DESIGN CRITERIA NOTES

1. THE STRUCTURAL DESIGN IS IN ACCORDANCE WITH THE PROVISIONS OF THE INTERNATIONAL BUILDING CODE, 2009 EDITION.

2. DESIGN LOADS ARE AS LISTED BELOW. NO PROVISIONS HAVE BEEN MADE FOR FUTURE EXPANSION.

LIVE LOADS:	
STAIRS, PUBLIC AREAS, CONTROL ROOM	100 PSF
ROOF	20 PSF
SUPERIMPOSED DEAD LOADS:	
MECHANICAL, ELECTRICAL AND CEILING	10 PSF
FINISHES WHERE SHOWN ON ARCHITECTURAL	AS REQUIRED

4. BASIC DESIGN SNOW LOADS ARE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2009.

GROUND SNOW LOAD, Pg	30 PSF
FLAT-ROOF SNOW LOAD, Pf	23 PSF
SNOW EXPOSURE FACTOR, Ce	1.0
SNOW LOAD IMPORTANCE FACTOR, Is	1.1
THERMAL FACTOR, Ct	1.0

5. BASIC DESIGN WIND LOADS ARE IN ACCORDANCE WITH ASCE 7-05. DESIGN ASSUMPTIONS ARE AS FOLLOW:

BASIC WIND SPEED:	90 MPH
IMPORTANCE FACTOR	1.15
EXPOSURE CATEGORY	B
OCCUPANCY CATEGORY	II
INTERNAL PRESSURE COEFFICIENT:	+/- 0.18

COMPONENT AND CLADDING PRESSURES (ADJUSTMENT FACTOR = 1.15 * 1.0 = 1.15)

ZONE 1	+6.8 PSF	-17.2 PSF
ZONE 2	+6.8 PSF	-28.1 PSF
ZONE 3	+6.8 PSF	-42.3 PSF
ZONE 4	+16.8 PSF	-18.2 PSF
ZONE 5	+16.8 PSF	-22.4PSF

6. SEISMIC DESIGN - THE STRUCTURE HAS BEEN DESIGNED ACCORDING TO THE INTERNATIONAL BUILDING CODE, 2009.

SEISMIC IMPORTANCE FACTOR, Ie	1.25
SEISMIC USE GROUP	III
0.2 SECOND SPECTRAL ACCELERATION, Ss	0.274g
1.0 SECOND SPECTRAL ACCELERATION, S1	0.060g
DESIGN SHORT SPECTRAL RESPONSE COEFF, SDS 0.292g	
DESIGN 1-SEC SPECTRAL RESPONSE COEFF, SD1	0.096g
SITE CLASS	D
SEISMIC DESIGN CATEGORY	B
SEISMIC FORCE RESISTING SYSTEM	MOMENT RESISTING FRAMES
DESIGN BASE SHEAR	4 K
RESPONSE MODIFICATION FACTOR, R	3
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE

FOUNDATION NOTES

1. FOUNDATION DESIGN AND SUBSURFACE INFORMATION IS BASED ON THE ASSUMED CLASS OF MATERIALS, SANDY GRAVEL AND/OR GRAVEL (GW AND GP), WITH A PRESUMPTIVE ALLOWABLE FOUNDATION PRESSURE OF 3,000 PSF. A GEOTECHNICAL ENGINEER SHALL VERIFY THIS CONDITION PRIOR TO PLACING ANY FOUNDATION. SEE IBC 1806.2.

2. SPREAD AND WALL FOOTINGS ARE DESIGNED FOR THE ALLOWABLE NET SOIL BEARING PRESSURE OF 3000 PSF.

3. PROVIDE CRACK CONTROL JOINTS IN SLABS-ON-GRADE AS INDICATED BY THE SPECIFICATIONS.

4. SITE PREPARATION AND FILL PLACEMENT:
ANY ORGANIC MATERIALS AND/OR UNFORESEEN DEMOLITION ENCOUNTERED DURING CONSTRUCTION ARE TO BE REMOVED FROM THE PROPOSED CONSTRUCTION AREA TO STABLE NATURAL GROUND IN ORDER TO PROPERLY ADDRESS ANY LOOSE CONDITION ENCOUNTERED WITHIN THE SOIL BORINGS. THE EXACT DEPTH OF EXCAVATIONS FOR LOAD BEARING INFRASTRUCTURE IS TO BE DETERMINED BY THE GEOTECHNICAL ENGINEER OF RECORD OR A REPRESENTATIVE THEREOF AT THE TIME THAT THE PROPOSED AREA IS EXCAVATED. FULL TIME GEOTECHNICAL OVERSIGHT IS REQUIRED.

THE EXPOSED SUBGRADE IS TO BE PROOFROLLED AND DENSIFIED WITH A VIBRATORY COMPACTOR OR SIMILAR EQUIPMENT IN THE PRESENCE OF THE GEOTECHNICAL/SOIL ENGINEER TO DETECT AND REPAIR UNSUITABLE SOIL CONDITIONS AND TO ATTAIN A UNIFORM FIRM AND STABLE SUBGRADE THROUGHOUT. ANY LOOSE/SOFT SOILS ENCOUNTERED ARE TO BE DENSIFIED BY PROOFROLLING AND FURTHER COMPACTION BY ADDITIONAL PASSES IF NECESSARY. AREAS THAT ARE IDENTIFIED WITH EXCESSIVE PUMPING OR WEAVING ARE TO BE EXCAVATED AND REPLACED WITH COMPACTED STRUCTURAL FILL MATERIALS IMPORTED OR SUITABLE SITE MATERIALS AT THE DIRECTION OF THE GEOTECHNICAL/SOIL ENGINEER.

5. BRING EXCAVATED GRADES UP TO THE DESIRED/FINISHED ELEVATION WITH GRANULAR TYPE SOIL OR IMPORTED/PROCESSED STONE (2A MODIFIED OR EQUIVALENT IN PENNSYLVANIA) THAT COMPLIES WITH THE SPECIFICATIONS LISTED BELOW FOR IMPORTED SOILS AND SHOULD BE COMPACTED TO THE DEGREE IN ACCORDANCE WITH ASTM D-698 LATEST STANDARD SPECIFICATIONS.
DEPENDING ON THE WEATHER AND MOISTURE CONDITIONS AT THE TIME OF CONSTRUCTION, IT MAY BE DIFFICULT TO ACHIEVE ADEQUATE COMPACTION. IF CONDITIONS ARE WET AT THE TIME OF CONSTRUCTION, PROPER DEWATERING AND DRYING MEASURES SHOULD BE IMPLEMENTED FOR THE SOILS TO DRY WITHIN OPTIMUM MOISTURE CONTENT RANGES. THIS IS EXTREMELY IMPORTANT IN ORDER TO PROPERLY COMPACT THE SOILS AS SPECIFIED HEREIN

6. SUBGRADES MAY BE BROUGHT UP TO DESIRED ELEVATION WITH ON SITE SOILS OR APPROVED STRUCTURAL FILL IN LIFTS NO GREATER THAN TEN INCHES LOOSE THICKNESS AND COMPACTED TO 98% OF THE MATERIALS MAXIMUM DRY DENSITY PER ASTM D-698. ANY BULK SAMPLES OF ALL MATERIALS TO BE USED AS STRUCTURAL LOAD-BEARING FILL MUST BE TAKEN AND TESTED PRIOR TO THE COMMENCEMENT OF WORK AND PLACEMENT OF SELECT FILL SO THAT MOISTURE/DENSITY RELATIONSHIPS (COMPACTION) CAN BE DETERMINED. APPROVED ON SITE SOILS MAY BE USED FOR BACKFILL UNDER THE STRICT FULLTIME CONTROL OF THE SOILS ENGINEER. ORGANIC AND MISCELLANEOUS UNCONTROLLED FILL MATERIALS ARE CONSIDERED TO HAVE NO BEARING VALUE. ALL EXPOSED FOOTING SUBGRADES ARE TO BE COMPACTED BY TWO PASSES WITH A JUMPING JACK COMPACTOR IMMEDIATELY PRIOR TO THE PLACEMENT OF THE FOOTING CONCRETE.

7. DO NOT ALLOW SURFACE WATER TO ACCUMULATE AND/OR POND IN EXCAVATIONS. TEMPORARY DEWATERING SYSTEM TO BE USED DURING CONSTRUCTION WILL BE DESIGNED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE GOVERNING BUILDING CODE.

MISCELLANEOUS NOTES:

1. THE DETAILS DESIGNATED AS "TYPICAL DETAILS" APPLY GENERALLY TO THE DRAWINGS IN AREAS WHERE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN THE DETAILS, UNLESS NOTED OTHERWISE.

2. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS, AND DETAILS. DO NOT SCALE THE DRAWINGS.

3. PRINCIPAL OPENINGS, CURBS, AND SLAB DEPRESSIONS ARE SHOWN ON THE DRAWINGS. SEE ARCHITECTURAL, HVAC (MECH'L), ELEC'L, AND PLUMBING DRAWINGS FOR SLEEVES, CURBS, INSERTS, OTHER OPENINGS, AND SLAB DEPRESSIONS NOT SHOWN. THE GENERAL CONTRACTOR SHALL PROVIDE FOR ALL OPENINGS, CURBS, AND SLAB DEPRESSIONS. SIZE AND LOCATION OF OPENINGS SHALL BE VERIFIED WITH THE HVAC CONTRACTOR. ANY DEVIATION FROM OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE PROFESSIONAL'S ATTENTION FOR APPROVAL PRIOR TO FABRICATION OR INSTALLATION OF STRUCTURAL MEMBERS.

4. THE CONTRACTOR SHALL COMPARE THE STRUCTURAL DRAWINGS WITH THE ARCH'L, HVAC (MECH'L), ELEC'L, PLUMBING, AND CIVIL DRAWINGS TO CONFIRM ALL REQUIREMENTS OF THE WORK. REPORT ANY CONFLICT/DISCREPANCY BETWEEN THE DISCIPLINES TO THE PROFESSIONAL PRIOR TO FABRICATING OR INSTALLING STRUCTURAL ELEMENTS.

5. THE HORIZONTAL AND VERTICAL DIMENSIONS OF EXISTING STRUCTURES SHALL BE VERIFIED BEFORE WORK IS BEGUN. ANY VARIATION BETWEEN DIMENSIONS SHOWN AND EXISTING DIMENSIONS SHALL BE REPORTED TO THE PROFESSIONAL.

6. THE CONTRACTOR SHALL INSURE THAT CONSTRUCTION LOADS DO NOT EXCEED THE DESIGN LIVE LOADS INDICATED ON THE STRUCTURAL DRAWINGS AND THAT THESE LOADS ARE NOT PUT ON THE STRUCTURAL MEMBERS PRIOR TO THE TIME THAT THE CONCRETE REACHES THE FULL DESIGN STRENGTH AND ALL FRAMING MEMBERS AND THEIR CONNECTIONS ARE IN PLACE.

7. PROVIDE CHAMFERS AS SPECIFIED AND/OR DETAILED ON THE ARCHITECTURAL DRAWINGS. CHAMFERS HAVE NOT BEEN SHOWN ON THE STRUCTURAL DRAWING.

CONCRETE NOTES

A. CAST-IN-PLACE CONCRETE

1. CLASSES OF CONCRETE SHALL BE AS FOLLOWS:

LOCATION	28-DAY F'c (psi)	* CONC TYPE	MAX. NOM. COARSE AGG. SIZE
ALL CONC, U.N.O.	3,000	N.W.C.	1 1/2"
SLAB-ON-GRADE	3,500	N.W.C.	1 1/2"
PILASTERS, WALLS	4,000	N.W.C.	1 1/2"
BEAMS, JOISTS, SLABS, TOPPING SLABS	4,000	N.W.C.	3/4"
SLABS ON METAL DECK	3,500	N.W.C.	3/4"

* N.W.C.-DENOTES NORMAL WEIGHT CONC. WITH A MAX. DRY DENSITY = 150 PCF

2. CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AS NOTED BELOW. SEE SECTION 7.7, ACI 318-08 FOR CONDITIONS NOT NOTED.

WALL FOOTINGS, COLUMN FOOTINGS, AND OTHER CONCRETE PLACED AGAINST SOIL	3"
BEAMS, COLUMNS, PILASTERS,	1 1/2"
WALLS	2" BACKFILLED SIDES 1.5" NON-BACKFILLED SIDES
GRADE BEAMS	2" TOP AND SIDES 3" BOTTOM
SLABS,	1"
COMPOSITE SLABS ON METAL DECK [MESH SHALL BE DRAPED]	1" TOP
SLABS-ON-GRADE	3" BOTTOM (MINIMUM 1" TOP
TOPPING SLABS	1 1/2" TOP

3. HORIZONTAL CONSTRUCTION JOINTS SHALL BE PERMITTED ONLY WHERE SHOWN ON THE STRUCTURAL DRAWINGS.

4. ALL EXPOSED CONCRETE SUBJECT TO FREEZING AND THAWING SHALL BE AIR ENTRAINED IN ACCORDANCE WITH ACI 318.

CONCRETE REINFORCEMENT NOTES

A. REINFORCING STEEL

a. CONCRETE REINFORCING BARS SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL CONFORMING TO ASTM A615 GRADE 60, EXCEPT AS NOTED. COLUMN TIES AND FIELD BENT #3 DOWELS MAY BE ASTM A615, GRADE 40. REINFORCEMENT REQUIRED TO BE WELDED SHALL CONFORM TO ASTM A706, U.N.O.

b. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. THE FOLLOWING WELDED WIRE REINFORCING SHALL BE USED FOR AREAS SPECIFIED BELOW, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

5 INCH SLAB-ON-GRADE — 6 X 6 - W2.9 X W2.9

FOR ADDITIONAL WWF, IF ANY, SEE FLOOR FRAMING PLANS.

c. HEADED STUDS AND DEFORMED BAR ANCHORS USED IN FABRICATION OF EMBEDDED ASSEMBLIES SHALL BE WELDED TO THOSE ASSEMBLIES USING A FULL FUSION PROCESS.

d. REINFORCING BARS MAY BE SPLICED ONLY AS SHOWN ON THE DRAWINGS EXCEPT THAT REINFORCING DESIGNATED AS "CONTINUOUS" SHALL HAVE A CLASS "B" LAP SPLICE (ACI 318-08, SECTION 12.15.1). LAP SPLICES OF CONTINUOUS REINFORCING SHALL BE MADE OVER SUPPORTS FOR BOTTOM BARS AND FOR INTERMEDIATE BARS AND AT MIDSPAN FOR TOP BARS. AT EXTERIOR SUPPORTS, TOP AND BOTTOM BARS SHALL BE HOOKED AND INTERMEDIATE BARS SHALL EXTEND TO WITHIN 2" OF EXTERIOR FACE.

e. HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90 DEGREE BENDS AND EXTENSIONS AT CORNERS AND INTERSECTIONS AS SHOWN ON TYPICAL WALL CORNER BAR PLACING DETAILS.

f. LAPS IN WELDED WIRE FABRIC SHALL BE TWO MESH AT SPLICES.

h. PROVIDE STANDARD BAR CHAIRS WITH PROTECTIVE TIPS AND SPACERS SPACED AS REQUIRED TO PROVIDE SPECIFIED CONCRETE PROTECTION FOR REINFORCEMENT BUT NOT TO EXCEED 3'-0" ON CENTER FOR SLABS, BEAMS, AND GRADE BEAMS.

CONCRETE MASONRY UNITS NOTES

1. HOLLOW CONCRETE MASONRY UNITS SHALL MEET ASTM C90, LIGHTWEIGHT, TYPE I, AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1700 PSI ON THE NET AREA FOR INDIVIDUAL UNITS AND 1900 PSI ON THE NET AREA FOR THE AVERAGE OF THREE (3) UNITS.

2. CMU MORTAR SHALL MEET ASTM C270, TYPE "S", AND HAVE A COMPRESSIVE CUBE STRENGTH OF 1800 PSI AT 28 DAYS.

3. CMU GROUT, POURED OR PUMPED, SHALL MEET ASTM C476, AND HAVE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2500 PSI.

4. SEE STRUCTURAL DRAWINGS FOR REINFORCING OF LOADBEARING CMU WALLS.

5. SPECIAL INSPECTION IS REQUIRED FOR CMU LOADBEARING WALLS.

6. JOINT REINFORCING SHALL MEET ASTM A82.

7. REINFORCED MASONRY WALLS SHALL HAVE A MINIMUM f'm = 1900 PSI. WALLS ARE PARTIALLY REINFORCED. GROUT SOLID ONLY THOSE CELLS THAT HAVE REINFORCING STEEL, U.N.O.

STEEL NOTES

A. STRUCTURAL STEEL

1. STRUCTURAL STEEL CONSTRUCTION HAS BEEN DESIGNED IN ACCORDANCE WITH A.I.S.C. 360-05, "STEEL CONSTRUCTION MANUAL."

2. STRUCTURAL STEEL SHAPES, PLATES, ETC., SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS, U.N.O.

WIDE FLANGE SHAPES	ASTM A992-50
CHANNELS, TEES, ANGLES, BARS, PLATES	ASTM A36
STEEL TUBING (HSS SECTIONS) (Fy = 46 KSI)	ASTM A500-GR. B
STEEL PIPE TYPE "E" OR "S"	ASTM A501 OR AS3
ANCHOR BOLTS	ASTM F1554 GR. 36, GR.55

3. CONNECTION BOLTS SHALL CONFORM TO ASTM A325. USE BEARING TYPE BOLTS WITH THREAD ALLOWED ACROSS THE SHEAR PLANE (TYPE N) AT TYPICAL BEAM SHEAR CONNECTIONS, U.N.O. USE TYPE "SC" BOLTS WITH EITHER DIRECT TENSION INDICATOR OR LOAD INDICATOR WASHERS AT ALL BOLTED SLIP CRITICAL CONNECTIONS.

4. A LISTING OF CONNECTIONS CONSIDERED "SLIP CRITICAL" IS AS FOLLOWS:

BOLTED CONNECTIONS OF TENSION MEMBERS.
BOLTS USED IN MOMENT CONNECTIONS.

5. STEEL BEAM CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL BE DESIGNED BY THE STRUCTURAL STEEL FABRICATOR. BEAM CONNECTIONS SHALL DEVELOP THE END REACTIONS GIVEN ON THE DRAWINGS. WHERE END REACTIONS ARE NOT SPECIFIED, THE BEAM CONNECTION SHALL DEVELOP 50% OF THE BEAMS WEB ALLOWABLE SHEAR CAPACITY. A MINIMUM CONNECTION CAPACITY OF 12 KIPS SHALL BE PROVIDED FOR ALL BEAMS, UNLESS NOTED OTHERWISE BY SPECIFIED REACTION. THE STRUCTURAL STEEL FABRICATOR SHALL PROVIDE CERTIFICATION BY A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF THE PROJECT, THAT THE CONNECTION DESIGN IS IN ACCORDANCE WITH ALL APPLICABLE CODES AND SPECIFICATIONS.

6. FOR ALL HIGH STRENGTH BOLTS, DIRECT TENSION INDICATOR WASHERS SHALL BE PROVIDED.

7. STEEL BEAMS SHALL BE ERECTED WITH NATURAL CAMBER UP.

8. ANCHOR BOLTS HAVE NOT BEEN DESIGNED FOR ANY SPECIFIC ERECTION FORCES. THE ERECTOR IS RESPONSIBLE FOR ANY AND ALL GUYING AND BRACING REQUIRED TO ERECT THE BUILDING.

9. THE RESPONSIBILITY FOR ANY TEMPORARY SHORING OR BRACING DURING THE CONSTRUCTION PHASE BEFORE COMPLETION OF CONNECTION AND POURING OF FLOOR SLAB IS ADDRESSED IN THE SPECIFICATIONS AND IS THE RESPONSIBILITY OF THE CONTRACTOR.

10. THE STABILITY OF THE FRAME DURING ERECTION IS THE CONTRACTOR'S RESPONSIBILITY.

B. WELDING

1. WELDED CONSTRUCTION SHALL CONFORM TO THE AMERICAN WELDING SOCIETY "STRUCTURAL WELDING CODE" D1.1; AWS D1.3-SHEET STEEL; AND AWS D1.4 "REINFORCING STEEL WELDING CODE".

2. ELECTRODES FOR FIELD AND SHOP WELDS OF STRUCTURAL STEEL SHALL BE E70XX, U.N.O.

3. ELECTRODES FOR WELDING OF REINFORCING STEEL SHALL BE E80XX.

4. ELECTRODES FOR WELDING OF SHEET STEEL SHALL CONFORM TO AWS D1.3.

5. WHEN WELDS ARE NOT CALLED-OUT ON DRAWINGS, THEY ARE MINIMUM SIZE CONTINUOUS FILLET WELDS IN ACCORDANCE WITH AWS D1.1. FILLET WELDS NOT SPECIFIED AS TO LENGTH SHALL BE CONTINUOUS.

6. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL GROOVE WELDS SHALL BE FULL PENETRATION.

7. ONLY LOW HYDROGEN ELECTRODES SHALL BE USED ON REINFORCING STEEL AND ASTM A992 STEEL.

8. PROVIDE FILLET WELDS AT ALL CONTACT JOINTS BETWEEN STEEL MEMBERS SUFFICIENT TO DEVELOP THE ALLOWABLE TENSILE STRENGTH OF THE SMALLER MEMBER AT THE JOINT UNLESS DETAILED OTHERWISE ON THE DRAWINGS.

METAL DECK NOTES

1. COMPOSITE METAL DECK SHALL BE GALVANIZED AND SHALL BE PLACED WITH CONTINUOUS SPANS OF THREE OR MORE WHERE POSSIBLE. IN NO CASE SHALL UNSHORED METAL DECK SPANS EXCEED THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS OR DEFLECTION CRITERIA OF SPAN DIVIDED BY 240.

2. DECK UNITS SHALL BE LAPPED ONLY OVER SUPPORTS.

3. ROOF DECK OVER STEEL BEAMS SHALL BE WIDE RIBBED AND GALVANIZED METAL ROOF DECK WITH THE FOLLOWING MINIMUM PROPERTIES:
1.5B--20 GA.
I = .150 IN4/FT.
SP = .139 IN3/FT.
SN = .147 IN3/FT.

WELD DECK TO SUPPORTING MEMBERS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. DECK AND WELDS SHALL HAVE A MINIMUM DESIGN DIAPHRAGM SHEAR CAPACITY OF 300 PLF.

SPECIAL INSPECTION

1. SPECIAL INSPECTION BY A QUALIFIED INSPECTOR APPROVED BY THE BUILDING OFFICIAL SHALL BE REQUIRED FOR THE FOLLOWING TYPES OF WORK.
SEE THE PROJECT SPECIFICATIONS FOR SPECIFIC REQUIREMENTS IN EACH CATEGORY

A. ALL CONCRETE WORK
B. REINFORCING STEEL
C. FABRICATED STRUCTURAL STEEL
D. WELDING:
STRUCTURAL STEEL
MOMENT CONNECTIONS
METAL DECKING
SHEAR CONNECTORS
E. ANCHOR BOLTS
F. HIGH STRENGTH BOLTING
G. STRUCTURAL MASONRY
H. EXPANSION TYPE ANCHOR BOLTS
I. ADHESIVE TYPE ANCHOR BOLTS
J. COMPACTED FILL

CONCRETE REPAIR NOTES

A. INTERIOR REPAIR

1. SURFACE PREPARATION:

a. REMOVE ALL DETERIORATED CONCRETE, DIRT, OIL, GREASE, AND ALL BOND-INHIBITING MATERIALS FROM SURFACE. BE SURE REPAIR AREA IS NOT LESS THAN 1/8 INCH IN DEPTH. PREPARATION WORK SHOULD BE DONE BY HIGH PRESSURE WATER BLAST, SCABBLER, OR OTHER APPROPRIATE MECHANICAL MEANS TO OBTAIN AN EXPOSED AGGREGATE SURFACE WITH A MINIMUM SURFACE PROFILE OF ±1/16 IN. (CSP-5) SATURATE SURFACE WITH CLEAN WATER. SUBSTRATE SHOULD BE SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER DURING APPLICATION.

b. STEEL REINFORCEMENT SHOULD BE THOROUGHLY PREPARED BY MECHANICAL CLEANING TO REMOVE ALL TRACES OF RUST. WHERE CORROSION HAS OCCURRED DUE TO THE PRESENCE OF CHLORIDES, THE STEEL SHOULD BE HIGH-PRESSURE WASHED WITH CLEAN WATER AFTER MECHANICAL CLEANING. FOR PRIMING OF REINFORCING STEEL USE SIKA ARMATEC 110 EPOCEM (CONSULT TECHNICAL DATA SHEET). FOR REINFORCING THAT HAS EXPERIENCED GREATER THAN FIFTY PERCENT LOSS, THE REINFORCING BAR FULLY EXPOSED ON ALL SIDES TO RECEIVE APPLICATION OF PRIMER.

2. STEEL REINFORCING PROTECTION:

a. PRODUCT DESCRIPTION: SIKA ARMATEC 110 EPOCEM IS A 3-COMPONENT, SOLVENT-FREE, MOISTURE-TOLERANT, EPOXY-MODIFIED, CEMENTITIOUS PRODUCT SPECIFICALLY FORMULATED AS A BONDING AGENT AND ANTI-CORROSION COATING.

b. MIXING: MIX IN ACCORDANCE WITH MANUFACTURER'S MIXING INSTRUCTIONS.

c. APPLICATION: FOR CORROSION PROTECTION ONLY - APPLY BY STIFF-BRISTLE BRUSH OR SPRAY AT 80 FT^2/GAL. (20 MILS). TAKE SPECIAL CARE TO PROPERLY COAT THE UNDERSIDE OF THE TOTALLY EXPOSED STEEL. ALLOW COATING TO DRY 2-3 HOURS AT 73°F. THEN APPLY A SECOND COAT AT THE SAME COVERAGE. ALLOW TO DRY AGAIN BEFORE THE REPAIR MORTAR OR CONCRETE IS APPLIED. POUR OR PLACE REPAIR WITHIN 7 DAYS.

3. POLYMER MODIFIED REPAIR MORTAR

a. PRODUCT DESCRIPTION: SIKATOP 123 PLUS IS A TWO-COMPONENT, POLYMER-MODIFIED, PORTLAND CEMENT, FAST-SETTING, NON-SAG MORTAR. IT IS A HIGH PERFORMANCE REPAIR MORTAR FOR VERTICAL AND OVERHEAD SURFACES, AND OFFERS THE ADDITIONAL BENEFIT OF FERROGARD 901, A PENETRATING CORROSION INHIBITOR.

b. PRIMING: APPLY SIKA ARMATEC 110 EPOCEM BY STIFF-BRISTLE BRUSH OR BROOM. SPRAY APPLY WITH GOLDBLATT PATTERN PISTOL OR EQUAL EQUIPMENT. FOR BEST RESULTS, WORK THE BONDING SLURRY WELL INTO THE SUBSTRATE TO ENSURE COMPLETE COVERAGE OF ALL SURFACE IRREGULARITIES. APPLY THE FRESHLY MIXED PATCHING MORTAR OR CONCRETE WET ON WET, OR UP TO THE MAXIMUM RECOMMENDED OPEN TIME, ONTO THE BONDING SLURRY.

c. MIXING: MIX IN ACCORDANCE WITH MANUFACTURER'S MIXING INSTRUCTIONS.

d. APPLICATION: SIKATOP 123 PLUS MUST BE SCRUBBED INTO THE SUBSTRATE, FILLING ALL PORES AND VOIDS. FORCE MATERIAL AGAINST EDGE OF REPAIR. WORKING TOWARD CENTER, AFTER FILLING REPAIR, CONSOLIDATE, THEN SCREED. MATERIAL MAY BE APPLIED IN MULTIPLE LIFTS. THE THICKNESS OF EACH LIFT, NOT TO BE LESS THAN 1/8 INCH MINIMUM OR MORE THAN 1.5 INCHES MAXIMUM. WHERE MULTIPLE LIFTS ARE REQUIRED SCORE TOP SURFACE OF EACH LIFT TO PRODUCE A ROUGHENED SURFACE FOR NEXT LIFT. ALLOW PRECEDING LIFT TO REACH FINAL SET, 30 MINUTES MINIMUM, BEFORE APPLYING FRESH MATERIAL. SATURATE SURFACE OF THE LIFT WITH CLEAN WATER. SCRUB FRESH MORTAR INTO PRECEDING LIFT. ALLOW MORTAR OR CONCRETE TO SET TO DESIRED STIFFNESS, THEN FINISH WITH WOOD OR SPONGE FLOAT FOR A SMOOTH SURFACE.

e. TOOLING AND FINISHING: AS PER ACI RECOMMENDATIONS FOR PORTLAND CEMENT CONCRETE, CURING IS REQUIRED. MOIST CURE WITH WET BURLAP AND POLYETHYLENE. A FINE MIST OF WATER OR A WATER BASED COMPATIBLE CURING COMPOUND. CURING COMPOUNDS ADVERSELY AFFECT THE ADHESION OF FOLLOWING LIFTS OF MORTAR, LEVELING MORTAR OR PROTECTIVE COATINGS. MOIST CURING SHOULD COMMENCE IMMEDIATELY AFTER FINISHING. IF NECESSARY PROTECT NEWLY APPLIED MATERIAL FROM DIRECT SUNLIGHT, WIND, RAIN AND FROST.

4. MANUFACTURER'S RECOMMENDATIONS: FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS FOR SURFACE PREPARATION, PRIMING, MIXING, APPLICATION AND FINISHING. IF THE MANUFACTURER'S RECOMMENDATIONS DIFFER FROM THE GENERAL NOTES, THE MANUFACTURER'S RECOMMENDATIONS SHALL GOVERN.

FINAL CONSTRUCTION

Revisions	Date

CONSULTANTS:

Architect:	Structural Engineer:	MEP/FP Engineer:	Cost Estimator:	Certified Industrial Hygienist:
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PROJECT MANAGER: Bray Mooney Consulting

Project Number	Scale
13901	12" = 1'-0"

Drawing Title: STRUCTURAL NOTES

Approved: Project Director

Project Title: RENOVATE BUILDING 14 BOILER PLANT

Location: 1400 BLACK HORSE HILL ROAD COATESVILLE, PA

Date	Checked	Drawn
APRIL 22, 2017	NEB	JEB

VA Project Number: 542-14-108

Building Number: 14

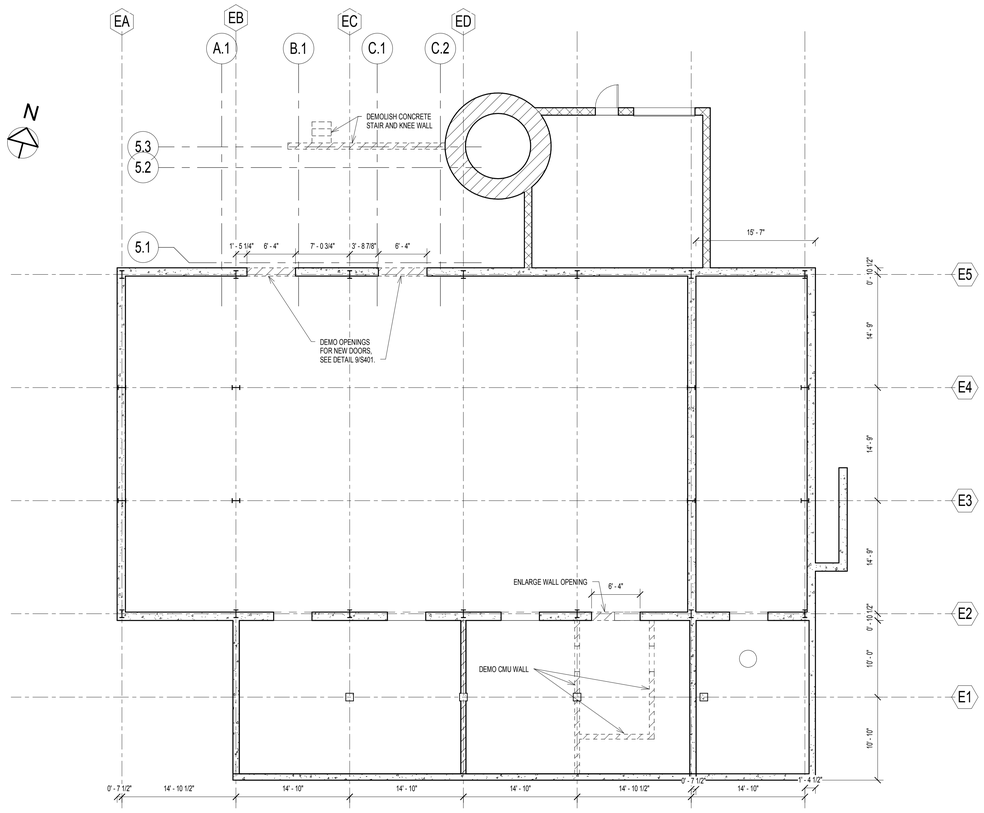
Drawing Number: S001

Dwg. of

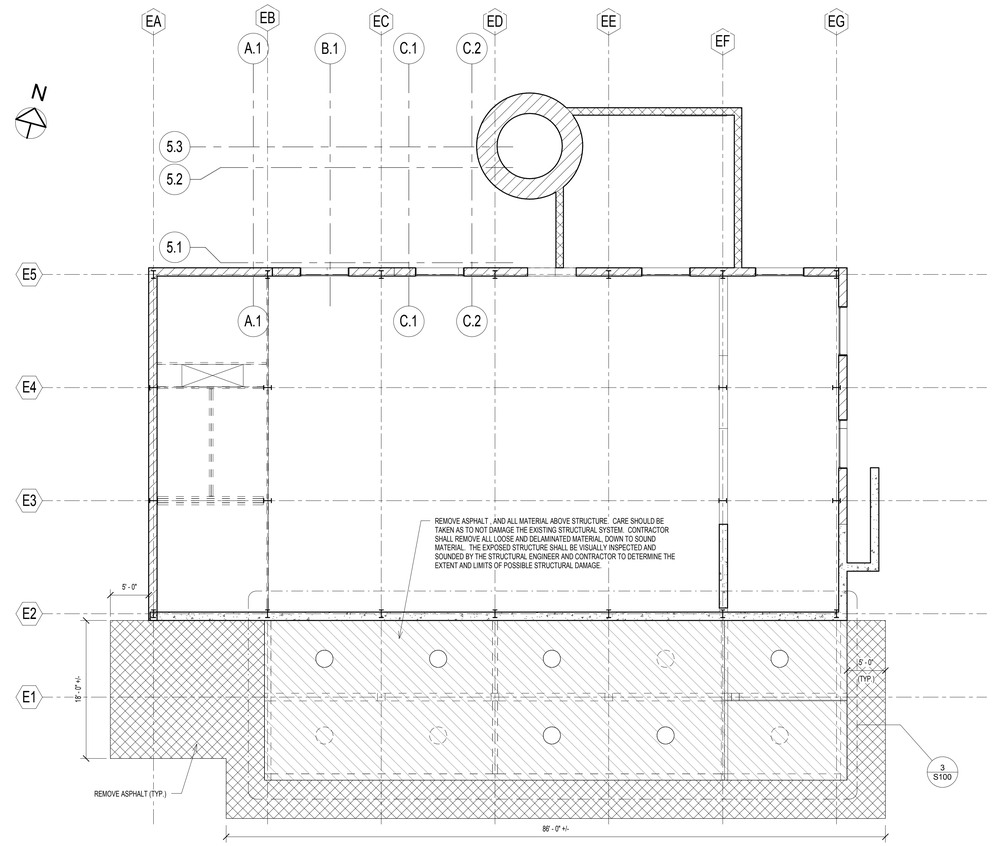
Office of Facilities Management

Department of Veterans Affairs

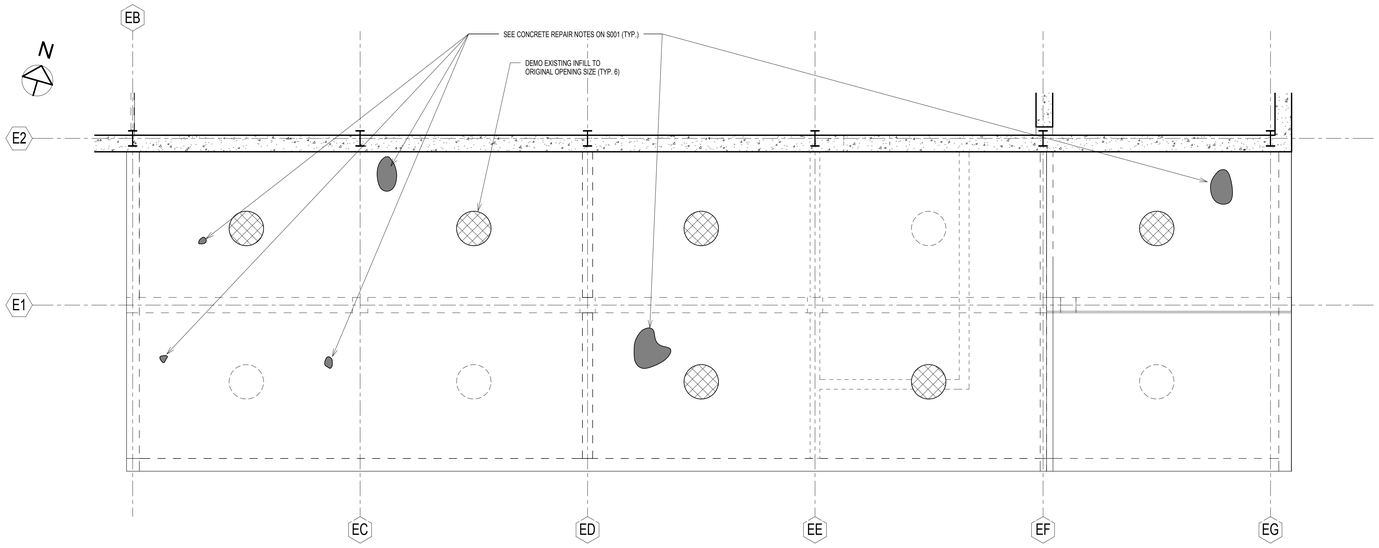
VA FORM 08-6231, OCT 1978



1 GROUND FLOOR EXIST./DEMO. PLAN
1/8" = 1'-0"



2 MEZZANINE EXIST./DEMO. PLAN
1/8" = 1'-0"



3 CONCRETE REPAIR PLAN
1/4" = 1'-0"

FINAL CONSTRUCTION

Revisions	Date

CONSULTANTS:

Architect:	Structural Engineer:	MEP/FP Engineer:	Cost Estimator:	Certified Industrial Hygienist:
William Cook Architecture & Planning	WZG STRUCTURAL CONSULTING ENGINEERS	MILLER-REMICK, LLC	BRAY MOONEY CONSULTING	MABBETT & ASSOCIATES, INC.
1251 ROMANSVILLE RD. COATESVILLE, PA 19320 Tel (610) 383-4660	180 WEST RIDGE PIKE LIMERICK, PA 19468 Tel (610) 831-0555	1010 KINGS HIGHWAY, S. CHERRY HILL, NJ 08034 Tel (856) 429-4000	410 E. 21 STREET CHESTER, PA, 19013 Tel (610) 872-3716	5 ALFRED CIRCLE BEDFORD, MA 01730 Tel (800) 877-6050

PROJECT MANAGER:
Bray Mooney Consulting

Project Number	Scale
13901	As indicated

Drawing Title: PARTIAL DEMOLITION PLANS, NOTES AND DETAILS

Approved: Project Director

Project Title: RENOVATE BUILDING 14 BOILER PLANT

Location: 1400 BLACK HORSE HILL ROAD COATESVILLE, PA

Date: APRIL 22, 2017 | Checked: NEB | Drawn: JEB

VA Project Number: 542-14-108

Building Number: 14

Drawing Number: S100

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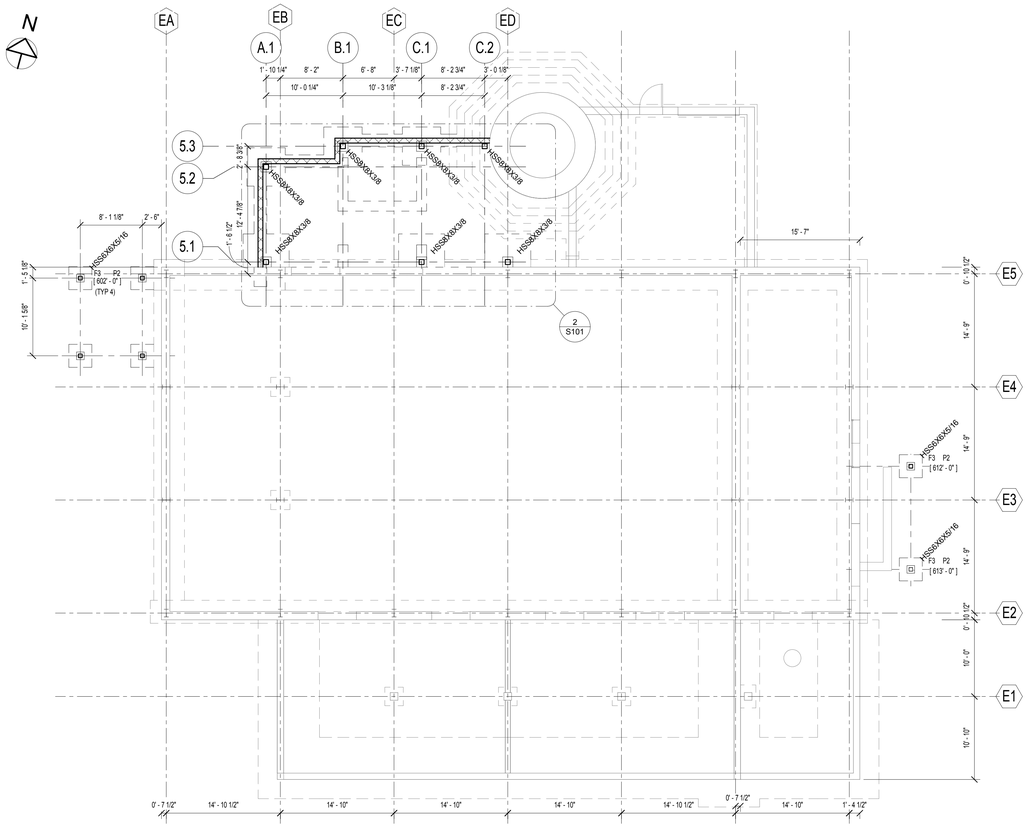
Department of Veterans Affairs

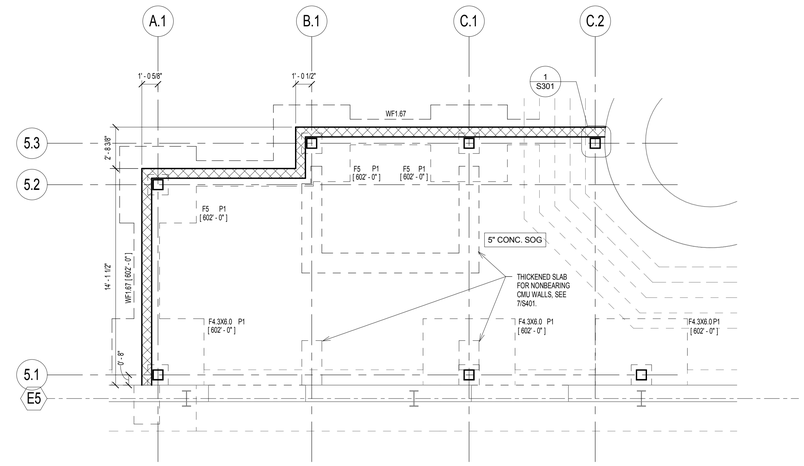
VA FORM 08-6231, OCT 1978

FOUNDATION PLAN NOTES:

1. SEE S001 FOR GENERAL NOTES.
2. SEE S401 FOR TYPICAL DETAILS.
3. [X'-X0"] INDICATES TOP OF FOOTING ELEVATION. TOP OF ALL EXTERIOR FOOTING ELEV. = -2'-0" U.N.O. SEE S401 FOR FOOTING SCHEDULE.
4. BOTTOMS ALL PERIMETER FOOTINGS SHALL BE 3'-0" MIN. BELOW GRADE.
5. 5.5" SLAB ON GRADE SHALL BE REINFORCED PER THE GENERAL NOTES. FOOTINGS AND SLABS ON GRADE SHALL BE COMPACTED TO 95% OF A MODIFIED PROCTOR.
6. COORDINATE ALL SLAB ON GRADE RECESSES, CURBS, AND LEDGES WITH THE REQUIREMENTS OF THE ARCH. DWGS.
7. VERIFY SLAB DIMENSIONS WITH ARCH. DWGS. REFER TO ARCH'L DRAWINGS FOR SLAB EDGE DIMENSIONS NOT INDICATED.
8. T.O.SLAB ELEVATION SHALL MATCH EXISTING SLAB ELEVATION.
9. PX INDICATES PIER DESIGNATION. SEE S401 FOR PIER AND BASE PLATE SCHEDULE. T.O. PIER ELEVATION SHALL = -2'-6" U.N.O.
10. FOUNDATIONS, COLUMNS, AND PIERS ARE CENTERED ON THE GRID LINES, U.N.O.; ALL BEAMS TO BE EQUALLY SPACED BETWEEN COLUMN LINES, U.N.O.



1 GROUND FLOOR PLAN
1/8" = 1'-0"



2 ENLARGED FOUNDATION PLAN
1/4" = 1'-0"

FINAL CONSTRUCTION

Revisions	Date

CONSULTANTS:

Architect:	Structural Engineer:	MEP/FP Engineer:	Cost Estimator:	Certified Industrial Hygienist:
William Cook Architecture & Planning	WZG STRUCTURAL CONSULTING ENGINEERS	MILLER-REMICK, LLC	BRAY MOONEY CONSULTING	MABBETT & ASSOCIATES, INC.
1251 ROMANSVILLE RD. COATESVILLE, PA 19320 Tel (610) 383-4660	180 WEST RIDGE PIKE LIMERICK, PA 19468 Tel (610) 831-0555	1010 KINGS HIGHWAY, S. CHERRY HILL, NJ 08034 Tel (856) 429-4000	410 E. 21 STREET CHESTER, PA. 19013 Tel (610) 872-3716	5 ALFRED CIRCLE BEDFORD, MA 01730 Tel (800) 877-8050

PROJECT MANAGER:
Bray Mooney Consulting

Project Number	Scale
13901	As indicated

Drawing Title: FOUNDATION PLAN

Approved: Project Director

Project Title: RENOVATE BUILDING 14 BOILER PLANT

Location: 1400 BLACK HORSE HILL ROAD COATESVILLE, PA

Date: APRIL 22, 2017 | Checked: NEB | Drawn: JEB

VA Project Number: 542-14-108

Building Number: 14

Drawing Number: S101

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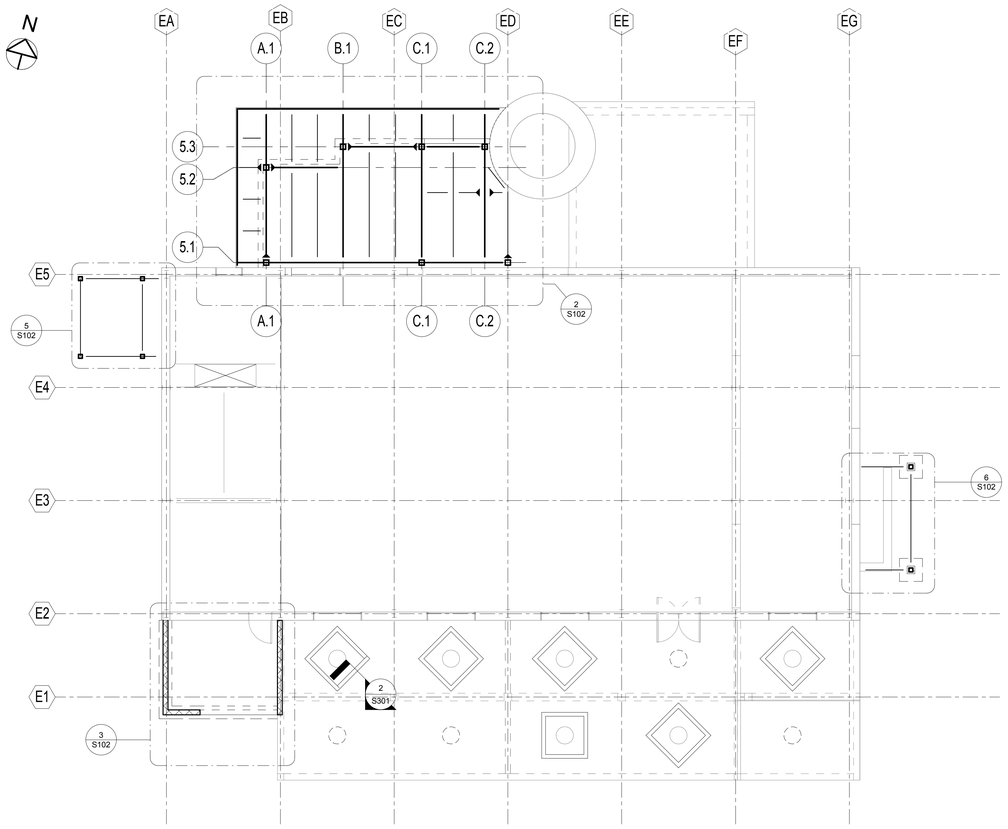
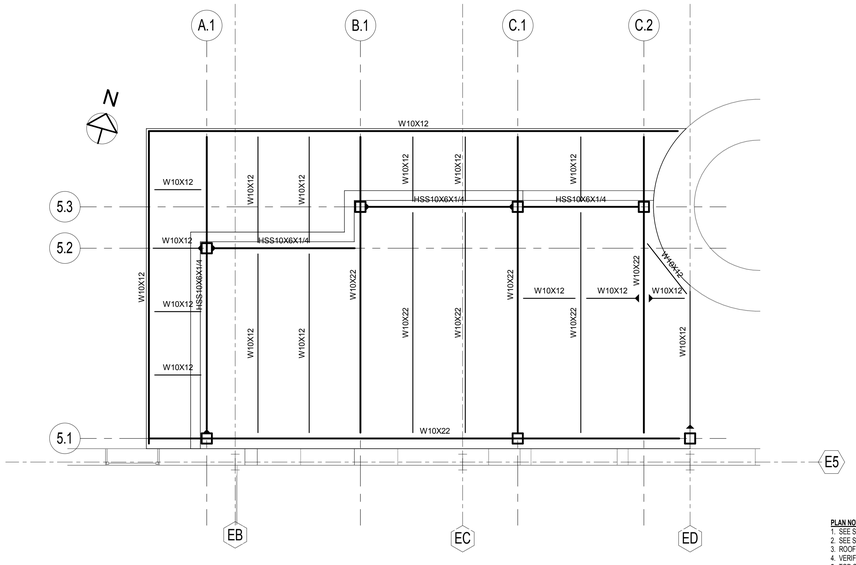
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

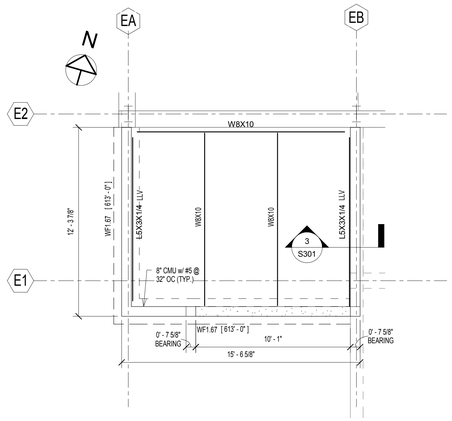


1 MEZZANINE STRUCTURAL PLAN
1/8" = 1'-0"

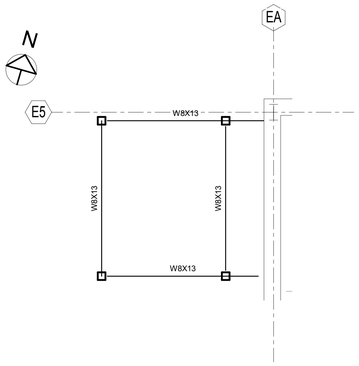


2 CNTRL ROOM FRAMING
1/4" = 1'-0"

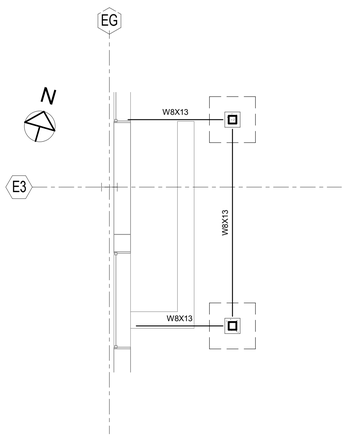
PLAN NOTES:
1. SEE S001 FOR GENERAL NOTES.
2. SEE S401 FOR TYPICAL DETAILS.
3. ROOF DECK SHALL BE 1.5B22, 3 SPAN MINIMUM, G60 GALVANIZED.
4. VERIFY ROOF DIMS. WITH ARCH'L DWGS.
5. TOP OF STEEL ELEV. = XXX'-X" U.N.O.



3 ENTRANCE CANOPY
1/4" = 1'-0"



5 MEZZANINE STRUCTURAL PLAN - Callout 1
1/4" = 1'-0"



6 MEZZANINE STRUCTURAL PLAN - Callout 2
1/4" = 1'-0"

FINAL CONSTRUCTION

Revisions	Date

CONSULTANTS:

Architect:	Structural Engineer:	MEP/FP Engineer:	Cost Estimator:	Certified Industrial Hygienist:
William Cook Architecture & Planning	WZG STRUCTURAL CONSULTING ENGINEERS	MILLER-REMICK, LLC	BRAY MOONEY CONSULTING	MABBETT & ASSOCIATES, INC.
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PROJECT MANAGER: Bray Mooney Consulting

Project Number	Scale
13901	As indicated

Drawing Title: FRAMING PLANS

Approved: Project Director

Project Title: RENOVATE BUILDING 14 BOILER PLANT

Location: 1400 BLACK HORSE HILL ROAD COATESVILLE, PA

Date: APRIL 22, 2017 | Checked: NEB | Drawn: JEB

VA Project Number: 542-14-108

Building Number: 14

Drawing Number: S102

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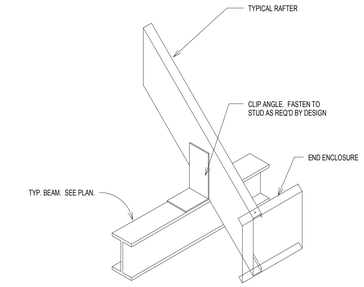
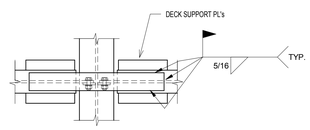
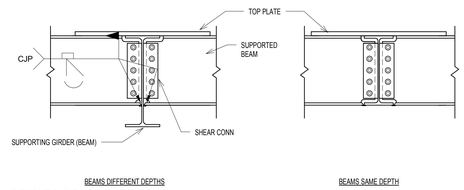
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

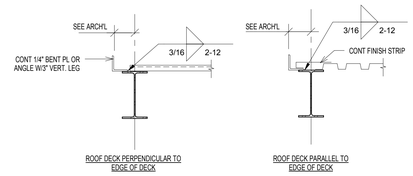


10 RAFTER ANCHORAGE
3/4" = 1'-0"





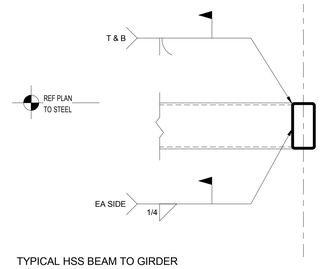
9 BEAM TO GIRDER MOMENT CONNECTION FIELD WELDED
3/4" = 1'-0"



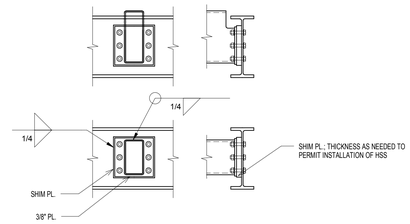
NOTES:

1. THIS DETAIL IS APPLICABLE AT ALL EDGE OF ROOF DECK LOCATIONS, UNO.
2. SEE ARCH DWGS. WHERE EDGE OF DECK DIMENSION IS NOT INDICATED ON STRUCTURAL DWGS.

8 EDGE OF ROOF DECK
3/4" = 1'-0"

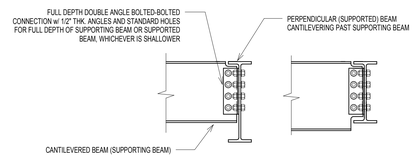


7 TYPICAL HSS BEAM TO GIRDER CONNECTION
3/4" = 1'-0"

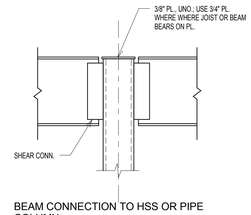


PROVIDE FOUR BOLTS MINIMUM; PROVIDE ADDITIONAL BOLTS AS REQUIRED FOR REACTIONS SHOWN ON PLANS.

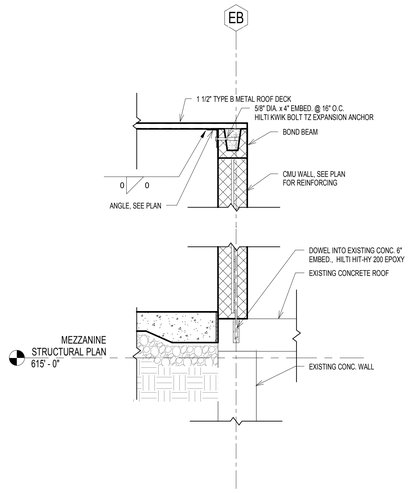
6 HSS CONNECTION TO W SHAPE BEAMS
3/4" = 1'-0"



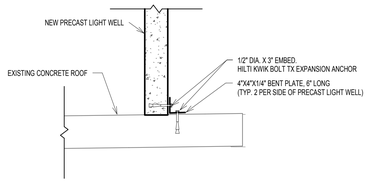
5 CANTILEVERED BEAM TO CANTILEVERED BEAM CONNECTION
3/4" = 1'-0"



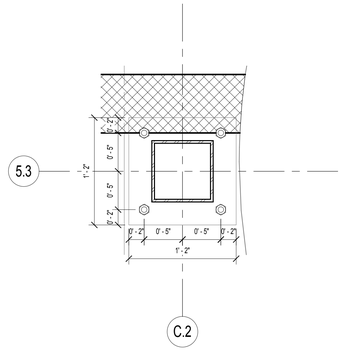
4 BEAM CONNECTION TO HSS OR PIPE COLUMN
3/4" = 1'-0"



3 SECTION @ ENTRANCE CANOPY
3/4" = 1'-0"



2 TYP. DETAIL @ LIGHT WELL
3/4" = 1'-0"



1 DETAIL
1 1/2" = 1'-0"

FINAL CONSTRUCTION

Revisions	Date

CONSULTANTS:

Architect:	Structural Engineer:	MEP/FP Engineer:	Cost Estimator:	Certified Industrial Hygienist:
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PROJECT MANAGER:
Bray Mooney Consulting

Project Number	Scale
13901	As indicated

Drawing Title: SECTIONS AND DETAILS

Approved: Project Director

Project Title: RENOVATE BUILDING 14 BOILER PLANT

Location: 1400 BLACK HORSE HILL ROAD COATESVILLE, PA

Date	Checked	Drawn
APRIL 22, 2017	NEB	JEB

VA Project Number: 542-14-108

Building Number: 14

Drawing Number: S301

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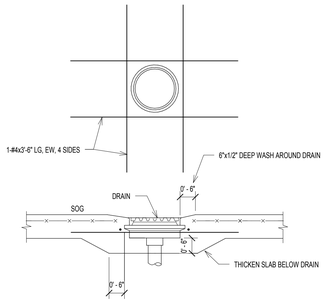
Office of Facilities Management

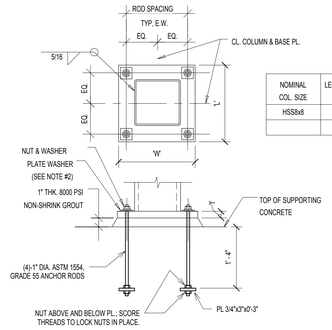
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978



SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR DRAIN LOCATIONS.

11 FLOOR DRAIN IN SLAB-ON-GRADE
1/2" = 1'-0"

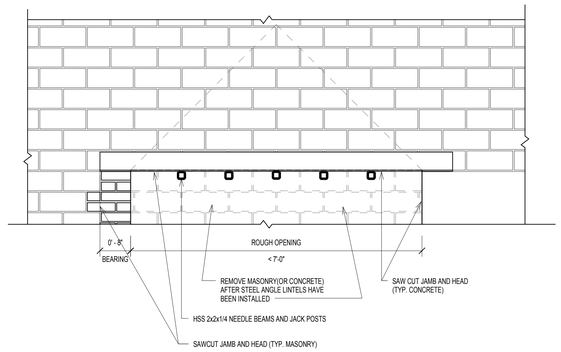


NOMINAL COL. SIZE	LENGTH 'L'	WIDTH 'W'	THICK. 'T'	ROD SPACING (EA. WAY)
HSS8x8	14"	14"	1.25"	11"

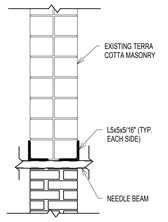
NOTES:

1. ANCHOR ROD HOLES IN BASEPLATE SHALL BE SIZED PER TABLE 14-2 IN THE 13TH ED. AISC MANUAL OF STEEL CONSTRUCTION.
2. SEE TABLE 14-2 IN THE 13TH ED. AISC MANUAL OF STEEL CONSTRUCTION FOR PLATE WASHER DIMS.; HOLE DIA. IN PLATE WASHER SHALL BE 1/16" LARGER THAN BOLT DIA.

10 HSS COLUMN BASE PLATE
3/4" = 1'-0"



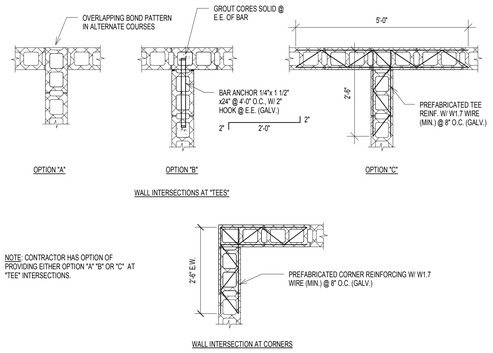
NEW LINTEL ELEVATION



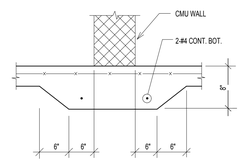
NEW LINTEL SECTION

1. SAWCUT ROUGH OPENING AT HEAD HEIGHT ON INTERIOR SIDE. CUT SHALL BE EQUAL TO ROUGH OPENING WIDTH, PLUS 8" ON EITHER SIDE.
2. INSTALL INTERIOR LINTEL.
3. SAWCUT ROUGH OPENING AT HEAD HEIGHT ON EXTERIOR SIDE. CUT SHALL BE EQUAL TO ROUGH OPENING WIDTH, PLUS 8" ON EITHER SIDE.
4. INSTALL EXTERIOR LINTEL.
5. SAWCUT RIGHT AND LEFT JAMBS. CUT SHALL BE EQUAL TO ROUGH OPENING WIDTH, PLUS 8" ON EITHER SIDE (MASONRY), OR ROUGH OPENING WIDTH (CONCRETE).
6. INSTALL TEMPORARY NEEDLE BEAMS AND JACK POSTS.
7. REMOVE MASONRY/CONCRETE WITHIN ROUGH OPENING .
8. TOOTH-IN BRICK MASONRY (MASONRY) UNDER LINTELS.
9. REMOVE TEMPORARY NEEDLE BEAMS.

9 LINTEL: NEW OPENING IN EXISTING WALL
3/4" = 1'-0"



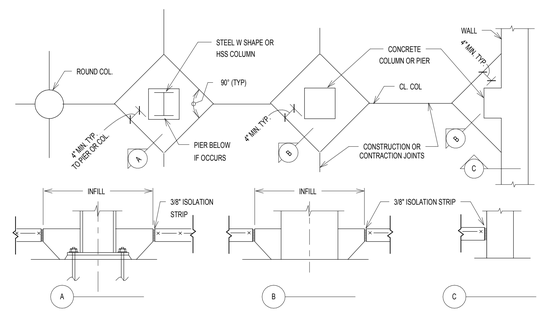
8 REINFORCING AT INTERSECTING MASONRY WALLS
3/4" = 1'-0"



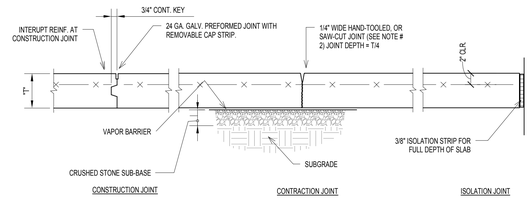
NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL NON-BEARING MASONRY PARTITION WALLS.
2. CONTRACTOR HAS OPTION OF THICKENING SLAB-ON-GRADE PER THIS DETAIL OR PROVIDING WALL FOOTING PER THE "NON-BEARING MASONRY WALL FOOTING" DETAIL.

7 THICKENED SLAB ON GRADE BELOW NON-BEARING MASONRY WALL
1/2" = 1'-0"



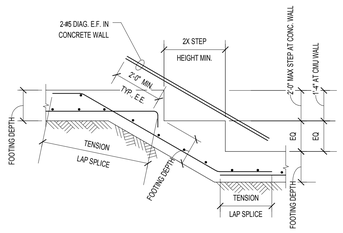
6 SLAB-ON-GRADE JOINTS AT COLUMNS, PIERS AND WALLS
1/2" = 1'-0"



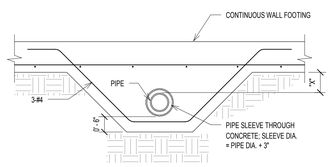
NOTES:

1. CONTRACTION JOINTS SHALL BE INSTALLED EITHER BY HAND TOOLING, OR BY SAW-CUTTING USING A "SOFF-CUT" ULTRA EARLY ENTRY DRY-CUT SAW OR AN APPROVED EQUAL; JOINTS SHALL BEINSTALLED IMMEDIATELY UPON COMPLETION OF FINISHING OPERATIONS.
2. REFER TO ARCHITECTURAL DRAWINGS FOR JOINT SEALANT REQUIREMENTS (IF ANY).
3. REFER TO GENERAL NOTES FOR SUBGRADE PREPARATION REQUIREMENTS.

5 SLAB ON GRADE CONSTRUCTION
1/2" = 1'-0"

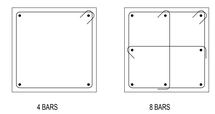


4 STEP IN WALL FOOTING
1/2" = 1'-0"



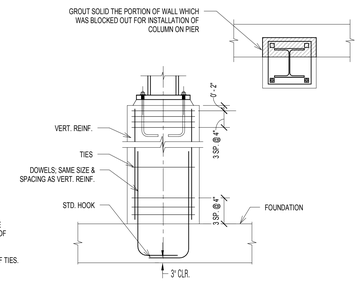
THICKEN WALL FOOTING AS SHOWN WHERE DIM. "X" < 1'-0".

3 PIPE BELOW WALL FOOTING
1/2" = 1'-0"



NOTES:

1. ALTERNATE THE LOCATION OF CORNER HOOKS ON CLOSED TIES AROUND THE PERIMETER OF THE PIER BETWEEN ADJACENT CORNERS ON SUCCESSIVE SETS OF TIES.
2. ALTERNATE THE LOCATION OF THE 90° & 135° HOOKS ON SUCCESSIVE SETS OF TIES.



2 CONCRETE PIER
1/2" = 1'-0"

CONCRETE PIER SCHEDULE

MARK	DIMENSIONS	VERT. REINF.	TIES*
P1	16"X16"	8-#4	#3@8"
P2	12"X12"	4-#5	#3@8"

* LOCATE TOP TIE 2" CLEAR BELOW TOP OF PIER; PROVIDE FOUR ADDITIONAL TIES @ 4" O.C. BELOW TOP TIE; INSTALL BOTTOM TIE 6" MAX ABOVE TOP OF FOOTING.

FOOTING SCHEDULE

MARK	DIMENSIONS			REINFORCEMENT (EACH WAY BOTTOM, UNO)
	WIDTH	LENGTH	DEPTH	
WF1.67	1'-8"	CONT.	1'-0"	#4 @ 12" TRANS., 3-#4 LONG.
F4.3X6.0	4'-4"	6'-0"	1'-0"	5-#5 TRANS., 7-#5 LONG.
F5	5'-0"	5'-0"	1'-4"	6-#5
F3	5'-0"	5'-0"	1'-0"	6-#5

1 SPREAD FOOTING SCHEDULE
1/2" = 1'-0"

FINAL CONSTRUCTION

Revisions	Date

CONSULTANTS:

Architect:	Structural Engineer:	MEP/FP Engineer:	Cost Estimator:	Certified Industrial Hygienist:
William Cook Architecture & Planning	WZG STRUCTURAL CONSULTING ENGINEERS	MILLER-REMICK, LLC	BRAY MOONEY CONSULTING	MABBETT & ASSOCIATES, INC.
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PROJECT MANAGER:
Bray Mooney Consulting

Project Number	Scale
13901	As indicated

Drawing Title: TYPICAL DETAILS

Approved: Project Director

Project Title: RENOVATE BUILDING 14 BOILER PLANT

Location: 1400 BLACK HORSE HILL ROAD COATESVILLE, PA

Date	Checked	Drawn
APRIL 22, 2017	NEB	JEB

VA Project Number: 542-14-108

Building Number: 14

Drawing Number: S401

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978