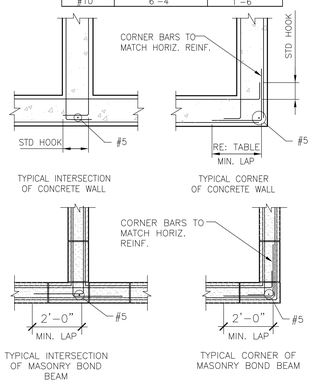
TABLE: MIN. LAP LENGTH & STD. HOOK FOR VERT. & HORIZ. BARS FOR CONCRETE		
BARS	MIN. LAP LENGTH	STD. HOOK
#5	2'-6"	10"
#6	3'-0"	11"
#7	4'-3"	1'-0"
#8	5'-0"	1'-2"
#9	6'-8"	1'-4"
#10	6'-4"	1'-6"

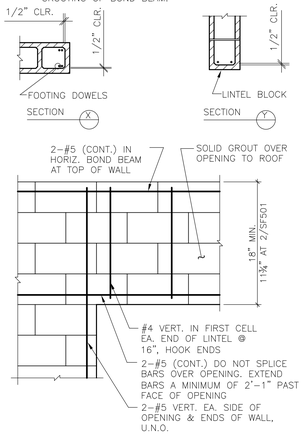


TYP. REINF. AT INTERSECTIONS OF FOOTINGS, GRADE BEAMS AND FOUNDATION WALLS

1 **Scale: 1/2" = 1'-0"**

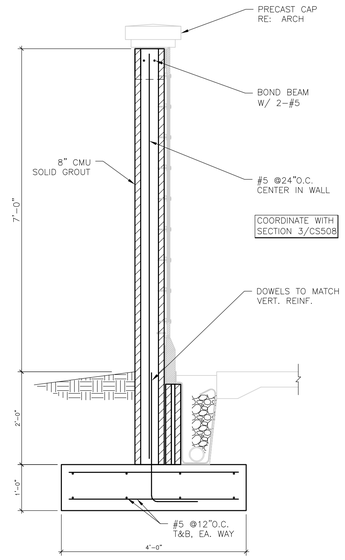
MASONRY BLOCK TERMINOLOGY

– LINTEL BLOCK USED FOR HORIZONTAL BARS AT BOTTOM OF MASONRY LINTELS AND HAS SOLID BOTTOM. – BOND BEAM BLOCK USED FOR HORIZONTAL BARS AT TOP OF WALLS (AND LINTELS) AND HAS OPEN BOTTOM AT CELLS. VERTICAL REINFORCEMENT IN WALLS SHALL EXTEND INTO BOND BEAMS AS SHOWN IN SECTIONS. DAM UNGROUTED CELLS TO ALLOW FOR CONTINUOUS GROUTING OF BOND BEAM.



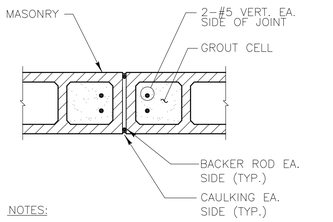
TYPICAL MASONRY LINTEL & END WALL REINFORCING

2 **Scale: 3/4" = 1'-0"**



MEMORIAL WALL SECTION

3 **Scale: 3/4" = 1'-0"**



NOTES:

1. HORIZONTAL TRUSS REINFORCEMENT SHALL BE DISCONTINUOUS AT JOINTS.
2. HORIZONTAL BARS IN BOND BEAM SHALL BE CONTINUOUS ACROSS JOINTS.

MASONRY WALL CONTROL JOINT DETAIL

4 **Scale: NTS**

GENERAL STRUCTURAL NOTES

DESIGN CRITERIA

CODES:
1. 2015 IBC
2. WIND – 130 MPH EXP. C

FOUNDATIONS

1. FOUNDATIONS WERE DESIGNED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY NODARSE & ASSOC., PROJECT NO. H1125068 DATED FEB. 21, 2013.
2. SPREAD FOOTINGS SHALL BE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE = 2,000 PSF
3. REFER TO THE REPORT FOR COMPACTION REQUIREMENTS, FIELD OBSERVATIONS, TESTING AND OTHER RECOMMENDATIONS.

CONTRACTOR NOTES

1. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS AND ELEVATIONS ON ALL DRAWINGS PRIOR TO STARTING WORK AND SHALL NOTIFY THE ARCHITECT AND ENGINEER IMMEDIATELY OF ANY DISCREPANCIES OR INCONSISTENCIES PRIOR TO PROCEEDING.
2. REFERENCE ARCHITECTURAL, CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
   A. SIZE AND LOCATIONS OF ALL OPENINGS
   B. SIZE AND LOCATIONS OF ALL NON–BEARING PARTITIONS
   C. SIZE AND LOCATION OF ALL CONCRETE CURBS, WALKS, ROOF AND FLOOR DRAINS, SLOPES, DEPRESSED SLAB AREAS, ETC.
   D. FLOOR AND ROOF FINISHES
3. WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF THE WORK, THE DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.
4. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT LIFE AND THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO BRACING AND SHORING OF LOADS DUE TO CONSTRUCTION, EQUIPMENT, WIND, SEISMIC, ETC.
5. THIS FIRM DOES NOT PRACTICE OR CONSULT IN THE FIELD OF SAFETY ENGINEERING. WE DO NOT DIRECT THE CONTRACTOR'S OPERATIONS, AND WE CANNOT BE RESPONSIBLE FOR THE SAFETY OF PERSONNEL ON THE SITE. SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE OWNER IF HE CONSIDERS ANY OF THE RECOMMENDED ACTIONS PRESENTED HEREIN TO BE UNSAFE.
6. THE CONTRACTOR SHALL CONFORM TO ALL SAFETY ORDINANCES, RULES, AND CODES. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF SAFETY ITEMS.
7. UNLESS OTHERWISE SHOWN OR NOTED, ALL PHASES OF WORK ARE TO CONFORM TO THE MINIMUM STANDARDS OF THE CODES AND SPECIFICATIONS REFERENCED HEREIN. WHERE CONFLICT BETWEEN CODES AND SPECIFICATIONS OCCUR, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.

CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318–14 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", AND ACI 301 "SPECIFICATIONS FOR STRUCTURAL BUILDINGS," EXCEPT AS MODIFIED BY THE SUPPLEMENTAL REQUIREMENTS CONTAINED HEREIN OR SHOWN ON THE DRAWINGS.
2. SEE ARCHITECTURAL DRAWINGS FOR THE LOCATION OF ARCHITECTURAL FINISHES.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 4,000 PSI.
4. CEMENT SHALL CONFORM TO ASTM C 150, TYPE I/II; AGGREGATES ASTM C 33.
5. WATER / CEMENT RATIO SHALL BE LESS THAN OR EQUAL TO 0.50.
6. DO NOT USE ADMIXTURES AND COLORS (EXCEPT AS NOTED HEREIN) UNLESS SUBSTANTIATING DATA IS SUBMITTED TO AND ACCEPTED BY THE ENGINEER AND ARCHITECT.
7. PROVIDE 3/4" CHAMFER ON ALL EXPOSED EDGES.
8. FORM REMOVAL.
   REMOVE FORMS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE"
   A. SIDE FORMS OF GRADE BEAMS.
   B. FOUNDATION WALLS: 3 DAYS
9. SLEEVE PLUMBING OPENINGS IN SLABS BEFORE PLACING CONCRETE AND BENDING REINFORCING STEEL AROUND SLEEVES.
10. REINFORCING STEEL SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS U.N.O..
11. TESTING LABORATORY SHALL PROVIDE:
    A. BATCH PLANT INSPECTION.
    B. CONTINUOUS PLACEMENT INSPECTION.
    C. CYLINDER TESTS.
    COPIES OF ALL TESTS AND INSPECTION SHALL BE SENT IMMEDIATELY TO THE ENGINEER FOR HIS REVIEW.
12. EPOXY ADHESIVE SHALL BE HILTI HIT HY200.

REINFORCING STEEL

1. FABRICATE AND PLACE REINFORCING BARS IN ACCORDANCE WITH CRSI "MANUAL OF STANDARD PRACTICE" AND CRSI "RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS", AND ACI 318.
2. REINFORCING STEEL TO COMPLY WITH ASTM A615, GRADE 60.
3. WELDED WIRE MESH SHALL CONFORM TO ASTM A185.
4. LAP REINFORCING STEEL IN CONCRETE AS SPECIFIED IN DETAIL 1/S0.01.
6. PROVIDE REINFORCING STEEL WITH THE FOLLOWING MINIMUM PROTECTIVE COVERING OF CONCRETE:
   FOOTINGS
   EXPOSED TO EARTH OR WEATHER = 2"
   CAST AGAINST EARTH = 3"
7. DO NOT USE BRICK OR POROUS MATERIAL TO SUPPORT REINF. STEEL OFF THE GROUND.
8. SUBMIT SHOP DRAWINGS.
9. WELDING OF REINFORCING SHALL NOT BE DONE EXCEPT AS SPECIFICALLY DETAILED ON THESE DRAWINGS. WELDED REINFORCEMENT SHALL CONFORM TO ASTM A706. SPECIAL INSPECTION REQUIRED.
10. ALL REINFORCING SHALL BE CONTINUOUS ACROSS CONST. JOINTS, U.N.O..

MASONRY

1. CONCRETE BLOCK UNITS ARE TO BE IN ACCORDANCE WITH ASTM SPECIFICATIONS C 90 GRADE N. 1900 PSI AVERAGE NET AREA COMPRESSIVE STRENGTH.
2. F'm = 1500 PSI, (COMPRESSIVE STRENGTH OF THE MASONRY ASSEMBLAGE)
3. MORTAR SHALL CONFORM TO ASTM C 270, TYPE S. 1800 PSI.
4. GROUT SHALL CONFORM TO ASTM C1019 AND C476, 2000 PSI.
5. PLACE VERTICAL BARS IN WALLS IN CENTER OF WALL UNLESS NOTED OTHERWISE.
6. TIE OR OTHERWISE FIX VERTICAL BARS IN POSITION IN MASONRY AT INTERVALS OF NOT LESS THAN 4'–0" AND AT TOP AND BOTTOM.
7. PROVIDE DUR–O–WALL HORIZONTAL LADUR REINFORCEMENT @ 16" O.C. CONTINUOUS THROUGHOUT WALLS.
8. GROUT VERTICAL CELLS CONTAINING REINFORCING STEEL AND ANCHOR BOLTS AND HORIZONTAL BOND BEAMS IN WALL U.N.O.
9. PROVIDE 1" MINIMUM GROUT COVER ON ALL BOLTS AND PLATES.
10. RE: 2/S–001 FOR TYP. MASONRY LINTELS AND END WALL REINF.
11. FULL BUTTER ALL BED AND HEAD JOINTS AND WEBS OR USE OPEN END UNITS AT SOLID GROUTED MASONRY.
12. RE: 2/S–001 FOR MASONRY BLOCK TERMINOLOGY.
13. USE RUNNING BOND.
14. SHORE MASONRY LINTELS A MINIMUM OF 28 DAYS OR UNTIL 75% OF STRENGTH HAS BEEN REACHED.
15. EPOXY ADHESIVE FOR REINFORCING STEEL AND THREADED RODS SHALL BE HILTI HIT–HY 200.

MARK	DESCRIPTION	DATE

DESIGN CONSULTANTS:

Cemetery Expertise: MKEC Engineering, Ken Kallenbach, (316) 684-9600	**Irrigation:** Aqua Engineering, Bob Beccard, (970) 372-6104	**Surveying & Hydraulics:** Fabre Engineering & Surveying, Frank Fabre, (850) 433-6438	**MEP:** Spur Design, Ben Noe, (913) 369-7264
Landscape Architect: Foster Conant, Matt Allen, (407) 648-2225	**Commissioning:** CTS, LLC, Kris Linster, (904) 588-3057	**Cost Estimating:** MOCA Cost Engineering, Todd Waddle, (850) 389-8131	**Geotechnical Engineering:** Terracon Consultants, Jay Casper, (720) 545-5807

ARCHITECT / ENGINEER OF RECORD:

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Office of Construction and Facilities Management
Department of Veterans Affairs

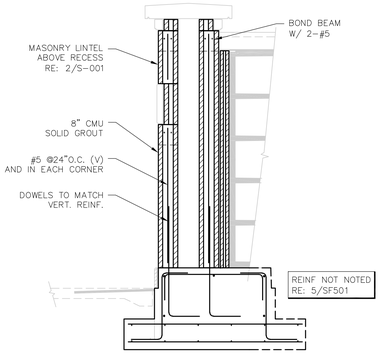
CAPE CANAVERAL NATIONAL CEMETERY
PHASE TWO DEVELOPMENT

APPROVED

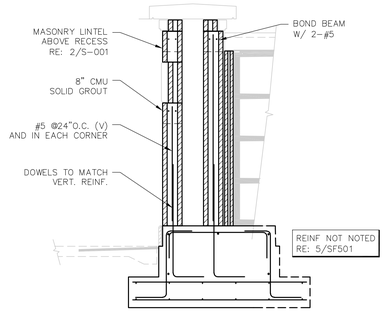
BID DOCUMENTS

LOCATION: MIMS, FLORIDA				BUILDING NUMBER
DATE: 10-25-2019	DRAWN: JJB	CHECKED: GR		PROJECT NUMBER: 934CM2003
DRAWING TITLE: GENERAL STRUCTURAL NOTES & DETAILS				DRAWING NUMBER: S-001, 144 OF 145

SEE SHEET CS503
FOR COLUMBARIUM
WALL DETAILS



1 5 HIGH
COLUMBARIUM PILASTER CROSS SECTION
SCALE: 1/2"=1'-0"



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COLUMBARIUM PILASTER CROSS SECTION
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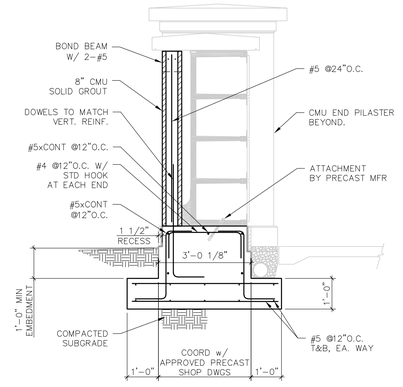
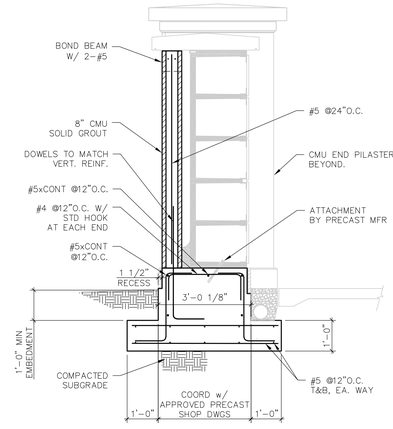


3 SINGLE SIDE - 4-HIGH
TYP COLUMBARIUM CROSS SECTION
SCALE: 1/2"=1'-0"



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TYP COLUMBARIUM CROSS SECTION
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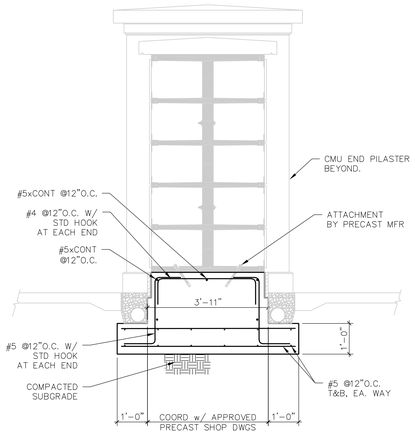

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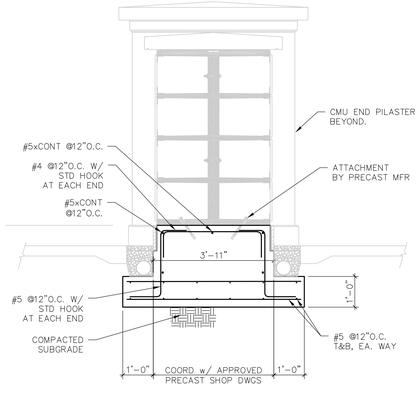
TYP COLUMBARIUM CROSS SECTION
SCALE: 1/2"=1'-0"



6 4 - HIGH
TYP COLUMBARIUM CROSS SECTION
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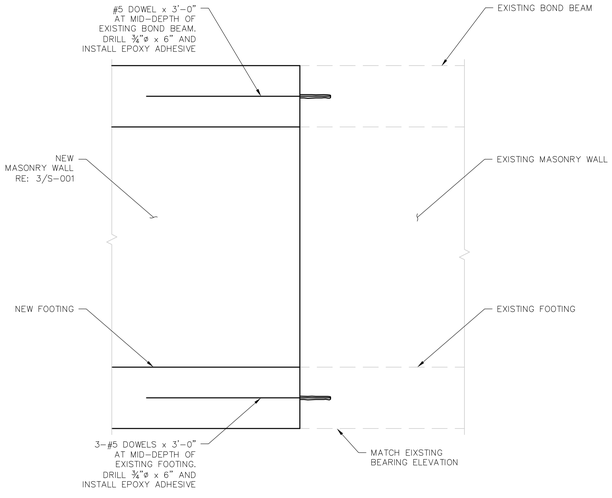

7 NEW TO EXISTING MEMORIAL WALL INTERFACE
SCALE: 1"=1'-0"

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Landscape Architect:
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DRAWING TITLE: **COLUMBARIUM DETAILS**

DRAWING NUMBER: **SF501**
145 OF 145