UMM ECO CENTER
PRE-ENGINEERED SHELTER PROJECT
UNIVERSITY OF MINNESOTA MORRIS

PROJECT NUMBER: 04-700-20-1443

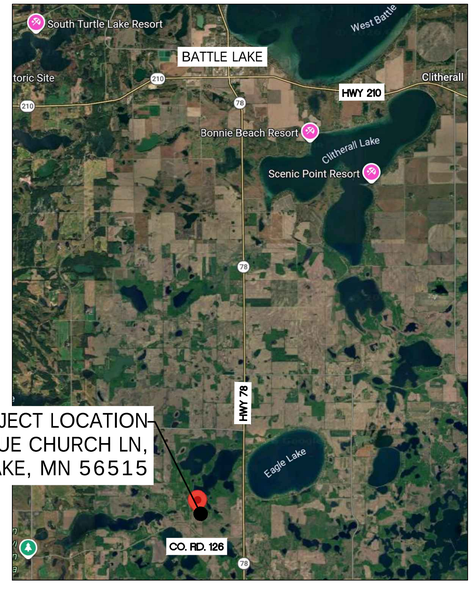


1 G-001 **PROJECT LOCATION**
SCALE: N.T.S.

DRAWING INDEX

⚠ INDICATES SHEETS THAT HAVE BEEN UPDATED BY ISSUED REVISION(S). CONTRACTOR ALSO RESPONSIBLE FOR REVIEWING WRITTEN PORTION OF CURRENT AND PRIOR ISSUED REVISIONS.

		ISSUED FOR BID 06/15/26					
G-001	TITLE SHEET	X					
C-101	SITE SURVEY	X					
C-131	SITE PLAN	X					
A-131	FLOOR PLAN, ROOF PLAN, ELEVATIONS, SECTIONS	X					
S10	STRUCTURAL STANDARD NOTES	X					
S11	STRUCTURAL KEYNOTES AND SCHEDULES	X					
S20	STRUCTURAL PLAN	X					
S30	BUILDING SECTIONS AND ELEVATIONS	X					
S31	BUILDING SECTIONS AND ELEVATIONS	X					
S40	FOUNDATION DETAILS	X					
S41	FOUNDATION SECTIONS AND DETAILS	X					
S42	CONCRETE CONSTRUCTION DETAILS	X					



2 G-001 **PROJECT LOCATION**
SCALE: N.T.S.



3 G-001 **ENLARGED PROJECT LOCATION**
SCALE: N.T.S.

2020 MINNESOTA BUILDING CODE (IBC)

THE FOLLOWING ARE SOME BUILDING CODE REQUIREMENTS

CHAPTER 3 USE AND OCCUPANCY CLASSIFICATION

312.1 UTILITY AND MISCELLANEOUS GROUP U
OPEN AIR PARK SHELTER

CHAPTER 5 GENERAL BUILDING HEIGHTS AND AREAS

504.3 ALLOWABLE HEIGHT OF BUILDING

OCCUPANCY CLASSIFICATION	TYPE OF CONST.	SPRINKLED OR NON-SPRINKLED	HEIGHT
U	II-B	NON-SPRINKLED	55

504.4 ALLOWABLE NUMBER OF STORIES ABOVE GRADE

OCCUPANCY CLASSIFICATION	TYPE OF CONST.	SPRINKLED OR NON-SPRINKLED	NO. OF STORIES
U	II-B	NON-SPRINKLED	2

506 BUILDING AREA

506.02 ALLOWABLE AREA FACTOR

OCCUPANCY CLASSIFICATION	TYPE OF CONST.	SPRINKLED OR NON-SPRINKLED	ALLOWABLE AREA FACTOR	ACTUAL AREA
U	II-B	NON-SPRINKLED	8,500	700

CHAPTER 6 TYPE OF CONSTRUCTION

TABLE 601 FIRE RATING REQT — II-B
STRUCTURAL FRAME - 0 HR
BEARING WALLS - 0 HR
NON BEARING WALLS - 0 HR
FLOOR CONSTRUCTION - 0 HR
ROOF CONSTRUCTION - 0 HR

CHAPTER 9 FIRE PROTECTION SYSTEMS

903 AUTOMATIC SPRINKLING SYSTEMS
903.2.1.3 AN AUTOMATIC SPRINKLING SYSTEM IS NOT REQUIRED.

906 PORTABLE FIRE EXTINGUISHER
IS NOT REQUIRED

907 FIRE ALARM SYSTEM
IS NOT REQUIRED

CHAPTER 10 MEANS OF EGRESS

1004.5 & TABLE OCCUPANT LOAD

OCCUPANCY LOAD TABLE				
FUNCTION OF SPACE	AREA	OCCUPANT LOAD FACTOR (NET OR GROSS)	OCCUPANCY	EXITS
ASSEMBLY WITHOUT FIXED SEATS	700	15	47	1

1012 RAMPS

CHAPTER 16 STRUCTURAL DESIGN

1604.5 & TABLE RISK CATEGORY
THIS IS A RISK CATEGORY II BUILDING.

CHAPTER 29 PLUMBING

2902.1 MIN. NUMBER OF PLUMBING FIXTURES
EXCEPTION: WHEN APPROVED BY THE BUILDING OFFICIAL, BUILDINGS OR STRUCTURES THAT ARE NORMALLY UNOCCUPIED, SUCH AS PICNIC SHELTERS AND SIMILAR STRUCTURES, NEED NOT BE PROVIDED WITH RESTROOM FACILITIES.

APPLICABLE BUILDING CODES

2020 MN BUILDING CODE
(2018 IBC WITH MN AMENDMENTS,
2018 IEBC WITH MN AMENDMENTS)
2020 MN CONSERVATION CODE FOR EXISTING BUILDINGS
(2018 IEBC WITH MN AMENDMENTS)
2020 MN ACCESSIBILITY CODE
(2018 IBC WITH MN AMENDMENTS,
2018 IEBC WITH MN AMENDMENTS, ANSI A117.1-2009)
2024 MN COMMERCIAL ENERGY CODE
(ASHRAE STANDARD 90.1-2019 WITH MN AMENDMENTS)
2020 MN ELEVATOR AND RELATED DEVICES CODE
(MN RULES CHAPTER 1307)
2020 MN FIRE CODE
(2018 IFC WITH MN AMENDMENTS)
2020 MN PLUMBING CODE
(2018 UPC WITH MN AMENDMENTS)
2020 MN MECHANICAL AND FUEL GAS CODE
(2018 IMC WITH MN AMENDMENTS. 2018 IFGC WITH MN AMENDMENTS, ANSI/ASHRAE STANDARD 154-2016, ANSI/ASHRAE 62.2-2016)
NFPA 13-16 FIRE SPRINKLER STANDARD
MN ELECTRICAL CODE
(2023 NEC)
2012 NFPA LIFE SAFETY CODE

2022 FGI GUIDELINES FOR DESIGN AND CONSTRUCTION OF HOSPITALS

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Andrew M. Engan

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PROJECT # 154.89	DATE: 6/15/2026
DRAWN BY: ARL	CHECKED BY: AME
OWNER:	

REVISION		DATE

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UNIVERSITY OF MINNESOTA, MORRIS
BATTLE LAKE, MN

TITLE SHEET

G-001

N

W E

S

80 40 0 80 160 240

SCALE IN FEET

SCALE: 1 INCH = 80 FEET

BEARINGS ARE BASED ON OTTER TAIL COUNTY COORDINATES
2011 ADJUSTMENT AS DETERMINED BY THE MNDOT CORS/VRS NETWORK.

SW 1/4 OF THE NW 1/4

SEC. 16, T. 131, R. 40

SE 1/4 OF THE NW 1/4

SEC. 16, T. 131, R. 40

NW 1/4 OF THE SW 1/4

SEC. 16, T. 131, R. 40

NE 1/4 OF THE SW 1/4

LEGEND

- DENOTES IRON MONUMENT SET MARKED "PLS 5630".
- DENOTES POWER POLE.
- DENOTES TELEPHONE PEDESTAL.
- DENOTES SPOT ELEVATIONS (NAVD - 1988)
- DENOTES UNDERGROUND OTTERTAIL TELCO1 CABLE AS FLAGGED.
- DENOTES OVERHEAD ELECTRIC LINE BY VISIBLE OBSERVATION.
- DENOTES FIVE FOOT CONTOUR INTERVALS BASED ON ALL SPOT ELEVATIONS.
- DENOTES TWO FOOT CONTOUR INTERVALS BASED ON ALL SPOT ELEVATIONS.
- DENOTES DELINEATED WETLAND
- DENOTES GRAVEL SURFACE
- DENOTES EDGE OF TREES AND BRUSH

GRUE CHURCH LANE

GRUE CHURCH ROAD

WETLAND

OWNER:
STATE OF MINNESOTA
DEPT. OF NATURAL RESOURCES

OWNER:
GRUE LUTHERAN CEMETERY ASSOC.

DOCUMENT NO. 562954

OWNER:
STATE OF MINNESOTA
DEPT. OF NATURAL RESOURCES

OWNER:
STATE OF MINNESOTA
DEPT. OF NATURAL RESOURCES

30' WIDE AND EXPRESS EASEMENT DOC. NO. 1150622

MIDDLE LAKE
LAKE ID NO. 56-252
LAKE CLASSIFICATION IS NATURAL ENVIRONMENT
ORDINARY HIGH WATER ELEV. = 1001.44 FEET (NAVD 1988)
(Located on 9/26/2022.)
(Lake elevation is at OHW.)

NOTE: WETLANDS WERE DELINEATED BY ROBERT F. FIERKE, AQUATIC ECOSOLUTIONS, INC.

FLOOD ZONE: CURRENTLY UNMAPPED

SURVEYORS UTILITY NOTES:
UNDERGROUND UTILITIES ARE SHOWN PER A UTILITY RESPONSE FROM GOPHER STATE ONE CALL. ADDITIONAL BURIED UTILITIES MAY BE ENCOUNTERED ON SITE. ADDITIONAL BURIED UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THIS SURVEY. CONTACT GOPHER STATE ONE CALL AT 1-800-252-1166 OR 811 FOR UTILITY LOCATIONS PRIOR TO EXCAVATION. THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND ARE BASED ON MARKINGS PLACED BY UTILITIES IN RESPONSE TO THE NOTICE, LOCATION OF UTILITIES PER THE LOCATE TICKET SHOULD BE CONSIDERED APPROXIMATE. CONTACT GOPHER STATE ONE CALL, UNDER A PRIVATE LOCATE, CONTRACTOR FOR ANY ADDITIONAL BURIED UTILITIES NOT LOCATED UNDER THIS LOCATE TICKET.

CURVE TABLE

CURVE	RADIUS	ARC	CHORD	CHORD BEARING	DELTA
C1	2824.79'	76.42'	76.42'	S 24°00'00" E	1°33'00"
C2	2824.79'	76.42'	76.42'	S 22°27'00" E	1°33'00"

ANDERSON LAND SURVEYING, INC.

PROFESSIONAL LAND SURVEYORS & LAND DEVELOPMENT CONSULTANTS
313 SOUTH MILL STREET, FERGUS FALLS, MN 56537 (218) 739-5268
(800) 300-9276

SURVEYOR'S CERTIFICATE

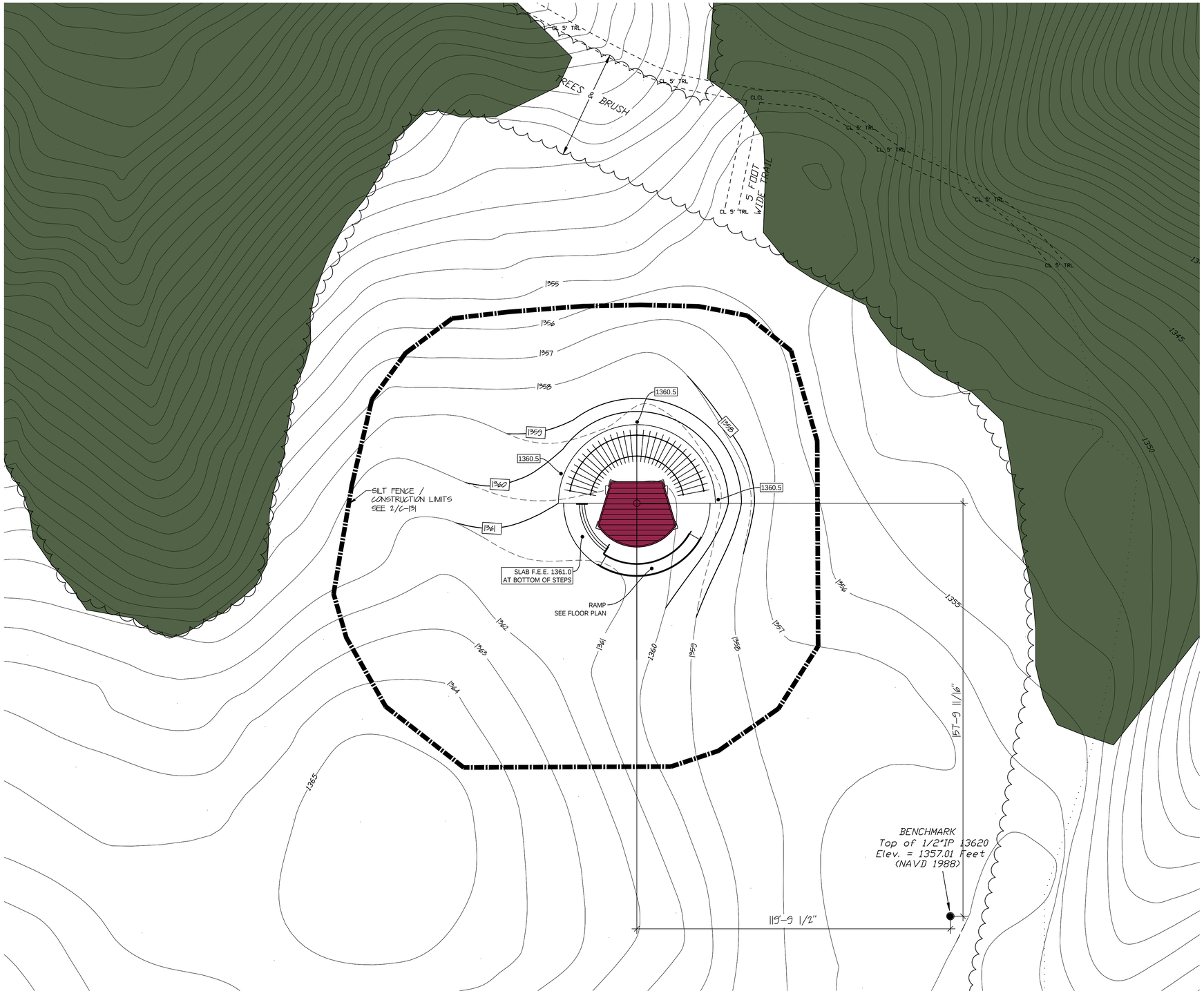
I HEREBY CERTIFY THAT THIS SURVEY, PLAN OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A PROFESSIONAL LAND SURVEYOR LICENSED UNDER THE LAWS OF THE STATE OF MINNESOTA. DATED THIS 26TH DAY OF JANUARY, 2023.

DAVID A. ANDERSON
PROFESSIONAL LAND SURVEYOR
MINNESOTA LICENSE NO. 13620

CERTIFICATE OF SURVEY FOR:

UNIVERSITY OF MINNESOTA MORRIS

CONTRACT NO. 301-22	FOLDER 301-22	DRAWN BY TMH	FIELD BOOK ALS-236/44
DWG FILE 301-220TC	CRD FILE 301-220TC	CHECKED BY DAA	FIELD CREW JAK/MJ
SEC-TWP-RG 16-131-40	REVISION:		DRAWING NUMBER 9008



N
W E
S

1 C-131 **SITE PLAN**
SCALE: 1' 5' 10' 20'

SITE NOTES

1. SLOPE SIDEWALKS TO SHED WATER, 1/20 (5%) MAX SLOPE IN LINE OF TRAVEL. THE SIDE SLOPE IS 1/50 (2%) MAX TO ALLOW FOR DRAINAGE. EITHER LONGITUDINAL OR TRANSVERSE.
2. SITE CONCRETE TO BE 4,000 PSI DESIGN FIBER REINFORCED.
3. ALL SITE CONCRETE TO HAVE A MINIMUM OF 6" GRANULAR BASE.
4. INSTALL EXPANSION MATERIALS & CAULK WHERE SIDEWALKS BUTT EXISTING CONCRETE AND THE BUILDING OR ANY CHANGE IN DIRECTION.
5. THE CONTRACTOR SHALL INSTALL TEMPORARY FENCING AROUND ALL EQUIPMENT AND MATERIALS STORED ON SITE.
6. REMOVE ALL DEBRIS FROM SITE.
7. CONTRACTOR SHALL REMOVE EXISTING SITE OBJECTS IN CONFLICT WITH NEW CONSTRUCTION.

GRADING NOTES

1. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE AND SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, INVERTS AND LOCATIONS OF ALL UTILITIES.
2. REMOVE FILL & TOPSOIL FROM UNDER THE BUILDING AREA AS DIRECTED BY SOILS ENGINEER. BASE BID INCLUDES ALL EARTHWORK REQUIRED FOR PROJECT ASSUMING AN AVERAGE EXCAVATION TO 2'-0" BELOW FINISH GRADE AT BUILDING & PARKING AREAS. ADDITIONS OR REDUCTIONS IN EARTHWORK WILL BE ADJUSTED BY THE UNIT COST OF ENGINEERED FILL. THE UNIT PRICE SHALL BE BASED ON CUBIC YARD OF MATERIAL SUPPLIES WITH A 30% MAX REDUCTION FOR COMPACTION. THIS INCLUDES THE CORRESPONDING COSTS OF EXCAVATION AND COMPACTION.
3. ALL ROUGH GRADING SHALL PERMIT WATER TO DRAIN AWAY FROM THE BUILDING.
4. THE CONTRACTOR SHALL TAKE CAUTION TO LIMIT ANY DAMAGE TO EXISTING PLANTINGS, PROPERTY AND ANY ADJOINING SURFACES.
5. THE CONTRACTOR IS RESPONSIBLE FOR FINAL GRADING. THE CONTRACTOR SHALL PROVIDE 6" OF BLACK DIRT IN PLANTING AREAS. LANDSCAPING INCLUDING SODDING AND/OR SEEDING SHALL BE BY THE THE OWNER.
6. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION.
7. GRADE TO SLOPE AWAY FROM BUILDING SHALL BE A MINIMUM OF 6" BELOW FINISHED FLOOR IN THE FIRST 10'-0", UNLESS NOTED OTHERWISE.

NEW CONTOUR
EXISTING CONTOUR
CONTOUR TO BE REMOVED

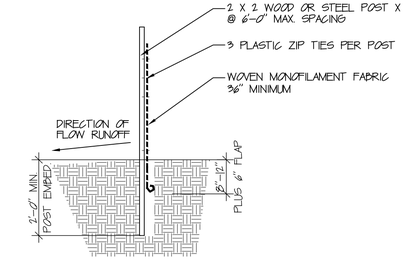
130 NEW ELEVATION
130 EXISTING ELEVATION

EROSION CONTROL NOTES

1. CONTRACTOR SHALL PROVIDE TEMPORARY AND PERMANENT EROSION CONTROL AS DESCRIBED ON THE PLANS AND SPECIFICATIONS.
2. NO MORE EXISTING VEGETATION SHALL BE DISTURBED THAN IS NECESSARY TO COMPLETE CONSTRUCTION OF THE PROJECT.THE CONTRACTOR SHALL PRACTICE CONSTRUCTION PHASING WHEN PRACTICAL.
3. ALL EXPOSED SOIL AREAS WITH A CONTINUOUS POSITIVE SLOPE WITHIN 200 LINEAL FEET FROM A WATER OF THE STATE (INCLUDING DRAINAGE DITCHES, AND OTHER STORM WATER CONVEYANCE SYSTEMS) SHALL HAVE TEMPORARY PROTECTION OR PERMANENT COVER FOR THE EXPOSED SOILS IF THE AREA HAS NOT BEEN, OR WILL NOT BE, WORKED BY THE CONTRACTOR WITHIN THE FOLLOWING TIME FRAMES:

TYPE OF SLOPE	DURATION
STEEPER THAN 3:1	7 DAYS
10:1 TO 3:1	14 DAYS
FLATTER THAN 10:1	21 DAYS

4. THE BOTTOM OF DRAINAGE DITCHES SHALL BE STABILIZED WITHIN 200 LINEAL FEET FROM A WATER OF THE STATE (AS DESCRIBED IN EROSION CONTROL NOTE #3). STABILIZATION SHALL BE INITIATED WITHIN 24 HOURS OF THE CONNECTION OF A DRAINAGE DITCH TO A WATER OF THE STATE, AND BE COMPLETED WITHIN FIVE CALENDAR DAYS.
7. TEMPORARY ROCK ENTRANCES, OR OTHER APPROVED METHODS, SHALL BE CONSTRUCTED, WHERE HAULING OPERATIONS WILL TAKE PLACE, TO MINIMIZE THE TRACKING OF SOIL ONTO OFF-SITE PAVED SURFACES.
8. THE CONTRACTOR SHALL INSPECT THE CONSTRUCTION SITE ONCE EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER RAIN EVENTS FOR DAMAGE TO EROSION CONTROL DEVICES. IF DAMAGED OR INEFFECTIVE EROSION CONTROL DEVICES ARE DISCOVERED, THEY SHALL BE REPAIRED OR REPLACED. THE CONTRACTOR SHALL MAINTAIN INSPECTION RECORDS, WHICH INCLUDE DATE AND TIME OF INSPECTIONS, DATES OF RAINFALL EVENTS, FINDINGS OF INSPECTIONS, CORRECTIVE ACTIONS TAKEN (INCLUDING DATES AND TIMES), AND DOCUMENTATION OF ANY CHANGES TO THE TEMPORARY OR PERMANENT EROSION CONTROL PLANS MADE DURING CONSTRUCTION.



2 C-131 **SILT FENCE**
SCALE: 3" 6" 1' 2'

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Andrew M. Engan

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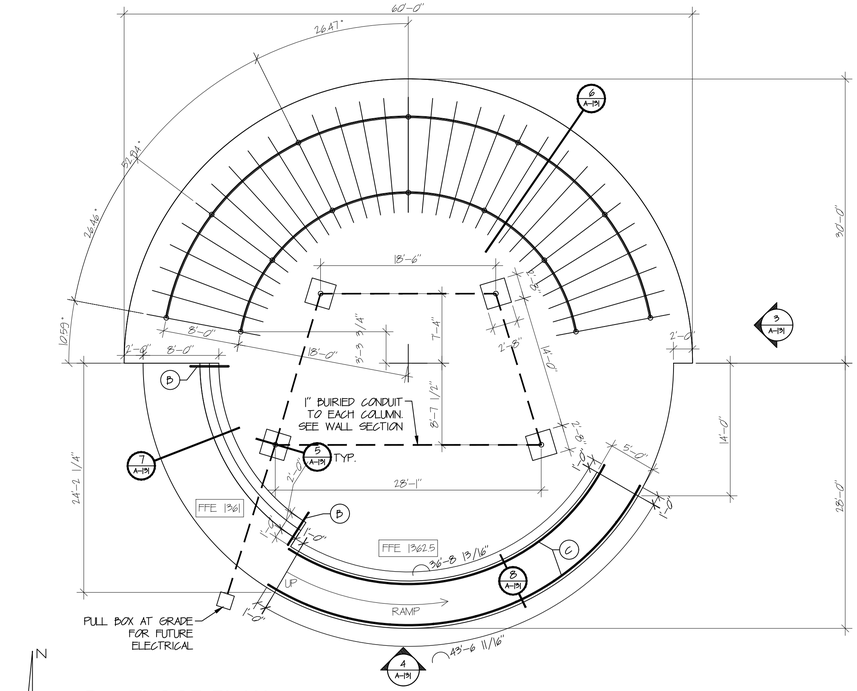
PROJECT # 154.89	DATE: 6/15/2026
DRAWN BY:	CHECKED BY: AME
OWNER:	

REVISION		DATE

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SITE IMPROVEMENT PLAN

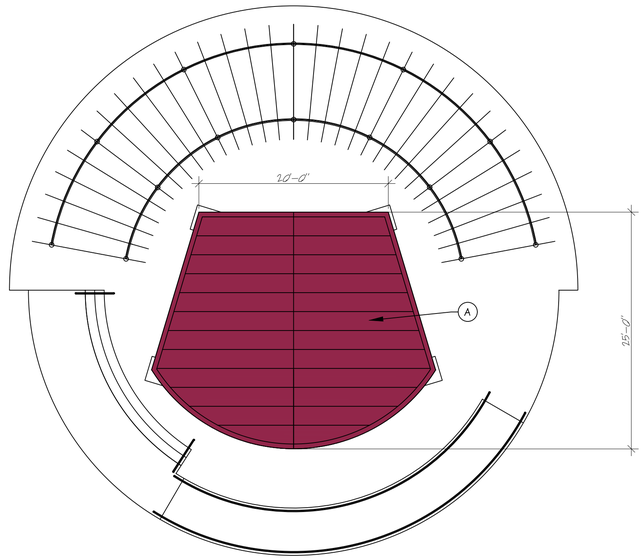
C-131



N W E S

1 A-131 **FLOOR PLAN**

SCALE: 1" 2' 4' 8'



N W E S

2 A-131 **ROOF PLAN**

SCALE: 1" 2' 4' 8'

GENERAL NOTES

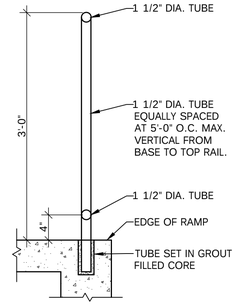
1. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE PROJECT AND VERIFY CONDITIONS AND DIMENSIONS.
2. THE CONTRACTOR SHALL VERIFY EXACT ELEVATIONS, INVERTS, AND LOCATIONS OF UTILITIES.
3. CONTRACTORS SHALL CONFORM TO APPLICABLE CODES.
4. CONTRACTORS SHALL USE CAUTION TO LIMIT DAMAGE TO EXISTING PLANTINGS, PROPERTY AND ADJOINING SURFACES.
5. THE CONTRACTORS SHALL NOTIFY THE ARCHITECT IF ANY EXISTING CONDITIONS DIFFER FROM THE PLANS.
6. THE CONTRACTOR IS RESPONSIBLE TO VERIFY DIMENSIONS.
7. CAULK AND MAKE WATERTIGHT CONTROL AND EXPANSION JOINTS.
8. INSTALL VAPOR BARRIER UNDER NEW CONCRETE FLOOR SLABS ON GRADE.
9. "N.I.C." REFERS TO ITEMS THAT ARE NOT IN THIS CONTRACT.
10. THE ON SITE SUPERINTENDENT SHALL PROVIDE BASIC LAYOUT FOR MECHANICAL, ELECTRICAL AND OTHER TRADES.
11. CONTRACTOR IS TO SUPPLY THE SHELTER MANUFACTURER'S ENGINEERED DRAWINGS FOR COORDINATION OF THE CONCRETE AFTER THE BID IS AWARDED. A STRUCTURAL REVIEW BY THE OWNER'S STRUCTURAL ENGINEER WILL BE REQUIRED. ANY CHANGES TO THE DESIGN WILL BE ISSUED WITH A CHANGE ORDER.

SPECIFIC KEYNOTES

(A) METAL ROOFING SYSTEM BY PRE-ENGINNERD SHELTER SUPPLIER. BASIS OF DESIGN: STANDING SEAM ROOF BY POLIGON.

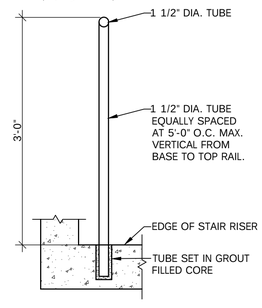
(P) STAIR HANDRAIL. SEE DETAIL 9/A-131.

(C) RAMP HANDRAIL. SEE DETAIL 8/A-131.



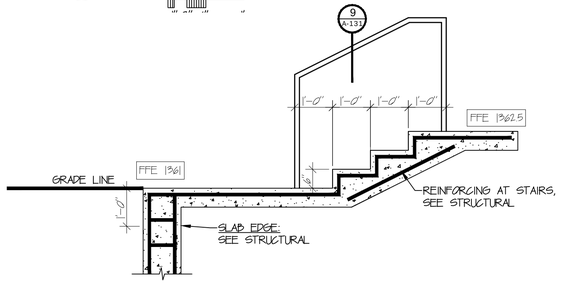
8 A-131 **HANDRAIL DETAIL - AT RAMP**

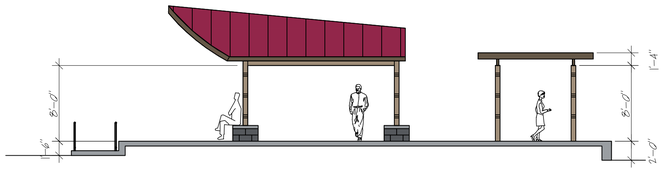
SCALE: 1" 3" 6" 1' CLEAR ANODIZED ALUMINUM



9 A-131 **HANDRAIL DETAIL - AT STAIR**

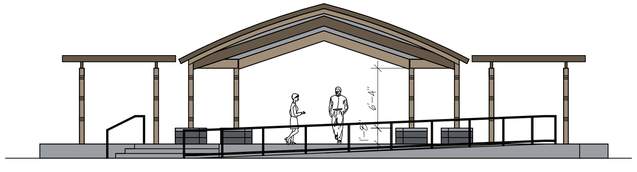
SCALE: 1" 3" 6" 1' CLEAR ANODIZED ALUMINUM





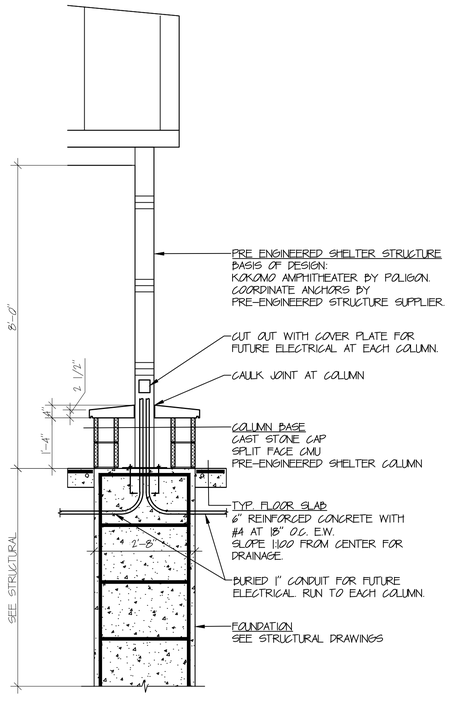
3 A-131 **EAST ELEVATION**

SCALE: 1" 2' 4' 8'



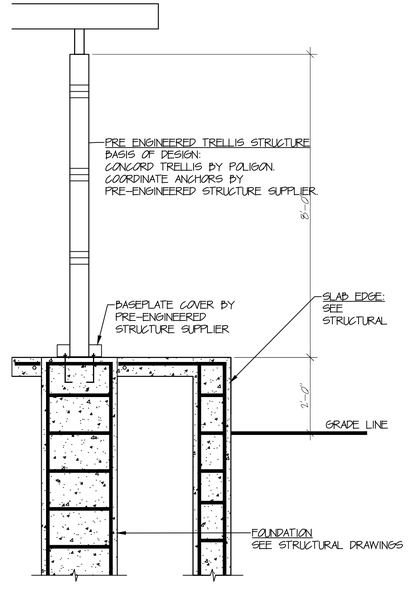
4 A-131 **SOUTH ELEVATION**

SCALE: 1" 2' 4' 8'



5 A-131 **WALL SECTION**

SCALE: 3" 6" 1' 2'



6 A-131 **WALL SECTION**

SCALE: 3" 6" 1' 2'

7 A-131 **STAIR SECTION**

SCALE: 3" 6" 1' 2'

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Andrew M. Engan

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BATTLE LAKE, MN

FLOOR PLAN, ROOF PLAN
ELEVATIONS, SECTIONS

A-131

SLAB-ON-GRADE CONCRETE

1. SLAB ON GRADE CONSTRACTION JOINTS ARE TO BE SPACED AS FOLLOWS (UNLESS OTHERWISE INDICATED ON PLAN):
   - A. FOR 4 INCH THICK SLAB ---------- 12 FEET SPACING MAX
   - B. FOR 5 INCH THICK SLAB ---------- 15 FEET SPACING MAX
   - C. FOR 6 INCH THICK SLAB ---------- 18 FEET SPACING MAX
2. AT CONTRACTOR'S OPTION, CONSTRUCTION JOINTS MAY BE SUBSTITUTED FOR CONTRACTION JOINTS.
3. LOCATE REINFORCEMENT 1.5 INCHES FROM TOP OF SLAB.
4. PROVIDE 1 - #4 x 4 FEET PARALLEL TO EDGE OF SLAB OPPOSITE THE END OF ALL DISCONTINUED SLAB JOINTS, AND 1 - #4 x 4 FEET DIAGONAL BAR AT ALL REENTRANT CORNERS. PLACE BARS MID-DEPTH IN SLAB AND 2 INCHES CLEAR FROM EDGE OF CORNER.
5. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF DEPRESSED SLAB AREAS AND DRAINS. SLOPE SLAB TO DRAINS WHERE SHOWN.
   - A. SLOPE BOTTOM SURFACE OF SLABS AS NECESSARY TO MAINTAIN MINIMUM THICKNESS NOTED ON DRAWINGS FOR ALL SLABS WITH SLOPING TOP SURFACE OR DEPRESSION.
6. IN ORDER TO MINIMIZE CONCRETE SHRINKAGE CRACKING, PLACE CONCRETE SLABS IN AN ALTERNATING LANE OR CHECKERBOARD PATTERN. THE MAXIMUM LENGTH OF SLAB CAST IN ANY ONE CONTINUOUS POUR IS RECOMMENDED TO BE LESS THAN 100 FEET.
7. FINISH TOLERANCE OF ALL SLABS SHALL BE IN ACCORDANCE WITH ACI 301, TYPE A.
8. SLABS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING FLATNESS/LEVELNESS REQUIREMENTS. FLOOR FLATNESS AND LEVELNESS TESTS SHALL BE CONDUCTED BY THE OWNER IN ACCORDANCE WITH ASTM E1155. RESULTS, INCLUDING ACCEPTANCE OR REJECTION OF THE WORK WILL BE PROVIDED TO THE CONTRACTOR WITHIN 48 HOURS AFTER DATA COLLECTION. REMEDIES FOR OUT OF TOLERANCE WORK SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.

CAST-IN-PLACE CONCRETE

1. CONCRETE CONSTRUCTION SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S (ACI) "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318) AND "SPECIFICATION FOR STRUCTURAL CONCRETE BUILDINGS" (ACI 301).
2. CONCRETE CONSTRUCTION IN HOT WEATHER SHALL CONFORM TO ACI 305.
3. CONCRETE CONSTRUCTION IN COLD WEATHER SHALL CONFORM TO ACI 306.
4. DETAILING, FABRICATION AND PLACEMENT OF REINFORCEMENT SHALL CONFORM TO ACI 315.
5. MATERIALS
   - A. CONCRETE
     - i) STRUCTURAL CAST-IN-PLACE — f'c = 4,000 PSI
     - ii) EXTERIOR WALKS, CURBS, RAMPS — f'c = 4,000 PSI
     - iii) CONCRETE FILL — f'c = 3,000 PSI
   - B. REINFORCING MATERIALS
     - i) REINFORCING BARS — ASTM A615, GRADE 60
     - ii) WELDED WIRE FABRIC — ASTM A185, FURNISH IN SHEETS ONLY
     - iii) THE USE OF POLYPROPYLENE FIBERS AS A SUBSTITUTION TO WELDED WIRE FABRIC IS PROHIBITED.
6. ALL BENT REINFORCING BARS SHALL BE SHOP FABRICATED ONLY. RE-BENDING OR WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS AUTHORIZED BY ENGINEER.
7. END HOOKS IN REINFORCING BARS, SHOWN ON THE STRUCTURAL DRAWINGS BUT NOT DIMENSIONED, SHALL CONFORM TO ACI 318.
8. CONCRETE COVER OVER REINFORCEMENT SHALL BE 2 INCHES CLEAR, EXCEPT FOR THE FOLLOWING, UNLESS OTHERWISE NOTED.
   - A. CONCRETE PLACED AGAINST AND PERMANENTLY IN CONTACT WITH EARTH — 3 INCH CLEAR
   - B. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH EARTH OR WATER
     - i) BEAMS, COLUMNS — 1.5 INCHES CLEAR
     - ii) WALLS — 1.5 INCHES CLEAR
     - iii) SLABS — 0.75 INCHES CLEAR
9. REINFORCEMENT SPLICE REQUIREMENTS
   - A. LAP WELDED WIRE FABRIC ONE FULL MESH AT SPLICES.
   - B. REINFORCEMENT SPLICES NOT PERMITTED EXCEPT AS DETAILED OR AUTHORIZED BY ENGINEER.
   - C. LAP REINFORCING BARS THE FOLLOWING MINIMUMS AT ALL SPLICES, CORNERS AND INTERSECTIONS, UNLESS OTHERWISE INDICATED. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES ON CONCRETE CAST BELOW THE BAR.

BAR SIZE	REGULAR BARS	TOP BARS
#3	1' - 4"	1' - 10"
#4	1' - 9"	2' - 5"
#5	2' - 2"	3' - 0"
#6	2' - 7"	3' - 7"
#7	3' - 3"	4' - 7"
#8	4' - 3"	6' - 0"
#9	5' - 5"	7' - 7"
#10	6' - 10"	9' - 7"

   - D. STAGGER ADJACENT REINFORCEMENT LAP SPLICES IN WALLS 18 INCHES MINIMUM.
   - E. BEAM AND CONTINUOUS SLAB REINFORCEMENT
     - i) SPLICE TOP REINFORCEMENT AT CENTERS OF SPAN BETWEEN SUPPORTS.
     - ii) SPLICE BOTTOM REINFORCEMENT AT SUPPORTS.
     - iii) TERMINATE BEAM'S TOP REINFORCEMENT WITH STANDARD HOOK AT END OF CANTILEVER OR DISCONTINUOUS BEAMS.
10. PROVIDE BAR SUPPORTS TO PROPERLY SECURE AND SUPPORT REINFORCING BARS. IN ADDITION TO NORMAL ACCESSORIES PROVIDE #3 STANDEES AT 48 INCHES O.C. TO SUPPORT TOP REINFORCEMENT IN BASE SLAB, AND #3 "U" OR "Z" SHAPE SPACERS AT 72 INCHES O.C. EACH WAY IN WALLS WITH TWO CURTAINS OF REINFORCEMENT.
11. DOWELS, PIPES AND OTHER INSTALLED MATERIALS AND ACCESSORIES SHALL BE HELD SECURELY IN POSITION DURING CONCRETE PLACEMENT. ALL REINFORCEMENT IS TO BE PLACED AND SECURED PRIOR TO PLACEMENT OF CONCRETE, UNLESS OTHERWISE STATED. DOWELS SHALL BE IN PLACE, NOT INSERTED, WHILE CONCRTE IS IN A PLASTIC STATE.
12. REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY PIPE, PIPE FLANGE OR METAL PART EMBEDDED IN CONCRETE. PROVIDE 2 INCH CLEARANCE IN ALL CASES UNLESS OTHERWISE INDICATED. NO EMBEDDED ITEM SHALL BE SUSPENDED FROM, SUPPORTED BY, OR BRACED IN PLACE FROM STRUCTURAL REINFORCEMENT.
13. LOCATE CONSTRUCTION JOINTS WHERE SHOWN ON THE DRAWINGS OR AS AUTHORIZED BY ENGINEER. SLABS, JOISTS AND BEAMS SHALL NOT HAVE JOINTS IN A HORIZONTAL PLANE EXCEPT WHERE DETAILED ON DRAWINGS.
14. THOROUGHLY CLEAN ALL KEYWAYS AND CONSTRUCTION JOINTS PRIOR TO PLACING CONCRETE IN ADJACENT POUR.
15. PVC WATERSTOP
   - A. PROTECT ALL PROJECTING WATERSTOPS FROM DAMAGE AND EXPOSURE DURING CONSTRUCTION.
   - B. FIRMLY TIE ALL ENDS AND EDGES OF WATERSTOPS AT 18 INCH MAXIMUM TO PREVENT MOVEMENT DURING CONCRETE PLACEMENT.
16. BEGIN SPACING OF BARS WHICH PARALLEL CONSTRUCTION AND EXPANSION JOINTS 2 INCHES CLEAR EACH SIDE OF JOINT.
17. UNLESS OTHERWISE SHOWN, PLACE (2) - #5 (1 EACH FACE) WITH 24 INCH PROJECTIONS AROUND ALL OPENINGS IN CONCRETE WALLS AND SLABS.
18. PROVIDE AN ADDITIONAL 500 LINEAL FEET EACH OF #4 AND #5 REINFORCING BARS FOR USE AS DIRECTED DURING CONSTRUCTION.
19. CHAMFER ALL EXPOSED CONCRETE EDGES 0.75 INCHES, UNLESS OTHERWISE INDICATED.

STRUCTURAL GENERAL NOTES

1. ARCHITECTURAL ELEVATION 100'-0" = SEE SITE PLAN FOR EQUIVALENT DATUM ELEVATION.
2. EXISTING CONSTRUCTION
   - A. DIMENSIONS, ELEVATIONS AND DETAILS OF EXISTING CONSTRUCTION HAVE BEEN OBTAINED FROM LIMITED FIELD INVESTIGATION AND EXISTING DOCUMENTS. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS NECESSARY TO PROPERLY COORDINATE NEW AND EXISTING CONSTRUCTION, AND PRIOR TO FABRICATION AND CONSTRUCTION. NOTIFY THE ENGINEER OF ALL VARIATIONS IN THE DETAILS, DIMENSIONS, AND ELEVATIONS OF EXISTING CONSTRUCTION WITH THAT SHOWN ON THE DRAWINGS.
   - B. CLEAN AND PREPARE ALL EXISTING SURFACES WHICH WILL BE IN CONTACT WITH NEW CONSTRUCTION AS INDICATED AND AS ACCEPTABLE TO ENGINEER. APPLY BONDING COMPOUND TO ALL EXISTING CONCRETE AND MASONRY SURFACES WHICH WILL BE IN CONTACT WITH NEW CONCRETE IMMEDIATELY PRIOR TO PLACEMENT.
   - C. PROTECT EXISTING MATERIALS FROM DAMAGE DURING CONSTRUCTION.
   - D. FURNISH AND INSTALL TEMPORARY SHORING OR BRACING AS NECESSARY TO PROVIDE SUPPORT AND STABILITY FOR EXISTING WALLS AND FRAMING DURING DEMOLITION AND CONSTRUCTION.
3. FUTURE CONSTRUCTION
   - A. PROVISIONS FOR FUTURE EXPANSION: _NONE_.
4. EQUIPMENT INSTALLATION
   - A. ALL OPENINGS SHOWN SHALL BE VERIFIED, AND ALL STRUCTURAL DIMENSIONS AND DETAILS PERTAINING TO EQUIPMENT INSTALLATION SHALL BE COORDINATED BY THE CONTRACTOR WITH THE ACTUAL EQUIPMENT FURNISHED.
   - B. EQUIPMENT SUPPORTS, ANCHORAGES AND OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED PRIOR TO PLACING CONCRETE.
   - C. MECHANICAL UNITS SUPPORTED BY ROOF OR FLOOR STRUCTURE ARE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER. ALL KNOWN UNITS HAVE BEEN SHOWN ON PLAN. IF UNIT'S GEOMETRY INCREASES, OPERATING WEIGHT INCREASES, IF LOCATION CHANGES, IF ADDITIONAL UNITS ARE REQUIRED, OR STRUCTURAL CHANGES ARE REQUIRED FOR ANY REASON, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND COORDINATION OF ALL DETAILS PERTAINING TO THE INSTALLATION OF THE ACTUAL EQUIPMENT. DESIGN SHALL BE SUBMITTED FOR STRUCTURAL ENGINEER-OF-RECORD REVIEW.

APPLICABLE SPECIFICATIONS AND CODES

CONSTRUCTION AND DESIGN SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION ADOPTED BY 2020 MINNESOTA STATE BUILDING CODE, AND WITH THE LATEST EDITION OF THE APPLICABLE SPECIFICATIONS AND THE REQUIREMENTS NOTED AS FOLLOWS:

ASCE 7-16 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES"

CONSTRUCTION LOADS

1. STRUCTURES HAVE BEEN DESIGNED FOR DEAD LOADS AND THE DESIGN LOADS NOTED ABOVE. PROVIDE TEMPORARY BRACING, SHORING, OR OTHER SUPPLEMENTAL SUPPORT DURING CONSTRUCTION AS NECESSARY TO PROTECT THE STRUCTURES FROM EXCESSIVE CONSTRUCTION LOADS.
2. DURING ERECTION OF THE STRUCTURE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY BRACING TO WITHSTAND ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED, INCLUDING LATERAL LOADS, STOCKPILES OF MATERIALS, AND EQUIPMENT. SUCH BRACING SHALL BE LEFT IN PLACE AS LONG AS REQUIRED FOR SAFETY AND UNTIL ALL FRAMING, INCLUDING ROOF STRUCTURE, IS IN PLACE.
3. SUPPORTING FLOORS, ROOFS, STRUCTURAL SLABS, AND BASIN TOP SLABS SHALL BE PLACED PRIOR TO BACKFILLING AGAINST WALLS OR FILLING OF BASINS. OTHERWISE PROVIDE SUFFICIENT WALL BRACING.

FOUNDATION

1. MINIMUM FROST COVER FROM GRADE TO BOTTOM OF FOOTING IS 72 INCHES UNLESS NOTED OTHERWISE IN UNHEATED AREAS
2. SHALLOW SPREAD FOUNDATION DESIGN CRITERIA
   - A. FOOTINGS ARE DESIGNED FOR A MINIMUM ALLOWABLE NET SOIL BEARING PRESSURE OF 2,000 PSF, AN ASSUMED VALUE.
   - B. DESIGN ASSUMPTION SHALL BE VERIFIED IN WRITING BY A LICENSE GEOTECHNICAL ENGINEER IN THE STATE IN WHICH THE PROJECT IS LOCATED PRIOR TO EXCAVATION FOR FOUNDATION CONSTRUCTION.
   - C. IF THE PROJECT OWNER WISHES NOT TO PROCURE PROFESSIONAL GEOTECHNICAL ENGINEERING SERVICES TO CONFIRM THESE ASSUMPTIONS, THE PROJECT OWNER TAKES FULL RESPONSIBILITY FOR ISSUING ARISING FROM THE BEARING SOILS.
3. SHALLOW SPREAD FOUNDATION SYSTEM
   - A. FOOTINGS TO BEAR ON COMPACTED NATIVE SOILS OR ENGINEERED FILL.
   - B. ALL TOPSOIL, FILL AND OTHER UNSUITABLE MATERIAL SHALL BE REMOVED.
   - C. THE OWNER TO PROVIDE GEOTECHNICAL SERVICES TO INSPECT THE EXCAVATED AREA TO ENSURE ALL MATERIALS REQUIRING REMOVAL HAVE BEEN REMOVED AND COMPACTION OF BACKFILL IS SATISFACTORY TO ACHIEVE DESIGN BEARING PRESSURE.
   - D. AVOID EXCESSIVE WETTING OR DRYING OF THE FOUNDATION EXCAVATIONS DURING CONSTRUCTION.
4. BACKFILL AGAINST WALLS WITH FILL ON BOTH SIDES SHALL BE COMPACTED IN EQUAL LIFTS EACH SIDE OF WALL. WALLS BACKFILLED FROM ONE SIDE ONLY SHALL HAVE ALL SUPPORTING SLABS, PERMANENT FRAMING OR TEMPORARY BRACING IN PLACE PRIOR TO PLACEMENT OF BACKFILL.
5. NON-FROST SUSCEPTIBLE STRUCTURAL FILL
   - A. PROVIDE NON-FROST SUSCEPTIBLE STRUCTURAL FILL BENEATH FOUNDATIONS TO MAXIMUM FROST DEPTH, CONSISTING OF A MEDIUM TO COARSE GRAINED, FREE-DRAINING SAND HAVING A MAXIMUM SIZE OF 1 INCH, WITH LESS THAN 40% BY WEIGHT PASSING THE #40 SIEVE AND LESS THAN 5% BY WEIGHT PASSING THE #200 SIEVE.

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SIGNATURE:

NAME: BRYAN L. ASCHE

DATE: June 15, 2026

LICENSE NUMBER: 40855

No.	Description	Date

UMM ECO CENTER
BATTLE LAKE, MN
UNIVERSITY OF MN - MORRIS

STRUCTURAL STANDARD NOTES

Project number	AE26012
Date	June 15, 2026
Drawn by	BA
Checked by	BA

S10

Scale 1/4" = 1'-0"

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FOOTINGS NOTES

1. CENTER FOOTINGS UNDER FOUNDATION UNLESS DIMENSIONED OTHERWISE.
2. SPACE REINFORCEMENT UNIFORMLY ACROSS FOOTING.
3. PLACE REINFORCEMENT 3" CLEAR FROM BOTTOM OF FOOTING EXCEPT WHERE DIMENSIONED OTHERWISE.
4. REFERENCE SPECIFIC SECTIONS FOR FOOTINGS NOT INCLUDED IN SCHEDULES.
5. SEE PLAN VIEW 3/S41 FOR TRANSVERSE REBAR PLACEMENT LAYOUT.

FOOTING SCHEDULE

MARK	WIDTH	LENGTH	THICKNESS	REINFORCEMENT	
				TRANSVERSE	LONGITUDINAL
F3.0	3' - 0"	3' - 0"	12"	(4) - #4's	(4) - #4's
F4.0	4' - 0"	4' - 0"	12"	(6) - #4's	(6) - #4's

FOOTING WALL SCHEDULE

MARK	WIDTH	THICKNESS	REINFORCEMENT	
			TRANSVERSE	LONGITUDINAL
W24	2' - 0"	1' - 0"	#4's @ 12" O.C.	(3) - #4 CONT.

PIER NOTES

1. COLUMN PIERS SHALL BE CENTERED ON FOOTINGS (U.N.O.)
2. COLUMN PIERS SHALL BE INTEGRAL WITH FOUNDATION WALLS.
3. CONSTRUCT REINFORCED CONCRETE PIER ACCORDING TO DETAIL 1/S40 (U.N.O.)

PIER SCHEDULE

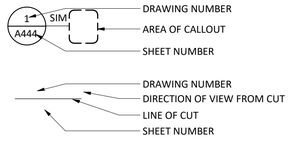
MARK	T.O. PIER ELEVATION	WIDTH	LENGTH	REINFORCEMENT	REMARKS
P1	100'-0"	2' - 8"	2' - 8"	(12) - #6's VERT. & #3 TIES @ 12"	SEE DETAIL 2/S40
P2	100'-0"	2' - 8"	2' - 8"	(12) - #6's VERT. & #3 TIES @ 12"	SEE DETAIL 3/S40
P3	100'-0"	2' - 0"		(8) - #5's VERT. & #3 TIES @ 10"	SEE DETAIL 4/S40

SYMBOLS LEGEND

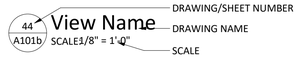
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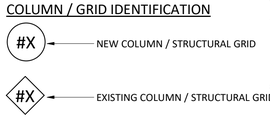
CALLOUT/SECTION IDENTIFCATION



DRAWING IDENTIFICATION



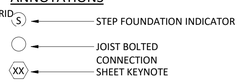
COLUMN / GRID IDENTIFICATION



NORTH ARROW



ANNOTATIONS



STRUCTURAL KEYNOTES

#	NOTE
1	EDIT NOTE INFORMATION IN TYPE PROPERTIES OF KEYNOTE SYMBOL

STRUCTURAL ABBREVIATIONS

ADDN'L	ADDITIONAL
AGG	AGGREGATE
ALT	ALTERNATIVE
AB	ANCHOR BOLT(S)
&	AND
ARCH	ARCHITECT OR ARCHITECTURAL
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
@	AT
BSMT	BASEMENT
BM	BEAM
R	BEAM REACTION
BRG	BEARING
BTWN	BETWEEN
BLK	BLOCK
BD.BM.	BOND BEAM
BOT	BOTTOM
BLDG	BUILDING
CANT	CANTILEVER
CLG	CEILING
CTR	CENTER
CL	CENTER LINE
CTR'D	CENTERED
CLR	CLEAR
COL	COLUMN
COMP	COMPOSITE
C	COMPRESSION
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONN	CONNECTION
CONST	CONSTRUCTION
CJ	CONSTRUCTION, CONTROL, OR CONTRACTION JOINT
CONT	CONTINUOUS
CONTR	CONTRACTOR
DL	DEAD LOAD
DBE	DECK BEARING ELEVATION
DEFL	DEFLECTION
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DWL(S)	DOWEL(S)
DWG(S)	DRAWING(S)
EA	EACH
EF	EACH FACE
EW	EACH WAY
E	EAST
E-W	EAST-WEST
ELEC	ELECTRICAL
EL	ELEVATION
ELEV	ELEVATOR
EQ	EQUAL
EXST	EXISTING
EXP	EXPANSION
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
FF	FAR FACE
FFE	FINISHED FLOOR ELEVATION
FLR	FLOOR
FT	FOOT
FTG	FOOTING
FDN	FOUNDATION
GALV	GALVANIZED
GA	GAUGE
GC	GENERAL CONTRACTOR
GLU-LAM	GLUED LAMINATED WOOD
HAS	HEADED ANCHOR STUD
HS	HEADED STUD(S)
HP	HIGH POINT
HK	HOOK
HORZ	HORIZONTAL
IN	INCH
ID	INSIDE DIAMETER
IF	INSIDE FACE
INSUL	INSULATION
INT	INTERIOR
JNT	JOINT

STRUCTURAL ABBREVIATIONS

JBE	JOIST BEARING ELEVATION
JST(S)	JOIST(S)
K	KIPS
KIP	1 KIP = 1,000 LBS
KLF	KIPS PER FOOT
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
LW	LIGHT WEIGHT
LTL	LINTEL
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MAS	MASONRY
MO	MASONRY OPENING
MAT	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
ML	MICRO LAMINATED WOOD
MIN	MINIMUM
MISC	MISCELLANEOUS
M	MOMENT
NF	NEAR FACE
NEC	NECESSARY
NOM	NOMINAL
N	NORTH
N-S	NORTH-SOUTH
NTS	NOT TO SCALE
#	NUMBER
OC	ON CENTER
OPNG	OPENING
OPP	OPPOSITE
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
/	PER
PLK	PLANK
PL	PLATE
PT	POST TENSION
LBS	POUNDS
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
P/C	PRECAST CONCRETE
REBAR	REINFORCING BAR
REINF	REINFORCING OR REINFORCE
REQ'D	REQUIRED
REV	REVERSE
RTU	ROOF TOP UNIT
SCHED	SCHEDULE
SEC	SECTION
V	SHEAR
SHT	SHEET
SIM	SIMILAR
S	SOUTH
SPEC	SPECIFICATION
SQ	SQUARE
STD	STANDARD
STL	STEEL
STIFF	STIFFENER
SUPP	SUPPORT
TEMP	TEMPORARY OR TEMPERATURE
T	TENSION
THRU	THROUGH
T&B	TOP AND BOTTOM
TBE	TOP OF BEAM ELEVATION
TFE	TOP OF FOOTING ELEVATION
TPE	TOP OF PIER ELEVATION
TQ	TORQUE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTCIAL
WWF	WELDED WIRE FABRIC
W	WEST OR WIDE FLANGE
W/	WITH
W/O	WITHOUT
WD	WOOD
WP	WORK POINT

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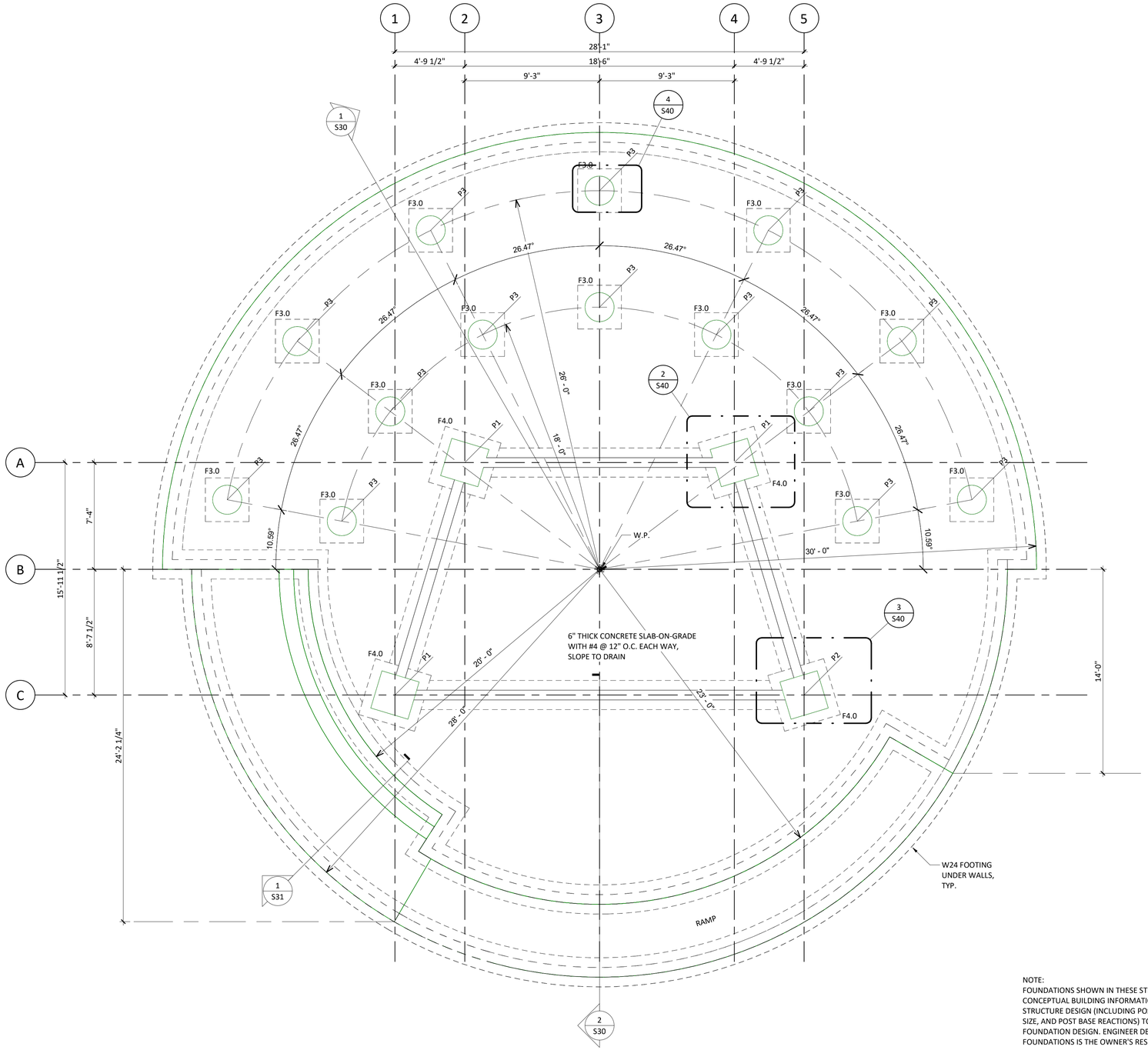
STRUCTURAL KEYNOTES & SCHEDULES

Project number	AE26012
Date	June 15, 2026
Drawn by	BA
Checked by	BA

S11

Scale: As indicated

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1 S20 STRUCTURAL PLAN
SCALE:1/4" = 1'-0"

FOUNDATION PLAN NOTES:

1. (XX) -DENOTES STRUCTURAL KEYNOTES, SEE DRAWING S11
2. CONTRACTOR TO VERIFY ALL DIMENSIONS, AND NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION OF NEW MATERIALS AND CONSTRUCTION.
3. WXX - DENOTES CONTINUOUS WALL FOOTING, SEE FOOTING SCHEDULE ON DRAWING S11.
4. FXX - DENOTES SPREAD FOOTING, SEE FOOTING SCHEDULE ON DRAWING S11.
5. PXX - DENOTES PIER FOUNDATION, SEE PIER SCHEDULE ON DRAWING S11.
6. TFE - DENOTES TOP OF FOOTING ELEVATION.
7. ADJUST FOUNDATIONS FOR UTILITIES ACCORDING TO THE FOLLOWING DETAILS. COORDINATE UTILITY LOCATION AND ELEVATION WITH MECHANICAL AND CIVIL.
   - DETAIL 4/S41 FOR DROPPED FOOTING
   - DETAIL 4/S42 FOR BLOCKOUT IN FOUNDATION WALL
   - DETAIL 5/S41 FOR STEPPED FOOTING
8. FOR SLAB-ON-GRADE CONSTRUCTION JOINT, SEE DETAIL 1/S42
9. FOR SLAB-ON-GRADE CONTRACTION JOINT, SEE DETAIL 2/S42
10. FOR CONCRETE CONSTRUCTION DETAILS, SEE DRAWING S42
11. REFER TO SOILS REPORT FOR REQUIRED SOIL MODIFICATIONS. REFER TO 1/S41 FOR EARTHWORK REQUIREMENTS FOR BUILDING SITE.
12. PLAN DIMENSIONS ARE TO EXTERIOR FACE OF FOUNDATION WALL ON FOUNDATION PLANS (UNLESS NOTED OTHERWISE).
13. (S) - DENOTES CONCRETE STEPPED FOUNDATION, SEE DETAIL 2/S41.

NOTE:
FOUNDATIONS SHOWN IN THESE STRUCTURAL WERE DESIGNED WITH CONCEPTUAL BUILDING INFORMATION. CONTRACTOR TO PROVIDE PE-CERTIFIED STRUCTURE DESIGN (INCLUDING POST BASE PLATE SIZE, ANCHORAGE LAYOUT & SIZE, AND POST BASE REACTIONS) TO STRUCTURAL ENGINEER TO CONFIRM FOUNDATION DESIGN. ENGINEER DESIGN COSTS ASSOCIATED FOR RE-DESIGN OF FOUNDATIONS IS THE OWNER'S RESPONSIBILITY.

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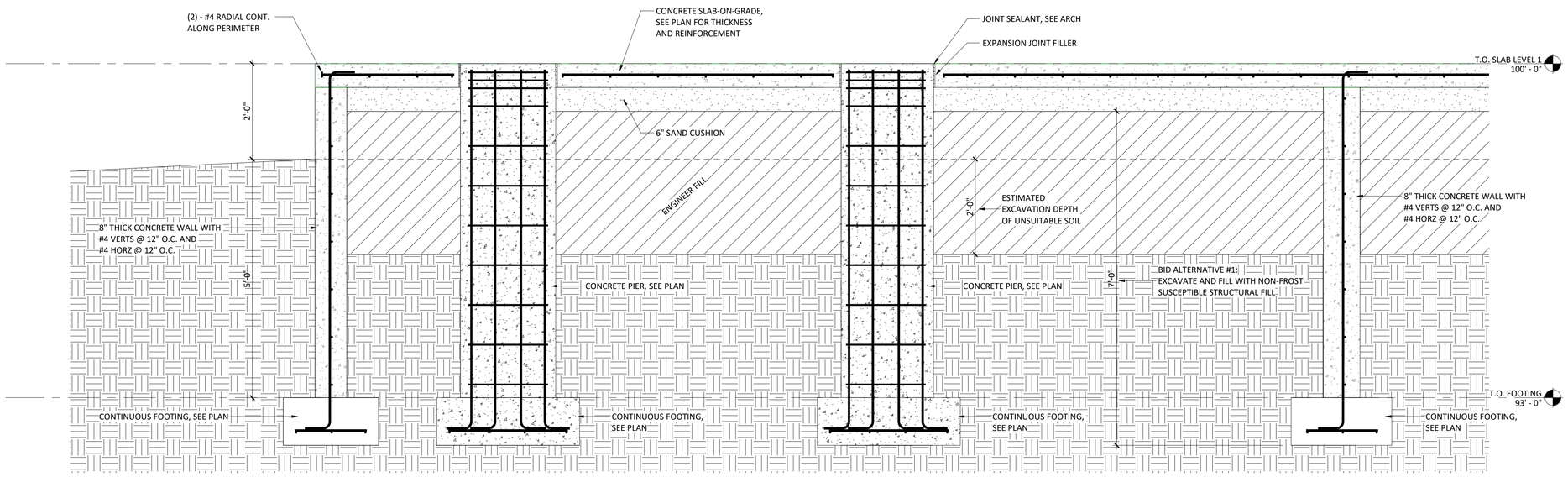
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STRUCTURAL PLAN

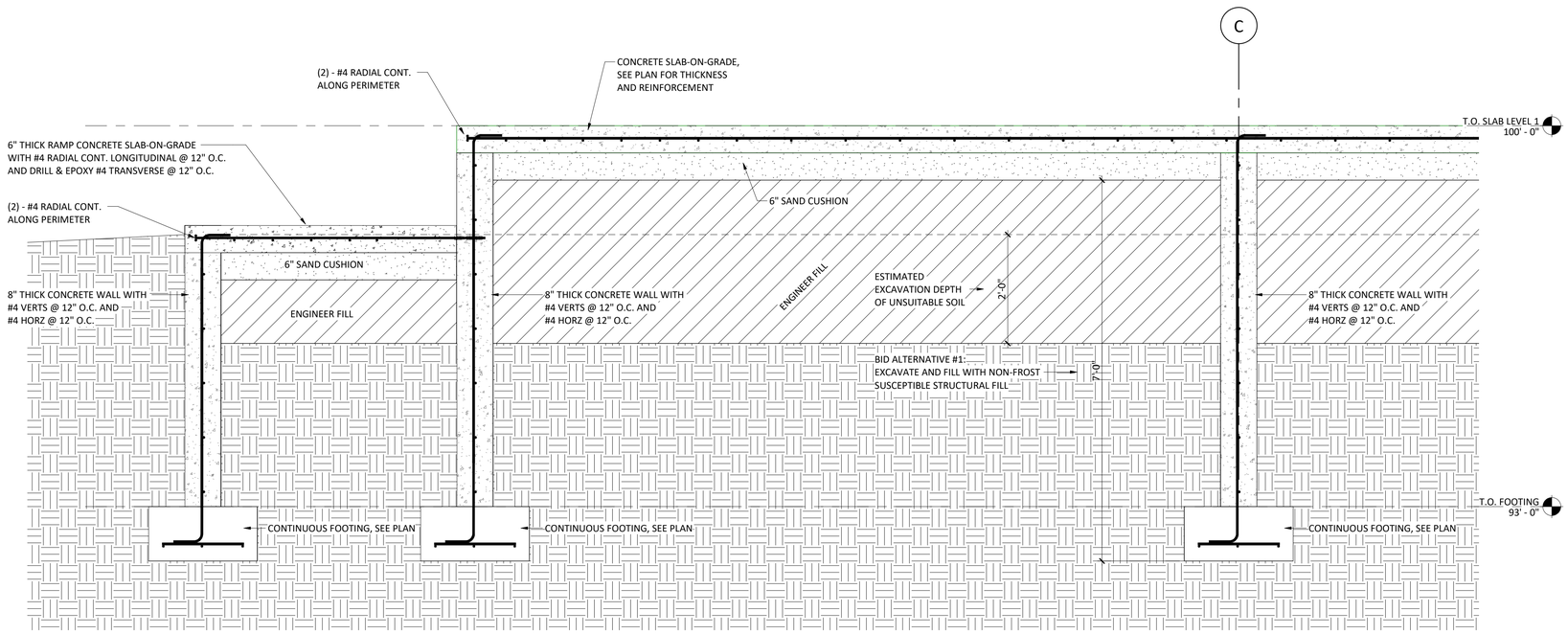
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Date	June 15, 2026
Drawn by	BA
Checked by	BA
Scale	As indicated

S20

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1 S30 SECTION
SCALE:3/4" = 1'-0"



2 S30 SECTION - RAMP
SCALE:3/4" = 1'-0"

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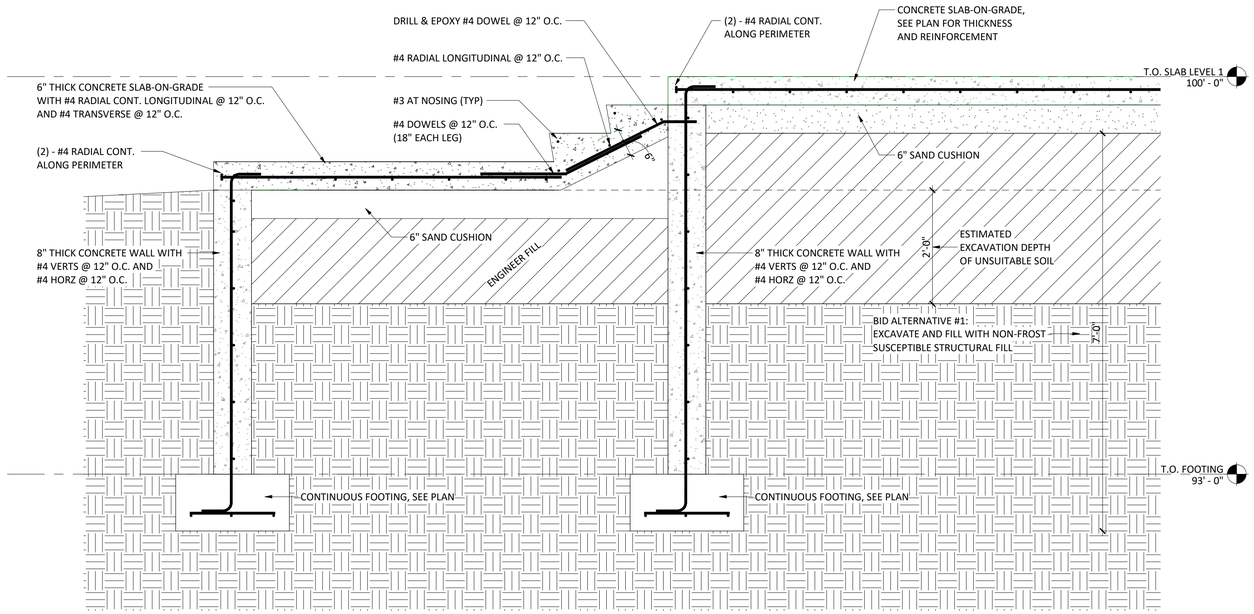
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UNIVERSITY OF MN - MORRIS

BUILDING SECTIONS AND ELEVATIONS

Project number	AE26012
Date	June 15, 2026
Drawn by	BA
Checked by	BA
Scale	3/4" = 1'-0"

S30

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1 / S31 SECTION - STAIRS
SCALE:3/4" = 1'-0"

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SIGNATURE:
NAME: BRYAN L. ASCHE
DATE: June 15, 2026
LICENSE NUMBER: 40855

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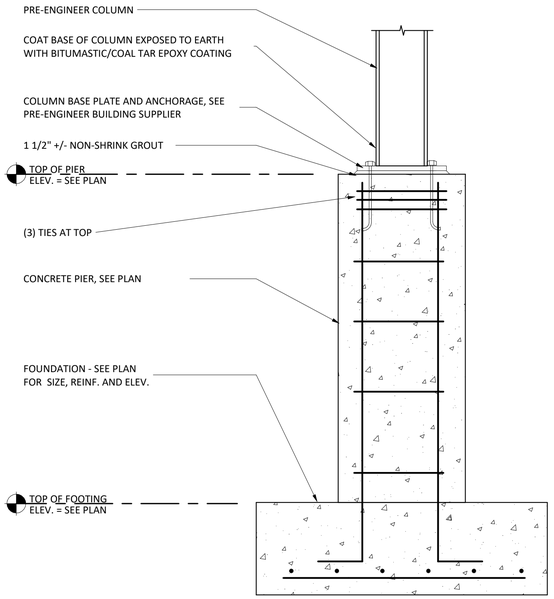
BUILDING SECTIONS AND ELEVATIONS

Project number	AE26012
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Drawn by	BA
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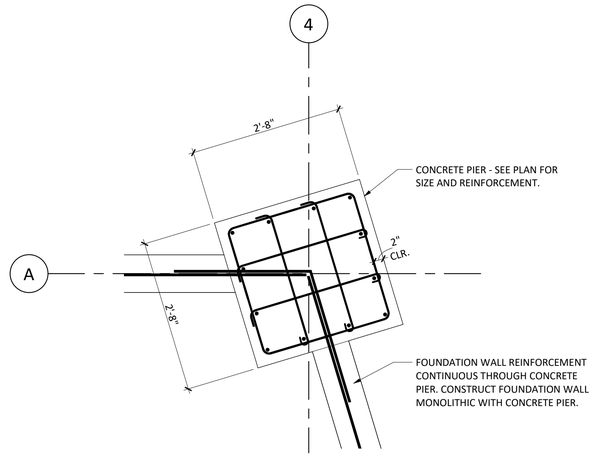
S31

Scale 3/4" = 1'-0"

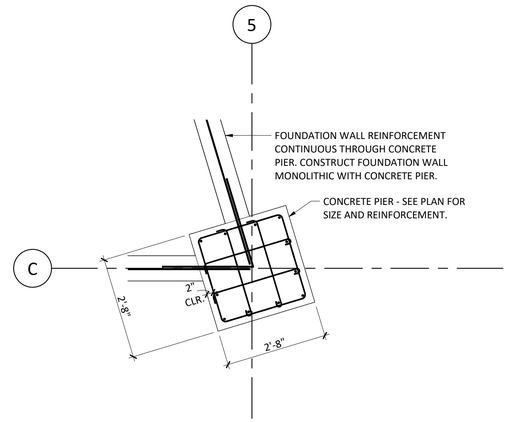
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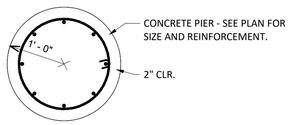
1 S40 CONCRETE PIER DETAIL
SCALE:NONE



2 S40 PLAN VIEW - PIER P1
SCALE:3/4" = 1'-0"



3 S40 PLAN VIEW - PIER P2
SCALE:1/2" = 1'-0"



4 S40 PLAN VIEW - PIER P3
SCALE:3/4" = 1'-0"

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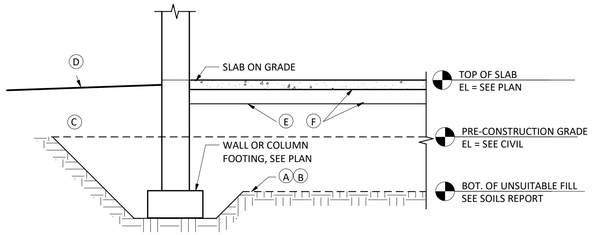
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FOUNDATION DETAILS

Project number	AE26012
Date	June 15, 2026
Drawn by	BA
Checked by	BA
Scale	As indicated

S40

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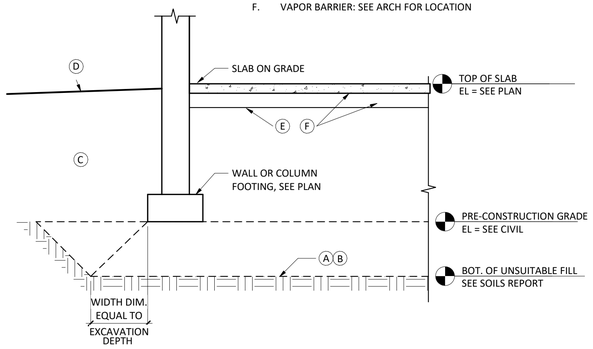


KEYNOTES:

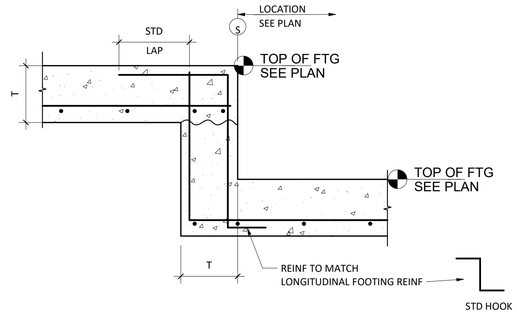
A. SUBGRADE: TO BE INSPECTED PRIOR TO CONCRETE PLACEMENT AND/OR BACKFILL.
B. NATIVE SOIL: SCARIFY AND RECOMPACT TO A MINIMUM OF 97% COMPACTION
C. BACKFILL: SATISFACTORY MATERIAL, COMPACT TO A MINIMUM 95%-98% COMPACTION.
D. FINAL GRADE: SLOPE AWAY FROM BUILDING. MINIMUM OF 1 INCH PER FOOT FOR TEN FEET. SEE CIVIL PLANS.
E. SAND CUSHION & CAPILLARY BARRIER: FREE DRAINING SAND WITH LESS THAN 40% PASSING A #4 SIEVE, LESS THAN 5% PASSING A #200 SIEVE.
F. VAPOR BARRIER: SEE ARCH FOR LOCATION

NOTE:

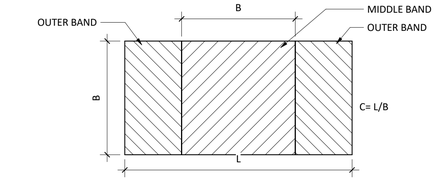
CONCRETE REINFORCEMENT NOT SHOWN FOR CLARITY.



1 S41 TYPICAL FOOTING & SLAB-ON-GRADE PREPARATION DETAIL
SCALE NONE

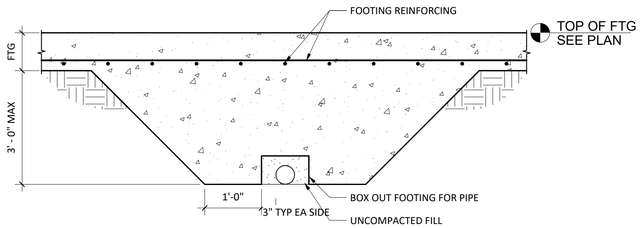


2 S41 STEPPED FOOTING
SCALE NONE

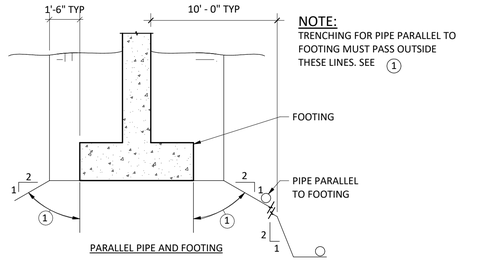


PLACE 2 / (C + 1) OF TOTAL TRANSVERSE REBAR IN MIDDLE BAND. PLACE REMAINDER OF TOTAL TRANSVERSE REBAR IN OUTER BANDS.

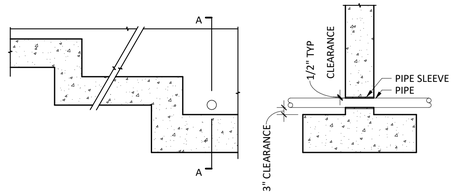
3 S41 RECTANGULAR FOOTING REBAR LAYOUT
SCALE NONE



4 S41 DROPPED FOOTING
SCALE NONE



NOTE:
TRENCHING FOR PIPE PARALLEL TO FOOTING MUST PASS OUTSIDE THESE LINES. SEE 1



NOTE:
SEE TYP STEPPED FOOTING DETAIL.

NOTE:
FOR PERPENDICULAR PIPE, FOOTING MUST BE STEPPED DOWN TO ALLOW PIPE PENETRATION TO PASS ABOVE FOOTING

5 S41 BURIED PIPE AT FOOTING
SCALE NONE

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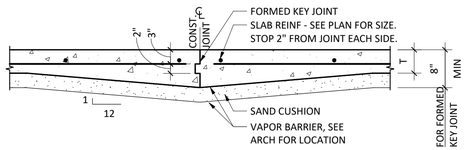
FOUNDATION SECTIONS & DETAILS

Project number	AE26012
Date	June 15, 2026
Drawn by	Author
Checked by	Checker

S41

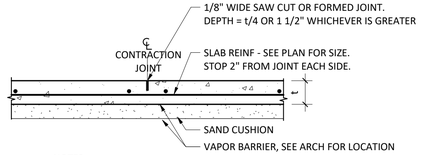
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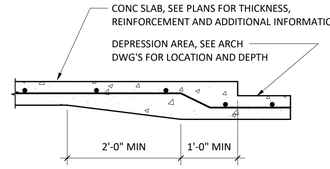
NOTE:
RETAINED-IN-PLACE GALVANIZED STEEL KEY FORM MAY BE USED IN LIEU OF FORMED KEY JOINT SHOWN. STEEL KEY FORM SHALL MATCH NOMINAL SLAB THICKNESS

1 S42 SLAB-ON-GRADE CONSTRUCTION JOINT
SCALE NONE

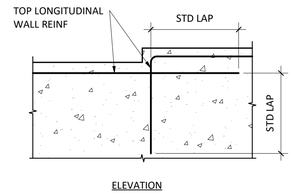


NOTES:
1. INSERT PREMOLDED PLASTIC, HARDBOARD, OR FIBERBOARD JOINT STRIP IN FRESH CONC OR SAW CUT AS SOON AS POSSIBLE AFTER SLAB FINISHING WITHOUT SPALLING OR DISLODGING AGGREGATE.
2. SLAB ON GRADE CONSTRUCTION JOINTS MAY BE SUBSTITUTED FOR SLAB ON GRADE CONTRACTION JOINTS AT CONTRACTOR'S OPTION.

2 S42 SLAB-ON-GRADE CONTRACTION JOINT
SCALE NONE

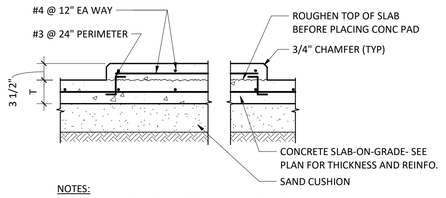


3 S42 RECESSED SLAB
SCALE NONE



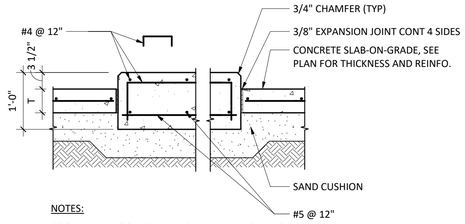
ELEVATION

4 S42 BLOCKOUT IN FOUNDATION WALL
SCALE NONE



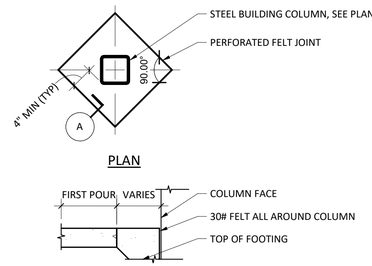
NOTES:
COORDINATE LOCATION AND SIZE WITH MECHANICAL.
MAINTAIN 6" CLEAR DISTANCE BETWEEN EDGE OF PAD AND EQUIPMENT ANCHORS.

5 S42 TYPICAL HOUSEKEEPING PAD
SCALE NONE

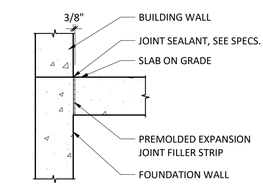


NOTES:
COORDINATE LOCATION AND SIZE WITH MECHANICAL.
MAINTAIN 6" CLEAR DISTANCE BETWEEN EDGE OF PAD AND EQUIPMENT ANCHORS.

6 S42 TYPICAL ISOLATION PAD
SCALE NONE

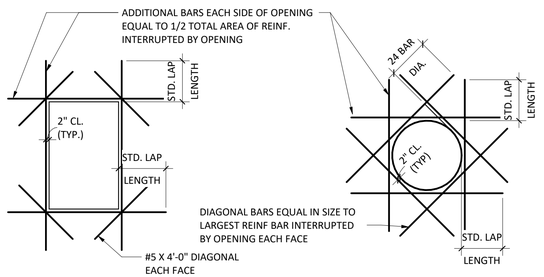


7 S42 TYP. FLOOR ISOLATION JOINT @ COLUMNS
SCALE NONE



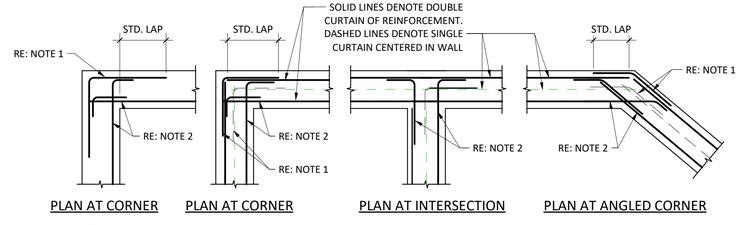
NOTES:
SLAB-ON-GRADE REINFORCEMENT NOT SHOWN FOR CLARITY.

8 S42 SLAB EXPANSION JOINT
SCALE NONE



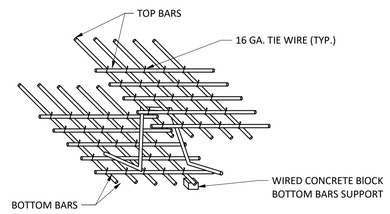
NOTE:
1. ALL OPENINGS 12" OR LARGER IN ANY DIRECTION SHALL BE REINFORCED IN ACCORDANCE WITH THIS DETAIL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
2. SEE OTHER CONTRACT DRAWINGS FOR WALL AND SLAB OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS.
3. SEE GENERAL NOTES FOR STANDARD LAP LENGTHS.

9 S42 ADDITIONAL REINF. @ WALL & STRUCTURAL SLAB OPENINGS
SCALE NONE



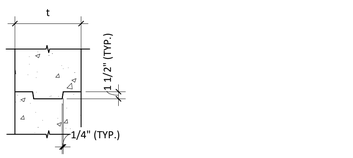
NOTE:
1. PROVIDE CORNER BARS WITH STANDARD LAP AS INDICATED
2. PROVIDE MAIN WALL REINFORCEMENT WITH STANDARD HOOK AT END, OR PROVIDE SEPARATE CORNER BARS WITH END HOOK AND LAP WITH MAIN WALL REINFORCEMENT.
3. CORNER BARS SHALL MATCH HORIZONTAL WALL REINFORCEMENT.
4. RE: GENERAL NOTES FOR STANDARD LAP LENGTHS

10 S42 HORIZONTAL REINF. @ CONCRETE WALL CORNERS AND INTERSECTIONS
SCALE NONE



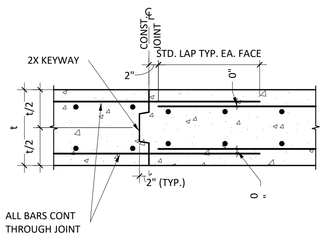
NOTE:
1. METAL BAR SUPPORTS. IF USED IN SLABS NOT ON GROUND, SHALL NOT MAKE CONTACT WITH FORMS.
2. REINFORCING BARS AND ACCESSORIES SHALL NOT BE IN CONTACT WITH ANY OTHER METAL INSTALLATION OR ACCESSORY EMBEDDED IN CONCRERTE. A MINIMUM OF 2" CLEARANCE SHALL BE PROVIDED IN ALL CASES.

11 S42 BAR AND CHAIR REINFORCEMENT SUPPORT
SCALE NONE



NOTE:
1. USE 2 X 4 NOMINAL KEYWAY IN WALLS WHERE t < 12". USE 2 X 6 NOMINAL KEYWAY WHERE t > 12".
2. ALL CONSTRUCTION JOINTS SHALL HAVE KEYWAYS AND CONTINUOUS REINFORCEMENT (OR DOWELS) UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.

12 S42 KEYWAY DETAIL
SCALE NONE



13 S42 WALL CONSTRUCTION JOINT
SCALE NONE

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