IOWA ARMY NATIONAL GUARD
OTTUMWA MAINTENANCE BUILDING RENOVATION

2858 N COURT STREET
OTTUMWA, IA 52501

CONSTRUCTION DOCUMENTS

PROJECT NO.: 19083501 CONTRACT NO.: C329O3116

PROJECT NUMBER: **R3006.106.00**

DATE: **08-12-2024**

DRAWING INDEX:

SHEET ISSUANCE LEGEND	
	NOT ISSUED
C	ISSUED FOR CONSTRUCTION
U	ISSUED FOR CONSTRUCTION - REVISED
R	ISSUED FOR REFERENCE ONLY
N	NOT FOR CONSTRUCTION

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CIVIL	
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E02.11	FLOOR PLAN LEVEL 1 - MVSB - POWER
E03.10	FLOOR PLAN LEVEL 1 - ARMORY - SYSTEMS
E05.00	ELECTRICAL DETAILS
E07.00	ELECTRICAL SCHEDULES

CERTIFICATION OF ENGINEER

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Marcus J. Clark, PE

Signature 8-12-24 Date

License Number 25057

My license renewal date is December 31, 2025

Pages or Sheets covered by this seal:
C01.01–C01.08

LICENSED PROFESSIONAL ENGINEER — MARCUS J. CLARK 25057 — IOWA

ARCHITECTURAL

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed architect under the laws of the State of Iowa.

David Streebin License # 5825

August 12, 2024

8/30/2025 License Expires

6/19/2023 Date Issued

Pages or Sheets covered by this seal:
A01.10, A01.11, A02.01

LICENSED PROFESSIONAL ARCHITECT — David Streebin — 5825 — IOWA

August 12, 2024

LICENSED PROFESSIONAL ENGINEER — NATHANIEL K. JACQUES P21686 — IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

NATHANIEL K. JACQUES 8-12-2024

NATHANIEL K. JACQUES DATE

MY LICENSE EXPIRATION DATE IS: 12/31/2024

PAGES OR SHEETS COVERED BY THIS SEAL:
Sheet Names
M00.00, M00.10, M01.10, M01.11, M04.00, M05.00

LICENSED PROFESSIONAL ENGINEER — KRISTEN L. SPINA P21051 — IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

KRISTEN L. SPINA 8-12-2024

KRISTEN L. SPINA DATE

MY LICENSE EXPIRATION DATE IS: 12/31/2025

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Sheet Names
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LICENSED PROFESSIONAL ENGINEER — JOHN PAUL GOEDKEN 14831 — IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

JOHN PAUL GOEDKEN 8-12-2024

JOHN PAUL GOEDKEN DATE

MY LICENSE EXPIRATION DATE IS: 12/31/2024

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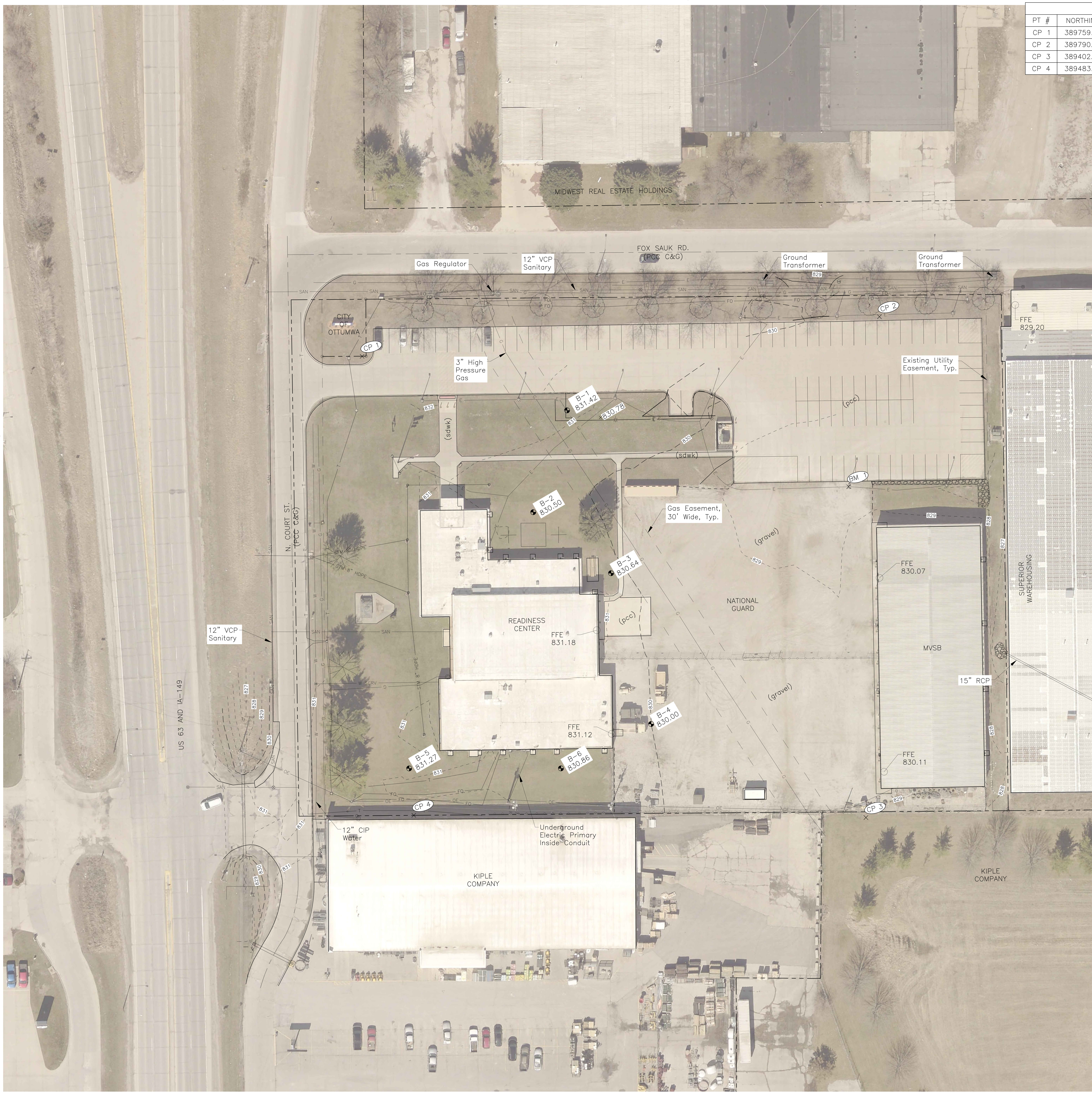
Sheet Names
S00.10, S00.11, S01.10



CONTROL POINTS				
PT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP 1	389759.39	1941177.85	831.69	5/8"ø x 30" Long Rebar w/Control Cap
CP 2	389790.08	1941578.49	829.59	5/8"ø x 30" Long Rebar w/Control Cap
CP 3	389402.22	1941568.02	828.34	5/8"ø x 30" Long Rebar w/Control Cap
CP 4	389483.99	1941217.88	831.24	5/8"ø x 30" Long Rebar w/Control Cap

THIS DRAWING IS SET TO HORIZONTAL COORDINATES OF NAD 1983, IOWA STATE PLANE, SOUTH ZONE (1402) SYSTEM IN U.S. SURVEY FEET. ELEVATIONS CORRESPOND TO NAVD 1988 DATUM IN U.S. FEET.

BENCHMARKS		
PT #	ELEVATION	DESCRIPTION
BM 1	830.39	RR Spike in PP S. of Parking (PCC), NW of E. Shop

LEGEND

- House — House or Building
- Chain Link Fence
- Watermain or Service
- Fire Hydrant
- Water Valve
- Water Shut-Off
- Sanitary Sewer, Manhole & Manhole Number
- Service Lateral
- Storm Sewer & Intakes/Manhole
- Gas
- Gas Meter
- Telephone
- Telephone Pedestal
- Fiber Optic
- Electric (Under Ground)
- Electric (Over Head)
- Street Light
- Utility Pole / Guy Wire / Light
- Tree/Bush
- Paved Street, Alley or Sidewalk (Material as noted)
- Gravel
- Sidewalk
- 1/2" rebar — Found Property Pin & Description
- Approximate Property Line
- B-8 — Soil Boring

CONSTRUCTION DOCUMENTS

RDG PLANNING DESIGN

ARCHITECT
RDG Planning & Design
301 Grand Avenue
Des Moines, Iowa 50309
Phone: (515) 288-3141

FOOD SERVICE

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Phone: (515) 334-9906

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Fairfield, IA 52556
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OTTUMWA MAINTENANCE BUILDING RENOVATION

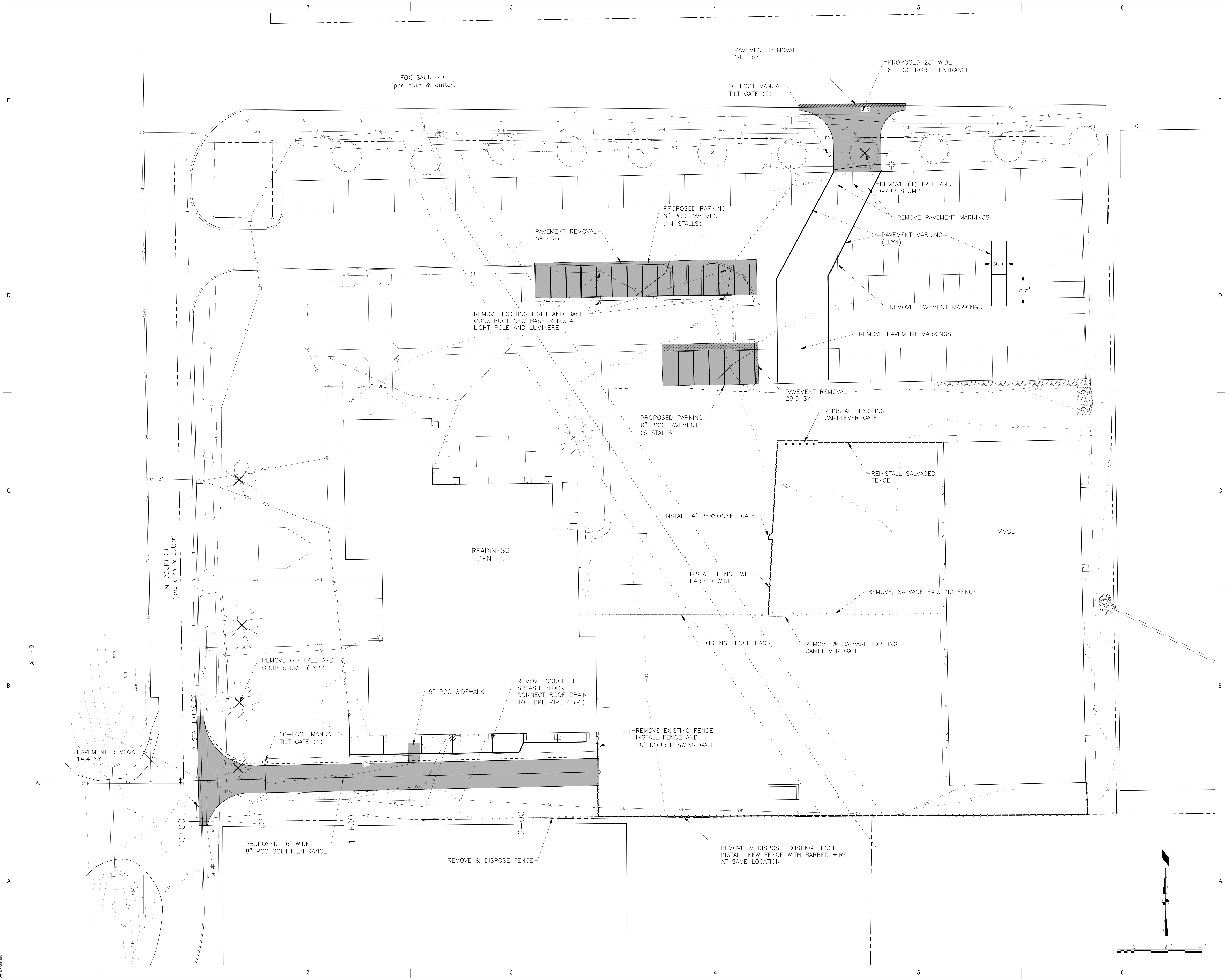
2858 N COURT STREET
OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C32903116

IOWA ARMY NATIONAL GUARD

ISSUANCE 08-12-2024
PROJECT NO: **R3006.106.00**

EXISTING CONDITIONS

C01.01



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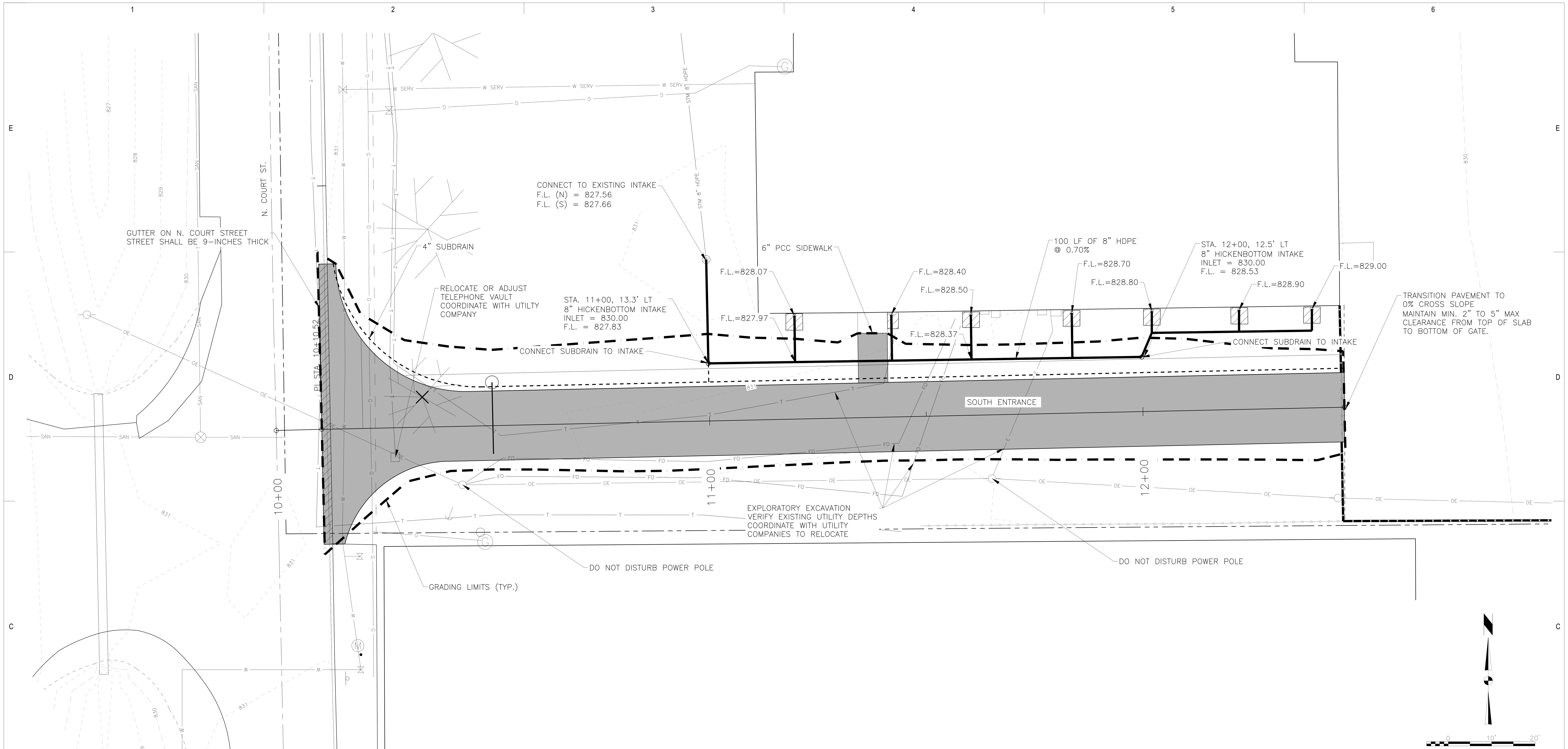
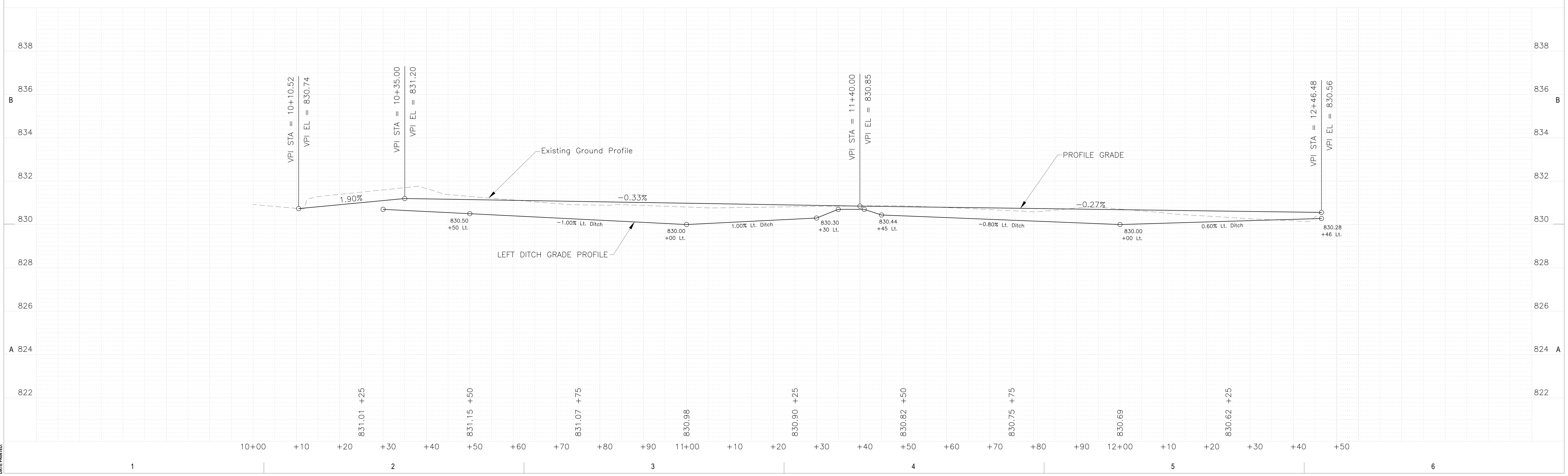
SITE PLAN

C01.02





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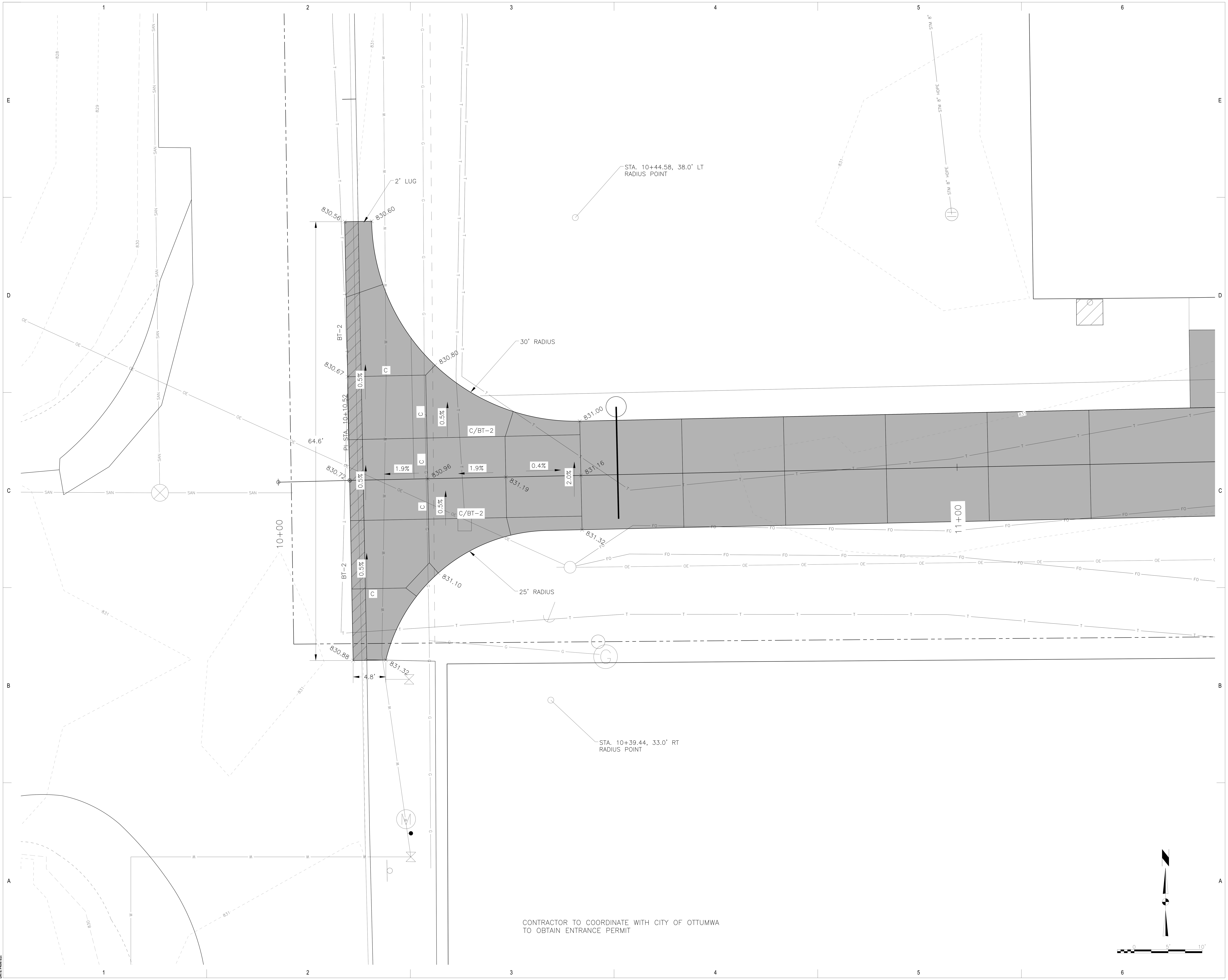
IOWA ARMY NATIONAL GUARD

SOUTH ENTRANCE GRADING PLAN

C01.03



CONTRACTOR TO COORDINATE WITH CITY OF OTTUMWA
TO OBTAIN ENTRANCE PERMIT

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STRUCTURAL | LIGHTING

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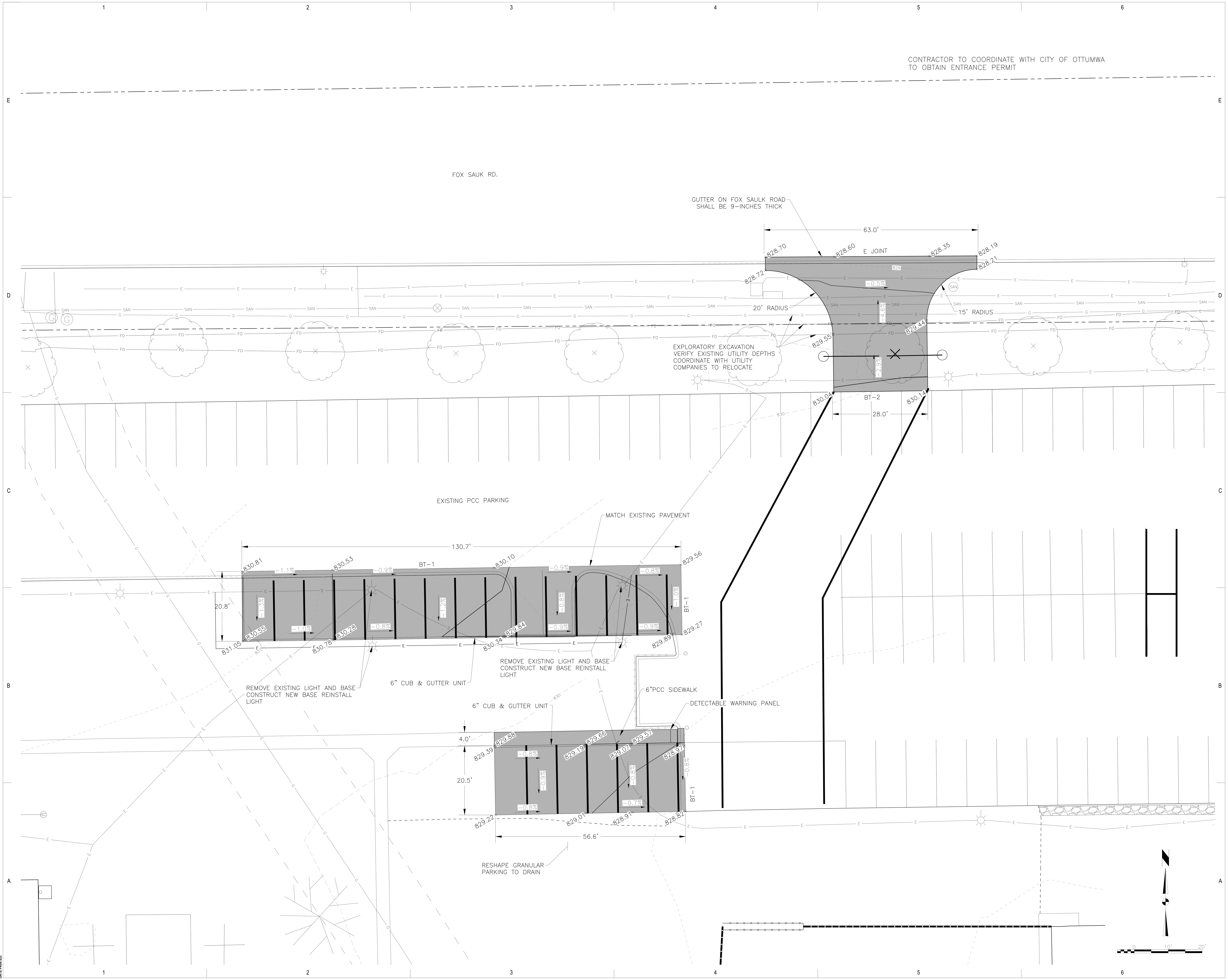
SOUTH ENTRANCE INTERSECTION DETAIL

C01.04



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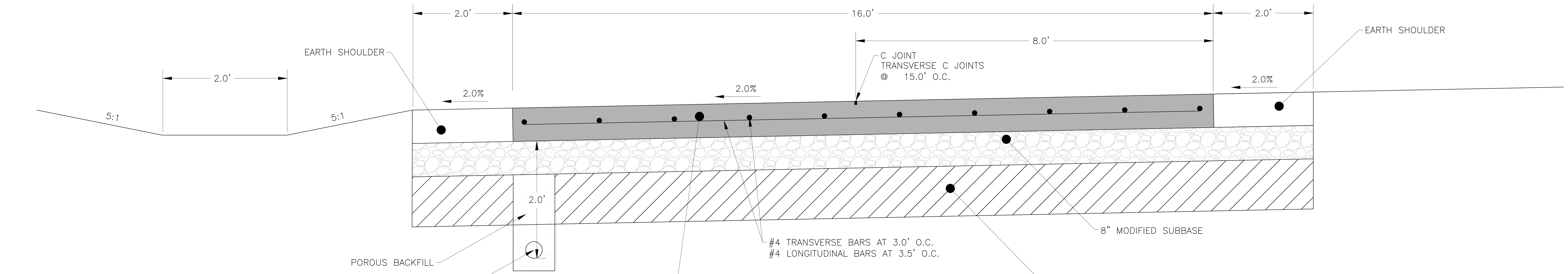
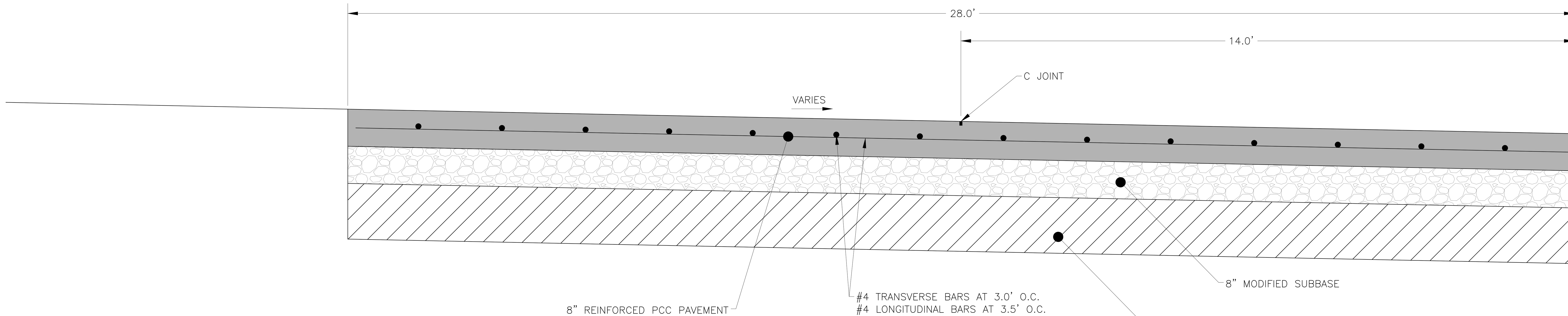
NORTH ENTRANCE PAVING

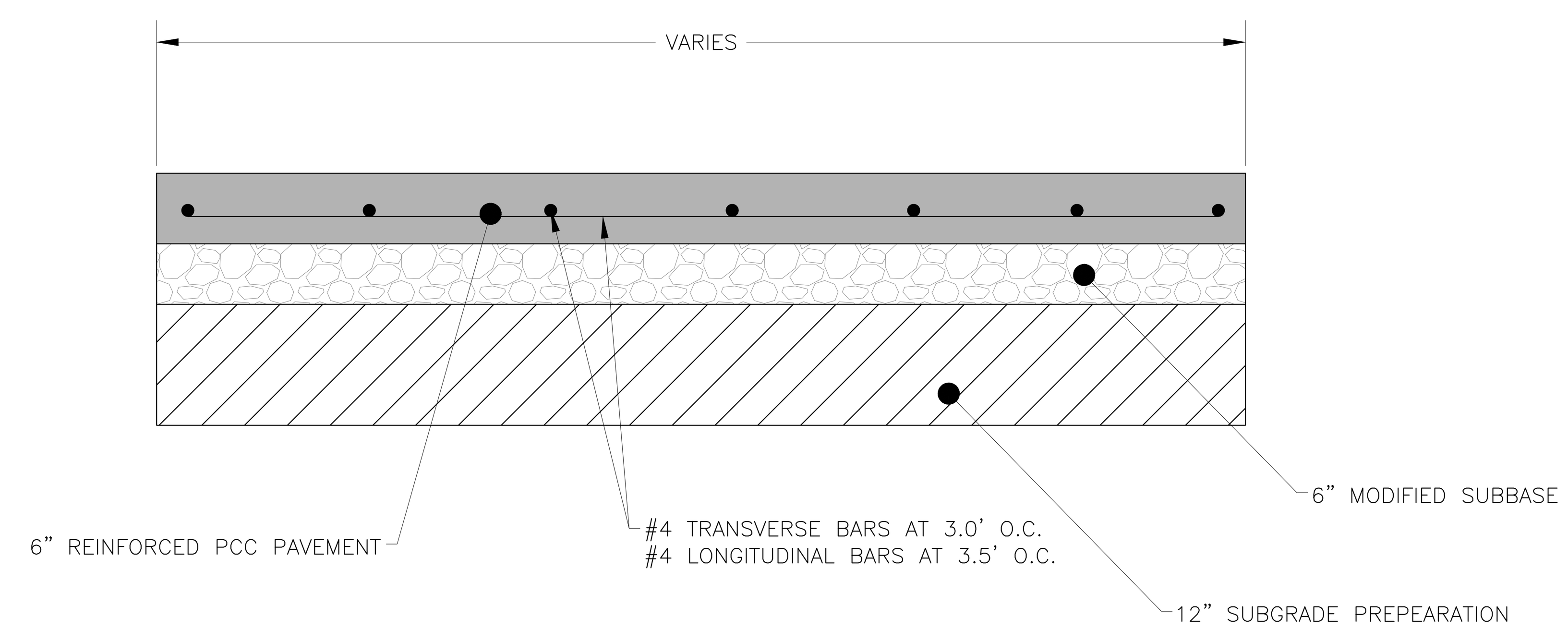
C01.05



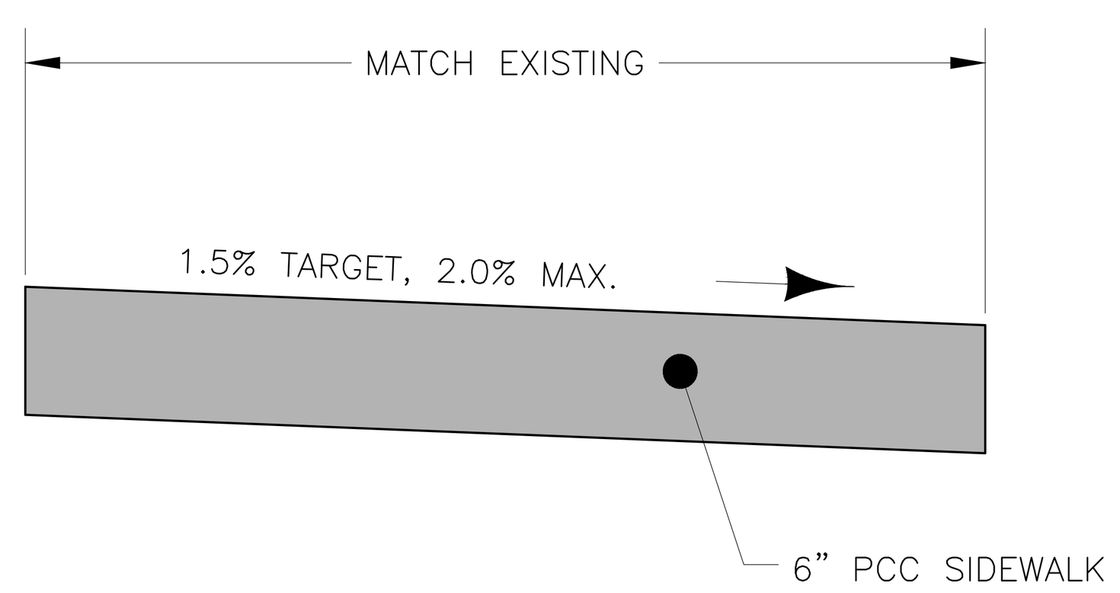
8" PCC SOUTH ENTRANCE TYPICAL SECTION



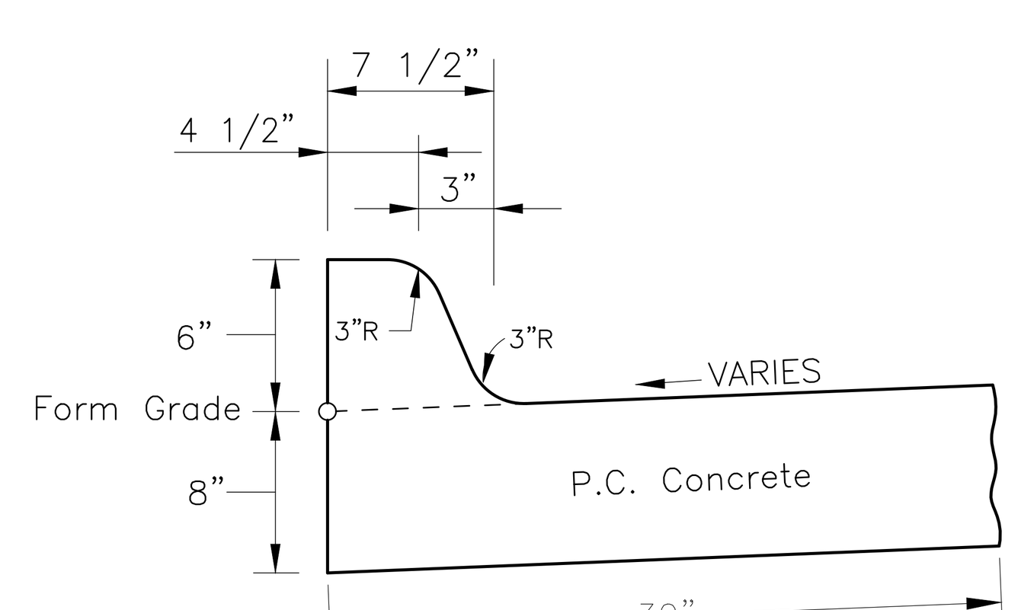
8" PCC NORTH ENTRANCE TYPICAL SECTION



6" PCC PARKING TYPICAL SECTION

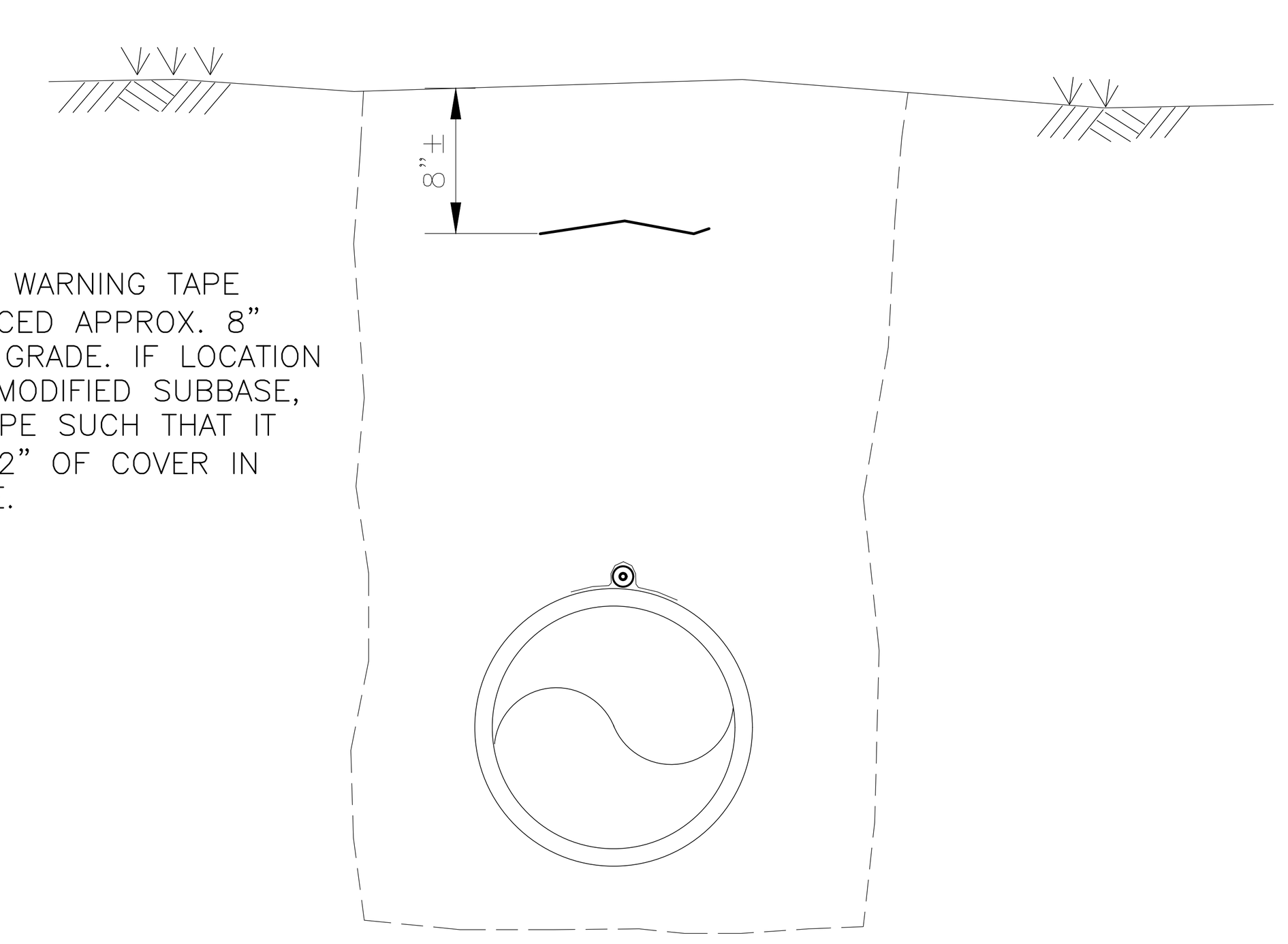


SIDEWALK DETAIL

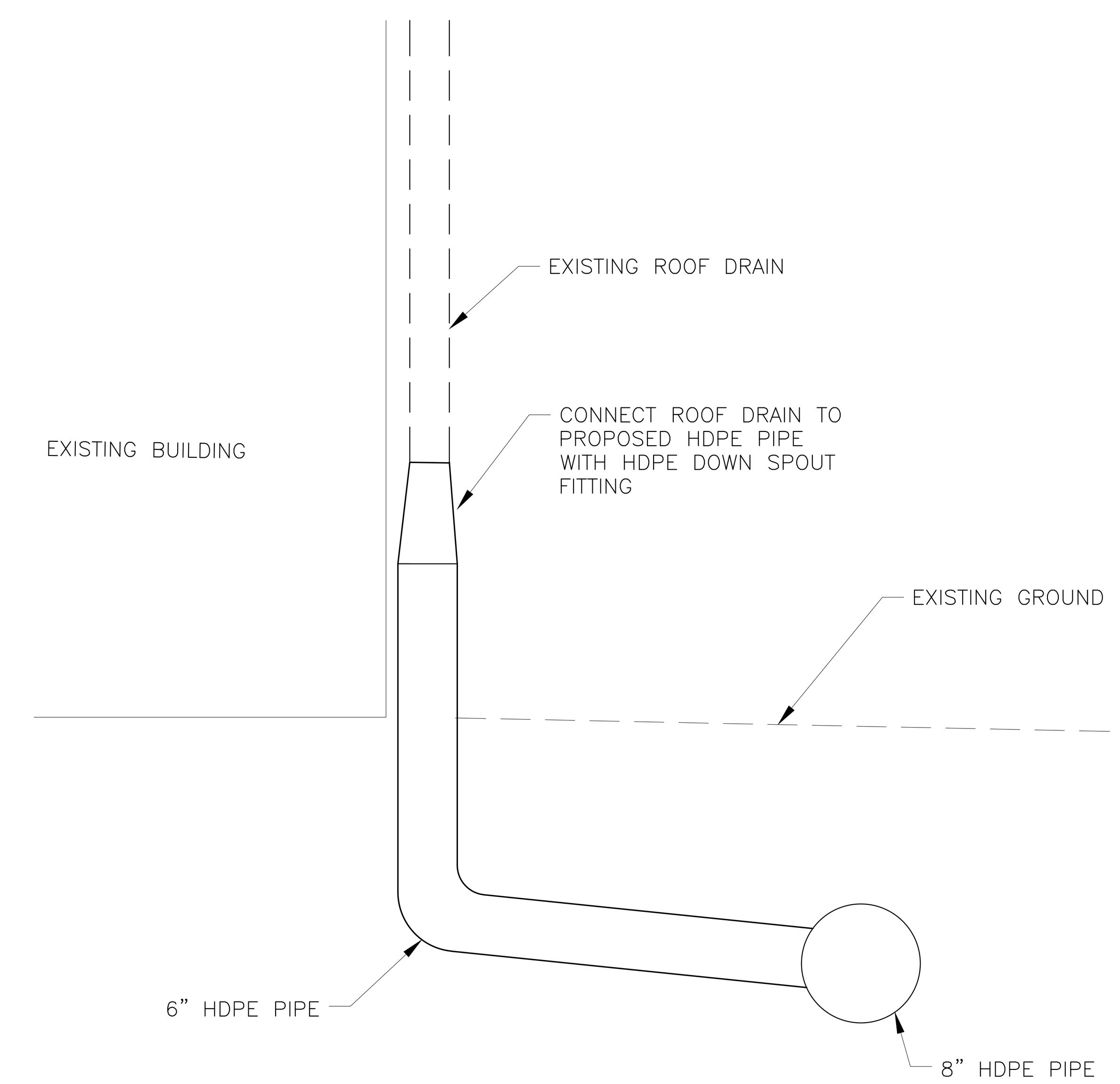


DETAIL OF STANDARD INTEGRAL CURB

NOTE: PLASTIC WARNING TAPE SHALL BE PLACED APPROX. 8" BELOW FINISH GRADE. IF LOCATION FALLS WITHIN MODIFIED SUBBASE, LOWER THE TAPE SUCH THAT IT HAS APPROX. 2" OF COVER IN THE SUBGRADE.



TRACER WIRE & WARNING TAPE TRENCH DETAIL



ROOF DRAIN CONNECTION

CONSTRUCTION DOCUMENTS

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IOWA ARMY NATIONAL GUARD

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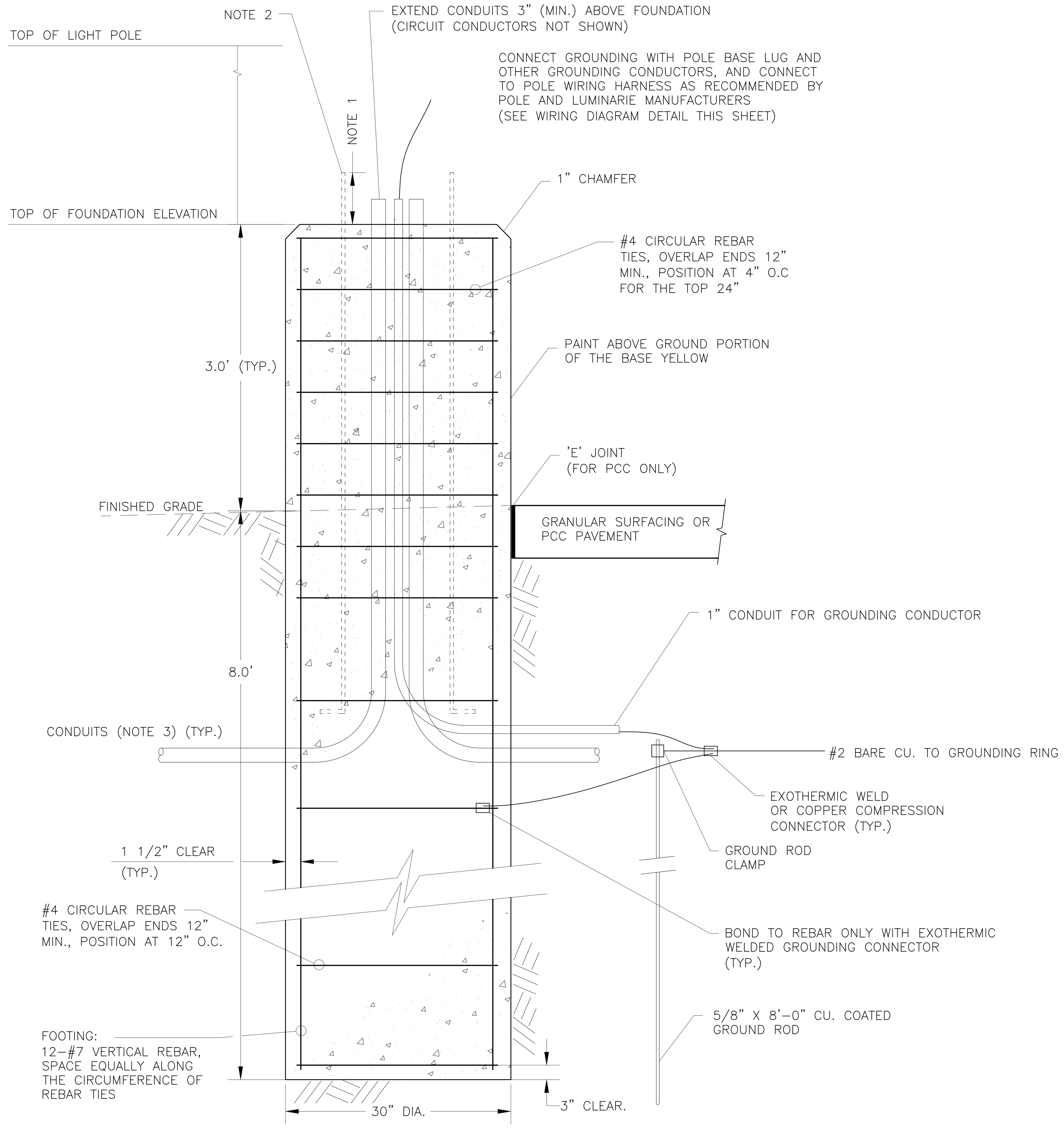
TYPICAL SECTIONS

C01.06



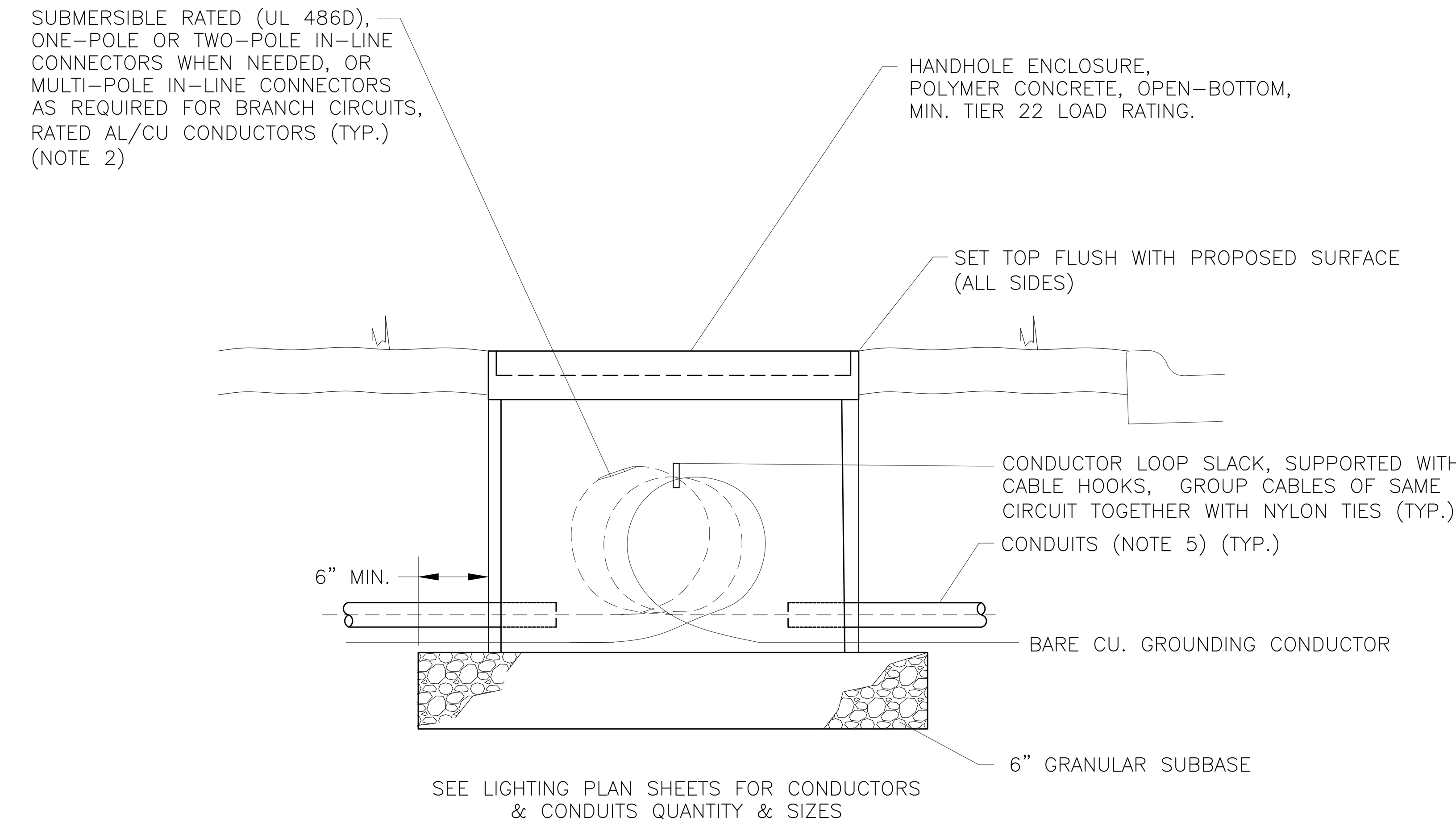
TYPICAL LIGHT POLE BASE – DETAIL

N.T.S.

NOTES

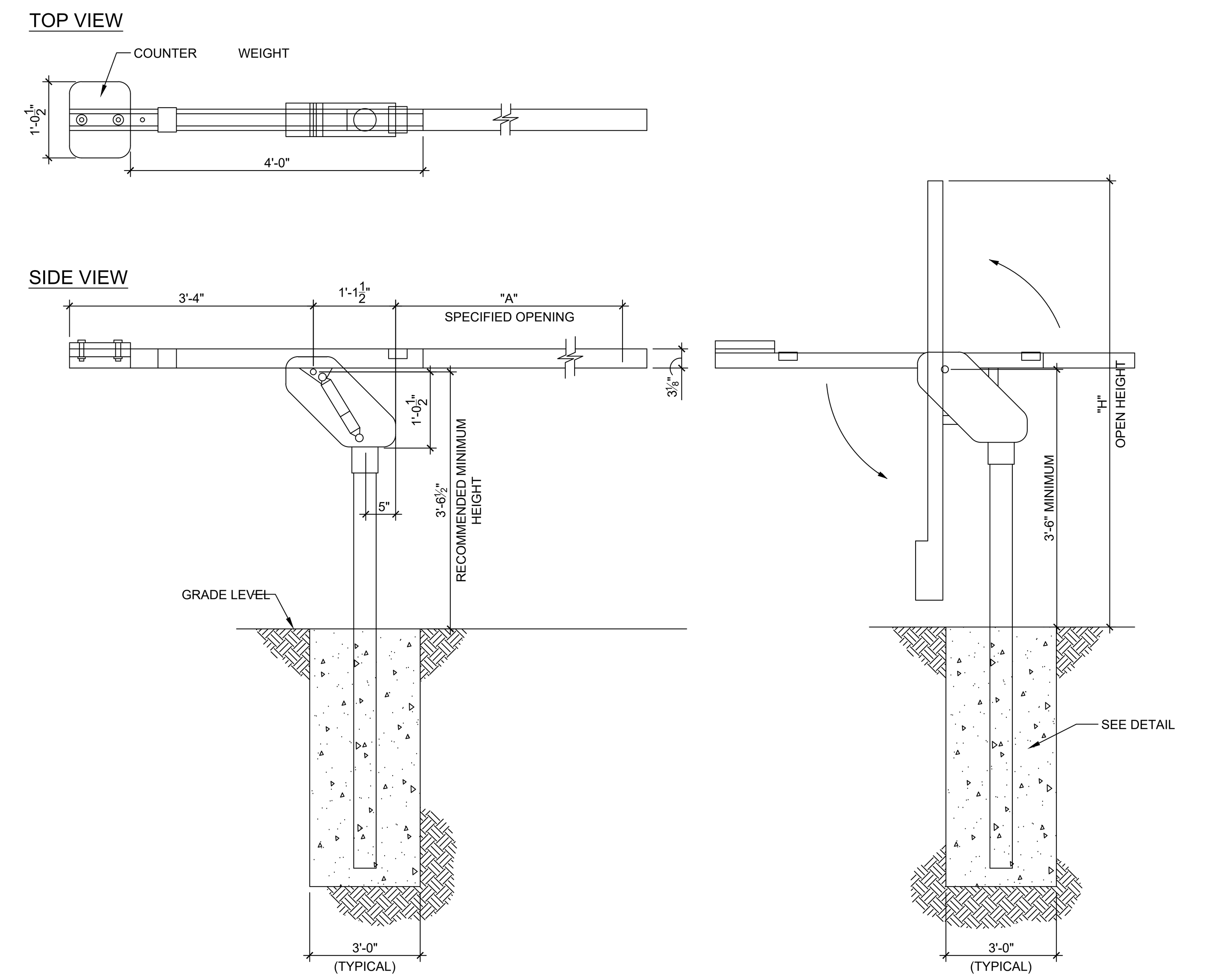
1. PROJECT ANCHOR BOLTS ABOVE TOP OF CONCRETE BASE AS SHOWN ON IOWA DOT STANDARD ROAD PLAN FIGURE LI-201 FOR TYPE 'A' FOUNDATION, AND AS RECOMMENDED BY POLE MANUFACTURER. INSTALL POLES WITH (2) NUTS ON EACH ANCHOR BOLT (ONE ABOVE & ONE BELOW BASE FLANGE TO PLUMB THE POLE), FILL VOID AREA UNDERNEATH POLE BASE PLATE WITH NON-SHRINK GROUT WITH WEEP HOLE AND HAND FINISH; OR INSTALL A WIRE FABRIC SCREEN CLOSURE.
2. THE ANCHOR BOLT QUANTITY, LENGTH, AND ARRANGEMENT, SHALL BE AS FURNISHED AND RECOMMENDED BY THE POLE MANUFACTURER.
3. COORDINATE QUANTITY, SIZE, AND ORIENTATION OF CONDUITS WITH LIGHTING SITE PLAN, LIGHT POLE BASE INSIDE DIAMETER SPACE AVAILABLE, AND TRENCH DEPTH REQUIREMENTS SHOWN ON TRENCH DETAILS. STUB OUT AND CAP EMPTY CONDUITS ON LIGHT POLES LOCATED AT END RUN OF CIRCUITS, FOR FUTURE LIGHTING EXTENSION CAPABILITIES. CONDUCTORS NOT SHOWN.
4. THE LOCATION AND ELEVATION FOR THE TOP OF FOUNDATION SHALL BE STAKED BY THE OWNER.

– ALL WIRING MATERIALS SHALL BE RATED FOR CONTACT WITH BOTH ALUMINUM AND/OR COPPER CONDUCTORS.



TYPICAL HANDHOLE (HH) DETAIL

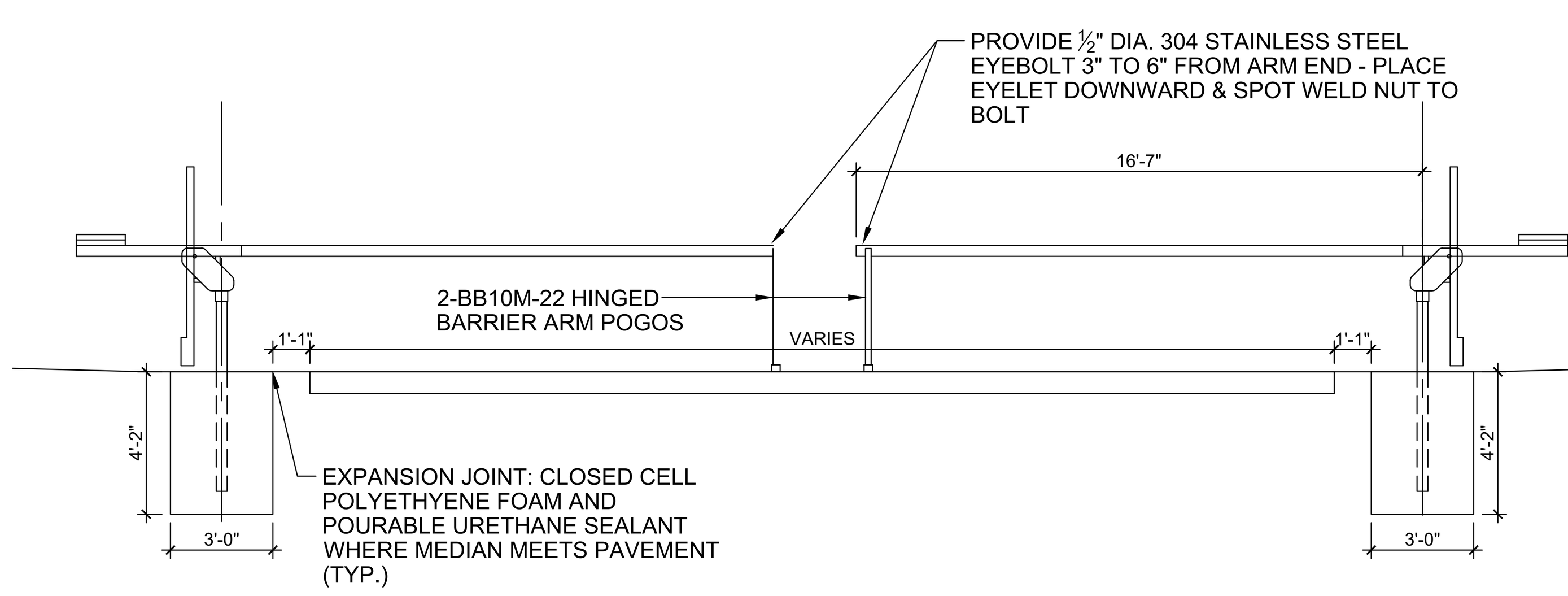
AND ELECTRICAL CONNECTIONS N.T.S.

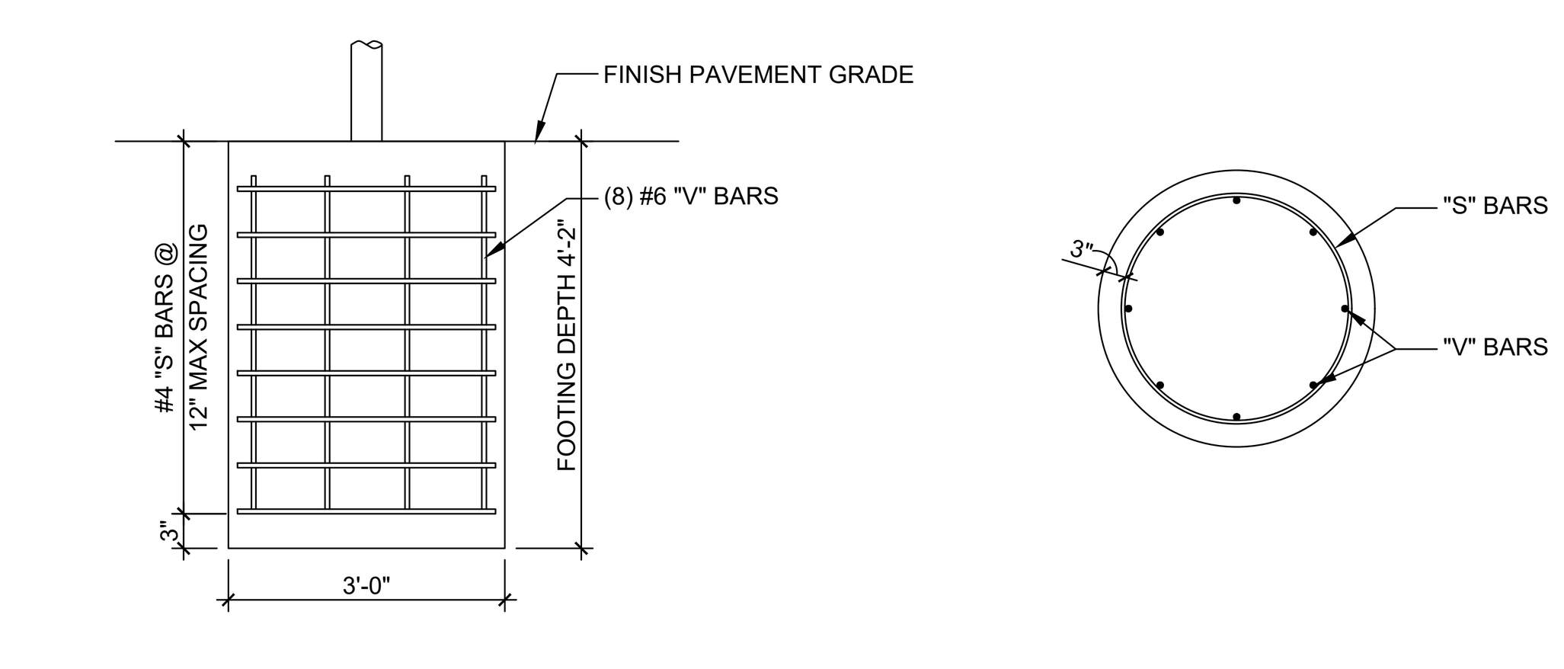


GATE ARM STOCK NO.	"A" CLEAR OPENING	TUBE LENGTH	"H" HEIGHT
MG-139-04	16 FOOT (192 INCHES)	240 INCHES	252 INCHES

NOTES:

1. PROVIDE MANUAL OPERATED GATES AND FOOTINGS WHERE SHOWN ON PLANS.
2. THE MANUAL OPERATION GATES SHALL BE MODEL MG-139 AS MANUFACTURED BY 'DELTA SCIENTIFIC CORPORATION' OR APPROVED EQUAL.
3. CONTRACTOR RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS AND FOOTING LOCATIONS IN THE FIELD PRIOR TO CONSTRUCTION FOR A SUCCESSFUL FUNCTION AND OPERATION ON SITE.
4. GATES SHALL BE LOCKABLE IN THE UP AND DOWN POSITIONS
5. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.





MANUAL TILT GATE

N.T.S.

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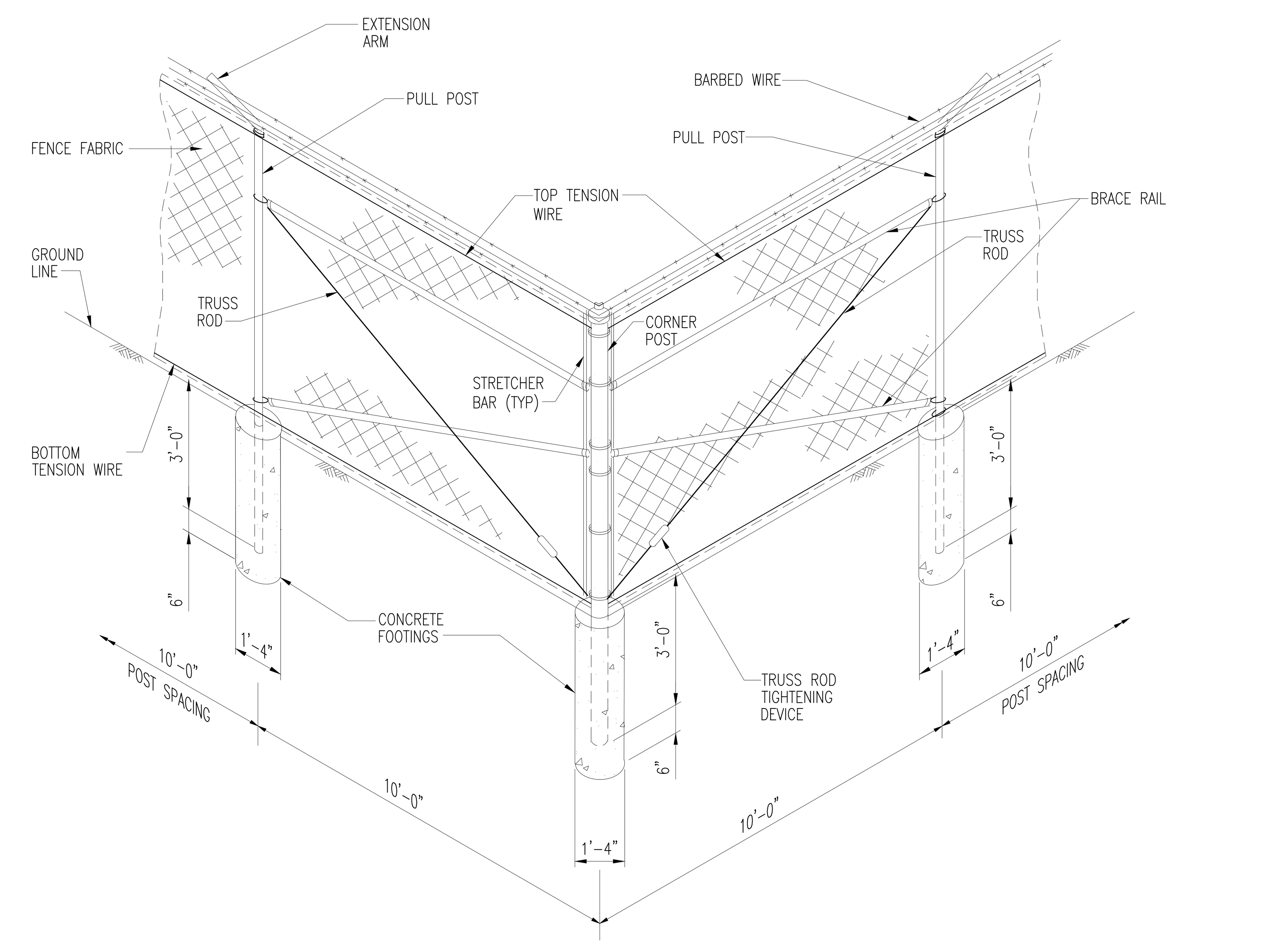
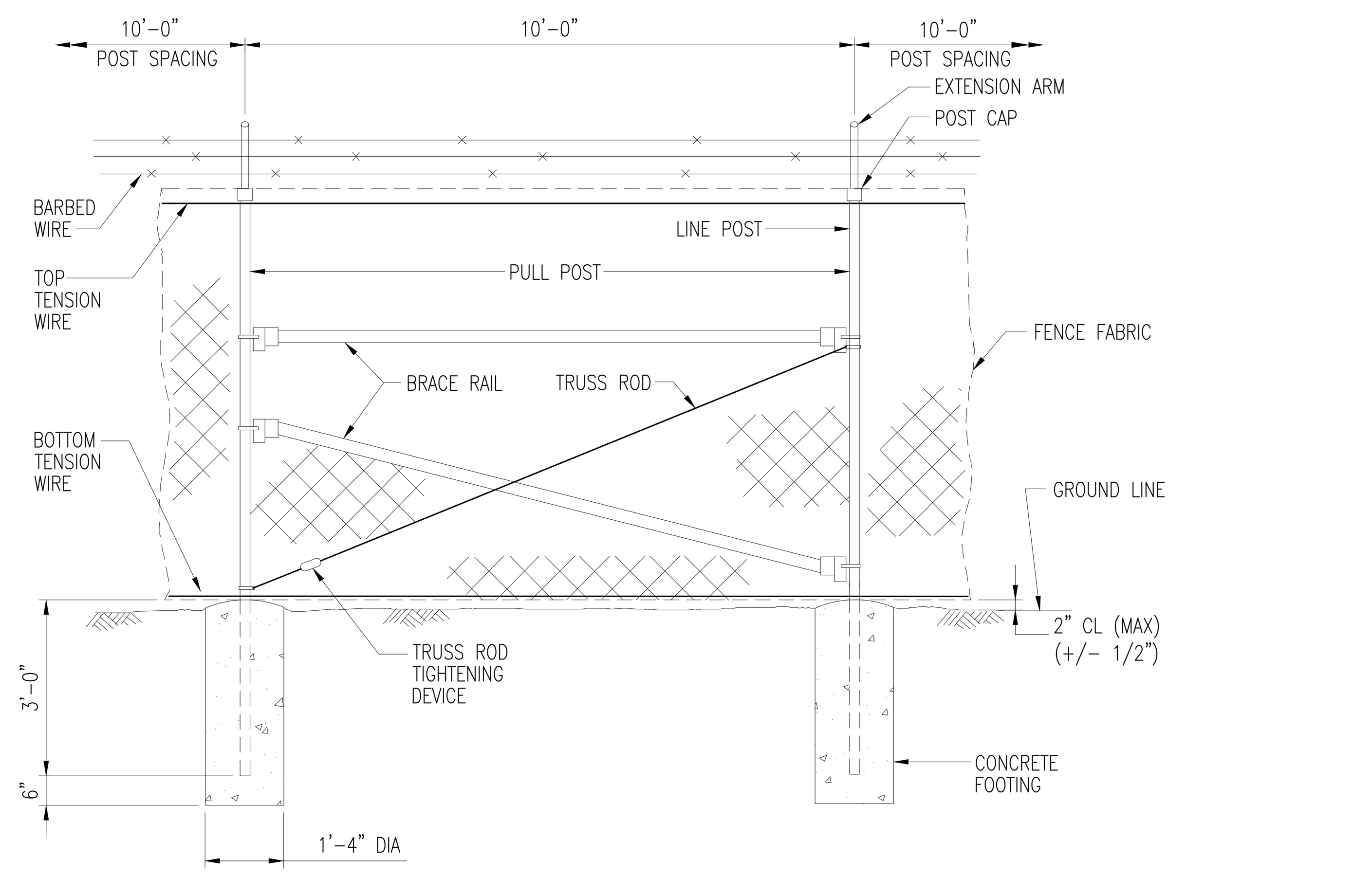
DETAILS

C01.07

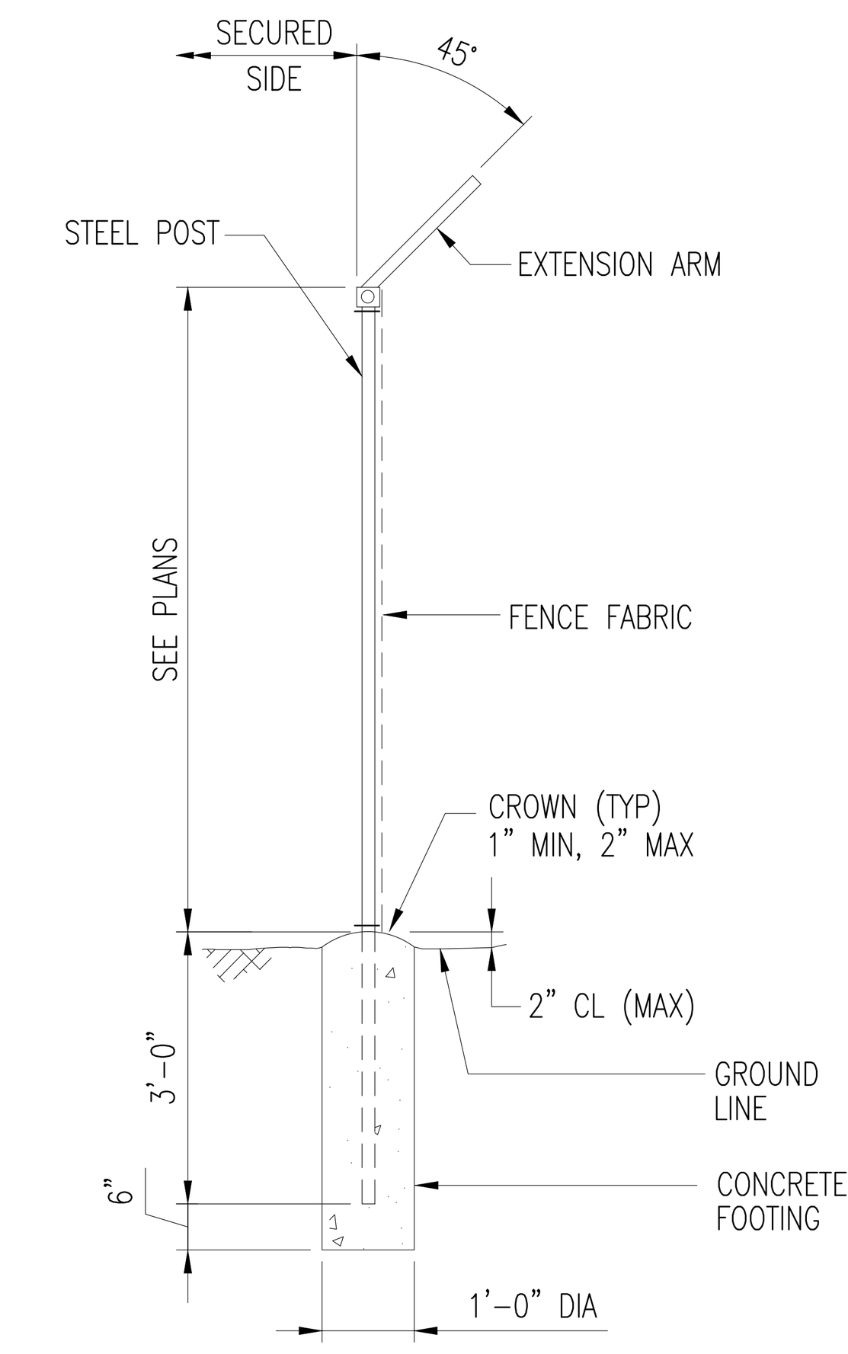


TYPICAL CORNER ASSEMBLY DETAIL
SCALE: NONE

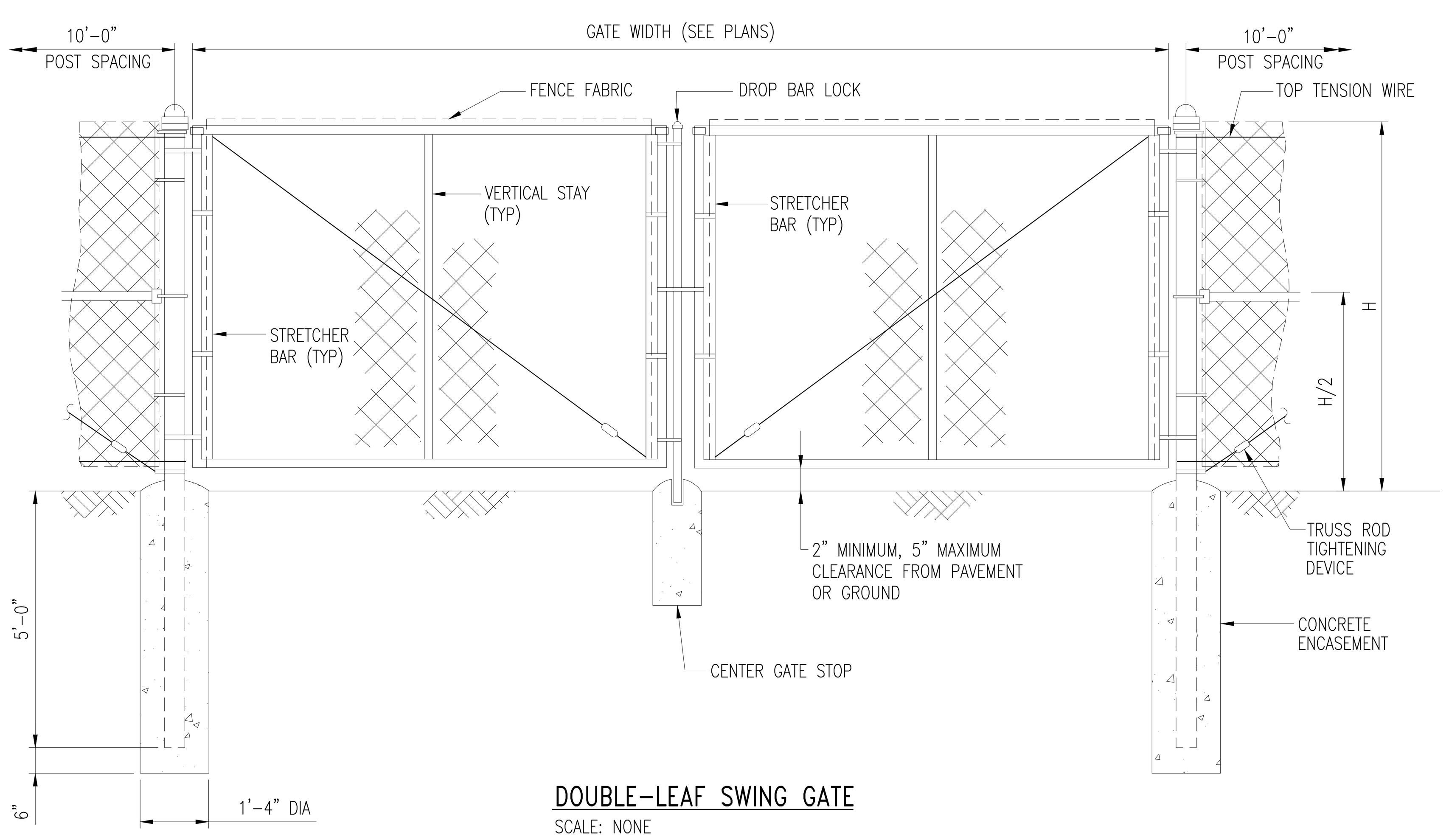


NOTES:
1. ONE BRACE RAIL INSTALLATION SHALL BE PLACED EVERY 90 FEET.

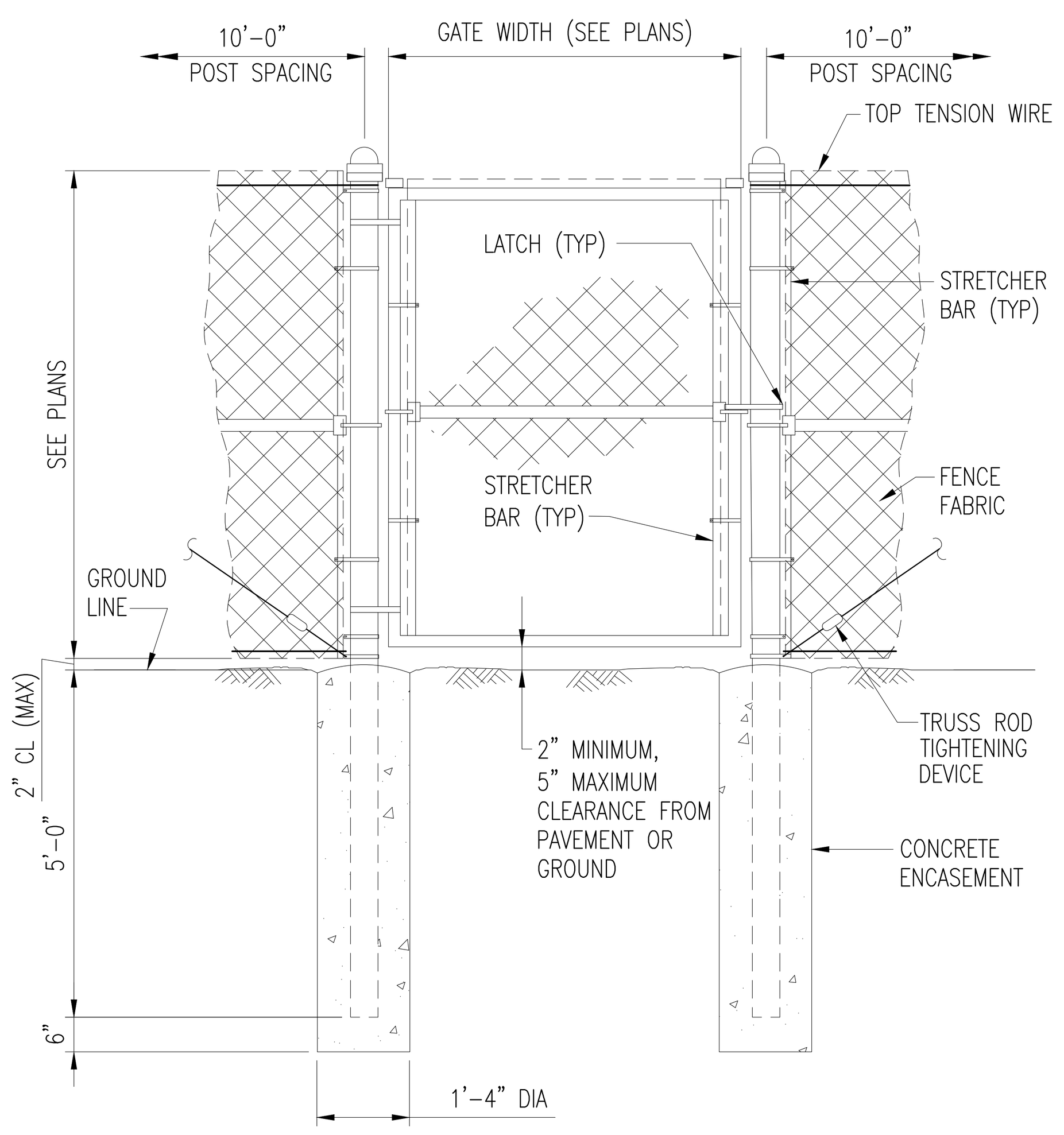
TYPICAL BRACE ASSEMBLY DETAIL
SCALE: NONE



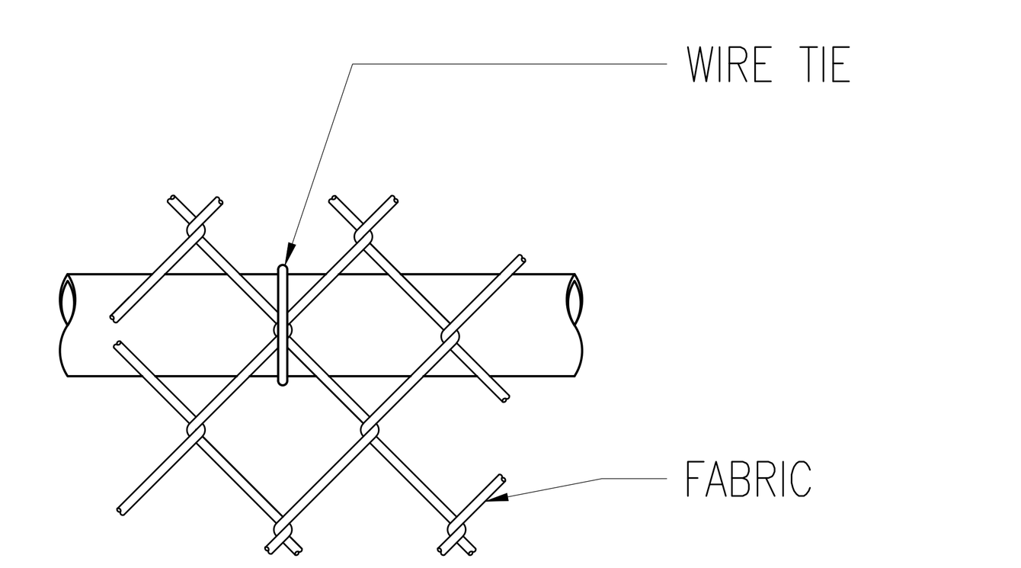
TYPICAL LINE POST DETAIL
SCALE: NONE



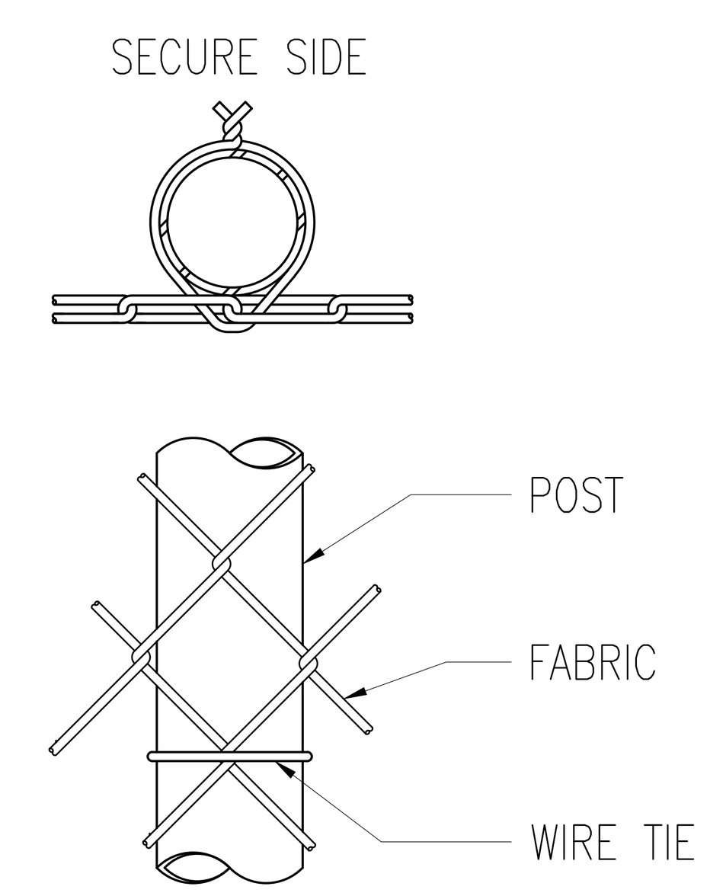
DOUBLE-LEAF SWING GATE
SCALE: NONE



PERSONNEL GATE DETAIL
SCALE: NONE



TOP OR BRACE RAIL ATTACHMENT
SCALE: NONE



POST ATTACHMENT
SCALE: NONE

CONSTRUCTION DOCUMENTS

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CIVIL / LANDSCAPE |

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RDG Planning & Design

FENCE DETAILS

C01.08

DESIGN CRITERIA

1. STRUCTURE HAS BEEN DESIGNED TO COMPLY WITH:
   IBC 2018
   IEBC 2018
   ACI 318-14
   AISC 360-16
   AWS D1.1
   AISI S100
2. RISK CATEGORY II
3. LIVE LOADS:

TYPICAL ROOF	15 PSF (REDUCIBLE)
TYPICAL FLOOR	150 PSF (REDUCIBLE)

4. WIND

BASIC WIND SPEED	V ULT = 115 MPH & V ASD = 90 MPH	
EXPOSURE CLASS	C	
INTERNAL PRESSURE COEFFICIENT, GCpi	±0.18	
WALL COMPONENTS:	ZONE 4	ZONE 5
A = 200 SF	25 PSF	37 PSF
A = 50 SF	27 PSF	31 PSF
A ≤ 10 SF	30 PSF	26 PSF

   C & C NOTES:
   a. THE PRESSURES LISTED ARE IN ACCORDANCE IBC AND ASCE 7, AND THE DESIGN FORCES USED BY THE SUBCONTRACTOR FOR A SPECIFIC APPLICATION ARE THE RESPONSIBILITY OF THE SUBCONTRACTOR.
   b. WIND PRESSURES ARE ULTIMATE DESIGN LEVEL.
   c. SEE ASCE 7 FOR ZONE DEFINITIONS AND EXTENT OF ZONES.
   d. SUBMIT DESIGN CALCULATIONS PREPARED BY A QUALIFIED PROFESSIONAL ENGINEER, REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED, FOR ANY DESIRED MODIFICATION TO THE STATED PRESSURES.
5. LATERAL LOAD RESISTANCE AND STABILITY OF THE EXISTING BUILDING, AS A WHOLE, IS NOT BEING ALTERED. ADDITIONS IMPART NO ADDITIONAL SEISMIC WEIGHT TO THE BUILDING.

GENERAL

1. DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONNEL AND PROPERTY ON AND AROUND THE JOBSITE. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING, GUYS, ETC. IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES.
2. ALL DRAWINGS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION SO A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR ARCHITECT.
3. STRUCTURAL SUBSTITUTIONS MAY BE ALLOWED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. SUPPLIER SHALL PROVIDE SEALED DESIGN CALCULATIONS OR SUITABLE PRODUCT LITERATURE FOR THE COMPONENTS.
4. ALL DIMENSIONS AND SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOBSITE PRIOR TO CONSTRUCTION, START OF SHOP DRAWINGS, START OF CONSTRUCTION, AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, OR CONDITIONS DEVELOP THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS, THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION.
5. CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED AS A RESULT OF NEW WORK.
6. STRUCTURAL DRAWINGS INCLUDE DESIGN REQUIREMENTS AND DIMENSIONS FOR STRUCTURAL INTEGRITY BUT DO NOT SHOW ALL DETAIL DIMENSIONS TO FIT INTRICATE ARCHITECTURAL AND MECHANICAL DETAILS. CONTRACTOR SHALL SO CONSTRUCT THE WORK SO IT WILL CONFORM TO THE CLEARANCES REQUIRED BY ARCHITECTURAL, MECHANICAL AND ELECTRICAL DESIGN.
7. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
8. DO NOT SCALE DRAWINGS. PRINTED DIMENSIONS HAVE PRECEDENCE OVER SCALED DRAWINGS AND LARGE-SCALE OVER SMALL-SCALE DRAWINGS. CONTRACTOR TO DETERMINE FINAL DIMENSION WITH ARCHITECT.
9. TYPICAL DETAILS SHALL APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
10. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE AND SAFETY OF WORKMEN DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT OR STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OR APPROVAL OF THE ABOVE ITEMS AND DO NOT IN ANY WAY RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES FOR THE ABOVE.
11. SEE ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR DETAILS, CONDITIONS, PITS, TRENCHES, PADS, DEPRESSIONS, ROOF/FLOOR OPENINGS, STAIRS, SLEEVES, ITEMS TO BE EMBEDDED OR ATTACHED TO STRUCTURAL ELEMENTS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS.
12. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADE CONTRACTORS. OPENING SIZES AND LOCATIONS SHOWN FOR DUCTS, PIPE, INSERTS AND OTHER PENETRATIONS WHEN SHOWN ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED PRIOR TO FORMING.
13. NO HOLES, NOTCHES, BLOCK-OUTS, ETC. ARE ALLOWED IN STRUCTURAL ELEMENTS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.
14. PENETRATIONS SHALL BE CAST-IN-PLACE AND SHALL NOT BE PERMITTED EXCEPT AS SHOWN IN THE STRUCTURAL DRAWINGS.
15. BEFORE SUBMITTING A PROPOSAL FOR THIS WORK, EACH PARTY SHALL VISIT THE PREMISES AND BECOME FULLY ACQUAINTED WITH CONDITIONS IN FIELD, TEMPORARY CONSTRUCTION REQUIRED, QUANTITIES AND TYPE OF EQUIPMENT, ETC. THE PROPOSAL SHALL INCLUDE ALL SUMS REQUIRED TO DO THE WORK.

SUBMITTALS

1. SUBMITTALS ARE:
   a. STEEL FABRICATION AND MISCELLANEOUS METALS
2. SUBMITTALS SHALL BE REVIEWED AND COORDINATED PRIOR TO SUBMITTING TO THE ARCHITECT. EACH SHOP DRAWING SUBMITTED SHALL BE STAMPED INDICATING REVIEW BY THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR AND REVIEW BY THE ARCHITECT SHALL NOT BEGIN UNTIL THIS IS COMPLETE. WORK SHALL NOT BEGIN WITHOUT REVIEW BY THE ARCHITECT/STRUCTURAL ENGINEER.
3. SUBMITTALS SHALL BE REVIEWED BY THE ARCHITECT/STRUCTURAL ENGINEER FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. NOTATIONS MADE BY THE ARCHITECT/STRUCTURAL ENGINEER ON THE SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS.
4. FOR ADDITIONAL INFORMATION ON REQUIRED SUBMITTALS, SEE INDIVIDUAL MATERIAL SECTIONS.

EXISTING CONDITIONS / DEMOLITION

1. EXISTING CONDITIONS:
   a. EXISTING STRUCTURAL INFORMATION SHOWN WAS OBTAINED FROM FIELD TAKE-OFF BY IMEG AS PERMITTED BY ACCESS RESTRICTIONS DURING DESIGN.
   b. ALL INFORMATION SHOWN ON THE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE. CONTRACTOR TO VERIFY EXISTING INFORMATION, DIMENSIONS AND SIZES AS REQUIRED TO COMPLETE THEIR WORK. WHERE ACTUAL CONDITIONS CONFLICT WITH THE DRAWINGS, THEY SHALL BE REPORTED TO THE ARCHITECT OR STRUCTURAL ENGINEER SO PROPER CLARIFICATION MAY BE MADE. MODIFICATION OF CONSTRUCTION DETAILS SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE ARCHITECT OR STRUCTURAL ENGINEER.
2. ALL DEMOLITION SHALL BE CARRIED OUT IN SUCH A WAY SO AS TO NOT DAMAGE EXISTING ELEMENTS WHICH ARE TO REMAIN.
3. ALL ELEMENTS WHICH ARE TO REMAIN AND WHICH ARE DAMAGED DURING DEMOLITION WORK SHALL BE REPLACED AT NO ADDED COST. EXISTING ELEMENTS ARE TO BE PROTECTED TO THE FULLEST EXTENT POSSIBLE TO REDUCE SUCH DAMAGE TO A MINIMUM.

STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "DETAILING FOR STEEL CONSTRUCTION" AND FABRICATED AND ERECTED IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
2. STRUCTURAL STEEL SHALL CONFORM TO ASTM STANDARDS AS NOTED BELOW:

WIDE FLANGE SHAPES	ASTM A992	Fy = 50 KSI
OTHER ROLLED SHAPES	ASTM A36	Fy = 36 KSI
HSS SECTION, SQ/RECT	ASTM A500, GR C	Fy = 50 KSI
HP SHAPES	ASTM A572	Fy = 50 KSI
BASE AND CONNECTION PLATES	ASTM A36	Fy = 36 KSI
HIGH STRENGTH BOLTS	ASTM F3125, GR A325	Fv = 120 KSI
HIGH STRENGTH TWIST-OFF BOLTS	ASTM F3125, GR F1852	Fv = 120 KSI
HEAVY HEX NUTS	ASTM A563	
WASHERS	ASTM F436	
ELECTRODES FOR ARC WELDING	AWS 5.1, E70XX	

3. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS". SEE DETAILS FOR BOLT SIZE AND MATERIAL ASTM DESIGNATION.
4. ALL BOLTED CONNECTIONS SHALL BE GRADE A325N BEARING TYPE BOLTS, UNLESS OTHERWISE NOTED. ALL BOLTS SHALL BE INSTALLED TO A MINIMUM "SNUG TIGHT" CONDITION, UNLESS OTHERWISE NOTED.
5. FULLY TENSIONED HIGH STRENGTH BOLTS AND SLIP CRITICAL HIGH STRENGTH BOLTS SHALL USE TENSION-CONTROL "TWIST-OFF" BOLTS OR BE INSTALLED USING THE TURN OF THE NUT METHOD.
6. WELD LENGTHS INDICATED ON THE DRAWINGS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE WELD LENGTH IS NOT SPECIFIED, PROVIDE WELD ALONG ENTIRE INTERSECTION OF THE JOINED PARTS. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM WELD SIZE AS SPECIFIED IN AISC 360, TABLE J2.4.
7. ALL WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED BY CERTIFIED WELDERS WITH EXPERIENCE AND CERTIFICATION IN THE TYPES OF WELDING CALLED FOR. WELDERS SHALL HAVE BEEN RECENTLY QUALIFIED AS PRESCRIBED IN "QUALIFICATION PROCEDURES" OF THE AMERICAN WELDING SOCIETY (AWS).
8. SPLICING OF STEEL MEMBERS WHERE NOT DETAILED ON THE DRAWINGS IS PROHIBITED WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER AS TO LOCATION, TYPE OF SPLICE AND CONNECTION TO BE MADE.
9. CUTS, HOLES, OPENINGS, ETC., REQUIRED IN STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS. BURNING OF HOLES AND CUTS IN THE FIELD SHALL NOT BE ALLOWED, EXCEPT BY WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER.
10. FURNISH AND INSTALL MISCELLANEOUS STEEL (CURBS, HANGERS, EXPANSION JOINT ANGLES, STRUTS, ETC.) AS CALLED FOR OR AS NECESSARY PER ARCHITECTURAL AND MECHANICAL/ELECTRICAL DRAWINGS.
11. THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STRUCTURAL STEEL FOR ARCHITECT/STRUCTURAL ENGINEER'S REVIEW BEFORE FABRICATION.

COLD-FORMED STEEL FRAMING (CFSF) SYSTEM

1. ALL COLD-FORMED STEEL FRAMING SHALL CONFORM TO THE AISI SPECIFICATION FOR THE DESIGN OF COLD-FORMED STRUCTURAL METALS, AISI S100.
2. THE STRUCTURAL DRAWINGS DO NOT REFLECT THE ENTIRE SCOPE OF WORK REQUIRED FOR COLD-FORMED STEEL FRAMING. COLD-FORMED STEEL FRAMING SHALL BE PROVIDED FOR AND COORDINATED WITH ARCHITECTURAL, MEP AND OTHER DRAWINGS.
3. COLD-FORMED STEEL FRAMING SHALL BE OF AT LEAST 20 GA (33 MIL) THICKNESS AND STUD SPACING SHALL NOT EXCEED 16" ON CENTER. STUDS, TRACKS, BRACING AND BRIDGING SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C955. STRUCTURAL COLD-FORMED STEEL FRAMING IS DEFINED AS THE FOLLOWING:
   a. ANY MEMBER CALLED OUT AND SPECIFIED IN THE STRUCTURAL DRAWINGS
4. ALL OTHER COLD-FORMED STEEL FRAMING IS NON-STRUCTURAL AND NOT A PART OF THE STRUCTURAL PACKAGE.
5. COLD-FORMED STRUCTURAL FRAMING SHALL CONFORM TO THE FOLLOWING STANDARDS:
   ROLLED SECTIONS, CONNECTION MATERIAL, AND STIFFENER PLATES:

18 GA (43 MIL) AND THINNER	ASTM A653, GR 33	Fy = 33 KSI
16 GA (54 MIL) AND THICKER	ASTM A653, GR 50	Fy = 50 KSI
CONNECTION MATERIAL > 3/16"	ASTM A36	Fy = 36 KSI
HOT-DIP COATING	ASTM A924, G60	
ELECTRO-PLATE COATING	ASTM A591	
ALUMINUM-ZINC COATING	ASTM A792, GR 40	
ELECTRODES FOR ARC WELDING	AWS 5.1 E60XX	

6. COLD-FORMED STEEL FRAMING COMPONENTS SHALL BE CUT SQUARELY FOR ATTACHMENT TO PERPENDICULAR MEMBERS OR AS REQUIRED FOR A FULL ANGULAR FIT AGAINST ABUTTING MEMBERS. MEMBERS SHALL BE SECURED IN PLACE UNTIL PROPERLY ATTACHED.
7. CUTOUTS, HOLES OR NOTCHES ARE NOT PERMITTED IN COLD-FORMED STEEL ROOF AND FLOOR JOISTS, HEADERS, OR BEAMS WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
8. CUTTING OF COLD-FORMED STEEL MEMBERS SHALL BE ACCOMPLISHED WITH A SAW OR SHEARS. TORCH CUTTING OF SUCH MEMBERS IS NOT PERMITTED. THE CUTTING OF ANY LOAD BEARING MEMBER IS PROHIBITED.
9. ALL WELDS SHALL COMPLY WITH THE REQUIREMENTS OF THE NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, AISI S100, AND THE STRUCTURAL WELDING CODE – SHEET STEEL, AWS D1.3.
10. ALL STEEL STUD AND JOIST FASTENERS SHALL BE TEK SCREWS, MANUFACTURED BY BUILDEX OR APPROVED EQUIVALENT.
11. CONSTRUCTION SHALL NOT BEGIN UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY THE ARCHITECT/STRUCTURAL ENGINEER. SUBMIT COMPLETE TECHNICAL INFORMATION ON ALL COLD-FORMED STEEL FRAMING, INCLUDING SECTION PROPERTIES, ALLOWABLE DESIGN STRESSES, DESCRIPTION OF CONNECTIONS AND FINISHES. DO NOT PROCEED WITH INSTALLATION UNTIL SUBMITTALS HAVE BEEN REVIEWED AND RETURNED.

POST-INSTALLED ANCHORS

1. ANCHORS SERVING AS THE BASIS OF DESIGN ARE SHOWN ON THE DRAWINGS. ACCEPTABLE ALTERNATIVE ANCHORS MAY BE SUPPLIED PROVIDED THE QUANTITY AND CONFIGURATION MATCH THE CAPACITY OF THE DESIGN ANCHOR QUANTITY AND CONFIGURATION. ANY ALTERNATES ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. BELOW SUMMARIZES EACH ANCHOR TYPE USED ON THE PROJECT.
2. MECHANICAL ANCHORS:
   a. EXPANSION ANCHORS

ANCHORED INTO	BASIS OF DESIGN	ACCEPTABLE ALTERNATES
GROUTED MASONRY	HILTI KB3 (ESR-1385)	DEWALT POWER STUD+ SD1 (ESR-2966) SIMPSON WEDGE-ALL (ESR-1396)
UNCRACKED CONCRETE	HILTI KB3 (ESR-2302)	DEWALT POWER STUD+ SD2 (ESR-2502) RED HEAD TRUBOLT+ (ESR-2427) SIMPSON STRONG BOLT 2 (ESR-3037)
CRACKED CONCRETE	HILTI KBTZ (ESR-1917)	DEWALT POWER STUD+ SD2 (ESR-2502) RED HEAD TRUBOLT+ (ESR-2427) SIMPSON STRONG BOLT 2 (ESR-3037)

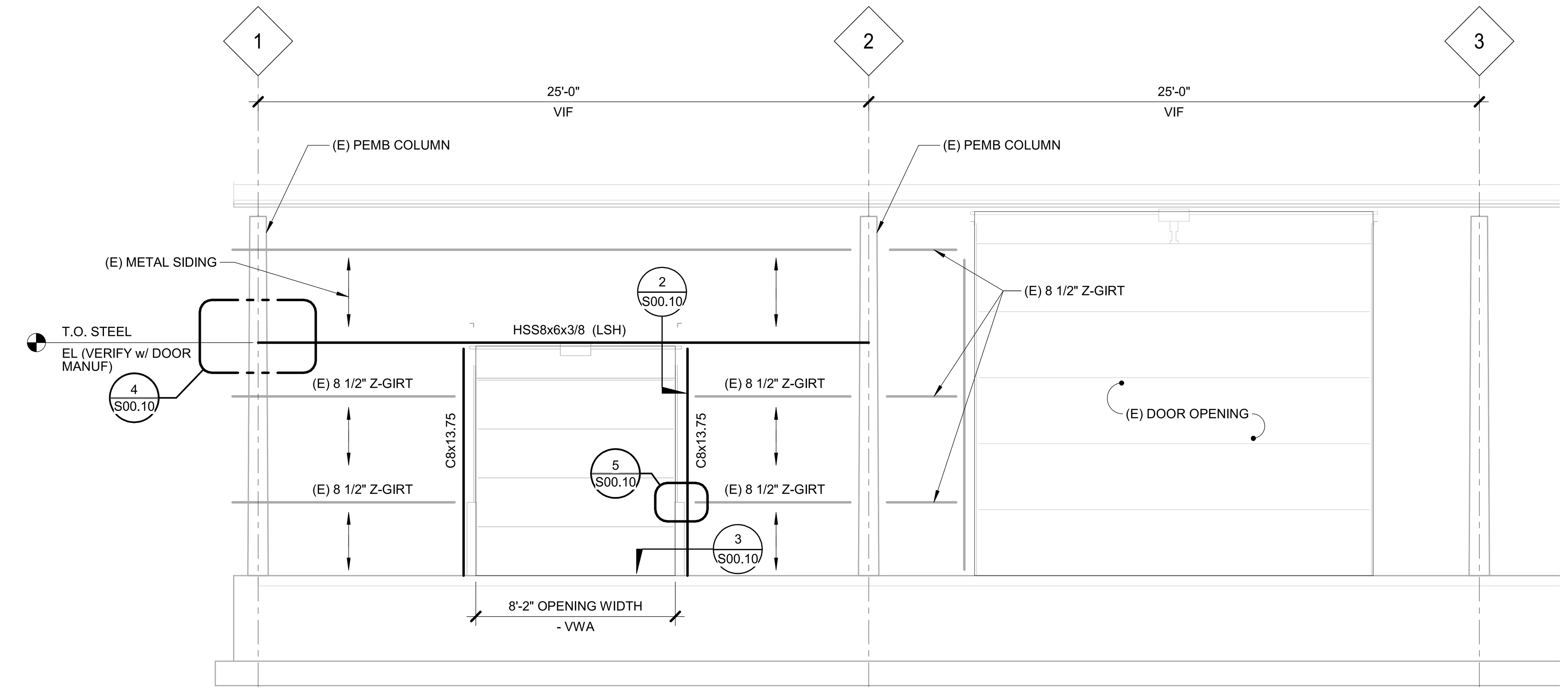
   b. THREADED SCREW ANCHORS

ANCHORED INTO	BASIS OF DESIGN	ACCEPTABLE ALTERNATES
GROUTED MASONRY	HILTI KWIK HUS-EZ (ESR-3056)	DEWALT WEDGE-BOLT+ (ESR-1678) SIMPSON TITEN HD (ESR-1056)
UNCRACKED CONCRETE	HILTI KWIK HUS-EZ (ESR-3027)	DEWALT POWER SCREW-BOLT+ (ESR-3889) SIMPSON TITEN HD (ESR-2713)
CRACKED CONCRETE	HILTI KWIK HUS-EZ (ESR-3027)	DEWALT POWER SCREW-BOLT+ (ESR-3889) SIMPSON TITEN HD (ESR-2713)

3. ADHESIVE ANCHORS: SHALL CONSIST OF DEFORMED REINFORCING BARS OR ASTM A193 GRADE B7 RODS, HEAVY DUTY NUTS AND WASHERS AND A TWO COMPONENT STRUCTURAL ADHESIVE. WHERE ANCHORING INTO HOLLOW MASONRY, A SCREEN TUBE SHALL BE PROVIDED.

ANCHORED INTO	BASIS OF DESIGN	ACCEPTABLE ALTERNATES
HOLLOW MASONRY	HILTI HIT-HY 270 (ESR-4143)	DEWALT AC 100+ GOLD (ESR-3200) SIMPSON SET-XP (ESR-0265)
GROUTED MASONRY	HILTI HIT-HY 270 (ESR-4143)	DEWALT AC 100+ GOLD (ESR-3200) RED HEAD A7 ACRYLIC (ESR-3951) SIMPSON SET-XP (ESR-0265)
CONCRETE	HILTI HIT-HY 200 (ESR-3187)	DEWALT AC 200+ (ESR-4027) SIMPSON SET-3G (ESR-4057)

4. CRACKED CONCRETE REPRESENTS ALL CONCRETE FOR PROJECTS LOCATED IN SEISMIC DESIGN CATEGORY C OR HIGHER, TENSILE ZONES SUCH AS BOTTOMS OF BEAMS AND SLABS, OR WHERE NOTED ON THE DRAWINGS.

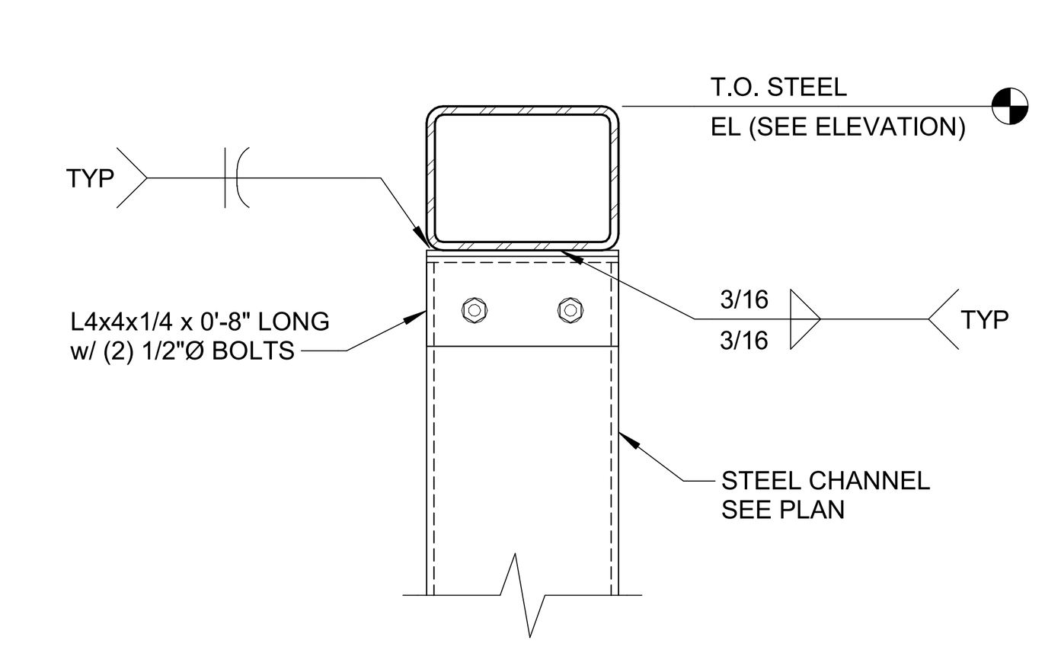


1 PARTIAL WEST ELEVATION

1/4" = 1'-0"

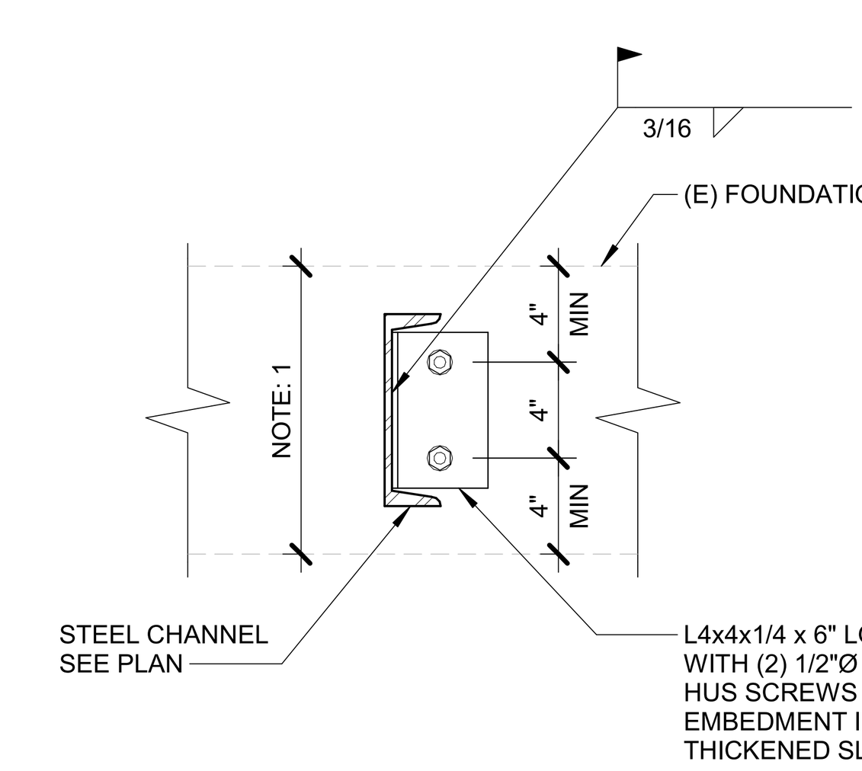
NOTE:

1. FASTEN EXISTING METAL SIDING TO THE NEW STEEL WITH #10 SCREWS AT 12" OC.



2 FRAMING DETAIL

1 1/2" = 1'-0"

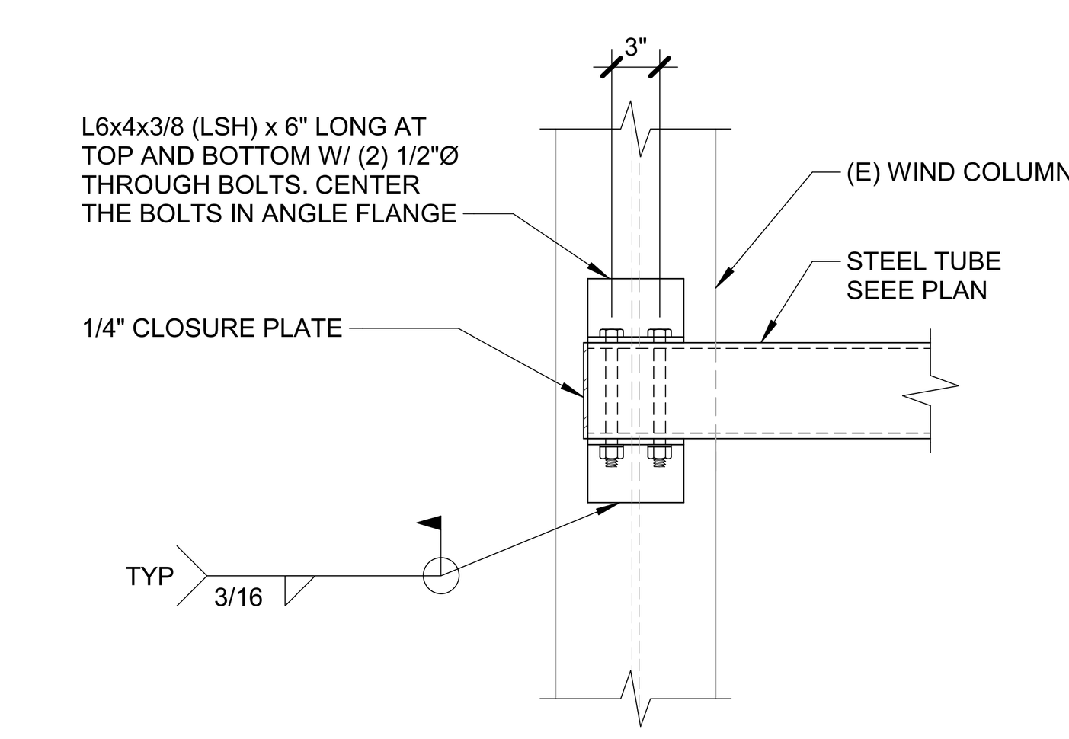


NOTE:

1. CONTRACTOR TO FIELD VERIFY THICKENED SLAB WIDTH OF 12". ALSO VERIFY THAT THE DEPTH OF THE THICKENED SLAB IS 8". FIELD VERIFICATION TO BE DONE A MIN OF 2 FEET AWAY FROM THE NEW/ EXISTING CONNECTION LOCATIONS.

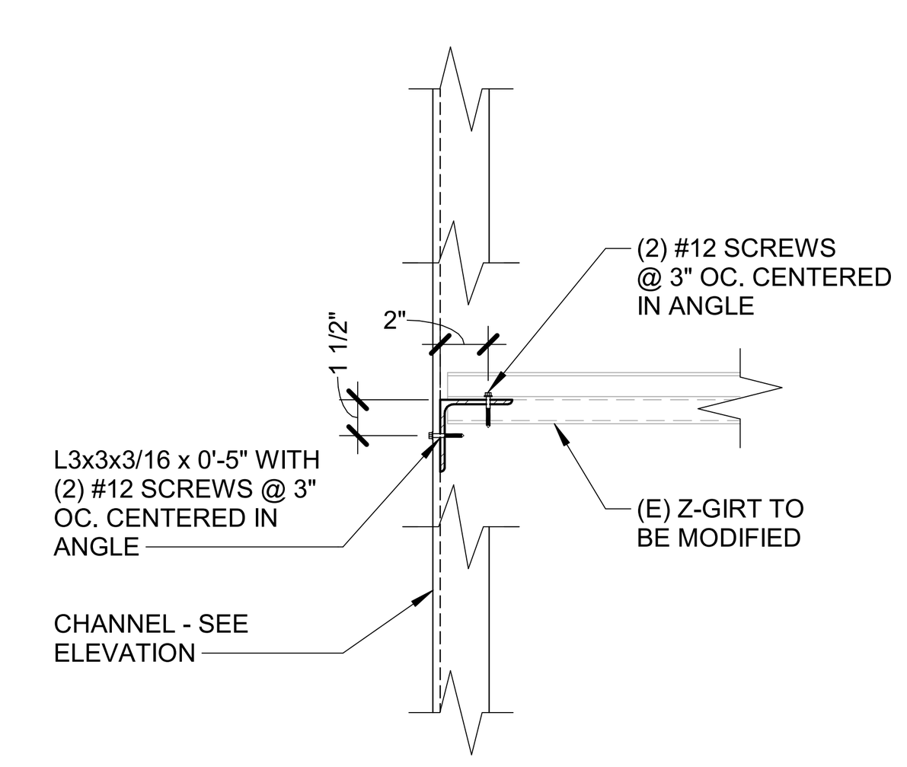
3 CHANNEL BASE CONNECTION

1 1/2" = 1'-0"



4 NEW HSS TO (E) FRAME COLUMN

1" = 1'-0"



5 (E) Z-GIRT TO CHANNEL

1 1/2" = 1'-0"

CONSTRUCTION DOCUMENTS

RDG PLANNING • DESIGN

ARCHITECT
RDG Planning & Design
301 Grand Avenue
Des Moines, Iowa 50309
Phone: (515) 288-3141

FOOD SERVICE

AV / IT / SECURITY

STRUCTURAL
IMEG
2882 106th Street
Des Moines, IA 50322
Phone: (515) 334-9906

LIGHTING

MECH/ ELEC/ PLUMB
IMEG
2882 106th Street
Des Moines, IA 50322
Phone: (515) 334-9906

CIVIL / LANDSCAPE
French-Reneker Associates
1501 S. Main Street
Fairfield, IA 52556
Phone: (641) 472-5145

OTTUMWA MAINTENANCE BUILDING RENOVATION

2858 N COURT STREET
OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C329O3116

IOWA ARMY NATIONAL GUARD

ISSUANCE 08-12-2024
PROJECT NO: R3006.106.00

GENERAL NOTES

DATE PRINTED: 8/2/2024 8:55:12 AM

TESTING, INSPECTIONS, AND OBSERVATIONS

1. THE STRUCTURAL ENGINEER DOES NOT PROVIDE INSPECTIONS OF CONSTRUCTION. STRUCTURAL ENGINEER MAY MAKE PERIODIC OBSERVATIONS OF THE CONSTRUCTION. SUCH OBSERVATIONS SHALL NOT REPLACE REQUIRED INSPECTIONS BY THE GOVERNING AUTHORITIES OR SERVE AS "SPECIAL INSPECTIONS" AS MAY BE REQUIRED BY CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE.
2. SEE ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS OR SPECIFICATIONS FOR TESTING AND INSPECTION REQUIREMENTS OF NON-STRUCTURAL COMPONENTS.
3. DUTIES OF THE INSPECTION AGENCY PER IBC CHAPTER 17:
   a. SUBMIT A PROPOSED TESTING AND INSPECTION PROGRAM TO THE OWNER, THE ARCHITECT AND THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF WORK.
   b. PERFORM ALL TESTING AND INSPECTION REQUIRED PER APPROVED TESTING AND INSPECTION PROGRAM.
   c. FURNISH INSPECTION REPORT TO THE BUILDING OFFICIAL, THE OWNER, THE ARCHITECT, STRUCTURAL ENGINEER AND THE GENERAL CONTRACTOR. THE REPORTS SHALL BE COMPLETED AND FURNISHED WITHIN 48 HOURS OF INSPECTED WORK.
   d. SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTION AGENCY'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
4. SPECIAL INSPECTIONS AND TESTS ARE REQUIRED FOR MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN CHAPTER 17 OF THE IBC OR IN STANDARDS REFERENCED BY THE IBC. THESE ITEMS INCLUDE:
   a. POST-INSTALLED ANCHORS – INSPECTION
5. THE FOLLOWING WORK SHALL BE INSPECTED BY THE SPECIAL INSPECTOR UNLESS SPECIFICALLY WAIVED BY THE BUILDING OFFICIAL.

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE
STRUCTURAL STEEL - FABRICATION			
1. FABRICATION FACILITY			X
2. CONNECTION ERECTION AND ASSEMBLY	X	X	
3. SINGLE PASS FILLET WELDS 5/16" OR LESS	X	X	X
4. ALL OTHER WELDS INCLUDING COMPLETE AND PARTIAL PENETRATION WELDS	X	X	X

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE
STRUCTURAL STEEL - ERECTION			
1. STRUCTURAL STEEL ERECTION	X	X	
2. CONNECTION ERECTION AND ASSEMBLY	X	X	
3. SINGLE PASS FILLET WELDS 5/16" OR LESS	X	X	X
4. ALL OTHER WELDS INCLUDING COMPLETE AND PARTIAL PENETRATION WELDS	X	X	X

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL PRIOR TO BOLTING - MINIMUM INSPECTION				
1. MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P	TABLE C-N5.6-1	2.1, 9.1
2. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O	TABLE C-N5.6-1	6.5.1
3. CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANE)	O	O	TABLE C-N5.6-1	2.3.2, 2.7.2, 9.1
4. CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O	TABLE C-N5.6-1	4, 8
5. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O	TABLE C-N5.6-1	TABLE 6.1(2)
6. PROTECTION STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS	O	O	TABLE C-N5.6-1	2.2, 8, 9.1

1 DOCUMENT - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORTS NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UPS, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION.

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL AFTER BOLTING - MINIMUM INSPECTION				
1. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P	TABLE C-N5.6-3	N/A

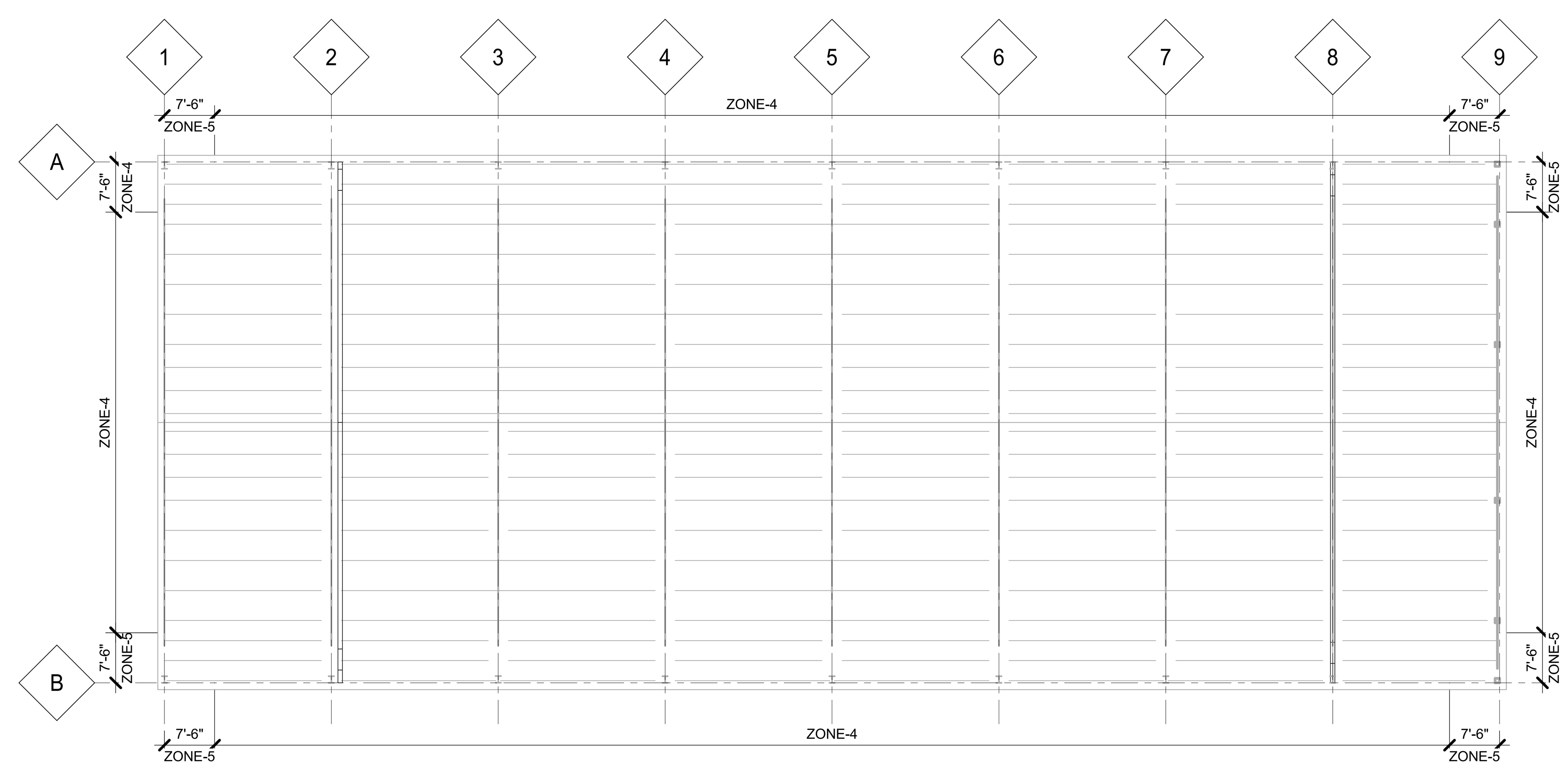
VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL PRIOR TO WELDING - MINIMUM INSPECTION				
1. WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE	P	P	TABLE C-N5.4-1	6.3
2. MANUFACTURER CERTIFICATES FOR WELDING CONSUMABLES AVAILABLE	P	P	TABLE C-N5.4-1	6.2
3. MATERIAL IDENTIFICATION	O	O	TABLE C-N5.4-1	6.2
4. WELDER IDENTIFICATION	O	O	TABLE C-N5.4-1	6.4 (WELDER QUALIFICATION)
5. FIT-UP OF FILLET WELDS	P/O[1]	O	TABLE C-N5.4-1	
a. DIMENSIONS (ALIGNMENT, GAPS AT ROOT)	P/O[1]	O	TABLE C-N5.4-1	5.21.1
b. CLEANLINESS (CONDITION OF STEEL SURFACES)	P/O[1]	O	TABLE C-N5.4-1	5.14
c. TACKING (TACK WELD QUALITY AND LOCATION)	P/O[1]	O	TABLE C-N5.4-1	5.17
6. CHECK WELDING EQUIPMENT	O	O	TABLE C-N5.4-1	6.2, 5.10

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL DURING WELDING - MINIMUM INSPECTION				
1. USE OF QUALIFIED WELDERS	O	O	TABLE C-N5.4-2	6.4
2. CONTROL AND HANDLING OF WELDING CONSUMABLES	O	O	TABLE C-N5.4-2	6.2
a. PACKAGING	O	O	TABLE C-N5.4-2	5.3.1
b. EXPOSURE CONTROL	O	O	TABLE C-N5.4-2	5.3.2 (FOR SMAW), 5.3.3 (FOR SAW)
3. ENVIRONMENT CONDITIONS	O	O	TABLE C-N5.4-2	
a. WIND SPEED WITHIN LIMITS	O	O	TABLE C-N5.4-2	5.11.1
b. PRECIPITATION AND TEMPERATURE	O	O	TABLE C-N5.4-2	5.11.2
4. WPS FOLLOWED	O	O	TABLE C-N5.4-2	6.3.3, 6.5.2, 5.5, 5.20
a. SETTINGS ON WELDING EQUIPMENT	O	O	TABLE C-N5.4-2	
b. TRAVEL SPEED	O	O	TABLE C-N5.4-2	
c. SELECTED WELDING MATERIALS	O	O	TABLE C-N5.4-2	
d. SHIELDING GAS TYPE/FLOW RATE	O	O	TABLE C-N5.4-2	
e. PREHEAT APPLIED	O	O	TABLE C-N5.4-2	5.6, 5.7
f. INTERPASS TEMPERATURE MAINTAINED (MIN/MAX)	O	O	TABLE C-N5.4-2	
g. PROPER POSITION (F, V, H, OH)	O	O	TABLE C-N5.4-2	
h. INTERMIX OF FILLER METALS AVOIDED UNLESS APPROVED	O	O	TABLE C-N5.4-2	
5. WELDING TECHNIQUES	O	O	TABLE C-N5.4-2	6.5.2, 6.5.3, 5.23
a. INTERPASS AND FINAL CLEANING	O	O	TABLE C-N5.4-2	5.29.1
b. EACH PASS WITHIN PROFILE LIMITATIONS	O	O	TABLE C-N5.4-2	
c. EACH PASS MEETS QUALITY REQUIREMENTS	O	O	TABLE C-N5.4-2	

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL AFTER WELDING - MINIMUM INSPECTION				
1. WELDS CLEANED	O	O	TABLE C-N5.4-3	5.29.1
2. SIZE, LENGTH AND LOCATION OF WELDS	P	P	TABLE C-N5.4-3	6.5.1
3. WELDS MEET VISUAL ACCEPTANCE CRITERIA	P[2]	P[2]	TABLE C-N5.4-3	6.5.3
a. CRACK PROHIBITION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(1)
b. WELD/BASE-METAL FUSION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(2)
c. CRATER CROSS-SECTION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(3)
d. WELD PROFILES	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(4), 5.24
e. WELD SIZE	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(6)
f. UNDERCUT	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(7)
g. POROSITY	P[2]	P[2]		TABLE 6.1(8)
4. ARC STRIKES	P	P	TABLE C-N5.4-3	5.28
5. REPAIR ACTIVITIES	P	P[2]	TABLE C-N5.4-3	6.5.3, 5.25
6. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P	TABLE C-N5.4-3	6.5.4, 6.5.5
7. PLACEMENT OF REINFORCING OR CONTOURING FILLET WELDS (IF REQUIRED)	P[2]	P[2]	TABLE C-N5.4-3	6.5.4, 6.5.5

1 FOLLOWING PERFORMANCE OF THIS INSPECTION TASK FOR TEN WELDS TO BE MADE BY A GIVEN WELDER, WITH THE WELDER DEMONSTRATING UNDERSTANDING OF REQUIREMENTS AND POSSESSION OF THE SKILLS TO VERIFY THESE ITEMS, THE PERFORM DESIGNATION OF THIS TASK SHALL BE REDUCED TO OBSERVE, AND THE WELDER SHALL PERFORM THIS TASK. SHOULD THE INSPECTOR DETERMINE THE WELDER HAS DISCONTINUED PERFORMANCE OF THIS TASK, THE TASK SHALL BE RETURNED TO PERFORM UNTIL SUCH TIME AS THE INSPECTOR HAS RE-ESTABLISHED ADEQUATE ASSURANCE THE WELDER WILL PERFORM THE INSPECTION TASKS LISTED.

2 DOCUMENT - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORT NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UPS, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION.



1 WIND LOAD DIAGRAM

1/16" = 1'-0"

NOTES:

1. SEE GENERAL NOTES FOR COMPONENTS AND CLADDING WIND LOADS (ULTIMATE) FOR WALLS.
2. MULTIPLY THE ULTIMATE WIND LOADS BY A 0.6 FACTOR TO GET THE ALLOWABLE WIND LOADS.

MATERIAL LEGEND

MATERIAL LEGEND:

- CONCRETE
- CONCRETE - EXISTING
- EARTH
- GRAVEL OR GRANULAR FILL
- GROUT OR DRYPACK OR SAND
- CMU OR MASONRY
- METAL / COLD-FORM STUD
- WOOD / STUD
- PRECAST CONCRETE
- STEEL
- OTHER/SPECIALTY

STRUCTURAL ABBREVIATION KEY

ABBR:	DESCRIPTION:
#	NUMBER OR POUNDS
@	AT
°	DEGREE
⌀	DIAMETER
(E)	EXISTING
A.B.	ANCHOR BOLT
ARCH	ARCHITECT, -URE, -URAL
B.O.	BOTTOM OF
bf	BEAM FLANGE WIDTH
BF	BRACE FRAME
BM	BEAM
BOTT	BOTTOM
BTWN	BETWEEN
CFSF	COLD FORM STEEL FRAMING
CLR	CLEAR
CL	CENTERLINE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATION
DIA	DIAMETER
DL	DEAD LOAD
DET	DETAIL
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EFF	EFFECTIVE
EL	ELEVATION
ELEC	ELECTRICAL
EMBED	EMBEDMENT
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
ETC	ETCETERA
EW	EACH WAY
EXP	EXPANSION
EXT	EXTERIOR
f 'c	CONCRETE COMPRESSIVE STRENGTH
FDN	FOUNDATION
FT	FOOT
FTG	FOOTING
Fy	YIELD STRESS
GA	GAGE OR GAUGE
GALV	GALVANIZED
HORIZ	HORIZONTAL
HSB	HIGH STRENGTH BOLT
JT	JOINT
K, KIP	KILOPOUND (1,000 POUNDS)
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L	LENGTH
LBS	POUNDS
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG.	LONGITUDINAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
MAX	MAXIMUM
MECH	MECHANICAL
MANUF	MANUFACTURER
MIN	MINIMUM
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OH	OPPOSITE HAND
OPNG	OPENING
PAF	POWDER ACTUATED FASTNER
PCF	POUNDS PER CUBIC FOOT
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
R	RADIUS
REINF	REINFORCING, -MENT, -ED
REQD	REQUIRED
RTU	ROOF TOP UNIT
SC	SLIP CRITICAL
SCHED	SCHEDULE
SIM	SIMILAR
SL	SNOW LOAD
SP	SPACE(S)
SPECS	SPECIFICATION(S)
SQ	SQUARE
STIFF	STIFFENER
STL	STEEL
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
T.O.	TOP OF
TC	PRE-TENSIONED BOLT
TEMP	TEMPERATURE
tf	BEAM FLANGE THICKNESS
THK	THICK
TRANS	TRANSVERSE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL
VIF	VERIFY IN FIELD
w/	WITH
WP	WORK POINT
WT	WEIGHT
WWR	WELDED WIRE REINFORCING

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OTTUMWA MAINTENANCE BUILDING RENOVATION

2858 N COURT STREET
OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C32903116

IOWA ARMY NATIONAL GUARD

ISSUANCE 08-12-2024

PROJECT NO: **R3006.106.00**

TESTING, INSPECTION AND ABBREVIATIONS

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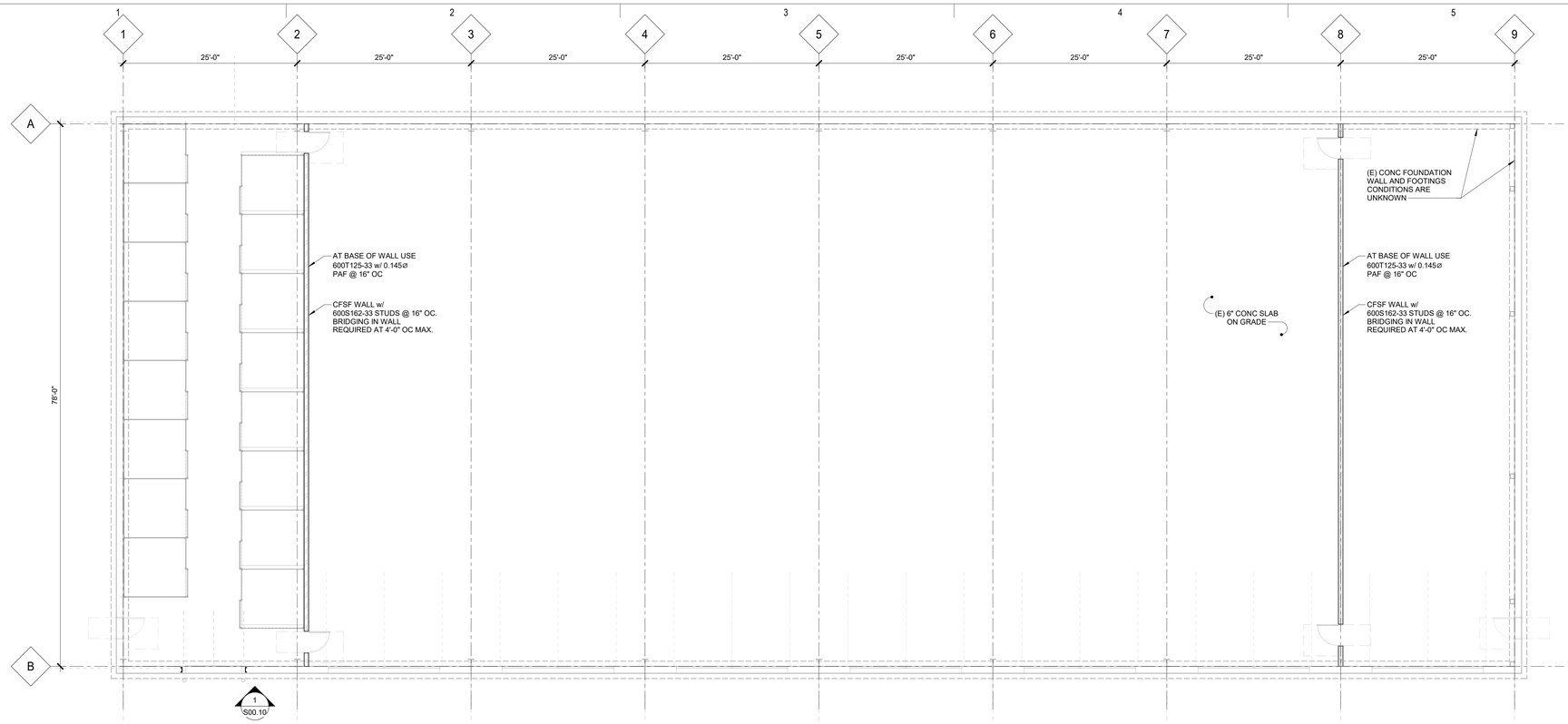
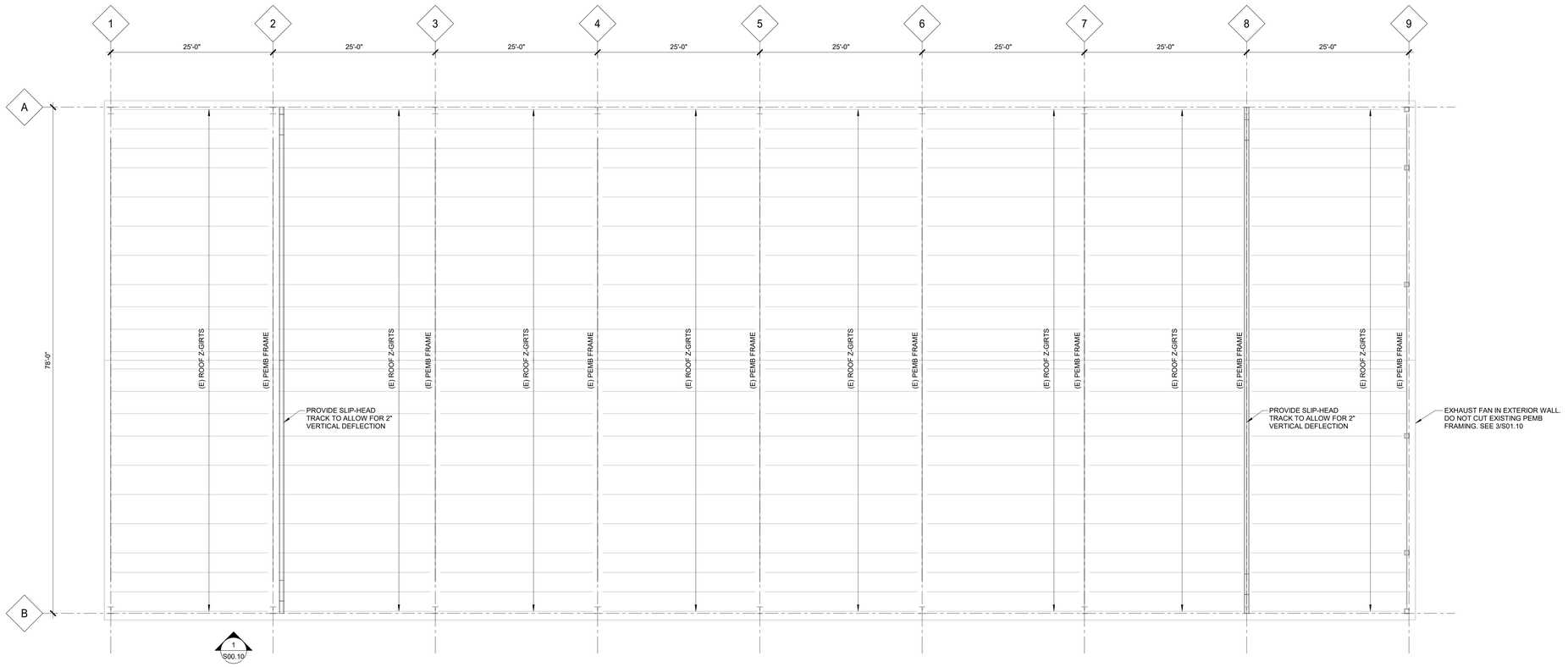


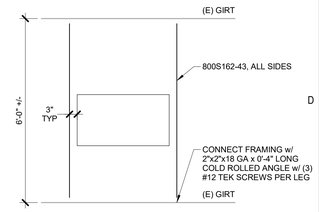
1 (E) FOUNDATION PLAN

1/8" = 1'-0"



2 (E) ROOF FRAMING PLAN

1/8" = 1'-0"



NOTES:

1. COORDINATE OPENING SIZE AND LOCATION w/ MEP / PROCESS.
2. OPENING FRAMING FLANGES TO POINT AWAY FROM OPENING.
3. TRIM w/ TYP METAL BUILDING TRIM.
4. ATTACH SIDING AND LINER PANEL TO FRAMING w/ WHITE HEADED SELF TAPPING SCREWS AT 12" OC.

3 WALL OPENING DETAIL

1/2" = 1'-0"

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OTTUMWA MAINTENANCE BUILDING RENOVATION

2858 N COURT STREET
OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C329O3116

IOWA ARMY NATIONAL GUARD

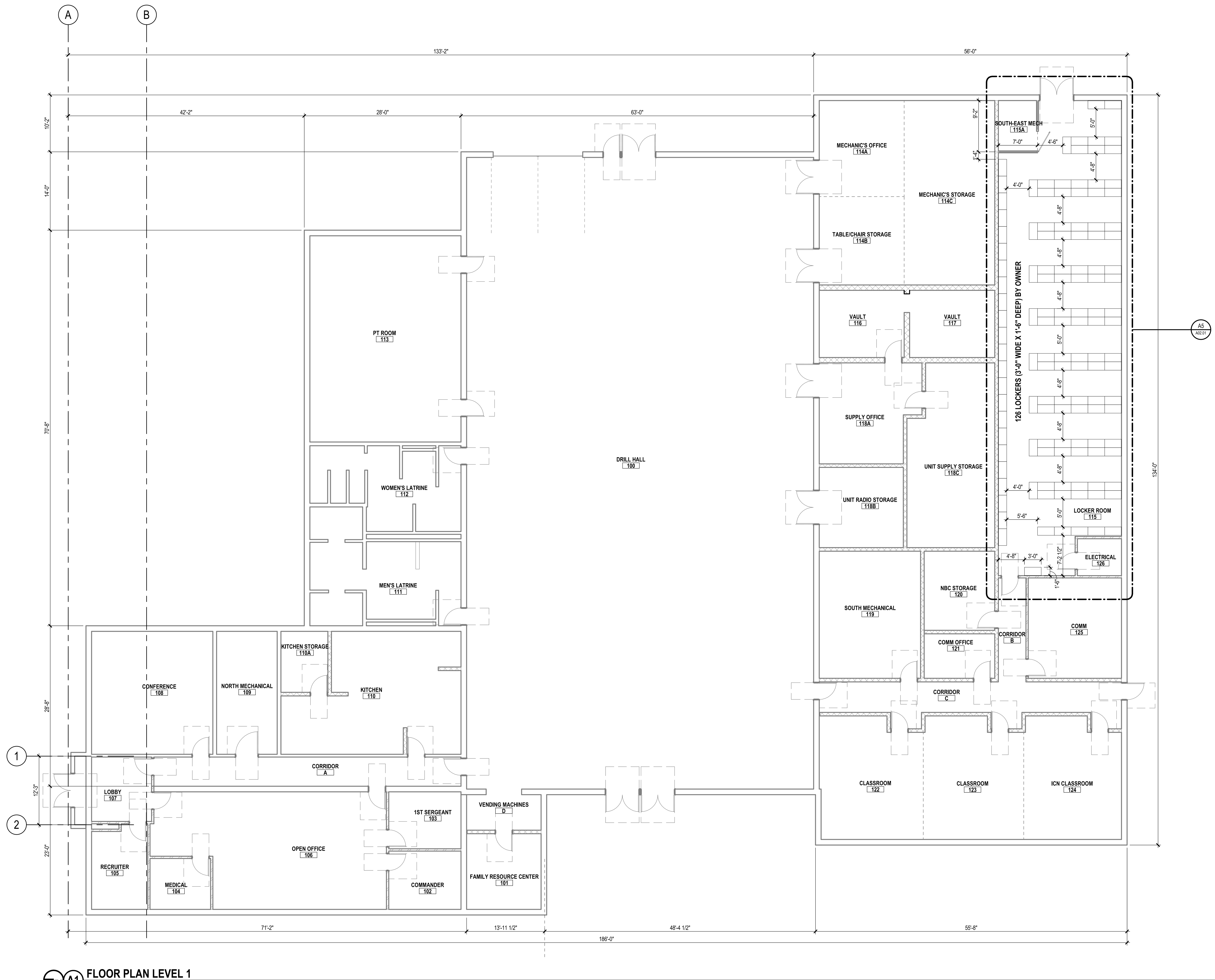
ISSUANCE 08-12-2024
PROJECT NO. R3006.106.00

EXISTING PLANS

S01.10

GENERAL ARCHITECTURAL NOTES

1. GENERAL
   A. CONTRACTOR SHALL VERIFY CONDITIONS AND DIMENSIONS PRIOR TO MATERIAL FABRICATION AND CONSTRUCTION.
   B. WHEN DRAWINGS AND SPECIFICATIONS ARE NOT IN AGREEMENT, THE BIDDER SHALL REQUEST WRITTEN CLARIFICATION PRIOR TO BIDDING AND CONSTRUCTION. IF NOT CLARIFIED PRIOR TO BIDDING, THE FOLLOWING PRECEDENCE SHALL BE USED TO DETERMINE SCOPE OF THE BID: SIZE/QUANTITY CONTROLLED BY DRAWINGS, MATERIAL QUALITY CONTROLLED BY SPECIFICATION. FINAL INTERPRETATION MUST BE ISSUED BY THE ARCHITECT/ENGINEER PRIOR TO MATERIAL FABRICATION OR CONSTRUCTION.
2. FLOORS
   A. ALL SIDEWALKS AND STOOPS SLOPE ¼"/FOOT MINIMUM AWAY FROM BUILDING.
   B. PROVIDE RAISED CONCRETE EQUIPMENT PADS FOR MECHANICAL AND ELECTRICAL EQUIPMENT. COORDINATE EXACT PAD SIZE AND LOCATION BASED ON EQUIPMENT PROVIDED. PADS EXTEND 4" MINIMUM BEYOND EACH SIDE OF THE EQUIPMENT BASE OR AS OTHERWISE INDICATED.
3. WALLS AND PARTITIONS
   A. WATERPROOFING SHALL BE PLACED AT ALL WALLS WITH GRADE ELEVATION CHANGES ON OPPOSITE SIDES INCLUDING BASEMENTS, TUNNELS, ELEVATOR SHAFTS AND SIMILAR PITS.
4. DETAILS
   A. EXTERIOR LOUVERS ARE BY THE CONTRACTOR. SIZES IF NOT SHOWN ON ARCHITECTURAL SHALL BE SHOWN ON THE MECHANICAL DRAWINGS.



A1 FLOOR PLAN LEVEL 1
1/8" = 1'-0"

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OTTUMWA MAINTENANCE BUILDING RENOVATION

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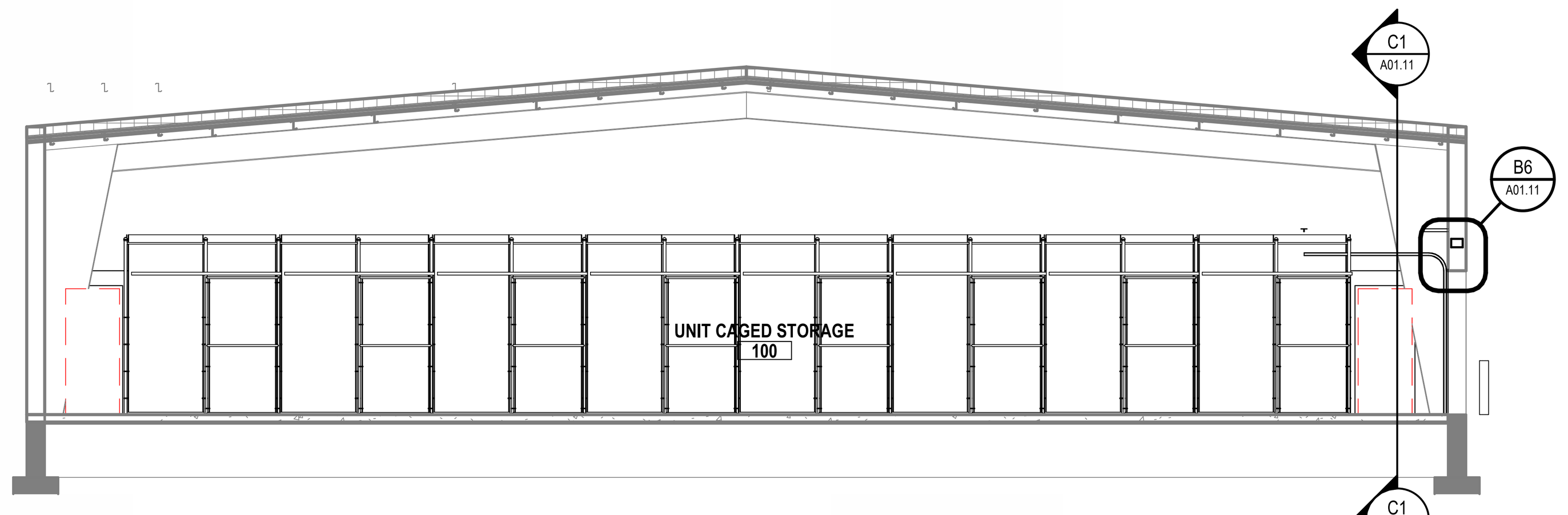
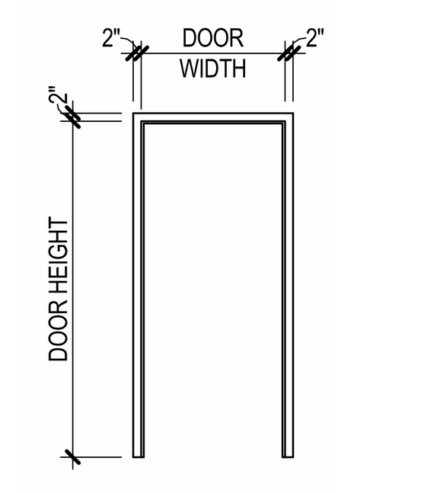
FLOOR PLAN LEVEL 1 - ARMORY

A01.10



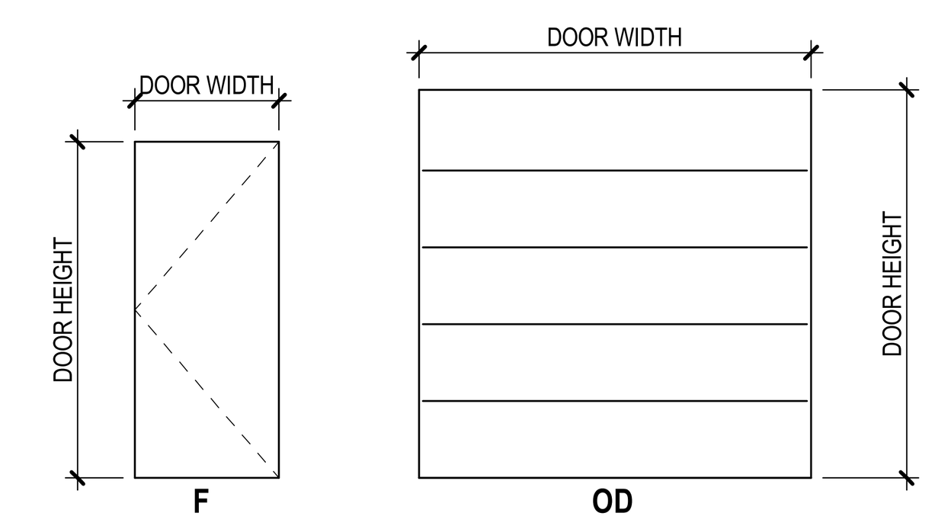
E2 EAST - WEST BUILDING SECTION
1/8" = 1'-0" (A1/A01.11)



DOOR FRAME TYPE

SINGLE

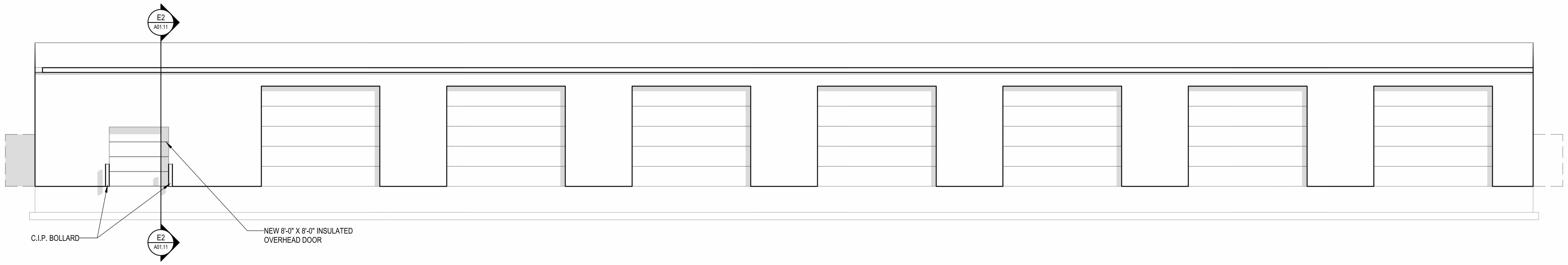
OVERHEAD DOOR



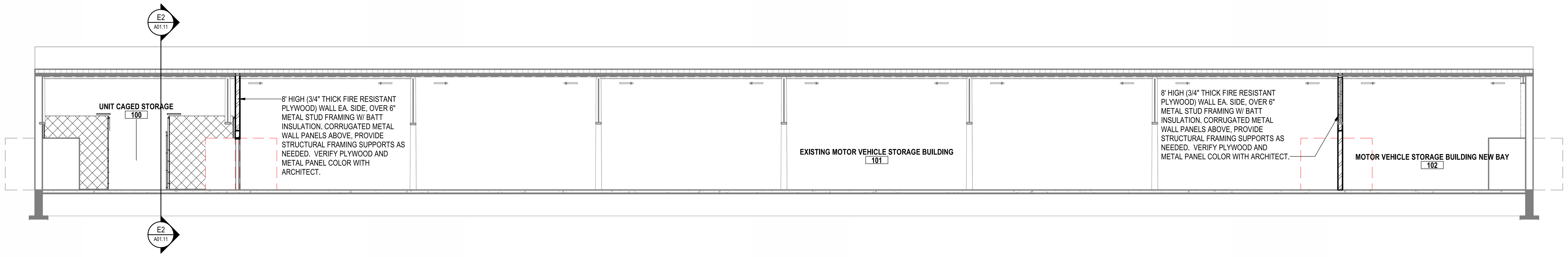
DOOR PANEL TYPES

DOOR AND FRAME SCHEDULE

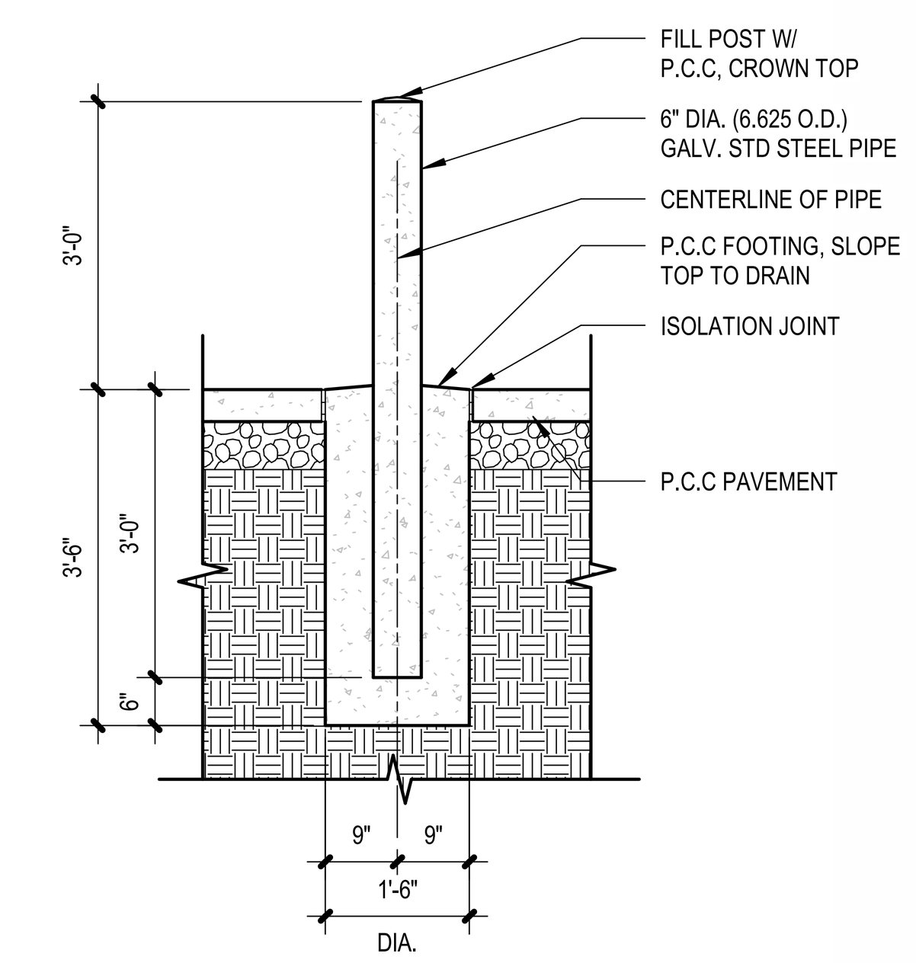
MARK	PANEL WIDTH	PANEL HEIGHT	PANEL TYPE	PANEL MATL	FRAME TYPE	FRAME MATL	FRAME WALL TYPE	FRAME THROAT	FIRE RATING	HARDWARE HDWR GROUP	HARDWARE PANIC DEVICE	HARDWARE ACCESS CONTROL	HARDWARE ELECTRIFIED	REMARKS	MARK
LEVEL 1															
100-2	3'-0"	7'-0"	F	HM	S	HM	U6A0	7 1/2"		100					100-2
100-3	8'-0"	8'-0"	OD				EXG.			101				INSULATED OVERHEAD DOOR	100-3
100-4	3'-0"	7'-0"	F	HM	S	HM	U6A0	7 1/2"		100					100-4
102-1	3'-0"	7'-0"	F	HM	S	HM	U6A0	7 1/2"		100					102-1
102-2	3'-0"	7'-0"	F	HM	S	HM	U6A0	7 1/2"		100					102-2



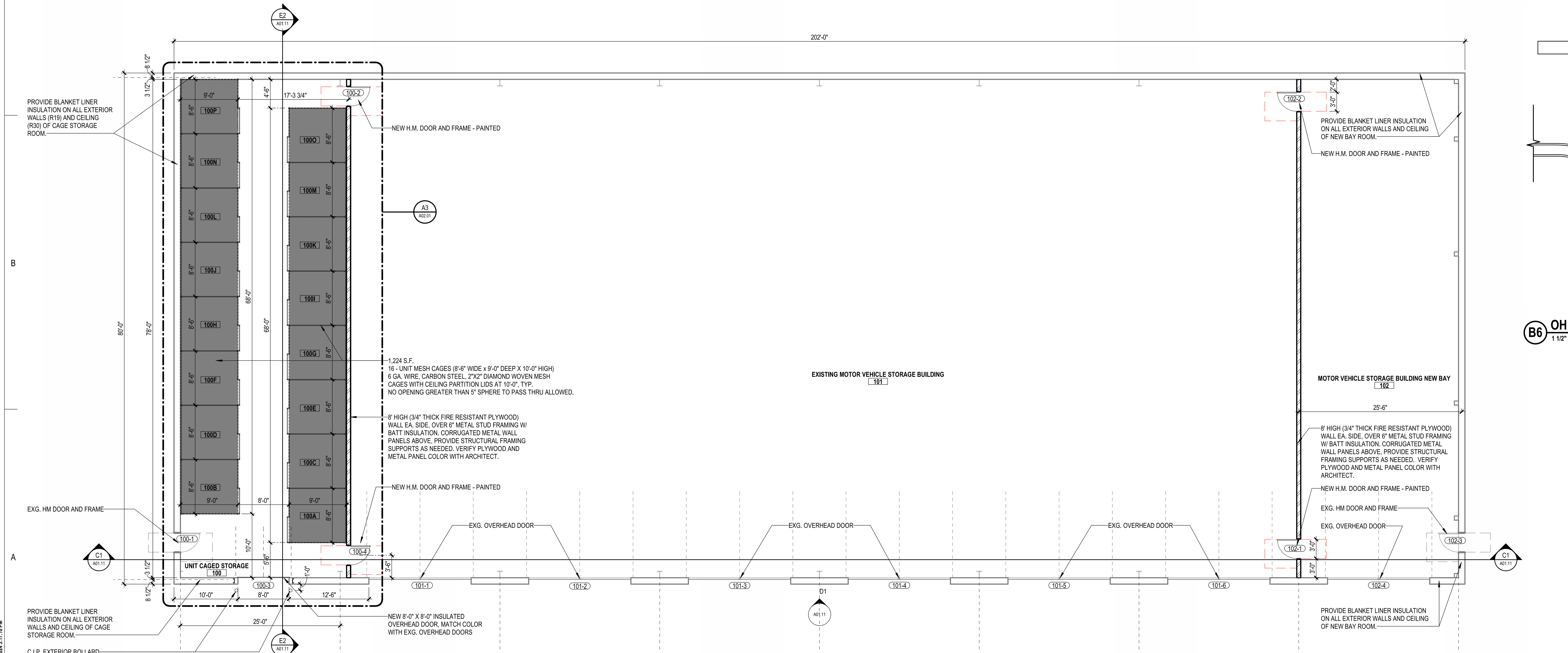
D1 WEST BUILDING ELEVATION
1/8" = 1'-0"



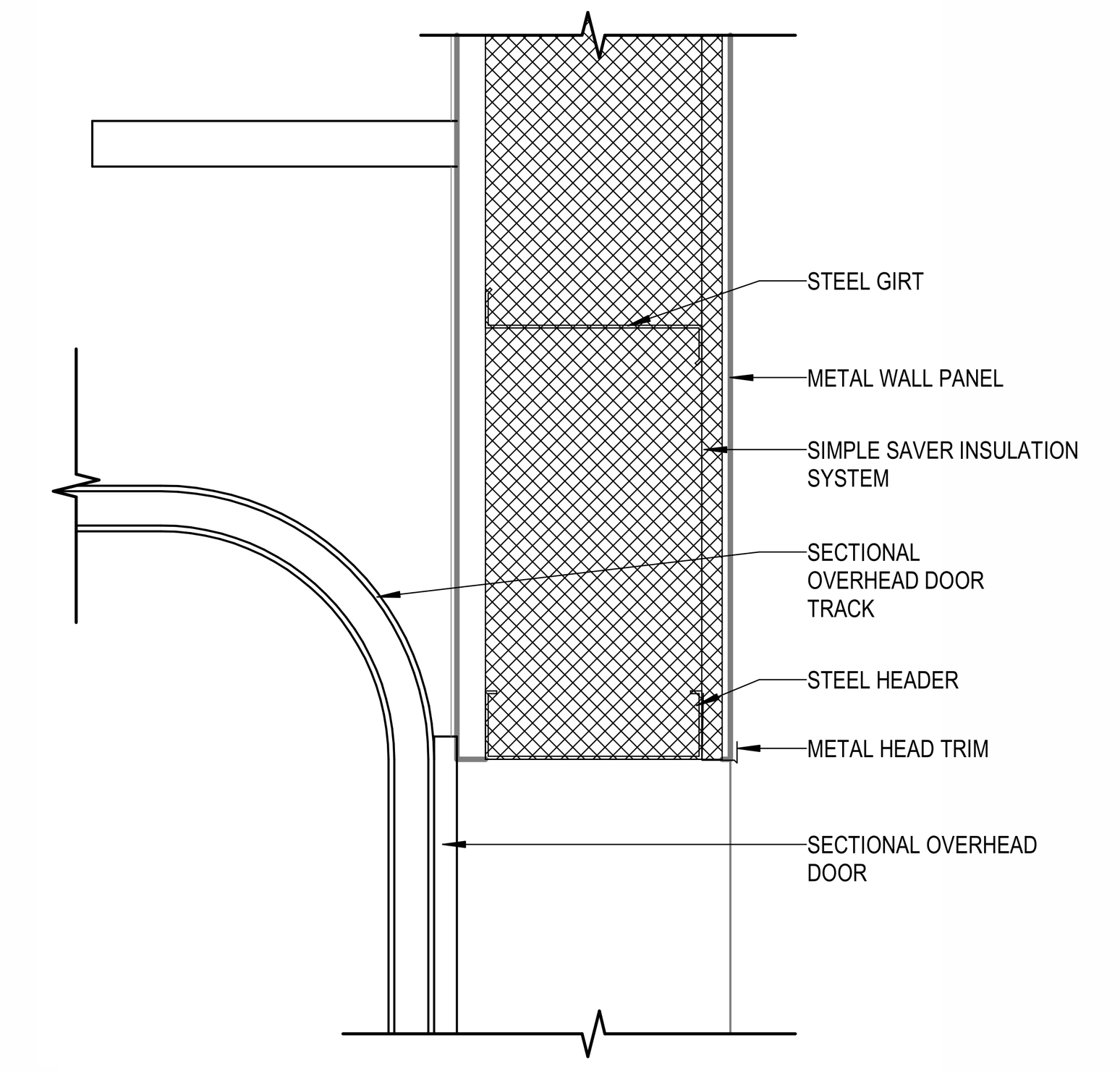
C1 NORTH - SOUTH BUILDING SECTION
1/8" = 1'-0"



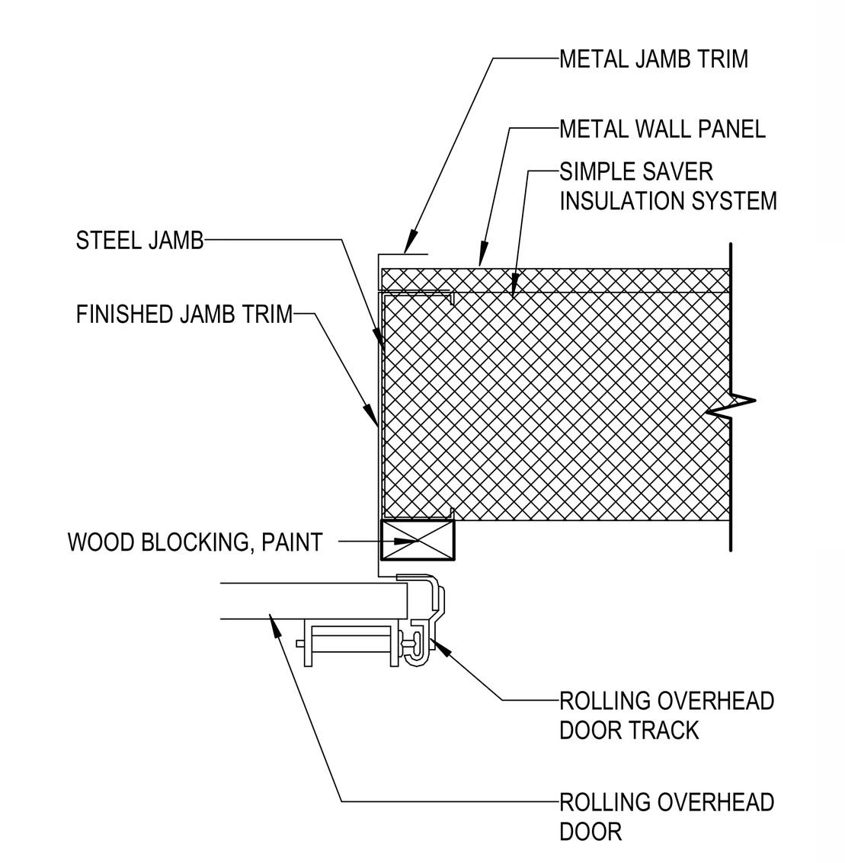
C6 EXTERIOR BOLLARD DETAIL
1/2" = 1'-0"



A1 FLOOR PLAN MOTOR VEHICLE STORAGE
1/8" = 1'-0"



B6 OH DOOR HEAD DETAIL
1 1/2" = 1'-0"



A6 HM DOOR JAMB @ OH DOOR
1 1/2" = 1'-0"

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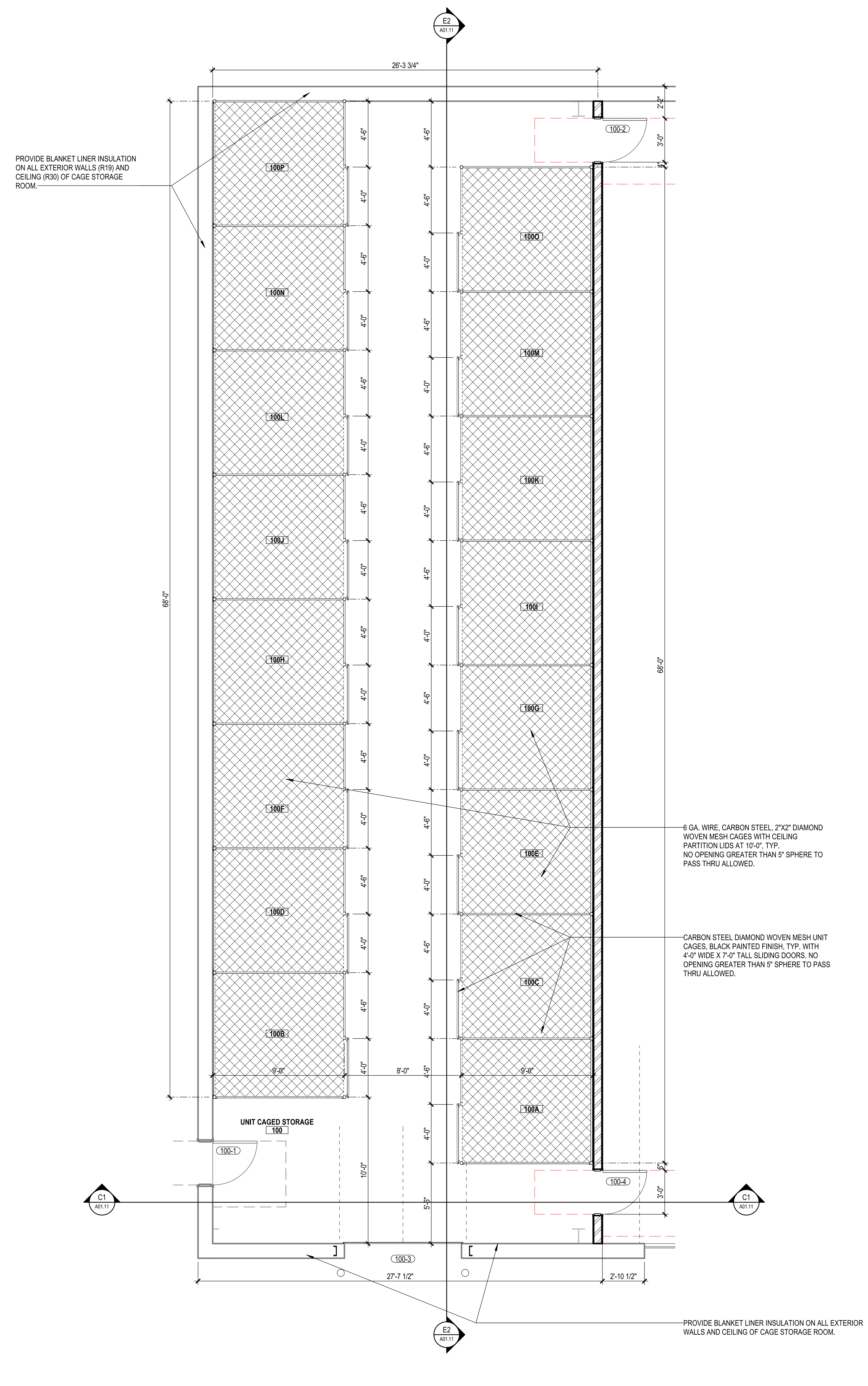
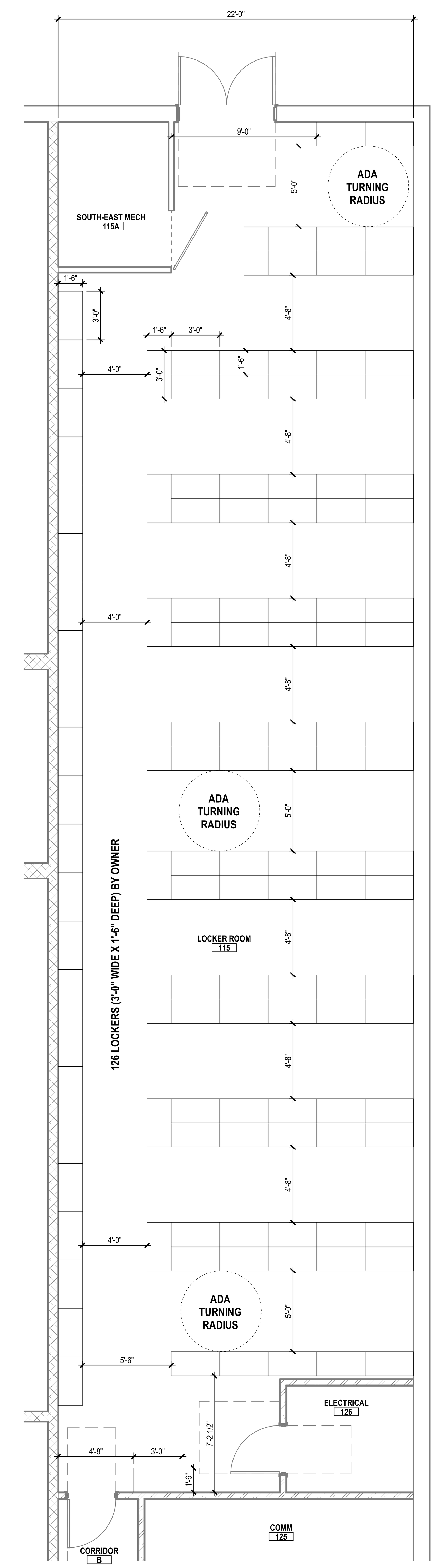
PROJECT NO: R3006.106.00

MVSB FLOOR PLAN-SECTIONS DOOR SCHED./DETAILS

A01.11



A3 MVSB ENLARGED PLAN - UNIT CAGED STORAGE 202
1/4" = 1'-0"



A5 ARMORY FLOOR PLAN - UNIT STORAGE 115
1/4" = 1'-0"

OTTUMWA MAINTENANCE BUILDING RENOVATION

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ISSUANCE 08-12-2024
PROJECT NO: **R3006.106.00**

ENLARGED PLANS

A02.01

VIEW KEY

NAME — LEVEL NAME
10'-0" — HEIGHT ABOVE PROJECT 0'-0"

(1) — INDICATES NOTE USED TO DESCRIBE ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL

INDICATES DIRECTION OF TRUE NORTH
PLAN OR DETAIL NUMBER
PLAN OR DETAIL NAME
VIEW NAME (NORTH, 1, 1/8" = 1'-0")
PLAN OR DETAIL SCALE

INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS (SIM)
DETAIL REFERRED TO BY SECTION CUT (1)
SHEET DETAIL IS LOCATED ON (M101, T101)

LINE TYPE AND TAG KEY:

NEW WORK BY THIS CONTRACTOR (WIDE LINE)
- NEW
- EXISTING TO BE REMOVED (SHORT DASHED PATTERN)
- NEW UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

EXISTING TO REMAIN OR WORK BY OTHERS (NARROW LINE)
- EXISTING
- EXISTING TO BE REMOVED BY OTHERS (SHORT DASHED PATTERN)
- EXISTING UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

HALFTONING DOES NOT MODIFY SCOPE.

'TAG'-E — TAGS WITH DASH 'E' INDICATES THE REFERENCED OBJECT IS EXISTING

TAG-1 — UNDERLINED TAG INDICATES OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL INFORMATION IS AVAILABLE IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST

INDICATES AN EXISTING SYSTEM'S POINT OF CONNECTION/REMOVAL

APPLICABLE CODES

CONTRACTOR SHALL COMPLY WITH APPLICABLE CODES AND LOCAL AMENDMENTS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

BUILDING CODE:	IBC 2015 EDITION
FIRE CODE:	IFC 2021 EDITION
PLUMBING CODE:	UPC 2021
MECHANICAL CODE:	IMC 2021 EDITION
ELECTRICAL CODE:	NFPA 70 (NEC) 2020 EDITION
LIFE SAFETY CODE:	NFPA 101 2021 EDITION
ENERGY CONSERVATION CODE:	ASHRAE 90.1 (2010)
LOCAL BUILDING CODE:	CURRENT EDITION

CONTRACTOR ABBREVIATION KEY

ABBR:	DESCRIPTION:
C.C.	CIVIL CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR

CONTACT PERSONS:

DESCRIPTION:	PERSON:
PROJECT MANAGER	NATE JACQUES
MECHANICAL	NATE JACQUES
ELECTRICAL	ZACH ROSS

VENTILATION SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY.

SYMBOL:	DESCRIPTION:
	DIRECTION OF AIR FLOW
	FLEXIBLE DUCT
	MANUAL VOLUME DAMPER
R	RISE IN DIRECTION OF AIR FLOW
D	DROP IN DIRECTION OF AIR FLOW
	DUCT CAP
	DUCT DOWN
	DUCT UP
	SUPPLY/OUTSIDE AIR DUCT SECTION
	RETURN AIR DUCT SECTION
	EXHAUST/RELIEF AIR DUCT SECTION
SD-1 6/115	AIR TERMINAL PROPERTIES SYMBOL NECK SIZE/CFM
	OPPOSED BLADE DAMPER (REFER TO SCHEDULE)
	PARALLEL BLADE DAMPER (REFER TO SCHEDULE)
T	WALL MOUNTED THERMOSTAT/HUMIDISTAT
CO	CARBON MONOXIDE
NO2	NITROGEN DIOXIDE
S	MANUAL SWITCH
ACT	DAMPER ACTUATOR - ELECTRIC

VENTILATION ABBREVIATION KEY

ABBR:	DESCRIPTION:
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
DN	DOWN
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
SCCR	SHORT CIRCUIT CURRENT RATING
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED

DUCT ABBREVIATION KEY

ABBR.	DESCRIPTION
EA	EXHAUST AIR
OA	OUTSIDE AIR
RA	RETURN/RELIEF AIR
SA	SUPPLY AIR

PLUMBING SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY.

SYMBOL:	DESCRIPTION:
G	NATURAL GAS
	PIPE DOWN
	SHUTOFF VALVE NORMALLY OPEN
	PIPE CONTINUATION

MECHANICAL RENOVATION NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, FIRE PROTECTION, PLUMBING, MEDICAL GAS, VENTILATION, PIPING AND TEMPERATURE CONTROL.

1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.
2. NOT ALL EXISTING DUCTWORK AND PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK.
3. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF ROOFS, WALLS, AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS. CONTRACTORS SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING] [EACH CONTRACTOR SHALL CUT AND PATCH ROOFS, WALLS, AND FLOORS ASSOCIATED WITH THEIR WORK.
4. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO BIDDING.
5. WHERE EXISTING MECHANICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, PIPING, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING MECHANICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.
6. PROVIDE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. MAINTAIN ACCESS TO EXISTING MECHANICAL INSTALLATIONS THAT REMAIN ACTIVE.
7. OBTAIN PERMISSION FROM OWNER BEFORE SHUTTING DOWN ANY SYSTEM FOR ANY REASON. MAINTAIN SERVICE TO ALL COMPONENTS THAT ARE TO REMAIN UNTIL NEW SYSTEMS ARE INSTALLED.
8. MAINTAIN EXISTING SYSTEM IN SERVICE UNTIL NEW SYSTEM IS COMPLETE AND READY FOR TIE IN AND SWITCHOVER. DRAIN SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. OBTAIN PERMISSION FROM OWNER BEFORE PARTIALLY OR COMPLETELY DRAINING SYSTEM. MAKE CHANGEOVER TO NEW SYSTEMS WITH MINIMUM OUTAGE.
9. PROPERLY RECLAIM AND DISPOSE OF ALL REFRIGERANT IN REMOVED EQUIPMENT/ REFRIGERANT PIPING. RECLAIMED REFRIGERANT SHALL HAVE DOCUMENTATION AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ).

MECHANICAL GENERAL NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO PLUMBING, VENTILATION AND TEMPERATURE CONTROL.

1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
2. CATALOG AND MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE DESCRIPTION OF MATERIAL SCHEDULED ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL AND SCHEDULED PERFORMANCE TAKES PRECEDENCE OVER THE MODEL NUMBER. THE FIRST MANUFACTURER SCHEDULED IS THE BASIS OF DESIGN.
3. DETERMINATION OF QUANTITIES OF MATERIAL AND EQUIPMENT REQUIRED SHALL BE MADE BY THE CONTRACTOR FROM THE DOCUMENTS. WHERE MATERIAL AND/OR QUANTITY DISCREPANCIES ARISE BETWEEN DRAWINGS, SCHEDULES AND/OR SPECIFICATIONS, THE HIGHER QUALITY/ GREATER NUMBER SHALL GOVERN.
4. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES.
5. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS.
6. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER ACCESS.
7. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
8. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF DESIGN.
9. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
10. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
11. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING.
12. SEAL ALL FLOOR, WALL, AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE.
13. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS WITHIN ROOMS.
14. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT.
15. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS, PIPING, DUCTWORK, ETC.
16. MAINTAIN A MINIMUM WORKING CLEARANCE OF 3'-6" IN FRONT OF ALL ELECTRICAL EQUIPMENT REQUIRING MAINTENANCE, INSPECTION, AND TESTING INCLUDING BUT NOT LIMITED TO PANELS, DISTRIBUTION PANELS, SWITCHBOARDS, MOTOR CONTROL CENTERS, TRANSFORMERS, EQUIPMENT DISCONNECTS AND STARTERS.
17. MAINTAIN THE DEDICATED ELECTRICAL EQUIPMENT SPACE DEFINED BY THE WIDTH / DEPTH OF ELECTRICAL EQUIPMENT MEASURED FROM THE FLOOR TO A HEIGHT 6'-0" ABOVE THE EQUIPMENT OR THE STRUCTURAL CEILING, WHICHEVER IS LOWER. SYSTEMS FOREIGN TO THE ELECTRICAL DISTRIBUTION SYSTEM ARE NOT ALLOWED IN THE DEDICATED ELECTRICAL SPACE INCLUDING: DUCTWORK, PIPING, ETC.
18. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT EXCEPT WHERE PAD EXTENSION WOULD INTERFERE WITH WORKING SPACE AT EQUIPMENT CONTROL PANELS AND ELECTRICAL PANELS.
19. NO LOADS SHALL BE PERMITTED TO BE HUNG FROM METAL ROOF DECKING. ALL HANGERS SHALL BE HUNG DIRECTLY FROM THE TOP MEMBER OF STRUCTURAL STEEL OR SUPPLEMENTARY MEMBERS ACCEPTABLE TO THE STRUCTURAL ENGINEER AND ONLY WITH PRIOR APPROVAL.
20. MECHANICAL CONTRACTOR SHALL CONFIRM THE FURNACES AND ENERGY RECOVERY VENTILATOR OPERATE PER THE CONTROL SEQUENCES SHOWN ON M04.00 TO MEET COMMISSIONING REQUIREMENTS OF ASHRAE 90.1 (2010) PARAGRAPH 6.7.2.4

VENTILATION SHEET INDEX

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OTTUMWA MAINTENANCE BUILDING RENOVATION

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OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C329O3116

IOWA ARMY NATIONAL GUARD

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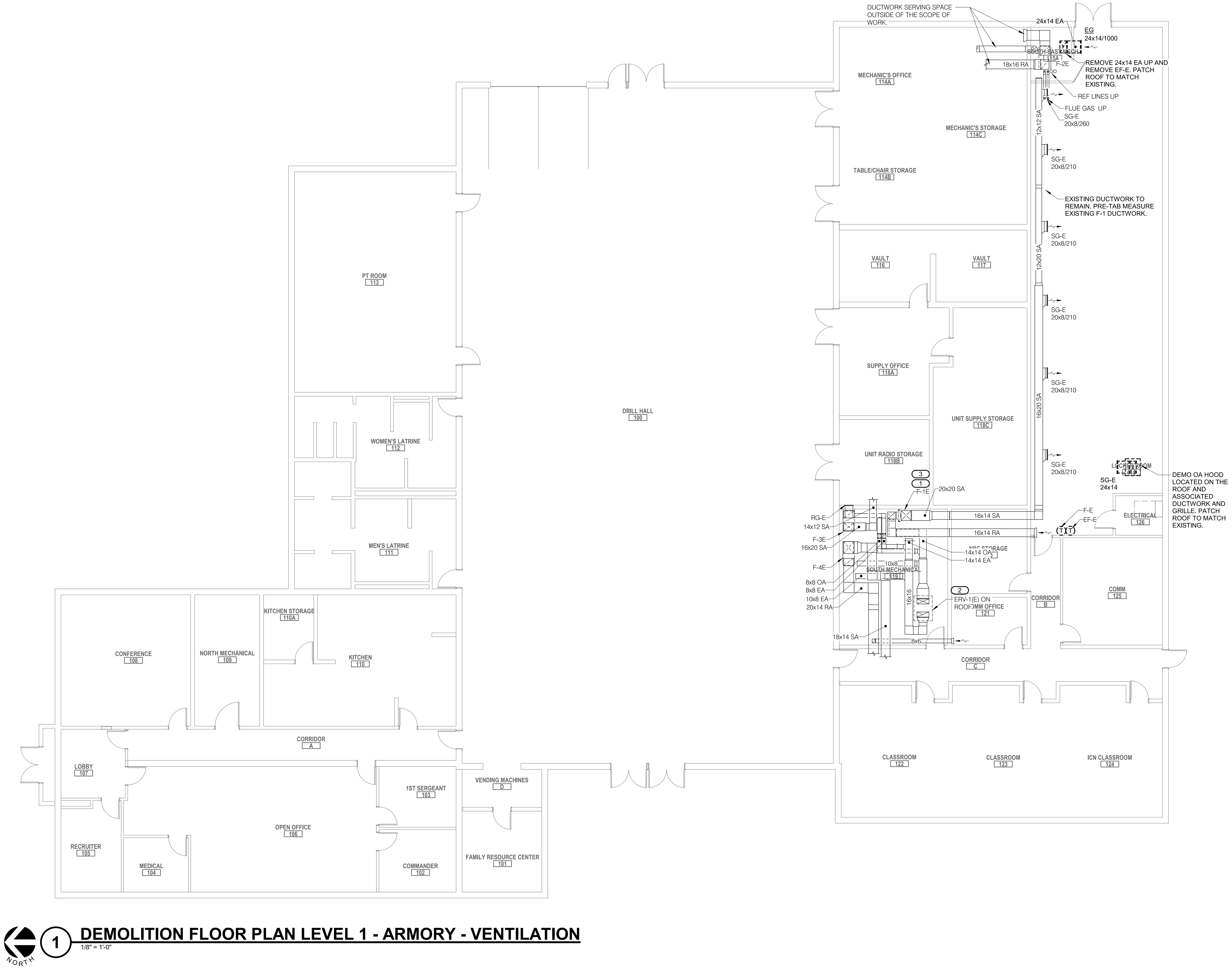
PROJECT NO: R3006.106.00

VENTILATION COVERSHEET

M00.00

KEYNOTES: #

1. DEMO EXISTING FURNACE. DISCONNECT DUCTING AND PIPING ASSOCIATED WITH EXISTING FURNACE AND PREPARE FOR NEW CONNECTION.
2. CONDUCT A PRE-DEMOLITION TAB FOR THE ENTIRE ERV-1(E) SYSTEM, INCLUDING AIRFLOWS FOR EACH EXHAUST AND OUTDOOR AIR DUCT TAP TO EACH EXISTING FURNACE.
3. CONDUCT A PRE-DEMOLITION TAB FOR THE ENTIRE F-1(E) UNIT, INCLUDING THE RETURN GRILLE AND SUPPLY GRILLE OPENINGS.



NORTH

1 DEMOLITION FLOOR PLAN LEVEL 1 - ARMORY - VENTILATION

1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

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OTTUMWA MAINTENANCE BUILDING RENOVATION

2858 N COURT STREET
OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C329O3116

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DEMO FLOOR PLAN LEVEL 1 - ARMORY - VENTILATION

M00.10

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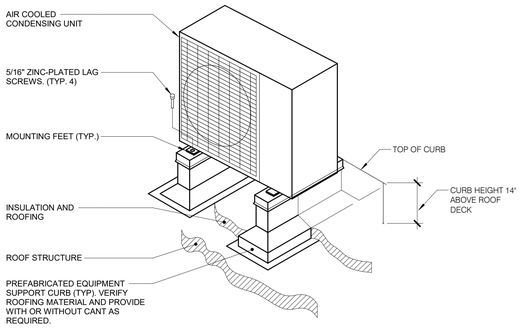
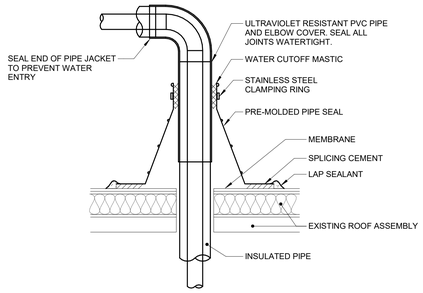


2 ROOF SUPPORT - EQUIPMENT RAIL

NO SCALE

NOTES:

1. VERIFY DIAMETER OF ANCHOR BOLT REQUIRED TO FIT WITHIN MOUNTING FEET ANCHOR HOLES.



3 ROOF PENETRATION - INSULATED PIPE

NO SCALE

NOTES:

1. MASTIC, PIPE SEAL, AND CEMENT TO MATCH EXISTING ROOFING.

1 FLOOR PLAN LEVEL 1 - ARMORY - VENTILATION

1/8" = 1'-0"

GENERAL NOTES:

1. MECHANICAL CONTRACTOR SHALL CONFIRM THE FURNACES AND ENERGY RECOVERY VENTILATOR OPERATE PER THE CONTROL SEQUENCES SHOWN ON M04.00 TO MEET COMMISSIONING REQUIREMENTS OF ASHRAE 90.1 (2010) PARAGRAPH 6.7.2.4

KEYNOTES: (#)

1. DIRECT THE DISCHARGE OF THE DRYING FAN TO THE CENTER OF THE ROOM. FAN SUPPORTS SHALL BE MOUNTED TO THE TOP OF THE STRUCTURE. SPAN UNISTRUT BETWEEN TWO STRUCTURAL JOISTS, CONNECT DRYING FAN TO UNISTRUT. ATTACH STABILIZATION TETHER PER MANUFACTURER'S INSTRUCTIONS. ATTACHMENT TO THE ROOF DECK IS NOT ALLOWED.

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OTTUMWA MAINTENANCE BUILDING RENOVATION

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OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C32903116

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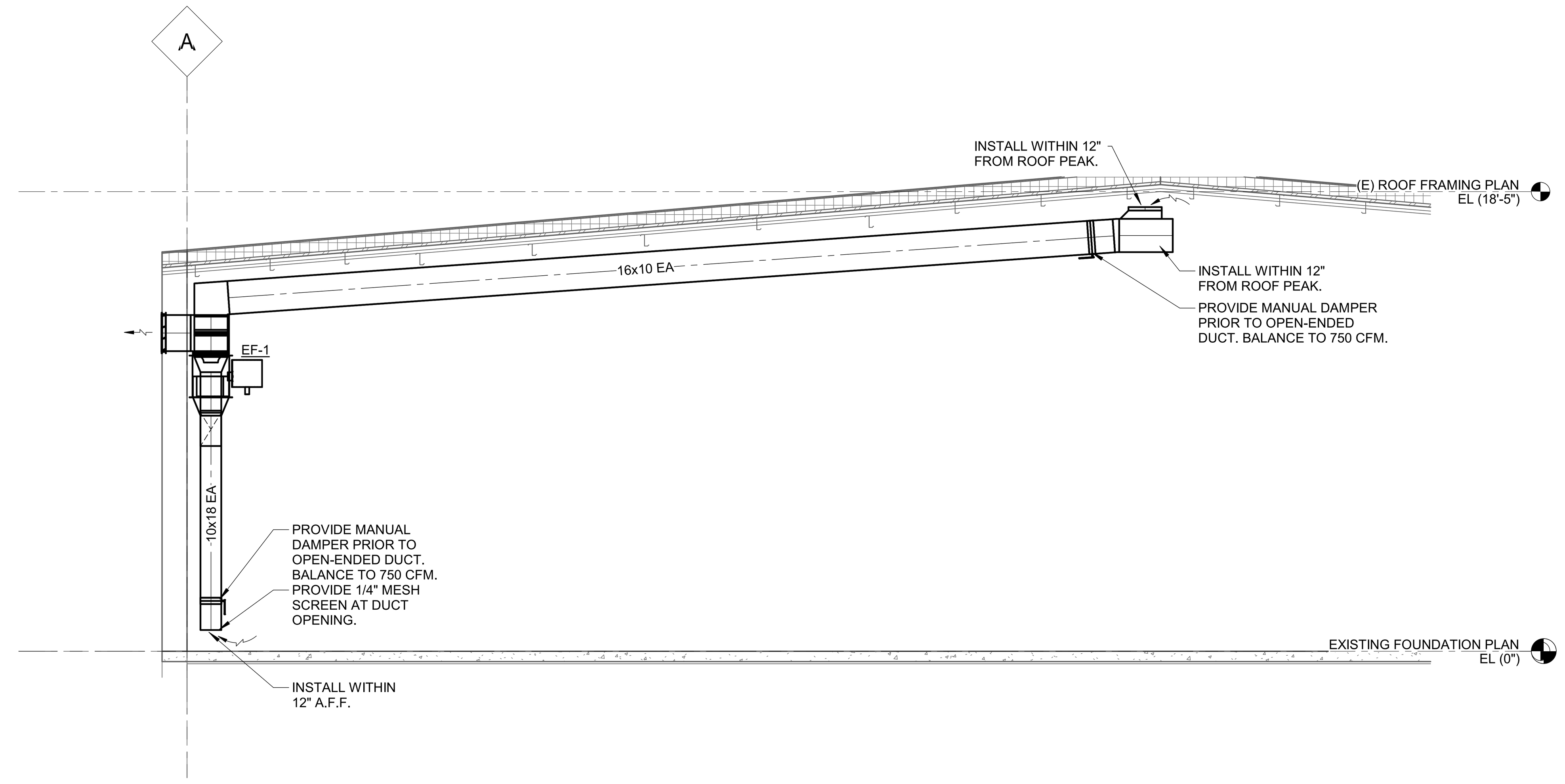
ISSUANCE 08-12-2024

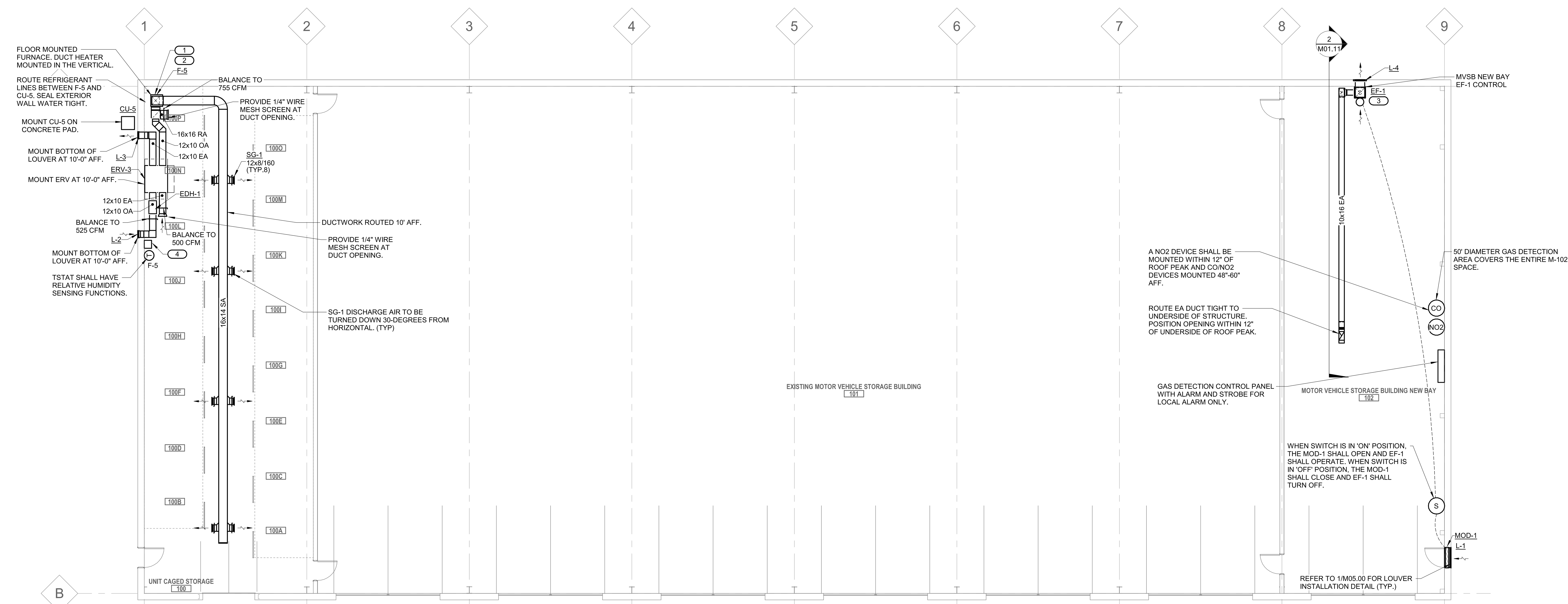
PROJECT NO: R3006.106.00

FLOOR PLAN LEVEL 1 - ARMORY - VENTILATION

M01.10



2 **Section 2**
1/4" = 1'-0"



1 **FLOOR PLAN LEVEL 1 - MVSB - VENTILATION**
1/8" = 1'-0"

GENERAL NOTES:

1. 1. MECHANICAL CONTRACTOR SHALL CONFIRM THE FURNACES AND ENERGY RECOVERY VENTILATOR OPERATE PER THE CONTROL SEQUENCES SHOWN ON M04.00 TO MEET COMMISSIONING REQUIREMENTS OF ASHRAE 90.1 (2010) PARAGRAPH 6.7.2.4.

KEYNOTES: (#)

1. NEW CONDENSATE LINES FROM THE NEW F-5 FURNACE SHALL BE DISCHARGED THROUGH THE EXTERIOR WALL TO GRADE. TERMINATE CONDENSATE PIPING AT A MAXIMUM OF 6" ABOVE GRADE. PROVIDE AND INSTALL CONCRETE SPLASHBLOCK AT CONDENSATE PIPE TERMINATION. SEAL PIPE PENETRATION THROUGH WALL AIR TIGHT.
2. REFER TO M04.00 FOR F-5 CONTROL SEQUENCE.
3. REFER TO 2/M01.11 FOR SECTION CUT OF SPACE.
4. ERV-3 SEVEN DAY PROGRAMMABLE CONTROLLER. WIRING BY M.C.

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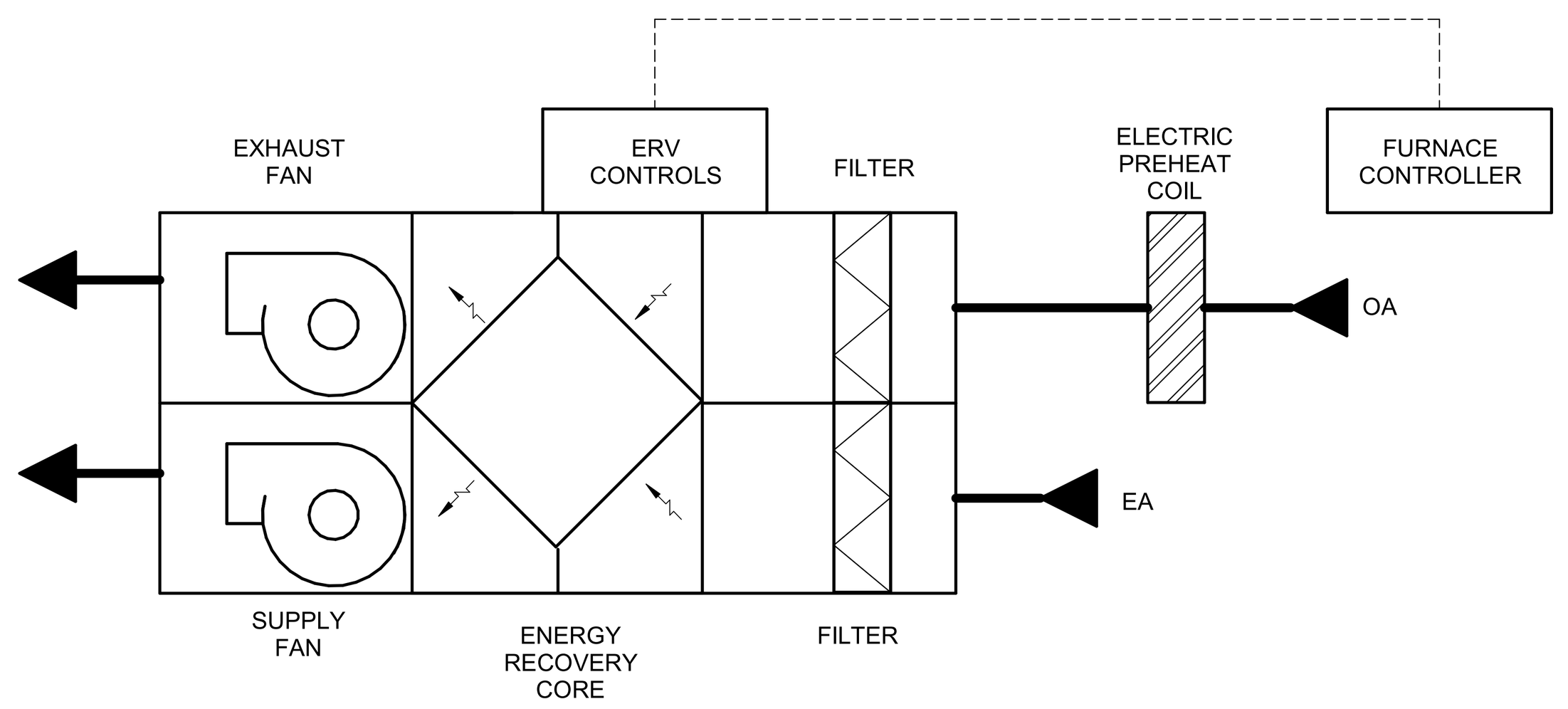
FLOOR PLAN LEVEL 1 - MVSB - VENTILATION

M01.11



ENERGY RECOVERY VENTILATOR (ERV) CONTROLS:

DESCRIPTION OF SYSTEM:
THE ENERGY RECOVERY VENTILATOR (ERV-3) SERVES THE F-5 FURNACE SYSTEM. THE ERV IS A PACKAGED UNIT CONTAINING SUPPLY AND EXHAUST FANS; OUTSIDE AIR AND EXHAUST AIR FILTERS, TOTAL ENERGY RECOVERY CORE; MOTORS AND ALL SENSORS AND CONTROL ACCESSORIES REQUIRED TO OPERATE THE UNIT AS DESCRIBED BELOW.

ALL ERV EXTERNAL SYSTEM CONTROL COMPONENTS, CONTROLLERS, SENSORS AND CONTROL FEEDERS AND RACEWAY SHALL BE INSTALLED BY THE MC.

SEQUENCE OF OPERATION:
ERV-3 SHALL BE CONTROLLED BY 7-DAY PROGRAMMABLE THERMOSTAT. UNIT SHALL OPERATE AND PROVIDE TEMPERED OUTDOOR AIR IN THE SCHEDULED OCCUPIED MODE. UNIT SHALL BE TURNED OFF AND FACTORY DAMPERS BE CLOSED IN THE SCHEDULED UNOCCUPIED MODE.

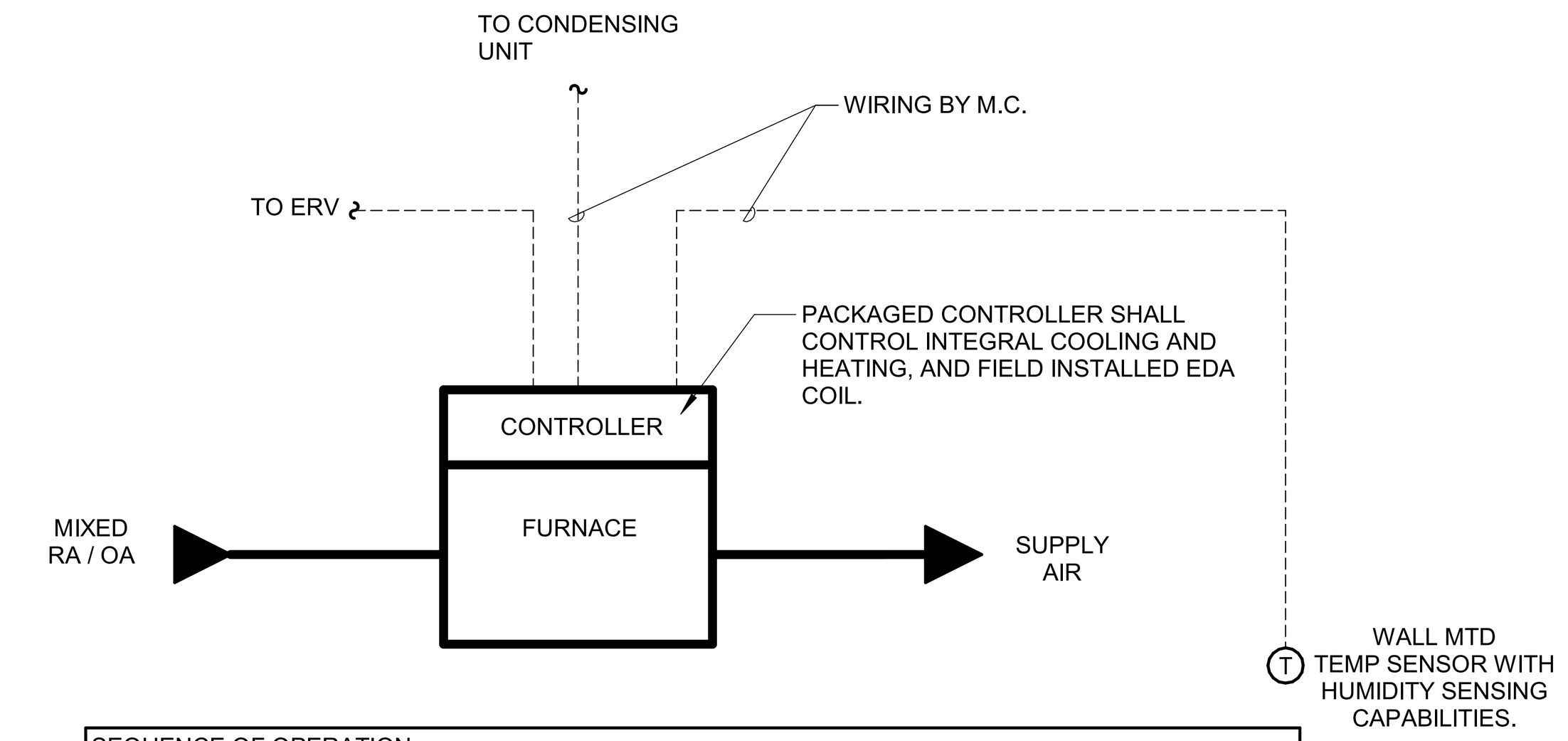
PROGRAMMABLE THERMOSTAT SHALL HAVE AN OVERRIDE OPTION FOR SWITCHING TO 'OCCUPIED MODE' OUTSIDE OF PRESET OCCUPANCY SCHEDULE.

WHEN COMMANDED TO OPERATE, ERV SUPPLY AND EXHAUST FANS SHALL BE TURNED ON TO OPERATE AT A CONSTANT VOLUME.

DEFROST CONTROL:
DUCT MOUNTED HEATING COIL (EDH-1) IS UTILIZED TO PREVENT FROSTING OF THE ENERGY RECOVERY CORE. WHENEVER THE DUCT MOUNTED OUTDOOR AIR TEMPERATURE SENSOR SENSES OUTDOOR AIR 10F (ADJ) OR COLDER, THE ELECTRIC HEATING COIL SHALL PRE-HEAT THE OUTDOOR AIR TO PREVENT FROST BUILD UP ON THE CORE.

UNOCCUPIED MODE:
WHENEVER THE 7-DAY PROGRAMMABLE THERMOSTAT IS IN UNOCCUPIED MODE, THEN THE ERV AND THE SUPPLY AND EXHAUST FANS SHALL BE TURNED OFF AND DAMPERS CLOSED.

1 ERV - ENERGY RECOVERY UNIT CONTROLS
NO SCALE



SEQUENCE OF OPERATION:

DESCRIPTION OF SYSTEM:
THE FURNACE IS A PACKAGED UNIT ALL SENSORS AND CONTROL ACCESSORIES REQUIRED TO OPERATE THE UNIT SHALL BE PROVIDED BY THE MANUFACTURER.

OPERATING CONTROLS:

PROVIDE LOW VOLTAGE, SEVEN-DAY PROGRAMMABLE THERMOSTAT TO CONTROL BURNER AND CONDENSING UNIT OPERATION BASED ON A CALL FOR HEATING OR COOLING. ERV-1(E) HAS AN EXISTING 7-DAY TIMECLOCK TO OPERATE DURING OCCUPIED MODE. FURNACE FANS SHALL BE PROGRAMMED WITH THE SAME SCHEDULE TO HAVE THE FURNACE FANS OPERATE DURING OCCUPIED MODE. DURING UNOCCUPIED MODE, FANS SHALL BE OFF UNLESS THERE IS A CALL FOR HEATING/COOLING.

PROGRAMMABLE THERMOSTAT SHALL HAVE AN OVERRIDE OPTION FOR SWITCHING TO 'OCCUPIED MODE' OUTSIDE OF PRESET OCCUPANCY SCHEDULE.

THERMOSTAT SHALL INCLUDE SYSTEM SELECTOR (HEAT-COOL-OFF) AND FAN CONTROL (ON-AUTO)

HEATING MODE:
HEATING SECTION SHALL MAINTAIN A SPACE TEMPERATURE SETPOINT OF 68F IN OCCUPIED MODE AND 55F IN OCCUPIED MODE.

COOLING MODE:
DX COOLING SHALL MAINTAIN A SPACE TEMPERATURE SETPOINT OF 75F. IN OCCUPIED AND UNOCCUPIED MODE.

DEHUMIDIFICATION MODE:
THE FURNACE SHALL MAINTAIN A MAXIMUM RELATIVE HUMIDITY OF 50% AT THE 75F DRY BULB TEMPERATURE. THE EDA HOT-GAS REHEAT COIL FROM THE FURNACE MANUFACTURER SHALL OPERATE TO REHEAT TO PREVENT SUB-COOLING AND GETTING THE SPACE TEMPERATURE CONDITION AWAY FROM THE SATURATION LINE ON THE PSYCHOMETRIC CHART.

PROVIDE HIGH LIMIT CONTROL, WITH THE FIXED STOP AT MAXIMUM PERMISSIBLE SETTING, TO DE-ENERGIZE BURNER ON EXCESSIVE BONNET TEMPERATURE AND ENERGIZE BURNER WHEN TEMPERATURE DROPS TO LOWER SAFE VALUE.

CONTROL SUPPLY FAN BASED ON BONNET TEMPERATURE INDEPENDENT OF BURNER CONTROLS. INCLUDE MANUAL SWITCH FOR CONTINUOUS FAN OPERATION.

DRAFT CONTROLS:

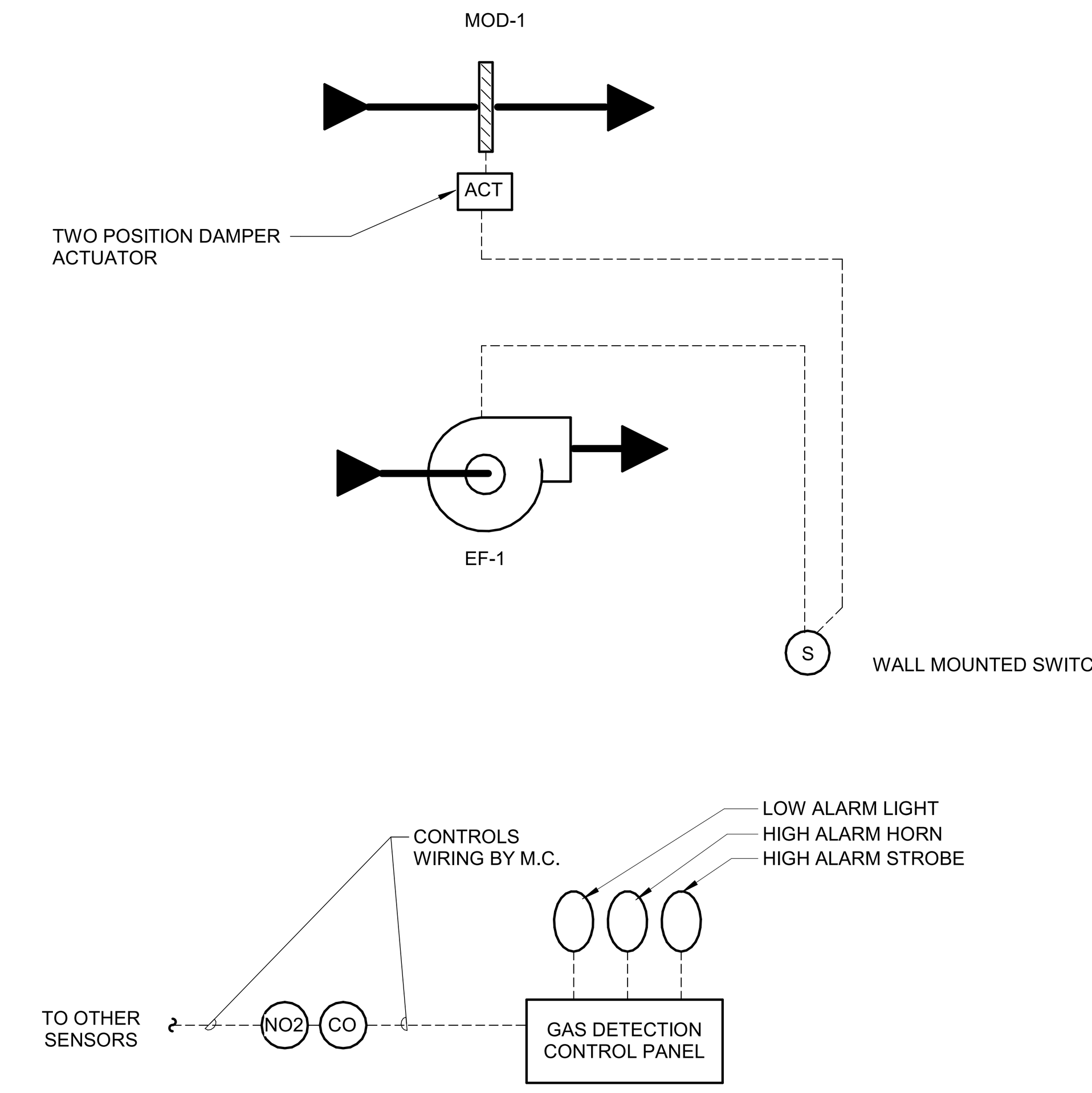
F-1 SHALL BE PROVIDED WITH A INDUCED DRAFT BLOWER. A PRESSURE SWITCH SHALL PROVE BLOWER OPERATION BEFORE ALLOWING GAS VALVE TO OPEN. DRAFT BLOWER SHALL ONLY OPERATE DURING HEATING CYCLE.

REFRIGERATION OPERATING CONTROLS:

TIMER SHALL LIMIT COMPRESSOR STARTS TO 12 PER HOUR.

INITIAL SCHEDULE:
* OCCUPIED: WEEKDAYS 6:00 A.M. (ADJ.) TO 9:00 P.M. (ADJ.)
* UNOCCUPIED: WEEKDAYS 9:00 P.M. (ADJ.) TO 6:00 A.M. (ADJ.) AND WEEKENDS.
* MANUAL OCCUPIED OVERRIDES SHALL BE USED ON DRILL WEEKENDS.

2 FURNACE F-1 CONTROL DIAGRAM
NO SCALE

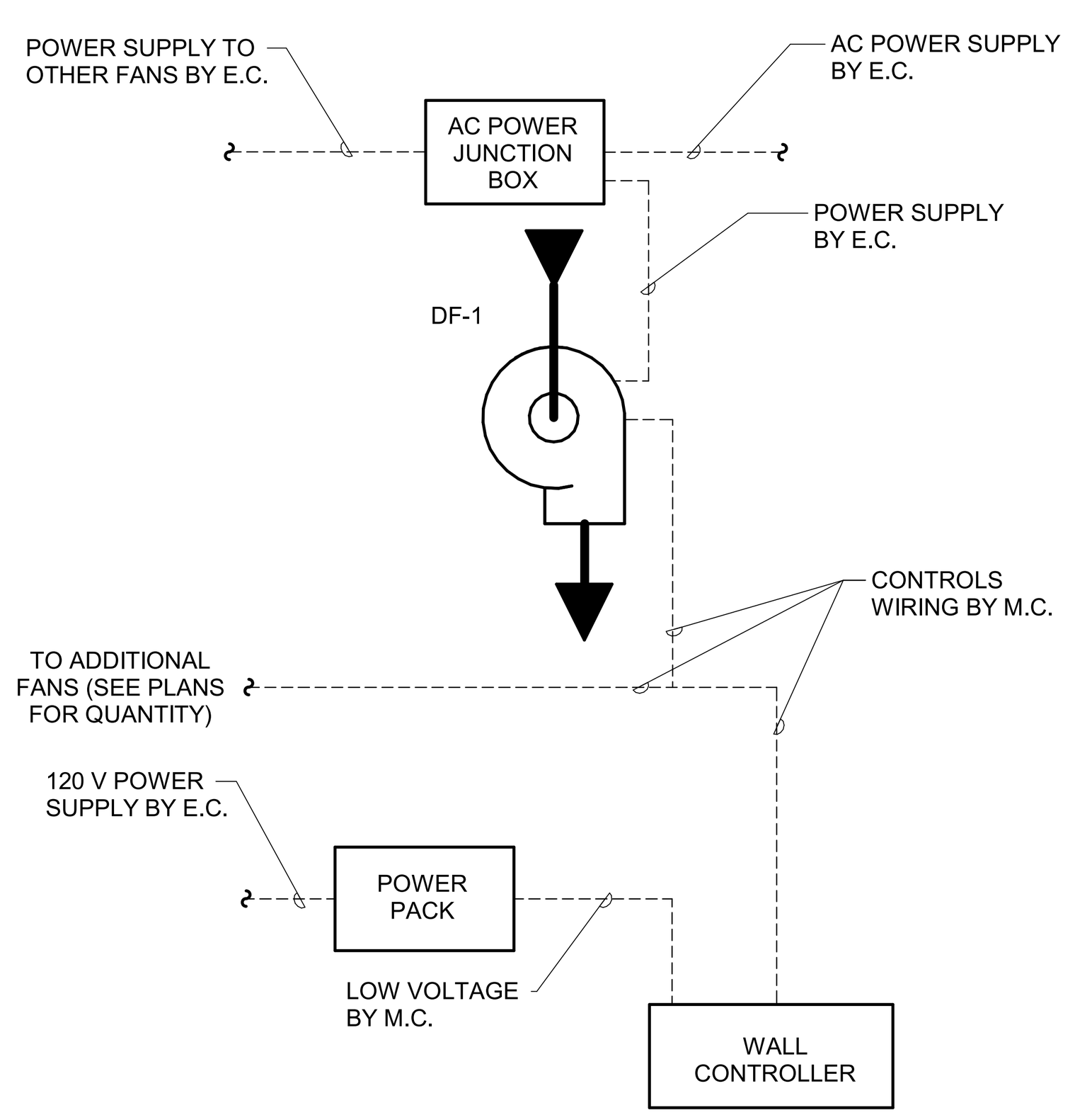


SEQUENCE OF OPERATION:
THE EF-1 IN THE NEW BAY SHALL OPERATE WHENEVER THE SPACE IS OCCUPIED AND ACTIVATED VIA WALL SWITCH BY THE OCCUPANT.

IF CARBON MONOXIDE LEVELS ARE ABOVE 50 PPM (ADJ.) OR NITROGEN DIOXIDE LEVELS ARE ABOVE 1PPM (ADJ.) THE FOLLOWING SHALL OCCUR.
- THE LOW ALARM LIGHT SHALL ILLUMINATE
- OCCUPANT IN THE SPACE SHALL ENSURE THE EF-1 MANUAL WALL SWITCH IS IN THE 'ON' POSITION.
- THE HIGH ALARM STROBE AND THE HIGH ALARM HORN SHALL BE OFF.

IF CARBON MONOXIDE LEVELS ARE ABOVE 200 PPM (ADJ.) OR NITROGEN DIOXIDE LEVELS ARE ABOVE 5 PPM (ADJ.) THE FOLLOWING SHALL OCCUR:
- THE LOW ALARM LIGHT SHALL ILLUMINATE.
- THE HIGH ALARM STROBE SHALL FLASH.
- THE HIGH ALARM HORN SHALL SOUND.
- OCCUPANT IN THE SPACE SHALL ENSURE THE EF-1 MANUAL WALL SWITCH IS IN THE 'ON' POSITION.

3 MVSB NEW BAY EF-1 CONTROL
NO SCALE



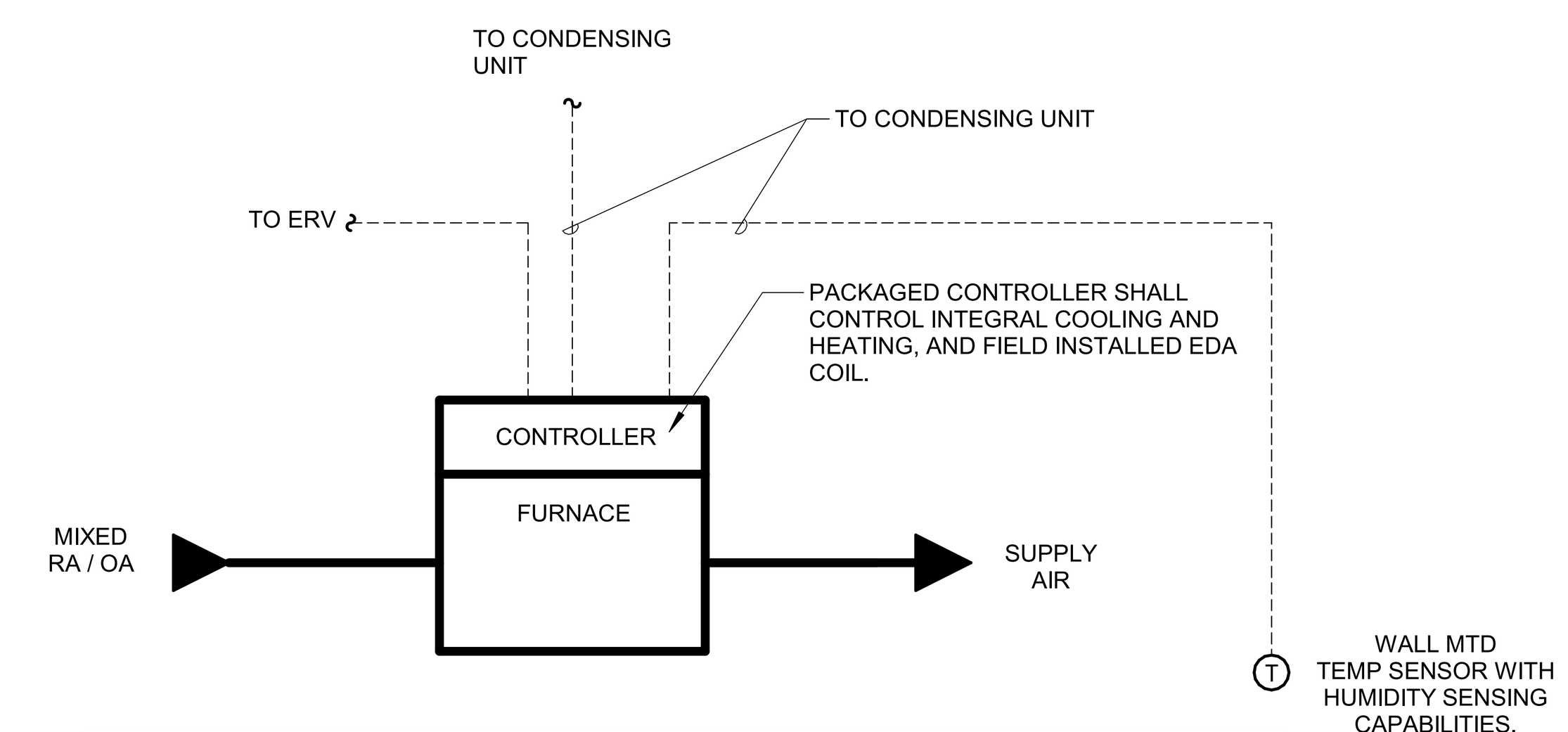
SEQUENCE OF OPERATION:

THE DRYING FANS SHALL BE CONTROLLED BY MANUFACTURER SUPPLIED CONTROLLER. REFER TO PLANS FOR LOCATION AND QUANTITY.

THE FAN CONTROLLER SHALL MODULATE THE FAN SPEED BASED ON MANUAL POTENTIOMETER MOUNTED IN THE FAN CONTROLLER CABINET.

CONTROL BASED ON ZOO FAN - H25 EC - MANUAL CONTROLLER OPTION.

4 DRYING FAN CONTROL
NO SCALE



SEQUENCE OF OPERATION:

DESCRIPTION OF SYSTEM:
THE FURNACE IS A PACKAGED UNIT ALL SENSORS AND CONTROL ACCESSORIES REQUIRED TO OPERATE THE UNIT SHALL BE PROVIDED BY THE MANUFACTURER.

OPERATING CONTROLS:

PROVIDE LOW VOLTAGE, SEVEN-DAY PROGRAMMABLE THERMOSTAT TO CONTROL ELECTRIC HEAT AND CONDENSING UNIT OPERATION BASED ON A CALL FOR HEATING OR COOLING. ERV-3 HAS A SEVEN-DAY CONTROLLER TO OPERATE DURING OCCUPIED MODE. FURNACE FANS SHALL BE PROGRAMMED WITH THE SAME SCHEDULE TO HAVE THE FURNACE FANS OPERATE DURING OCCUPIED MODE. DURING UNOCCUPIED MODE, FANS SHALL BE OFF UNLESS THERE IS A CALL FOR HEATING/COOLING.

PROGRAMMABLE THERMOSTAT SHALL HAVE AN OVERRIDE OPTION FOR SWITCHING TO 'OCCUPIED MODE' OUTSIDE OF PRESET OCCUPANCY SCHEDULE.

THERMOSTAT SHALL INCLUDE SYSTEM SELECTOR (HEAT-COOL-OFF) AND FAN CONTROL (ON-AUTO)

HEATING MODE:
HEATING SECTION SHALL MAINTAIN A SPACE TEMPERATURE SETPOINT OF 68F IN OCCUPIED MODE AND 55F IN OCCUPIED MODE.

COOLING MODE:
DX COOLING SHALL MAINTAIN A SPACE TEMPERATURE SETPOINT OF 75F. IN OCCUPIED AND UNOCCUPIED MODE.

DEHUMIDIFICATION MODE:
THE FURNACE SHALL MAINTAIN A MAXIMUM RELATIVE HUMIDITY OF 50% AT THE 75F DRY BULB TEMPERATURE. THE EDA HOT-GAS REHEAT COIL FROM THE FURNACE MANUFACTURER SHALL OPERATE TO REHEAT TO PREVENT SUB-COOLING AND GETTING THE SPACE TEMPERATURE CONDITION AWAY FROM THE SATURATION LINE ON THE PSYCHOMETRIC CHART.

PROVIDE HIGH LIMIT CONTROL, WITH THE FIXED STOP AT MAXIMUM PERMISSIBLE SETTING.

CONTROL SUPPLY FAN BASED ON BONNET TEMPERATURE INDEPENDENT OF HEATER CONTROLS. INCLUDE MANUAL SWITCH FOR CONTINUOUS FAN OPERATION.

REFRIGERATION OPERATING CONTROLS:

TIMER SHALL LIMIT COMPRESSOR STARTS TO 12 PER HOUR.

INITIAL SCHEDULE:
* OCCUPIED: WEEKDAYS 6:00 A.M. (ADJ.) TO 9:00 P.M. (ADJ.)
* UNOCCUPIED: WEEKDAYS 9:00 P.M. (ADJ.) TO 6:00 A.M. (ADJ.) AND WEEKENDS.
* MANUAL OCCUPIED OVERRIDES SHALL BE USED ON DRILL WEEKENDS.

5 FURNACE F-5 CONTROL DIAGRAM
NO SCALE

IMEG
2882 106TH STREET
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REF. SCALE IN INCHES 0 1 2 3
PROJECT #23002773.00

OTTUMWA MAINTENANCE BUILDING RENOVATION

CONSTRUCTION DOCUMENTS

RDG PLANNING • DESIGN

2858 N COURT STREET
OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C329O3116

IOWA ARMY NATIONAL GUARD

MECH/ ELEC/ PLUMB
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FOOD SERVICE

ARCHITECT
RDG Planning & Design
301 Grand Avenue
Des Moines, Iowa 50309
Phone: (515) 288-3141

CIVIL / LANDSCAPE
French-Reneker Associates
1501 S. Main Street
Fairfield, IA 52556
Phone: (641) 472-5145

LIGHTING

AV / IT / SECURITY

ISSUANCE 08-12-2024
PROJECT NO: **R3006.106.00**

HVAC CONTROLS

ENERGY RECOVERY SCHEDULE

NOTES:
1. REFER TO DETAIL1/M04.00 FOR ERV CONTROLS.
2. UNIT SHOWN FOR BALANCING PURPOSES ONLY. REFER TO 2007 PROJECT DOCUMENTS FOR EQUIPMENT PERFORMANCE DATA.
3. EXISTING UNIT CONTROLLED VIA TIME-CLOCK. EXISTING SCHEDULE/CONTROL SHALL REMAIN AS EXISTING.

AIR HANDLING UNIT TAG NAME	AREA SERVED	TYPE	MINIMUM EFFICIENCY	OUTSIDE/SUPPLY AIR STREAM CFM	SUMMER EAT DB °F	SUMMER EAT WB °F	SUMMER LAT DB °F	SUMMER LAT WB °F	WINTER EAT DB °F	WINTER EAT WB °F	WINTER LAT DB °F	WINTER LAT WB °F	APD	RETURN/EXHAUST AIR STREAM CFM	SUMMER EAT DB °F	SUMMER EAT WB °F	SUMMER LAT DB °F	SUMMER LAT WB °F	WINTER EAT DB °F	WINTER EAT WB °F	WINTER LAT DB °F	WINTER LAT WB °F	APD	RECOVERED SUMMER MBH	RECOVERED WINTER MBH	WEIGHT (LBS)	MOTOR HP	VOLTAGE	PHASE	MINIMUM CIRCUIT AMPACITY	MAXIMUM OVERCURRENT PROTECTION	DISCONNECT BY (NOTE A)	DISCONNECT TYPE (NOTE B)	CONTROLLER/ STARTER BY (NOTE A)	CONTROLLER/ STARTER TYPE (NOTE C)	EMERGENCY POWER	MODEL	MANUFACTURER	NOTES
ERV-1(E)	SOUTH HALF OF BLDG	FIXED PLATE	60	1,705	95	78	83.4	70.6	-4.7	-5.7	42.2	34.3	0.5	1,700	78	65	87.1	70.5	68	53	21.4	21.4	0.5	124	32.3	0	2	208 V	3	20.7 A	20 A	EXISTING	NF	NOTE 3	FV	No	HE2XRT	RENEWAIRE	NOTE 2
ERV-3	UNIT CAGED STORAGE	FIXED PLATE	60%	525	93.3	76.2	81.8	69.9	-4.7	-5.7	43.5	34.8	0.5	500	78	65	87.1	70.5	68	53	21.4	21.4	0.5	13.68	32.43	182	0.5	208 V	1	10.8 A	15 A	EC	NF	MFR	FV	No	MCV500E	RUSKIN	NOTE 1

FURNACE SCHEDULE

NOTES:
1. PROVIDE WITH EDA-036C REHEAT COIL AFTER A-FRAME COILING COIL. PIPING AND EDA INSULATION FIELD INSTALLED.
2. REFER TO DETAIL 2/M04.00 FOR FURNACE CONTROLS.
3. PROVIDE WITH 7-DAY PROGRAMMABLE THERMOSTAT FOR FURNACE CONTROL. LENNOX MODEL CS7500. UNIT SHALL HAVE RELATIVE HUMIDITY SENSING AND SETPOINT CAPABILITES.
4. UNIT IS SPECIFIED AS R-410A. UNIT SHALL BE PROVIDED WITH R-454B IF EQUIPMENT IS PROCURED AFTER JANUARY 1, 2025.
5. PROVIDE FEILD FABRICATED FILTER RACK AT RETURN CONNECTION OF UNIT FOR MERV 13 FILTER.
6. UNIT SHALL BE PROVIDED WITH VARIABLE SPEED FAN CONTROLLER.

TAG NAME	AREA SERVED	EXT. S.P. IN. W.C.	FAN/BLOWER CFM (HIGH SPEED)	MAX. COIL A.P.D. IN. W.C.	HP	AIR FLOW TYPE	ELECTRICAL VOLTAGE	PHASES	DISCONNECT BY (NOTE A)	DISCONNECT TYPE (NOTE B)	CONTROLLER/ STARTER BY (NOTE A)	HEATING MINIMUM EFFICIENCY AFUE	MINIMUM OUTPUT MBH	ELEMENT KW	EVAPORATOR MAX. LAT °F	EAT DB °F	EAT WB °F	TOTAL MBH	MAX. DIMENSIONS (INCHES) LENGTH	WIDTH	HEIGHT	MANUFACTURER	MODEL	EVAPORATOR COIL MODEL	NOTES
F-1	LOCKER ROOM	0.6	1,260	0.14	0.75	UP FLOW	120 V	1	EC	NF	MFR	96	55	0	57.6	80	67	35.8	28.75	21	33	LENNOX	ML296UH090	CK40CT-48C-F	NOTES 1, 2, 3, 4, 5, 6
F-5	UNIT CAGED STORAGE	0.5	1,280	0.14	1	UP FLOW	208 V	1	EC	NF	MFR	0	51.3	15	55.3	77.3	66	35.5	54	21.5	55	LENNOX	CBK45UHVT-036	CBK45UHVT-036	NOTES 1, 2, 3, 4, 5, 6

DUCT HEATER SCHEDULE - ELECTRIC

NOTES:
1. UNIT TO PROVIDE FROST PROTECTION AT THE ENERGY RECOVERY VENTILATOR.

TAG NAME	AREA SERVED	CFM	EAT °F	LAT °F	HEATING ELEMENT NUMBER OF STAGES	TOTAL KW (QTY * KW) QTY	KW	ELECTRICAL VOLTAGE	PHASES	DISCONNECT BY (NOTE A)	DISCONNECT TYPE (NOTE B)	CONTROLLER/ STARTER BY (NOTE A)	SCCR	CONTROL TYPE	EMERGENCY POWER	MAX. DIMENSIONS LENGTH	HEIGHT	MANUFACTURER	MODEL	NOTES
EDH-1	ERV-3	525	-4.7	25.3	1	1	5	208 V	3	EC	F	MFR	5000	FV	No	1'-4"	1'-2"	INDEECO	QUA	NOTE 1

FAN SCHEDULE

NOTES:
1.PROVIDE VSPOT-10K CONTROLLER MOUNTED ON LOCKER ROOM WALL. M.C. SHALL PROVIDE CONTROL WIRING BETWEEN CONTROLLER AND DF-1
2.FAN TO BE PROVIDED WITH A BACK DRAFT DAMPER INTEGRAL TO THE UNIT, FAN HOUSING TO BE MOUNTED INLINE WITH DUCTWORK.

TAG NAME	AREA SERVED	CFM	S.P. IN. W.C.	FAN RPM (NOTE F)	DRIVE TYPE	MAX. AMCA SONES	BACKDRAFT DAMPER TYPE	ELECTRICAL (NOTE 1) MHP (NOTE E)	VOLTAGE	PHASES	DISCONNECT BY (NOTE A)	DISCONNECT TYPE (NOTE B)	CONTROLLER/ STARTER BY (NOTE A)	CONTROLLER/ STARTER TYPE (NOTE C)	MANUFACTURER	MODEL	NOTES
DF-1	LOCKER ROOM	650	0.00	2150	DIRECT	5	N/A	0.05	120	1	MFR	NF	MFR	0-10VDC	ZOO	H25 EC	NOTE 1
EF-1	MVSB NEW BAY	1500	0.75	1725	DIRECT	13.1	GRAVITY	0.5	120	1	MFR	NF	MFR	FV	GREENHECK	SQ-120	NOTE 2

CONDENSING UNIT SCHEDULE

NOTES:
1.REFER TO SPECIFICATION SECTION 23 62 13 FOR ADDITIONAL REQUIREMENTS.
2.PROVIDE FEILD FABRICATED FILTER RACK AT RETURN CONNECTION OF UNIT FOR MERV 13 FILTER.

TAG NAME	AREA SERVED	NOMINAL DESIGN TONS	REFRIGERANT	AMBIENT TEMP °F	NUMBER OF COMPRESSORS	NUMBER OF STAGES	NUMBER OF FANS	ELECTRICAL VOLTAGE	PHASES	MCA	MOCP	DISCONNECT BY (NOTE A)	DISCONNECT TYPE (NOTE B)	CONTROLLER/ STARTER BY (NOTE A)	EMERGENCY POWER	MAX. DIMENSIONS LENGTH	WIDTH	HEIGHT	WEIGHT (INCHES) DRY	MANUFACTURER	MODEL (NOTE 1)	NOTES
CU-1	F-1	3	R-410A	95.0	1	2	1	208	3	14	20	EC	NF	MFR	No	28.25	28.25	33.75	187	LENNOX	ML18XC2-036-233	NOTE 2
CU-5	F-5	3	R-410A	95.0	1	2	1	208	3	14	20	EC	NF	MFR	No	28.25	32.25	33.75	231	LENNOX	ML18XC2-036-230	NOTE 2

SCHEDULE GENERAL NOTES:

A. DISCONNECT AND CONTROLLER STARTER FURNISHED AND INSTALLED BY:
MFR = MANUFACTURER
EC = ELECTRICAL CONTRACTOR.
MC = FURNISHED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.
MFR/EC = FURNISHED LOOSE BY MANUFACTURER INSTALLED BY ELECTRICAL CONTRACTOR.
TCC = TEMPERATURE CONTROL CONTRACTOR

B. DISCONNECT TYPE:
CB = CIRCUIT BREAKER
F = FUSED
NF = NON-FUSED

C. CONTROLLER STARTER TYPE:
FV = FULL VOLTAGE
WYE = WYE-DELTA
SS = SOLID STATE (SOFT START)
MS = MANUAL STARTER
VFD = VARIABLE FREQUENCY DRIVE
VFD/B = VARIABLE FREQUENCY DRIVE WITH BYPASS
YD = WYE - DELTA

E. NO EQUIPMENT SHALL BE SELECTED ABOVE 90% OF MOTOR NAME PLATE RATING.

F. MUST BE WITHIN +/- 10% OF SCHEDULED RPM.

AIR TERMINAL SCHEDULE

NOTES:
1.REFER TO DRAWINGS FOR NECK SIZE. ALL BRANCH DUCTWORK TO AIR TERMINALS SHALL BE NECK SIZE UNLESS NOTED OTHERWISE.

TAG NAME	FACE SIZE (IN.) (NOTE 2)	TYPE	BORDER (NOTE 1)	MATERIAL	FINISH	VOLUME DAMPER REQUIRED	MANUFACTURER	MODEL	NOTES
SG-1	SEE DWG.	DOUBLE DEFLECTION	SURFACE MOUNT	ALUMINUM	WHITE	NO	TITUS	301RL	LONG FRONT BLADES

MOTOR OPERATED DAMPER SCHEDULE

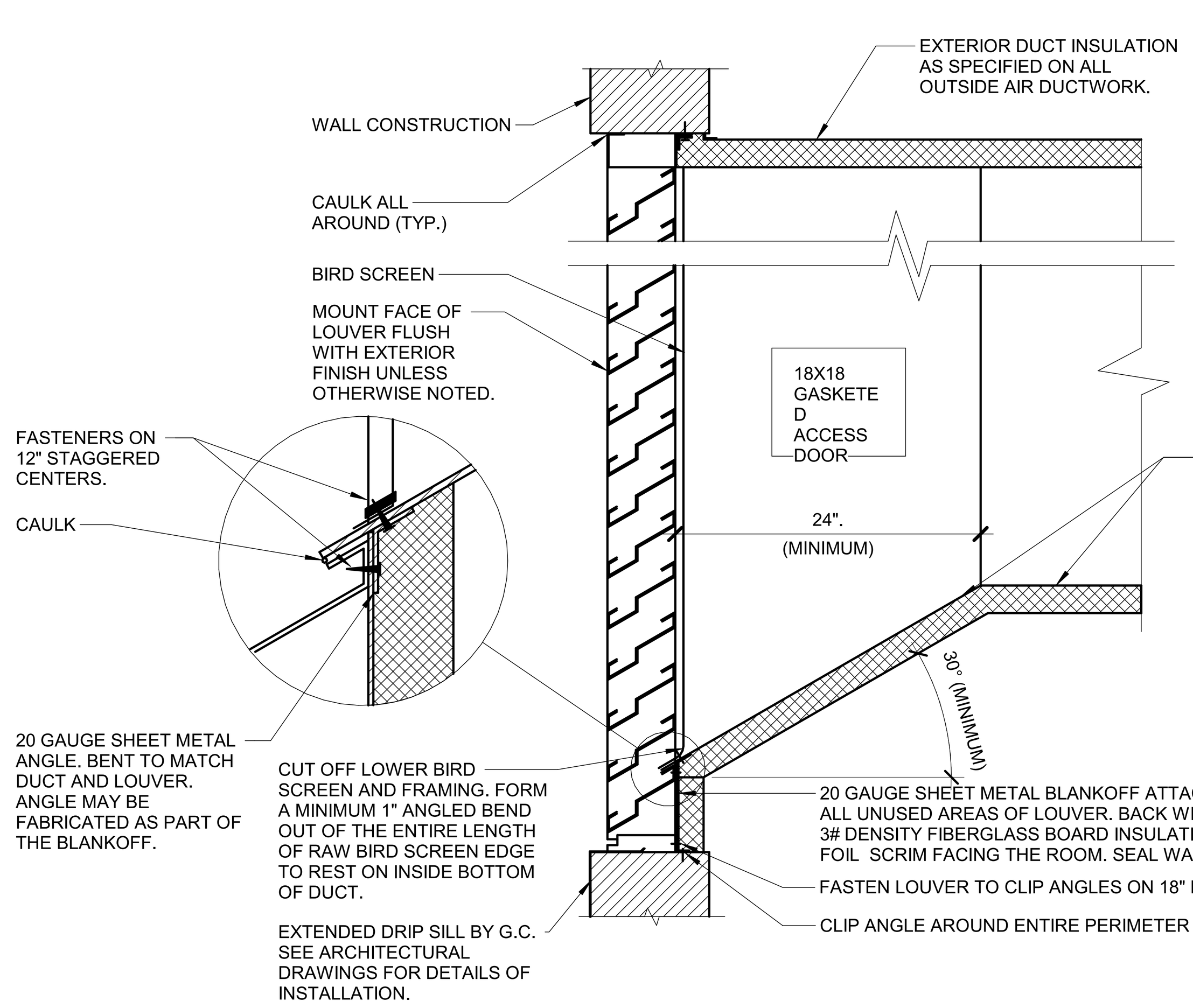
NOTES:
1.COORDINATE DAMPER ACTUATOR LOCATION AND MOUNTING REQUIREMENTS WITH ELECTRICAL CONTRACTOR.
2. DAMPER SHALL BE AMCA CLASS 1A.

TAG NAME	AREA SERVED	SIZE WIDTH	SIZE HEIGHT	CFM MAX.	BLADE CONFIGURATION	BLADE ORIENTATION	INSULATED	ACTUATOR TYPE (NOTE 1)	ACTUATOR STYLE	POWER FAILURE POSITION	POSITIVE POSITION FEEDBACK REQUIRED	NOTES
MOD-1	L-1	36	18	1500	PARALLEL	HORIZONTAL	No	ELECTRIC	TWO POSITION	NORMALLY CLOSED (NC)	No	NOTE 2

LOUVER SCHEDULE

NOTES:
1.FINISH TYPES: TYPE 6 - PVDF (KYNAR 500, HYLAR 5000, OR DURANAR). STANDARD COLOR - SELECTION BY ARCHITECT.

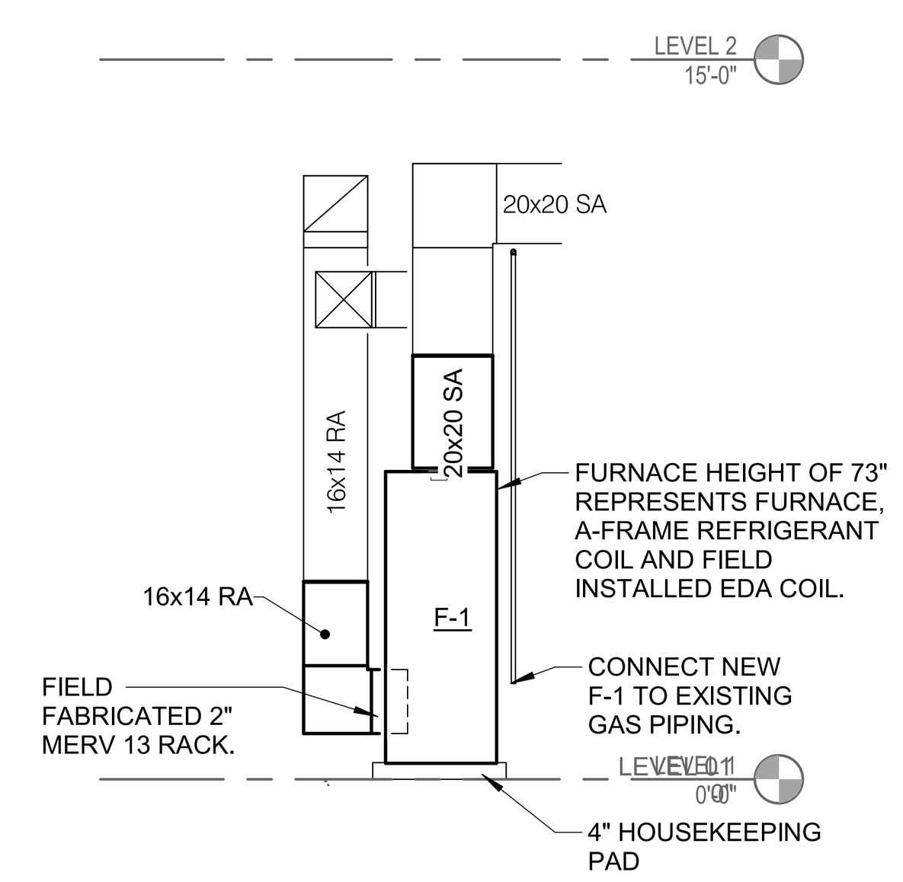
TAG NAME	AREA SERVED	CFM	SIZE (INCHES) WIDTH	SIZE (INCHES) HEIGHT	FREE AREA VELOCITY	S.P. IN. W.C.	FINISH (NOTE 1)	MANUFACTURER	MODEL	NOTES
L-1	MVSB NEW BAY	1500	36	18	900	0.08	TYPE 6	RUSKIN	ELF375	
L-2	UNIT CAGED STORAGE	525	12	18	900	0.18	TYPE 6	RUSKIN	ELF375	
L-3	UNIT CAGED STORAGE	500	12	18	1200	0.25	TYPE 6	RUSKIN	ELF375	
L-4	MVSB NEW BAY	1500	18	18	1800	0.20	TYPE 6	RUSKIN	ELF375	



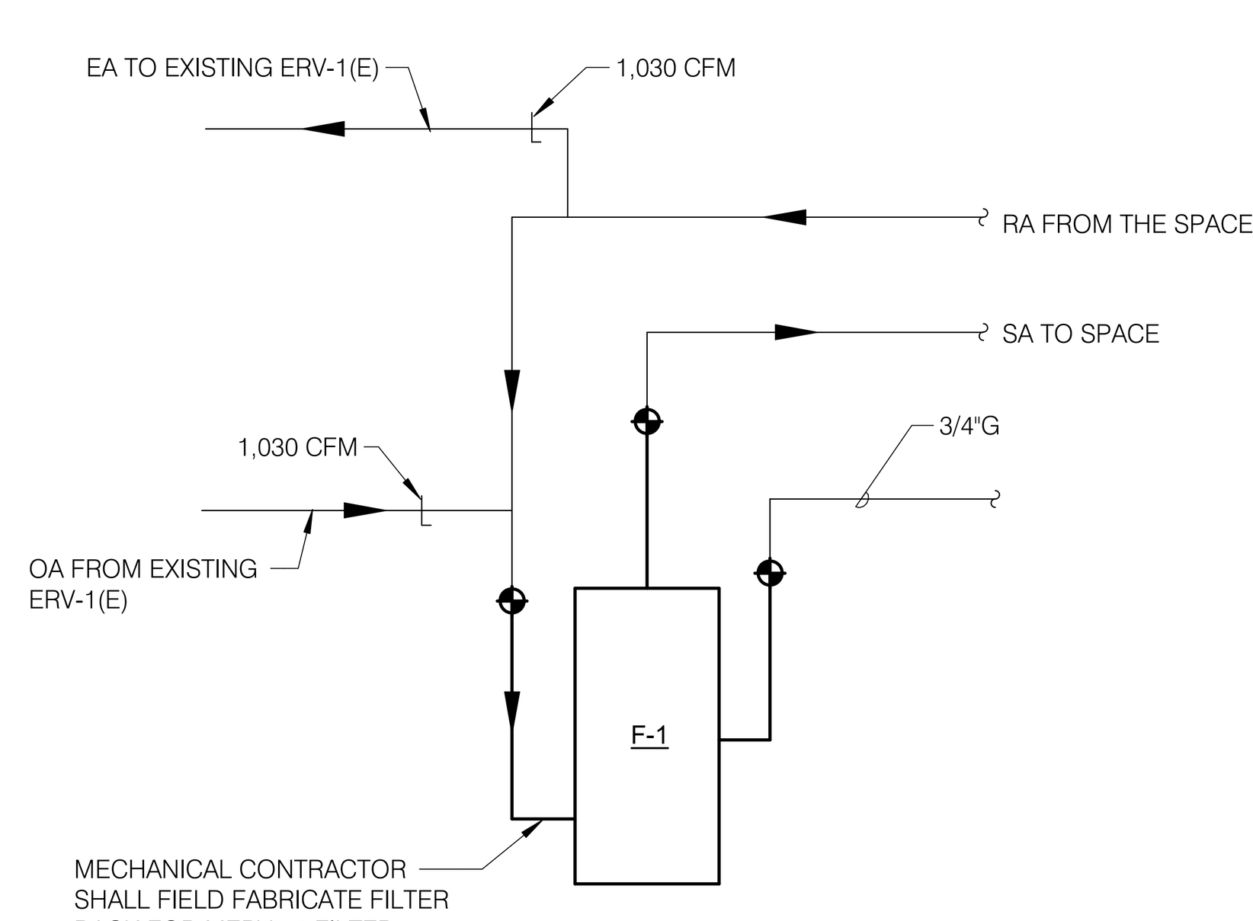
1 LOUVER INSTALLATION
NO SCALE

NOTES:

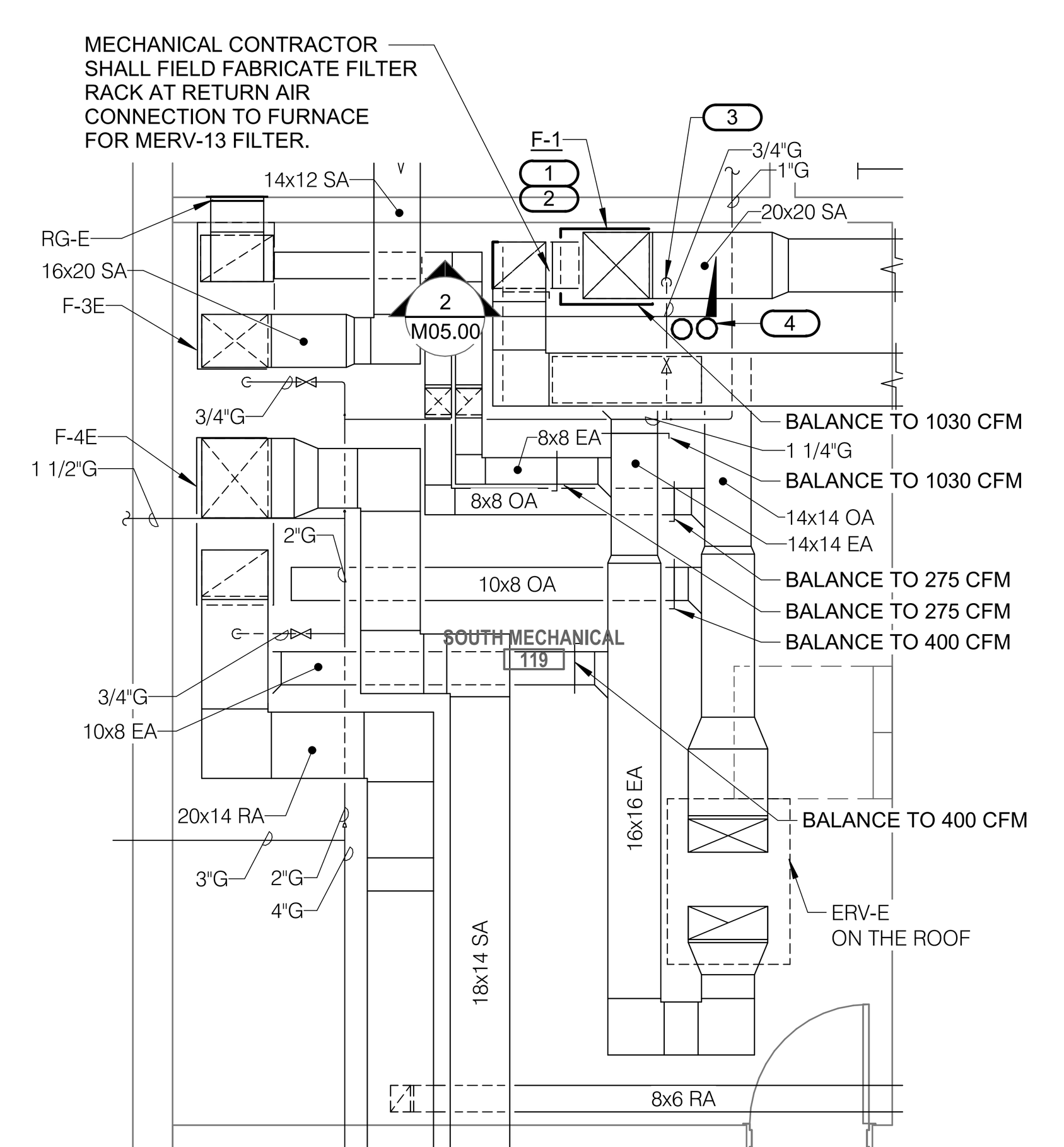
1. SEAL ALL JOINTS ON BOTTOM INTERIOR SURFACE OF DUCT WITHIN 6'-0" OF THE LOUVER WATER TIGHT.
2. MOUNT BOTTOM OF INTAKE LOUVERS AT LEAST 40" ABOVE GRADE OR ROOF ELEVATION TO MINIMIZE CHANCES OF SNOW DRIFTING INTO THE LOUVER.
3. CAULK SHEETMETAL SCREWS WHERE THEY PENETRATE METAL.



2 F-1 SECTION VIEW
NO SCALE



3 FURNACE (F-1) DETAIL
NO SCALE



4 ENLARGED PLAN - MECHANICAL ROOM
1/4" = 1'-0"

KEYNOTES: #

1. INSTALL NEW FURNACE F-1, AS SHOWN ON THE DRAWING. RECONNECT EXISTING DUCTING AND GAS AND CONDENSATE PIPING TO THE FURNACE. REFER TO 3/M05.00 FOR FURNACE (F-1) DETAIL.
2. REFER TO M04.00 FOR FURNACE CONTROL SEQUENCES. F-1 SUPPLY FAN SHALL OPERATE DURING OCCUPIED HOURS TO DISTRIBUTE THE OA FROM ERV-1(E) TO THE SPACE.
3. MECHANICAL CONTRACTOR SHALL CONNECT EXISTING GAS LINE TO THE NEW FURNACE F-1.
4. NEW REFRIGERANT LINES UP TO CU-1 ON ROOF. REFER TO 2/M01.10 FOR ROOF MOUNTED CONDENSER DETAIL. REFER TO 3/M01.10 FOR PIPE ROOF PENETRATION DETAIL.

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REF. SCALE IN INCHES
PROJECT #23002773.00

CONSTRUCTION DOCUMENTS

OTTUMWA MAINTENANCE BUILDING RENOVATION

2858 N COURT STREET
OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C32903116

IOWA ARMY NATIONAL GUARD

RDG PLANNING • DESIGN
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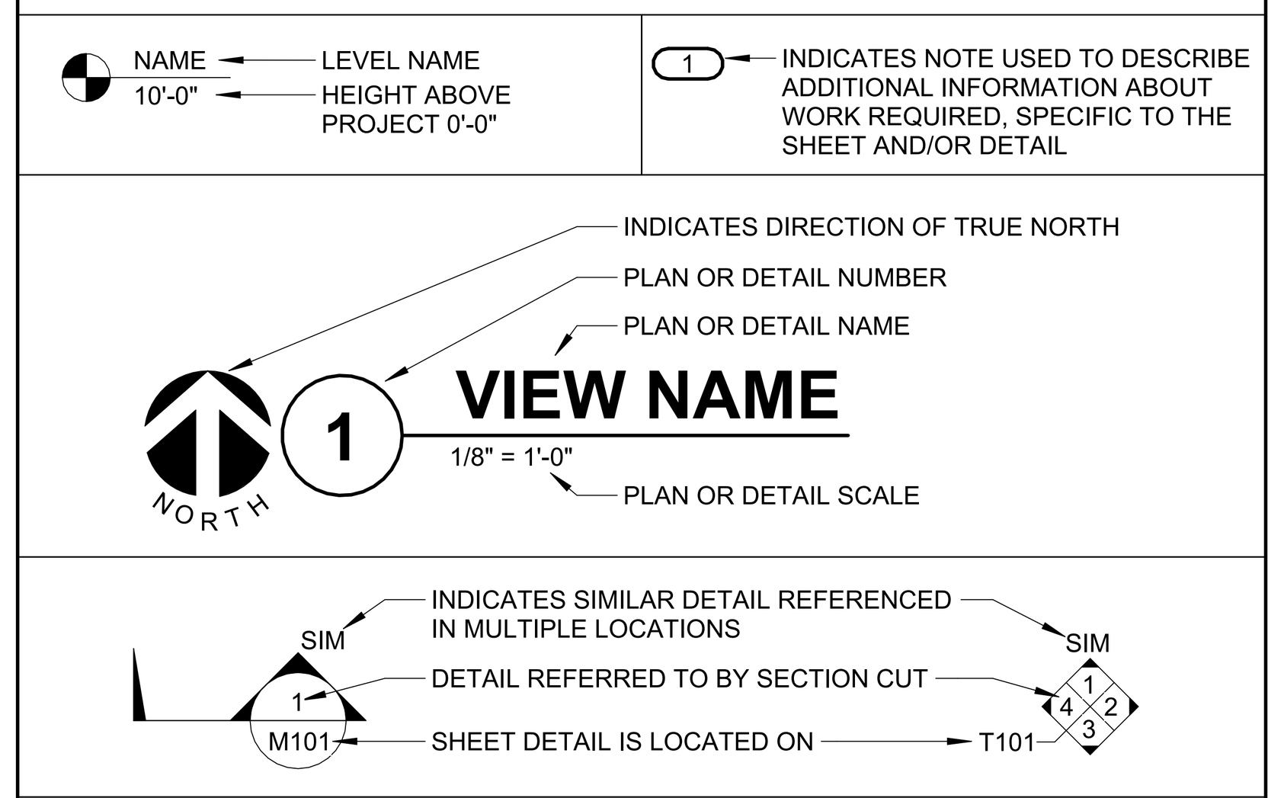
STRUCTURAL
CIVIL / LANDSCAPE
FOOD SERVICE
LIGHTING
AV / IT / SECURITY

ISSUANCE 08-12-2024
PROJECT NO. R2006.106.00

HVAC SCHEDULES AND DETAILS

M05.00

VIEW KEY



LINE TYPE AND TAG KEY:

NEW WORK BY THIS CONTRACTOR (WIDE LINE)
- NEW
- EXISTING TO BE REMOVED (SHORT DASHED PATTERN)
- NEW UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

EXISTING TO REMAIN OR WORK BY OTHERS (NARROW LINE)
- EXISTING
- EXISTING TO BE REMOVED BY OTHERS (SHORT DASHED PATTERN)
- EXISTING UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

HALFTONING DOES NOT MODIFY SCOPE.

'TAG'-E — TAGS WITH DASH 'E' INDICATES THE REFERENCED OBJECT IS EXISTING

TAG-1 — UNDERLINED TAG INDICATES OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL INFORMATION IS AVAILABLE IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST

INDICATES AN EXISTING SYSTEM'S POINT OF CONNECTION/REMOVAL

APPLICABLE CODES

CONTRACTOR SHALL COMPLY WITH APPLICABLE CODES AND LOCAL AMENDMENTS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

BUILDING CODE:	IBC 2015 EDITION
FIRE CODE:	IFC 2021 EDITION
PLUMBING CODE:	UPC 2021
MECHANICAL CODE:	IMC 2021 EDITION
ELECTRICAL CODE:	NFPA 70 (NEC) 2020 EDITION
LIFE SAFETY CODE:	NFPA 101 2021 EDITION
ENERGY CONSERVATION CODE:	ASHRAE 90.1 (2010)
LOCAL BUILDING CODE:	CURRENT EDITION

CONTACT PERSONS:

DESCRIPTION:	PERSON:
PROJECT MANAGER	NATE JACQUES
MECHANICAL	NATE JACQUES
ELECTRICAL	ZACH ROSS

ELECTRICAL SYMBOL LIST

SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
E / E	ECONN	26 05 33	ELECTRICAL CONNECTION
J / J	JB	26 05 33	JUNCTION BOX
	PANEL '###'	26 24 16	PANELBOARD - SURFACE MOUNT
	MX-#/MS-# /CB-#/CS-#	26 24 19	MANUAL SWITCH / STARTER / COMBINATION STARTER/ CIRCUIT BREAKER. REFER TO DISC/STA SCHEDULE
	DS-#/FDS-#/DSS-#	26 28 16	DISCONNECT. REFER TO DISC/STA SCHEDULE
	REC-DUP-GFI	26 27 26	DUPLEX GFI RECEPTACLE, 125V
W	REC-DUP-WP	26 27 26	DUPLEX GFI WEATHERPROOF RECEPTACLE 125V

ELECTRICAL SYMBOL LIST

SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
COMMON AND SEQUENCE OF OPERATION SUBSCRIPTS			SUBSCRIPTS: TYPE / PROGRAMMING # = 15, 30, 75, 110, 177 CANDELA RATING
H # / H #	FA-140	28 31 00	FIRE ALARM HEAT DETECTOR BLANK = COMBINATION RATE OF RISE / FIXED TEMP
F	FA-130	28 31 00	FIRE ALARM MANUAL PULL STATION
	FA-200	28 31 00	FIRE ALARM VISUAL ALARM DEVICE, CEILING OR WALL MOUNT # = CANDELA RATING.
F # / F #	FA-210	28 31 00	AUDIO HORN/CHIME ALARM DEVICE, CEILING OR WALL MOUNTED
	FA-211	28 31 00	COMBINATION AUDIO HORN/CHIME AND VISUAL ALARM DEVICE, CEILING OR WALL MOUNTED # = CANDELA RATING

CONTRACTOR ABBREVIATION KEY

ABBR:	DESCRIPTION:
C.C.	CIVIL CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
G.C.	GENERAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR

SEQUENCE OF OPERATION / SYSTEM INPUTS		PANEL/ANNUNCIATOR ALARM INDICATION	PANEL/ANNUNCIATOR SUPERVISORY INDICATION	PANEL/ANNUNCIATOR TROUBLE INDICATION	AUDIBLE ALARMS SEQUENCE	VISUAL ALARMS SEQUENCE
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL LOW BATTERY			X			
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL BATTERY OR CHARGER FAILURE				X		
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL ABNORMAL SWITCH OR CONTROL POSITION.			X			
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL GROUND FAULT, OPEN CIRCUIT, SHORT CIRCUIT				X		
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL AC POWER LOSS OR IRREGULARITY				X		
NOTIFICATION APPLIANCE CIRCUIT OR SLC LOOP GROUND FAULT, OPEN CIRCUIT, SHORT CIRCUIT				X		
INITIATING DEVICE FAILURE OR COMMUNICATION ERROR				X		
FIRE ALARM PANEL MANUAL FIRE DRILL			X		X	X
MANUAL PULL STATION	FT F	X			X	X
SMOKE DETECTOR	S #/_ S #/_	X			X	X
HEAT DETECTOR	H #/_ H #/_ H #/_	X			X	X

1 FIRE ALARM OPERATION MATRIX

NO SCALE

ELECTRICAL SYMBOL LIST

SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
S	SW-1P	26 09 33	SWITCH - SINGLE POLE
S_W	SW-1P-WP	26 09 33	SWITCH - WEATHERPROOF
S_3	SW-3W	26 09 33	SWITCH - THREE WAY
OC P	SW-OC-P-P	26 09 33	OCCUPANCY SENSOR - PASSIVE INFRARED 360 DEGREE COVERAGE
OC U	SW-OC-U	26 09 33	OCCUPANCY SENSOR - ULTRASONIC 360 DEGREE COVERAGE

ELECTRICAL SYMBOL LIST

SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
	REFER TO LUMINAIRE SCHEDULE		INDUSTRIAL LUMINAIRE
			SINGLE FACE EXIT SIGN
			EMERGENCY UNIT

ELECTRICAL EQUIPMENT TAGS

TAG:	DESCRIPTION:	RELATED SPECIFICATION
MC-#	EXTERIOR MOUNTED METERING CABINET	26 20 00

ELECTRICAL ABBREVIATION KEY

ABBR:	DESCRIPTION:
ABV	ABOVE
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ASR	ARCHITECTURAL SURFACE RACEWAY
BC	BELOW COUNTER
C	CONDUIT (BRANCH CIRCUIT OR FEEDER CONTEXT)
CO	CONDUIT AND BOX ROUGH-IN ONLY (ROUGH-IN ONLY)
EG	EQUIPMENT GROUND
EGC	EQUIPMENT GROUNDING CONDUCTOR
NC	NORMALLY CLOSED
NEMA #	NEMA RATING
NIC	NOT IN CONTRACTED SCOPE
NO	NORMALLY OPEN
ROOF	EQUIPMENT LOCATED ON ROOF ABOVE
SM	SURFACE MOUNTED
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED

CONDUIT INSTALLATION SCHEDULE

THE FOLLOWING SCHEDULE SHALL BE ADHERED TO UNLESS THEY CONSTITUTE A VIOLATION OF APPLICABLE CODES OR ARE NOTED OTHERWISE ON THE DRAWINGS. THE INSTALLATION OF RMC CONDUIT WILL BE PERMITTED IN PLACE OF ALL CONDUIT SPECIFIED IN THIS SCHEDULE. REFER TO CONDUIT AND BOXES SPECIFICATION 26 05 33 FOR ADDITIONAL INFORMATION.

INSTALLATION TYPE	RMC	EMT	PVC
FEEDERS: SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS, MOTOR CONTROL CENTERS, ETC.		X	
BRANCH CIRCUITS: LIGHTING, RECEPTACLES, CONTROLS, ETC.		X	
MECHANICAL EQUIPMENT FEEDERS: PUMPS, CHILLERS, AIR HANDLING UNITS, ETC.		X	
FLOOR MOUNTED EQUIPMENT FEEDERS: PUMPS, ETC. (INCLUDE NO MORE THAN 6 FEET OF LFMC TO PUMP)		X	
CONTROLS (LIGHTING, POWER, BUILDING AUTOMATION, ETC.)		X	
WET AND DAMP LOCATIONS: (CONDUIT, BOXES, FITTINGS, INSTALLED AND EQUIPPED TO PREVENT WATER ENTRY)	X		
ELEVATED CONCRETE SLABS (ABOVE GRADE)	X		X
INTERIOR LOCATIONS WITH FINSHED CEILING AND WALLS: CONCEALED IN WALLS AND ABOVE FINISHED CEILINGS		X	
INTERIOR LOCATIONS WITHOUT FINISHED CEILINGS: CONCEALED IN WALL, EXPOSED ABOVE CEILINGS		X	
EXISTING INTERIOR LOCATIONS WITH FINISHED CEILINGS AND WALLS: CONCEALED IN WALLS AND ABOVE FINISHED CEILING UNLESS OTHERWISE NOTED		X	
UNDERGROUND / SLABS ON GRADE (IN OR UNDER SLABS ON GRADE)			
WITHIN 5' FROM THE PERIMETER OF THE BUILDING	X		X
WITHIN 5' FROM THE PERIMETER OF THE BUILDING WHEN PASSING THROUGH THE PERIMETER OF THE BUILDING FOUNDATION:	X		
UNDERGROUND SITE CONDUITS:			
WITHIN 5' FROM THE PERIMETER OF A BUILDING FOUNDATION	X		
5' OR GREATER FROM THE PERIMETER OF A BUILDING FOUNDATION	X		X
UNDER ROADS, DRIVES, AND VEHICLE TRAVELED WAYS. WHEN HDPE DIRECTIONAL BORING IS ALLOWED: PROVIDE PRESSURIZED GROUT			X

ELECTRICAL GENERAL NOTES:

1. **{L###}** INDICATES THE LIGHTING SEQUENCE OF OPERATION FOR THE SPACE. REFER TO THE LIGHTING SEQUENCE OF OPERATION MATRIX ON SHEET E07.00.
2. SHADED LUMINAIRE OR DEVICE INDICATES LUMINAIRE OR DEVICE IS CONNECTED TO AN EMERGENCY CIRCUIT.
3. REFER TO SHEET E07.00 FOR LUMINAIRE SCHEDULE.

LUMINAIRE KEY:

LUMINAIRE
F1 = FIXTURE TAG
1 = CIRCUIT NUMBER
a = SWITCH DESIGNATION
"NL" INDICATES LUMINAIRE IS UNSWITCHED FOR NIGHT LIGHT.

*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: F1 / 1 / a / NL

DEVICE KEY:

DEVICE
# = MOUNTING (IF APPLICABLE)
1 = CIRCUIT NUMBER

*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: A / 1

ELECTRICAL MOUNTING SUBSCRIPT KEY:

A	MOUNT AT +6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH
C	MOUNT AT CEILING (DEVICE OR ROUGH-IN CONTEXT)
H	MOUNT ORIENTED HORIZONTALLY
S	SURFACE MOUNTED
W	WEATHERPROOF WIRING DEVICE, NEMA 3R WHILE-IN-USE COVER, WR LISTED

ELECTRICAL RENOVATION NOTES:

THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, LIGHTING, POWER, FIRE ALARM, AND OTHER LOW VOLTAGE SYSTEMS.

1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS. CONTRACTOR SHALL REVIEW EXISTING CONDITIONS AND REPORT CONFLICTS.
2. NOT ALL EXISTING EQUIPMENT, LUMINAIRES, AND CONDUIT ARE SHOWN. CONTRACTOR SHALL REVIEW EXISTING CONDITIONS AND REPORT CONFLICTS.
3. ELECTRICAL CONTRACTOR SHALL REVIEW EXISTING CONDITIONS TO VERIFY ACCESSIBILITY TO THE AREAS OF THEIR WORK INCLUDING WALLS, FLOOR, CEILINGS, CEILING TILES/GRID, AND ROOF. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE CUTTING, REMOVAL, PATCHING, AND REINSTALLATION OF AFFECTED AREAS ASSOCIATED WITH THEIR WORK BY COORDINATING WITH THE GENERAL CONTRACTOR OR QUALIFIED CONTRACTOR.
4. WHERE EXISTING ELECTRICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, CONDUIT, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING ELECTRICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.

ELECTRICAL INSTALLATION NOTES:

1. CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL PROVIDED. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS. BALANCE THE LOAD ON PANEL AS EVENLY AS POSSIBLE BETWEEN EACH PHASE.
2. FLUSH MOUNT ALL LIGHTING CONTROL DEVICES AT +42" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED.
3. FLUSH MOUNT ALL DUPLEX RECEPTACLES AND TECHNOLOGY OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. RECEPTACLES AND OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED. MOUNT EXTERIOR LOCATED RECEPTACLES WITH WHILE-IN-USE COVERS AT +20" FROM FINISHED GRADE (CENTER DIMENSIONS) TO MAINTAIN INSTALLATION ADA COMPLIANCE.
4. ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS.
5. MOUNT ALL FIRE ALARM PULL STATIONS AT +42" FROM FLOOR (CENTERLINE DIMENSION) EXCEPT WHERE OTHERWISE NOTED.
6. INSTALL ALL WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES AT 90" ABOVE FINISHED FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER, EXCEPT WHERE OTHERWISE NOTED. HEIGHT SHALL BE MEASURED TO THE TOP OF THE DEVICE.
7. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING MOUNTED DEVICES AND EQUIPMENT WITH LUMINAIRES, SPRINKLER, AND CEILING DIFFUSERS. CENTER ALL DEVICES IN CEILING TILE PATTERN. SMOKE DETECTORS,CARBON MONOXIDE DETECTORS, AND OCCUPANCY/VACANCY SENSORS SHALL BE LOCATED NO CLOSER THAN 3 FEET TO AN AIR SUPPLY DIFFUSER OR RETURN GRILLE. CARBON MONOXIDE DETECTORS SHALL BE LOCATED 10 PLUS FT FROM FIRE PLACES, COOKING, AND SIMILAR FUEL-BURNING APPLIANCES
8. CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION, THIS CONTRACTOR SHALL ADJUST RECEPTACLES, OUTLETS, OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
9. ELECTRICAL AND TECHNOLOGY EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF, OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT, ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.
11. CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO THE WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
12. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER ELECTRICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
13. ELECTRICAL IDENTIFICATION. REFER TO SPECIFICATION SECTION 26 05 53 FOR COLOR/LABEL REQUIREMENTS FOR CONDUIT, BOX, CABLE/WIRE, AND EQUIPMENT.

ELECTRICAL SHEET INDEX

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LIGHTING

AV / IT / SECURITY

OTTUMWA MAINTENANCE BUILDING RENOVATION

2858 N COURT STREET
OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C32903116

IOWA ARMY NATIONAL GUARD

ISSUANCE 08-12-2024
PROJECT NO: R3006.106.00

ELECTRICAL COVERSHEET

E00.00

SHEET NOTES:

1. DEMO ALL LIGHT FIXTURES WHERE SHOWN BUT EXISTING CIRCUIT AND CONTROLS SHALL REMAIN FOR REUSE WITH NEW LIGHTS.

1 DEMOLITION FLOOR PLAN LEVEL 1 - ARMORY - ELECTRICAL

1/8" = 1'-0"

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OTTUMWA MAINTENANCE BUILDING RENOVATION

2858 N COURT STREET
OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C329O3116

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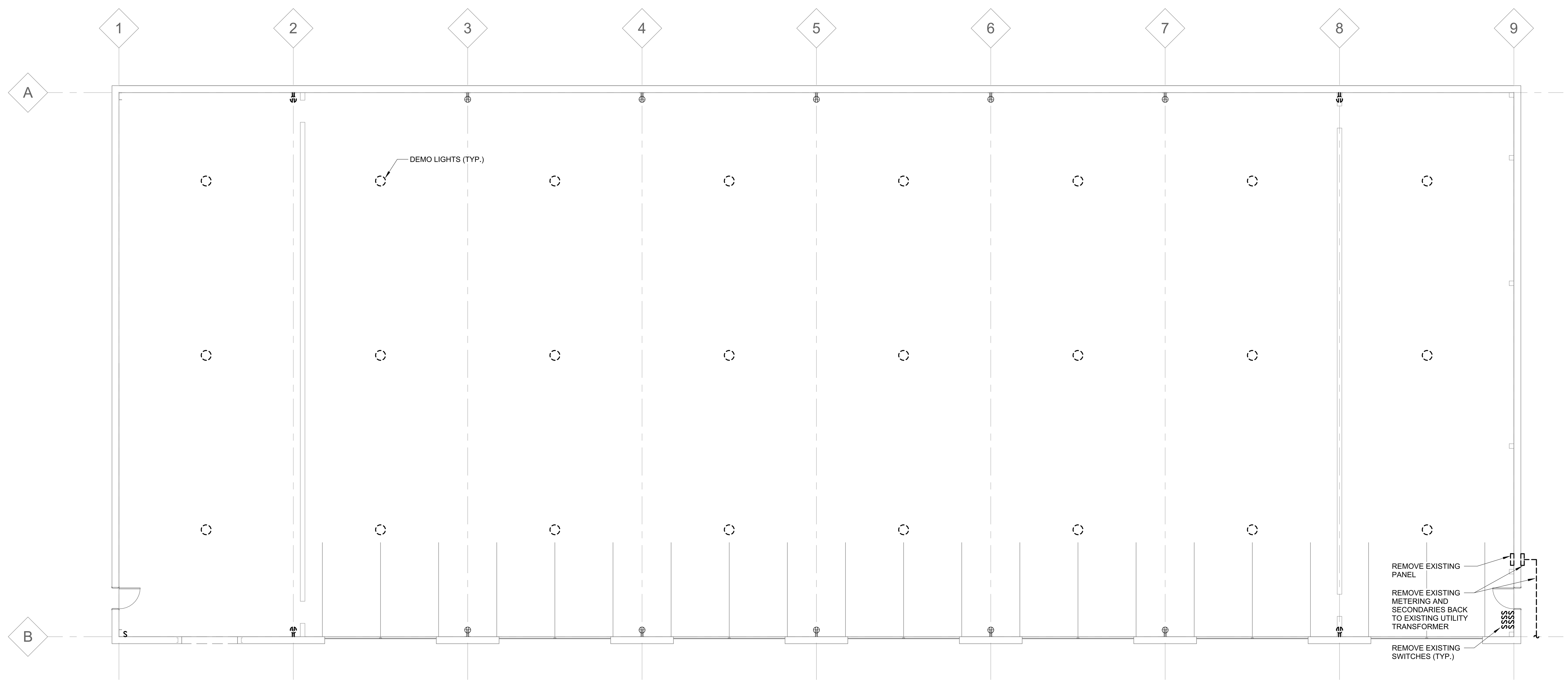
ISSUANCE	08-12-2024
PROJECT NO:	R3006.106.00

DEMOLITION FLOOR PLAN LEVEL 1 - ARMORY - ELECTRICAL

E00.10

SHEET NOTES:

1. DEMO ALL LIGHT FIXTURES WHERE SHOWN BUT EXISTING CONDUIT SHALL REMAIN FOR REUSE WITH NEW LIGHTS.



1 DEMOLITION FLOOR PLAN LEVEL 1 - MVSB - ELECTRICAL

1/8" = 1'-0"

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DEMOLITION FLOOR PLAN LEVEL 1 - MVSB - ELECTRICAL

E00.11

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SHEET NOTES:

1. LIGHTS TO BE CONNECTED TO EXISTING LIGHTING CONTROLS AND CIRCUIT, EXTEND USING 2#12 & 1#12 EGC IN 3/4" C AS NECESSARY.
2. CONNECT EXIT SIGNS AND EMERGENCY FIXTURES TO UNSWITCHED LEG OF LIGHTING CIRCUIT.

1 FLOOR PLAN LEVEL 1 - ARMORY - LIGHTING

1/8" = 1'-0"

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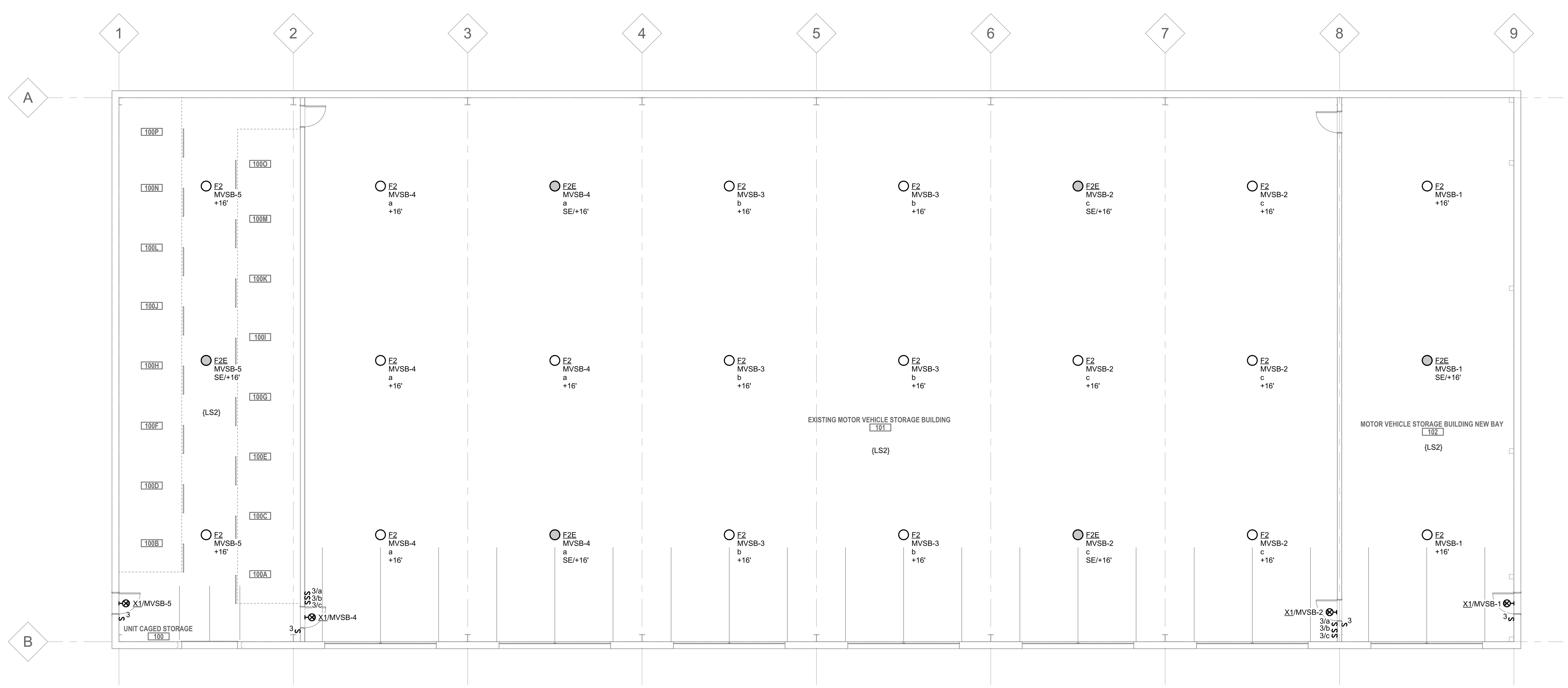
PROJECT NO: **R3006.106.00**

FLOOR PLAN LEVEL 1 - ARMORY - LIGHTING

E01.10

SHEET NOTES:

1. CONNECT EXIT SIGNS AND EMERGENCY FIXTURES TO UNSWITCHED LEG OF LIGHTING CIRCUIT.



1 FLOOR PLAN LEVEL 1 - MVSB - LIGHTING

1/8" = 1'-0"

NORTH

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OTTUMWA MAINTENANCE BUILDING RENOVATION

ISSUANCE 08-12-2024

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FLOOR PLAN LEVEL 1 - MVSB - LIGHTING

E01.11

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KEYNOTES: #

1. DISCONNECT PROVIDED BY MANUFACTURER, INSTALLED BY EC. EC SHALL PROVIDE CONTROL WIRING BETWEEN CONTROLLER AND DF-1. COORDINATE REQUIREMENTS AND LOCATIONS WITH MC.

1 FLOOR PLAN LEVEL 1 - ARMORY - POWER

1/8" = 1'-0"

NORTH

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OTTUMWA MAINTENANCE BUILDING RENOVATION

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ISSUANCE 08-12-2024
PROJECT NO: R3006.106.00

FLOOR PLAN LEVEL 1 - ARMORY - POWER

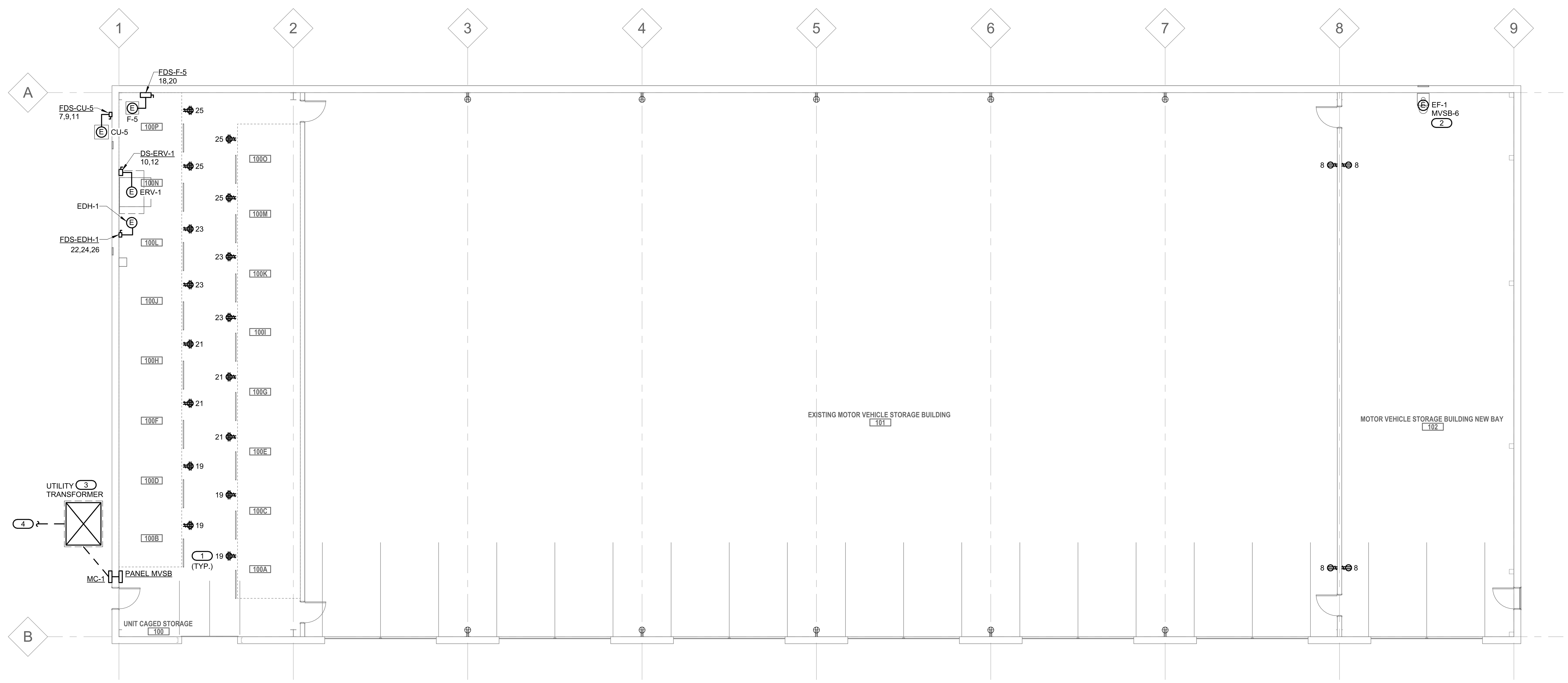
E02.10

SHEET NOTES:

1. ALL CIRCUITS SHOWN ARE CONNECTED TO PANEL MVSB. REFER TO PANEL SCHEDULES FOR ADDITIONAL INFORMATION.

KEYNOTES: (#)

1. MOUNT RECEPTACLE DIRECTLY TO CAGE FACE.
2. DISCONNECT/CONTROLLER PROVIDED BY MANUFACTURER, INSTALLED BY EC.
3. REFER TO 2/E05.00 FOR TRANSFORMER PAD DETAIL.
4. RUN (2) EMPTY 4" CONDUITS WITH PULL STRING TO PROPERTY LINE FOR NEW ELECTRICAL SERVICE PRIMARIES. COORDINATE EXACT ROUTING AND LOCATION WITH UTILITY COMPANY. APPROXIMATELY 175' FROM TRANSFORMER TO PROPERTY LINE.



1 FLOOR PLAN LEVEL 1 - MVSB - POWER

1/8" = 1'-0"

OTTUMWA MAINTENANCE BUILDING RENOVATION

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FLOOR PLAN LEVEL 1 - MVSB - POWER

E02.11

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SHEET NOTES:

1. CONNECT NEW FIRE ALARM DEVICES TO EXISTING FIRE ALARM CIRCUIT MAINTAINED FROM DEMO.

1 FLOOR PLAN LEVEL 1 - ARMORY - SYSTEMS

1/8" = 1'-0"

NORTH

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FLOOR PLAN LEVEL 1 - ARMORY - SYSTEMS

E03.10

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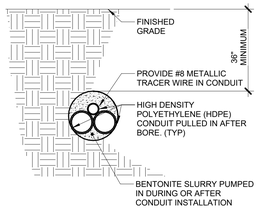
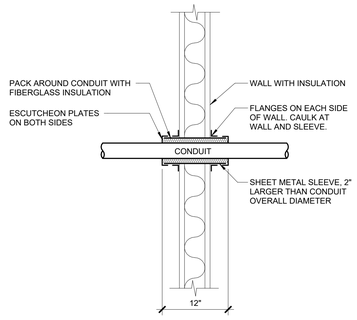
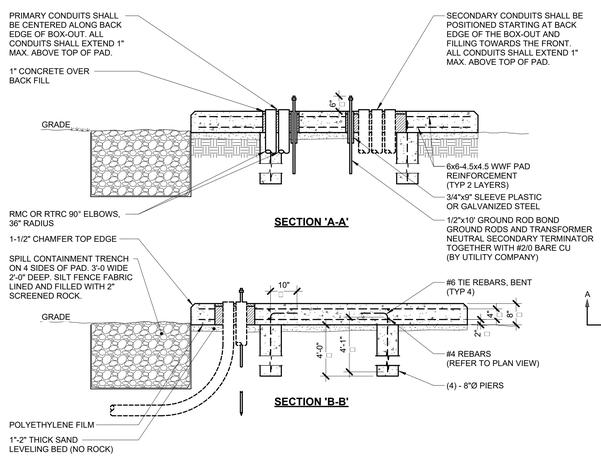


1 DIRECTIONAL BORE DETAIL
NO SCALE



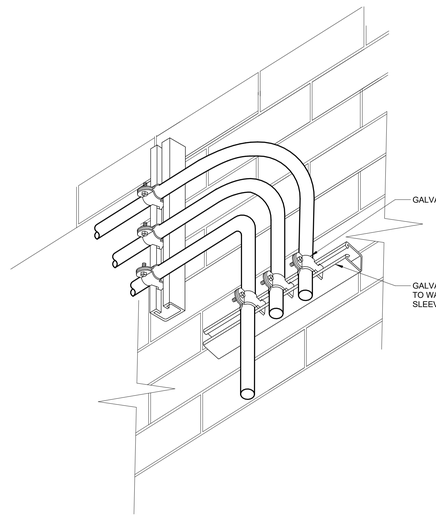
2 CONDUIT WALL PENETRATION
NO SCALE



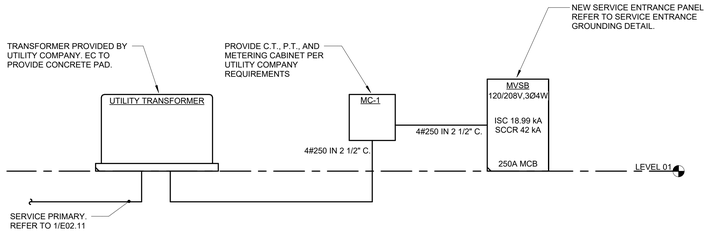
3 TRANSFORMER PAD DETAIL (75-150 KVA)
NO SCALE

NOTES:

1. CONCRETE: f'c ≥ 3500 PSI AT 28 DAYS.
2. REINFORCING STEEL: ASTM A 615-60.
3. 6x6-4.5x4.5 WELDED WIRE FABRIC (WWF): ASTM A 185.
4. SOIL: ≥ 95 PERCENT PROCTOR DENSITY OR 55 PSI PBV.
5. GENERAL CONTRACTOR TO PROVIDE TRANSFORMER PAD AS SHOWN. E.C. TO COORDINATE CONDUIT ROUGH-IN WITH G.C.
6. VERIFY FINAL REQUIREMENTS AND DIMENSIONS WITH UTILITY COMPANY.



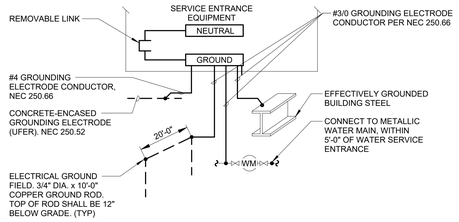
4 CONDUIT WALL SUPPORT
NO SCALE



5 RISER DIAGRAM - MVSB
NO SCALE

ELECTRICAL - RISER DIAGRAM NOTES:

1. THE RISER DIAGRAM IS INTENDED TO CONVEY THE COMPONENTS OF THE ELECTRICAL DISTRIBUTION SYSTEM. REFER TO ELECTRICAL DRAWINGS, DETAILS, DISTRIBUTION / PANEL / EQUIPMENT / EQUIPMENT CONNECTION SCHEDULES, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. SHORT CIRCUIT CURRENT RATINGS (SCCR) FOR EQUIPMENT ARE MINIMUM REQUIREMENTS FOR BUSS BRACING AND DEVICE RATING. ALL EQUIPMENT SHALL BE FULLY RATED UNLESS SPECIFICALLY NOTED AS SERIES RATED.
3. THE BASIS OF DESIGN: THE CONTRACTOR SHALL BE RESPONSIBLE FOR DERATING AND SIZING CONDUCTORS AND CONDUITS TO EQUAL OR EXCEED AMPACITY OF THE BASIS OF DESIGN CIRCUITS WHEN ALTERNATIVE METHODS OR MATERIALS OTHER THAN THE BASIS OF DESIGN ARE APPLIED.
   a. RACEWAY: EMT UNLESS OTHERWISE NOTED
   b. FEEDER CHARACTERISTICS: ALL CURRENT CARRYING CONDUCTORS SHALL BE COPPER UNLESS NOTED OTHERWISE. CONDUCTOR SIZES ARE BASED ON AMERICAN WIRE GAUGE AWG AND KCMIL THOUSANDS OF CIRCULAR MIL. REFER TO SPECIFICATION SECTION 25 05 13 WIRE AND CABLE FOR ADDITIONAL INFORMATION
   c. GROUNDING AND BONDING CONDUCTORS SHALL BE COPPER.
   d. CONDUCTORS (MOTORS): COPPER
   e. CONDUCTOR LENGTHS LISTED IN RISER DIAGRAMS AND SCHEDULES ARE FOR ENGINEERING CALCULATIONS AND SHALL NOT BE USED FOR BIDDING PURPOSES.
   f. [BLANK] OR [CU] INDICATES COPPER CONDUCTOR
4. PROVIDE GROUNDING ELECTRODE AND BONDING SYSTEM PER CODE REQUIREMENTS. PROVIDE THE FOLLOWING MINIMUM CONNECTIONS AND COMPONENTS. REFER TO SPECIFICATION SECTION 26 05 26 GROUNDING AND BONDING AND DETAILS WHEN APPLICABLE:
   a. ELECTRICAL GROUND FIELD
   b. METALLIC WATER MAIN
   c. BUILDING STEEL, EFFECTIVELY GROUNDED
   d. INTERSYSTEM BONDING TERMINAL [IBT]
5. PROVIDE O.Z. GEDNEY OR EQUAL GROUND BUSHING FOR ALL SERVICE AND FEEDER RACEWAYS BONDED TO GROUND BUS WITH CONDUCTOR SIZED TO MAXIMUM FEEDER GROUND CAPACITY.
6. CONDUCTORS AND GROUND SIZES ON THE LINE AND LOAD SIDES OF ALL DISCONNECT SWITCHES SHALL BE IDENTICAL UNLESS NOTED OTHERWISE.
7. REFER TO COVER SHEET FOR ADDITIONAL EQUIPMENT TAG INFORMATION (SPD-#, M-#, ETC).
8. REFER TO GROUNDING ELECTRODE SYSTEM AND BONDING DETAILS
   a. EGC – EQUIPMENT GROUNDING CONDUCTOR
   b. GEC – GROUNDING ELECTRODE CONDUCTOR
   c. SSBJ – SUPPLY SIDE BONDING JUMPER
9. CIRCUIT BREAKER CHARACTERISTICS AND ACCESSORIES:
   a. [CB] INDICATES CIRCUIT BREAKER
   b. [FU] INDICATES FUSED SWITCH
   c. [NF] INDICATES NON-FUSED SWITCH
   d. [MLO] INDICATES MAIN LUG ONLY
   e. [MCB] INDICATES MAIN CIRCUIT BREAKER
   f. [100% RATED] INDICATES INSULATED CASE BREAKER RATED FOR FULL CONTINUOUS CAPACITY OF CIRCUIT BREAKER NAMEPLATE
   g. [LOCK] INDICATES PADLOCK HASP
   h. [RED] INDICATES RED HANDLE
   i. [SHUNT] INDICATES SHUNT TRIP BREAKER



NOTES.

1. 1. REFER TO SPECIFICATION SECTION 26 05 26 GROUNDING AND BONDING

6 SERVICE ENTRANCE GROUNDING ELECTRODE SYSTEM DETAIL
NO SCALE

REF. SCALE IN INCHES 0 1 1 2 3

PROJECT #23002773.00

DATE PRINTED: 8/12/2024 1:17:49 PM

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LIGHTING

AV / IT / SECURITY

RDG PLANNING ● DESIGN

2858 N COURT STREET
OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C32903116

IOWA ARMY NATIONAL GUARD

OTTUMWA MAINTENANCE BUILDING RENOVATION

ISSUANCE 08-12-2024
PROJECT NO: R3006.106.00

ELECTRICAL DETAILS

E05.00

LED LUMINAIRE SCHEDULE

(DESC) DOOR:
FA - FLAT ALUMINUM
FS - FLAT STEEL
RA - REGRESSED ALUMINUM
RS - REGRESSED STEEL

FINISH:
PAF - PAINT AFTER FABRICATION
CFSA - COLOR-FINISH SELECTION BY ARCHITECT

DISTRIBUTION:
II - ANSI/IES TYPE 2 DISTRIBUTION
III - ANSI/IES TYPE 3 DISTRIBUTION
IV - ANSI/IES TYPE 4 DISTRIBUTION
V - ANSI/IES TYPE 5 DISTRIBUTION

BEAMWIDTH:
NSP - VERY NARROW SPOT
SP - SPOT
MD - MEDIUM
WD - WIDE
VWD - VERY WIDE
WW - WALL WASH

(L/L) LENS/LOUVER:
A - .125"ACRYLIC
B - BAFFLE/LOUVER
C - CLEAR ALZAK
F - FROSTED ACRYLIC
G - TEMPERED GLASS
K - KSH12 .125" ACRYLIC
K19 - KSH19 .156" ACRYLIC
M – MATTE DIFFUSE CLEAR
N - NONE
P - POLYCARBONATE
R - HIGH IMPACT DR ACRYLIC
SS – SEMI-SPECULAR CLEAR
O - OTHER (SEE DESCRIPTION)

(MTG)...
CL - CEILING SURFACE
CV - COVE
FR - FLANGED RECESSED
P - PERIMETER
PL - POLE
RE - RECESSED
SP - SUSPENDED
SU - SURFACE
UC - UNDER CABINET
WL - WALL
O - OTHER (SEE DESCRIPTION)

(WATT) PER: FIX - FIXTURE, FT - FOOT, LAMP

(TYPE) LED
LED - LIGHT EMITTING DIODE
TLED - TUBULAR LED LAMP
OLED - ORGANIC LED
DLED - DYNAMIC TUNABLE LED
O - OTHER
RGB - COLOR CHANGING LED
RGBW - COLOR CHANGING + WHITE
RGBA - COLOR CHANGING + AMBER
RLED - RETROFIT LED
WLED - WARM DIM LED

(TYPE) DRIVER:
0-10V - 0-10V DIMMING
DALI - DIGITAL ADDRESSABLE
DMX - DIGITAL MULTIPLEX
EB - ELECTRONIC
ELV - ELECTRONIC LOW VOLTAGE
EM - EMERGENCY BATTERY
HL - HIGH/LOW (100%/50%) STEP DIM
LINE - LINE VOLTAGE DIMMING
ML - MULTI-LEVEL SWITCHING
MV - MULTI-VOLTAGE ELECTRONIC
REM - REMOTE
O - OTHER (SEE DESCRIPTION)

CATALOG NUMBER SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. THE COMPLETE DESCRIPTION AND THE SPECIFICATION SHALL BE COORDINATED WITH THE CATALOG NUMBER TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN.

VERIFY AND COORDINATE ALL CEILING TYPES WITH LUMINAIRE MOUNTING AND TRIM REQUIREMENTS PRIOR TO THE RELEASE OF THE LUMINAIRE ORDER.
CONFIRM ALL COLORS AND FINISHES OF ALL LUMINAIRE COMPONENTS WITH ARCHITECT AND INTERIOR DESIGNER PRIOR TO THE RELEASE OF THE LUMINAIRE ORDER.
UNLESS INDICATED ON LIGHTING PLANS OR BELOW, REFER TO ARCHITECTURAL AND INTERIOR DESIGN ELEVATIONS, SECTIONS AND DETAILS FOR ALL SUSPENDED AND WALL MOUNTED LUMINAIRE MOUNTING HEIGHTS.

REFER TO SPECIFICATION SECTIONS LED LIGHTING 26 51 19 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
INTERIOR CORRELATED COLOR TEMPERATURE 4000K, COLOR RENDERING INDEX (CRI) AT OR ABOVE 80, UNLESS NOTED OTHERWISE.

ITEM	DESCRIPTION	L/L	MTG	DIMENSIONS				WATT		LED			DRIVER		APPROVED MANUFACTURER / SERIES
				L	W	H	DIA	MAX ANSI	PER	TYPE	QTY	DELIVERED LUMENS (MIN)	VOLTS	TYPE	
F1	LED LENSED STRIP LIGHT, DIE-FORMED COLD-ROLLED STEEL HOUSING, SQUARE FULL FROST LENS. PAF. INTEGRATED OCCUPANCY SENSOR.	O	SP	96"	3"	4"	N/A	35	FIX	LED	1	8000	120V	0-10V	COOPER METALUX SNX COLUMBIA MPS LITHONIA CLX OR PRE-APPROVED EQUAL
F2	LED ROUND HIGH BAY, ALUMINUM HOUSING, POLYCARBONATE LENS, CLEAR REFLECTOR. FINISH TO BE SELECTED BY ARCHITECT. INTEGRATED OCCUPANCY SENSOR.	O	SP CL	NA	NA	4.77"	12.98"	195	FIX	LED	1	27000	120V	0-10V	LITHONIA CPRB METALUX UHBS COLUMBIA CRB OR PRE-APPROVED EQUAL
F2E	SIMILAR TO F2 BUT WITH INTEGRAL BATTERY BACKUP.	O	SP CL	NA	NA	4.77"	12.98"	195	FIX	LED	1	27000	120V	0-10V	LITHONIA CPRB METALUX UHBS COLUMBIA CRB OR PRE-APPROVED EQUAL
EM1	EMERGENCY UNIT, TWO ADJUSTABLE LED HEADS, WHITE THERMOPLASTIC HOUSING, LITHIUM IRON PHOSPHATE BATTERY. SELF TEST & DIAGNOSTICS OF INVERTER AND LAMPS,	O	WL	11"	3 1/2"	7 1/2"	N/A	3 6	FIX	LED	2	346 546	120V	EM	DUAL-LITE EVHC LITHONIA ELM4L MULE TSR OR PRE-APPROVED EQUAL
X1	SINGLE-FACE EXIT SIGN, BRUSHED ALUMINUM DIE-CAST ALUMINUM BODY, RED LETTERS, EMERGENCY NI-CAD BATTERY INSIDE OF SIGN, UNIVERSAL ARROWS/MOUNTING. VERIFY RECESSED END, BACK OR CEILING MOUNTING AND ARROWS WITH PLANS.	O	CL WL	12"	2"	10"	N/A	4	FIX	LED	1	3 WATT LED.	120V	EM	ACUITY LITHONIA LE H.E. WILLIAMS EXIT/CA LIGHTALARMS GALAXY TX SERIES OR PRE-APPROVED EQUAL

DISCONNECT AND STARTER SCHEDULE

NOTE: ALL DISCONNECTS (EXCEPT MANUAL STARTERS) SHALL BE HEAVY DUTY TYPE.

DISCONNECT TYPE:	**ACCESSORIES & OPTIONS**	
FU - FUSED	SA - STANDARD ACCESSORIES (INCLUDES * ITEMS)	PF - PHASE LOSS PROTECTION (5 HP OR GREATER, 3 PHASE MOTOR)
NF - NON-FUSED	*CT - CONTROL TRANSFORMER, FUSED 120V	TO - MELTING THERMAL OVERLOADS (1 PHASE)
CB - CIRCUIT BREAKER	*EO - ELECTRONIC OVERLOAD (3 PHASE MOTORS)	TS - 2 SPEED SELECTOR SWITCH IN DOOR
	*HA - HAND-OFF-AUTO IN DOOR	GP - GREEN (OFF) PILOT LIGHT IN DOOR
STARTER TYPE:	*RP - RED (RUN) PILOT LIGHT IN DOOR	FA - 4-CONVERTIBLE AUXILIARY CONTACTS
FV - FULL VOLTAGE	*TA - TWO CONVERTIBLE AUXILIARY CONTACTS	EI - ELECTRICAL INTERLOCK (2)-N.O. & (2)-N.C.
YD - WYE - DELTA	S/N - INSULATED NEUTRAL ASSEMBLY	SS - START-STOP PUSHBUTTON IN DOOR
RE - REVERSING		HL - HANDLE PADLOCK HASP
TW - 2 SPEED, 2 WINDING		
SW - 2 SPEED, 1 WINDING		
RV - REDUCED VOLTAGE AUTOXFMR		
SS - SOLID STATE		
MS - MANUAL STARTER		
MX - MANUAL SWITCH		
FS - FUSED SWITCH		
AMS-ASSEMBLED MOTOR STARTER		

ITEM	DISCONNECT TYPE & RATING			VOLTAGE	POLES	STARTER		ENCLOSURE	REQUIRED ACCESSORIES & OPTIONS	COMMENTS
	TYPE	RATING	TRIP RATING			NEMA SIZE	TYPE			
MX-F-1		30 A		120 V	1	0	MX	NEMA 1		
FDS-CU-5	FU	30 A	30 A	208 V	3			NEMA 3R		
FDS-CU-1	FU	30 A	20 A	208 V	3			NEMA 1		
FDS-EDH-1	FU	30 A	20 A	208 V	2			NEMA 1		
FDS-F-5	FU	200 A	150 A	208 V	3			NEMA 1		
DS-ERV-1	NF	30 A		208 V	3			NEMA 1		

LIGHTING SEQUENCE OF OPERATION

NOTES:
1. {L##} DENOTES THE LIGHTING SEQUENCE OF OPERATIONS FOR THIS SPACE.
2. a = SWITCH DESIGNATION FOR LIGHTING CONTROL
3. VERIFY AND COORDINATE ALL PUSH BUTTON WALL DEVICES AND QUANTITIES OF INDIVIDUAL BUTTONS WITH SCENES AND ZONES PER LOCATION.

PLAN ID	LIGHTING SWITCHED
{LS1}	Sequence: Switched lights are controlled in this space. ON: The lights are turn on by occupancy sensor. OFF: After the space has been vacant for 15 minutes, the lights will automatically turn off.
{LS2}	Sequence: Switched lights are controlled in this space. ON: The lights turned on using switches. OFF: After the space has been vacant for 15 minutes, the lights will automatically turn off.

PANEL MVSB

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 250 A/3P @ UTILITY TRANSFORMER
LOCATION: UNIT CAGED STORAGE 100

SINGLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 250 A MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 42 kA
ISC: 18.99 kA

NOTES:

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
	1	LIGHTING	20 A	1	10	10	10	2.62	0.65	1.3					2.86	8	8	8	1	20 A	LIGHTING	2	
	3	LIGHTING	20 A	1	8	8	8	2.2			1.3	1.3			2.59	10	10	10	1	20 A	LIGHTING	4	
	5	LIGHTING	20 A	1	12	12	12	1					0.65	1.18	2.04	6	6	6	1	20 A	EF-1	6	
	7	CU-5	20 A	3	12	--	12	0.84	1.34	0.72					2.29	10	10	10	1	20 A	RECEPTACLES	8	
	9										1.34	1.12			1.43	12	--	12	2	15 A	ERV-1	10	
	11												1.34	1.12								12	
--	13	EAST WALL RECEPTS (EXIST)	20 A	1	--	--	--		0.72	0.72						--	--	--	1	20 A	WEST WALL RECEPTS (EXIST)	14	--
--	15	EAST WALL RECEPTS (EXIST)	20 A	1	--	--	--				0.72	0.72				--	--	--	1	20 A	WEST WALL RECEPTS (EXIST)	16	--
--	17	EXTERIOR LIGHTS (EXIST)	20 A	1	--	--	--						0.8	10	1.08	8	--	1/0	2	150 A	F-5	18	
	19	RECEPTACLES	20 A	1	12	12	12	1.18	1.44	10												20	
	21	RECEPTACLES	20 A	1	12	12	12	1.83			1.44	1.67			1.38	12	--	12	3	20 A	EDH-1	22	
	23	RECEPTACLES	20 A	1	12	12	12	2.43					1.44	1.67								24	
	25	RECEPTACLES	20 A	1	10	10	10	1.84	1.44	1.67												26	
--	27	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	SPARE	28	--
--	29	SPARE	20 A	1	--	--	--						0	0		--	--	--	1	20 A	SPARE	30	--
--	31	SPARE	20 A	1	--	--	--		0	0						--	--	--	1	20 A	SPARE	32	--
--	33	SPARE	20 A	1	--	--	--				0	0				--	--	--	1	20 A	SPARE	34	--
--	35	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	36	--
--	37	SPACE	--	1	--	--	--		--	--						--	--	--	1	--	SPACE	38	--
--	39	SPACE	--	1	--	--	--				--	--				--	--	--	1	--	SPACE	40	--
--	41	SPACE	--	1	--	--	--						--	--		--	--	--	1	--	SPACE	42	--
								Total Load:	20.00 kVA		9.61 kVA		18.20 kVA										
								Total Amps:	177.67		80.11		162.67										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC	1.176 kVA	100.00%	1.176 kVA		
HVAC Cooling Only	9.03 kVA	100.00%	9.03 kVA	TOTAL CONNECTED LOAD:	47.81 kVA
HVAC Heating Only	20 kVA	100.00%	20 kVA	TOTAL ESTIMATED DEMAND LOAD:	38.046 kVA
Lighting	5.2 kVA	100.00%	5.2 kVA	TOTAL CONNECTED AMPS:	132.71 A
Power	2.246 kVA	100.00%	2.246 kVA	TOTAL ESTIMATED DEMAND AMPS:	105.6 A
Receptacles	6.48 kVA	100.00%	6.48 kVA		
Spare	3.68 kVA	80.00%	2.944 kVA		

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES:

PANEL P1

MOUNTING: SURFACE
ENCLOSURE: NEMA 1
FED FROM: 200 A/3P CB @ MDP
LOCATION: Room 119

DOUBLE TUB
SOLID NEUTRAL
GROUND BUS

MAIN: 225 A MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
SCCR: 22 kA

NOTES: EXISTING PANEL. SQUARE-D. NEW PANEL LOADS IN BOLD TEXT.

KEY	CKT NO.	LOAD DESCRIPTION	OCPD AMPS	P	WIRE SIZE H	N	G	VD %	A		B		C		VD %	WIRE SIZE G	N	H	P	OCPD AMPS	LOAD DESCRIPTION	CKT NO.	KEY
--	1	*LIGHTING*	20 A	1	--	--	--		1.8	1.8						--	--	--	1	20 A	*LIGHTING*	2	--
--	3	*LIGHTING*	20 A	1	--	--	--				1.6	1.8				--	--	--	1	20 A	*LIGHTING*	4	--
--	5	*LIGHTING*	20 A	1	--	--	--						1.4	1.3		--	--	--	1	20 A	*LIGHTING*	6	--
--	7	*LIGHTING*	20 A	1	--	--	--		1.5	1.5						--	--	--	1	20 A	*LIGHTING*	8	--
--	9	*LIGHTING*	20 A	1	--	--	--				1.7	1.2				--	--	--	1	20 A	*RECEPTACLES*	10	--
--	11	*RECEPTACLES*	20 A	1	--	--	--						1.4	1.2		--	--	--	1	20 A	*RECEPTACLES*	12	--
--	13	*RECEPTACLES*	20 A	1	--	--	--		1	1.6						--	--	--	1	20 A	*RECEPTACLES*	14	--
--	15	*RECEPTACLES*	20 A	1	--	--	--				1.6	1.4				--	--	--	1	20 A	*F-3*	16	--
--	17	*SPARE*	15 A	1	--	--	--						0	1.4		--	--	--	1	20 A	*F-4*	18	--
--	19	*RECEPTACLES*	20 A	1	--	--	--		1.2	**0.9**					**2.57**	**12**	**12**	**12**	**1**	**20 A**	**RECEPTACLES**	**20**	**EB**
EB	**21**	**RECEPTACLES**	**20 A**	**1**	**12**	**12**	**12**	**1.68**			**0.9**	**0.4**			**1.07**	**12**	**12**	**12**	**1**	**20 A**	**DF-1**	**22**	**EB**
NB	**23**	**F-1**	**25 A**	**1**	**12**	**12**	**12**	**1.47**					**1.66**	1.4		--	--	--	1	20 A	*F-2*	24	--
--	25	*RECEPTACLES*	20 A	1	--	--	--		0.8	0.8						--	--	--	1	20 A	*RECEPTACLES*	26	--
--	27	*SP-1*	20 A	1	--	--	--				1.1	0.7				--	--	--	1	20 A	*EF-1*	28	--
--	29	*CU-1E*	35 A	3	--	--	--						2	**0.2**	**0.24**	**12**	**12**	**12**	**1**	**20 A**	**DF-1 CONTROLLER**	**30**	**EB**
	31								2	0.9						--	--	--	3	20 A	*ERV-1*	32	--
	33										2	0.9										34	
--	35	*CU-3*	35 A	3	--	--	--						2	0.9								36	
	37								2	0						--	--	--	1	20 A	*SPARE*	38	--
	39										2	0				--	--	--	1	20 A	*SPARE*	40	--
--	41	*CU-2*	30 A	2	--	--	--						1.5	0.4		--	--	--	1	20 A	*RECEPTACLES*	42	--
	43								1.5	0.4						--	--	--	1	20 A	*ARMS VAULT SECURITY*	44	--
--	45	*WH-3*	20 A	1	--	--	--				1.5	0.2				--	--	--	1	20 A	*P-1*	46	--
--	47	*P-2*	20 A	1	--	--	--						0.2	0.2		--	--	--	1	20 A	*PC/1, TC/1*	48	--
--	49	*DOOR HOLDERS*	20 A	1	--	--	--		0.6	2.7						--	--	--	2	40 A	*SSCU-1*	50	--
--	51	*SS-1*	20 A	1	--	--	--				0.2	2.7										52	
--	53	*EXISTING LOAD*	20 A	1	--	--	--						0	0		--	--	--	1	20 A	*EXISTING LOAD*	54	--
--	55	*EXISTING LOAD*	20 A	1	--	--	--		0	0						--	--	--	1	20 A	*EXISTING LOAD*	56	--
--	57	*EXISTING LOAD*	20 A	1	--	--	--				0	0				--	--	--	1	20 A	*EXISTING LOAD*	58	--
--	59	*EXISTING LOAD*	20 A	1	--	--	--						0	0		--	--	--	1	20 A	*EXISTING LOAD*	60	--
--	61	*EXISTING LOAD*	20 A	1	--	--	--		0	0						--	--	--	1	20 A	*EXISTING LOAD*	62	--
--	63	*COILING DOOR*	20 A	1	--	--	--				0	**1.68**			**0.87**	**12**	**--**	**12**	**3**	**20 A**	**CU-1**	**64**	**NB**
--	65	*SPACE*	--	1	--	--	--						--	**1.68**								**66**	
--	67	*SPACE*	--	1	--	--	--		--	**1.68**												**68**	
--	69	*SPACE*	--	1	--	--	--				--	--				--	--	--	1	--	*SPACE*	70	--
--	71	*SPACE*	--	1	--	--	--						--	--		--	--	--	1	--	*SPACE*	72	--
--	73	*SPACE*	--	1	--	--	--		--	--						--	--	--	1	--	*SPACE*	74	--
--	75	*SPACE*	--	1	--	--	--				--	--				--	--	--	1	--	*SPACE*	76	--
--	77	*SPACE*	--	1	--	--	--						--	--		--	--	--	1	--	*SPACE*	78	--
--	79	*SPACE*	--	1	--	--	--		--	--						--	--	--	1	--	*SPACE*	80	--
--	81	*SPACE*	--	1	--	--	--				--	--				--	--	--	1	--	*SPACE*	82	--
--	83	*SPACE*	--	1	--	--	--						--	--		--	--	--	1	--	*SPACE*	84	--
								Total Load:	24.68 kVA		23.58 kVA		18.84 kVA										
								Total Amps:	211.76		202.59		156.98										

LOAD SUMMARY

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	TOTALS*	
HVAC Cooling Only	5.044 kVA	100.00%	5.044 kVA		
HVAC Heating Only	1.656 kVA	100.00%	1.656 kVA	TOTAL CONNECTED LOAD:	67.10 kVA
Power	0.6 kVA	100.00%	0.6 kVA	TOTAL ESTIMATED DEMAND LOAD:	53.844 kVA
Receptacles	1.8 kVA	100.00%	1.8 kVA	TOTAL CONNECTED AMPS:	186.25 A
Spare	58 kVA	80.00%	46.4 kVA	TOTAL ESTIMATED DEMAND AMPS:	149.5 A

*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL.

CIRCUIT KEY NOTES: EB=EXISTING CIRCUIT BREAKER NB=NEW CIRCUIT BREAKER

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REF. SCALE IN INCHES PROJECT #23002773.00

CONSTRUCTION DOCUMENTS

RDG PLANNING • DESIGN

ARCHITECT | FOOD SERVICE | AV / IT / SECURITY | STRUCTURAL | LIGHTING | MECH/ELEC/ PLUMB | CIVIL / LANDSCAPE

OTTUMWA MAINTENANCE BUILDING RENOVATION

2858 N COURT STREET
OTTUMWA, IA 52501
PROJECT NO.: 19083501 CONTRACT NO.: C32903116

IOWA ARMY NATIONAL GUARD

ISSUANCE 08-12-2024
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ELECTRICAL SCHEDULES

E07.00

DATE PRINTED: 8/13/2024 1:17:30 PM