ROCK & ROLL

CITY OF MASSILLON
COUNTY OF STARK
STATE OF OHIO

GENERAL WATERLINE INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE LINE AND GRADE STAKES AT 100' INTERVALS FOR WATER MAIN AND FOR EACH FITTING AND APPURTENANCE. A COPY OF CUT SHEET SHALL BE PROVIDED TO FIELD INSPECTOR PRIOR TO INSTALLATION.
2. WATER WORK SHALL NOT BEGIN UNTIL AREAS OF WATERLINE CONSTRUCTION ARE ROUGH GRADED (WITHIN 1FT. OF FINISHED GRADE" AND FILL AREAS ARE COMPLETED AND COMPACTED.)
4. A MINIMUM OF 5 FEET HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN UTILITY CONDUIT CROSSOVERS AND WATERLINE APPURTENANCES, I.E. HYDRANTS, VALVES, TEES, ETC.
6. WATERLINE MATERIAL AND INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH AQUA OHIO SPECIFICATIONS. CLASS 52 DUCTILE IRON WATER MAIN POLYWRAPPED, FITTINGS CLASS 53 CEMENT LINED POLYWRAPPED AND HDPE TUBING WITH COMPRESSION FITTINGS FOR DOMESTIC SERVICES OR 2" HDPE SDR 9 POLYETHYLENE 3408 PIPE AROUND CUL-DE-SAC. IF POLYETHYLENE IS USED, A 12 GAUGE WIRE AND METALLIC CAUTION TAPE MUST BE USED.
7. ALL PIPE AND APPURTENANCES INSTALLED ON A DEPRESSURIZED WATER MAIN ARE TO BE WIPED CLEAN AND ALL INTERIOR SURFACES SATURATED WITH A MINIMUM 1% CHLORINE SOLUTION.
8. ALL MECHANICAL JOINTS ARE TO BE RESTRAINED USING MEGALUG OR "FORD" EQUIVALENT. FIRE LINE RISERS TO INCLUDE (2) 5/8" ALL THREAD RODS EXTENDING FROM LOWER BEND TO RISER FLANGE.
9. A RESTRAINT GASKET (FIELD-LOK OR APPROVED EQUAL) SHALL BE UTILIZED ON PUSH-ON JOINTS AS REQUIRED BY AQUA OHIO STANDARDS.
10. ALL DUCTILE IRON PIPE AND FITTINGS TO BE POLYWRAPPED AND TAPED AS PER DUCTILE IRON PIPE RESEARCH ASSOCIATION RECOMMENDATIONS.
11. DUCTILE IRON IN CASING SHALL BE CLASS 52, POLYWRAPPED AND ALL PUSH-ON JOINTS SHALL BE EQUIPPED WITH RESTRAINT GASKETS (FIELD-LOK OR APPROVED EQUAL) AND STAINLESS STEEL CASING SPACERS ARE REQUIRED IN STARK COUNTY.
12. ALL THRUST BLOCKING WILL BE SOLID CONCRETE BLOCKS WITH OAK WEDGES OR POURED CONCRETE, PER AQUA STANDARDS DRAWING.
13. ALL MAIN LINE VALVES ARE OPEN RIGHT AND ALL MAIN LINE VALVES ARE TO BE PLACED ON A MINIMUM OF ONE 4" SOLID CONCRETE BLOCK. ALL VALVES TO HAVE #57 LIMESTONE UP TO OPERATING NUT OF VALVE.
14. ALL FIRE HYDRANTS TO HAVE A MINIMUM OF ½ CUBIC YARD OF #57 LIMESTONE 6" ABOVE DRAIN HOLE OR EQUIVALENT SIZE BANK RUN GRAVEL. PLASTIC SHALL BE PLACED OVER STONE PRIOR TO BACKFILL. ALL HYDRANTS TO BE TURNED WITH 4-1/2" NOZZLE FACING STREET AND MEETING FIRE DEPARTMENT SPECIFICATIONS.
15. ALL VALVE BOX COVERS ARE TO BE PAINTED BLUE. CONTRACTOR ARE RESPONSIBLE FOR ADJUSTMENTS TO VALVE BOXES, CURB BOXES, AND FIRE HYDRANTS WITH RESPECT TO FINAL GRADING. ALL VALVES BOXES IN NEW OR PROPOSED PAVEMENT SHALL BE SCREW TYPE.
16. WATERLINE WILL NOT BE ACCEPTED OR PLACED IN SERVICE UNTIL CONTRACTOR CONDUCTS AND OBTAINS SATISFACTORY RESULTS OF PRESSURE AND CHLORINE TESTS. BACTERIA TEST WILL THEN BE CONDUCTED BY AQUA OHIO. ALL VALVES, HYDRANTS, AND CURB BOXES TO BE TO PROPER GRADE PRIOR TO ACCEPTANCE.
17. THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO ENSURE SAFETY OF THE PUBLIC ON AND SURROUNDING THE SITE DURING CONSTRUCTION.
18. THE LOCATION OF EXISTING UTILITIES AND STRUCTURES, BOTH ABOVE GROUND AND UNDERGROUND ARE SHOWN ON THE PLANS FROM DATA AVAILABLE AT THE TIME OF THE SURVEY AND ARE NOT NECESSARILY COMPLETE AND/OR CORRECT. THE EXACT LOCATION AND PROTECTION OF EXISTING UTILITIES AND STRUCTURES IS THE RESPONSIBILITY OF THE CONTRACTOR. DURING CONSTRUCTION, THE CONTRACTOR SHALL USE DUE DILIGENCE IN PROTECTING FROM DAMAGE ALL EXISTING UTILITIES AND STRUCTURES WHETHER SHOWN ON PLANS OR NOT. IF DAMAGE IS CAUSED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR RESTORATION OF SAME IN ACCORDANCE WITH THE DIRECTIONS OF THE OWNER. THE CONTRACTOR SHALL CONTACT OHIO UTILITIES PROTECTION SERVICE, AT 1-800-362-2764, TWO WORKING DAYS PRIOR TO START OF CONSTRUCTION AS REQUIRED BY OHIO LAW.
19. THE WATERLINE SHALL BE INSTALLED AT 4' -0" OF COVER FROM PROPOSED GRADE TO TOP OF THE WATERLINE. THIS 4' SHALL BE MAINTAINED UNLESS OTHERWISE NOTED.
20. A MINIMUM 10' -0" HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN ALL STORM AND SANITARY SEWERS AND WATERLINE, OUT TO OUT.
21. A MINIMUM 18" VERTICAL SEPARATION MUST BE MAINTAINED BETWEEN ALL STORM AND SANITARY SEWERS AND WATERLINE, OUT TO OUT.
26. THE CONTRACTOR MAY DEFLECT THE WATERLINE AS PER MANUFACTURER'S SPECS WITH PERMISSION FROM AQUA AS NEEDED TO MAINTAIN MINIMUM HORIZONTAL AND VERTICAL SEPARATION DISTANCES.
30. WATER SERVICE LINE CONNECTIONS ARE NOT TO BE INSTALLED UNTIL PRESSURE TEST AND BACTERIA TESTS HAVE BEEN APPROVED.
31. THE NORMAL WORKING PRESSURE IN WATER LINES SHALL NOT BE LESS THAN 35 PSI.

NOTE: THIS LIST DOES NOT SUPERCEDE CONTRACT SPECIFICATIONS AND IS INTENDED ONLY AS A GUIDELINE TO INSTALLING WATERLINES WITHIN THE AQUA OHIO SERVICE AREA. ANY QUESTIONS SPECIFIC TO YOUR PROJECT, SHOULD BE DISCUSSED WITH THE ONSITE INSPECTOR.

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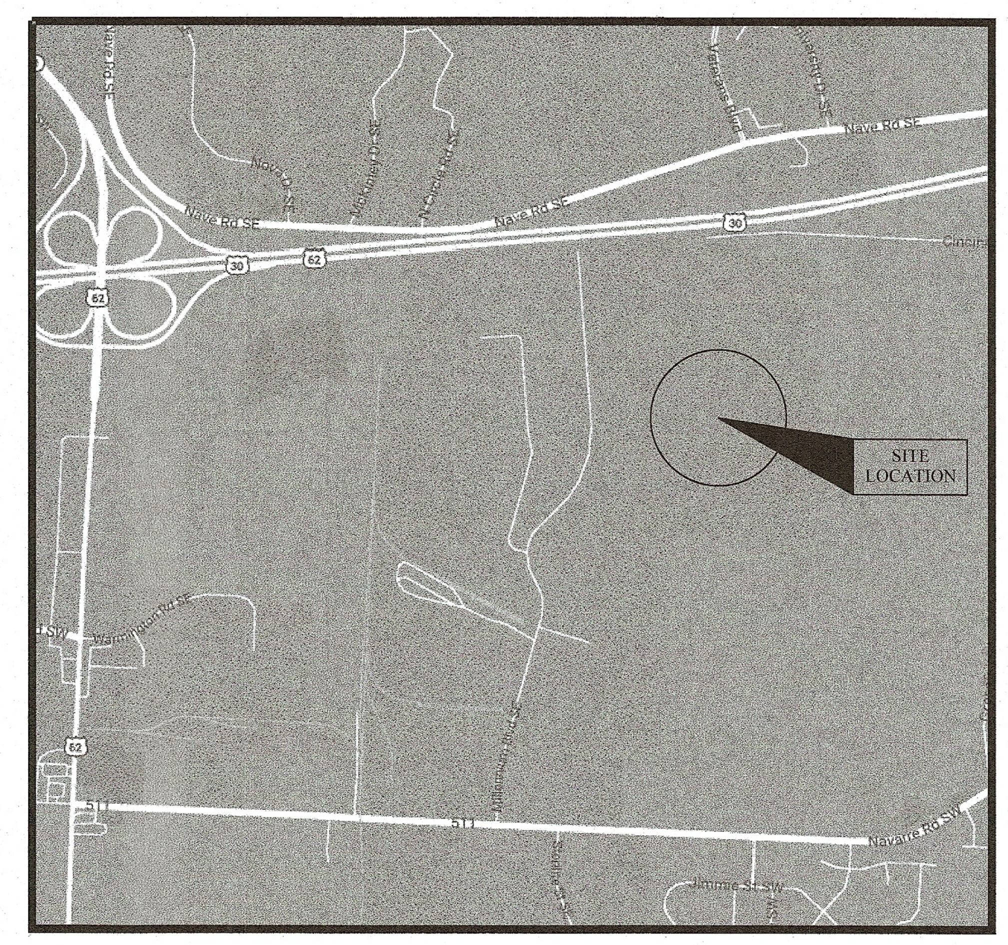

VICINITY MAP
NO SCALE

N

WATERLINE
MATERIAL SPECIFICATIONS

DUCTILE IRON PIPE. Type required: push-on joints, cement lined, pressure class 52 for 4 inch through 16 inch, manufacturing standards AWWA C150 and C151. Polyethylene encasement shall be installed on all ductile pipe and fittings.

DUCTILE IRON FITTINGS. (tees, crosses, bends, reducers, sleeves, couplings and plugs.) Type required: mechanical joint, tees, crosses, bends and reducers are to be cement lined; working pressure rating 250 psi, manufacturing standards ANSI A21.53, ANSI A21.4 and ANSI A21.10. Compact style is acceptable. Retainer glands shall be installed wherever there is a possibility of joint separation.

FIRE HYDRANTS. Type required: post type, breakable flange design for traffic collisions, 5 1/4" diameter main valve, one 4 ½" pumper and two 2 ½" hose nozzles, 6" MJ inlet, main valve to open left, direction of opening to be indicated with arrow cast on hydrant, to be designed for 5 foot trench, National Standard threads on nozzles, O-ring packing preferred, type 304 stainless steel bolts and nuts, operating nut and nut on caps: 1 ½" pentagon, color yellow paint on body trimmed with red paint on bonnet and caps, AWWA standard C502, Mueller Centurion A423, US Pipe M-94 or Clow Medallion. Hydrant shall be outfitted with 5" Storz hydrant connection, meeting fire department specifications.

TAPPING VALVES. Type required: Resilient seat, iron body, stainless steel bonnet bolts and nuts, mechanical joint accessories, non-rising stem, for underground service, O-ring packing preferred, OPEN RIGHT (clockwise) 2 inch square operating nut, manufacturing standards and pressure ratings AWWA specification C500.

4" THROUGH 12" GATE VALVES. Type required: resilient seat, iron body, stainless steel bonnet bolts and nuts, mechanical joint accessories, non-rising stem, for underground service, O-ring packing preferred, **OPEN RIGHT** (clockwise), 2 inch square operating nut, manufacturing standards and pressure ratings AWWA C515, Mueller A-2361 or equal.

VALVE BOXES. Type required: two piece, cast iron, screw type for adjustable height, height range to be approximately 36 to 60 inches. They are to include a well fitting cast iron lid, the word "WATER" to be cast on lid.

2" WATER MAIN. 2" water main shall be soft drawn type "K" copper tubing or high density polyethylene plastic (HDPE), copper tube size, as called out on the plan. If HDPE is used, it shall be 200 psi, SDR 9 with marking tape and a 12 gage copper tracer wire laid in the trench. Brass compression fittings shall be used. Stainless steel stiffeners are necessary at each joint.

POLYETHYLENE ENCASEMENT. Type required: Eight mil thick polyethylene tube manufactured in accordance with ANSI/AWWA C105/A21.5. Polyethylene adhesive tape, 1 ½" wide, is to seal joints.

BLOW OFF ASSEMBLIES. Type required: Kupferle Foundry TF500 or approved equal. Install in valve box. Install 2" curb stop with curb box ahead of each blow off.

Revised 02/20/17

APPROVED BY THE MASSILLON CITY ENGINEER THIS 20 DAY OF December, 2018

JASON M. POPIEL, PE, CPESC (OHM ADVISORS) - CITY ENGINEER

APPROVED BY STARK SOIL & WATER CONSERVATION DISTRICT BY LETTER DATED______ DAY OF____________, 20__.

ONLY APPROVED, SIGNED PLANS BY THE CITY ENGINEER ARE TO BE USED FOR CONSTRUCTION

GENERAL NOTES

1. THE CONSTRUCTION OF THIS PROJECT SHALL BE GOVERNED BY THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION (O.D.O.T.) CONSTRUCTION AND MATERIAL SPECIFICATIONS, CURRENT EDITION, THE O.D.O.T. STANDARD CONSTRUCTION DRAWINGS, AND THE CITY OF MASSILLON SPECIFICATIONS AND STANDARD CONSTRUCTION DRAWINGS.
2. ALL DISTURBED GREEN AREAS SHALL BE TOP DRESSED AND RE-SEEDED.
3. CALL OHIO UTILITIES PROTECTION SERVICE BEFORE DIGGING 811.
4. ALL STORM SEWERS SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE), SMOOTH LINED, PER O.D.O.T. ITEM 707.33 UNLESS OTHERWISE NOTED ON PLANS.
5. ELECTRICAL CONDUIT SHALL BE AS REQUIRED BY THE UTILITY OWNER.
6. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS IN THE ENGINEERING AND BUILDING DEPARTMENTS.
7. THE CONTRACTOR IS RESPONSIBLE FOR ANY ADDITIONAL SILTATION CONTROL MEASURES NECESSARY TO PREVENT SILT FROM LEAVING THE SITE.
8. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF DEMOLITION MATERIAL AND DEBRIS.
9. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION, OR BETTER.
10. TEMPORARY SOIL EROSION AND SEDIMENT CONTROL WILL BE REQUIRED IN ACCORDANCE WITH THE CITY OF MASSILLON ENGINEER'S OFFICE.
11. A PRE CONSTRUCTION MEETING MUST BE HELD AT THE CITY OF MASSILLON ENGINEER'S OFFICE PRIOR TO STARTING ANY CONSTRUCTION ACTIVITY. IN ADDITION, THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE TO THE CITY OF MASSILLON BEGINNING WORK TO ARRANGE FOR INSPECTION.
12. A 18 INCH. MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED FROM THE OUTSIDE EDGE OF ALL WATER MAIN PIPE TO THE OUTSIDE EDGE OF ALL STORM SEWER PIPE.
13. A 10 FOOT MINIMUM HORIZONTAL CLEARANCE SHALL BE MAINTAINED FROM THE OUTSIDE EDGE OF ALL WATER MAIN PIPE TO THE OUTSIDE EDGE OF ALL STORM SEWER PIPE.
14. AN 18 INCH MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED FROM THE OUTSIDE EDGE OF ALL WATER MAIN PIPE TO THE OUTSIDE EDGE OF ALL SANITARY SEWER.

SANITARY SEWER

1. ALL SANITARY SEWERS AND APPURTENANCES SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF MASSILLON STANDARDS, CONSTRUCTION DRAWINGS & MATERIAL SPECIFICATIONS.
2. ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED. 8. ALL SANITARY SEWER LATERALS SHALL BE LAID AT NO LESS THAN 1% GRADE.
3. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL DAMAGE TO THE EXISTING SEWERAGE SYSTEM RESULTING FROM NON-CONFORMANCE WITH THE CITY OF MASSILLON STANDARDS, CONSTRUCTION DRAWINGS & MATERIAL SPECIFICATIONS OR GENERAL NEGLIGENCE.
4. WHERE INLET AND OUTLET PIPES CONNECT TO MANHOLES A FLEXIBLE WATERTIGHT JOINT AS APPROVED BY THE CITY OF MASSILLON STANDARDS, CONSTRUCTION DRAWINGS & MATERIAL SPECIFICATIONS IS REQUIRED. FLEXIBLE GASKETS SHALL CONFORM WITH ASTM C-923.
5. FOR SANITARY SEWER DEPTHS LESS THAN 12 FEET, MATERIALS SHALL CONSIST OF SDR-35 PVC MEETING ASTM D-3034 WITH JOINTS CONFORMING TO ASTM ASTM D-3212, AND BEDDING CONFORMING TO ASTM D-2321, CLASS II.
6. THE CONTRACTOR MUST ALERT THE UTILITIES PROTECTION SERVICES AT 811 AT LEAST 48 HOURS BEFORE ANY EXCAVATING HAS BEGUN.
7. ALL UNDERGROUND LINES ENCOUNTERED BY CONSTRUCTION OF SANITARY SYSTEM ARE TO BE COMPLETELY RESTORED AT THE EXPENSE OF THE CONTRACTOR.
8. SANITARY FORCE MAIN SHALL BE PVC SDR-11 OR HDPE MEETING ASTM F714, ASTM F2620, ASTM F1290, ASTM D2321 AND ASTM F1962 SPECIFICATIONS WITH MINIMUM 4' BURY. PIPE SHALL BE TESTED AT TWICE THE WORKING PRESSURE.

INDEX

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matt@webercivil.com

STATE OF OHIO
MATTHEW L. WEBER
61709
REGISTERED
PROFESSIONAL ENGINEER

Reg. No.: 61709

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OWNER:
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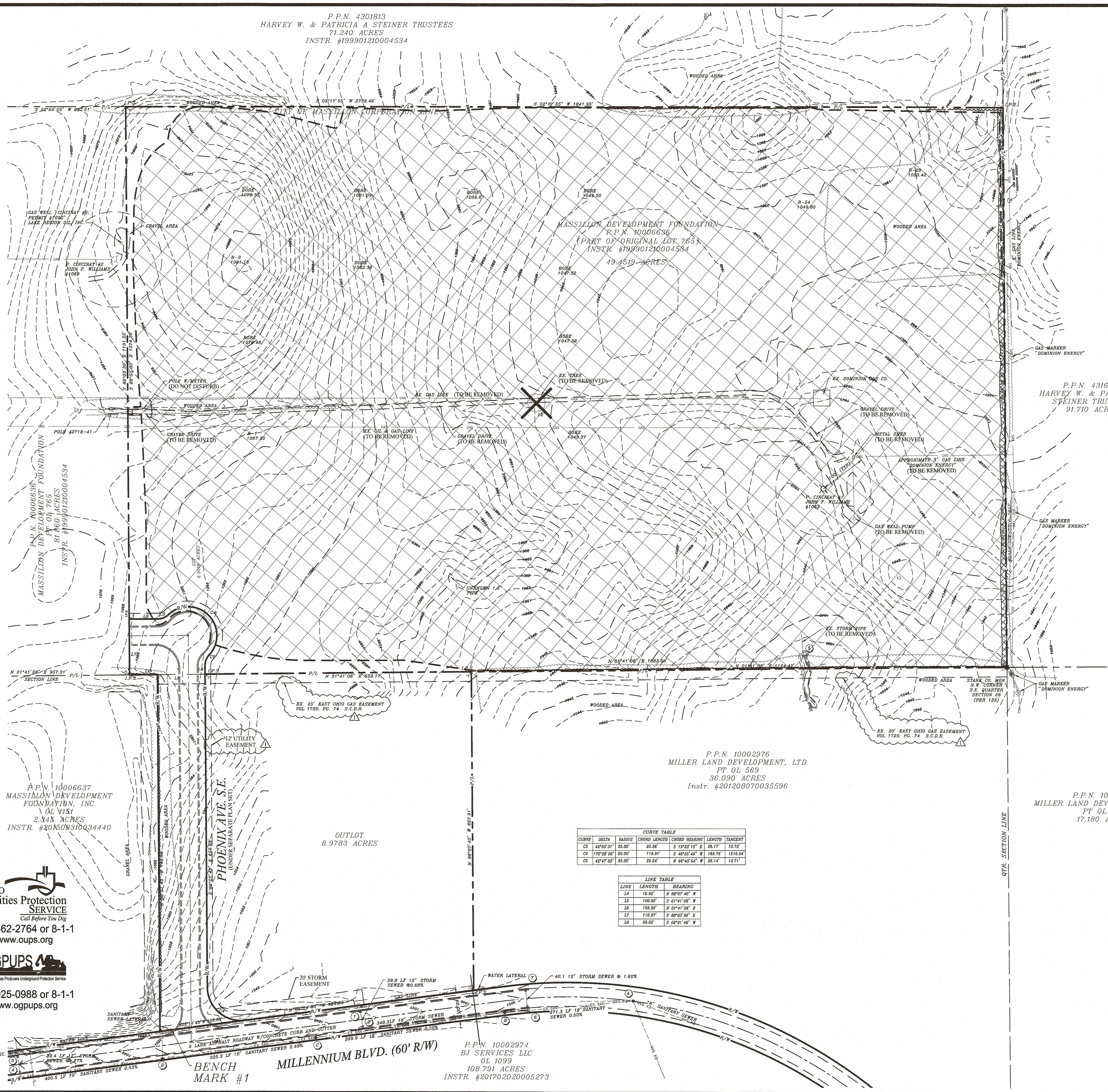
ROCK & ROLL
NEW SITE
2255 PHOENIX AVE. SE, MASSILLON, OHIO

Issue Date
08-29-2018
09-04-2018
09-24-2018
△ 11-05-2018

TITLE SHEET

C100
Project No. 2018-196



CURVE TABLE						
CURVE	DELTA	RADIUS	CHORD LENGTH	CHORD BEARING	LENGTH	TANGENT
C3	42°50'01"	35.00'	25.56'	S 19°23'15" E	26.17'	13.73'
C4	175°28'08"	60.00'	119.91'	S 46°55'49" W	183.75'	1516.54'
C5	42°47'32"	35.00'	25.54'	N 66°43'54" W	26.14'	13.71'

LINE TABLE		
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L4	16.92'	N 88°07'40" W
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L7	116.97'	S 88°03'30" E
L8	59.02'	S 02°01'46" W

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SITE BENCH MARK

BENCH MARK #1
TOP NUT ON HYDRANT

ELEVATION = 1053.73

EX. STORM STRUCTURE SCHEDULE

1. CURB INLET BASIN
GUTTER RIM=1047.63
12" ADS INV. W=1042.23
2. CURB INLET BASIN
GUTTER RIM=1047.58
12" ADS INV. E=1041.96
15" ADS INV. S=1041.78
3. CURB INLET BASIN
GUTTER RIM=1044.39
10" PVC INV. E=1041.14
12" ADS INV. W=1040.39
4. CURB INLET BASIN
GUTTER RIM=1044.34
12" ADS INV. E=1039.89
15" ADS INV. N=1039.74
5. 12" VCP INV. E=1035.28
(TO BE REMOVED)
6. CURB INLET BASIN
GUTTER RIM=1044.10
15" ADS INV. N=1038.25
18" ADS INV. S=1038.10
12" ADS INV. E=1039.40
7. CURB INLET BASIN
GUTTER RIM=1044.14
12" ADS INV. W=1040.04

EX. SANITARY STRUCTURE SCHEDULE

A. SANITARY MANHOLE
RIM=1042.38
18" PVC INV. N&SW=1027.31
B. SANITARY MANHOLE
RIM=1045.17
18" PVC INV. N&S=1028.67
C. SANITARY MANHOLE
RIM=1049.20
18" PVC INV. N&S=1030.67
D. SANITARY MANHOLE
RIM=1050.22
18" PVC INV. S=1032.27
10" PVC INV. N&E=1032.27
E. SANITARY MANHOLE
RIM=1043.10
10" PVC INV. S&E=1034.38

LEGEND

47.96 AC. — AREA OF DEMOLITION & CLEARING

TREE TO BE REMOVED

ITALICS TEXT REPRESENTS EXISTING CONDITION

NON-ITALICS TEXT REPRESENTS PROPOSED CONDITION

LEGEND

SANITARY MANHOLE
STORM MANHOLE
COMBINATION MANHOLE
CATCH BASIN
CLEANOUT
MONITOR WELL
HYDRANT
WATER LINE VALVE
WATER SERVICE VALVE
WATER MANHOLE
WATER METER
UTILITY POLE
UTILITY POLE WITH TRANSFORMER
LIGHT POLE
STREET LIGHT ASSEMBLY
GUY ANCHOR
BOLLARD
CHAIN LINK FENCE
WOOD FENCE
GUARDRAIL
FLAG POLE
SPRINKLER CONTROL BOX
GAS LINE MARKER
GAS VALVE
GAS METER
GASOLINE INTAKE VALVE
GASOLINE PUMP
ELECTRIC GROUND TRANSFORMER
CABLE TV PEDESTAL
TELEPHONE MANHOLE
TRAFFIC MANHOLE
ELECTRIC MANHOLE
ELECTRIC METER
PULL BOX
TELEPHONE PEDESTAL
SIGN
DECIDUOUS TREE
CONIFEROUS TREE
MAILBOX
NEWSPAPER BOX
DENOTES 5/8" IRON PIN SET WITH "DEMPSEY P.S. 6914" CAP (UNLESS OTHERWISE NOTED)
MAG NAIL SET

UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

Scale: 1" = 100'

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ROCK & ROLL
NEW SITE
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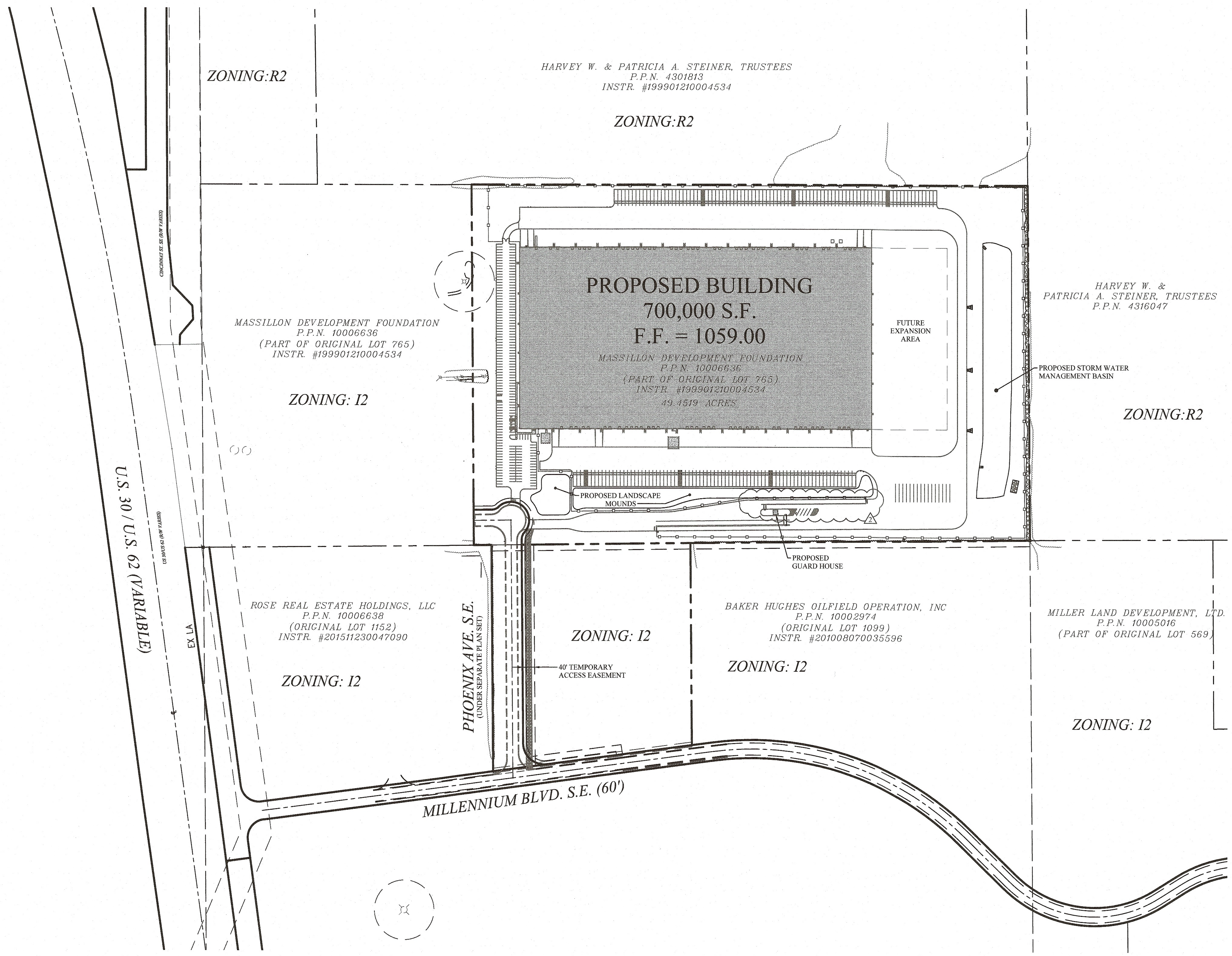
DEMOLITION PLAN

C101
Project No. 2018-196



LEGEND

ITALICS TEXT REPRESENTS EXISTING CONDITION

NON-ITALICS TEXT REPRESENTS PROPOSED CONDITION

Scale: 1" = 200'

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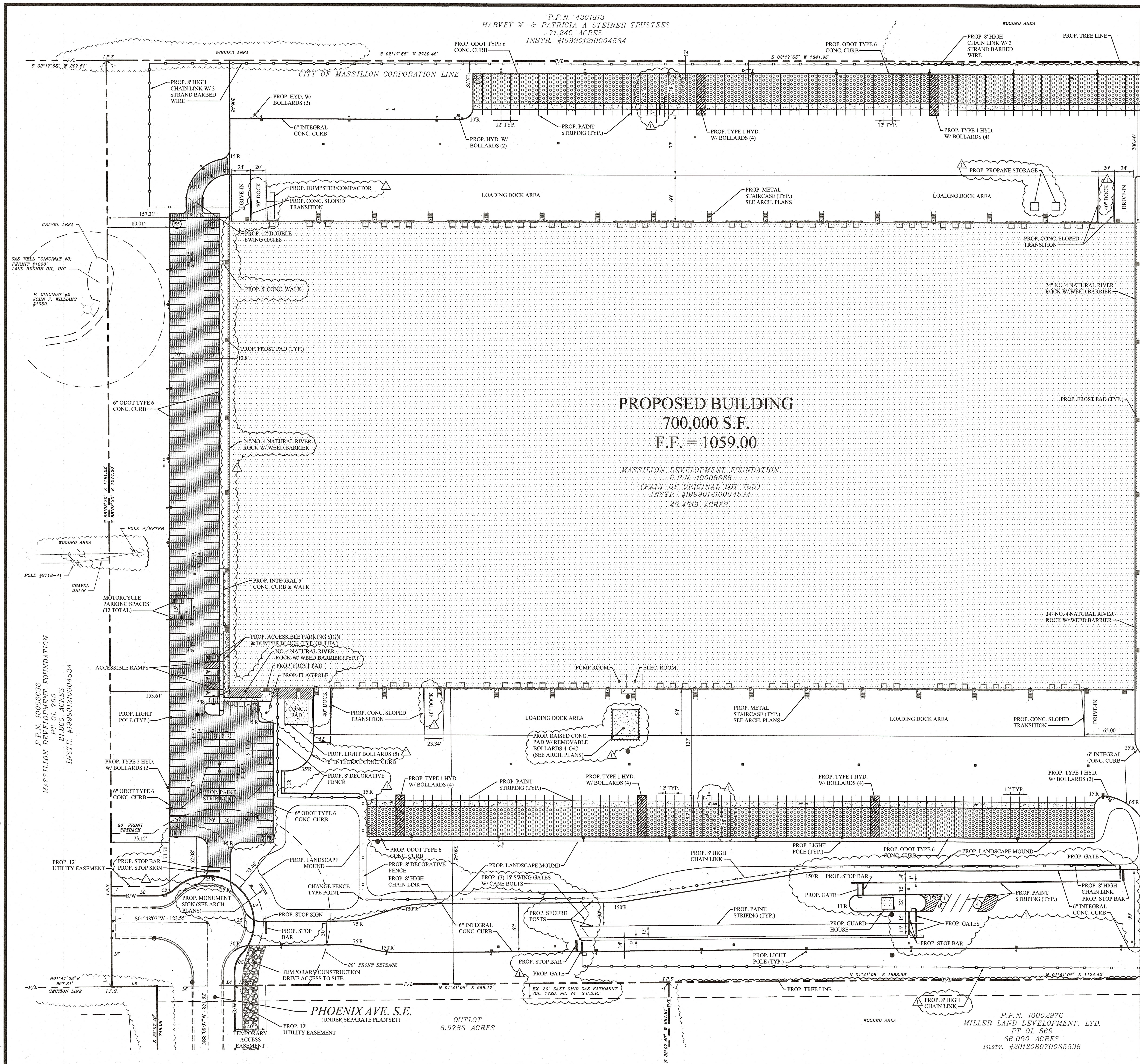
OVERALL SITE PLAN

C102

Project No. 2018-196



SITE BENCH MARK

BENCH MARK #1
TOP NUT ON HYDRANT
(SEE SHEET C101)

ELEVATION = 1053.73

SITE DATA

USE DISTRICT	= MAS_I2 (GENERAL INDUSTRIAL DISTRICT)
SITE AREA	= 49.4519 AC.
PROP. BUILDING AREA	= 700,000 S.F. (FOOTPRINT)

BUILDING SETBACKS:

FRONT YARD	= 80'
SIDE YARD	= 0'
REAR YARD	= 0'

NUMBER OF AUTO PARKING SPACES:

REGULAR PARKING SPACES	= 202
HANDICAP PARKING SPACES	= 5
TOTAL PARKING SPACES	= 207

REQUIRED SPACES
5 SPACES + 1 FOR EVERY 1 1/2 EMPLOYEE IN THE LARGEST WORKING SHIFT.

TRAILER PARKING SPACES	= 176
MOTORCYCLE PARKING	= 12

FLOOD ZONE

FLOOD ZONE "X" PER FLOOD INSURANCE
RATE MAP NUMBER 39151C 0213 E
COMMUNITY PANEL NUMBER 39151 0213 E
EFFECTIVE DATE (NOT PRINTED)

LEGEND

- CONCRETE PAVEMENT (ALL NON-HATCHED PAVED AREAS SHALL BE CONCRETE)
- CONCRETE WALKS/PADS
- HEAVY DUTY ASPHALT
- REGULAR DUTY ASPHALT

ITALICS TEXT REPRESENTS EXISTING CONDITION
NON-ITALICS TEXT REPRESENTS PROPOSED CONDITION

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L7	116.97'	S 88°03'30" E
L8	59.02'	S 02°01'46" W

NOTES:
1. FOR LANDSCAPED AREAS SEE ARCHITECTURAL LANDSCAPE PLAN.
2. ALL PAINT STRIPING SHALL BE AS FOLLOWS:
   CONCRETE AREAS (YELLOW) 4" WIDE
   ASPHALT AREAS (WHITE) 4" WIDE

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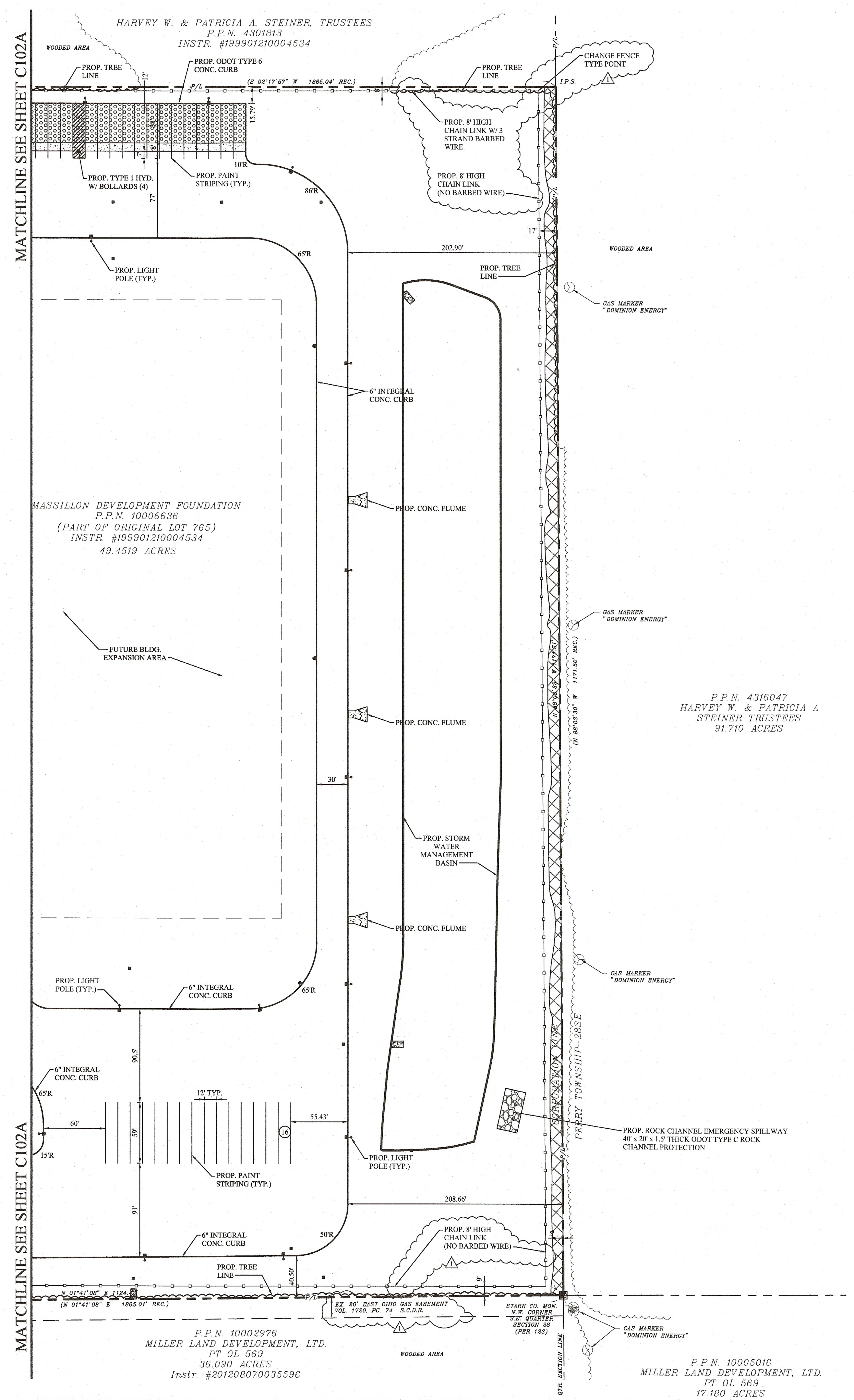
PARTIAL SITE PLAN

C102A
Project No. 2018-196



SITE BENCH MARK
BENCH MARK #1
TOP NUT ON HYDRANT
(SEE SHEET C101)
ELEVATION = 1053.73

LEGEND

- CONCRETE PAVEMENT (ALL NON-HATCHED PAVED AREAS SHALL BE CONCRETE)
- CONCRETE WALKS/PADS
- HEAVY DUTY ASPHALT
- REGULAR DUTY ASPHALT

ITALICS TEXT REPRESENTS EXISTING CONDITION
NON-ITALICS TEXT REPRESENTS PROPOSED CONDITION

FOR LANDSCAPED AREAS SEE ARCHITECTURAL LANDSCAPE PLAN

OHIO Utilities Protection SERVICE
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OGPUPS
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Scale: 1" = 60'

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STATE OF OHIO MATTHEW L. WEBER 61709 REGISTERED PROFESSIONAL ENGINEER
Reg. No.: 61709

CLIENT:
GEIS CONSTRUCTION
10020 AURORA-HUDSON RD.
STREETSBORO, OHIO
JEN DOTSON
PHONE: (216) 218-3507

OWNER:
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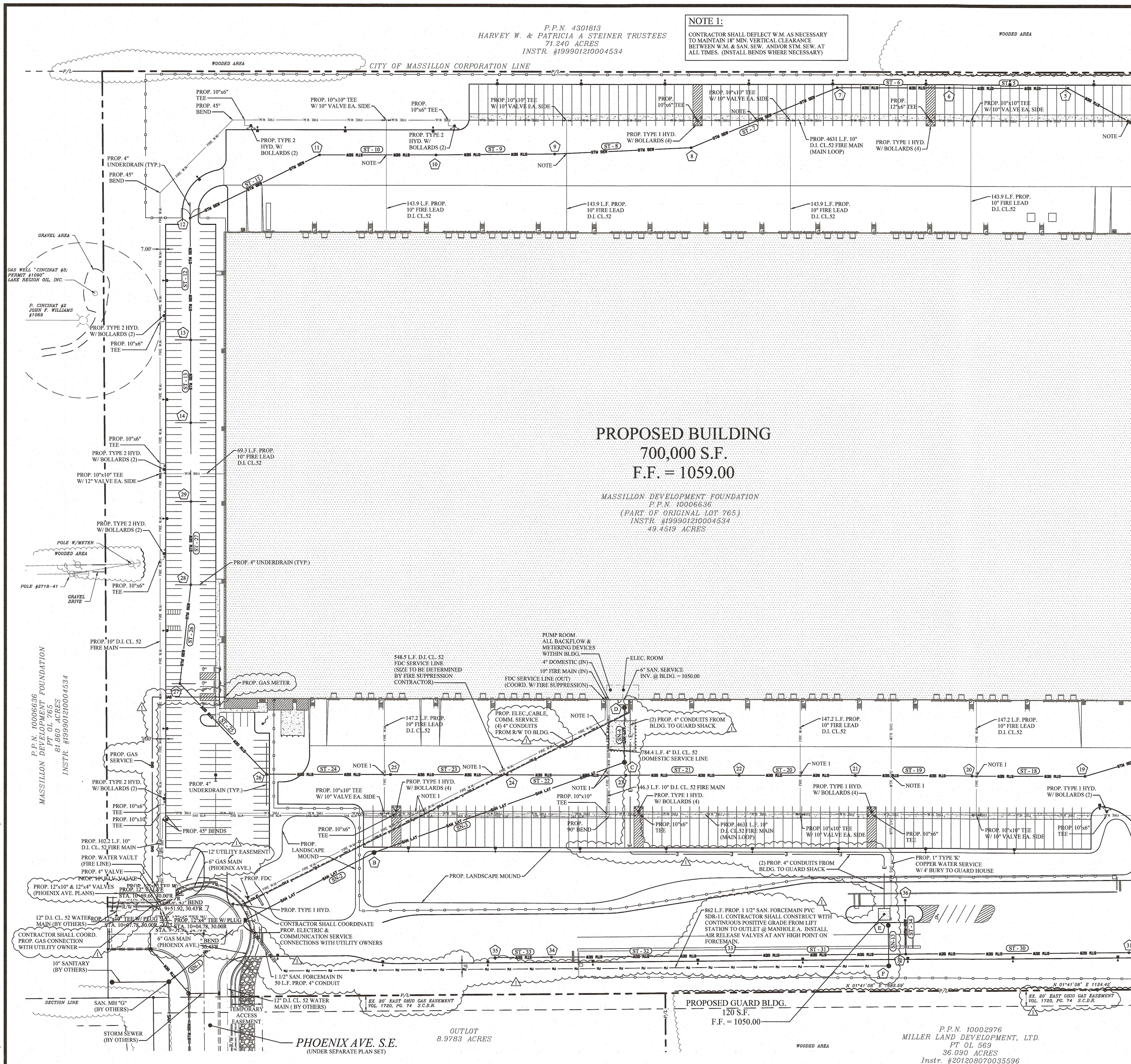
ROCK & ROLL NEW SITE
2255 PHOENIX AVE. SE, MASSILLON, OHIO

Issue Date
08-29-2018
09-04-2018
09-24-2018
11-05-2018

SITE PLAN

C102B
Project No. 2018-196

NOTE 1:
CONTRACTOR SHALL DEFLECT W.M. AS NECESSARY TO MAINTAIN 18" MIN. VERTICAL CLEARANCE BETWEEN W.M. & SAN. SEW. AND/OR STM. SEW. AT ALL TIMES. (INSTALL BENDS WHERE NECESSARY)



ITALICS TEXT REPRESENTS EXISTING CONDITION
NON-ITALICS TEXT REPRESENTS PROPOSED CONDITION

STORM STRUCTURE TABLE	
DRAINAGE STRUCTURE	DETAILS
5	ODOT CB 2-4 TOP GRATE = 1052.00 INV IN = 1044.20, 36" N INV OUT = 1043.70, 42" SW
6	ODOT CB 2-4 TOP GRATE = 1052.00 INV IN = 1044.80, 36" N INV OUT = 1044.80, 36" S
7	ODOT CB 2-4 TOP GRATE = 1052.00 INV IN = 1045.35, 36" N INV OUT = 1045.35, 36" S
8	ODOT CB 2-4 TOP GRATE = 1053.00 INV IN = 1046.05, 36" N INV OUT = 1046.05, 36" S
9	ODOT CB 2-4 TOP GRATE = 1053.00 INV IN = 1047.15, 30" N INV OUT = 1046.65, 36" S
10	ODOT CB 2-3 TOP GRATE = 1053.00 INV IN = 1048.20, 24" N INV OUT = 1047.70, 30" S
11	ODOT CB 2-3 TOP GRATE = 1053.00 INV IN = 1049.25, 18" NW INV OUT = 1048.75, 24" S
12	ODOT CB 2-3 1 TOP GRATE = 1056.35 INV IN = 1051.45, 15" W INV OUT = 1051.20, 18" SE
13	ODOT CB 2-2B TOP GRATE = 1057.50 INV IN = 1052.50, 12" W INV OUT = 1052.25, 15" E
14	ODOT CB 2-2B TOP GRATE = 1057.50 INV OUT = 1053.05, 12" E
19	ODOT CB 2-5 1 TOP GRATE = 1053.00 INV IN = 1042.95, 42" N INV OUT = 1042.95, 42" S
20	ODOT CB 2-4 TOP GRATE = 1053.00 INV IN = 1043.45, 42" N INV OUT = 1043.45, 42" S
21	ODOT CB 2-4 TOP GRATE = 1053.00 INV IN = 1043.95, 42" N INV OUT = 1043.95, 42" S
22	ODOT CB 2-4 TOP GRATE = 1053.00 INV IN = 1044.95, 36" N INV OUT = 1044.45, 42" S
23	ODOT CB 2-4 TOP GRATE = 1053.00 INV IN = 1045.45, 36" N INV OUT = 1045.45, 36" S
24	ODOT CB 2-4 TOP GRATE = 1053.00 INV IN = 1045.95, 36" N INV OUT = 1045.95, 36" S
25	ODOT CB 2-4 TOP GRATE = 1053.00 INV IN = 1047.40, 24" N INV OUT = 1046.40, 36" S
26	ODOT CB 2-3 TOP GRATE = 1057.00 INV IN = 1049.30, 18" NE INV OUT = 1048.80, 24" S
27	ODOT CB 2-2B TOP GRATE = 1057.25 INV IN = 1051.20, 12" E INV OUT = 1050.70, 18" SW
28	ODOT CB 2-2B TOP GRATE = 1057.50 INV IN = 1052.30, 12" E INV OUT = 1052.30, 12" W
29	ODOT CB 2-2B TOP GRATE = 1057.50 INV OUT = 1053.25, 12" W
31	ODOT CB 2-3 TOP GRATE = 1051.50 INV IN = 1042.60, 30" N INV OUT = 1042.60, 30" S
32	ODOT CB 2-3 TOP GRATE = 1049.00 INV IN = 1044.75, 15" N INV IN = 1043.50, 12" E INV OUT = 1043.50, 30" S
33	ODOT CB 2-2B TOP GRATE = 1051.60 INV IN = 1047.00, 15" N INV OUT = 1047.00, 15" S
34	ODOT CB 2-2B TOP GRATE = 1057.00 INV IN = 1049.85, 15" N INV OUT = 1049.85, 15" S
35	ODOT CB 2-2B TOP GRATE = 1056.00 INV OUT = 1050.75, 15" S
36	ODOT CB 2-2B TOP GRATE = 1049.00 INV OUT = 1044.20, 12" W

SITE BENCH MARK
BENCH MARK #1 TOP NUT ON HYDRANT (SEE SHEET C101)
ELEVATION = 1053.73

STORM PIPE TABLE				
NAME	SIZE	LENGTH	SLOPE	TYPE
ST - 5	36"	152.89'	0.39%	HDPE
ST - 6	36"	143.92'	0.38%	HDPE
ST - 7	36"	203.19'	0.34%	HDPE
ST - 8	36"	176.19'	0.34%	HDPE
ST - 9	30"	152.73'	0.36%	HDPE
ST - 10	24"	149.94'	0.37%	HDPE
ST - 11	18"	185.29'	1.05%	HDPE
ST - 12	15"	156.67'	0.51%	HDPE
ST - 13	12"	106.48'	0.52%	HDPE
ST - 18	42"	145.47'	0.34%	HDPE
ST - 19	42"	150.10'	0.33%	HDPE
ST - 20	42"	149.61'	0.33%	HDPE
ST - 21	36"	145.86'	0.34%	HDPE
ST - 22	36"	152.69'	0.33%	HDPE
ST - 23	36"	150.36'	0.30%	HDPE
ST - 24	24"	159.54'	0.88%	HDPE
ST - 25	18"	161.17'	0.87%	HDPE
ST - 26	12"	128.02'	0.86%	HDPE
ST - 27	12"	106.95'	0.89%	HDPE
ST - 30	30"	287.01'	0.31%	HDPE
ST - 31	15"	225.93'	1.00%	HDPE
ST - 32	15"	230.26'	1.24%	HDPE
ST - 33	15"	72.82'	1.24%	HDPE
ST - 34	12"	69.43'	1.01%	HDPE

Sanitary Structure Table	
Name	Structure Details
A *	SANITARY MANHOLE RIM = 1060.500 SN-2 INV IN = 1043.992 SN-1 INV OUT = 1044.000
B	SANITARY MANHOLE RIM = 1057.500 SN-3 INV IN = 1045.873 SN-2 INV OUT = 1045.870
C	SANITARY MANHOLE RIM = 1053.800 SN-4 INV IN = 1049.298 SN-3 INV OUT = 1049.300
D	SANITARY CLEANOUT RIM = 1054.800 SN-4 INV OUT = 1050.000
E	SANITARY CLEANOUT RIM = 1049.300 SN-13 INV OUT = 1044.600
F **	PROPOSED LIFT STATION RIM = 1049.000 SN-13 INV IN = 1044.000
G	SANITARY MANHOLE RIM = 1060.250 SN-6 INV IN = 1036.610 SN-1 INV IN = 1036.570 SN-8 INV OUT = 1036.410

SANITARY PIPE TABLE				
NAME	SIZE	LENGTH	SLOPE	TYPE
SN-1	8"	125.95'	5.90%	PVC SDR-35
SN-2	6"	187.81'	1.00%	PVC SDR-35
SN-3	6"	342.74'	1.00%	PVC SDR-35
SN-4	6"	70.18'	1.00%	PVC SDR-35
SN-13	6"	52.17'	1.15%	PVC SDR-35

* INV. 1055.00, 1 1/2" W/ 90° DOWN TURN
** SEE C105F FOR DETAILS

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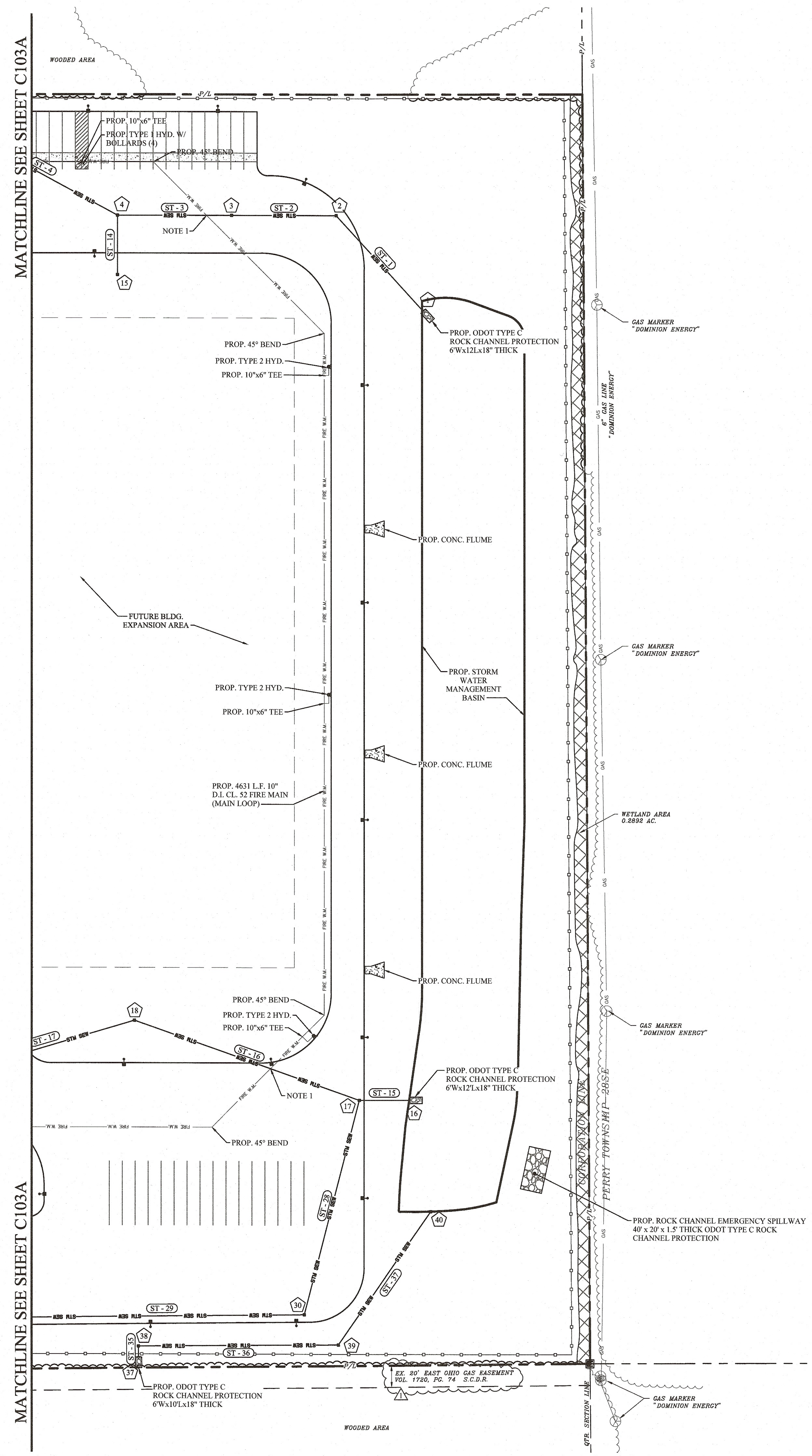
ROCK & ROLL NEW SITE
2255 PHOENIX AVE. SE, MASSILLON, OHIO

UTILITY PLAN

C103A
Project No. 2018-196



DOMINION ENERGY NOTE:

IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN THE LATERAL AND SUBJACENT SUPPORT OF DOMINION ENERGY'S PIPELINE(S), IN COMPLIANCE TO 29 CFR, PART 1926, AND SUBPART P, (SAFE EXCAVATION & SHORING). ONE-FOOT MINIMUM VERTICAL AND HORIZONTAL CLEARANCE MUST BE MAINTAINED BETWEEN DOMINION ENERGY OHIO'S (DEO) EXISTING PIPELINE(S) AND ALL OTHER IMPROVEMENTS. EXTREME CARE SHOULD BE TAKEN NOT TO HARM ANY DEO FACILITY (PIPELINES, ETC.) OR APPURTENANCE (PIPE COATING, TRACER WIRE, CATHODIC PROTECTION TEST STATION WIRES & DEVICES, VALVE BOXES, ETC.) DEO FACILITIES MUST BE PROTECTED WITH A TARP DURING BRIDGE CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE AND LIABLE FOR ENSURING THAT ALL DEO EXISTING FACILITIES, ABOVE AND BELOW GROUND, REMAIN UNDAMAGED, ACCESSIBLE AND IN WORKING ORDER. THE CROSSING OF DEO'S PIPELINE WITH ANOTHER STEEL FACILITY MAY CREATE A POTENTIAL CORROSION ISSUE FOR THE PROPOSED FACILITY AND THE EXISTING DEO FACILITY. PLEASE CONTACT DOMINION ENERGY OHIO'S CORROSION DEPARTMENT: DAVE CUTLIP (330-266-2121), RICK MCDONALD (330-266-2122), OR AL HUMRICHOUSER (330-478-3757).

SITE BENCH MARK

BENCH MARK #1
TOP NUT ON HYDRANT
(SEE SHEET C101)

ELEVATION = 1053.73

NOTE 1:

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ITALICS TEXT REPRESENTS EXISTING CONDITION

NON-ITALICS TEXT REPRESENTS PROPOSED CONDITION

STORM STRUCTURE TABLE

DRAINAGE STRUCTURE	DETAILS
1	ODOT HW 2.1 INV IN = 1041.00, 42" NE
2	ODOT CB 2-5 1 TOP GRATE = 1053.25 INV IN = 1041.80, 42" N INV OUT = 1041.80, 42" SW
3	ODOT CB 2-4 TOP GRATE = 1053.25 INV IN = 1042.40, 42" N INV OUT = 1042.40, 42" S
4	ODOT CB 2-5 1 TOP GRATE = 1053.25 INV IN = 1043.00, 42" NE INV IN = 1045.25, 15" W INV OUT = 1043.00, 42" S
15	ODOT CB 2-2B TOP GRATE = 1053.50 INV OUT = 1048.25, 15" E
16	ODOT HW 2.1 INV IN = 1041.00, 48" N
17	ODOT CB 2-5 TOP GRATE = 1052.25 INV IN = 1041.15, 48" N INV IN = 1041.15, 30" W INV OUT = 1041.15, 48" S
18	ODOT CB 2-5 TOP GRATE = 1053.00 INV IN = 1042.40, 42" N INV OUT = 1041.90, 48" S
30	ODOT CB 2-4 1 TOP GRATE = 1049.00 INV IN = 1041.80, 30" N INV OUT = 1041.80, 30" E
37	ODOT FULL HEIGHT HEADWALL INV IN = 1037.00, 24"x38"E., E
38	ODOT CB 2-4 TOP GRATE = 1044.00 INV IN = 1037.15, 24"x38"E., S INV OUT = 1037.15, 24"x38"E., W
39	ODOT CB 2-4 TOP GRATE = 1044.00 INV IN = 1039.25, 24"x38"E., SE INV OUT = 1039.25, 24"x38"E., N
40	OUTLET STRUCTURE TOP GRATE = 1044.00 INV OUT = 1041.00, 24"x38"E., NW

STORM PIPE TABLE

NAME	SIZE	LENGTH	SLOPE	TYPE
ST - 1	42"	119.19'	0.67%	HDPE
ST - 2	42"	96.70'	0.62%	HDPE
ST - 3	42"	105.74'	0.57%	HDPE
ST - 4	42"	191.59'	0.37%	HDPE
ST - 14	15"	54.81'	5.47%	HDPE
ST - 15	48"	46.35'	0.32%	HDPE
ST - 16	48"	220.58'	0.34%	HDPE
ST - 17	42"	169.48'	0.32%	HDPE
ST - 28	30"	204.62'	0.32%	HDPE
ST - 29	30"	263.19'	0.30%	HDPE
ST - 35	24"	10.00'	1.50%	RCP
ST - 36	24"	185.00'	1.14%	RCP
ST - 37	24"	150.00'	1.17%	RCP

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N

Scale: 1" = 60'

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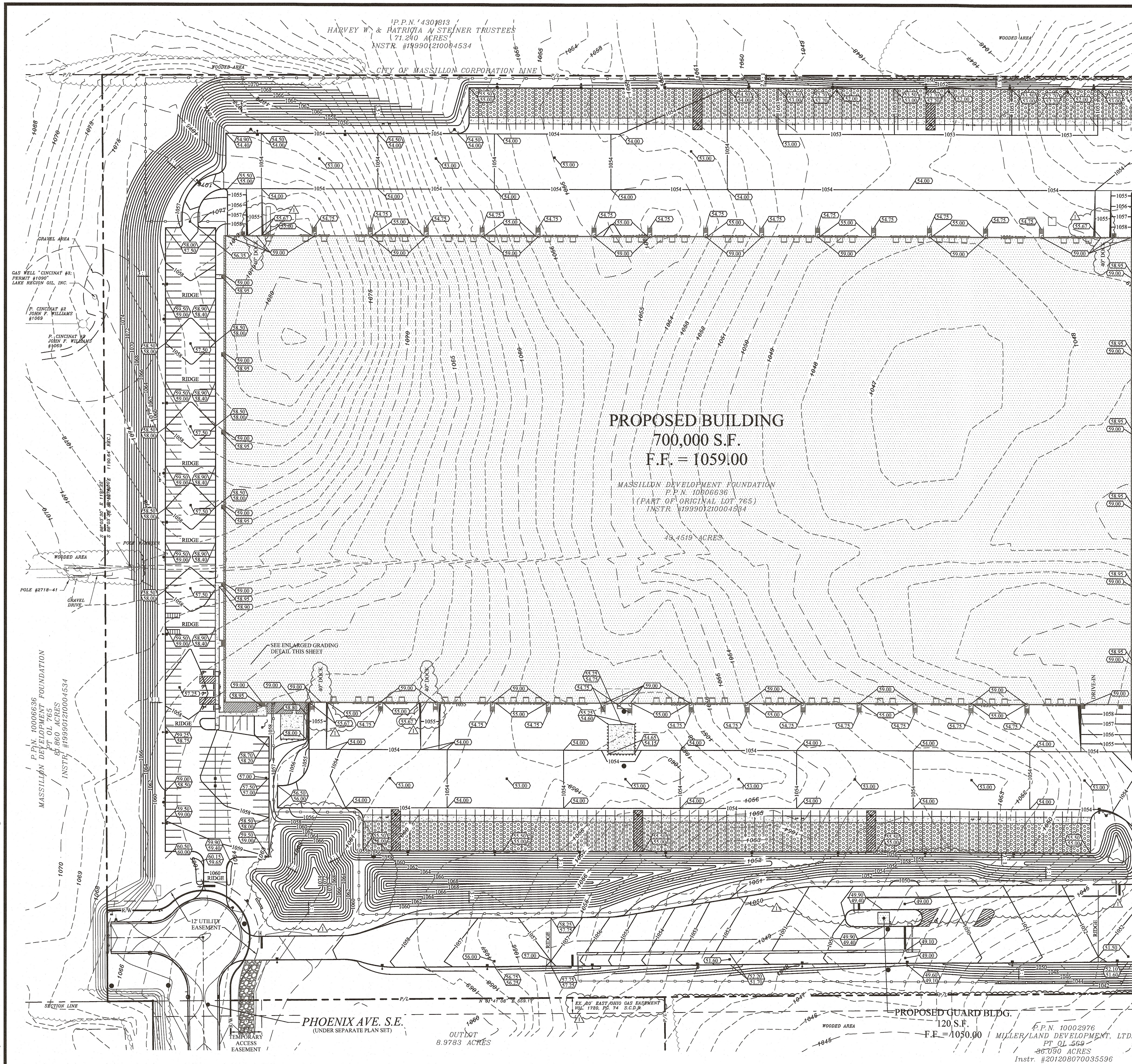
ROCK & ROLL NEW SITE
2255 PHOENIX AVE. SE, MASSILLON, OHIO

Issue Date
08-29-2018
09-04-2018
09-24-2018
1 11-05-2018

UTILITY PLAN

C103B

Project No. 2018-196



SITE BENCH MARK

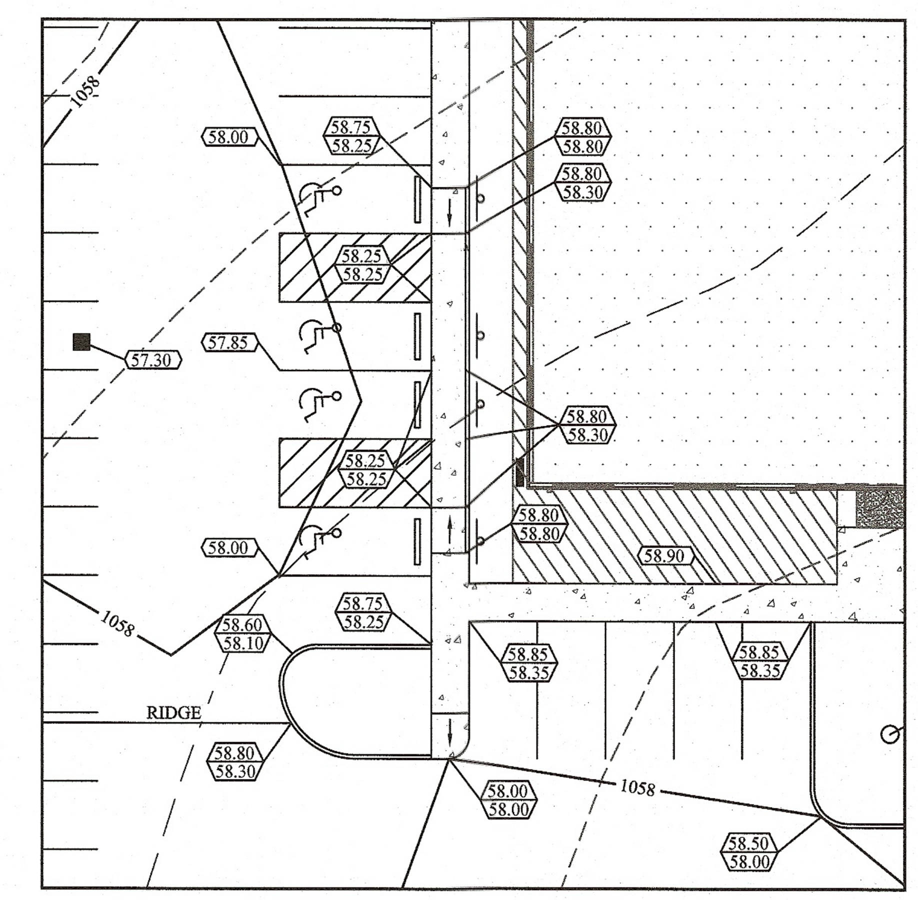
BENCH MARK #1
TOP NUT ON HYDRANT
(SEE SHEET C101)

ELEVATION = 1053.73

LEGEND

ITALICS TEXT REPRESENTS EXISTING CONDITION
NON-ITALICS TEXT REPRESENTS PROPOSED CONDITION

00.00 PROPOSED SPOT GRADE
00.00 / 00.00 PROPOSED GRADE AT CURB
0000.00 EXISTING SPOT GRADE



ENLARGED GRADING DETAIL

SCALE: 1" = 20'

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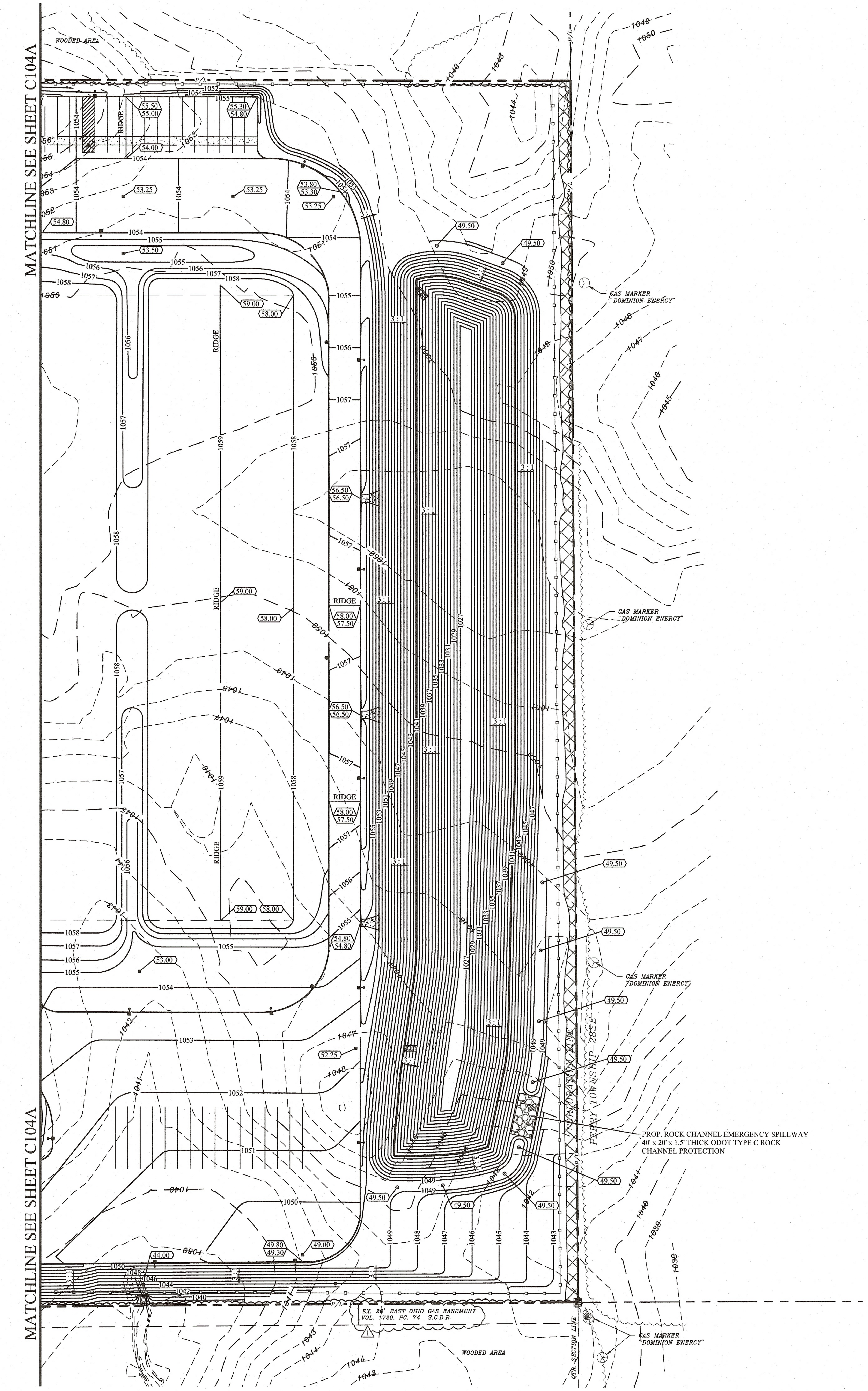
GRADING PLAN

C104A

Project No. 2018-196



SITE BENCH MARK

BENCH MARK #1
TOP NUT ON HYDRANT
(SEE SHEET C101)

ELEVATION = 1053.73

LEGEND

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00.00 PROPOSED SPOT GRADE

00.00 / 00.00 PROPOSED GRADE AT CURB

0000.00 / 0000.00 EXISTING SPOT GRADE

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N

Scale: 1" = 60'

GRADING PLAN

C104B

Project No. 2018-196

SITE BENCH MARK

BENCH MARK #1
TOP NUT ON HYDRANT
(SEE SHEET C101)

ELEVATION = 1053.73

LEGEND

ITALICS TEXT REPRESENTS EXISTING CONDITION
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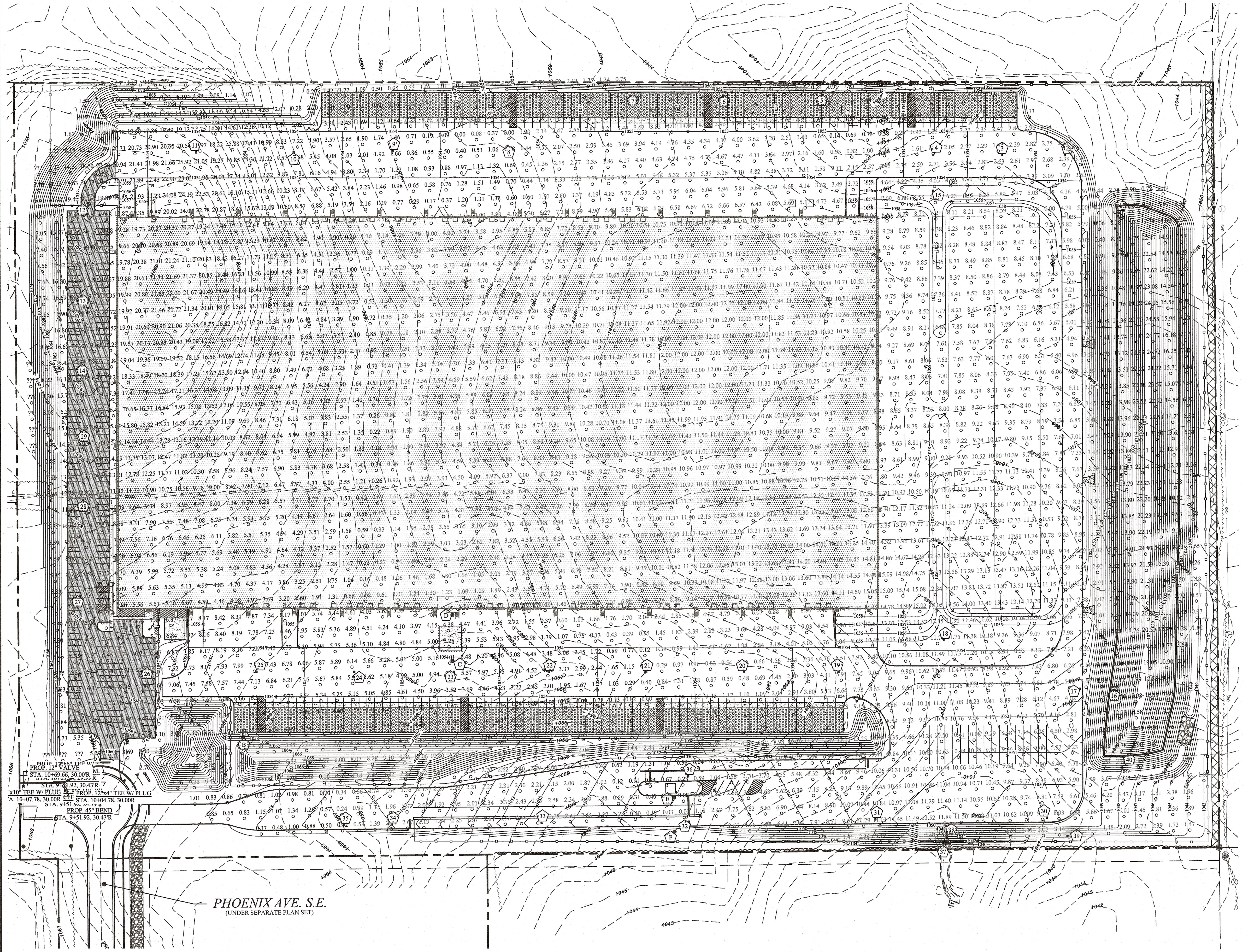

EARTHWORK CALCULATIONS

EARTHWORK QUANTITIES ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE ENTIRELY RESPONSIBLE FOR AN INDEPENDENT EARTHWORK TAKEOFF/ASSESSMENT AND BID ACCORDING TO HIS/HER EARTHWORK VALUES.

Volume Summary

Name	Type	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Proposed Earthwork Surface	full	1.000	1.000	1992744.80	246170.03	311801.51	65631.48<Fill>

Totals

	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	1992744.80	246170.03	311801.51	65631.48<Fill>

ASSUMPTIONS:

- Topsoil average depth: 12"
- Building pad & aggregate: 10"
- Heavy-duty total asphalt thickness: 13"
- Concrete pavement total thickness: 13"
- Sidewalk total thickness: 8"
- Assume borrow clean fill from over-dug pond and refill pond to grade with topsoil.
- Does not include foundation or utility excavation spoils.

Topsoil:	49.4519 Ac. x 43,560 x 1.0' / 27 = 79,798 C.Y.
Area of Building in Fill:	447,947 S.F. x 0.83' / 27 = 13,770 C.Y.
Area of Building in Cut:	252,053 S.F. x 0.83' / 27 = 7,748 C.Y.
Area of RD pvmt in Fill:	0.0 S.F. x 0.92' / 27 = 0.0 C.Y.
Area of RD pvmt in Cut:	66,982 S.F. x 0.92' / 27 = 2,282 C.Y.
Area of HD pvmt in Fill:	45,903 S.F. x 1.08' / 27 = 1,836 C.Y.
Area of HD pvmt in Cut:	40,927 S.F. x 1.08' / 27 = 1,637 C.Y.
Area of Concrete pvmt in Fill:	297,207 S.F. x 1.08' / 27 = 11,888 C.Y.
Area of Concrete pvmt in Cut:	231,979 S.F. x 1.08' / 27 = 9,272 C.Y.
Area of Concrete sidewalk in Fill:	0.0 S.F. x 0.67' / 27 = 00 C.Y.
Area of Concrete sidewalk in Cut:	2,670 S.F. x 0.67' / 27 = 66 C.Y.

	Raw Cut	Raw Fill
	246,170	311,801
Area of Building in Fill:		- 13,770
Area of Building in Cut:	+ 7,748	
Area of HD pvmt in Fill:		- 1,836
Area of HD pvmt in Cut:	+ 1,637	
Area of Concrete pvmt in Fill:		- 11,888
Area of Concrete pvmt in Cut:	+ 9,272	
Area of Concrete sidewalk in Fill:		- 0
Area of Concrete sidewalk in Cut:	+ 66	
Totals	264,893 C.Y. Cut	284,307 C.Y. Fill

NET = 19,414 C.Y. FILL

N

Scale: 1" = 80'

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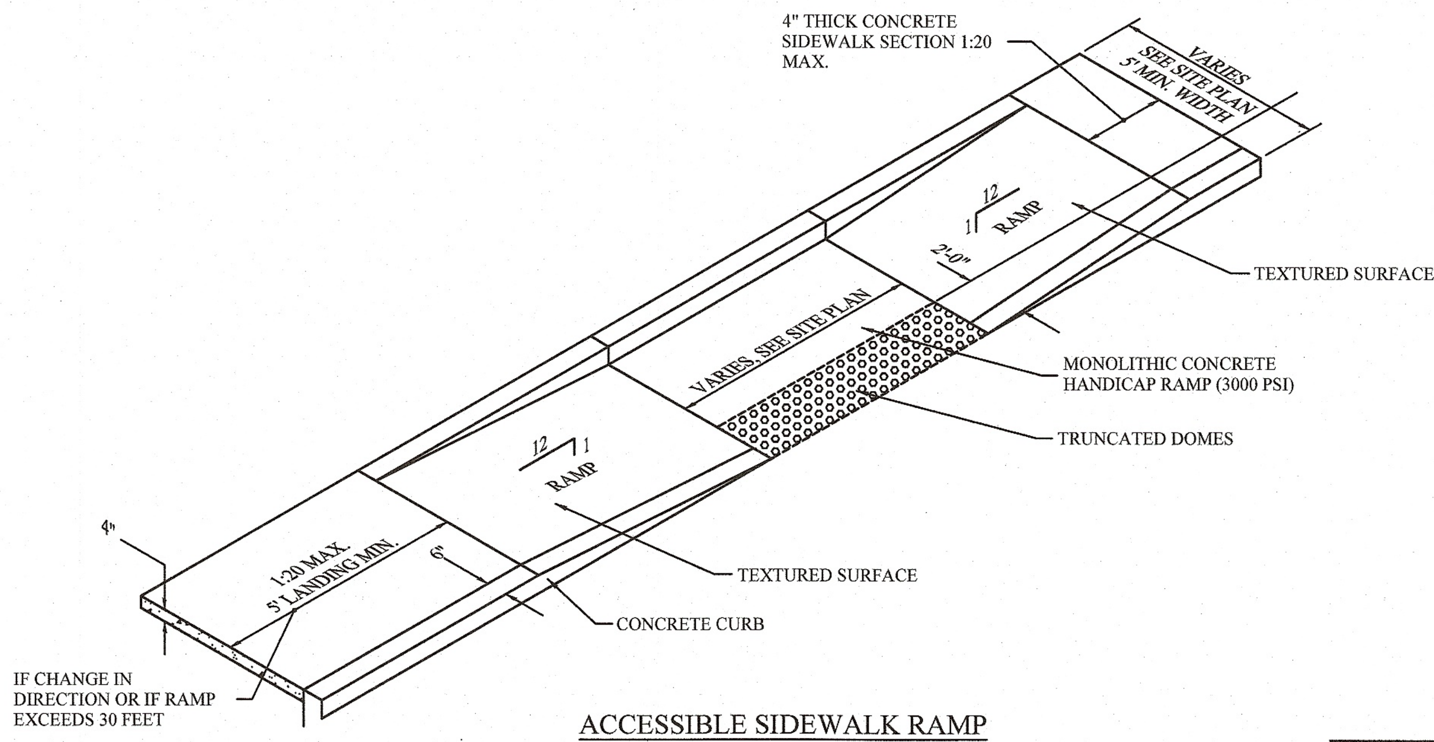
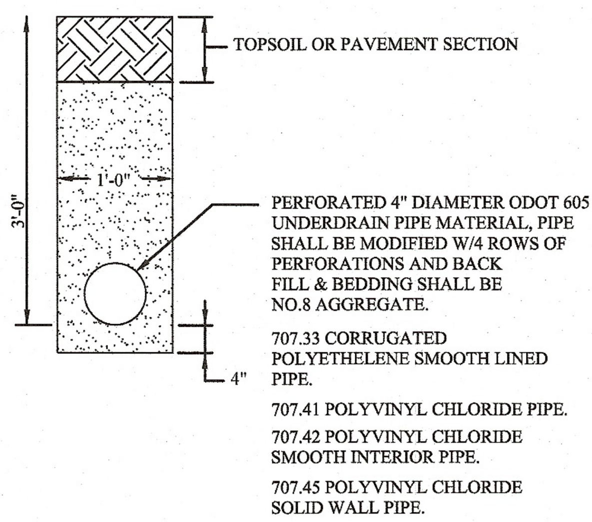
GRADING PLAN

C104C

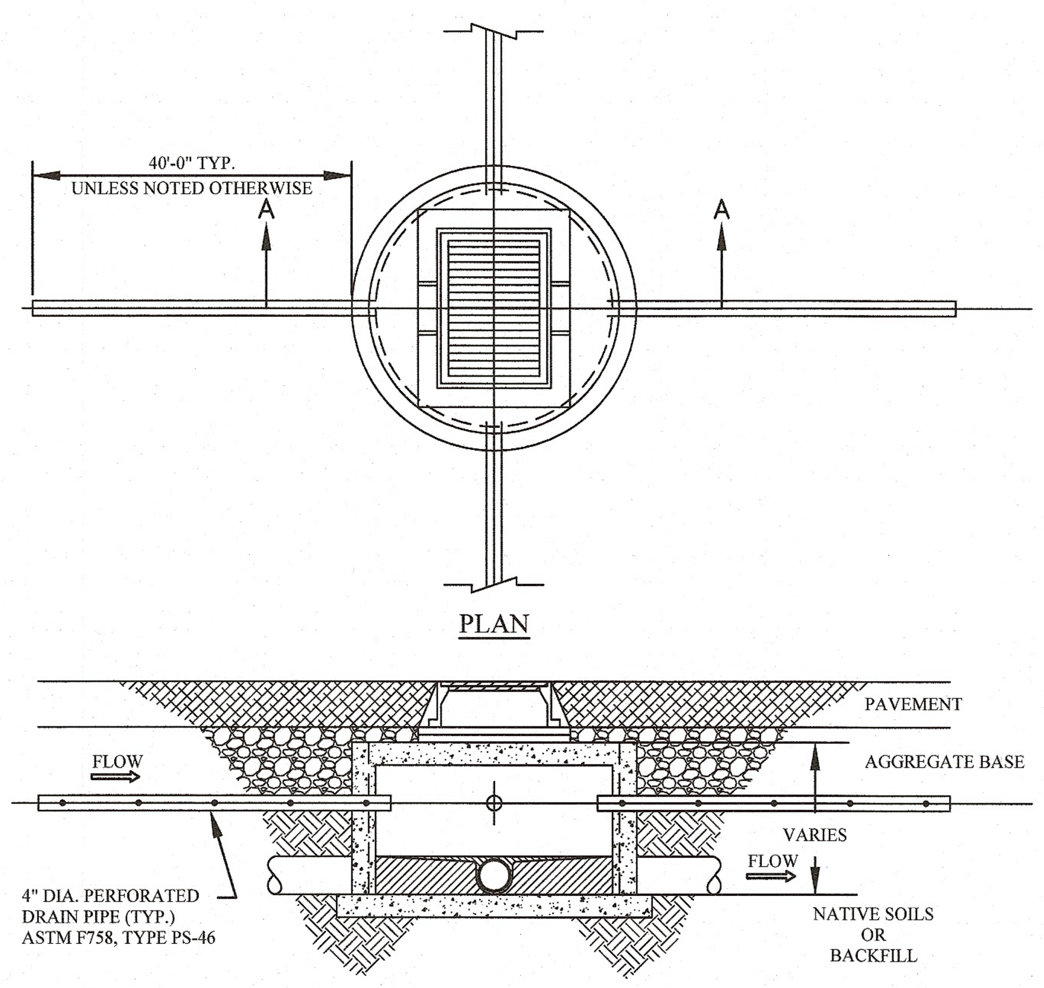
Project No. 2018-196



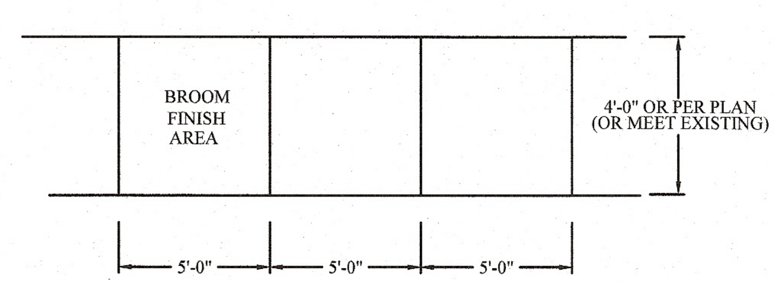
ACCESSIBLE SIDEWALK RAMP
REFERENCE ONLY NOT TO SCALE



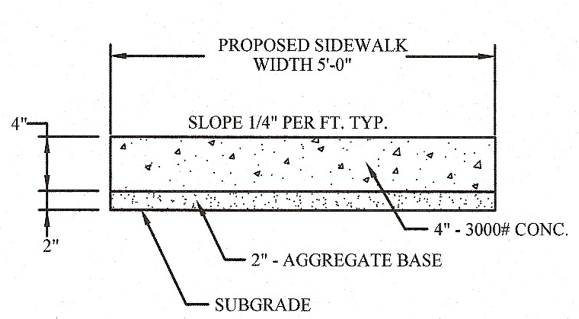
UNDERDRAIN DETAIL
REFERENCE ONLY NOT TO SCALE



FINGER DRAIN DETAIL
REFERENCE ONLY NOT TO SCALE



CONCRETE SIDEWALK FINISH AND JOINTS
REFERENCE ONLY NOT TO SCALE

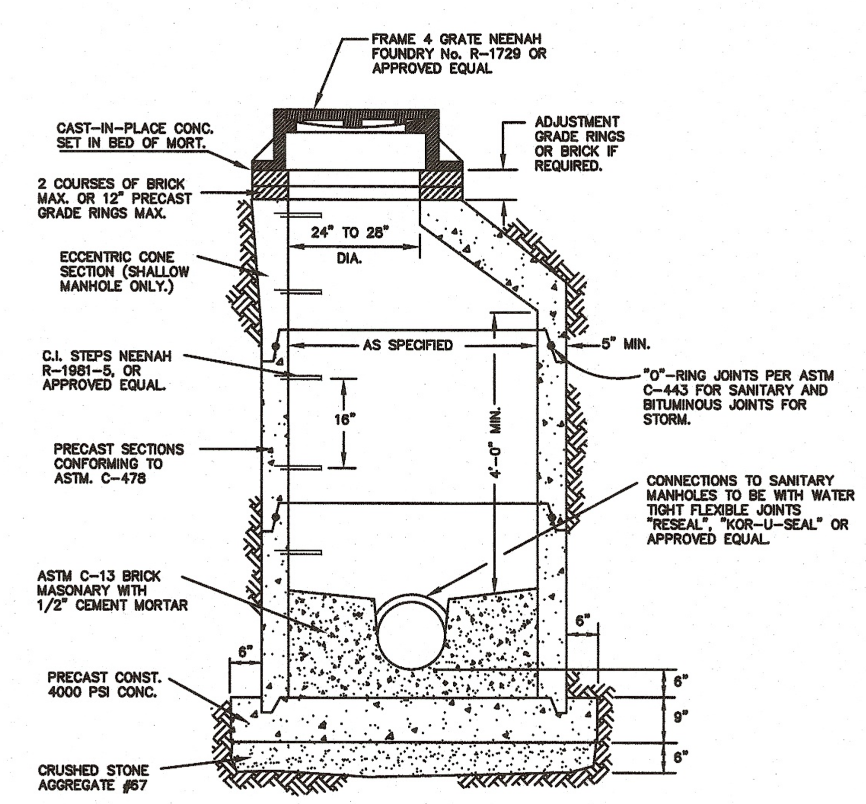


NOTE:
CRACK CONTROL SHALL BE AT FIFTEEN FOOT (15') INTERVALS AND SCORE MARKS SHALL BE AT FIVE FOOT (5') INTERVALS. CONSTRUCTION SHALL BE IN ACCORDANCE WITH O.D.O.T. ITEM 608. PRIOR TO THE START OF SIDEWALK CONSTRUCTION THE SUBGRADE MUST BE INSPECTED AND APPROVED BY THE OWNERS REPRESENTATIVE. ANY SETTLEMENT OR DEFICIENT AREAS IDENTIFIED BY THE OWNERS REPRESENTATIVE SHALL BE REPAIRED BY A A METHOD ACCEPTABLE TO THE OWNER. THE REPAIRED AREAS WILL BE SUBJECT TO COMPACTION TESTING AND APPROVAL BY THE OWNER PRIOR TO THE START OF SIDEWALK CONSTRUCTION.

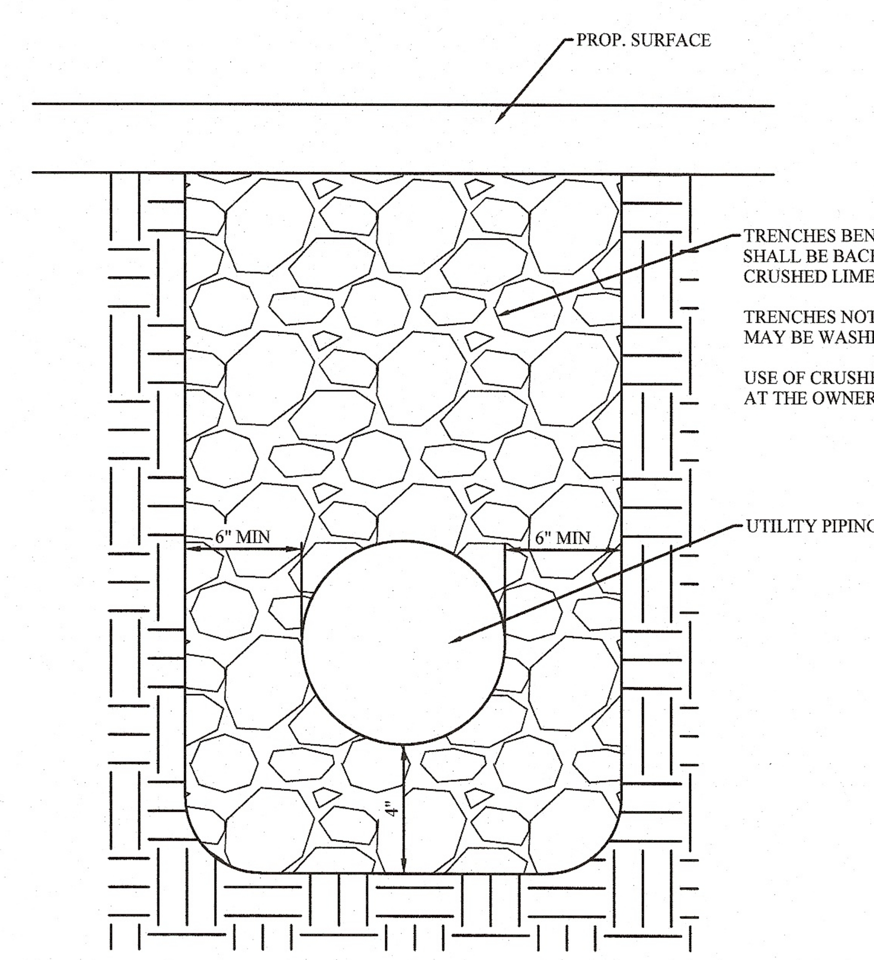
CONCRETE SIDEWALK (ON-SITE)
REFERENCE ONLY NOT TO SCALE

MINIMUM MANHOLE DIAMETERS
REFER TO PLAN FOR SPECIFIC SIZING REQUIREMENTS

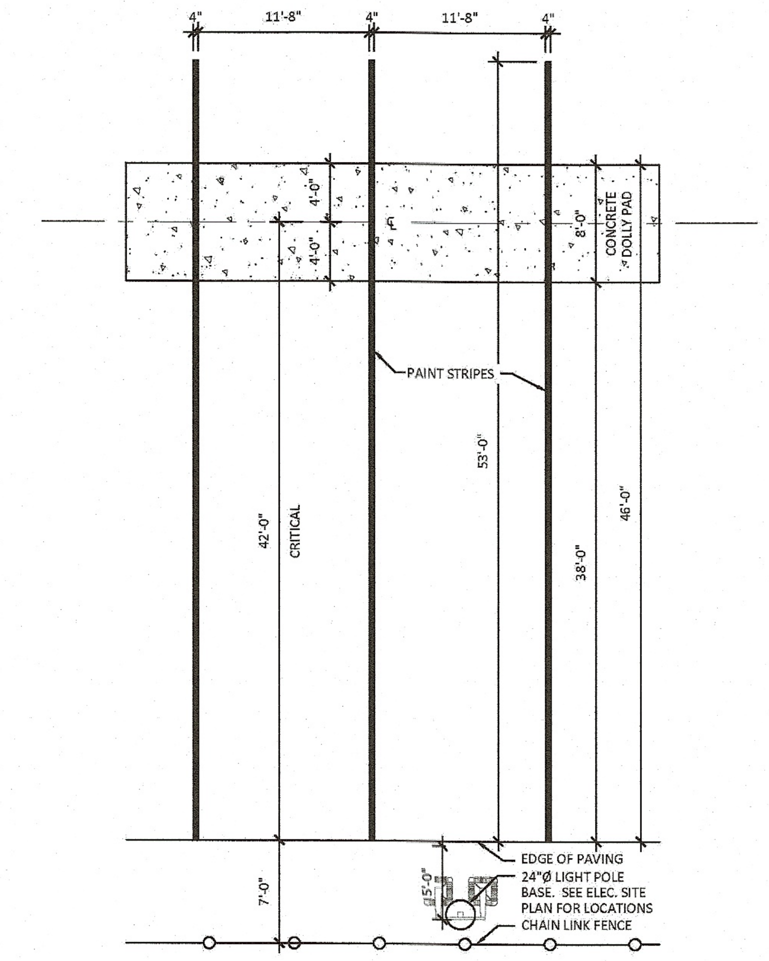
MH Inside Dia. (in.)	Max. Pipe Dia. (in.)
48	30
60	36 to 42
72	48
84	54
90	60
96	60



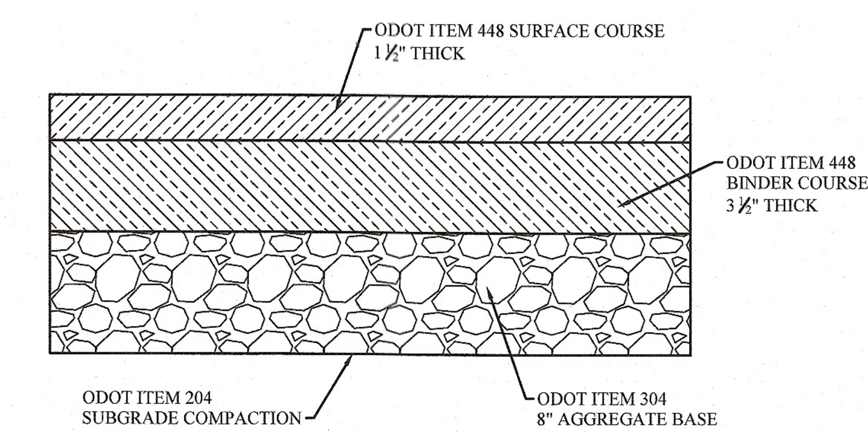
SANITARY SEWER INSPECTION
MANHOLE DETAIL
REFERENCE ONLY NOT TO SCALE



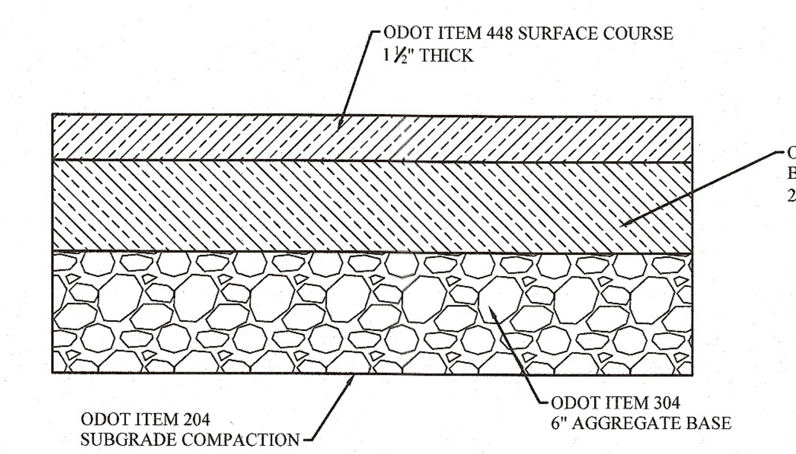
STORM & SANITARY UTILITY TRENCH DETAIL
REFERENCE ONLY NOT TO SCALE



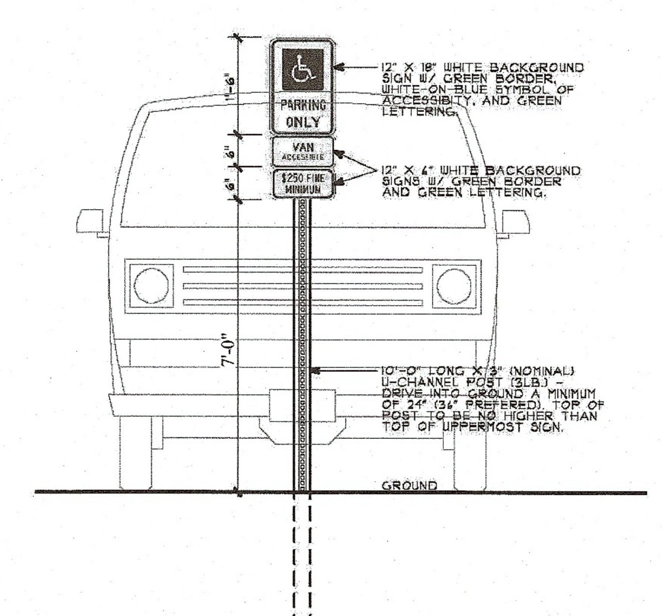
DOLLY PAD AND LIGHT POLE TYPICAL LOCATION DETAIL
REFERENCE ONLY NOT TO SCALE



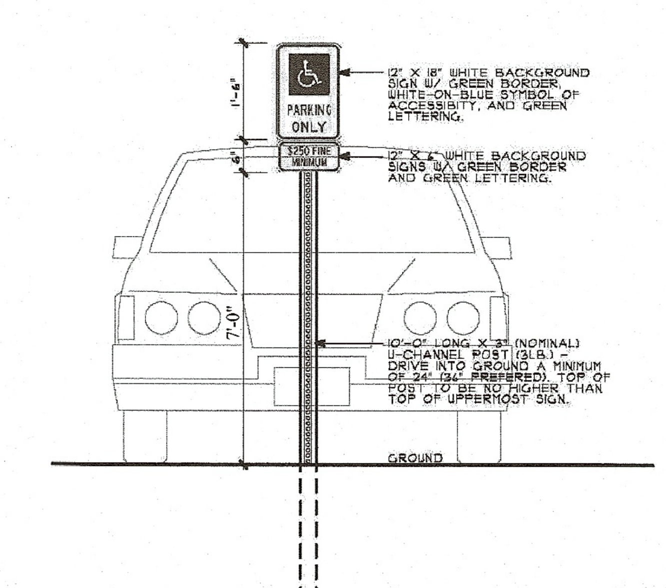
PROP. HEAVY DUTY ASPHALT PAVEMENT
REFERENCE ONLY NOT TO SCALE



PROP. REGULAR DUTY ASPHALT PAVEMENT
REFERENCE ONLY NOT TO SCALE

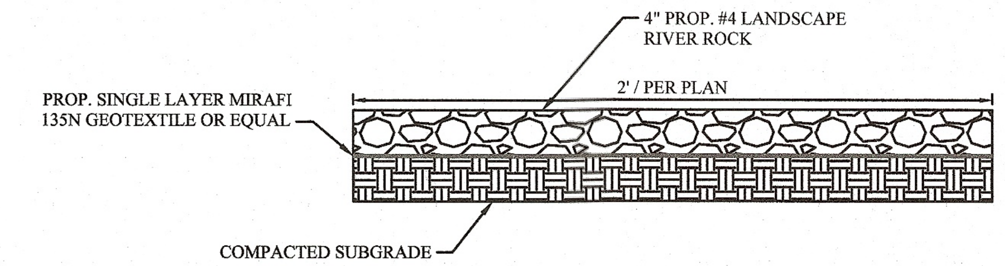


VAN ACCESSIBLE PARKING SPACE SIGN
NOT TO SCALE

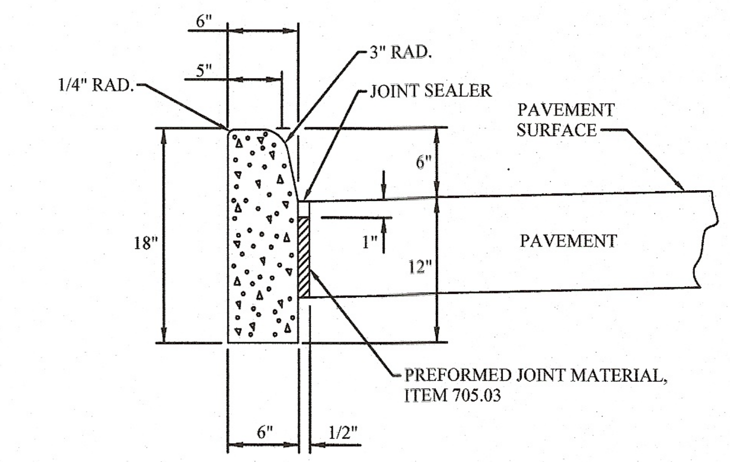


CAR ACCESSIBLE PARKING SPACE SIGN
NOT TO SCALE

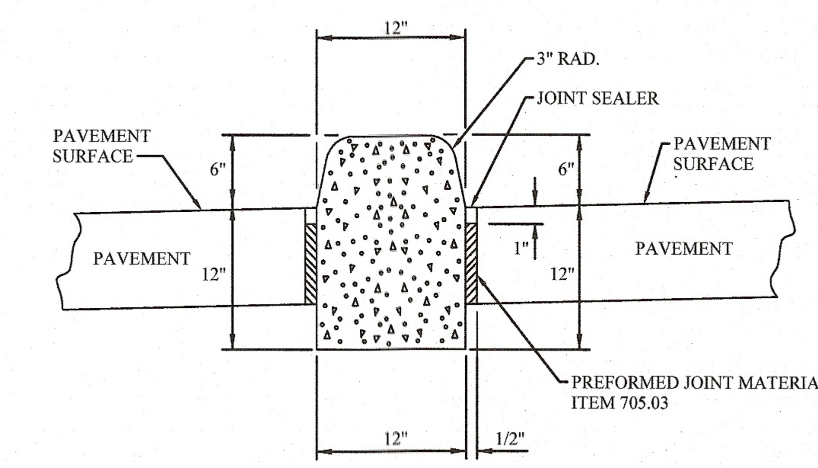
HANDICAPPED PARKING DETAIL
REFERENCE ONLY NOT TO SCALE



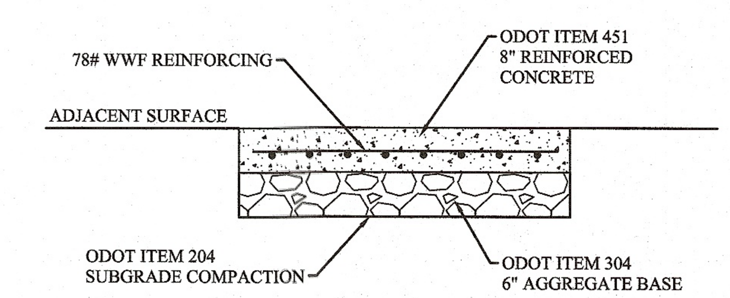
RODENT RUN LANDSCAPE STRIP
REFERENCE ONLY NOT TO SCALE



ODOT TYPE 6 CONCRETE CURB
REFERENCE ONLY NOT TO SCALE



12" WIDE CONCRETE CURB AT
TRUCK ENTRY DETAIL
REFERENCE ONLY NOT TO SCALE



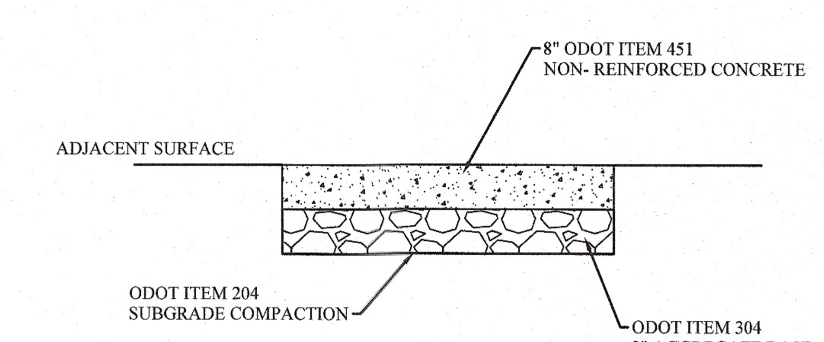
ALL EXTERIOR CONCRETE SHALL BE AIR-ENTRAINED 6% ± 1%.

CONTROL JOINT/SAWCUTS

SOFF CUT SAW CUTS WITHIN 24 HOURS OF POUR TO BE T/4 (T=SLAB THICKNESS). MAX SPACING SHALL BE 12'-0" O.C. MAXIMUM EACH WAY.

CONTROL JOINTS SHALL NOT TERMINATE AT ANY INTERSECTION JOINT (EITHER CONSTRUCTION OR CONTROL) SO AS TO CREATE A "T" INTERSECTION. EXCEPTION: SAWCUTS MAY TERMINATE AT UNDOWELED CONSTRUCTION JOINTS.

SITE CONCRETE DETAIL
(TRUCK AREAS & DOCKS)
REFERENCE ONLY NOT TO SCALE



CONCRETE DRIVE APRON DETAIL
REFERENCE ONLY NOT TO SCALE

WEBER ENGINEERING SERVICES
Where Strong Relationships & Superior Service Guide Your Project

2555 Hartville Rd., Suite B
Rootstown, OH 44272
www.WeberEngineeringServices.com
330-329-2037
matt@webercivil.com

STATE OF OHIO
MATTHEW L. WEBER
61709
REGISTERED
PROFESSIONAL ENGINEER

Reg. No.: 61709

CLIENT:

GEIS CONSTRUCTION

10020 AURORA-HUDSON RD.
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JEN DOTSON
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OWNER:

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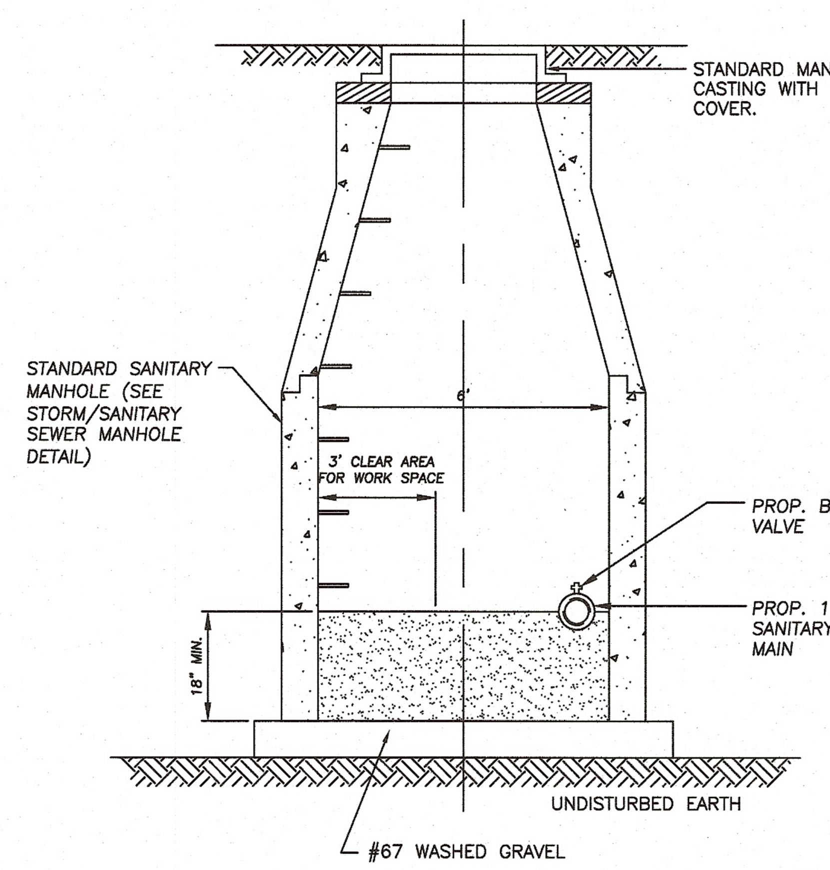
ROCK & ROLL
NEW SITE
2255 PHOENIX AVE. SE, MASSILLON, OHIO

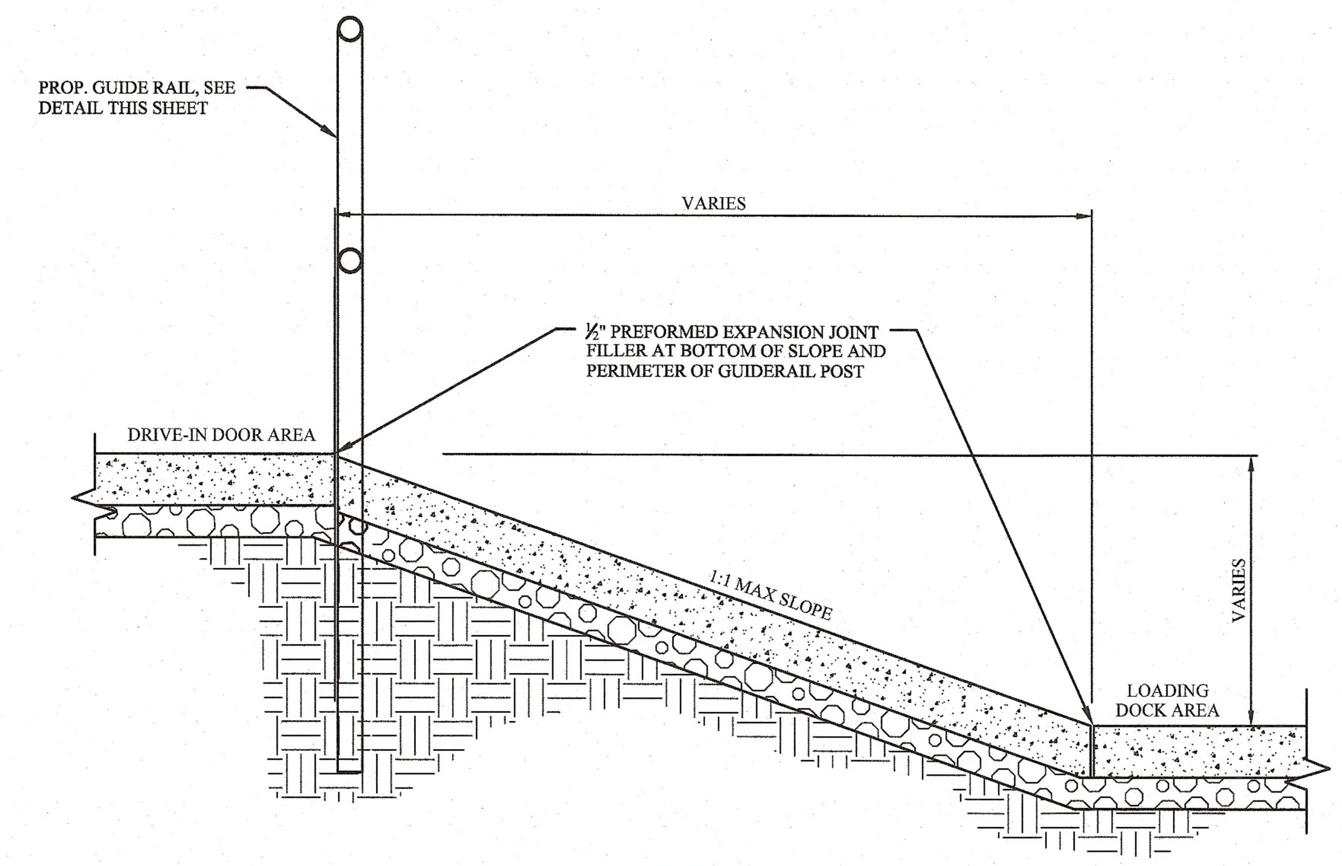
Issue Date
08-29-2018
09-04-2018
09-24-2018
△11-05-2018

SITE DETAILS

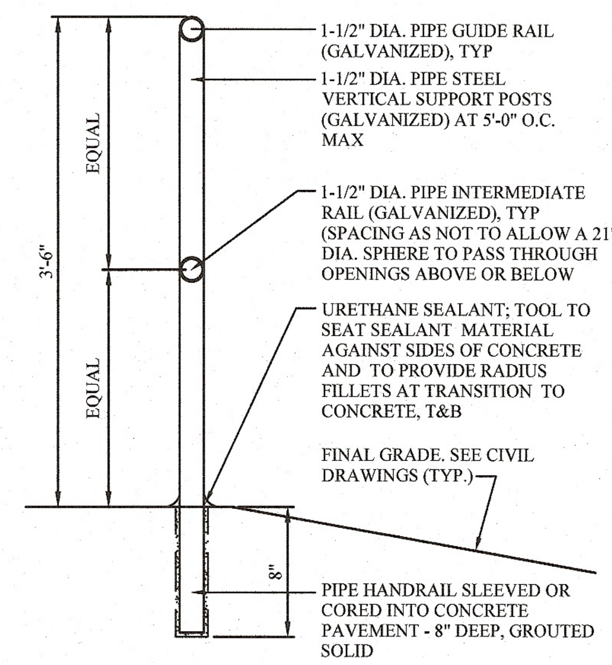
C105
Project No. 2018-196



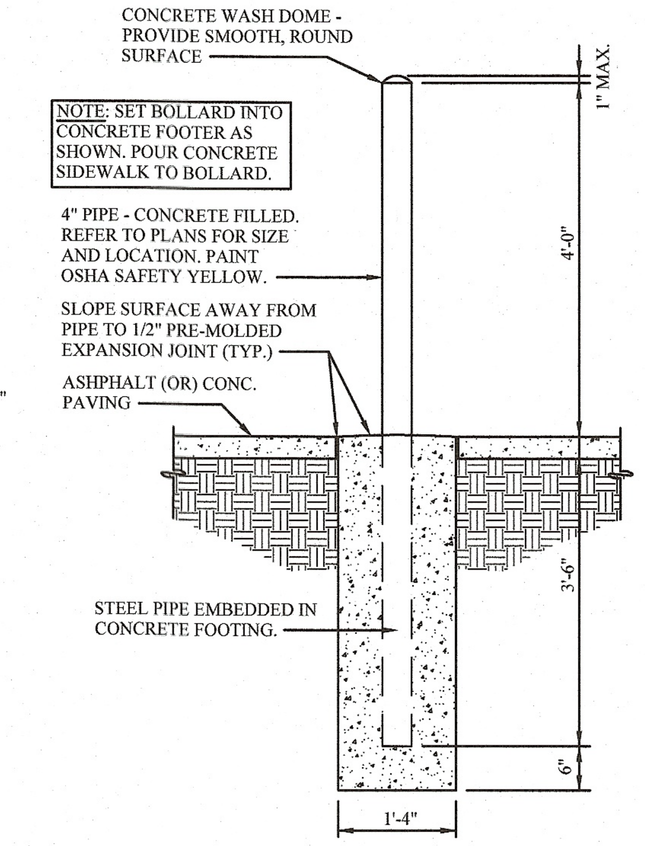
FORCE MAIN W/ AIR RELEASE VALVE TO LATERAL CONNECTION DETAIL
REFERENCE ONLY NOT TO SCALE



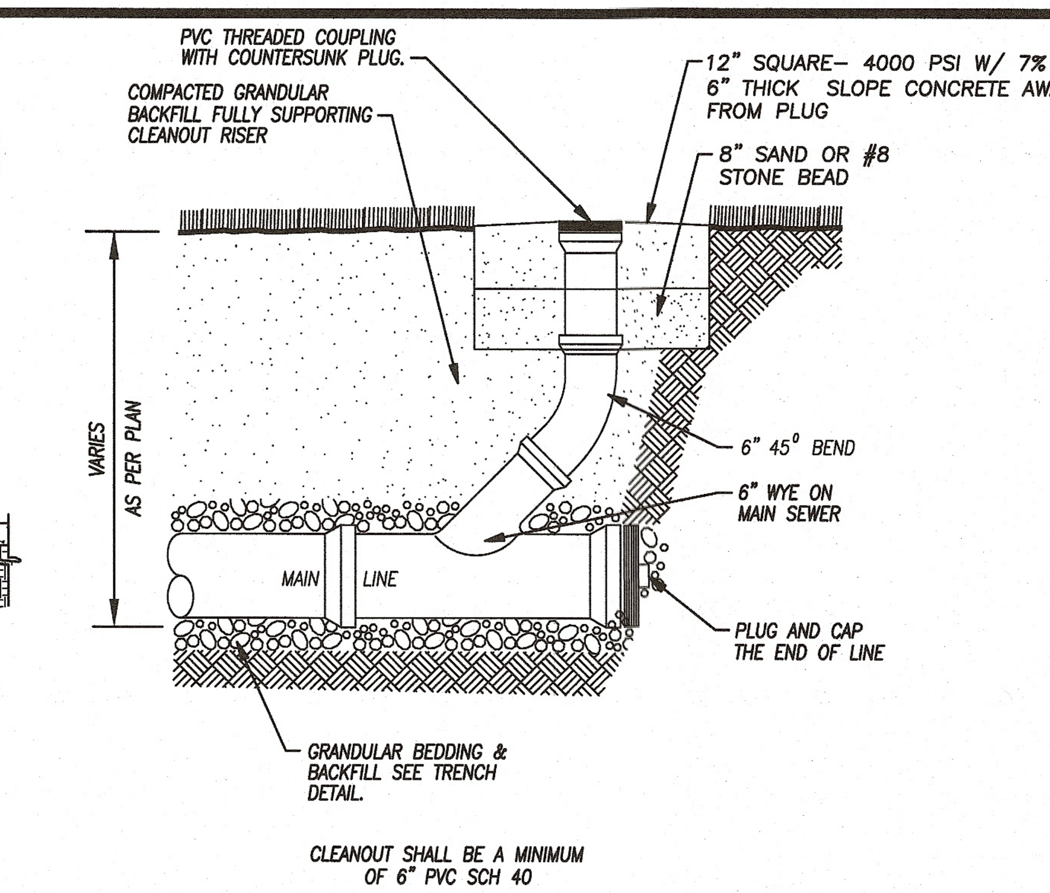
RAMP TRANSITION
REFERENCE ONLY NOT TO SCALE



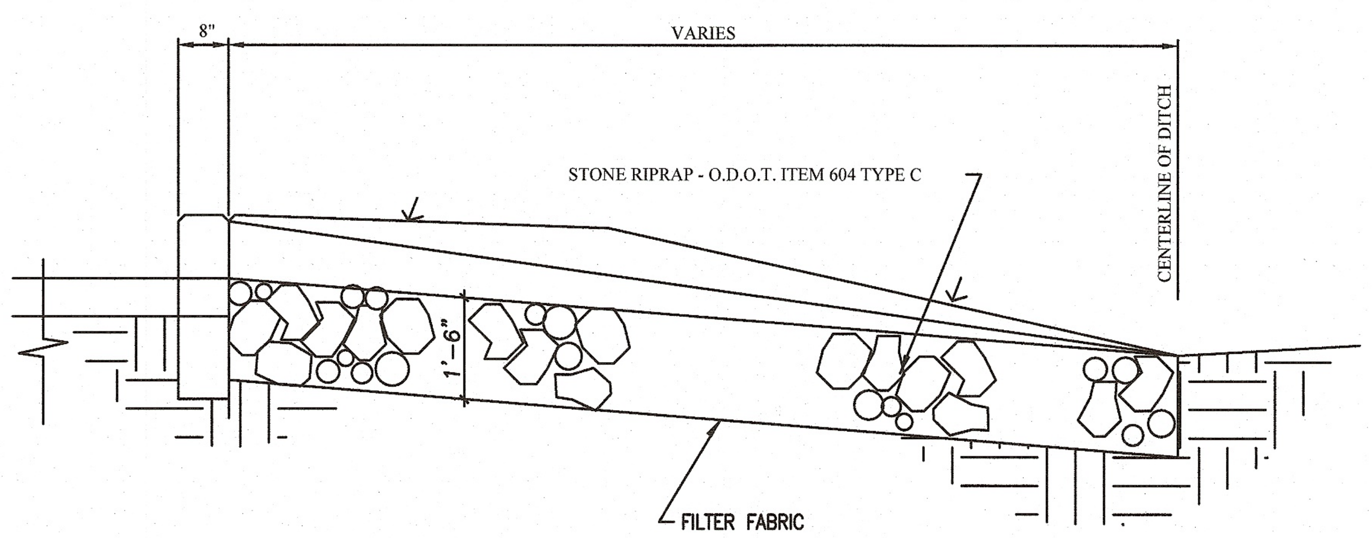
GUIDE RAIL DETAIL
REFERENCE ONLY NOT TO SCALE



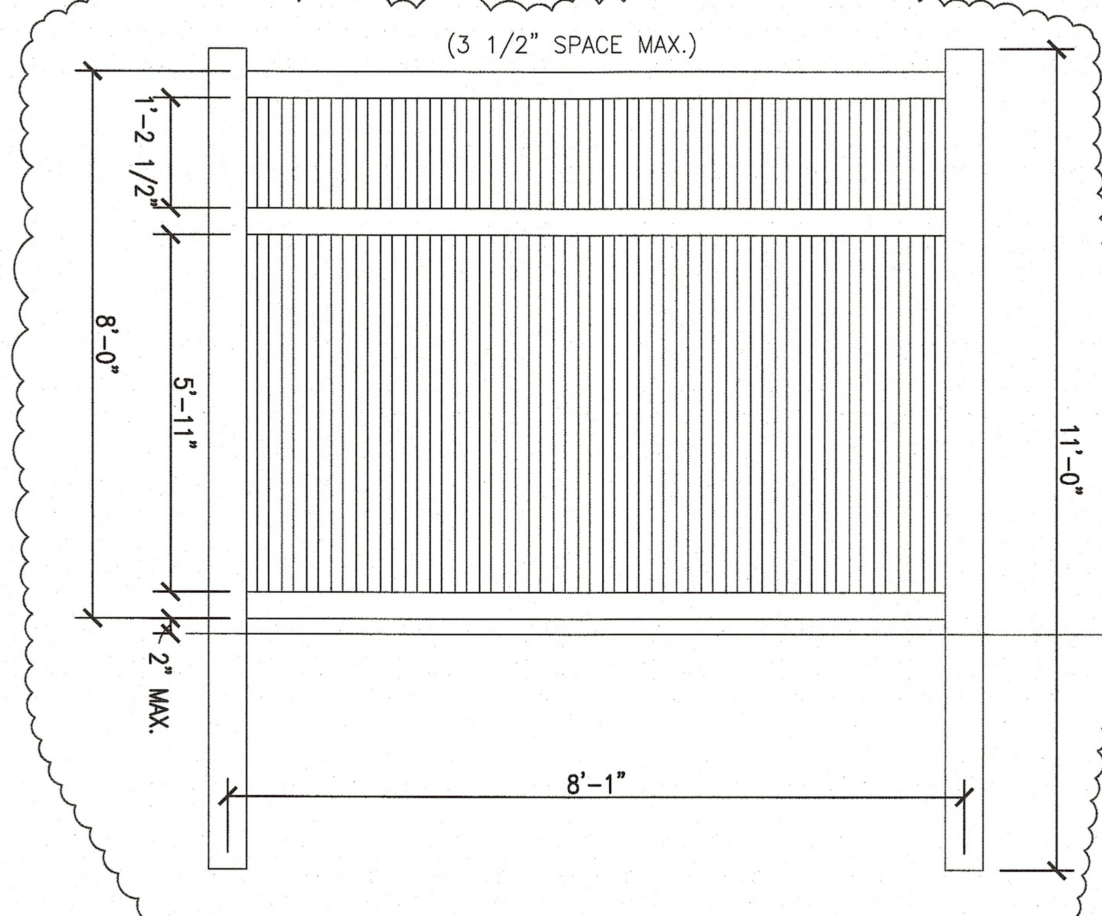
TYPICAL BOLLARD DETAIL
REFERENCE ONLY NOT TO SCALE



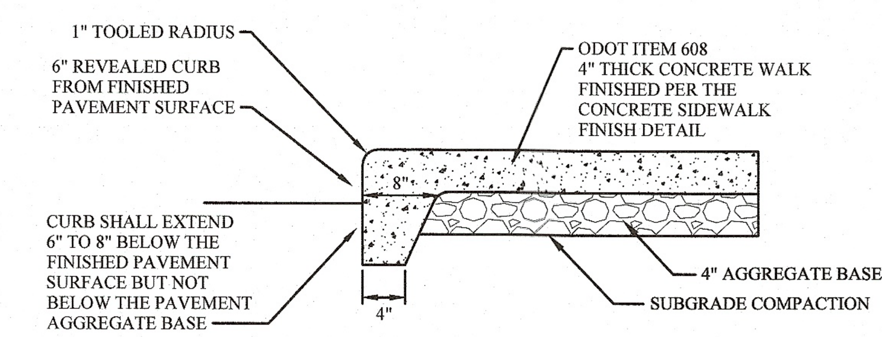
CLEANOUT DETAIL
REFERENCE ONLY NOT TO SCALE



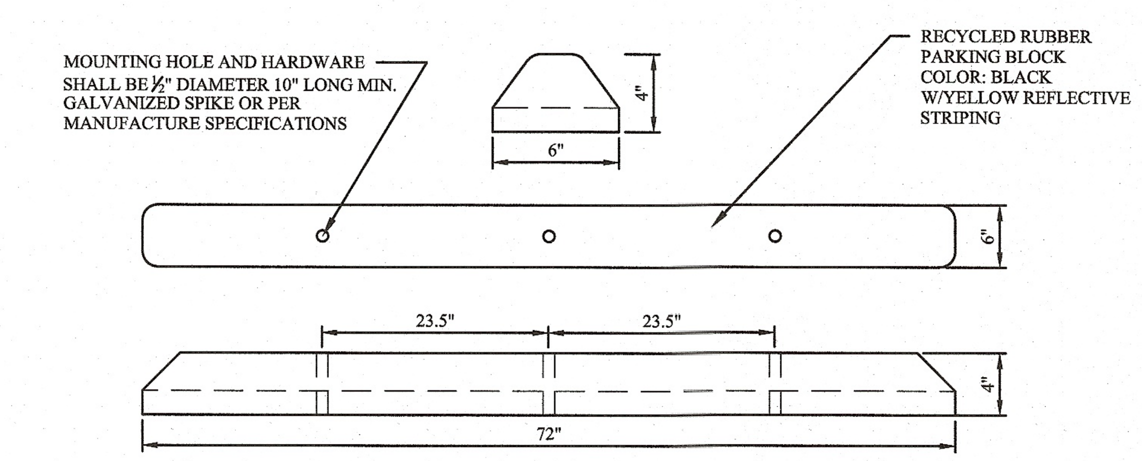
SECTION THROUGH TYPICAL FLUME
REFERENCE ONLY NOT TO SCALE



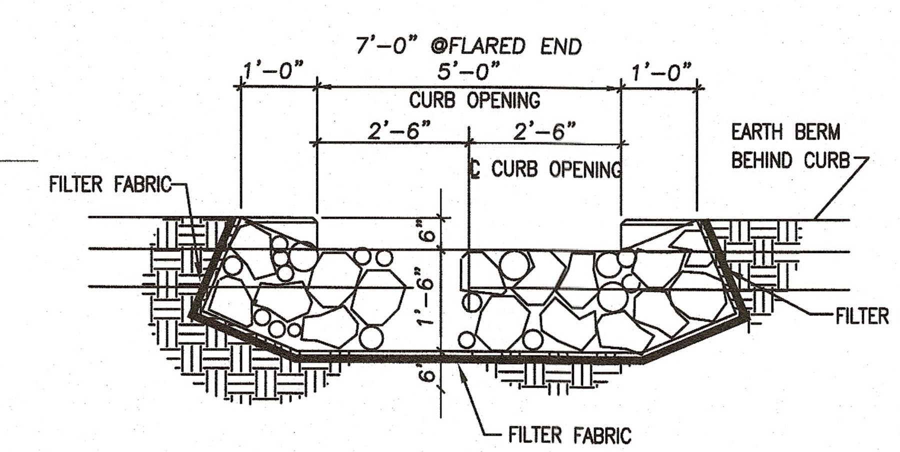
DECORATIVE FENCE DETAIL
REFERENCE ONLY NOT TO SCALE
CONTRACTOR SHALL SUPPLY SHOP DRAWINGS



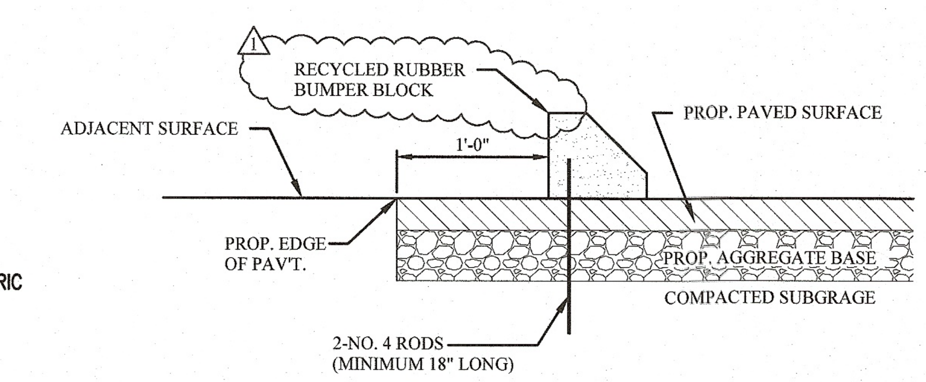
INTEGRAL CONCRETE CURB & WALK DETAIL (ON-SITE)
REFERENCE ONLY NOT TO SCALE



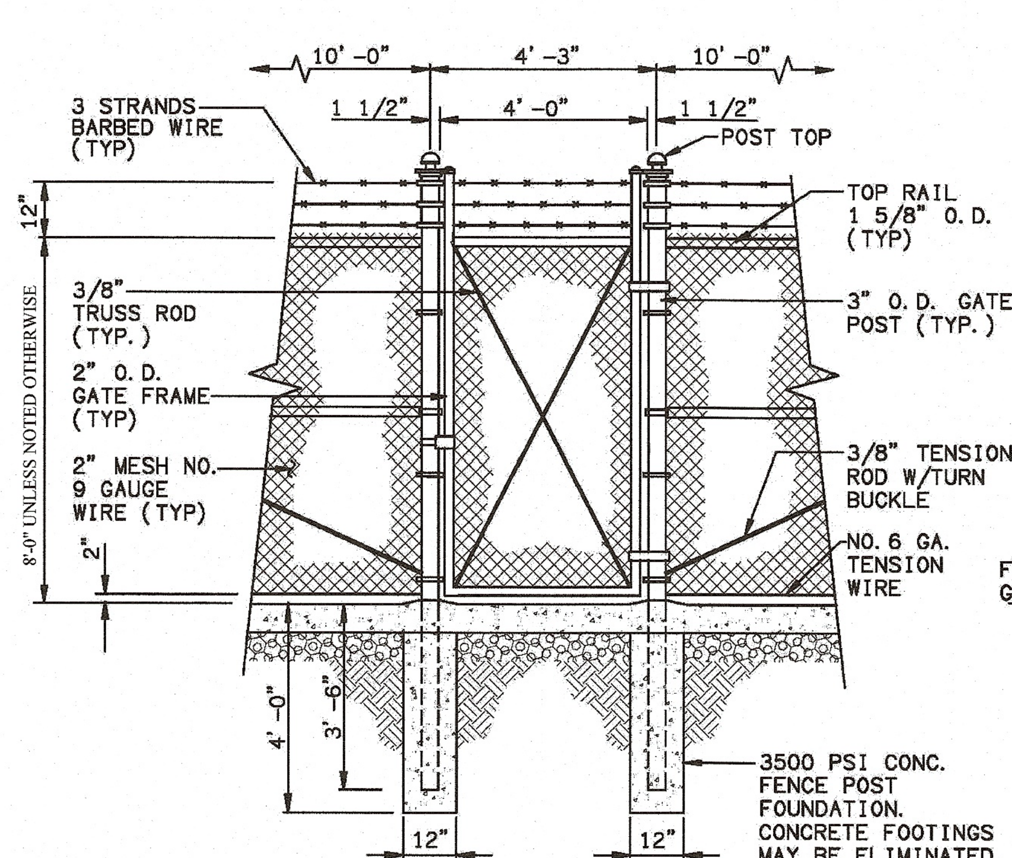
PROP. RECYCLED RUBBER BUMPER BLOCK
REFERENCE ONLY NOT TO SCALE



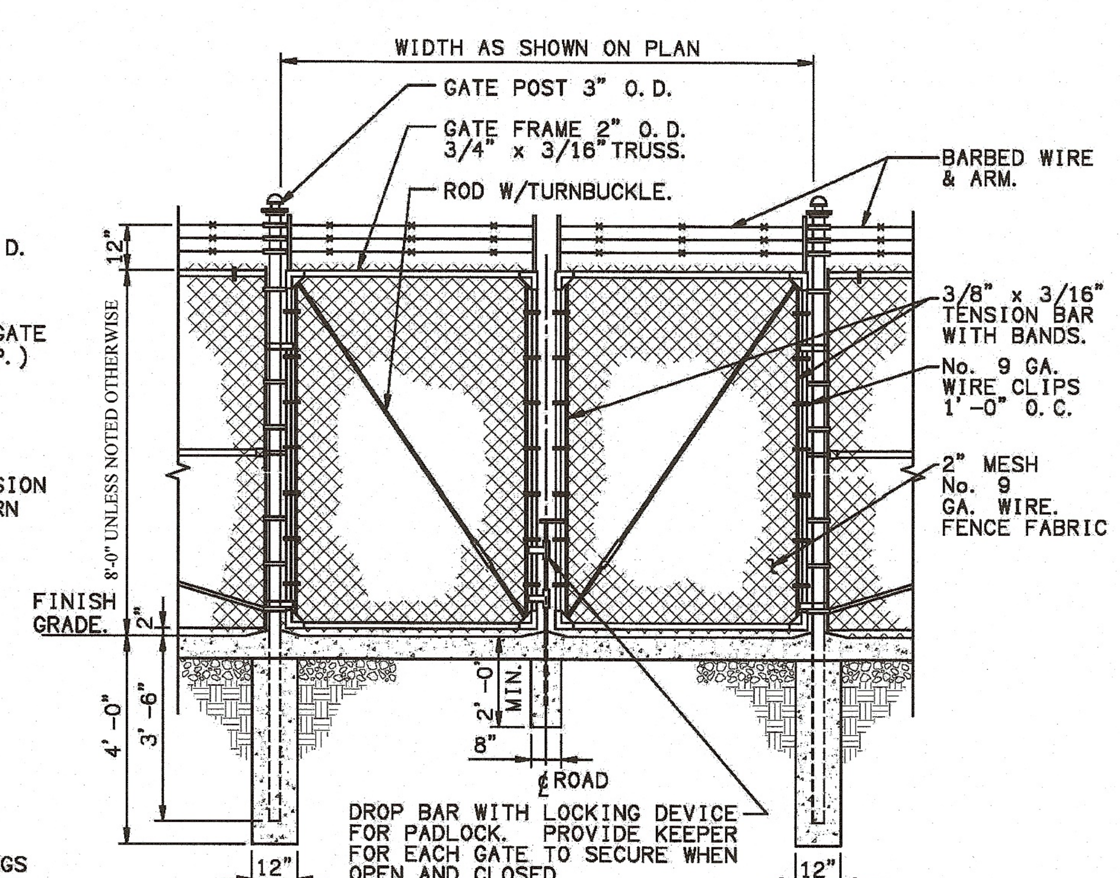
TRANSVERSE SECTION THROUGH TYPICAL FLUME
REFERENCE ONLY NOT TO SCALE



BUMPER BLOCK DETAIL
REFERENCE ONLY NOT TO SCALE

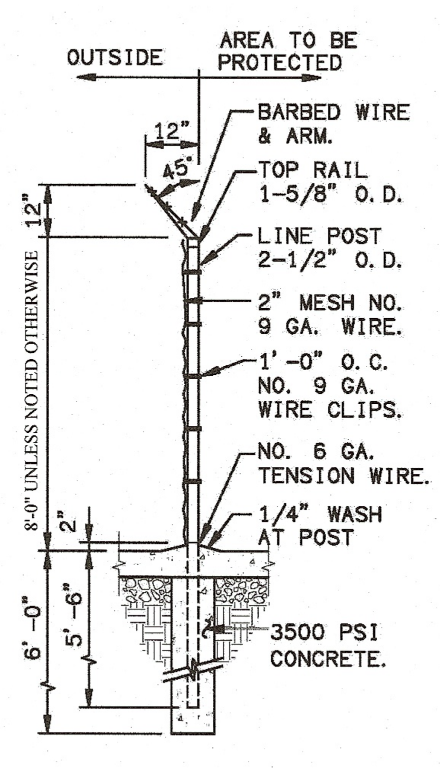


PEDESTRIAN GATE - ELEVATION

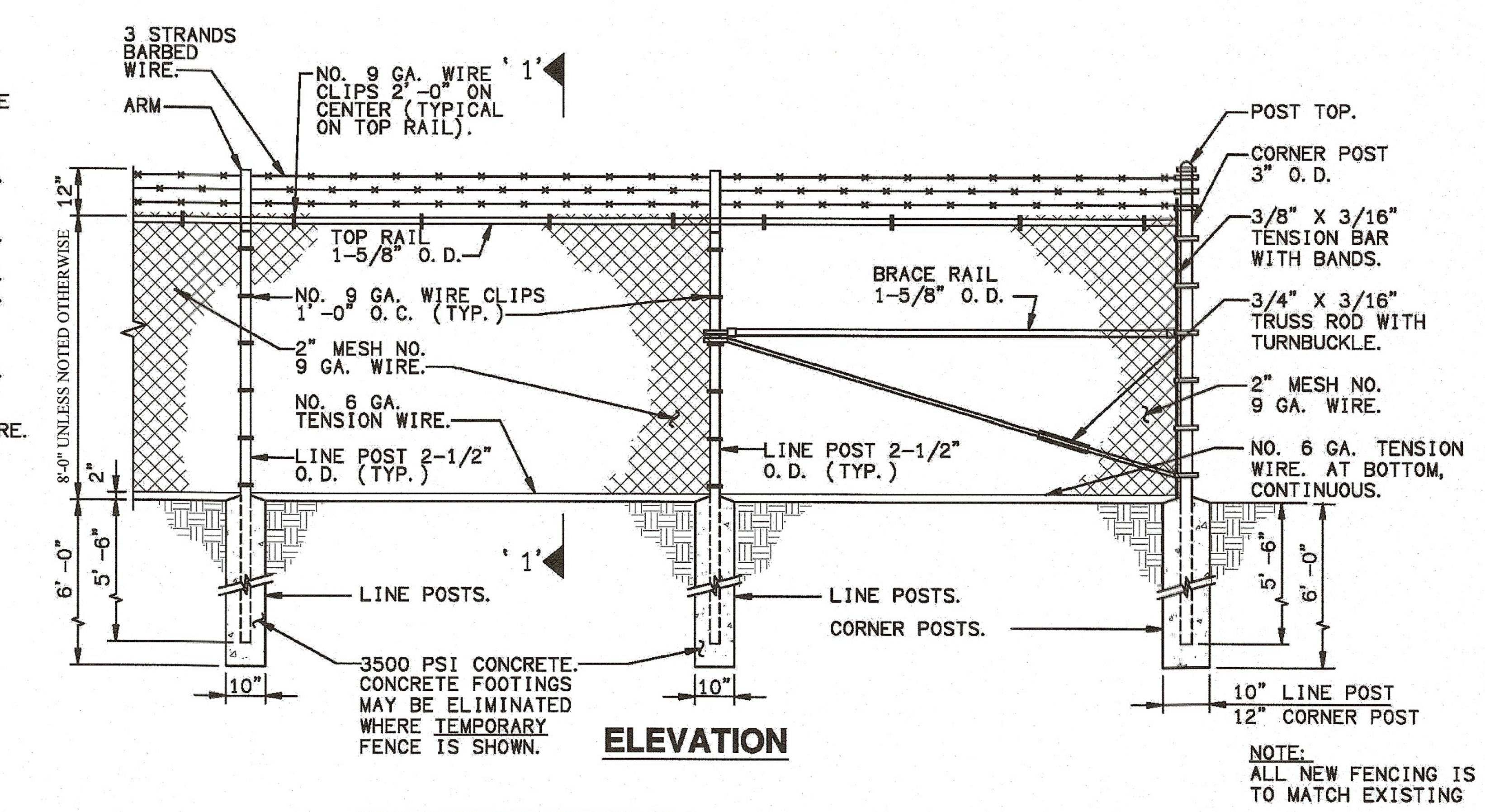


SWING GATE - ELEVATION

TYPICAL FENCE AND GATE DETAILS
REFERENCE ONLY NOT TO SCALE



SECTION



ELEVATION

NOTE: ALL NEW FENCING IS TO MATCH EXISTING

CHAIN LINK FENCE DETAILS
REFERENCE ONLY NOT TO SCALE

FENCE SUPPLIER SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL BY OWNER

* BARBED WIRE SHALL BE INSTALLED ON FENCE ONLY WHERE NOTED ON PLANS *

WEBER ENGINEERING SERVICES
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2555 Hartville Rd., Suite B
Rootstown, OH 44272
www.WeberEngineeringServices.com
330-329-2037
matt@webercivil.com

STATE OF OHIO
MATTHEW L. WEBER
61709
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Reg. No.: 61709

CLIENT:

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ROCK & ROLL
NEW SITE
2255 PHOENIX AVE. SE, MASSILLON, OHIO

Issue Date
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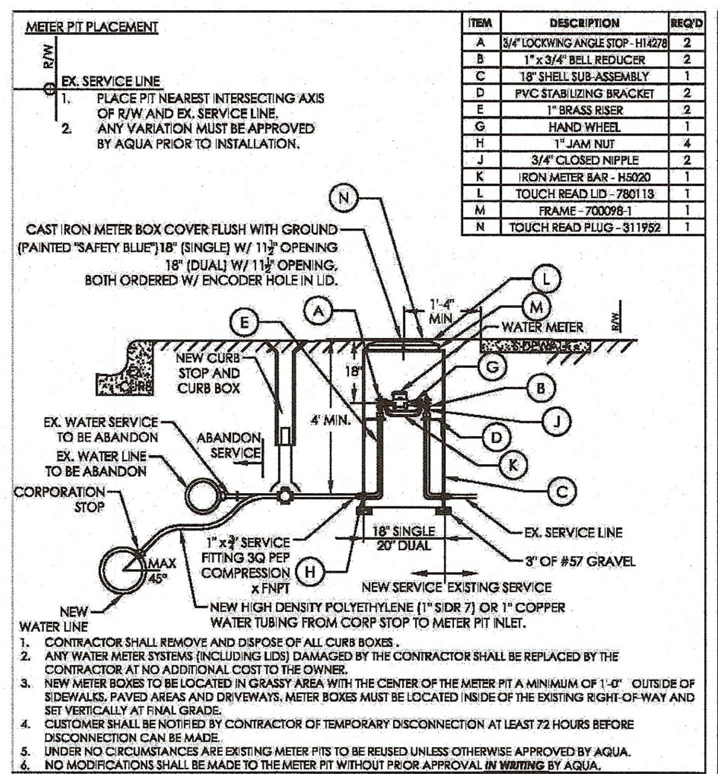
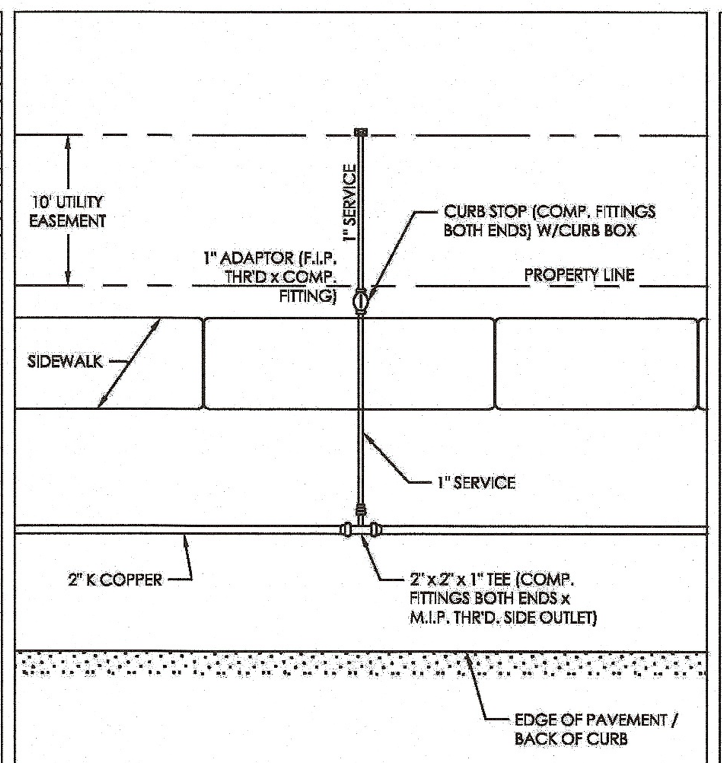
09-24-2018
△11-05-2018

SITE DETAILS

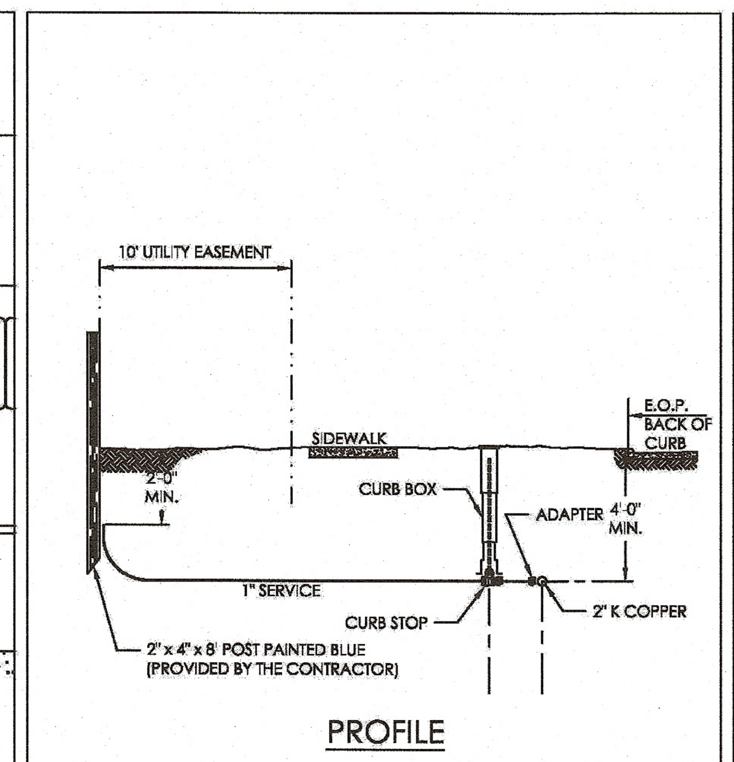
C105A
Project No. 2018-196



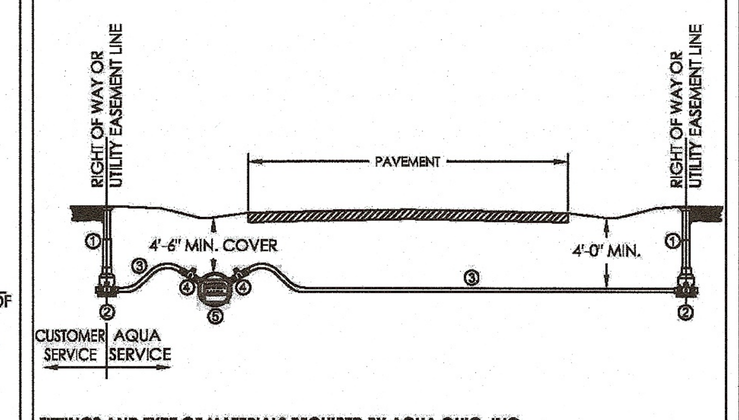
TYPICAL WATER SERVICE TAP — DRAWING NUMBER: SD-101



TYPICAL PRE-TAP PLAN — DRAWING NUMBER: SD-102



TYPICAL PRE-TAP CUL-DE-SAC LOTS — DRAWING NUMBER: SD-103



FITTINGS AND TYPE OF MATERIALS REQUIRED BY AQUA OHIO, INC.

1. CURB BOX
2. 1" BRASS CURB STOP
3. SERVICE LINE
4. 1" BRASS CORPORATION STOP
5. MAXIMUM DIRECT TAP SHALL BE 1" FOR 8" AND 12" DIA. D.I.P. AND 2" FOR 16" DIA. D.I.P. BRASS SERVICE SADDLE WITH STAINLESS STEEL STRAP TO BE USED OTHERWISE

* RESIDENTS TO BE NOTIFIED BEFORE SHUT OFF

TYPICAL SERVICE LINE INSTALLATION — DRAWING NUMBER: SD-104

- FIELD-LOK GASKETS OR OTHER APPROVED PIPE RESTRAINT SYSTEMS WILL BE USED TO RESTRAIN PIPE, OR WITH PRIOR APPROVAL BY AQUA FOR THE FOLLOWING SITUATIONS:
  1. FOR VERTICAL BENDS IN LIEU OF DEAD-MAN CONCRETE RESTRAINT
  2. FOR VERTICAL AND HORIZONTAL BENDS INSTALLED IN POOR SOIL CONDITIONS
  3. FOR HYDRANTS OR BENDS WITH SLOPING GROUND BEHIND THE POINT OF THRUST

NOTE: MEG-A-LUGS OR APPROVED EQUAL SHALL BE USED TO RESTRAIN FITTINGS AND VALVES

- THRUST BLOCKS WILL NORMALLY BE USED FOR ALL HORIZONTAL BENDS. THE CONTRACTOR WILL GET WRITTEN PRIOR APPROVAL FROM AQUA TO SUBSTITUTE A RESTRAINT SYSTEM IN LIEU OF THRUST BLOCKING FOR HORIZONTAL BENDS.
- CONTRACTOR WILL SUPPLY ALL FIELD-LOK GASKETS

LINEAR FEET OF MECHANICAL PIPE RESTRAINT REQUIRED (EITHER SIDE OF FITTING)

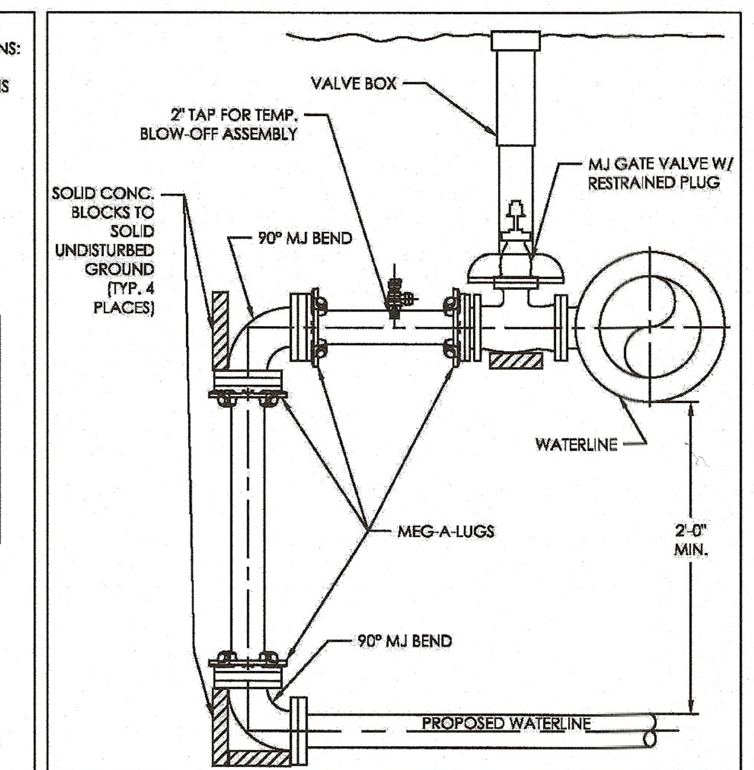
PIPE DIA. (IN.)	DEAD END	90°	45°	22.5°	11.25°	VERT. UP	VERT. DOWN	TEE BRANCH
4	36	16	8	0	0	4	16	18
6	60	28	13	0	0	10	24	35
8	108	54	18	0	0	18	36	90
12	162	90	36	18	0	36	72	144
16	214	118	49	23	12	12	21	200
24	304	165	68	33	16	16	30	289

CONSTRUCTION CRITERIA:

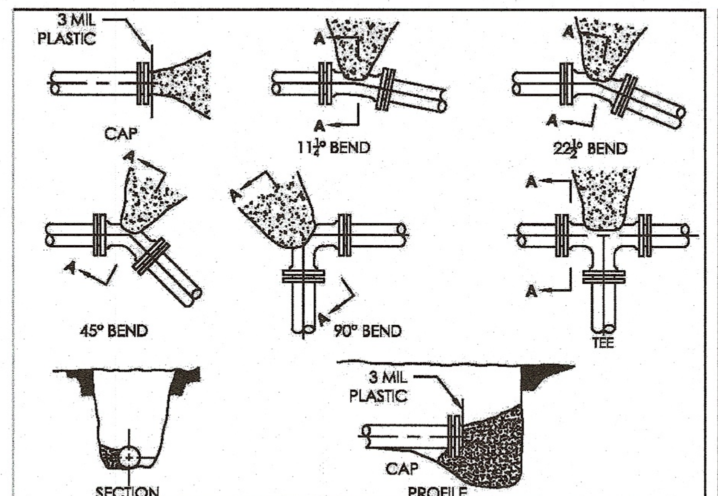
1. FOR WORKING AND/OR TEST PRESSURES< 150 PSI.
2. TYPE 2 TRENCH WITH MINIMUM OF 4.0 FT. OF COVER
3. POLYWRAPPED PIPE
4. 18 FT. PIPE LENGTHS
5. FITTINGS RESTRAINED WITH MEG-A-LUGS OR APPROVED EQUAL

NOTE: IF FIELD CONDITIONS DO NOT CONFORM TO THE NOTED CONSTRUCTION CRITERIA, THE CONTRACTOR SHALL GET WRITTEN APPROVAL FROM AQUA FOR THE NUMBER OF RESTRAINED JOINTS.

THRUST RESTRAINT WITH FIELD-LOK GASKETS — DRAWING NUMBER: SD-105



BACKSIDE TAP DETAIL — DRAWING NUMBER: SD-106



FITTINGS SIZES	BEARING AREA OF BLOCK ON UNDISTURBED SOIL FOR HORIZONTAL BENDS (S.F.) *				
	TEES & ENDS	90° BEND	45° BEND	22½° BEND	11¼° BEND
4	1.5	2	1.5	1.5	1.5
6	3	4	2	1.5	1.5
8	4.5	7	3.5	2	1.5
10	7.5	10.5	5	3	1.5
12	10.5	15	8	4	2.5

* AND VERTICAL BENDS UP

NOTES:

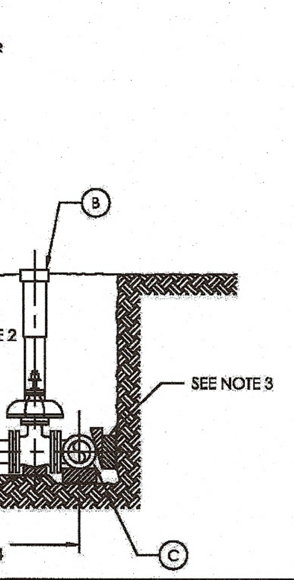
1). ALL BLOCKING SHALL BE POURED AGAINST FIRM, UNDISTURBED SOIL.
2). BEARING AREA AT FITTINGS NOT GIVEN IN BEARING TABLE SHALL BE AS DIRECTED BY THE ENGINEER.
3). WHEN POURING AGAINST PLUGS AND BLIND FLANGES SET A PIECE OF 3 MIL PLASTIC AGAINST FITTING, TO KEEP CONCRETE OFF BOLTS.
4). LAYOUT TO BE APPROVED BY ENGINEER PRIOR TO CONCRETE POUR.
5). BASED ON 150 PSI STATIC PRESSURE PLUS 50 PSI WATER HAMMER AND 2000 PSF SOIL BEARING.
6). PIPE JOINTS AND BOLTS MUST BE ACCESSIBLE AFTER CONCRETE IS POURED.
7). THRUST BLOCK DETAILS ARE SHOWN AS MINIMUM AND MAY REQUIRE ADDITIONAL BLOCKING.
8). CONCRETE CINDER BLOCKS MAY BE USED IN PLACE OF POURED CONCRETE FOR WATER MAINS 12" AND SMALLER.

CONCRETE THRUST BLOCKING DETAILS — DRAWING NUMBER: SD-107

NOTES:

1. SOLID CONCRETE BLOCK TO BE USED UNDER ALL TEES, VALVES, ALSO BEHIND AND UNDER HYDRANT ELBOW.
2. CLEAN CRUSHED STONE FILL AROUND HYDRANT DRAIN TO A DEPTH OF 2'-0".
3. SOLID CONCRETE BLOCK WITH OAK WEDGES. (BRACED AGAINST UNDISTURBED SOIL)
4. THE DISTANCE FROM THE CENTERLINE OF MAIN TO THE CENTERLINE OF HYDRANT WILL BE 5' EXCEPT WHEN INDIVIDUAL CIRCUMSTANCES PROVE IT TO BE INFEASIBLE. WHEN SUCH CIRCUMSTANCES OCCUR, THE LENGTH OF THE LEAD WILL BE NOTED ON THE DRAWINGS WITH THE STATIONING.
5. ALL HYDRANTS SHALL STAND PLUMB AND HAVE PUMPER NOZZLE FACING THE CURB.
6. PUMPER NOZZLE SHALL BE OUTFITTED WITH 5" STORZ STEAMER CONNECTION.

ITEM	DESCRIPTION
A	HYDRANT ASSEMBLY PER STANDARDS BY AQUA OHIO INC.
B	6" M.J. GATE VALVE, (3) PIECE VALVE BOX
C	ANCHOR TEE (CLOW F-1217)
D	6" DUCTILE IRON PIPE WITH MEGA-LUGS FOR RETAINERS

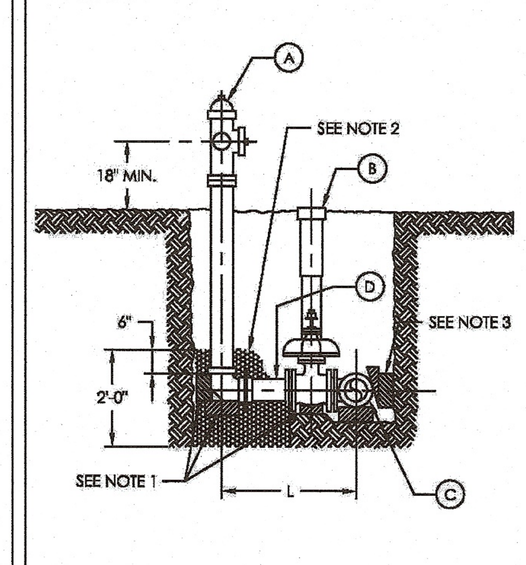


TYPICAL FIRE HYDRANT ASSEMBLY TYPE I — DRAWING NUMBER: SD-108

NOTES:

1. SOLID CONCRETE BLOCK TO BE USED UNDER ALL TEES, VALVES, ALSO BEHIND AND UNDER HYDRANT ELBOW.
2. CLEAN CRUSHED STONE FILL AROUND HYDRANT DRAIN TO A DEPTH OF 2'-0".
3. SOLID CONCRETE BLOCK WITH OAK WEDGES. (BRACED AGAINST UNDISTURBED SOIL)
4. ALL HYDRANTS SHALL STAND PLUMB AND HAVE PUMPER NOZZLE FACING THE CURB.
5. PUMPER NOZZLE SHALL BE OUTFITTED WITH 5" STORZ STEAMER CONNECTION.

ITEM	DESCRIPTION
A	HYDRANT ASSEMBLY PER STANDARDS BY AQUA OHIO INC.
B	6" M.J. GATE VALVE, (3) PIECE VALVE BOX
C	ANCHOR TEE (CLOW F-1217)
D	M.J. ANCHOR COUPLING x 12"L

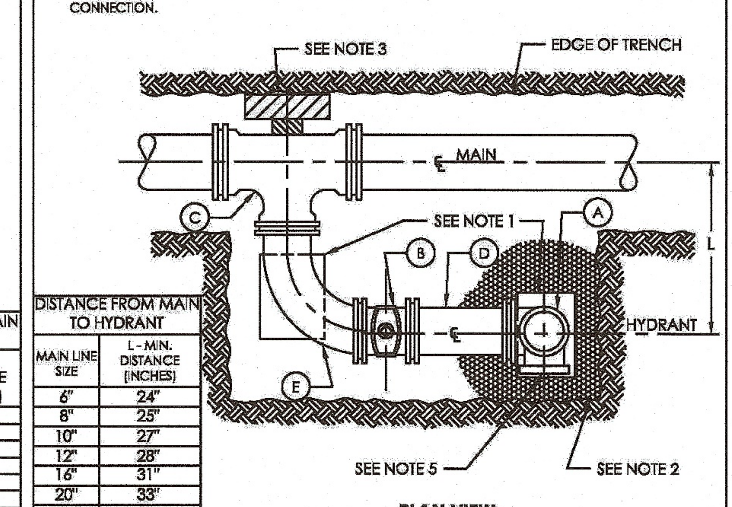


DISTANCE FROM MAIN TO HYDRANT	
MAIN LINE SIZE	L - MIN. DISTANCE (INCHES)
6"	38"
8"	40"
10"	42"
12"	43"
16"	46"
20"	58"
24"	61"

TYPICAL FIRE HYDRANT ASSEMBLY TYPE II — DRAWING NUMBER: SD-109

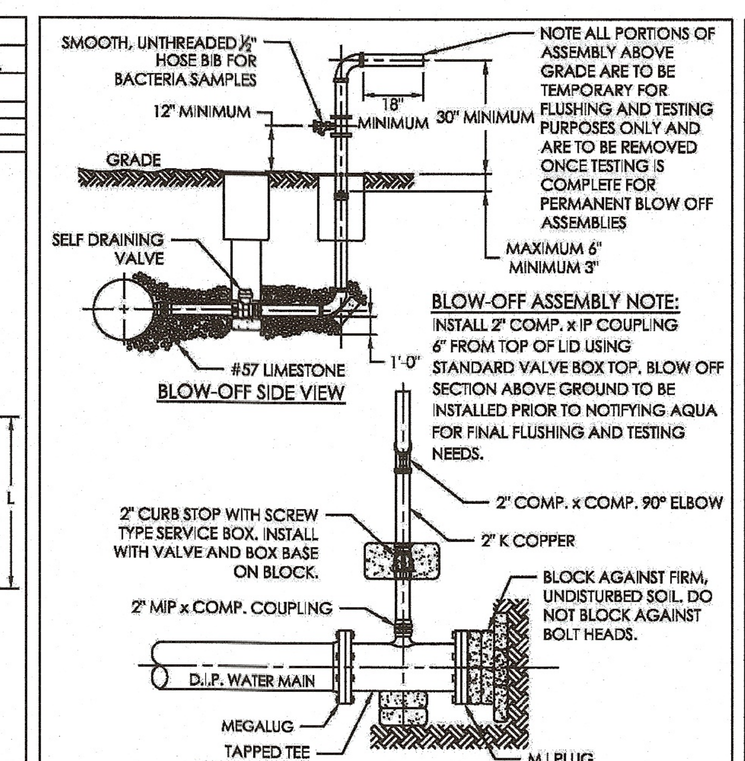
NOTES:

1. SOLID CONCRETE BLOCK TO BE USED UNDER ALL TEES, BENDS, ALSO BEHIND AND UNDER HYDRANT ELBOW.
2. CLEAN CRUSHED STONE FILL AROUND HYDRANT DRAIN TO A DEPTH OF 2'-0".
3. SOLID CONCRETE BLOCK WITH OAK WEDGES. (BRACED AGAINST UNDISTURBED SOIL)
4. THE DISTANCE FROM THE CENTERLINE OF MAIN TO THE CENTERLINE OF HYDRANT WILL BE 5' EXCEPT WHEN INDIVIDUAL CIRCUMSTANCES PROVE IT TO BE INFEASIBLE. WHEN SUCH CIRCUMSTANCES OCCUR, THE LENGTH OF THE LEAD WILL BE NOTED ON THE DRAWINGS WITH THE STATIONING.
5. ALL HYDRANTS SHALL STAND PLUMB AND HAVE PUMPER NOZZLE FACING THE CURB.
6. PUMPER NOZZLE SHALL BE OUTFITTED WITH 5" STORZ STEAMER CONNECTION.

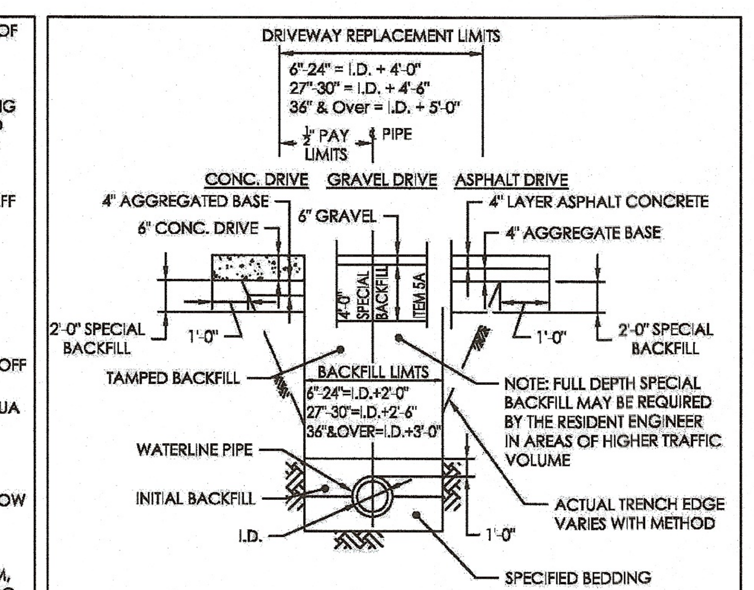


DISTANCE FROM MAIN TO HYDRANT	
MAIN LINE SIZE	L - MIN. DISTANCE (INCHES)
6"	24"
8"	25"
10"	27"
12"	28"
16"	31"
20"	33"
24"	36"

TYPCAL FIRE HYDRANT ASSEMBLY TYPE III — DRAWING NUMBER: SD-110



2" ADAPTOR & BLOW OFF ASSEMBLY — DRAWING NUMBER: SD-111

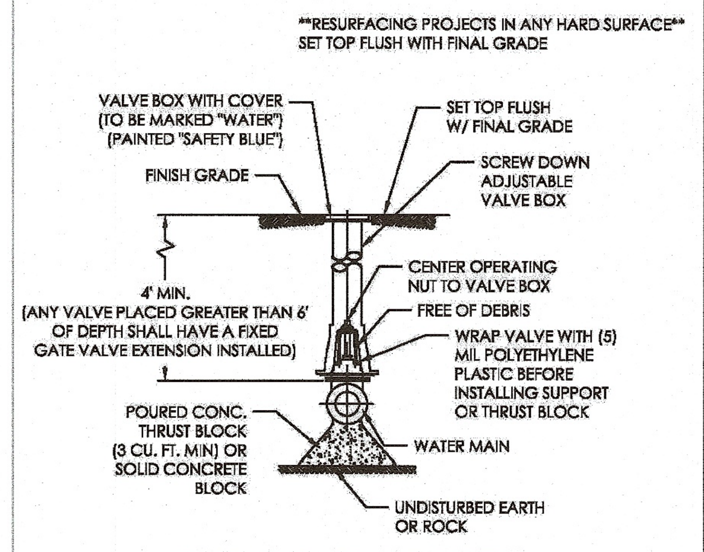


DRIVEWAY RESTORATIONS SHALL BE AS FOLLOWS: CONCRETE DRIVEWAYS WILL BE REPLACED FROM THE NEAREST EXISTING JOINT TO THE STREET, FULL SLAB REPLACEMENT. ASPHALT DRIVEWAYS WILL BE REPLACED FROM THE FARTHEST TRENCH CUT LINE TO THE STREET WITH ALL ASPHALT JOINTS TO BE SEALED, REPAIRING ONLY THE TRENCH WIDTH CUT ACROSS A DRIVEWAY IS NOT ACCEPTABLE.

NOTE: THE CONTRACTOR SHALL MAINTAIN ALL DRIVEWAYS PRIOR TO DRIVEWAY REPLACEMENT.

DRIVEWAY ~ PRIVATE DRIVE RESTORATION — DRAWING NUMBER: SD-112

RESURFACING PROJECTS IN ANY HARD SURFACE SET TOP FLUSH WITH FINAL GRADE



GATE VALVE INSTALLATION DETAIL

1. ALL VALVE BOXES MUST BE KEPT FREE OF DEBRIS DURING CONSTRUCTION.

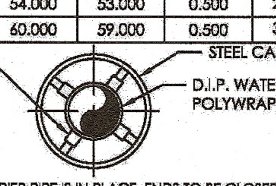
GATE VALVE INSTALLATION DETAIL — DRAWING NUMBER: SD-113

~PIPE CROSSING DATA SHEET~

PIPE DATA	CARRIER PIPE	CASING PIPE
MATERIAL	DUCTILE IRON	STEEL
PROCESS OF MANUFACTURE	SPIN CAST	ELECTRIC
WELD SPECIFICATION	ANSI,A21.51	ASTM A53
GRADE OF CLASS	SEE SPEC	GRADE B TEST
PRESSURE	SEE SPEC	35,000 PSI, YIELD
TYPE OF JOINT	PUSH ON FIELD LOK RUBBER GASKET	WELDED
TYPE OF COATING	ASPHALTIC PRIMER	NONE
CATHODIC PROTECTION	NONE	NONE
SEAL AT END OF CASING	N/A	MOLDED SYN. RUBBER END SEAL
METHOD OF INSTALLATION	PUSH ON SKIDS	JACK AND BORE

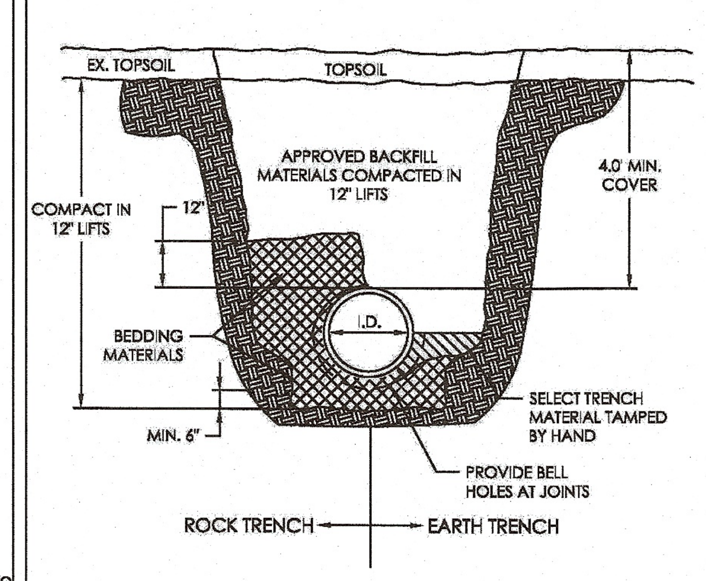
CASING PIPE SIZING

WATER MAIN SIZE	NOMINAL SIZE OF CASING PIPE	OUTSIDE DIAMETER	INSIDE DIAMETER	WALL THICKNESS (MIN.)	WEIGHT PER FOOT
6"	16"	16.000	15.250	0.375	62.64
8"	18"	18.000	17.250	0.375	70.65
12"	24"	24.000	23.000	0.500	125.61
16"	30"	30.000	29.000	0.500	157.68
20"	36"	36.000	35.000	0.500	189.75
24"	42"	42.000	41.000	0.500	221.82
30"	48"	48.000	47.000	0.500	253.89
36"	54"	54.000	53.000	0.500	285.96
42"	60"	60.000	59.000	0.500	318.03

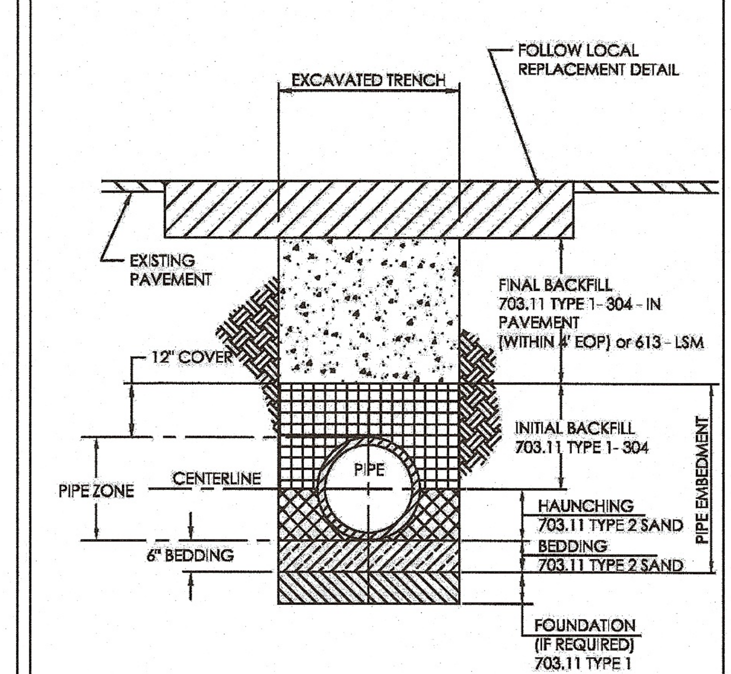


FILL CASING PIPE WITH SAND AFTER CARRIER PIPE IS IN PLACE. ENDS TO BE CLOSED OFF SUFFICIENTLY TO RETAIN THE SAND. FIELD-LOK GASKETS TO BE USED AT ALL PIPE JOINTS WITHIN CASING PIPE.

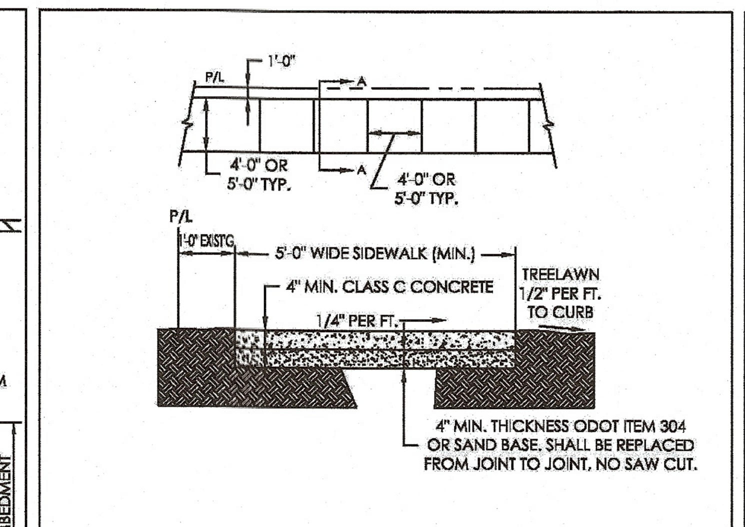
CASING PIPE DETAIL — DRAWING NUMBER: SD-114



TYPICAL TRENCH DETAIL OUTSIDE OF PAVEMENT — DRAWING NUMBER: SD-115

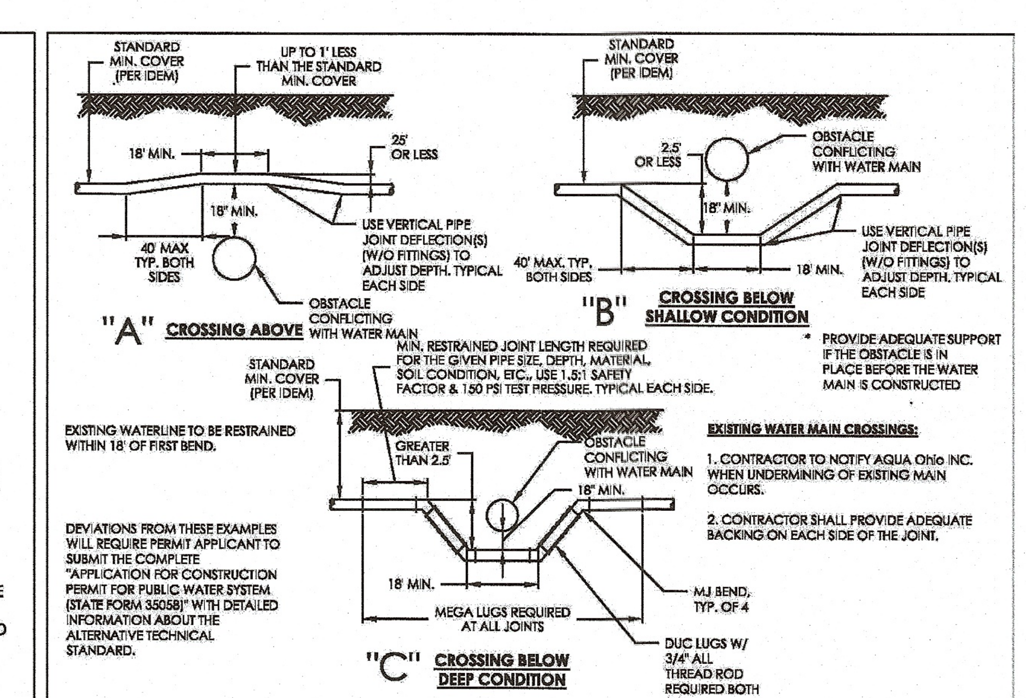


TYPICAL TRENCH DETAIL INSIDE OF PAVEMENT — DRAWING NUMBER: SD-116



1. EXPANSION JOINTS OF APPROVED PREFORMED ASPHALT FIBRE, 1/4" THICK SHALL BE PROVIDED AT INTERVALS OF NOT MORE THAN TWENTY-FIVE FEET AND AS DEEMED NECESSARY, SUCH AS AT MANHOLES OR UTILITY POLES BETWEEN THE SIDEWALK AND ADJOINING STRUCTURES.
2. MINIMUM FALL FROM TOP OF SIDEWALK TO TOP OF CURB IS 6".
3. SIDEWALK THICKNESS SHALL BE 6" MINIMUM AT DRIVE APPROACHES.
4. CONCRETE SHALL BE 4000 PSI @ 28 DAYS CONFORMING TO ODOT SPECIFICATION #499.

TYPICAL SIDEWALK DETAIL — DRAWING NUMBER: SD-117



DESIGN CRITERIA FOR UTILITY CONFLICTS/CROSSINGS — DRAWING NUMBER: SD-118

TYPCAL WATER LINE DETAILS

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STATE OF OHIO — MATTHEW L. WEBER — 61709 — REGISTERED PROFESSIONAL ENGINEER

Reg. No.: 61709

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ROCK & ROLL NEW SITE
2255 PHOENIX AVE. SE, MASSILLON, OHIO

Issue Date
08-29-2018
09-04-2018
09-24-2018
11-05-2018

SITE DETAILS

C105B

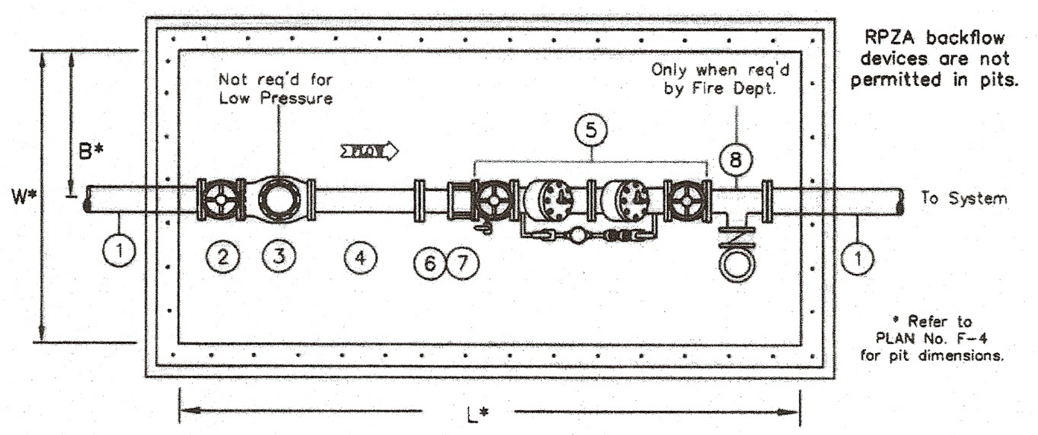
Project No. 2018-196

FIRE SERVICE LINES - 6", 8", and 10"

"Open System" has fire hydrants, meter pit is req'd

Non-Residential __ LOW PRESSURE (up to 150 psi) __ HIGH PRESSURE (where pressure may exceed 150 psi) See note below.

RPZA for systems with chemical additives (anti-freeze systems)
DCVA for systems with no chemical additives



	ITEM				
1	Line Size (Cement-lined D.I.P.) as approved by Aqua		6"	8"	10"
2	R.S. Gate Valve, O.S.&Y., Flanged		6"	8"	10"
3	Pressure Reducing Valve (PRV)	SIZED BY CUSTOMER			
4	Meter (by Aqua)		45"	53"	68"
5	Backflow Device Assembly - DCDA or RPDA		6"	8"	10"
6	Spool Piece, Flg x Flg - Length = 12 in (min.)		6"	8"	10"
7	Flanged Coupling Adapter	Ford Style FFCA or Smith-Blair Style 913			
8	Tee for FDC, only if req'd by local Fire Dept.		6"	8"	10"
	Branchline sized by local Fire Department if required.	SIZED BY LOCAL FIRE DEPARTMENT			

Notes:

A. It is the CUSTOMER's responsibility to address THERMAL EXPANSION before the installation of a PRV or backflow device. All Fire systems should have a Pressure Relief Valve.

B. Water Company Rules & Regulations require that all of the specifications are met and a meter is set before water service is turned on.

C. It is the CUSTOMER's responsibility to size the pressure reducing valve(s) to fit their flow needs. Two-stage reduction may be needed where there is a wide variation between the initial pressure and the reduced pressure. Parallel installation may be needed where there is a wide variation of reduced pressure requirements, where it is vital to maintain a continuous water supply, or other reasons for improved performance.

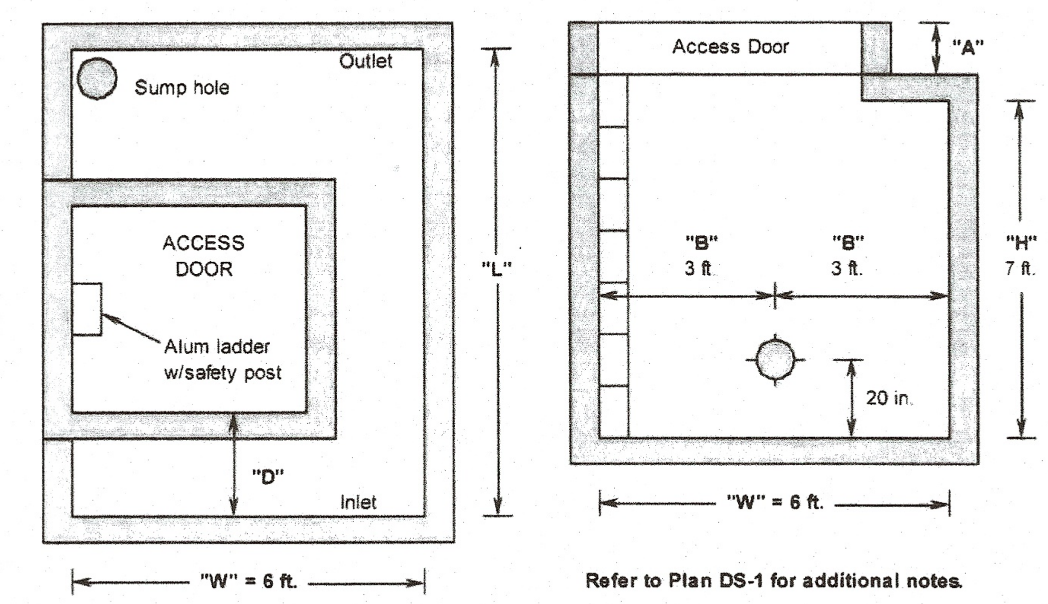
D. Each part must be NSF/ANSI 61 (Annex F & G) compliant. Entire unit must be NSF/ANSI 372 compliant.

E. DCDA & RPDA Assemblies must be UL & FM approved.

rev. 3-13-14

AQUA	
'Open' Fire Lines 6" to 10"	
ck'd by: MJF	Plan No. F-3

SINGLE SERVICE PIT DIMENSIONS for FIRE Service



Refer to Plan DS-1 for additional notes.

Dim	Description	"Open System" 6"	8"	10"	"Closed System" 3"	4"	6"	8"	10"
L	Length - Low Pressure (LP)	12'	13'	14'	n/a	6'	7'	7'	8'
L	Length - Low Pressure w/ FDC	13'	14'	16'	n/a	7'	8'	9'	9'
L	Length - High Pressure (HP)	13'	15'	17'	n/a	8'	9'	10'	11'
L	Length - High Pressure w/ FDC	14	16	19'	n/a	9'	11'	12'	13'
W	Width	6 ft.			6 ft.				
H	Height	7 ft.			7 ft.				
B	Centerline of pipe to side wall	3 ft.			3 ft.				
D	* Front of Door Opening to Inlet Wall - LP	1'	1'	1'	n/a	1'	2'	2'	2'
D	* Front of Door Opening to Inlet Wall - HP	3'	3'	4'	n/a	2'	3'	3'	3'
	Centerline of pipe to floor	20" min - 24" max			20" min. to 24" max.				
	Backflow allowance (inc.both valves)	49"	53"	56"	n/a	40"	49"	53"	56"
A	Height of raised Access Door	6" min to 12" max			6" min. to 12" max.				
	Access Door Opening	4' x 4'			4' x 4'				

* Assumes inlet flange is 9 in. from inlet wall. Outlet flange must be 9 in. (min.) from outlet wall.

Pit dimensions are indide dimensions.

Pipe restrained with Omni Sleeve in each end of pit wall.

rev. 3-18-14

AQUA	
SINGLE SERVICE DIMENSIONS (Fire)	
Ck'd by: MJF	Plan No. F-4

Single Service PIT Calculations - FIRE

	Fitting	OPEN SYSTEM 6"	8"	10"	CLOSED SYSTEM 4"	6"	8"	10"
	Inlet Flange	9	9	9	9	9	9	9
	Valve	10.5	11.5	13				
	Meter	45	53	68				
	Tail Pc w/exp jt	13	13	13	13	13	13	13
Watts 774 DCDA	Backflow (inc valves)	48.5	52	55.5	40	48.5	52	55.5
	Outlet Flange	9	9	9	9	9	9	9
	Gaskets	0.5	0.5	0.5	0.25	0.25	0.25	0.25
	TOTAL (in)	135.5	148.0	168.0	71.3	79.8	83.3	86.8
	TOTAL (ft)	11.3	12.3	14.0	5.9	6.6	6.9	7.2
LP Standard	**FINAL (ft) min**	**12**	**13**	**14**	**6**	**7**	**7**	**8**
	"extra" inches	8.5	8.0	0.0	0.8	4.3	0.8	9.3
	Tee	16	18	22	13	16	18	22
	Gaskets	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	TOTAL (in)	151.8	166.3	190.3	84.5	96.0	101.5	109.0
	TOTAL (ft)	12.6	13.9	15.9	7.0	8.0	8.5	9.1
LP Std. w/FDC	**FINAL (ft) min**	**13**	**14**	**16**	**7**	**8**	**9**	**9**
	"extra" inches	4.3	1.8	1.8	-0.5	0.0	6.5	-1.0
	Valve				9	10.5	11.5	13
	PRV	18	25	30	13	18	25	30
	Gaskets	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	TOTAL (in)	153.8	173.3	198.3	93.5	108.5	120.0	130.0
	TOTAL (ft)	12.8	14.4	16.5	7.8	9.0	10.0	10.8
HP Standard	**FINAL (ft) min**	**13**	**15**	**17**	**8**	**9**	**10**	**11**
	"extra" inches	2.3	6.8	5.8	2.5	-0.5	0.0	2.0
	Tee	16	18	22	13	16	18	22
	Gaskets	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	TOTAL (in)	170.0	191.5	220.5	106.8	124.8	138.3	152.3
	TOTAL (ft)	14.2	16.0	18.4	8.9	10.4	11.5	12.7
HP Std. w/FDC	**FINAL (ft) min**	**14**	**16**	**19**	**9**	**11**	**12**	**13**
	"extra" inches	-2.0	0.5	7.5	1.3	7.3	5.8	3.8
	Front of Door Opening (in)	19.5	20.5	22	9	9	9	9
	Front of Door Opening (ft)	1.6	1.7	1.8	0.8	0.8	0.8	0.8
"D" LP	**Front of Door Opening (ft)**	**1**	**1**	**1**	**0**	**0**	**0**	**0**
	Front of Door Opening (in)	37.5	45.5	52	22	28.5	36.5	43
	Front of Door Opening (ft)	3.1	3.8	4.3	1.8	2.4	3.0	3.6
"D" HP	**Front of Door Opening (ft)**	**3**	**3**	**4**	**0**	**0**	**0**	**0**

AQUA		
Single Service Pit Calculations - FIRE		
Ck'd by MJF	3/6/2014	Plan No. F-5

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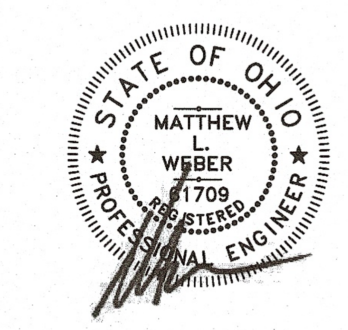

Reg. No.: 61709

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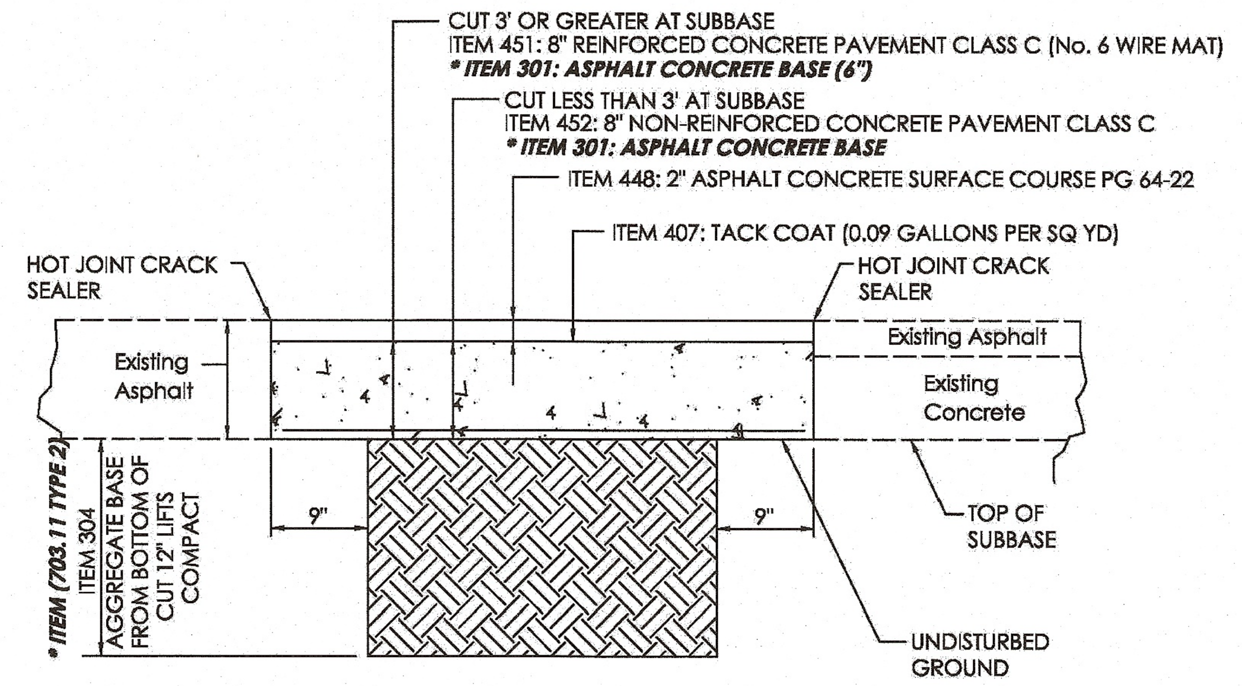
NEW SITE
2255 PHOENIX AVE. SE, MASSILLON, OHIO

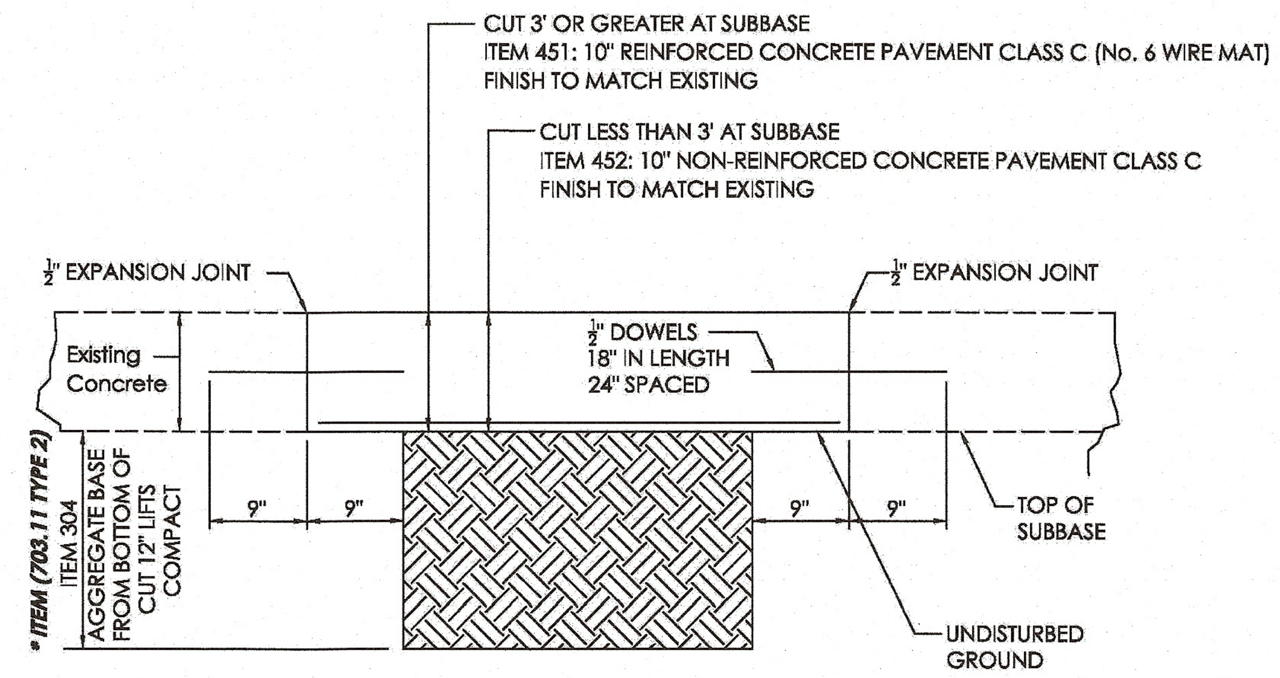
Issue Date
08-29-2018
09-04-2018
09-24-2018
△1 11-05-2018

SITE DETAILS

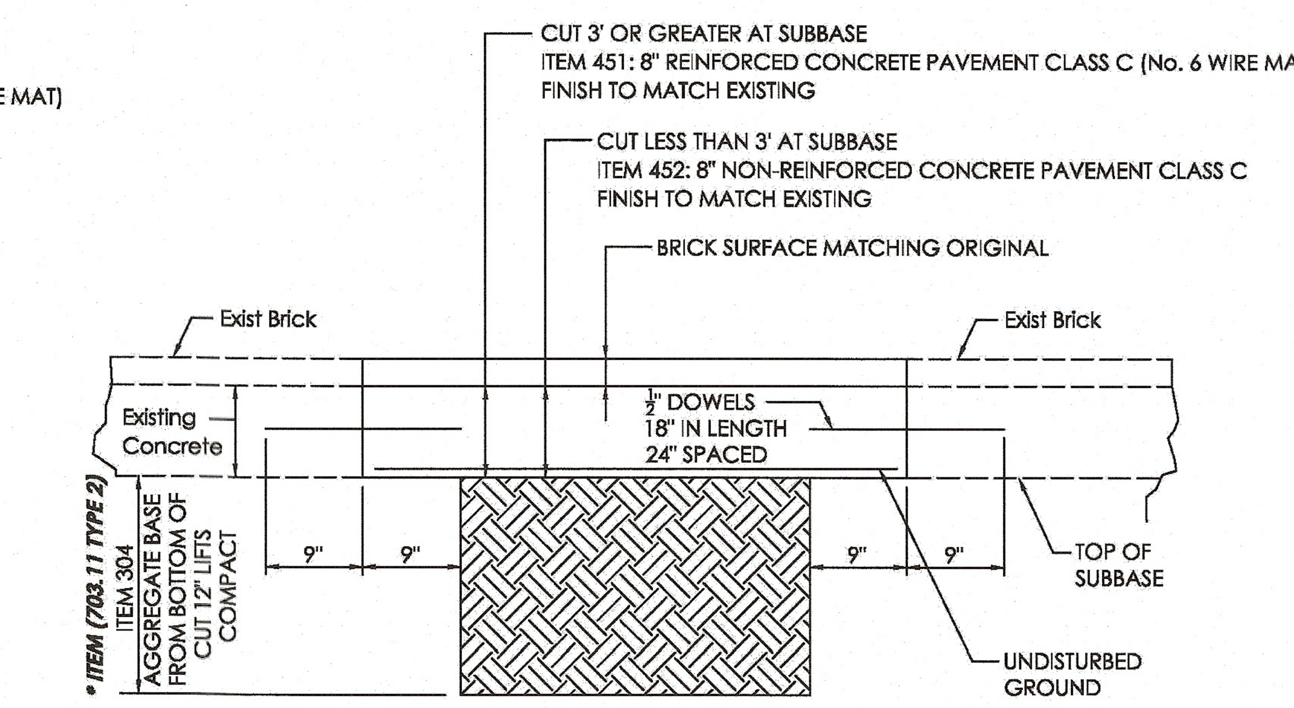
C105C
Project No. 2018-196

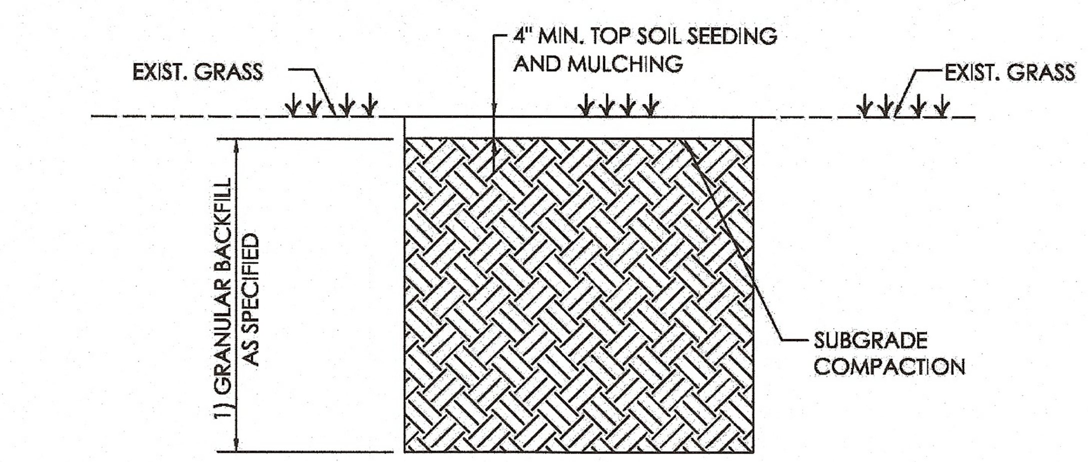


*** ODOT ITEM 304: AGGREGATE BASE MAY BE REQUIRED IN TRENCH FOR MAINTENANCE OF TRAFFIC NEEDS.**



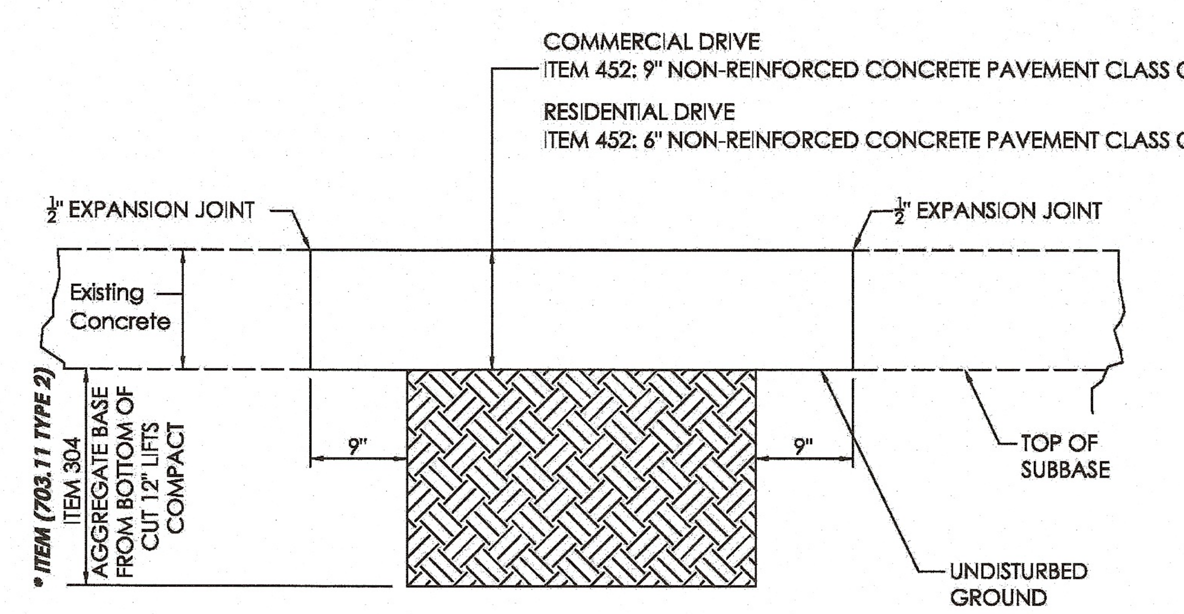
ROADWAY RESTORATION DETAIL



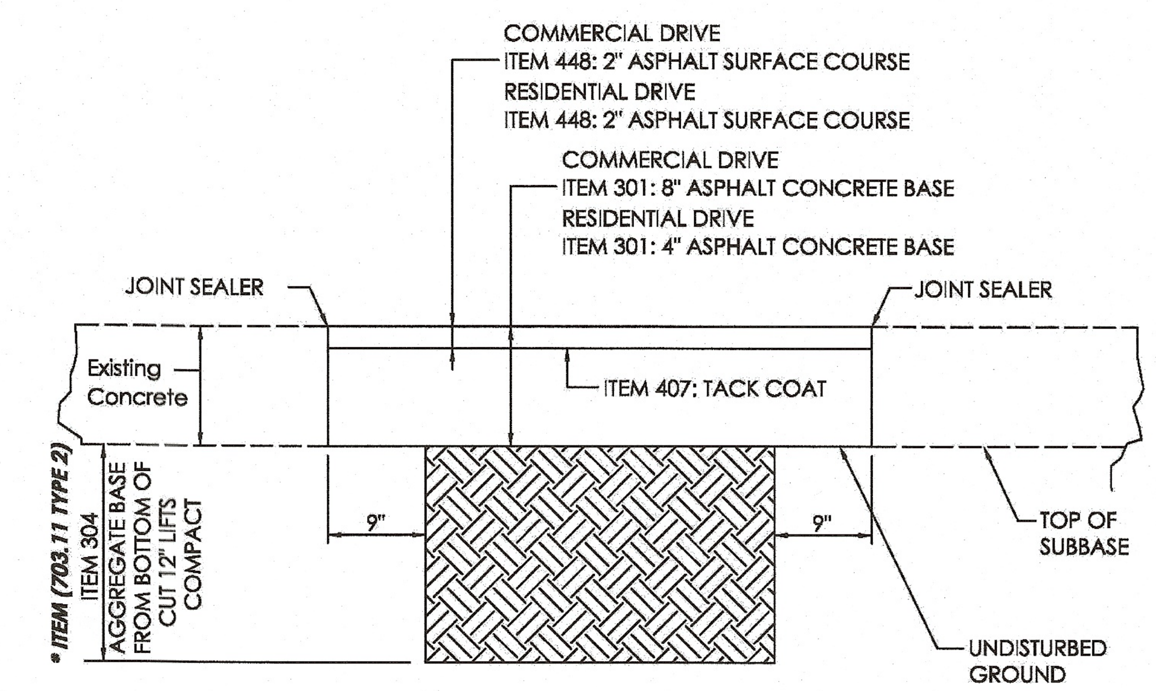


NOTES
1) EXCAVATED MATERIAL MAY BE USED IF FOUND TO BE IN ACCEPTABLE CONDITION AS DETERMINED BY THE CITY ENGINEER.

LAWN RESTORATION DETAIL



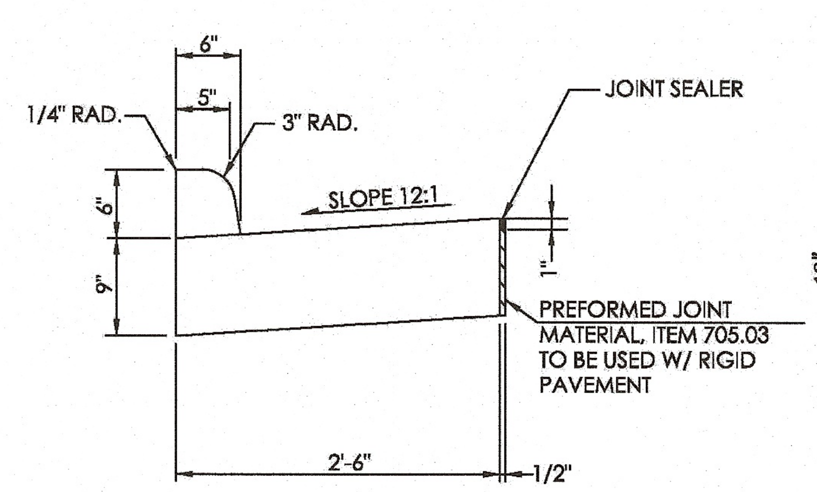
CONCRETE DRIVEWAY RESTORATION DETAIL



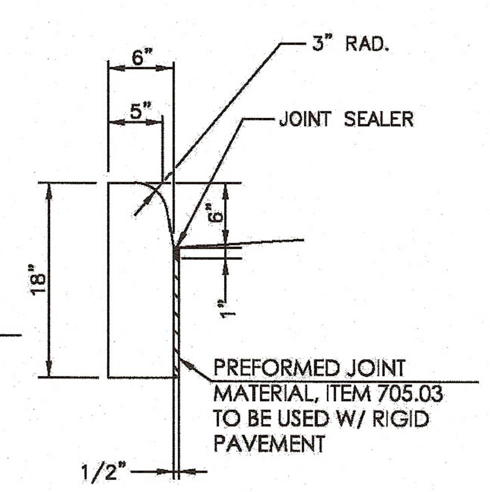
ASPHALT DRIVEWAY RESTORATION DETAIL

NOTE:

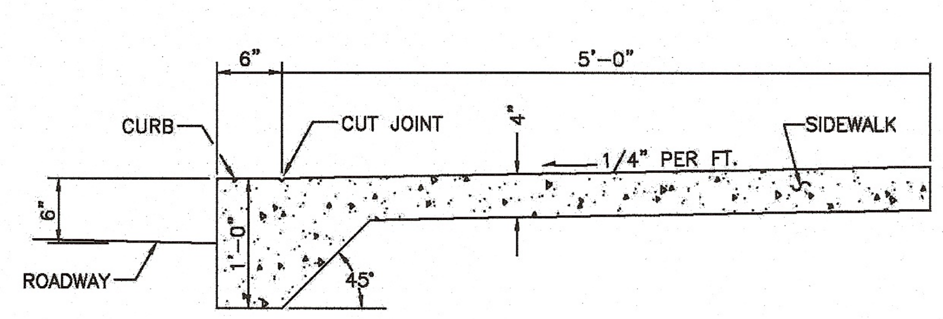
WITH EXISTING CONCRETE WALK, CURB OR DRIVE IS DISTURBED ENTIRE SLAB FROM EXISTING JOINTS SHALL BE REMOVED AND REPLACED UNLESS OTHERWISE DETERMINED BY CITY ENGINEER.



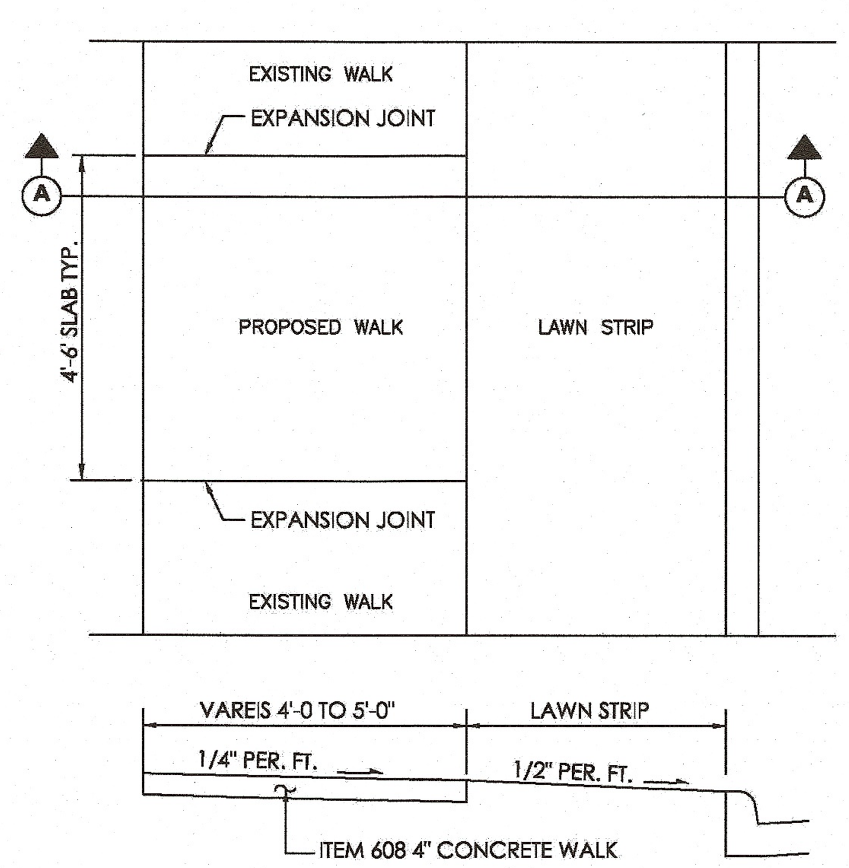
CURB TYPE 2



CURB TYPE 6

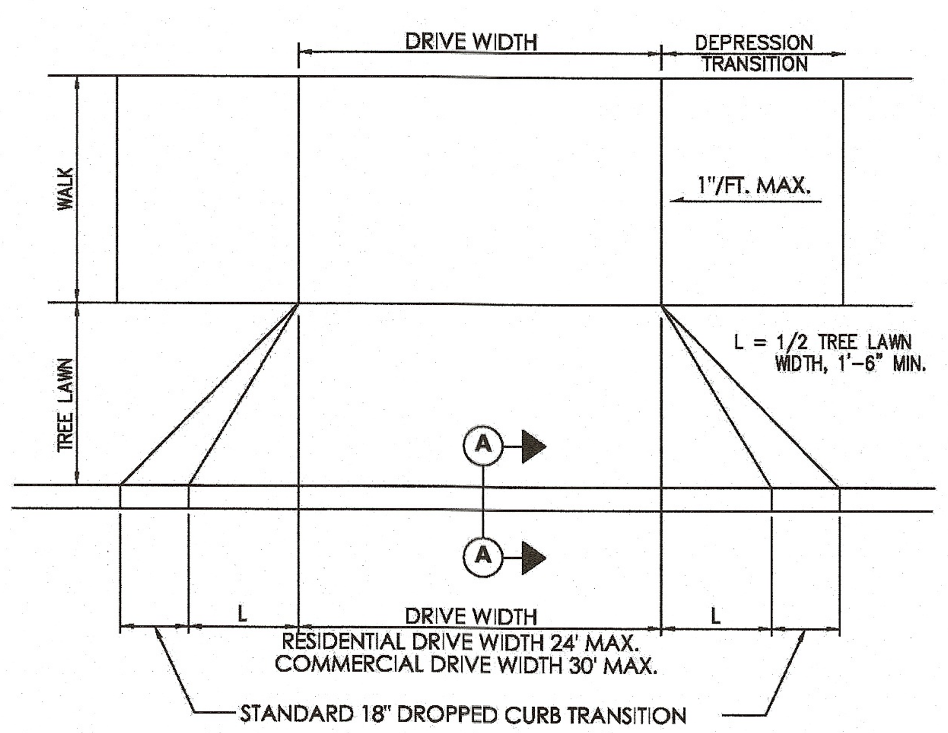


COMBINED CURB & SIDEWALK

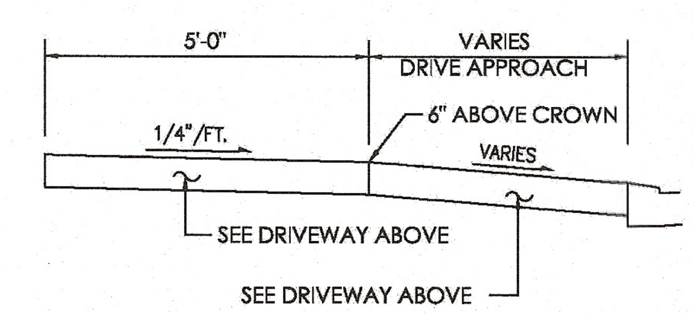


A-A

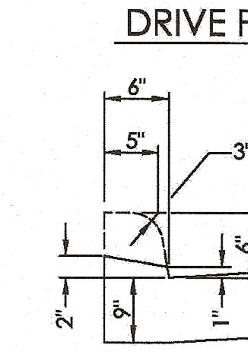
SIDEWALK



DRIVE PLAN



DRIVE PROFILE



A-A

NOTE
ANY DEVIATION FROM THIS MUST BE APPROVED BY THE CITY ENGINEER.
CONCRETE SHALL BE 4000 PSI CLASS C

DRIVEWAY APPROACH DETAIL

CITY OF MASSILLON DETAILS DETAILS
REFERENCE ONLY NOT TO SCALE

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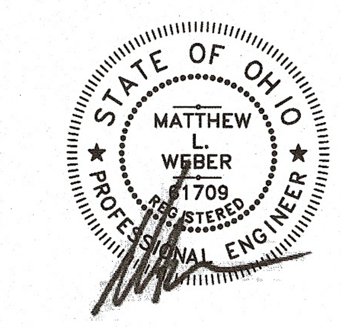

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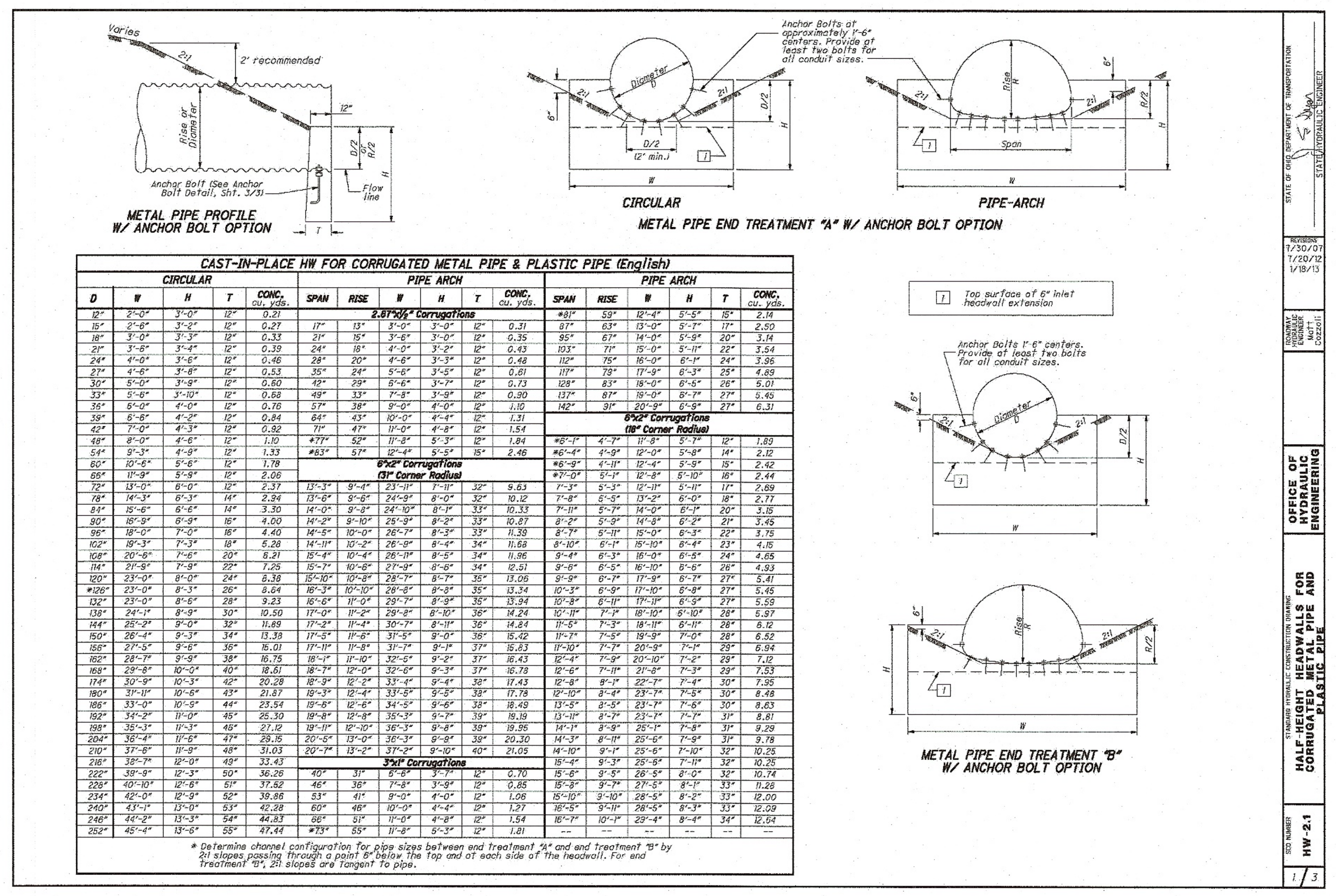
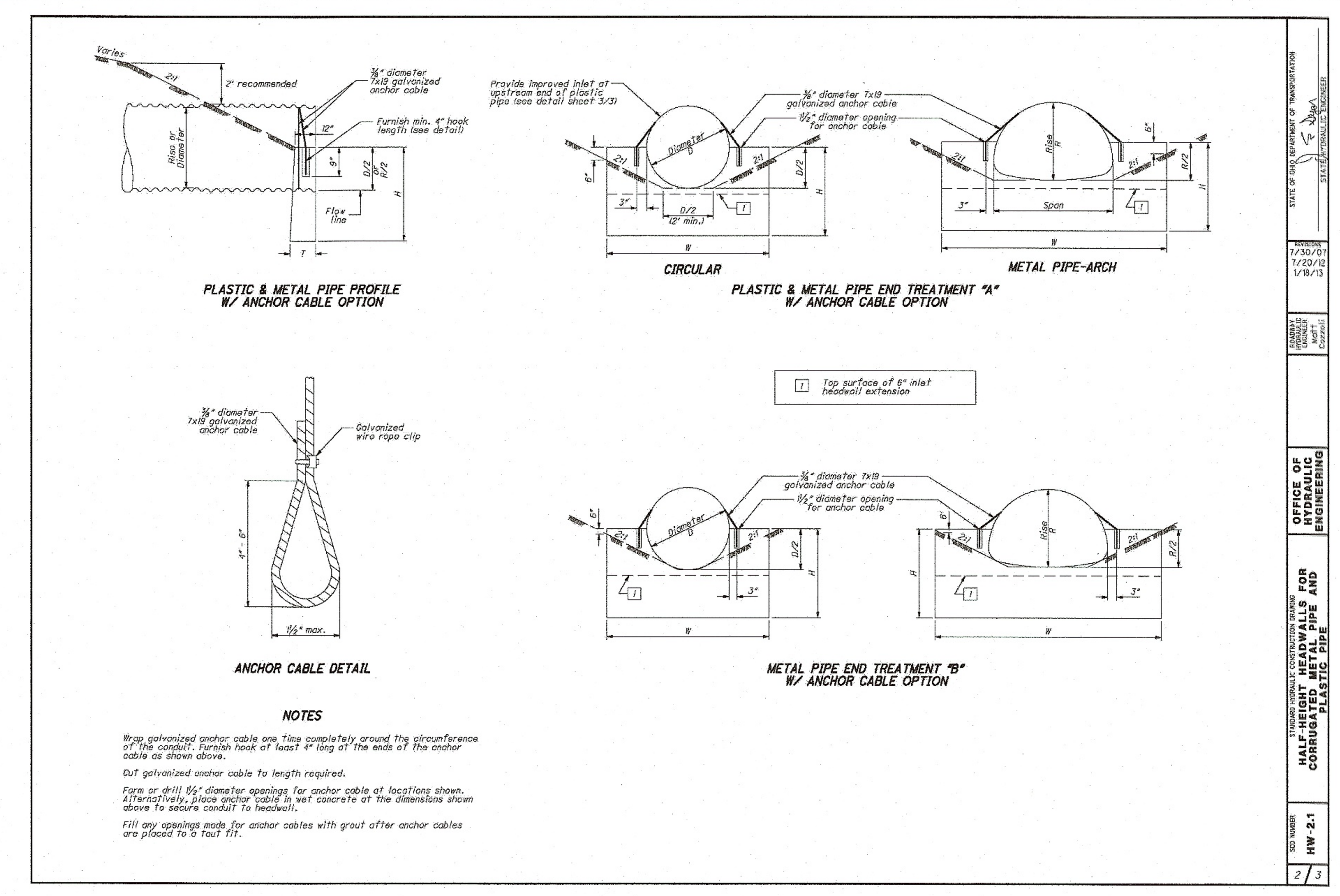
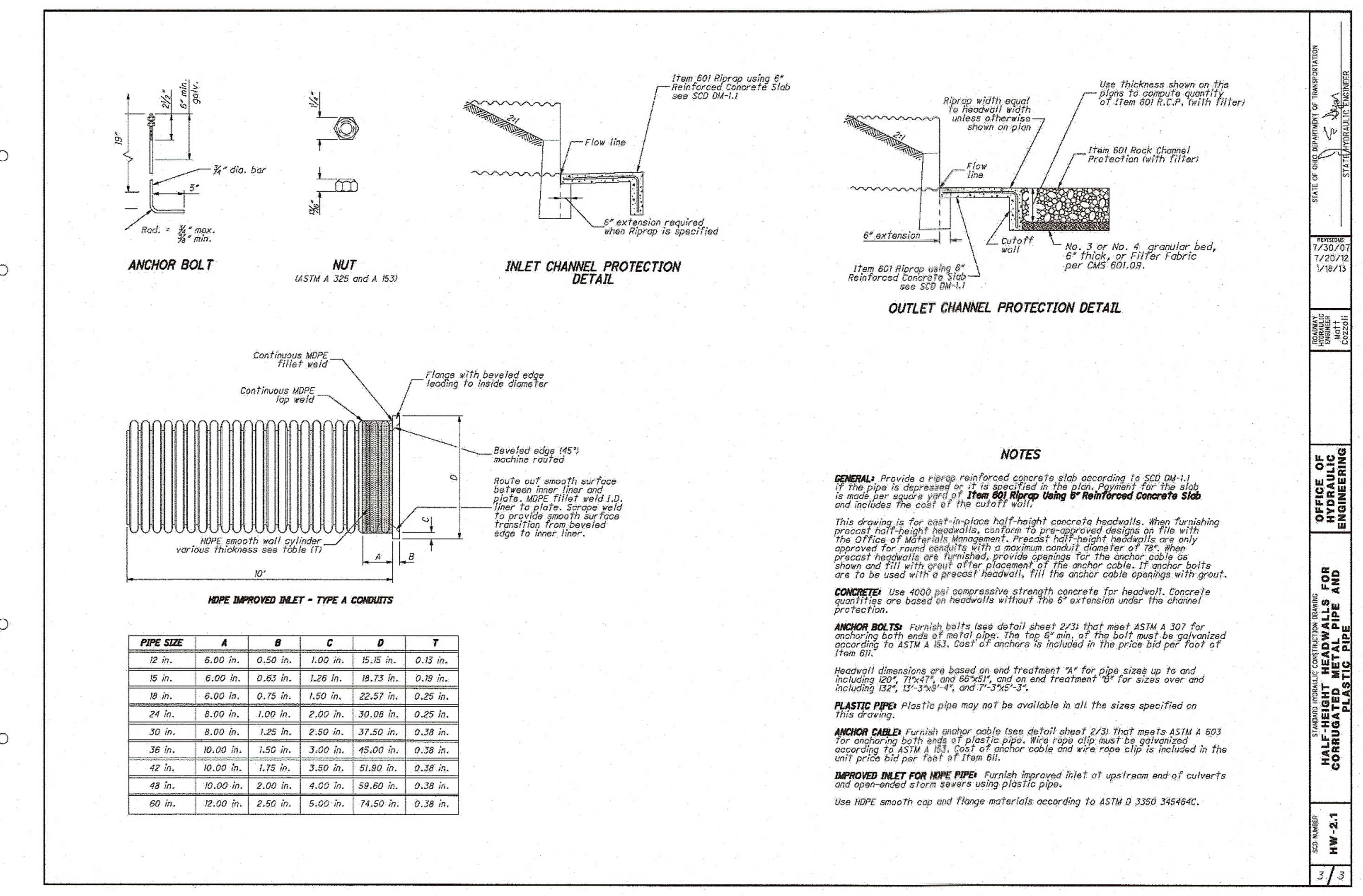
SITE DETAILS

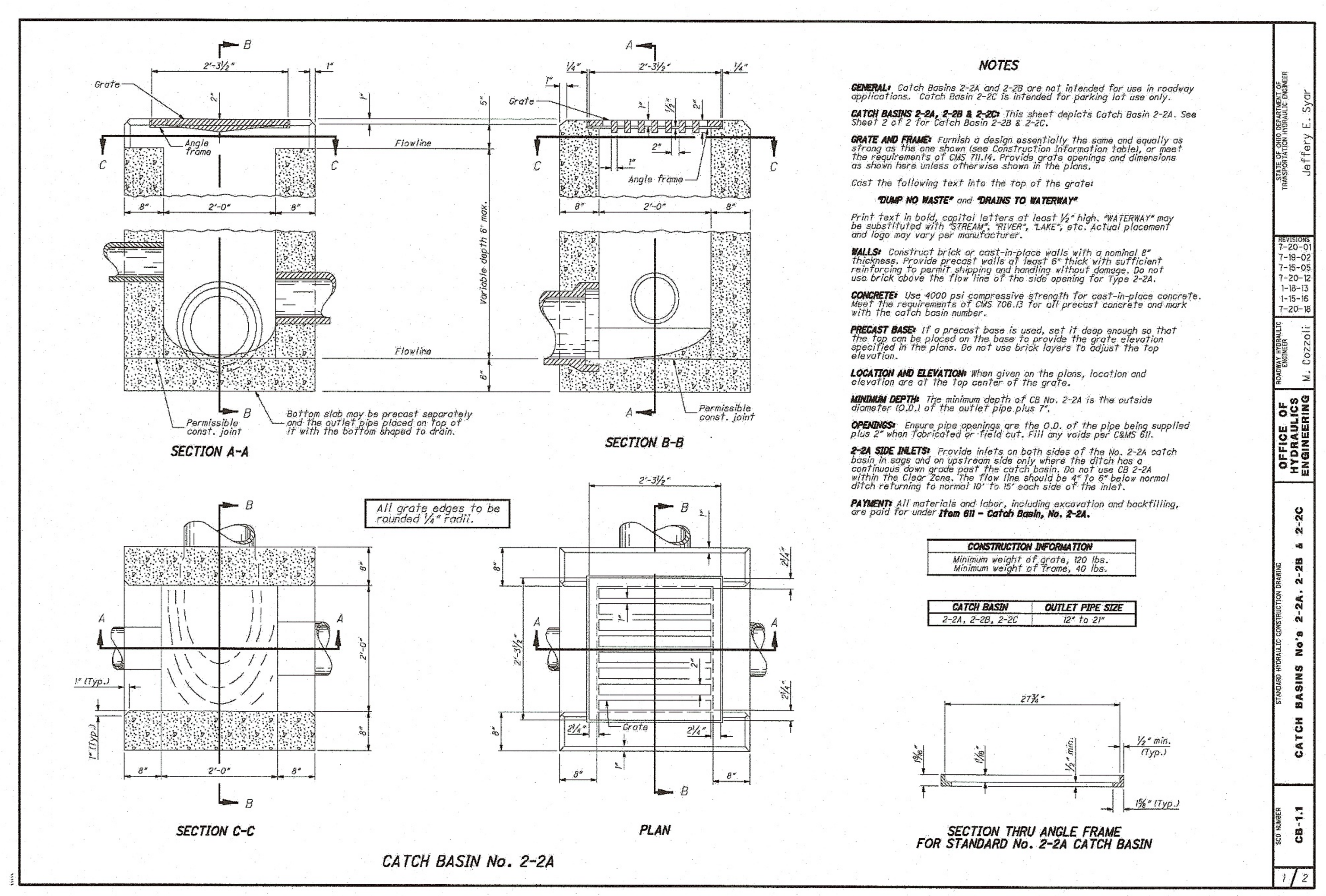
C105D

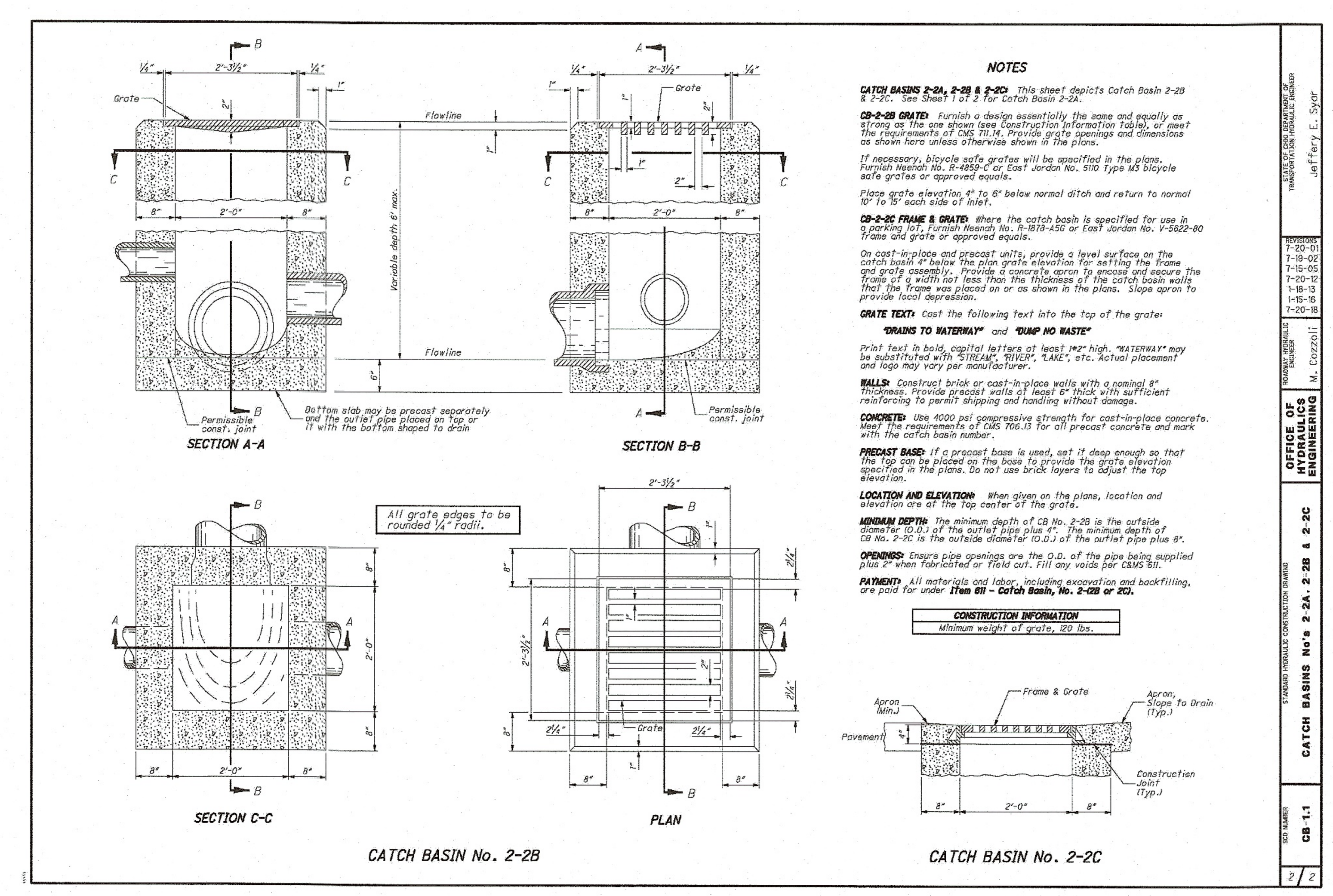
Project No. 2018-196











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2255 PHOENIX AVE. SE, MASSILLON, OHIO

Issue Date
08-29-2018
09-04-2018
09-24-2018
⚠11-05-2018

SITE DETAILS

C105E
Project No. 2018-196

Pump Systems
Limited Liability Company

2246 Port Centre
Medina OH 44256
United States
(234) 312-3511

Quotation

Date 9/27/2018
Expires: 10/27/2018
Quote # 23586
Sales Rep: Weingart, Tim
tweingart@pumpsystemsllc.com
(330) 227-3834

Project Title:

Bill To

Ship To

Prepared For: Matt

Item	Quantity	Description	Rate	Amount
Custom Package	1	Fiberglass Basin Package: 24" x 96" *1-HPG200 *1-TL Pro Complete Lift-Out System *1-Control Panel *3-Floats *1-Fiberglass Basin w/ AntiFloat Collar *1-Set of 1" Guide Rails *11/4" POC Discharge Piping	4,165.00	4,165.00
SUS02-Pump Simplex Lift Station	1	Pump Start Up Service of Simplex Lift Station	450.00	450.00

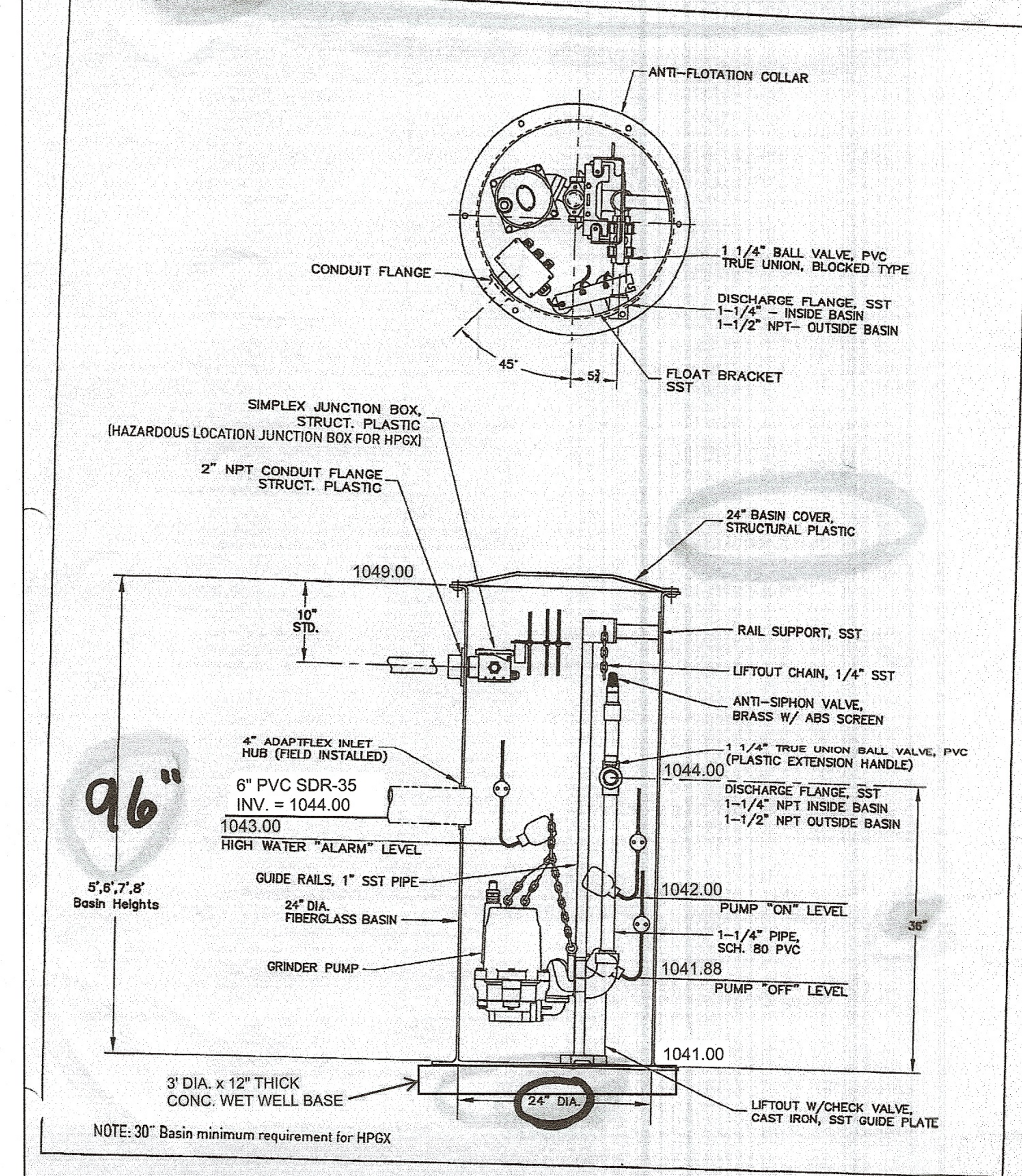
See Lift Station Calculations Report for further detail.

Subtotal 4,615.00
Shipping (Best Way) 200.00
Total $4,815.00

Quote Acceptance:
Signing this proposal in the space below constitutes your order and our agreement to pricing, term and conditions contained herein. Please furnish us a confirming purchase order at your earliest convenience.
Company Name: ____________ Printed Name: ____________
Signature: ____________ Date: ____________
PO#: ____________

Installation - HPG(X)/HPGR

TL-PRO - SIMPLEX FIBERGLASS LOW PRESSURE SEWER SYSTEM



NOTE: 30" Basin minimum requirement for HPGX

PENTAIR HYDROMATIC

Specifications - HPG200

SUBMERSIBLE SEWAGE GRINDER PUMPS

GENERAL

Contractor shall furnish all labor, materials, equipment and incidentals required to provide 1 (qty.) submersible centrifugal sewage grinder pump(s) as specified herein.

OPERATING CONDITIONS

Each pump shall be rated 2 hp, TBD volts, TBD phase, 60 hertz, and 3450 rpm. The unit shall produce 1 U.S. GPM at 13.12 ft. feet TDH.

CONSTRUCTION

Each pump shall be of the sealed submersible grinder type, manufactured by Pentair Hydromatic. The pump volute, motor and seal housing shall be high quality gray cast iron, ASTM A-48, Class 30. All external mating parts shall be machined and Nitrile O-ring sealed on a beveled edge. Gaskets shall not be acceptable. All fasteners exposed to the pumped liquid shall be 316 series stainless steel.

ELECTRICAL POWER/CONTROL CORD

Electric power/control cord shall be SOOW water resistant 600V, 90°C, UL and/or CSA approved. The single cord shall incorporate both power and sensor leads and shall be a minimum of seven (7) 12 gauge conductors.

The pump shall be protected with compression fitting and epoxy potted area at the power cord entry to the pump. A separation between the junction box areas of the pump and the motor by a stator lead sealing gland or terminal board shall not be acceptable.

The power cable entry into the cord cap assembly shall first be made with a compression fitting. Each individual lead shall be stripped down to bare wire, at staggered intervals, and each strand shall be individually separated. This area of the cord cap shall then be filled with an epoxy compound potting which will prevent water contamination to gain entry even in the event of wicking or capillary attraction.

The power cord leads shall then be connected to the motor leads with heavy duty connectors having copper inserts with a crimped wire-to-wire connection, rather than a terminal board that allows for possible leaks.

The cord cap assembly shall be sealed with a Nitrile O-ring on a beveled edge to assure proper sealing.

MOTOR

The stator, rotor and bearings shall be mounted in a sealed submersible type housing. The stator windings shall have Class F insulation (155°C or 311°F) and a dielectric oil-filled motor, NEMA B design (three-phase), NEMA L design (single-phase). Because air-filled motors do not dissipate heat as efficiently as oil-filled motors, they shall not be acceptable.

The pump and motor shall be specifically designed so that they may be operated partially dry or completely submerged in the liquid being pumped. The pump shall not require cooling water jackets. Dependence upon, or use of, water jackets for supplemental cooling shall not be acceptable.

Stators shall be securely held in place with a removable end ring and threaded fasteners. No special tools shall be required for pump and motor disassembly.

Pump shall be equipped with heat sensors. The heat sensor(s) (one on single-phase, two on three-phase) shall be a low resistance, bimetal disc that is temperature sensitive. It (they) shall be mounted directly in the stator and sized to open at 120°C or 130°C and automatically reset at 30–35°C differential. The sensor shall be connected in series with the motor starter coil so that the starter is tripped if a heat sensor opens. The motor starter shall be equipped with overload heaters so all normal overloads are protected by an external heater block.

BEARINGS AND SHAFT

An upper single row ball radial bearing and a lower single row ball thrust bearing shall be provided. Bearings shall be permanently lubricated by the dielectric oil that fills the motor housing.

The shaft shall be machined from solid 400 series stainless steel and be designed with large diameters and minimum overhang to reduce shaft deflection and prolong bearing and seal life.

PENTAIR HYDROMATIC

SEALS AND SENSORS

The rotor and stator in the motor housing shall be separated and protected from the pumped liquid by an oil-filled seal housing incorporating two type 21 carbon ceramic mechanical seals mounted in tandem. The seal housing shall be equipped with a moisture sensing probe installed between the seals, and the sensing of moisture in the seal chamber shall be automatic, continuous and not require the pump be stopped or removed from the wet well.

IMPELLER

The impeller shall be designed for rough duty service and shall be of a five-vane, semi-open design with hydrodynamic sealing vanes on the rear shroud. The impeller shall be constructed of engineered thermoplastic, with a permanently molded, hexagonally locked bronze insert. The impeller shall be of a non-overloading design and be factory or field trimable to meet specific performance conditions.

Optional all bronze impeller available.

GRINDER CUTTERS

The combination centrifugal pump impeller and grinder unit shall be attached to the common motor and pump shaft made of 416 stainless steel. The grinder unit shall be on the suction side of the pump impeller and discharge directly into the impeller inlet, leaving no exposed shaft to permit packing of ground solids. The grinder shall consist of two stages. The cutting action of the second stage shall be perpendicular to the plane of the first cut for better control of the particle size. The grinder shall be capable of grinding normal domestic sewage. Both stationary and rotating cutters shall be made of 440C stainless steel hardened to Rockwell 60C and ground to close tolerance.

The upper (axial) cutter and stationary cutter ring shall be reversible to provide new cutting edges to double life. The stationary cutter ring shall be pressed into the suction opening of the volute and held in place by three (3) 300 series stainless steel screws. The lower (radial) cutter shall macerate the solids against the I.D. of the cutter ring and extrude them through the slots of the cutter ring. The upper (axial) cutter shall cut off the extrusions, as they emerge from the slots of the cutter ring to eliminate any roping effect that may occur in single stage cutting action. The upper (axial) cutter shall fit over the hub of the impeller and the lower (radial) cutter shall be slip-fit and secured by means of peg and hole and rotate simultaneously with the rotation of the shaft and impeller. The grinding mechanism shall be locked to the shaft by a 300 series stainless steel countersunk washer in conjunction with a 300 series stainless steel flat head cap screw threaded into the end of the shaft.

TESTING

Commercial testing shall be required and include the following:

The pump shall be visually inspected to confirm that it is built in accordance with the specifications as to hp, voltage, phase and hertz.

The motor and seal housing chambers shall be hi-potted to test for moisture content and/or insulation defects.

Pump shall be allowed to run dry to check for proper rotation.

Discharge piping shall be attached, the pump submerged in water, and amp readings taken in each leg to check for an unbalanced stator winding. If there is a significant difference in readings, the stator windings shall be checked with a bridge to determine if an unbalanced resistance exists. If so, the stator will be replaced.

PAINT

The pump shall be painted with waterborne hybrid acrylic/alkyd paint. This custom engineered, quick dry paint shall provide superior levels of corrosion and chemical protection.

PENTAIR HYDROMATIC

ADDED SHEET

WEBER ENGINEERING SERVICES
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STATE OF OHIO
MATTHEW L. WEBER
61709
PROFESSIONAL ENGINEER

Reg. No.: 61709

CLIENT:
GEIS CONSTRUCTION
10020 AURORA-HUDSON RD.
STREETSBORO, OHIO
JEN DOTSON
PHONE: (216) 218-3507

OWNER:
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ROCK & ROLL
NEW SITE
2255 PHOENIX AVE. SE, MASSILLON, OHIO

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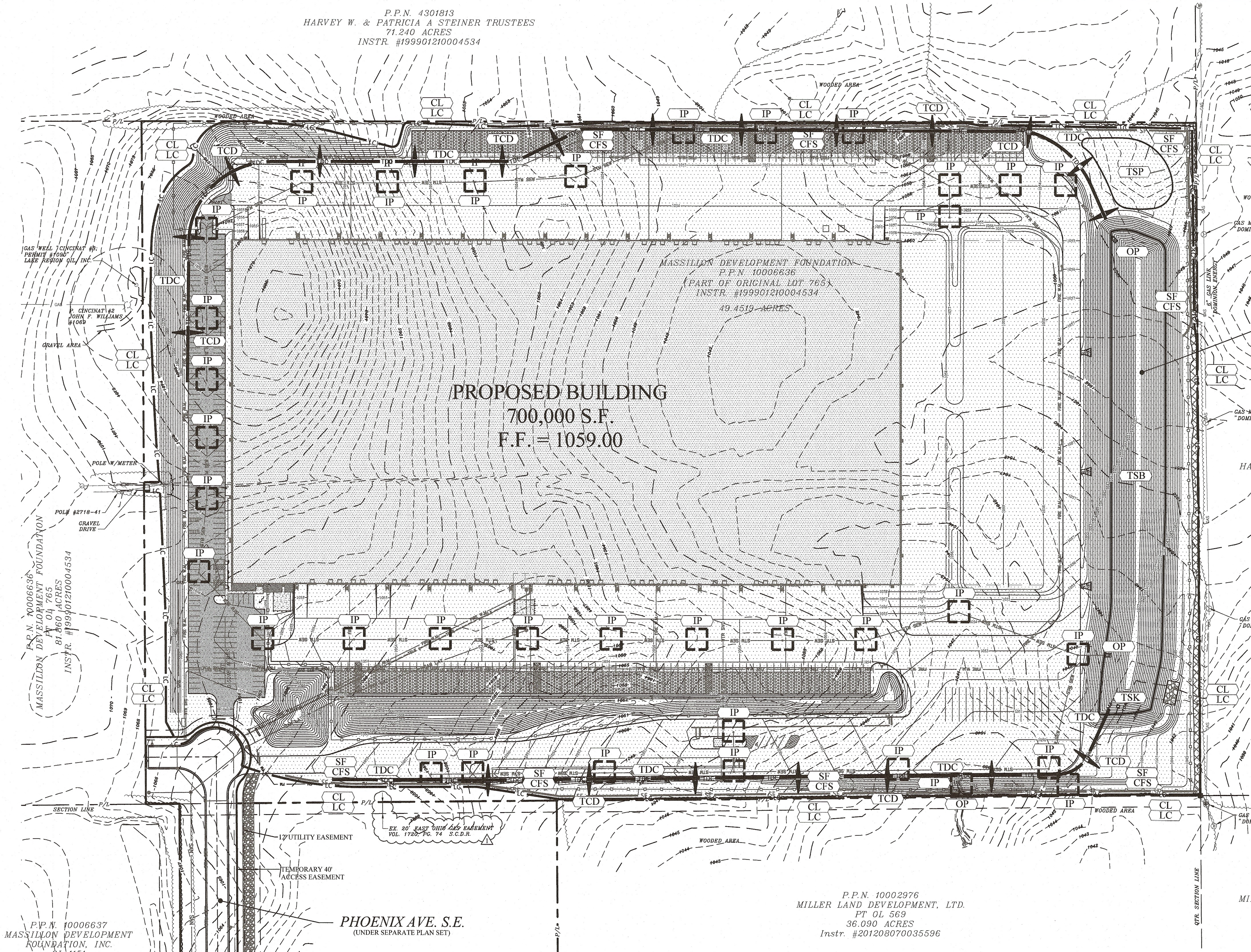
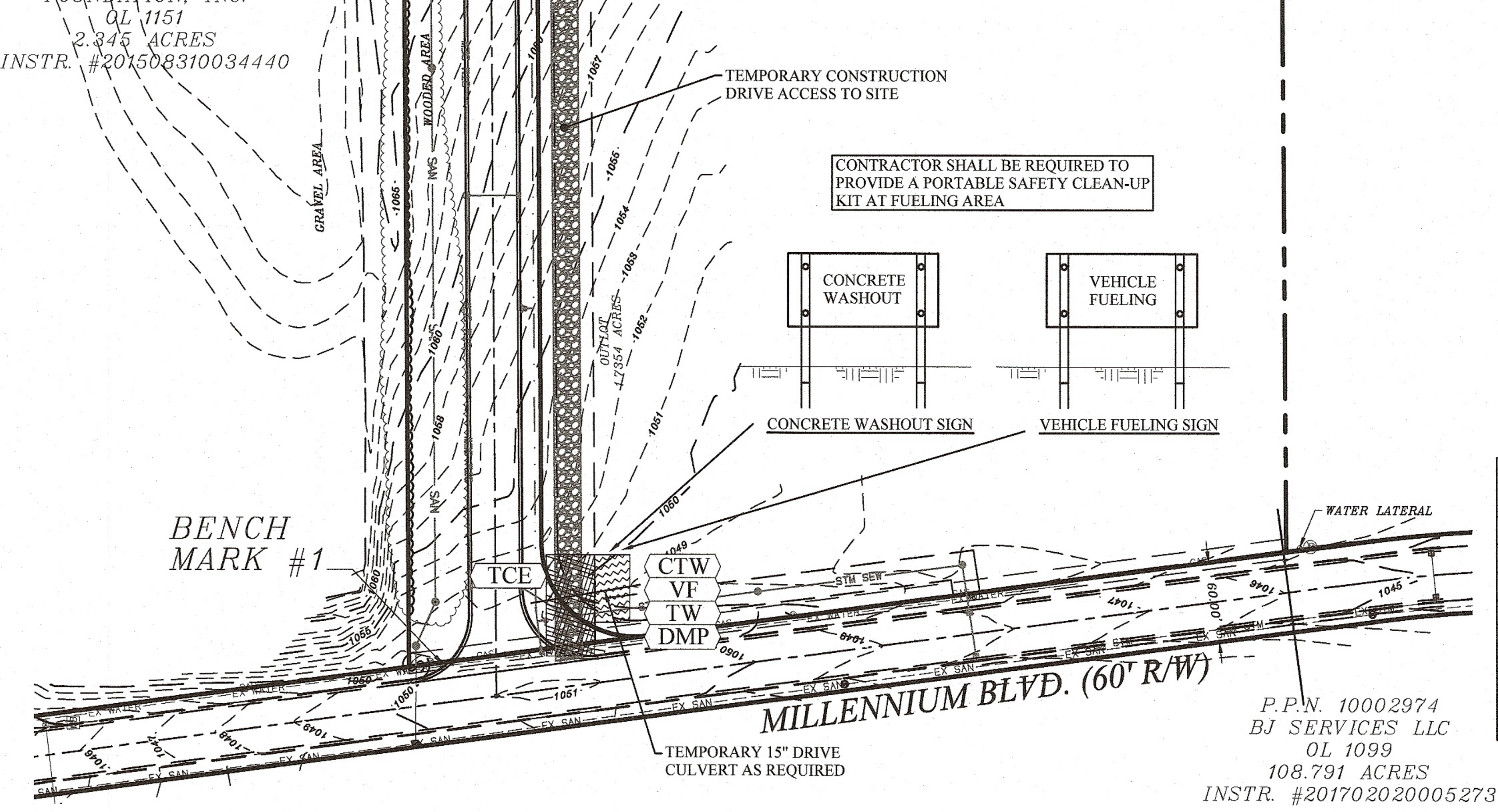
SITE DETAILS

C105F
Project No. 2018-196





THE CONTRACTOR SHALL PREVENT AND/OR REDUCE AND CONTROL SOIL EROSION RESULTING FROM THE PROPOSED IMPROVEMENTS. THE USE OF SILT FENCING, JUTE MATTING, TEMPORARY SEEDING, SILT CHECKS, INLET PROTECTION AROUND ALL CATCH BASINS, STABILIZED CONSTRUCTION ENTRANCE(S), ETC. WILL BE REQUIRED. SEDIMENT CONTROL STRUCTURES/DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL RAINWATER AND LAND DEVELOPMENT - OHIO'S STANDARDS FOR STORM WATER MANAGEMENT, LAND DEVELOPMENT AND URBAN STREAM PROTECTION. SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUED INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS SET FORTH ON THE APPROVED STORM WATER POLLUTION PREVENTION PLAN IF APPLICABLE, OR AS DETAILED ON THE CONSTRUCTION PLANS, AS SPECIFIED BY THE CITY OF MASSILLON."

INSPECTION CHECKLIST

INSPECTIONS SHALL BE MADE ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVEN GREATER THAN ONE-HALF INCH OF RAIN PER 24 HOUR PERIOD

DATE	INSPECTOR	WEATHER CONDITIONS	RAINFALL AMOUNT	SEDIMENT DISCHARGE	DISCHARGE LOCATION	BMPS FAILED	ADDITIONAL BMPS NEEDED	CORRECTION MADE

SITE BENCH MARK

BENCH MARK #1
TOP NUT ON HYDRANT
ELEVATION = 1053.73

FLOOD ZONE

FLOOD ZONE "X" PER FLOOD INSURANCE
RATE MAP NUMBER 39151C 0213 E
COMMUNITY PANEL NUMBER 39151 0213 E
EFFECTIVE DATE (NOT PRINTED)

SWP3 AMENDMENT ACTIVITIES

GRADING ________ DATE

SITE STABILIZATION ________ DATE

SWP3 AMENDMENT ________ DATE

SWP3 RESPONSIBLE PARTY

GEIS CONSTRUCTION
JEN DOTSON
10020 AURORA-HUDSON RD.
STREETSBORO, OHIO
216-218-3507

ESTIMATED CONSTRUCTION DATES

START DATE 09-15-2018
END DATE 08-01-2019

SWP3 PREPARED

08-29-2018

ALL OFF-SITE BORROW OR SPOIL AREAS SHALL BE REQUIRED TO BE PERMITTED BY A SEPARATE NOI AND RELATED SWP3.

THIS PROJECT WILL HAVE NO OFF-SITE BORROW OR SPOIL AREAS. ALL MATERIALS WILL BE CONTAINED WITHIN THE SITE.

TAG	HATCH/SYMBOL	SWP3 BMP
CL / LC	LC 47.97 Ac. LC	CLEARING LIMITS, LIMITS OF CONSTRUCTION
TCE		TEMPORARY CONSTRUCTION ENTRANCE
CTW / VF / TW / DMP		CEMENT TRUCK WASHOUT, VEHICLE FUELING, TOXIC WASTE AND DUMPSTER LOCATION
IP		INLET PROTECTION (SEE DETAIL ON SHT. C109)
IPSS		INLET SILT SACK PROTECTION (SEE DETAIL ON SHT. C109)
TSB		TEMPORARY SEDIMENT BASIN
TSK		TEMPORARY SKIMMER

TAG	LINE	SWP3 BMP
SF	SF	SILT FENCE
CFS	CFS	12" COMPOST FILTER SOCK MAY BE SUBSTITUTED FOR SILT FENCE AT CONTRACTORS DISCRETION
TCD		TEMPORARY CHECK DAM
OP		OUTLET PROTECTION
TDC	TDC	TEMPORARY DIVERSION CHANNEL
TSP		TEMPORARY TOPSOIL STOCK PILE

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

SIGNATURES:

SITE CONTRACTOR ________ DATE

GENERAL CONTRACTOR ________ DATE

OWNER ________ DATE

DESIGN ENGINEER ________ DATE

Scale: 1" = 100'

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ROCK & ROLL
NEW SITE
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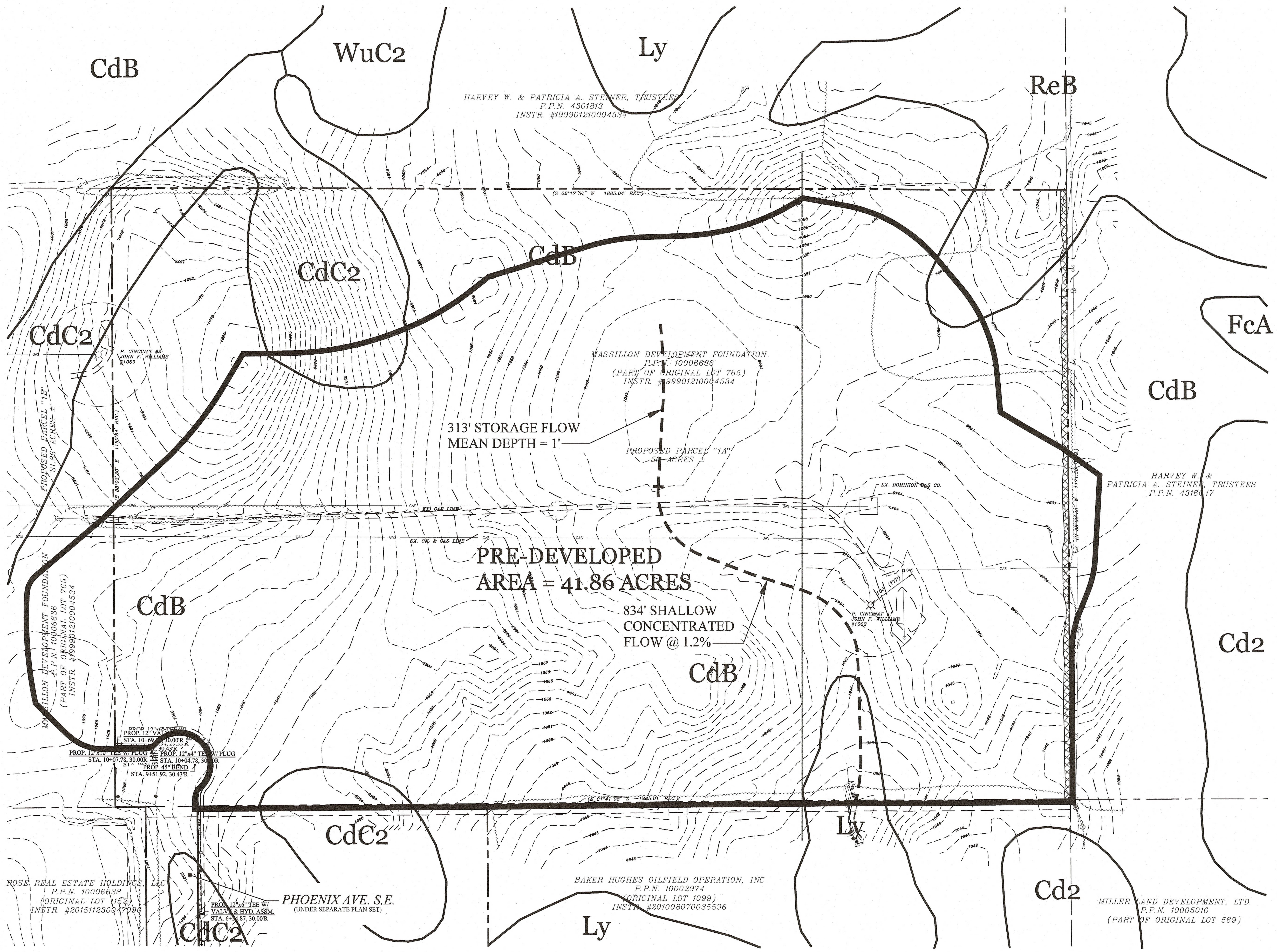
SWP3 PLAN

C106
Project No. 2018-196



PRE-DEVELOPED DRAINAGE MAP & SOIL MAP

PRE-DEVELOPED: AREA = 41.86 AC., CN = 85, TC = 32.4 MIN.

CdB	-	Canfield silt loam, 2 to 6 percent slopes
CdC2	-	Canfield silt loam, 6 to 12 percent slopes, eroded
FcA	-	Fitchville silt loam, 0 to 2 percent slopes
Ly	-	Luray silt loam, 0 to 2 percent slopes
ReB	-	Ravenna silt loam, 2 to 6 percent slopes
WuC2	-	Wooster silt loam, 6 to 12 percent slopes, moderately eroded

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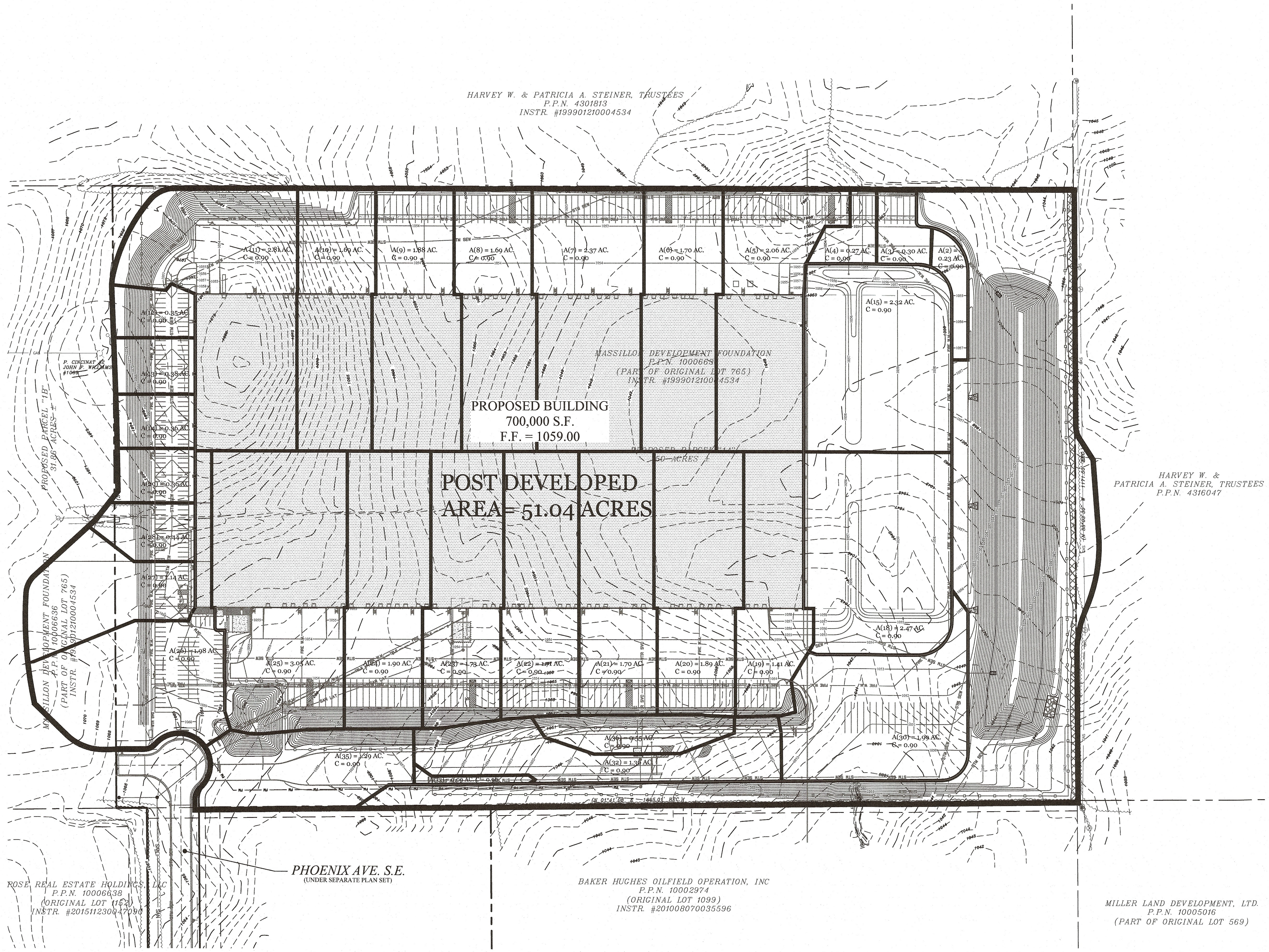
△1 11-05-2018

SWP3 DETAILS

C107

Project No. 2018-196



POST DEVELOPED DRAINAGE MAP

POST-DEVELOPED: AREA = 51.04 AC., CN = 97, TC = 20.0 MIN.

Scale: 1" = 100'

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ROCK & ROLL
NEW SITE
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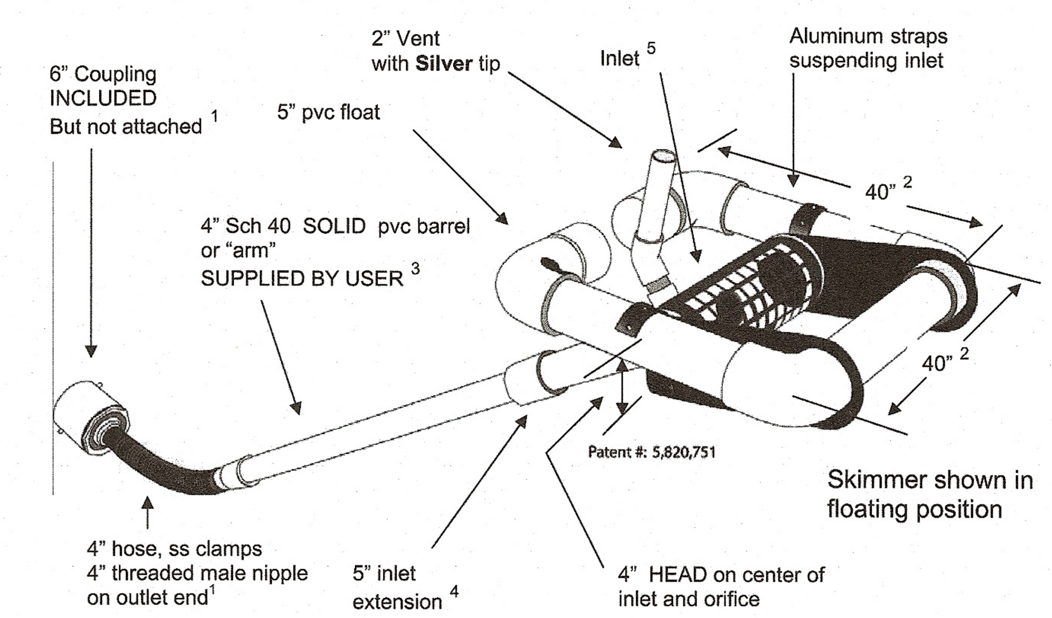
SWP3
DETAILS

C107A
Project No. 2018-196

Sediment Basin Data

Basin Number				
A. Total Contributing Watershed (ac.)	51.04			
B. Disturbed Area (ac.)	50.00			
C. Req. Dewatering Volume (A x 1,800 cu. ft./ac.)	91,872			
D. Req. Sediment Storage Zone Vol. (B* 1000)	50,000			
E. Total Required Capacity (C+D in cu ft)	141,872			
F. Dewatering Volume Provided (cu. ft./ac.)	140,819			
G. Sediment Storage Provided (cu. ft./ac.)	589,437			
H. Total Storage Provided in Crest of Riser (cu. ft./ac.)	730,256			
Principal Spillway				
Req. Principal Spillway Capacity (10 yr-24hr storm) (cfs)	166.48			
Principal Spillway Capacity Provided (cfs)	124.12			
Principal Spillway Elevation	1042.75			
Riser (inches)	36" SQ			
Diameter of Barrel (inches)	24"			
Volume of Concrete to Prevent Riser Flotation (cu. ft.)	25			
Outlet Type				
Drawdown Time (Hours must exceed 48 hr drawdown)	72			
Mark selected outlet type (X)				
A. Non-perforated Riser with Stub & Faircloth Skimmer	X			
(Orifice size in inches)	4.9			
Stone pad provided at top of Sediment storage	X			
B. Protected Single Orifice				
(Orifice size in inches)				
C. Perforated Riser				
Hole size (inches)				
Number of Holes				
Protection of Perforations - sm holes (<3/4") typ need anti-clogging				
measure - aggregate > than hole size or wire cloth/fence & geotextile				
Pond Shape - 4:1 L:W for each inlet or baffle(s) applied	4:1			
Baffles Detailed (Yes or No)	Yes			
Bottom Elevation	1027.00			
Sediment Storage Zone Elevation	1041.00			
Crest of Principal Spillway Elevation (Min. 1 ft. below crest E. S.)	1042.75			
Pool Depth at Riser (ft., ideally 3-5')	15.75			
Top of Embankment Elevation	1049.50			
Embankment Side Slopes (Max 2:1, combined 5:1)	3:1			
Embankment Top Width (ft., baBOT on C/L Height, Min 8')	10			
Req. Emergency Spillway Capacity (25 yr-24hr storm) (cfs)	204.71			
Req. Emergency Spillway Discharge (25 yr-24 hr storm less Principal S.)	80.60			
Emergency Spillway Capacity Provided (cfs)	316.78			
Emergency Spillway Elevation	1047.50			
Emergency Spillway Bottom Width	40.00			
Emergency Spillway Lining	Vegetative			
Rock Outlet Protection (Size, gradation and quality of rock)				
Length	10.00			
Width	6.00			
Depth	1.50			
Gradation - O.D.O.T. unless specified otherwise	C			

5" *Faircloth Skimmer*® Cut Sheet
J. W. Faircloth & Son, Inc.
www.FairclothSkimmer.com



1. Hose attached to outlet using the threaded 4" nipple. Typical methods used: on a metal structure a steel stubout welded on the side at the bottom to the side with a 4" threaded coupling or reducers; on a concrete structure with a hole or orifice at the bottom, use a steel plate with a hole cut in it and coupling welded to it that will fit over the hole in the concrete and bolted to the structure with sealant.
2. Dimensions are approximate, not intended as plans for construction.
3. Barrel (solid, not foam core pipe) should be 1.4 times the depth of water with a minimum length of 8' so the inlet can be pulled to the side for maintenance. If more than 10' long weight may have to be added to inlet to counter the increased buoyancy.
4. Inlet tapers down from 5" maximum inlet to a 4" barrel and hose. Barrel is smaller to reduce buoyancy and tendency to lift inlet but is sufficient for flow through inlet because of slope. The inlet orifice can be reduced using the plug and cutter provided to control the outflow rate.
5. Inlet is 8" pipe between the straps with slots cut in the inlet and aluminum screen door (smaller than shown in illustration) for access to the 5" inlet and orifice inside.
6. **Capacity** 32,832 cubic feet per day maximum with 5" inlet and 4" head. Inlet can be reduced by installing a smaller orifice using the plug and cutter provided to adjust flow rate for the particular basin volume and drawdown time required.
7. Shipped assembled. User glues inlet extension and barrel, installs vent, cuts orifice in plug and attaches to outlet pipe or structure. Includes flexible hose, rope, orifice cutter, etc.

5inchCut TM 11-07 November 14, 2007

TEMPORARY SEDIMENT CONTROL CALCULATIONS

Use a Temporary Skimmer

Total Drainage Area:	51.04	Ac.
Disturbed Earth Area:	50.00	Ac.
Sediment Storage Volume Required (1,000 C.F./Ac.):	50,000	C.F.
Sediment Storage Volume Provided Below Skimmer Orifice:	589,437	C.F.
Dewatering Volume Required (1,800 C.F./Ac.)	91,872	C.F.
Dewatering Volume Provided Below Principal Spillway:	140,819	C.F.
Design Detention Volume:	887,313	C.F.
Bottom of Temporary Sediment Basin:	1027.00	
Invert of Skimmer device:	1041.00	
Normal Water Level:	1041.00	
Cleanout Elevation:	1032.60	
Set Crest of Principal Spillway at:	1042.75	
Set Crest of Emergency Spillway at:	1047.50	
Top of Bank:	1049.50	

TEMPORARY SEDIMENT CONTROL VOLUME CALCULATIONS

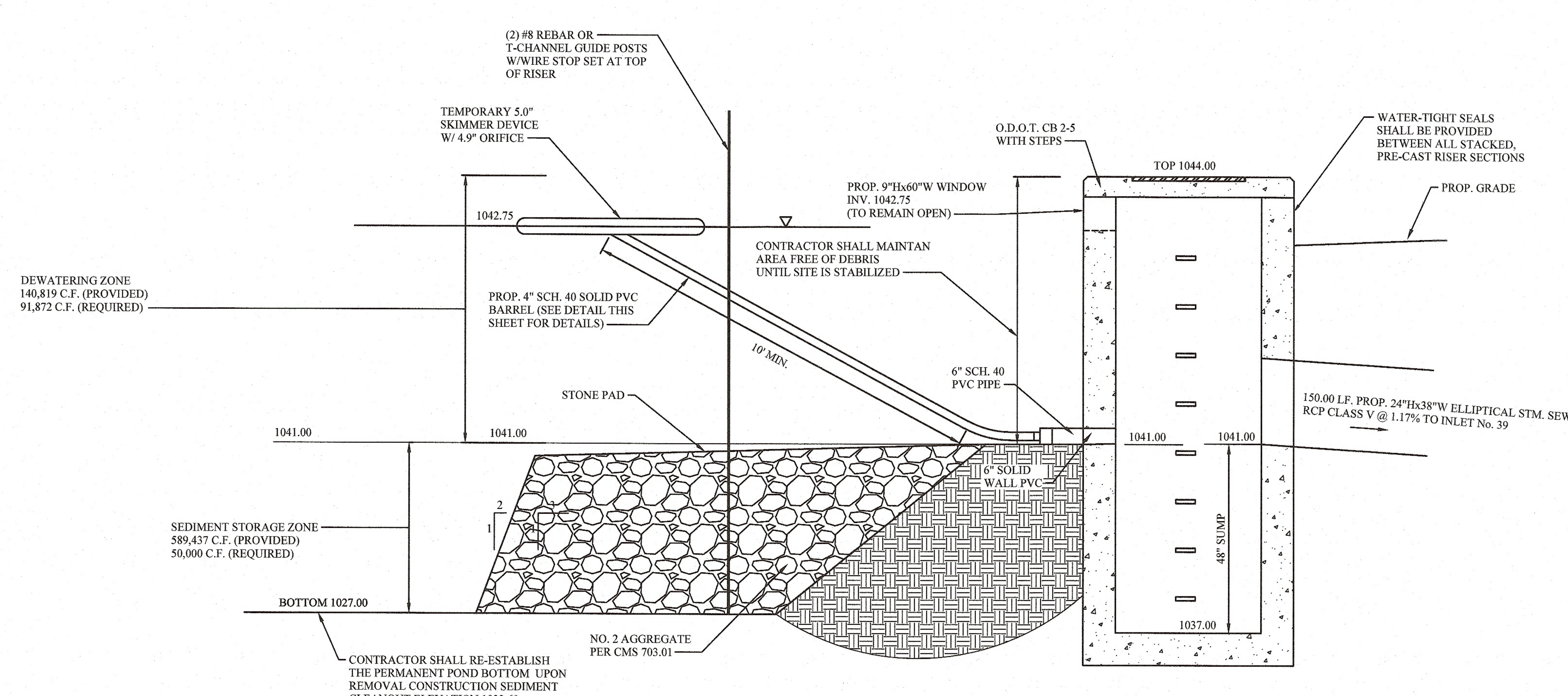
Retention Pond Information

	Elevation	Area, S.F.	Volume (C.F.)	Volume Sum (C.F.)
BOT	1027.00	7,715	0	0
	1028.00	12,329	10,021	10,021
	1030.00	21,779	34,104	44,125
	1032.00	31,518	53,294	97,419
	1034.00	41,535	73,051	170,469
	1036.00	51,818	93,351	263,820
	1038.00	62,363	114,179	378,000
	1040.00	73,164	135,526	513,525
DEW	1041.00	78,660	75,912	589,437
	1042.00	84,214	81,437	670,874
	1044.00	95,495	179,708	850,582
	1046.00	107,002	202,496	1,053,078
	1048.00	118,735	225,736	1,278,814
TB	1049.50	134,731	190,098	1,468,912

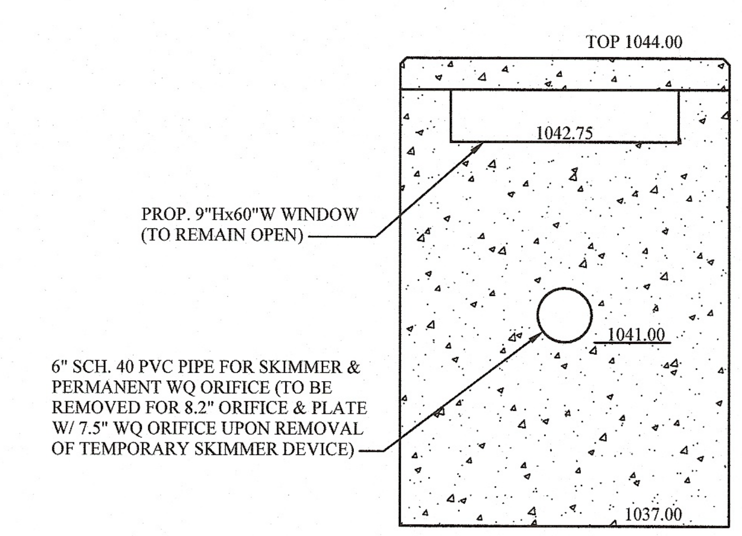
Spillway Design	
273.40	100-yr Peak Flow, C.F.S.
2.00	Spillway Height, Ft.
40.00	Spillway Width, Ft.

TEMPORARY SKIMMER DEVICE

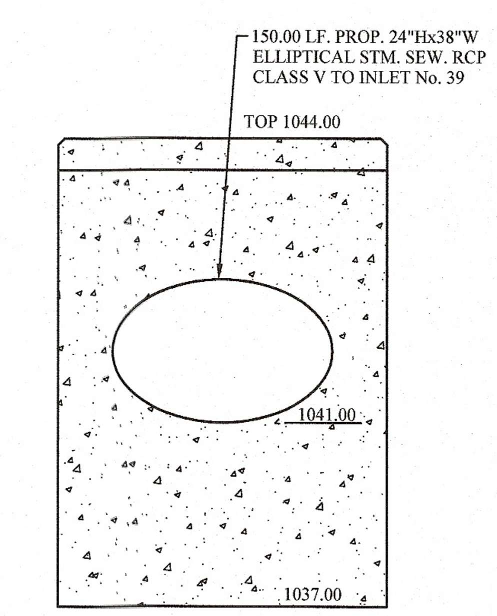
Calculate Skimmer Size					
Basin Volume in Cubic Feet	91,872	Cu.Ft	**Skimmer Size**	**5.0**	Inch
Days to Drain*	3	Days	Orifice Radius	**2.4**	Inch[es]
			Orifice Diameter	**4.9**	Inch[es]
*In NC assume 3 days to drain					



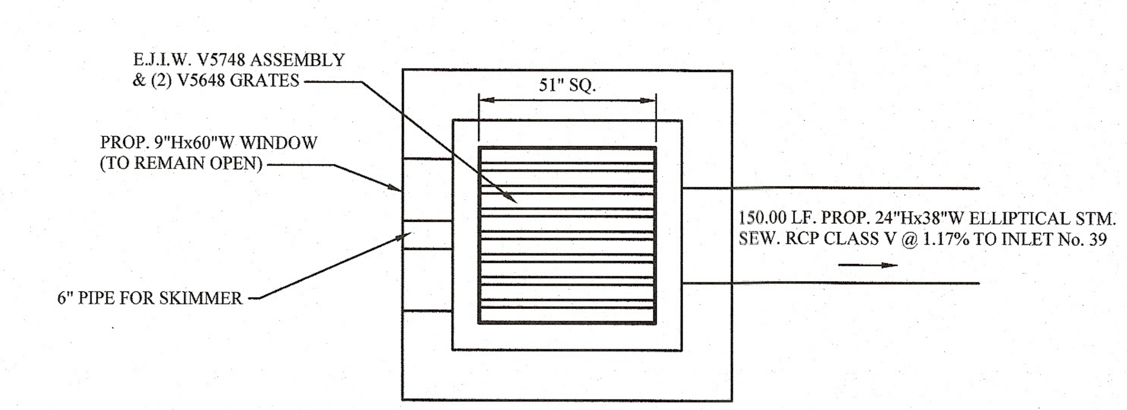
TEMPORARY SKIMMER/OUTLET STRUCTURE (STRUCT. No. 40)
NOT TO SCALE REFERENCE ONLY



LEFT VIEW
NOT TO SCALE REFERENCE ONLY



RIGHT VIEW
NOT TO SCALE REFERENCE ONLY



TOP VIEW
NOT TO SCALE REFERENCE ONLY

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OWNER:

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10020 AURORA-HUDSON RD.
STREETSBORO, OHIO
JEN DOTSON
PHONE: (216) 218-3507

ROCK & ROLL
NEW SITE
2255 PHOENIX AVE. SE, MASSILLON, OHIO

Issue Date
08-29-2018
09-04-2018
09-24-2018
△11-05-2018

SWP3
DETAILS

C108
Project No. 2018-196

STORM SEWER CALCULATIONS (10-YR)

Storm Sewer Tabulation

Page 1

Station Line	To Line	Len (ft)	Drng Area Incr (ac)	Drng Area Total (ac)	Rnoff coeff (C)	Area x C Incr	Area x C Total	Tc Inlet (min)	Tc Syst (min)	Rain (I) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe Size (in)	Pipe Slope (%)	Invert Elev Dn (ft)	Invert Elev Up (ft)	HGL Elev Dn (ft)	HGL Elev Up (ft)	Grnd / Rim Elev Dn (ft)	Grnd / Rim Elev Up (ft)	Line ID
1	End	119.187	0.23	18.41	0.90	0.21	16.57	10.0	17.5	3.8	62.62	97.42	6.51	42	0.67	1041.00	1041.80	1045.32	1045.65	1045.10	1053.25	ST - 1
2	1	96.703	0.30	18.18	0.90	0.27	16.36	10.0	17.3	3.8	62.34	93.65	6.48	42	0.62	1041.80	1042.40	1046.17	1046.43	1053.25	1053.25	ST - 2
3	2	105.736	0.27	17.88	0.90	0.24	16.09	10.0	17.0	3.8	61.86	89.56	6.43	42	0.57	1042.40	1043.00	1046.53	1046.82	1053.25	1053.25	ST - 3
4	3	191.591	2.06	15.29	0.90	1.85	13.76	10.0	16.4	3.9	53.90	71.87	5.60	42	0.37	1043.00	1043.70	1047.46	1047.85	1053.25	1052.00	ST - 4
5	4	152.885	1.70	13.23	0.90	1.53	11.91	10.0	16.0	4.0	47.22	49.38	6.68	36	0.39	1044.20	1044.80	1048.11	1048.66	1052.00	1052.00	ST - 5
6	5	143.918	2.37	11.53	0.90	2.13	10.38	10.0	15.6	4.0	41.71	48.72	5.90	36	0.38	1044.80	1045.35	1048.76	1049.17	1052.00	1052.00	ST - 6
7	6	203.192	1.69	9.16	0.90	1.52	8.24	10.0	14.9	4.1	33.93	46.27	4.80	36	0.34	1045.35	1046.05	1049.40	1049.78	1052.00	1053.00	ST - 7
8	7	176.193	1.88	7.47	0.90	1.69	6.72	10.0	14.1	4.2	28.38	45.99	4.01	36	0.34	1046.05	1046.65	1049.92	1050.15	1053.00	1053.00	ST - 8
9	8	152.731	1.69	5.59	0.90	1.52	5.03	10.0	13.6	4.3	21.67	29.08	4.41	30	0.36	1047.15	1047.70	1050.18	1050.49	1053.00	1053.00	ST - 9
10	9	149.945	2.81	3.90	0.90	2.53	3.51	10.0	13.1	4.4	15.39	16.19	4.90	24	0.37	1048.20	1048.75	1050.53	1051.03	1053.00	1053.00	ST - 10
11	10	185.285	0.35	1.09	0.90	0.32	0.98	10.0	11.9	4.6	4.50	12.73	3.57	18	1.05	1049.25	1051.20	1051.21	1052.01	1053.00	1056.35	ST - 11
12	11	156.666	0.38	0.74	0.90	0.34	0.67	10.0	10.9	4.8	3.18	5.45	4.49	15	0.51	1051.45	1052.25	1052.14	1052.97	1056.35	1057.50	ST - 12
13	12	106.482	0.36	0.36	0.90	0.32	0.32	10.0	10.0	4.9	1.60	3.02	3.82	12	0.52	1052.50	1053.05	1053.02	1053.59	1057.50	1057.50	ST - 13
14	End	46.354	0.01	25.09	0.90	0.01	22.58	10.0	16.7	3.9	87.55	96.58	6.97	48	0.32	1041.00	1041.15	1045.32	1045.44	1045.62	1052.25	ST - 15
15	14	220.585	2.47	19.78	0.90	2.22	17.80	10.0	16.0	4.0	70.61	98.99	5.62	48	0.34	1041.15	1041.90	1046.18	1046.56	1052.25	1053.00	ST - 16
16	15	169.482	1.41	17.31	0.90	1.27	15.58	10.0	15.5	4.0	62.74	67.73	6.52	42	0.32	1042.40	1042.95	1046.87	1047.34	1053.00	1053.00	ST - 17
17	16	145.466	1.89	15.90	0.90	1.70	14.31	10.0	15.1	4.1	58.45	69.71	6.08	42	0.34	1042.95	1043.45	1047.57	1047.92	1053.00	1053.00	ST - 18
18	17	150.100	1.70	14.01	0.90	1.53	12.61	10.0	14.6	4.2	52.35	68.62	5.44	42	0.33	1043.45	1043.95	1048.01	1048.30	1053.00	1053.00	ST - 19
19	18	149.612	1.71	12.31	0.90	1.54	11.08	10.0	14.1	4.2	46.86	68.74	4.87	42	0.33	1043.95	1044.45	1048.37	1048.60	1053.00	1053.00	ST - 20
20	19	145.863	1.73	10.60	0.90	1.56	9.54	10.0	13.6	4.3	40.98	46.15	5.80	36	0.34	1044.95	1045.45	1048.65	1049.05	1053.00	1053.00	ST - 21
21	20	152.686	1.90	8.87	0.90	1.71	7.98	10.0	13.1	4.4	34.95	45.10	4.94	36	0.33	1045.45	1045.95	1049.13	1049.43	1053.00	1053.00	ST - 22
22	21	150.357	3.05	6.97	0.90	2.75	6.27	10.0	12.5	4.5	28.13	43.12	3.98	36	0.30	1045.95	1046.40	1049.49	1049.68	1053.00	1053.00	ST - 23

Project File: 2018-196 Storm 01B.stm | Number of lines: 37 | Run Date: 8/29/2018

NOTES:Intensity = 47.83 / (Inlet time + 8.30) ^ 0.78; Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewers v10.50

Storm Sewer Tabulation

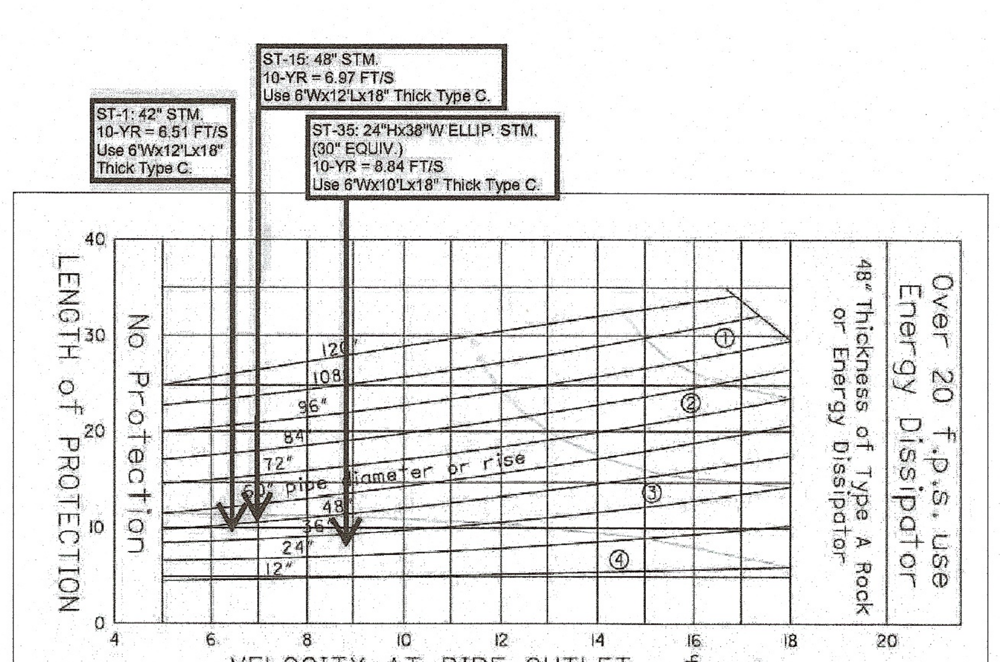
Page 2

Station Line	To Line	Len (ft)	Drng Area Incr (ac)	Drng Area Total (ac)	Rnoff coeff (C)	Area x C Incr	Area x C Total	Tc Inlet (min)	Tc Syst (min)	Rain (I) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe Size (in)	Pipe Slope (%)	Invert Elev Dn (ft)	Invert Elev Up (ft)	HGL Elev Dn (ft)	HGL Elev Up (ft)	Grnd / Rim Elev Dn (ft)	Grnd / Rim Elev Up (ft)	Line ID
23	22	159.537	1.98	3.92	0.90	1.78	3.53	10.0	11.9	4.6	16.14	25.04	5.88	24	0.88	1047.40	1048.80	1049.71	1050.25	1053.00	1057.00	ST - 24
24	23	161.169	1.14	1.94	0.90	1.03	1.75	10.0	11.4	4.7	8.17	11.57	6.40	18	0.87	1049.30	1050.70	1050.25	1051.81	1057.00	1057.25	ST - 25
25	24	128.015	0.44	0.80	0.90	0.40	0.72	10.0	10.9	4.8	3.43	3.90	5.38	12	0.86	1051.20	1052.30	1051.93	1053.09	1057.25	1057.50	ST - 26
26	25	106.951	0.36	0.36	0.90	0.32	0.32	10.0	10.0	4.9	1.60	3.97	3.07	12	0.89	1052.30	1053.25	1053.09	1053.79	1057.50	1057.50	ST - 27
27	14	204.625	1.99	5.30	0.90	1.79	4.77	10.0	15.4	4.0	19.28	27.32	3.93	30	0.32	1041.15	1041.80	1046.18	1046.50	1052.25	1049.00	ST - 28
28	27	263.194	0.01	3.31	0.90	0.01	2.98	10.0	13.7	4.3	12.77	26.72	2.60	30	0.30	1041.80	1042.60	1046.73	1046.92	1049.00	1051.50	ST - 29
29	28	287.011	1.36	3.30	0.90	1.22	2.97	10.0	11.9	4.6	13.61	27.14	2.77	30	0.31	1042.60	1043.50	1046.93	1047.16	1051.50	1049.00	ST - 30
30	29	225.925	0.09	1.39	0.90	0.08	1.25	10.0	11.1	4.7	5.92	7.62	4.82	15	1.00	1044.75	1047.00	1047.28	1048.64	1049.00	1051.60	ST - 31
31	30	230.256	0.01	1.30	0.90	0.01	1.17	10.0	10.3	4.9	5.73	8.49	5.14	15	1.24	1047.00	1049.85	1048.69	1050.82	1051.60	1057.00	ST - 32
32	31	72.815	1.29	1.29	0.90	1.16	1.16	10.0	10.0	4.9	5.74	8.48	5.63	15	1.24	1049.85	1050.75	1050.82	1051.72	1057.00	1056.00	ST - 33
33	3	54.807	2.32	2.32	0.90	2.09	2.09	10.0	10.0	4.9	10.33	17.85	8.49	15	5.47	1045.25	1048.25	1047.46	1049.44	1053.25	1053.50	ST - 14
34	29	69.429	0.55	0.55	0.90	0.50	0.50	10.0	10.0	4.9	2.45	4.23	3.12	12	1.01	1043.50	1044.20	1047.28	1047.51	1049.00	1049.00	ST - 34
35	End	10.000	0.01	0.03	0.90	0.01	0.03	10.0	10.6	4.8	43.63	59.38	8.84	24 x 38 e	1.50	1037.00	1037.15	1039.00	1039.07	1039.58	1044.00	ST - 35
36	35	185.000	0.01	0.02	0.90	0.01	0.02	10.0	10.3	4.9	43.59	51.65	8.76	24 x 38 e	1.14	1037.15	1039.25	1041.54	1043.03	1044.00	1044.00	ST - 36
37	36	150.000	0.01	0.01	0.90	0.01	0.01	10.0	10.0	4.9	43.54	52.36	8.75	24 x 38 e	1.17	1039.25	1041.00	1045.24	1046.45	1044.00	1044.00	ST - 37

Project File: 2018-196 Storm 01B.stm | Number of lines: 37 | Run Date: 8/29/2018

NOTES:Intensity = 47.83 / (Inlet time + 8.30) ^ 0.78; Return period =Yrs. 10 ; c = cir e = ellip b = box

Storm Sewers v10.50



NOTES
Rock size (6", 12", 18") indicates the square opening on which 85% of the material, by weight, will be retained.
The width of protection shall be the width of the headwall, with 4' being the minimum.
(Where a stream bed will withstand the calculated velocity without erosion, no rock channel protection will be required.)

LEGEND	ROCK TYPE
① 48" of 18" rock	A
② 36" of 18" rock	A
③ 30" of 12" rock	B
④ 18" of 6" rock	C

Source: ODOT Location and Design Manual, Rock Channel Protection at Culvert and Storm Sewer Outlets

WATER QUALITY CALCULATIONS (PHASE 1)

Water Quality Orifice Design for Extended Detention Basin
For sizing of single water quality orifice in wet or dry extended detention basin or constructed wetland

Revised to conform to the Ohio EPA Permit No. OHC000005 effective April 23, 2018.

Project Description: Rock & Roll — Date: 8/24/2018 — By: WES

Section 1: WATER QUALITY VOLUME CALCULATION

Water Quality Volume, WQv = RvPA/12 ft³ or acre-ft

Land Use	Rv	Acres
Industrial & Commercial	0.8	51.04
High Density Residential (>8 dwellings/acre)	0.5	
Medium Density Residential (4 to 8 dwellings/acre)	0.4	
Low Density Residential (<4 dwellings/acre)	0.3	
Open Space and Recreational Areas	0.2	

Rv = 0.05 + 0.9i, where i = fraction of post-construction impervious surface or use table

Drainage Area, A = 51.04 acres; Calculated Rv = 0.8000; Precipitation Depth, P = 0.9 inches

WQv = 101,716 ft³ = 2.3351 acre-ft

Section 2: EXTENDED DETENTION BASIN DESIGN PARAMETERS

Type of Extended Detention Basin = Wet Ext. Det. Basin

Required Extended Detention Volume, EDv = 101,716 ft³ = WQv for Wet Extended Detention Basin

Minimum required draw-down time = 24 hrs

Add'l 20% volume for sediment storage = 20,343 ft³

Calculated minimum permanent pool volume = 101,716 ft³

Minimum permanent pool volume = 101,716 ft³

Total add'l volume required below WQ orifice = 122,059 ft³

1/2 of required EDv = 50,858 ft³

1/3 of required draw-down time = 8.00 hrs

Section 3: BASIN ELEVATIONS & VOLUME INFORMATION

WQ orifice invert elevation = 1041.00 ft

Contour Elevation (ft)	Contour Area (ft²)	(acres)	Incremental Volume (ft³)	(ac-ft)	Cumulative Volume (ft³)	(ac-ft)
1027.00	7,715	0.2	0	0	0	0.0
1028.00	12,329	0.3	10,022	0.2	10,022	0.2
1030.00	21,779	0.5	34,108	0.8	44,130	1.0
1032.00	31,518	0.7	53,297	1.2	97,427	2.2
1034.00	41,535	1.0	73,053	1.7	170,480	3.9
1036.00	51,818	1.2	93,353	2.1	263,833	6.1
1038.00	62,363	1.4	114,181	2.6	378,014	8.7
1040.00	73,164	1.7	135,527	3.1	513,541	11.8
1041.00	78,660	1.8	75,912	1.7	589,453	13.5
1042.00	84,214	1.9	81,437	1.9	670,890	15.4
1043.00	89,826	2.1	87,020	2.0	757,910	17.4
1044.00	95,495	2.2	92,661	2.1	850,571	19.5
1045.00	101,220	2.3	98,358	2.3	948,928	21.8
1046.00	107,002	2.5	104,111	2.4	1,053,039	24.2
1047.00	112,840	2.6	109,921	2.5	1,162,960	26.7
1048.00	118,735	2.7	115,788	2.7	1,278,748	29.4
1049.00	124,686	2.9	121,711	2.8	1,400,458	32.2
1049.50	134,721	3.1	64,854	1.5	1,465,312	33.6

Bottom of sediment storage = 1027.00; WQ orifice invert elevation = 1041.00

Resulting total volume provided below WQ orifice = 589,453 ft³ which is > or equal to 122,059 ft³ (Result is 579.51% of the WQv)

Resulting EDv Elevation = 1,042.23 ft

Resulting volume provided above WQ orifice = 875,859 ft³ which is > or equal to 101,716 ft³

Section 4: WQ ORIFICE CALCULATIONS - OHIO EPA METHOD #2

EDv elevation = 1,042.23 ft; WQ orifice invert elevation = 1,041.00 ft; Maximum Hydraulic Head, H_{max} = 1.23304 ft; Orifice Coefficient, C = 0.60; Minimum required draw-down time = 24.00 hrs; Average Discharge, Q_{avg} = 1.17727 cfs; Average Hydraulic Head, H_{avg} = 0.61652 ft; Orifice Area, A = $Q_{avg}/[C(2gH_{avg})^{0.5}]$ = 0.31139 ft²; Calculated Orifice Diameter, D = 7.55597 in; Volume discharged in 1/3 of draw-down time = 33,905.36 ft³ which is less than 50,858 ft³ (which is 1/2 of the required EDv)

Section 5: WQ ORIFICE CALCULATIONS - MANUAL ESTIMATE

Orifice Diameter, D = 7.5 in; Maximum Hydraulic Head, H_{max} = 1.23304 ft; Average Discharge, Q_{avg} = 1.15989 cfs; Actual draw-down time = 24.36957 hrs which is > or equal to 24.00 hrs; Volume discharged in 1/3 of required draw-down time = 33,404.80 ft³ which is less than 50,858 ft³

Results = Anti-clogging device typically not required for this orifice diameter. Actual draw-down time is equal to or greater than minimum allowable draw-down time (OK). First 1/2 of EDv or WQv does not discharge in less than 1/3 of minimum drain time (OK).

Page 1 of 1

WATER QUALITY CALCULATIONS (FULL BUILD-OUT)

Water Quality Orifice Design for Extended Detention Basin
For sizing of single water quality orifice in wet or dry extended detention basin or constructed wetland

Revised to conform to the Ohio EPA Permit No. OHC000005 effective April 23, 2018.

Project Description: Rock & Roll — Date: 8/24/2018 — By: WES

Section 1: WATER QUALITY VOLUME CALCULATION

Drainage Area, A = 51.04 acres; Calculated Rv = 0.8000; Precipitation Depth, P = 0.9 inches

WQv = 143,403 ft³ = 3.2921 acre-ft

Section 2: EXTENDED DETENTION BASIN DESIGN PARAMETERS

Type of Extended Detention Basin = Wet Ext. Det. Basin; Required Extended Detention Volume, EDv = 143,403 ft³; Minimum required draw-down time = 24 hrs; Add'l 20% volume for sediment storage = 28,681 ft³; Calculated minimum permanent pool volume = 143,403 ft³; Minimum permanent pool volume = 143,403 ft³; Total add'l volume required below WQ orifice = 172,084 ft³; 1/2 of required EDv = 71,702 ft³; 1/3 of required draw-down time = 8.00 hrs

Section 3: BASIN ELEVATIONS & VOLUME INFORMATION (same contour table as Phase 1)

Resulting total volume provided below WQ orifice = 589,453 ft³ which is > or equal to 172,084 ft³ (Result is 411.05% of the WQv)

Resulting EDv Elevation = 1,042.71 ft

Resulting volume provided above WQ orifice = 875,859 ft³ which is > or equal to 143,403 ft³

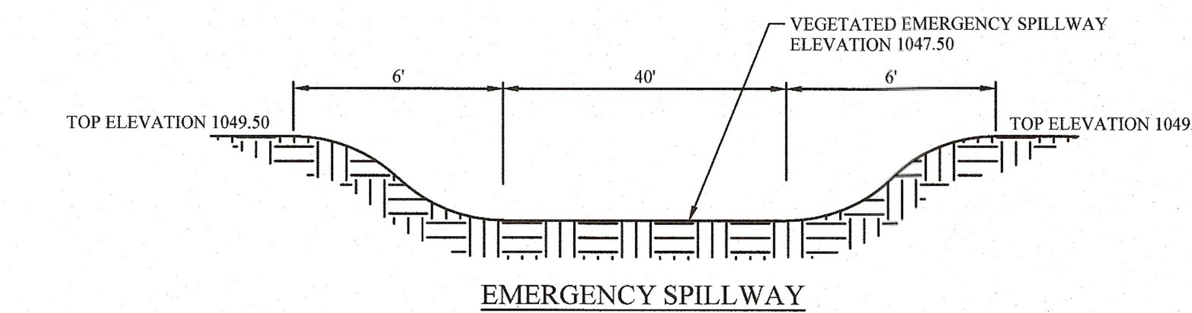
Section 4: WQ ORIFICE CALCULATIONS - OHIO EPA METHOD #2

EDv elevation = 1,042.71 ft; WQ orifice invert elevation = 1,041.00 ft; Maximum Hydraulic Head, H_{max} = 1.71209 ft; Orifice Coefficient, C = 0.60; Minimum required draw-down time = 24.00 hrs; Average Discharge, Q_{avg} = 1.65976 cfs; Average Hydraulic Head, H_{avg} = 0.85604 ft; Orifice Area = 0.37287 ft²; Calculated Orifice Diameter, D = 8.26480 in; Volume discharged in 1/3 of draw-down time = 47,801.00 ft³ which is less than 71,702 ft³

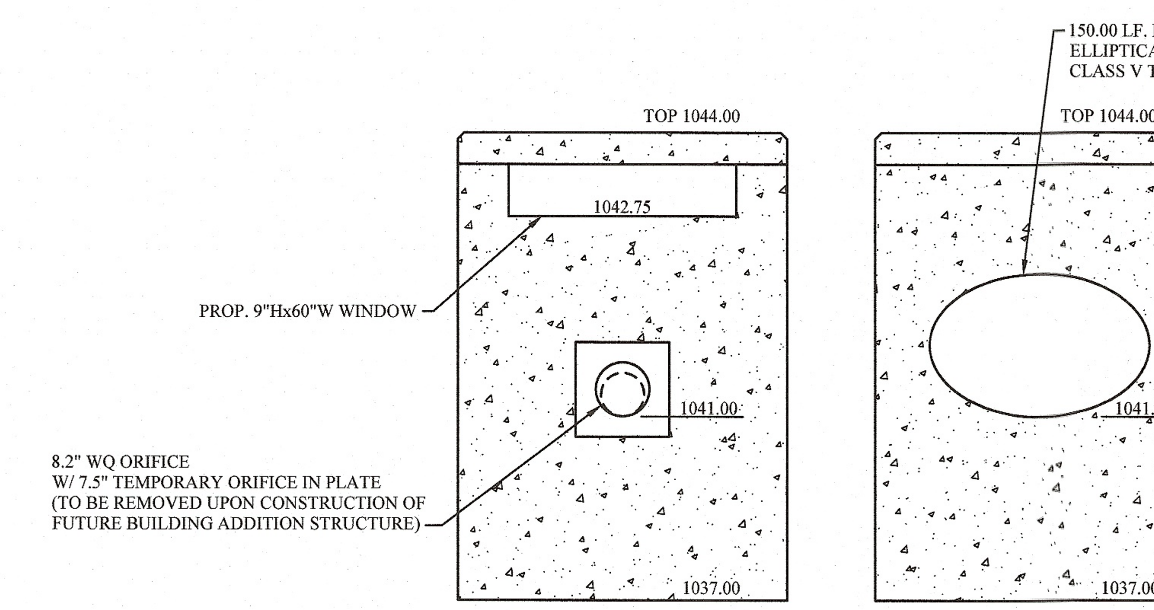
Section 5: WQ ORIFICE CALCULATIONS - MANUAL ESTIMATE

Orifice Diameter, D = 8.2 in; Maximum Hydraulic Head, H_{max} = 1.71209 ft; Average Discharge, Q_{avg} = 1.63379 cfs; Actual draw-down time = 24.38136 hrs which is > or equal to 24.00 hrs; Volume discharged in 1/3 of required draw-down time = 47,053.29 ft³ which is less than 71,702 ft³

Page 1 of 1

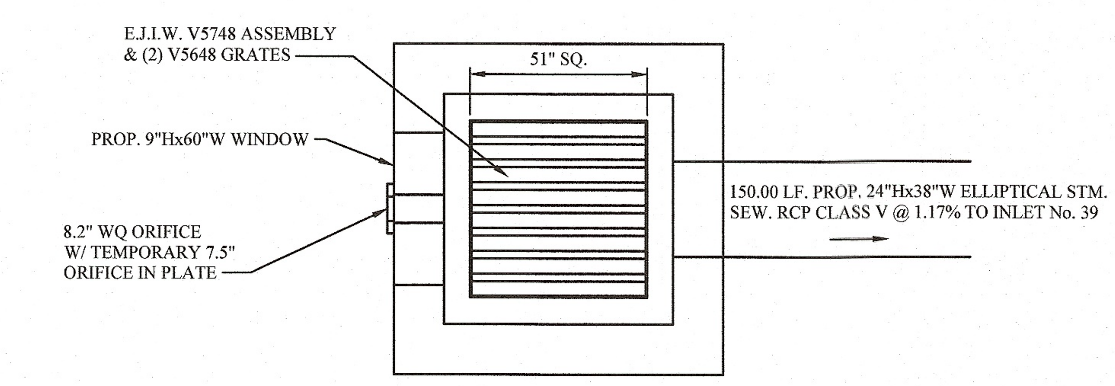


EMERGENCY SPILLWAY
REFERENCE ONLY

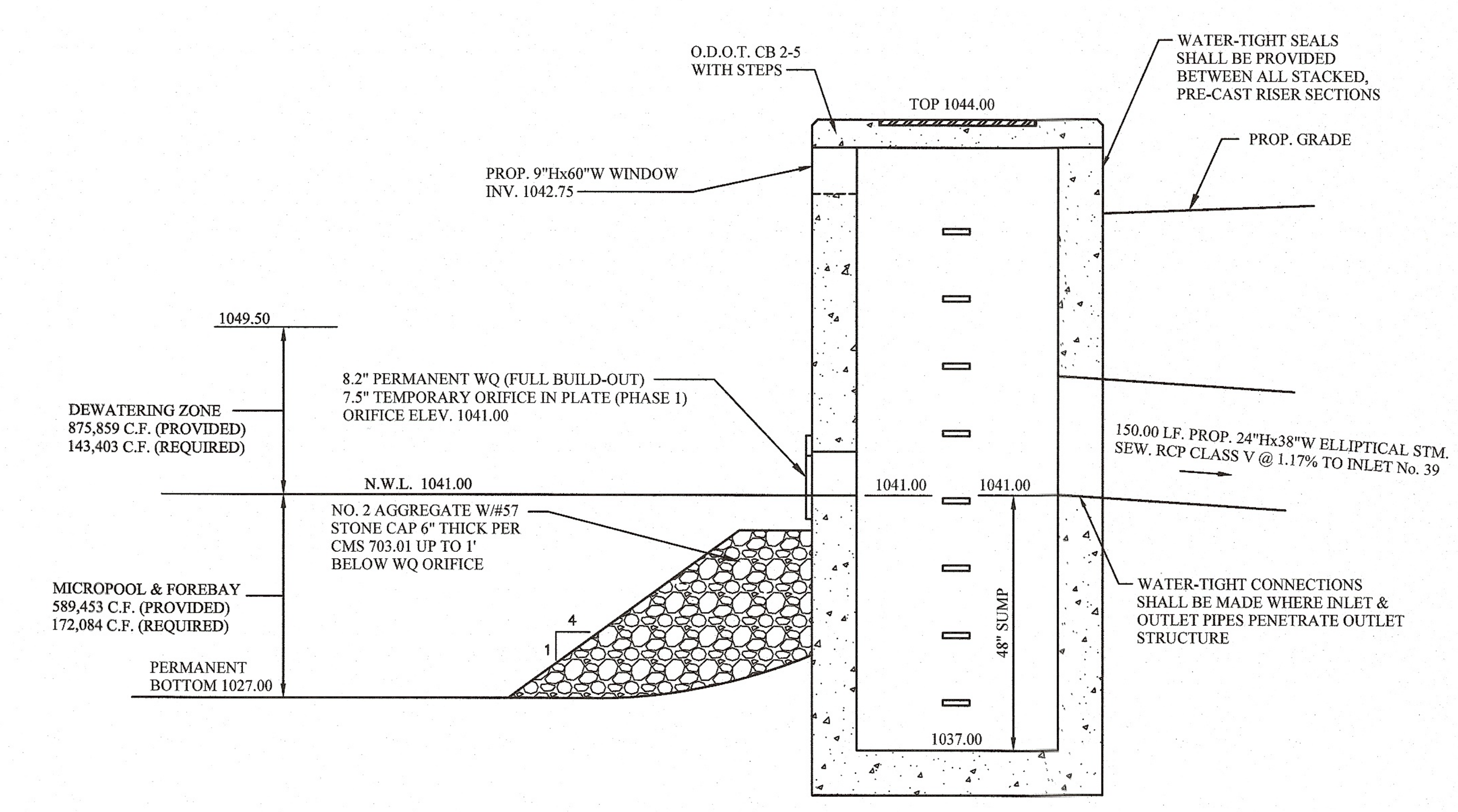


LEFT VIEW
NOT TO SCALE REFERENCE ONLY

RIGHT VIEW
NOT TO SCALE REFERENCE ONLY



TOP VIEW
NOT TO SCALE REFERENCE ONLY



PERMANENT OUTLET STRUCTURE (STRUCT. No. 40)
NON-CLOG FIGURE 2.6.3 OF OHIO RAINWATER AND LAND DEVELOPMENT MANUAL
REFERENCE ONLY

WEBER ENGINEERING SERVICES
Where Strong Relationships & Superior Service Guide Your Project
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Rootstown, OH 44272
www.WeberEngineeringServices.com
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matt@webercivil.com

STATE OF OHIO — MATTHEW L. WEBER — 61709 — REGISTERED PROFESSIONAL ENGINEER

Reg. No.: 61709

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SWP3 DETAILS

C108A
Project No. 2018-196

1. Construction personnel, including subcontractors who may use or handle hazardous or toxic materials. shall be made aware of the following general guidelines regarding disposal and handling of hazardous and construction wastes:
   - Prevent spills
   - Use products up
   - Follow label directions for disposal
   - Remove lids from empty bottles and cans when disposing in trash
   - Recycle wastes whenever possible
   - Don't pour into waterways, storm drains or onto the ground
   - Don't pour down the sink, floor drain or septic tanks
   - Don't bury chemicals or containers
   - Don't burn chemicals or containers
   - Don't mix chemicals together

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

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

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

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

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

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

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

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

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

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

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

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

OHIO EPA PERMIT NO. OHC000005

PART III G. SWP3 REQUIREMENTS

a. COMMERCIAL BUILDING EXPANSION

b. TOTAL SITE AREA - 49.45 AC. - DISTURBED AREA = 47.96 AC.

c. PRE-CONSTRUCTION RUNOFF COEFFICIENT - CN=0.97; POST-CONSTRUCTION RUNOFF COEFFICIENT CN=0.85

d. IMPERVIOUS AREA = 31.81 AC. (ENTIRE SITE), PERCENT IMPERVIOUS = 64.3%.

e. SOIL TYPES:

CDB	-	CANFIELD SILT LOAM, 2 TO 6 PERCENT SLOPES
CDC2	-	CANFIELD SILT LOAM, 6 TO 12 PERCENT SLOPES, ERODED
FCA	-	FITCHVILLE SILT LOAM, 0 TO 2 PERCENT SLOPES
LY	-	LURAY SILT LOAM, 0 TO 2 PERCENT SLOPES
REB	-	RAVENNA SILT LOAM, 2 TO 6 PERCENT SLOPES
WUC2	-	WOOSTER SILT LOAM, 6 TO 12 PERCENT SLOPES, MODERATELY ERODED

f. PRIOR LAND USE: VACANT LAND

g. CONSTRUCTION SEQUENCE - SEE IMPROVEMENT PLANS

h. UNNAMED TRIBUTARY TO TUSCARAWAS RIVER

• NO WETLANDS

i. NOT SUBDIVIDED (MEASURES IDENTIFIED ON PLANS)

j. NOT APPLICABLE

k. PERMIT REQUIREMENTS ATTACHED. (FIELD COPY)

l. IDENTIFIED ON SHEET C106

m. IDENTIFIED ON SHEET C106

n. SITE MAP SHOWN ON PLANS

(i) LIMITS OF CONSTRUCTION IDENTIFIED ON THE PLANS (LC).

(ii) SOIL TYPES IDENTIFIED ON THE PLANS

(iii) DRAINAGE WATER SHEDS IDENTIFIED ON THE PLANS.

(iv) THERE ARE NO WETLANDS ON THE SITE. NO SPRINGS, LAKES OR WATER WELLS WITHIN 200 FEET OF THE SITE.

(v) EXISTING & PLANNED LOCATIONS OF BUILDINGS, ROADS, PARKING FACILITIES AND UTILITIES ARE IDENTIFIED ON THE PLANS.

(vi) EROSION AND SEDIMENT CONTROL PRACTICES ARE IDENTIFIED ON THE PLANS.

(vii) SEDIMENT & STORM WATER MANAGEMENT DATA IS IDENTIFIED ON THE PLANS.

(viii) PERMANENT STORM WATER MANAGEMENT PRACTICES ARE IDENTIFIED ON THE PLANS.

(ix) CEMENT TRUCK WASHOUT, DUMPSTER & VEHICLE FUELING AREA ARE IDENTIFIED ON THE PLANS.

(x) CONSTRUCTION ENTRANCE IS IDENTIFIED ON THE PLANS.

(xi) NOT APPLICABLE

2. A. NOT APPLICABLE.

B. TEMPORARY SEEDING AND PERMANENT SEEDING MEASURES ARE IDENTIFIED ON THE PLANS.

(I) TABLE 1 & TABLE 2 HAVE BEEN IDENTIFIED ON THE PLANS.

(II)NOT APPLICABLE.

C. SHEET FLOW RUNOFF HAS BEEN CONTROLLED BY MEANS OF SILT FENCE AND DIRECTED TOWARDS UNDISTURBED SOILS. POINT DISCHARGES HAVE BEEN CONTAINED WITHIN STORM SEWERS.

D. SEDIMENT CONTROL HAS BEEN MANAGED BY MEANS OF SILT FENCE.

(I) NOTED THROUGHOUT THE PLANS.

(II) SILT FENCE UTILIZED.

(III) SILT FENCE IS IDENTIFIED ON THE PLANS.

(IV) INLET PROTECTION IS IDENTIFIED ON THE PLANS.

(V) NOT APPLICABLE.

(VI) NOTED ON THE IMPROVEMENT PLANS.

E. POST-CONSTRUCTION MAINTENANCE AND INSPECTION IS IDENTIFIED ON THE PLANS.

LARGE CONSTRUCTION ACTIVITIES - NOT APPLICABLE

SMALL CONSTRUCTION ACTIVITIES - RATIONALE IDENTIFIED ON PLANS

F. SURFACE WATER PROTECTION - NOT APPLICABLE

G. OTHER CONTROLS

(I) CEMENT TRUCK WASHOUT AREA IS IDENTIFIED ON THE PLANS.

(II)DUST CONTROL MEASURES AND VEHICLE TRACKING ARE IDENTIFIED ON THE PLANS.

(III) ADDITIONAL NOTES ARE IDENTIFIED ON THE PLANS.

(IV) NOTED ON THE PLANS.

(V) NOTED ON THE PLANS.

H. NOTED THROUGHOUT THE PLANS.

I. INSPECTION FREQUENCY AND INSPECTION CHECKLIST IS NOTED ON THE PLANS.

(I) NOTED ON THE PLANS.

(II) NOTED ON THE PLANS.

(III) STATEMENT NOTED.

3. APPROVED STATE OR LOCAL PLANS

STATEMENT NOTED.

4. EXCEPTIONS

STATEMENT NOTED.

CONSTRUCTION SEQUENCE

(ALL ITEMS ARE TO BE THE RESPONSIBILITY OF THE GENERAL SITE CONTRACTOR)

CONTACT STARK SOIL & WATER CONSERVATION DISTRACT TO SCHEDULE A PRE-CONSTRUCTION MEETING AT 330-451-7644 PRIOR TO ANY EARTH MOVING ACTIVITY

CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN CO-PERMITEE COVERAGE ON THE OHIO EPA NPDES PERMIT FURTHER SITE PRIOR TO ANY EARTH MOVING ACTIVITY

SITE PREPARATION

NOTE:

PROVIDE SAFE AND SECURE PEDESTRIAN AND VEHICULAR TRAFFIC CIRCULATION THROUGHOUT THE ENTIRETY OF THE CONSTRUCTION SEQUENCE WITH WELL DEFINED CONSTRUCTION BOUNDARIES TO BE ACCESSED BY CONSTRUCTION PERSONNEL ONLY. ALL EROSION CONTROLS ARE TO BE THOROUGHLY INSPECTED BY THE CONTRACTOR UPON THE COMPLETION OF EACH WORK DAY AND MAINTAINED THROUGHOUT THE REQUIRED LIFE OF THE CONTROL, AS SPECIFIED BY THE APPROVED EROSION AND SEDIMENTATION CONTROL PLANS AND NARRATIVE. THE CONTRACTOR MUST REVIEW THE APPROVED EROSION AND SEDIMENTATION CONTROL PLANS AND NARRATIVE. THE CONTRACTOR MUST REVIEW THE APPROVED NPDES PERMIT AND SIGN THE PERMIT TO ACCEPT RESPONSIBILITIES AS THE CO-PERMITEE.

INITIAL PHASE (WITHIN 7 DAYS OF START OF GRUBBING)

1. INSTALL A TEMPORARY CONSTRUCTION ENTRANCE FOR ACCESS TO CONSTRUCTION AREAS OF SITE.
2. SETUP CONSTRUCTION TRAILER ON SITE AND ESTABLISH TEMPORARY POWER AND TELEPHONE SERVICE AS NECESSARY.
3. ALL TEMPORARY UTILITY SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. STAKEOUT LIMITS OF DISTURBANCE.
5. INSTALL TEMPORARY INLET PROTECTION ON ALL EXISTING CATCH BASINS WITHIN LIMITS OF CONSTRUCTION. REMOVE SILT PROTECTION FROM DESIGNATED INLETS ONLY WHEN INLET STRUCTURE IS TO BE REMOVED AS REQUIRED BY PROGRESSION OF CONSTRUCTION. REFER TO PLANS FOR IDENTIFICATION OF INLET STRUCTURES TO BE REMOVED.
6. INSTALL ALL FILTER FABRIC FENCE WHERE SHOWN ON PLANS.
7. BEGIN SITE CLEARING.
8. REMOVE TOPSOIL FROM AREAS OF BUILDING AND PAVEMENT.
9. CONSTRUCT STORM WATER BASIN.
10. BEGIN EARTHWORK OPERATIONS.
11. CONSTRUCT STORM WATER DIVERSION AS A FIRST STEP
12. IN THE EVENT OF RAIN, ALLOW STANDING WATER TO SETTLE PRIOR TO PUMPING. UTILIZE THE PUMPING SYSTEMS TO PUMP POLLUTED WATER PER E.P.A. REQUIREMENTS. ALLOW ONLY CLEAN WATER TO BE DISCHARGED TO THE EXISTING DRAINAGE SYSTEM. REMOVE SILT FROM BASINS AS NECESSARY PRIOR TO CONTINUING EARTHWORK. MATERIAL SHOULD BE MECHANICALLY SPREAD AND DRIED PRIOR TO INCORPORATION INTO THE EARTHWORK PROCEDURES. ADEQUACY OF THE DRIED MATERIAL IS TO BE DETERMINED BY A GEOTECHNICAL ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE AND ENSURE THAT PROPER MECHANISMS ARE IN PLACE TO CONTROL WASTE MATERIALS. CONSTRUCTION WASTES INCLUDES, BUT ARE NOT LIMITED TO, EXCESS SOIL MATERIALS, BUILDING MATERIALS, CONCRETE WASH WATER, SANITARY WASTES, ETC., THAT COULD ADVERSELY IMPACT WATER QUALITY. MEASURES SHALL BE PLANNED AND IMPLEMENTED FOR HOUSEKEEPING, MATERIALS MANAGEMENT, AND LITTER CONTROL. WHEREVER POSSIBLE, RECYCLING OF EXCESS MATERIALS IS PREFERRED, RATHER THAN DISPOSAL.

INTERIM PHASE GENERAL CONSTRUCTION

1. MAINTAIN TEMPORARY CONTROLS UNTIL REMOVAL IS WARRANTED DUE TO PROGRESSION OF WORK.
2. BEGIN EARTHMOVING OPERATIONS. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE COUNTY CONSERVATION DISTRICT OF LOCATION AND EROSION AND SEDIMENTATION CONTROL MEASURES IMPLEMENTED AT BORROW OR SPOIL SITE OF IMPORT/EXPORT MATERIAL. THE CONTRACTOR IS TO COORDINATE WITH OWNER THE PLACEMENT OF SUCH MEASURES.
3. STORM SEWER, SANITARY SEWER, WATER LINE AND UTILITY LINE CONSTRUCTION MAY BEGIN IMMEDIATELY FOLLOWING ESTABLISHMENT OF GRADE AND WITH THE PERMISSION OF THE OWNER.
4. STABILIZE ALL UTILITY TRENCHES AT THE END OF EACH WORKDAY BY MEANS OF GRAVEL BACKFILL TO SURFACE, REPAVING OR MULCHING.
5. REPLACE TOPSOIL, FINE GRADE AND SEED AS REQUIRED.
6. STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEED AND MULCHING OR CROWNVETCH SEEDING IMMEDIATELY UPON REACHING FINAL GRADE.
7. INSTALL PAVEMENT SUBBASE.
8. BEGIN BITUMINOUS PAVING, REMOVING TEMPORARY CONSTRUCTION ENTRANCE ONLY WHEN NECESSARY.
9. RESEED AND REDRESS ANY AREAS THAT MAY REQUIRE ATTENTION IMMEDIATELY. NOTE THAT LAWN AREAS WILL NOT BE DEEMED STABLE UNTIL A UNIFORM 80% COVERAGE IS ACHIEVED.
10. ALL EROSION MEASURES SHALL REMAIN IN PLACE UNTIL THE SITE IS STABILIZED. ALL AREAS OF VEGETATIVE SURFACE STABILIZATION, WHETHER TEMPORARY OR PERMANENT, SHALL BE CONSIDERED TO BE IN PLACE AND FUNCTIONAL WHEN THE REQUIRED UNIFORM RATE OF COVERAGE (80%) IS OBTAINED.

FINAL PHASE POST-PAVING BASIN CONVERSION

1. IF, FOR ANY REASON, THE PROJECT IS SUSPENDED, THE CONTRACTOR SHALL INSURE THAT ALL INSTALLED EROSION MEASURES ARE FUNCTIONING AND PROPERLY MAINTAINED DURING THIS PERIOD, AND THAT ALL BARED SOILS ARE SEEDED AND MULCHED WITH TEMPORARY SEED MIXTURE.
2. THE FOLLOWING ITEMS MUST BE COMPLETED BY THE CONTRACTOR, IN ORDER, ONCE THE SITE HAS BEEN DEEMED STABLE:
   A. REMOVE SEDIMENT CONTROL DEVICES AND ESTABLISH WATER QUALITY CONTROL ORIFICE.
   B. REMOVE TEMPORARY CONSTRUCTION ENTRANCE PRIOR TO COMPLETION OF PAVING.
   C. SITE CLEAN UP.
   D. RESEED ANY AREAS THAT REQUIRE ADDITIONAL SEED
   E. FILTER FENCES ARE TO BE CLEANED, REMOVED, BACKFILLED AND SEEDED WITH PERMANENT SEEDING.
   F. VERIFY POSITIVE CONVEYANCE FLOW IN ALL DRAINAGE STRUCTURES.

SPECIFICATIONS FOR TEMPORARY SEEDING

TEMPORARY SEEDING SPECIES SELECTION

SEEDING DATES	SPECIES	LB/100 FT^2	LB/ACRE
MARCH 1 TO AUGUST 15	OATS TALL FESCUE ANNUAL RYEGRASS	3 1 1	128 (4 BUSHEL) 40 40
	PERENNIAL RYEGRASS TALL FESCUE ANNUAL RYEGRASS	1 1 1	40 40 40
	ANNUAL RYEGRASS PERENNIAL RYEGRASS CREEPING RED FESCUE KENTUCKY BLUEGRASS	1.25 3.25 0.4 0.4	55 142 17 17
	OATS TALL FESCUE ANNUAL RYEGRASS	3 1 1	128 (3 BUSHELS) 40 40
AUGUST 16TH TO NOVEMBER	RYE TALL FESCUE ANNUAL RYEGRASS	3 1 1	112 (2 BUSHEL) 40 40
	WHEAT TALL FESCUE ANNUAL RYEGRASS	3 1 1	120 (BUSHEL) 40 40
	PERENNIAL RYE TALL FESCUE ANNUAL RYEGRASS	1 1 1	40 40 40
	ANNUAL RYEGRASS PERENNIAL RYEGRASS CREEPING RED FESCUE KENTUCKY BLUEGRASS	1.25 3.25 0.4 0.4	40 40 40
NOVEMBER 1 TO FEB. 29	USE MULCH ONLY FOR DORMANT SEEDING		

NOTE: OTHER APPROVED SPECIES MAY BE SUBSTITUTED

1. STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION-SITE.
2. TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR 14 DAYS OR 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 SHALL 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 ESTABLISHED ADEQUATE STANDS OF VEGETATION WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. SOIL TESTS SHOULD BE TAKEN ON THE SITE TO PREDICT THE NEED FOR LIME AND FERTILIZER.
5. SEEDING METHOD--SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON-SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

MULCHING TEMPORARY SEEDING

1. APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES AND WITH FAVORABLE SOIL CONDITIONS AND ON VERY FLAT SOIL CONDITIONS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION.
2. MATERIALS: STRAW--IF STRAW IS USED, IT SHALL BE UNROTTED SMALL-GRAIN APPLIED AT 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 SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING METHODS: MECHANICAL--A DISK, CRIMPER OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT, GENERALLY BE LEFT LONGER THAN 6 IN. MULCH NETTINGS--NETTINGS SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES. SYNTHETIC BINDERS--SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA-TACK OR EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER. WOOD-CELLULOSE FIBRE--WOOD-CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LB. /AC. THE WOOD-CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB. / 100 GAL.

BMP INSPECTION CHECKLIST

BMP	FREQUENCY	NOTES
GENERAL INSPECTION	EVERY 6 MO.	
STORM WATER BASIN	MONTHLY	
VEGETATION	MONTHLY	FIRST 2 GROWING SEASONS THEN TWICE A YEAR
SILT FENCE	MONTHLY	FIRST GROWING SEASON

REGULAR INSPECTION AND MAINTENANCE WILL BE PROVIDED FOR ALL EROSION AND SEDIMENT CONTROL PRACTICES. PERMANENT RECORDS OF MAINTENANCE AND INSPECTIONS MUST BE KEPT THROUGHOUT THE CONSTRUCTION PERIOD. INSPECTIONS MUST BE MADE A MINIMUM OF ONCE EVERY 7 DAYS AND IMMEDIATELY AFTER STORM EVENTS GREATER THAN 0.5 INCHES OF RAIN IN A 24 HOUR PERIOD. PROVIDED WILL BE NAME OF INSPECTOR, MAJOR OBSERVATIONS, DATED OF INSPECTION AND CORRECTIVE MEASURES TAKEN. RECORDS SHALL L BE SUBMITTED TO THE CITY OF MASSILLON ENGINEERING DEPARTMENT FOR REVIEW BY MAY 1st OF EACH YEAR.

ALL CONTROL PRACTICES THAT REQUIRE REPAIR SHALL BE REPAIRED WITHIN THREE (3) DAYS OF THE INSPECTION.

ADDITIONAL SWP3 CONSIDERATIONS

NO OPEN BURNING

DUST CONTROL SHALL BE ACHIEVED BY USE OF WATERING TRUCKS. USE OF OIL IS STRICTLY PROHIBITED. INLET PROTECTION MUST BE IMPLEMENTED PRIOR TO DUST CONTROL MEASURES.

IN THE EVENT OF A PETROLEUM SPILL (>25 GALLONS) OR THE PRESENCE OF OIL SHEEN, THE CONTRACTOR SHALL CONTACT THE OHIO E.P.A. AT 800-282-9378, THE LOCAL FIRE DEPARTMENT.

SMALL SPILLS (<25 GALLONS) SHALL BE CLEANED UP USING AN ABSORBING AGENT, THE ABSORBING AGENT REMOVED AND DISPOSED OF ACCORDING TO FEDERAL REGULATIONS.

ALL TRENCH DEWATERING MEASURES SHALL BE DISCHARGED INTO SETTLING BASINS PRIOR TO DISCHARGE FROM SITE. BMP'S THAT REQUIRE REPAIR SHALL BE REPAIRED WITHIN 3 DAYS OF INSPECTION. SETTLING PONDS MUST BE REPAIRED WITHIN 10 DAYS OF INSPECTION.

STREETS ADJACENT TO SITE SHALL BE CLEANED AT THE END OF EACH WORK DAY.

POST-CONSTRUCTION BMP RATIONALE

STORM WATER MANAGEMENT AND POST CONSTRUCTION WATER QUALITY BMP'S HAVE BEEN ADDRESSED BY MEANS OF AN ON-SITE STORM WATER MANAGEMENT/WATER QUALITY BASIN.

MAINTENANCE FOR PERMANENT SEEDINGS FERTILIZATION AND MOWING

MIXTURE	FORMULA	LBS./ACRE	LBS./1,000 SQ. FT	TIME	MOWING
CREEPING RE FESCUE RYEGRASS KEENTCKY BLUEGRASS	10-10-10	500	12	FALL, YEARLY AS NEEDED	NOT CLOSER THAN 3"
TALL FESCUE	10-10-10	500	12		NOT CLOSER THAN 4"
TURF-TYPE FESCUE	10-10-10	500	12		
CROWN VETCH FESCUE	0-20-20	400	10	SPRING, YEARLY FOLLOWING ESTABLISHMENT AND EVERY 4-7 YEARS 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 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. TOPSOIL SHALL BE APPLIED WHERE NEEDED TO ESTABLISH VEGETATION. SEEDBED PREPARATION
   a. LIME--AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ACID SOIL AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF 100 LB./1,000 SQ. FT. OR 2 TONS/ACRE.
   b. 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 25 LB./1,000 SQ. FT. OR 1000 LB./ACRE OF 10-10-10 OR 12-12-12 ANALYSES.
   c. THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING-TOOTH HARROW OR OTHER SUITABLE FIELD IMPLEMENT TO A DEPTH OF 3 INCHES. ON SLOPING LAND, THE SOIL SHALL BE WORKED ON THE CONTOUR.

EROSION PREVENTION PRACTICES

SEEDING DATES AND SOIL CONDITIONS

SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 OR AUG 1 TO SEPTEMBER 30. IF SEEDING OCCURS OUTSIDE OF THE ABOVE SPECIFIED DATES, ADDITIONAL MULCH AND IRRIGATION MAY BE REQUIRED TO ENSURE A MINIMUM OF 80% GERMINATION. TILLAGE FOR SEEDBED PREPARATION SHOULD BE DONE WHEN 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 SEEDING

1. SEEDINGS SHOULD NOT BE MADE FROM OCTOBER 1 THROUGH NOVEMBER 20. DURING THIS PERIOD, THE SEEDS ARE LIKELY TO GERMINATE BUT PROBABLY WILL NOT BE ABLE TO SURVIVE THE WINTER.
2. THE FOLLOWING METHODS MAY BE USED FOR "DORMANT SEEDING":

- FROM OCTOBER 1 THROUGH NOVEMBER 20, PREPARE THE SEEDBED, ADD THE REQUIRED AMOUNTS OF LIME AND FERTILIZER, THEN MULCH AND ANCHOR. AFTER NOVEMBER 20, BROADCAST THE SELECTED SEED MIXTURE AT A 50% INCREASE IN THE SEEDING RATE.
- 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 FOLLOW THE CONTOUR WHERE FEASIBLE.

MULCHING

1. MULCH MATERIAL SHALL BE APPLIED IMMEDIATELY AFTER SEEDING. DORMANT SEEDING SHALL BE MULCHED. 100% OF THE GROUND SURFACE SHALL BE COVERED WITH AN APPROVED MATERIAL.
2. MATERIALS

   STRAW--IF STRAW IS USED IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT THE RATE OF 2 TONS/ACRE 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 DIVIDE AREA INTO APPROXIMATELY 1,000-SQ.-FT. HAND-SPREAD MULCH, 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./ACRE. OR 46 LB./1,000 SQ. FT.

   OTHER--OTHER ACCEPTABLE MULCHES INCLUDE ROLLED EROSION CONTROL MATTINGS OR BLANKETS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT 6 TONS/ACRE.
3. STRAW AND MULCH ANCHORING METHODS

   STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER.

   MECHANICAL--A DISK, CRIMPER OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT GENERALLY LEFT LONGER THAN 6 IN.

   MULCH NETTINGS-NETTINGS SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES.

   SYNTHETIC BINDERS-SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TACK OR EQUIVALENT MAY BE USED AT RATES SPECIFIED BY THE MANUFACTURER.

EROSION PREVENTION PRACTICES

WOOD CELLULOSE FIBER--WOOD CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LBS./ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER WITH THE MIXTURE CONTAINING A MAXIMUM OF 50 LBS. CELLULOSE/100 GALLONS OF WATER.

IRRIGATION

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

PERMANENT SEEDING

SEED MIX	SEEDING RATE		NOTES
	LBS./ACRE	LBS./1,000 SQ. FEET	
GENERAL USE			
CREEPING RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	20-40 10-20 20-40	1/2-1 1/4-1/2 1/2-1	FOR CLOSE MOWING & FOR WATERWAYS WITH<2.0 FT/SEC VELOCITY
TALL FESCUE	40-50	1-1 1/4	
TURF- TYPE (DWARF) FESCUE	90	2 1/4	
STEEP BANKS OR CUT SLOPES			
TALL FESCUE	40-50	1-1/4	
CROWN VETCH TALL FESCUE	10-20 20-30	1/4-1/2 1/2-3/4	DO NOT SEED LATER THAN AUGUST
FLAT PEA TALL FESCUE	20-25 20-30	1/2-3/4 1/2-3/4	DO NOT SEED LATER THAN AUGUST
ROAD DITCHES AND SWALES			
TALL FESCUE	40-50	1-1 1/4	
TURF-TYPE (DWARF) FESCUE KENTUCKY BLUEGRASS	90 5	2 1/4 0.1	
LAWNS			
KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	100-120	2 2	
KENTUCKY BLUEGRASS CREEPING RED FESCUE	100-120	2 1-1/2	FOR SHADED AREAS

NOTE: OTHER APPROVAL SEED SPECIES MAY BE SUBSTITUTED.

TABLE 1: PERMANENT STABILIZATION

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT WILL LIE DORMANT FOR ONE YEAR OR MORE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND AT FINAL GRADE	WITHIN TWO DAYS OF REACHING FINAL GRADE
ANY OTHER AREAS AT FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREAS

TABLE 2: TEMPORARY STABILIZATION

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND NOT AT FINAL GRADE	WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS
FOR ALL CONSTRUCTION ACTIVITIES, AND DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER OF THE STATE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S).
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	PRIOR TO THE ONSET OF WINTER WEATHER

WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. PERMANENT AND TEMPORARY STABILIZATION ARE DEFINED IN PART VII.

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ROCK & ROLL
NEW SITE
2255 PHOENIX AVE. SE, MASSILLON, OHIO

Issue Date
08-29-2018
09-04-2018
09-24-2018
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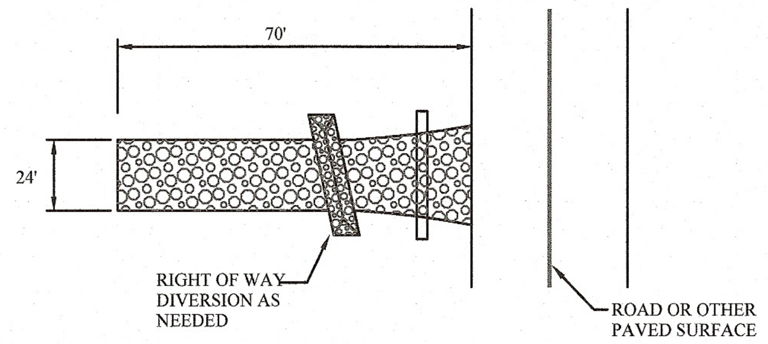
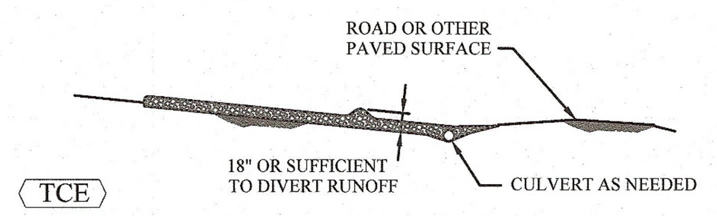
SWP3 DETAILS

C109

Project No. 2018-196



CONSTRUCTION ENTRANCE PLAN
REFERENCE ONLY NOT TO SCALE



TCE
CONSTRUCTION ENTRANCE PROFILE
REFERENCE ONLY NOT TO SCALE

1. STONE SIZE - ODOT #2 (1.5-2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABALIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDENCE LOTS.)
3. THICKNESS- THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10 INCHES FOR HEAVY DUTY USE.
4. WIDTH- THE ENTRANCE SHALL BE AT LEAST 14 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE- A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA PRIOR TO PLACING STONE . IT SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS.

GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE	
MINIMUM TENSILE STRENGTH	200 LBS.
MINIMUM PUNCTURE STRENGTH	80 PSI.
MINIMUM TEAR STRENGTH	50 LBS.
MINIMUM BURST STRENGTH	320 PSI.
MINIMUM ELONGATION	20%
EQUIVALENT OPENING SIZE	EOS<0.6MM.
PERMITTIVITY	1X10^-3 CM/SEC.

6. TIMING- THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
7. CULVERT- A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
8. WATER BAR- A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED
9. SURFACES.

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,
10. SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.

CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND
11. PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.

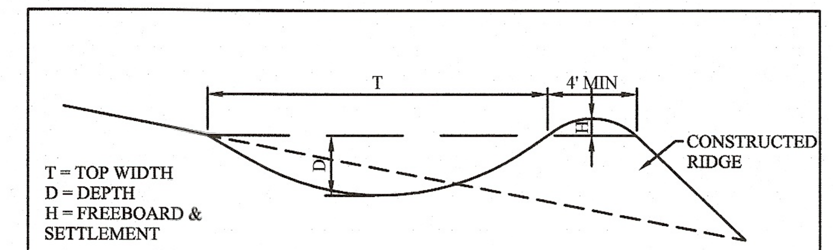
REMOVAL- THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

TCE SPECIFICATIONS FOR CONSTRUCTION ENTRANCE

REQUIREMENTS FOR GEOTEXTILES			
PROPERTY	TEST METHOD	WOVEN- CLASS I	NONWOVEN-I
TENSILE STRENGTH (POUNDS) 1/	ASTM C 4632 GRAB TEST	200 MINIMUM IN ANY PRINCIPAL DIRECTION	180 MINIMUM
ELONGATION AT FAILURE (PERCENT) 1/	ASTM D 4632 GRAB TEST	<50	> 50
PUNCTURE (POUNDS) 1/	ASTM D 4833	90 MINIMUM	80 MINIMUM
ULTRAVIOLET LIGHT (% RESIDUAL TENSILE STRENGTH)	ASTM D 4355 150-HR EXPOSURE	70 MINIMUM	70 MINIMUM
APPARENT OPENING SIZE (AOS)	ASTM D 4751	AS SPECIFIED, BUT NO SMALLER THAN .212 (#70) 2/	AS SPECIFIED MAX. #40 2/
PERCENT OPEN AREA (PERCENT)	CWO-02215-86	4.0 MINIMUM	----
PERMITIVITY SEC-1	ASTM D 4491	0.10 MINIMUM	0.70 MINIMUM

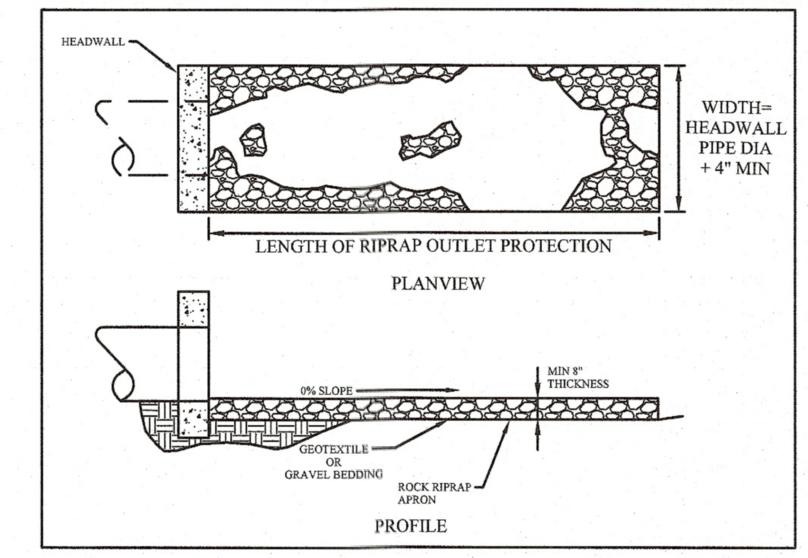
1. MINIMUM AVERAGE ROLL VALUE (WEAKEST PRINCIPAL DIRECTION).
2. U.S. STANDARD SIEVE SIZE
NOTE: CWO IS A USACE REFERENCE

RIPRAP SIZE CHART			
TYPE OF ROCK OR RIPRAP (ODOT)	"N" VALUE	SIZE OF ROCK	
		50%	85%
TYPE D	.036	>6 IN.	3-12 IN.
TYPE C	.04	>12 IN.	6-18 IN.
TYPE B	.043	>18 IN.	12-24 IN.
TYPE A	.045	>24 IN.	18-30 IN.



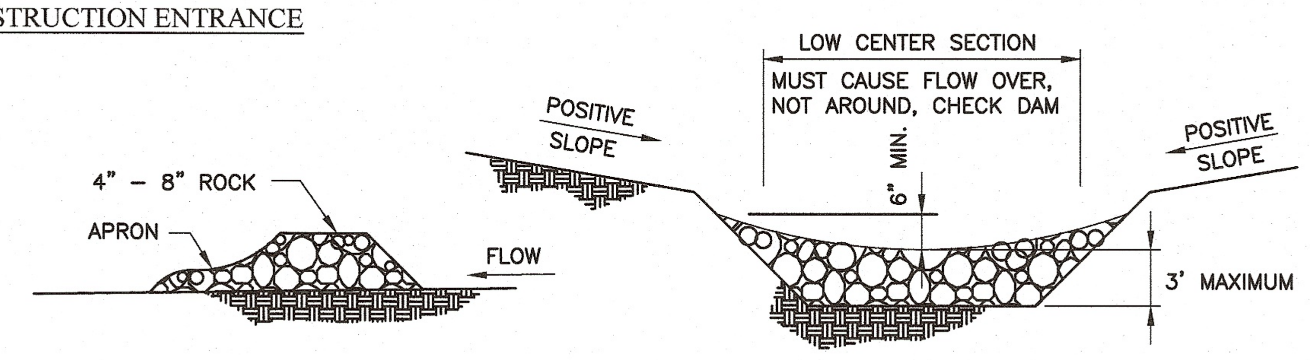
1. ALL TREES, BRUSH, STUMPS, AND OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE WORK SITE.
2. THE DIVERSION SHALL BE EXCAVATED AND SHAPED TO THE PROPER GRADE AND CROSS SECTION.
3. FILL MATERIAL USED IN THE CONSTRUCTION OF THE CHANNEL SHALL BE WELL COMPACTED IN UNIFORM LAYERS NOT EXCEEDING 9 INCHES USING THE WHEEL TREADS OR TRACKS OF THE CONSTRUCTION EQUIPMENT TO PREVENT UNEQUAL SETTLEMENT.
4. EXCESS EARTH SHALL BE GRADED OR DISPOSED OF SO THAT IT WILL NOT RESTRICT FLOW TO THE CHANNEL OR INTERFERE WITH ITS FUNCTIONING.
5. FERTILIZING, SEEDING, AND MULCHING SHALL CONFORM TO THE RECOMMENDATION IN THE APPLICABLE VEGETATIVE SPECIFICATIONS.
6. CONSTRUCTION SHALL BE SEQUENCED SO THAT THE NEWLY CONSTRUCTED CHANNEL IS STABILIZED PRIOR TO BECOMING OPERATIONAL TO AID IN THE ESTABLISHMENT OF VEGETATION, SURFACE WATER MAY BE PREVENTED FROM ENTERING THE NEWLY CONSTRUCTED CHANNEL THROUGH THE ESTABLISHMENT PERIOD.
7. GULLIES THAT MAY FORM IN THE CHANNEL OR OTHER EROSION DAMAGE THAT OCCURS BEFORE THE GRASS LINING BECOMES ESTABLISHED SHALL BE REPAIRED WITHOUT DELAY.

TDC SPECIFICATIONS FOR TEMPORARY DIVERSION
REFERENCE ONLY NOT TO SCALE



1. SUBGRADE FOR THE FILTER OR BEDDING AND RIPRAP SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES AS SHOWN ON THE PLAN. THE SUBGRADE SHALL BE CLEARED OF ALL TREES, STUMPS, ROOTS, SOD, LOOSE ROCK, OR OTHER MATERIAL.
2. RIPRAP SHALL CONFORM TO THE GRADING LIMITS AS SHOWN ON THE PLAN.
3. GEOTEXTILE SHALL BE SECURELY ANCHORED ACCORDING TO MANUFACTURERS' RECOMMENDATIONS.
4. GEOTEXTILE SHALL BE LAID WITH THE LONG DIMENSION PARALLEL TO THE DIRECTION OF FLOW AND SHALL BE LAID LOOSELY BUT WITHOUT WRINKLES AND CREASES. WHERE JOINTS ARE NECESSARY, STRIPS SHALL BE PLACED TO PROVIDE A 12-IN. MINIMUM OVERLAP, WITH THE UPSTREAM STRIP OVERLAPPING THE DOWNSTREAM STRIP.
5. GRAVEL BEDDING SHALL BE ODOT NO. 67'S OR 57'S UNLESS SHOWN DIFFERENTLY ON THE DRAWINGS.
6. RIPRAP MAY BE PLACED BY EQUIPMENT BUT SHALL BE PLACED IN A MANNER TO PREVENT SLIPPAGE OR DAMAGE TO THE GEOTEXTILE.
7. RIPRAP SHALL BE PLACED BY A METHOD THAT DOES NOT CAUSE SEGREGATION OF SIZES. EXTENSIVE PUSHING WITH A DOZER CAUSES SEGREGATION AND SHALL BE AVOIDED BY DELIVERING RIPRAP NEAR ITS FINAL LOCATION WITHIN THE CHANNEL.
8. CONSTRUCTION SHALL BE SEQUENCED SO THAT OUTLET PROTECTION IS PLACED AND FUNCTIONAL WHEN THE STORM DRAIN, CULVERT, OR OPEN CHANNEL ABOVE IT BECOMES OPERATIONAL.
9. ALL DISTURBED AREAS WILL BE VEGETATED AS SOON AS PRACTICAL.

OP SPECIFICATIONS FOR ROCK OUTLET PROTECTION
REFERENCE ONLY NOT TO SCALE



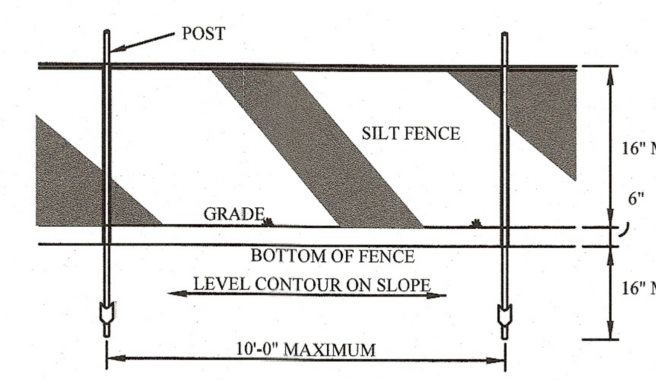
CHECK DAM PROFILE

CHECK DAM CROSS SECTION
NO SCALE

1. THE CHECK DAM SHALL BE CONSTRUCTED OF 4-8 INCH DIAMETER STONE, PLACED SO THAT IT COMPLETELY COVER THE WIDTH OF THE CHANNEL. ODOT TYPE D STONE IS ACCEPTABLE, BUT SHOULD BE UNDERLAIN WITH A GRAVEL FILTER CONSISTING OF ODOT NO. 3 OR 4 OR SUITABLE FILTER FABRIC.
2. MAXIMUM HEIGHT OF CHECK DAM SHALL NOT EXCEED 3.0 FEET.
3. THE MIDPOINT OF THE ROCK CHECK DAM SHALL BE A MINIMUM OF 6 INCHES LOWER THAN THE SIDES IN ORDER TO DIRECT ACROSS THE CENTER AND AWAY FROM THE CHANNEL SIDES.
4. THE BASE OF THE CHECK DAM SHALL BE ENTRENCHED APPROXIMATELY 6 INCHES.
5. SPACING OF CHECK DAMS SHALL BE IN A MANNER SUCH THAT THE TOE OF THE UPSTREAM DAM IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM DAM.
6. A SPLASH APRON SHALL BE CONSTRUCTED WHERE CHECK DAMS ARE EXPECTED TO BE IN USE FOR AN EXTENDED PERIOD OF TIME, A STONE APRON SHALL BE CONSTRUCTED IMMEDIATELY DOWNSTREAM OF THE CHECK DAM TO PREVENT FLOWS FROM UNDERCUTTING THE STRUCTURE. THE APRON SHOULD BE 6 IN. THICK AND ITS LENGTH TWO TIMES THE HEIGHT OF THE DAM.
7. STONE PLACEMENT SHALL BE PERFORMED EITHER BY HAND OR MECHANICALLY AS LONG AS THE CENTER OF CHECK DAM IS LOWER THAN THE SIDES AND EXTNEDS ACROSS ENTIRE CHANNEL.
8. SIDE SLOPES SHALL BE MINIMUM OF 2:1

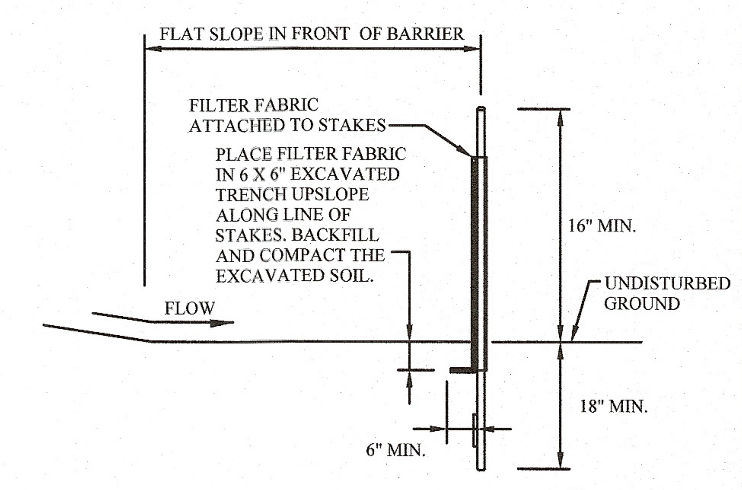
CHECK DAM SPACING				
DAM HEIGHT (FT)	CHANNEL SLOPE			
	<5%	5 - 10%	10 - 15%	15 - 20%
1	65 FT.	30 FT.	20 FT.	15 FT.
2	130 FT.	65 FT.	40 FT.	30 FT.
3	200 FT.	100 FT.	65 FT.	50 FT.

TCD ROCK CHECK DAMS
REFERENCE ONLY NOT TO SCALE



SF SILT FENCE DETAIL
REFERENCE ONLY NOT TO SCALE

JOINING SECTIONS OF
SILT FENCE DETAIL
REFERENCE ONLY NOT TO SCALE
SF



SF SILT FENCE SECTION
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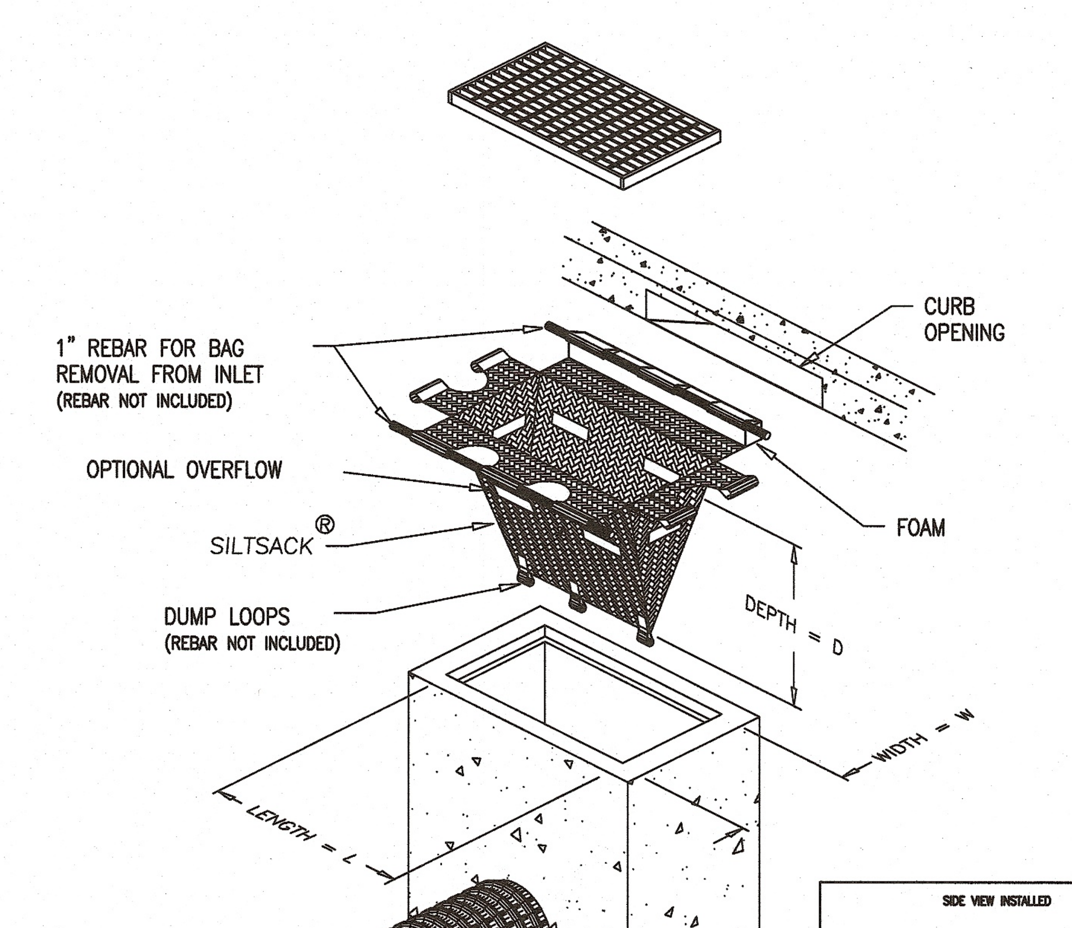
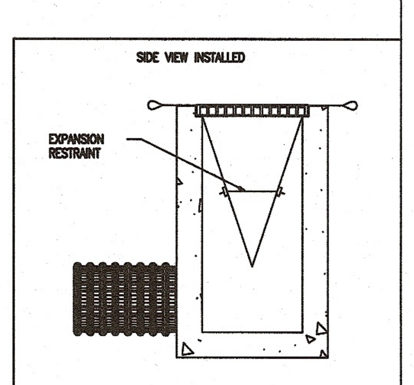




INLET PROTECTION NOTE

1. THE TYPICAL INLET SILT FENCE DETAIL SHALL REMAIN IN PLACE UNTIL PAVEMENT IS ESTABLISHED.
2. ONCE PAVEMENT HAS BEEN INSTALLED, THE INLETS WITHIN THE PAVING LIMITS MUST BE FITTED WITH THE "SILTSACK" SEDIMENT CONTROL DEVICE AS MANUFACTURED BY ACF ENVIROMENTAL CONTROL INC., OR APPROVED EQUAL.
3. SILT SACK MUST REMAIN IN PLACE UNTIL THE SITE HAS BEEN SEEDED & STABILIZED.

DETAIL OF INLET SEDIMENT CONTROL DEVICE
WITH CURB DEFLECTOR

IPSS SILTSACK DETAIL

1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
3. TO PREVENT WATER PONDED BY THE SILT FENCE FROM FLOWING AROUND THE ENDS, EACH END SHALL BE CONSTRUCTED UPSLOPE SO THAT THE ENDS ARE AT A HIGHER ELEVATION.
4. WHERE POSSIBLE, SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 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 MIN. OF 16 IN. ABOVE THE ORIGINAL GROUND SURFACE.
7. THE SILT FENCE SHALL BE PLACED IN A TRENCH CUT A MIN. OF 6 IN. DEEP. THE TRENCH SHALL BE CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABLE DEVICE WHICH WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWN SLOPE SIDE OF THE GEOTEXTILE AND SO THAT 8 IN. OF CLOTH ARE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6 IN. DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC.
9. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6-IN. OVERLAP PRIOR TO DRIVING INTO THE GROUND.
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 THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR 3) OTHER PRACTICES SHALL BE INSTALLED.

SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELYONE-HALF OF THE HEIGHT OF THE SILT FENCE.

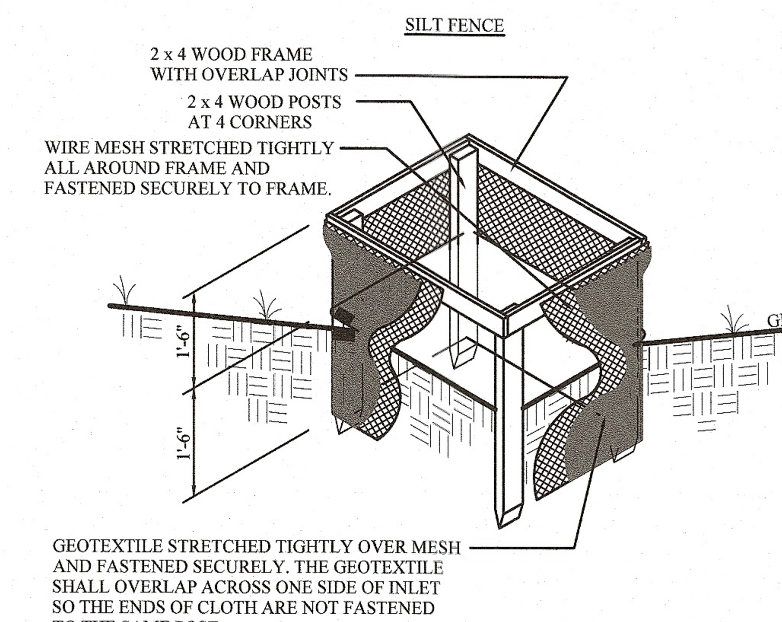
SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING A PROLONGED RAINFALL. THE LOCATION OF EXISTING SILT FENCE SHALL BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS. IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED IMMEDIATELY.

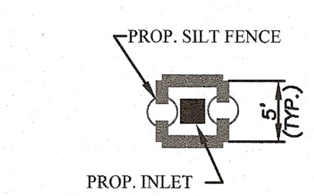
CRITERIA FOR SILT FENCE MATERIALS

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

MINIMUM CRITERIA FOR SILT FENCE FABRIC (ODOT, 2002)		
FABRIC PROPERTIES	VALUES	TEST METHOD
MINIMUM TENSILE STRENGTH	120 LBS. (535 N)	ASTM D 4362
MAXIMUM ELONGATION AT 60 LBS	50%	ASTM D 4632
MINIMUM PUNCTURE STRENGTH	50 LBS (220 N)	ASTM D 4833
MINIMUM TEAR STRENGTH	40 LBS (180 N)	ASTM D 4533
APPARENT OPENING SIZE	<.84 MM	ASTM D 4751
MINIMUM PERMITTIVITY	1X10^2 SEC^-1	ASTM D 4491
UV EXPOSURE STRNEGTH RETENTION	70%	ASTM D 4355

SF SPECIFICATIONS FOR SILT FENCE





TYPICAL SILT FENCE
INSTALLATION AT ALL INLETS

1. THE TYPICAL INLET SILT FENCE DETAIL SHALL REMAIN IN PLACE UNTIL PAVEMENT IS ESTABLISHED.
2. ONCE PAVEMENT HAS BEEN INSTALLED, THE INLETS WITHIN THE PAVING LIMITS MUST BE FITTED WITH THE "SILTSACK" SEDIMENT CONTROL DEVICE AS MANUFACTURED BY ACF ENVIROMENTAL CONTROL INC., OR APPROVED EQUAL.
3. SILT SACK MUST REMAIN IN PLACE UNTIL THE SITE HAS BEEN SEEDED & STABILIZED.

1. INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE STORM INLET BECOMES FUNCTIONAL
2. THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH AT LEAST 18 INCHES.
3. THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2-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 INCHES 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 MATERIAL SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20-40- SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM TOP OF THE FRAME TO 18 INCHES BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAP ACROSS ON 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 EARTH DIKES SHALL BE AT LEAST 6 INCHES HIGHER THAN THE TOP OF THE FRAME.

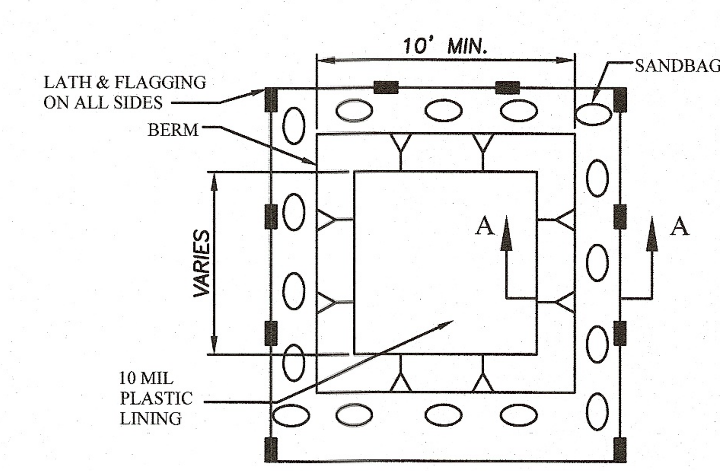
MAINTENANCE

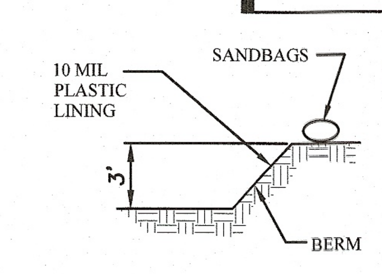
EFFECTIVE STORM DRAIN INLET PROTECTION COLLECTS SEDIMENT AND THEREFORE MUST BE CLEANED REGULARLY TO PREVENT CLOGGING AND SUBSEQUENT FLOODING CONDITIONS, PIPING, OR OVERTOPPING OF THE CONTROL STRUCTURES. SEDIMENT BARRIERS THAT SAG, FALL OVER, OR ARE NOT PROPERLY SECURED, MUST BE PROMPTLY REPAIRED OR REPLACED.

INLET PROTECTION SHALL BE INSPECTED WEEKLY AND AFTER EACH RAINFALL EVENT. AREAS WHERE THERE IS ACTIVE TRAFFIC SHALL BE INSPECTED DAILY. REPAIRS SHALL BE MADE AS NEEDED TO ASSURE THE PRACTICE IS PERFORMING AS INTENDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION IS ONE-HALF THE HEIGHT OF THE TRAP. SEDIMENT SHALL NOT BE WASHED INTO THE INLET. SEDIMENT SHALL BE REMOVED AND PLACED IN A LOCATION WHERE IT IS STABLE AND NOT SUBJECT TO EROSION.

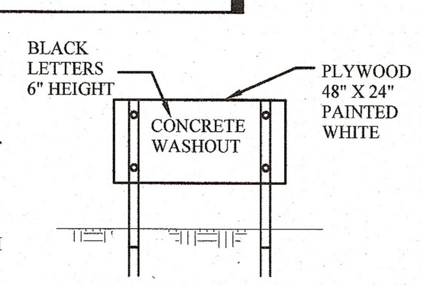
ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, ALL FILTER MATERIAL AND COLLECTED SEDIMENT SHALL BE REMOVED AND PROPERLY DISPOSED.

IP SPECIFICATIONS FOR GEOTEXTILE INLET PROTECTION
REFERENCE ONLY NOT TO SCALE





SECTION A-A



CONCRETE WASHOUT SIGN

1. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE LOCATED A MINIMUM OF 50 FT FROM STORM DRAIN INLETS, OPEN DRAINAGE FACILITIES, AND WATERCOURSES. FACILITY SHALL BE LOCATED AWAY FROM CONSTRUCTION TRAFFIC OR ACCESS AREAS TO PREVENT DISTURBANCE OR TRACKING.
2. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED AS SHOWN ON THE DETAIL WITH A MINIMUM LENGTH AND MINIMUM WIDTH OF 10'.
3. LATH AND FLAGGING SHALL BE COMMERCIAL TYPE.
4. PLASTIC LINING MATERIAL SHALL BE A MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND SHALL BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
5. A SIGN SHALL BE INSTALLED ADJACENT TO WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.
6. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL HAVE A TEMPORARY PIT OR BERMED AREAS OF SUFFICIENT VOLUME TO COMPLETELY CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT PROCEDURES.
7. WASHOUT OF CONCRETE TRUCKS SHALL BE PERFORMED IN DESIGNATED AREAS ONLY.
8. ONLY CONCRETE FROM MIXER TRUCK CHUTES SHOULD BE WASHED INTO CONCRETE WASHOUT.
9. CONCRETE WASHOUT FROM CONCRETE PUMPER BINS CAN BE WASHED INTO CONCRETE PUMPER TRUCKS AND DISCHARGED INTO DESIGNATED WASHOUT AREA OR PROPERLY DISPOSED OF OFFSITE.
10. CONCRETE WASTES SHALL BE ALLOWED TO HARDEN THEN BROKEN UP, REMOVED, AND PROPERLY DISPOSED OF IN ACCORDANCE WITH LOCAL REGULATION ON A REGULAR BASIS.
11. WHEN TEMPORARY WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHALL BE REMOVED AND DISPOSED OF. MATERIALS USED TO CONSTRUCT THE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.

TCW TEMP. CONCRETE WASHOUT FACILITY

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Issue Date
08-29-2018
09-04-2018
09-24-2018
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SWP3
DETAILS

C110
Project No. 2018-196

SPECIFICATIONS FOR DUST CONTROL

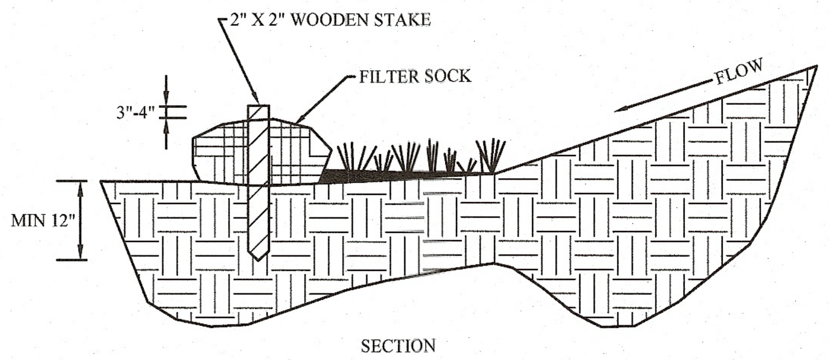
ADHESIVES FOR DUST CONTROL			
ADHESIVE	WATER DILUTION (ADHESIVE WATER)	NOZZLE TYPE	APPLICATION RATE GAL./AC.
LATEX EMULSION	12.5:1	FINE	235
TESIN IN WATER ACRYLIC EMULSION (NO-TRAFFIC)	4:1	FINE	300
ACRYLIC EMULSION (NO-TRAFFIC)	7:1	COARSE	450
ACRYLIC EMULSION (TRAFFIC)	3.5:1	COARSE	350

1. VEGETATIVE COVER AND/MULCH- APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE FOR OVER 21 DAYS. SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING; PERMANENT SEEDING; MULCHING PRACTICES; AND TREE AND NATURAL AREA PROTECTION PRACTICES.

2. WATERING- SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEED, ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES. WATERING SHALL BE DONE AT A RATE THAT PREVENTS DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURERS INSTRUCTIONS.

3. SPRAY-ON ADHESIVES-APPLY ADHESIVE ACCORDING TO THE FOLLOWING TABLE OR MANUFACTURERS' INSTRUCTIONS
4. STONE - GRADED ROADWAYS AND OTHER SUITABLE AREAS WILL BE STABILIZED USING CRUSHED STONE OR COARSE GRAVEL AS SOON AS PRACTICABLE AFTER REACHING AN INTERIM OR FINAL GRADE. CRUSHED STONE OR COARSE GRAVEL CAN BE USED AS A PERMANENT COVER TO PROVIDE CONTROL OF SOIL EMISSIONS.
5. BARRIERS- EXISTING WINDBREAK VEGETATION SHALL BE MARKED AND PRESERVED. SNOW FENCING OR OTHER SUITABLE BARRIER MAY BE PLACED PERPENDICULAR TO PREVAILING AIR CURRENTS AT INTERVALS OF ABOUT 15 TIMES THE BARRIER HEIGHT TO CONTROL AIR CURRENTS AND BLOWING SOIL
6. CALCIUM CHLORIDE - THIS CHEMICAL MAY BE APPLIED BY MECHANICAL SPREADER AS LOOSE, DRY GRANULES OR FLAKES AT A RATE THAT KEEPS THE SURFACE MOIST BUT NOT SO HIGH AS TO CAUSE WATER POLLUTION OR PLANT DAMAGE. APPLICATION RATES SHOULD BE STRICTLY IN ACCORDANCE WITH SUPPLIERS' SPECIFIED RATES.
7. OPERATION AND MAINTENANCE - WHEN TEMPORARY DUST CONTROL MEASURES ARE USED; REPETITIVE TREATMENT SHOULD BE APPLIED AS NEEDED TO ACCOMPLISH CONTROLS.

STREET CLEANING- PAVED ARES THAT HAVE ACCUMULATED SEDIMENT FROM CONSTRUCTION SHOULD BE CLEANED DAILY, OR AS NEED, UTILIZING A STREET SWEEPER OR BUCKET-TYPE ENDLOADER OR SCRAPER.



1. MATERIALS-COMPOST USED FOR FILTER SOCKS SHALL BE WEED, PATHOGEN AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH. THEY SHALL BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF PARTICLES RANGING FROM $\frac{3}{8}$" TO 2"

2. FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE $\frac{3}{8}$" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.

INSTALLATION:

3. FILTER SOCKS WILL BE PLACED ON A LEVEL LINE ACROSS SLOPES, GENERALLY PARALLEL TO THE BASE OF THE SLOPE OR OTHER AFFECTED AREA. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND AS NEEDED MID-SLOPE.

4. FILTER SOCKS INTENDED TO BE LEFT AS A PERMANENT FILTER OR PART OF THE NATURAL LANDSCAPE SHALL BE SEEDED AT THE TIME OF INSTALLATION FOR ESTABLISHMENT OF PERMANENT VEGETATION.

5. FILTER SOCKS ARE NOT TO BE USED IN CONCENTRATE FLOW SITUATIONS OR IN RUNOFF CHANNELS.

MAINTENANCE:

6. ROUTINELY INSPECT FILER SOCKS AFTER EACH SIGNIFICANT RAIN. MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.

7. REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.

8. WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.

9. REMOVAL-FILTER SOCKS WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED IN SUCH A WAY AS TO FACILITATE AN NO OBSTRUCT SEEDINGS.

CFS — COMPOST FILTER SOCK DETAIL

REFERENCE ONLY NOT TO SCALE

SPECIFICATIONS FOR MULCHING

1. MULCH AND 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 21 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 - 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 STRAW 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 PLACE TWO 45-LB. BALES OF STRAW IN EACH SECTION.
   - HYDROSEEDERS - WOOD CELLULOSE FIBER SHOULD BE USED AT 2,000 LB./AC. OR 46 LB./1,000 SQ. FT.
   - OTHER - ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS AND ROLLED EROSION CONTROL PRODUCTS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD MULCH/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 ACCEPTABLE 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 BE LEFT GENERALLY LONGER THAN 6 INCHES.
   - MULCH NETTINGS - USE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, FOLLOWING ALL PLACEMENT AND ANCHORING REQUIREMENTS. USE IN AREAS OF WATER CONCENTRATION AND STEEP SLOPES TO HOLD MULCH IN PLACE.
   - SYNTHETIC BINDERS - FOR STRAW MULCH, SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TACK, OR EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER. ALL APPLICATIONS OF SYNTHETIC BINDERS MUST BE CONDUCTED IN SUCH A MANNER WHERE THERE IS NO CONTACT WITH WATER OF THE STATE.
   - 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 LBS./AC. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LB./100 GAL. OF WOOD CELLULOSE FIBER.

SPECIFICATIONS FOR SODDING

MATERIALS
1. SOD SHALL BE HARVESTED, DELIVERED AND INSTALLED WITHIN A PERIOD OF 48 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD SHALL BE INSPECTED AND APPROVED PRIOR TO INSTALLATION.

2. THE SOD SHALL BE KEPT MOIST AN COVERED DURING HAULING AND PREPARATION FOR PLACEMENT.

3. SOD SHALL BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 0.75 INCHES, PLUS OR MINUS 0.25 INCHES, AT THE TIME OF CUTTING. MEASUREMENTS FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH.

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 SHALL NOT BE CONDUCTED ON SLIP-PRONE AREAS WHERE SOIL PREPARATION SHOULD BE LIMITED ONLY TO WHAT IS NECESSARY FOR ESTABLISHING VEGETATION.

2. THE AREA SHALL BE GRADED AND TOPSOIL SPREAD WHERE NEEDED.

3. SOIL AMENDMENTS

   LIME- AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ACIDIC SOILS AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF 100 LB./1,000 SQ. FT OR 2 TONS/AC.

   FERTILIZER- FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A 2 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

   THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING-TOOTH HARROW, OR OTHER SUITABLE FIELD IMPLEMENT TO A DEPTH OF 3 INCHES.

4. BEFORE LAYING SOD, THE SURFACE SHALL BE UNIFORMLY GRADED AND CLEARED OF ALL DEBRIS, STONES AND CLODS LARGER THAN 3-IN. DIAMETER.

SOD INSTALLATION
1. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURES, THE SOIL SHALL BE LIGHTLY IRRIGATED IMMEDIATELY BEFORE LAYING THE SOD.

2. SOD SHALL NOT BE PLACED ON FROZEN SOIL.

3. THE FIRST ROW OF SOD SHALL BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED IN A BRICK-LIKE PATTERN. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS THAT WOULD DRY THE ROOTS.

4. ON SLOPING AREAS WHERE EROSION MAY BE A PROBLEM, SOD SHALL BE LAID WITH THE LONG EDGE PARALLEL TO THE CONTOUR AND STAGGERED JOINTS. THE SOD SHALL BE SECURED WITH PEGS OR STAPLES.

5. AS SODDING IS COMPLETED IN ANY ONE SECTION, THE ENTIRE AREA SHALL BE ROLLED OR TAMPED TO ENSURE SOLID CONTACT OF ROOTS WITH THE SOIL SURFACE. SOD SHALL BE WATERED IMMEDIATELY AFTER ROLLING OR TAMPING UNTIL THE SOD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF LAYING TAMPING AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN 8 HOURS.

MAINTENANCE
1. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK WITH SUFFICIENT QUANTITIES TO MAINTAIN MOIST SOIL TO A DEPTH OF 4-6 INCHES.

2. AFTER THE FIRST WEEK, SOD SHALL BE WATERED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE AND ENSURE ESTABLISHMENT.

3. THE FIRST MOWING SHALL NOT BE ATTEMPTED UNTIL SOD IS FIRMLY ROOTED.

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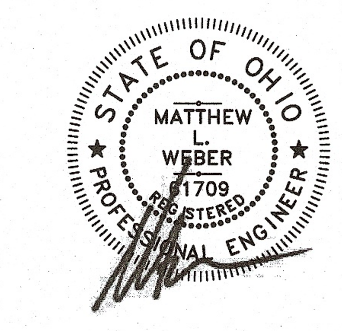

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