

STRUCTURAL NOTES

A) GENERAL

- DESIGN IS IN ACCORDANCE WITH AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE MAINE STATE BUILDING CODE.
- THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER WHEN UNANTICIPATED OR APPARENTLY DANGEROUS CONDITIONS ARE UNCOVERED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING LOCAL UTILITY COMPANIES PRIOR TO THE START OF ANY EXCAVATION OR SITE WORK.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE PORTION OF THE WORK.
- OPENINGS LESS THAN 12" MAXIMUM DIMENSION IN SLABS AND WALLS ARE GENERALLY NOT SHOWN ON STRUCTURAL DRAWINGS. SEE MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR LOCATIONS AND DIMENSIONS OF CHASES, INSERTS, SLEEVES, OPENINGS AND OTHER PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS.
- DETAILS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE FOR MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ENGINEER.
- * INDICATED DIMENSIONS MAY CHANGE TO SUIT MANUFACTURERS REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ANY NECESSARY CHANGES.
- PROVIDE THREE SETS OF SHOP DRAWINGS FOR THE ARCHITECT/ENGINEER TO REVIEW. THE CONTRACTOR SHALL USE APPROVED SHOP DRAWINGS FOR CONSTRUCTION.

B) FOUNDATIONS

- FOUNDATIONS HAVE BEEN DESIGNED BASED UPON A CODE ALLOWED PRESUMPTIVE BEARING CAPACITY OF 3 KSF. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY IF UNSUITABLE MATERIALS EXIST. THIS OFFICE IS NOT QUALIFIED TO DETERMINE SUBSURFACE BEARING CONDITIONS. IT IS RECOMMENDED THAT THE OWNER HIRE A GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF MAINE TO DETERMINE ALL OBTAINABLE BEARING PRESSURES AND SUBSURFACE PREPARATIONS.
- THE ARCHITECT/ENGINEER ASSUMES NO RESPONSIBILITY FOR THE VALIDITY OF SUBSURFACE CONDITIONS WHERE DESCRIBED FOR FOUNDATIONS, SPECIFICATIONS, TEST BORINGS OR TEST PITS. THESE DATA ARE INCLUDED ONLY TO ASSIST THE CONTRACTOR DURING CONSTRUCTION, AND REPRESENT CONDITIONS ONLY AT THESE SPECIFIC LOCATIONS AT THE PARTICULAR TIME THEY WERE MADE.
- UNSUITABLE BEARING MATERIALS, SUCH AS MISCELLANEOUS FILL AND ORGANIC SOILS MAY EXIST IN AREAS OF NEW FOUNDATIONS. EXISTING UNSUITABLE MATERIALS SHALL BE EXCAVATED AS DIRECTED OR AS INDICATED ON THE DRAWINGS AND SHALL BE FOLLOWED BY OTHER TYPE OF COMPACTED GRAVEL FILL AS SPECIFIED.
- EXCAVATIONS FOR WALL AND COLUMN FOOTINGS SHALL BE FINISHED BY HAND.
- WHERE ROCK IS ENCOUNTERED, IT SHALL BE EXCAVATED TO 1'-0" BELOW BOTTOM OF FOOTINGS & SLABS AND REPLACED WITH A 1'-0" LAYER OF COMPACTED GRAVEL OR SAND.
- NO FOUNDATION CONCRETE SHALL BE PLACED IN WATER OR ON FROZEN SOIL.
- BACKFILL UNDER ANY PORTION OF THE STRUCTURE SHALL BE COMPACTED IN 6" LIFTS.
- COMPACT SOIL TO 95% OF MAX. DRY DENSITY UNDER FOOTINGS AND BENEATH SLABS.
- PLACE CONSTRUCTION JOINTS IN SLABS AND FOUNDATION WALLS IN ACCORDANCE WITH DETAILS AND AT LOCATIONS INDICATED ON DRAWINGS.
- PLACE 6" LAYER OF FINE GRANULAR FILL DIRECTLY BENEATH SLAB ON GRADE. PLACE 6 MIL. POLY VAPOR RETARDER UNDER GRANULAR FILL. THOROUGHLY MET & COMPACT 24 HRS. PLACING CONC. (OPTIONAL REQUIREMENT DEPENDENT ON SPECIFIC SITE CONDITIONS. NEED FOR THIS TYPE OF CONSTRUCTION SHALL BE DETERMINED BY ENGINEER).
- BACKFILL SHALL BE PLACED AND COMPACTED SIMULTANEOUSLY ON BOTH SIDES OF FOUNDATION WALLS WHEREVER POSSIBLE.
- CONTRACTOR SHALL MAINTAIN CONTINUOUS CONTROL OF SURFACE AND SUBSURFACE WATER DURING CONSTRUCTION SO THAT WORK IS DONE UNDER DRY CONDITIONS ON UNDISTURBED SUBGRADE MATERIAL OR COMPACTED FILL, AS APPLICABLE.
- ALL EMBANKMENTS AND BACKFILL AROUND STRUCTURES SHALL BE COMPACTED TO 90%.
- ALL BELOW GRADE CONCRETE SHALL BE COATED WITH A BITUMINOUS BASED DAMPROOFING MATERIAL WHERE ADJACENT TO BASEMENT LEVELS, ELEVATOR PITS, SUMP PITS, AND ALL OTHER SUB-GRADE USABLE AREAS.

C) CONCRETE

- CONCRETE WORK SHALL CONFORM TO LATEST EDITIONS OF "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301).
- CONCRETE SHALL BE PROPORTIONED, MIXED AND PLACED UNDER THE SUPERVISION OF THE APPROVED TESTING AGENCY.
- CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI FOR FOOTINGS, FOUNDATIONS, AND INTERIOR SLABS ON GRADE. EXTERIOR WALLS AND DRIVEWAYS SUBJECT TO DEICER CHEMICALS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3500 PSI.
- ALL CONCRETE EXPOSED TO THE ELEMENTS SHALL BE AIR-ENTRAINED.
- CONCRETE SHALL BE CURED FOR A MINIMUM OF SEVEN DAYS BEFORE ANY LOADS ARE APPLIED THERETO.
- CONSTRUCTION JOINTS SHALL BE PLACED AS SHOWN ON THE DRAWINGS. CHANGES SHALL NOT BE MADE WITHOUT APPROVAL OF THE ENGINEER.
- CONCRETE SHALL BE PLACED SO THAT SLAB THICKNESS IS AT NO POINT LESS THAN THAT INDICATED ON DRAWINGS. THIS REQUIRES THAT STRUCTURAL SLABS NOT BE CAST DEAD LEVEL WHEN SUPPORTING MEMBERS HAVE ANY UPWARD CURVATURE.
- PROVIDE A SMOOTH RUBBED SURFACE, FREE FROM BURRS, TIE HOLES, HONEYCOMBS, ETC. ON EXPOSED CONCRETE WALLS.
- PROVIDE A STEEL TROWELED FINISH FOR SLABS-ON-GRADE AND A BROOM FINISH FOR EXTERIOR SLABS.
- ALL FOUNDATION WALLS SHALL HAVE AT LEAST 2-#5 BARS CONTINUOUS AT TOP OF WALL, WITH BENT CORNER BARS AT WALL INTERSECTIONS AND CORNERS, UNLESS OTHERWISE NOTED.
- ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER TYPICALLY, UNLESS NOTED OTHERWISE.
- AT OPENINGS IN FOUNDATION WALLS LARGER THAN 16 INCHES SQUARE, PROVIDE 2-#4s AT TOP & BOTTOM EDGES OF OPENING.

STRUCTURAL NOTES

C) CONCRETE (CONT)

- PORTLAND CEMENT TYPE I SHALL BE USED FOR ALL CONCRETE. PROVIDE MINIMUM 5 1/2 BAGS OF CEMENT PER CUBIC YARD OF 3000 PSI CONCRETE AND MINIMUM 6 BAGS OF CEMENT PER CUBIC YARD OF 3500 PSI CONCRETE.
- THE MAXIMUM PERMISSIBLE WATER-CEMENT RATIO OF CONCRETE SHALL BE 0.50 FOR AIR-ENTRAINED 3000 PSI CONCRETE (5.6 GALLONS PER 94 LB. SACK OF CEMENT), AND SHALL BE 0.45 FOR AIR-ENTRAINED 3500 PSI CONCRETE (5.1 GALLONS PER 94 LB. SACK OF CEMENT).
- AT ALL CONSTRUCTION JOINTS WHICH ARE NOT DESIGNED OR DESIGNATED TO BE CONTROL JOINTS, NEW CONCRETE SHALL BE EPOXY BONDED TO HARDENED CONCRETE WITH SIKADUR 32, HI-MOD LFL MANUFACTURED BY SIKA CORP. OR ENGINEER APPROVED EQUIVALENT. APPLY PER MANUFACTURER'S RECOMMENDATIONS.
- ELASTOMERIC SEALANT SHALL BE 'SIKA FLEX IA' AS MANUFACTURED BY SIKA CORP. OR ENGINEER APPROVED EQUIVALENT.
- ALL CONCRETE SHALL BE PLACED IN THE DRY.
- WHERE CONSTRUCTION JOINTS ARE NOT SHOWN, OR WHEN ALTERNATE LOCATIONS ARE PROPOSED, DRAWINGS SHOWING LOCATION OF CONSTRUCTION AND CONTROL JOINTS AND CONCRETE PLACING SEQUENCE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PREPARATION OF THE REINFORCEMENT SHOP DRAWINGS.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CONCRETE TESTING BY AN APPROVED TESTING AGENCY FOR ALL CONCRETE PLACED ON THE PROJECT. SAMPLES FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 150 CUBIC YARDS OF CONCRETE, NOR LESS THAN ONCE FOR EACH 5000 SQ. FT. OF SURFACE AREA FOR SLABS AND WALLS. SAMPLES FOR STRENGTH TESTS SHALL BE TAKEN IN ACCORDANCE WITH ASTM C172. COPIES OF ALL TEST RESULTS SHALL BE FORWARDED TO THE ARCHITECT/ENGINEER BY THE G.C.
- CONCRETE (OTHER THAN HIGH-EARLY-STRENGTH) SHALL BE MAINTAINED ABOVE 50 DEGREES F AND IN A MOIST CONDITION FOR AT LEAST THE FIRST SEVEN DAYS AFTER PLACEMENT, EXCEPT WHEN CURING IS TO BE ACCELERATED IN ACCORDANCE WITH ACI 318.
- DURING COLD WEATHER CONDITIONS ADEQUATE EQUIPMENT SHALL BE PROVIDED FOR HEATING CONCRETE MATERIALS AND PROTECTING CONCRETE DURING FREEZING OR NEAR FREEZING WEATHER.
- DURING HOT WEATHER CONDITIONS, ATTENTION SHALL BE GIVEN TO GIVEN INGREDIENTS, PRODUCTION METHODS, HANDLING, PLACING, PROTECTION AND CURING TO PREVENT EXCESSIVE CONCRETE TEMPERATURES OR WATER EVAPORATION THAT WOULD IMPAIR REQUIRED STRENGTH OR SERVICEABILITY OF THE STRUCTURE.
- CONCRETE SHALL BE PLACED W/O HORIZONTAL CONSTRUCTION JOINTS EXCEPT WHERE SHOWN OR NOTED. VERTICAL CONSTRUCTION JOINTS AND STOPS IN CONCRETE WORK SHALL BE MADE AT MID SPAN OR AT POINTS OF MINIMUM SHEAR.
- PROCESS AND ELECTRICAL DRAWINGS MAY IDENTIFY AND LOCATE EMBEDDED ITEMS (PIPES, SLEEVES, EQUIP. BOLTS, RAILINGS, LIFTING RINGS, FRIG. ETC.) AND ARE TO BE USED IN CONJUNCTION WITH STRUCT. DRAWINGS DURING CONSTRUCTION.
- ALL EQUIPMENT ANCHOR BOLTS FURNISHED BY EQUIPMENT MANUFACTURER TO BE INSTALLED BY GENERAL CONTRACTOR, AND SHALL BE HOT-DIPPEL GALVANIZED.

D) REINFORCING STEEL

- REINFORCING STEEL SHALL BE GRADE 60 NEW BILLET STEEL, CONFORMING TO ASTM A616. WELDED WIRE FABRIC SHALL BE ASTM A185.
- DETAILINGS, FABRICATION AND ERECTION OF REINFORCEMENT SHALL CONFORM TO LATEST EDITIONS OF "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318) AND "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
- MINIMUM COVER OF CONCRETE SHALL BE 3" AT BOTTOMS OF FOOTINGS. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.
- INSTALLATION OF REINFORCEMENT SHALL BE COMPLETED AT LEAST 24 HOURS PRIOR TO SCHEDULED CONCRETE PLACEMENT, UNLESS OTHERWISE APPROVED BY ENGINEER.
- MINIMUM CONCRETE COVER FOR REINFORCEMENT, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 5"0"
 - CONCRETE EXPOSED TO EARTH OR WEATHER #6 THROUGH #8 BARS #5 BAR WSI OR DSI WIRE, AND SMALLER 2"0"
 - CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND #11 BAR AND SMALLER 1"0"
 - BEAMS, COLUMNS, PRIMARY REINF., TIES, STIRRUPS, SPIRALS 2"0"
- PROVIDE AND SCHEDULE ON SHOP DRAWINGS THE NECESSARY ACCESSORIES TO HOLD REINFORCEMENT SECURELY IN POSITION. MINIMUM REQUIREMENTS SHALL BE HIGH CHAIRS, 4'-0" O.C. WITH CONTINUOUS #5 SUPPORT BAR, SLAB BOLSTERS, CONTINUOUS AND 5'-6" O.C. BEAM BOLSTERS, 5'-0" O.C. ALL CHAIRS SHALL BE GALVANIZED AND SHALL BE USED AGAINST ALL FORMS (SLABS, WALLS, PLASTER, ETC.)
- WHERE CONTINUOUS REINFORCEMENT IS CALLED FOR IT SHALL BE EXTENDED CONTINUOUS AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS END. MIN. LAP OF REINFORCING BARS SHALL BE 48 BAR DIAM. U.N.O.
- WHERE THERE IS A CONFLICT BETWEEN LOCATIONS OF COLUMN VERTICAL BARS AND BEAM HORIZONTAL BARS, THE COLUMN BARS SHALL REMAIN IN THEIR DESIGNATED POSITIONS AND BEAM BAR LOCATIONS SHALL BE ADJUSTED.
- COLUMN DOVELLS SHALL BE SET WITH A TEMPLATE AND POSITIONED SO AS TO BE ENCLOSED BY THE COLUMN TIES.
- U.N.O., DOVELLS SHALL MATCH BAR SIZE AND NUMBER.
- WELDED WIRE FABRIC SHALL LAP 6" OR ONE SPACE, WHICHEVER IS LARGER, AND SHALL BE WIRED TOGETHER.
- REINFORCEMENT SHALL NOT BE TACK WELDED.
- SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

DESIGN LOADS

2009 INTERNATIONAL BUILDING CODE W/ MASSACHUSETTS AMENDMENTS
MUNICIPALITY: ATHOL

LIVE & CONCENTRATED LOADS:

RETAIL AREAS (LIGHT) 100 PSF
STORAGE AREAS (LIGHT) 125 PSF
MIN. CONCENTRATED FLOOR LOAD 2000 LBS.

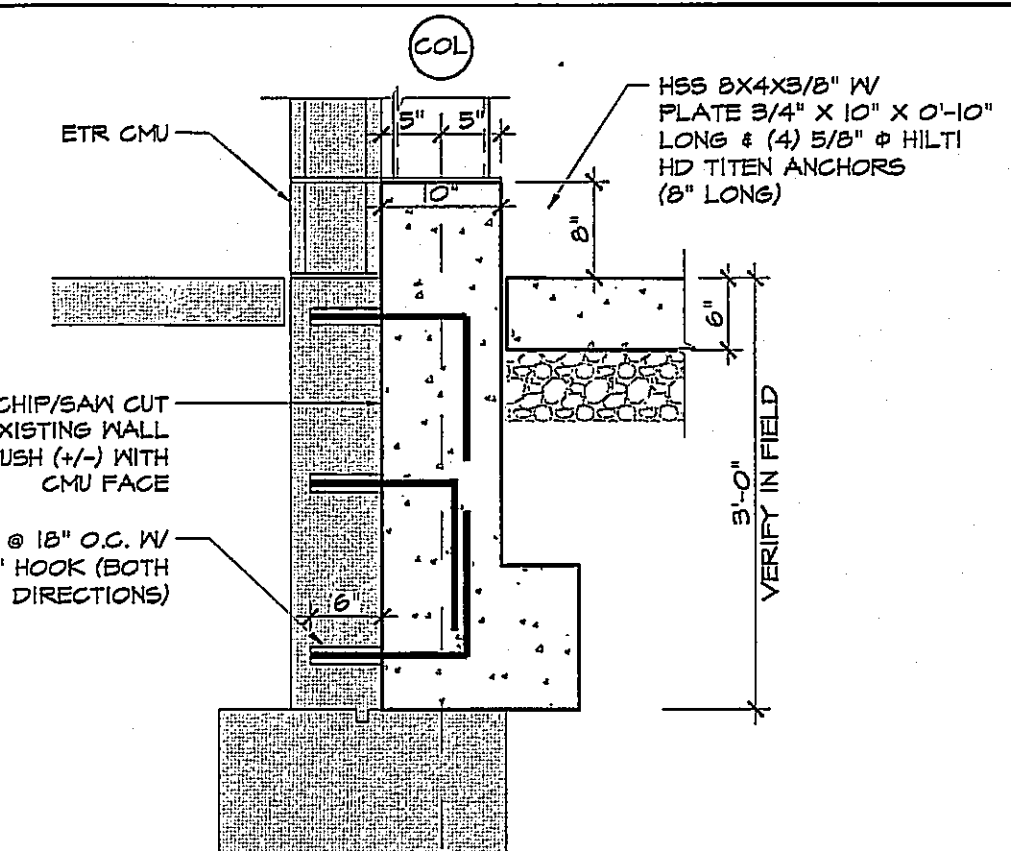
MISC. DATA:

PRESUMED SOIL BEARING CAPACITY 8 KSF
GROUND SNOW LOAD 60 PSF
MIN. FLAT ROOF SNOW LOAD 42 PSF
BASIC WIND SPEED 100 MPH, EXP. B
MIN. FROST DEPTH 4'-6"

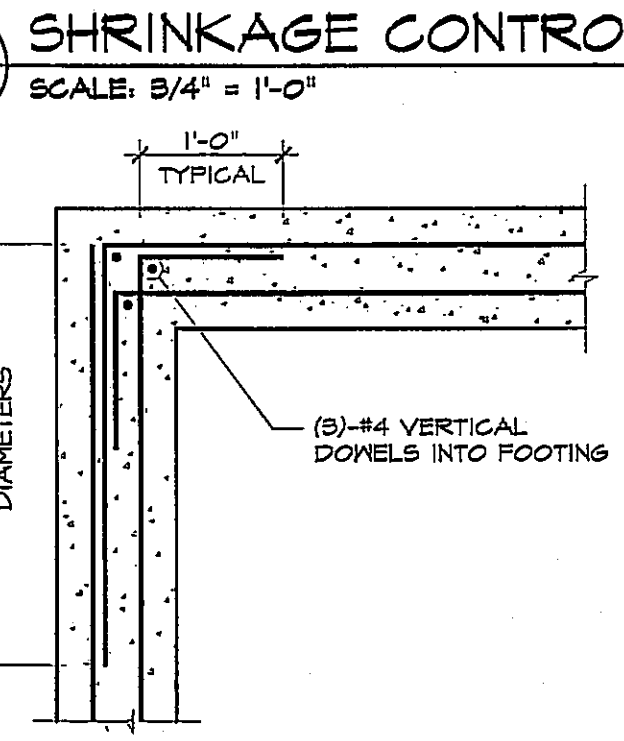
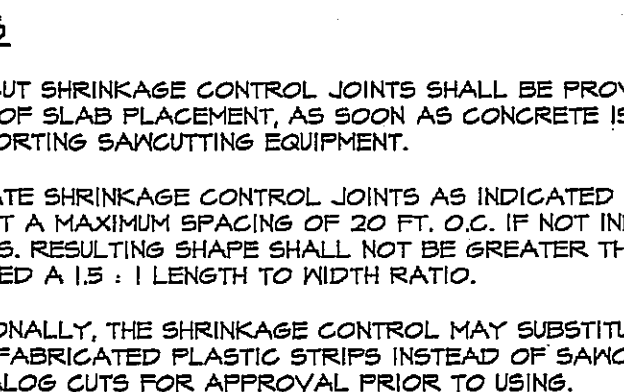
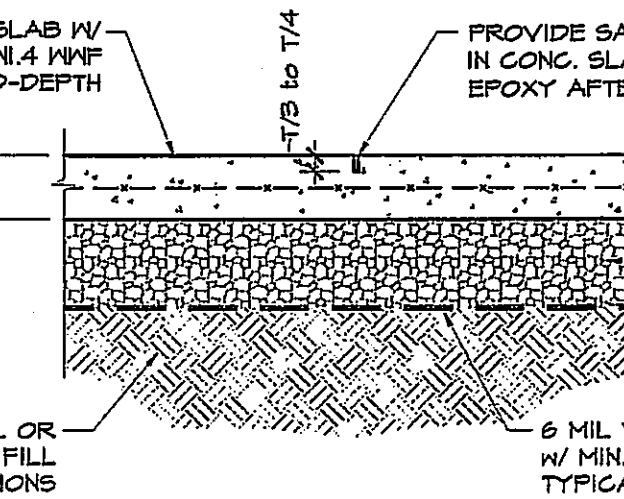
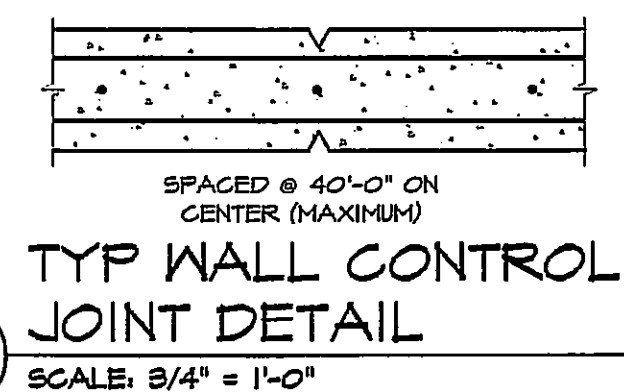
SEISMIC DESIGN CRITERIA:

SEISMIC IMPORTANCE FACTOR $I_e=1.0$
SEISMIC USE GROUP II
SPECTRAL RESPONSE ACCELERATIONS $S_s=0.250$ $S_1=0.080$
SITE CLASS D
SEISMIC RESPONSE COEFFICIENTS $S_{ds}=0.267$ $S_{d1}=0.128$
SEISMIC DESIGN CATEGORY B

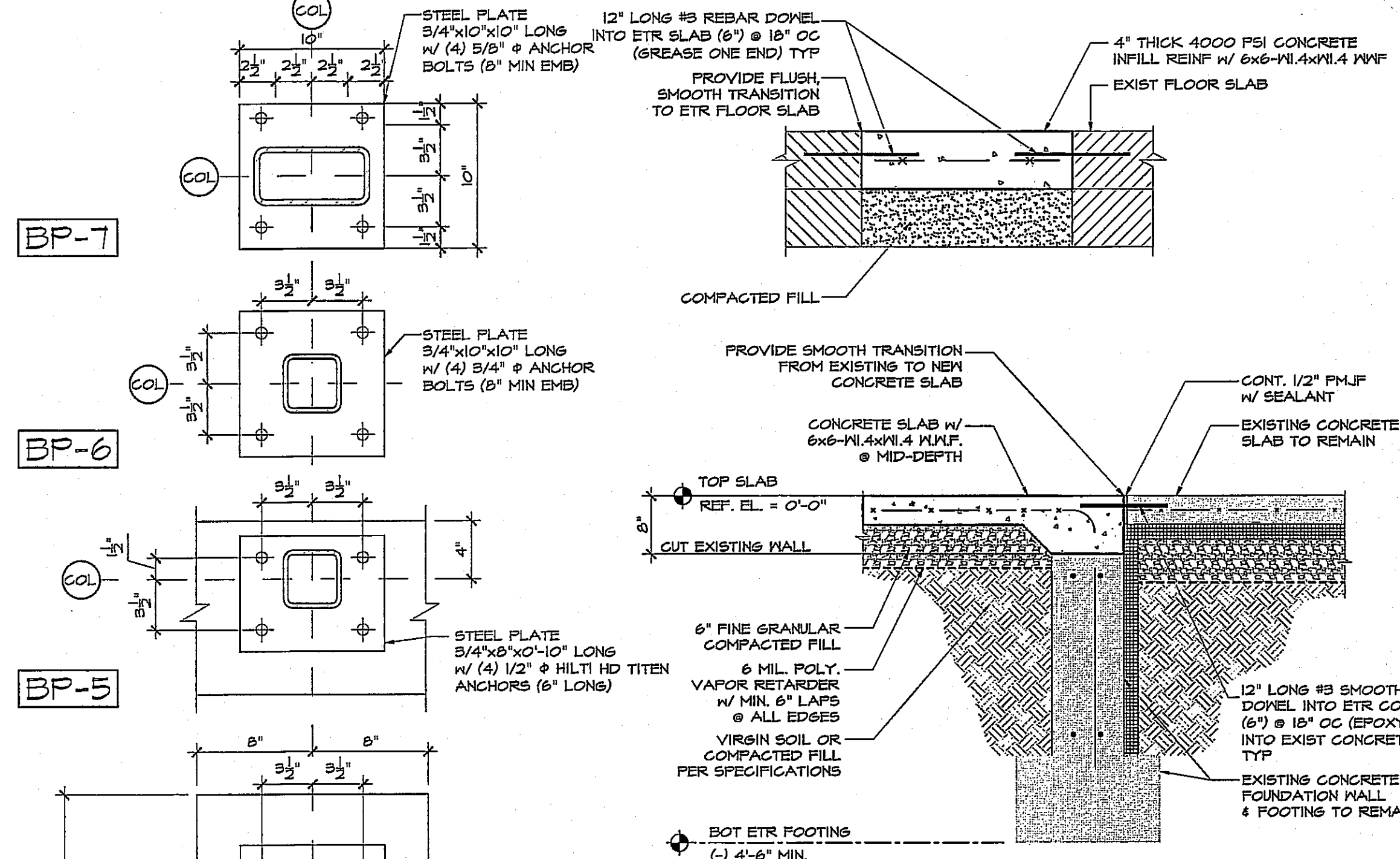
LIGHT FRAMED WALLS WITH SHEAR PANELS- WOOD $R=6$ $I/2$ $C_u=4$
DESIGN BASE SHEAR = 4.84K
SIMPLIFIED ANALYSIS PROCEDURE



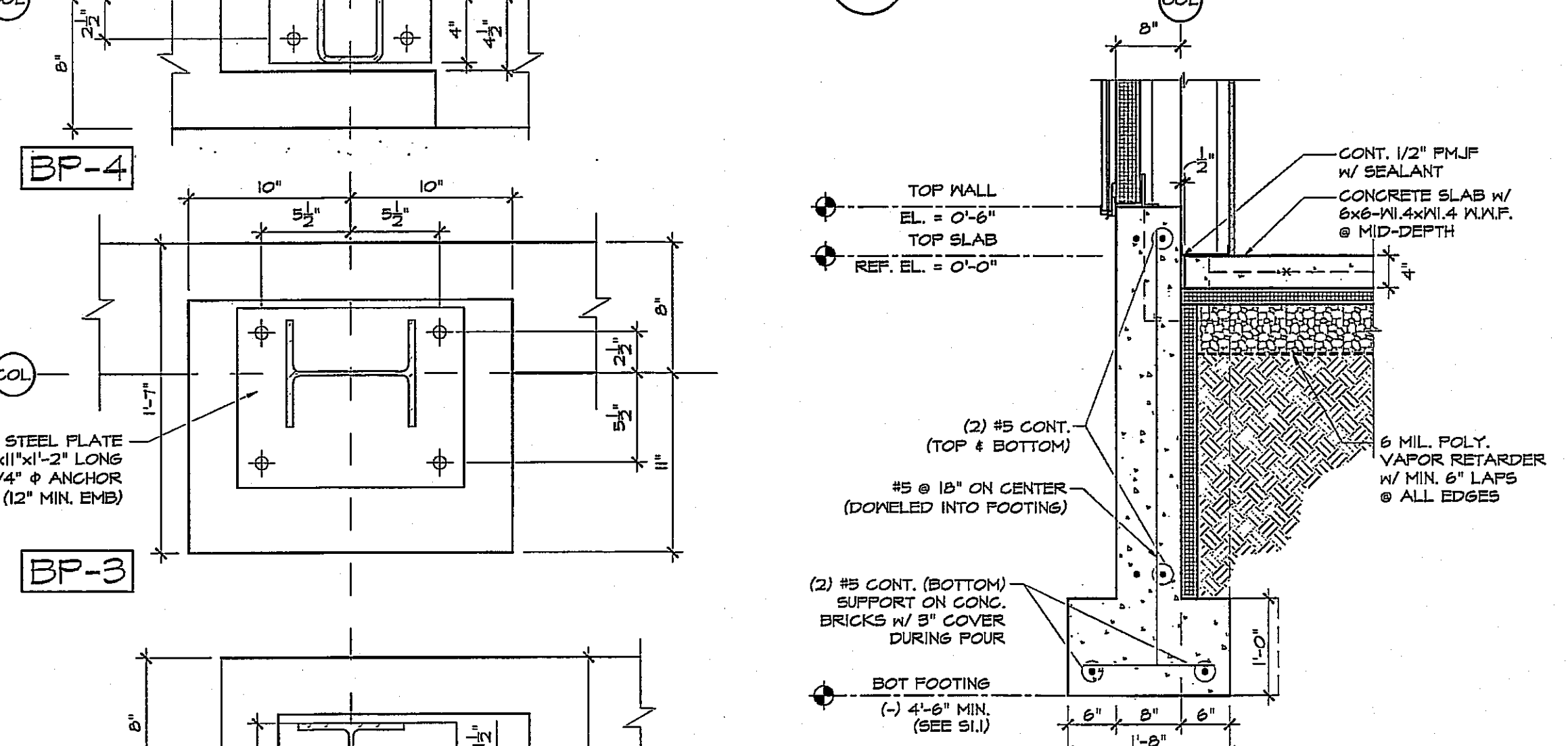
FOUNDATION DETAIL @ WEST MONUMENT
SCALE: 3/4" = 1'-0"



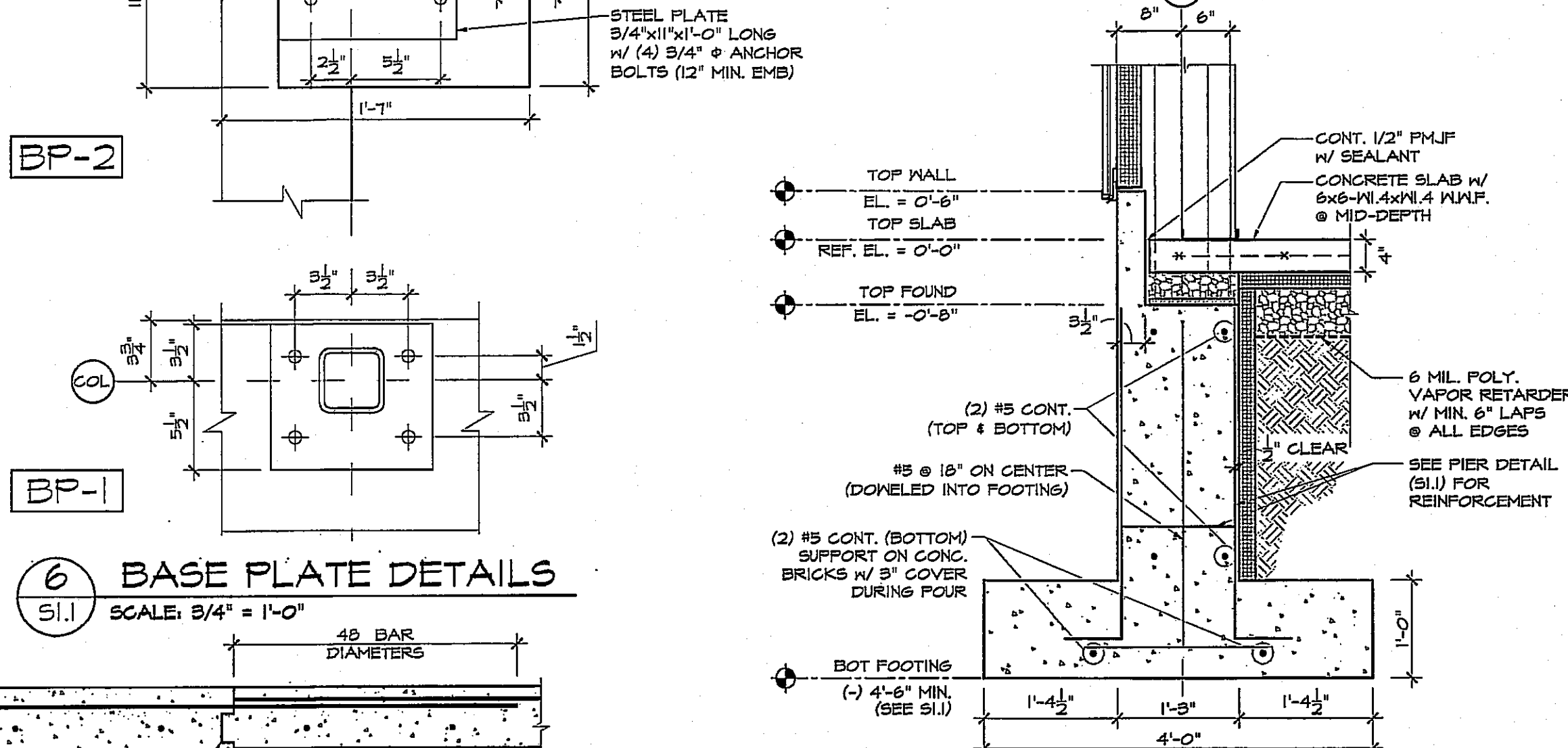
WALL REINF DETAIL @ CORNERS
SCALE: 3/4" = 1'-0"



CONC SLAB TO EXISTING FOUNDATION WALL SECTION
SCALE: 3/4" = 1'-0"



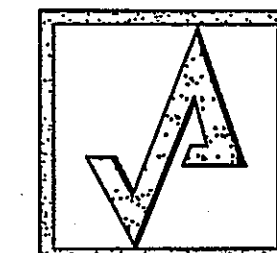
TYP FOUNDATION WALL SECTION
SCALE: 3/4" = 1'-0"



TYP FOUNDATION WALL SECTION @ COLUMN PIER
SCALE: 3/4" = 1'-0"



WALL WALL CONSTRUCTION JOINT DETAIL
SCALE: 3/4" = 1'-0"



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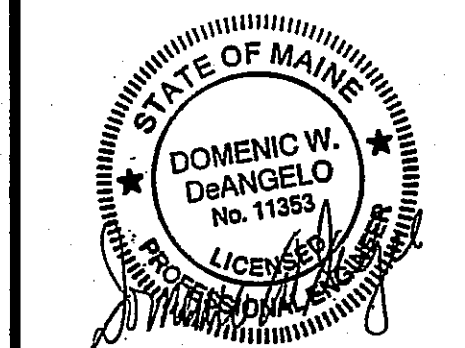
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REVISIONS

NUMBER	REMARKS	DATE



FOR CONSTRUCTION

PROJECT TITLE

Cumberland FARMS
100 Crossing Blvd, Framingham, Massachusetts
STORE # 5604
V1079

801 WASHINGTON AVE
PORTLAND, ME
Cumberland County

FOUNDATION DETAILS & NOTES

DATE	PROJ NO
JULY 19, 2012	11112
DRAWN BY	CHECKED BY
MD	AZ

DRAWING NUMBER

S2.1