

GENERAL STRUCTURAL & CONSTRUCTION NOTES

1.0 GENERAL

- ALL WORK SHALL CONFORM TO THE "2009 INTERNATIONAL BUILDING CODE", AND TO ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
- IN CASE OF CONFLICT BETWEEN THE GENERAL NOTES, SPECIFICATIONS AND DETAILS, THE MOST RIGID REQUIREMENTS SHALL GOVERN.
- WORK NOT INDICATED ON A PART OF THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN IN CORRESPONDING PLACES SHALL BE REPEATED.
- JOB SITE SAFETY AND CONSTRUCTION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL PROVIDE FOR DEWATERING AS REQUIRED DURING EXCAVATION AND CONSTRUCTION. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- THE CONTRACTOR SHALL COORDINATE OPENINGS, SLEEVES, CONCRETE HOUSEKEEPING PADS, INSERTS AND DEPRESSIONS SHOWN ON THE STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.
- ALL COSTS OF INVESTIGATION AND/OR REDESIGN DUE TO CONTRACTOR IMPROPER INSTALLATION OF STRUCTURAL ELEMENTS OR OTHER ITEMS NOT IN CONFORMANCE WITH THE CONTRACT DOCUMENTS SHALL BE AT THE CONTRACTOR'S EXPENSE.
- THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE SPECIFICATIONS AND MECHANICAL DRAWINGS. IF THERE IS A DISCREPANCY BETWEEN DRAWINGS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER PRIOR TO PERFORMING THE WORK.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING BUILDING INFORMATION SHOWN (DIMENSIONS, ELEVATIONS, ETC.) AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENT.
- THE CONTRACTOR SHALL VERIFY AND/OR ESTABLISH ALL EXISTING CONDITIONS AND DIMENSIONS AT THE SITE. FAILURE TO NOTIFY THE ENGINEER OF UNSATISFACTORY CONDITIONS CONSTITUTES ACCEPTANCE OF UNSATISFACTORY CONDITIONS.
- IF THE EXISTING FIELD CONDITIONS DO NOT PERMIT THE INSTALLATION OF THE WORK IN ACCORDANCE WITH THE DETAILS SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND PROVIDE A SKETCH OF THE CONDITION WITH HIS PROPOSED MODIFICATION OF THE DETAILS GIVEN ON THE CONTRACT DOCUMENTS. DO NOT COMMENCE WORK UNTIL CONDITION IS RESOLVED AND THE ENGINEER APPROVES MODIFICATION.
- WHERE ALTERATIONS INVOLVE THE EXISTING SUPPORTING STRUCTURE, THE CONTRACTOR SHALL PROVIDE SHORING AND PROTECTION REQUIRED TO ENSURE THE STRUCTURAL INTEGRITY OF THE EXISTING STRUCTURE.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE ALLOWABLE CONSTRUCTION LOADS AND TO PROVIDE DESIGN AND CONSTRUCTION OF FALSEWORK, FORMWORK, STAGINGS, BRACING, SHEETING AND SHORING, ETC.
- CONTRACTOR TO PROVIDE SHEETINGS, BRACING AND UNDERPINNING AS NECESSARY TO PREVENT ANY LATERAL OR VERTICAL MOVEMENTS OF EXISTING BUILDINGS, STREETS AND ANY EXISTING UTILITY LINES.
- BRACING, SHEETING, SHORING, ETC., REQUIRED TO INSURE THE STRUCTURAL INTEGRITY OF THE EXISTING BUILDINGS OR NEW CONSTRUCTION, SIDEWALKS, UTILITIES, ETC., SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER ENGAGED BY THE CONTRACTOR. DETAILED SIGNED AND SEALED SHOP DRAWINGS SHALL BE PREPARED INDICATING ALL WORK TO BE PERFORMED. SUBMIT THE SHOP DRAWINGS IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS.
- IN NO CASE SHALL HEAVY EQUIPMENT BE PERMITTED CLOSER THAN 8'-0" FROM ANY FOUNDATION WALL. IF IT IS NECESSARY TO OPERATE SUCH EQUIPMENT CLOSER THAN 8'-0" TO THE WALL, THE CONTRACTOR SHALL BE THE SOLE RESPONSIBLE PARTY AND, AT HIS OWN EXPENSE, SHALL PROVIDE ADEQUATE SUPPORTS OR BRACE THE WALL TO WITHSTAND THE ADDITIONAL LOADS SUPERIMPOSED FROM SUCH EQUIPMENT.
- NO BLASTING SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL.
- SHOP DRAWINGS FOR ALL STRUCTURAL MATERIALS TO BE SUBMITTED TO ENGINEER FOR REVIEW PRIOR TO THE START OF FABRICATION OR COMMENCEMENT OF WORK. REVIEW PERIOD SHALL BE A MINIMUM OF TWO (2) WEEKS. REPRODUCTION OF ANY PORTION OF THE STRUCTURAL CONTRACT DRAWINGS FOR RESUBMITTAL AS SHOP DRAWINGS IS PROHIBITED. SHOP DRAWINGS PRODUCED IN SUCH A MANNER WILL BE REJECTED AND RETURNED.
- SHOP DRAWINGS SUBMITTED FOR STRUCTURAL REVIEW SHALL CONSIST OF TWO (2) SETS OF PRINTS AND ONE (1) SET OF REPRODUCIBLE PRINTS. ONLY ONE (1) MARKED UP SET OF REPRODUCIBLE PRINTS WITH THE STRUCTURAL ENGINEER'S COMMENTS WILL BE RETURNED TO THE CONTRACTOR.
- SHOP DRAWINGS SHALL BEAR THE CONTRACTOR'S STAMP OF APPROVAL, WHICH SHALL CONSTITUTE CERTIFICATION THAT THE CONTRACTOR HAS VERIFIED ALL CONSTRUCTION CRITERIA, MATERIALS AND SIMILAR DATA AND HAS CHECKED EACH DRAWING FOR COMPLETENESS, COORDINATION AND COMPLIANCE WITH THE CONTRACT DOCUMENTS.
- THE SHOP DRAWINGS SHALL INCLUDE DIMENSIONAL FLOOR AND ROOF EDGES, OPENINGS AND SLEEVES AT ALL FLOORS REQUIRED FOR ALL TRADES.
- THE STRUCTURAL DRAWINGS SHALL GOVERN THE WORK FOR ALL STRUCTURAL FEATURES, UNLESS NOTED OTHERWISE.
- INSPECTION IS REQUIRED OF ALL CONSTRUCTION Delineated ON THE STRUCTURAL DRAWINGS AND/OR SPECIFICATIONS. THE OWNER (CONTRACTOR) SHALL EMPLOY A TESTING/INSPECTION AGENCY WHICH SHALL PROVIDE PERSONNEL WITH THE FOLLOWING MINIMUM QUALIFICATIONS:
 - CERTIFIED BY INSTITUTE OF CERTIFIED ENGINEERING TECHNICIANS, OR OTHER RECOGNIZED COMPARABLE ORGANIZATION, AND:
 - FOR INSPECTION, SAMPLING, TESTING CONCRETE AND MASONRY.
 - ACI CERTIFIED CONCRETE FIELD-TESTING TECHNICIAN, GRADE I AND CONSTRUCTION INSPECTOR, LEVEL II
 - STRUCTURAL STEEL INSPECTION:
 - AWS CERTIFIED WELDING INSPECTOR.
- SUBMIT PERIODIC REPORTS WITHIN ONE BUSINESS DAY AFTER RECEIPT BY THE CONTRACTOR TO ENGINEER DURING CONSTRUCTION. SUBMIT FINAL INSPECTION REPORT SUMMARY FOR EACH DIVISION OF WORK, CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER, THAT INSPECTIONS WERE PERFORMED AND THAT WORK WAS PERFORMED IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- THE OWNER SHALL ENGAGE A TESTING AGENCY TO PROVIDE TESTING SERVICES AS INDICATED IN EACH SECTION OF THESE GENERAL NOTES.
- ALL MATERIALS SHALL BE STORED TO PROTECT THEM FROM EXPOSURE TO THE ELEMENTS.

1.0A EARTHWORK

- EXCAVATION SHALL BE PERFORMED SO AS NOT TO DISTURB EXISTING ADJACENT BUILDINGS, STREETS AND UTILITY LINES. VERIFY LOCATION OF ALL UTILITIES PRIOR TO COMMENCEMENT OF WORK. HAND EXCAVATE AROUND UTILITIES AS REQUIRED.
- SEE THE SPECIFICATIONS AND GEOTECHNICAL REPORT FOR EXCAVATION, BACKFILL AND PREPARATION OF THE FOUNDATION SUBGRADE.
- COMPACT SOIL TO NOT LESS THAN 95% OF MAXIMUM DENSITY OF MODIFIED PROCTOR (ASTM D1557).
- THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL GEOTECHNICAL ENGINEER, SUBJECT TO THE APPROVAL OF THE ENGINEER, TO PERFORM SOIL TESTING AND INSPECTION. THE ENGINEER SHALL INSPECT THE SUBGRADE TO VERIFY BEARING LEVELS AND ENSURE THAT THE SAFE BEARING CAPACITY MEETS OR EXCEEDS THE DESIGN VALUE INDICATED BELOW. REPORTS SHALL BE SUBMITTED TO THE ENGINEER OUTLINING THE WORK PERFORMED AND TEST RESULTS.

2.0 FOUNDATIONS

- FOUNDATIONS HAVE BEEN DESIGNED AND FOUNDATION ELEVATIONS ESTABLISHED ON THE BASIS OF A SUBSURFACE INVESTIGATION REPORT AND RECOMMENDATION PREPARED BY ARM GROUP INC. DATED JULY 19, 2012. SEE THE REPORT FOR ADDITIONAL REQUIREMENTS. THE REQUIREMENTS CONTAINED IN THE GEOTECHNICAL REPORT ARE PART OF THE CONSTRUCTION DOCUMENTS.
- UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEER'S APPROVAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE NEED TO USE FOUNDATION REBAR AS A GROUNDING ELECTRODE SYSTEM AND SHALL BE RESPONSIBLE FOR INSTALLING THE BONDING CLAP PRIOR TO PLACEMENT OF THE CONCRETE AS PER NJCCO BULLETIN No. 02-2. PROVIDE 2 INSPECTION PORTS, SEE ELECTRICAL DRAWINGS FOR LOCATION.
- FOUNDATIONS SHALL BEAR ON UNDISTURBED OR COMPACTED SOIL WITH A MINIMUM BEARING CAPACITY OF 2500 PSF. PRIOR TO FOUNDATION CONCRETE PLACEMENT, THE FOUNDATION SUBGRADE SHALL BE APPROVED BY THE INSPECTING GEOTECHNICAL ENGINEER. IF CONDITIONS PROVE TO BE UNACCEPTABLE AT ELEVATIONS SHOWN, FOUNDATION BOTTOMS SHALL BE LOWERED TO ACCEPTABLE SUBGRADE MATERIAL. FILL OVER-EXCAVATION WITH LEAN CONCRETE (2,500 psi).
- CONCRETE FOR FOUNDATIONS SHALL BE POURED ON THE SAME DAY THE SUBGRADE IS APPROVED BY THE GEOTECHNICAL ENGINEER.
- THE CONTRACTOR SHALL OBSERVE WATER CONDITIONS AT THE SITE AND TAKE THE NECESSARY PRECAUTIONS TO ENSURE THAT THE FOUNDATION EXCAVATIONS REMAIN DRY DURING CONSTRUCTION. ANY SHEETING OR SHORING REQUIRED FOR DEWATERING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

3.0 CAST-IN-PLACE CONCRETE

- CONCRETE SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-08), AND CONSTRUCTED IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE.
- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE 28 DAY STRENGTH OF 4,500 psi.
- AIR ENTRAINMENT SHALL BE 4.5% TO 5.5% IN ALL EXPOSED CONCRETE WORK.
- MAXIMUM WATER/CEMENT RATIO: 0.45
- ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE (144 pcf +/-) WITH ALL CEMENT CONFORMING TO ASTM C150, TYPE I. MAXIMUM AGGREGATE SIZE SHALL BE 1 1/2", CONFORMING TO ASTM C33.
- REINFORCING STEEL: ASTM A615, GRADE 60.
- WELDED WIRE REINFORCEMENT: (WWR) ASTM A-185.
- LEVELING GROUT SHALL BE NON-SHRINK, NON-METALLIC TYPE, FACTORY PRE-MIXED GROUT IN ACCORDANCE WITH CE-CR0-C621 OR ASTM C109, WITH A MINIMUM COMPRESSIVE 28 DAY STRENGTH OF 5,000 psi.
- REINFORCING STEEL CLEAR COVER SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"
 - CONCRETE EXPOSED TO EARTH OR WEATHER: 2"
 - #6 BARS AND LARGER: 1 1/2"
 - #6 BARS AND SMALLER: 1"
- SUBMIT TO ENGINEER REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL AND MIX DESIGNS FOR REVIEW PRIOR TO PLACING ANY CONCRETE.
- ALL REINFORCEMENT SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. IF REQUIRED, ADDITIONAL BARS, STIRRUPS OR CHAIRS SHALL BE PROVIDED BY THE CONTRACTOR TO FURNISH SUPPORT FOR ALL BARS.
- SPLICES IN REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 48 BAR DIAMETERS, UNLESS SHOWN OTHERWISE ON THE DRAWINGS OR CALCULATED IN ACCORDANCE WITH ACI 318 AND APPROVED BY THE ENGINEER.
- LAP WELDED WIRE REINFORCEMENT TWO (2) FULL WIRE SPACES AT SPLICES AND WIRE TOGETHER.
- PROVIDE PLASTIC TIPPED BOLSTERS AND CHAIRS AT ALL LOCATIONS WHERE THE CONCRETE SURFACE IN CONTACT WITH THE BOLSTERS OF CHAIRS IS EXPOSED.
- PLACING OF CONCRETE SHALL NOT START UNTIL THE PLACEMENT OF REINFORCING HAS BEEN APPROVED BY THE INSPECTION AGENCY.
- BONDING AGENT SHALL BE USED WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE.
- EPOXY ADHESIVE SHALL BE USED WHERE DOWELS ARE TO BE INSTALLED INTO EXISTING CONCRETE. SUBMIT MANUFACTURER INFORMATION FOR ENGINEER REVIEW.
- NO SLEEVE SHALL BE PLACED THOUGH ANY CONCRETE ELEMENT UNLESS SHOWN ON THE APPROVED SHOP DRAWINGS OR SPECIFICALLY AUTHORIZED IN WRITING BY THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL VERIFY DIMENSIONS AND LOCATIONS OF ALL SLOTS, PIPE SLEEVES, ETC. AS REQUIRED FOR MECHANICAL TRADES BEFORE CONCRETE IS PLACED.
- PIPES OR CONDUITS PLACED IN SLABS SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN 1/3 THE SLAB THICKNESS AND SHALL NOT BE SPACED CLOSER THAN THREE (3) DIAMETERS ON CENTER. ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE. NO CONDUITS SHALL BE PLACED IN SLABS WITHIN 12" OF COLUMN FACE OR FACE OF BEARING WALL. NO CONDUITS MAY BE PLACED IN EXTERIOR SLABS OR SLABS SUBJECTED TO FLUIDS.
- PRIOR TO PLACING CONCRETE, THE CONTRACTOR SHALL SUBMIT TO THE STRUCTURAL ENGINEER FOR REVIEW, A CONCRETE POUR SCHEDULE SHOWING LOCATION OF ALL PROPOSED CONSTRUCTION JOINTS AND WATERSTOPS.
- PRIOR TO PLACING CONCRETE, THE CONTRACTOR SHALL SUBMIT TO THE STRUCTURAL ENGINEER FOR REVIEW, CONCRETE MIX DESIGNS PREPARED IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS INDICATED IN THE GENERAL NOTES.
- CONCRETE SHALL NOT BE PUMPED THROUGH ALUMINUM PIPES AND SHALL NOT BE PLACED IN CONTACT WITH ALUMINUM FORMS, MIXING DRUMS, BUCKETS, CHUTES, CONVEYORS OR OTHER EQUIPMENT MADE OF ALUMINUM.
- ALL INSERTS AND SLEEVES SHALL BE CAST-IN-PLACE WHENEVER FEASIBLE. DRILLED OR POWDER DRIVEN FASTENERS WILL BE PERMITTED WHEN PROVEN TO THE SATISFACTION OF THE STRUCTURAL ENGINEER THAT THE FASTENERS WILL NOT SPALL THE CONCRETE AND HAVE THE SAME CAPACITY AS CAST-IN-PLACE INSERTS.
- WHEN INSTALLING EXPANSION BOLTS OR ADHESIVE ANCHORS, THE CONTRACTOR SHALL TAKE MEASURES TO AVOID DRILLING OR CUTTING OF ANY EXISTING REINFORCING AND DESTRUCTION OF CONCRETE. HOLES SHALL BE BLOWN CLEAN PRIOR TO PLACING BOLTS OR ADHESIVE ANCHORS.
- CHAMFER ALL EXPOSED CONCRETE CORNERS UNLESS NOTED OTHERWISE.
- THE CONCRETE SLABS SHALL BE FINISHED FLAT AND LEVEL WITHIN TOLERANCE, TO THE ELEVATION INDICATED ON THE DRAWINGS.
- EARLY DRYING OUT OF CONCRETE, ESPECIALLY DURING THE FIRST 24 HOURS, SHALL BE CAREFULLY GUARDED AGAINST. ALL SURFACES SHALL BE MOIST CURED OR PROTECTED USING A MEMBRANE CURING AGENT APPLIED AS SOON AS FORMS ARE REMOVED. IF MEMBRANE CURING AGENT IS USED, EXERCISE CARE NOT TO DAMAGE COATING.
- COLD WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI-306. HOT WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI-305R.
- THROUGHOUT CONSTRUCTION, THE CONCRETE WORK SHALL BE ADEQUATELY PROTECTED AGAINST DAMAGE DUE TO EXCESSIVE LOADING, CONSTRUCTION EQUIPMENT, MATERIALS OR METHODS, ICE, RAIN, SNOW, EXCESSIVE HEAT AND FREEZING TEMPERATURES.
- PREPARE CONCRETE TEST CYLINDERS FROM EACH DAY'S POUR. CYLINDERS SHALL BE PROPERLY CURED AND STORED. SAMPLE FRESH CONCRETE IN ACCORDANCE WITH ASTM C172.
- RETAIN LABORATORY TO PROVIDE TESTING SERVICE. SLUMP PER ASTM C143R, AIR CONTENT PER ASTM C231 OR C173, CYLINDER TESTS PER ASTM C31 AND C39. ONE SET OF SIX (6) CYLINDERS FOR EACH 50 CUBIC YARDS FOR EACH MIX USED. REPORTS OF ALL TESTS TO BE SUBMITTED TO THE ENGINEER.

4.0 CONCRETE ANCHORS

- ALL ADHESIVE ANCHORS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
- THE SPACING, MINIMUM EMBEDMENT AND INSTALLATION OF THE ANCHORS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PROCEDURES.
- ANCHOR RODS USED IN ADHESIVE ANCHORAGE SYSTEMS SHALL CONFORM WITH ASTM F1554, GRADE 55 STEEL.

5.0 MASONRY

- MASONRY SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530.1-08/ASCE 6-08), EXCEPT WHERE OTHERWISE MODIFIED BY THESE GENERAL NOTES AND SPECIFICATIONS.
- MORTAR SHALL CONFORM TO ASTM C270, TYPE N. ALL PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE I. LIME SHALL CONFORM TO ASTM C207 AND MASONRY CEMENT SHALL CONFORM TO ASTM C91.
- THE CONTRACTOR SHALL VERIFY ALL OPENINGS BELOW LINTELS INDICATED ARE ADEQUATE TO ACCEPT PIPES AS SHOWN ON THE MEP DRAWINGS. NOTIFY THE STRUCTURAL ENGINEER OF ANY DISCREPANCIES PRIOR TO LINTEL INSTALLATION.

6.0 STRUCTURAL STEEL

- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO "THE MANUAL OF STEEL CONSTRUCTION", THIRTEENTH EDITION, 2005, AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) INCLUDING SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, AND ALSO CODE OF STANDARD PRACTICE.
- ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS AND SHALL CONFORM TO "STRUCTURAL WELDING CODE ANSI/AWS D1.1", LATEST EDITION, AMERICAN WELDING SOCIETY (AWS).
- WIDE FLANGE SHAPES: ASTM A992 OR A572, GRADE 50
- STRUCTURAL SHAPES & PLATES: ASTM A36, A572 OR A992
- STEEL PIPE: ASTM A53, GRADE B
- STEEL TUBING: (SQUARE OR RECT.): ASTM A500, GRADE B (ROUND): ASTM A501
- GALVANIZED STRUCTURAL STEEL:
 - STRUCTURAL SHAPES AND RODS: ASTM A123.
 - BOLTS, FASTENERS AND HARDWARE: ASTM A153.
- ALL BOLTED CONNECTIONS SHALL BE WITH ASTM A325 HIGH STRENGTH BOLTS 3/4" MINIMUM DIAMETER, UNLESS NOTED OTHERWISE.
- ANCHOR RODS SHALL CONFORM TO ASTM F1554, UNLESS NOTED OTHERWISE.
- WELDING ELECTRODES SHALL BE E70XX FOR MANUAL ARC WELDING AND F7X-EXXX FOR SUBMERGED ARC WELDING. ALL WELDERS SHALL BE CERTIFIED BY THE AWS. MINIMUM WELD SIZE SHALL BE 3/16" UNLESS NOTED OTHERWISE.
- CUTS, HOLES, CORING, ETC. REQUIRED FOR OTHER TRADES OR FIELD CONDITIONS SHALL BE SHOWN ON THE SHOP DRAWINGS AND MADE IN THE SHOP. CUTTING OR BURNING OF MAIN STRUCTURAL MEMBERS IN THE FIELD WILL NOT BE PERMITTED.
- SUBMIT SHOP DRAWINGS FOR FABRICATION AND ERECTION OF STRUCTURAL STEEL. CLEARLY INDICATE COORDINATED DIMENSIONS OF MECHANICAL UNIT AND ROOF PENETRATION SIZES. SHOP AND ERECTION DRAWINGS MUST SHOW ALL SHOP/FLOOR AND FIELD WELDS. INITIAL SHOP DRAWING SUBMITTAL SHALL INCLUDE PROPOSED CONNECTION DETAILS AND JOB STANDARDS. PROVIDE SIGNED AND SEALED CALCULATIONS FOR ALL NON-STANDARD CONNECTION DETAILS SHOWING DESIGN CAPACITIES.
- THE GENERAL CONTRACTOR AND STEEL ERECTOR SHALL NOTIFY THE STRUCTURAL ENGINEER OF ANY FABRICATION OR ERECTION ERRORS OR DEVIATIONS AND RECEIVE WRITTEN APPROVAL BEFORE ANY FIELD CORRECTIONS ARE MADE.
- ALL STEEL SHALL BE PAINTED WITH SHOP STANDARD PRIMER UNLESS NOTED OTHERWISE.
- STEEL ANGLES AND PLATES ALONG WITH BOLTS AND WASHERS, IN DIRECT CONTACT WITH EXTERIOR FINISH MASONRY, AND ALL EXTERIOR EXPOSED STRUCTURAL STEEL, SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123 AND A153.
- FIELD WELDED SURFACES WITHIN FOUR (4) INCHES OF WELD SHALL BE CLEANED AND GROUND SMOOTH. AFTER WELDING COAT THE EXPOSED AREA WITH APPROPRIATE PRIMER/PAINTS AS SPECIFIED.
- AFTER WELDING GALVANIZED STEEL, COAT THE EXPOSED AREA WITH GALVANIZING REPAIR PAINT. GALVANIZING REPAIR PAINT SHALL BE A HIGH ZINC DUST CONTENT PAINT COMPLYING WITH FEDERAL SPECIFICATION DOD-P-21035A OR SSPC-PAINT-20, COLD GALVANIZING COMPOUND BY ZRC PRODUCTS CO. OR EQUAL.
- VISUALLY INSPECT ALL FILLET WELDS. 10% OF ALL FIELD FILLET WELDS IN PRIMARY CONNECTIONS AND MULTI-PASS WELDS SHALL BE TESTED BY THE MAGNETIC PARTICLE METHOD, COMPLYING WITH ASTM E709, PERFORMED ON THE ROOT PASS AND ON THE FINISHED WELD.
- FIELD TEST BOLTED CONNECTIONS IN ACCORDANCE WITH AISC.
- ALL STEEL SHALL BE THOROUGHLY CLEANED BY POWER TOOL CLEANING PRIOR TO PAINTING. ALL ARCHITECTUALLY EXPOSED STRUCTURAL STEEL SHALL BE CLEANED WITH COMMERCIAL BLAST CLEANING.
- ALL DISSIMILAR METALS SHALL BE TREATED OR PROPERLY SEPARATED TO PREVENT GALVANIC AND/OR CORROSIVE EFFECTS.
- ALL CONNECTIONS SHALL BE SYMMETRICAL ABOUT THE AXIS OF THE MEMBER CONNECTED. PROVIDE ONLY ONE GRADE OF BOLT FOR EACH BOLT DIAMETER TO BE USED IN THE CONNECTIONS. DO NOT MIX GRADES OF BOLTS.

7.0 METAL DECK

- METAL DECK SHALL BE DESIGNED AND DETAILED IN ACCORDANCE WITH THE "DESIGN MANUAL FOR FLOOR DECKS AND ROOF DECKS" OF THE STEEL DECK INSTITUTE (SDI), LATEST EDITION.
- INSTALL IN ACCORDANCE WITH SDI SUGGESTED SPECIFICATIONS UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- DECK SUPPLIER SHALL PROVIDE ALL ADDITIONAL FRAMING, CLOSURE ANGLES AND PLATES, POUR STOPS, SCREED ANGLES, AND ROOF STUMP PANS AS REQUIRED AT THE EDGES OF ALL OPENINGS OR CHANGES OF DECK DIRECTION, INCLUDING THOSE WHICH HAVE NOT BEEN DETAILED.
- ROOF AND NON-COMPOSITE DECKS SHALL BE WELDED TO STEEL SUPPORTS, INCLUDING THE EDGE SUPPORT PARALLEL TO THE DECK SPAN WITH 5/8" DIAMETER (EFFECTIVE FUSION DIAMETER) PLUG WELDS AT 12" ON CENTER INTERIOR AND 6" ON CENTER AT EDGE OF DECK SHEET UNLESS NOTED OTHERWISE ON THE DRAWINGS. FASTER SIDE LAPS WITH #10 SELF-TAPPING SCREWS AT 36" O.C. MAXIMUM SPACING UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- NO MECHANICAL OR ELECTRICAL PIPING, FIXTURES, UNITS OR SYSTEMS MAY BE HUNG DIRECTLY FROM THE ROOF DECK.

8.0 DESIGN DATA

- GOVERNING CODE: 2009 INTERNATIONAL BUILDING CODE
- LIVE LOADS:
 - MECHANICAL AREA: 150 PSF
- SNOW LOAD:
 - PG (GROUND SNOW LOAD) 30 PSF
 - I (SNOW LOAD IMPORTANCE FACTOR) 1.2
 - WIND EXPOSURE B
- WIND LOAD:
 - BASIC WIND SPEED 90 MPH
 - I (WIND IMPORTANCE FACTOR) 1.15
- EARTHQUAKE DESIGN DATA:
 - SS (MAPPED SPECTRAL RESPONSE COEFFICIENT) 0.228
 - SI (MAPPED SPECTRAL RESPONSE COEFFICIENT) 0.057
 - SITE CLASSIFICATION C
 - SEISMIC DESIGN CATEGORY C
 - I (SEISMIC IMPORTANCE FACTOR) 1.5
 - BASIC SEISMIC RESISTING SYSTEM: CANTILEVERED COLUMN SYSTEM

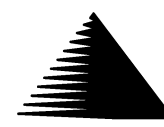
CONSULTANTS:

Mechanical/Electrical/Plumbing/Structure:

ANTHONY R. DIACARO, JR., P.E.
MILLER-REMICK CONSULTANTS
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE NO. PE062779

SIGNATURE: _____

ARCHITECT/ENGINEERS:



Miller-Remick LLC
M.E.P. & Structural Engineering
A Veteran Owned Small Business
1010 KINGS HIGHWAY SOUTH
BUILDING ONE - 1st FLOOR
CHERRY HILL, NEW JERSEY 08034
PHONE: (856)429-4000
FAX: (856)429-5002

Drawing Title

STRUCTURAL
NOTES

SCALE: NONE

Approved Project Director

Project Title

COOLING TOWER
REPLACEMENT

Location

VA MED. CENTER, LEBANON, PA

Date

8/27/2012

Checked

NM

Drawn

JK

Project Number

595-11-135

Building Number

10

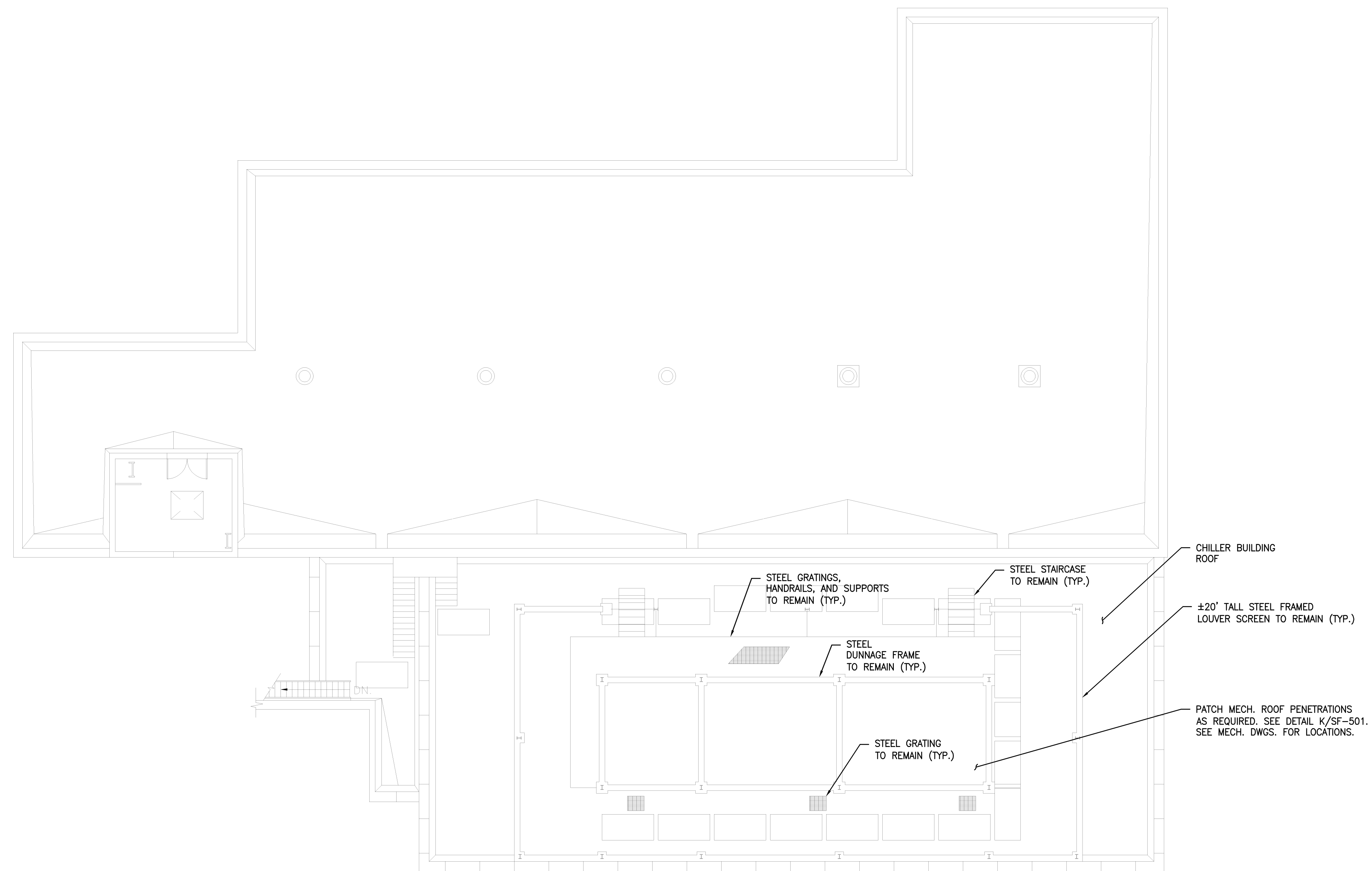
Drawing Number

S-001



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Office of
Construction
and Facilities
Management

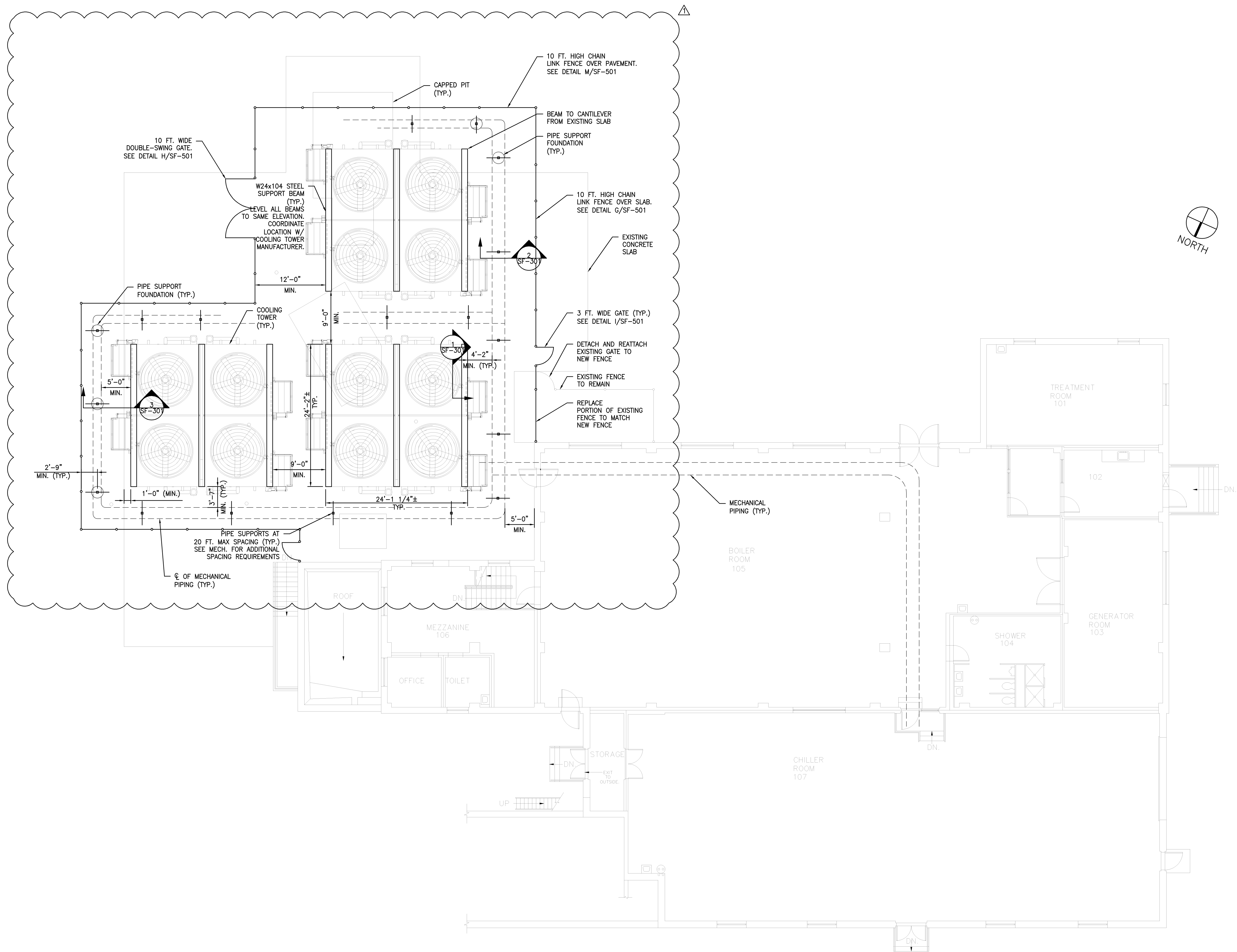




A compass rose with a circle divided into four quadrants by a vertical and a horizontal line. The word "NORTH" is written below the circle, and a thick black line points towards the top-left quadrant, indicating the North direction.

		CONSULTANTS:		Mechanical/Electrical/Plumbing/Structure: ANTHONY D. PACARO JR., P.E. MILLER-REMICK CORPORATION PROFESSIONAL ENGINEER PENNSYLVANIA LICENSE NO. PE062779 SIGNATURE: _____		ARCHITECT/ENGINEERS:  Miller-Remick LLC M.E.P. & Structural Engineering A Veteran Owned Small Business 1010 KINGS HIGHWAY SOUTH BUILDING ONE - 1st FLOOR CHERRY HILL, NEW JERSEY 08034 PHONE: (856)429-4000 FAX: (856)429-5002		Drawing Title STRUCTURAL DEMOLITION PLAN SCALE: 1/8"=1'-0" Approved: Project Director		Project Title COOLING TOWER REPLACEMENT Location VA MED. CENTER, LEBANON, PA Date 8/27/2012		Project Number 595-11-135 Building Number 10 Drawing Number SD-101 Dwg. 4 of 26		Office of Construction and Facilities Management  Department of Veterans Affairs	
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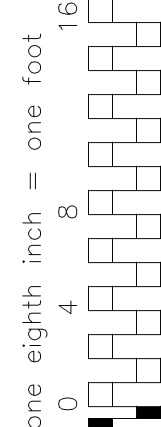
three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot
one eighth inch = one foot



1 FOUNDATION PLAN
SCALE: 1/8"=1'-0"

CONSTRUCTION DOCUMENTS

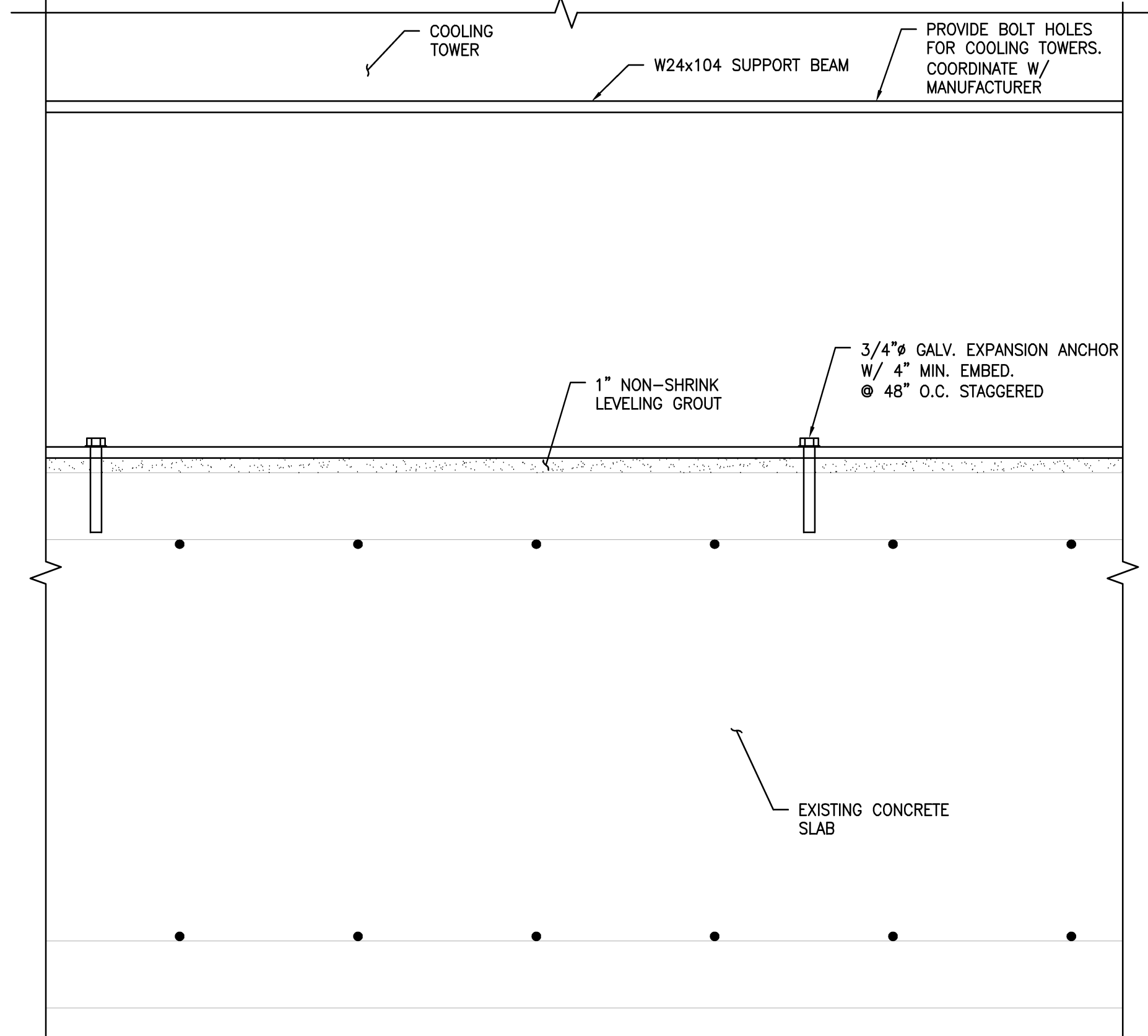
<div>ADDENDUM #2</div> <div>Revisions</div>		CONSULTANTS:		Mechanical/Electrical/Plumbing/Structure: ANTHONY D. DIACARO, JR., P.E. WILLY-REMICK CORPORATION PROFESSIONAL ENGINEER PENNSYLVANIA LICENSE NO. PE062779 SIGNATURE: _____	ARCHITECT/ENGINEERS: Miller-Remick LLC M.E.P. & Structural Engineering A Veteran Owned Small Business 1010 KINGS HIGHWAY SOUTH BUILDING ONE - 1st FLOOR CHERRY HILL, NEW JERSEY 08034 PHONE: (856)429-4000 FAX: (856)429-5002	Drawing Title STRUCTURAL FOUNDATION PLAN SCALE: 1/8"=1'-0" Approved Project Director	Project Title COOLING TOWER REPLACEMENT Location VA MED. CENTER, LEBANON, PA Date 8/27/2012 Checked NM Drawn JK	Project Number 595-11-135 Building Number 10 Drawing Number SB-101 Dwg. 5 of 26	Office of Construction and Facilities Management Department of Veterans Affairs
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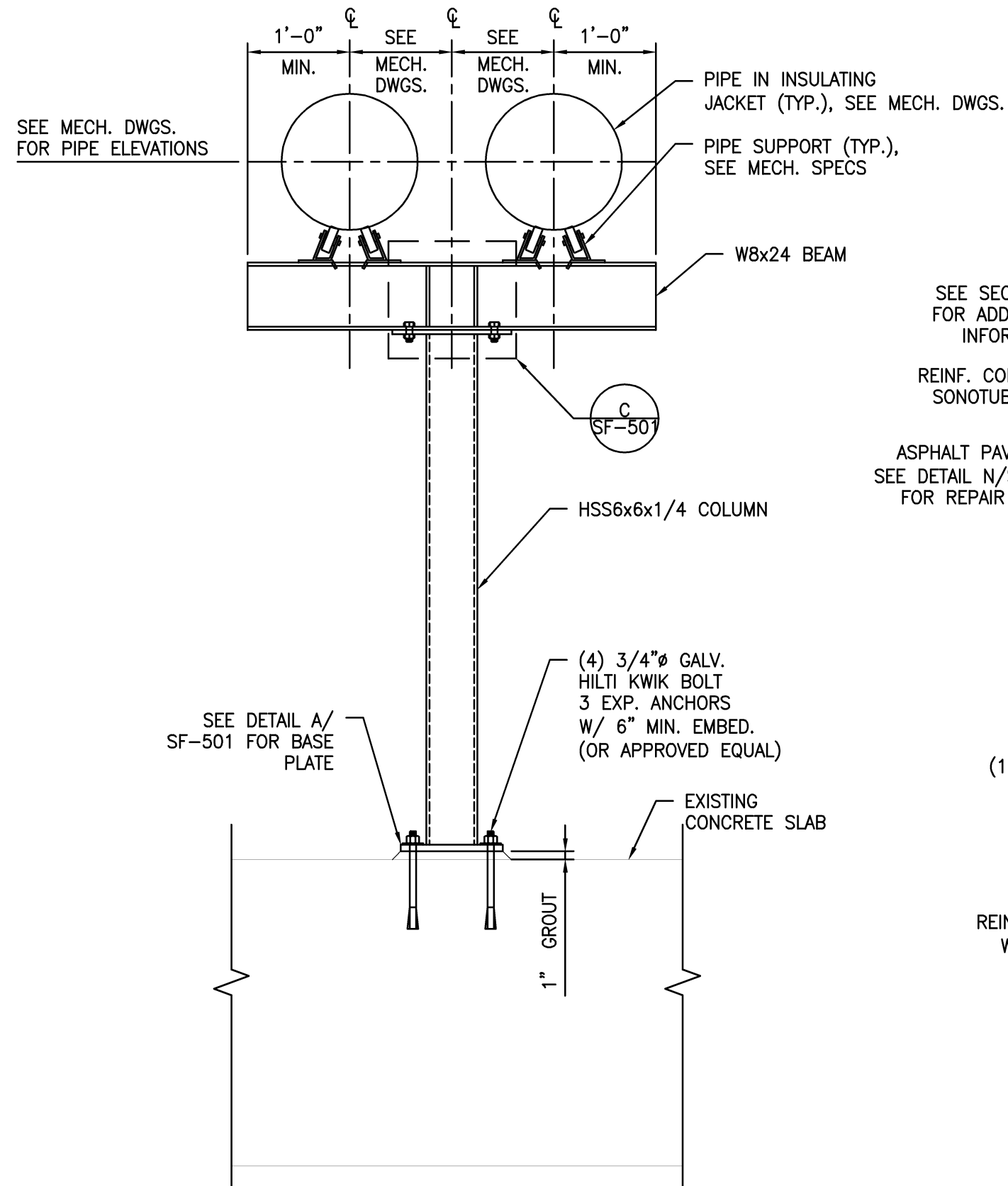
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VA FORM 08-6231

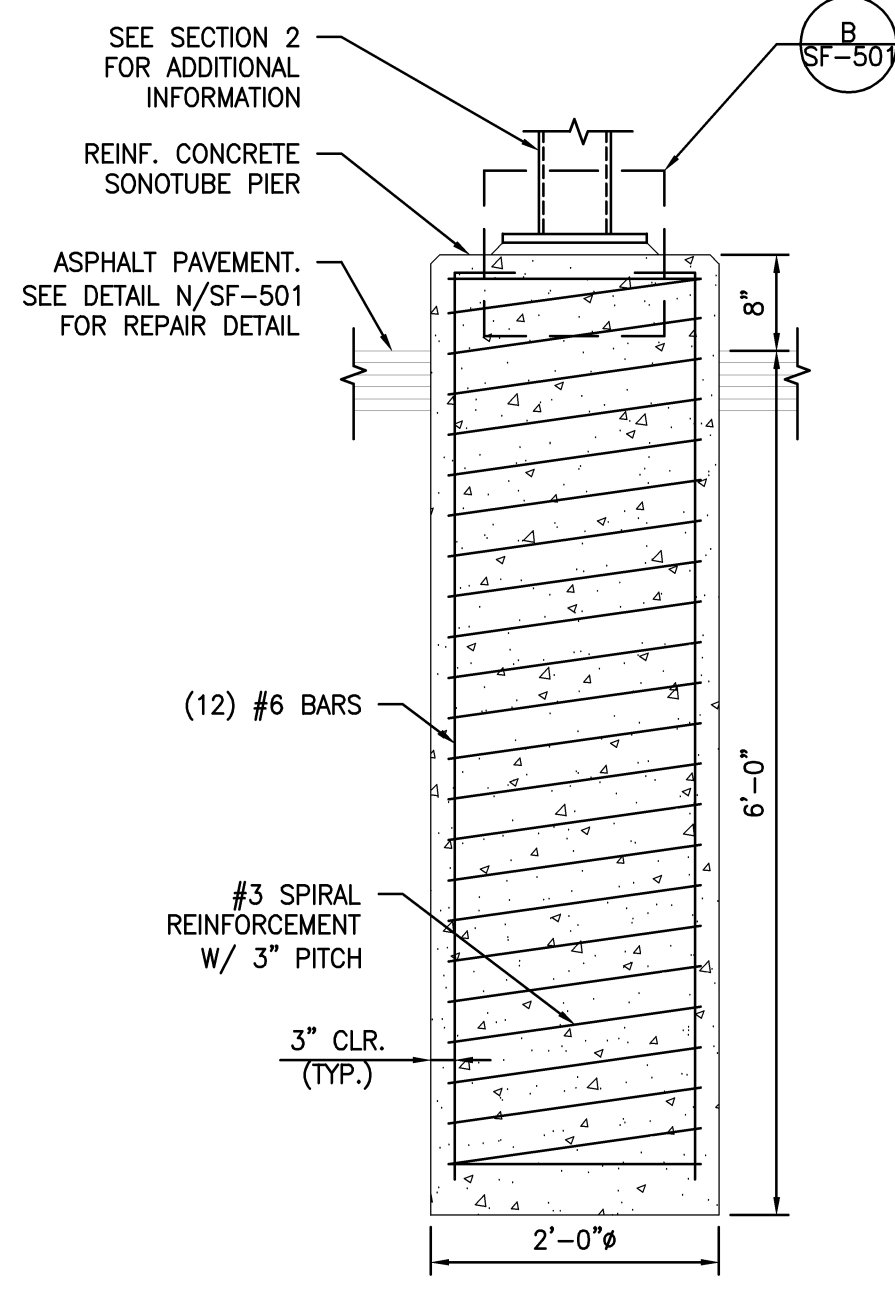
three inches = one foot
one and one half inches = one foot
one inch = one foot
three quarters inch = one foot
one half inch = one foot
three eighths inch = one foot
one quarter inch = one foot
one eighth inch = one foot



1 SECTION
SCALE: 1 1/2"=1'-0"



2 SECTION
SCALE: 3/4"=1'-0"

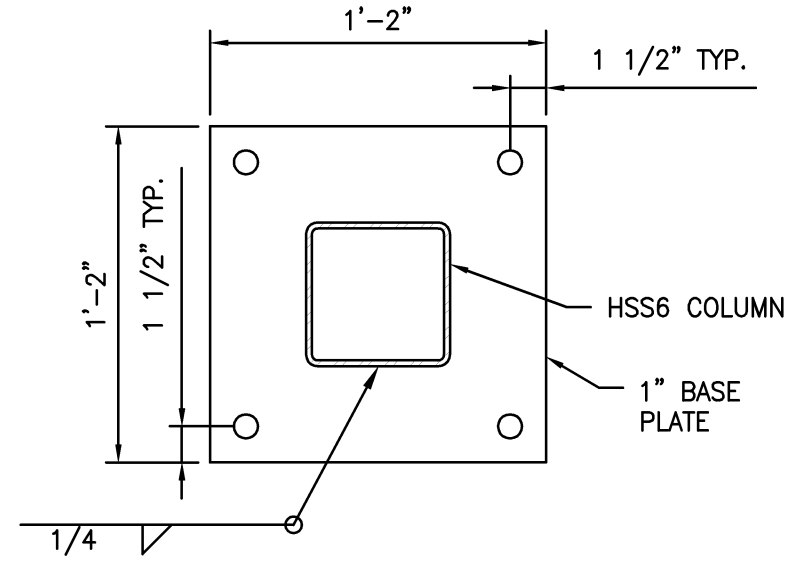


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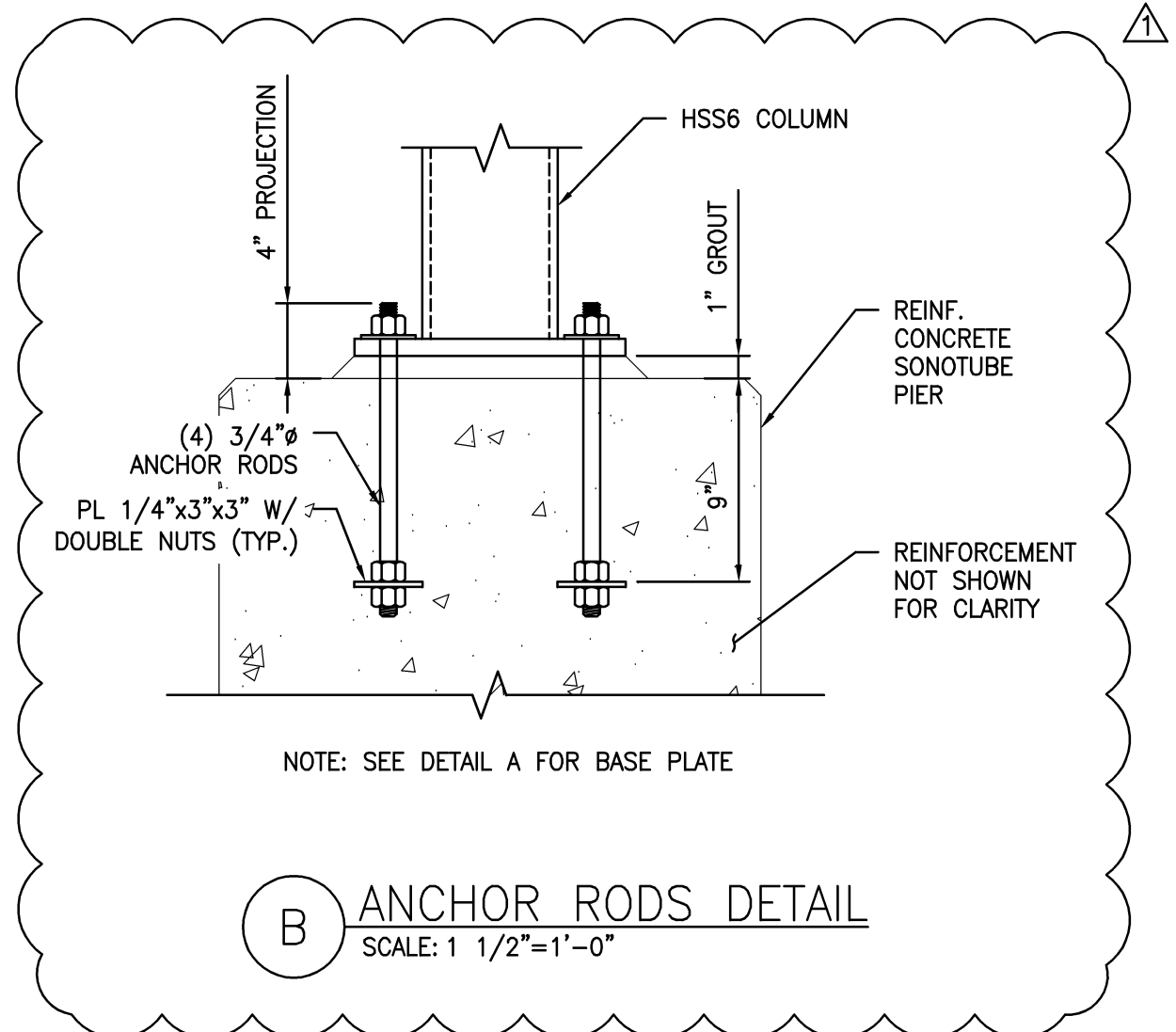
CONSTRUCTION DOCUMENTS

		CONSULTANTS:	Mechanical/Electrical/Plumbing/Structure:	ARCHITECT/ENGINEERS:	Drawing Title STRUCTURAL SECTIONS SCALE: AS NOTED	Project Title COOLING TOWER REPLACEMENT	Project Number 595-11-135	Building Number 10	Office of Construction and Facilities Management							
		1010 KINGS HIGHWAY SOUTH BUILDING ONE - 1st FLOOR CHERRY HILL, NEW JERSEY 08034 PHONE: (856)429-4000 FAX: (856)429-5002	SIGNATURE: _____	1010 KINGS HIGHWAY SOUTH BUILDING ONE - 1st FLOOR CHERRY HILL, NEW JERSEY 08034 PHONE: (856)429-4000 FAX: (856)429-5002	Approved Project Director	Location VA MED. CENTER, LEBANON, PA	Date 8/27/2012	Checked NM	Drawn JK	Drawing Number SF-301	Dwg. 7 of 26					
		ADDENDUM #2		09-13-12		Date		Revisions		Date						

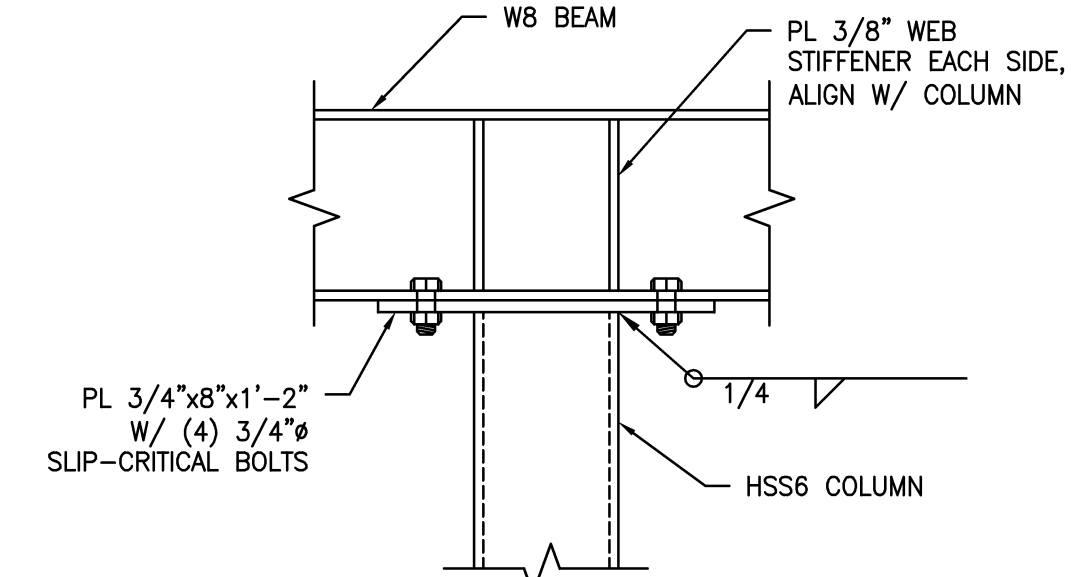
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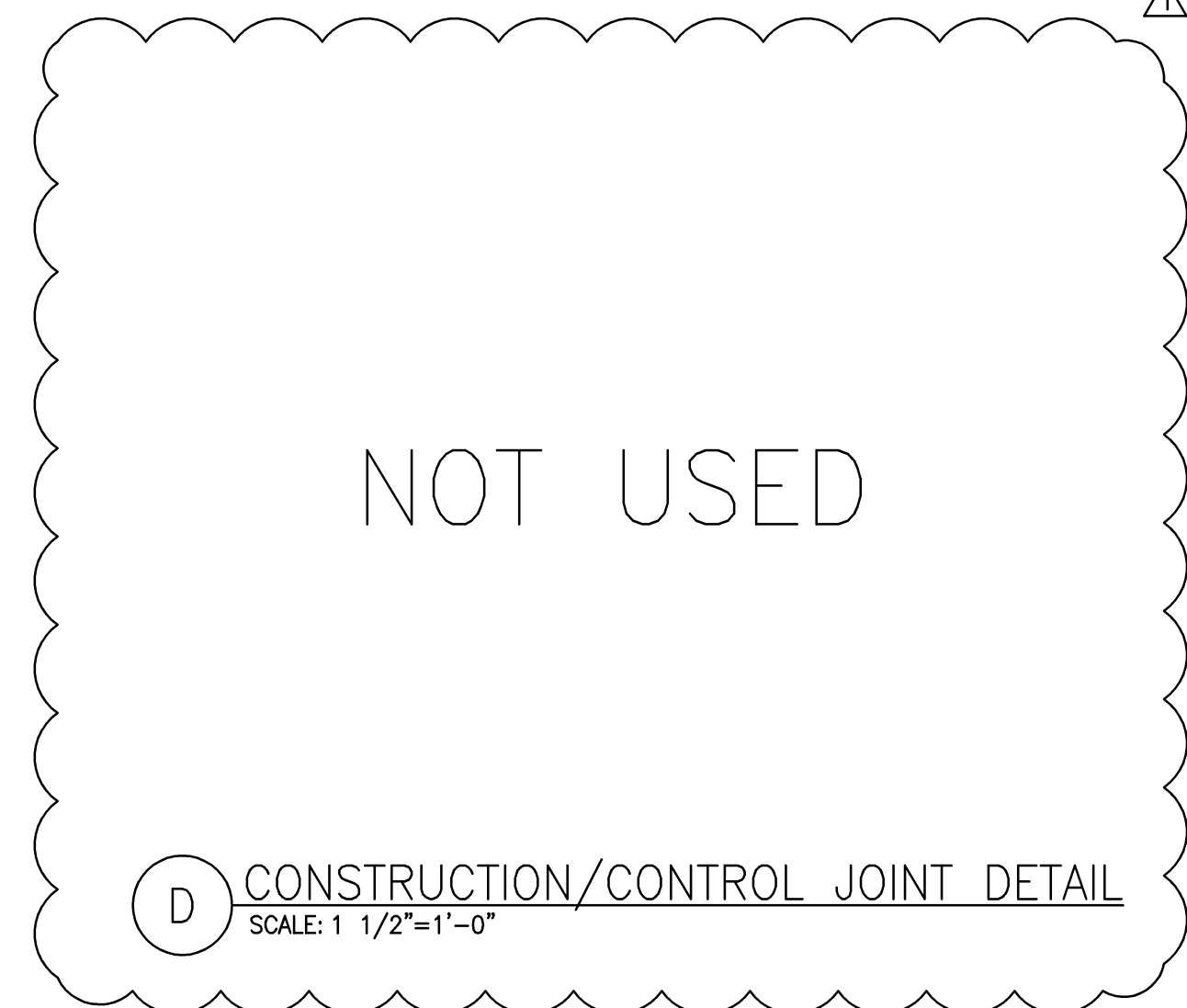
A BASE PLATE DETAIL
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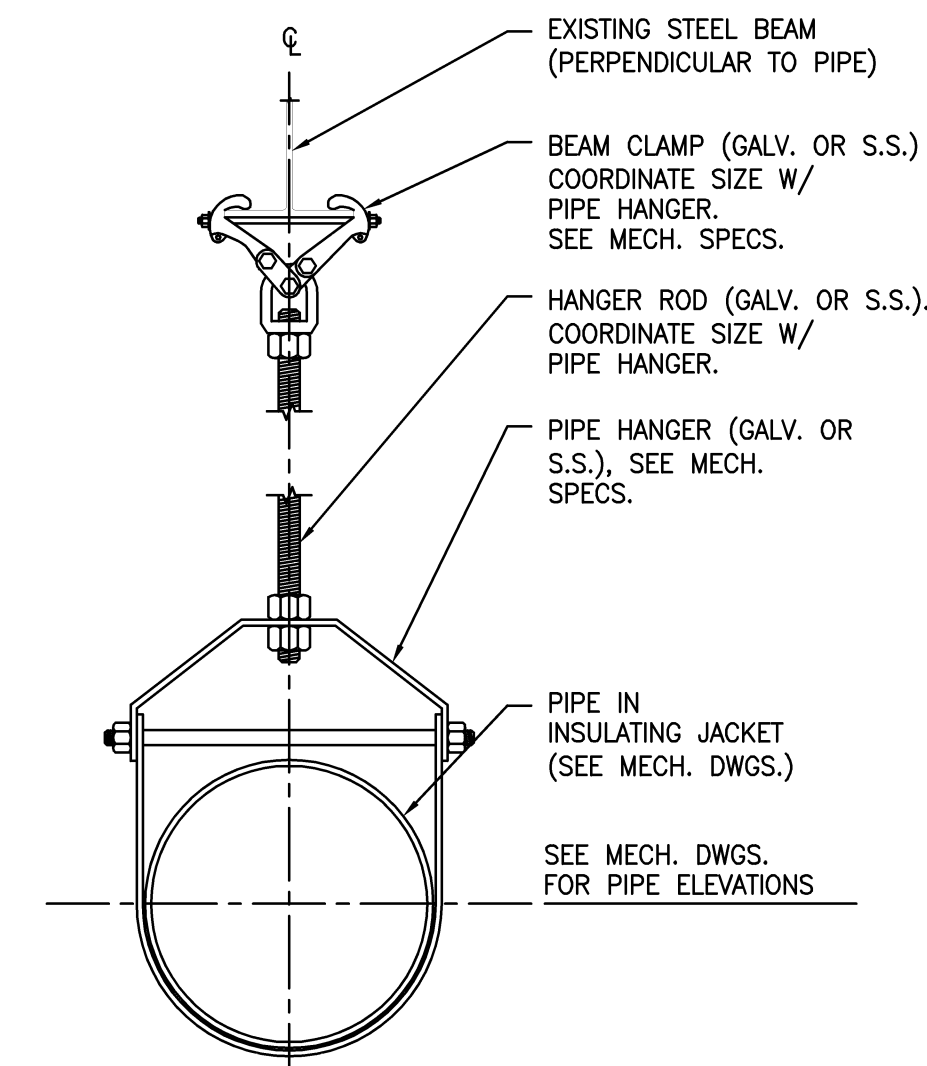
B ANCHOR RODS DETAIL
SCALE: 1 1/2"=1'-0"



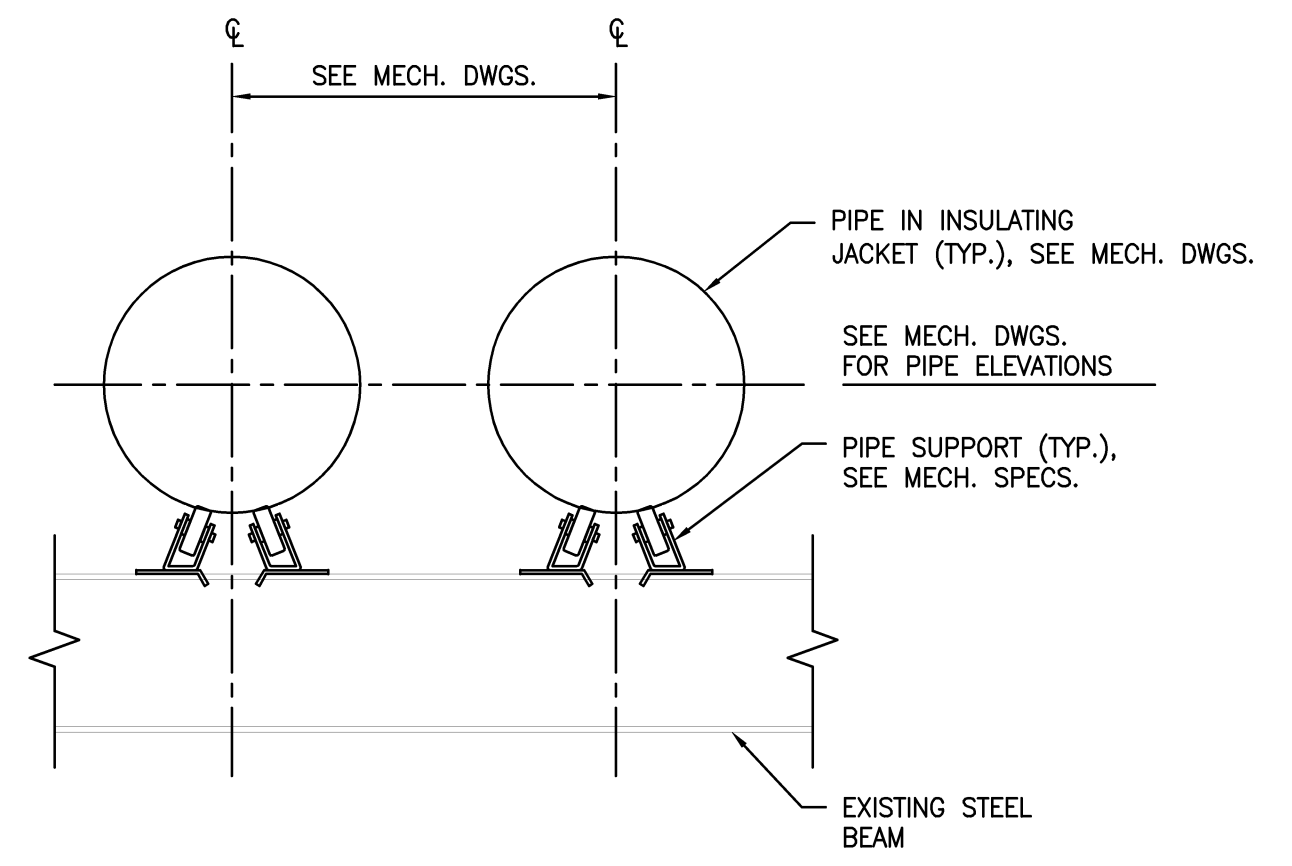
C EXTERIOR PIPE SUPPORT DETAIL
SCALE: 1 1/2"=1'-0"



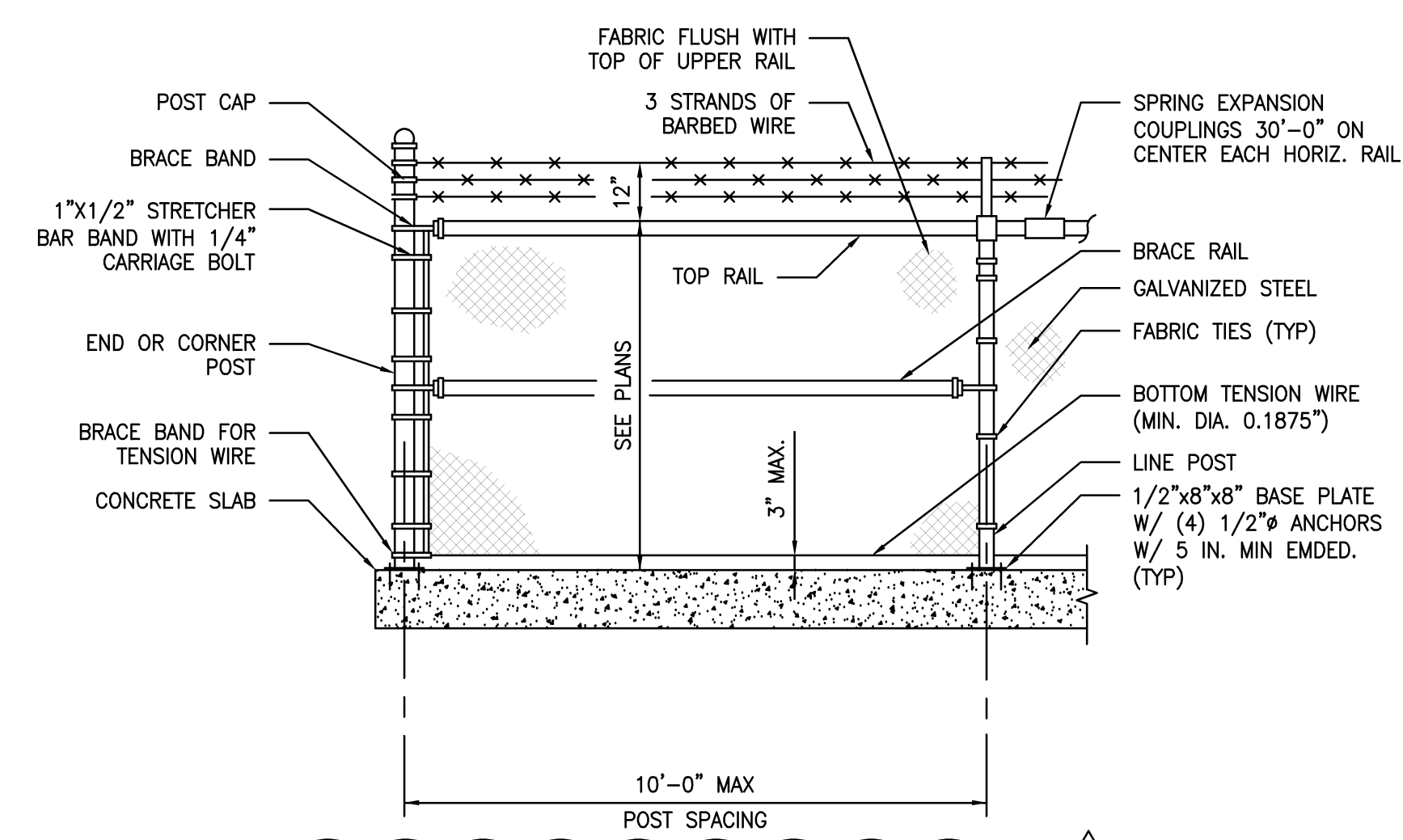
D CONSTRUCTION/CONTROL JOINT DETAIL
SCALE: 1 1/2"=1'-0"



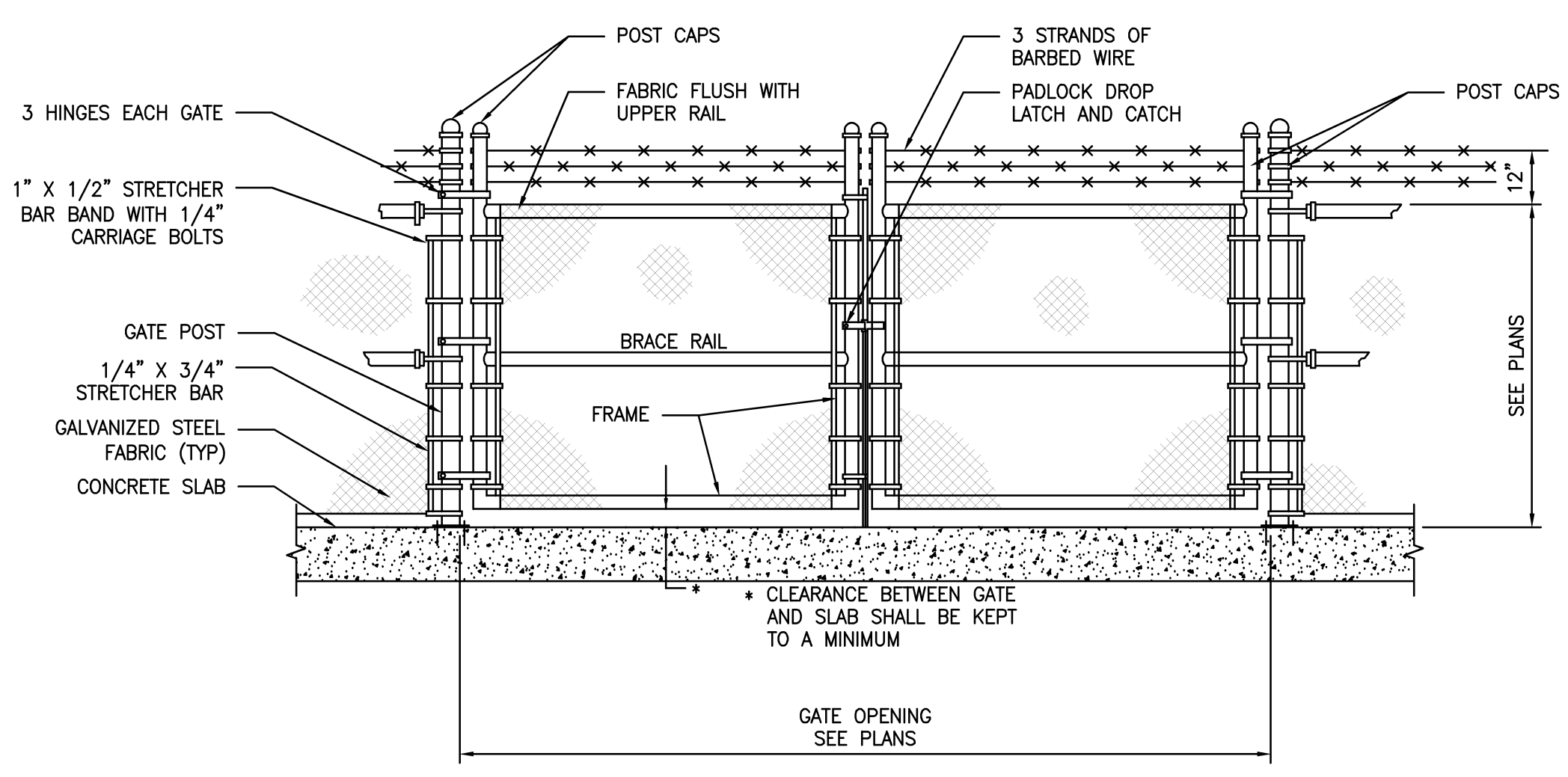
E INTERIOR PIPE HANGER DETAIL
SCALE: 1 1/2"=1'-0"



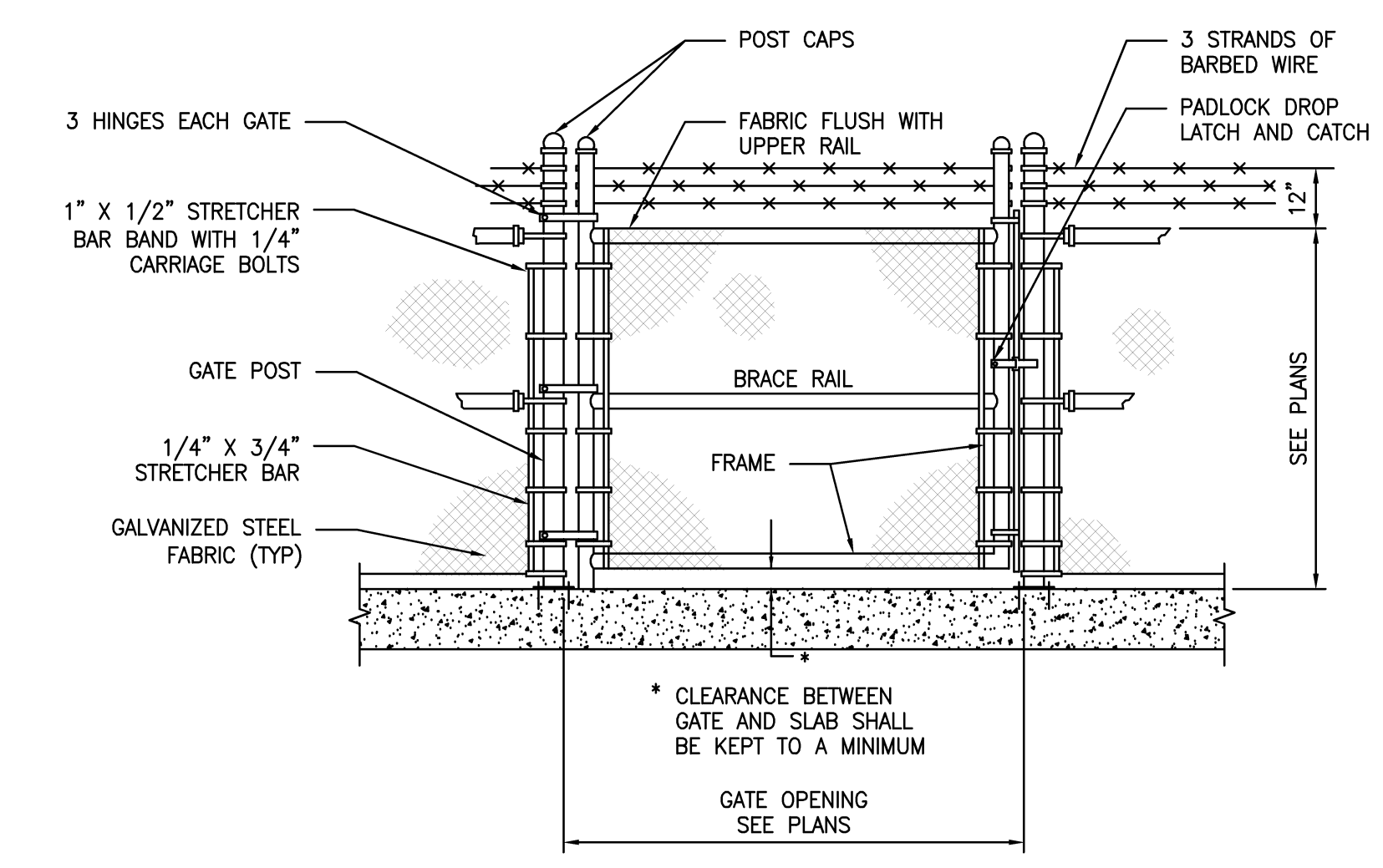
F INTERIOR PIPE SUPPORT DETAIL
SCALE: 1"=1'-0"



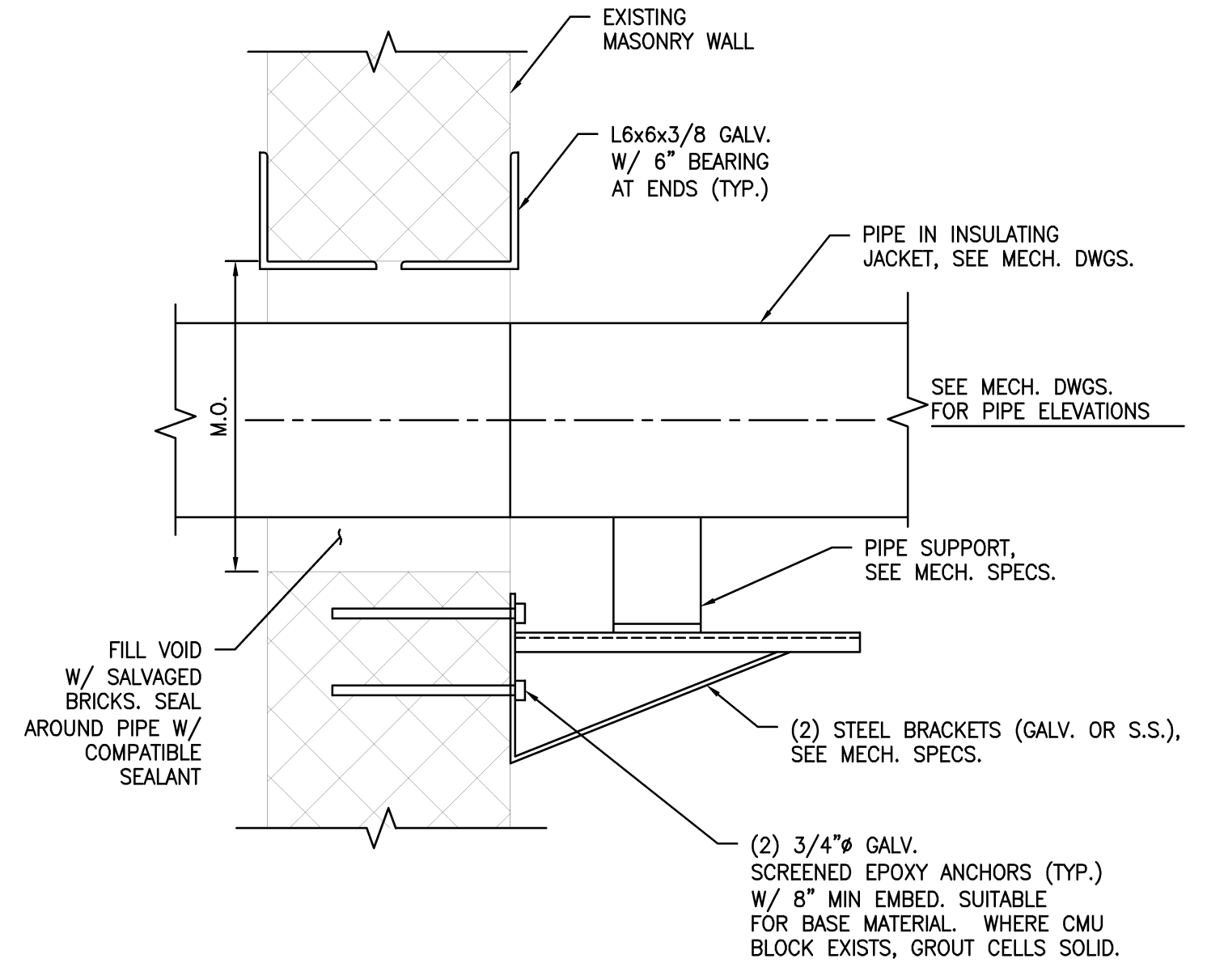
G FENCE DETAIL OVER SLAB
SCALE: NONE



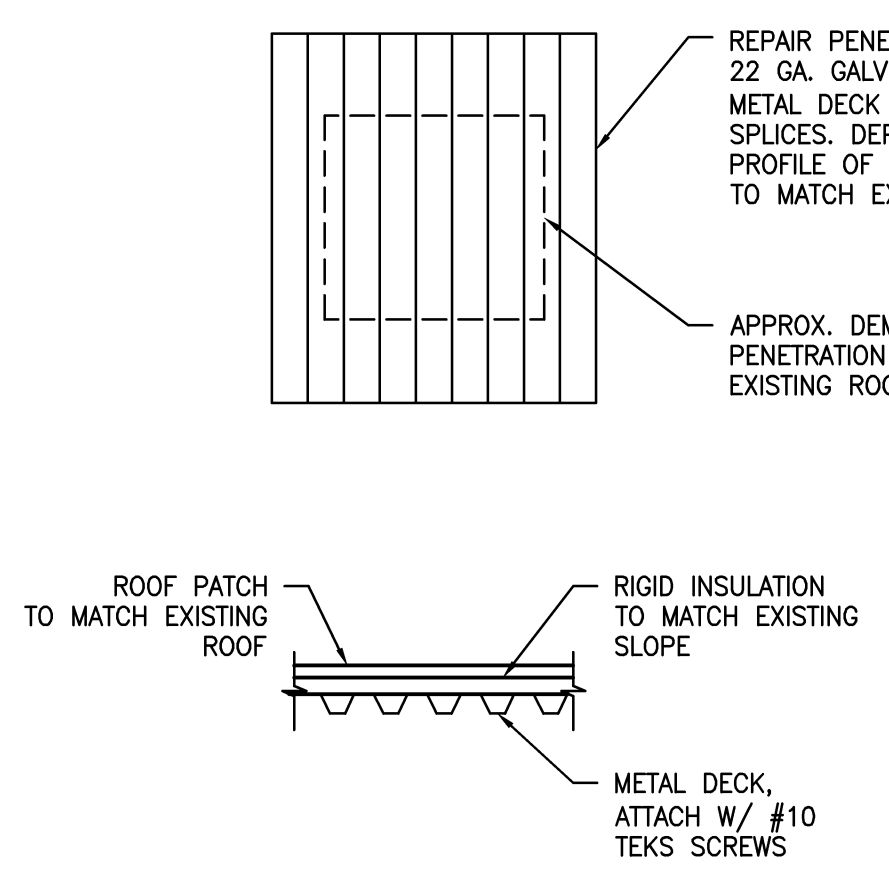
H DOUBLE LEAF SWING GATE DETAIL
SCALE: NONE



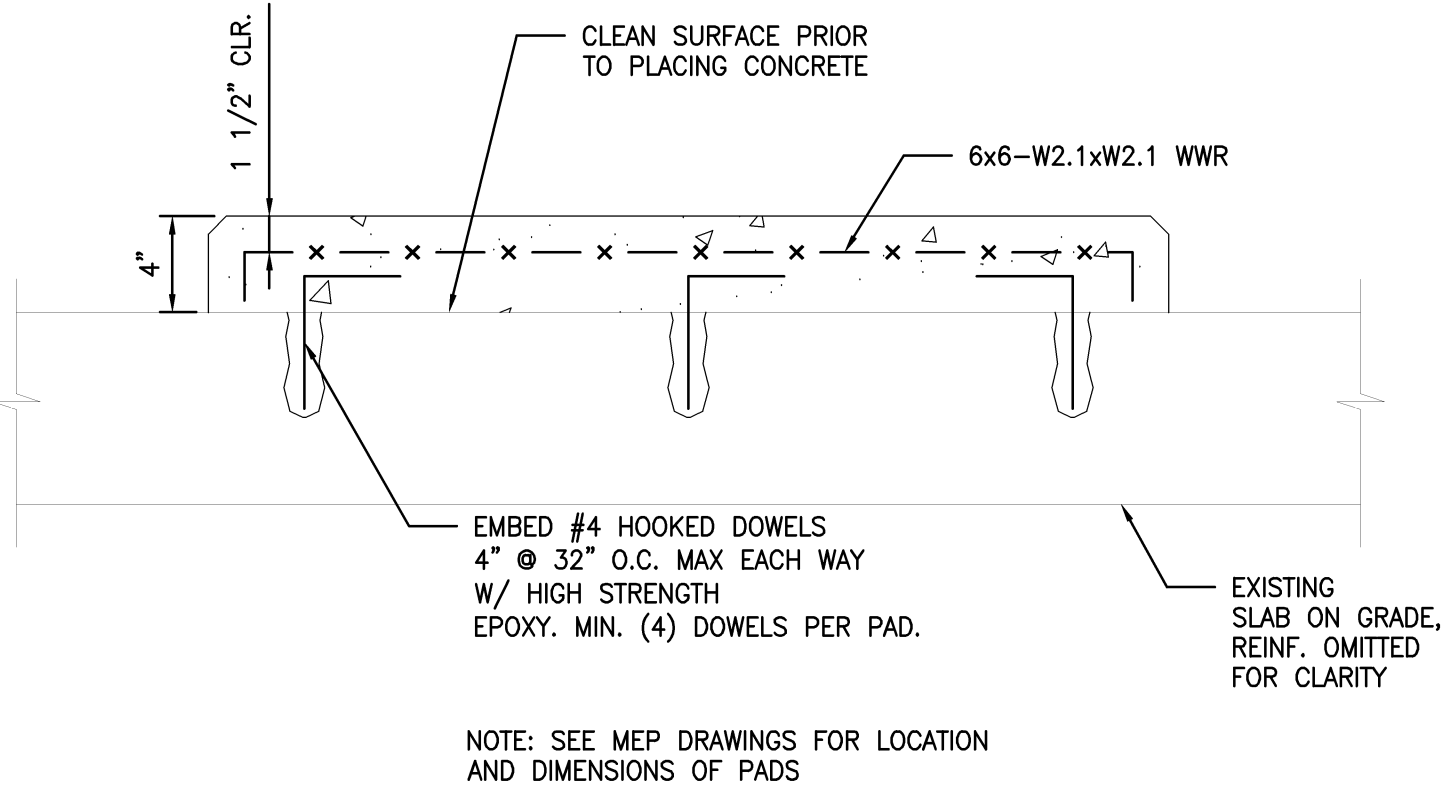
I SINGLE LEAF SWING GATE DETAIL
SCALE: NONE



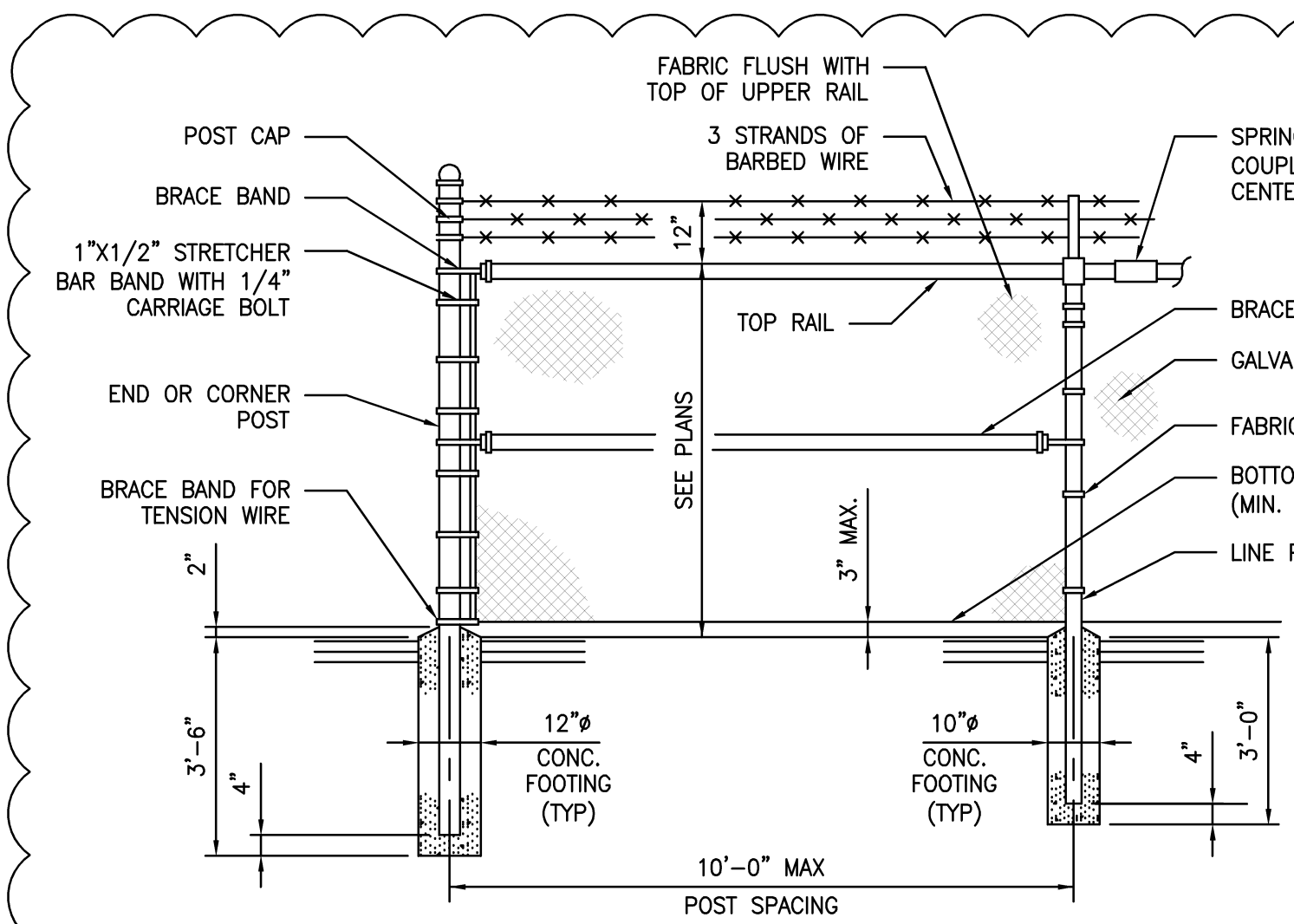
J MASONRY WALL PENETRATION DETAIL
SCALE: 1 1/2"=1'-0"



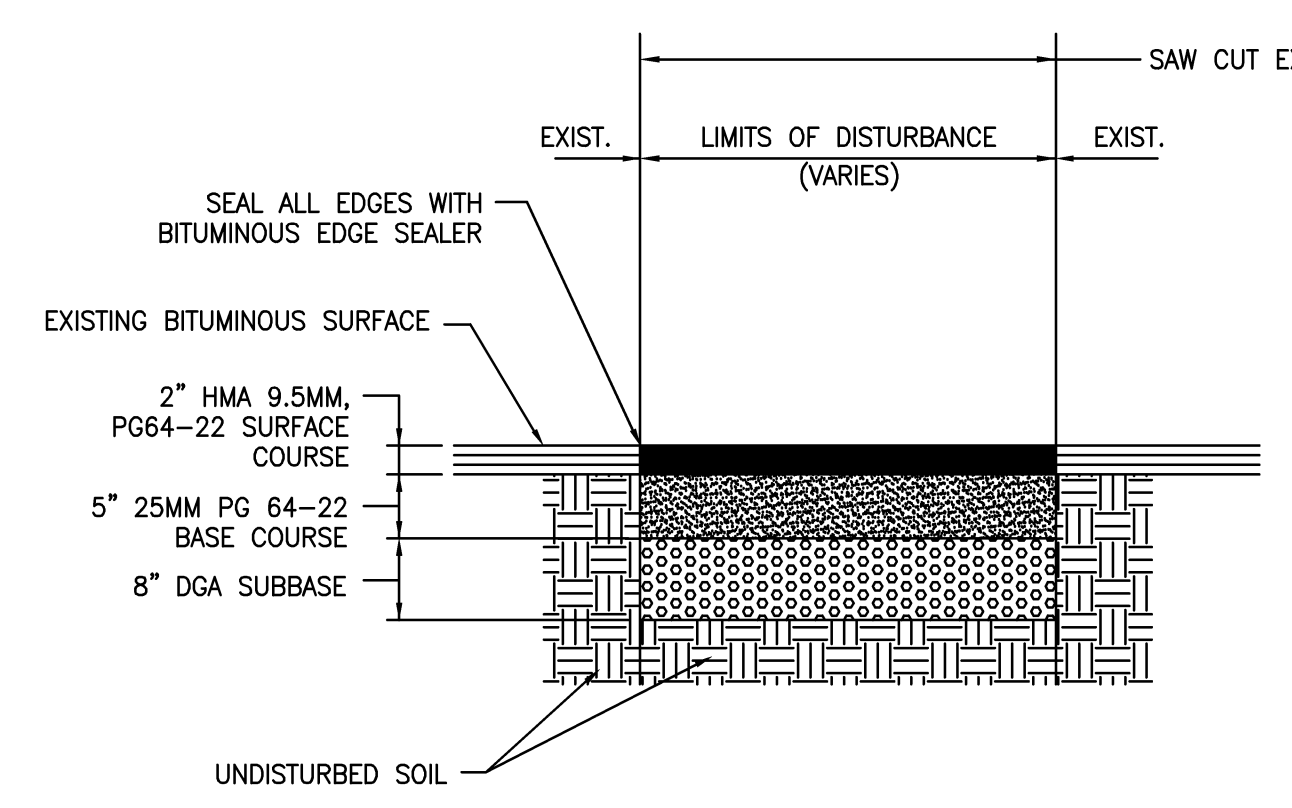
K ROOF PATCH DETAIL
SCALE: NONE



L EQUIPMENT PAD DETAIL
SCALE: 1 1/2"=1'-0"



M FENCE DETAIL OVER PAVEMENT
SCALE: NONE



N ASPHALT REPAIR DETAIL
SCALE: NONE

- NOTES:
1. PATCHING OF EXISTING ROADWAYS SHALL BE IN ACCORDANCE WITH THE PENNDOT SPECIFICATION PUBLICATION 408, LATEST EDITION.
 2. DESIGN MIX FOR THE SURFACE COURSE, BASE COURSE AND SUBBASE SHALL BE PREPARED IN CONFORMANCE WITH THE PENNDOT SPECIFICATION PUBLICATION 408, LATEST EDITION.
 3. THE SUBBASE COURSE SHALL NOT BE CONSTRUCTED MORE THAN TWO (2) WEEKS PRIOR TO THE TIME THAT THE HMA SURFACE IS TO BE APPLIED. THE CONTRACTOR SHALL REPAIR ANY SUBBASE COURSE DEFECTS TO THE SATISFACTION OF THE ENGINEER IF CONSTRUCTION PROCEDURE IS OTHERWISE.

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CONSTRUCTION DOCUMENTS