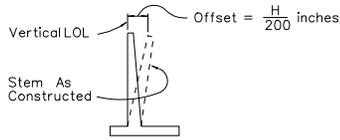
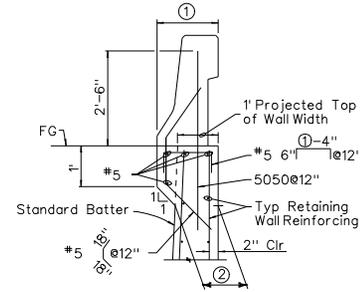


FOOTING STEP

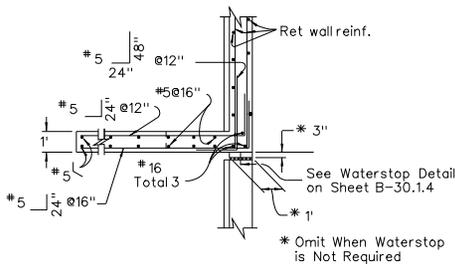


APPROXIMATE WALL OFFSET VALUES
Values For Offsetting Forms To Be Determined By The Engineer

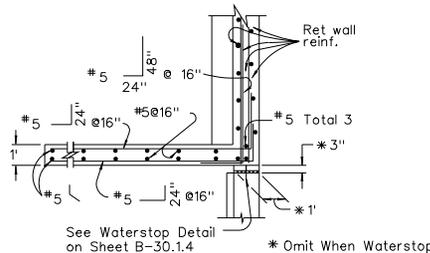


STEM HAUNCH FOR BARRIER RAIL

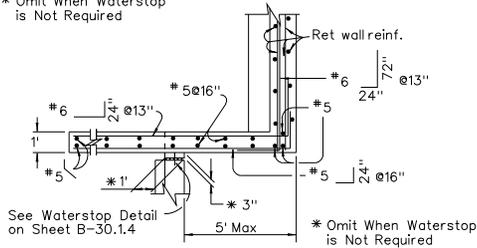
Dimension ① (Barrier Rail Width) To Be As Shown in the Project Plans. Stem Width ② At Base of Haunch To Be Determined As Shown.



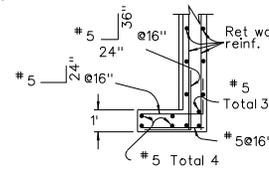
PLAN
For Return Wall Type A



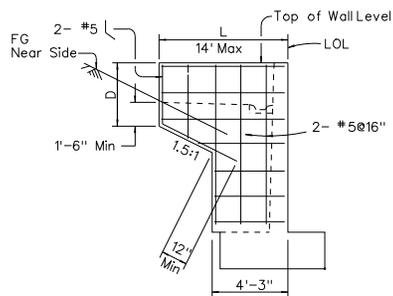
PLAN
For Return Wall Type C



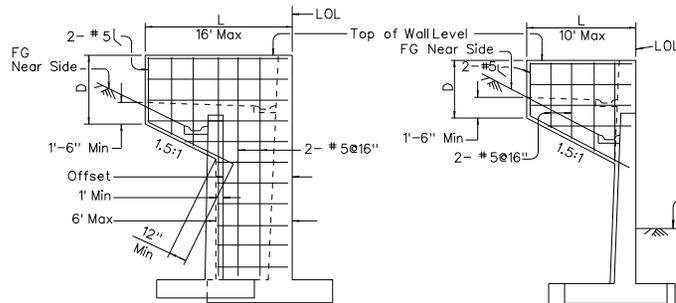
PLAN
For Return Wall Type B



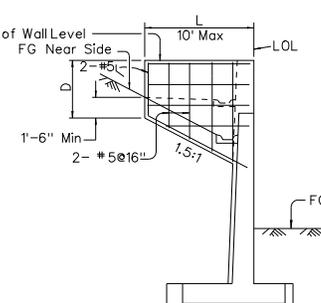
PLAN
For Return Wall Type D



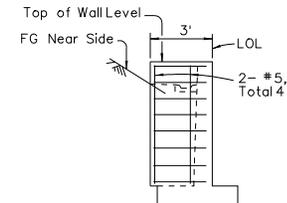
ELEVATION
RETURN WALL TYPE A
Use Where H=8' or Less



ELEVATION
RETURN WALL TYPE B
Use Where H=10' or More On Offset Walls



ELEVATION
RETURN WALL TYPE C
Use Where H=10' or More On Straight Walls



ELEVATION
RETURN WALL TYPE D
Use Where H=6' or Less

GENERAL NOTES:

- DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1996 WITH INTERIMS THROUGH 2000.
- LOADING: LIVE LOAD SURCHARGE PRESSURE EQUAL TO 2 FEET OF EARTH. SEISMIC ACCELERATION = 0.15g & 0.4g, WHERE 1/2 THE PEAK GROUND ACCELERATION IS USED IN THE DESIGN.
- CONCRETE: ALL CONCRETE SHALL BE CLASS A OR AA MODIFIED (MAJOR) WITH $f'_c = 4000$ psi AT 28 DAYS.
- REINFORCING STEEL: ALL REINFORCING STEEL SHALL BE ASTM A615 GRADE 60 OR A706.
- DESIGN DATA: CANTILEVER WALLS ARE DESIGNED BASED ON THE FOLLOWING PARAMETERS:

SOIL PROPERTIES:

INTERNAL ANGLE OF FRICTION = 35°
UNIT WEIGHT = 120 pcf
EQUIV. ACTIVE FLUID PRESS. = 36 pcf (LEVEL BACKFILL)
EQUIV. ACTIVE FLUID PRESS. = RANKINE METHOD (SLOPING BACKFILL)
EQUIV. PASSIVE FLUID PRESS. = 360 pcf (TOP OF FOOTING DOWN)
COEFFICIENT OF FRICTION BETWEEN SOIL AND CONCRETE = 0.45

WALL PROPERTIES:

STATIC DESIGN BASED ON ALLOWABLE STRESS DESIGN
 $f'_c = 1.6$ ksi
 $f_s = 24$ ksi
 $n = 8$

SEISMIC DESIGN BASED ON LOAD FACTOR DESIGN
 $f'_c = 4$ ksi
 $f_y = 60$ ksi

FACTORS OF SAFETY APPLIED
STATIC OVERTURNING = 2.0
STATIC SLIDING = 1.5
SEISMIC OVERTURNING = 1.5
SEISMIC SLIDING = 1.1

- RETURN WALLS: RETURN WALL NOT REQUIRED UNLESS SHOWN IN PLANS. FOR DIMENSION (D), SEE PROJECT PLANS.
- DRAINAGE: DRAINAGE SYSTEM (GUTTER, DRAIN, PIPE) NOT REQUIRED UNLESS SPECIFIED IN THE PLANS.