

## GENERAL NOTES

### A GENERAL

#### A1 AS-BUILT VERIFICATION

CONTRACT DOCUMENTS THAT DESCRIBE EXISTING CONDITIONS ARE BASED ON FIELD OBSERVATIONS AND ARE NOT BASED ON EXTENSIVE FIELD MEASUREMENT. OPENING OF CONCEALED CONDITIONS OR EXCAVATION OF BURIED ITEMS. THE STRUCTURAL ENGINEER OF RECORD DOES NOT WARRANT THEM TO BE WITHOUT ERROR. THESE PORTIONS OF THE DRAWINGS ARE INTENDED AS A GUIDE TO THE CONTRACTOR WHO SHALL VERIFY ACTUAL CONDITIONS AT THE JOB SITE.

#### A2 DIMENSIONS

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS, BOTH FOR THIS WORK AND FOR ALL EXISTING CONDITIONS WHICH EFFECT THIS WORK, PRIOR TO THE START OF WORK AND IT SHALL BE HIS RESPONSIBILITY TO IMMEDIATELY NOTIFY THE STRUCTURAL ENGINEER OF RECORD SHOULD ANY DISCREPANCIES EXIST.

#### A3 ERECTION BRACING

THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ADEQUATE ERECTION BRACING AS REQUIRED FOR THE STABILITY OF THE STRUCTURE AND ITS STRUCTURAL COMPONENTS DURING ALL PHASES OF CONSTRUCTION.

#### A4 SHOP DRAWINGS

SHOP DRAWINGS (2 REPRODUCIBLE PRINTS) SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR REVIEW AFTER THE CONTRACTOR HAS REVIEWED AND STAMPED SAME FOR COMPLIANCE AND PRIOR TO FABRICATION FOR THE FOLLOWING ITEMS:

1. CONCRETE AND MASONRY REINFORCEMENT
2. STRUCTURAL STEEL AND ALUMINUM

#### A5 SPECIAL INSPECTIONS

IN ADDITION TO THE INSPECTIONS REQUIRED BY IBC SECTION 109, THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS WHO SHALL PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE FOLLOWING WORK:

1. SUBGRADE PREPARATION AND BACKFILL PLACEMENT
2. STRUCTURAL STEEL PER IBC SECTION 1704.3 AND TABLE 1704.3
3. CONCRETE PER IBC SECTION 1704.4 AND TABLE 1704.4
4. ENGINEERED MASONRY PER IBC SECTION 1704.5 AND TABLE 1704.5.1
5. EPOXY ANCHOR INSTALLATION PER APPLICABLE ICC ESR REPORT.

### B STRUCTURAL DESIGN

#### B1 BUILDING CODE

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE 2003 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC) AS AMENDED AND ADOPTED BY THE CITY OF ENTIAT.

#### B2 DESIGN LOADS

SNOW LOAD  
35 PSF,  $s_s = 1.1$   
WIND LOAD  
85 MPH, EXPOSURE C,  $w = 1.15$   
SEISMIC LOAD  
 $Sds = 0.467$ ,  $is = 1.25$

#### B3 FOUNDATIONS

SUBGRADE PREPARATION AND BACKFILL REQUIREMENTS SHALL BE AS SPECIFIED IN THE PROJECT GEOTECHNICAL REPORT, CITY OF ENTIAT WWP/ SBR BASINS, PREPARED BY HAMMOND COLLIER, PROJECT NO. 05-23-004.03, DATED DECEMBER 2005. DESIGN ALLOWABLE BEARING PRESSURE = 4,000 PSF (SBR BASINS), 2,000 PSF REMAIN.

### C CONCRETE

#### C1 APPLICABLE CODES

CONCRETE CONSTRUCTION SHALL CONFORM TO THE 2005 EDITION OF THE ACI BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-05). MIX PROPORTIONING SHALL BE PER ACI 301.

#### C2 REINFORCING STEEL DETAILING

DETAILS AND DETAILING OF CONCRETE REINFORCEMENT SHALL BE IN CONFORMANCE WITH ACI 315.

#### C3 MATERIALS

$f'_c = 4,000$  PSI, NOT LESS THAN 5.5 SACKS CEMENT PER CUBIC YARD. REINFORCEMENT: GRADE 60,  $F_y = 60,000$  PSI PER ASTM A615.

#### C4 CONCRETE COVER

ALL CONCRETE SHALL BE PROVIDED MINIMUM COVER AS FOLLOWS:

FOOTINGS AND UNFORMED SURFACES - 3". FORMED SURFACES EXPOSED TO EARTH, WEATHER, OR IN CONTACT WITH LIQUIDS - 2".

#### C5 REINFORCING STEEL LAP SPLICES

SPLICES OF REINFORCING STEEL BARS SHALL BE IN ACCORDANCE WITH ACI 318 AND SHALL BE CLASS B UNLESS OTHERWISE NOTED. STAGGER LAPS OF ADJACENT BARS ONE LAP LENGTH. THE LAP SPlice LENGTH OF BARS OF DIFFERENT DIAMETERS MAY BE BASED ON THE SMALLER DIAMETER BAR.

#### C6 FINISH

ALL EXPOSED CONCRETE SHALL BE SACK FINISHED. CHAMFER ALL EXPOSED EDGES.

### D REINFORCED MASONRY

#### D1 APPLICABLE CODES

REINFORCED MASONRY CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF ACI 530-02.

#### D2 MATERIALS

CONCRETE MASONRY UNITS:  $f'_m = 1,500$  PSI, 8" UNITS, 115 PCF MAXIMUM DENSITY, GRADE N, TYPE I. ALL BLOCK SHALL CONTAIN AN INTEGRAL WATER REPELLENT ADMIXTURE.

MORTAR: TYPE S, MINIMUM COMPRESSIVE CUBE STRENGTH = 1,800 PSI. ALL MORTAR SHALL CONTAIN AN INTEGRAL WATER REPELLENT ADMIXTURE.

GROUT:  $F_g = 2,000$  PSI. GROUT ALL CELLS CONTAINING REINFORCEMENT.

INSULATION: VERMICULITE LOOSE FILL INSULATION PER ASTM C 516, TYPE II, GRADE 2.

REINFORCEMENT: GRADE 60,  $F_y = 60,000$  PSI PER ASTM A 615.

ANCHOR BOLTS: ASTM A 307, HEAVY HEX BOLTS.

#### D3 VERTICAL REINFORCEMENT

REINFORCE WALLS VERTICALLY WITH (1)  $\#5 \text{ @ } 32"$  O.C., (2)  $\#5$  VERTICAL FULL HEIGHT AT CORNERS AND INTERSECTIONS, ADD (1)  $\#5$  EA FACE AT OPENINGS AND DISCONTINUOUS ENDS. PROVIDE PREFABRICATED WIRE POSTERSION BOTTOM, TOP AND AT 192 BAR DIAMETERS TO POSITION VERTS. CENTER ALL VERTS UNLESS SPECIFICALLY NOTED OTHERWISE.

#### D4 HORIZONTAL REINFORCEMENT

REINFORCE WALLS HORIZONTALLY WITH (2)  $\#5 \text{ @ } 48"$  O.C. PLUS PROVIDE (2)  $\#5$  CONTINUOUS TOP ALL WALLS. PROVIDE CORNER BARS TO MATCH HORIZONTAL WALL REINFORCEMENT AT CORNERS AND INTERSECTIONS. AT OPENINGS PROVIDE (2)  $\#5$  TOP AND BOTTOM EXTENDING 2'-0" BEYOND OPENING EACH SIDE. HOOK WHERE FULL EXTENSION IS NOT AVAILABLE.

#### D5 REINFORCEMENT COVER

ALL REINFORCEMENT SHALL BE COMPLETELY EMBEDDED IN MORTAR OR GROUT WITH A MINIMUM COVER, INCLUDING THE MASONRY UNIT, OF AT LEAST  $3/4"$ ,  $1/2"$  WHEN EXPOSED TO WEATHER AND 2" WHEN EXPOSED TO SOIL.

#### D6 REINFORCING LAP SPLICES

LAP ALL REINFORCEMENT 48 DIAMETERS AT SPLICES. STAGGER LAPS OF ADJACENT BARS ONE LAP LENGTH.

#### D7 INSULATION

FILL ALL UNREINFORCED CELLS WITH LOOSE FILL INSULATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

### E STRUCTURAL STEEL

#### E1 APPLICABLE CODES

STEEL CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE AISC STEEL CONSTRUCTION MANUAL, 13TH EDITION.

#### E2 MATERIALS

W SHAPES: ASTM A992,  $F_y = 50$  KSI

CHANNELS, ANGLES, BARS AND PLATES: ASTM A36,  $F_y = 36$  KSI

CAST IN PLACE COLUMN ANCHOR BOLTS: ASTM F1554, GRADE 36

STRUCTURAL FRAMING BOLTS: ASTM A325 X

STRUCTURAL FRAMING BOLTS FOR ALUMINUM CONSTRUCTION: 3/4"  $\Phi$  STAINLESS STEEL ASTM F593 (ASTI 304/316) WELDING ELECTRODES: E70XX

#### E3 BOLTED CONNECTIONS

ALL BEAM CONNECTIONS SHALL HAVE A MINIMUM OF (2) BOLTS. BOLTS SHALL BE SPACED AT A 4 DIAMETER PITCH WITH A MINIMUM EDGE DISTANCE OF 2 BOLT DIAMETERS. PROVIDE SHORT SLOTTED HOLES WHERE INDICATED.

#### E4 HOT-DIP GALVANIZING

ALL FRAMING SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.

### F ALUMINUM

#### F1 APPLICABLE CODES:

ALUMINUM CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE ALUMINUM ASSOCIATION ALUMINUM DESIGN MANUAL SPECIFICATIONS AND GUIDELINES FOR ALUMINUM STRUCTURES, 2005 EDITION.

#### F2 MATERIALS

STRUCTURAL SHAPES, BARS, AND PLATES SHALL BE ALLOY 6061-T6.

GRATING: P-19-4 (1 1/4 x 3/16). FABRICATION AND INSTALLATION PER ANSI/AIAAM METAL BAR GRATING MANUAL.

#### F3 PROTECTION OF ALUMINUM

PROVIDE PROTECTION FOR ALUMINUM IN CONTACT WITH WITH DISSIMILAR METALS AND CONCRETE AS SPECIFIED.

### G WOOD FRAMING

#### G1 APPLICABLE CODES

WOOD FRAMING SHALL CONFORM TO THE REQUIREMENTS OF IBC CHAPTER 23.

#### G2 MATERIALS

LUMBER: ALL SAWN LUMBER SHALL BE GRADED AND MARKED IN CONFORMANCE WITH WCLB STANDARD GRADING RULES FOR WEST COAST LUMBER NO 16, LATEST EDITION, 19% MAXIMUM MOISTURE CONTENT AT INSTALLATION. METAL PLATE CONNECTORS: FASTENERS IN CONTACT WITH PT WOOD SHALL BE SIMPSON ZMAX OR EQUIVALENT.

SAWN LUMBER: DOUGLAS FIR #2

STRUCTURAL COMPOSITE LUMBER:

LVL: TRUSJOIST MACMILLAN 1.3E 1 1/4" TIMBERSTRAND RIM BOARD

PSL: TRUSJOIST MACMILLAN 1.9E MICROLAM

PSL: TRUSJOIST MACMILLAN 2.0E PARALLAM

PLYWOOD: ROOF SHEATHING 5/8" CDX, SPAN RATING 40/20

#### G3 FRAMING DETAILS

FRAMING DETAILS NOT OTHERWISE NOTED SHALL BE PER IBC CHAPTER 23. ALL BOLT HEADS BEARING AGAINST WOOD SHALL BE PROVIDED WITH STANDARD CUT WASHERS. ALL WOOD IN CONTACT WITH MASONRY OR CONCRETE SHALL BE PRESSURE TREATED. PLYWOOD SHALL BE LAD FACE GRAIN PERPENDICULAR TO SUPPORTS, STAGGERED PATTERN.

#### G4 NAILING

ALL NAILS ASSOCIATED WITH CONNECTION HARDWARE SHALL BE AS SPECIFIED BY THE CONNECTION HARDWARE MANUFACTURER. ONLY TWO TYPES ON NAILS ARE TO BE USED FOR THE REMAINDER OF THE WORK ON THIS PROJECT. ALL SHEATHING SHALL BE NAILED WITH 10d NAILS (2 3/8" x 0.148" DIAMETER) AND WILL BE SIMPLY NOTED AS "SHEATHING NAILS" - ABBREVIATED AS "SN". THE REMAINDER OF NAILS SHALL BE 16d BOX (3 1/2" x 0.131" DIAMETER) AND WILL BE NOTED SIMPLY AS "NAILS".

#### G5 CONNECTION HARDWARE

ALL MISCELLANEOUS PREFABRICATED CONNECTION HARDWARE IS IDENTIFIED BY CATALOG NUMBERS AS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, INC. REFER TO CATALOG C-2007. SIZE AND NUMBER OF NAILS SHALL BE (MAX) WHERE BOTH (MAX) AND (MIN) ARE SHOWN IN CATALOG. WHEN SPECIFIC NAILING IS SPECIFIED FOR CONNECTION HARDWARE, NAILS WILL BE SPECIFIED BY PENNY WEIGHT - REFER SOLELY TO THE MANUFACTURER'S CATALOG TO OBTAIN THE PROPER DIAMETER AND LENGTH. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED PROVIDED EQUIVALENCE HAS BEEN DEMONSTRATED BY ICC.

### H EPOXY ANCHORS

#### H1 APPLICABLE REQUIREMENTS

ICC ESR-1682 (HILTI HIT RE 500 ADHESIVE ANCHOR SYSTEM), ICC ESR 1722 (SIMPSON SET ADHESIVE SYSTEMS). BOTH THE HILTI AND SIMPSON PRODUCT ARE ACCEPTABLE WHERE EPOXY ANCHORS ARE SPECIFIED.

#### H2 MATERIALS

THREADED RODS: A31 304 STAINLESS STEEL

ADHESIVE: PER ESR

#### H3 EMBEDMENT REQUIREMENTS

EMBED ALL EPOXYED THREADED RODS/REINFORCING BARS (Ø) DIAMETERS UNLESS SPECIFICALLY NOTED OTHERWISE.

### I ABBREVIATIONS

AB ANCHOR BOLT

BLK BLOCKING

BN BOUNDARY NAIL

BRG BEARING

E EXISTING

MCJ MASONRY CONTROL JOINT

N NAIL

PLCS PLACES

PLYW PLYWOOD

SCJ SLAB CONTROL JOINT

SN SHEATHING NAIL



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GENERAL NOTES

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CITY OF ENTIAT  
2007 WATSEWATER TREATMENT  
FACILITIES IMPROVEMENTS

BUILDING STRUCTURAL GENERAL NOTES

JOB NO.

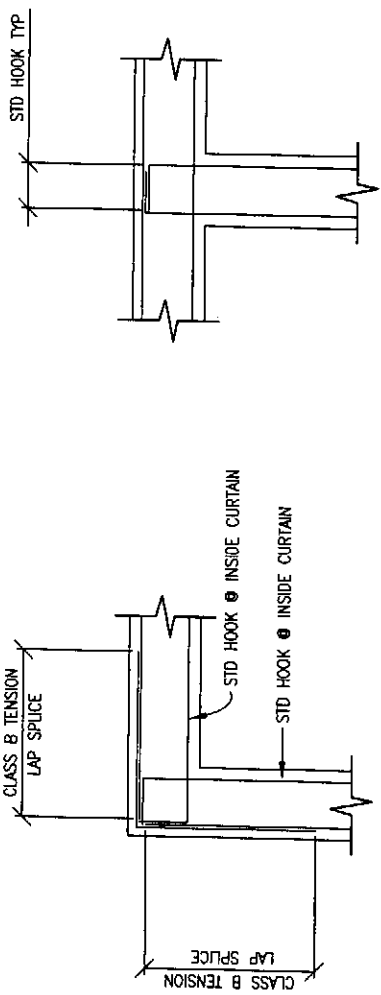
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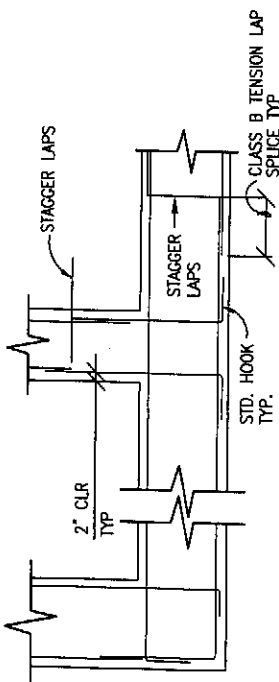
S1

SHEET

OF



HORIZ WALL REINF @ WALL INTERSECTIONS (1) S2  
NO SCALE

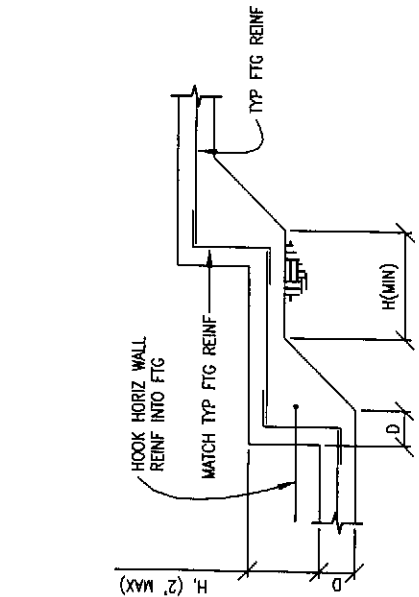


TYP FTG REINF PLACEMENT (4) S2  
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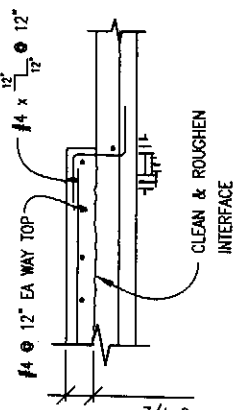
REINF STEEL LAP SPLICES

SIZE	Ld	CLASS B SPLICE LENGTH TOP BARS	OTHER BARS
#3	12"	14"	12"
#4	12"	19"	15"
#5	14"	24"	19"
#6	17"	29"	22"
#7	25"	42"	32"
#8	28"	46"	37"
#9	32"	54"	42"
#10	36"	61"	47"
#11	40"	68"	52"

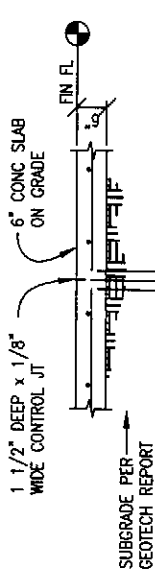
- NOTES:  
 1. SMALLEST SIDE COVER MEASURED TO THE CENTER OF BAR—2.5 BAR #'S MIN.  
 2. CENTER TO CENTER SPACING OF BARS = 5 #'S MIN.  
 3. HORIZ REINF SO PLACED THAT >12" OF FRESH CONC IS CAST IN THE MEMBER BELOW SHALL BE CONSIDERED TOP BARS.



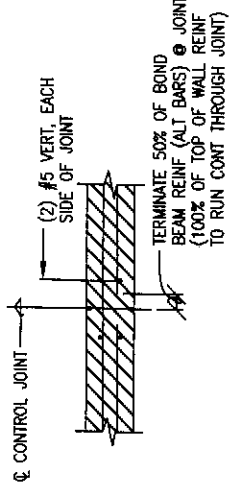
TYP STEPPED FTG (2) S2  
NO SCALE



TYP EQUIP PAD (5) S2  
NO SCALE



6" CONG SLAB CONTROL JT (7) S2  
SCALE: 3/4" = 1'-0"



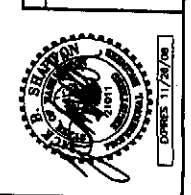
PLAN @ CMU CONTROL JOINT (8) S2  
NO SCALE

NOTE: SEE FDN PLAN FOR LOCATIONS

TERMINATE 50% OF BOND BEAM REINF (ALT BARS) @ JOINT. (100% OF TOP OF WALL REINF TO RUN CONT THROUGH JOINT)

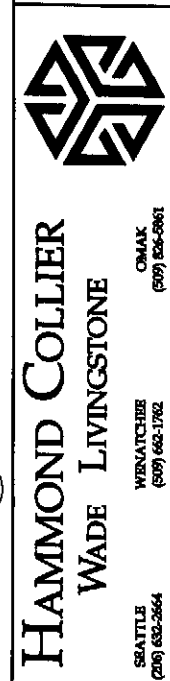
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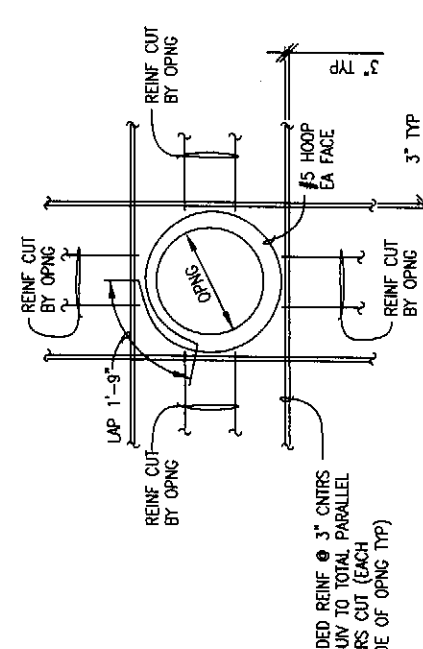
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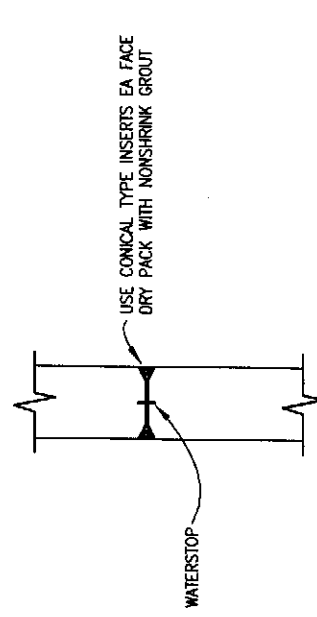
CITY ENTIAI  
 2007 WASTEWATER TREATMENT FACILITIES IMPROVEMENTS  
 TYPICAL CONCRETE DETAILS

JOB NO. 0523004-03  
 DRAWING NO. S2  
 SHEET OF

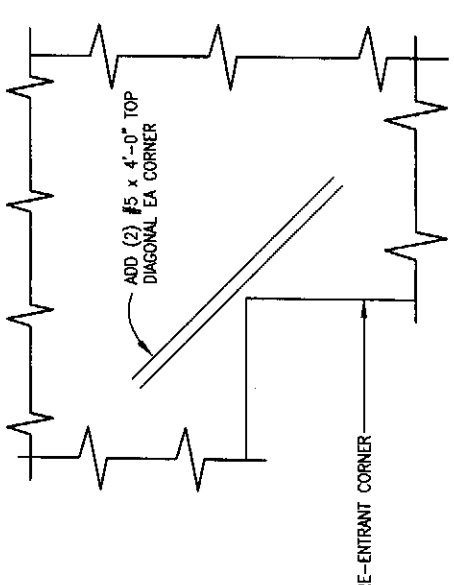


TYP REINF @ WALL OPENING (3) S2  
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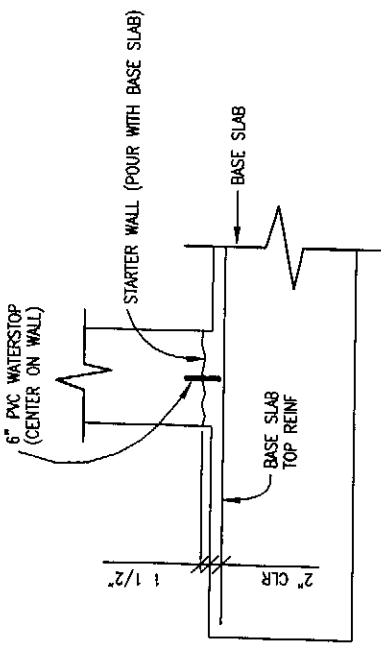
ADDED REINF @ 3" CNTRS EQUIV TO TOTAL PARALLEL BARS CUT (EACH SIDE OF OPNG TYP)



FORM SNAP TIE HOLE (6) S2  
NO SCALE

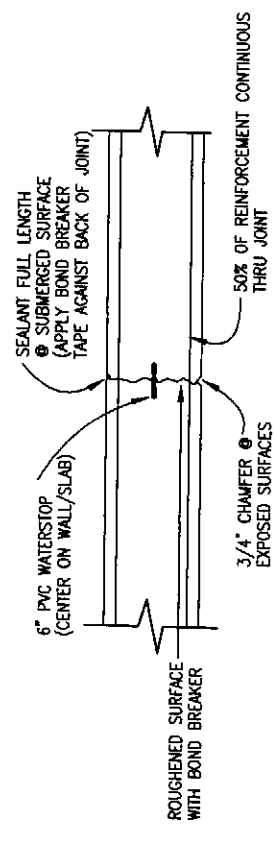


ADDED SLAB REINFORCEMENT @ RE-ENTRANT CORNERS (9) S2  
NO SCALE



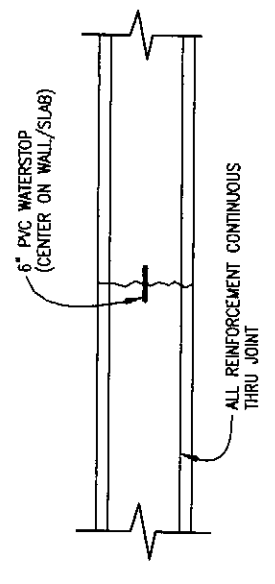
WATERSTOP @ WALL BASE  
NO SCALE

1 S3



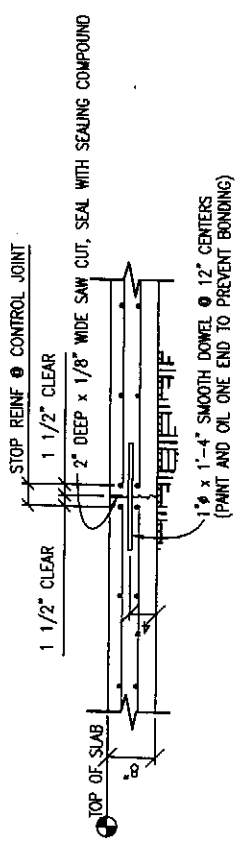
TYP WATERSTOP @ CONST/CONTROL JOINT  
NO SCALE

4 S3



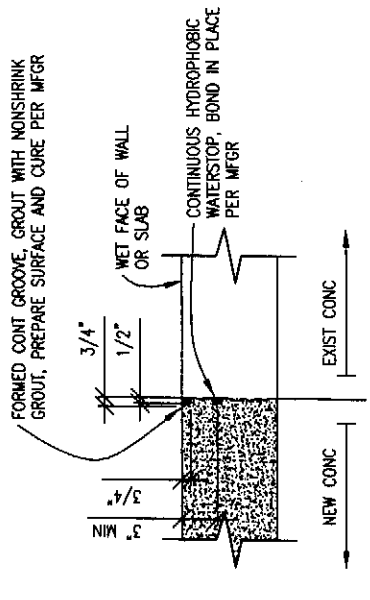
TYPICAL WATERSTOP @ CONST JOINT  
NO SCALE

2 S3



CONTROL JOINT @ SLUDGE STORAGE  
NO SCALE

5 S3



HYDROPHOBIC/GROOVE WATERSTOP  
NO SCALE

3 S3



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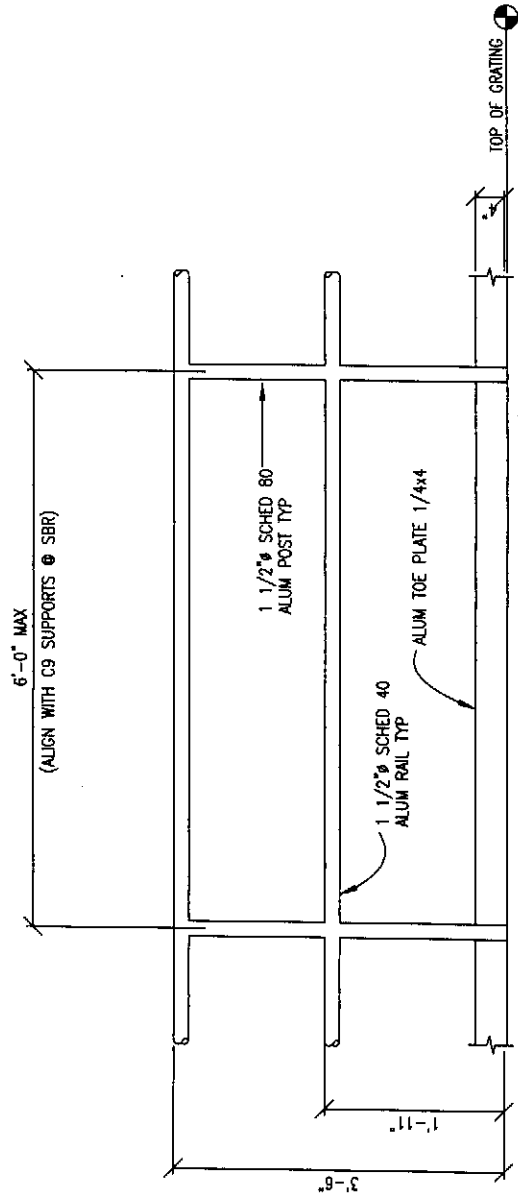
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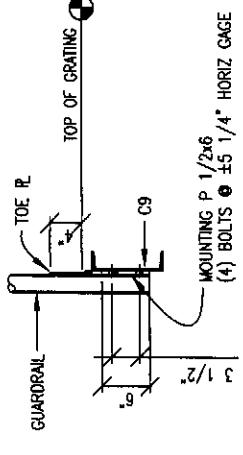
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TYPICAL CONCRETE DETAILS

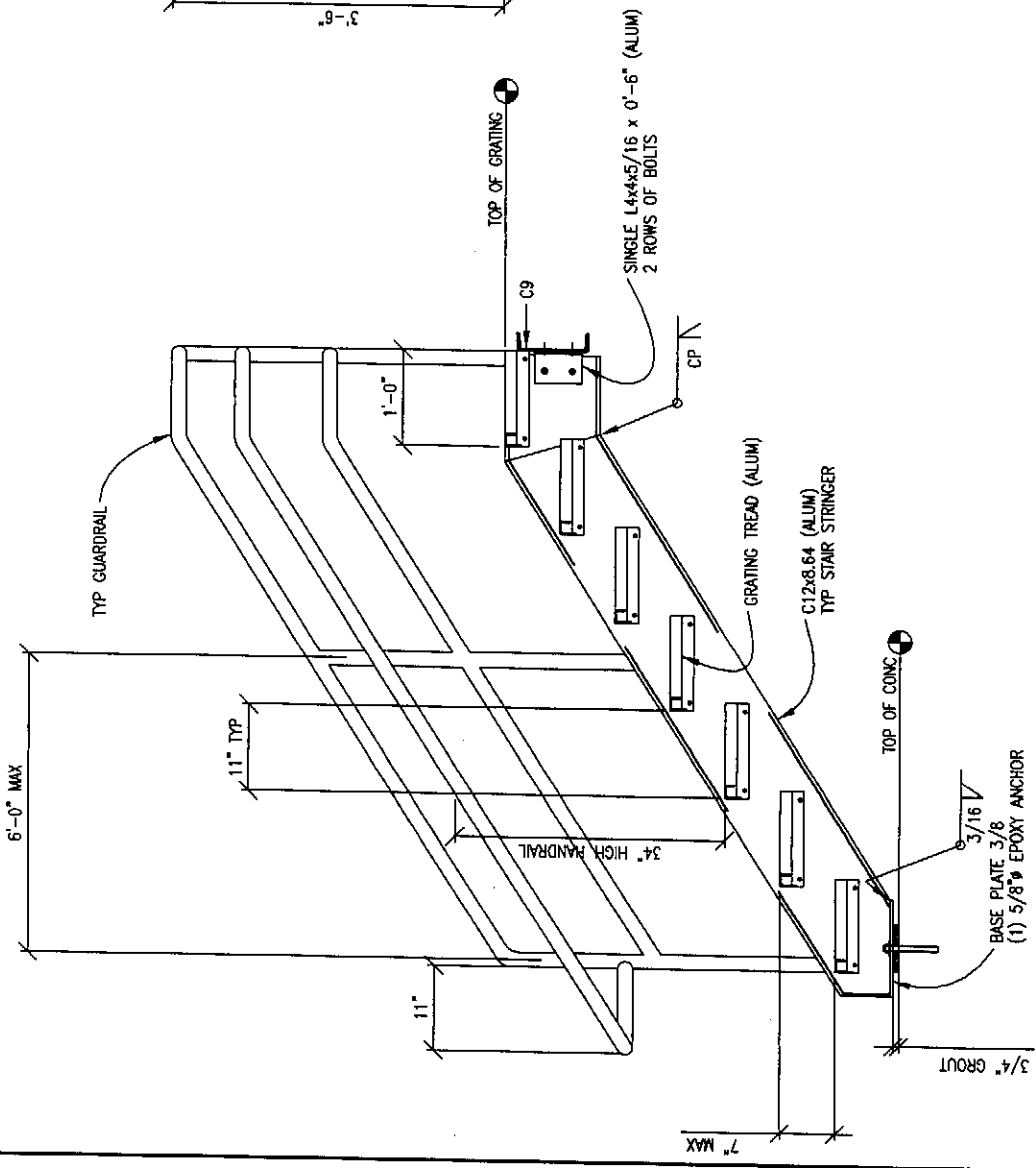
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DRAWING NO. S3  
SHEET 07



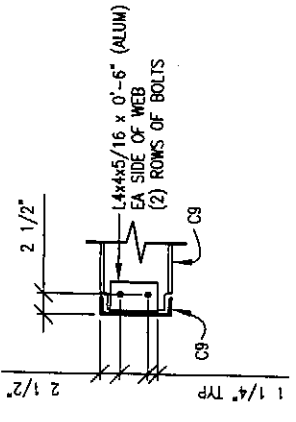
TYP ALUMINUM GUARDRAIL (2)  
SCALE: 1" = 1'-0"



GUARDRAIL TO C9  
SCALE: 1" = 1'-0"

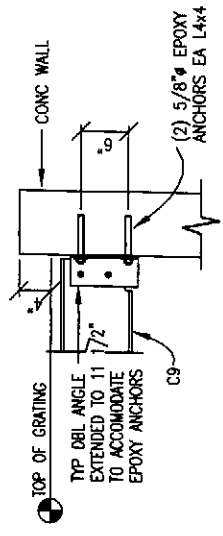


TYPICAL ALUMINUM STAIR (1)  
SCALE: 1" = 1'-0"

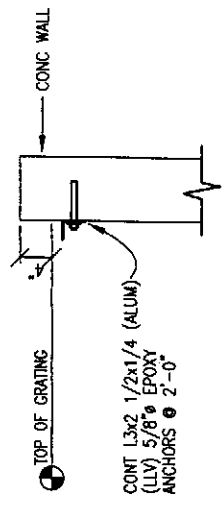


NOTE: PROVIDE SINGLE ANGLE @ CORNER CONNECTIONS

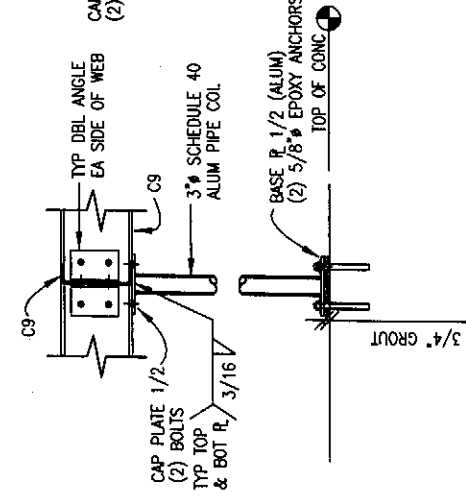
TYP C9 TO C9 CONN (4)  
SCALE: 1" = 1'-0"



TYP C9 TO CONC WALL (5)  
SCALE: 1" = 1'-0"



GRATING TO CONC WALL (6)  
SCALE: 1" = 1'-0"



C9 TO COL & COL BASE DETAILS (7)  
SCALE: 1" = 1'-0"



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TYPICAL ALUMINUM DETAILS

JOB NO. 0523004-03  
DRAWING NO. S4  
SHEET OF

