

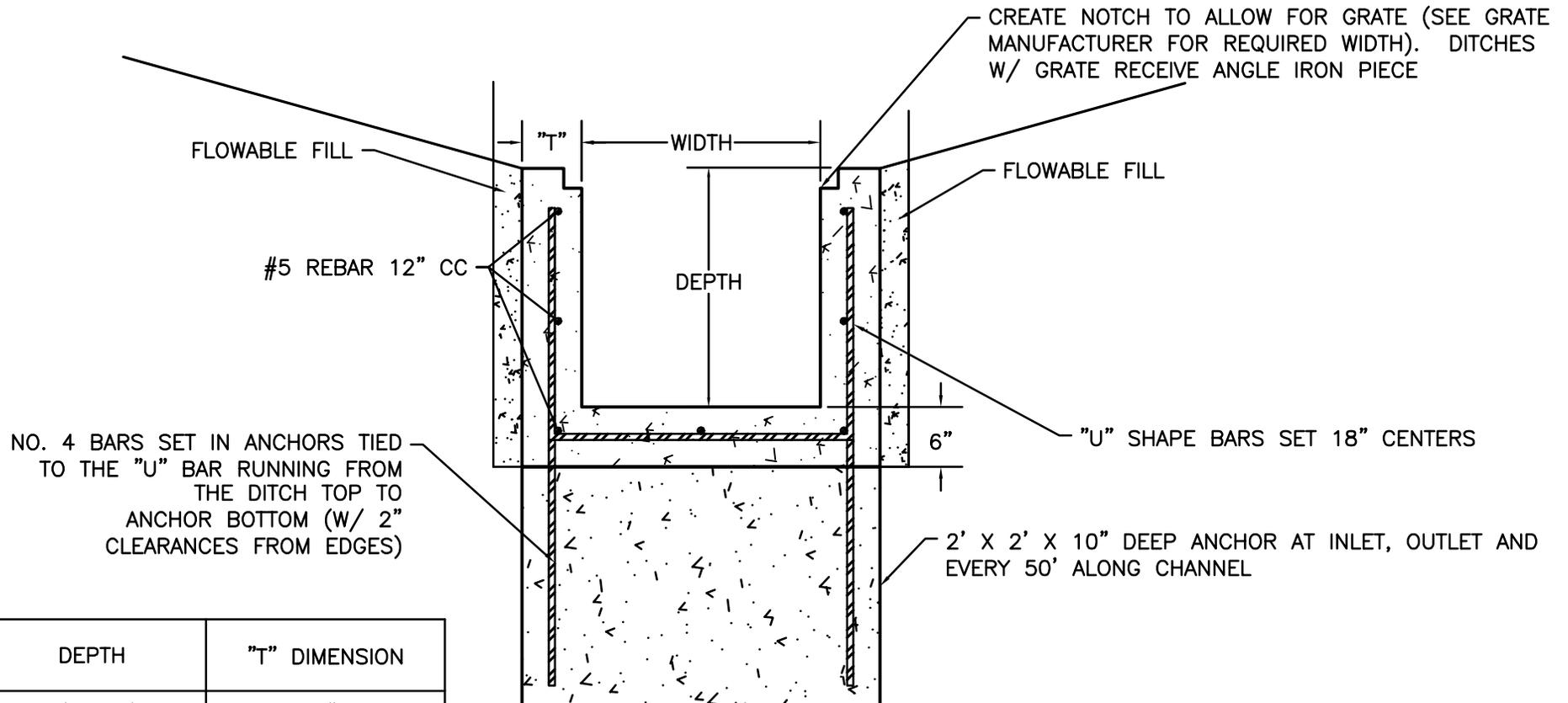
CONSTRUCTION JOINT

SEE AML 30-60-3 FOR ADDITIONAL DETAILS

CONSTRUCTION JOINTS SHALL BE PLACED A MINIMUM OF 10' & A MAXIMUM OF 20'. SEE "STEEL" SECTION OF AML TECHNICAL SPECIFICATION FOR BAR SPLICES & EMBEDMENT INFORMATION.

ALL STEEL REINFORCEMENT SHALL BE 60 KSI. ALL CONCRETE IS 4,000 PSI WITH FIBER REINFORCEMENT.

SEE DESIGN PLANS AND SPECIAL CONDITIONS FOR DITCH SIZES AND IF GRATE IS REQUIRED (INCIDENTAL). GRATES SITE UPON AN ANCHORED ANGLE IRON PLATE THAT SERVES AS A POINT TO ATTACH GRATE TO DITCH USING BOLTS INTO THE PLATE.



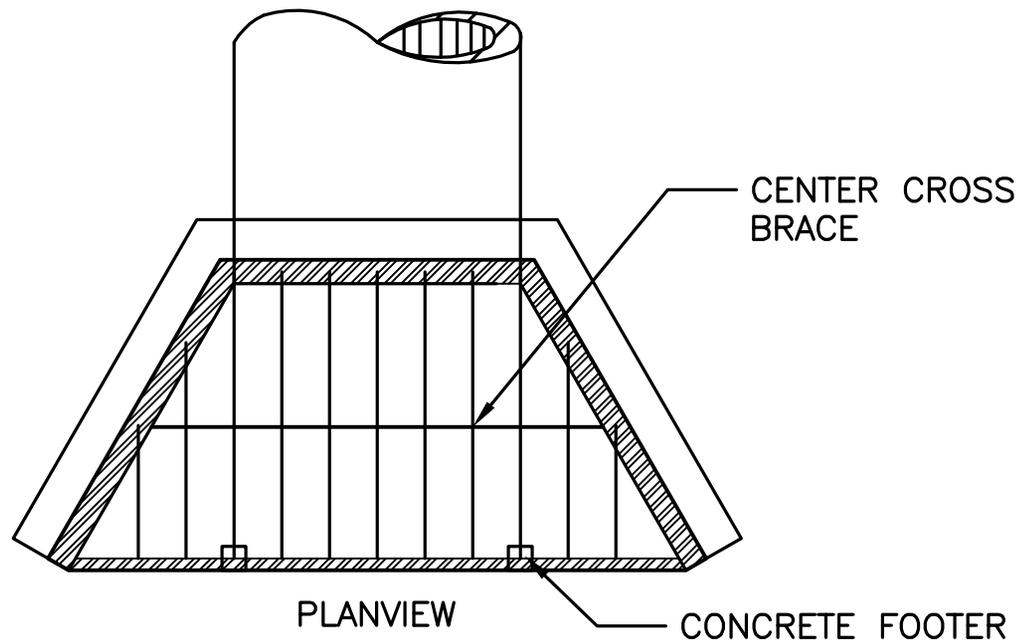
NO. 4 BARS SET IN ANCHORS TIED TO THE "U" BAR RUNNING FROM THE DITCH TOP TO ANCHOR BOTTOM (W/ 2" CLEARANCES FROM EDGES)

DEPTH	"T" DIMENSION
0' - 3'	6"
3.1' - 6'	10"

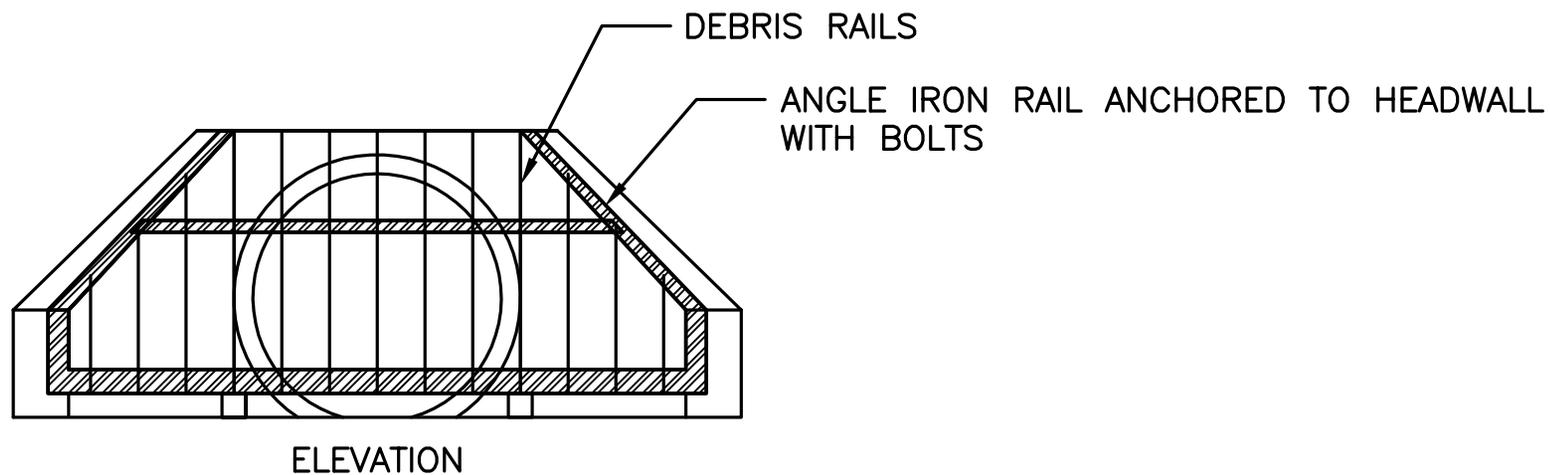
ALL REBAR SHALL HAVE 2" MIN CLEARANCE. INSTALL SIDEWALLS COMPLETELY BELOW GROUNDLINE. UNITS MAY BE PRE-CAST WITH ENGINEER'S PRIOR APPROVAL.

FOR GRATES USE WITH AML 24-50-1

CONCRETE DITCH- RECTANGULAR (AML 21-50-3)



1. DEBRIS RAILS SHOULD BE 1.25" RECTANGULAR STEEL SECTIONS SET ON 6" CENTERS.
2. SET CENTER CROSS BRACE AT ELEVATION AT LEAST  $\frac{1}{2}$  PIPE DIA. ABOVE CULVERT INVERT.
3. USE CROSS BARS ONLY ON PIPES >36" UNLESS STATED OTHERWISE ON THE DRAWINGS OR IN THE SPECIAL CONDITIONS OR WHEN DIRECTED BY ENGINEER IN WRITING.

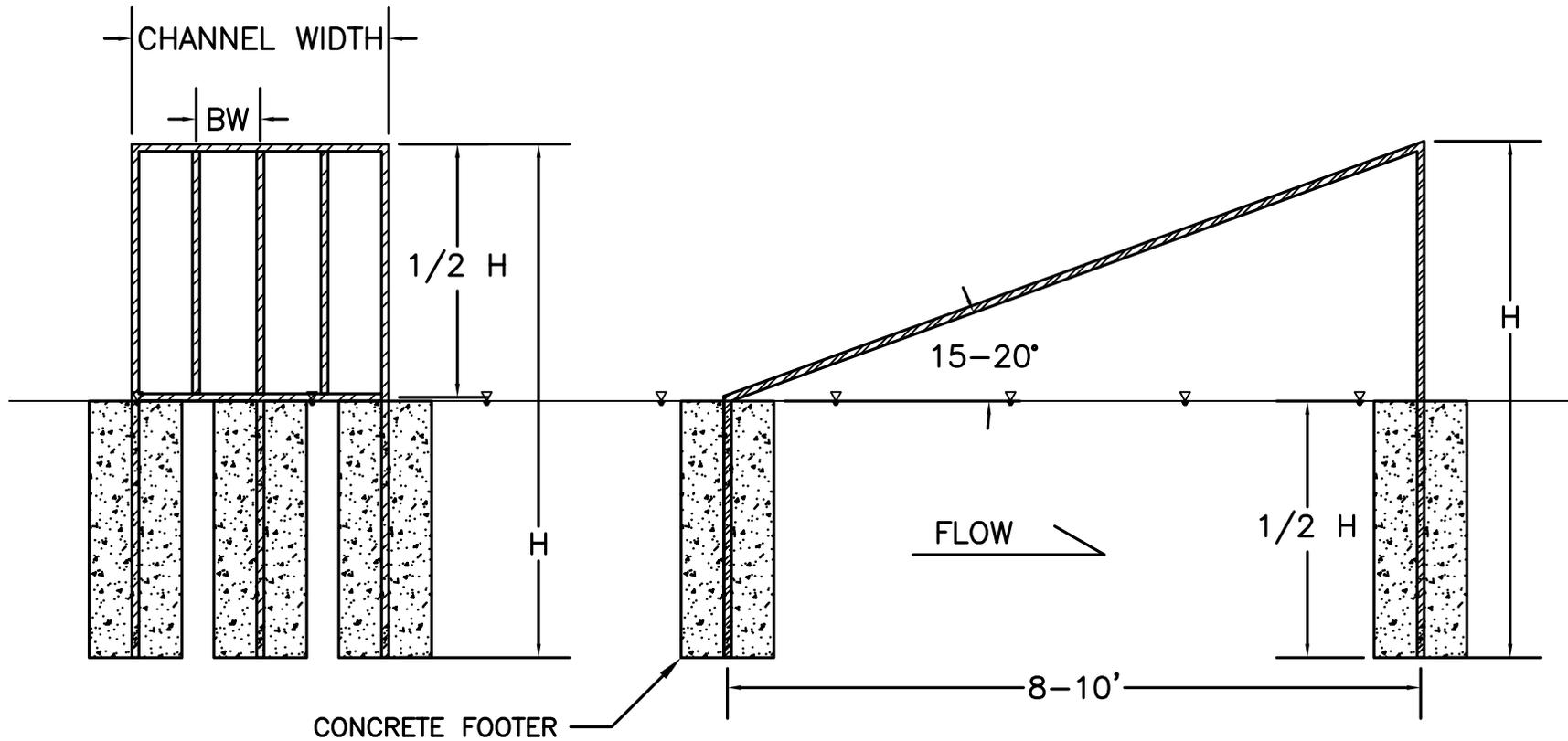


CULVERT DEBRIS BARRIER (AML 23-60-1)

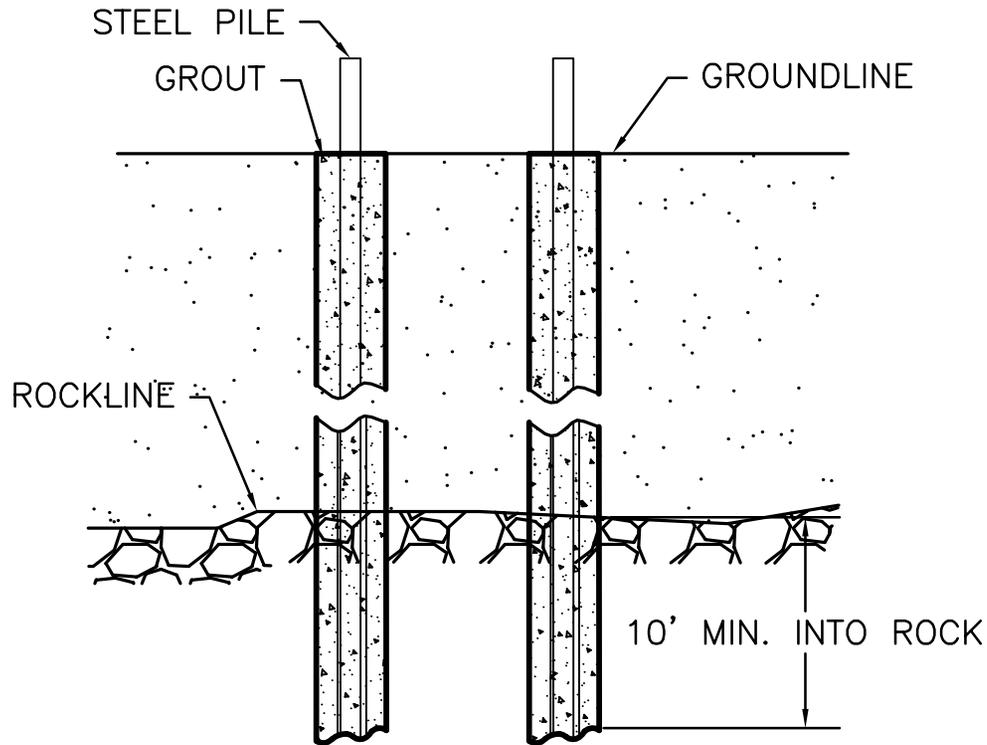
"BW" SPACING AND "H" ARE SPECIFIED ON DRAWINGS OR SPECIAL CONDITIONS.

BARRIER SCREEN MATERIALS WILL BE SPECIFIED ON THE DRAWINGS. IF NOT STATED ASSUME #8 REBAR. ALL JOINTS ARE WELDED.

THESE DEVICES SHOULD BE SET UPSTREAM OF THE CULVERT A MINIMUM DISTANCE OF 1.5 TIMES THE PIPE DIAMETER.



IN-STREAM CULVERT DEBRIS BARRIER (AML 23-60-2)



DESIGN CHART	
DEPTH OF ROCK	CTR-CTR SPACING OF RAILS AND NO. OF ROWS
5'-9'	USE 48" SPACING- 1 ROW
10'-14'	USE 36" SPACING- 1 ROW
15'-19'	USE 24"- 1 ROW <u>OR</u> USE 48"- 2 ROWS
20'-24'	USE 24"- 2 ROWS <u>OR</u> USE 36"- 3 ROWS
25'+	USE 24" SPACING- 3 ROWS

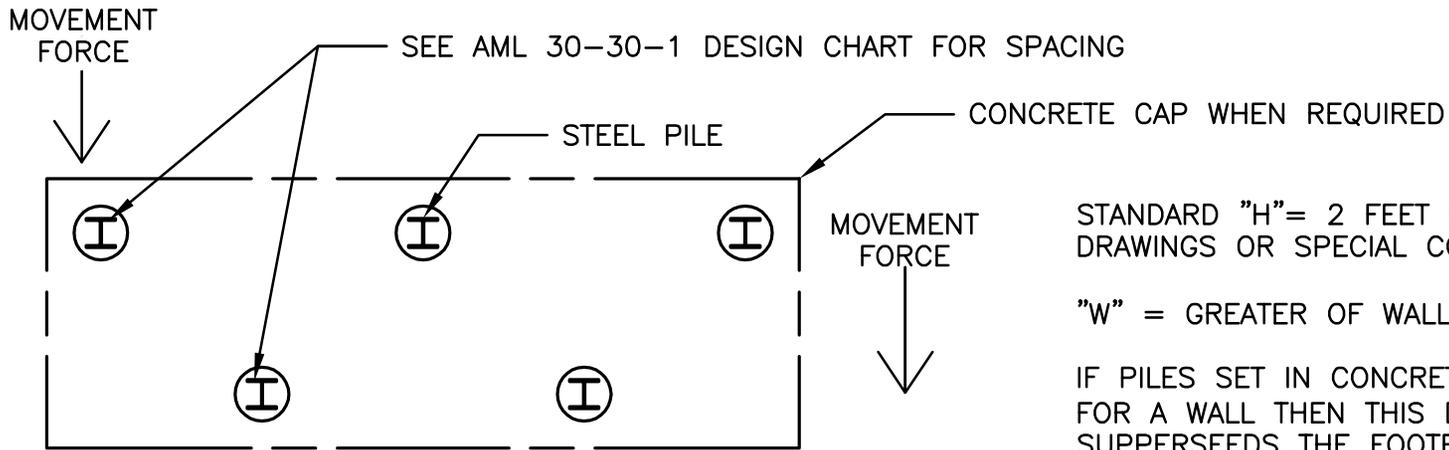
- IF SOIL DEPTH EXCEEDS 5 FEET, THEN A 2' THICK CONCRETE CAP SHOULD BE USED TO TIE THE STEEL PILES TOGETHER UNLESS DIRECTED OTHERWISE ON THE DRAWINGS OR BY THE ENGINEER IN WRITING.
- MINIMUM PILE SIZE IS W8 X 40

NOTES:

1. IF DEPTHS TO ROCK EXCEED 20' THE ENGINEER MAY REQUIRE ADDITIONAL EXCAVATION.
2. BEAMS SHALL BE ORIENTED WITH FLANGES PERPENDICULAR TO POSSIBLE SLIDE MOVEMENT.
3. BEAMS SHALL BE ENCASED WITH GROUT FOR THE ENTIRE DEPTH OF THE HOLE.
4. BEAMS SHALL BE STRAIGHT AND STRUCTURALLY SOUND. NO SPLICING SHALL BE ALLOWED.

SEE AML 30-30-2 FOR CAP DETAILS

STEEL PILES FOUNDATION (AML 30-30-1)

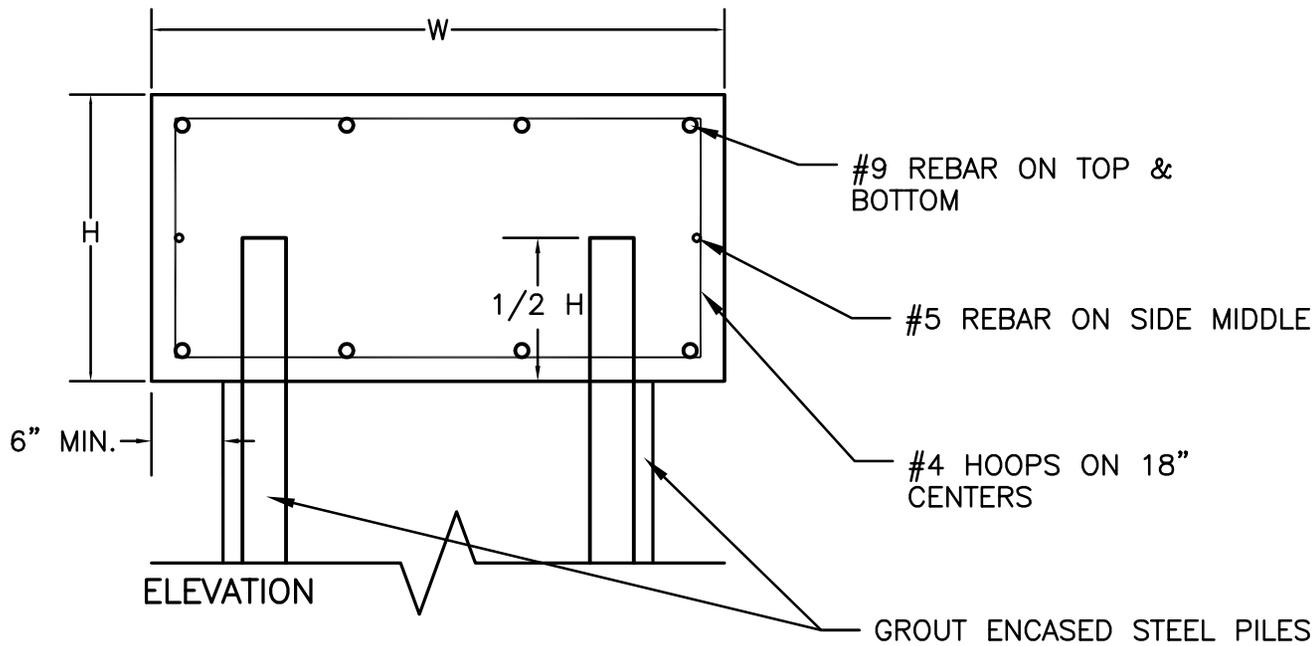


PLANVIEW

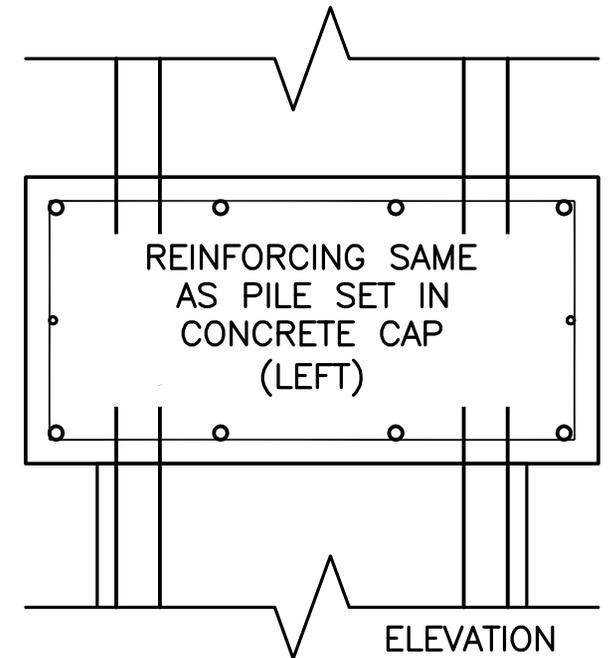
STANDARD "H" = 2 FEET UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIAL CONDITIONS.

"W" = GREATER OF WALL BASE WIDTH OR PILE DIA. + 6"

IF PILES SET IN CONCRETE CAP IS USED AS A FOUNDATION FOR A WALL THEN THIS DETAIL'S REINFORCEMENT PATTERN SUPPERSEDES THE FOOTER DETAIL FOR THAT WALL UNLESS NOTED OTHERWISE ON THE DRAWINGS.

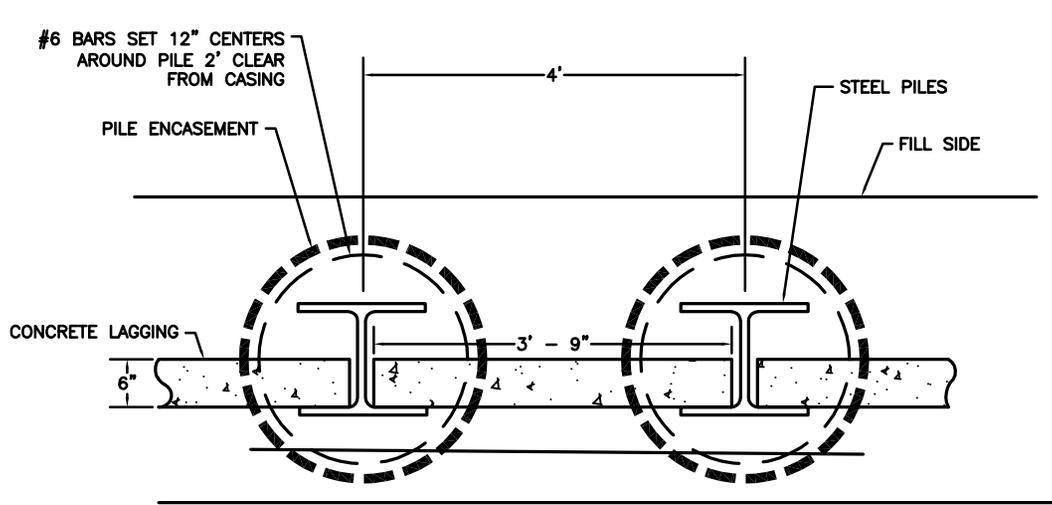


PILES SET IN CONCRETE CAP



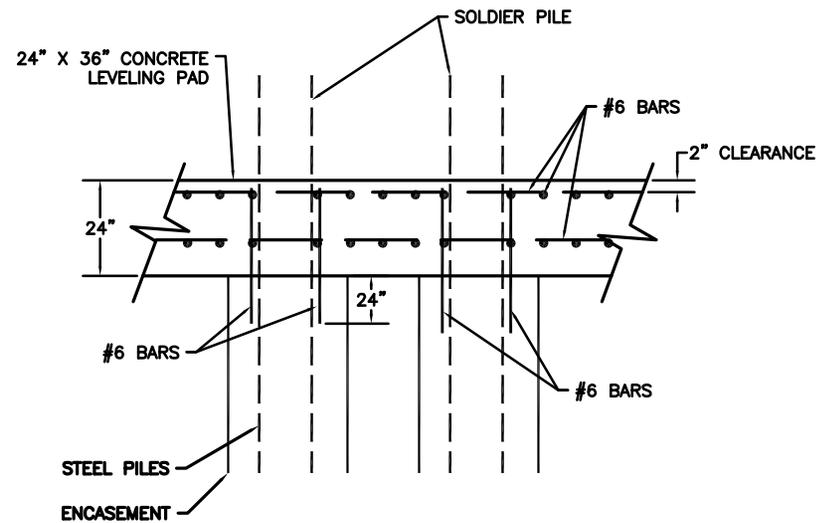
PILES EXTENDING THROUGH CONCRETE CAP

STEEL PILES REINFORCED CONCRETE CAP (AML 30-30-2)



PLAN VIEW

NTS



ELEVATION

NTS

NOTE:

THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO FORMING AND/OR POURING ANY PANELS SUCH THAT THE ENGINEER MAY HAVE A REPRESENTATIVE ON SITE PRIOR TO AND DURING THE POURING PROCESS.

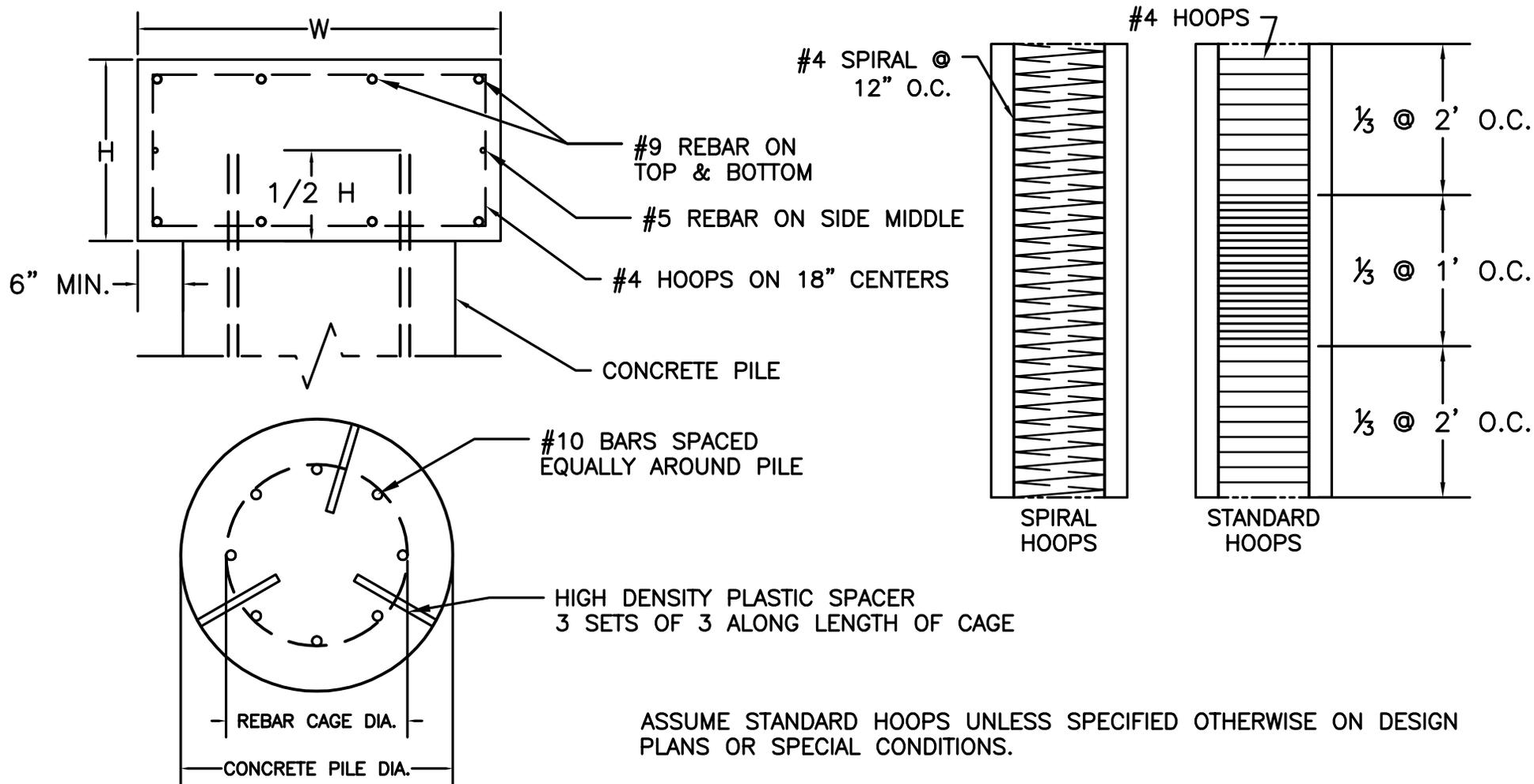
ALL STEEL REINFORCEMENT SHALL BE ACCURATELY PLACED IN THE FORMS VERTICALLY AND HORIZONTALLY OF THE THE POSITIONS SHOWN. THE REINFORCEMENT CAGE (REAR) SHALL BE HELD FIRMLY IN PLACE BY THE USE OF CHAIRS AND WIRE TIES DURING THE VIBRATION, AGITATION, AND CURING CYCLES OF THE CONCRETE TO PREVENT MOVEMENT. WIRE TIES SHALL BE USED IN THE FABRICATION OF THE REINFORCEMENT CAGE (REBAR). ALL STEEL REINFORCEMENT SHALL BE 60 KIS. WELDING SHALL NOT BE PERMITTED.

FOR SPLICES SEE AML 30-70-3 AND "STEEL" SECTION OF TECHNICAL SPECIFICATIONS.

SEE AML 30-30-2 FOR CONCRETE CAP REINFORCEMENT DETAILS

USE WITH AML 30-70-1

PILE AND LAGGING WALL- SHEET 2 (AML 30-70-2)



ASSUME STANDARD HOOPS UNLESS SPECIFIED OTHERWISE ON DESIGN PLANS OR SPECIAL CONDITIONS.

STANDARD "H" = 2 FEET UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIAL CONDITIONS. "W" = PILE DIA. + 6" OVERHANG ON EACH SIDE.

	REINFORCED CONCRETE CAP		CONCRETE PILE				SPACER SIZE
	STEEL (lbs)	CONCRETE (cyd)	STEEL (lbs)		CONCRETE (cyd)	NO. OF #10 BARS	
			w/ Spiral Hoops	w/ Standard Hoops			
24" PILE	33.19	0.22	2.8	34.32	0.116	7	6"
30" PILE	33.59	0.26	5.2	44.32	0.182	9	6"
36" PILE	34.09	0.30	6.4	52.93	0.262	11	9"
	PER LINEAR FOOT						

## REINFORCED CONCRETE PILES & CAP (AML 30-80-1)

## **BITUMINOUS REPAIR**

### **1. SCOPE**

The work shall consist of the resurfacing of paved, public roads disturbed or damaged as a direct consequence of achieving the requirements of these Contract Documents. This specification is generally intended to provide for the replacement of pavement disturbed as a part of the work, such as culvert installation **or the transporting of construction materials to the job site.**

At the ENGINEER'S discretion, the requirements of this specification may also apply to other damages to non-state-maintained roads, such as potholes and rutted areas, when in the opinion of the ENGINEER such damages are unavoidable in the prudent and practical accomplishment of the various items of work required to complete the Project. However, any damages to state-maintained roads and damages to non-state-maintained roads caused by negligence of the CONTRACTOR shall be the sole responsibility of the CONTRACTOR. Such damages shall be repaired to the satisfaction of the ENGINEER and the COMMONWEALTH shall incur no additional expense therefore.

Roads, bridges, and/or crossings on which the COMMONWEALTH will be reimbursing the CONTRACTOR for possible repairs and corrections associated therewith will be, insofar as possible, designated on the Design Drawings, and discussed at the "Pre-bid" showing of Project. Nonetheless, it shall be the CONTRACTOR'S responsibility to solicit clarifications and/or instructions from the ENGINEER on a site-specific basis prior to mobilizing to the individual sites.

### **2. MATERIALS**

**2.1. General:** All bituminous materials used in the resurfacing operation shall meet the requirements of the Kentucky Transportation Cabinet's "Standard Specifications for Road and Bridge Construction", current edition.

**2.2. Dense Graded Aggregate:** Shall conform to the "Crushed Aggregate and Channel Lining" technical specification.

**2.3. Leveling and Patching:** The bituminous mixture used for leveling and patching shall consist of the same bituminous concrete surface mix used in the resurfacing operation.

**2.4. Tack and Prime:** Any of the following emulsions are permitted for use as a tack material: SS-1, SS-1h, CSS-1, CSS-1h, AE-60, RS-1, or CRS-1. Furnish a primer that conforms to ASTM D41 and ensure the supplier provides certification of conformance. All tack and prime materials shall meet the applicable requirements of the Kentucky Transportation Cabinet's "Standard Specifications for Road and Bridge Construction", current edition. Cut back asphalts may be used only with the written permission of the ENGINEER, and shall be in conformance with all applicable laws and regulations concerning air pollution control.

The temperature limitations for applying prime and tack coats shall be that specified for the type of construction with which such work is included. Prime and tack coats shall not be applied to wet surfaces.

When RS-1 or CRS-1 is furnished for tack they shall be applied undiluted at the rate of 0.4 pound (0.05 gallon) per square yard, unless otherwise specified in the requirements for the bituminous mixture being placed. When SS-1, SS-1h, CSS-1, CSS-1h, or AE-60 is furnished for tack the material may be applied without dilution providing uniform and satisfactory coverage is achieved. Unless otherwise specified in the requirements for the bituminous mixture being placed, the application rate for undiluted SS-1, SS-1h, CSS-1, CSS-1h, or AE-60 shall be 0.4 pound (0.05 gallon) per square yard.

Prime coats shall be applied at the rate specified in the Plans, or as directed by the ENGINEER, when conditions justify variations in the rates of applications.

At the time of application, the temperature of prime and tack materials shall be within the ranges:

<b>PRIME</b>	
Primer L	60-120°F
<b>TACK</b>	
SS-1, SS-1h, CSS-1	
CSS-1h, AE-60	70-160°F
RS-1, CRS-1	70-140°F

On projects over which public traffic is being maintained, the tack coat shall be applied over one-half of the pavement width not to exceed one-half day's work in advance of the construction of the bituminous cover course; provided, that at no time shall the tack coat application end at a location hazardous to traffic. Tack coat application requiring an overnight lane closure will not be allowed. The work shall be arranged so that at the end of runs all tack shall be covered with the bituminous mat.

Provide necessary barricades, warning signs, and flagmen to ensure against traffic traveling over freshly applied prime or tack coat.

**2.5. Resurfacing Material:** Resurfacing material shall consist of Bituminous Concrete Surface, Class I, (bituminous asphalt) using coarse aggregate meeting the requirements of the Kentucky Transportation Cabinet's "Standard Specifications for Road and Bridge Construction", current edition. Natural conglomerate, crushed slag, crushed granite, crushed siliceous gravel, or crushed sandstone sand will be required in the proportions of no less than 25% of the total combined fine and coarse aggregates in Bituminous Concrete Surface, Class I.

At least 10 days prior to the resurfacing operation, supply the ENGINEER in writing with information concerning the composition of the surface mix intended for use as well as the source from which he intends to obtain the material.