BUCKEYE CROSSING
LOCATED IN THE CITY OF MASSILLON
STARK COUNTY, OHIO

PLAN APPROVALS

APPROVED BY THE CITY OF MASSILLON ENGINEER
THIS 12th *DAY OF* JULY, *20*06.

KAD
CITY OF MASSILLON ENGINEER - KEITH A. DYLEWSKI

SANITARY SEWER PERMIT-TO-INSTALL HAS BEEN RECEIVED FROM THE OHIO EPA
THIS ____ DAY OF ______________, 20____.

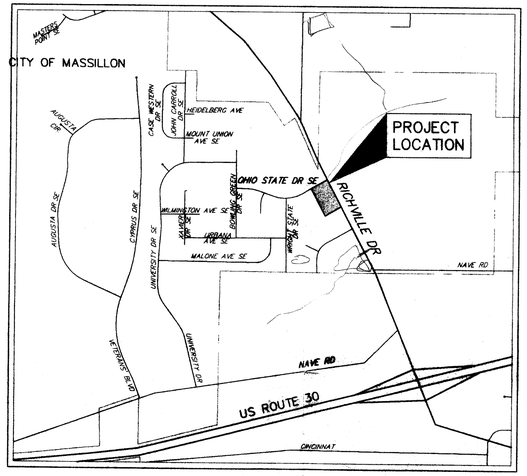
WATERLINE IS APPROVED BY AQUA OHIO
THIS 5 *DAY OF* JULY, *20*06.

Donald L. Snyder
AQUA OHIO

I HEREBY CERTIFY THAT THESE IMPROVEMENTS HAVE BEEN COMPLETED, AS INDICATED BY THE "AS-BUILT" DIMENSIONS SHOWN ON THESE PLANS.

THIS _____ DAY OF ________________, 20____.

BRYAN J. ASHMAN
REGISTERED ENGINEER No. E-043804



LOCATION MAP

LATITUDE: 40°46' LONGITUDE: 81°29'

INDEX OF SHEETS

OWNER

TOBIN ENTERPRISES INC.
7694 STRAUSSER ST NW
NORTH CANTON, OHIO 44720
CONTACT: FRED TOBIN
PHONE: 330-497-9744
FAX: 330-497-9006

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE **800-362-2764**
OHIO UTILITIES PROTECTION SERVICE

ESTIMATED QUANTITIES

ITEM	QTY.	UNIT	DESCRIPTION
			SANITARY SEWER
603	624	L.F.	6" SANITARY SEWER PIPE (LATERALS)
603	341	L.F.	8" SANITARY SEWER PIPE
603	14	EACH	8" x 6" WYES
604	10.23	V.F.	(2) SANITARY MANHOLES, SHALLOW TYPE (COMPLETE)
604	11.41	V.F.	(1) SANITARY MANHOLES, TYPE 3, CONSTRUCTED ONLINE (COMPLETE)
603	60	L.F.	8" SANITARY SEWER IN 16" STEEL CASING PIPE BORED
			WATER WORKS
638	212	L.F.	8" WATER MAIN, DUCTILE CAST IRON, CLASS 350 W/POLYWRAP
638	1	EACH	12"x8" TAPPING SLEEVE & VALVE
638	2	EACH	1 1/2" COPPER TYPE-K SERVICE LINE W/CURB BOX COMPLETE
638	1	EACH	HYDRANT ASSY COMPLETE TYPE M A
			MISCELLANEOUS
609	70	L.F.	CONCRETE CURB (TYPE 6; ODOT BP-5.1)

NOTE: STORM QUANTITIES PER SITE PLAN

GENERAL NOTES

1.) CONTRACTOR SHALL CHECK DETAIL DRAWINGS FOR MINIMUM GRADE AND BACKFILL REQUIREMENTS.

2.) ALL MANHOLES TO BE ADJUSTED TO GRADE WHERE NECESSARY.

3.) ALL CONCRETE TO BE 1:2: 4-6 BAG MIX. 28 DAY - 3000 PSI COMPRESSIVE STRENGTH: MAX. SLUMP TO BE 4".

4.) CONTRACTOR SHALL PAY INSPECTOR(S) AT THE RATE OF TIME AND ONE-HALF OF REGULAR RATE AFTER 4:00 P.M. MONDAY through FRIDAY. SATURDAYS ALL DAY AT TIME AND ONE-HALF.

5.) ALL MATERIALS USED WILL BE NEW - NO SALVAGED MATERIAL WILL BE ACCEPTED EXCEPT CASINGS, AS APPROVED.

6.) IF SUBGRADE IS UNSUITABLE, CONTRACTOR WILL EXCAVATE AND REPLACE SUCH MATERIAL WITH CRUSHER RUN GRAVEL, AT THE DISCRETION OF THE INSPECTOR OR CITY ENGINEER. THIS FILL TO BE PLACED IN 6" LAYERS OR LESS. SAID FILL TO BE COMPACTED TO 95% LABORATORY DRY WEIGHT BEFORE ADDITIONAL LAYERS ARE ADDED. CONTRACTOR WILL BE PAID FOR EXTRA GRAVEL AND EXCAVATION. THIS COMPACTION TO BE DONE BEFORE FORMS ARE PLACED.

7.) ALL EXTRA PAY ITEMS WILL HAVE THE APPROVAL OF THE BOARD OF CONTROL BEFORE EXTRA ITEMS ARE INSTALLED.

8.) CONTRACTOR WILL NOTIFY ENGINEER WHEN HE IS IN NEED OF CONSTRUCTION STAKES AND THIS OFFICE WILL COMPLY WITHIN A PERIOD OF 48 HOURS.

9.) CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES BEFORE ANY WORK IS BEGUN. THE CITY OF MASSILLON IS NOT RESPONSIBLE FOR ANY LOST TIME DUE TO UTILITY RELOCATION.

10.) MANHOLES SHALL BE CONSTRUCTED IN CONFORMANCE WITH MASSILLON CITY STANDARDS (FILE No. M-81) AVAILABLE FROM THE CITY ENGINEER.

11.) CONTRACTOR SHALL CONTACT THE CITY OF MASSILLON ENGINEERING DEPARTMENT (GREG McCUE) AT (330)830-1722 AT LEAST 2 DAYS PRIOR TO THE INITIATION OF CONSTRUCTION TO SCHEDULE A PRE-CONSTRUCTION MEETING.

12.) CONTRACTOR SHALL NOTIFY COOPER & ASSOCIATES, LLP UPON COMPLETION OF SANITARY SEWER CONSTRUCTION. COOPER WILL THEN ACQUIRE AS BUILT DATA & SUBMIT TO CITY OF MASSILLON.

SANITARY SEWER NOTES

1.) ALL SANITARY SEWERS AND APPURTENANCES SHALL BE CONSTRUCTED ACCORDING TO MASSILLON CITY ENGINEERING DEPARTMENT SPECIFICATIONS IN EFFECT AT THE TIME OF CONSTRUCTION.

2.) ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.

3.) FIRST FLOOR ELEVATION FOR BUILDING AT THE BUILDING SETBACK LINE SHALL BE A MINIMUM OF 6" ABOVE STREET CENTERLINE GRADE.

4.) MINIMUM COVER OVER ALL SANITARY SEWER MUST BE 3.0 FEET.

5.) ALL SANITARY SEWERS, 8" DIAMETER AND LARGER, MUST PASS INTERNAL TELEVISION INSPECTION. THE CONTRACTOR SHALL PROVIDE COMPLETE INTERNAL INSPECTION VIDEOTAPE TO THE MASSILLON SANITARY ENGINEERING DEPARTMENT. THE VIDEOTAPING PROCEDURE MUST BE IN ACCORDANCE WITH MASSILLON SANITARY ENGINEERING DEPARTMENT SPECIFICATIONS.

6.) PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE CITY OF MASSILLON ENGINEERING DEPT., (330-830-1722) TO SCHEDULE A PRE-CONSTRUCTION MEETING. A MINIMUM OF 3 DAYS NOTICE IS REQUIRED TO SCHEDULE THIS MEETING.

7.) SANITARY SEWER MAY BE ANY OF THE FOLLOWING MATERIALS, HOWEVER THE COMPLETE SYSTEM MUST BE UNIFORM IN PIPE MATERIAL:
  A. V.C.P. EXTRA STRENGTH A.S.T.M. C-700 WITH COMPRESSION TYPE JOINTS IN CONFORMANCE WITH A.S.T.M. C-425.
  B. A.B.S. COMPOSITE PIPE A.S.T.M. D-2680 WITH CHEMICALLY WELDED PREMIUM JOINTS ASTM D-[illegible]
  C. P.V.C. PIPE A.S.T.M. D-3034,S.D.R. 35 MAXIMUM WITH GASKETED PREMIUM JOINTS ASTM D-3212. BEDDING PER ASTM-2321.

8.) A BULKHEAD SHALL BE CONSTRUCTED IN THE EXISTING MANHOLE AT THE ENTRANCE OF THE PROPOSED SEWER PIPE AND REMAIN IN PLACE UNTIL THE NEW SEWER LINE IS COMPLETE, TESTED AND APPROVED BY THE MASSILLON CITY ENGINEER, AT WHICH TIME THE BULKHEAD SHALL BE REMOVED.

9.) LEAKAGE LIMIT TEST TO BE 100 GAL/IN/MI/DAY.

10.) MANHOLE AND TRENCHES SHALL BE PER MASSILLON DETAILS DRAWINGS.

11.) SANITARY SERVICE LATERALS SHALL EXTEND INTO THE LOT 10' BEYOND R/W OR BEYOND FURTHEST UTILITY LINE - WHICHEVER IS GREATER.

WATERLINE NOTES

1.) THE WATER LINE SHALL BE INSTALLED SO THAT 4'-0" OF COVER, FROM GRADE TO THE TOP OF THE WATER LINE, IS MAINTAINED AS A MINIMUM.

2.) WATER LINE MATERIALS AND INSTALLATION PROCEDURES SHALL MEET OR EXCEED ALL APPLICABLE A.W.W.A. STANDARDS INCLUDING, BUT NOT LIMITED TO, C600 AND C651.

3.) THE CONTRACTOR SHALL CAREFULLY LAY OUT THE WATER LINE AND ALL RELATED FACILITIES TO ENSURE THAT THEY ARE LOCATED WITHIN THE PUBLIC RIGHT-OF -WAY AND/OR DESIGNATED UTILITY EASEMENTS AS INDICATED ON THE DRAWINGS.

4.) MEGALUG RETAINERS REQUIRED AT ALL FITTINGS.

5.) THE PROPOSED FACILITIES WILL MAINTAIN A MINIMUM PRESSURE OF 35 P.S.I. DELIVERED TO THE CURB STOP DURING NORMAL OPERATING CONDITIONS.

6.) BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS. AQUA OHIO MAY GRANT SPECIAL PERMISSION FOR BUILDINGS SIX STORIES AND HIGHER.

7.) A TYPE 1 TRENCH SHALL BE USED AND BACKFILLED WITH EXCAVATED MATERIAL PROVIDED THAT SAID MATERIAL CONSISTS OF LOAM, CLAY, SAND, GRAVEL, OR OTHER SUITABLE MATERIAL. BACKFILLING FOR ROAD AND DRIVEWAY CUTS SHALL BE, AS A MINIMUM, ODOT 304 AGGREGATE (PROPERLY COMPACTED), OR AS SPECIFIED BY THE LOCAL JURISDICTION.

8.) WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY SANITARY SEWERS OR SEWER MANHOLE, AND AT LEAST 5 FEET HORIZONTALLY FROM ANY STORM SEWERS OR STRUCTURES. THE DISTANCE SHALL BE MEASURED FROM EDGE TO EDGE.

9.) AN 18 INCH VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN SANITARY SEWERS AND WATER MAINS, MEASURED BETWEEN THE OUTSIDE PIPE WALLS. A 12 INCH VERTICAL CLEARANCE IS REQUIRED BETWEEN WATER MAINS AND STORM SEWERS, MEASURED BETWEEN THE OUTSIDE PIPE WALLS. THE STORM SEWER MAY CROSS EITHER ABOVE OR BELOW THE WATER MAIN.

10.) ALL PIPE JOINTS WITHIN 36 FT. OF ANY DEAD END SHALL BE RESTRAINED BY USING FIELD LOCK GASKETS IN PUSH-ON JOINTS OR RETAINER GLANDS (MEGALUGS) ON MECHANICAL JOINTS. IN ADDITION, POURED-IN-PLACE CONCRETE THRUST BLOCKS SHALL BE PROVIDED PER AQUA OYIO SPECIFICATIONS TO PREVENT MOVEMENT OF THE WATERLINE.

11.) ALL DUCTILE PIPE, FITTINGS AND VALVES SHALL BE ENCASED IN POLYETHYLENE ENCASEMENT (POLYWRAP) IN A WORKMANLIKE MANNER WITH JOINTS TAPED PER AQUA OHIO SPECIFICATIONS.

12.) WATER SERVICES SHALL EXTEND 10' INTO THE LOTS OR BEYOND FURTHEST UTILITY, WHICHEVER IS GREATER, WITH THE CURB BOX INSTALLED 4' BEHIND BACK OF CURB. THE AQUA OHIO POINT OF DELIVERY IS THE OUTLET SIDE OF THE CURB STOP.

SEWERAGE
APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
AS EVIDENCED BY COPY OF LETTER OF APPROVAL HERETO ATTACHED

RECEIVED
JUL 24 2006

REVISIONS

△	MASSILLON COMMENTS	MJS	5/18/06
△			
△			
△			
△			
△			
△			

BRYAN J. ASHMAN
JEROLD E. GEIB

COOPER & ASSOCIATES, LLP
ENGINEERS AND SURVEYORS
PHONE (330) 452-5731
FAX No.(330) 452-8110

1301 MARKET
AVENUE NORTH
CANTON, OHIO
44714

BRYAN ASHMAN E-043804 7-10-06

TITLE, NOTES AND QUANTITY SHEET
BUCKEYE CROSSING
FOR: TOBIN ENTERPRISES INC.

DRAWN BY: MJL
CHECKED BY: BJA
FIELD BOOK No. ______
DATE: 4/13/06

SHEET
1 OF 4

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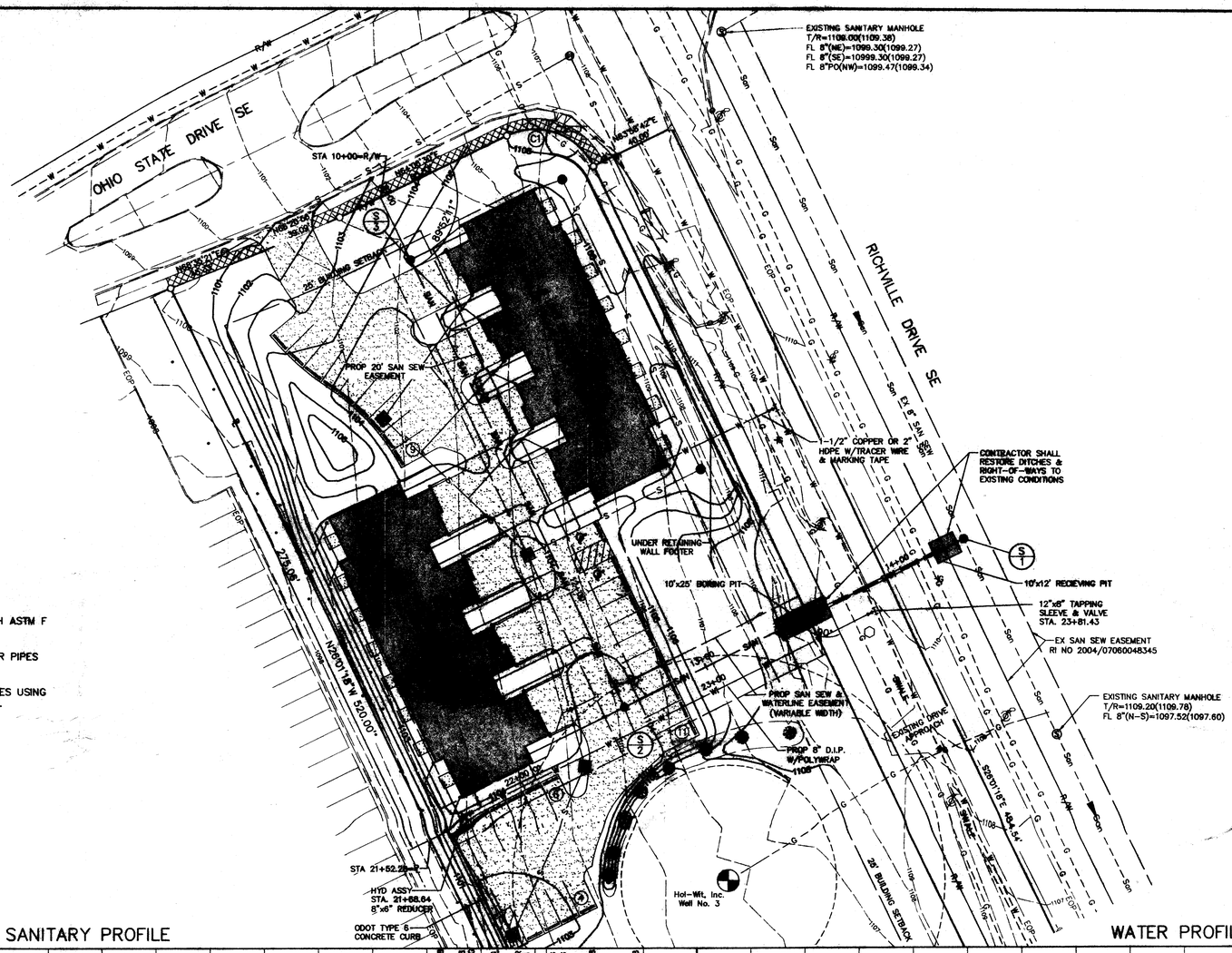


WYE LOCATION FOR 6" SANITARY LATERAL	
LATERAL STATION	LENGTH
12+28.81, RT	10.00'
12+20.81, RT	10.00'
11+95.39, RT	10.00'
11+87.39, RT	10.00'
11+62.65, LT	10.00'
11+61.98, RT	10.00'
11+53.98, RT	10.00'
11+35.23, LT	10.00'
11+27.23, LT	10.00'
11+25.23, RT	10.00'
11+01.81, LT	10.00'
10+93.81, LT	10.00'
10+68.40, LT	10.00'
10+60.40, LT	10.00'

SANITARY SEWER NOTES
ADDITIONAL SANITARY NOTES (SEE SHEET 1)

1.) ALL SANITARY SEWER PIPES SHALL BE TESTED IN ACCORDANCE WITH ASTM F 1417.

2.) DEFLECTION TESTING SHALL BE PERFORMED ON ALL SANITARY SEWER PIPES IN ACCORDANCE WITH ASTM D3034.

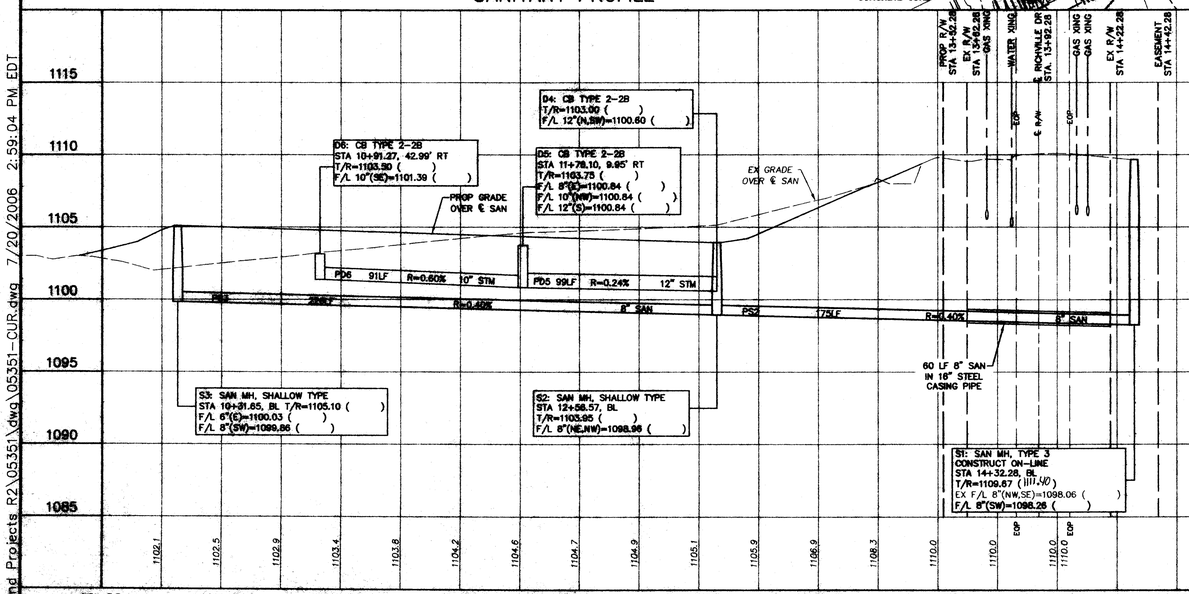
3.) LEAKAGE TESTING SHALL BE PERFORMED ON ALL SANITARY MANHOLES USING THE NEGATIVE AIR TEST METHOD IN ACCORDANCE WITH ASTM C1244.

BENCHMARK:

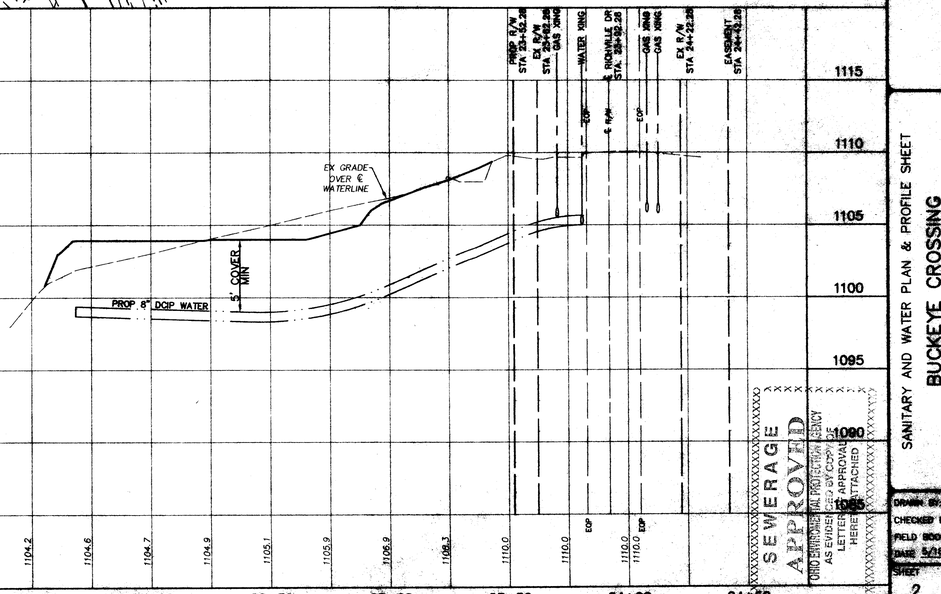
60d NAIL FD 1' UP SOUTH OF OE Co POLE 2719-4 LOCATED @ THE N.E. CORNER OF RICHVILLE DR S.E. & NAVE RD S.E.

ELEVATION = 1098.23

SANITARY PROFILE



WATER PROFILE



SANITARY AND WATER PLAN & PROFILE SHEET

REVISIONS
5/19/06 MASSILLON COMMENTS

COOPER & ASSOCIATES, LLP
ENGINEERS AND SURVEYORS
BRYAN J. ASHMAN
JEROLD E. GEIB
PHONE (330) 453-5731
FAX NO (330) 453-4110

SANITARY AND WATER PLAN & PROFILE SHEET
BUCKEYE CROSSING
LOCATED IN THE CITY OF MASSILON
STARK COUNTY, OHIO
FOR: TOBIN ENTERPRISES INC.

SEWERAGE APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
AS EVIDENCED BY COPY OF LETTER OF APPROVAL ATTACHED HERETO

DRAWN BY: NDL
CHECKED BY: BJA
FIELD BOOK No.
DATE 5/19/2006
SHEET 2 OF 4
PROJ# 05351

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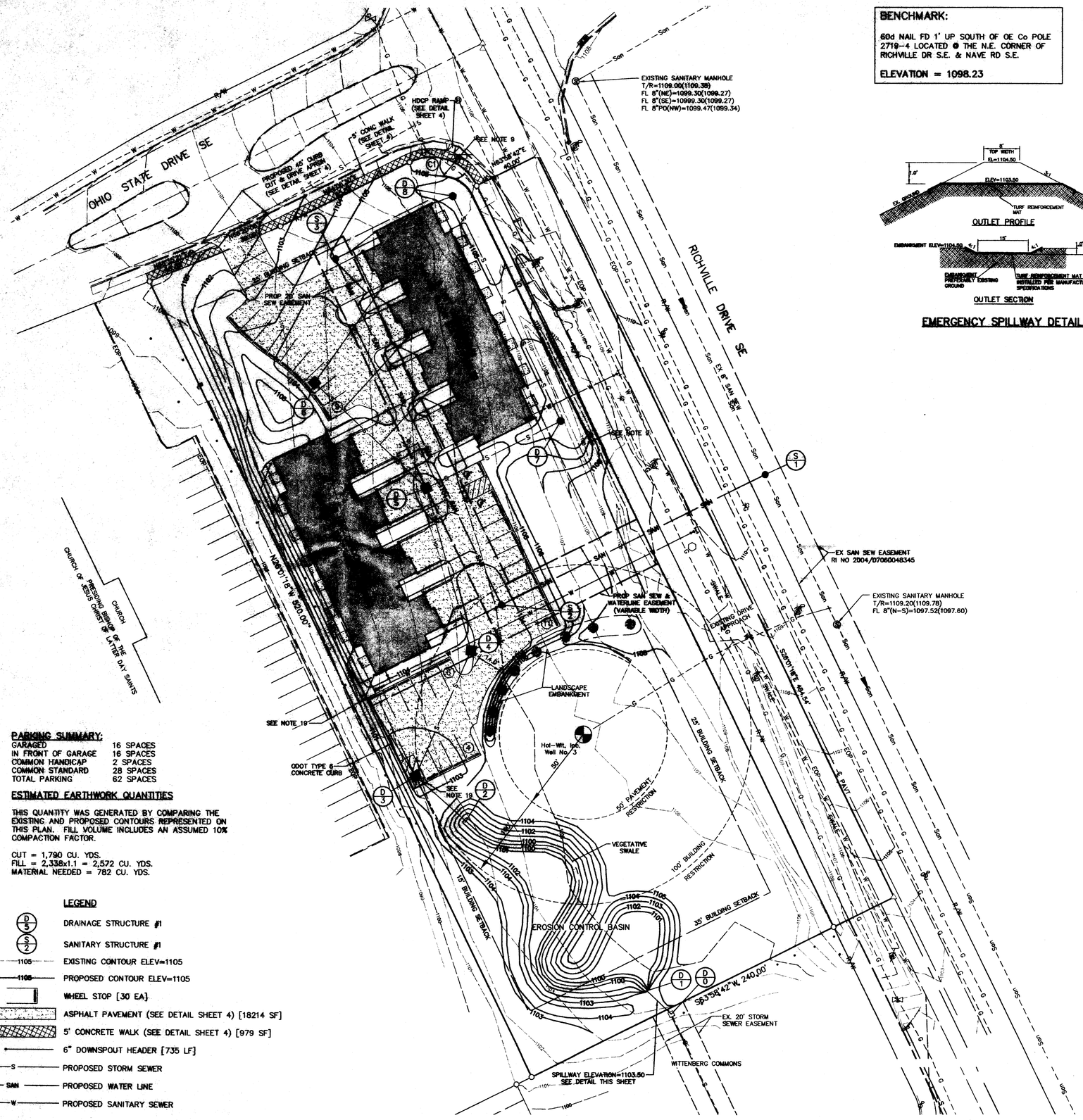
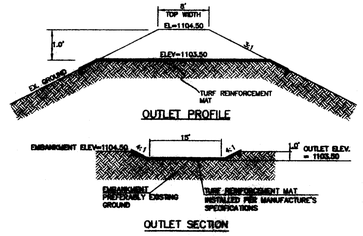


BENCHMARK:

60d NAIL FD 1' UP SOUTH OF OE Co POLE 2719-4 LOCATED @ THE N.E. CORNER OF RICHVILLE DR S.E. & NAVE RD S.E.

ELEVATION = 1098.23

(C1) CURVE DATA
Δ = 89°52'11"
R = 30.00'
L = 47.06'
T = 29.93'
CH = 42.38'
CH BRG = N70°57'24"W



EMERGENCY SPILLWAY DETAIL

STORM SEWER DATA

D0: EX CATCH BASIN
T/G=1003.29
EX FL 12"(SE)=1099.39
PROP FL 12"(NW)=1099.39
(CORE DRILL CONNECTION)
EX PD0:12" STM R=3.27%

D1: PRE-MANUFACTURED TAPERED INLET(NON PERFORM UNTIL EROSION CONTROL BASIN REMOVED)
FL 12"(SE)=1099.47

PD1: 20 LF 12" STM R=0.42%

D2: PRE-MANUFACTURED TAPERED OUTLET
FL 12"(NW)=1100.11

D3: STM CB, ODOT 2-2B
T/G=1102.50
FL 6"(NW)=1100.28
FL 12"(NE,SE)=1100.28

PD3: 40 LF 12" STM R=0.42%

D4: STM CB, ODOT 2-2B
T/G=1103.00
FL 12"(N,SW)=1100.60

PD4: 81 LF 12" STM R=0.40%
(SEE NOTE 11)

D5: STM CB, ODOT 2-2B
T/G=1103.75
FL 8"(NE)=1100.84
FL 10"(NW)=1100.84
FL 12"(S)=1100.84

PD5: 99 LF 12" STM R=0.24%

D6: STM CB, ODOT 2-2B
T/G=1103.50
FL 10"(SE)=1101.39

PD6: 91 LF 10" STM R=0.60%
(SEE NOTE 11)

D7: STM CB, TYPE 'S'
T/G=1104.00
FL 8"(NW,SW)=1101.41

PD7: 89 LF 8" STM R=0.64%

D8: STM CB, TYPE 'S'
T/G=1104.00
FL 6"(SW)=1102.00
FL 8"(SE)=1102.00

PD8: 147 LF 8" STM R=0.40%

GENERAL NOTES

1.) SANITARY SEWER IMPROVEMENT PLAN & PROFILE AND SEWER EASEMENT ARE BY SEPARATE INSTRUMENTS.

2.) FLOOD CONTROL FOR THIS SITE WAS PROVIDED IN THE EXISTING DETENTION BASIN SW OF THIS SITE. PROPOSED DRAINAGE IS TO CONNECT TO THE EXISTING CB LOCATED BETWEEN LOTS 1 AND 2 IN WITTENBERG COMMONS. EROSION CONTROL AND WATER QUALITY MEASURES ARE REQUIRED PRIOR TO DISCHARGE INTO THE EXISTING CB.

3.) ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE CODES, ORDINANCES, AND STANDARD SPECIFICATIONS OF THE CITY OF MASSILLON. IN LIEU OF ANY LOCAL SPECIFICATIONS WORK SHALL BE DONE IN CONFORMANCE WITH THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS MOST RECENT EDITION.

4.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS FOR CONSTRUCTION.

5.) DRIVEWAY PERMITS, STREET OPENING PERMITS, AND SANITARY PERMITS ARE REQUIRED. CONTRACTOR SHALL CONTACT THE CITY OF MASSILLON ENGINEERING DEPARTMENT FOR LICENSE AND PERMIT REQUIREMENTS.

6.) ALL EXISTING FIELD CONDITIONS SHALL BE FIELD CHECKED AND VERIFIED BY CONTRACTORS PRIOR TO BIDDING AND CONSTRUCTION. SHOULD THERE BE ANY DISCREPANCY BETWEEN PLANS AND ACTUAL FIELD CONDITIONS; CONTRACTOR HAS TO SEEK WRITTEN CLARIFICATION FROM THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK.

7.) IT SHALL BE CONTRACTOR'S SOLE RESPONSIBILITY TO CONSTRUCT ALL ITEMS ON THESE PLANS USING CONSTRUCTION MEANS AND METHODS THAT WILL PROTECT PROPERTY AND PREVENT BODILY INJURY AND/OR DEATH. THE CONTRACTOR SHALL TAKE ANY NECESSARY SAFETY PRECAUTIONS TO COMPLY WITH THE SAFETY REQUIREMENTS OF CITY, STATE, AND FEDERAL GOVERNMENTS.

8.) CONSTRUCTION SHALL BE PERFORMED, AND EQUIPMENT STORED, IN A MANNER WHICH PERMITS EXISTING FACILITIES TO PERFORM WITHOUT INTERRUPTION.

9.) THE PROPOSED RETAINING WALL SHALL BE CONSTRUCTED OF MODULAR UNITS(VERSA-LOK OR APPROVED EQUAL) IN ACCORDANCE WITH THE MANUFACTURES SPECIFICATIONS, ESTIMATED AREA FOR THE FACE OF THE RETAINING WALL = 660 ± SF. T/WALL=1108.00 B/WALL=1104.25. TRANSITION T/WALL @ BOTH ENDS FROM 1108.00 TO 1106.50 IN 10'.

10.) A SEPARATE INSTRUMENT WILL BE PREPARED FOR THE RICHVILLE DRIVE R/W DEDICATION.

11.) CONTRACTOR SHALL INSTALL LOW STRENGTH MORTAR BACKFILL TO PAVEMENT SUBGRADE FOR PD4 AND PD6.

12.) ALL DISTURBED YARD AREAS SHALL BE FINE GRADED, SEEDED, FERTILIZED AND MULCHED IN ACCORDANCE WITH ODOT 659. THE TWO TREES DESIGNATED FOR REMOVAL SHALL BE COMPLETELY REMOVED FROM THE SITE (INCLUDING STUMPS).

13.) NO SOIL BORINGS WERE ACQUIRED FOR THIS PROJECT. THE CONTRACTOR MAY PERFORM HIS OWN SOILS INVESTIGATION AFTER OBTAINING APPROVAL FROM THE OWNER.

14.) EMBANKMENT CONSTRUCTION AND SUBGRADE COMPACTION SHALL BE IN GENERAL CONFORMANCE WITH ODOT SPECIFICATIONS AND MORE SPECIFICALLY AS FOLLOWS:
- STANDARD PROCTOR WITHIN BUILDING LIMITS (TO 5' OUTSIDE BUILDING LINE) AND UNDER PAVEMENT.
- STANDARD PROCTOR IN UTILITY TRENCHES = 95%.
- STANDARD PROCTOR IN YARD AREAS = 90%.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ON-SITE EROSION CONTROL IN GENERAL CONFORMANCE WITH REQUIREMENTS OF THE CITY OF MASSILLON ENGINEER'S OFFICE AND IN SPECIFIC CONFORMANCE WITH EROSION CONTROL PLANS.

15.) THE FOLLOWING MATERIALS ARE APPROVED FOR THE STORM SEWER UNLESS OTHERWISE DESIGNATED ON THE PLAN. INSTALLATION TO BE IN ACCORDANCE WITH ODOT TYPE 'B' UNLESS OTHERWISE NOTED.
- REINFORCED CONCRETE PIPE PER ODOT ITEM 603
- HIGH DENSITY POLYETHYLENE CORRUGATED PIPE WITH SMOOTH INTERIOR PER ODOT ITEM 707.33
- DOWNSPOUT HEADERS SHALL BE PVC (SDR 35) IN ACCORDANCE WITH ASTM D3034.

16.) ODOT 2-2-B CATCH BASIN TOP SLAB & GRATE SHALL BE MODIFIED FOR HIGHWAY LOADING AS REQUIRED. GRATES TO BE BIKE SAFE (EAST JORDAN IRON WORKS : 5110 TYPE M1)

17.) PROPOSED 8" WATER LINE EXTENSION AND HYDRANT SHALL BE INSTALLED IN ACCORDANCE WITH THE REGULATIONS AND SPECIFICATIONS OF AQUA OHIO INC. LAYOUT PLAN AND EASEMENT PLAT BY SEPARATE EASEMENT.

18.) WATER SERVICES SHALL BE 1-1/2" TYPE 'K' SOFT COPPER INSTALLED IN CONFORMANCE WITH APPROPRIATE REGULATIONS.

19.) TAPER THE CONCRETE CURB FROM 6" TO 0" IN THE LAST 24"

PARKING SUMMARY:

GARAGED	16 SPACES
IN FRONT OF GARAGE	16 SPACES
COMMON HANDICAP	2 SPACES
COMMON STANDARD	28 SPACES
TOTAL PARKING	62 SPACES

ESTIMATED EARTHWORK QUANTITIES

THIS QUANTITY WAS GENERATED BY COMPARING THE EXISTING AND PROPOSED CONTOURS REPRESENTED ON THIS PLAN. FILL VOLUME INCLUDES AN ASSUMED 10% COMPACTION FACTOR.

CUT = 1,790 CU. YDS.
FILL = 2,338x1.1 = 2,572 CU. YDS.
MATERIAL NEEDED = 782 CU. YDS.

LEGEND

- DRAINAGE STRUCTURE #1
- SANITARY STRUCTURE #1
- 1105 — EXISTING CONTOUR ELEV=1105
- 1105 — PROPOSED CONTOUR ELEV=1105
- WHEEL STOP [30 EA]
- ASPHALT PAVEMENT (SEE DETAIL SHEET 4) [18214 SF]
- 5' CONCRETE WALK (SEE DETAIL SHEET 4) [979 SF]
- 6" DOWNSPOUT HEADER [735 LF]
- S — PROPOSED STORM SEWER
- SAN — PROPOSED WATER LINE
- W — PROPOSED SANITARY SEWER

REVISIONS
5/19/06 MASSILLON COMMENTS

COOPER & ASSOCIATES, LLP
ENGINEERS AND SURVEYORS
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FAX No.(330) 452-9110
AVENUE NORTH
CANTON, OHIO
44714

BUCKEYE CROSSING
LOCATED IN THE CITY OF MASSILON
STARK COUNTY, OHIO
FOR: TOBIN ENTERPRISES INC.

DRAINAGE, GRADING AND SITE PLAN (2.807 AC)

DRAWN BY: MJL
CHECKED BY: BJA
FIELD BOOK No.
DATE: 5/19/2006
SHEET 3 OF 4
PROJ # 05351

APPROVED
AS SUBMITTED
AS EVIDENCED BY COPY OF OHIO ENVIRONMENTAL PROTECTION AGENCY SEWER PERMIT

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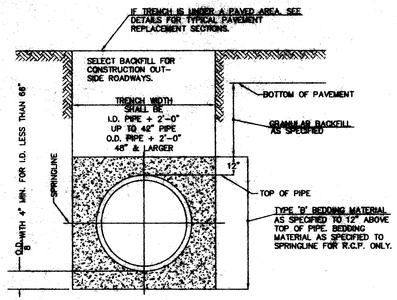

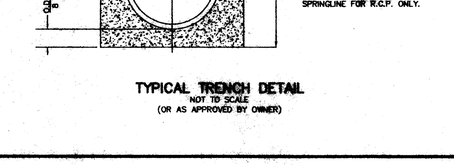

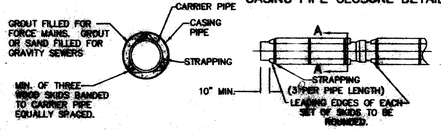

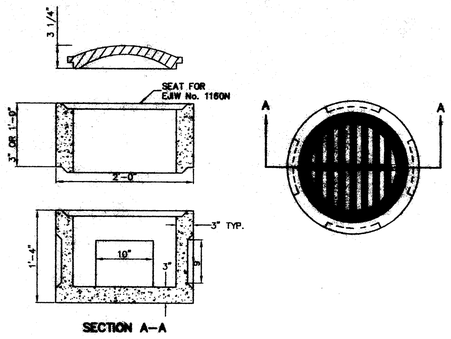

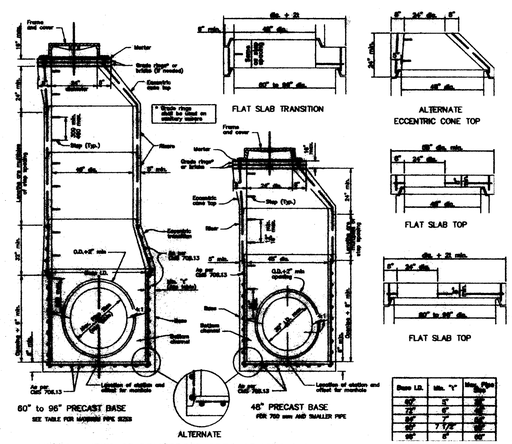

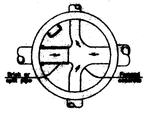

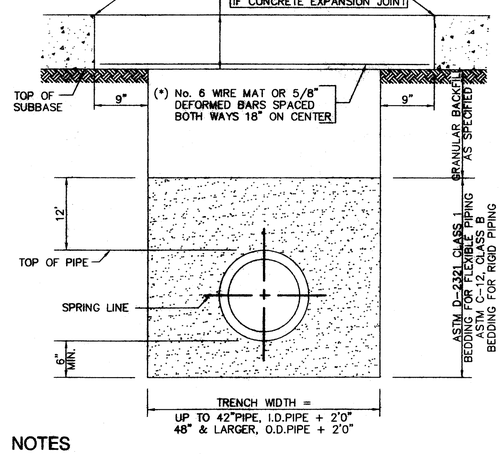

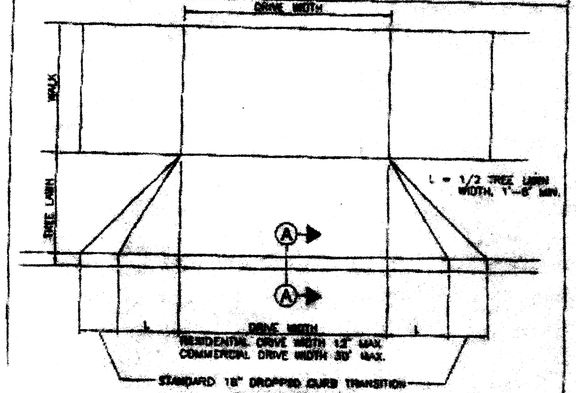

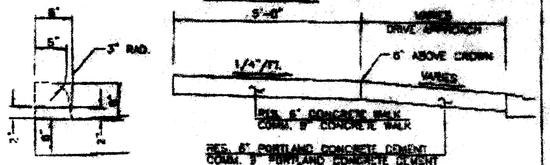

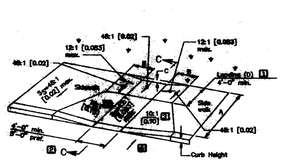

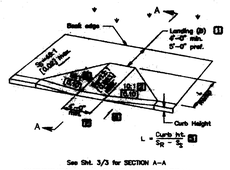

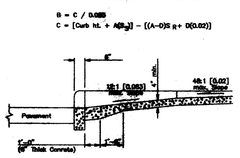

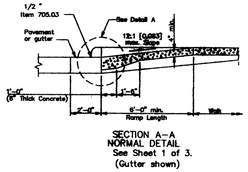

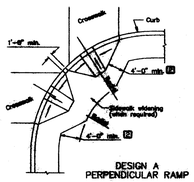

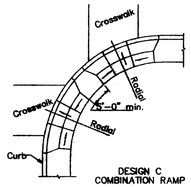

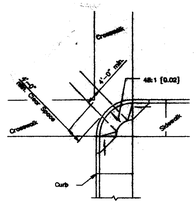

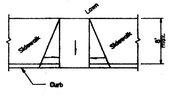

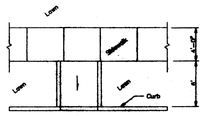

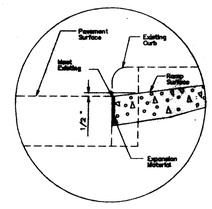

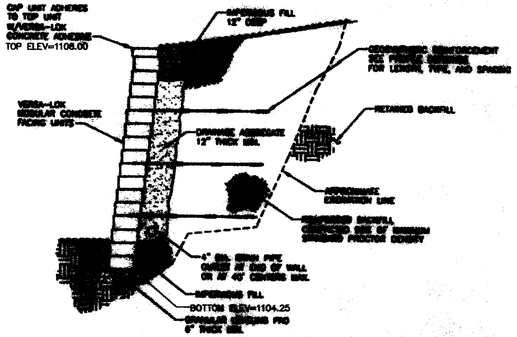

TYPICAL TRENCH DETAIL

NOT TO SCALE
(OR AS APPROVED BY OWNER)

BORING DETAIL

NOT TO SCALE

TYPE 'S' CATCH BASIN

NOT TO SCALE

① ITEM 404 – 1" ASPHALT CONCRETE SURFACE COURSE
② ITEM 402 – 2-1/2" ASPHALT CONCRETE INTERMEDIATE COURSE
③ ITEM 408 – BITUMINOUS PRIME COAT (0.4 GAL./S.Y.)
③ ITEM 304 – 6" AGGREGATE BASE
④ ITEM 203 – COMPACTED SUBGRADE

TYPICAL PARKING LOT SECTION

NOT TO SCALE
(OR AS APPROVED BY OWNER)
ESTIMATED AREA = 23,330 S.F.

CITY OF MASSILLON ENGINEERING
151 LINCOLN WAY EAST
MASSILLON, OHIO (330)830-1722
FAX: (330)830-1786

MANHOLE TYPE 3

Base I.D.	Min. "t"	Max. Pipe Size
60"	5"	[illegible]
72"	6"	[illegible]
84"	7"	[illegible]
90"	7 1/2"	[illegible]
96"	8"	60"

SECTION VIEWS OF REINFORCED PRECAST MANHOLES

SECTION BELOW SPRING LINE

NOTES

GENERAL: [illegible]

TOP AND TRANSITION (OR REDUCER): [illegible]

BASE: [illegible]

CONNECTIONS: [illegible]

JOINT SEAL: [illegible]

MATERIALS: [illegible]

DROP PIPE: [illegible]

STEPS, FRAMES AND COVERS: [illegible]

CITY OF MASSILLON ENGINEERING
151 LINCOLN WAY EAST
MASSILLON, OHIO (330)830-1722
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OPEN CUT DETAIL

NOTES

(*) MUST BE USED WITH CONCRETE PAV'T WHEN WIDTH OF TRENCH IS GREATER THAN 3' AT THE SUBBASE LEVEL

CONCRETE BASE SHALL BE OF 1:2:4, 6 BAG MIX, PORTLAND CEMENT CONCRETE USING HIGH EARLY STRENGTH CEMENT AND IT MUST BE CURED AT LEAST 48 HRS.

CITY OF MASSILLON ENGINEERING
151 LINCOLN WAY EAST
MASSILLON, OHIO (330)830-1722
FAX: (330)830-1786

DRIVEWAY APPROACH DETAIL

NOTE

ANY DEVIATION FROM THIS MUST BE APPROVED BY THE CITY ENGINEER.

CURB RAMP DETAILS

See Sht. 3/3 for SECTION C-C
COMBINED CURB RAMP DETAIL

B = C / 0.083
C = [Curb ht. + A(S_s)] – [(A–D)S_R + D(0.02)]

See Sht. 3/3 for SECTION A–A
PERPENDICULAR CURB RAMP DETAIL

SECTION C–C
See Sheet 1 of 3.

SECTION A–A
NORMAL DETAIL
See Sheet 1 of 3.
(Gutter shown)

DESIGN D
DIAGONAL RAMP

Use in existing walks only and when site constraints prohibit other designs. The diagonal ramp may be perpendcular, parallel or combination.

Avoid using where curb radii are less than 20'-0".

DESIGN A
PERPENDICULAR RAMP

DESIGN C
COMBINATION RAMP

DESIGN E
PERPENDICULAR RAMP

DESIGN G
PERPENDICULAR RAMPS
w/o FLARES

DETAIL A

LEGEND

1 May be reduced to 3'-0" in existing sidewalks if the landing is unconstrained along the back edge.

2 May be reduced to 3'-4" in existing sidewalks to better fit the walk configuration or where site conditions are restricted by narrow walks, pole foundations, drainage inlets, etc. The width may be tapered.

3 Where landing width (D) has been reduced to 3'-0" the flared sides shall have a maximum slope of 12:1 [0.083].

Flared sides are not required where the edges of a curb ramp are protected by landscaping or other barriers to travel by wheel chair users or pedestrians across the edge of the curb ramp. However, if the flared sides are used in these areas, they may be of any slope.

4 The slope of the ramp toward the curb is preferred to be 12:1 [0.083] or flatter related to the horizontal, but the maximum slope shall be 12:1 [0.083] relative to the existing or proposed walk slope.

In existing sidewalks, where the maximum ramp slope (S_R) is not feasible, it may be reduced as follows:

A) 10:1 [0.10] for a max. rise of 6",
B) 8:1 [0.125] for a max. rise of 3",
C) 6:1 [0.167] over a max. run of 2'-0" for historic areas where a flatter slope is not feasible.

5 The minimum length of a perpendicular ramp is 6' from the back of a 6" curb and may be increased where feasible to obtain a flatter ramp slope or to better blend with the walk configuration.

6 Gutter counter slopes at the foot of perpendicular curb ramps should not exceed 20:1 [0.05] over a distance of 2'-0" from the curb.

7 Dimensions derived by equation are nominal. Construct ramps to meet required slopes and existing conditions.

NOTES

SURFACE TEXTURE: Detectable warning on walking surface warnings shall consist of raised truncated domes with a diameter of nominal 0.9 in., a height of nominal 0.2 in. and a center to center spacing of nominal 2.35 in. and shall contrast visually with adjoining surfaces either light-on-dark, or dark-on-light.

The material used to provide contrast an intral part of the walking surface.

JOINTS: shall be provided in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. A 1/2 " Item 705.03 expansion joint filler shall be provided around the edge of ramps built in existing concrete walk. Lines shown on this drawing indicate the ramp edge and slope changes and are not necessarily joint lines.

PAYMENT: Walk and curb, Items 608 and 609, shall be measured through the curb ramp area paid for under their respective ItemsItem 608 – Curb Ramp, Eachconstructed in new curb and walk shall include the cost of any additional materials, grading, forming and finishingItem 608 – Curb Ramp, Square Foot , constructed in existing curb and walk shall include the cost of furnishing all materials, grading, forming, and finishing of the curb and walk of the curb ramp. Removal of existing curb and walk shall be paid for under Item 202.

TYPICAL SECTION–REINFORCED RETAINING WALL
MODULAR CONCRETE UNIT
SCALE: NONE

SEWERAGE
APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
AS EVIDENCED BY COPY OF
LETTER OF APPROVAL
HERETO ATTACHED

HORIZONTAL SCALE
0 15 30 60
SCALE: 1" = 30'

REVISIONS

△	MASSILLON COMMENTS	MJL	5/19/06

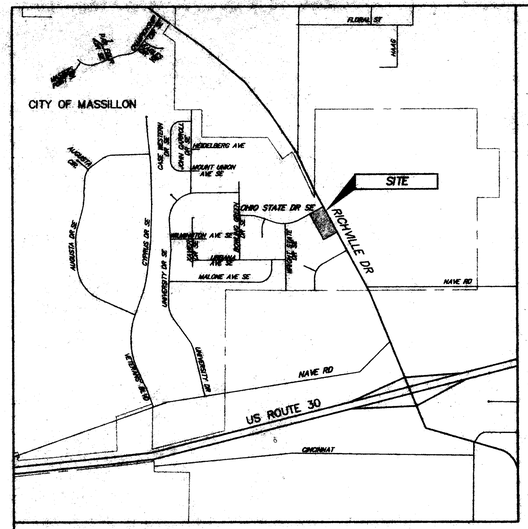
COOPER & ASSOCIATES, LLP
ENGINEERS AND SURVEYORS
BRYAN J. ASHMAN
JEROLD E. GEIB
PHONE (330) 452-5731
FAX No. (330) 452-9110

DETAILS
BUCKEYE CROSSING
LOCATED IN THE CITY OF MASSILON
STARK COUNTY, OHIO
FOR: TOBIN ENTERPRISES INC.

DRAWN BY: MJL
CHECKED BY: BJA
FIELD BOOK No.
DATE 4/13/2006
SHEET 4 OF 4
DETAILS
PROJ.# 05351

H:\Land Projects R2\05351\dwg\05351-CUR.dwg 7/20/2006 3:04:11 PM EDT

STORMWATER POLLUTION PREVENTION PLAN
BUCKEYE CROSSING



LOCATION MAP

PROPOSED SEQUENCE OF OPERATION

THE CONTRACTOR SHALL PERFORM NO WORK ON THIS SITE UNTIL A PRE-CONSTRUCTION MEETING IS HELD ON-SITE WITH THE STARK SOIL AND WATER CONSERVATION DISTRICT, URBAN RESOURCE COORDINATOR. (Phone: (330) 830-7700, EXT. #127)

1. MARK LIMITS OF DISTURBANCE AND INSTALL PERIMETER CONTROLS. INSTALL CONSTRUCTION ENTRANCE(S) AND PREPARE THE SUPPORT AREA.

   PERFORM CLEARING AND GRUBBING OPERATIONS. TOPSOIL REMOVAL AND STOCKPILING.

2. PROTECT SOIL STOCKPILES. CONSTRUCT SEDIMENT TRAPPING FACILITIES AND NECESSARY DIVERSIONS. PREPARE STREAM CROSSINGS, TEMPORARY AND PERMANENT, AS NECESSARY.

   PERFORM EXCAVATION AND EMBANKMENT OPERATIONS

3. APPLY EROSION CONTROL STABILIZATION TO GRADED AREAS TO REMAIN TEMPORARILY DORMANT.

   INSTALL DRAINAGE FACILITIES AND PRIMARY POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES.

4. INSTALL APPROPRIATE INLET PROTECTION AND OUTLET PROTECTION AS REQUIRED BY THIS PLAN. STABILIZE OPEN STORMWATER CONVEYANCE CHANNELS, ENERGY DISSIPATERS, AND OTHER VELOCITY CHECKS AS REQUIRED.

   INSTALL UNDERGROUND UTILITIES AND ROADWAY PAVEMENT.

5. ESTABLISH PERMANENT SOIL STABILIZATION AT ALL FINISHED LOCATIONS. TEMPORARILY STABILIZE ALL LOTS TO BE TRANSFERRED BY INDIVIDUAL LOT NOIs.

   INSTALL SECONDARY POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES. PROCEED WITH OFF-ROAD FINISHED GRADING AND CONSTRUCTION.

6. COMPLETE PERMANENT STABILIZATION OF ALL DISTURBED AREAS. REMOVE ACCUMULATED SEDIMENT FROM SEDIMENT BARRIERS AND TRAPPING FACILITIES. REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES, GRADE AND STABILIZE LOCATIONS.

7. REQUEST FINAL INSPECTION 45 DAYS AFTER FINAL SITE STABILIZATION IS COMPLETE.

TYPICAL SOIL PROTECTION CHART

STABILIZATION TYPE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PERMANENT SEEDING			A						A			
DORMANT SEEDING	B		B									
TEMPORARY SEEDING			C			C	D		D			
SODDING			E **						E			
MULCHING	F											F

A = KENTUCKY BLUEGRASS AT 90 LB/AC MIXED WITH PERENIAL RYEGRASS AT 30 LB/AC

B = KENTUCKY BLUEGRASS AT 135 LB/AC MIXED WITH PERENIAL RYEGRASS AT 45 LB/AC PLUS 2 TONS/AC STRAW MULCH

C = SPRING OATS AT 100 LB/AC

D = WHEAT OR CEREAL RYE AT 150 LB/AC

E = SOD

F = STRAW MULCH AT 2 TONS/AC

* = IRRIGATION NEEDED DURING JUNE AND JULY

** = IRRIGATION NEEDED FOR 2-3 WEEKS AFTER APPLYING SOD

PROJECT SITE DESCRIPTION
EROSION AND SEDIMENT CONTROL, POST-CONSTRUCTION STORMWATER POLLUTION PREVENTION, AND NON-SEDIMENT POLLUTION CONTROL PRACTICES AND PROCEDURES
OWNER CERTIFICATION

INTRODUCTION:
THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NPDES PERMIT FOR CONSTRUCTION SITES IN OHIO AND WITH THE APPLICABLE LOCAL EROSION AND SEDIMENT CONTROL REGULATIONS.

THIS PLAN ADDRESSES THE THREE SIGNIFICANT WATER QUALITY AND QUANTITY ASPECTS OF THE LAND DEVELOPMENT CONSTRUCTION PROCESS:
1. EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION,
2. POST-CONSTRUCTION STORMWATER MANAGEMENT, AND
3. NON-SEDIMENT POLLUTANT CONTROLS.
4. OTHER CONSIDERATIONS.

THE CONTRACTOR SHALL INSTALL AND MAINTAIN THE PRACTICES INDICATED IN ACCORDANCE WITH THE INCLUDED SEQUENCE OF CONSTRUCTION AND THE DETAILS AND SPECIFICATIONS CONTAINED IN RAINWATER AND LAND DEVELOPMENT , ODOR, DIV. OF SOIL AND WATER CONSERVATION, AND OTHER REFERENCED MANUALS AND HANDBOOKS.

PROJECT DESCRIPTION:
___ IS A PROPOSED RESIDENTIAL DEVELOPMENT WHICH INCLUDES THE CONSTRUCTION OF STREETS AND UTILITIES TYPICAL OF THIS TYPE OF DEVELOPMENT AND OF THE RESIDENTIAL CONSTRUCTION AND LANDSCAPING ACTIVITIES NECESSARY TO COMPLETE THE DEVELOPMENT.

___ IS A PROPOSED COMMERCIAL DEVELOPMENT WHICH INCLUDES THE CONSTRUCTION OF PAVEMENT, UTILITIES, AND BUILDINGS CONSISTENT WITH COMMERCIAL ACTIVITIES.

___ IS A PROPOSED INDUSTRIAL DEVELOPMENT WHICH INCLUDES THE CONSTRUCTION OF PAVEMENT, UTILITIES, AND BUILDINGS CONSISTENT WITH INDUSTRIAL ACTIVITIES.

THE SITE CONSISTS OF APPROXIMATELY ___ ACRES OF WHICH APPROXIMATELY ___ PERCENT WILL BE DISTURBED BY THE CONSTRUCTION OF THE ROADWAYS AND UTILITIES.

THE EXISTING AVERAGE RUNOFF COEFFICIENT IS ASSUMED TO BE 0.___ THE FULLY DEVELOPED RUNOFF COEFFICIENT IS EXPECTED TO BE 0.___ THE ANTICIPATED INCREASE IN RUNOFF IS ___ PERCENT.

DEVELOPMENT WILL RESULT IN APPROXIMATELY ___ ACRES OF IMPERIOUS COVER, OR ___ PERCENT IMPERVIOUSNESS.

THE SITE IS (topography).

THE SOILS OF THE SITE ARE (describe).

THERE ARE (describe surface waters on site).

THE PRIOR LAND USE (describe)

WITH APPROPRIATE PRECAUTIONS, THE QUALITY OF RUNOFF SHOULD BE UNCHANGED FROM WHAT IS PRODUCED BY THE EXISTING CONDITIONS.

THE INITIAL RECEIVING WATER FOR RUNOFF FROM THIS SITE IS THE ___ AND THE SUBSEQUENT RECEIVING WATER IS ___ .

1. EROSION AND SEDIMENT CONTROL MEASURES:
EROSION AND SEDIMENT CONTROL PRACTICES INDICATED ON THIS PLAN SHALL MEET THE STANDARDS AND SPECIFICATIONS CONTAINED IN THE CURRENT EDITION OF RAINWATER AND LAND DEVELOPMENT, , ODOR, DIV. OF SOIL AND WATER CONSERVATION.

___ (CONTRACTOR A) SHALL BE RESPONSIBLE FOR CLEARING THE LAND AND THE INSTALLATION OF PERIMETER CONTROLS.

___ (CONTRACTOR B) SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF PERIMETER CONTROLS UNTIL FINAL STABILIZATION.

SEQUENCE OF EROSION AND SEDIMENT CONTROL PRACTICE IMPLEMENTATION:
1. PRIOR TO THE BEGINNING OF DISTURBANCE, THE CONTRACTOR MUST SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE STARK SOIL AND WATER CONSERVATION DISTRICT, URBAN RESOURCE COORDINATOR. [PHONE: 330-830-7700 (#127)]

2. INSTALL CONSTRUCTION ENTRANCES AT EVERY POINT OF ACCESS FOR CONSTRUCTION VEHICLES ONTO PAVED PUBLIC ROADWAYS.

3. PRIOR TO ANY GRADING ACTIVITIES TAKING PLACE, SILT FENCING AND OTHER SEDIMENT BARRIERS INDICATED ON THE PLAN, OR AS SHALL BE DEEMED NECESSARY UPON INSPECTION, SHALL BE INSTALLED AND FUNCTIONAL.

4. PRIOR TO ANY MAJOR GRADING ACTIVITY TAKING PLACE, THE APPROPRIATE SEDIMENT TRAPPING FACILITIES INDICATED ON THIS PLAN SHALL BE IMPLEMENTED.

5. ALL TOPSOIL STOCKPILES SHALL BE STABILIZED AS SOON AS THE STOCKPILING ACTIVITY IS COMPLETE.

6. ALL DISTURBED AREAS SHALL BE TEMPORARILY OR PERMANENTLY SEEDED, AS INDICATED ON THE PLAN, IN ACCORDANCE WITH THE SPECIFICATIONS UNDER NON-STRUCTURAL PRACTICES, BELOW.

SPECIFICATIONS FOR TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, MATTING, AND RIPRAP ARE CONTAINED ON SHEET No._____ OF THIS PLAN.

7. UPON COMPLETION OF THE PROPOSED STORM SEWER SYSTEM, DROP INLET AND CURB INLET PROTECTION SHALL BE INSTALLED IN ALL LOCATIONS WHERE SEDIMENT IS BEING CARRIED TO THE INLET AND INTO THE STORM SEWER.

8. DITCHES OR SWALES SHALL BE STABILIZED AS INDICATED ON THE PLAN BEFORE THE CHANNEL BEGINS TO RECEIVE ITS DESIGN FLOW.

9. TEMPORARY CONTROL MEASURES MAY BE REMOVED AND DISPOSED OF AT THE TIME THAT THE ENTIRE CONTRIBUTING AREA HAS BEEN STABILIZED. TRAPPED SEDIMENTS SHALL BE REMOVED AND DISPOSED OF AT A LOCATION AND IN A MANNER WHICH WILL PREVENT THEIR FURTHER EROSION.

10. FINAL SITE STABILIZATION IS ACHIEVED WHEN THERE IS NO EXPOSED GROUND REMAINING ON THE SITE, ALL SURFACES ARE PROTECTED BY EITHER PAVEMENT, ROOF AREAS OR PERMANENT VEGETATIVE COVER WITH A DENSITY OF AT LEAST 70% AND ALL OF THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN REMOVED AND DISPOSED OF AND ALL TRAPPED SEDIMENT HAS BEEN PERMANENTLY STABILIZED.

NON-STRUCTURAL PRACTICES:
WHEREVER FEASIBLE, THE NATURAL CONDITION SHOULD BE PRESERVED. THIS IS ACCOMPLISHED BY PRESERVING RIPARIAN AREAS ADJACENT TO SURFACE WATERS OF THE STATE, PRESERVING EXISTING VEGETATION AND VEGETATED BUFFER STRIPS, PHASING CONSTRUCTION TO MINIMIZE DISTURBANCE, AND DESIGNATION OF TREE PRESERVATION AREAS.

NOTE: UNDISTURBED RIPARIAN AREAS AND BUFFERS SHOULD BE A MINIMUM OF 25 FEET WIDE AS MEASURED FROM THE ORDINARY HIGH WATER MARK OF THE SURFACE WATER. DESIGNATED AND/OR JURISDICTIONAL WETLANDS ARE CONSIDERED TO BE SURFACE WATERS.

EROSION CONTROL PRACTICES:
THE CONTRACTOR SHALL INITIATE TEMPORARY SEEDING OR PERMANENT SEEDING ON ALL DISTURBED AREAS IN ACCORDANCE WITH THE TIMING REQUIREMENTS SHOWN ELSEWHERE IN THIS PLAN.

WHEN SEASONAL CONDITIONS PROHIBIT THE APPLICATION OF TEMPORARY OR PERMANENT SEEDING, NON-VEGETATIVE SOIL STABILIZATION PRACTICES SUCH AS MATTING AND MULCHING SHALL BE USED.

STRUCTURAL PRACTICES:
TIMING SEDIMENT CONTROL STRUCTURES SHALL BE FUNCTIONAL THROUGHOUT EARTH DISTURBING ACTIVITY. SEDIMENT PONDS AND PERIMETER SEDIMENT BARRIERS SHALL BE IMPLEMENTED AS THE FIRST STEP OF GRADING AND WITHIN SEVEN DAYS OF THE START OF GROUBBING. THEY SHALL CONTINUE TO FUNCTION UNTIL THE UPSLOPE DEVELOPMENT AREA IS RESTABILIZED.

SETTLING PONDS CONCENTRATED STORM WATER RUNOFF FROM DISTURBED AREAS SHALL PASS THROUGH A SEDIMENT-SETTLING POND. THE FACILITY'S STORAGE CAPACITY SHALL BE 67 CUBIC YARDS PER ACRE OF THE TOTAL CONTRIBUTING AREA.

SEDIMENT BARRIERS SHEET FLOW RUNOFF FROM DENUDED AREAS SHALL BE INTERCEPTED BY SEDIMENT BARRIERS. SEDIMENT BARRIERS, SUCH AS SILT FENCES OR DIVERSIONS DIRECTING RUNOFF TO SETTLING FACILITIES, SHALL PROTECT ADJACENT PROPERTIES AND WATER RESOURCES FROM SEDIMENT TRANSPORTED BY SHEET FLOW.

OTHER EROSION AND SEDIMENT CONTROL PRACTICES SHALL PREVENT SEDIMENT LADEN WATER FROM ENTERING STORM DRAIN SYSTEMS, UNLESS THE STORM DRAIN SYSTEM DRAINS INTO A SETTLING POND. THESE PRACTICES SHALL DIVERT RUNOFF FROM DISTURBED AREAS AND STEEP SLOPES WHERE PRACTICABLE AND STABILIZE CHANNELS AND OUT FALLS FROM EROSIVE FLOWS.

2. POST-CONSTRUCTION STORMWATER POLLUTION PREVENTION:
STRUCTURAL AND NON-STRUCTURAL POST-CONSTRUCTION POLLUTION PREVENTION PRACTICES ARE REQUIRED BY FEDERAL, STATE, (AND LOCAL) GUIDELINES AND REGULATIONS FOR ALL PROJECTS WHERE THE DISCHARGE FOLLOWING DEVELOPMENT EXCEEDS THE PRE-DEVELOPMENT DISCHARGE. THE PURPOSE OF THESE STORMWATER MANAGEMENT PRACTICES IS TO ENSURE THAT THERE IS NO SIGNIFICANT CHANGE IN THE HYDROLOGICAL REGIME OF THE RECEIVING WATER.

THE STORMWATER MANAGEMENT PRACTICES THAT MAY BE IMPLEMENTED DURING THE CONSTRUCTION OF LAND DEVELOPMENT PROJECTS INCLUDE BUT ARE NOT LIMITED TO:

- **STORAGE PRACTICES –**
  WET PONDS, EXTENDED-DETENTION OUTLET STRUCTURES, SUBSURFACE STORAGE
- **FILTRATION PRACTICES –**
  GRASSED SWALES, BIORETENTION CELLS, MEDIA FILTERS, SAND FILTERS, FILTER STRIPS, CONSTRUCTED WETLANDS
- **INFILTRATION PRACTICES –**
  INFILTRATION BASINS, INFILTRATION STRIPS, SUBSURFACE INFILTRATION SYSTEMS
- **VELOCITY DISSIPATION PRACTICES –**
  GRADE STABILIZATION STRUCTURES, LEVEL SPREADERS, PIPE AND CHANNEL OUTLET PROTECTION
- **NON-STRUCTURAL PRACTICES –**
  RIPARIAN SETBACK PRESERVATION, MAINTAIN OR INCREASE OPEN SPACE, MINIMIZE IMPERVIOUS SURFACES, MINIMIZE DISTURBANCE OF SOILS AND VEGETATION, MINIMIZE DIRECTLY INTERCONNECTED IMPERVIOUS SURFACES.

NOTE:
STORMWATER MANAGEMENT IS INTEGRAL TO THE DEVELOPMENT OF THE IMPROVEMENT PLANS FOR THE SITE. STORMWATER MANAGEMENT PRACTICES SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. CONSTRUCTION MUST BE IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS CONTAINED IN THE SITE IMPROVEMENT PLANS.

OHIO EPA HAS INDICATED THAT, FOR SITES OF LESS THAN FIVE ACRES, STRUCTURAL POST-CONSTRUCTION PRACTICES ARE RECOMMENDED BUT NOT REQUIRED.

3. NON-SEDIMENT POLLUTION CONTROLS:
NO SOLID (OTHER THAN SEDIMENT) OR LIQUID WASTE, INCLUDING BUILDING MATERIALS, SHALL BE DISCHARGED INTO STORM WATER RUNOFF AND/OR STORMWATER CONVEYANCE FACILITIES.

CONSTRUCTION ROAD/PARKING AREA STABILIZATION:
THE CONTRACTOR SHALL DESIGNATE A SINGLE AREA FOR CONSTRUCTION VEHICLE ACCESS AND PARKING AND ENSURE THAT THE DESIGNATED USES WILL BE RESTRICTED TO THAT AREA. THE DESIGNATED ROADS AND PARKING AREAS SHALL BE STABILIZED WITH A 6-INCH LAYER OF 2- TO 4-INCH CRUSHED ROCK OR GRAVEL BASE PRIOR TO VEHICLES BEING PERMITTED TO USE THE AREAS.

IT IS RECOMMENDED THAT THE SAME AREA BE USED FOR MAINTENANCE AND FUELING OPERATIONS AND MATERIAL STORAGE, WITH THE APPROPRIATE DIKING AND OTHER RAINFALL RUNOFF CONTROLS.

WASTE MATERIAL:
NO WASTE MATERIALS SHALL BE EITHER BURNED OR BURIED, OR ALLOWED TO ENTER SURFACE WATERS OR STORM DRAINAGE SYSTEMS ON THE SITE.

LIDDED CONTAINERS MUST BE PROVIDED FOR COLLECTION OF A WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIAL ON SITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL.

HAZARDOUS OR TOXIC MATERIAL HANDLING:
CONSTRUCTION VEHICLE MAINTENANCE, FUELING AND LUBRICATING, AND FUEL AND LUBRICANT STORAGE SHALL BE RESTRICTED TO A SINGLE LOCATION ON THE SITE AT ANY ONE TIME AND THAT SITE SHALL BE ADEQUATELY DIKED TO PREVENT ANY SPILLED CHEMICALS FROM ENTERING THE DRAINAGE SYSTEM.

MIXING, PUMPING, TRANSFERRING, OR OTHERWISE HANDLING CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE CURING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN A DESIGNATED AREA AWAY FROM ANY SURFACE WATER, STREAM, DITCH, OR STORM DRAIN. THE AREA SHALL BE ADEQUATELY DIKED TO PREVENT RAINFALL RUNOFF FROM TRANSPORTING THE MATERIALS ONTO ADJACENT SOILS.

HAZARDOUS SUBSTANCE SPILL HANDLING:
A. IF HAZARDOUS SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC., ARE SPILLED, LEAKED, OR OTHERWISE RELEASED ONTO THE SOIL, THE ENTIRE VOLUME OF CONTAMINATED SOIL SHALL BE DUG UP AND DISPOSED OF AT A LICENSED SANITARY LANDFILL (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). IN NO CASE MAY THE CONTAMINATED SOIL BE BURIED.

B. SPILLS ON ADJACENT PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER, OR A COMMERCIAL CHEMICAL ABSORBENT AND DISPOSED OF AT A LICENSED SANITARY LANDFILL.

C. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. FOR SUCH MATERIALS, CALL OHIO EPA (1-800-282-9378).

D. SPILLS OF 25 GAL. OR MORE OF PETROLEUM PRODUCTS SHALL BE REPORTED TO OHIO EPA (1-800-282-9378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MINUTES OF THE DISCOVERY OF THE RELEASE.

SAW CUTTING AND SURFACING POLLUTION PREVENTION:
SLURRY AND CUTTINGS SHALL BE VACUUMED DURING CUTTING AND SURFACING OPERATIONS. THEY SHALL NOT REMAIN ON PERMANENT CONCRETE OR ASPHALT PAVEMENT OVERNIGHT. THEY SHALL NOT DRAIN INTO ANY NATURAL OR CONSTRUCTED DRAINAGE CONVEYANCE. COLLECTED SLURRY AND CUTTINGS SHALL BE DISPOSED OF IN A MANNER THAT DOES NOT VIOLATE GROUNDWATER OR SURFACE WATER QUALITY STANDARDS.

CONCRETE HANDLING:
UNUSED CONCRETE REMAINING IN THE TRUCK AND PUMP SHALL BE RETURNED TO THE ORIGINATING BATCH PLANT FOR RECYCLING. IT SHALL NOT BE DISPOSED OF ON SITE.

CONCRETE TRUCK CHUTES, PUMPS AND INTERNALS SHALL BE WASHED OUT ONLY INTO PREPARED AREAS AWAITING INSTALLATION OF CONCRETE OR ASPHALT. IF NO PREPARED AREAS ARE AVAILABLE, WASH WATER AND LEFTOVER PRODUCT SHALL BE HELD IN A LINED SUMP. CONTAINED CONCRETE SHALL BE DISPOSED OF IN A MANNER THAT DOES NOT VIOLATE GROUNDWATER OR SURFACE WATER QUALITY STANDARD.

SEE SHEET No. ___ OF THIS PLAN FOR DETAILS AND SPECIFICATIONS FOR A CONCRETE WASHOUT SUMP.

TRENCH AND GROUND WATER CONTROL:
DEWATERING: WATER IN TRENCHES, SEDIMENT BASINS, AND SEDIMENT TRAPS IS GENERALLY CONTAMINATED WITH SEDIMENT AND CANNOT BE ALLOWED TO MIX WITH SURFACE WATER WITHOUT APPROPRIATE TREATMENT.

IF DEWATERING OF TRENCHES, SEDIMENT BASINS, AND/OR SEDIMENT TRAPS IS REQUIRED, THE CONTRACTOR SHALL ENSURE THAT THE DISCHARGE PASSES THROUGH A CONSTRUCTED TEMPORARY SEDIMENT TRAP OR A SEDIMENT FILTERING DEVICE SUCH AS AN AFC ENVIRONMENTAL, INC., "DIRT BAG".

GROUND WATER DISCHARGE: GROUND WATER IS NOT USUALLY CONTAMINATED WITH SEDIMENT AND MAY BE PUMPED AND DISCHARGED WITHOUT TREATMENT IF THE PROPER PRECAUTIONS ARE TAKEN.

GROUND WATER MAY ONLY BE DISCHARGED DIRECTLY INTO SURFACE WATERS, STORM DRAINS, OR PERMANENTLY STABILIZED SURFACES. GROUND WATER THAT IS DISCHARGED ONTO UNSTABILIZED SURFACES OR THAT IS ALLOWED TO FLOW ACROSS UNSTABILIZED SURFACES MUST BE TREATED TO REMOVE SEDIMENT BEFORE BEING ALLOWED TO ENTER ANY SURFACE WATER OR STORM WATER CONVEYANCE SYSTEM.

4. OTHER CONSIDERATIONS:
SURFACE WATER PROTECTION:
NO CONSTRUCTION ACTIVITY OF ANY KIND SHALL BE PERFORMED IN ANY SURFACE WATERS (STREAMS, RIVERS, LAKES, WETLANDS, OR OTHER) ON THE SITE UNLESS THE CONSTRUCTION PLANS FOR THE PROJECT ARE IN COMPLIANCE WITH SECTIONS 404 AND 401 OF THE CLEAN WATER ACT AND THE APPROPRIATE PERMITS HAVE BEEN ACQUIRED FROM THE U.S. ARMY CORPS OF ENGINEERS (SECTION 404 REGULATION) AND/OR THE OHIO ENVIRONMENTAL PROTECTION AGENCY (SECTION 401 REGULATION).

INSPECTIONS:
INSPECTIONS ARE TO BE PERFORMED BY QUALIFIED PERSONS PROVIDED BY THE PERMITTEE AND THE INSPECTION LOGS ARE TO BECOME A PART OF THIS PLAN.

INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE IN EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT OF GREATER THAN 0.5 INCH OF RAIN PER 24 HOUR PERIOD, FROM THE START OF CONSTRUCTION THROUGH THE FINAL INSPECTION PRIOR TO THE NOTICE OF TERMINATION.

MAINTENANCE:
ALL TEMPORARY AND PERMANENT CONTROL PRACTICES SHALL BE REPAIRED AND MAINTAINED IN ACCORDANCE WITH THE BMP REQUIREMENTS SHOWN ON THIS SHEET TO ASSURE THE CONTINUED PERFORMANCE OF THEIR FUNCTION. IN ORDER TO ACCOMPLISH THIS, THERE SHALL BE SUFFICIENT EQUIPMENT, MATERIALS, AND PERSONNEL AVAILABLE AT ALL TIMES TO MAKE ANY REPAIRS OR REPLACEMENTS THAT ARE NECESSARY.

SUB-LOTS WITHIN THE DEVELOPMENT:
RESPONSIBILITY FOR COMPLIANCE WITH THE PERMIT AND THE PLAN ON INDIVIDUAL LOTS REMAINS WITH THE PERMITTEE UNTIL AN INDIVIDUAL LOT NOTICE OF INTENT IS FILED WITH OEPA BY THE BUILDER TRANSFERRING RESPONSIBILITY TO THE BUILDER ON AN INDIVIDUAL LOT IS NOT ACCOMPLISHED UNLESS THE LOT IS TEMPORARILY STABILIZED BY THE PERMITTEE AT LEAST 7 DAYS PRIOR TO SUBMITTAL OF THE INDIVIDUAL LOT NOI. TRANSFERRING RESPONSIBILITY FOR INDIVIDUAL LOTS THROUGH AND INDIVIDUAL LOT NOI DOES NOT RELEASE THE PERMITTEE FROM RESPONSIBILITY FOR MAINTAINING CENTRAL PRACTICES EVEN IF THE PRACTICE IS LOCATED ON A SINGLE LOT.

CERTIFICATION:
I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR THE GATHERING OF THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

_____ _____
FRED TOBIN – PRESIDENT DATE

SEWERAGE APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
AS EVIDENCED BY COVERAGE UNDER
LETTER OF APPROVAL
HEREIN ATTACHED

COVER SHEET

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STATE OF OHIO
BRYAN J. ASHMAN
PROFESSIONAL ENGINEER

STORMWATER POLLUTION PREVENTION PLAN
BUCKEYE CROSSING
FOR: TOBIN ENTERPRISES INC.

DRAWN BY: EJHB
CHECKED BY:
FIELD BOOK No.
DATE April 5, 2006
SHEET E1 OF E5
PROJ # 05351

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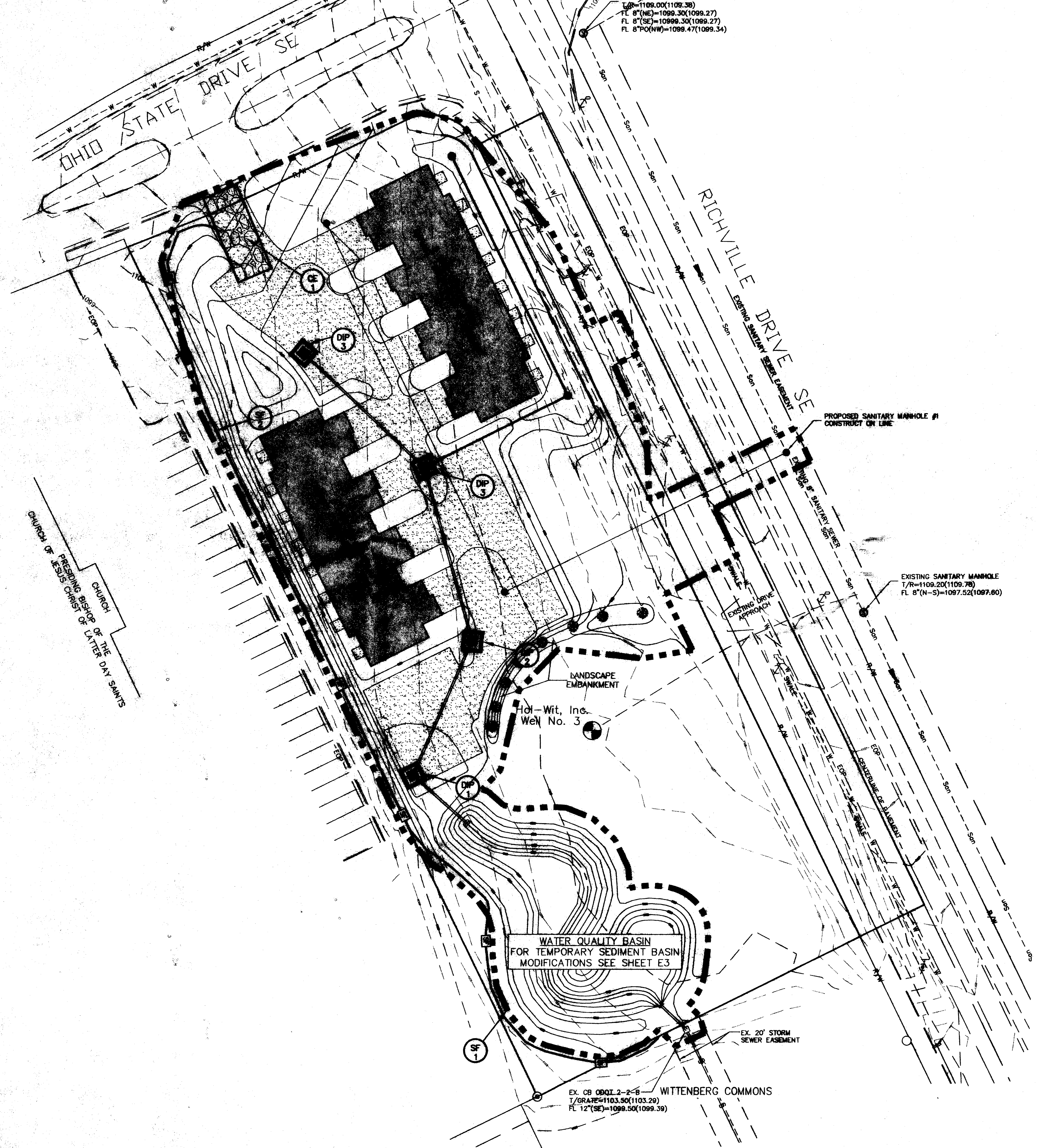
STORMWATER POLLUTION PREVENTION PLAN
BUCKEYE CROSSING



PERMAMENT STABILIZATION	
AREA REQUIRING PERMAMENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT WILL LIE DORMANT FOR ONE YEAR OR MORE.	WITHIN 7 DAYS OF THE MOST RECENT DISTURBANCE.
ANY AREAS WITHIN 50 FEET OF A STREAM AND AT FINAL GRADE.	WITHIN 2 DAYS OF REACHING FINAL GRADE.
ANY OTHER AREAS AT FINAL GRADE.	WITHIN 7 DAYS OF REACHING FINAL GRADE WITHIN THAT AREA.
TEMPORARY STABILIZATION	
AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A STREAM AND NOT AT FINAL GRADE.	WITHIN 2 DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR 7 DAYS OR MORE.
FOR RESIDENTIAL SUBDIVISIONS, NON-RESIDENTIAL SUBDIVISIONS (E.G., INDUSTRIAL PARKS) AND COMMERCIAL DEVELOPMENTS (E.G., SHOPPING CENTERS), ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 21 DAYS BUT LESS THAN ONE YEAR AND NOT WITHIN 50 FEET OF A STREAM.	WITHIN 7 DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA. FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST 7 DAYS PRIOR TO THE TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOTS.
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER.	PRIOR TO THE ONSET OF WINTER WEATHER.

REPAIR AND MAINTENANCE TIME REQUIREMENTS
1. WHEN PRACTICES REQUIRE REPAIR OR MAINTENANCE. IF INSPECTION REVEALS THAT A CONTROL PRACTICE IS IN NEED OF REPAIR OR MAINTENANCE, WITH THE EXCEPTION OF A SEDIMENT BASIN, IT MUST BE REPAIRED OR MAINTAINED WITHIN 48 HOURS OF THE INSPECTION. SEDIMENT BASINS MUST BE REPAIRED OR MAINTAINED WITHIN 7 DAYS OF THE INSPECTION.
2. WHEN PRACTICES FAIL TO PERFORM THEIR INTENDED FUNCTION. IF INSPECTION REVEALS THAT A CONTROL PRACTICE FAILS TO PERFORM ITS INTENDED FUNCTION AND THAT ANOTHER, MORE APPROPRIATE CONTROL PRACTICE IS REQUIRED, THE SWP3 MUST BE AMENDED AND THE NEW CONTROL PRACTICE MUST BE INSTALLED WITHIN 10 DAYS OF THE INSPECTION.
3. WHEN PRACTICES DEPICTED ON THE SWP3 ARE NOT INSTALLED. IF INSPECTION REVEALS THAT A CONTROL PRACTICE HAS NOT BEEN IMPLEMENTED IN ACCORDANCE WITH THE SCHEDULE CONTAINED IN THIS PLAN, THE CONTROL PRACTICE MUST BE IMPLEMENTED PRIOR TO THE NEXT STORM EVENT WHICH PRODUCES RUNOFF FROM THE SITE, BUT IN NO CASE LATER THAN 7 DAYS FROM THE DATE OF INSPECTION.
IF THE INSPECTION REVEALS THAT THE PRACTICE IS NOT NEEDED, THE INSPECTION RECORD MUST CONTAIN A STATEMENT OF EXPLANATION AS TO WHY THE CONTROL PRACTICE IS NOT NEEDED.

SOIL STOCKPILE PROTECTION

LOCATIONS FOR TOPSOIL STOCKPILES SHOULD BE CAREFULLY SELECTED TO INSURE THAT ANY MATERIAL ERODED FROM THE STOCKPILES DOES NOT HAVE DIRECT ACCESS INTO A STORM DRAIN OR DRAINAGEWAY.

THE STOCKPILES SHOULD BE PROTECTED BY EITHER BEING COVERED WITH PLASTIC SHEETING OR BY THE APPLICATION OF TEMPORARY SEEDING.

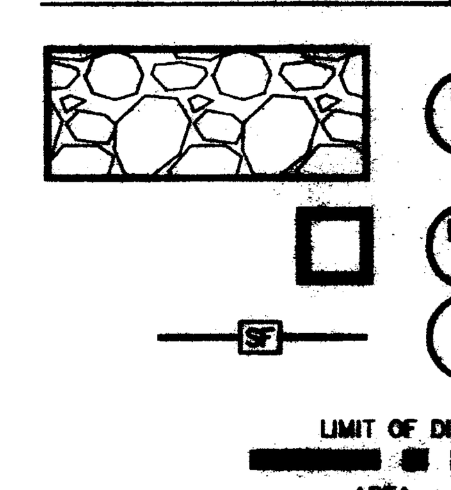
THE BASE OF THE STOCKPILES SHOULD BE PROTECTED BY A LINE OF SILT FENCE ALONG THE LOWER SIDE(S) OF THE STOCKPILE AND NO CLOSER THAN 6' FROM THE BASE.

THE STOCKPILE PROTECTION SHALL REMAIN IN PLACE AND FUNCTIONING UNTIL THE STOCKPILE HAS BEEN REMOVED.

EROSION CONTROL BLANKETS:

1. EROSION CONTROL BLANKETS WILL BE USED ON ALL SLOPES GREATER THAN 3:1 (33%).
2. EROSION CONTRAL BLANKETS WILL BE USED ON ALL SLOPES GREATER THAN 6:1 (16%) WITH A SLOPE LENGTH OF 20 FEET OR MORE.
3. OTHER EROSION AND SEDIMENT CONTROL ITEMS MAY BE NECESSARY DUE TO ENVIRONMENTAL CONDITIONS.

LEGEND OF ESC PRACTICES



EROSION AND SEDIMENT CONTROL ESTIMATED QUANTITIES		
PRACTICE	UNIT	QUANTITY
SAFETY		
SAFETY FENCE	LUMP	LUMP
ROAD STABILIZATION		
CONSTRUCTION ENTRANCE	EACH	1
CONSTRUCTION ROAD STABILIZATION	LIN. FT.	–
SEDIMENT BARRIERS		
SILT FENCE	LIN. FT.	575
BRUSH BARRIER	LIN. FT.	–
DROP INLET PROTECTION	EACH	4
CURB INLET PROTECTION	EACH	–
CULVERT INLET PROTECTION	EACH	–
DIKES & DIVERSIONS		
TEMPORARY DIVERSION DIKE	LIN. FT.	–
TEMPORARY FILL DIVERSION	LIN. FT.	–
WATER BAR/TEMPORARY R/W DIVERSION	EACH	–
DIVERSION	LIN. FT.	–
CONTAINMENT BERM	LIN. FT.	–
SEDIMENT TRAPS & BASINS		
SEDIMENT TRAP (COMPLETE)	EACH	–
SEDIMENT BASIN (COMPLETE)	EACH	–
STORMWATER BASIN MOD. FOR SEDIMENT	EACH	1
DROP INLET/SEDIMENT TRAP	EACH	–
SEDIMENT CONTROL TRENCH	LIN. FT.	–
FLUMES		
TEMPORARY SLOPE DRAIN	LIN. FT.	–
PAVED FLUME	LIN. FT.	–
CHECK DAM	EACH	–
WATERWAY & OUTLET PROTECTION		
TEMPORARY CONVEYANCE CHANNEL	LIN. FT.	–
TEMPORARY OUTLET PROTECTION	EACH	–
TEMPORARY RIPRAP	CU. YD.	–
TEMPORARY CHECK DAM	EACH	–
TEMPORARY LEVEL SPREADER	EACH	–
For Permanent Practices See Site Engineering Plans		
STREAM PROTECTION		
TEMPORARY VEHILCE STREAM CROSSING	EACH	–
UTILITY STREAM CROSSING	EACH	–
VEGETATIVE STREAMBANK STABILIZATION	EACH	–
STRUCTURAL STREAMBANK STABILIZATION	EACH	–
DEWATERING STRUCTURE/DEVICE	EACH	–
TURBIDITY CURTAIN	LIN. FT.	–
SUBSURFACE DRAINAGE		
SUBSURFACE DRAIN	LIN. FT.	–
[illegible]		
SURFACE ROUGHENING	SQ. YD.	–
GRADIENT TERRACING	LIN. FT.	–
TOPSOILING	LUMP	LUMP
GRASS ESTABLISHMENT		
TEMPORARY SEEDING & MULCH	LUMP	LUMP
PERMANENT SEEDING & MULCH	LUMP	LUMP
SODDING	SQ. YD.	–
MULCHES		
MULCHING	SQ. YD.	–
EROSION CONTROL BLANKET	SQ. YD.	–
TURF REINFORCEMENT MAT	SQ. YD.	–
DUST CONTROL		
DUST CONTROL	LUMP	LUMP

THE ESTIMATE OF QUANTITIES LISTED ABOVE IS APPROXIMATE ONLY AND IS BASED ON THE PRACTICES INDICATED ON THE PLAN.

THE ESTIMATED QUANTITIES DO NOT INCLUDE ANY ADDITIONAL MATERIALS THAT MAY BE REQUIRED FOR:

1) MAINTENANCE, REPLACEMENT AND/OR ADJUSTMENT OF PRACTICES AS DETERMINED BY INSPECTIONS.

2) MATERIALS REQUIRED FOR ADDITIONAL PRACTICES, NOT INDICATED ON THE PLAN, WHICH MAY BE REQUIRED BY ACTUAL FIELD CONDITIONS DURING CONSTRUCTION.

FOR THESE QUANTITIES, THE CONTRACTOR MUST RELY UPON HIS EXPERIENCE IN SIMILAR CONSTRUCTION PROJECTS INVOLVING SIMILAR SLOPES, SOIL TYPES, AND SEASONAL RAINFALL.

SEWERAGE APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
AS EVIDENCED BY COPY OF LETTER OF APPROVAL HERETO ATTACHED

HORIZONTAL SCALE
SCALE: 1" = 30'

REVISIONS

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ENGINEERS AND SURVEYORS
BRYAN J. ASHMAN
JEROLD E. GEIB
CANTON, OHIO

STORMWATER POLLUTION PREVENTION PLAN
BUCKEYE CROSSING
FOR: TOBIN ENTERPRISES INC.

DRAWN BY: C.B.B.
CHECKED BY:
FIELD BOOK No.
DATE: [illegible]
SHEET E2 of E5
PROJ.# 05351

TEMPORARY EROSION AND SEDIMENT CONTROL PLAN & ESTIMATED ESC QUANTITIES

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STORMWATER POLLUTION PREVENTION PLAN
BUCKEYE CROSSING

SPECIFICATIONS
FOR
TEMPORARY MODIFICATION TO STORMWATER PONDS USED FOR SEDIMENT CONTROL DURING CONSTRUCTION

1. THE DETENTION/RETENTION BASIN AS DESIGNED, SHALL BE MODIFIED FOR SEDIMENT TRAPPING CAPABILITIES, AND BE OPERATIONAL BEFORE UPSLOPE LAND DISTURBANCE BEGINS.

2. SITE PREPARATION--THE SITE SHALL BE PREPARED IN ACCORDANCE WITH THE ENGINEERING PLANS.

3. CUT-OFF TRENCH (IF REQUIRED) SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERING PLANS.

4. EMBANKMENT--THE EMBANKMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERING PLANS AND SHALL ONLY BE MODIFIED AS INDICATED ON THIS PLAN.

5. PIPE SPILLWAY--THE PIPE SPILLWAY SHALL BE CONSTRUCTED IN ACORDANCE WITH THE ENGINEERING PLANS AND SHALL ONLY BE MODIFIED AS INDICATED ON THIS PLAN.

6. RISER PIPE BASE--THE RISER PIPE SHALL BE SET A MINIMUM OF 6" IN THE CONCRETE BASE.

7. TRASH RACKS--IF REQUIRED BY THIS PLAN, BOTH THE TOP OF THE TEMPORARY RISER AND THE TEMPORARY DEWATERING ORIFICE SHALL BE FITTED WITH TRASH RACKS FIRMLY FASTENED TO THE RISER PIPE.

8. EMERGENCY SPILLWAY--THE EMERGENCY SPILLWAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERING PLANS. IF THE ENGINEERING PLANS DO NOT INCLUDE AN EMERGENCY SPILLWAY, ONE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS PLAN.

9. SEED AND MULCH--THE ENTIRE INSTALLATION SHALL BE STABILIZED IMMEDIATELY FOLLOWING ITS CONSTRUCTION. IN NO CASE SHALL THE EMBANKMENT OR EMERGENCY SPILLWAY REMAIN BARE FOR MORE THAN 7 DAYS.

10. SEDIMENT CLEANOUT--SEDIMENT SHALL BE REMOVED AND THE BASIN RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS FILLED ONE-HALF OF THE POND'S ORIGINAL DEPTH OR AS INDICATED ON THE PLANS. SEDIMENT REMOVED FROM THE BASIN SHALL BE PLACED SO THAT IT WILL NOT ERODE.

11. FINAL REMOVAL--TEMPORARY STRUCTURES OR MODIFICATIONS USED FOR SEDIMENT CONTROL DURING CONSTRUCTION SHALL BE REMOVED ONLY AFTER THE UPSTREAM DRAINAGE AREA IS STABILIZED OR AS INDICATED IN THE PLANS. DEWATERING AND REMOVAL SHALL NOT CAUSE SEDIMENT TO BE DISCHARGED.

12. SEDIMENT SHALL BE REMOVED AS NEEDED TO ACHIEVE THE DESIGN DEPTH AND DIMENSIONS OF THE PERMANENT POND.

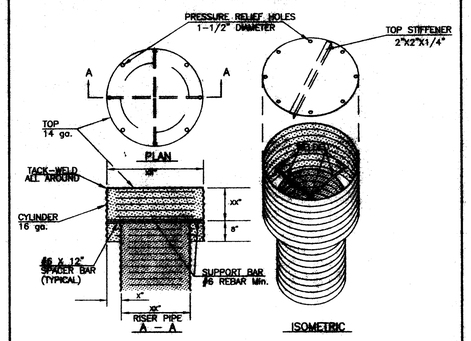
SAFETY NOTE:
SEDIMENT BASINS AND SEDIMENT TRAPS ARE VERY HAZARDOUS INSTALLATIONS, ESPECIALLY FOR CHILDREN. IT IS ESSENTIAL THAT SEDIMENT BASINS AND SEDIMENT TRAPS BE FENCED TO PREVENT UNAUTHORIZED PERSONS FROM GAINING ACCESS TO THE POOL AREA. THE FENCE SHOULD REMAIN IN PLACE UNTIL THE SEDIMENT TRAP OR SEDIMENT BASIN IS COMPLETELY REMOVED.

SEDIMENT BASIN DESIGN DATA	
DRAINAGE AREA	1.6 AC.*
SEDIMENT VOLUME REQUIRED	110 C.Y.
EMBANKMENT TOP WIDTH	5' **
EMBANKMENT TOP ELEVATION	1104.0**
EMBANKMENT SIDE SLOPES	3:1 **
EMERGENCY SPILLWAY ELEVATION	**
EMERGENCY SPILLWAY WIDTH	**
RISER CREST ELEVATION	--
12" OUTLET ELEVATION	1099.44**
SEDIMENT CLEANOUT ELEVATION	--
TRASH RACK REQUIRED	--
BAFFLE REQUIRED	NO

* SEE STORMWATER MANAGEMENT REPORT
** SEE SITE ENGINEERING PLANS

SEDIMENT TRAP EFFICIENCY = %

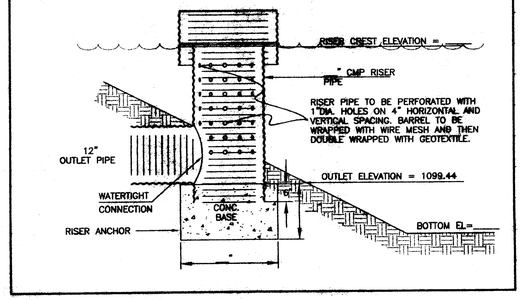
ANTI-VORTEX DEVICE/TRASH RACK



SPECIFICATIONS

1. THE CYLINDER MUST BE FIRMLY FASTENED TO THE TOP OF THE RISER.
2. SUPPORT BARS ARE WELDED TO THE TOP OF THE RISER OR ATTACHED BY STRAPS BOLTED TO THE TOP OF THE RISER.

RISER PIPE DETAIL - 100% DEWATERING DRAWDOWN
NOT TO SCALE



HORIZONTAL SCALE
SCALE 1" = 10'
0 5 10 20

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STORMWATER POLLUTION PREVENTION PLAN
BUCKEYE CROSSING
FOR: TOBIN ENTERPRISES INC.

DRAWN BY: C.H.S.
CHECKED BY:
FIELD BOOK No.
DATE: April 6, 2006
SHEET E.3 OF 05
PROJ.# 05351

SEWERAGE APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
AS ENDORSED BY COPY OF
LETTER OF APPROVAL
HERETO ATTACHED

TEMPORARY SEDIMENT TRAP

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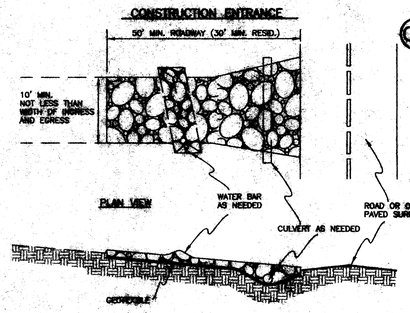

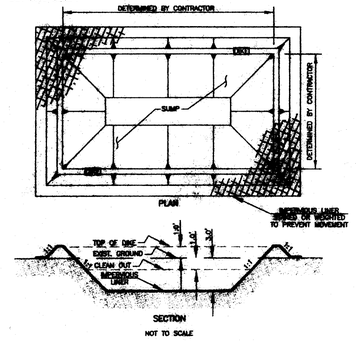

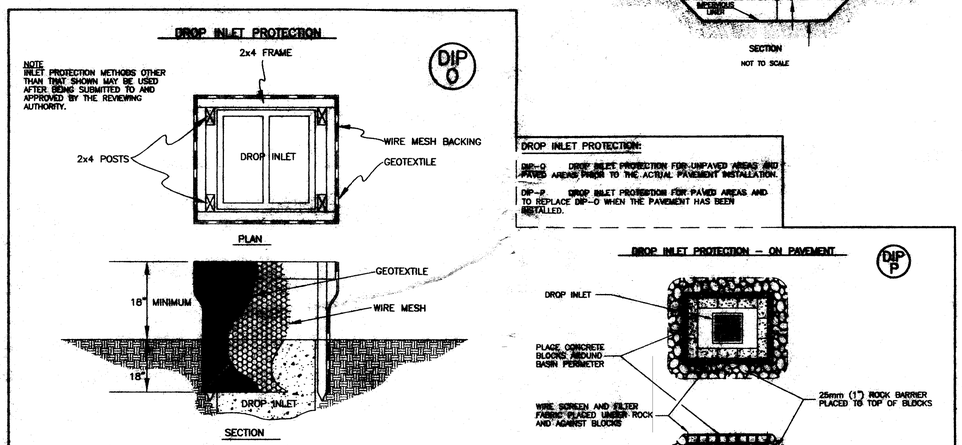

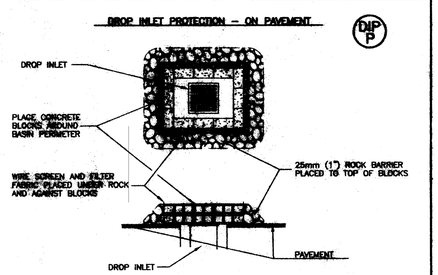

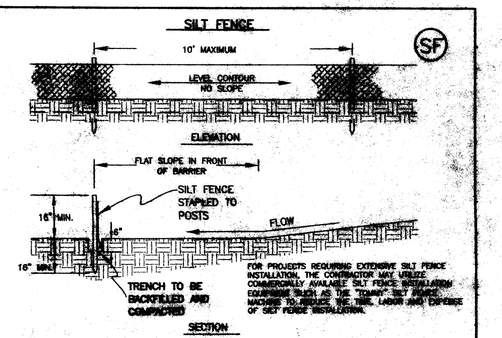

STORMWATER POLLUTION PREVENTION PLAN

BUCKEYE CROSSING

CONSTRUCTION ENTRANCE

PROFILE

FOR ADDITIONAL DETAILS SEE RAINWATER AND LAND DEVELOPMENT

SPECIFICATIONS

1. STONE SIZE – TWO INCH STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 50' (EXCEPT ON SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES.
3. THICKNESS – THE STONE LAYER SHALL BE AT LEAST 12" THICK.
4. WIDTH – THE ENTRANCE SHALL BE AT LEAST 10' WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS AND EGRESS OCCURS.
5. BEDDING – A GEOTEXTILE SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE. IT SHALL HAVE A GRAB TENSILE STRENGTH OF AT LEAST 200 LB. AND A MULLEN BURST STRENGTH OF AT LEAST 190 LB.
6. CULVERT – A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FLOWING ACROSS THE ENTRANCE FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
7. WATER BAR – A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
8. MAINTENANCE – TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
9. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.

DROP INLET PROTECTION

NOTE
INLET PROTECTION METHODS OTHER THAN THAT SHOWN MAY BE USED AFTER BEING SUBMITTED TO AND APPROVED BY THE REVIEWING AUTHORITY.

SECTION

FOR ADDITIONAL DETAILS SEE RAINWATER AND LAND DEVELOPMENT

SPECIFICATIONS

1. INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE STORM DRAIN BECOMES OPERATIONAL.
2. THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH OF AT LEAST 18 INCHES.
3. THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2"x 4" CONSTRUCTION GRADE LUMBER. THE 2x4 POSTS SHALL BE DRIVEN 1' INTO THE GROUND AT THE FOUR CORNERS OF THE INLET AND THE TOP PORTIONS OF 2x4 FRAME ASSEMBLED USING THE OVERLAP JOINT SHOWN. THE TOP OF THE FRAME SHALL BE AT LEAST 6" BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.
4. WIRE MESH SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT FABRIC WITH WATER FULLY IMPOUNDED AGAINST IT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO THE FRAME.
5. GEOTEXTILE SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20–40 SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO IT. IT SHALL EXTEND FROM THE TOP OF THE FRAME TO 18" BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAP ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.
6. BACKFILL SHALL BE PLACED AROUND THE INLET IN COMPACTED 6" LAYERS UNTIL THE EARTH IS EVEN WITH THE NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.
7. A COMPACTED EARTH DIKE OR A CHECK DAM SHALL BE CONSTRUCTED IN THE DITCH LINE BELOW THE INLET IF THE INLET IS NOT IN A DEPRESSION AND IF RUNOFF BYPASSING THE INLET WILL NOT FLOW TO A SETTLING POND. THE TOP OF THE EARTH DIKE SHALL BE AT LEAST 6' HIGHER THAN THE TOP OF THE FRAME.

CONCRETE WASH WATER CONTAINMENT SUMP

THE CONCRETE WASH WATER CONTAINMENT SUMP SHALL BE EXCAVATED AND LINED PRIOR TO THE SCHEDULING OF ANY CONCRETE DELIVERIES TO THE SITE.

THE CAPACITY OF THE SUMP SHALL BE DETERMINED BY THE CONTRACTOR AND BASED ON HIS ESTIMATE OF THE VOLUME OF WASH WATER REQUIRED BY THE PROJECT AND THE FREQUENCY OF CLEANING OUT THE SUMP.

SECTION

NOT TO SCALE

DROP INLET PROTECTION:

DIP-O DROP INLET PROTECTION FOR UNPAVED AREAS AND PAVED AREAS PRIOR TO THE ACTUAL PAVEMENT INSTALLATION.

DIP-P DROP INLET PROTECTION FOR PAVED AREAS AND TO REPLACE DIP-O WHEN THE PAVEMENT HAS BEEN INSTALLED.

DROP INLET PROTECTION – ON PAVEMENT

DROP INLET INSTALLATION SPECIFICATIONS

DROP INLET PROTECTION TO BE INSTALLED ON PAVEMENT OR ON GROUND WHERE SILT FENCE PROTECTION IS NOT APPROPRIATE.

CONCRETE BLOCKS TO BE PLACED AROUND PERIMETER OF BASIN WITH OPENINGS HORIZONTAL. BLOCKS TO BE PLACED WITHOUT SPACES BETWEEN BLOCKS.

WIRE MESH AND FILTER FABRIC TO BE PLACED ON PAVEMENT OR GROUND, EXTENDING 6"+/– UNDER ROCK, AND UP AGAINST FACE OF CONCRETE BLOCKS.

25mm (1"+/–) ROCK TO BE PLACED AROUND THE CONCRETE BLOCK BARRIER, OVER THE WIRE MESH AND FILTER FABRIC. ROCK MUST BE PLACED TO THE TOP OF THE BLOCKS AND EXTEND OUTWARD A MINIMUM OF TWO TIMES THE HEIGHT OF THE BLOCKS.

THE INLET PROTECTION MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL THE ENTIRE CONTRIBUTING AREA HAS BEEN STABILIZED.

SILT FENCE

FOR PROJECTS REQUIRING EXTENSIVE SILT FENCE INSTALLATION, THE CONTRACTOR MAY UTILIZE COMMERCIALLY AVAILABLE SILT FENCE INSTALLATION EQUIPMENT SUCH AS THE "TOMMY" SILT FENCE MACHINE TO REDUCE THE TIME, LABOR AND EXPENSE OF SILT FENCE INSTALLATION.

SECTION

FOR ADDITIONAL DETAILS SEE RAINWATER AND LAND DEVELOPMENT

SPECIFICATIONS

1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
3. TO PREVENT WATER PONDED BY THE SILT FENCE FROM FLOWING AROUND THE ENDS, EACH END SHALL BE CONSTRUCTED UPSLOPE SO THAT THE ENDS ARE AT A HIGHER ELEVATION.
4. WHERE POSSIBLE, SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5' (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16" ABOVE THE ORIGINAL GROUND SURFACE.
7. THE SILT FENCE SHALL BE PLACED IN A TRENCH CUT A MINIMUM OF 6" DEEP. THE TRENCH SHALL BE CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABLE DEVICE WHICH WILL INSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE AND SO THAT 8" OF CLOTH ARE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6" DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED.
9. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE OVERLAPPED WITH THE END STAKES OF EACH SECTION WRAPPED TOGETHER BEFORE DRIVING INTO THE GROUND.
10. MAINTENANCE – SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF TOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES CONCENTRATED FLOW, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE:
    1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED.
    2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR
    3) OTHER PRACTICES SHALL BE INSTALLED.

CRITERIA FOR SILT FENCE MATERIALS

1. FENCE POSTS – THE LENGTH SHALL BE A MINIMUM OF 32" LONG. WOOD POSTS WILL BE 2-BY-2" HARDWOOD OF SOUND QUALITY. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FT.
2. SILT FENCE FABRIC – SEE CHART BELOW

FABRIC PROPERTIES	VALUES	TEST METHOD
GRAB TENSILE STRENGHT	90 LB. MINIMUM	ASTM D 1682
MULLEN BURST STRENGTH	190 PSI MINIMUM	ASTM D 3786
SLURRY FLOW RATE	0.3 GAL./MIN./SQ. FT. MAXIMUM	
EQUIVALENT OPENING SIZE	40–80	US STD. SIEVE CW-02215
ULTRAVIOLET RADIATION STABILITY	90% MINIMUM	ASTM-G-26

SEWERAGE APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
AS EVIDENCED BY COPY OF
LETTER OF APPROVAL
HERETO ATTACHED

MISC. INSTALLATION DETAILS AND SPECIFICATIONS

REVISIONS

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JEROLD E. GEIB

STORMWATER POLLUTION PREVENTION PLAN
BUCKEYE CROSSING
FOR: TOBIN ENTERPRISES INC.

DRAWN BY: C.H.B.
CHECKED BY: ______
FIELD BOOK No. ______
DATE April 6, 2006

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STORMWATER POLLUTION PREVENTION PLAN
BUCKEYE CROSSING

PERMANENT SEEDING

SITE PREPARATION

1. A SUBSOILER, PLOW OR OTHER IMPLEMENT SHALL BE USED TO REDUCE SOIL COMPACTION AND ALLOW MAXIMUM INFILTRATION. SUBSOILING SHOULD BE DONE WHEN THE SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING SHALL NOT BE DONE ON SLIP-PRONE AREAS WHERE SOIL PREPARATION SHOULD BE LIMITED TO WHAT IS NECESSARY FOR ESTABLISHING VEGETATION.
2. THE SITE SHALL BE GRADED AS NEEDED TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION AND SEEDING.
3. RESOIL SHALL BE APPLIED WHERE NEEDED TO ESTABLISH VEGETATION.

SEEDBED PREPARATION

1. LIME -- AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ACID SOIL AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF 100 LB./1,000 S.F. OR 2 TONS/ACRE.
2. FERTILIZER - FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AT A RATE OF 12 LB./1,000 SQ. FT. OR 500 LB./AC. OF 10-10-10 OR 12-12-12 ANALYSIS.
3. THE LIMESTONE AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING-TOOTH HARROW, OR OTHER IMPLEMENT TO A DEPTH OF 3 INCHES. ON SLOPING LAND THE SOIL SHALL BE WORKED ON THE CONTOUR.

SEEDING DATES AND SOIL CONDITIONS

1. SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 OR AUGUST 1 TO SEPTEMBER 30. THESE SEEDING DATES ARE IDEAL BUT, WITH THE USE OF ADDITIONAL MULCH AND IRRIGATION SEEDINGS MAY BE MADE ANY TIME THROUGHOUT THE GROWING SEASON. TILLAGE/SEEDBED PREPARATION SHOULD BE DONE WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND.

DORMANT SEEDINGS

1. SEEDINGS SHALL NOT BE PLANTED FROM OCTOBER 1 THROUGH NOVEMBER 20.
2. THE FOLLOWING METHODS MAY BE USED FOR "DORMANT SEEDING":
   * FROM OCTOBER 1 THROUGH NOVEMBER 20, PREPARE THE SEEDBED, ADD THE REQUIRED AMOUNTS OF LIME AND FERTILIZER, THEN MULCH AND ANCHOR. AFTER NOVEMBER 20, AND BEFORE MARCH 15, BROADCAST THE SELECTED SEED MIXTURE. INCREASE THE SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING.
   * FROM NOVEMBER 20 THROUGH MARCH 15, WHEN SOIL CONDITIONS PERMIT, PREPARE THE SEEDBED, LIME AND FERTILIZE, APPLY THE SELECTED SEED MIXTURE, MULCH AND ANCHOR. INCREASE THE SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING.
   * APPLY SEED UNIFORMLY WITH A CYCLONE SPREADER, DRILL, CULTIPACKER SEEDER, OR HYDRO-SEEDER (SLURRY MAY INCLUDE SEED AND FERTILIZER) ON A FIRM, MOIST SEEDBED.
   * WHERE FEASIBLE, EXCEPT WHEN A CULTIPACKER TYPE SEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A CULTIPACKER, ROLLER, OR LIGHT DRAG. ON SLOPING LAND, SEEDING OPERATIONS SHOULD BE ON THE CONTOUR WHERE FEASIBLE.

PERMANENT SEEDING

SEED MIX	SEEDING RATE LB./ACRE	SEEDING RATE LB./1,000 S.F.	NOTES:
GENERAL USE			
CREEPING RED FESCUE DOMESTIC RYE GRASS KENTUCKY BLUEGRASS	20-40 10-20 10-20	1/2 - 1 1/4 - 1/2 1/4 - 1/2	
TALL FESCUE	40	1	
DWARF FESCUE	40	1	
STEEP BANKS OR CUT SLOPES			
TALL FESCUE	40	1	
CROWN VETCH TALL FESCUE	10 20	1/4 1/2	NOT LATER THAN AUGUST
FLAT PEA TALL FESCUE	20 20	1/2 1/2	NOT LATER THAN AUGUST
ROAD DITCHES AND SWALES			
TALL FESCUE	40	1	
DWARF FESCUE KENTUCKY BLUEGRASS	90 5	2 1/4	
LAWNS			
KENTUCKY BLUEGRASS PERENNIAL RYE GRASS	60 60	1 1/2 1 1/2	
KENTUCKY BLUEGRASS CREEPING RED FESCUE	60 60	1 1/2 1 1/2	FOR SHADED AREAS

NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED

MULCHING SEE MULCH.

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.

MAINTENANCE OF PERMANENT SEEDING

1. PERMANENT SEEDING SHALL NOT BE CONSIDERED ESTABLISHED FOR AT LEAST 1 FULL YEAR FROM THE TIME OF PLANTING. SEEDED AREAS SHALL BE INSPECTED FOR FAILURE AND VEGETATION REESTABLISHED AS NEEDED. DEPENDING ON SITE CONDITIONS, IT MAY BE NECESSARY TO IRRIGATE, FERTILIZE, OVERSEED, OR REESTABLISH PLANTINGS IN ORDER TO PROVIDE PERMANENT VEGETATION FOR ADEQUATE EROSION CONTROL.
2. MAINTENANCE FERTILIZATION RATES SHALL BE ESTABLISHED BY SOIL TEST RECOMMENDATIONS OR BY USING THE RATES SHOWN IN THE FOLLOWING TABLE.

FERTILIZATION AND MOWING

MIXTURE	FORMULA	LB./AC.	LIME	MOWING
CREEPING RED FESCUE RYE GRASS KENTUCKY BLUEGRASS	10-10-10	500	FALL, YEARLY OR AS NEEDED	NOT CLOSER THAN 3"
TALL FESCUE	10-10-10	500		NOT CLOSER THAN 4"
DWARF FESCUE	10-10-10	500		NOT CLOSER THAN 2"
CROWN VETCH FESCUE	0-20-20	400	SPRING, YEARLY FOLLOWING ESTABLISH-MENT AND EVERY 4-7 YEARS THEREAFTER	DO NOT MOW
FLAT PEA FESCUE	0-20-20	400		DO NOT MOW

NOTE: SOIL TEST RECOMMENDATIONS PREFERRED OVER ABOVE

TEMPORARY SEEDING

1. STRUCTURAL EROSION -- AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS 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 45 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 IS NOT POSSIBLE.
4. SOIL AMENDMENTS -- APPLICATIONS OF TEMPORARY VEGETATION SHALL ESTABLISH ADEQUATE STANDS 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 SPREADER, 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.

TEMPORARY SEEDING SPECIES SELECTION

SEEDING DATES	SPECIES	LB./1,000 SQ. FT.	PER ACRE
MARCH 1 TO AUGUST 15	OATS TALL FESCUE ANNUAL RYE GRASS	3 1 1	4 BUSHEL 40 LBS. 40 LBS.
	PERENNIAL RYE GRASS TALL FESCUE ANNUAL RYE GRASS	1 1 1	40 LBS. 40 LBS. 40 LBS.
AUGUST 16 TO NOVEMBER 1	RYE TALL FESCUE ANNUAL RYE GRASS	3 1 1	2 BUSHEL 40 LBS. 40 LBS.
	WHEAT TALL FESCUE ANNUAL RYE GRASS	1 1 1	2 BUSHEL 40 LBS. 40 LBS.
	PERENNIAL RYE GRASS TALL FESCUE ANNUAL RYE GRASS	1 1 1	40 LBS. 40 LBS. 40 LBS.
NOV. 1 TO SPRING SEEDING	MULCH, SODDING OR DORMANT SEEDING ONLY		

NOTE : OTHER APPROVED SPECIES MAY BE SUBSTITUTED

TOPSOILING

STRIPPING
TOPSOIL OPERATIONS SHOULD NOT BE PERFORMED WHEN THE SOIL IS WET OR FROZEN. STRIPPING SHALL BE CONFINED TO THE IMMEDIATE CONSTRUCTION AREA. ALL PERIMETER DIKES, BASINS, AND OTHER SEDIMENT CONTROLS SHALL BE IN PLACE PRIOR TO STRIPPING.

STOCKPILING
TOPSOIL SHALL BE STOCKPILED IN A MANNER AND LOCATION THAT NATURAL DRAINAGE IS NOT OBSTRUCTED AND NO OFF-SITE SEDIMENT DAMAGE SHALL RESULT AND ANY ERODED MATERIAL DOES NOT HAVE DIRECT ACCESS TO ANY STORM DRAINS OR DRAINAGEWAYS. STOCKPILE SIDE SLOPES SHALL NOT EXCEED 2:1.

STOCKPILE PROTECTION
PERIMETER CONTROLS (SILT FENCE OR EARTH BARRIER) MUST BE PLACED AROUND THE STOCKPILE IMMEDIATELY. TEMPORARY SEEDING OF THE STOCKPILE MUST BE PERFORMED WITHIN 7 DAYS IF THE STOCKPILE IS TO REMAIN DORMANT FOR LONGER THAN 30 DAYS.

SITE PREPARATION AND MAINTENANCE DURING TOPSOILING
BEFORE TOPSOILING, ALL NECESSARY EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, DIKES, LEVEL SPREADERS, SEDIMENT BASINS, ETC. MUST BE IMPLEMENTED. THESE PRACTICES MUST BE MAINTAINED DURING TOPSOILING.

LIMING
WHERE THE pH OF THE SUBSOIL IS 6 OR LESS, OR THE SOIL IS COMPOSED OF HEAVY CLAYS, AGRICULTURAL LIMESTONE SHALL BE SPREAD IN ACCORDANCE WITH SOIL TESTS OR THE VEGETATIVE ESTABLISHMENT PRACTICE BEING USED.

BONDING
IMMEDIATELY PRIOR TO DUMPING AND SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY DISCING OR SCARIFYING TO A DEPTH OF AT LEAST 2" TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL.

APPLICATION
TOPSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY CONDITION, WHEN TOPSOIL OR SUBGRADE IS EXCESSIVELY WET, OR IN A CONDITION THAT THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING OR PROPOSED SODDING OR SEEDING. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 2" ON 3:1 OR STEEPER SLOPES AND 4" ON FLATTER SLOPES. ANY IRREGULARITIES IN THE SURFACE SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

TOPSOIL MUST BE COMPACTED ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL AND TO OBTAIN A LEVEL SEEDBED FOR THE ESTABLISHMENT OF HIGH MAINTENANCE TURF. UNDUE COMPACTION SHALL BE AVOIDED BECAUSE IT INCREASES RUNOFF VELOCITY AND VOLUME, AND DETERS SEED GERMINATION.

SPECIAL CONSIDERATION SHOULD BE GIVEN TO THE TYPES OF EQUIPMENT USED TO PLACE TOPSOIL IN AREAS TO RECEIVE FINE TURF. AVOID UNNECESSARY COMPACTION BY HEAVY MACHINERY WHENEVER POSSIBLE. IN AREAS WHICH ARE NOT GOING TO BE MOWED, THE SURFACE SHOULD BE LEFT ROUGH IN ACCORDANCE WITH "SURFACE ROUGHENING".

SOIL STERILANTS
NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS UNTIL SUFFICIENT TIME HAS ELAPSED TO PERMIT DISSIPATION OF TOXIC MATERIALS.

CUBIC YARDS OF TOPSOIL REQUIRED FOR APPLICATION TO VARIOUS DEPTHS

DEPTH (INCHES)	PER 1,000 SQUARE FEET	PER ACRE
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806

TopSoiling.dwg

MULCH

SPECIFICATIONS

MATERIALS:
MATERIALS MAY BE SELECTED FROM THE FOLLOWING TABLE UNLESS SPECIFIED OTHERWISE IN THE PLAN:

ORGANIC MULCH MATERIALS AND APPLICATION RATES

MULCHES:	RATES: Per Acre	RATES: Per 1,000 sq.ft.	NOTES:
Straw	1-1/2 - 2 tons (Minimum 2 tons for winter cover)	70 - 90 lbs.	Free from weeds and coarse matter. must be anchored. Spread with mulch blower or by hand.
Corn Stalks	4 - 6 tons	185 - 275 lbs.	Cut or shredded in 4-6" lengths. Air-dried. Do not use in fine turf areas. Apply with mulch blower or by hand.
Fiber Mulch	Minimum 1,500 lbs.	35 lbs.	Do not used this mulch for winter cover or during hot, dry months.* Apply as slurry.
Wood Chips	4 - 6 tons	185 - 275 lbs.	Free of coarse matter. Air-dried. Treat with 12 lbs. nitrogen per ton. Do not use in fine turf orreas. Apply with mulch blower, chip handler, or by hand.
Bark Chips or Shredded Bark	50 - 70 cu.yds.	1 - 2 cu.yds.	Free of coarse matter. Air-dried. Do not use in fine turf orreas. Apply with mulch blower, chip handler, or by hand.
* When fiber mulch is the only available mulch during periods when straw should be used, apply at a minimum rate of 2,000 lbs./ac. OR 45 lbs./1,000 sq. ft..			

PRIOR TO MULCHING:
COMPLETE THE REQUIRED GRADING AND INSTALL THE NEEDED SEDIMENT CONTROL PRACTICES.

LIME AND FERTILIZER SHOULD BE INCORPORATED AND SURFACE ROUGHENING ACCOMPLISHED AS NEEDED. SEED SHOULD BE APPLIED PRIOR TO MULCHING EXCEPT IN THE FOLLOWING CASES:
1. WHERE SEED IS TO BE APPLIED AS PART OF A HYDROSEEDER SLURRY CONTAINING FIBER MULCH.
2. WHERE SEED IS TO BE APPLIED FOLLOWING A STRAW MULCH SPREAD DURING WINTER MONTHS.

APPLICATION:
MULCH MATERIALS SHALL BE SPREAD UNIFORMLY, BY HAND OR MACHINE. WHEN SPREADING MULCH BY HAND, DIVIDE THE AREA TO BE MULCHED INTO APPROXIMATELY 1,000 sq. ft.. SECTIONS AND PLACE 70-90 lb.. ($1\frac{1}{2}$ TO 2 BALES) OF STRAW IN EACH SECTION TO FACILITATE UNIFORM DISTRIBUTION.

MULCH ANCHORING:
STRAW MULCH MUST BE ANCHORED IMMEDIATELY AFTER SPREADING TO PREVENT DISPLACEMENT. THE FOLLOWING METHODS OF ANCHORING STRAW MAY BE USED:
1. MULCH ANCHORING TOOL (KRIMPER): THIS METHOD IS LIMITED TO USE ON SLOPES NO STEEPER THAN 3:1. MACHINERY SHALL BE OPERATED ON THE CONTOUR.
2. FIBER MULCH: APPLY FIBER MULCH BY MEANS OF A HYDROSEEDER AT A RATE OF 500-750 lbs./acre OVER TOP OF STRAW MULCH.
3. LIQUID MULCH BINDERS: APPLICATION SHOULD BE HEAVIEST AT EDGES OF AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT DISPLACEMENT. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR MAY BE SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL.
   a. SYNTHETIC BINDERS: FORMULATED BINDERS OR ORGANICALLY FORMULATED PRODUCTS MAY NE USED AS RECOMMENDED BY THE MANUFACTURER.
   b. ASPHALT: RECOMMENDED FOR USE ARE RAPID CURING (RC-70, RC-250, RC-800), MEDIUM CURING (MC-250, MC-800), AND EMULSIFIED ASPHALT (SS-1,CSS-1,CMS-,MS-2,RS-1, RS-2, CRS-1 & CRS-2). APPLY ASPHALT AT 0.10 GALLON PER SQUARE YARD (10 gal./1,000 sq.ft.).
   c. ASPHALT DESIGNATIONS ARE FROM THE ASPHALT INSTITUTE SPECIFICATIONS.
4. MULCH NETTINGS: LIGHTWEIGHT PLASTIC, COTTON, OR PAPER NETS MAY BE STAPLED OVER THE MULCH IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

MAINTENANCE:
INSPECT PER THE SCHEDULE CONTAINED IN THE PLAN TO CHECK FOR EROSION. WHERE EROSION IS OBSERVED IN MULCHED AREAS, ADDITIONAL MULCH SHOULD BE APPLIED. NETS AND MATS SHOULD BE INSPECTED FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, RE-INSTALL NETTING OR MATTING AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH.

DUST CONTROL MEASURES DURING CONSTRUCTION

VEGETATIVE COVER - IN AREAS SUBJECT TO LITTLE OR NO CONSTRUCTION TRAFFIC, A VEGETATIVELY STABILIZED SURFACE WILL REDUCE DUST EMISSIONS.

MULCH - NOT RECOMMENDED WITHIN HEAVY TRAFFIC PATHWAYS. BINDERS OR TACKIFIERS SHOULD BE USED TO TACK ORGANIC MULCHES.

TILLAGE - CHISEL-TYPE PLOWS SPACES ABOUT 12 INCHES APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT. tHE PRACTICE SHOULD BE USED BEFORE WIND EROSION STARTS. BEGIN PLOWING ON THE WINDWARD SIDE OF THE SITE.

IRRIGATION - SPRINKLE HAUL ROADS AND HEAVY TRAFFIC ROUTES WITH WATER UNTIL THE SURFACE IS WET. REPEAT AS NEEDED.

SPRAY-ON ADHESIVES - THE FOLLOWING TABLE LISTS VARIOUS ADHESIVES AND CORRESPONDING MIXING AND APPLICATION INFORMATION:

ADHESIVE	WATER DILUTION (ADHESIVE: WATER)	TYPE OF NOZZLE	APPLICATION RATE GALLONS/ACRE
ANIONIC ASPHALT EMULSION	7:1	OARSE SPRAY	1,200
LATEX EMULSION	12.5:1	FINE SPRAY	235
RESIN IN WATER	4:1	FINE SPRAY	300
ACRYLIC EMULSION (NON-TRAFFIC)	7:1	COARSE SPRAY	450
ACRYLIC EMULSION (TRAFFIC)	3.5:1	COARSE SPRAY	350

STONE - USE CRUSHED STONE OR COARSE GRAVEL TO STABILIZE ROADS AND TRAFFIC AREAS.

BARRIERS - A BOARD FENCE, WIND FENCE, SILT FENCE. OR SIMILAR BARRIER PLACED PERPENDICULAR TO PREVAILING WIND CURRENTS AT INTERVALS OF ABOUT 15 TIMES THE BARRIER HEIGHT WILL HELP TO CONTROL WIND CURRENTS AND BLOWING SOIL.

CALCIUM CHLORIDE - APPLICATION RATES SHOULD BE STRICTLY IN COMPLIANCE WITH THE SUPPLIERS SPECIFICATIONS. THE CHEMICAL MAY BE APPLIED BY MECHANICAL SPREADER AS LOOSE, DRY GRANULES OF FLAKES AT A RATE THAT KEEPS THE SURFACE MOIST BUT NOT SO HIGH AS TO CAUSE WATER POLLUTION OR PLANT DAMAGE.

SEWERAGE APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
AS EVIDENCED BY COPY OF LETTER OF APPROVAL HERETO ATTACHED

MISC. INSTALLATION DETAILS AND SPECIFICATIONS

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STORMWATER POLLUTION PREVENTION PLAN
BUCKEYE CROSSING
FOR: TOBIN ENTERPRISES, INC.

DRAWN BY: C.H.B.
CHECKED BY:
FIELD BOOK No.
DATE April 6, 2006
SHEET E5 OF E5
PROJ.# 05351