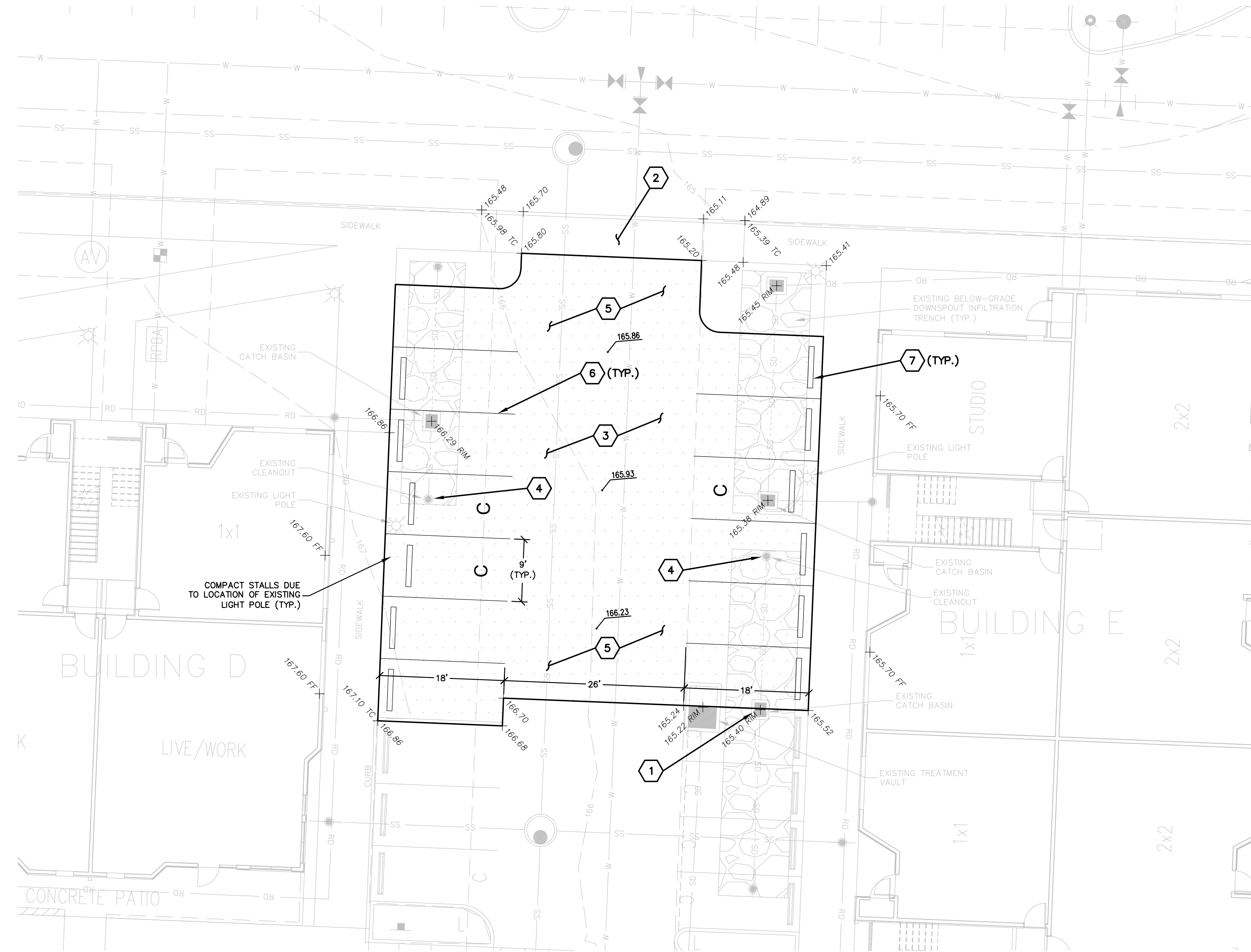


SEC 15, TWP 18N, RGE 1W, W.M.



PROJECT INFORMATION

OWNER/APPLICANT: SERENITY APARTMENT HOMES, LLC
 7483 OLD HWY 99 HANGAR M-5
 TUMWATER, WA 98501

PARCEL NO: 11815240500

SITE ADDRESS: 444 CARPENTER RD. SE
 LACEY, WA 98503

ZONING: MHDC

PARCEL AREA: 3.18 ACRES (137,750)

SOILS: YELM FINE SANDY LOAM
 (HSG B) PER NRCS

GRADING: ±420 CY CUT/FILL (FOR
 APPLICATION PURPOSES ONLY)

SANITARY SEWER/WATER: CITY OF LACEY

POWER/GAS: COMCAST & LUMEN

TELECOMMUNICATIONS: PUGET SOUND ENERGY

FIRE DISTRICT: LACEY

REFUSE/RECYCLING: PACIFIC DISPOSAL

FEMA FIRM DESIGNATION: ZONE X (PANEL #53067C0191E),
 OUTSIDE THE 0.2% ANNUAL
 CHANCE FLOODPLAIN

MIN. PARKING REQUIRED: 105 TO 129.5 (PER APPROVED SITE
 PLAN DATED 11/30/21)

PARKING PROVIDED: 118 EXISTING + 13 PROPOSED =
 131 STALLS

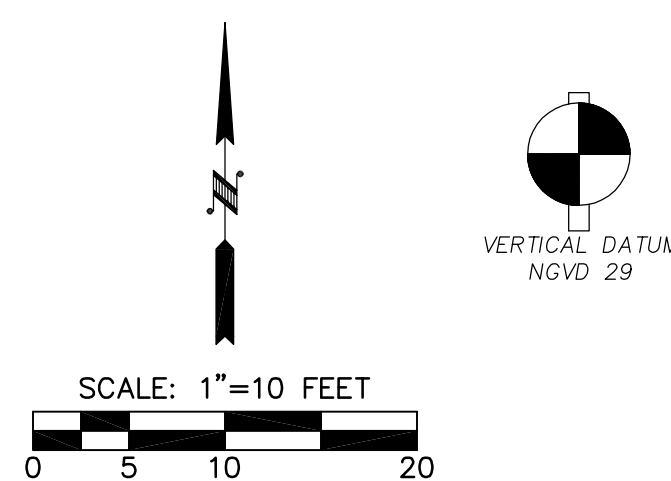
HARD SURFACE COVERAGE: 2.08 AC EXISTING (65.4%)
 2.17 AC PROPOSED (68.1%)

CONSTRUCTION NOTES

- 1 INSTALL STORM DRAIN INLET PROTECTION (BMP C220) IN EXISTING CATCH BASIN.
- 2 CONTRACTOR TO CHECK THICKNESS OF EXISTING SIDEWALK AT DRIVEWAY APPROACH. IF 4", REMOVE AND REPLACE WITH 6" DEPTH.
- 3 REMOVE EXISTING GRASS PAVER SYSTEM, CONCRETE RIBBONS, AND BOLLARDS.
- 4 IF THEY DO NOT CURRENTLY EXIST, INSTALL CONCRETE COLLAR, RING, AND COVER FOR EXISTING STORM CLEANOUTS PER DETAIL ON SHEET 2.
- 5 CONSTRUCT PERMEABLE PAVEMENT DRIVE AISLE AND PARKING STALLS PER DETAIL ON SHEET 2. MATCH TO EXISTING SIDEWALK AND ASPHALT GRADES WHERE APPLICABLE.
- 6 INSTALL 4" WIDE PAINTED WHITE STRIPING LINES FOR PARKING STALLS.
- 7 INSTALL CONCRETE WHEEL STOPS (MATCH EXISTING).

GENERAL NOTES

- 1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF THE STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION.
- 2. ALL CURBS, STREET GRADES, SIDEWALK GRADES, AND ANY OTHER VERTICAL AND OR HORIZONTAL ALIGNMENT SHALL BE STAKED BY AN ENGINEERING OR SURVEYING FIRM CAPABLE OF PERFORMING SUCH WORK.
- 3. WHERE NEW ASPHALT JOINS EXISTING, THE EXISTING ASPHALT SHALL BE CUT TO A NEAT VERTICAL EDGE AND TACKED WITH ASPHALT EMULSION TYPE CSS-1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE NEW ASPHALT WILL BE FEATHERED BACK OVER EXISTING TO PROVIDE FOR A SEAL AT THE SAW CUT LOCATION AND THE JOINT SEALED WITH GRADE AR-4000W PAVING ASPHALT.
- 4. COMPACTION OF SUBGRADE, ROCK, AND ASPHALT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.



"CALL UNDERGROUND LOCATE AT 1-800-424-5555 OR 811 BEFORE YOU DIG"

NO.	DATE	REVISIONS PER CITY COMMENTS
1	4/8/24	

**SERENITY APARTMENTS
 PARKING LOT EXPANSION**

CITY OF LACEY, WASHINGTON

PARKING LOT PLAN

DESIGNED BY: CMM
 DRAWN BY: CMM
 CHECKED BY: CMM
 SCALE: 1" = 10'
 DATE: 3/6/2024



4/18/2024

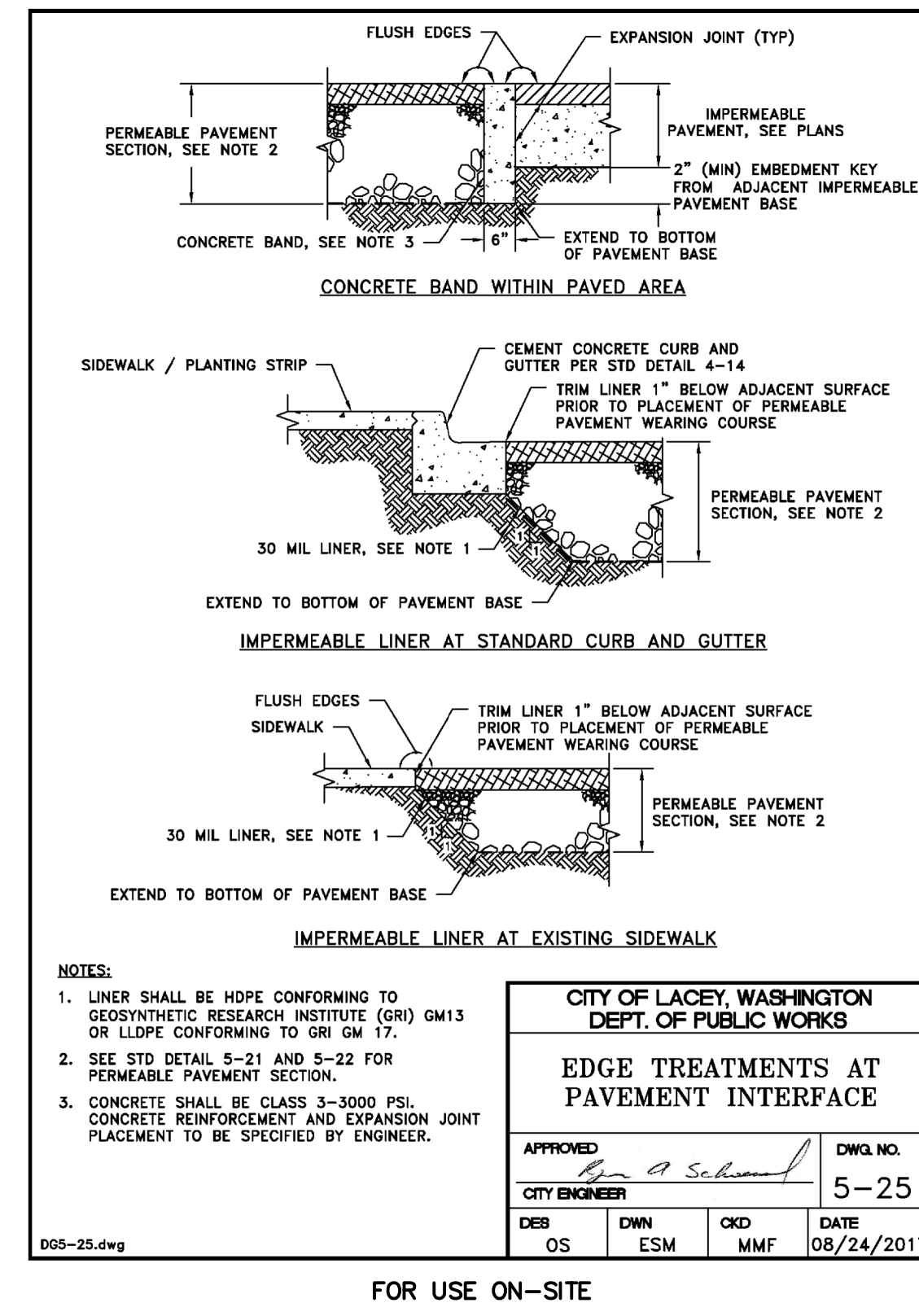
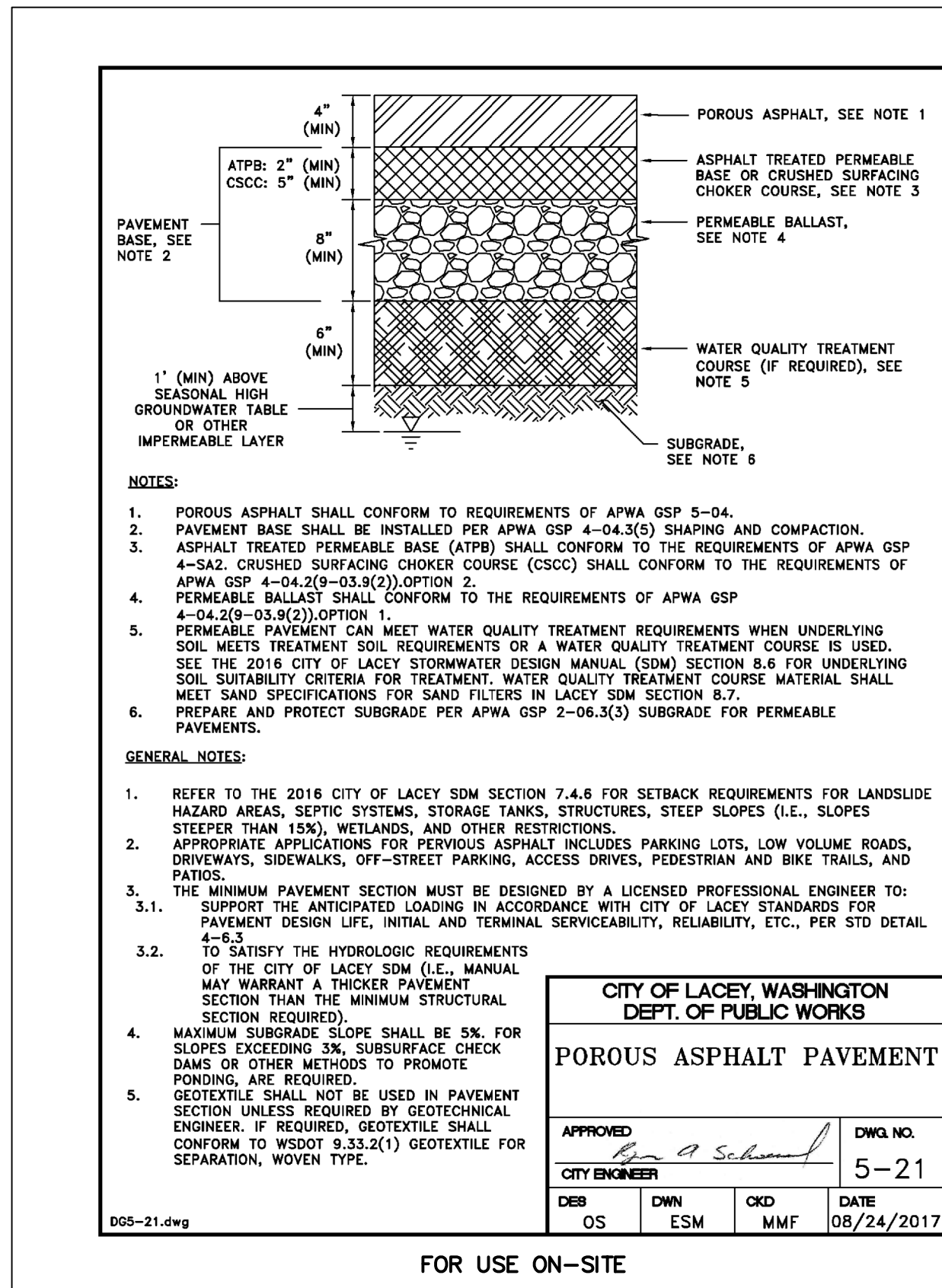
PO Box 12690
 Olympia, WA 98508
 360.705.2474
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 ENGINEERING**

Civil Engineering - Land Planning - Project Management

JOB NUMBER: 24001
 DRAWING NAME: 24001_DRPL

SEC 15, TWP 18N, RGE 1W, W.M.



PERMEABLE PAVEMENT CONSTRUCTION NOTES

Subgrade

- Compact the subgrade to the minimum necessary for structural stability. Two guidelines currently used to specify subgrade compaction are "firm and unyielding" (qualitative), and 90-92% Standard Proctor (quantitative). Do not allow heavy compaction due to heavy equipment operation. The subgrade should not be subject to truck traffic.
- After compaction, the subgrade surface shall be hand-raked or gently scarified to eliminate any "soil skin" that has formed.
- To prevent compaction when installing the aggregate base, the following steps (back-dumping) should be followed: 1) the aggregate base is dumped onto the subgrade from the edge of the installation and aggregate is then pushed out onto the subgrade; 2) trucks then dump subsequent loads from on top of the aggregate base as the installation progresses.
- Any subgrade areas inadvertently compacted shall be scarified to a minimum 6" depth prior to placement of the base course.

Geotextile Fabric

Geotextile fabric shall conform to Standard Specification Section 9-33 (Table 3) "Geotextile for separation or soil stabilization" (Mirafi 140N or equal).

Aggregate Top Course

Washed "Gravel Backfill for Drains" per WSDOT 9-03.12(4).

Aggregate Base Course

Washed "Permeable Ballast" per WSDOT 9-03.9(2).

Wearing Layer

For all surface types, a minimum initial infiltration rate of 20 inches per hour is necessary. To improve the probability of long-term performance, significantly higher initial infiltration rates are desirable.

Permeable Asphalt

- Products must have adequate void spaces through which water can infiltrate (minimum 200 in/hr). A void space within the range of 16 - 25% is typical.
- Aggregate shall consist of uniform, small- to medium-grained, crushed gravel meeting the specifications for "No. 8 Stone" per ASTM C-33.
- Binder shall conform to PG 70-22 criteria and should be placed at a ratio of 5.75 to 6.00 percent by weight.
- Pavement shall be compacted to a firm condition by means of approximately two passes with a heavy vibratory roller. Excessive compaction should be avoided.

Pervious Concrete

- Products must have adequate void spaces through which water can infiltrate (minimum 200 in/hr). A void space within the range of 15 - 35% is typical.
- Aggregate shall consist of uniform, small- to medium-grained, crushed gravel meeting the specifications of "No. 8 Stone" per ASTM C-33. Typically, the concrete paste is a six-sack mix with a water/cement ratio in the range of 0.27 to 0.35. The finished concrete shall provide a minimum compressive strength of 2,000 psi.

Acceptance Test

- Driveways and parking lot areas can be tested by simply throwing a bucket of water on the surface. If anything other than a scant amount puddles or runs off the surface, additional testing is necessary prior to accepting the construction.

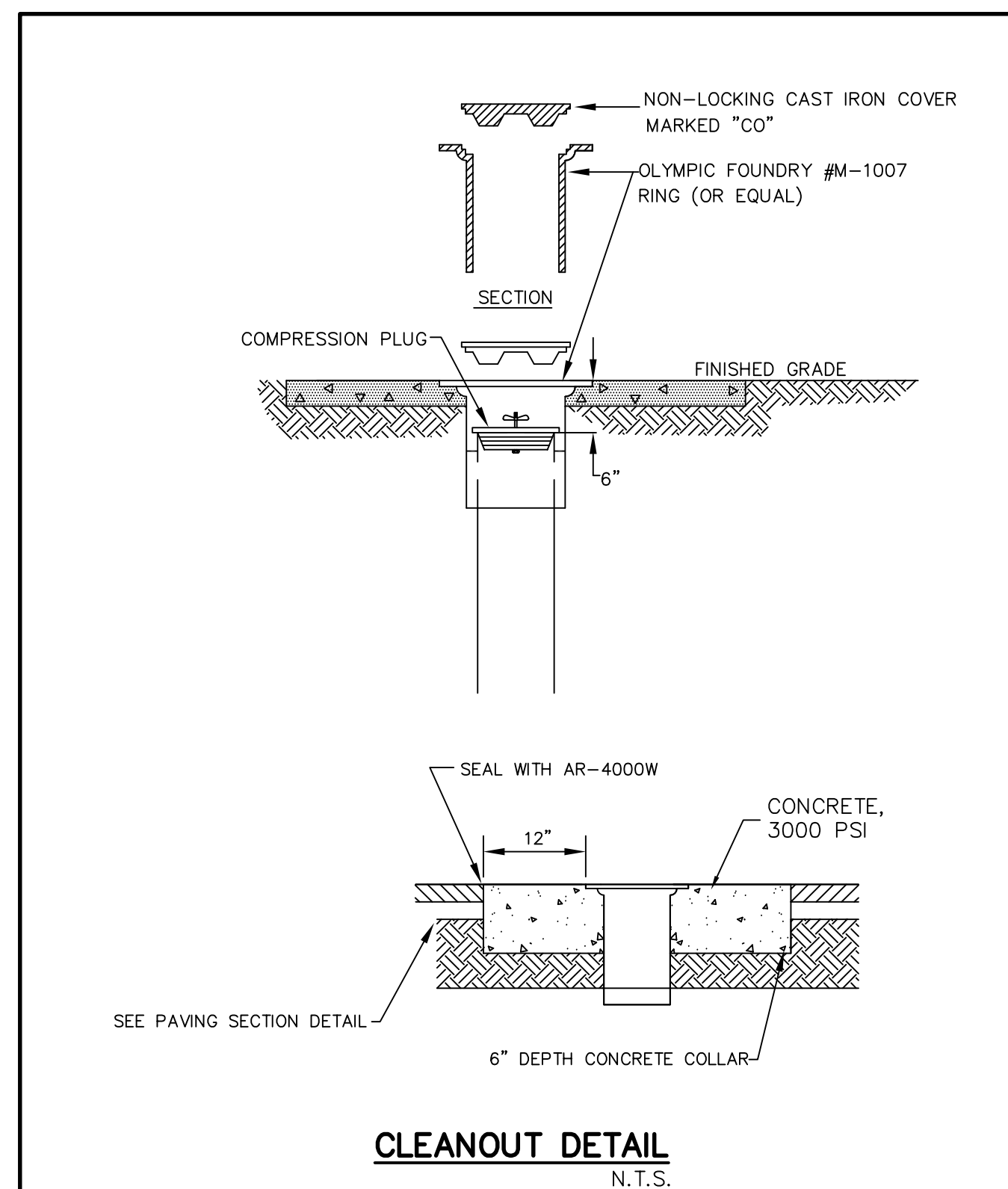
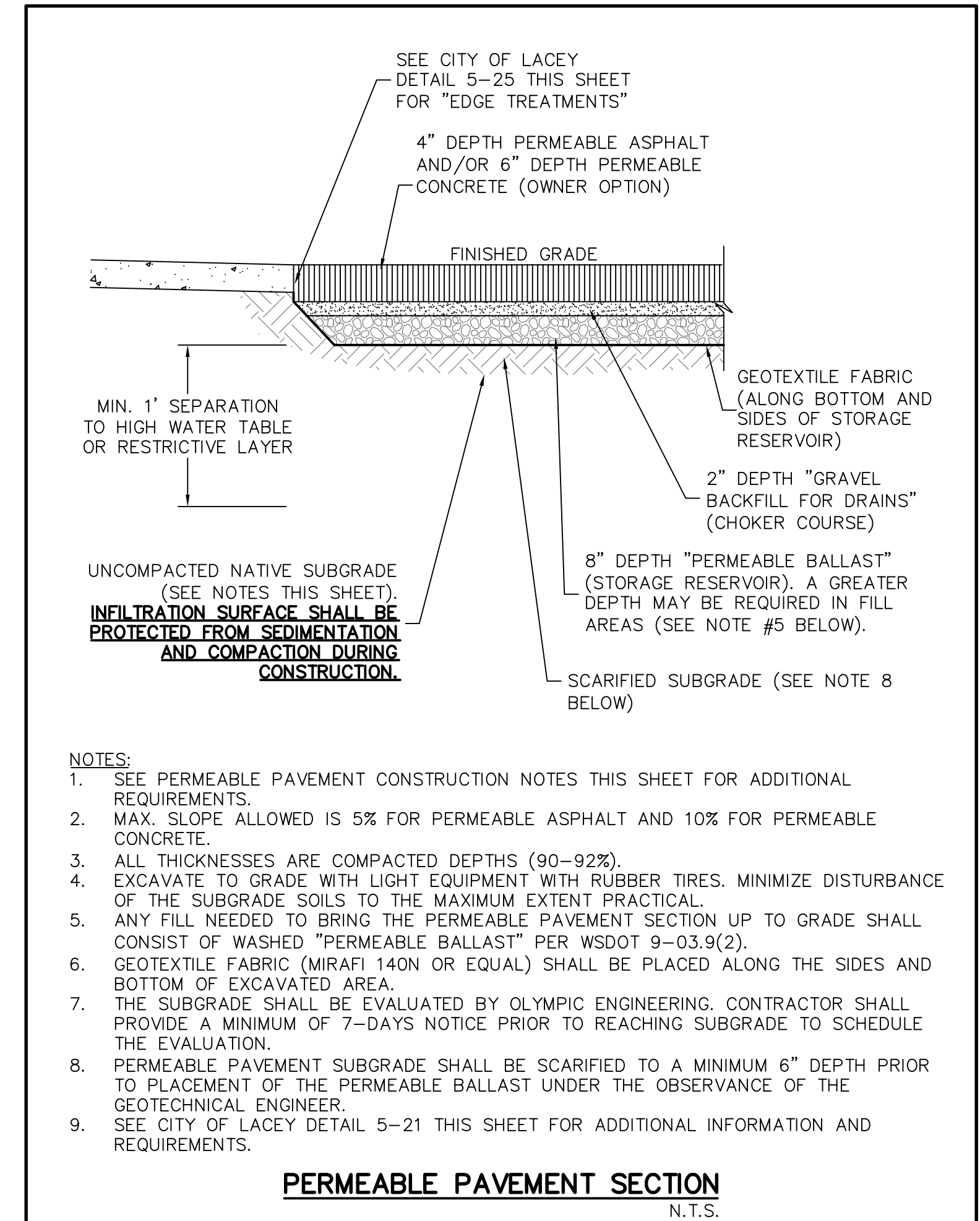
Maintenance During Construction, Including Construction of the Building

Care shall be taken to prevent dirt, sand, and other debris from being conveyed or tracked onto the permeable pavement during all phases of construction, including construction of the building. Over time, dirt, sand, dust, and other debris can collect in permeable pavement voids and reduce its porosity, which can negatively affect the functionality of the system.

In order to preserve maximum functionality, the contractor shall clean the permeable pavement semi-annually until final site stabilization and building construction completion and after overall project completion. Particular attention should be given to areas where debris accumulation is visible. Best practices for maintaining permeable pavement include sweeping with a streetsweeper that uses water in conjunction with brushes and vacuum to clean debris from the surface and prevent it from reducing the pavements void volume. If that method is unsuccessful, or as an alternate method of cleaning if using a streetsweeper is not practical, permeable pavement may be cleaned by washing with high pressure water. Using a vacuum to collect as much of the water-debris mixture as possible may increase the effectiveness of pressure washing.

Maintenance

- Erosion and introduction of sediment from surrounding land uses should be strictly controlled after construction by amending exposed soil with compost and mulch, planting exposed areas as soon as possible, and armoring outfall areas.
- Surrounding landscaped areas should be inspected regularly and possible sediment sources controlled immediately.
- Installations can be monitored for adequate or designed minimum infiltration rates by observing drainage immediately after heavier rainstorms for standing water or infiltration tests using ASTM C1701.
- Clean permeable pavement surfaces to maintain infiltration capacity at least once or twice annually following recommendations below.
- Utility cuts should be backfilled with the same aggregate base used under the permeable paving to allow continued conveyance of stormwater through the base, and to prevent migration of fines from the standard base aggregate to the more open graded permeable base material (Diniz, 1980).
- Ice build up on permeable pavement is reduced and the surface becomes free and clear more rapidly compared to conventional pavement. Deicing and sand application may be reduced or eliminated and the permeable pavement installation should be assessed during winter months and the winter traction program developed from those observations. Vacuum and sweeping frequency will likely be required more often if sand is applied.
- Clean permeable pavement surfaces by sweeping with a streetsweeper that uses water in conjunction with brushes and vacuum. If that method is unsuccessful, or as an alternate method of cleaning if using a streetsweeper is not practical, permeable pavement may be cleaned by washing with high pressure water. Using a vacuum to collect as much of the water-debris mixture as possible may increase the effectiveness of pressure washing.



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DESIGNED BY: CMM
DRAWN BY: CMM
CHECKED BY: N.T.S.
SCALE: 3/8"/2024
DATE: 3/6/2024

4/8/2024

CHRISTOPHER M. MAYER
P.E.
REGISTERED PROFESSIONAL ENGINEER
NO. 57401

PO Box 12690
Olympia, WA 98508
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www.olyeng.com

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SHEET: 2 OF 2