REQUIRED VERIFICATION & INSPECTION OF CONCRETE CONSTRUCTION IBC 2006 (TABLE 1704.4)

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE	PERIODIC STAGES	REQUIRED ON THIS PROJECT
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT		X	ACI 318: 3.5, 7.1-7.7	1903.5, 1907.1, 1907.7, 1914.4	PRIOR TO STARTING POURS WHERE CONCRETE TO BE SAMPLED	YES
2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE1704.3, ITEM 5B			AWS D1.4 ACI 318: 3.5.2	1907.7, 1914.4	PRIOR TO ENCLOSING	YES
3. INSPECT BOLTS TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED	X			1912.5		NO
4. VERIFYING USE OF REQUIRED DESIGN MIX		X	ACI 318: CH. 4 5.2-5.4	1904, 1905.2-1906.4, 1914.2, 1914.3	EACH TIME FRESH CONCRETE SAMPLED	YES
5. SAMPLING FRESH CONCRETE AND PERFORMING SLUMP, AIR CONTENT AND DETERMINING THE TEMPERATURE OF FRESH CONCRETE AT THE TIME OF MAKING SPECIMENS FOR STRENGTH TESTS	X		ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1905.5, 1994.10	EACH TIME CONCRETE CYLINDERS TAKEN SEE STRUCTURAL NOTES	YES
6. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X		ACI 318: 5.9, 5.10	1905.9, 1905.10, 1914.5, 1914.7, 1914.8	EACH TIME FRESH CONCRETE SAMPLED	YES
7. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X	ACI 318: 5.11, 5.13	1906.11, 1906.13, 1914.9	(1) UNANNOUCED INSPECTION FOR EVERY 250 CUBIC YARDS OF CONC. PLACED FOR ENTIRE PROJECT	YES
8. THE INSPECTION OF PRESTRESSED CONCRETE: a. APPLICATION OF PRESTRESSING FORCES b. GROUTING ON BONDED PRESTRESSING TENDONS IN THE SEISMIC-RESISTING SYSTEM	X X		ACI 318: 18.18 ACI 318: 18.18.4			NO
9. ERECTION OF PRECAST CONCRETE MEMBERS		X	ACI 318: CH. 16		PRIOR TO ENCLOSING	NO
10. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POSTTENSIONED CONCRETE & PRIOR TO REMOVAL OF SHORES & FORMS FROM BEAMS & STRUCTURAL SLABS		X	ACI 318: 6.2	1906.2		NO

SPECIAL INSPECTION AND TESTING:

1. SPECIAL INSPECTION AND MINIMUM TESTING SHALL BE PERFORMED IN ACCORDANCE WITH 2006 IBC TABLES 1704.3 (STEEL) 1704.4 (CONCRETE), AND 1704.5.1 (MASONRY)

2. INSPECTION SHALL BE PROVIDED BY AN INDEPENDENT TESTING AGENCY HIRED AT THE CONTRACTOR'S EXPENSE. AGENCY INSPECTION PERSONNEL SHALL MEET THE INSPECTOR QUALIFICATIONS FOR EACH MATERIAL ITEM AS INDICATED IN THE SPECIFICATIONS.

3. ANY MATERIAL OR PLACEMENT DEVIATIONS FROM MINIMUMS SHOWN ON THE DRAWINGS OR IN SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

4. IN ADDITION TO THE IBC INSPECTION TABLES, THE INSPECTOR SHALL VERIFY THAT ALL STEEL MAINTAIN ERECTION TOLERANCE OF STRUCTURAL STEEL WITHIN AISC'S CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.

5. IN ADDITION TO THE CONCRETE AND MASONRY IBC INSPECTION TABLES, THE INSPECTOR SHALL VERIFY THAT ALL CONCRETE AND MASONRY MAINTAIN TOLERANCES SPECIFIED IN ACI 117-90 STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS.

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. 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.

3. ALL STRUCTURAL SHOP DRAWINGS TO BE REVIEWED BY JOB SUPERINTENDENT IN ADDITION TO ALL PERSONNEL DEEMED NECESSARY BY CONTRACTOR PRIOR TO SUBMITTAL TO ENGINEER FOR APPROVAL.

4. ALL SHOP DRAWING RESUBMITTALS SHALL INCLUDE A WRITTEN DETAILED LIST OF LOCATIONS AND DESCRIPTIONS OF ALL CHANGES MADE FROM PREVIOUS SUBMITTAL. LIST SHALL BE SPECIFIC AND GENERAL NOTE SUCH AS "DIMENSIONS CORRECTED" ARE NOT ACCEPTABLE.

DESIGN CODES:

- 2006 INTERNATIONAL BUILDING CODE.

- ACI 318-05 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY.

CONCRETE TESTING:

1. CONCRETE TESTING SHALL BE PAID FOR BY THE CONTRACTOR. TESTING LABORATORY SHALL PERFORM THE FOLLOWING TEST ON CAST-IN-PLACE CONCRETE:

A) ASTM C143 - "STANDARD TEST METHOD FOR SLUMP OF PORTLAND CEMENT CONCRETE."

B) ASTM C39 - "STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS. A SEPARATE TEST SHALL BE CONDUCTED FOR EACH CLASS, FOR EVERY 50 CUBIC YARDS (OR FRACTION THEREOF), PLACED PER DAY. REQUIRED CYLINDER(S) QUANTITIES AND TEST AGE AS FOLLOWS:

(1) AT 7 DAYS
(2) AT 28 DAYS

PROVIDE ONE ADDITIONAL RESERVE CYLINDER TO BE TESTED UNDER THE DIRECTION OF THE ENGINEER, IF REQUIRED. IF 28 DAY STRENGTH IS ACHIEVED, THE ADDITIONAL CYLINDER(S) MAY BE DISCARDED.

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:

3,000 PSI - FOUNDATION WALLS AND FOOTINGS
4,000 PSI - INTERIOR SLABS-ON-GRADE & ELEVATED SLABS
4,000 PSI - ALL OTHER CONCRETE

2. SUBMIT PROPOSED MIX DESIGN WITH RECENT FIELD CYLINDER OR LAB TESTS FOR REVIEW PRIOR TO USE. MIX SHALL BE UNIQUELY 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 III 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 RE-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 IF 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 EXCEPT AS MODIFIED BELOW:
ACI 117 ITEM 4.3.1 ELEVATIONS OF SLABS-ON-GRADE TOP OF SLAB ELEVATION SHALL BE WITHIN A 3/8" ENVELOPE EITHER SIDE OF THE THEORETICAL DESIGN SURFACE.

ACI 117 ITEM 4.5.7 FLOOR FINISH TOLERANCES AS MEASURED BY PLACING A TRESTSTRAIGHTEDGE (UNLEVELED) 10 FT. STRAIGHTEDGE ANYWHERE ON THE SLAB AND ALLOWING IT TO REST UPON TWO HIGH SPOTS WITHIN 28 DAYS AFTER SLAB CONCRETE PLACEMENT. THE GAP AT ANY POINT BETWEEN THE STRAIGHT EDGE AND THE FLOOR SHALL NOT EXCEED 1/4".

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 NOTED OTHERWISE ON DRAWINGS (CLASS B SPLICE).

5. PROVIDE CORNER BARS OF SAME BAR DIAMETER AS SPECIFIED FOR THE WALL, BEAM OR FOOTING. PROVIDE MINIMUM OF 48 BAR DIAMETER LAP FOR ALL CORNER BARS, UNLESS NOTE OTHERWISE.

6. 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.

7. 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.

8. REINFORCING STEEL SHALL RECEIVE CONCRETE COVER AS FOLLOWS:

DESCRIPTION	MINIMUM COVER
CAST AGAINST & 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 1/2"
BEAMS AND COLUMNS	1 1/2"

9. 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.

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

11. CONTRACTOR TO FURNISH AND INSTALL 500 LINEAL FEET EACH OF ADDITIONAL # 4 & #5 REINFORCING STEEL TO BE USED AT ENGINEER'S DISCRETION.

12. UNLESS NOTED OTHERWISE ALL UNDER SLAB VAPOR BARRIERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM 1745 CLASS C AND SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.

13. PRIOR TO SCREEDING AN ELEVATED SLAB, CONCRETE SHALL BE UNIFORMLY PLACED ON ALL (3) SPANS OF THE DECK TO A THICKNESS APPROXIMATELY EQUAL TO THE SPECIFIED SLAB THICKNESS AT EACH BEAM OR JOIST LINE.

14. CONTRACTOR IS RESPONSIBLE FOR ESTIMATING CONCRETE QUANTITIES ON ELEVATED SLABS AND SHALL ACCOUNT FOR DEFLECTIONS IN THE FLOOR STRUCTURE.

15. CONTRACTOR SHALL MAINTAIN A CONSTANT THICKNESS OVER THE ENTIRE ELEVATED SLAB. ELEVATED SLAB THICKNESS SHALL NOT BE 3/8" GREATER THAN OR 1/4" LESS THAN THE SPECIFIED THICKNESS.

16. LASER SCREED OR OTHER SIMILARLY FUNCTIONING EQUIPMENT SHALL NOT BE PERMITTED FOR ELEVATED SLABS UNLESS AUTHORIZED BY ALBERTSON ENGINEERING INC.

Revisions	Date

CONSULTANTS:

ARCHITECT/ENGINEERS:

Drawing Title: Site Details

Approved Project Director: VAMC Sheridan

Project Title: Sheridan VAMC LANDSCAPING FOR BUILDING 87

Location: Sheridan, Wyoming

Date: 9/14/2014 | Checked: | Drawn: CLC

Project Number: 666-14-3015

Building Number: 87

Drawing Number: CS902

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Office of Construction and Facilities Management

Department of Veterans Affairs