

TOWN OF YARROW POINT

STANDARD PLANS AND NOTES

JULY 2010



TOWN MAYOR – DAVID COOPER
TOWN ENGINEER – STACIA SCHROEDER, PE
TOWN PLANNER – MONA GREEN
TOWN BUILDING OFFICIAL – STEVE WILCOX

TOWN OF YARROW POINT STANDARD PLANS AND NOTES

TABLE OF CONTENTS

SECTION 1 – GRADING/ TEMPORARY EROSION & SEDIMENTATION CONTROL

GENERAL NOTES	GE-1
EROSION /SEDIMENTATION CONTROL – PLAN NOTES.....	GE-2
TYPICAL TEMPORARY EROSION CONTROL	GE-3
TEMPORARY CONSTRUCTION – SINGLE-FAMILY ENTRANCE	GE-4
TEMPORARY CONSTRUCTION – PLAT/ SHORT PLAT ENTRANCE.....	GE-5
CATCH BASIN/ INLET SEDIMENTATION TRAP	GE-6
TEMPORARY SEDIMENT POND	GE-7
TEMPORARY SEDIMENT TRAP	GE-8
TREE PROTECTION	GE-9
MINOR FILLS AROUND TREES	GE-10
LARGER FILLS AROUND TREES	GE-11
ROCKERY FACING CUT SECTION.....	GE-12
ROCKERY FACING FILL SECTION	GE-13
ROCKERY FACING UNDER SIDEWALK	GE-14
ROCKERY FACING FILL SECTION REINFORCEMENT.....	GE-15
<u>WSDOT TEMPORARY EROSION CONTROL DETAILS ADOPTED BY YARROW POINT:</u>	
HIGH VISIBILITY FENCE.....	I-10.10-01
SILT FENCE WITH BACKUP SUPPORT	I-30.10-01
SILT FENCE.....	I-30.15-00
EROSION CONTROL AT CULVERT ENDS	I-30.20-00
WATTLE INSTALLATION ON SLOPE	I-30.30-00
COMPOST SOCK.....	I-30.40-00
STRAW BALE BARRIER.....	I-30.50-00
TEMPORARY SILT FENCE FOR INLET PROTECTION IN UNPAVED AREAS.....	I-40.10-00
STORM DRAIN INLET PROTECTION	I-40.20-00
GEOTEXTILE ENCASED CHECK DAM INSTALLATION	I-50.10-00
CHECK DAMS.....	I-50.20-00

EROSION CONTROL BLANKET PLACEMENT ON SLOPE I-60.10-00
EROSION CONTROL BLANKET PLACEMENT IN CHANNEL I-60.20-00

GENERAL NOTES

1. This development project shall conform to the Town of Yarrow Point's requirements and be in accordance with the approved plans. Any changes from the approved plan will require approval from the owner, engineer, building official, town engineer, and town planner as applicable.
2. All workmanship and materials shall conform to the "Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge, and Municipal Construction" (latest edition), except where supplemented or modified by the Town. Copies of the above documents shall be available at the job site during construction.
3. A pre-construction meeting is required prior to the start of all construction. Contact the Town Engineer or the Town building official to schedule a meeting.
4. Locations shown for existing utilities are approximate. The contractor is cautioned that overhead utility lines may not be shown on the drawings. It shall be the Contractor's responsibility to determine the true elevations and locations of all underground utilities and the extent of any hazards created by overhead utility lines. Identification, location marking, and responsibility for underground facilities or utilities is governed by provision of Chapter 19.122 Revised Code of Washington (RCW). Prior to starting construction, the Contractor shall call One-Call (1-800-424-5555) for utility locations (water, sanitary sewer, storm sewer, gas, power, telephone, cable television, and internet).
5. As-built drawings are required prior to project acceptance.
6. If this project involves a public improvement, the plans shall be prepared using the ICC/ANSI A117.1-2003 American National Standard for Accessible and Usable Buildings and Facilities reference manual. Any conflicts between those standards and these plans shall be immediately brought to the Town's attention.

EROSION/ SEDIMENTATION CONTROL – PLAN NOTES

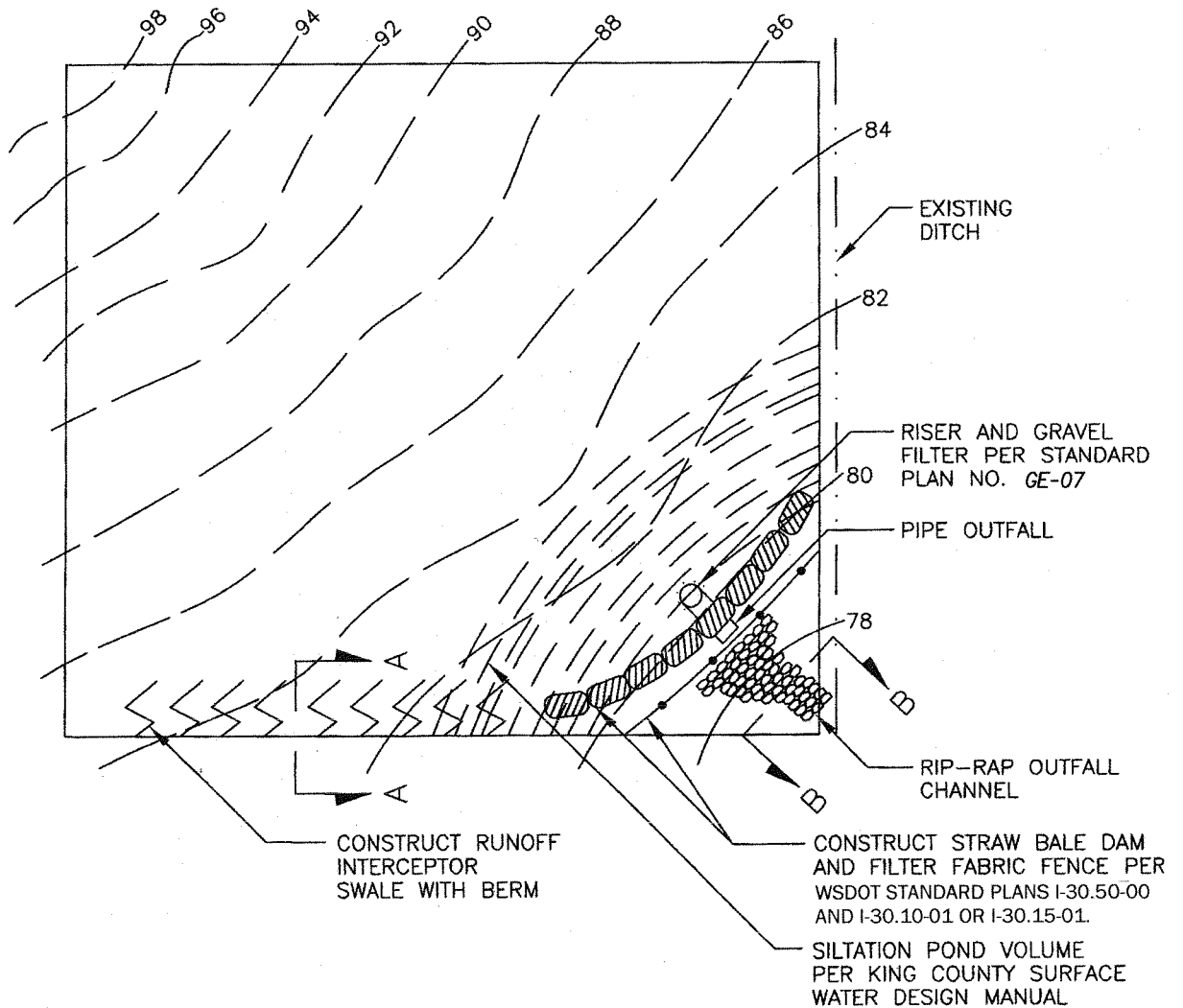
1. The approved Construction Sequence shall be as follows:
 - a. Conduct pre-construction meeting.
 - b. Flag or fence clearing limits.
 - c. Post sign with name and phone number of TESC supervisor.
 - d. Install catch basin protection if required.
 - e. Grade and install construction entrance(s).
 - f. Install perimeter protection (silt fence, brush barrier, etc.).
 - g. Construct sediment ponds and traps.
 - h. Grade and stabilize construction roads.
 - i. Construct surface water controls (interceptor dikes, pipe slope drains, etc.) simultaneously with clearing and grading for project development.
 - j. Maintain erosion control measures in accordance with Town of Yarrow Point Standards and manufacturer's recommendations.
 - k. Relocate erosion control measures or install new measures so that as site conditions change, the erosion and sediment control is always in accordance with the Town TESC minimum requirements.
 - l. Cover all areas within the specified time frame with straw, wood fiber mulch, compost, plastic sheeting, crushed rock or equivalent.
 - m. Stabilize all areas that reach final grade within 7 days.
 - n. Seed or sod any areas to remain unworked for more than 30 days.
 - o. Upon completion of the project, all disturbed areas must be stabilized and best management practices removed if appropriate.
2. Approval of this erosion/ sedimentation control (ESC) plan does not constitute an approval of permanent road or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.)
3. The implementation of this ESC plan and the construction, maintenance, replacement, and upgrading of these ESC facilities is the responsibility of the Permittee/Contractor until all construction is approved.
4. The boundaries of the clearing limits shown on this plan shall be set by survey and clearly flagged in the field by a clearing control fence prior to construction. During the construction period, no disturbance or removal of any ground cover beyond the flagged clearing limits shall be permitted. The flagging shall be maintained by the Permittee/ Contractor for the duration of construction.
5. The ESC facilities shown on this plan must be constructed prior to or in conjunction with all clearing and grading activities in such a manner as to ensure that sediment-laden water does not enter the drainage system or violate applicable water standards. Wherever possible, maintain natural vegetation for silt control
6. The ESC facilities shown on this plan are the minimum requirements for anticipated site conditions. During the construction period, these ESC facilities shall be upgraded (e.g., additional sumps, relocation of ditches and silt fences, etc.) as needed for unexpected storm events. Additionally, more ESC facilities may be required to ensure complete siltation control. Therefore, during the course of construction it shall be the obligation and responsibility of the

EROSION /SEDIMENTATION CONTROL – PLAN NOTES (CONT.)

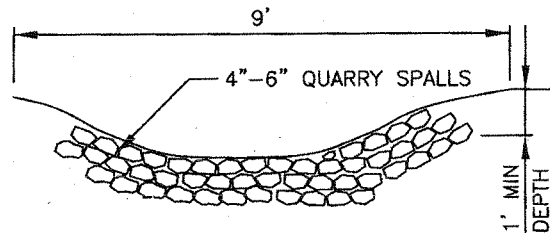
- Contractor to address any new conditions that may be created by his activities and to provide additional facilities over and above the minimum requirements as may be needed.
7. The ESC facilities shall be inspected by the Permittee/Contractor daily during non-rainfall periods, every hour (daylight) during rainfall events, at the end of every rainfall, and maintained as necessary to ensure their continued functioning. In addition, temporary siltation ponds and all temporary siltation controls shall be maintained in a satisfactory condition until such time that clearing and/or construction is completed, permanent drainage facilities are operational, and the potential for erosion has passed. Written records shall be kept documenting the reviews of the ESC facilities.
 8. The ESC facilities on inactive sites shall be inspected and maintained a minimum of once a month or within 48 hours following a storm event.
 9. All denuded soils must be stabilize with an approved TESC method (e.g. seeding, mulching, plastic covering, crushed rock) within the following timelines:
 - May 1 to September 30 – soils must be stabilized within 7 days of grading.
 - October 1 to April 30 – soils must be stabilized within 2 days of grading
 - Stabilize soils at the end of the workday prior to a weekend, holiday, or predicted rain event.
 10. At no time shall more than 1' of sediment be allowed to accumulate within a catch basin. All catch basins and conveyance lines shall be cleaned prior to paving. The cleaning operation shall not flush sediment-laden water into the downstream system.
 11. Stabilized construction entrances shall be installed at the beginning of construction and maintained for the duration of the project. Additional measures, such as wash pads, may be required to ensure that all paved areas are kept clean for the duration of the project.
 12. Any permanent retention/ detention facility used as a temporary settling basin shall be modified with the necessary erosion control measures and shall provide adequate storage capacity. If the permanent facility is to function ultimately as an infiltration or dispersion system, the facility shall not be used as a temporary settling basin. No underground detention tank, detention vault, or system which backs under or into a pond shall be used as a temporary settling basin.
 13. Where seeding for temporary erosion control is required, fast germinating grasses shall be applied at an appropriate rate (e.g., annual or perennial rye applied at approximately 80 pounds per acre).
 14. Where straw mulch is required for temporary erosion control, it shall be applied at a minimum thickness of 2".
 15. All erosion/ sedimentation control ponds with a dead storage depth exceeding 6" must have a perimeter fence with a minimum height of 3'.
 16. All work and materials shall be in accordance with the Town of Yarrow Point standards and specifications
 17. The ESC facilities shall be constructed in accordance with the details on the approved plans. Locations may be moved to suit field conditions, subject to approval by the Town Engineer or the Town Building Official.

EROSION /SEDIMENTATION CONTROL – PLAN NOTES (CONT.)

18. A copy of the approved erosion control plans must be on the job site whenever construction is in progress.
19. All lots adjoining or having any native growth protection easements (NGPE) shall have a 6' high temporary construction fence (chain link with pier blocks) separating the lot (or buildable portions of the lot) from the area restricted by the NGPE and shall be installed prior to any grading or clearing and remain in place until the Town Engineer authorizes removal.
20. Clearing limits shall be delineated with a clearing control fence. The clearing control fence shall consist of a 6-ft high chain link fence adjacent the drip line of trees to be saved, wetland or stream buffers, and sensitive slopes. Clearing control fences along wetland or stream buffers or upslope of sensitive slopes shall be accompanied by an erosion control fence. If approved by the Town, a four-foot high orange mesh clearing control fence may be used to delineate clearing limits in all other areas.
21. Off-site streets must be kept clean at all times. If dirt is deposited on the public street system the street shall be immediately cleaned with power sweeper or other equipment. All vehicles shall leave the site by way of the construction entrance and shall be cleaned of all dirt that would be deposited on the public streets.
22. Any catch basins collecting runoff from the site, whether they are on or off the site, shall have their grates covered with filter fabric during construction. Catch basins directly downstream of the construction entrance or any other catch basin as determined by the Town Engineer or Town Building Official shall be protected with a "filter fabric sock" or equivalent.
23. The washed gravel backfill adjacent to the filter fabric fence shall be replaced and the filter fabric cleaned if it is nonfunctional by excessive silt accumulation as determine by the Town of Yarrow Point. Also, all interceptor swales shall be cleaned if silt accumulation exceeds one-quarter depth.
24. Rock for erosion protection of roadway ditches, where required, must be of sound quarry rock, placed to a depth of 1' and must meet the following specifications: 4"-8" rock/40%-70% passing; 2"-4" rock/ 30%-40% passing; and 1"-2" rock 10%-20% passing.
25. If any part(s) of the clearing limit boundary or temporary erosion/ sedimentation control plan is/are damaged, it shall be repaired immediately.
26. All properties adjacent to the project site shall be protected from sediment deposition and runoff.
27. Do not flush concrete by-products or trucks near or into the storm drainage system. If exposed aggregate is flushed into the storm system, it could mean re-cleaning the entire downstream storm system, or possibly re-laying the storm line.
28. Prior to October 1 of each year (the beginning of the wet season), all disturbed areas shall be reviewed to identify which ones can be seeded in preparation for the winter rains. The identified disturbed area shall be seeded within one week after October 1. A site plan depicting the areas to be seeded and the areas to remain uncovered shall be submitted to the Town Engineer. The Town Engineer can require seeding of additional areas in order to protect surface waters, adjacent properties, or drainage facilities.
29. If a sediment pond is not proposed, a baker tank or other temporary ground and/ or surface water storage tank may be required during construction, depending on weather conditions.



INTERCEPTOR SWALE DETAIL
SECTION A-A



RIP-RAP OUTFALL CHANNEL
SECTION B-B

NOTES

1. IF FLOW IS GREATER THAN 2 FPS, 1' MINIMUM DEPTH OF 4"-6" QUARRY SPALLS IS REQUIRED.
2. SEE ECOLOGY STORMWATER MANAGEMENT MANUAL FOR W. WA, BMP C200 FOR ADDITIONAL DESIGN INFORMATION.

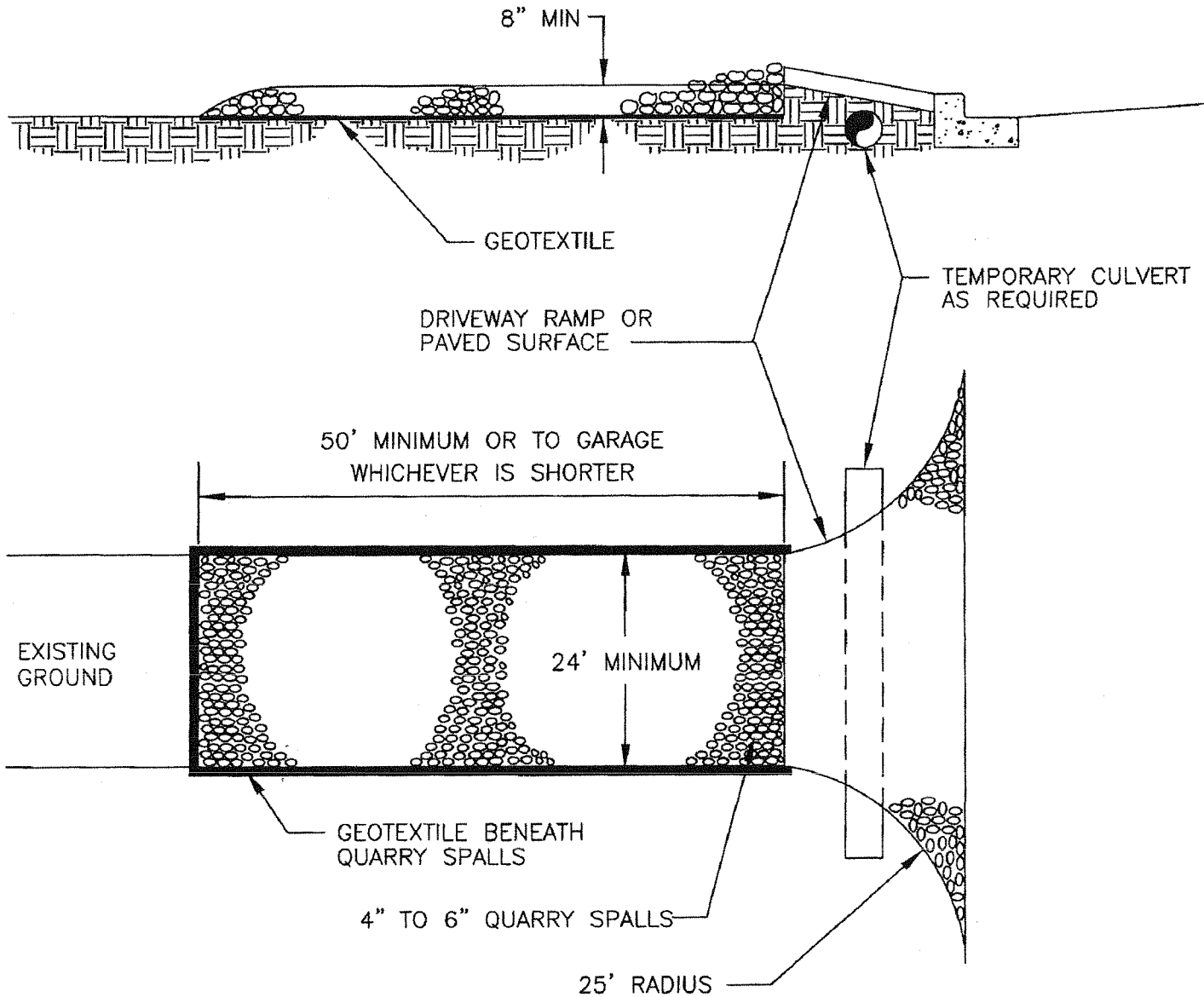
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**TYPICAL TEMPORARY
 EROSION CONTROL**

GE-03



SINGLE FAMILY

NOTES:

1. PAD SHALL BE REMOVED AND REPLACED WHEN SOIL IS EVIDENT ON THE SURFACE OF THE PAD OR AS DIRECTED BY THE TOWN ENGINEER OR BUILDING OFFICIAL.
2. PAD SHALL BE INSTALLED IN PLANTING STRIP AS APPROPRIATE.
3. PAD THICKNESS SHALL BE INCREASED IF SOIL CONDITIONS DICTATE AND/OR PER THE DIRECTION OF THE TOWN ENGINEER OR BUILDING OFFICIAL.
4. CONTRACTOR RESPONSIBLE FOR THICKENED EDGE CONDITION.

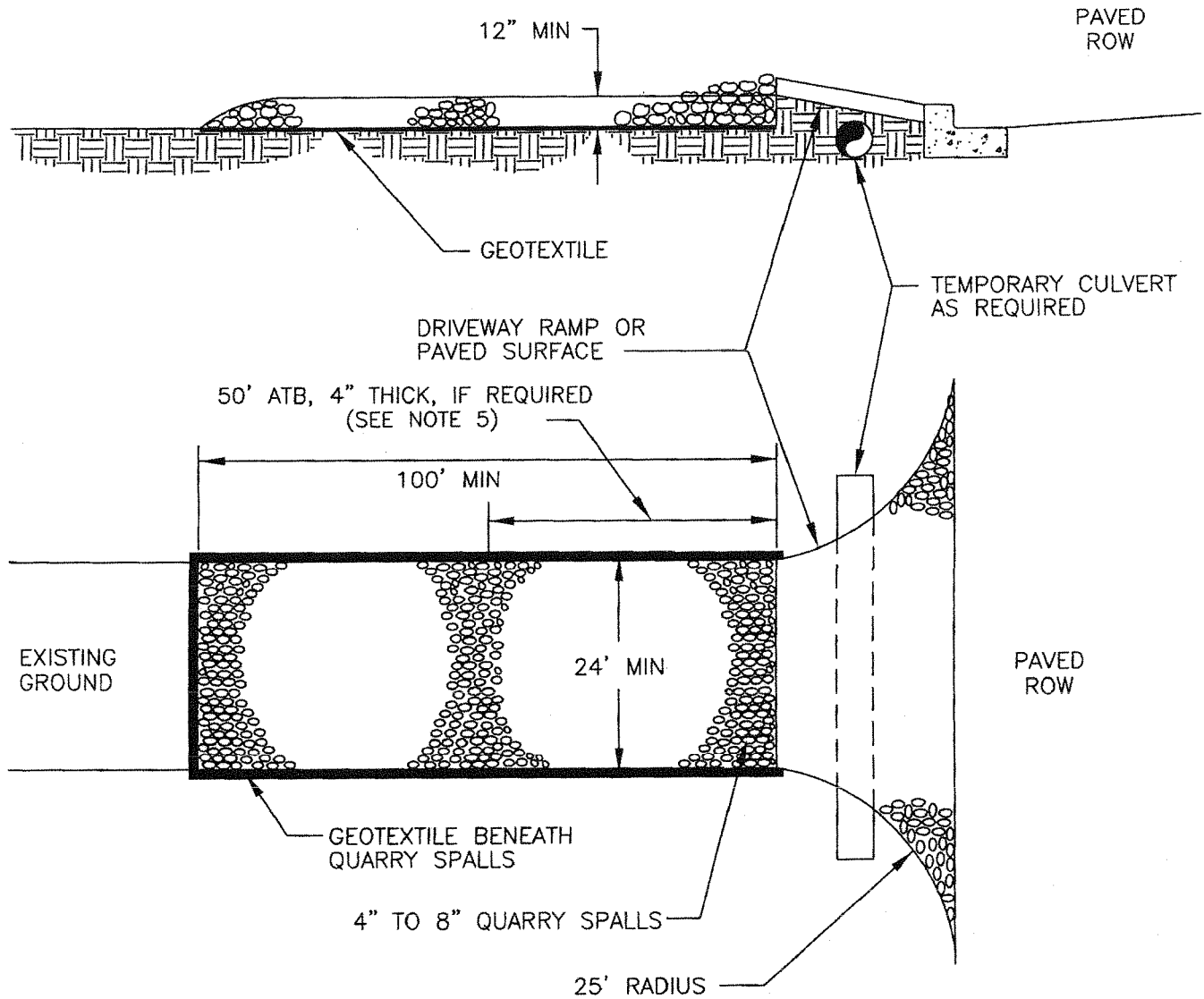
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**TEMPORARY SINGLE-FAMILY
 CONSTRUCTION ENTRANCE**

GE-04



PLAT/COMMERCIAL

1. PAD SHALL BE REMOVED AND REPLACED WHEN SOIL IS EVIDENT ON THE SURFACE OF THE PAD OR AS DIRECTED BY THE TOWN ENGINEER OR BUILDING OFFICIAL.
2. PAD SHALL BE INSTALLED IN PLANTING STRIP AS APPROPRIATE.
3. PAD THICKNESS SHALL BE INCREASED IF SOIL CONDITIONS DICTATE AND/OR PER THE DIRECTION OF THE TOWN ENGINEER OR BUILDING OFFICIAL.
4. CONTRACTOR RESPONSIBLE FOR THICKENED EDGE CONDITION.
5. ATB MAY BE REQUIRED.
6. SEE ECOLOGY STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, BMP C105 FOR ADDITIONAL DEISGN INFORMATION.

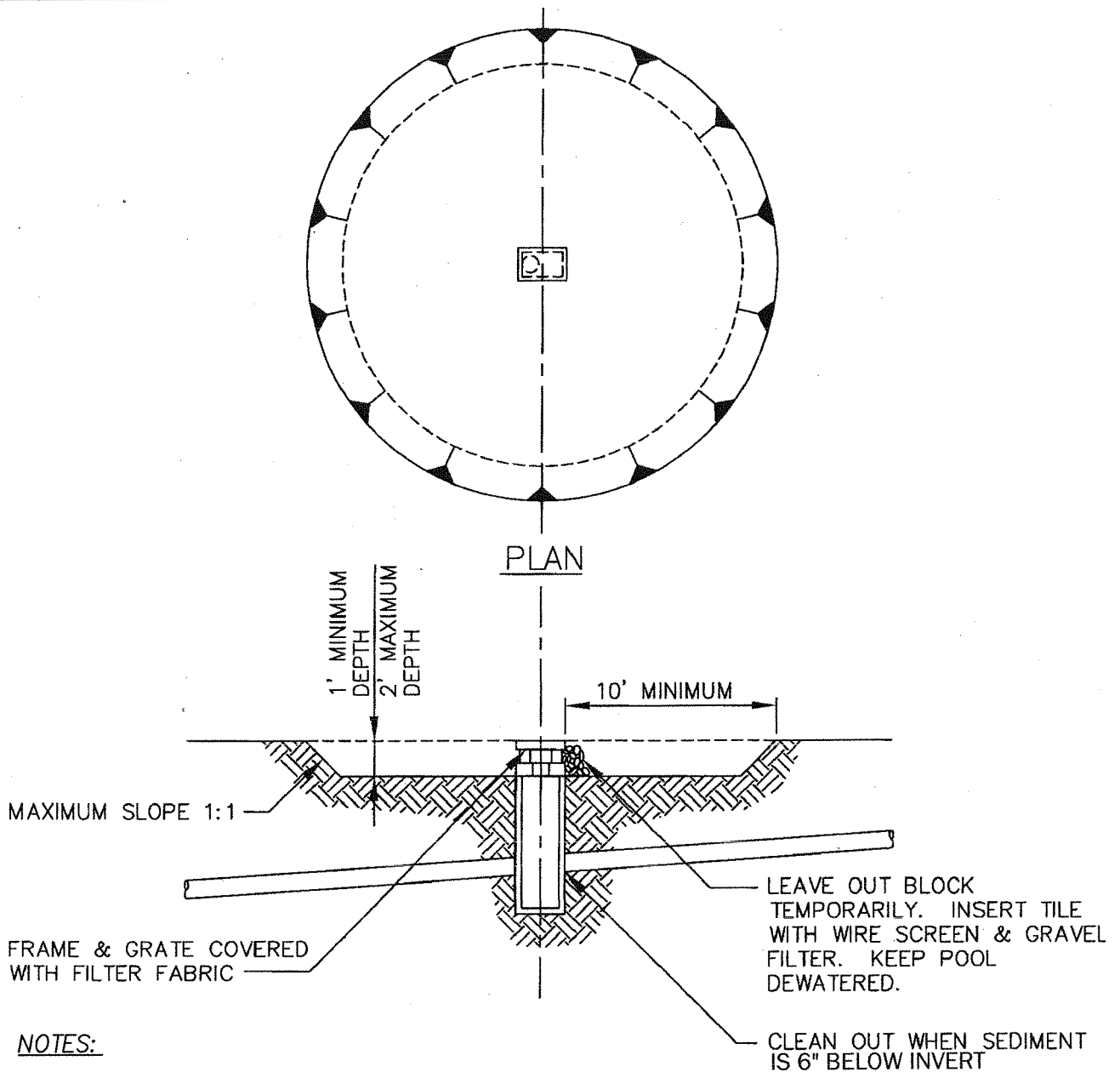
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**TEMPORARY PLAT/SHORT PLAT
 CONSTRUCTION ENTRANCE**

GE-05



NOTES:

1. PROTECT INLETS DURING CONSTRUCTION. KEEP SEDIMENT OUT OF THE STORM DRAINAGE SYSTEM. USE HALF-CIRCLE BEHIND CURB INLETS DURING STREET CONSTRUCTION. MODIFY PROTECTION AS CONSTRUCTION PROGRESSES.
2. CIRCULAR SHAPE IS NOT ESSENTIAL; VARY SHAPE TO FIT DRAINAGE AREA AND TERRAIN. OBSERVE TO CHECK TRAP EFFICIENCY AND MODIFY AS NECESSARY TO INSURE SATISFACTORY TRAPPING OF SEDIMENT. CAN BE ADAPTED TO THRU-CURB INLET.
3. ALLOW 2' MINIMUM OVERHANG OR FILTER FABRIC OVERHANG MUST BE COVERED WITH 1-1/4" CRUSHED ROCK.
4. FILTER FENCE MAY BE REQUIRED AROUND PERIMETER OF BASIN.
5. SEE ECOLOGY STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON, BMP C220 FOR ADDITIONAL DESIGN INFORMATION.

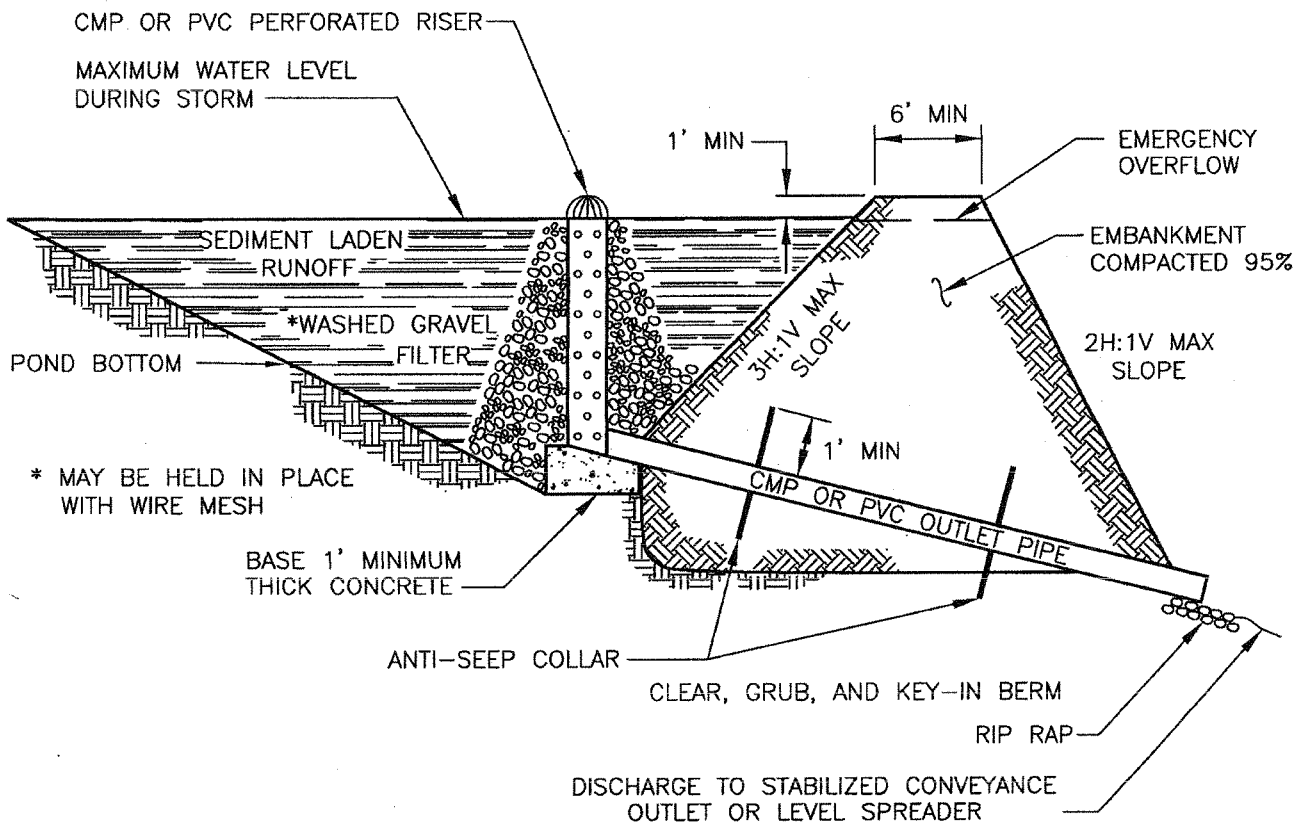
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**CATCH BASIN/ INLET
 SEDIMENTATION TRAP**

GE-06



NOTES

1. VOLUME SHALL BE DETERMINED BY THE ECOLOGY STORMWATER MANAGEMENT MANUAL FOR W. WA OR KING COUNTY SURFACE WATER MANUAL.
2. REMOVE SEDIMENT FROM THE POND WHEN IT ACCUMULATES 1 FOOT DEPTH.
3. POND LENGTH SHALL BE 3 TIMES GREATER THAN THE WIDTH.
4. SEE ECOLOGY STORMWATER MANAGEMENT MANUAL FOR W. WA, BMP C241 FOR ADDITIONAL DESIGN INFORMATION.

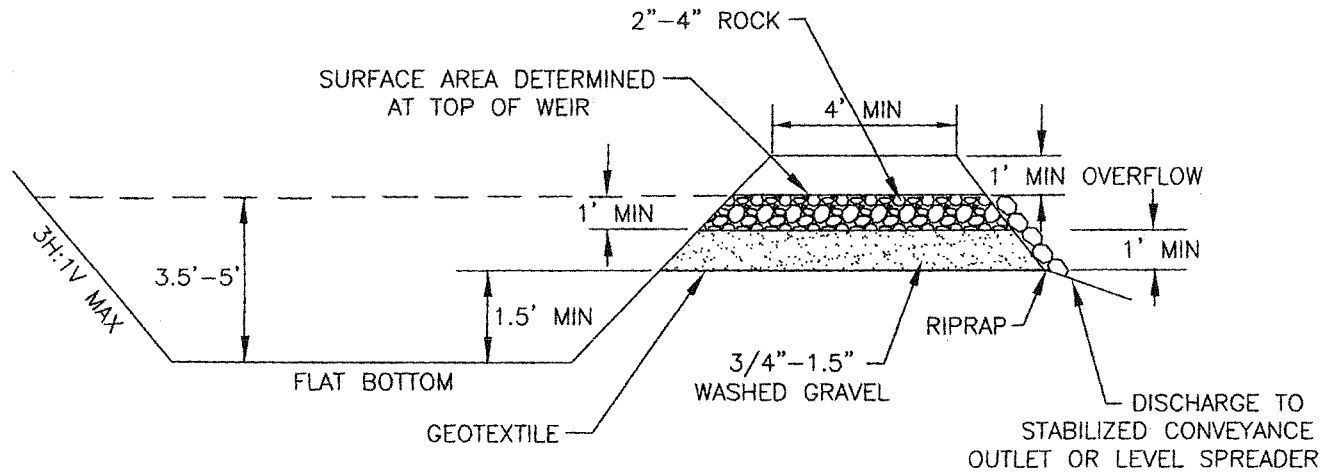
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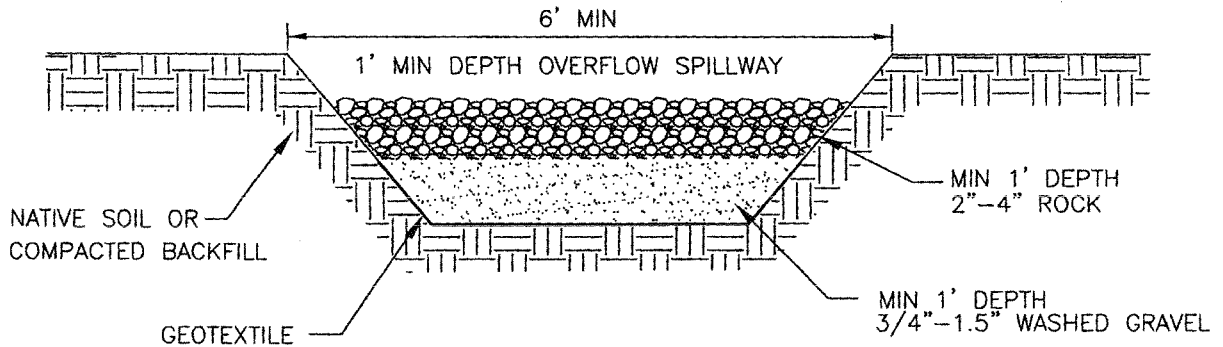


TEMPORARY SEDIMENT POND

GE-07



CROSS-SECTION



TRAP OUTLET

NOTES:

1. VOLUME SHALL BE DETERMINED BY THE LATEST KING COUNTY SURFACE WATER DESIGN MANUAL.
2. REMOVE SEDIMENT FROM THE TRAP WHEN IT ACCUMULATES 1 FOOT DEPTH.
3. PLACE GEOTEXTILE UNDER THE SPILLWAY AND SIDE SLOPES TO PROVIDE A CONTINUOUS LAYER BETWEEN THE GRAVEL/ ROCK AND THE NATIVE EARTHEN MATERIAL.

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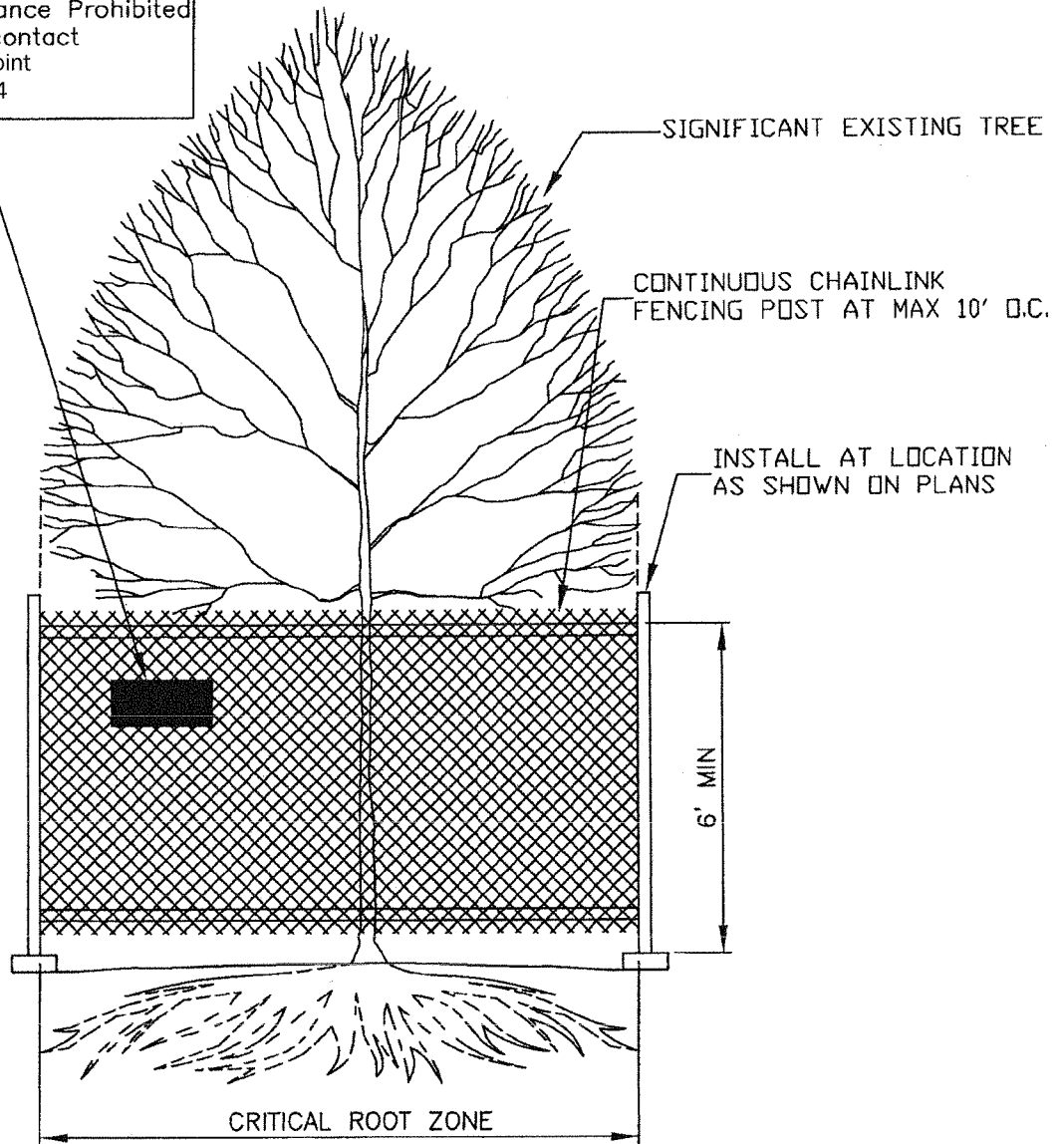


**TEMPORARY
 SEDIMENT TRAP**

GE-08

FENCING SIGN DETAIL

Tree Protection Area, Entrance Prohibited
To report violations contact
Town of Yarrow Point
(425) 454-6694



NOTES:

1. MINIMUM SIX (6) FOOT HIGH TEMPORARY CHAINLINK FENCE SHALL BE PLACED AT THE CRITICAL ROOT ZONE OR DESIGNATED LIMIT OF DISTURBANCE OF THE TREE TO BE SAVED. FENCE SHALL COMPLETELY ENCIRCLE TREE(S). INSTALL FENCE POSTS USING PIER BLOCK ONLY. AVOID POST OR STAKES INTO MAJOR ROOTS. MODIFICATIONS TO FENCING MATERIAL AND LOCATION MUST BE APPROVED BY THE TOWN ENGINEER OR THE TOWN BUILDING OFFICIAL.
2. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER ONE (1) INCH DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING, AND COVERED WITH SOIL AS SOON AS POSSIBLE.
3. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING. FENCING SHALL NOT BE MOVED OR REMOVED UNLESS APPROVED BY THE TOWN ENGINEER OR THE TOWN BUILDING OFFICIAL. WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY UNDER THE SUPERVISION OF A CERTIFIED ARBORIST AND WITH PRIOR APPROVAL BY THE TOWN.
4. FENCING SIGNAGE AS DETAILED ABOVE MUST BE POSTED EVERY FIFTEEN (15) FEET ALONG THE FENCE. SIGN TO BE MINIMUM 11"x17" AND MADE OF WEATHERPROOF MATERIAL.

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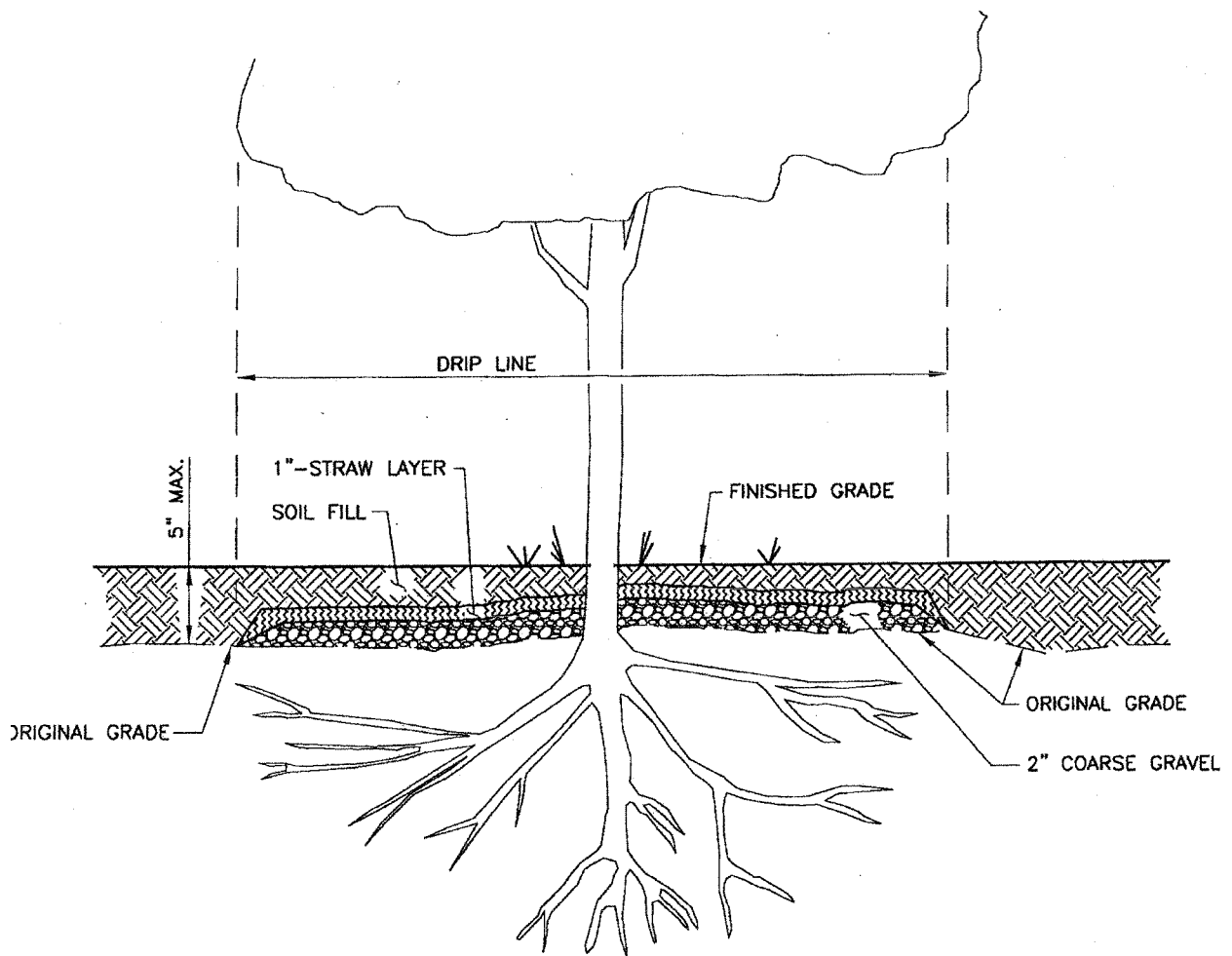
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TREE PROTECTION

GE-09

LAST REVISED: 07/31/10



NOTES:

1. EXTEND GRAVEL AND STRAW OUT TO DRIPLINE OF TREE.
2. COMPACT SOIL BY HAND EQUIPMENT ONLY.

TOWN OF YARROW POINT

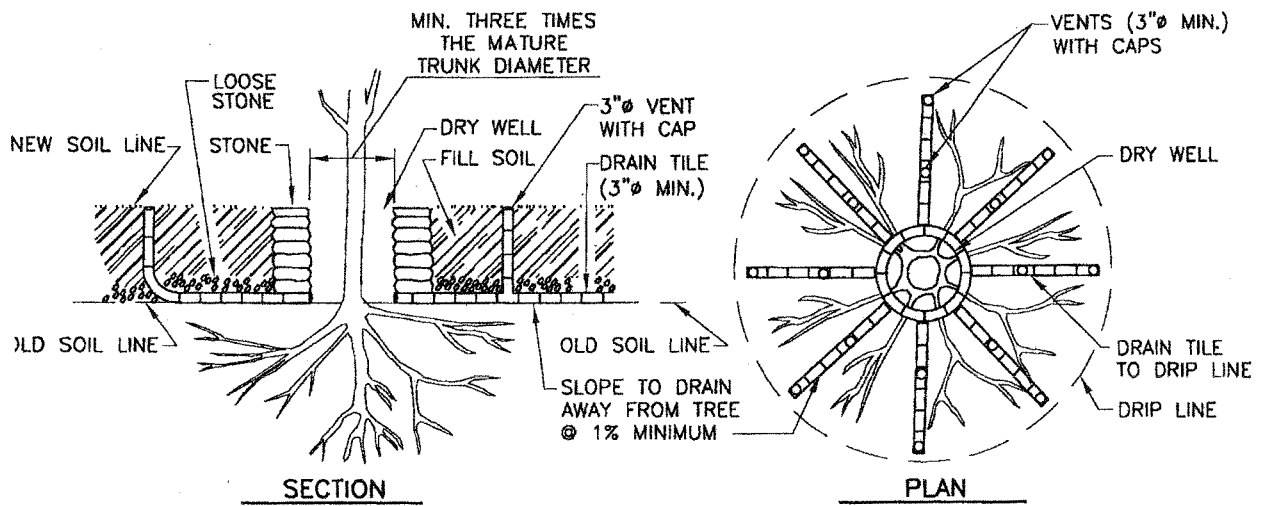
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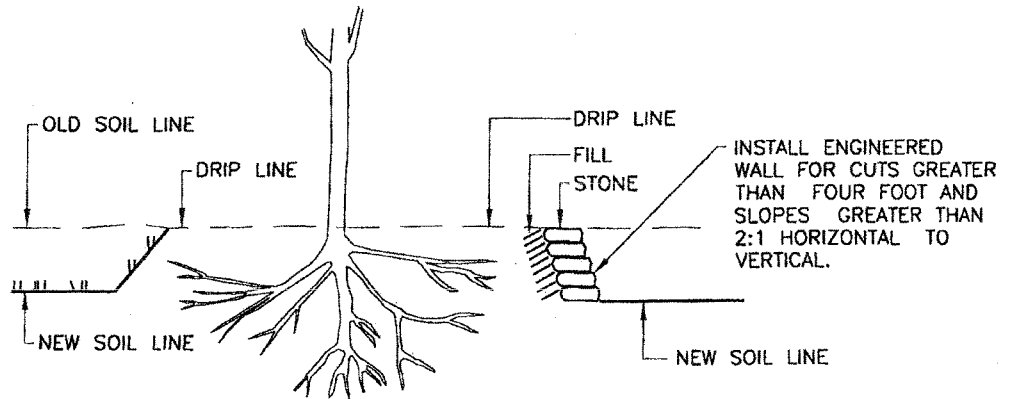
**LARGER FILLS
 AROUND TREES**

GE-10

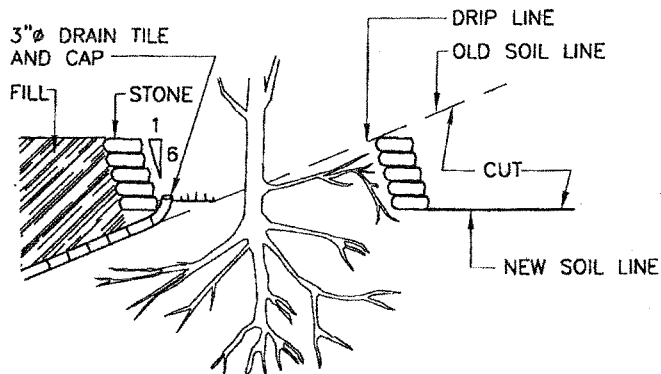
LAST REVISED: 07/31/10



RAISING THE GRADE



LOWERING THE GRADE



LOWERING AND RAISING THE GRADE

NOTES:

1. ALL DRAIN TILE SHALL BE PERFORATED AND WRAPPED IN PERMEABLE DRAIN FABRIC OR CLOTH SOCKS DESIGNED FOR PERFORATED PIPE.
2. MINIMUM BATTER ON DRY WELLS WALLS SHALL BE 1:6 HORIZONTAL TO VERTICAL.
3. ALL FILL SOIL SHALL BE COMPACTED BY HAND EQUIPMENT ONLY.

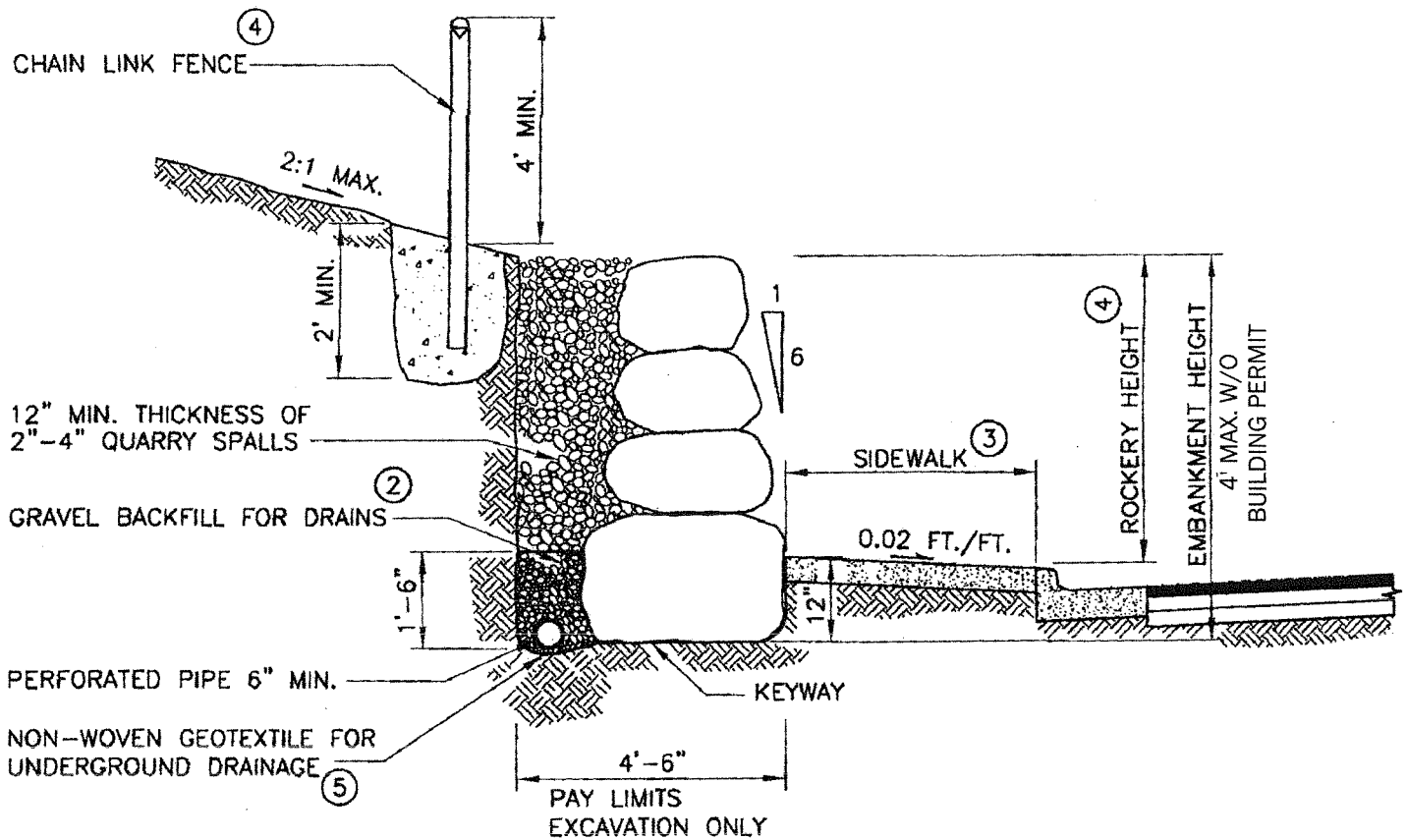
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**MINOR FILLS
 AROUND TREES**

GE-11



NOTES:

1. NOT USED
2. WSDOT/APWA 9-03.12[4]
3. FACE OF ROCKERY OR RETAINING WALL MUST BE A MIN. OF 10 FT. FROM TRAVELED WAY IF ROCKERY OR RETAINING WALL IS BEHIND THICKENED EDGE.
4. CHAIN LINK FENCE, TYP NO. 4 OR 6 (WSDOT/APWA STANDARD) OR HANDRAIL REQUIRED WHEN ROCKERY HEIGHT IS 30 IN. OR GREATER.
5. WSDOT/APWA STANDARD SPECIFICATION SECTION 9-33.
6. THE ROCK FACING FOUNDATION AND/OR KEYWAY IS TO BE CLEARED OF ORGANIC MATTER AND DEBRIS AND THE UNDERLYING MINERAL SOIL COMPACTED TO A MINIMUM 95% OF THE MAXIMUM DRY DENSITY.

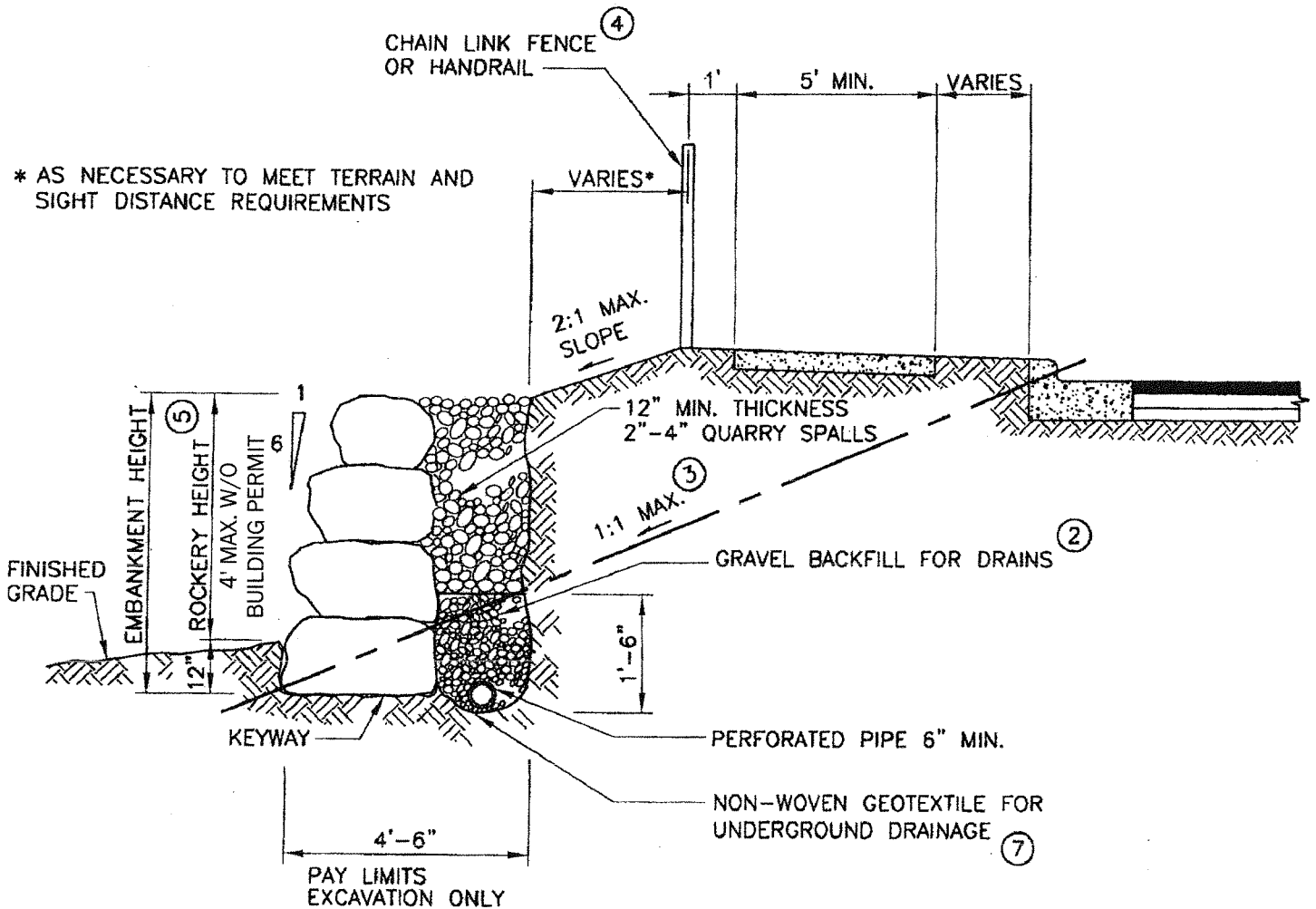
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**ROCK FACING
 CUT SECTION**

GE-12



NOTES:

1. NOT USED
2. WSDOT/APWA 9-03.12[4]
3. FLATTER SLOPE MAY BE REQUIRED IN LESS STABLE SOILS.
4. CHAIN LINK FENCE, TYP NO. 4 (WSDOT/APWA STANDARD) OR HANDRAIL REQUIRED WHEN ROCKERY HEIGHT IS 30 IN. OR GREATER.
5. FOR ROCKERY HEIGHTS EXCEEDING 4 FT., SEE DETAIL GE-15 OR PROVIDE DETAIL STAMPED BY A PROFESSIONAL ENGINEER.
6. NOT USED.
7. WSDOT/APWA STANDARD SPECIFICATION SECTION 9-33.
8. THE ROCK FACING FOUNDATION AND/OR KEYWAY IS TO BE CLEARED OF ORGANIC MATTER AND DEBRIS AND THE UNDERLYING MINERAL SOIL COMPACTED TO A MINIMUM 95% OF THE MAXIMUM DRY DENSITY.

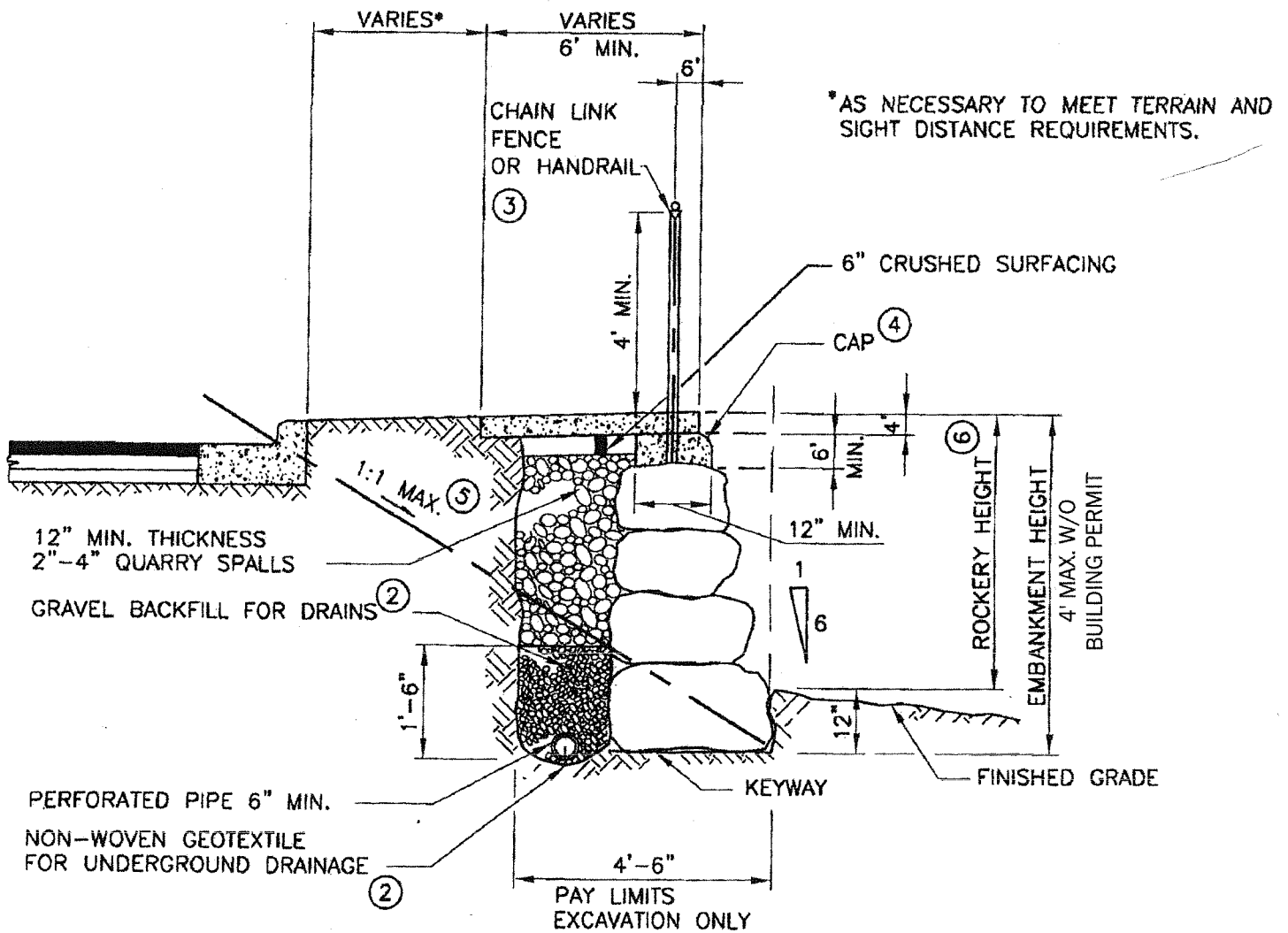
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**ROCK FACING
 FILL SECTION**

GE-13



NOTES:

1. NOT USED
2. WSDOT/APWA 9-03.12[4]
3. CHAIN LINK FENCE, TYP NO. 4 (WSDOT/APWA STANDARD) OR HANDRAIL REQUIRED WHEN ROCKERY HEIGHT IS 30 IN. OR GREATER.
4. CAP SHALL BE CONCRETE CLASS 4000.
5. FLATTER SLOPE MAY BE REQUIRED IN LESS STABLE SOILS.
6. FOR ROCKERY HEIGHTS EXCEEDING 4 FT., SEE DETAIL GE-15.
7. NOT USED.
8. WSDOT/APWA STANDARD SPECIFICATION SECTION 9-33.
9. THE ROCK FACING FOUNDATION AND/OR KEYWAY IS TO BE CLEARED OF ORGANIC MATTER AND DEBRIS AND THE UNDERLYING MINERAL SOIL COMPACTED TO A MINIMUM 95% OF THE MAXIMUM DRY DENSITY.

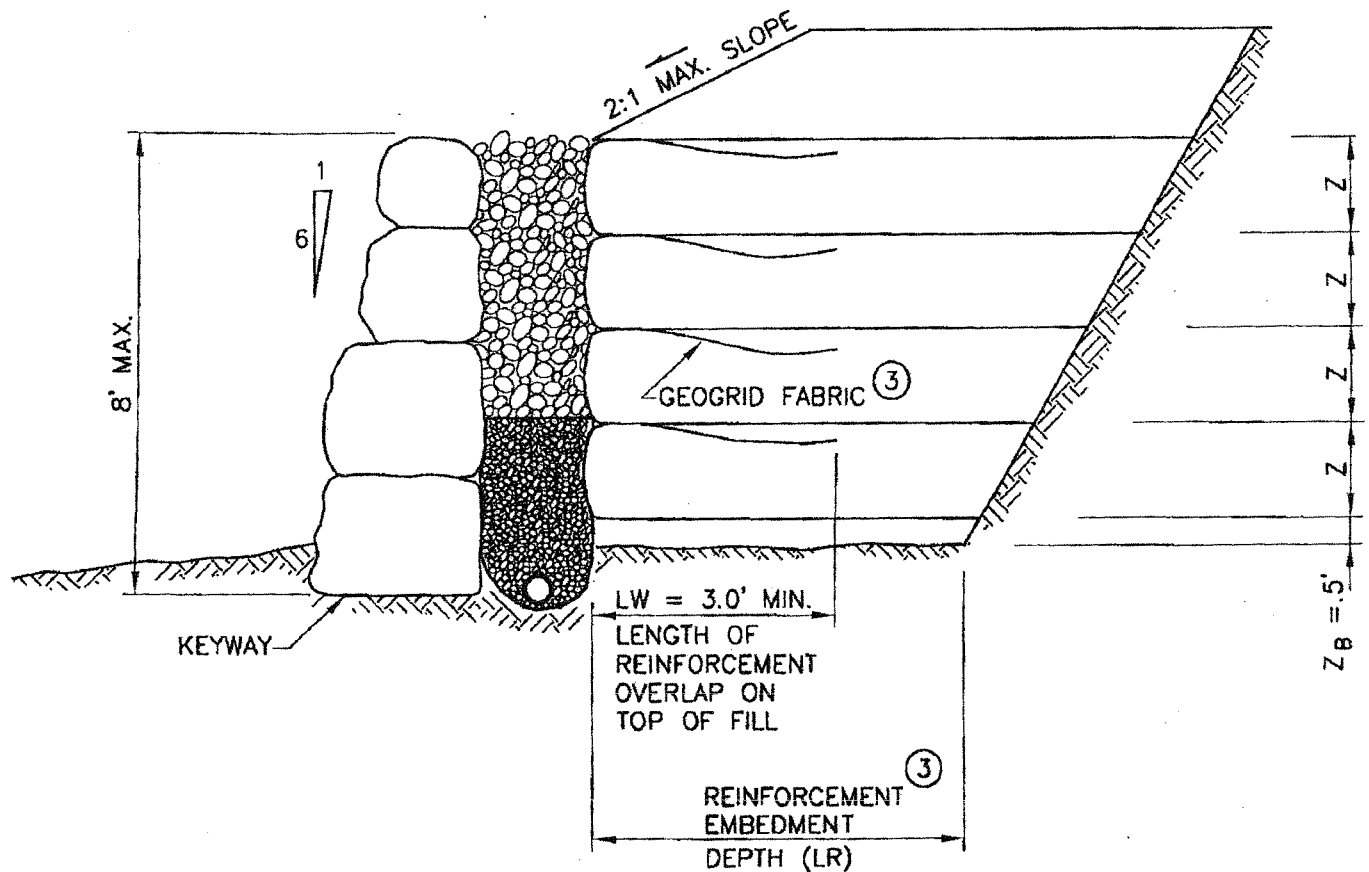
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**ROCK FACING
 UNDER SIDEWALK**

GE-14



NOTES:

1. ROCKERY FACINGS ARE TO BE CONSTRUCTED TO TOWN OF YARROW POINT STANDARDS GE-12, GE-13, OR GE-14.
2. THE WALL FOUNDATION IS TO BE CLEARED OF ORGANIC MATTER AND DEBRIS AND THE UNDERLYING MINERAL SOILS COMPACTED TO 95 PERCENT OF THE MAX. DRY DENSITY. THE EMBANKMENT MATERIAL IS TO BE GRAVEL BORROW MEETING THE REQUIREMENTS OF 9-03.14 OF THE WSDOT STANDARDS. THE BACKFILL IS TO BE PLACED IN THEN LIFTS, NOT EXCEEDING SIX INCHES IN THICKNESS AND COMPACTED TO 95 PERCENT OF THE MAX. DRY DENSITY..
3. GEOSYNTHETIC REINFORCEMENT REQUIREMENTS INCLUDING TYPE, VERTICAL SPACING (Z), AND EMBEDMENT (LR), WILL BE DETERMINED ON A ROCKERY BY ROCKERY BASIS BY A PROFESSIONAL ENGINEER.
4. ZB IS HEIGHT OF FIRST LAYER OF REINFORCEMENT ABOVE COMPACTED SUBGRADE ELEVATION.
5. EMBANKMENTS BEHIND ROCKERIES EXCEEDING 4 FT. IN HEIGHT SHALL BE REINFORCED WITH GEOSYNTHETIC FABRIC OR GEOGRID.
6. CHAINLINK FENCE TYPE #4 OR 6 (WSDOT/ APWA STANDARD) OR HANDRAIL REQUIRED WHEN ROCKERY HEIGHT IS 30 IN. OR GREATER.

TOWN OF YARROW POINT

4030 95TH AVENUE NE
 YARROW POINT, WA 98004
 P: (425) 454-6994 F: (425) 454-7899
 townhall@ci.yarrow-point.wa.us
 www.ci.yarrow-point.wa.us

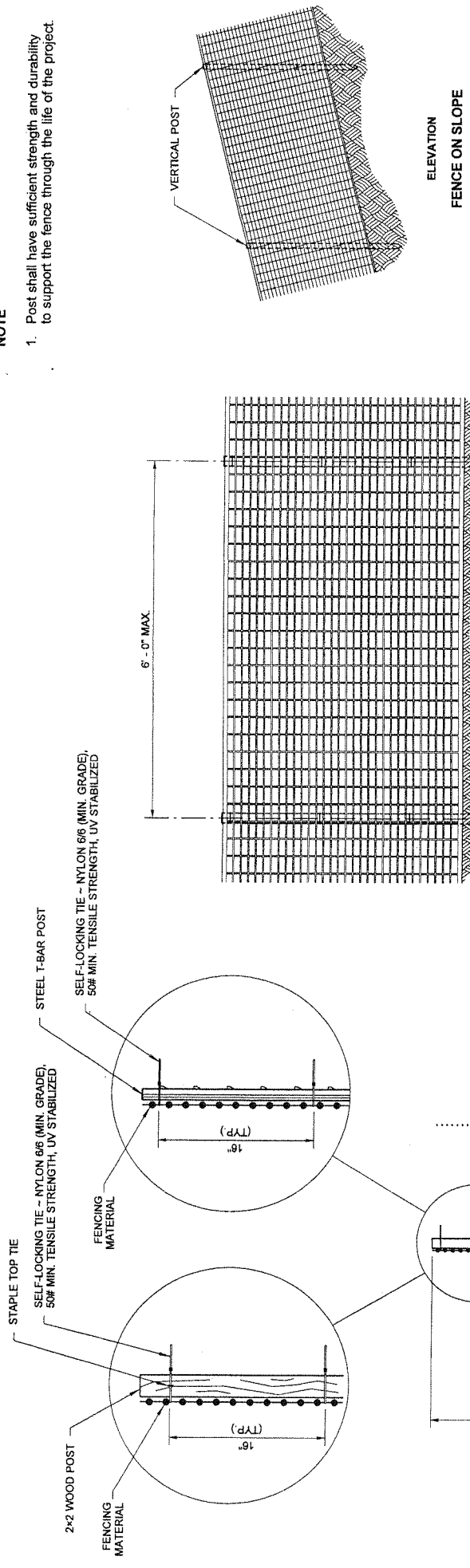


**ROCK FACING
 FILL SECTION REINFORCEMENT**

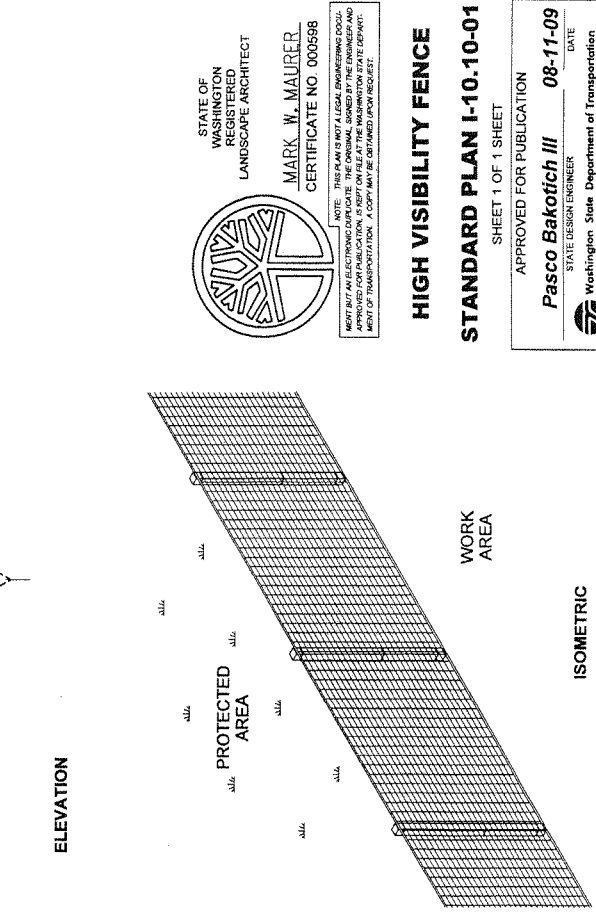
GE-15

NOTE

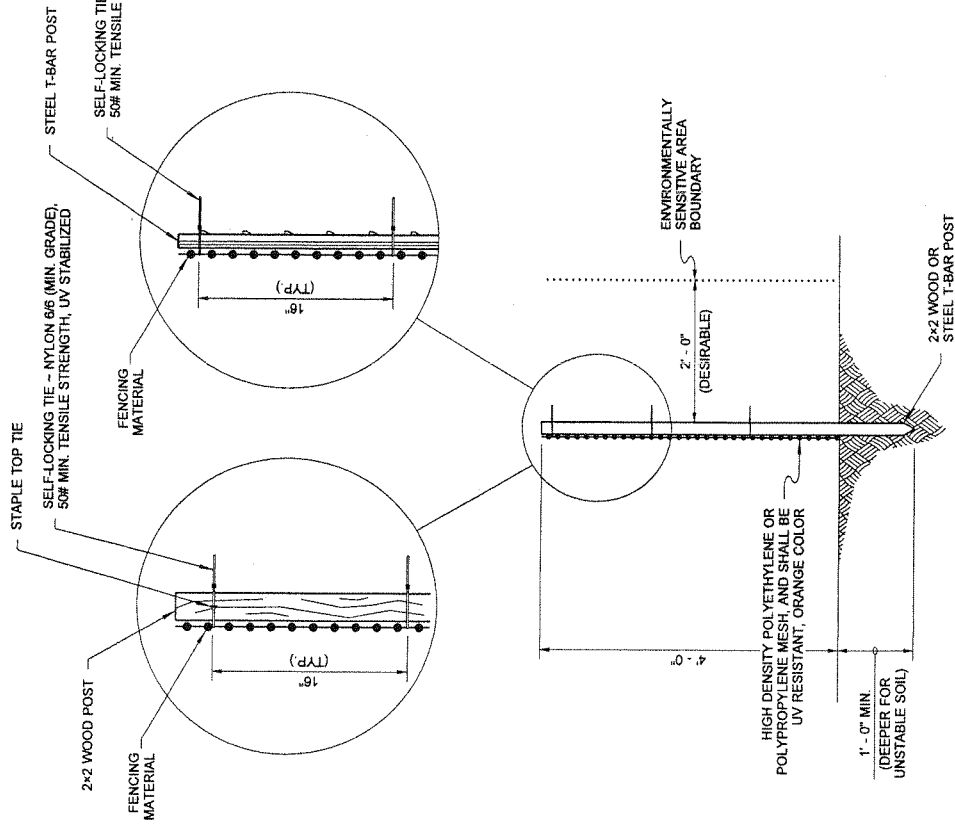
1. Post shall have sufficient strength and durability to support the fence through the life of the project.



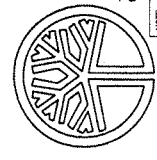
**ELEVATION
FENCE ON SLOPE**



ISOMETRIC



TYPICAL SECTION



STATE OF
WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
MARK W. MAURER
CERTIFICATE NO. 000598

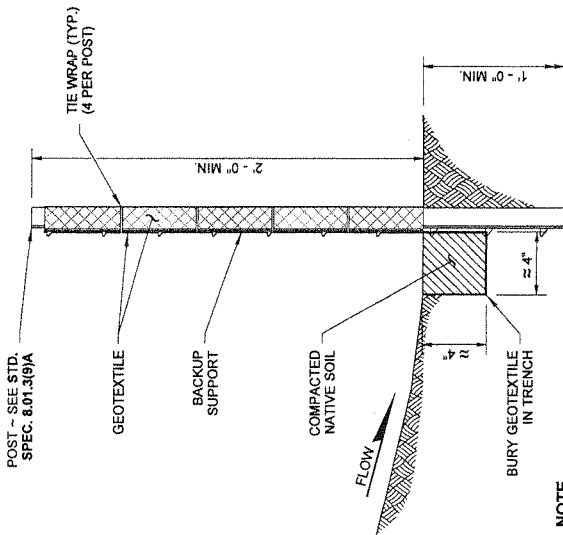
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**HIGH VISIBILITY FENCE
STANDARD PLAN I-10-10-01**

SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION
Pasco Bakotich III
STATE DESIGN ENGINEER
DATE **08-17-09**
Washington State Department of Transportation

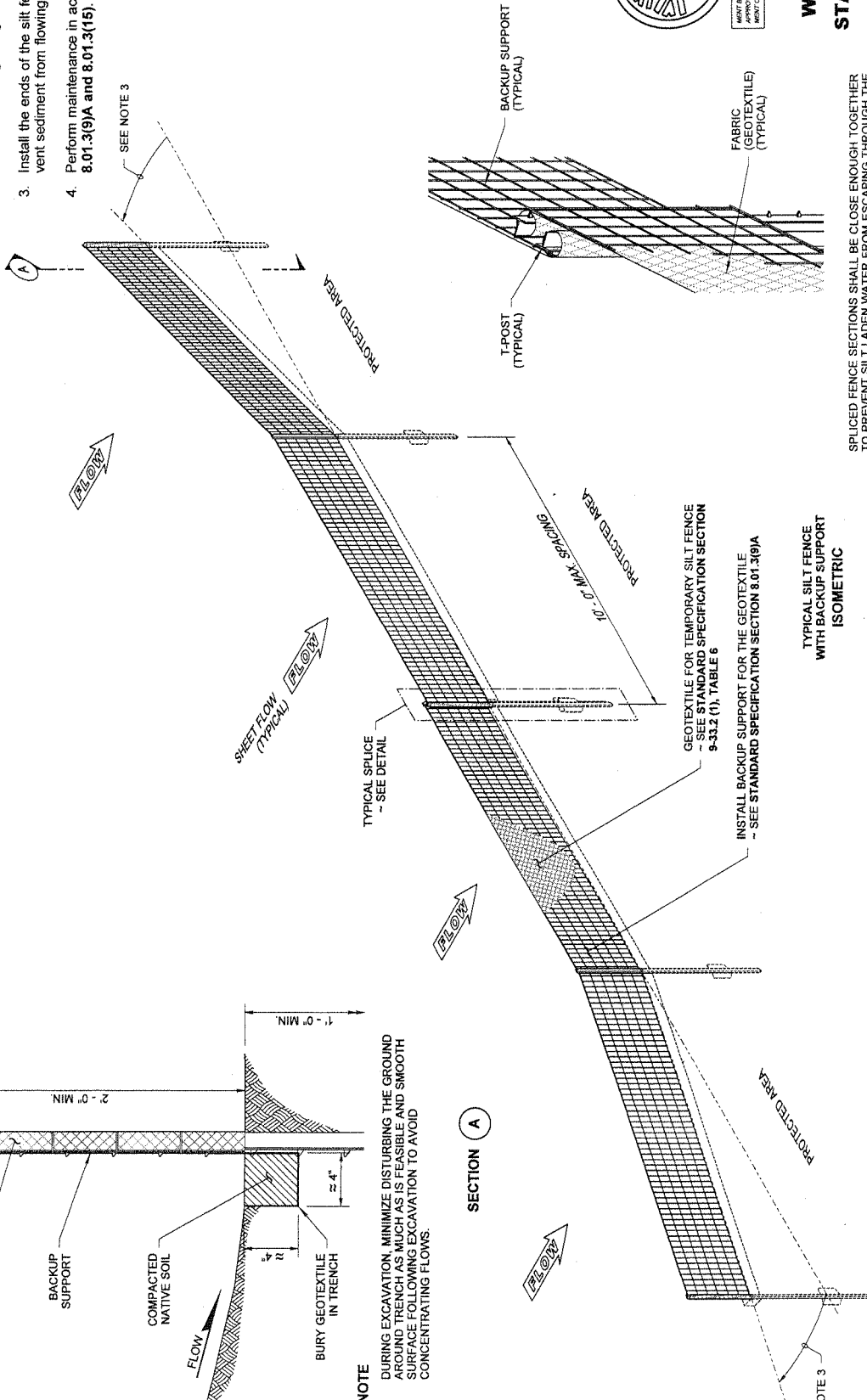
NOTES

1. Maximize detention of stormwater by placing fence as far away from toe of slope as possible without encroaching on sensitive areas or outside of the clearing boundaries.
2. Install silt fencing along contours.
3. Install the ends of the silt fence to point slightly up-slope to prevent sediment from flowing around the ends of the fence.
4. Perform maintenance in accordance with Standard Specifications 8.01.3(9)A and 8.01.3(15).



NOTE

DURING EXCAVATION, MINIMIZE DISTURBING THE GROUND AROUND TRENCH AS MUCH AS IS FEASIBLE AND SMOOTH SURFACE FOLLOWING EXCAVATION TO AVOID CONCENTRATING FLOWS.



SECTION A



STATE OF WASHINGTON
REGISTERED PROFESSIONAL
LANDSCAPE ARCHITECT
MARK W. MAILER
CERTIFICATE NO. 000586

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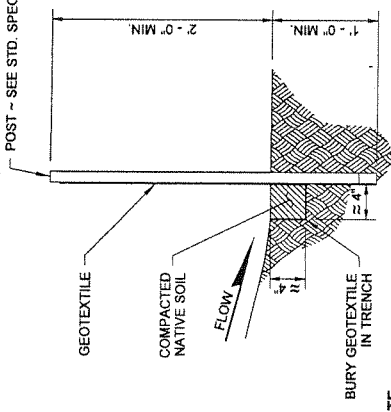
SILT FENCE WITH BACKUP SUPPORT
STANDARD PLAN I-30.10-01
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Pasco Bakofich III 08-11-09
STATE DESIGN ENGINEER DATE
Washington State Department of Transportation

SPliced FENCE SECTIONS SHALL BE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP. JOINING SECTIONS SHALL NOT BE PLACED IN LOW SPOTS OR IN SUMP LOCATIONS.

SPlice DETAIL

POST - SEE STD. SPEC. 8.01.3(9)A

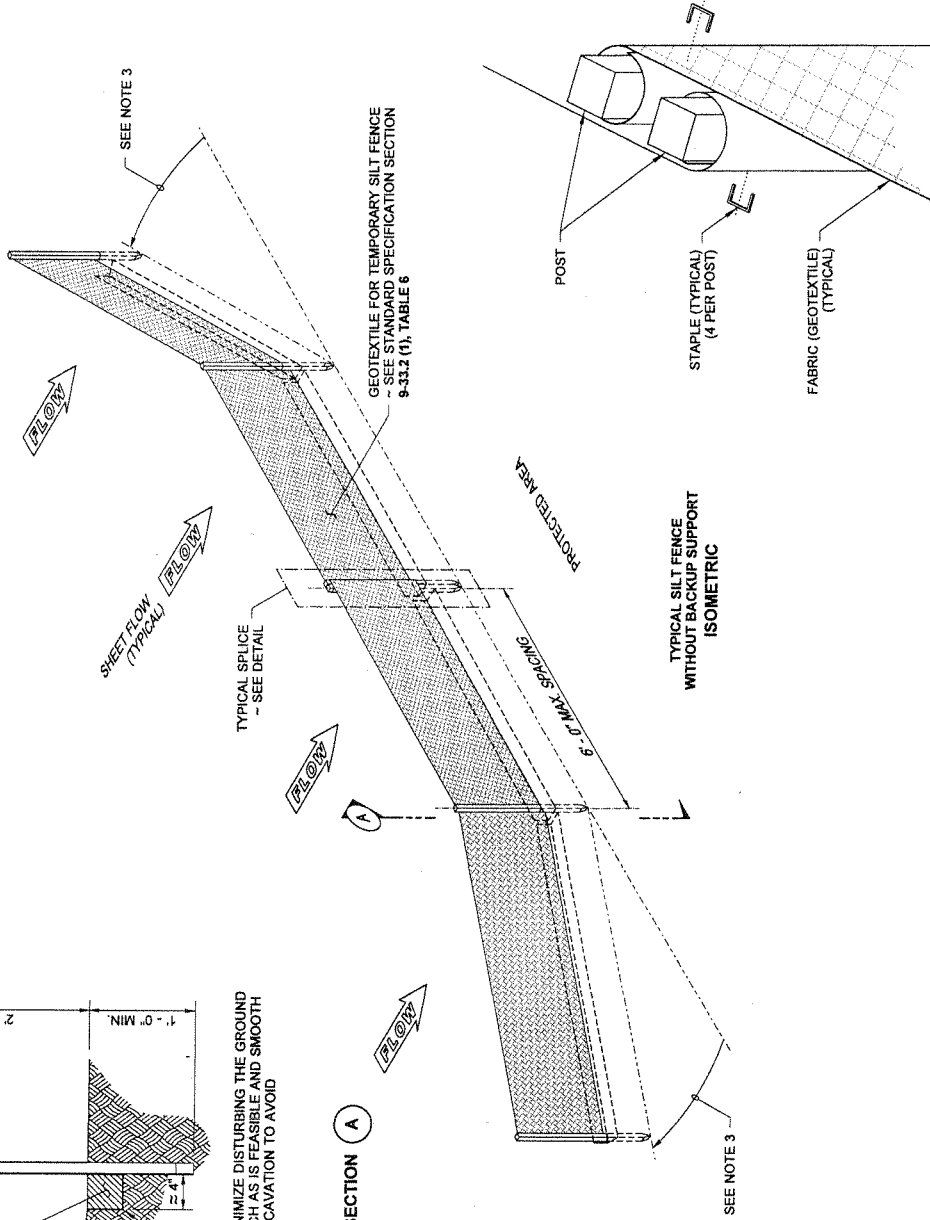


NOTE

DURING EXCAVATION, MINIMIZE DISTURBING THE GROUND AROUND TRENCH AS MUCH AS IS FEASIBLE AND SMOOTH SURFACE FOLLOWING EXCAVATION TO AVOID CONCENTRATING FLOWS.

NOTES

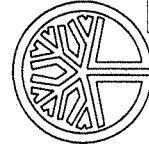
1. Maximize detention of stormwater by placing fence as far away from toe of slope as possible without encroaching on sensitive areas or outside of the clearing boundaries.
2. Install silt fencing along contours.
3. Install the ends of the silt fence to point slightly up-slope to prevent sediment from flowing around the ends of the fence.
4. Perform maintenance in accordance with Standard Specifications 8.01.3(9)A and 8.01.3(15).



SECTION A

SPLICED FENCE SECTIONS SHALL BE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP. JOINING SECTIONS SHALL NOT BE PLACED IN LOW SPOTS OR IN SUMP LOCATIONS.

SPLICE DETAIL



STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT

MARK W. MAURER CERTIFICATE NO. 000598

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SILT FENCE

STANDARD PLAN I-30.15-00

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Pasco Bakotich III 08-11-09

STATE DESIGN ENGINEER

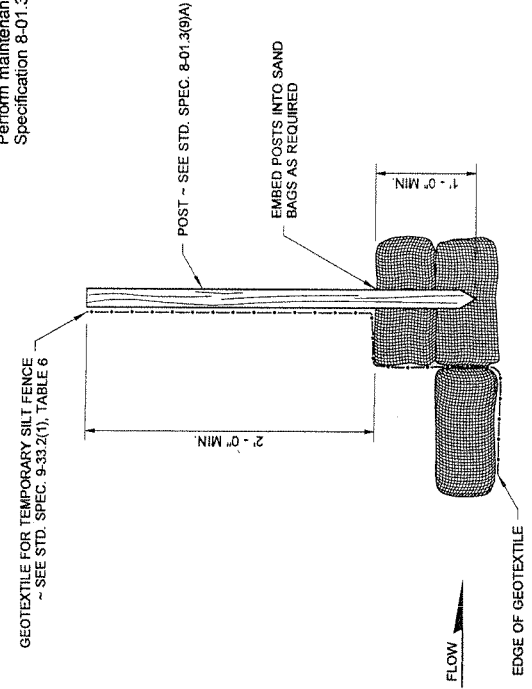
DATE

Washington State Department of Transportation

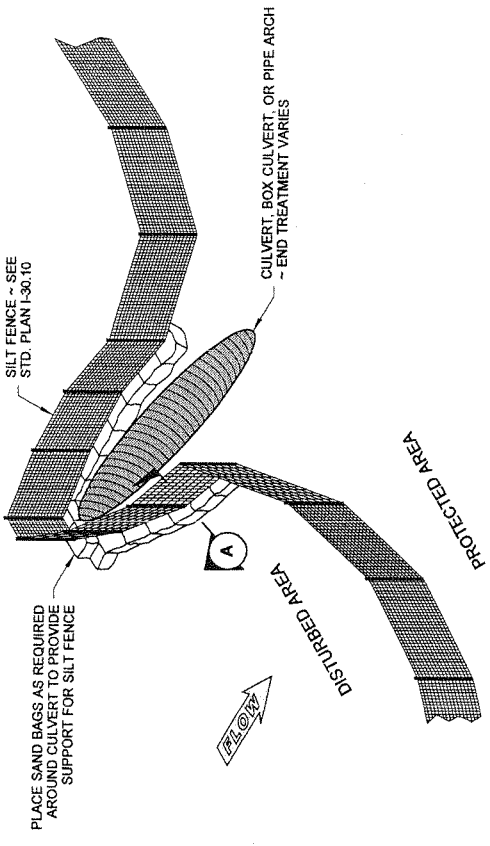


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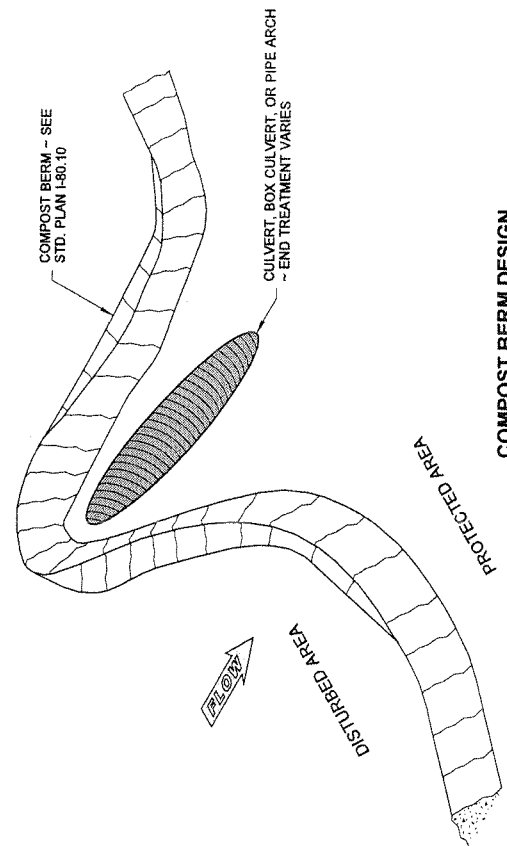
Perform maintenance in accordance with Standard Specification 8-01.3(9)A and 8-01.3(15).



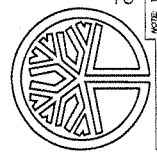
SECTION A



SILT FENCE DESIGN



COMPOST BERM DESIGN



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REGISTERED
LANDSCAPE ARCHITECT
MARK W. MAURER
CERTIFICATE NO. 000598

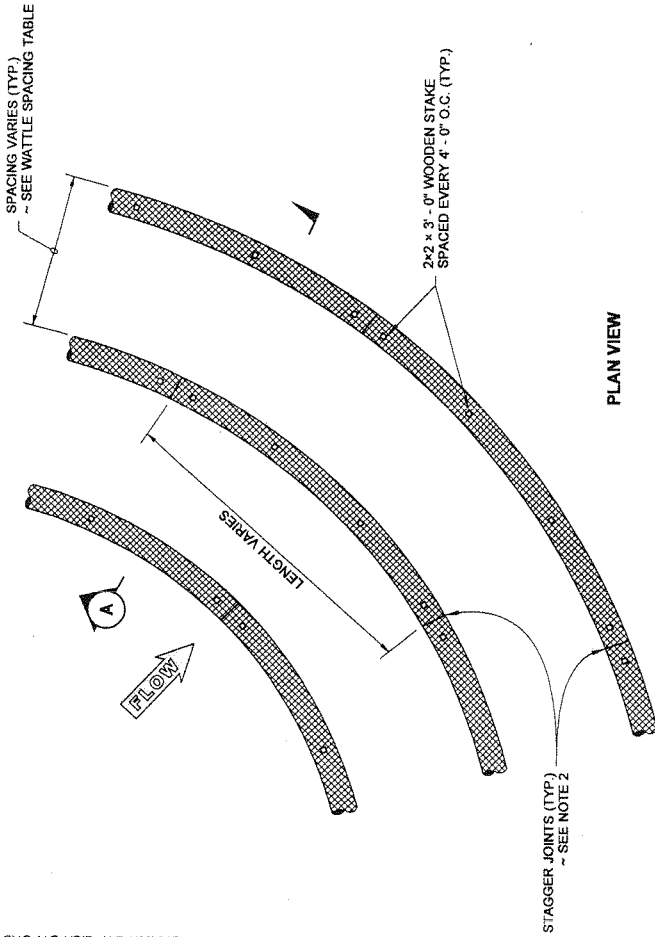
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**EROSION CONTROL
AT CULVERT ENDS**

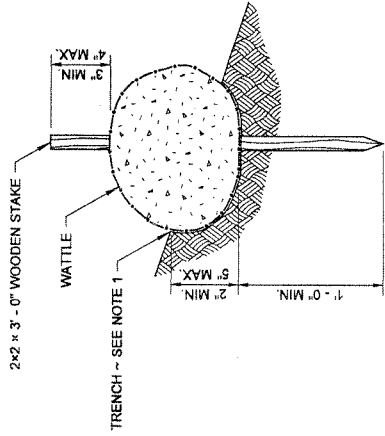
STANDARD PLAN I-30.20-00

SHEET 1 OF 1 SHEET

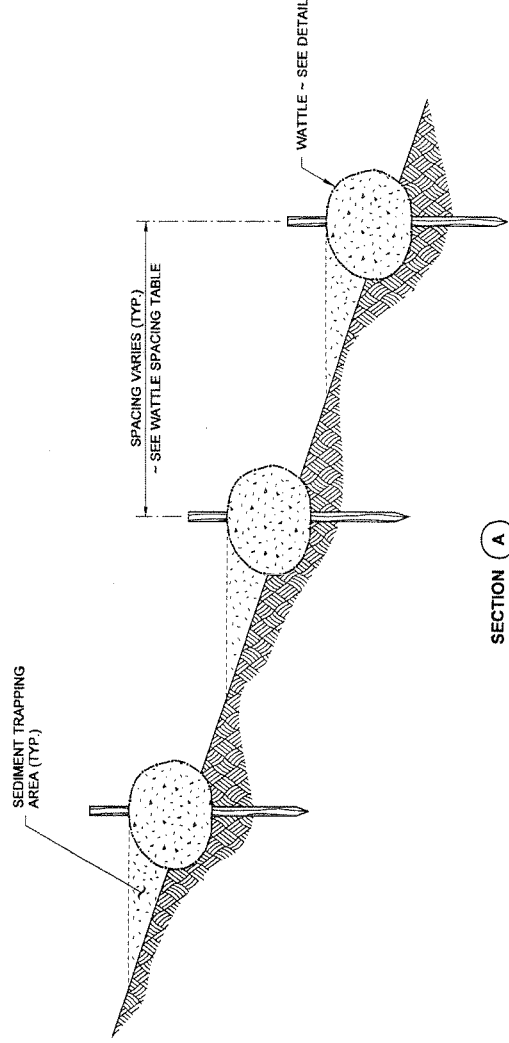
APPROVED FOR PUBLICATION
Pasco Bakotich III 09-20-07
STATE DESIGN ENGINEER DATE
Washington State Department of Transportation



PLAN VIEW



TYPICAL SECTION
WATTLE DETAIL

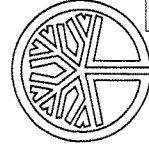


SECTION A

WATTLE SPACING TABLE	
SLOPE	MAXIMUM SPACING
1:1	10' - 0"
2:1	20' - 0"
3:1	30' - 0"
4:1	40' - 0"

NOTES

1. Wattles shall be in accordance with Standard Specification 9-14.5(5). Install Wattles along contours. Installation shall be in accordance with Standard Specification 8-01.3(10).
2. Securely knot each end of Wattle. Abut adjacent Wattles tightly, end to end, without overlapping the ends.
3. Pilot holes may be driven through the Wattles and into the soil when soil conditions require.
4. Live stakes may be used for permanent installation and shall be in accordance with Standard Specification 9-14.5(6).
5. Wattles shall be inspected regularly, and immediately after a rainfall produces runoff, to ensure they remain thoroughly entrenched and in contact with the soil.
6. Perform maintenance in accordance with Standard Specification 8-01.3(15).



STATE OF
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REGISTERED
LANDSCAPE ARCHITECT
MARK W. MAURER
CERTIFICATE NO. 000598

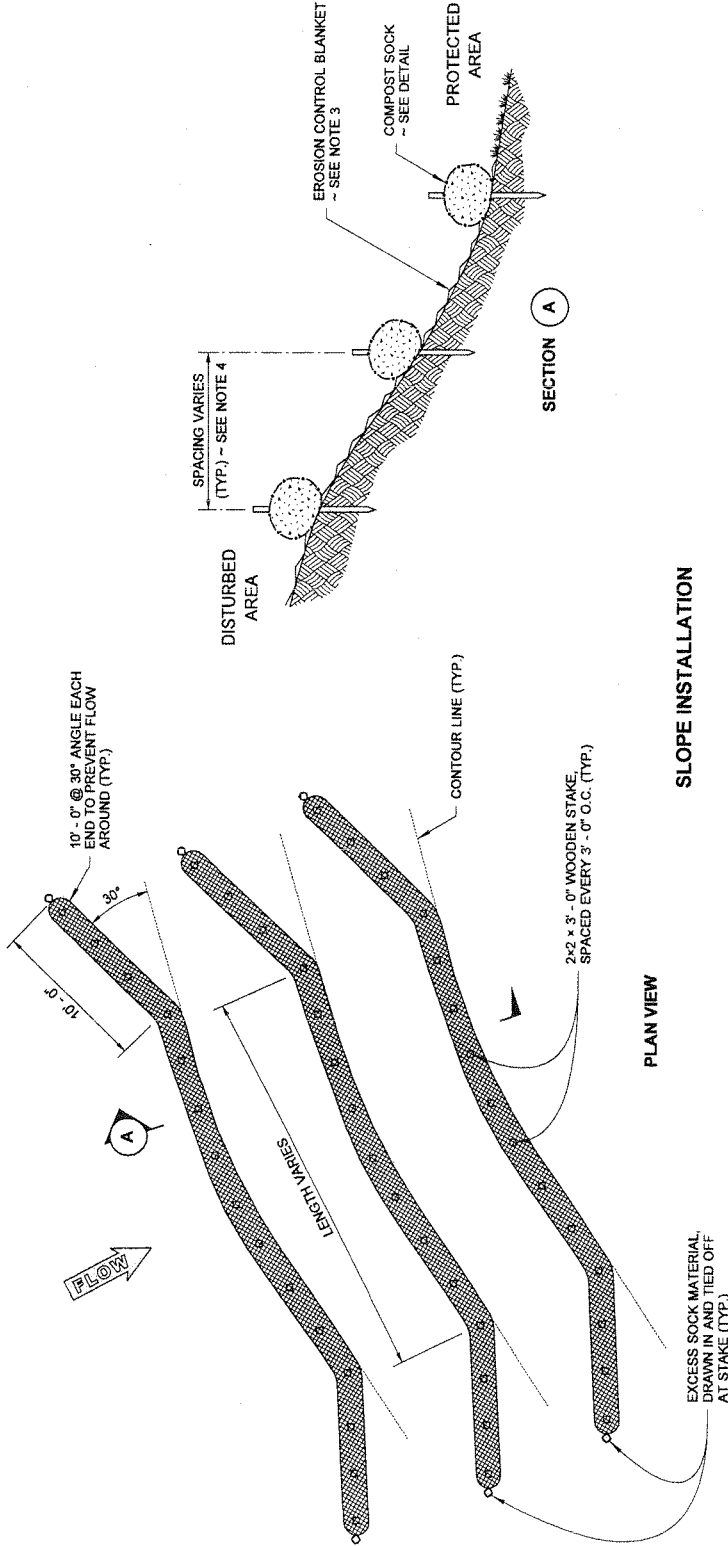
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**WATTLE INSTALLATION
ON SLOPE
STANDARD PLAN I-30.30-00**

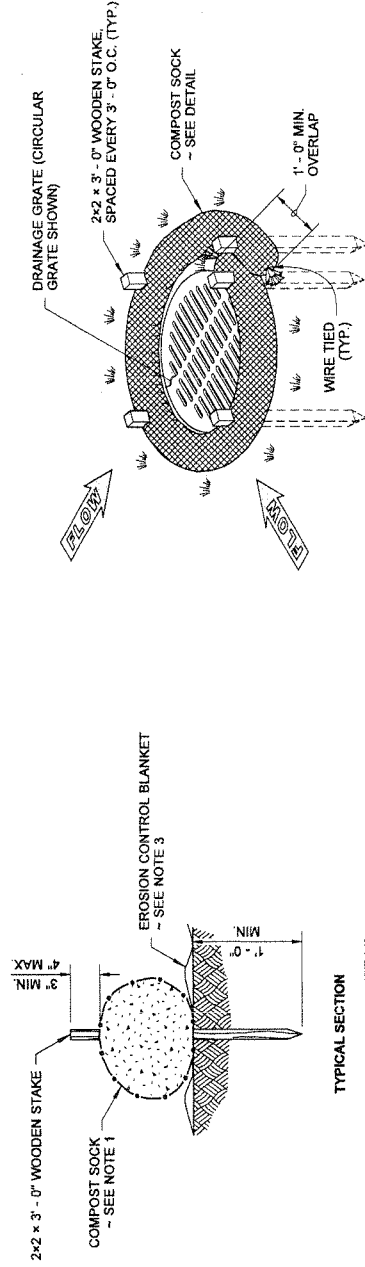
SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION
Pasco Bakotich III 09-20-07
STATE DESIGN ENGINEER DATE
Washington State Department of Transportation

NOTES

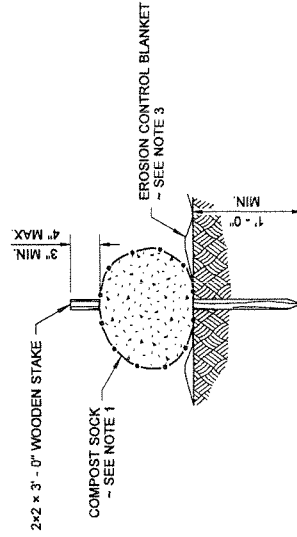
1. Compost Sock shall be in accordance with Standard Specification 9-14.5(6). Compost Sock shall be a minimum of 8" in diameter or sized to suit conditions as specified by the Engineer or Contract.
2. Compost material to be dispersed on site, as determined by the Engineer.
3. When placing Compost Sock on slopes, use Erosion Control Blanket if specified by the Engineer and in accordance with Standard Specification 9-14.5(2). See Standard Plan I-60.10.
4. Always install Compost Sock perpendicular to slope and along contour lines.
5. Remove sediment from the up slope side of the Compost Sock when accumulation has reached 1/2 of the effective height of the Compost Sock.
6. Live stakes can be used in addition to wooden stakes and shall be in accordance with Standard Specification 9-14.6(1). See plans for species selection and spacing.



SLOPE INSTALLATION



TYPICAL SECTION COMPOST SOCK DETAIL



STATE OF WASHINGTON
 ENGINEERING
 LANDSCAPE ARCHITECT

SANDRA L. SALISBURY
 CERTIFICATE NO. 000860

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COMPOST SOCK

STANDARD PLAN I-30.40-00

SHEET 1 OF 1 SHEET

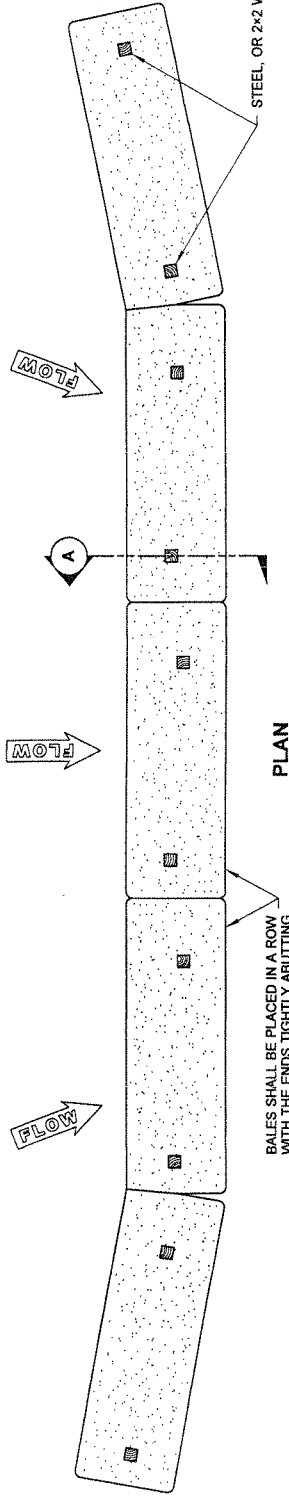
APPROVED FOR PUBLICATION

Pasco Bakotich III
 STATE DESIGN ENGINEER
 Washington State Department of Transportation

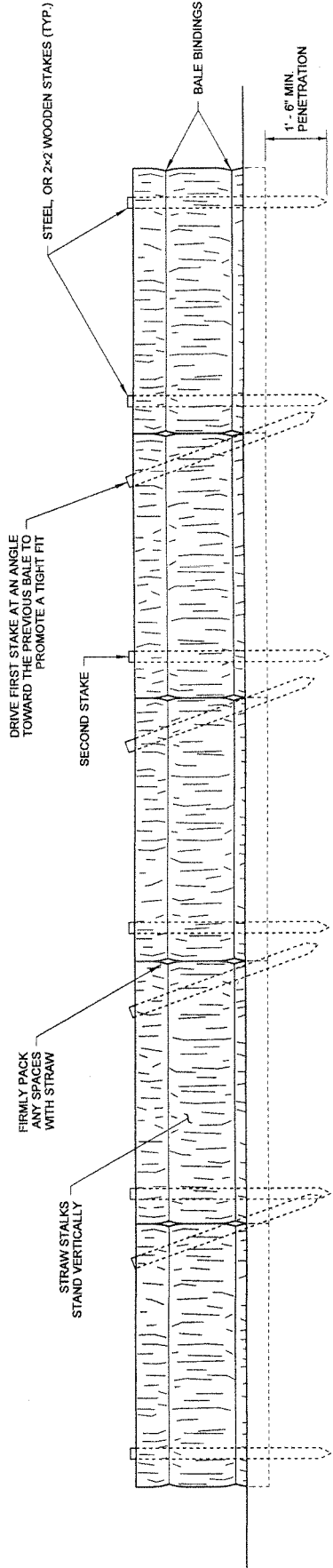
DATE 10-12-07

NOTES

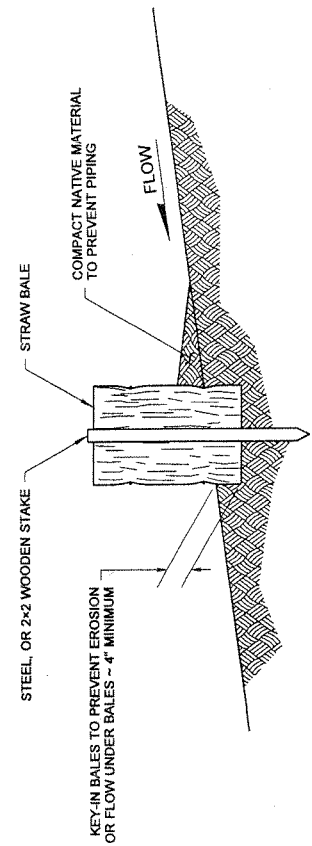
1. See Standard Specification 8-01.3(9)C, for additional information.
2. Perform maintenance in accordance with Standard Specification 8-01.3(15).



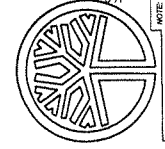
PLAN



ELEVATION



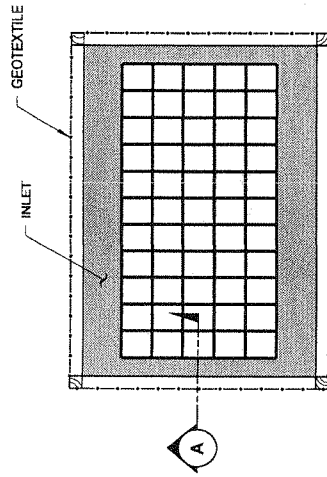
SECTION A



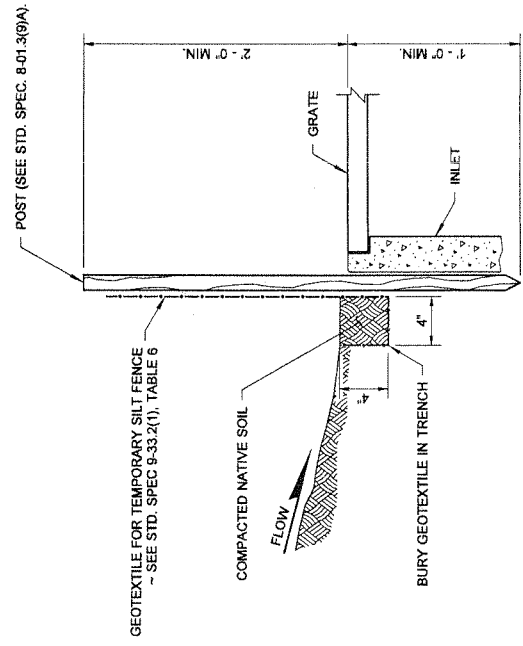
STRAW BALE BARRIER
STANDARD PLAN I-30.50-00
 SHEET 1 OF 1 SHEET
 APPROVED FOR PUBLICATION
 Pasco Bakotich III 11-14-07
 STATE DESIGN ENGINEER DATE
 Washington State Department of Transportation

NOTES

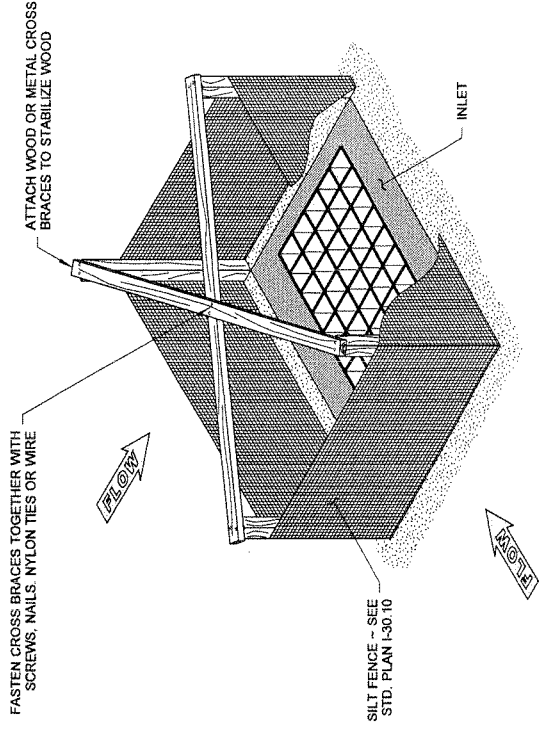
1. Prefabricated units may be used in lieu of the design shown on this plan upon approval of the Engineer.
2. Structure shall be constructed such that geotextile material shall be fastened to posts creating a seamless joint.
3. Ensure that ponding height of water does not cause flooding on adjacent roadways or private property.
4. Perform maintenance in accordance with Standard Specification 8-01.3(15).



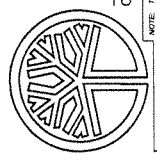
PLAN VIEW
(CROSS BRACES NOT SHOWN)



SECTION A



ISOMETRIC VIEW
(ENTIRE FENCE NOT SHOWN FOR ILLUSTRATIVE PURPOSES)



STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
MARK W. MAURER
CERTIFICATE NO. 000598

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TEMPORARY SILT FENCE FOR INLET PROTECTION IN UNPAVED AREAS
STANDARD PLAN I-40.10-00

SHEET 1 OF 1 SHEET

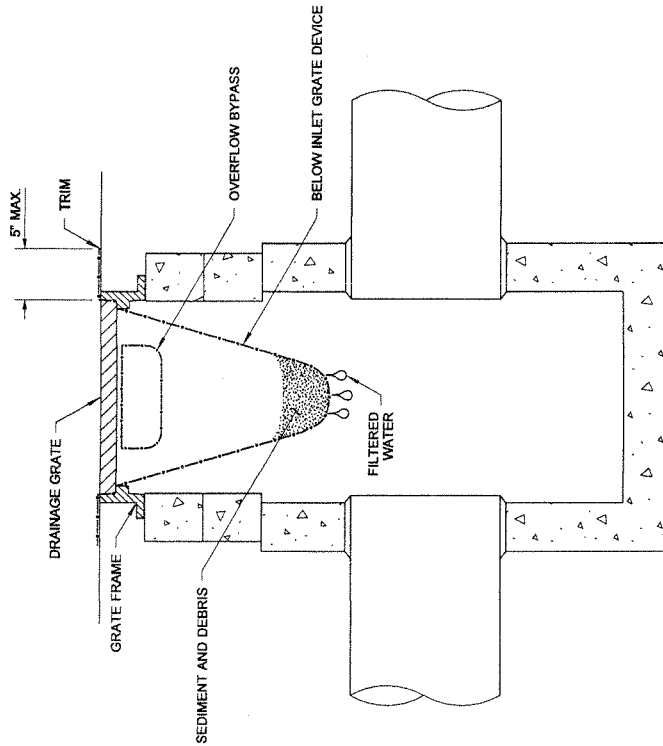
APPROVED FOR PUBLICATION

Pasco Bakotich III 09-20-07
STATE DESIGN ENGINEER DATE

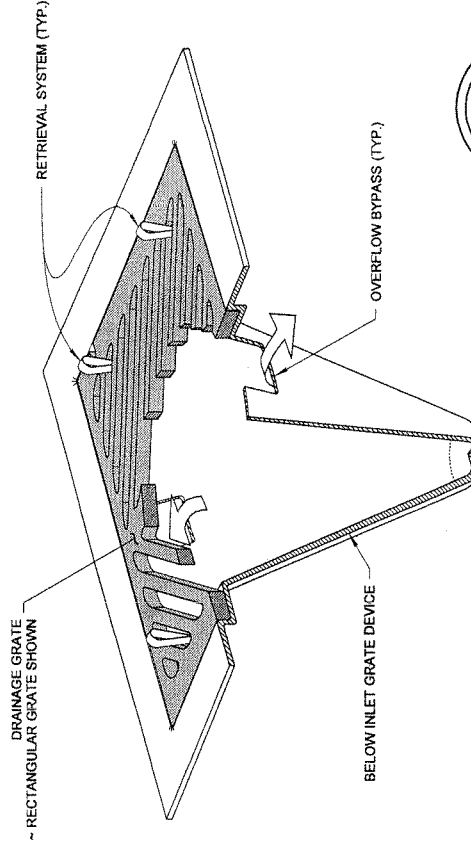
Washington State Department of Transportation

NOTES

1. Size the Below Inlet Grate Device (BIGD) for the storm water structure it will service.
2. The BIGD shall have a built-in high-flow relief system (overflow bypass).
3. The retrieval system must allow removal of the BIGD without spilling the collected material.
4. Perform maintenance in accordance with Standard Specification 8-01.3(15).



SECTION VIEW
NOT TO SCALE



ISOMETRIC VIEW



STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT

MARK W. MAURER
CERTIFICATE NO. 000598

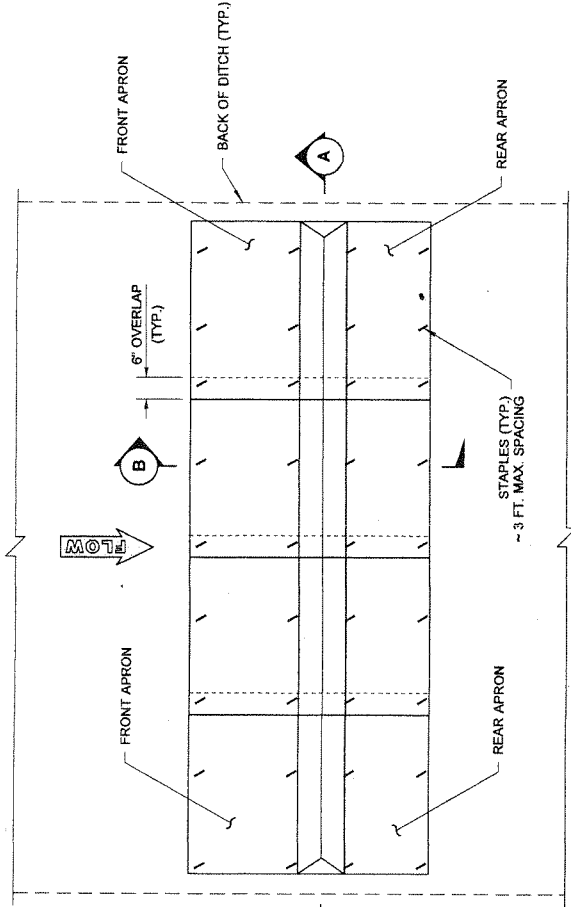
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**STORM DRAIN
INLET PROTECTION**
STANDARD PLAN I-40.20-00
SHEET 1 OF 1 SHEET

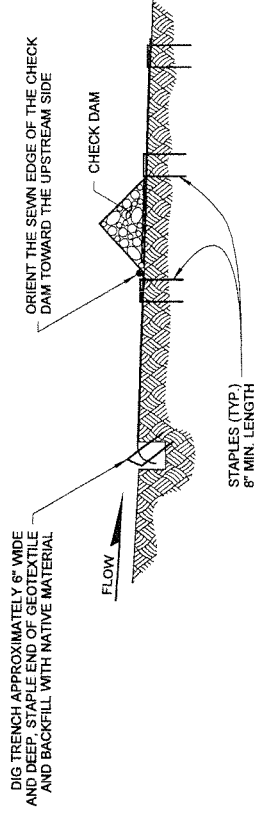
APPROVED FOR PUBLICATION
Pasco Bakofich III 09-20-07
 STATE DESIGN ENGINEER DATE
 Washington State Department of Transportation

NOTES

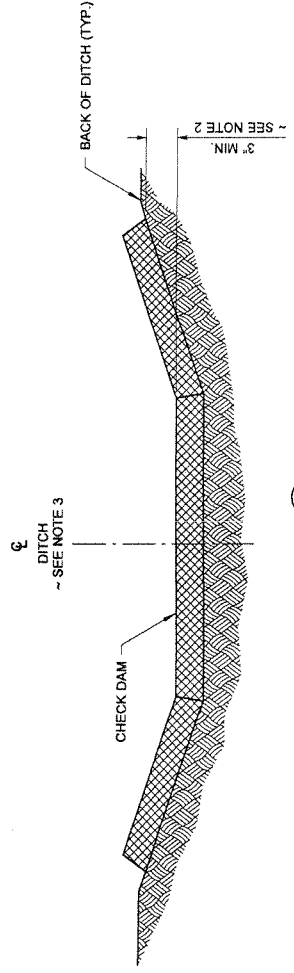
1. Geotextile encased Check Dams shall meet the requirements of Standard Specifications 8-01.3(6/A) and 9-14.5(4).
2. Install the sloped ends of the Check Dam a minimum of 3' higher than the top of the check dam in the channel to ensure that water flows over the dam and not around it.
3. Flat bottom ditch design shown. Check Dam installation details are similar for "V" bottom ditches.
4. Perform maintenance in accordance with Standard Specifications 8-01.3(15).



PLAN VIEW



SECTION B



SECTION A



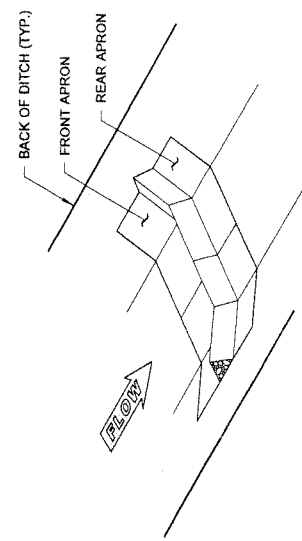
STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
MARK W. MAURER
CERTIFICATE NO. 000598

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GEOTEXTILE ENCASED CHECK DAM INSTALLATION
STANDARD PLAN I-50.10-00

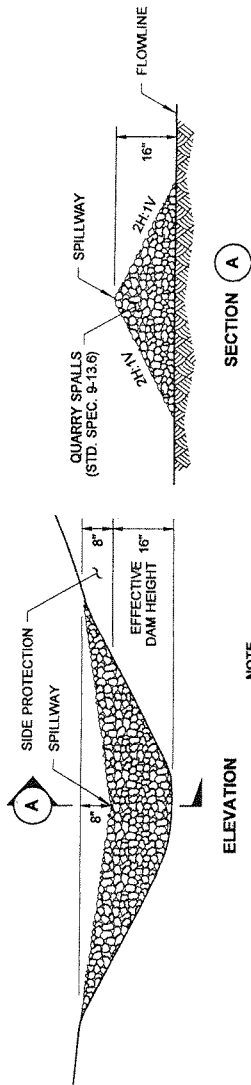
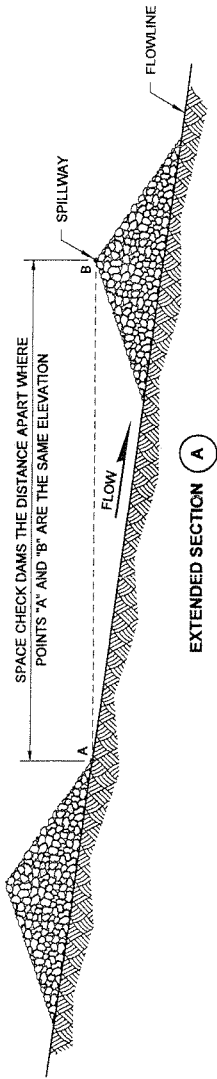
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Pasco Bakotich III 09-20-07
STATE DESIGN ENGINEER DATE
Washington State Department of Transportation



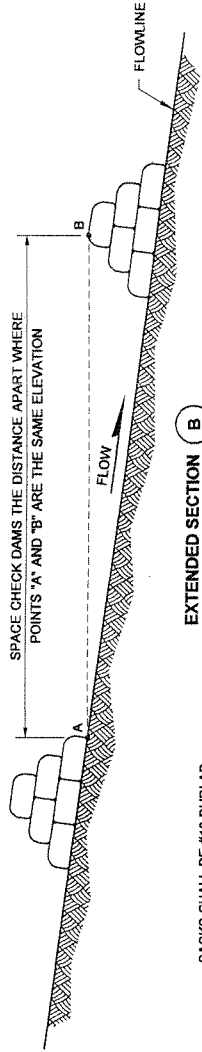
ISOMETRIC VIEW

DRAWN BY: MARK SUJKA

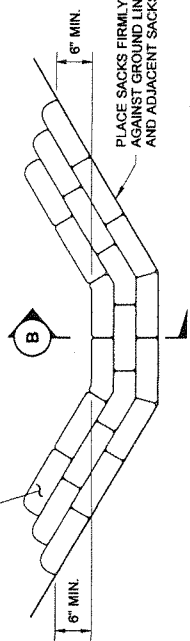


NOTE
ROCK CHECK DAMS SHALL BE PLACED OUTSIDE OF THE CLEAR ZONE, OR BEHIND TRAFFIC BARRIER.

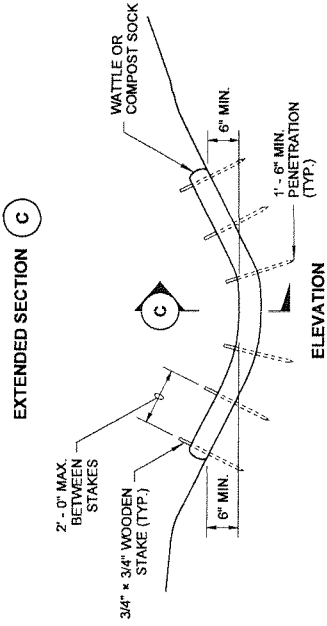
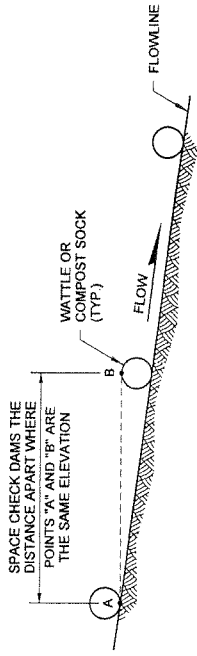
ROCK CHECK DAM



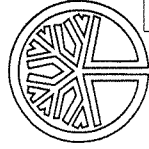
SACKS SHALL BE #10 BURLAP OR APPROVED ALTERNATE FILLED WITH 48 TO 55 LBS. OF GRAVEL BACKFILL FOR DRAINS.



SANDBAG CHECK DAM



WATTLE OR COMPOST SOCK CHECK DAM



STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT

MARK W. MAURER
CERTIFICATE NO. 0005898

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CHECK DAMS

STANDARD PLAN I-50.20-00

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

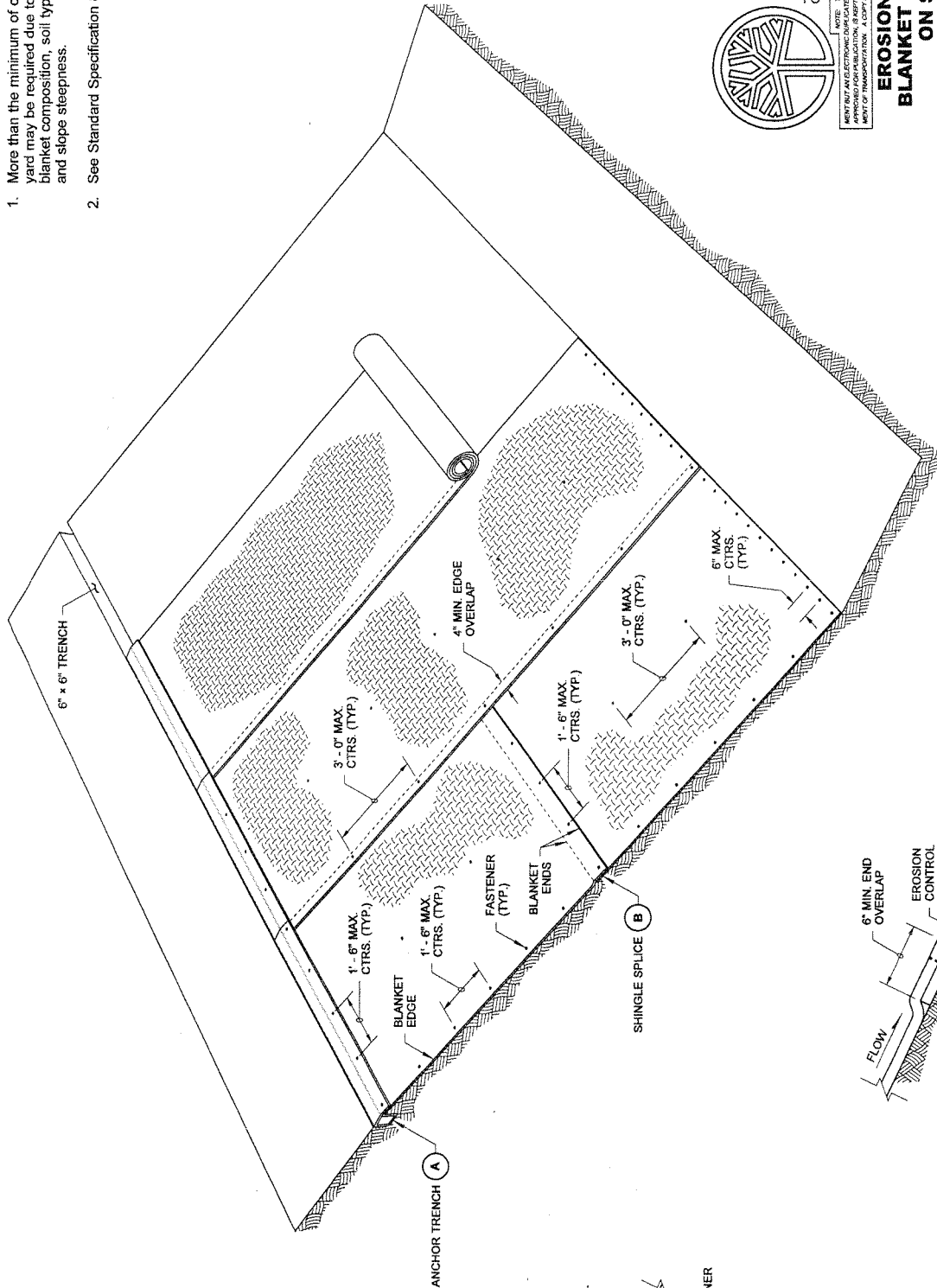
Pasco Bakotich III
STATE DESIGN ENGINEER
DATE 08-31-07



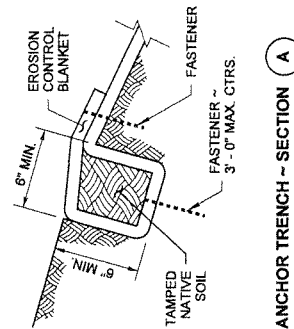
Washington State Department of Transportation

NOTES

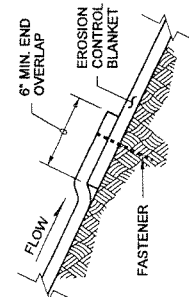
1. More than the minimum of one fastener per square yard may be required due to conditions such as blanket composition, soil type, surface uniformity, and slope steepness.
2. See Standard Specification 8-01.3(3).



PERSPECTIVE VIEW



ANCHOR TRENCH - SECTION A



SHINGLE SPLICE - SECTION B



STATE OF
WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
MARK W. MAJURER
CERTIFICATE NO. 000598

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT. IT IS NOT TO BE USED FOR ANY ENGINEERING OR CONSTRUCTION PURPOSES. THE ORIGINAL, SIGNED BY THE ENGINEER AND APPROVED FOR PUBLICATION, IS KEPT ON FILE AT THE WASHINGTON STATE ENGINEERING CENTER, 1000 4TH AVENUE, SEASIDE, WA 98138.

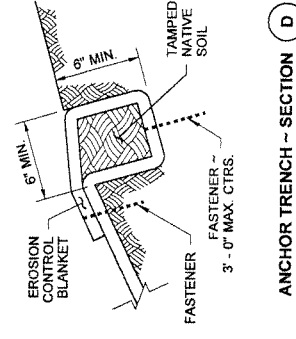
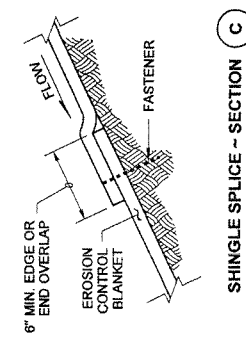
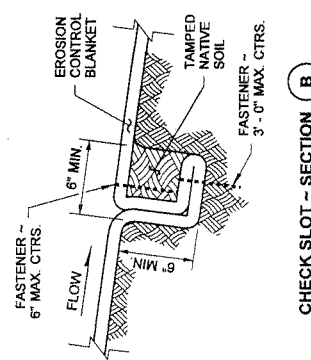
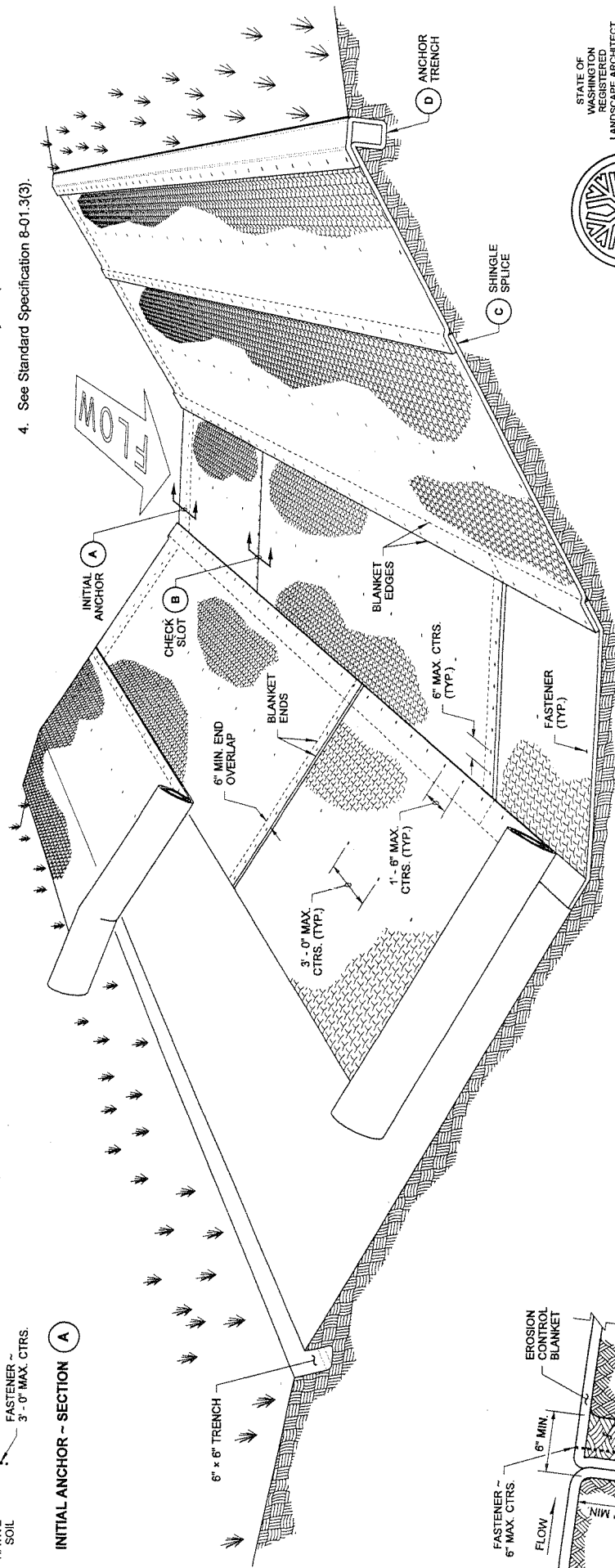
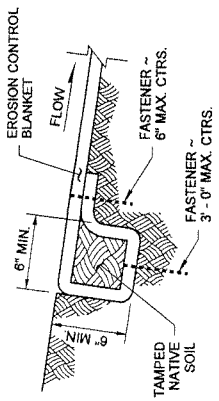
**EROSION CONTROL
BLANKET PLACEMENT
ON SLOPE**

STANDARD PLAN I-60.10-00
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Pasco Bakofich III
STATE DESIGN ENGINEER
Washington State Department of Transportation
DATE: **08-31-07**

NOTES

1. More than the minimum of one fastener per square yard may be required due to conditions such as blanket composition, soil type, surface uniformity, and flow velocity.
2. Provide Check Slots per manufacturer's recommendations.
3. Roll ends may be spliced in a check slot.
4. See Standard Specification 8-01.3(3).



STATE OF WASHINGTON
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**EROSION CONTROL
BLANKET PLACEMENT
IN CHANNEL**
STANDARD PLAN I-60.20-00
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Pasco Bakotich III 08-31-07
STATE DESIGN ENGINEER
Washington State Department of Transportation

TOWN OF YARROW POINT STANDARD PLANS AND NOTES

TABLE OF CONTENTS

SECTION 2 – ROADWAY

ROADWAY PLAN NOTES.....	RD-1
ROADWAY DESIGN CRITERIA.....	RD-2 <i>SEPARATE DOCUMENT NOT AVAILABLE UNTIL 1/1</i>
ROADWAY GEOMETRY TABLE	RD-3
ROADWAY CROSS SECTION VERTICAL CURB	RD-4
ROADWAY CROSS SECTION THICKENED EDGE.....	RD-5
ROADWAY CROSS SECTION PRIVATE LANE	RD-6
VEHICLE TURN-A-ROUND ON ROAD >200 FEET	RD-7
VEHICLE TURN-A-ROUND ON ROAD ≤200 FEET	RD-8
DRIVEWAY IN PUBLIC RIGHT-OF-WAY	RD-9
MEASURING SIGHT DISTANCE	RD-10
DRIVEWAY – VERTICAL TRANSITION TO ROW	RD-11
PATHWAY DETAIL – 92 ND AVE NE.....	RD-12
RESTORATION DETAIL AND PAVEMENT PATCHING	RD-13
BUTT JOINT, COLD PLANING, AND COLD MIX RAMP.....	RD-14
EDGE RESTORATION DETAILS	RD-15
SECTION OF LONGITUDINAL OR TRANSVERSE CUT	RD-16
CONCRETE DRIVEWAY APPROACH (NE POINTS DR WEST ONLY)	RD-17
STREET NAME/ REGULATORY SIGN INSTALLATION	RD-18
STREET NAME/ REGULATORY SIGN STANDARD.....	RD-19
MAILBOX PAGODA STANDARD	RD-20
STREET LIGHT ELECTRICAL JUNCTION BOX	RD-21
STREET LIGHT ELECTRICAL J-BOX FOUNDATION	RD-22
STREET LIGHT JUNCTION BOX.....	RD-23
STREET LIGHT STANDARD	RD-24

STREET LIGHT POLE BASE DETAIL.....	RD-25
STREET LIGHT PLAN LAYOUT	RD-26 NOT REAL
STREET LIGHT SPECIFICATIONS.....	RD-27
CONDITIONS REQUIRING SAFETY RAILINGS	RD-28
METAL HANDRAIL ALTERNATE NO. 1.....	RD-29
METAL HANDRAIL ALTERNATE NO. 2.....	RD-30
WOOD HANDRAIL	RD-31 NOT REAL
CHAINLINK FENCE	RD-32
BOLLARDS ALTERNATE NO. 1	RD-33
BOLLARDS ALTERNATE NO. 2	RD-34
GENERAL UTILITY ADJUSTMENT IN A.C. PAVEMENT.....	RD-35
SURVEY MONUMENT CASE AND COVER	RD-36
PICNIC TABLE STANDARD.....	RD-37
MEMORIAL BENCH STANDARD	RD-38

WSDOT ROADWAY DETAILS ADOPTED BY YARROW POINT:

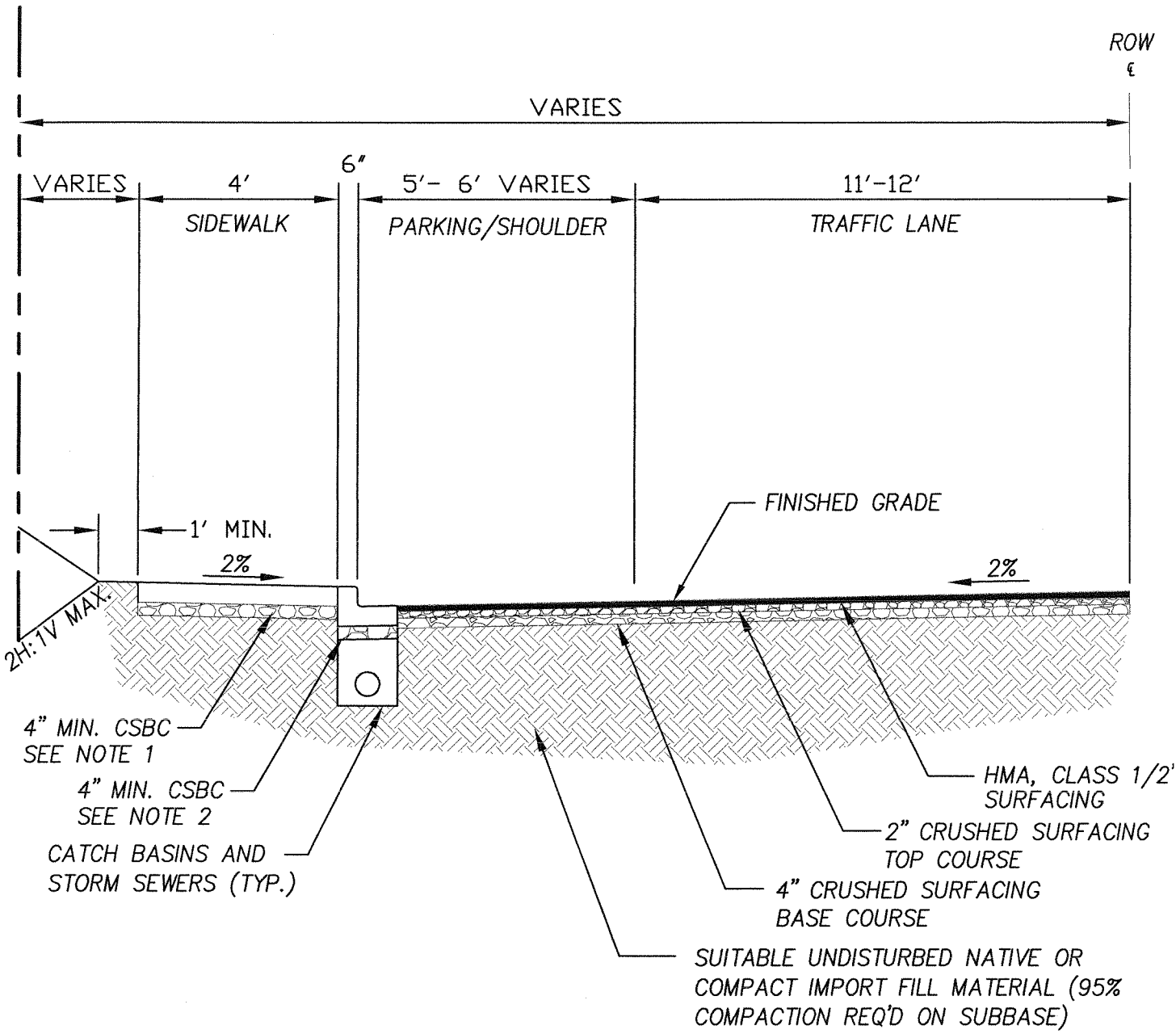
CEMENT CONCRETE PAVEMENT JOINTS	A-40.10-01
CEMENT CONCRETE PAVEMENT REPAIR	A-60.10-01
CEMENT CONCRETE CURBS	F-10.12-00
EXTRUDED CURB.....	F-10.42-00
CEMENT CONCRETE SIDEWALK	F-30.10-00
SIDEWALK RAMP TYPE 1 WITH LAYOUTS	F-40.10-01
GROUND MOUNTED SIGN PLACEMENT	G-20.10-00
TIMBER SIGN SUPPORT.....	G-22.10-01
TREE AND SHRUB PLANTING DETAILS	H-10.10-00
CROSS WALK AND STOP BAR DETAIL.....	M-15.10-01
PARKING SPACE LAYOUTS.....	M-17.10-02
LONGITUDINAL MARKING PATTERNS.....	M-20.10-01
PROFILED AND EMBOSSED PLASTIC LINES	M-20.20-01
LONGITUDINAL MARKING SUBSTITUTION W/ RPMs	M-20.50-01
ACCESSIBLE SYMBOLS FOR PARKING	M-24.60-02

ROADWAY – PLAN NOTES

1. A pre-construction conference shall be held prior to the start of construction. The Contractor shall be responsible for securing all necessary permits prior to construction.
2. All roadway work and materials shall be in accordance with the current APWA and Town of Yarrow Point standards and specifications.
3. All public roadways shall be constructed of 2" Class "B" AC paving on 4" asphalt-treated base (ATB), unless otherwise approved by the Town Engineer
4. A copy of the approved roadway plans must be on the job site whenever construction is in progress.
5. Density test reports will be required for all public roadways and all private roadways within plats and short plats. All trench backfill shall be compacted to 95 percent density in roadways, roadway shoulders, roadway prism and driveways, and 85 percent density in unpaved areas. All pipe zone compaction shall be 95 percent.
6. All residential driveways must conform to the Town of Yarrow Point standards and specifications.
7. All concrete for sidewalks and curb and gutter must be 4,000 psi minimum (5 ¾ sack mix).
8. In the case of new road construction or reconstruction requiring mailboxes to be moved or rearranged, the Developer/Contractor shall coordinate with the U.S. Postal Service for the new location of the mailbox structure.
9. Any roadway signage or striping removed or temporarily moved by the Contractor shall be restored so as to meet the current Town of Yarrow Point standards.
10. It is the responsibility of the Contractor to provide adequate temporary traffic control to ensure traffic safety during construction activities. Therefore, the Contractor shall submit a traffic control plan to the Town of Yarrow Point at least 48 hours prior to starting any work in the right-of-way. All traffic control devices shall conform to the "manual on Uniform Traffic Control Devices" (MUTCD) or as modified by a licensed traffic engineer.
11. Where a sidewalk is to be constructed above a slope or adjacent to a rockery or retaining wall where the lowest finished elevation of the slope, rockery, or retaining wall is to be thirty inches (30") or more below the finish elevation of the sidewalk, a safety railing shall be required when:
(a) The plane of the wall face is less than 4' in horizontal distance from the outside edge of the sidewalk; (b) The slopes adjacent to the sidewalk average greater than two to one.
12. The maximum grade for private roadways shall be twenty percent (20%), or fifteen percent (15%) if used for fire access. For public roadways, the maximum grade shall be fifteen percent (15%).
13. Dead-end streets shall be appropriately signed and barricaded. See most current edition of the MUTCD.
14. Sidewalk and curb and gutter cannot be poured monolithically. There must be a cold joint or full-depth expansion joint between them.
15. Measures shall be taken by the developer to provide grass and gravel in areas within the right-of-way which have been stripped of natural vegetation or have a potential for erosion.
16. The developer shall coordinate with Puget Sound Energy for the design and installation of street lights on all newly-created public roadways and existing roadways.

ROADWAY – PLAN NOTES (CONT.)

17. When an existing roadway is to receive a half-street overlay, the existing roadway must be cold planed at the edge of the gutter and centerline. When the existing roadway is to receive a full-street overlay, it must be cold planed at the edge of both gutters per the Town of Yarrow Point standard plans.
18. All new signs required in the public right-of-way must be purchased from, and installed by, the Town of Yarrow Point.
19. When installing new sidewalk, the area behind the sidewalk must be graded so that the yard drainage does not drain over the sidewalk.
20. Any existing public improvements damaged during construction shall be replaced prior to final inspection.
21. The Contractor is responsible for keeping all public streets free from mud and debris at all times. The Contractor shall be prepared to use power sweepers or other pieces of equipment necessary to keep the roadways clean.
22. Backfill in all street cuts underlain by concrete will be control density fill (CDF). Contractor must provide steel plating necessary to allow to CDF to cure.
23. When constructing new thickened edge which does not align with the existing edge of pavement, the roadway must be tapered from the end of the new thickened edge to match the existing pavement. The entry taper into the new improvements shall be 5:1, and leaving the new improvements shall be 10:1.
24. When an existing roadway is to be widened or matched to allow for a driveway approach, the existing pavement must be saw cut at least one foot from the edge to provide a proper match between new and existing asphalt. However, when the existing pavement contains alligatored areas, those areas must be removed prior to widening. All saw cuts shall be parallel or perpendicular to the right-of-way centerline.
25. All rockeries must be constructed in accordance with the most current guidelines of the Association.
26. Private driveways accessing public roadways shall not alter the existing grades at the edge of the right-of-way by more than 1'.
27. Driveways within the right-of-way shall be gravel or asphalt only.
28. Trucks over 40' in length are prohibited in Yarrow Point. A temporary permit however, may be obtained from the Town.

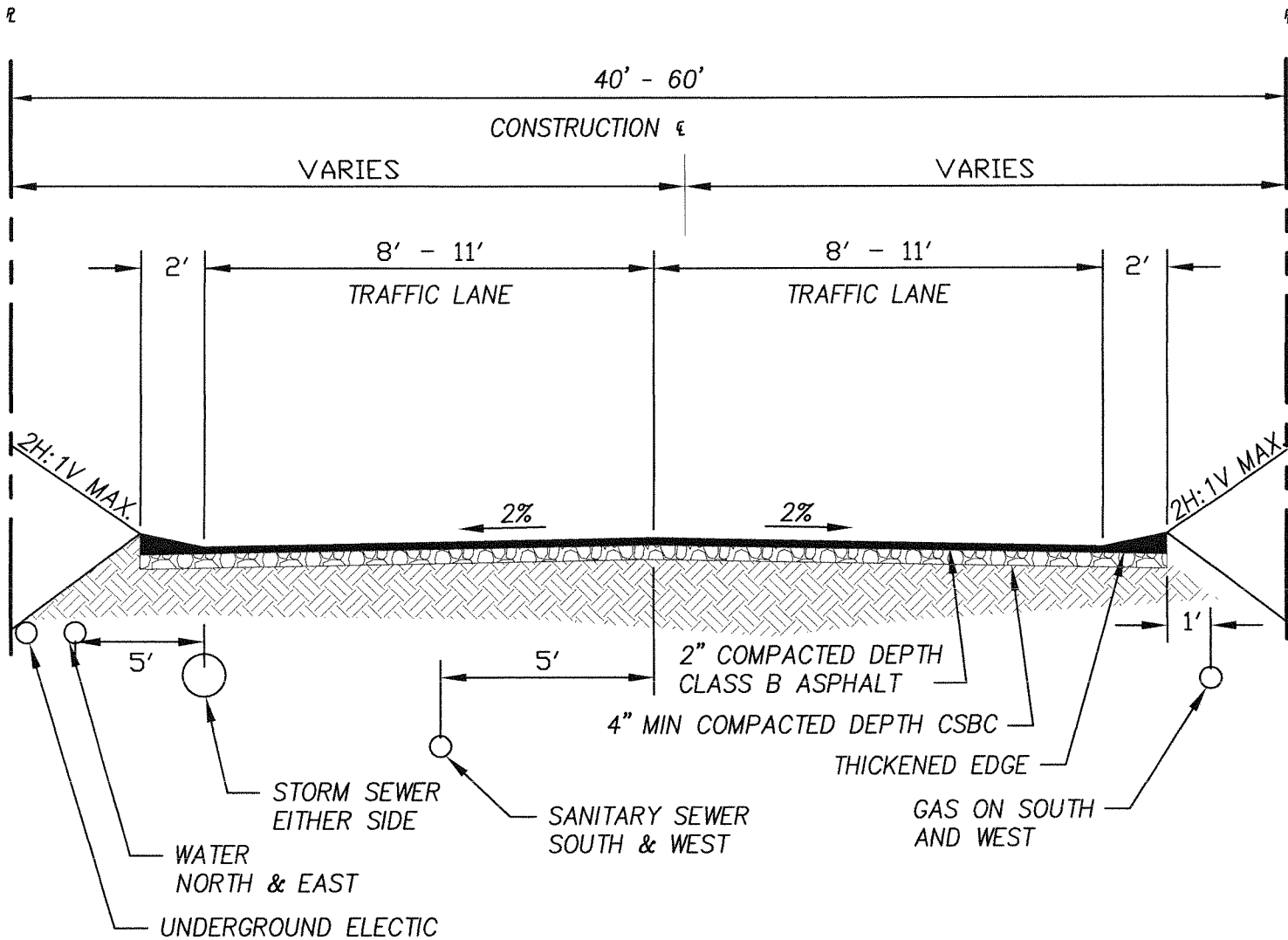


NOTE:
 1. CEMENT CONCRETE SIDEWALK PER WSDOT STD DTL F-30.10-00
 2. CEMENT CONCRETE TRAFFIC CURB AND GUTTER PER WSDOT STD DTL F-10.12-00

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**ROADWAY CROSS SECTION
 VERTICAL CURB**
 RD-04



NOTE:

1. CSBC TO BE PLACED ON SUITABLE UNDISTURBED NATIVE OR COMPACT IMPORT FILL MATERIAL (95% COMPACTION REQUIRED ON SUBBASE).
2. NE 47TH STREET IS A 20' WIDE CONCRETE STREET AND SHALL BE REPLACED/ IMPROVED ACCORDING TO WSDOT STD PLANS AND SPECS.
3. NE 38TH STREET AND THE WESTERN TERMINUS OF NE 42ND STREET SHALL BE CONSTRUCTED ACCORDING TO THE STD DTL FOR A PRIVATE LANE.
4. UTILITY EASEMENTS OUTSIDE THE PUBLIC RIGHT-OF-WAY MAY BE REQUIRED.

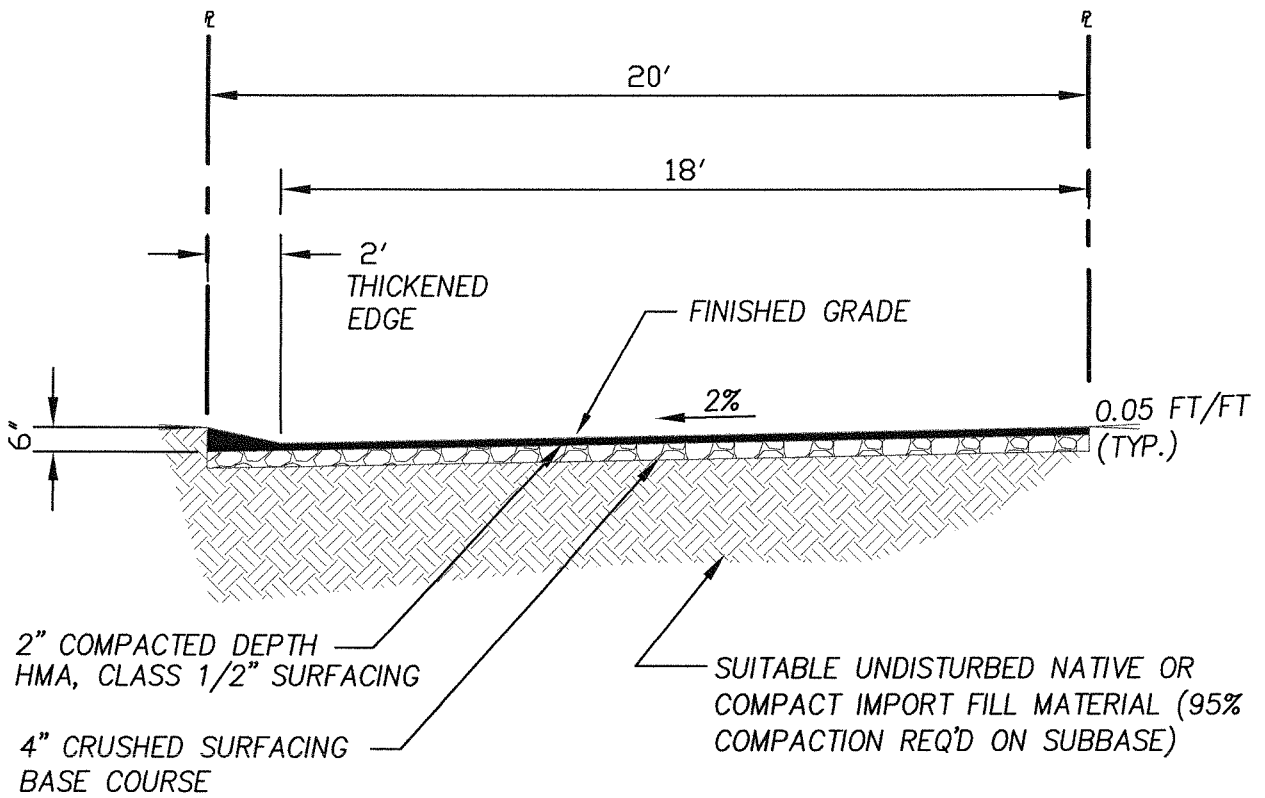
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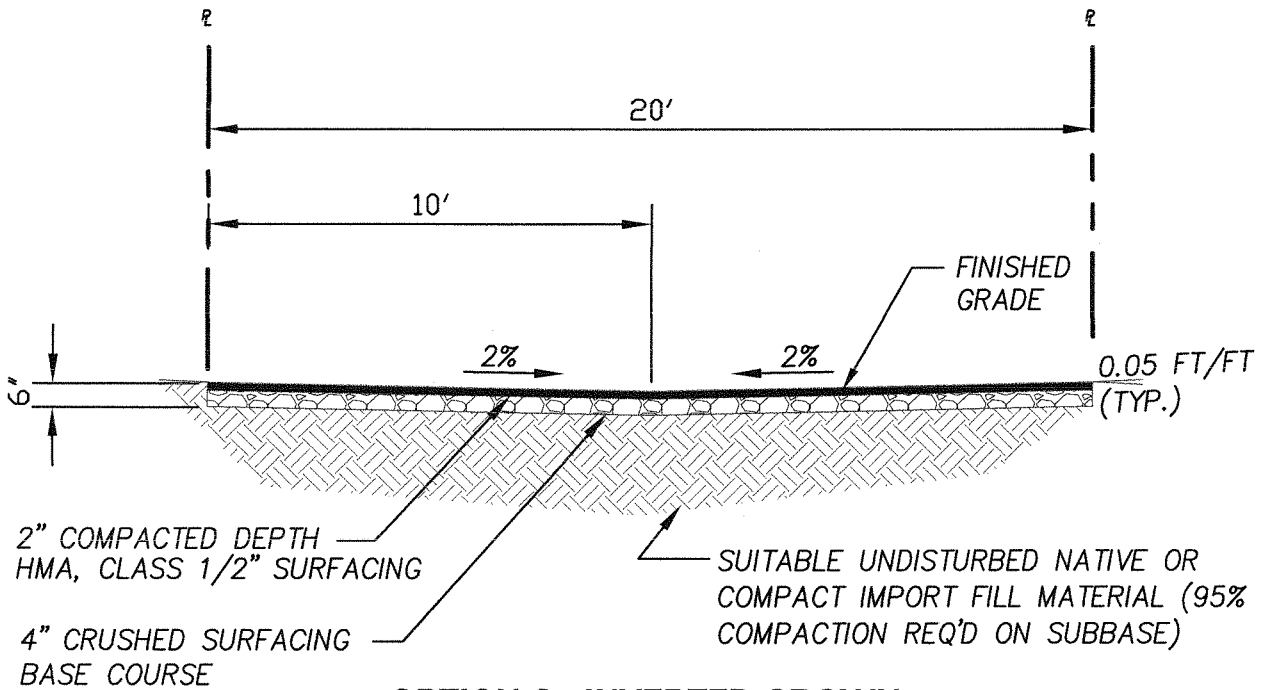
**ROADWAY CROSS SECTION
 THICKENED EDGE**

RD-05



OPTION 1 - THICKENED EDGE

NOT TO SCALE



OPTION 2 - INVERTED CROWN

NOT TO SCALE

TOWN OF YARROW POINT

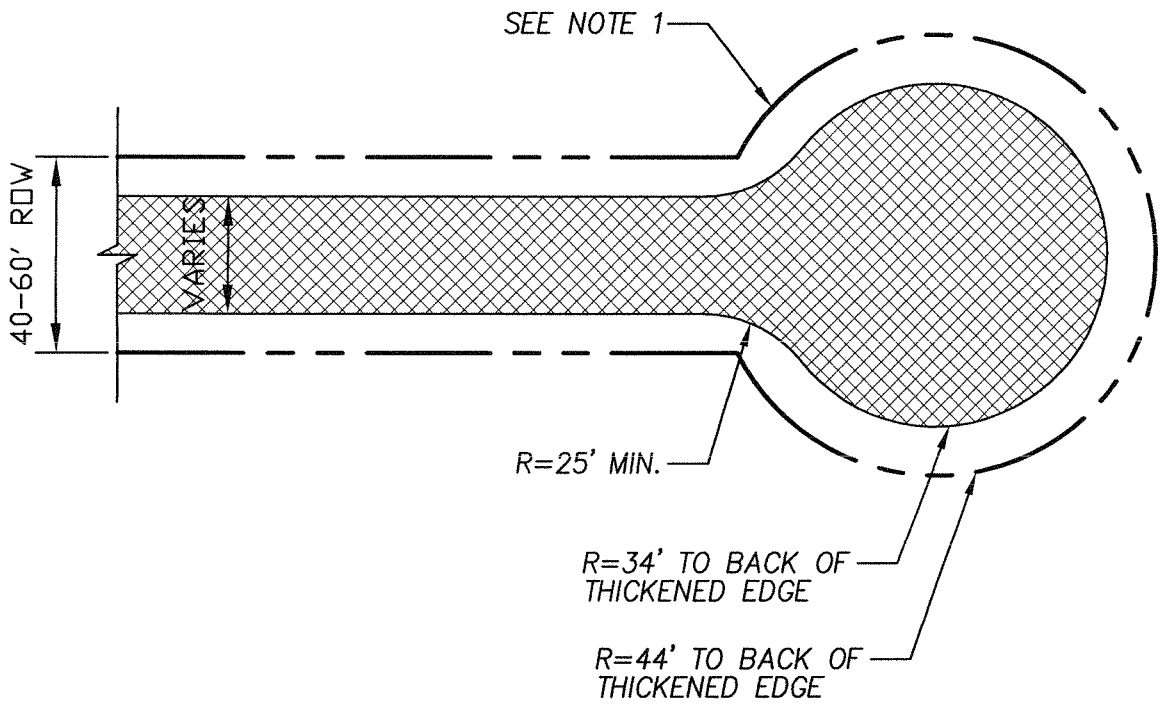
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ROADWAY CROSS SECTION PRIVATE LANE

RD-06

LAST REVISED: 07/31/10



NOTE:

1. UTILITY EASEMENT AROUND THE PERIMETER OF THE CUL-DE-SAC MAY BE REQUIRED.
2. CUL-DE-SAC APPLIES TO PERMANENT AND TEMPORARY ROADWAY IMPROVEMENTS.
3. POINTS DRIVE NE CUL-DE-SAC R=30' TO BACK OF 2' WIDE THICKENED EDGE.

TOWN OF YARROW POINT

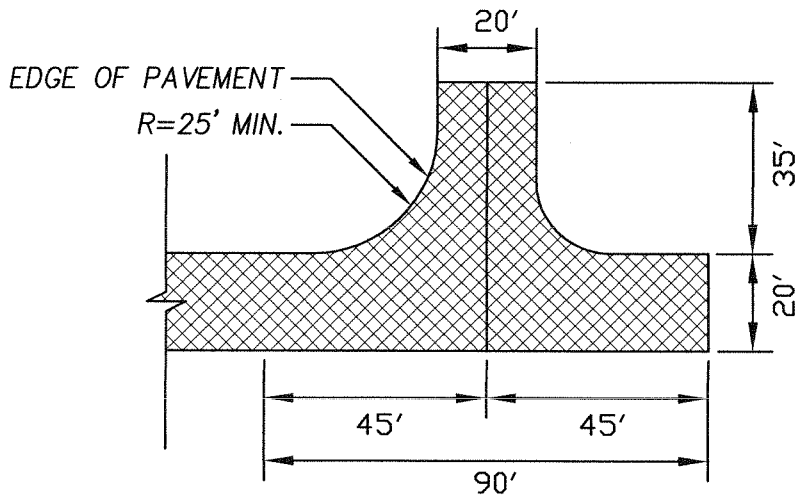
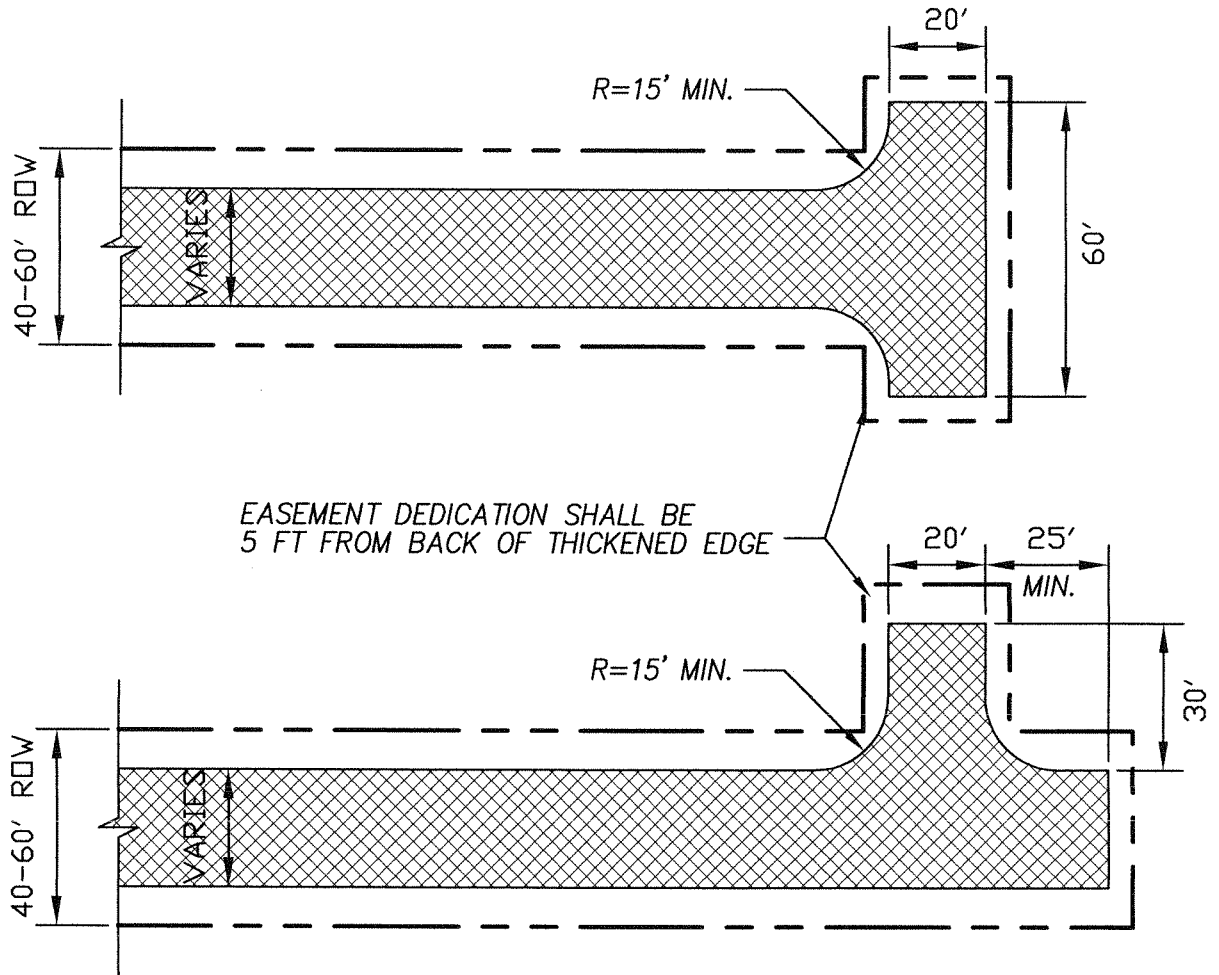
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**VEHICLE TURN-A-ROUND ON
 ROAD > 200'**

RD-07

LAST REVISED: 07/31/10



**FIRE DEPARTMENT
TURN-A-ROUND REQUIREMENTS**

NOTE:

1. UTILITY EASEMENTS AROUND THE PERIMETER OF THE TURN-A-ROUND MAY BE REQUIRED.
2. TURN-A-ROUNDS APPLY TO PERMANENT AND TEMPORARY ROADWAY IMPROVEMENTS.
3. TURN-A-ROUND FACILITIES SHALL NOT BE LOCATED ON DRIVEWAYS.
4. ALL STREET ENDS SHALL BE SIGNED PER THE MUTCD.

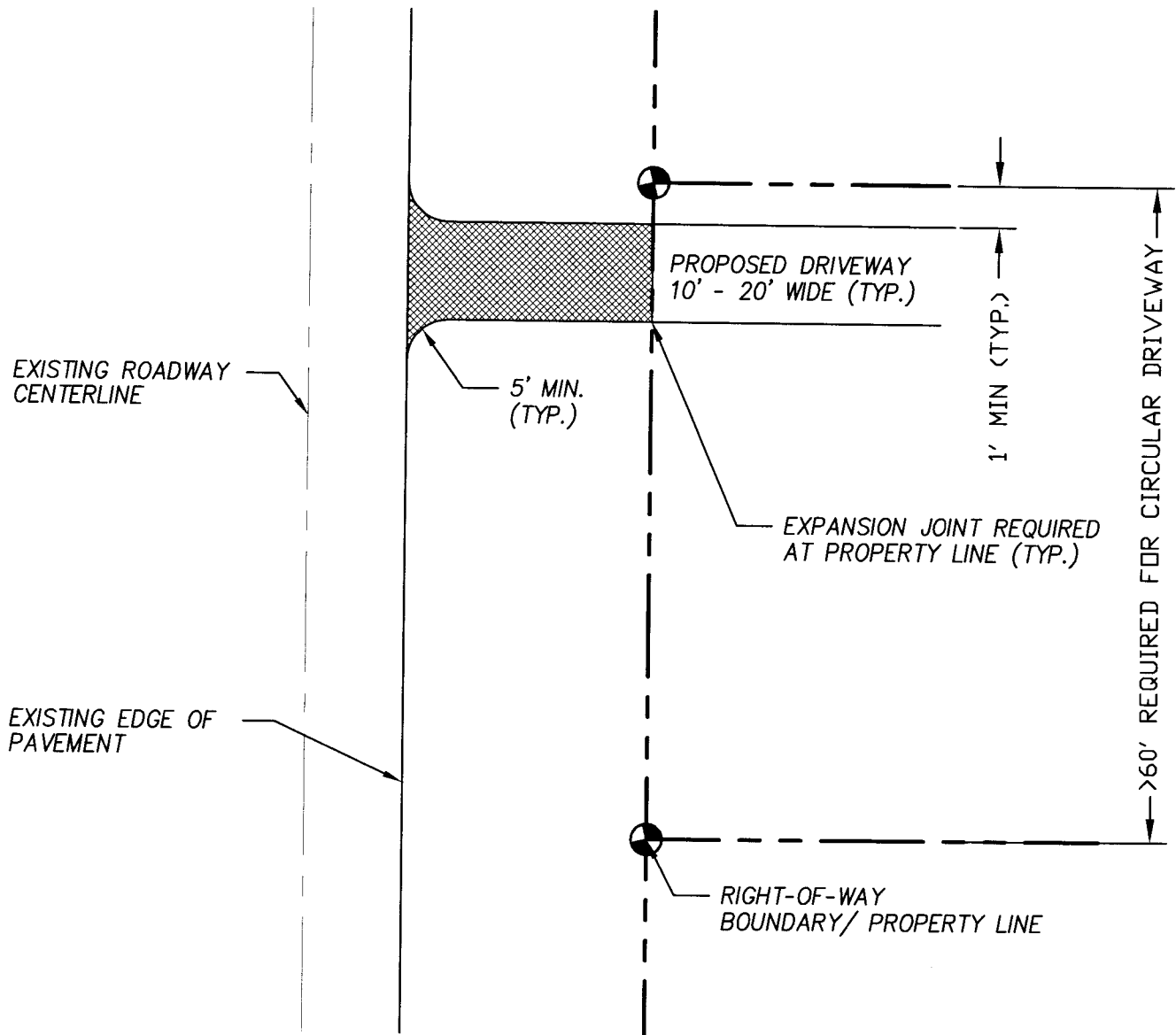
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**VEHICLE TURN-A-ROUND ON
ROAD ≤ 200'**

RD-08



NOTE:

1. ALL PRIVATE DRIVEWAYS IN THE PUBLIC RIGHT-OF-WAY SHALL BE MAINTAINED BY THE ADJACENT RESPECTIVE PROPERTY OWNER.
2. REFER TO RD-02 FOR ADDITIONAL DESIGN CRITERIA (CURRENTLY UNDER CONSTRUCTION).
3. A DRIVEWAY SHALL NOT BE LESS THAN 10 FEET IN WIDTH AND SHALL NOT EXCEED 20 FEET IN WIDTH.
4. ONLY GRASS, GRAVEL, AND ASPHALT DRIVEWAY SURFACES ARE ALLOWED IN THE PUBLIC RIGHT-OF-WAY.
5. AN ENCROACHMENT AGREEMENT IS REQUIRED FOR ALL EXISTING AND PROPOSED ENCROACHMENTS IN THE PUBLIC RIGHT-OF-WAY. THIS DOCUMENT SHALL BE ENFORCED AS PART OF THE PERMITTING PROCESS.
6. SINGLE-FAMILY DRIVEWAYS: 1 DRIVEWAY/ RESIDENCE
7. THE FOLLOWING CRITERIA MUST BE MET FOR A CIRCULAR SINGLE-FAMILY DRIVEWAY TO BE APPROVED:
 - A) THE PROPERTY FRONTAGE EXCEEDS 60 FEET; AND
 - B) THE WIDTH OF EACH DRIVEWAY SHALL NOT EXCEED 10'; AND
 - C) SPACING, OFFSETS, AND SETBACKS FROM INTERSECTIONS SHALL BE GOVERNED BY THE MUTCD.

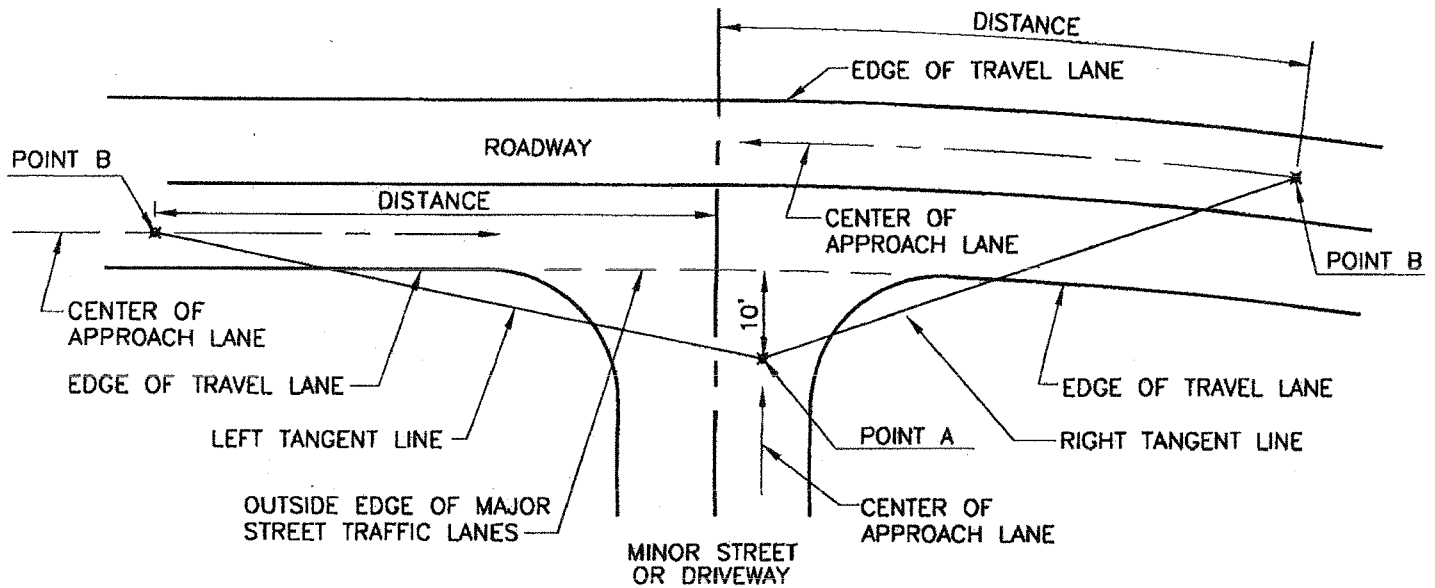
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**DRIVEWAY IN
PUBLIC RIGHT-OF-WAY**

RD-09



NOTES:

1. PARKING STRIPES OR LANES DESIGNATED FOR PARKING ONLY ARE OUTSIDE THIS REFERENCE LINE AND ARE NOT INCLUDED IN THE MAJOR STREET TRAFFIC LANES.
2. ALL STREET ENDS SHALL BE SIGNED PER THE MUTCD.
3. SEE THE AASHTO DESIGN MANUAL FOR STOPPING SIGHT DISTANCE, ENTERING SITE DISTANCE, AND INTERSECTION DESIGN.

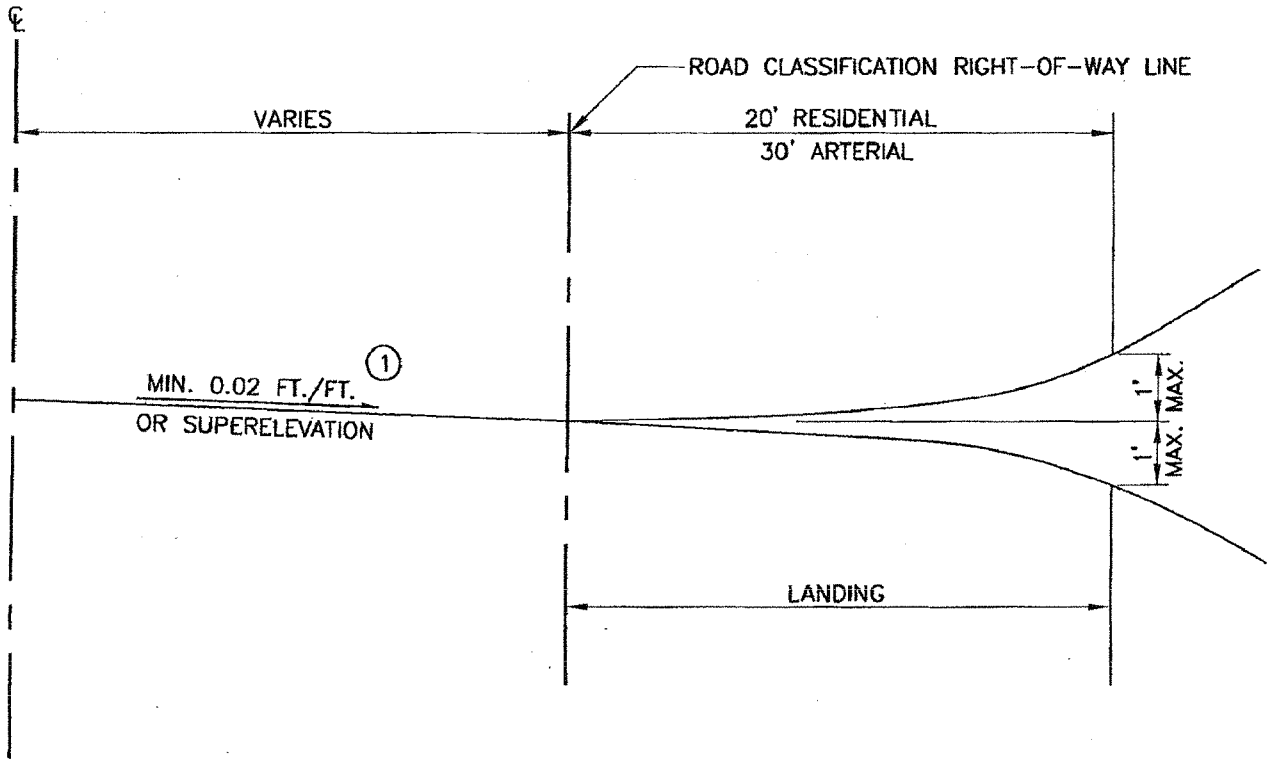
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**MEASURING
 SITE DISTANCE**

RD-10



TOWN OF YARROW POINT

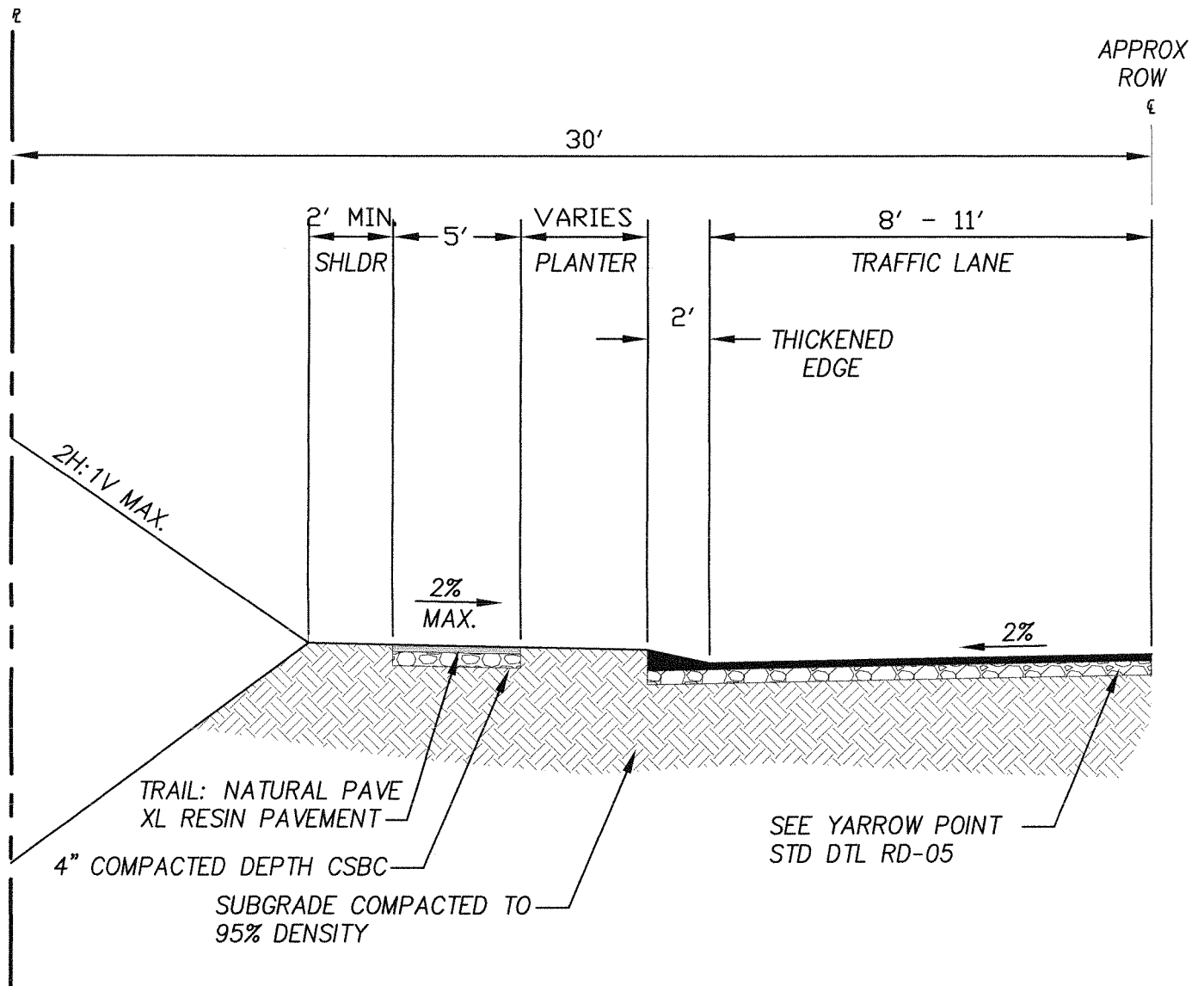
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**DRIVEWAY - VERTICAL TRANSITION
TO RIGHT-OF-WAY**

RD-11

LAST REVISED: 07/31/10



NOTES:

1. ALL PLANS MUST BE APPROVED BY THE TOWN PRIOR TO CONSTRUCTION OF THE TRAIL. TRAIL CENTERLINE TO BE STAKED IN FIELD BY CONTRACTOR AND APPROVED BY TOWN PRIOR TO CONSTRUCTION.
2. ALL HAZARDOUS TREES AND TREE LIMBS, AS DEFINED BY A CERTIFIED ARBORIST, SHALL BE FELLED AND REMOVED FROM THE SITE.
3. SUBGRADE TO BE TREATED WITH AN APPROVED HERBICIDE PRIOR TO LACING PATHWAY SURFACING.
4. MINIMUM BRANCH CLEARANCE ABOVE TRAIL SURFACE = 7'-0" (TYPICAL).
5. PATHWAY SURFACING SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE PLANS AND SPECIFICATIONS. DESIGN SPECIFICATIONS FOR NEW AND/OR REPAIRED PATHWAYS ARE AVAILABLE FROM THE TOWN ENGINEER.

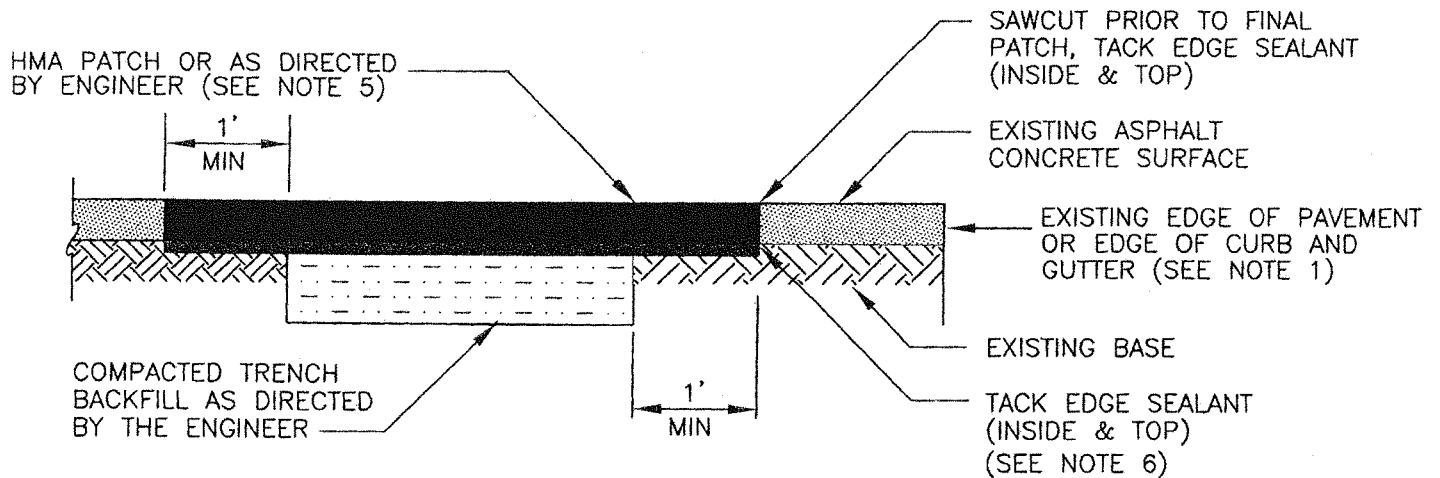
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**PATHWAY DETAIL
 92ND AVE NE**

RD-12



TYPICAL PATCH FOR PAVEMENT

NOTES:

1. IF THE DISTANCE FROM THE EDGE OF PATCH TO THE EDGE OF PAVEMENT OR CURB AND GUTTER IS LESS THAN 3', THE PATCH MUST CONTINUE TO THE EXISTING EDGE; UNLESS ROADWAY IS OVERLAID WITHIN 60 DAYS.
2. HOT MIX ASPHALT SHALL BE CLASS B.
3. ALL TRENCH BACKFILL SHALL BE CRUSHED SURFACING TOP COURSE MATERIAL FOR PERPENDICULAR TRENCHES, OR AS DIRECTED BY ENGINEER.
4. CLASS B HOT MIX ASPHALT MAY BE USED IN LIEU OF ATB.
5. PATCH MUST ALWAYS BE 1" DEEPER THAN EXISTING ASPHALT; MAX 6" DEEP, OR AS DIRECTED BY ENGINEER.
6. TOP SEAL-USE AR4000W AND PROVIDE A SAND BLANKET TO ALLEVIATE TRAILING.

TOWN OF YARROW POINT

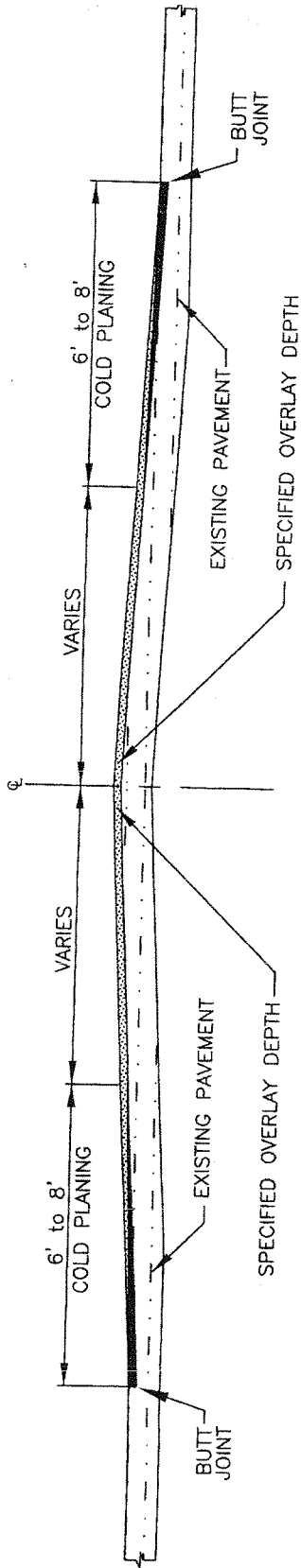
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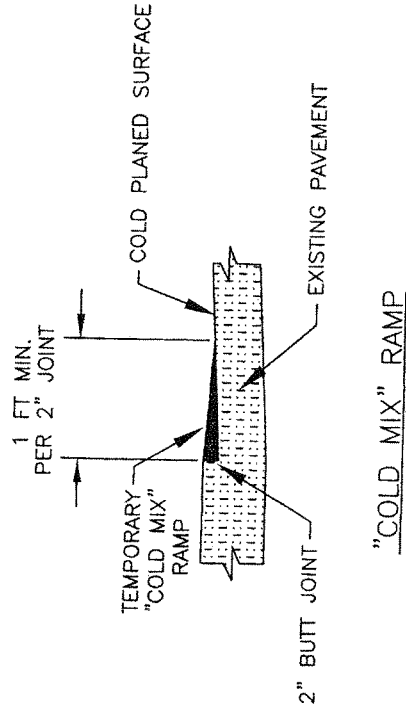
RESTORATION DETAIL AND PAVEMENT PATCHING

RD-13

LAST REVISED: 07/31/10



BUTT JOINT COLD PLANING



"COLD MIX" RAMP

NOTES:

1. ALL JOINTS PLANED PERPENDICULAR TO TRAVEL LANES SHALL BE COLD MIXED IMMEDIATELY, AS PER THIS DETAIL, AND MAINTAINED UNTIL TIME OF REMOVAL, SAME DAY AS CLASS B ASPHALT OVERLAY.

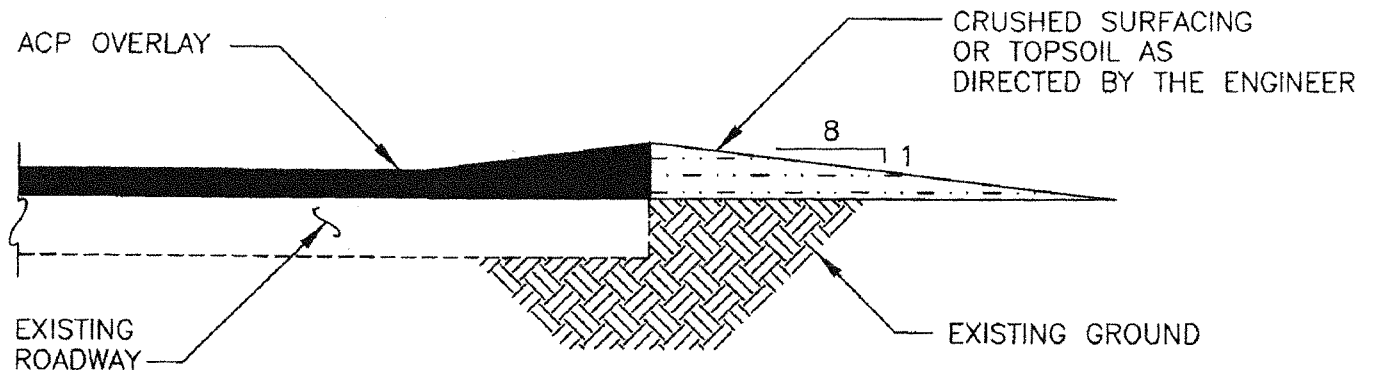
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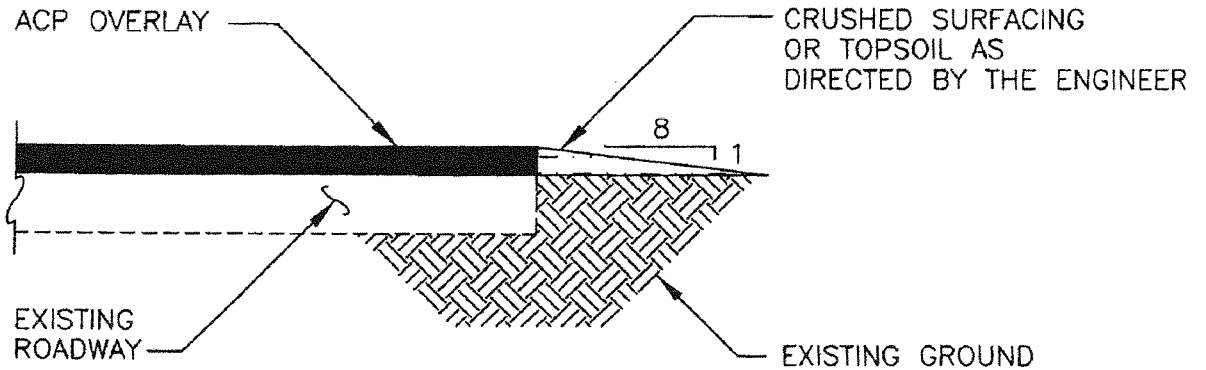


**BUTT JOINT, COLD PLANING AND
 COLD MIX RAMP**

RD-14



WITH THICKENED EDGE



WITHOUT THICKENED EDGE

TOWN OF YARROW POINT

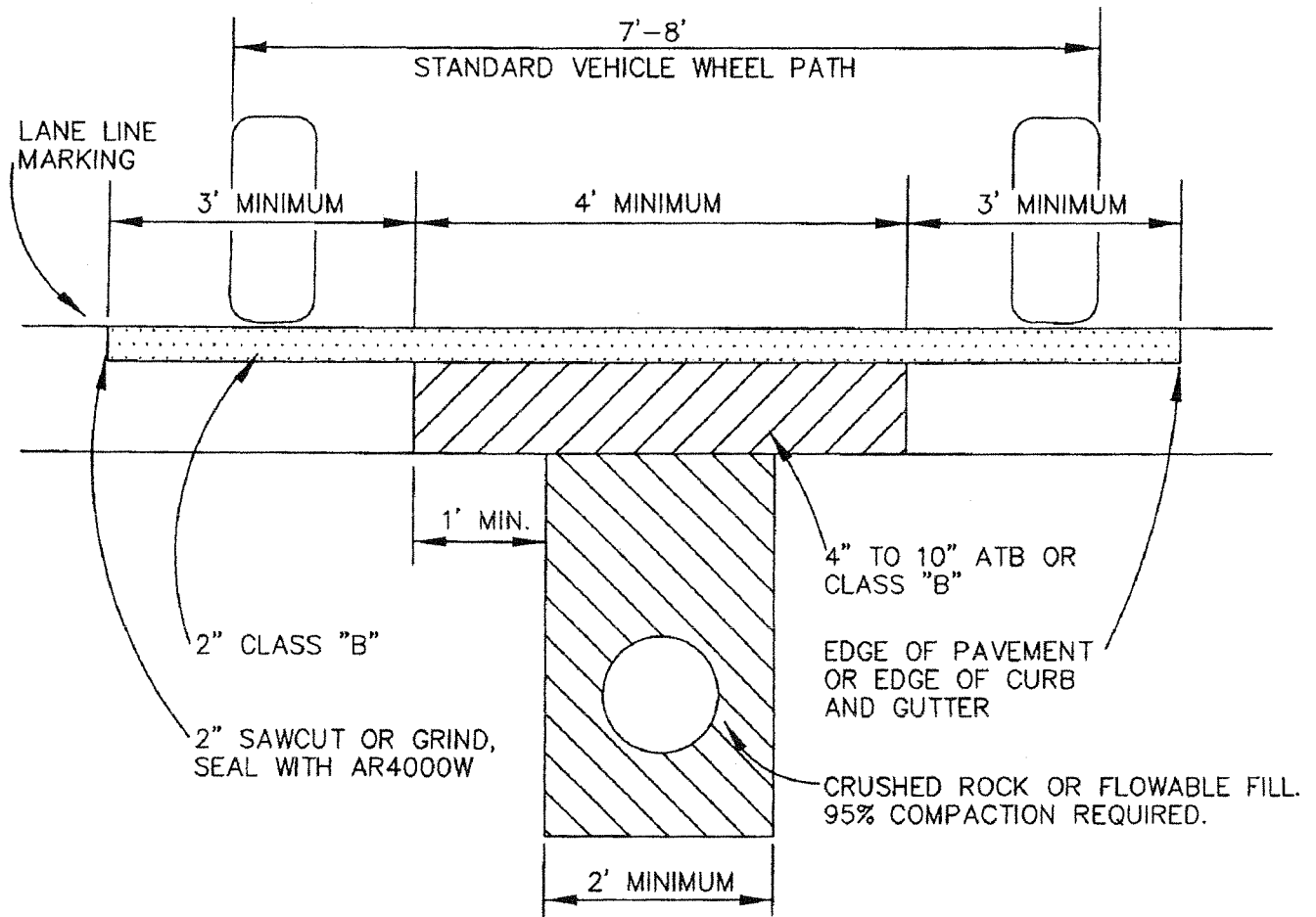
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**EDGE RESTORATION
 DETAILS**

RD-15

LAST REVISED: 07/31/10



LESS THAN FULL WIDTH OVERLAY

TOWN OF YARROW POINT

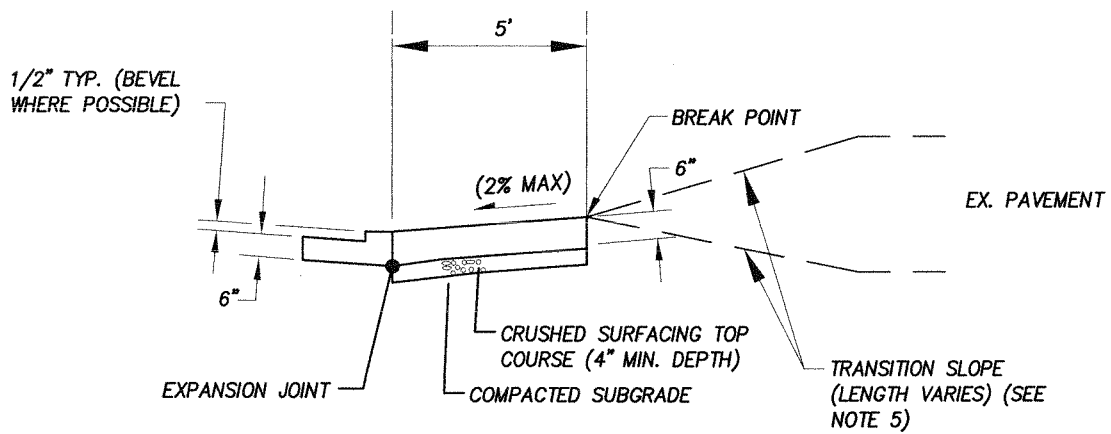
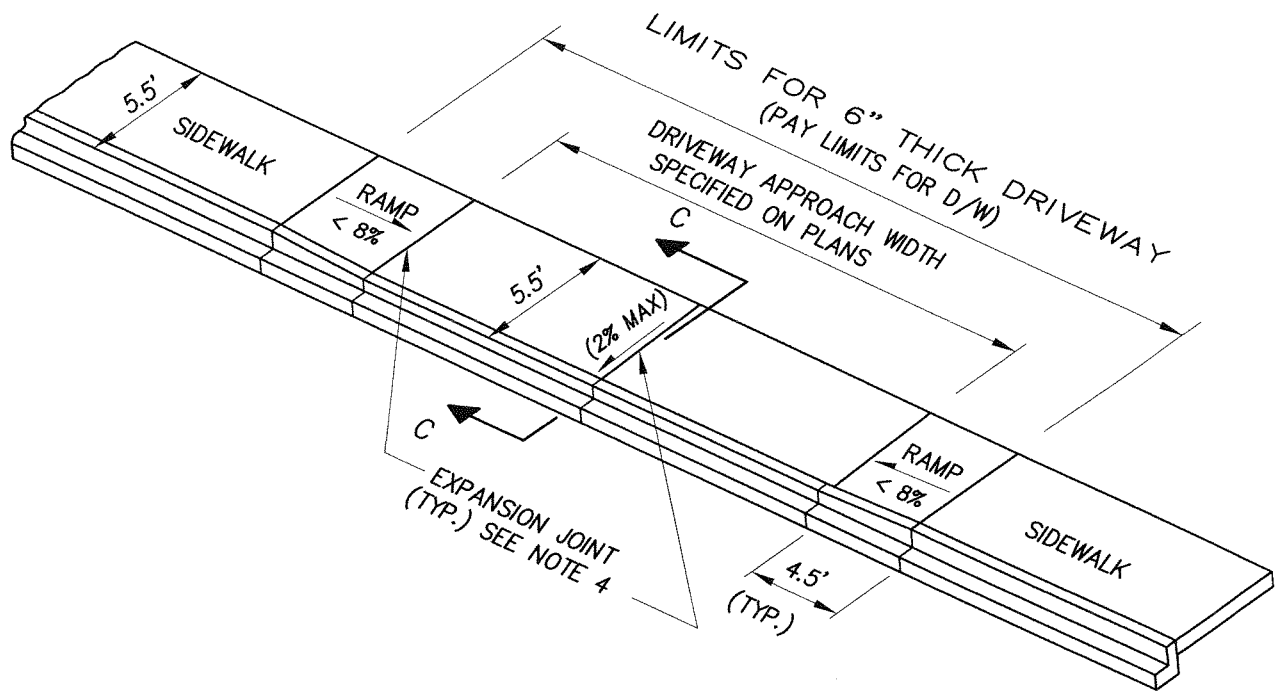
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SECTION OF LONGITUDINAL OR TRANSVERSE CUT

RD-16

LAST REVISED: 07/31/10

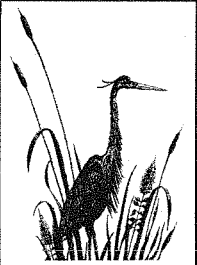


SECTION C

NOTES:

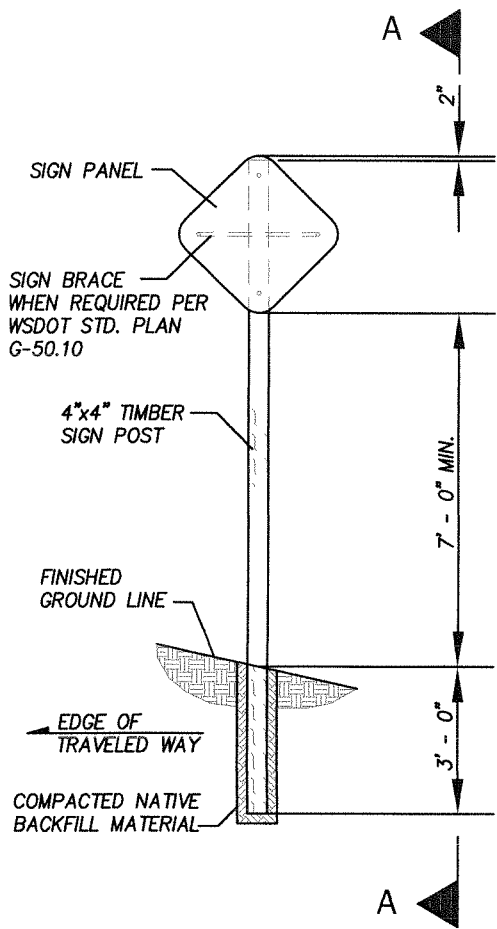
1. DRIVEWAYS TO DEVELOPED LOTS SHALL NOT BE BLOCKED FOR MORE THAN 4 HOURS. CONTRACTOR SHALL PROVIDE IMMEDIATE TEMPORARY ACCESS FOR DEVELOPED LOTS WHEN SO DIRECTED BY THE ENGINEER.
2. DETAILS SHOWN ARE TYPICAL, THE ENGINEER RESERVES THE RIGHT TO REVISE DETAILS TO BETTER MATCH FIELD CONDITIONS.
3. SIDEWALK GRADES SHALL BE ADJUSTED TO MATCH EXISTING GROUND OR DRIVEWAY WITHIN LIMITS SHOWN, WHEN SO DIRECTED BY THE ENGINEER.
4. 3/8" THRU EXPANSION JOINTS SHALL BE PLACED AT BACK, SIDES, AND FRONT AND SHALL NOT EXCEED 15' MAXIMUM SPACING. WHERE DRIVEWAY WIDTH EXCEEDS 16', A 2" EXPANSION JOINT SHALL BE PLACED LONGITUDINALLY ALONG THE DRIVEWAY CENTERLINE. ELASTOMERIC JOINT MATERIAL SHALL BE IN CONFORMANCE TO SECTION 9-04.1 (4) OF THE WSDOT STANDARD SPECIFICATIONS.
5. SLOPE CHANGE AT BREAK POINT SHALL BE 8% MAXIMUM FOR CREST CONDITION AND 12% MAXIMUM FOR SAG CONDITION.
6. HIGH EARLY STRENGTH, CLASS 4000 PSI MINIMUM, WITH AIR ENTRAINMENT. NO COLOR OR TINT SHALL BE ADDED.
7. FORMS, PLACING, FINISHING AND CURING PER STANDARD SPECIFICATIONS.

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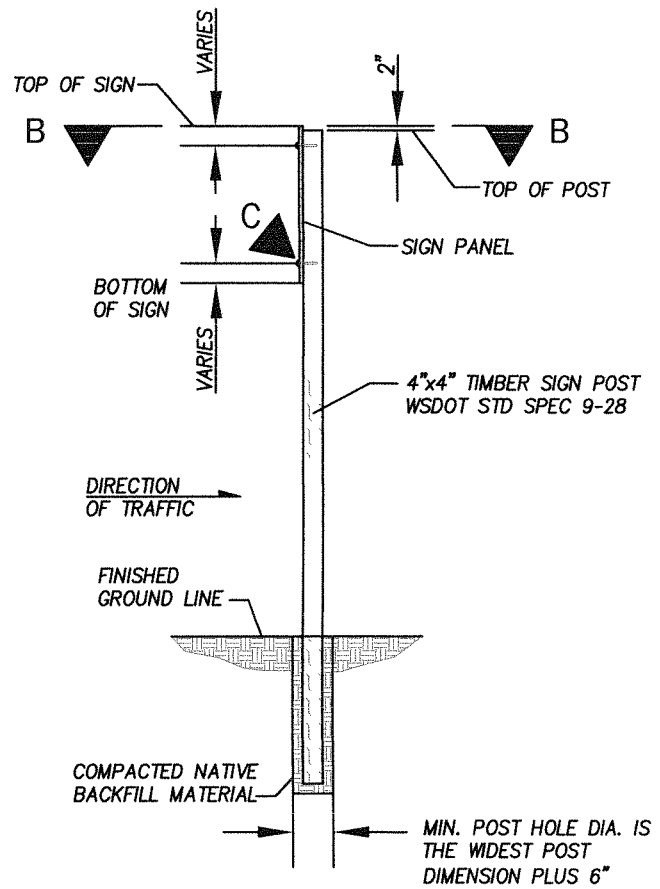


CONCRETE DRIVEWAY APPROACH
(NE POINTS DR ONLY)
 WEST

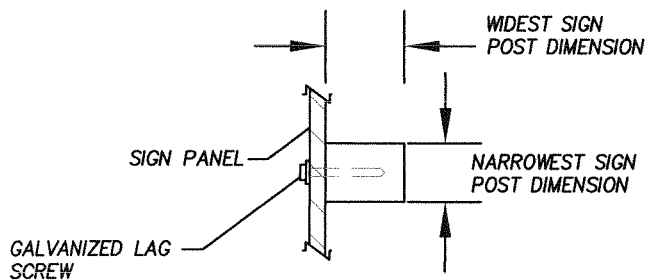
RD-17



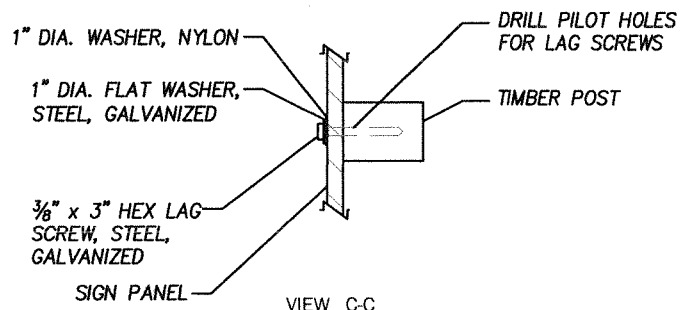
ELEVATION VIEW



VIEW A-A



VIEW B-B



VIEW C-C

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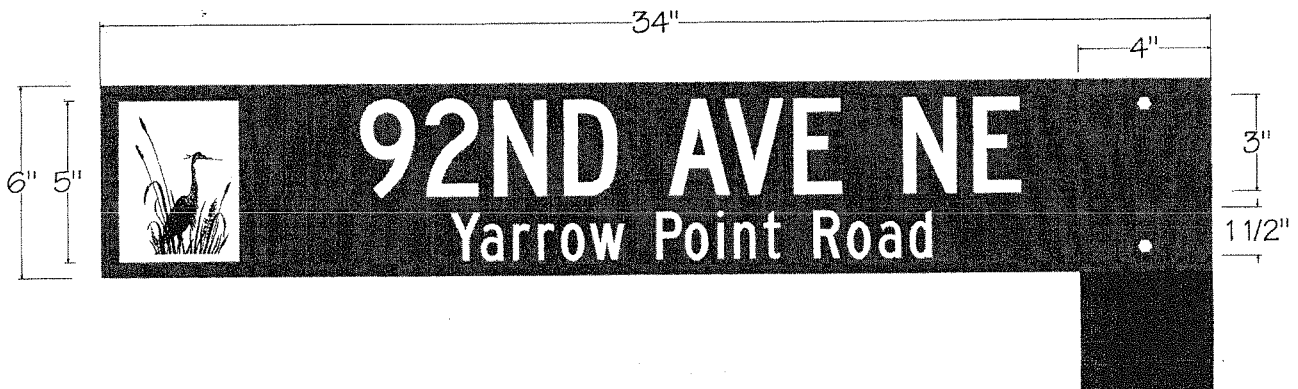
**STREET NAME/ REGULATORY
 SIGN INSTALLATION**

RD-18

Sign	Dimensions (WxH)	Sign Color	Lettering Color
STREET NAME	6"x30"	Pantone 364	White
STOP	30"	Red	White
SPEED LIMIT	18"x24"	White	Black
NO PARKING ON PAVEMENT	12"x18"	White	Red
NO PARKING ANYTIME	12"x18"	White	Red
NO PARKING HERE TO CORNER	12"x18"	White	Red
3 HR PARKING ON SHOULDER	12"x18"	White	Green
DEAD END	30"	Yellow	Black
NO OUTLET	24"	Yellow	Black
SPEED WARNING	24"	Yellow	Black
HANDICAP RESERVED	12"x18"	White	Blue
NO LIFEGUARD ON DUTY	12"x18"	Red	White
ARROW SYMBOL WARNING	18"x36"	Yellow	Black
OUTLET TO 92ND	18"x24"	White	Black
PED X-ING	-	Yellow-green	Black
BEACH HOURS	12"x18"	White	Green
42ND BEACH CUSTOM	30"x30"	White	Black

NOTE:

- 1.) All signs are 0.080" aluminum, Grade- High Intensity Prismatic (HIP).
- 2.) Street name signs shall be double-sided.
- 3.) Street name signs shall include the USPS street name, the historical street name and the Town logo.



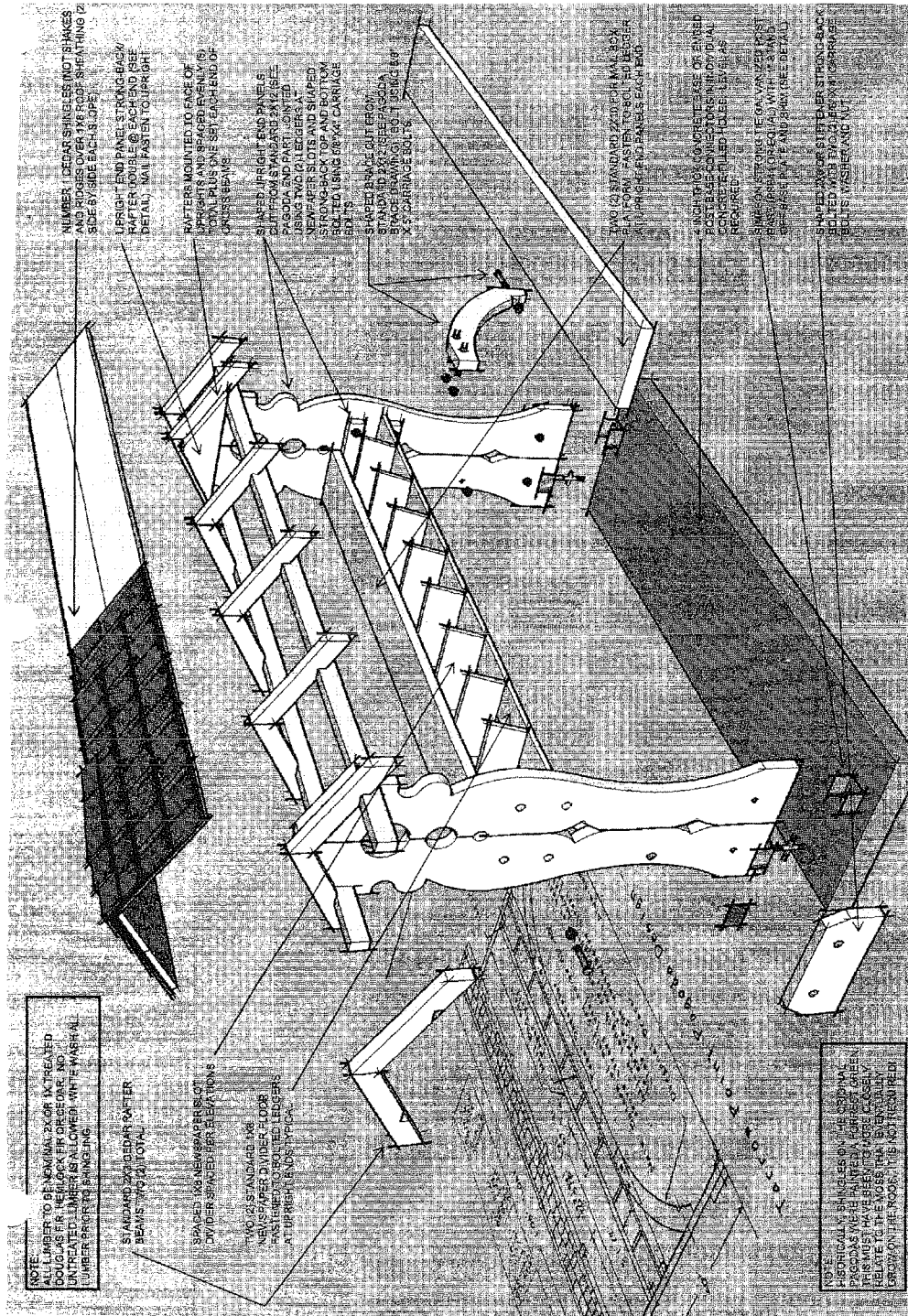
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**STREET NAME/ REGULATORY
 SIGN STANDARD**

RD-19



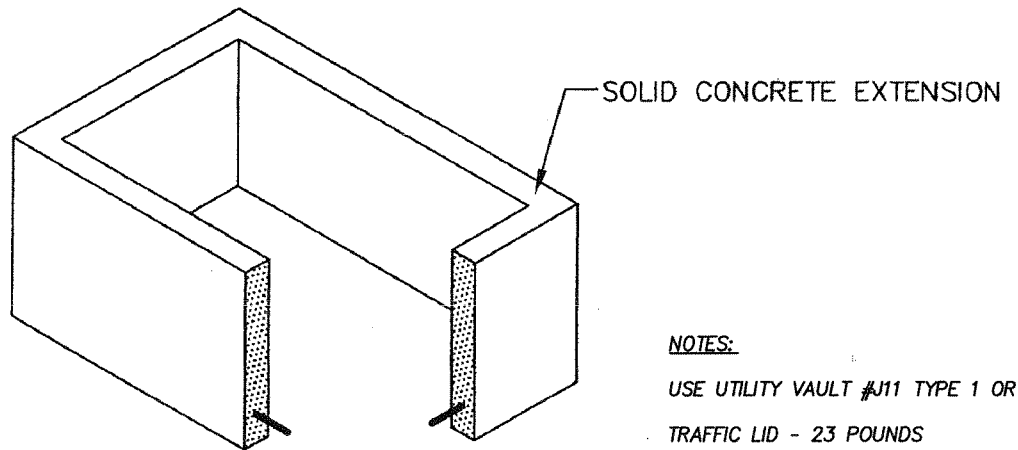
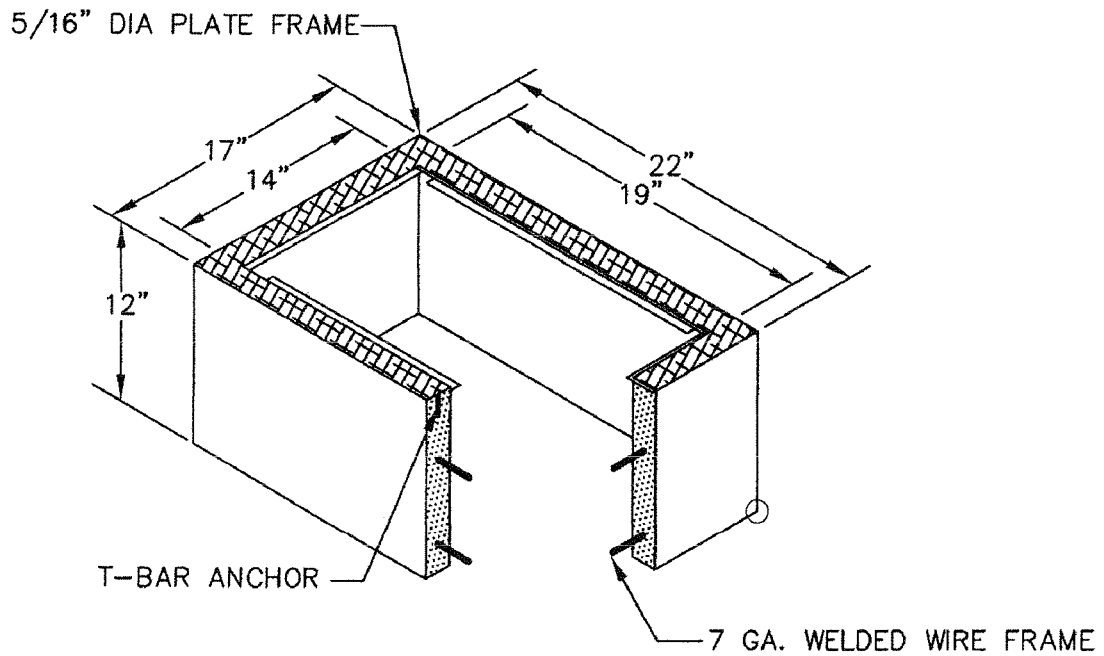
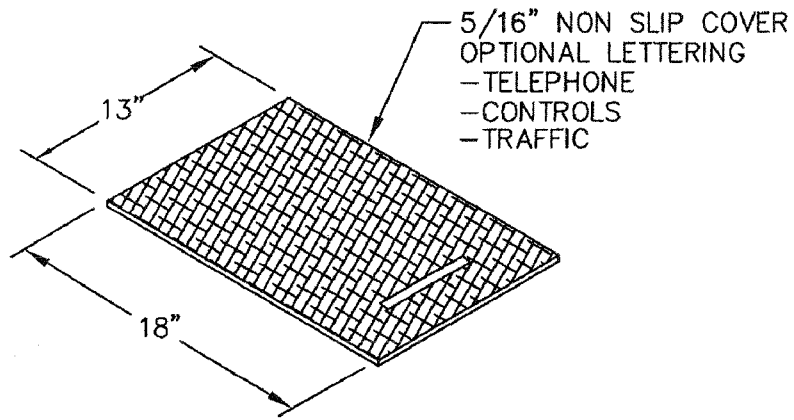
- NOTES:**
1. REFER TO www.ci.yarrow-point.wa.us FOR MORE INFORMATION AND DESIGN CRITERIA.
 2. LOCATION IS SUBJECT TO APPROVAL BY THE TOWN FOR PROTECTION OF VIEWS AND ACCESS.
 3. THIS STANDARD DETAIL AS WELL AS THOSE LISTED ON THE TOWN'S WEBSITE, DEPICT THE MINIMUM STRUCTURAL AND DIMENSIONAL STANDARD. ANY DEVIATION MUST BE APPROVED BY THE TOWN ENGINEER.

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**MAILBOX PAGODA
 STANDARD**

RD-20



NOTES:

USE UTILITY VAULT #J11 TYPE 1 OR EQUAL

TRAFFIC LID - 23 POUNDS

BOTTOM - 123 POUNDS

BOX COMPLETE - 146 POUNDS

TOWN OF YARROW POINT

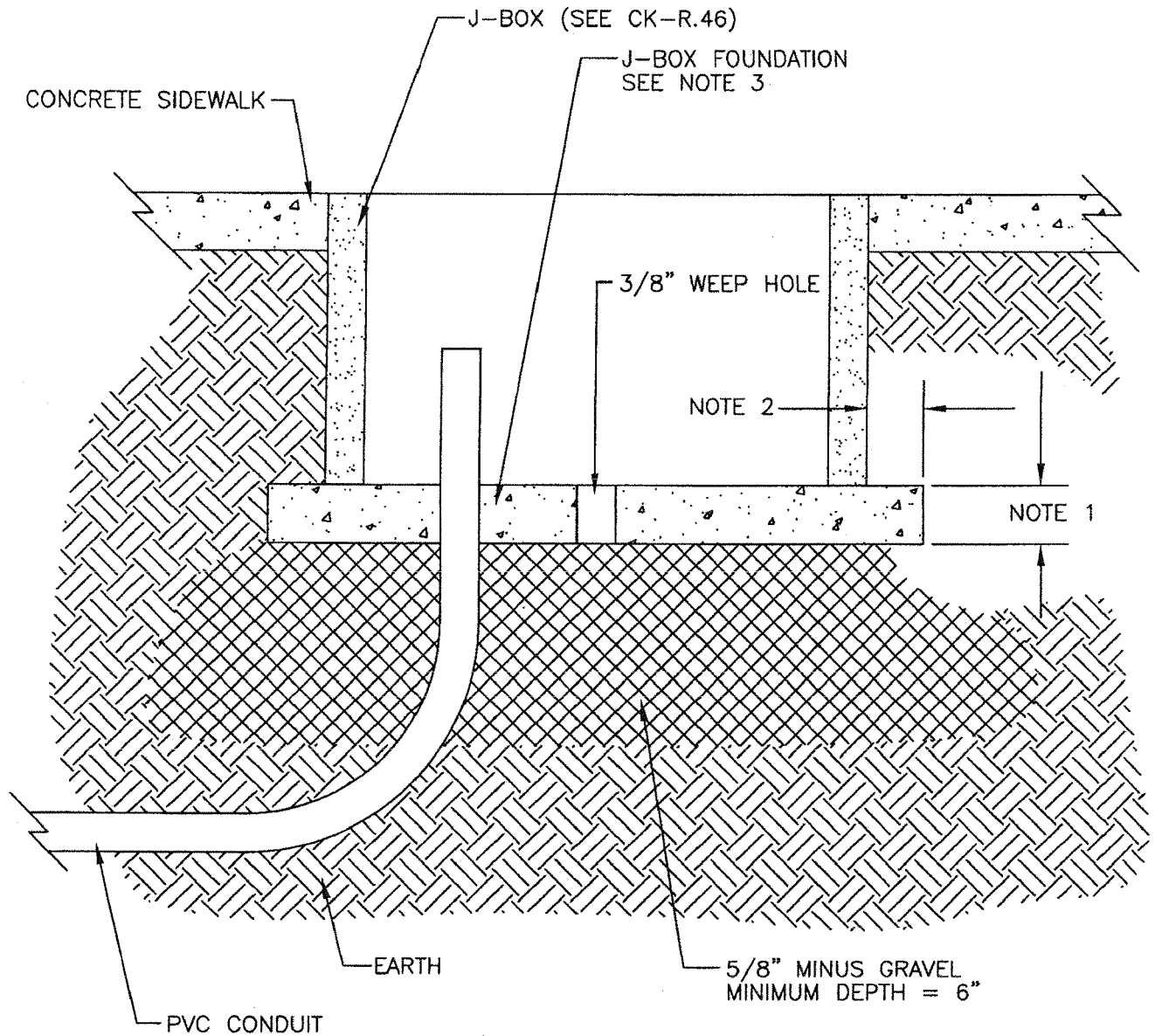
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**STREET LIGHT
 ELECTRICAL JUNCTION BOX**

RD-21

FOR USE WITH NON-U.S.E. CABLE



NOTES:

1. 3" TO 4" THICK CONCRETE WITH 3/8" WEEP HOLE
2. MINIMUM 1"; MAXIMUM 6"
3. THE FIT BETWEEN J-BOX AND FOUNDATION SHALL BE SNUG

TOWN OF YARROW POINT

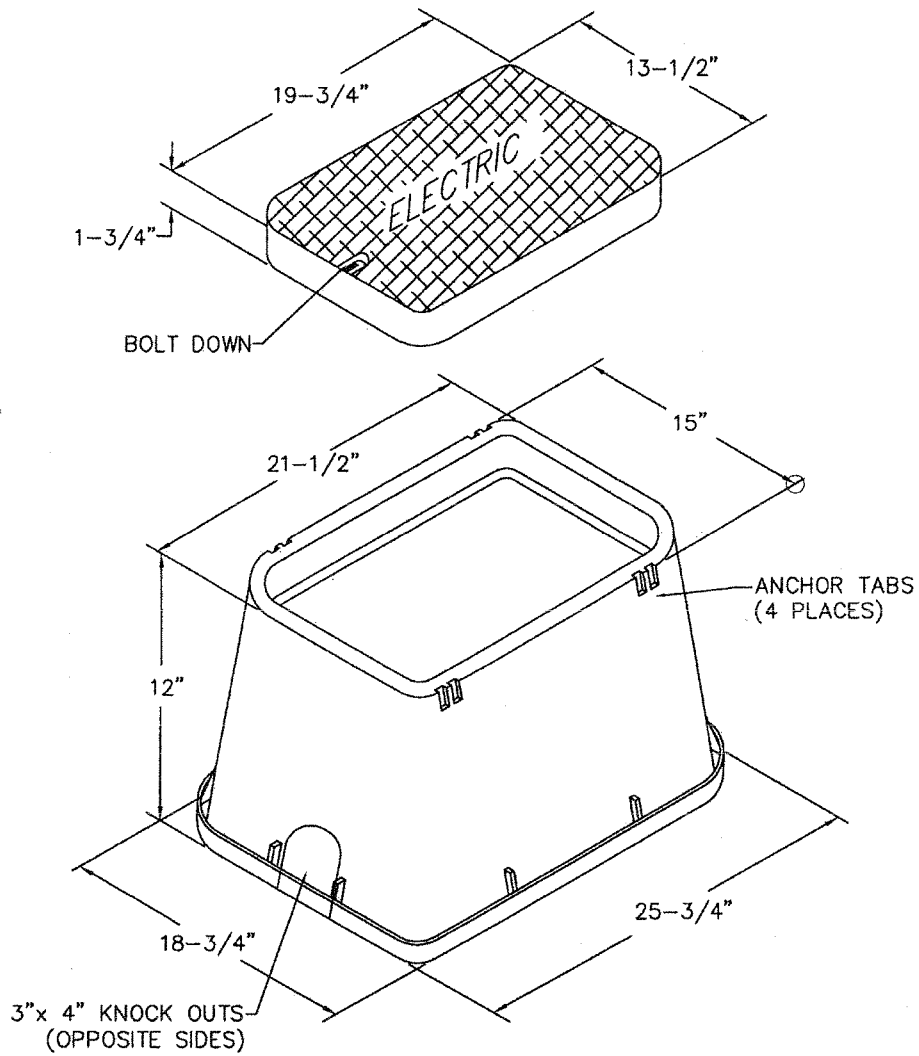
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**STREET LIGHT
ELECTRICAL J-BOX FOUNDATION**

RD-22

LAST REVISED: 07/31/10



NOTES:

1. USE CARSON MODEL #1220-12-4be
2. COVER MUST DISPLAY "ELECTRIC" OR EQUAL

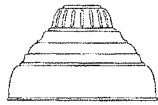
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**STREET LIGHT
 JUNCTION BOX**

RD-23



20 in/510mm x 25
in/635 mm dia
WT: 45 lbs

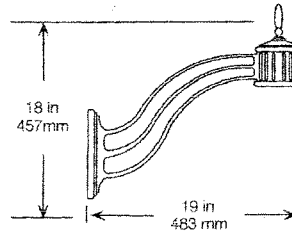
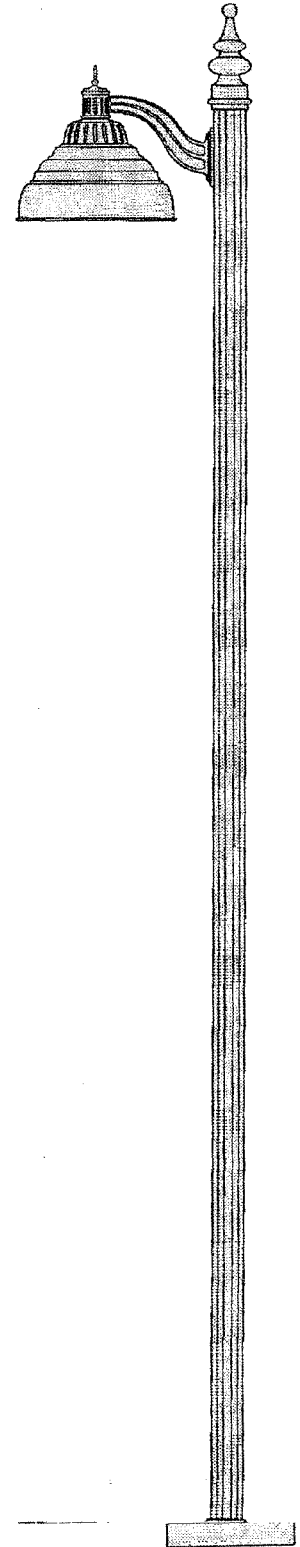
LUMINAIRE

ARCHITECTURAL AREA LIGHTING PENDANT LUMINAIRE
PROMENADE SERIES, TYPE III DISTRIBUTION
INTERNAL HOUSE SIDE SHIELD
100 WATT HPS, 120 VOLT HPF BALLAST
LUMINAIRE PAINTED AAL DGN
PRM2 H3 HORIZ. LAMP, FLAT GLASS LENS, IES FULL CUTOFF,
TYPE III REFLECTOR, ARM MOUNT

CATALOG NUMBER -- PRM2-H3-HSS-100HPS-120-DGN

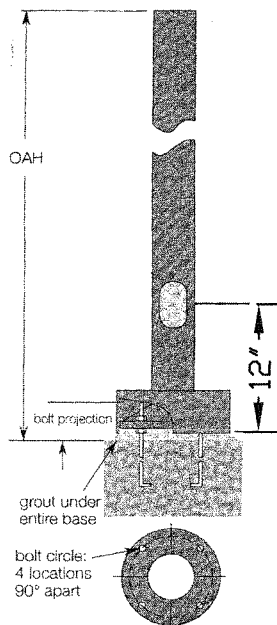
LAMP

CERAMALUX HIGH PRESSURE SODIUM LAMP - 100 WATT
MANUFACTURER: PHILIPS LIGHTING
CATALOG NO.: C100554/M
DESCRIPTION: CLEAR; ANSI CODE/ BALLAST S54S; INITIAL
INTENSITY 9500 LUMEN; COLOR RENDERING INDEX 21' COLOR
TEMPERATURE 2100 K; OPERATING POSITION UNIVERSAL;
OVERALL LENGTH 5 7/16 INCH; LIFE 24000; APPLICATION GENERAL
LIGHTING; STANDARD PACKAGE 12; CERAMALUX[T] BRAND



ARM

ARCHITECTURAL AREA LIGHTING
LUMINAIRE ARM FOR PENDANT MOUNTED LUMINAIRE
ARM PAINTED ALL DGN
CATALOG NUMBER -- TRA5D-DGN



POLE

GARMIRE IRON STEEL POLE PR5
25' TALL - ROUND, TAPERED, GALVANIZED
ANCHOR BASE STEEL POLE
12.5" BASE DIA. AND 5" POLE DIA.
FINISH PAINT AAL DGN OVER GALVANIZE
(INCLUDING CAP)
POLE DRILLED FOR AAL TRA5D ARM
POLE TOP CAP W/ PE RECEPTACLE
INSTALLED
CATALOG NUMBER GR25-HDG/AAL "DGN"

SET OF 4 ANCHOR BOLTS 1"x3/8"x6"x6"
A307/GALV

http://www.aal.net/products/promenade8482_prm2

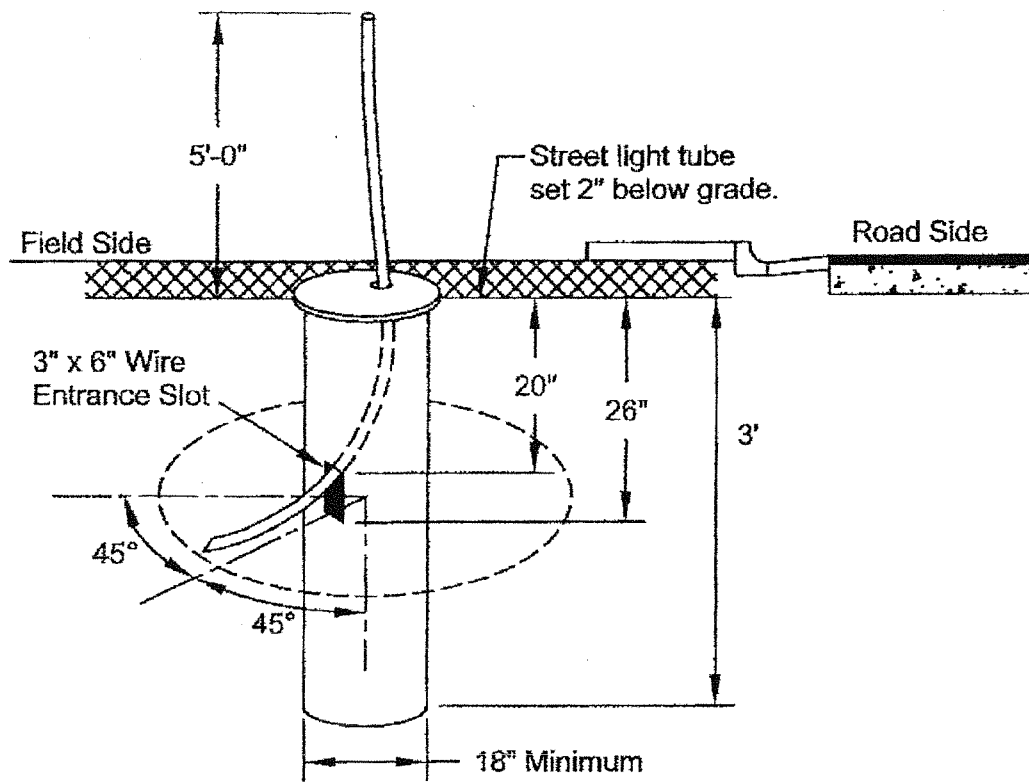
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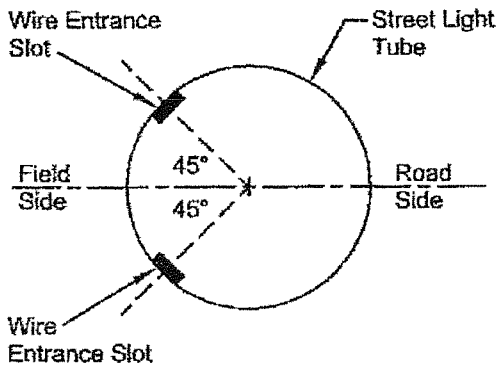


**STREET LIGHT
STANDARD**

RD-24



Plan View Detail of Street Light Tube



Position 3" x 6" wire entrance slot 45 degrees left or right from a line perpendicular to roadway through center of tube.

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**STREET LIGHT
 POLE BASE DETAIL**

RD-25

HOUSING

The ballast housing shall be a one piece, high strength casting with an integral heat sink for the ballast assembly. Housing shall be A356 cast free of any porosity, foreign materials or cosmetic fillers. The hood shall be spun aluminum welded circumferentially to the ballast housing. The housing shall have an inner rolled flange to support the door frame. The door frame shall be an aluminum casting, hinged to the housing. The door frame shall be sealed to the housing with a molded silicone gasket and be secured with four captive screws. The lens on the PRM2 and PRM3 shall be clear, tempered glass sealed to the door frame with a silicone gasket. Vertical lamp fixture shall have a sag glass lens, the horizontal lamp fixture shall have a flat glass lens. The optional drop lens on the PRM4 shall be molded, optical grade DR acrylic. All internal and external hardware is stainless steel.

REFLECTOR MODULE

The optical assembly shall consist of an die cast aluminum housing, sealed with a silicone gasket to prevent dust, insect or moisture contamination. The reflector module shall consist of segmented, specular and semi-specular Alzak[®] panels precisely formed and positioned within the housing and rotatable on ninety degree increments for proper field positioning. Reflectors shall meet the ANSI-IES standard for full cutoff in horizontal models.

ELECTRICAL

All electrical components shall be U.L. recognized. Ballasts shall be high power factor rated for -30°C starting. The ballast assembly plate shall be mounted to the cast housing for maximum heat dissipation. Medium and mogul base porcelain sockets shall be pulse rated. Sockets for horizontal metal halide lamps are pin orientated and include a lamp stabilizer. The ballast assembly shall be installed and prewired in the fixture. High output fluorescent lamps shall be powered by electronic ballast and shall be rated for a minimum starting temperature of -18° C. (PRM3 only)

MOUNTING

The fixture shall be welded to the cast arm for mounting the TRA5 and TRA6 arm.

Wall mounting the WMA35 or WMA36: the fixture shall be welded to the cast arm.

Arm or wall mounting other AAL arms: The fixture shall attach to a transition casting that is welded to the arm. The transition piece shall attach to the fixture with three stainless steel 1/4-20 bolts and sealed with a silicone gasket.

Post top fitter: the cast fitter shall be welded to the yoke and slips over a 4 in/100 mm O.D. pole for PRM3 or a 5 in/127 mm O.D. pole for PRM2 & PRM4 and secured with six stainless steel set screws.

TOOL-LESS RELAMPING

The lens door frame of the fixture shall hinge down for relamping. Four captive screws shall be loosened to open the fixture for relamping (PRM2 & PRM4). One captive screw shall be loosened to open the fixture on the PRM3.

FINISH

Fixture finish shall consist of a five stage pretreatment regimen with a polymer primer sealer, oven dry off and top coated with a thermoset super TGIC polyester powder coat finish. The finish shall meet the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance.

EISA COMPLIANCE

AAL is committed to complying with U.S. EISA requirements. All applicable products manufactured for sale in the United States after January 1, 2009, meet EISA requirements.

CERTIFICATION

Fixtures shall be listed with ETL for outdoor, wet location use, UL 1598 and Canadian CSA C22.2 no.250 IP = 54.

TOWN OF YARROW POINT

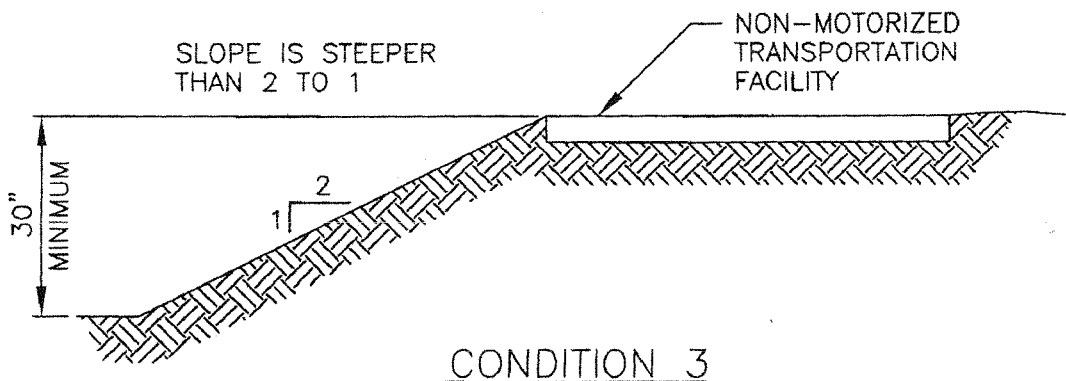
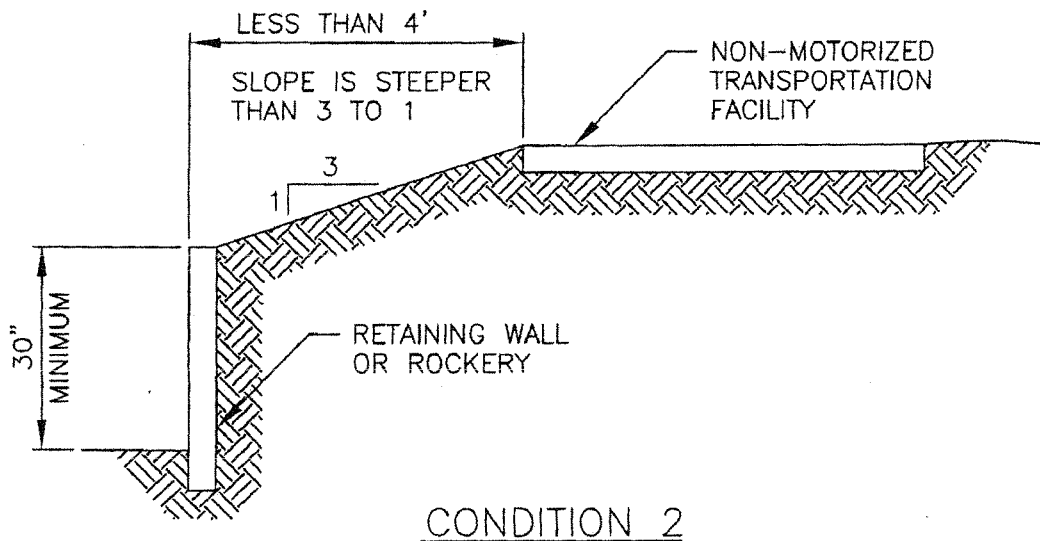
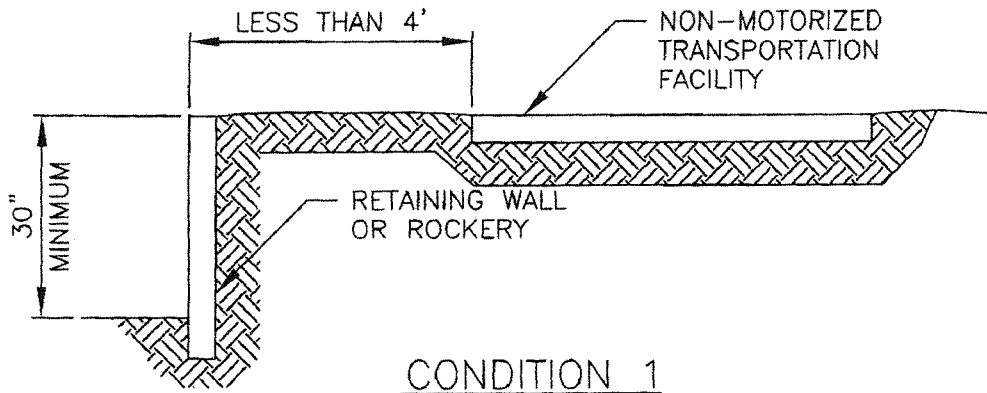
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STREET LIGHT SPECIFICATIONS

RD-27

LAST REVISED: 07/31/10



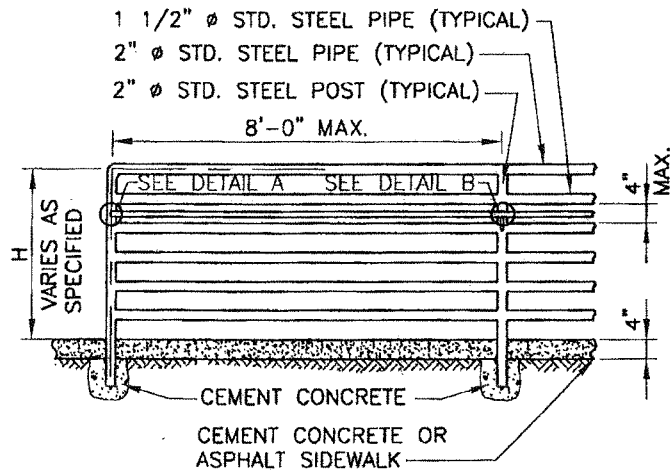
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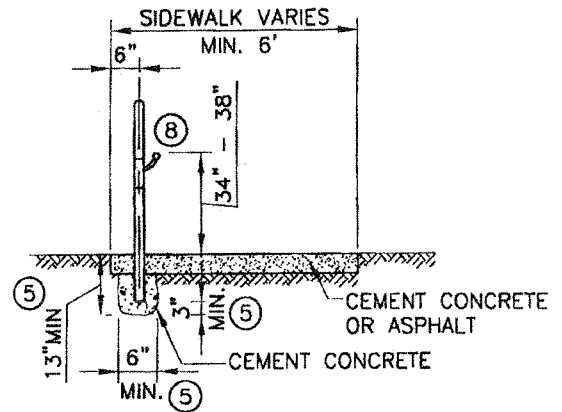


**CONDITIONS REQUIRING
 SAFETY RAILINGS**

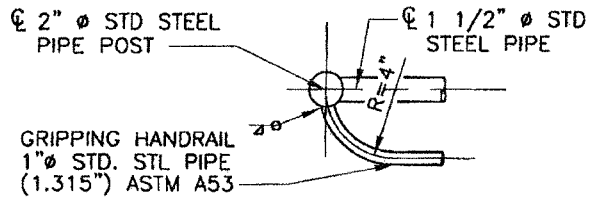
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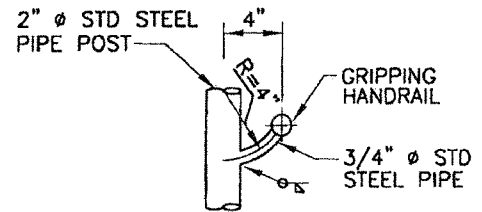
METAL HANDRAIL



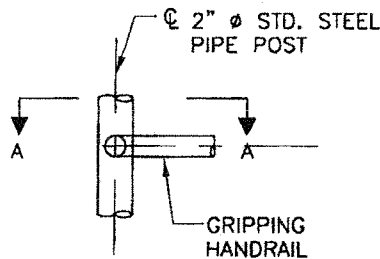
HANDRAIL SECTION



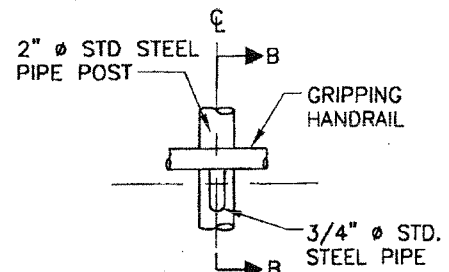
SECTION A-A



SECTION B-B



DETAIL A



DETAIL B

GRIPPING HANDRAIL

NOTES:

1. RAILS TO BE MINIMUM A53 TYPE E, GRADE B, 2 IN. NOMINAL DIAMETER, MINIMUM SECTION MODULUS 0.561 IN 3 (GALV. STEEL OR ALUM).
2. POSTS, HANDRAILS, CONNECTIONS, JOINTS AND HARDWARE SHALL HAVE A SMOOTH SURFACE.
3. ALL STEEL SHALL BE GALVANIZED. ANY WELDING OR REPAIR IN THE FIELD SHALL BE PAINTED IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATION SECTION 6-07.3.
4. FOOTINGS TO BE MINIMUM CONCRETE CLASS 4000.
5. POSTS SET DEPTH AND CONCRETE FOOTING DIMENSIONS SHALL BE REVIEWED AND DETERMINED BY ENGINEER BASED ON LOCAL SOIL AND SITE CONDITIONS.
6. SEE AASHTO 2.7.2 AND AASHTO 2.7.3 FOR RAIL VERTICAL SPACING REQUIREMENTS.
7. NOT USED.
8. GRIPPING HANDRAIL IS REQUIRED IF SIDEWALK GRADE IS 5% OR GREATER.
9. THE RAILING SHALL MEET THE REQUIREMENTS OF THE AASHTO STANDARDS SPECIFICATIONS FOR HIGHWAY AND BRIDGES.

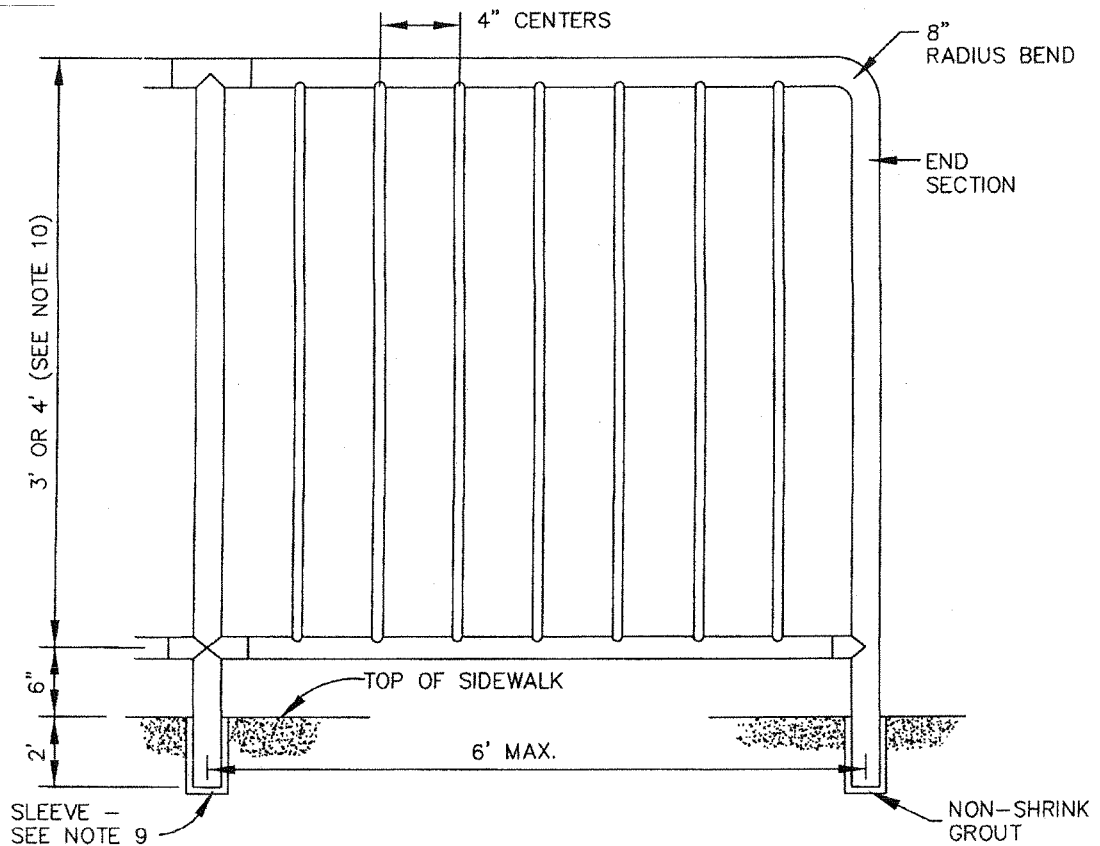
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METAL HANDRAIL
 ALTERNATE NO. 1

RD-29



PIPE SCHEDULE
(ALL DIMENSIONS O.D.)

PANEL HEIGHT	TOP RAIL/POST	BOTTOM RAIL	BALUSTER
3'	1.90"	1.90"	.840"
4'	2.875"	2.375"	.840"

NOTES:

1. RAILING SHALL BE ALUMINUM PIPE RAIL OR APPROVED EQUIVALENT. INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.
2. SHOP DRAWINGS OF RAILING SHALL BE SUBMITTED FOR APPROVAL SHOWING COMPLETE DIMENSIONS AND DETAILS OF FABRICATION AND INCLUDING AN ERECTION DIAGRAM. MATERIALS BEING USED SHALL BE SPECIFIED IN THE SHOP DRAWINGS.
3. ALL ALUMINUM PARTS SHALL BE GIVEN A CLEAR ANODIC COATING AT LEAST 0.0006 INCH THICK AND BE HOT WATER SEALED AND SHALL HAVE A UNIFORM FINISH.
4. PIPE RAILING AND PIPE RAILING SPLICES MAY BE HEATED TO NOT MORE THAN 400°F FOR A PERIOD NOT TO EXCEED 30 MINUTES TO FACILITATE FORMING OR BENDING.
5. CUTTING SHALL BE DONE BY SAWING OR MILLING AND ALL CUTS SHALL BE TRUE AND SMOOTH, FLAME CUTTING WILL NOT BE PERMITTED.
6. PIPE RAILING, PIPE BALUSTERS AND PIPE RAILING SPLICES SHALL BE ADEQUATELY WRAPPED TO ENSURE SURFACE'S PROTECTION DURING HANDLING AND TRANSPORTATION TO THE JOB SITE.
7. WELDING OF ALUMINUM SHALL BE IN ACCORDANCE WITH THE LATEST AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
8. ALLOW FOR EXPANSION AT APPROXIMATELY EVERY FOURTH POST.
9. RAILS, POSTS AND FORMED ELBOWS SHALL BE A.S.T.M. B-241 OR B-429 ALLOY, 6063-T6 SCHEDULE 40 (STD. PIPE). BRACKETS, ENDCAPS AND OTHER FITTINGS SHALL BE A.S.T.M. 6063-T5. SPLICES AND REINFORCING SLEEVES SHALL BE DRAWN ALUMINUM TUBING 6063-T832. SLEEVE I.D. SHALL BE 1" GREATER THAN POST O.D.
10. PANEL HEIGHT: 3 FEET FOR PEDESTRIAN USES;
4 FEET FOR COMBINED BICYCLE AND PEDESTRIAN USES.

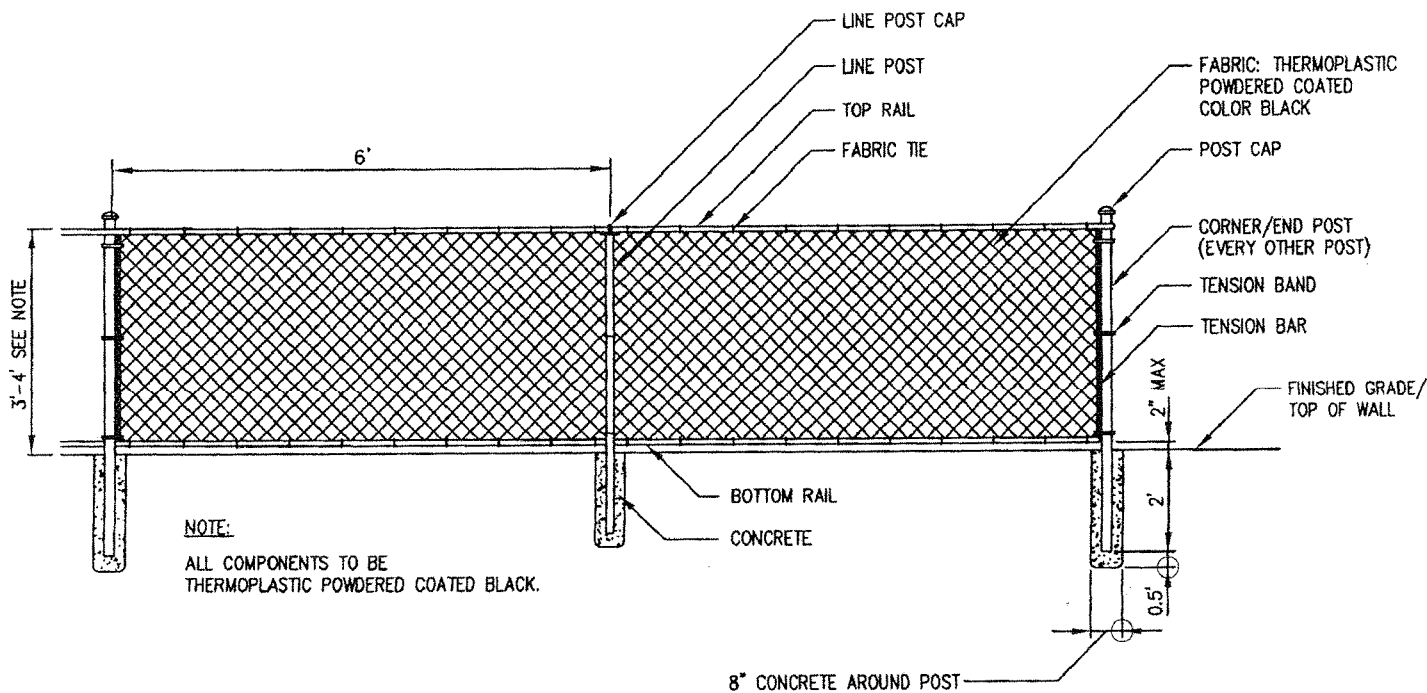
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**METAL HANDRAIL
ALTERNATE NO. 2**

RD-30



PIPE SCHEDULE
(ALL DIMENSIONS I.D.)

TOP/BOTTOM RAIL	CORNER/END POST	LINE POST
1.25"	2.5"	2"

NOTES

1. ALL FENCING MATERIALS SHALL COMPLY WITH THE WSDOT/APWA STANDARD SPECIFICATIONS SECTION 9-16 CLASS 1 MATERIAL. INSTALLATIONS PER MANUFACTURER'S RECOMMENDATIONS.
2. SHOP DRAWINGS OF RAILING SHALL BE SUBMITTED FOR APPROVAL SHOWING COMPLETE DIMENSIONS AND DETAILS OF FABRICATION AND INCLUDING AN ERECTION DIAGRAM. MATERIALS BEING USED SHALL BE SPECIFIED IN THE SHOP DRAWINGS.
3. ALL STEEL PARTS AND CHAIN LINK FABRIC SHALL BE GIVEN A BLACK ULTRAVIOLET-INSENSITIVE THERMOPLASTIC POWDER COATING AT LEAST 3 MILS THICK AND SHALL HAVE A UNIFORM FINISH.
4. CUTTING SHALL BE DONE BY SAWING OR MILLING AND ALL CUTS SHALL BE TRUE AND SMOOTH. FLAME CUTTING WILL NOT BE PERMITTED.
5. ALL MATERIALS SHALL BE ADEQUATELY WRAPPED TO ENSURE SURFACE PROTECTION DURING HANDLING AND TRANSPORTATION TO THE JOB SITE.
6. ANY WELDING OF STEEL SHALL BE IN ACCORDANCE WITH THE LATEST AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
7. PANEL HEIGHT: 3 FEET FOR PEDESTRIAN USES
4 FEET FOR COMBINED BICYCLE AND PEDESTRIAN USES

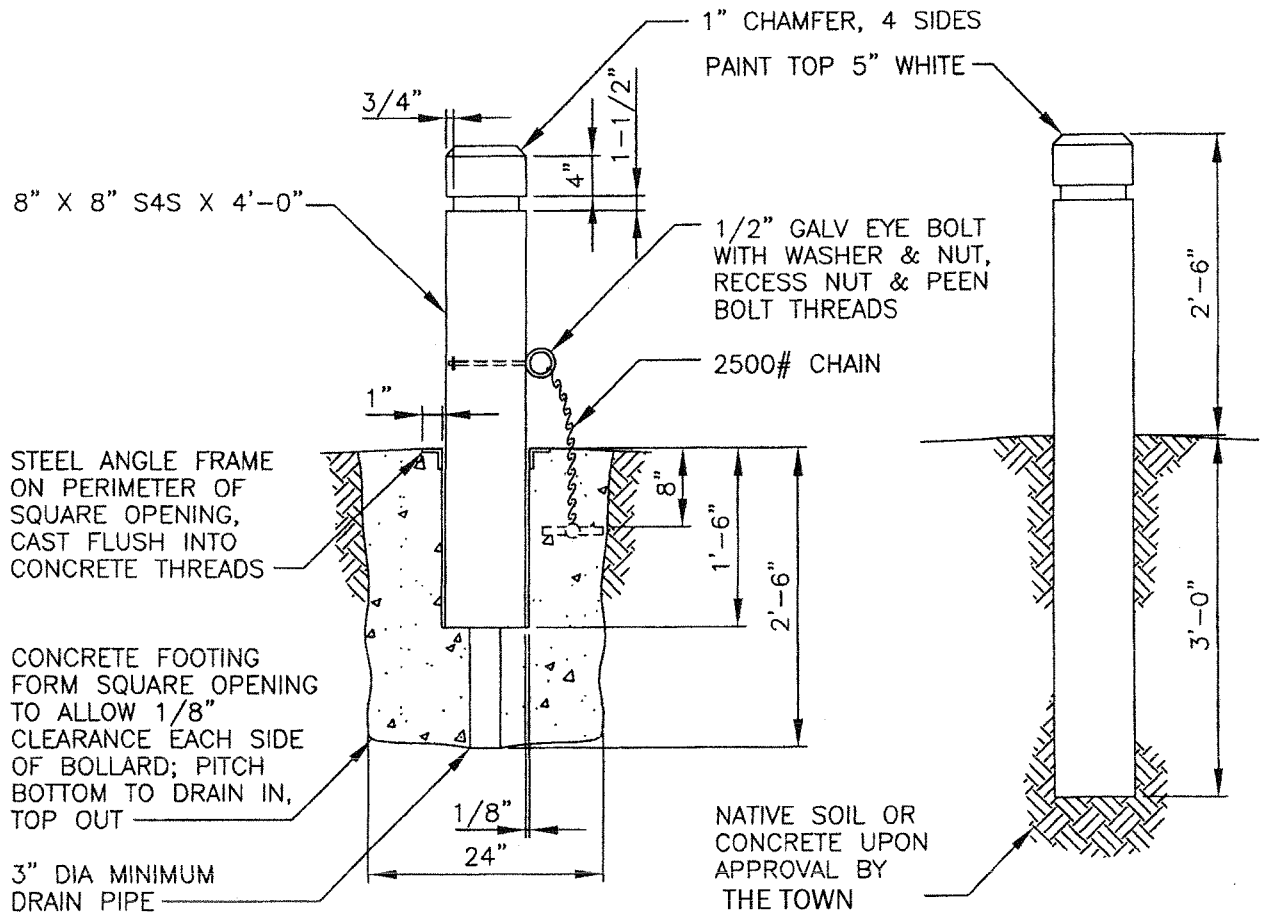
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**CHAINLINK
FENCE**

RD-32



REMOVABLE BOLLARD

FIXED BOLLARD

NOTES:

1. TIMBER SHALL BE DOUGLAS FIR, DENSE CONSTRUCTION GRADE, AND SHALL BE PRESSURE TREATED.
2. NUTS, BOLTS, AND WASHERS CONFORM TO ASTM A307.
3. ALL STEEL PIPES SHALL BE GALVANIZED.
4. CONCRETE SHALL BE CLASS C.
5. A HASP MAY BE SUBSTITUTED FOR THE CHAIN UPON APPROVAL BY THE TOWN.

TOWN OF YARROW POINT

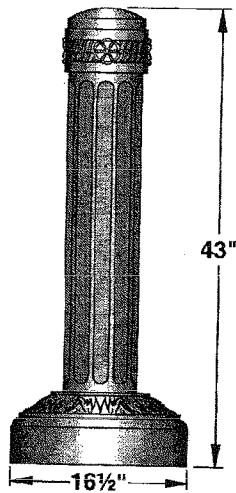
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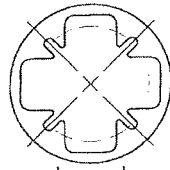
**BOLLARD
 ALTERNATE NO. 1**

RD-33

B23C-TOP



**12" DIA. BOLT
CIRCLE**



**HAND HOLE
LOCATION**

NOTES:

1. B2300 BOLLARD CAST ALUMINUM CONSTRUCTION
www.sunvalleylighting.com

TOWN OF YARROW POINT

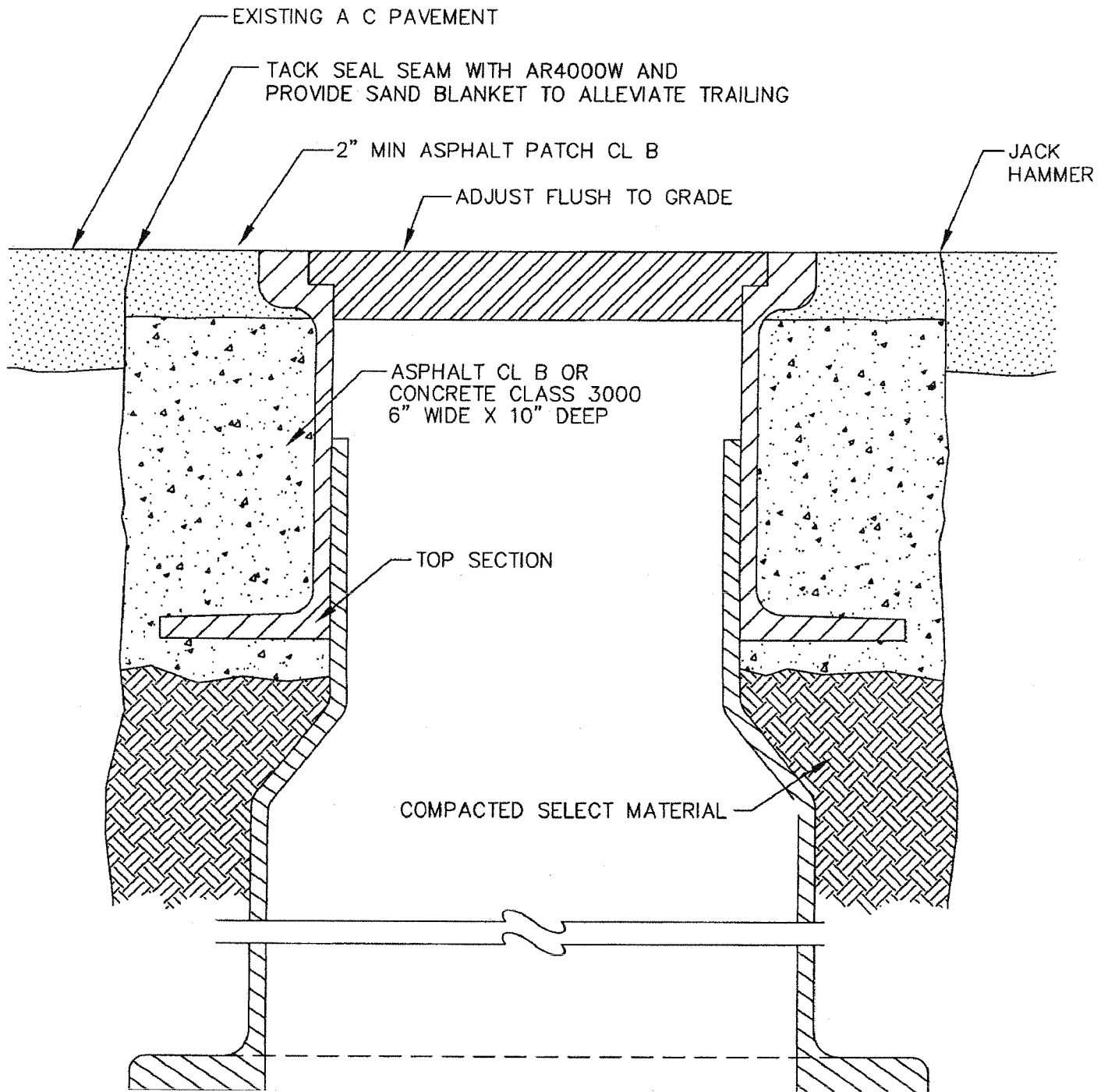
4030 95TH AVENUE NE
YARROW POINT, WA 98004
P: (425) 454-6994 F: (425) 454-7899
townhall@ci.yarrow-point.wa.us
www.ci.yarrow-point.wa.us



**BOLLARD
ALTERNATE NO. 2**

RD-34

LAST REVISED: 07/31/10



NOTES:

1. VALVE BOX TOP SECTION SHALL BE: RICH MANUFACTURING 940B SEATTLE STANDARD WITH NEW LID, OR APPROVED EQUAL.

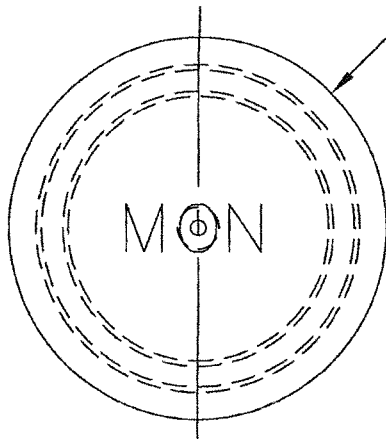
TOWN OF YARROW POINT

4030 95TH AVENUE NE
 YARROW POINT, WA 98004
 P: (425) 454-6994 F: (425) 454-7899
 townhall@ci.yarrow-point.wa.us
 www.ci.yarrow-point.wa.us

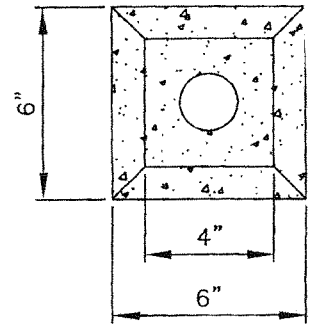


**GENERAL UTILITY
 ADJUSTMENT IN AC PAVEMENT**

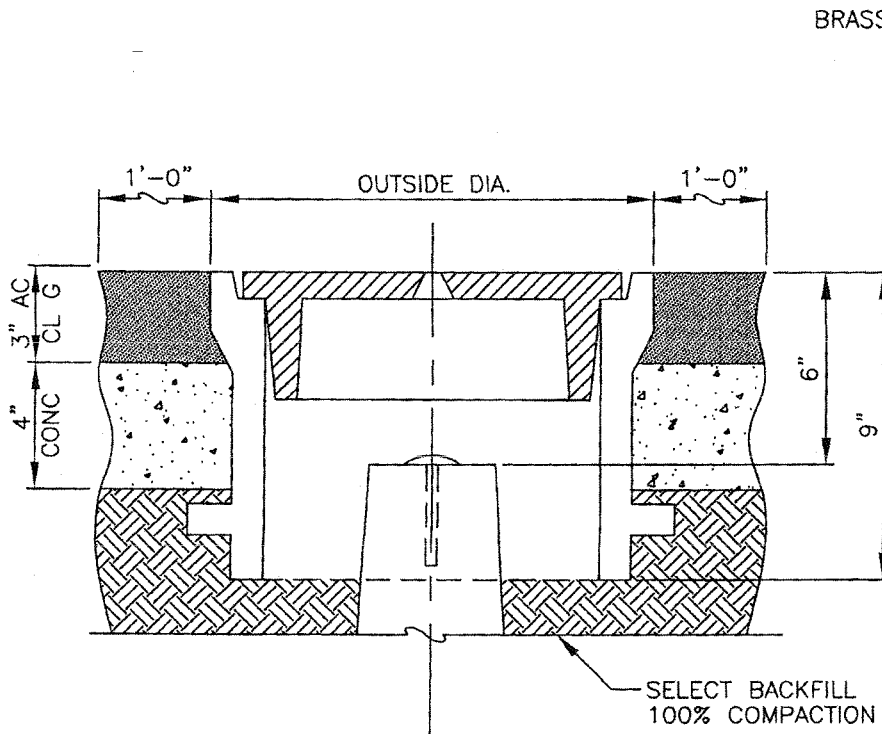
RD-35



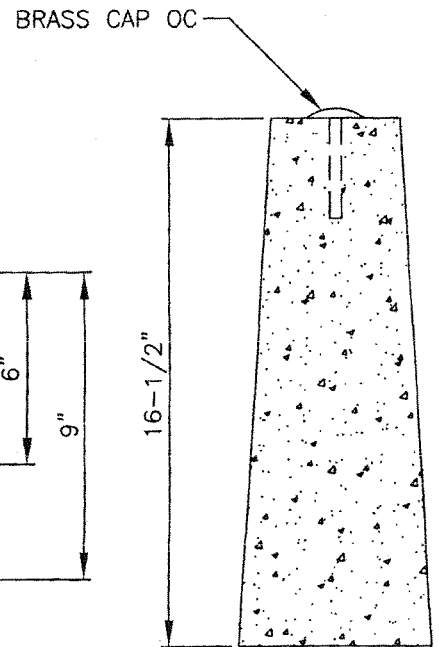
PLAN



PLAN



ELEVATION



ELEVATION

NOTES:

1. STANDARD MONUMENT CASE AND COVER WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD PLAN H-7.
2. THE CASTINGS SHALL BE GREY-IRON, ASTM DESIGNATION A-48, CLASS 30B. THE COVER AND SEAT SHALL BE MACHINED SO AS TO HAVE PERFECT CONTACT AROUND THE ENTIRE CIRCUMFERENCE AND FULL WIDTH OF BEARING SURFACE.

TOWN OF YARROW POINT

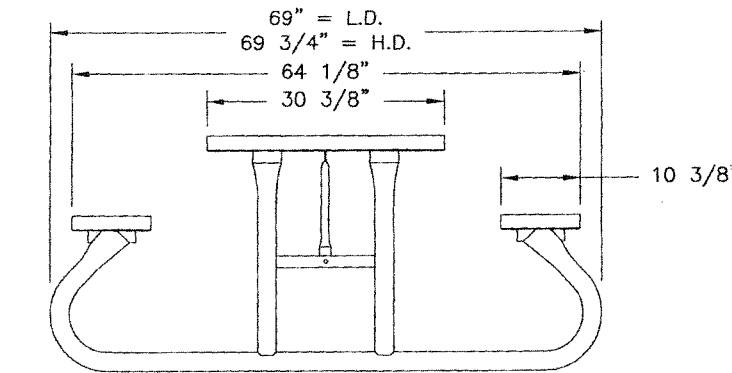
4030 95TH AVENUE NE
 YARROW POINT, WA 98004
 P: (425) 454-6994 F: (425) 454-7899
 townhall@ci.yarrow-point.wa.us
 www.ci.yarrow-point.wa.us



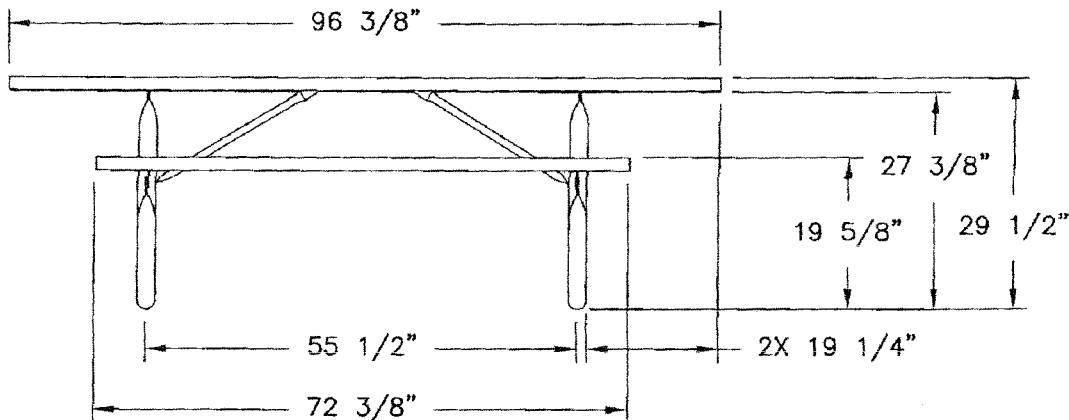
**SURVEY MONUMENT
 CASE AND COVER**

RD-36

ALL MODELS W/ SEATS



SG115P/SG115D



specifications:

NOTE: We reserve the right to change specifications without notice.

Heat fused poly-vinyl coating, finished on inner-metal structure, to an approximate 3/16" thickness. Framework assemblies are finished with powder coating; electrostatically applied and oven cured according to powder manufacturer's specifications. Fasteners are stainless steel to resist corrosion.

TABLE FRAMES:

Main supports are constructed of 2 3/8" od x 13 gage and 1 5/8" od x 14 gage structural steel tubing. Cross-braces are 1" od x 15 gage structural steel tubing. Mounting brackets on legs are 10 gage x 2 7/8" x 6" sheet steel.

TOP & SEATS:

Top and seats use fabricated 3/4"-#9 expanded steel mesh and 12 gage sheet metal for perforated. Framing on the 8', 6' and 4' top and 8' and 6' seats are 10 gage mitered angles 3/4" x 1 3/4". The 4' seats use 14 gage mitered angles 3/4" x 1 3/4". Top's center support brace is 1/8" x 1 1/2" strip steel. Top and seat mounting brackets are 1/4" x 1 1/2" steel flat bar.

GENERAL:

10' picnic table ground space requirements are 69 3/4" x 120 3/8". 8' handicap picnic table ground space requirements: 69 3/4" X 96 3/8". 8' picnic table ground space requirements are 69 3/4" x 96 3/8". 6' picnic table ground space requirements are 69 3/4" X 72 3/8". 4' picnic table ground space requirements are 69 3/4" x 48 3/8". Table tops are 30 3/8" wide and 29 1/2" to the top of the tables. Seats are 10 3/8" wide and 19 5/8" to top of seat. Corner radius is 3" to the outside. 8' utility table ground space requirements are 30 3/8" x 96 3/8". 6' utility table ground space requirements are 30 3/8" x 72 3/8". 6' and 8' utility table tops are 30 3/8" wide and 29 1/2" to the top of the table. Corner radius is 3" to the outside.

NOTE: 8' HANDICAP, PICNIC - EXPANDED METAL AND PERFORATED TABLE

www.wabashvalley.com

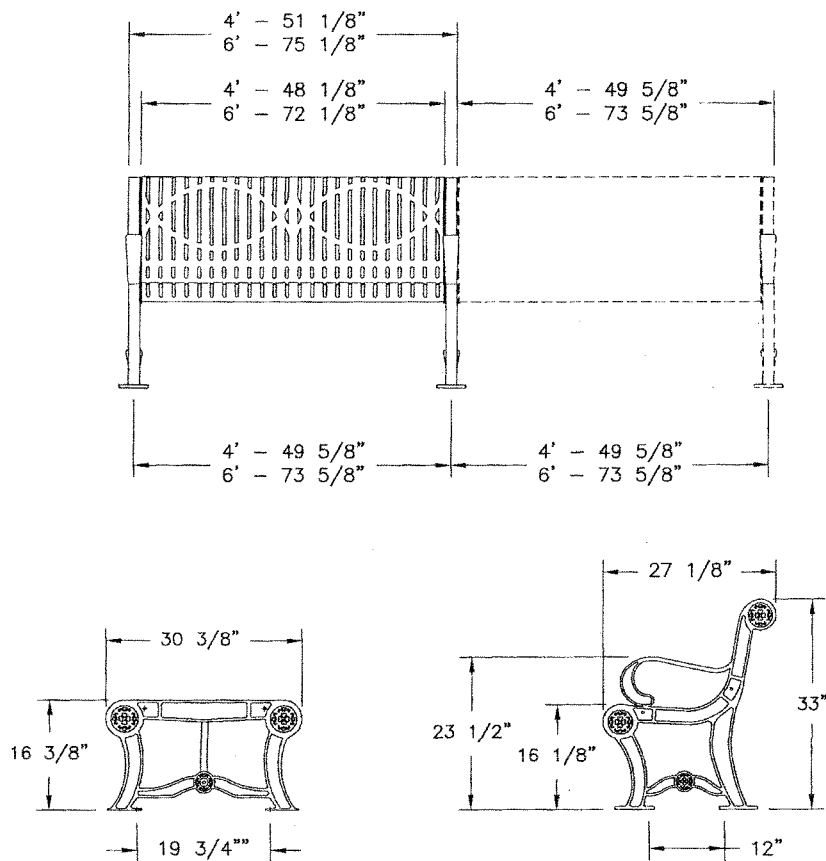
TOWN OF YARROW POINT

4030 95TH AVENUE NE
 YARROW POINT, WA 98004
 P: (425) 454-6994 F: (425) 454-7899
townhall@ci.yarrow-point.wa.us
www.ci.yarrow-point.wa.us



**PICNIC TABLE
 STANDARD**

RD-37



specifications:

NOTE: We reserve the right to change specifications without notice.

Heat fused poly-vinyl coating, finished on inner-metal structure, to an approximate 3/16" thickness. Framework assemblies are finished with powder coating; electrostatically applied and oven cured according to powder manufacturer's specifications. Fasteners are stainless steel to resist corrosion.

BENCH FRAME:

Main support legs are #2 cast aluminum. Web width is 5/16" and leg width is 1 1/2". Foot pads are 3" x 5".

BENCH SEAT:

Expanded seat uses 3/4" #9 expanded metal. Welded wire seat uses 5 gage welded wire. Rib is 10 gage and perforated is 12 gage sheet steel. Both types of fabricated metals and sheet metals are machine rolled, forming the seat's contour shape. The rod bench is 1/2" steel rod and the slats are 1/4" x 2 1/4" flat bar. The bench's frame/mounting brackets are 10 gage sheet steel. Support braces, adding support to the bench's contour shape, are 1/4" x 1 1/4" flat bar steel.

GENERAL:

4' Estate bench ground space requirements are 27 1/8" x 51 1/8" for a single unit. With one add-on is 27 1/8" x 100 3/4" total. For each additional add-on, add 49 5/8". The bench seat is 48 1/8" long x 25 1/2" wide and 15 7/8" to the lowest part in the bench's seat.

6' Estate bench ground space requirements are 27 1/8" x 75 1/8" for a single unit. With one add-on is 27 1/8" x 148 3/4" total. For each additional add-on, add 73 5/8". The bench seat is 72 1/8" long x 25 1/2" wide and 15 7/8" to the lowest part in the bench's seat.

4' Estate low profile bench ground space requirements are 30 3/8" x 51 5/8" for a single unit. With one add-on is 30 3/8" x 101 1/2" total. For each additional expanded metal, rib or perforated add-on, add 49 7/8", welded wire add 50 1/8". The expanded metal, rib and perforated bench seat is 48 1/8" long, welded wire is 48 3/8" long x 30 3/8" wide and 16 3/8" to the top of the seat.

6' Estate low profile bench ground space requirements: 30 3/8" x 75 1/8" for a single unit. With one add-on is 30 3/8" x 149 1/8" total. For each additional add-on, add 73 5/8". The bench seat is 72 1/8" long x 30 3/8" wide and 16 3/8" to the top of the seat.

The Memorial Plaque consists of 304 brushed stainless steel.

NOTE: 6' MEMORIAL RIB AND PERFORATED BENCH

www.wabashvalley.com

TOWN OF YARROW POINT

4030 95TH AVENUE NE
YARROW POINT, WA 98004
P: (425) 454-6994 F: (425) 454-7899
townhall@ci.yarrow-point.wa.us
www.ci.yarrow-point.wa.us

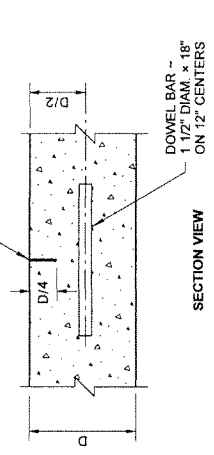


MEMORIAL BENCH STANDARD

RD-38

LAST REVISED: 07/31/10

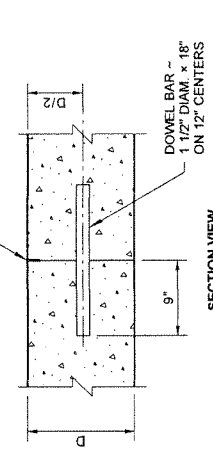
SAWED GROOVE -
WIDTH 3/16" MIN., 5/16" MAX.
OVER MIDPOINT OF BAR.
SEE STD. SPEC. 5-05.3(8)B



SECTION VIEW

TRANSVERSE CONTRACTION JOINT

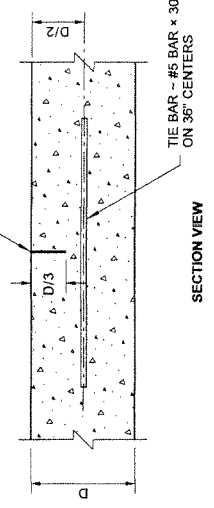
SAWED GROOVE -
WIDTH 3/16" MIN., 5/16" MAX.
DEPTH 1" MIN.
SEE STD. SPEC. 5-05.3(8)C



SECTION VIEW

TRANSVERSE CONSTRUCTION JOINT

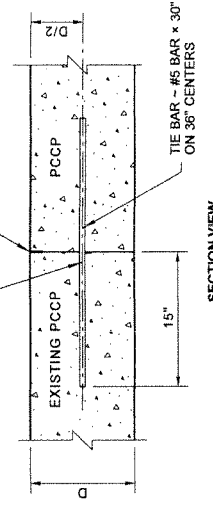
SAWED GROOVE -
WIDTH 3/16" MIN., 5/16" MAX.
OVER MIDPOINT OF BAR.
SEE STD. SPEC. 5-05.3(8)B



SECTION VIEW

LONGITUDINAL CONTRACTION JOINT

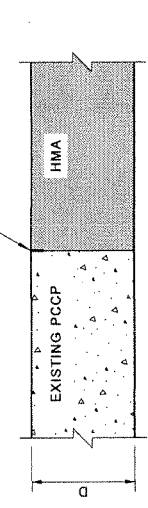
SAWED GROOVE -
WIDTH 3/16" MIN., 5/16" MAX.
DEPTH 1" MIN.
SEE STD. SPEC. 5-05.3(8)C



SECTION VIEW

PCCP TO PCCP
LONGITUDINAL CONSTRUCTION JOINT

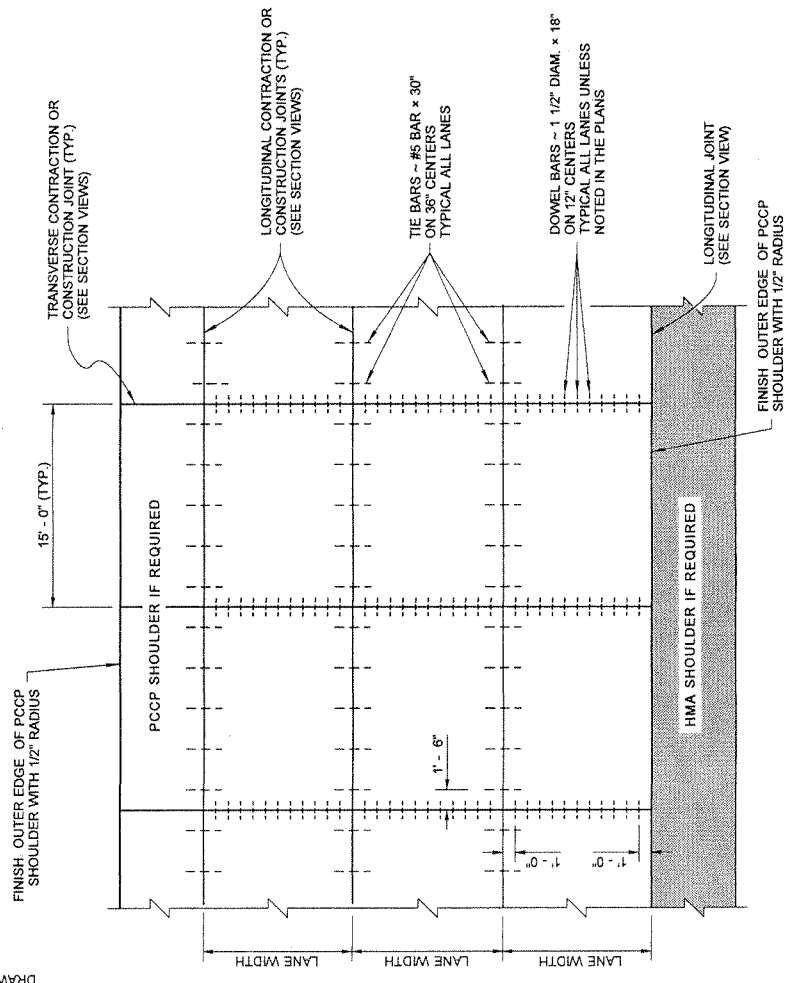
SAWED GROOVE -
WIDTH 3/16" MIN., 5/16" MAX.
DEPTH 1" MIN.
SEE STD. SPEC. 5-04.3(12)B



SECTION VIEW

PCCP TO HMA
LONGITUDINAL JOINT

DRAWN BY: FERN LIDDELL



PLAN VIEW

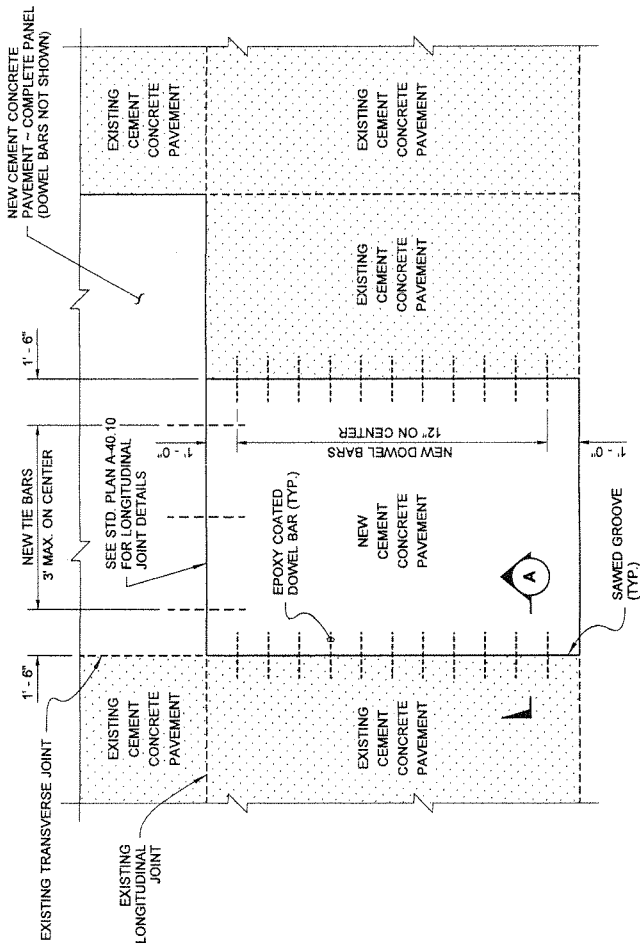


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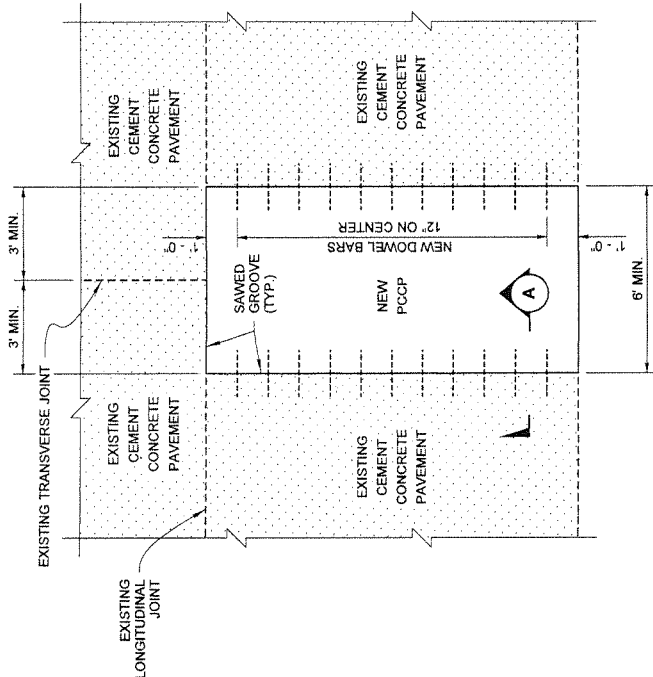
CEMENT CONCRETE
PAVEMENT JOINTS

STANDARD PLAN A-40.10-01

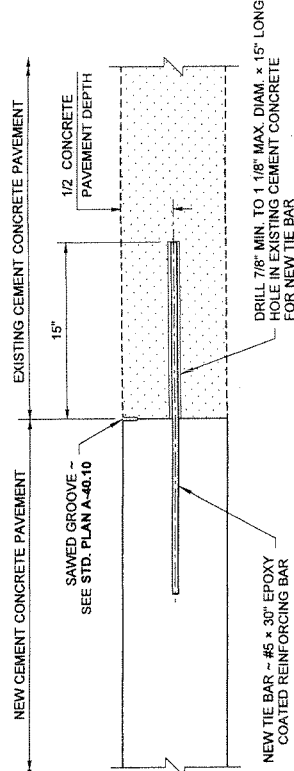
SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION
Pasco Bakotich III
STATE DESIGN ENGINEER
DATE 08-11-09
Washington State Department of Transportation



PLAN VIEW
PARTIAL PANEL REPLACEMENT
WITH TIE BARS



PLAN VIEW
PARTIAL PANEL REPLACEMENT
WITHOUT TIE BARS



SECTION B

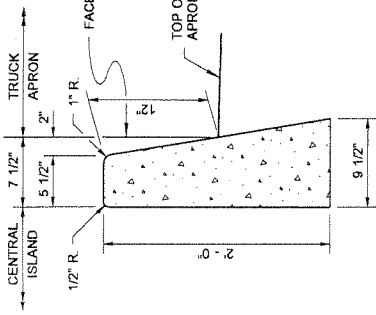


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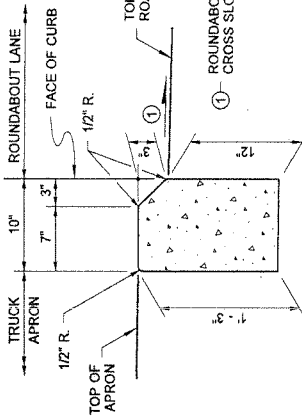
**CEMENT CONCRETE
PAVEMENT REPAIR**
STANDARD PLAN A-60.10-01

SHEET 2 OF 2 SHEETS
APPROVED FOR PUBLICATION
Pasco Bakotich III
STATE DESIGN ENGINEER
Washington State Department of Transportation
DATE: **10-14-09**

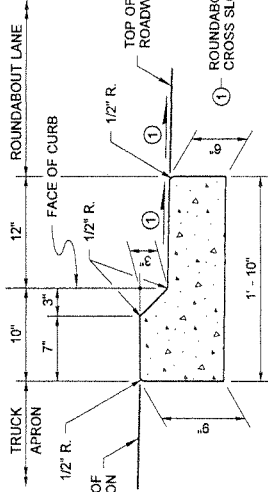
GENERAL NOTE
See Standard Plan F-3 for Curb Expansion and Contraction Joint Spacing



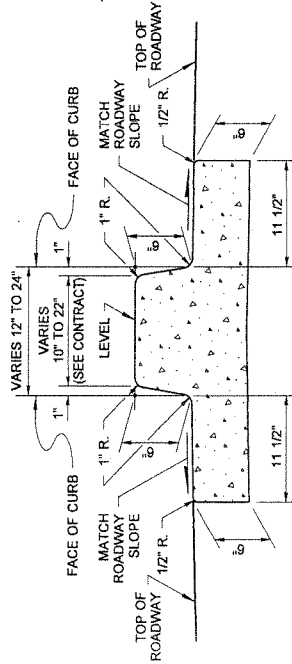
**ROUNDABOUT CENTRAL ISLAND
CEMENT CONCRETE CURB**



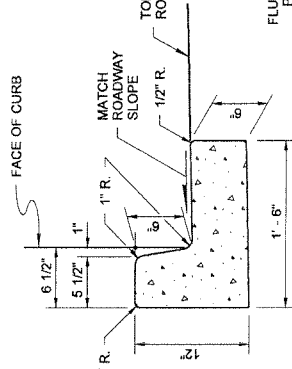
**ROUNDABOUT TRUCK APRON
CEMENT CONCRETE CURB**



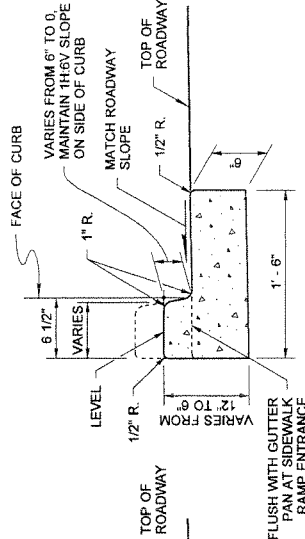
**ROUNDABOUT TRUCK APRON
CEMENT CONCRETE
CURB AND GUTTER**



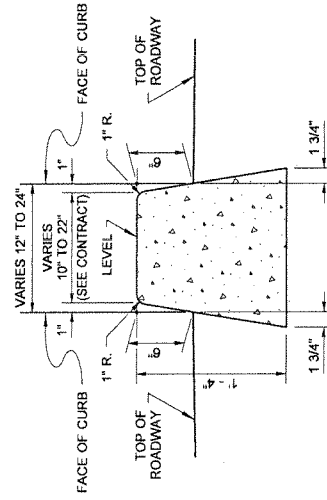
**DUAL-FACED CEMENT CONCRETE
TRAFFIC CURB AND GUTTER**



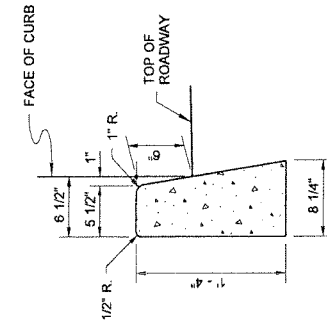
**CEMENT CONCRETE
TRAFFIC CURB AND GUTTER**



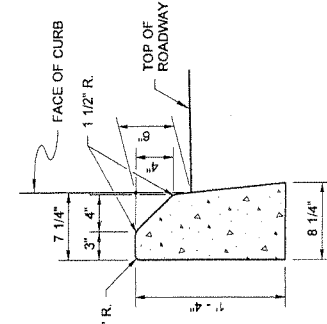
**DEPRESSED CURB SECTION
AT SIDEWALK RAMPS AND
DRIVEWAY ENTRANCES**



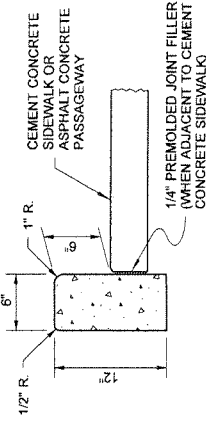
**DUAL-FACED CEMENT
CONCRETE TRAFFIC CURB**



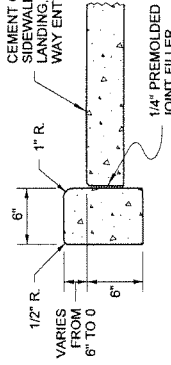
**CEMENT CONCRETE
TRAFFIC CURB**



**MOUNTABLE CEMENT
CONCRETE TRAFFIC CURB**

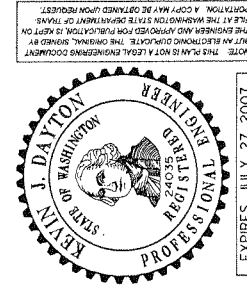


**CEMENT CONCRETE
PEDESTRIAN CURB**



**CEMENT CONCRETE
PEDESTRIAN CURB
AT SIDEWALK RAMPS & LANDINGS,
AND DRIVEWAY ENTRANCES**

DRAWN BY: MARK SUJKA

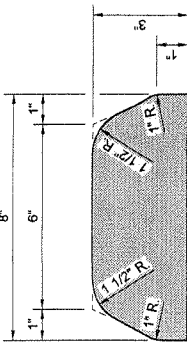


EXPIRES: JULY 27, 2007

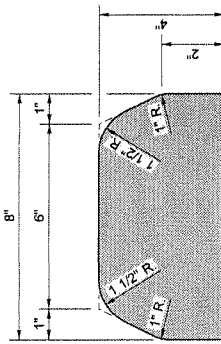
CEMENT CONCRETE CURBS
STANDARD PLAN F-10.12-00

SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION
Kevin J. Dayton
STATE DESIGN ENGINEER
Washington State Department of Transportation

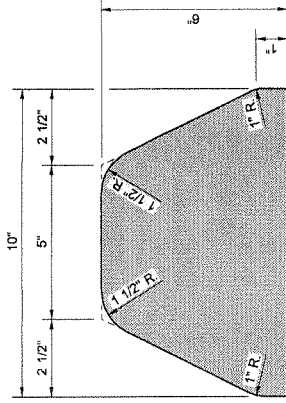
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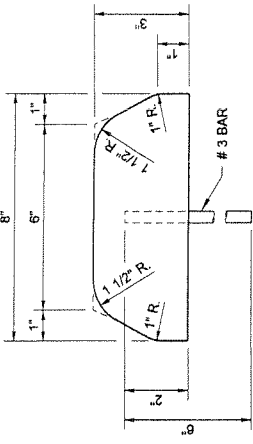
TYPE 1
(HOT MIX ASPHALT)



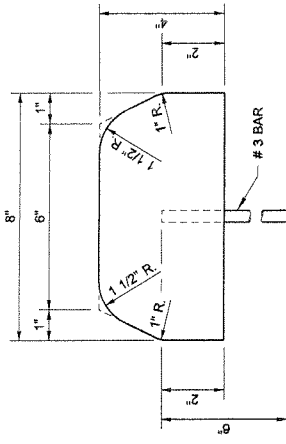
TYPE 2
(HOT MIX ASPHALT)



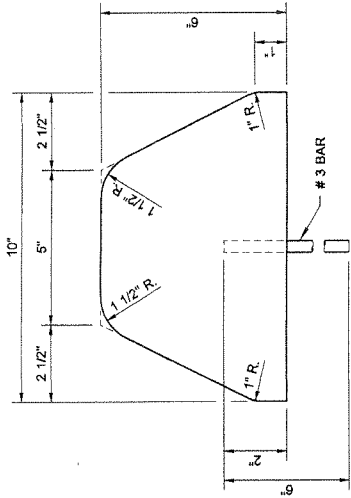
TYPE 3
(HOT MIX ASPHALT)



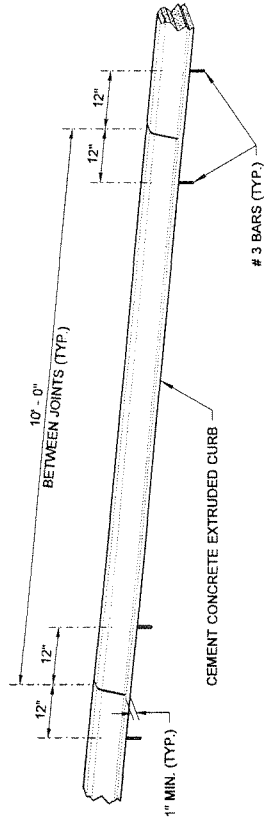
TYPE 4
(CEMENT CONCRETE)



TYPE 5
(CEMENT CONCRETE)



TYPE 6
(CEMENT CONCRETE)



SPACING OF ANCHOR BARS
(FOR TYPES 4, 5, AND 6)

NOTE
JOINTS MAY BE FORMED DURING INSTALLATION USING A RIGID DIVIDER OR SAWCUT AFTER CONCRETE CURES TO MINIMUM STRENGTH.

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 FILE AT THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION. A COPY MAY BE OBTAINED UPON REQUEST.

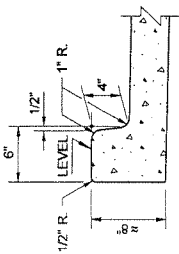
EXTRUDED CURB

STANDARD PLAN F-10-42-00

SHEET 1 OF 1 SHEET

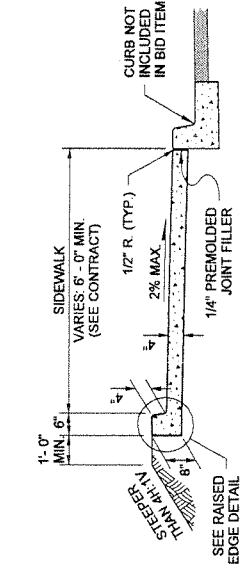
APPROVED FOR PUBLICATION
Ken L. Smith
 STATE DESIGN ENGINEER
 Washington State Department of Transportation

DATE: **01-23-07**

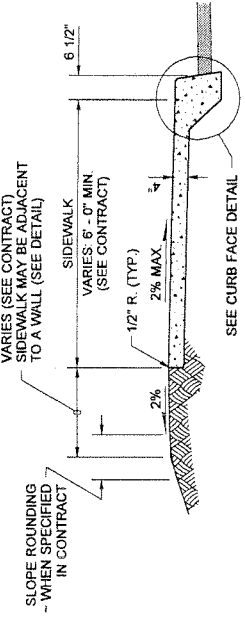


NOTE: EXTEND SIDEWALK TRANSVERSE JOINTS TO INCLUDE RAISED EDGE

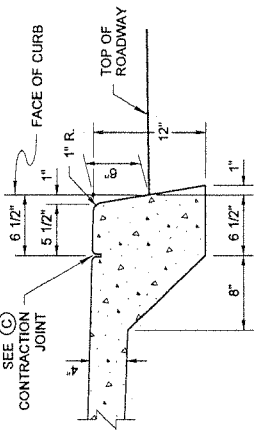
RAISED EDGE DETAIL



CEMENT CONCRETE SIDEWALK WITH RAISED EDGE

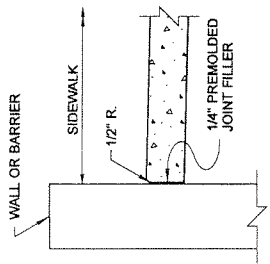


MONOLITHIC CEMENT CONCRETE CURB AND SIDEWALK

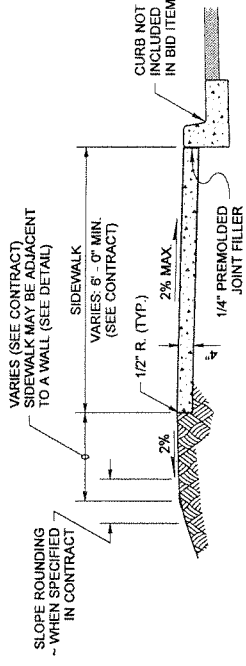


NOTE: EXTEND SIDEWALK TRANSVERSE JOINTS TO INCLUDE CURB (FULL DEPTH)

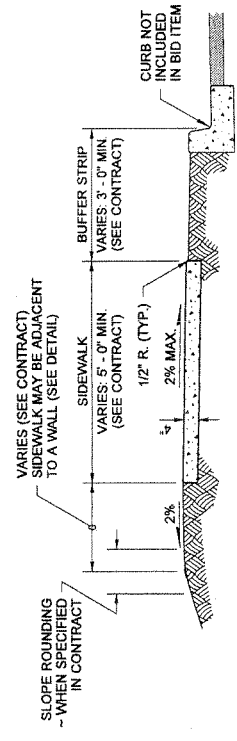
CURB FACE DETAIL



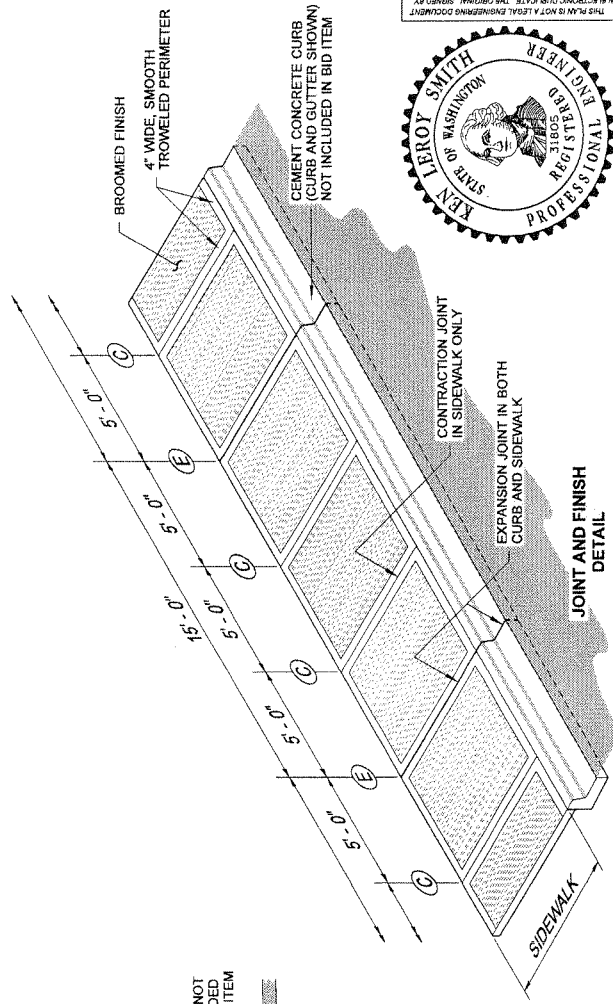
SIDEWALK ADJACENT TO WALL DETAIL



CEMENT CONCRETE SIDEWALK ADJACENT TO CURB



CEMENT CONCRETE SIDEWALK ADJACENT TO BUFFER STRIP

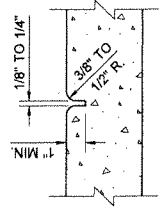


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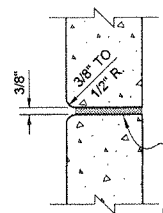
CEMENT CONCRETE SIDEWALK

STANDARD PLAN F-30.10-00

SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION
Ken L. Smith
STATE DESIGN ENGINEER
Washington State Department of Transportation
DATE: 01-23-07



(C) CONTRACTION JOINT

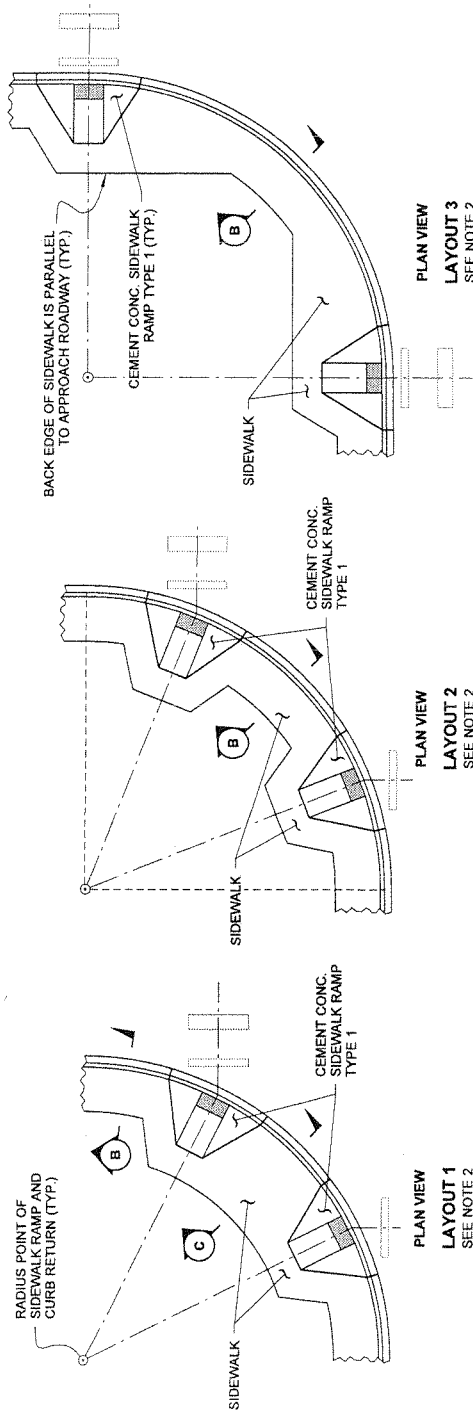


(E) EXPANSION JOINT

PREMOLDED JOINT FILLER

NOTES

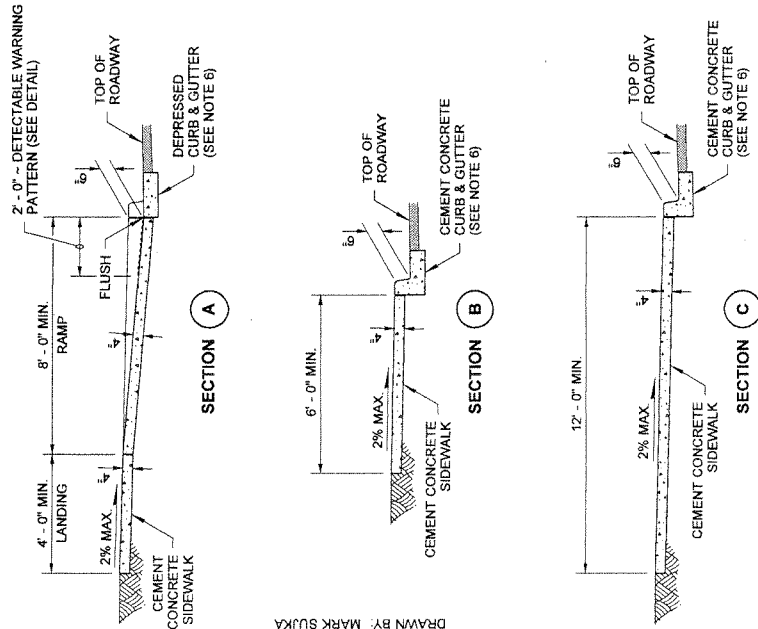
1. The bottom of the ramp shall have a level area (not in excess of 2% in any direction), 4' x 4'.
2. Layouts 1, 2, & 3 require two (2) of this bid item: "Cement Conc. Sidewalk Ramp Type 1". The bid item does not include the adjacent Curb (or Curb & Gutter), or Sidewalk.
3. Ramp slopes shall not be steeper than 12H:1V.
4. To the maximum extent feasible, ramp cross slopes shall not exceed 2%.
5. Avoid placing drainage structures, junction boxes or other obstructions in front of ramp access areas.
6. Curb & Gutter is shown, see the Contract Plans for the curb design specified. See Standard Plan F-10.12 for curb details.
7. See Standard Plan F-30.10 for sidewalk joint placement and details.



PLAN VIEW LAYOUT 1
SEE NOTE 2

PLAN VIEW LAYOUT 2
SEE NOTE 2

PLAN VIEW LAYOUT 3
SEE NOTE 2

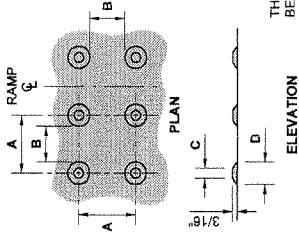


SECTION A

SECTION B

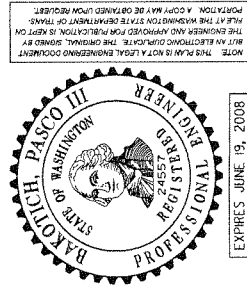
SECTION C

DRAWN BY: MARK SUJKA

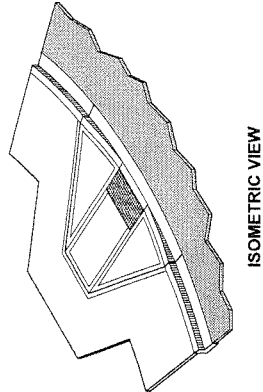


	MIN.	MAX.
A	1 5/8"	2 3/8"
B	5/8"	1 1/2"
C	7/16"	3/4"
D	7/8"	1 7/16"

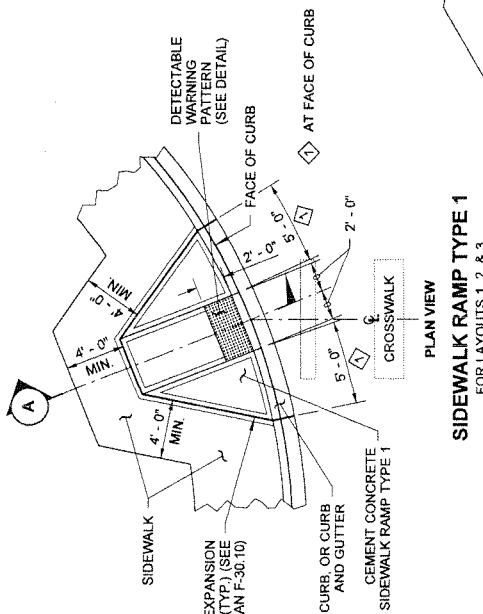
DETECTABLE WARNING PATTERN DETAIL



SIDEWALK RAMP TYPE 1 WITH LAYOUTS
STANDARD PLAN F-40.10-01
SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION
Pasco Bakotich III 10-05-07
STATE DESIGN ENGINEER DATE
Washington State Department of Transportation



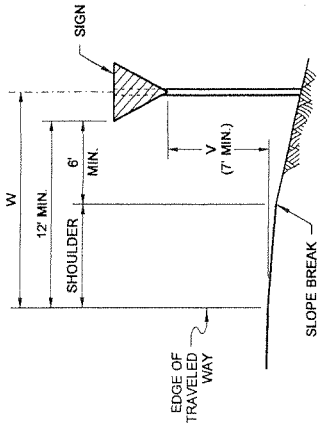
ISOMETRIC VIEW



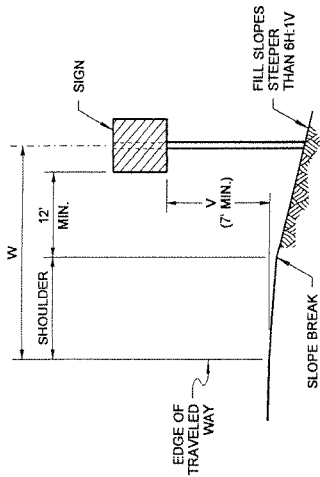
PLAN VIEW SIDEWALK RAMP TYPE 1
FOR LAYOUTS 1, 2, & 3

NOTES

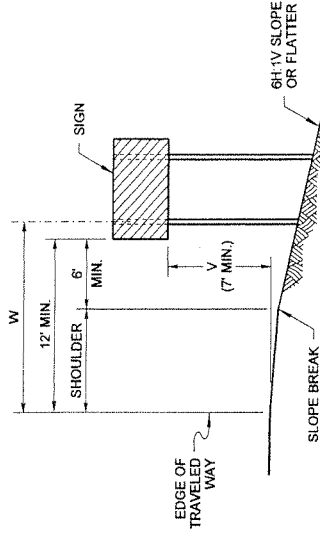
1. Refer to the Sign Specification Sheet of the Contract for the "V" and "W" distances.
2. The minimum vertical distance from the bottom of the sign to the ground shall not be less than 7' for signs located within the Design Clear Zone.



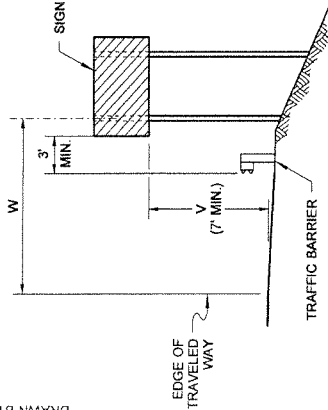
SIGN INSTALLATION IN FILL SECTION



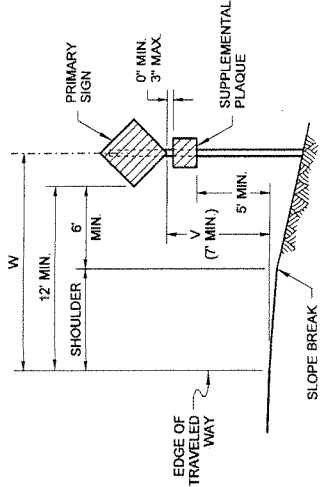
SIGN INSTALLATION ON STEEP FILL SLOPES



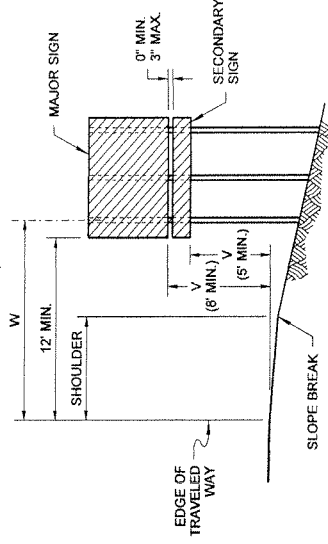
MULTIPLE SIGN POST INSTALLATION IN FILL SECTION



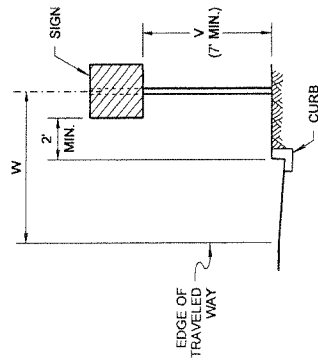
SIGN INSTALLATION BEHIND TRAFFIC BARRIER



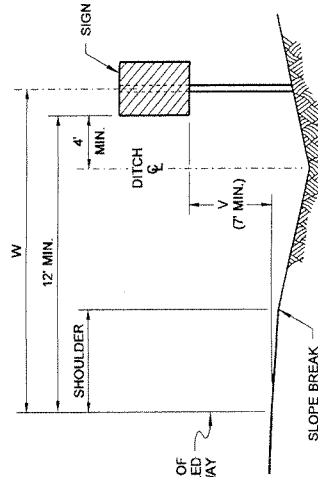
SIGN WITH SUPPLEMENTAL PLAQUE INSTALLATION IN FILL SECTION



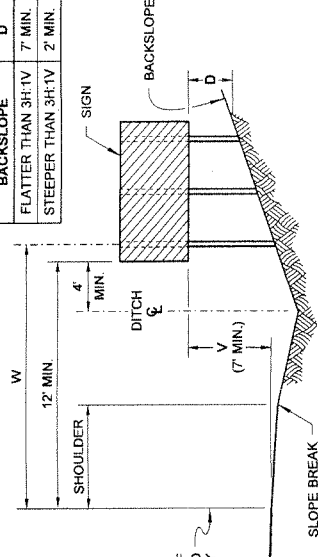
GUIDE OR DIRECTIONAL SIGN WITH SECONDARY SIGN INSTALLATION ON EXPRESSWAYS AND FREEWAYS



SIGN INSTALLATION IN CURB SECTION

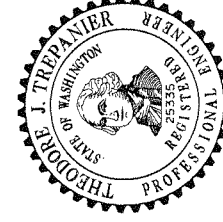


SIGN INSTALLATION IN DITCH SECTION



MULTIPLE SIGN POST INSTALLATION IN DITCH SECTION

BACKSLOPE	D
FLATTER THAN 3H:1V	7' MIN.
STEEPER THAN 3H:1V	2' MIN.



EXPIRES AUGUST 9, 2003

GROUND MOUNTED SIGN PLACEMENT STANDARD PLAN G-20.10-00

SHEET 1 OF 1 SHEET

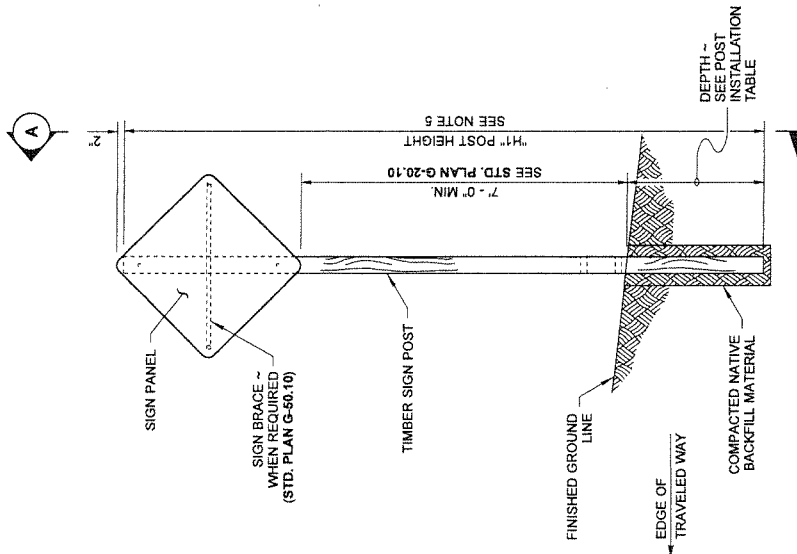
APPROVED FOR PUBLICATION

Pasco Bakotich III 09-20-07

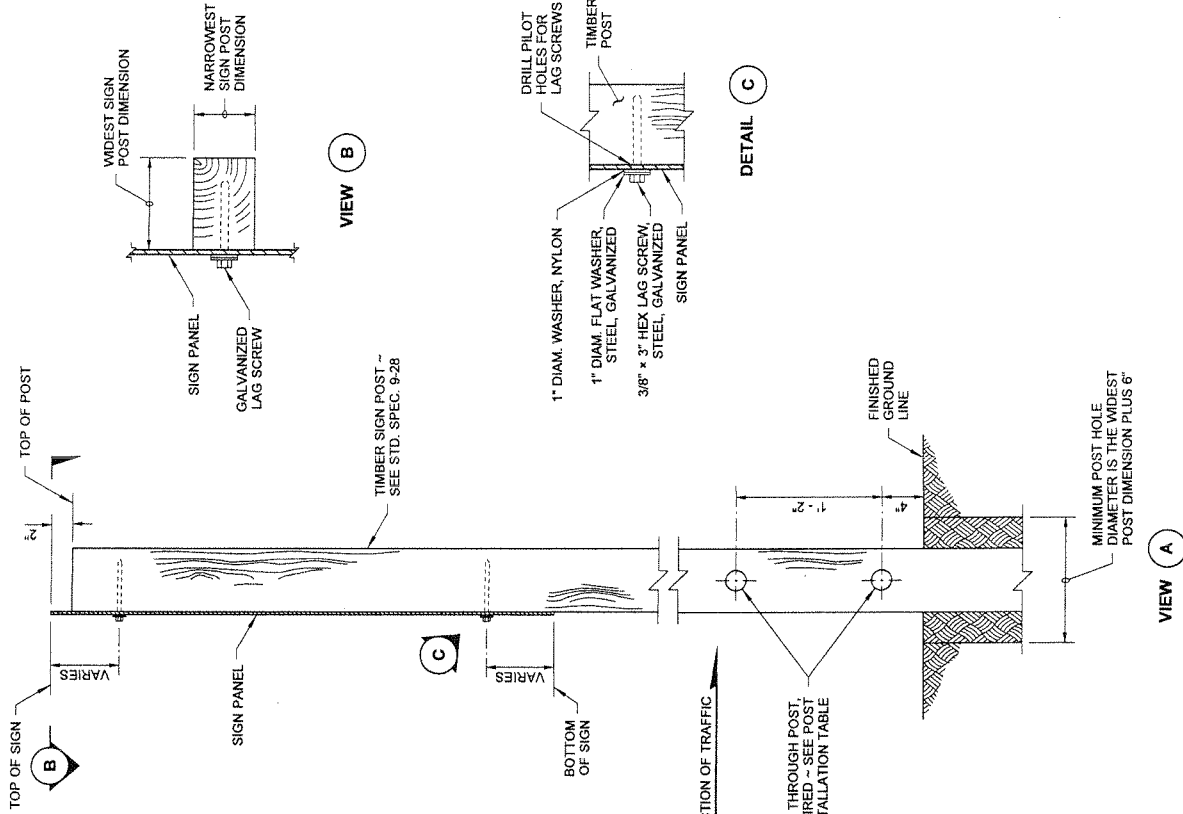
STATE DESIGN ENGINEER DATE

Washington State Department of Transportation





**ELEVATION VIEW
SINGLE POST INSTALLATION**



NOTES

1. Notch is only required with multiple post installations.
2. 6x10, 8x10, and 6x12 Timber Sign Posts cannot be made breakaway and do not have holes or notches. These posts shall not be installed within the Design Clear Zone. They may be installed behind traffic barrier.
3. Signs with a width less than 12 feet and supported on three 6x6 or 6x8 posts shall not be installed within the Design Clear Zone. They may be installed behind traffic barrier.
4. Signs with a width less than 17 feet and supported on four 6x6 or 6x8 posts shall not be installed within the Design Clear Zone. They may be installed behind traffic barrier.
5. For "X", "Y", "H1", "H2", "H3", and "H4" refer to the Sign Specification Sheet in the Contract.
6. For 6x6 posts and larger, 7 feet minimum spacing is required between posts.

POST SIZE (NOM.)	DEPTH	HOLE DIAMETER	NOTCH DEPTH (SEE NOTE 1)
4x4	3' - 0"	NOT REQ'D	NOT REQ'D
4x6	4' - 0"	1 1/2"	1 1/2"
6x6	4' - 0"	SEE NOTE 3 & 4	SEE NOTE 3 & 4
6x8	5' - 0"	SEE NOTE 3 & 4	SEE NOTE 3 & 4
6x10	6' - 0"	SEE NOTE 2	SEE NOTE 2
8x10	6' - 0"	SEE NOTE 2	SEE NOTE 2
6x12	7' - 0"	SEE NOTE 2	SEE NOTE 2

POST INSTALLATION TABLE



EXPIRES AUGUST 9, 2009

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TIMBER SIGN SUPPORT

STANDARD PLAN G-22.10-01

SHEET 1 OF 3 SHEETS

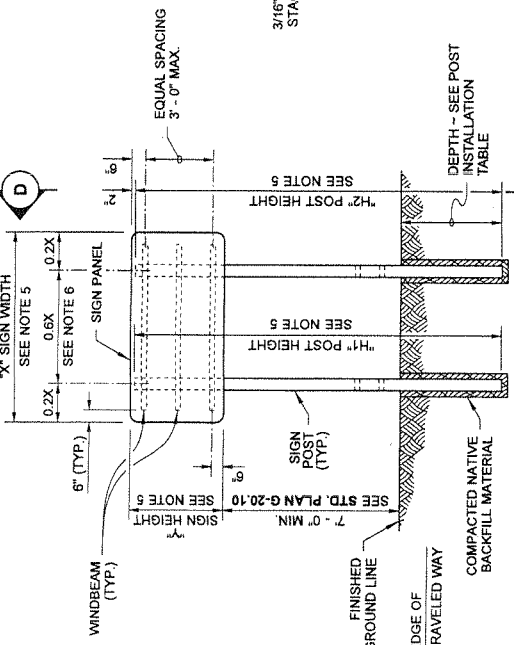
APPROVED FOR PUBLICATION

Pasco Bakotich III 07-03-08

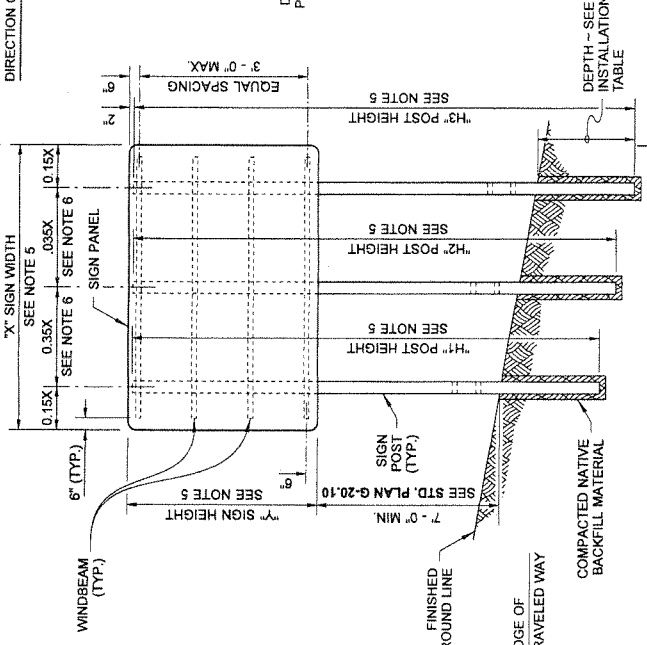
STATE DESIGN ENGINEER DATE

Washington State Department of Transportation

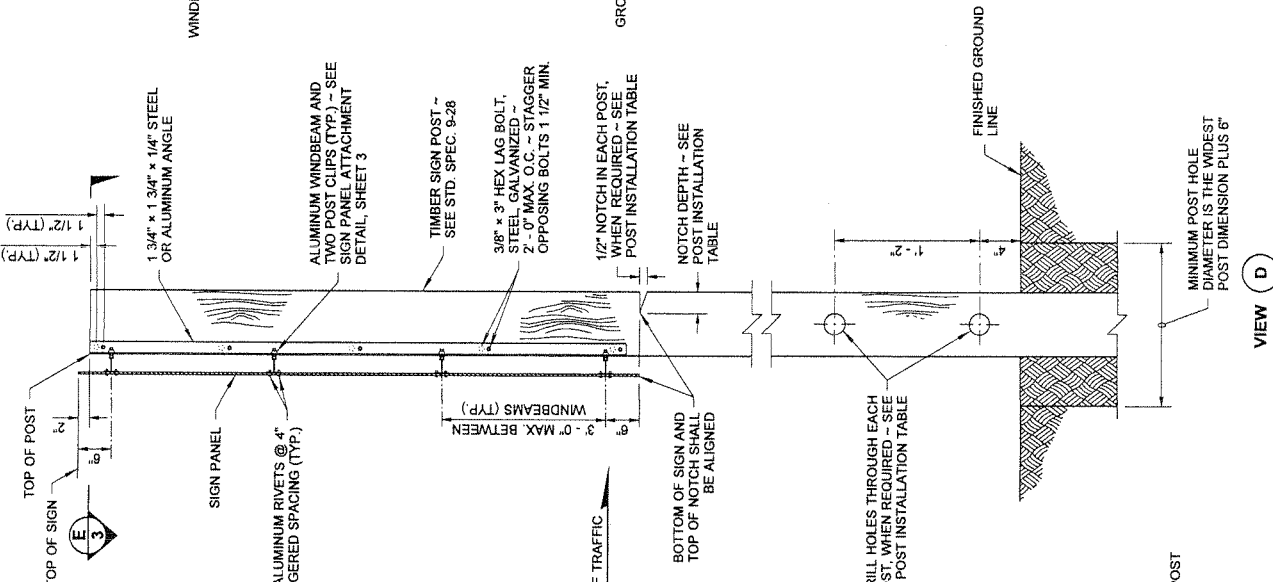




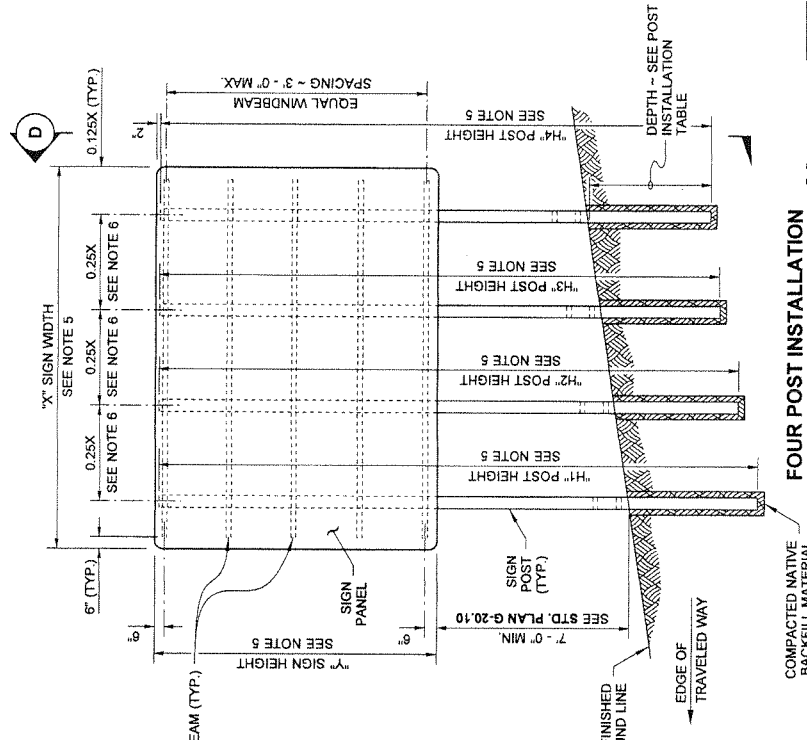
TWO POST INSTALLATION



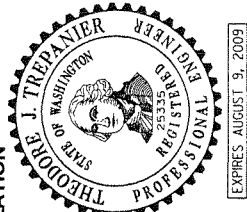
THREE POST INSTALLATION



VIEW D



FOUR POST INSTALLATION



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TIMBER SIGN SUPPORT

STANDARD PLAN G-22.10-01

SHEET 2 OF 3 SHEETS

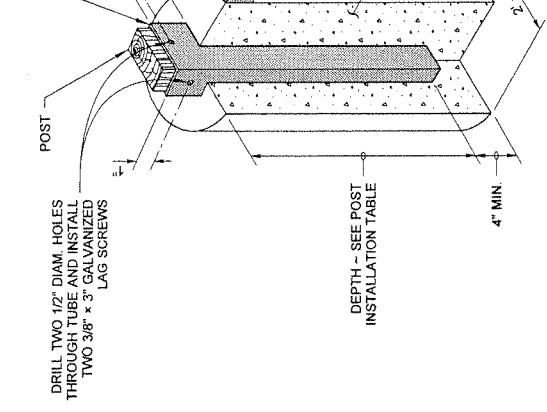
APPROVED FOR PUBLICATION

Pasco Bakotich III

STATE DESIGN ENGINEER DATE 07-03-08



3/16" TUBULAR STEEL ~ 4" x 4", 4" x 6",
6" x 6", OR 6" x 8" - ASTM A 500 GRADE
B (GALV.) PER AASHTO M111 OR ASTM
A 501 (GALV.) PER AASHTO M111.



DRILL TWO 1/2" DIAM. HOLES THROUGH TUBE AND INSTALL TWO 3/8" x 3" GALVANIZED LAG SCREWS

DEPTH - SEE POST INSTALLATION TABLE

4" MIN.

ISOMETRIC VIEW

CONCRETE FOUNDATION SLEEVE DETAIL

TO BE USED WHEN PLACING TIMBER POST IN A PAVED AREA



EXPIRES AUGUST 9, 2009

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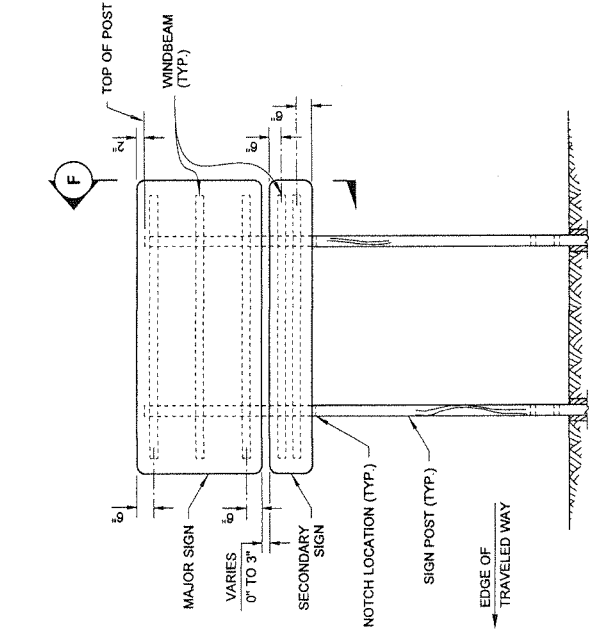
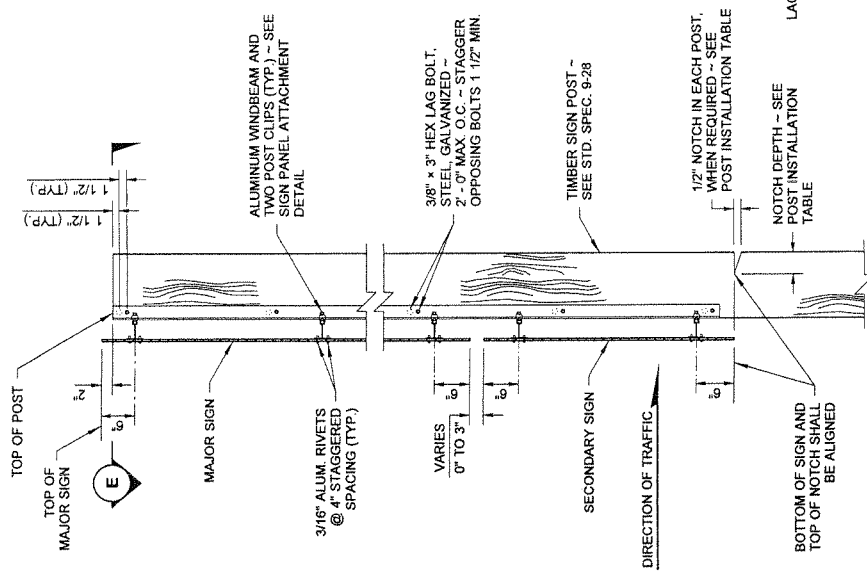
TIMBER SIGN SUPPORT
STANDARD PLAN G-22-10-01

SHEET 3 OF 3 SHEETS

APPROVED FOR PUBLICATION

Pasco Bakotich III 07-03-08

STATE DESIGN ENGINEER DATE
Washington State Department of Transportation



MAJOR AND SECONDARY SIGN INSTALLATION

ALUMINUM WINDBEAM AND TWO POST CLIPS (TYP.) - SEE SIGN PANEL ATTACHMENT DETAIL

3/8" x 3" HEX LAG BOLT, STEEL GALVANIZED, 2'-0" MAX. O.C. STAGGER OPPOSING BOLTS 1 1/2" MIN.

TIMBER SIGN POST - SEE STD. SPEC. 9-28

1/2" NOTCH IN EACH POST, WHEN REQUIRED - SEE POST INSTALLATION TABLE

NOTCH DEPTH - SEE POST INSTALLATION TABLE

LAG BOLT (TYP.)

3/16" ALUM. RIVET (TYP.)

POST CLIP

STEEL OR ALUMINUM ANGLE (TYP.)

VIEW F

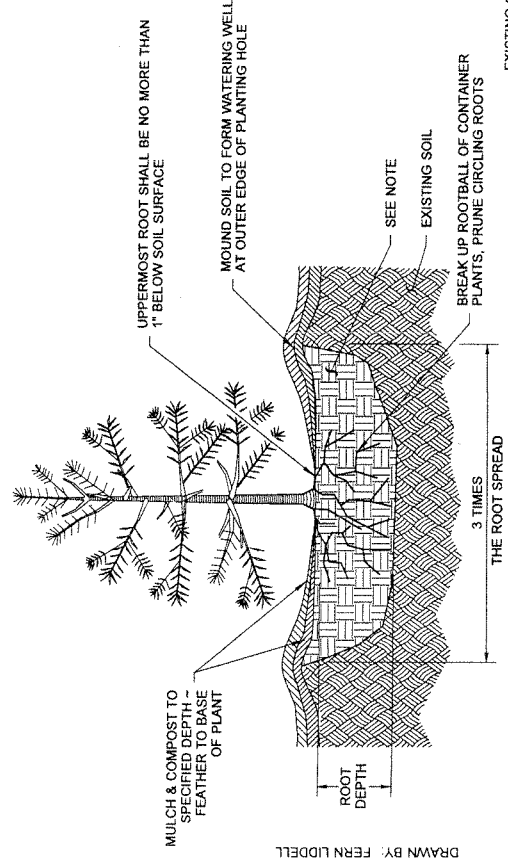
VIEW E

ISOMETRIC VIEW

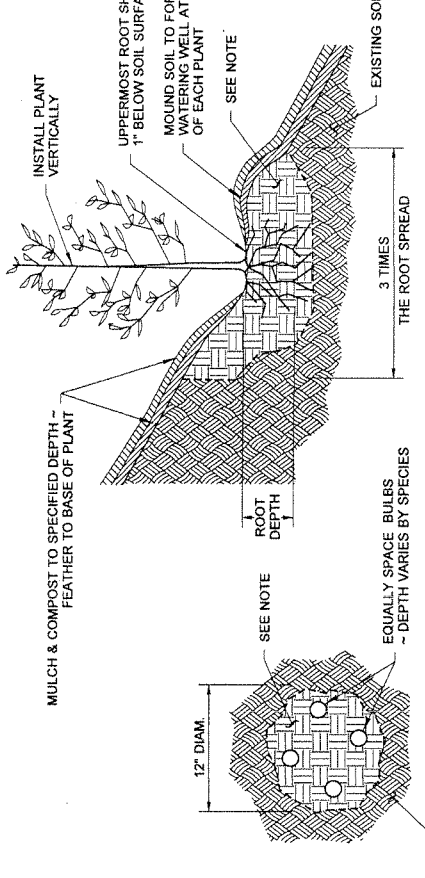
SIGN PANEL ATTACHMENT DETAIL

NOTE

Backfill with soil removed from hole
 ~ See planting area soil preparation detail or Special Provisions.



DRAWN BY: FERN LIDDELL

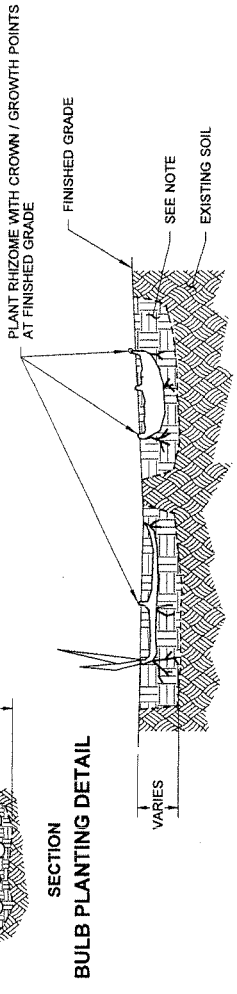


SLOPE PLANTING DETAIL

(INCLUDES ALL PLANTS ON SLOPES)

BULB PLANTING DETAIL

(INCLUDES ALL PLANTS ON SLOPES)



TUBER OR RHIZOME PLANTING DETAIL

UPPERMOST ROOT SHALL BE NO MORE THAN 1" BELOW SOIL SURFACE

LOWER WRAPPED (B&B) ROOTBALL INTO HOLE. CUT AWAY ALL WRAPPING MATERIALS FROM ROOTBALL AND REMOVE FROM HOLE, ROUGHEN SOIL AT EDGES OF ROOTBALL TO STIMULATE ROOTS

MOUND SOIL TO FORM WATERING WELL AT OUTER EDGE OF PLANTING HOLE

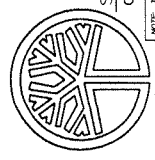
SEE NOTE

EXISTING SOIL

USING 3/8" x 2" x 2" STAKES, STAKE THROUGH EDGE OF ROOTBALL INTO EDGE OF UNDISTURBED SOIL. STAKES SHALL BE FLUSH WITH GROUND SURFACE OR JUST BELOW

STREET TREE PLANTING AND STAKING DETAIL

(APPLIES TO CONTAINER, BALL AND BURLAPPED, (B&B) DECIDUOUS AND CONIFERS)



STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT

SALLY A. ANDERSON
 CERTIFICATE NO. 000372

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TREE AND SHRUB PLANTING DETAILS
STANDARD PLAN H-10.10-00

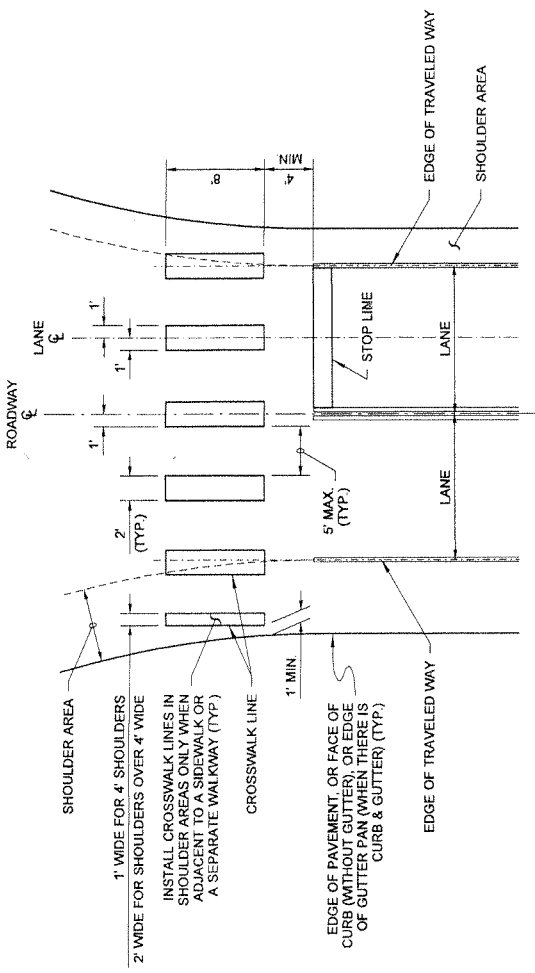
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Pasco Bakofich III 07-03-08
 STATE DESIGN ENGINEER DATE



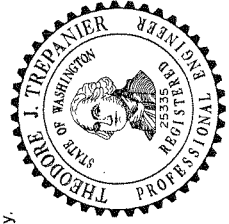
Washington State Department of Transportation



DETAIL

NOTES

1. See the Contract Plans for locations of crosswalk centerlines.
2. To the maximum extent possible, curb ramp centerline should be perpendicular to the crosswalk centerline.
3. To the maximum extent possible, crosswalks should be perpendicular to the centerline of the traveled way.

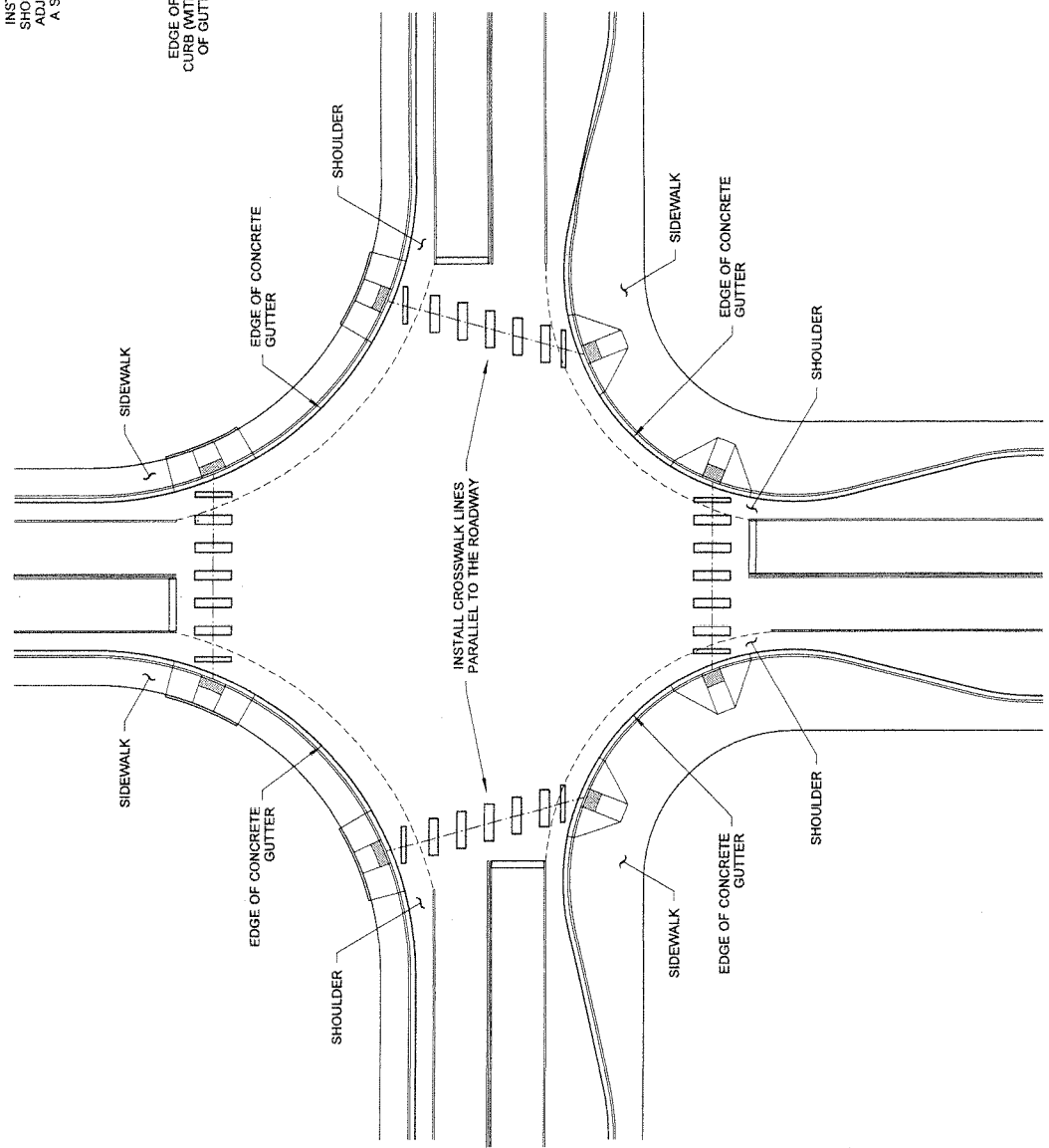


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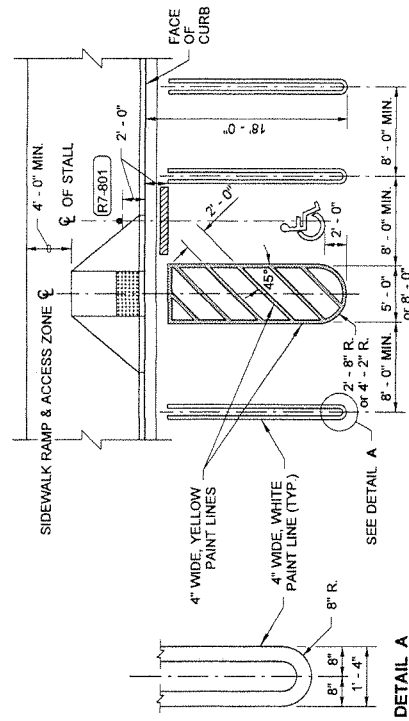
CROSSWALK LAYOUT
STANDARD PLAN M-15.10-01

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Ken L. Smith
STATE DESIGN ENGINEER
DATE **02-06-07**
Washington State Department of Transportation



TYPICAL APPLICATIONS



PLAN

ALTERNATIVE PARKING STALL MARKINGS
USE ONLY WHEN SPECIFIED IN THE CONTRACT

NOTES

1. Three, four and five accessible stall arrangements may be either 60° (angled) or 90° (perpendicular) parking arrangements. See Contract.
2. An Access Parking Space Symbol is required for each accessible parking stall. A blue background and white border are required when the symbol is installed on a cement concrete surface.
3. All accessible stalls shall have wheel stops. Place wheel stops in other stalls when specified in the contract. Wheel stops shall be approximately 6" high and a minimum of 6' long.
4. Refer to the Standard Plans for sidewalk ramp, detectable warning pattern, and curb details.

LEGEND

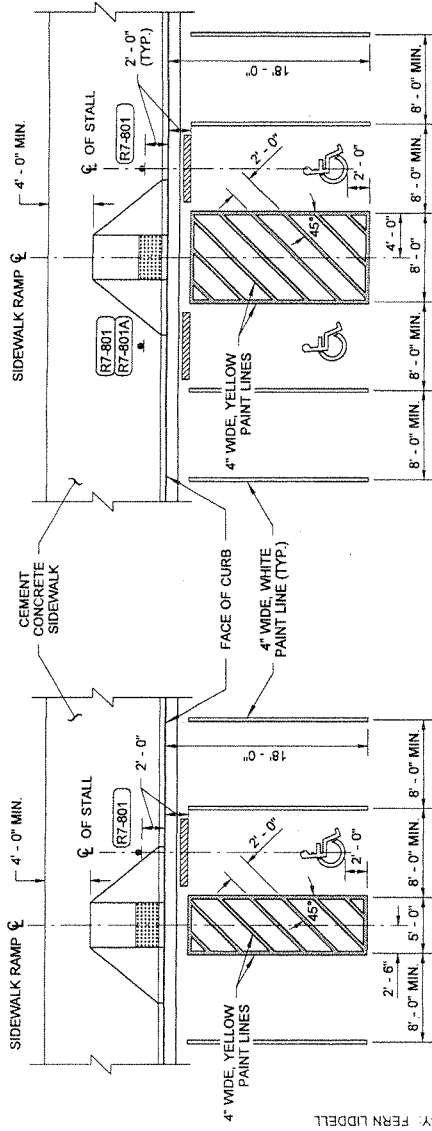
- Reserved Parking Sign and post with (R7-801A) Plaque, if indicated (See Sign Fabrication Manual)
- Access Parking Space Symbol
- Manufactured wheel stop
- Detectable Warning Pattern



EXPIRES AUGUST 9, 2009

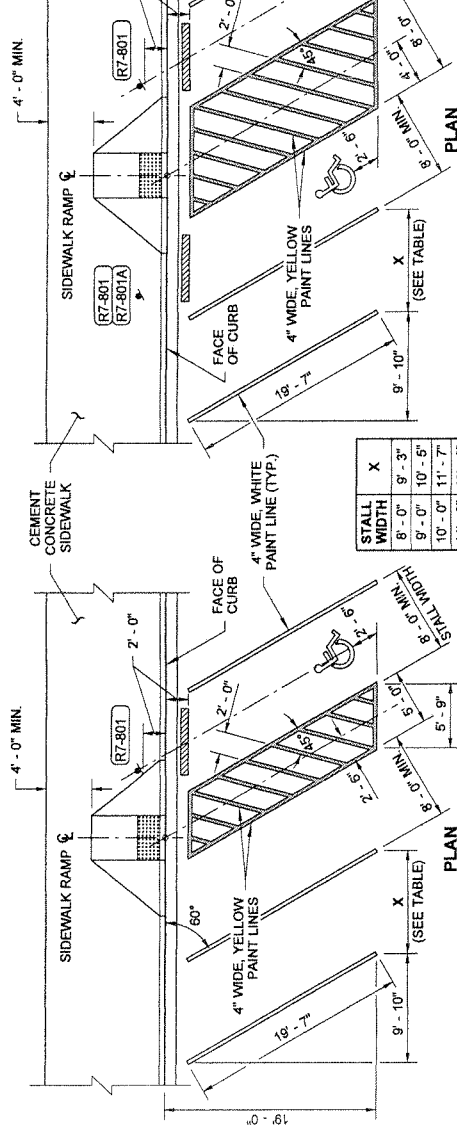
PARKING SPACE LAYOUTS
STANDARD PLAN M-17.10-02
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION
Pasco Bakotich III
STATE DESIGN ENGINEER
DATE 07-03-08
Washington State Department of Transportation



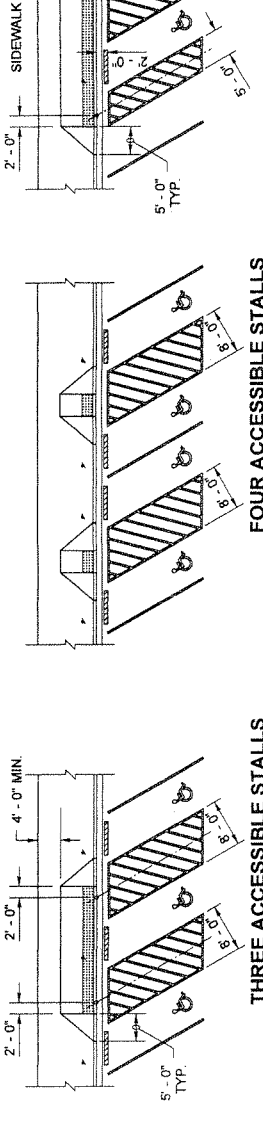
PLAN

ONE ACCESSIBLE STALL
90° PARKING STALL ARRANGEMENT



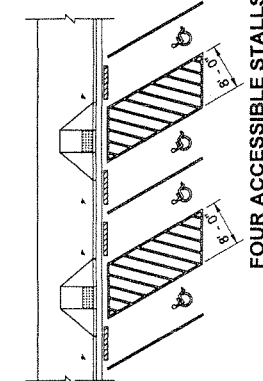
PLAN

TWO ACCESSIBLE STALLS
90° PARKING STALL ARRANGEMENT



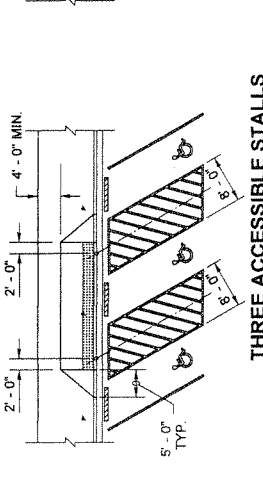
PLAN

THREE ACCESSIBLE STALLS
60° PARKING STALL ARRANGEMENT



PLAN

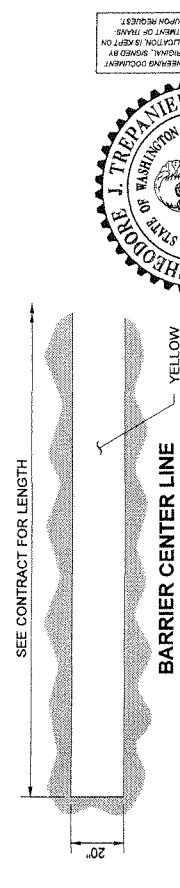
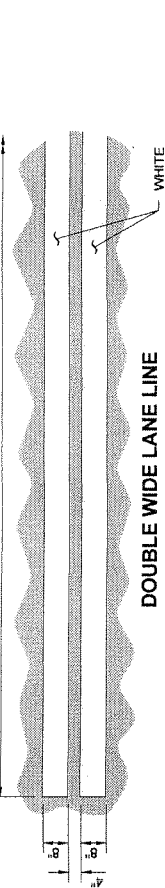
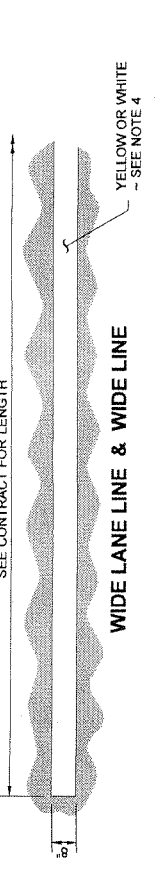
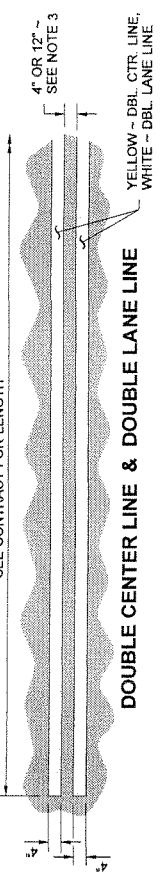
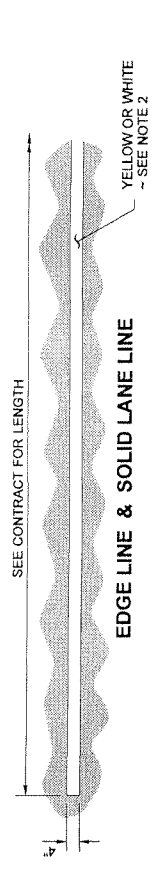
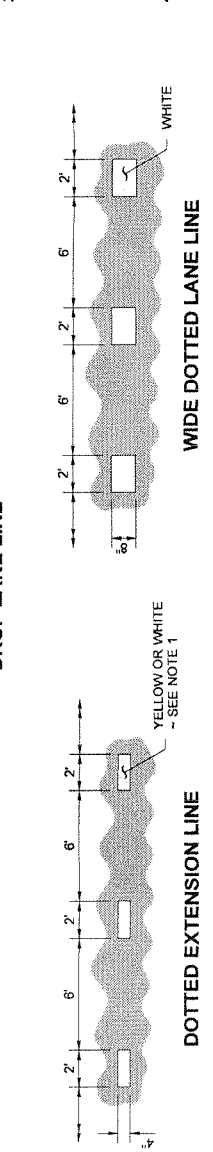
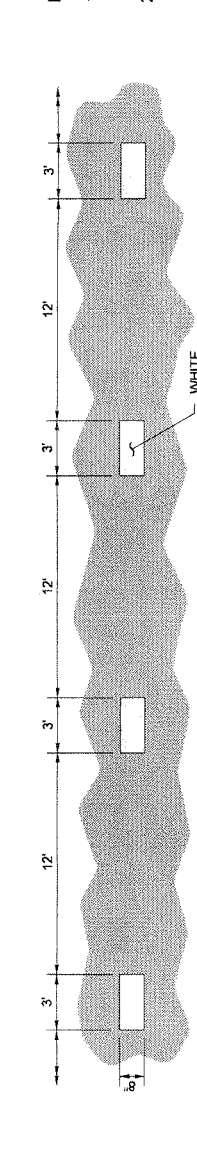
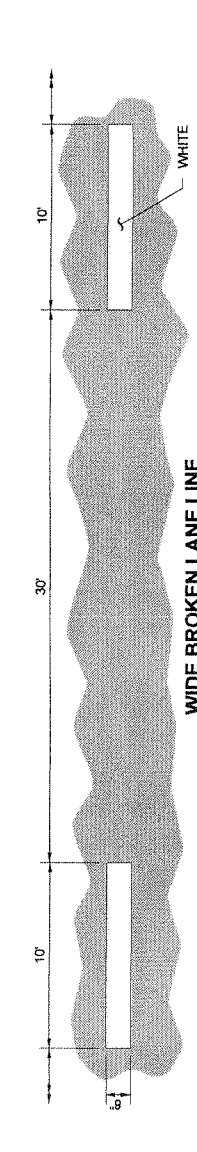
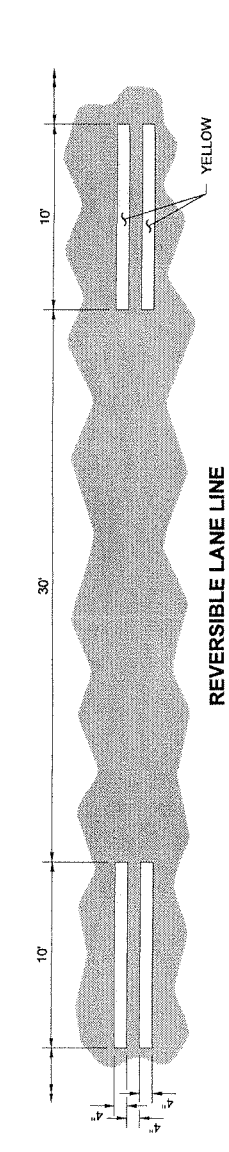
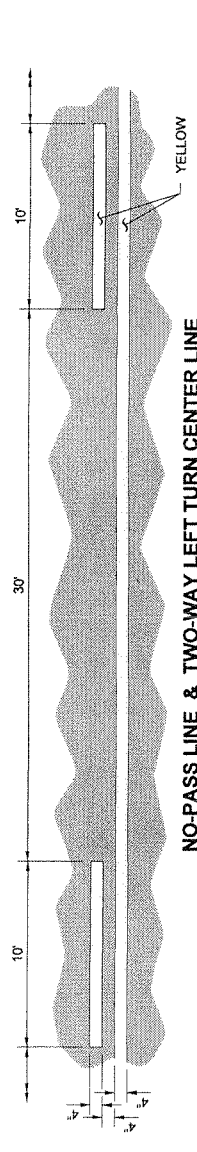
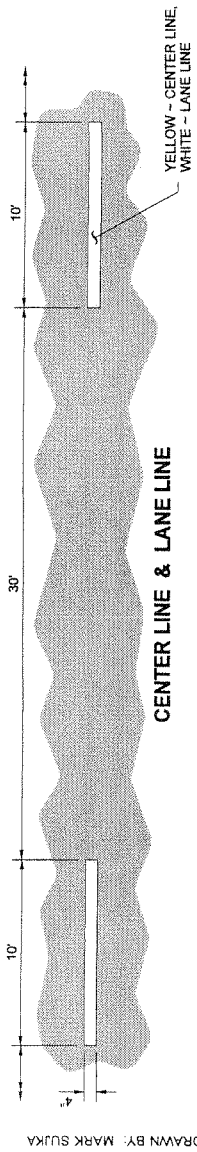
FOUR ACCESSIBLE STALLS
60° PARKING STALL ARRANGEMENT



PLAN

FIVE ACCESSIBLE STALLS
60° PARKING STALL ARRANGEMENT

STALL WIDTH	X
8'-0"	9'-3"
9'-0"	10'-5"
10'-0"	11'-7"
11'-0"	12'-8"
12'-0"	13'-10"



NOTES

1. Dotted Extension Line shall be the same color as the line it is extending.
2. Edge Line shall be white on the right edge of traveled way, and yellow on the left edge of traveled way (on one-way roadways). Solid Lane Line shall be white.
3. The distance between the lines of the Double Center Line shall be 12" everywhere, except 4" for left turn channelization and narrow roadways with lane widths of 10 feet or less. Local Agencies (on non-State Routes) may specify a 4" distance for all locations. The distance between the lines of the Double Lane Line shall be 4".
4. Wide Lane Line shall be white. Wide Line shall be yellow or white as specified in the Plans.



EXPIRES AUGUST 9, 2007

LONGITUDINAL MARKING PATTERNS

STANDARD PLAN M-20-10-01

SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Ken L. Smith 01-30-07

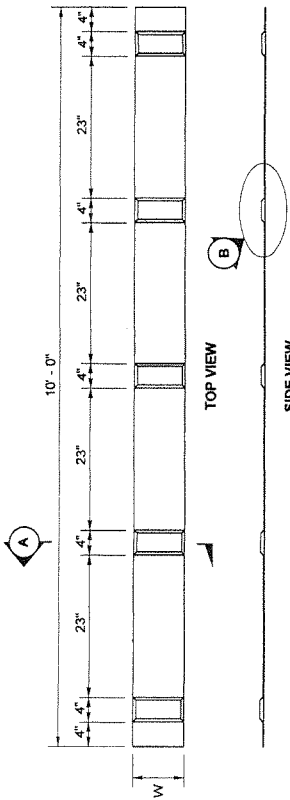
STATE DESIGN ENGINEER DATE

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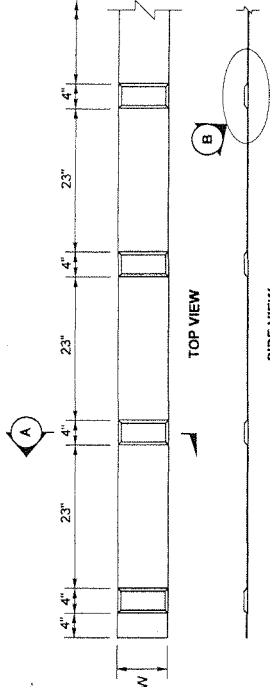
GENERAL NOTE

See Standard Plan M-20.10 for pattern and color requirements.



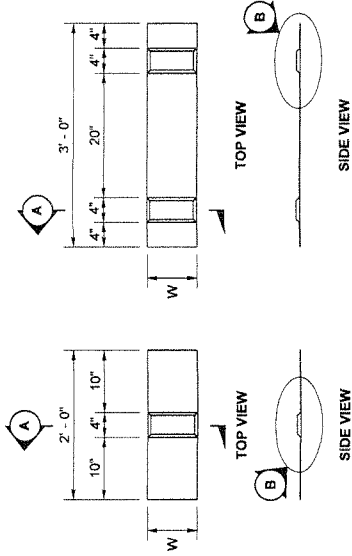
PROFILED PLASTIC
(BROKEN LINE)

FOR:
 CENTER LINE & LANE LINE - W = 4"
 NO-PASS LINE & TWO-WAY LEFT-TURN CENTER LINE - W = 4"
 REVERSIBLE LANE LINE - W = 4"
 WIDE BROKEN LANE LINE - W = 8"



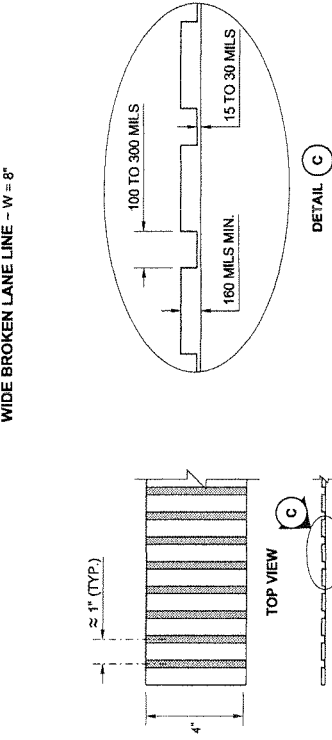
PROFILED PLASTIC
(SOLID LINE)

FOR:
 NO-PASS LINE - W = 4"
 TWO-WAY LEFT-TURN CENTER LINE - W = 4"
 DOUBLE CENTER LINE & DOUBLE LANE LINE - W = 4"
 EDGE LINE & SOLID LANE LINE - W = 4"
 WIDE LANE LINE & WIDE LINE - W = 8"
 DOUBLE WIDE LANE LINE - W = 8"
 BARRIER CENTER LINE - W = 20"



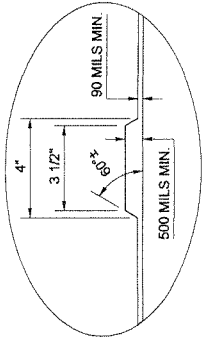
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(BROKEN LINE)

FOR:
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 WIDE DOTTED LANE LINE - W = 8"

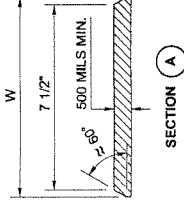


EMBOSSSED PLASTIC
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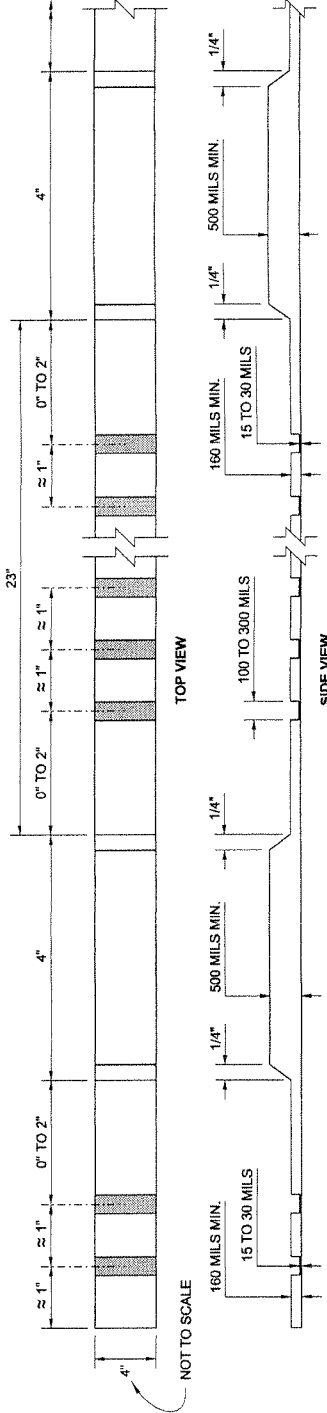
FOR:
 CENTER LINE & LANE LINE
 NO-PASS LINE & TWO-WAY LEFT-TURN CENTER LINE
 REVERSIBLE LANE LINE
 DOUBLE CENTER LINE & DOUBLE LANE LINE
 EDGE LINE & SOLID LANE LINE



DETAIL B

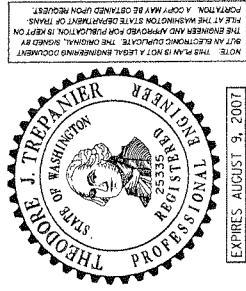


SECTION A



PROFILED EMBOSSED PLASTIC
(SOLID OR BROKEN LINE)

FOR:
 CENTER LINE & LANE LINE
 NO-PASS LINE
 TWO-WAY LEFT-TURN CENTER LINE
 REVERSIBLE LANE LINE
 DOUBLE CENTER LINE & DOUBLE LANE LINE
 EDGE LINE & SOLID LANE LINE



EXPIRES AUGUST 9, 2007

PROFILED AND EMBOSSED PLASTIC LINES
STANDARD PLAN M-20.20-01

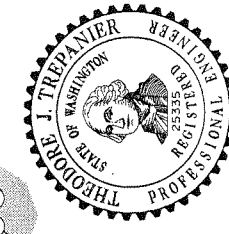
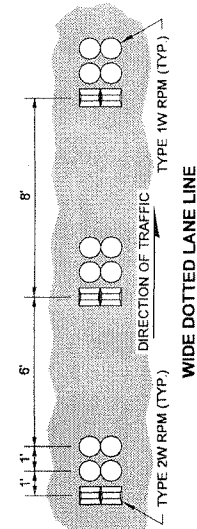
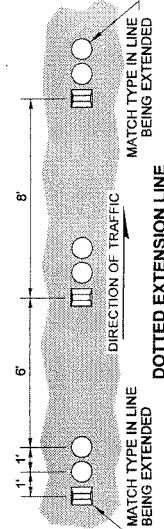
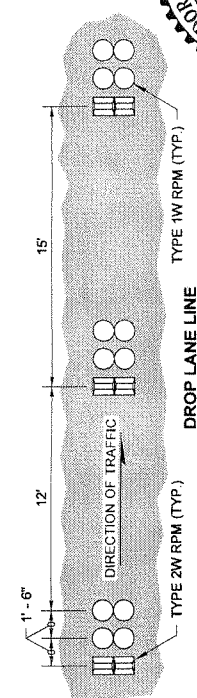
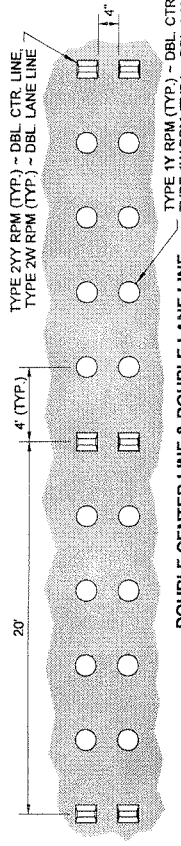
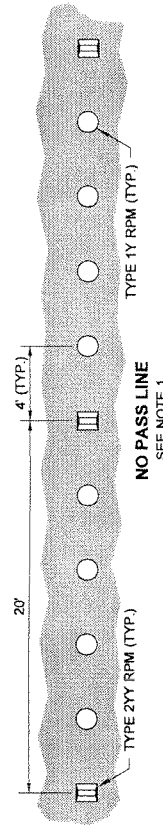
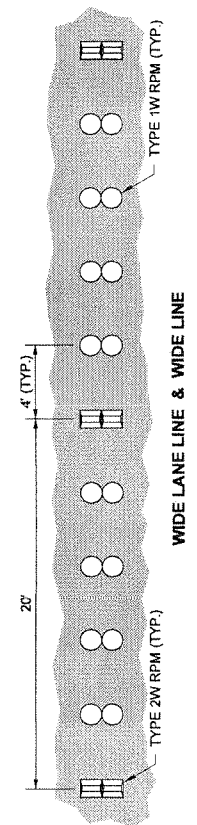
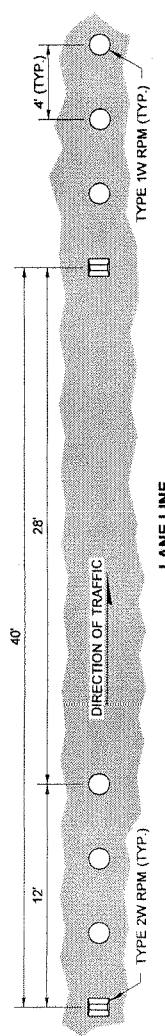
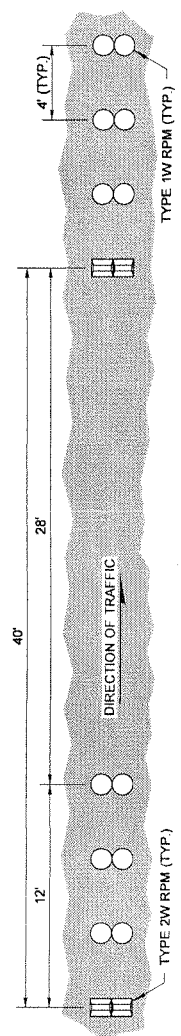
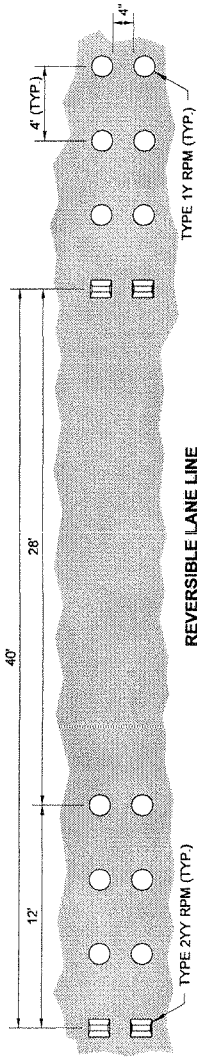
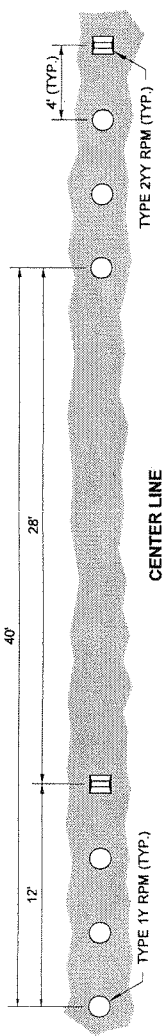
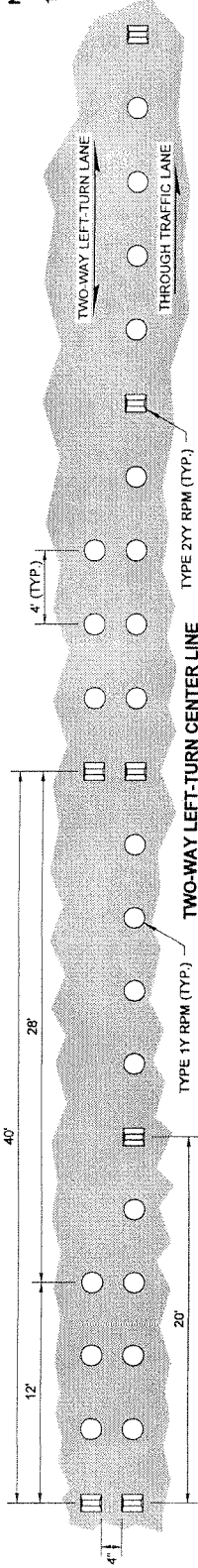
SHEET 1 OF 1 SHEET

APPROVED FOR PUBLICATION

Ken L. Smith
 STATE DESIGN ENGINEER
 DATE: 01-30-07
 Washington State Department of Transportation

NOTE

- The NO PASS LINE (when required) is applied parallel to the CENTER LINE, 4' away, with the Type 2YY RPM's aligned (similar to TWO-WAY LEFT-TURN LINE).



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**LONGITUDINAL MARKING
SUBSTITUTION W/ RAISED
PAVEMENT MARKERS
STANDARD PLAN M-20-50-01**

SHEET 1 OF 1 SHEET

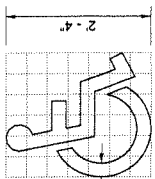
APPROVED FOR PUBLICATION

Ken L. Smith
STATE DESIGN ENGINEER

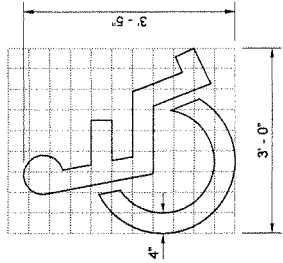
DATE: 01-30-07

Washington State Department of Transportation

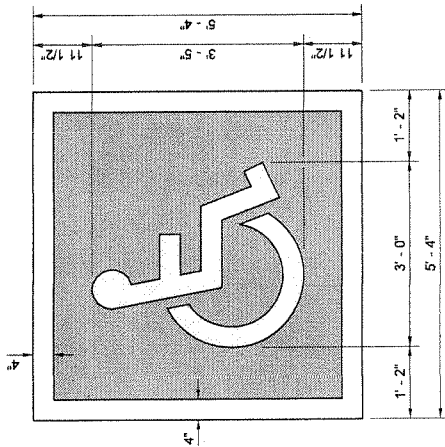
NOTES: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT. THE ENGINEER HAS REVIEWED THE PLAN FOR TECHNICAL ACCURACY AND APPROVED FOR PUBLICATION. IT IS THE USER'S RESPONSIBILITY TO OBTAIN THE NECESSARY PERMITS AND APPROVED FOR PUBLICATION. THE ORIGINAL DRAWING IS THE AUTHORITY. A COPY MAY BE OBTAINED UPON REQUEST.



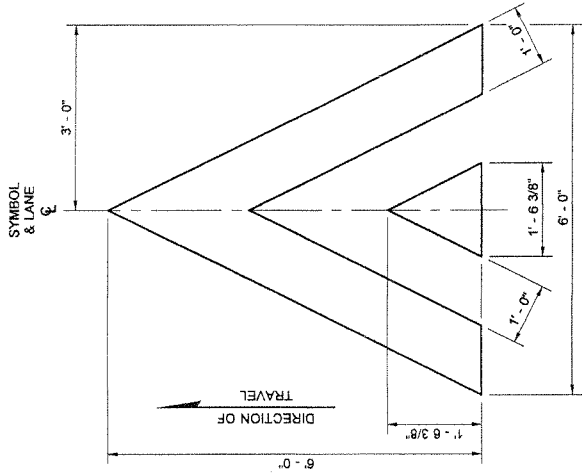
GRID IS 4" SQUARE MARKING AREA = 1.41 SQ. FT.
ACCESS PARKING SPACE SYMBOL
(MINIMUM)



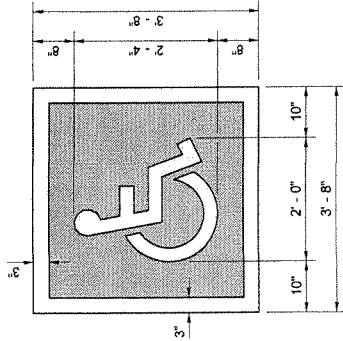
GRID IS 4" SQUARE MARKING AREA = 3.09 SQ. FT.
ACCESS PARKING SPACE SYMBOL
(STANDARD)



TOTAL MARKING AREA = 26.44 SQ. FT.
WHITE = 9.76 SQ. FT. BLUE = 18.69 SQ. FT.
ACCESS PARKING SPACE SYMBOL (STANDARD)
WITH BLUE BACKGROUND AND WHITE BORDER
(REQUIRED FOR CEMENT CONCRETE SURFACES)

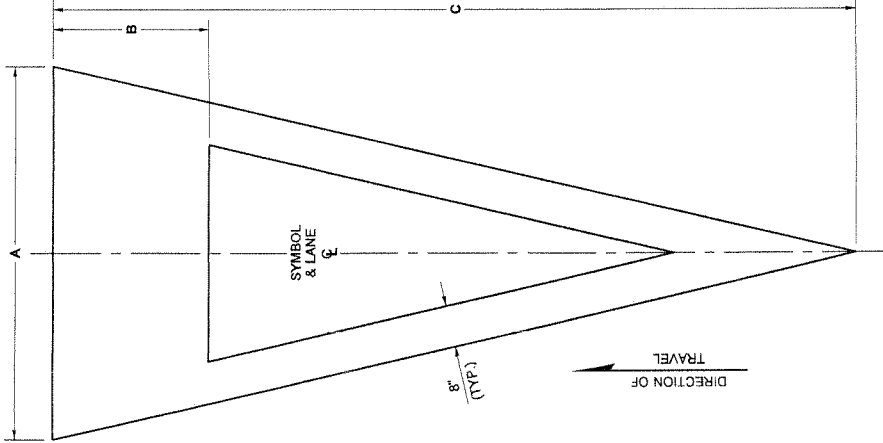


MARKING AREA = 12.08 SQ. FT.
SPEED BUMP SYMBOL

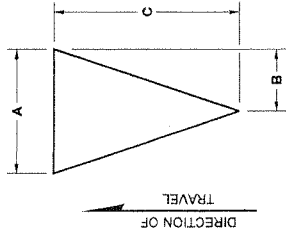


TOTAL MARKING AREA = 13.44 SQ. FT.
WHITE = 4.62 SQ. FT. BLUE = 8.82 SQ. FT.
ACCESS PARKING SPACE SYMBOL (MINIMUM)
WITH BLUE BACKGROUND AND WHITE BORDER
(REQUIRED FOR CEMENT CONCRETE SURFACES)

SYMBOL MARKING	A	B	C	USE	MARKING AREA
YIELD AHEAD SYMBOL	6' - 0"	2' - 6"	13' - 0"	LESS THAN 45 MPH	25.90 SQ. FT.
	6' - 0"	3' - 0"	20' - 0"	45 MPH OR GREATER	36.54 SQ. FT.
YIELD LINE SYMBOL	1' - 0"	6"	1' - 6"	LESS THAN 45 MPH	0.75 SQ. FT.
	2' - 0"	1' - 0"	3' - 0"	45 MPH OR GREATER	3.00 SQ. FT.



YIELD AHEAD SYMBOL



YIELD LINE SYMBOL
(MULTIPLE SYMBOLS REQUIRED
FOR TRANSVERSE YIELD LINE
- SEE CONTRACT)



NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT
UNTIL AN ELECTRONIC SIGNATURE AND ORIGINAL SIGNATURE
ARE AFFIXED TO THE DRAWING. THE ORIGINAL SIGNATURE
MUST BE KEPT WITH THE DRAWING. THE SIGNATURE OF THE
ENGINEER AND APPROVED FOR PUBLICATION IS KEPT ON
FILE AT THE WASHINGTON STATE DEPARTMENT OF TRAFFIC
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EXPIRES AUGUST 9, 2007

**SYMBOL MARKINGS
MISCELLANEOUS**

STANDARD PLAN M-24.60-02

SHEET 2 OF 2 SHEETS

APPROVED FOR PUBLICATION

Ken L. Smith

STATE DESIGN ENGINEER

DATE 02-06-07

Washington State Department of Transportation



TOWN OF YARROW POINT

STANDARD PLANS AND NOTES

TABLE OF CONTENTS

SECTION 3 – STORM DRAINAGE

STORM DRAINAGE PLAN NOTES.....	SD-1
STORM DRAINAGE DESIGN CRITERIA.....	SD-2
ROCK-LINED SHOULDER DITCHES	SD-3
GRASS-LINED SWALE.....	SD-4
GRASS-LINED SWALE SEED MIX	SD-5
ENERGY DISSIPATOR.....	SD-6
FILED TAPPING OF CONCRETE PIPE.....	SD-7

WSDOT STORM DRAINAGE DETAILS ADOPTED BY YARROW POINT:

CATCH BASIN TYPE I.....	B-05.20-00
CATCH BASIN TYPE I-L.....	B-05.40-00
CATCH BASIN TYPE I-P (FOR DRIVEWAY)	B-05.60-00
CATCH BASIN TYPE II.....	B-10.20-00
CATCH BASIN TYPE II W/ FLOW RESTRICTOR	B-10.40-00
CATCH BASIN TYPE II W/ BAFFLE TYPE FLOW RESTRICTOR	B-10.60-00
CONCRETE INLET.....	B-25.60-00
MISCELLANEOUS DETAILS FOR DRAINAGE STRUCTURES	B-30.90-01
RECTANGULAR FRAME (REVERSIBLE).....	B-30.10-00
RECTANGULAR SOLID METAL COVER	B-30.20-01
RECTANGULAR VANED GRATE.....	B-30.30-00
RECTANGULAR BI-DIRECTIONAL VANED GRATE.....	B-30.40-00
RECTANGULAR HERRINGBONE GRATE	B-30.50-00
CIRCULAR FRAME (RING) AND COVER.....	B-30.70-01
CIRCULAR GRATE	B-30.80-00
PIPE ZONE BEDDING AND BACKFILL	B-55.20-00
CONNECTION DETAILS FOR DISSIMILAR CULVERT PIPE	B-60.20-00
COUPLING BANDS FOR CORRUGATED METAL PIPE.....	B-60.40-00

STORM DRAINAGE – PLAN NOTES

1. A pre-construction conference shall be held prior to the start of construction. The Contractor shall be responsible for securing all necessary permits prior to construction.
2. Before any construction may occur, the contractor shall have plans which have been signed and approved by the Town of Yarrow Point, obtained all Town, county, state, federal, and other required permits, and have posted all required bonds. Contact the Town of Yarrow Point (425) 454-6994 for the current plan submittal procedures.
3. All storm drainage improvements shall be designed and constructed in accordance with the latest edition of the Town of Yarrow Point standard plans and notes, and the Standard Specifications for Road, Bridge and Municipal Construction, prepared by WSDOT and the American Public Works Association (APWA).
4. Any deviation from the approved plans will require written approval. All changes shall be submitted to the Town.
5. A copy of the approved storm water plans must be on the job site whenever construction is in progress.
6. All disturbed areas shall be seeded and mulched or similarly stabilized to the satisfaction of the Town of Yarrow Point for the prevention of on-site erosion after the completion of construction.
7. Minimum cover over storm drainage pipes in ROW or vehicular path shall be 18 inches, unless other design is approved.
8. Steel pipe shall have Asphalt Treatment #1 or better inside and outside.
9. All catch basins shall be Type I unless otherwise noted. Catch basins with a depth of over five feet (5') to the pipe invert shall be a Type II catch basin. Type II catch basins exceeding five feet (5') in depth shall have a standard ladder installed.
10. All storm drainage main extensions within the public right-of-way or in easements must be staked for line and grade prior to starting construction.
11. Rock for erosion protection of roadway ditches, where required, must be of sound quarry rock, placed to a depth of one foot (1') and must meet the following specifications: 4"-8" rock/40%-70% passing; 2"-4" rock/ 30%-40% passing; 2"-minus rock/ 10%-20% passing.
12. All pipe, manholes, catch basins, and appurtenances shall be laid on a properly prepared foundation in accordance with the current State of Washington Standard Specifications for Road and Bridge Construction (WSDOT). This shall include necessary leveling of the trench bottom or the top of the foundation material as well as placement and compaction of required bedding material to uniform grade so that the entire length of the pipe will be supported on a uniformly dense, unyielding base. If the native material in the bottom of the trench meets the requirements for "gravel backfill for pipe bedding," the first lift of pipe bedding may be omitted provided the material in the bottom of the trench is loosened, re-graded, and compacted to form a dense unyielding base. All pipe bedding shall be APWA Class B, Type I, or better. Pipe shall not be installed on sod, frozen earth, large boulders, or rock. Pipe bedding for flexible pipes shall be pea gravel to the springline of the pipe.
13. Construction of dewatering (groundwater) systems shall be in accordance with the APWA standard specifications.
14. Issuance of a Building and/or Site Development Permit by the Town of Yarrow Point does not relieve the owner of the continuing legal obligation and/or liability connected with storm

STORM DRAINAGE – PLAN NOTES (CONT.)

surface water disposition. Further, the Town of Yarrow Point does not accept any obligation for the proper functioning and maintenance of the system during or following construction except as outlined in the Yarrow Point Municipal Code.

15. All trench backfill shall be compacted to 95 percent density in roadways, roadway shoulders, roadway prism and driveways, and 85 percent density in unpaved areas. All pipe zone compaction shall be 95 percent.
16. The Contractor shall be responsible for providing adequate safeguards, safety devices, protective equipment, confined space protection, flaggers, and any other needed actions to protect the life, health, and safety of the public, and to protect property in connection with the performance of work covered by the contract. Any work within the traveled right-of-way that may interrupt normal traffic flow shall require a Traffic Control Plan approved by the Town of Yarrow Point. All sections of the WSDOT Standard Specifications, Traffic Control section, and the Manual of Uniform Traffic Control Devices (MUTCD) shall apply.
17. No final cut or fill slope shall exceed slopes of two (2) horizontal to one (1) vertical without stabilization by rockery or by a structural retaining wall.
18. All manhole ladders shall be firmly attached and extend to within 1' of the bottom of the structure.
19. Approximate locations of existing utilities have been obtained from available records and are shown for convenience. The Contractor shall be responsible for verification of existing utility locations whether or not these utilities are shown on the plans. The Contractor shall exercise all care to avoid damage to any utility. If conflicts with existing utilities arise during construction, the contractor shall notify the Town Engineer or the Town Building Official immediately and any changes required shall be approved by the appropriate Town Staff prior to commencement of related construction on the project.
20. The underground utility location service shall be contacted for the field location of existing utilities prior to any construction. The owner or his representative shall be contacted if a utility conflict exists. For utility locations in King County, call 1-800-424-5555. The Contractor is responsible to ensure that utility locates are maintained throughout the life of the project.
21. The Contractor shall verify the locations, widths, thicknesses, and elevations of all existing pavements and structures that are to interface with new work. Provide all trimming, cutting, saw cutting, grading, leveling, sloping, coating, and other work, including materials as necessary, to cause the interface with existing works to be proper, acceptable to the Town Engineer and/or the Town Building Official, complete in place and ready to use.
22. All inlet, manhole, and catch basin frames and grates shall not be adjusted to grade until immediately prior to final paving. All catch basin grates shall be set 0.10' below pavement level.
23. Utility road crossings shall be bored whenever possible. Open cut road crossings for utility trenches on existing traveled roadways shall be backfilled only with 5/8" minus crushed rock and mechanically compacted (unless otherwise approved by the Town). NOTE: For streets underlain by concrete, backfill for crossings shall be CDF. Cuts into the existing asphalt shall be neat line cut with saw or jack hammer in a continuous line. A temporary cold mix patch must be placed immediately after backfill and compaction. A permanent hot mix patch shall be placed

STORM DRAINAGE – PLAN NOTES (CONT.)

within 30 days and shall be a minimum of 1" thicker than the original asphalt with a minimum thickness of 2".

24. All damages incurred to public and/or private property by the Contractor during the course of construction shall be promptly repaired to the satisfaction of the Town Engineer and/or Town Building Official before project approval and the release any bonds.
25. Grout all seams and openings in all inlets, catch basins, and manholes.
26. When widening an existing roadway where an existing Type I catch basin will remain in the travel lane, the existing frame and cover shall be replaced with a round, locking frame and cover.
27. For other than single-family dwellings, all exposed or readily exposed indoor storm drainage piping/plumbing shall be labeled with the words "STORM DRAIN" with minimum 2 inch high letters.

STORM DRAINAGE – DESIGN CRITERIA

I. DESIGN

- A. Public and private storm drainage designs in Yarrow Point are exempt from requirements set forth by the National Pollutant Discharge Elimination System (NPDES) municipal storm water permit. Private systems are designed according to the current Town of Yarrow Point Storm Water Drainage Guidelines. Improvements to the public system are designed according to assumptions and modeling criteria referred to in the Town's 2008 Comprehensive Storm Water Management Plan.

II. PIPE

A. Materials

1. Acceptable Types

- a. PVC 3034 (Town recommended and preferred)
- b. CPEP (ADS N-12 or equal)
- c. Hancor High Q
- d. Treatment 1 Steel
- e. Aluminum CMP: Pipe thickness shall be 0.060" (16 ga.) unless minimum bury cannot be obtained.
- f. Concrete: Pipe must be steel reinforced type for sizes larger than 12" diameter

2. All pipes shall have a minimum 18" of pipe cover in the ROW or private drives exposed to vehicular traffic. If pipe cover is less than 18 inches the pipe shall be ductile iron (Class 50) or C-900. Also, any pipes proposed to be installed in the load bearing zone of structural walls must be protected by a ductile iron (Class 50) sleeve. The design or use of DI sleeves must be approved by the Town of Yarrow Point.

3. Storm drainage pipes laid 16 feet and deeper must be cement lined, ductile iron pipe, Class 50.

B. Sizing

1. Size of the required pipe will be based on the Manning Equation with a minimum slope of 0.02 ft/ft for 6" pipe, 0.01 ft/ft for 8" pipe and 0.005 ft/ft for 12" pipe.

2. The following is a list of the minimum pipe diameter size for the listed pipe type:

- | | |
|--------------------------------|-----|
| a. Main Line | 12" |
| b. Curb Inlet/ Single Crossing | 8" |
| c. Side Line | 6" |
| d. Perforated Drain Line | 4" |
| e. Rockery Drain | 4" |

3. Downstream pipe shall be the same size or larger than the upstream pipe.

C. Jointing

1. Aluminum CMP shall be band and gasket at all joints except in areas where a high water table problem exists.

STORM DRAINAGE – DESIGN CRITERIA (CONT.)

2. Concrete pipe joins shall be rubber ring gasket.
3. PVC pipe shall be rubber gasket slide jointing.

D. Horizontal and Vertical Clearances

1. Minimum Horizontal Clearance between storm drainage, sanitary sewer, and water pipes shall be 5 feet, unless another design alternative has been specifically approved by the Town Engineer.
2. Minimum Vertical Clearance where storm drainage, sanitary sewers and water mains cross shall be 18 inches between the pipes, unless an alternative design has been specifically approved by the Town Engineer.

E. General

1. Bends are not allowed in main lines.
2. A catch basin is required for the following conditions:
 - a. A change in the flow-line slope.
 - b. At a maximum distance of 300' in mainline.
 - c. A change in the pipe size.
 - d. For the joining of two or more main lines.
 - e. For a side-line service.
 - f. A change in pipe-material.
3. Tapping Tees are acceptable for side services where structures cannot be installed due to other structure conflicts, but only if a yard drain is located within 10' of the property line and the design is approved by the Town Engineer.
4. All driveway culverts located within the Town of Yarrow Point ROW shall be of sufficient length to provide a minimum 3:1 slope from the edge of the driveway to the bottom of the ditch. Culverts shall have beveled end sections to match the side slope.
5. Public storm drains are to be centered in easements with a minimum width of 10 feet or two times the depth of the utility, whichever is greater. Reduction of the easement width may be allowed on a case-by-case basis.
6. Drainage outlets (stub-outs) shall be provided for each individual lot. Stub-outs shall conform to the following:
 - a. Each outlet shall be suitably located at the lowest elevation on the lot, so as to service all future roof downspouts, footing drains, driveways, yard drains, and any other surface or subsurface drains necessary to render the lots suitable for their intended use.

STORM DRAINAGE – DESIGN CRITERIA (CONT.)

- b. Each outlet shall have positive, free-flowing drainage to an approved storm water conveyance system or to an approved outfall location. In the event gravity discharge is not possible, the designer may choose to pump private storm water to the nearest public catch basin in the Town owned right-of-way. Prior to pumping however, Yarrow Point requires proof that the developer has contacted adjacent downstream property owners to fully consider gravity options.
 - c. Outlets on each lot shall be located with a 5' high, white 2"x 4" stake marked "STORM" or "DRAIN." The stub-out shall visibly extend above surface level and be secured to the stake.
 - d. Pipe material shall conform to Yarrow Point standards.
 - e. Drainage easements are required for drainage systems designed to convey flows across more than one lot.
 - f. The Developer and/ or Contractor are responsible for coordinating the locations of all stubout conveyance lines with respect to the utilities (e.g., power, gas, telephone, and cable).
 - g. All individual stub-outs shall be privately owned and maintained by the respective property owner.
7. Building structures shall not be permitted within 5' of the outside of any storm drainage pipe, or 10' from the top of any channel bank.
8. All building downspouts and footing drains shall be connected to the public storm drainage system, unless otherwise approved by the Town Engineer.

STORM DRAINAGE – DESIGN CRITERIA (CONT.)

III. CATCH BASINS/ INLETS

A. Material

1. Shall be precast concrete steel reinforced construction.
2. Adjustment rings shall be precast concrete.
3. Grates and covers shall be ductile iron and frames shall be cast iron. Alternate plans acceptable provided that they conform to shop drawings approved by the Town of Yarrow Point. Covers shall be marked "STORM".

B. Sizing

1. Acceptable pipe sizes used with specific drainage structures shall conform for the following table:

Table 1: Pipe Sizes and Drainage Structures

Basin Type	Pipe Size								
	6"	8"	12"	15"	18"	24"	30"	36"	48"
Yard Drain	X								
Curb Inlet	X	X							
Type I CB	X	X	X	X					
Type I-L CB	X	X	X	X	X				
Type II-48" CB	X	X	X	X	X	X	X		
Type II-54" CB	X	X	X	X	X	X	X	X	
Type II-72" CB	X	X	X	X	X	X	X	X	X

2. Type II CB shall be used for all pipes larger than 18" and shall be sized at 1-1/2 times the largest connected pipe's diameter.

C. Depth

1. All catch basins with 5' or less between the top of grate and the pipe invert can be Type I CB's.
2. All catch basins with more than 5' between the top of grate and the pipe invert must be Type II CB's.

D. Spacing

1. For grades less than 8 percent, catch basin spacing shall be a maximum of 300 feet.
2. For grades from 8 to 12 percent, catch basin spacing shall be a maximum of 200 feet.
3. For grades greater than 12 percent, catch basin spacing shall be a maximum of 150 feet.

E. Grate Selection

STORM DRAINAGE – DESIGN CRITERIA (CONT.)

1. Vane grates shall be used on all sloped areas of 6 percent or greater in the gutter section of a paved roadway and in sloped earth channels.
2. Herringbone grates shall be used in unpaved areas when no sloped channel exists.
3. Through-curb frames with herringbone grates shall be used at low points along the flow line of the curb.
4. Through-curb frames with vane grates shall be used for grade change points where the slope changes from a 6 percent or greater slope to a 2 percent or less slope.
5. Solid lids for Type II catch basins shall be round traffic-bearing and marked "STORM". Type I shall be traffic-bearing steel plates.
6. All solid lids shall be provided with hex nuts for locking.

F. Joints

1. Type I joints shall be non-shrink grout.
2. Type II and larger manholes shall have gasketed joints and shall be watertight sealed.
3. Concrete pipe and CMP pipe shall be joined at the catch basin with concrete between the pipe and the structure.
4. PVC and other plastic pipes require a coupling adapter made for the pipe type and concrete joining.

G. Construction

1. Catch basins shall be bedded in pea gravel when:
 - a. The catch basin is a Type II or larger manhole assembly.
 - b. The placement is in a water table and the soil is unstable.
 - c. The base soils are over-excavated.
2. Adjustments over 4" to grade shall be with concrete adjustment rings.
3. Adjustments under 4" shall be with concrete brick and grout.
4. For Type II CB's with eccentric cone top-section, the maximum adjustment distance is 12", not including casting.
5. For Type II CB's with flat-top, the maximum adjustment distance is 12", not including casting.
6. All joints shall be grouted with a non-shrink concrete sealer.

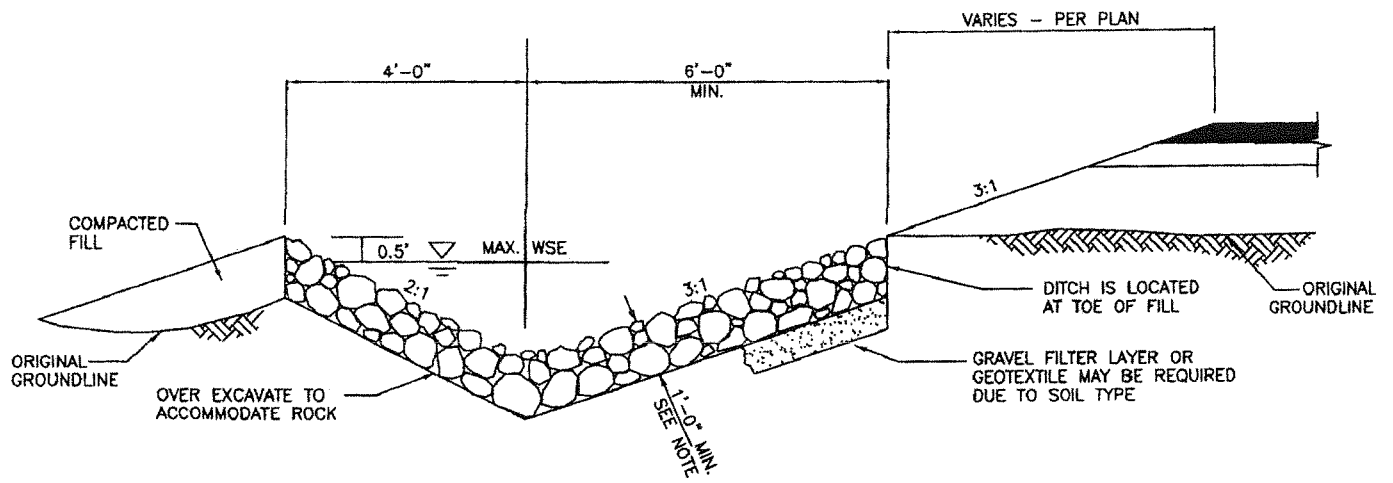
STORM DRAINAGE – DESIGN CRITERIA (CONT.)

7. In Town approved circumstances where paved access cannot be provided to a catch basin, the catch basin shall be within 50 ft of paved access and pedestrian access must be maintained, i.e., fences shall have gates, etc. If paved access cannot be provided within 50ft of a catch basin, then the catch basin shall not have a sump and shall be channeled. In cases where a channeled catch basin is used there must be a standard catch basin with paved access at least 200 ft upstream. In addition, the pipe slope downstream of the standard catch basin shall be 2% minimum.

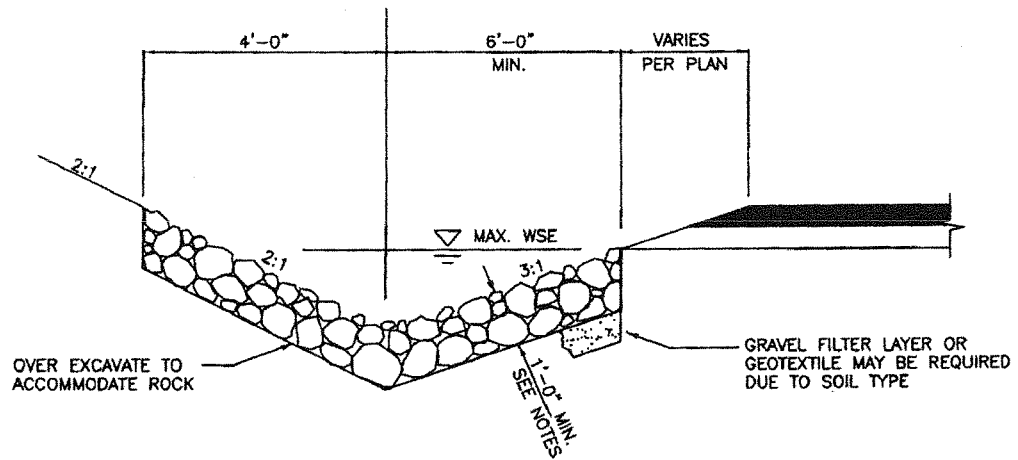
H. Privately Owned Catch Basins, Area Drains, and Inlets

1. Minimum size for catch basin or area drain (small catch basin) is 12 inches in diameter with 18 inches between the invert of the outlet pipe and the bottom of the catch basin or area drain. If the minimum sump (water storage area) cannot be met, then the drainage device must be connected to a catch basin with at least the minimum sump and a floatable material separator before discharging the storm water to the public system.
2. The service areas for all private catch basins and area drains shall conform to the following table:

CATCH BASIN SERVICE AREAS	
<i>(This table does not apply to catch basins located in public streets)</i>	
Catch Basin / Area Drain Size	Maximum Impervious Surface
<u>Area/ Yard Drains</u> (The minimum sump is 1 foot in diameter and 18-inches deep below the invert of the outlet pipe.)	500 square feet
<u>Type 1 Catch Basins</u> (The sump is approximately 22 inches by 26 inches and 17 inches deep below the outlet.)	w/ a 4-inch outlet, 7,500sf w/ a 6 inch outlet, 15,000 sf
<u>Type 2 Catch Basins</u> (The sump is a minimum of 4 feet in diameter and 2 feet deep below the outlet.)	30,000sf



ROCK-LINED SHOULDER DITCH
IN FILL SECTION



ROCK-LINED SHOULDER DITCH
IN CUT SECTION

NOTES:

1. ROCK LINED DITCHES TO BE USED WHEN FLOW VELOCITIES EXCEED 4 FPS.
2. ROCK SIZE AND DEPTH DEPENDENT ON FLOW VELOCITY. MINIMUM ROCK SIZE 2"-4" QUARRY SPALLS.

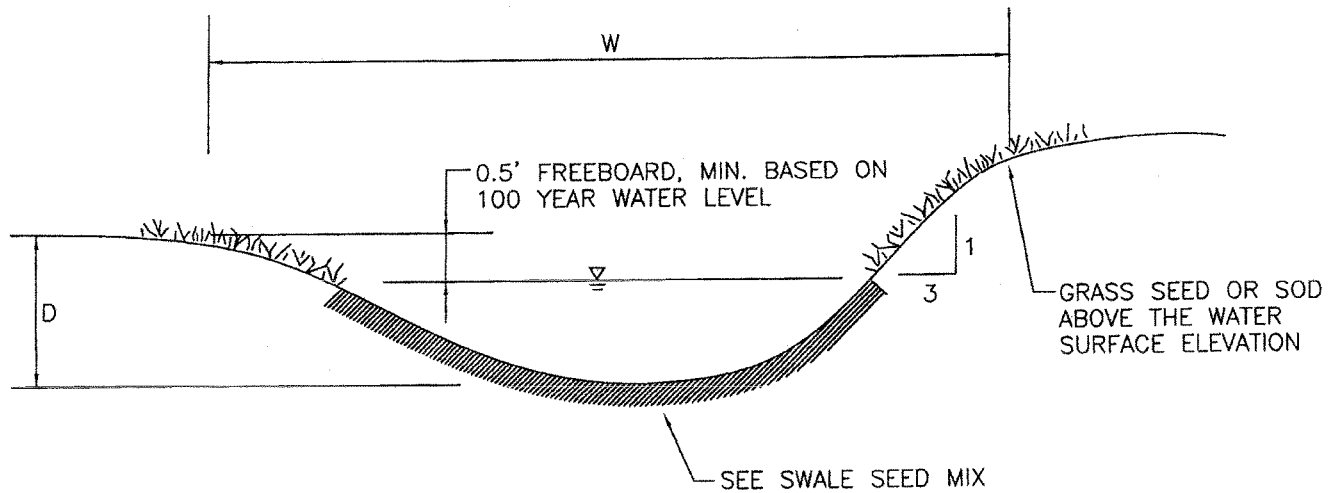
TOWN OF YARROW POINT

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**ROCK-LINED
SHOULDER DITCHES**

SD-03



TYPICAL SECTION

NOTES:

1. D AND W SIZED TO ACCOMMODATE DESIGN FLOW, PER CHAPTER 6.3 OF THE KING COUNTY SURFACE WATER DESIGN MANUAL, CURRENT EDITION.
2. ROUND ALL CORNERS FOR EASE OF MOWING.
3. MAXIMUM DESIGN VELOCITY SHALL BE 1 FPS FOR WATER QUALITY TREATMENT, AND 3 FPS FOR 100-YR CONVEYANCE.
4. MINIMUM SWALE LENGTH IS 100 FEET.
5. MINIMUM BOTTOM WIDTH IS 2 FEET (b).
6. SLOPE SHALL BE BETWEEN 1 AND 6%.
7. ADD SPREADER WEIR AT SWALE INLET FOR EVEN FLOW DISTRIBUTIONS.
8. LOCATE ALL SEDIMENT TRAPS FOR EASE OF MAINTENANCE.

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**GRASS-LINED
 SWALE**

SD-04

**TABLE 6.3.1.C
GRASS SEED MIXES SUITABLE FOR BIOFILTRATION SWALE TREATMENT AREAS***

MIX 1		MIX 2	
75–80 percent	Tall or Meadow Fescue	60–70 percent	Tall Fescue
10–15 percent	Seaside Creeping Bentgrass or Colonial Bentgrass	10–15 percent	Seaside Creeping Bentgrass or Colonial Bentgrass
5–10 percent	Redtop	10–15 percent	Meadow Foxtail
		6–10 percent	Alsike Clover
		1–5 percent	Marshfield Big Trefoil
		1–6 percent	Redtop

NOTE: All percentages are by weight.

**TABLE 6.3.1.D FINELY-TEXTURED PLANTS TOLERANT OF
FREQUENT SATURATED SOIL CONDITIONS OR STANDING WATER**

GRASSES		WETLAND PLANTS	
Water Foxtail	<i>Alopercurus geniculatus</i>	Sawbeak Sedge	<i>Carex stipata</i>
Shortawn Foxtail	<i>Alopercurus aequalis</i>	Spike Rush	<i>Eleocharis palustris</i>
Bentgrass	<i>Agrosits spp.</i>	Slender Rush	<i>Juncus tenuis</i>
Spike Bentgrass	<i>A. exarata</i>	Grass-leaf Rush	<i>Juncus marginatus</i>
Redtop	<i>A. alba or gigantea</i>		
Colonial Bentgrass	<i>A. tenuis or capillaris</i>		
Mannagrass	<i>Glyceria spp.</i>		
Western	<i>G. occidentalis</i>		
Northern	<i>G. borealis</i>		
Slender-Spiked	<i>G. leptostachya</i>		
Rough-Stalked Bluegrass	<i>Poa trivialis</i>		
Velvet Grass	<i>Holcus mollis</i>		

TOWN OF YARROW POINT

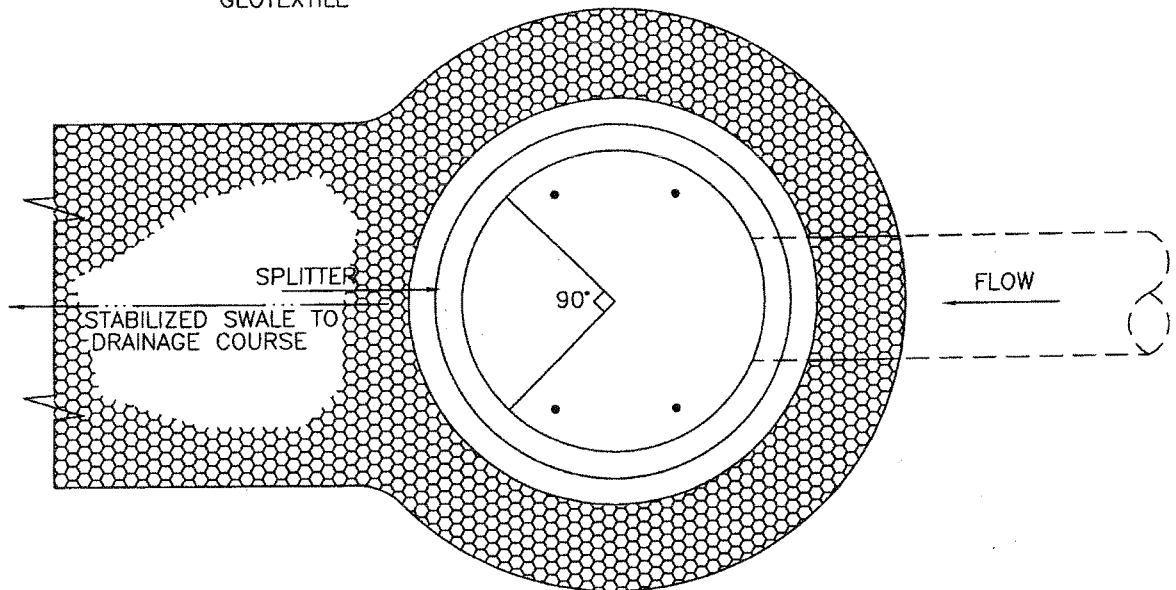
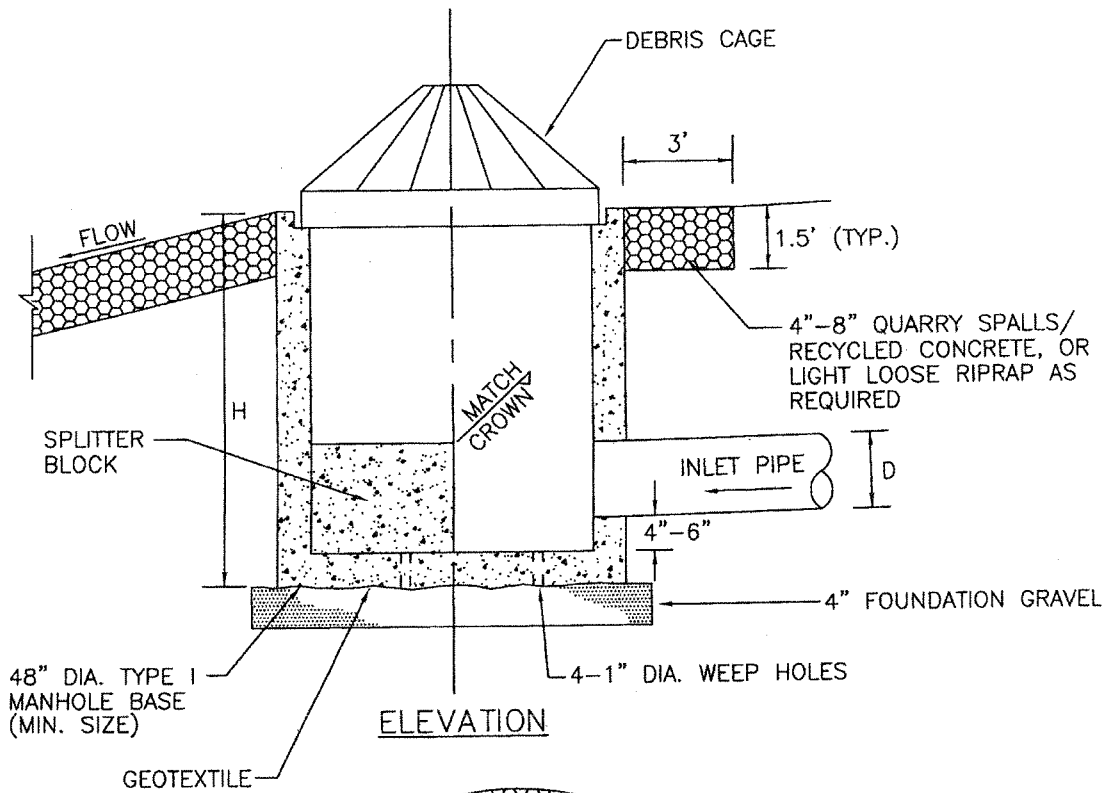
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**GRASS-LINED SWALE
SEED MIX**

SD-05

LAST REVISED: 07/31/10



INLET PIPE SIZE "D"	BASE HEIGHT "H"
8"	2'
12"	3'
18"	3'
24"	4'

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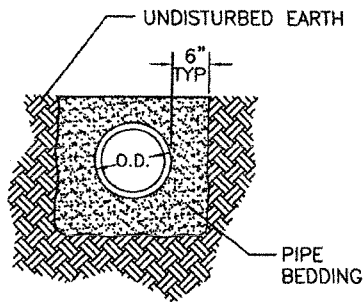
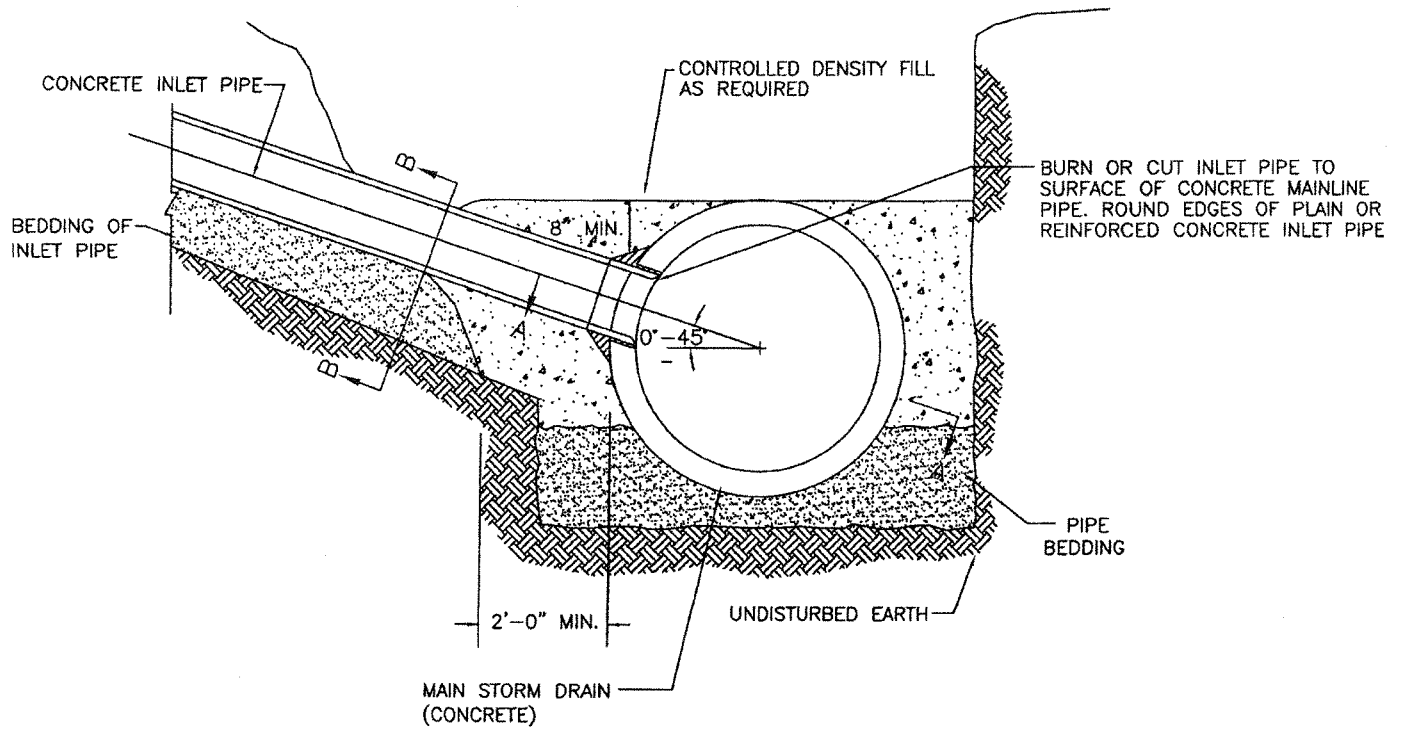
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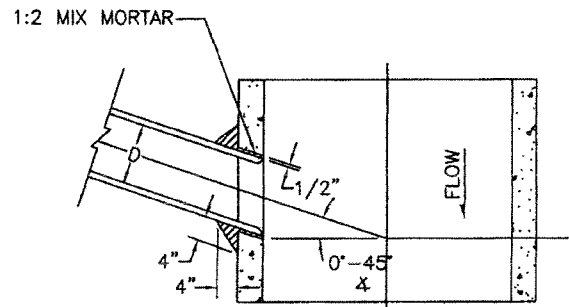
ENERGY DISSIPATOR

SD-06

LAST REVISED: 07/31/10



SECTION B-B



SECTION A-A

NOTES:

1. "D" THE INSIDE DIAM. OF THE INLET PIPE, SHALL BE 6" OR LESS. FOR LARGER VALUES OF "D" USE A MANHOLE OR CATCH BASIN.
2. IN NO CASE SHALL THE OUTSIDE DIAM. OF THE INLET PIPE EXCEED ONE-HALF THE INSIDE DIAM. OF THE MAIN STORM DRAIN PIPE.
3. CENTERLINE OF INLET PIPE SHALL BE ON RADIUS OF MAIN STORM DRAIN.
4. THE MIN. OPENING INTO THE EXISTING STORM DRAIN SHALL BE THE OUTSIDE DIAM. OF THE INLET PIPE PLUS 1 IN.
5. IF ANGLE IS GREATER THAN 45°, FIELD TAPPING IS NOT ALLOWED.
6. MAINLINE SHALL HAVE 12" MIN. DIAM.
7. FOR THERMOPLASTIC AND D.I. INLET PIPES, CORE DRILL MAIN AND CONNECT WITH SADDLE TEE OR INSERTA TEE.
8. FOR CONCRETE INLET PIPES CORE DRILL AND GROUT.

TOWN OF YARROW POINT

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**FIELD-TAPPING
 OF CONCRETE PIPE**

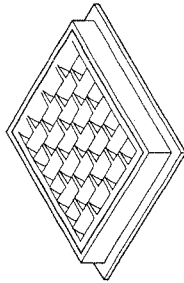
SD-07

PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSSP * (STD. SPEC. 9-05.20)	12"
SOLID WALL PVC (STD. SPEC. 9-05.12(1))	15"
PROFILE WALL PVC (STD. SPEC. 9-05.12(2))	15"

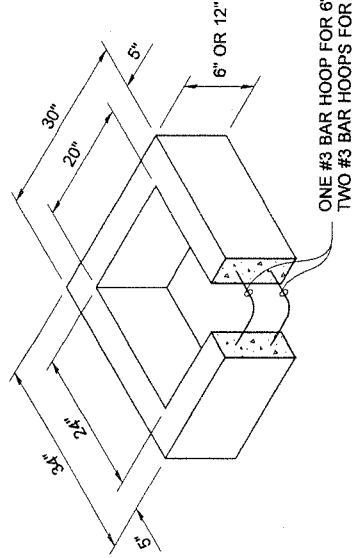
* CORRUGATED POLYETHYLENE STORM SEWER PIPE

NOTES

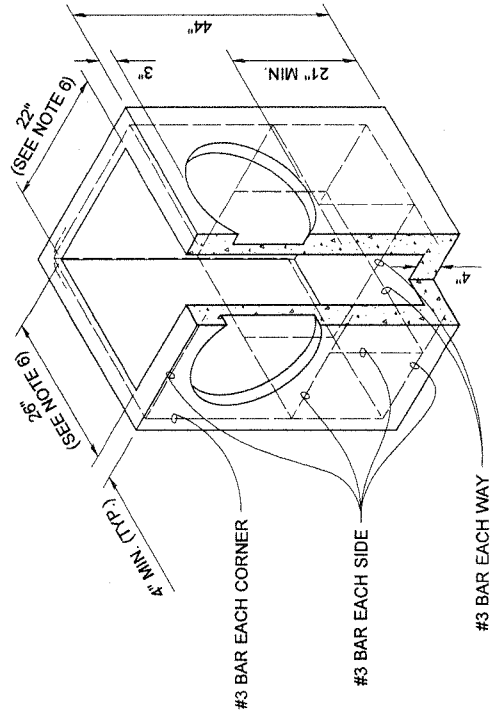
- As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the **ALTERNATIVE PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.
- The knockout diameter shall not be greater than 20". Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with Standard Specification 9-04.3.
- The maximum depth from the finished grade to the lowest pipe invert shall be 5'.
- The frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
- The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1:24 or steeper.
- The opening shall be measured at the top of the precast base section.
- All pickup holes shall be grouted full after the basin has been placed.



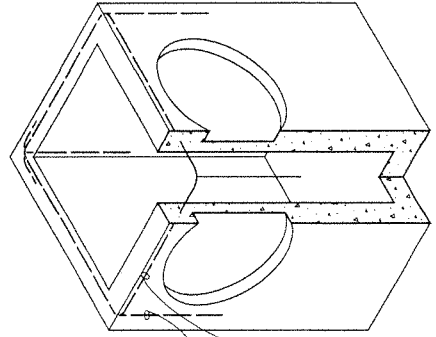
FRAME AND VANED GRATE



RECTANGULAR ADJUSTMENT SECTION



PRECAST BASE SECTION



SEE NOTE 1

ALTERNATIVE PRECAST BASE SECTION

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CATCH BASIN TYPE 1

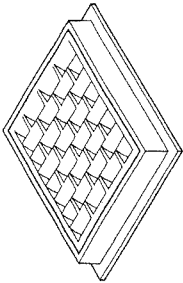
STANDARD PLAN B-5.20-00

SHEET 1 OF 1 SHEET

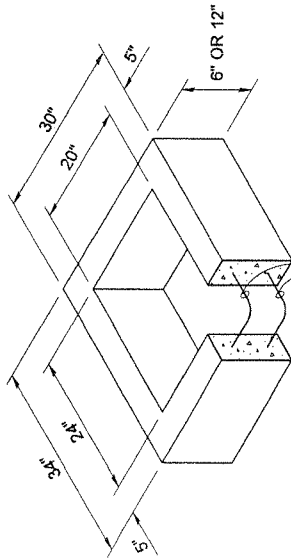
APPROVED FOR PUBLICATION

Harold J. Peterfeso 06-01-06
STATE DESIGN ENGINEER DATE
Washington State Department of Transportation



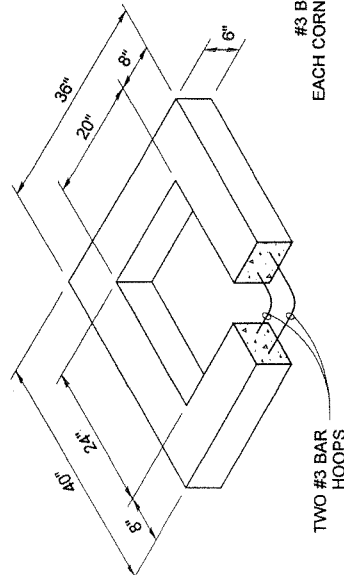


FRAME AND VANED GRATE



ONE #3 BAR HOOP FOR 6" HEIGHT
TWO #3 BAR HOOPS FOR 12" HEIGHT

RECTANGULAR ADJUSTMENT SECTION



TWO #3 BAR HOOPS

REDUCING SECTION

#3 BAR EACH CORNER
#3 BAR EACH SIDE

#3 BAR EACH WAY

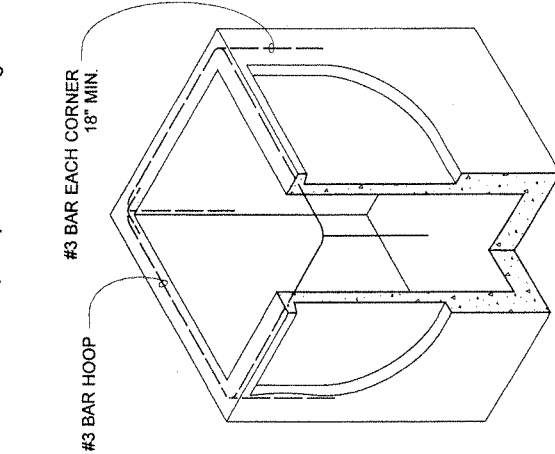
PRECAST BASE SECTION

NOTES

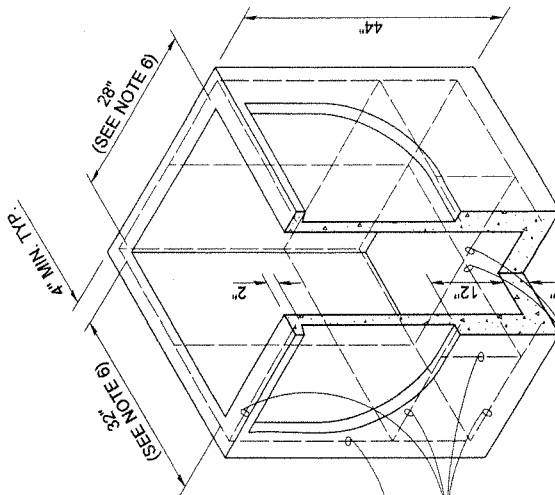
1. As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the **ALTERNATIVE PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.
2. The knockout diameter shall not be greater than 26". Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with Standard Specification 9-04.3.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5'.
4. The frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1:24 or steeper.
6. The opening shall be measured at the top of the precast base section.
7. All pickup holes shall be grouted full after the basin has been placed.

PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE	18"
ALL METAL PIPE	21"
CPSSP * (STD. SPEC. 9-05.20)	18"
SOLID WALL PVC (STD. SPEC. 9-05.12(1))	21"
PROFILE WALL PVC (STD. SPEC. 9-05.12(2))	21"

* CORRUGATED POLYETHYLENE STORM SEWER PIPE



ALTERNATIVE PRECAST BASE SECTION



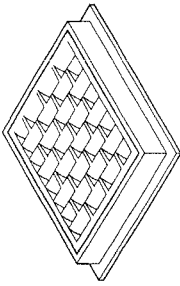
PRECAST BASE SECTION

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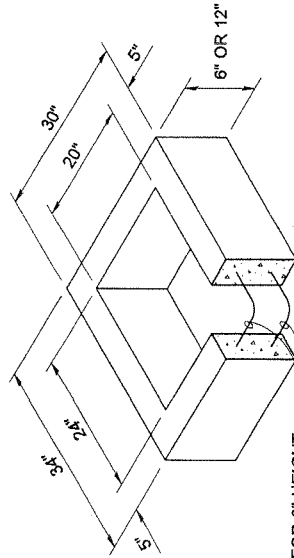
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CATCH BASIN TYPE 1L
STANDARD PLAN B-5.40-00
SHEET 1 OF 1 SHEET

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Washington State Department of Transportation

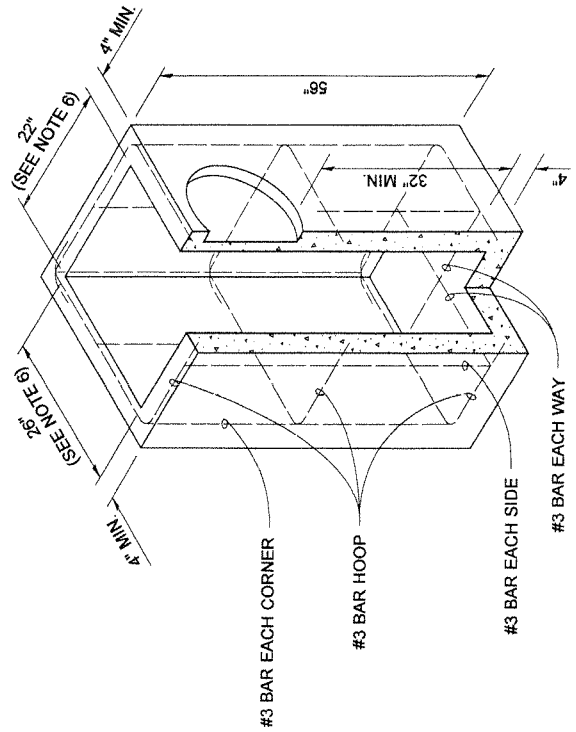


FRAME AND VANED GRATE



ONE #3 BAR HOOP FOR 6" HEIGHT
TWO #3 BAR HOOPS FOR 12" HEIGHT

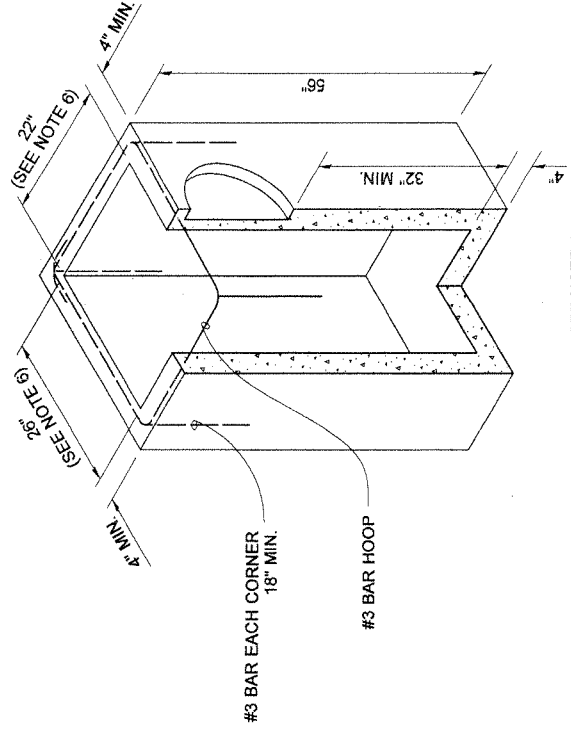
RECTANGULAR ADJUSTMENT SECTION



PRECAST BASE SECTION

NOTES

1. As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or wire mesh having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the **ALTERNATIVE PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.
2. The knockout diameter shall not be greater than 18". Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with Standard Specification 9-04.3.
3. The maximum depth from the finished grade to the lowest pipe invert shall be 5'.
4. The frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
5. The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1:24 or steeper.
6. The opening shall be measured at the top of the precast base section.
7. All pickup holes shall be grouted full after the basin has been placed.



SEE NOTE 1

ALTERNATIVE PRECAST BASE SECTION

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REGISTERED PROFESSIONAL ENGINEER
MATTHEW J. WILBECK
LICENSE NO. 15588
EXPIRES: JULY 1, 2007

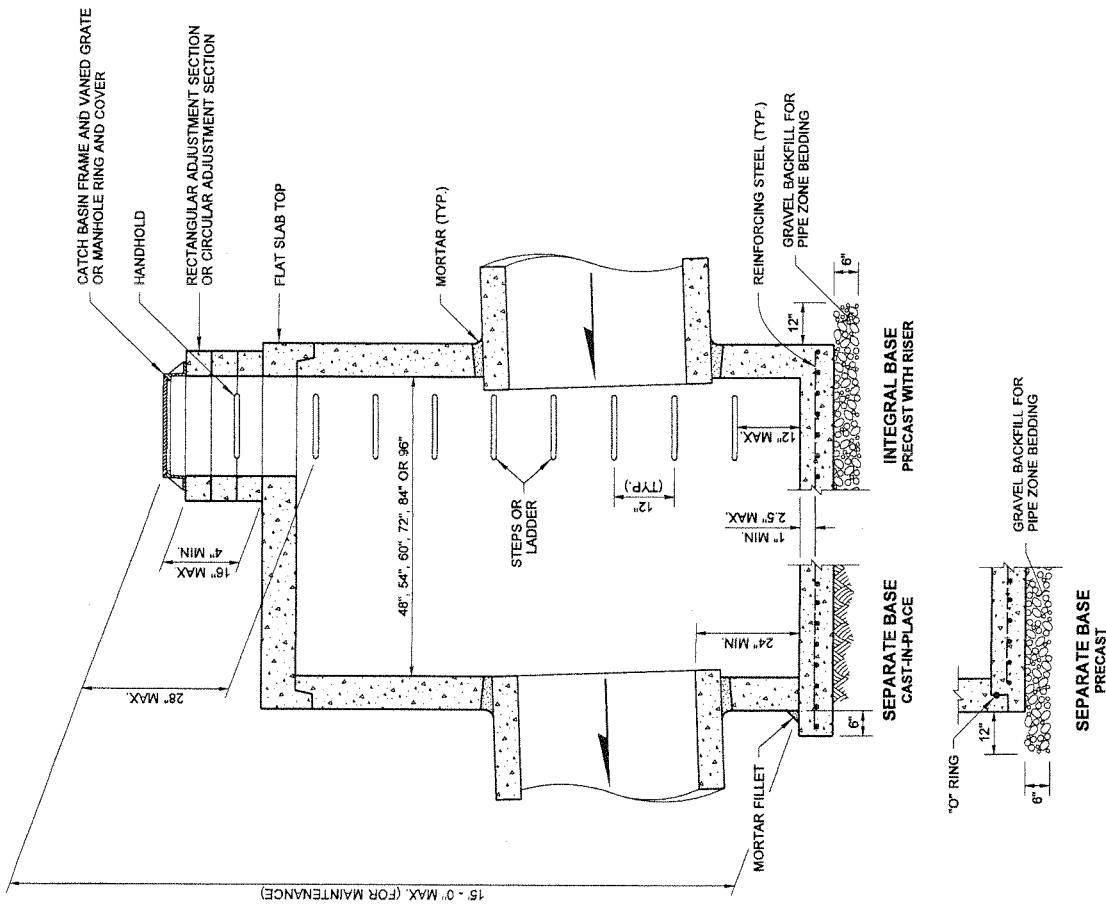
**CATCH BASIN TYPE 1P
(FOR PARKING LOT)**
STANDARD PLAN B-5-60-00

SHEET 1 OF 1 SHEET

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STATE DESIGN ENGINEER DATE
Washington State Department of Transportation

NOTES

1. No steps are required when height is 4' or less.
2. The bottom of the precast catch basin may be sloped to facilitate cleaning.
3. The rectangular frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
4. Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with Standard Specification 9-04.3.



CATCH BASIN DIMENSIONS

CATCH BASIN DIAMETER	WALL THICKNESS	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL in ² /ft. IN EACH DIRECTION	
					SEPARATE BASE	INTEGRAL BASE
48"	4"	6"	36"	8"	0.23	0.15
54"	4.5"	8"	42"	8"	0.19	0.19
60"	5"	8"	48"	8"	0.25	0.25
72"	6"	8"	60"	12"	0.35	0.24
84"	8"	12"	72"	12"	0.39	0.29
96"	8"	12"	84"	12"	0.39	0.29

PIPE ALLOWANCES

CATCH BASIN DIAMETER	PIPE MATERIAL WITH MAXIMUM INSIDE DIAMETER				
	CONCRETE	ALL METAL	CPSSP (1)	SOLID WALL PVC (2)	PROFILE WALL PVC (3)
48"	24"	30"	24"	27"	30"
54"	30"	36"	30"	27"	36"
60"	36"	42"	36"	36"	42"
72"	42"	54"	42"	36"	48"
84"	54"	60"	54"	36"	48"
96"	60"	72"	60"	36"	48"

- (1) Corrugated Polyethylene Storm Sewer Pipe (Std. Spec. 9-05.20)
- (2) (Std. Spec. 9-05.12(1))
- (3) (Std. Spec. 9-05.12(2))



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CATCH BASIN TYPE 2

STANDARD PLAN B-10.20-00

SHEET 1 OF 1 SHEET

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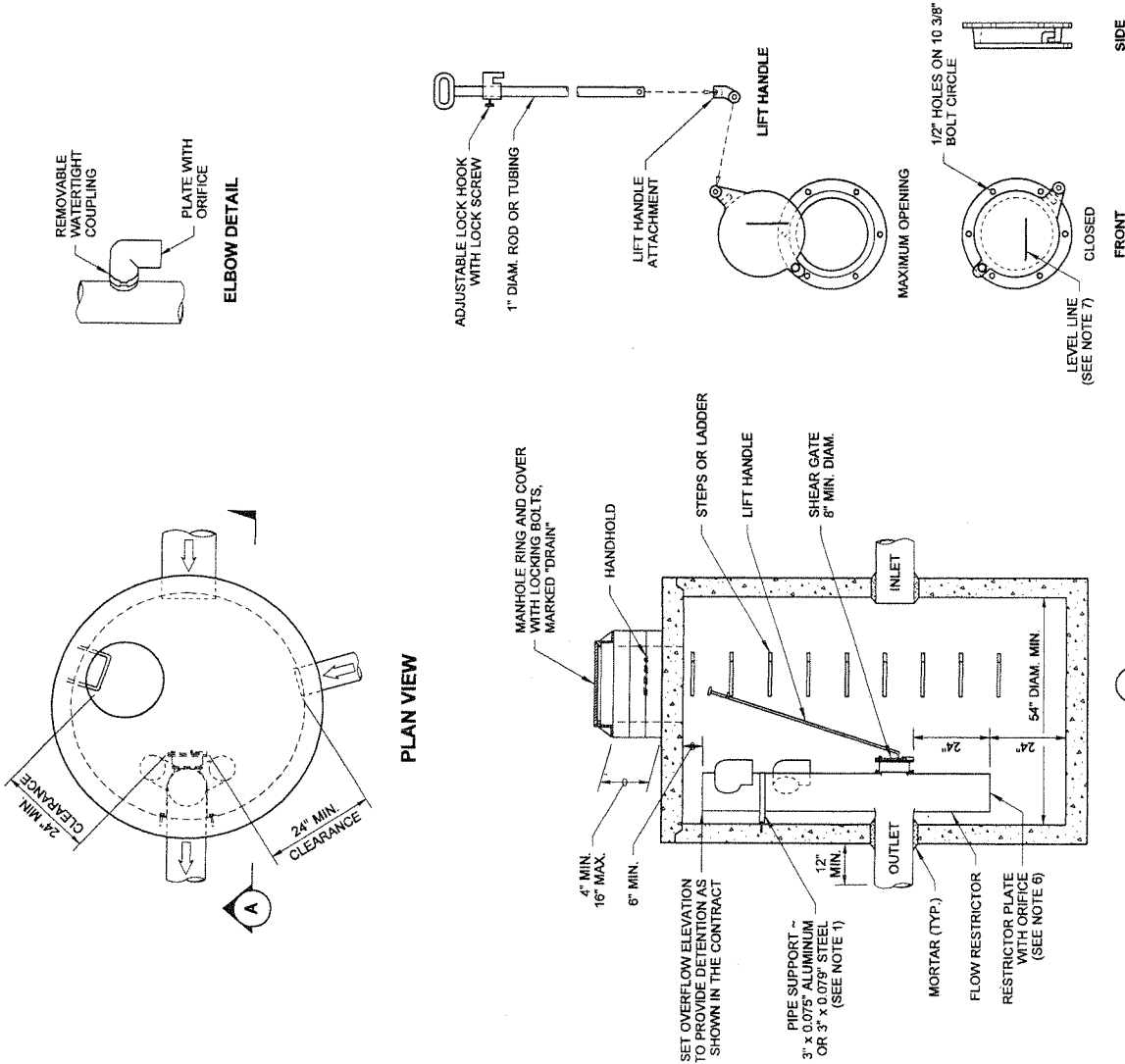
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NOTES

- The pipe supports and the flow restrictor shall be constructed of the same material and be anchored at a maximum spacing of 36". Attach the pipe supports to the manhole with 5/8" stainless steel expansion bolts or embed the supports into the manhole wall 2".
- The vertical riser stem of the flow restrictor shall be the same diameter as the horizontal outlet pipe with a minimum diameter of 8".
- The flow restrictor shall be fabricated from one of the following materials:
 - 0.060" Corrugated Aluminum Alloy Drain Pipe
 - 0.064" Corrugated Galvanized Steel Drain Pipe with Treatment 1
 - 0.064" Corrugated Aluminumized Steel Drain Pipe
 - 0.060" Aluminum alloy flat sheet, in accordance with ASTM B 209, 5052 H32 or EPS High Density Polyethylene Storm Sewer Pipe
- The frame and ladder or steps are to be offset so that the shear gate is visible from the top; the climb-down space is clear of the riser and gate; the frame is clear of the curb.
- The multi-orifice elbows may be located as shown, or all placed on one side of the riser to assure ladder clearance. The size of the elbows and their placement shall be specified in the Contract.
- Restrictor plate with orifice as specified in the Contract. The opening is to be cut round and smooth.
- The shear gate shall be made of aluminum alloy in accordance with ASTM B 26 and ASTM B 275, designation ZG32A; or cast iron in accordance with ASTM A 48, Class 30B.
- The lift handle shall be made of a similar metal to the gate (to prevent galvanic corrosion), it may be of solid rod or hollow tubing, with adjustable hook as required.
- A neoprene rubber gasket is required between the riser mounting flange and the gate flange. Install the gate so that the level-line mark is level when the gate is closed.
- The mating surfaces of the lid and the body shall be machined for proper fit.
- All shear gate bolts shall be stainless steel.
- The shear gate maximum opening shall be controlled by limited hinge movement, a stop tab, or some other device.
- Alternative shear gate designs are acceptable if material specifications are met and flange bolt pattern matches.



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MATTHEW J. WITECKI
 STATE OF WASHINGTON
 155568
 PROFESSIONAL ENGINEER

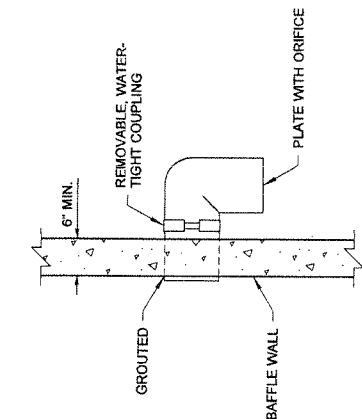
EXPIRES JULY 1, 2007

**CATCH BASIN TYPE 2
 WITH FLOW RESTRICTOR**
STANDARD PLAN B-10.40-00
 SHEET 1 OF 1 SHEET

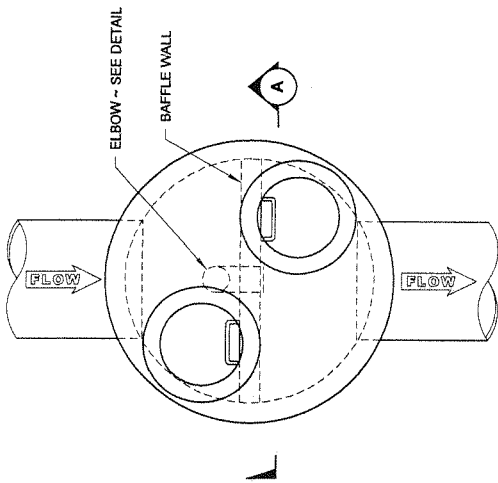
APPROVED FOR PUBLICATION
Harold J. Peterfeso 06-01-06
 STATE DESIGN ENGINEER DATE
 Washington State Department of Transportation

NOTES

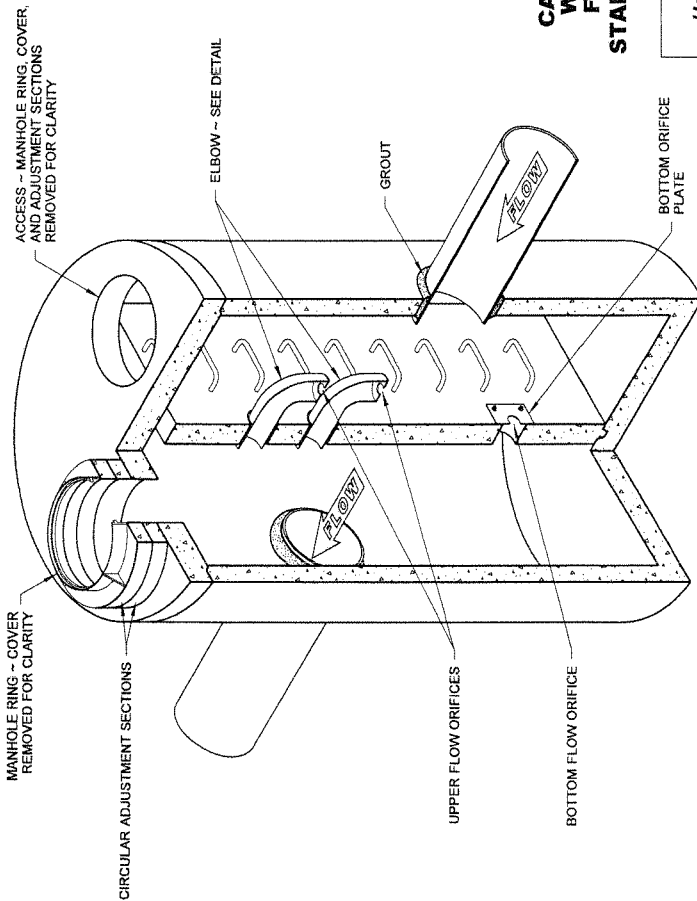
1. See Contract for size and location of all pipes and orifices.
2. Baffle wall shall have #4 Bar at 12" spacing each way.
3. Precast baffle shall be keyed and grouted in place.
4. Bottom orifice plate shall be galvanized steel with a minimum thickness of 1/4". Attach orifice with 1/2" stainless steel bolts.
5. Upper flow orifice plates and elbows shall be aluminum, aluminumized steel or galvanized steel. Galvanized steel shall have Treatment 1.



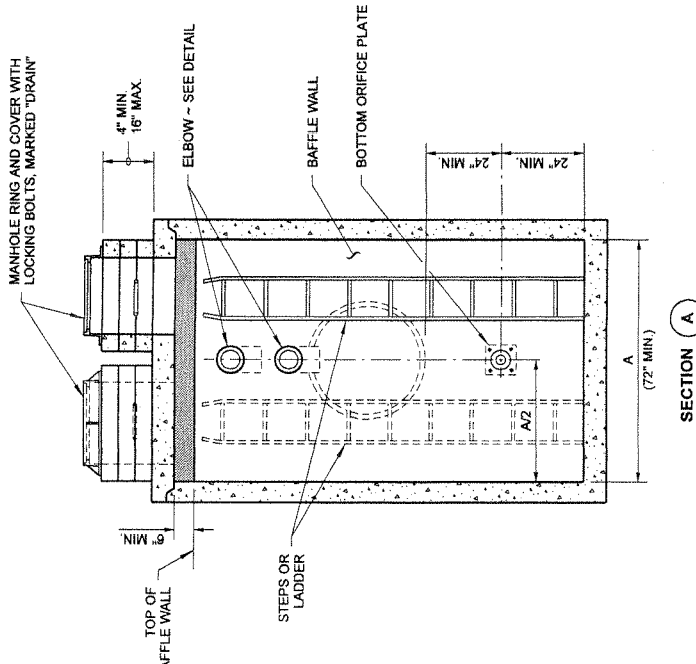
ELBOW DETAIL



PLAN



ISOMETRIC CUTAWAY



SECTION A

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MATTHEW J. WITECKI
 STATE OF WASHINGTON
 LICENSE NO. 15558
 PROFESSIONAL ENGINEER
 EXPIRES JULY 1, 2007

**CATCH BASIN TYPE 2
 WITH BAFFLE TYPE
 FLOW RESTRICTOR**
STANDARD PLAN B-10.60-00

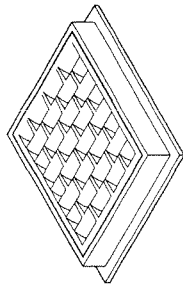
SHEET 1 OF 1 SHEET
 APPROVED FOR PUBLICATION
Harold J. Peterfeso 06-08-06
 STATE DESIGN ENGINEER DATE
 Washington State Department of Transportation

PIPE ALLOWANCES	
PIPE MATERIAL	MAXIMUM INSIDE DIAMETER
REINFORCED OR PLAIN CONCRETE	12"
ALL METAL PIPE	15"
CPSSP * (STD. SPEC. 9-05.20)	12"
SOLID WALL PVC (STD. SPEC. 9-05.12(1))	15"
PROFILE WALL PVC (STD. SPEC. 9-05.12(2))	15"

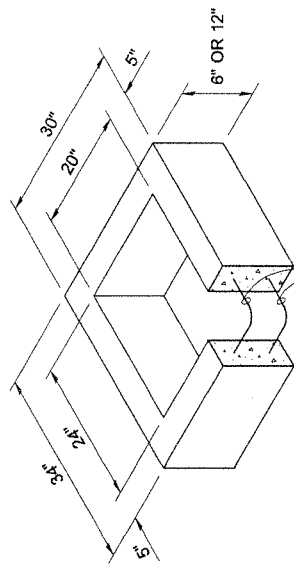
* CORRUGATED POLYETHYLENE STORM SEWER PIPE

NOTES

- As acceptable alternatives to the rebar shown in the **PRECAST BASE SECTION**, fibers (placed according to the Standard Specifications), or **wire mesh** having a minimum area of 0.12 square inches per foot shall be used with the minimum required rebar shown in the **ALTERNATIVE PRECAST BASE SECTION**. Wire mesh shall not be placed in the knockouts.
- The knockout diameter shall not be greater than 18". Knockouts shall have a wall thickness of 2" minimum to 2.5" maximum. Provide a 1.5" minimum gap between the knockout wall and the outside of the pipe. After the pipe is installed, fill the gap with joint mortar in accordance with Standard Specification 9-04.3.
- The maximum depth from the finished grade to the lowest pipe invert shall be 5'.
- The frame and grate may be installed with the flange up or down. The frame may be cast into the adjustment section.
- The Precast Base Section may have a rounded floor, and the walls may be sloped at a rate of 1:24 or steeper.
- The opening shall be measured at the top of the precast base section.
- All pickup holes shall be grouted full after the inlet has been placed.

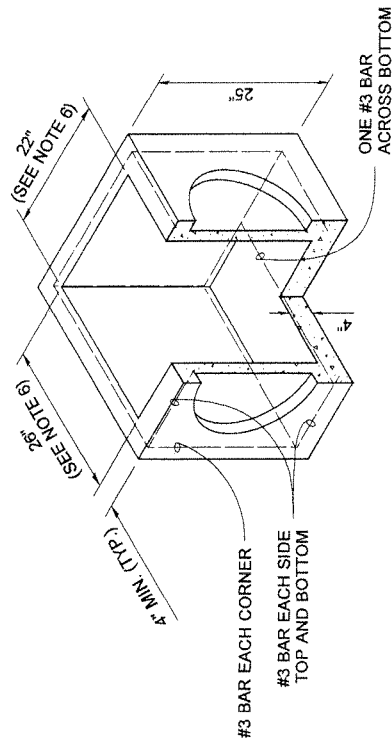


FRAME AND VANED GRATE

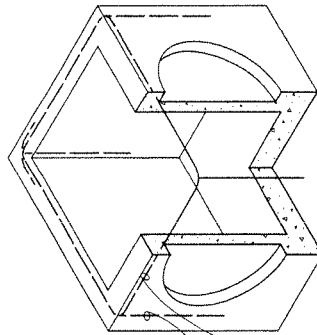


ONE #3 BAR HOOP FOR 6" HEIGHT
TWO #3 BAR HOOPS FOR 12" HEIGHT

RECTANGULAR ADJUSTMENT SECTION



PRECAST BASE SECTION

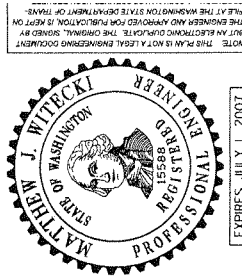


#3 BAR EACH CORNER
18" MIN.

#3 BAR HOOP

SEE NOTE 1

ALTERNATIVE PRECAST BASE SECTION



EXPIRES JULY 1, 2007

CONCRETE INLET

STANDARD PLAN B-25.60-01

SHEET 1 OF 1 SHEET

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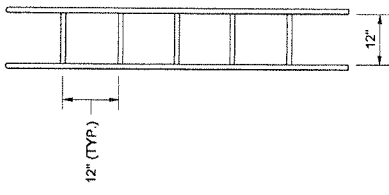
Washington State Department of Transportation



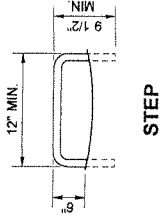
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NOTE

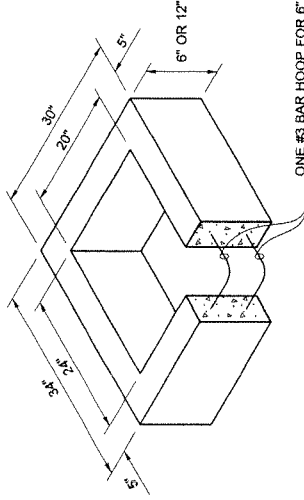
Ladder rungs for manholes and catch basins shall meet the requirements of AASHTO M 199.



PREFABRICATED LADDER

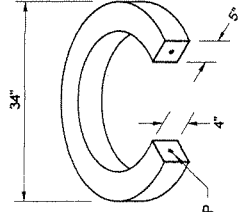


STEP

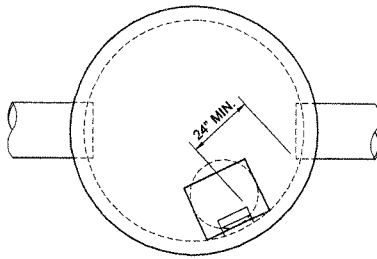


RECTANGULAR ADJUSTMENT SECTION

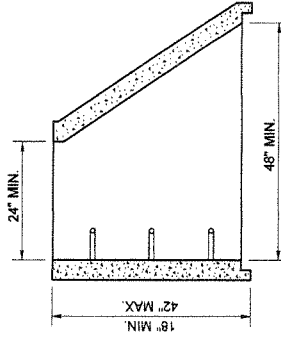
As an acceptable alternative to rebar, wire mesh having a minimum area of 0.12 square inches per foot may be used for adjustment sections.



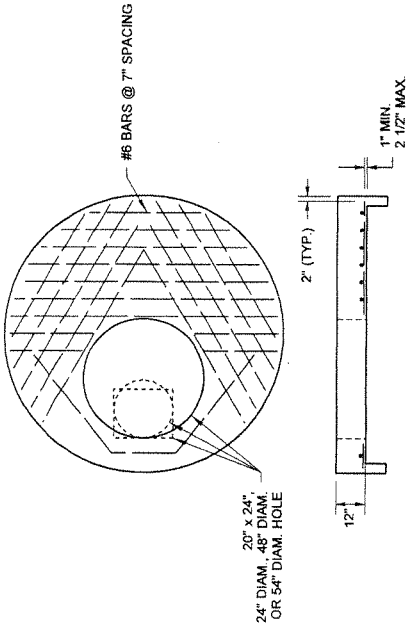
CIRCULAR ADJUSTMENT SECTION



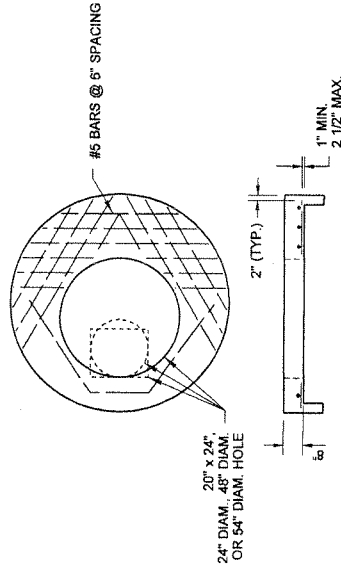
TYPICAL ORIENTATION FOR ACCESS AND STEPS



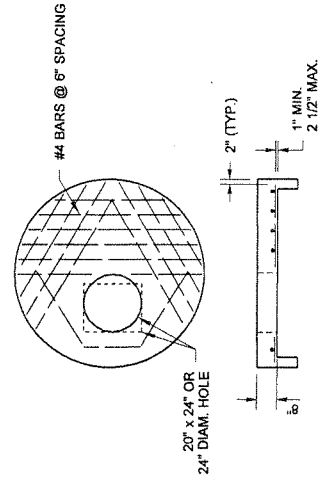
ECCENTRIC CONE SECTION



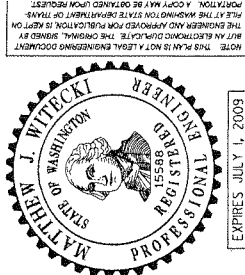
84" or 96" FLAT SLAB TOP



72" FLAT SLAB TOP

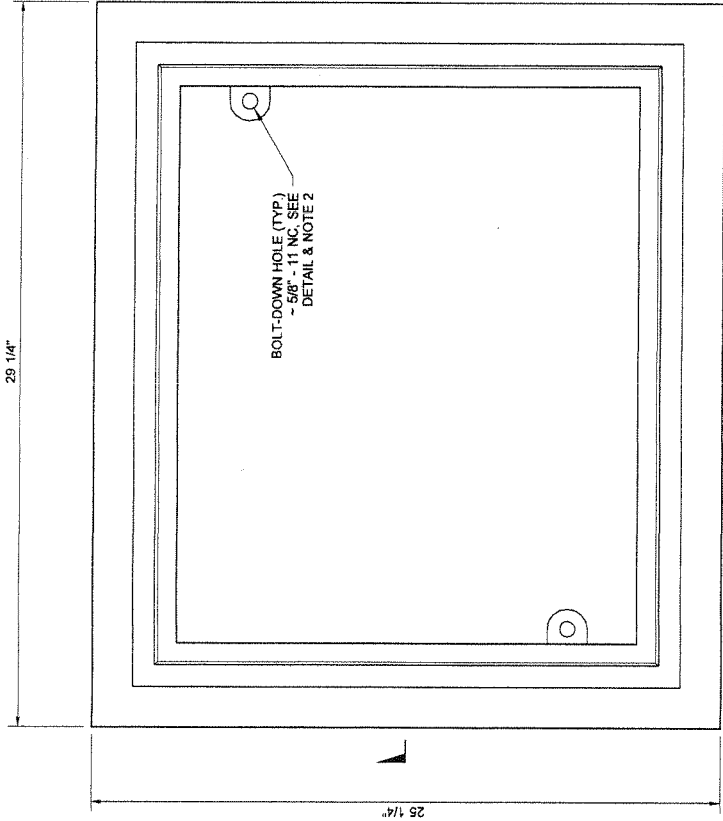


48", 54", or 60" FLAT SLAB TOP



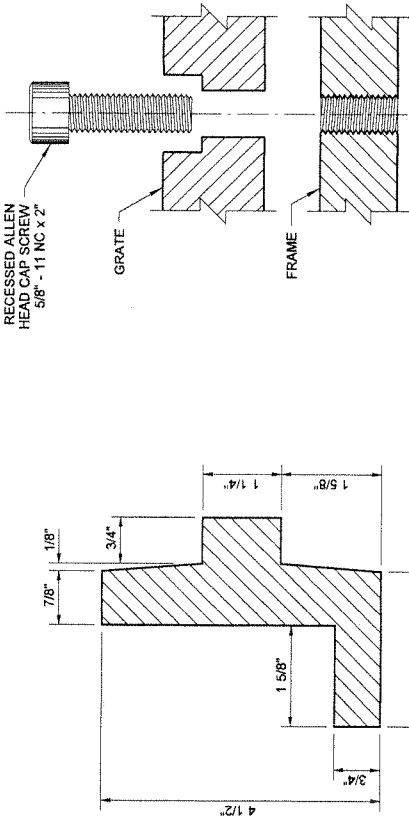
MISCELLANEOUS DETAILS FOR DRAINAGE STRUCTURES STANDARD PLAN B-30.90-01

SHEET 1 OF 1 SHEET
 APPROVED FOR PUBLICATION
Pasco Bakotich III 09-20-07
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NOTES

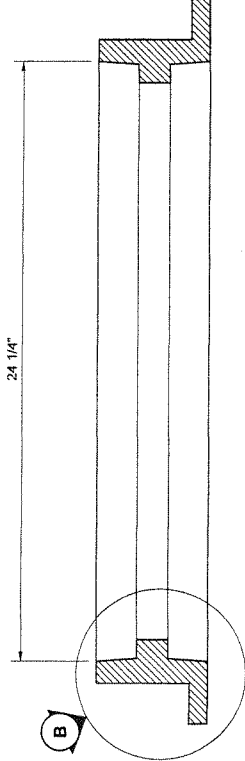
1. This frame is designed to accommodate 20" x 24" grates or covers as shown on Standard Plans B-30.20, B-30.30, B-30.40 and B-30.50.
2. When bolt-down grates or covers are specified in the Contract, provide two holes in the frame that are vertically aligned with the grate or cover slots. In each hole to accept a 5/8" - 11 NC x 2" allen head cap screw. Location of bolt down holes varies among different manufacturers.
3. Refer to Standard Specification 9-05.15(2) for additional requirements.



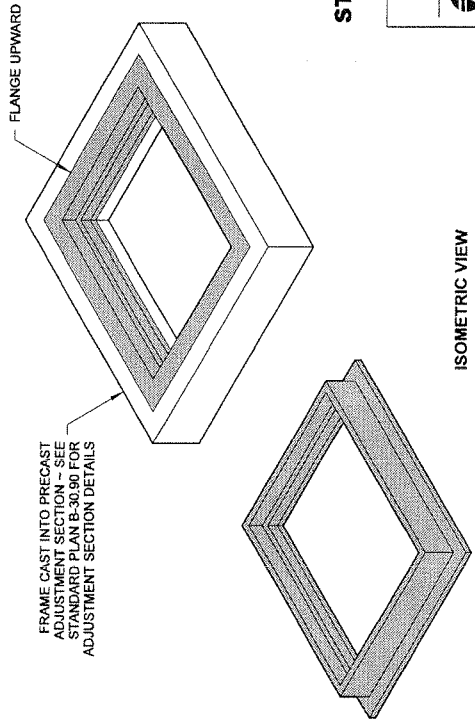
SECTION B-B
BOLT-DOWN DETAIL
SEE NOTE 2

DETAIL B

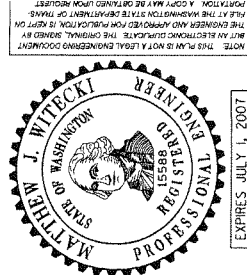
TOP



SECTION A-A



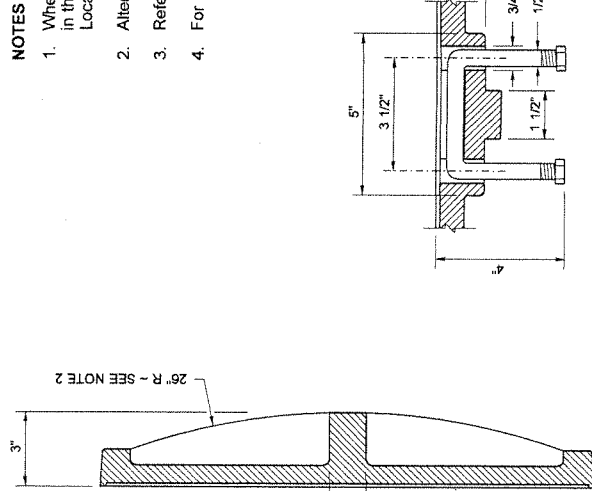
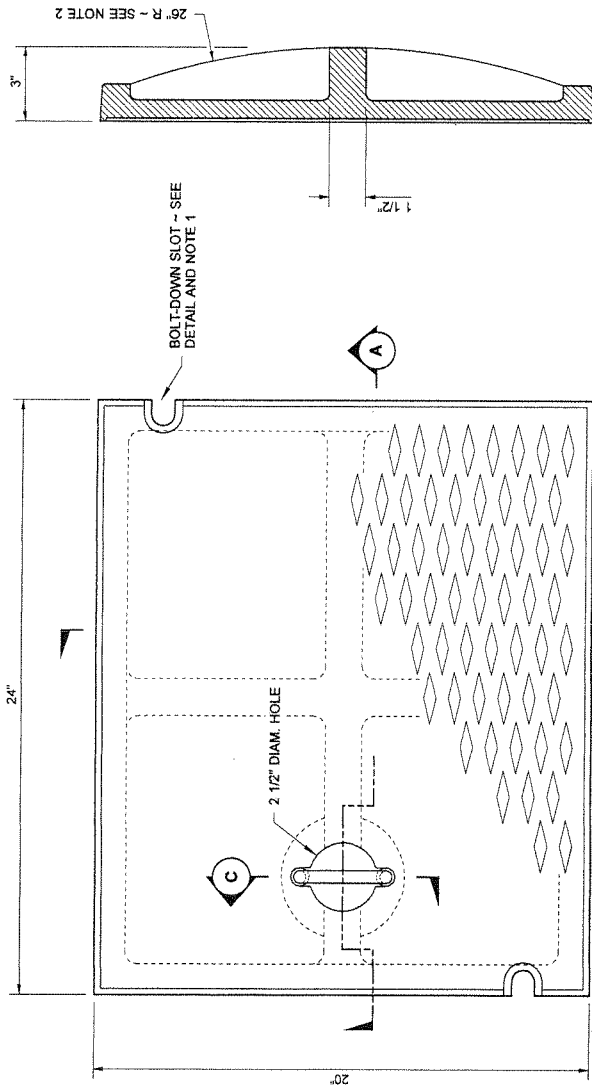
ISOMETRIC VIEW
SHOWING THE VARIATIONS



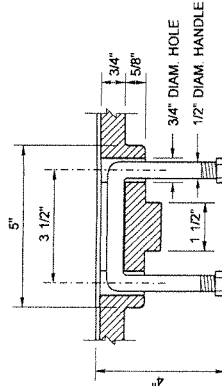
RECTANGULAR FRAME (REVERSIBLE)

STANDARD PLAN B-30.10-00

SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION
Harold J. Peterfeso 06-08-06
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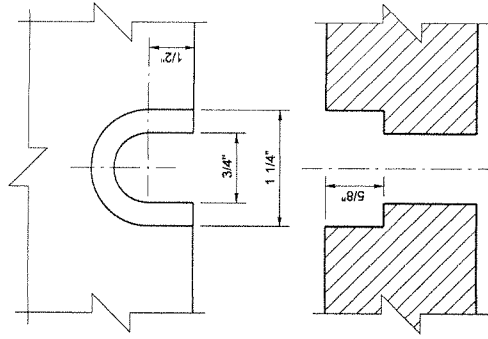


SECTION B

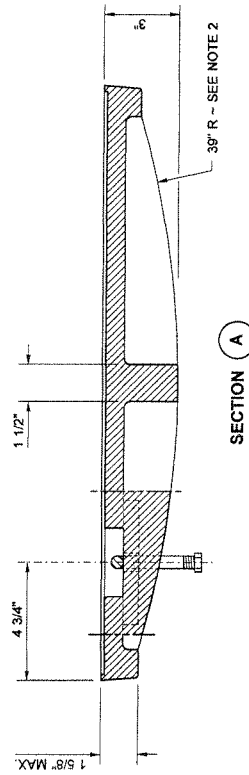


SECTION C

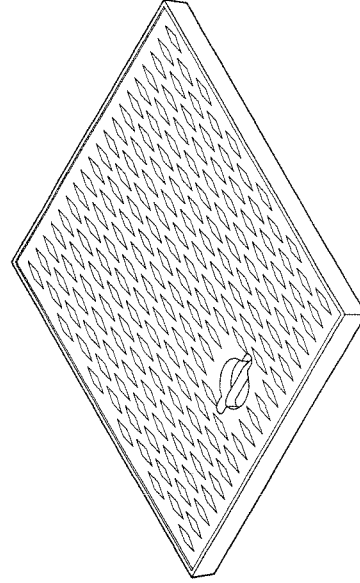
- NOTES**
- When bolt-down covers are specified in the Contract, provide two slots in the cover that are vertically aligned with the holes in the frame. Location of bolt-down slots varies among different manufacturers.
 - Alternative reinforcing designs are acceptable in lieu of the rib design.
 - Refer to Standard Specification 9-05.15(2) for additional requirements.
 - For frame details, see Standard Plan B-30.10.



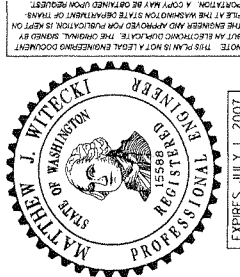
BOLT-DOWN SLOT DETAIL
SEE NOTE 1



SECTION A



ISOMETRIC



EXPIRES: JULY 1, 2007

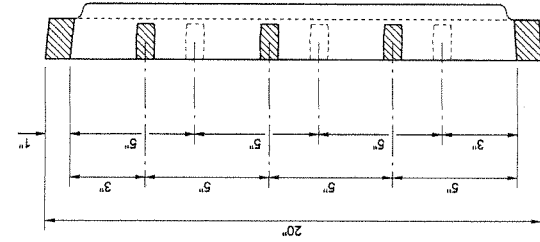
**RECTANGULAR SOLID
METAL COVER
STANDARD PLAN B-30.20-01**

SHEET 1 OF 1 SHEET

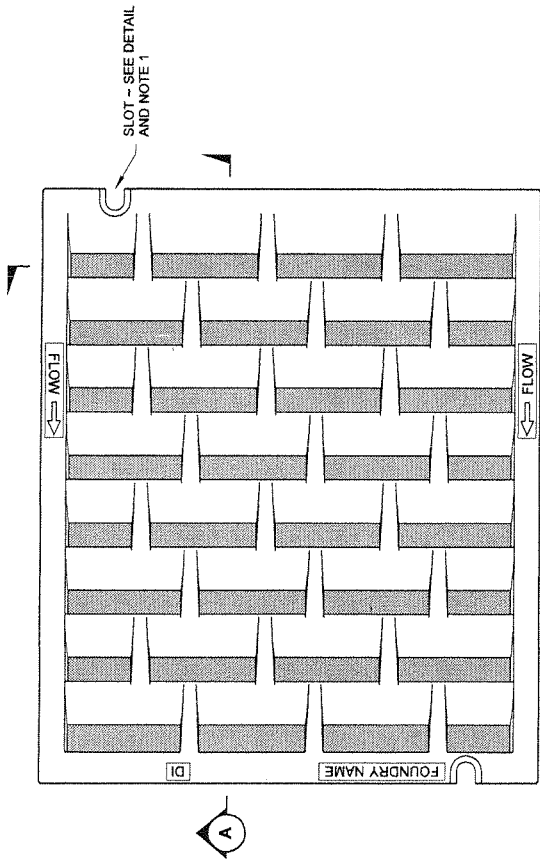
APPROVED FOR PUBLICATION
Kevin J. Dayton 11-21-06
 STATE DESIGN ENGINEER DATE
 Washington State Department of Transportation

NOTES

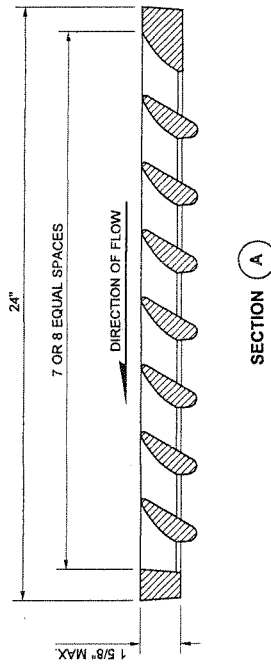
1. When bolt-down grates are specified in the Contract, provide two slots in the grate that are vertically aligned with the holes in the frame. Location of bolt-down slots varies among different manufacturers.
2. Refer to Standard Specification 9-05.15(2) for additional requirements.
3. For Frame details, see Standard Plan B-30.10.



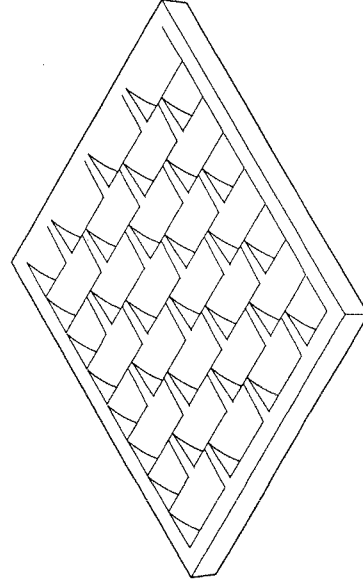
SECTION B



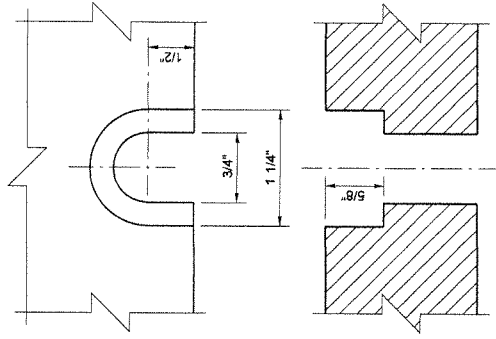
TOP



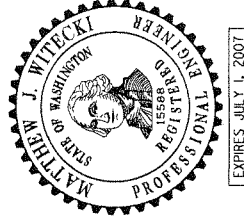
SECTION A



ISOMETRIC



BOLT-DOWN SLOT DETAIL
SEE NOTE 1



**RECTANGULAR
VANED GRATE**

STANDARD PLAN B-30.30-01

SHEET 1 OF 1 SHEET

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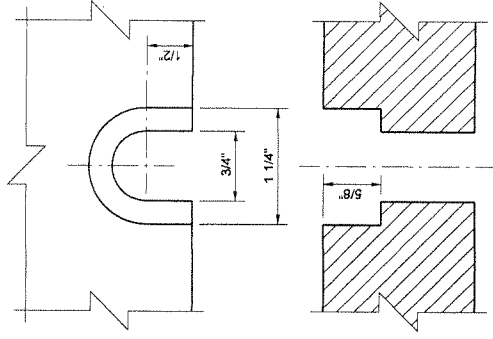
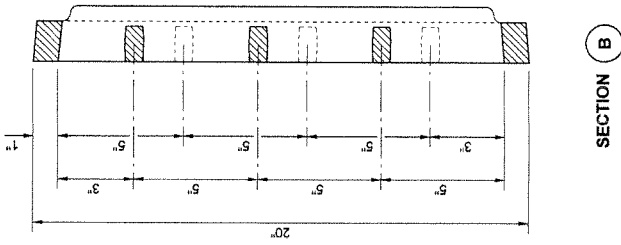
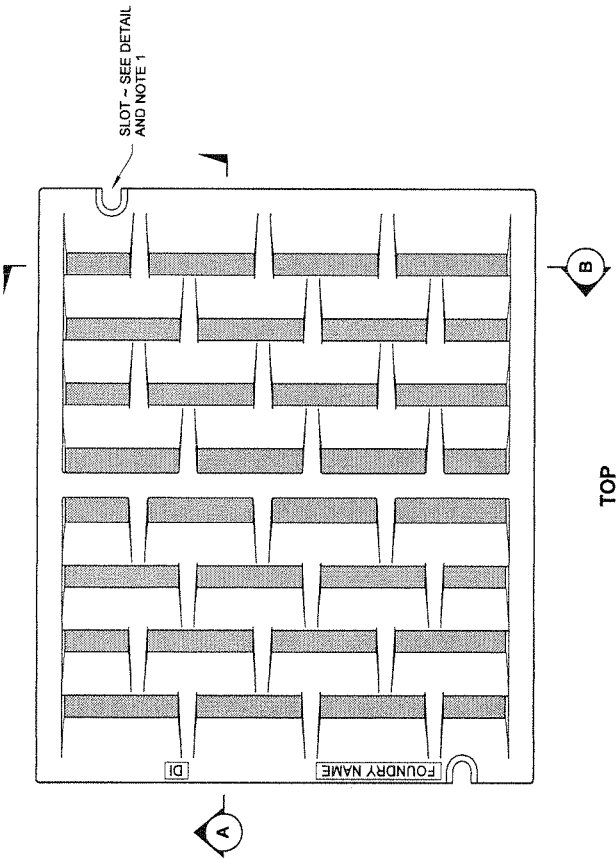
STATE DESIGN ENGINEER DATE

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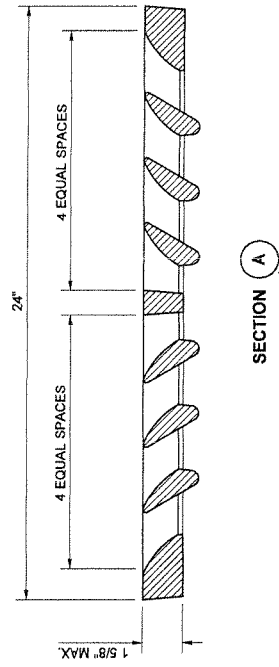
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NOTES

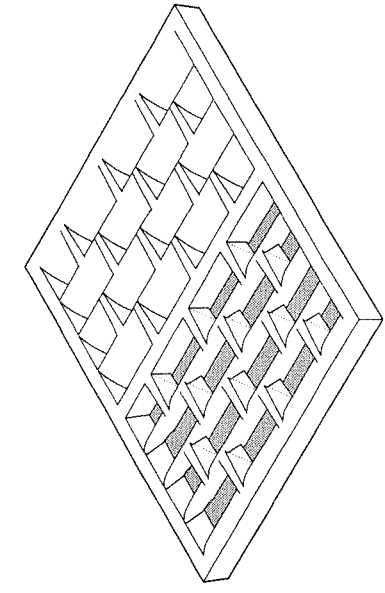
1. When bolt-down grates are specified in the Contract, provide two slot in the grate that are vertically aligned with the holes in the frame. Location of bolt-down slots varies among different manufacturers.
2. Refer to Standard Specification 9-05.15(2) for additional requirements
3. For Frame details, see Standard Plan B-30.10.



BOLT-DOWN SLOT DETAIL
SEE NOTE 1



SECTION A



ISOMETRIC

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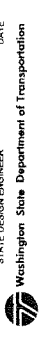
EXPIRES: JULY 1, 2007

**RECTANGULAR
BI-DIRECTIONAL
VANED GRATE
STANDARD PLAN B-30.40-01**

SHEET 1 OF 1 SHEET

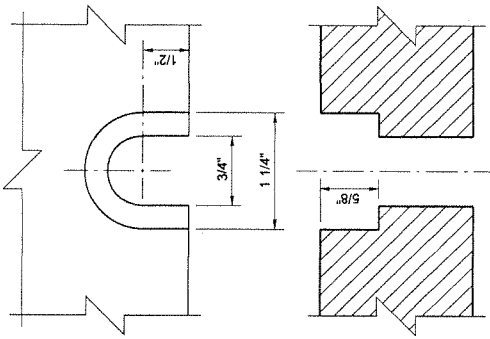
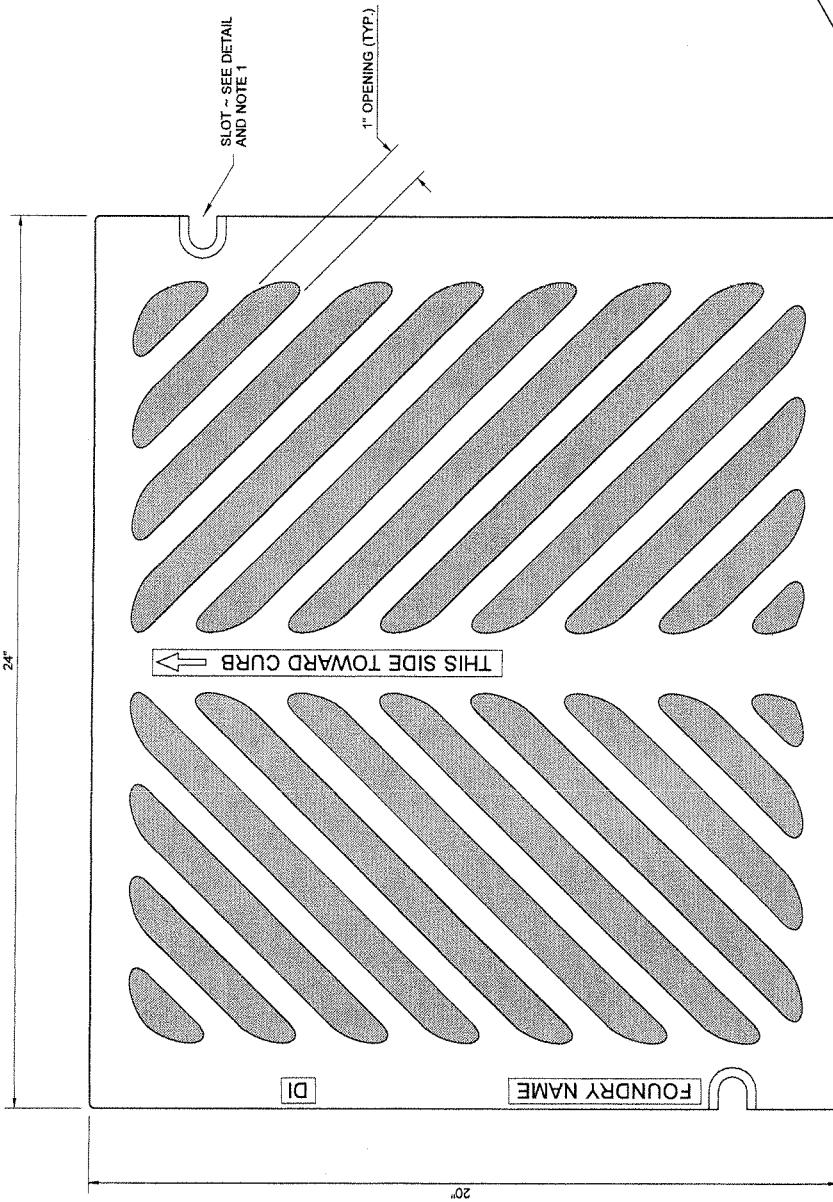
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Harold J. Peterfeso 06-01-06
STATE DESIGN ENGINEER DATE

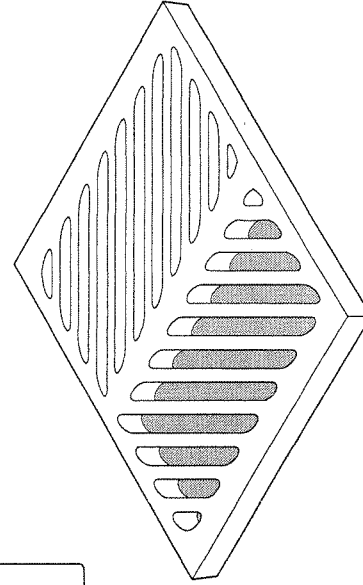


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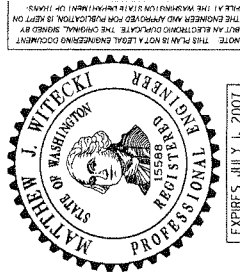
1. When bolt-down grates are specified in the Contract, provide two slots in the grate that are vertically aligned with the holes in the frame. Location of bolt-down slots varies among different manufacturers.
2. Refer to Standard Specification 9-05.15(2) for additional requirements.
3. For Frame details, see Standard Plan B-30.10.
4. The thickness of the grate shall not exceed 1 5/8".



BOLT-DOWN SLOT DETAIL
SEE NOTE 1



ISOMETRIC

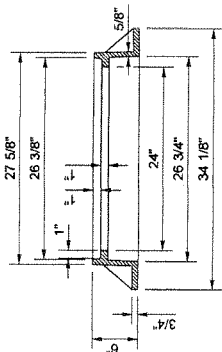
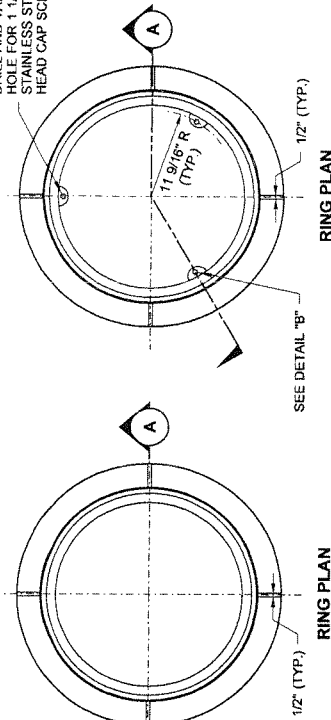


**RECTANGULAR
HERRINGBONE GRATE
STANDARD PLAN B-30.50-01**

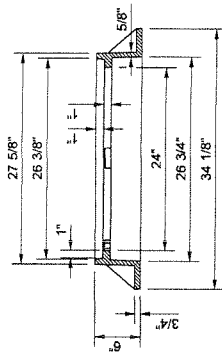
SHEET 1 OF 1 SHEET
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STATE DESIGN ENGINEER DATE
Washington State Department of Transportation

DRAWN BY: ELENA BRUNSTEN

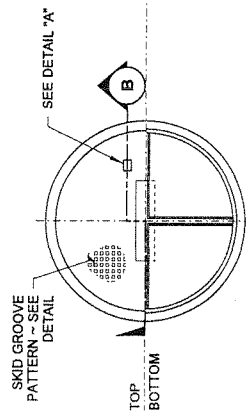
DRILL AND TAP 5/8" - 11NC
FOR 1/2" X 5/8" SOCKET
STAINLESS STEEL SOCKET
HEAD CAP SCREW (TYP.)



RING SECTION A

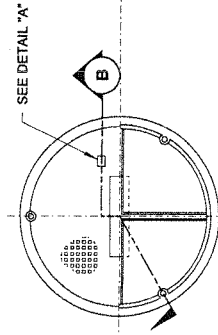


RING SECTION A



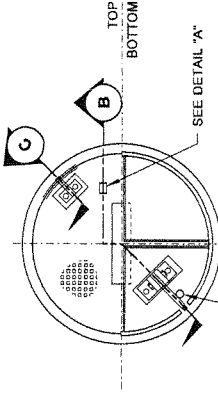
COVER PLAN

SKID GROOVE PATTERN - SEE DETAIL 'A'



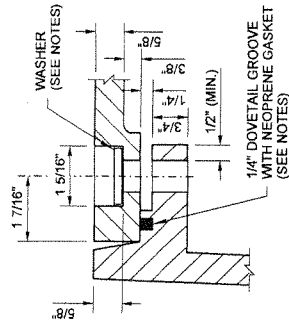
COVER PLAN

COVER SECTION B

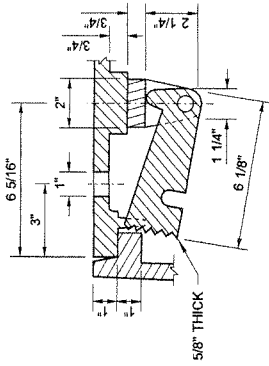


COVER PLAN

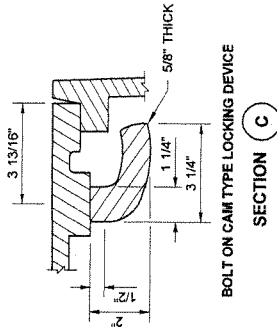
COVER SECTION B



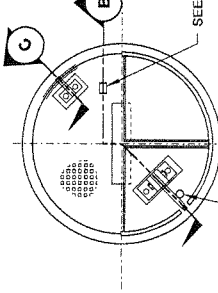
BOLT-DOWN / WATERTIGHT
DETAIL "B"



BOLT ON CAM TYPE LOCKING DEVICE
DETAIL "C"

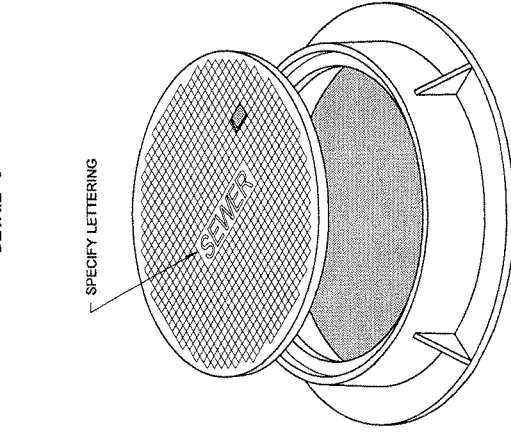


BOLT ON CAM TYPE LOCKING DEVICE
SECTION C



COVER PLAN

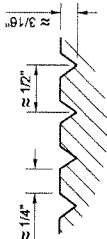
COVER SECTION B



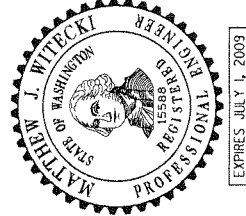
ISOMETRIC VIEW

NOTES

1. The gasket and groove may be in the sea (frame) or in the underside of the cover. The gasket may be "I" shaped in section. The groove may be cast or machined.
2. For bolt-down manhole ring and covers that are not designated "Watertight", the neoprene gasket, groove and washer are not required.
3. Washer shall be neoprene (Detail "B").
4. In lieu of blind pick notch for storm sewer manhole covers, drill three 1" diameter holes at 120° spacing.
5. Proprietary manhole covers without bottom ribs are acceptable.
6. For clarity, the vertical scale of the Cover Section has been exaggerated, it is 1.5 times the horizontal scale (1H:1.5V).



SKID GROOVE PATTERN
DETAIL



**CIRCULAR FRAME (RING)
AND COVER**
STANDARD PLAN B-30-70-0'

SHEET 1 OF 1 SHEET
APPROVED FOR PUBLICATION

Pasco Bakotich III 08-31-07
STATE DESIGN ENGINEER DATE
Washington State Department of Transportation

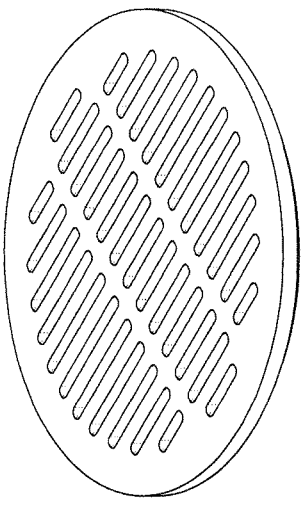
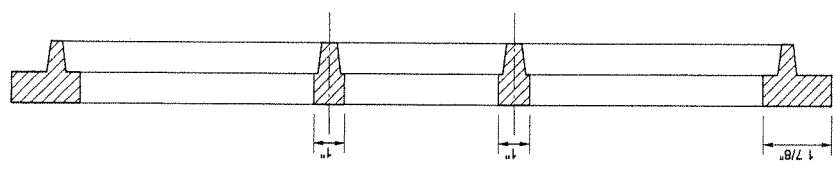
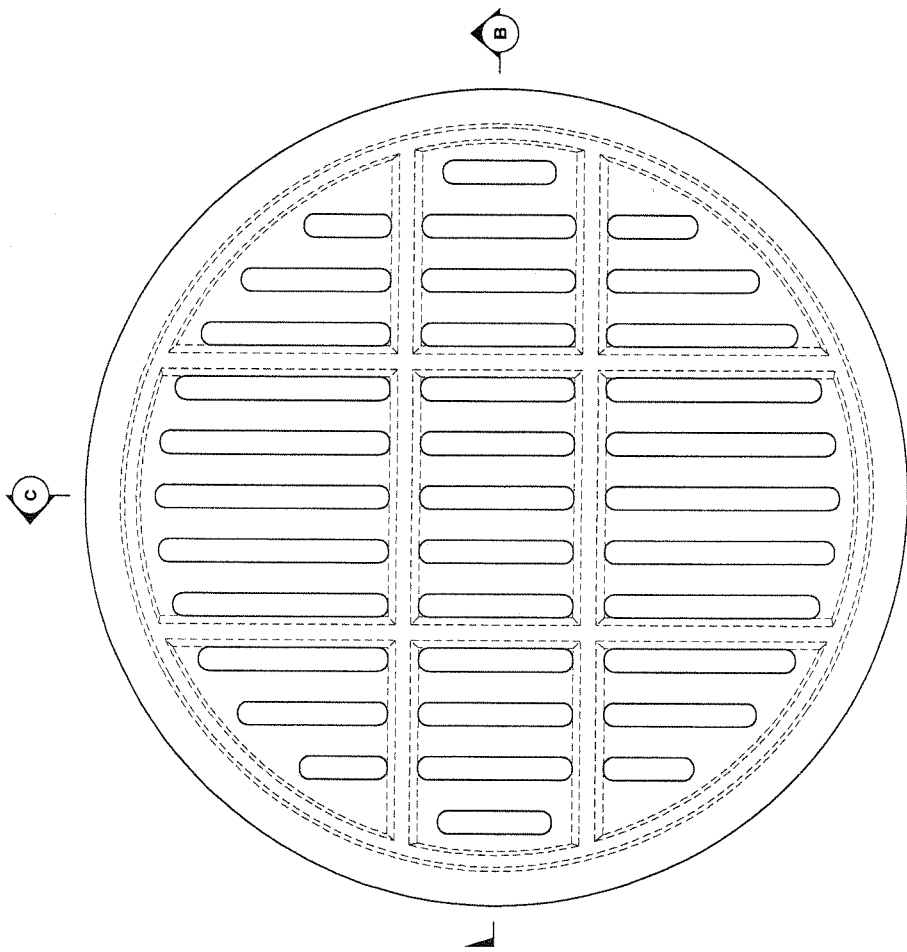
CAMLOCK
TYPE 3

BOLT-DOWN / WATERTIGHT
TYPE 2

STANDARD
TYPE 1

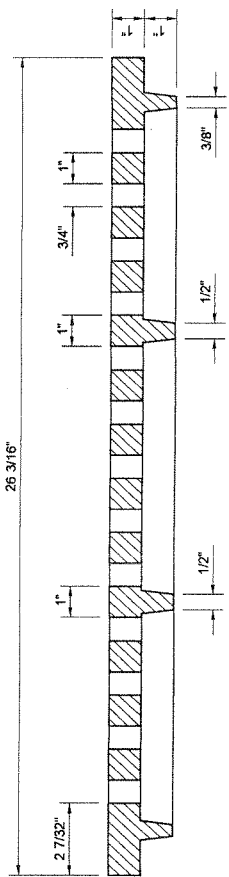
NOTES

1. For use with Circular Frames (rings) detailed in Standard Plan B-30.7.
2. Slotted Manhole Covers are intended for use with Drywells only. See Standard Plans B-20.20 and B-20.60.



ISOMETRIC VIEW

SECTION C



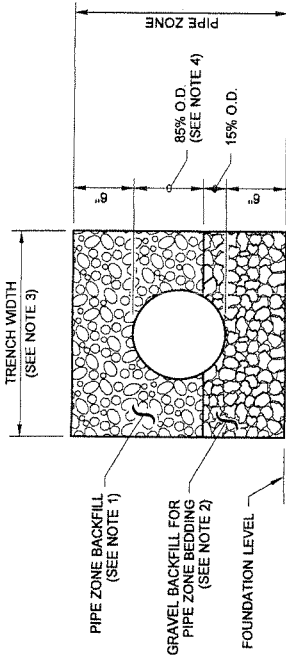
SECTION B

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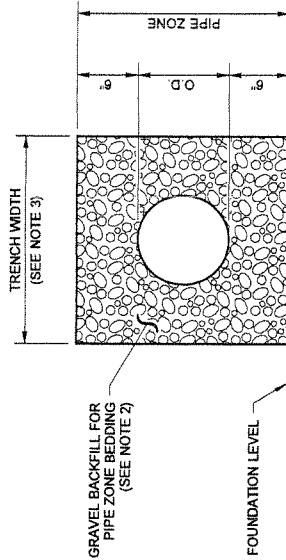
MATTHEW J. WITRECK
STATE OF WASHINGTON
LICENSE NO. 155888
PROFESSIONAL ENGINEER
EXPIRES: JULY 1, 2007

CIRCULAR GRATE
STANDARD PLAN B-30.80-01
SHEET 1 OF 1 SHEET

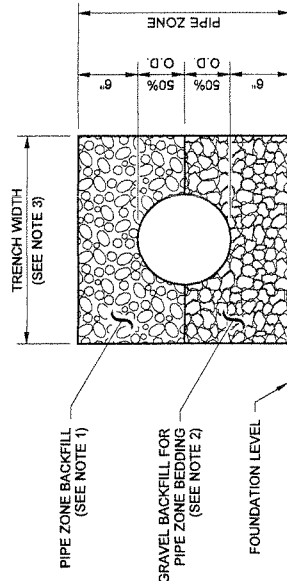
APPROVED FOR PUBLICATION
Harold J. Peterfeso 06-08-06
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CONCRETE AND DUCTILE IRON PIPE



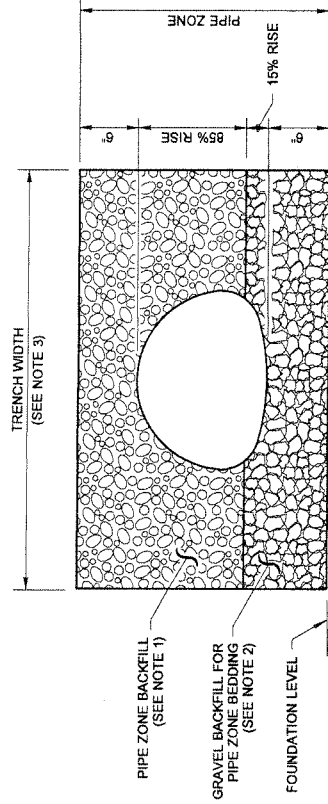
THERMOPLASTIC PIPE



METAL PIPE

NOTES

1. See Standard Specifications Section 7-08.3(3) for Pipe Zone Backfill.
2. See Standard Specifications Section 9-03.12(3) for Gravel Backfill for Pipe Zone Bedding.
3. See Standard Specifications Section 2-09.4 for Measurement of Trench Width.
4. For sanitary sewer installation, concrete pipe shall be bedded to spring line.



PIPE ARCHES

CLEARANCE BETWEEN PIPES FOR MULTIPLE INSTALLATIONS		
PIPE	SIZE	MINIMUM DISTANCE BETWEEN BARRELS
CIRCULAR PIPE (DIAMETER)	12" to 24"	12"
	30" to 96"	DIAM. / 2
	102" to 180"	48"
PIPE ARCH (SPAN)	18" to 36"	12"
	43" to 142"	SPAN / 3
METAL ONLY	148" to 200"	48"

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 MATEER J. WITTECK
 STATE OF WASHINGTON
 15588
 REGISTERED PROFESSIONAL ENGINEER
 EXPIRES JULY 1, 2007

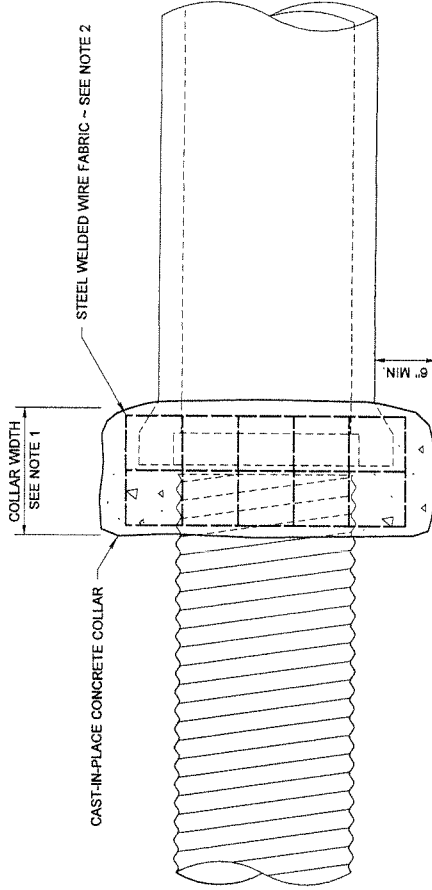
PIPE ZONE BEDDING AND BACKFILL
STANDARD PLAN B-55.20-00
 SHEET 1 OF 1 SHEET

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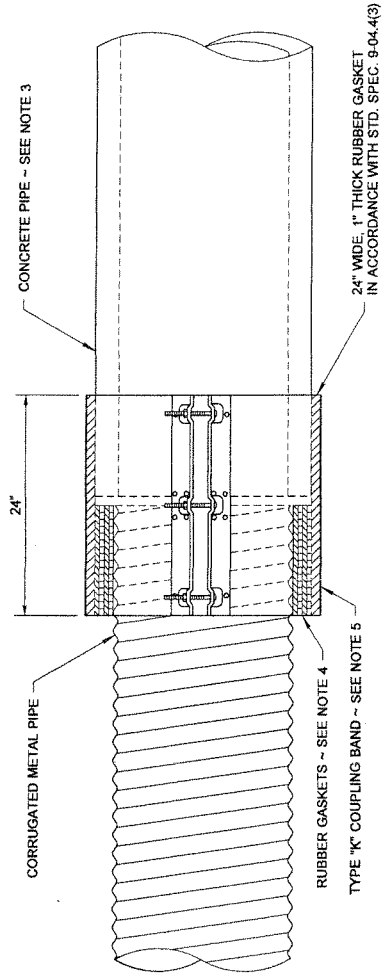
DATE
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NOTES

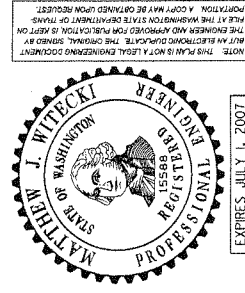
1. The Concrete Collar width shall be one half of the outside pipe diameter of the largest pipe. The minimum Concrete Collar width shall be "12". Concrete Collars may be used with all pipe materials and diameters. The Concrete Collar option shall only be used to extend existing pipes.
2. Steel Welded Wire Fabric shall be in accordance with Standard Specification 9-07.7. Install two wraps for size 6 x 6 W1.4 x W1.4 (10 Gage) Steel Welded Wire Fabric or one wrap for any of the following sizes:
 6 x 6 W2.1 x W2.1 (8 Gage)
 6 x 6 W2.9 x W2.9 (6 Gage)
 4 x 4 W2.9 x W2.9 (6 Gage)
 4 x 4 W4.0 x W4.0 (4 Gage)
3. When a Coupling Band connection requires attachment to the bell end of a concrete pipe, the bell end of the pipe shall be removed before the connection is installed.
4. Increase the outside diameter of the metal pipe to match the outside diameter of the concrete pipe by installing "12" wide rubber gaskets, thickness as required (Coupling Band only). The rubber gaskets shall be in accordance with Standard Specification 9-04.4(3).
5. Use a flat Type K Coupling Band. Type K Coupling Bands with dimples are not allowed for the installation detail shown. The Coupling Band option shall only be used for extending existing pipes that have an inside diameter of 36" or less.



CONCRETE COLLAR OPTION



COUPLING BAND OPTION

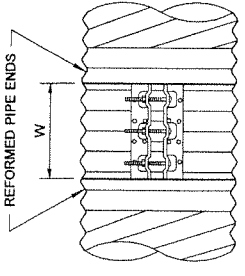


CONNECTION DETAILS FOR DISSIMILAR CULVERT PIPE STANDARD PLAN B-60.20-00

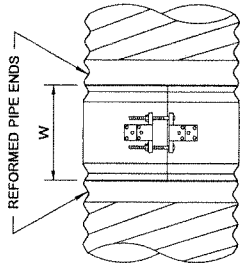
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COUPLING BAND DIMENSION TABLE (ALL DIMENSIONS ARE IN INCHES)				
BAND TYPE	CORRUGATION PITCH x DEPTH	PIPE DIAM	MIN. W	GASKET TYPE
D	2 2/3 x 1/2	12 ~ 84	12	SLEEVE
	OR 3 x 1			
	REFORMED TO 2 2/3 x 1/2			
F	3 x 1	90 ~ 144	24	SLEEVE
	REFORMED TO 2 2/3 x 1/2			
	OR 2 2/3 x 1/2			
J	2 2/3 x 1/2	12 ~ 84	10 1/2	O-RING
	OR 3 x 1			
	REFORMED TO 2 2/3 x 1/2			
K	2 2/3 x 1/2	12 ~ 48	12	BUTYL
	OR 3 x 1			
	REFORMED TO 2 2/3 x 1/2			
D	2 2/3 x 1/2	36 ~ 60	12	SLEEVE
	OR 3 x 1			
	REFORMED TO 2 2/3 x 1/2			
F	2 2/3 x 1/2	12 ~ 48	10 1/2	O-RING
	OR 3 x 1			
	REFORMED TO 2 2/3 x 1/2			
K	2 2/3 x 1/2	12 ~ 48	12	SLEEVE
	OR 3 x 1			
	REFORMED TO 2 2/3 x 1/2			

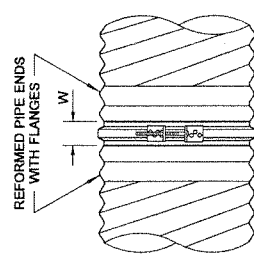
* PIPE ARCH ONLY



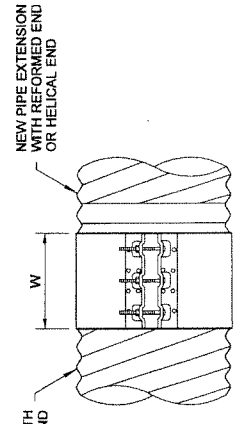
TYPE D
ANNULAR CORRUGATED BAND



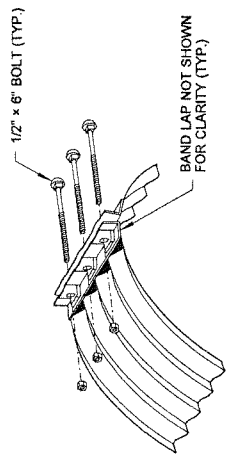
TYPE F
SEMI-CORRUGATED BAND



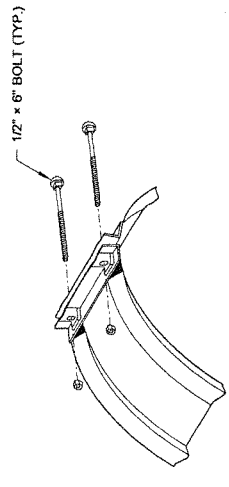
TYPE J
FLANGE BAND



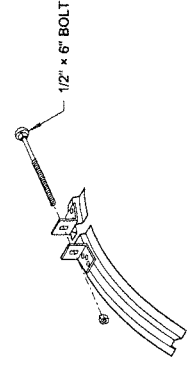
TYPE K
FLAT BAND OR DIMPLE BAND



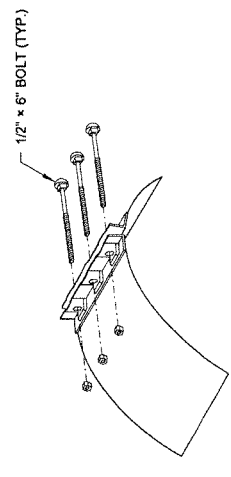
TYPE D
BAND ANGLE CONNECTOR DETAIL



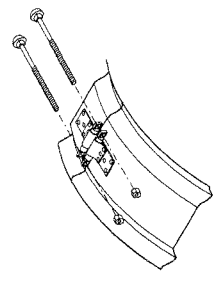
TYPE F
BAND ANGLE CONNECTOR DETAIL



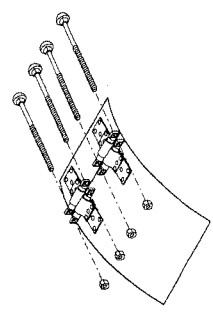
TYPE J
BAND ANGLE CONNECTOR DETAIL



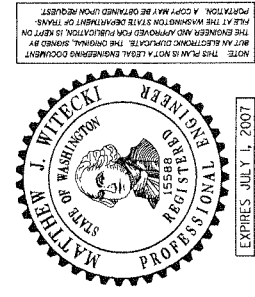
TYPE K
BAND ANGLE CONNECTOR DETAIL



TYPE F
BAR & STRAP CONNECTOR DETAIL



TYPE K
DOUBLE BAR & STRAP CONNECTOR DETAIL



COUPLING BANDS FOR CORRUGATED METAL PIPE
STANDARD PLAN B-60-40-00
SHEET 1 OF 1 SHEET

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STATE DESIGN ENGINEER
Washington State Department of Transportation
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