



Project
**THE CENTER FOR
ADVANCED SURGICAL
SERVICES (CASS)**
88 JESSE HILL DRIVE
ATLANTA, GA 30303

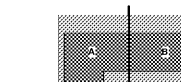
Prepared For
GRADY HEALTH SYSTEM
80 JESSEE HILL DR. SE
ATLANTA, GA 30303



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Key Plan



Professional Seals

**NOT FOR
CONSTRUCTION**

| No. | Description | Date |
|-----|-------------|------------|
| 1 | ED - GMP | 2019-07-20 |

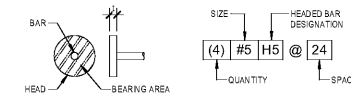
Project No: 18-16013.00
Sheet Title

**TYPICAL CONCRETE
DETAILS**

Original is 30 x 43. Do not scale contents of this drawing
Sheet Number

S501

| BAR SIZE | 'H5' BARS | | 'H10' BARS | |
|----------|-------------------------------|-------------------------|-------------------------------|-------------------------|
| | MIN HEAD BEARING AREA (SQ IN) | MIN HEAD THICKNESS (IN) | MIN HEAD BEARING AREA (SQ IN) | MIN HEAD THICKNESS (IN) |
| #4 | 0.82 | 0.25 | 2.0 | 0.43 |
| #5 | 1.27 | 0.31 | 3.1 | 0.50 |
| #6 | 1.80 | 0.38 | 4.4 | 0.58 |
| #7 | 2.45 | 0.44 | 6.0 | 0.62 |
| #8 | 3.18 | 0.50 | 7.9 | 0.62 |
| #9 | 4.14 | 0.58 | 10.0 | 0.68 |
| #10 | 5.20 | 0.64 | 12.7 | 0.75 |
| #11 | 6.43 | 0.70 | 16.0 | 0.81 |



- NOTES:
- CLEAR SPACING OF H5 HEADED BARS SHALL BE 4X DIA OF BAR MINIMUM.
 - SPACING OF H10 HEADED BARS SHALL BE PER DETAIL IN THE DRAWINGS.

**HEADED DEFORMED BAR
SCHEDULE & DESIGNATION**

| NTS | SF |
|----------------------------|-------------------------------|
| A1010 Standard Foundations | 03 20 00 Concrete Reinforcing |

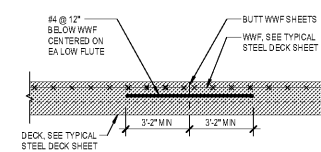
REINFORCING BAR DESIGNATIONS

| NTS | SF |
|----------------------------|-------------------------------|
| A1010 Standard Foundations | 03 20 00 Concrete Reinforcing |

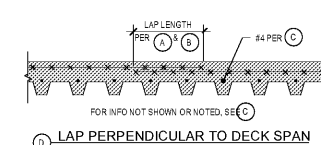
DEFORMED BAR ANCHOR DESIGNATION

| NTS | SF |
|----------------------------|-------------------------------|
| A1010 Standard Foundations | 03 20 00 Concrete Reinforcing |

| PLAIN WIRE SIZE | WIRE SPACING | |
|-----------------|--------------|-----|
| | 6X6 | 4X4 |
| W2.9 | 8" | 6" |
| W4 | 8" | 6" |
| W5.5 | 10" | 10" |
| W6 | 8" | 6" |
| W7 | 8" | 6" |
| W8 | 8" | 6" |
| W11 | 8" | 6" |
| W20 | 16" | 12" |
| W31 | 20" | 16" |



LAP PARALLEL TO DECK SPAN



LAP PERPENDICULAR TO DECK SPAN

WELDED WIRE FABRIC LAP SPlice SCHEDULE

| NTS | SF |
|----------------------------|-------------------------------|
| A1010 Standard Foundations | 03 20 00 Concrete Reinforcing |

PLAIN WIRE

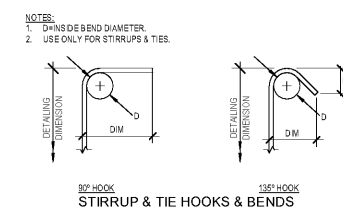
- NOTES:
- LAP SPlice LENGTHS ARE APPLICABLE TO CONCRETE WITH A MINIMUM $f_c = 3000$ PSI AND A MINIMUM WIRE STEEL $f_y = 60,000$ PSI.
 - OFFSET BETWEEN WIRES IS REQUIRED. LAP LENGTHS LISTED IN TABLE ARE MINIMUM LENGTHS. PROVIDE ADDITIONAL LAP LENGTH TO ACHIEVE OFFSET REQUIREMENTS.
 - PLAIN WIRE LAP SPlice LENGTHS ARE MEASURED FROM OUTERMOST CROSS WIRE OF EACH SHEET.
 - DEFORMED WIRE LAP SPlice LENGTHS ARE MEASURED FROM END OF EACH SHEET.
 - WHERE LIGHTWEIGHT AGGREGATE IS USED, MULTIPLY VALUES BY 1.3.

DEFORMED WIRE

**HEADED DEFORMED BAR
EMBEDMENT SCHEDULE**

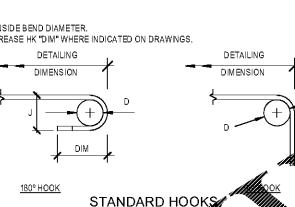
| NTS | SF |
|----------------------------|-------------------------------|
| A1010 Standard Foundations | 03 20 00 Concrete Reinforcing |

| BAR | D | 180° HOOK | | 90° HOOK | |
|-----|--------|-----------|--------|----------|-----|
| | | DIM | DIM | DIM | DIM |
| #3 | 1 1/2" | 4" | 3" | | |
| #4 | 2" | 4 1/2" | 3" | | |
| #5 | 2 1/2" | 5" | 3 3/4" | | |
| #6 | 3" | 5 1/2" | 4 1/2" | | |
| #7 | 3 1/2" | 6" | 4 1/2" | | |
| #8 | 4" | 6 1/2" | 5" | | |
| #9 | 4 1/2" | 7" | 5 1/4" | | |
| #10 | 5" | 7 1/2" | 5 3/4" | | |
| #11 | 5 1/2" | 8" | 6" | | |



STIRRUP & TIE HOOKS & BENDS

| BAR | D | 90° HOOK | | 180° HOOK | |
|-----|--------|----------|---------|-----------|---------|
| | | DIM | DIM | DIM | DIM |
| #3 | 2 1/4" | 6" | 5" | 4" | 3" |
| #4 | 3" | 8" | 6" | 5" | 4" |
| #5 | 3 3/4" | 10" | 7" | 6" | 5" |
| #6 | 4 1/2" | 12" | 8" | 7" | 6" |
| #7 | 5 1/4" | 14" | 10" | 7" | 7" |
| #8 | 6" | 14 1/2" | 11" | 8" | 8" |
| #9 | 6 3/4" | 15 1/2" | 12" | 11 3/4" | 11 3/4" |
| #10 | 7 3/8" | 16 1/2" | 12 1/2" | 11 1/4" | 11 1/4" |
| #11 | 8 1/4" | 17 1/2" | 13 1/4" | 12 3/4" | 12 3/4" |



STANDARD HOOKS

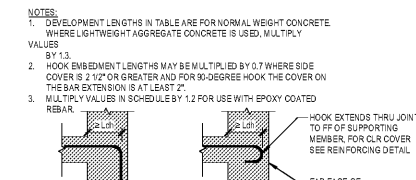
REINFORCING BAR HOOKS & BENDS

| NTS | SF |
|----------------------------|-------------------------------|
| A1010 Standard Foundations | 03 20 00 Concrete Reinforcing |

DOWEL BAR COUPLER DESIGNATION

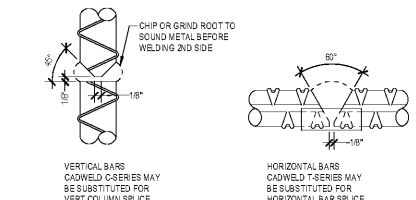
| NTS | SF |
|----------------------------|-------------------------------|
| A1010 Standard Foundations | 03 20 00 Concrete Reinforcing |

| R | S | CONCRETE STRENGTH | |
|-----|--------|-------------------|------------------|
| | | $f_c = 3000$ PSI | $f_c = 4000$ PSI |
| #4 | 2" | 0 3/4" | 0 3/4" |
| #5 | 2 1/2" | 1 1/4" | 0 3/4" |
| #6 | 3" | 1 3/4" | 1 1/4" |
| #7 | 3 1/2" | 1 3/4" | 1 1/4" |
| #8 | 4" | 1 3/4" | 1 1/4" |
| #9 | 4 1/2" | 1 3/4" | 1 1/4" |
| #10 | 5" | 1 3/4" | 1 1/4" |
| #11 | 5 1/2" | 1 3/4" | 1 1/4" |



STANDARD HOOK EMBEDMENT SCHEDULE

| NTS | SF |
|----------------------------|-------------------------------|
| A1010 Standard Foundations | 03 20 00 Concrete Reinforcing |



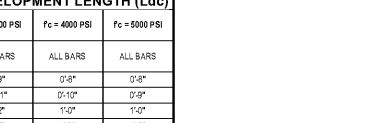
- NOTES:
- A PRE-QUALIFIED TENSION TEST SHALL BE MADE BY AN APPROVED TESTING LABORATORY ON SAMPLES OF EVERY SIZE BAR BEING WELDED.
 - MATERIALS CONDITIONS AND WELDING PROCEDURES UTILIZED SHALL COMPLY WITH THE CURRENTLY APPLICABLE BUILDING CODE AND THE REQUIREMENTS OF THE GOVERNING INSPECTION AGENCY.
 - ALL COSTS INCURRED FOR OBTAINING APPROVALS SHALL BE BORNE BY THE GENERAL CONTRACTOR.

BUTT WELD REINFORCEMENT BARS

| NTS | SF |
|----------------------------|-------------------------------|
| A1010 Standard Foundations | 03 20 00 Concrete Reinforcing |

| CONCRETE STRENGTH | CLASS | TENSION DEVELOPMENT LENGTH (Ld) | | | | | | COMPRESSION DEVELOPMENT LENGTH (Ldc) | | |
|-------------------|-------|---------------------------------|------------|------------------|------------|------------------|------------|--------------------------------------|------------------|------------------|
| | | $f_c = 3000$ PSI | | $f_c = 4000$ PSI | | $f_c = 5000$ PSI | | $f_c = 3000$ PSI | $f_c = 4000$ PSI | $f_c = 5000$ PSI |
| | | TOP BARS | OTHER BARS | TOP BARS | OTHER BARS | TOP BARS | OTHER BARS | ALL BARS | ALL BARS | ALL BARS |
| #3 | 10 | 11.0" | 1.0" | 13" | 1.0" | 1.0" | 0.9" | 0.9" | 0.9" | |
| #4 | 24 | 11.0" | 1.0" | 13" | 1.0" | 1.0" | 0.9" | 0.9" | 0.9" | |
| #5 | 3.0 | 2.4" | 2.3" | 2.3" | 2.3" | 2.3" | 2.3" | 2.3" | 2.3" | |
| #6 | 3.7 | 2.9" | 2.9" | 2.9" | 2.9" | 2.9" | 2.9" | 2.9" | 2.9" | |
| #7 | 5.3 | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | 4.0" | |
| #8 | 6.0 | 4.7" | 4.7" | 4.7" | 4.7" | 4.7" | 4.7" | 4.7" | 4.7" | |
| #9 | 6.9 | 5.2" | 5.2" | 5.2" | 5.2" | 5.2" | 5.2" | 5.2" | 5.2" | |
| #10 | 7.7 | 5.7" | 5.7" | 5.7" | 5.7" | 5.7" | 5.7" | 5.7" | 5.7" | |
| #11 | 8.4 | 6.3" | 6.3" | 6.3" | 6.3" | 6.3" | 6.3" | 6.3" | 6.3" | |

DEVELOPMENT LENGTH (Ld) AND LAP SPlice SCHEDULE



BAR REINFORCEMENT DEVELOPMENT LENGTH AND LAP SPlice SCHEDULE

| NTS | SF |
|----------------------------|-------------------------------|
| A1010 Standard Foundations | 03 20 00 Concrete Reinforcing |

- NOTES:
- MULTIPLY THE Ld AND DEVELOPMENT LENGTH BY THE APPLICABLE FACTORS LISTED BELOW.
 - MULTIPLY THE Ld AND DEVELOPMENT LENGTH BY 1.5 FOR ANY OF THE FOLLOWING CONDITIONS:
 - THE CONCRETE CLEAR COVER IS LESS THAN OR EQUAL TO THE BAR DIAMETER.
 - WHERE STIRRUPS OR TIES ARE SHOWN IN THE DRAWINGS THROUGHOUT LAP SPlice OR DEVELOPMENT LENGTH AND THE CLEAR SPACING OF BARS IS LESS THAN 3 BAR DIAMETERS.
 - WHERE LIGHTWEIGHT AGGREGATE CONCRETE IS USED, MULTIPLY THE Ld AND DEVELOPMENT LENGTH BY 1.3.
 - FOR EPOXY COATED REBAR, MULTIPLY Ld AND Ld BY 1.5 WHERE CLEAR COVER IS LESS THAN 3D OR CLEAR SPACING IS LESS THAN 6D, OTHERWISE MULTIPLY BY 1.2.
 - TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
 - SPlices DESIGNATED AS LTS SHALL BE CLASS 'A' UNLESS CLASS 'X' SPlices ARE PERMITTED. CLASS 'A' SPlices ARE PERMITTED ONLY WHERE SPlices ARE STAGGERED AND ONE HALF OR LESS OF THE TOTAL REINFORCEMENT IS SPliced WITHIN THE REQUIRED LAP LENGTH.
 - FOR REINFORCEMENT WITH $f_y = 75$ KSI MULTIPLY VALUES BY 1.25.
 - BUNDLE BARS: INDIVIDUAL BAR SPlices IN A BUNDLE SHALL NOT OVERLAP. THE ENTIRE BUNDLE SHALL NOT BE LAP SPliced. THREE BAR BUNDLES MULTIPLY VALUES BY 1.2, FOUR BAR BUNDLES MULTIPLY BY 1.33.
 - WHEN BARS OF DIFFERENT SIZE ARE LAP SPliced IN TENSION, SPlice LENGTH SHALL BE THE LARGER OF Ld OF THE LARGER BAR AND ITS LENGTH OF SMALLER BARS.
 - WHEN BARS OF DIFFERENT SIZE ARE LAP SPliced IN COMPRESSION, SPlice LENGTH SHALL BE THE LARGER OF Ld OF THE LARGER BAR AND Ld OF THE SMALLER BAR.
 - MECHANICAL BAR COUPLERS (ICC APPROVED) MAY BE USED AS AN ALTERNATE TO LAP SPlices. COUPLERS SHALL BE CLASSIFIED AS EITHER TYPE 1 OR TYPE 2. TYPE 1 COUPLERS SHALL BE ADEQUATE TO TRANSFER 120% OF THE YIELD STRENGTH OF THE SPliced BARS. TYPE 2 COUPLERS SHALL BE ADEQUATE TO TRANSFER 100% OF THE YIELD STRENGTH AND 100% OF THE TENSILE STRENGTH OF THE SPliced BARS, UNLESS INDICATED OTHERWISE, USE TYPE 1 COUPLERS.
 - IN SHOTCRETE WALLS, SPlices IN REINFORCING BARS SHALL BE NON-CONTACT LAP SPlices WITH AT LEAST 2 INCH CLEARANCE BETWEEN BARS. THE BUILDING OFFICIAL MAY PERMIT THE USE OF CONTACT LAP SPlices WHEN NECESSARY FOR THE SUPPORT OF THE REINFORCING PROVIDED IT CAN BE DEMONSTRATED BY MEANS OF PRE-CONSTRUCTION TESTING THAT ADEQUATE ENCASEMENT OF THE BARS AT THE SPlice CAN BE ACHIEVED, AND PROVIDED THAT THE SPlices ARE PLACED SO THAT A LINE THROUGH THE CENTER OF THE TWO SPliced BARS IS PERPENDICULAR TO THE SURFACE OF THE SHOTCRETE WORK.

HEADED BAR DEVELOPMENT LENGTH (Ld)

| BAR SIZE | CONCRETE STRENGTH | | |
|----------|-------------------|------------------|------------------|
| | $f_c = 3000$ PSI | $f_c = 4000$ PSI | $f_c = 5000$ PSI |
| #4 | 0 3/4" | 0 3/4" | 0 3/4" |
| #5 | 1 1/4" | 1 1/4" | 1 1/4" |
| #6 | 1 3/4" | 1 3/4" | 1 3/4" |
| #7 | 1 3/4" | 1 3/4" | 1 3/4" |
| #8 | 1 3/4" | 1 3/4" | 1 3/4" |
| #9 | 1 3/4" | 1 3/4" | 1 3/4" |
| #10 | 1 3/4" | 1 3/4" | 1 3/4" |
| #11 | 1 3/4" | 1 3/4" | 1 3/4" |

NOTES:
 1. DEVELOPMENT LENGTHS ARE FOR H5 BARS NORMAL WEIGHT CONCRETE.
 2. CLEAR COVER TO BAR SHALL BE 2 BAR DIA MINIMUM AND CLEAR SPACING BETWEEN BARS SHALL BE 4 BAR DIA MIN.
 3. MULTIPLY VALUES IN SCHEDULE BY 1.2 FOR USE WITH EPOXY COATED REBAR.

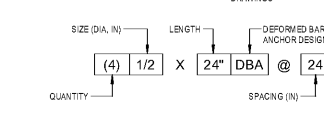
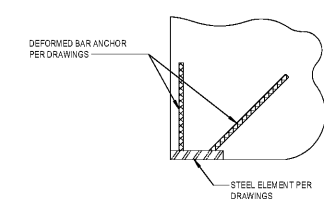
AT VERTICAL ELEMENT



AT HORIZONTAL ELEMENT



- NOTES:
- TYPICAL DESIGNATION WILL INCLUDE ONLY SOME OF THE INFORMATION LISTED ABOVE.
 - ADDITIONAL DESIGNATIONS FOR GR 75 BARS, EPOXY COATED BARS, AND STAINLESS BARS WILL BE INCLUDED WHERE APPLICABLE.



- NOTES:
- ANCHORS CALLED OUT WITH THIS DESIGNATION ON DRAWINGS WITH A DIAMETER 4/8" SHALL BE FLUX FUELED DEFORMED BAR ANCHORS ASTM 496 OR ASTM NELSON TYPE 2, (ICC-ES ESR-2007), OR EQUAL DBA WITH A DIAMETER OF 3/4" OR LARGER SHALL CONFORM TO ASTM A76. SEE SPECS FOR ADD. INFO.
 - HOOKS AND BENDS OF BAR PER ACI 318 CHAPTER 7.
 - SEE DRAWINGS FOR SIZE, LENGTH AND SPACING.

- NOTES:
- CLEAR SPACING OF H5 HEADED BARS SHALL BE 4X DIA OF BAR MINIMUM.
 - SPACING OF H10 HEADED BARS SHALL BE PER DETAIL IN THE DRAWINGS.

**HEADED DEFORMED BAR
SCHEDULE & DESIGNATION**

| NTS | SF |
|----------------------------|-------------------------------|
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