WESTVIEW MEADOWS
PHASES 1 & 2

SECTION 9, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

GENERAL NOTES

ALL WORK SHALL BE DONE UNDER THE SUPERVISION OF THE BUTLER COUNTY ENGINEER AND THE AUTHORITY HAVING RESPONSIBILITY FOR UTILITIES IN THE AREA AND IN ACCORDANCE WITH THE RULES AND REGULATIONS FOR SUBDIVISION.

STORM SEWERS SHALL BE A MATERIAL WITH A MANUFACTURER'S MANNINGS "N" OF 0.011 OR LOWER AND A MATERIAL AS NOTED IN APPENDIX D, TABLE D–6 IN THE BUTLER COUNTY SUBDIVISION REGULATIONS ADOPTED NOVEMBER 24, 1997. (NOTE – CORRUGATED METAL PIPE NOT INCLUDED)

STEPS SHALL BE INSTALLED IN CATCH BASINS AND MANHOLES IN EXCESS OF FOUR FEET.

CONSTRUCTION WORK SHALL BE IN ACCORDANCE WITH THE OHIO DEPARTMENT OF TRANSPORTATION "CONSTRUCTION AND MATERIAL SPECIFICATIONS" ODOT 2017 STANDARDS OR BUTLER COUNTY REQUIREMENTS AND STANDARDS FOR SUBDIVISIONS. WHEN IN CONFLICT, THE COUNTY REQUIREMENTS SHALL PREVAIL.

SUMP COLLECTOR LINES SHALL BE CONSTRUCTED SDR 35 PVC.

A PRE–CONSTRUCTION MEETING IS REQUIRED WITH THE BUTLER COUNTY ENGINEER'S OFFICE PRIOR TO THE START OF CONSTRUCTION.

SANITARY SEWER MATERIALS AND INSTALLATION AS PER BUTLER COUNTY WATER & SEWER SPECIFICATIONS USING SECTION 3110 FOR PVC, SDR–35 & 26 PIPE; SECTION 3140 FOR ABS PVC COMPOSITE PIPE. SECTION 3410 FOR MANHOLES.

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

THE UPSTREAM TERMINUS OF THE SANITARY SEWER LATERALS SHOWN HERE ON ARE TO BE 12 FEET BELOW OF THE ELEVATION OF THE BACK OF CURB.

WATER MAIN SHALL HAVE 4' MINIMUM DEPTH TO TOP OF PIPE. ALL WATER MAINS TO BE DUCTILE IRON PIPE, CL. 53 AWWA C–151. WATER MAIN MATERIALS, VALVES, FIRE HYDRANTS, FITTINGS, APPURTENANCES, AND INSTALLATION TO BE AS BUTLER COUNTY SPECIFICATIONS, AND SHALL HAVE RESTRAINED JOINTS. ALL WATER MAIN VALVES TO HAVE A MINIMUM DEPTH OF 2.5 AND A MAXIMUM OF 4.0' FROM PROPOSED GRADE TO THE TOP OF THE VALVE OPERATING NUT.

WATER MAIN SHALL HAVE 10' HORIZONTAL, & 18" VERTICAL SEPARATION (OUTSIDE EDGE TO EDGE) WITH ALL OTHER PIPE.

ALL DOWNSPOUT LINES SHALL BE ON SPLASHBLOCKS AND MAY NOT BE CONNECTED TO THE CURB.

ALL TRENCHES WITHIN THE RIGHT–OF–WAY AND UTILITY EASEMENTS SHALL BE COMPACTED AND BACKFILLED IN ACCORDANCE WITH ITEM 203 AND 603 IN THE CURRENT OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS MANUAL.

THE DEVELOPER SHALL BE RESPONSIBLE FOR THE INSTALLATION OF CONDUITS OF THE FULL WIDTH OF THE PUBLIC RIGHT–OF–WAY AS CALLED FOR ON THE TYPICAL SECTION FOR USE BY THE ELECTRIC, TELEPHONE, AND CABLE TELEVISION SERVICES. THE DEVELOPER SHALL COORDINATE THE LOCATION OF THE LINES WITH EACH UTILITY COMPANY.

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

STORM SEWER PIPE SHALL BE TYPE "B" & "C" CONDUIT, 707.42 PVC, ALL DIA. (CONTECH A200 OR EQUAL), 707.33 PVC, UP TO & INCLUDING 24" DIA (HANCOR, ADS, OR EQUAL), 707.01 CMP, ALL DIA., 706.02, REINFORCED CONCRETE PIPE, ALL DIA.

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

PRIVATE DRIVEWAYS, PARKING LOTS AND OTHER PAVED AREAS, EARTHEN BERMS OR STRUCTURES SHOULD NOT BE CONSTRUCTED OVER PRIVATE WATER OR SEWER SERVICE LINES WITHIN THE PUBLIC ROAD RIGHT OF WAY OR WITHIN EASEMENT AREAS FOR THE PUBLIC UTILITIES. SHOULD THIS OCCUR, THE PROPERTY OWNER WILL BE HELD RESPONSIBLE FOR THE PROTECTION AND REPAIR OF AND FOR PROVIDING ACCESS TO ANY CURB STOPS, METER PITS, MANHOLES, CLEANOUTS, ETC. INSTALLED IN CONJUNCTION WITH THESE PRIVATE SERVICE LINES 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.

LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY GROUND CONDITIONS AND EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION.

THE EXISTING UTILITIES SHOWN ARE FOR CONTRACTOR'S CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE OWNER ASSUMES NO RESPONSIBILITY FOR THE LOCATION OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

BUTLER COUNTY ASSUMES NO MAINTENANCE RESPONSIBILITY FOR PRIVATE DRIVES.

BUTLER COUNTY WILL NOT BE RESPONSIBLE FOR ANY PAVEMENT OR STORM SEWER REPAIRS RESULTING FROM WATER MAIN REPAIRS. BUTLER COUNTY ALSO WILL NOT BE RESPONSIBLE FOR ADJUSTING VALVES, FIRE HYDRANTS, METER PITS, ETC. AS A RESULT OF GRADE CHANGES. THE GRANTOR SHALL BE RESPONSIBLE FOR THE PROPER ADJUSTMENT OF VALVES, FIRE HYDRANTS, METER PITS, ETC., TO THE SATISFACTION OF BUTLER COUNTY, DUE TO GRADE CHANGES, PAVING, REPAVING, ETC., INITIATED BY THE GRANTOR.

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

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

SANITARY SEWER LATERALS, WHICH SHALL INCLUDE ALL PIPE AND APPURTENANCES FROM THE BUILDING TO THE PUBLIC SEWER MAIN, AND 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.

ALL GROUND SURFACE AREAS THAT HAVE BEEN EXPOSED OR LEFT BARE AS A RESULT OF CONSTRUCTION AND ARE TO FINAL GRADE AND ARE TO REMAIN SO, SHALL BE SEEDED AND MULCHED AS SOON AS PRACTICAL IN ACCORDANCE WITH STATE OF OHIO SPECIFICATIONS, ITEM 659.

THE CONTRACTOR SHALL SEED AND MULCH DISTURBED GRASS AREAS WITH:
- 3 LBS. WHEAT OR RYE PER 1000 SQ. FT.
- 10 LBS. 12–12–12 FERTILIZER PER 1000 SQ. FT.
- 2 OR 3 BALES OF STRAW PER 1000 SQ. FT.

THE CONTRACTOR SHALL ALSO PROVIDE OTHER EROSION CONTROL MEASURES AS MAY BE REQUIRED BY BUTLER COUNTY ENGINEER DURING THE CONSTRUCTION PHASE.

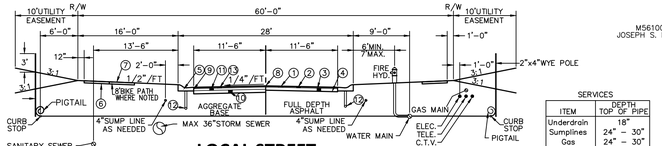
SEEDING – SPECIFICATIONS AT DETENTION BASIN:

RED FESCUE	1 LB. PER 1000 SQ. FT
KENTUCKY BLUEGRASS	1/2 LB. PER 1000 SQ. FT.
PERENNIAL RYEGRASS	1/2 LB. PER 1000 SQ. FT.

FERTILIZER: 12 – 12 – 12
MULCH – 3 BALES OF STRAW PER 1000 SQ. FT.
MULCH TIE DOWN: LIQUID ASPHALT (R.C. 70, 25 OR 800) 40 GALS. PER 1000 SQ. YDS. OR PLASTIC MULCH NETTING, STAPLED IN PLACE.
SOD: TO BE STAKED IN PLACE.

ON STREET PARKING SHALL BE LIMITED AND SHALL BE PROHIBITED DURING SNOW EVENTS. LANGUAGE SHALL BE PLACED IN THE SUBDIVISION PROTECTIVE COVENANTS, GIVING THE HOA THE ABILITY TO ENFORCE AND ELIMINATING THE NEED FOR PARKING SIGNAGE.

IF MORE THAN FIVE (5) FOOT OF FILL IS PLACED ON A BUILDING LOT, A COMPACTION TEST MUST BE APPROVED BY THE BUTLER COUNTY SWCD OFFICE AND BUTLER COUNTY ENGINEER'S OFFICE PRIOR TO FINAL PLAT APPROVAL.



SERVICES

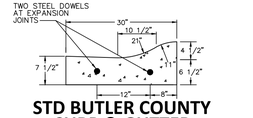
ITEM	DEPTH TOP OF PIPE
Underdrain	18"
Sumplines	24" – 30"
Gas	24" – 30"
Water	48" – 54"
Electric	36" – 40"
Telephone	36" – 40"
Cable TV	36" – 40"

LOCAL STREET
NOT TO SCALE

1. 1"SURFACE COURSE OF ITEM 448 ASPHALTIC CONCRETE, SEE NOTE #4
2. 2 1/2" LEVELING COURSE OF ITEM 448 ASPHALTIC CONCRETE
3. 6" BASE COURSE OF ITEM 301 BITUMINOUS AGGREGATE BASE
4. COMPACTED SUBGRADE, ITEM 203.13
5. ROLL TYPE CURB & GUTTER, ITEM 609 (BUTLER CO. STANDARD C–1)
6. 4" THICK CLASS "C" CONCRETE WALK, 5' WIDE, ITEM 608 WALK TO BE 1/2"HIGHER THAN SOD. BIKE PATH SHALL BE 8'WIDE.
7. SEEDING & MULCHING, ITEM 659
8. TACK COAT, ITEM 407 – TO BE APPLIED AT A RATE OF 0.05 GAL. PER SQ. YARD, SEE NOTE #4
9. TACK COAT SHALL BE APPLIED TO FRONT FACE OF CURB PRIOR TO THE INSTALLATION OF THE 301 BITUMINOUS AGGREGATE BASE. ALSO TO BE APPLIED TO THE CURB JOINT AFTER THE INSTALLATION OF 448 LEVELING COURSE
10. 6" BASE COURSE OF ITEM 304 AGGREGATE BASE
11. 5" BASE COURSE OF ITEM 301 BITUMINOUS AGGREGATE BASE
12. ITEM 605, 4" UNDERDRAIN CONNECT UNDERDRAIN TO FRONT FACE OF NEAREST CATCH BASIN
13. 1 1/2"LEVELING COURSE OF ITEM 448 ASPHALTIC CONCRETE

TYPICAL STREET SECTION NOTES

1. ITEM NUMBERS REFER TO THE OHIO DEPARTMENT OF HIGHWAYS CONSTRUCTION AND MATERIAL SPECIFICATIONS, AND ALL CONSTRUCTION WORK SHALL BE DONE ACCORDING TO SAID SPECIFICATIONS OR 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 EASEMENTS SHALL BE COMPACTED AND BACKFILLED IN ACCORDANCE WITH ITEMS 203 AND 603 IN THE STATE SPECIFICATIONS.
4. SURFACE COURSE (ITEM 448) AND TACK COAT (ITEM 407 ARE TO BE APPLIED NO SOONER THAN NINE (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 NOT 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 CONDUIT 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 38"FOR USE BY THE ELECTRIC, TELEPHONE AND CABLE TV SERVICES. THE LOCATION OF THESE LINES SHALL BE COORDINATED WITH UTILITY COMPANIES BY THE DEVELOPER.
7. SANITARY LATERALS SHALL BE EXTENDED BEYOND THE LIMITS OF THE UTILITY EASEMENTS, BUT NOT TO EXCEED 12' FROM THE RIGHT OF WAY LINE.
8. ALL ELECTRICAL TRANSFORMERS SHALL BE LOCATED SO THAT THEY DO NOT INTERFERE WITH THE EXISTING MANHOLES.
9. SUMP LINE CONDUITS ARE TO BE SDR 35.
10. THE SANITARY SEWER SHALL BE PLACED IN SUCH A MANNER THAT THE MANHOLE COVER DOES NOT CONFLICT WITH THE SIDEWALK.
11. SOCK REQUIRED FOR UNDERDRAIN IF SANDY SOILS ARE ENCOUNTERED, OR AT THE DIRECTION OF THE COUNTY INSPECTOR.



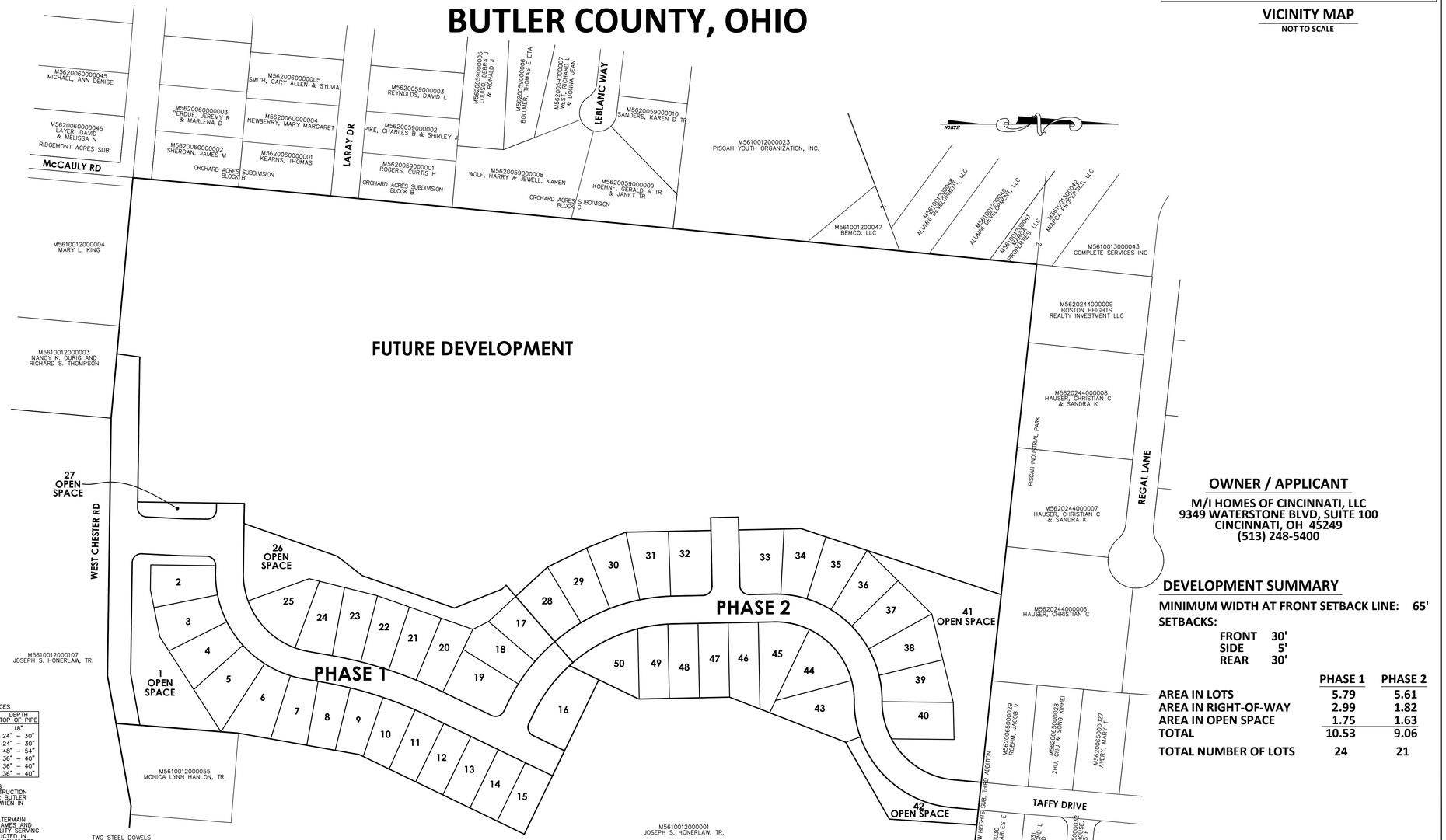
STD BUTLER COUNTY CURB & GUTTER

N. T. S.

NOTES:
GENERAL: THIS DRAWING SHOWS THE STANDARD TYPE OF CURB THAT SHOULD BE USED ON MOST TYPES OF PAVEMENT. TYPICAL SECTION OF PROJECT SHOWS THE TYPE TO BE USED. ALSO THE THICKNESS OF THE EDGE OF THE PAVEMENT OR THE EDGE OF THE CURB AND GUTTER SECTION.

JOINTS: ONE INCH EXPANSION JOINTS SHALL EXTEND UP TO TOP OF THE CURB AND SHALL BE CONSTRUCTED IN THE CURB AND GUTTER SECTION IN SUCH A MANNER THAT THE JOINT SEAL WILL EXTEND THE FULL WIDTH OF THE GUTTER AND INTO THE CURB FACE A SUFFICIENT DISTANCE TO SEAL THE JOINT TO AN ELEVATION OF AT LEAST TWO (2) INCHES ABOVE THE FLOW LINE OF THE GUTTER SECTION AT EXPANSION JOINTS. ALL JOINTS SHALL BE CONSTRUCTED PERPENDICULAR TO THE EDGE OF THE CURB AND TO THE SURFACE OF THE PAVEMENT. TRANSVERSE EXPANSION JOINT MATERIAL SHALL MEET THE REQUIREMENTS OF 705.03. EXPANSION MATERIAL AND JOINT SEALER IS NOT REQUIRED WHEN CURB IS ADJACENT TO FLEXIBLE TYPE PAVEMENT.

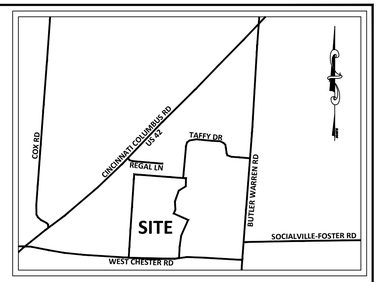
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LOCATION MAP
1" = 120'

SHEET INDEX

1	COVER SHEET
2-3	IMPROVEMENT PLAN
4	WATER MAIN PLAN & PROFILE
5-6	GRADING & S.W.P.P. PLAN
7-9	PROFILES & DETAILS
10-11	STANDARD DETAILS
12	EROSION CONTROL NOTES & DETAILS
13	WEST CHESTER RD WIDENING PLAN
14	WEST CHESTER RD STRIPING PLAN
15-16	WEST CHESTER RD CROSS SECTIONS
17	WIDENING NOTES & DETAILS



VICINITY MAP
NOT TO SCALE

OWNER / APPLICANT
M/I HOMES OF CINCINNATI, LLC
9349 WATERSTONE BLVD, SUITE 100
CINCINNATI, OH 45249
(513) 248-5400

DEVELOPMENT SUMMARY

MINIMUM WIDTH AT FRONT SETBACK LINE: 65'
SETBACKS:
FRONT 30'
SIDE 5'
REAR 30'

	PHASE 1	PHASE 2
AREA IN LOTS	5.79	5.61
AREA IN RIGHT-OF-WAY	2.99	1.82
AREA IN OPEN SPACE	1.75	1.63
TOTAL	10.53	9.06
TOTAL NUMBER OF LOTS	24	21

STATE OF OHIO
JAMES H. WATSON
49886
REGISTERED
PROFESSIONAL ENGINEER

Revision	By	Date
STAFF COMMENTS	JW	08/17/18
BCEO COMMENTS	JW	10/01/18

WESTVIEW MEADOWS
PHASES 1 & 2

SECTION 9, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

COVER SHEET

Date	08/08/18
Scale	AS NOTED
Drawn By	BC
Proj. Mgr.	JW
Survey Database	N/A
DWG	16619004-DTL-00
X-Ref(s)	
Project Number	16619.00
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Phone 513.759.0004
www.mspdesign.com

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SEE SHEET 4 FOR CONTINUATION OF 10"WATER MAIN EXTENSION AND CONNECTION TO EXISTING 12"WATER

NORTH

SCALE IN FEET

0 25 50 100 150

R.J.P. = RESTRAINED JOINT PIPE

LENGTH OF PIPE TO BE RESTRAINED IN EACH DIRECTION FROM CENTERLINE OF BEND, EXCEPT AS NOTED BELOW		
DESCRIPTION	8"	10"
90° BEND	59'	72'
45° BEND	24'	30'
22 1/2° BEND	12'	14'
11 1/4° BEND	6'	7'
8" x 6" TEE	41' BRANCH	
10" x 8" TEE	54' BRANCH	

HORIZONTAL

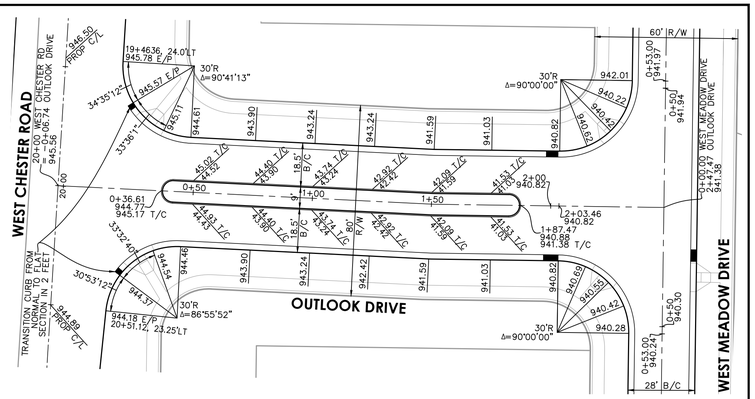
LENGTH OF PIPE TO BE RESTRAINED IN EACH DIRECTION FROM CENTERLINE OF BEND, EXCEPT AS NOTED BELOW		
DESCRIPTION	8"	10"
11 1/4° UP BEND	6'	7'
11 1/4° DOWN BEND	11'	13'
22 1/2° UP BEND	12'	14'
22 1/2° DOWN BEND	22'	26'
45° UP BEND	24'	30'
45° DOWN BEND	45'	55'
DEAD END	54'	67'

VERTICAL

PIPE RESTRAINTS SCHEDULE FOR JOINTS

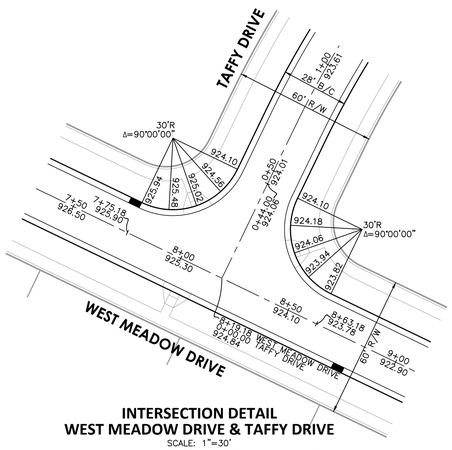
NO DRIVEWAY MAY BE PLACED OVER WATER SERVICE.
NO DRIVEWAY MAY BE PLACED OVER SANITARY SEWER MANHOLE.

NOTE:
HIGH WATER TABLES ARE APPARENT IN THIS AREA. IF BASEMENTS ARE CONSTRUCTED, IT IS THE RESPONSIBILITY OF THE BUILDER TO TAKE SPECIAL PRECAUTION TO ENSURE THE BASEMENTS STAY DRY.



INTERSECTION DETAIL
WEST CHESTER ROAD & OUTLOOK DRIVE
SCALE: 1"=30'
ANGLES SHOWN ARE 22.5° UNLESS NOTED OTHERWISE
ELEVATIONS SHOWN TOP OF CURB UNLESS NOTED OTHERWISE

INTERSECTION DETAIL
OUTLOOK DRIVE & WEST MEADOW DRIVE
SCALE: 1"=30'
ANGLES SHOWN ARE 22.5° UNLESS NOTED OTHERWISE
ELEVATIONS SHOWN TOP OF CURB UNLESS NOTED OTHERWISE



INTERSECTION DETAIL
WEST MEADOW DRIVE & TAFFY DRIVE
SCALE: 1"=30'
ANGLES SHOWN ARE 22.5° UNLESS NOTED OTHERWISE
ELEVATIONS SHOWN TOP OF CURB UNLESS NOTED OTHERWISE

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49886
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WESTVIEW MEADOWS
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BUTLER COUNTY, OHIO
IMPROVEMENT PLAN

Date	08/08/18
Scale	AS NOTED
Drawn By	BC
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Survey Database	N/A
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NORTH

SCALE IN FEET

0 25 50 100 150

R.J.P. = RESTRAINED JOINT PIPE

LENGTH OF PIPE TO BE RESTRAINED IN EACH DIRECTION FROM CENTERLINE OF BEND, EXCEPT AS NOTED BELOW

DESCRIPTION	8"
90° BEND	59'
45° BEND	24'
22 1/2° BEND	12'
11 1/4° BEND	6'
8" x 6" TEE	41' BRANCH

HORIZONTAL

LENGTH OF PIPE TO BE RESTRAINED IN EACH DIRECTION FROM CENTERLINE OF BEND, EXCEPT AS NOTED BELOW

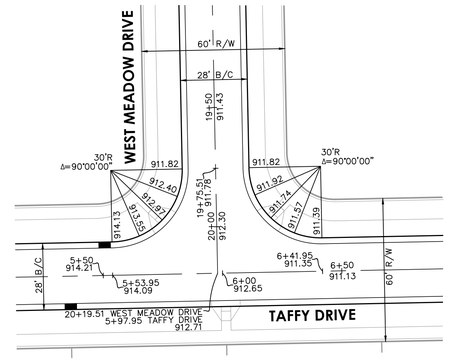
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22 1/2° DOWN BEND	22'
45° UP BEND	24'
45° DOWN BEND	45'
DEAD END	54'

VERTICAL

PIPE RESTRAINTS SCHEDULE FOR JOINTS

NO DRIVEWAY MAY BE PLACED OVER WATER SERVICE.
NO DRIVEWAY MAY BE PLACED OVER SANITARY SEWER MANHOLE.

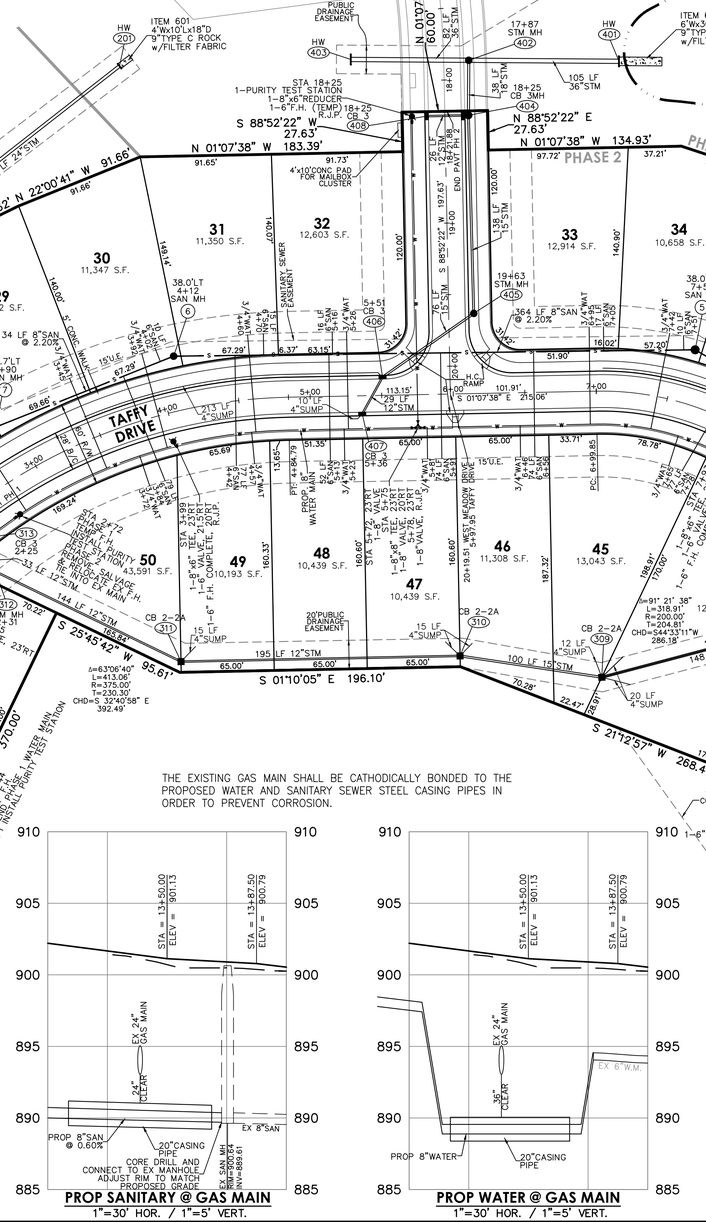
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INTERSECTION DETAIL
WEST MEADOW DRIVE & TAFFY DRIVE

SCALE: 1"=30'

ANGLES SHOWN ARE 22.5° UNLESS NOTED OTHERWISE
ELEVATIONS SHOWN TOP OF CURB UNLESS NOTED OTHERWISE



THE EXISTING GAS MAIN SHALL BE CATHODICALLY BONDED TO THE PROPOSED WATER AND SANITARY SEWER STEEL CASING PIPES IN ORDER TO PREVENT CORROSION.

PROP SANITARY @ GAS MAIN
1"=30' HOR. / 1"=5' VERT.

PROP WATER @ GAS MAIN
1"=30' HOR. / 1"=5' VERT.

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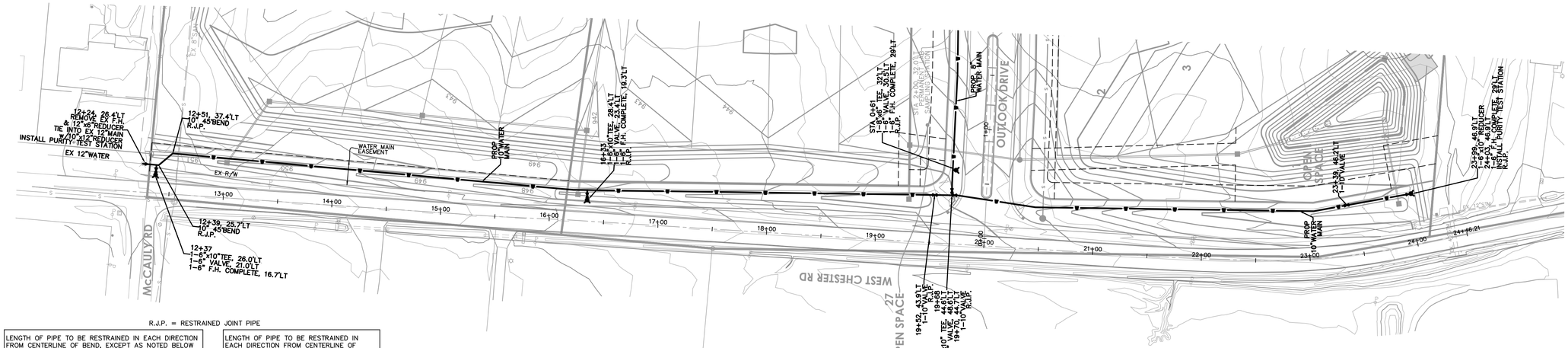
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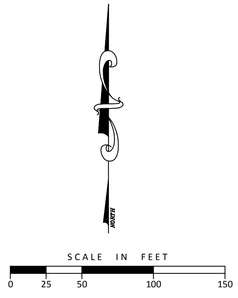
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R.J.P. = RESTRAINED JOINT PIPE

LENGTH OF PIPE TO BE RESTRAINED IN EACH DIRECTION FROM CENTERLINE OF BEND, EXCEPT AS NOTED BELOW

DESCRIPTION	8"	10"
90° BEND	59'	72'
45° BEND	24'	30'
22 1/2° BEND	12'	14'
11 1/4° BEND	6'	7'
8" x 6" TEE	41' BRANCH	
10" x 8" TEE	54' BRANCH	

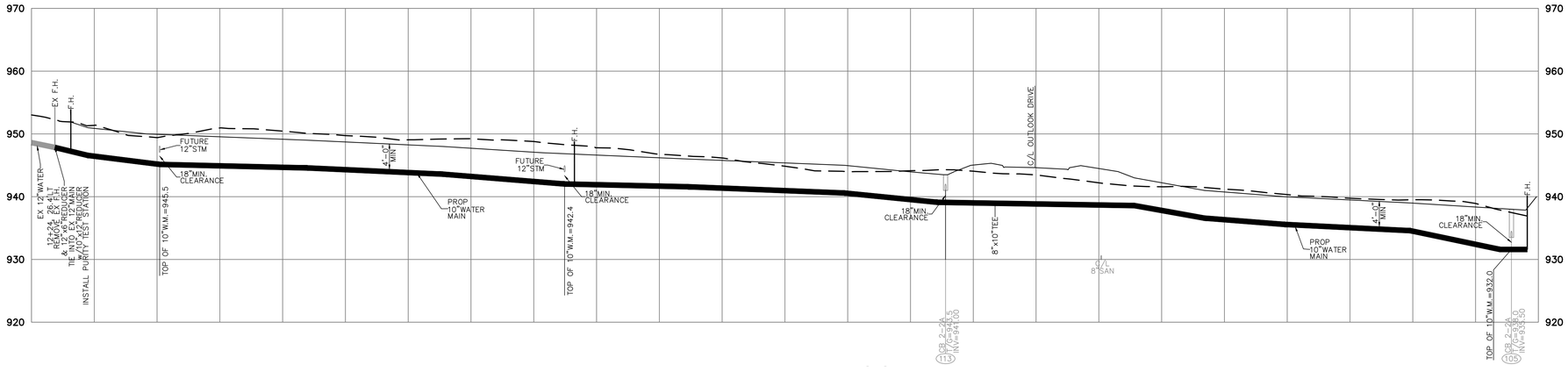
HORIZONTAL

LENGTH OF PIPE TO BE RESTRAINED IN EACH DIRECTION FROM CENTERLINE OF BEND, EXCEPT AS NOTED BELOW

DESCRIPTION	8"	10"
11 1/4° UP BEND	6'	7'
11 1/4° DOWN BEND	11'	13'
22 1/2° UP BEND	12'	14'
22 1/2° DOWN BEND	22'	26'
45° UP BEND	24'	30'
45° DOWN BEND	45'	55'
DEAD END	54'	67'

VERTICAL

PIPE RESTRAINTS SCHEDULE FOR JOINTS



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WESTVIEW MEADOWS
PHASES 1 & 2

SECTION 9, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
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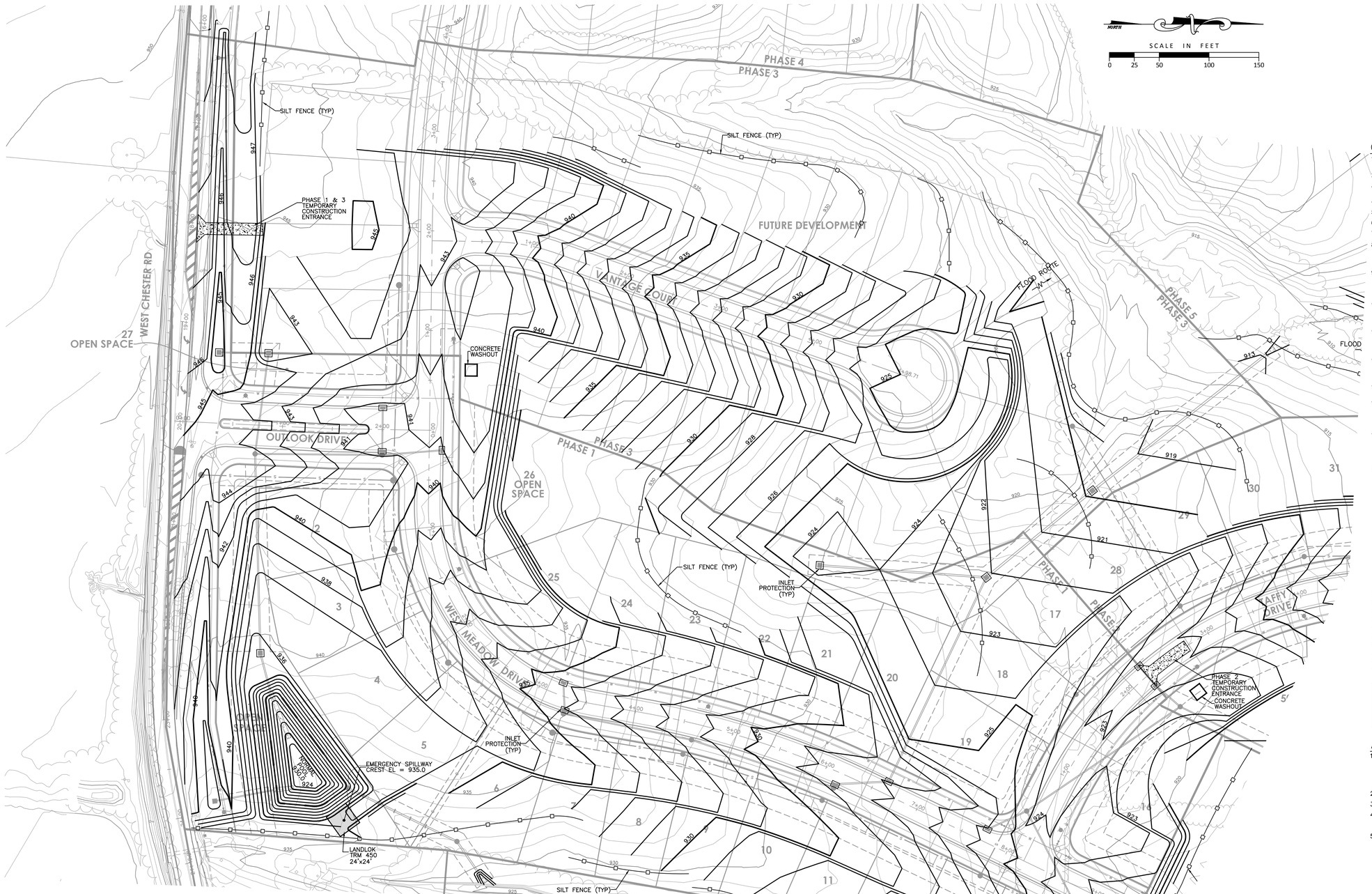
WATER MAIN PLAN & PROFILE

Revision	By	Date
STAFF COMMENTS	JW	08/17/18
BCEO COMMENTS	JW	10/01/18

Date	08/08/17
Scale	AS NOTED
Drawn By / Proj. Mgr.	BC / JW
Survey Database	N/A
DWG	16619004-IMP-00
X-Ref(s)	
Project Number	16619.00
File No. / Sheet No.	4 / 17

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LEGEND

- INLET PROTECTION
- GRAVEL DITCH CHECK
- SILT FENCE
- 100 YR FLOOD ROUTE
- 948 EXISTING CONTOUR
- 948 PROPOSED CONTOUR

GENERAL NPDES NOTES

1. PROJECT INVOLVES THE CONSTRUCTION OF ROADS, HOUSES AND UTILITIES FOR A SINGLE FAMILY SUBDIVISION.
2. AREA TO BE DISTURBED IS APPROXIMATELY 30 ACRES.
3. PRE-CONSTRUCTION RUNOFF COEFFICIENT IS 0.32.
   POST-CONSTRUCTION RUNOFF COEFFICIENT IS 0.50.
4. PREDOMINATE SOIL TYPES ARE FINCASTLE SILT LOAM & XENIA SILT LOAM.
5. THE EAST FORK OF MILL CREEK IS THE FIRST NAMED STREAM RECEIVING RUNOFF FROM THIS SITE.
6. NPDES STORM WATER GENERAL PERMIT NUMBER: 1GC06880*AG
7. PROJECT DURATION: THRU 2019
8. SITE OPERATOR: M/I HOMES OF CINCINNATI, LLC
   9349 WATERSTONE BLVD, SUITE 100
   CINCINNATI, OH 45249
   (513) 248-5400
9. SWPPP CONTACT: M/I HOMES OF CINCINNATI, LLC
   9349 WATERSTONE BLVD, SUITE 100
   CINCINNATI, OH 45249
   (513) 248-5400
   CONTACT: MIKE ATHAN
10. UNLESS OTHERWISE NOTED, STANDARDS AND SPECIFICATIONS ESTABLISHED IN THE LATEST EDITION OF THE OHIO DEPARTMENT OF NATURAL RESOURCES "RAINWATER AND LAND DEVELOPMENT" MANUAL CURRENT EDITION, SHALL GOVERN THE EROSION AND SEDIMENT CONTROL INSTALLATIONS SPECIFIED ON THIS PLAN.
11. THE DEVELOPER AND CONTRACTOR SHALL ABIDE BY THE RULES AND REGULATIONS SET FORTH IN THE OHIO EPA PERMIT NO. OHC000005- "AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES).
12. THE SWP3 PLAN, NOI APPLICATION, AND LETTER GRANTING PERMIT COVERAGE SHALL BE RETAINED ON SITE AT ALL TIMES IN THE PROJECT TRAILER AND SHALL BE MADE AVAILABLE IMMEDIATELY UPON REQUEST OF THE OHIO EPA DIRECTOR OR HIS AUTHORIZED REPRESENTATIVE DURING WORKING HOURS.
13. PRIOR TO COMMENCEMENT OF CONSTRUCTION OPERATIONS, ALL SEDIMENTATION AND EROSION CONTROL FEATURES SHALL BE IN PLACE.
16. SEDIMENT CONTROL STRUCTURES SHALL BE FUNCTIONAL THROUGHOUT THE COURSE OF EARTH DISTURBING ACTIVITY, AND SHALL CONTINUE TO FUNCTION UNTIL THE UP SLOPE DEVELOPMENT AREA IS RESTABILIZED. AS CONSTRUCTION PROGRESSES AND THE TOPOGRAPHY IS ALTERED, APPROPRIATE CONTROLS MUST BE CONSTRUCTED OR EXISTING CONTROLS ALTERED TO ADDRESS THE CHANGING DRAINAGE PATTERNS.
14. ALL GROUND SURFACE AREAS THAT HAVE BEEN EXPOSED OR LEFT BARE AS A RESULT OF DEMOLITION AND ARE TO FINAL GRADE AND TO REMAIN SO, SHALL BE SEEDED AND MULCHED AS SOON AS PRACTICAL IN ACCORDANCE WITH STATE OF OHIO SPECIFICATION ITEM 659, AND IN ACCORDANCE WITH THE CONDITIONS OF THE NPDES STORM WATER GENERAL PERMIT.

MAINTENANCE OF CONTROLS

1. SILT FENCE AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND DAILY DURING A PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC ON A FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE AND PREPARED FOR SEEDING.
5. SEDIMENT SHALL BE REMOVED FROM POND AT SUCH TIME WHEN SEDIMENT OCCUPIES 50% OF BASIN DEPTH.

CONSTRUCTION SEQUENCE

1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES BEFORE UPSLOPE CLEARING AND GRADING.
2. GRADING AND STRIPPING OF THE REMAINING AREAS OF THE DEVELOPMENT SITE OR PROJECT AREA.
3. INSTALL STORMWATER MANAGEMENT SYSTEM.
4. TEMPORARY VEGETATIVE STABILIZATION OF EROSION AND SEDIMENT CONTROL MEASURES.
5. GRADING OF SUBDIVISION STREET.
6. INSTALLATION OF ALL UTILITIES.
7. SITE CONSTRUCTION.
8. FINAL GRADING, STABILIZATION, AND LANDSCAPING.
9. REMOVAL OF EROSION AND SEDIMENT CONTROLS MEASURES.

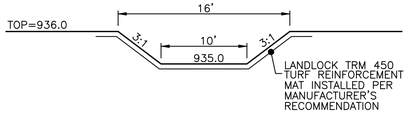
* DUE TO THE DYNAMICS AND STAGING OF EARTH MOVEMENT. CONTRACTOR MAY NEED TO ALTER THE EROSION CONTROL MEASURES AS SHOWN HEREON. CONTRACTOR TO APPLY (B.M.P.) BEST MANAGEMENT PRACTICES IN ORDER TO CONTROL THE RUNOFF OF SILT AND SEDIMENT.
* ADDITIONAL SILT FENCE MAY BE REQUIRED AS SITE CONDITIONS DETERMINE.
* IF A TEMPORARY STOCKPILE IS CREATED, SILT FENCE SHALL BE PLACED AT THE TOE OF SLOPE

ADDITIONAL NOTES

1. A DETAILED MAINTENANCE PLAN THAT DESCRIBES PROCEDURES (E.G. INSPECTIONS SEE SECTION 2.18 INSPECTION OF STORM WATER CONTROLS (INTERNAL INSPECTIONS) NEEDED TO ENSURE THE CONTINUED PERFORMANCE OF CONTROL PRACTICES SHALL BE LOCATED AT THE ENTRANCE OF THE DEVELOPMENT AREA OR AT THE JOB TRAILER IN A WELL-MARKED CONTAINER ACCESSIBLE AT ALL TIMES. SUCH PLANS MUST ENSURE THAT POLLUTANTS COLLECTED WITHIN STRUCTURAL POST-CONSTRUCTION PRACTICES, BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
2. ESTABLISH VEGETATION ON ALL BARE AREAS AS PER O.E.P.A. N.P.D.E.S. REGULATIONS.
3. CONTRACTOR IS RESPONSIBLE FOR N.P.D.E.S. INSPECTIONS DURING CONSTRUCTION PERIOD.
4. HIGH WATER TABLES ARE APPARENT IN THIS AREA. IF BASEMENTS ARE CONSTRUCTED, IT IS THE RESPONSIBILITY OF THE BUILDER TO TAKE SPECIAL PRECAUTION TO ENSURE THE BASEMENTS STAY DRY.
5. THE TOP FOOT OF LOT FILLS NECESSARY TO ACHIEVE PLAN GRADE MAY CONSIST OF REDISTRIBUTED TOP SOIL.

SOUTH BASIN PERFORMANCE DATA

FREQUENCY (YR.)	Q_{IN} (CFS)	Q_{OUT} (CFS)	PEAK ELEV. (ABOVE MSL)	STORAGE VOLUME (C.F.)
5	9.0	0.4	932.5	15,000
10	11.0	0.5	933.0	19,500
25	13.0	0.6	933.6	24,500
50	15.0	0.6	934.1	29,000
100	17.0	1.0	934.3	31,500



EMERGENCY SPILLWAY SECTION
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PHASES 1 & 2
SECTION 9, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO
GRADING & S.W.P.P. PLAN

Revision	By	Date
BCEO COMMENTS	JW	10/01/18

Date	08/08/18
Scale	AS NOTED
Drawn By / Proj. Mgr.	BC / JW
Survey Database	N/A
DWG	16619004-IMP-00
X-Ref(s)	
Project Number	16619.00
File No. / Sheet No.	5 / 17

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NORTH

SCALE IN FEET

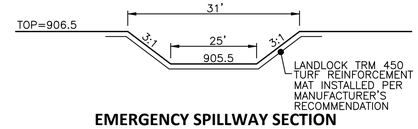
0 25 50 100 150

LEGEND

- INLET PROTECTION
- GRAVEL DITCH CHECK
- SILT FENCE
- 100 YR FLOOD ROUTE
- 948 EXISTING CONTOUR
- 948 PROPOSED CONTOUR

NORTH BASIN PERFORMANCE DATA

FREQUENCY (YR.)	Q_{IN} (CFS)	Q_{OUT} (CFS)	PEAK ELEV. (ABOVE MSL)	STORAGE VOLUME (C.F.)
5	75.0	4.1	903.7	151,700
10	92.0	5.6	904.1	185,600
25	112.0	10.2	904.3	212,000
50	125.0	14.3	904.5	228,600
100	143.0	19.2	904.7	251,400



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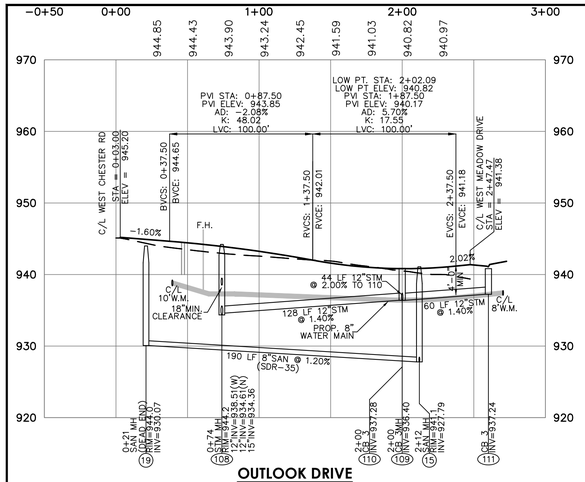
GRADING & S.W.P.P. PLAN

Revision	By	Date
BCEO COMMENTS	JW	10/01/18

Date	08/08/18
Scale	AS NOTED
Drawn By	BC
Proj. Mgr.	JW
Survey Database	N/A
DWG	16619004-IMP-00
X-Ref(s)	
Project Number	16619.00
File No.	Sheet No. 6 / 17

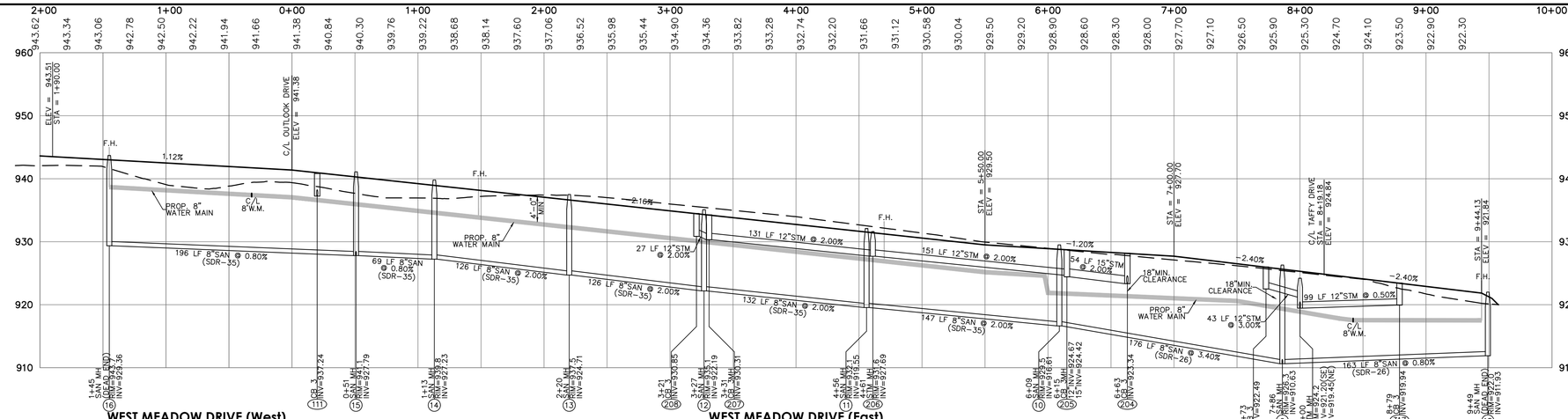
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OUTLOOK DRIVE

1"=50' HOR. / 1"=10' VERT.

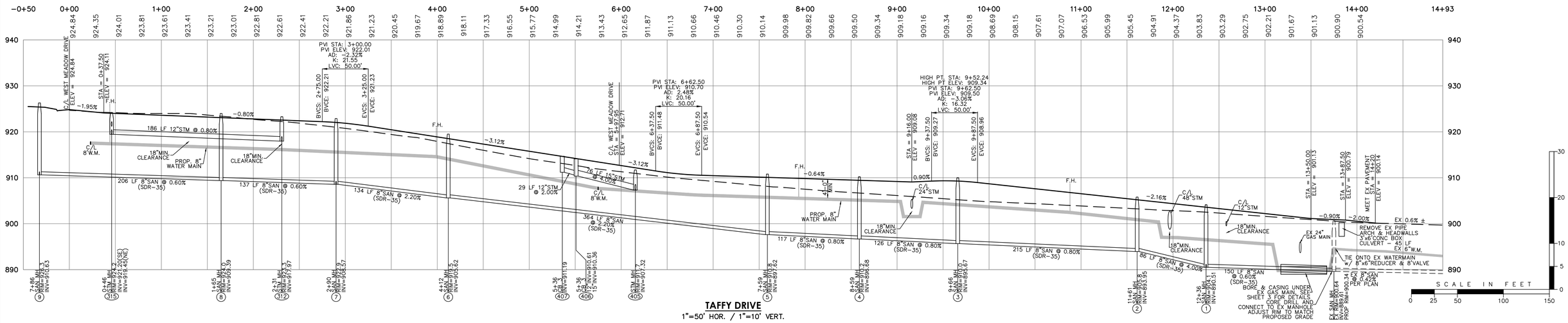


WEST MEADOW DRIVE (West)

1"=50' HOR. / 1"=10' VERT.

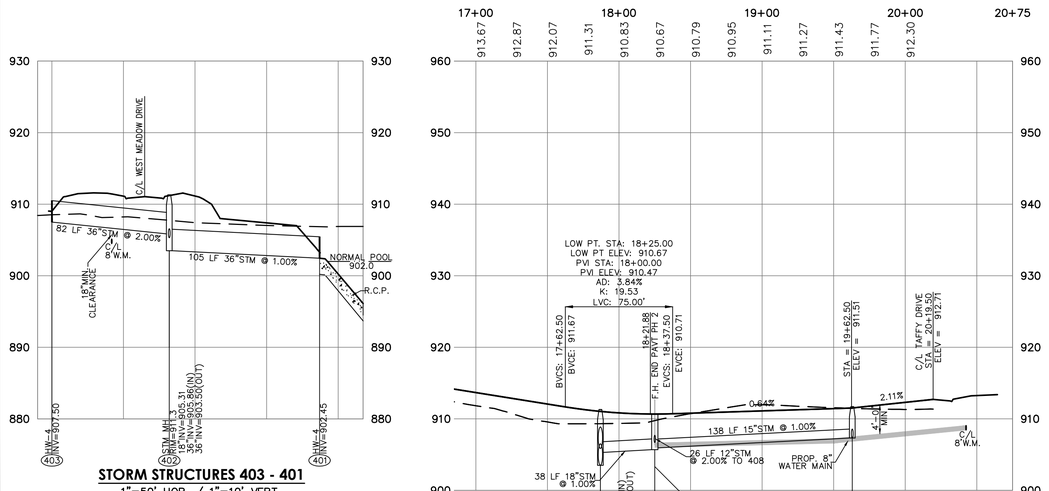
WEST MEADOW DRIVE (East)

1"=50' HOR. / 1"=10' VERT.



TAFFY DRIVE

1"=50' HOR. / 1"=10' VERT.

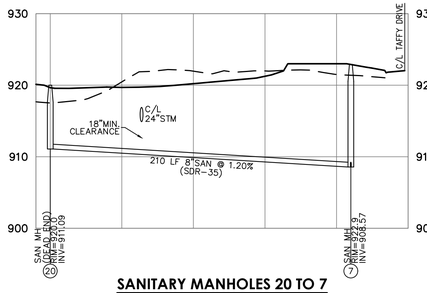


STORM STRUCTURES 403 - 401

1"=50' HOR. / 1"=10' VERT.

WEST MEADOW DRIVE (West)

1"=50' HOR. / 1"=10' VERT.



SANITARY MANHOLES 20 TO 7

1"=50' HOR. / 1"=10' VERT.

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PROFILES & DETAILS

Revision	By	Date
STAFF COMMENTS	JW	08/17/18
BCEO COMMENTS	JW	10/01/18

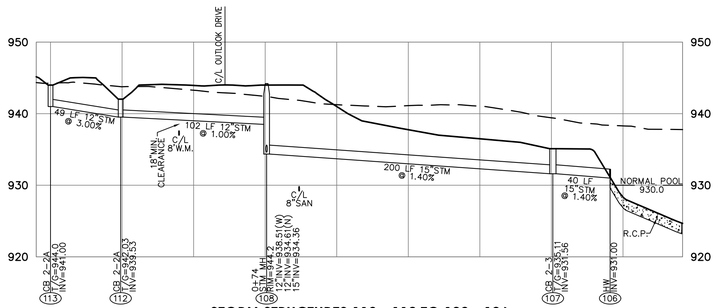
Date	08/08/18
Scale	AS NOTED
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Proj. Mgr.	JW
Survey Database	N/A
DWG	16619004-IMP-00
X-Ref(s)	
Project Number	16619.00
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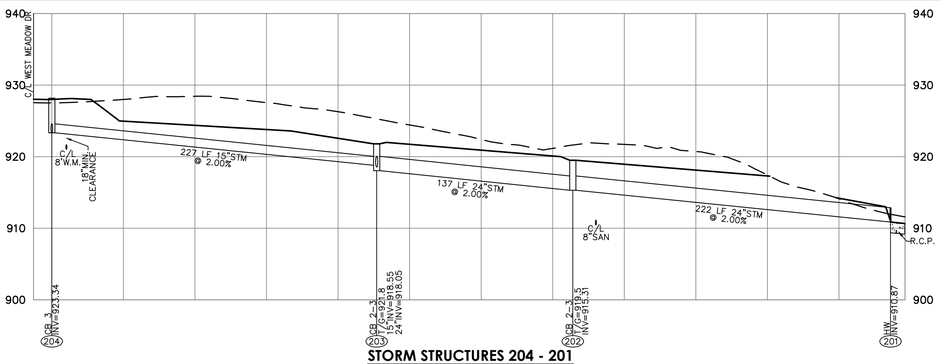
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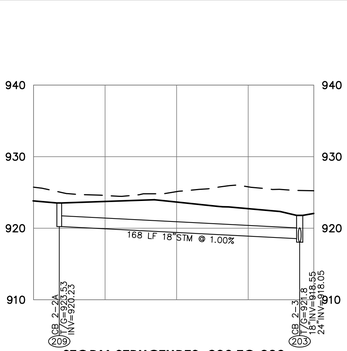
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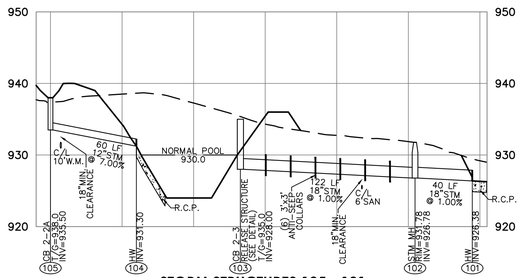
STORM STRUCTURES 113 - 112 TO 108 - 106
1"=50' HOR. / 1"=10' VERT.



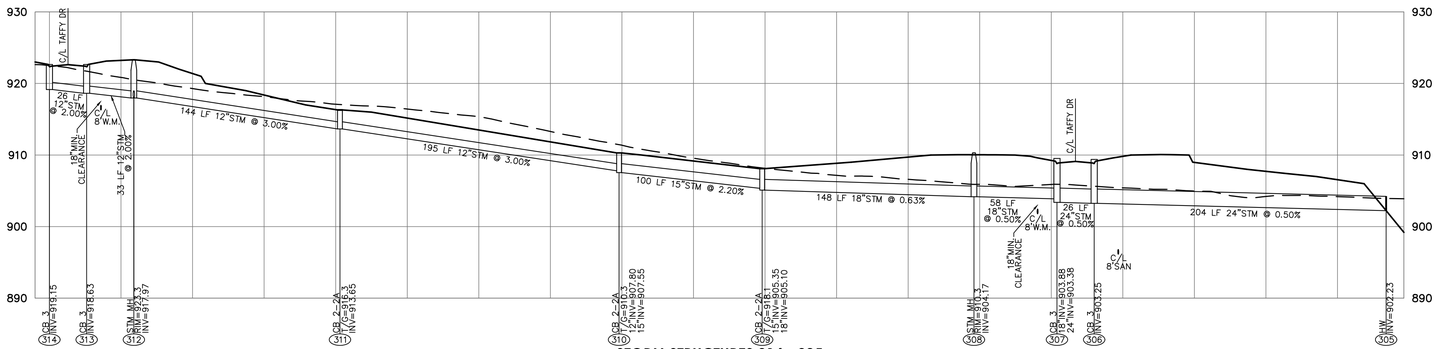
STORM STRUCTURES 204 - 201
1"=50' HOR. / 1"=10' VERT.



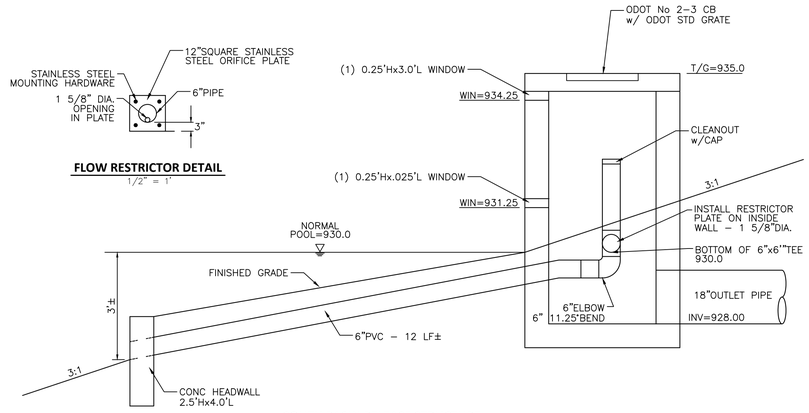
STORM STRUCTURES 209 TO 203
1"=50' HOR. / 1"=10' VERT.



STORM STRUCTURES 105 - 101
1"=50' HOR. / 1"=10' VERT.

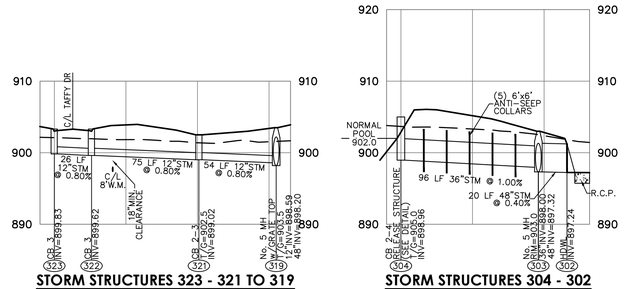


STORM STRUCTURES 314 - 305
1"=50' HOR. / 1"=10' VERT.



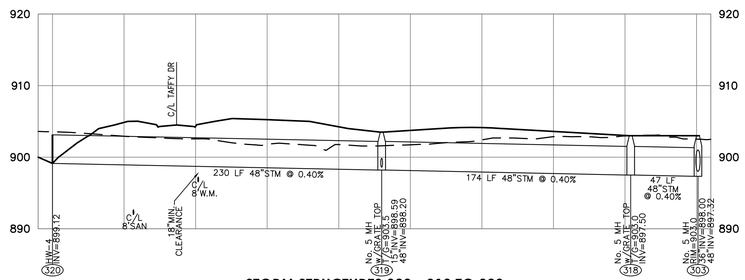
FLOW RESTRICTOR DETAIL
1/2" = 1'

SOUTH BASIN RELEASE STRUCTURE
1/2" = 1'

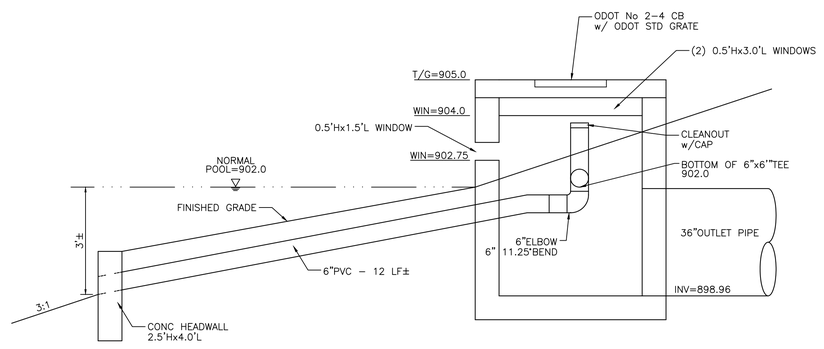


STORM STRUCTURES 323 - 321 TO 319
1"=50' HOR. / 1"=10' VERT.

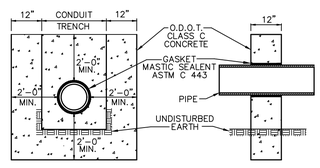
STORM STRUCTURES 304 - 302
1"=50' HOR. / 1"=10' VERT.



STORM STRUCTURES 320 - 318 TO 303
1"=50' HOR. / 1"=10' VERT.



NORTH BASIN RELEASE STRUCTURE
1/2" = 1'



ANTI-SEEP COLLAR DETAIL
NOT TO SCALE

SCALE IN FEET
0 25 50 100 150
30 20 10 5 0

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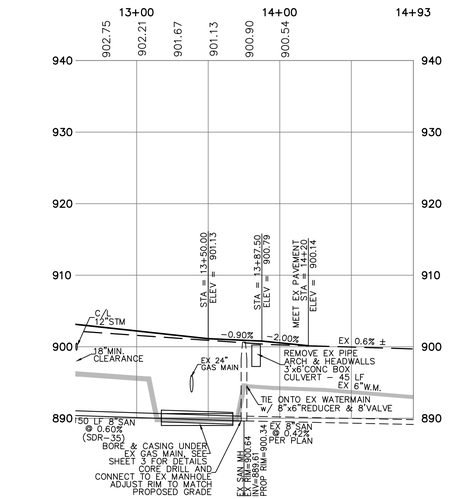
WESTVIEW MEADOWS
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PROFILES & DETAILS

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X-Ref(s)	
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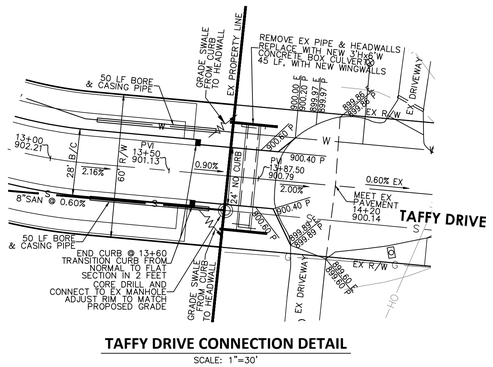
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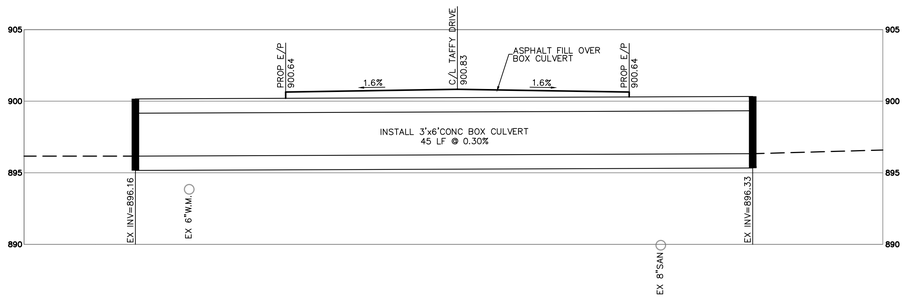
C/L PROFILE AT TAFFY DRIVE CONNECTION

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



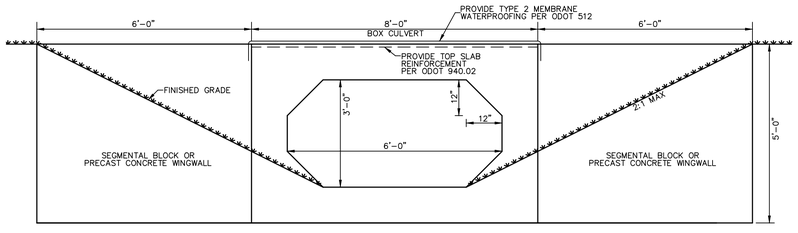
TAFFY DRIVE CONNECTION DETAIL

SCALE: 1"=30'



PROFILE OF NEW BOX CULVERT AT TAFFY DRIVE CONNECTION

SCALES: 1"=5' HORIZONTAL & VERTICAL



TAFFY DRIVE BOX CULVERT DETAIL

SCALE: 1/2"= 1'-0"

CONTRACTOR SHALL PROVIDE BCEO SHOP DRAWINGS OF BOX CULVERT AND HEADWALL DESIGN PRIOR TO ORDERING STRUCTURES.

OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

STATE OF OHIO
JAMES H. WATSON
49886
REGISTERED PROFESSIONAL ENGINEER

WESTVIEW MEADOWS
PHASES 1 & 2

SECTION 9, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

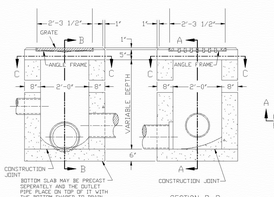
PROFILES & DETAILS

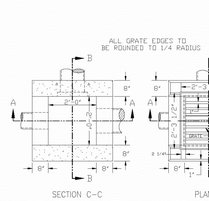
Revision	By	Date
STAFF COMMENTS	JW	08/17/18
BCEO COMMENTS	JW	10/01/18

Date	08/08/18
Scale	AS NOTED
Drawn By / Proj. Mgr.	BC / JW
Survey Database	N/A
DWG	16619004-IMP-00
X-Ref(s)	
Project Number	16619.00
File No. / Sheet No.	9 / 17

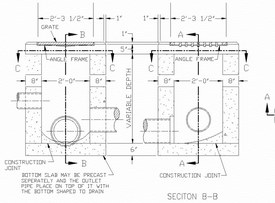
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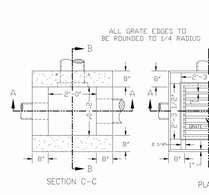
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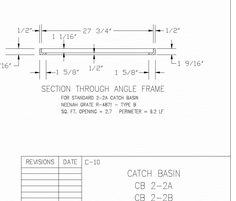


STANDARD 2-2A CATCH BASIN





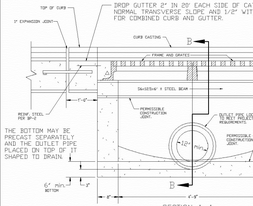
STANDARD NO. 2-2B CATCH BASIN



REVISIONS	DATE	C-10
		CATCH BASIN CB 2-2A CB 2-2B
CHK. BY: C.A.H.		EFFECTIVE DATE: 1-1-94
BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY 1921 FAIRGROVE AVENUE - HAMILTON, OHIO PHONE: 867-5744		45011

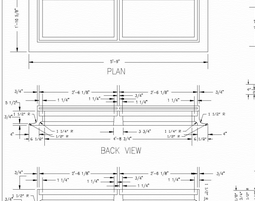
NOTES

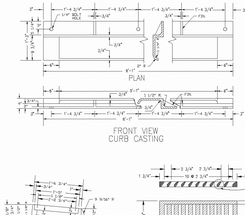
GRATING AND FRAME: Shall meet the requirements of 604. The design shall be essentially the same and equally as strong as the one shown hereon.
Weight of grate, minimum , 120 lbs.
Weight of frame, minimum, 60 lbs.
CONCRETE: Cast in place to be class "C".
BRICK OR CONCRETE BLOCK: Side walls, when used in place of concrete, shall be 8 inches nominal thickness.
When catch basin above the flow line of the side opening shall be constructed of Portland Cement Concrete.
No. 2-2A: Side inlets to be placed 4 to 6 inches below normal elevations of median or ditch flow line, returning to normal 10 feet each side of the basin.
No. 2-2B: Side inlet elevation to be placed 4 to 6 inches below normal ditch returning to normal 10 feet each side of basin.
SIDE INLETS: Shall be provided on both sided of the No. 2-2A catch basin in sags and on upstream side only where the ditch has a continuous down grade past the catch basin.
MAXIMUM PIPE SIZE IS 21".
MAXIMUM DEPTH IS 4 FEET.
STEPS: Shall be provided where the depth exceeds 48" and shall meet the requirements of drawing MH-1.



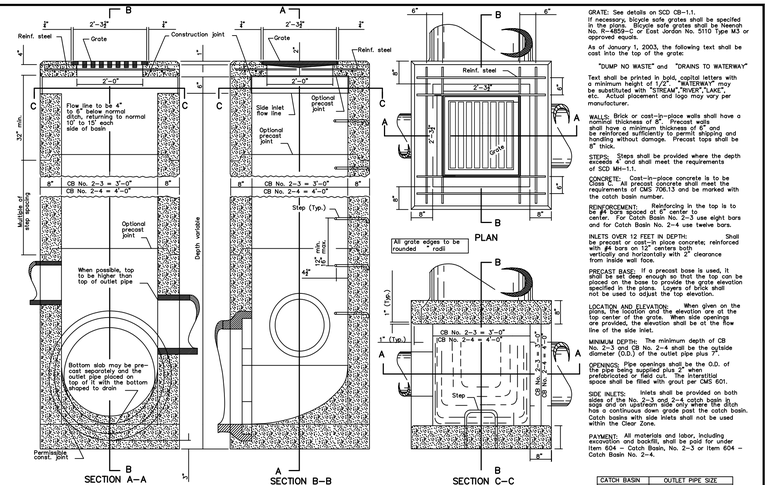
NOTES

GRATES:
STANDARD GRATE AS SHOWN IN THE PLAN VIEW SHALL BE PROVIDED UNLESS THE PLANS SPECIFICALLY REQUIRE GRATE "A". PLACE GRATE SO THE DIAGONAL BARS DIRECT DRAINAGE FLOW TOWARD THE CURB. ALL BAR EDGES TO BE ROUNDED 1/8" RADIUS.
CASTINGS:
THE DESIGN SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THE ONE SHOWN HEREON. MINIMUM WEIGHTS ARE: GRATE CASTING 170 LBS., STANDARD GRATE 157 LBS. FRAME 205 LBS. AND "A" GRATE 105 LBS. BEARING AREAS OF FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE GRATE IN THE FRAME. NO PROJECTIONS SHALL EXIST IN BEARING AREAS.
BOLTS: FOUR 3/4" x 6" ANCHOR BOLTS WITH HEX NUTS AND LOCKING WASHERS.
DOWELS: FOUR 1" x 18" ARE REQUIRED FOR CONCRETE PAVEMENT OF GUTTER BLOCKOUT. SEE CDOT BP-4 FOR DOWEL DETAILS.
BRICK OR CONCRETE BLOCK: SIDE WALLS WHEN USED IN PLACE OF CONCRETE, SHALL BE 8" NOMINAL THICKNESS.
BLOCKOUT: SHALL BE PAVED WITH CLASS C CONCRETE IN PCC PAVEMENT OR GUTTER AND PAID FOR AS PART OF THE PAVEMENT OR GUTTER WITH NO DEDUCTION IN PAVEMENT QUANTITIES BECAUSE OF CASTINGS. A CLASS C CONCRETE APRON THE SIZE OF THE 3'-0" GUTTER BLOCKOUT SHALL BE CAST IN PLACE IN ASPHALT PAVEMENT AND DOWELS REQUIRED WITH THE COST INCLUDED IN THE CATCH BASIN BID PRICE. NO DEDUCTION TO BE MADE IN CURB QUANTITIES.
PRECAST: CONSTRUCTION IS PERMITTED, EXCEPT FOR APRON, AND CONCRETE SHALL MEET REQUIREMENTS OF 706.13 WITH 6.0 ±% AIR VOID CONTENT IN THE HARDENED CONCRETE. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 9" AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND HANDLING WITHOUT DAMAGE.
STEPS: STEPS SHALL BE PROVIDED WHERE THE DEPTH EXCEEDS 48" AND SHALL MEET THE REQUIREMENTS OF DRAWINGS MH-1.





REVISIONS	DATE	C-6
		CATCH BASIN NO. 3
CHK. BY: C.A.H.		EFFECTIVE DATE: 1-1-94
BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY 1921 FAIRGROVE AVENUE - HAMILTON, OHIO PHONE: 867-5744		45011



CATCH BASINS No. 2-3 & No. 2-4

GRATE: See details on SCD CB-1.1. If necessary, bicycle safe grates shall be specified in the plans. Bicycle safe grates shall be Neenah No. R-4659-C or East Jordan No. 5110 Type M3 or approved equals.

As of January 1, 2003, the following text shall be cast into the top of the grate:

"DUMP NO WASTE" and "DRAINS TO WATERWAY"

Text shall be printed in bold, capital letters with a minimum height of 1/2". "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

WALLS: Brick or cast-in-place walls shall have a minimum thickness of 8". Precast concrete walls shall have a minimum thickness of 6" and be reinforced sufficiently to permit shipping and handling without damage. Precast tops shall be 8" thick.

STEPS: Steps shall be provided where the depth exceeds 4' and shall meet the requirements of SCD MH-1.1.

CONCRETE: Cast-in-place concrete is to be Class "C". Precast concrete shall meet the requirements of ODOT 706.13 and be marked with the catch basin number.

REINFORCEMENT: Reforcing in the top is to be #4 bars on 12" centers, both ways, placed near the center of the slab for Catch Basin No. 2-3 use eight bars and for Catch Basin No. 2-4 use twelve bars.

INLETS OVER 12 FEET IN DEPTH: Shall be precast or cast-in-place concrete; reinforced with #4 bars on 12" centers both directions, placed concentrically with 2" clearance from inside wall surfaces.

PRECAST BASE: If a precast base is used, it shall be set deep enough so that the top can be cut off to fit the base to bypass the invert elevation specified in the plans. Bypass of base shall not be used to adjust the top elevation.

LOCATION AND ELEVATIONS: When given on the plans, the location and the elevation are at the top center of the grate. When side openings are provided, the elevation shall be at the flow line of the side inlet.

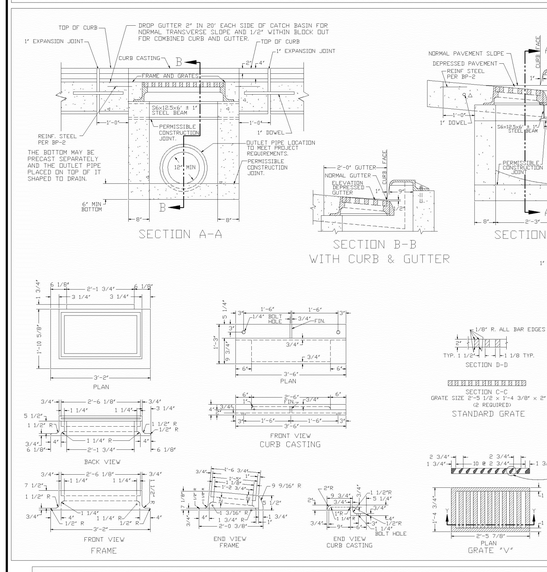
MINIMUM DEPTH: The minimum depth of CB No. 2-3 and CB No. 2-4 shall be the outside diameter (O.D.) of the outlet pipe plus 7".

OPENINGS: Pipe openings shall be the O.D. of the pipe being supplied plus 2" when prefabricated or field cut. The interstitial space shall be filled with grout per CMS 501.

SIDE INLETS: Inlets shall be provided on both sides of the No. 2-3 and 2-4 catch basin in sags and on upstream side only where the ditch has a continuous down grade past the catch basin. Catch basins with side inlets shall not be used within the Clear Zone.

PAYMENT: All materials and labor, including excavation and backfill, shall be paid for under Item 604 – Catch Basin, No. 2-3 or Item 604 – Catch Basin No. 2-4.

CATCH BASIN	OUTLET PIPE SIZE
2-3	12" to 33"
2-4	36" to 42"



NOTES

***GRATES** Two required. For details, see SCD CB-2.3. Grates shall be designed to support the loading and dimensions shall not differ from those shown, unless otherwise approved by ODOT.*

***CASTINGS** The design shall be essentially the same and equal to that shown hereon. If shall be placed so that the skipped bars direct drainage flow toward the curb.*

Curb Casting . . . . . 305 lbs. (138 kg)
Two Grates . . . . . 294 lbs. (133 kg)
Frame . . . . . 550 lbs. (247 kg)
Two Grate "A" . . . . . 200 lbs. (90 kg)

Lighter weight frames and grates that meet the requirements of ODOT 604 may be substituted for the above weights.

Curb Casting . . . . . 305 lbs. (138 kg)
Two Grates . . . . . 294 lbs. (133 kg)
Frame . . . . . 550 lbs. (247 kg), and
Two Grate "A" . . . . . 200 lbs. (90 kg).

Lighter weight frames and grates that meet the requirements of ODOT 604 may be substituted for the above weights.

***CASTINGS** The design shall be essentially the same and equally as strong as the one shown hereon.*
Weight of grate, minimum , 120 lbs.
Weight of frame, minimum, 60 lbs.

"DUMP NO WASTE" and "DRAINS TO WATERWAY"

Text shall be printed in bold, capital letters with a minimum height of 1/2". "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

***BEARING AREAS** The frame and grate shall be so fitted and finished as to provide a firm and even seat. No projections shall exist on bearing areas and the grate shall not rock when placed in any position.*

***WALLS** When used in place of concrete, brick side walls shall be 8" (200) nominal thickness.*

***PRECAST CONSTRUCTION** Permitted, except for the apron. Concrete shall meet requirements of CMS 706.02, Class QC 1 or QC 2. Walls shall have sufficient thickness for shipping and handling without damage. The wall thickness for ductile shall be from the outside.*

***HEIGHT DEPTH.** The minimum depth is per the cover requirements for that pipe type.*

***OPENINGS** Any pipe openings greater than 4" (100) from the pipe O.D. shall be filled with grout per CMS 501. The Engineer's approval. This is not paid for CMS 501.*

***DOWELS** Four 3/4" (19x457) dowels are required for the pavement or gutter blockout. See SCD BP-4.2 for dowel details.*

***BLOCKOUT** Blockouts shall be paved with Class C concrete in PCC pavement or gutter, and paid for as part of the pavement or gutter with no deduction in pavement quantities. A Class C concrete apron, the size of the gutter blockout, shall be cast-in-place in asphalt pavement and dowels required with the cost included in the catch basin bid price. No deduction to be made in the unit bid price.*

***PRECAST** Construction is permitted, except for apron, and concrete shall meet requirements of 706.13 with 6.0 ±% air void content in the hardened concrete. Precast walls shall have a minimum thickness of 9" (230) and reinforcing shall be sufficient to permit shipping and handling without damage.*

***STEPS** Steps shall be provided where the depth exceeds 48" (1200) and shall meet the requirements of Drawing MH-1.*

***ROUNDING STEEL** All reinforcing steel shall have 2" clear cover unless otherwise noted.*

***STEPS** Shall be provided where the depth exceeds 48" and shall meet the requirements of Drawing MH-1.*

***GRATES** Standard grate as shown in the plan view shall be provided unless the plans specifically require grate "A". Place grate so the diagonal bars direct drainage flow toward the curb. All bar edges to be rounded 1/8" radius.*

***CASTINGS** The design shall be essentially the same and equally as strong as the one shown hereon. Minimum weights are: grate casting 170 lbs., standard grate 157 lbs. frame 205 lbs. and "A" grate 105 lbs. Bearing areas of frame and grate shall be so fitted and finished as to provide a firm and even seat for all portions of the grate in the frame. No projections shall exist on bearing areas.*

***BOLTS** Four 3/4" x 6" anchor bolts with hex nuts and locking washers.*

***DOWELS** Four 1" x 18" are required for concrete pavement of gutter blockout. See CDOT BP-4 for dowel details.*

***BRICK OR CONCRETE BLOCK** Side walls when used in place of concrete, shall be 8" nominal thickness.*

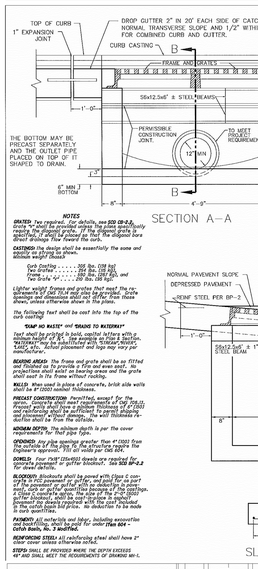
***BLOCKOUT** Shall be paved with Class C concrete in PCC pavement or gutter and paid for as part of the pavement or gutter with no deduction in pavement quantities because of castings. A Class C concrete apron the size of the 3'-0" gutter blockout shall be cast in place in asphalt pavement and dowels required with the cost included in the catch basin bid price. No deduction to be made in the unit bid price.*

***PRECAST** Construction is permitted, except for apron, and concrete shall meet requirements of 706.13 with 6.0 ±% air void content in the hardened concrete. Precast walls shall have a minimum thickness of 9" (230) and reinforcing shall be sufficient to permit shipping and handling without damage.*

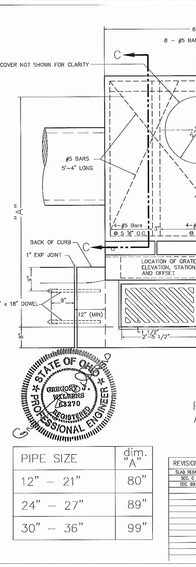
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***ROUNDING STEEL** All reinforcing steel shall have 2" clear cover unless otherwise noted.*

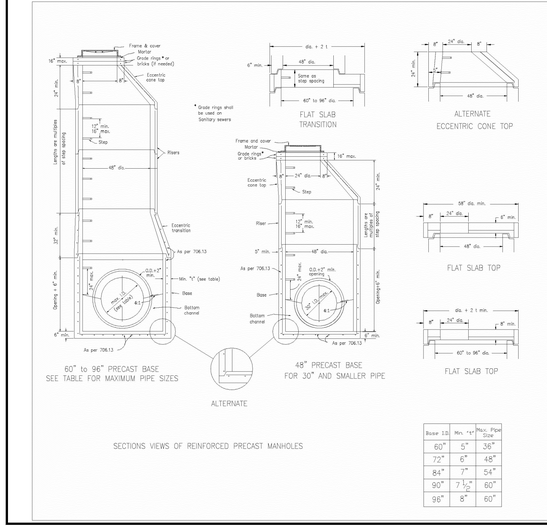
***STEPS** Shall be provided where the depth exceeds 48" and shall meet the requirements of Drawing MH-1.*



PIPE SIZE	dim. "A"
12" – 21"	80"
24" – 27"	89"
30" – 36"	99"



REVISIONS	DATE	C-7
SLAB BEAM	12/29/11	
SCD-5	01/06/12	CATCH BASIN NO. 3 MODIFIED
SDC 89	01/06/12	
CHK. BY: E.J.P.		EFFECTIVE DATE: 1-1-94
BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY 1921 FAIRGROVE AVENUE - HAMILTON, OHIO PHONE: 867-5744		45011



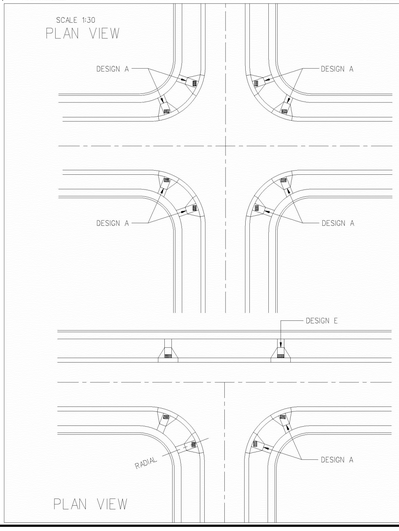
SECTIONS VIEWS OF REINFORCED PRECAST MANHOLES

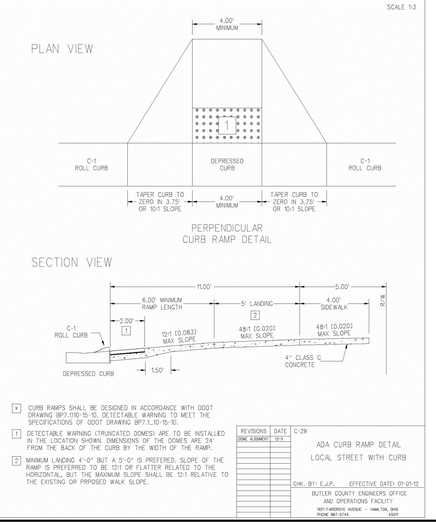
NOTES

GENERAL: With normal soil and site conditions this standard precast manhole may be used for any required manhole depth.
Sections of the precast manhole shall be cast and assembled with either all torque or all groove ends up. Lift holes may be provided in each section for handling.
TOP AND TRANSITION (or reducer) sections may be either eccentric cone or flat slab.
BASES for No.3 Manholes are shown with monolithic floor and riser which may be cast in one or two operations. A permissible alternate is to cast and ship the floor and barrel seperately. Openings for inlet and outlet pipes shall be provided, either when the unit is cast or later, to meet project requirements. Bottom channels may be formed of concrete precast in the base or by field construction as shown on MH-1 and MH-2.
OPENINGS IN RISER SECTIONS for 18" and smaller inlet pipes may be prefabricated or cut in the field provided the side of the pipe at the springline do not project into the manhole.
CONNECTIONS between precast manhole sections and pipes on sanitary sewers may be sealed with resilient connectors conforming to ASTM C923.
JOINT SEAL between precast manhole sections on sanitary sewers shall be resilient and flexible gasket joints per 706.11.
MATERIALS for bases and other precast sections, including reinforcement not specified herein, shall comply with the requirements of 706.13.
DROP PIPE, when specified on the plans, shall be constructed as shown on MH-2.
STEPS, FRAMES AND COVERS shall conform with the requirements set forth on

Base I.D.	Min. "t"	Max. Pipe Size
60"	5"	36"
72"	6"	48"
84"	7"	54"
90"	7 1/2"	60"
96"	8"	60"

REVISIONS	DATE	
		TYPICAL MANHOLE DETAIL MH-3
CHK. BY: C.A.H.		EFFECTIVE DATE: 1-1-94
BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY 1921 FAIRGROVE AVENUE - HAMILTON, OHIO PHONE: 867-5744		45011





[x] CURB RAMPS SHALL BE DESIGNED IN ACCORDANCE WITH ODOT DRAWING BP7.1(10-15-10). DETECTABLE WARNING TO MEET THE SPECIFICATIONS OF ODOT DRAWING BP7.1.10-15-10.

[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 4'-0" BUT A 5'-0" IS PREFERED. SLOPE OF THE RAMP IS PREFERRED TO BE 12:1 OR FLATTER RELATED TO THE HORIZONTAL, BUT THE MAXIMUM SLOPE SHALL BE 12:1 RELATIVE TO THE EXISTING OR PRPOSED WALK SLOPE.

REVISIONS	DATE	C-29
ODNR, K.LOMSKY	12/8	ADA CURB RAMP DETAIL LOCAL STREET WITH CURB
CHK. BY: E.J.P.		EFFECTIVE DATE: 01-01-12
BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY 921 FAIRGROVE AVENUE - HAMILTON, OHIO PHONE: 867-5744		45011

PIPE DIA. OR EQUIV. DIA.	SHAPE	DIMENSIONS C	E	F	L	W	T	X	CLASS C CONC. C.Y.	REINF STEEL LBS.
18"	○	1'-9"	2'-6"	2'-3"	3'-6"	4'-0"	2"	12"	0.58	7
15"	○	2'-0"	2'-9"	2'-3"	4'-0"	4'-0"	2 1/2"	13 1/2"	0.75	
18"	○	1'-9"	3'-0"	2'-9"	3'-6"	4'-9"	2 1/4"		0.68	8
	◇	2'-3"	3'-0"	3'-6"	4'-6"	5'-3"	2 1/2"	15"	0.93	
18"	◇	2'-0"	3'-6"	3'-0"	4'-0"	5'-6"			0.89	
21"	○	2'-6"	3'-3"	4'-0"	5'-0"	6'-0"	2 3/4"		1.14	8
	◇	2'-3"	3'-0"	3'-6"	4'-6"	6'-0"			1.07	9
	⬭	2'-9"	3'-6"	4'-6"	5'-6"	6'-6"	3"	18"	1.35	8
24"	○	2'-6"	4'-0"	4'-0"	5'-0"	6'-9"	3/4"		1.30	9
	◇	3'-0"	3'-9"	5'-0"	6'-0"	7'-0"			1.57	
27"	⬭	2'-9"	4'-6"	4'-3"	5'-3"	7'-3"	3 1/2"		1.51	10

NOTES

1. DIMENSIONS AND QUANTITIES ARE BASED ON CONCRETE PIPE AND WILL VARY INSIGNIFICANTLY FOR CORRUGATED METAL PIPE.
2. REINFORCING STEEL : MINIMUM GRADE 40, BARS EVENLY SPACED.
3. 6 - NO. 4 x 1'-0" DOWEL BARS.
4. 2 - NO. 4 x (C DIMENSION MINUS 4").
5. SLOPES SHALL BE WARPED TO FIT HEADWALL WHEN PIPE IS SKEWED AND/OR NORMAL SLOPE VARIES FROM 2:1.
6. VOLUME DISPLACED BY PIPE COMPUTED USING INSIDE DIAMETER OF PIPE.
7. WING ANGLES AND/OR DIMENSIONS MAY BE ALTERED DURING CONSTRUCTION TO ACCOMMODATE FLOW OF WATER.
8. WHEN BOTTOM OF WINGS ARE SLOPED IN DIRECTION OF FLOW EQUAL TO SLOPE OF PIPE, FRONT FACE OF HEADWALL SHALL REMAIN VERTICAL.



REVISIONS	DATE	C-13A
		12" - 27" SLOPE/HILLSIDE
CHK. BY: E.J.P.		EFFECTIVE DATE: 1-1-2010
BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY 1921 FAIRGROVE AVENUE - HAMILTON, OHIO PHONE: 867-5744		SHEET 1 OF 2

DIA.	30"	36"	42"	48"	54"	60"
Y	21"	24"	27"	30"	33"	36"

(1) DIAMETER OF CIRCULAR PIPE OR SPAN OF NON-CIRCULAR PIPE
(2) DIAMETER OF CIRCULAR PIPE OR RISE OF NON-CIRCULAR PIPE
3. ○ APPLIES TO 66" DIAMETER AND GREATER. (CIRCULAR PIPE)
4. SEE CURRENT STANDARD DRAWINGS FOR DIMENSIONS, QUANTITIES, AND BILL OF REINFORCEMENT.
5. DIMENSIONS FROM FACE OF CONCRETE TO STEEL SHALL BE 2" CLEAR DISTANCE.
6. ENCIRCLED LETTERS, ○ INDICATE STEEL BAR LOCATIONS
7. BARS B | C | G | P | M | Y ARE SPACED 1'-0" O.C. ALL OTHER BARS SHALL BE EVENLY SPACED.
8. BARS B AND Y ARE PLACED IN ORDER OF INCREASING LENGTHS, BEGINNING AT THE END OF EACH WING.
9. BARS C ARE PLACED IN ORDER OF INCREASING LENGTHS, BEGINNING AT THE TOP OF EACH WING.
10. HEADWALLS LOCATED AT EDGE OF SHOULDER SHALL BE PARALLEL TO CENTERLINE OF THE ROAD.
11. APRON BETWEEN WINGS SHALL BE SLOPED IN DIRECTION OF FLOW EQUAL TO SLOPE OF PIPE. FRONT FACE OF HEADWALL AND ENDS OF WINGS SHALL REMAIN VERTICAL.

(LAYOUT AND STEEL PATTERN)

REVISIONS	DATE	
		PIPE CULVERT HEADWALLS 0° SKEW 30° - 66°
CHK. BY: E.J.P.		EFFECTIVE DATE: 1-1-2010
BUTLER COUNTY ENGINEERS OFFICE AND OPERATIONS FACILITY 1921 FAIRGROVE AVENUE - HAMILTON, OHIO PHONE: 867-5744		SHEET 2 OF 2

WESTVIEW MEADOWS PHASES 1 & 2

SECTION 9, TOWN 3, RANGE 2 WEST CHESTER TOWNSHIP BUTLER COUNTY, OHIO

STANDARD DETAILS

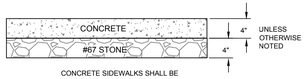
OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG (NON MEMBERS MUST BE CALLED DIRECTLY)

Revision	By	Date
BCEO COMMENTS	JW	10/01/18

Date	08/08/18
Scale	AS NOTED
Drawn By BC	Proj. Mgr. JW
Survey Database	N/A
DWG	16619004-DTL-00
X-Ref(s)	
Project Number	16619.00
File No.	Sheet No. 10 / 17

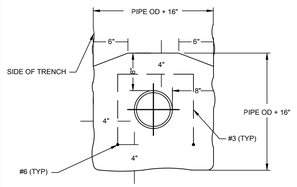
MSP DESIGN
McGill Smith Punshon
■ Architecture ■ Engineering ■ Landscape Architecture ■ Planning ■ Surveying
3700 Park 42 Drive Suite 1908 Cincinnati OH 45241 Phone 513.759.0004 www.mspdesign.com

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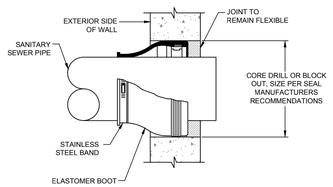
CONCRETE SIDEWALKS SHALL BE IN ACCORDANCE WITH OHIO D.O.T. SPECIFICATION 608

SIDE WALK RESTORATION DETAIL



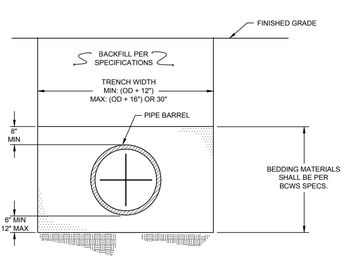
PIPE SIZE	CY CONC PER LIN FT	LENGTH OF NO 3 BARS	SPACING (FT) BETWEEN NO 3 BARS
6"	0.121	3'-9"	1.64
8"	0.139	4'-3"	1.25
10"	0.157	4'-9"	1.12
12"	0.177	5'-3"	1.02
16"	0.200	6'-3"	0.85
18"	0.247	6'-10"	0.78
20"	0.270	7'-5"	0.72
24"	0.315	8'-6"	0.63
30"	0.540	10'-0"	0.57

CONCRETE ENCASEMENT DETAIL

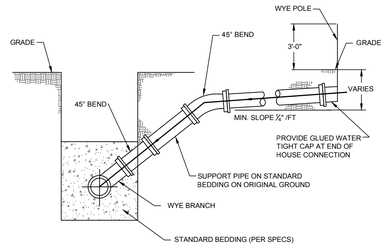


NOTES:
WALL PENETRATIONS SHALL BE LOCATED WITHIN A RISER SECTION AND NOT A WALL JOINT

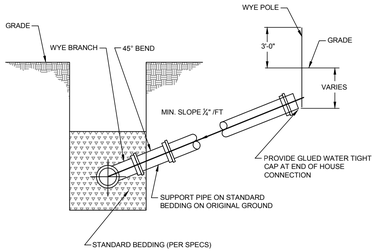
CONNECTION TO EXISTING MANHOLE



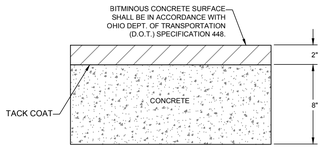
TYPICAL TRENCH DETAIL SEWER INSTALLATION



HOUSE CONNECTION FOR DEEP SEWER

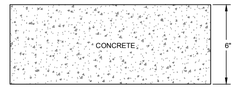


HOUSE CONNECTION FOR SHALLOW SEWER



PORTLAND CEMENT CONCRETE BASE SHALL BE IN ACCORDANCE WITH OHIO D.O.T. SPECIFICATION 305.

TYPE "A"

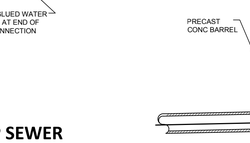


PORTLAND CEMENT CONCRETE BASE SHALL BE IN ACCORDANCE WITH OHIO D.O.T. SPECIFICATION 452.

TYPE "B"

CRUSHED STONE BASE SHALL BE IN ACCORDANCE WITH OHIO D.O.T. SPECIFICATION 304

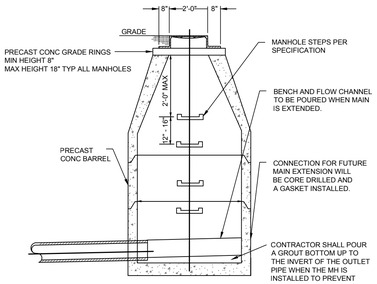
TYPE "C"



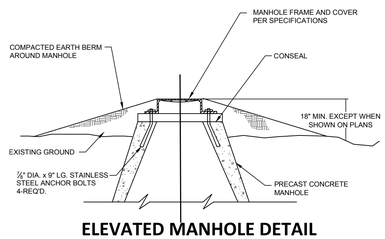
CRUSHED STONE BASE SHALL BE IN ACCORDANCE WITH OHIO D.O.T. SPECIFICATION 304

TYPE "D"

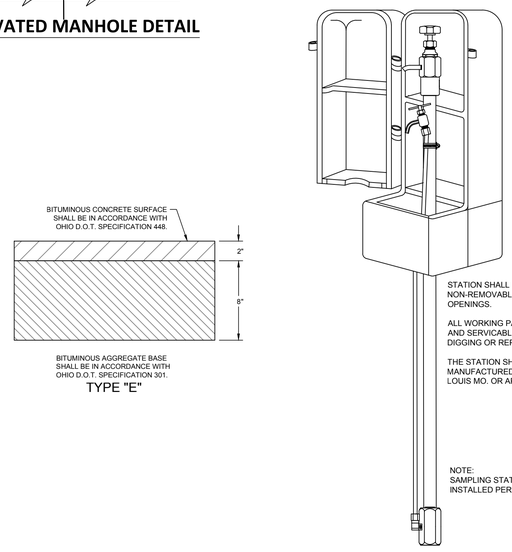
PAVEMENT REPLACEMENT DETAILS



DEAD END MANHOLE

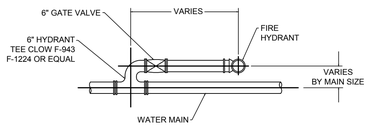


ELEVATED MANHOLE DETAIL



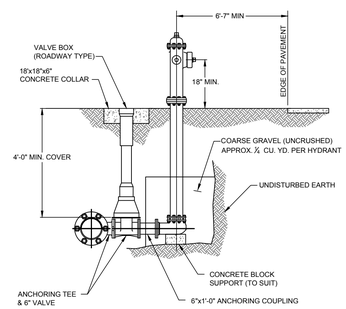
PERMANENT LAB SAMPLING STATION

TYPE "E"



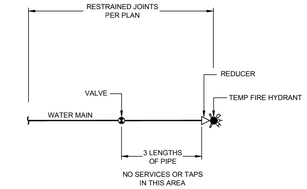
NOTES:
1.) FITTINGS TO BE MECHANICAL JOINT HYDRANT ANCHOR FITTINGS.
2.) SEE TYPICAL FIRE HYDRANT INSTALLATION DETAIL FOR ADDITIONAL DETAILS.

SETTING FOR HYDRANT ADJACENT TO MAIN

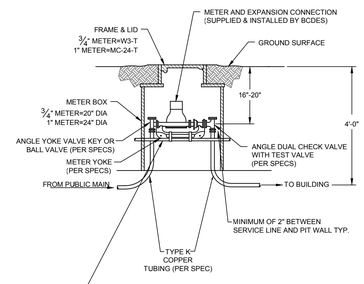


NOTES:
1.) VERIFY LOCATION OF F.H. RELATIVE TO WATER MAIN ON PLANS.
2.) CHECK STREET DETAILS FOR RELATIONSHIP BETWEEN MAIN, STREET AND F.H.

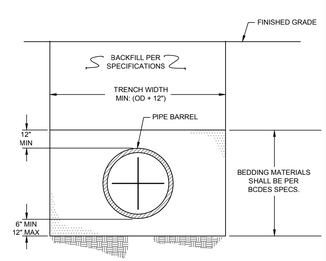
TYPICAL FIRE HYDRANT INSTALLATION



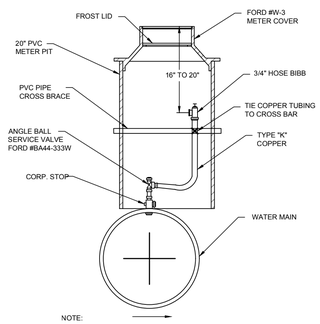
DEAD END DETAIL w/ TEMP F.H.



STANDARD INSTALLATION FOR 3/4" AND 1"WATER MATER SETTINGS

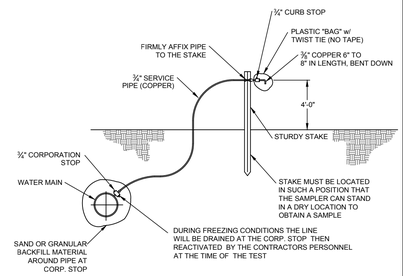


TYPICAL TRENCH DETAIL WATER MAIN INSTALLATION

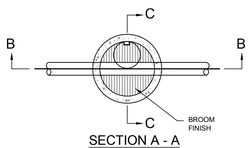


NOTE:
1) PIPE LESS THAN OR EQUAL TO 12"Ø MUST USE 3/4" CORP. STOP, ANGLE BALL VALVE AND SERVICE PIPE.
2) PIPE GREATER THAN 12"Ø TO USE 1" CORP. STOP, ANGLE BALL VALVE AND SERVICE PIPE.

MANUAL AIR RELEASE VALVE

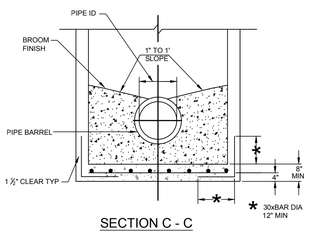


PURITY TEST STATION

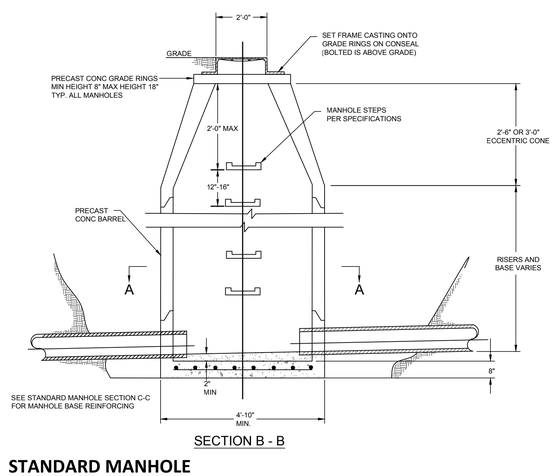


SECTION A - A

M.H. DEPTH	SLAB & DOWELL RESTEEL SQ. IN./FT. E.W.
0'-10'	0.17
11'-20'	0.22
21'-30'	0.27
31'-40'	0.32



SECTION C - C



SECTION B - B

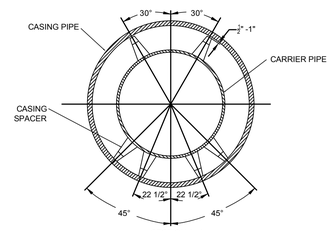
STANDARD MANHOLE

1) THE CARRIER PIPE SHALL BE BRACED WITHIN THE CASING PIPE WITH CASING SPACERS THAT PLACE THE CARRIER PIPE IN A "RESTRAINED" POSITION TO PRECLUDE POSSIBLE FLOATATION WHILE PROVIDING 1/2-1" CLEARANCE BETWEEN THE TOP RUNNERS AND THE CASING PIPE.

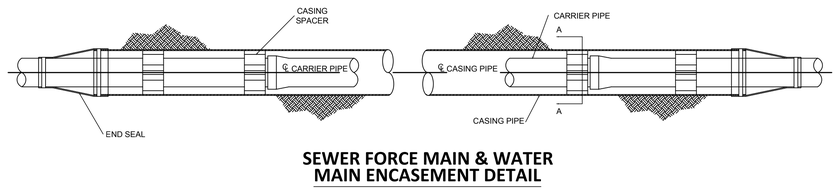
2) CASING SPACERS SHALL BE INSTALLED WITHIN ONE (1) FOOT OF EACH SIDE OF CARRIER PIPE JOINTS, WITHIN ONE (1) FOOT OF EACH END OF THE CASING PIPE AND ON 6 FOOT CENTERS THEREAFTER.

3) THERE SHALL BE TWO (2) RUNNERS ON TOP AND TWO (2) RUNNERS ON BOTTOM OF CASING SPACER FOR CARRIER PIPE DIAMETERS OF 4-12" OR TWO (2) RUNNERS ON TOP AND FOUR (4) RUNNERS ON BOTTOM FOR CARRIER PIPE DIAMETERS OF 14-36".

4) AT EACH END OF THE CASING PIPE, THE CARRIER AND CASING PIPE SHALL BE WRAPPED WITH END SEALS.



SECTION A -A



SEWER FORCE MAIN & WATER MAIN ENCASEMENT DETAIL

STATE OF OHIO
JAMES H. WATSON
49886
REGISTERED
PROFESSIONAL ENGINEER

OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

WESTVIEW MEADOWS
PHASES 1 & 2
SECTION 9, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO
STANDARD DETAILS

Revision	By	Date
STAFF COMMENTS	JW	08/17/18
BCEO COMMENTS	JW	10/01/18

Date	08/08/18
Scale	AS NOTED
Drawn By	BC
Proj. Mgr.	JW
Survey Database	N/A
DWG	16619004-DTL-00
X-Ref(s)	
Project Number	16619.00
File No.	Sheet No. 11 / 17

MSP DESIGN
McGill Smith Punshon
■ Architecture ■ Engineering ■ Landscape Architecture ■ Planning ■ Surveying
3700 Park 42 Drive Suite 1908 Cincinnati OH 45241 Phone 513.759.0004 www.mspdesign.com

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Specifications
for
Permanent Seeding

SITE PREPARATION

1. A 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. 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 lbs./1,000 sq. ft. or 2 tons/ac.

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 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 in. 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 Aug. 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. For winter seeding, see the following section on dormant seeding.

DORMANT SEEDINGS

1. Seedings shall not be planted 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, and the required amounts of lime and fertilizer, then mulch and anchor. After November 20, and before March 15, broadcast the selected seed mixture, mulch and anchor. 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. Seedings made during optimum seeding dates and with favorable soil conditions and on very flat areas may not need mulch to achieve adequate stabilization. Dormant seeding shall be mulched.

2. Materials

* Straw–If straw is used it shall be unrotted small–grain straw applied at the rate of 2 tons/ac. or 90 lb./1,000 sq. ft. (two to three bales). The mulch shall be spread uniformly by hand or mechanically so the soil surface is covered. For uniform distribution of hand–spread mulch, divide area into approximately 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 used at 2,000 lb./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 tons/ac.

3. Straw Mulch Anchoring Methods

Straw mulch shall be anchored immediately to minimize loss by wind or water.

* Mechanical–A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but, generally, be left longer than 6 in.

* Mulch Nettings–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 manufacturer or at the rate of 160 gal. /ac.

* Synthetic Binders–Synthetic binders such as Acrylic DLR (Agri–Tac), DCA–70, Petroset, Terra Tack or equivalent may be used at rates recommended by manufacturer.

* Wood Cellulose Fiber–Wood cellulose fiber binder shall be applied at a net dry weight of 750 lb./ac. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lbs./100 gal.

IRRIGATION

1. Permanent seeding shall include irrigation to establish vegetation during dry or hot weather or on adverse site conditions as needed for adequate moisture for seed germination and plant growth.

2. Excessive irrigation rates shall be avoided and irrigation monitored to prevent erosion and damage from runoff.

Permanent Seeding			
Seed Mix	Seeding Rate		Notes:
	lb./ac.	lb./1.000 ft.^{2}	
General Use			
Creeping Red Fescue Domestic Ryegrass 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	Do not seed later than August
Flat Pea Tall Fescue	20 20	1/2 1/2	Do not seed later than August
Road Ditches and Swales			
Tall Fescue	40	1	
Dwarf Fescue Kentucky Bluegrass	90 5	2 1/4	
Lawns			
Kentucky Bluegrass Perennial Ryegrass	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.

Specifications
for
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 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.

Maintenance for Permanent Seedings
Fertilization and Mowing

Mixture	Formula	lb./ac.	lb./1.000 ft.^{2}	Time	Mowing
Creeping Red Fescue Ryegrass Kentucky Bluegrass	10–10–10	500	12	Fall, yearly or as needed.	Not closer than 3"
Tall Fescue	10–10–10	500	12		Not closer than 4"
Dwarf Fescue	10–10–10	500	12		Not closer than 2"
Crown Verch Fescue	0–20–20	400	10	Spring, yearly following establishment and every 4–7 yr. thereafter.	Do not mow
Flat Pea Fescue	0–20–20	400	10		Do not mow

Note: Following soil test recommendations is preferred to fertilizer rates shown above.

Specifications
for
Temporary Seeding

Temporary Seeding Species Selection			
Seeding Dates	Species	lb./1.000 ft.^{2}	Per Ac.
March 1 to August 15	Oats Tall Fescus Annual Ryegrass	3 1 1	4 bushel 40 lb. 40 lb.
	Perennial Ryegrass Tall Fescus Annual Ryegrass	1 1 1	40 lb. 40 lb. 40 lb.
August 16 to November 1	Rye Tall Fescus Annual Ryegrass	3 1 1	2 bushel 40 lb. 40 lb.
	Wheat Tall Fescus Annual Ryegrass	3 1 1	2 bushel 40 lb. 40 lb.
	Perennial Ryegrass Tall Fescus Annual Ryegrass	1 1 1	40 lb. 40 lb. 40 lb.
November 1 to Spring Seeding	Use mulch only, sodding practices or domant seeding		

Note: Other approved seed 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 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 preparation is not possible.

4. Soil Amendments–Applications of temporary vegetation shall establish adequate stands of vegetation that may require the use of soil amendments. Soil tests should be taken on the site to predict the need for lime and fertilizer.

5. Seeding Method–Seed shall be applied uniformly with a cyclone seeder, drill, cultipacker seeder, or hydroseeder. When feasible, seed that has been broadcast shall be covered by raking and 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 that shall be applied during or immediately after seeding. Seedings made during optimum seeding dates and with favorable soil conditions and on very flat areas may not need mulch to achieve adequate stabilization.

2. Materials:

* Straw–If straw is used, it shall be unrotted small–grain straw applied at the rate of 2 tons/ac. or 90 lbs./1,000 sq. ft. (two to three bales). The mulch shall be spread uniformly by hand or mechanically so the soil surface is covered. For uniform distribution of hand–spread mulch, divide area into approximately 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 used at 2,000 lb./ac. or 46 lb./1,000 sq. ft.

* Other–Other acceptable mulches include mulch matting applied according to manufacturer's recommendations or wood chips applied at 6 tons/ac.

3. Straw mulch shall be anchored immediately to minimize loss by wind or water.

4. Anchoring Methods:

* Mechanical–A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but generally, be left longer than 6 in.

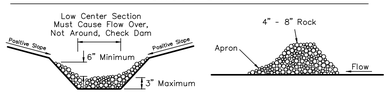
* Mulch Nettings–Netting shall be used according to the manufacturer's recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff and on critical slopes.

* Asphalt Emulsion–Asphalt shall be applied as recommended by the manufacturer or at the rate of 160 gal. /ac.

* Synthetic Binders–Synthetic binders such as Acrylic DLR (Agri–Tac), DCA–70, Petroset, Terra Tack or equivalent may be used at rates recommended by manufacturer.

* Wood Cellulose Fiber–Wood cellulose fiber binder shall be applied at a net dry weight of 750 lb./ac. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lbs./100 gal.

Specifications
for
Check Dam



CROSS SECTION

PROFILE

1. The check dam shall be constructed of 4–8 in. diameter stone, placed so that it completely covers the width of the channel.

2. The top of the check dam shall be constructed so that the center is approximately 6 in. lower than the outer edges, so water will flow across the center and not around the ends.

3. The maximum height of the check dam at the center of the weir shall not exceed 3 ft.

4. Spacing between dams shall be as shown in the plans or by the following table:

Check Dam Spacing

Dam Height (ft.)	Channel Slope			
	< 5%	5 - 10%	10 - 15 %	15 - 20%
1	65 ft.	30 ft.	20 ft.	15 ft.
2	130 ft.	65 ft.	40 ft.	30 ft.
3	200 ft.	100 ft.	65 ft.	50 ft.

Specifications
for
Mulching

1. Mulch and/or other appropriate vegetative practices shall be applied to disturbed areas within 7 days of grading if the area is to remain dormant (undisturbed) for more than 45 days or on areas and portions of the site which can be brought to final grade.

2. Mulch shall consist of one of the following:

* Straw–Straw shall be unrotted small–grain straw applied at the rate of 2 tons/ac. or 90 lbs./1,000 sq. ft. (two to three bales). The mulch shall be spread uniformly by hand or mechanically so the soil surface is covered. For uniform distribution of hand–spread mulch, divide area into approximately 1,000 sq. ft. sections and spread two 45 lb. bales of straw in each section.

* Hydroseeders–Wood cellulose fiber should be used at 2,000 lb./ac. or 46 lbs./1,000 sq. ft.

* Other–Other acceptable mulches include mulch matting applied according to manufacturer's recommendations or wood chips applied at 10–20 tons/ac.

3. Mulch Anchoring–Mulch shall be anchored immediately to minimize loss by wind or runoff. The following are accepted methods for anchoring mulch:

* Mechanical–Use a disk, crimper, or similar type tool set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but generally be left longer than 6 in.

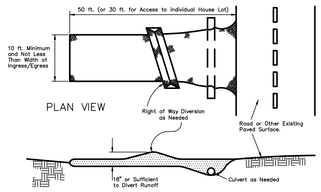
* Mulch Nettings–Use according to the manufacturer's recommendations, following all placement and anchoring suggestions. Use in areas of water concentration and steep slopes to hold mulch in place.

* Asphalt Emulsion–For straw mulch, apply at the rate of 160 gal. /ac. (0.1 gal. /sy) into the mulch as it is being applied or as recommended by the manufacturer.

* Synthetic Binders–For straw mulch, synthetic binders such as Acrylic DLR (Agri–Tac), DCA–70, Petroset, Terra Tack or equivalent may be used at rates recommended by manufacturer.

* Wood Cellulose Fiber–Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 lb./acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lbs./100 gal.

Specifications
for
Construction Entrance



PROFILE

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 ft. (except on single residence lot where a 30–ft. minimum length applies).

3. Thickness–The stone layer shall be at least 6 in. thick.

4. Width–The entrance shall be at least 10 ft. wide, but not less than the full width at points where ingress or egress occurs.

5. Bedding–A geotextile shall be placed over the entire area prior to placing stone. It shall have a Grab Tensile Strength of at least 200 lb. and a Mullen Burst Strength of at least 190 lbs.

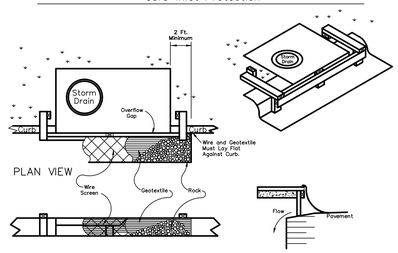
6. Culvert–A pipe or culvert shall be constructed under the entrance if needed to prevent surface water flowing across the entrance from being directed out onto paved surfaces.

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.

Specifications
for
Curb Inlet Protection



1. Inlet protection shall be constructed either before upslope land disturbance begins or before the storm drain becomes operational.

2. The wooden frame is to be constructed 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.

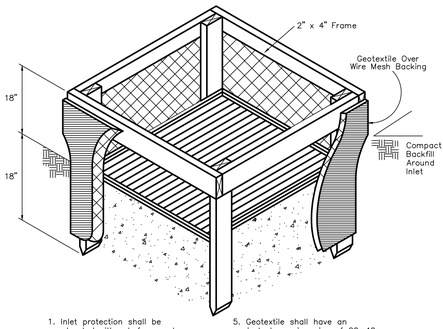
3. The wire mesh shall be of sufficient strength to support fabric and stone. It shall be a continuous piece with a minimum width of 30 in. and 4 ft. longer than the throat length of the inlet, 2 ft. on each side.

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.

Specifications
for
Inlet Protection in Swales, Ditch Lines or Yard Inlets



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 in.

3. The wooden frame shall be constructed of 2–by–4 in. construction grade lumber. The 2–by–4 in. posts shall be driven 1 ft. into the ground at four corners of the inlet and the top portion of 2–by–4 in. frame assembled using the overlap joint shown. The top of the frame shall be at least 6 in. below adjacent roads if ponded water would pose a safety hazard to traffic.

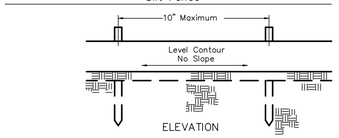
4. Wire mesh shall be of sufficient strength to support fabric with water fully impounded against it. It shall be stretched tightly around the frame and fastened securely to the frame.

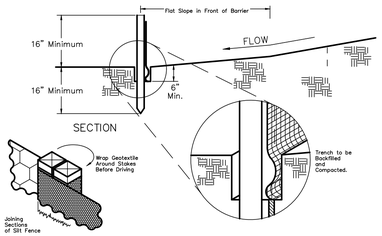
5. Geotextile shall have an equivalent opening size of 20–40 sieve and be resistant to sunlight. It shall be stretched tightly around the frame and fastened securely. It shall extend from the top of the frame to 18 in. below the inlet notch elevation. The geotextile shall overlap across one side of the 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–in. layers until the earth is even with 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 dikes shall be at least 6 in. higher than the top of the frame.

Specifications
for
Silt Fence





Specifications
for
Silt Fence

1. Silt fence shall be constructed before upslope land disturbance begins.

2. All silt fences 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 ft. (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 in. above the original ground surface.

7. The silt fence shall be placed in a trench cut a minimum of 6 in. deep. The trench shall be cut with a trencher, cable laying 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 and so that 8–in. of cloth are below the ground surface. Excess material shall lie on the bottom of the 6–in. deep trench. The trench shall be backfilled and compacted.

9. Seams between section of silt fence shall be overlapped with the end stakes of each section wrapped together before driving into the ground.

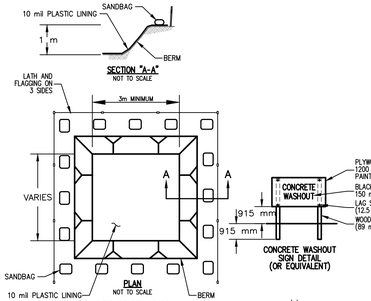
10. Maintenance–Silt fence shall allow runoff to pass only as diffuse flow through the geotextile. If runoff overtops the silt fence, flows under or around ends, or in any other way becomes a concentrated flow, on of the following shall be performed, as appropriate: 1) The layout of the silt fence shall 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 in. long. Wood posts will be 2–by–2 in. of hardwood of sound quality. The maximum spacing between posts shall be 10 ft.

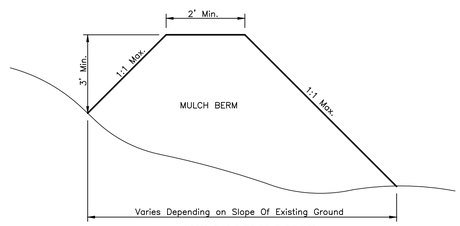
2. Silt Fence Fabric shall be ODOT Type C Geotextile Fabric or as described by the chart below:

Fabric Properties	
Minimum Tensile Strength	120 lbs.
Maximum Elongation at 60 lbs	50%
Minimum Puncture Strength	50 lbs
Minimum Tear Strength	40 lbs.
Minimum Burst Strength	200 psi
Apparent Opening Size	≤ 0.84 mm
Minimum Permittivity	1 x 10^{-2} sec^{-1}
Ultraviolet Exposure Strength Retention	70 %



CONCRETE WASHOUT DETAIL

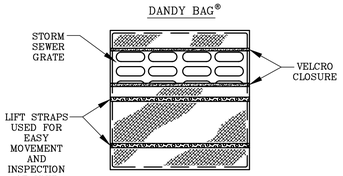
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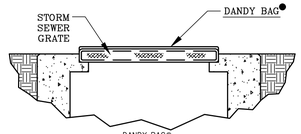


MULCH BERM DETAIL

N.T.S.

DANDY BAG®





NOTE: THE DANDY BAG® WILL BE **MANUFACTURED IN THE U.S.A.** FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

HI–FLOW DANDY BAG® (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) X 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistence	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m^2 (gal/min/ft^2)	5907 (145)
Permittivity	ASTM D 4491	Sec^{-1}	2.1

*Note: All Dandy Bags® can be ordered with our optional oil absorbent pillows



OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

Revision	By	Date
BCEO COMMENTS	JW	10/01/18

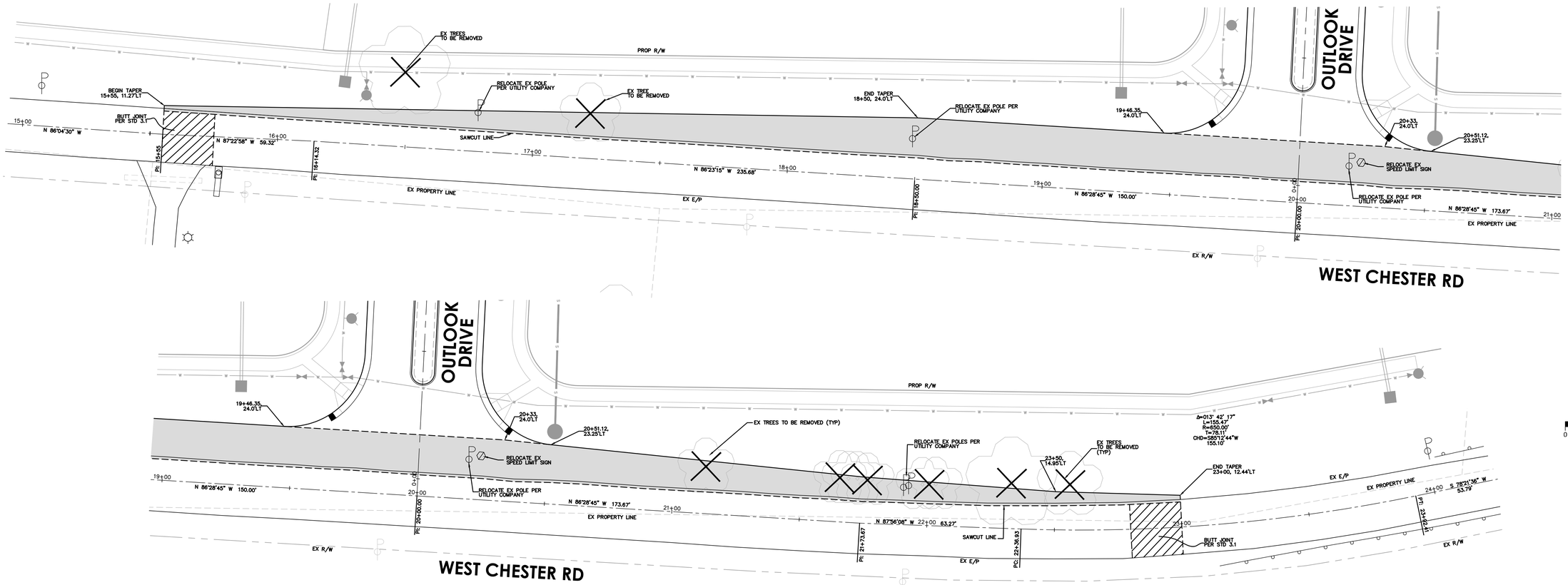
WESTVIEW MEADOWS
PHASES 1 & 2
SECTION 9, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO
EROSION CONTROL NOTES & DETAILS

Date	08/08/18
Scale	AS NOTED
Drawn By	BC Proj. Mgr. JW
Survey Database	N/A
DWG	16619004-DTL-00
X-Ref(s)	
Project Number	16619.00
File No.	Sheet No. 12 / 17

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1) PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC IN ACCORDANCE WITH 642 OF THE O.D.O.T. CONSTRUCTION & MATERIAL SPECIFICATIONS.

2) A RIGHT-OF-WAY PERMIT MUST BE OBTAINED FROM THE BUTLER COUNTY ENGINEER'S OFFICE PRIOR TO THE START OF CONSTRUCTION.

INDICATES NEW ASPHALT PAVEMENT

① ITEM 441 – 1.5" SURFACE COURSE, TYPE 1 (448)
② ITEM 407 – TACK COAT, 0.10 GAL/SY
③ ITEM 441 – 1.5" INTERMEDIATE COURSE, TYPE 2 (448)
④ ITEM 407 – TACK COAT FOR INTERMEDIATE COURSE, 0.05 GAL/SY
⑤ ITEM 301 – 6" ASPHALT CONCRETE BASE, PG 64-22
⑥ ITEM 408 – PRIME COAT, 0.40 GAL/SY
⑦ ITEM 304 – 6" AGGREGATE BASE
⑧ ITEM 203 – SUBGRADE COMPACTION (PROOF ROLLING)
⑨ ITEM 659 – SEEDING AND MULCHING
Ⓐ EXISTING PAVEMENT

NORTH

SCALE IN FEET
0 10 20 40 60

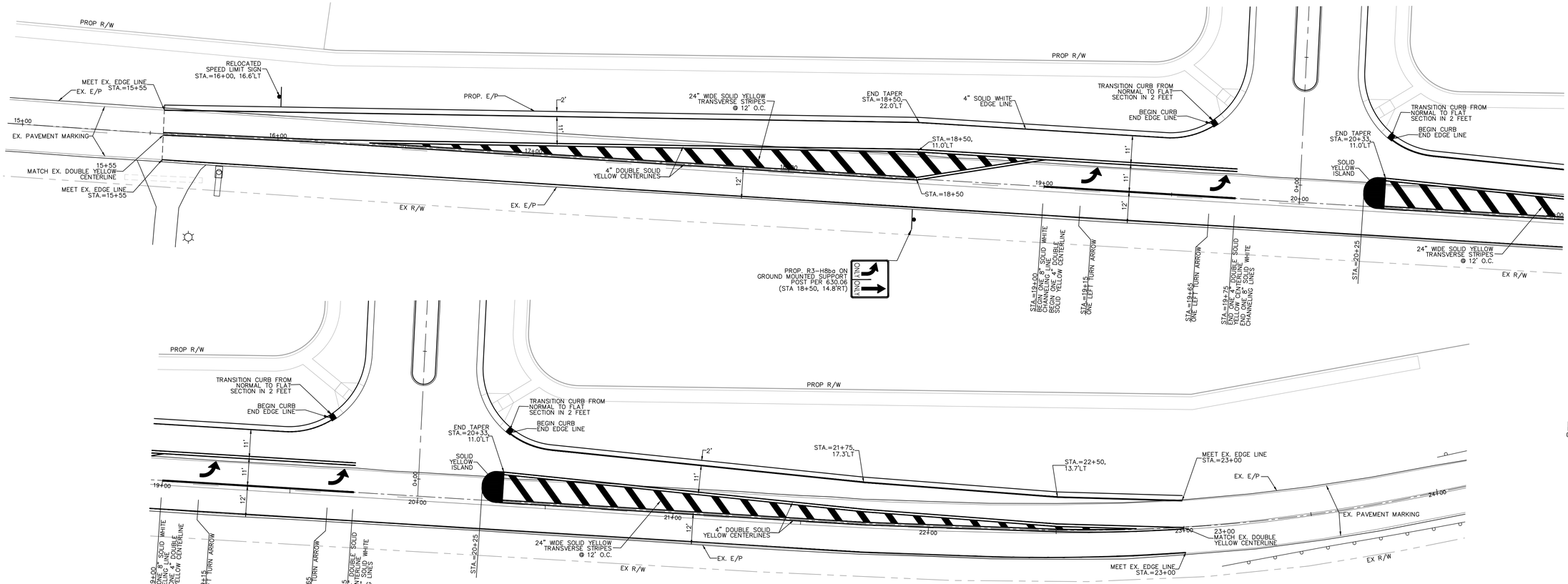
WESTVIEW MEADOWS
PHASES 1 & 2
SECTION 9, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO
WEST CHESTER RD WIDENING PLAN

Revision	By	Date
BCEO COMMENTS	JW	10/01/18

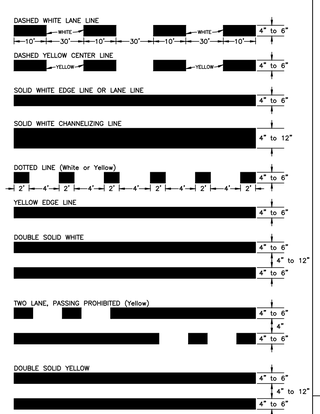
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Scale	AS NOTED
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Survey Database	N/A
DWG	16619004-IMP-00
X-Ref(s)	
Project Number	16619.00
File No.	Sheet No. 13 / 17

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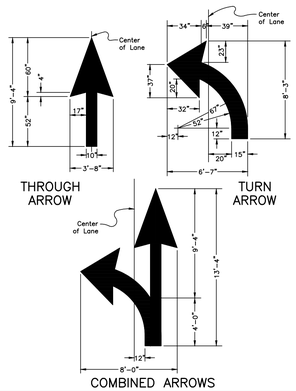
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TYPICAL PAVEMENT MARKINGS
TYPES OF LONGITUDINAL LINES



TYPICAL PAVEMENT MARKINGS
PAVEMENT ARROWS
FOR RURAL AND URBAN INTERSECTIONS



NOTES:
1. Arrows shall be white with reflective surfaces.
2. Either paint or plastic materials may be used.

NOTE: ALL STRIPING TO BE THERMOPLASTIC

Revision	By	Date
BCEO COMMENTS	JW	10/01/18

WESTVIEW MEADOWS
PHASES 1 & 2
SECTION 9, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

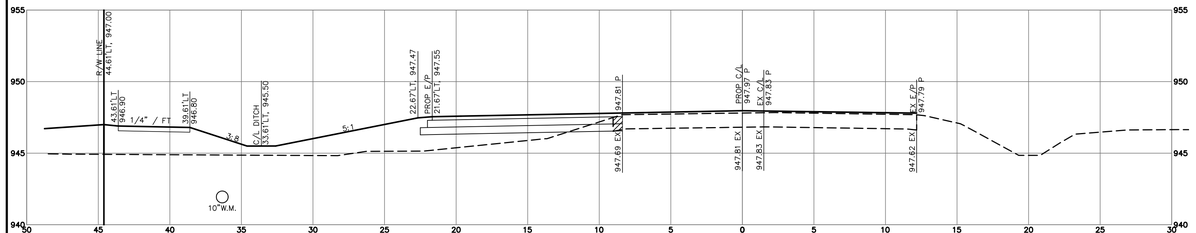
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Scale	AS NOTED
Drawn By	BC
Proj. Mgr.	JW
Survey Database	N/A
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X-Ref(s)	
Project Number	16619.00
File No.	Sheet No. 14 / 17

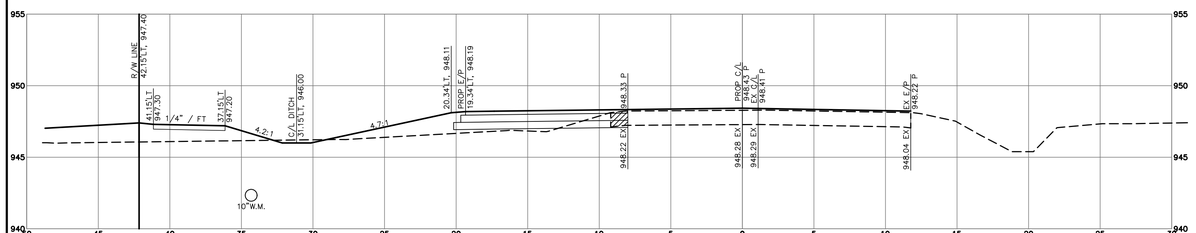
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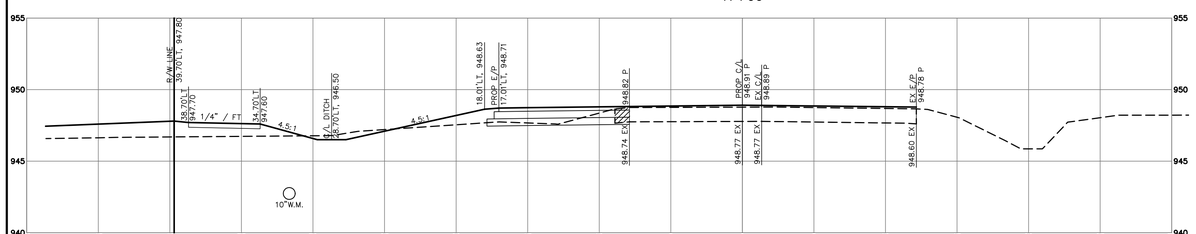
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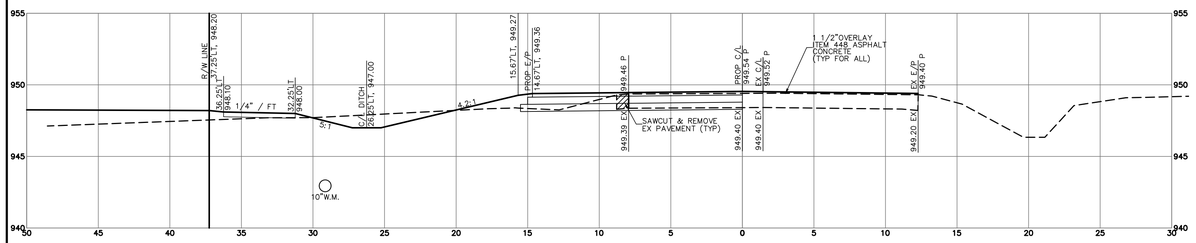
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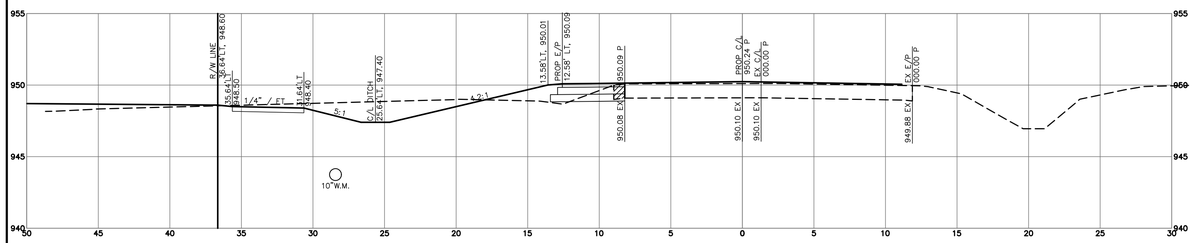
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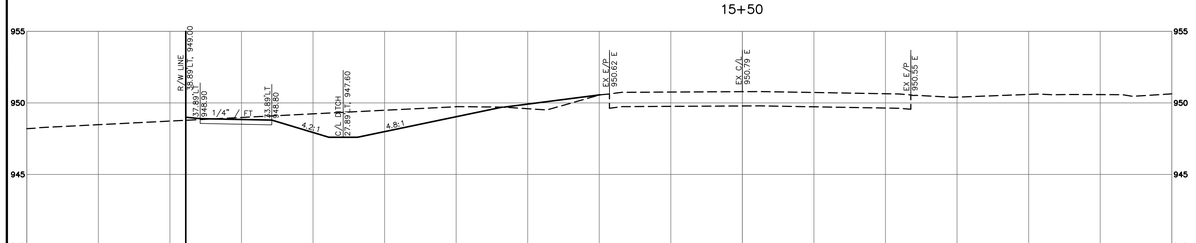
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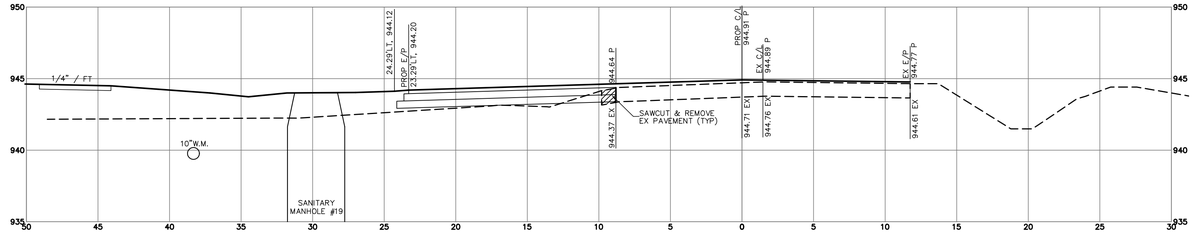
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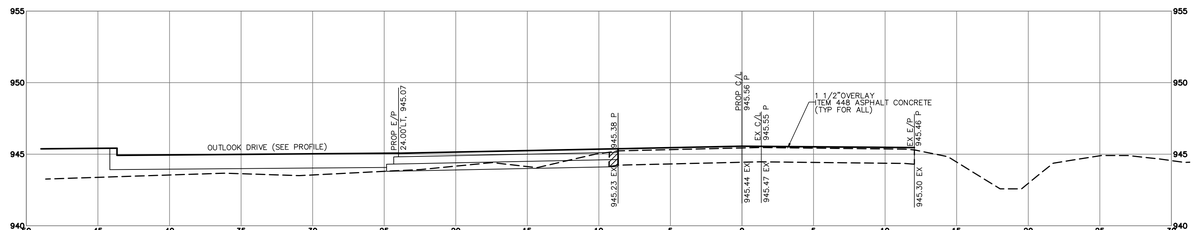
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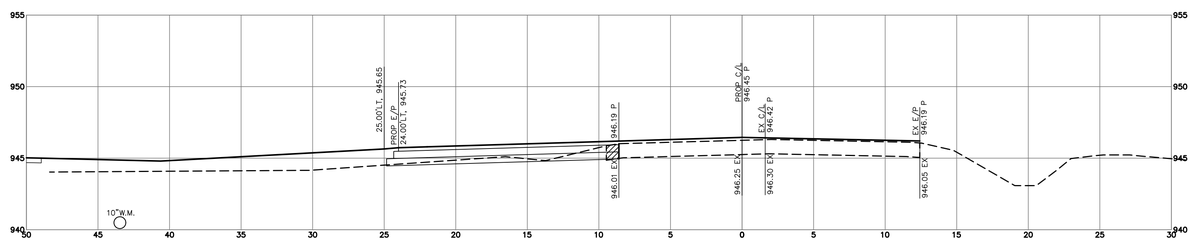
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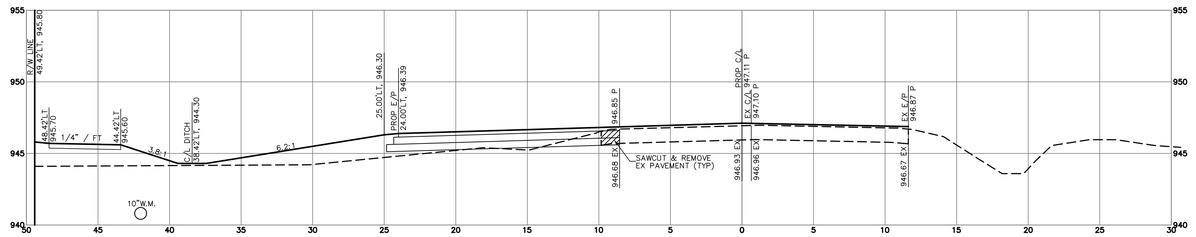
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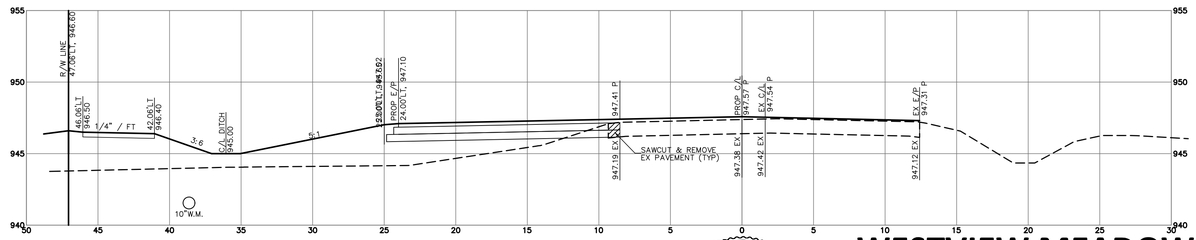
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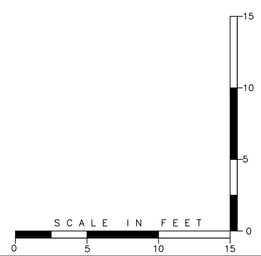


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STATE OF OHIO
JAMES H. WATSON
49886
REGISTERED
PROFESSIONAL ENGINEER

WESTVIEW MEADOWS
PHASES 1 & 2

SECTION 9, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

CROSS SECTIONS 15+50 - 20+50

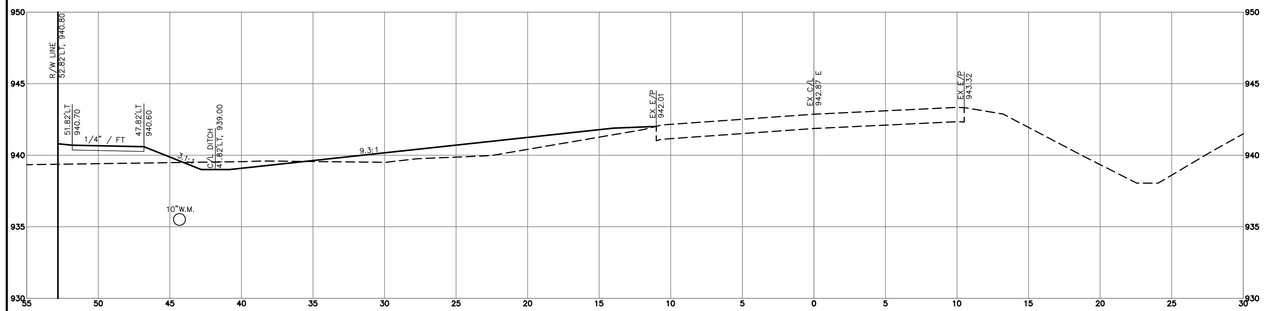
Revision	By	Date
BCEO COMMENTS	JW	10/01/18

Date	08/08/18
Scale	AS NOTED
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X-Ref(s)	
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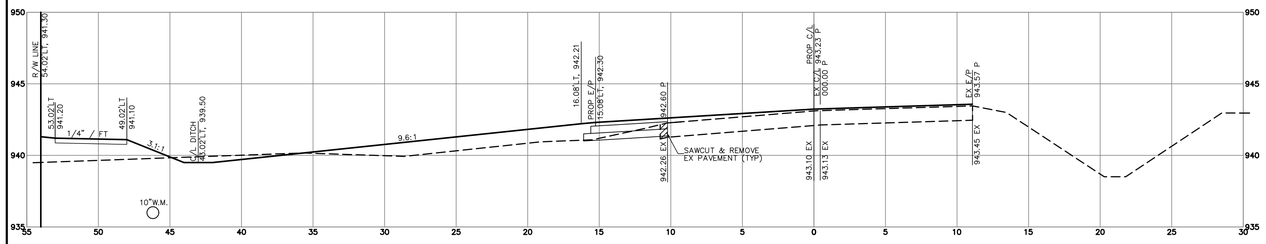
MSP DESIGN
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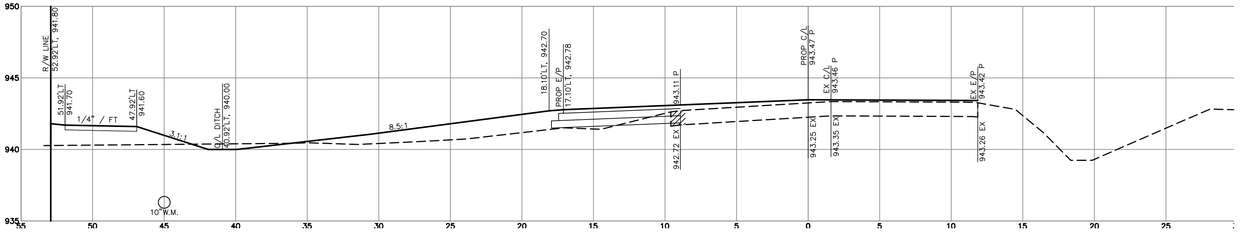
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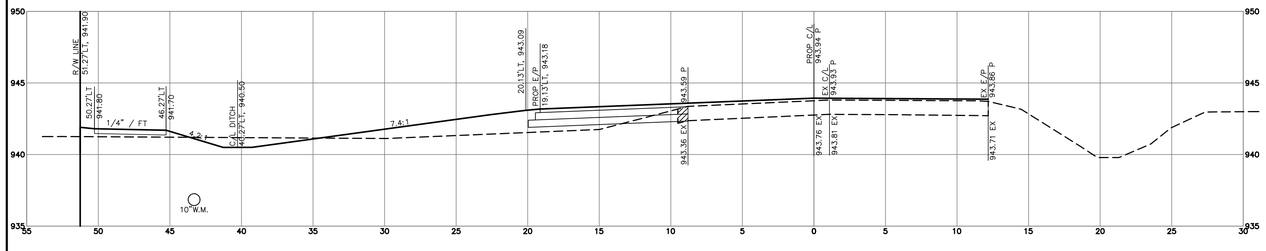
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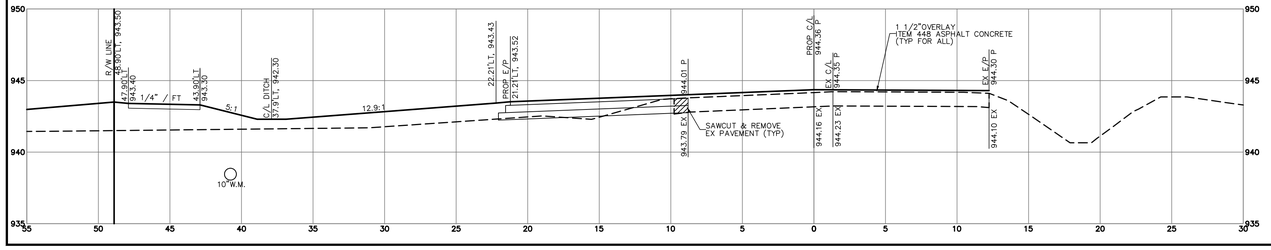
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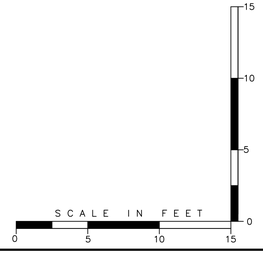


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STATE OF OHIO
JAMES H. WATSON
49886
REGISTERED
PROFESSIONAL ENGINEER

Revision	By	Date
BCEO COMMENTS	JW	10/01/18

WESTVIEW MEADOWS
PHASES 1 & 2
SECTION 9, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO
CROSS SECTIONS 21+00 - 23+00

Date	08/08/18
Scale	AS NOTED
Drawn By	BC
Proj. Mgr.	JW
Survey Database	N/A
DWG	16619004-XSEC-00
X-Ref(s)	
Project Number	16619.00
File No.	Sheet No. 16 / 17

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GENERAL SPECIFICATIONS

THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIALS SPECIFICATIONS (CMS), DATED JANUARY 1, 2016, THE STATE OF OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) FOR STREETS AND HIGHWAYS, 2012 EDITION, THE UNITED STATES DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION (FHWA) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, OR THE LATEST REVISIONS THEREOF, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED FOR THIS PROJECT, SHALL GOVERN THIS PROJECT, EXCEPT WHERE SPECIFICALLY MODIFIED OR AS SHOWN ON THE DRAWINGS.

CONSTRUCTION SEQUENCE

PHASE ONE

WIDEN THE NORTH SIDE OF WEST CHESTER ROAD TO ACCOMMODATE THE EASTBOUND LEFT TURN LANE AT OUTLOOK DRIVE. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGH THE USE OF DRUMS PER MT-97.10 AND 97.11. LANE RESTRICTIONS WILL BE PERMITTED BETWEEN 9:00 AM AND 3:00 PM, MONDAY THROUGH FRIDAY.

PHASE TWO

COMPLETE SIGNAGE AND PERMANENT MARKINGS ALONG WEST CHESTER ROAD AT OUTLOOK DRIVE. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.

ALTERNATE METHODS

IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN WILL BE PUT INTO EFFECT UNTIL THE APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE BUTLER COUNTY ENGINEER'S OFFICE.

MATERIALS AND WORKMANSHIP

UNLESS OTHERWISE SPECIFIED, ALL MATERIALS SHALL BE NEW AND BOTH WORKMANSHIP AND MATERIALS SHALL BE OF THE FIRST QUALITY, PROPER AND SUFFICIENT FOR THE PURPOSE CONTEMPLATED. THE CONTRACTOR SHALL FURNISH, IF SO REQUIRED, SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF MATERIALS AND WORKMANSHIP. ALL ITEMS OF EQUIPMENT AND/OR MATERIALS PROPOSED FOR SUBSTITUTION MUST BE APPROVED BY THE ENGINEER IN WRITING AND SHALL BE EQUAL OR BE SUPERIOR TO THE ITEMS SPECIFIED IN THE CONTRACT DOCUMENTS. IF SAID SUBSTITUTION PROPOSED BY THE CONTRACTOR FOR A SPECIFIED ITEM REQUIRED ENGINEERING REVISIONS, THE EXPENSE OF SUCH REVISIONS SHALL BE PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

EXISTING FACILITIES

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM HIS WORK IN SUCH A MANNER AS NOT TO DAMAGE OR DESTROY ANY EXISTING FACILITY. IF ANY SUCH DAMAGE DOES OCCUR DUE TO THE CONTRACTOR'S OPERATIONS, HE SHALL REPLACE THE DAMAGED PORTION AT THIS EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.

EXAMINATION OF THE SITE

THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE OF THE PROPOSED WORK, THE PLANS AND SPECIFICATIONS. THE SUBMISSION OF A BID SHALL BE CONSIDERED EVIDENCE THAT THE CONTRACTOR HAS MADE SUCH EXAMINATION AND IS SATISFIED AS TO THE CONDITIONS TO BE ENCOUNTERED IN PERFORMING THE WORK IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM

PROTECTING EXISTING UNDERGROUND UTILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR STAKING, MARKING, OR OTHERWISE DESIGNATING THE LOCATIONS OF THE UNDERGROUND UTILITIES IN THE CONSTRUCTION AREAS IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH OF WHICH THEY WERE INSTALLED. THE MARKING OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF PLANNED CONSTRUCTION. EXTREME CARE SHALL BE TAKEN IN THE VICINITY OF THE EXISTING UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ISOLATE, BRACE, SUPPORT, SHEET, ETC. AND PROTECT THE EXISTING UTILITY FROM MOVING EITHER HORIZONTALLY OR VERTICALLY. IF SUCH MOVEMENT DOES OCCUR DUE TO THE CONTRACTOR'S OPERATIONS, HE SHALL REPAIR THE UTILITY AT HIS EXPENSE. THE CONTRACTOR MAY ELECT TO REMOVE AND RECONSTRUCT PORTIONS OF THE EXISTING UTILITY AT HIS OWN EXPENSE IF HE SO DESIRES.

SHOULD AN UNLOCATED OR AN EXTREME VARIANCE IN LOCATION OF A UTILITY BE ENCOUNTERED DURING EXCAVATION, CONSULT THE ENGINEER IMMEDIATELY FOR DIRECTIONS.

DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED AND USED BY THE ENGINEER OR OTHERS, EXCEPT WHEN PERMITTED IN WRITING BY THE ENGINEER AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICING HAS BEEN PROVIDED. COOPERATION WITH THE ENGINEER IN KEEPING RESPECTIVE SERVICES AND FACILITIES IN OPERATION IS ESSENTIAL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM HIS WORK IN SUCH A MANNER AS NOT TO DAMAGE OR DESTROY ANY EXISTING UTILITY. IF ANY SUCH DAMAGE DOES OCCUR DUE

UTILITY COORDINATION

THE FOLLOWING IS A LIST OF THE KNOWN EXISTING UTILITIES IN THE PROJECT AREA ALONG WITH THE RESPECTIVE OWNERS. THE LIST IS INCLUDED FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITY OWNERS IN THE PROJECT AREA PRIOR TO START OF CONSTRUCTION WHETHER LISTED ON THIS PAGE OR NOT.

ELECTRIC
DUKE ENERGY
2010 DANA AVENUE
CINCINNATI, OH 45207
ATTN: TODD JONES
(513) 287-4749

GAS
DUKE ENERGY
139 EAST FOURTH ST
ROOM 460 ANNEX
CINCINNATI, OH 45202
ATTN: RICHARD HACKER
(513) 287-1232

TELEPHONE
CINCINNATI BELL
221 EAST FOURTH ST, 121-900
PO BOX 2301
CINCINNATI, OH 45201
ATTN: MARK CONNER
(513) 397-7165

SANITARY SEWER & WATER
BUTLER COUNTY WATER & SEWER
130 HIGH STREET
HAMILTON, OH 45011
ATTN: STEVE THOMPSON
(513) 785-5288

CABLE
SPECTRUM
11252 CORNELL PARK DRIVE
CINCINNATI, OH 45242
ATTN: JIM O'REILLY
(513) 489-5000

UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLAN ARE AS OBTAINED FROM THE OWNERS OF THE UTILITIES AS REQUIRED BY SECTION 153.64 OF THE OHIO REVISED CODE.

THE UNDERGROUND UTILITIES SHOWN ON THE PLAN HAVE BEEN LOCATED BY DILIGENT FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT; BUT BUTLER COUNTY OR MCGILL SMITH PUNSHON, INC. DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS.

UTILITIES NOTIFICATION

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA WHICH MAY INVOLVE UNDERGROUND UTILITY FACILITIES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER, THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY FACILITY SHOWN ON THE PLAN.

THE OWNER OF THE UNDERGROUND FACILITY SHALL, WITHIN 48 HOURS (EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS), MARK THE LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE AND THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION.

RESTORATION

THE CONTRACTOR SHALL PROVIDE FOR PROTECTION OF THE FOLLOWING: EXISTING STREETS, DRIVEWAYS, SIDEWALKS, CURBS, GUTTERS, RE-SEEDING/RE-SODDING, REMOVAL OF TREES, RESTORATION OF AGRICULTURAL LAND, THE MAINTENANCE OF THE CONSTRUCTION AREA DURING PROGRESS OF THE WORK AND THE COMPLETE RESTORATION OF THE CONSTRUCTION AREA AFTER THE BACKFILLING IS COMPLETED, AND HE SHALL PROCEED TO RESTORE TO ITS ORIGINAL CONDITION ALL STREETS, DRIVEWAYS, SIDEWALKS, CURBS, GUTTERS, STRUCTURES, AND ALL AREAS THAT WERE DAMAGED, DISTURBED, OR OCCUPIED BY THE CONTRACTOR IN CONNECTION WITH ANY PHASE OF THE WORK.

PAVEMENTS, TREES, SHRUBS, FENCES, POLES, OR OTHER PROPERTY AND SURFACE STRUCTURES WHICH HAVE BEEN DAMAGED, REMOVED, OR DISTURBED BY THE CONTRACTOR, WHETHER DELIBERATELY OR THROUGH FAILURE TO CARRY OUT THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, STATE LAWS, MUNICIPAL ORDINANCES, THE SPECIFIC DIRECTION OF THE ENGINEER, OR THROUGH FAILURE TO EMPLOY USUAL AND REASONABLE SAFEGUARDS SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

ALL TEMPORARY SIGNS, SPRINKLER SYSTEMS, LANDSCAPING, ORNAMENTAL FENCING, ETC., LOCATED WITHIN THE PROJECT LIMITS MUST BE REPLACED UPON COMPLETION OF THE CONSTRUCTION.

INSPECTIONS

THE PERMITTEE SHALL BE RESPONSIBLE FOR PAYING ANY OVERTIME REQUIRED OF THE BUTLER COUNTY ENGINEER'S OFFICE INSPECTORS ON THIS PROJECT.

CONSTRUCTION LAYOUT STAKES

THE CONTRACTOR IS TO PROVIDE ALL LABOR AND MATERIALS REQUIRED TO ADEQUATELY ENSURE THE PROPER ELEVATIONS AND LOCATIONS OF ALL ITEMS INCLUDED IN THE WORK. THIS IS TO BE PAID FOR UNDER ITEM 623, LUMP SUM, CONSTRUCTION LAYOUT STAKES. PRIOR TO CONSTRUCTION, BENCHMARKS SHALL BE RE-ESTABLISHED OUTSIDE OF THE CONSTRUCTION LIMITS. THIS WORK SHALL BE PERFORMED UNDER THE SUPERVISION OF A PROFESSIONAL SURVEYOR REGISTERED IN THE STATE OF OHIO.

CROSSING AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEM.

JOINT SEAL

WHERE PROPOSED PAVEMENT IS TO BUTT THE EXISTING PAVEMENT, THE EXISTING PAVEMENT IS TO BE SAWCUT OR MILLED AND THE JOINT IS TO BE SEALED WITH A FOUR INCH WIDE STRIP OF ASPHALT CEMENT 702.01 APPLIED TO THE SURFACE OF THE JOINT. PAYMENT SHALL INCLUDE ALL NECESSARY LABOR, EQUIPMENT AND MATERIALS FOR THE WORK NOTED ABOVE AND SHALL BE INCLUDED WITH THE CONTRACT UNIT PRICE BID FOR ITEM 407, TACK COAT, AS PER PLAN

PAVEMENT PLANING (BUTT JOINTS)

ANY PAVEMENT PLANING SHALL BE IN ACCORDANCE WITH CONSTRUCTION & MATERIAL SPECIFICATIONS 254 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 448, ASPHALT CONCRETE SURFACE COURSE, TYPE 1H.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE COUNTY, REPRESENTATIVES OF THE COUNTY, CONSTRUCTION MANAGER AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE COUNTY.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE COUNTY.

ALL EXISTING SEWERS TO REMAIN AND INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEMS.

ITEM 614 – MAINTAINING TRAFFIC

ACCESS TO ADJACENT PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.

LANE CLOSURES SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING MT-97.10 AND MT-97.11. A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED DURING CONSTRUCTION ACTIVITY. LANE CLOSURES WILL NOT BE PERMITTED BETWEEN THE HOURS OF 6:00 AM AND 9:00 AM AND BETWEEN THE HOURS OF 3:00 PM AND 6:00 PM, MONDAY THROUGH FRIDAY

TWO LANE TRAFFIC SHALL BE MAINTAINED DURING PERIODS OF SUSPENSION OF WORK AND OUTSIDE OF NORMAL WORKING HOURS.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS, SIGN SUPPORTS, AND BARRICADES AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL ADVANCE TRAFFIC SIGNING, INCLUDING CONSTRUCTION WORK ZONE APPROACH SIGNING AND BARRICADES REQUIRED FOR THIS PROJECT SHALL BE FURNISHED, ERECTED, MAINTAINED AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CONSTRUCTION AND MATERIAL SPECIFICATIONS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

ITEM 832 STORM WATER POLLUTION PREVENTION PLAN

PREPARE THE SWPPP AS OUTLINED IN THIS SPECIFICATION. ADDITIONAL GUIDANCE CAN BE ALL ACTIVITY IDENTIFIED BY THE SWPPP THAT IS NOT SPECIFICALLY IDENTIFIED AS A PAY ITEM ELSEWHERE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE STORM WATER POLLUTION PREVENTION PLAN.

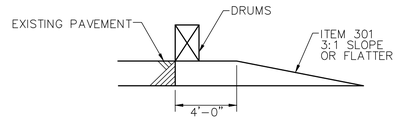
WITNESSES AND BENCHMARKS

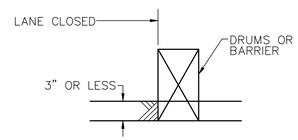
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY PRIOR TO BEGINNING CONSTRUCTION TO RESET CENTERLINE CONTROL WITNESSES AND BENCHMARKS.

ITEM NO.	DESCRIPTION	QTY	UNIT
	ROADWAY		
201	CLEARING & GRUBBING	1	LS
202	PAVEMENT REMOVED	83	SQ YD
203	EXCAVATION	3,000	CU SYD
203	EMBANKMENT	3,000	CU YD
204	SUBGRADE COMPACTION	974	SQ YD
614	MAINTAINING TRAFFIC	1	LS
624	MOBILIZATION	1	LS
	EROSION CONTROL		
207	FILTER FABRIC FENCE	100	LF
659	SEEDING AND MULCHING	2,000	SQ YD
659	COMMERCIAL FERTILIZER	0.1	TON
659	WATER	6	M. GAL
	PAVEMENT		
252	FULL DEPTH PAVEMENT SAWING	745	LF
301	ASPHALT CONCRETE BASE	156	CU YD
304	AGGREGATE BASE	162	CU YD
407	TACK COAT	259	GAL.
407	TACK COAT FOR INTERMEDIATE COURSE	48	GAL.
408	PRIME COAT	390	GAL.
448	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG. 64-22	120	CU YD
448	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG. 64-22	40	CU YD
	TRAFFIC CONTROL		
630	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	1	EACH
630	REMOVAL OF POST SUPPORT AND REERECTION	1	EACH
630	GROUND MOUNTED SUPPORT, NO. 3 POST	12	LF
630	SIGN, FLAT SHEET	7	SQ FT
642	CENTER LINE	0.23	MILE
642	CHANNELIZING LINE	75	LF
642	LANE ARROW	3	EACH
642	TRANSVERSE LINE	290	LF
642	EDGE LINE	0.27	MILE
642	SOLID YELLOW ISLAND	1	EACH
	MISCELLANEOUS		
614	MAINTAINING TRAFFIC	1	LUMP
623	CONSTRUCTION LAYOUT STAKES	1	LUMP
633	MOBILIZATION	1	LUMP

DROP-OFF IN WORK ZONES

DROP-OFFS ADJACENT TO TRAVELED LANES AFTER EXCAVATION BUT BEFORE PLACEMENT OF ITEM 304.





GENERAL NOTES

1. IT IS INTENDED THAT THIS DETAIL BE USED FOR TREATMENT OF DROP-OFFS THAT DEVELOP DURING CONSTRUCTION OPERATIONS AND THAT ARE NOT OTHERWISE PROVIDED FOR IN THE CONSTRUCTION PLANS.
2. THE NEED FOR CERTAIN ADVISORY SIGNING IS REQUIRED TO ADVISE OR WARN MOTORISTS, AND ALL REQUIREMENTS OF THE OMUTCD MUST BE FULFILLED.
3. IN URBAN OR OTHER HEAVILY DEVELOPED AREAS WHERE PEDESTRIANS AND/OR BICYCLISTS MAY BE PRESENT IN SIGNIFICANT NUMBERS, ADDITIONAL SIGNING AND PROTECTIVE MEASURES OTHER THAT THOSE SHOWN HEREON MAY BE REQUIRED.
4. WHEN DRUMS ARE SPECIFIED FOR A DROP-OFF CONDITION, A MINIMUM NUMBER OF FOUR (4) DRUMS SHALL BE USED. SPACING SHALL BE AS INDICATED IN THE PLANS OR AS SPECIFIED IN THE OMUTCD.

STATE OF OHIO
JAMES H. WATSON
49886
REGISTERED PROFESSIONAL ENGINEER

WESTVIEW MEADOWS
PHASES 1 & 2

SECTION 9, TOWN 3, RANGE 2
WEST CHESTER TOWNSHIP
BUTLER COUNTY, OHIO

WIDENING NOTES & DETAILS

OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

Revision	By	Date
BCEO COMMENTS	JW	10/01/18

Date	08/08/18
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Proj. Mgr.	JW
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