

NEW CONSTRUCTION OF
SIDNEY AIRPORT
NEW EQUIPMENT HANGAR
CITY OF SIDNEY

14833 SIDNEY-PLATTSVILLE ROAD SIDNEY, OH 45365

CITY OF SIDNEY:
201 WEST POPLAR AVENUE
SIDNEY, OH, 45365

CITY MANAGER
JON CRUSEY

FREYTAG & ASSOCIATES, INC. ARCHITECTS / ENGINEERS
ARCHITECTURAL

CONSULTANTS

NAUMAN & ZELINSKI LLC.
PLUMBING, HVAC, ELECTRICAL, FIRE PROTECTION - ENGINEERING

JEZERINAC GEERS & ASSOCIATES, INC.
STRUCTURAL ENGINEERING

CHOICE ONE ENGINEERING
CIVIL ENGINEERING

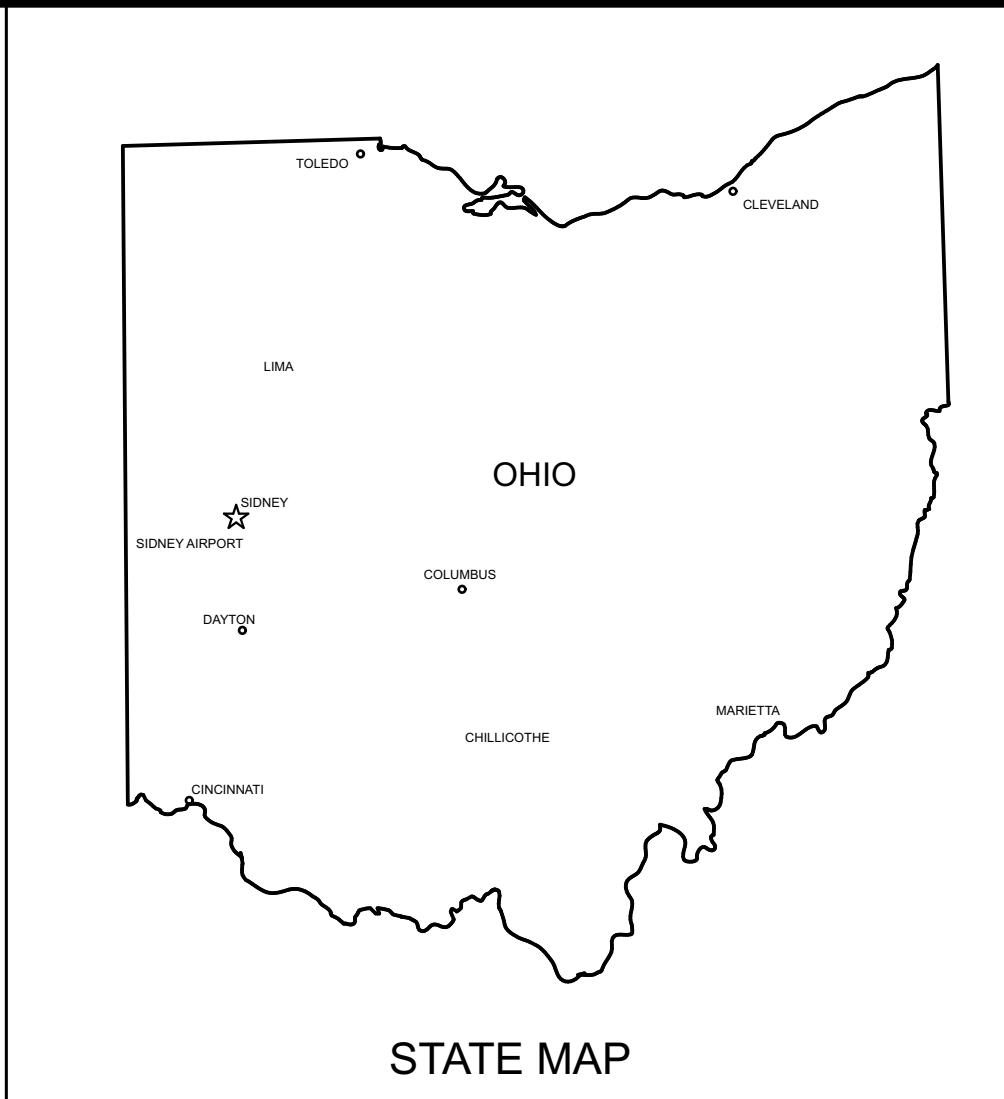
UNDERGROUND UTILITIES

Contact Two Working Days
Before You Dig


Before You Dig

OHIO811. 8-1-1. or 1-800-362-2764
(Non-members must be called directly)


VICINITY MAP


STATE MAP

GENERAL NOTES

1.

ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

2.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE WORK SPACE AND FIRE SAFETY DURING DEMOLITION AND NEW CONSTRUCTION ACTIVITIES.

3.

DURING CONSTRUCTION THE CONTRACTOR SHALL COORDINATE ALL TRADES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PROVIDING OR RELOCATING ALL ITEMS AFFECTING THIS WORK. ITEMS SHALL BE, BUT NOT LIMITED TO: EXIT LIGHTS, ELECTRICAL SERVICE, SECURITY SYSTEMS, HVAC SYSTEMS, THERMOSTAT CONTROLS, ETC. TO PROVIDE A COMPLETE AND OPERABLE INSTALLATION AND/OR SYSTEM, PER OWNER REQUIREMENTS AND SATISFACTION AND IN FULL COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

4.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL CONSTRUCTION DEBRIS.

5.

ALL VERTICAL ELEVATIONS AND WORKING POINTS ARE GIVEN WITH REFERENCE TO LEVEL ONE FINISH FLOOR ELEVATION 100'-0" DATUM. SEE CIVIL DRAWINGS FOR ACTUAL FINISH FLOOR ELEVATIONS.

6.

THE DRAWINGS ARE THE GRAPHIC PORTION OF THE CONTRACT DOCUMENTS SHOWING THE DESIGN, LOCATION, AND DIMENSIONS OF THE WORK. DO NOT SCALE THE DRAWINGS TO DETERMINE A DIMENSION IN QUESTION. CONSULT THE ARCHITECT FOR CLARIFICATION.

7.

CONTRACTOR(S) ARE TO INVESTIGATE AND VERIFY LOCATION, CONDITION, AND CAPACITY OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF WORK PRIOR TO BEGINNING CONSTRUCTION. SEE UTILITY, MECHANICAL, AND ELECTRICAL DRAWINGS FOR FURTHER INFORMATION.

8.

UNLESS NOTED OTHERWISE, ALL EXTERIOR EQUIPMENT PADS, (CONDENSING UNITS, TRANSFORMERS, ETC.) ARE INSTALLED BY THE GENERAL (LEAD) CONTRACTOR. VERIFY WITH APPROPRIATE CONTRACTOR(S) FOR REQUIRED SIZE, SLEEVES, KNOCK-OUTS, AND LOCATION. VERIFY WITH LOCAL UTILITY COMPANIES FOR ANY ADDITIONAL REQUIREMENTS (KNOCK-OUTS, ETC.) ASSOCIATED WITH EQUIPMENT PADS.

9.

ENSURE THAT ADJOINING MATERIALS, NEW OR EXISTING, ARE COMPATIBLE.

10.

SUBMIT ELECTRONIC SET OF SHOP DRAWINGS (PDF FORMAT) FOR REVIEW AND APPROVAL PRIOR TO ORDERING FOR THE FOLLOWING: CATCH BASINS, YARD DRAINS, MANHOLES, DOORS, FRAMES, HARDWARE, REINFORCING STEEL, METAL STUDS, GYPSUM BOARD FIRE-STOPPING/FIRE-SAFING, EQUIPMENT, FIRE SUPPRESSION, MISC. STEEL, INSULATION, AND/OR ANY FINISH MATERIALS. SHOP DRAWINGS ARE TO LIST SIZES, MATERIALS, CONFIGURATIONS AND ANY POWER, WATER OR CONNECTION REQUIREMENTS. SHOP DRAWINGS SHALL INCLUDE ANY CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS AS NECESSARY TO EVALUATE THE MATERIAL OR SYSTEM. SEE SPECIFICATIONS FOR ADDITIONAL SHOP DRAWING REQUIREMENTS.

ABBREVIATIONS

ABBREVIATIONS USED ON DRAWINGS IN GENERAL ARE LISTED BELOW. REFER TO CSI DOCUMENT TD 2-4 FOR ANY ABBREVIATION USED ON THE DRAWINGS BUT ARE NOT LISTED BELOW

AB

ANCHOR BOLTS

AC

AIR CONDITIONING

AFF

ABOVE FINISHED FLOOR

ALT.

ALTERNATIVE

ALUM.

ALUMINUM

AP

ACCESS PANEL

APPROX

APPROXIMATE

ARCH

ARCHITECT(URAL)

AWG

AMERICAN WIRE GAUGE

BD

BOARD

BLDG

BUILDING

BLK

BLOCK

BLKG

BLOCKING

BOS

BOTTOM OF STEEL

BRG

BEARING

B.T.U.

BRITISH THERMAL UNIT

CFM

CUBIC FEET PER MINUTE

CL

CENTERLINE

CLG

CEILING

CLR

CLEAR

CMU

CONCRETE MASONRY UNIT

CO

CLEANOUT

COL

COLUMN

CONC

CONCRETE

CT

CERAMIC TILE

C/C

CENTER TO CENTER PENNY (NAILS, ETC.)

DBL

DOUBLE

DET

DETAIL

DF

DRINKING FOUNTAIN

DIA / Ø

DIAMETER

DIM

DIMENSION

DS

DOWNSPOUT

EA

EACH

EIFS

EXTERIOR INSULATION AND FINISH SYSTEM

ELEC

ELECTRIC(AL)

EQ

EQUAL

EQUIP

EQUIPMENT

EXP

EXPANSION

FD

FLOOR DRAIN

FDN

FOUNDATION

FE

FIRE EXTINGUISHER

FH

FIRE HYDRANT

FIN

FINISH

FIN FLUFF

FINISH FLOOR

FIX

FIXTURE

FL

FLOOR

FTG

FOOTING

FRP

FIBER REINFORCED PANEL

GA

GAUGE

GC

GENERAL CONTRACTOR

GYP. BD.

GYPSUM BOARD

HB

HOSE BIBB

HM

HOLLOW METAL

HOR

HORIZONTAL

HW

HOT WATER

INCL

INCLUDE(D), (ING)

INV

INVERT

JST

JOIST

LLV

LONG LEG VERTICAL

LVR

LOUVER

MH

MAN HOLE

MIN

MINIMUM

MTD

MOUNTED

MTL

METAL

O.C.

ON CENTER

PEMB

PRE-ENGINEERED METAL BUILDING

REF

REFERENCE

REFG

REFRIGERATOR

SUSP

SUSPENDED

SS

STAINLESS STEEL

TOM

TOP OF MASONRY

TOS

TOP OF STEEL

UNO

UNLESS OTHERWISE NOTED

VERT

VERTICAL

VTR

VENT THRU ROOF

W/

WITH

W/O

WITHOUT

SHEET INDEX

CS

COVER SHEET

REF.

SITE SURVEY

A1.0

SITE PLAN

A1.1

CODE PLAN

A1.2

SPECIFICATIONS

A1.3

SPECIFICATIONS

A1.4

SPECIFICATIONS

A1.5

SPECIFICATIONS

A1.6

SPECIFICATIONS

A2.1

FIRST FLOOR PLAN

A4.1

EXTERIOR ELEVATIONS

A5.1

BUILDING SECTION

A6.1

WALL SECTIONS

A7.1

DOOR SCHEDULE AND DETAILS

S0.0

GENERAL STRUCTURAL INFORMATION

S1.1

FOUNDATION PLAN

S2.1

FOUNDATION DETAILS

M1.1

FLOOR PLAN

M2.1

SCHEDULES & DETAILS

E0.1

LEGENDS AND SCHEDULES

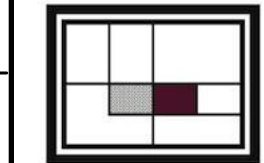
E0.2

SCHEDULES AND SINGLE LINE DIAGRAM

E1.1

LIGHTING, POWER AND SYSTEMS PLAN

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RACHEL A. SCHMITTMAYER
LICENSE #2419524
EXPIRATION DATE: 12/31/2027

These designs and all items depicted herein, whether in writing or graphically, are instruments of professional service, may not be altered or changed, in any way, without the prior knowledge, and written consent of the Architect. Any change made without the Architect's written approval will void all such documents and instruments and the Architect will not be personally liable for any damage, harm or loss caused thereby.

REVISIONS

PLAN APPROVAL/BIDDING 2/25/26

COMM. NUMBER

2511

DATE

2/25/26

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LP

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RS

COVER SHEET

CS



LEGEND

- I.P.F. IRON PIN FOUND
- △ TRAVERSE POINT
- EXISTING DOWNSPOUT
- ⊗ EXISTING UTILITY POLE
- E — EXISTING UNDERGROUND ELECTRIC LINE
- O.H.E — EXISTING OVERHEAD ELECTRIC
- ⊕ EXISTING ELECTRICAL MANHOLE
- ⊞ EXISTING ELECTRICAL METER
- ⊞ EXISTING ELECTRIC TRANSFORMER
- 1025 — INDEX CONTOUR
- 1024 — INTERMEDIATE CONTOUR
- ~ BRUSH LINE



THE BEARINGS ARE BASED ON NAD 83 CORS
2011 ADJUSTMENT, OHIO NORTH ZONE, GEOID
12B, ODOT VRS CORS NETWORK



BENCHMARK #1 ELEV. 1038.81
MAG NAIL IN LIGHT POLE NORTH OF THE
SOUTHEAST MOST HANGER

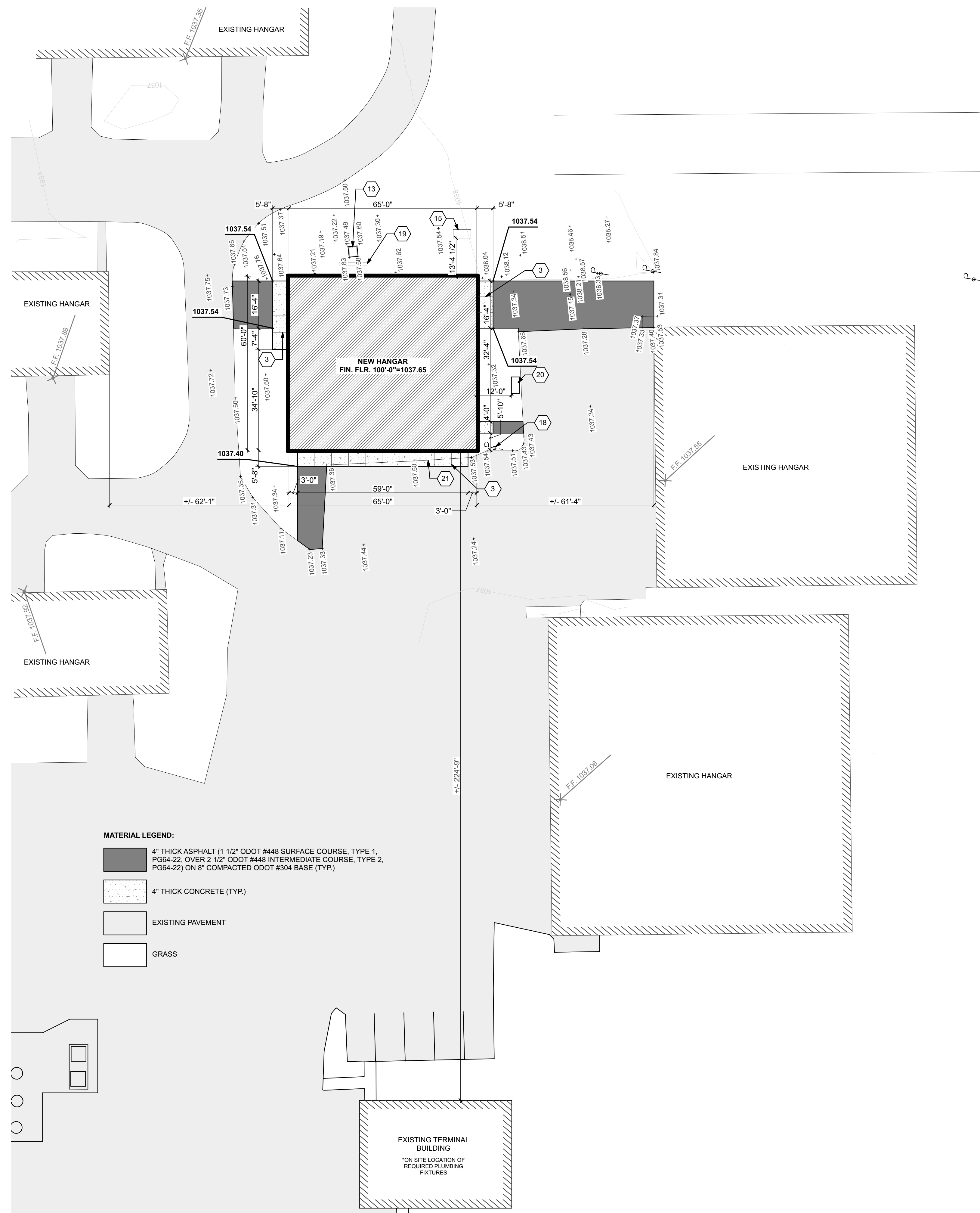
PROPERTY LINE STATEMENT

PROPERTY LINES HAVE BEEN PLACED UTILIZING READILY AVAILABLE COUNTY GIS DATA. A FULL BOUNDARY RESOLUTION WAS NOT COMPLETED.

UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. CHOICE ONE ENGINEERING MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA EITHER IN-SERVICE OR ABANDONED. CHOICE ONE ENGINEERING FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH CHOICE ONE ENGINEERING DID LOCATE AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. CHOICE ONE ENGINEERING HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

THIS SURVEY WAS COMPLETED WITHOUT A FULL TITLE SEARCH. EASEMENTS SHOWN WERE FOUND IN OUR RESEARCH OF THE PROPERTY, BUT CHOICE ONE ENGINEERING MAKES NO GUARANTEE ALL EASEMENTS ON THE PROPERTY ARE SHOWN.



PLAN KEY NOTES

PLAN NOTES ARE STD. FOR ALL
FLOOR PLANS. ALL NOTES MAY NOT
BE REFERENCED ON THIS SHEET.

1. ELECTRICAL PANEL.
2. CONCRETE SLAB SAW CUT CONTROL JOINT. PROVIDE FLOAT FINISH.
3. CONCRETE SLAB HAND TOOLED CONTROL JOINT. PROVIDE BROOM FINISH.
4. OMIT
5. 8" MINERAL WOOL INSULATION (R-28) ABOVE CONCRETE KNEE WALL.
6. 5 LB 2-A-10-B-C MULTI-PURPOSE DRY CHEMICAL WITH MOUNTING BRACKET. SEE MOUNTING HEIGHT REQUIREMENTS IN SPECIFICATIONS.
7. ISOLATION JOINT. TYPICAL AROUND COLUMN PIERS.
8. DOWNSPOUT AND SPLASH PAD
9. CONCRETE PIER, REFER TO STRUCTURAL DRAWINGS.
10. END-WALL FRAMING, REFER TO METAL BUILDING DRAWINGS.
11. RIGID FRAME, REFER TO METAL BUILDING DRAWINGS.
12. CHAIN SUSPENDED RADIANT HEATER, REFER TO MECHANICAL DRAWINGS.
13. TRANSFORMER, REFER TO ELECTRICAL DRAWINGS.
14. AIR COMPRESSOR, REFER TO MECHANICAL DRAWINGS.
15. PROPANE TANK, REFER TO MECHANICAL DRAWINGS. COORDINATE FINAL LOCATION WITH PROPANE SUPPLIER.
16. PLUMBING BELOW SLAB, REFER TO MECHANICAL DRAWINGS. PROVIDE GRANULAR BEDDING OF CRUSHED STONE OR GRAVEL, ODDT 603 TYPE 3 (#57 OR #67), OR OTHER APPROVED EQUIVALENT, IN COMPLIANCE WITH CITY OF SIDNEY REQUIREMENTS.
17. 6" WIDE TRENCH DRAIN, REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS.
18. EXISTING LIGHT POLE TO BE REMOVED BY ELECTRIC UTILITY COMPANY.
19. 8" CMU FIRE INTEGRAL WATER REPELLENT, GROUT SOLD. MINIMUM 1-HOUR FIRE RESISTANT RATED WALL FOR TRANSFORMER, VERIFY FINAL DIMENSIONS OF WALL AND DISTANCE FROM PAD AND TRANSFORMER WITH UTILITY COMPANY. REFER TO DETAIL 3/A-1.
20. VENTED SUMP, REFER TO MECHANICAL DRAWINGS.
21. REMOVE EXISTING ASPHALT AS NEEDED FOR NEW CONCRETE APRON. MEET EXISTING ASPHALT GRADE.

FLOOR PLAN GENERAL NOTES

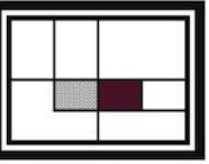
- A. FLOOR PLAN DIMENSIONS FOR EXTERIOR WALLS ARE FROM FACE OF STUD OR FOUNDATION.
- B. DOOR FRAME LOCATED 4" FROM WALL AT HINGE SIDE, UNLESS NOTED OR DIMENSIONED OTHERWISE.
- C. THE BASE FLOOR ELEVATION INDICATED FOR THE PROJECT IS 100'-0". REFER TO SITE PLAN FOR CORRELATION TO USGS DATUM.
- D. PROVIDE CONTINUOUS FOUNDATION INSULATION AROUND THE ENTIRE PERIMETER OF THE BUILDING. REFER TO WALL SECTIONS FOR DETAIL..
- E. REFER TO DETAILS FOR TYPICAL COMMON CONTROL JOINTS AND EXPANSION JOINT DETAILS.
- F. REFER TO SHEET A7.1 FOR DOOR SCHEDULE.
- G. SEE SPECIFICATIONS FOR DOOR HARDWARE SETS.
- H. RESEED ANY GRASS AREAS DISTURBED DURING CONSTRUCTION PER THE SPECIFICATIONS.
- I. PROVIDE METAL BLOCKING AS NEEDED FOR ALL EQUIPMENT AND DEVICES.
- J. REPAIR ANY EXISTING ASPHALT DAMAGE DURING CONSTRUCTION.
- K. CONTRACTOR TO VERIFY UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

LEGEND

REFER TO WALL SECTIONS AND
DETAILS FOR WALL CONSTRUCTION

- | | |
|---|--|
|  | KEY NOTE, SEE ABOVE |
|  | DOOR OPENING, REFER TO DOOR SCHEDULE ON SHEET A7.1 |
|  | DETAIL NUMBER |
| | DETAIL / ELEVATION DESIGNATION |
|  | SHEET NUMBER |
|  | EXISTING UTILITY POLE |
|  | NEW GRADE ELEVATION |
|  | EXISTING GRADE ELEVATION |

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Reckel Schmetzger

RACHEL A. SCHMITMEYER
LICENSE #2418524
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REVISIONS

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COMM. NUMBER	DATE
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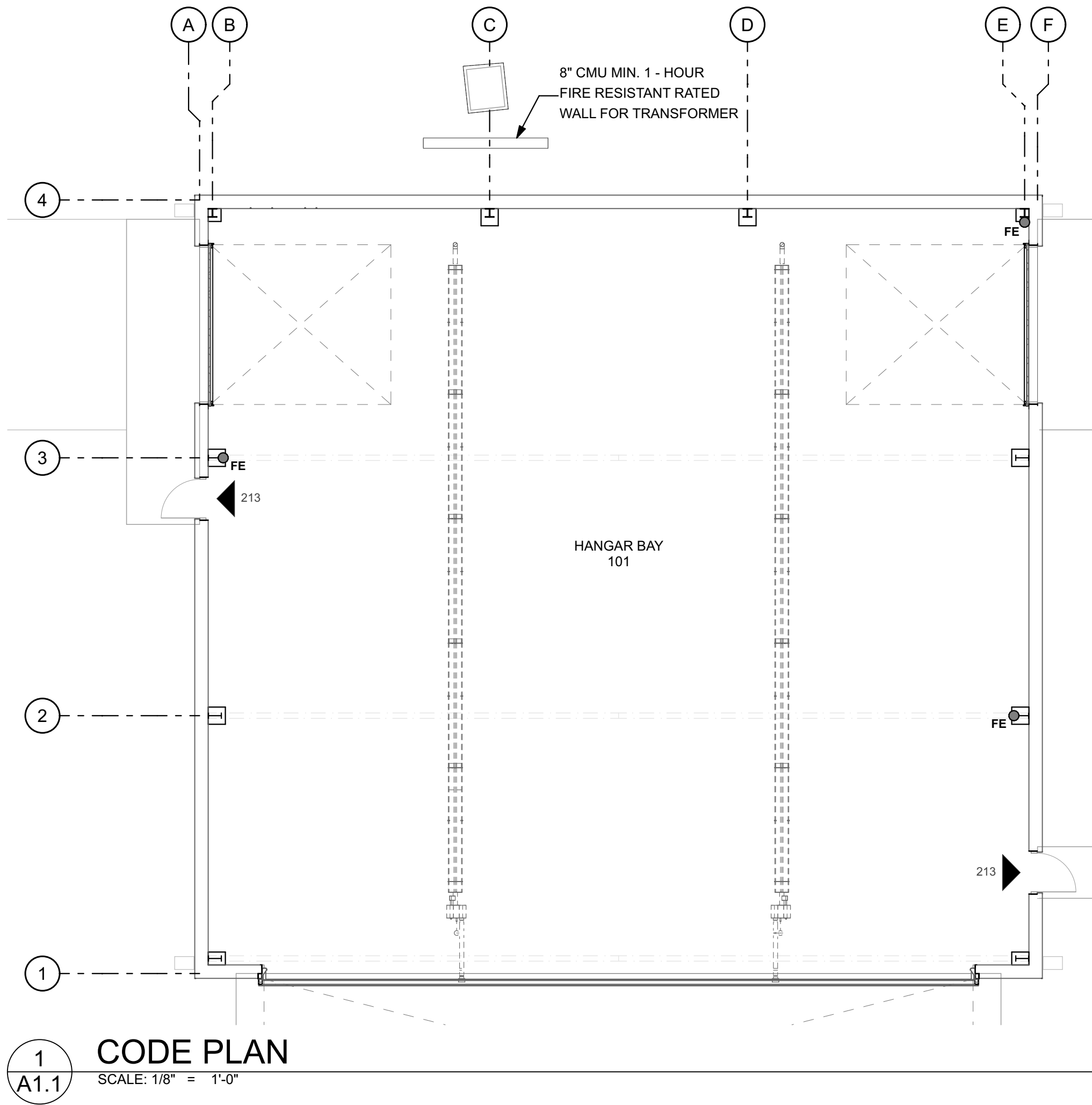
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LP	RS
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SITE PLAN

A1.0



LEGEND

EGRESS ### - OPENING CAPACITY

2-A RATED FIRE EXTINGUISHER,
REFER TO FLOOR PLAN A2.1

OHIO BUILDING CODE INFORMATION

	S-1 OCCUPANCY
TYPE OF CONSTRUCTION	TYPE II B
ALLOWABLE HEIGHT TABLE 504.3 (NS)	55'
ALLOWABLE STORIES TABLE 504.4 (NS)	2 STORIES
ALLOWABLE AREA TABLE 506.2 (NS)	17,500 SF
ACTUAL HEIGHT	30'
ACTUAL STORIES	1 STORY
ACTUAL AREA	3,900 SF

- CODE EDITIONS 2024 OBC, 2024 OMC, 2024 OPC
- MAXIMUM EXIT ACCESS TRAVEL DISTANCE PER TABLE 1017.2 OBC = 200 FT

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS TABLE 601 AND TABLE 602. REFER TO SITE PLAN FOR FIRE SEPERATION DISTANCES.		
TYPE II B		
PRIMARY STRUCTURAL FRAME		0 HRS
BEARING WALL INTERIOR / EXTERIOR		0 HRS
NON BEARING EXTERIOR WALLS		0 HRS
NON BEARING INTERIOR WALLS		0 HRS
FLOOR CONSTRUCTION		0 HRS.
ROOF CONSTRUCTION		0 HRS.

OCCUPANT LOAD TABLE 1004.5		
AIRCRAFT HANGAR	3900 S.F. 500 GROSS	8 OCC.

NOT SPRINKLERED
PER OBC TABLE 412.3.6 THE BUILDING IS CLASSIFIED AS A GROUP III HANGAR.

PLUMBING FIXTURE REQUIREMENTS
PLUMBING FIXTURES REQUIRED ARE AVAILABLE ON SITE IN THE EXISTING TERMINAL BUILDING +/- 228'-9" AWAY. SEE SITE PLAN ON A1.0.

	Storage BASED ON OCCUPANT LOAD OF 8	REQUIRED
WATER CLOSETS	1 PER 100	1
LAVATORIES	1 PER 100	1
DRINKING FOUNTAIN	1 PER 1,000	1
SERVICE SINK		1

FIRE EXTINGUISHERS:
PORTABLE FIRE EXTINGUISHERS SHALL BE PROVIDED PER OBC 906.
OCCUPANCY IS CONSIDERED ORDINARY HAZARD PER TABLE 906.3(1).
FE = 2-A RATED FIRE EXTINGUISHER, 3 PROVIDED

STRUCTURAL DESIGN LOADS:
REFER TO SHEET 50.0 AND METAL BUILDING DRAWING SUBMITTALS FOR STRUCTURAL DESIGN LOADS.

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REVISIONS	
PLAN APPROVAL/BIDDING	2/25/26
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2511	2/25/26
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CODE PLAN

A1.1

DIVISION 1: GENERAL

CONTRACT DOCUMENTS: REFER TO SEPARATE CONTRACT DOCUMENTS

DIVISION 2: EXISTING CONDITIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE WORKSPACE AND FIRE SAFETY DURING DEMOLITION AND NEW CONSTRUCTION ACTIVITIES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL CONSTRUCTION DEBRIS. REMOVE ANY EXISTING DEBRIS LEFT FROM DEMOLITION WORK BY OTHERS.

IT IS SOLEY THE CONTRACTOR(S) RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURES AND SEQUENCES AND TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING CONSTRUCTION, INCLUDING THE ADDITION OF SHORING, SHEATHING, TEMPORARY ENCLOSURES, ETC. IT IS THE CONTRACTOR(S) SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY AND CONSTRUCTION REGULATIONS, ORDINANCES, AND CODES DURING THE COURSE OF CONSTRUCTION.

DIVISION 3: CONCRETE

STRUCTURAL DRAWING SPECIFICATIONS TAKE PRECEDENCE OVER THESE DRAWINGS AND SPECIFICATIONS.

PERFORM ALL WORK NECESSARY TO COMPLETE THE CONCRETE WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. THIS WORK SHALL INCLUDE GROUTING, FORM WORK, INSTALLING WIRE MESH AND REINFORCING STEEL, FINISHING OF CONCRETE, ETC., FURNISH AND INSTALL ALL PREMOLED EXPANSION/ISOLATION JOINT FILLERS, AND ALL NECESSARY MATERIALS AND LABOR FOR A COMPLETE INSTALLATION.

EXTERIOR WALKS, CURBS AND DRIVE APRONS SHALL BE COVERED UNDER SPECIFICATIONS LISTED ON SITE PLAN DRAWINGS.

ANY EXISTING SIDEWALKS OR CURBS DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR RESTORED BY THE CONTRACTOR.

REFER TO STRUCTURAL DRAWINGS FOR GRANULAR FILL UNDER ALL CONCRETE SLABS ON GRADE.

FORMS: PLYWOOD PATENTED TYPE, STEEL FACED.

ACCESSORIES: CHAIRS, TIES, ETC., SHALL BE GALVANIZED.

CURING COMPOUND: "CHEM HARD" BY L&M CONSTRUCTIONS CHEMICALS, INC. OR ARCHITECT APPROVED EQUAL. (VERIFY THAT ANY CURING COMPOUND AND DUST SEALER USED IS COMPATIBLE WITH ALL FLOORING MATERIAL AND ADHESIVES (CARPET, VCT, TILE, ETC.)) APPLICATION PER MANUFACTURER'S REQUIREMENTS.

- ALL INTERIOR SLABS SHALL HAVE A SPRAY APPLIED CURING COMPOUND AND DUST SEALER.

CONCRETE TRUCKS SHALL WASH-DOWN ONLY IN DESIGNATED AREAS.

FORMS, EXTRA MATERIALS, ETC., SHALL BE REMOVED FROM SITE WITHIN TWO DAYS AFTER CONCRETE WORK IS COMPLETED.

REFER TO STRUCTURAL DRAWINGS FOR CONCRETE COMPRESSIVE STRENGTH REQUIREMENTS.

DIVISION 04: UNIT MASONRY

GENERAL

ACTION SUBMITTALS

PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
SHOP DRAWINGS: FOR THE FOLLOWING:

- MASONRY UNITS: INDICATE SIZES, PROFILES, COURSING, AND LOCATIONS OF SPECIAL SHAPES.
- REINFORCING STEEL: INDICATE BENDING, LAP LENGTHS, AND PLACEMENT OF UNIT MASONRY REINFORCING BARS. COMPLY WITH ACI 315R, INDICATE ELEVATIONS OF REINFORCED WALLS.

MIX DESIGNS: FOR EACH TYPE OF MORTAR AND GROUT. INCLUDE DESCRIPTION OF TYPE AND PROPORTIONS OF INGREDIENTS.

- INCLUDE TEST REPORTS FOR MORTAR MIXES REQUIRED TO COMPLY WITH PROPERTY SPECIFICATION. TEST IN ACCORDANCE WITH ASTM C109/C109M FOR COMPRESSIVE STRENGTH; ASTM C1506 FOR WATER RETENTION, AND ASTM C91/C91M FOR AIR CONTENT.
- INCLUDE TEST REPORTS, IN ACCORDANCE WITH ASTM C1019, FOR GROUT MIXES REQUIRED TO COMPLY WITH COMPRESSIVE STRENGTH REQUIREMENT.

DELIVERY, STORAGE, AND HANDLING

STORE MASONRY UNITS ON ELEVATED PLATFORMS IN A DRY LOCATION. IF UNITS ARE NOT STORED IN AN ENCLOSED LOCATION, COVER TOPS AND SIDES OF STACKS WITH WATERPROOF SHEETING, SECURELY TIED. IF UNITS BECOME WET, DO NOT INSTALL UNTIL THEY ARE DRY.

DELIVER PREBLENDED, DRY MORTAR MIX IN MOISTURE-RESISTANT CONTAINERS. STORE PREBLENDED, DRY MORTAR MIX IN DELIVERY CONTAINERS ON ELEVATED PLATFORMS IN A DRY LOCATION OR IN COVERED WEATHERPROOF DISPENSING SILOS.

STORE MASONRY ACCESSORIES, INCLUDING METAL ITEMS, TO PREVENT CORROSION AND ACCUMULATION OF DIRT AND OIL.

FIELD CONDITIONS

COLD-WEATHER REQUIREMENTS: DO NOT USE FROZEN MATERIALS OR MATERIALS MIXED OR COATED WITH ICE OR FROST. DO NOT BUILD ON FROZEN SUBSTRATES. REMOVE AND REPLACE UNIT MASONRY DAMAGED BY FROST OR BY FREEZING CONDITIONS. COMPLY WITH COLD-WEATHER CONSTRUCTION REQUIREMENTS CONTAINED IN TMS 602.

HOT-WEATHER REQUIREMENTS: COMPLY WITH HOT-WEATHER CONSTRUCTION REQUIREMENTS CONTAINED IN TMS 602.

PRODUCTS

CONCRETE MASONRY UNITS

MASONRY STANDARD: COMPLY WITH TMS 602.

SHAPES: PROVIDE SHAPES INDICATED AND AS FOLLOWS, WITH EXPOSED SURFACES MATCHING EXPOSED FACES OF ADJACENT UNITS UNLESS OTHERWISE INDICATED.

INTEGRAL WATER REPELLENT: PROVIDE UNITS MADE WITH INTEGRAL WATER REPELLENT FOR EXPOSED UNITS AND BELOW GRADE UNITS.

- DESCRIPTION: LIQUID POLYMERIC, INTEGRAL WATER-REPELLENT ADMIXTURE THAT DOES NOT REDUCE FLEXURAL BOND STRENGTH. UNITS MADE WITH INTEGRAL WATER REPELLENT, WHEN TESTED IN ACCORDANCE WITH ASTM E514/E514M AS A WALL ASSEMBLY MADE WITH MORTAR CONTAINING INTEGRAL WATER-REPELLENT MANUFACTURER'S MORTAR ADDITIVE, WHEN TESTED PERIOD EXTENDING TO 24 HOURS, WILL SHOW NO SIGNS OF WATER OR LEAKS ON THE BACK OF TEST SPECIMEN.

CMUS: ASTM C90, NORMAL WEIGHT.

UNIT COMPRESSIVE STRENGTH: PROVIDE UNITS WITH MINIMUM AVERAGE NET-AREA COMPRESSIVE STRENGTH OF 2150 PSI.

FIRE-RESISTANCE RATINGS: COMPLY WITH REQUIREMENTS FOR FIRE-RESISTANCE-RATED ASSEMBLY DESIGNS INDICATED.

- WHERE FIRE-RESISTANCE-RATED CONSTRUCTION IS INDICATED, UNITS ARE USED BY UL OR A QUALIFIED TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

MORTAR AND GROUT MATERIALS:

PREBLENDED DRY MORTAR MIX: PACKAGED BLEND MADE FROM PORTLAND CEMENT AND HYDRATED LIME, MASONRY CEMENT OR MORTAR CEMENT, SAND, WATER REPELLENTS, AND ADMIXTURES AND COMPLYING WITH ASTM C1714/C1714M.

- PREBLENDED DRY PORTLAND CEMENT MORTAR MIX:
 - MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - AMERIMIX IS A TRADEMARK OF BONSAI AMERICAN, AN OLDCASTLE COMPANY
 - SPEC MIX, LLC
- PREBLENDED DRY MASONRY CEMENT MORTAR MIX:
 - MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:
 - AMERIMIX IS A TRADEMARK OF BONSAI AMERICAN, AN OLDCASTLE COMPANY
 - SPEC MIX, LLC

AGGREGATE FOR MORTAR: ASTM C144.

AGGREGATE FOR GROUT: ASTM C404

COLD-WEATHER ADMIXTURE: NONCHLORIDE, NONCORROSIVE, ACCELERATING ADMIXTURE COMPLYING WITH ASTM C494/C494M, TYPE C, AND RECOMMENDED BY MANUFACTURER FOR USE IN MASONRY MORTAR OF COMPOSITION INDICATED.

- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - BASF
 - EUCULD CHEMICAL COMPANY (THE): A SUBSIDIARY OF RPM INTERNATIONAL, INC.
 - GCP APPLIED TECHNOLOGIES INC.

WATER-REPELLENT ADMIXTURE: LIQUID WATER-REPELLENT MORTAR ADMIXTURE INTENDED FOR USE WITH CMUS CONTAINING INTEGRAL WATER REPELLENT FROM SAME MANUFACTURER.

- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - EUCULD CHEMICAL COMPANY (THE): A SUBSIDIARY OF RPM INTERNATIONAL, INC.
 - GCP APPLIED TECHNOLOGIES INC.
 - MASTER BUILDERS SOLUTIONS; BRAND OF MBCC GROUP

WATER: POTABLE.

GROUT FOR UNIT MASONRY: COMPLY WITH ASTM C476.

- USE GROUT OF TYPE INDICATED OR, IF NOT OTHERWISE INDICATED, OF TYPE (FINE OR COARSE) THAT WILL COMPLY WITH TMS 602 FOR DIMENSIONS OF GROUT SPACES AND POUR HEIGHT.
- PROPORTION GROUT IN ACCORDANCE WITH ASTM C476, TABLE 1 OR PARAGRAPH 4.2.1.2 FOR SPECIFIED 28-DAY COMPRESSIVE STRENGTH INDICATED, BUT NOT LESS THAN 2000 PSI.
- PROVIDE GROUT WITH A SLUMP OF 8 TO 11 INCHES AS MEASURED IN ACCORDANCE WITH ASTM C143/C143M.

REINFORCEMENT

- UNCOATED-STEEL REINFORCING BARS: ASTM A615/A615M OR ASTM A996/A996M, GRADE 60.
- REINFORCING BAR POSITIONERS: WIRE UNITS DESIGNED TO FIT INTO MORTAR BED JOINTS SPANNING MASONRY UNIT CELLS AND TO HOLD REINFORCING BARS IN CENTER OF CELLS. UNITS ARE FORMED FROM 0.148-INCH STEEL WIRE, HOT-DIP GALVANIZED AFTER FABRICATION. PROVIDE UNITS DESIGNED FOR NUMBER OF BARS INDICATED.
- MASONRY-JOINT REINFORCEMENT, GENERAL: ASTM A951/A951M.
 - HOT-DIP GALVANIZED CARBON STEEL
 - WIRE SIZE 0.148-INCH DIAMETER
 - SPACING OF CROSS RODS, TABS, AND CROSS TIES: NOT MORE THAN 16 INCHES O.C.
- BASIS-OF-DESIGN PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE HOHMANN & BARNARD, INC. #220 LADDER MESH

EXECUTION

INSTALLATION, GENERAL

FOR DIMENSIONS IN CROSS SECTION OR ELEVATION, DO NOT VARY BY MORE THAN PLUS 1/2 INCH OR MINUS 1/4 INCH.

FOR LOCATION OF ELEMENTS IN PLAN, DO NOT VARY FROM THAT INDICATED BY MORE THAN PLUS OR MINUS 1/2 INCH.

FOR LOCATION OF ELEMENTS IN ELEVATION, DO NOT VARY FROM THAT INDICATED BY MORE THAN PLUS OR MINUS 1/4 INCH IN A STORY HEIGHT OR 1/2 INCH TOTAL.

LINES AND LEVELS:

FOR BED JOINTS AND TOP SURFACES OF BEARING WALLS, DO NOT VARY FROM LEVEL BY MORE THAN 1/4 INCH IN 10 FT., OR 1/2-INCH MAXIMUM.

FOR VERTICAL LINES AND SURFACES, DO NOT VARY FROM PLUMB BY MORE THAN 1/4 INCH IN 10 FT., 3/8 INCH IN 20 FT., OR 1/2-INCH MAXIMUM.

FOR LINES AND SURFACES, DO NOT VARY FROM STRAIGHT BY MORE THAN 1/4 INCH IN 10 FT., 3/8 INCH IN 20 FT., OR 1/2-INCH MAXIMUM.

FOR VERTICAL ALIGNMENT OF EXPOSED HEAD JOINTS, DO NOT VARY FROM PLUMB BY MORE THAN 1/4 INCH IN 10 FT., OR 1/2-INCH MAXIMUM.

FOR FACES OF ADJACENT EXPOSED MASONRY UNITS, DO NOT VARY FROM FLUSH ALIGNMENT BY MORE THAN 1/16 INCH EXCEPT DUE TO WARPAGE OF MASONRY UNITS WITHIN TOLERANCES SPECIFIED FOR WARPAGE OF UNITS.

JOINTS:

FOR BED JOINTS, DO NOT VARY FROM THICKNESS INDICATED BY MORE THAN PLUS OR MINUS 1/8 INCH, WITH A MAXIMUM THICKNESS LIMITED TO 1/2 INCH.

FOR EXPOSED BED JOINTS, DO NOT VARY FROM BED-JOINT THICKNESS OF ADJACENT COURSES BY MORE THAN 1/8 INCH.

FOR HEAD AND COLLAR JOINTS, DO NOT VARY FROM THICKNESS INDICATED BY MORE THAN PLUS 3/8 INCH OR MINUS 1/4 INCH.

LAYING MASONRY WALLS

LAY OUT WALLS IN ADVANCE FOR ACCURATE SPACING OF SURFACE BOND PATTERNS WITH UNIFORM JOINT THICKNESSES

BOND PATTERN FOR EXPOSED MASONRY: LAY EXPOSED MASONRY IN RUNNING BOND; DO NOT USE UNITS WITH LESS-THAN-NOMINAL 4-INCH HORIZONTAL FACE DIMENSIONS AT CORNERS OR JAMBS.

FILL CORES IN HOLLOW CMUS WITH GROUT.

MORTAR BEDDING AND JOINTING

BED FACE SHELLS IN MORTAR AND MAKE HEAD JOINTS OF DEPTH EQUAL TO BED JOINTS.

BED WEBS IN MORTAR IN ALL COURSES OF PIERS, COLUMNS, AND PILASTERS.

BED WEBS IN MORTAR IN GROUTED MASONRY, INCLUDING STARTING COURSE ON FOOTINGS.

FULLY BED ENTIRE UNITS, INCLUDING AREAS UNDER CELLS, AT STARTING COURSE ON FOOTINGS.

FULLY BED UNITS AND FILL CELLS WITH MORTAR AT ANCHORS AND TIES AS NEEDED TO FULLY EMBED ANCHORS AND TIES IN MORTAR.

TOOL EXPOSED JOINTS SLIGHTLY CONCAVE WHEN THUMBPRINT HARD, USING A JOINTER LARGER THAN JOINT THICKNESS UNLESS OTHERWISE INDICATED.

MASONRY-JOINT REINFORCEMENT

INSTALL ENTIRE LENGTH OF LONGITUDINAL SIDE RODS IN MORTAR WITH A MINIMUM COVER OF 5/8 INCH ON EXTERIOR SIDE OF WALLS, 1/2 INCH ELSEWHERE. LAP REINFORCEMENT A MINIMUM OF 6 INCHES.

SPACE REINFORCEMENT NOT MORE THAN 16 INCHES O.C.

SPACE REINFORCEMENT NOT MORE THAN 8 INCHES O.C. IN FOUNDATION WALLS AND PARAPET WALLS.

PROVIDE REINFORCEMENT NOT MORE THAN 8 INCHES ABOVE AND BELOW WALL OPENINGS AND EXTENDING 12 INCHES BEYOND OPENINGS IN ADDITION TO CONTINUOUS REINFORCEMENT.

INTERRUPT JOINT REINFORCEMENT AT CONTROL AND EXPANSION JOINTS UNLESS OTHERWISE INDICATED.

PROVIDE CONTINUITY AT WALL INTERSECTIONS BY USING PREFABRICATED T-SHAPED UNITS.

PROVIDE CONTINUITY AT CORNERS BY USING PREFABRICATED L-SHAPED UNITS.

CUT AND BEND REINFORCING UNITS AS DIRECTED BY MANUFACTURER FOR CONTINUITY AT RETURNS, OFFSETS, COLUMN FIREPROOFING, PIPE ENCLOSURES, AND OTHER SPECIAL CONDITIONS.

ANCHORING MASONRY TO CONCRETE

ANCHOR MASONRY WITH ANCHORS EMBEDDED IN MASONRY JOINTS AND ATTACHED TO STRUCTURE.

SPACE ANCHORS AS INDICATED, BUT NOT MORE THAN 24 INCHES O.C. VERTICALLY AND 36 INCHES O.C. HORIZONTALLY.

REINFORCED UNIT MASONRY

PLACING REINFORCEMENT: COMPLY WITH REQUIREMENTS IN TMS 602.

GROUTING: DO NOT PLACE GROUT UNTIL ENTIRE HEIGHT OF MASONRY TO BE GROUTED HAS ATTAINED ENOUGH STRENGTH TO RESIST GROUT PRESSURE.

COMPLY WITH REQUIREMENTS IN TMS 602 FOR CLEANOUTS AND FOR GROUT PLACEMENT, INCLUDING MINIMUM GROUT SPACE AND MAXIMUM POUR HEIGHT.

LIMIT HEIGHT OF VERTICAL GROUT POURS TO NOT MORE THAN 60 INCHES.

DIVISION 5: STRUCTURAL STEEL

REFER TO STRUCTURAL DRAWINGS FOR STEEL REQUIRED FOR FOUNDATIONS

REFER TO DIVISION 13 FOR STRUCTURAL STEEL REQUIREMENTS FOR PRE-ENGINEERED METAL BUILDING

STEEL PRIME PAINT: SSPC 15-68T-TYPE 1.

DIVISION 7: MOISTURE AND THERMAL PROTECTION

JOINT SEALANTS

- COMPATIBILITY: PROVIDE JOINT SEALANTS, BACKINGS, AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH JOINT SUBSTRATES UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY JOINT-SEALANT MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
- CLEAN JOINT SURFACES IMMEDIATELY BEFORE INSTALLATION OF SEALANT.
- PROVIDE POLYETHYLENE FOAM OR BUTYL BACKER ROD OF PROPER THICKNESS WHEN REQUIRED. CAULK ALL JOINTS FORMED BY ANY TWO DIFFERING MATERIALS
- SILICONE (HIGH PERFORMANCE), S, NS, 100/50, NT, SINGLE-COMPONENT, NONSAG, PLUS 100 PERCENT AND MINUS 50 PERCENT MOVEMENT CAPABILITY, NONTRAFFIC-USE, NEUTRAL-CURING SILICONE JOINT SEALANT; ASTM C920, TYPE S, GRADE NS, CLASS 100/50, USE NT
 - PROVIDE ONE OF THE FOLLOWING:
 - TREMCO; SPECTRUM 1
 - PECORA; 890NST
 - SIKA; SIKASIL WS-290
 - USE AT EXTERIOR OR INTERIOR JOINTS BETWEEN METAL PANELS, METAL TRIM, BETWEEN METAL PANELS OR TRIM AND CONCRETE, PERIMETER JOINTS OF METAL FRAMES IN WALLS AND OTHER HIGH MOVEMENT JOINTS.
- URETHANE, S, NS, 35, NT, SINGLE-COMPONENT, NONSAG, PLUS 35 PERCENT AND MINUS 35 PERCENT MOVEMENT CAPABILITY NONTRAFFIC-USE, URETHANE JOINT SEALANT; ASTM C920, TYPE S, GRADE NS, CLASS 35, USE NT, PAINTABLE.
 - PROVIDE ONE OF THE FOLLOWING:
 - TREMCO; DYMONIC 100
 - SIKA CORPORATION; SIKAFLEX 1A
 - PECORA CORPORATION; DYNATROL I-XL
 - USE AT EXTERIOR OR INTERIOR JOINTS IN VERTICAL SURFACES OF CONCRETE AND MASONRY.
- REFER TO DIVISION 32 FOR SEALANTS IN CONCRETE SLABS ON GRADE.

EXTERIOR WALLS AND ROOF

- REFER TO DIVISION 13 FOR ROOF AND WALL THERMAL INSULATION THAT IS PART OF THE PRE-ENGINEERED METAL BUILDING ASSEMBLY.

PERIMETER FOUNDATION INSULATION: 2" R=18 STYROFOAM RIGID INSULATION BOARD.

- QUALITY ASSURANCE:
 - SURFACE-BURNING CHARACTERISTICS, AS DETERMINED BY TESTING IDENTICAL PRODUCTS ACCORDING TO ASTM E 94 BY A QUALIFIED TESTING AGENCY. IDENTIFY PRODUCTS WITH APPROPRIATE MARKINGS
- MANUFACTURERS:
 - DIVERSIFOAM PRODUCTS.
 - DOW CHEMICAL COMPANY.
 - OWENS CORNING
 - PACTIV BUILDING PRODUCTS DIVISION.

AUXILIARY INSULATING MATERIALS:

- ADHESIVE FOR BONDING INSULATION: PRODUCT WITH DEMONSTRATED CAPABILITY TO BOND INSULATION SECURELY TO SUBSTRATES INDICATED WITHOUT DAMAGING INSULATION AND SUBSTRATES.

VAPOR RETARDER:

- PERFORMANCE REQUIREMENTS:
 - CONFORM TO ASTM E1745 "STANDARD SPECIFICATION FOR PLASTIC WATER VAPOR RETARDERS USED IN CONTACT WITH SOIL OR GRANULAR FILL UNDER CONCRETE SLABS", CLASS A.
 - 15-MIL MINIMUM THICKNESS.
 - WATER VAPOR PERMEANCE LESS THAN OR EQUAL TO 0.02 PERMS TESTED BY ASTM E 96.
 - PUNCTURE RESISTANCE GREATER THAN OR EQUAL TO 3,000 GRAMS TESTED BY ASTM D 1709.
 - TENSILE STRENGTH GREATER THAN OR EQUAL TO 65 LBF/IN TESTED BY ASTM E 154, SEC. 9
 - CHEMICAL RESISTANCE "UNAFFECTED" TESTED BY ASTM E 154
- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE MATERIALS FROM ONE OF THE FOLLOWING:
 - RAVEN INDUSTRIES.
 - REEF INDUSTRIES, INC.
 - STEGO INDUSTRIES, LLC.
 - W.R. MEADOWS, INC.
- AUXILIARY MATERIALS RECOMMENDED:
 - VAPOR BARRIER SEAM TAPE PRODUCTS - MANUFACTURER'S STANDARD ALL-WEATHER ADHESIVE SEAM TAPE MEETING ALL ASTM E 1745 "CLASS A" VAPOR RETARDER SPECIFICATIONS.
 - VAPOR PROOFING MASTIC PRODUCTS - MANUFACTURER'S STANDARD VAPOR PROOFING MASTIC WITH WATER VAPOR PERMEANCE LESS THAN OR EQUAL TO 0.30 PERMS AS TESTED BY ASTM E 96
 - VAPOR BARRIER PIPE BOOT/PATCHING MEMBRANE PRODUCTS - MANUFACTURER'S STANDARD ALL-WEATHER ADHESIVE PIPE BOOT/PATCHING MEMBRANE THAT IS AN ALL-WEATHER ADHESIVE BACKED MEMBRANE MEETING ALL ASTM E 1745 "CLASS A" VAPOR RETARDER SPECIFICATIONS (MUST BE A FACTORY INSTALLED ADHESIVE).
- PREPARE SURFACES IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
- INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND ASTM E 1643-98.

DIVISION 8: DOORS, WINDOWS, GLASS, GLAZING AND FINISH HARDWARE:

MAN DOORS:

- EXTRA HEAVY DUTY STEEL DOORS AND FRAMES: ANSIS/DI A250.8, LEVEL 3: ANSIS/DI A250.4, LEVEL A.
- DOORS: METALLIC-COATED STEEL SHEET WITH MINIMUM THICKNESS OF 0.053 INCH WITH MIN A40 COATING. INSULATED CORE MEETING MANUFACTURER'S STANDARD AND ASTM C 1363. PROVIDE WEEP-HOLE OPENINGS IN BOTTOM OF EXTERIOR DOORS TO PERMIT MOISTURE TO ESCAPE. SEAL JOINTS IN TOP EDGES OF DOORS AGAINST WATER PENETRATION.
- FRAMES: METALLIC-COATED STEEL SHEET WITH MINIMUM THICKNESS OF 0.067 INCH WITH MIN A40 COATING. FULL PROFILE WELDED W/ MITERED OR COPED CORNERS, WELD FLUSH FACE JOINTS CONTINUOUSLY; GRIND, FILL, DRESS, AND MAKE SMOOTH, FLUSH, AND INVISIBLE.
- JAMB ANCHORS: STUD-WALL TYPE, DESIGNED TO ENGAGE STUD, WELDED TO BACK OF FRAMES; NOT LESS THAN 16 GA. (3) PER JAMB.
- FLOOR ANCHORS: FORMED FROM SAME MATERIAL AS FRAMES, NOT LESS THAN 14 GA ON MONOLITHIC CONCRETE SLABS. CLIP-TYPE ANCHORS, WITH TWO HOLES TO RECEIVE FASTENERS.
- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - CECO DOOR, AADG, INC.; ASSA ABLOY
 - CURRIES, ADG, INC.; ASSA ABLOY GROUP
 - STEELCRAFT; ALLEGION.

OVERHEAD DOORS:

- PERFORMANCE:
 - OVERHEAD DOORS SHALL MEET THE METAL BUILDING WIND LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED ACCORDING TO ASCE/SEI 7.
 - DEFLECTION OF DOOR IN HORIZONTAL POSITION (OPEN) SHALL NOT EXCEED 1/120 OF THE DOOR WIDTH.
 - MEET OR EXCEED ASTM E 1886 AND ASTM E 1996 IMPACT RESISTANCE.
 - MEET STANDARDS ESTABLISHED BY ANSIS/ASMA 102.
 - THERMAL PERFORMANCE: MIN. U-FACTOR 0.094
 - MEET OR EXCEED IECC 2021 REQUIREMENTS FOR MAXIMUM RATE OF CFM/FT2 OF 0.04.
- STEEL SECTIONAL DOORS FOR MANUAL OPERATION:
 - CHAIN HOIST.
 - STEEL SECTIONS: ZINC-COATED (GALVANIZED) STEEL SHEET WITH G60 ZINC COATING.
 - EXTERIOR-FACE, STEEL SHEET THICKNESS: 0.018-INCH NOMINAL COATED THICKNESS. (26 GA)
 - SURFACE: MANUFACTURER'S STANDARD, STUCCO EMBOSSED.
 - SECTION THICKNESS: 2 INCHES.
 - INSULATE INTERIOR OF STEEL SECTIONS WITH DOOR MANUFACTURER'S STANDARD CFC-FREE POLYURETHANE INSULATION, FOAMED IN PLACE TO COMPLETELY FILL INTERIOR OF SECTION AND PRESSURE BONDED TO FACE SHEETS TO PREVENT DELAMINATION UNDER WIND LOAD, AND WITH MAXIMUM FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF 75 AND 450, RESPECTIVELY, ACCORDING TO ASTM E 84. ENCLOSE INSULATION COMPLETELY WITHIN STEEL SECTIONS THAT INCORPORATE THE INTERIOR FACING MATERIAL WITH NO EXPOSED INSULATION.
 - INTERIOR FACING MATERIAL: ZINC-COATED (GALVANIZED), COLD-ROLLED, COMMERCIAL STEEL (CS) SHEET, COMPLYING WITH ASTM A 653/A 653M, WITH 0.018-INCH THICKNESS (26 GA)

- COUNTERBALANCE SYSTEM: AIRCRAFT-TYPE GLAV, STEEL LIFTING CABLES W/ MIN. SAFETY FACTOR OF 6. TORSION SPRINGS ON CONTINUOUS BALL-BEARING CROSS-HEADER SHAFT.
 - SPRING OPERATION CYCLES: NOT LESS THAN 20,000.
 - TRACK: HOT-DIPPED GALVANIZED STEEL, ASTM A-653, ROOF PITCH TRACK CONFIGURATION. TWO-INCH TRACK ROLLERS WITH HARDENED STEEL BEARINGS.
 - HARDWARE: HOT-DIPPED GALV. STEEL, 14 GA. MIN.
 - WEATHERSEALS: FITTED TO BOTTOM AND TOP AND AROUND ENTIRE PERIMETER OF DOOR.
 - LOCKING DEVICES: EQUIP DOOR WITH LOCKING DEVICE ASSEMBLY. CREMONE TYPE, BOTH JAMB SIDES, LOCKING BARS, OPERABLE FROM INSIDE AND OUTSIDE, WITH CYLINDERS.
- MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - CLOPAY BUILDING PRODUCTS; A GRIFFON COMPANY.
 - OVERHEAD DOOR CORPORATION.
 - WAYNE-DALTON CORP.
 - HAS DOOR

DOOR HARDWARE: THE HARDWARE SETS REPRESENT THE DESIGN INTENT AND DIRECTION OF THE OWNER AND ARCHITECT. THEY ARE A GUIDELINE ONLY AND SHOULD NOT BE CONSIDERED A DETAILED HARDWARE SCHEDULE. DISCREPANCIES, CONFLICTING HARDWARE AND MISSING ITEMS SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT WITH CORRECTIONS MADE PRIOR TO THE BIDDING PROCESS. OMITTED ITEMS NOT INCLUDED IN A HARDWARE SET SHOULD BE SCHEDULED WITH THE APPROPRIATE ADDITIONAL HARDWARE REQUIRED FOR PROPER APPLICATION AND FUNCTIONALITY.

- STANDARD WARRANTY PERIOD: ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION, UNLESS OTHERWISE INDICATED.
- SPECIAL WARRANTY PERIODS:
 - TEN YEARS FOR MORTISE LOCKS AND LATCHES.
 - TEN YEARS FOR EXIT HARDWARE.
 - TWENTY-FIVE YEARS FOR MANUAL SURFACE DOOR CLOSERS

Set 01 - Exterior Doors

3 Hinges	TA2714	630	McKinney
1 Lockset (Classroom)	45HTR 15H S1	630	Best Locking System
1 Interchangeable Core	TCX-7X32X1	630	Best Locking System
1 Closer	8900 Push Slide	689	Dorma
1 Jamb Weather Strip	135 NB		National Guard Products
1 Strike Jamb Weather Strip	700 NB		National Guard Products
1 Head Weather Strip	700 NB		National Guard Products
1 Door Sweep	200 NA		National Guard Products
1 Saddle Threshold	425	AL	National Guard Products

Set 02 - Hanger Door

BY DOOR SUPPLIER

Set 03 - Overhead Door

BY DOOR SUPPLIER

SECTION 08 3400 CUSTOM DESIGNED SINGLE PANEL HYDRAULIC DOORS

PART 1 GENERAL

1.1 SUBMITTALS

- PRODUCT DATA:
 - MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED.
 - PREPARATION INSTRUCTIONS AND RECOMMENDATIONS.
 - STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS.
 - TYPICAL INSTALLATION METHODS.
- SHOP DRAWINGS: INCLUDE DETAILS OF MATERIALS, CONSTRUCTION, AND FINISH. INCLUDE RELATIONSHIP WITH ADJACENT CONSTRUCTION.
- DELEGATED-DESIGN: FOR SYSTEMS INDICATED BY A REGISTERED PROFESSIONAL ENGINEER, CERTIFIED AND LICENSED IN THE STATE OR MUNICIPALITY THE PROJECT IS LOCATED.
 - DETAILS OF FABRICATION OF COMPONENTS.
 - SIGNED AND SEALED DESIGN CALCULATIONS FOR SYSTEMS INDICATED USED TO DETERMINE LOAD CARRYING CAPACITIES.
 - ANALYSIS DATA: SIGNED AND SEALED.
 - SIZING METHODS AND CALCULATIONS: SIGNED AND SEALED.

1.2 QUALITY ASSURANCE

- MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SPECIFIED IN THIS SECTION WITH A MINIMUM OF FIVE YEARS' DOCUMENTED EXPERIENCE.
- INSTALLER QUALIFICATIONS: COMPANY SPECIALIZING IN PERFORMING WORK OF THIS SECTION WITH MINIMUM TWO YEARS DOCUMENTED EXPERIENCE WITH PROJECTS OF SIMILAR SCOPE AND COMPLEXITY.

1.3 DELEGATED DESIGN

- ENGAGE A QUALIFIED PROFESSIONAL ENGINEER, AS DEFINED IN SECTION 014000 - QUALITY REQUIREMENTS.
 - MUST BE LICENSED IN STATE OR MUNICIPALITY THE PROJECT IS LOCATED.
 - COMPLY WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA.
- DELIVERY, STORAGE, AND HANDLING
 - STORE AND HANDLE IN STRICT COMPLIANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS.
 - PROTECT FROM DAMAGE DUE TO WEATHER, EXCESSIVE TEMPERATURE, AND CONSTRUCTION OPERATIONS.

1.5 PROJECT CONDITIONS

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3. FACTORY-SUPPLIED UPPER WEATHER STRIPPING: SHIPPED WITH FRAME AND DOOR PANEL FOR FIELD INSTALL.
4. FACTORY-SUPPLIED LOWER WEATHER STRIPPING: INSTALLED ON DOOR PANEL BEFORE INSTALLATION.
5. HYDRAULIC DOORS: OPERATED BY HYDRAULIC CYLINDERS MECHANICALLY FASTENED TO SWINGING DOOR LEAF AND MANUFACTURER'S DOOR FRAME.
6. TWO HYDRAULIC CYLINDERS: OPEN AND CLOSE HYDRAULIC DOOR. DESIGNED TO CARRY REQUIRED LOADS DURING OPERATION, OPEN POSITION, AND CLOSED POSITION.
- a. INTERNAL STOPS: INSTALLED TO PREVENT OVER-EXTENSION OF CYLINDERS, RESTRICTING SYSTEM FROM OPENING OR CLOSING BEYOND ITS LIMITS.
- b. EQUIPPED WITH RESTRICTORS TO CONTROL OIL FLOW ON THE DOWN CYCLE.
7. HYDRAULIC POWER UNIT:
- a. POWER: 5 HP.
- 1) 230 VAC SINGLE-PHASE. REQUIRES 40 AMP BREAKER.
- 2) MOMENTARY TOGGLE STYLE SWITCH.
- a) PUSH IN DESIRED DIRECTION ACCORDING TO LABELS; RAISE OR LOWER.
- b) SWITCH REQUIRES CONSTANT PRESSURE TO OPERATE.
- c) WHEN PRESSURE ON SWITCH IS RELEASED, PUMP OPERATION STOPS CAUSING DOOR TO STOP AND STAY AT DOOR'S PRESENT POSITION.
- d. ELECTRIC MOTOR AND PUMP ARE COMBINED INTO ONE SELF-CONTAINED UNIT LOCATED ADJACENT TO THE DOOR.
- e. ELECTRICAL CONNECTIONS TO THE PUMP UNIT AND FINAL HOOK-UP BY OTHERS.
- c. ELECTRICAL POWER CONNECTIONS TO THE PUMP UNIT AND FINAL HOOK-UP BY OTHERS.
- d. PRE-WIRED AND FACTORY TESTED.
- e. HYDRAULIC OIL: ISO 32 OR ISO 22.
8. ALTERNATIVE HYDRAULICS: TO ALLOW FOR DOOR OPERATION WHEN ELECTRICAL PUMP HAS LOST POWER.
- B. FINISHES:
1. SYSTEM FRAMES AND PANELS: CLEANED AND PAINTED WITH DIRECT TO METAL PAINT.
2. EXTERIOR: METAL PANEL TO MATCH BUILDING CLADDING BY METAL BUILDING SUPPLIER.
3. INTERIOR: METAL PANEL BY METAL BUILDING SUPPLIER. PAINTED WHITE.

PART 3 EXECUTION

- 3.1 EXAMINATION
- A. EXAMINE SUBSTRATES AND CONDITION WITH BUILDING ERECTOR PRESENT FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.
- B. PROCEED WITH ERECTION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
- 3.2 PREPARATION
- A. BUILDING ROUGH OPENING JAMBS AND HEADER TO BE PLUMB AND LEVEL WITHIN 1/4 INCH FROM END TO END.
- B. FOUNDATION BELOW DOOR TO BE LEVEL AND FLAT WITHIN 1/2 INCH (13 MM) VARIATION ACROSS DOOR OPENING.
- 3.3 INSTALLATION
- A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, APPROVED SUBMITTALS, AND IN PROPER RELATIONSHIP WITH ADJACENT CONSTRUCTION.
1. INSTALLATION OF CUSTOM DESIGNED HYDRAULIC DOOR COMPLETED BY LICENSED DOOR MANUFACTURER PERSONNEL ONLY.
2. STEEL ROUGH OPENING: DOOR FRAME STITCH WELDED TO BUILDING JAMB AND HEADER.
- 3.4 CLEANING AND PROTECTION
- A. CLEAN PRODUCTS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- B. TOUCH-UP, REPAIR OR REPLACE DAMAGED PRODUCTS OR FINISHES BEFORE SUBSTANTIAL COMPLETION.

DIVISION 9: FINISHES:

- INTERIOR PAINTING WORK:
1. THIS SECTION INCLUDES SURFACE PREPARATION AND APPLICATION OF PAINT SYSTEMS ON THE FOLLOWING SUBSTRATES:
- a. GALVANIZED STEEL
1. GALVANIZED-METAL SUBSTRATES: REMOVE GREASE AND OIL RESIDUE FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS TO PRODUCE CLEAN, LIGHTLY ETCHED SURFACES THAT PROMOTE ADHESION OF SUBSEQUENTLY APPLIED PAINTS.
- b. STEEL
1. SHOP-PRIMED STEEL SUBSTRATES: CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS OF SHOP PAINT, AND PAINT EXPOSED AREAS WITH THE SAME MATERIAL AS USED FOR SHOP PRIMING TO COMPLY WITH SSPC-PA 1 FOR TOUCHING UP SHOP-PRIMED SURFACES.
2. STEEL SUBSTRATES: REMOVE RUST AND LOOSE MILL SCALE.
- c. CONCRETE
1. CONCRETE MASONRY SUBSTRATES: REMOVE EFFLORESCENCE AND CHALK. DO NOT PAINT SURFACES IF MOISTURE CONTENT OR ALKALINITY OF SURFACES TO BE PAINTED EXCEEDS THAT PERMITTED IN MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. ACCEPTABLE PAINT MANUFACTURERS: (ALL PAINTS MUST BE FROM A SINGLE MANUFACTURER).
- a. SHERWIN WILLIAMS COMPANY (THE)
- b. BENJAMIN MOORE & CO.
- c. ICI PAINTS
- d. PPG PAINTS
- e. OTHER MANUFACTURERS IF APPROVED BY ARCHITECT.
3. PAINT COLORS SHALL BE SELECTED BY THE OWNER.
4. MAINTENANCE MATERIAL SUBMITTALS:
- a. FURNISH EXTRA MATERIALS, FROM THE SAME PRODUCT RUN, THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS, 5% BUT NOT LESS THAN 1 GAL. OF EACH MATERIAL AND/OR COLOR APPLIED.
5. PAINT APPLICATION
- a. PAINT TO COVER ALL SURFACES TO BE PAINTED. THERE SHALL BE NO BLOTCHES, ROLLER MARKS, BRUSH MARKS, OR BLEED THROUGH.
- b. AS A MINIMUM ALL SURFACES TO BE PAINTED SHALL RECEIVE ONE PRIME COAT AND TWO FINISHED COATS.
- c. PROVIDE MATERIALS FOR USE WITHIN EACH PAINT SYSTEM THAT ARE COMPATIBLE WITH ONE ANOTHER AND SUBSTRATES INDICATED, UNDER CONDITIONS OF SERVICE AND APPLICATION AS DEMONSTRATED BY MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
- d. FOR EACH COAT IN A PAINT SYSTEM, PROVIDE PRODUCTS RECOMMENDED IN WRITING BY MANUFACTURERS OF TOPCOAT FOR USE IN PAINT SYSTEM AND ON SUBSTRATE. INDICATED, AND THESE COATINGS SHALL MAINTAIN THEIR FILM INTEGRITY THROUGHOUT THE ENTIRE WARRANTY PERIOD.
- e. PROVIDE COATINGS SPECIFICALLY COMPOUNDED BY MANUFACTURER FOR ELECTROSTATIC SPRAY APPLICATION, WHERE PRIMERS ARE INDICATED OR REQUIRED. PROVIDE ONLY PRIMERS THAT ARE APPROVED BY MANUFACTURER FOR USE WITH FINISH COATING MATERIALS.

DIVISION 10: SPECIALTIES:

- FIRE EXTINGUISHERS
1. NFPA COMPLIANCE: FABRICATE AND LABEL FIRE EXTINGUISHERS TO COMPLY WITH NFPA 10, "PORTABLE FIRE EXTINGUISHERS."
2. FIRE EXTINGUISHERS: LISTED AND LABELED FOR TYPE, RATING, AND CLASSIFICATION BY AN INDEPENDENT TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
3. WARRANTY PERIOD: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
4. INSTRUCTION LABELS: NCLUDE PICTORIAL MARKING SYSTEM COMPLYING WITH NFPA 10, APPENDIX
5. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS FROM ONE OF THE FOLLOWING:
- a. J. L. INDUSTRIES, INC.; A DIVISION OF ACTIVAR CONSTRUCTION PRODUCTS GROUP.
- b. LARSEN'S MANUFACTURING COMPANY.
- c. POTTER ROEMER LLC.
6. MOUNTING BRACKETS: MANUFACTURER'S STANDARD GALVANIZED STEEL, DESIGNED TO SECURE FIRE EXTINGUISHER TO WALL OR STRUCTURE, OF SIZES REQUIRED FOR TYPES AND CAPACITIES OF FIRE EXTINGUISHERS INDICATED, WITH PLATED OR RED BAKED-ENAMEL FINISH.
7. IDENTIFICATION: LETTERING COMPLYING WITH AUTHORITIES HAVING JURISDICTION FOR LETTER STYLE, SIZE, SPACING, AND LOCATION. LOCATE AS INDICATED BY ARCHITECT.
8. INSTALLATION:
- a. EXAMINE FIRE EXTINGUISHERS FOR PROPER CHARGING AND TAGGING.
- b. REMOVE AND REPLACE DAMAGED, DEFECTIVE, OR UNDERCHARGED FIRE EXTINGUISHERS.
- c. INSTALL FIRE EXTINGUISHERS AND MOUNTING BRACKETS IN LOCATIONS INDICATED AND IN COMPLIANCE WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
- d. MOUNTING BRACKETS: 54 INCHES ABOVE FINISHED FLOOR TO TOP OF FIRE EXTINGUISHER. FASTEN MOUNTING BRACKETS TO SURFACES, SQUARE AND PLUMB, AT LOCATIONS INDICATED.

DIVISION 13: PREMANUFACTURED METAL BUILDING SYSTEMS

GENERAL

SECTION INCLUDES:

- STRUCTURAL STEEL FRAMING.
- METAL ROOF PANELS.
- METAL WALL PANELS.
- THERMAL INSULATION.
- ACCESSORIES.

ACTION SUBMITTALS

SHOP DRAWINGS: INDICATE COMPONENTS BY OTHERS, INCLUDE FULL BUILDING PLAN, ELEVATIONS, SECTIONS, DETAILS AND ATTACHMENTS TO OTHER WORK.

DELEGATED-DESIGN SUBMITTAL: FOR METAL BUILDING SYSTEMS.

- INCLUDE ANALYSIS DATA INDICATING COMPLIANCE WITH PERFORMANCE REQUIREMENTS AND DESIGN DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

INFORMATIONAL SUBMITTALS

LETTER OF DESIGN CERTIFICATION: SIGNED AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER, INCLUDE THE FOLLOWING:

- NAME AND LOCATION OF PROJECT.
- ORDER NUMBER.
- NAME OF MANUFACTURER.
- NAME OF CONTRACTOR.
- BUILDING DIMENSIONS INCLUDING WIDTH, LENGTH, HEIGHT, AND ROOF SLOPE.
- INDICATE COMPLIANCE WITH ALSO STANDARDS FOR HOT-ROLLED STEEL AND AISI STANDARDS FOR COLD-ROLLED STEEL, INCLUDING EDITION DATES OF EACH STANDARD.
- GOVERNING BUILDING CODE AND YEAR OF EDITION.
- DESIGN LOADS: INCLUDE DEAD LOAD, ROOF LIVE LOAD, COLLATERAL LOADS, ROOF SNOW LOAD, DEFLECTION, WIND LOADS/SPEEDS AND EXPOSURE, SEISMIC DESIGN CATEGORY OR EFFECTIVE PEAK VELOCITY-RELATED ACCELERATION/PEAK ACCELERATION, AND AUXILIARY LOADS (CRANES).
- LOAD COMBINATIONS: INDICATE THAT LOADS WERE APPLIED ACTING SIMULTANEOUSLY WITH CONCENTRATED LOADS, ACCORDING TO GOVERNING BUILDING CODE.
- BUILDING-USE CATEGORY: INDICATE CATEGORY OF BUILDING USE AND ITS EFFECT ON LOAD IMPORTANCE FACTORS.

QUALITY ASSURANCE

MANUFACTURER QUALIFICATIONS: A QUALIFIED MANUFACTURER.

- ENGINEERING RESPONSIBILITY: PREPARATION OF COMPREHENSIVE ENGINEERING ANALYSIS AND SHOP DRAWINGS BY A PROFESSIONAL ENGINEER WHO IS LEGALLY QUALIFIED TO PRACTICE IN JURISDICTION WHERE PROJECT IS LOCATED.

WARRANTY

SPECIAL WARRANTY ON METAL PANEL FINISHES: MANUFACTURER AGREES TO REPAIR FINISH OR REPLACE METAL PANELS THAT SHOW EVIDENCE OF DETERIORATION OF FACTORY-APPLIED FINISHES WITHIN SPECIFIED WARRANTY PERIOD.

- FINISH WARRANTY PERIOD: 25 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

SPECIAL WEATHERTIGHTNESS WARRANTY FOR STANDING-SEAM METAL ROOF PANELS: MANUFACTURER AGREES TO REPAIR OR REPLACE STANDING-SEAM METAL ROOF PANEL ASSEMBLIES THAT LEAK OR OTHERWISE FAIL TO REMAIN WEATHERTIGHT WITHIN SPECIFIED WARRANTY PERIOD.

WARRANTY PERIOD: 20 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PRODUCTS

SOURCE LIMITATIONS

OBTAIN METAL BUILDING SYSTEM COMPONENTS, INCLUDING PRIMARY AND SECONDARY FRAMING AND METAL PANEL ASSEMBLIES, FROM A SINGLE SOURCE MANUFACTURER.

MANUFACTURERS

BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRE-ENGINEERED METAL BUILDING SYSTEM AS MANUFACTURED BY **RENEGADE STEEL BUILDINGS, INC.**, 2151 HOMER ROAD, COMMERCE, GA (sales@renegadesteelbuildings.com, 877-363-4223) OR EQUIVALENT PRODUCT BY ONE OF THE FOLLOWING:

- CHIEF BUILDINGS: CHIEF INDUSTRIES, INC.
- MID-WEST STEEL BUILDING COMPANY; AN NCI COMPANY.
- NUCOR BUILDING SYSTEMS.
- VARCO PRUDEN BUILDINGS
- AMERICAN BUILDINGS

PERFORMANCE REQUIREMENTS

DELEGATED DESIGN: ENGAGE A QUALIFIED PROFESSIONAL ENGINEER TO DESIGN METAL BUILDING SYSTEM.

STRUCTURAL PERFORMANCE: METAL BUILDING SYSTEMS SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED ACCORDING TO PROCEDURES IN MBMA'S "METAL BUILDING SYSTEMS MANUAL."

- DESIGN LOADS: AS INDICATED ON STRUCTURAL DRAWINGS.
- BUILDING CODE: DESIGN SHALL BE IN ACCORDANCE WITH THE 2024 OHIO BUILDING CODE.
- DEFLECTION AND DRIFT LIMITS: DESIGN METAL BUILDING SYSTEM ASSEMBLIES TO WITHSTAND SERVICEABILITY DESIGN LOADS WITHOUT EXCEEDING DEFLECTIONS AND DRIFT LIMITS RECOMMENDED IN AISI "DESIGN GUIDE NO. 3: SERVICEABILITY DESIGN CONSIDERATION FOR STEEL BUILDINGS".
- DEFLECTION AND DRIFT LIMITS: NO GREATER THAN THE FOLLOWING:
 - PURLINS AND RAFTERS: VERTICAL DEFLECTION OF 1/180 OF THE SPAN.
 - PRIMARY FRAMING: HORIZONTAL DEFLECTION OF 1/60 OF THE HEIGHT.
 - GIRTS: HORIZONTAL DEFLECTION OF 1/60 OF THE SPAN.
 - METAL ROOF PANELS: VERTICAL DEFLECTION OF 1/60 OF THE SPAN.
 - METAL WALL PANELS: HORIZONTAL DEFLECTION OF 1/60 OF THE SPAN.
 - DESIGN SECONDARY-FRAMING SYSTEM TO ACCOMMODATE DEFLECTION OF PRIMARY FRAMING AND CONSTRUCTION TOLERANCES, AND TO MAINTAIN CLEARANCES AT OPENINGS.
 - LATERAL DRIFT: MAXIMUM OF 1/60 OF THE BUILDING HEIGHT.

SEISMIC PERFORMANCE: METAL BUILDING SYSTEM SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO ASCE/SEI 7 AND/OR PERFORMANCE CRITERIA ON STRUCTURAL DRAWINGS/NOTES.

THERMAL MOVEMENTS: ALLOW FOR THERMAL MOVEMENTS FROM AMBIENT AND SURFACE TEMPERATURE CHANGES BY PREVENTING BUCKLING, OPENING OF JOINTS, OVERSTRESSING OF COMPONENTS; FAILURE OF JOINT SEALANTS; FAILURE OF CONNECTIONS; AND OTHER DETRIMENTAL EFFECTS; BASED ON SURFACE TEMPERATURES OF MATERIALS DUE TO BOTH SOLAR HEAT GAIN AND NIGHTTIME-SKY HEAT LOSS.

- TEMPERATURE CHANGE: 120 DEG F (67 DEG C), AMBIENT; 180 DEG F, MATERIAL SURFACES.

STRUCTURAL PERFORMANCE FOR METAL ROOF AND WALL PANELS: PROVIDE METAL PANEL SYSTEMS CAPABLE OF WITHSTANDING THE EFFECTS OF THE FOLLOWING LOADS, BASED ON TESTING ACCORDING TO ASTM E 1592:

- WIND LOADS: AS INDICATED ON DRAWINGS.

WATER PENETRATION FOR METAL ROOF PANELS: NO WATER PENETRATION WHEN TESTED IN ACCORDANCE WITH ASTM E1646 AT TEST-PRESSURE DIFFERENCE OF 6.24 LBS/5F.

WATER PENETRATION FOR METAL WALL PANELS: NO WATER PENETRATION WHEN TESTED IN ACCORDANCE WITH ASTM E531 AT TEST-PRESSURE DIFFERENCE OF 6.24 LBS/5F.

WIND-UPLIFT RESISTANCE: PROVIDE METAL ROOF PANEL ASSEMBLIES THAT COMPLY WITH UL 580 FOR WIND-UPLIFT-RESISTANCE CALSS INDICATED.

- UPLIFT RATING: UL 90.

THERMAL PERFORMANCE FOR OPAQUE ELEMENTS: PROVIDE THE FOLLOWING MINIMUM R-VALUES WHEN TESTED ACCORDING TO ASTM C 1363 OR ASTM C 516 AND IN COMPLIANCE WITH ASHRAE 90.1 LATEST EDITION REQUIRED PER ORS:

- ROOF R-VALUE: R-40 (R-28.0 CAVITY + R-12.0 CONTINUOUS).
- WALLS R-VALUE: R-40 (R-28.0 CAVITY + R-12.0 CONTINUOUS).

STRUCTURAL-STEEL FRAMING

STRUCTURAL STEEL: COMPLY WITH AISI 360, "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS."

BOLTED CONNECTIONS: COMPLY WITH RCSC'S "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS."

COLD-FORMED STEEL: COMPLY WITH AISI'S "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" FOR DESIGN REQUIREMENTS AND ALLOWABLE STRESSES.

PRIMARY FRAMING: MANUFACTURER'S STANDARD RIGID CLEAR SPAN SOLID-MEMBER FRAMING SYSTEM WITHOUT INTERIOR COLUMNS.

- FRAME CONFIGURATION: AS INDICATED ON DRAWINGS.

END-WALL FRAMING: MANUFACTURER'S STANDARD FOR BUILDINGS NOT REQUIRED TO BE EXPANDABLE.

SECONDARY FRAMING: MANUFACTURER'S STANDARD PURLINS AND JOISTS AND EXTERIOR-FRAMED (BYPASS) GIRTS.

ANCHOR BOLTS: HEADED ANCHOR RODS AS INDICATED IN ANCHOR ROD PLAN FOR ATTACHMENT OF METAL BUILDING TO FOUNDATION. REFER ALSO TO STRUCTURAL FOUNDATION DRAWINGS.

METAL ROOF PANELS

EXPOSED-FASTENER RIBBED METAL ROOF PANEL IN MANUFACTURER'S STANDARD ROLLED FORMED PROFILE.

- ZINC-COATED OR ALUMINUM-ZINC ALLOY-COATED SHEET STEEL 0.018-INCH (26 GA.) NOMINAL UNCOATED STEEL THICKNESS.
- ONE PIECE LENGTHS AND ENDLAPS, WHEN REQUIRED SHALL BE 8" AND OCCUR AT A PURLIN.
- EXTERIOR FINISH: TWO-COAT PVDF IN COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURERS FULL RANGE.
- CONCEALED FINISH: APPLY PRETREATMENT AND MANUFACTURER'S STANDARD WHITE OR LIGHT-COLORED ACRYLIC OR POLYESTER BACKER FINISH.

METAL WALL PANELS

EXPOSED-FASTENER METAL PANELS IN MANUFACTURER'S STANDARD ROLLED FORMED PROFILE COVERING A NET COVERAGE OF 36".

- ZINC-COATED OR ALUMINUM-ZINC ALLOY-COATED SHEET STEEL 0.018-INCH (26 GA.) NOMINAL UNCOATED STEEL THICKNESS. PREPAINTED BY THE COIL-COATING PROCESS TO COMPLY WITH ASTM A755/A755M.
- EXTERIOR FINISH: TWO-COAT PVDF IN COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURERS FULL RANGE.
- CONCEALED FINISH: APPLY PRETREATMENT AND MANUFACTURER'S STANDARD WHITE OR LIGHT-COLORED ACRYLIC OR POLYESTER BACKER FINISH.
- PANELS SHALL BE ONE PIECE FROM BASE TO EAVE.

THERMAL INSULATION SYSTEM

BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ENERGY SAVER DOUBLE LAYER WALL INSULATION SYSTEM AS MANUFACTURED BY **SILVERCOTE**, 25 LOGUE COURT, GREENVILLE, SC 29615 (info@silvercote.com).

WALL INSULATION SYSTEM INCLUDES THE FOLLOWING:

- WOVEN HPDE SCIRM FABRIC
 - COATING: 2.0 MIL THICK
 - COLOR: WHITE/GRAY
 - WEIGHT: 4.4 OZ/YD2
 - THICKNESS: NOMINAL 9 MIL, ASTM D1777
- METAL STRAPPING USED TO SUPPORT SCIRM FABRIC
 - HOT DIPPED GALVANIZED STEEL, GRADE 60, ZINC COATED PER ASTM A653
 - MIN. 0.022" X 1"
 - COLOR: WHITE
- CAVITY INSULATION
 - MINERAL-FIBER-BLANKET INSULATION: ASTM C665, CONSISTING OF FIBERS MANUFACTURED FROM GLASS, SLAGWOOL, OR ROCK WOOL.
 - UNFACED: TYPE 1 PASSING ASTM E 136 FOR COMBUSTION CHARACTERISTICS.
- EXTERIOR INSULATION
 - MINERAL-FIBER-BLANKET INSULATION: ASTM C665, CONSISTING OF FIBERS MANUFACTURED FROM GLASS, SLAGWOOL, OR ROCK WOOL.
 - FACED: ALUMINUM FOIL FACED AND PERFORATED.
 - PERMEANCE ASTM E96 >10 PERM, PROCEDURE A.
 - ASTM E84 FLAME SPREAD 5, SMOKE DEVELOPED 0

ROOF INSULATION SYSTEM INCLUDES THE FOLLOWING:

- WOVEN HPDE SCIRM FABRIC
 - COATING: 2.0 MIL THICK
 - COLOR: WHITE/GRAY
 - WEIGHT: 4.4 OZ/YD2
 - THICKNESS: NOMINAL 9 MIL, ASTM D1777
- METAL STRAPPING USED TO SUPPORT SCIRM FABRIC
 - HOT DIPPED GALVANIZED STEEL, GRADE 60, ZINC COATED PER ASTM A653
 - MIN. 0.022" X 1"
 - COLOR: WHITE
- CAVITY INSULATION
 - MINERAL-FIBER-BLANKET INSULATION: ASTM C665, CONSISTING OF FIBERS MANUFACTURED FROM GLASS, SLAGWOOL, OR ROCK WOOL.
 - UNFACED: TYPE 1 PASSING ASTM E 136 FOR COMBUSTION CHARACTERISTICS.
- EXTERIOR INSULATION
 - MINERAL-FIBER-BLANKET INSULATION: ASTM C665, CONSISTING OF FIBERS MANUFACTURED FROM GLASS, SLAGWOOL, OR ROCK WOOL.
 - UNFACED: TYPE 1 PASSING ASTM E 136 FOR COMBUSTION CHARACTERISTICS

INSULATION ACCESSORIES: MANUFACTURER'S STANDARD SEALANT, HANGERS, FASTENERS, CLIPS, TAPE & ADHESIVE, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION.

BUILDING ACCESSORIES

GENERAL: PROVIDE ACCESSORIES AS STANDARD WITH METAL BUILDING SYSTEM MANUFACTURER AND AS SPECIFIED. FABRICATE AND FINISH ACCESSORIES AT THE FACTORY TO GREATEST EXTENT POSSIBLE, BY MANUFACTURER'S STANDARD PROCEDURES AND PROCESSES, COMPLY WITH INDICATED PROFILES AND WITH DIMENSIONAL AND STRUCTURAL REQUIREMENTS.

- FORM EXPOSED SHEET METAL ACCESSORIES THAT ARE WITHOUT EXCESSIVE OIL-CANNING, BUCKLING, AND TOOL MARKS AND THAT ARE TRUE TO LINE AND LEVELS INDICATED, WITH EXPOSED EDGES FOLDED BACK TO FORM HEMS.

ROOF PANEL ACCESSORIES: PROVIDE COMPONENTS REQUIRED FOR A COMPLETE METAL ROOF PANEL ASSEMBLY INCLUDING COPINGS, FASCIAE, CORNER UNITS, RIDGE CLOSURES, CLIPS, SEALANTS, GASKETS, FILLERS, CLOSURE STRIPS, AND SIMILAR ITEMS. MATCH MATERIAL AND FINISH OF METAL ROOF PANELS UNLESS OTHERWISE INDICATED.

WALL PANEL ACCESSORIES: PROVIDE COMPONENTS REQUIRED FOR A COMPLETE METAL WALL PANEL ASSEMBLY INCLUDING COPINGS, FASCIAE, MULLIONS, SILLS, CORNER UNITS, CLIPS, SEALANTS, GASKETS, FILLERS, CLOSURE STRIPS, AND SIMILAR ITEMS. MATCH MATERIAL AND FINISH OF METAL WALL PANELS UNLESS OTHERWISE INDICATED.

FLASHING AND TRIM: ALUMINUM-ZINC ALLOY-COATED STEEL SHEET, 0.017-INCH (26 GA.) NOMINAL UNCOATED STEEL THICKNESS, PREPAINTED WITH COIL COATING, FINISHED TO MATCH ADJACENT METAL PANELS.

GUTTERS: ALUMINUM-ZINC ALLOY-COATED STEEL SHEET, 0.018 NOMINAL UNCOATED STEEL THICKNESS, PREPAINTED WITH COIL COATING, FINISHED TO MATCH ROOF FASCIA AND RAKE TRIM. MATCH PROFILE OF GABLE TRIM, COMPLETE WITH END PIECES, OUTLET TUBES, AND OTHER SPECIAL PIECES AS REQUIRED. FABRICATE IN MINIMUM 10-FOOT- (3-M.) LONG SECTIONS, SIZED ACCORDING TO SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL."

- GUTTER SUPPORTS: FABRICATED FROM SAME MATERIAL AND FINISH AS GUTTERS.

DOWNSPOUTS: ALUMINUM-ZINC ALLOY-COATED STEEL SHEET, 0.024-INCH (0.61-MM) NOMINAL UNCOATED STEEL THICKNESS, PREPAINTED WITH COIL COATING, FINISHED TO MATCH METAL WALL PANELS. FABRICATE IN MINIMUM 10-FOOT LONG SECTIONS, COMPLETE WITH FORMED ELBOWS AND OFFSETS.

- MOUNTING STRAPS: FABRICATED FROM SAME MATERIAL AND FINISH AS GUTTERS.

EXECUTION

ERECTION OF STRUCTURAL FRAMING

ERECT METAL BUILDING SYSTEM ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND DRAWINGS.

DO NOT FIELD CUT, DRILL, OR ALTER STRUCTURAL MEMBERS WITHOUT WRITTEN APPROVAL FROM METAL BUILDING SYSTEM MANUFACTURER'S PROFESSIONAL ENGINEER.

SET STRUCTURAL FRAMING ACCURATELY IN LOCATIONS AND TO ELEVATIONS INDICATED, ACCORDING TO AISI SPECIFICATIONS REFERENCED IN THIS SECTION. MAINTAIN STRUCTURAL STABILITY OF FRAME DURING ERECTION.

BASE AND BEARING PLATES: CLEAN CONCRETE- AND MASONRY-BEARING SURFACES OF BOND-REDUCING MATERIALS AND ROUGHEN SURFACES PRIOR TO SETTING PLATES. CLEAN BOTTOM SURFACE OF PLATES.

- SET PLATES FOR STRUCTURAL MEMBERS ON WEDGES, SHIMS, OR SETTING NUTS AS REQUIRED.
- TIGHTEN ANCHOR RODS AFTER SUPPORTED MEMBERS HAVE BEEN POSITIONED AND PLUMBED. DO NOT REMOVE WEDGES OR SHIMS BUT, IF PROTRUDING, CUT OFF FLUSH WITH EDGE OF PLATE BEFORE PACKING WITH GROUT.
- PROMPTLY PACK GROUT SOLIDLY BETWEEN BEARING SURFACES AND PLATES SO NO VOIDS REMAIN. NEATLY FINISH EXPOSED SURFACES; PROTECT GROUT AND ALLOW TO CURE. COMPLY WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR SHRINKAGE-RESISTANT GROUTS.

ALIGN AND ADJUST STRUCTURAL FRAMING BEFORE PERMANENTLY FASTENING. BEFORE ASSEMBLY, CLEAN BEARING SURFACES AND OTHER SURFACES THAT WILL BE IN PERMANENT CONTACT WITH FRAMING. PERFORM NECESSARY ADJUSTMENTS TO COMPENSATE FOR DISCREPANCIES IN ELEVATIONS AND ALIGNMENT.

- LEVEL AND PLUMB INDIVIDUAL MEMBERS OF STRUCTURE.
- OF ERECTION AND MEAN TEMPERATURE WHEN STRUCTURE WILL BE COMPLETED AND IN SERVICE.

PRIMARY FRAMING AND END WALLS: ERECT FRAMING LEVEL, PLUMB, RIGID, SECURE, AND TRUE TO LINE. LEVEL BASEPLATES TO A TRUE EVEN PLANE WITH FULL BEARING TO SUPPORTING STRUCTURES. SET WITH DOUBLE-NUTTED ANCHOR BOLTS. USE GROUT TO OBTAIN UNIFORM BEARING AND TO MAINTAIN A LEVEL BASE-LINE ELEVATION. MOIST-CURE GROUT FOR NOT LESS THAN SEVEN DAYS AFTER PLACEMENT.

- MAKE FIELD CONNECTIONS USING HIGH-STRENGTH BOLTS INSTALLED ACCORDING TO RCSC'S "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS" FOR BOLT TYPE AND JOINT TYPE SPECIFIED.
 - JOINT TYPE: SNUG TIGHTENED OR PRETENSIONED AS REQUIRED BY MANUFACTURER.

SECONDARY FRAMING: ERECT FRAMING LEVEL, PLUMB, RIGID, SECURE, AND TRUE TO LINE. FIELD BOLT SECONDARY FRAMING TO CLIPS ATTACHED TO PRIMARY FRAMING.

- PROVIDE RAKE OR GABLE PURLINS WITH TIGHT-FITTING CLOSURE CHANNELS AND FASCIAE.
- LOCATE AND SPACE WALL GIRTS TO SUIT OPENINGS SUCH AS DOORS AND WINDOWS.
- PROVIDE SUPPLEMENTAL FRAMING AT ENTIRE PERIMETER OF OPENINGS, INCLUDING DOORS, WINDOWS, VENTILATORS, AND OTHER PENETRATIONS OF ROOF AND WALLS.

BRACING: INSTALL BRACING IN ROOF AND SIDEWALLS WHERE INDICATED ON ERECTION DRAWINGS.

- TIGHTEN ROD AND CABLE BRACING TO AVOID SAG.
- LOCATE INTERIOR END-BAY BRACING ONLY WHERE INDICATED.

FRAMING FOR OPENINGS: PROVIDE SHAPES OF PROPER DESIGN AND SIZE TO REINFORCE OPENINGS AND TO CARRY LOADS AND VIBRATIONS IMPOSED, INCLUDING EQUIPMENT FURNISHED UNDER MECHANICAL AND ELECTRICAL WORK. SECURELY ATTACH TO STRUCTURAL FRAMING.

ERECTION TOLERANCES: MAINTAIN ERECTION TOLERANCES OF STRUCTURAL FRAMING WITHIN AISI 303.

METAL PANEL INSTALLATION, GENERAL

GENERAL: ANCHOR METAL PANELS AND OTHER COMPONENTS OF THE WORK SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT.

- FIELD CUT METAL PANELS AS REQUIRED FOR DOORS, WINDOWS, AND OTHER OPENINGS. CUT OPENINGS AS SMALL AS POSSIBLE, NEATLY TO SIZE REQUIRED, AND WITHOUT DAMAGE TO ADJACENT METAL PANEL FINISHES.
 - FIELD CUTTING OF METAL PANELS BY TORCH IS NOT PERMITTED UNLESS APPROVED IN WRITING BY MANUFACTURER.
- INSTALL METAL PANELS PERPENDICULAR TO STRUCTURAL SUPPORTS UNLESS OTHERWISE INDICATED.
- FLASH AND SEAL METAL PANELS WITH WEATHER CLOSURES AT PERIMETER OF OPENINGS AND SIMILAR ELEMENTS. FASTEN WITH SELF-TAPPING SCREWS.
- LOCATE AND SPACE FASTENINGS IN UNIFORM VERTICAL AND HORIZONTAL ALIGNMENT.
- LOCATE METAL PANEL SPLICES OVER STRUCTURAL SUPPORTS WITH END LAPS IN ALIGNMENT.
- LAP METAL FLASHING OVER METAL PANELS TO ALLOW MOISTURE TO RUN OVER AND OFF THE MATERIAL.

LAP-SEAM METAL PANELS: INSTALL SCREW FASTENERS USING POWER TOOLS WITH CONTROLLED TORQUE ADJUSTED TO COMPRESS EPDM WASHERS TIGHTLY WITHOUT DAMAGE TO WASHERS, SCREW THREADS, OR METAL PANELS. INSTALL SCREWS IN PREDRILLED HOLES.

- ARRANGE AND NEST SIDE-LAP JOINTS SO PREVAILING WINDS BLOW OVER, NOT INTO, LAPPED JOINTS. LAP RIBBED OR FLUTED SHEETS ONE FULL RIB CORRUGATION. APPLY METAL PANELS AND ASSOCIATED ITEMS FOR NEAT AND WEATHERTIGHT ENCLOSURE. AVOID "PANEL CREEP" OR APPLICATION NOT TRUE TO LINE.

METAL PROTECTION: WHERE DISSIMILAR METALS CONTACT EACH OTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTACT SURFACES WITH CORROSION-RESISTANT COATINGS OR APPLYING RUBBERED-ASPHALT UNDERLAYMENT TO EACH CONTACT SURFACE, OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY METAL ROOF PANEL MANUFACTURER.

JOINT SEALERS: INSTALL GASKETS, JOINT FILLERS, AND SEALANTS WHERE INDICATED AND WHERE REQUIRED FOR WEATHERPROOF PERFORMANCE OF METAL PANEL ASSEMBLIES. PROVIDE TYPES OF GASKETS, FILLERS, AND SEALANTS INDICATED, OR, IF NOT INDICATED, PROVIDE TYPES RECOMMENDED BY METAL PANEL MANUFACTURER.

- SEAL METAL PANEL END LAPS WITH DOUBLE BEADS OF TAPE OR SEALANT THE FULL WIDTH OF PANEL. SEAL SIDE JOINTS WHERE RECOMMENDED BY METAL PANEL MANUFACTURER.
- PREPARE JOINTS AND APPLY SEALANTS TO COMPLY WITH REQUIREMENTS IN SECTION 079200 "JOINT SEALANTS."

METAL ROOF PANEL INSTALLATION

GENERAL: PROVIDE METAL ROOF PANELS OF FULL LENGTH FROM EAVE TO RIDGE UNLESS OTHERWISE INDICATED OR RESTRICTED BY SHIPPING LIMITATIONS.

- INSTALL RIDGE CAPS AS METAL ROOF PANEL WORK PROCEEDS.
- FLASH AND SEAL METAL ROOF PANELS WITH WEATHER CLOSURES AT EAVES AND RAKES. FASTEN WITH SELF-TAPPING SCREWS.

STANDING-SEAM METAL ROOF PANELS: FASTEN METAL ROOF PANELS TO SUPPORTS WITH CONCEALED CLIPS AT EACH STANDING-SEAM JOINT, AT LOCATION AND SPACING AND WITH FASTENERS RECOMMENDED BY MANUFACTURER.

- INSTALL CLIPS TO SUPPORTS WITH SELF-DRILLING OR SELF-TAPPING FASTENERS.
- INSTALL PRESSURE PLATES AT LOCATIONS INDICATED IN MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
- SEAMED JOINT: CRIMP STANDING SEAMS WITH MANUFACTURER-APPROVED MOTORIZED SEAMER TOOL SO THAT CLIP, METAL ROOF PANEL, AND FACTORY-APPLIED SEALANT ARE COMPLETELY ENGAGED.
- RIGIDLY FASTEN EAVE END OF METAL ROOF PANELS AND ALLOW RIDGE END FREE MOVEMENT FOR THERMAL EXPANSION AND CONTRACTION. PREDRILL PANELS FOR FASTENERS.
- PROVIDE METAL CLOSURES AT EACH SIDE OF RIDGE CAPS.

METAL WALL PANEL INSTALLATION

GENERAL: INSTALL METAL WALL PANELS IN ORIENTATION, SIZES, AND LOCATIONS INDICATED ON DRAWINGS. INSTALL PANELS PERPENDICULAR TO GIRTS, EXTENDING FULL HEIGHT OF BUILDING, UNLESS OTHERWISE INDICATED. ANCHOR METAL WALL PANELS AND OTHER COMPONENTS OF THE WORK SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT.

- UNLESS OTHERWISE INDICATED, BEGIN METAL PANEL INSTALLATION AT CORNERS WITH CENTER OF RIB LINED UP WITH LINE OF FRAMING.
- SHIM OR OTHERWISE PLUMB SUBSTRATES RECEIVING METAL WALL PANELS.
- WHEN TWO ROWS OF METAL PANELS ARE REQUIRED, LAP PANELS 4 INCHES (102 MM) MINIMUM.
- WHEN BUILDING HEIGHT REQUIRES TWO ROWS OF METAL PANELS AT GABLE ENDS, ALIGN LAP OF GABLE PANELS OVER METAL WALL PANELS AT EAVE HEIGHT.
- RIGIDLY FASTEN BASE END OF METAL WALL PANELS AND ALLOW EAVE END FREE MOVEMENT FOR THERMAL EXPANSION AND CONTRACTION. PREDRILL PANELS.

8. INSTALL FLASHING AND TRIM AS METAL WALL PANEL WORK PROCEEDS.
9. APPLY ELASTOMERIC SEALANT CONTINUOUSLY BETWEEN METAL BASE CHANNEL (SILL ANGLE) AND CONCRETE, AND ELSEWHERE AS INDICATED ON DRAWINGS; IF NOT INDICATED, AS NECESSARY FOR WATERPROOFING.
10. ALIGN BOTTOM OF METAL WALL PANELS AND FASTEN WITH BLIND RIVETS, BOLTS, OR SELF-DRILLING OR SELF-TAPPING SCREWS.
11. PROVIDE WEATHERPROOF ESCUTCHEONS FOR PIPE AND CONDUIT PENETRATING EXTERIOR WALLS.

METAL WALL PANELS: INSTALL METAL WALL PANELS ON EXTERIOR SIDE OF GIRTS. ATTACH METAL WALL PANELS TO SUPPORTS WITH FASTENERS AS RECOMMENDED BY MANUFACTURER.

THERMAL INSULATION INSTALLATION

GENERAL: INSTALL INSULATION CONCURRENTLY WITH METAL PANEL INSTALLATION, IN THICKNESS INDICATED TO COVER ENTIRE SURFACE, ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

1. SET VAPOR-RETARDER TOWARD WARM SIDE OF CONSTRUCTION UNLESS OTHERWISE INDICATED. DO NOT OBSTRUCT VENTILATION SPACES EXCEPT FOR FIRESTOPPING.
2. TAPE JOINTS AND RUPTURES IN VAPOR RETARDER AND SEAL EACH CONTINUOUS AREA TO THE SURROUNDING CONSTRUCTION TO ENSURE AIRTIGHT INSTALLATION.
3. INSTALL INSULATION BLANKETS STRAIGHT AND TRUE IN ONE-PIECE LENGTHS.

BLANKET ROOF INSULATION:

1. SCRIM FABRIC SUPPORT BANDING: INSTALL BANDING PERPENDICULAR AND PARALLEL TO BUILDING FRAMING AT SPACINGS AS RECOMMENDED BY INSULATION SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS. ATTACH TO STRUCTURE USING RECOMMENDED CLIPS AND FASTENERS
2. INSTALL INSULATION SUPPORT SCRIM FABRIC OVER BANDING PER INSULATION SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS. PULL FABRIC TO BE SMOOTH AND SQUARE TO THE STRUCTURE AND FASTEN WITH RECOMMENDED ADHESIVE AND FASTENERS.
3. INSTALL UNFACED BLANKET INSULATION ON TOP OF SCRIM FABRIC TO COMPLETELY FILL CAVITY BETWEEN PURLINS.
4. INSTALL SECOND (TOP) LAYER OF UNFACED BLANKET INSULATION OVER LOWER LAYER AND PERPENDICULAR TO PURLINS, CREATING A THERMAL BREAK BELOW METAL ROOF PANELS.
5. INSTALL ROOF PANELS PER MANUFACTURER'S INSTRUCTIONS.

BLANKET WALL INSULATION:

1. FROM OUTSIDE, INSTALL INSULATION HANGERS AS REQUIRED.
2. HANG EXTERIOR LAYER OF PERFORATED FOIL-FACED INSULATION WITH FACING TO THE OUTSIDE. TRIM 6" INSULATION FROM THE BOTTOM AND WRAP FACING AROUND TO THE INSIDE.
3. INSTALL WALL SHEETING PER MANUFACTURER'S INSTRUCTIONS.
4. FROM INSIDE, INSTALL UNFACED BLANKET INSULATION BETWEEN GIRTS FILLING ENTIRE CAVITY.
5. INSTALL SCRIM FABRIC PER INSULATION SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS WITH RECOMMENDED ADHESIVE AND FASTENERS. PULL FABRIC TO BE SMOOTH AND SQUARE TO THE STRUCTURE.
6. INSTALL METAL BANDING AND FASTEN TO STRUCTURE.

ACCESSORY INSTALLATION

GENERAL: INSTALL ACCESSORIES WITH POSITIVE ANCHORAGE TO BUILDING WITH WEATHERTIGHT MOUNTING. PROVIDE FOR THERMAL EXPANSION. COORDINATE INSTALLATION WITH FLASHINGS AND OTHER COMPONENTS.

1. INSTALL COMPONENTS REQUIRED FOR A COMPLETE METAL ROOF PANEL ASSEMBLY, INCLUDING TRIM, COPINGS, RIDGE CLOSURES, SEAM COVERS, FLASHINGS, SEALANTS, GASKETS, FILLERS, CLOSURE STRIPS, AND SIMILAR ITEMS.
2. INSTALL COMPONENTS FOR A COMPLETE METAL WALL PANEL ASSEMBLY, INCLUDING TRIM, COPINGS, CORNERS, SEAM COVERS, FLASHINGS, SEALANTS, GASKETS, FILLERS, CLOSURE STRIPS, AND SIMILAR ITEMS.
3. WHERE DISSIMILAR METALS CONTACT EACH OTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTACT SURFACES WITH CORROSION-RESISTANT COATING, BY APPLYING RUBBERIZED-ASPHALT UNDERLAYMENT TO EACH CONTACT SURFACE, OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY MANUFACTURER.

FLASHING AND TRIM: COMPLY WITH PERFORMANCE REQUIREMENTS, MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL." PROVIDE CONCEALED FASTENERS WHERE POSSIBLE AND SET UNITS TRUE TO LINE AND LEVEL. INSTALL WORK WITH LAPS, JOINTS, AND SEAMS THAT WILL BE PERMANENTLY WATERTIGHT AND WEATHER RESISTANT.

1. INSTALL EXPOSED FLASHING AND TRIM THAT IS WITHOUT EXCESSIVE OIL-CANNING, BUCKLING, AND TOOL MARKS AND THAT IS TRUE TO LINE AND LEVELS INDICATED, WITH EXPOSED EDGES FOLDED BACK TO FORM HEMS. INSTALL SHEET METAL FLASHING AND TRIM TO FIT SUBSTRATES AND TO RESULT IN WATERPROOF AND WEATHER-RESISTANT PERFORMANCE.
2. EXPANSION PROVISIONS: PROVIDE FOR THERMAL EXPANSION OF EXPOSED FLASHING AND TRIM. SPACE MOVEMENT JOINTS AT A MAXIMUM OF 10 FEET (3 M) WITH NO JOINTS ALLOWED WITHIN 24 INCHES (600 MM) OF CORNER OR INTERSECTION. WHERE LAPPED OR BAYONET-TYPE EXPANSION PROVISIONS CANNOT BE USED OR WOULD NOT BE SUFFICIENTLY WEATHER RESISTANT AND WATERPROOF, FORM EXPANSION JOINTS OF INTERMESHING HOOKED FLANGES, NOT LESS THAN 1 INCH (25 MM) DEEP, FILLED WITH MASTIC SEALANT (CONCEALED WITHIN JOINTS).

GUTTERS: JOIN SECTIONS WITH RIVETED-AND-SOLDERED OR LAPPED-AND-SEALED JOINTS. ATTACH GUTTERS TO EAVE WITH GUTTER HANGERS SPACED AS REQUIRED FOR GUTTER SIZE, BUT NOT MORE THAN 36 INCHES (914 MM) O.C. USING MANUFACTURER'S STANDARD FASTENERS. PROVIDE END CLOSURES AND SEAL WATERTIGHT WITH SEALANT. PROVIDE FOR THERMAL EXPANSION.

DOWNSPOUTS: JOIN SECTIONS WITH 1-1/2-INCH (38-MM) TELESOPING JOINTS. PROVIDE FASTENERS DESIGNED TO HOLD DOWNSPOUTS SECURELY 1 INCH (25 MM) AWAY FROM WALL. LOCATE FASTENERS AT TOP AND BOTTOM AND AT APPROXIMATELY 60 INCHES (1524 MM) O.C. IN BETWEEN.

1. PROVIDE SPLASHBLOCKS AT DOWNSPOUT OUTLETS.

PIPE FLASHING: FORM FLASHING AROUND PIPE PENETRATION AND METAL ROOF PANELS. FASTEN AND SEAL TO PANEL AS RECOMMENDED BY MANUFACTURER.

FIELD QUALITY CONTROL

SPECIAL INSPECTIONS: OWNER WILL ENGAGE A QUALIFIED SPECIAL INSPECTOR TO PERFORM FIELD QUALITY CONTROL SPECIAL INSPECTIONS AND TO SUBMIT REPORTS.

DIVISION 31: EARTHWORK

SITE CLEARING

MATERIAL OWNERSHIP

EXCEPT FOR STRIPPED TOPSOIL AND OTHER MATERIALS INDICATED TO BE STOCKPILED OR OTHERWISE REMAIN OWNER'S PROPERTY, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM PROJECT SITE.

SUBMITTALS

EXISTING CONDITIONS: DOCUMENTATION OF EXISTING CONDITIONS, ADJOINING CONSTRUCTION AND PREVIOUS SITE IMPROVEMENTS THAT ESTABLISHES PRECONSTRUCTION CONDITIONS THAT MIGHT BE MISCONSTRUED AS DAMAGE CAUSED BY SITE CLEARING.

RECORD DRAWINGS: IDENTIFYING AND ACCURATELY SHOWING LOCATIONS OF CAPPED UTILITIES AND OTHER SUBSURFACE STRUCTURAL, ELECTRICAL, AND MECHANICAL CONDITIONS.

PROJECT CONDITIONS

TRAFFIC: MINIMIZE INTERFERENCE WITH ADJOINING ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES DURING SITE-CLEARING OPERATIONS.

1. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS, OR OTHER ADJACENT OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM OWNER AND AUTHORITIES HAVING JURISDICTION.
2. PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS IF REQUIRED BY OWNER OR AUTHORITIES HAVING JURISDICTION.

UTILITY LOCATOR SERVICE: NOTIFY OPUS FOR AREA WHERE PROJECT IS LOCATED BEFORE SITE CLEARING.

DO NOT COMMENCE SITE-CLEARING OPERATIONS UNTIL TEMPORARY EROSION AND

SEDIMENTATION CONTROL AND PLANT-PROTECTION MEASURES ARE IN PLACE.
TOPSOIL REPLACEMENT: PERFORM ONLY WHEN THE TOPSOIL IS DRY OR SLIGHTLY MOIST.

EXECUTION

PREPARATION

PROTECT AND MAINTAIN BENCHMARKS AND SURVEY CONTROL POINTS FROM DISTURBANCE DURING CONSTRUCTION.

LOCATE AND CLEARLY IDENTIFY VEGETATION TO REMAIN.

PROTECT EXISTING SITE IMPROVEMENTS TO REMAIN FROM DAMAGE DURING CONSTRUCTION.

1. RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO OWNER.

TEMPORARY EROSION AND SEDIMENTATION CONTROL

PROVIDE TEMPORARY EROSION- AND SEDIMENTATION-CONTROL MEASURES TO PREVENT SOIL EROSION AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS, ACCORDING TO REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

VERIFY THAT FLOWS OF WATER REDIRECTED FROM CONSTRUCTION AREAS OR GENERATED BY CONSTRUCTION ACTIVITY DO NOT ENTER OR CROSS PROTECTION ZONES.

INSPECT, REPAIR, AND MAINTAIN EROSION- AND SEDIMENTATION-CONTROL MEASURES DURING CONSTRUCTION UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED.

REMOVE EROSION AND SEDIMENTATION CONTROLS AND RESTORE AND STABILIZE AREAS DISTURBED DURING REMOVAL.

EXISTING UTILITIES

INTERRUPTING EXISTING UTILITIES: DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY UTILITY SERVICES ACCORDING TO REQUIREMENTS INDICATED:

NOTIFY ARCHITECT NOT LESS THAN TWO DAYS IN ADVANCE OF PROPOSED UTILITY INTERRUPTIONS.

CLEARING AND GRUBBING

REMOVE OBSTRUCTIONS TO PERMIT INSTALLATION OF NEW CONSTRUCTION.

STRIPPING

REMOVE SUBSOIL AND NON-SOIL MATERIALS IN AREAS NECESSARY FOR ACCEPTABLE CONSTRUCTION SUBBASE IN BUILDING AND PAVED AREAS.

SITE IMPROVEMENTS

REMOVE EXISTING ABOVE AND BELOW-GRADE IMPROVEMENTS AS INDICATED AND NECESSARY TO FACILITATE NEW CONSTRUCTION.

DISPOSAL OF SURPLUS AND WASTE MATERIALS

REMOVE UNSUITABLE AND WASTE MATERIALS INCLUDING TRASH AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.

EARTH MOVING

RELATED DOCUMENTS

ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS; LATEST EDITION

SUMMARY

SECTION INCLUDES:

1. PREPARING SUBGRADES FOR SLABS-ON-GRADE, WALKS, AND PAVEMENTS.

2. EXCAVATING AND BACKFILLING FOR BUILDINGS AND STRUCTURES.

3. SUBBASE AND DRAINAGE COURSE FOR CONCRETE SLABS-ON-GRADE.

4. SUBBASE COURSE FOR CONCRETE WALKS AND PAVEMENTS.

5. SUBBASE COURSE AND BASE COURSE FOR ASPHALT PAVING.

6. EXCAVATING AND BACKFILLING TRENCHES FOR UTILITIES AND PITS FOR BURIED UTILITY STRUCTURES.

SOIL MATERIALS

1. SATISFACTORY SOILS: SOIL CLASSIFICATION GROUPS GW, GP, GM, SW, SP, AND SM ACCORDING TO ASTM D 2487, OR A COMBINATION OF THESE GROUPS; FREE OF ROCK OR GRAVEL LARGER THAN 2 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, AND OTHER DELETERIOUS MATTER.

2. UNSATISFACTORY SOILS: SOIL CLASSIFICATION GROUPS GC, SC, CL, ML, OL, CH, MH, OH, AND PT ACCORDING TO ASTM D 2487, OR A COMBINATION OF THESE GROUPS.

a. UNSATISFACTORY SOILS ALSO INCLUDE SATISFACTORY SOILS NOT MAINTAINED WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT AT TIME OF COMPACTION.

3. SUBBASE COURSE OR ENGINEERED FILL: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; WITH AT LEAST 90 PERCENT PASSING A 1-1/2-INCH SIEVE AND NOT MORE THAN 12 PERCENT PASSING A No. 200 SIEVE, ODOT ITEM 304.

4. BASE COURSE: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; WITH AT LEAST 95 PERCENT PASSING A 1-1/2-INCH SIEVE AND NOT MORE THAN 8 PERCENT PASSING A No. 200 SIEVE, ODOT ITEM 304.

5. BEDDING COURSE: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; EXCEPT WITH 100 PERCENT PASSING A 1-INCH SIEVE AND NOT MORE THAN 8 PERCENT PASSING A No. 200 SIEVE.

6. FILTER MATERIAL: NARROWLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, OR CRUSHED STONE AND NATURAL SAND; ASTM D 448; COARSE-AGGREGATE GRADING SIZE 67; WITH 100 PERCENT PASSING A 1-INCH SIEVE AND 0 TO 5 PERCENT PASSING A No. 4 SIEVE

7. SAND: ASTM C 33; FINE AGGREGATE.

8. IMPERVIOUS FILL: CLAYEY GRAVEL AND SAND MIXTURE CAPABLE OF COMPACTING TO A DENSE STATE.

ACCESSORIES

DETECTABLE WARNING TAPE: ACID- AND ALKAL-RESISTANT, POLYETHYLENE FILM WARNING TAPE MANUFACTURED FOR MARKING AND IDENTIFYING UNDERGROUND UTILITIES, A MINIMUM OF 6 INCHES WIDE AND A MILS THICK, CONTINUOUSLY INSCRIBED WITH A DESCRIPTION OF THE UTILITY, WITH METALLIC CORE ENCASED IN A PROTECTIVE JACKET FOR CORROSION PROTECTION, DETECTABLE BY METAL DETECTOR WHEN TAPE IS BURIED UP TO 30 INCHES DEEP; COLORED PER ITEM C BELOW.

TAPE COLOR DESIGNATIONS

1. RED: ELECTRIC.

2. YELLOW: GAS, OIL, STEAM, AND DANGEROUS MATERIALS.

3. ORANGE: TELEPHONE AND OTHER COMMUNICATIONS.

4. BLUE: WATER SYSTEMS.

5. GREEN: SEWER SYSTEMS.

PREPARATION

PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT, AND OTHER HAZARDS CREATED BY EARTH MOVING OPERATIONS.

PROTECT AND MAINTAIN EROSION AND SEDIMENTATION CONTROLS DURING EARTH MOVING OPERATIONS.

EXCAVATION, GENERAL

UNCLASSIFIED EXCAVATION: EXCAVATE TO SUBGRADE ELEVATIONS REGARDLESS OF THE CHARACTER OF SURFACE AND SUBSURFACE CONDITIONS ENCOUNTERED. UNCLASSIFIED EXCAVATED MATERIALS MAY INCLUDE ROCK, SOIL MATERIALS, AND OBSTRUCTIONS. NO CHANGES IN THE CONTRACT SUM OR THE CONTRACT TIME WILL BE AUTHORIZED FOR ROCK EXCAVATION OR REMOVAL OF OBSTRUCTIONS.

1. IF EXCAVATED MATERIALS INTENDED FOR FILL AND BACKFILL INCLUDE UNSATISFACTORY SOIL MATERIALS AND ROCK, REPLACE WITH SATISFACTORY SOIL MATERIALS PER EXCAVATION DIMENSIONS BELOW.

CLASSIFIED EXCAVATION: EXCAVATE TO SUBGRADE ELEVATIONS. MATERIAL TO BE EXCAVATED WILL BE CLASSIFIED AS EARTH AND ROCK. DO NOT EXCAVATE ROCK UNTIL IT HAS BEEN CLASSIFIED AND CROSS SECTIONED BY ARCHITECT. THE CONTRACT SUM WILL BE ADJUSTED FOR ROCK EXCAVATION ACCORDING TO UNIT PRICES INCLUDED IN THE CONTRACT DOCUMENTS. CHANGES IN THE CONTRACT TIME MAY BE AUTHORIZED FOR ROCK EXCAVATION.

1. EARTH EXCAVATION INCLUDES EXCAVATING PAVEMENTS AND OBSTRUCTIONS VISIBLE ON SURFACE, UNDERGROUND STRUCTURES, UTILITIES, AND OTHER ITEMS INDICATED TO BE REMOVED; TOGETHER WITH SOIL, BOULDERS, AND OTHER MATERIALS NOT CLASSIFIED AS ROCK OR UNAUTHORIZED EXCAVATION.

a. INTERMITTENT DRILLING, RAM HAMMERING, OR RIPPING OF MATERIAL NOT CLASSIFIED AS ROCK EXCAVATION IS EARTH EXCAVATION.

2. ROCK EXCAVATION INCLUDES REMOVAL AND DISPOSAL OF ROCK. REMOVE ROCK TO LINES AND SUBGRADE ELEVATIONS INDICATED TO PERMIT INSTALLATION OF PERMANENT CONSTRUCTION WITHOUT EXCEEDING THE EXCAVATION DIMENSIONS.

EXCAVATION DIMENSIONS:

- 12 INCHES OUTSIDE OF CONCRETE FORMS.
- 6 INCHES BENEATH BOTTOM OF CONCRETE SLABS-ON-GRADE.
- 6 INCHES BENEATH PIPE IN TRENCHES, AND THE GREATER OF 24 INCHES WIDER THAN PIPE OR 42 INCHES WIDE.

EXCAVATION FOR STRUCTURES

EXCAVATE TO INDICATED ELEVATIONS AND DIMENSIONS WITHIN A TOLERANCE OF PLUS OR MINUS 1 INCH. IF APPLICABLE, EXTEND EXCAVATIONS A SUFFICIENT DISTANCE FROM STRUCTURES FOR PROTECTING AND REMOVING CONCRETE FORMWORK, FOR INSTALLING SERVICES AND OTHER CONSTRUCTION, AND FOR INSPECTIONS.

- EXCAVATIONS FOR FOOTINGS AND FOUNDATIONS: DO NOT DISTURB BOTTOM OF EXCAVATION. EXCAVATE BY HAND TO FINAL GRADE JUST BEFORE PLACING CONCRETE REINFORCEMENT. TRIM BOTTOMS TO REQUIRED LINES AND GRADES TO LEAVE SOLID BASE TO RECEIVE OTHER WORK.

EXCAVATION FOR WALKS AND PAVEMENTS

EXCAVATE SURFACES UNDER WALKS AND PAVEMENTS TO INDICATED LINES, CROSS SECTIONS, ELEVATIONS, AND SUBGRADES.

EXCAVATION FOR UTILITY TRENCHES

COMPLY WITH THE LATEST EDITION OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEM 611 PIPE CULVERTS, SEWERS, DRAINS, AND DRAINAGE STRUCTURES.

CONDUIT UNDER PAVEMENT: REFER TO THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEM 611.02, TYPE C CONDUITS.

CONDUIT NOT UNDER PAVEMENT: REFER TO THE OHIO DEPARTMENT OF TRANSPORTATION MATERIAL SPECIFICATIONS ITEM 611.02, TYPE C CONDUITS.

EXCAVATE TRENCHES TO INDICATED GRADIENTS, LINES, DEPTHS, AND ELEVATIONS. BEYOND BUILDING PERIMETER, EXCAVATE TRENCHES TO ALLOW INSTALLATION OF TOP OF PIPE BELOW FROST LINE.

EXCAVATE TRENCHES TO UNIFORM WIDTHS TO PROVIDE THE FOLLOWING CLEARANCE ON EACH SIDE OF PIPE OR CONDUIT. EXCAVATE TRENCH WALLS VERTICALLY FROM TRENCH BOTTOM TO 12 INCHES HIGHER THAN TOP OF PIPE OR CONDUIT UNLESS OTHERWISE INDICATED.

- CLEARANCE: 12 INCHES EACH SIDE OF PIPE OR CONDUIT OR AS INDICATED.

TRENCH BOTTOMS: EXCAVATE TRENCHES 4 INCHES DEEPER THAN BOTTOM OF PIPE AND CONDUIT ELEVATIONS TO ALLOW FOR BEDDING COURSE. HAND-EXCAVATE DEEPER FOR BELLS OF PIPE.

- EXCAVATE TRENCHES 6 INCHES DEEPER THAN ELEVATION REQUIRED IN ROCK OR OTHER UNYIELDING BEARING MATERIAL TO ALLOW FOR BEDDING COURSE.

NOTIFY ARCHITECT WHEN EXCAVATIONS HAVE REACHED REQUIRED SUBGRADE.

AUTHORIZED ADDITIONAL EXCAVATION AND REPLACEMENT MATERIAL WILL BE PAID FOR ACCORDING TO CONTRACT PROVISIONS FOR UNIT PRICES.

RECONSTRUCT SUBGRADES DAMAGED BY FREEZING TEMPERATURES, FROST, RAIN, ACCUMULATED WATER, OR CONSTRUCTION ACTIVITIES, AS DIRECTED BY ARCHITECT, WITHOUT ADDITIONAL COMPENSATION.

UNAUTHORIZED EXCAVATION

FILL UNAUTHORIZED EXCAVATION UNDER FOUNDATIONS OR WALL FOOTINGS BY EXTENDING BOTTOM ELEVATION OF CONCRETE FOUNDATION OR FOOTING TO EXCAVATION BOTTOM, WITHOUT ALTERING TOP ELEVATION. LEAN CONCRETE FILL, WITH 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI, MAY BE USED WHEN APPROVED BY ARCHITECT.

STORAGE OF SOIL MATERIALS

STOCKPILE BORROW SOIL MATERIALS AND EXCAVATED SATISFACTORY SOIL MATERIALS WITHOUT INTERMIXING. PLACE, GRADE, AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.

BACKFILL

PLACE AND COMPACT BACKFILL IN EXCAVATIONS PROMPTLY, BUT NOT BEFORE COMPLETING THE FOLLOWING:

- CONSTRUCTION BELOW FINISH GRADE INCLUDING, WHERE APPLICABLE, SUBDRAINAGE, DAMPROOFING, WATERPROOFING, AND PERIMETER INSULATION.
- SURVEYING LOCATIONS OF UNDERGROUND UTILITIES FOR RECORD DOCUMENTS.
- TESTING AND INSPECTING UNDERGROUND UTILITIES.
- REMOVING CONCRETE FORMWORK.
- REMOVING TRASH AND DEBRIS.
- REMOVING TEMPORARY SHORING AND BRACING, AND SHEETING.
- INSTALLING PERMANENT OR TEMPORARY HORIZONTAL BRACING ON HORIZONTALLY SUPPORTED WALLS.

PLACE BACKFILL ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.

UTILITY TRENCH BACKFILL

PLACE AND COMPACT BEDDING COURSE ON TRENCH BOTTOMS AND WHERE INDICATED, SHAPE BEDDING COURSE TO PROVIDE CONTINUOUS SUPPORT FOR BELLS, JOINTS, AND BARRELS OF PIPES AND FOR JOINTS, FITTINGS, AND BODIES OF CONDUITS.

TRENCHES UNDER FOOTINGS: BACKFILL TRENCHES EXCAVATED UNDER FOOTINGS AND WITHIN 18 INCHES OF BOTTOM OF FOOTINGS WITH SATISFACTORY SOIL. FILL WITH CONCRETE TO ELEVATION OF BOTTOM OF FOOTINGS. CONCRETE IS SPECIFIED IN DIVISION 03 SECTION "CAST-IN-PLACE CONCRETE."

TRENCHES UNDER ROADWAYS: PROVIDE 4-INCH THICK, CONCRETE-BASE SLAB SUPPORT FOR PIPING OR CONDUIT LESS THAN 30 INCHES BELOW SURFACE OF ROADWAYS. AFTER INSTALLING AND TESTING, COMPLETELY ENCASE PIPING OR CONDUIT IN A MINIMUM OF 4 INCHES OF CONCRETE BEFORE BACKFILLING OR PLACING ROADWAY SUBBASE COURSE. CONCRETE IS SPECIFIED IN DIVISION 03 SECTION "CAST-IN-PLACE CONCRETE."

BACKFILL VOIDS WITH SATISFACTORY SOIL WHILE REMOVING SHORING AND BRACING.

PLACE AND COMPACT INITIAL BACKFILL OF SUBBASE MATERIAL, FREE OF PARTICLES LARGER THAN 1 INCH IN ANY DIMENSION, TO A HEIGHT OF 12 INCHES OVER THE PIPE OR CONDUIT.

- CAREFULLY COMPACT INITIAL BACKFILL UNDER PIPE HAUNCHES AND COMPACT EVENLY UP ON BOTH SIDES AND ALONG THE FULL LENGTH OF PIPING OR CONDUIT TO AVOID DAMAGE OR DISPLACEMENT OF PIPING OR CONDUIT. COORDINATE BACKFILLING WITH UTILITIES TESTING.

PLACE AND COMPACT FINAL BACKFILL OF SATISFACTORY SOIL TO FINAL SUBGRADE ELEVATION.

INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES, 6 INCHES BELOW SUBGRADE UNDER PAVEMENTS AND SLABS, AND 12 INCHES BELOW FINISHED GRADE ELSEWHERE.

BEDDING COURSE AND BACKFILL FOR ALL METALLIC PIPING SHALL BE NATURAL WASHED STONE MATERIAL. CRUSHED LIMESTONE MATERIAL IS NOT PERMITTED DUE TO POTENTIAL ADVERSE REACTIONS WITH THE PIPING.

STONE AGGREGATE FILL

ODOT ITEM 204, SUBGRADE COMPACTION

- FOR ALL PAVED AREAS: AFTER SITE CLEARING AND PRIOR TO ANY FILL OR AGGREGATE PLACEMENT, ALL EXPOSED SURFACES SHOULD BE PROOF ROLLED WITH AN APPROVED LOADED, TANDEM AXLE TRUCK TO EVALUATE FOR SOIL STABILITY AND TO VERIFY THAT A RELATIVELY UNYIELDING SURFACE IS ACHIEVED. SOFT OR LOOSE SOILS, IF ENCOUNTERED, SHOULD BE DISKED, DRIED AND RECOMPACTED OR UNDERCUT AND REPLACED WITH COMPACTED ENGINEERED FILL OR OTHERWISE AS DIRECTED BY THE SOILS ENGINEER.
- IN THE EVENT THAT EXCESSIVE RUTTING OR DEFLECTIONS OCCUR DURING PROOF ROLLING OPERATIONS, YIELDING SOILS SHOULD BE ADDRESSED AS NOTED IN THE SITE GEOTECHNICAL REPORT OR AS DIRECTED BY THE SOILS ENGINEER.
- ALL AREAS TO RECEIVE PAVEMENT SHALL BE COMPACTED AS NOTED IN ODOT ITEM 204. OWNER'S REPRESENTATIVE SHALL REQUIRE PROOF ROLLING OF SUBGRADE PRIOR TO INSTALLATION OF BASE MATERIAL. PROOF ROLLING SHALL CONSIST OF DRIVING OVER THE SUBGRADE WITH A LOADED TANDEM DUMP TRUCK AS DIRECTED BY THE OWNER'S REPRESENTATIVE UNTIL NO DEFLECTION OR TIRE INDENTATION IN THE SUBGRADE IS PRESENT. ALL PROOF ROLLING PROCEDURES AND ANY NECESSARY CORRECTIVE MEASURES WILL BE THE COMPLETE RESPONSIBILITY OF THE SITE CONTRACTOR.
- PAYMENT FOR ITEM 204 SUBGRADE COMPACTION FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID PRICE AND SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO COMPLETE THIS ITEM OF WORK.

IF ARCHITECT DETERMINES THAT UNSATISFACTORY SOIL IS PRESENT, CONTINUE EXCAVATION AND REPLACE WITH COMPACTED BACKFILL OR FILL MATERIAL AS DIRECTED.

PROOF-ROLL SUBGRADE BELOW THE BUILDING SLABS AND PAVEMENTS WITH A PNEUMATIC-TIRED AND LOADED 10-WHEEL, TANDEM-AXLE DUMP TRUCK WEIGHING NOT LESS THAN 20 TONS TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING. PROOF ROLLING AT ASPHALT PAVEMENT SUBGRADES SHALL MEET THE REQUIREMENTS OF ODOT ITEM 204.06. DO NOT PROOF-ROLL WET OR SATURATED SUBGRADES. IF UNSATISFACTORY CONDITIONS EXIST, REPLACE WITH COMPACTED BACKFILL OR FILL AS DIRECTED.

PLOW, SCARIFY, BENCH, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO FILL MATERIAL WILL BOND WITH EXISTING MATERIAL.

PLACE AND COMPACT FILL MATERIAL IN LAYERS TO REQUIRED ELEVATIONS AS FOLLOWS:

1. UNDER GRASS AND PLANTED AREAS, USE SATISFACTORY SOIL MATERIAL.
2. UNDER WALKS AND PAVEMENTS, USE SATISFACTORY SOIL MATERIAL.
3. UNDER STEPS AND RAMPS, USE SUBBASE COURSE, ODOT ITEM 304.
4. UNDER BUILDING SLABS, USE SUBBASE COURSE, ODOT ITEM 304.
5. UNDER FOOTINGS AND FOUNDATIONS, USE SUBBASE COURSE, ODOT ITEM 304.

SOIL MOISTURE CONTROL

UNIFORMLY MOISTEN OR AERATE SUBGRADE AND EACH SUBSEQUENT FILL OR BACKFILL SOIL LAYER BEFORE COMPACTION TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT.

1. REMOVE AND REPLACE, OR SCARIFY AND AIR DRY, OTHERWISE SATISFACTORY SOIL MATERIAL THAT EXCEEDS OPTIMUM MOISTURE CONTENT BY 2 PERCENT AND IS TOO WET TO COMPACT TO SPECIFIED DRY UNIT WEIGHT.

COMPACTION OF SOIL BACKFILLS AND FILLS

GEOTECHNICAL ENGINEER AND/OR THEIR REPRESENTATIVE BE PRESENT DURING EARTHWORK OPERATIONS AND PAVEMENT INSTALLATION TO OBSERVE THE FIELD CONDITIONS WITH RESPECT TO THE DESIGN ASSUMPTIONS AND SPECIFICATIONS.

PLACE BACKFILL AND FILL SOIL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.

PLACE BACKFILL AND FILL SOIL MATERIALS EVENLY ON ALL SIDES OF STRUCTURES TO REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE.

COMPACT SOIL MATERIALS TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698:

1. PAVEMENTS:
 - a. COMPACT TOP 12 INCHES OF SUBGRADE AND EACH 8 INCH LAYER OF BACKFILL OR FILL MATERIAL TO 100 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY. COMPACTION SHALL COMPLY WITH ODOT ITEM 204 AND PER GEOTECHNICAL REPORT.
 - b. THE AGGREGATE BASE SHOULD COMPLY WITH THE GRADATION REQUIREMENTS OF ODOT ITEM 304 DENSE-GRADED AGGREGATE. IT SHOULD BE COMPACTED TO 98 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 (STANDARD PROCTOR).
2. FOUNDATIONS, BUILDING SLABS AND STEPS: COMPACT TOP 12 INCHES OF SUBGRADE AND EACH 8 INCH LAYER OF BACKFILL OR FILL MATERIAL TO 100 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY.
3. LAWN, UNPAVED AREAS, AND BORROW PIT: COMPACT TOP 6 INCHES OF SUBGRADE AND EACH 8 INCH LAYER OF BACKFILL OR FILL MATERIAL TO 95 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY.
4. WALKWAYS: COMPACT TOP 6 INCHES OF SUBGRADE AND EACH 8 INCH LAYER OF BACKFILL OR FILL MATERIAL TO 98 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY.
5. UNDERGROUND UTILITIES: PROVIDE THE PRECEDING REQUIREMENTS FOR THE RESPECTIVE UTILITY LOCATION(S).
6. UTILITY PIPING AND CONDUITS:
 - a. BEDDING SHALL BEGIN BY PLACING 4 TO 6 INCH BEDDING OF THE APPROVED BACKFILL MATERIAL AND COMPACTING TO 90 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. THE WIDTH OF THE BEDDING SHALL BE THE DIAMETER OF THE PIPE PLUS 2 FEET.
 - b. HAUNCHING SHALL CONSIST OF PLACING THE APPROVED BACKFILL MATERIAL TO THE SPRING LINE OF THE PIPE AND COMPACTING TO 90 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. THIS LIFT SHALL NOT EXCEED 9 INCHES LOOSE. THE PIPE BEDDING AND FLOW LINE SHALL NOT BE DISTURBED AS A RESULT OF THE HAUNCHING OPERATION.
 - c. INITIAL BACKFILL SHALL CONSIST OF PLACING THE APPROVED BACKFILL MATERIAL TO THE SPRING LINE OF THE PIPE AND COMPACTING TO 90 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. THIS LIFT SHALL NOT EXCEED 9 INCHES LOOSE. CRUSHED OR BUCKLED PIPE AS A RESULT OF THE BACKFILLING OPERATIONS WILL BE REMOVED AND REPLACED WITH NO ADDITIONAL PAYMENT.
 - d. INITIAL BACKFILL SHALL CONTINUE IN 6 INCH LIFTS WITH THE APPROVAL BACKFILL MATERIAL TO A DEPTH OF 12 INCHES ABOVE THE PIPE.
7. FINISH BACKFILLING OF THE TRENCH SHALL CONSIST OF PLACING THE APPROVED BACKFILL OR MATERIAL FROM THE TRENCH EXCAVATION IN 6 INCH LIFTS TO THE GRADE OF THE TRENCH. FINISH BACKFILLING WITHIN PAVED AREAS SHALL CONTINUE TO THE BASE OF THE COMPACTED AGGREGATE WITH THE APPROVED BACKFILL MATERIAL.

GRADING

GENERAL: UNIFORMLY GRADE AREAS TO A SMOOTH SURFACE, FREE OF IRREGULAR SURFACE CHANNELS. COMPLY WITH COMPACTION REQUIREMENTS AND GRADE TO CROSS SECTIONS, LINES, AND ELEVATIONS INDICATED.

1. PROVIDE A SMOOTH TRANSITION BETWEEN ADJACENT EXISTING GRADES AND NEW GRADES.
2. CUT OUT SOFT SPOTS, FILL LOW SPOTS, AND TRIM HIGH SPOTS TO COMPLY WITH REQUIRED SURFACE TOLERANCES.

SITE ROUGH GRADING: SLOPE GRADES TO DIRECT WATER AWAY FROM BUILDINGS AND TO PREVENT PONDING. FINISH SUBGRADES TO REQUIRED ELEVATIONS WITHIN THE FOLLOWING TOLERANCES:

1. TURF OR UNPAVED AREAS: PLUS OR MINUS 1 INCH.
2. WALKS: PLUS OR MINUS 1 INCH.
3. PAVEMENTS: PLUS OR MINUS 1/2 INCH.

GRADING INSIDE BUILDING SLABS: FINISH SUBGRADE TO A TOLERANCE OF 1/2 INCH WHEN TESTED WITH A 10-FOOT STRAIGHTEDGE.

SUBBASE COURSES UNDER DRIVES AND WALKS

THIS ITEM OF WORK SHALL CONSIST OF THE WORK AS DESCRIBED IN OHIO DEPARTMENT OF TRANSPORTATION ITEM 304 AGGREGATE BASE, EXCEPT AS HEREIN MODIFIED. THIS ITEM SHALL ALSO INCLUDE SATURATING THE AGGREGATE BASE WITH WATER DURING PLACEMENT OF EACH LIFT PRIOR TO COMPACTION.

ON PREPARED SUBGRADE, PLACE SUBBASE COURSE AND BASE COURSE UNDER DRIVES AND WALKS AS FOLLOWS:

1. PLACE SUBBASE COURSE MATERIAL OVER SUBGRADE AND SHAPE TO REQUIRED CROWN ELEVATIONS AND CROSS-SLOPE GRADES.
2. PLACE SUBBASE COURSE 6 INCHES OR LESS IN COMPACTED THICKNESS IN A SINGLE LAYER.
3. PLACE SUBBASE COURSE AND BASE COURSE THAT EXCEEDS 6 INCHES IN COMPACTED THICKNESS IN LAYERS OF EQUAL THICKNESS, WITH NO COMPACTED LAYER MORE THAN 6 INCHES THICK OR LESS THAN 3 INCHES THICK.
4. COMPACT SUBBASE COURSE AND BASE COURSE AT OPTIMUM MOISTURE CONTENT TO REQUIRED GRADES, LINES, CROSS SECTIONS, AND THICKNESS TO NOT LESS THAN 95 PERCENT OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 1557.

SUBBASE COURSE UNDER CONCRETE SLABS-ON-GRADE

ON PREPARED SUBGRADE, PLACE SUBBASE COURSE AND DRAINAGE COURSE UNDER CAST-IN-PLACE CONCRETE SLABS-ON-GRADE AS FOLLOWS:

1. PLACE SUBBASE COURSE TO COMPACTED THICKNESS AS INDICATED. COMPACTED THICKNESS SHALL BE 4" MINIMUM IF THICKNESS IS NOT INDICATED.
2. COMPACT SUBBASE COURSE AT OPTIMUM MOISTURE CONTENT, TO NOT LESS THAN 95% OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 1557.
3. CONSOLIDATE USING ROLLER OR VIBRATORY COMPACTOR UNTIL IT WILL REMAIN STABLE UNDER CONSTRUCTION TRAFFIC. WHEELS OF CONSTRUCTION VEHICLES SHALL NOT PENETRATE THE DRAINAGE COURSE MORE THAN 1/2" WHEN DRIVEN ACROSS THE SURFACE.

FIELD QUALITY CONTROL

SPECIAL INSPECTIONS: OWNER WILL ENGAGE A QUALIFIED SPECIAL INSPECTOR TO PERFORM THE FOLLOWING SPECIAL INSPECTIONS:

1. DETERMINE PRIOR TO PLACEMENT OF FILL THAT SITE HAS BEEN PREPARED IN COMPLIANCE WITH REQUIREMENTS AND MAXIMUM LIFT THICKNESS COMPLY WITH REQUIREMENTS.

TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED GEOTECHNICAL ENGINEERING TESTING AGENCY TO PERFORM TESTS AND INSPECTIONS.

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 <i>Rachel A. Schmitmeier</i> RACHEL A. SCHMITMEIER LICENSE #2419524 EXPIRATION DATE: 12/31/2027																		
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ALLOW TESTING AGENCY TO INSPECT AND TEST SUBGRADES AND EACH FILL OR BACKFILL LAYER. PROCEED WITH SUBSEQUENT EARTH MOVING ONLY AFTER TEST RESULTS FOR PREVIOUSLY COMPLETED WORK COMPLY WITH REQUIREMENTS.

FOOTING SUBGRADE: AT FOOTING SUBGRADES, AT LEAST ONE TEST OF EACH SOIL STRATUM WILL BE PERFORMED TO VERIFY DESIGN BEARING CAPACITIES. SUBSEQUENT VERIFICATION AND APPROVAL OF OTHER FOOTING SUBGRADES MAY BE BASED ON A VISUAL COMPARISON OF SUBGRADE WITH TESTED SUBGRADE WHEN APPROVED BY ARCHITECT.

WHEN TESTING AGENCY REPORTS THAT SUBGRADES, FILLS, OR BACKFILLS HAVE NOT ACHIEVED DEGREE OF COMPACTION SPECIFIED, SCARIFY AND MOISTEN OR AERATE, OR REMOVE AND REPLACE SOIL MATERIALS TO DEPTH REQUIRED; RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION IS OBTAINED.

PROTECTION

REPAIR AND REESTABLISH GRADES TO SPECIFIED TOLERANCES, WHERE COMPLETED OR PARTIALLY COMPLETED SURFACES BECOME ERODED, RUTTED, SETTLED, OR WHERE THEY LOSE COMPACTION DUE TO SUBSEQUENT CONSTRUCTION OPERATIONS OR WEATHER CONDITIONS.

WHERE SETTLING OCCURS BEFORE PROJECT CORRECTION PERIOD ELAPSES, REMOVE FINISHED SURFACING, BACKFILL WITH ADDITIONAL SOIL MATERIAL, COMPACT, AND RECONSTRUCT SURFACING.

DIVISION 32: EXTERIOR IMPROVEMENTS

CONCRETE PAVING

THIS SECTION INCLUDES EXTERIOR CEMENT CONCRETE PAVEMENT FOR WALKWAYS & SIDEWALKS. SUBMITTALS

PRODUCT DATA: FOR EACH TYPE OF MANUFACTURED MATERIAL AND PRODUCT INDICATED. DESIGN MIXTURES: FOR EACH CONCRETE PAVEMENT MIXTURE. INCLUDE ALTERNATE MIXTURE DESIGNS WHEN CHARACTERISTICS OF MATERIALS, PROJECT CONDITIONS, WEATHER, TEST RESULTS, OR OTHER CIRCUMSTANCES WARRANT ADJUSTMENTS.

QUALITY ASSURANCE

MANUFACTURER QUALIFICATIONS: MANUFACTURER OF READY-MIXED CONCRETE PRODUCTS WHO COMPLIES WITH ASTM C 94/C 94M REQUIREMENTS FOR PRODUCTION FACILITIES AND EQUIPMENT.

1. MANUFACTURER CERTIFIED ACCORDING TO NRMCA'S "CERTIFICATION OF READY MIXED CONCRETE PRODUCTION FACILITIES."

FORMS

FORM MATERIALS: PLYWOOD, METAL, METAL-FRAMED PLYWOOD, OR OTHER APPROVED PANEL-TYPE MATERIALS TO PROVIDE FULL-DEPTH, CONTINUOUS, STRAIGHT, SMOOTH EXPOSED SURFACES.

FORM-RELEASE AGENT: COMMERCIALLY FORMULATED FORM-RELEASE AGENT THAT WILL NOT BOND WITH, STAIN, OR ADVERSELY AFFECT CONCRETE SURFACES AND WILL NOT IMPAIR SUBSEQUENT TREATMENTS OF CONCRETE SURFACES.

STEEL REINFORCEMENT

PLAIN-STEEL WELDED WIRE REINFORCEMENT: ASTM A 185, FABRICATED FROM AS-DRAWN STEEL WIRE INTO FLAT SHEETS.

REINFORCING BARS: ASTM A 615/A 615M, GRADE 60; DEFORMED.

BAR SUPPORTS: BOLSTERS, CHAIRS, SPACERS, AND OTHER DEVICES FOR SPACING, SUPPORTING, AND FASTENING REINFORCING BARS; WELDED WIRE REINFORCEMENT, AND DOWELS IN PLACE. BAR SUPPORTS ACCORDING TO CRSI'S "MANUAL OF STANDARD PRACTICE" FROM STEEL WIRE, PLASTIC, OR PRECAST CONCRETE OF GREATER COMPRESSIVE STRENGTH THAN CONCRETE, AND AS FOLLOWS:

1. EQUIP WIRE BAR SUPPORTS WITH SAND PLATES OR HORIZONTAL RUNNERS WHERE BASE MATERIAL WILL NOT SUPPORT CHAIR LEGS.

CONCRETE MATERIALS

CEMENTITIOUS MATERIAL: USE ONE OF THE FOLLOWING CEMENTITIOUS MATERIALS, OF THE SAME TYPE, BRAND, AND SOURCE THROUGHOUT THE PROJECT:

1. PORTLAND CEMENT: ASTM C 150, TYPE I.

NORMAL-WEIGHT AGGREGATES: ASTM C 33, COARSE AGGREGATE, UNIFORMLY GRADED. PROVIDE AGGREGATES FROM A SINGLE SOURCE.

1. MAXIMUM COARSE-AGGREGATE SIZE: 3/4 INCH NOMINAL.
2. FINE AGGREGATE: FREE OF MATERIALS WITH DELETERIOUS REACTIVITY TO ALKALI IN CEMENT.

WATER: ASTM C 94/C 94M.

AIR-ENTRAINING ADMIXTURE: ASTM C 260.

CURING MATERIALS

ABSORPTIVE COVER: ASHTO M 182, CLASS 2, BURLAP CLOTH MADE FROM JUTE OR KENAF, WEIGHING APPROXIMATELY 9 OZ./SQ. YD, DRY.

MOISTURE-RETAINING COVER: ASTM C 171, POLYETHYLENE FILM OR WHITE BURLAP- POLYETHYLENE SHEET.

WATER: POTABLE.

CLEAR WATERBORNE MEMBRANE-FORMING CURING COMPOUND: ASTM C 309, TYPE 1, CLASS B.

RELATED MATERIALS

EXPANSION- AND ISOLATION-JOINT-FILLER STRIPS: ASTM D 1751, ASPHALT-SATURATED CELLULOSIC FIBER OR ASTM D 1752, CORK OR SELF-EXPANDING CORK.

BONDING AGENT: ASTM C 1059, TYPE II, NON-REDISPERSIBLE, ACRYLIC EMULSION OR STYRENE BUTADIENE.

COLD-APPLIED JOINT SEALANTS

SINGLE-COMPONENT, SELF-LEVELING, SILICONE JOINT SEALANT FOR CONCRETE: ASTM D 5893, TYPE 1L.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
 - a. CRAFTCO INC., AN ERGON COMPANY; ROADSAVER SILICONE SL.
 - b. DOW CORNING CORPORATION; 890-SL.
 - c. PECORA CORPORATION; 300 SL.

MULTI-COMPONENT, POURABLE, TRAFFIC-GRADE, MODIFIED-URETHANE JOINT SEALANT FOR CONCRETE: ASTM C 920, TYPE M, GRADE P, CLASS 25, FOR USE U.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
 - a. PECORA CORPORATION; DYNATROL II-SL.
 - b. SIKA CORPORATION. CONSTRUCTION PRODUCTS DIVISION; SIKAFLEX - 2C SL.
 - c. TREMCO INCORPORATED; VULKEM 445SSL.

JOINT-SEALANT BACKER MATERIALS

GENERAL: PROVIDE JOINT-SEALANT BACKER MATERIALS THAT ARE NONSTAINING; ARE COMPATIBLE WITH JOINT SUBSTRATES, SEALANTS, PRIMERS, AND OTHER JOINT FILLERS.

ROUND BACKER RODS FOR COLD- AND HOT-APPLIED JOINT SEALANTS: ASTM D 5249, TYPE 1, OF DIAMETER AND DENSITY REQUIRED TO CONTROL SEALANT DEPTH AND PREVENT BOTTOM-SIDE ADHESION OF SEALANT.

CONCRETE MIXTURES

PREPARE DESIGN MIXTURES, PROPORTIONED ACCORDING TO ACI 301, FOR EACH TYPE AND STRENGTH OF NORMAL-WEIGHT CONCRETE DETERMINED BY EITHER LABORATORY TRIAL MIXES OR FIELD EXPERIENCE.

1. USE A QUALIFIED INDEPENDENT TESTING AGENCY FOR PREPARING AND REPORTING PROPOSED CONCRETE MIXTURE DESIGNS FOR THE TRIAL BATCH METHOD.

PROPORTION MIXTURES TO PROVIDE NORMAL-WEIGHT CONCRETE WITH THE FOLLOWING PROPERTIES:

1. COMPRESSIVE STRENGTH (28 DAYS): 4000 PSI.
2. MAXIMUM WATER-CEMENTITIOUS MATERIALS RATIO AT POINT OF PLACEMENT: 0.50.
3. SLUMP LIMIT: 4 INCHES.

ADD AIR-ENTRAINING ADMIXTURE AT MANUFACTURER'S PRESCRIBED RATE TO RESULT IN NORMAL-WEIGHT CONCRETE AT POINT OF PLACEMENT HAVING AN AIR CONTENT AS FOLLOWS:

1. AIR CONTENT: 6 PERCENT PLUS OR MINUS 1.5 PERCENT FOR 3/4-INCH NOMINAL MAXIMUM AGGREGATE SIZE.

CHEMICAL ADMIXTURES: USE ADMIXTURES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

1. USE WATER-REDUCING AND RETARDING ADMIXTURE WHEN REQUIRED BY HIGH TEMPERATURES, LOW HUMIDITY, OR OTHER ADVERSE PLACEMENT CONDITIONS.

CONCRETE MIXING

READY-MIXED CONCRETE: MEASURE, BATCH, AND MIX CONCRETE MATERIALS AND CONCRETE ACCORDING TO ASTM C 94/C 94M AND ASTM C 1116. FURNISH BATCH CERTIFICATES FOR EACH BATCH DISCHARGED AND USED IN THE WORK.

1. WHEN AIR TEMPERATURE IS BETWEEN 85 DEG F AND 90 DEG F, REDUCE MIXING AND DELIVERY TIME FROM 1-1/2 HOURS TO 75 MINUTES; WHEN AIR TEMPERATURE IS ABOVE 90 DEG F, REDUCE MIXING AND DELIVERY TIME TO 60 MINUTES.

PREPARATION

REMOVE LOOSE MATERIAL FROM COMPACTED SUBBASE SURFACE IMMEDIATELY BEFORE PLACING CONCRETE.

STEEL REINFORCEMENT

GENERAL: COMPLY WITH CRSI'S "MANUAL OF STANDARD PRACTICE" FOR FABRICATING, PLACING, AND SUPPORTING REINFORCEMENT.

JOINTS

CONSTRUCTION JOINTS: SET CONSTRUCTION JOINTS AT SIDE AND END TERMINATIONS OF PAVEMENT AND AT LOCATIONS WHERE PAVEMENT OPERATIONS ARE STOPPED FOR MORE THAN ONE-HALF HOUR UNLESS PAVEMENT TERMINATES AT ISOLATION JOINTS.

1. CONTINUE STEEL REINFORCEMENT ACROSS CONSTRUCTION JOINTS, UNLESS OTHERWISE INDICATED. DO NOT CONTINUE REINFORCEMENT THROUGH SIDES OF PAVEMENT STRIPS, UNLESS OTHERWISE INDICATED.
2. PROVIDE TIE BARS AT SIDES OF PAVEMENT STRIPS WHERE INDICATED.
3. BUTT JOINTS: USE BONDING AGENT AT JOINT LOCATIONS WHERE FRESH CONCRETE IS PLACED AGAINST HARDENED OR PARTIALLY HARDENED CONCRETE SURFACES.
4. DOWELED JOINTS: INSTALL DOWEL BARS AND SUPPORT ASSEMBLIES AT JOINTS WHERE INDICATED. LUBRICATE OR ASPHALT-COAT ONE-HALF OF DOWEL LENGTH TO PREVENT CONCRETE BONDING TO ONE SIDE OF JOINT.

ISOLATION JOINTS: FORM ISOLATION JOINTS OF PREFORMED JOINT-FILLER STRIPS ABUTTING CONCRETE CURBS, CATCH BASINS, MANHOLES, INLETS, STRUCTURES, WALKS, OTHER FIXED OBJECTS, AND WHERE INDICATED.

1. LOCATE EXPANSION JOINTS AT INTERVALS OF 50 FEET, UNLESS OTHERWISE INDICATED.
2. EXTEND JOINT FILLERS FULL WIDTH AND DEPTH OF JOINT.
3. TERMINATE JOINT FILLER NOT LESS THAN 1/2 INCH OR MORE THAN 1 INCH BELOW FINISHED SURFACE IF JOINT SEALANT IS INDICATED.
4. PLACE TOP OF JOINT FILLER FLUSH WITH FINISHED CONCRETE SURFACE IF JOINT SEALANT IS NOT INDICATED.
5. FURNISH JOINT FILLERS IN ONE-PIECE LENGTHS. WHERE MORE THAN ONE LENGTH IS REQUIRED, LACE OR CLIP JOINT-FILLER SECTIONS TOGETHER.

CONTRACTION JOINTS: FORM WEAKENED-PLANE CONTRACTION JOINTS, SECTIONING CONCRETE INTO AREAS AS INDICATED. CONSTRUCT CONTRACTION JOINTS FOR A DEPTH EQUAL TO AT LEAST ONE-FOURTH OF THE CONCRETE THICKNESS, AS FOLLOWS TO MATCH JOINTING OF EXISTING ADJACENT CONCRETE PAVEMENT:

1. GROOVED JOINTS: FORM CONTRACTION JOINTS AFTER INITIAL FLOATING BY GROOVING AND FINISHING EACH EDGE OF JOINT WITH GROOVING TOOL TO A 3/8-INCH RADIUS. REPEAT GROOVING OF CONTRACTION JOINTS AFTER APPLYING SURFACE FINISHES.
2. DOWELED CONTRACTION JOINTS: INSTALL DOWEL BARS AND SUPPORT ASSEMBLIES AT JOINTS WHERE INDICATED. LUBRICATE OR ASPHALT COAT ONE-HALF OF DOWEL LENGTH TO PREVENT CONCRETE BONDING TO ONE SIDE OF JOINT.

EDGING: AFTER INITIAL FLOATING, TOOL EDGES OF PAVING, GUTTERS, CURBS, WALKWAYS AND JOINTS IN CONCRETE WITH EDGING TOOL TO A 3/8-INCH RADIUS. REPEAT TOOLING OF EDGES AFTER APPLYING SURFACE FINISHES.

CONCRETE PLACEMENT

COMPLY WITH ACI 301 REQUIREMENTS FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE.

DO NOT ADD WATER TO CONCRETE DURING DELIVERY OR AT PROJECT SITE.

DO NOT ADD WATER TO FRESH CONCRETE AFTER TESTING.

CONSOLIDATE CONCRETE ACCORDING TO ACI 301 BY MECHANICAL VIBRATING EQUIPMENT SUPPLEMENTED BY HAND SPAKING, RODDING, OR TAMPING.

1. CONSOLIDATE CONCRETE ALONG FACE OF FORMS AND ADJACENT TO TRANSVERSE JOINTS WITH AN INTERNAL VIBRATOR. KEEP VIBRATOR AWAY FROM JOINT ASSEMBLIES, REINFORCEMENT, OR SIDE FORMS. USE ONLY SQUARE-FACED SHOVELS FOR HAND SPREADING AND CONSOLIDATION. CONSOLIDATE WITH CARE TO PREVENT DISLOCATING REINFORCEMENT, DOWELS, AND JOINT DEVICES.

SCREED PAVEMENT SURFACES WITH A STRAIGHTEDGE AND STRIKE OFF.

COMMENCE INITIAL FLOATING USING BULL FLOATS OR DARBIES TO IMPART AN OPEN TEXTURED AND UNIFORM SURFACE PLANE BEFORE EXCESS MOISTURE OR BLEED WATER APPEARS ON THE SURFACE. DO NOT FURTHER DISTURB CONCRETE SURFACES BEFORE BEGINNING FINISHING OPERATIONS OR SPREADING SURFACE TREATMENTS.

COLD-WEATHER PLACEMENT: COMPLY WITH ACI 306.1. PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH THAT COULD BE CAUSED BY FROST, FREEZING ACTIONS, OR LOW TEMPERATURES.

HOT-WEATHER PLACEMENT: COMPLY WITH ACI 301 WHEN HOT-WEATHER CONDITIONS EXIST.

FLOAT FINISHING

GENERAL: DO NOT ADD WATER TO CONCRETE SURFACES DURING FINISHING OPERATIONS. FLOAT FINISH: BEGIN THE SECOND FLOATING OPERATION WHEN BLEED-WATER SHEEN HAS DISAPPEARED AND CONCRETE SURFACE HAS STIFFENED SUFFICIENTLY TO PERMIT OPERATIONS. FLOAT SURFACE WITH POWER-DRIVEN FLOATS, OR BY HAND FLOATING IF AREA IS SMALL OR INACCESSIBLE TO POWER UNITS. FINISH SURFACES TO TRUE PLANES. CUT DOWN HIGH SPOTS AND FILL LOW SPOTS. RE-FLOAT SURFACE IMMEDIATELY TO UNIFORM GRANULAR TEXTURE.

1. MEDIUM-TO-COARSE-TEXTURED BROOM FINISH: PROVIDE A COARSE FINISH BY STRIATING FLOAT-FINISHED CONCRETE SURFACE 1/16 TO 1/8 INCH DEEP WITH A STIFF-BRISTLED BROOM, PERPENDICULAR TO LINE OF TRAFFIC.

CONCRETE PROTECTION AND CURING

GENERAL: PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES.

EVAPORATION RETARDER: APPLY EVAPORATION RETARDER TO CONCRETE SURFACES IF HOT, DRY, OR WINDY CONDITIONS CAUSE MOISTURE LOSS APPROACHING 0.2 LB/SQ. FT. X H BEFORE AND DURING FINISHING OPERATIONS. APPLY ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AFTER PLACING, SCREEDING, AND BULL FLOATING OR DARBING CONCRETE, BUT BEFORE FLOAT FINISHING.

BEGIN CURING AFTER FINISHING CONCRETE BUT NOT BEFORE FREE WATER HAS DISAPPEARED FROM CONCRETE SURFACE.

CURING METHODS: CURE CONCRETE BY MOISTURE CURING, MOISTURE-RETAINING-COVER CURING, CURING COMPOUND, OR A COMBINATION OF THESE AS FOLLOWS:

1. MOIST CURING: KEEP SURFACES CONTINUOUSLY MOIST FOR NOT LESS THAN SEVEN DAYS WITH THE FOLLOWING MATERIALS:
 - a. WATER.
 - b. CONTINUOUS WATER-FOG SPRAY.
 - c. ABSORPTIVE COVER, WATER SATURATED AND KEPT CONTINUOUSLY WET. COVER CONCRETE SURFACES AND EDGES WITH 12-INCH LAP OVER ADJACENT ABSORPTIVE COVERS.
2. CURING COMPOUND: APPLY UNIFORMLY IN CONTINUOUS OPERATION BY POWER SPRAY OR ROLLER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. RECOAT AREAS SUBJECTED TO HEAVY RAINFALL WITHIN THREE HOURS AFTER INITIAL APPLICATION. MAINTAIN CONTINUITY OF COATING AND REPAIR DAMAGE DURING CURING PERIOD.

INSTALLATION OF JOINT SEALANTS

JOINT-SEALANT INSTALLATION STANDARD: COMPLY WITH RECOMMENDATIONS IN ASTM C 1193 FOR USE OF JOINT SEALANTS AS APPLICABLE TO MATERIALS, APPLICATIONS, AND CONDITIONS INDICATED AND WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.

INSTALL JOINT-SEALANT BACKINGS OF KIND INDICATED TO SUPPORT JOINT SEALANTS DURING APPLICATION AND TO PREVENT CONCRETE FROM PRODUCING UNIFORM CROSS-SECTIONAL SHAPES AND DEPTHS OF INSTALLED SEALANTS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.

INSTALL JOINT SEALANTS USING PROVEN TECHNIQUES THAT COMPLY WITH THE FOLLOWING AND AT THE SAME TIME BACKINGS ARE INSTALLED:

1. PLACE JOINT SEALANTS SO THEY DIRECTLY CONTACT AND FULLY WET JOINT SUBSTRATES.
2. COMPLETELY FILL RECESSES IN EACH JOINT CONFIGURATION.

TOOLING OF NONSAG JOINT SEALANTS: IMMEDIATELY AFTER JOINT-SEALANT APPLICATION AND BEFORE SKINNING OR CURING BEGINS, TOOL SEALANTS ACCORDING TO THE FOLLOWING REQUIREMENTS TO FORM SMOOTH, UNIFORM BEADS OF CONFIGURATION INDICATED, TO ELIMINATE AIR POCKETS, AND TO ENSURE CONTACT AND ADHESION OF SEALANT WITH SIDES OF JOINT.

1. REMOVE EXCESS JOINT SEALANT FROM SURFACES ADJACENT TO JOINTS.
2. USE TOOLING AGENTS THAT ARE APPROVED IN WRITING BY JOINT-SEALANT MANUFACTURER AND THAT DO NOT DISCOLOR SEALANTS OR ADJACENT SURFACES.

CLEANING

CLEAN OFF EXCESS JOINT SEALANT OR SEALANT SMEARS ADJACENT TO JOINTS AS THE WORK PROGRESSES, BY METHODS AND WITH CLEANING MATERIALS APPROVED IN WRITING BY MANUFACTURERS OF JOINT SEALANTS AND OF PRODUCTS IN WHICH JOINTS OCCUR.

PROTECT JOINT SEALANTS, DURING AND AFTER CURING PERIOD, FROM CONTACT WITH CONTAMINATING SUBSTANCES AND FROM DAMAGE RESULTING FROM CONSTRUCTION OPERATIONS OR OTHER CAUSES SO SEALANTS ARE WITHOUT DETERIORATION OR DAMAGE AT TIME OF SUBSTANTIAL COMPLETION.

PAVEMENT TOLERANCES

COMPLY WITH TOLERANCES OF ACI 117 AND AS FOLLOWS:

1. ELEVATION: 1/4 INCH.
2. THICKNESS: PLUS 3/8 INCH, MINUS 1/4 INCH.
3. SURFACE: GAP BELOW 10-FOOT- LONG, UNLEVELLED STRAIGHTEDGE NOT TO EXCEED 1/4 INCH.
4. JOINT WIDTH: PLUS 1/8 INCH, NO MINUS.

FIELD QUALITY CONTROL

TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS AND PREPARE TEST REPORTS.

TESTING SERVICES: TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED ACCORDING TO ASTM C 172 SHALL BE PERFORMED ACCORDING TO THE FOLLOWING REQUIREMENTS:

1. TESTING FREQUENCY: OBTAIN AT LEAST 1 COMPOSITE SAMPLE FOR EACH 5000 SQ. FT. OR FRACTION THEREOF OF EACH CONCRETE MIX PLACED EACH DAY.
 - a. WHEN FREQUENCY OF TESTING WILL PROVIDE FEWER THAN FIVE COMPRESSIVE STRENGTH TESTS FOR EACH CONCRETE MIXTURE, TESTING SHALL BE CONDUCTED FROM AT LEAST FIVE RANDOMLY SELECTED BATCHES OR FROM EACH BATCH IF FEWER THAN FIVE ARE USED.
2. SLUMP: ASTM C 143/C 143M; ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
3. AIR CONTENT: ASTM C 231, PRESSURE METHOD; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIX.
4. CONCRETE TEMPERATURE: ASTM C 1064; ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEG F AND BELOW AND WHEN 80 DEG F AND ABOVE, AND ONE TEST FOR EACH COMPOSITE SAMPLE.
5. COMPRESSION TEST SPECIMENS: ASTM C 31/C 31M; CAST AND LABORATORY CURE ONE SET OF THREE STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.
6. COMPRESSIVE-STRENGTH TESTS: ASTM C 39/C 39M; TEST 1 SPECIMEN AT 7 DAYS AND 2 SPECIMENS AT 28 DAYS.
 - a. A COMPRESSIVE-STRENGTH TEST SHALL BE THE AVERAGE COMPRESSIVE STRENGTH FROM 2 SPECIMENS OBTAINED FROM SAME COMPOSITE SAMPLE AND TESTED AT 28 DAYS.

STRENGTH OF EACH CONCRETE MIX WILL BE SATISFACTORY IF AVERAGE OF ANY 3 CONSECUTIVE COMPRESSIVE-STRENGTH TESTS EQUALS OR EXCEEDS SPECIFIED COMPRESSIVE STRENGTH AND NO COMPRESSIVE-STRENGTH TEST VALUE FALLS BELOW SPECIFIED COMPRESSIVE STRENGTH BY MORE THAN 500 PSI.

TEST RESULTS SHALL BE REPORTED IN WRITING TO ARCHITECT, CONCRETE MANUFACTURER, AND CONTRACTOR WITHIN 48 HOURS OF TESTING. REPORTS OF COMPRESSIVE-STRENGTH TESTS SHALL CONTAIN PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING AND INSPECTING AGENCY, LOCATION OF CONCRETE BATCH IN WORK, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIXTURE PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7- AND 28-DAY TESTS.

ADDITIONAL TESTS: TESTING AND INSPECTING AGENCY SHALL MAKE ADDITIONAL TESTS OF CONCRETE WHEN TEST RESULTS INDICATE THAT SLUMP, AIR ENTRAINMENT, COMPRESSIVE STRENGTHS, OR OTHER REQUIREMENTS HAVE NOT BEEN MET, AS DIRECTED BY ARCHITECT.

REMOVE AND REPLACE CONCRETE PAVEMENT WHERE TEST RESULTS INDICATE THAT IT DOES NOT COMPLY WITH SPECIFIED REQUIREMENTS.

ADDITIONAL TESTING AND INSPECTING, AT CONTRACTOR'S EXPENSE, WILL BE PERFORMED TO DETERMINE COMPLIANCE OF REPLACED OR ADDITIONAL WORK WITH SPECIFIED REQUIREMENTS.

REPAIRS AND PROTECTION

REMOVE AND REPLACE CONCRETE PAVEMENT THAT IS BROKEN, DAMAGED, OR DEFECTIVE OR THAT DOES NOT COMPLY WITH REQUIREMENTS IN THIS SECTION.

PROTECT CONCRETE FROM DAMAGE. EXCLUDE TRAFFIC FROM PAVEMENT FOR AT LEAST 14 DAYS AFTER PLACEMENT. WHEN CONSTRUCTION TRAFFIC IS PERMITTED, MAINTAIN PAVEMENT AS CLEAN AS POSSIBLE BY REMOVING SURFACE STAINS AND SPILLAGE OF MATERIALS AS THEY OCCUR.

MAINTAIN CONCRETE PAVEMENT FREE OF STAINS, DISCOLORATION, DIRT, AND OTHER FOREIGN MATERIAL.

CONCRETE FINISH SCHEDULE

CONCRETE FINISH SCHEDULE	
ITEM	FINISH
LEAN CONCRETE FILL AT SOFT SOILS OR OVER EXCAVATIONS	N/A
EXTERIOR WALKS, STOOPS, STEPS, APRONS, AND CURBS, AND EXTERIOR CONCRETE NOT OTHERWISE INDICATED	MEDIUM-TO-COARSE-TEXTURED BROOM FINISH
EXTERIOR FORMED CONCRETE EXPOSED TO VIEW NOT OTHERWISE INDICATED	FINE BROOM FINISH

TURF AND GRASSES

INFORMATIONAL SUBMITTALS

CERTIFICATION OF GRASS SEED: FROM SEED VENDOR FOR EACH GRASS-SEED MONOSTAND OR MIXTURE STATING THE BOTANICAL AND COMMON NAME, PERCENTAGE BY WEIGHT OF EACH SPECIES AND VARIETY, AND PERCENTAGE OF PURITY, GERMINATION, AND WEED SEED. INCLUDE THE YEAR OF PRODUCTION AND DATE OF PACKAGING.

QUALITY ASSURANCE

PESTICIDE APPLICATOR: STATE LICENSED, COMMERCIAL.

PROJECT CONDITIONS

PLANTING RESTRICTIONS: PLANT DURING ONE OF THE FOLLOWING PERIODS. COORDINATE PLANTING PERIODS WITH INITIAL MAINTENANCE PERIODS TO PROVIDE REQUIRED MAINTENANCE FROM DATE OF PLANTING COMPLETION.

1. SPRING PLANTING: MARCH 15 THROUGH MAY 15
2. FALL PLANTING: AUGUST 15 THROUGH OCTOBER 15

WEATHER LIMITATIONS: PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING TO BE PERFORMED WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED. APPLY PRODUCTS DURING FAVORABLE WEATHER CONDITIONS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

MAINTENANCE SERVICE

INITIAL TURF MAINTENANCE SERVICE: PROVIDE FULL MAINTENANCE BY SKILLED EMPLOYEES OF LANDSCAPE INSTALLER. MAINTAIN AS REQUIRED IN PART 3. BEGIN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL ACCEPTABLE TURF IS ESTABLISHED BUT FOR NOT LESS THAN 60 DAYS FROM DATE OF PLANTING COMPLETION.

SEED

GRASS SEED: FRESH, CLEAN, DRY, NEW-CROP SEED COMPLYING WITH AOSA'S "RULES FOR TESTING SEEDS" FOR PURITY AND GERMINATION TOLERANCES.

SEED SPECIES: STATE-CERTIFIED SEED OF GRASS SPECIES AS FOLLOWS

SEED SPECIES: DO NOT USE ANNUAL RYEGRASS, ZOYSIAGRASS, KENTUCKY31 FESCUE OR ANNUAL BLUEGRASS. SEED OF GRASS SPECIES AS FOLLOWS, WITH NOT LESS THAN 95 PERCENT GERMINATION, NOT LESS THAN 85 PERCENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED:

1. SUN AND PARTIAL SHADE: PROPORTIONED BY WEIGHT AS FOLLOWS:
 - a. 30% ESCALANTE TALL FESCUE (FESTUCA ARUNDINACEA VAR. 'ESCALANTE')
 - b. 25% RAPTOR TALL FESCUE (FESTUCA ARUNDINACEA VAR 'RAPTOR')
 - c. 25% PATAGONIA TALL FESCUE (FESTUCA ARUNDINACEA VAR 'PATAGONIA')
 - d. 15% ARTIC GREEN PERENNIAL RYEGRASS (LOLIUM PERENNE VAR. 'ARTIC GREEN')
 - e. 5% BLUE SAPPHIRE KENTUCKY BLUEGRASS (POA PRATENSIS VAR. 'BLUE SAPPHIRE')

INORGANIC SOIL AMENDMENTS

LIME: APPLY GROUND AGRICULTURAL LIMESTONE IF NECESSARY, AT THE RATE DETERMINED BY CONTRACTOR'S SOIL TESTS TO ADJUST PH OF TOPSOIL AT NO LESS THAN 6.5.

ORGANIC SOIL AMENDMENTS

COMPOST: WELL-COMPOSTED, STABLE, AND WEED-FREE ORGANIC MATTER, PH RANGE OF 5.5 TO 8; MOISTURE CONTENT 35 TO 55 PERCENT BY WEIGHT; 100 PERCENT PASSING THROUGH ¾ INCH SIEVE; SOLUBLE SALT CONTENT OF 5 TO 10 DECI-SIEMENS/M; NOT EXCEEDING 0.5 PERCENT INERT CONTAMINANTS AND FREE OF SUBSTANCES TOXIC TO PLANTINGS; AND AS

FOLLOWS:

1. ORGANIC MATTER CONTENT: 50-60 PERCENT OF DRY WEIGHT.

SPHAGNUM PEAT: PARTIALLY DECOMPOSED SPHAGNUM PEAT MOSS, FINELY DIVIDED OR OF GRANULAR TEXTURE, WITH A PH RANGE OF 3.4 TO 4.8.

WOOD DERIVATIVES: DECOMPOSED, NITROGEN-TREATED SAWDUST, GROUND BARK, OR WOOD WASTE; OF UNIFORM TEXTURE AND FREE OF CHIPS, STONES, STICKS, SOIL, OR TOXIC MATERIALS.

MANURE: WELL-ROTTED, UNLEACHED, STABLE OR CATTLE MANURE CONTAINING NOT MORE THAN 35 PERCENT NITROGEN; SAWDUST, OR OTHER BEDDING MATERIALS, FREE OF TOXIC SUBSTANCES, STONES, STICKS, SOIL, WEED SEED, AND MATERIAL HARMFUL TO PLANT GROWTH.

FERTILIZERS

COMMERCIAL FERTILIZER: COMMERCIAL-GRADE COMPLETE FERTILIZER OF NEUTRAL CHARACTER, CONSISTING OF FAST- AND SLOW-RELEASE NITROGEN, 50 PERCENT DERIVED FROM NATURAL ORGANIC SOURCES OF UREA FORMALDEHYDE, PHOSPHOROUS, AND POTASSIUM IN THE FOLLOWING COMPOSITION:

1. COMPOSITION: 11 LB/1000 SQ. FT., 4 PERCENT OF ACTUAL NITROGEN, 4 PERCENT PHOSPHOROUS, AND 2 PERCENT POTASSIUM, BY WEIGHT.
2. COMPOSITION: NITROGEN, PHOSPHOROUS, AND POTASSIUM IN AMOUNTS RECOMMENDED IN SOIL REPORTS FROM A QUALIFIED SOIL-TESTING LABORATORY.

SLOW-RELEASE FERTILIZER, GRANULAR OR PELLETTED FERTILIZER CONSISTING OF 50 PERCENT WATER-INSOLUBLE NITROGEN, PHOSPHORUS, AND POTASSIUM IN THE FOLLOWING COMPOSITION:

1. COMPOSITION: 20 PERCENT NITROGEN, 10 PERCENT PHOSPHOROUS, AND 10 PERCENT POTASSIUM, BY WEIGHT.
2. COMPOSITION: NITROGEN, PHOSPHOROUS, AND POTASSIUM IN AMOUNTS RECOMMENDED IN SOIL REPORTS FROM A QUALIFIED SOIL-TESTING LABORATORY.

PLANTING SOILS

TOPSOIL: ASTM D 5268 TOPSOIL, WITH PH RANGE OF 5.5 TO 7, A MINIMUM OF 6 PERCENT ORGANIC MATERIAL CONTENT; FREE OF STONES ¾ INCH OR LARGER IN ANY DIMENSION AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH. MIX ASTM D 5268 TOPSOIL WITH SOIL AMENDMENTS AND FERTILIZERS, AS NEEDED TO PRODUCE PLANTING SOIL.

PLANTING SOIL: EXISTING, NATIVE SURFACE TOPSOIL FORMED UNDER NATURAL CONDITIONS WITH THE DUFF LAYER RETAINED DURING EXCAVATION PROCESS AND STOCKPILED ON-SITE. VERIFY SUITABILITY OF NATIVE SURFACE TOPSOIL TO PRODUCE VIABLE PLANTING SO

TURF MAINTENANCE

GENERAL: MAINTAIN AND ESTABLISH TURF BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, REPLANTING, AND PERFORMING OTHER OPERATIONS AS REQUIRED TO ESTABLISH HEALTHY, VIABLE TURF. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY SMOOTH TURF. PROVIDE MATERIALS AND INSTALLATION THE SAME AS THOSE USED IN THE ORIGINAL INSTALLATION.

MOW TURF AS SOON AS TOP GROWTH IS TALL ENOUGH TO CUT. REPEAT MOWING TO MAINTAIN SPECIFIED HEIGHT WITHOUT CUTTING MORE THAN 1/3 OF GRASS HEIGHT. REMOVE NO MORE THAN 1/3 OF GRASS-LEAF GROWTH IN INITIAL OR SUBSEQUENT MOWINGS. DO NOT DELAY MOWING UNTIL GRASS BLADES BEND OVER AND BECOME MATTED. DO NOT MOW WHEN GRASS IS WET. SCHEDULE INITIAL AND SUBSEQUENT MOWINGS TO MAINTAIN 2 1/2" GRASS HEIGHT.

TURF POST-FERTILIZATION: APPLY FERTILIZER AFTER INITIAL MOWING AND WHEN GRASS IS DRY.

1. USE FERTILIZER THAT WILL PROVIDE ACTUAL NITROGEN OF AT LEAST 1 LB/1000 SQ. FT. (BUT NO MORE THAN 1-1/2 LB/1000 SQ. FT.) TO TURF AREA

SATISFACTORY TURF

TURF INSTALLATIONS SHALL MEET THE FOLLOWING CRITERIA AS DETERMINED BY ARCHITECT:

1. SATISFACTORY SEEDED TURF: AT END OF MAINTENANCE PERIOD, A HEALTHY, UNIFORM, CLOSE STAND OF GRASS HAS BEEN ESTABLISHED, FREE OF WEEDS AND SURFACE IRREGULARITIES, WITH COVERAGE EXCEEDING 90 PERCENT OVER ANY 10 SQ. FT. AND BARE SPOTS NOT EXCEEDING 5 BY 5 INCHES.

USE SPECIFIED MATERIALS TO REESTABLISH TURF THAT DOES NOT COMPLY WITH REQUIREMENTS AND CONTINUE MAINTENANCE UNTIL TURF IS SATISFACTORY.

PESTICIDE APPLICATION

APPLY PESTICIDES AND OTHER CHEMICAL PRODUCTS AND BIOLOGICAL CONTROL AGENTS IN ACCORDANCE WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND MANUFACTURER'S WRITTEN RECOMMENDATIONS. COORDINATE APPLICATIONS WITH OWNER'S OPERATIONS AND OTHERS IN PROXIMITY TO THE WORK. NOTIFY OWNER BEFORE EACH APPLICATION IS PERFORMED.

POST-EMERGENT HERBICIDES (SELECTIVE AND NON-SELECTIVE): APPLY ONLY AS NECESSARY TO TREAT ALREADY-GERMINATED WEEDS AND IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS.

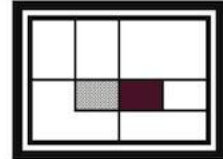
CLEANUP AND PROTECTION

PROMPTLY REMOVE SOIL AND DEBRIS CREATED BY TURF WORK FROM PAVED AREAS. CLEAN WHEELS OF VEHICLES BEFORE LEAVING SITE TO AVOID TRACKING SOIL ONTO ROADS, WALKS, OR OTHER PAVED AREAS.

ERECT TEMPORARY FENCING OR BARRICADES AND WARNING SIGNS AS REQUIRED TO PROTECT NEWLY PLANTED AREAS FROM TRAFFIC. MAINTAIN FENCING AND BARRICADES THROUGHOUT INITIAL MAINTENANCE PERIOD AND REMOVE AFTER PLANTINGS ARE ESTABLISHED.

REMOVE NONDEGRADABLE EROSION-CONTROL MEASURES AFTER GRASS ESTABLISHMENT PERIOD.

FREYTAG & ASSOCIATES INC.
ARCHITECTS ENGINEERS



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NEW EQUIPMENT HANGAR
CITY OF SIDNEY

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Rachel A. Schmitmeyer
RACHEL A. SCHMITMEYER
LICENSE #2419524
EXPIRATION DATE: 12/31/2027

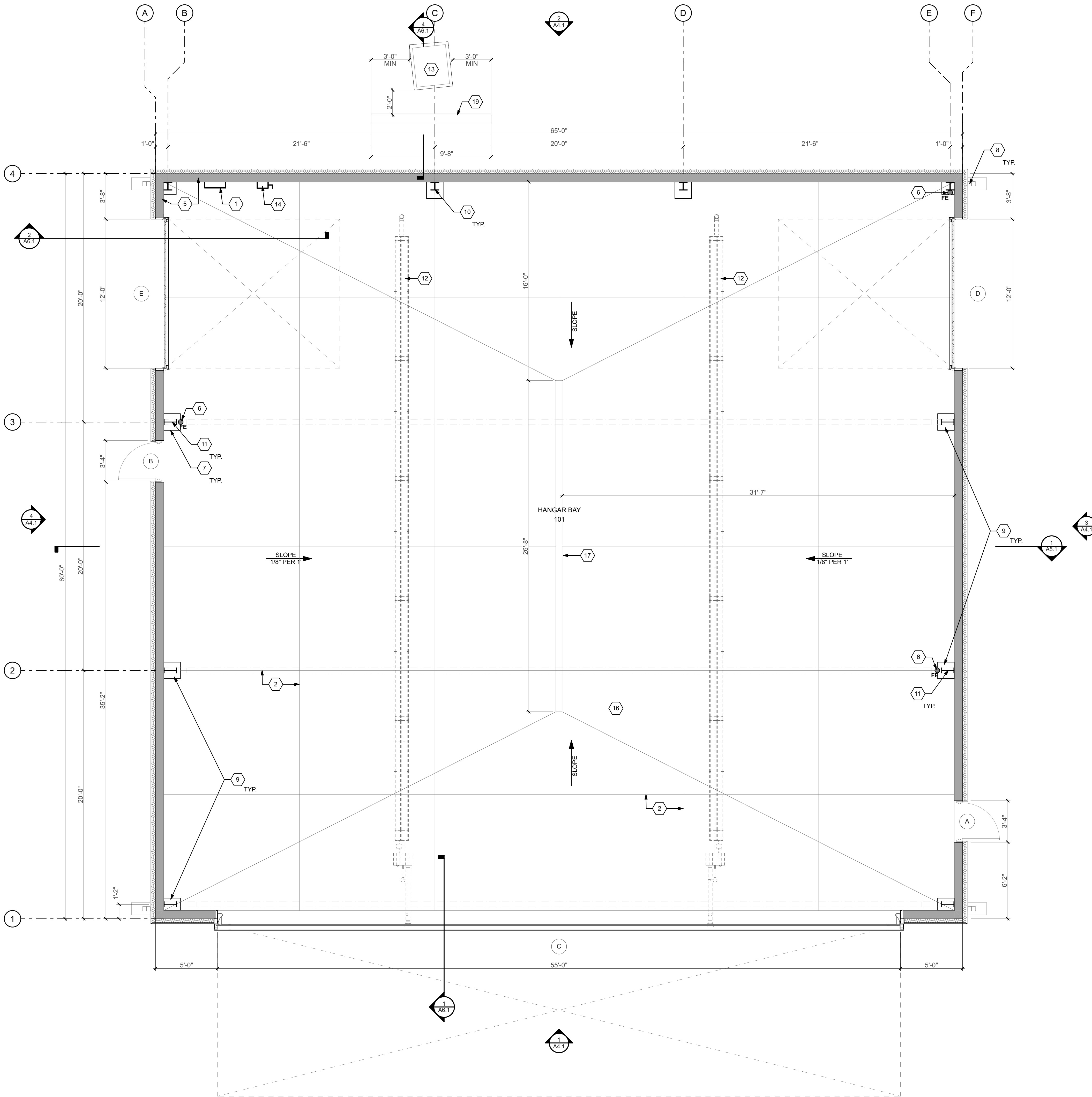
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REVISIONS
PLAN APPROVAL/BIDDING 2/25/26

COMM. NUMBER	DATE
2511	2/25/26
DRAWN BY	CHECKED BY
LP	RS

SPECIFICATIONS

A1.6



1
A2.1
FIRST FLOOR
SCALE: 1/4" = 1'-0"

- PLAN KEY NOTES
- PLAN NOTES ARE STD. FOR ALL FLOOR PLANS. ALL NOTES MAY NOT BE REFERENCED ON THIS SHEET.
- ELECTRICAL PANEL.
 - CONCRETE SLAB SAW CUT CONTROL JOINT. PROVIDE FLOAT FINISH.
 - CONCRETE SLAB HAND TOOLED CONTROL JOINT. PROVIDE BROOM FINISH.
 - OMIT
 - 8" MINERAL WOOL INSULATION (R-28) ABOVE CONCRETE KNEE WALL.
 - 5 LB 2-A-10-B-C MULTI-PURPOSE DRY CHEMICAL WITH MOUNTING BRACKET. SEE MOUNTING HEIGHT REQUIREMENTS IN SPECIFICATIONS.
 - ISOLATION JOINT. TYPICAL AROUND COLUMN PIERS.
 - DOWNSPOUT AND SPLASH PAD
 - CONCRETE PIER, REFER TO STRUCTURAL DRAWINGS.
 - END-WALL FRAMING, REFER TO METAL BUILDING DRAWINGS.
 - RIGID FRAME, REFER TO METAL BUILDING DRAWINGS.
 - CHAIN SUSPENDED RADIANT HEATER, REFER TO MECHANICAL DRAWINGS.
 - TRANSFORMER, REFER TO ELECTRICAL DRAWINGS.
 - AIR COMPRESSOR, REFER TO MECHANICAL DRAWINGS.
 - PROPANE TANK, REFER TO MECHANICAL DRAWINGS. COORDINATE FINAL LOCATION WITH PROPANE SUPPLIER.
 - PLUMBING BELOW SLAB, REFER TO MECHANICAL DRAWINGS. PROVIDE GRANULAR BEDDING OF CRUSHED STONE OR GRAVEL, ODOT 603 TYPE 3 (#57 OR #67), OR OTHER APPROVED EQUIVALENT, IN COMPLIANCE WITH CITY OF SIDNEY REQUIREMENTS.
 - 6" WIDE TRENCH DRAIN, REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS.
 - EXISTING LIGHT POLE TO BE REMOVED BY ELECTRIC UTILITY COMPANY.
 - 8" CMU WITH INTEGRAL WATER REPELLENT, GROUT SOLID. MINIMUM 1 - HOUR FIRE RESISTANT RATED WALL FOR TRANSFORMER. VERIFY FINAL DIMENSIONS OF WALL AND DISTANCE FROM PAD AND TRANSFORMER WITH UTILITY COMPANY. REFER TO DETAIL 3/A6.1.
 - VENTED SUMP, REFER TO MECHANICAL DRAWINGS.
 - REMOVE EXISTING ASPHALT AS NEEDED FOR NEW CONCRETE APRON. MEET EXISTING ASPHALT GRADE.

- FLOOR PLAN GENERAL NOTES
- FLOOR PLAN DIMENSIONS FOR EXTERIOR WALLS ARE FROM FACE OF STUD OR FOUNDATION.
 - DOOR FRAME LOCATED 4" FROM WALL AT HINGE SIDE, UNLESS NOTED OR DIMENSIONED OTHERWISE.
 - THE BASE FLOOR ELEVATION INDICATED FOR THE PROJECT IS 100'-0". REFER TO SITE PLAN FOR CORRELATION TO USGS DATUM.
 - PROVIDE CONTINUOUS FOUNDATION INSULATION AROUND THE ENTIRE PERIMETER OF THE BUILDING. REFER TO WALL SECTIONS FOR DETAIL.
 - REFER TO DETAILS FOR TYPICAL COMMON CONTROL JOINTS AND EXPANSION JOINT DETAILS.
 - REFER TO SHEET A7.1 FOR DOOR SCHEDULE.
 - SEE SPECIFICATIONS FOR DOOR HARDWARE SETS.
 - RESEED ANY GRASS AREAS DISTURBED DURING CONSTRUCTION PER THE SPECIFICATIONS.
 - PROVIDE METAL BLOCKING AS NEEDED FOR ALL EQUIPMENT AND DEVICES.
 - REPAIR ANY EXISTING ASPHALT DAMAGE DURING CONSTRUCTION.
 - CONTRACTOR TO VERIFY UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION.

- LEGEND
- REFER TO WALL SECTIONS AND DETAILS FOR WALL CONSTRUCTION
- # KEY NOTE, SEE ABOVE
- # DOOR OPENING, REFER TO DOOR SCHEDULE ON SHEET A7.1
- #/A6.1 DETAIL NUMBER
SHEET NUMBER DETAIL / ELEVATION DESIGNATION
- EXISTING UTILITY POLE
- NEW GRADE ELEVATION
- + ##### EXISTING GRADE ELEVATION

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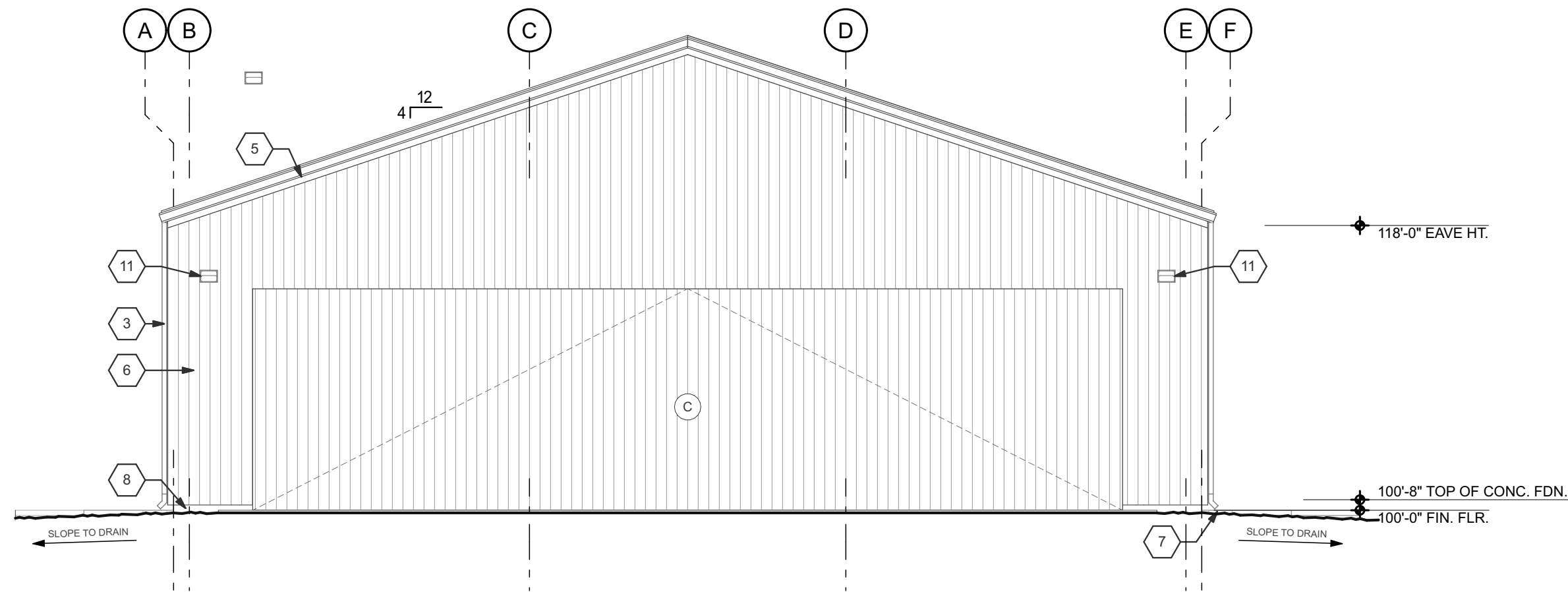
STATE OF OHIO
RACHEL A. SCHMITMEYER
2419524
REGISTERED ARCHITECT

Rachel A. Schmitmeyer
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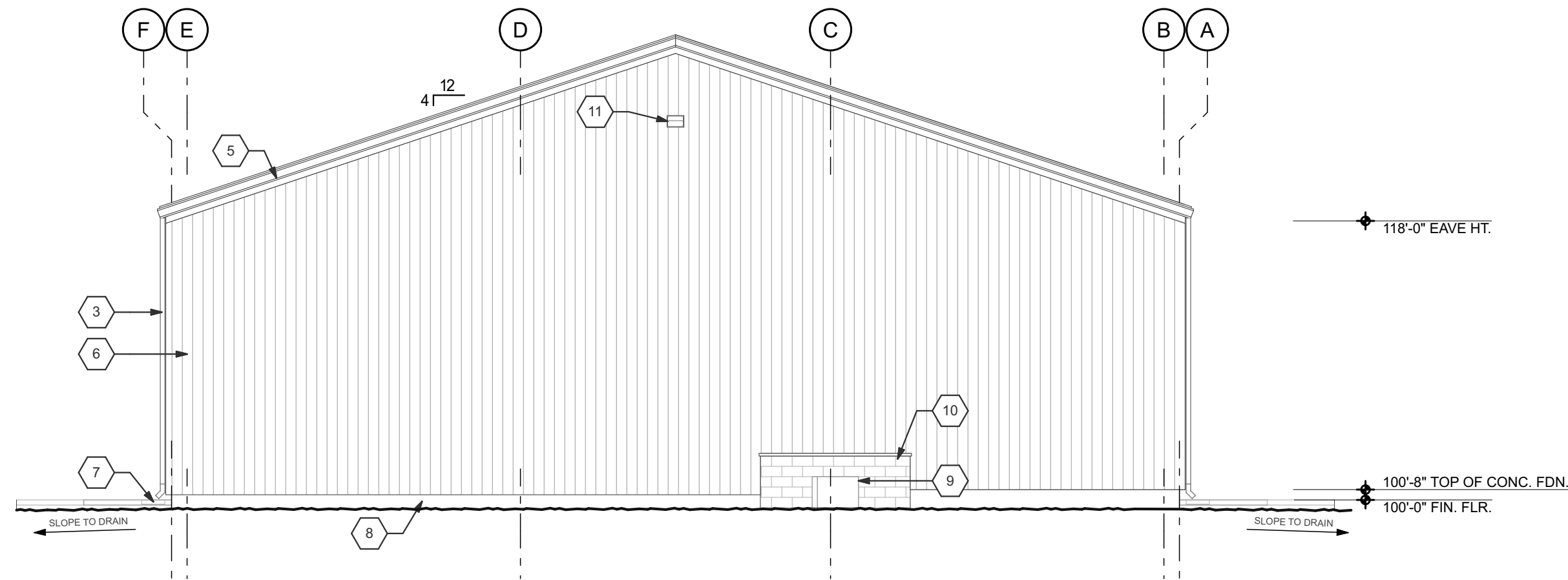
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REVISIONS	
PLAN APPROVAL/BIDDING	2/25/26
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FIRST FLOOR PLAN	

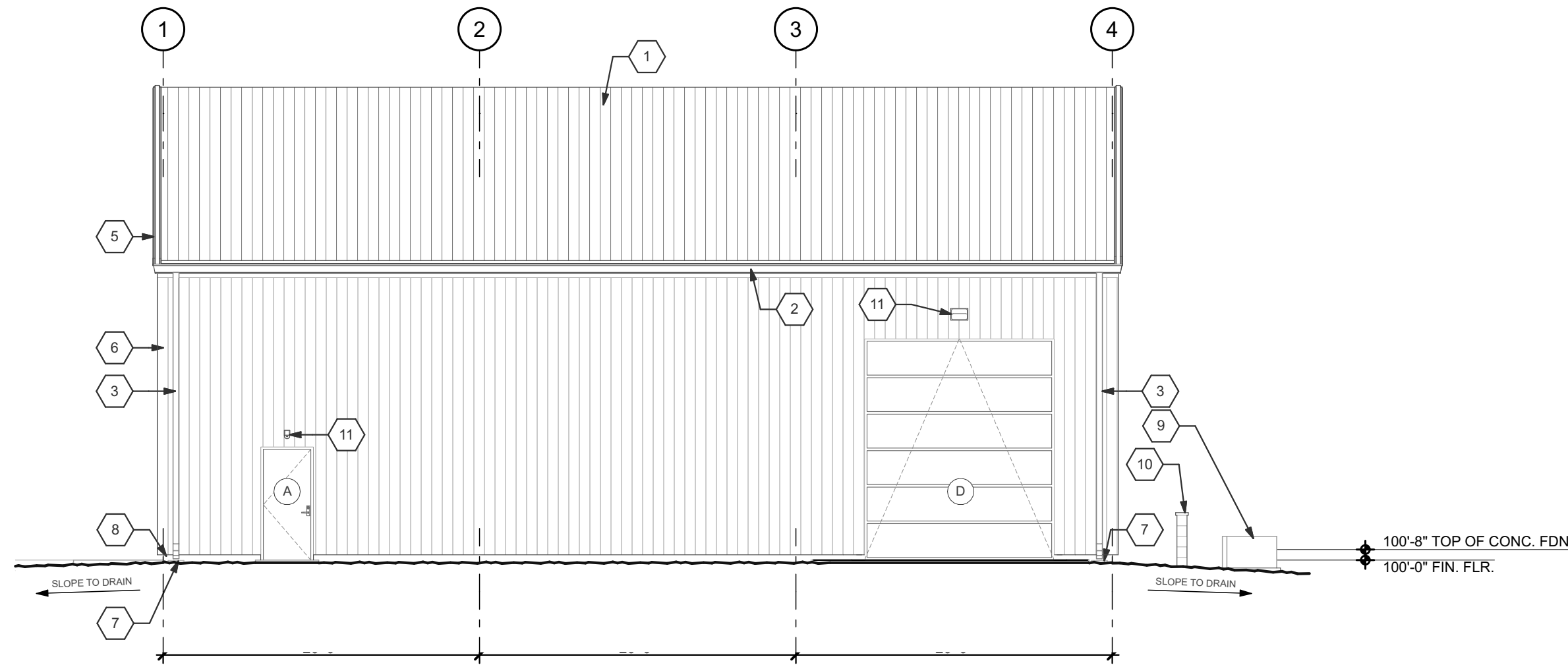
A2.1



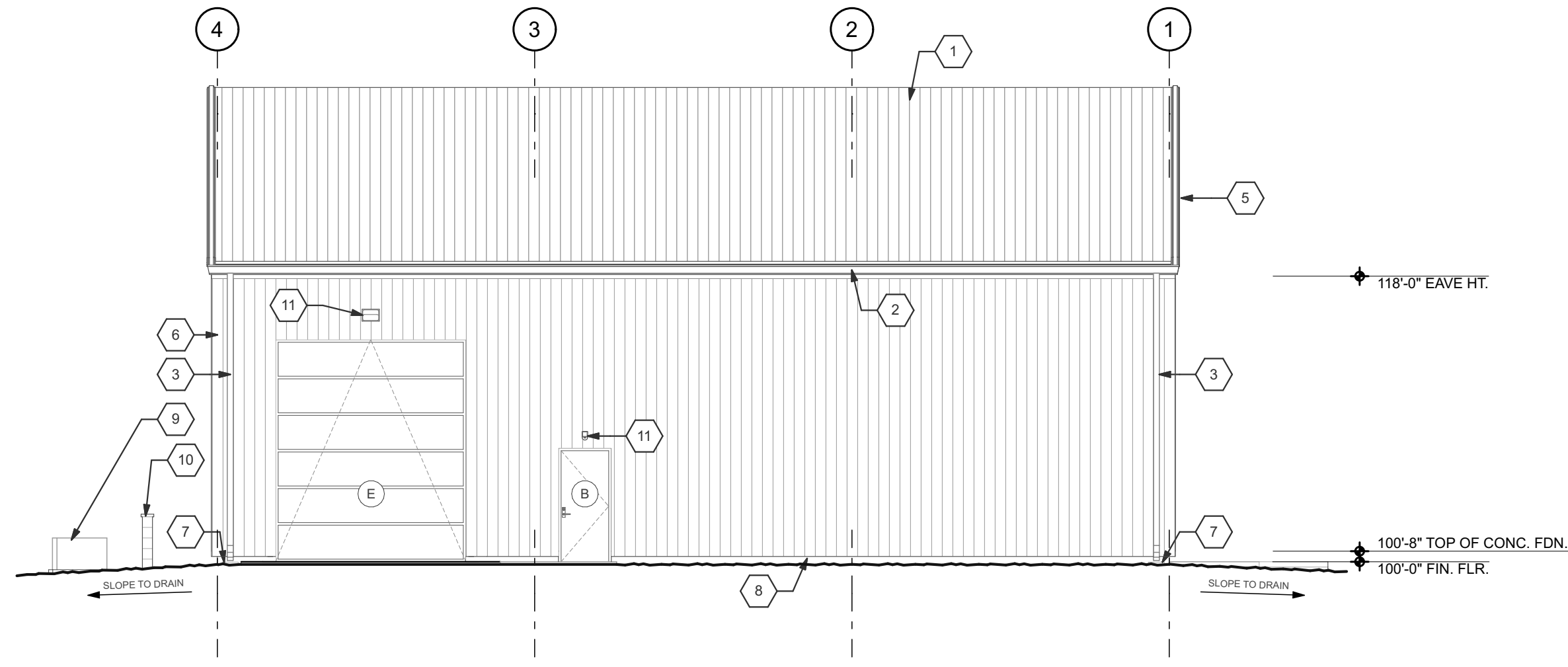
1 WEST ELEVATION
SCALE: 1/8" = 1'-0"



2 EAST ELEVATION
SCALE: 1/8" = 1'-0"



3 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



4 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

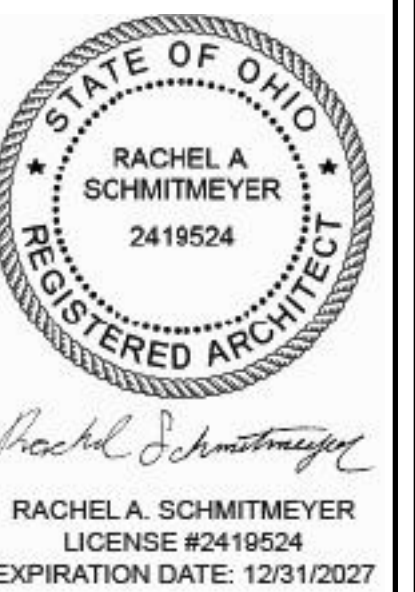
- EXTERIOR ELEVATION NOTES
- ALL NOTES MAY NOT BE REFERENCED ON THIS SHEET.
- 26 GA. METAL ROOF PANELS, COLOR SELECTED BY ARCHITECT FROM MANUFACTURER FULL RANGE.
 - 7" METAL GUTTER BY METAL BUILDING MANUFACTURER.
 - 4" X 5" (NOM) METAL DOWNSPOUT, BY METAL BUILDING MANUFACTURER.
 - OMIT
 - 9" METAL FASCIA, BY METAL BUILDING MANUFACTURER.
 - 26 GA. METAL WALL PANELS, BY METAL BUILDING MANUFACTURER, COLOR SELECTED BY ARCHITECT FROM MANUFACTURER FULL RANGE.
 - CONCRETE SPLASH PAD
 - CONCRETE KNEE WALL
 - TRANSFORMER, REFER TO ELECTRICAL DRAWINGS.
 - 8" CMU WITH INTEGRAL WATER REPELLENT, GROUT SOLID. MINIMUM 1 - HOUR FIRE RESISTANT RATED WALL FOR TRANSFORMER. VERIFY FINAL DIMENSIONS OF WALL AND DISTANCE FROM PAD AND TRANSFORMER WITH UTILITY COMPANY. REFER TO DETAIL 3/A6.1.
 - OUTDOOR LIGHT, REFER TO ELECTRICAL DRAWINGS.

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ELEVATION LEGEND

- KEY NOTE, SEE ABOVE.
- ⊕ DOOR OPENING, REFER TO DOOR SCHEDULE ON SHEET A7.1

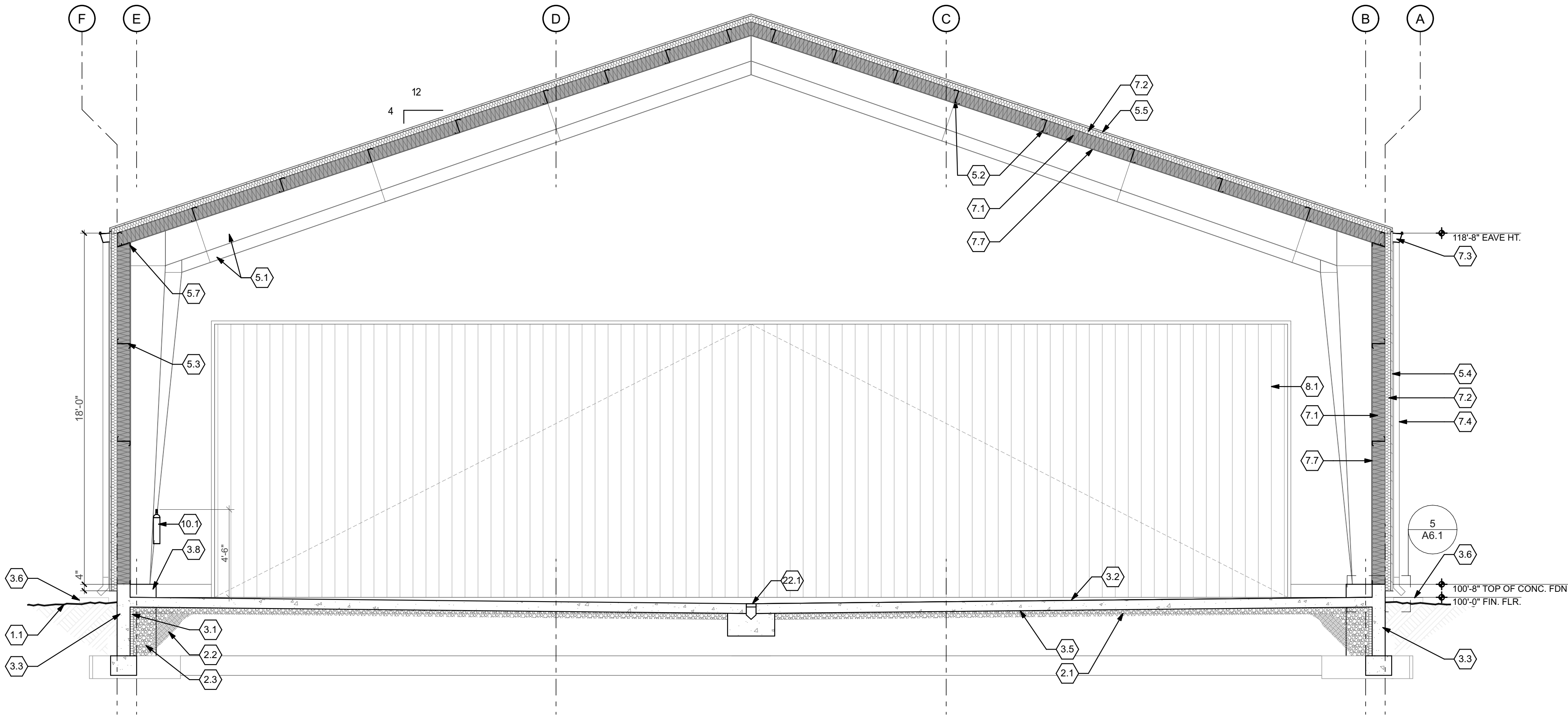
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EXTERIOR ELEVATIONS

A4.1



1 BUILDING SECTION
SCALE: 1/4" = 1'-0"

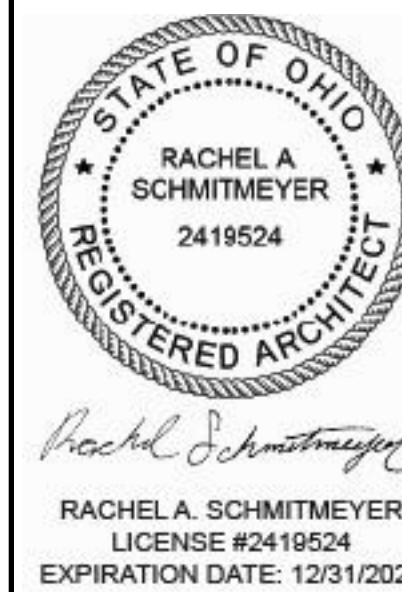
- SECTION NOTES
- SECTION NOTES ARE STD. FOR ALL SECTIONS. ALL NOTES MAY NOT BE REFERENCED ON THIS SHEET.
- 1.1 GRADE, REFER TO SITE PLAN.
- 2.1 4" COMPACTED GRAVEL BASE (TYPICAL).
- 2.2 COMPACTED EARTH BACKFILL.
- 2.3 COMPACTED GRAVEL BACKFILL.
- 3.1 2" x 24" CONTINUOUS RIGID PERIMETER INSULATION BOARD.
- 3.2 6" CONCRETE FLOOR SLAB, REFER TO STRUCTURAL DRAWINGS.
- 3.3 CONCRETE FOUNDATION WALL AND FOOTING, REFER TO STRUCTURAL DETAILS FOR SIZE, TOP OF FOOTING DEPTH AND REINFORCING.
- 3.4 CONCRETE FOOTING, REFER TO STRUCTURAL DETAILS FOR SIZE, TOP OF FOOTING DEPTH AND REINFORCING.
- 3.5 VAPOR BARRIER (TYPICAL), REFER TO SPECIFICATIONS.
- 3.6 PRECAST CONCRETE SPLASH PAD
- 3.7 CONCRETE FROST STOOP, REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
- 3.8 CONCRETE PIER, REFER TO STRUCTURAL DRAWINGS.
- 3.9 EXISTING EXTERIOR CONCRETE SLAB, VERIFY WITH UTILITY COMPANY IF EXISTING PAD IS ACCEPTABLE FOR NEW TRANSFORMER.
- 4.1 8" CMU WITH INTEGRAL WATER REPELLENT, GROUT SOLID, MINIMUM 1 - HOUR FIRE RESISTANT RATED WALL FOR TRANSFORMER. VERIFY FINAL DIMENSIONS OF WALL AND DISTANCE FROM PAD AND TRANSFORMER WITH UTILITY COMPANY. REFER TO DETAIL 3/A6.1.
- 4.2 2" SOLID CMU SOAP BRICK
- 4.3 OMIT
- 4.4 FILL CORES OF CMU WITH GROUT, REFER TO STRUCTURAL DRAWINGS FOR REINFORCING.
- 4.5 HORIZONTAL JOINT REINFORCEMENT WALL TIE AT 16" O.C. VERTICAL (MAX)
- 5.1 STEEL RIGID FRAME, REFER TO METAL BUILDING DRAWINGS.
- 5.2 STEEL PURLIN, REFER TO METAL BUILDING DRAWINGS.
- 5.3 STEEL GIRT, REFER TO METAL BUILDING DRAWINGS.
- 5.4 26 GA. METAL WALL PANEL, REFER TO METAL BUILDING DRAWINGS.
- 5.5 26 GA. METAL ROOF PANEL, REFER TO METAL BUILDING DRAWINGS.
- 5.6 END COLUMN, REFER TO METAL BUILDING DRAWINGS.
- 5.7 BENT PLATE, REFER TO METAL BUILDING DRAWINGS. MATCH GAUGE OF GIRT.
- 5.8 EXTERIOR DOOR CLADDING PROVIDED BY METAL BUILDING CONTRACTOR TO MATCH GAUGE OF METAL WALL PANEL.
- 5.9 29 GA. INTERIOR DOOR CLADDING PROVIDED BY METAL BUILDING CONTRACTOR.
- 7.1 8" MINERAL WOOL INSULATION (R-28)
- 7.2 3 1/2" MINERAL WOOL INSULATION WITH PERFORATED FOIL FACING (R-12)
- 7.3 PREFORMED METAL GUTTER, REFER TO METAL BUILDING SPECIFICATIONS.
- 7.4 PREFORMED METAL DOWNSPOUT, REFER TO METAL BUILDING SPECIFICATIONS.
- 7.5 EAVE TRIM, REFER TO METAL BUILDING DRAWINGS.
- 7.6 FIELD INSTALLED MIN. R-15 MINERAL WOOL BLANKET INSULATION. FILL CAVITY FULL INSULATION PROVIDED BY GC.
- 7.7 9 MIL WOVEN HPDE SCRM FABRIC AND SUPPORT BANDING SYSTEM
- 8.1 HYDRAULIC DOOR, REFER TO DOOR SCHEDULE.
- 8.2 OVERHEAD DOOR, REFER TO DOOR SCHEDULE.
- 10.1 FIRE EXTINGUISHER, REFER TO FLOOR PLAN.
- 22.1 8" WIDE TRENCH DRAIN, REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS.
- 26.1 TRANSFORMER, REFER TO ELECTRICAL DRAWINGS.

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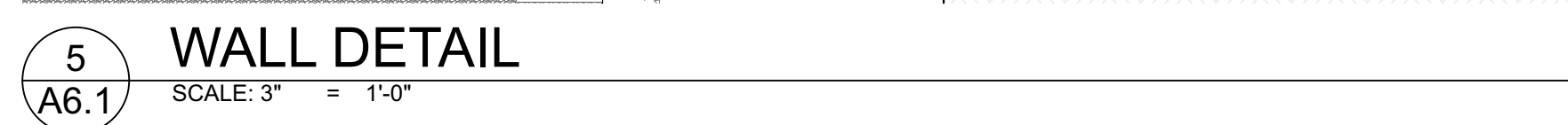
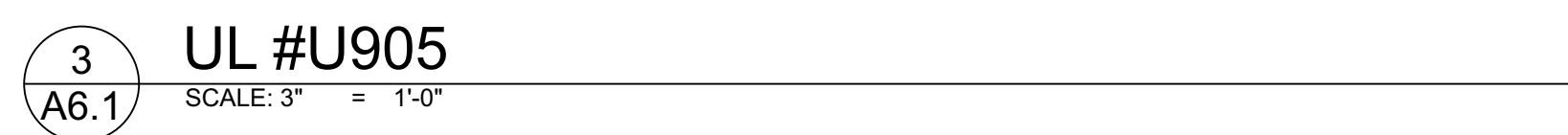
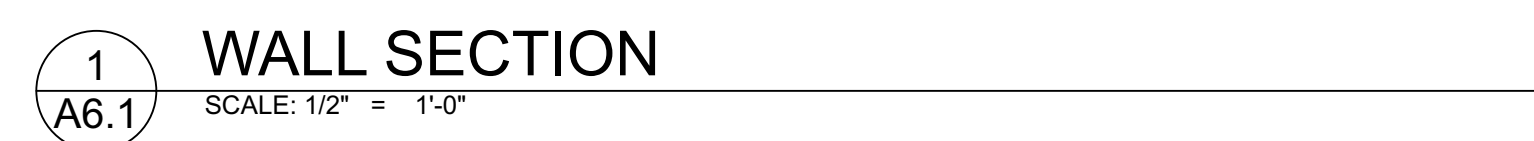
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BUILDING SECTION

A5.1



A6.1



RM	TAG	DOOR						FRAME				HEAD	JAMB	SILL	Fire Rating	Hard. Set	Remarks
			W	HT	MATL	TYPE	GLZ	MATL	EL	GLZ	DEPTH						
101	A		3'-0"	7'-0"	HM	A	-	HM	HM-1	-	5 3/4"	H1	J1A, J1B	S1	-	1	-
101	B		3'-0"	7'-0"	HM	A	-	HM	HM-1	-	5 3/4"	H1	J1A, J1B	S1	-	1	-
101	C		55'-0"	14'-0"	STL	H	-	-	-	-	-	H2	J2A, J2B	S2	-	2	-
101	D		12'-0"	14'-0"	STL	OH	-	-	-	-	-	H3	J3A, J3B	S3	-	3	-
101	E		12'-0"	14'-0"	STL	OH	-	-	-	-	-	H3	J3A, J3B	S3	-	3	-



A7.1

GENERAL STRUCTURAL NOTES

GENERAL

- THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE CONSTRUCTION IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURE AND TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WATER, SHORING, SHEETING, TEMPORARY BRACING, GUYS, OR TIEDOWNS WHICH MAY BE NECESSARY. SUCH MATERIAL IS TO REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.
- IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
- MECHANICAL EQUIPMENT (LOADS, OPENINGS AND STRUCTURE) IN ANY WAY RELATED TO MECHANICAL REQUIREMENTS ARE SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR IS TO OBTAIN APPROVAL OF MECHANICAL AND OTHER TRADES BEFORE PROCEEDING WITH SUCH PORTION OF THE WORK. EXCESS COST RELATED TO VARIATION IN MECHANICAL REQUIREMENTS IS TO BE BORNE BY MECHANICAL CONTRACTOR.
- DO NOT SCALE THE DRAWINGS WHERE DIMENSIONS ARE NOT SPECIFICALLY GIVEN. PROVIDE SHOP DRAWINGS FOR DIMENSIONS AND ELEVATIONS NOT SHOWN. COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE NOT INTENDED TO ADJUDICATE, NOR SUPERSEDE THOSE SHOWN ON THE ARCHITECTURAL DRAWINGS.
- FIELD VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY THE ARCHITECT IMMEDIATELY WHERE CONFLICTS EXIST WITHIN THE DRAWINGS OR BETWEEN THE DRAWINGS AND FIELD CONDITIONS.
- THROUGHOUT THESE PLANS, THE TERM "PROVIDE" IS DEFINED AS "SUPPLY AND INSTALL".
- SHOP DRAWINGS ARE TO BE SUBMITTED FOR COMPLETE ERECTION PHASE OR SEQUENCE. LIMITS OF EACH INDIVIDUAL ERECTION PHASE OR SEQUENCE ARE TO BE CLEARLY INDICATED ON THE PLANS. INCOMPLETE OR PIECEMEAL SHOP DRAWINGS WILL BE RETURNED PRIOR TO REVIEW. RESUBMITTALS ARE TO HAVE REVISIONS CLEARLY MARKED OR IDENTIFIED. THE CONTRACTOR SHALL REVIEW AND ACCEPT FULL RESPONSIBILITY FOR DIMENSIONAL CORRECTNESS. ALL SHOP DRAWINGS MUST BEAR THE APPROVAL, STAMP OF THE CONTRACTOR PRIOR TO REVIEW BY THE ARCHITECT OR ENGINEER.
- SHOULD ANY OF THE DETAILED INSTRUCTIONS SHOWN ON THE PLANS CONFLICT WITH THE GENERAL STRUCTURAL NOTES, THE SPECIFICATIONS OR WITH EACH OTHER, THE STRICTEST PROVISIONS WILL GOVERN.
- CODE INFORMATION

GOVERNING CODE: 2024 OHIO BUILDING CODE
BUILDING RISK CATEGORY: CATEGORY II

LOADING TYPE: UNIFORM (PSF) CONCENTRATED (LB)
ROOF TYPE: PRIMARY SECONDARY
-ORDINARY FLAT, PITCHED, AND CURVED ROOFS 20 PSF 2.0 KIPR
-RAIN INTENSITY (I) 2.0 INHR 5.8 INHR

SNOW LOADS: 20 PSF
-GROUND SNOW LOAD (Pg) 20 PSF
-FLAT ROOF SNOW LOAD (Pi) 20 PSF
-SNOW EXPOSURE FACTOR (Ce) 1.0
-SNOW LOAD IMPORTANCE FACTOR (Ib) 1.0
-THERMAL FACTOR (Ct) 1.0
-SNOW DRIFTING (Pg) AND EXTENTS INDICATED ON PLAN

WIND LOADS: 107 MPH
-BASIC WIND SPEED (V) 83 MPH
-BASIC ALLOWABLE WIND SPEED (V and) 83 MPH
-SITE EXPOSURE CATEGORY C
-INTERNAL PRESSURE COEFFICIENT +/- 0.18
-COMPONENT & CLADDING LOADS REFER TO C&C CHART PROVIDED

SEISMIC LOADS: 1.0
-SEISMIC IMPORTANCE FACTOR (Ib) 0.00X
-MAPPED SPECTRAL RESPONSE ACCELERATION (Sa) 0.00X
-MAPPED SPECTRAL RESPONSE ACCELERATION (Sb) 0.00X
-SEISMIC SITE CLASS D
-DESIGN SPECTRAL RESPONSE ACCELERATION (Sds) 0.00X
-DESIGN SPECTRAL RESPONSE ACCELERATION (Sd1) 0.00X
-SEISMIC DESIGN CATEGORY B
-RESPONSE MODIFICATION COEFFICIENT (R) 3.0
-SEISMIC RESPONSE COEFFICIENT (Ca) 0.00X
-SEISMIC DESIGN BASE SHEAR (V) XXX K
-ANALYSIS PROCEDURE
-BASIC SEISMIC FORCE-RESISTING SYSTEM: DETAILED

GEOTECHNICAL: TBD
-GEOTECHNICAL ENGINEER: TBD
-REFERENCE REPORT ID. OR NUMBER: TBD
-REFERENCE REPORT DATE: TBD
-ALLOWABLE DESIGN BEARING PRESSURE: 1,500 PSF
-FOUNDATION TYPE: SHALLOW SPREAD FOOTING

REINFORCED CONCRETE

- SPECIFICATIONS: IN GENERAL, COMPLY WITH ACI-301-20, "SPECIFICATIONS FOR STRUCTURAL CONCRETE".
- MATERIALS

A. STRUCTURAL CONCRETE:

MIX USAGE	f _c (PSI)	MAX w/cm	EXPOSURE CLASS	AIR CONTENT
LEAN CONCRETE	1,500	0.45	F0	---
FOOTINGS & INTERIOR COLUMN PIER	1,500	0.45	F1	---
INTERIOR SLABS ON GRADE	4,000	0.45	F0	---
EXTERIOR FOUNDATION STEMMALLS, EXTERIOR FOUNDATION WALLS & EXTERIOR COLUMN PIER	4,000	0.45	F2	5%-7%
EXTERIOR UNREINFORCED SLABS ON GRADE & EXTERIOR CONCRETE NOT SUBJECT TO DECKERS	4,000	0.45	F2, C1	5%-7%

- ALL DEFORMED REINFORCING BARS: Fy = 60,000 PSI.
- CEMENT: PORTLAND CEMENT, ASTM C150, TYPE I OR TYPE II; ASTM C1157, TYPE LH OR GU, OR ASTM C595, TYPE II, ALL CEMENT FOR CONCRETE EXPOSED TO VIEW IS TO BE FROM THE SAME MILL.
- AGGREGATES: ASTM C33, USE SIZE NO. 57 FOR ALL MIXES UNLESS NOTED OTHERWISE.
- ADMIXTURES:
 - WATER-REDUCING, LOW AND MID RANGE: ASTM C494, TYPE A OR D.
 - HIGH-RANGE WATER-REDUCING, SUPERPLASTICIZER: ASTM C494, TYPE F OR G.
- AIR-ENTRAINING: ASTM C260.
- FLY-ASH: ASTM C618, TYPE C OR F.
- NON-CHLORIDE, NON-CORROSIVE ACCELERATOR: ASTM C494, TYPE C OR E.

FIELD MANUAL: PROVIDE AT LEAST ONE COPY OF THE ACI FIELD REFERENCE MANUAL, MIN.-15(20) IN THE FIELD OFFICE AT ALL TIMES.

3. SUBMITTALS

- SUBMIT A MIX DESIGN FOR EACH MIXTURE USAGE REQUIRED FOR THE PROJECT. CONCRETE PROPORTIONS ARE TO BE ESTABLISHED ON THE BASIS OF PREVIOUS FIELD EXPERIENCE OR TRIAL MIXTURES.
- SUBMIT PLACING DRAWINGS FOR ALL REINFORCING. INDICATE STRENGTH, SIZE, AND DETAILS OF ALL BAR REINFORCING.
- SUBMIT PRODUCT LITERATURE FOR ADMIXTURES AND CURING COMPOUNDS PROPOSED FOR USE.
- SUBMIT REPORTS OF ALL REQUIRED TESTING AND INSPECTIONS.

5. CONTINGENCIES

- PROVIDE LEAN CONCRETE UNDER FOUNDATIONS FOR ACCIDENTAL OVER EXCAVATION, SOFT SPOTS, AND UTILITY TRENCHES.

6. FOOTINGS, PIERS, WALLS

- SOAKS IN FOOTINGS TO MATCH HORIZONTAL PIER OR WALL REINFORCING.
- PROVIDE CORNER BARS AT WALL AND FOOTING CORNERS TO MATCH HORIZONTAL REINFORCING.
- LAP BARS AS INDICATED IN THE CONCRETE REINFORCING LAP SCHEDULE.

7. SPLICES

- LAP SPLICE REINFORCING BARS AS SCHEDULED. MINIMUM LAP = 36 DIAMETERS.

8. FINISHES

- PER ACI 117, SURFACES OF INTERIOR SLABS ON GRADE ARE TO BE FINISHED TO THE FOLLOWING TOLERANCES: FLOOR FLATNESS (F₁)=0 AND LEVELNESS (F₁)=20 UNLESS NOTED OTHERWISE, IN SPECIFICATIONS.
- TYPICAL INTERIOR FLOOR AREAS TO REMAIN EXPOSED - HARD TROWELED FINISH.
- EXTERIOR SLABS: BROOK FINISH.

9. CURING

- CURING IS TO COMMENCE IMMEDIATELY AFTER CONCRETE PLACEMENT AND CONTINUE FOR AT LEAST 7 DAYS. DO NOT ALLOW CURING TO BE DELAYED OVERNIGHT.
- INTERIOR SLABS TO RECEIVE QUARRY TILE OR CERAMIC TILE ARE TO BE MOIST-CURED WITHOUT THE USE OF A CURING COMPOUND.
- ALL OTHER SLABS MAY BE EITHER MOIST-CURED OR RECEIVE AN APPLICATION OF CURING COMPOUND.

10. FIELD QUALITY CONTROL

- OBTAIN CONCRETE FOR REQUIRED TESTS AT POINT OF PLACEMENT. IF CONCRETE IS PUMPED, OBTAIN CONCRETE AT DISCHARGE END, THEREOF, FOR ONE DAY PLACEMENT.
- FOR EACH CLASS OF CONCRETE, OTHER THAN LEAN CONCRETE, PERFORM ONE STRENGTH TEST FOR EACH 50 YARDS, OR FRACTION THEREOF, FOR ONE DAY PLACEMENT.
- DETERMINE SLUMP FOR EACH STRENGTH TEST.
- DETERMINE AIR CONTENT FOR EACH STRENGTH TEST OF EXTERIOR EXPOSED CONCRETE.
- MAINTAIN RECORDS OF ALL TESTS INDICATING EXACT LOCATION OF THE STRUCTURE REPRESENTED BY EACH TEST.

STRUCTURAL STEEL

1. MATERIALS:

- ANCHOR RODS: ASTM F1554, GRADE 36, UNLESS NOTED OTHERWISE.

2. SPECIFICATIONS:

- WELDING PERSONNEL AND PROCEDURES ARE TO BE QUALIFIED PER AWS D1.1, UNLESS SPECIFICALLY SHOWN OTHERWISE, DESIGN, FABRICATION AND ERECTION TO BE GOVERNED BY THE LATEST REVISIONS OF:
 - AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
 - AISC CODE OF STANDARD PRACTICE.
 - STRUCTURAL WELDING CODE, AWS D1.1 OF THE AMERICAN WELDING SOCIETY.
 - SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A535 OR A502/B5.1.

3. SUBMITTALS:

- SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL WHICH INCLUDE ERECTION PLANS.
- INDICATE MATERIAL, SPECIFICATIONS, STRENGTHS, AND FINISHES.

4. COATINGS:

- DO NOT PAINT ANCHOR RODS WHICH WILL BE ENCASED IN CONCRETE.

5. MISCELLANEOUS:

- GROUT UNDER BEARING PLATES TO BE NON-METALLIC, NON-SHRINKING TYPE.
- STEEL BELOW GRADE TO BE PROTECTED BY A MINIMUM OF 3" OF CONCRETE, 4" OF SOLID MASONRY, OR A FIELD-APPLIED COAT OF ASPHALT/TAPIO/PAINT.
- PROVIDE 1/4" THICK SETTING PLATES FOR ALL BEAMS AND BEAM LINEELS BEARING ON MASONRY OR CONCRETE WHICH DO NOT REQUIRE A THICKER BEARING PLATE.
- PROVIDE HEAVY PLATE WASHERS AT ALL ANCHOR RODS.

POST-INSTALLED ANCHOR SYSTEMS

1. GENERAL:

- LISTED ANCHOR PRODUCTS PROVIDED BELOW ARE NOT TO BE USED AS INTERCHANGEABLE PRODUCTS. EACH ANCHOR HAS DEFINED CAPACITIES BASED UPON TESTED PERFORMANCE WITH APPLICABLE SAFETY FACTORS AND WILL VARY ACROSS MANUFACTURERS. TYPES OF ANCHORS INDICATED THROUGHOUT THE DESIGN DOCUMENTS ARE DETAILED FOR THEIR SPECIFIC PURPOSE AND CAPACITY. SUBSTITUTION OF ANCHORS FROM THOSE SPECIFIED ARE ONLY ALLOWED AFTER ENGINEER REVIEW AND APPROVAL OR AGREEMENT FROM WRITTEN REQUEST BY THE CONTRACTOR.
- PROVIDE ANCHORAGE MATCHING MANUFACTURER, TYPE, DIAMETER, EMBEDMENT, AND BASE MATERIAL AS INDICATED IN THE DOCUMENTS.
- ALL POST-INSTALLED ANCHORS TO BE HANDED DRILLED. FOLLOW ALL HOLE CLEANING AND INSTALLATION INSTRUCTIONS AS STIPULATED BY THE ANCHOR MANUFACTURER. FOLLOW ALL OSHA GUIDELINES FOR CONCRETE DRILLING AS IT PERTAINS TO SILICA DUST.
- INSTALLATION OF ADHESIVE ANCHORS MUST BE PERFORMED BY PERSONNEL TRAINED TO INSTALL ADHESIVE ANCHORS THROUGH MANUFACTURER TRAINING PROGRAMS.
- INSTALLATION OF ADHESIVE ANCHORS IN THE HORIZONTAL OR UPWARDLY INCLINED ORIENTATION AND WHERE SUPPORTING SUSTAINED TENSION LOADS SHALL BE INSTALLED BY QUALIFIED PERSONNEL BY ACCESS INSTALLATION PROGRAMS.
- MINIMUM CONCRETE AGE FOR POST-INSTALLED ADHESIVE ANCHORS SHALL BE NOT LESS THAN 28 DAYS.
- ALL ANCHORS IN CONTACT WITH PRESSURE-TREATED LUMBER ARE TO BE HOT-DIPPED GALVANIZED PER ASTM A153 WITH A MINIMUM 0.015 COATING OR STAINLESS STEEL WITH CHEMICAL COMPOSITION CONFORMING TO AISI 302/304 OR AISI 316. FASTENERS AND CONNECTORS ARE TO BE OF THE SAME MATERIAL, STAINLESS STEEL OR HOT-DIPPED GALVANIZED. DO NOT MIX MATERIALS.
- MINIMUM EMBEDMENT FOR MECHANICAL EXPANSION ANCHORAGE SYSTEMS IS TO BE 1.80x DIAMETER. MINIMUM EMBEDMENT FOR SCREW ANCHORAGE AND ADHESIVE ANCHORAGE SYSTEMS IS TO BE 9x DIAMETER.

2. ANCHORAGE TO CONCRETE

- ACCEPTABLE MECHANICAL EXPANSION ANCHORAGE SYSTEMS:
 - DEWALT POWER STUD -SDI OR -SDS WEDGE EXPANSION ANCHOR
 - HLTI KWIK BOLT EXPANSION ANCHOR
 - HLTI KWIK BOLT T22 EXPANSION ANCHOR
 - EMPSION STRONG-BOLT 2 WEDGE EXPANSION ANCHOR
- ACCEPTABLE MECHANICAL SLEEVE ANCHORAGE SYSTEMS: (MAY NOT BE USED TO SECURE MAIN BUILDING FRAME COMPONENTS) OF THE PROJECT:
 - DEWALT LOK-BOLT AS SLEEVE ANCHOR
 - HLTI KLC SLEEVE ANCHOR
 - EMPSION SLEEVE-ALL SLEEVE ANCHOR
- ACCEPTABLE MECHANICAL SCREW ANCHORAGE SYSTEMS:
 - DEWALT SCREW-BOLT 1
 - HLTI KWIK HUS-EZ SCREW ANCHOR
 - EMPSION TITEN HD SCREW ANCHOR
- ACCEPTABLE ADHESIVE ANCHORAGE SYSTEMS:
 - DEWALT ACH200-ADHESIVE FOR REINFORCING BAR
 - DEWALT PURE20-ADHESIVE FOR THREADED ROD AND REINFORCING BAR
 - DEWALT PURE10-ADHESIVE FOR THREADED ROD AND REINFORCING BAR
 - HLTI HT-100-ADHESIVE FOR THREADED ROD AND REINFORCING BAR
 - HLTI HT-100-ADHESIVE FOR THREADED ROD AND REINFORCING BAR
 - HLTI HT-100-ADHESIVE FOR THREADED ROD AND REINFORCING BAR
 - EMPSION A-XP ADHESIVE FOR THREADED ROD AND REINFORCING BAR
 - EMPSION ET-30-ADHESIVE FOR THREADED ROD AND REINFORCING BAR

IN ACCORDANCE WITH CHAPTER 17 OF THE REFERENCE BUILDING CODE, THE OWNER SHALL EMPLOY INSPECTION AGENCIES TO PERFORM SPECIAL INSPECTIONS DURING CONSTRUCTION INCLUDING INSPECTIONS OF SHOP-FABRICATED ITEMS WHEN APPLICABLE. ALL INSPECTION AGENCIES, INCLUDING FABRICATION FACILITIES, WHEN REQUIRED, SHALL BE QUALIFIED AND APPROVED BY THE BUILDING OFFICIAL. REFER TO OTHER DISCIPLINES FOR SPECIAL INSPECTIONS OF NON-STRUCTURAL SYSTEMS.

TABLE 1 STATEMENT OF SPECIAL INSPECTIONS FOR STRUCTURAL DISCIPLINE

REQUIRED SPECIAL INSPECTIONS AND TESTS FOR SOILS			
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING	---	X	
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	---	X	
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	---	X	
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X	---	
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SURFACE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	---	X	

REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION			
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	
1. INSPECT REINFORCEMENT AND VERIFY PLACEMENT	---	X	
2. INSPECT ANCHORS CAST IN CONCRETE	---	X	
3. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	---	
5. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	---	X	

ABBREVIATIONS

AB ANCHOR BOLT
ADDL ADDITIONAL
ALUM ALUMINUM
ARCH ARCHITECTURAL

B or BO BOTTOM OF
BFB BOTTOM FLANGE BRACE
BLDG BUILDING
BM BEAM
BOT BOTTOM

CMF COLD-FORMED METAL FRAMING
CMFT COLD-FORMED METAL TRUSS
CJ CONTROL OR CONSTRUCTION JOINT
CLR CLEAR
CM CONSTRUCTION MANAGER
CMU CONCRETE MASONRY UNIT
COL COLUMN
CONC CONCRETE
CONT CONTINUOUS
COORD COORDINATE
CY CUBIC YARD

DBL DOUBLE
DEMO DEMOLISH OR DEMOLITION
DET DETAIL
DIA DIAMETER
DIAG DIAGONAL
DIM DIMENSION
DWG DRAWING

EA EACH
EJ EXPANSION JOINT
ENG ENGINEER
EW EACH WAY
EXP EXPANSION

FDN FOUNDATION
FIN FINISH OR FINISHED
FLR FLOOR
FTG FOOTING
FRTV FIRE-RETARDANT TREATED WOOD
FV FIELD VERIFY

GA GAGE
GALV GALVANIZE
GC GENERAL CONTRACTOR

HC HOLLOW CORE
HORIZ HORIZONTAL

ID INSIDE DIMENSION
IF INSIDE FACE
INT INTERIOR

JST JOIST
JT JOINT

KB KICKER BRACE

L ANGLE
LGMF LIGHT GAGE METAL FRAMING
LLBB LONG LEG BACK-TO-BACK
LLH LONG LEG HORIZONTAL
LLV LONG LEG VERTICAL

MAS MASONRY
MAX MAXIMUM
MIN MINIMUM
MTL METAL

N NORTH
NA NOT APPLICABLE
NIC NOT IN CONTRACT
NOM NOMINAL
NTS NOT TO SCALE

OC ON CENTER
OD OUTSIDE DIAMETER
OH OVERHEAD
OPP OPPOSITE
OPNG OPENING
OSB ORIENTED STRAND BOARD
PAF POWDER ACTUATED FASTENERS
PC PRECAST
PEMB PRE-ENGINEERED METAL BUILDING
PERP PERPENDICULAR
PSI POUNDS PER SQUARE INCH
PSF POUNDS PER SQUARE FOOT

REIN REINFORCING
REQD REQUIRED

SCHED SCHEDULE
SECT SECTION
SER STRUCTURAL ENGINEER OF RECORD
SF SQUARE FOOT
SL SLOPED
SLBB SHORT LEG BACK-TO-BACK
SPEC SPECIFICATION
SQ SQUARE
SS STAINLESS STEEL
STD STANDARD
SY SQUARE YARD
SYM SYMMETRICAL

T or TO TOP OF
TAB TOP AND BOTTOM
TEMP TEMPORARY OR TEMPERATURE
T&G TONGUE AND GROOVE
TYP TYPICAL

UN UNLESS NOTED
UNO UNLESS NOTED OTHERWISE

VB VAPOR BARRIER
VERT VERTICAL

W WIDE FLANGE
WI WITH
W/O WITHOUT
WT WEIGHT
WWF WELDED WIRE FABRIC

YD YARD

LAP SPLICE SCHEDULE FOR CONCRETE REINFORCING

4,000 psi & 4,500 psi CONCRETE UNCOATED REINFORCING BARS

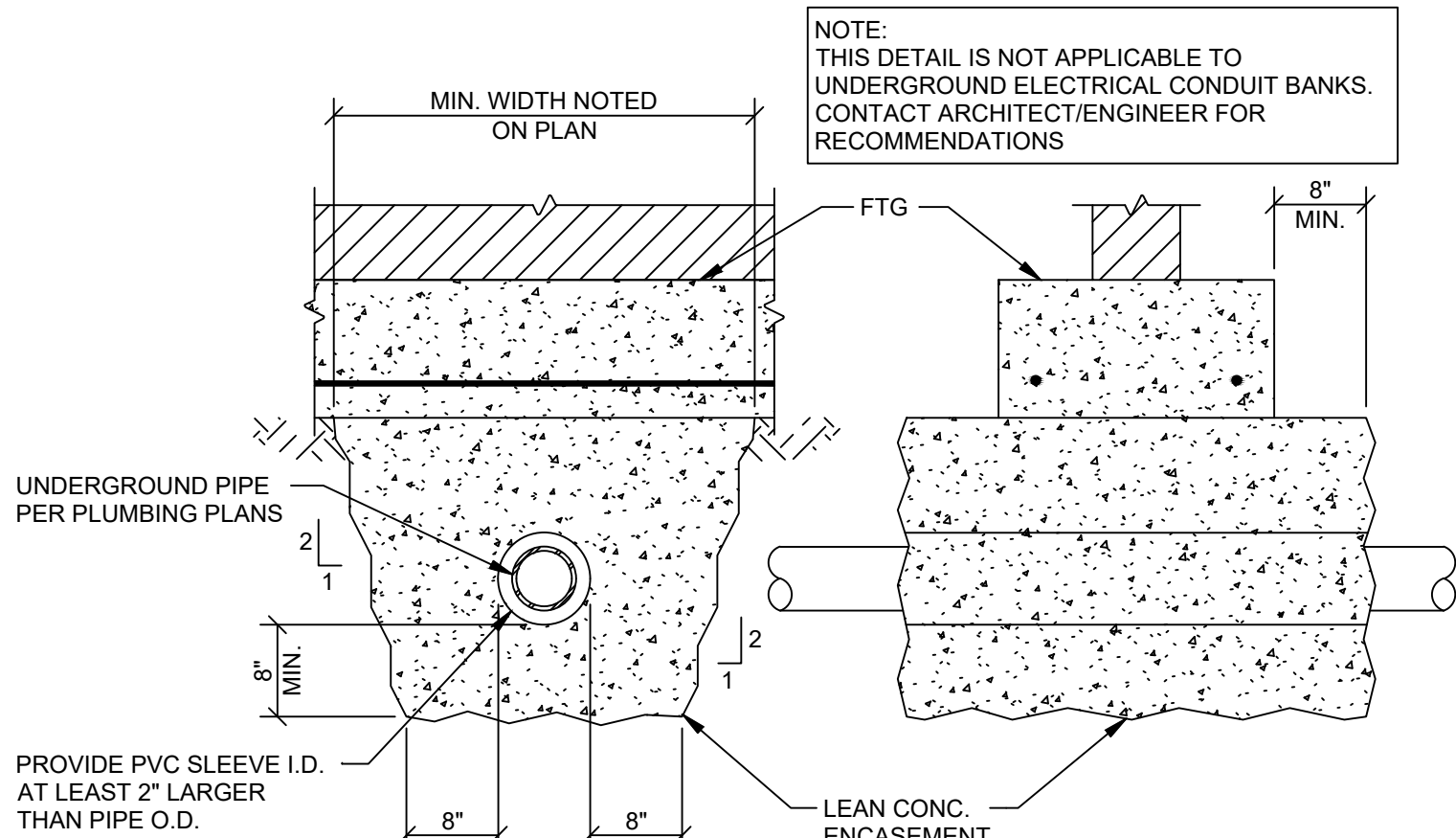
BAR SIZE	3/4" CLR.	1 1/2" CLR. AND GREATER
#4	2'-8"	2'-1"
#5	3'-4"	2'-7"
#6	4'-0"	3'-1"
#7	6'-6"	4'-6"
#8	8'-0"	5'-2"
#9	9'-8"	5'-10"
#10	11'-8"	6'-6"
#11	13'-8"	7'-3"

LAP SPLICE SCHEDULE FOR CONCRETE REINFORCING

5,000 psi & 5,500 psi CONCRETE UNCOATED REINFORCING BARS

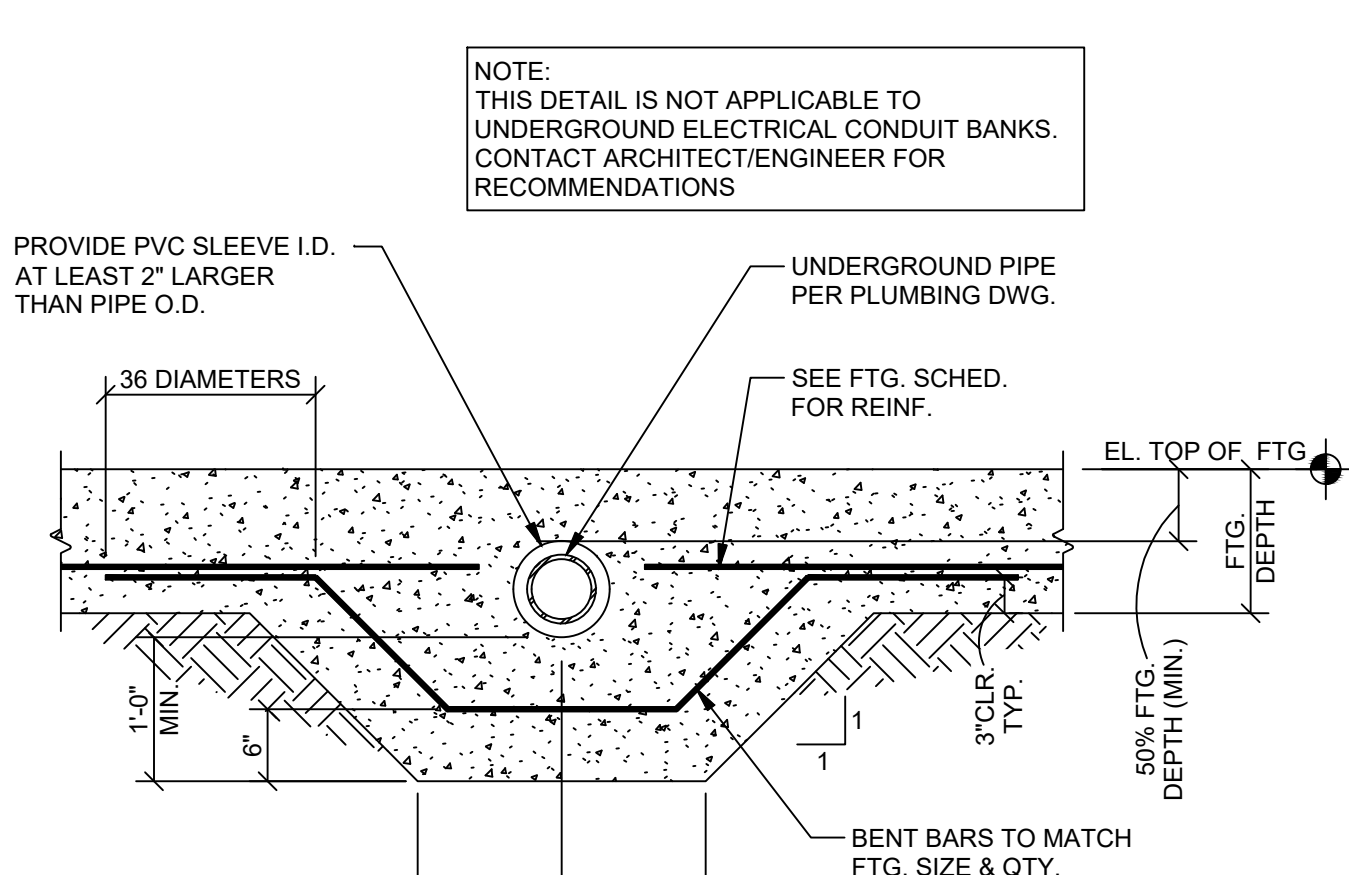
BAR SIZE	3/4" CLR.	1 1/2" CLR. AND GREATER
#4	2'-5"	1'-10"
#5	3'-0"	2'-4"
#6	3'-7"	2'-9"
#7	5'-9"	4'-0"
#8	7'-2"	4'-7"
#9	8'-8"	5'-2"
#10	10'-5"	5'-10"
#11	12'-3"	6'-8"

- TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BAR.
- BAR SPACING TO BE A MINIMUM OF THREE DIAMETERS UNLESS NOTED OR SCHEDULED OTHERWISE.
- APPLICABLE ONLY FOR 60 KSI STEEL AND NORMAL WEIGHT CONCRETE.
- IN LIEU OF LAP SPLICING, BARS MAY BE SPLICED BY MECHANICAL MEANS WHICH DEVELOP AT LEAST 125% OF THE BAR'S SPECIFIED YIELD STRENGTH.



TYPICAL PIPE BELOW FOOTING

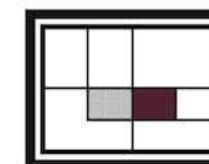
DETAIL 1
3/4" = 1'-0"



TYPICAL PIPE THROUGH FOOTING

DETAIL 2
3/4" = 1'-0"

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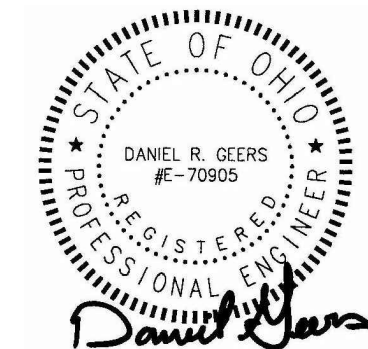
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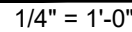
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REVISIONS
PLAN APPROVAL/
BIDDING 02-25-2026

COMM. NUMBER 25.02.026 DATE 02/25/2026
DRAWN BY CAD CHECKED BY RG
GENERAL STRUCTURAL INFORMATION

S0.0

Jezerinac Geers Structural Engineering	
PROJECT #	25.02.026
DESIGNED BY	REG
DRAWN BY	CAD
CHECKED BY	
DOCUMENT STATUS	
☐ PROGRESS	
☐ BIDDING	
☒ PERMIT	
☐ CONSTRUCTION	



FOUNDATION NOTES

ASSUMED DESIGN SOIL BEARING PRESSURE = 1,500 PSF. GEOTECHNICAL ENGINEER IS TO BE RETAINED PRIOR TO CONSTRUCTION TO DETERMINE BEARING PRESSURE. DO NOT BEGIN FOUNDATION CONSTRUCTION UNTIL SOILS REPORT HAS BEEN REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER. FOUNDATIONS MAY REQUIRE REDESIGN BASED ON FINDINGS OF GEOTECHNICAL ENGINEER. FOUNDATION DESIGN SHALL BE BASED ON DESIGN AREA TO BE THE RESPONSIBILITY OF THE CONTRACTOR. PLACE NO CONCRETE CURB PRIOR TO INSPECTION AND APPROVAL OF BEARING SURFACES BY SOILS CONSULTANT.

2. FOUNDATIONS HAVE BEEN DESIGNED BASED UPON PRELIMINARY MATERIAL BUILDING REACTIONS. FOUNDATION CONSTRUCTION IS NOT TO BEGIN UNTIL FINAL BUILDING REACTIONS HAVE BEEN RECEIVED, REVIEWED, AND FOUNDATION DESIGNS HAS BEEN VERIFIED. ANY VARIATION IN LOADING FROM THE PRELIMINARY BUILDING REACTIONS TO BE REVIEWED WITH REDESIGN AREA TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

3. KEEP FOUNDATIONS FREE OF WATER AT ALL TIMES. REPLACE WEAKENED SOIL WITH LEAN CONCRETE OR FILL.

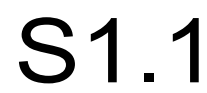
4. BOTTOM OF FOOTINGS ARE TO BE AT LEAST 36-INCHES BELOW THE ADJACENT EXTERIOR FINISH GRADE FOR FROST PROTECTION.

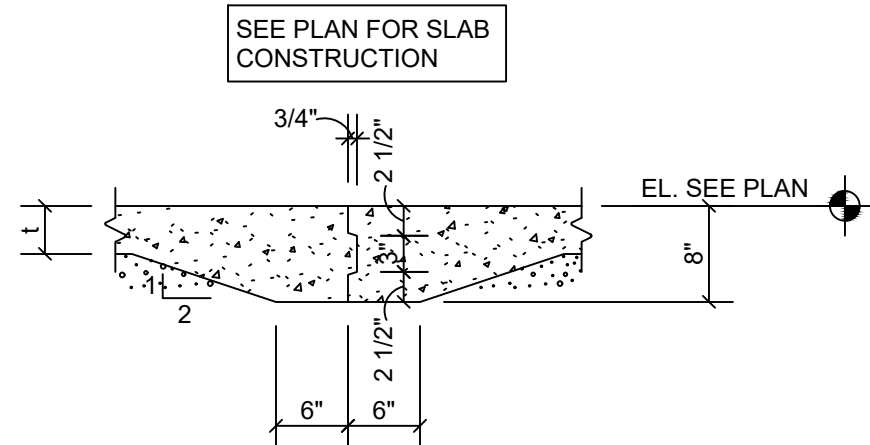
5. ELEVATIONS SHOWN ON FOOTINGS INDICATE ELEVATION AT TOP OF FOOTING. REFERENCE PRELIMINARY OF CONCRETE SLAB ELEVATION AS NOTED ON PLANS. COORDINATE ABSOLUTE ELEVATION OF TOP OF SLAB WITH FOUNDATION ELEVATION.

6. PROVIDE CORNER BARS AT ALL FOOTING AND CONCRETE WALL INTERSECTIONS.

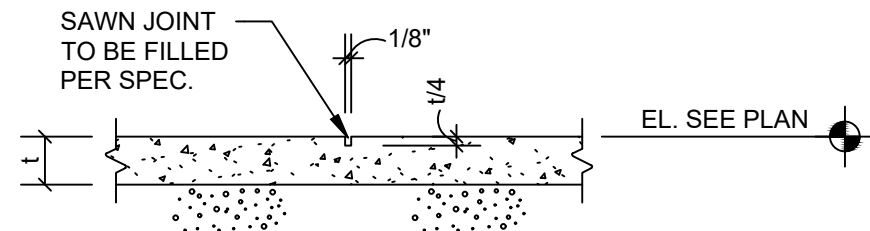
7. SEE SHEET SO FOR GENERAL STRUCTURAL INFORMATION.

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TYPICAL FLOOR CONSTRUCTION JOINT

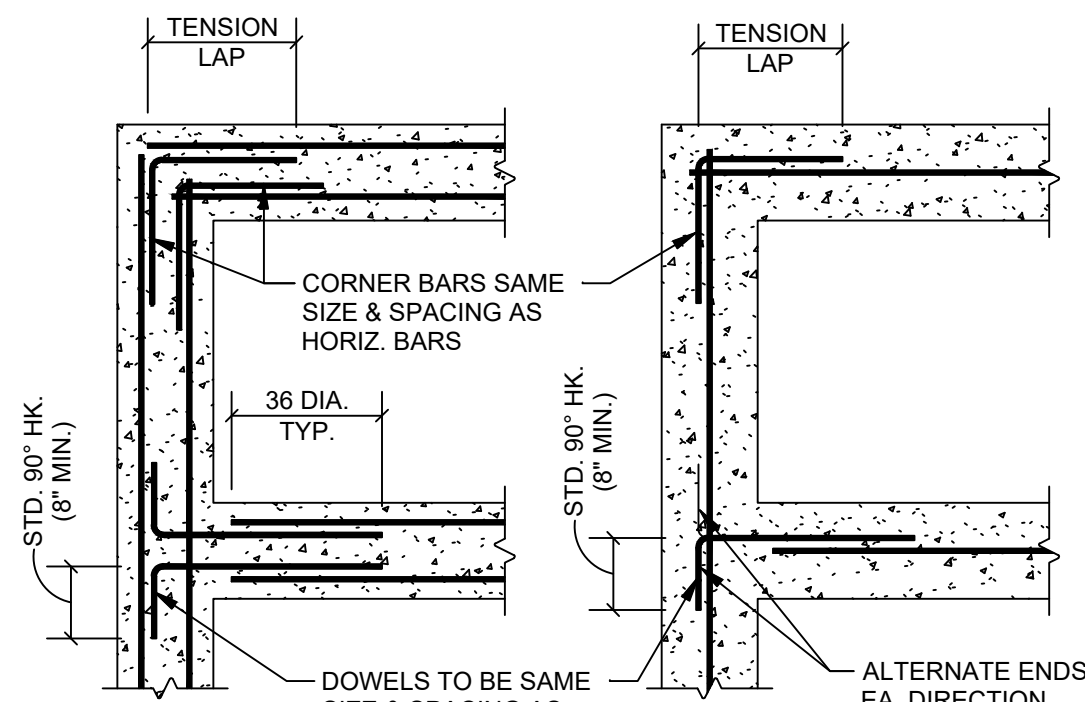


TYPICAL FLOOR CONTROL JOINT

SECTION

3/4" = 1'-0"

1

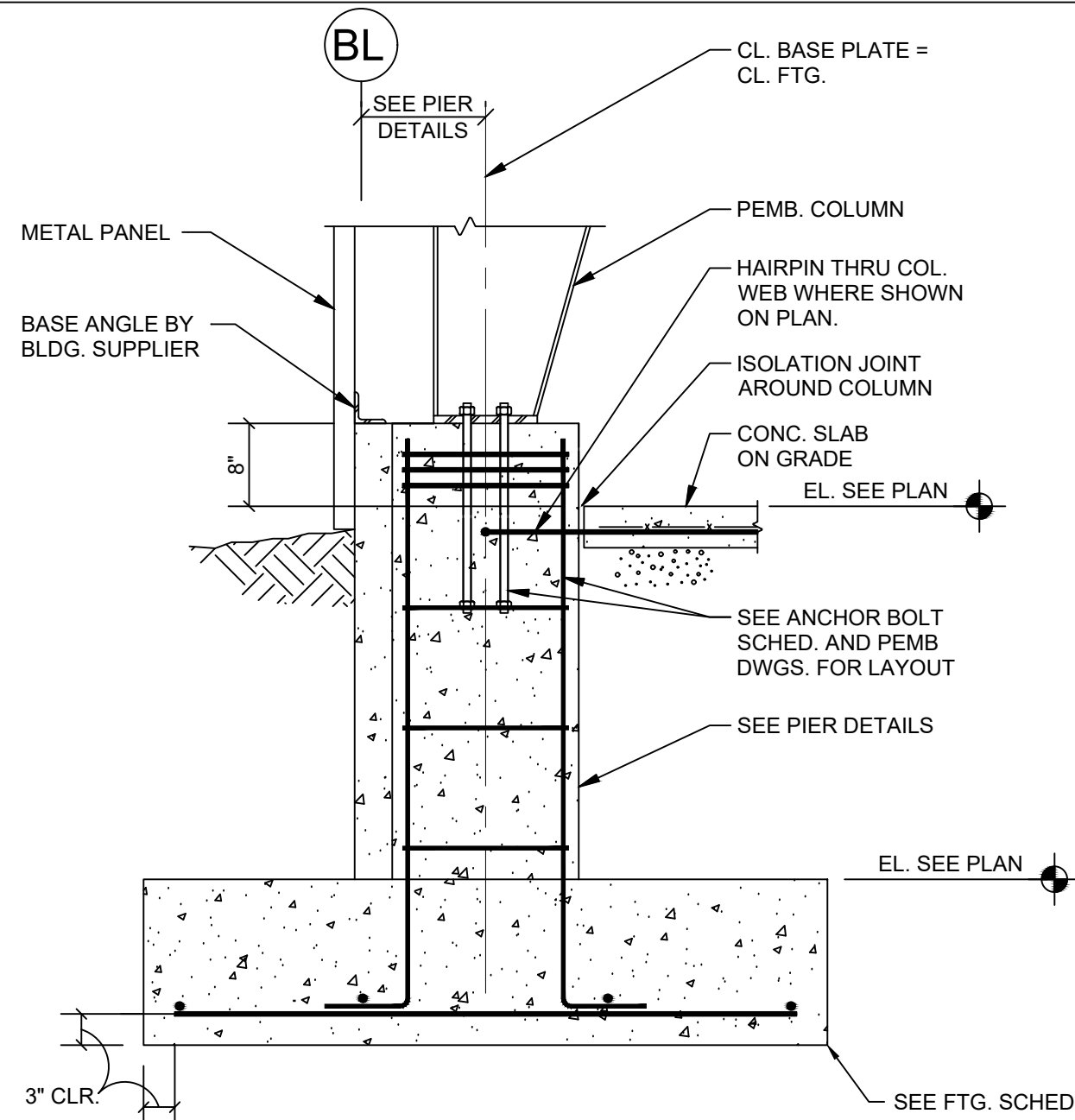


TYPICAL CORNER BARS FOR CONCRETE WALL AND FOOTING CONSTRUCTION

SECTION

3/4" = 1'-0"

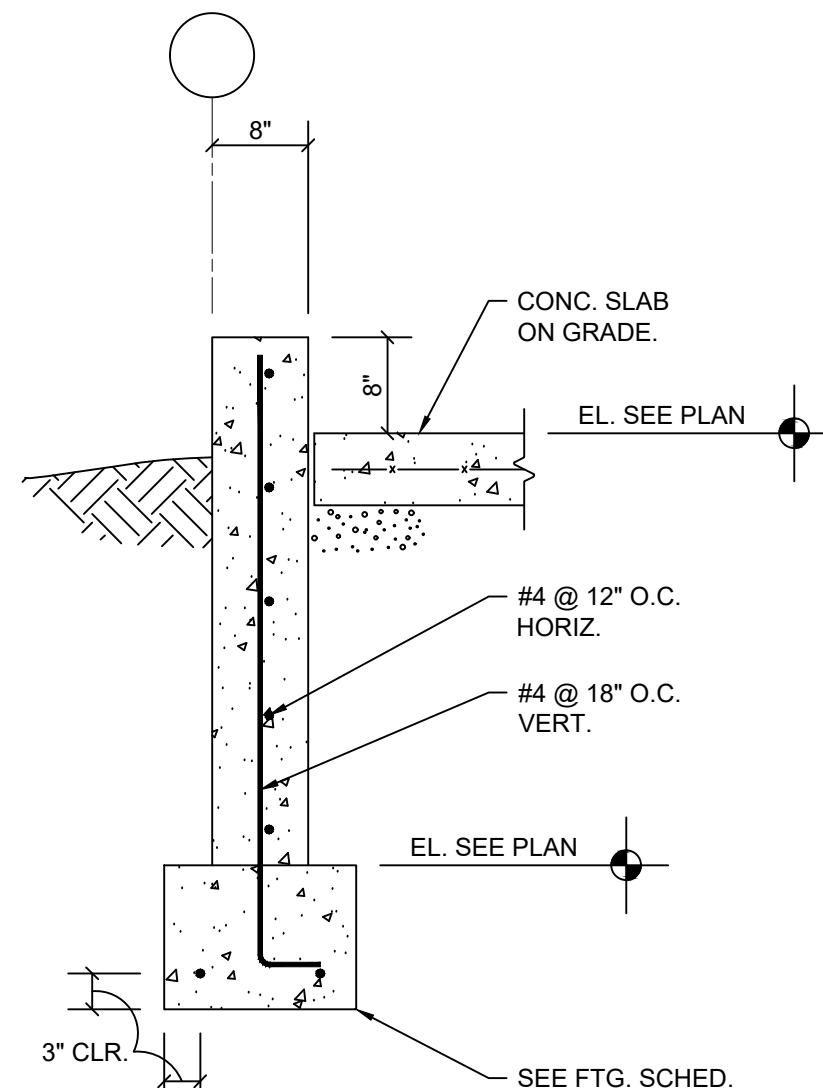
2



SECTION

3/4" = 1'-0"

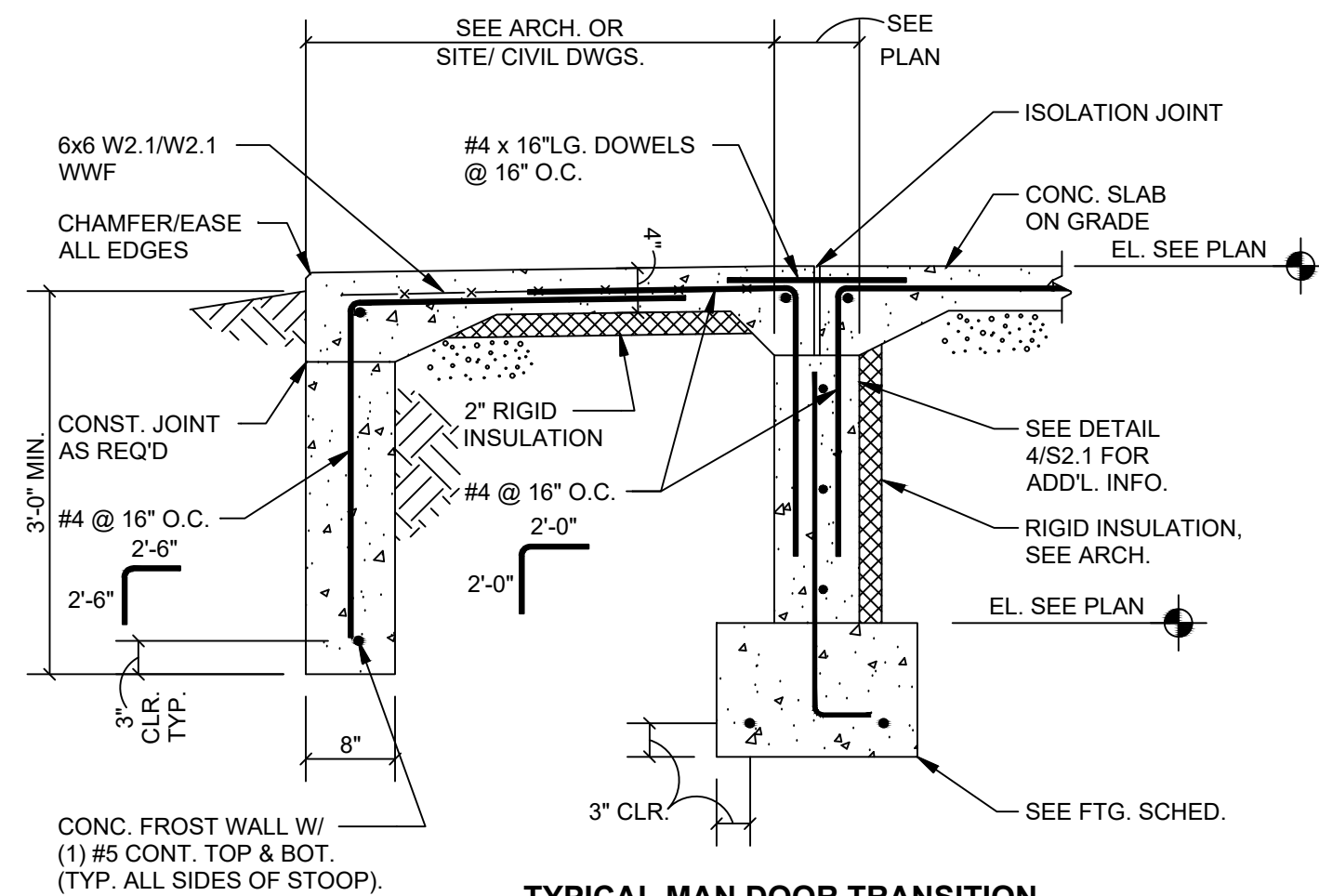
3



SECTION

3/4" = 1'-0"

4

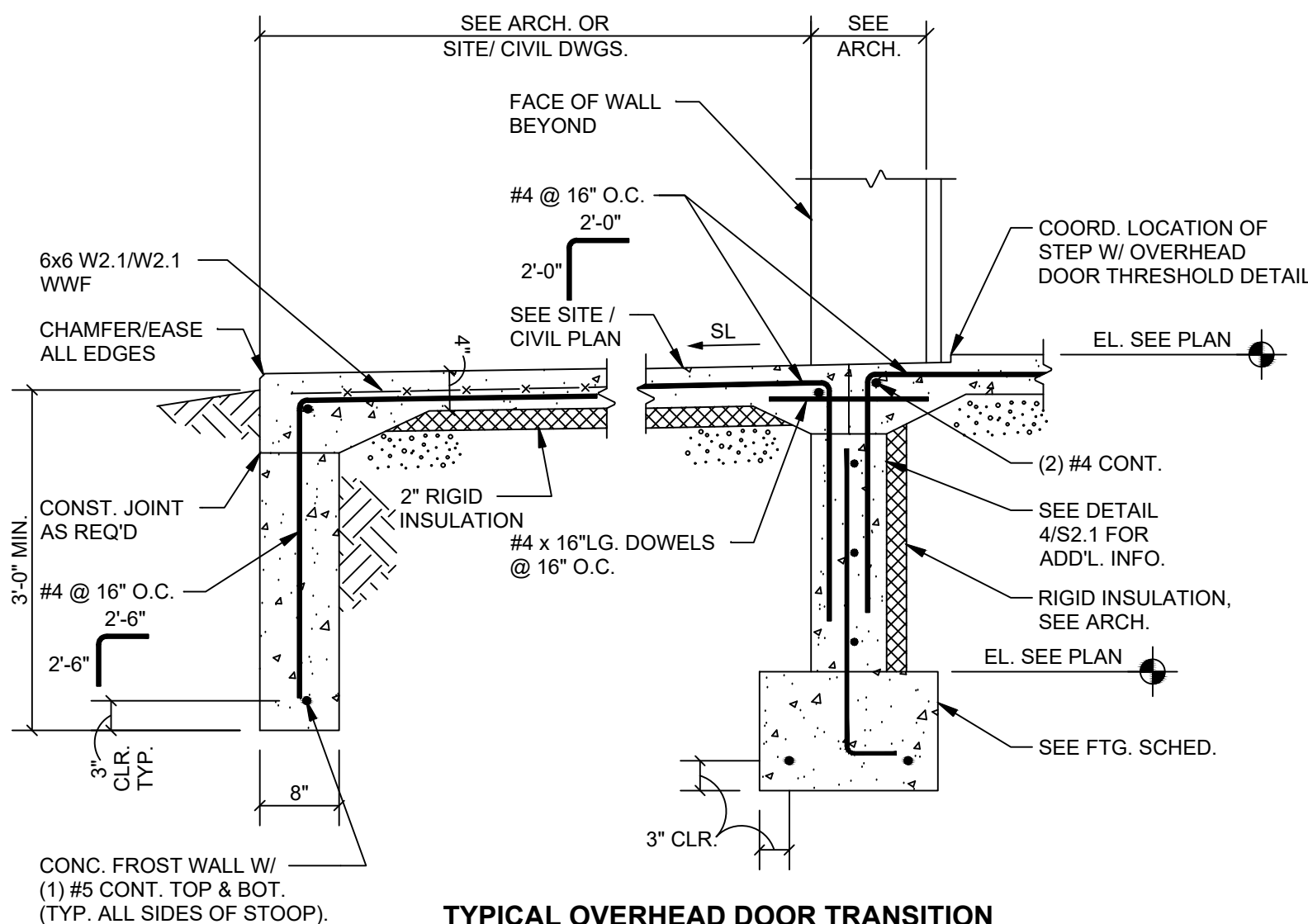


TYPICAL MAN DOOR TRANSITION

SECTION

3/4" = 1'-0"

5

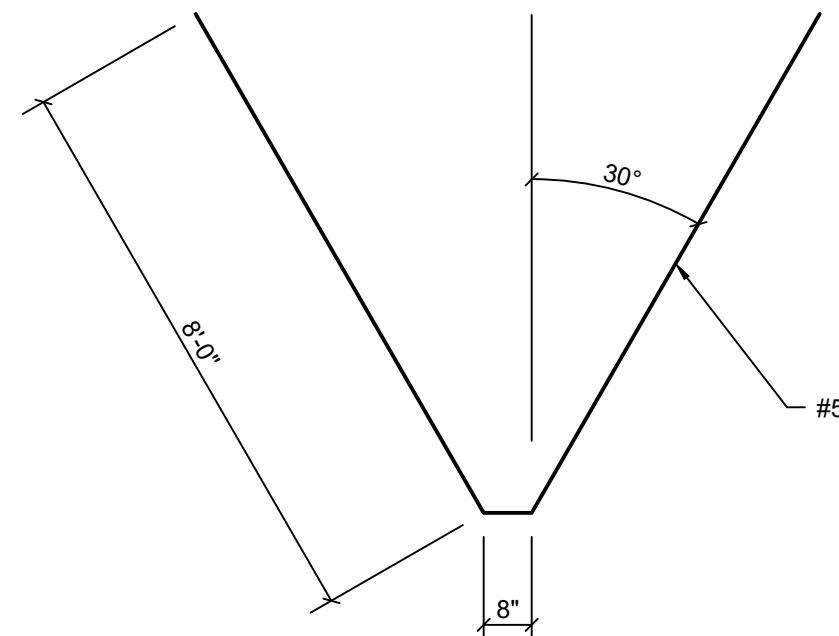


TYPICAL OVERHEAD DOOR TRANSITION

SECTION

3/4" = 1'-0"

6

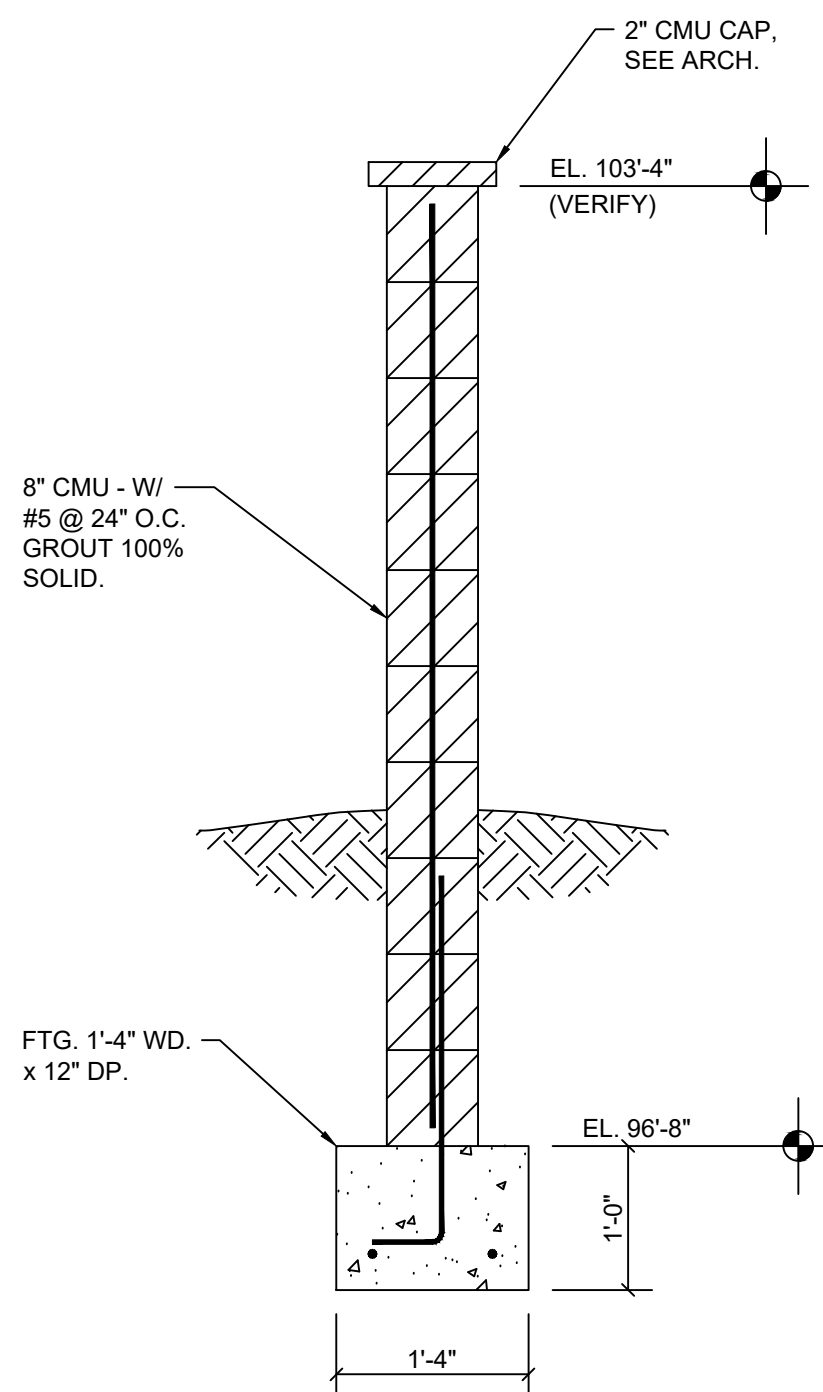


TYPICAL HAIRPIN HP1

DETAIL

N.T.S.

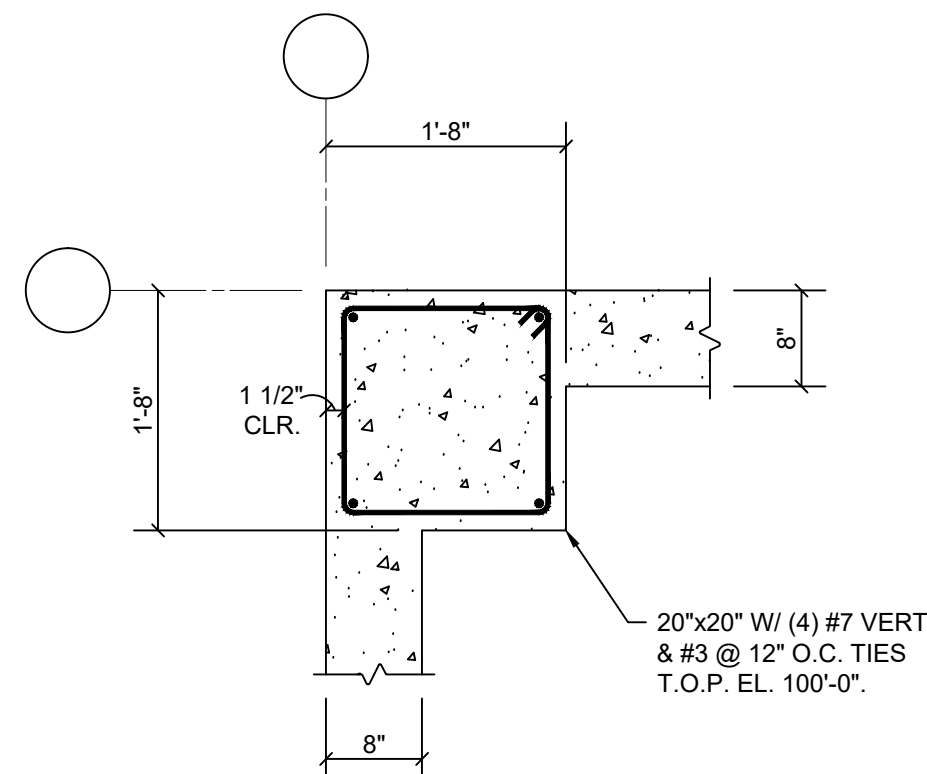
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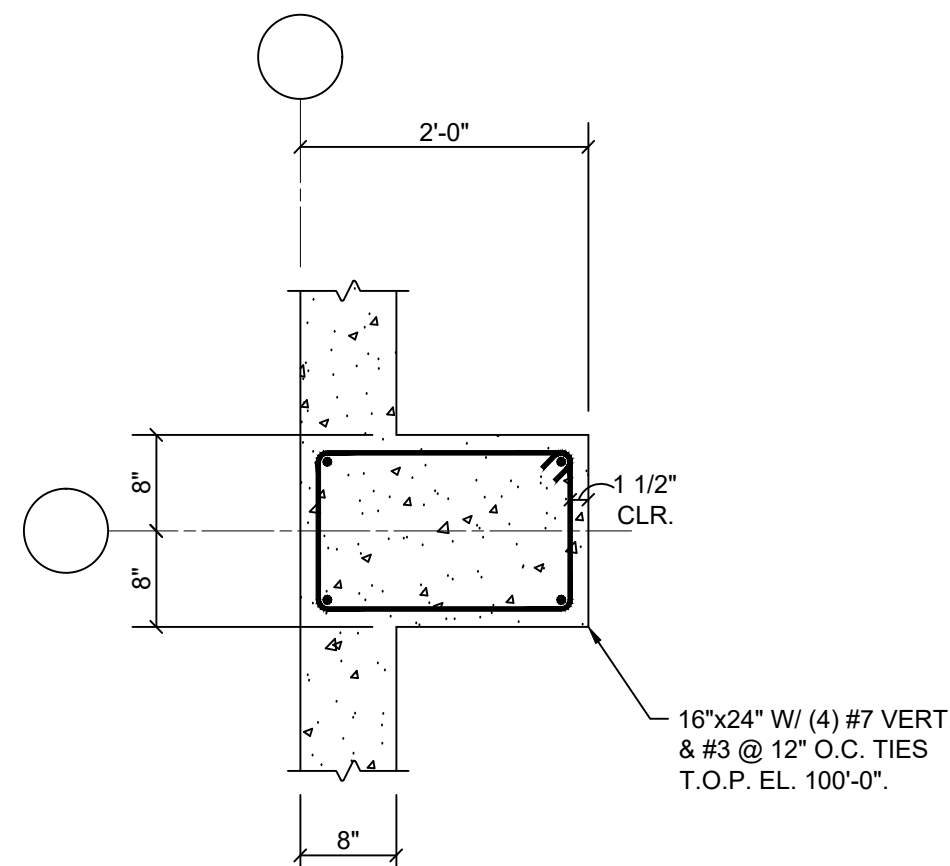
SECTION

N.T.S.

8



PIER P1



PIER P2

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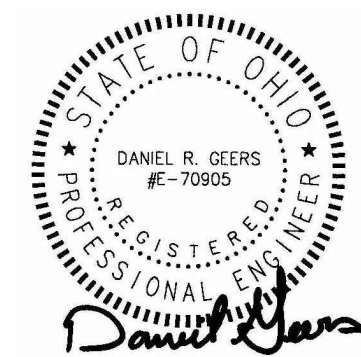
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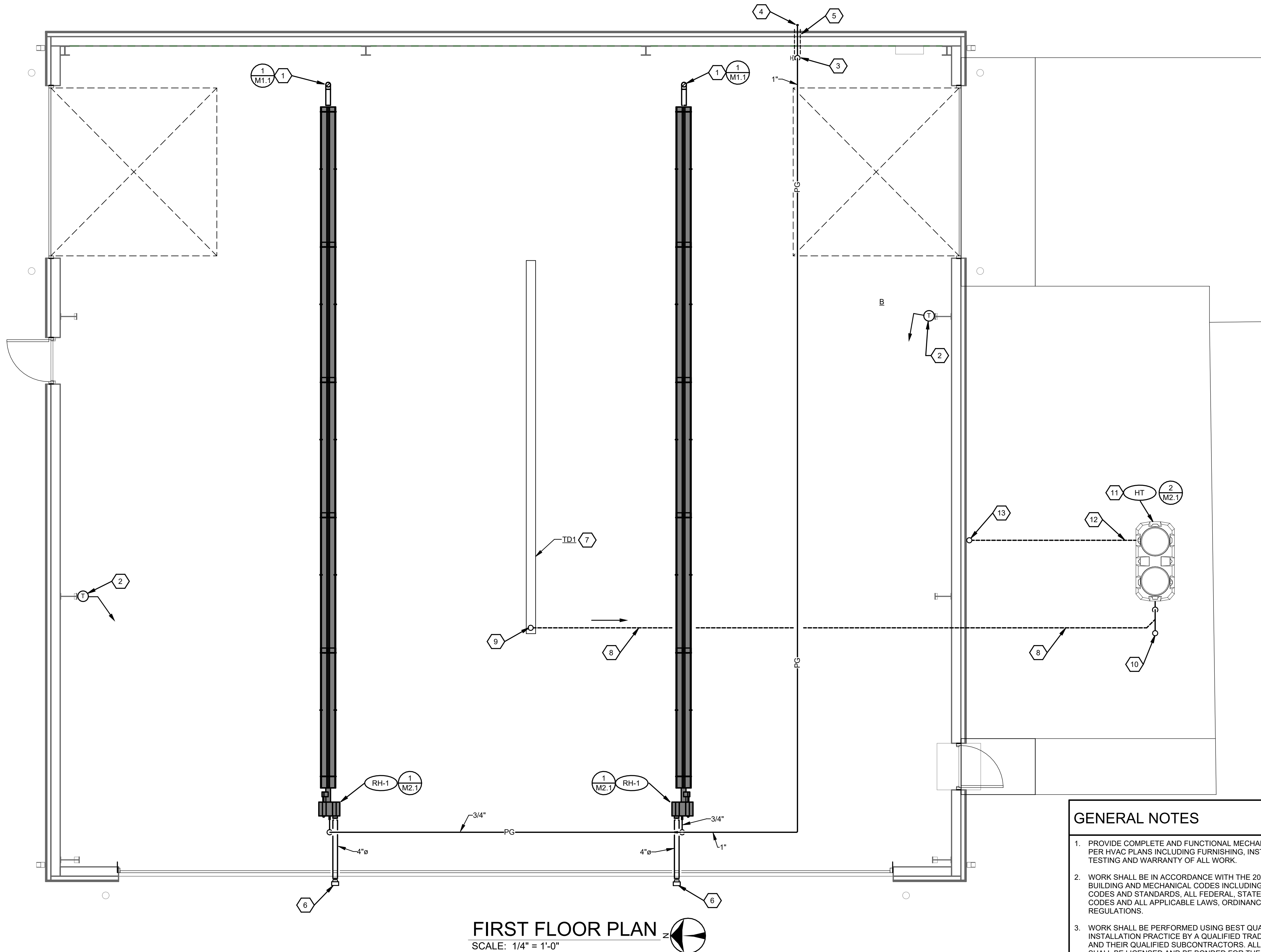
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REVISIONS	
PLAN APPROVAL/ BIDDING	02-25-2026

COMM. NUMBER	DATE
25.02.026	02/25/2026
DRAWN BY	CHECKED BY
CAD	RG

FOUNDATION DETAILS

S2.1



FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

GENERAL NOTES

- PROVIDE COMPLETE AND FUNCTIONAL MECHANICAL SYSTEMS PER HVAC PLANS INCLUDING FURNISHING, INSTALLING, TESTING AND WARRANTY OF ALL WORK.
- WORK SHALL BE IN ACCORDANCE WITH THE 2024 OHIO BUILDING AND MECHANICAL CODES INCLUDING REFERENCED CODES AND STANDARDS, ALL FEDERAL, STATE, AND LOCAL CODES AND ALL APPLICABLE LAWS, ORDINANCES AND REGULATIONS.
- WORK SHALL BE PERFORMED USING BEST QUALITY INSTALLATION PRACTICE BY A QUALIFIED TRADE CONTRACTOR AND THEIR QUALIFIED SUBCONTRACTORS. ALL CONTRACTORS SHALL BE LICENSED AND BE BONDED FOR THE WORK.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH OSHA AND OWNER SAFETY STANDARDS AND PRACTICES. ALL ON SITE PERSONNEL SHALL BE SAFETY TRAINED AND OWNER CERTIFIED.
- OBTAIN REQUIRED PERMITS RELATED TO THE WORK AND PAY ALL PERMIT AND INSPECTION FEES.
- THE AUTHORITY HAVING JURISDICTION SHALL INSPECT AND APPROVE ALL WORK. PROVIDE A FINAL CERTIFICATE OF APPROVAL FROM THE AUTHORITY HAVING JURISDICTION AND PRESENT TO THE OWNER BEFORE REQUESTING FINAL PAYMENT AND RELEASE OF RETAINAGE.
- ALL EQUIPMENT AND MATERIAL REQUIRED FOR COMPLETE AND FUNCTIONAL HVAC SYSTEMS ARE INCLUDED IN THE CONTRACT.

GENERAL REQUIREMENTS

- PROPANE GAS PIPING SHALL BE SCH 40 BLACK STEEL WITH THREADED FITTINGS. PIPE HANGERS SHALL BE CLEVIS STYLE.
- BELOW SLAB DRAIN PIPING SHALL BE SCH. 40 PVC WITH DWV GLUED FITTINGS.

GENERAL LEGEND

EC	ELECTRICAL CONTRACTOR.
FC	FIRE PROTECTION CONTRACTOR.
GC	GENERAL CONTRACTOR.
HC	HVAC CONTRACTOR.
PC	PLUMBING CONTRACTOR.
TC	TEMPERATURE CONTROLS CONTRACTOR.
NIC	NOT IN CONTRACT.
AFF	ABOVE FINISHED FLOOR - TO BOTTOM OF ITEM UNLESS INDICATED OTHERWISE IN DRAWING.
(E)	EXISTING.
ES	EQUIPMENT SUPPLIER.
EM	EMERGENCY.
MH	MOUNTING HEIGHT.
S	SURFACE MOUNTED.
WP	WEATHER PROOF.
(3)	NOTE SYMBOL - APPLIES ONLY TO SHEET ON WHICH IS SHOWN.
(2)	DETAIL NOTE SYMBOL - APPLIES ONLY TO DETAIL ON WHICH IS SHOWN.
(H-1)	EQUIPMENT REFERENCE SYMBOL. ELECTRICAL CONNECTION REQUIRED.
(H-1)	EQUIPMENT REFERENCE SYMBOL. NO ELECTRICAL CONNECTION REQUIRED.
123	ROOM NUMBER.
(B H2)	DETAIL SYMBOL DETAIL "B" SHOWN ON SHEET H2.
(A H1)	SECTION SYMBOL SECTION "A" DESIGNATION, SHOWN ON SHEET H1.
(A H1)	EXTERIOR ELEVATION SYMBOL ELEVATION "A" DESIGNATION, SHOWN ON SHEET H1
(FD1)	CONNECTION, NEW TO EXISTING. UP TO SYMBOL UP TO "FD1", SHOWN ON FLOOR ABOVE.
---	1 HOUR FIRE PROTECTION SEE SPECIFICATION FOR PENETRATION DETAILS
---	2 HOUR FIRE PROTECTION SEE SPECIFICATION FOR PENETRATION DETAILS
---	3 HOUR FIRE PROTECTION SEE SPECIFICATION FOR PENETRATION DETAILS
- - -	ITEM TO BE REMOVED.
---	EXISTING TO REMAIN.
---	NEW ITEM.

CONSTRUCTION NOTES

- 4" DIA. TYPE B VENT UP THROUGH ROOF.
- RADIANT HEATER THERMOSTAT. PROVIDE 18 AWG WIRING IN 1/2" EMT CONDUIT FROM THERMOSTAT TO HEATER.
- 1" PROPANE GAS PIPING DROPS DOWN OUTSIDE WALL TO 24" A.F.F. PROVIDE SHUT-OFF VALVE 36" A.F.F.
- STUB 1" PIPE THROUGH WALL. REGULATOR AND CONNECTION SHALL BE BY PROPANE SUPPLIER.
- PVC PIPE SLEEVE THROUGH WALL.
- 4" DIA. INTAKE CAP WITH BIRD SCREEN.
- NEW TRENCH DRAIN. REFER TO SCHEDULE ON M2.1.
- 4" PVC SCH 40 PIPE WITH DWV FITTINGS BELOW SLAB. SLOPE 1/8" PER FOOT FROM TRENCH DRAIN TO HOLDING TANK.
- PROVIDE 4" P-TRAP ON TRENCH OUTLET PIPE.
- CLEANOUT.
- NEW HOLDING TANK, REFER TO DETAIL ON M2.1.
- 2" PVC VENT PIPE.
- 2" VENT UP FROM BELOW GRADE. TRANSITION TO GALVANIZED STEEL JUST ABOVE GRADE AND RUN TO TEN FEET ABOVE GRADE. PIPE IS OPEN AT THE TOP.

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NEW CONSTRUCTION OF SIDNEY AIRPORT NEW EQUIPMENT HANGAR CITY OF SIDNEY

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REVISIONS
PLAN
APPROVAL/BIDDING

COMM. NUMBER
2511
DRAWN BY
RAD

DATE
02/25/26
CHECKED BY
JDZ

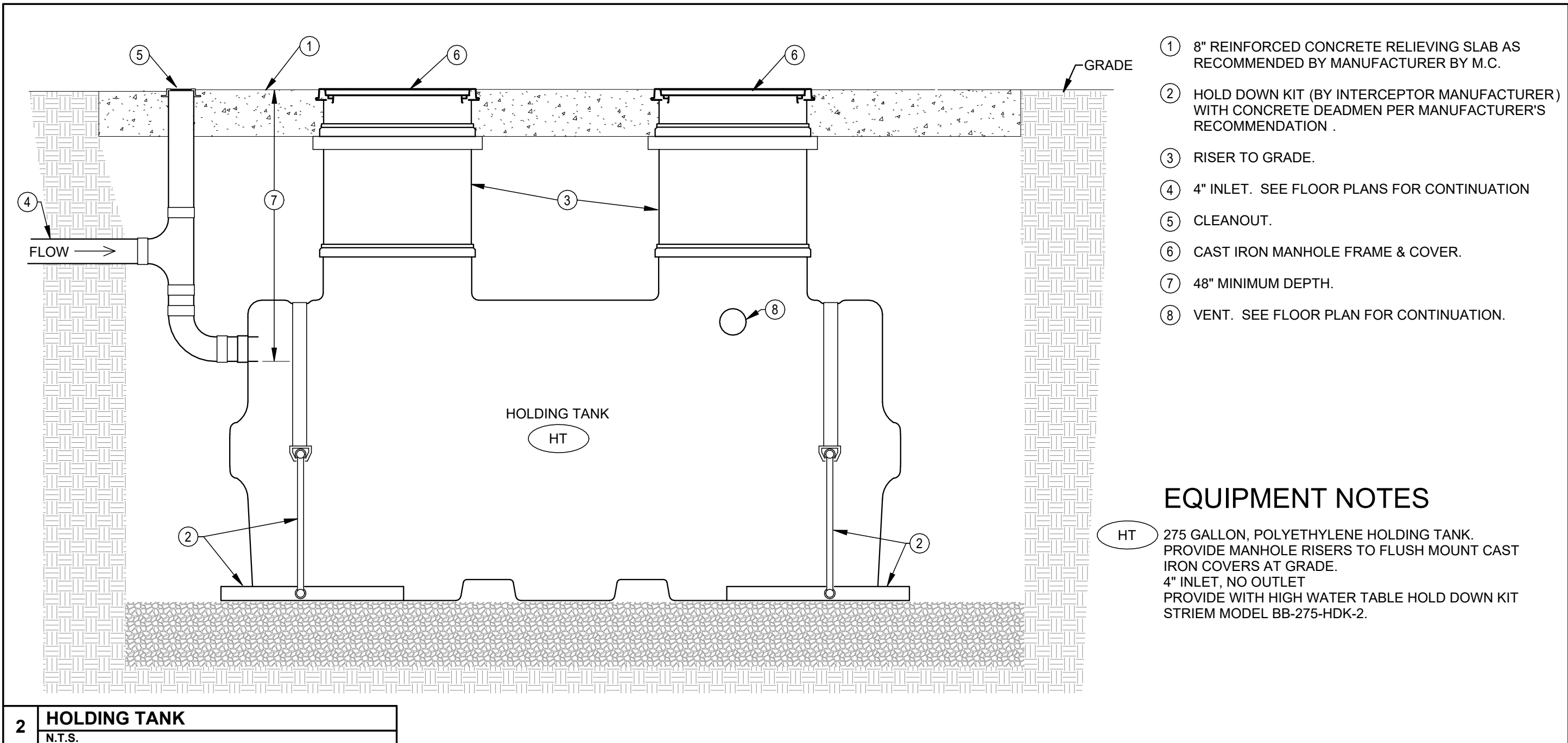
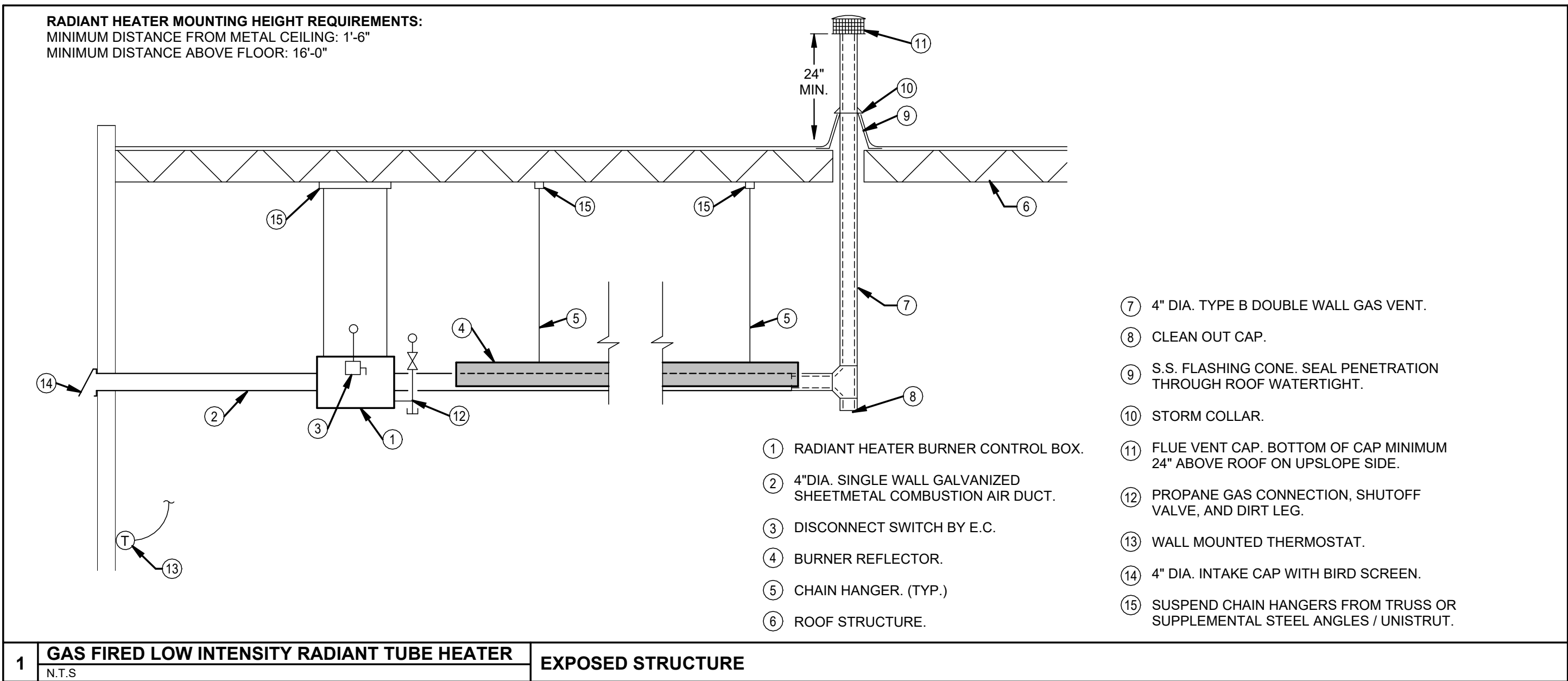
FLOOR PLAN

M1.1



SCALE: 1/4" = 1'-0"

NAUMAN & ZELINSKI LLC.
204 S. Ludlow Street Suite 400 Dayton, Ohio 45402
Phone: (937) 225-3501
PROJECT # 26007



RADIANT HEATER SCHEDULE - GAS

GENERAL NOTES

BASIS OF DESIGN: RE-VERBER-RAY
EQUAL BY: SCHWANK SUPERTUBE

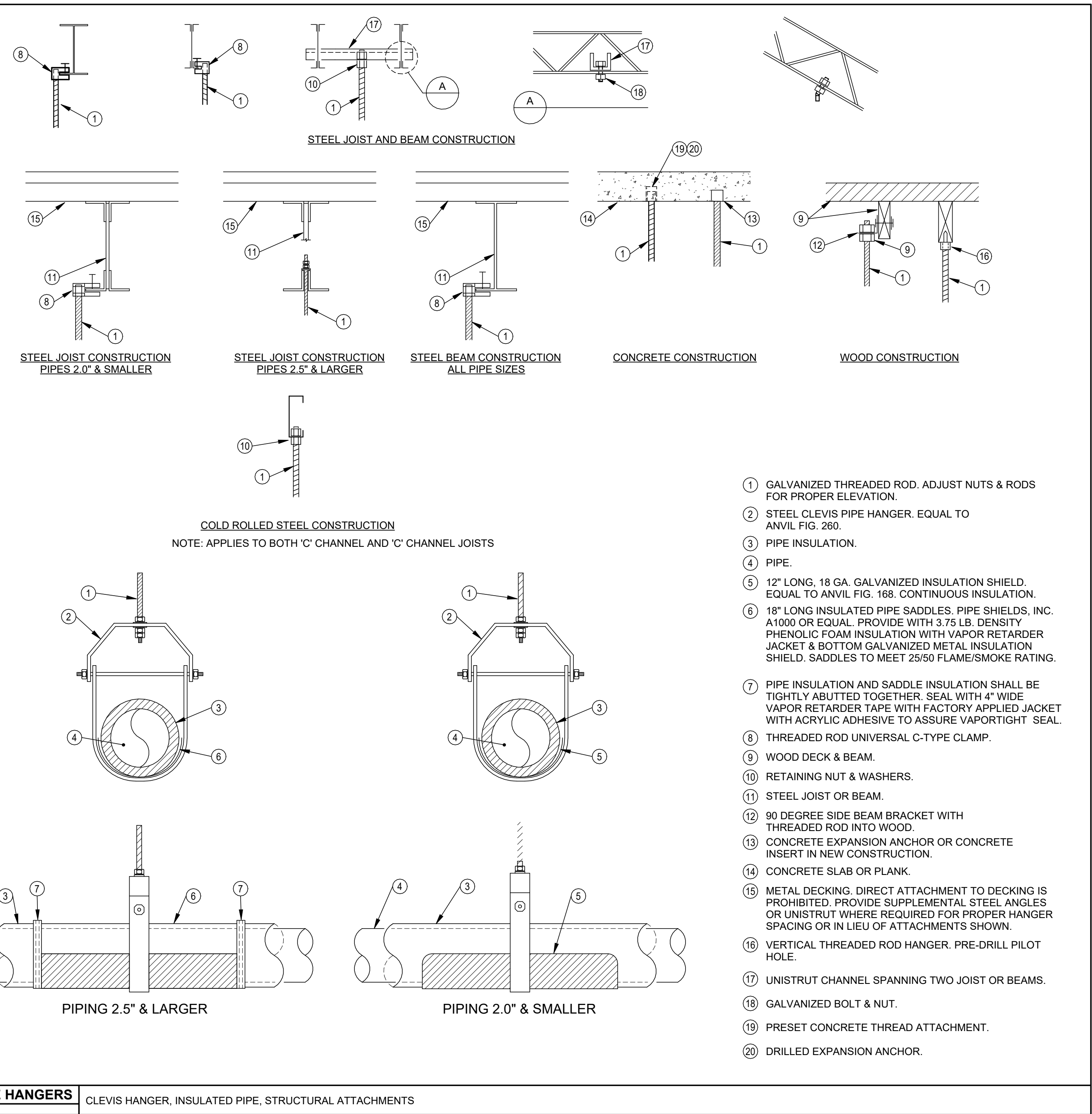
UNIT NO.	MODEL #	SERVICE	MOUNTING	MODULATING RANGE (MBH)	MOUNTING HEIGHT	AMPS	VOLT/PH	DIMENSIONS	WEIGHT (LBS)	NOTES
								L		
RH-1	MP-50-115	APP BAY	CHAIN SUSPENDED	85-115	19'-0"	5	120 / 1	50'-9"	235	1

NOTES:

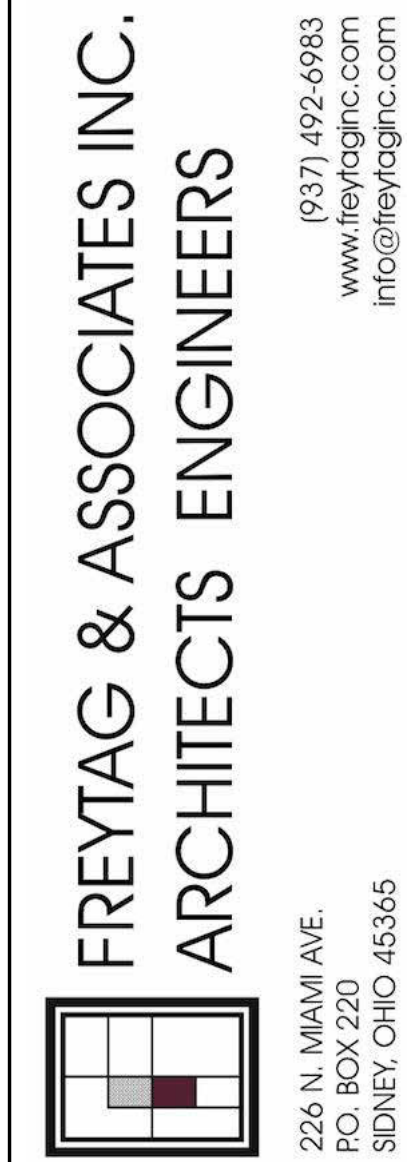
1. HEATER SHALL BE CATEGORY 1 RATED FOR VERTICAL VENTING.

DRAIN SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	OUTLET SIZE	FEATURES					STRAINER/GRATE					NOTES	
		MODEL NUMBER		ANCHOR FLANGE	FLASHING CLAMP	UNDERDECK CLAMP	DBL / DRAINAGE	SEDIMENT BUCKET	TOP/STRAINER SIZE	FLAT	DOME	OPEN (NO GRATE)	HALF OPEN		ADJUSTABLE
TD1	TRENCH DRAIN/ HDPE CONSTRUCTION/ HEAVY DUTY DUCTILE IRON FRAME AND SLOTTED GRATE	ZURN #Z886-HD W/ #DGE GRATE	4"	●					6" WIDE 26'-8" LONG (4 - 80" LONG SECTIONS)	●					



3	PIPE HANGERS N.T.S.	CLEVIS HANGER, INSULATED PIPE, STRUCTURAL ATTACHMENTS
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REVISIONS
PLAN
APPROVAL/BIDDING 2/25/26

COMM. NUMBER DATE
2511 02/25/26
DRAWN BY CHECKED BY
RAD JDZ

SCHEDULES &
DETAILS

M2.1

ELECTRICAL SPECIFICATIONS

- A. ALL ELECTRICAL WIRING, EQUIPMENT AND INSTALLATION SHALL CONFORM TO THE 2024 OHIO BUILDING CODE, 2023 NATIONAL ELECTRIC CODE AND LOCAL CODES, LATEST ADOPTED EDITIONS.
- B. ALL ELECTRICAL EQUIPMENT SHALL BE U.L. APPROVED AND COMMERCIAL GRADE. PANELBOARDS, CIRCUIT BREAKERS AND DISCONNECTS BY SQUARE D, SIEMENS, CUTLER-HAMMER OR G.E
- C. SUBMIT ELECTRONIC SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO ORDERING FOR THE FOLLOWING EQUIPMENT: LIGHT FIXTURES, PANELBOARD(S), CIRCUIT BREAKER(S) AND WIRING DEVICES.
- D. ALL POWER AND SYSTEMS WIRING SHALL BE INSTALLED IN CONDUIT RACEWAYS UNLESS OTHERWISE SPECIFICALLY NOTED.
- E. DRAWINGS ARE SCHEMATIC IN NATURE TO REPRESENT REQUIRED EQUIPMENT/DEVICES AND ASSOCIATED POWER/CIRCUITRY. DRAWINGS SHALL NOT BE SCALED FOR DEVICE LOCATIONS. THE E.C. SHALL COORDINATE THE FINAL LOCATIONS OF ALL FLUSH MOUNTED DEVICES (INCLUDING FIRE ALARM AND TECHNOLOGY ROUGH-IN BOXES) WITH CASEWORK, FIXED FURNITURE, ETC., TO AVOID CONFLICTS AND VIEWING OBSTRUCTIONS. RECEPTACLES ASSOCIATED WITH ADJACENT TO TECHNOLOGY OUTLET BOXES SHALL BE LOCATED AT THE SAME MOUNTING HEIGHT AND WITHIN 6" HORIZONTALLY UNLESS SPECIFICALLY NOTED OTHERWISE.
- F. THE ARCHITECT SHALL RESERVE THE RIGHT TO MAKE MINOR ADJUSTMENT IN LOCATIONS OF SYSTEM RUNS AND COMPONENTS WHERE THEY CONSIDER SUCH ADJUSTMENTS DESIRABLE IN THE INTEREST OF CONCEALING WORK OR PRESENTING A BETTER APPEARANCE WHERE EXPOSED. ANY SUCH CHANGES SHALL BE ANTICIPATED AND REQUESTED SUFFICIENTLY IN ADVANCE SO AS TO NOT CAUSE EXTRA WORK, OR UNDULY DELAY THE WORK. COORDINATE WORK IN ADVANCE WITH ALL OTHER TRADES AND REPORT IMMEDIATELY ANY DIFFICULTIES WHICH CAN BE ANTICIPATED. WHERE ANY SYSTEM RUNS AND COMPONENTS ARE SO PLACED AS TO CAUSE OR CONTRIBUTE TO A CONFLICT, IT SHALL BE READJUSTED AT THE EXPENSE OF THE CONTRACTOR CAUSING SUCH CONFLICT. THE ARCHITECT'S DECISION SHALL BE FINAL IN REGARD TO ARRANGEMENT OF EQUIPMENT, CONDUIT(S), DEVICES, WIREWAYS ETC., WHERE CONFLICT ARISES.
- G. ALL WIRING SHALL UTILIZE MIN. #12 AWG SIZE COPPER THHN/THWN STRANDED CONDUCTORS WITH INSULATION SUITABLE FOR THE APPLICATION. CONDUCTORS FOR ELECTRIC RADIANT HEATERS SHALL BE LISTED FOR THE APPLICATION.
- H. PROVIDE A SEPARATE NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT AND SEPARATE GREEN COLORED INSULATED COPPER GROUNDING CONDUCTOR FOR EACH BRANCH CIRCUIT CONDUIT. NEUTRAL WIRES FOR 120 VOLT CIRCUITS SHALL BE WHITE.
- I. ALL CONDUCTORS SHALL BE INSTALLED IN MIN. 0.75" SIZE CONDUIT OR MC CABLING AS ALLOWED BELOW. EMT SHALL BE UTILIZED FOR INTERIOR FEEDERS AND BRANCH CIRCUITRY. MC CABLE SHALL ONLY BE ALLOWED FOR 20 AMP CIRCUITS. FINAL CONNECTION TO INDOOR LIGHT FIXTURES, AND DROPS TO RECEPTACLES IN WALLS. MC CABLING IS NOT PERMITTED TO BE USED FOR EXPOSED CONDUIT LOCTIONS. ALL HOME RUN BRANCH CIRCUITS SHALL BE IN EMT CONDUIT. THE HOME RUN CONDUIT SHALL ORGINATE AT THE PANLE BOARD AND SHALL TERMINATE AT THE LAST CONNECTED DEVICE ON THE CIRCUIT OR IN THE CENTER OF THE ROOM/AREA THAT THE CIRCUIT SERVES. LIQUID TIGHT FLEXIBLE METAL CONDUIT SHALL BE USED FOR ALL OTHER FINAL CONNECTIONS TO MOVEABLE/VIBRATING EQUIPMENT. ALL EXTERIOR CONDUIT SHALL BE RIGID METAL CONDUIT.
- J. EMT CONDUIT FITTINGS SHALL BE ALL STEEL COMPRESSION OR SETSCREW TYPE.
- K. ALL CONDUITS INSTALLED ON EXTERIOR OF BUILDING SHALL BE RIGID GALVANIZED TYPE WITH THREADED STEEL FITTINGS. UTILIZE COMPATIBLE NEMA 3R TYPE BOXES FOR ALL EXTERIOR FIXTURE AND OUTLET BOXES.
- L. ALL EMPTY CONDUITS SHALL HAVE A NYLON PULLSTRING INSTALLED PER SPECIFICATIONS.
- M. WIRING DEVICES SHALL BE SPECIFICATION GRADE, IVORY COLOR, WITH STEEL COVERPLATES, HUBBELL, P&S, COOPER OR LEVITON.
- N. ALL CONDUIT, FITTINGS, BENDS, ETC. SHALL BE PROPERLY SUPPORTED PER NEC AND NEATLY INSTALLED.
- O. IDENTIFY PANEL AND CIRCUIT NUMBER ON ALL RECEPTACLE COVERPLATES WITH PRINTED LABELS WITH BLACK LETTERS ON CLEAR ADHESIVE BACKGROUND.
- P. PROVIDE TYPED PANEL DIRECTORIES INDICATING TYPE OF LOAD.
- Q. ALL SPARE BREAKERS IN PANELBOARDS SHALL BE TURNED 'OFF'.
- R. THE TOTAL LOAD (AMPERES) OF ANY BRANCH CIRCUIT SHALL NOT EXCEED 80% OF THE RATED AMPACITY OF THE CIRCUIT BREAKER FOR THAT CIRCUIT.
- S. THE ELECTRICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS TO AVOID INTERFERENCE WITH THE BUILDING COMPONENTS, EXISTING UTILITIES, EQUIPMENT, ETC.
- T. IDENTIFY ALL BRANCH CIRCUITS AT ALL JUNCTION BOXES BY NEATLY PRINTING PANEL AND CIRCUIT NUMBERS ON BOX COVERS WITH INDELIBLE MARKER.
- U. NEATLY LABEL BRANCH CIRCUIT NUMBERS ON EACH EXPOSED CONDUIT LEAVING PANELBOARDS WITH INDELIBLE MARKERS.
- V. NEATLY LABEL PANEL AND BRANCH CIRCUIT NUMBERS ON EACH ACCESSIBLE OR EXPOSED CONDUIT ENTERING OR LEAVING ALL PULLBOXES AND JUNCTION BOXES WITH INDELIBLE MARKERS.
- W. LABEL ALL NORMAL POWER PANELBOARDS WITH PHENOLIC WHITE BACKGROUND AND BLACK LETTER PLATE WITH SOURCE OF FEEDER, SWITCH OR BREAKER NUMBER, VOLTAGE, PHASE, AND BRANCH.
- X. LABEL ALL NORMAL POWER DISCONNECT SWITCHES WITH PHENOLIC WHITE BACKGROUND AND BLACK LETTER PLATE WITH PANEL, CIRCUIT NUMBER, VOLTAGE, PHASE, FED FROM AND DESCRIPTION OF LOAD FED.
- Y. DISCONNECT SWITCHES SHALL BE HEAVY DUTY; FUSIBLE TYPE TO UTILIZE 'RK1' FUSES.
- Z. EQUIPMENT, DUCTWORK AND PIPING SHALL NOT BE INSTALLED IN THE DEDICATED ELECTRICAL SPACE ABOVE OR IN THE WORKING SPACE REQUIRED AROUND ELECTRICAL SWITCHGEAR, MOTOR CONTROL CENTERS OR PANELBOARDS AS IDENTIFIED BY NEC 110.26 SPACES ABOUT ELECTRICAL EQUIPMENT – 600 VOLTS NOMINAL OR LESS.FOR EQUIPMENT RATED OVER 600 VOLTS NOMINAL – 110.32 WORK SPACE ABOUT EQUIPMENT – 110.33 ENTRANCE AND ACCESS TO WORK SPACE – 110.34 WORK SPACE AND GROUNDING. THE ELECTRICAL CONTRACTOR SHALL CAUTION OTHER TRADES TO COMPLY WITH THIS STIPULATION.
- AA. PERFORM ALL CUTTING AND PATCHING REQUIRED FOR INSTALLATION OF ELECTRICAL SYSTEMS. PATCHING SHALL BE CONSISTENT WITH ADJACENT SURFACES.
- AB. PROVIDE ONE YEAR COMPLETE WARRANTY (PARTS, MATERIALS, LABOR). START OF WARRANTY FROM DATE OF BENEFICIAL OCCUPANCY AGREED TO IN WRITING.

ELECTRICAL LEGEND

	ELECTRICAL CONNECTION REQUIRED.
	EXIT LIGHTING FIXTURE WITH INTEGRAL BATTERY AND EM LAMP HEADS.
	LIGHTING FIXTURE: CAPITAL LETTER DENOTES FIXTURES TYPE. LOWER CASE LETTER DENOTES SWITCHING ARRANGEMENT.
	EACH ARROWHEAD REPRESENTS ONE COMPLETE CIRCUIT; CAPITAL LETTER DENOTES PANEL; NUMBER DENOTES CIRCUIT.
	WIRE & CONDUIT IN WALL OR ABOVE CEILING
	WIRE & CONDUIT UNDERGROUND
	JUNCTION BOX.
	20A-125V DUPLEX RECEPTACLE, NEMA 5-20R (18" M.H.).
	20A-125V DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, (18" M.H.) TWO-GANG ASSEMBLY. D = DOUBLE DUPLEX.

GENERAL LEGEND

EC	ELECTRICAL CONTRACTOR.
FC	FIRE PROTECTION CONTRACTOR.
GC	GENERAL CONTRACTOR.
HC	HVAC CONTRACTOR.
PC	PLUMBING CONTRACTOR.
TC	TEMPERATURE CONTROLS CONTRACTOR.
NIC	NOT IN CONTRACT.
AFF	ABOVE FINISHED FLOOR - TO BOTTOM OF ITEM UNLESS INDICATED OTHERWISE IN DRAWING.
(E)	EXISTING.
ES	EQUIPMENT SUPPLIER.
EM	EMERGENCY.
MH	MOUNTING HEIGHT.
S	SURFACE MOUNTED.
WP	WEATHER PROOF.
3	NOTE SYMBOL - APPLIES ONLY TO SHEET ON WHICH IS SHOWN.
2	DETAIL NOTE SYMBOL - APPLIES ONLY TO DETAIL ON WHICH IS SHOWN.
H-1	EQUIPMENT REFERENCE SYMBOL. ELECTRICAL CONNECTION REQUIRED.
H-1	EQUIPMENT REFERENCE SYMBOL. NO ELECTRICAL CONNECTION REQUIRED.
123	ROOM NUMBER.
B E2	DETAIL SYMBOL. DETAIL "B" SHOWN ON SHEET E2.
A E1	SECTION SYMBOL. SECTION "A" DESIGNATION, SHOWN ON SHEET E1.
FD1	CONNECTION, NEW TO EXISTING. UP TO SYMBOL. UP TO "FD1", SHOWN ON FLOOR ABOVE.
	NEW ITEM.

GENERAL NOTES

- A. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2024 OHIO BUILDING CODE, INCLUDING REFERENCED CODES AND STANDARDS, ALL LOCAL AND STATE CODES AND MEET APPROVAL OF AUTHORITIES HAVING JURISDICTION.
- B. BIDDERS SHALL INSPECT PROJECT SITE EXISTING CONDITIONS DURING BIDDING.
- C. INCLUDE PAYMENT OF ALL PERMIT AND INSPECTION FEES AND OBTAIN AN ELECTRICAL PERMIT AND SECURE INSPECTION AND APPROVAL OF THE CODE OFFICIAL.
- D. SUBMIT AN ELECTRONIC COPY OF SUBMITTAL DATA AND DESCRIPTIVE LITERATURE IN .PDF FORMAT FOR ALL FIXTURES AND EQUIPMENT.
- E. WORKMANSHIP SHALL BE OF THE HIGHEST QUALITY AND REPRESENT THE BEST PRACTICES OF THE INDUSTRY.
- F. COORDINATE INSTALLATION WITH OTHER TRADES; PROVIDE OFFSETS AS REQUIRED.
- G. INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.
- H. COORDINATE EACH ROUGH-IN INSTALLATION REQUIREMENTS AND LOCATIONS WITH OTHER TRADES. ACTUAL EQUIPMENT OR CABINETRY PROVIDED AND FIELD CONDITIONS BEFORE PERFORMING WORK.
- I. REFER TO ARCHITECTURAL DRAWING ELEVATIONS FOR MOUNTING LOCATION INFORMATION, ARRANGEMENT AND HEIGHT FOR ALL DEVICES AT FURNISHINGS, CASEWORK, ETC.
- J. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL LIGHTING FIXTURES. WHERE DISCREPANCIES MAY OCCUR BETWEEN THE ELECTRICAL PLANS AND THE ARCHITECTURAL CEILING PLANS ON QUANTITY OF FIXTURES. THE ELECTRICAL PLANS SHALL TAKE PRECEDENCE. COORDINATE FIXTURE LOCATIONS WITH OTHER TRADES TO AVOID CONFLICTS WITH PIPING AND DUCTWORK.
- K. ALL EQUIPMENT AND MATERIAL REQUIRED FOR COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEMS SHALL BE INCLUDED IN THE CONTRACT.

ELECTRICAL INDEX OF DRAWINGS

SHEET	DRAWING TITLE
E0.1	LEGENDS AND SCHEDULES
E0.2	SCHEDULES AND SINGLE LINE DIAGRAM
E1.1	LIGHTING, POWER AND SYSTEMS PLAN

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CITY OF SIDNEY

14833 SIDNEY-PLATTSVILLE ROAD

SIDNEY, OHIO ZIP

STATE OF OHIO

JEFFREY D. ZELINSKI

63822

REGISTERED PROFESSIONAL ENGINEER

EXPIRATION DATE 12/31/2027

JEFFERY D. ZELINSKI LICENSE #63822
EXPIRATION DATE 12/31/2027

REVISIONS

PLAN

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LEGENDS AND SCHEDULES

E0.1

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PROJECT # 26007

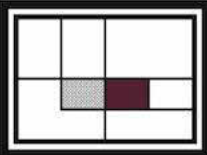
Branch Panel: A					Construction: New					System: Normal Power				
LOCATION: Space 1					MOUNTING: Surface					A.I.C RATING				
SUPPLY FROM:					ENCLOSURE: Type 1					MAINS TYPE: M.L.O				
VOLTAGE: 120/240 Single-1-3					MCB RATING: NA					MAINS RATING: 200 A				
CKT	Description	Trip	Poles	Note	A		B		Note	Poles	Trip	Description	CKT	
1	Interior Lighting	20 A	1		901 VA	160 VA				1	20 A	Ext Lighting	2	
3	Receptacles	20 A	2				180 VA	180 VA		2	20 A	Receptacles	4	
5	--	--	--		180 VA	180 VA				--	--	--	6	
7	Receptacles	20 A	2				180 VA	180 VA		2	20 A	Receptacles	8	
9	--	--	--		180 VA	180 VA				--	--	--	10	
11	Receptacles	20 A	2				180 VA	180 VA		2	20 A	Receptacles	12	
13	--	--	--		180 VA	180 VA				--	--	--	14	
15	Receptacles	20 A	2				180 VA	180 VA		2	20 A	Receptacles	16	
17	--	--	--		180 VA	180 VA				--	--	--	18	
19	Air Comp.	60 A	2				3000 VA	3000 VA		2	50 A	OH Door	20	
21	--	--	--		3000 VA	3000 VA				--	--	--	22	
23	RH1	20 A	1				1000 VA	1000 VA		1	20 A	RH2	24	
25	Fuel Pumps	20 A	1		12000 VA	180 VA				2	20 A	Receptacles...	26	
27	Receptacles...	20 A	2				180 VA	180 VA		--	--	--	28	
29	--	--	--		180 VA								30	
31													32	
33													34	
35													36	
37													38	
39													40	
41													42	
Total Load:					20028 VA		9800 VA							
NOTES:														
Load Classification		Connected Load		Demand Factor		Estimated...		Panel Totals						
Lighting		924 VA		100.00%		924 VA								
Motor		26000 VA		80.00%		20800 VA		Total Conn. Load: 29822 VA						
Receptacles		3600 VA		50.00%		1800 VA		Total Est. Demand: 22826 VA						
								Total Conn. Current: 124 A						
								Total Est. Demand Current: 95 A						

LIGHTING FIXTURE SCHEDULE																						
FIXTURE SYMBOL	LUMINAIRE					FIXTURE VOLTAGE	MANUFACTURER & CATALOG NO.	OTHER ACCEPTABLE MANUFACTURES	DIFFUSING MEDIA	TRIM COLOR					MOUNTED S - SURFACE. R - RECESSED. SM - STEM MTD. WM - WALL MTD. C - CHAIN MTD. UC - UNDER CAB. CS - CLG. SURF.	SIZE				SEE NOTES		
	LED	TYPE		LOW VOLTAGE	WATTS/ FIXTURE					LUMENS/ COLOR TEMP	WHITE	BLACK	ALUMINUM	BRONZE		STANDARD	SEE NOTES	WIDTH	LENGTH		DEPTH	DIAMETER
H1	•				100	12000 LUMENS / 4000K	120	LITHONIA # REBL ALO13 UVOLT SWW3 80CRI DWH M2	COLUMBIA, DAYBRITE	ROUND HIGH BAY	•				C			8	13			
K1	•				32	4400 LUMENS / 4000K	120	LITHONIA# TWX2 MVOLT P2 40K DBLXD	COLUMBIA, DAYBRITE	CLEAR LENS	•				WM					1		
REM	•							LITHONIA #ERE - GY - SGL - WP - SQ	COMPASS, CHLORIDE	EXTERIOR REMOTE LAMP HEAD	•				WM							
X1	•				5		120	LITHONIA # ECRG - HO - SQ - M6	COMPASS, CHLORIDE	LED EMERGENCY/EXIT RED LETTERS ON WHITE INTEGRAL BATTERIES AND EM LAMP HEADS	•				WM							

SCHEDULE NOTES:
1. FIXTURE TO HAVE INTEGRAL PHOTOCELL.

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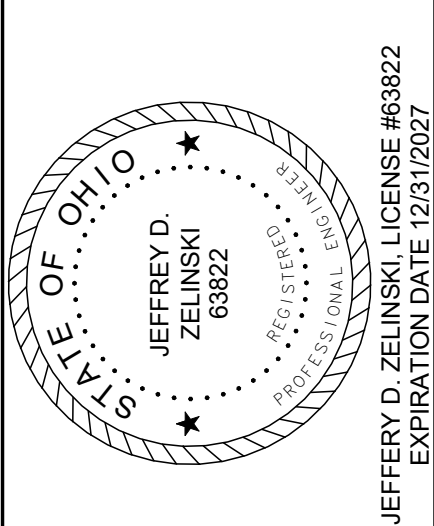
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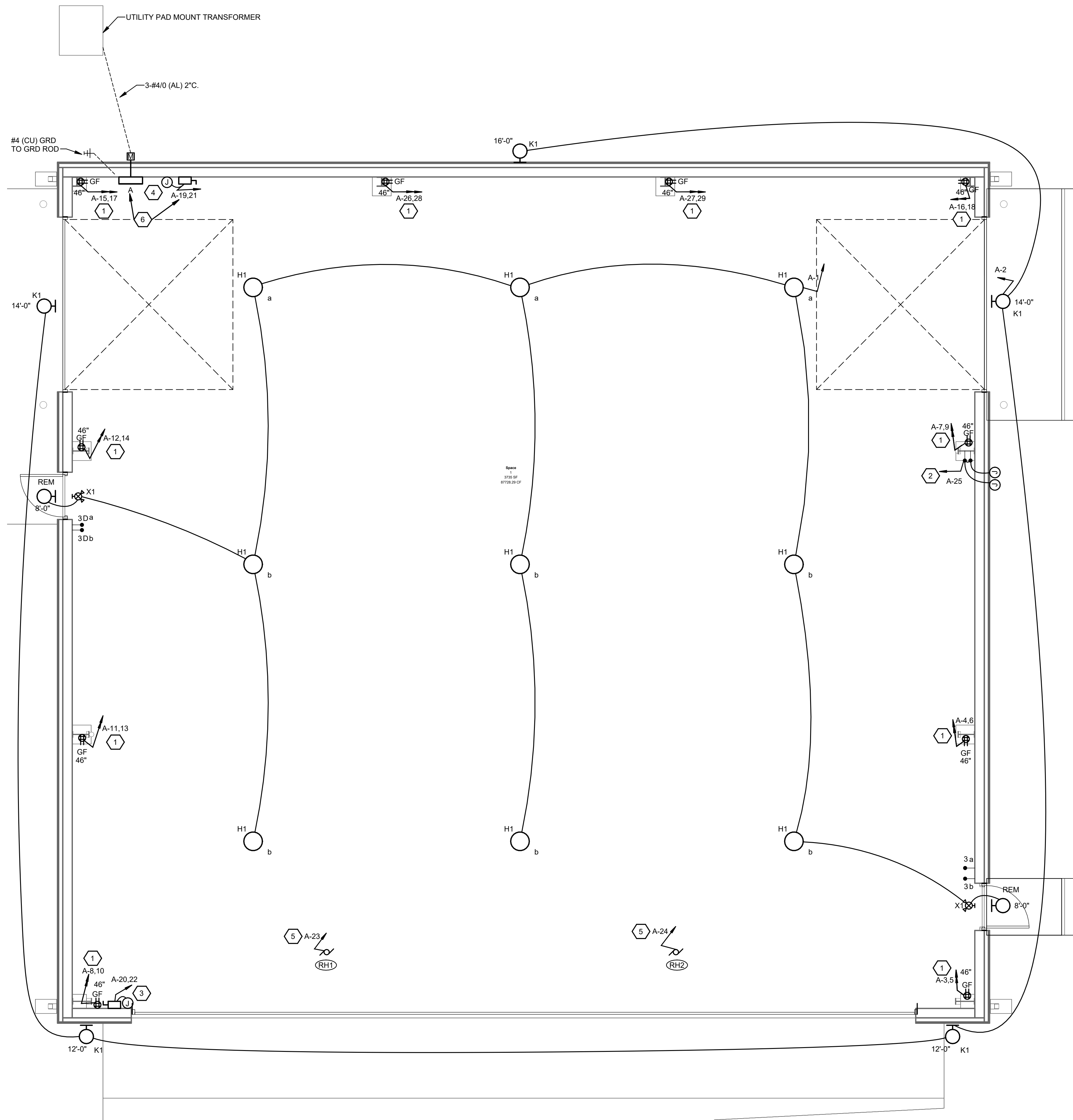
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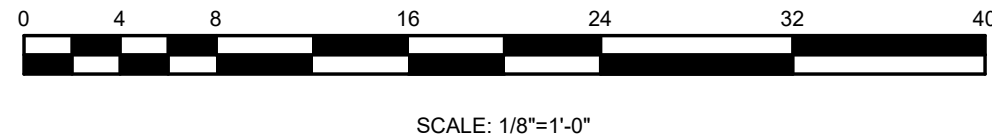
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SCHEDULES AND SINGLE LINE DIAGRAM	



- CONSTRUCTION NOTES**
1. QUAD RECEPTACLE MOUNTED ON COLUMN. PROVIDE DEDICATED 120V CIRCUIT TO EACH.
 2. PROVIDE SWITCHED 120V POWER TO EXTERIOR FUEL PUMPS. COORDINATE LOCATIONS AND REQUIREMENTS WITH OWNER. FUEL STORAGE TANKS/ PUMPS RELOCATED BY OTHERS.
 3. PROVIDE 208V - 1PH POWER CONNECTION TO AIR CRAFT BAY DOOR OPERATOR. COORDINATE CONNECTION AND CONTROL REQUIREMENTS WITH DOOR EQUIPMENT SUPPLIER.
 4. COORDINATE POWER REQUIREMENTS FOR AIR COMPRESSOR FURNISHED BY OWNER. PROVIDE FUSED DISCONNECT.
 5. PROVIDE RECEPTACLE OR TOGGLE TYPE DISCONNECT AT RADIANT HEATER FOR LOCAL DISCONNECT MEANS. COORDINATE REQUIREMENTS WITH H.C.
 6. PROVIDE FLOOR MOUNTED UNISTRUT FRAME FOR MOUNTING OF SERVICE PANEL AND DISCONNECT FOR AIR COMPRESSOR.

FIRST FLOOR POWER PLAN
SCALE: 1/4" = 1'-0"

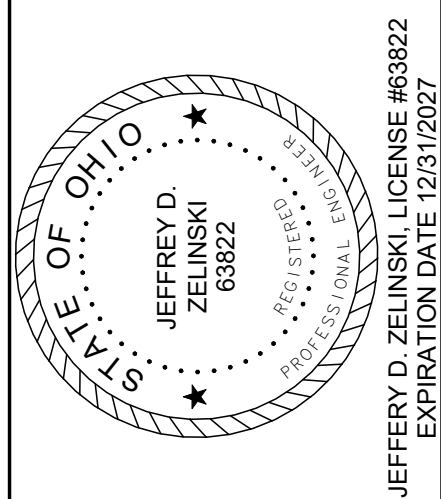


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**LIGHTING, POWER
AND SYSTEMS PLAN**

E1.1