

113 LINCOLN WAY WEST  
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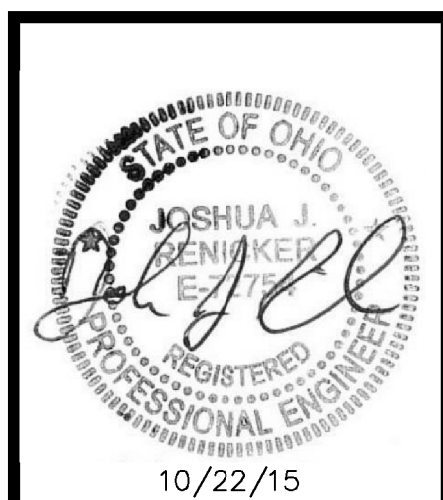
**NOTE TO CONTRACTORS:**  
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


412 LAKE AVENUE, NE  
MASSILLON, OHIO 44646  
330-833-8387

# E-TANK

3150 MILLENNIUM BOULEVARD S.E.  
MASSILLON, OHIO 44646



 ALL REVISIONS MADE TO THIS  
DRAWING AFTER ABOVE DATE SHALL  
BE DATED AND DESCRIBED BELOW.  
THIS DRAWING WAS LAST REVISED  
ON 06/26/2006

### EXISTING SITE PLAN

REVISIONS:  
9/15/2015  

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10/22/2015

## C1.1

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING TREES AS NEEDED FOR CONSTRUCTION OF THE NEW FACILITY.
2. THE CONTRACTOR'S SURVEYOR IS TO STAKE OUT EXTENTS OF SITE DEVELOPMENT AND THEN COORDINATE TREE REMOVAL EXTENT WITH ARCHITECT. SEE SHEET C2.1.

BENCHMARK #6:  
CHISELED SQUARE TOP OF CONC.  
BASE SW LEG OF ELECTRIC  
TRANSMISSION TOWER  
ELEV. = 1039.35

BENCHMARK#10:  
CHISELED "X" ON NORTH SIDE HYD  
TOP FLANGE BOLT AT SOUTH R  
EAST SIDE PROPOSED ROAD  
ELEV. = 1052.71

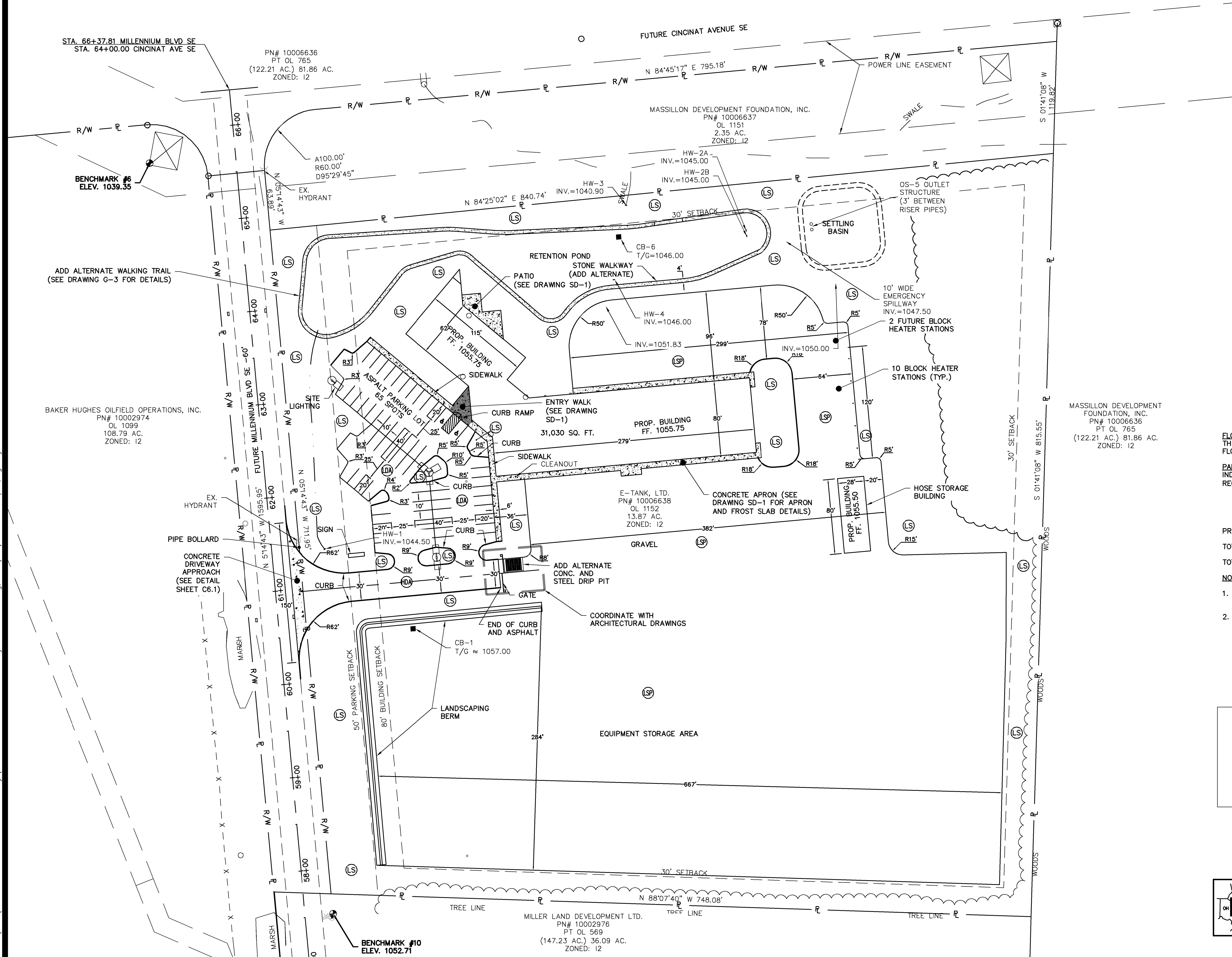
SCALE: 1 INCH = 50'

0 25' 50' 100'

A horizontal scale bar with alternating black and white segments. The segments are labeled 0, 25', 50', and 100' from left to right. The bar is divided into four equal segments, each representing 25 feet.

## C1.1

R:\Stark\City\Massillon\125\John Picard - E-Tank Facility Site Plan.dwg: 10/21/15 - 4:15pm: gmay



**FLOODPLAIN:**  
THIS SITE IS NOT LOCATED IN OR ADJACENT TO A FLOODPLAIN.

**PARKING:**  
INDUSTRIAL ESTABLISHMENT WITH RELATED OFFICES.  
REQUIRED = 5 + (EMPLOYEES IN LARGEST SHIFT) / 1.5  
= 5 + 40 / 1.5  
= 32  
PROVIDED = 65  
TOTAL PAVED AREA = 33,230 SQ. FT.  
TOTAL GRAVEL AREA = 283,212 SQ. FT.

**NOTES:**  
1. REFER TO SHEET C6.1 FOR DRIVEWAY APPROACH AND STONE WALKWAY DETAILS.  
2. SEE ARCHITECTURAL DRAWING FOR ADDITIONAL INFORMATION OF CONCRETE WALKS AND PATIO.

LEGEND	
	HEAVY DUTY ASPHALT
	LIGHT DUTY ASPHALT
	LIMESTONE PAVEMENT
	LANDSCAPED AREA

SCALE: 1" = 50'

0 25' 50' 100'

**HAMMONTREE & ASSOCIATES, LIMITED**  
ENGINEERS, PLANNERS, SURVEYORS  
5233 STONINGHAM RD., NORTH CANTON, OH 44720  
PH: (330) 499-8817 FAX: (330) 499-0149  
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**JOHN PATRICK  
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**SCHWABER CONSTRUCTION CO.**  
MASSILLON, OHIO  
412 LAKE AVENUE, NE  
MASSILLON, OHIO 44646  
330-833-8387

PROPOSED NEW FACILITY FOR  
**E-TANK**  
3150 MILLENNIUM BOULEVARD S.E.  
MASSILLON, OHIO 44646

**JOSHUA J. DENIKER**  
REGISTERED PROFESSIONAL ENGINEER  
10/22/15

Project Number 15004  
Date 10-22-2015  
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**SITE DIMENSION PLAN**

REVISIONS:  
9/15/2015  
10/22/2015

**C2.1**

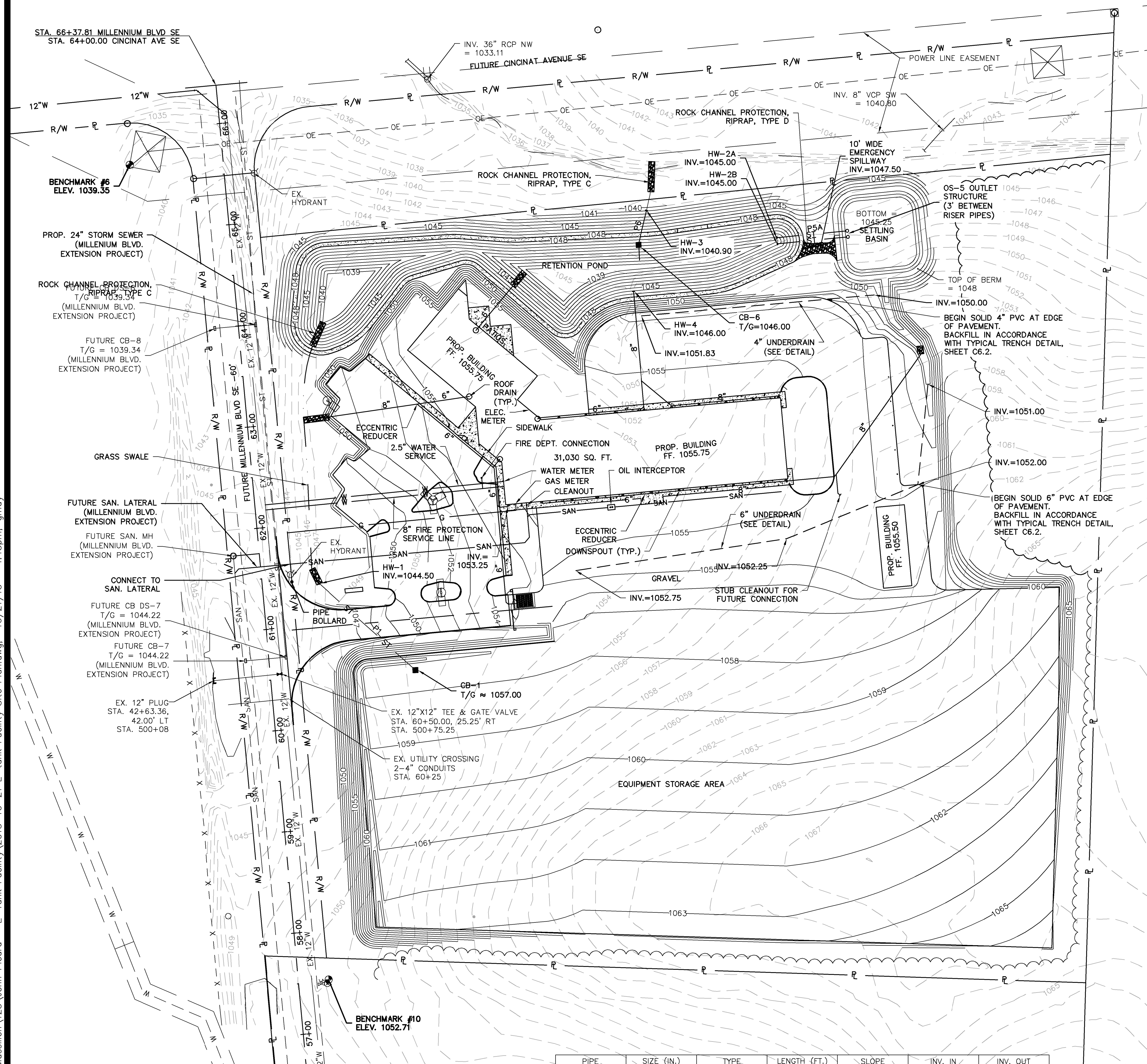




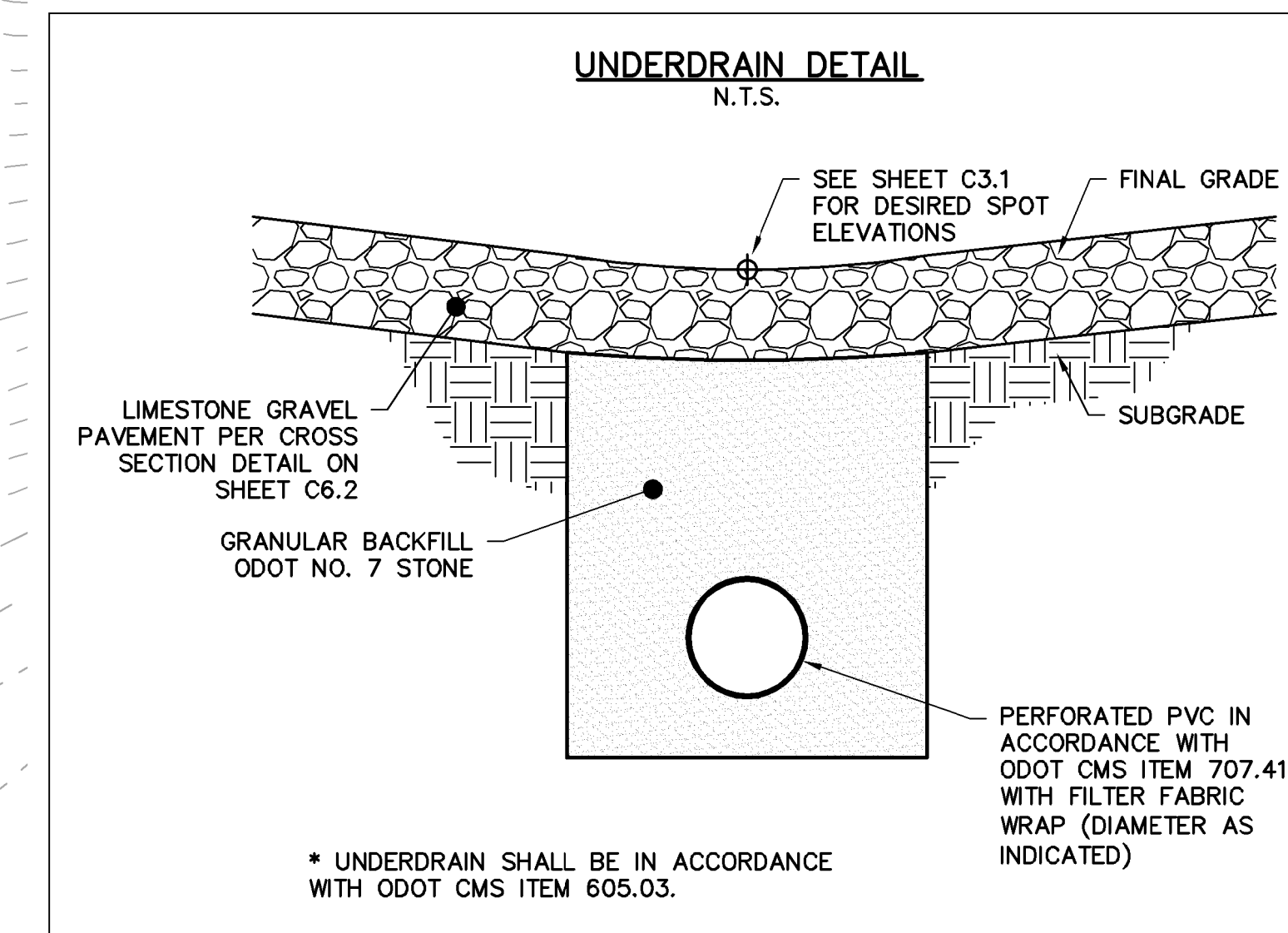
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PIPE	SIZE (IN.)	TYPE	LENGTH (FT.)	SLOPE	INV. IN	INV. OUT
P1	18	B	127	1.77%	1046.75	1044.50
P5A&B	18	C	68	0.37%	1045.25	1045.00
P6	12	C	34	9.12%	1044.00	1040.90

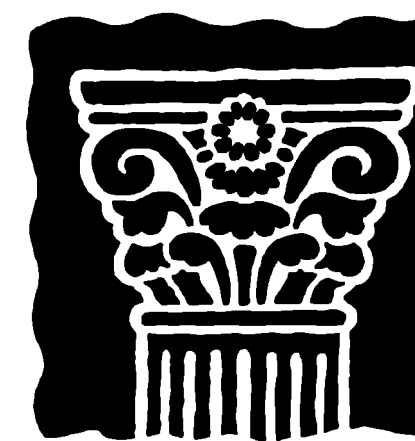


\* UNDERDRAIN SHALL BE IN ACCORDANCE WITH ODOT CMS ITEM 605.03.

#### NOTES:

1. CB-1 SHALL BE ODOT CB TYPE 2-3 WITH TRAFFIC BEARING GRATES AND FRAMES.
2. REFER TO SETTLING BASIN OUTLET STRUCTURE DETAIL ON SHEET C6.2.
3. CB-6 SHALL BE ODOT CB TYPE 2-2B WITH STANDARD GRATE AND FRAME.
4. PROPOSED GAS MAIN EXTENSION TO BE COMPLETED BY OTHERS. CONTRACTOR TO COORDINATE WITH GAS COMPANY FOR SERVICE CONNECTION.
5. FIRE DEPARTMENT CONNECTION SHALL BE IN ACCORDANCE WITH CITY OF MASSILLON FIRE DEPARTMENT REQUIREMENTS.

SCALE: 1 INCH = 50'  
0 25' 50' 100'



**JOHN PATRICK  
PICARD**  
ARCHITECT, INC.

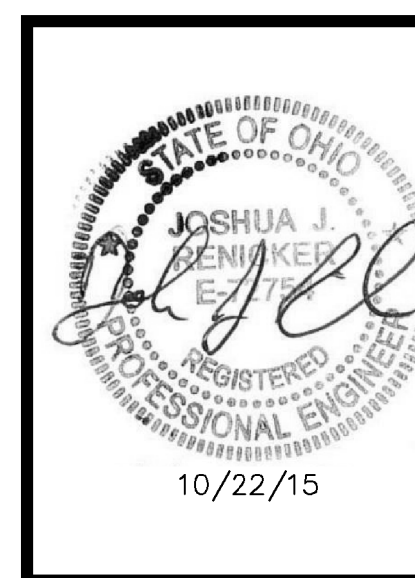
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SITE UTILITY PLAN

**C4.1**

REVISIONS:  
9/15/2015  
10/22/2015

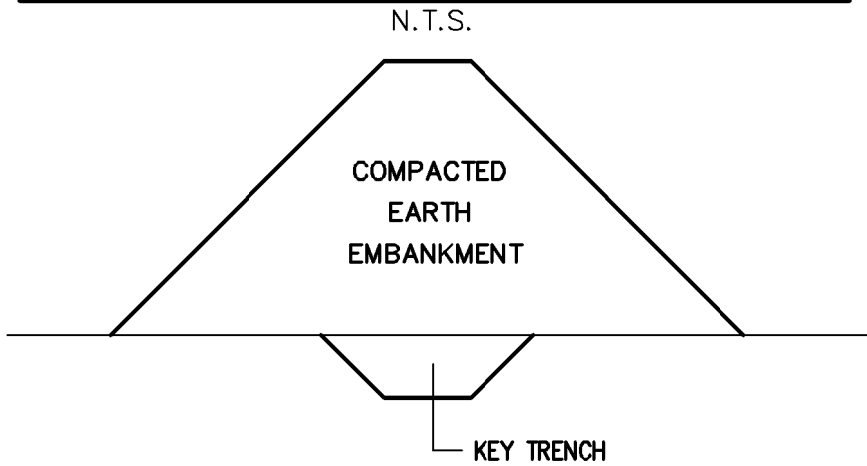


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RETENTION OR DETENTION POND SPECIFICATIONS:

- SCOPE
- THE WORK SHALL CONSIST OF ALL SITE PREPARATION, EXCAVATION, EARTH FILL, PIPE SPILLWAY INSTALLATION, ROCK SLOPE PROTECTION, AND SEEDING NECESSARY FOR THE CONSTRUCTION OF PONDS AS SHOWN ON THE PLANS.
- SITE PREPARATION
- THE FOUNDATION AREA AND BORROW AREA WILL BE CLEARED OF ALL TREES, STUMPS, ROOTS, BRUSH, ROCKS, AND OTHER DEBRIS. THE DISPOSAL AREA FOR ALL CLEARED MATERIAL WILL BE AS SHOWN ON THE PLANS.
  - THE FOUNDATION AREA WILL BE STRIPPED TO A MINIMUM DEPTH OF 6 INCHES. AFTER STRIPPING, AN EXAMINATION OF THE FOUNDATION AREA WILL BE MADE AND ALL POCKETS OR ORGANIC SOIL, SAND AND GRAVELS, AND OTHER UNSUITABLE MATERIAL WILL BE REMOVED. AFTER EXCAVATION IS COMPLETE, ALL SLOPES WITHIN THE FOUNDATION AREA WILL BE NO STEEPER THAN 1:1 AND WILL BE SHAPED TO ACCOMMODATE COMPACTION EQUIPMENT.
  - BORROW AREAS WILL BE STRIPPED OF ALL VEGETATION, ORGANIC MATTER, AND OTHER UNSUITABLE MATERIALS.
- EXCAVATION
- THE CUTOFF TRENCH AND ANY OTHER REQUIRED EXCAVATIONS SHALL BE EXCAVATED TO THE LINES AND GRADES AS SHOWN ON THE PLANS. PRIOR TO BACKFILLING, THE EXCAVATED CUTOFF TRENCH WILL BE EXAMINED FOR UNANTICIPATED UNSUITABLE MATERIAL THAT WILL REQUIRE ADDITIONAL EXCAVATION. THE CUTOFF TRENCH WILL BE BACKFILLED WITH THE MOST IMPERVIOUS MATERIAL AVAILABLE FROM THE DESIGNATED BORROW AREA(S) OR EMERGENCY SPILLWAY. PLACEMENT, COMPACTION, AND MOISTURE REQUIREMENTS ARE THE SAME AS SPECIFIED FOR THE EARTH FILL. THE CUTOFF TRENCH AND OTHER EXCAVATIONS WILL BE DETERMINED PRIOR TO AND DURING BACKFILLING OPERATIONS.
- PRINCIPAL SPILLWAY
- THE TYPE AND QUALITY (ASTM, FEDERAL SPEC.) OF MATERIALS FOR THE PRINCIPAL SPILLWAY WILL BE DESIGNATED ON THE PLANS. MATERIALS WILL BE INSPECTED IN THE FIELD PRIOR TO INSTALLATION AND REPAIRS TO DAMAGED COATINGS WILL BE MADE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. IF STEEL PIPE IS SPECIFIED ON THE PLANS, IT SHOULD BE FREE OF PITTING, SCALING, AND OTHER DEFECTS THAT CAN BE DETECTED BY A VISUAL INSPECTION. UNLESS OTHERWISE SPECIFIED ON THE PLANS, CUTOFF COLLARS, CONNECTING BANDS AND OTHER APPURTENANCES WILL BE OF THE SAME MATERIAL AS THE PIPE CONDUIT.
  - THE PRINCIPAL SPILLWAY SYSTEM WILL BE PLACED ON A FIRM FOUNDATION TO THE LINES AND GRADES AS SHOWN ON THE PLANS. SELECTED BACKFILL MATERIAL SHALL BE PLACED IN 4-INCH HORIZONTAL LAYERS AND COMPACTED BY HAND TAMPING OR HAND OPERATED POWER TAMPERS. SPECIAL CARE SHALL BE TAKEN TO PREVENT LIFTING THE PIPE BY PRESSURE EXERTED BY TAMPING EARTH UNDER THE HAUNCHES OF THE PIPE. MOISTURE CONTROL AND COMPACTION REQUIREMENTS WILL BE EQUIVALENT TO THAT SPECIFIED FOR THE EARTH FILL. WHEN RESERVOIR DRAIN PIPES OR STOCKWATER PIPES ARE INSTALLED IN THE FILL, THEY SHALL BE INSTALLED TO THE SAME REQUIREMENTS AS THE PRINCIPAL SPILLWAY.
- EARTH FILL
- PRIOR TO BEGINNING PLACEMENT OF EARTH FILL, THE SURFACE OF THE FOUNDATION AREA WILL BE SCARIFIED TO A DEPTH OF 4 INCHES AND COMPACTED TO THE SAME REQUIREMENTS AS SPECIFIED FOR EARTH FILL.
  - FILL MATERIAL WILL BE OBTAINED FROM THE DESIGNATED BORROW AREA(S) AND SHALL BE FREE OF ALL SOD, ROOTS, FROZEN SOIL, STONES LARGER THAN 6 INCHES DIAMETER, AND OTHER OBSOLETAE MATERIAL. THE PLACING AND SPREADING OF THE FILL MATERIAL SHALL BEGIN AT THE LOWEST POINT IN THE FOUNDATION AREA AND SHALL BE PLACED IN HORIZONTAL LIFTS WITH A MAXIMUM THICKNESS OF 6 INCHES PRIOR TO COMPACTION. UNLESS OTHERWISE SPECIFIED ON THE PLANS, EACH LIFT WILL BE COMPACTED WITH AT LEAST FOUR PASSES OF SHEEPSFOOT ROLLER (200 PSI MINIMUM RATING).
  - THE DISTRIBUTION AND GRADATION OF MATERIALS THROUGHOUT THE FILL SHALL BE SUCH THAT THERE WILL BE NO LENSES, POCKETS, STREAKS, OR LAYERS OF MATERIAL DIFFERING SUBSTANTIALLY IN TEXTURE OR GRADATION FROM THE SURROUNDING MATERIAL. WHERE IT IS NECESSARY TO USE MATERIALS OF VARYING TEXTURE AND GRADATION, THE MORE IMPERVIOUS MATERIAL SHALL BE PLACED IN THE UPSTREAM AND CENTER PORTIONS OF THE FILL.
  - THE MOISTURE CONTENT OF THE FILL MATERIAL BEING PLACED MUST BE MAINTAINED WITHIN THE LIMITS REQUIRED TO PERMIT SATISFACTORY COMPACTION. IF THE FILL MATERIAL CONTAINS SUFFICIENT MOISTURE TO PRODUCE A HAND MOLDED BALL WHICH HOLDS ITS SHAPE, AND NOT SO WET THAT FREE WATER CAN BE SQUEEZED TO THE SURFACE, THE MOISTURE CONTENT IS SATISFACTORY FOR MOST SOIL TYPES. IF OR BY SPRINKLING EACH FILL LAYER PRIOR TO COMPACTION. AFTER ADDING WATER, THE FILL MATERIAL MUST BE MIXED TO OBTAIN UNIFORM MOISTURE CONTENT PRIOR TO COMPACTION. MATERIAL THAT IS TOO WET WHEN PLACED ON THE FILL SHALL BE REMOVED, OR DRIED BY DISKING PRIOR TO COMPACTION.
  - IF THE TOP SURFACE OF THE PRECEDING LAYER OF COMPACTED FILL, OR ADJUTMENT SURFACE IN THE ZONE OF CONTACT WITH THE FILL BECOMES TOO DRY TO PERMIT A SUITABLE BOND, IT SHALL BE SCARIFIED AND MOISTENED BY SPRINKLING TO AN ACCEPTABLE MOISTURE CONTENT PRIOR TO PLACEMENT OF THE NEXT LAYER OF FILL.
  - IF THE TOP SURFACE OF THE FILL BECOMES TOO WET OR FROZEN, THIS MATERIAL MUST BE REMOVED PRIOR TO PLACEMENT OF THE NEXT LAYER OF FILL.
- DRAIN FILL
- DRAIN FILL SHALL BE PROTECTED FROM BEING CONTAMINATED BY ADJACENT SOIL MATERIALS DURING PLACEMENT BY EITHER PLACING IT IN A CLEANLY EXCAVATED TRENCH OR BY KEEPING THE DRAIN AT LEAST 1 FT. ABOVE THE ADJACENT EARTH FILL.
- TOPSOIL
- THE TOPSOIL STOCKPILED DURING SITE PREPARATION SHALL BE PLACED AS A TOP DRESSING ON THE SURFACE OF THE EMERGENCY SPILLWAY, EARTH FILL AND BORROW AREAS THAT ARE OUTSIDE THE PERMANENT POOL.
- BORROW AREA
- ALL BORROW AREAS SHALL BE GRADED AND LEFT IN SUCH A MANNER THAT THEY CAN BE DRAINED AND REVEGETATED.
- VEGETATIVE TREATMENT
- A SEEDBED SHALL BE PREPARED BY LOOSENING THE SOIL TO A DEPTH OF 2 TO 4 INCHES AND SMOOTHED AS REQUIRED TO MEET THE DESIGN CROSS SECTION. UNSUITABLE MATERIAL THAT WILL INTERFERE WITH SEEDING AND MAINTENANCE SHALL BE REMOVED. STABILIZING CROP, SEED, FERTILIZER, LIME, MULCH, AND OTHER REQUIREMENTS WILL BE OF THE TYPE AND RATES SPECIFIED ON THE PLANS.
- POLLUTION CONTROL
- THE CONTRACTOR WILL SCHEDULE HIS OPERATIONS TO MINIMIZE EROSION OF SOIL, AND NOT CREATE AN INCREASE IN SUSPENDED SEDIMENT TO FLOWING STREAMS. AREAS WILL NOT BE STRIPPED OF SOD AND TOPSOIL UNTIL THEIR USE IS NEEDED. TEMPORARY CROSSING WILL BE USED AS NEEDED TO ALLOW EQUIPMENT TO CROSS FLOWING STREAMS.
  - EQUIPMENT PARKING AND SERVICING AREAS WILL BE LOCATED WHERE FUELS, OILS, AND OTHER POLLUTANTS WILL NOT BE WASHED INTO STREAMS DURING STORM EVENTS.

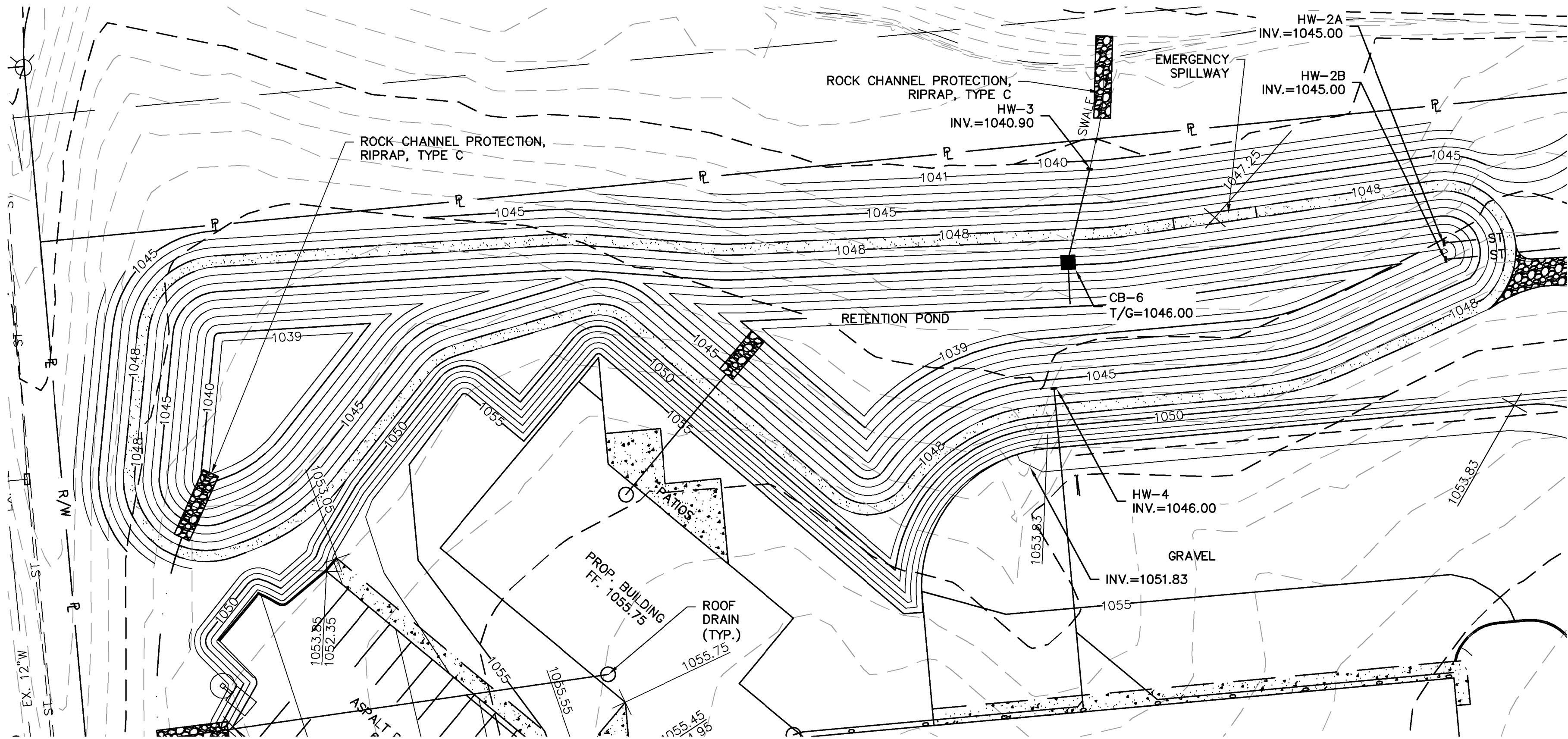
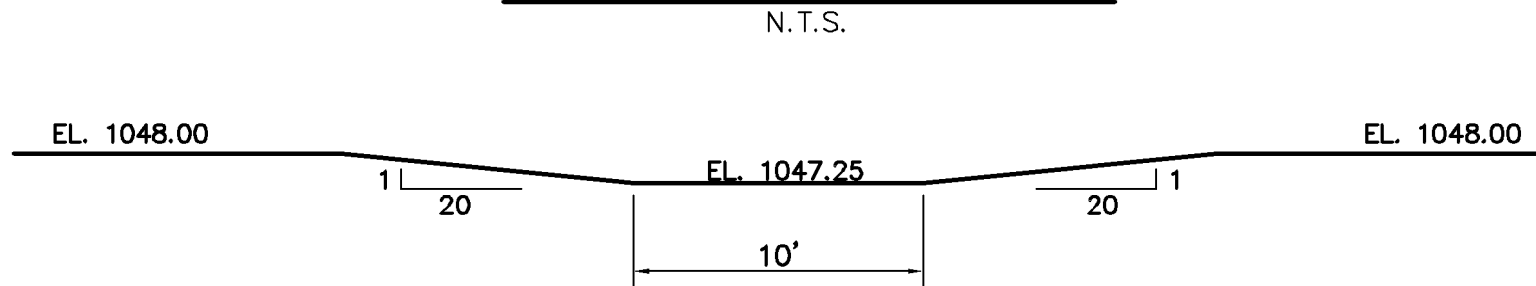
EMBANKMENT WITH KEY TRENCH DETAIL



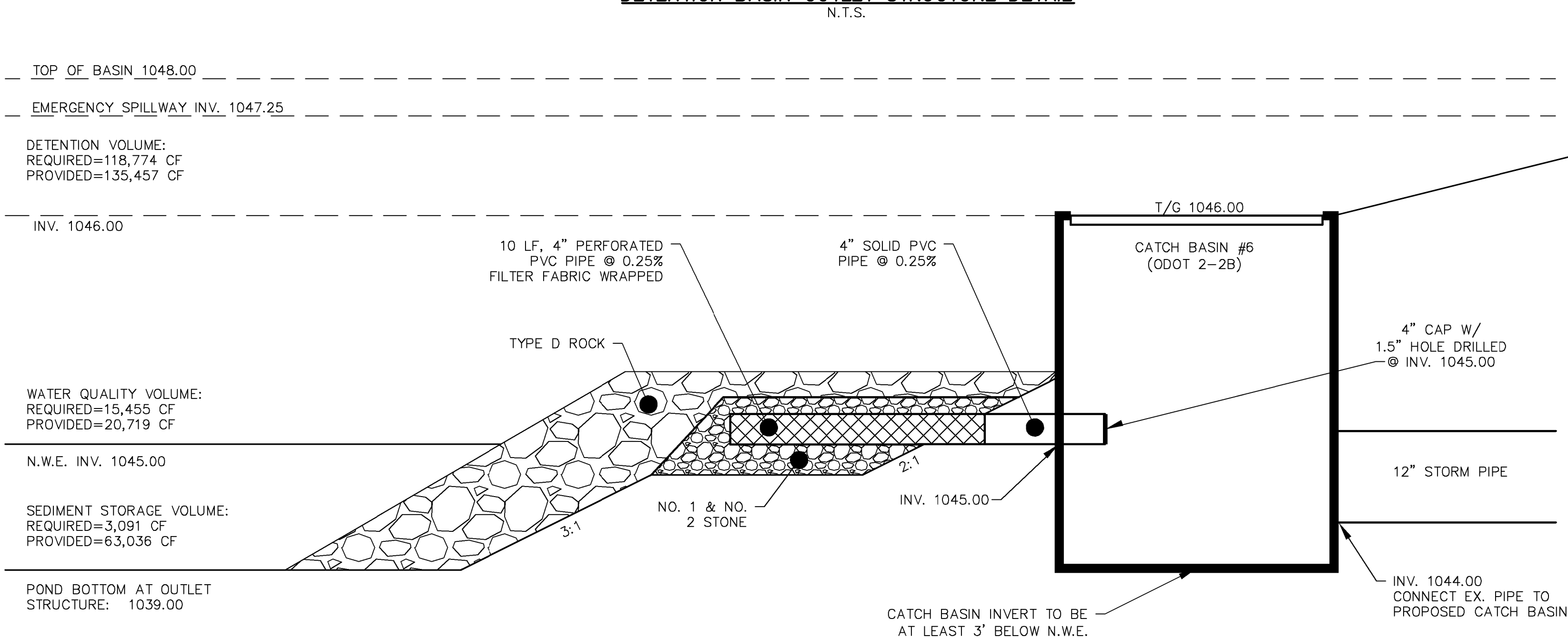
SUMMARY OF DETENTION BASIN DRAINAGE CALCULATIONS

STORM FREQUENCY	2	5	10	25	50	100
PRE-DEV. FLOW (CFS)	14.83	18.53	21.26	25.97	27.61	31.59
POST-DEV. UNCONTROLLED FLOW (CFS)	26.53	33.09	38.01	46.42	49.37	56.48
POST-DEV. DESIGN FLOW (CFS)	6.22	8.78	10.56	13.02	13.98	15.98
DESIGN PEAK WATER ELEV. (FT)	1,046.26	1,046.47	1,046.66	1,047.02	1,047.69	1,047.40
DESIGN STORAGE VOLUME REQUIRED (CF)	89,893	95,083	99,701	108,474	111,479	118,774

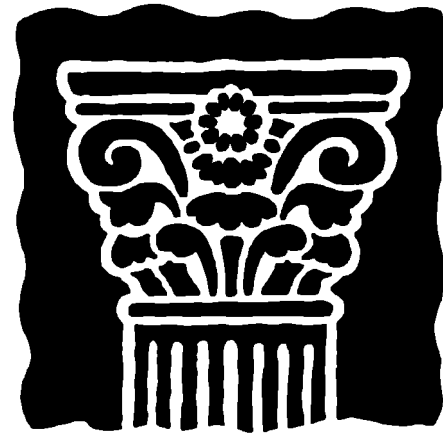
EMERGENCY SPILLWAY DETAIL



DETENTION BASIN OUTLET STRUCTURE DETAIL



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SITE DETENTION PLAN

C5.1



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DEMOLITION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL (IN A LOCATION APPROVED BY THE GOVERNING AUTHORITIES) OF ALL ABANDONED STRUCTURES OR EQUIPMENT; SO THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS OUTLINED IN THESE PLANS OR GEOTECHNICAL REPORT. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS NEEDED FOR DEMOLITION AND DISPOSAL.
2. THE CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. ALL EXISTING UTILITY CONNECTIONS ARE TO BE ABANDONED AS DIRECTED BY THE RESPECTIVE UTILITY OWNER.
3. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.

UTILITY NOTES

1. UTILITIES SHOWN WERE TAKEN FROM RECORDS OF RESPECTIVE UTILITY COMPANIES AND FROM A TOPOGRAPHIC SURVEY AND DO NOT NECESSARILY REPRESENT ALL UNDERGROUND OR OVERHEAD UTILITIES ADJACENT TO OR UPON THE PREMISES SHOWN ON THE PLAN. CALL OUPS PRIOR TO EXCAVATION.
2. ANY UTILITIES FOUND DURING EXCAVATION, NOT SHOWN ON THESE PLANS, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.
3. EXISTING UTILITIES TO REMAIN, WHICH ARE CRUSHED OR DAMAGED DURING CONSTRUCTION, SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.
4. EACH SUBCONTRACTOR SHALL OBTAIN THEIR OWN PERMITS AND CONTACT THE UTILITY COMPANY FOR VERIFICATION AND LOCATION OF HOOK-UP PRIOR TO ANY WORK BEING DONE.
5. WATER:  
  
ALL WATER SERVICE LATERALS 2 INCHES AND SMALLER SHALL BE TYPE "K" COPPER; SERVICE LATERALS LARGER THAN 2 INCHES SHALL BE DUCTILE IRON PIPE; ALL WATER LATERALS SHALL HAVE 5 FEET (MIN) OF COVER. ALL BACKFLOW PREVENTION DEVICES SHALL BE APPROVED BY THE LOCAL WATER DEPARTMENT.  
  
THE MECHANICAL/PLUMBING DESIGNER IS TO ENSURE THAT ADEQUATE PRESSURE AND CAPACITY IS AVAILABLE TO SERVICE THE SITE. EXISTING WATER MAIN PRESSURE & CAPACITY IS UNKNOWN AT THIS TIME.
6. STORM:  
  
ALL STORM SEWERS SHALL CONFORM TO ODOT ITEM 707.33 OR ITEM 706.02.  
  
ALL CATCH BASINS SHALL BE CONSTRUCTED AS SHOWN ON THESE DRAWINGS AND DETAILED PER THE ODOT STANDARD DRAWINGS AND CURRENT CONSTRUCTION AND MATERIAL SPECIFICATIONS. CATCH BASIN GRATES WITHIN PAVEMENT TO BE TRAFFIC BEARING.  
  
DOWNSPOUTS TO CONNECT DIRECTLY TO THE STORM SEWER SYSTEM WITH A MINIMUM 6" DIAMETER PIPE OR AS INDICATED ON DRAWINGS WITH A MINIMUM 1% SLOPE. REFER TO ARCHITECTURAL PLANS FOR EXACT DOWNSPOUT LOCATION.
7. SANITARY:  
  
SANITARY LATERAL SHALL BE A MINIMUM 6" DIAMETER PVC PIPE, ASTM D3034, SDR35, WITH RUBBER GASKET JOINTS OR APPROVED EQUAL. LATERAL SHALL BE CONSTRUCTED WITH A MINIMUM OF 1% SLOPE (10% MAX), AND HAVE A MINIMUM OF 4 FOOT OF COVER.  
  
ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.  
  
THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SLOPE OF BUILDING SEWERS TOWARDS THE LATERAL SEWER IN STRICT ACCORDANCE WITH THE GOVERNING AUTHORITIES.  
  
CLEAN-OUTS TO BE INSTALLED AT ALL PIPE BENDS AND ANGLES, UNLESS A MANHOLE IS INDICATED.
8. THE CONTRACTOR SHALL VERIFY THE SIZE, LOCATION, INVERT ELEVATION, AND CONDITION OF ALL EXISTING UTILITIES AT THE POINT OF CONNECTIONS PRIOR TO ANY INSTALLATION. THE CONTRACTOR IS TO ENSURE EXISTING UTILITIES ARE IN GOOD WORKING ORDER. IF ELEVATIONS DIFFER FROM WHAT IS SHOWN ON THIS DRAWING, THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY PRIOR TO ANY CONSTRUCTION.
9. 10 FT-HORIZONTAL AND 1.5 FT-VERTICAL (MINIMUM) CLEARANCE IS REQUIRED BETWEEN SANITARY & WATER LINES. ALL OTHER UTILITIES SHALL HAVE 5 FT-HORIZONTAL AND 1.0 FT-VERTICAL (MINIMUM) CLEARANCE BETWEEN LINES.
10. GAS, ELECTRIC, TELEPHONE & CABLE LINES SHOWN FOR REFERENCE ONLY AND ARE DESIGNED BY OTHERS. CONTRACTOR TO INSTALL PER RESPECTIVE UTILITY APPROVED SET OF PLANS.
11. COORDINATE UTILITY CONNECTIONS AT THE BUILDING WITH THE MECHANICAL DRAWINGS.

GENERAL NOTES

1. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION OR CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATIONS OF ALL UTILITIES.
2. WITHIN THE SUBJECT PROPERTY, THE INTENT IS TO HAVE A CLEAN, CLEAR SITE, FREE OF ALL EXISTING ITEMS NOTED TO BE REMOVED IN ORDER TO PERMIT THE CONSTRUCTION OF THE NEW PROJECT.
3. WHERE EXISTING ITEMS ARE SHOWN TO REMAIN, CARE SHOULD BE TAKEN TO INSURE PROTECTION OF THAT ITEM FROM DAMAGE. ANY ITEMS DISTURBED BY CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE TO A CONDITION EQUAL TO OR BETTER THAN EXISTING AND TO THE SATISFACTION OF THE OWNER OF THE ITEM.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS, METHODS, AND MATERIALS OF CONSTRUCTION TO COMPLETE PROPOSED CONSTRUCTION.
5. ANY APPARENT DISCREPANCIES OR QUESTIONS IN CONTRACT DOCUMENTS ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVES AND ENGINEER IMMEDIATELY.
6. TRAFFIC SHALL BE MAINTAINED ON ALL ADJOINING STREETS AT ALL TIMES. TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
7. THE DESIGN ENGINEER SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, PROCEDURES, TECHNIQUES, OR SEQUENCES OF CONSTRUCTION NOT SPECIFIED HEREIN, NOR FOR THE SAFETY ON THE JOB SITE, NOR SHALL THE DESIGN ENGINEER BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
8. ANY MODIFICATIONS TO THE WORK SHOWN ON THE PLANS MUST HAVE PRIOR WRITTEN APPROVAL FROM THE OWNER, ENGINEER AND REVIEW AGENCIES.

GENERAL NOTES - EARTHWORK

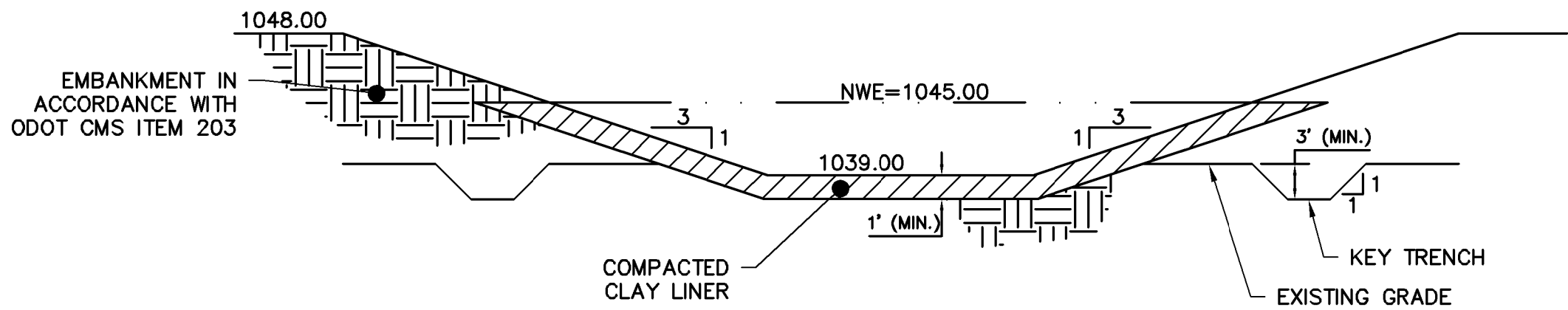
1. THE CONTRACTOR SHALL INSTALL ALL SEDIMENTATION CONTROLS TO MINIMIZE SOIL EROSION AND OFF-SITE SILTATION BEFORE ANY CLEARING, GRUBBING OR EARTHWORK HAS BEGUN. REFERENCE THE STORMWATER POLLUTION PREVENTION PLAN FOR EROSION CONTROL STRUCTURES AND SPECIFICATIONS.
2. ALL TIMBER, LOGS, BRUSH, RUBBISH, AND VEGETATIVE MATTER WHICH WILL INTERFERE WITH THE GRADING OPERATION OR AFFECT THE PLANNED STABILITY OF FILL AREAS SHALL BE REMOVED FROM THE PROJECT CONSTRUCTION AREA.
3. ANY UNSUITABLE SOILS ENCOUNTERED IN PROPOSED PAVEMENT AREAS SHALL BE REMOVED AND REPLACED WITH COMPACTED MATERIAL APPROVED BY THE ENGINEER.
4. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AT ALL TIMES AND SHALL BACKFILL AND GRADE EXCAVATED AREAS SO AS TO ELIMINATE PONDING ON THE SITE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPORTATION OF ANY BORROW MATERIAL NECESSARY TO COMPLETE THE JOB.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE OFF-SITE DISPOSAL OF ANY AND ALL EXCESS OR UNSUITABLE MATERIAL NOT USED ON THE JOB SITE.
7. PROPOSED PAVEMENT AREAS ARE TO BE PROOF-ROLLED PER SPECIFICATIONS IMMEDIATELY PRIOR TO CONSTRUCTION. IF ANY AREAS ARE FOUND TO BE "SOFT" OF "SPONGY", THE CONTRACTOR IS TO COORDINATE THE REMOVAL OR PROCEDURE WITH THE GEOTECHNICAL ENGINEER.
8. PROPOSED ELEVATIONS SHOWN SHALL NOT BE CHANGED WITHOUT APPROVAL OF THE ENGINEER.
9. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING AND IN AREAS SELECTED BY OWNER.
10. UNLESS OTHERWISE INDICATED AT A SPECIFIC LOCATION, ALL FINISHED GRADES AT THE LIMITS OF NEW WORK ARE TO CONFORM TO AND MATCH EXISTING GRADES.
11. SITE GRADING SHALL PROVIDE POSITIVE DRAINAGE TO CATCH BASINS OR SHEET FLOW OFF OF AREAS, THUS PREVENTING THE PONDING OF WATER ON SITE.
12. PRIOR TO PLACEMENT OF ANY COMPACTED FILLS, PROCTOR CURVES SHALL BE ESTABLISHED FROM PROPOSED BORROW MATERIAL SAMPLES.
13. PRIOR TO PAVING, THE SUBGRADE SHALL BE TESTED WITH A FULLY LOADED TANDEM AXLE DUMP TRUCK FURNISHED BY THE CONTRACTOR. ANY YIELDING AREAS IN THE SUBGRADE SHALL BE REMOVED AND/OR REPLACED PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
14. ALL COMPACTED FILLS RELATED TO THE CONSTRUCTION OF THE PROPOSED PROJECT SHALL BE PLACED IN ACCORDANCE WITH ODOT ITEM 203. DURING CONSTRUCTION, THESE COMPACTED FILLS SHALL BE TESTED USING THE NUCLEAR DENSOMETER METHOD. COMPACTION REQUIREMENT SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

COMPACTED CLAY LINER SPECIFICATIONS

**MATERIAL:** ONSITE CLAYEY SOILS SHALL BE USED FOR THE CLAY LINER. TOPSOIL, TREE ROOTS AND ORGANIC MATTER MUST NOT BE USED AS CLAY LINING MATERIAL. FURTHERMORE, ANY OTHER MATERIAL, WHICH DOES NOT COMPACT PROPERLY, MUST NOT BE PLACED IN ANY OF THE AREAS TO BE CLAY LINED. FOLLOWING LOOSE SPREADING, THE CLAY LINER MATERIAL FOR EACH LAYER SHOULD BE BROKEN UP TO ENSURE THAT THE CLOD SIZES ARE NOT GREATER THAN THE LAYER THICKNESS. IN ADDITION, ANY ROCKS GREATER THAN 6 INCHES DIAMETER SHALL BE REMOVED.

**PLACEMENT:** PRIOR TO PLACEMENT OF EACH LAYER, THE TOP OF THE PREVIOUS LAYER SHALL BE THOROUGHLY SCARIFIED TO JOIN EACH LAYER TOGETHER AND TO PREVENT LAMINATIONS AT THE LAYER INTERFACES. MAXIMUM LOOSE LIFT THICKNESS SHALL BE EIGHT (8) INCHES. THE TOTAL THICKNESS OF THE CLAY LINER SHALL BE A MINIMUM OF ONE (1) FOOT.

**COMPACTION:** PRIOR TO COMPACTION, ALL MATERIAL USED FOR LINING PURPOSES SHALL BE CONDITIONED TO HAVE A MOISTURE CONTENT WITHIN THE RANGE OF +/- 2% OF THE OPTIMUM MOISTURE CONTENT FOR THE SOURCE MATERIAL. EACH LAYER OF MATERIAL PLACED SHALL BE COMPACTED TO PRODUCE A FIELD DRY DENSITY OF AT LEAST 98% OF THE STANDARD MAXIMUM LABORATORY DRY DENSITY DETERMINED BY STANDARD PROCTOR LABORATORY TESTING OF THE SOURCE MATERIAL. FIELD TESTING OF THE COMPACTED LINER SHALL BE COMPLETED USING THE NUCLEAR DENSOMETER METHOD.



CITY OF MASSILLON SANITARY SEWER SPECIFICATIONS

SANITARY SEWER CONSTRUCTION PROPOSED FOR THIS PROJECT SHALL CONFORM TO THE LATEST CITY OF MASSILLON STANDARDS AND CONSTRUCTION MATERIALS SPECIFICATIONS, TEN STATE STANDARDS, AND THE LATEST EDITION OF THE ODOT CMS, OR MODIFIED BY THE CONTRACT DRAWINGS. IF A CONFLICT ARISES BETWEEN SAID STANDARDS IT SHALL BE AT THE DISCRETION OF THE CITY OF MASSILLON ENGINEER AS TO WHICH STANDARD SHALL GOVERN. THE PROJECT CONTRACT DRAWINGS SHALL GOVERN UNLESS NOTED OTHERWISE.

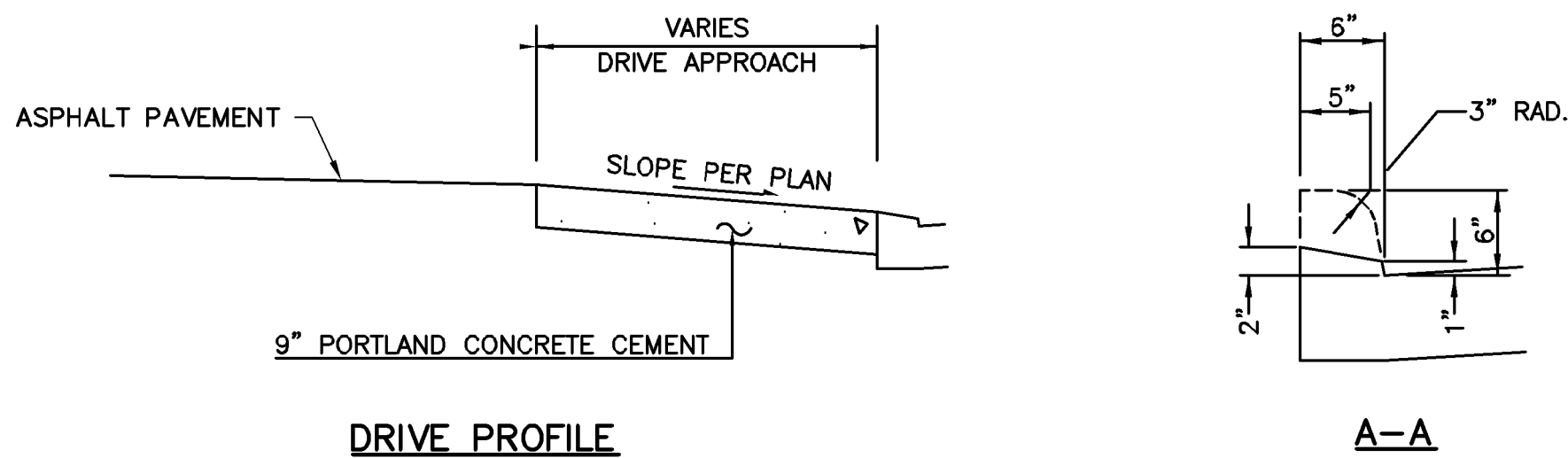
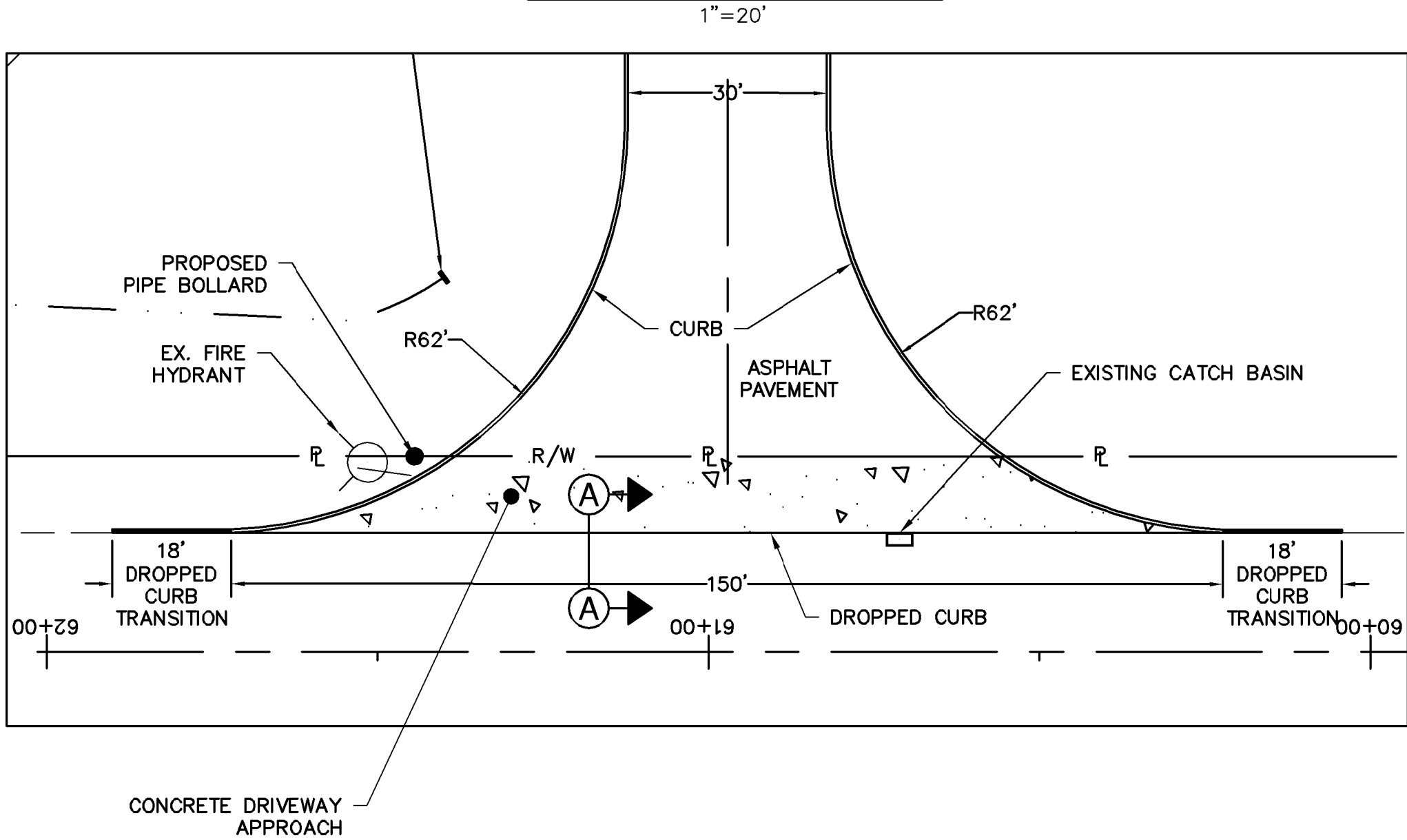
SANITARY GRAVITY SEWER PIPE AND FITTINGS SHALL BE PVC SDR 35 CONFORMING TO ASTM D-3034 UNLESS OTHERWISE NOTED. PVC COMPOUNDS SHALL CONFORM TO ASTM D-1784 PVC PIPE AND FITTINGS SHALL HAVE BELL AND SPIGOT TYPE JOINTS CONFORMING TO ASTM-3212 AND GASKETS CONFORMING TO ASTM F-477.

BACKFILL IN SEWER TRENCHES SHALL CONFORM TO ODOT ITEM 603.10 AND BE PLACED IN LAYERS SUFFICIENT TO MEET THE COMPACTION REQUIREMENT OF 100% OF MAXIMUM LABORATORY DRY DENSITY PER ASTM D-698 AND THOROUGHLY COMPACTED WITH MACHINE MOUNDED COMPACTION EQUIPMENT. THE PLACING OF BACKFILL MATERIAL SHALL BE CONTINUED UNTIL THE TRENCH IS ENTIRELY FILLED AND COMPACTED WITH THE APPROVED GRANULAR MATERIAL TO THE GRADE CALLED FOR ON THE CONTRACT DRAWINGS. EXCAVATED MATERIAL CONFORMING TO ODOT 203 SHALL BE USED FOR BACKFILLING EXISTING STRUCTURES (AFTER REMOVAL) ONLY. CRUSHED GRAVEL CONFORMING TO GRADATION REQUIREMENTS OF ODOT ITEM 304 OR APPROVED EQUAL AS SHOWN ON ODOT TABLE 703-1 SHALL BE USED FOR BACKFILLING ALL SEWER TRENCH AREAS SHOWN ON THE PLANS AND AS DIRECTED BY THE CITY OF MASSILLON ENGINEER. FLOODING, JETTING, OR PUDDLING OF BACKFILL MATERIAL WILL NOT BE PERMITTED UNLESS APPROVED BY THE CITY OF MASSILLON ENGINEER.

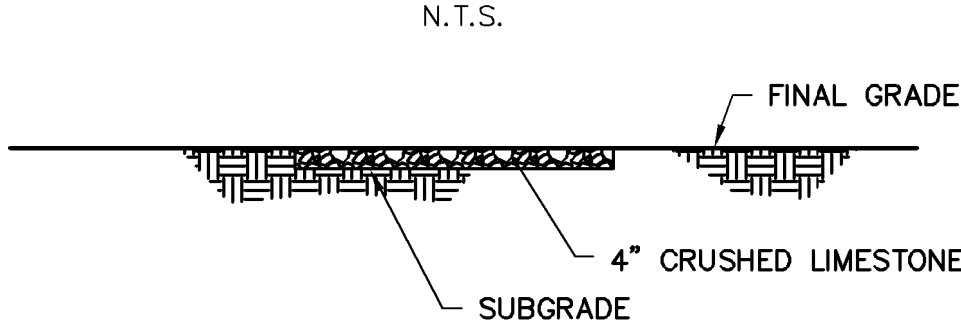
CLEAN WATER STATEMENT

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

DRIVEWAY APPROACH DETAIL

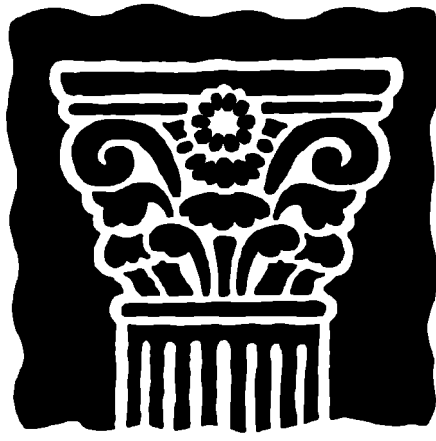


STONE WALKWAY DETAIL



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REVISIONS:  
9/15/2015  
10/22/2015



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ALL CONTRACTORS ARE RESPONSIBLE FOR ALL DRAWINGS LISTED IN THE INDEX ON DRAWING T-1 AS WELL AS ALL RELATED SPECIFICATION SECTIONS. IF YOU PREPARE A BID OR CONSTRUCT WITHOUT THE USE OF ALL THE DOCUMENTS PROVIDED, YOU DO SO AT YOUR OWN RISK.



412 LAKE AVENUE, NE  
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330-833-8387

PROPOSED NEW FACILITY FOR  
**E-TANK**  
3150 MILLENNIUM BOULEVARD S.E.  
MASSILLON, OHIO 44646

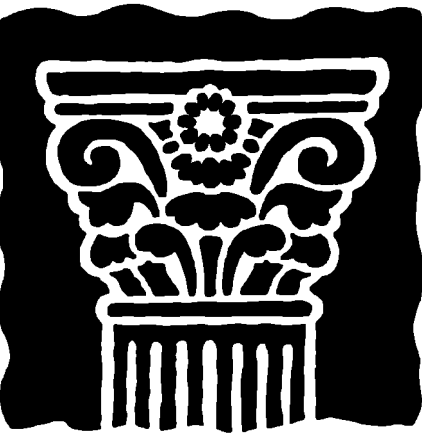
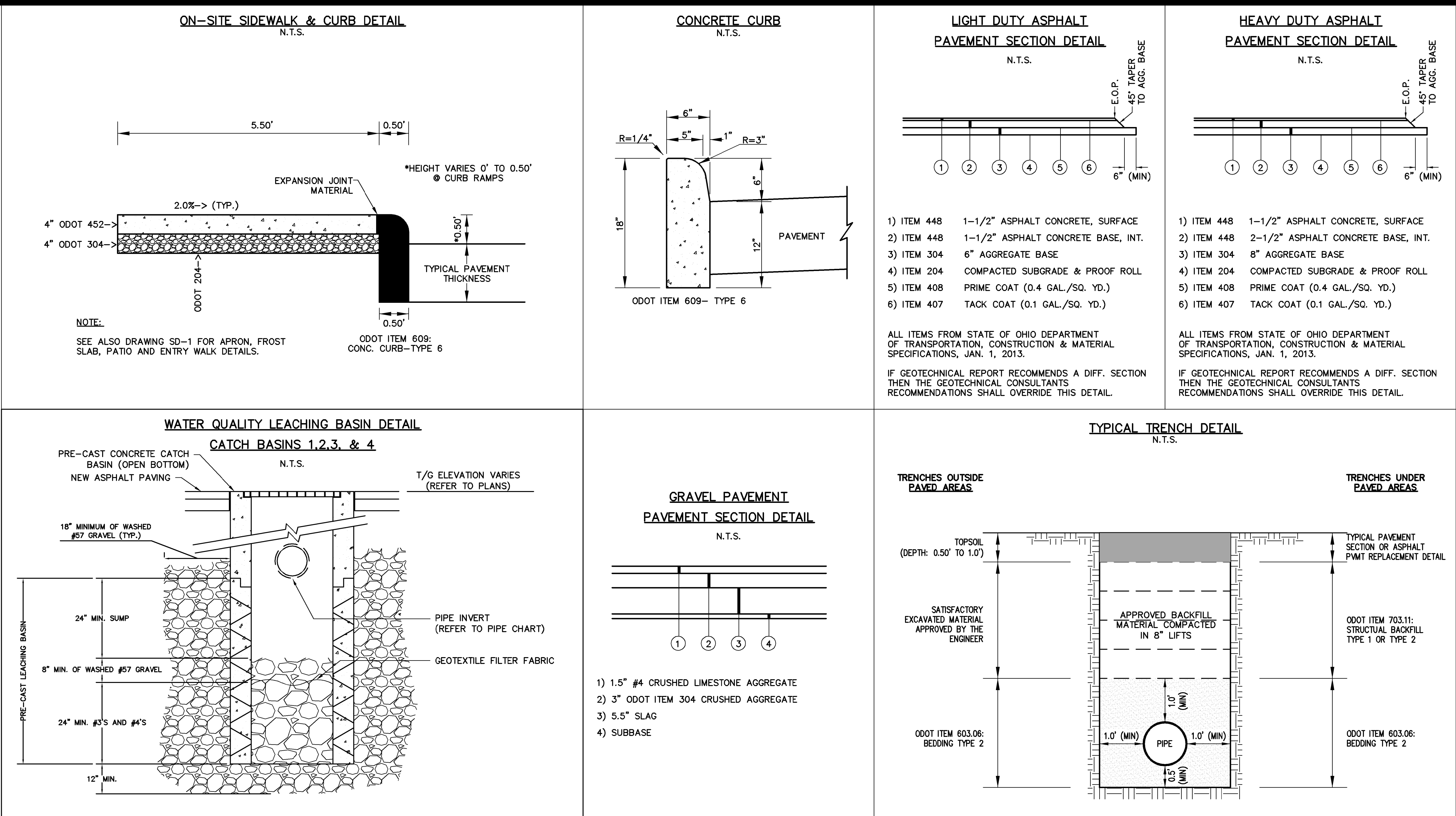


Project Number 15004  
Date 10-22-2015  
ALL REVISIONS MADE TO THIS DRAWING AFTER ABOVE DATE SHALL BE DATED AND DESCRIBED BELOW. THIS DRAWING WAS LAST REVISED ON 10/22/15.  
SITE NOTES & DETAILS

C6.1



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**C6.2**

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9/15/2015  
10/22/2015



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EROSION CONTROL NOTES

- ALL PROPERTIES ADJACENT TO THE SITE OF SOIL-DISTURBING ACTIVITY SHALL BE PROTECTED TO THE MAXIMUM EXTENT PRACTICABLE, FROM SOIL EROSION AND SEDIMENT RUNOFF AND DRAINAGE, INCLUDING, BUT NOT LIMITED TO PRIVATE PROPERTIES, NATURAL AND ARTIFICIAL WATERWAYS, WETLANDS, STORM SEWERS AND PUBLIC LANDS.
- CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL PRACTICES USED TO SATISFY THIS REQUIREMENT SHALL CONFORM, AS A MINIMUM, TO STATE OF OHIO STANDARDS AS SET FORTH IN THE MOST-CURRENT EDITION OF THE RAINWATER AND LAND DEVELOPMENT MANUAL, DEFINED BY THE OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF SOIL AND WATER CONSERVATION AND NATURAL RESOURCE CONSERVATION SERVICE AND SHALL CONFORM TO THE MOST CURRENT OHIO ENVIRONMENTAL PROTECTION AGENCY, OHIO REVISED CODE CHAPTER 6111 REQUIREMENTS.
- EROSION AND SEDIMENT CONTROL PLAN APPROVALS ISSUED IN ACCORDANCE WITH THESE RULES DO NOT RELIEVE THE OWNER OF RESPONSIBILITY FOR OBTAINING ALL OTHER NECESSARY PERMITS AND OR APPROVALS FROM FEDERAL STATE, AND/OR COUNTY AGENCIES. IF REQUIREMENTS VARY, THE MOST STRINGENT REQUIREMENTS SHALL BE FOLLOWED.
- EROSION AND SEDIMENT CONTROL PRACTICES AT THE SITE, AND AS IDENTIFIED IN THE ESC PLAN SHALL COMPLY WITH THE FOLLOWING:
  - AN APPROVED EROSION AND SEDIMENT CONTROL PLAN OR APPROVAL LETTER FROM THE LOCAL SWCD SHALL BE LOCATED ON SITE FOR REVIEW.
  - LIMITS TO CLEARING AND GRADING SHALL BE SHOWN ON ESC PLANS. LIMITS TO CLEARING AND GRADING SHALL BE CLEARLY MARKED ON SITE WITH SIGNAGE, FLAGGING, AND/OR FENCING ETC.
  - INSTALL EROSION AND SEDIMENT PERIMETER CONTROLS AS A FIRST ACTION OF CONSTRUCTION AS SPECIFIED BY CONSTRUCTION SEQUENCE. THIS SHALL INCLUDE AND IS NOT LIMITED TO PROTECTIVE BMP'S FOR STREAM CORRIDORS AND CROSSINGS, WETLANDS, SITE ENTRANCE, SEDIMENT TRAPS & BASINS, BARRIERS, AND DIVERSION DIKES.
  - CONCENTRATED STORM WATER RUNOFF SHALL PASS THROUGH A SEDIMENT CONTROL DEVICE BEFORE EXITING THE SITE BOUNDARIES. CONCENTRATED RUNOFF FROM BARE SOIL AREAS SHALL BE DIVERTED INTO A SETTLING POND OR SEDIMENT CONTROL STRUCTURE, OR OTHER APPROVED SEDIMENT BARRIER BEFORE LEAVING THE SITE.
  - EARTHEN STRUCTURES SUCH AS DAMS, BASINS, STREAM MODIFICATIONS AND WATER DIVERSIONS SHALL BE SEEDED AND MULCHED WITH IN SEVEN (7) DAYS OF THE COMPLETION OF INSTALLATION. DAMS SHALL CONFORM TO THE OHIO DAM LAWS (ORC 1521.06).
  - STABILIZATION OF CRITICAL AREAS WITHIN 50 FEET OF ANY STREAM OR WETLAND SHALL BE TEMPORARILY STABILIZED WITHIN TWO (2) DAYS OF DISTURBANCE IF AREA WILL REMAIN INACTIVE FOR SEVEN (7) DAYS OR LONGER AND PERMANENTLY STABILIZED WITHIN TWO (2) DAYS OF REACHING FINAL GRADE. CONSTRUCTION VEHICLES SHALL AVOID STREAMS AND THE 50 FOOT BUFFER AREAS, IF AN ACTIVE DRAINAGE WAY MUST BE CROSSED BY CONSTRUCTION VEHICLES REPEATEDLY DURING CONSTRUCTION, A TEMPORARY STREAM CROSSING SHALL BE CONSTRUCTED ACCORDING TO THE SPECIFICATIONS IN THE RAINWATER & LAND DEVELOPMENT MANUAL. CONSTRUCTION OF BRIDGES, CULVERTS OR SEDIMENT CONTROL STRUCTURES SHALL NOT PLACE SOIL, DEBRIS AND OTHER FINE PARTICULATE MATERIAL INTO OR CLOSE TO THE WATER RESOURCE IN SUCH A MANNER THAT IT MAY SLOUGH, SLIP OR ERODE.
  - STORM SEWER INLETS SHALL BE PROTECTED SO THAT SEDIMENT-LADEN RUNOFF WILL NOT ENTER THE STORM SEWER SYSTEM WITHOUT FIRST BEING FILTERED AND/OR TREATED. SANITARY SEWER MANHOLES SHALL BE PROTECTED SO THAT NO STORM RUNOFF WILL ENTER THE SANITARY SEWER SYSTEM.
  - RE-VEGETATE SOIL. TEMPORARY SOIL STABILIZATION SHALL OCCUR WITHIN SEVEN (7) DAYS AFTER ROUGH GRADING IF THE AREA WILL REMAIN IDLE LONGER THAN FOURTEEN (14) DAYS. PERMANENT SOIL STABILIZATION SHALL BE INSTALLED WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. PERMANENT VEGETATION IS A GROUND COVER DENSE ENOUGH TO COVER 80% OF THE SOIL SURFACE AND MATURE ENOUGH TO SURVIVE WINTER WEATHER CONDITION.
  - SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED TO PREVENT SOIL LOSS. STABILIZATION SHALL BE REQUIRED IF STOCKPILES ARE LOCATED WITHIN CRITICAL AREAS NEAR STREAMS OR WETLANDS, OR IF DETERMINED BY THE LOCAL SWCD THAT SEDIMENT FROM STOCKPILES WILL LEAVE THE SITE.
  - UNSTABLE SOILS PRONE TO SLIPPING OR SLOUGHING SHALL NOT BE CLEARED, GRADED, EXCAVATED, FILLED OR HAVE LOADS IMPOSED UPON THEM UNLESS THE WORK IS PLANNED BY A QUALIFIED PROFESSIONAL ENGINEER AND INSTALLED IN ACCORDANCE WITH THE ESC PLAN. CUT AND FILL SLOPES SHOULD BE DESIGNED TO MINIMIZE EROSION PROBLEMS. ADEQUATE SLOPE DESIGN INCLUDES USE OF ROUGH SOIL SURFACE ALONG THE FACE OF THE SLOPE; WATER DIVERSION ALONG THE TOP OF THE SLOPE AWAY FROM THE FACE; TERRACES TO REDUCE SLOPE LENGTH; DELIVERY OF CONCENTRATED STORM WATER FLOWS TO THE BASE OF THE SLOPE VIA ADEQUATE CHANNEL OR PIPE; AND DRAINAGE FOR WATER SEEPS IN THE SLOPE THAT ENDANGER SLOPE STABILITY.
  - SOIL SHALL BE REMOVED FROM PAVED SURFACES AND/OR PUBLIC ROADS AT THE END OF EACH DAY IN SUCH A MANNER THAT DOES NOT CREATE OFF-SITE SEDIMENTATION IN ORDER TO ENSURE SAFETY AND ABATE OFF-SITE SOIL LOSS. COLLECTED SEDIMENTS SHALL BE PLACED IN A STABLE LOCATION ON SITE OR TAKEN OFF-SITE TO A STABLE LOCATION.
  - STABILIZE DISTURBED OR MODIFIED DRAINAGE WAYS. REDUCE EROSION EFFECTS OF STORM WATER BY USING AND/OR MAINTAINING GRASSED SWALES, INFILTRATION STRUCTURES, OR WATER DIVERSIONS.
  - SEDIMENT AND EROSION CONTROLS SHALL BE INSPECTED ONCE EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF A 0.5" OR GREATER RAINFALL EVENT. A WRITTEN LOG OF THESE INSPECTIONS AND IMPROVEMENTS TO CONTROLS SHALL BE KEPT ON SITE. THE INSPECTIONS SHALL INCLUDE THE DATE OF INSPECTION, NAME OF INSPECTOR, WEATHER CONDITIONS, OBSERVATIONS, ACTIONS TAKEN TO CORRECT ANY PROBLEMS AND THE DATE CORRECTIVE ACTIONS WERE TAKEN.
  - TRENCHES FOR UNDERGROUND UTILITY LINES AND PIPES SHALL BE TEMPORARILY STABILIZED WITHIN SEVEN (7) DAYS IF THEY ARE TO REMAIN INACTIVE FOR THIRTY (30) DAYS. TRENCH DEWATERING DEVICES SHALL DISCHARGE IN A MANNER THAT FILTERS SOIL-LADEN WATER BEFORE DISCHARGING IT TO A RECEIVING DRAINAGE DITCH OR POND. IF SEEDING, MULCHING, OR OTHER EROSION AND SEDIMENT CONTROL MEASURES WERE PREVIOUSLY INSTALLED, THESE PROTECTIVE MEASURES SHALL BE REINSTALLED.
  - DISTURBED AREAS WHICH WILL REMAIN UNWORKED FOR A PERIOD OF 14 DAYS OR MORE SHALL BE STABILIZED WITH SEEDING AND MULCHING OR OTHER APPROPRIATE MEANS WITHIN 7 DAYS.
  - SOLID, SANITARY AND TOXIC WASTE MUST BE DISPOSED OF IN A PROPER MANNER IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS. IT IS PROHIBITED TO BURN, BURY OR POUR OUT ONTO THE GROUND OR INTO THE STORM SEWERS ANY SOLVENTS, PAINTS, STAINS, GASOLINE, DIESEL FUEL, USED MOTOR OIL, HYDRAULIC FLUID, ANTIFREEZE, CEMENT CURING COMPOUNDS AND OTHER SUCH TOXIC OR HAZARDOUS WASTES. STORAGE TANKS SHOULD BE LOCATED IN DIKED AREAS AWAY FROM ANY DRAINAGE CHANNELS. THE DIKED AREA SHOULD HOLD A VOLUME 110% OF THE LARGEST TANK.
  - OFF-SITE VEHICLE TRACKING SEDIMENT SHALL BE MINIMIZED. CONSTRUCTION VEHICLES ARE LIMITED TO THE CONSTRUCTION ACCESS ROAD(S) NOTED ON THE PLAN. OFFSITE SEDIMENT TRACKING SHALL BE CONTROLLED BY REGULARLY SCHEDULED SWEEPING OF OFFSITE ACCESS ROADS AND MAINTENANCE OF ROCK CONSTRUCTION ENTRANCE.
  - ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST MEET THE STANDARDS AND SPECIFICATIONS OF THE OHIO RAINWATER AND LAND DEVELOPMENT HANDBOOK (2006).
  - OTHER EROSION AND SEDIMENT CONTROL ITEMS MAY BE NECESSARY DUE TO ENVIRONMENTAL CONDITIONS.
  - WINTERIZATION -- ANY DISTURBED AREA THAT IS NOT GOING TO BE WORKED FOR 14 DAYS OR MORE MUST BE SEEDED AND MULCHED BY NOVEMBER 1 OR MUST HAVE A DORMANT SEEDING OR MULCH COVER APPLIED BETWEEN NOVEMBER 1 AND MARCH 1.
  - CONCRETE CEMENT IS TO BE TAKEN BACK TO PLANT FOR WASHOUT AND RECYCLING OR DESIGNATED AREAS ON SITE FOR CONCRETE WASHOUT ARE TO BE USED.

ADDITIONAL CONSTRUCTION SITE POLLUTION CONTROLS

- 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
  - 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 BURY CHEMICALS OR CONTAINERS
  - DON'T POUR DOWN THE SINK, FLOOR DRAIN OR SEPTIC TANKS
  - DON'T BURN CHEMICALS OR CONTAINERS
  - DON'T MIX CHEMICALS TOGETHER
- 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 (C&DD) WASTE MUST BE DISPOSED OF AT AN OHIO EPA APPROVED C&DD LANDFILL.
- 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.
- 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.
- 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.
- CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT WITH NO POTENTIAL FOR DISCHARGE SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER. FIELD TILE OR OTHER SUBSURFACE DRAINAGE STRUCTURES WITHIN 10 FT. OF THE SUMP SHALL BE CUT AND PLUGGED. FOR SMALL PROJECTS, TRUCK CHUTES MAY BE RINSED AWAY FROM ANY WATER CONVEYANCES.
- 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.
- CONTAMINATED SOILS. IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF AT LICENSED SANITARY LANDFILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY. (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). NOTE THAT STORM WATER RUN OFF ASSOCIATED WITH CONTAMINATED SOILS ARE NOT AUTHORIZED UNDER OHIO EPA'S GENERAL STORM WATER PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
- 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.
- DUST CONTROL OR DUST SUPPRESSANTS SHALL BE USED TO PREVENT NUISANCE CONDITIONS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND IN A MANNER WHICH WILL 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.
- 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.
- 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.
- A PERMIT TO INSTALL (PTI) IS REQUIRED PRIOR TO THE CONSTRUCTION OF ALL CENTRALIZED SANITARY SYSTEMS, INCLUDING SEWER EXTENSIONS, AND SEWERAGE SYSTEMS (EXCEPT THOSE SERVING ONE, TWO, AND THREE FAMILY DWELLINGS) AND POTABLE WATER LINES. PLANS MUST BE SUBMITTED AND APPROVED BY OHIO EPA. ISSUANCE OF AN OHIO EPA CONSTRUCTION GENERAL STORM WATER PERMIT DOES NOT AUTHORIZE THE INSTALLATION OF ANY SEWERAGE SYSTEM WHERE OHIO EPA HAS NOT APPROVED A PTI.

I, THE UNDERSIGNED, CERTIFY THAT I UNDERSTAND AND WILL ADHERE TO THE REQUIREMENTS, TERMS, AND CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN REVIEWED AND APPROVED BY THE STARK SOIL AND WATER CONSERVATION DISTRICT FOR COMPLIANCE WITH THE CITY OF MASSILLON AND STARK COUNTY WATER QUALITY REGULATIONS FOR THE ABOVE REFERENCED PROJECT.

OWNER--

DATE

STORMWATER POLLUTION PREVENTION PLAN

SWPPP PREPARATION DATE: AUGUST 21, 2015



SITE ADDRESS: 4113 MILLENNIUM BLVD SE  
MASSILLON, OHIO 44646  
VICINITY MAP  
N.T.S.  
CONSTRUCTION SEQUENCE

- CONDUCT PRE-CONSTRUCTION MEETING WITH STARK SWCD.
- INSTALL SILT FENCE AND CONSTRUCTION ENTRANCE AS SHOWN ON PLANS. (CONTRACTOR SHALL DESIGNATE THE AREA UTILIZED FOR CONSTRUCTION ENTRANCE.)
- CLEAR TREES, BRUSH AND STUMPS AS NECESSARY.
- ALL PERIMETER BARRIERS TO BE CONSTRUCTED WITHIN 7 DAYS OF FIRST GRUBBING.
- BASIN MUST BE INSTALLED PRIOR TO UP-SLOPE DISTURBANCE.
- INSTALL TEMPORARY SEEDING TO ALL STRUCTURAL EROSION INSTALLATIONS PRIOR TO MASS GRADING OF SITE.
- STRIP/STOCKPILE TOPSOIL. STOCKPILES THAT ARE INACTIVE FOR 14 DAYS OR LONGER SHALL BE SEEDED/STABILIZED WITHIN 7 DAYS OF LAST ACTIVITY.
- MASS GRADING
- INSTALL UNDERGROUND UTILITIES AND BUILDING.
- INSTALL INLET PROTECTION.
- BRING PAVEMENT AREAS TO SUB GRADE.
- INSTALL PAVEMENT AND BACK FILL CURBS. AFTER INSTALLATION OF PAVEMENT REPLACE INLET PROTECTION.
- FINISH GRADE, SEED AND MULCH ALL DISTRIBUTED AREAS AND MAINTAIN TEMPORARY EROSION CONTROLS AS REQUIRED.
- UPON COMPLETION AND SITE STABILIZATION, REMOVE ACCUMULATED SEDIMENT AND DEBRIS FROM STORM SYSTEM AND REMOVE SOIL AND EROSION CONTROLS, EXCEPT FOR SILT FENCING. SILT FENCE TO BE REMOVED AFTER 80% OF SITE HAS BEEN STABILIZED.

ADDITIONAL PROVISIONS:

- INSTALLATION OF SILT FENCING SHALL NOT OCCUR PRIOR TO THE INITIAL PRE-CONSTRUCTION MEETING.
- CONTINUOUSLY SWEEP DRIVES AND STREET AND MAINTAIN CONSTRUCTION ENTRANCE.
- ALL AREAS AT FINAL GRADE OR WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR 14 DAYS OR LONGER SHALL BE STABILIZED WITHIN 7 DAYS OF LAST ACTIVITY.

SITE INFO:

**SITE DESCRIPTION--** THE EXISTING SITE IS AN UNDEVELOPED PROPERTY WITH GRASS AND WOODED AREAS.

THE PROPOSED SITE WILL BE AN INDUSTRIAL SITE WITH AN OFFICE BUILDING, PARKING LOT, AND STORAGE AREA.

**BMPs--** A WATER QUALITY / DETENTION BASIN WILL BE USED FOR THIS SITE. THE BASIN WILL PREVENT POLLUTANTS FROM LEAVING THE SITE BY ALLOWING THEM TO SETTLE OUT OF THE WATER PRIOR TO LEAVING THE SITE.

TOTAL AREA OF SITE -- 14.37 AC.  
AREA OF SITE TO UNDER GO EXCAVATION -- 11.55 AC.

PRE-CONSTRUCTION RUNOFF COEFFICIENT -- 0.40  
POST-CONSTRUCTION RUNOFF COEFFICIENT -- 0.69

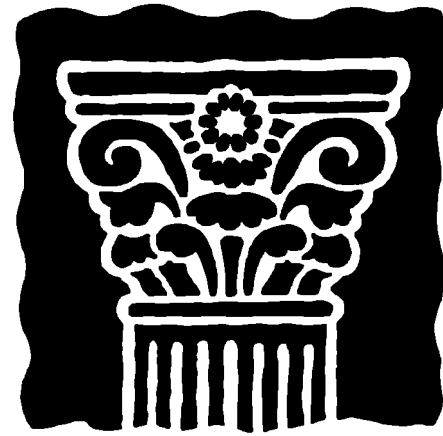
SCHEDULE OF MAJOR CONSTRUCTION

COMMENCEMENT -- FALL 2015  
COMPLETION -- FALL 2016

**RECEIVING STREAM & SURFACE WATER**  
ONSITE DRAINAGE FLOWS TO AN UNNAMED TRIBUTARY TO THE TUSCARAWAS RIVER.

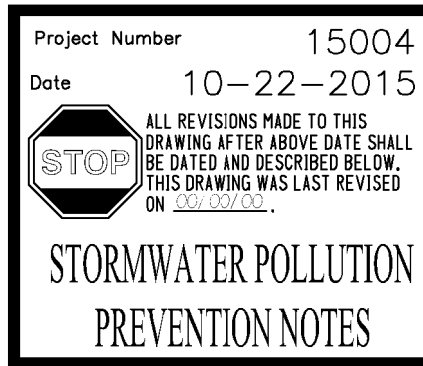
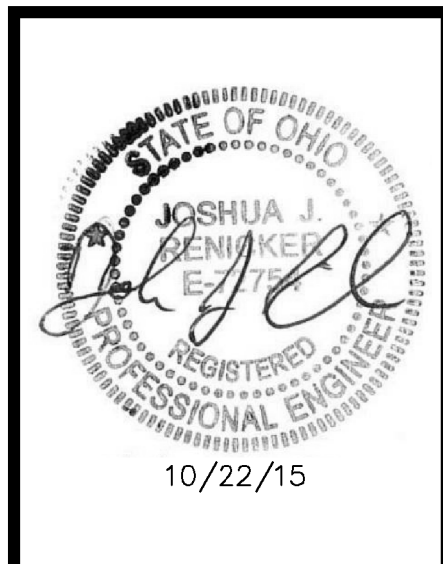
SOILS

CbB-- CANFIELD SILT LOAM, 2 TO 6 PERCENT SLOPES  
CdC2-- CANFIELD SILT LOAM, 6 TO 12 PERCENT SLOPES



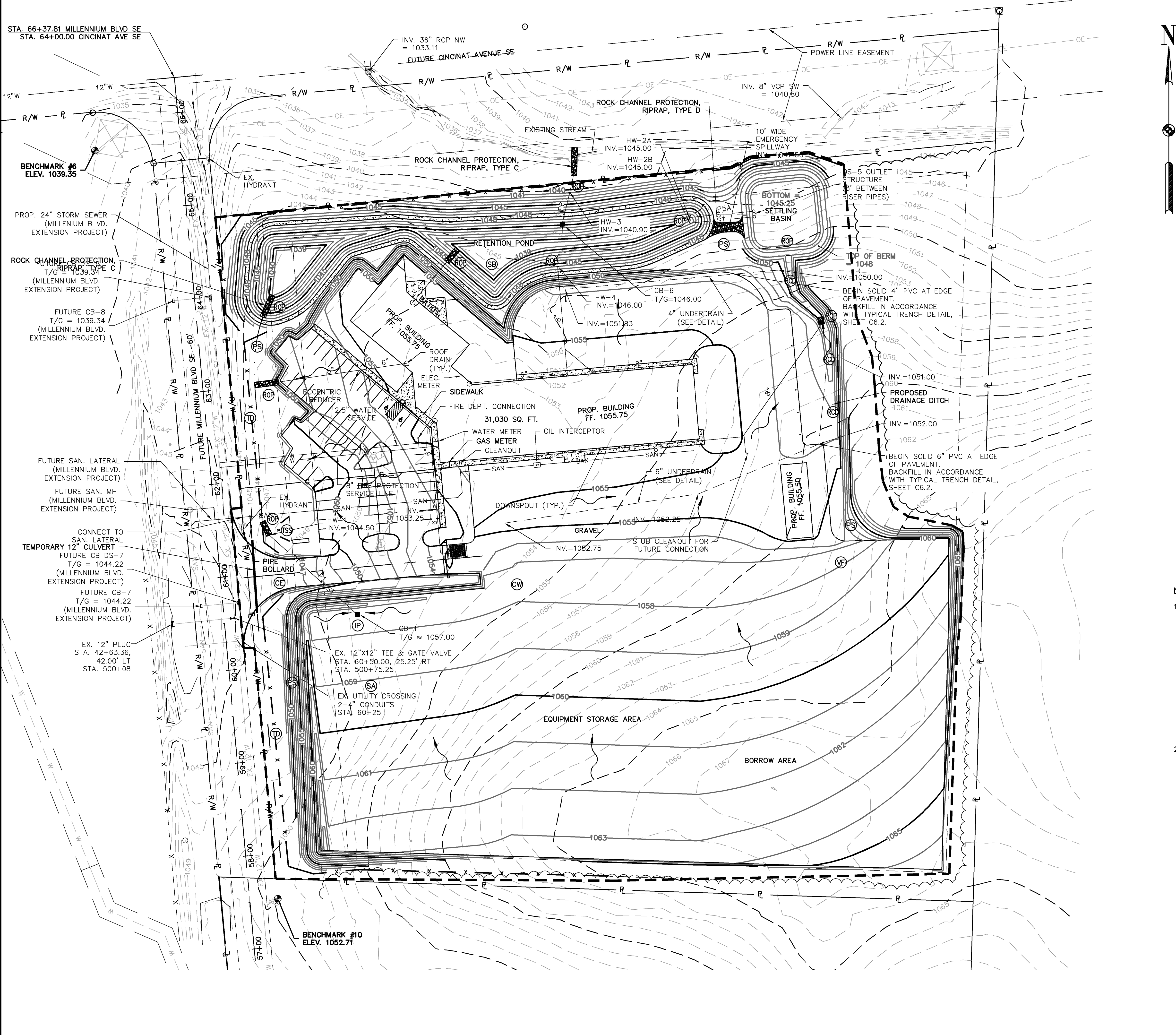
JOHN PATRICK  
PICARD  
ARCHITECT, INC.  
113 LINCOLN WAY WEST  
MASSILLON, OHIO 44647  
PHONE (330) 471-9000  
EMAIL:jpparchitect@yahoo.com

**NOTE TO CONTRACTORS:**  
ALL CONTRACTORS ARE RESPONSIBLE FOR ALL DRAWINGS LISTED IN THE INDEX ON DRAWING T-1 AS WELL AS ALL RELATED SPECIFICATION SECTIONS. IF YOU PREPARE A BID OR CONSTRUCT WITHOUT THE USE OF ALL THE DOCUMENTS PROVIDED, YOU DO SO AT YOUR OWN RISK.





R:\Stark\City\Massillon\125\John Picard - E-Tank Facility Site Plan.dwg: 10/21/15 - 4:15pm: gmay



**LEGEND**

⊙	CONSTRUCTION ENTRANCE
⊖	TEMPORARY DIVERSION CHANNEL
⊕	SEDIMENT BASIN
⊗	PERMANENT SEEDING
⊘	TEMPORARY SEEDING
⊙	TOPSOIL STOCKPILE
⊖	INLET PROTECTION
⊕	ROCK CHECK DAM
⊗	VEHICLE FUELING AREA
⊘	STORAGE AREA (SOLID, SAN. WASTE.....)
⊙	CONCRETE WASHOUT PITS
⊖	ROCK OUTLET PROTECTION
⊕	ROCK CHECK DAM
---	SILT FENCE
---	LIMITS OF CONSTRUCTION
---	SURFACE FLOW

**NOTE:**  
CONTRACTOR TO USE TEMPORARY DIVERSION CHANNELS DURING MASS EXCAVATION TO DIVERT RUNOFF TO SEDIMENT BASIN UNTIL STORM SEWERS ARE INSTALLED AND FUNCTIONING. ALL DIVERSION CHANNELS MUST BE STABILIZED AGAINST EROSION.

- NOTES:**
1. 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 CONSTRUCTIONS ENTRANCE(S), ETC. WILL BE REQUIRED. SEDIMENT CONTROL STRUCTURES/DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL RAINWATER AN LAND DEVELOPMENT - OHIO'S STANDARDS FOR STORM WATER PROTECTION. SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS SET FORTH ON THE APPROVED STORM WATER POLLUTION PREVENTION PLAN APPLICABLE, OR AS DETAILED ON THE CONSTRUCTION PLANS, AS SPECIFIED BY THE CITY OF MASSILLON.
  2. ROCK CHANNEL PROTECTION SHALL BE IN ACCORDANCE WITH ODOT CMS ITEM 601.09. REFER TO DETAIL ON SHEET C7.4.

SCALE: 1 INCH = 50'

0 25' 50' 100'

**HAMMONTREE & ASSOCIATES, LIMITED**  
ENGINEERS, PLANNERS, SURVEYORS  
5233 STONEHAM RD. NORTH CANTON, OH 44720  
PH: (330) 499-8817 FAX: (330) 499-0149  
TOLL FREE: 1-800-304-8817  
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**SCHWABER CONSTRUCTION CO.**  
MASSILLON, OHIO  
412 LAKE AVENUE, NE  
MASSILLON, OHIO 44646  
330-833-8387

PROPOSED NEW FACILITY FOR  
**E-TANK**  
3150 MILLENNUIUM BOULEVARD S.E.  
MASSILLON, OHIO 44646

STATE OF OHIO  
JOSHUA J. BENIKER  
REGISTERED PROFESSIONAL ENGINEER  
10/22/15

Project Number 15004  
Date 10-22-2015  
ALL REVISIONS MADE TO THIS DRAWING AFTER ABOVE DATE SHALL BE DATED AND DESCRIBED BELOW.  
THIS DRAWING WAS LAST REVISED ON 10/22/15  
**STOP**  
STORMWATER POLLUTION PREVENTION PLAN

**C7.2**

REVISIONS:  
9/15/2015  
10/22/2015



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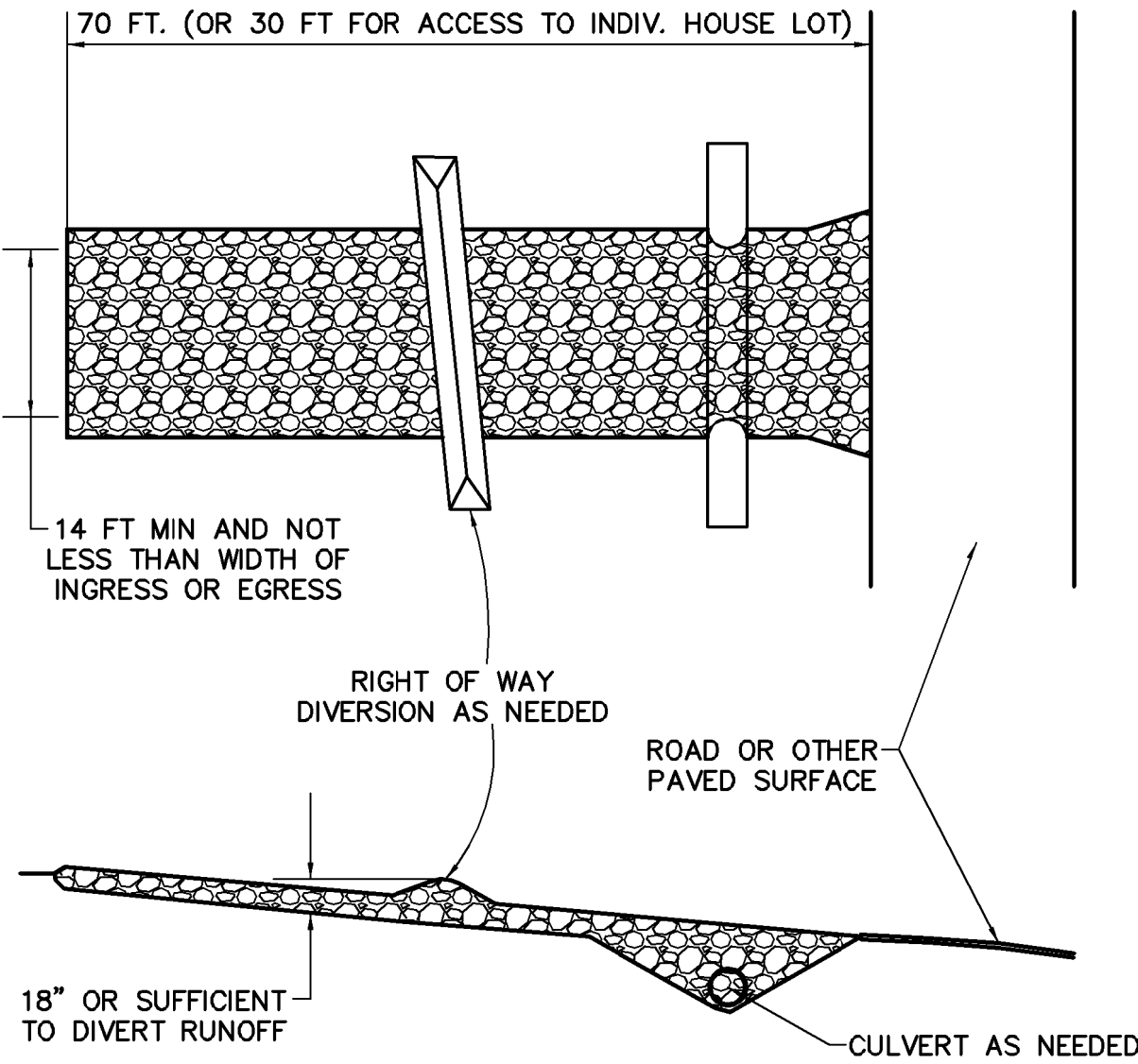
**CONSTRUCTION ENTRANCE**  
N.T.S.

- STONE SIZE: ODOT # 2 (1.5–2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
- THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDUAL LOTS).
- THICKNESS: THE STONE LAYER SHALL BE AT LEAST 18 INCHES THICK FOR LIGHT OR HEAVY DUTY USE.
- THE ENTRANCE SHALL BE AT LEAST 20 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- 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 < 0.6 MM.
PERMITIVITY	1X10–3 CM/SEC.		

- TIMING: THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
- 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.
- WATER BAR: A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
- MAINTENANCE: TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
- CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF–SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION–SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
- REMOVAL: THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ENTRANCE.



**TEMPORARY DIVERSION**  
N.T.S.

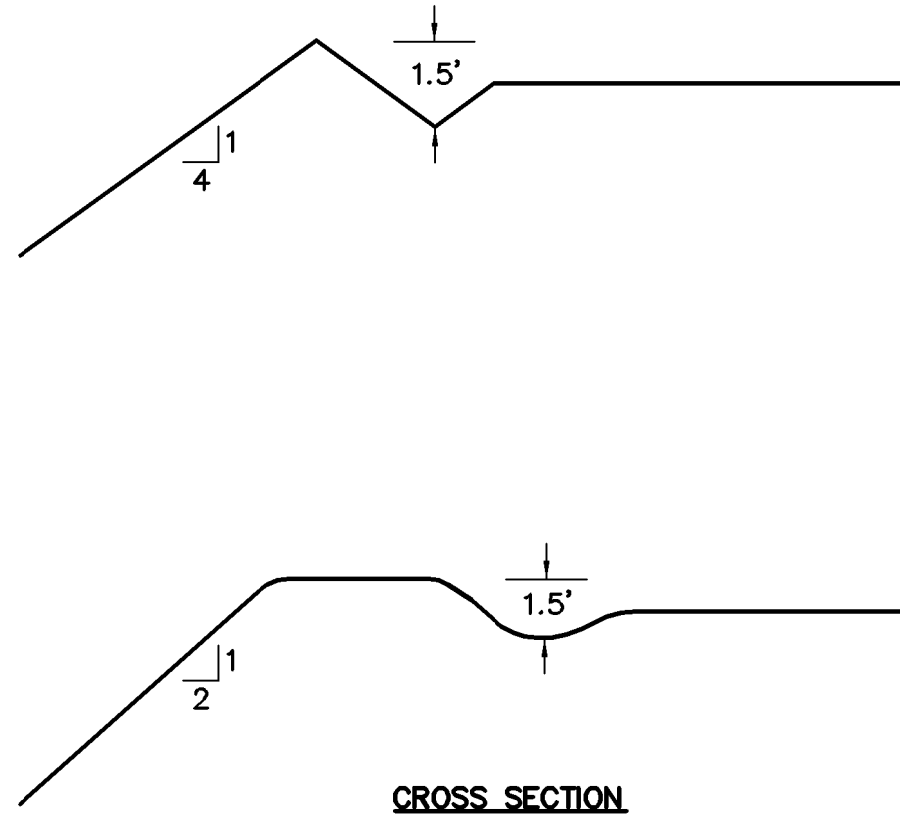
- DRAINAGE AREA SHOULD NOT EXCEED 10 ACRES. LARGER AREAS REQUIRE A MORE EXTENSIVE DESIGN.
- THE CHANNEL CROSS SECTION MAY BE PARABOLIC OR TRAPEZOIDAL. DISK THE BASE OF THE DIKE BEFORE PLACING FILL. BUILD THE DIKE 10% HIGHER THAN DESIGNED FOR SETTLEMENT. THE DIKE SHALL BE COMPACTED BY TRAVERSING WITH TRACKED EARTH–MOVING EQUIPMENT.
- THE MINIMUM CROSS SECTION OF THE LEVEE OR DIKE WILL BE AS FOLLOWS: (MINIMUM DESIGN FREEBOARD SHALL BE 0.3 FOOT.) WHERE CONSTRUCTION TRAFFIC WILL CROSS, THE TOP WIDTH MAY BE MADE WIDER AND THE SIDE SLOPES FLATTER THAN SPECIFIED ABOVE.

DIKE TOP WIDTH (FT.)	HEIGHT (FT.)	SIDE SLOPES	SHAPE
0	1.5	4:1	TRAPEZOIDAL
4	1.5	2:1	PARABOLIC

- THE GRADE MAY BE VARIABLE DEPENDING UPON THE TOPOGRAPHY, BUT MUST HAVE A POSITIVE DRAINAGE TO THE OUTLET AND BE STABILIZED TO BE NON–EROSIVE.
- OUTLET RUNOFF ONTO A STABILIZED AREA, INTO A PROPERLY DESIGNED WATERWAY, GRADE STABILIZATION STRUCTURE, OR SEDIMENT TRAPPING FACILITY.
- DIVERSIONS SHALL BE SEEDED AND MULCHED IN ACCORDANCE WITH THE REQUIREMENTS IN PRACTICE STANDARDS TEMPORARY SEEDING (OR PERMANENT SEEDING) AND MULCHING AS SOON AS THEY ARE CONSTRUCTED OR OTHER SUITABLE STABILIZATION IN ORDER TO PRESERVE DIKE HEIGHT AND REDUCE MAINTENANCE.

**TEMPORARY DIVERSION STABILIZATION TREATMENT**

SLOPE	< 2 AC.	2 – 5 AC.	5 – 10 AC.
0 – 3%	SEED & STRAW	SEED & STRAW	SEED & STRAW
3 – 5%	SEED & STRAW	SEED & STRAW	MATTING
5 – 8%	SEED & STRAW	MATTING	MATTING
8 – 20%	SEED & STRAW	MATTING	ENGINEERED



NOTE: DIVERSIONS WITH STEEPER SLOPES OR GREATER DRAINAGE AREAS ARE BEYOND THE SCOPE OF THIS STANDARD AND MUST BE DESIGNED FOR STABILITY, SEED, STRAW AND MATTING USED SHALL MEET THE SPECIFICATIONS FOR TEMPORARY SEEDING, MULCHING AND MATTING.

**SILT FENCE**  
N.T.S.

- SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
- ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS THAT MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
- ENDS OF THE SILT FENCES SHALL BE BROUGHT UPSLOPE SLIGHTLY SO THAT WATER PONDED BY THE SILT FENCE WILL BE PREVENTED FROM FLOWING AROUND THE ENDS.
- SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
- WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
- THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- THE SILT FENCE SHALL BE PLACED IN AN EXCAVATED OR SLICED TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE MADE WITH A TRENCHER, CABLE LAYING MACHINE, SLICING MACHINE, OR OTHER SUITABLE DEVICE THAT WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
- THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE. A MINIMUM OF 8 INCHES OF GEOTEXTILE MUST BE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6-INCH DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC.
- SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE SPliced TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6-IN. OVERLAP PRIOR TO DRIVING INTO THE GROUND, (SEE DETAILS).
- MAINTENANCE--SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVER/FS20 TOPS THE SILT FENCE, FLOWS UNDER THE FABRIC OR AROUND THE FENCE ENDS, OR IN ANY OTHER WAY ALLOWS A CONCENTRATED FLOW DISCHARGE, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR 3) OTHER PRACTICES SHALL BE INSTALLED.

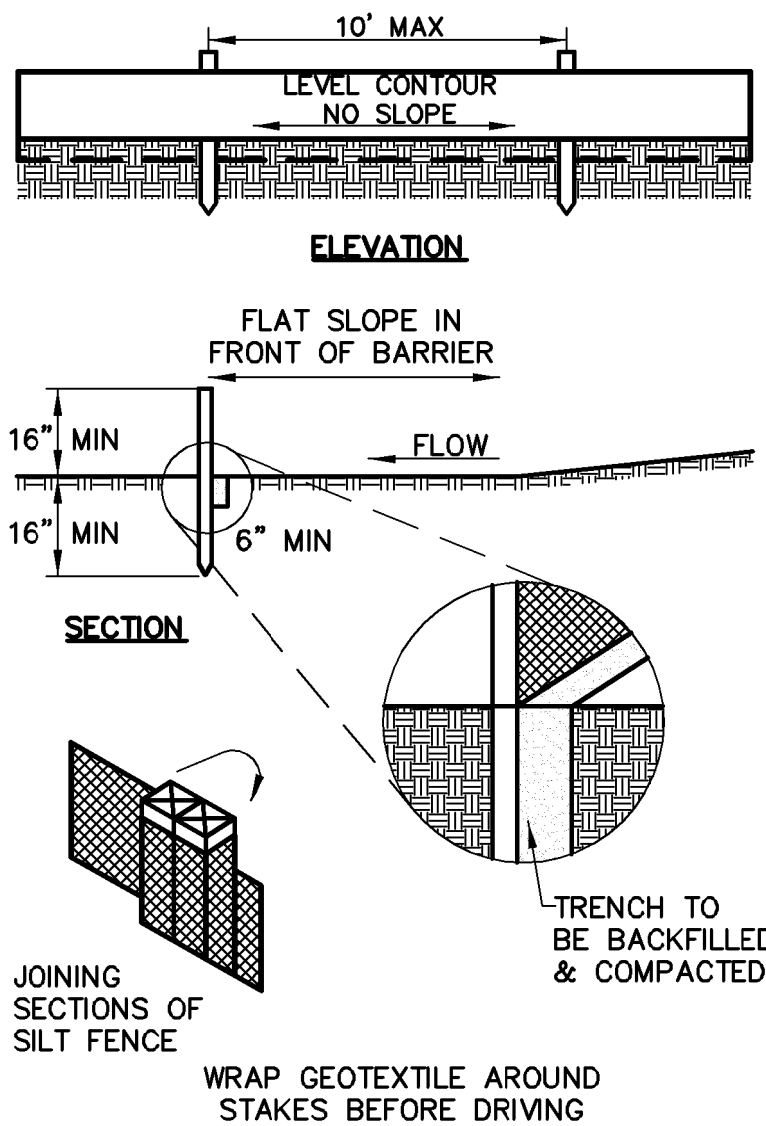
SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE–HALF OF THE HEIGHT OF THE SILT FENCE.

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

**CRITERIA FOR SILT FENCE MATERIALS**

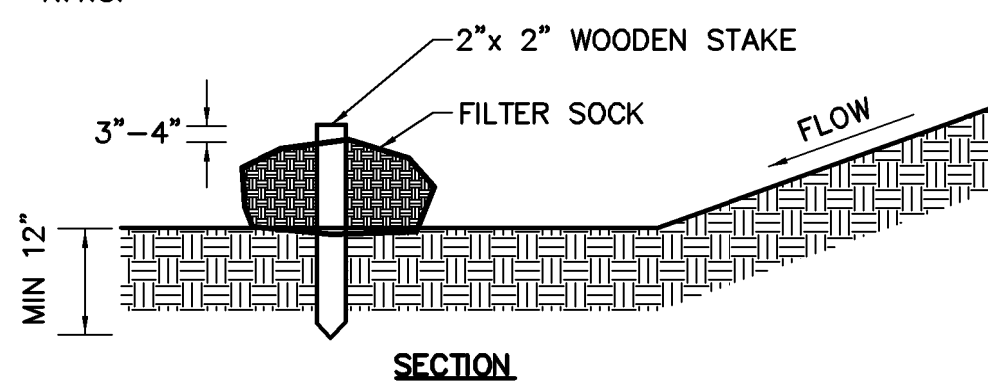
- FENCE POST – THE LENGTH SHALL BE A MINIMUM OF 32 INCHES. WOOD POSTS WILL BE 2–BY–2-IN. NOMINAL DIMENSIONED HARDWOOD OF SOUND QUALITY. THEY SHALL BE FREE OF KNOTS, SPLITS AND OTHER VISIBLE IMPERFECTIONS, THAT WILL WEAKEN THE POSTS. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FT. POSTS SHALL BE DRIVEN A MINIMUM 16 INCHES INTO THE GROUND, WHERE POSSIBLE. IF NOT POSSIBLE, THE POSTS SHALL BE ADEQUATELY SECURED TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT/WATER LOADING.
- SILT FENCE FABRIC – SEE CHART BELOW.

FABRIC PROPERTIES	VALUES	TEST METHOD
MIN TENSILE STRENGTH	120 LBS	ASTM D 4632
MAX. ELONGATION AT 60 LBS	50%	ASTM D 4632
MIN. PUNCTURE STRENGTH	50 LBS	ASTM D 4833
MIN. TEAR STRENGTH	40 LBS	ASTM D 4533
APPARENT OPENING SIZE	0.84 MM	ASTM D 4751
UV EXPOSURE STRENGTH	70%	ASTM G 4355
MIN. PERMITIVITY	1X10–2SEC.–1	ASTM D 4491

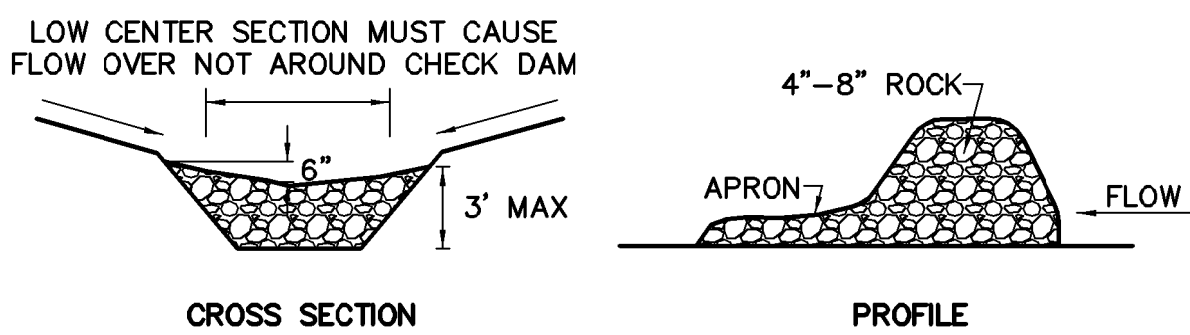


**FILTER SOCK**  
N.T.S.

- 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 A PARTICLES RANGING FROM 3/8\" TO 2\".
- FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8\" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.
- 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.
- 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.
- FILTER SOCKS ARE NOT TO BE USED IN CONCENTRATED FLOW SITUATIONS OR IN RUNOFF CHANNELS.
- ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
- REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE PRACTICE.
- WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.
- REMOVAL: FILTER SOCKS WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED IN SUCH AS WAY AS TO FACILITATE AND NOT OBSTRUCT SEEDINGS.

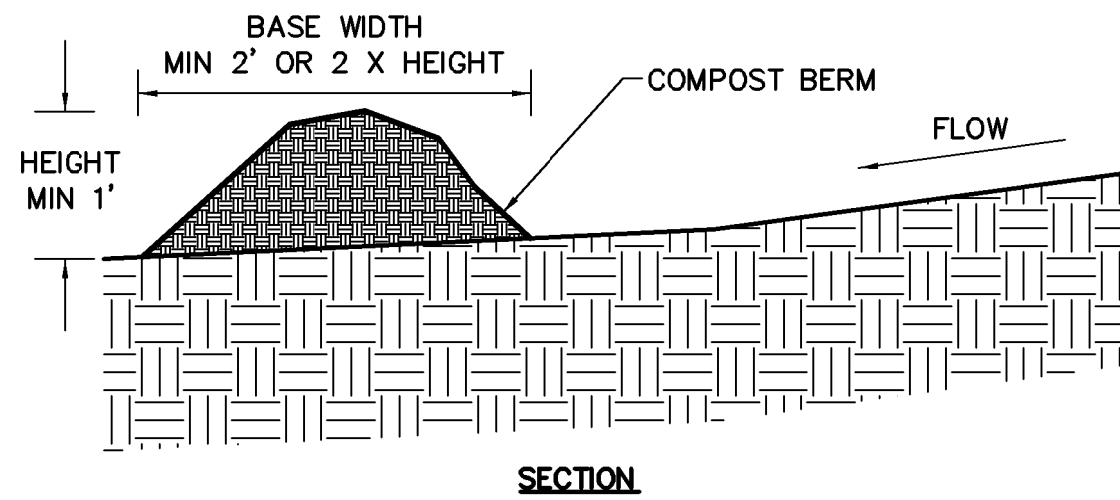


**ROCK CHECK DAM**  
N.T.S.



- THE CHECK DAM SHALL BE CONSTRUCTED OF 4–8 INCH DIAMETER STONE, PLACED SO THAT IT COMPLETELY COVERS THE WIDTH OF THE CHANNEL. ODOT TYPE D STONE IS ACCEPTABLE, BUT SHOULD BE UNDERLAIN WITH A GRAVEL FILTER CONSISTING OF ODOT NO. 3 OR 4 SUITABLE FILTER FABRIC.
- MAXIMUM HEIGHT OF CHECK DAM SHALL NOT EXCEED 3.0 FEET.
- THE MIDPOINT OF THE ROCK CHECK DAM SHALL BE 6 INCHES LOWER THAN THE SIDES IN ORDER TO DIRECT ACROSS THE CENTER AND AWAY FROM THE CHANNEL SIDES.
- THE BASE OF THE CHECK DAM SHALL BE ENTRENCHED APPROXIMATELY 6 INCHES.
- 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.
- 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.
- STONE PLACEMENT SHALL BE PERFORMED EITHER BY HAND OR MECHANICALLY AS LONG AS THE CENTER OF CHECK DAM IS LOWER THAN THE SIDES AND EXTENDS ACROSS ENTIRE CHANNEL.
- SIDE SLOPES SHALL BE A MINIMUM OF 2:1.

**FILTER BERM**  
N.T.S.

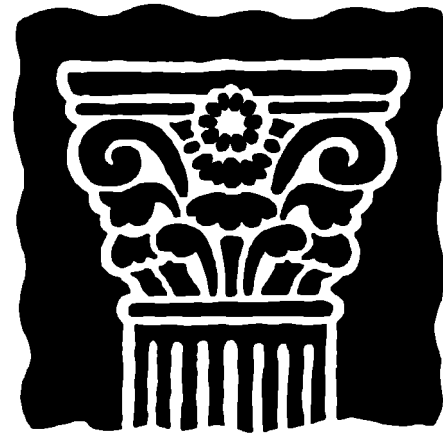


- MATERIALS: COMPOST USED FOR FILTER BERMS SHALL BE WEED, PATHOGEN AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH. THEY SHALL BE DERIVED FROM A WELL–DECOMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF A PARTICLES RANGING FROM 1/4\" TO 3\".
- INSTALLATION: FILTER BERMS 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 BERMS SHALL BE PROVIDED AT THE TOP AND AS NEEDED MID–SLOPE.
- MAINTENANCE: INSPECT FILTER BERMS AFTER EACH SIGNIFICANT RAIN, MAINTAINING THE BERMS IN A FUNCTIONAL CONDITION AT ALL TIMES. REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER BERMS WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE PRACTICE. WHERE THE FILTER BERM DETERIORATES OR FAILS IT WILL BE, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.
- REMOVAL: FILTER BERMS NO LONGER NEEDED WILL BE DISPERSED ON SITE IN A MANNER THAT WILL FACILITATE SEEDING.

FILTER BERMS ARE NOT TO BE USED IN CONCENTRATED FLOW SITUATIONS OR IN RUNOFF CHANNELS.



REVISIONS:  
9/15/2015  
10/22/2015

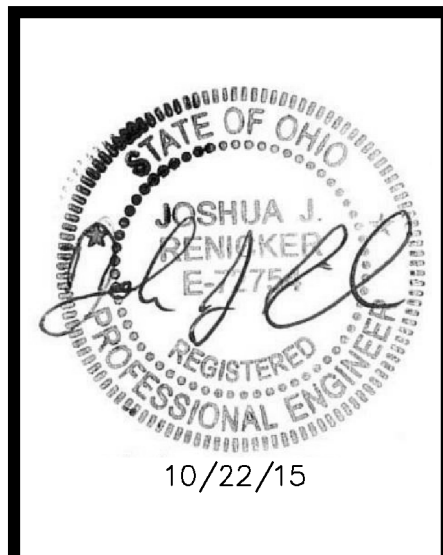


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**SCHUMACHER CONSTRUCTION CO.**  
MASSILLON, OHIO  
412 LAKE AVENUE, NE  
MASSILLON, OHIO 44646  
330–833–8387

PROPOSED NEW FACILITY FOR  
**E-TANK**  
3150 MILLENNIUM BOULEVARD S.E.  
MASSILLON, OHIO 44646



Project Number 15004  
Date 10–22–2015  
ALL REVISIONS MADE TO THIS DRAWING AFTER ABOVE DATE SHALL BE LISTED AND DESCRIBED BELOW. THIS DRAWING WAS LAST REVISED ON 10/22/2015.  
**STOP**  
STORMWATER POLLUTION PREVENTION DETAILS

**C7.3**

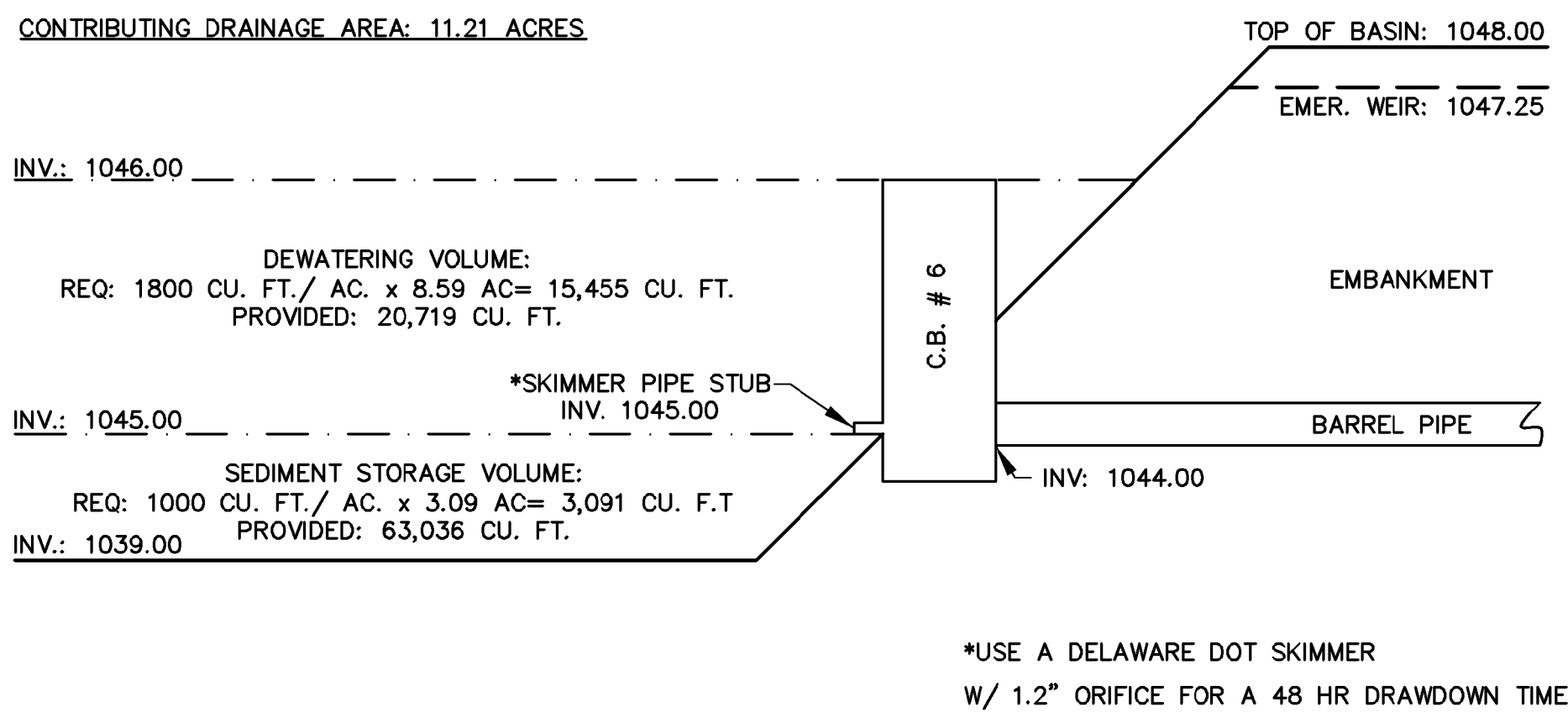


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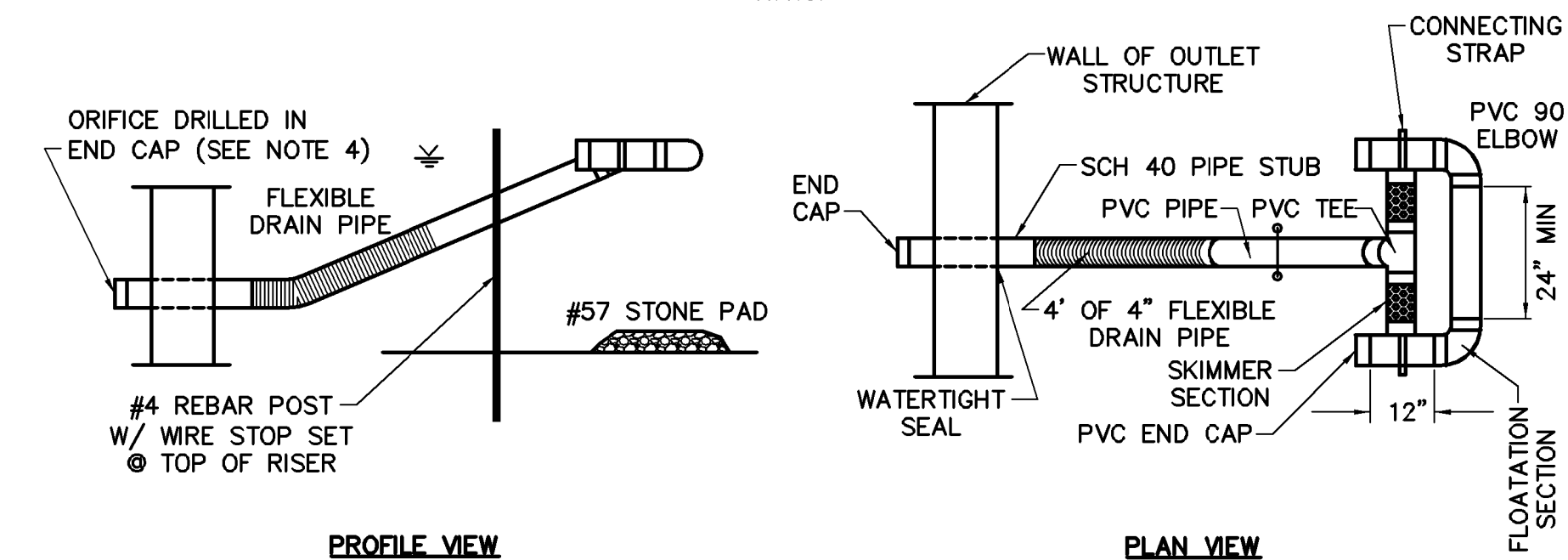
### SEDIMENT BASIN N.T.S.

- SEDIMENT BASINS SHALL BE CONSTRUCTED AND OPERATIONAL BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
- SITE PREPARATION: THE AREA UNDER THE EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED AS NEEDED TO FACILITATE SEDIMENT CLEANOUT. GULLIES AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. THE SURFACE OF THE FOUNDATION AREA WILL BE THOROUGHLY SCARIFIED BEFORE PLACEMENT OF THE EMBANKMENT MATERIAL.
- CUT-OFF TRENCH: THE CUTOFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF THE EMBANKMENT. THE MINIMUM DEPTH SHALL BE 3 FT. UNLESS SPECIFIED DEEPER ON THE PLANS OR AS A RESULT OF SITE CONDITIONS. THE MINIMUM BOTTOM WIDTH SHALL BE 4 FT, BUT WIDE ENOUGH TO PERMIT OPERATION OF COMPACTION EQUIPMENT. THE TRENCH SHALL BE KEPT FREE OF STANDING WATER DURING BACKFILL OPERATIONS.
- EMBANKMENT: THE FILL MATERIAL SHALL BE FREE OF ALL SOD, ROOTS, FROZEN SOIL, STONES OVER 6 IN. IN DIAMETER, AND OTHER OBJECTIONABLE MATERIAL. THE PLACING AND SPREADING OF THE FILL MATERIAL SHALL BE STARTED AT THE LOWEST POINT OF THE FOUNDATION AND THE FILL SHALL BE BROUGHT UP IN APPROXIMATELY 6 IN. HORIZONTAL LAYERS OR OF SUCH THICKNESS THAT THE REQUIRED COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED. CONSTRUCTION EQUIPMENT SHALL BE OPERATED OVER EACH LAYER IN A WAY THAT WILL RESULT IN THE REQUIRED COMPACTION. SPECIAL EQUIPMENT SHALL BE USED WHEN THE REQUIRED COMPACTION CANNOT BE OBTAINED WITHOUT IT. THE MOISTURE CONTENT OF FILL MATERIAL SHALL BE SUCH THAT THE REQUIRED DEGREE OF COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED.
- PIPE SPILLWAY: THE PIPE CONDUIT BARREL SHALL BE PLACED ON A FIRM FOUNDATION TO THE LINES AND GRADES SHOWN ON THE PLANS. CONNECTIONS BETWEEN THE RISER AND BARREL, THE ANTI-SLEEP COLLARS AND BARREL AND ALL PIPE JOINTS SHALL BE WATERTIGHT. SELECTED BACKFILL MATERIAL SHALL BE PLACED AROUND THE CONDUIT IN LAYERS AND EACH LAYER SHALL BE COMPACTED TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. ALL COMPACTION WITHIN 2 FT. OF THE PIPE SPILLWAY WILL BE ACCOMPLISHED WITH HAND-OPERATED TAMPING EQUIPMENT.
- DURING CONSTRUCTION, CB #6 WILL SERVE AS THE OUTLET STRUCTURE FOR THE SEDIMENT BASIN. A SKIMMER WILL BE USED FOR DEWATERING THE BASIN (SEE DETAIL ON SHEET C5.1).
- TRASH RACKS: THE TOP OF THE C.B. SHALL BE FITTED WITH TRASH RACKS FIRMLY FASTENED.
- EMERGENCY SPILLWAY: THE EMERGENCY SPILLWAY SHALL BE CUT IN UNDISTURBED GROUND. ACCURATE CONSTRUCTION OF THE SPILLWAY ELEVATION AND WIDTH IS CRITICAL AND SHALL BE WITHIN A TOLERANCE OF 0.2 FT.
- SEED AND MULCH: THE SEDIMENT BASIN SHALL BE STABILIZED IMMEDIATELY FOLLOWING ITS CONSTRUCTION. IN NO CASE SHALL THE EMBANKMENT OR EMERGENCY SPILLWAY REMAIN BARE FOR MORE THAN 7 DAYS.
- SEDIMENT CLEANOUT: SEDIMENT SHALL BE REMOVED AND THE SEDIMENT BASIN RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS FILLED ONE-HALF THE POND'S ORIGINAL DEPTH OR AS INDICATED ON THE PLANS. SEDIMENT REMOVED FROM THE BASIN SHALL BE PLACED SO THAT IT WILL NOT ERODE.
- ONCE CONSTRUCTION IS COMPLETE AND 80% OF THE UPLAND VEGETATION IS ESTABLISHED, THE SKIMMER WILL BE REMOVED AND THE 1.5" ORIFICE AND FLOW PIPE (PER DETAIL ON SHEET C5.1) WILL BE INSTALLED. FINALLY THE SEDIMENT BASIN IS TO BE REGRADED TO THE FINAL DETENTION BASIN CONFIGURATION AND SEEDED.

CONTRIBUTING DRAINAGE AREA: 11.21 ACRES



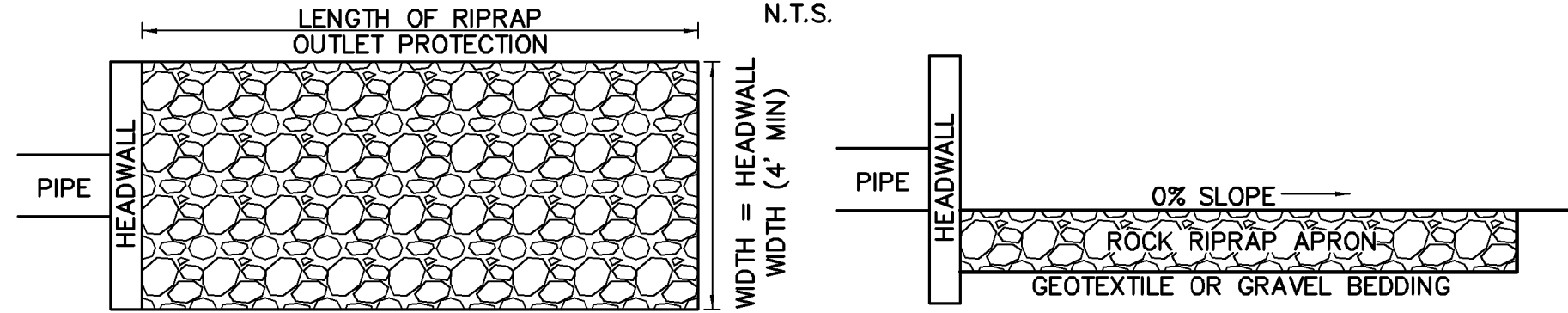
### SKIMMER DEWATERING DEVICE N.T.S.



NOTES:

- ALL JOINTS OF THE FLOATATION SECTION SHALL BE GLUED TOGETHER AND WATERTIGHT. JOINTS OF THE SKIMMER SECTION NEED NOT BE WATERTIGHT.
- TO INSTALL DEWATERING PIPE STUB:  
FOR CORRUGATED METAL RISER, STUB SHALL BE SCH 40 STEEL PIPE TACK WELDED TO CREATE WATERTIGHT SEAL.  
FOR CONCRETE RISER, STUB SHALL BE SCH 40 PVC PIPE GROUTED TO CREATE A WATERTIGHT SEAL
- FLEXIBLE, NON PERFORATED HDPE DRAIN PIPE SHALL BE ATTACHED TO OUTLET STRUCTURE DEWATERING STUB WITH WATERTIGHT CONNECTIONS.
- USE A 1.2" ORIFICE DRILLED @ INV. 1045.00 FOR A MINIMUM 48-HOUR DEWATERING TIME.

### ROCK OUTLET PROTECTION N.T.S.

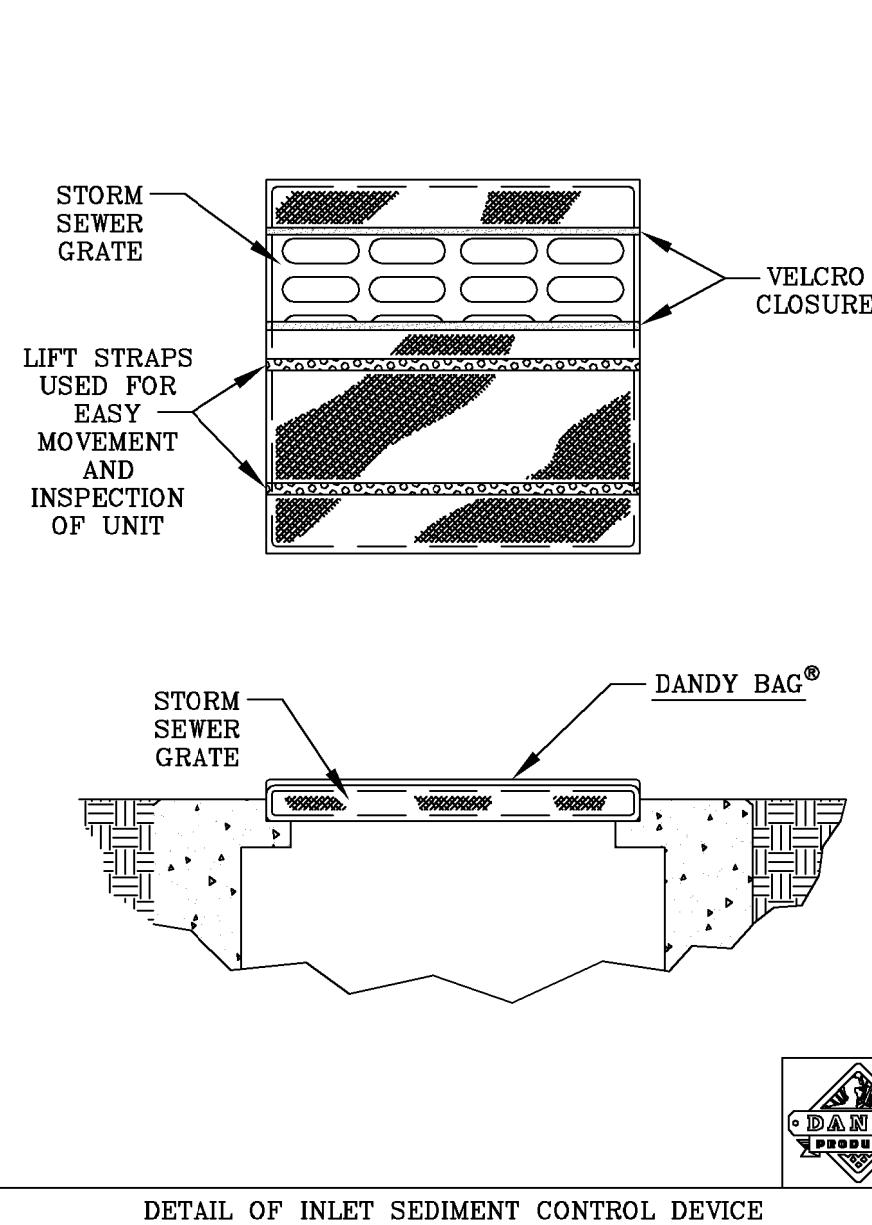


- SUBGRADE FOR THE FILTER OR BEDDING AND RIPRAP SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES AS SHOWN ON THE PLAN. THE SUBGRADE SHALL BE CLEARED OF ALL TREES, STUMPS, ROOTS, SOD, LOOSE ROCK, OR OTHER MATERIAL.
- RIPRAP SHALL CONFORM TO THE GRADING LIMITS AS SHOWN ON THE PLAN.
- GEOTEXTILE SHALL BE SECURELY ANCHORED ACCORDING TO MANUFACTURERS' RECOMMENDATIONS.
- 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.
- GRAVEL BEDDING SHALL BE ODOT NO. 67S OR 57S UNLESS SHOWN DIFFERENTLY ON THE DRAWINGS.
- RIPRAP MAY BE PLACED BY EQUIPMENT BUT SHALL BE PLACED IN A MANNER TO PREVENT SUPPAGE OR DAMAGE TO THE GEOTEXTILE.
- 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.
- CONSTRUCTION SHALL BE SEQUENCED SO THAT OUTLET PROTECTION IS PLACED AND FUNCTIONAL WHEN THE STORM DRAIN, CULVERT, OR OPEN CHANNEL ABOVE IT BECOMES OPERATIONAL.
- ALL DISTURBED AREAS WILL BE VEGETATED AS SOON AS PRACTICAL.

### DE-WATERING

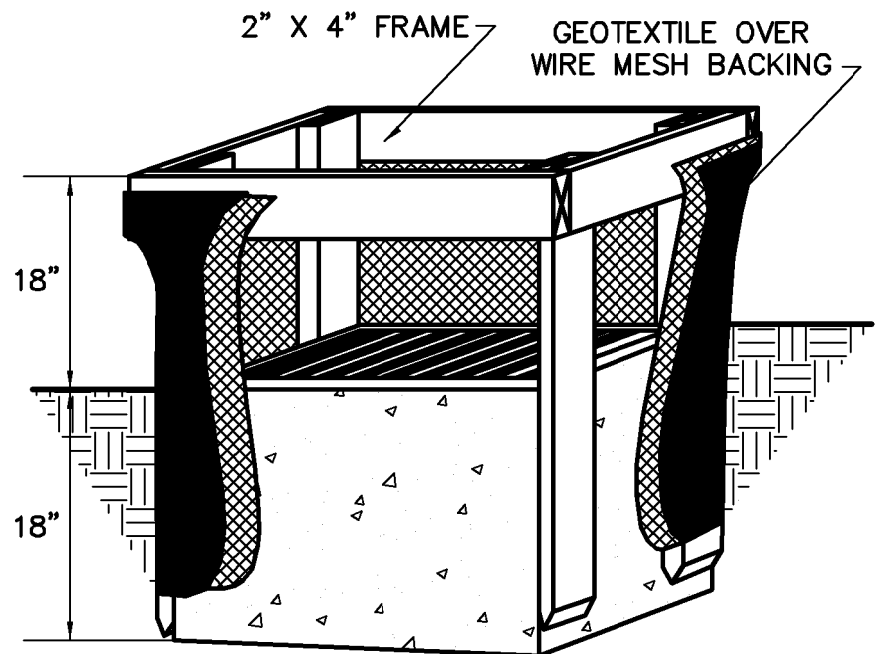
- A DE-WATERING PLAN SHALL BE DEVELOPED PRIOR TO THE COMMENCEMENT OF ANY PUMPING ACTIVITIES.
- THE DE-WATERING PLAN SHALL INCLUDE ALL PUMPS AND RELATED EQUIPMENT NECESSARY FOR THE DEWATERING ACTIVITIES AND DESIGNATE AREAS FOR PLACEMENT OF PRACTICES. OUTLETS FOR PRACTICES SHALL BE PROTECTED FROM SCOUR EITHER BY RIPRAP PROTECTION, FABRIC LINER, OR OTHER ACCEPTABLE METHOD OF OUTLET PROTECTION.
- WATER THAT IS NOT DISCHARGED INTO A SETTLING/TREATMENT BASIN BUT DIRECTLY INTO WATERS OF THE STATE SHALL BE MONITORED HOURLY. DISCHARGED WATER SHALL BE WITHIN  $\pm 5'$  F OF THE RECEIVING WATERS.
- SETTLING BASINS SHALL NOT BE GREATER THAN FOUR (4) FEET IN DEPTH. THE BASIN SHALL BE CONSTRUCTED FOR SEDIMENT STORAGE AS OUTLINED IN CHAPTER 6, SEDIMENT BASIN OR SEDIMENT TRAP. THE INLET AND OUTLET FOR THE BASIN SHALL BE LOCATED AT THE FURTHEST POINTS OF THE STORAGE. A FLOATING OUTLET SHALL BE USED TO ENSURE THAT SETTLED SOLIDS DO NOT RE-SUSPEND DURING THE DISCHARGE PROCESS. THE SETTLING BASIN SHALL BE CLEANED OUT WHEN THE STORAGE HAS BEEN REDUCED BY 50% OF ITS ORIGINAL CAPACITY.
- ALL NECESSARY NATIONAL, STATE AND LOCAL PERMITS SHALL BE SECURED PRIOR TO DISCHARGING INTO WATERS OF THE STATE.

### DANDY BAG DETAIL N.T.S.



### GEOTEXTILE INLET PROTECTION N.T.S.

- INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE INLET BECOMES FUNCTIONAL.
- THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH AT LEAST 18 INCHES.
- THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2-INCH BY 4-INCH CONSTRUCTION GRADE LUMBER. THE 2-INCH BY 4-INCH POSTS SHALL BE DRIVEN ONE (1) FT. INTO THE GROUND AT FOUR CORNERS OF THE INLET AND THE TOP PORTION OF 2-INCH BY 4-INCH FRAME ASSEMBLED USING THE OVERLAP JOINT SHOWN. THE TOP OF THE FRAME SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WILL POSE A SAFETY HAZARD TO TRAFFIC.
- 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.
- GEOTEXTILE MATERIAL SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20-40 SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM THE TOP OF THE FRAME TO 18 INCHES BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAP ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.
- BACKFILL SHALL BE PLACED AROUND THE INLET IN COMPACTED 6-INCH LAYERS UNTIL THE EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.
- A COMPACTED EARTH DIKE OR CHECK DAM SHALL BE CONSTRUCTED IN THE DITCH LINE BELOW THE INLET IF THE INLET IS NOT IN A DEPRESSION. THE TOP OF THE DIKE SHALL BE AT LEAST 6 INCHES HIGHER THAN THE TOP OF THE FRAME.



### CONCRETE WASHOUT FACILITY N.T.S.

NOTES:  
TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE LOCATED A MINIMUM OF 50 FT FROM STORM DRAIN INLETS, OPEN DRAINAGE FACILITIES, AND WATERCOURSES. EACH FACILITY SHOULD BE LOCATED AWAY FROM CONSTRUCTION TRAFFIC OR ACCESS AREAS TO PREVENT DISTURBANCE OR TRACKING.

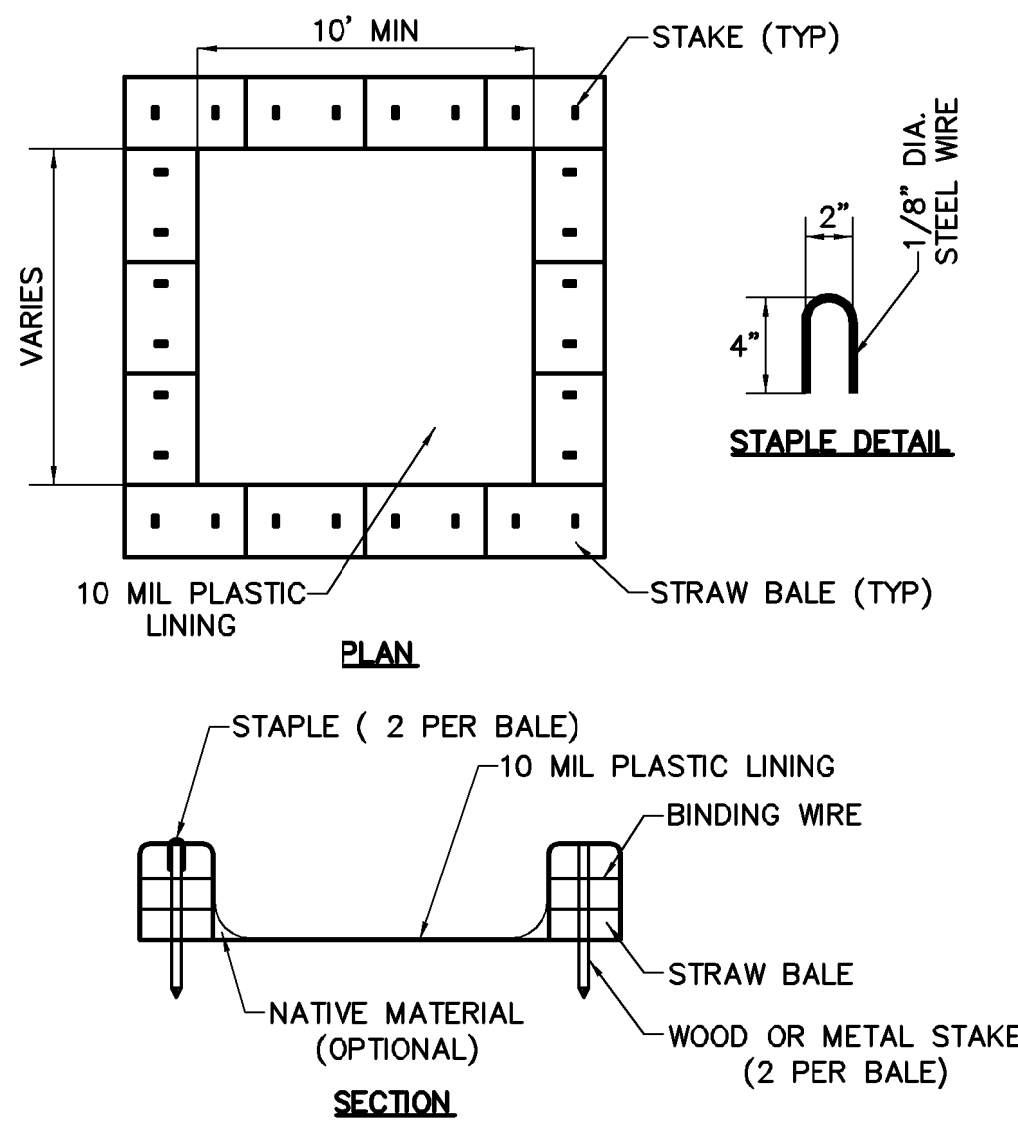
A SIGN SHOULD BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.

TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE CONSTRUCTED ABOVE GRADE OR BELOW GRADE AT THE OPTION OF THE CONTRACTOR. TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

ONLY CONCRETE FROM MIXER TRUCK CHUTES SHOULD BE WASHED INTO CONCRETE WASH OUT.

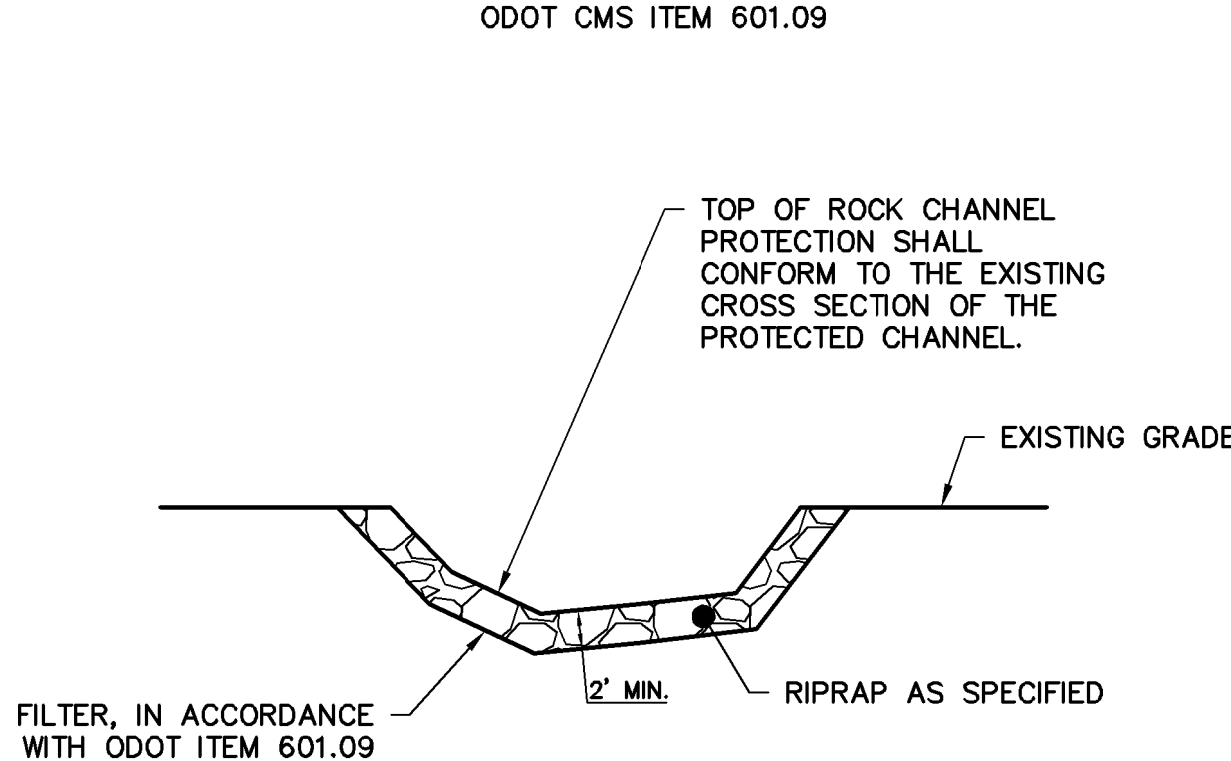
CONCRETE WASHOUT FROM CONCRETE PUMPER BINS CAN BE WASHED INTO CONCRETE PUMPER TRUCKS AND DISCHARGED INTO DESIGNATED WASHOUT AREA OR PROPERLY DISPOSED OF OFFSITE.

ONCE CONCRETE WASTES ARE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE SHOULD BE BROKEN UP, REMOVED, AND DISPOSED OF ON A REGULAR BASIS.

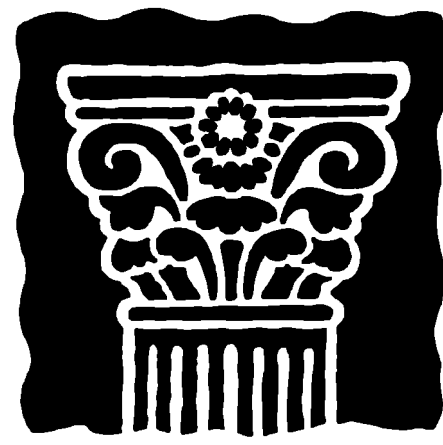


### ROCK CHANNEL PROTECTION N.T.S.

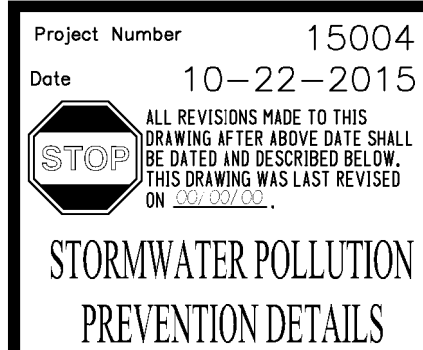
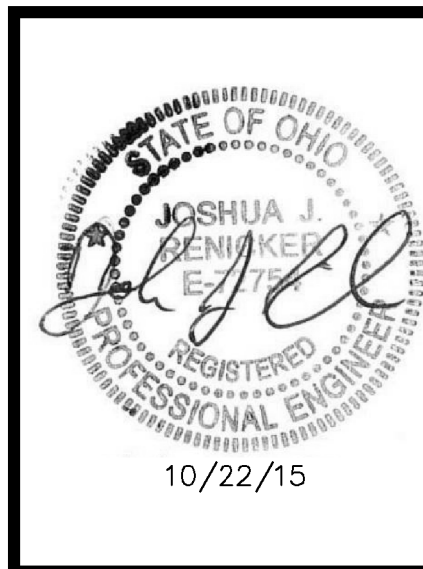
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9/15/2015  
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NOTE: OTHER APPROVED SPECIES MAY BE SUBSTITUTED.

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

CUT SLOPES—GREATER THAN 3:1 SLOPES

1. STAIR—STEP GRADING MAY BE CARRIED OUT ON ANY MATERIAL SOFT ENOUGH TO BE RIPPED WITH A BULLDOZER. THE RATIO OF THE HORIZONTAL DISTANCE TO THE VERTICAL CUT DISTANCE SHALL BE FLATTER THAN 1:1 AND THE HORIZONTAL PORTION OF THE STEP SHALL SLOPE TOWARD THE VERTICAL WALL. INDIVIDUAL VERTICAL CUTS SHALL NOT BE MORE THAN 24 INCHES ON SOFT SOIL MATERIALS AND NOT MORE THAN 36 INCHES IN ROCKY MATERIALS.
2. GROOVING MAY BE MADE WITH ANY APPROPRIATE IMPLEMENT WHICH CAN BE SAFELY OPERATED ON THE SLOPE AND WHICH WILL NOT CAUSE UNDUE COMPACTION. SUGGESTED IMPLEMENTS INCLUDE DISCS, TILLERS, SPRING HARROWS, AND THE TEETH ON A FRONT-END LOADER BUCKET. SUCH GROOVES SHALL NOT BE LESS THAN 3 INCHES DEEP NOR FURTHER THAN 15 INCHES APART.

FILL SLOPES—GREATER THAN 3:1 SLOPES

FILL SLOPES STEEPER THAN 3:1 SHALL BE GROOVED OR ALLOWED TO REMAIN ROUGH AS THEY ARE CONSTRUCTED UTILIZING METHOD  
(1) OR (2) BELOW.

1. GROOVING MAY BE MADE WITH ANY APPROPRIATE IMPLEMENT WHICH CAN BE SAFELY OPERATED ON THE SLOPE AND WHICH WILL NOT CAUSE UNDUE COMPACTION SUCH AS DISCS, TILLERS, SPRING HARROWS, AND THE TEETH ON A FRONT-END LOADER BUCKET. GROOVES LEFT SHALL NOT BE LESS THAN 3 INCHES DEEP NOR FURTHER THAN 15 INCHES APART.
2. AS LIFTS OF THE FILL ARE CONSTRUCTED, SOIL AND ROCK MATERIALS MAY BE ALLOWED TO FALL NATURALLY ONTO THE SLOPE SURFACE. AT NO TIME SHALL SLOPES BE BLADED OR SCRAPED TO PRODUCE A SMOOTH, HARD SURFACE.

CUTS, FILLS, AND GRADED AREAS WHICH WILL BE MOWED

1. MOWED SLOPES SHOULD NOT BE STEEPER THAN 3:1 AND SHALL AVOID EXCESSIVE ROUGHNESS. THESE AREAS MAY BE ROUGHENED WITH SHALLOW GROOVES SUCH AS THOSE, WHICH REMAIN AFTER TILLING, DISCING, HARROWING, RAKING, OR USE OF A CULTIPACKER—SEEDER. THE FINAL PASS OF ANY SUCH TILLAGE IMPLEMENT SHALL BE ON THE CONTOUR (PERPENDICULAR TO THE SLOPE).
2. GROOVES FORMED BY IMPLEMENTS SHALL BE NOT LESS THAN 1 INCH DEEP AND NOT FURTHER THAN 12 INCHES APART. FILL SLOPES THAT ARE LEFT ROUGH DURING CONSTRUCTION MAY BE SMOOTHED WITH A CHAIN HARROW OR SIMILAR IMPLEMENT TO FACILITATE MOWING.

**SITE PREPARATION:**

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

**SEEDBED PREPARATION:**

1. LIME: AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ACID SOIL AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF 100 POUNDS PER 1,000-SQ. FT. OR 2 TONS PER ACRE.
2. FERTILIZER: FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. IN PLACE OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AT A RATE OF 25 POUNDS PER 1,000-SQ. FT. OR 1000 POUNDS PER ACRE OF A 10-10-10 OR 12-12-12 ANALYSES.
3. THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING-TOOTH HARROW, OR OTHER SUITABLE FIELD IMPLEMENT TO A DEPTH OF 3 INCHES. ON SLOPING LAND, THE SOIL SHALL BE WORKED ON THE CONTOUR.

**SEEDING DATES AND SOIL CONDITIONS:**

SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 OR AUGUST 1 TO SEPTEMBER 30. IF SEEDING OCCURS OUTSIDE OF THE ABOVE-SPECIFIED DATES, ADDITIONAL MULCH AND IRRIGATION MAY BE REQUIRED TO ENSURE A MINIMUM OF GERMINATION. TILLAGE FOR SEEDBED PREPARATION SHOULD BE DONE WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND. FOR WINTER SEEDING, SEE THE FOLLOWING SECTION ON DORMANT SEEDING.

**DORMANT SEEDINGS:**

1. SEEDINGS SHOULD NOT BE MADE FROM OCTOBER 1 THROUGH NOVEMBER 20. DURING THIS PERIOD, THE SEEDS ARE LIKELY TO GERMINATE BUT PROBABLY WILL NOT BE ABLE TO SURVIVE THE WINTER.

1. DETERMINE THE DEPTH AND SUITABILITY OF TOPSOIL AT THE SITE. (FOR HELP, CONTACT YOUR LOCAL SWCD OFFICE TO OBTAIN A COUNTY SOIL SURVEY REPORT).
2. PRIOR TO STRIPPING TOPSOIL, INSTALL APPROPRIATE DOWNSLOPE EROSION AND SEDIMENTATION CONTROLS SUCH AS SEDIMENT TRAPS AND BASINS.
3. REMOVE THE SOIL MATERIAL NO DEEPER THAN WHAT THE COUNTY SOIL SURVEY DESCRIBES AS "SURFACE SOIL" (IE. A OR AP HORIZON).
4. CONSTRUCT STOCKPILES IN ACCESSIBLE LOCATIONS THAT DO NOT INTERFERE WITH NATURAL DRAINAGE. INSTALL APPROPRIATE SEDIMENT CONTROLS TO TRAP SEDIMENT SUCH AS SILT FENCE IMMEDIATELY ADJACENT TO THE STOCKPILE OR SEDIMENT TRAPS OR BASINS DOWNSTREAM OF THE STOCKPILE. STOCKPILE SIDE SLOPES SHALL NOT EXCEED A RATIO OF 2:1.
5. IF TOPSOIL IS STORED FOR MORE THAN 21DAYS, IT SHOULD BE TEMPORARY SEEDED, OR COVERED WITH A TARP.

SPREADING THE TOPSOIL

1. PRIOR TO APPLYING TOPSOIL, THE TOPSOIL SHOULD BE PULVERIZED.
2. TO ENSURE BONDING, GRADE THE SUBSOIL AND ROUGHEN THE TOP 3-4 IN. BY DISKING.
3. DO NOT APPLY WHEN SITE IS WET, MUDDY, OR FROZEN, BECAUSE IT MAKES SPREADING DIFFICULT, CAUSES COMPACTION PROBLEMS, AND INHIBITS BONDING WITH SUBSOIL.
4. APPLY TOPSOIL EVENLY TO A DEPTH OF AT LEAST 4 INCHES AND COMPACT SLIGHTLY TO IMPROVE CONTACT WITH SUBSOIL.
5. AFTER SPREADING, GRADE AND STABILIZE WITH SEEDING OR APPROPRIATE VEGETATION.



REVISIONS:  
9/15/2015  
10/22/2015