

## VILLAGE OFFICIALS

**MARK G. KOBASUK**

**TRACY BOONE**

# TERRY FAIRLEY

# SARAH DONOHUE

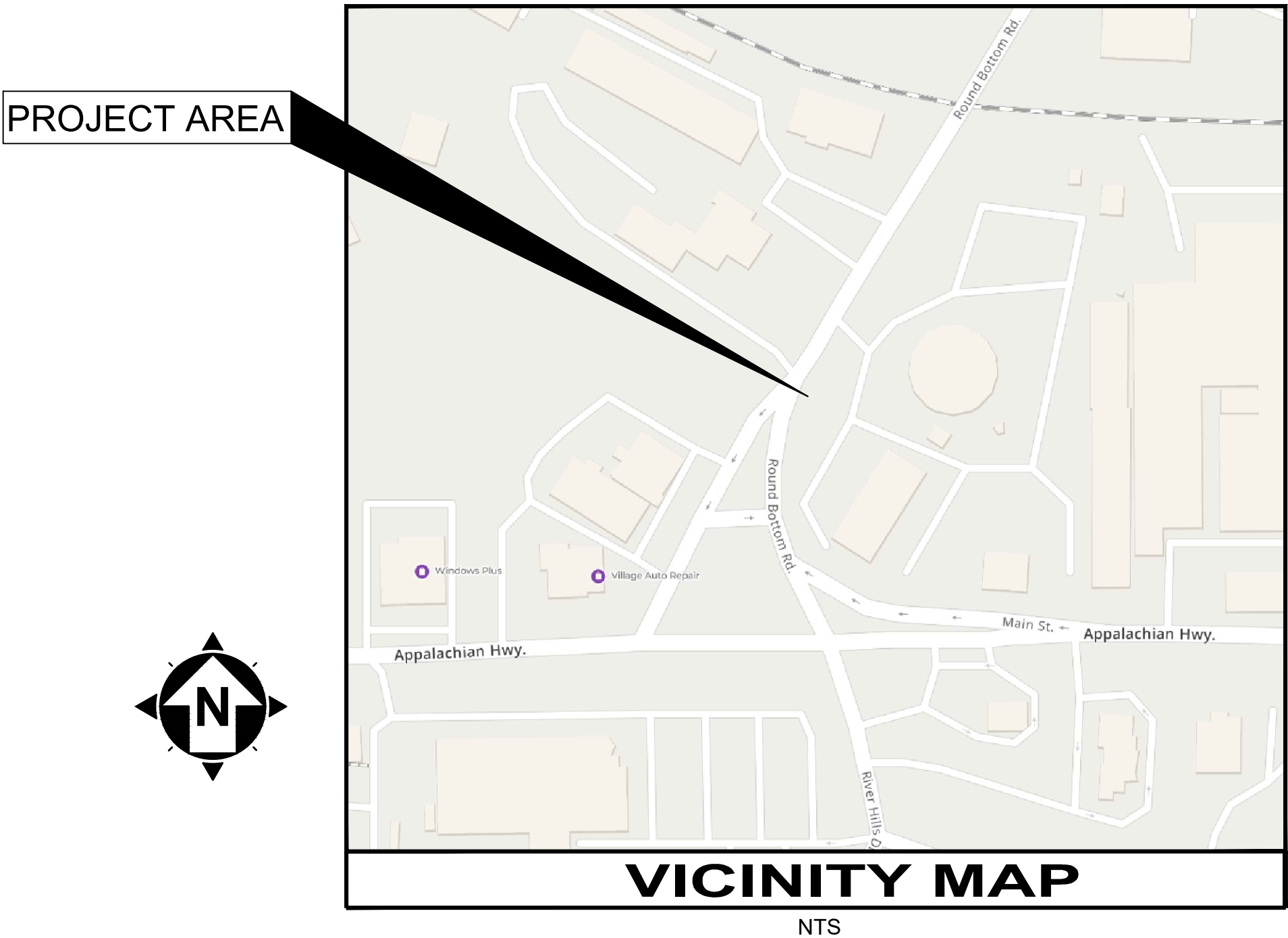
## PEG QUALLEN

# JERRY SCHWAB

# JEFF DRESCHER

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**ODOT STANDARD DRAWINGS**  
THE CURRENT EDITION OF THE ODOT STANDARD  
DRAWINGS ARE HEREBY MADE PART OF THESE PLANS.

<h1>UNDERGROUND UTILITIES</h1>	
<p>Contact Two Working Days Before You Dig</p>	
	
<p>OHIO811, 8-1-1, or 1-800-362-2764 (Non-members must be called directly)</p>	

## PROJECT SPECIFICATIONS

IN GENERAL, THE PROJECT SPECIFICATIONS CONFORM TO THE  
JANUARY 1, 2019 STANDARD SPECIFICATIONS OF THE STATE OF OHIO,  
DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND  
SUPPLEMENTAL SPECIFICATIONS THERETO.  
THE PROJECT SPECIFICATIONS, UNDER SEPARATE COVER,  
PREPARED BY CT CONSULTANTS SHALL GOVERN ALL  
WORK AND MATERIALS FOR THIS PROJECT.

APPROVED FOR CONSTRUCTION BY:

---

CHUCK MORGAN, DIRECTOR OF PUBLIC WORKS

DATE

ERIC MORRIS, P.E. #E-67084

DATE

<div>ROUND BOTTOM ROAD DRYWELL</div>		<div>TITLE SHEET</div>				ISSUE FOR:	BID	NO	REVISION	DATE
						ISSUE DATE:	04/24/2025			
						SCALE:	NTS			
						DESIGNED BY:	EMOR			
						DRAWN BY:	EMOR			
						CHECKED BY:	FTWE			
PROJECT NO.		241457								
DISCIPLINE		CIVIL								
SHEET NAME		C1.0 TITLE								
SHEET									OF	
1									4	

GENERAL NOTES

MAINTAINING ADJACENT STREET TRAFFIC

THE CONTRACTOR SHALL MAINTAIN TRAFFIC TO ALL ROADWAYS INTERSECTING THE CONSTRUCTION AREAS.

OPEN TRENCHES

ALL OPEN TRENCHES FOR STORM SEWERS, WATERMAINS, ETC., SHALL BE PROPERLY DELINEATED FROM THE TRAVELED ROADWAY BY REFLECTIVE DRUMS. TRENCHES SHALL EITHER BE BACKFILLED OR COVERED FOR ANY EXTENDED PERIODS OF NO CONSTRUCTION IN ORDER TO MAINTAIN CONTINUOUS TWO-WAY TRAFFIC, PART WIDTH CONSTRUCTION AND OFF PEAK TRAFFIC VOLUME PERIODS (SEE NOTE "TIME RESTRICTIONS") SHALL BE UTILIZED TO CONSTRUCT ANY REQUIRED UTILITY CROSSEOVERS, LATERALS, OR CATCH BASIN LEADS WITHIN THE TRAVELED ROADWAY.

CONSTRUCTION STIPULATION

- A. THE CONTRACTOR SHALL NOT STORE MATERIALS AND EQUIPMENT, OPERATE EQUIPMENT ON OR OVER PROPERTY OTHER THAN THE PUBLIC RIGHT-OF-WAY OR AREAS WITHIN THE TEMPORARY CONSTRUCTION EASEMENT THAT IS PART OF THE PROJECT CONSTRUCTION.
- B. THE CONTRACTOR SHALL SUBMIT, IN WRITING, A SCHEDULE OF OPERATIONS TO THE ENGINEER AND RECEIVE APPROVAL BEFORE STARTING WORK ON THIS PROJECT.
- C. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ORGANIZE THE WORK IN SUCH A MANNER TO PROVIDE THE MOST SAFETY WITH THE LEAST INCONVENIENCE TO THE PUBLIC.

MATERIALS AND SPECIFICATIONS

IN GENERAL, UNLESS SPECIFICALLY SET FORTH HEREIN, THE WORK AND MATERIALS SHALL CONFORM TO THE APPLICABLE DIVISIONS AND PARAGRAPHS OF THE MOST CURRENT EDITION OF THE:

STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS

UNLESS OTHERWISE SPECIFIED, ALL MATERIALS SHALL BE NEW AND BOTH WORKMANSHIP AND MATERIALS SHALL BE OF PREMIUM QUALITY, PROPER AND SUFFICIENT FOR THE PURPOSE CONTEMPLATED. THE CONTRACTOR SHALL FURNISH, IF SO REQUIRED, SATISFACTORY EVIDENCE AS TO TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP.

ALL ITEMS OF EQUIPMENT AND/OR MATERIAL PROPOSED BY THE CONTRACTOR FOR SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER IN WRITING AND SHALL BE EQUAL OR SUPERIOR TO THE ITEMS SPECIFIED IN THE CONTRACT DOCUMENTS. IF SAID SUBSTITUTION PROPOSED BY THE CONTRACTOR FOR A SPECIFIED ITEM REQUIRES ENGINEERING REVISIONS, THE TOTAL EXPENSE OF SAID REVISIONS SHALL BE PAID BY THE CONTRACTOR.

ANY ITEMS OF LABOR AND MATERIALS REQUIRED BUT NOT SHOWN AS A SEPARATE PAY ITEM IN THE PROPOSAL SHALL BE FURNISHED AND INSTALLED AS INCIDENTAL TO THE CONTRACT, EXCEPT AS NOTED IN THE PLANS AND SPECIFICATIONS.

PERMITS

THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL CHARGES AND FEES AS MAY BE NECESSARY AND REQUIRED BY THE VILLAGE OR STATE.

RESPONSIBILITY

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PERFORM HIS WORK IN SUCH A MANNER AS NOT TO DAMAGE OR DESTROY ANY EXISTING FEATURE, (I.E. EXISTING INLETS, CONDUITS, ETC.) WHICH IS NOT MARKED FOR REPLACEMENT OR REMOVAL. IF ANY SUCH DAMAGE DOES OCCUR DUE TO THE OPERATIONS OF THE CONTRACTOR, HE SHALL REPLACE THE DAMAGED PORTION AT HIS EXPENSE.

THE CONTRACTOR SHALL EXERCISE DUE CARE DURING CONSTRUCTION SO AS NOT TO DESTROY ANY TREES, PLANTS, SHRUBS OR STRUCTURES OUTSIDE OF THE INDICATED WORK LIMITS AND THOSE NOT SPECIFICALLY MARKED FOR REMOVAL OR RELOCATION WITHIN THE WORK LIMITS.

IN SOME INSTANCES, THE CONTRACTOR WILL BE REQUIRED TO EXCAVATE UNDER AND AROUND THE EXISTING UTILITIES. EXTREME CARE SHOULD BE USED NOT TO DAMAGE THE UTILITY DURING THIS OPERATION.

WATER POLLUTION, SOIL EROSION AND SILTATION CONTROL

THE CONTRACTOR SHALL TAKE EXTREME CARE AND UTILIZE BEST MANAGEMENT PRACTICES TO CONTROL SEDIMENT AND EROSION DURING THE PROJECT AND TO PREVENT UNNECESSARY EROSION, WATER POLLUTION AND SILTATION AT ALL POINTS OF THE PROJECT. TEMPORARY SEEDING AND MULCHING; INLET PROTECTION; STRAW BALES; SLOPE DRAINS, ETC., SHALL BE USED AS NECESSARY OR AS DIRECTED BY THE VILLAGE, THE COST OF WHICH SHALL BE INCIDENTAL TO THE OVERALL CONTRACT PRICE.

EROSION AND DUST CONTROL

THE CONTRACTOR SHALL TAKE EXTREME CARE TO PREVENT UNNECESSARY EROSION AT ALL POINTS OF THE PROJECT.

DUST SHALL BE KEPT TO A MINIMUM. COST OF EQUIPMENT, WATER, LABOR AND MATERIAL, ETC. REQUIRED TO PERFORM DUST CONTROL SHALL BE INCIDENTAL TO THE OVERALL BID PRICE.

TESTING

THE CONTRACTOR SHALL INCLUDE THE COST OF ALL REQUIRED TESTS IN THE UNIT PRICE BID FOR THE PERTINENT ITEM AND NO SEPARATE COMPENSATION IS TO BE MADE FOR SAID TESTING.

UTILITIES

UTILITIES DATA HAS NOT BEEN VERIFIED BY THE ENGINEER. THE ENGINEER OR THE OWNER IS NOT RESPONSIBLE OR LIABLE FOR DATA SUPPLIED BY OTHERS.

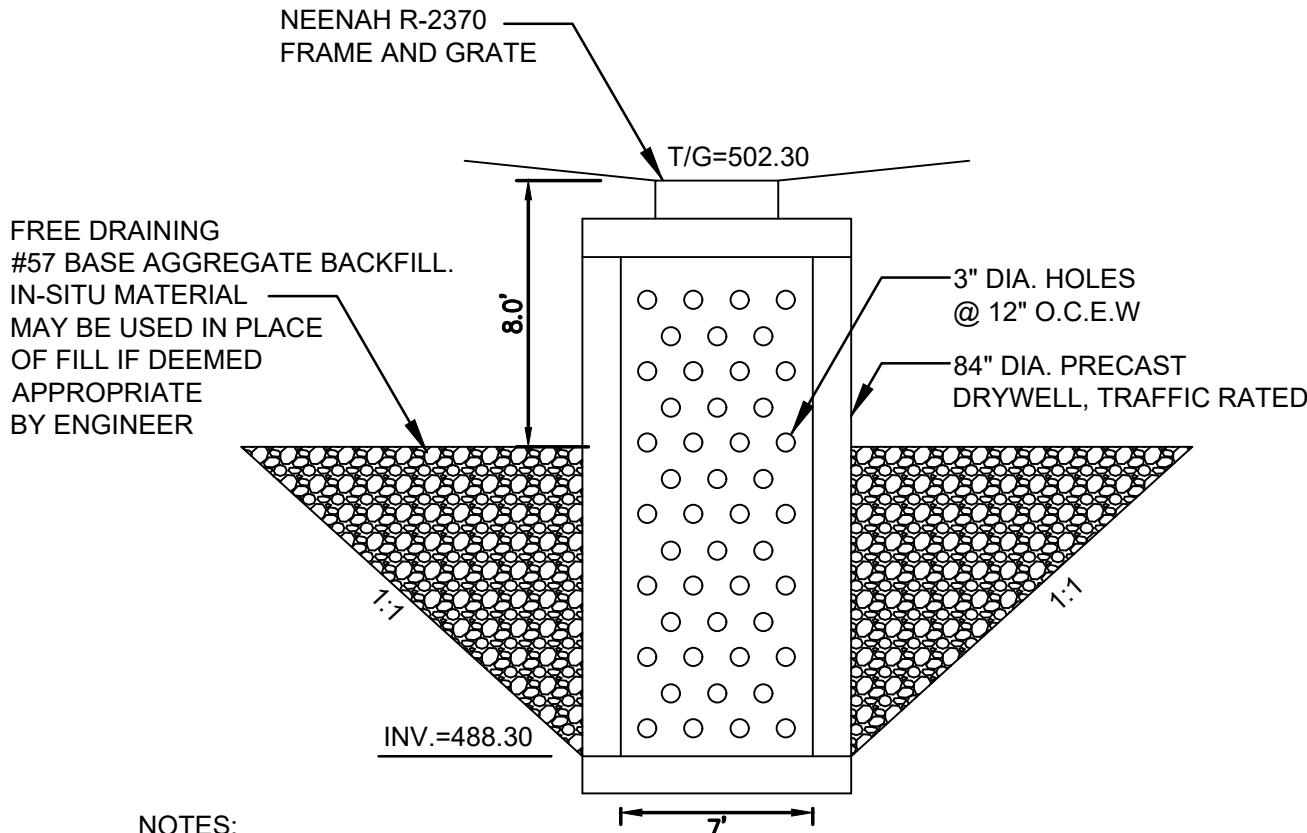
WITHIN 10 DAYS OF THE AWARD OF THE CONTRACT, THE OWNER SHALL NOTIFY ALL UTILITIES OF THE NAME, ADDRESS AND PHONE NUMBER OF THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE REGISTERED UNDERGROUND UTILITY PROTECTION SERVICE AND NON-MEMBER OWNERS OF THE STARTING DATE AT LEAST TWO WORKING DAYS PRIOR TO STARTING WORK. THE UTILITY SHALL MARK, STAKE OR OTHERWISE DESIGNATE THE LOCATION OF THE UNDERGROUND FACILITIES WITHIN 48 HOURS OF RECEIVING THE CONTRACTORS NOTICE OF A STARTING DATE. THE MARKING OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION.

DURING CONSTRUCTION, THE CONTRACTOR SHALL REPORT IMMEDIATELY TO THE OWNERS OF THE UNDERGROUND FACILITIES ANY BREAK OR LEAK IN THE FACILITIES, OR ANY DENT, GOUGE, GROOVE OR OTHER DAMAGE. THE CONTRACTOR SHALL NOTIFY NEARBY OCCUPANTS OF ANY EMERGENCY SITUATION THAT MAY ARISE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL UTILITY ACTIVITIES AND SCHEDULES.

PROJECT SIGNAGE

CONTRACTOR SHALL INSTALL A PROJECT SIGN (WITH SLFRF FUNDING LISTED) ON THE NORTH BOUND AND SOUND BOUND APPROACH TO THE PROJECT. COORDINATE SIGN LOCATIONS WITH THE ENGINEER AND HAMILTON COUNTY MAINTENANCE DEPARTMENT.

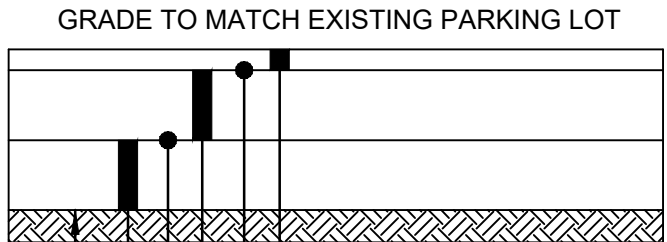


NOTES:

- 1.) WRAP DRYWELL SIDES AND BOTTOM IN NON-WOVEN POROUS POLYPROPYLENE FILTER FABRIC US FABRICS "US 160NW" NONWOVEN GEOTEXTILE OR APPROVED EQUAL. FABRIC WRAP AND INSTALLATION SHALL BE INCIDENTAL TO ITEM 611 DRYWELL.
- 2.) DRYWELL SHALL HAVE A CLOSED BOTTOM AND BE BUILT IN ACCORDANCE WITH ASTM C478
- 3.) CONCRETE SHALL BE 5000 PSI MIN @ 28 DAYS WITH 5%-8% AIR ENTRAINMENT.

ITEM 611 - TYPICAL DRYWELL DETAIL

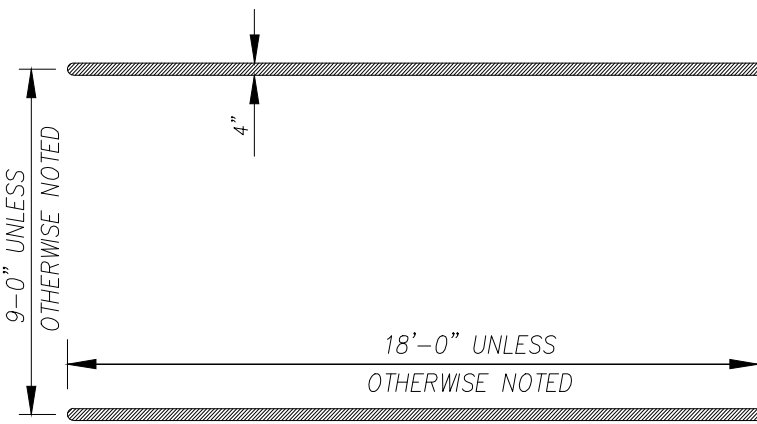
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- ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22 (1-1/2")
- ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE (@ 0.06 Gals/SY)
- ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE
- TYPE 2, PG64-22 (6") PLACE IN TWO 3" LIFTS
- ITEM 408 - PRIME COAT (@ 0.04 Gals/SY)
- 6" ITEM 304 AGGREGATE BASE
- ITEM 204 - SUBGRADE COMPACTION (INCIDENTAL TO ITEM 441)

ITEM 441 - ASPHALT PAVEMENT SECTION

NTS



STRIPING SHALL BE ITEM 642 TRAFFIC PAINT (WHITE)

ITEM 644 - PARKING STRIPING DETAIL

NTS

ROUNDBOTTOM ROAD DRYWELL  
VILLAGE OF NEWTOWN  
HAMILTON COUNTY, OHIO

NOTES AND DETAILS

PROJECT NO.

241457

DISCIPLINE

CIVIL

SHEET NAME

C2.0 NOTES

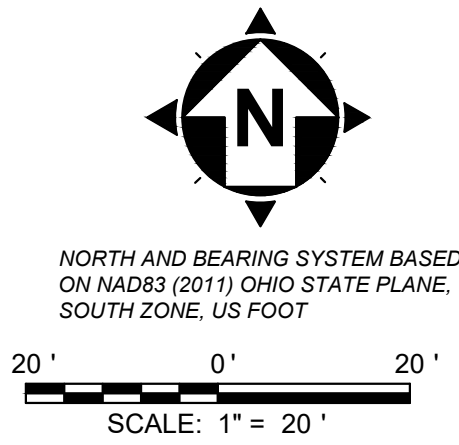
SHEET

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OF

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HATCH LEGEND

REMOVE EXISTING ASPHALT FOR CONSTRUCTION. INSTALL 7.5" PROPOSED HEAVY DUTY ASPHALTIC PAVEMENT WITH 8" GRANULAR BASE AFTER DRYWELLS HAVE BEEN INSTALLED AND INSPECTED. SEE DETAIL ABOVE FOR PAVEMENT SECTION.

RE-STRIPE PARKING SPACES, SEE DETAIL BELOW.

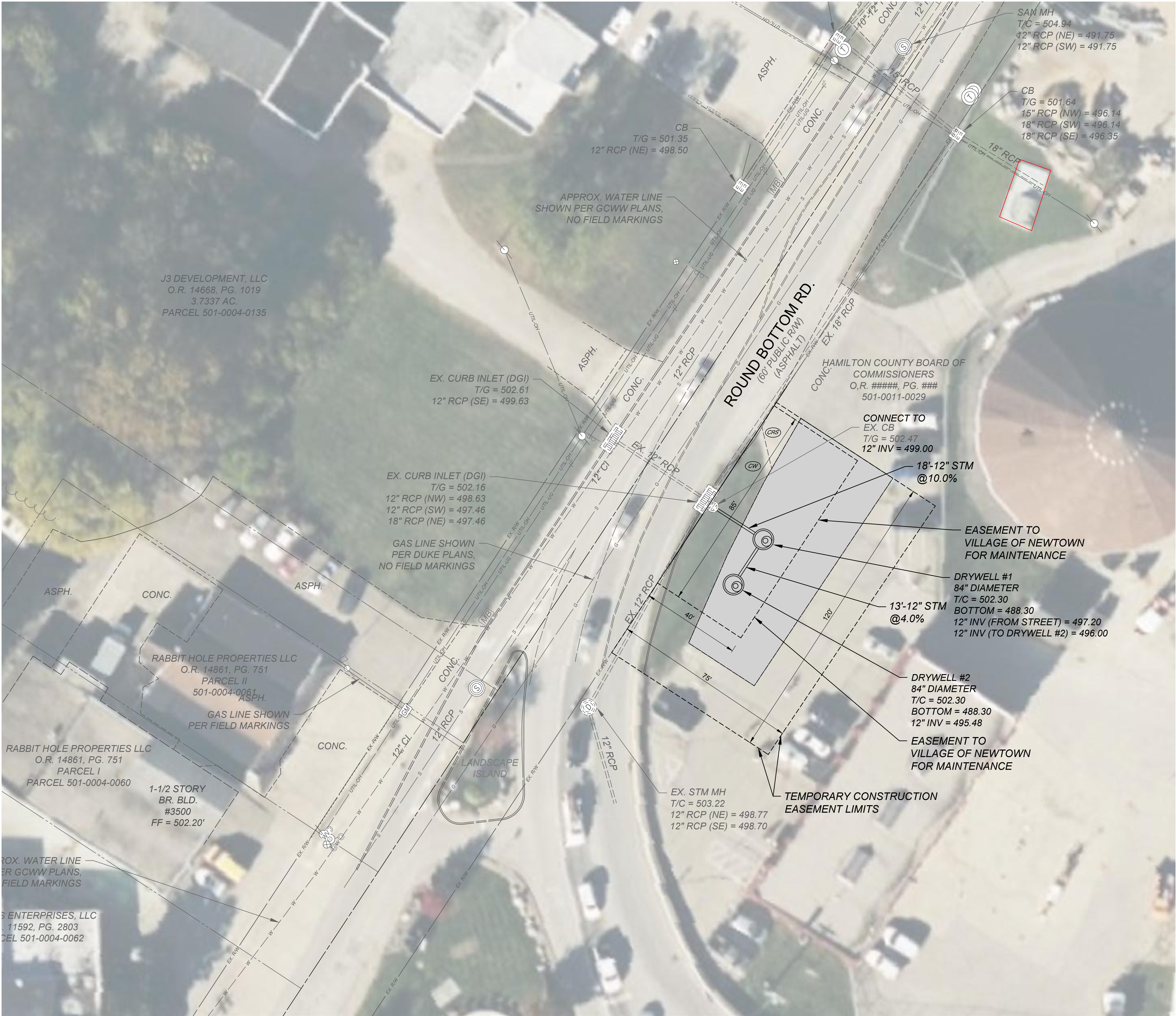
SYMBOL LEGEND

CONCRETE WASHOUT LOCATION  
SEE DETAILS SHT C4.0

CONSTRUCTION ROAD STABILIZATION  
SEE DETAILS SHT C4.0

CW

CRS



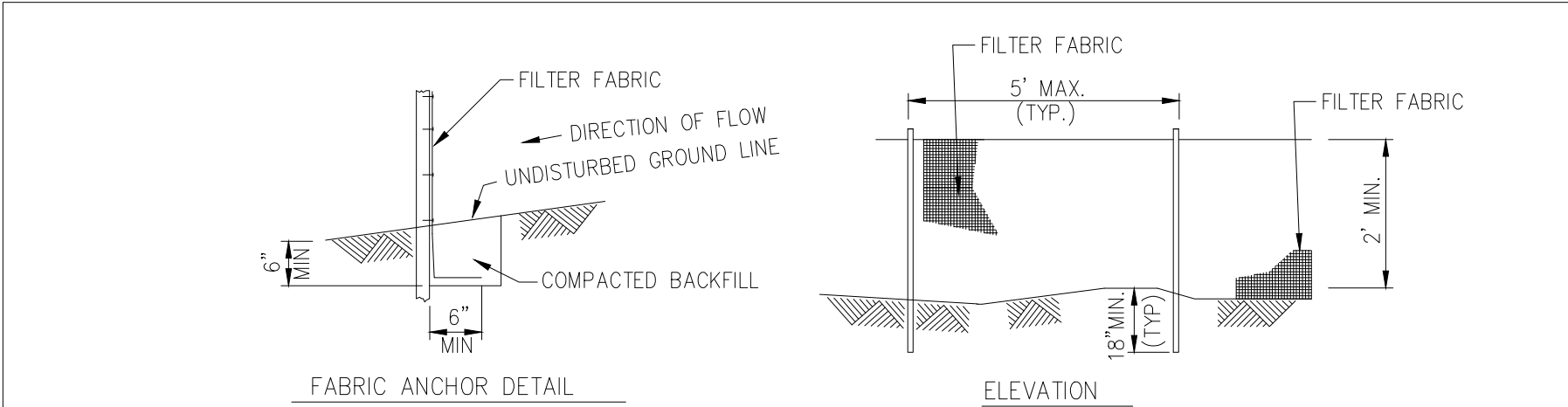
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SCALE:	1" = 20'			
DESIGNED BY:	EMOR			
DRAWN BY:	EMOR			
CHECKED BY:	FTWE			

ROUND BOTTOM ROAD DRYWELL  
VILLAGE OF NEWTOWN  
HAMILTON COUNTY, OHIO

PLAN

PROJECT NO. 241457	
DISCIPLINE CIVIL	
SHEET NAME C3.0 PLAN	
SHEET 3	OF 4



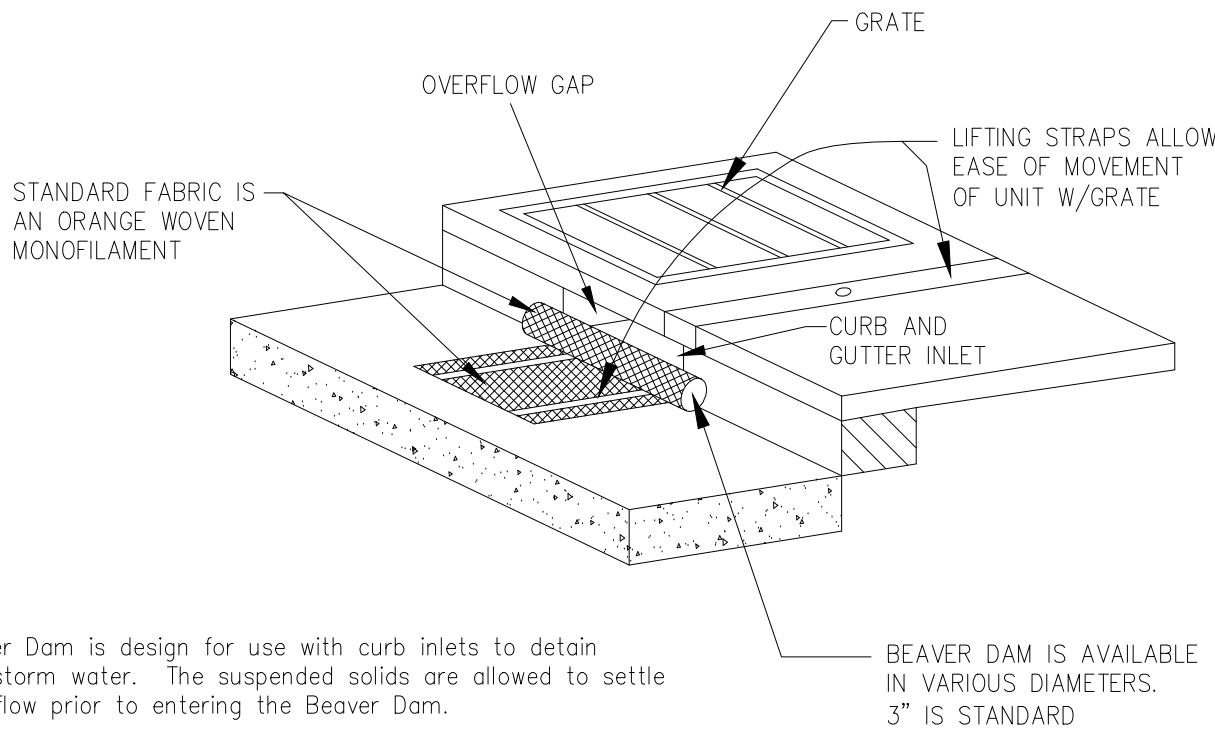


NOTES

1. TEMPORARY SEDIMENT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK IN THE AREA TO BE PROTECTED. THEY SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
2. FILTER FABRIC SHALL MEET THE REQUIREMENTS OF MATERIAL SPECIFICATION 592 GEOTEXTILE TABLE 1 OR 2, CLASS I WITH EQUIVALENT OPENING SIZE OF AT LEAST 30 FOR NONWOVEN AND 50 FOR WOVEN.
3. FENCE POSTS SHALL BE EITHER STANDARD STEEL POST OR WOOD POST WITH A MINIMUM CROSS-SECTIONAL AREA OF 3.0 SQ. IN.

PERIMETER SILT FENCE DETAIL

SCALE: NOT TO SCALE



The patented Beaver Dam is design for use with curb inlets to detain sediment – laden storm water. The suspended solids are allowed to settle out of the slowed flow prior to entering the Beaver Dam.

INSTALLATION

1. Stand the grate on end.
2. Slide the Beaver Dam bag on with the Dam on top of the grate.
3. Pull the excess down.
4. Lay the unit on its side.
5. Carefully tuck the flap in.
6. Press the Velcro strips together.
7. Install the unit making sure the front edge of the grate is inserted in the frame first, then lower it back into place.
8. Press the Velcro dots together that are located under the straps to hold the straps to the surface of the unit.

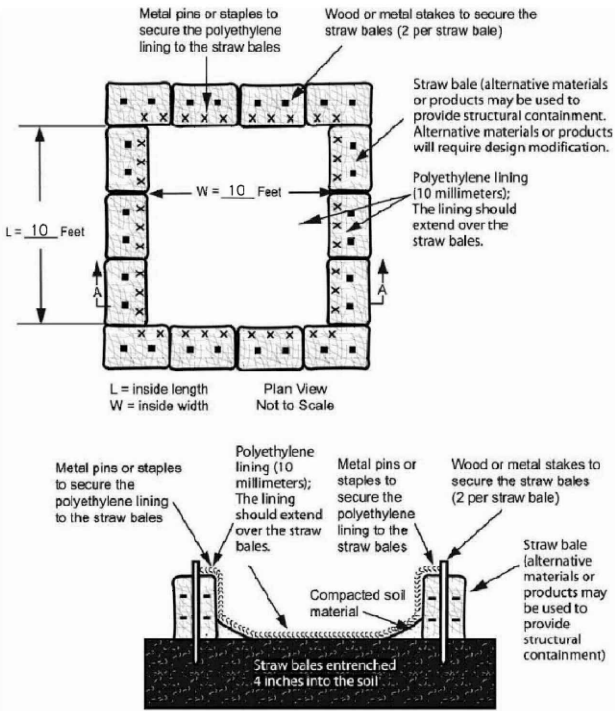
INLET INSPECTION

To inspect inlet, remove Beaver Dam with grate inside, inspect curb inlet/catch basin and replace Beaver Dam into grate from end against curb openings.

Ponding is likely if sediment is not removed regularly. The Beaver Dam must never be used where overflow may endanger an exposed slope. The Beaver Dam is not intended for any other use and should not be used for any other purpose.

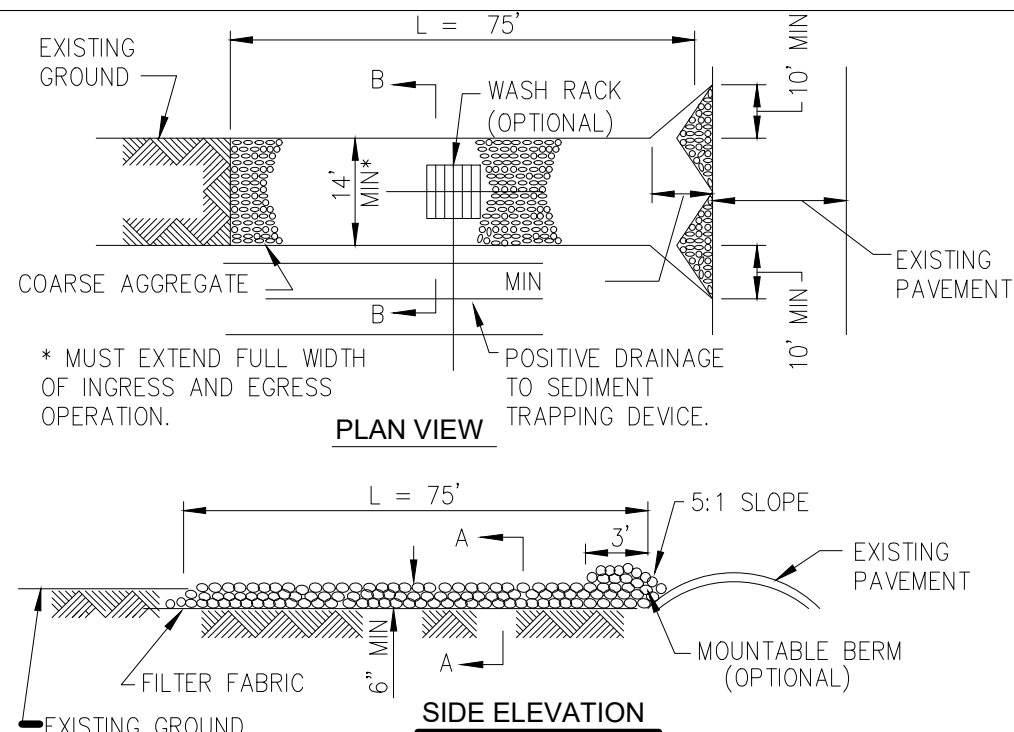
INLET FILTER DETAIL

SCALE: NOT TO SCALE



CONCRETE WASHOUT DETAIL

SCALE: NOT TO SCALE



NOTES

1. FILTER FABRIC SHALL MEET THE REQUIREMENTS OF MATERIAL SPECIFICATION 592 GEOTEXTILE, TABLE I OR 2, CLASS I, II OR IV AND SHALL BE PLACED OVER THE CLEARED AREA PRIOR TO THE PLACING OF ROCK.
2. ROCK OR RECLAIMED CONCRETE SHALL MEET ONE OF THE FOLLOWING IDOT COARSE AGGREGATE GRADATION, CA-1, CA-2, CA-3 OR CA-4 AND BE PLACED ACCORDING TO CONSTRUCTION SPECIFICATION 25 ROCKFILL USING PLACEMENT METHOD I AND CLASS III COMPACTION.
3. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHALL BE CONSTRUCTED ACCORDING TO MANUFACTURERS SPECIFICATIONS.
4. IF WASH RACKS ARE USED THEY SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

STABILIZED CONSTRUCTION ENTRANCE PLAN

SCALE: NOT TO SCALE

PERMANENT SEEDING

Permanent seeding includes the seedbed preparation, seeding, and the establishment of perennial vegetation used to permanently stabilize soil, prevent sediment pollution, reduce runoff by promoting infiltration, and provide storm water quality benefits offered by dense vegetation.

CONDITIONS WHERE PRACTICE APPLIES

Permanent seeding should be applied to:

- Areas or portions of construction-sites which can be brought to final grade. Applications of permanent seeding should not be delayed while construction on limited portions of the site being completed.
- Areas on that will be regraded, but will be dormant for a year or more.

PLANNING CONSIDERATIONS

Healthy dense turf will have a dramatic long lasting effect on stormwater quality as well as promoting infiltration and reducing the amount of runoff. To establish quality vegetation, careful preparation of the seedbed, soil, even subsoil is highly encouraged.

**Soil Compaction**—Stormwater quality and the amount of runoff both vary significantly with soil compaction. Non-compacted soils improve stormwater by promoting:

- dense vegetation.
- high infiltration & lower runoff rates.
- pollutant filtration, deposition & absorption,
- beneficial biologic activity in the soil.

Construction activity can cause highly compacted soils but also offers the opportunity to improve soil condition. The best time for improving soil condition is during the establishment of permanent vegetation. It is highly recommended that subsoilers, plows or others implements be specified as part of final seedbed preparation. Use discretion in slip-prone areas.

**Minimum Soil Conditions**—Vegetation cannot be expected to stabilize soil that is unstable due to its texture, structure, water movement or excessively steep slope. The following minimum soil conditions are needed for the establishment and maintenance of a long-lived vegetation cover. If these conditions cannot be met, see the Standards and Specifications for Resolving. Soils must include enough fine-grained material to hold at least a moderate amount of available moisture. The soil must be free from material that is toxic or otherwise harmful to plant growth.

Permanent Seeding			
Seed Mix	Seeding Rate		Notes:
	lb./ac.	lb./1,000 ft <sup>2</sup>	
General Use			
Creeping Red Fescue	20-40	1/2-1	
Ryegrass	10-20	1/4-1/2	
Kentucky Bluegrass	10-20	1/4-1/2	
Tall Fescue	40	1	
Dwarf Fescue	40	1	

Steep Banks or Cut Slopes			
Tall Fescue	40	1	
Crown Vetch	10	1/4	Do not seed later than August
Tall Fescue	20	1/2	
Flat Pea	20	1/2	Do not seed later than August
Tall Fescue	20	1/2	

Road Ditches and Swales			
Tall Fescue	40	1	
Dwarf Fescue	90	2 1/4	
Kentucky Bluegrass	5		

Lawns			
Perennial Ryegrass	60	1 1/2	For shaded areas
Kentucky Bluegrass	60	1 1/2	
Creeping Red Fescue	60	1 1/2	
Kentucky Bluegrass	60	1 1/2	
Note: Other approved seed species may be substituted.			

Maintenance for Permanent Seedings					
Fertilization and Mowing					
Mixture	Formula	lb./ac.	lb/1,000 sq. ft.	Time	Mowing
Creeping Red Fescue Ryegrass Kentucky Bluegrass	10-10-10	500	12		Not closer than 3"
Tall Fescue	10-10-10	500	12	Fall, yearly or as needed	Not closer than 4"
Dwarf Fescue	10-10-10	500	12		Not closer than 2"
Crown Vetch Fescue	0-20-20	400	10	Spring, yearly following establishment and every 4-7 yrs. 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.					

SITE PREPARATION

1. A subsoiler, plow or other implement shall be used to reduce soil compaction and allow maximum infiltration. (Maximizing infiltration will help control both runoff rate and water quality.) Subsoiling should be done when the soil moisture is low enough to allow the soil to crack or fracture. Subsoiling shall not be done on slip-prone areas where soil preparation should be limited to what is necessary for establishing vegetation.
2. The site shall be graded as needed to permit the use of conventional equipment for seedbed preparation and seeding.
3. Resoil shall be applied where needed to establish vegetation.

SEEDBED PREPARATION

1. **Lime**—Agricultural group 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/ac.
2. **Fertilizer**—Fertilizer shall be applied as recommended by a soil test. In lieu of a soil test, fertilizer shall be applied at a rate of 12 lb./1,000 sq. ft. or 500 lb./ac. of 10-10-10 or 12-12-12 analysis.
3. The lime and fertilizer shall be worked into the soil with a disk harrow, spring-tooth harrow, or other suitable field implement to a depth of 3 in. On sloping land the soil shall be worked on the contour.

SEEDING DATES AND SOIL CONDITIONS

Seeding should be done March 1 to May 31 or August 1 to September 30. These seeding dates are ideal but, with the use of additional mulch and irrigation, seedings may be made any time throughout the growing season. Tillage/seedbed preparation should be done when the soil is dry enough to crumble and not form ribbons when compressed by hand. For winter seeding, see the following section on dormant seeding.

MULCHING

1. Mulch material shall be applied immediately after seeding. Seedings made during optimum seeding dates and with favorable soil conditions and on very flat areas may not need mulch to achieve adequate stabilization. Dormant seedings shall be mulched.
2. **Materials**
  - Straw—If straw is used it shall be unrotted small-grain straw applied at the rate of 2 tons/ac. or 90 lb./1,000 sq. ft. (two to three bales). The mulch shall be spread uniformly by hand or mechanically so the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000 sq. ft. sections and spread two 45-lb. bales of straw in each section.
  - Hydroseeder—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 matings applied according to manufacturer's recommendations or wood chips applied at 6 tons/ac.
3. **Straw Mulch Anchoring Methods**
  - Straw mulch shall be anchored immediately to minimize loss by wind or water.
  - Mechanical—A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but, generally, be left longer than 6 in.

SEEDING NOTES

SCALE: NOT TO SCALE

PERMANENT SEEDING, CONTINUED

MAINTENANCE

1. Permanent seeding shall not be considered established for at least 1 full yr. from the time of planting. Seeded areas shall be inspected for failure and vegetation conditions. It may be necessary to irrigate, fertilize, overseed, or reestablish plantings in order to provide permanent vegetation for adequate erosion control.

2. Maintenance fertilization rates shall be established by soil test recommendations or by using the rates shown in the following table.

DORMANT SEEDINGS

1. Seeding shall not be planted from October 1 through November 20. During this period the seeds are likely to germinate but probably will not be able to survive the winter.
2. The following methods may be used for "Dormant Seeding":

- From October 1 through November 20, prepare the seedbed, add the required amounts of lime and fertilizer, then mulch and anchor. After November 20, and before March 15, broadcast the selected seed mixture. Increase the seeding rates by 50% for this type of seeding.
- From November 20 through March 15, when soil conditions permit, prepare the seedbed, lime and fertilize, apply the selected seed mixture, mulch and anchor. Increase the seeding rates by 50% for this type of seeding.
- Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder, or hydro-seeder (slurry may include seed and fertilizer) on a firm, moist seedbed.
- Where feasible, except when a cultipacker type seeder is used, the seedbed should be firmed following seeding operations with a cultipacker, roller, or light drag. On sloping land, seeding operations should be on the contour where feasible.
- 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.
- Asphalt Emulsion—Asphalt shall be applied as recommended by the manufacturer or at the rate of 160 gal./ac.
- Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri-Tac), DAC-70, Petroset, Terra Tack or equal may be used at rates recommended by the manufacturer.
- Wood Cellulose Fiber—Wood cellulose fiber binder shall be applied at a net dry weight of 750 lb./ac. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lb./100 gal. of wood cellulose fiber.

IRRIGATION

1. Permanent seeding shall include irrigation to establish vegetation during dry or hot weather or on adverse site conditions as needed for adequate moisture for seed germination and plant growth.
2. Excessive irrigation rates shall be avoided and irrigation monitored to prevent erosion and damage from runoff.

TEMPORARY SEEDING

Temporary seeding provides erosion control on areas in between construction operations.

Grasses which are quick growing are seeded and usually mulched to provide prompt, temporary soil stabilization. It effectively minimizes the area of a construction-site prone to erosion and should be used everywhere the sequence of construction operations allows vegetation to be established.

CONDITIONS WHERE PRACTICE APPLIES

Temporary seeding should be applied on exposed soil where additional work (grading, etc.) is not scheduled for more than 21 days. Permanent seeding should be applied if the areas will be idle for more than a year.

PLANNING CONSIDERATIONS

This practice has the potential to drastically reduce the amount of sediment eroded from a construction-site. Control efficiencies greater than 90% will be achieved with proper applications of temporary seeding. Because practices used to trap sediment are usually much less effective, temporary seeding is to be used even on areas where runoff is treated by sediment trapping practices. Because temporary seeding is highly effective and practical on construction-sites, its liberal use is highly recommended.

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 21 days or more. These idle areas should be seeded as soon as possible after grading or shall be seeded within 7 days. Several applications of temporary seeding are necessary on typical construction projects.
3. The seedbed should be pulverized and loose to ensure the success of establishing vegetation. However, temporary seeding shall not be postponed if ideal seedbed preparation is not possible.
4. Soil Amendments—Applications of temporary vegetation shall establish adequate stands of vegetation 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.

Temporary Seeding Species Selection			
Seeding Dates	Species	Lb./1,000 ft. <sup>2</sup>	Per Acre
March 1 to August 15	Oats	3	4 bushel
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
August 16 to November 1	Perennial Ryegrass	1	40 lb.
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
November 1 to Spring Seeding	Rye	3	2 bushel
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
November 1 to Spring Seeding	Wheat	3	2 bushel
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
November 1 to Spring Seeding	Perennial Ryegrass	1	40 lb.
	Tall Fescue	1	40 lb.
	Annual Ryegrass	1	40 lb.
Note: Other approved seed species may be substituted.			

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 areas may not need mulch to achieve adequate stabilization.
2. **Materials**
  - Straw—If straw is used, it shall be unrotted small-grain straw applied at the rate of 2 tons/ac. or 90 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.
  - Hydroseeder—If wood cellulose fiber is used, it shall be used at 2,000 lb./ac. or 46 lb./1,000 sq. ft.
  - Other—Other acceptance mulches include mulch matings 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 concentration runoff and on critical slopes.
  - Asphalt Emulsion—Asphalt shall be applied as recommended by the manufacturer or at the rate of 160 gal./ac.
  - Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Tack or equal may be used at rates recommended by the manufacturer.
  - Wood-Cellulose Fiber—Wood-cellulose fiber binder shall be applied at a net dry weight of 750 lb./ac. The wood-cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lb./100 gal.

DATE

REVISION

NO

BID

ISSUE FOR:

ISSUE DATE:

SCALE:

DESIGNED BY:

DRAWN BY:

CHECKED BY:

ROUNDBOTTOM ROAD DRYWELL

EROSION CONTROL DETAILS

PROJECT NO.

241457

DISCIPLINE

CIVIL

SHEET NAME

C4.0 EROS

SHEET

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