

SECTION 9

SPECIFICATIONS FOR SIDEWALKS

9.01 DESCRIPTION OF WORK

The work shall consist of furnishing and installing sidewalks of the specified widths and thicknesses as shown on the plans specified herein, and furnishing all labor, materials, tools, and equipment for receiving, unloading, transporting, laying, and testing of the sidewalk. Contractor shall furnish all necessary accessories to complete the sidewalk work as shown on the plans and specified herein.

The work shall be performed in accordance with the specifications and plans, the current MDOT Standard Specifications for Construction and the following specifications.

9.02 RIGHT-OF-WAY/EASEMENTS

The Contractor shall confine his work to the public right-of-way or easements as shown on the plans. Any other area required for equipment or material storage or for construction operations shall be the Contractor's responsibility.

9.03 LIMITATION ON OPERATIONS

The Contractor shall at all times conduct his work so that there is a minimum of inconvenience to the residents of the streets in this project. A traffic control plan must be submitted to, and approved by, the municipality and/or agency of jurisdiction prior to the start of construction.

9.04 PERMITS

The Contractor shall obtain all necessary permits including but not limited to those from the Road Commission and Drain Commission. The Owner will receive plan approval from these agencies. The Contractor shall pay for any charges or bonds for those permits and related inspection by those agencies. All costs shall be considered part of the major work items.

9.05 HOT MIX ASPHALT (HMA) SIDEWALK CONSTRUCTION

9.05.01 Grade

The sidewalk shall be constructed to match the existing grade, or as noted on the construction plans. The sidewalk will have a transverse slope either toward or away from the road to maintain existing drainage patterns. Minor fills and cuts will be made in the field during construction to provide smooth transition of the sidewalk and maintain existing drainage patterns. The cost to make all cuts and fills required to

construct the sidewalk shall be included in the price bid for the sidewalk grading and restoration.

9.05.02 Subbase Preparation

Existing vegetation shall be removed and topsoil excavated to provide a six (6) inch sand subbase for the proposed sidewalk. The existing sand subbase shall be compacted to ninety-five (95%) percent maximum unit weight in accordance with MDOT procedures. Where fill sand is required it shall be compacted to achieve ninety-five (95%) percent maximum unit weight in accordance with MDOT procedures. The cost to prepare the subbase shall be included in the price bid for the sidewalk grading and restoration.

9.05.03 Gravel Base

The gravel base shall be ten (10') feet wide and consist of six (6) inches of compacted MDOT 22A gravel in accordance with the section as indicated on the construction plans. Density of the gravel shall be ninety five (95%) percent. The cost for gravel base shall be included in the price bid for aggregate base under bituminous (6" compacted in place).

9.05.04 Hot Mix Asphalt (HMA) Surface

The hot mix asphalt surface shall consist of 120 lbs/s.y. MDOT 36A hot mix asphalt (top) over 165 lbs/s.y. of MDOT 13A hot mix asphalt (level) placed in accordance with the section as indicated on the construction plans. The asphalt performance grade shall be 58-28. The hot mix asphalt shall be placed with a self-propelled paver; spreader boxes will not be permitted.

A bond coat shall be applied between successive courses of hot mix asphalt at an application rate of 0.1 gal/s.y. The bond coat shall be included in the cost of hot mix asphalt sidewalk.

9.06 CONCRETE SIDEWALK CONSTRUCTION

Concrete sidewalk shall conform to current MDOT Standard Specifications for Construction Section 803, "Concrete Sidewalks, Sidewalk Ramps and Steps".

9.06.01 Grade

The sidewalk shall be constructed to match the existing grade, or as noted on the construction plans. The sidewalk will have a transverse slope either toward or away from the road to maintain existing drainage patterns. Minor fills and cuts will be made in the field during construction to provide smooth transition of the sidewalk and maintain existing drainage patterns. The cost to make all cuts and fills required to construct the sidewalk shall be included in the price bid for the sidewalk grading and restoration.

9.06.02 Sub-base Preparation

Existing vegetation shall be removed and topsoil excavated to provide a four (4") inch sand sub-base for the proposed sidewalk. The existing sand sub-base shall be compacted to ninety-five (95%) percent maximum unit weight in accordance with MDOT procedures. Where fill sand is required it shall be compacted to achieve ninety-five (95%) percent maximum unit weight in accordance with MDOT procedures. The cost to prepare and provide the four (4") inch sand sub-base shall be included in the unit price bid for the sidewalk grading restoration.

9.06.03 Concrete

Concrete shall meet the requirements for Grade P1 Concrete or Grade S2 Concrete as specified in the current MDOT Standard Specifications for Construction Section 601, "Portland Cement Concrete Pavements". Concrete shall be six sack limestone mix and shall be air-entrained and shall have a compressive strength of not less than 3,500 pounds per square inch, within twenty-eight (28) days of paving. Other materials shall meet the requirements of the applicable portions of the current MDOT Standard Specifications for Construction.

All concrete sidewalks shall be paved with a single course of concrete. Sidewalks through driveways shall be six (6") inches thick. All other walks shall be four (4") inches thick. Unless otherwise specified, saw cuts and removal of existing sidewalk shall be considered incidental to the major items of work.

9.06.04 Joints

Full depth transverse expansion joints shall be constructed perpendicular to the surface of the sidewalk at intervals not to exceed fifty (50') feet. Expansion joint material shall be one-half (1/2") inch pre-molded expansion joints and shall be set 1/4" below the surface of the sidewalk. Sealing of joints will not be required.

One (1") inch pre-molded expansion joints must be placed between the sidewalk and back-of-curb when sidewalk is constructed between the curb and building or other rigid structures. Sealing of joints will not be required.

Transverse plane of weakness joints shall be true to line and grade, and shall be placed at four (4') foot intervals and shall be formed with a grooving tool. Planes of weakness joints shall be constructed to a depth of at least one (1") inch and a width of 1/8 inch to 1/4 inch. Sealing of joints will not be required.

9.06.05 Surface

The surface of the concrete shall be floated to a level uniform surface and left with a slightly rounded surface. The surface shall be roughened with mechanic's brush to prevent smooth and slippery surfaces. No surface shall be troweled to a glassy finish. Edges at the forms and joints shall be rounded with an edging tool.

9.07 HANDICAP CONCRETE CURB

At locations where sidewalk is constructed to a concrete curb, the curb shall be constructed as shown per the handicap concrete curb detail in these specifications. If the curb is existing and does not meet the current standard, the curb shall be sawcut at the nearest joint of removal and shall be completely removed. Unless otherwise specified, this item of work including removal, if needed, shall be paid by the lineal foot as measured along the face of curb.

9.08 SIDEWALK RAMPS

Where shown on the drawings or as directed by the Engineer concrete sidewalk ramps with detectable warning domes shall be installed in accordance with the current detail in the MDOT Road and Bridge Standard Plans. The concrete shall be 6" thick. Unless otherwise specified, this item of work shall be paid by the square foot of concrete sidewalk ramp installed.

9.09 TREES

Trees marked "REMOVE" on the plans shall be taken down and removed from the right-of-way in a manner that does not endanger the adjoining property, or persons or traffic using the right-of-way. Tree limbs (less than three (3) inches in diameter) and tree stumps shall be completely removed and disposed of by the Contractor.

Firewood from the trees removed shall remain the property of the adjoining property owner. If the adjoining property owner does not want the remaining firewood, it shall be the property of the Contractor and disposed of by the Contractor.

Because of the special concern for preservation of trees in the area, only those trees that have been indicated on the construction plans are to be removed.

Trees six (6) inches and smaller that are removed will not be considered a pay item. If shown in the proposal, trees over six (6) inches that are removed shall be a pay item otherwise shall be considered part of the major items of work. All other trees are to be preserved unless written permission for removal is obtained from the adjoining property owner and the Township. Selective pruning of trees will be permitted to allow operation of the Contractor's equipment and this will be required for the necessary clearances along the proposed sidewalk. Tree branches and roots shall be pruned neatly and the scars shall be covered with an approved tree dressing.

9.10 STUMP REMOVAL

As noted on the plans or as authorized by the Township, existing tree stumps as well as stumps remaining from trees which are removed shall be completely removed and disposed of by the Contractor. Grinding stumps down will not be permitted except as specifically authorized by the Township, however, all stumps and root material within two feet (2') of the sidewalk shall be completely removed. Unless otherwise

specified, the cost of stump removal shall be considered part of the major work items.

9.11 TREE REPLACEMENT

Replacement trees shall be the size and type specified in the proposal. Transplanting replacement trees shall be performed in accordance with the current MDOT Standard Specifications for Construction Section 815 "Landscaping". The Contractor shall replace transplanted trees that are not in a vigorous growing condition one year after transplanting. Unless otherwise specified, tree replacement shall be a pay item.

9.12 TREE TRIMMING

Adjacent trees shall be trimmed to allow for a minimum of ten (10) feet overhead clearance and one (1) foot side clearance to the edge of the sidewalk. Unless otherwise specified, cost shall be considered part of the major items of work.

9.13 RELOCATIONS

9.13.01 Existing Utility Structures

Existing utility poles, guy anchors, hydrants (unless listed in the proposal), cable enclosure boxes, etc. shall be relocated by the utility company at no cost to the Contractor.

9.13.02 Fence Relocations

Existing fences shown or not shown on the construction plans shall be relocated in accordance with the current MDOT Standard Specifications for Construction Section 808 "Fencing". Unless otherwise specified, the cost of relocating fences shall be included in the cost of sidewalk grading and restoration.

9.13.03 Landscape Relocation

Existing shrubs, seedlings, bushes, landscaped mounds, decorative stone, shredded bark, etc. at the proposed walkway location shown or not shown on the plans shall be relocated and transplanted by the Contractor, unless specified otherwise by the adjoining property owner.

The Contractor shall take care to transplant shrubs and bushes to guarantee their continued growth. If the transplanted material dies within the Contractor's warranty period, the Contract shall replace the dead material with a similar type nursery stock in vigorous growing condition. Landscaping that cannot be transplanted shall be replaced with a similar type nursery stock in a vigorous growing condition.

Unless otherwise specified, the cost of landscaping relocation and replacement shall be included in the cost for sidewalk grading and restoration.

9.13.04 Sprinkler System Relocations

Existing sprinkler systems shown or not shown on the plans shall be relocated as directed by the Owner's Engineer or the adjoining property Owner. Sprinkler systems shall be tested for leakage after relocation is complete. Unless otherwise specified the cost of relocating sprinkler systems shall be included in the cost for sidewalk grading and restoration.

9.14 ADJUSTMENTS OF EXISTING UTILITY VALVES, ETC.

All existing valves for water mains, including valves for water services, gas company valves, manhole and catch basin castings, etc. shall be adjusted to meet the sidewalk elevations. Unless otherwise specified, the cost for this work shall be considered part of the major items of work.

9.15 MAIL BOXES

The Contractor shall temporarily relocate and maintain mail boxes interfering with the sidewalk location so that mail service is not interrupted, both temporarily and permanent. Mail boxes shall be replaced in a condition and location equal to that prior to construction or as required by the U.S. Postal Service. All mail boxes shall be replaced with a turn out of six (6) inches of MDOT 23A gravel, which shall be included in the cost of bituminous sidewalk grading and restoration.

9.16 DRIVEWAYS/HARD SURFACE PARKING AREAS

Unless otherwise noted on the construction plans or as directed by the Owner's Engineer, all existing driveways/hard surface parking areas shall be saved. Where driveways/hard surface parking areas are to be removed, a clean sawcut smooth joint the full depth of the material shall be made. Bond coat or joint material shall be applied if necessary. Unless otherwise specified, cost of sawcut/removal and appurtenances shall be considered part of the major work items.

9.17 GRAVEL DRIVEWAYS

The proposal includes a quantity for gravel driveways. This item is for replacing gravel in driveways that are disturbed during construction.

9.18 DITCH/SWALE CONSTRUCTION

All ditch/swale construction, as required to maintain existing drainage patterns, shall be considered part of the major items of work, unless otherwise specified.

9.19 EXCESS EXCAVATION

Excess excavation shall be the property of the Contractor and shall be disposed of by the Contractor.

9.20 TREATED LUMBER/CONCRETE RIP-RAP RETAINING WALL

Treated lumber/concrete rip-rap retaining walls shall be constructed in accordance with the details as shown on the construction plans. Unless otherwise specified, these are considered part of the major items of work.

9.21 TREATED LUMBER FENCE

Treated lumber fence shall be constructed in accordance with the details as shown in the construction plans. This is a pay item as listed in the proposal, unless otherwise specified.

9.22 PEDESTRIAN STRIPING

Where indicated on the construction plans existing paved streets, driveways and parking areas shall be striped with a six (6) inch wide white, fifteen (15) mill minimum thickness of paint. Paints must be approved by the Township prior to placement. Unless otherwise specified, pedestrian striping is a pay item measured per lineal foot of sidewalk. The Contractor is responsible for placing temporary signage during the placement of pedestrian striping as indicated in these specifications.

9.23 EXISTING SIDEWALKS, CROSSINGS/REPLACEMENT/SAFETY

Where existing sidewalks are disturbed/removed they shall be replaced as soon as possible. The Contractor shall place barricades and warning signs to alert the sidewalk users.

9.24 MATERIAL TESTING

The Township reserves the right to sample and test any of the materials required for the proposed construction, either before or after delivery to the project and to reject any material represented by any sample which fails to comply with the minimum requirements specified.

The Contractor shall furnish all materials reasonably required for sampling testing and analysis necessary for the testing of materials as required by these specifications.

The cost of the above described testing shall be paid by the Township. If any material fails to meet the specified requirements, all material represented by the sample shall be rejected unless the Contractor can demonstrate through additional tests, at his own expense, that the remainder of the material is satisfactory.

As a minimum requirement, the following shall be submitted to the Owner's Engineer by the Contractor (at no additional cost to the Township):

- A. Pipe: certified test reports for strength from the manufacturer.

B. Hot mix asphalt (HMA) materials:

- 1) master mix design
- 2) slips from the plant as to the type of mix

C. Concrete material slips from the plant as to the type of mix.

9.25 LAWN AND YARD RESTORATION

After construction is complete all disturbed lawn areas, including adjacent cut and fill areas as required to blend into the existing yards, shall be repaired using a maximum of 1 on 4 backslope, four (4) inches of topsoil, MDOT Class A seed, fertilizer and mulch.

All disturbed areas, including adjacent cut and fill areas as required to blend into the existing yards, which are not lawns shall be repaired using a maximum of 1 on 3 backslope, two (2) inches of topsoil, MDOT Roadside Seed, fertilizer and mulch.

When approved by the Township, the existing topsoil may be salvaged and reused.

Restored areas shall be repaired and reseeded as often as necessary in order to produce a close stand of weed free grass to the edges of the sidewalk. The cost of lawn and yard restoration is to be included in the price bid for sidewalk grading and restoration.

9.26 SURFACE RESTORATION

All areas disturbed by construction operations shall be restored to their original condition as determined by the Owner's Engineer. The Engineer will use information from plans and photographs, or video tapes when available.

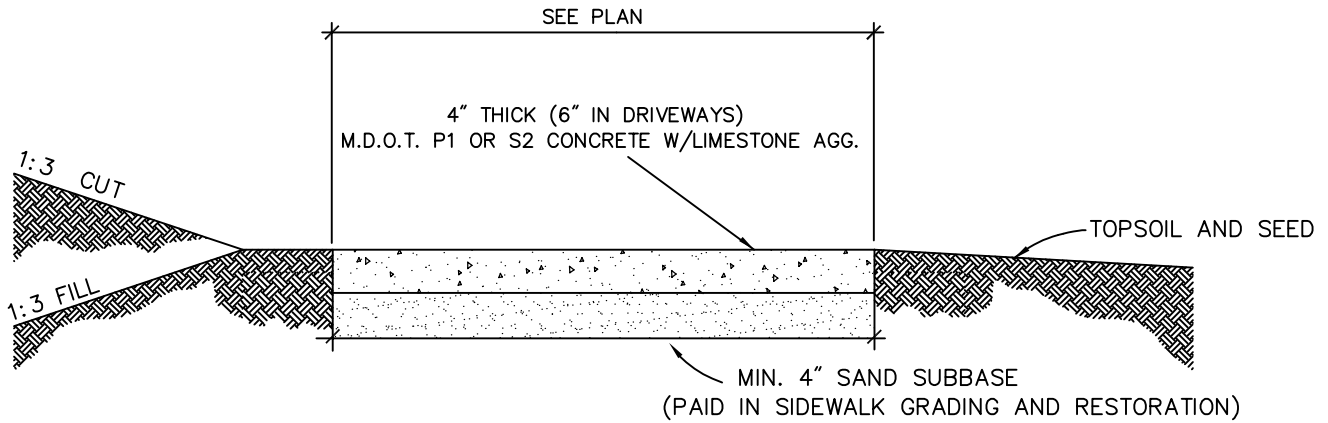
All streets, walks and other improved surfaces disturbed by construction operations shall be replaced to uniform lines and grades established by the Owner's Engineer.

Restoration shall follow the construction in a timely fashion so as to minimize inconvenience to the adjacent property owners and the general public. The manner in which this restoration is done by the Contractor will be a determining factor in the approval by the Owner's Engineer of staking requests and partial payment requests.

All work necessary to return the areas of construction operations to their original condition, other than the items listed in the proposal, shall be considered incidental to the major items of work, and no specific payment will be made therefore.

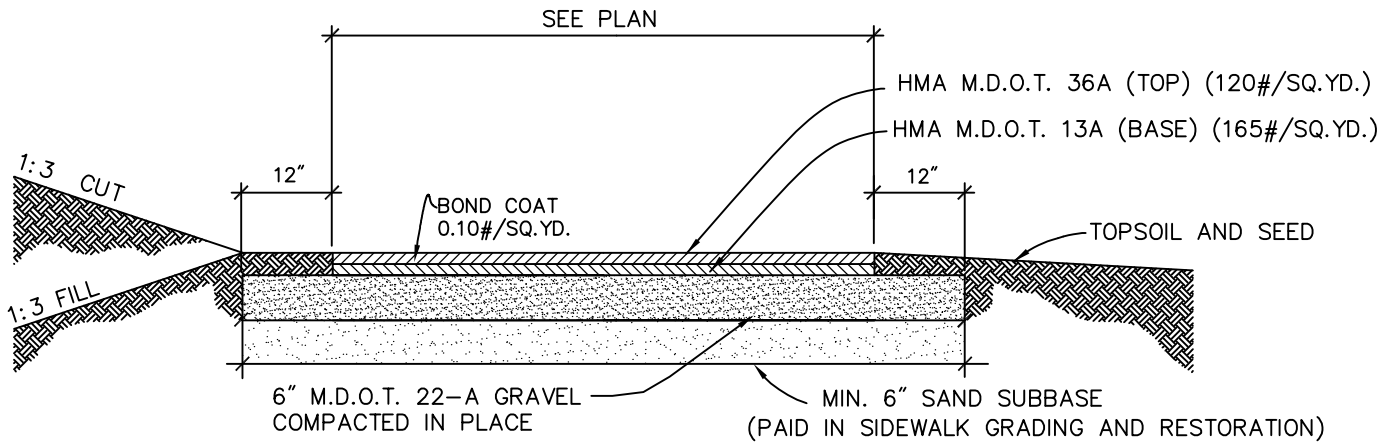
9.27**PROTECTION OF WORK**

The Contractor shall protect the work until it is accepted by the Township. Any part of the completed work that is damaged prior to acceptance by the Township shall be replaced at the Contractor's expense.



CONCRETE SIDEWALK DETAIL

NO SCALE

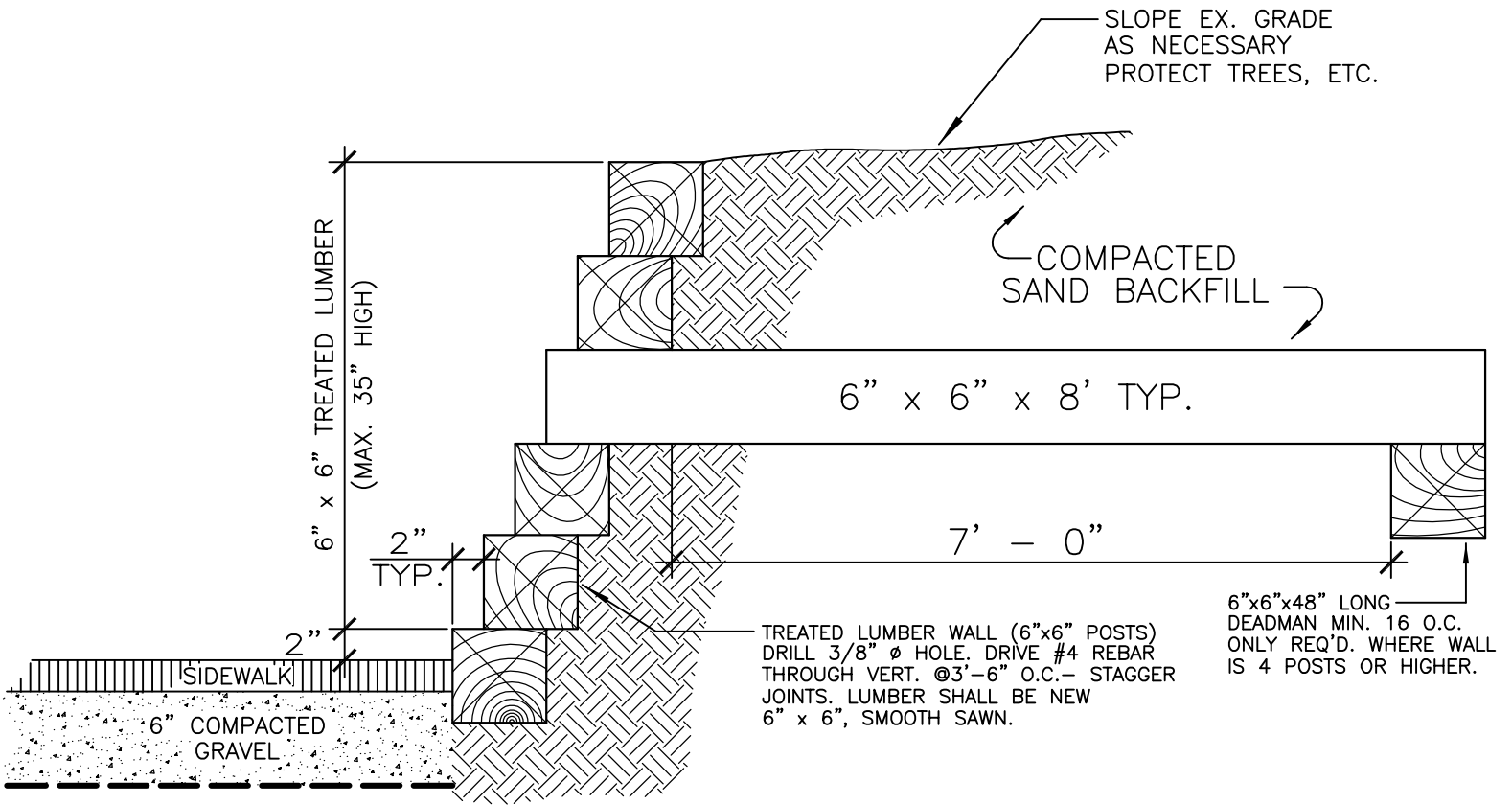


BITUMINOUS SIDEWALK DETAIL

NO SCALE

SIDEWALK DETAILS

PREIN & NEWHOF
CONSULTING ENGINEERS

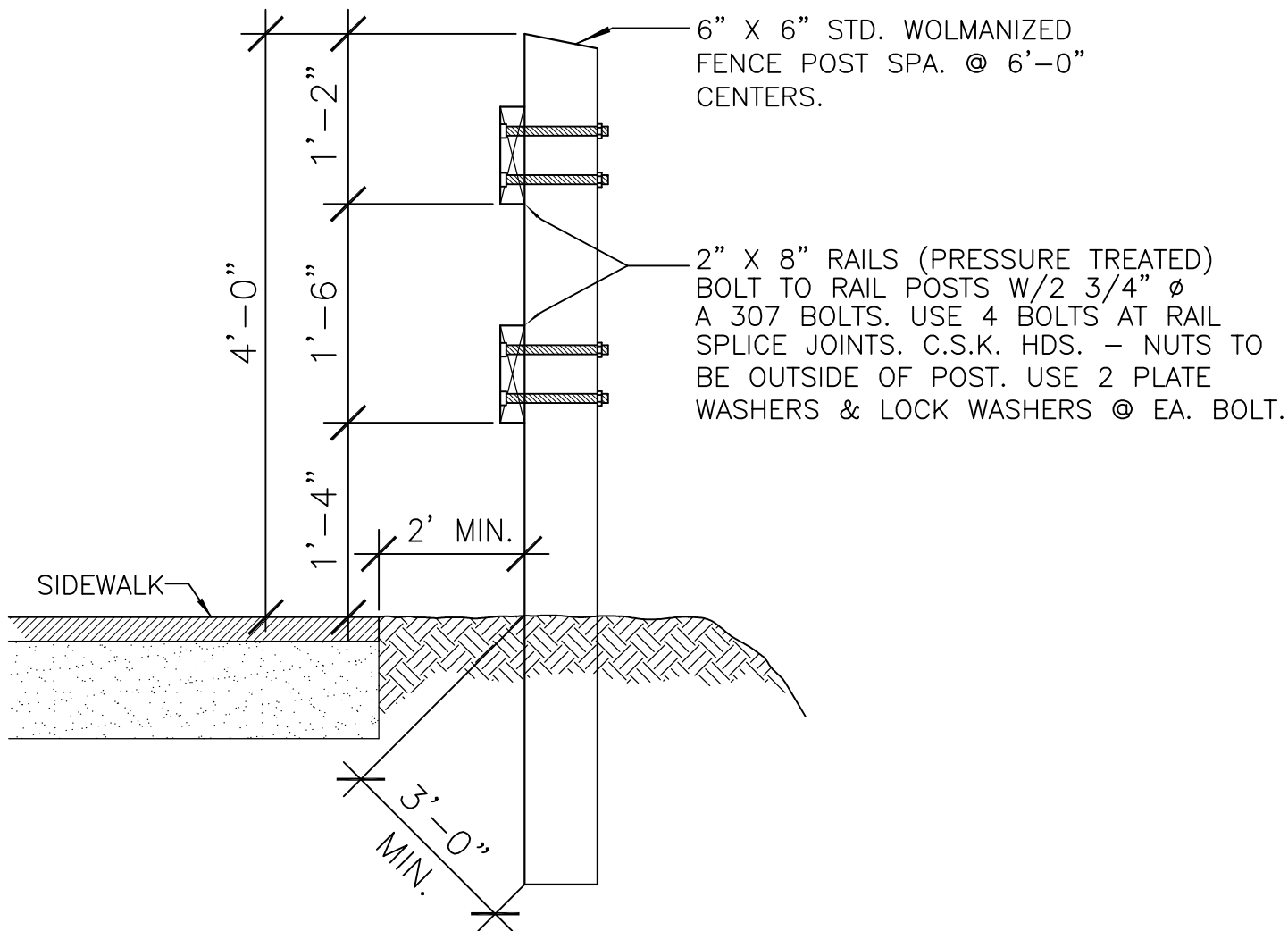


(6" x 6" TREATED LUMBER, 0.4 RETENTION,
EQUIVALENT TO WOOD FOUNDATION
SOUTHERN YELLOW OR RED PINE - SMOOTH SAWN)

DETAIL TREATED LUMBER RETAINING WALL

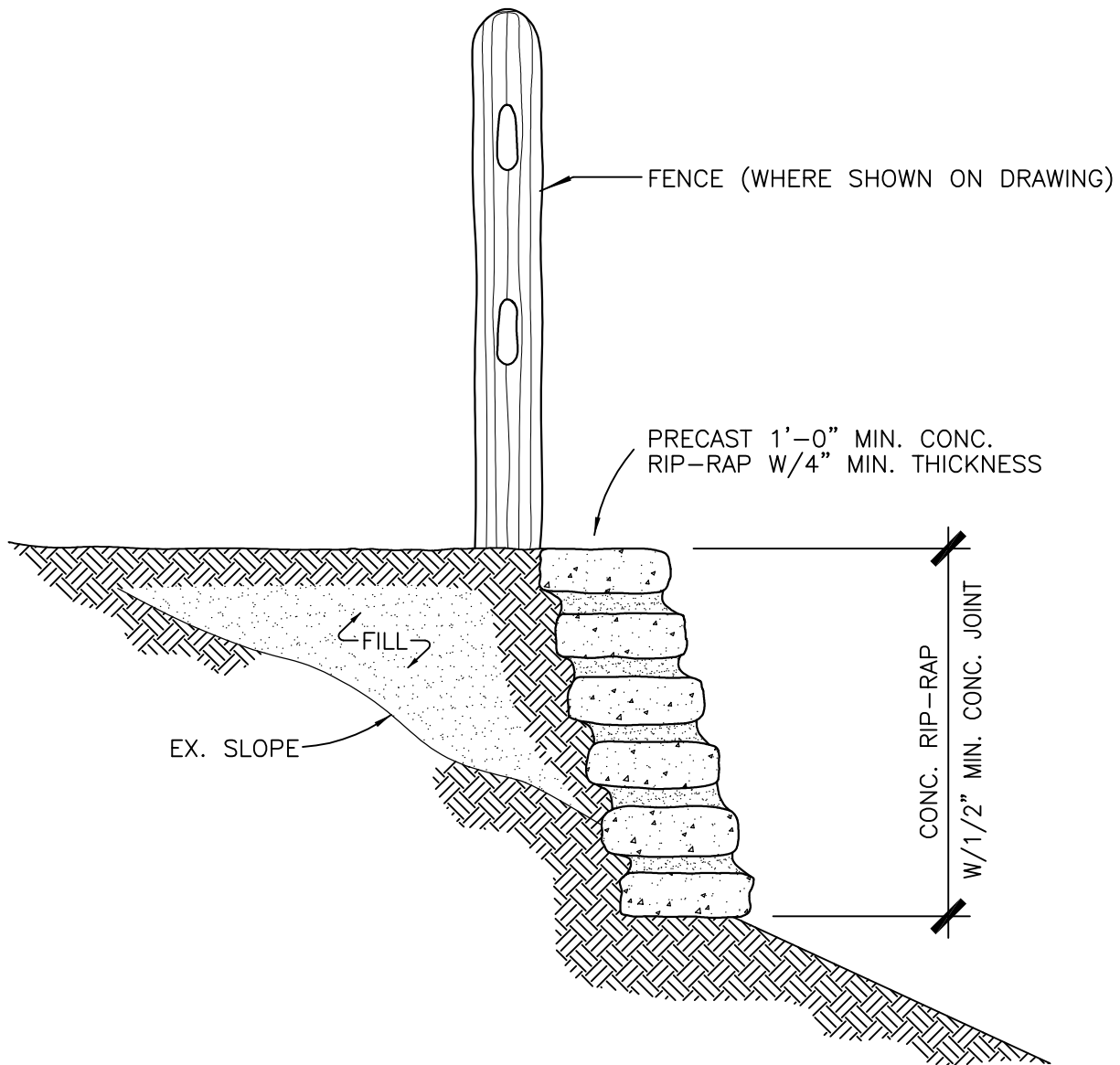
PREIN & NEWHOF
CONSULTING ENGINEERS

01/2006
WALL-LUMBER
PN-HOL



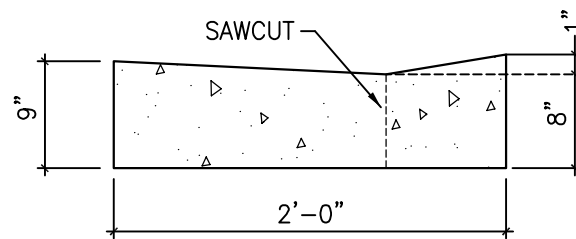
TREATED LUMBER FENCE

PREIN & NEWHOF
CONSULTING ENGINEERS



CONCRETE RIP-RAP RETAINING WALL

PREIN & NEWHOF
CONSULTING ENGINEERS



NOTE:
THE PRICE PER LINEAL FOOT OF
HANDICAP CURB SHALL INCLUDE FULL
DEPTH SAWCUT TO THE NEAREST
JOINT OF REMOVAL, AND PLACING A
HANDICAP CURB SECTION.

HANDICAP CONCRETE CURB DETAIL