

SITE INFORMATION:

Legal Description:	Lot 5, Crossroads Development
Current Use:	Vacant
Proposed Use:	Commercial

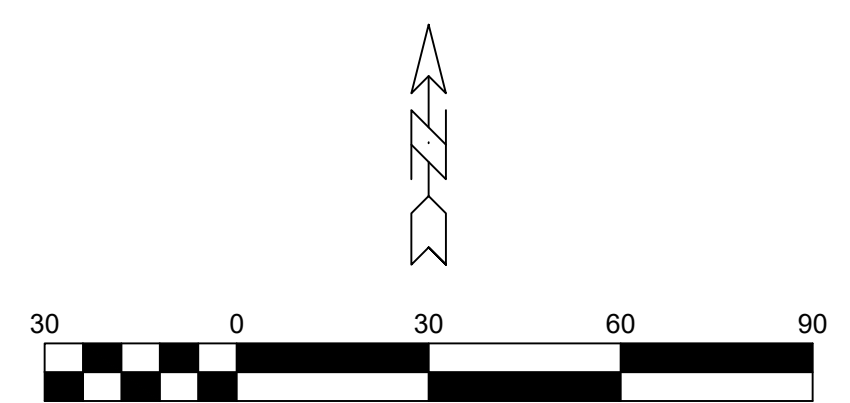
Site Areas		
Parcel Area:	211,562 SF	(4.86 Acres)
Total Existing Impervious:	0 SF	(0%)
Proposed Building Area:	35,640 SF	
Proposed Pavement Area:	49,912 SF	
Proposed Sidewalk Area:	600 SF	
Total Proposed Impervious:	86,152 SF	(40.7%)
Total Proposed Greenspace:	125,410 SF	(59.3%)

PARKING CALCULATIONS
 55 Stalls Minimum for Trade & Contractor Use
 (One per employee plus one per 500 SF of sales area)
 Parking Stalls Proposed 57

PROPERTY OWNER:
 Gene Frederickson Trucking & Excavating, Inc.
 Troy Frederickson
 4450 Fieldcrest Rd.
 Kaukauna, WI 54130
 Telephone: (920) 585-7884
 Email: troy@gfexc.com

LEGEND

FO	Underground Fiber Optic	Sanitary MH / Tank / Base	CATV Pedestal
OH	Overhead Electric Lines	Hydrant	Benchmark
San	Sanitary Sewer	Utility Valve	Sign
G	Underground Gas Line	Utility Meter	Asphalt Pavement
	Culvert	Utility Pole	Concrete Pavement
800	Index Contour	Light Pole / Signal	Gravel
799	Intermediate Contour	Guy Wire	
	Delineated Wetlands	Telephone Pedestal	
	Proposed Storm Sewer	Ex Spot Elevation	
	Proposed Sanitary Sewer	Proposed Sanitary Manhole	Proposed Reducer
	Proposed Water Main	Proposed Storm Manhole	Proposed Plug
	Proposed Contour	Proposed Curb Inlet	Proposed Water MH
	Proposed Swale	Prop. Catch Basin / Yard Drain	Proposed Tee
	Proposed Culvert	Proposed Endwall	Proposed Cross
	Proposed Building	Proposed Hydrant	Proposed 90° Bend
	Proposed Asphalt	Proposed Valve	Proposed 45° Bend
	Proposed Concrete	Proposed Curb Stop	Proposed 22.5° Bend
	Proposed Gravel	Proposed Cleanout	



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 Civil Engineers and Land Surveyors
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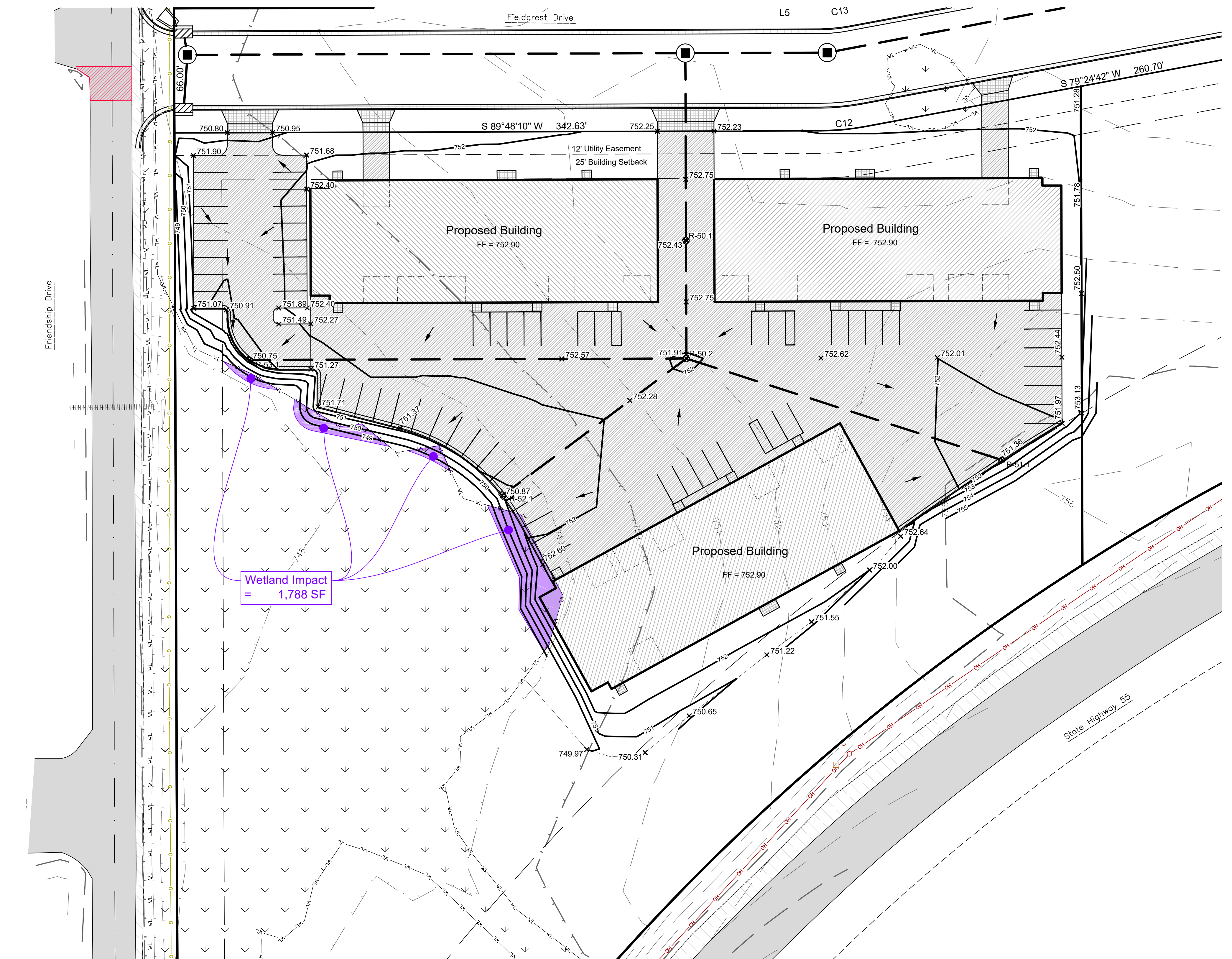
SITE PLAN

Crossroads Development - Lot 5
 Village of Harrison, Calumet County, WI
 For: Gene Frederickson Trucking & Excavating, Inc.

SHEET INDEX:

Sheet	Page
Site Plan	C1.0
Drainage and Grading Plan	C1.2
Erosion & Sediment Control Plan	C1.3
Utility Plan	C1.4
Vehicle Maneuvering Detail	C1.5
Construction & Erosion Control Details	C2.1

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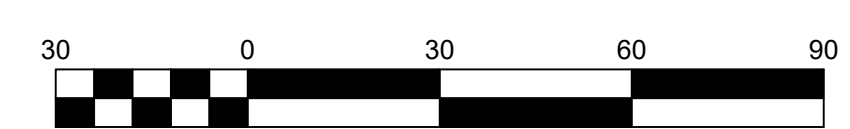
BENCHMARKS (NAVD88)

BM 0	NGS Benchmark PID and Designation - DE7575 Elev 749.25
BM 1	Fire Hydrant, Tag Bolt ±415' East of intersection of Freindship Dr and Calumet St on north R/W Elev 749.16
BM 2	Fire Hydrant, Tag Bolt Northeast Corner of intersection of Fieldcrest Dr and Calumet St Elev 742.53
BM 3	Fire Hydrant, Tag Bolt ±410' North of intersection of Friendship Dr and WI-55 on west R/W Elev 750.24

- NOTES:**
- Existing utilities shown are indicated in accordance with available records and field measurements. The contractor shall be responsible for obtaining exact locations & elevations of all utilities, including sewer and water from the owners of the respective utilities. All utility owners shall be notified by the contractor 72 hours prior to excavation. Contact Digger's Hotline (1-800-242-8511) for exact utility locations.
 - The Contractor shall verify all staking and field layout against the plan and field conditions prior to constructing the work and immediately notify the Engineer of any discrepancies.
 - The contractor shall minimize the area disturbed by construction as the project is constructed. Disturbed areas shall be seeded as soon as final grade is established. Contractor shall replace topsoil and then seed, fertilize and mulch all lawn areas within 1 week of topsoil placement.
 - Contractor shall remove all excess materials from the site. Earthwork contractors shall verify topsoil depth.
 - All sediment and erosion control devices and methods shall be in accordance with the Wisconsin DNR Technical Standards.
 - The contractor shall make weekly inspections and inspections within 1 day of any rainfall exceeding 0.5 inches of the sediment and erosion control devices throughout construction. The contractor shall repair or maintain erosion control devices as necessary. The inspection reports shall be made available to the owner at the end of the construction or upon demand during construction.
 - Contractor is responsible for compliance with Department of Safety & Professional Services, Chapter SPS 382, for lateral construction and cleanout locations.
 - Updated survey and title search have not been authorized and the boundary and easements shown may be inaccurate or incomplete.

LEGEND

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OH	Overhead Electric Lines	Hydrant	Benchmark
San	Sanitary Sewer	Utility Valve	Sign
San	Underground Gas Line	Utility Meter	Asphalt Pavement
800	Culvert	Utility Pole	Concrete Pavement
799	Index Contour	Light Pole / Signal	Gravel
798	Intermediate Contour	Guy Wire	Proposed Building
797	Delineated Wetlands	Telephone Pedestal	Proposed Asphalt
608	Proposed Storm Sewer	Ex Spot Elevation	Proposed Concrete
608	Proposed Contour	Proposed Storm Manhole	Proposed Gravel
608	Proposed Swale	Proposed Curb Inlet	
608.73	Proposed Culvert	Prop. Catch Basin / Yard Drain	
608.73 TW	Prop. Flowline Spot Elev.	Proposed Endwall	
608.7	Prop. Top of Walk Elev.	Proposed Rip Rap	
608.7	Existing Grade	Prop. Drainage Direction	
		FF=000.0	
		Prop. Finished Floor Elev.	



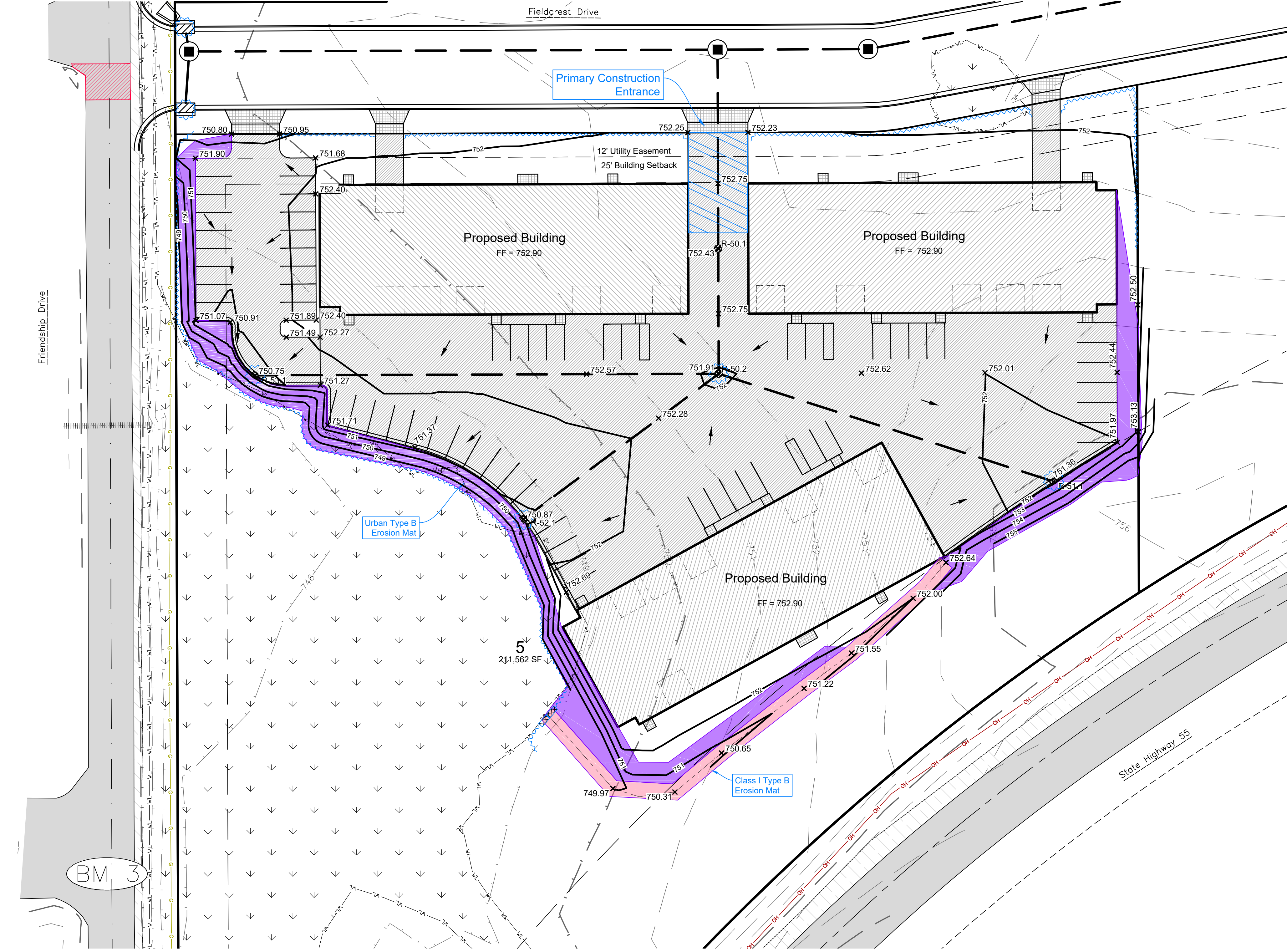
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DRAINAGE & GRADING PLAN

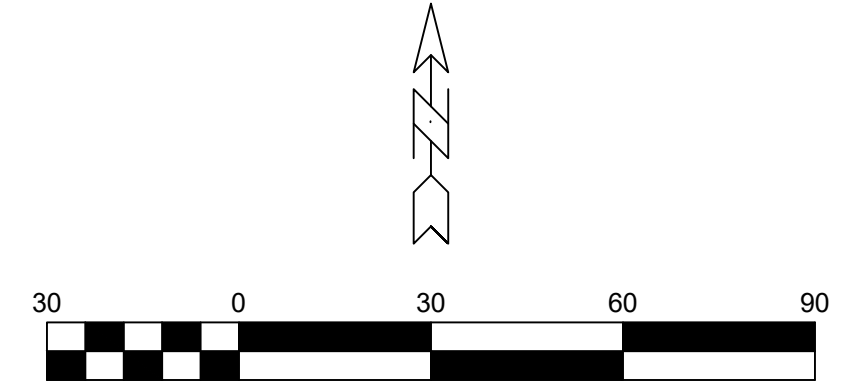
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LEGEND

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	Proposed Contour	Proposed Storm Manhole	Proposed Gravel
	Proposed Swale	Proposed Curb Inlet	
	Proposed Culvert	Proc. Catch Basin / Yard Drain	
	Proposed Silt Fence	Proposed Endwall	
	Prop. Drainage Direction	Proposed Rip Rap	
		Proposed Urban Type B Erosion Mat	
		Proposed Class I Type B Erosion Mat	
		Proposed Class III Type B Erosion Mat	
		Proposed Inlet Protection	
		Type of Inlet Protection	



Planned Sediment and Erosion Control Practices

All erosion control practices shall be in place prior to disturbing the site. All sediment and erosion control devices and methods shall be in accordance with DNR Technical Standards and the WisDOT Erosion Control product acceptability lists (PAL). It is the responsibility of the Contractor to minimize the area disturbed and the duration of the disturbance. Erosion & sediment control measures shall be maintained on a continuing basis until the site is permanently stabilized. All applicable controls must be in place at the end of each work day. All off-site sediment deposits occurring as a result of construction work or a storm event shall be cleaned up at a minimum of the end of each day or as necessary. Flushing shall not be allowed.

- 1) Diverting Flow
 - a) Permanent Diversion - Intended to divert runoff around disturbed areas to a location where the water can be discharged without adversely impacting the receiving area or channel. Permanent diversions will be used to route runoff to the ponds.
 - b) Temporary Diversion - Intended to divert runoff around disturbed areas to a location where the water can be discharged without adversely impacting the receiving area or channel. Unlike a permanent diversion, the temporary diversion will be removed upon the completion of the project. Temporary diversions will be used upslope of any soil piles to reduce the amount of sediment transported. **All diversions shall be installed and maintained in accordance with DNR Technical Standard 1066.**
- 2) Overland Flow
 - a) Silt Fence - Intended to provide a temporary barrier to the transportation of sediment offsite. Silt fence also reduces the velocity of sheet flow, thereby reducing the erosion potential of flowing water. Silt fencing is not to be used in areas of channelized flow and sediment deposits shall be removed when a 6 inch depth is reached. The silt fence shall be repaired or replaced as necessary to maintain a barrier. **All Silt Fence shall be installed and maintained in accordance with DNR Technical Standard 1056.** It will be placed at the following locations:
 - i) along the site boundary where runoff will leave the site.
 - ii) and at the toe of soil piles if the pile will remain in place for more than seven (7) days.
 - b) Sediment Bale Barrier - Intended to intercept and detain small amounts of sediment from construction operations to prevent sediment from leaving the site. Sediment Bale Barriers are not to be used in areas of channelized flow. **All Sediment Bale Barriers shall be installed and maintained in accordance with DNR Technical Standard 1055.** Sediment Bale Barriers may be used in place of silt fence around soil stockpiles.
 - c) Mulching and Erosion Mat - Intended to reduce the amount of erosion caused by raindrop impact, high overland and concentrated flow velocities and assist the establishment of both temporary and permanent vegetation. **All Erosion Mat shall be installed and maintained in accordance with DNR Technical Standards 1052 and 1053 and all Mulching with DNR Technical Standard 1058.** In addition to mulching, Erosion Mat is required per plan with installation per manufacturer specifications.
 - d) Seeding - Intended to provide a reduction of overland flow velocities and stabilize disturbed areas. Seeding will be used on all disturbed areas within seven days of the completion of the activity that will disturb the area. **All seeding shall be in accordance with DNR Technical Standard 1059.** Seed mixture 40 (per WisDOT Specifications, Section 630) shall be applied at 5 pounds per 1000 square feet for permanent seeding prior to September 15th. If required, temporary seeding shall consist of Oats, Rye, Winter Wheat, and/or Annual Ryegrass applied at rates and during the season specified by the Technical Standard but no later than November 1st. Sod placement may occur at anytime sod is available and the sod and soil are not frozen.
- 3) Trapping Sediment in Channelized Flow
 - a) Ditch Checks - Intended to settle suspended sediment in channelized flow by reducing the flow velocity. **All Ditch Checks shall be installed and maintained in accordance with DNR Technical Standard 1062.** Ditch Checks will be used where indicated on the plan as sediment logs. Additional ditch checks may be required in areas where erosion is occurring.
 - b) Sediment Basin - Intended to detain sediment-laden runoff from disturbed areas for a sufficient time to allow the sediment to settle. Once constructed, the proposed pond may function as a sediment basin during the construction of the project in accordance with **WDR Technical Standard 1064.**
- 4) Permanent Channel Stabilization
 - a) Armored Waterway - Intended to establish a non-erosive lining in the channel to prevent erosion. This can be accomplished using riprap. Riprap will be used in the following areas:
 - i) drainage swales and pipe outfalls, as indicated on the plans
 - b) Vegetated Waterway - Intended to establish permanent vegetation to reduce the velocity of concentrated runoff thereby protecting the waterway from erosion. The type of erosion mat used will depend upon the velocity of the runoff in the channel and are specified in accordance with DOT Erosion Control Product Acceptability Lists (PAL). Vegetated waterways will be used in the following areas:
 - i) drainage swales, as indicated on the plans
- 5) Inlet Protection Barriers - Intended to prevent the sedimentation of storm water conveyance structures. **All Inlet Protection Barriers shall be installed and maintained in accordance with DNR Technical Standard 1060.** Structures, inlet protection barriers will be used at all storm sewer inlets as indicated on the plans.
- 6) Stone Tracking Pad - Intended to reduce the amount of sediment transported onto public roads. **The Tracking Pad shall be installed and maintained in accordance with DNR Technical Standard 1057.** A tracking pad will be constructed at the site entrance as indicated on the plan.
- 7) Dewatering BMP - Intended to reduce the amount of sediment conveyed due to dewatering practices. **Dewatering practices require compliance with DNR Technical Standard 1061.** The use of geotextile bags is required to prevent sedimentation with discharge to the adjacent storm water pond. The bags shall meet the requirements of Technical Standard 1061. Upon completion of the dewatering operation, all materials must be disposed of properly in accordance with all state and local requirements.
- 8) Dust Control - Intended to reduce surface to air transport of dust during construction. **Dust control shall be implemented with use of methods provided in DNR Technical Standard 1068.** These methods include the use of polymers, seeding, mulch, and water.
- 9) Waste Material - All onsite waste and construction materials shall be handled and disposed of properly. No pavement material, runoff from concrete washout, or other waste material is allowed to enter the storm sewer system or receiving waters.

Sequence of Construction

- 1) Obtain plan approval and other applicable permits
- 2) Flag work limits. **April 2025**
- 3) Install and maintain all erosion & sediment control measures. **April 2025**
- 4) Utility construction. **May 2025**
- 5) Site grading. **May - June 2025**
- 6) Curb and gutter construction. **May - June 2025**
- 7) Building construction. **June - October 2025**
- 8) Seed and mulch lawn areas (permanent). **No later than September 15, 2025**
- 9) Asphalt paving. **October 2025**
- 10) Remove all temporary measures upon final stabilization of the site.

Note: The dates provided are approximate and subject to weather conditions and overall project schedule. Several work items as listed above may occur simultaneously with others. Sequence of construction is expected to be similar for future phases.

Maintenance Plan

The contractor is responsible for inspection and maintenance of sediment and erosion control measures until the project is completed. The inspections shall be made every seven days or within 24-hours of a rainfall event of 0.50-inch or greater. Any practices that are damaged or not working properly shall be repaired by the end of the day. Accumulated sediment shall be removed when it has reached a height of one-half the height of the structure. In addition, the following measures shall be taken:

- 1) All seeded or sodded areas will be repaired as necessary according to the specifications in the planned practices to maintain a vigorous, dense vegetated cover.
- 2) Remove silt fence and temporary structures only after final stabilization and vegetative cover is established.
- 3) Avoid the use of fertilizers and pesticides in or adjacent to channels or ditches.
- 4) Construction and waste materials shall be properly disposed.

Weekly inspection reports shall be maintained by the contractor. These reports shall document inspections and maintenance performed, the date and time of the inspections, the inspector's name, and the status of construction and any maintenance performed. Refer to Appendix C of this report for a template, or visit <http://dnr.wi.gov/topic/stormwater/construction/forms.html>. Upon request, the inspection reports shall be made available to the owner, the engineer, Village of Harrison, Calumet County, or the Wisconsin Department of Natural Resources.

Responsible Parties

Best Management Practices (BMPs) Construction and Maintenance:
Owner's Contractor, to be determined.

BMP Inspection and Compliance Enforcement:
Village of Harrison

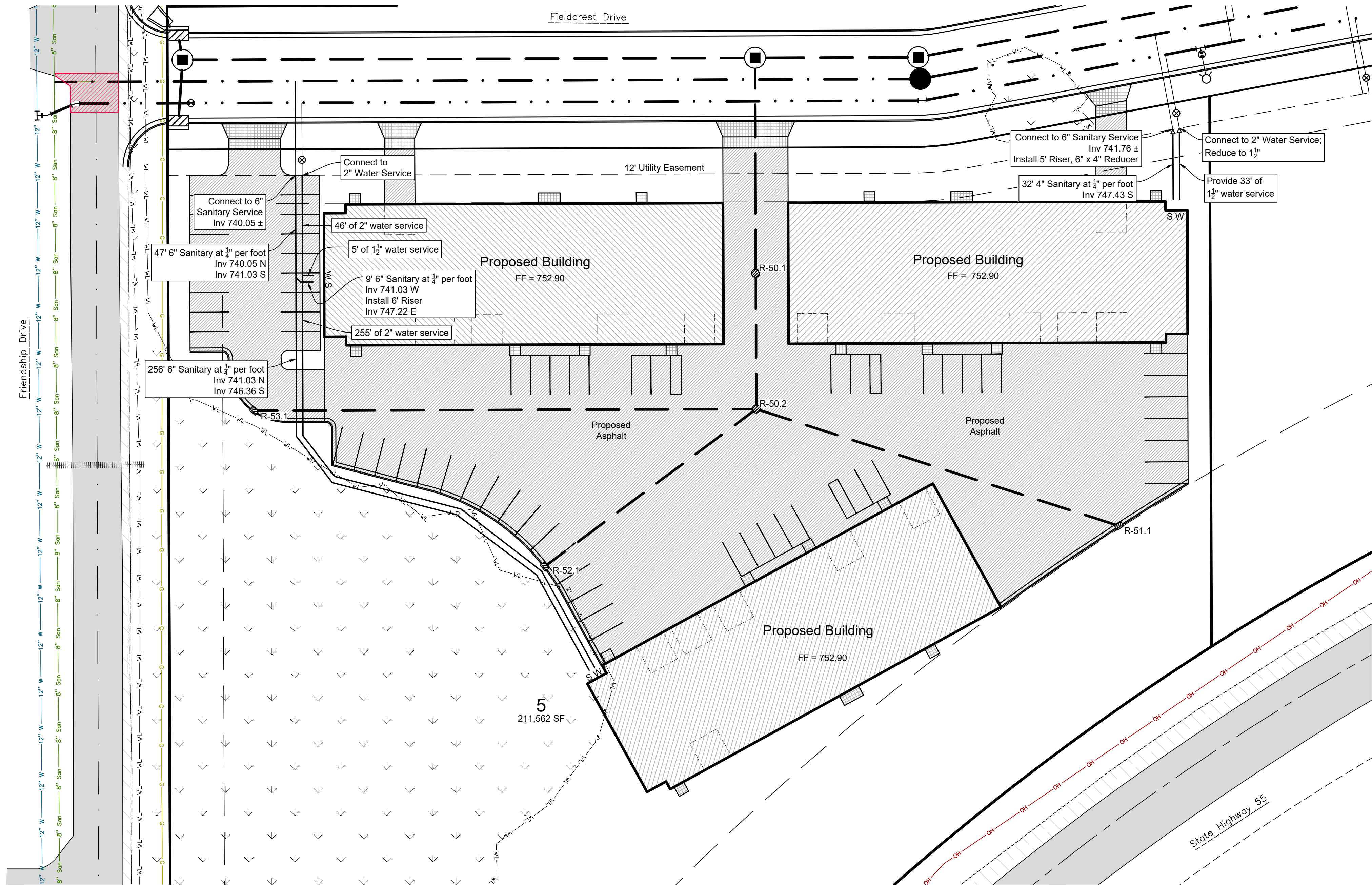
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EROSION & SEDIMENT CONTROL PLAN

Crossroads Development - Lot 5
Village of Harrison, Calumet County, WI
For: Gene Frederickson Trucking & Excavating, Inc.

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Contractor shall locate all buried facilities prior to excavating. This plan may not correctly or completely show all buried utilities.

The Contractor shall verify all staking and field layout against the plan and field conditions prior to constructing the work and immediately notify the Engineer of any discrepancies.

The Contractor shall comply with all conditions of the Erosion Control Plan and the Storm Water discharge Permit. All Erosion Control shall be done in accordance with the Plan and Wisconsin DNR Technical Standards.

The outside services are shown to stop at a point 5 feet outside the foundation wall. The Contractor shall be responsible for coordination of continuation of the services into the building to properly coincide with the interior plumbing plans, and compliance with all plumbing permits.

The Contractor is responsible for compliance with Department of Safety & Professional Services, Chapter SPS 382, for lateral construction and cleanout locations.

The contractor shall coordinate with provider for electric, gas, and telecommunication service connection and relocations.

Pipe lengths are measured to center of structure. Endwalls are included in pipe length.

Water Services shall be Copper or PEX, with minimum of 18 gauge, insulated (blue), single-conductor copper tracer wire, or equivalent, per SPS 382.40 (8)(k).

Sanitary Sewer Services shall be PVC Schedule 40, with minimum of 18 gauge, insulated (green), single-conductor copper tracer wire, or equivalent, per SPS 382.30 (11)(h).

Storm Sewer Pipe shall be PVC SDR(35), Reinforced Concrete Class II, or HDPE, AASHTO M 294, Type S with water tight joints, with minimum of 18 gauge, insulated (brown), single-conductor copper tracer wire, or equivalent, per SPS 382.36 (7)(d)10.a.

LEGEND

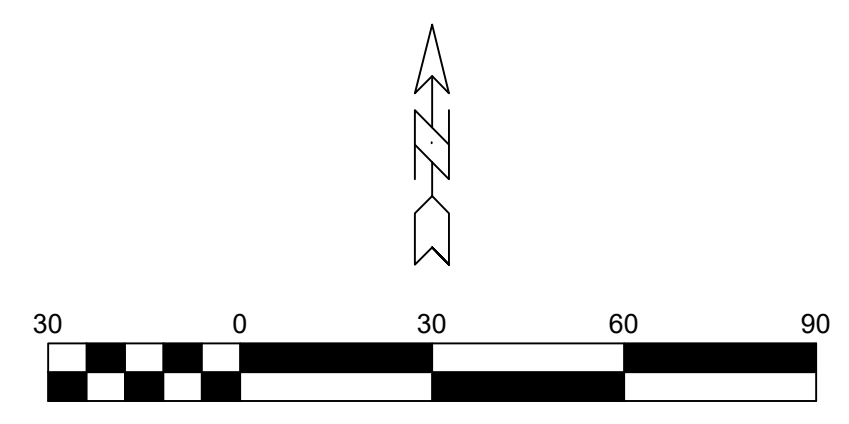
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				Proposed Concrete
				Proposed Gravel

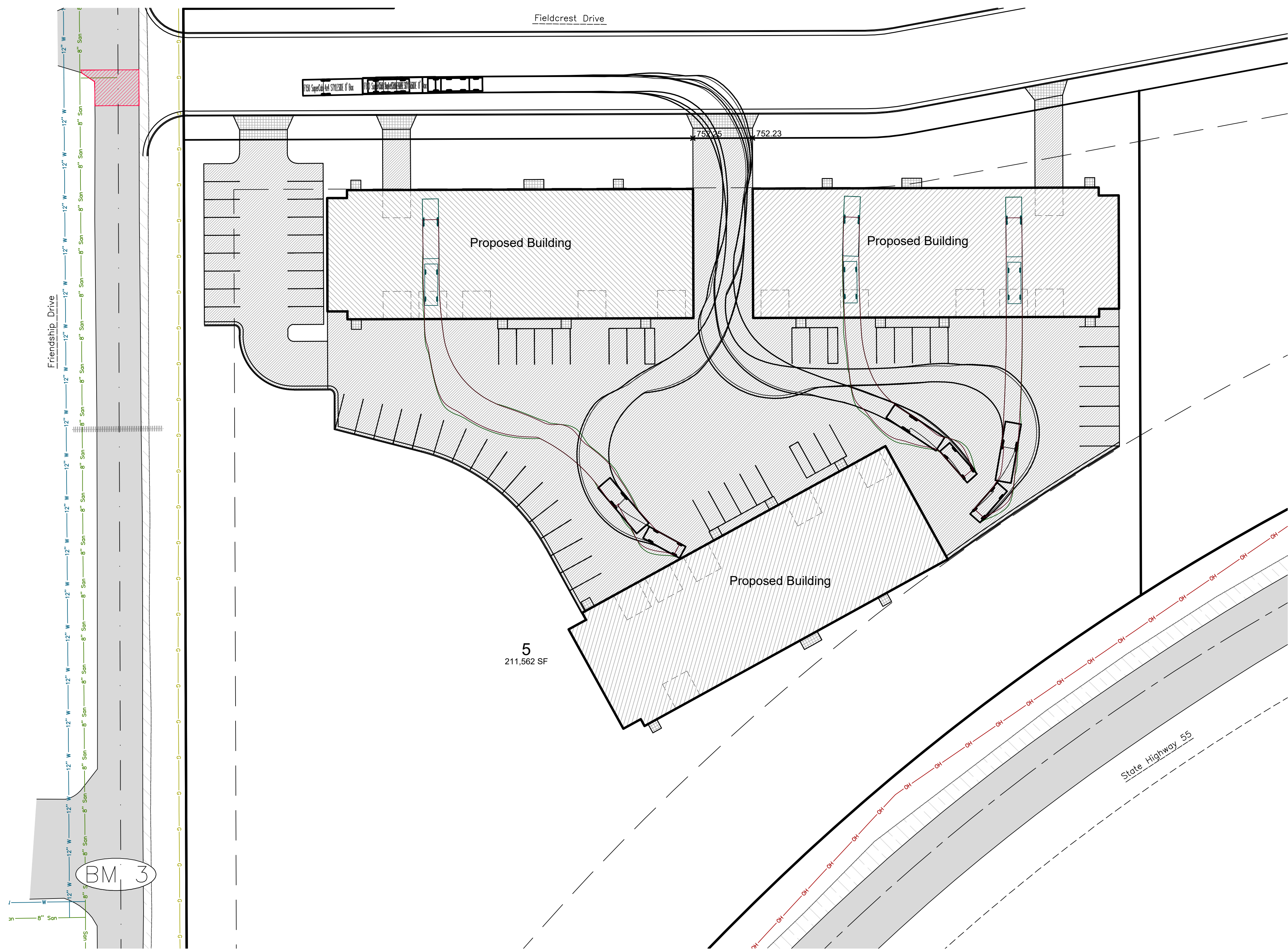
STORMSEWER STRUCTURE SUMMARY

Structure	Type	Size	Cover	Final Grade Rm	Plan Rm	Invert	Final Grade Depth	Plan Depth
R-50.1	MH (48) Inlet	48" ID	R-2578	752.43	752.35	746.52	5.91	5.83
R-50.2	MH (48) Inlet	48" ID	R-2578	751.91	751.62	746.58	5.33	5.04
R-51.1	Inlet	3x2' ID	R-3067	751.36	751.07	746.97	4.39	4.10
R-52.1	Inlet	3x2' ID	R-3067	750.87	750.79	746.85	4.02	3.94
R-53.1	Inlet	3x2' ID	R-3067	750.75	750.67	747.09	3.66	3.58
Total =							23.33	22.51

STORM SEWER PIPE SUMMARY

Reach	US	DS	US Inv	DS Inv	Length	Slope	Size (in)	Node Drop	Phase	Total Area		Runoff		Capacity		Velocity (ft/s)				
										(SF)	(SF)	(GPM)	(GPM)	(cfs)	(cfs)					
R-50.1	Stub		746.52	746.47	46	0.0010	24	0.00		13830	0	11880	1950	517	2660	3478	1.15	5.93	7.75	2.5
R-50.2	R-50.1		746.58	746.52	63	0.0010	24	0.00		20545	0	7097	13448	687	2143	3478	1.53	4.78	7.75	2.5
R-51.1	R-50.2		746.97	746.58	176	0.0022	12	0.00		15394	0	4110	11284	505	505	813	1.13	1.13	1.81	2.3
R-52.1	R-50.2		746.85	746.58	122	0.0022	12	0.00		20969	0	5510	15459	688	688	813	1.53	1.53	1.81	2.3
R-53.1	R-50.2		747.09	746.58	232	0.0022	12	0.00		8297	0	1103	7194	264	264	813	0.59	0.59	1.81	2.3
Total =										637										

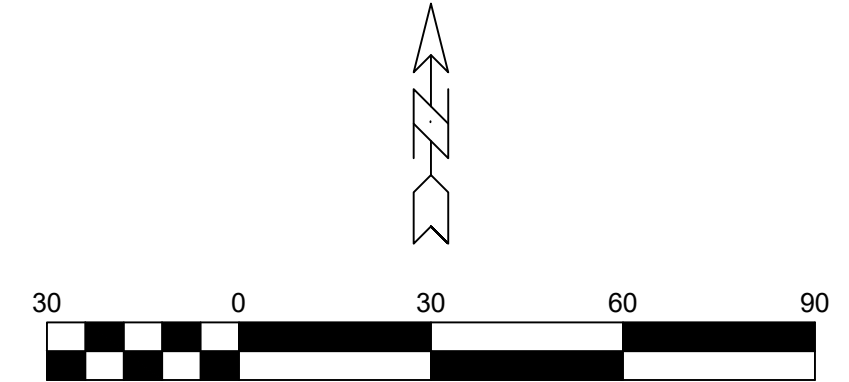




NOTES:
 Vehicle shown is a Ford F-150 SuperCab 4x4 with 8' Box towing a 30' trailer.

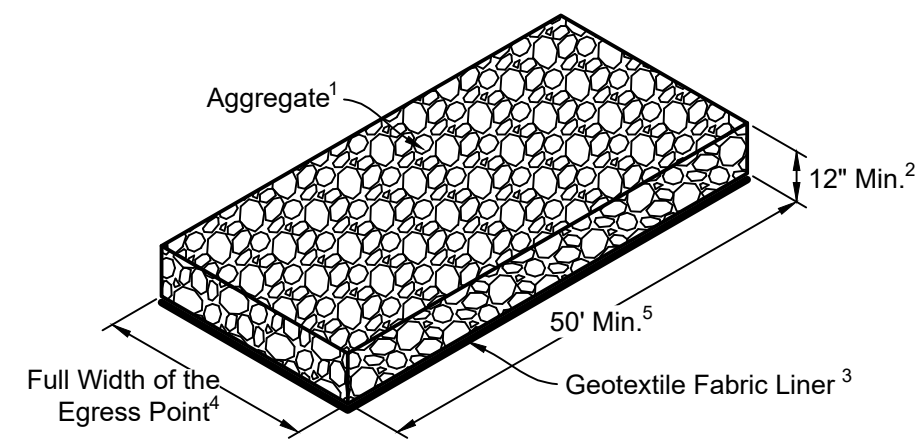
LEGEND

FO	Underground Fiber Optic	San	Sanitary Sewer	G	Underground Gas Line	Culvert	800	Index Contour	799	Intermediate Contour	WL	Delineated Wetlands	Sanitary MH / Tank / Base	Hydrant	Utility Valve	Utility Meter	Utility Pole	Light Pole / Signal	Guy Wire	Telephone Pedestal	Ex Spot Elevation	CATV Pedestal	Benchmark	Sign	Asphalt Pavement	Concrete Pavement	Gravel	Proposed Building	Proposed Asphalt	Proposed Concrete	Proposed Gravel
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VEHICLE MANEUVERING DETAIL

Crossroads Development - Lot 5
 Village of Harrison, Calumet County, WI
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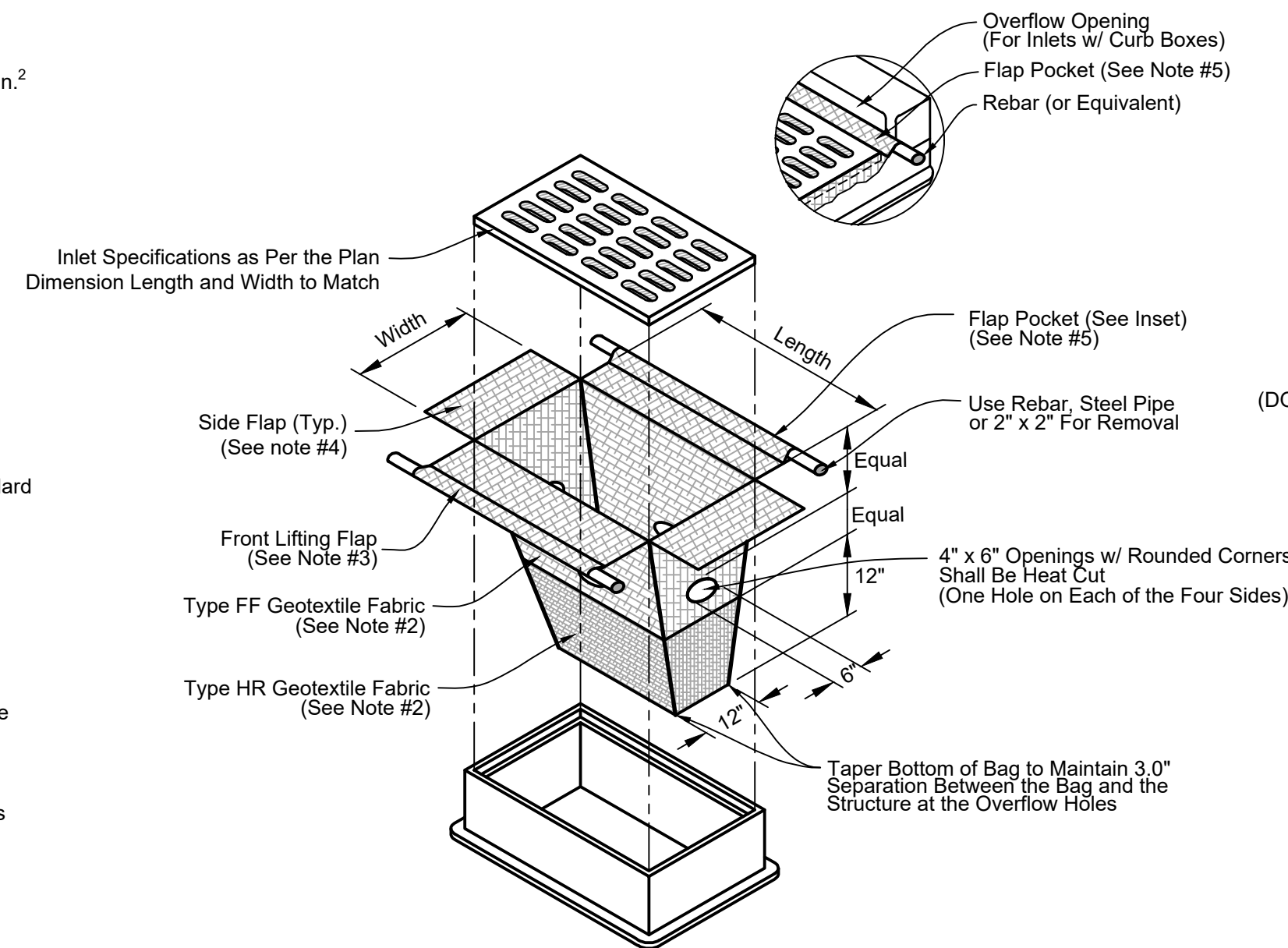


TRACKING PAD DETAIL
DNR TECHNICAL STANDARD 1057

- Note 1 Use hard, durable, angular stone or recycled concrete meeting the gradation in Table 1. Where this gradation is not available, meet the gradation in Wisconsin Department of Transportation (DOT) 2022 Standard Specification, Section 312, Select Crushed Material.
- Note 2 Slope the stone tracking pad in a manner to direct runoff to an approved treatment practice.
- Note 3 Select fabric type based on soil conditions and vehicles loading.
- Note 4 Install tracking pad across full width of the access point, or restrict existing traffic to a dedicated egress lane at least 12 feet wide across the top of the pad.
- Note 5 If a 50' pad length is not possible due to site geometry, install the maximum length practicable and supplement with additional practices as needed.

TABLE 1: GRADATION FOR STONE TRACKING PADS

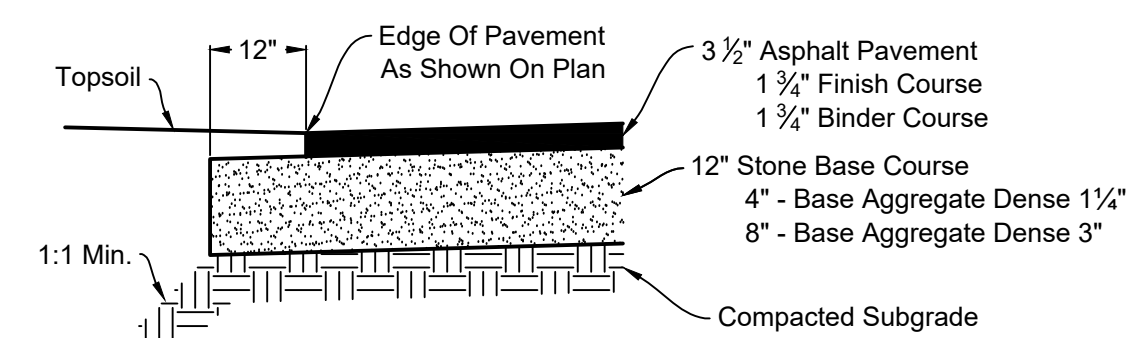
Sieve Size	Percent by weight passing
3"	100
2-1/2"	90-100
1-1/2"	25-60
3/4"	0-20
3/8"	0-5



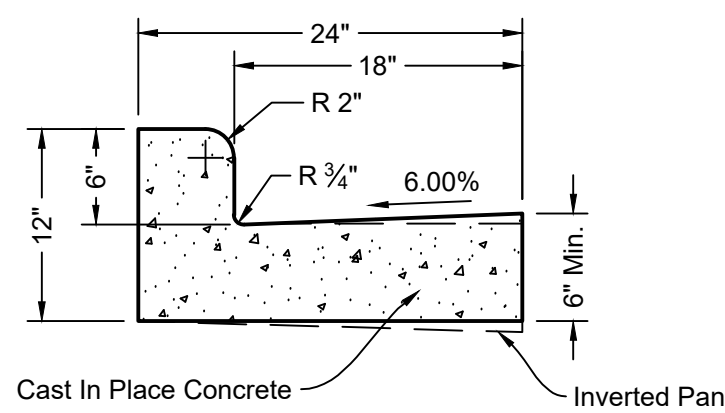
INLET PROTECTION, TYPE D-HR
DNR TECHNICAL STANDARD 1060
(CAN BE INSTALLED IN ANY INLET WITH OR WITHOUT A CURB BOX)

- NOTES:**
- Taper bottom of bag to maintain three inches of clearance between the bag and the structure, measured from the bottom of the overflow openings to the structure wall.
 - Geotextile fabric, Type FF for flaps and top half of filter bag. Geotextile fabric, Type HR for bottom half of filter bag with front, back, and bottom being one piece.
 - Front lifting flap is to be used when removing and maintaining filter bag.
 - Side flaps shall be a maximum of two inches long. Fold the fabric over and reinforce with multiple stitches.
 - Flap pockets shall be large enough to accept wood 2" x 2". The rebar, steel pipe, or wood shall be installed in the rear flap and shall not block the top half of the curb face opening.

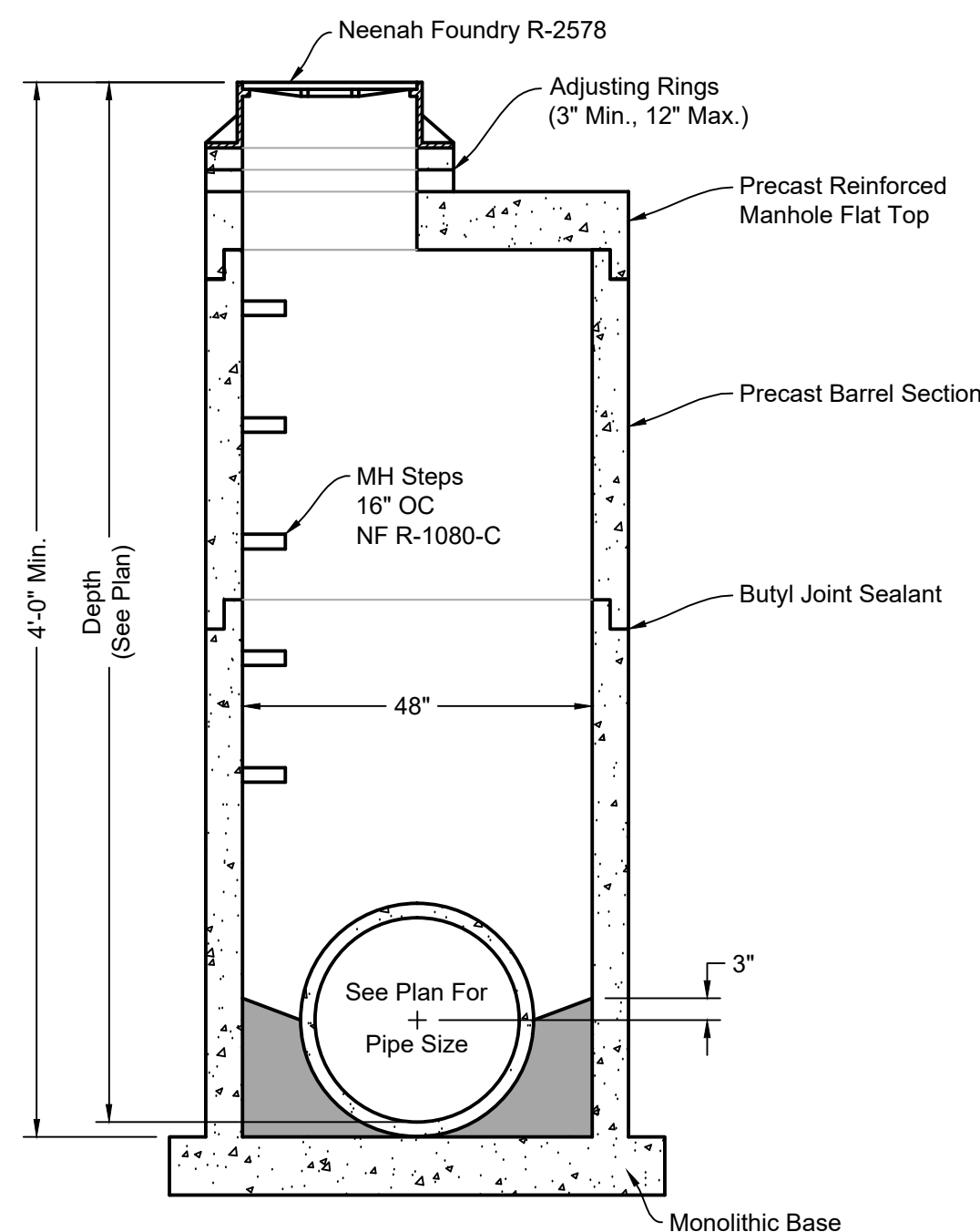
- MAINTENANCE NOTES:**
- When removing or maintaining inlet protection, care shall be taken so that the sediment trapped in the fabric does not fall into the structure. Material that has fallen into the inlet shall be immediately removed.



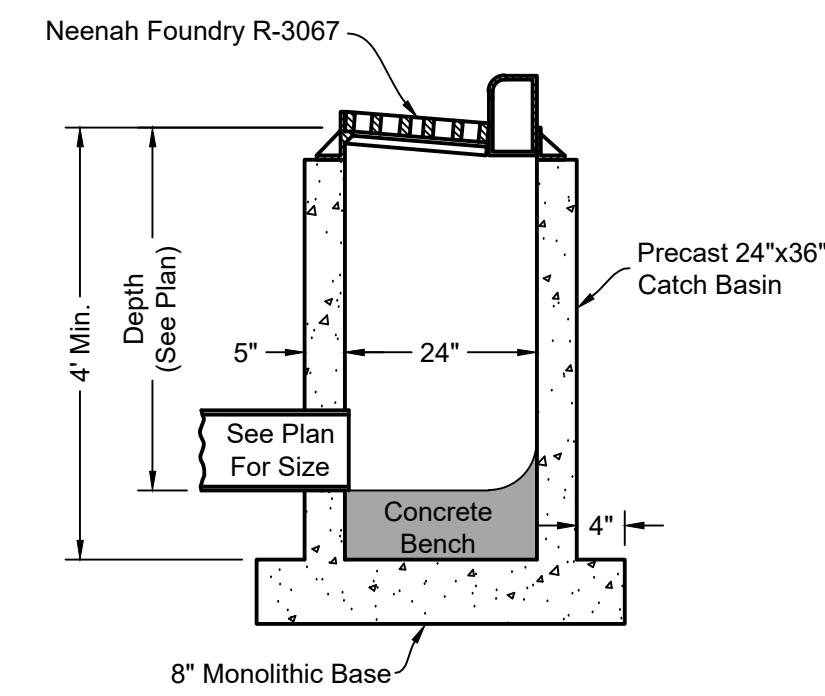
ASPHALT PAVEMENT SECTION



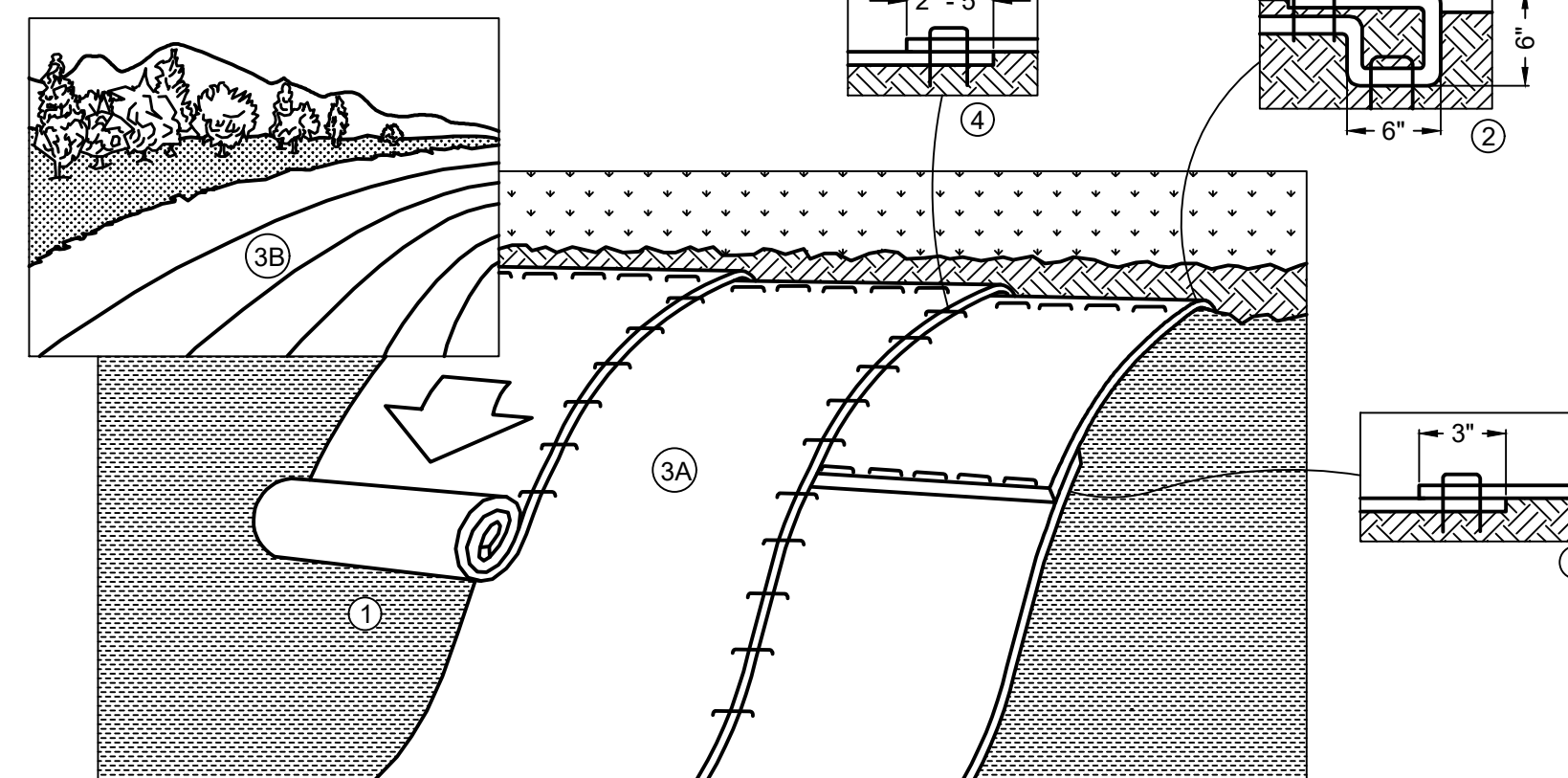
24" STANDARD CURB



STANDARD STORM MANHOLE

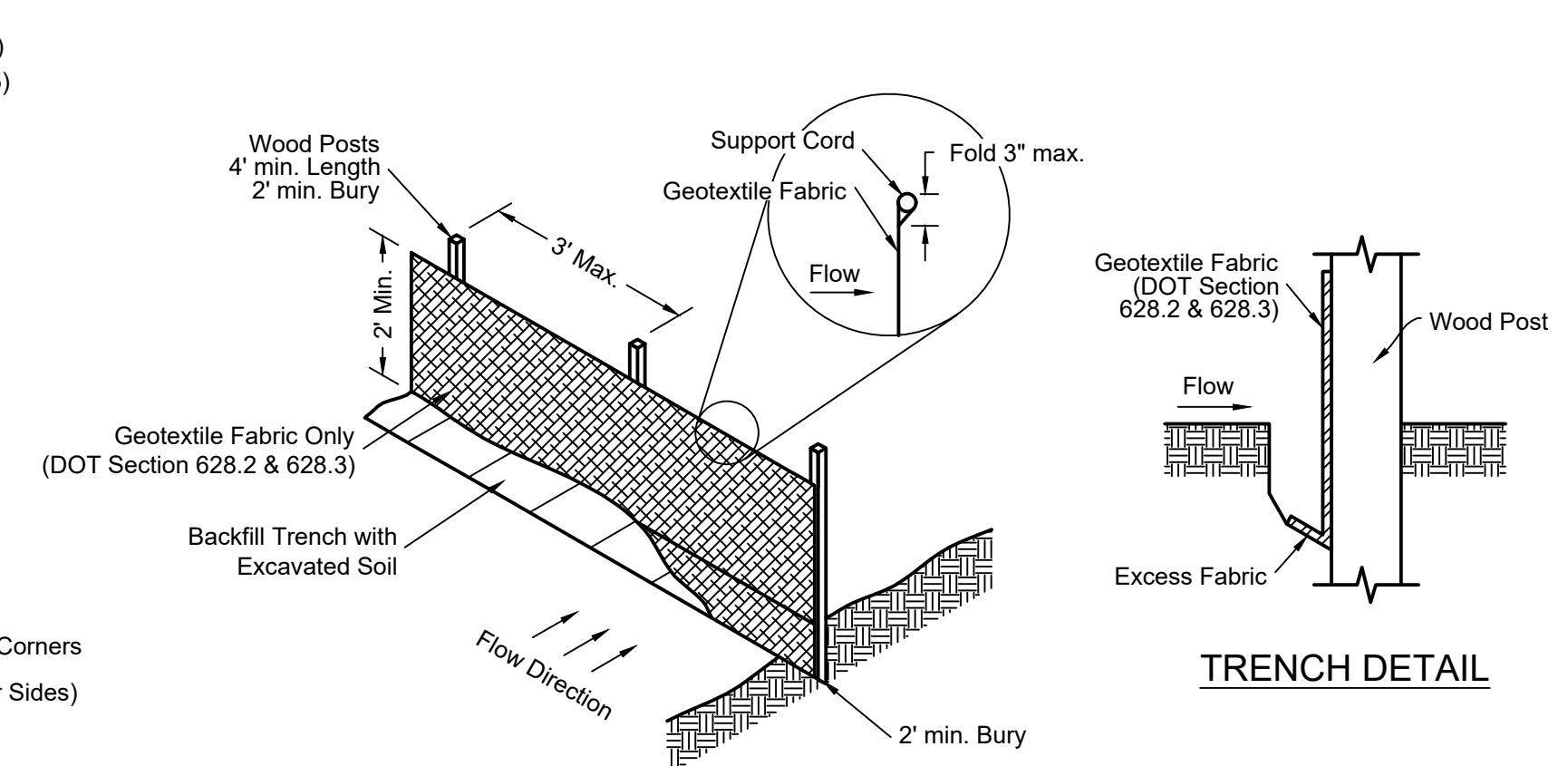


CURB INLET DETAIL



- Prepare soil before installing Rolled Erosion Control Products (RECP's), including any necessary application of lime, fertilizer, and seed. Note: When using cell-o-seed do not seed prepared area. Cell-o-seed must be installed with paper side down.
- Begin at the top of the slope by anchoring the RECP's in a 6" (15 cm) deep x 6" (15 cm) wide trench with approximately 12" (30 cm) of RECP's extended beyond the up-slope portion of the trench. Anchor the RECP's with a row of staples/stakes approximately 12" (30 cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to compacted soil and fold remaining 12" (30 cm) portion of RECP's back over seed and compacted soil. Secure RECP's over compacted soil with a row of staples/stakes spaced approximately 12" (30 cm) across the width of the RECP's.
- Roll the RECP's (A) down or (B) horizontally across the slope. RECP's will unroll with appropriate side against the soil surface. All RECP's must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide. When using the Dot system, staples/stakes should be placed through each of the colored dots corresponding to the appropriate staple pattern.
- The edges of parallel RECP's must be stapled with approximately 2" - 5" (5 cm - 12.5 cm) overlap depending on RECP's type.
- Consecutive RECP's spliced down the slope must be placed end over end (shingle style) with an approximate 3" (7.5 cm) overlap. Staple through overlapped area, approximately 12" (30 cm) apart across entire RECP's width. Note: * In loose soil conditions, the use of staple or stake lengths greater than 6" (30 cm) may be necessary to properly secure the RECP's.
- Detail provided by North American Green (www.nagreen.com)
- Turf Reinforcement Mats (TRM's) shall be installed in accordance with the above specifications for all RECP's. Anchoring size and pattern is to be installed per manufacturer specifications for clay soils having 4:1 slope. All TRM's shall be topsoil filled, seeded, and covered with a Class 2, Type B erosion mat in accordance with all manufacturer specifications.

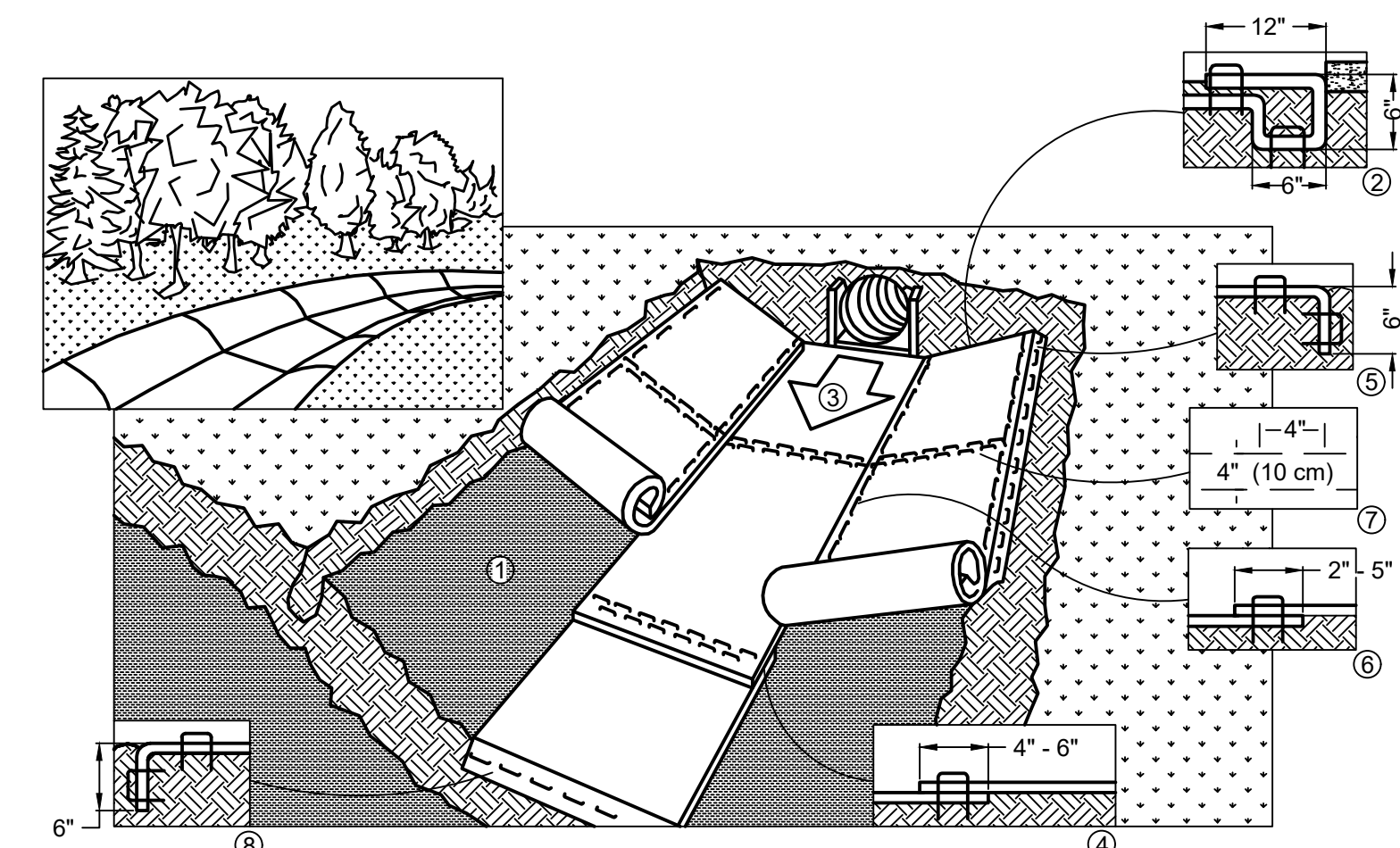
EROSION/TURF REINFORCEMENT MAT SLOPE INSTALLATION
DNR TECHNICAL STANDARD 1052



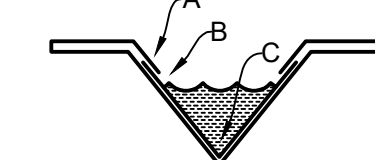
TRENCH DETAIL

- Silt fence notes:**
- Detail of construction not shown on this drawings shall conform to criteria set by authorities having jurisdiction and by DNR Technical Standard 1056.
 - When possible, the silt fence should be constructed in an arc or horseshoe shape with the ends pointing upslope to maximize both strength and effectiveness.
 - Attach the fabric to the posts with wire staples or wooden lath and nails.
 - 8'-0" post spacing allowed if a woven geotextile fabric is used.
 - Trench shall be a minimum of 4" wide and 6" deep to bury and anchor the geotextile fabric. Fold material to fit trench and backfill and compact trench with excavated soil.
 - Geotextile fabric shall be reinforced with an industrial polypropylene netting with a maximum mesh spacing of 3/4" or equal. A heavy-duty nylon top support chord or equivalent is required.
 - Steel posts shall be studded "tee" or "u" type with a minimum weight of 128 lbs/lineal foot (without anchor). Fin anchors shall be a minimum size of 4" diameter or 1 1/2" x 3 1/2", except wood posts for geotextile fabric reinforced with netting shall be a minimum size of 1 1/8" x 1 1/8" oak or hickory.

SILT FENCE INSTALLATION
DNR TECHNICAL STANDARD 1056



- Prepare soil before installing Rolled Erosion Control Products (RECP's), including any necessary application of lime, fertilizer, and seed. Note: When using cell-o-seed do not seed prepared area. Cell-o-seed must be installed with paper side down.
- Begin at the top of the channel by anchoring the RECP's in a 6" (15 cm) deep x 6" (15 cm) wide trench with approximately 12" (30 cm) of RECP's extended beyond the up-slope portion of the trench. Anchor the RECP's with a row of staples/stakes approximately 12" (30 cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to compacted soil and fold remaining 12" (30 cm) portion of RECP's back over seed and compacted soil. Secure RECP's over compacted soil with a row of staples/stakes spaced approximately 12" (30 cm) across the width of the RECP's.
- Roll center RECP's in direction of water flow in bottom of channel. RECP's will unroll with appropriate side against the soil surface. All RECP's must be securely fastened to soil surface by placing staples/stakes in appropriate locations as shown in the staple pattern guide. When using the DOT system, staples/stakes should be placed through each of the colored dots corresponding to the appropriate staple pattern.
- Place consecutive RECP's end over end (shingle style) with a 4" - 6" (10 cm - 15 cm) overlap. Use a double row of staples staggered 4" (10 cm) apart and 4" (10 cm) on center to secure RECP's.
- Full length edge of RECP's at top of side slopes must be anchored with a row of staples/stakes approximately 12" (30 cm) apart in a 6" (15 cm) deep x 6" (15 cm) wide trench. Backfill and compact the trench after stapling.
- Adjacent RECP's must be overlapped approximately 2" - 5" (5 cm - 12.5 cm) (depending on RECP's type) and stapled.
- In high flow channel applications a staple check slot is recommended at 30 to 40 foot (9 M - 12 M) intervals. Use a double row of staples staggered 4" (10 cm) apart and 4" (10 cm) on center over entire width of the channel.
- The terminal end of the RECP's must be anchored with a row of staples/stakes approximately 12" (30 cm) apart in a 6" (15 cm) deep x 6" (15 cm) wide trench. Backfill and compact the trench after stapling. Note: * In loose soil conditions, the use of staple or stake lengths greater than 6" (15 cm) may be necessary to properly anchor the RECP's.
- Detail provided by North American Green (www.nagreen.com)



- Critical Points**
- Overlaps and seams
 - Projected Water line
 - Channel Bottom/side slope vertices

- Note: * Horizontal staple spacing should be altered if necessary to allow staples to secure the critical points along the channel surface.

- ** In loose soil conditions, the use of staple or stake lengths greater than 6" (15 cm) may be necessary to properly anchor the RECP's.

EROSION MAT CHANNEL INSTALLATION
DNR TECHNICAL STANDARD 1053