GENERAL NOTES

1. ITEM NUMBERS REFER TO THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS 2010, AND ALL CONSTRUCTION WORK SHALL BE DONE ACCORDING TO SAID SPECIFICATIONS OF BUTLER COUNTY REQUIREMENTS AND STANDARDS FOR SUBDIVISIONS. WHEN IN CONFLICT, THE COUNTY REQUIREMENTS SHALL PREVAIL.

2. ITEMS THAT PERTAIN TO UNDERGROUND UTILITIES SUCH AS WATERMAIN PIPE, SANITARY SEWER PIPE, WATER VALVES AND MANHOLE FRAMES AND COVERS, ETC., WILL REMAIN UNDER SPECIFICATIONS OF THE UTILITY SERVING THE AREA. STORM SEWERS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUTLER COUNTY ENGINEER.

3. ALL TRENCHES WITHIN THE RIGHT-OF-WAY AND 10' UTILITY EASEMENT SHALL BE COMPACTED AND BACKFILLED IN ACCORDANCE WITH ITEM 203 AND 603 IN THE STATE SPECIFICATIONS.

4. SURFACE COURSE (ITEM 448) AND TACK COAT (ITEM 407) ARE TO BE APPLIED NO SOONER THAN TWELVE (12) MONTHS AFTER THE LEVELING COURSE, (ITEM 448), AND FIFTY (50) PERCENT OF THE HOMES ARE COMPLETED. IF AFTER TWO (2) YEARS FIFTY (50) PERCENT OF THE HOMES HAVE BEEN COMPLETED, THEN THE TOP COURSE MAY BE APPLIED.

5. A MINIMUM 10' UTILITY EASEMENT SHALL BE SHOWN ON THE RECORD PLAT PARALLEL AND IMMEDIATELY ADJACENT TO THE RIGHT-OF-WAY LINE ALLOWING FOR INSTALLATION, OPERATION AND MAINTENANCE OF SEWERS, WATER, ELECTRIC, AND TELEPHONE CONDUITS AND ANY OTHER PUBLIC OR QUASI PUBLIC UTILITY.

6. DEVELOPER SHALL BE RESPONSIBLE FOR THE INSTALLATION OF CONDUITS FOR THE FULL WIDTH OF THE PUBLIC RIGHT-OF-WAY AT A DEPTH OF 36" FOR USE BY THE ELECTRIC, TELEPHONE, AND CABLE SERVICES. THE LOCATION OF THE LINES SHALL BE COORDINATED WITH UTILITY COMPANIES BY THE DEVELOPER.

7. SANITARY LATERALS SHALL BE EXTENDED TO AT LEAST TEN (10) FEET BEYOND THE PROPERTY/RIGHT-OF-WAY OR TO THE EDGE OF THE EASEMENT, WHICHEVER IS GREATER.

8. SANITARY LATERALS, WHICH SHALL INCLUDE ALL PIPE AND APPURTENANCES FROM THE BUILDING TO THE PUBLIC SEWER MAIN, AND THE CONNECTION TO THE PUBLIC SEWER MAIN SHALL BE CONSIDERED PRIVATE AND THE RESPONSIBILITY OF THE PROPERTY OWNER TO MAINTAIN. THE CONNECTION TO THE SEWER WOULD BE ANY PIPING THAT EXTENDS OUT FROM THE MAIN BARREL OF THE SEWER MAIN.

9. IF METER PITS CANNOT BE INITIALLY INSTALLED AT THE LOCATION SHOW ON THE TYPICAL SECTION, A CURB STOP CAN BE SET UP AT THIS LOCATION.

10. ALL ELECTRICAL TRANSFORMERS SHALL BE LOCATED SO THAT THEY DO NOT INTERFERE WITH THE EXISTING MANHOLES OR WATER MAIN APPURTENANCES.

11. SUMP LINE CONDUITS ARE TO BE SDR-35.

12. WATER MAIN MATERIALS, VALVES, FIRE HYDRANTS, FITTINGS, AND APPURTENANCES AND INSTALLATION TO BE AS PER BUTLER COUNTY SPECIFICATIONS, USING CLASS 53 DUCTILE IRON AS PER AWWA C-151 WITH 4' MINIMUM COVER.

13. SANITARY SEWER MATERIALS AND INSTALLATION TO BE AS PER BUTLER COUNTY SPECIFICATION, USING SECTION 3110 FOR PVC SDR-35 & 26 PIPE; SECTION 3140 FOR ABS OR PVC COMPOSITE PIPE; SECTION 3410 FOR MANHOLES.

14. CROSSINGS WHENEVER A SANITARY SEWER AND WATER MAIN MUST CROSS, THE SEWER SHALL BE AT SUCH AN ELEVATION THAT THE CROWN OF THE SEWER IS AT LEAST EIGHTEEN (18) INCHES MEASURED BETWEEN THE OUTSIDE PIPE WALLS, BELOW THE BOTTOM OF THE WATER MAIN.

IF IT IS ABSOLUTELY IMPOSSIBLE TO MAINTAIN THE EIGHTEEN (18) IN VERTICAL SEPARATION, THE WATER MAIN SHALL BE RELOCATED OR THE SEWER SHALL BE CONSTRUCTED AS FOLLOWS:

A. A SEWER PASSING OVER OR UNDER THE WATER MAIN SHALL BE ENCASED OR CONSTRUCTED OF MATERIALS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION FOR A MINIMUM DISTANCE OF TEN (10) FEET ON EACH SIDE OF THE WATER MAIN.
B. THE SEWER CROSSING SHALL BE CONSTRUCTED SO THAT THE SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS.
C. WHERE A WATER MAIN PASSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE OF THE WATER MAIN.

15. STORM SEWER PIPE SHALL MEET THE REQUIREMENTS AS FOLLOWS:

A. PVC PIPE AS PER ODOT SUPPLEMENTAL SPECIFICATION 931 FOR ALL DIAMETERS (CONTECH A2000 OR EQUAL).
B. HDPE PIPE AS PER ODOT SUPPLEMENTAL SPECIFICATION 944 FOR DIAMETERS UP TO AND INCLUDING 24".
C. CORRUGATED STEEL SPIRAL RIB PIPE AS PER ODOT SUPPLEMENTAL SPECIFICATION 943 FOR ALL DIAMETERS (CONTECH ULTRAFLO OR EQUAL).
D. REINFORCED CONCRETE PIPE AS PER ODOT CONSTRUCTION AND MATERIAL SPECIFICATION 706.02 FOR ALL DIAMETERS. CLASS SHALL BE SPECIFIED AT THE CONTRACTOR'S REQUEST. (CINCINNATI CONCRETE PIPE, DURACRETE, OR EQUAL)

INSTALLATION SHALL MEET BUTLER COUNTY SPECIFICATIONS. ALL JOINTS SHALL BE SOIL SEAL JOINTS UNLESS SPECIFICALLY NOTED ON THE PLANS.

16. DEFLECTION TESTING FOR STORM SEWERS AND CULVERTS. FIFTEEN PERCENT (15%) OF ALL STORM SEWERS SHALL BE TESTED FOR DEFLECTION WITHIN THIRTY (30) DAYS AFTER THEY ARE COMPLETE. BUTLER COUNTY ENGINEER OR HIS DESIGNATED REPRESENTATIVE WILL DETERMINE WHAT FIFTEEN PERCENT (15%) SHALL BE TESTED. IF ANY STORM SEWER IN THE ORIGINAL FIFTEEN PERCENT (15%) IS FOUND OUT OF COMPLIANCE, DEFLECTION TESTS WILL BE REQUIRED ON 100% OF THE REMAINING STORM SEWER. A VERTICAL RING DEFLECTION GREATER THAN FIVE PERCENT (5%) WILL NOT BE ALLOWED. THIS DEFLECTION IS DEFINED AS FIVER PERCENT (5%) REDUCTION IN THE VERTICAL BASE OR AVERAGE INSIDE DIAMETER. THE METHOD OF TESTING SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. IF RIGID BALLS OR MANDRELS ARE USED TO TEST PIPE DEFLECTION, NO MECHANICAL PULLING DEVICES SHALL BE USED. THE DEFLECTION TEST MAY BE CONDUCTED WITH A NINE PRONG MANDREL, A BALL OR A CYLINDER OR ANOTHER MANNER ACCEPTABLE TO THE BUTLER COUNTY ENGINEER OR HIS DESIGNATED REPRESENTATIVE. THE TESTING WILL BE ACCOMPLISHED FROM MANHOLE TO MANHOLE OR CATCHBASIN TO CATCHBASIN, FOLLOWING THE COMPLETE FLUSHING OF THE LINE. THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT REQUIRED TO COMPLETE THE DEFLECTION TESTING. ANY SECTION OF PIPE THAT FAILS TO MEET THE AFOREMENTIONED REQUIREMENTS SHALL BE REROUNDED BY A PROCEDURE ACCEPTABLE TO THE COUNTY OR BE EXCAVATED AND EITHER RELAYED OR REPLACED, AND RETESTED UNTIL THE REQUIREMENTS ARE MET.

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

18. ALL CATCH BASINS AND MANHOLES WITH A DEPTH GREATER THAN FOUR (4) FEET SHALL BE PROVIDED WITH STEPS. STEPS SHALL MEET THE REQUIREMENTS OF ODOT STD. 604 AND SHALL CONFORM TO THE DETAILS AS SHOWN ON BUTLER COUNTY STANDARD DRAWING MH-1A.

19. ALL BUILDINGS TO BE SERVED BY THE PUBLIC SEWER SYSTEM SHALL BE CONSTRUCTED SO AS TO PROVIDE A MINIMUM OF FOUR (4) FEET OF VERTICAL SEPARATION BETWEEN THE PUBLIC SANITARY SEWER, AT THE POINT OF CONNECTION, AND THE LOWEST BUILDING LEVEL SERVED BY THE GRAVITY SEWER CONNECTION. IN ADDITION, SAID BUILDING LEVEL SHALL BE AT LEAST ONE (1) FOOT ABOVE THE LOWEST POINT OF FREE-OVERFLOW (NON-SEALED MANHOLE COVER) UPSTREAM OF ANY TREATMENT FACILITY OF WASTEWATER PUMPING FACILITY THAT RECEIVES THE DISCHARGE FROM SAID BUILDING. SAID MINIMUM SERVICE LATERALS SHALL BE RECORDED ON THE "AS-BUILT" PLANS FOR THE DEVELOPMENT WHICH WILL BE KEPT ON FILE IN THE OFFICE OF THE BUTLER COUNTY WATER AND SEWER DEPARTMENT.

20. BUTLER COUNTY WATER AND SEWER DEPARTMENT DOES NOT ACCEPT ANY RESPONSIBILITY FOR THE RELOCATION, REPAIR, OR REPLACEMENT OF ANY OTHER UTILITY INSTALLED WITHIN FIVE (5) FEET OF THE CENTER LINE OF ANY SANITARY SEWER MAIN OR WATER MAIN.

21. ALL WATER MAIN VALVES TO HAVE A MINIMUM DEPTH OF TWO AND ONE HALF (2.5) FEET AND A MAXIMUM DEPTH OF FOUR (4) FEET FROM PROPOSED GRADE TO THE TOP OF THE VALVE OPERATING NUT.

22. ANY WATER MAIN TWELVE (12) INCH DIAMETER OR LARGER SHALL BE ENCASED WITH LINEAR LOW-DENSITY POLYETHYLENE ENCASEMENT (POLYWRAP) AS PER SECTION 1520 OF THE BUTLER COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES STANDARD SPECIFICATIONS AND DETAILS BOOK.

23. ALL SANITARY SEWER LATERALS SHALL BE AT LEAST FOUR (4) FEET BELOW A PROPOSED BASEMENT FLOOR ELEVATION AT THE POINT OF CONNECTION TO SEWER MAIN AND SHALL NOT EXCEED A DEPTH OF TWELVE (12) FEET BELOW FINISH GRADE AT THE END OF THE LATERAL AT THE RIGHT-OF-WAY UNLESS SPECIFICALLY AUTHORIZED BY THE COUNTY.

24. PRIVATE DRIVEWAYS, PARKING LOTS AND OTHER PAVED AREAS, EARTHEN BERMS, OR STRUCTURES SHOULD NOT BE CONSTRUCTED OVER PRIVATE WATER OR SEWER LINES WITHIN THE PUBLIC ROAD RIGHT-OF-WAY OR WITHIN EASEMENT AREAS FOR THE PUBLIC UTILITIES. SHOULD THIS OCCUR, THE PROPERTY OWNER SHALL BE HELD RESPONSIBLE FOR THE PROTECTION AND REPAIR AND FOR PROVIDING ACCESS TO ANY CURB STOPS, METER PITS, MANHOLES, CLEAN-OUTS, ETC. INSTALLED IN CONJUNCTION WITH THESE PRIVATE SERVICES LIENS AND FOR ANY DAMAGE OR RESTORATION OF THE PAVED SURFACES OR STRUCTURES THAT MAY RESULT FROM THE FUTURE OPERATION, MAINTENANCE, REPAIR OR REPLACEMENT OF SAID SERVICE LINES AND APPURTENANCES.

25. PROVIDE THE BUTLER COUNTY ENGINEER'S OFFICE WITH A FORTY-EIGHT (48) HOUR NOTICE PRIOR TO THE START OF ANY CONSTRUCTION, INCLUDING SANITARY INSTALLATION. PHONE (513) 785-4145

26. CONTRACTORS TO ACCEPT ALL QUANTITIES AS CORRECT PRIOR TO BEGINNING CONSTRUCTION.

27. ANY ROADWAY SETTLEMENT GREATER THAN ONE (1) INCH WILL BE REQUIRED TO BE REPAIRED WITH ODOT ITEM 613 LOW STRENGTH MORTAR BACKFILL (TYPE 1)

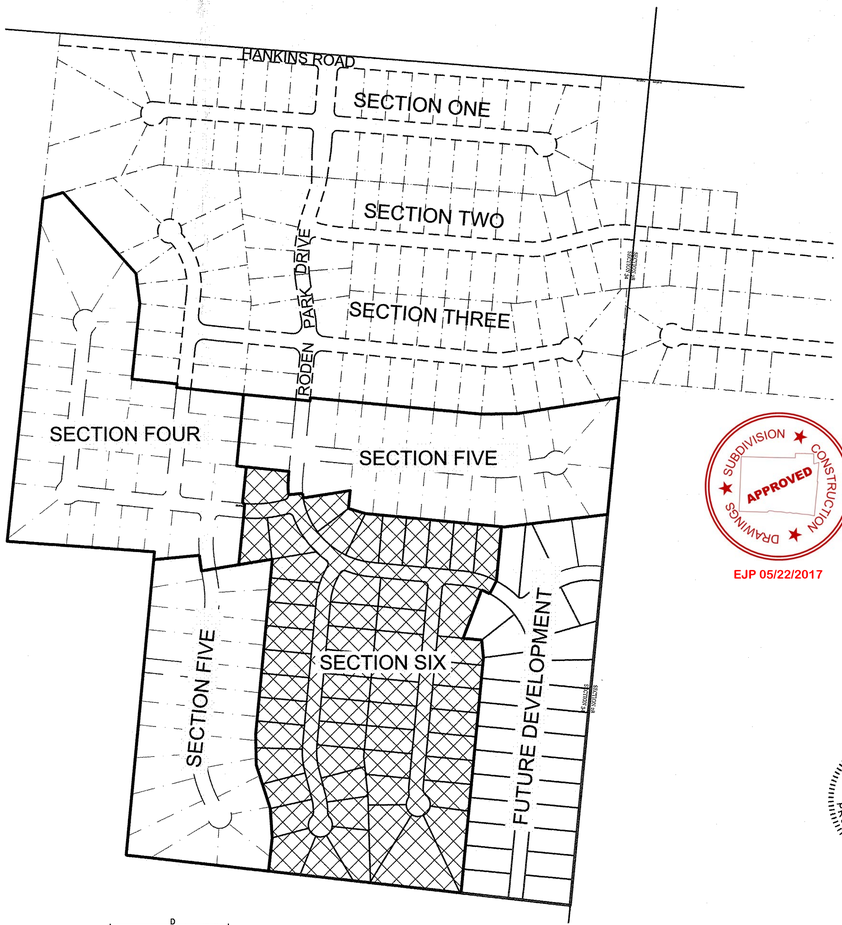
28. A TYPICAL FIVE (5) FOOT DRAINAGE EASEMENT IS TO BE PROVIDED ON BOTH SIDES OF EVERY LOT LINE.

29. EXISTING ZONING: R-SE
FRONTAGE: 100'
SETBACKS: FRONT = 50' UNLESS OTHERWISE NOTED ON PLAN
SIDE = 15' MIN., 30' TOTAL
REAR = 45', UNLESS OTHERWISE NOTED ON PLAN

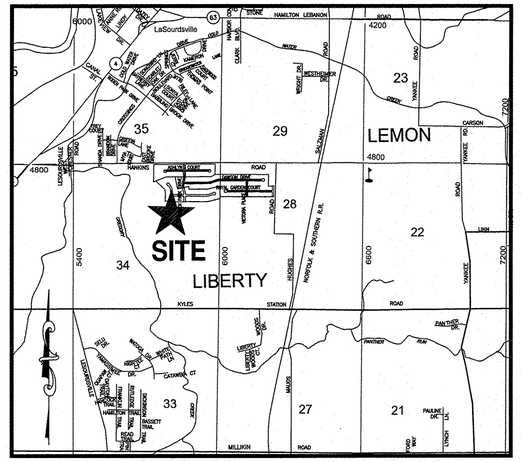
30. TOTAL ACREAGE: 50.00 ACRES

31. TOTAL # OF SINGLE FAMILY LOTS: 55

DEVELOPMENT PLANS
FOR
WINDSOR ESTATES SECTION 6
LIBERTY TOWNSHIP, BUTLER COUNTY, OHIO
SECTION 34, TOWN 3, RANGE 3



N



VICINITY MAP
(Not to Scale)

OWNER/DEVELOPER

OAKES DEVELOPMENT
8534 YANKEE STREET
DAYTON, OH 45458
PH: (937) 435-8584

ENGINEER

CESO, INC.
8534 YANKEE STREET
DAYTON, OH 45458
PH: (937) 435-8584
DAVID C. OAKES, P.E., P.S.

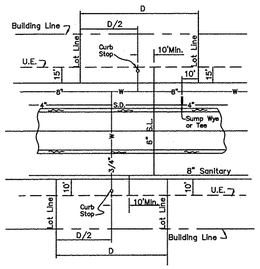
INDEX OF SHEETS

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PLAN AND PROFILE - RODEN PARK DRIVE	3
PLAN AND PROFILE - ST. ANDREWS WAY	4
PLAN AND PROFILE - SANDHURST COURT	5
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SUBDIVISION CONSTRUCTION DRAWINGS APPROVED
EJP 05/22/2017

STATE OF OHIO JUSTIN ELAM E-76298 REGISTERED PROFESSIONAL ENGINEER

5/15/17
JUSTIN ELAM, P.E. DATE
REGISTERED ENGINEER
OHIO LICENSE NO. E-76298



STANDARD SERVICE DETAIL
(Not to Scale)

300 0 300 600
GRAPHIC SCALE (IN FEET)

_____ APPROVED BY OHIO EPA-WATER
DATE

_____ APPROVED BY OHIO EPA-SEWER
DATE

OHIO Utilities Protection SERVICE
811 or 1-800-362-2764 Call Before You Dig

REVISIONS
NO. | DESCRIPTION | DATE

STATE OF OHIO JUSTIN ELAM E-76298 REGISTERED PROFESSIONAL ENGINEER

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TITLE SHEET

WINDSOR ESTATES

OHIO
LIBERTY TOWNSHIP

ISSUE: CONSTRUCTION
DATE: 5/12/2017
JOB NO.: 751421
DESIGN: KEH
DRAWN: KEH
CHECKED: JEE
SHEET NO. 1

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LEGEND

- PROPOSED SANITARY SEWER/MANHOLE/LETTER
- PROPOSED STORM DRAIN/STRUCTURE/NUMBER
- PROPOSED WATER MAIN

OHIO Utilities Protection SERVICE
811 or 1-800-362-2764 Call Before You Dig

N

WINDSOR ESTATES SECTION FIVE

(SEE SHEET 4) ST. ANDREWS WAY

(SEE SHEET 5) SANDHURST COURT

(SEE SHEET 6) BRYSON LANE

RODEN PARK DRIVE

HEATHWOOD COURT

WINDSOR ESTATES SECTION FIVE

(SEE SHEET 8)

(SEE SHEET 7)

(SEE SHEET 3)

EX. BLDG

PROPOSED BASIN

FUTURE DEVELOPMENT

GRAPHIC SCALE (IN FEET)
60 0 60 120

REVISIONS NO.	DATE	DESCRIPTION

STATE OF OHIO — JUSTIN ELAM E-76238 — REGISTERED PROFESSIONAL ENGINEER

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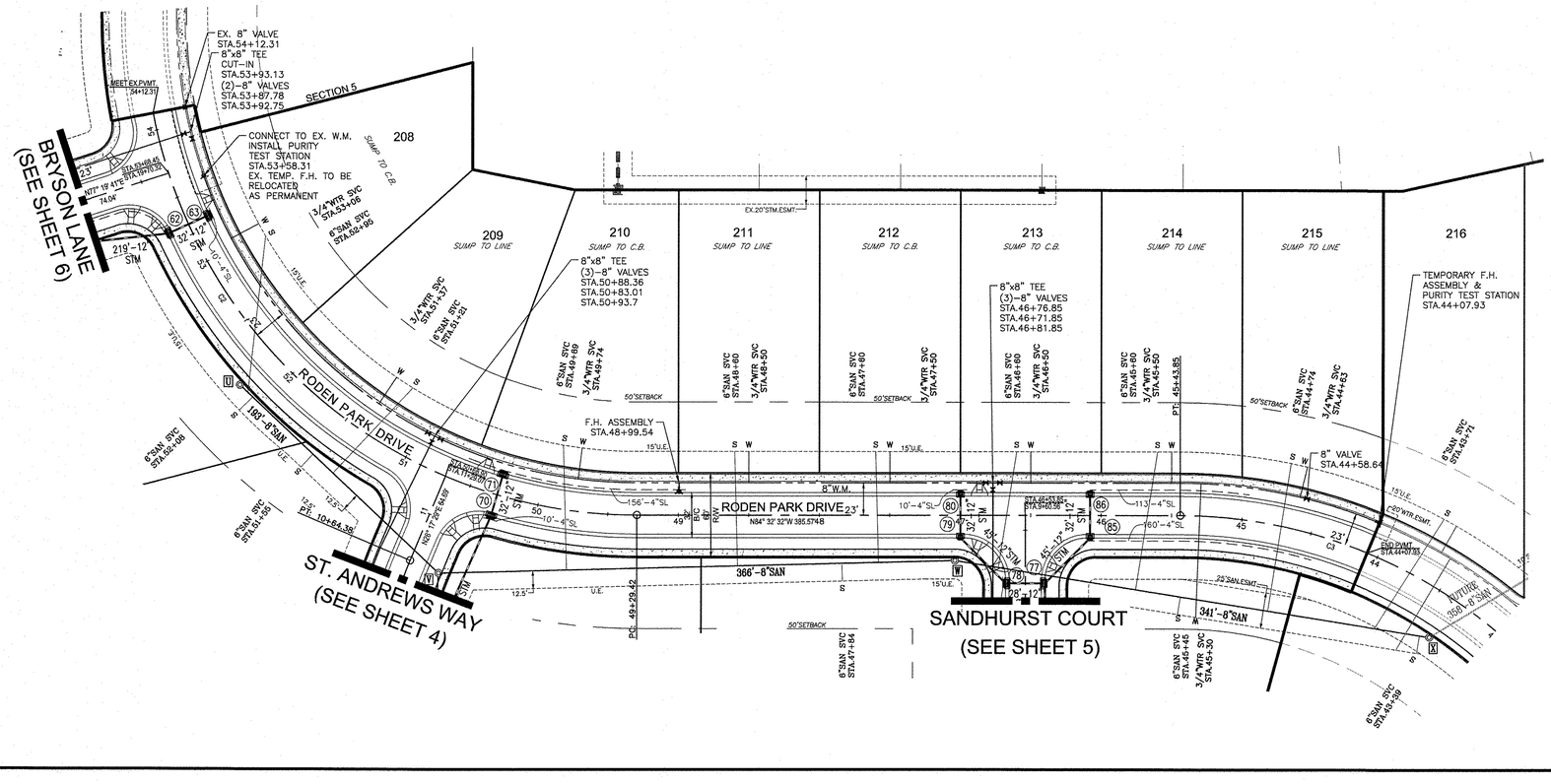
OVERALL UTILITY PLAN & INDEX MAP

WINDSOR ESTATES

LIBERTY TOWNSHIP OHIO

ISSUE: CONSTRUCTION
DATE: 5/12/2017
JOB NO.: 751421
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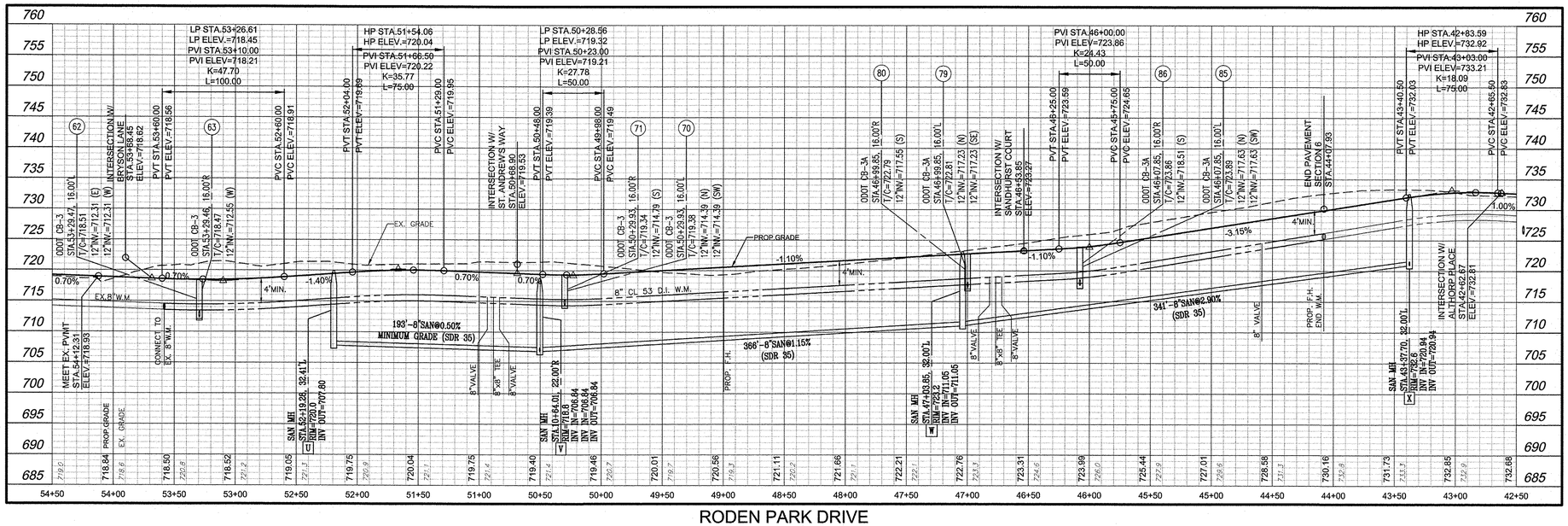


NOTE:
At Crossings, the water main shall have a minimum vertical distance of eighteen (18") inches from storm and sanitary sewers. Also, one full length of water main shall be located so the joints are as far from the storm and sanitary sewers as possible.

NOTES:
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WATER MAIN RESTRAINT JOINT LOCATION CHART

Water Main Dia.	Horizontal 45°Bends	Vertical 45°Bends Up (Lower Water Under...)	Vertical 45°Bends Down (Lower Water Under...)	Dead Ends (Permanent & Temporary)
6"	18' both sides	18' both sides	36' both sides	72' Back
8"	18' both sides	36' both sides	36' both sides	90' Back
10"	36' both sides	36' both sides	54' both sides	117' Back
12"	36' both sides	54' both sides	72' both sides	180' Back
14"	54' both sides	54' both sides	90' both sides	198' Back
16"	54' both sides	54' both sides	90' both sides	216' Back



RODEN PARK DRIVE

CURVE TABLE

CURVE #	RADIUS	LENGTH	CHORD DIRECTION	CHORD LENGTH	DELTA	TANGENT
C2	350.00	549.78'	N39° 32' 32"W	494.98'	90°00'00"	350.00'
C3	350.00	549.78'	N39° 32' 32"W	494.97'	90°00'00"	350.00'

VERTICAL
1 inch = 10 ft.
20
10

GRAPHIC SCALE (IN FEET)
HORIZONTAL
1 inch = 50 ft.
50 0 25 50

REVISIONS
NO. DATE DESCRIPTION

STATE OF OHIO
JUSTIN ELAM
E-76288
REGISTERED PROFESSIONAL ENGINEER

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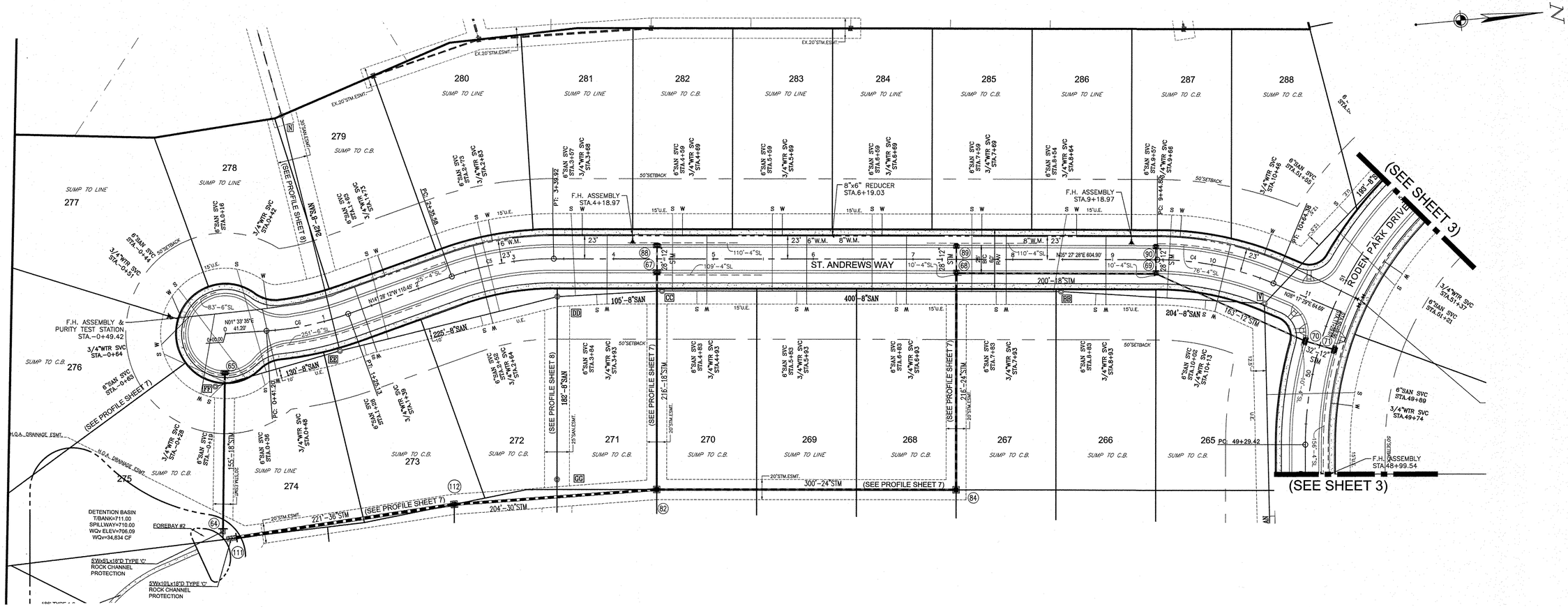
PLAN AND PROFILE - RODEN PARK DRIVE

WINDSOR ESTATES

LIBERTY TOWNSHIP OHIO

ISSUE: CONSTRUCTION
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ST. ANDREWS WAY

NOTE:
At Crossings, the water main shall have a minimum vertical distance of eighteen (18") inches from storm and sanitary sewers. Also, one full length of water main shall be located so the joints are as far from the storm and sanitary sewers as possible.

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14"	54' both sides	54' both sides	90' both sides	198' Back
16"	54' both sides	54' both sides	90' both sides	216' Back

CURVE TABLE						
CURVE #	RADIUS	LENGTH	CHORD DIRECTION	CHORD LENGTH	DELTA	TANGENT
C4	300.00	119.56'	N16° 52' 28"E	118.77'	22°50'01"	60.58'
C5	300.00	104.34'	N04° 30' 22"W	103.82'	19°55'40"	52.70'
C6	300.00	83.93'	N06° 27' 19"W	83.66'	16°01'48"	42.24'

GRAPHIC SCALE (IN FEET)
HORIZONTAL
1 inch = 50 ft.
50 0 25 50

VERTICAL
1 inch = 10 ft.
20 10

REVISIONS		
NO.	DATE	DESCRIPTION

STATE OF OHIO
JUSTIN E. HOLM
E-76288
PROFESSIONAL ENGINEER

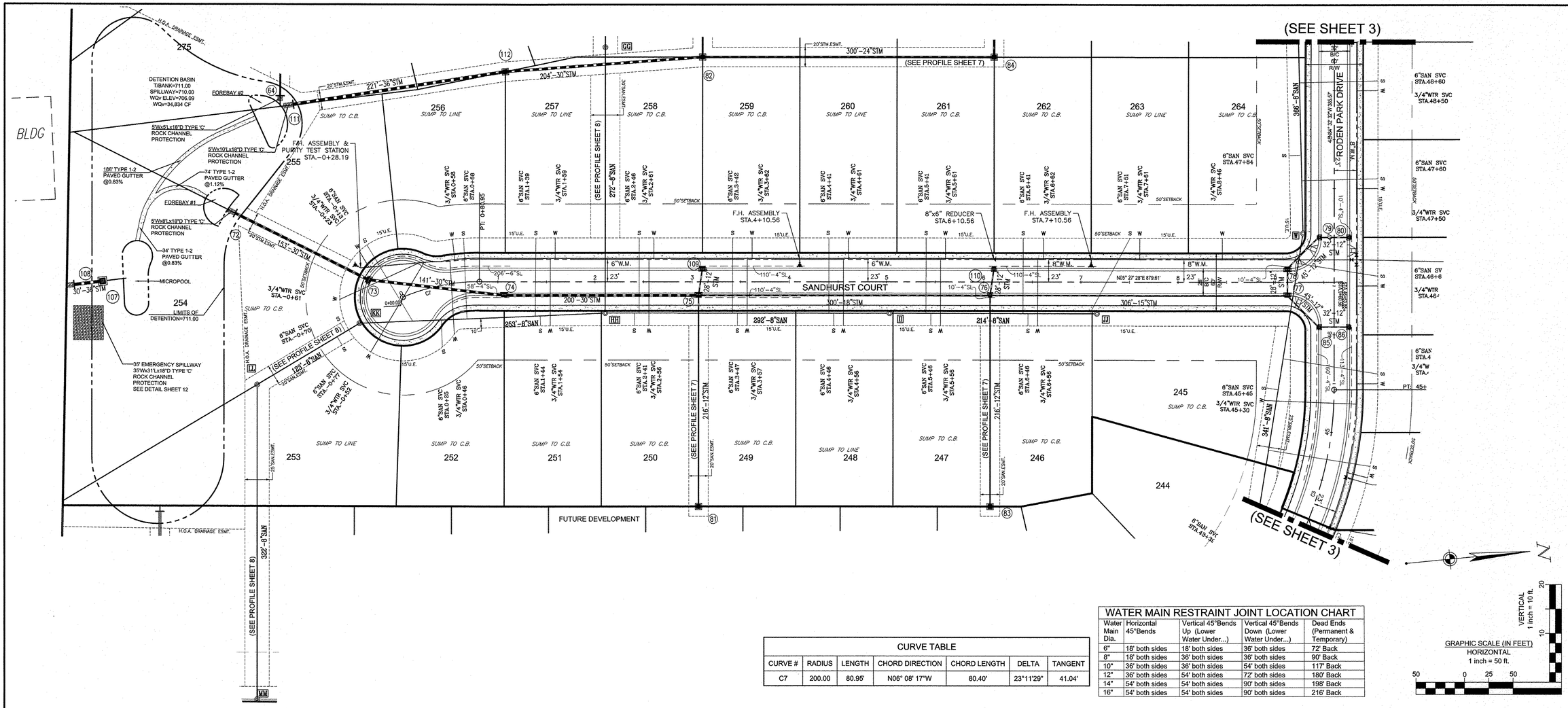
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PLAN AND PROFILE - ST. ANDREWS WAY

WINDSOR ESTATES

LIBERTY TOWNSHIP OHIO

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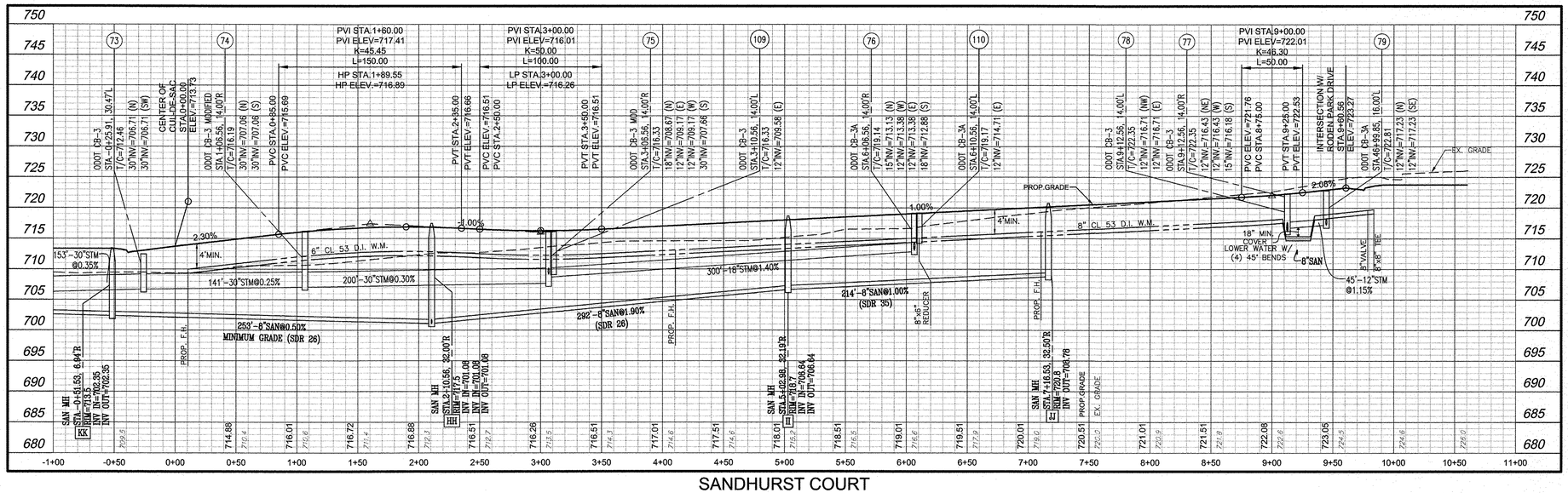
CURVE TABLE						
CURVE #	RADIUS	LENGTH	CHORD DIRECTION	CHORD LENGTH	DELTA	TANGENT
C7	200.00	80.95'	N06° 08' 17"W	80.40'	23°11'29"	41.04'

WATER MAIN RESTRAINT JOINT LOCATION CHART				
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GRAPHIC SCALE (IN FEET)
HORIZONTAL
1 inch = 50 ft.
50 0 25 50
VERTICAL
1 inch = 10 ft.
20 10

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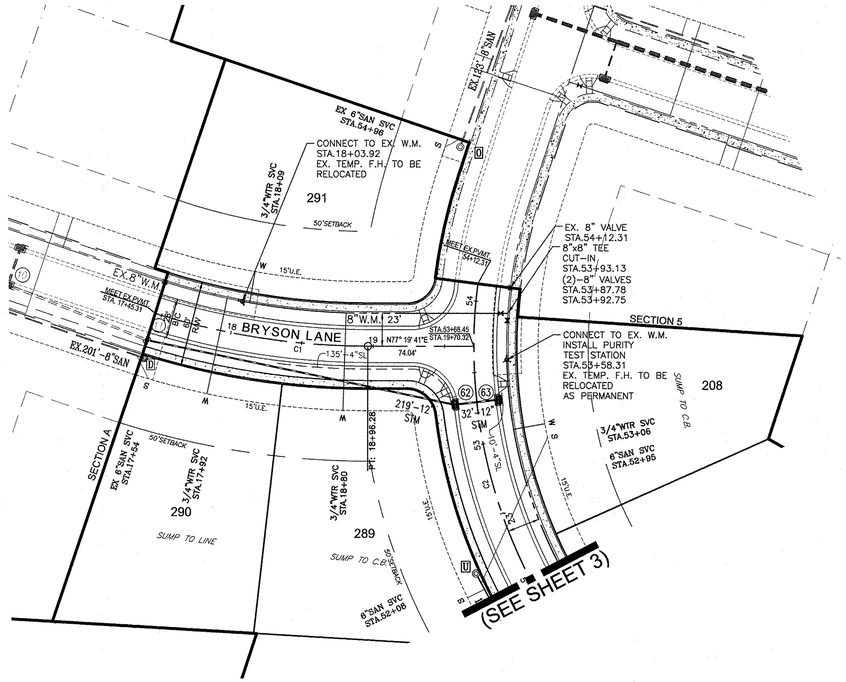
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PLAN AND PROFILE - SANDHURST COURT
WINDSOR ESTATES
LIBERTY TOWNSHIP OHIO

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SHEET NO. 5

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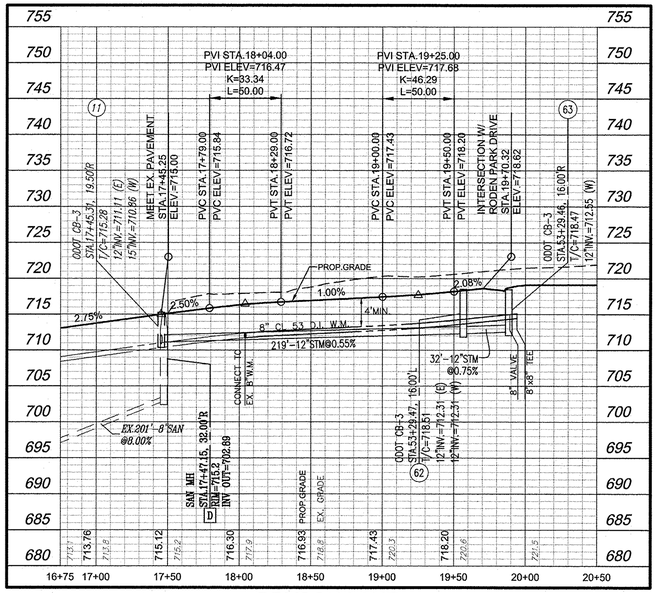


NOTE:
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NOTES:

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7. Contractors to accept all quantities as correct prior to beginning construction.

WATER MAIN RESTRAINT JOINT LOCATION CHART				
Water Main Dia.	Horizontal 45°Bends	Vertical 45°Bends Up (Lower Water Under...)	Vertical 45°Bends Down (Lower Water Under...)	Dead Ends (Permanent & Temporary)
6"	18' both sides	18' both sides	36' both sides	72' Back
8"	18' both sides	36' both sides	36' both sides	90' Back
10"	36' both sides	36' both sides	54' both sides	117' Back
12"	36' both sides	54' both sides	72' both sides	180' Back
14"	54' both sides	54' both sides	90' both sides	198' Back
16"	54' both sides	54' both sides	90' both sides	216' Back



BRYSON LANE

CURVE TABLE						
CURVE #	RADIUS	LENGTH	CHORD DIRECTION	CHORD LENGTH	DELTA	TANGENT
C1	500.00	162.81'	N86° 39' 22"E	162.09'	18°39'22"	82.13'
C2	350.00	549.78'	N39° 32' 32"W	494.98'	90°00'00"	350.00'

VERTICAL
1 inch = 10 ft.
20
10

GRAPHIC SCALE (IN FEET)
HORIZONTAL
1 inch = 50 ft.
50 0 25 50

REVISIONS		
NO.	DATE	DESCRIPTION

STATE OF OHIO
JUSTIN EHAM
E-78688
REGISTERED PROFESSIONAL ENGINEER

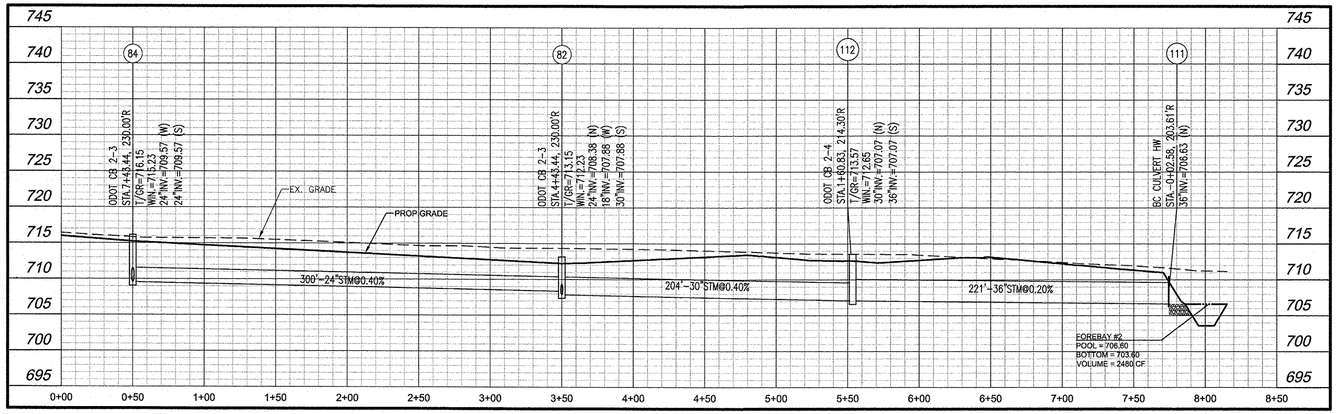
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PLAN AND PROFILE - BRYSON LANE

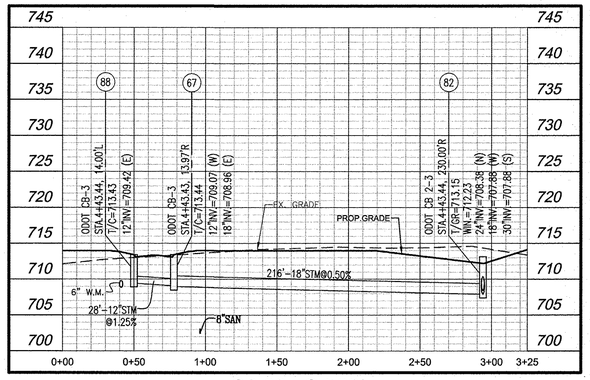
WINDSOR ESTATES

LIBERTY TOWNSHIP OHIO

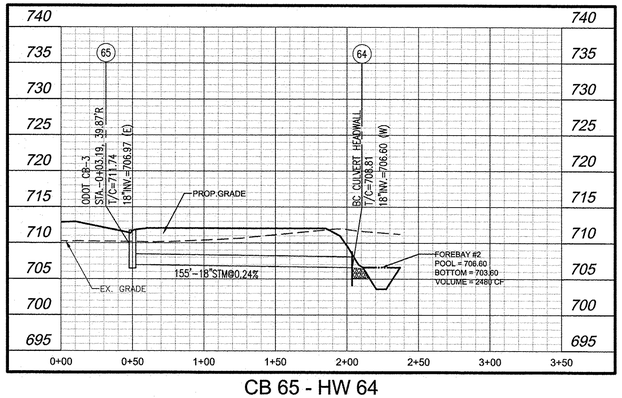
ISSUE:	CONSTRUCTION
DATE:	5/12/2017
JOB NO.:	751421
DESIGN:	KEH
DRAWN:	KEH
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SHEET NO.	6



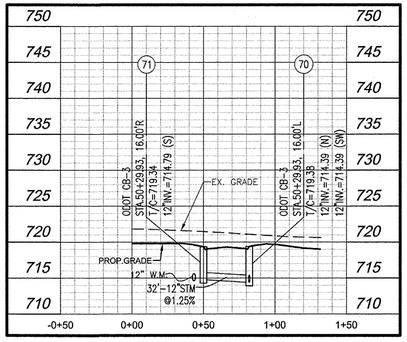
CB 84 - HW 111



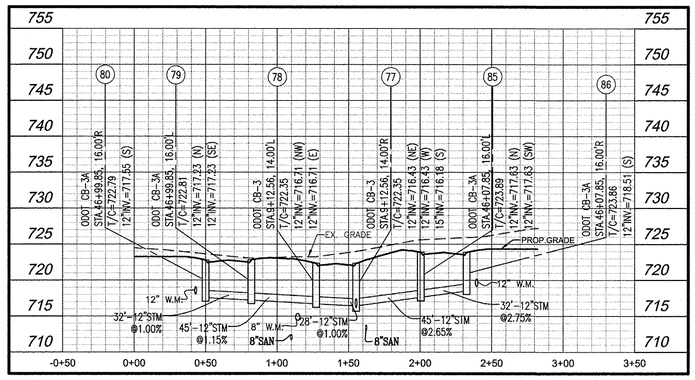
CB 88 - CB 82



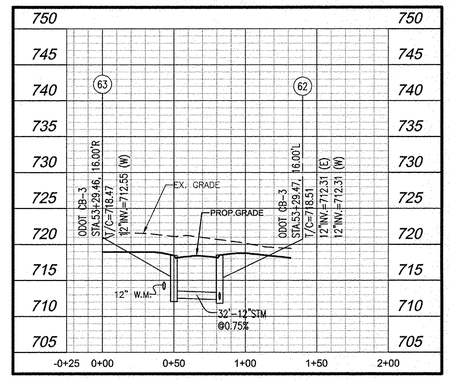
CB 65 - HW 64



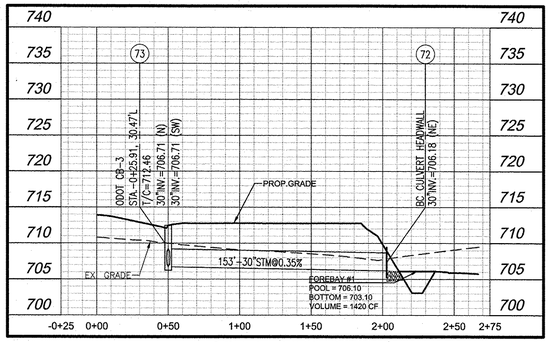
CB 71 - CB 70



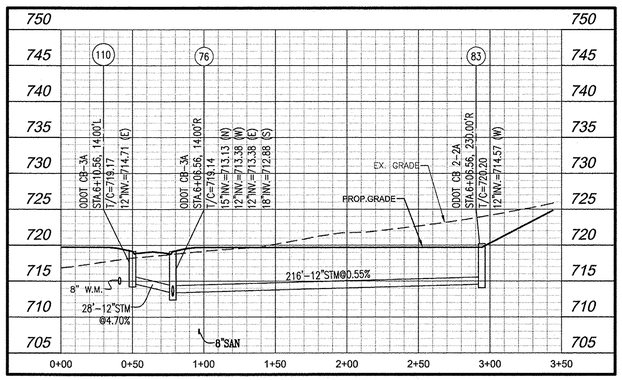
CB 80 - CB 86



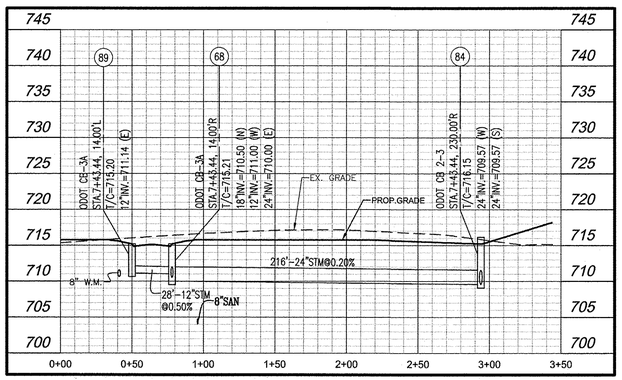
CB 63 - CB 62



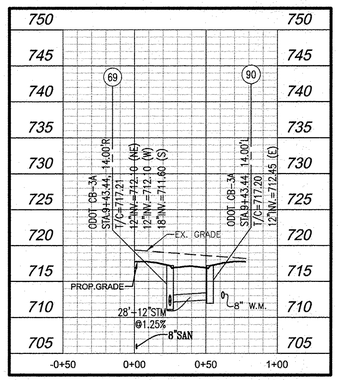
CB 73 - HW 72



CB 110 - CB 83



CB 89 - CB 84



CB 90 - CB 69

NOTE:
At Crossings, the water main shall have a minimum vertical distance of eighteen (18") inches from storm and sanitary sewers. Also, one full length of water main shall be located so the joints are as far from the storm and sanitary sewers as possible.

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VERTICAL
1 inch = 10 ft.
20
10

GRAPHIC SCALE (IN FEET)
HORIZONTAL
1 inch = 50 ft.
50 0 25 50

REVISIONS

NO.	DATE	DESCRIPTION

STATE OF OHIO
JUSTIN ELAM E-76288
PROFESSIONAL ENGINEER

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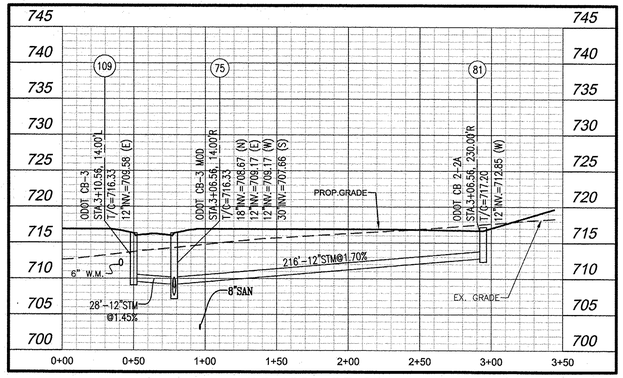
OFFSTREET PROFILES

WINDSOR ESTATES

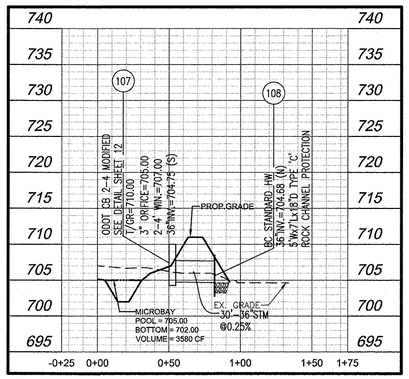
OHIO
LIBERTY TOWNSHIP

ISSUE: CONSTRUCTION
DATE: 5/12/2017
JOB NO.: 751421
DESIGN: KEH
DRAWN: KEH
CHECKED: JEE
SHEET NO. 7

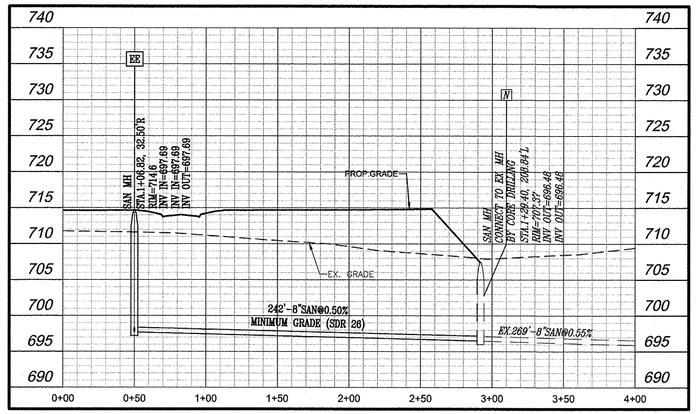
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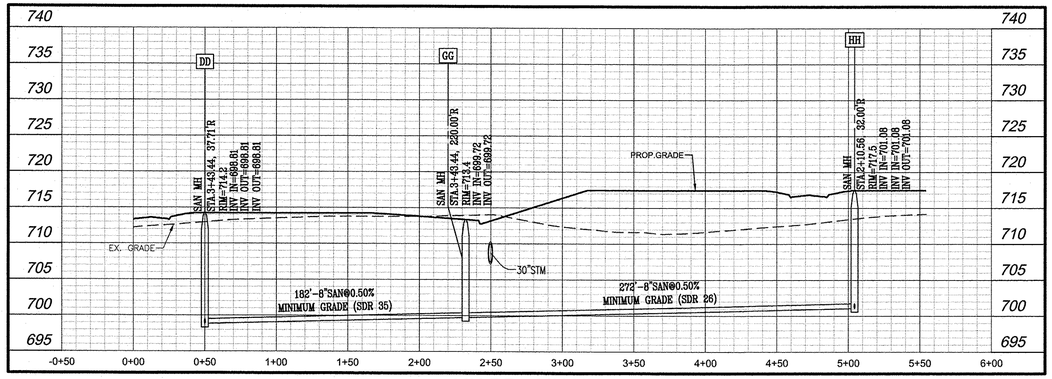
CB 109 - CB 81



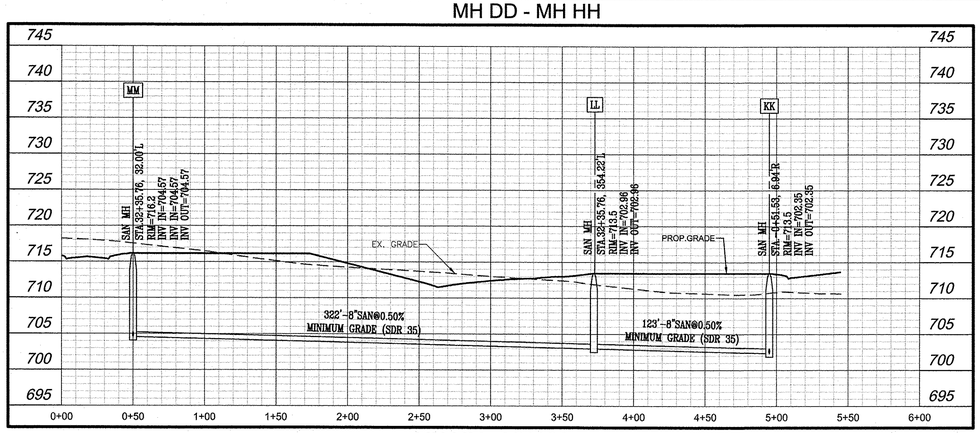
HW 107 - HW 108



MH EE - MH N



MH DD - MH HH



MH MM - MH KK

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HORIZONTAL
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50 0 25 50
VERTICAL
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10 20

REVISIONS NO.	DATE	DESCRIPTION

STATE OF OHIO
JUSTIN ELAM
E-76288
REGISTERED PROFESSIONAL ENGINEER

CREATION TO COMPLETION
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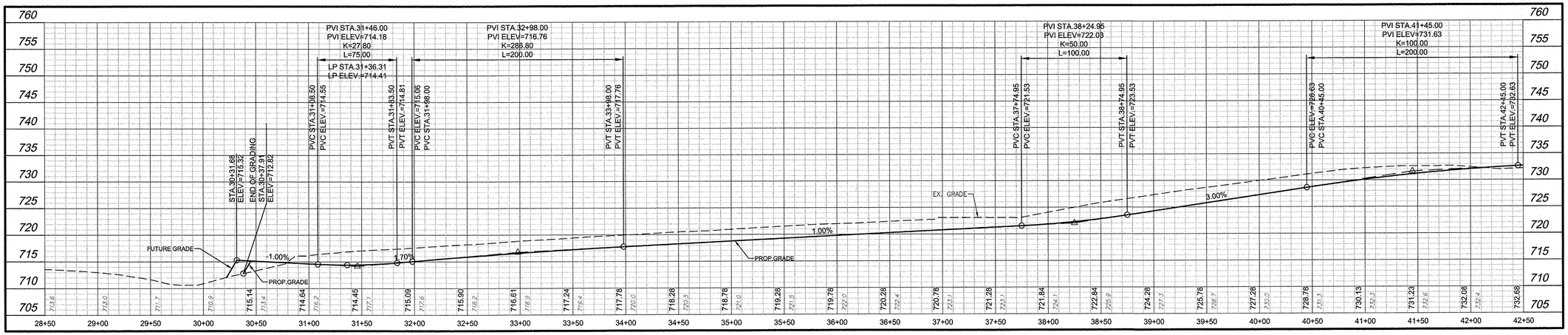
OFFSTREET PROFILES

WINDSOR ESTATES

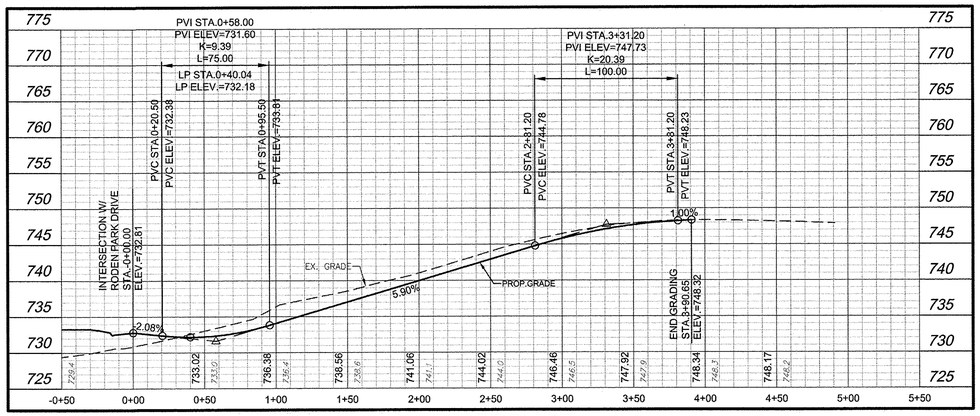
LIBERTY TOWNSHIP OHIO

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DATE:	5/12/2017
JOB NO.:	751421
DESIGN:	KEH
DRAWN:	KEH
CHECKED:	JEE
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RODEN PARK DRIVE
FOR GRADING PURPOSES ONLY



ALTHORP PLACE
FOR GRADING PURPOSES ONLY

NOTE:
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50 0 25 50
VERTICAL
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REVISIONS

NO.	DATE	DESCRIPTION

STATE OF OHIO
JUSTIN E. HAM
E-76288
PROFESSIONAL ENGINEER

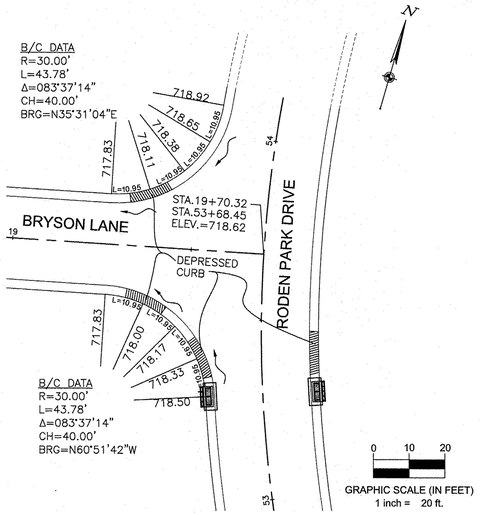
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PROFILE - RODEN PARK DRIVE & ALTHORP PLACE

WINDSOR ESTATES

LIBERTY TOWNSHIP OHIO

ISSUE: CONSTRUCTION	
DATE:	5/12/2017
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DESIGN:	KEH
DRAWN:	KEH
CHECKED:	JEE
SHEET NO.	9



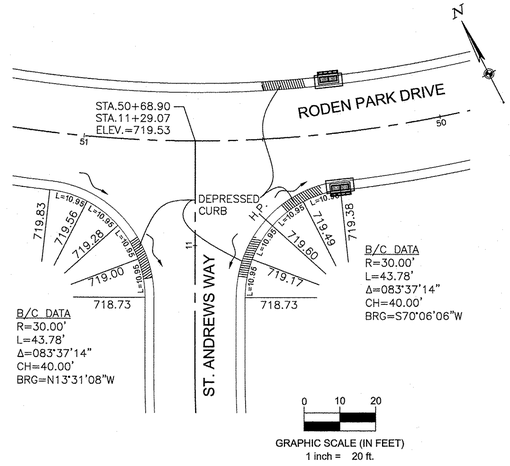
INTERSECTION DETAIL

BRYSON LANE & RODEN PARK DRIVE

NOTES:

ALL ELEVATIONS SHOWN ARE CENTERLINE OF FINISHED PAVEMENT AND TOP OF CURB UNLESS OTHERWISE NOTED.

ALL CURB RAMPS TO BE CONSTRUCTED PER ADA STANDARDS.



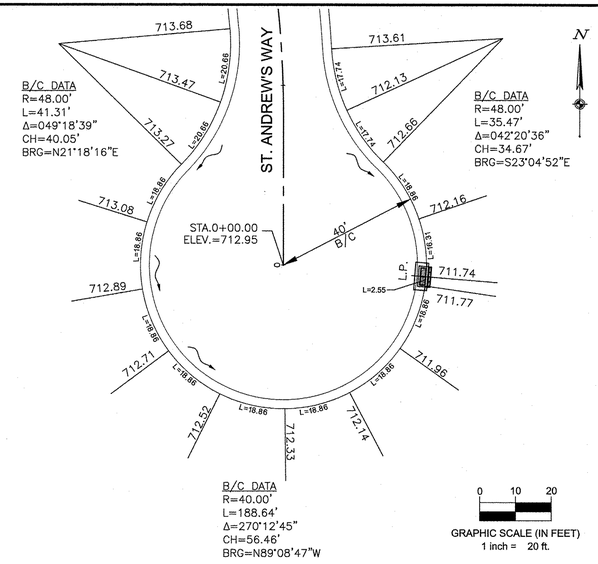
INTERSECTION DETAIL

ST. ANDREWS WAY & RODEN PARK DRIVE

NOTES:

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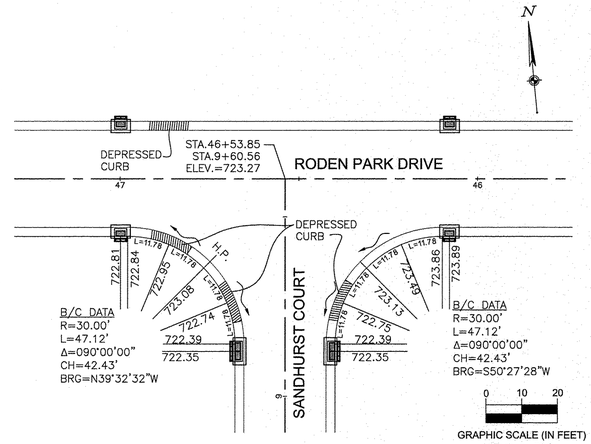
CUL-DE-SAC DETAIL

ST. ANDREWS WAY

NOTES:

ALL ELEVATIONS SHOWN ARE CENTERLINE OF FINISHED PAVEMENT AND TOP OF CURB UNLESS OTHERWISE NOTED.

ALL CURB RAMPS TO BE CONSTRUCTED PER ADA STANDARDS.



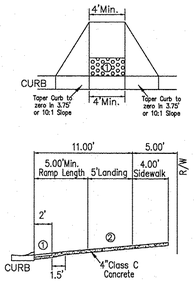
INTERSECTION DETAIL

SANDHURST COURT & RODEN PARK DRIVE

NOTES:

ALL ELEVATIONS SHOWN ARE CENTERLINE OF FINISHED PAVEMENT AND TOP OF CURB UNLESS OTHERWISE NOTED.

ALL CURB RAMPS TO BE CONSTRUCTED PER ADA STANDARDS.



① Detectable Warning (Truncated Domes) are to be installed in the location shown. Dimensions of the domes are 24" from the back of the curb by the width of the ramp.

② Minimum Landing is to be 4' but 5' is preferred. The slope of the ramp is preferred to be 12:1 or flatter related to the horizontal, but the minimum slope shall be 12:1 relative to the existing or proposed walk slope.

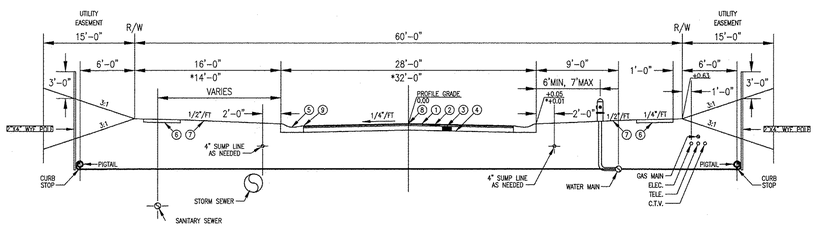
③ Curb ramps shall be design A or design B per ODOT Drawing 7-12-02, sheets 1 thru 3. Truncated domes are to meet the specifications of ODOT drawing 7-12-02 sheet 3.

CURB RAMP DETAIL

N.T.S.

ITEM	DEPTH OF PIPE
Underdrain	18"
Sumplines	24" – 30"
Gas	24" – 30"
Water	48" – 54"
Electric	36" – 40"
Telephone	36" – 40"
Cable TV	36" – 40"

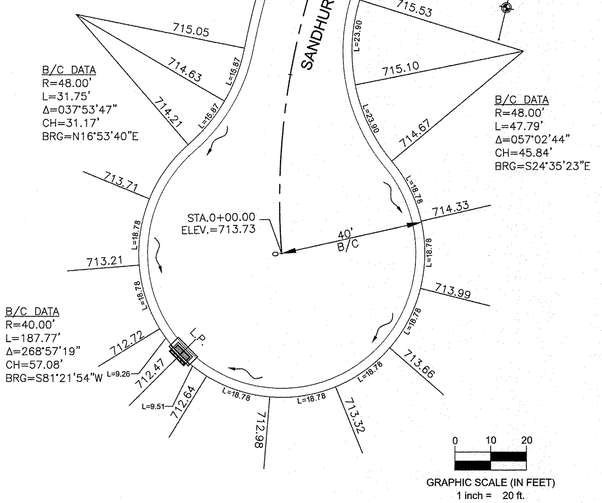
① One inch surface course of Item 448 asphaltic concrete
② One and one half inch leveling course of Item 448 asphaltic concrete
③ Six inch base course of Item 301 bituminous aggregate base.
④ Compacted subgrade, Item 203.13
⑤ Roll type curb and gutter, Item 609 (Butler County Standard C-1).
⑥ Four inch thick class "C" concrete sidewalk, five feet wide, Item 608. Walk to be 1/2" higher than sod.
⑦ Seeding and mulching item 659.
⑧ Tack coat, Item 407 – to be applied at a rate of 0.05 gal. per sq. yard.
⑨ Tack coat shall be applied to front face of curb prior to the installation of 301 bituminous aggregate base.



TYPICAL SECTION

N.T.S.

*RODEN PARK DRIVE



CUL-DE-SAC DETAIL

SANDHURST COURT

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50 0 25 50
VERTICAL
1 inch = 10 ft.
10 20

REVISIONS NO.	DATE	DESCRIPTION

STATE OF OHIO
JUSTIN ELAM
E-76899
REGISTERED PROFESSIONAL ENGINEER

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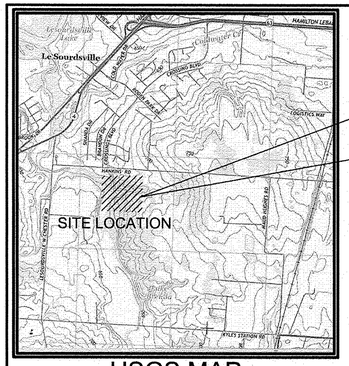
INTERSECTION DETAILS

WINDSOR ESTATES

OHIO

LIBERTY TOWNSHIP

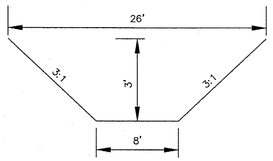
ISSUE: CONSTRUCTION	
DATE: 5/12/2017	
JOB NO.:	751421
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DRAWN:	KEH
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SHEET NO.	10



USGS MAP
NTS

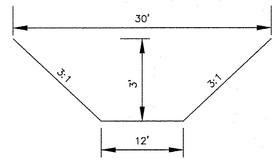
STORMWATER OUTFLOW NOTE:
THE SUBJECT SITE OUTLETS INTO AN EXISTING BASIN SOUTH OF THE SITE WHICH THEN OUTLETS INTO AN UN-NAMED TRIBUTARY OF PANTHERS RUN TO THE SOUTH OF THE SITE.

FOREBAY #1
POOL = 706.10
BOTTOM = 703.10
VOLUME = 1420 CF



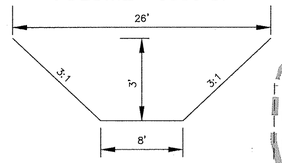
FOREBAY #1
NTS

FOREBAY #2
POOL = 706.60
BOTTOM = 703.60
VOLUME = 2470 CF



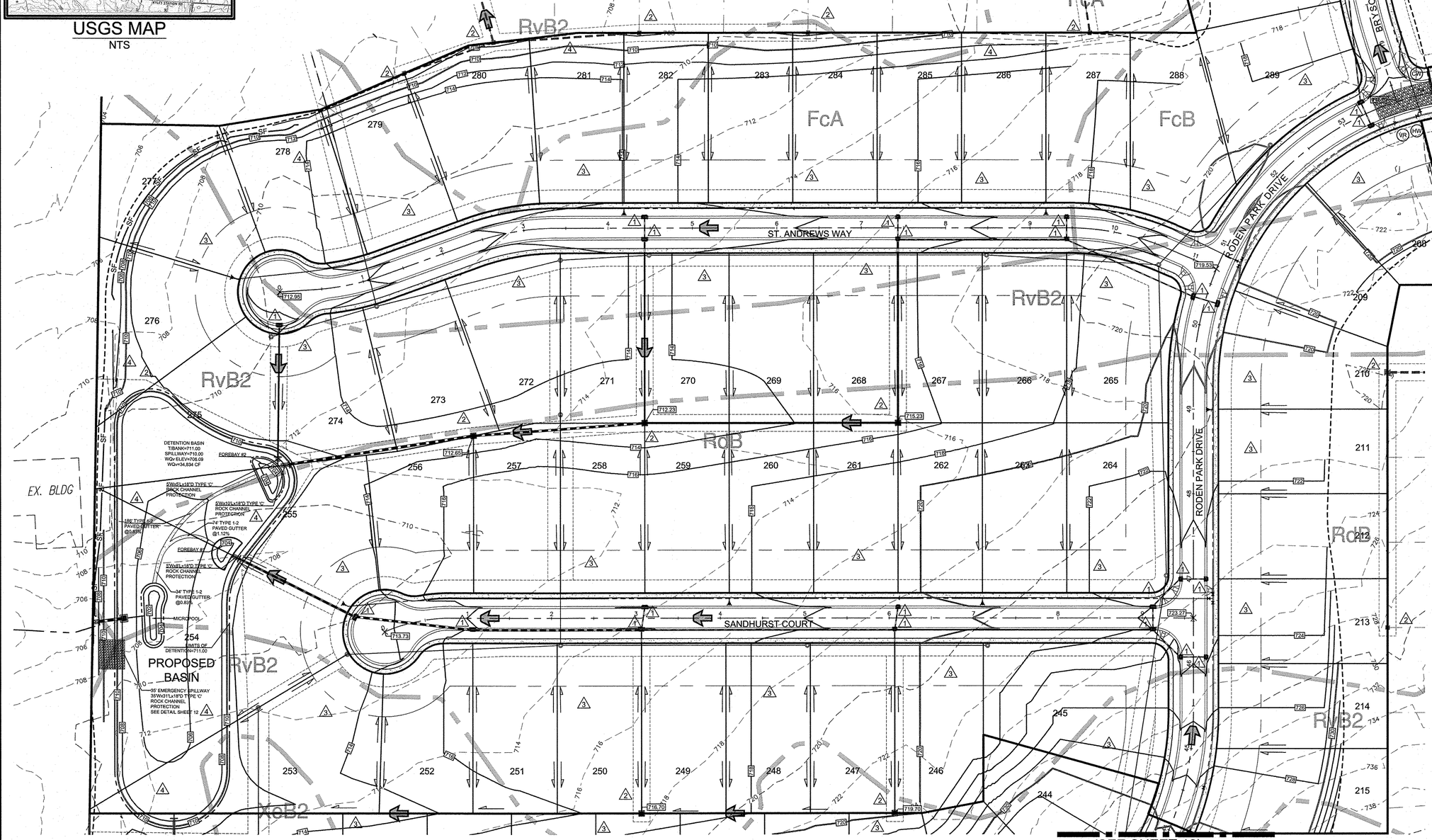
FOREBAY #2
NTS

MICROPOOL
POOL = 705.00
BOTTOM = 702.00
VOLUME = 3580 CF



MICROPOOL
NTS

N



LEGEND

- PHASE LINE
- LIMITS OF DISTURBANCE
- SF — TEMPORARY SILT FENCE
- EROSION EELS
- EXISTING TREE LINE
- FLOOD ROUTING
- DRAINAGE PATH
- DRAINAGE AREA
- CONSTRUCTION ENTRANCE
- HW — HAZARDOUS WASTE STORAGE AREA
- VR — VEHICLE REFUELING AREA
- CW — CONCRETE WASHOUT AREA
- 1 — CURB INLET PROTECTION
- 2 — AREA INLET PROTECTION
- 3 — TEMPORARY SEEDING
- 4 — PERMANENT SEEDING
- BUILDER'S SWALE

OHIO Utilities Protection SERVICE
811 or 1-800-362-2764 Call Before You Dig

60 0 60 120
GRAPHIC SCALE (IN FEET)

REVISIONS NO	DATE	DESCRIPTION

STATE OF OHIO — JUSTIN ELAM E-76288 — REGISTERED PROFESSIONAL ENGINEER

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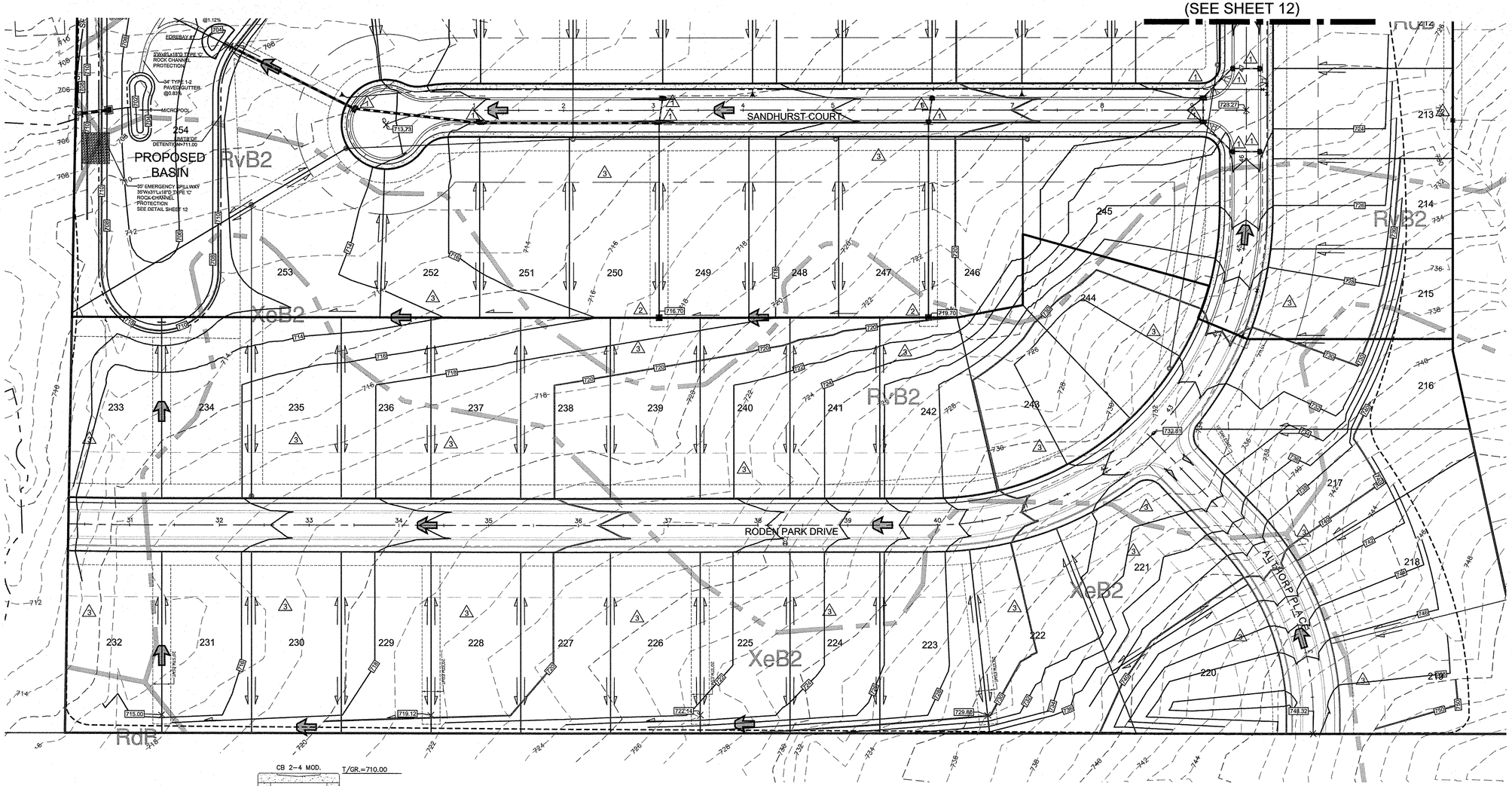
GRADING & EROSION CONTROL PLAN

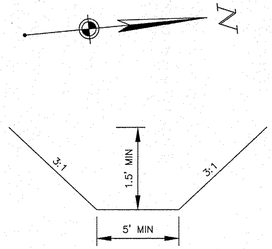
WINDSOR ESTATES

LIBERTY TOWNSHIP OHIO

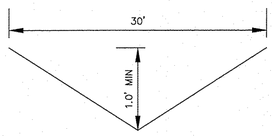
ISSUE: CONSTRUCTION	
DATE:	5/12/2017
JOB NO.:	751421
DESIGN:	KEH
DRAWN:	KEH
CHECKED:	JEE
SHEET NO.	11

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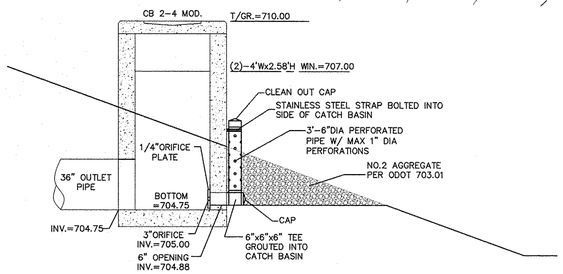
TYPICAL FLOOD ROUTE



TYPICAL BUILDER'S SWALE

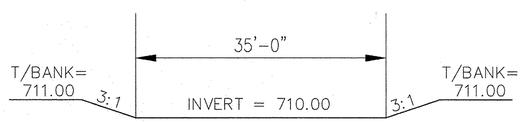
LEGEND

- PHASE LINE
- LIMITS OF DISTURBANCE
- SF — TEMPORARY SILT FENCE
- EROSION EELS
- EXISTING TREE LINE
- FLOOD ROUTING
- DRAINAGE PATH
- DRAINAGE AREA
- 1 CURB INLET PROTECTION
- 2 AREA INLET PROTECTION
- 3 TEMPORARY SEEDING
- 4 PERMANENT SEEDING
- BUILDER'S SWALE



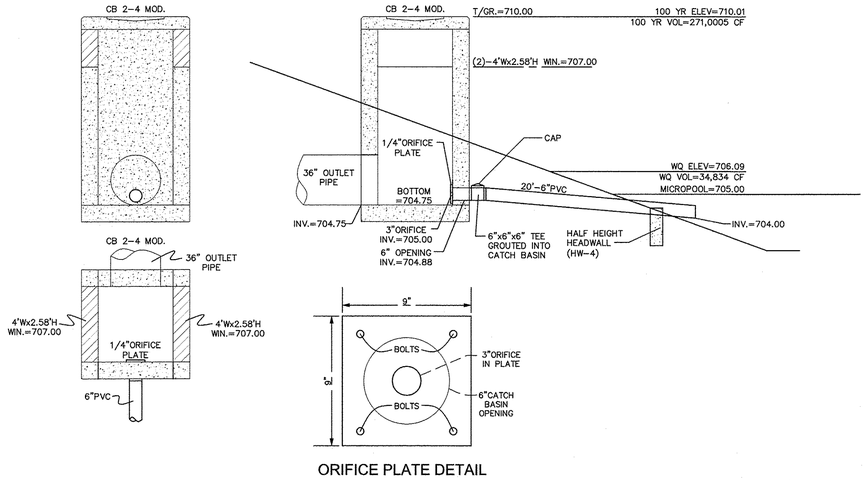
CONSTRUCTION PHASE OUTLET DETAIL

NTS



SPILLWAY DETAIL

NTS



ORIFICE PLATE DETAIL

POST CONSTRUCTION OUTLET DETAIL

NTS

NOTES:

1. EROSION CONTROL PRACTICES SHALL BE INSTALLED BEFORE ANY MAJOR SOIL DISTURBANCE.
2. THE EXPOSED SUB-GRADE AREAS SHOULD BE PROOF ROLLED AND ANY SOFT YIELDING AREA SHOULD BE UNDERCUT.
3. ESTABLISH VEGETATION IN ALL BARE AREAS AS PER OEPA N.P.D.E.S. REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR N.P.D.E.S. INSPECTION DURING CONSTRUCTION PERIOD.
4. OUTLET STRUCTURES IN SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITION AT ALL TIMES. SEDIMENT MUST BE REMOVED FROM BASINS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 40%. (APPROXIMATELY ONE-HALF OF POND DEPTH)

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GRAPHIC SCALE (IN FEET)

REVISIONS NO.	DATE	DESCRIPTION

STATE OF OHIO — JUSTIN ELAM E-76288 — REGISTERED PROFESSIONAL ENGINEER

CESO
CREATION TO COMPLETION
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Engineering • Architecture • Surveying • Construction Mgt • Environmental

GRADING & EROSION CONTROL PLAN

WINDSOR ESTATES

LIBERTY TOWNSHIP, OHIO

ISSUE: CONSTRUCTION
DATE: 5/12/2017
JOB NO.: 751421
DESIGN: KEH
DRAWN: KEH
CHECKED: JEE
SHEET NO. 12

SITE DATA

OWNER/DEVELOPER/OPERATOR:
OAKES DEVELOPMENT
8534 YANKEE STREET
DAYTON, OHIO 45458

PLAN DESIGNER:
CESO, INC.
8534 YANKEE STREET
DAYTON, OHIO 45458

DEVELOPMENT NAME AND DESCRIPTION:
WINDSOR ESTATES, SECTION SIX, A LOW DENSITY RESIDENTIAL SUBDIVISION, WILL CONSIST OF 55 SINGLE FAMILY HOMES.

SITE ACREAGE:
THE SITE IS APPROXIMATELY 50.00 ACRES OF WHICH 47.3 ACRES WILL BE DISTURBED BY CONSTRUCTION

RUNOFF COEFFICIENT:
PRE-CONSTRUCTION RUNOFF COEFFICIENT, C=0.4
POST-CONSTRUCTION RUNOFF COEFFICIENT, C=0.6

IMPERVIOUS AREA:
PRE-CONSTRUCTION- 0 ACRE, 0 %
POST-CONSTRUCTION- 7.45 ACRES, 14.9%

PRIOR LAND USE
THE SITE WAS PREVIOUSLY WITH ROW CROP, WOODS, & GRASS

SOIL TYPES:
A. FINCASTLE, 39.9% OF SITE
B. RUSSELL-MIAMIAN, 47.8% OF SITE
C. MIAMIAN-RUSSELL, 12.3% OF SITE

ADJACENT AREAS:
THE SITE IS BOUND TO THE NORTH BY HANKINS ROAD
AND TO THE WEST BY LESOURDESVILLE WEST
CHESTER ROAD.

STORM WATER MANAGEMENT:
THE SUBJECT SITE OUTLETS INTO A PROPOSED BASIN SOUTH OF THE SITE WHICH THEN OUTLETS INTO AN UN-NAMED TRIBUTARY TO PANTHERS RUN SOUTH OF THE SITE.

SEQUENCE OF CONSTRUCTION

1. INSTALL CONSTRUCTION ENTRANCE, HAZARDOUS WASTE STORAGE AREA, VEHICLE REFUELING AREA, AND CONCRETE WASH PIT.
2. INSTALL SILT FENCE AS NEEDED
3. CLEAR & GRUB SITE
4. CONSTRUCT BASIN
5. ROUGH GRADE SITE
6. CONSTRUCT SANITARY, DISTURBING TRENCH AREA ONLY
7. INSTALL STORM & WATER LINE, PLACING INLET PROTECTION AS INLETS ARE CONSTRUCTED
8. GRADE STREETS FIXING INLET PROTECTION AS NEEDED
9. REMOVE CONSTRUCTION ROAD STABILIZATION
10. PAVE STREETS
11. FINAL GRADE LOTS
12. SEED & MULCH ALL DISTURBED AREAS
13. REMOVE ALL EROSION CONTROL PRACTICES

GOOD HOUSEKEEPING

THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT:

AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.

ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS, AND IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.

PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.

SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.

WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.

MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.

THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

GENERAL LAND CONSERVATION NOTES

NO DISTURBED AREA WILL BE DENUDED FOR MORE THAN 30 DAYS IF IT IS TO REMAIN DORMANT FOR MORE THAN 45 DAYS UNLESS AUTHORIZED BY THE STATE GOVERNING JURISDICTION'S INSPECTOR. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DISTURBED AREAS WITHIN 14 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE.

ALL STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING FOR ALL SITES.

ALL STORM SEWER, SANITARY SEWER, WATER MAIN AND SERVICE TRENCHES SHALL BE MULCHED AND SEEDED WITHIN 14 DAYS AFTER BACK FILL IF INSTALLATION IS THROUGH STABILIZED AREAS. NO MORE THAN 500 FEET OF TRENCH WILL BE OPEN AT ANY ONE TIME.

ELECTRIC POWER, TELEPHONE, CATV AND GAS SUPPLY TRENCHES SHALL BE COMPACTED SEEDED AND MULCHED WITHIN 14 DAYS AFTER BACK FILL, IF INSTALLATION IS THROUGH STABILIZED AREAS.

ALL TEMPORARY DIVERSIONS, SEDIMENT BASIN EMBANKMENTS AND EARTH STOCKPILES SHALL BE SEEDED AND MULCHED FOR TEMPORARY VEGETATIVE COVER WITHIN 7 DAYS AFTER GRADING. STRAW, HAY MULCH OR EQUIVALENT IS REQUIRED.

ALL STORM SEWER INLETS SHALL BE PROTECTED BY SEDIMENT TRAPS (INLET PROTECTION) WHICH WILL BE MAINTAINED AND MODIFIED AS REQUIRED AS CONSTRUCTION PROGRESSES.

ANY DISTURBED AREA NOT STABILIZED WITH SEEDING, SODDING, PAVING OR BUILT UPON BY NOVEMBER 1ST, OR AREAS DISTURBED AFTER THAT DATE, SHALL BE MULCHED IMMEDIATELY WITH HAY OR STRAW AT THE RATE OF 2 TONS PER ACRE AND OVER-SEEDED BY APRIL 15TH.

AT THE COMPLETION OF CONSTRUCTION, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ALL DENUDED AREAS SHALL BE STABILIZED.

HOA SHALL MAINTAIN AND KEEP RECORD OF ANY MAINTENANCE/INSPECTIONS OF COMMON AREAS.

SWPPP NOTES

1. ALL EROSION AND SEDIMENTATION CONTROL SHALL BE PERFORMED ACCORDING TO: SWPPP AND DETAIL PLANS; ACCORDING TO THE LATEST OHIO EPA AUTHORIZATION FOR CONSTRUCTION ACTIVITY UNDER THE "NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM" (NPDES); ANY AND ALL REQUIRED PERMITS, REPORTS, AND RELATED DOCUMENTS. SEE OHIO EPA PERMIT NO. OHC000004 FOR SWPPP RULES AND REGULATIONS. ALL CONTRACTORS AND SUBCONTRACTORS MUST BECOME FAMILIAR WITH ALL OF THE ABOVE.
2. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE SWPPP. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AND GRADE CHANGES TO THE SITE AT NO ADDITIONAL COST TO OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
3. CONTRACTOR SHALL MINIMIZE CLEARING AND DISTURBANCE TO THE ENVIRONMENT TO THE MAXIMUM EXTENT POSSIBLE OR AS REQUIRED BY THE GENERAL PERMIT. EVERY EFFORT SHALL BE MADE TO PRESERVE THE NATURAL RIPARIAN SETBACK ADJACENT TO STREAMS OR OTHER SURFACE WATER BODIES.
4. SEDIMENT STRUCTURE AND PERIMETER SEDIMENT BARRIERS SHALL BE IMPLEMENTED AS THE FIRST STEP OF GRADING WITHIN SEVEN (7) DAYS FROM THE START OF CLEARING AND GRUBBING, AND SHALL CONTINUE TO FUNCTION UNTIL THE SLOPE DEVELOPMENT AREA IS RESTABILIZED. SEDIMENT CONTROL DEVICES SHALL BE IMPLEMENTED FOR ALL AREAS REMAINING DISTURBED FOR OVER 14 DAYS.
5. TEMPORARY SOIL STABILIZATION OF DISTURBED AREAS BY MEANS OF TEMPORARY VEGETATION, MULCHING, GEOTEXTILES, SOD, PRESERVATION OF EXISTING VEGETATION, AND OTHER APPROVED TECHNIQUES TO BE APPLIED AS FOLLOWS:

   WITHIN TWO (2) DAYS OF ANY AREA WITHIN 50 FEET OF A STREAM NOT AT FINAL GRADE REMAINING DORMANT FOR OVER FOURTEEN (14) DAYS.

   WITHIN SEVEN (7) DAYS OF ANY AREA THAT WILL BE DORMANT FOR MORE THAN FOURTEEN (14) DAYS BUT LESS THAN A YEAR.

   FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN (7) DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR INDIVIDUAL LOTS.
6. PERMANENT SOIL STABILIZATION OF DISTURBED AREAS BY MEANS OF VEGETATION, LANDSCAPE TYPE MULCHING, MATTING, SOD, RIP RAP, AND OTHER APPROVED LANDSCAPING TECHNIQUES TO BE APPLIED AS FOLLOWS:
   WITHIN SEVEN (7) DAYS OF ANY AREA THAT WILL BE DORMANT FOR ONE (1) YEAR OR MORE.
   WITHIN TWO (2) DAYS OF ANY AREA WITHIN 50 FEET OF A STREAM AT FINAL GRADE.
   WITHIN SEVEN (7) DAYS FOR ANY OTHER AREA AT FINAL GRADE.
7. TEMPORARY SEEDING, MULCHING, AND FERTILIZER SPECIFICATIONS:
   SEEDING: ANNUAL RYEGRASS AT 2.02 #/1,000 S.F.
   MULCHING: STRAW MATERIAL SHALL BE UNROTTED SMALL GRAIN STRAW APPLIED AT A RATE OF TWO (2) TON/ACRE, OR 80-100 POUNDS PER 1,000 S.F. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE FREE OF PROHIBITIVE NOXIOUS WEEDS. MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICAL MEANS. FROM NOVEMBER 01 THRU MARCH 15 INCREASE THE RATE OF STRAW MULCH TO THREE (3) TON/ACRE.
   FERTILIZER: APPLY FERTILIZER AT HALF THE RATE OF PERMANENT APPLICATION AND AS PER STATE DOT SPECIFICATIONS. IF PROJECT CONDITIONS PREVENT FERTILIZING THE SOIL, THEN THIS ITEM MAY BE WAIVED.
8. PERMANENT SEEDING SHALL BE IN ACCORDANCE WITH ODOT STANDARD SPECIFICATIONS.
9. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION. ALL SLOPES 3:1 OR GREATER THAN 3:1 SHALL BE FERTILIZED, SEEDED, AND CURLEX BLANKETS BY AMERICAN EXCELSIOR COMPANY, NORTH AMERICAN GREEN, INC. OR AN APPROVED EQUAL AS SPECIFIED IN THE PLANS SHALL BE INSTALLED ON THE SLOPES.
10. OHIO EPA SWPPP REGULATIONS REQUIRES THAT A SEDIMENT TRAP OR POND BE SIZED TO PROVIDE AT LEAST 104 CUBIC YARDS (67 CY FOR DEWATERING AND 37 CY FOR SEDIMENT STORAGE) OF STORAGE PER ACRE OF TOTAL CONTRIBUTING AREA. MAXIMUM DEPTH OF SEDIMENT SETTLING POND SHALL BE EQUAL OR LESS THAN 5-FEET WITH A LENGTH TO WIDTH RATIO GREATER THAN OR EQUAL TO 2:1)
11. OUTLET STRUCTURES IN SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT MUST BE REMOVED FROM BASINS AND OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 40% (APPROXIMATELY ONE-HALF OF POND DEPTH).
12. NO SOLID (OTHER THAN SEDIMENT) OR LIQUID WASTE, INCLUDING BUILDING MATERIALS, SHALL BE DISCHARGED IN STORM WATER RUNOFF.
13. ALL TOXIC WASTES, HAZARDOUS WASTES AND NON-SEDIMENT POLLUTANTS MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL GUIDELINES. WASH OUT OF CEMENT TRUCKS SHOULD OCCUR IN DESIGNATED PIT OR DIKED AREAS, WHERE WASHINGS CAN BE REMOVED AND PROPERLY DISPOSED OFF-SITE WHEN THEY HARDEN. STORAGE TANKS SHOULD ALSO BE LOCATED IN PIT OR DIKED AREAS. IN ADDITION, SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CLEAN AND CONTAIN FUEL AND CHEMICAL SPILLS MUST BE KEPT ON SITE. NO TOXIC OR HAZARDOUS WASTES SHALL BE DISPOSED INTO STORM DRAINS, SEPTIC TANKS OR BY BURYING, BURNING OR MIXING THE WASTES.
14. CONTAINERS SHALL BE AVAILABLE FOR DISPOSAL OF DEBRIS, TRASH, HAZARDOUS OR PETROLEUM WASTES. ALL CONTAINERS MUST BE COVERED AND LEAK-PROOF. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THE PERTINENT MATERIAL.
15. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DISPOSED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE SITE THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. BRICKS, HARDENING CONCRETE AND SOIL WASTE SHALL BE FREE FROM CONTAMINATION WHICH MAY LEACH CONSTITUENTS TO WATERS OF THE STATE.
17. CLEAN CONSTRUCTION WASTES THAT WILL BE DISPOSED INTO THE PROPERTY SHALL BE SUBJECT TO ANY LOCAL PROHIBITIONS FROM THIS TYPE OF DISPOSAL.
18. ALL CONSTRUCTION AND DEMOLITION DEBRIS (C&DD) WASTE SHALL BE DISPOSED OF IN AN OHIO EPA APPROVED C&DD LANDFILL AS REQUIRED BY OHIO REVISED CODE 3714. CONSTRUCTION DEBRIS MAY BE DISPOSED OF ON-SITE, BUT DEMOLITION DEBRIS MUST BE DISPOSED IN AN OHIO EPA APPROVED LANDFILL. ALSO, MATERIALS WHICH CONTAIN ASBESTOS MUST COMPLY WITH AIR POLLUTION REGULATIONS (SEE OHIO ADMINISTRATIVE CODE 3745-20).
19. AREA SHALL BE DESIGNATED FOR MIXING OR STORAGE OF COMPOUNDS SUCH AS FERTILIZERS, LIME ASPHALT, OR CONCRETE, THESE DESIGNATED AREAS SHALL BE LOCATED AWAY FROM WATERCOURSES, DRAINAGE DITCHES, FIELD DRAINS, OR OTHER STORMWATER DRAINAGE AREA.
20. EQUIPMENT FUELING & MAINTENANCE SHALL BE IN DESIGNATED AREAS ONLY, THESE DESIGNATED AREAS SHALL BE LOCATED AWAY FROM WATERCOURSES, DRAINAGE DITCHES, FIELD DRAINS, OR OTHER STORMWATER DRAINAGE AREA.
21. A SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN MUST BE DEVELOPED FOR SITES WITH ONE ABOVE-GROUND STORAGE TANK OF 660 GALLONS OR MORE, TOTAL ABOVE-GROUND STORAGE OF 1,330 GALLONS OR BELOW-GROUND STORAGE OF 4,200 GALLONS OF FUEL.
22. ALL DESIGNATED CONCRETE CHUTE OR WASHOUT AREAS SHALL BE LOCATED AWAY FROM WATERCOURSES, DRAINAGE DITCHES, FIELD DRAINS OR OTHER STORMWATER DRAINAGE AREAS.
23. THERE IS A POTENTIAL FOR HIGH GROUND WATER AT THIS SITE. CONTRACTOR IS RESPONSIBLE FOR DESIGNING AND IMPLEMENTING A PLAN TO CONTROL BOTH SURFACE AND GROUND WATER DURING THE COURSE OF CONSTRUCTION.
24. DISCHARGE OF WATER WITH POTENTIAL SEDIMENT FROM THE SITE SHALL BE THROUGH A FILTER BAG, SUMP PIT OR OTHER SEDIMENT REMOVAL DEVICE.
25. ALL CONTAMINATED SOIL MUST BE TREATED AND/OR DISPOSED IN AN OHIO EPA APPROVED SOLID WASTE MANAGEMENT FACILITY OR HAZARDOUS WASTE TREATMENT, STORAGE OR DISPOSAL FACILITIES (TSDFs).
26. IF THE SITE CONTAINS CONTAMINATED SOIL, THE FOLLOWING SHALL BE USED TO PREVENT CONTAMINATION FROM BEING RELEASED:
   1. BERMS, TRENCHES AND PITS TO COLLECT CONTAMINATED RUNOFF AND PREVENT DISCHARGES.
   2. PUMPING RUNOFF INTO A SANITARY SEWER (WITH PRIOR APPROVAL OF THE SANITARY SYSTEM OPERATOR) OR INTO A CONTAINER FOR TRANSPORT TO AN APPROPRIATE TREATMENT/DISPOSAL FACILITY.
   3. COVERING AREAS OF CONTAMINATION WITH TARPS OR OTHER METHODS THAT PREVENT STORM WATER FROM COMING INTO CONTACT WITH THE MATERIAL.

SWPPP NOTES (CONT.)

27. IN THE EVENT OF AN ACCIDENTAL SPILL, IMMEDIATE ACTION WILL BE UNDERTAKEN BY THE GENERAL CONTRACTOR TO CONTAIN AND REMOVE THE SPILLED MATERIAL. ALL HAZARDOUS MATERIALS, INCLUDING CONTAMINATED SOIL AND LIQUID CONCRETE WASTE, WILL BE DISPOSED OF BY THE CONTRACTOR IN THE MANNER SPECIFIED BY FEDERAL, STATE AND LOCAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS. AS SOON AS POSSIBLE, THE SPILL WILL BE REPORTED TO THE APPROPRIATE AGENCIES. AS REQUIRED UNDER THE PROVISIONS OF THE CLEAN WATER ACT, ANY SPILL OR DISCHARGE ENTERING WATERS OF THE UNITED STATES WILL BE PROPERLY REPORTED. THE GENERAL CONTRACTOR WILL PREPARE A WRITTEN RECORD OF ANY SPILL AND ASSOCIATED CLEAN-UP ACTIVITIES OF PETROLEUM PRODUCTS OR HAZARDOUS MATERIALS IN EXCESS OF 1 GALLON OR REPORTABLE QUANTITIES, WHICH EVER IS LESS.
28. THE CONTRACTOR SHALL CONTACT THE OHIO EPA AT 800.282.9378, THE LOCAL FIRE DEPARTMENT AND THE LOCAL EMERGENCY PLANNING COMMITTEE IN THE EVENT OF A PETROLEUM SPILL (>25 GALLONS) OR THE PRESENCE OF SHEEN.
29. OPEN BURNING IS NOT PERMITTED ON THE SITE.
30. DUST CONTROL USING APPROVED MATERIALS MUST BE PERFORMED AT ALL TIMES. DUST SUPPRESSANTS SHALL NOT BE APPLIED NEAR CATCH BASINS FOR STORM SEWERS OR OTHER DRAINAGE WAYS. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION IS PROHIBITED.
31. APPROPRIATE MEASURES MUST BE TAKEN TO ENSURE THAT ALL PROPER AIR POLLUTION PERMITS ARE OBTAINED.
32. PROCESS WASTEWATERS (EQUIPMENT WASHING, LEACHATE ASSOCIATED WITH ON-SITE WASTE DISPOSAL AND CONCRETE WASH-OUTS) SHALL BE COLLECTED AND DISPOSED OF PROPERLY.
33. SANITARY AND WATER PTI FORMS SHALL BE FILED WITH THE OHIO EPA AS REQUIRED.
34. PROTECTED STORAGE AREAS SHALL BE USED FOR INDUSTRIAL AND CONSTRUCTION MATERIALS IN ORDER TO MINIMIZE THE EXPOSURE OF SUCH MATERIALS TO STORMWATER.
35. ALL CONTROL MEASURES STATED IN THE SWPPP SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL TEMPORARY OR PERMANENT STABILIZATION OF THE SITE IS ACHIEVED. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED BY A QUALIFIED PERSON IN ACCORDANCE TO THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT, AND REPAIRED ACCORDING TO THE FOLLOWING:
36. INSPECTIONS OF BMPS SHALL BE PERFORMED BY QUALIFIED PERSONS PROVIDED BY THE PERMITTEE AND THE INSPECTION LOGS ARE TO BECOME A PART OF THIS PLAN. INSPECTIONS RECORDS SHALL BE SIGNED BY THE INSPECTOR AND WILL BE KEPT FOR 3 YEARS AFTER THE NOTICE OF TERMINATION IS SUBMITTED.
37. INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE IN EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES OF RAIN PER 24 HOUR PERIOD, FROM THE BEGINNING OF CONSTRUCTION THROUGH THE FINAL INSPECTION PRIOR TO THE NOTICE OF TERMINATION.
38. NON-SEDIMENT POND BMPS TO BE REPAIRED WITHIN 3 DAYS OF INSPECTION AND SEDIMENT POND BMPS WITHIN 10 DAYS OF INSPECTION. BMPS NOT MEETING THE INTENDED FUNCTION SHALL BE REPLACED WITHIN 10 DAYS OF INSPECTION. MISSING BMPS SHALL BE INSTALLED WITHIN 10 DAYS OF INSPECTION.
39. IF THE SITE IS STABILIZED AND WILL BE DORMANT FOR A LONG PERIOD OF TIME, LESS FREQUENT INSPECTIONS MAY BE REQUESTED OF THE OEPA VIA A WAIVER REQUEST.
40. INLET PROTECTION DEVICES AND CONTROLS SHALL BE REPAIRED OR REPLACED WHEN THEY SHOW SIGNS OF UNDERMINING AND OR DETERIORATION.
41. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STANDING OF GRASS IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.
42. SILT FENCES, INLET PROTECTION, SILT DIKES AND PERVIOUS LOGS SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION IF DAMAGED. SEDIMENT ACCUMULATION MUST BE REMOVED WHEN SEDIMENT HEIGHT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE, INLET PROTECTION, SILT DIKE AND PERVIOUS LOG.
43. MINIMIZE OFF-SITE SEDIMENT TRACKING OF VEHICLES BY THE USE OF STONE MATERIAL IN ALL CONSTRUCTION ENTRANCES, ALONG WITH REGULARLY SCHEDULED SWEEPING/GOOD HOUSEKEEPING. STABILIZED CONSTRUCTION ENTRANCES TO BE PROPERLY MAINTAINED AND IN GOOD WORKING ORDER AT ALL TIMES; THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE STONE AS CONDITIONS DEMAND.
44. IF THE ACTION OF VEHICLES TRAVELING OVER THE STABILIZED CONSTRUCTION ENTRANCE DOES NOT SUFFICIENTLY REMOVE MOST OF THE DIRT AND MUD, THEN THE TIRES MUST BE WASHED BEFORE VEHICLES ENTER A PUBLIC ROAD. PROVISIONS MUST BE MADE TO INTERCEPT THE WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
45. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED ONTO THE ROADWAYS OR INTO THE STORM SEWERS MUST BE REMOVED IMMEDIATELY.
46. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.
47. CONTRACTORS AND SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING ALL SEDIMENT FROM THE SITE, INCLUDING DETENTION PONDS, AND STORM SEWER SYSTEMS. SEDIMENT DEPOSITION DURING SITE STABILIZATION MUST ALSO BE REMOVED.
48. ALL RIP RAP MUST BE PLACED OVER GEOTEXTILE FILTER.
49. STONE CONSTRUCTION ENTRANCE TO BE MAINTAINED BY CONTRACTOR UNTIL SITE HAS BEEN PAVED OR IS NO LONGER REQUIRED.
50. ALL CATCH BASIN GRATES ARE TO BE PROTECTED WITH INLET BAGS AFTER THEY ARE INSTALLED. THEY SHOULD BE ROUTINELY CLEANED AND MAINTAINED.
51. ROCK CHECK DAMS SHOULD BE ROUTINELY CLEANED ONCE SEDIMENT BEGINS TO APPEAR ON THE UPSTREAM SIDE OF THE ROCK.
52. ON-SITE AND OFF-SITE STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION BY THE USE OF BEST MANAGEMENT PRACTICES. THESE AREAS MUST BE SHOWN IN THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS.
53. CONTRACTOR TO DELINEATE STOCK PILE LOCATION ON PLANS TO BE KEPT ON SITE DURING CONSTRUCTION.
54. CONSTRUCT STOCKPILES IN ACCESSIBLE LOCATIONS THAT DO NOT INTERFERE WITH NATURAL DRAINAGE. INSTALL APPROPRIATE SEDIMENT CONTROLS TO TRAP SEDIMENT SUCH AS SILT FENCE IMMEDIATELY ADJACENT TO THE STOCKPILE OR SEDIMENT TRAPS OR BASINS DOWNSTREAM OF STOCKPILE. STOCKPILE SIDE SLOPES SHALL NOT EXCEED A RATIO OF 2:1.
55. IF STOCKPILE IS STORED FOR MORE THAN 14 DAYS, IT SHOULD BE TEMPORARY SEEDED, OR COVERED WITH A TARP.
56. ALL CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH DAY; THIS INCLUDES BACKFILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR ASPHALT FOR ROAD CONSTRUCTION.
57. THE LAST LAYER OF SOIL, INCLUDING TOP SOIL SHOULD BE COMPACTED TO 80% - 85% OF THE MAXIMUM STANDARD PROCTOR DENSITY, IN AREAS OUTSIDE THE PARKING LOT THAT WILL RECEIVE VEGETATION. THIS IS PARTICULARLY IMPORTANT IN CUT SLOPE AND EMBANKMENT AREAS. IN PAVEMENT AND ISLAND AREAS, IT IS RECOMMENDED THAT THE SOIL BE COMPACTED TO 98% AND 95% OF THE MAXIMUM STANDARD PROCTOR DENSITY RESPECTIVELY; THE LAST COMPACTED LAYER MAY BE SCARIFIED TO IMPROVE THE SOIL GROWTH CHARACTERISTICS.
58. THE POST CONSTRUCTION WATER QUALITY REQUIREMENTS OF OHIO EPA PERMIT OHC000004 SHALL BE MET BY THE EXISTING WATER QUALITY BASIN.
59. ALL WATER FROM DEWATERING ACTIVITES SHALL BE PROCESSED THROUGH A BMP PRIOR TO LEAVING THE SITE.

STRUCTURAL BMP LONG-TERM MAINTENANCE (GENERAL NOTES)

1. THE OWNER AGREES TO MAINTAIN IN PERPETUITY THE STORM WATER MANAGEMENT PRACTICES IN ACCORDANCE WITH APPROVED MAINTENANCE PLANS LISTED IN #2 BELOW AND IN A MANNER THAT WILL PERMIT THE STORM WATER MANAGEMENT PRACTICES TO PERFORM THE PURPOSES FOR WHICH THEY WERE DESIGNED AND CONSTRUCTED. THIS INCLUDES ALL PIPES, STRUCTURES, IMPROVEMENTS, AND VEGETATION PROVIDED TO CONTROL THE QUANTITY OF THE STORM WATER.
2. NO ALTERATIONS TO THE WATER QUALITY/DETENTION BASINS WITHOUT APPROVAL FROM THE JURISDICTIONAL REVIEWING AUTHORITY.
3. THE OWNER SHALL PROVIDE A MAINTENANCE PLAN FOR EACH STORM WATER MANAGEMENT PRACTICE. THE MAINTENANCE PLANS SHALL INCLUDE A SCHEDULE FOR MONTHLY AND ANNUAL MAINTENANCE. THE OWNER SHALL MAINTAIN, UPDATE AND STORE THE MAINTENANCE RECORDS FOR THE STORM WATER MANAGEMENT PRACTICES. THE SPECIFIC MAINTENANCE PLANS FOR EACH STORM WATER MANAGEMENT PRACTICE ARE AS FOLLOWS.

MAINTENANCE TO BE COMPLETED EVERY 3 MONTHS
- REMOVE TRASH AND/OR ACCUMULATED SEDIMENT FROM POND AREA.
- REMOVE OBSTRUCTIONS IN ORIFICES AND/OR OUTLETS WITHIN POND.
- REMOVE DEBRIS AND SEDIMENT FROM INLET PIPES, OUTLET PIPES AND STRUCTURES.

MAINTENANCE TO BE COMPLETED YEARLY
- REPAIR EROSION TO OUTFALL OR SPILLWAY OF THE POND
- REPAIR AND/OR REPLACE DAMAGED STRUCTURES, SUCH AS CATCH BASINS, RISERS, PIPES AND HEADWALLS.
- MOW EMBANKMENTS AND REMOVE WOODY VEGETATION ON EMBANKMENTS

YEARLY REPORT REQUIREMENTS
SKETCH SHOWING GENERAL AREA OF BMP'S, SUMMARY OF ALL MAINTENANCE ACTIVITIES SINCE LAST ANNUAL INSPECTION, PHOTOS AND DESCRIPTION OF ALL BMP DESIGN FEATURES, INDICATION OF ANY DEVIATION FROM APPROVED PLAN FOR BMP, IDENTIFICATION OF IMPROVEMENTS NECESSARY TO RESTORE ORIGINAL DESIGN FUNCTION, MAINTENANCE ACTIVITIES REQUIRED IN THE NEXT 6 MONTHS, IDENTIFICATION AND CONTACT INFORMATION OF ENTITY RESPONSIBLE FOR BMP, AND IDENTIFICATION AND CONTACT INFORMATION FOR ENGINEER PREPARING THE REPORT INCLUDING SIGNATURE AND SEAL.

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REVISIONS NO.	DATE	DESCRIPTION

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SWPPP NOTES

WINDSOR ESTATES

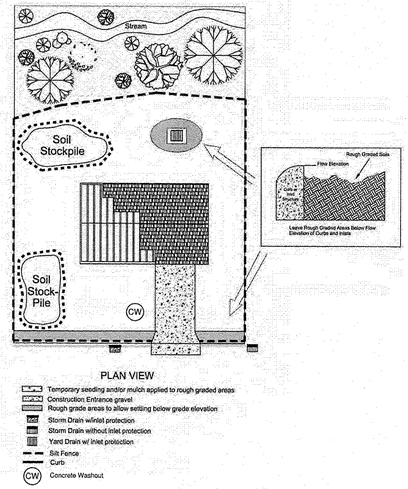
OHIO

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ISSUE: CONSTRUCTION	
DATE: 5/12/2017	
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DESIGN:	KEH
DRAWN:	KEH
CHECKED:	JEE
SHEET NO.	13

Specifications
for

Small Construction Site Controls



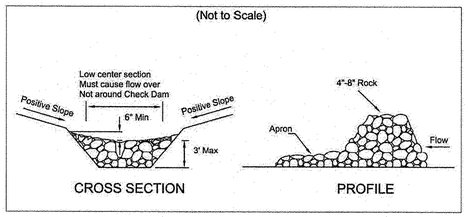
Specifications
for

Small Construction Site Controls

1. Preexisting vegetation shall be retained on idle portions of the building lot for as long as construction operations allow. Clearing shall be done so only active working areas are bare.
2. Temporary seed and/or mulch shall be applied to areas, such as stockpiles and rough graded areas, that are bare and not actively being worked. This shall apply to areas that will not be reworked for 14 days or more.
3. Stockpiles created from basement excavation and grading shall be situated away from streets, swales, or other waterways and shall be seeded and/or mulched immediately.
4. Silt fence or other sediment barriers shall control sheet flow runoff from the building lot. These shall not be constructed in channels or areas of concentrated flow. Other sediment controls such as sediment traps and inlet protection shall also be used as needed to control sediment runoff. Sediment control practices shall be inspected weekly after storm events, and maintained in good working condition.
5. Construction vehicle access shall be limited to one route, to the greatest extent practical. The access shall be gravel or crushed rock underlain with geotextile.
6. Mud tracked onto streets or sediment settled around curb inlet protection shall be removed daily or as needed to prevent it from accumulating. It shall be removed by shoveling and scraping and shall NOT be washed off paved surfaces or into storm drains. Sediment removed shall be placed where it will not be subject to erosion or concentrated runoff.

Specifications
for

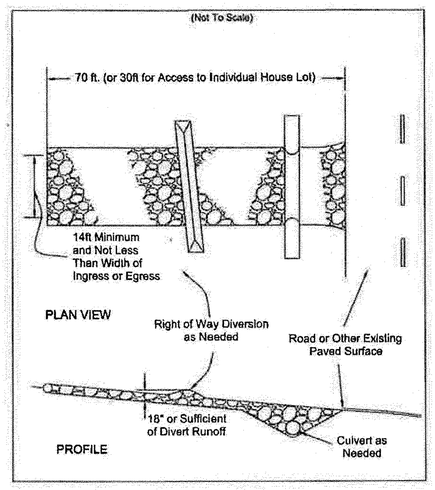
Rock Check Dam



1. The check dam shall be constructed of 4-8 inch diameter stone, placed so that it completely covers the width of the channel. ODOT Type D stone is acceptable, but should be underlain with a gravel filter consisting of ODOT No. 3 or 4 or suitable filter fabric.
2. Maximum height of check dam shall not exceed 3.0 feet.
3. The midpoint of the rock check dam shall be a minimum of 6 inches lower than the sides in order to direct across the center and away from the channel sides.
4. The base of the check dam shall be entrenched approximately 6 inches.
5. Spacing of check dams shall be in a manner such that the toe of the upstream dam is at the same elevation as the top of the downstream dam.
6. A Splash Apron shall be constructed where check dams are expected to be in use for an extended period of time, a stone apron shall be constructed immediately downstream of the check dam to prevent flows from undercutting the structure. The apron should be 6 in. thick and its length two times the height of the dam.
7. Stone placement shall be performed either by hand or mechanically as long as the center of check dam is lower than the sides and extends across entire channel.
8. Side slopes shall be a minimum of 2:1.

Specifications
for

Construction Entrance



Specifications
for

Construction Entrance

1. Stone Size—ODOT # 2 (1.5-2.5 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 70 ft. (exception: apply 30 ft. minimum to single residence lots).
3. Thickness -The stone layer shall be at least 6 inches thick for light duty entrances or at least 10 inches for heavy duty use.
4. Width -The entrance shall be at least 14 feet wide, but not less than the full width at points where ingress or egress occurs.
5. Geotextile -A geotextile shall be laid over the entire area prior to placing stone. It shall be composed of strong rot-proof polymeric fibers and meet the following specifications:

Figure 7.4.1

Geotextile Specification for Construction Entrance.	
Minimum Tensile Strength	200 lbs
Minimum Puncture Strength	80 psi.
Minimum Tear Strength	50 lbs
Minimum Burst Strength	320 psi
Minimum Elongation	20%
Equivalent Opening Size	EOS < 0.6 mm
Permittivity	1×10-3 cm/sec.

6. Timing—The construction entrance shall be installed as soon as is practicable before major grading activities.
7. Culvert -A pipe or culvert shall be constructed under the entrance if needed to prevent surface water from flowing across the entrance or to prevent runoff from being directed out onto paved surfaces.
8. 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.
9. 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.
10. 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.
11. Removal—the entrance shall remain in place until the disturbed area is stabilized or replaced with a permanent roadway or entrance.

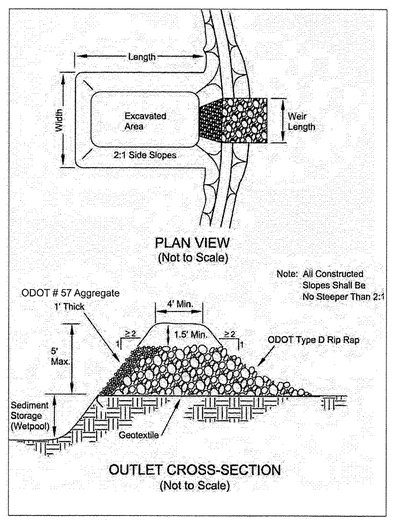
Specifications
for

Sediment Traps

1. Work shall consist of the installation, maintenance and removal of all sediment traps at the locations designated on the drawings.
2. Sediment traps shall be constructed to the dimensions specified on the drawings and operational prior to upslope land disturbance.
3. The area beneath the embankment shall be cleared, grubbed and stripped of vegetation to a minimum depth of six (6) inches. The pool shall be cleared as needed to facilitate sediment cleanout.
4. Fill used for the embankment shall be evaluated to assure its suitability and it must be free of roots or other woody vegetation, large rocks, organics or other objectionable materials. Fill material shall be placed in six (6) inch lifts and shall be compacted by traversing with a sheepsfoot or other approved compaction equipment. Fill height shall be increased five (5) percent to allow for structure/foundation settlement. Construction shall not be permitted if either the earthfill or compaction surface is frozen.
5. The maximum height of embankment shall be five (5) feet. All cut and fill slopes shall be 2:1 (H:V) or flatter.
6. A minimum storage volume below the crest of the outlet of 67 yd^3 for every acre of contributing drainage area shall be achieved at each location noted on the drawings with additional sediment storage volume provided below this elevation.
7. Temporary seeding shall be established and maintained over the useful life of the practice.
8. The outlet for the sediment trap structure shall be constructed to the dimensions shown on the drawings.
9. The outlet shall be constructed using the materials specified on the drawings. Where geotextile is used, all overlaps shall be a minimum of two (2) feet or as specified by the manufacturer, whichever is greater. All overlaps shall be made with the upper most layer placed last. Geotextile shall be keyed in at least 6" on the upstream side of the outlet.
10. Warning signs and safety fence shall be placed around the traps and maintained over the life of the practice.
11. After all sediment-producing areas have been permanently stabilized, the structure and all associated sediment shall be removed. Stable earth materials shall be placed in the sediment trap area and compacted. The area shall be graded to blend in with adjoining land surfaces and have positive drainage. The area shall be immediately seeded.

Specifications
for

Sediment Trap



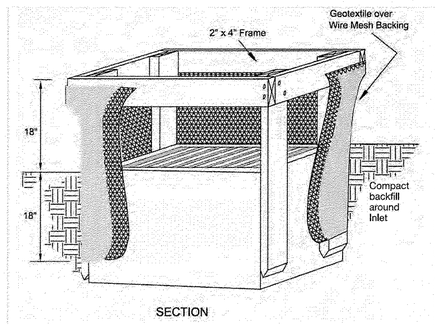
Specifications
for

Additional Construction Site Pollution 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:
   - 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'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.

Specifications
for

Geotextile Inlet Protection



1. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
2. The earth around the inlet shall be excavated completely to a depth at least 18 inches.
3. The wooden frame shall be constructed of 2-inch by 4-inch construction grade lumber. The 2-inch by 4-inch posts shall be driven one (1) ft. into the ground at four corners of the inlet and the top portion of 2-inch by 4-inch frame assembled using the overlap joint shown. The top of the frame shall be at least 6 inches below adjacent roads if ponded water will 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 material 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. It shall extend from the top of the frame to 18 inches 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-inch layers until the earth is even with notch elevation on ends and top elevation on sides.
7. A compacted earth dike or check dam shall be constructed in the ditch line below the inlet if the inlet is not in a depression. The top of the dike shall be at least 6 inches higher than the top of the frame.

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SWPPP DETAILS

WINDSOR ESTATES

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CHECKED:	JEE
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Specifications
for

Permanent Seeding

Site Preparation

1. Subsoiler, plow, or other implement shall be used to reduce soil compaction and allow maximum infiltration. (Maximizing infiltration will help control both runoff rate and water quality.) 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. Topsoil 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 pounds per 1,000-sq. ft. or 2 tons per acre.
2. Fertilizer—Fertilizer shall be applied as recommended by a soil test. In place of a soil test, fertilizer shall be applied at a rate of 25 pounds per 1,000-sq. ft. or 1000 pounds per acre of a 10-10-10 or 12-12-12 analyses.
3. The lime and fertilizer shall be worked into the soil with a disk harrow, spring-tooth harrow, or other suitable field implement to a depth of 3 inches. On sloping land, the soil shall be worked on the contour.

Seeding Dates and Soil Conditions

Seeding should be done March 1 to May 31 or August 1 to September 30. If seeding occurs outside of the above-specified dates, additional mulch and irrigation may be required to ensure a minimum of 80% germination. Tillage for seedbed preparation should be done when the soil is dry enough to crumble and not form ribbons when compressed by hand. For winter seeding, see the following section on dormant seeding.

Dormant Seedings

1. Seedings should not be made from October 1 through November 20. During this period, the seeds are likely to germinate but probably will not be able to survive the winter.
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 seeder, 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.

Mulching

1. Mulch material shall be applied immediately after seeding. Dormant seeding shall be mulched. 100% of the ground surface shall be covered with an approved material.
2. Materials
   - Straw—If straw is used it shall be unrotted small-grain straw applied at the rate of 2 tons per acre or 90 pounds (two to three bales) per 1,000-sq. ft. The mulch shall be spread uniformly by hand or mechanically applied so the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000-sq.-ft. sections and spread two 45-lb. bales of straw in each section.
   - Hydroseeders—If wood cellulose fiber is used, it shall be applied at 2,000 lb./ac. or 46 lb./1,000 sq. ft.
   - Other—Other acceptable mulches include rolled erosion control mattings or blankets applied according to manufacturer's recommendations or wood chips applied at 6 tons per acre.

3. Straw and 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 inches.
- Mulch Netting—Netting 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 manufacture or at the rate of 160 gallons per acre.
- Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Tack or equivalent may be used at rates specified by the manufacturer.
- Wood Cellulose Fiber—Wood cellulose fiber shall be applied at a net dry weight of 750 pounds per acre. The wood cellulose fiber shall be mixed with water with the mixture containing a maximum of 50 pounds cellulose per 100 gallons of water.

Irrigation

Permanent seeding shall include irrigation to establish vegetation during dry weather or on adverse site conditions, which require adequate moisture for seed germination and plant growth.

Irrigation rates shall be monitored to prevent erosion and damage to seeded areas from excessive runoff.

Table 7.10.2 Permanent Seeding

Seed Mix	Seeding Rate		Notes:
	Lbs./acre	Lbs./1,000 Sq. Feet	
General Use			
Creeping Red Fescue Domestic Ryegrass Kentucky Bluegrass	20-40 10-20 20-40	1/2-1 1/4-1/2 1/2-1	For close mowing & for waterways with <2.0 ft/sec velocity
Tall Fescue	40-50	1- 1 1/4	
Turf-type (dwarf) Fescue	90	2 1/4	
Steep Banks or Cut Slopes			
Tall Fescue	40-50	1- 1 1/4	
Crown Vetch Tall Fescue	10-20 20-30	1/4-1/2 1/2-3/4	Do not seed later than August
Flat Pea Tall Fescue	20-25 20-30	1/2-3/4 1/2-3/4	Do not seed later than August
Road Ditches and Swales			
Tall Fescue	40-50	1-11/4	
Turf-type (Dwarf) Fescue Kentucky Bluegrass	90 5	2 1/4 0.1	
Lawns			
Kentucky Bluegrass Perennial Ryegrass	100-120	2 2	
Kentucky Bluegrass Creeping Red Fescue	100-120	2 1-1/2	For shaded areas

Note: Other approved seed species may be substituted.

Specifications
for

Temporary Seeding

Table 7.8.1 Temporary Seeding Species Selection

Seeding Dates	Species	Lb./1000 ft2	Lb/Acre
March 1 to August 15	Oats Tall Fescue Annual Ryegrass	3 1 1	128 (4 Bushel) 40 40
	Perennial Ryegrass Tall Fescue Annual Ryegrass	1 1 1	40 40 40
	Annual Ryegrass Perennial Ryegrass Creeping Red Fescue Kentucky Bluegrass	1.25 3.25 0.4 0.4	55 142 17 17
	Oats Tall Fescue Annual Ryegrass	3 1 1	128 (3 bushel) 40 40
August 16th to November	Rye Tall Fescue Annual Ryegrass	3 1 1	112 (2 bushel) 40 40
	Wheat Tall Fescue Annual Ryegrass	3 1 1	120 (2 bushel) 40 40
	Perennial Rye Tall Fescue Annual Ryegrass	1 1 1	40 40 40
	Annual Ryegrass Perennial Ryegrass Creeping Red Fescue Kentucky Bluegrass	1.25 3.25 0.4 0.4	40 40 40
November 1 to Feb. 29	Use mulch only or dormant seeding		

Note: Other approved species may be substituted.

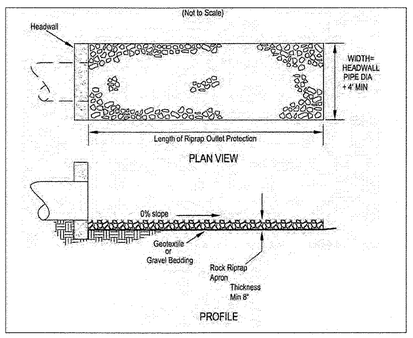
1. Structural erosion and sediment control practices such as diversions and sediment traps shall be installed and stabilized with temporary seeding prior to grading the rest of the construction site.
2. Temporary seed shall be applied between construction operations on soil that will not be graded or reworked for 14 days or greater. These idle areas shall be seeded within 7 days after grading.
3. The seedbed should be pulverized and loose to ensure the success of establishing vegetation. Temporary seeding should not be postponed if ideal seedbed preparation is not possible.
4. Soil Amendments—Temporary vegetation seeding rates shall establish adequate stands of vegetation, which may require the use of soil amendments. Base rates for lime and fertilizer shall be used.
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.

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 on favorable, very flat soil conditions may not need mulch to achieve adequate stabilization.
2. Materials:
   - Straw—If straw is used, it shall be unrotted small-grain straw applied at a rate of 2 tons per acre or 90 lbs./ 1,000 sq. ft. (2-3 bales)
   - Hydroseeders—If wood cellulose fiber is used, it shall be used at 2000 lbs./ ac. or 46 lb./ 1,000-sq.-ft.
   - Other—Other acceptable mulches include mulch mattings applied according to manufacturer's recommendations or wood chips applied at 6 ton/ 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 left to a length of approximately 6 inches.
   - Mulch Netting—Netting shall be used according to the manufacturers recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff and on critical slopes.
   - Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Track or equivalent may be used at rates recommended by the manufacturer.
   - Wood-Cellulose Fiber—Wood-cellulose fiber binder shall be applied at a net dry wt. 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.

Specifications
for

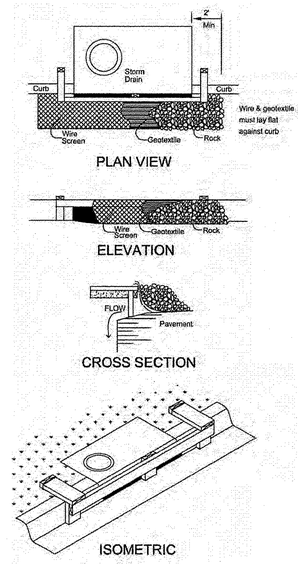
Rock Outlet Protection



1. Subgrade for the filter or bedding and riprap shall be prepared to the required lines and grades as shown on the plan. The subgrade shall be cleared of all trees, stumps, roots, sod, loose rock, or other material.
2. Riprap shall conform to the grading limits as shown on the plan.
3. Geotextile shall be securely anchored according to manufacturers' recommendations.
4. Geotextile shall be laid with the long dimension parallel to the direction of flow and shall be laid loosely but without wrinkles and creases. Where joints are necessary, strips shall be placed to provide a 12-in. minimum overlap, with the upstream strip overlapping the downstream strip.
5. Gravel bedding shall be ODOT No. 67's or 57's unless shown differently on the drawings.
6. Riprap may be placed by equipment but shall be placed in a manner to prevent slippage or damage to the geotextile.
7. Riprap shall be placed by a method that does not cause segregation of sizes. Extensive pushing with a dozer causes segregation and shall be avoided by delivering riprap near its final location within the channel.
8. Construction shall be sequenced so that outlet protection is placed and functional when the storm drain, culvert, or open channel above it becomes operational.
9. All disturbed areas will be vegetated as soon as practical.

Specifications
for

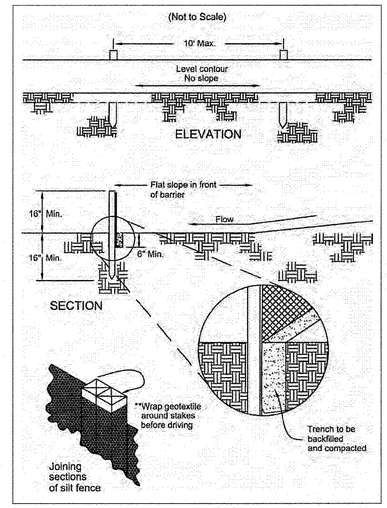
Geotextile - Stone Inlet Protection for Curb Inlets



1. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
2. Construct a wooden frame of 2-by-4-in. construction-grade lumber. The end spacers shall be a minimum of 1 ft. beyond both ends of the throat opening. The anchors shall be nailed to 2-by-4-in. stakes driven on the opposite side of the curb.
3. The wire mesh shall be of sufficient strength to support fabric and stone. It shall be a continuous piece with a minimum width of 30 in. and 4 ft. longer than the throat length of the inlet, 2 ft. on each side.
4. Geotextile cloth shall have an equivalent opening size (EOS) of 20-40 sieve and be resistant to sunlight. It shall be at least the same size as the wire mesh.
5. The wire mesh and geotextile cloth shall be formed to the concrete gutter and against the face of the curb on both sides of the inlet and securely fastened to the 2-by-4-in. frame.
6. Two-inch stone shall be placed over the wire mesh and geotextile in such a manner as to prevent water from entering the inlet under or around the geotextile cloth.
7. This type of protection must be inspected frequently and the stone and/or geotextile replaced when clogged with sediment.

Specifications
for

Silt Fence



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 that may carry small concentrated flows to the silt fence are dissipated along its length.
3. Ends of the silt fences shall be brought upslope slightly so that water ponded by the silt fence will be prevented from flowing around the ends.
4. Silt fence shall be placed on the flattest area available.
5. Where possible, vegetation shall be preserved for 5 feet (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 inches above the original ground surface.
7. The silt fence shall be placed in an excavated or sliced trench cut a minimum of 6 inches deep. The trench shall be made with a trencher, cable laying machine, slicing machine, or other suitable device that will ensure an adequately uniform trench depth.
8. The silt fence shall be placed with the stakes on the downslope side of the geotextile. A minimum of 8 inches of geotextile must be below the ground surface. Excess material shall lay on the bottom of the 6-inch deep trench. The trench shall be backfilled and compacted on both sides of the fabric.
9. Seams between sections of silt fence shall be spliced together only at a support post with a minimum 6-in. overlap prior to driving into the ground, (see details).
10. Maintenance—Silt fence shall allow runoff to pass only as diffuse flow through the geotextile. If runoff overtops the silt fence, flows under the fabric or around the fence ends, or in any other way allows a concentrated flow discharge, 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.

    Sediment deposits shall be routinely removed when the deposit reaches approximately one-half of the height of the silt fence.

    Silt fences shall be inspected after each rainfall and at least daily during a prolonged rainfall. The location of existing silt fence shall be reviewed daily to ensure its proper location and effectiveness. If damaged, the silt fence shall be repaired immediately.

Criteria for silt fence materials

1. Fence post – The length shall be a minimum of 32 inches. Wood posts will be 2-by-2-in. nominal dimensioned hardwood of sound quality. They shall be free of knots, splits and other visible imperfections, that will weaken the posts. The maximum spacing between posts shall be 10 ft. Posts shall be driven a minimum 16 inches into the ground, where possible. If not possible, the posts shall be adequately secured to prevent overturning of the fence due to sediment/water loading.
2. Silt fence fabric – See chart below.

Table 6.3.2 Minimum criteria for Silt Fence Fabric (ODOT, 2002)

FABRIC PROPERTIES	VALUES	TEST METHOD
Minimum Tensile Strength	120 lbs. (535 N)	ASTM D 4632
Maximum Elongation at 60 lbs	50%	ASTM D 4632
Minimum Puncture Strength	50 lbs (220 N)	ASTM D 4833
Minimum Tear Strength	40 lbs (180 N)	ASTM D 4533
Apparent Opening Size	≤ 0.84 mm	ASTM D 4751
Minimum Permittivity	1X10-2 sec.-1	ASTM D 4491
UV Exposure Strength Retention	70%	ASTM G 4355

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