

**STRUCTURAL NOTES**

**GENERAL NOTES:**

1. ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
2. THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER IT IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO ENSURE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING (AND ACCOMPANYING FOOTINGS), GUYS OR TIEDOWNS.
3. ADDITIONAL OBSERVATIONS AS A RESULT OF REJECTION OF WORK COMPLETED AND/OR ADDITIONAL OBSERVATIONS DUE TO THE DEFICIENCIES IN WORK OBSERVED WILL BE AT THE EXPENSE OF THE CONTRACTOR.

**DESIGN CODES:**

- 2003 INTERNATIONAL BUILDING CODE.
- AC 318-02 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY.

**DESIGN LOADS:**

THE RETAINING WALL HAS BEEN DESIGNED WITH THE FOLLOWING SUPERIMPOSED LOADINGS:

- LATERAL: ETEP (TYP. U.N.C.) 40 pcf
- ETEP (SUPPORTING HOUSE) 60 pcf + FOUND. SURCHARGE

**FOUNDATIONS:**

FOUNDATIONS ARE DESIGNED FOR AN ASSUMED ALLOWABLE SOIL BEARING PRESSURE OF 1,500 psl. ON EXISTING SOILS. COMPACT SOILS BELOW FOOTINGS TO 05X OF MODIFIED PROCTOR (ASTM D1557).

**PLUMBING SLEEVES:**

MINIMUM SLEEVE SPACING SHALL BE TWO DIAMETERS CENTER TO CENTER TO THE LARGER SLEEVE OR 6" CLEAR BETWEEN SLEEVES, WHICHEVER IS GREATER. PRIOR TO CONSTRUCTION SLEEVE LOCATIONS AND SIZES SHALL BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.

**CHEMICAL ANCHORS:**

SHALL BE A POLYMER INJECTION SYSTEM SUCH AS RAMSET "EPCON", MOLLY "PARAMOUNT HV", SIKA "SIKADUR INJECTION SET", "ULTI-HIGH STRENGTH EPOXY", OR APPROVED EQUAL. INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. INSTALLERS SHALL BE TRAINED BY THE MANUFACTURER'S REPRESENTATIVE.

**PENETRATIONS:**

NO PENETRATIONS SHALL BE MADE IN ANY STRUCTURAL MEMBERS OTHER THAN THOSE LOCATED ON THESE DRAWINGS WITHOUT PREVIOUS APPROVAL OF THE ENGINEER.

**CONCRETE MIX DESIGN:**

1. SHALL BE MIX DESIGNED BY A RECOGNIZED TESTING LABORATORY TO ACHIEVE A STRENGTH AT 28 DAYS AS LISTED BELOW WITH A PLASTIC AND WORKABLE MIX:

4,000 psl - ALL CONCRETE

2. SUBMIT PROPOSED MIX DESIGN WITH RECENT FIELD CYLINDER OR LAB TESTS FOR REVIEW PRIOR TO USE. MIX SHALL BE UNQUELTY IDENTIFIED BY MIX NUMBER OR OTHER POSITIVE IDENTIFICATION. CONCRETE SHALL COMPLY WITH ALL THE REQUIREMENTS OF ASTM STANDARD C94 FOR MEASURING, MIXING, TRANSPORTING, ETC. CONCRETE TICKETS SHALL BE TIME STAMPED WHEN CONCRETE IS BATCHED. THE MAXIMUM TIME ALLOWED FROM THE TIME THE MIXING WATER IS ADDED UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED ONE AND ONE HALF (1-1/2) HOURS IF FOR ANY REASON THERE IS A LONGER DELAY THAN STATED ABOVE, THE CONCRETE SHALL BE DISCARDED. IT SHALL BE THE RESPONSIBILITY OF THE TESTING LAB TO NOTIFY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THE ABOVE. ALL SLABS SHALL BE CURED USING CURING COMPOUND MEETING ASTM STANDARD C309 TYPE 1 AND SHALL HAVE A FUGITIVE DYE. THE COMPOUND SHALL BE PLACED AS SOON AS THE FINISHING IS COMPLETED OR AS SOON AS THE WATER HAS LEFT THE UNFINISHED CONCRETE. ALL SCUFFED OR BROKEN AREAS IN THE CURING MEMBRANE SHALL BE RECOATED DAILY. CALCIUM CHLORIDES SHALL NOT BE UTILIZED, OTHER ADMIXTURES MAY BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.

3. CONCRETE SHALL UTILIZE TYPE 1/II CEMENT.

4. THE CONCRETE STRENGTHS SHOWN IN THE SECTION ABOVE AND IN THE SPECIFICATIONS ARE MINIMUM COMPRESSIVE STRENGTHS. THE ENGINEER SHALL DETERMINE IF THE CONCRETE IS ACCEPTABLE, OR TO BE REMOVED, OR TO RECEIVE SPECIAL CURING IF THE COMPRESSIVE STRENGTHS ARE LESS THAN SPECIFIED.

5. ALL CONCRETE EXPOSED TO WEATHER OR EARTH SHALL BE AIR ENTRAINED TO 5% TO 7%.

6. WATER REDUCING AGENTS MAY BE USED IN THE CONCRETE MIX. PLASTICIZERS AND SUPER-PLASTICIZERS MAY BE USED ONLY WHEN WRITTEN PERMISSION OF THE ENGINEER IS GIVEN.

7. NO SALTS OF ANY KIND MAY BE USED IN CONCRETE BEFORE OBTAINING THE ENGINEER'S WRITTEN PERMISSION FOR THEIR USE.

**CONCRETE AND REINFORCING PLACEMENT:**

1. ALL CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 301 AND ACI 117.
2. ALL REINFORCING STEEL TO BE ASTM A615, GRADE 60 (#4 AND LARGER), EXCEPT WHERE NOTED OTHERWISE. REINFORCING SHALL NOT BE WELDED.
3. ALL REINFORCING STEEL BARS TO BE DETAILED AND PLACED IN ACCORDANCE WITH THE LATEST ACI MANUALS.
4. LAP ALL REINFORCING SPLICES IN CONCRETE A MINIMUM OF 48 BAR DIAMETERS OR 24 INCHES, WHICHEVER IS GREATER, UNLESS NOTE OTHERWISE ON DRAWINGS (CLASS B SPLICE).

5. PROVIDE FOUNDATION DOWELS AS SHOWN. MINIMUM SIZE DOWELS TO BE #4, UNLESS OTHERWISE NOTED. ALL VERTICAL REINFORCING STEEL IN COLUMNS AND PIERS, OR VERTICAL REINFORCING IN WALLS, SHALL BE DOWELED INTO THE FOOTINGS WITH SAME SIZE AND QUANTITY DOWEL AS THE VERTICAL REINFORCING.

6. WHERE SHOWN ON THE DRAWINGS, PROVIDE WELD PLATES, WELDMENTS, OR CONCRETE INSERTS FOR FASTENING AND SECURING OTHER COMPONENTS. CONCRETE INSERTS SHALL BE FURNISHED BY THE CONTRACTOR REQUIRING THEM AND INSTALLED BY THE CONTRACTOR CASTING THE CONCRETE AROUND THEM. CLIP ANGLES SHALL BE FURNISHED BY THE CONTRACTOR REQUIRING THEM.

7. REINFORCING STEEL SHALL RECEIVE CONCRETE COVER AS FOLLOWS:

| DESCRIPTION  | MINIMUM COVER |
|--|---------------|
| CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH                                  | 3"            |
| EXPOSED TO EARTH OR WEATHER  |               |
| #6 THROUGH #18 BARS  | 2"            |
| #5 BARS OR SMALLER   | 1 1/2"        |
| NOT EXPOSED TO EARTH OR WEATHER OR IN CONTACT WITH THE GROUND, SLABS AND WALLS |               |
| #11 BARS OR SMALLER  | 3/4"          |
| #14 AND #18  | 1 1/4"        |
| BEAMS AND COLUMNS  | 1 1/4"        |

8. PROVIDE TWO (2) #5'S, ONE AT EACH FACE, UNLESS NOTED OTHERWISE, AROUND ALL OPENINGS GREATER THAN 12"x12" IN CAST-IN-PLACE CONCRETE. EXTEND REINFORCING 2'-0" BEYOND OPENING IN BOTH DIRECTIONS. CONTACT ENGINEER FOR ALL OPENINGS GREATER THAN 12"x12" FOR DESIGN.

9. COLD WEATHER AND HOT WEATHER PROMISONS OF ACI 306 AND 305 (CURRENT EDITIONS), RESPECTIVELY, SHALL BE MAINTAINED.

**FORMWORK AND SHORING:**

NO STRUCTURAL CONCRETE SHALL BE STRIPPED UNTIL IT HAS REACHED AT LEAST TWO-THIRDS OF THE 28 DAY DESIGN STRENGTH. DESIGN, ERECTION AND REMOVAL OF ALL FORMWORK, SHORES AND RESHORES SHALL MEET THE REQUIREMENTS SET FORTH IN ACI STANDARDS 301 AND 347.

**CITY OF DEADWOOD CONSTRUCTION STANDARDS:**

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF DEADWOOD'S "UTILITIES CONSTRUCTION STANDARDS" AND AS SHOWN HERE WITHIN

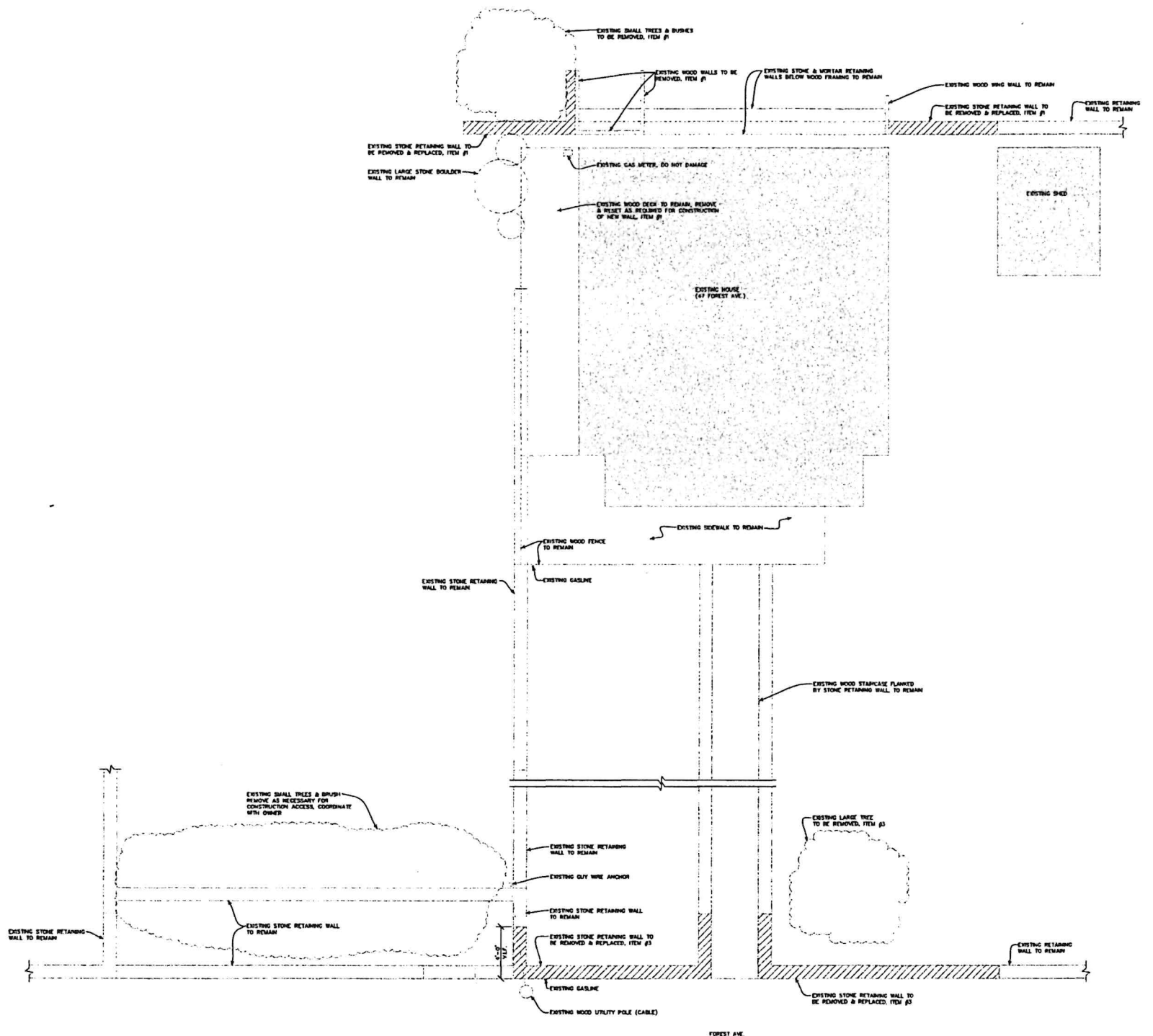
**45 & 47 FOREST AVENUE RETAINING WALL**  
 DEADWOOD, SOUTH DAKOTA

SHEET NO. 50  
 DATE: 01/25/08  
 DRAWN BY: AH

3202 West Main Street  
 Suite C  
 Rapid City, South Dakota 57702  
 605.343.9606

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**DEMOLITION PLAN**  
SCALE: 1/4"=1'-0"

**DEMOLITION PLAN NOTES**

- DIMENSIONS AND ELEVATIONS ARE APPROXIMATE. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.
- OBTAIN ANY AND ALL NECESSARY PERMITS FROM THE CITY OF DEADWOOD.
- REQUIREMENTS FOR PERFORMANCE BONDS, BID BONDS, PAYMENT SCHEDULE, CHANGE ORDER DOCUMENTATION AND APPROVAL ARE RESPONSIBILITY OF OWNER WITH ASSISTANCE FROM THE CITY OF DEADWOOD. CONSTRUCTION TO BE COMPLETED WITHIN 60 DAYS OF START OF CONSTRUCTION. LIQUIDATED DAMAGES IN THE AMOUNT OF \$200 PER DAY WILL BE ASSESSED FOR EACH DAY PAST THE 60 DAY LIMIT IN WHICH CONSTRUCTION IS NOT COMPLETED.
- MAINTAIN FULL ACCESS FOR ONE-WAY TRAFFIC ON FOREST AVENUE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL OVERHEAD & UNDERGROUND UTILITIES AND TAKING ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO ALL UTILITIES.
- REMOVE, SALVAGE, STORE AND RESET ALL ITEMS INDICATED. REPLACE ALL ITEMS DAMAGED DURING REMOVAL WITH NEW OF SAME TYPE AS EXISTING.
- REMOVE AND DISPOSE OF ITEMS NOT INDICATED FOR SALVAGE OR REUSE. CONTRACTOR IS RESPONSIBLE FOR LEGAL DISPOSAL OF ALL ITEMS NECESSARY TO COMPLETE THE PROJECT.
- SEE NOTES ON SHEET S2 FOR DETAILED DESCRIPTION OF WORK ITEMS.

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DEADWOOD, SOUTH DAKOTA

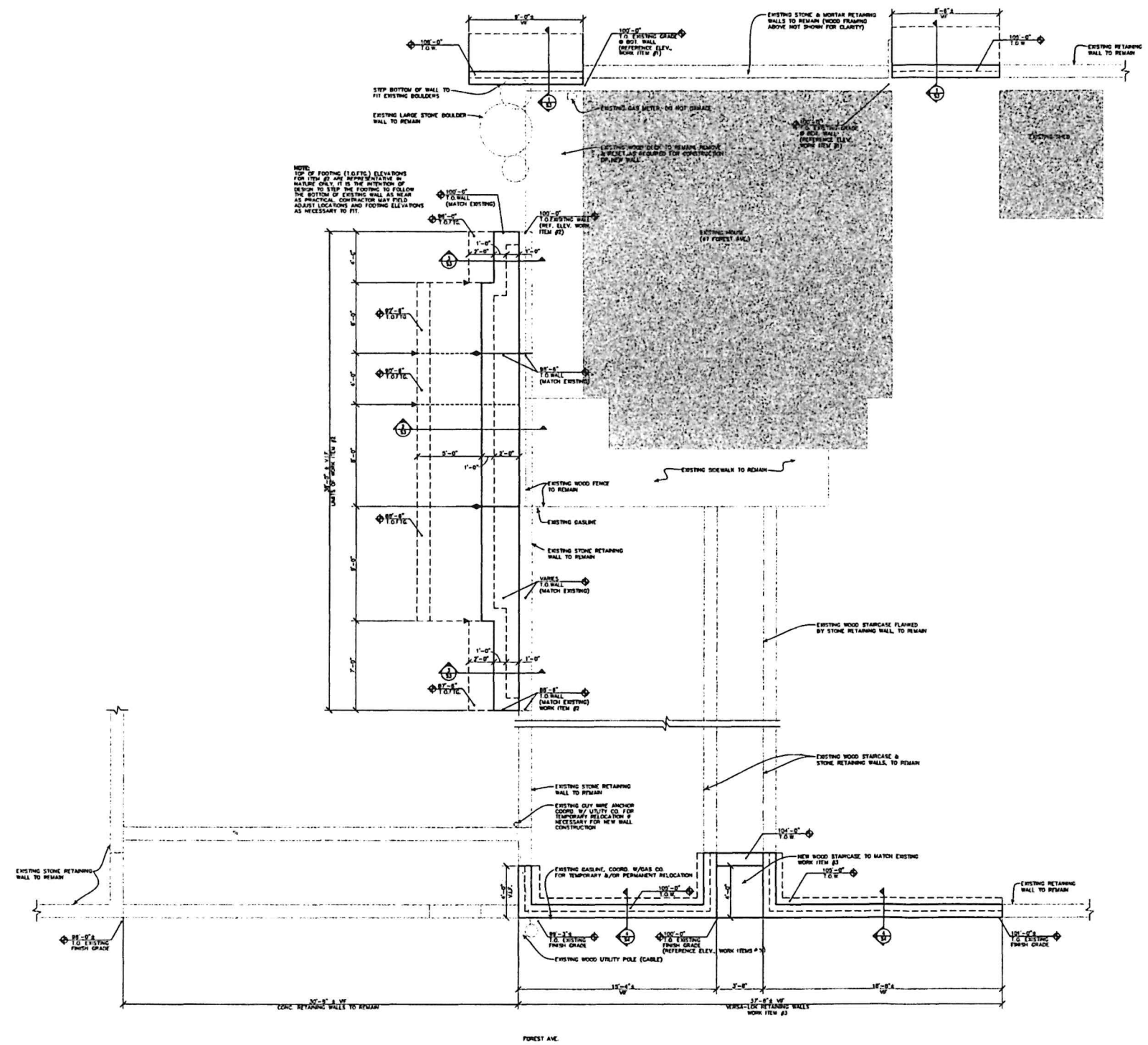
DATE: 01/25/08    DRAWN BY: AH    SHEET FILE: DEMOLITION PLAN

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**S1**



**NOTE:**  
 TOP OF FOOTING (1.0 FT) ELEVATIONS FOR 10% OF ANY UNDESIGNATED MATERIAL ONLY. IT IS THE INTENTION OF DESIGN TO STEP THE FOOTING TO FOLLOW THE BOTTOM OF EXISTING WALL AS NEAR AS PRACTICAL. CONTRACTOR MAY FIELD ADJUST LOCATIONS AND FOOTING ELEVATIONS AS NECESSARY TO FIT.

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- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL OVERHEAD & UNDERGROUND UTILITIES AND TAKING ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGING ALL UTILITIES.
- STONE VENEER TO BE CONSTRUCTED IN MANNER SIMILAR TO MATCH ORIGINAL STONE WALL AND SHALL BE ANCHORED TO CONCRETE BLOCK WALL AS SHOWN IN SECTIONS. STEEL ANGLE SHALL BE ASTM A36 MATERIAL & SHALL BE HOT DIPPED GALV. IN ACCORDANCE WITH ASTM A153.
- PROVIDE RUMF BLANKET PERMITS AND HYDROSEED ALL DISTURBED AREAS. RUMF BLANKET SHALL BE WESTERN EXCELSDOR EXCEL PPS-8 OR APPROVED EQUAL. SEED SHALL MATCH CITY OF DEADWOOD STANDARDS.
- ◊ INDICATES TOP OF WALL STEP.
- ▶ INDICATES TOP OF FOOTING STEP.

**WORK ITEM KEYNOTES:**

FOR BIDDING PURPOSES AND TO HELP DELINEATE REPAIR WORK INVOLVED, THE RETAINING WALL REPAIRS HAVE BEEN SUBDIVIDED INTO THREE (3) SEPARATE WORK ITEM GROUPS. REFER TO CITY OF DEADWOOD INSTRUCTIONS WITH REGARD TO BIDDING OF THE ITEMS. A DETAILED DESCRIPTION OF WORK ITEMS IS AS FOLLOWS:

**WORK ITEM #1:** REMOVE AND REPLACE EXISTING STONE RETAINING WALL AT REAR OF HOUSE WITH A NEW CONCRETE RETAINING WALL. SEE NEW RETAINING WALL PLAN AND SECTIONS.

**WORK ITEM #2:** REPAIR EXISTING STONE WALL RUNNING FROM FRONT TO REAR OF LOT WITH NEW CONCRETE WALL. SEE NEW RETAINING WALL PLAN AND SECTIONS.

**WORK ITEM #3:** REMOVE AND REPLACE EXISTING STONE RETAINING WALLS AT LOT 47 ALONG FOREST AVENUE WITH A NEW VERA-LOK RETAINING WALL. SEE NEW RETAINING WALL PLAN AND SECTIONS.

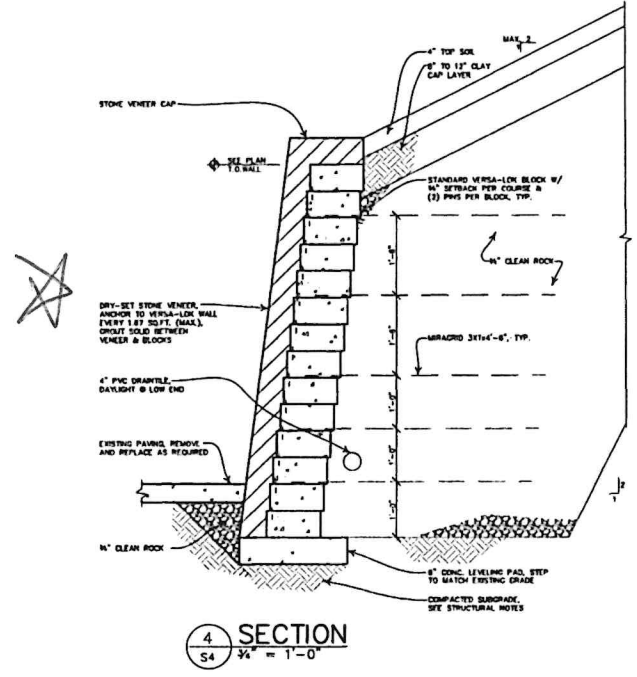
**RETAINING WALL PLAN**  
 SCALE: 1"=1'-0"

**45 & 47 FOREST AVENUE RETAINING WALL**  
 DEADWOOD, SOUTH DAKOTA

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 SHEET NO.: RETAINING WALL PLANS

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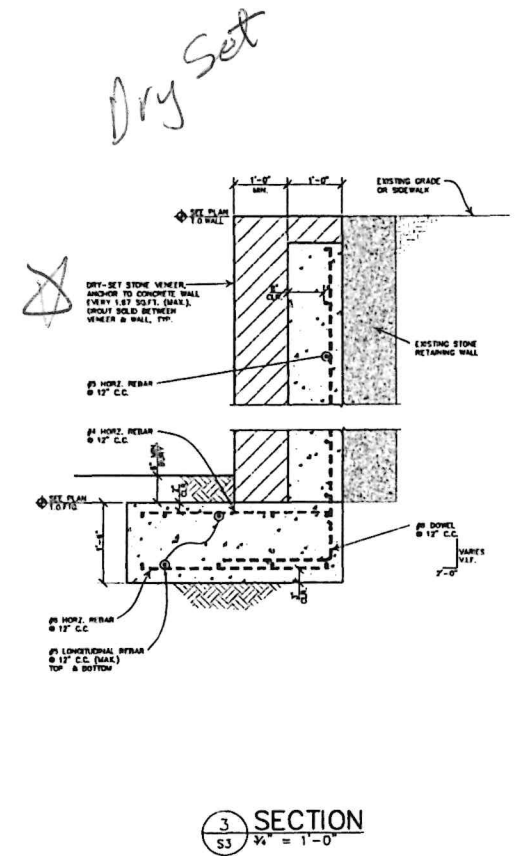
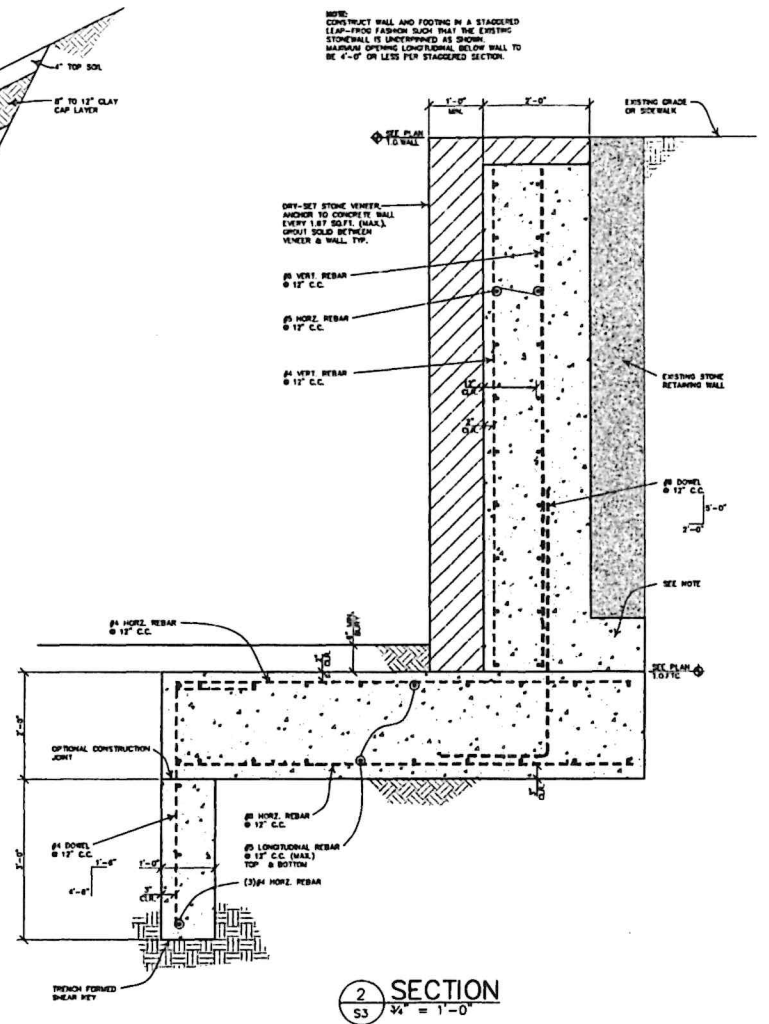
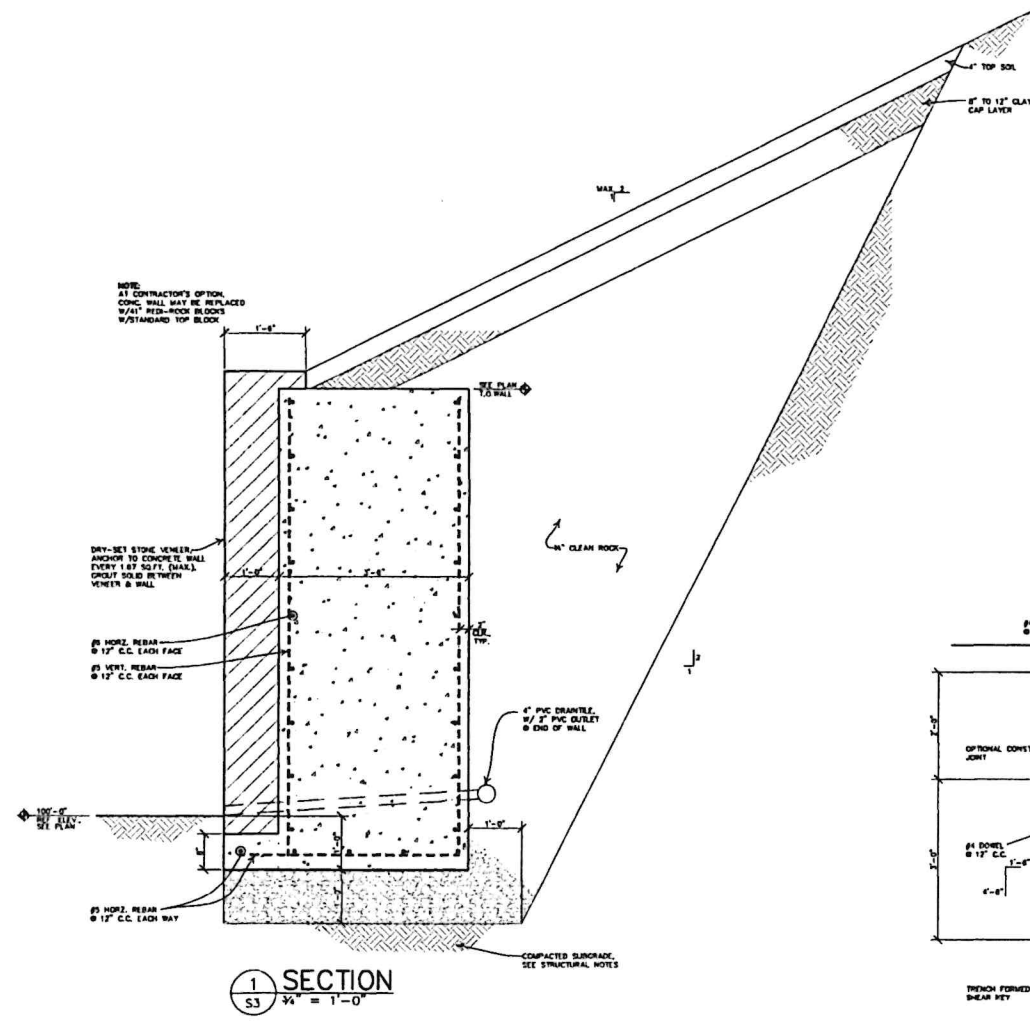
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