

TOWN OF PLATTSBURGH

CLINTON COUNTY, NEW YORK



STANDARD SPECIFICATIONS FOR TOWN CENTER STORM DRAINAGE SYSTEMS

**ADOPTED: July 17, 2021
Resolution #104 of 2021**

**Town of Plattsburgh
151 Banker Road
Plattsburgh, NY 12901-7307**

PART 1 - GENERAL

1.1 Description:

- A. The following subsections establish the construction requirements for and the sequence in which new drainage systems are to be constructed within the Town of Plattsburgh Town Center Smart Growth Zone.
- B. The Drainage Design Standards set forth in the following paragraphs shall be employed in the development of a Storm Water Management Plan and/or Storm Water Pollution Prevention Plan for a proposed project. This plan will be considered an integral part of all development plans submitted for Town approval.

1.2 Requirements:

- A. It shall be the responsibility of the Contractor to supply and install all materials in accordance with these Standards. The Superintendent of Highways and/or his representative reserves the right to conduct any testing to verify that the material and/or installation is within the requirements of the sections of these Standards. Should any material and/or installation be determined not to be in accordance with all the requirements the sections of Standards, the Contractor shall, at his own expense, correct the unacceptable material and/or installation. The Contractor shall also reimburse the Town for all costs associated with the testing of materials and/or installations that is determined not to be in accordance with the requirements of the sections of these Standards. Prior to installation of any stormwater structure, shop drawings shall be reviewed and approved by the Superintendent of Highways or his designee.

PART 2 - DESIGN STANDARDS:

2.1 Storm Sewer Drainage Structures

- A. Junction Boxes:
 - 1. Placement shall be at the property line corners to provide a point of connection for the sump pump discharge line of each house or building into the sewer system, as required.
 - 2. The junction box shall be square precast concrete, 2'-6" x 2'-6" x 3'-0" I.D. Knockout Catch Basin as manufactured by The Fort Miller CO., or an approved equivalent.

3. Following installation of junction boxes, all lift hooks shall be cut and voids mortared.
4. All storm sewer connections to all new or existing structures (including, but not limited to, catch basins, manholes, drywells, junction boxes, stormwater features, etc.) shall be installed with a flexible rubber boot. Refer to the standard details for more installation information.

B. Catch Basins:

1. Placement shall be such that the maximum distance which storm water run-off is allowed in an open gutter flow shall not exceed three (300) hundred lineal feet. A shorter distance than this maximum limit may be necessary due to site specific conditions.
2. Catch basins shall be installed at all intersections such that no storm water run-off shall accumulate in or pass through the intersection.
3. The catch basin shall be square precast concrete, 2'-6" x 2'-6" I.D. Catch Basin as manufactured by The Fort Miller CO., or an approved equivalent.
4. The maximum height for a catch basin shall be four (4) feet as measured from the finished top of frame and grate (rim) elevation to the invert out elevation.
5. All catch basins are required to have a minimum twelve (12) inch sump except that, when an entering or exiting pipe diameter is equal to fifteen (15) inches, then a nine (9) inch sump pump shall be required.
6. When a catch basin exceeds four (4) feet in height (as determined in 4.) above) or when any of the entering or exiting pipe diameters exceed fifteen (15) inches, the type of storm sewer drainage structure must be changed from a catch basin to a storm sewer manhole as per CONCRETE DRAINAGE MANHOLE DETAIL (D2).
7. All catch basins shall meet the requirements of Section 706-04 of the NYSDOT standard specification for concrete structures.
8. Following installation of catch basins, all lift hooks shall be cut and voids mortared.
9. All storm sewer connections to all new or existing structures (including, but not limited to, catch basins, manholes, drywells, junction boxes, stormwater features, etc.) shall be installed with a flexible rubber boot. Refer to the standard details for more installation information.

C. Storm Sewer Manholes:

1. The storm sewer manhole inside diameter shall be a function of the storm sewer pipes that enter and exit the specific manhole.
2. The storm sewer manholes shall be round precast concrete, in accordance with the 4'-0", 5'-0", 6'-0", 6'6", 7'-0" and 8'-0" I.D. Manhole

Sections as manufactured by The Fort Miller Co., Inc. or an approved equivalent.

3. All storm sewer manholes shall have a standard monolithic base, unless otherwise approved by the Superintendent of Highways or his representative.
4. All storm sewer manholes are required to have a minimum twelve (12) inch sump.
5. All manholes shall meet the requirements of Section 706-04 of the NYSDOT standard specification for concrete structures.
6. Following installation of manholes, all lift hooks shall be cut and voids mortared.
7. All storm sewer connections to all new or existing structures (including, but not limited to, catch basins, manholes, drywells, junction boxes, stormwater features, etc.) shall be installed with a flexible rubber boot. Refer to the standard details for more installation information.

2.2 Storm Sewer Pipes:

A. Material:

1. All storm sewer pipes shall conform to the AASHTO M 294 Standard Specification, Type S, with smooth waterway for coupling joints. All pipes shall be bell and spigot and only new complete sections shall be used for each installation. Couplings will only be allowed for connections to existing storm sewers (not between two new lengths of pipe).
 - a. Soil tight Couplings: AASHTO M 294, corrugated, matching pipe and fittings to form soil tight joints.
 - b. Silt tight Couplings: PE sleeve with ASTM D 1056, Type 2, Class A, Grade 2 gasket material that mates with pipe and fittings to form silt tight joints.
2. Solid corrugated polyethylene pipe and end sections shall be 12", 15", 18", 24", 30", 36", 48", etc. N-12 pipe.

B. Pipe Size:

1. The minimum pipe diameter for any storm sewer shall be twelve (12) inches.

C. Pipe Placement:

1. Vertical alignment shall provide for a minimum depth of cover from the finished ground elevation to the top of pipe equal to two and one half (2-1/2) feet.
2. When pipe sizes of different diameters enter a drainage structure at a straight through grade condition, the crown elevations of the pipe shall

be matched. Underdrain pipe (excluding perforated storm sewer pipe) shall be excluded from this requirement.

3. When more than one pipe enters a drainage structure, at no time will an elevation difference between inverts exceed three (3) feet. Underdrain pipe (excluding perforated storm sewer pipe) shall be excluded from this requirement.
4. All storm sewer connections to all new or existing structures (including, but not limited to, catch basins, manholes, drywells, junction boxes, stormwater features, etc.) shall be installed with a flexible rubber boot. Refer to the standard details for more installation information.

2.3 Sump Pump Collector System:

- A. This system shall provide a point of connection for the sump pump discharge line (known as sump pump lateral) of each house or building as required.
- B. Sump pump laterals shall be installed into a junction box. Sump pump laterals directly connected to a catch basin or manhole shall be reviewed on a case-by-case basis only. The Town does not take responsibility for sump pump laterals.
- C. The minimum pipe diameter and material for any sump pump lateral shall be four (4) inch polyvinyl chloride (PVC) SDR 35 Sewer Pipe.
- D. Whenever possible, all sump pump laterals shall be gravity flow.
- E. Junction boxes shall be inter-connected with a collector pipe.
- F. The minimum pipe diameter and material for any collector pipe shall be six (6) inch PVC SDR 35 Sewer Pipe.
- G. The collector pipe shall have a minimum slope of one half percent (0.50%), a minimum depth of cover of two and one half (2-1/2) feet, and shall be connected into the storm sewer system at either a catch basin or storm sewer manhole only.
- H. Floor drains from garages or any drains with the potential to be contaminated by any prohibited substances, cannot be connected to stormwater systems.

2.4 Underdrain Pipe:

- A. When the ground water and/or soil conditions are such that sub-surface highway drainage becomes necessary, a perforated underdrain pipe shall be installed at low points along the highway profile.
- B. This underdrain pipe will connect directly into any drainage structure at the edge of pavement.
- C. The minimum pipe diameter for underdrain pipe shall be six (6) inches.
- D. The Superintendent of Highways under special circumstances may allow portions of the storm sewer to be utilized as underdrain pipe through the use of perforated rather than solid-wall storm sewer pipe.

2.5 Stormwater Management Basins

- A. All proposed stormwater management basins intended for ownership by the Town shall be contained on their own parcel. It shall be noted that these lots do not necessarily have to conform to zoning relative to bulk lot requirements, however the lot shall have direct access to a public right of way. Such lots will be designated as a “utility lot” in accordance with Town of Plattsburgh zoning regulations for special use permits.
- B. All design elements of the stormwater basin shall be in conformance with the NYSDEC guidelines in effect at the time of construction. Notwithstanding, the following additional elements shall be included which are specific to the Town’s ability to access and maintain the facilities.
 - 1. Access to basin:
 - a. All basins shall have an access way from an approved town/county/state paved right of way and into the fenced area of the basin. The access shall be a minimum of 12-feet in width and shall be constructed of 12” of NYSDOT Section 304 compliant Subbase Course placed on woven geotextile over the compacted subgrade, Type 2, and 2” of Asphalt Concrete Binder Course, Type 3 compliant with NYSDOT Section 403. Subgrade and subbase shall be compacted to 95% of modified proctor density.
 - b. The access shall have a vertical slope not exceeding 10%.
 - 2. Access external and internal to basin:
 - a. Suitable access shall be provided both interior and exterior of the perimeter fence for mowing. These areas shall not have a land slope in excess of 25%.
 - 3. Perimeter Fencing & Gate:
 - a. All basins shall be provided with a 6-feet high chain link fence which shall surround the entire stormwater management area, when the Highway Superintendent determines that it necessary for public safety.

- b. The gate shall be constructed of the same material as the fence with locking access, if fencing is required.

2.6 Easements

- A. A thirty (30) foot permanent utility easement shall be dedicated to the Town to be maintained by the Town whenever utility lines, which are required for the mutual benefit of adjoining property owners, pass through private property. A permanent easement shall also be dedicated for stormwater basins, established at the limits of grading for the facility. The easement for the stormwater basin shall include a width of fifteen feet (15') for the access drive to the facility. The timing of the filing of drainage easements by the project sponsor shall be at the discretion of the Town Attorney. All costs associated with preparation, approval and filing of drainage easements shall be borne by the project sponsor. Generally, drainage systems to be dedicated to the Town and which serve Town highways should be dedicated the same time as the associated highways.

2.7 Performance Standards

- A. All of the requirements enumerated in this specification shall be performed and all of the utilities and work shall be installed in accordance with standards, specifications and procedures acceptable to the Town Engineer, Highway Superintendent, and the Building and Planning Coordinator.

2.8 Inspection and Certification

- A. Adequate inspection shall be provided at all times and during all phases of construction and shall be done under the direction of the Town Designated Engineer, unless such inspections are determined by the Superintendent or Building & Planning Coordinator to not be required.
- B. All infrastructure proposed to be conveyed to the Town following construction, shall be inspected by a third party (which shall be the Town Designated Engineer, or Town Staff), and not the engineer hired by the owner/developer to perform the design, to avoid a conflict of interest. Any changes to the design based upon field conditions or other circumstances shall be memorialized on the plans/specification by the design engineer and resubmitted to the Town for approval. All costs of inspection shall be the responsibility of the developer. If the inspection service is provided by Town Staff, the cost will be based on the actual costs of payroll plus overhead incurred by the Town.

- C. Written certification by a New York State licensed engineer will be required from the owner/developer certifying to the Town (and any other Authority Having Jurisdiction) that infrastructure not to be conveyed to the Town for final ownership, was constructed in accordance with project plans and specifications.

2.9 Modification or Waiver Requirements

- A. When the Highway Superintendent, Town Engineer or the Building and Planning Coordinator determines that extraordinary hardship would result from strict compliance with the provisions of this specification because of an unusual circumstance of topography or other physical condition in the proposed location, it may modify the requirements for said street. In addition, for good cause, the Town Board, in consultation with the Highway Superintendent or Building and Planning Coordinator may waive compliance with the provisions of any part of this specification in connection with the construction of the same.

STANDARD DETAILS FOR STORM DRAINAGE SYSTEMS



1. CATCH BASINS HAVING A DEPTH GREATER THAN 48" FROM FINISHED SURFACE TO THE FLOOR OF THE CONCRETE BASE SHALL BE PROVIDED WITH STEPS.
2. BACKFILL WITH TRENCH BACKFILL MATERIAL COMPACTED TO 95% MODIFIED PROCTOR.
3. COMPACTION TESTING, AROUND CATCH BASINS, BY DEVELOPER IS REQUIRED AS ORDERED BY ENGINEER TO CONFIRM CONFORMANCE WITH COMPACTION REQUIREMENTS.

A SECTION

HEAVY DUTY FRAME AND GRATE
TO BE CAMPBELL NO. 1396 OR
APPROVED EQUAL (BICYCLE SAFE)

- SHAPE & SIZE OF OPENING
TO MATCH FRAME & GRATE

INSIDE JOINTS NEATLY
STRUCK AND POINTED

PRECAST REINFORCED CONC.
GRADE ADJUSTMENT W/
OPENING TO MATCH FRAME—
AND GRATE

PRECAST REINFORCED CONC:
FLAT LID W/ OPENING TO
MATCH FRAME AND GRATE

2'-6" x 2'-6" 3
CATCH BASIN AS MANUFACTURED
BY THE FORT MILLER CO.
INC. OR APPROVED EQUAL
ALL STRUCTURES TO MEET SECTION
706-04 OF THE NYSDOT
STANDARD SPECIFICATIONS

FINISHED GRADE

5.5" MIN 12" MAX
—GRADE ADJUSTMENT

2'-6" MIN

FILL OPENING WITH NON-SHRINK WATERPROOF GROUT AFTER PIPE IS INSTALLED

— BUTYL ROPE
GASKET

—SERIES 304 STAINLESS
STEEL BAND CLAMP &
SERIES 305 STAINLESS
STEEL ADJUSTMENT SCREW

— FORMED HOLE WITH
FLEXIBLE RUBBER BOOT
SEAL ASSEMBLY CAST
INTO CATCH BASIN WALL
OR PRECAST FORMED HOLE
WITH BOOT AND BAND

12" NO. 2 CRUSHED STONE SUBBASE
OR TYPE 3 SUBBASE GRAVEL

TYPICAL SECTION

PREPARED BY:

THE
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CONCRETE CATCH BASIN

REVISION DATE

STANDARD DETAIL

DRAINAGE SYSTEM

TOWN OF PLATTSBURGH

CLINTON COUNTY, NEW YORK

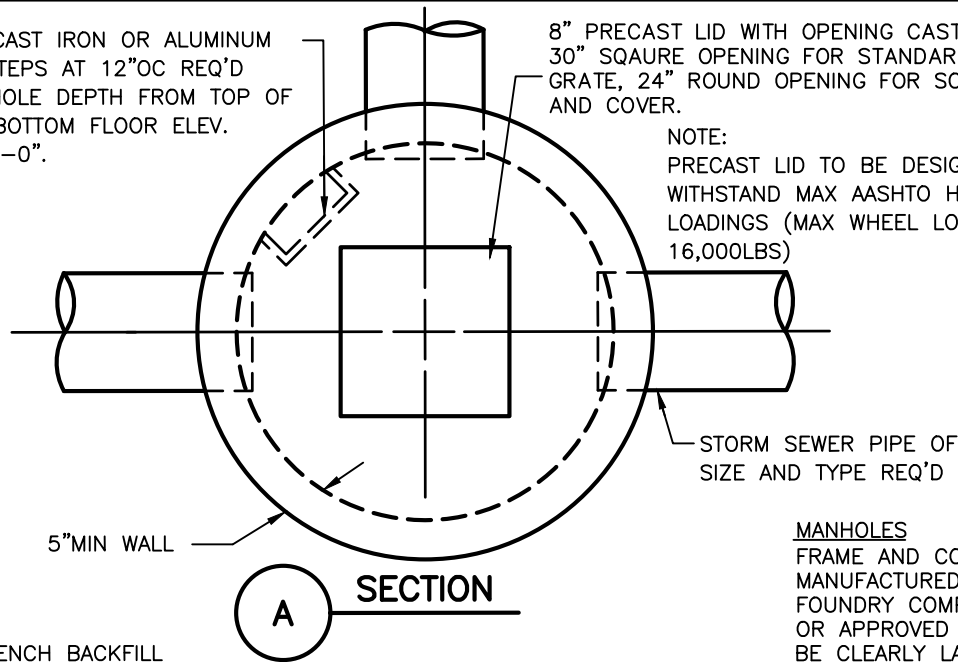
FEBRUARY 2021

D1

STANDARD CAST IRON OR ALUMINUM
MANHOLE STEPS AT 12" OC REQ'D
WHEN MANHOLE DEPTH FROM TOP OF
FRAME TO BOTTOM FLOOR ELEV.
EXCEEDS 4'-0".

8" PRECAST LID WITH OPENING CAST IN CENTER
30" SQUARE OPENING FOR STANDARD FRAME &
GRATE, 24" ROUND OPENING FOR SOLID FRAME
AND COVER.

NOTE:
PRECAST LID TO BE DESIGNED TO
WITHSTAND MAX AASHTO H20 TRUCK
LOADINGS (MAX WHEEL LOADING
16,000LBS)



NOTES:

1. BACKFILL WITH TRENCH BACKFILL
COMPACTED TO 95% MODIFIED
PROCTOR.
2. COMPACTION TESTING, AROUND
MANHOLE, BY DEVELOPER IS
REQUIRED AS ORDERED BY
ENGINEER TO CONFIRM
CONFORMANCE WITH COMPACTION
REQUIREMENTS.

MANHOLES

FRAME AND COVER NO.1009 AS
MANUFACTURED BY CAMPBELL
FOUNDRY COMPANY, HARRISON, NJ,
OR APPROVED EQUAL. COVER MUST
BE CLEARLY LABELED "STORM SEWER"

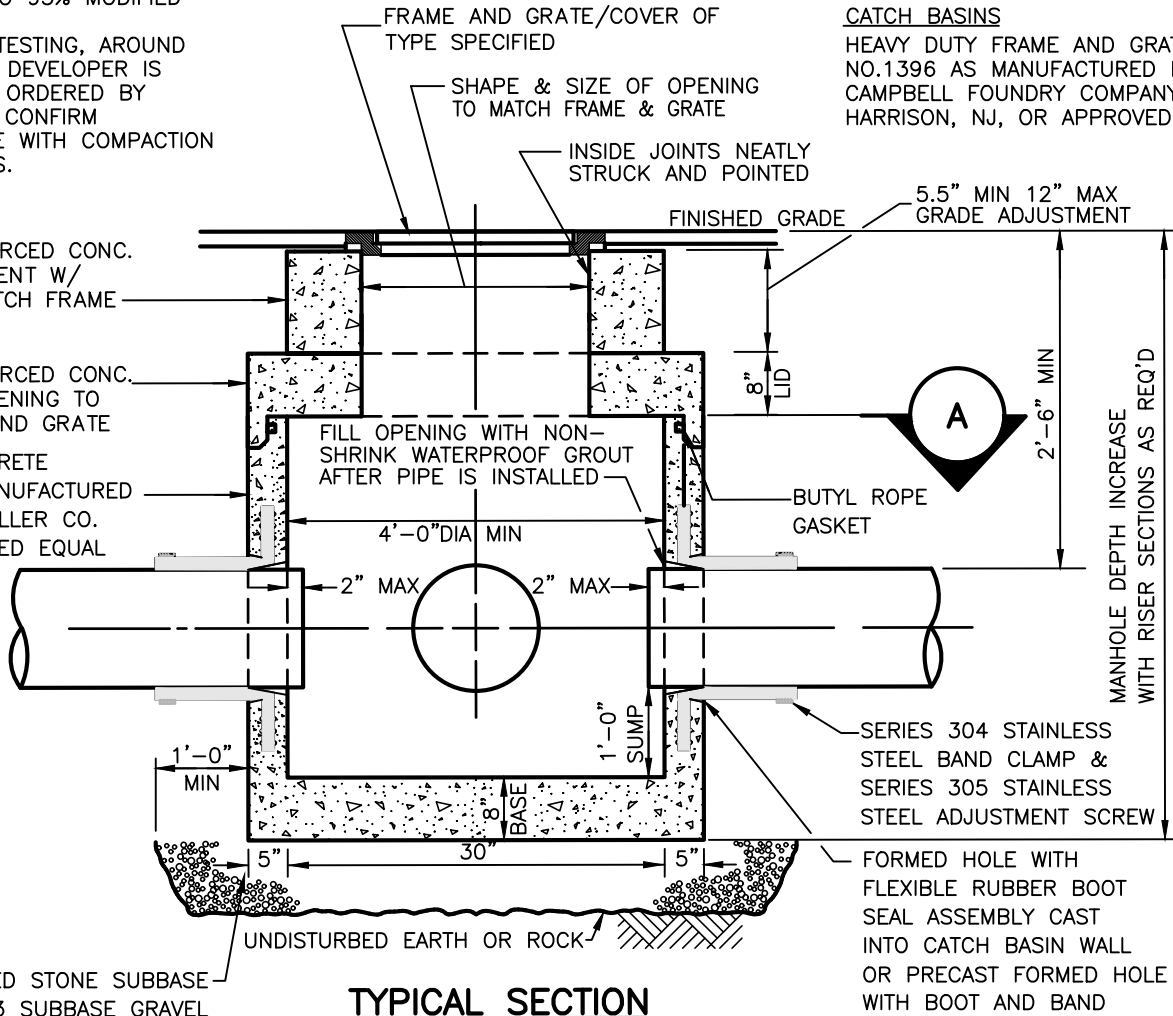
CATCH BASINS

HEAVY DUTY FRAME AND GRATE
NO.1396 AS MANUFACTURED BY
CAMPBELL FOUNDRY COMPANY,
HARRISON, NJ, OR APPROVED EQUAL

PRECAST REINFORCED CONC.
GRADE ADJUSTMENT W/
OPENING TO MATCH FRAME
AND GRATE

PRECAST REINFORCED CONC.
FLAT LID W/ OPENING TO
MATCH FRAME AND GRATE

4'-0" I.D. CONCRETE
MANHOLE AS MANUFACTURED
BY THE FORT MILLER CO.
INC. OR APPROVED EQUAL



TYPICAL SECTION

12" NO. 2 CRUSHED STONE SUBBASE
OR TYPE 3 SUBBASE GRAVEL

PREPARED BY:

CONCRETE MANHOLE

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STANDARD DETAIL

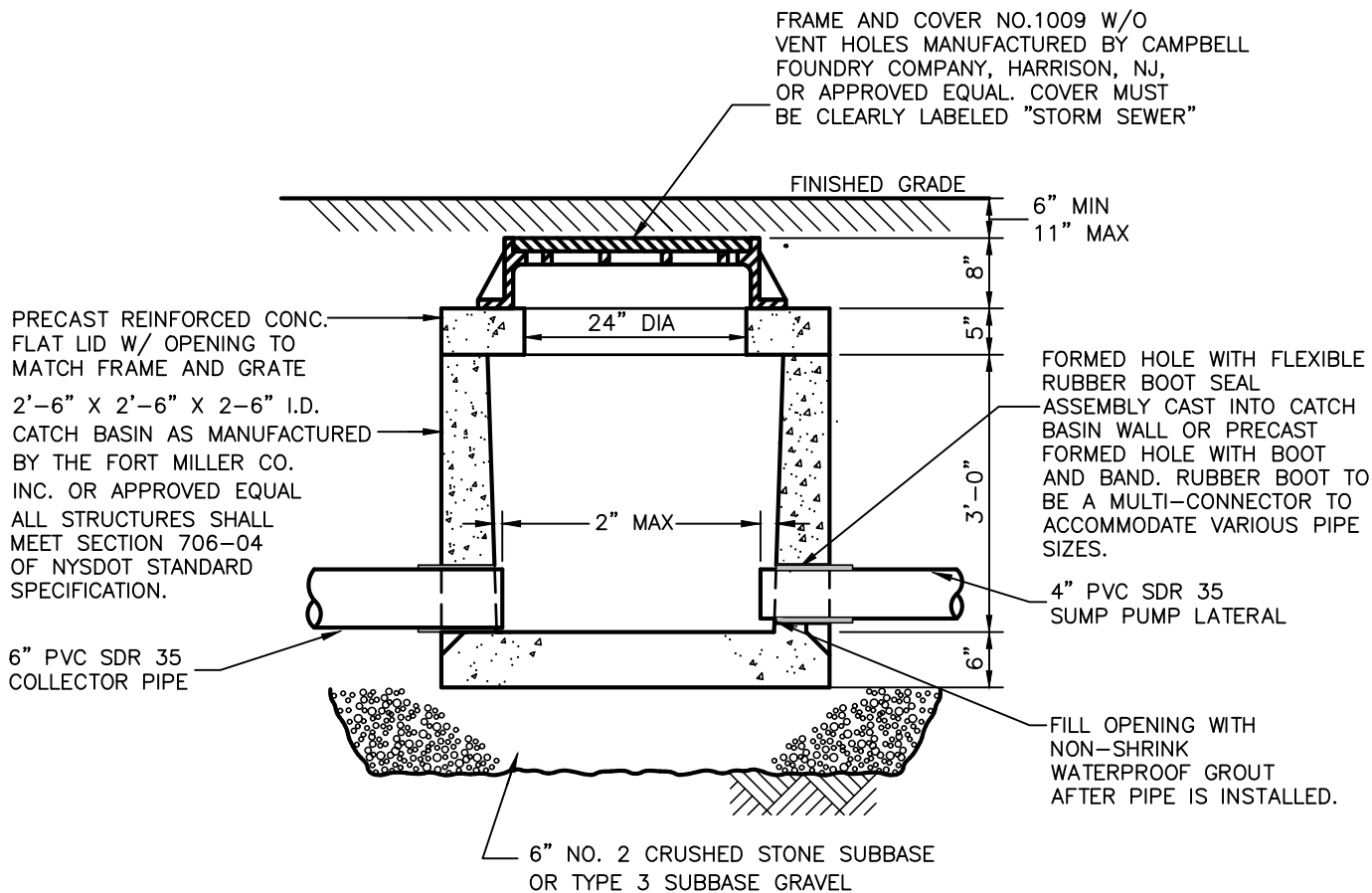
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CLINTON COUNTY, NEW YORK

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D2



JUNCTION BOX GRAVITY CONNECTION

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REVISION DATE

STANDARD DETAIL

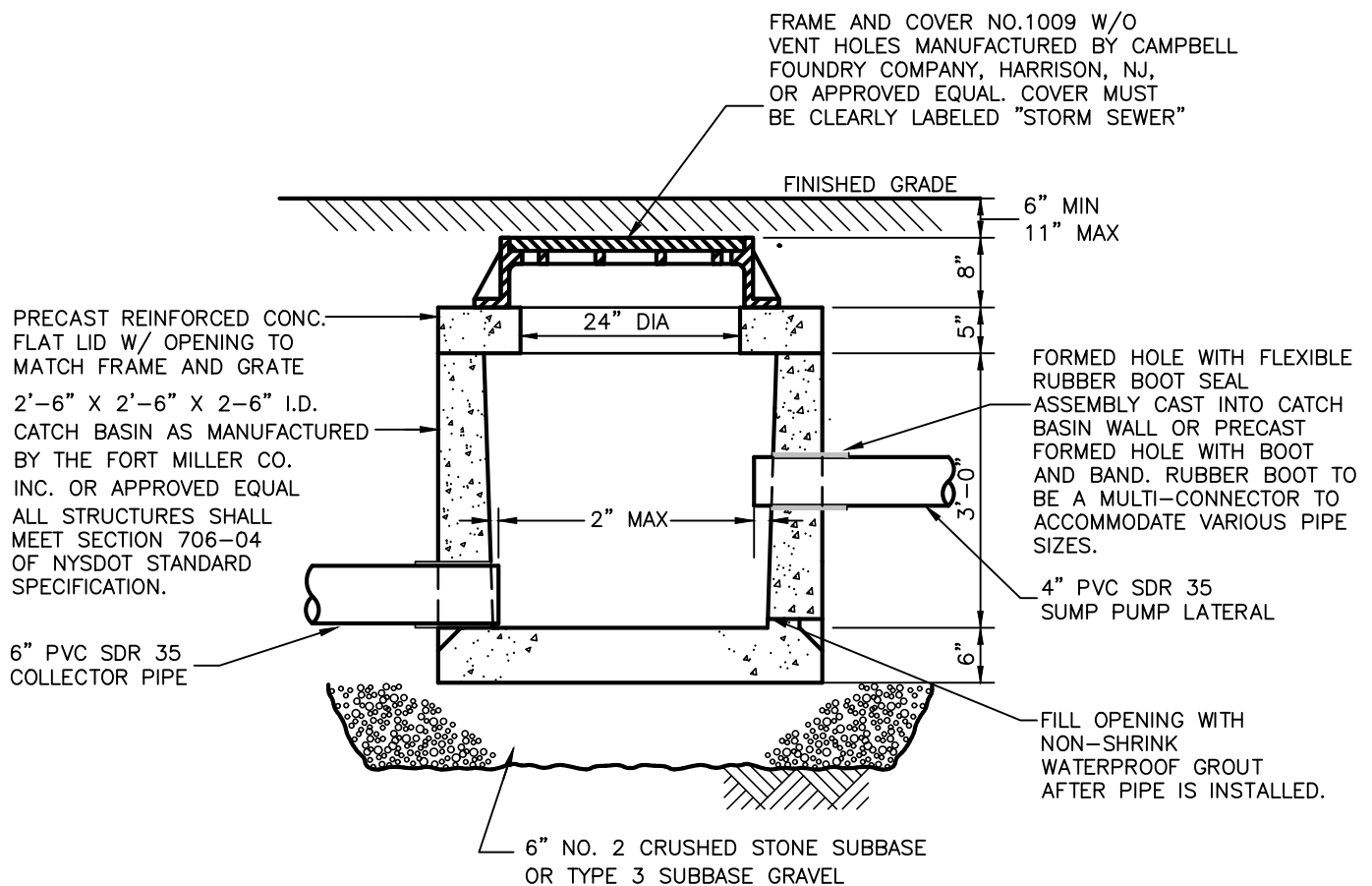
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CLINTON COUNTY, NEW YORK

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D3



JUNCTION BOX PRESSURE CONNECTION

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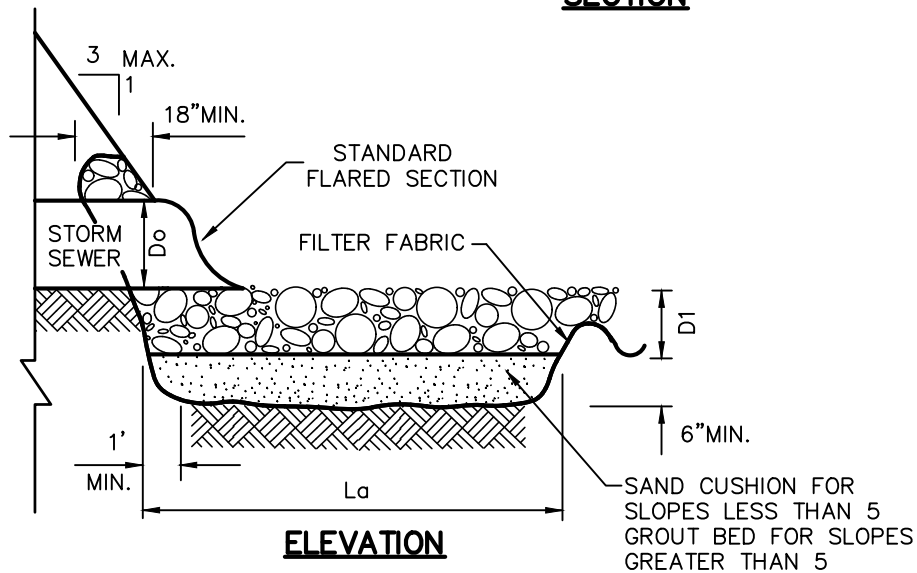
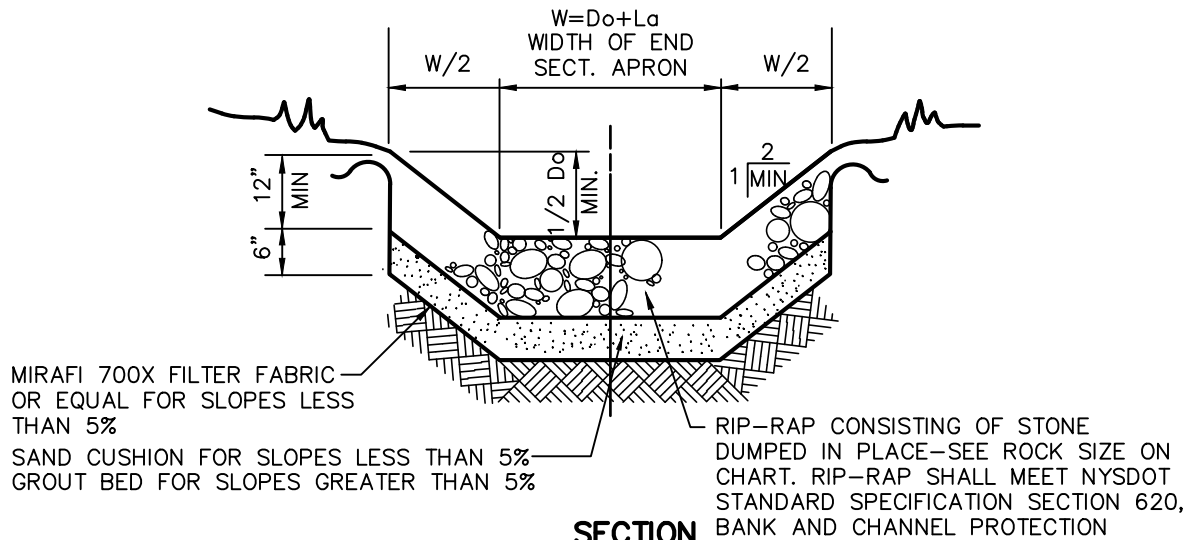
DRAINAGE SYSTEM

TOWN OF PLATTSBURGH

CLINTON COUNTY, NEW YORK

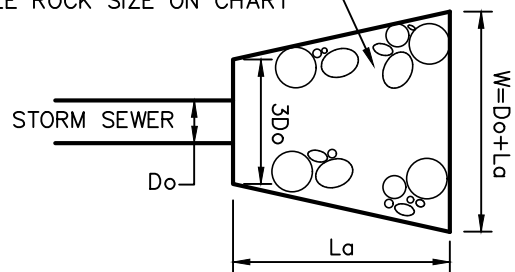
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D3A



Do (IN)	La (FT)	W (FT)	D1 (IN)	ROCK SIZE (NYSDOT)
12	6	7.0	12	LIGHT
15	8	9.5	12	LIGHT
18	10	11.5	12	LIGHT
24	12	14	18	MEDIUM
30	16	18.5	18	MEDIUM
36	20	23	18	MEDIUM
42	22	25.5	18	MEDIUM
48	24	28	18	MEDIUM
54	30	34.5	36	HEAVY
60	34	39	36	HEAVY
72	40	46	36	HEAVY
84	46	53	36	HEAVY

RIP-RAP CONSISTING OF STONE DUMPED IN PLACE
SEE ROCK SIZE ON CHART



END SECTION WITH STONE LINED APRON

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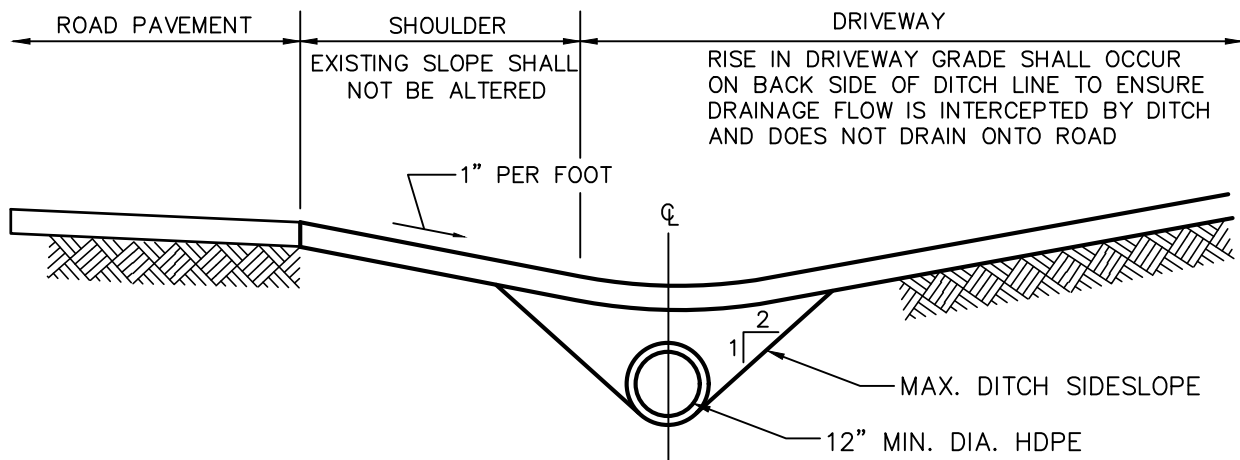


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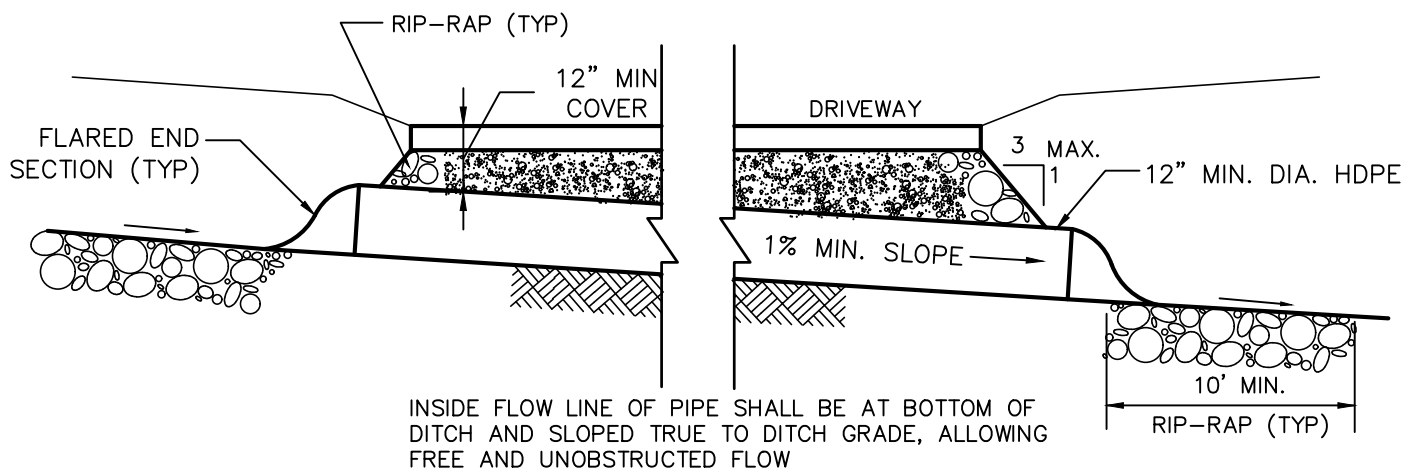
STANDARD DETAIL
DRAINAGE SYSTEM
TOWN OF PLATTSBURGH
CLINTON COUNTY, NEW YORK

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D4



CULVERT CROSS-SECTION



CULVERT PROFILE

DRIVEWAY CULVERT INSTALLATION

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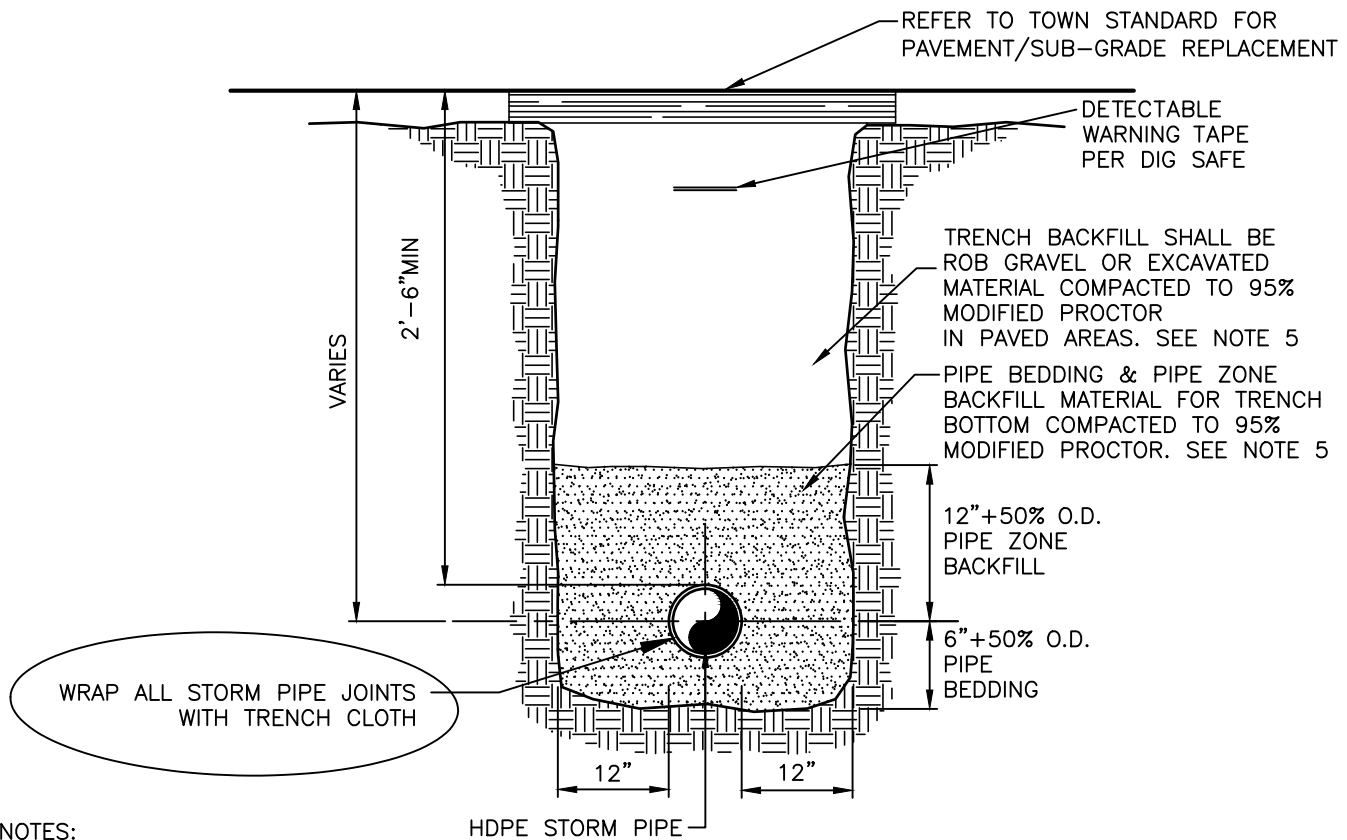
DRAINAGE SYSTEM

TOWN OF PLATTSBURGH

CLINTON COUNTY, NEW YORK

FEBRUARY 2021

D5



NOTES:

1. PIPE BEDDING & PIPE ZONE BACKFILL SHALL BE A NATURAL RUN-OF-BANK (R.O.B.) SAND OR A MIXTURE OF CRUSHED STONE AND GRAVEL, FREE OF SOFT, NONDURABLE PARTICLES, ORGANIC MATERIALS, AND ELONGATED PARTICLES, AND SHALL BE WELL GRADED FROM FINE TO COARSE PARTICLES. BEDDING GRADATIONS SHALL BE APPROVED BY THE ENGINEER AND SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE DESIGNATION	% PASSING
1/2"	100%
1/4"	90-100%
NO. 200	0-5%

2. TRENCH BACKFILL SHALL BE A NATURAL RUN-OF-BANK (R.O.B.) GRAVEL, FREE OF SOFT, NONDURABLE PARTICLES, ORGANIC MATERIALS, AND ELONGATED PARTICLES, AND SHALL BE WELL GRADED FROM FINE TO COARSE PARTICLES. TRENCH BACKFILL GRADATIONS SHALL BE APPROVED BY THE ENGINEER AND SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE DESIGNATION	% PASSING
4"	100%
1/4"	30-100%
NO. 40	0-50%
NO. 200	0-10%

IN UNPAVED AREAS, TRENCH BACKFILL CAN BE MATERIALS EXCAVATED FROM THE TRENCH AS APPROVED BY THE ENGINEER.

3. TRENCHING SHALL BE CONDUCTED IN ACCORDANCE WITH O.S.H.A. STANDARDS.
4. INSTALL CONTINUOUS DETECTABLE MARKING TAPE DURING BACKFILLING OF TRENCH FOR UNDERGROUND PIPING. LOCATE TAPE 12" BELOW FINISHED GRADE, DIRECTLY OVER PIPING, EXCEPT 6" BELOW SUBGRADE UNDER PAVEMENTS & SLAB
5. COMPACTION TESTING BY DEVELOPER IS REQUIRED AS ORDERED BY ENGINEER TO CONFIRM CONFORMANCE WITH COMPACTION REQUIREMENTS. COMPACTION TESTING AROUND CATCH BASINS IS REQUIRED TOO (SEE DETAIL D1).

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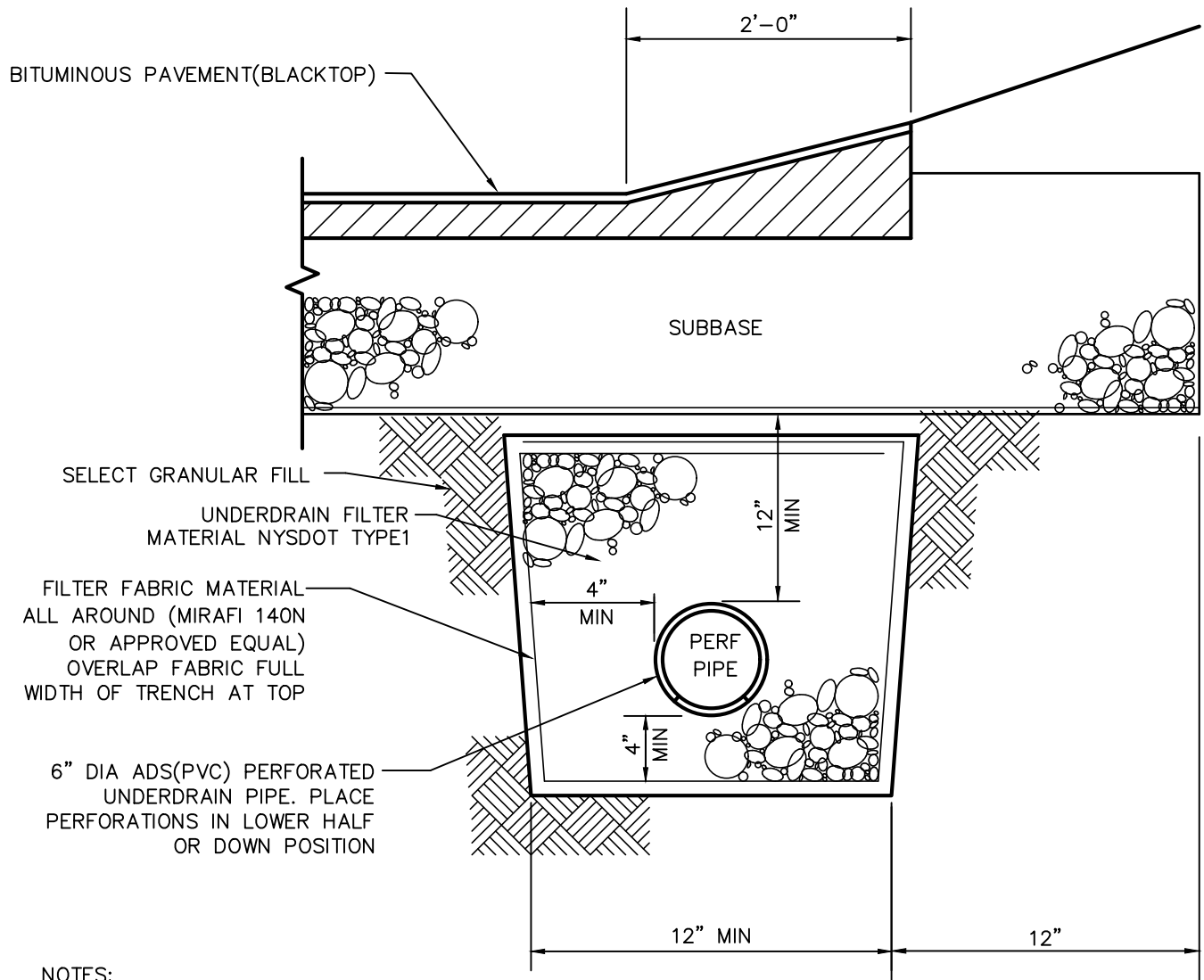


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DRAINAGE SYSTEM
TOWN OF PLATTSBURGH
CLINTON COUNTY, NEW YORK

FEBRUARY 2021

D6



NOTES:

1. PROVIDE AT LOCATIONS AS SHOWN ON THE PLANS, OR AS ORDERED BY THE ENGINEER DURING CONSTRUCTION.
2. FIELD CONDITIONS FOUND DURING CONSTRUCTION SHALL DETERMINE ACTUAL INSTALLATION DEPTH.
3. FINAL DETERMINATIONS RELATIVE TO CONSTRUCTION TYPE AND MATERIALS SHALL BE MADE BY ENGINEER, TOWN ENGINEER, TOWN DESIGNATED ENGINEER AND/OR SUPERINTENDENT OF HIGHWAYS. ALL DECISIONS SHALL BE STRICTLY ADHERED TO.

UNDERDRAIN (BELOW PAV'T)

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