINAL CONDITION OR CONNECTED TO A STORM SEWER SYSTEM AS DIRECTED BY THE VILLAGE OR COUNTY ENGINEER.
14. APPROVAL OF THESE PLANS IS CONTINGENT ON ALL EASEMENTS REQUIRED FOR THE CONSTRUCTION OF THE WORK BEING SECURED AND SUBMITTED TO THE COUNTY OF SUMMIT DEPARTMENT OF ENVIRONMENTAL SERVICES FOR RECORDING PRIOR TO COMMENCEMENT OF THE WORK, AND NO WORK WHICH REQUIRES AN EASEMENT WILL BE ALLOWED TO PROCEED UNTIL THIS HAS BEEN DONE.
15. ALL AREAS WITHIN THE PUBLIC RIGHT-OF-WAY THAT ARE DISTURBED BY THIS PROJECT SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION, PER CMS ITEM 659 (SEEDING AND MULCHING) OR OTHER APPLICABLE SPECIFICATIONS.
16. AT ALL UTILITY CROSSINGS WHERE THE EXISTING UTILITY IS EXPOSED IN THE TRENCH, THE BACKFILL SHALL CONSIST OF COMPACTED GRANULAR MATERIAL IN ACCORDANCE WITH CMS ITEM 611 BETWEEN THE DEEPER AND SHALLOWER PIPE. WHERE PROPOSED UTILITIES OR SERVICES CROSS PROPOSED OR EXISTING PAVEMENT AREAS, BACKFILL SHALL BE COMPACTED GRANULAR MATERIAL IN ACCORDANCE WITH CMS ITEM 611 EXTENDING AT LEAST 3 FEET BEYOND THE BACK OF CURB OR EDGE OF PAVEMENT. COST IS TO BE INCLUDED IN THE PRICE BID FOR RELATED PIPE.
17. IN THE EVENT EXCAVATION FOR THE STREET IS FROM 0" TO 6" BELOW THAT CALLED FOR ON THE PLANS, THE CONTRACTOR SHALL REPLACE THIS EXCESS EXCAVATED MATERIAL WITH ITEM 304 AGGREGATE, AND SHALL BE PAID FOR BY THE CONTRACTOR.
18. CURB INLETS, MANHOLES, AND CATCH BASINS SHALL BE CHANNELED AS DIRECTED.
19. WHERE NECESSARY TO DISTURB PAVEMENTS OR DRIVES, THE PAVEMENT SHALL BE SAW CUT IN NEAT, STRAIGHT LINES. THE DEPTH OF SAW CUT SHALL BE FULL DEPTH.
20. THE CITY, COUNTY AND DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR MEANS, METHODS, PROCEDURES, TECHNIQUES, OR CONSEQUENCES OF CONSTRUCTION. THE CITY, COUNTY, AND DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR SAFETY ON THE JOB SITE, OR FOR FAILURE BY THE CONTRACTOR TO PERFORM WORK ACCORDING TO CONTRACT DOCUMENTS.
21. THE CONTRACTOR SHALL RESTRICT CONSTRUCTION ACTIVITY TO PUBLIC RIGHT-OF-WAY AND AREAS DEFINED AS PERMANENT AND/OR TEMPORARY CONSTRUCTION EASEMENTS.
22. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO EQUAL OR BETTER CONDITION THAT EXISTED BEFORE CONSTRUCTION. DRAINAGE DITCHES OR WATER COURSES THAT ARE DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO THE GRADES AND CROSS SECTIONS THAT EXISTED BEFORE CONSTRUCTION.
23. ALL SIGNS, LANDSCAPING, STRUCTURES, OR OTHER APPURTENANCES DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF THE CITY ENGINEER. THE COST OF SUCH WORK SHALL BE PAID FOR BY THE CONTRACTOR.
24. PERMITS TO CONSTRUCT IN THE RIGHT-OF-WAY OF EXISTING STREETS MUST BE OBTAINED FROM THE VILLAGE AND COUNTY BEFORE COMMENCING CONSTRUCTION. WHEN OPEN-CUTTING OF EXISTING PAVEMENT IS PERMITTED, CONTROLLED DENSITY BACKFILL MAY BE USED IN PLACE OF COMPACTED GRANULAR BACKFILL. ASPHALT SURFACES SHALL BE HEAT WELDED.
25. WHEN UNKNOWN OR INCORRECTLY LOCATED UNDERGROUND UTILITIES ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND THE CITY, AND DESIGN ENGINEER.
26. BEFORE RELOCATING ANY MAILBOXES, THE CONTRACTOR SHALL CONTACT THE U.S. POSTAL SERVICE AND RELOCATE MAILBOXES ACCORDING TO THE REQUIREMENTS OF THE POSTAL SERVICE.
27. ALL BENCHMARKS ARE BASED ON UNITED STATES GEOLOGICAL SURVEY (USGS) DATUM.
28. THE CITY ENGINEER IN APPROVING THESE PLANS, DOES NOT IN ANY WAY RELIEVE THE OWNER'S ENGINEER OF HIS/HER RESPONSIBILITY FOR ACCURATE AND COMPLETE ENGINEERING DESIGN RELATIVE TO THE PLANS.

SUMMIT COUNTY D.O.E.S. GENERAL NOTES (SANITARY SEWERS AND APPURTENANCES)

1. ALL SANITARY SEWERS AND APPURTENANCES SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH CURRENT STANDARDS AND SPECIFICATIONS OF THE DEPARTMENT OF ENVIRONMENTAL SERVICES (D.O.E.S.).
2. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED. ORDINANCE NO. 85-656, APPROVED 10-8-85.
3. APPROVAL BY D.O.E.S. CONSTITUTES NEITHER EXPRESSED NOR IMPLIED WARRANTIES AS TO THE FITNESS, ACCURACY, OR SUFFICIENCY OF PLANS, DESIGNS OR SPECIFICATIONS.
4. ALL SANITARY SEWER MATERIALS, INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE OEPA.
5. THE DESIGN ENGINEER CERTIFIES THAT ALL UTILITIES IN EXISTING AND PROPOSED ROADS AND EASEMENTS ARE SHOWN.
6. ALL SANITARY SEWERS SHALL PASS THE AIR ACCEPTANCE TEST PRIOR TO ACCEPTANCE BY D.O.E.S.
7. ALL SANITARY SEWERS SHALL BE VIDEO TAPED BY THE OWNER AND FOUND TO BE FREE OF DEFECTS AND FOREIGN MATTER AND IN PROPER ALIGNMENT PRIOR TO FORMAL ACCEPTANCE BY D.O.E.S.
8. ALL MANHOLES SHALL BE SUPPLIED WITH SOLID COVERS.
9. ALL SANITARY LATERALS SHALL BE EXTENDED TO NOT LESS THAN 15 FEET INTO THE PROPERTY.
10. ALL SANITARY LATERALS SHALL BE LAID AT NO LESS THAN 1% GRADE.
11. SANITARY SEWER MATERIALS SHALL CONFORM TO D.O.E.S. AND O.E.P.A. STANDARDS.
12. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL DAMAGE TO THE EXISTING SEWERAGE SYSTEM RESULTING FROM NON-CONFORMANCE WITH D.O.E.S. STANDARDS OR GENERAL NEGLIGENCE.
13. A 12" MAXIMUM MANHOLE GRADE ADJUSTMENT IS PERMITTED. ADJUSTMENT IS TO BE MADE WITH PRECAST GRADE RINGS OR RED BRICK (TWO COURSES MAXIMUM). A MINIMUM OF ONE (1) GRADE RING IS REQUIRED AT EACH MANHOLE.
14. INTERNAL CHIMNEY SEALS SHALL BE INSTALLED IN ALL MANHOLES.
15. MANHOLE COVER INSERTS SHALL BE PROVIDED FOR ALL MANHOLES, REGARDLESS OF THE TYPE OF COVER REQUIRED.
16. WHERE INLET AND OUTLET PIPES CONNECT TO MANHOLES, A FLEXIBLE WATERTIGHT JOINT, AS APPROVED BY D.O.E.S., IS REQUIRED.
17. THE MINIMUM REQUIREMENTS FOR GRAVITY SANITARY SEWER PIPE SHALL BE PVC SDR-35 PLASTIC SEWER PIPE CONFORMING TO ASTM D3034. ALL JOINTS SHALL CONFORM TO ASTM D3212. ALL BEDDING SHALL CONFORM TO ASTM D2321 TYPE I, II OR III AND D.O.E.S. STANDARDS.
18. THE CONTRACTOR MUST ALERT THE OHIO UTILITIES PROTECTION SERVICE AT 811 AT LEAST 48 HOURS BEFORE ANY EXCAVATION HAS BEGUN.
19. ALL ROUGH GRADING (WITHIN 6" OF FINISHED GRADE) SHALL BE COMPLETED WITHIN THE RIGHT-OF-WAY & EASEMENT PRIOR TO SANITARY SEWER AND WATER LINE CONSTRUCTION.
20. NO SEWER CONSTRUCTION WILL BE PERMITTED UNTIL SUCH TIME THAT THE PLANS ARE APPROVED BY D.O.E.S. AND O.E.P.A. INCLUDING PAYMENT OF REVIEW AND "PERMIT TO INSTALL" FEES REQUIRED BY THE O.E.P.A.
21. ALL SANITARY SEWERS CONTAINED WITHIN THIS PROJECT (DEDICATED EASEMENT) ARE TO BE PUBLICLY OWNED AND MAINTAINED.
22. CONNECTIONS TO EXISTING MANHOLES SHALL BE CORE DRILLED, WITH BENCHES AND CHANNELS FORMED AND REPAIRED, IN ACCORDANCE WITH D.O.E.S. SPECIFICATIONS.

OEPA NOTES

1. MINIMUM CLEARANCE BETWEEN SANITARY SEWER AND WATER LINES SHALL BE 10' HORIZONTAL OR 1'-6" VERTICAL OUTSIDE OF EACH PIPE. MINIMUM CLEARANCE BETWEEN STORM SEWER AND WATER LINES SHALL BE 4' HORIZONTAL OR 1'-0" VERTICAL OUTSIDE OF EACH PIPE.
2. A DEFLECTION TEST SHALL BE REQUIRED FOR ALL FLEXIBLE PIPE OF 8-INCH DIAMETER AND LARGER. THE TEST SHALL BE CONDUCTED AT LEAST 30 DAYS AFTER COMPLETION OF BACKFILL AND SHALL BE IN ACCORDANCE WITH ASTM D-3034. THE ALLOWABLE DEFLECTION RATE SHALL NOT EXCEED FIVE (5%) PERCENT.
3. ALL SANITARY SEWERS MUST PASS A LOW PRESSURE AIR TEST, WHICH SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM F1417. THE MAX. ALLOWABLE TEST LEAKAGE SHALL BE 100 GAL/INCH OF DIAMETER/MILE/DAY.
4. MANHOLE CONSTRUCTION SHALL MEET THE REQUIREMENTS OF ASTM C478 AND C443. ALL MANHOLES SHALL BE AIR/VACUUM TESTED IN ACCORDANCE WITH AND MEET ALL THE REQUIREMENTS OF ASTM C1244.



UNDER PAVEMENT

NOTES:
1. PROVIDE MINIMUM TRENCH WIDTH AS REQUIRED BY SUMMIT COUNTY D.O.E.S. STANDARDS.
2. PROVIDE BACKFILL, AS SHOWN IN THE ABOVE DETAIL, ABOVE REQUIRED SUMMIT COUNTY D.O.E.S. PIPE COVER.
3. ALL COSTS FOR PAVEMENT RESTORATION FOR SANITARY SEWER TO BE INCLUDED IN UNIT PRICE FOR SANITARY PIPE.
4. ALL SAW CUTS IN EXISTING PAVEMENT ARE TO BE STRAIGHT AND PARALLEL TO THE PROPOSED CENTERLINE OF THE SANITARY SEWER, AND SHALL BE VERTICAL AND NEAT.

OUTSIDE OF PAVEMENT

NOTES:
1. PROVIDE MINIMUM TRENCH WIDTH AS REQUIRED BY SUMMIT COUNTY D.O.E.S. STANDARDS.
2. PROVIDE BACKFILL, AS SHOWN IN THE ABOVE DETAIL, ABOVE REQUIRED SUMMIT COUNTY D.O.E.S. PIPE COVER.
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4. ALL SAW CUTS IN EXISTING PAVEMENT ARE TO BE STRAIGHT AND PARALLEL TO THE PROPOSED CENTERLINE OF THE SANITARY SEWER, AND SHALL BE VERTICAL AND NEAT.

TRENCH RESTORATION WITHIN RIGHT-OF-WAY

NOTES:
ALL CURBS SHALL BE REPAIRED PER ODOT ITEM 609 AND STANDARD CONSTRCUTION DRAWING BP-5.1. TYPE OF CURB REPAIR SHALL MATCH EXISTING CURB TYPE.

SURVEY PERFORMED BY:
CAMPBELL & ASSOCIATES, INC.
Surveying - Engineering
3485 Fortuna Drive, Suite 100
Green, Ohio 44312
(330) 945-4117
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DATE: 05-09-2019
SCALE:
SCALE:
DRAWN: MF
CHECKED: MJW

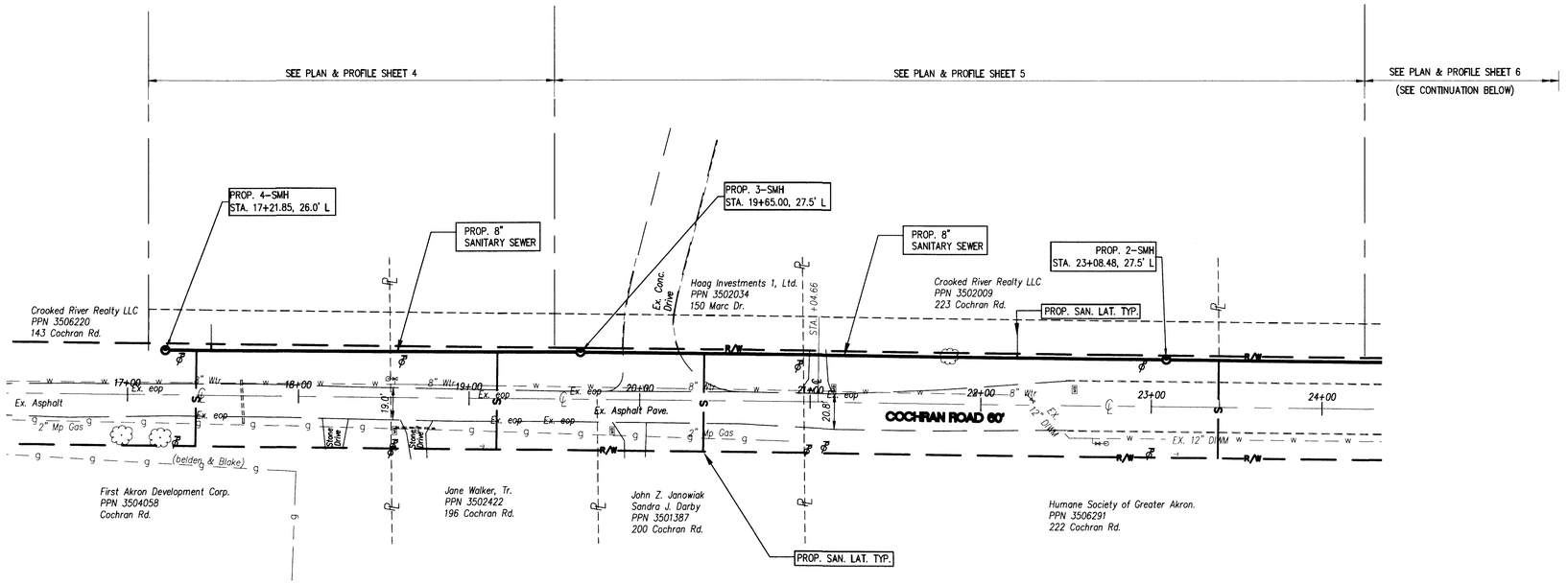
COCHRAN ROAD SANITARY SEWER MAIN EXTENSION
GENERAL NOTES AND DETAILS

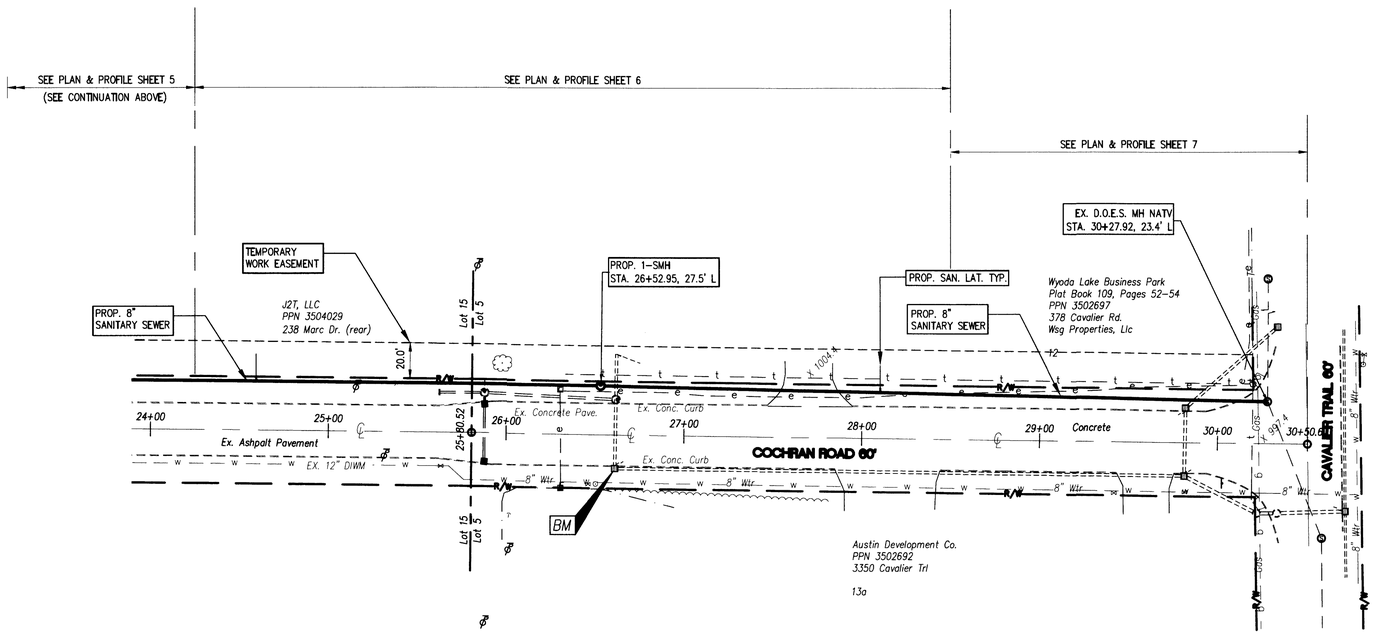
PROJECT NUMBER 20130077

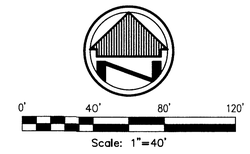
wohlwend engineering group
4216 KENT INDUSTRIAL PKWY
KENT, OH 44240
(330) 673-2400

2 / 7

5466







BASIS OF BEARINGS
THE BASIS FOR BEARINGS IS GRID NORTH, OHIO STATE PLANE COORDINATE SYSTEM, NORTH ZONE. NAD83 (1986)

BENCHMARK
TOP CENTER OF EXISTING CURB INLET AT STA. 26+62.33' 18.8' RT.

ELEV. 1008.00

Legend

R/W – Right-of-way	St – Existing Storm
E/p – Existing Edge Of Pavement	– Existing Hydrant
– Property Line	– Existing Water Valve
– Centerline	G.V. – Existing Gas Valve
– Power Pole	S – Existing Sanitary Manhole
– Light Pole	–S– Existing Sanitary Sewer
– Telephone/power Pole	–W– Existing Watermain
–x– Existing Fence	–G– Existing Gasmain
– Existing Catch Basin	– Proposed Gate Valve
– Existing Storm Manhole	– Proposed Hydrant

EXISTING UTILITIES
THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES. CONTRACTOR IS TO CONTACT THE OHIO UTILITIES PROTECTION SERVICE (OUPS) AT 811 TO HAVE ENTIRE AREA MARKED AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF EARTH DISTURBING ACTIVITIES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRACING ALL TRENCH EXCAVATIONS, AND FOR BRACING AND/OR RELOCATING EXISTING UTILITES IN CONFLICT WITH THE PROPOSED WORK. THE CONTRACTOR SHALL COORDINATE ALL SUCH BRACING/RELOCATIONS WITH THE APPROPRIATE UTILITY COMPANIES. ALL BRACING SHALL BE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.

SURVEY PERFORMED BY:
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(330) 945-4117
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DATE: 05-29-2015
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SCALE:
DRAWN: JJF
CHECKED: MJW

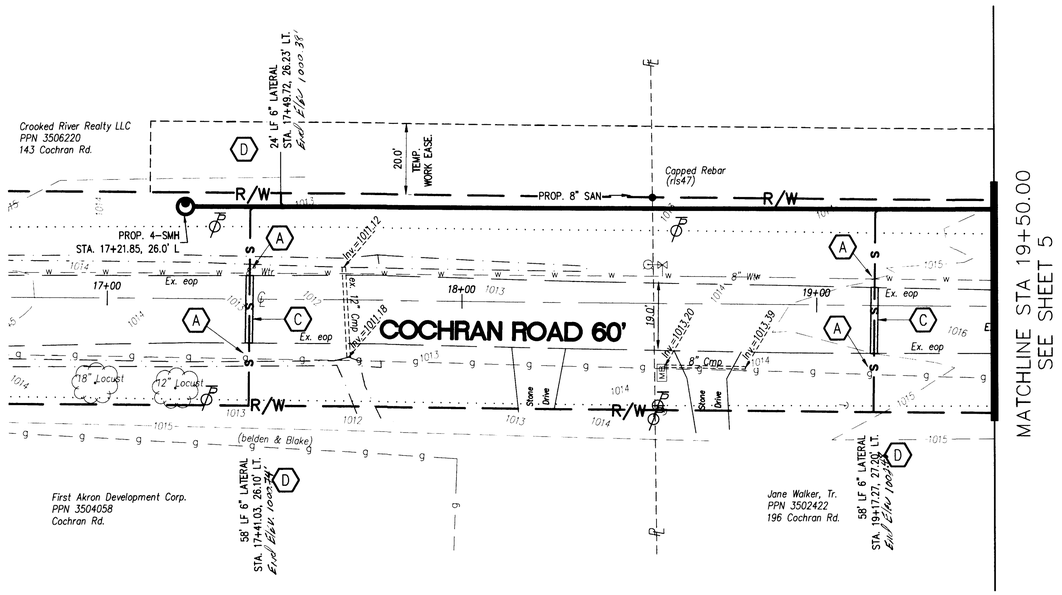
COCHRAN ROAD SANITARY SEWER MAIN EXTENSION
OVERALL PLAN

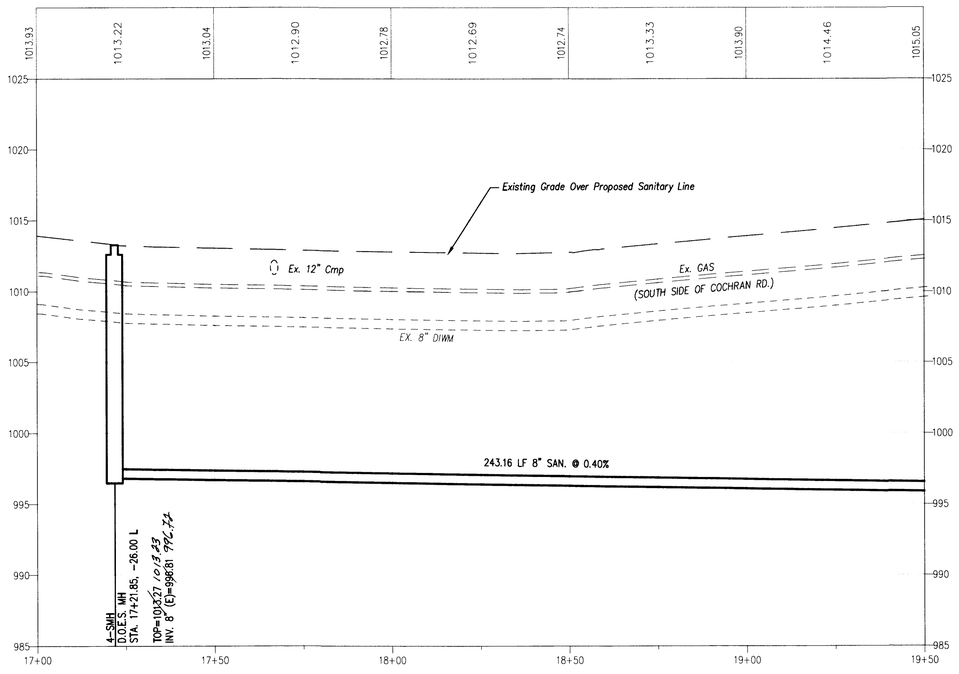
PROJECT NUMBER 20130077

4216 FARC INDUSTRIAL PKWY
KENT, OH 44240
(330) 673-2400
wohlwend engineering group

3
7

5467





0' 20' 40' 60'

Scale: 1"=20'

BASIS OF BEARINGS
THE BASIS FOR BEARINGS IS GRID NORTH, OHIO STATE PLANE COORDINATE SYSTEM, NORTH ZONE. NAD83 (1986)

BENCHMARK
TOP CENTER OF EXISTING CURB INLET AT STA. 26+62.33' 18.8' RT.

ELEV. 1008.00

Legend

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KEYED NOTES

(A) – MAINTAIN A MINIMUM 18" VERTICAL CLEARANCE BETWEEN ALL WATER LINES AND SEWERS (SANITARY AND STORM) CROSSINGS. MAINTAIN A MINIMUM 12" VERTICAL CLEARANCE AT ALL OTHER UTILITY CROSSINGS.

(B) – CONTRACTOR TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES WITHIN THE WORK AREA. CONTRACTOR TO SUPPORT AND RESET EXISTING UTILITIES AND UTILITY STRUCTURES DURING CONSTRUCTION OF SANITARY MAIN. COORDINATE WORK WITH UTILITY COMPANIES. SEE UTILITY NOTES THIS SHEET.

(C) – PROVIDE STRAIGHT AND NEAT CUTS IN EXISTING PAVEMENTS AND CURBS PRIOR TO OPENING TRENCH. REPAIR PAVEMENT AND CURBS PER DETAIL SHEET 2.

(D) – ALL SANITARY LATERALS SHALL BE EXTENDED TO THE R/W OR TO THE BACK OF THE TEMP. WORK EASEMENT AS SHOWN.

(E) – REMOVE EXISTING TREES AS NECESSARY WITHIN RIGHT-OF-WAY PER ODOT ITEM 201. PROTECT EX. TREES OUTSIDE OF R/W.

LATERAL NOTES:
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2. INSTALL LATERALS PER ODOT ITEM 603.
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COCHRAN ROAD SANITARY SEWER MAIN EXTENSION
PLAN AND PROFILE – STA. 17+21.85 TO STA. 19+50

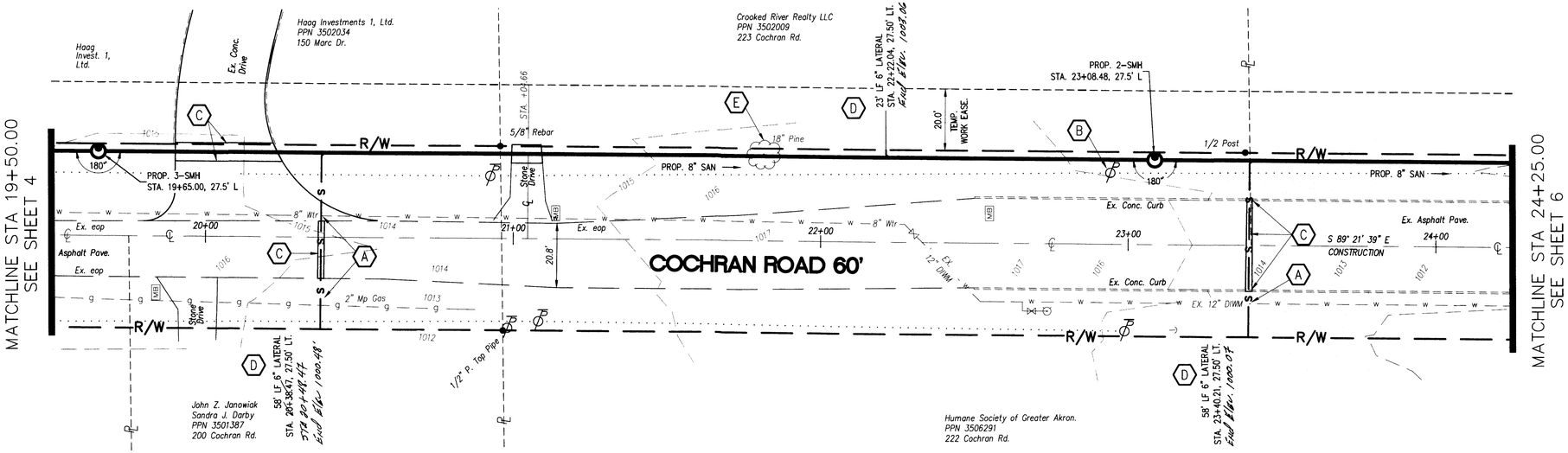
PROJECT NUMBER 20130077

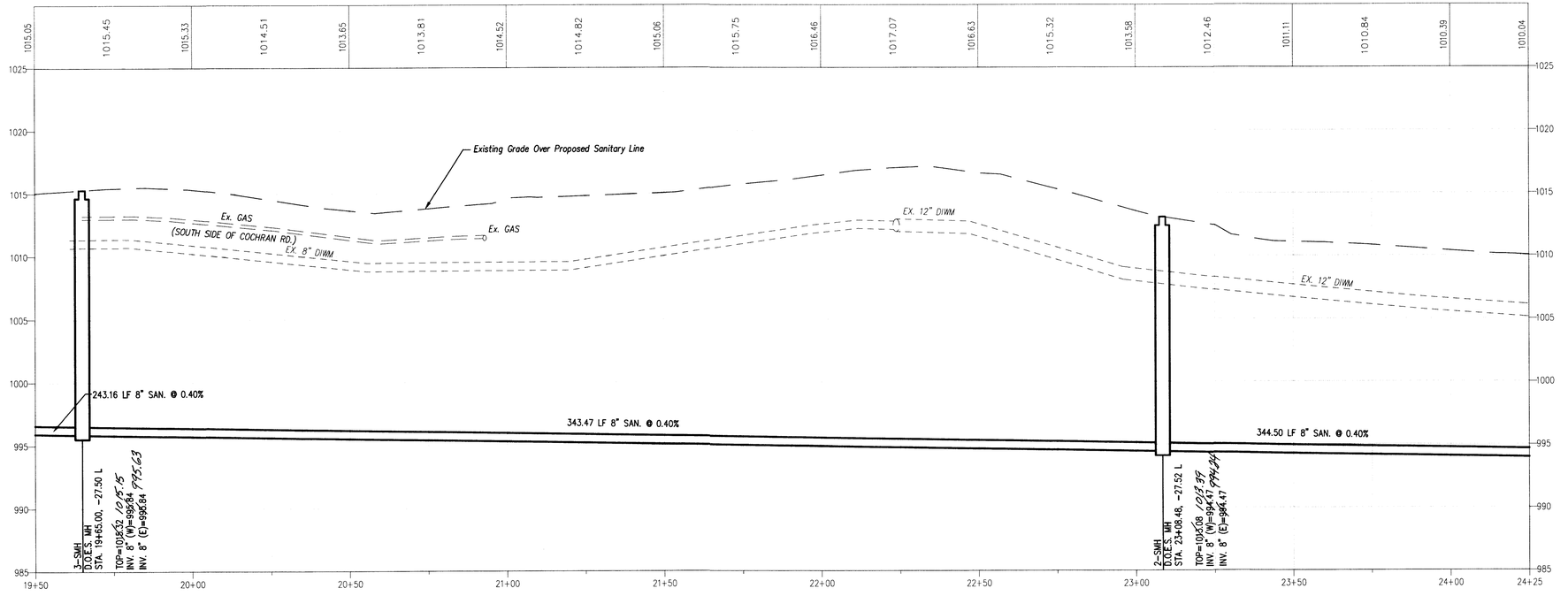
4216 KARG INDUSTRIAL PKWY
KENT, OH 44240
(330) 673-2400
wohlwend engineering group

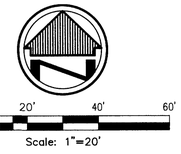
4
7

STA. 17+21.85 TO 19+50

5468







BASIS OF BEARINGS
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BENCHMARK
TOP CENTER OF EXISTING CURB INLET AT STA. 26+62.33' 18.8' RT.

ELEV. 1008.00

Legend

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E/p – Existing Edge Of Pavement	– Existing Hydrant
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– Centerline	G.V. – Existing Gas Valve
– Power Pole	– Existing Sanitary Manhole
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COCHRAN ROAD SANITARY SEWER MAIN EXTENSION
PLAN AND PROFILE – STA. 19+50 TO STA. 24+25

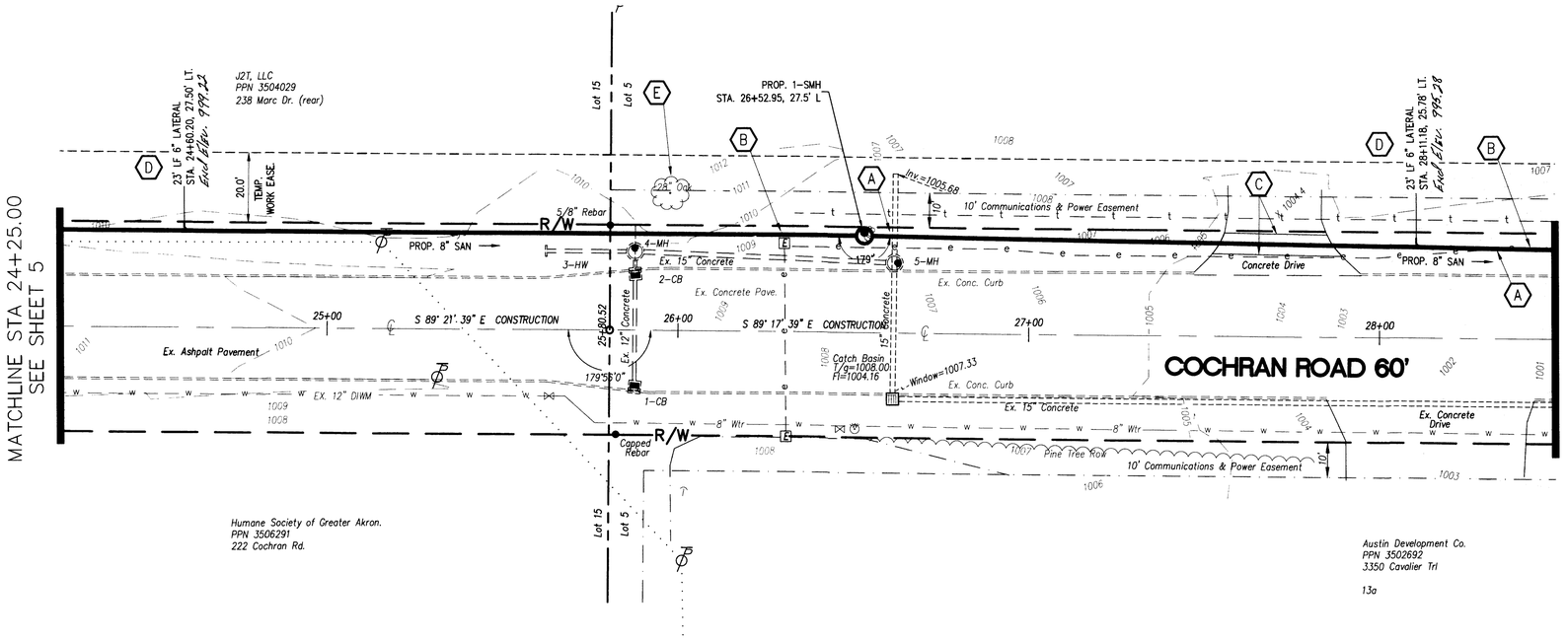
PROJECT NUMBER 20130077

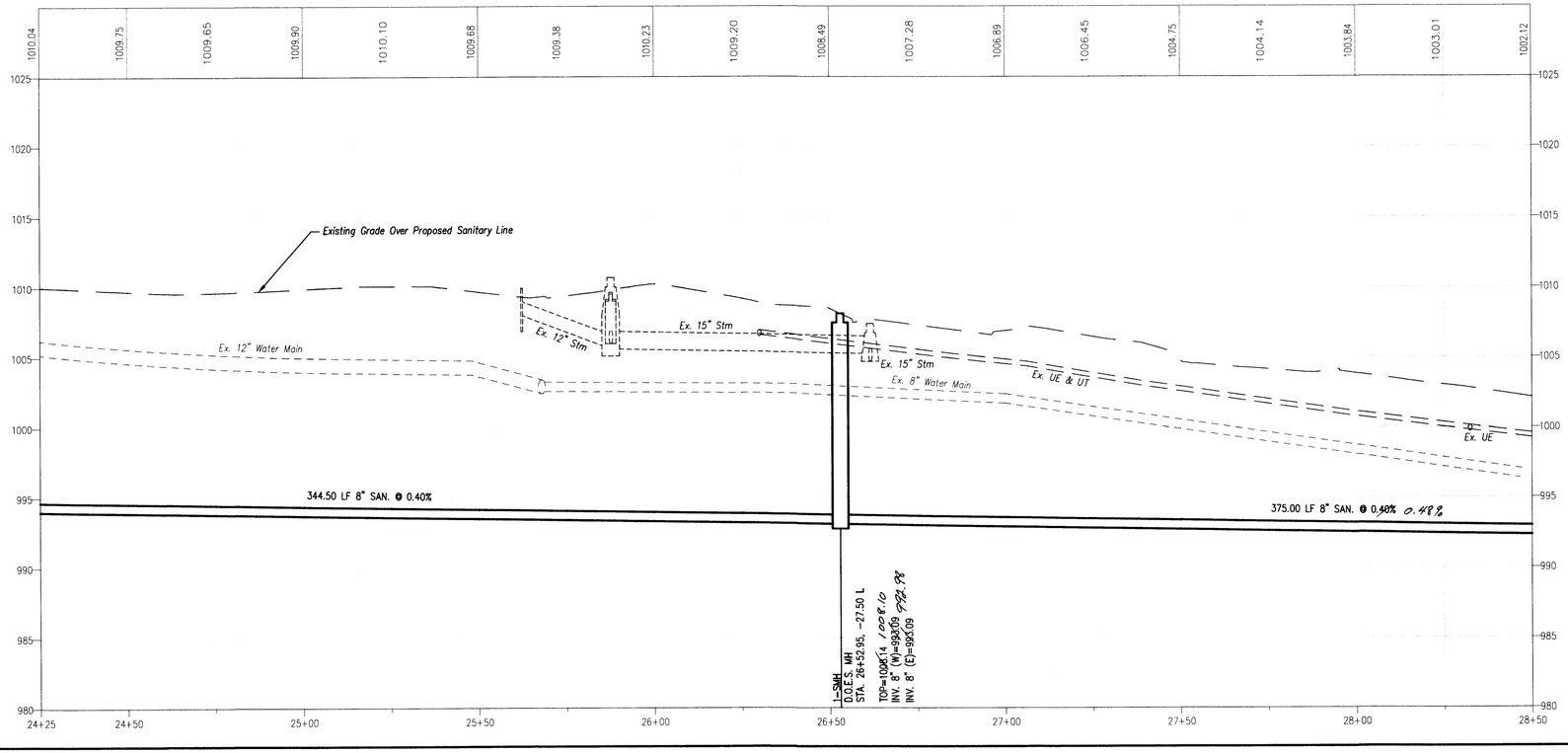
4216 KARG INDUSTRIAL PKWY
KENT, OH. 44240
(330) 672-4860
wohlwend engineering group

5
7

STA. 19+50 TO 24+25

5469





0' 20' 40' 60'

Scale: 1"=20'

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ELEV. 1008.00

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KEYED NOTES

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DATE: 05-29-2015
SCALE
DRAWN: MJF
CHECKED: MJW

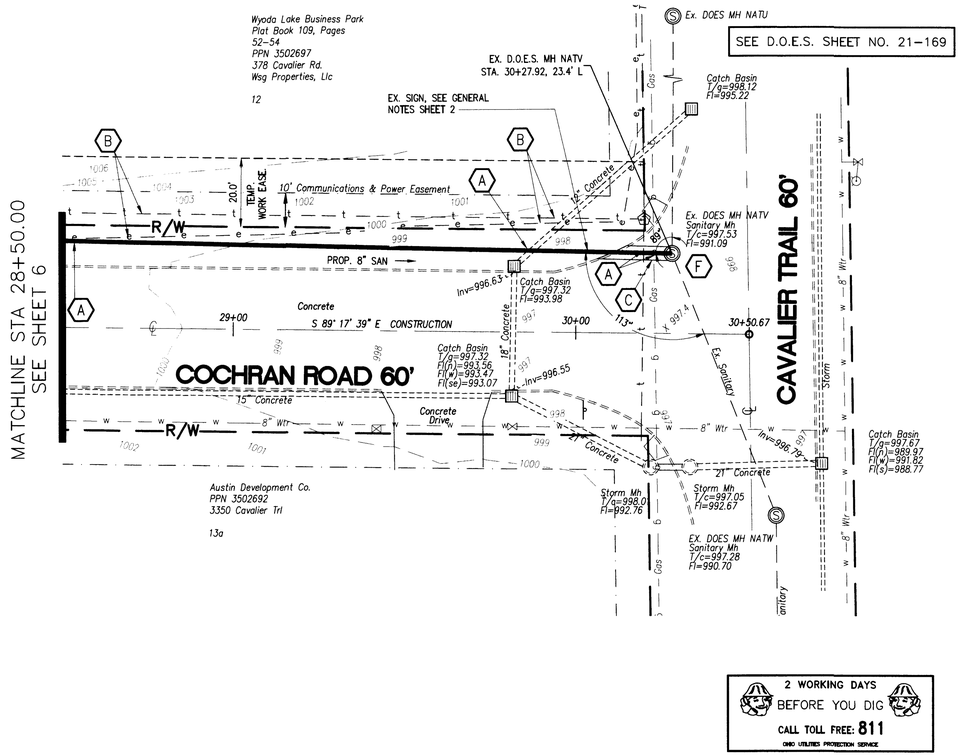
COCHRAN ROAD SANITARY SEWER MAIN EXTENSION
PLAN AND PROFILE – STA. 24+25 TO STA. 28+50

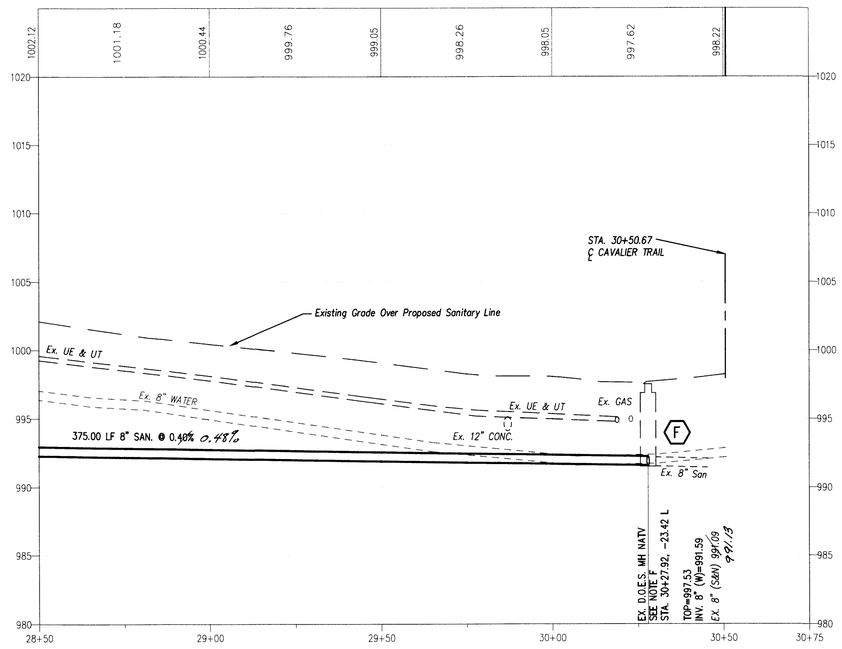
PROJECT NUMBER 20130077

wohlwend engineering group
4216 KARG INDUSTRIAL PKWY
KENT, OH 44240
(330) 673-2400

6
7

STA. 24+25 TO STA. 28+50
5470





SEE D.O.E.S. SHEET NO. 21-169

0' 20' 40' 60'

Scale: 1"=20'

BASIS OF BEARINGS
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TOP CENTER OF EXISTING CURB INLET AT STA. 26+62.33' 18.8' RT.

ELEV. 1008.00

Legend

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x – Existing Fence	G – Existing Gasmain
– Existing Catch Basin	– Proposed Gate Valve
– Existing Storm Manhole	– Proposed Hydrant

KEYED NOTES

(A) – MAINTAIN A MINIMUM 18" VERTICAL CLEARANCE BETWEEN ALL WATER LINES AND SEWERS (SANITARY AND STORM) CROSSINGS. MAINTAIN A MINIMUM 12" VERTICAL CLEARANCE AT ALL OTHER UTILITY CROSSINGS.

(B) – CONTRACTOR TO VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES WITHIN THE WORK AREA. CONTRACTOR TO SUPPORT AND RESET EXISTING UTILITIES AND UTILITY STRUCTURES DURING CONSTRUCTION OF SANITARY MAIN. COORDINATE WORK WITH UTILITY COMPANIES. SEE UTILITY NOTES THIS SHEET.

(C) – PROVIDE STRAIGHT AND NEAT CUTS IN EXISTING PAVEMENTS AND CURBS PRIOR TO OPENING TRENCH. REPAIR PAVEMENT AND CURBS PER DETAIL SHEET 2.

(D) – ALL SANITARY LATERALS SHALL BE EXTENDED TO THE R/W OR TO THE BACK OF THE TEMP. WORK EASEMENT AS SHOWN.

(E) – REMOVE EXISTING TREES AS NECESSARY WITHIN RIGHT-OF-WAY PER ODOT ITEM 201. PROTECT EX. TREES OUTSIDE OF R/W.

(F) – CORE DRILL EXISTING MANHOLE AND INSTALL KOR-N-SEAL FLEXIBLE PIPE-TO-MANHOLE CONNECTOR PER D.O.E.S STANDARD DETAIL DRAWING NO. 34 TO RECEIVE PROPOSED 8" SANITARY PIPE.

LATERAL NOTES
1. ALL LATERALS SHALL BE INSTALLED AT A MINIMUM SLOPE OF 1.00% FROM BUILDINGS TO MAIN.
2. INSTALL LATERALS PER ODOT ITEM 611.
3. CONNECT LATERALS TO MAIN PER D.O.E.S. STANDARD DRAWINGS.
4. THE ENDS OF ALL SANITARY LATERALS ARE TO BE CAPPED AND THEIR EXACT STA. & OFFSET RECORDED.

UTILITY NOTES:
1. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES. CONTRACTOR IS TO CONTACT THE OHIO UTILITIES PROTECTION SERVICE (OUPS) AT 811 TO HAVE ENTIRE AREA MARKED AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF EARTH DISTURBING ACTIVITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRACING ALL TRENCH EXCAVATIONS, AND FOR BRACING AND/OR RELOCATING EXISTING UTILITES IN CONFLICT WITH THE PROPOSED WORK. THE CONTRACTOR SHALL COORDINATE ALL SUCH BRACING/RELOCATIONS WITH THE APPROPRIATE UTILITY COMPANIES. AL BRACING SHALL BE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREM
3. THE EXISTING UNDERGROUND UTILITIES AS SHOWN ARE OBTAINED FROM A COMBINATION OF FIELD LOCATION AND RECORD INFORMATION OBTAINED FROM THE RESPECTIVE UTILITY COMPANIES, WHERE PROVIDED. THESE UTILITIES, THEIR LOCATION AND THEIR ACTIVE OR INACTIVE STATUS, SHOULD BE VERIFIED BY CONTACTING THE OHIO UTILITY PROTECTION SERVICE (O.U.P.S.), PRIOR TO CONSTRUCTION. LOCATION, SIZE, DEPTH, AND STATUS OF USE ARE SHOWN AS ACCURATE AS POSSIBLE WITH THE AVAILABLE DATA.

As-Builts

No.	DATE	REVISION	BY
1			
2			
3			

DATE: 05-29-2015
SCALE:
SCALE:
DRAWN: AJF
CHECKED: MJW

COCHRAN ROAD SANITARY SEWER MAIN EXTENSION
PLAN AND PROFILE – STA. 28+50 TO STA. 30+50.67

PROJECT NUMBER 20130077

wohlwend engineering group
4216 KARG INDUSTRIAL PKWY
KENT, OH 44240
(330) 673-2400

7
7

STA. 28+50 TO STA.30+50.67

5471

COCHRAN ROAD EXTENSION

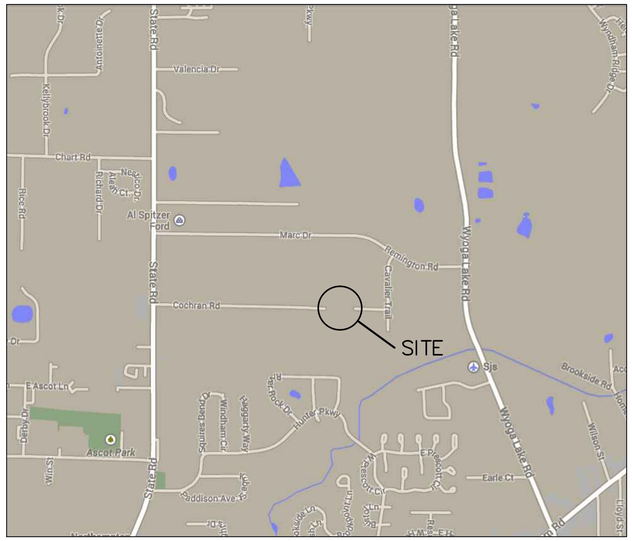
PART OF ORIGINAL NORTHAMPTON TOWNSHIP, LOT NO. 27, CITY OF CUYAHOGA FALLS, COUNTY OF SUMMIT, STATE OF OHIO

PUBLIC WATERLINE AND ROADWAY IMPROVEMENT PLANS

ENGINEER:

WOHLWEND ENGINEERING GROUP, Ltd.
4216 KARG INDUSTRIAL PARKWAY
KENT, OH 44240
(330) 673-2400

MAY 2014



VICINITY MAP
NO SCALE

INDEX OF SHEETS

CERTIFICATION

MICHAEL J. WOHLWEND
OF WOHLWEND ENGINEERING GROUP, LTD.
ITS REGISTERED ENGINEER — DATE

CUYAHOGA FALLS – CITY ENGINEER — DATE

WETLAND DELINEATION PERFORMED BY:
FLICKINGER WETLAND SERVICES GROUP, INC.
554 WHITE POND DRIVE, SUITE D
FAIRLAWN, OHIO 44320
(330)-865-0688

SURVEY PERFORMED BY:
CAMPBELL & ASSOCIATES, INC.
Surveying • Engineering
3485 Fortuna Drive, Suite 100
Green, Ohio 44312
(330) 945-4117
www.campbellsurvey.com

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE: 811
OHIO UTILITIES PROTECTION SERVICE

No.	DATE	REVISION	BY
1	07-11-2014	REVISED PER CITY	JJF
2			
3			

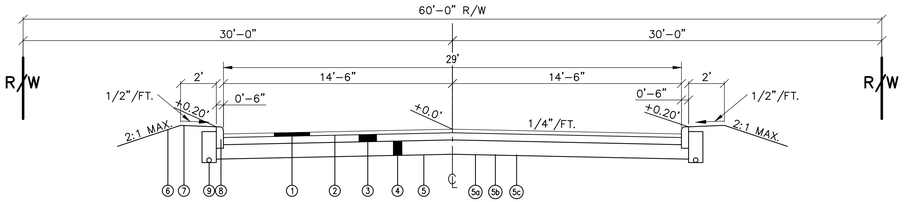
DATE: 05-13-2013
SCALE:
SCALE:
DRAWN: JJF
CHECKED: MJW

COCHRAN ROAD EXTENSION
TITLE SHEET

PROJECT NUMBER 20130077

wohlwend engineering group
4216 KARG INDUSTRIAL PKWY
KENT, OH 44240
(330) 673-2400

1
7



TYPICAL 60' R/W SECTION

ITEM	DESCRIPTION
1 – 448	2" ASPHALT CONCRETE SURFACE COURSE, TYPE 2
2 – 407	TACK COAT
3 – 301	6" BITUMINOUS ASPH. BASE
4 – 304	12" AGGREGATE BASE (LIMESTONE ONLY)
5 – 204	COMPACTED SUBGRADE
5a– 204	EXCAVATION OF UNDERCUT SUBGRADE (SEE UNDERCUT NOTE THIS SHEET)
5b– 204	EMBANKMENT OF UNDERCUT SUBGRADE (SEE UNDERCUT NOTE THIS SHEET)
5c– 861	GEOGRID FOR SUBGRADE STABILIZATION (SEE UNDERCUT NOTE THIS SHEET)
6 – 652/653	PLACING TOPSOIL (STOCKPILED OR FURNISHED)
7 – 659	SEEDING AND MULCHING
8 – 609	TYPE 6 CONCRETE CURB (ODOT BP–5.1)
9 – 605	4" UNDERDRAIN W/#57 AGGREGATE

ROADWAY TYPICAL SECTION

NO SCALE

ITEM 204 – UNDERCUT SUBGRADE

ALL EARTHWORK, INCLUDING SUBGRADE COMPACTION AND PROOF ROLLING, SHALL BE CONDUCTED UNDER THE DIRECT SUPERVISION OF A QUALIFIED GEOTECHNICAL ENGINEER OR SENIOR SOIL TECHNICIAN, BOTH HEREIN REFERRED TO AS "GEOTECHNICAL ENGINEER".

SUBGRADE COMPACTION AND UNDERCUTTING SHALL BE OBTAINED UNDERNEATH THE ENTIRE PAVEMENT SECTION PLUS AND ADDITIONAL 5' FROM THE BACK SIDE OF THE PROPOSED CURBS ON BOTH SIDES OF THE ROADWAY TO ENSURE PROPER SUBGRADE STABILITY FOR THE PROPOSED ROADWAY SECTION.

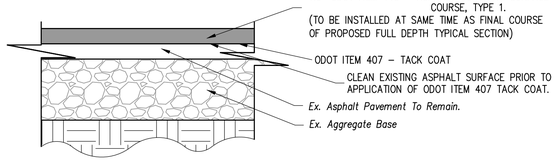
IF SATISFACTORY SUBGRADE STABILITY CANNOT BE OBTAINED BY MOISTURE CONTROL AND COMPACTION ACCORDING TO ODOT ITEM 204 SUBGRADE COMPACTION, THE GEOTECHNICAL ENGINEER WILL DIRECT THE CONTRACTOR TO REMOVE THE UNSTABLE MATERIAL AND TO CONSTRUCT THE REPLACEMENT MATERIAL TO THE FINISHED GRADE WITHIN THE TOLERANCES SPECIFIED IN ODOT ITEM 203 EMBANKMENT.

REMOVE THE UNSTABLE SUBGRADE MATERIAL TO THE DEPTH DETERMINED BY THE GEOTECHNICAL ENGINEER OR AS SPECIFIED IN THE CONTRACT DOCUMENTS. REPLACE WITH SUITABLE MATERIAL CONFORMING TO ODOT ITEM 204 SUBGRADE COMPACTION, IN 8-INCH LOOSE LIFTS. ONCE STABILITY IS ACHIEVED, COMPACT ACCORDING TO ODOT ITEM 204 SUBGRADE COMPACTION. PAYMENT FOR EXCAVATION OF UNDERCUT SUBGRADE AND EMBANKMENT OF UNDERCUT SUBGRADE SHALL BE PER THE CY INSTALLED, AS VERIFIED BY GEOTECHNICAL ENGINEER AND/OR CITY ENGINEER.

WHEN REQUIRED BY THE GEOTECHNICAL ENGINEER, PLACE GEOTEXTILE FABRIC AT THE BOTTOM OF THE CUT OR AT LOCATIONS DESIGNATED IN THE CONTRACT DOCUMENTS. PLACE THE GEOTEXTILE FABRIC SMOOTH AND FREE OF TENSION OR WRINKLES. FOLD OR CUT THE GEOTEXTILE FABRIC TO CONFORM TO CURVES. OVERLAP A MINIMUM OF 18 INCHES (450 MM) AT THE ENDS AND SIDES. HOLD THE GEOTEXTILE FABRIC IN PLACE WITH PINS OR STAPLES. PAYMENT FOR GEOTEXTILE WILL BE BY THE SY INSTALLED, AS VERIFIED BY THE GEOTECHNICAL ENGINEER AND/OR CITY ENGINEER.

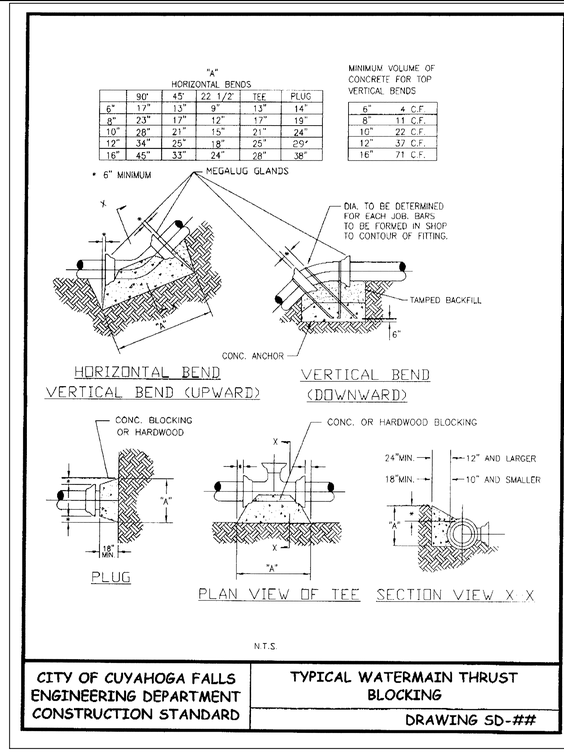
END DUMP THE SUITABLE MATERIAL ON THE GEOTEXTILE FABRIC. DO NOT OPERATE THE EQUIPMENT DIRECTLY ON THE GEOTEXTILE FABRIC. UNLESS STATED OTHERWISE, SPREAD THE END DUMPED MATERIAL AND MAINTAIN A MINIMUM LIFT THICKNESS OF 12 INCHES (300 MM).

WHEN GRANULAR MATERIAL TYPE E IS SPECIFIED OR ALLOWED, USE A GEOTEXTILE FABRIC ON THE TOP, BOTTOM AND AROUND THE TYPE E GRANULAR MATERIAL TO PREVENT PIPING OF MATERIAL INTO THE TYPE E GRANULAR MATERIAL. THE ENGINEER MAY USE GRANULAR MATERIAL TYPE E WHEN EXCESS WATER IS AT THE BOTTOM OF THE CUT.



RESURFACING DETAIL

SCALE: NOT TO SCALE



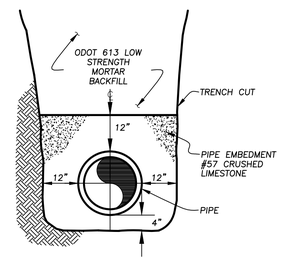
CITY OF CUYAHOGA FALLS ENGINEERING DEPARTMENT CONSTRUCTION STANDARD	TYPICAL WATERMAIN THRUST BLOCKING
	DRAWING SD-##

WATER MAIN BLOCKING DETAIL

N.T.S

GENERAL NOTES (WATER MAINS)

1. ALL WATERLINES AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS ESTABLISHED BY THE CITY OF CUYAHOGA FALLS. PIPE SHALL BE CLASS 53, CEMENT–LINED, DUCTILE IRON, WITH PUSH ON JOINTS. HOWEVER, MECHANICAL JOINTS WITH STAINLESS STEEL TYPE 316 BOLTS AND NUTS MUST BE USED FOR ALL FITTINGS, VAVLES, AND HYDRANTS. POURED CONCRETE THRUST BLOCKS MUST BE CONSTRUCTED WHERE NECESSARY. ALL VALVES MUST HAVE BOXES AND OPEN LEFT. MECHANICAL JOINTS SHALL HAVE MEGALUG FLANGES.
2. ALL WATER LINE MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT RULES AND REGULATIONS OF THE CITY OF CUYAHOGA FALLS WATER DEPARTMENT AND THE OEPA.
3. WATER MAINS SHALL BE LAID WITH A MINIMUM OF 5'– 0" FROM THE TOP OF FINISHED GRADE TO THE TOP OF THE WATER MAIN.
4. IN CASE OF CONFLICT IN GRADE BETWEEN WATER MAINS AND SEWERS, THE WATER MAINS SHALL BE LOWERED DURING CONSTRUCTION, SEE DETAIL ON SHEET 13.
5. MINIMUM CLEARANCE BETWEEN SANITARY SEWER AND WATER LINES SHALL BE 10' HORIZONTAL AND 1'–6" VERTICAL OUTSIDE OF EACH PIPE. MINIMUM CLEARANCE BETWEEN STORM SEWER AND WATER LINES SHALL BE 4' HORIZONTAL AND 1'–0" VERTICAL OUTSIDE OF EACH PIPE.
6. WATER MAINS SHALL BE DEFLECTED AROUND STRUCTURES WITHOUT THE USE OF SPECIAL FITTINGS AND WITHOUT EXCEEDING THE MANUFACTURER'S ALLOWABLE DEFLECTION.
7. IF THE TOP OF THE OPERATING NUT FOR ANY VALVE IS MORE THAN 36" BELOW THE FINISHED GRADE, AN EXTENSION STEM SHALL BE PROVIDED TO PLACE THE OPERATING NUT BETWEEN 24" AND 36" BELOW THE FINISHED GRADE. ALL WATER VALVES SHALL OPEN LEFT & CONFORM TO THE CITY OF CUYAHOGA FALLS WATER DEPARTMENT SPECIFICATIONS.
8. THE CONTRACTOR SHALL THOROUGHLY CLEAN, FLUSH, AND TEST THE WATER MAINS PRIOR TO BEING PUT IN SERVICE AND BEFORE ACCEPTANCE BY THE CITY OF CUYAHOGA FALLS. WATERMAINS SHALL BE INSTALLED AND PRESSURE TESTED IN ACCORDANCE WITH AWWA C600.
9. THE CONTRACTOR SHALL NOTIFY THE CITY OF CUYAHOGA FALLS WATER DEPT. AT LEAST TWO (2) WORKING DAYS BEFORE TAPPING INTO EXISTING WATER LINES.
10. ALL WATER MAINS SHALL BE DISINFECTED BY THE CONTRACTOR IN ACCORDANCE WITH AWWA C651.
11. ALL COSTS TO PLUG AND BLOCK THE ENDS OF WATER MAINS AT LOCATION SHOWN IN PLAN SHALL BE INCLUDED IN THE PRICE BID FOR PIPE. SEE STANDARD DRAWING SD–145.
12. ALL WATER TAPS TO BE INSTALLED BY THE CITY OF CUYAHOGA FALLS.
13. WATER SERVICE BOXES SHALL BE ADJUSTED BY THE DEVELOPER OR BUILDER AFTER FINAL GRADING IS COMPLETED FOR EACH INDIVIDUAL LOT. ALL WATER SERVICES SHALL CONFORM TO THE CITY OF CUYAHOGA FALLS WATER DEPARTMENT SPECIFICATIONS.
14. FIRE HYDRANTS SHALL BE SUPPLIED WITH NATIONAL STANDARD THREADS ON ALL NOZZLES. HYDRANTS SHALL BE 5–1/4" AMERICAN B–84–B OR 5–1/4" KENNEDY K–81–A, CONFORMING TO AWWA C502 AND THE CITY OF CUYAHOGA FALLS WATER DEPARTMENT SPECIFICATIONS. A DRAINAGE SUMP 2 FEET IN DIAMETER AND 2 FEET DEEP SHALL BE EXCAVATED BELOW EACH HYDRANT AND FILLED WITH COARSE GRAVEL OR STONE, COMPACTED IN PLACE, UNDER AND AROUND THE SHOE OF THE HYDRANT AND TO A LEVEL OF 6 INCHES ABOVE THE WASTE OPENING. NO DRAINAGE SUMP SHALL BE CONNECTED TO A SANITARY SEWER.
15. ALL FITTINGS, VALVES, AND HYDRANTS SHALL HAVE MECHANICAL JOINTS, WITH STAINLESS STEEL 316 BOLTS; MEGALUG GLANDS SHALL BE USED ON ALL MECHANICAL JOINTS. BLEEDERS SHALL BE INSTALLED OUT OF ALL PLUGS. ALL VALVES SHALL BE OPEN LEFT AND HAVE BOXES.
16. THE PROPOSED FACILITIES WILL MAINTAIN A MINIMUM 35 PSI PRESSURE DELIVERED TO THE CURB STOP DURING NORMAL OPERATING CONDITIONS.
17. BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS.
18. WATER SERVICE LINES 2" AND SMALLER SHALL BE A.S.T.M. SPEC. B–88–62 TYPE "K" COPPER. CORP. STOPS, CURB STOPS, & BACKFLOW DEVICES SHALL BE AS APPROVED BY THE CITY OF CUYAHOGA FALLS.



UTIILTY TRENCH DETAIL

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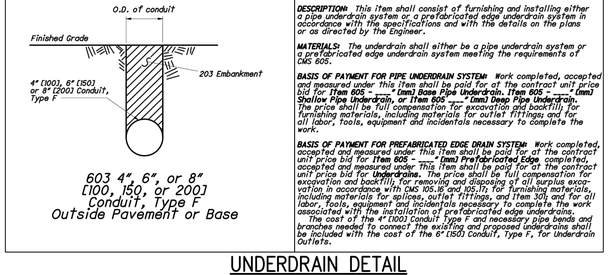


UNDERDRAIN DETAIL

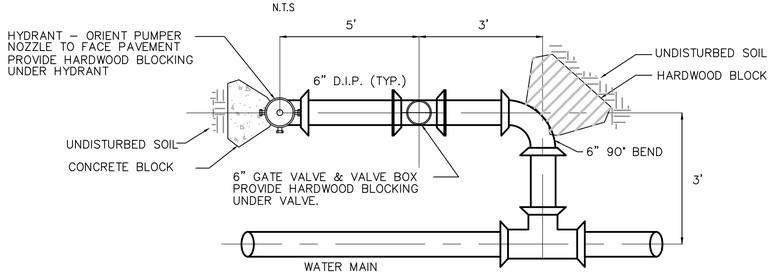
N.T.S

PROPOSED TO EXISTING WATER MAIN CONNECTION NOTES

1. PRIOR TO SHUTTING OFF EXISTING 8" MAIN TO CONNECT PROPOSED 12" MAIN AND ABANDON PORTIONS OF EXISTING MAIN, VERIFY LOCATION OF NEAREST SHUTOFF VALVES ON BOTH ENDS OF THE PROPOSED WATER MAIN.
2. ONCE VALVES ARE LOCATED, COORDINATE WITH THE CITY OF CUYAHOGA FALLS ENGINEERING AND WATER DEPARTMENT, TO DETERMINE WHICH PROPERTY OWNERS WATER WILL BE SHUT OFF DURING CONSTRUCTION.
3. NOTIFY, IN WRITING, EACH AFFECTED PROPERTY OWNER NO LATER THAN 48 HOURS PRIOR TO SHUTTING OFF THE 8" WATER MAIN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SCHEDULE THE 12" WATER MAIN INSTALLATION IN SUCH MANNER AS TO MINIMIZE THE AMOUNT OF TIME, PROPERTY OWNERS ARE WITHOUT WATER.
4. ONCE WATER MAIN IS SHUT OFF IN AREA OF PROPOSED WORK, CUT EXISTING MAIN AT LOCATIONS SHOWN ON PLANS AND INSTALL NECESSARY FITTINGS (REDUCERS, 45° BENDS, AND GATE VALVES) TO CONNECT THE PROPOSED 12" MAIN INTO THE EXISTING 8" MAIN.
5. INSTALL PROPOSED 12" WATER MAIN AND HYDRANT AND PERFORM ALL NECESSARY TESTING.
6. ONCE THE CITY OF CUYAHOGA FALLS APPROVES THE INSTALLATION OF THE 12" WATER MAIN, PLACE WATER MAIN INTO SERVICE.
7. ABANDON EXISTING 8" WATER MAIN.

PIPE TRENCH DETAIL

N.T.S



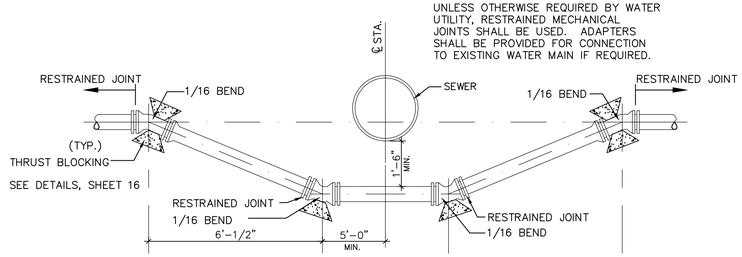
TYPE "A" HYDRANT ASSEMBLY

N.T.S

TYPE "A" ASSEMBLY TO INCLUDE 6" 90° BEND, 6" GATE VALVE, FIRE HYDRANT AND 6" PIPE RUNS.

GENERAL NOTES (STORM SEWERS)

1. ALL STORM SEWER MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT RULES AND REGULATIONS OF THE CITY OF CUYAHOGA FALLS. ALL STORM SEWERS CONSTRUCTED UNDER THIS PLAN SHALL MEET THE REQUIREMENTS OF ODOT CMS ITEM 603.
2. ALL STORM SEWER PIPES TO BE ITEM 603, CONDUIT TYPE B. BACKFILL UNDER PAVEMENT SHALL BE GRANULAR MATERIAL. PAYMENT FOR COMPACTED GRANULAR BACKFILL MATERIAL SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 603.
3. ALL STORM SEWER TO HAVE ODOT ITEM 603 TYPE 2 BEDDING.
4. ALL STORM SEWER CONSTRUCTED UNDER THIS PLAN SHALL MEET THE REQUIREMENTS OF ODOT CMS ITEM 603.
5. ALL STORM SEWER SHALL BE REINFORCED CONCRETE PIPE (ODOT 706.02) CLASS III OR BETTER WITH PREMIUM O–RING GASKETS WHEN PIPE IS WITHIN THE PRIVATE DRIVEWAY OR AS NOTED. ALL OTHER PIPE MAY BE HDPE (ODOT 707.33) UNLESS SPECIFICALLY NOTED.



THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK ASSOCIATED WITH THE WATERLINE LOWERING WITH THE CITY OF CUYAHOGA FALLS WATER DEPT. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST THREE WORKING DAYS IN ADVANCE OF HIS PROPOSED WORK ON THE WATERLINE. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF CUYAHOGA FALLS WATER DEPT. STANDARDS.

WATERLINE LOWERING DETAIL

N.T.S.

NOTES:

1) COMBINED SEWERS SHALL BE ENCASED IN 2000 PSI CONCRETE TO 10' EACH SIDE OF CROSSING WHEN CLEARANCE IS LESS THAN 18".

2) USE 1/16 BENDS CLASS 53 DUCTILE IRON PIPE CEMENT LINED.

No.	DATE	REVISION	BY
1	07-11-2014	REV. PER CITY	JJF
2			
3			

DATE: 05-13-2014
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SCALE:
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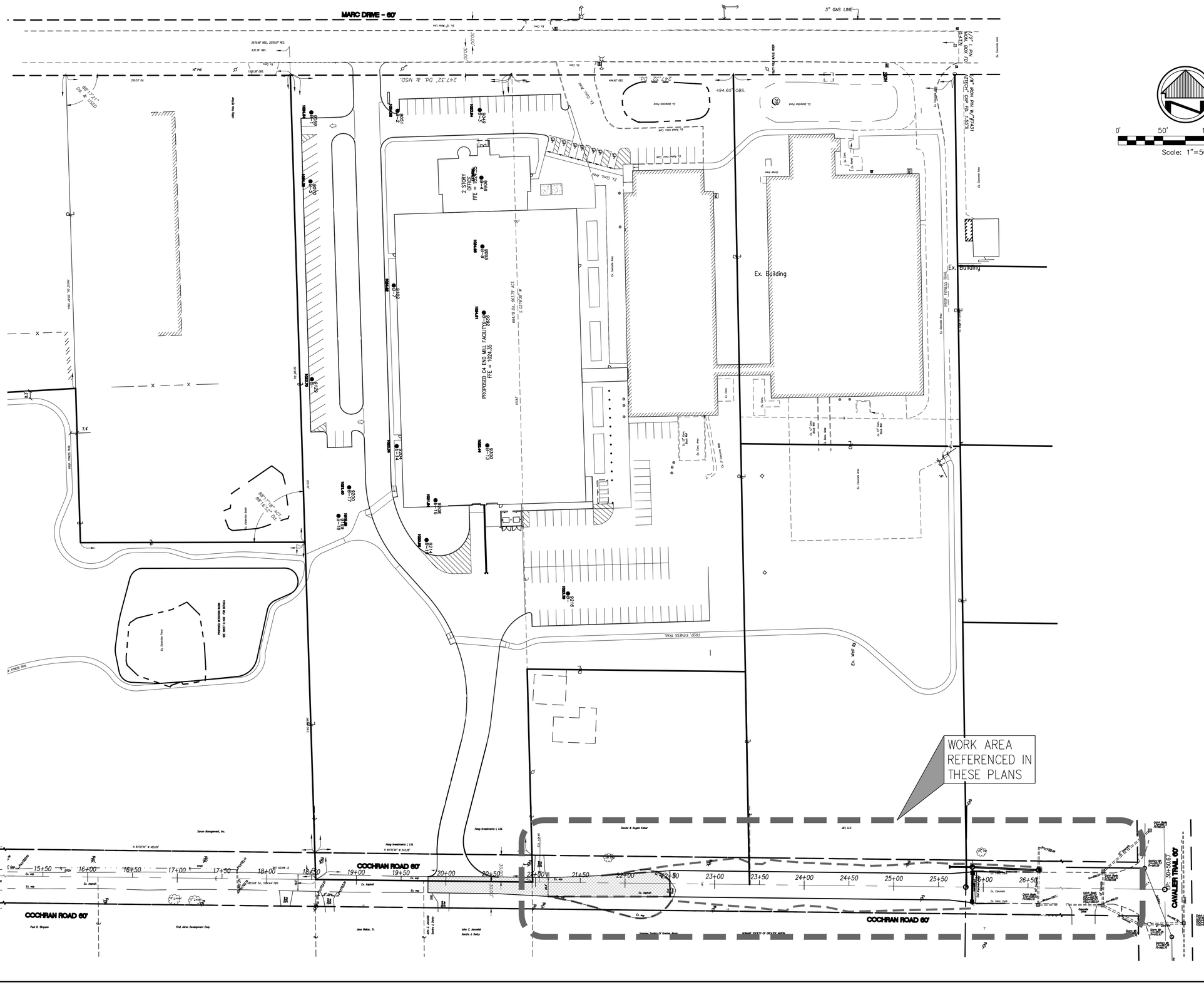
CHECKED: MJW

COCHRAN ROAD EXTENSION
TYPICAL SECTION AND GENERAL NOTES

PROJECT NUMBER 20130077

wohlwend engineering group
4216 KARC INDUSTRIAL PKWY
KENT, OH 44240
(330) 673-2400



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2			
3			

DATE: 05-13-2014
SCALE:
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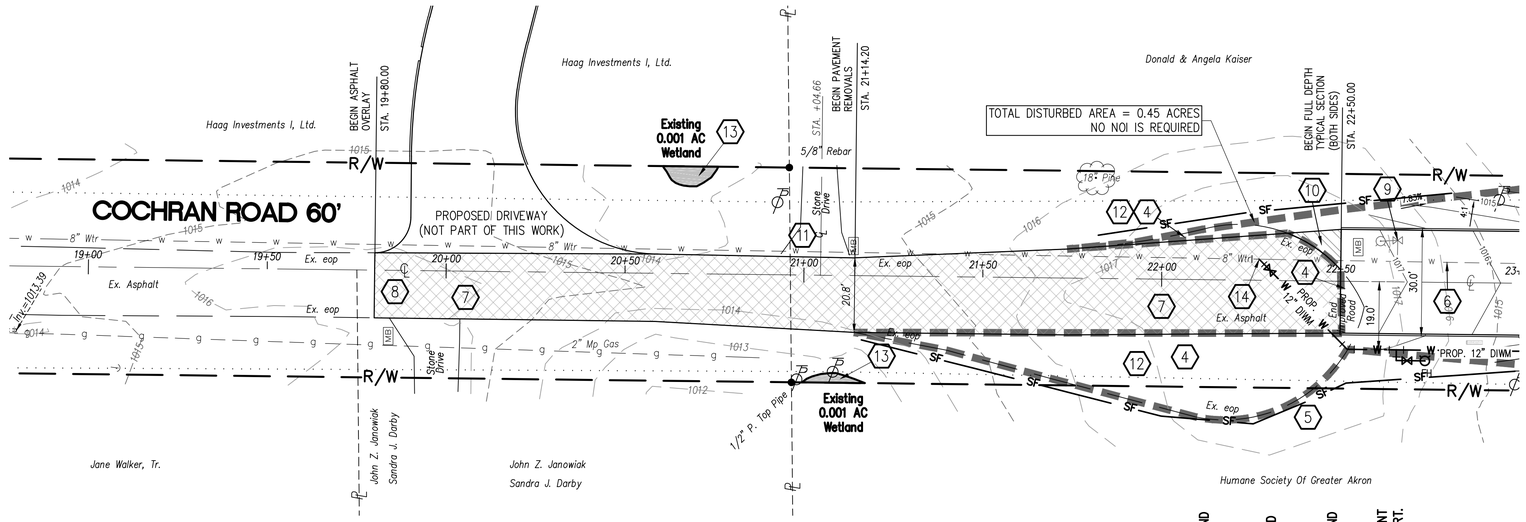
DRAWN: JJF
CHECKED: MJW

COCHRAN ROAD EXTENSION
OVERALL SITE PLAN

PROJECT NUMBER
20130077

4216 KARG INDUSTRIAL PKWY
KENT, OH 44240
(330) 673-2400
wohlwend engineering group

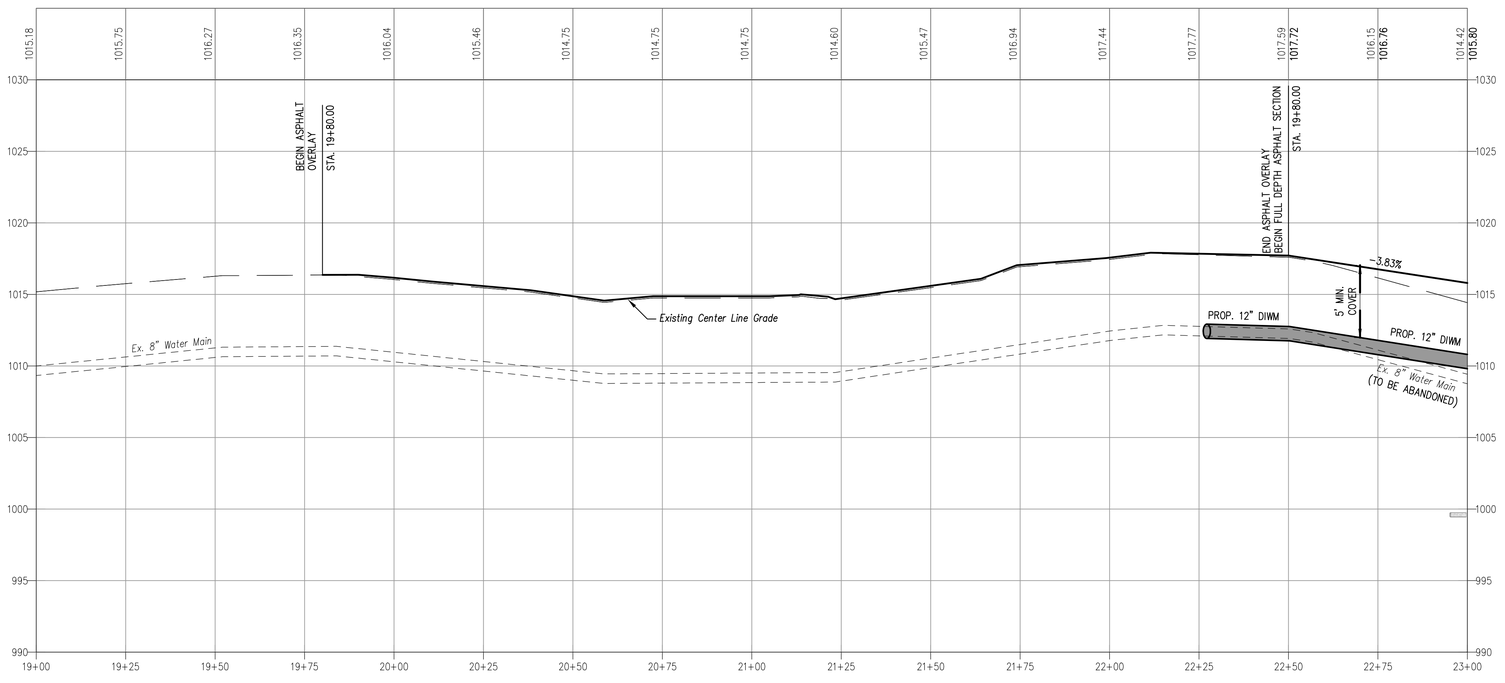


PROP. 45° HORIZONTAL BEND W/8" X 12" MJ REDUCER STA. 22+27.17, 5.9' LT.

PROP. 12" GATE VALVE AND VALVE BOX STA. 22+30.23, 2.8' LT.

PROP. 45° HORIZONTAL BEND STA. 22+52.07, 19.0' RT.

PROP. TYPE A FIRE HYDRANT TEE STA. 22+65.81, 19.0' RT.



SWP3 AND GRADING LEGEND

- 1098 — PROP. CONTOUR ELEV.
- 1098 — EX. CONTOUR
- 1030.00 – PROPOSED ELEV.
- SF — SILT FENCE
- DISTURBED LIMITS

0' 20' 40' 60'

Scale: 1"=20'

BASIS OF BEARINGS
THE BASIS FOR BEARINGS IS GRID NORTH, OHIO STATE PLANE COORDINATE SYSTEM, NORTH ZONE. NAD83 (1986)

BENCHMARK
TOP CENTER OF EXISTING CURB INLET AT STA. 26+62.33' 18.8' RT.

ELEV. 1008.00

Legend

R/W – Right-of-way	St — Existing Storm
E/P – Existing Edge Of Pavement	Existing Hydrant
Property Line	Existing Water Valve
Centerline	Existing Gas Valve
Power Pole	Existing Sanitary Manhole
Light Pole	–S– Existing Sanitary Sewer
Telephone/power Pole	–W– Existing Watermain
X Existing Fence	–G– Existing Gasmain
Existing Catch Basin	Proposed Gate Valve
Existing Storm Manhole	Proposed Hydrant

KEYED NOTES

1. CONTRACTOR TO MAINTAIN A MIN. 18" VERT. CLEARANCE BETWEEN THE WATERMAIN AND STORM & SANITARY SEWERS. PROVIDE WATERMAIN UNDERPASS PER CITY STANDARDS AS REQUIRED. CONTRACTOR TO MAINTAIN A MIN. 10' HORIZONTAL CLEARANCE (OUT TO OUT) BETWEEN THE WATERMAIN AND THE STORM & SANITARY SERWERS.
2. TAPER CURB TO MATCH EX.
3. INSTALL 4" UNDERDRAINS INTO CLOSEST CB. MATCH 4"ø CROWN TO CROWN OF HIGHEST PIPE. CORE DRILL EX. CB 1 AND EX. CB 2 TO INSTALL 4" UD CONNECTION.
4. REMOVE EXISTING ASPHALT PAVEMENT WITHIN LIMITS SHOWN PER ODOT ITEM 202 – PAVEMENT REMOVED. PROVIDE A FULL DEPTH SAW CUT ALONG LIMITS OF REMOVAL PROVIDING A STRAIGHT AND NEAT CUT. SAW CUTTING IS TO BE PERFORMED WET TO MINIMIZE AIRBORNE DUST.
5. DO NOT PERFORM ANY WORK OUTSIDE OF THE RIGHT-OF-WAY UNTIL THE CITY OF CUYAHOGA FALLS HAS OBTAIN THE NECESSARY TEMPORARY WORK EASEMENTS TO PERFORM SUCH WORK.
6. ABANDON EXISTING 8" WATER LINE IN PLACE.
7. PROVIDE 1.5" ASPHALT OVERLAY PER DETAIL ON SHEET 2 OF 5.
8. REMOVE EXISTING ASPHALT AS NEEDED TO PROVIDE SMOOTH TRANSITION BETWEEN 1.5" ASPHALT OVERLAY AND EXISTING ASPHALT TO REMAIN.
9. REMOVE EXISTING FIRE HYDRANT ASSEMBLY PER ODOT ITEM 202.
10. INSTALL FULL DEPTH ASPHALT PAVEMENT PER BUILDUP SHOWN ON TYPICAL SECTION SHEET 2 OF 5.
11. ADJUST DRIVEWAY APRON TO TIE INTO NEW ASPHALT OVERLAY AS FOLLOWS:
    1. REMOVE EXISTING ASPHALT FROM RIGHT-OF-WAY TO EDGE OF EXISTING PAVEMENT TO PROVIDE A MINIMUM THICKNESS OF 1.5" PROPOSED ASPHALT.
    2. INSTALL 1.5" PROPOSED ASPHALT PER OVERLAY DETAIL SHEET 2 OF 5.
    3. SEAL JOINTS BETWEEN EXISTING ASPHALT TO REMAIN AND PROPOSED ASPHALT.
12. BACKFILL AREAS OF EXISTING PAVEMENT REMOVAL THAT ARE OUTSIDE LIMITS OF PROPOSED ROADWAY PER ODOT ITEM 203 – EMBANKMENT UP TO 4" OF FINAL GRADE. INSTALL 4" OF TOPSOIL TO BRING FINAL GRADE EQUAL TO SURROUNDING GRADE PER ODOT ITEM 652 AND/OR 653. SEED AND MULCH ENTIRE AREA PER ODOT ITEM 659 SEEDING AND MULCHING, TYPE 1 (LAWN MIXTURE).
13. DO NOT DISTURB EXISTING WETLANDS. INSTALL ORANGE SILT FENCING AT LIMITS OF WETLANDS PRIOR TO COMMENCING CONSTRUCTION.
14. INSTALL PROPOSED CONNECTION BETWEEN PROPOSED 12" WATER MAIN AND EXISTING 8" WATER MAIN. SEE WATER MAIN CONNECTION NOTES ON SHEET 2.

NOTES:
1. STATION, OFFSET AND ELEVATION GIVEN FOR ALL CATCH BASINS NO. 3 AND NO. 3A IS TO TOP/BACK OF CURB.
2. THE EXISTING UNDERGROUND UTILITIES AS SHOWN ARE OBTAINED FROM A COMBINATION OF FIELD LOCATION AND RECORD INFORMATION OBTAINED FROM THE RESPECTIVE UTILITY COMPANIES, WHERE PROVIDED. THESE UTILITIES, THEIR LOCATION AND THEIR ACTIVE OR INACTIVE STATUS, SHOULD BE VERIFIED BY CONTACTING THE OHIO UTILITY PROTECTION SERVICE (O.U.P.S.), PRIOR TO CONSTRUCTION. LOCATION, SIZE, DEPTH, AND STATUS OF USE ARE SHOWN AS ACCURATE AS POSSIBLE WITH THE AVAILABLE DATA.
3. SEE SHEET 2 FOR WATER MAIN AND SANITARY SEWER NOTES.
4. THE ENDS OF ALL WATER SERVICES, SANITARY LATERALS, AND STORM SEWERS LATERALS ARE TO BE MARKED WITH WOODEN STAKES.

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE: 811
OHIO UTILITIES PROTECTION SERVICE

No.	DATE	REVISION	BY
1	07-11-2014	REV. PER CITY	JJF
2			
3			

DATE: 05-13-2014
SCALE:
SCALE:
DRAWN: JJF
CHECKED: MJW

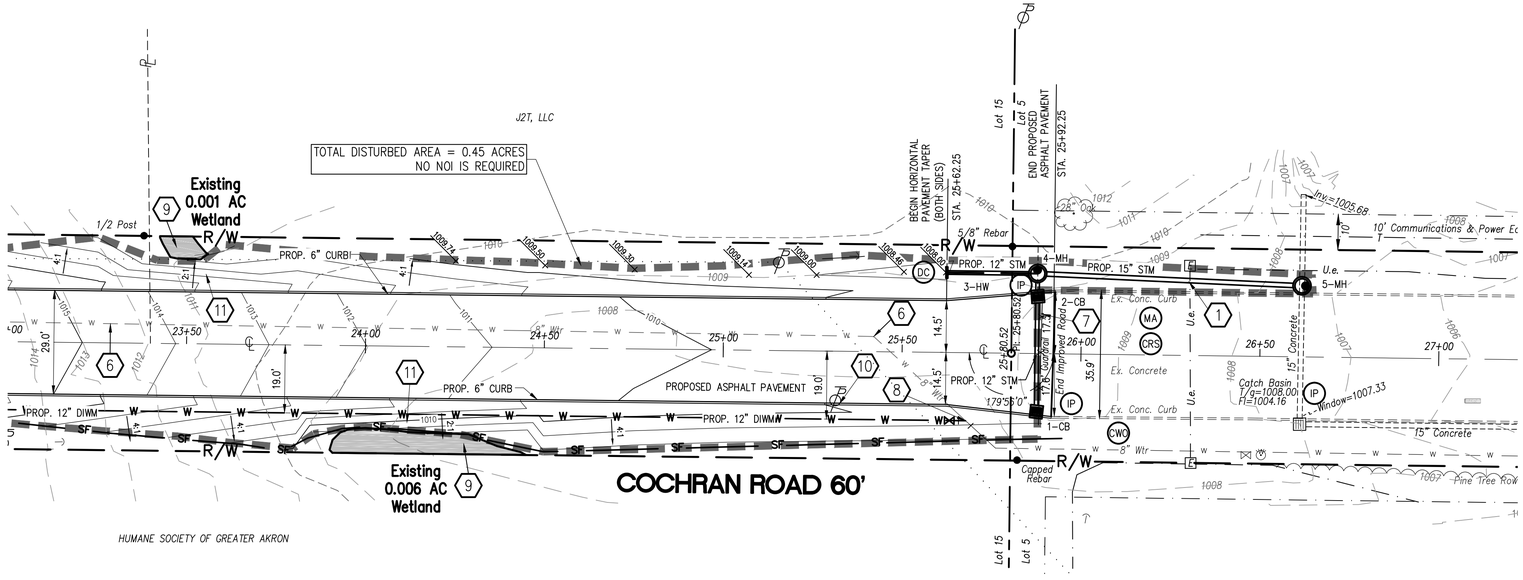
COCHRAN ROAD EXTENSION
COCHRAN ROAD – PLAN AND PROFILE

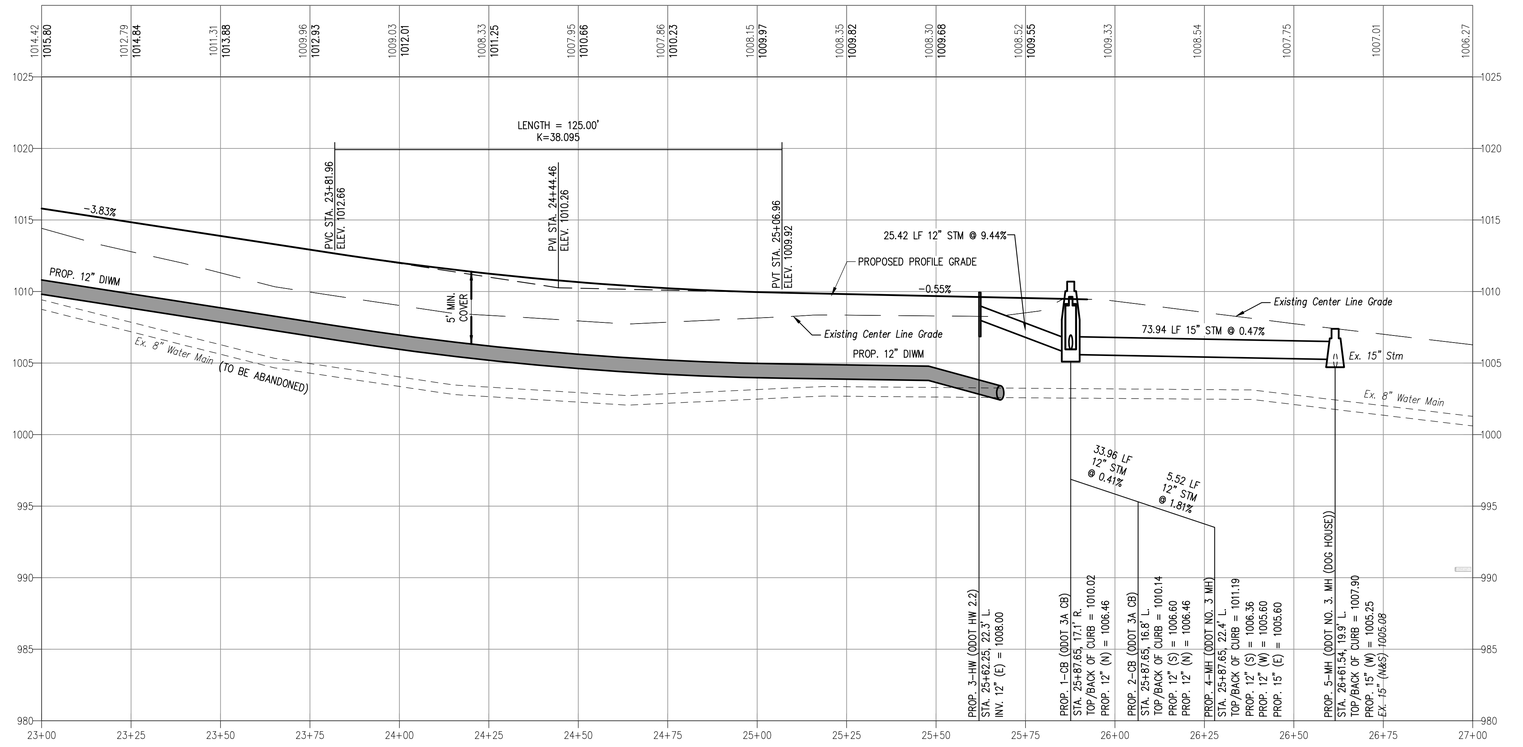
PROJECT NUMBER 20130077

4216 KARG INDUSTRIAL PKWY
KENT, OH 44240
(330) 673-2400
wohlwend engineering group

4
7

STA. 19+00 TO 23+00





STA. 23+00 TO STA. 27+00

SWP3 AND GRADING LEGEND

- 1098 — PROP. CONTOUR ELEV.
- 1098 — EX. CONTOUR
- 1030.00 – PROPOSED ELEV.
- SF — SILT FENCE
- DISTURBED LIMITS
- (IP) – INLET PROTECTION
- (CWO) – TEMPORARY CONCRETE WASH OUT
- (DC) – ROCK DITCH CHECK DAM
- (RF) – REFUELING AREA.
- (MA) – CHEMICAL MIXING AREA.
- (CRS) – CONSTRUCTION DRIVE

0' 20' 40' 60'

Scale: 1"=20'

BASIS OF BEARINGS
THE BASIS FOR BEARINGS IS GRID NORTH, OHIO STATE PLANE COORDINATE SYSTEM, NORTH ZONE. NAD83 (1986)

BENCHMARK
TOP CENTER OF EXISTING CURB INLET AT STA. 26+62.33' 18.8' RT.

ELEV. 1008.00

Legend

- R/W – Right-of-way
- E/P – Existing Edge Of Pavement
- PL – Property Line
- ℄ – Centerline
- Ø – Power Pole
- ☼ – Light Pole
- Ø – Telephone/power Pole
- —x— – Existing Fence
- Existing Catch Basin
- Existing Storm Manhole
- St — – Existing Storm
- Existing Hydrant
- Existing Water Valve
- G.V. – Existing Gas Valve
- (S) – Existing Sanitary Manhole
- — S — – Existing Sanitary Sewer
- — W — – Existing Watermain
- — G — – Existing Gasmain
- Proposed Gate Valve
- Proposed Hydrant

NOTES:
1. STATION, OFFSET AND ELEVATION GIVEN FOR ALL CATCH BASINS NO. 3 AND NO. 3A IS TO TOP/BACK OF CURB.
2. THE EXISTING UNDERGROUND UTILITIES AS SHOWN ARE OBTAINED FROM A COMBINATION OF FIELD LOCATION AND RECORD INFORMATION OBTAINED FROM THE RESPECTIVE UTILITY COMPANIES, WHERE PROVIDED. THESE UTILITIES, THEIR LOCATION AND THEIR ACTIVE OR INACTIVE STATUS, SHOULD BE VERIFIED BY CONTACTING THE OHIO UTILITY PROTECTION SERVICE (O.U.P.S.), PRIOR TO CONSTRUCTION. LOCATION, SIZE, DEPTH, AND STATUS OF USE ARE SHOWN AS ACCURATE AS POSSIBLE WITH THE AVAILABLE DATA.
3. SEE SHEET 2 FOR WATER MAIN AND SANITARY SEWER NOTES.
4. THE ENDS OF ALL WATER SERVICES, SANITARY LATERALS, AND STORM SEWERS LATERALS ARE TO BE MARKED WITH WOODEN STAKES.

KEYED NOTES

(1) – CONTRACTOR TO MAINTAIN A MIN. 18" VERT. CLEARANCE BETWEEN THE WATERMAIN AND STORM & SANITARY SEWERS. PROVIDE WATERMAIN UNDERPASS PER CITY STANDARDS AS REQUIRED. CONTRACTOR TO MAINTAIN A MIN. 10' HORIZONTAL CLEARANCE (OUT TO OUT) BETWEEN THE WATERMAIN AND THE STORM & SANITARY SERWERS.

(2) – TAPER CURB TO MATCH EX.

(3) – INSTALL 4" UNDERDRAINS INTO CLOSEST CB. MATCH 4"ø CROWN TO CROWN OF HIGHEST PIPE. CORE DRILL EX. CB 1 AND EX. CB 2 TO INSTALL 4" UD CONNECTION.

(4) – REMOVE EXISTING ASPHALT PAVEMENT WITHIN LIMITS SHOWN PER ODOT ITEM 202 – PAVEMENT REMOVED. PROVIDE A FULL DEPTH SAW CUT ALONG LIMITS OF REMOVAL PROVIDING A STRAIGHT AND NEAT CUT. SAW CUTTING IS TO BE PERFORMED WET TO MINIMIZE AIRBORNE DUST.

(5) – DO NOT PERFORM ANY WORK OUTSIDE OF THE RIGHT-OF-WAY UNTIL THE CITY OF CUYAHOGA FALLS HAS OBTAIN THE NECESSARY TEMPORARY WORK EASEMENTS TO PERFORM SUCH WORK.

(6) – ABANDON EXISTING 8" WATER LINE IN PLACE.

(7) – REMOVE EXISTING GUARDRAIL PER ODOT ITEM 202.

(8) – INSTALL PROPOSED CONNECTION BETWEEN PROPOSED 12" WATER MAIN AND EXISTING 8" WATER MAIN. SEE WATER MAIN CONNECTION NOTES ON SHEET 2.

(9) – DO NOT DISTURB EXISTING WETLANDS. INSTALL ORANGE SILT FENCING AT LIMITS OF WETLANDS PRIOR TO COMMENCING CONSTRUCTION.

(10) – EXISTING UTILITY POLE TO BE REMOVED. COORDINATE WITH POLE OWNER.

(11) – ADJUST SLOPES BEHIND CURB TO AVOID ANY WETLAND IMPACTS.

2 WORKING DAYS
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COCHRAN ROAD EXTENSION
COCHRAN ROAD – PLAN AND PROFILE

PROJECT NUMBER 20130077

4216 KARG INDUSTRIAL PKWY
KENT, OH 44240
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wohlwend engineering group

5
7

LEGEND

TC = REVISED TOP/BACK OF CURB ELEVATION

℄ = REVISED CENTERLINE ELEVATION

TC = ORIGINAL DESIGN TOP/BACK OF CURB ELEVATION

℄ = ORIGINAL DESIGN CENTERLINE ELEVATION

TC 1095.25 (+0.25) = VALUE IN PARENTHESIS IS THE DIFFERENCE BETWEEN ORIGINAL DESIGN ELEVATION AND REVISED ELEVATION.

J2T, LLC

Existing
0.001 AC
Wetland

Existing
0.006 AC
Wetland

HUMANE SOCIETY OF GREATER AKRON

COCHRAN ROAD 60'

28" Oak

Ex. Concrete

Ex. Conc. Curb

STA. 25+92.25
EX. ℄ = 1009.58±

EX. GUTTER ELEV. = 1009.34
BACK OF CURB ELEV. = 1009.84

EX. GUTTER ELEV. = 1009.29
BACK OF CURB ELEV. = 1009.79

5.20%

1.67%

23+50 24+00 24+50 24+75 25+00 25+06.96 25+50 25+62.25 25+87.65 26+00

TC 1010.86 (+0.00) TC 1010.86
℄ 1010.66 (+0.00) ℄ 1010.66
TC 1010.73 (+0.30) TC 1010.43
℄ 1010.53 (+0.30) ℄ 1010.23
TC 1010.60 (+0.43) TC 1010.17
℄ 1010.40 (+0.43) ℄ 1009.97
TC 1010.56 (+0.44) TC 1010.12
℄ 1010.36 (+0.75) ℄ 1009.92
TC 1010.34 (+0.46) TC 1009.88
℄ 1010.14 (+0.46) ℄ 1009.68
TC 1010.28 (+0.46) TC 1009.82
℄ 1010.08 (+0.46) ℄ 1009.62
TC 1010.14
℄ 1009.66 (+0.18) ℄ 1009.48
TC 1010.02

1014 1013 1012 1011 1010 1009 1012

COCHRAN ROAD
FIELD CHANGE
5/22/2015

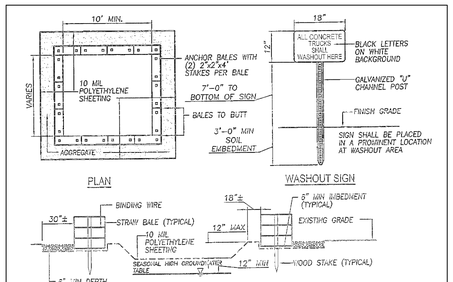
TEMPORARY SEEDING SPECIES SELECTION			
SEEDING DATES	SPECIES	LB/1000ft.	PER ACRE
MARCH 1 TO AUGUST 15	OATS	3	4 BUSHEL
	TALL FESCUE	1	40 LB.
	ANNUAL RYEGRASS	1	40 LB.
	PERENNIAL RYEGRASS	1	40 LB.
	TALL FESCUE	1	40 LB.
	ANNUAL RYEGRASS	1	40 LB.
AUGUST 16 TO NOVEMBER 1	RYE	3	2 BUSHEL
	TALL FESCUE	1	40 LB.
	ANNUAL RYEGRASS	1	40 LB.
	WHEAT	3	2 BUSHEL
	TALL FESCUE	1	40 LB.
	ANNUAL RYEGRASS	1	40 LB.
	PERENNIAL RYEGRASS	1	40 LB.
	TALL FESCUE	1	40 LB.
	ANNUAL RYEGRASS	1	40 LB.
NOVEMBER 1 TO SPRING SEEDING	USE MULCH ONLY, SODDING PRACTICES OR DORMANT SEEDING		

NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED.

1. STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSION AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION SITE.
2. TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR 14 DAYS OR MORE. THESE IDLE AREAS SHOULD BE SEEDED AS SOON AS POSSIBLE AFTER GRADING OR SHALL BE SEEDED WITHIN 7 DAYS. SEVERAL APPLICATIONS OF TEMPORARY SEEDING ARE NECESSARY ON TYPICAL CONSTRUCTION PROJECTS.
3. THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. HOWEVER, TEMPORARY SEEDING SHALL NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.
4. SOIL AMENDMENTS—APPLICATIIONS OF TEMPORARY VEGETATION SHALL ESTABLISH ADEQUATE STRANDS OF VEGETATION WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. SOIL TESTS SHOULD BE TAKEN ON THE SITE TO PREDICT THE NEED FOR LIME AND FERTILIZER.
5. SEEDING METHOD—-SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON-SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

MULCHING TEMPORARY SEEDING

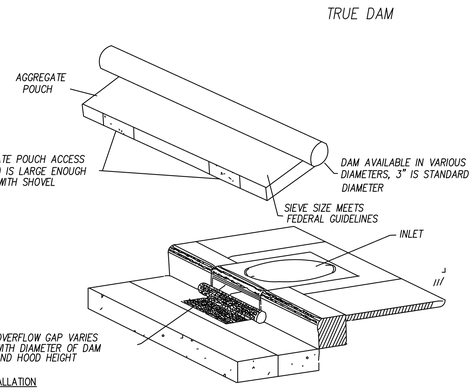
1. APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES AND WITH FAVORABLE SOIL CONDITIONS AND ON VERY FLAT AREAS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION.
2. MATERIALS
   - STRAW–IF STRAW IS USED, IT SHALL BE UNROTTED SMALL–GRAIN STRAW APPLIED AT THE RATE OF 2 TONS/AC. OR 90LB./1000 SQ. FT. (TWO TO THREE BALES). THE MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND–SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1000 SQ.–FT. SECTIONS AND SPREAD TWO 45 LB. BALES OF STRAW EACH SECTION.
   - HYDROSEEDERS–IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE USED AT 2000 LB./AC. OR 46LB./1000 SQ. FT.
   - OTHER–OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TONS/AC.
3. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING METHODS:
   - MECHANICAL–A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT, GENERALLY, BE LEFT LONGER THAN 6 IN.
   - MULCH NETTINGS–NETTINGS SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATION RUNOFF AND ON CRITICAL SLOPES.
   - ASPHALT EMULSION–ASPHALT SHALL BE APPLIED AS RECOMMENDED BY THE MANUFACTURER OR AT THE RATE OF 160 GAL./AC.
   - SYNTHETIC BINDERS–SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI–TAC), DCA–70, PETROSET, TERRA TACK OR EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER.
   - WOOD CELLULOSE FIBER–WOOD–CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LB./AC. THE WOOD–CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB./GAL.



NOTES:

1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL.
4. WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
6. AT LEAST WEEKLY REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.

CONCRETE WASHOUT AREA



INSTALLATION

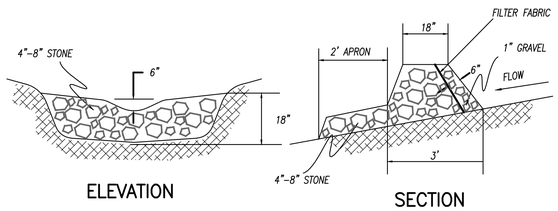
1) PLACE TRUE DAM ON GROUND WITH AGGREGATE POUCH ON STREET SIDE NEAR INLET IT WILL BE INSTALLED ON, REMOVE RUBBER BANDS FROM UNIT
2) OPEN VELCRO ACCESSES ON POUCH LOCATED ON THE STREET SIDE EDGE OF UNIT
3) FILL THE POUCH WITH AGGREGATE SUCH AS #5–7, 8'S OR SIMILAR TO A LEVEL (AT LEAST 1/2 FULL) THAT WILL KEEP THE UNIT IN PLACE DURING A RAIN EVENT AND CREATE A POSITIVE SEAL BETWEEN THE UNIT AND THE SURFACE OF STREET OR SOIL IT IN CONTACT WITH. RESEAL VELCRO ACCESSES
4) CENTER THE UNIT AGAINST CURB OR MEDIAN INLET OPENING SO THAT THE CURB SIDE OF UNIT CREATES A SEAL WITH THE CURB AND INLET STRUCTURE. THERE WILL BE APPROXIMATELY 6" OF THE TRUE DAM OVERHANGING ON EACH SIDE OF THE OPENING. IF THE UNIT IS NOT INSTALLED IN THIS MANNER IT WILL NOT FUNCTION PROPERLY

MAINTENANCE

TO INSURE PROPER OPERATION REMOVE SILT, SEDIMENT, AND DEBRIS FROM SURFACE AND VICINITY OF UNIT WITH A SQUARE POINT SHOVEL OR STIFF BRISTLE BROOM. REMOVE FINE MATERIAL FROM INSIDE ENVELOPE AS NEEDED OR DIRECTED BY THE ENGINEER/INSPECTOR. DISPOSE OF SILT, SEDIMENT, AND DEBRIS IN A MANNER SATISFACTORY TO THE ENGINEER AWAY FROM ENVIRONMENTALLY SENSITIVE AREAS AND WATERWAYS AFTER EACH EVENT OR AS DIRECTED BY THE PROJECT ENGINEER/INSPECTOR. DISPOSE OF TRUE DAMS NO LONGER IN USE AT AN APPROPRIATE SOLID WASTE LANDFILL OR OTHER FACILITY LICENSED TO RECEIVE POLYPROPYLENE WASTE.

INLET PROTECTION (CURB INLET)

N.T.S. IP



SILT CHECK DAM

N.T.S. SCD

GENERAL NOTES

- PERIMETER SEDIMENT CONTROLS (I.E. SEDIMENT TRAPS, SILT FENCE, COMPOST SOCKS, COMPOST BERMS, ETC…) SHALL BE IMPLEMENTED AS THE FIRST STEP OF GRADING AND WITHIN SEVEN (7) DAYS FROM THE START OF GRUBBING AND SHALL CONTINUE TO FUNCTION UNTIL UPSLOPE AREAS DRAINING TO THEM ARE PERMANENTLY STABILIZED, OR AS DIRECTED BY THE CITY ENGINEER, OR HIS DESIGNATED REPRESENTATIVE.
- NO EROSION AND SEDIMENT CONTROL BMPS SHALL BE REMOVED FROM THE SITE PRIOR TO ADEQUATE PERMANENT STABILIZATION OF THE ASSOCIATED UPLAND DRAINAGE AREAS AND WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CITY ENGINEER, OR HIS DESIGNATED REPRESENTATIVE, UNLESS THEIR REMOVAL IS SPECIFICALLY PROVIDED FOR WITHIN THE SITE'S APPROVED PLAN.
- THERE SHALL BE NO SEDIMENT–LADEN OR TURBID DISCHARGES TO WATER RESOURCES OR WETLANDS RESULTING FROM DEWATERING ACTIVITIES. IF TRENCH OR GROUNDWATER CONTAINS SEDIMENT, IT MUST PASS THROUGH A SEDIMENT TRAP OR OTHER EQUALLY EFFECTIVE SEDIMENT CONTROL DEVICE, PRIOR TO BEING DISCHARGED FROM THE CONSTRUCTION SITE. ALTERNATIVELY, SEDIMENT MAY BE REMOVED BY SETTLING IN PLACE OR BY DEWATERING INTO A SUMP PIT, FILTER BAG OR COMPARABLE PRACTICE. GROUND WATER DEWATERING WHICH DOES NOT CONTAIN SEDIMENT OR OTHER POLLUTANTS IS NOT REQUIRED TO BE TREATED PRIOR TO DISCHARGE. HOWEVER, CARE MUST BE TAKEN WHEN DISCHARGING GROUND WATER TO ENSURE THAT IT DOES NOT BECOME POLLUTANT–LADEN BY TRAVERSING OVER DISTURBED SOILS OR OTHER POLLUTANT SOURCES.
- STREETS DIRECTLY ADJACENT TO CONSTRUCTION ENTRANCES AND RECEIVING TRAFFIC FROM THE DEVELOPMENT AREA, SHALL BE CLEANED DAILY TO REMOVE SEDIMENT TRACKED OFF–SITE. IF APPLICABLE, THE CATCH BASINS ON THESE STREETS NEAREST TO THE CONSTRUCTION ENTRANCES SHALL ALSO BE CLEANED WEEKLY. BASED ON SITE CONDITIONS, THE CITY ENGINEER, OR HIS DESIGNATED REPRESENTATIVE, MAY REQUIRE ADDITIONAL BEST MANAGEMENT PRACTICES TO CONTROL OFF–SITE TRACKING AND DUST.
- IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER, OR HIS/HER REPRESENTATIVE, TO INSPECT ALL CONTROLS ON THE SITE AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN TWENTY–FOUR (24) HOURS AFTER ANY STORM EVENT GREATER THAN ONE–HALF INCH OF RAIN PER TWENTY–FOUR (24) HOUR PERIOD. WHEN INSPECTIONS REVEAL THE NEED FOR REPAIR, REPLACEMENT, OR INSTALLATION OF EROSION AND SEDIMENT CONTROL BMPS, THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:
  - IF AN INTERNAL INSPECTION REVEALS THAT A CONTROL PRACTICE IS IN NEED OF REPAIR OR MAINTENANCE, WITH THE EXCEPTION OF A SEDIMENT–SETTLING POND, IT MUST BE REPAIRED OR MAINTAINED WITHIN THREE (3) DAYS OF THE INSPECTION. SEDIMENT–SETTLING PONDS MUST BE REPAIRED OR MAINTAINED WITHIN TEN (10) DAYS OF THE INSPECTION.
  - IF AN INTERNAL INSPECTION REVEALS THAT A CONTROL PRACTICE FAILS TO PERFORM ITS INTENDED FUNCTION AS DETAILED IN THE SWP3 AND THAT ANOTHER, MORE APPROPRIATE CONTROL PRACTICE IS REQUIRED, THE SWP3 MUST BE AMENDED AND THE NEW CONTROL PRACTICE MUST BE INSTALLED WITHIN TEN (10) DAYS OF THE INSPECTION.
  - IF AN INTERNAL INSPECTION REVEALS THAT A CONTROL PRACTICE HAS NOT BEEN IMPLEMENTED IN ACCORDANCE WITH THE SCHEDULE, THE CONTROL PRACTICE MUST BE IMPLEMENTED WITHIN TEN (10) DAYS FROM THE DATE OF THE INSPECTION. IF THE INTERNAL INSPECTION REVEALS THAT THE PLANNED CONTROL PRACTICE IS NOT NEEDED, THE RECORD MUST CONTAIN A STATEMENT OF EXPLANATION AS TO WHY THE CONTROL PRACTICE IS NOT NEEDED.
  - THE APPLICANT SHALL MAINTAIN FOR THREE (3) YEARS FOLLOWING FINAL STABILIZATION THE RESULTS OF THESE INSPECTIONS, THE NAMES AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTIONS, THE DATES OF INSPECTIONS, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE SWP3, A CERTIFICATION AS TO WHETHER THE FACILITY IS IN COMPLIANCE WITH THE SWP3, AND INFORMATION ON ANY INCIDENTS OF NON–COMPLIANCE DETERMINED BY THESE INSPECTIONS.
- ALL EROSION AND SEDIMENT CONTROL PRACTICES SPECIFIED ON THIS PLAN SHALL CONFORM WITH DETAILS AND SPECIFICATIONS OUTLINED IN THE CURRENT VERSION OF THE OHIO DEPARTMENT OF NATURAL RESOURCES BOOKLET, "RAINWATER AND LAND DEVELOPMENT", OR AS SPECIFIED BY THE CITY ENGINEER, OR HIS DESIGNATED REPRESENTATIVE.
- EROSION AND SEDIMENT CONTROL PRACTICES NOT ALREADY SPECIFIED ON THIS PLAN MAY BE NECESSARY DUE TO UNFORESEEN ENVIRONMENTAL CONDITIONS AND/OR CHANGES IN DRAINAGE PATTERNS CAUSED BY EARTH–MOVING ACTIVITY. ADDITIONAL PRACTICES SHALL BE IMPLEMENTED AT THE DEVELOPER'S EXPENSE AS DIRECTED BY THE CITY ENGINEER, OR HIS DESIGNATED REPRESENTATIVE.
- NO STRUCTURAL SEDIMENT CONTROLS (E.G. SILT FENCE, SEDIMENT TRAPS, ETC.) SHALL BE USED IN A WATER RESOURCE OR WETLAND, UNLESS THEIR USE IS SPECIFICALLY PROVIDED FOR WITHIN THE SITE'S APPROVED PLAN.
- SOIL STOCKPILES, TOPSOIL OR OTHERWISE, SHALL BE SITUATED AWAY FROM STREETS, SWALES, OR OTHER WATERWAYS AND SHALL BE SEEDED AND/OR MULCHED IMMEDIATELY.
- ON–SITE PERSONNEL SHALL TAKE ALL NECESSARY MEASURES TO COMPLY WITH APPLICABLE REGULATIONS REGARDING FUGITIVE DUST EMISSIONS, INCLUDING OBTAINING NECESSARY PERMITS FOR SUCH EMISSIONS. THE CITY ENGINEER, OR HIS DESIGNATED REPRESENTATIVE, MAY REQUIRE DUST CONTROLS INCLUDING, BUT NOT LIMITED TO, THE USE OF WATER TRUCKS TO WET DISTURBED AREAS, TARPING STOCKPILES, TEMPORARY STABILIZATION OF DISTURBED AREAS, AND REGULATION OF THE SPEED OF VEHICLES ON THE SITE.

MAINTENANCE AND INSPECTION

PERMANENT RECORDS OF MAINTENANCE AND INSPECTION MUST BE MAINTAINED A MINIMUM OF ONCE EVERY SEVEN DAYS AND AFTER STORM EVENTS GREATER THAN 0.5 INCH IN A 24 HOUR PERIOD. NAME OF INSPECTOR, MAJOR OBSERVATIONS, DATE OF INSPECTION, CERTIFICATION OF COMPLIANCE, CORRECTIVE MEASURES TAKEN. RECORDS MUST BE MAINTAINED FOR 2 YEARS AFTER NOTICE OF INTENT PER OHIO EPA NPDES PERMIT.

REPAIRS

ANY EROSION CONTROL MEASURES, STRUCTURES, DEVICES, OR RELATED ITEMS IN NEED OF REPAIR WILL BE MADE WITHIN FIFTEEN DAYS.

WINTERIZATION

ANY DISTURBED AREA THAT IS NOT GOING TO BE WORKED FOR 14 DAYS OR MORE MUST BE SEEDED AND MULCHED BY NOVEMBER 1 OR MUST HAVE DORMANT SEEDING OR MULCH COVER APPLIED BETWEEN NOVEMBER 1 AND MARCH 1.

MULCHING

1. MULCH MATERIAL SHALL BE APPLIED IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES AND WITH FAVORABLE SOIL CONDITIONS AND ON VERY FLAT AREAS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION. DORMANT SEEDING SHALL BE MULCHED.
2. MATERIALS
   - STRAW – IF STRAW IS TO BE USED IT SHALL BE UNROTTED SMALL–GRAIN STRAW APPLIED AT THE RATE OF 2 TONS/AC. OR 90 LB./1000 SQ.FT. (TWO TO THREE BALES). THE MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND–SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1000 SQ.FT. SECTIONS AND SPREAD TWO 45 LB. BALES OF STRAW IN IN EACH SECTION.
   - HYDROSEEDERS – IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE USED AT 2000 LB./AC. OR 46 LB./1000 SQ.FT.
   - OTHER – OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TONS/AC.
3. STRAW MULCH ANCHORING METHODS
   STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER.
   - MECHANICAL – A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT, GENERALLY, BE LEFT LONGER THAN 6 IN.
   - MULCH NETTINGS – NETTINGS SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES.
   - ASPHALT EMULSION – ASPHALT SHALL BE APPLIED AS RECOMMENDED BY THE MANUFACTURER OR AT THE RATE OF 160 GAL./AC.
   - SYNTHETIC BINDERS – SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI–TAC), DCA–70, PETROSET TERRA TACK, OR EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER.
   - WOOD CELLULOSE FIBER – WOOD CELLULOSE FIBER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LB./AC. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB./100 GAL. OF WOOD CELLULOSE FIBER.

IRRIGATION

1. PERMANENT SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY OR HOT WEATHER OR ON ADVERSE SITE CONDITIONS AS NEEDED FOR ADEQUATE MOISTURE FOR SEED GERMINATION AND PLANT GROWTH.
2. EXCESSIVE IRRIGATION RATES SHALL BE AVOIDED AND IRRIGATION MONITORED TO PREVENT EROSION AND DAMAGE FROM RUNOFF.

PERMANENT SEEDING

1. DISTURBED AREAS REMAINING DORMANT FOR OVER A YEAR AND AT FINAL GRADE SHALL HAVE THE PERMANENT LANDSCAPING COVER INSTALLED PER LANDSCAPING PLAN.
2. DISTURBED AREAS WITHIN 50 FEET OF A STREAM MUST HAVE A PERMANENT COVER APPLIED WITHIN 2 DAYS OF REACHING FINAL GRADE.

NON–SEDIMENT POLLUTANT CONTROLS

1. Construction personnel, including subcontractors who may use or handle hazardous or toxic materials, shall be made aware of the following general guidelines regarding disposal and handling of hazardous and construction wastes:
   DO'S
   - Prevent spills
   - Use products up
   - Follow label directions for disposal
   - Remove lids from empty bottles and cans when disposing in trash
   - Recycle wastes whenever possible

   DON'TS
   - Don't pour into waterways, storm drains or onto the ground
   - Don't pour down the sink, floor drain or septic tanks
   - Don't bury chemicals or containers
   - Don't burn chemicals or containers
   - Don't mix chemicals together

2. Containers shall be provided for the proper collection of all waste material including construction debris, trash, petroleum products and any hazardous materials used on–site. Containers shall be covered and not leaking. All waste material shall be disposed of at facilities approved for that material. Construction Demolition and Debris (CD&D) waste must be disposed of at an Ohio EPA approved CD&D landfill.

3. No construction related waste materials are to be buried on–site. By exception, clean fill (bricks, hardened concrete, soil) may be utilized in a way which does not encroach upon natural wetlands, streams or floodplains or result in the contamination of waters of the state.

4. Handling Construction Chemicals. Mixing, pumping, transferring or other handling of construction chemicals such as fertilizer, lime, asphalt, concrete drying compounds, and all other potentially hazardous materials shall be performed in an area away from any watercourse, ditch or storm drain.

5. Equipment Fueling and Maintenance, oil changing, etc., shall be performed away from watercourses, ditches or storm drains, in an area designated for that purpose. The designated area shall be equipped for recycling oil and catching spills. Secondary containment shall be provided for all fuel oil storage tanks. These areas must be inspected every seven days and within 24 hrs. of a 0.5 inch or greater rain event to ensure there are no exposed materials which would contaminate storm water. Site operators must be aware that Spill Prevention Control and Countermeasures (SPCC) requirements may apply. An SPCC plan is required for sites with one single above ground tank of 660 gallons or more, accumulative above ground storage of 1330 gallons or more, or 42,000 gallons of underground storage. Contaminated soils must be disposed of in accordance with Item 8.

6. Concrete Wash Water shall not be allowed to flow to streams, ditches, storm drains, or any other water conveyance. A sump or pit with no potential for discharge shall be constructed if needed to contain concrete wash water. Field tile or other subsurface drainage structures within 10 ft. of the sump shall be cut and plugged. For small projects, truck chutes may be rinsed away from any water conveyances.

7. Spill Reporting Requirements: Spills on pavement shall be absorbed with sawdust or kitty litter and disposed of with the trash at a licensed sanitary landfill. Hazardous or industrial wastes such as most solvents, gasoline, oil–based paints, and cement curing compounds require special handling. Spills shall be reported to Ohio EPA (1–800–282–9378). Spills of 25 gallons or more of petroleum products shall be reported to Ohio EPA, the local fire department, and the Local Emergency Planning Committee within 30 min. of the discovery of the release. All spills which contact waters of the state must be reported to Ohio EPA.

8. Contaminated Soils. If substances such as oil, diesel fuel, hydraulic fluid, antifreeze, etc. are spilled, leaked, or released onto the soil, the soil should be dug up and disposed of at licensed sanitary landfill or other approved petroleum contaminated soil remediation facility. (not a construction/demolition debris landfill). Note that storm water run off associated with contaminated soils are not be authorized under Ohio EPA's General Storm Water Permit associated with Construction Activities.

9. Open Burning. No materials containing rubber, grease, asphalt, or petroleum products, such as tires, autoparts, plastics or plastic coated wire may be burned (OAC 3745–19). Open burning is not allowed in restricted areas, which are defined as: 1) within corporation limits; 2) within 1000 feet outside a municipal corporation having a population of 1000 to 10,000; and 3) a one mile zone outside of a corporation of 10,000 or more. Outside of restricted areas, no open burning is allowed within a 1000 feet of an inhabited building on another property. Open burning is permissible in a restricted area for: heating tar, welding, smudge pots and similar occupational needs, and heating for warmth or outdoor barbeques. Outside of restricted areas, open burning is permissible for landscape or land–clearing wastes (plant material, with prior written permission from Ohio EPA), and agricultural wastes, excluding buildings.

10. Dust Control or dust suppressants shall be used to prevent nuisance conditions, in accordance with the manufacturer's specifications and in a manner, which prevent a discharge to waters of the state. Sufficient distance must be provided between applications and nearby bridges, catch basins, and other waterways. Application (excluding water) may not occur when rain is imminent as noted in the short term forecast. Used oil may not be applied for dust control.

11. Other Air Permitting Requirements: Certain activities associated with construction will require air permits including but not limited to: mobile concrete batch plants, mobile asphalt plants, concrete crushers, large generators, etc. These activities will require specific Ohio EPA Air Permits for installation and operation. Operators must seek authorization from the corresponding district of Ohio EPA. For demolition of all commercial sites, a notification for Restoration and Demolition must be submitted to Ohio EPA to determine if asbestos corrective actions are required.

12. Process Waste Water/Leachate Management. Ohio EPA's Construction General Permit only allows the discharge of storm water and does not include other waste streams/discharges such as vehicle and/or equipment washing, on–site septic leachate concrete wash outs, which are considered process wastewaters. All process wastewaters must be collected and properly disposed at an approved disposal facility. In the event, leachate or septage is discharged; it must be isolated for collection and proper disposal and corrective actions taken to eliminate the source of waste water.

13. A Permit To Install (PTI) is required prior to the construction of all centralized sanitary systems, including sewer extensions, and sewerage systems (except those serving one, two, and three family dwellings) and potable water lines. Plans must be submitted and approved by Ohio EPA. Issuance of an Ohio EPA Construction General Storm Water Permit does not authorize the installation of any sewerage system where Ohio EPA has not approved a PTI.

14. Manufacturer's recommended methods for spill clean–up will be posted and site personnel made aware of the procedures and the location of the information and cleanup supplies.

15. Materials and equipment necessary for spill cleanup will be kept in the material storage area on site. Equipment and materials will include, but not be limited to brooms, dustpans, mops, rags, gloves, goggles, cat litter, sand, sawdust, and plastic and metal trash containers specifically designated for this purpose.

16. All spills will be cleaned up immediately after discovery.

17.. The spill area will be kept well–ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

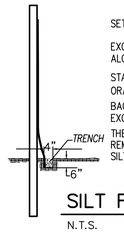
18. Spills of toxic or hazardous materials will be reported to the appropriate State or Local government agency, regardless of the size.

19. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.

20. The site superintendent responsible for the day–to–day operations will be the spill prevention and cleanup coordinator. He/She will designate site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and in the office trailer on site.

SEQUENCE OF CONSTRUCTION

1. INSTALL ORANGE WETLAND PROTECTION SILT FENCE.
2. COORDINATE REMOVAL OF EXISTING UTILITY POLE.
3. SILT FENCE AND CATCH BASIN PROTECTION FOR EXISTING CATCH BASINS.
4. ESTABLISH REFUELING AREA.
5. REMOVE EXISTING PAVEMENT TO BE REMOVED AND BEGIN ROUGH GRADING/ROADWAY FILL.
6. CONSTRUCT CONCRETE WASHOUT AREA.
7. CONSTRUCT PROPOSED 12" WATER MAIN AND STORM SEWER. INSTALL PROPOSED CATCH BASIN PROTECTION AS EACH CATCH BASIN IS INSTALLED AND PLACED INTO SERVICE.
8. PREPARE SUBGRADE FOR NEW ROADWAY
9. FINISH REMAINING SITE WORK AND STABILIZE THE SITE.
10. ONCE SITE IS STABILIZED, REMOVE REMAINING EROSION AND SEDIMENT CONTROL DEVICES.



SET THE STAKES.

EXCAVATE A 4"x6" TRENCH UPSLOPE ALONG THE LINE OF STAKES.

STAPLE FILTER MATERIAL (FILTER MATERIAL TO BE ORANGE) TO STAKES AND EXTEND IT INTO THE TRENCH.

BACKFILL AND COMPACT THE EXCAVATED SOIL.

THERE WILL BE MINIMAL TO NO VEGETATION REMOVAL, ONLY AS NECESSARY TO INSTALL SILT FENCE PROPERLY.

SILT FENCE

N.T.S. SF

REVISION	BY
REV. PER CITY	JJF

No.	DATE
1	07–11–2014
2	
3	

DATE: 05–13–2014
SCALE:
SCALE:
DRAWN: JJF
CHECKED: MJM

COCHRAN ROAD EXTENSION
SWP3 NOTES AND DETAILS

PROJECT NUMBER 20130077

4216 KARG INDUSTRIAL PKWY
KENT, OH 44240
(330) 673–2400
wohlwend engineering group

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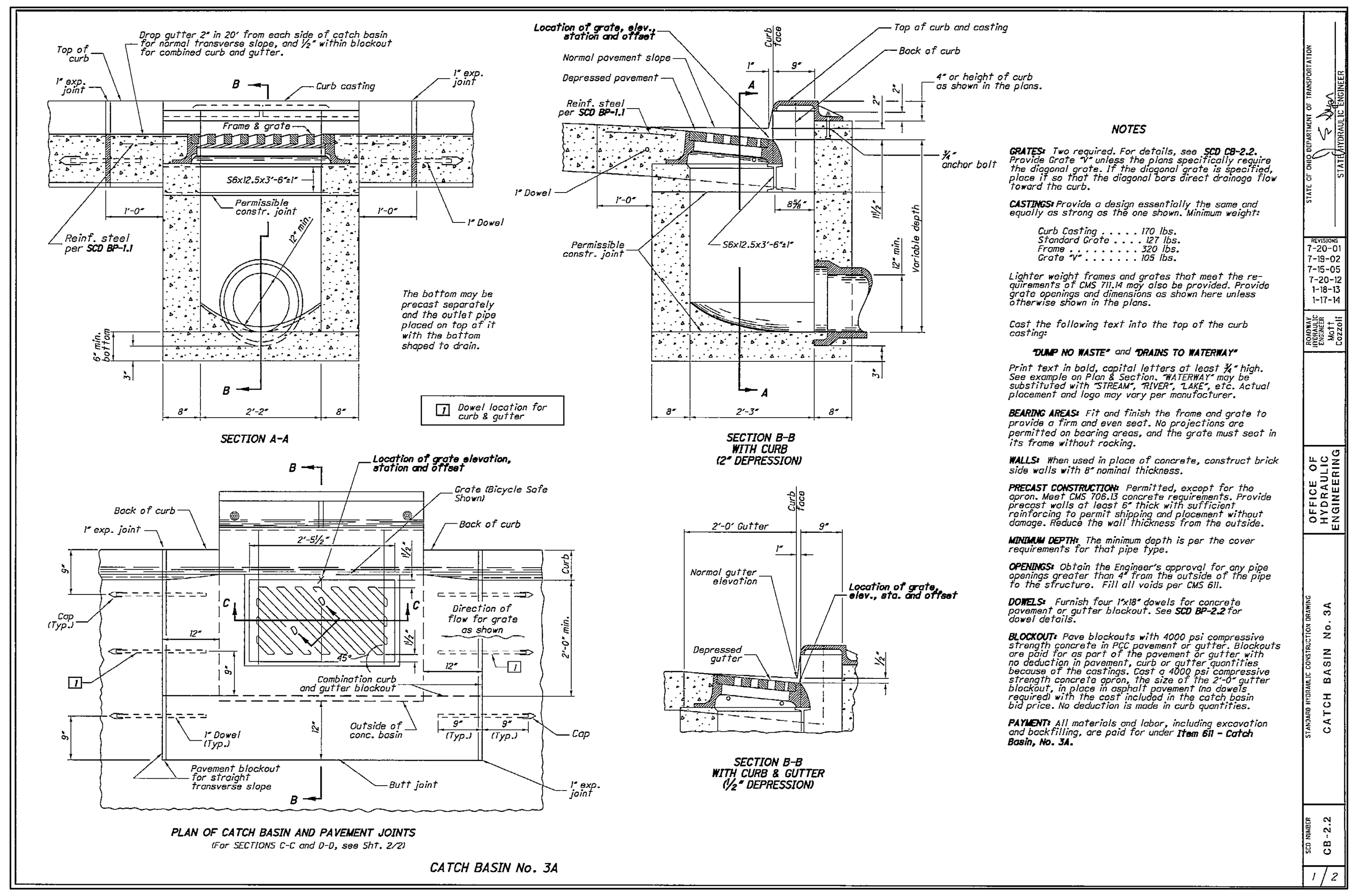
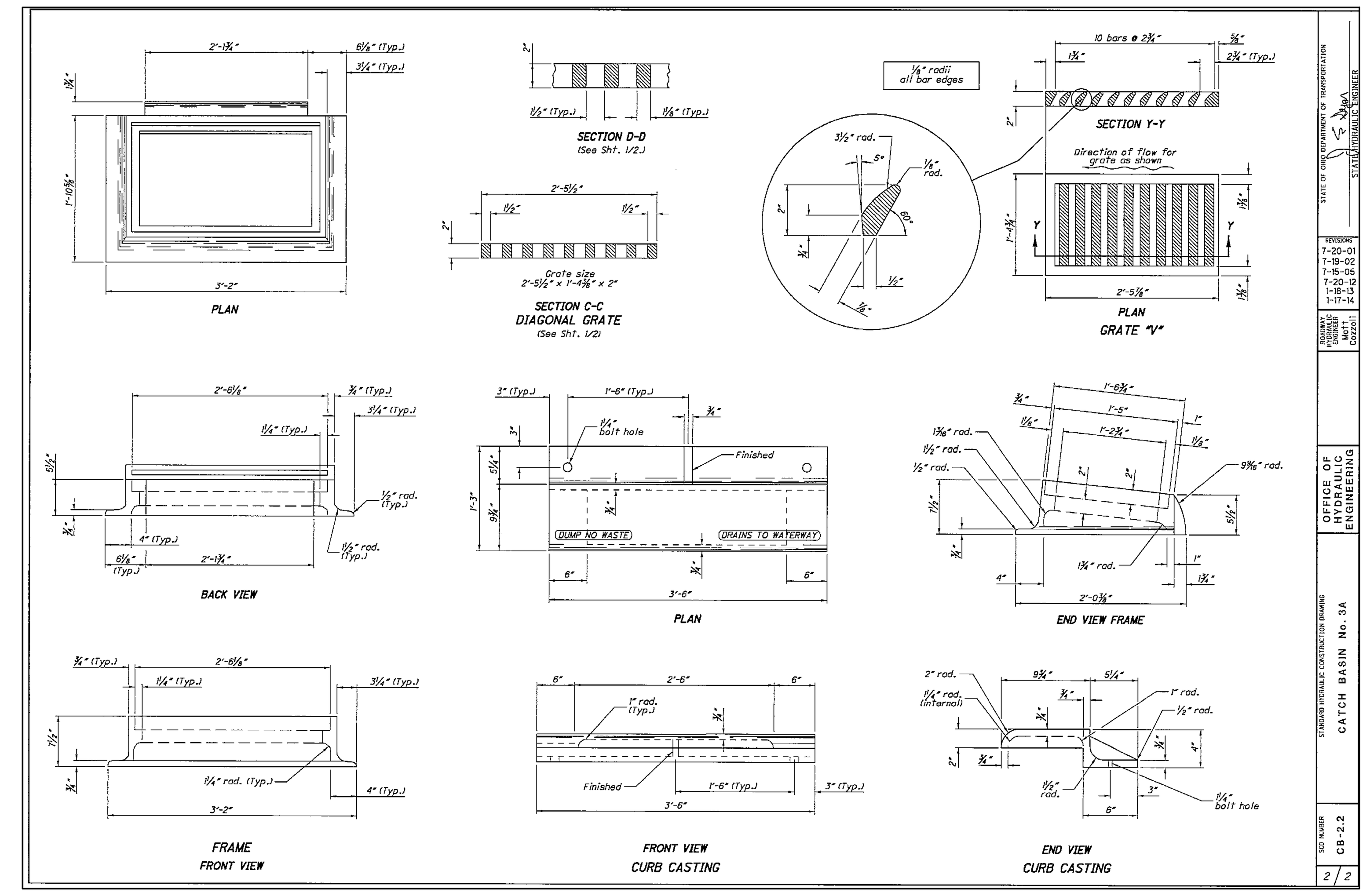
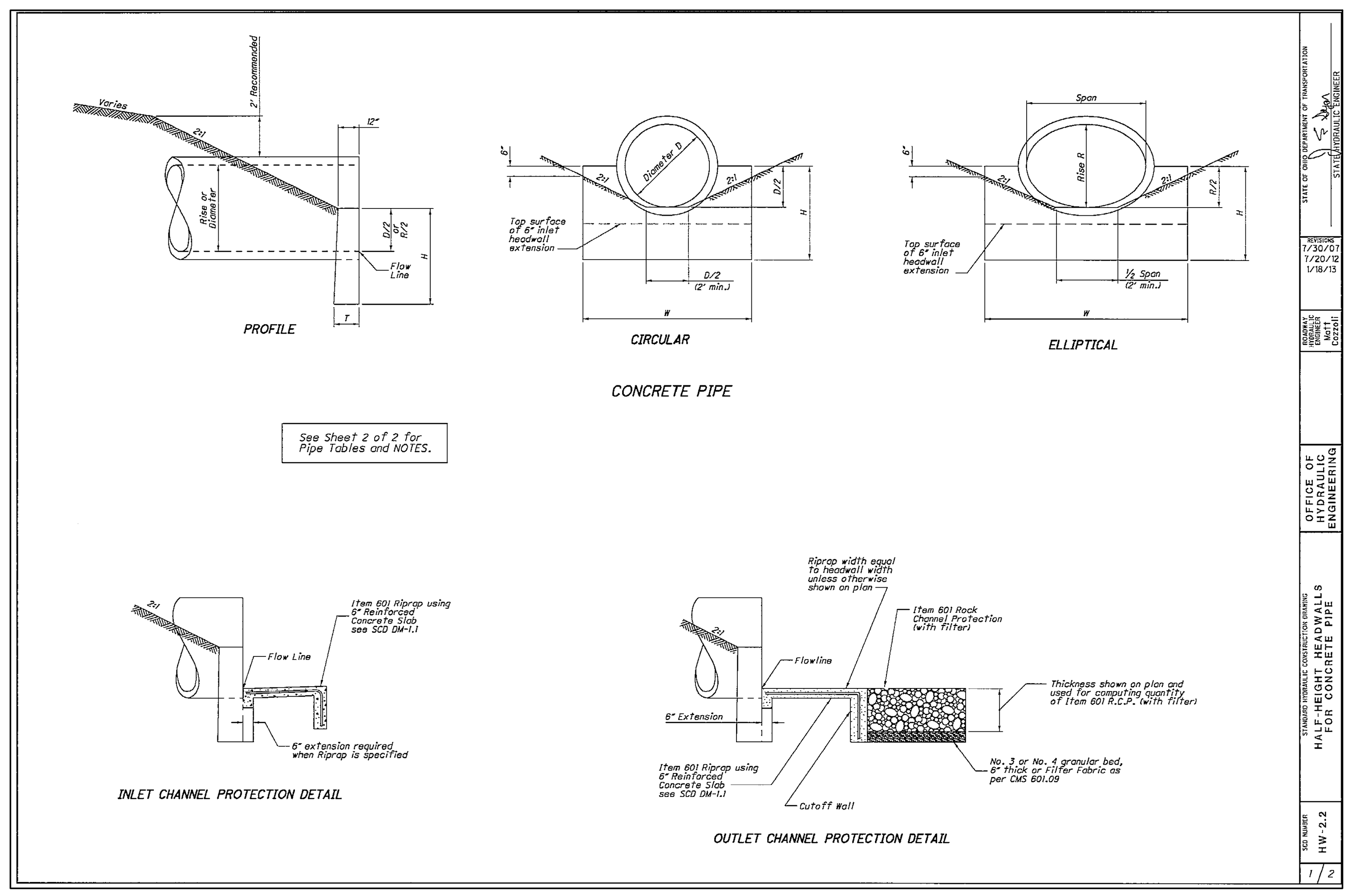
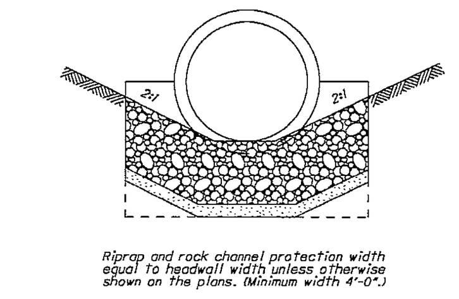








Riprap and rock channel protection width equal to headwall width unless otherwise shown on the plans. (Minimum width 4'-0".)

NOTES

GENERAL: Provide a riprap reinforced concrete slab according to SCD DM-1.1 if the pipe is depressed or it is specified in the plan. Payment for the slab is made per square yard of **Item 601 Riprap Using 6" Reinforced Concrete** Slab and includes the cost of the cutoff wall.

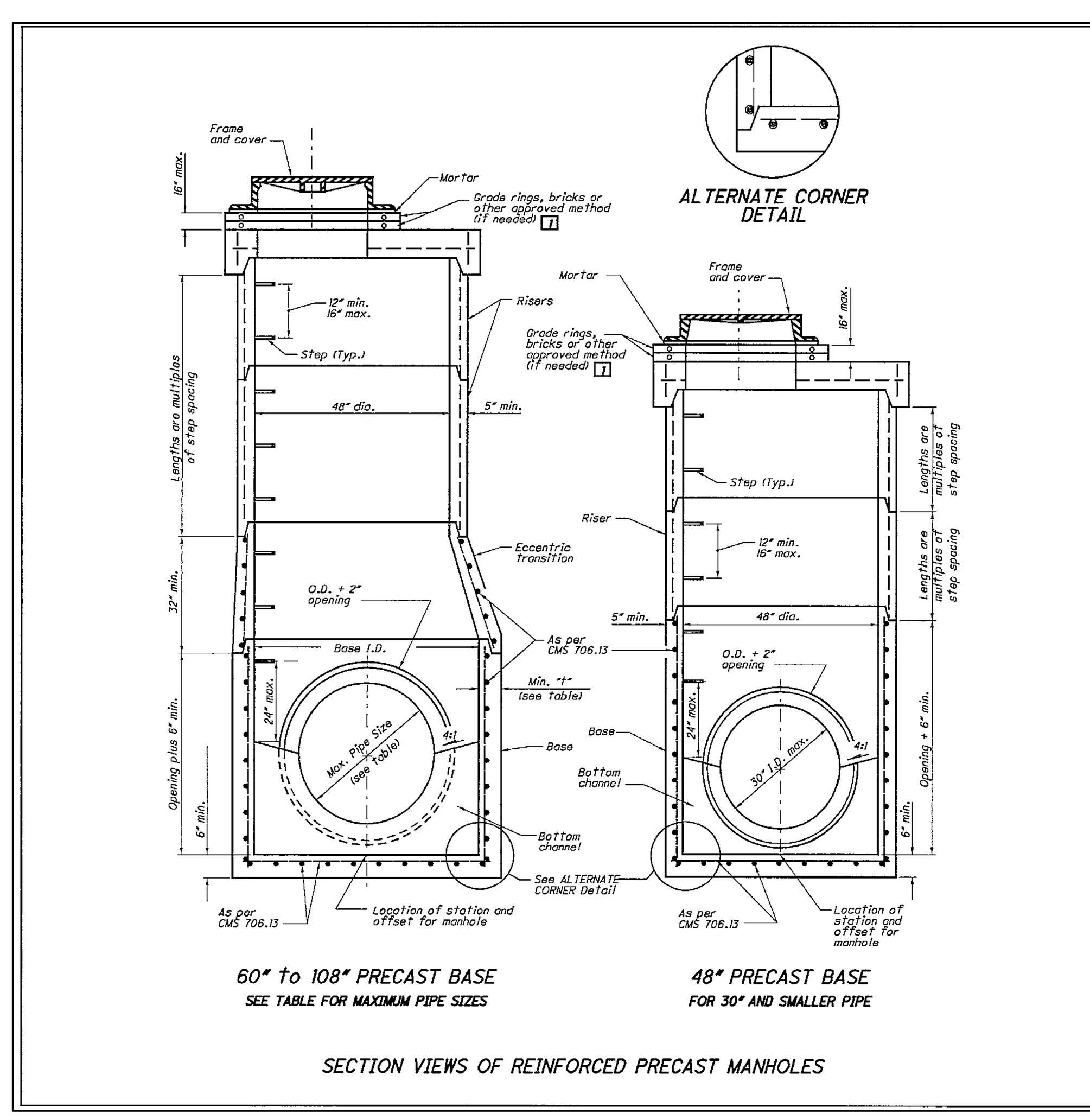
This drawing is for cast in place half-height concrete headwalls. When furnishing precast half-height headwalls, conform to pre-approved designs on file with the Office of Materials Management. Precast half-height headwalls are only approved for round conduits with a maximum conduit diameter of 78".

CONCRETE: Use 4000 psi compressive strength concrete for headwalls.

Concrete quantities are based on headwalls without the 6" extension under the channel protection.

C.I.P. HEADWALL FOR CONCRETE PIPE (English)

CIRCULAR					ELLIPTICAL					
D	W	H	T	Conc. cu. yds.	Span	Rise	W	H	T	Conc. cu. yds.
12"	2'-0"	3'-0"	12"	0.20	--	--	--	--	--	--
15"	2'-6"	3'-2"	12"	0.25	--	--	--	--	--	--
18"	3'-0"	3'-3"	12"	0.31	23"	14"	3'-0"	3'-2"	12"	0.29
21"	3'-6"	3'-4"	12"	0.37	30"	19"	3'-7"	3'-4"	12"	0.35
24"	4'-0"	3'-6"	12"	0.43	34"	22"	3'-11"	3'-5"	12"	0.38
27"	4'-6"	3'-8"	12"	0.49	38"	24"	4'-6"	3'-6"	12"	0.44
30"	5'-0"	3'-9"	12"	0.56	42"	27"	4'-8"	3'-7"	12"	0.45
33"	5'-6"	3'-10"	12"	0.62	45"	29"	5'-2"	3'-8"	12"	0.49
36"	6'-0"	4'-0"	12"	0.69	49"	32"	5'-5"	3'-10"	12"	0.52
39"	6'-6"	4'-2"	12"	0.77	53"	34"	5'-11"	4'-0"	14"	0.66
42"	7'-0"	4'-3"	12"	0.84	60"	38"	6'-10"	4'-2"	14"	0.82
48"	8'-0"	4'-6"	14"	1.09	68"	43"	8'-0"	4'-4"	16"	1.01
54"	9'-3"	4'-9"	14"	1.32	76"	48"	9'-2"	5'-0"	16"	1.34
60"	10'-6"	5'-6"	16"	1.93	83"	53"	10'-4"	5'-2"	18"	1.65
66"	11'-9"	5'-9"	18"	2.42	91"	58"	11'-6"	5'-5"	18"	1.97
72"	13'-0"	6'-0"	18"	2.77	98"	63"	12'-7"	5'-7"	20"	2.38
78"	14'-3"	6'-3"	20"	3.37	106"	68"	13'-9"	5'-10"	20"	2.69
84"	15'-6"	6'-6"	22"	4.05	113"	72"	14'-9"	6'-0"	22"	3.14
90"	16'-9"	6'-9"	22"	4.51	121"	77"	15'-11"	6'-3"	22"	3.49
96"	18'-0"	7'-0"	24"	5.31	128"	82"	17'-0"	6'-5"	24"	4.04
102"	19'-3"	7'-3"	26"	6.20	136"	87"	18'-2"	6'-8"	24"	4.84
108"	20'-6"	7'-6"	26"	6.78	143"	92"	19'-4"	6'-10"	26"	5.12
114"	21'-9"	7'-9"	28"	7.81	151"	97"	20'-6"	7'-1"	26"	5.42
120"	23'-0"	8'-0"	30"	8.93	166"	106"	22'-7"	7'-5"	28"	6.60
126"	24'-3"	8'-3"	30"	9.57	180"	116"	24'-10"	7'-10"	30"	7.99
132"	25'-6"	8'-6"	32"	10.84	--	--	--	--	--	--
144"	28'-8"	9'-0"	34"	13.00	--	--	--	--	--	--



NOTES

STEPS, FRAMES AND COVERS: Meet the requirements shown on SCD MH-1.1.

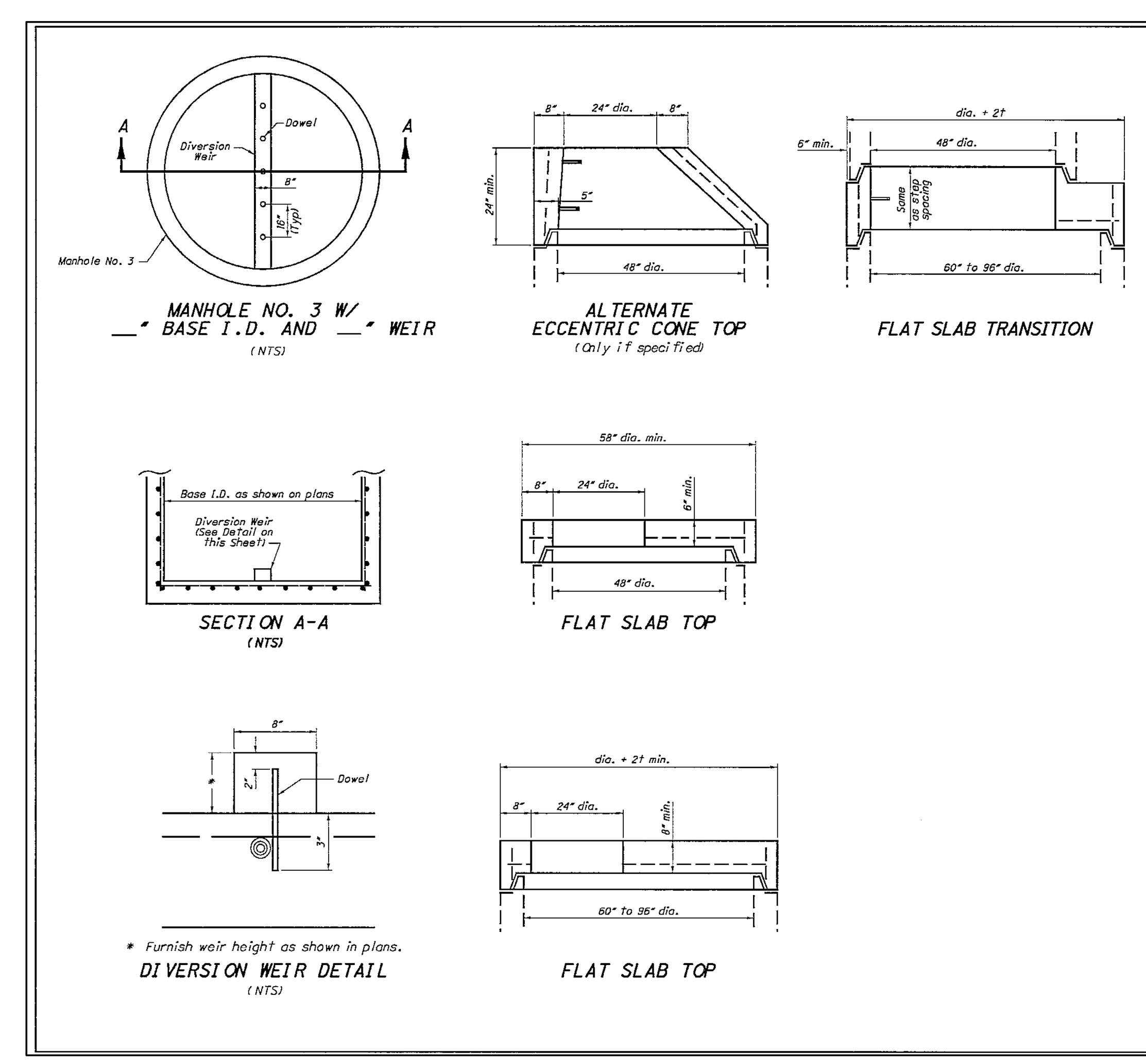
TOP SLAB REBAR: Use epoxy coated reinforcing steel within the top slab.

LEGEND

1 Reconstruction to grade only. Approved materials are kept on file by the Office of Materials Management.

MAXIMUM PIPE SIZES

BASE I.D.	MIN. "t"	MAX. PIPE SIZE
60"	5"	36"
72"	6"	48"
84"	7"	54"
90"	7½"	60"
96"	8"	66"
108"	9"	72"



No.	DATE	REVISION	BY
1	07-11-2014	REV. PER CITY	JJF
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DATE: 05-13-2014
SCALE:
SCALE:
DRAWN: JJF
CHECKED: MJW

COCHRAN ROAD EXTENSION
CONSTRUCTION NOTES AND DETAILS

PROJECT NUMBER
20130077

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City of Cuyahoga Falls
MUD BROOK TRIBUTARY DRAINAGE STUDY

REPORT AND APPENDICES

PREPARED BY

Environmental Design Group
The community impact people.
450 Grant Street
Akron, Ohio 44311

OCTOBER 2018

Table of Contents

Appendices

I EXECUTIVE SUMMARY

Environmental Design Group (EDG) conducted a drainage study for the Mud Brook Tributary that flows between the Dales of Northampton and North Point at Hunter's Crossing, as shown on Figure 1. During the Mud Brook Greenway and Trail Plan public meetings, this area was identified as having multiple flooding events that have increased over time causing erosion as shown on Figures 2 and 3. The goals of the project were to identify and delineate the drainage areas to known problem areas within the study areas, perform a planning level hydrologic and hydraulic analysis of these areas, and identify opportunities that could potentially alleviate known flooding and erosion issues within the delineated capture areas. This did not include a detailed analysis of the watershed, but rather a review of known as-built drawings, county GIS data, and field reconnaissance.

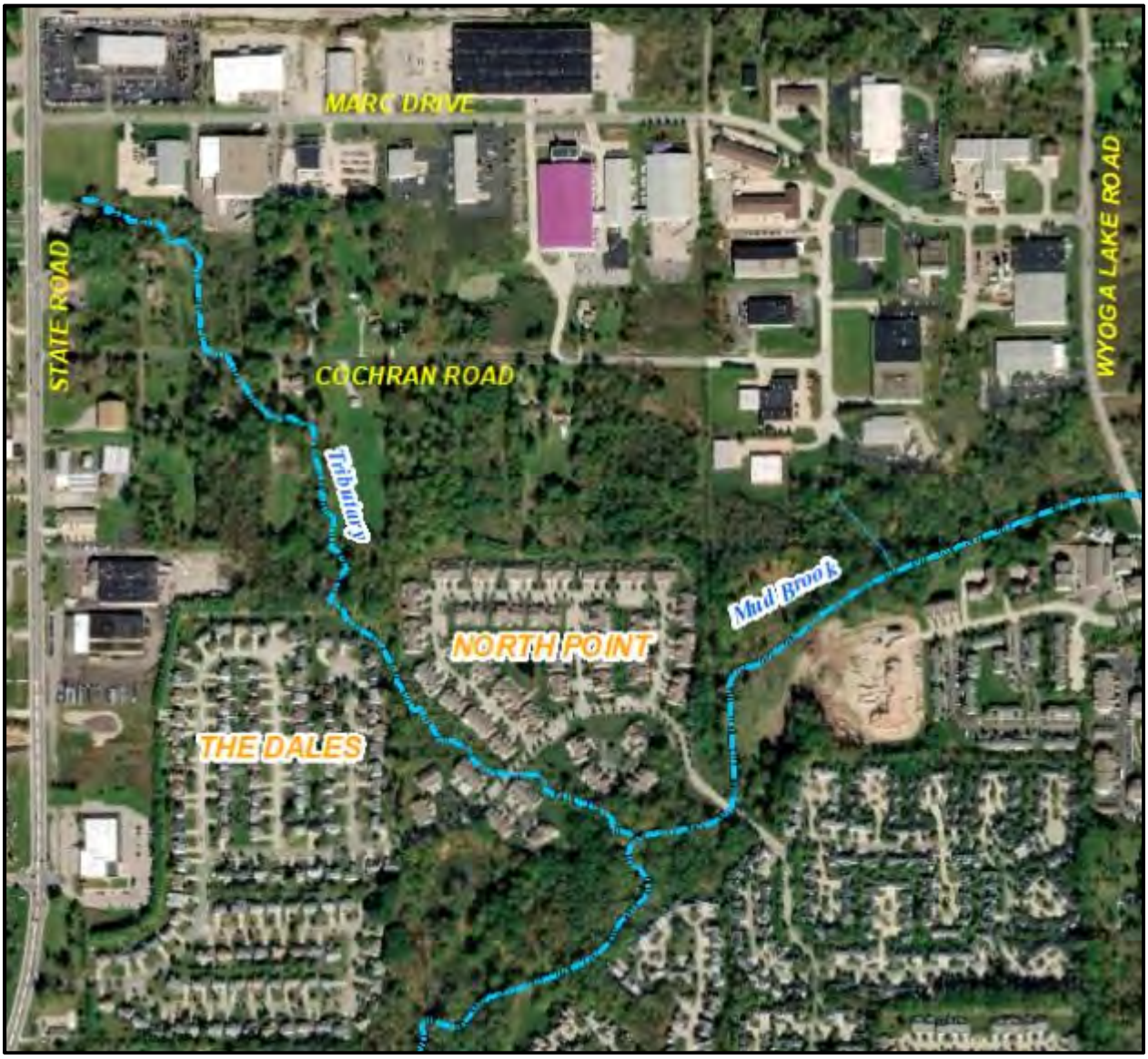

Figure 1. Project area.

Figure 2. 07-23-2015 photo of erosion between North Point and the Dales.

Figure 3. 05-22-2015 photo of erosion on Mud Brook main steam north of North Point development.

Originally, the study only included the drainage area to Mud Brook via the tributary stream that is located between the North Point and The Dales Development (Phase I). This area was identified to be approximately 187 acres. During the first public meeting for the project, it was identified that the northern portion of North Point was also being affected by flooding. This northern portion was added to the study area (Phase II). Phase II included drainage areas discharging to the grassy swale located at the north edge of the North Point at Hunters' Crossing housing development and the potential areas that discharge to the 42-inch storm sewer outfall near the southern end of Cavalier Trail. This area was identified to be approximately 61 acres.

The tasks completed for the study included the following:

- Attend several meetings with the City of Cuyahoga Falls and other key stakeholders throughout the project, including two public meetings, to adequately understand flooding concerns and obtain concurrence of the plan by the long-term implementers – private and public. Many of the flooded or eroded areas are located within private property.

- Collect known existing data and perform minor field reconnaissance of the project area. EDG worked with the City Engineer to gather information on existing basins located in the drainage area, including review of as-built drawings (if existing) and comparison of the drawings to the basins. EDG also reviewed Federal Emergency Management Agency (FEMA) flood mapping. Field survey was not performed.

- Evaluate data of the project area for existing conditions and for flood mitigation at a conceptual planning level using hydrologic and hydraulic modeling software. Refine the model for preferred alternatives based on comments received and additional field investigation.

- Prepare a list of alternative improvements identified and categorize them as either public or private improvements and either immediate, short term, or long-term improvements. A preliminary construction cost opinion was developed for each improvement. Additional land, if needed, for the improvements either as easement or right-of-way was identified.

- Document findings and alternatives into a report to assist the City and stakeholders with funding applications and a roadmap for flood reducing implementation. This report includes background information, an overall master plan of all improvement alternatives, color graphic illustrations of recommended site improvements, prioritization/phasing plan of the proposed improvements, and conceptual construction cost opinions broken into implementable phases including separate costs for key items.

Recommendations from the process are summarized as follows:

- The City should update their stormwater policy to a stormwater code and include specific modeling criteria for the Mud Brook Watershed. The City can utilize the hydrologic and hydraulic model created for this project to evaluate any development in the tributary watershed.

- Private property owners and the City should protect and enhance existing riparian vegetation.

- Private property basins should be restored to promissory storage volumes.

- Construct some of the recommended improvements found in Section III. After each improvement is constructed, the City shall rerun the model with the new project, including any new development, to identify the next recommended project(s) to control flooding.

The City will determine which improvements will be carried to design and construction. Note that any work within the confines of Mud Brook or Mud Brook Tributary that requires the disturbance of any earth will most likely require coordination and possibly a permit from the US Army Corps of Engineers and/or the Ohio EPA as they have jurisdiction over these waters. Channel improvements are typically given more favor with these agencies if they include stream restoration components such as improved sinuosity of the channel, floodplain connectivity, and the addition of riffles and pools.

II EXISTING CONDITIONS

Research, Field Review, and Desktop Mapping

The studied drainage areas are contained within Cuyahoga Falls as shown in Figure 4. The Phase I study area had a total drainage area of 187 acres and contained approximately 3,900 LF of stream (tributary) that discharged directly to Mud Brook. The Phase II drainage area was identified to be approximately 61 acres and eventually drains to Mud Brook. Currently this flow enters Mud Brook through an existing ditch within the North Point development, a 42-inch culvert pipe along Cavalier Trail and sheet flow.

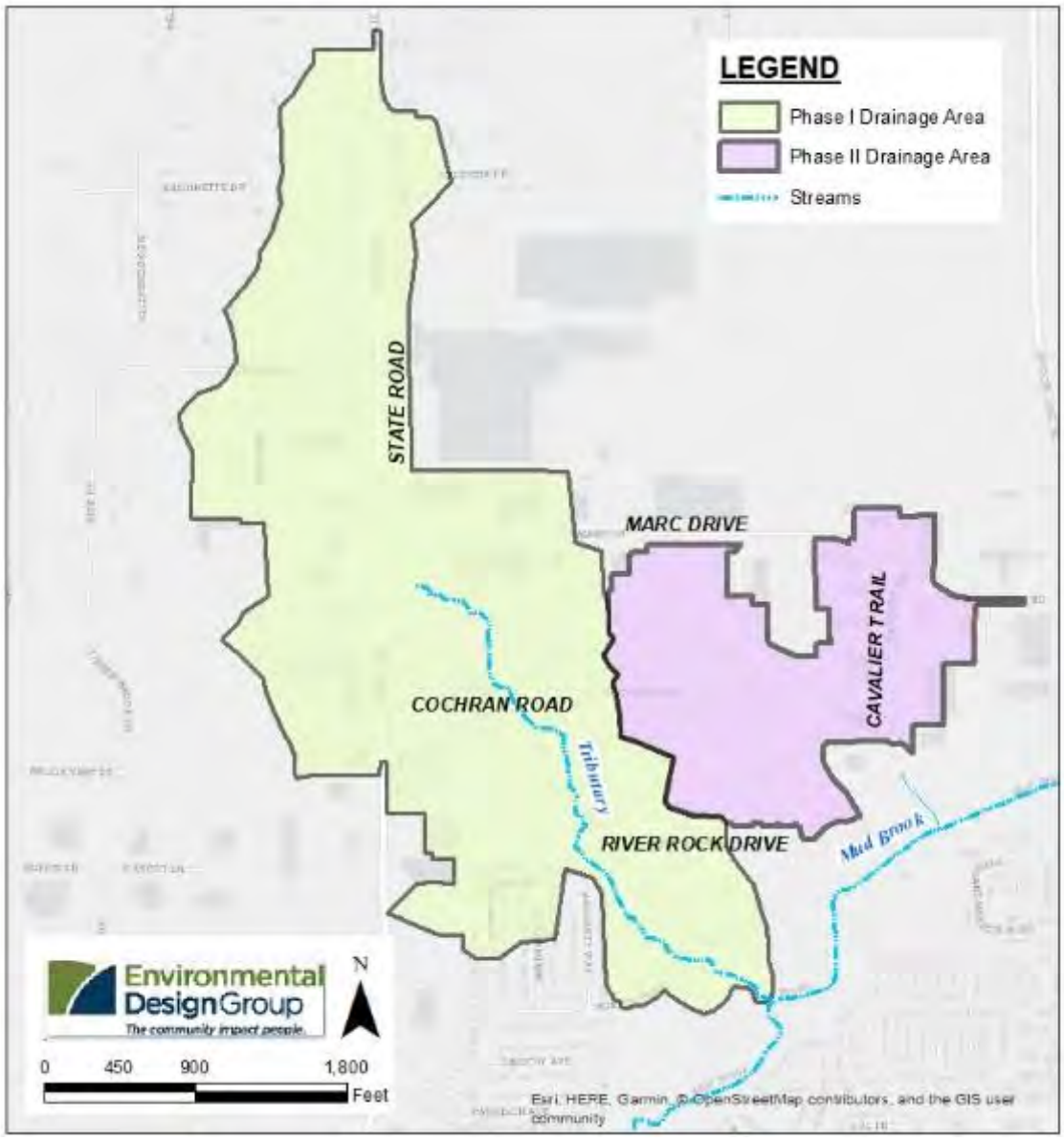

Figure 4. Overall drainage areas.

Per Chapter 1125, Stream Corridor Protection, of the City of Cuyahoga Falls Code of Ordinances, the Mud Brook Tributary is classified as a Type II stream (stream with drainage area greater than 32 acres

and up to 0.5 square miles). In accordance with Table 1125-22 of the code a total buffer area for a Type II stream is 50 feet on both sides. The 42-inch culvert draining the Phase II drainage area is not a stream, therefore does not have riparian setbacks. However, the Mud Brook (25.8 square miles) itself is a Type IV stream corridor with a 100-foot buffer each side (measured from the ordinary high-water mark).

A review of the Federal Emergency Management Agency's (FEMA) flood maps showed that the study areas were not within an area that is mapped by FEMA. FEMA Special Hazard Flood Areas are shown in Figure 5 and can be found on FEMA Federal Insurance Rate Map (FIRM) Panel Number 39153C0120F, effective date 4/19/2016., included in Appendix 1 As shown in the FEMA flood maps, the culvert under Bath Road hydraulically restricts flow from the tributary from conveying further downstream. The three dams at Mill Pond also contribute to this back up. Furthermore, the storage capacity of Mill Pond is currently greatly reduced due to sedimentation.

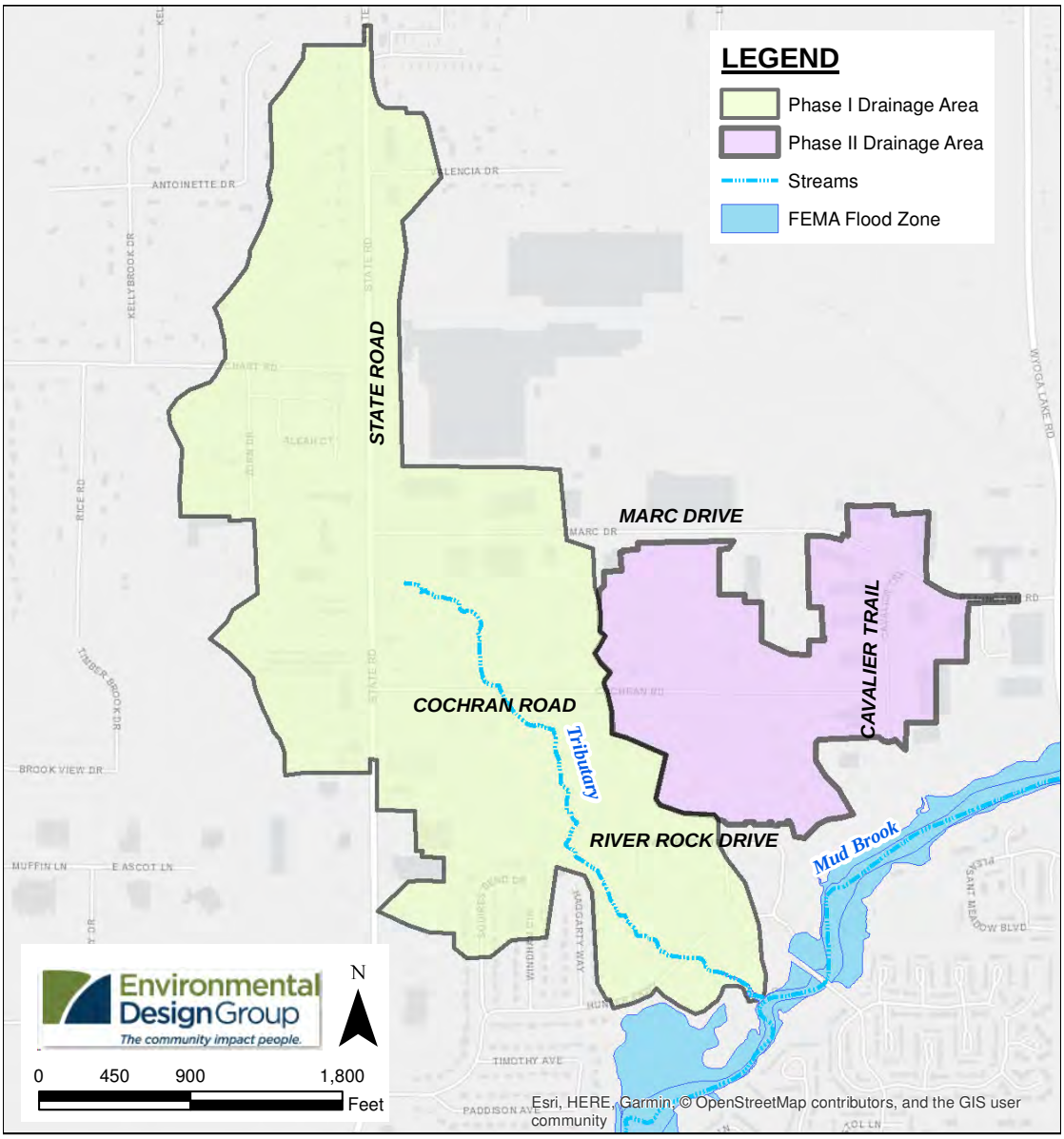

Figure 5. FEMA flood zones.

Information regarding potential wetlands was obtained from the National Wetland Inventory (NWI). 3.88 acres of potential emergent (PEM) wetlands and 0.92 acres of potential forested (PFO) wetlands were discovered in the Phase I drainage area, mainly adjacent to the tributary, and 0.91 acres of PEM wetlands were discovered within the Phase II drainage area, just north of Cochran Road, near 150 Marc Dr. as shown on Figure 6. Wetland delineation was not included in the study scope of work.

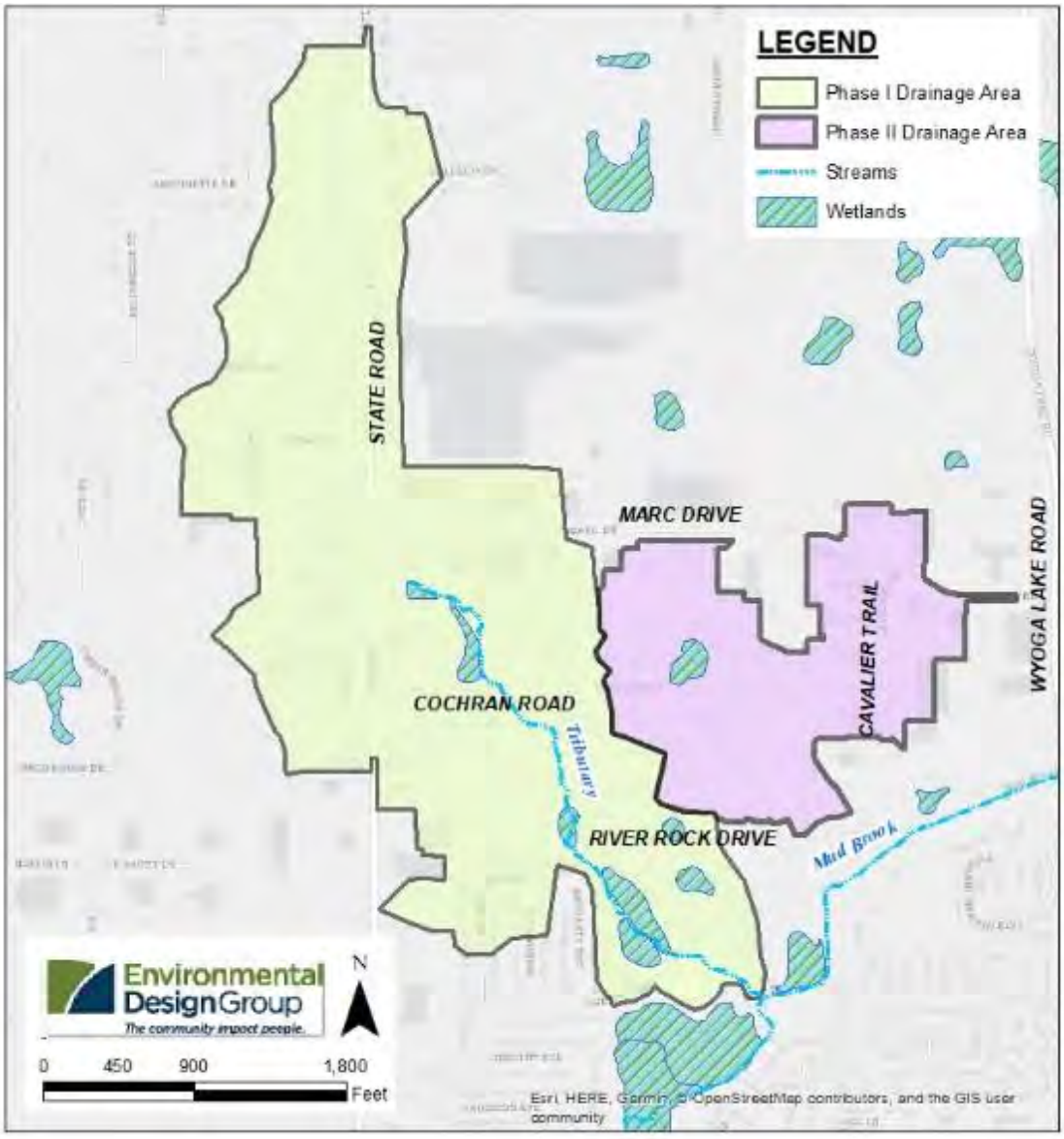

Figure 6. Potential wetlands.

Parcel ownership and land classification data for the study areas and surrounding areas were obtained from the Summit County's online GIS program and land classification was mapped in Figure 7. The upper half of the Phase 1 drainage area primarily consisted of commercial development with some residential properties, while the lower half of the watershed contains mostly residential properties. The Phase II drainage area is heavily developed with commercial and industrial land use, but also contains some residential properties. The majority of the residential properties located adjacent to Cochran Rd are very low-density with large grassy or wooded areas, while the smaller residential lots are very high-density

with very little open space. There were determined to be only two properties (Parcel IDs 3501727 and 3502065) within the Phase I drainage area that are owned by the City of Cuyahoga Falls, which are located at the southeastern corner of where State Rd and Cochran Rd intersect. The property to the south already contains a building, but the property to the north could potentially be utilized for stormwater storage. The city also owns property along Mud Brook, outside and upstream of the study area.

A large portion of this drainage area was previously a part of Northampton Township and was annexed into Cuyahoga Falls in 1986. Many of the current land uses and development represents those township regulations. Currently, most of the drainage area is zoned Employment District (E-1) and Manufacturing (M-1 & M-3). Typically, employment and manufacturing districts have 50% more impervious surface compared to residential land use.

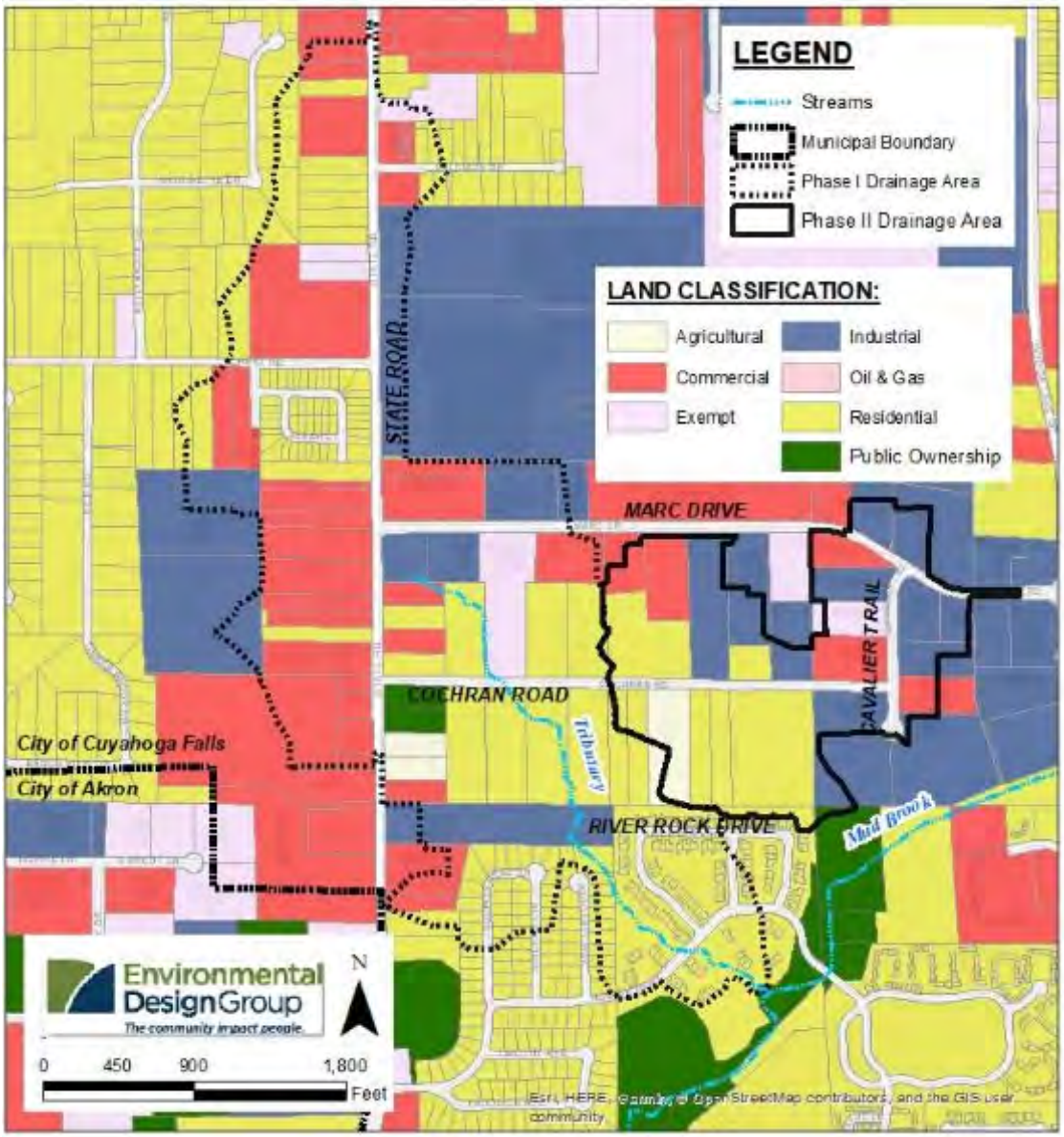

Figure 7. Land Use Classification

Information regarding the soils within the study areas was obtained from the web soil survey develop by the United States Department of Agriculture Natural Resource Conservation Service (NRCS) and is included in Appendix 2. Both Phase I and Phase II study areas primarily contained silt loam soils and are designated within hydrologic soil group (HSG) D. Soils of this type have very slow infiltration rate and high runoff potential. The exception to this is the lower portion of the tributary channel, which is a Holly Silt loam with a HSG of C/D. Therefore, infiltration practices will not be as effective as attenuation practices for controlling flooding events.

Existing Culverts, Storm Sewers, and Outfalls

Figure 8 depicts the storms sewers, culverts, and outfalls within the vicinity of the study area. Major outfalls that were identified within the study areas included the existing 36" storm sewer at State Rd, the 42" storm sewer outfall at Cavalier Trails, and the 18" outfall that drains the swale located behind the residences located north of River Rock Dr. of the North Point at Hunters' Crossing development. Four major culverts were identified within the Phase I study area and were all located within the vicinity of the tributary. Only one small roadway culvert was found within the Phase II study area at Cochran Rd.

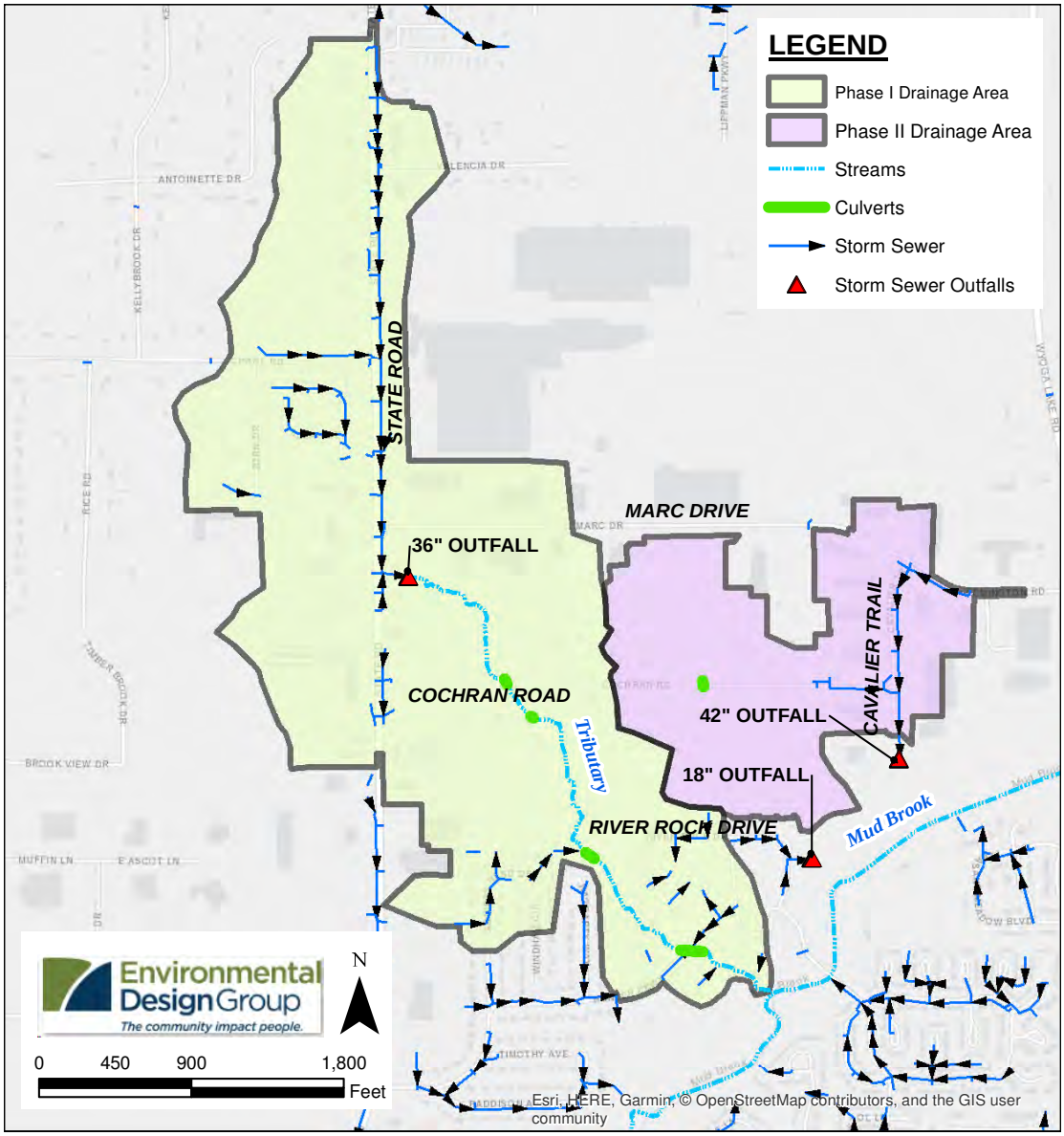

Figure 8. Culverts, Storm Sewers, and Outfalls

The storm sewers were used to help delineate the watershed boundaries; however, they generally were not analyzed in detail in the hydrologic and hydraulic model. The exception was the existing storm sewer system for the existing 42" outfall to the Cavalier Trail, which was modeled for this project to see if additional capacity was available in the system. Existing storm structure types, rims, inverts, and pipe connections/configurations were determined using record drawings provided by the City of Cuyahoga Falls and by field investigations. Pipe sizes, inverts, and material types were also determined from record drawings and/or field observations.

Field Reconnaissance

EDG performed limited field review of the Phase I and Phase II drainage areas. The purpose of the field review was to identify the potential of existing basins and drainage channels that could be improved in order to mitigate flooding and erosion concerns. Site visits were performed on August 2, 2017, September 14, 2017, June 5, 2018, July 31, 2018, and August 2, 2018. During the field reviews, the following information was observed:

- Basin compliance with as-built drawings, if available (a survey was not performed, and reconnaissance was performed from city access)
- Basin condition (e.g. maintenance), if observable (a survey was not performed, and reconnaissance was performed from city access)
- Channel Shape
- High water marks (elevation not taken in field)
- Evidence of water overflowing channel
- Channel erosion
- Culverts
- Obstructions

Mud Brook Tributary is an intermittent stream throughout most of the project area. There are sections with rocky and/or sediment laden beds, sections with standing water, sections with negative slopes (sloped to drain upstream, not downstream), and sections where the channel is not identifiable. The channel shape varied greatly along the entire length. Channel side slopes contrasted from sharp upright cutbanks to gently sloping banks, which made it difficult to identify the top of bank. The width of the channel bed varied. Throughout wooded areas, there were obstructions within the stream typically made up of fallen trees, leaves, debris, and rocks. In general, the stream channel was connected to a floodplain except in culverted areas.

Within southern sections of the tributary, there are large areas of floodplain denuded of vegetation or consisting of mown lawn. Riparian vegetation provides for increased flood control through root uptake, reduced erosion, and increased stream channel flow. These alterations increase erosion, decrease flood control and exacerbate sedimentation in Mill Pond. Photographs taken during field reviews are included in Appendix 3. After the detention basin photos, the tributary photos begin at the culvert under Hunter Parkway and move upstream.

Stakeholder Participation

EDG met with stakeholders for this project on numerous occasions to obtain more information and to share interim results of the study. EDG met with City officials on September 5, 2017, City officials and residents on November 17, 2018, City officials on March 14, 2018 and July 15, 2018, and with

commercial property owners on July 30, 2018 and August 16, 2018. A public meeting was held on October 4, 2017. Additionally, the City of Cuyahoga Falls also met with property owners and stakeholders on numerous occasions without EDG.

Existing Stormwater Basins

A total of 20 stormwater basins were investigated during this study and 14 of those basins were included within the hydrologic and hydraulic model. Figure 9 shows the locations of these basins and Table 1 summarizes the basins modeled for this study. Two basins were identified to be in noncompliance with their as built drawings. The details of this are describe later in this section and in Appendix 4. Photographs of the remaining basins included in the field investigations are included in Appendix 3.

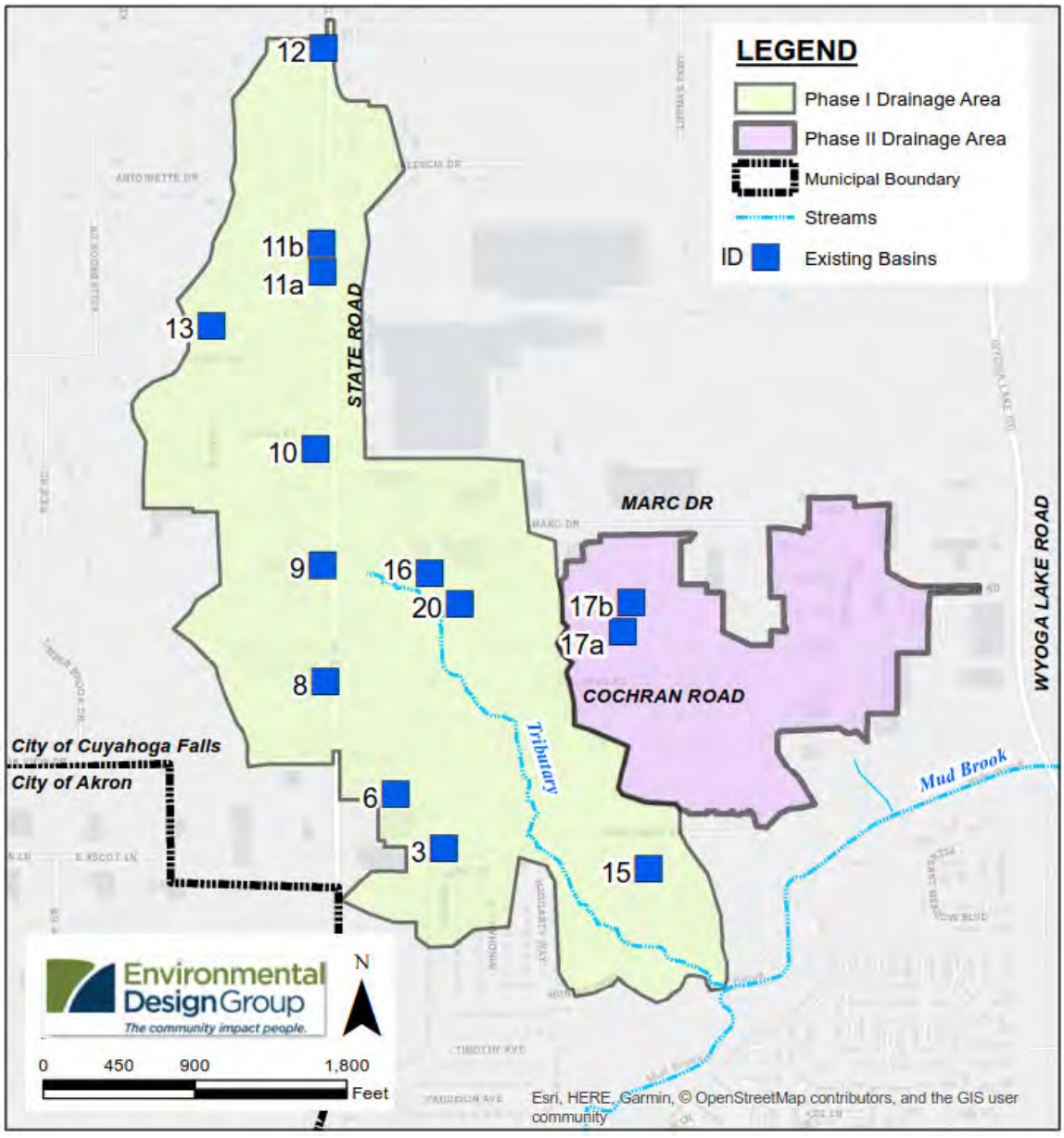

Figure 9. Existing Stormwater Basins

Model ID	Address (Parcel ID)	Model ID	Address (Parcel ID)
3	3457 State Road (3505280)	12	3934 State Road (3500841)
6	3499 State Road (3500776)	13	45 Chart Road (3506108)
8	3566 State Road (3504008)	15	(3505937)
9	3624 State Road (3501097)	16	60 Marc Drive (3504532)
10	(3506199)	17a	150 Marc Drive (3506220)
11a	(3501299)	17b	120 Marc Drive (3506221)
11b	(3501301)	20	70 Marc Drive (3506460)

Table 1. Existing Stormwater Basin locations

Basin at 150 Marc Dr (17a)

A field review was performed for the existing basin at 150 Marc Dr. Upon arrival to the site, it was noted that the basin had a permanent pool of water (Figure 10). Drawings provided by the City identified the basin as a dry basin. After visual inspection of the basin's outlet structure, it appeared that structure was not constructed as per plans. The water quality volume (WQv) orifice in the outlet structure was completely submerged with a permanent pool of water observed at the invert of what the detention orifice (determined due to its pipe size) shown in Figure 11. The invert of the outlet pipe was constructed at a higher elevation than the invert of the WQv orifice. Therefore, it was suspected that the basin was not constructed properly or not functioning properly. Measurements were taken from the permanent pool to the rim of the overflow structure (Figure 12) and of the detention orifice diameter (Figure 13) for reference.

Figure 10. Existing Detention Basin at 150 Marc Dr.

Figure 11. Submerged WQv Outlet

Figure 12. Measuring Elevation Difference (~1.83 ft) between Permanent Pool and Basin Overflow

Figure 13. Measuring Detention Orifice Diameter (~9.5 in)

After the field visit, preliminary calculations were performed to calculate the water quality, detention, and total basin storage volumes provided by the as built basin drawings versus the constructed basin. A summary of the calculations is shown in Table 2. The calculations were performed using the previous field measurements in conjunction with 2015 aerial imagery and contours developed from 2015 LIDAR. The permanent pool was determined to be approximately 15,630 SF and intersected the LIDAR data at an elevation of 1013.00. Based on field measurements, the overflow rim of the outlet structure was constructed 1.83 ft above the permanent pool (1014.83). LIDAR data indicated that the emergency spillway was constructed at approximately 1015.00, which is only 0.17 ft above the rim of the overflow. As shown in Table 2, the promissory volumes as per the plans are greater than the constructed basin. It is recommended that these promissory volumes of the basin be restored.

Storage component	Promissory volume (CF) as per the recorded Stormwater Report	Volume provided (CF) as per preliminary calculations
Total WQv	8,866	0
Total volume to overflow rim	40,307	31,546
Total volume to emergency spillway	49,590	34,778

Table 2. Comparison of Provided Volume vs Promised Volume

Basin at 120 Marc Drive (17b)

A field review was performed for the existing basin at 120 Marc Dr. (Figure 14). It was observed that the existing basin contained dense vegetation and that sediment was blocking the inlet and outlet pipes of the basin (Figures 15 and 16). The basin constructed at 150 Marc Drive relied upon the functionality of this basin. Based on these current observations, it is possible that stormwater from this development could be entering the adjacent basin untreated and undetained, which could negatively affect the observed performance of the basin at 150 Marc Dr. (17a). It is recommended that this basin also be repaired to promissory storage volumes.

Figure 14. Existing Detention Basin at 120 Marc Dr.

Figure 15. Clogged Inlet Pipe

Figure 16. Clogged Outlet Pipe

Hydrologic and Hydraulic Modeling Approach

The existing conditions hydrologic and hydraulic (H&H) model was created using the U.S. Environmental Protection Agency Stormwater Management Model (SWMM) version 5.1. Detailed calculations may be found in Appendix 5.

Hydrologic Modeling Data

Type II 24 hr SCS design storms were used for this project. Rainfall data for each design storm was obtained from the National Oceanic and Atmospheric Administration (NOAA) partial duration frequency server. This cumulative precipitation data was input into the SWMM model at 10-minute intervals. Models were run for the 1, 2, 5, 10 and 25-year storm events. The study areas were divided into a total of 27 subcatchments for Phase I and an additional 24 -subcatchments for Phase II to be included in the H&H model (Figure 17).

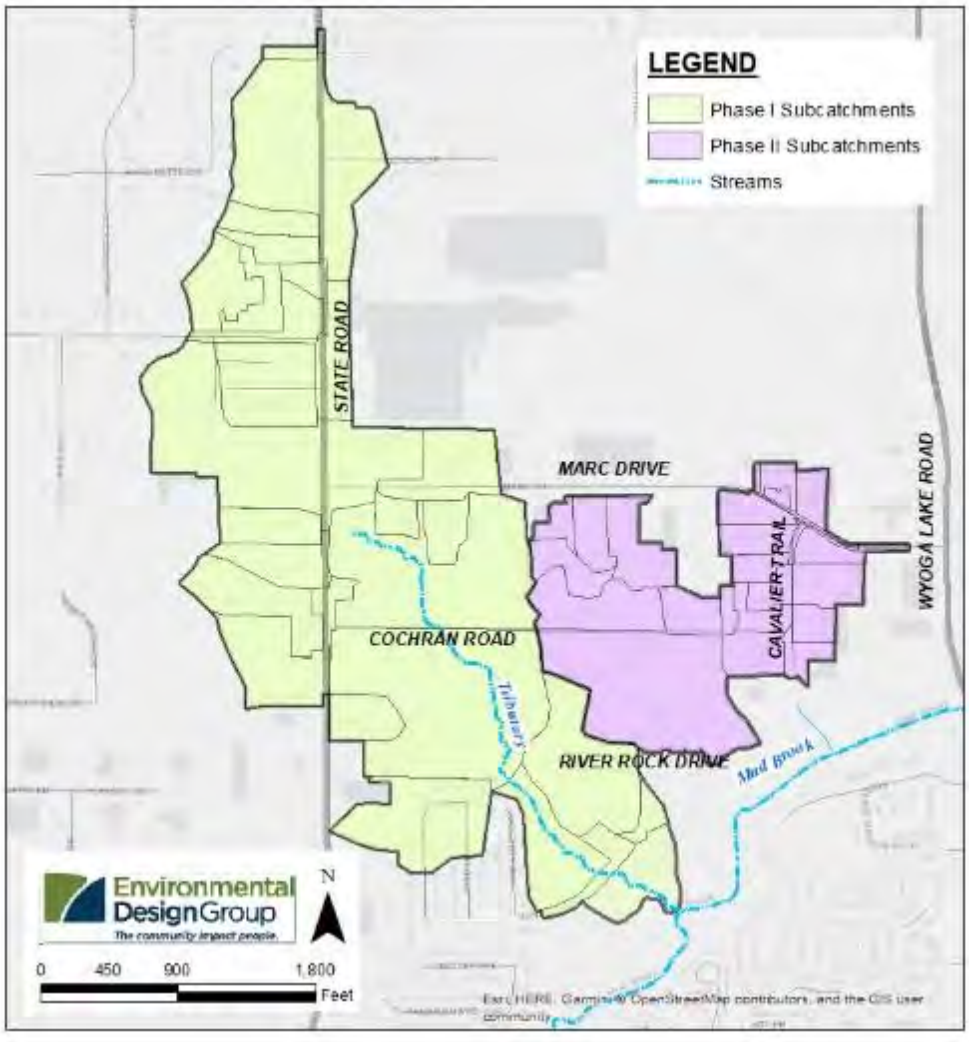

Figure 17. Modeled Subcatchments

The area, width, slope, roughness, depth of depression storage, and infiltration parameters were determined for each subcatchment and entered in SWMM.

Subcatchment boundaries were delineated using topographic information obtained from Summit County GIS database, from record drawings provided by the City of Cuyahoga Falls, and from field investigations.

Subcatchment widths were computed as the total subcatchment area divided by the subcatchment's average overland flow length. The average overland flow length for each subcatchment was determined from estimating multiple overland flow paths from aerials, topographic data, plans, and field observations.

The average slope for each subcatchment was determined by averaging the slopes of each previously determine overland flow path.

The National Resources Conservation Service (NRCS) Curve Number (CN) infiltration method was utilized to estimate the runoff hydrographs for each subcatchment because of its applicability to single-event design storm simulations. Factors that were required to determine the appropriate CN value included hydrologic soil group (HSG) and land cover type. HSG data were obtained for the study area from the NRCS Web Soil Survey and land cover type was estimated using 2015 aerial data for Summit County. CN values for the delineated land cover types were obtained from the NRCS's TR-55 manual (NRCS, 1986) and used to develop a composite CN value for each subcatchment by an area weighting method. The antecedent moisture condition was assumed to be normal.

Impervious surface roughness values were estimated as 0.01 and the pervious roughness coefficient was set to 0 as described in the SWMM hydrology reference manual. The depth of depression storage for impervious surfaces was assumed to be 0.05 and the depth of depression storage values for pervious surfaces was calculated as the initial abstraction (Ia) depth determined by the aforementioned CN method.

Hydraulic Modeling Data

Hydraulic model data for this project included stormwater basins and municipal storm sewer systems. Existing site storm sewers were not developed within this model, but several main sewer systems such as the Cavalier Trail sewer and the State Road sewer were included. Existing storm structure types, rims, inverts, and pipe connections/configurations were determined using record drawings provided by the City of Cuyahoga Falls and by field investigations. Pipe sizes, inverts, and material types were also determined from record drawings and/or field observations.

The 14 basins were modeled as storage units because of their simplicity. Parameters determined for each storage unit include invert elevation, maximum depth, initial depth, and tabular storage curves. Each basin outlet control structure, emergency spillway/overflow, and sewer outlet was also included in the model. This information was determined using GIS data, plans, and field observations.

City Stormwater Policy

The City of Cuyahoga Falls (City) currently has a Stormwater Policy to guide development for controlling stormwater peak flows and volumes. The policy was set forth to "protect health and safety by prevention of downstream flooding, erosion, storm sewer overloading and enhancement of storm water quality." The City reviewed other similar municipalities' stormwater policy/ordinances to determine if an update to the policy is recommended or the creation of a code would be beneficial.

Currently, the City's policy requests the development to:

- limit runoff peak flows of the 10-year post development to the 2-year predevelopment,
- discharge peak flows for the 25, 50 and 100-year storms at the corresponding predevelopment year rates,
- calculate the peak rate using the entire site,
- utilize the rational method for sites under two acres, and
- utilize Soil Conservation Service (SCS) method for larger sites.

Based upon review of other similar municipalities, it is recommended that the city enact an ordinance with measurable modeling goals and submittals. An ordinance or code can provide consistency that a policy cannot. Codes can also provide stipulations for flexibility to modify stormwater management for regional capacity. The city is considering revising their current policy with an ordinance.

III PROPOSED ALTERNATIVES

Based on the results of the existing conditions model, mapping, field investigations, and stakeholder input, 14 alternative options were developed for the known flooding and erosion problems. These alternatives are shown on Figure 18. The alternatives were ranked into immediate, short-term, and long-term projects based on impact, costs, land availability, and understanding of future development potential. A summary of the alternatives and associated costs are included in Table 3.

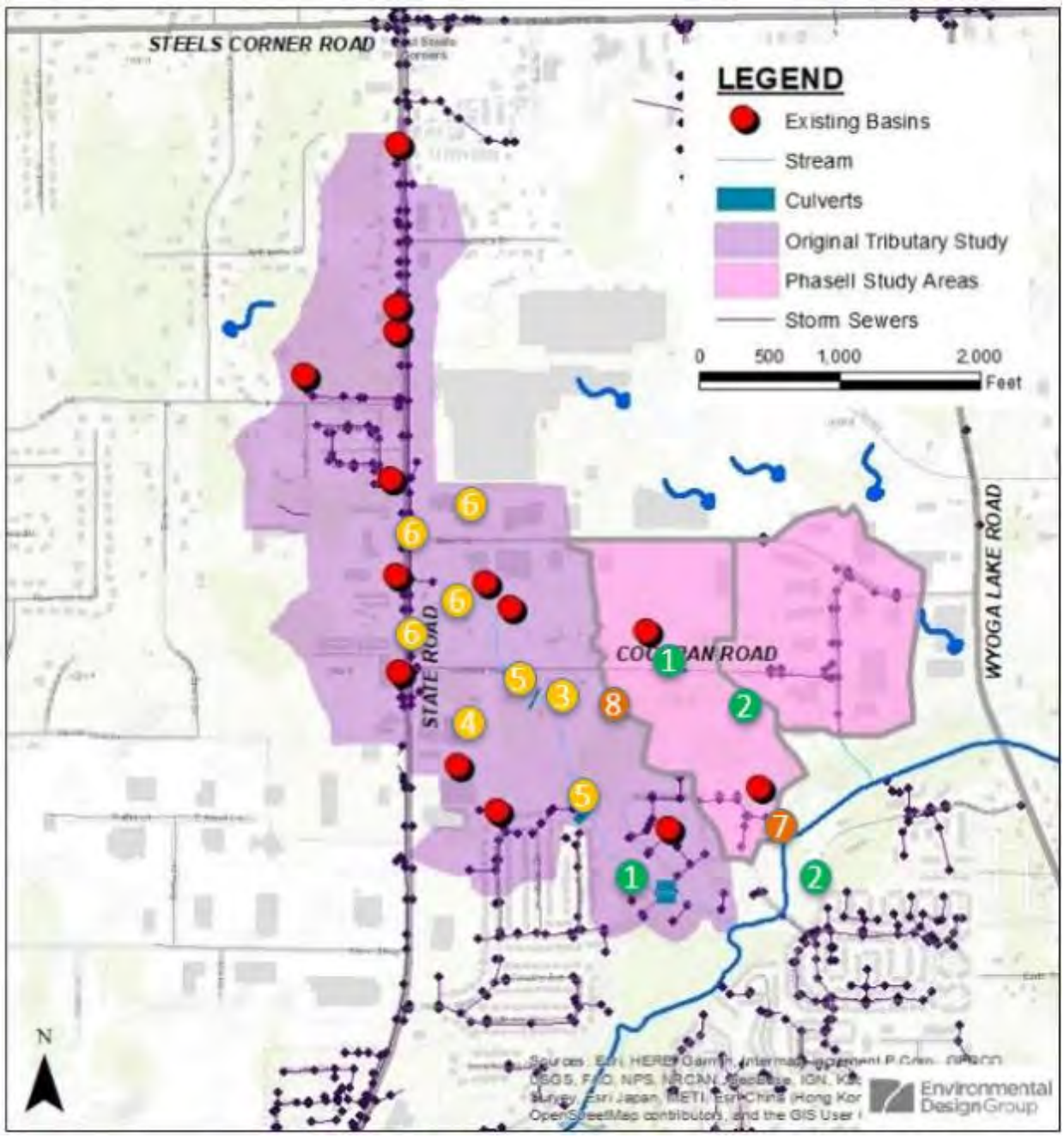

Figure 18. Proposed Alternatives

Alternative	Project Name	Project Cost
Immediate		
1a	Repair existing basins at 120 & 150 Marc Dr.	None
1b	The Dales/North Point Stream Restoration	~$60,000
2a	Cochran Road Ditches (Without Underground Storage)	$175,000 - $225,000
2b	Mud Brook Storage/borrow pit	Trail Grant
Short Term		
3	Cochran Road Ditches (With Underground Storage)	~$175,000
4	Cochran/State Basin	~$234,000
5a	Oxbow Wetland (North)	~$248,000
5b	Oxbow Wetland (South)	~$192,000
6	Detention Basin(s) – 4 Potential	$250,000 - $450,000
Long Term		
7	North Point Drainage Improvements	$35,000 - $150,000
8	Cochran Road Reconstruction	$350,000 - $450,000

Table 3. Proposed Alternatives

Immediate

Immediate alternatives had the simplest land opportunities, cost, and permitting issues. These projects either can be performed by private property owners, the existing trail grant, within existing city owned right-of-way or existing easements. Additionally, due to the small size or coordination with other projects, the permitting of these projects is relatively simple.

Alternatives 1a and 1b could occur concurrently.

Alternative 1a – Repair Existing Basin at 120 & 150 Marc Dr.

The existing detention basin at 150 Marc Dr. (Basin 17a), shown in Figures 19 and 20, fails to meet the stormwater storage requirements as promised in the stormwater report provided by the City of Cuyahoga Falls dated March 18, 2014 as prepared by Wohlwend Engineering Group. Also, the existing detention basin at 120 Marc Dr. (17b) appears to be full of sediment and vegetation. Stormwater discharges from both basins currently drain to the existing swale located by the properties at North Point at Hunter's Crossing, where frequent flooding is known to occur.

We recommend that the City require the owners to update the basins to meet the stormwater management performance permitted for their respective sites. These repairs should be made by the property owner. Repairs to these basins will provide some flood relief within Phase II drainage area. Repair could be completed in less than 3 months.

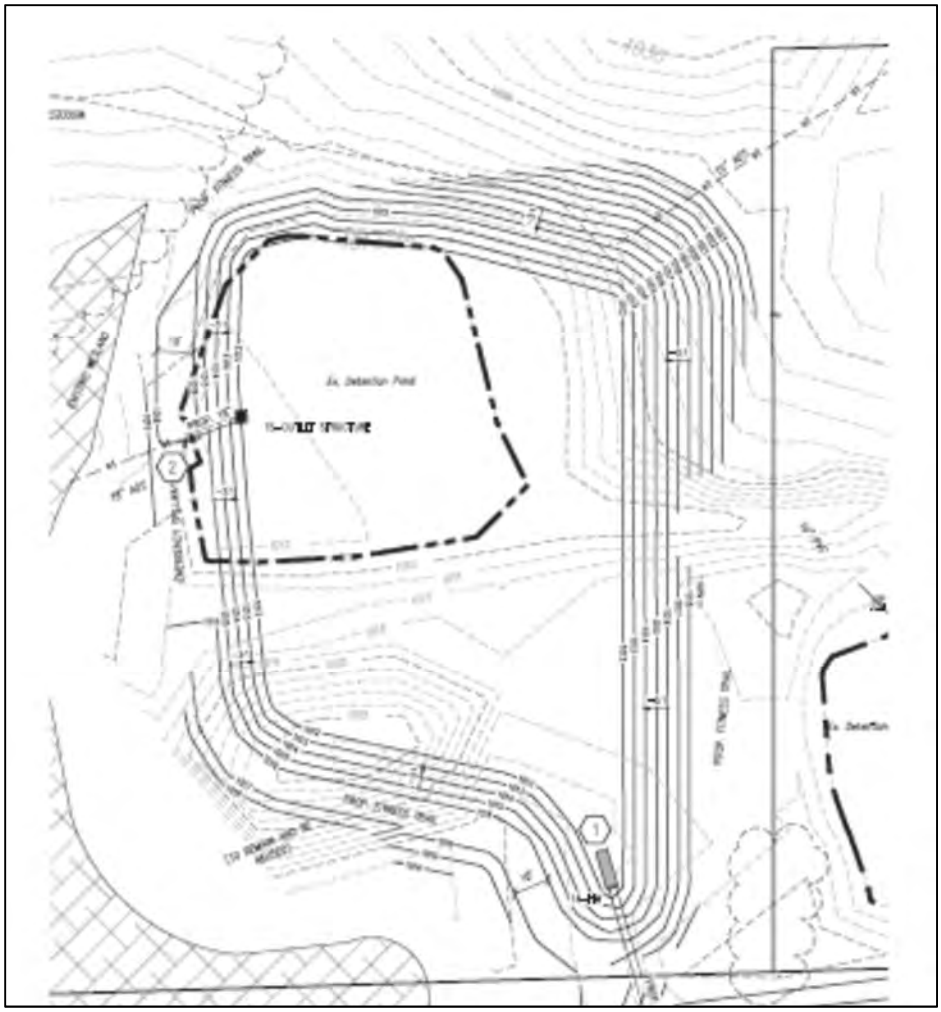

Figure 19. Basin at 150 Mark Dr.

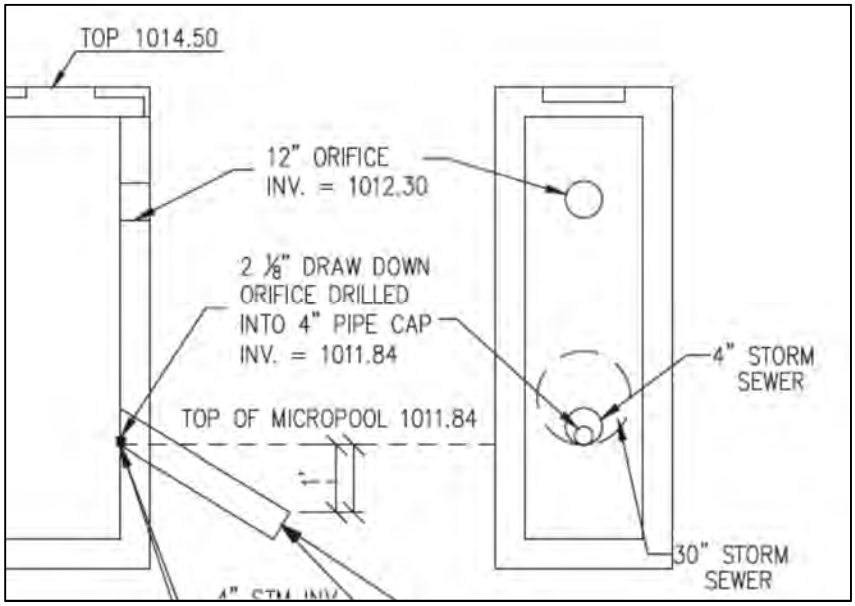

Figure 20. Outlet Structure at 150 Marc Dr. Basin

Alternative 1b – The Dales/North Point Stream Restoration

The tributary between the Dales and North Point downstream of an existing culvert is eroding and should be stabilized with energy dissipation to reduce future erosion. The project concept, shown in Figure 21, includes an energy dissipator at the outlet of the existing 30-inch pipe, rock channel protection around the pipe and spillway, and replanting the floodplain highlighted in green, which is currently bare earth with little to no protection against erosion. This project was bid in October 2018 and is expected to be completed by the end of 2018.

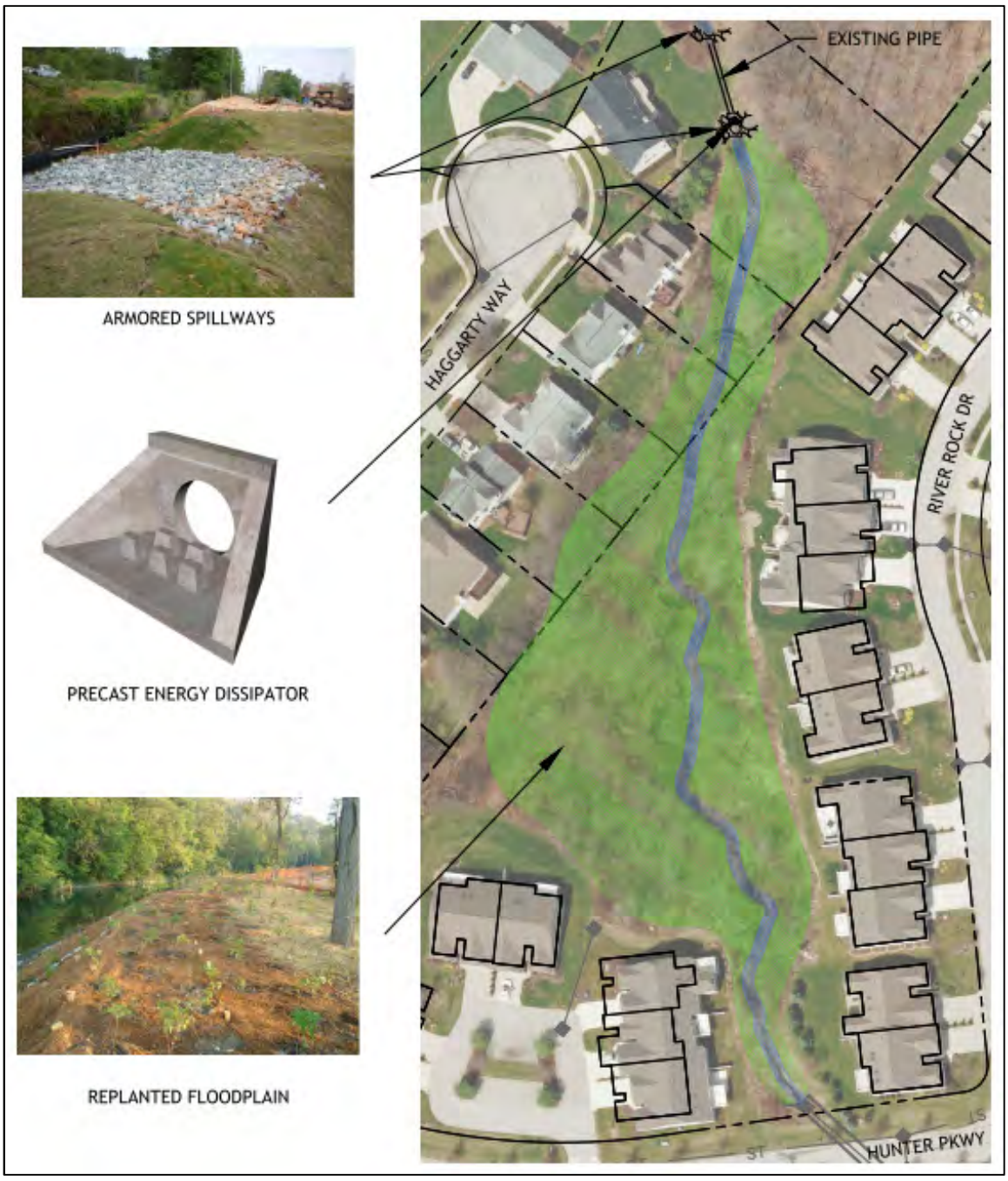

Figure 21. Alternative 1a

Alternative 2a – Cochran Road Ditches (Without Underground Storage)

This alternative, shown in Figure 22, involves constructing ditches east along the north and south side of Cochran Rd to reduce the amount of stormwater runoff that is currently draining to the swale located behind the North Point at Hunters' Crossing development within Phase II drainage area. The swales would be a phased piece of a long-term solution discussed below in Alternative 8. Ditches would convey stormwater to existing culvert pipes, that connect to the existing 42-inch culvert to Mud Brook. This conveyance option would increase the time of concentration of stormwater to Mud Brook but would be very quick to construct.

Figure 22. Alternative 1b.

Alternative 2b – Mud Brook Storage

Within the Mud Brook Trail and Greenway plan, it was identified that in order to meet ADA trail requirements, the trail alignment requires the use of soil to ramp up and down. The study identified the use of existing soils from the old Gun Club property owned by the City. This property would enable sufficient borrow soils to implement an ADA accessible trail. The soil borrow pit would not be refilled, but rather regraded and hydraulically connected to Mud Brook. This borrow pit would be planted with wetland vegetation to stabilize the excavated area. The site would provide for approximately 2 acre-feet of regional flood storage upstream of the backup at Bath Road culvert (Figure 23). This project has the potential to allow additional conveyance from the tributary. The project is currently funded as part of the trail grant (Clean Ohio Trail Fund). Without this funding, the project would be reclassified as a long-term solution.

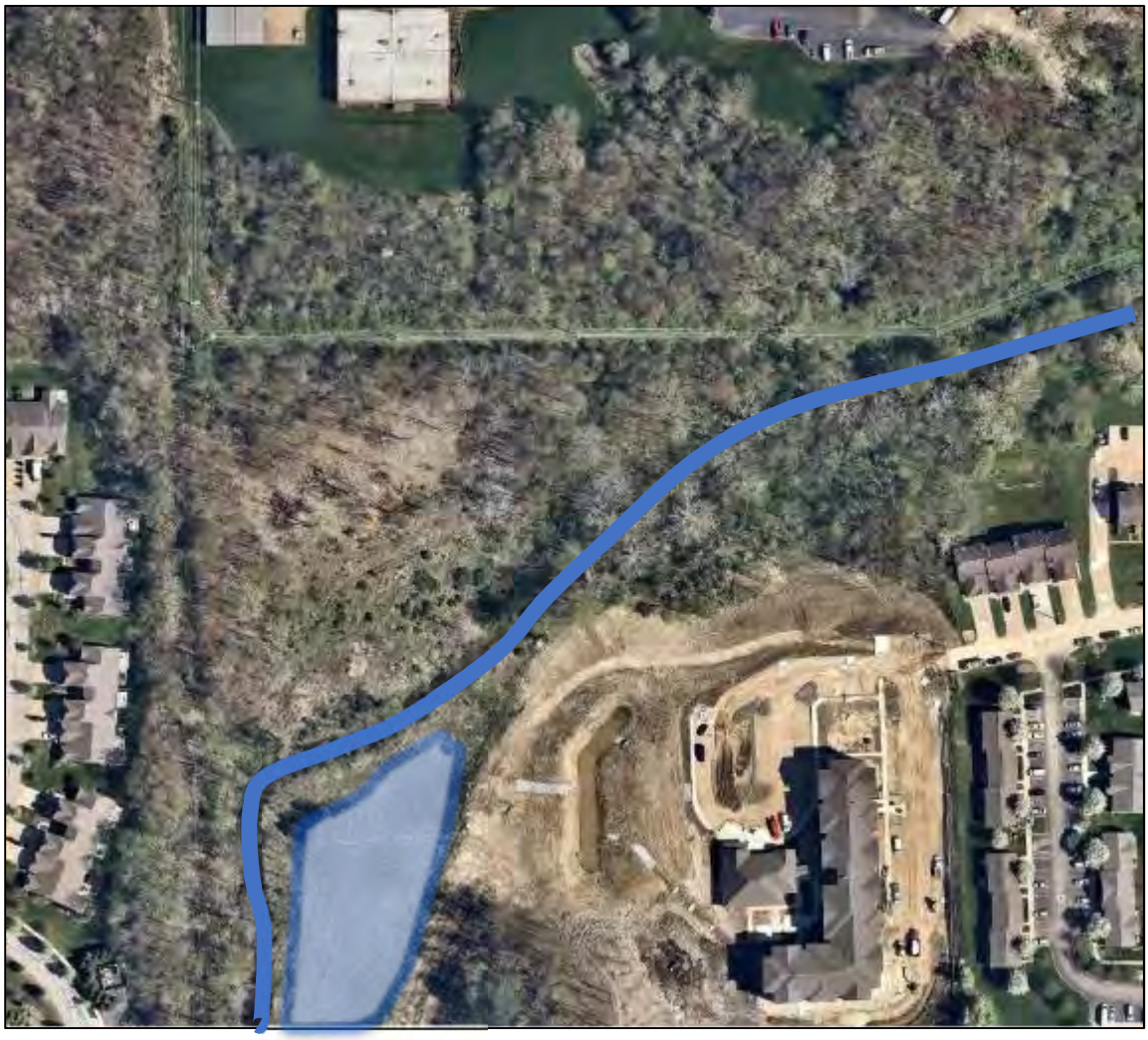

Figure 23. Alternative 2b

Short Term

Alternative 3 – Cochran Road Ditches (With Underground Storage)

This alternative, shown in Figure 24, involves constructing ditches east with underground storage, along the north and south side of Cochran Rd to reduce the amount of stormwater runoff that is currently draining to the swale located behind the North Point at Hunters' Crossing development. Underground storage would be placed within the right-of-way. Overflow would be connected to the existing culverts east of the property. This would involve phased construction and road closures.

Figure 24. Alternative 3

Alternative 4 – Cochran/State Basin

This alternative, shown in Figure 25, involves constructing a small detention basin in front of the existing City building near the intersection of State Rd and Cochran Rd. This basin could detain stormwater runoff from existing storm sewers along State Road. Outfall from the basin could be redirected to enhanced swales along Cochran if constructed as part of Alternative 2a or 3. Since the property is already owned by the City, project startup would be quicker than other alternatives. However, the project construction costs are larger than others. Work would need to occur within State Road right-of-way including catch basin modification.

Figure 25. Alternative 4

Alternative 5a – Oxbow Wetland (North)

North of Cochran Road is an existing wetland area that could be enhanced to include an oxbow wetland as shown in Figure 26. Oxbow wetlands provide for additional habitat and stormwater storage along stream channels. This location could provide storage along the existing stream channel. The project could utilize the nationwide 27 permit to perform construction on private property.

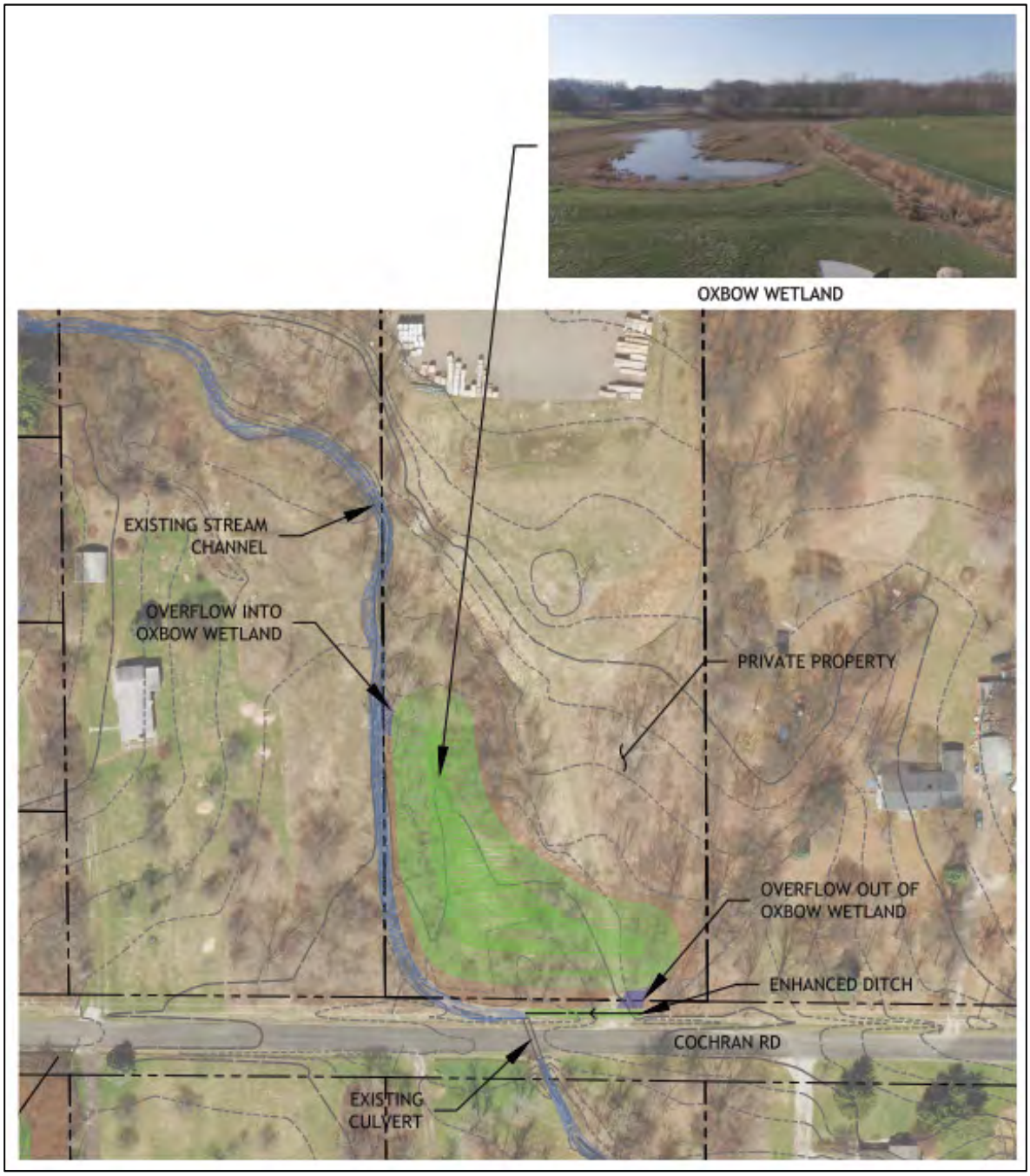

Figure 26. Alternative 5a

Alternative 5b – Oxbow Wetland (South)

South of Cochran Road, also along the stream channel and within private property, there is an opportunity to construct an oxbow wetland, shown on Figure 27. The private property owner is currently expanding the front of their building and moving parking toward State Road (to the west). A water quality basin will be constructed as a part of these improvements to manage the new impervious surfaces. EDG reviewed two different plans for the proposed water quality basin and provided feedback to the City, as documented in Appendix 6. An oxbow wetland could be used to detain and clean stormwater entering the stream channel from the large private property roof structure and excess flow directly from the channel. This location could provide storage along the existing stream channel. The project could utilize the nationwide 27 permit to perform construction on private property.

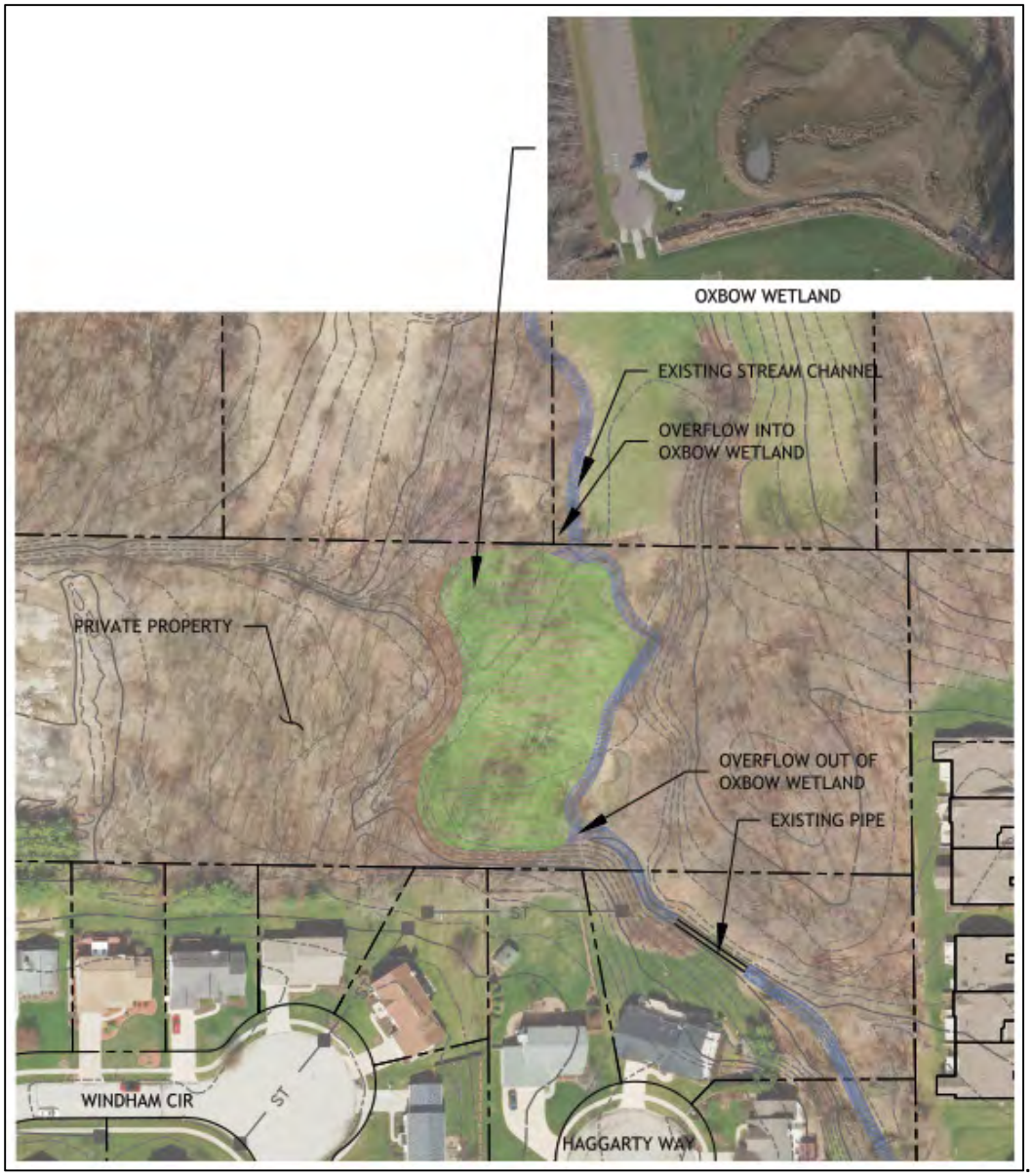

Figure 27. Alternative 5b

Alternative 6 – Detention Basin(s)

Within the upper portion of the Phase I drainage area are numerous opportunities for smaller detention basins, as shown on Figure 28. These basins range in sizes. Areas for these basins were identified as underutilized land or the potential to capture and control large impervious surfaces. Each of these basins require similar land acquisition issues, permits, construction duration and construction costs. Therefore, each of these potential locations provide equal opportunity.

Figure 28. Alternative 6

Long Term

Alternative 7 – North Point Drainage Improvements

This alternative involves improving the drainage system for the swale located behind the North Point at Hunters' Crossing development on private property. Potential improvements include removing the existing structure and pipe currently draining the swale behind the North Point at Hunters' Crossing development, shown on Figure 29, and continuing the existing swale to where the sewer currently outfalls. This alternative could potentially work in conjunction with alternative 2b to detain additional stormwater runoff in the proposed floodplain wetland at the old gun club. This alternative would potentially cost $35,000 to $150,000, however would require coordination with the old Gun Club environmental cleanup. Currently, the northern portion of the old Gun Club is contaminated from gunshot and would require clean up prior to introducing water which may leach contamination into Mud Brook. The City is actively applying for grants to clean up this site. Coordination with this cleanup work would be cost effective.

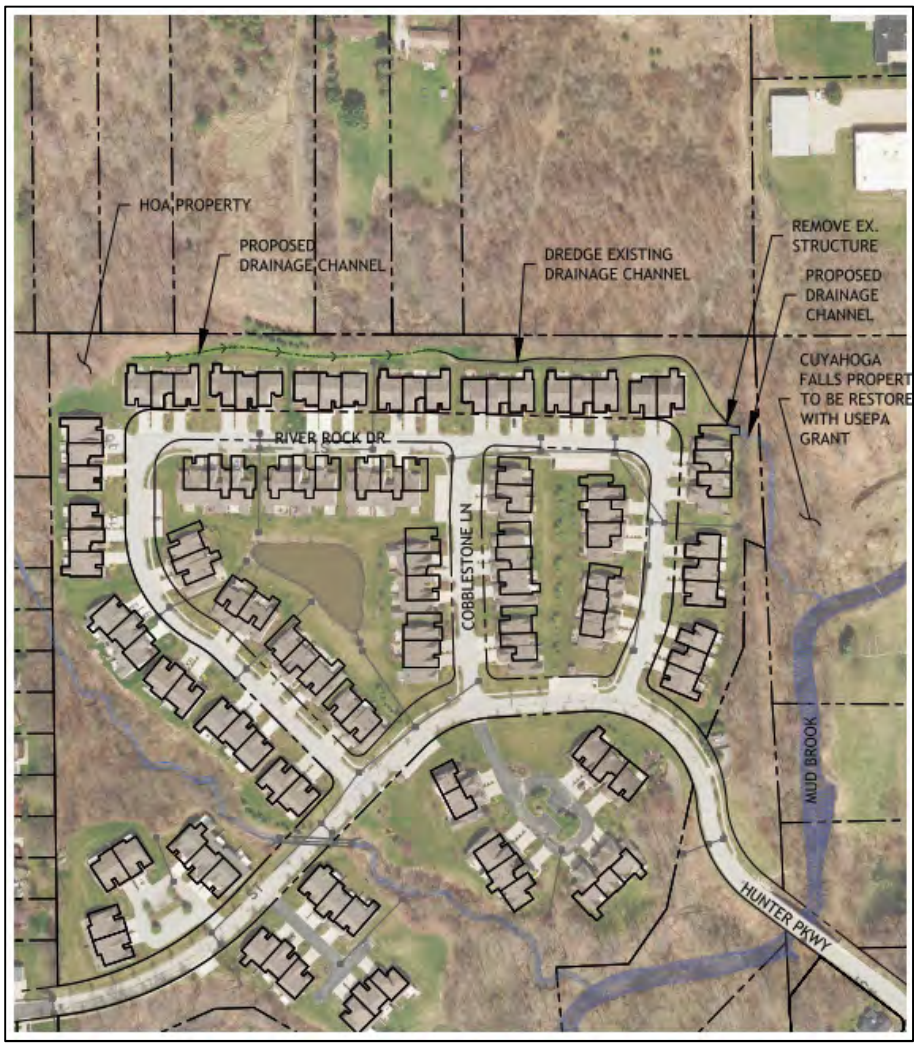

Figure 29. Alternative 7

Alternative 8 – Cochran Road Reconstruction

This alternative would involve reconstruction a large portion of Cochran Rd to convey and control stormwater from current and future developments. A fully functional storm sewer system would be constructed in this alternative to convey stormwater to the existing 42" storm sewer at Cavalier Trial, ultimately reducing the amount of stormwater draining to the swale located behind the North Point at Hunters' Crossing development. This alternative would potentially cost $350,000 to $450,000. A potential funding source for this project would be the Ohio Public Works Commission (OPWC) grant. An example of underground storage that could be placed under the reconstructed road is shown in Figure 30.

Figure 30. Alternative 8

V CONCLUSIONS AND RECOMMENDATIONS

As stated previously, there are numerous private and public projects that can be constructed to improve flood control within the two study drainage areas and citywide.

1) The city should enact a stormwater code to include modeling volumes. This can include more stringent modeling requirements for the Mud Brook and other flood prone watersheds.
2) Private property owners and the City should protect and enhance existing riparian vegetation. This vegetation can provide for significant erosion control within the Phase I project area.
3) Private property basins should be restored to promissory storage volumes. This should occur as soon as possible.
4) Storage areas should be created as the opportunity arises as per the prioritization identified within this document. However, the priority of this document should be revisited with new development, new regulation changes and property ownership changes.