

FITNESS CENTER - STORM SHELTER

CAMP CROWDER TRAINING SITE

NEOSHO, MISSOURI

OWNER: STATE OF MISSOURI
MICHAEL L. PARSON, GOVERNOR

DEPARTMENT OF PUBLIC SAFETY
MISSOURI NATIONAL GUARD
OFFICE OF ADJUTANT GENERAL

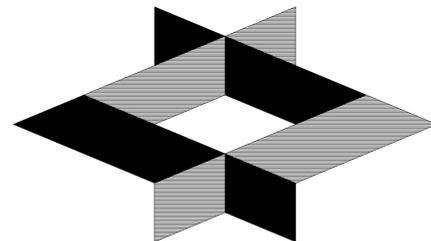
PROJECT MANAGEMENT: OFFICE OF ADMINISTRATION,
DIVISION OF FACILITIES MANAGEMENT,
DESIGN & CONSTRUCTION

DESIGNER: GLMV Architecture, Inc.

PROJECT NUMBER: T2027-01

SITE NUMBER: 6260

ASSET NUMBER: 8136260016

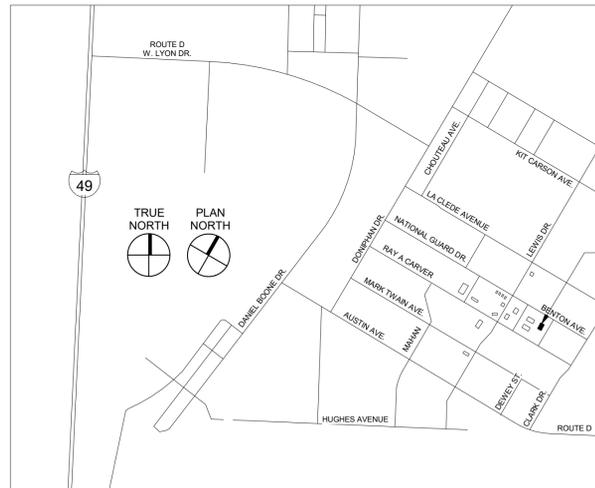


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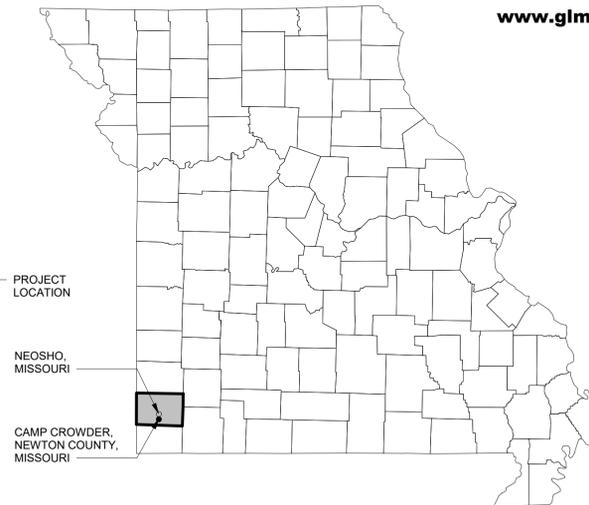
www.glmv.com

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VICINITY MAP



LOCATION MAP

SHEET NUMBER:

G-001

1 OF 32 SHEETS

UL-LISTED FIRE-RATED ASSEMBLIES

NOTES

- Design/System/Construction/Assembly Usage Disclaimer:
- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
 - Authorities Having Jurisdiction should be consulted before construction.
 - Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
 - When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
 - Only products which bear UL's Mark are considered Certified.
 - References to Canadian UL Listings have been removed.
 - Some alternate construction materials or optional components noted in the reference listing have been removed. Includes construction not applicable to this project. See original listing on UL website for complete listing.
 - The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.
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UL LISTED MATERIALS AND PRODUCTS NOTE:

- SPECIFIC MANUFACTURERS AS NOTED WITHIN THE UL LISTINGS REFERENCED AND INCLUDED WITHIN THIS CONSTRUCTION DOCUMENT SET SHALL BE CONSIDERED AS A BASIS-OF-DESIGN. See **Rigid Nonmetallic Conduit (DZKT) and Electrical Nonmetallic Tubing (FKHU)** categories in the UL Electrical Construction Equipment Directory for names of manufacturers.
- ADDITIONAL MANUFACTURERS SHALL BE CONSIDERED PROVIDED THAT:
 - PRODUCT UNDER CONSIDERATION IS INTENDED FOR USE IN THE SAME APPLICATION;
 - IS COMPRISED OF THE SAME COMPOSITION, MATERIALS, ETC. AS THE BASIS-OF-DESIGN; AND
 - SUCH PRODUCTS SHALL BEAR THE UL CERTIFICATION MARK.
- OTHER ALTERNATIVE UL LISTINGS OR BUILDING CODE ASSEMBLIES PROVIDING THE SAME LEVEL OF FIRE PROTECTION SHALL BE CONSIDERED FOR THE APPLICATION WHICH THE LISTING IS INTENDED. THIS REQUIRES PRELIMINARY REVIEW AND APPROVAL BY THE ARCHITECT PRIOR TO SUBMITTAL.

UL-263 - Fire Resistance Ratings - ANSI/UL 263 Certified for United States

See *General Information for Fire-Resistance Ratings - ANSI/UL 263 Certified for United States Design Criteria and Allowable Variances.*

Design No. U905

June 10, 2019

Bearing Wall Rating — 2 HR.
Nonbearing Wall Rating — 2 HR

This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7



Horizontal Section

- Concrete Blocks** — Various designs. Classification D-2 (2 hr). See Concrete Blocks category for list of eligible manufacturers.
- Mortar** — Blocks laid in full bed of mortar, nom. 3/8 in. thick, of not less than 2-1/4 and not more than 3-1/2 parts of clean sharp sand to 1 part Portland cement (proportioned by volume) and not more than 50 percent hydrated lime (by cement volume). Vertical joints staggered.
- Portland Cement Stucco or Gypsum Plaster** — [removed].
- Loose Masonry Fill** — If all core spaces are filled with loose dry expanded slag, expanded clay or shale (Rotary Kilm Process), water repellent vermiculite masonry fill insulation, or silicone treated perlite loose fill insulation add 2 hr to classification.
- Foamed Plastic** — (Optional-Not Shown) — 1-1/2 in. thick max. 4 ft wide sheathing attached to concrete blocks (Item 1).
ATLAS ROOFING CORP — "EnergyShield Pro Wall Insulation", "EnergyShield Pro 2 Wall Insulation", "EnergyShield CGF Pro and EnergyShield Ply Pro"
CARLISLE COATINGS & WATERPROOFING INC — Type R2+ SHEATHIE
FIRESTONE BUILDING PRODUCTS CO L L C — "Enverge™ CI Foil Exterior Wall Insulation" and "Enverge™ CI Glass Exterior Wall Insulation"
HUNTER PANELS, A DIVISION OF CARLISLE CONSTRUCTION MATERIALS, LLC — Types "Xci-Glass A", "Xci Foil (Class A)", "Xci 286"
RMX OPERATING L L C — Types "TSX-8500", "ECOMAXci FR", "TSX-8510", "ECOMAX xi FR White", "ECOMAXci", "ECOMAXci FR Air Barrier", "Thermasheath-XP", "Thermasheath", "Durasheath", "Thermasheath-3", "Durasheath-3"
THE DOW CHEMICAL CO — Types ThermoX Sheathing, ThermoX Light Duty Insulation, ThermoX Heavy Duty Insulation, ThermoX Metal Building Board, ThermoX White Finish Insulation, ThermoX ci Exterior Insulation, ThermoX XARMOR ci Exterior Insulation, ThermoX IH Insulation, ThermoX Plus Liner Panel, ThermoX Heavy Duty Plus (HDP) and TUFF-R™ ci Insulation

5A. **Building Units** — [removed]

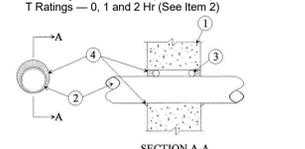
* Indicates such products shall bear the UL Certification Mark for jurisdictions employing the UL Certification.

Last Updated on 2019-06-10

XHEZ - Through-penetration Firestop Systems

System No. W-J-2029
May 19, 2005

F Ratings — 1 and 2 Hr (See Item 2)
T Ratings — 0, 1 and 2 Hr (See Item 2)



SECTION A-A

- Wall Assembly** — Min 4-1/2 in. (114 mm) thick lightweight or normal weight (100-150 pcf or 1600 - 2400 kg/m³) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Diam of opening shall be 7/8 to 1 in. (22 to 25 mm) larger than the outside diam of nonmetallic pipe or conduit (Item 2).

See **Concrete Blocks (CAZT)** category in the Fire Resistance Directory for names of manufacturers.

- Through Penetrants** — One nonmetallic pipe or conduit to be centered within the firestop system. The annular space for max 1-1/4 in. (32 mm) diam pipe or conduit shall be min 0 in. (0 mm, point contact) to max 7/8 in. (22 mm). The annular space for pipe or conduit larger than nom 1-1/4 in. (32 mm) diam shall be min 1/2 in. (13 mm) to max 1 in. (25 mm). Pipe or conduit to be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipes or conduits may be used:
 - Polyvinyl Chloride (PVC) Pipe** — Nom 2 in. (51 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
 - Polyvinyl Chloride (PVC) Pipe** — Nom 3 in. (76 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) piping system.
 - Chlorinated Polyvinyl Chloride (CPVC) Pipe** — Nom 3 in. (76 mm) diam (or smaller) SDR11 CPVC pipe for use in closed (process or supply) piping systems.
 - Rigid Nonmetallic Conduit** — Nom 3 in. (76 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA No. 70).
 - Electrical Nonmetallic Tubing (ENT)** — Nom 1 in. (25 mm) diam (or smaller) ENT formed of PVC, installed in accordance with the National Electrical Code (NFPA No. 70).
 - Acrylonitrile Butadiene Styrene (ABS) Pipe** — Nom. 2 in. (51 mm) diam (or smaller) Schedule 40 solid core or cellular core ABS pipe for use in closed (process or supply) or vented (drain, waste or vent) piping systems.
See **Rigid Nonmetallic Conduit (DZKT) and Electrical Nonmetallic Tubing (FKHU)** categories in the UL Electrical Construction Equipment Directory for names of manufacturers.

The hourly T Rating is dependent on the hourly rating of the wall assembly, the pipe or conduit size and whether the pipe is intended for use as a closed or vented system, as shown in the following table:

Nom Pipe Diam In. (mm)	Wall Assem Rating Hr	Closed (c) or Vented (v)	T Rating Hr
1/2 to 3 (13 - 76)	1	v	1
1/2 to 1-1/4 (13 - 32)	1	c	1
1/2 to 1-1/4 (13 - 32)	2	v	2
1/2 to 1-1/4 (13 - 32)	2	c	1
2 (51)	1	v	0
2 (51)	2	v	0

- Packing Material** — (Optional) — Mineral wool or fiberglass insulation or polyethylene backer rod firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of caulk fill material.

- Fill, Void or Cavity Materials** — **Cauk, Sealant or Putty** — Min thickness of 5/8 in. (16 mm) and 1-1/4 in. (32 mm) of caulk or putty for 1 and 2 hr rated wall assemblies, respectively, applied within annulus between pipe or conduit and periphery of the opening, flush with both surfaces of wall assembly. At the point contact location between pipe or conduit and wall, a min 1/2 in. (13 mm) diam bead of caulk or putty shall be applied at the pipe or conduit/wall interface on both surfaces of wall assembly.
3M COMPANY — CP 25WB+, MP+ Stix, IC 25WB+ caulk or FB-3003 WT sealant. (Note: CP 25WB+ not suitable for use with CPVC pipes).

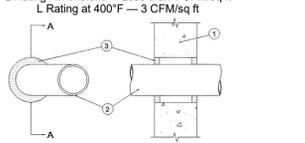
* Indicates such products shall bear the UL Certification Mark for jurisdictions employing the UL Certification.

XHEZ - Through-penetration Firestop Systems

System No. W-J-1311
May 30, 2019

F Ratings — 1 and 2 Hr (See Item 3)
T Rating — 0 Hr

L Rating At Ambient — Less than 1 CFM/sq ft
L Rating at 400°F — 3 CFM/sq ft



SECTION A-A

- Wall Assembly** — Min 5 in. (127 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600 - 2400 kg/m³) concrete wall. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 5-1/2 in. (127 mm).

See **Concrete Blocks (CAZT)** category in the Fire Resistance Directory for names of manufacturers.

- Through Penetrants** — One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between penetrant and periphery of opening shall be min 0 in. (0 mm) (point contact) to max 1 in. (25 mm). The penetrant may be installed at an angle not greater than 45 degrees from perpendicular. Penetrant to be rigidly supported on both sides of wall assembly. The following types and sizes of penetrants may be used:
 - Steel Pipe** — Nom 4 in. (102 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
 - Iron Pipe** — Nom 4 in. (102 mm) diam (or smaller) cast or ductile iron pipe.
 - Conduit** — Nom 4 in. (102 mm) diam (or smaller) rigid steel conduit or steel electrical metallic tubing (EMT).
 - Copper Tubing** — Nom 4 in. (102 mm) diam (or smaller) Type M (or heavier) copper tubing.
 - Copper Pipe** — Nom 4 in. (102 mm) diam (or smaller) Regular (or heavier) copper pipe.

- Fill, Void or Cavity Materials** — **Cauk** — Min 5/8 in. (16 mm) thickness of caulk applied within annulus, flush with both surfaces of wall assembly. Min 1/2 in. (13 mm) diam bead of caulk shall be applied at the penetrant/concrete interface at the point contact location on both surfaces of wall assembly.
SHERWIN WILLIAMS CO — WHITE LIGHTING FlameBuster High heat Silicone or WHITE LIGHTING FlameBuster Intumescent Silicone

* Indicates such products shall bear the UL Certification Mark for jurisdictions employing the UL Certification.

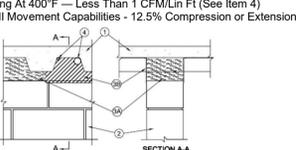
XHBN - Joint Systems

See General Information for Joint Systems
System No. HW-D-0098
June 04, 2010

Assembly Rating — 1 and 2 Hr (See Item 4)
Nominal Joint Width - 1 in.

L Rating At Ambient — Less Than 1 CFM/Lin Ft (See Item 4)
L Rating at 400°F — Less Than 1 CFM/Lin Ft (See Item 4)

Class II and III Movement Capabilities - 12.5% Compression or Extension



SECTION A-A

- Floor Assembly** — The fire rated fluted steel unit/concrete floor assembly shall be constructed of the materials and in a manner described in the individual D700 or D900 Floor-Ceiling Design in the UL Fire Resistance Directory and shall include the following construction features:
 - Steel Floor and Form Units** — Max 3 in. (76 mm) deep galv steel fluted floor units.
 - Concrete** — Min 2-1/2 in. (64 mm) thick reinforced concrete as measured from top plane of the floor units.
 - Spray-Applied Fire Resistive Materials** — (Optional) — (Not Shown) — Prior to the installation of the forming material and fill, void or cavity material (Items 3A, 3B) the steel floor units may be sprayed with a min 5/16 in. (8 mm) to max 1-3/4 in. (44 mm) thickness of fire resistive material.
GCP APPLIED TECHNOLOGIES INC — Type MK-6-HY
ISOLATEK INTERNATIONAL — Type 300

- Roof Assembly** — (Not Shown) — As an alternate to the floor assembly, a fire rated fluted steel deck roof assembly may be used. The roof assembly shall be constructed of the materials and in the manner described in the individual P900 Series Roof-Ceiling Design in the UL Fire Resistance Directory. The hourly rating of the roof assembly shall be equal to or greater than the hourly rating of the wall assembly. The roof assembly shall include the following construction features:
 - Steel Roof Deck** — Max 3 in. (76 mm) deep galv steel fluted roof deck.
 - Roof Insulation** — Min 2-1/4 in. (57 mm) thick poured insulating concrete, as measured from the top plane of the floor units.

- Wall Assembly** — Min 6 in. (152 mm) thick steel-reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) structural concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. See **Concrete Blocks (CAZT)** category in the Fire Resistance Directory for names of manufacturers.

- Joint System** — Max separation between bottom of floor or roof and top of wall at time of installation of joint system is 1 in (25 mm). The joint system is designed to accommodate a max 12.5 percent compression or extension from its installed width. The joint system shall consist of the following:
 - Forming Material** — Nom 4 pcf (64 kg/m³) mineral wool batt insulation compressed and firmly packed to completely fill the flutes and the gap between the top of the wall and bottom of the floor or roof as a permanent form. Batt insulation cut to the shape of the fluted steel deck, approx 33 percent larger than the flutes. Pieces compressed and installed vertically into the flutes above the top of the wall. Additional pieces of batt insulation, min 6 in. wide, installed edge-first into joint opening between bottom of fluted steel deck and top of wall, parallel with joint direction, such that batt sections are compressed min 33 percent in joint opening. Compressed batt sections are flush with both surfaces of wall. Adjoining lengths of batt to be tightly butted with butted seams spaced min 48 in. (1.22 m) apart along the length of the joint.
ROCK WOOL MANUFACTURING CO — Delta Board

- Forming Material** — (Optional-Not Shown) Performed mineral wool plugs, formed to the shape of the fluted floor units, friction fit to completely fill the flutes above the ceiling runner. The plugs shall be flush with both wall surfaces. Additional forming material, described in item 3A, to be used in conjunction with the plugs to fill the gap between the top of the wall and the bottom of the steel floor units.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP777 Speed Plugs

- Fill, Void or Cavity Material** — Min 1/8 in. (3.2 mm) wet thickness (min 1/16 in. or 1.6mm dry thickness) of fill material sprayed or troweled on each side of the wall to completely cover mineral wool forming material and to overlap a min of 1/2 in. (13 mm) onto wall and steel deck on both sides of wall. When spray-applied fire resistive material is applied to the steel deck, the fill material is to overlap the wall a min of 1/2 in. (14 mm) and to overlap the spray-applied fire resistive material a min of 2 in. (51 mm) on both sides of wall. When through-penetrants (Item 4) are installed within flute, the fill material shall overlap a min 1/2 in. (13 mm) onto the periphery of each penetrant, on both sides of wall.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP672 Firestop Spray or CFS-SP WB Firestop Joint Spray

- Through-Penetrants** — Max of two penetrants may be installed parallel with and within the flutes of the steel floor or roof deck. The annular space between penetrants and steel deck or spray-applied fire resistive material on steel deck shall be min 0 in. (point contact) and the annular space between penetrants within the flutes shall be min 2 in. (51 mm). Penetrants to be rigidly supported on both sides of the floor or wall assembly. The following types and sizes of penetrants may be used:
 - Polyvinyl Chloride (PVC) Pipe** — Nom 1-1/2 in. (38 mm) diam (or smaller) Schedule 40 solid core PVC pipe for use in closed (process or supply) piping systems.
 - Rigid Nonmetallic Conduit** — Nom 1-1/2 in. (38 mm) diam (or smaller) Schedule 40 PVC conduit installed in accordance with the National Electrical Code (NFPA 70).
 - Steel Conduit or Tubing** — Nom 1/2 in. (13 mm) diam rigid steel conduit or steel electrical metallic tubing (EMT) installed in accordance with the National Electrical Code (NFPA No. 70).

When Through-Penetrant(s) installed in flute of steel deck, the hourly rating of the joint system is 1 hr.

When Through-Penetrant(s) installed in flute of steel deck, L Ratings do not apply.

* Indicates such products shall bear the UL Certification Mark for jurisdictions employing the UL Certification.

Last Updated on 2010-06-04

ASHRAE 90.1-2019

THE PROJECT HAS BEEN DESIGNED TO THE ASHRAE 90.1-2019 STANDARDS FOR THE ENERGY EFFICIENCY BUILDING ENVELOPE REQUIREMENTS:

- SPACE CONDITIONING CATEGORY: 4A
- NON-RESIDENTIAL CONDITIONED SPACE (NO SEMI-HEATED SPACES)
- COMPLIANCE PATH: PRESCRIPTIVE
- ROOFS (INSUL ABOVE DECK): R-30 (CONTINUOUS INSULATION)
- WALLS, ABOVE GRADE (MASS): R-5 (CONTINUOUS INSULATION)
- WALLS, BELOW GRADE: NONE
- FLOORS: NONE
- SLAB-ON-GRADE FLR. (UNHEATED): R-15 FOR 24"
- OPAQUE DOORS (HOLLOW METAL SWINGING): U-0.370
- VERTICAL FENESTRATION 0-40% OF WALL (FIXED): 0.36 (ASSEMBLY MAX U) 0.36 (ASSEMBLY MAX SHGC) 1.10 (ASSEMBLY MIN. VT/SHGC)
- VERTICAL FENESTRATION 0-40% OF WALL (ENTRANCE DOOR): 0.63 (ASSEMBLY MAX U) 0.33 (ASSEMBLY MAX SHGC) 1.10 (ASSEMBLY MIN. VT/SHGC)

CODE ANALYSIS SUMMARY

PROJECT INFORMATION:

CAMP CLARK TRAINING SITE
18159 SOUTH K HIGHWAY
NEVADA, MISSOURI 64772
VERNON COUNTY
MONG PROJECT NUMBER: T1930-01
GLMV PROJECT NUMBER: 00948-19001

FITNESS CENTER - STORM SHELTER
(NEW CONSTRUCTION PROJECT)

JURISDICTION: MISSOURI OFFICE OF ADMINISTRATION - FACILITIES MANAGEMENT, DESIGN & CONSTRUCTION
MISSOURI NATIONAL GUARD

FIRE DEPARTMENT: NEVADA FIRE DEPARTMENT

BUILDING INFORMATION - INTERNATIONAL BUILDING CODE (IBC)

- MAIN OCCUPANCY TYPE (303.4): A-3 (ASSEMBLY)
- ADDITIONAL (MIXED) OCCUPANCIES (CHAPTER 3): N/A
- CONSTRUCTION TYPE (TABLE 601): I-B

(NON-COMBUSTIBLE / NO FIRE-RESISTIVE REQUIREMENTS)

- BASIC ALLOWABLE AREA (TABLE 506.2): 9,500 S.F.
- W/ AUTOMATIC SPRINKLER SYSTEM (1-STORY): 38,000 S.F.
- BASIC ALLOWABLE HEIGHT (TABLE 504.3 & 504.4): 3-STORIES / 75'-0"
- AREA MODIFICATIONS: N/A
- FRONTAGE INCREASE (EQ. 5-5): If = (260/260-0.25) 30/30
If = 0.75
Aa = (38,000 S.F. (9,500 S.F. x 0.75))
Aa = 45,125 S.F.

TOTAL AREA INCREASE (EQ. 5-1): 45,125 S.F. / FLR.

MAXIMUM ALLOWABLE AREA: 3,920 S.F.

ACTUAL (GROSS) BUILDING AREA: 1-STORY / 16' - 8"

ACTUAL HEIGHT: 250 FEET (A-3 OCCUPANCY)

DEAD END CORRIDOR TRAVEL (SECTION 1020.4): NOT TO EXCEED 20 FEET

EGRESS

- REQUIRED EXITS PER STORY (TABLE 1006.3.1): 2
- EXITS PROVIDED IN DESIGN: 2
- MAX. EXIT ACCESS TRAVEL DISTANCE (TABLE 1017.2): 250 FEET (A-3 OCCUPANCY)
- DEAD END CORRIDOR TRAVEL (SECTION 1020.4): NOT TO EXCEED 20 FEET

BUILDING ELEMENTS FIRE-RESISTANCE RATING REQUIREMENTS (TABLE 601)

PRIMARY STRUCTURAL FRAME: 0-HOURS ROOF CONSTRUCTION: 0-HOURS

INTERIOR BEARING WALLS: 0-HOURS NON-BEARING WALLS & PARTITIONS: 0-HOURS

EXTERIOR BEARING WALLS: 0-HOURS EXTERIOR: 0-HOURS

FLOOR CONSTRUCTION: 0-HOURS INTERIOR: 0-HOURS

BUILDING OCCUPANCY LOAD (TABLE 1004.1.2)

ROOM:	OCC. PER 100 S.F. AREA	OCC. PER RM.
FREE WEIGHTS AREA	1/50 S.F.	925 S.F.
MACHINE AREA	1/50 S.F.	1,279 S.F.
MEN'S LOCKER ROOM	1/50 S.F.	349 S.F.
WOMEN'S LOCKER ROOM	1/50 S.F.	349 S.F.
JANITOR'S CLOSET	1/300 S.F.	42 S.F.
STORAGE	1/300 S.F.	235 S.F.
MECHANICAL/ELECTRIC	1/300 S.F.	189 S.F.
TOTAL:		64 OCCUPANTS

BUILDING SEPARATIONS: (SEE NFPA CODE SUMMARY)

PLUMBING FIXTURES (TABLE 2902.1)

FIXTURE COUNTS	PER OCC.	TOTAL REQ.	PROVIDED
WATER CLOSETS:	1/125 MALE	3	3
	1/65 FEMALE	1	3
LAVATORIES:	1/200 OCC.	1	4
SHOWERS:	-	-	-
OTHER - SERVICE SINK:	1 REQUIRED	1	1
DRINKING FOUNTAINS:	1/500 OCC.	1	4

NFPA 101 - LIFE SAFETY CODE

OCCUPANCY (SECTION 6.1.2.1): ASSEMBLY

SEPARATION OF OCCUPANCIES (SECTION 12.3.2): ASSEMBLY & MECHANICAL: 1-HOUR

FIRE ALARM SYSTEM: PER NFPA 70, 72 & UFC 3-600-01

FIRE PROTECTION SYSTEMS: AUTO. SPRINKLER SYSTEM PER NFPA 13

PORTABLE EXTINGUISHING EQUIP. PER NFPA

CODES OF RECORD:

INTERNATIONAL BUILDING CODE (IBC) EDITION: 2015

INTERNATIONAL PLUMBING CODE (IPC) EDITION: 2015

INTERNATIONAL MECHANICAL CODE (IMC) EDITION: 2015

NATIONAL ELECTRICAL CODE (NEC) EDITION: 2015

NATIONAL FIRE PROTECTION AGENCY (NFPA 101) EDITION: 2015

AMERICANS WITH DISABILITIES ACT (ADA) EDITION: 2010

ARCHITECTURAL BARRIERS ACT (ABA) (EXEMPT)

ASHRAE STANDARD 90.1 EDITION: 2019

SHEET METAL AND AIR-CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION (SMACNA)

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

AMERICAN CONCRETE INSTITUTE (ACI)

LAND USE: PROJECT IS LOCATED ON LAND OWNED BY THE NATIONAL GUARD & IS OUTSIDE THE JURISDICTION OF THE CITY OF NEVADA & VERNON COUNTY.

ACCESSIBLE ALL SPACES ARE ACCESSIBLE. ADJACENT PARKING LOTS HAVE AN ACCESSIBLE ROUTE TO THE BUILDING.

ACTIVE FIRE PROTECTION SYSTEMS:

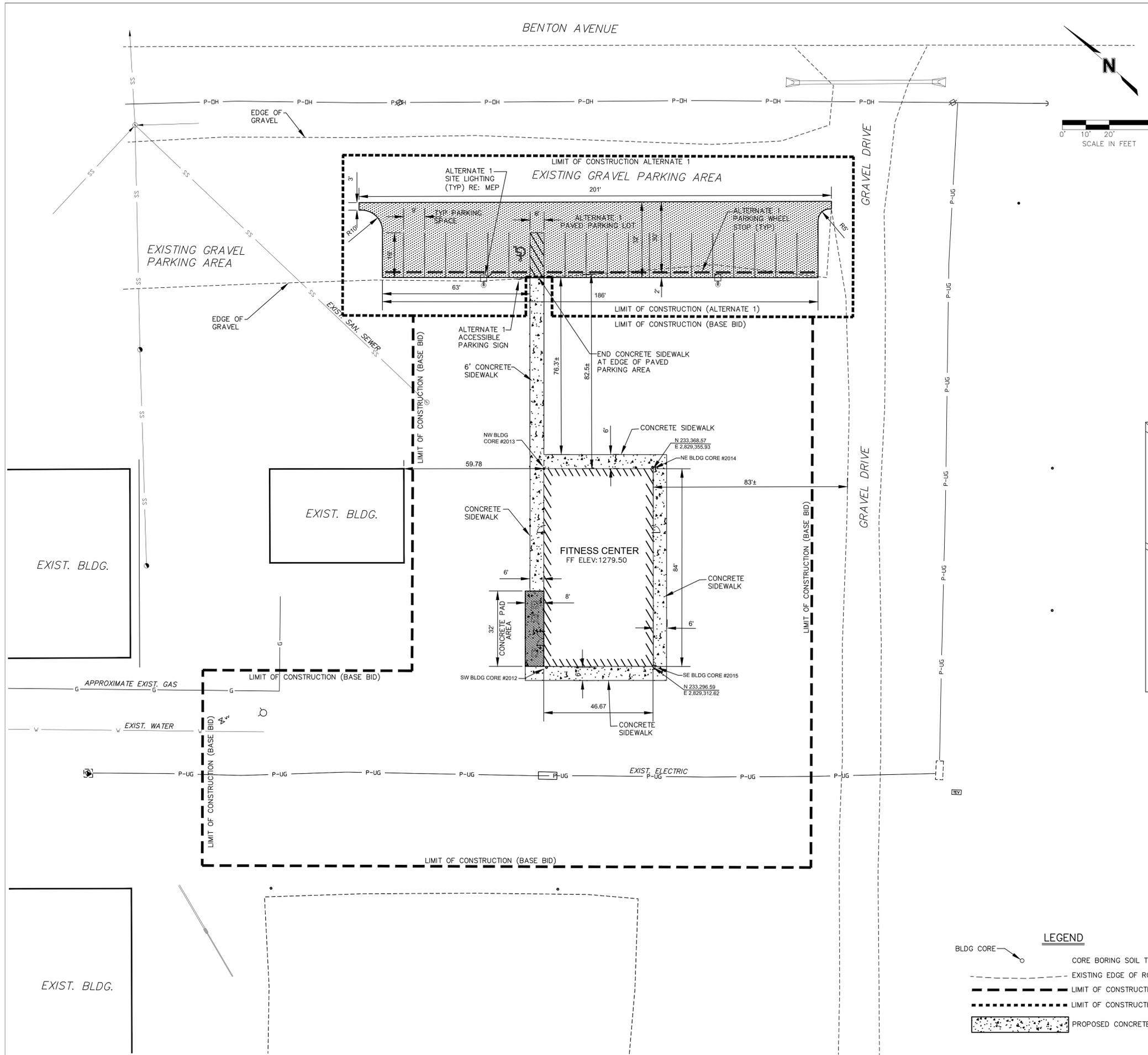
ARMY NATIONAL GUARD, DG 415-5 (GENERAL FACILITIES INFORMATION DESIGN GUIDE):

- (SECTION 1-13.15) - INCORPORATE EFFICIENT AND COST-EFFECTIVE FIRE PROTECTION AND DETECTION SYSTEMS IN ALL ARNG FACILITY DESIGNS.

(FIRE PROTECTION SYSTEMS - UFGS 21 13 00) - REGARDLESS OF THE CONSTRUCTION TYPE, ANY FACILITIES MEETING THE FOLLOWING CRITERIA SHOULD BE PROVIDED WITH AN APPROPRIATE FIRE PROTECTION SYSTEM.

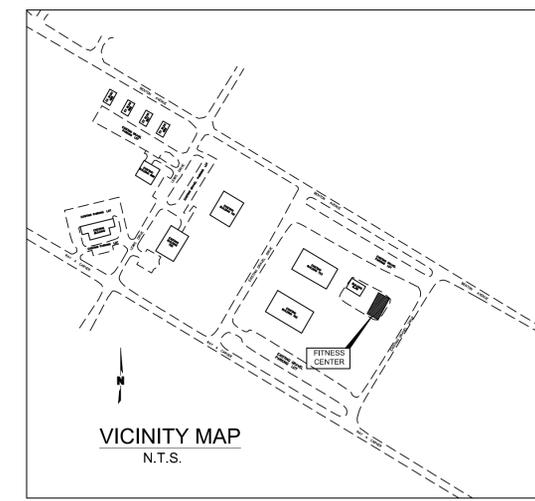
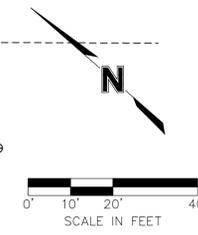
OPERATIONAL IMPAIRMENT WOULD REDUCE THE OPERATIONAL READINESS AND RESPONSIVENESS OF THE STRATEGIC OR TACTICAL DEFENSIVE AND OFFENSIVE CAPABILITY.

**



GENERAL SITE PLAN NOTES:

1. ALL DIMENSIONS ARE TO CENTER OF STRIPE(S), EDGE OF PAVEMENT, FACE OF CURB OR FACE OF BUILDING UNLESS OTHERWISE NOTED. ALL RADII ARE 2.5' UNLESS OTHERWISE NOTED.
2. SLOPE FINISH GRADES, SIDEWALKS, AND PAVING AWAY FROM BUILDING FOR POSITIVE DRAINAGE.
3. GENERAL CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS, GRADES, AND DIMENSIONS ON SITE AND REPORT ALL MAJOR DISCREPANCIES TO ARCHITECT.
4. REMOVE ALL ITEMS AS NOTED. PROTECT ALL EXISTING ITEMS TO REMAIN.
5. ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH SPECIFICATIONS.
6. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS AND STRUCTURAL PLANS FOR DIMENSIONS OF THE BUILDING AND CONCRETE PADS.
7. SITE LIGHTING SHOWN FOR REFERENCE ONLY. (RE:MEP)
8. EXCAVATION & EMBANKMENT MATERIAL: 13,500 CUBIC FEET FOR BASE BID (INCLUDES LOW VOLUME FILL MATERIAL UNDER BUILDING PAD - COMPACTED IN PLACE).
9. SUBGRADE LOW VOLUME FILL (MoDOT TYPE 5 AGGREGATE): 5,670 SQUARE FEET (MIN. 18" THICKNESS) UNDER BUILDING PAD.
10. SUBGRADE LOW VOLUME FILL (MoDOT TYPE 5 AGGREGATE): 6,750 SQUARE FEET (MIN. 18" THICKNESS) ALTERNATE 1 PARKING AREA.
11. TOPSOIL MATERIAL: 9,000 SQUARE FEET (MIN. 6" THICKNESS) LANDSCAPE ADJACENT TO BUILDING



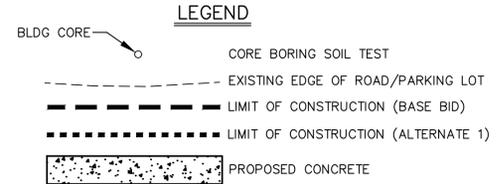
BENCHMARK INFORMATION

BENCHMARK NO. 1 = ELEV. 1272.69 NAVD 88 DATUM
 3/4" I.P. ON NORTHEASTERLY CORNER RAY A. CARVER & FIRST ROAD EAST OF LEWIS DRIVE, 55± NORTH OF RAY A. CARVER & 20± EAST OF N-S ROAD, IN LINE W/SOUTH SIDE OF CONCRETE PARKING LOT TO THE EAST.

SITE CONTROL

HORIZONTAL CONTROL NO. 1 N233,251.0; E2,828,761.4
 3/4" I.P. ON NORTHEASTERLY CORNER RAY A. CARVER & FIRST ROAD EAST OF LEWIS DRIVE, 55± NORTH OF RAY A. CARVER & 20± EAST OF N-S ROAD, IN LINE W/SOUTH SIDE OF CONCRETE PARKING LOT TO THE EAST.

HORIZONTAL CONTROL NO. 2 N232,965.4; E2,829,244.4
 3/4" I.P. ON NORTHEASTERLY CORNER RAY A. CARVER & SECOND ROAD EAST OF LEWIS DRIVE, 80± NORTH OF RAY A. CARVER & 25± EAST OF N-S ROAD, IN LINE W/SOUTH SIDE OF CONCRETE PARKING LOT TO THE WEST.



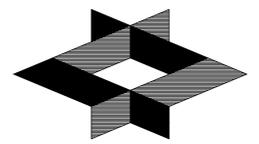
STATE OF MISSOURI
 MIKE PARSON,
 GOVERNOR

07/01/2020



JERALD FRANKLIN NORTON, JR.
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 MO# E-25158

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OFFICE OF ADJUTANT GENERAL
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DEPARTMENT OF PUBLIC SAFETY
 Missouri Army National Guard

Camp Crowder Training Site
 Design Master Plan Facilities, Prototype
 Neosho, Missouri
 PROJECT NO. T2027-01

FITNESS CENTER - STORM SHELTER

PROJECT # T2027-01
 SITE # 6260
 ASSET # 8136260016

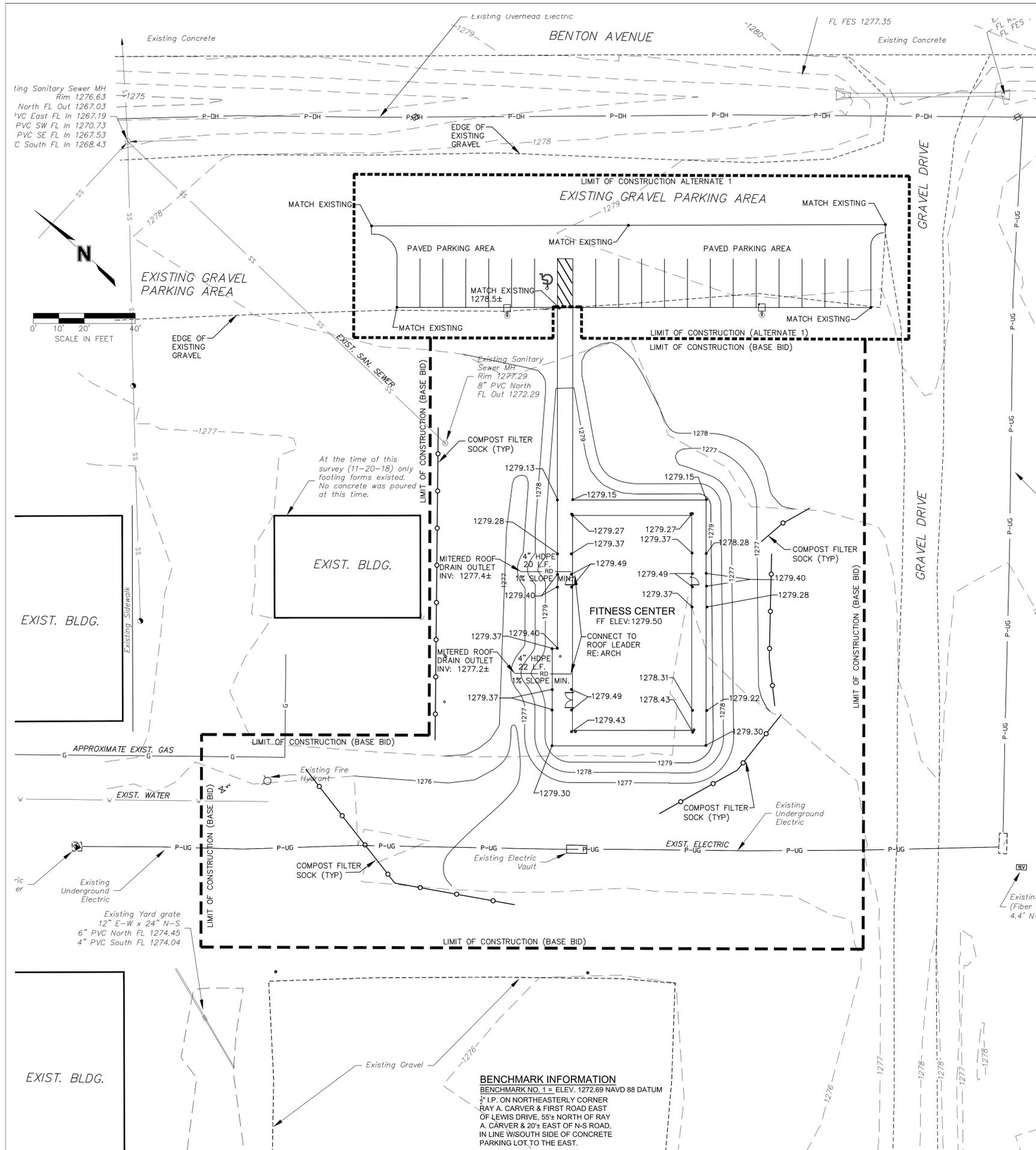
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ISSUE DATE:	07/02/2020

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 DRAWN BY: JFW
 CHECKED BY: JFN
 DESIGNED BY: JFW

SHEET TITLE:
SITE PLAN

SHEET NUMBER:
C-101
 3 OF 32 SHEETS
 07/02/2020





EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF ALL EROSION & SEDIMENT CONTROL MEASURES AND PRACTICES THROUGHOUT THE PROJECT. ANY AND ALL FINES ASSOCIATED WITH EROSION CONTROL VIOLATIONS WILL BE THE CONTRACTOR'S RESPONSIBILITY.
2. EROSION CONTROL IS THE CONTRACTOR'S RESPONSIBILITY. THIS PLAN SHOULD BE USED AS A GUIDE AND REPRESENTS THE MINIMUM EROSION CONTROL DEVICES REQUIRED.
3. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. ADDITIONAL EROSION & SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
4. CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL EROSION & SEDIMENT CONTROL DEVICES AFTER EACH RAINFALL EVENT.
5. THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES IN ADDITION TO THOSE LISTED TO ENSURE THAT SILT WILL NOT LEAVE THE PROJECT CONFINES.
6. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION & SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED WITH A HEALTHY STAND OF PERMANENT VEGETATION.
7. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AT COMPLETION OF CONSTRUCTION.
8. THE CONTRACTOR SHALL ENSURE THAT ALL DRAINAGE STRUCTURES, FLUMES, PIPES, ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF ACCEPTANCE.
9. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY STABILIZATION AS REQUIRED.
10. THE CONTRACTOR SHALL PROVIDE A TEMPORARY CONSTRUCTION ENTRANCE FOR VEHICULAR TRAFFIC AS REQUIRED.
11. ALL EROSION CONTROL DEVICES SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE SPECIFICATIONS AND PLANS.
12. REFERENCE DETAIL SHEET FOR TYPICAL EROSION CONTROL DEVICE INSTALLATION.
13. THE CONTRACTOR WILL BE REQUIRED TO CLEAN THE STREETS OF DEPOSITED MUD AS FREQUENTLY IN ORDER TO KEEP THEM USABLE AND TO CONTROL DUST.
14. SEE TEMPORARY VEGETATION REQUIREMENT NOTES ON THIS SHEET FOR EXPOSED SOIL WHERE NO ACTIVITY WILL OCCUR FOR MORE THAN 14 DAYS.
15. CONTRACTOR IS RESPONSIBLE FOR PHASED INSTALLATION OF EROSION CONTROL BMP (BEST MANAGEMENT PRACTICE) IN ORDER TO PREVENT SEDIMENT FROM BREACHING THE LIMITS OF DISTURBANCE.

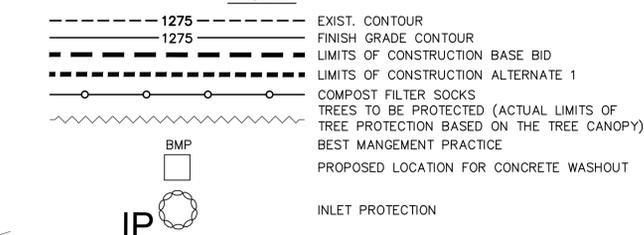
POLLUTION PREVENTION PROCEDURE NOTES:

1. HANDLING AND DISPOSAL OF HAZARDOUS MATERIALS:
 - DO: PREVENT SPILLS
USE PRODUCTS UP
FOLLOW LABEL DIRECTIONS FOR DISPOSAL
REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING TRASH
RECYCLE WASTES WHENEVER POSSIBLE
 - DON'T: DON'T POUR WASTE INTO SEWERS OR WATERWAYS ON THE GROUND
DON'T POUR WASTE DOWN THE SINK, FLOOR DRAIN OR SEPTIC TANKS
DON'T BURY CHEMICALS OR CONTAINERS, OR DISPOSE OF THEM WITH OTHER WASTE
DON'T BURN OR MIX CHEMICALS OR CONTAINERS
DON'T WASH SEDIMENT DOWN STORM SEWER INLETS
2. CONTAINERS SHALL BE PROVIDED FOR COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS TO BE USED ON-SITE. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL.
3. NO WASTE MATERIALS SHALL BE BURIED ON-SITE.
4. MIXING, PUMPING, TRANSFERRING OR OTHERWISE HANDLING CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH OR STORM DRAIN.
5. EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC., SHALL BE PERFORMED ONLY IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS.
6. CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW DIRECTLY TO STORM SEWERS, STREAMS, DITCHES, LAKES, ETC WITHOUT BEING TREATED. A CONCRETE WASHOUT AREA SHALL BE PROVIDED.
7. ALL PAINT, SOLVENTS, PETROLEUM PRODUCTS AND PETROLEUM WASTE PRODUCTS, AND STORAGE CONTAINERS (SUCH AS DRUMS, CANS, OR CARTONS) SHALL BE STORED ACCORDING TO BMP (BEST MANAGEMENT PRACTICE). THE MATERIALS EXPOSED TO PRECIPITATION SHALL BE STORED IN WATERTIGHT, STRUCTURALLY SOUND, CLOSED CONTAINERS. ALL CONTAINERS SHALL BE INSPECTED FOR LEAKS OR SPILLAGE DURING THE ONCE PER WEEK INSPECTION OF BMP (BEST MANAGEMENT PRACTICE). IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO SOIL, THE SOIL SHALL BE DUG UP AND PROPERLY DISPOSED OF. SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER OR PRODUCT DESIGNED FOR THAT PURPOSED AND DISPOSED OF AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. THESE MATERIALS WILL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH MODNR REQUIREMENTS.
8. STATE LAW REQUIRES THE PARTY RESPONSIBLE FOR A PETROLEUM PRODUCT SPILL IN EXCESS OF 50 GALLONS TO REPORT THE SPILL TO MoDNR (573-634-2436) AS SOON AS PRACTICAL AFTER DISCOVERY. FEDERAL LAW REQUIRES THE RESPONSIBLE PARTY TO REPORT ANY RELEASE OF OIL IF IT REACHES OR THREATENS A SEWER, LAKE, CREEK, STREAM, RIVER, GROUNDWATER, WETLAND, OR AREA, LIKE A ROAD DITCH, THAT DRAINS INTO ONE OF THE ABOVE.
9. SUFFICIENT TEMPORARY TOILET FACILITIES TO SERVE THE NUMBER OF WORKERS ON THE SITE SHALL BE PROVIDED. THE FACILITIES SHALL BE SERVICED FREQUENTLY TO MAINTAIN A SANITARY CONDITIONS.

GENERAL NOTES:

1. CONTRACTOR SHALL HAVE ALL EROSION CONTROL MEASURES INSTALLED PRIOR TO GRADING.
2. ELEVATIONS AT BUILDING PERIMETER ARE FINISH GRADE (TOP OF SLAB OR TOP OF MULCH)
3. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES FOR LOCATION OF ALL UNDERGROUND UTILITY SERVICES BEFORE BEGINNING EXCAVATION.
4. ROOF DRAIN SYSTEM SHALL BE PVC PIPING AT 1% MIN. SLOPE UNLESS OTHERWISE NOTED W/HDPE MITERED DRAIN OUTLETS. REFER TO ARCH'L PLANS FOR ROOF DOWNSPOUT DETAILS, LOCATIONS AND CONNECTION TYPES.
5. MAXIMUM FINISHED SLOPE SHALL NOT EXCEED 4 HORIZONTAL TO 1 VERTICAL.

LEGEND



BENCHMARK INFORMATION
 BENCHMARK NO. 1 = ELEV. 1272.69 NAVD 88 DATUM
 1/4" I.P. ON NORTHEASTERLY CORNER
 RAY A. CARVER & FIRST ROAD EAST
 OF LEWIS DRIVE, 55± NORTH OF RAY
 A. CARVER & 20± EAST OF N-S ROAD,
 IN LINE W/SOUTH SIDE OF CONCRETE
 PARKING LOT TO THE EAST.

07/01/2020



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Design Master Plan Facilities,
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FITNESS CENTER -
 STORM SHELTER

PROJECT # T2027-01

SITE # 6260

ASSET # 8136260016

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 CHECKED BY: JFN
 DESIGNED BY: JWS

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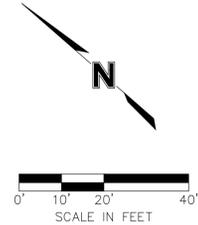
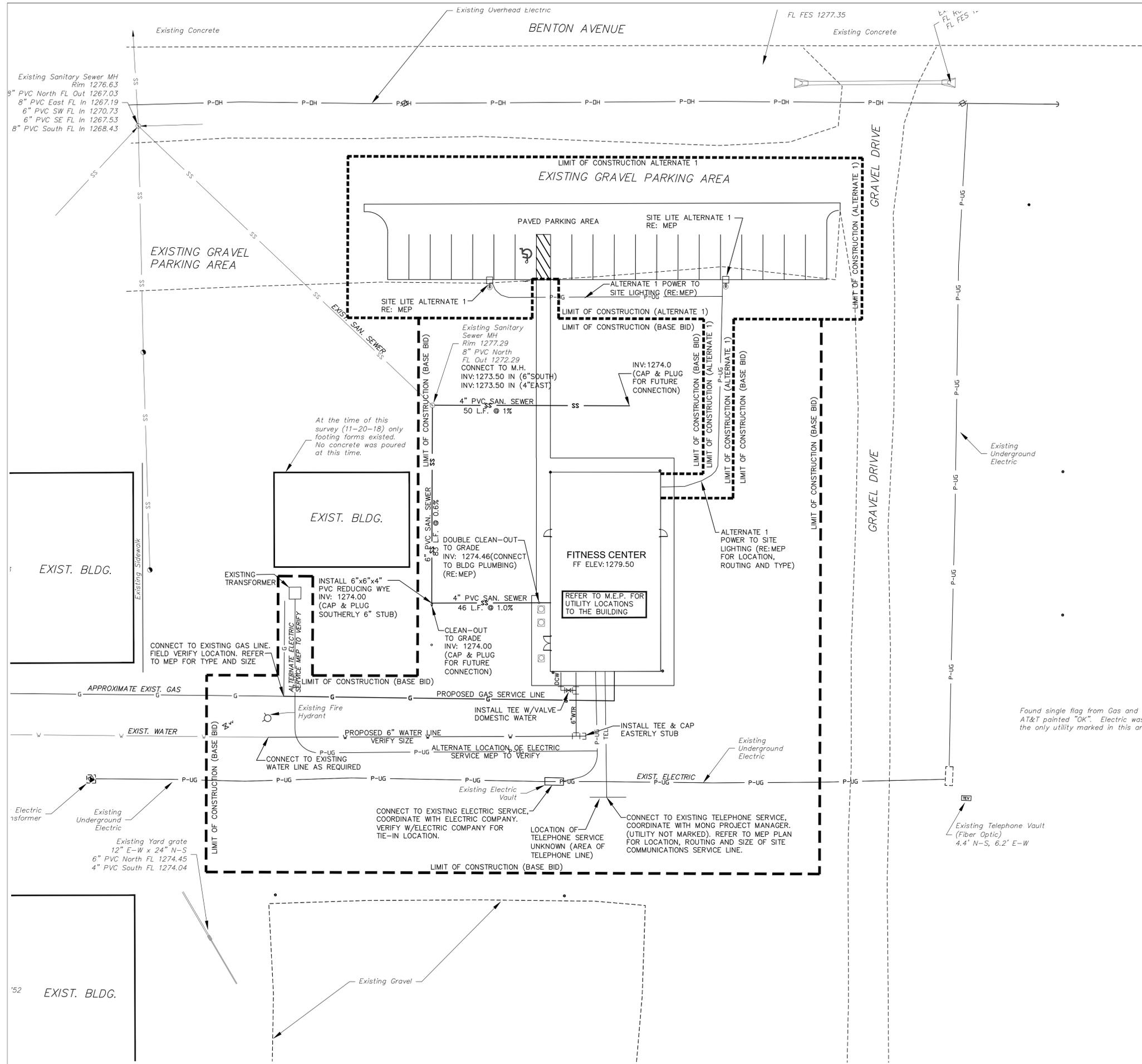
**GRADING
 DRAINAGE
 AND EC PLAN**

SHEET NUMBER:

C-102

4 OF 32 SHEETS

07/02/2020



GENERAL UTILITY NOTES:

1. NECESSARY PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING UTILITY SERVICES AND MAINS. ANY DAMAGE TO THEM SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
2. IT SHALL BE DISTINCTLY UNDERSTOOD THAT FAILURE TO SPECIFICALLY MENTION WORK WHICH IS REQUIRED TO COMPLETE THE PROJECT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PERFORM SUCH WORK.
3. THE CONTRACTOR SHALL CALL 1-800-344-7483 AT LEAST 48 WORKING HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.
4. ALL PUBLIC WATER AND SANITARY SEWER MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
5. ALL PRIVATE WATER AND SANITARY SEWER MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.
6. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS PROVIDED BY OWNER AND FIELD CONDITIONS WHEN POSSIBLE, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF ALL EXISTING UTILITIES BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS WELL IN ADVANCE OF TRENCHING. IF THE CLEARANCES ARE LESS THAN SPECIFIED ON THE PLANS OR 18", WHICHEVER IS LESS, CONTACT OLSSON TO REPORT ANY DISCREPANCIES.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF ALL REQUIRED NECESSARY SHEETING, SHORING, BRACING, AND SPECIAL EXCAVATION MEASURES REQUIRED ON THE PROJECT TO MEET OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS PURSUANT TO THE INSTALLATION OF THE WORK INDICATED ON THE DRAWINGS. OLSSON ACCEPTS NO RESPONSIBILITY FOR THE DESIGN TO INSTALL SAID ITEMS.
8. THE CONTRACTOR SHALL INCLUDE IN THE CONTRACT PRICE DAILY RECORD KEEPING OF THE AS-BUILT CONDITION OF ALL UNDERGROUND UTILITIES ASSOCIATED WITH THE PROJECT.
9. THE CONTRACTOR SHALL INCLUDE IN THE CONTRACT PRICE ALL MATERIAL AND LABOR ASSOCIATED WITH THE TESTING OF THE SANITARY SEWER AS REQUIRED BY THE SPECIFICATIONS.
10. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO FINAL CONNECTION OF UTILITY SERVICES.
11. ALL WATER AND SANITARY SEWER TRENCHING AND BEDDING SHALL BE PER SPECIFICATIONS.
12. COORDINATE NUMBER, SIZE, AND LOCATION OF ELECTRIC CONDUIT & PULL STRINGS WITH ELECTRIC/UTILITY COMPANY.
13. FOR CONTINUATION OF ALL BUILDING UTILITIES AND BUILDING CONNECTION LOCATIONS REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING PLANS.
14. REFER TO ARCH'L PLANS FOR ROOF DRAIN DOWNSPOUTS LOCATIONS AND CONNECTION DETAILS.

WATER NOTES

1. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO THE PERMANENT CONNECTION OF SERVICES.
2. MAINTAIN 10' HORIZONTAL SEPARATION (MINIMUM) BETWEEN WATER MAINS AND SANITARY SEWER MAINS. MAINTAIN 18" VERTICAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWER LINES.
3. REFER TO M.E.P. PLAN FOR LOCATION AND SIZE OF BACKFLOW PREVENTION FOR FIRE LINE.

SANITARY SEWER NOTES

1. SANITARY SEWER APPURTENANCES SHALL COMPLY WITH THE SPECIFICATIONS.
2. SANITARY SEWER CLEAN-OUTS LOCATED IN TRAFFIC AREAS SHALL HAVE TRAFFIC RATED FRAMES AND COVERS.
3. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO PERMANENT CONNECTION OF SERVICES.
4. REFER TO MEP PLANS FOR BUILDING SANITARY SEWER CONNECTION LOCATIONS 5' OUTSIDE BUILDING FOUNDATION.

LEGEND

- SS PROPOSED SANITARY SEWER
- W PROPOSED WATER LINE
- TEL PROPOSED COMMUNICATIONS
- GAS PROPOSED GAS LINE
- P-UG PROPOSED UNDERGROUND ELECTRIC
- LIMIT OF CONSTRUCTION BASE BID
- - - - - LIMIT OF CONSTRUCTION ALTERNATE 1



BID DOCUMENTS

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SITE # 6260
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DRAWN BY: EWS
CHECKED BY: JFN
DESIGNED BY: EWS

**UTILITY
PLAN**

SHEET NUMBER:
C-103
5 OF 32 SHEETS
07/02/2020

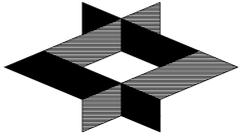


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DESIGNED BY: EWS

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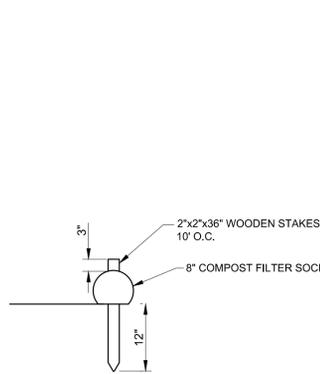
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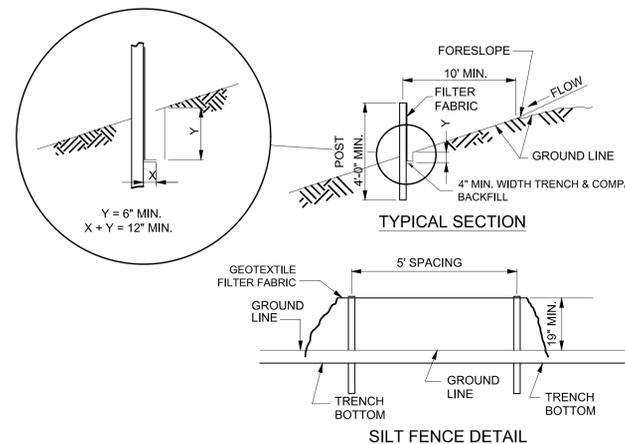
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6 OF 32 SHEETS

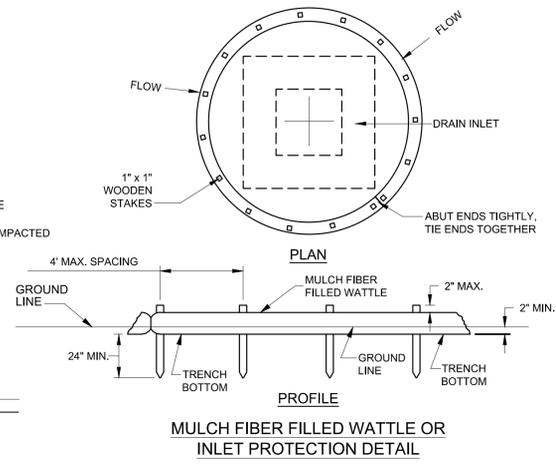
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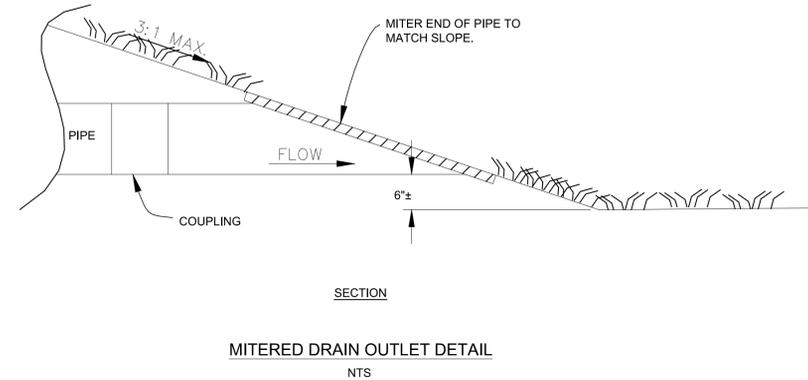
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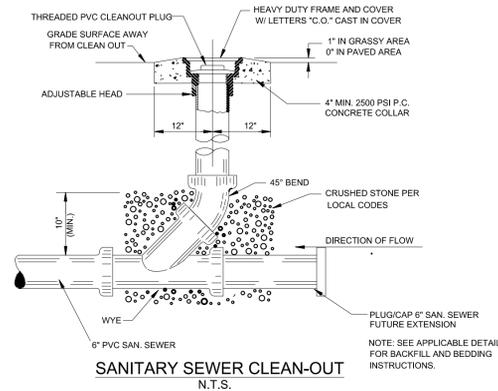
SILT FENCE DETAIL



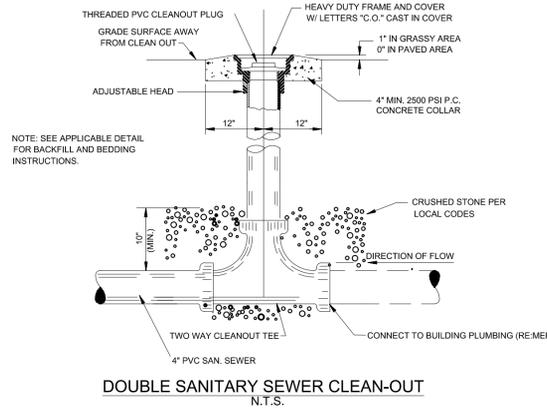
MULCH FIBER FILLED WATTLE OR
 INLET PROTECTION DETAIL



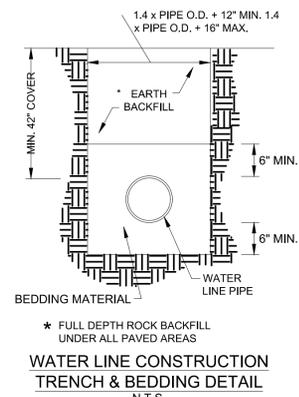
MITERED DRAIN OUTLET DETAIL
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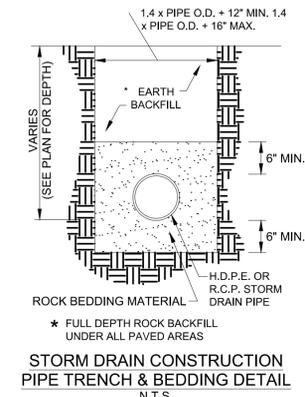
SANITARY SEWER CLEAN-OUT
 N.T.S.



DOUBLE SANITARY SEWER CLEAN-OUT
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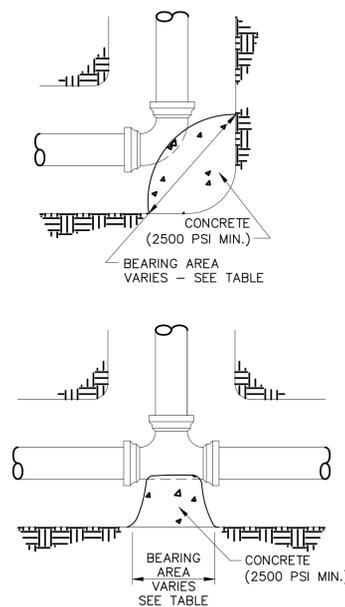


WATER LINE CONSTRUCTION
 PIPE TRENCH & BEDDING DETAIL
 N.T.S.



STORM DRAIN CONSTRUCTION
 PIPE TRENCH & BEDDING DETAIL
 N.T.S.

NOTE:
 ALL TRENCHES ACROSS STREETS, ALLEYS, AND DRIVEWAYS SHALL BE BACKFILLED TO NATURAL OR FINISHED GRADE WITH APPROVED GRANULAR MATERIAL AS SOON AS CONDITIONS PERMIT. THE GRADE IS TO BE MAINTAINED UNTIL COMPACTED OR APPROVED BY THE ENGINEER.

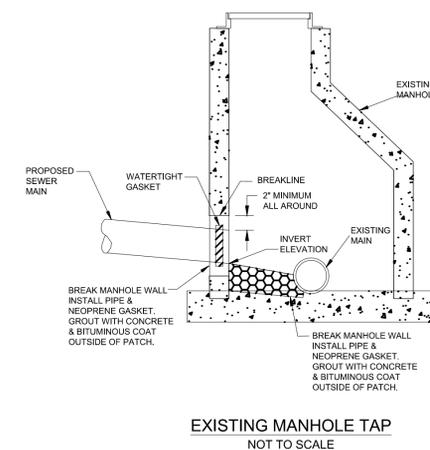


THRUST BLOCK DETAILS
 NOT TO SCALE

WATER LINE SIZE	MINIMUM THRUST BLOCKING AREA
6" DIA. OR SMALLER	6 SQUARE FEET
8" DIA.	8 SQUARE FEET
12" DIA.	12 SQUARE FEET

REQUIRED ON TEES, ELLS, PLUGS, CAPS, VALVES, ETC.

REQUIRED ON TEES, ELLS, PLUGS, CAPS, VALVES, ETC.

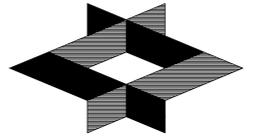


EXISTING MANHOLE TAP
 NOT TO SCALE



JERALD FRANKLIN NORTON, JR.
 PROFESSIONAL ENGINEER
 MO# E-25158

BID DOCUMENTS



GLMV Architecture
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 GLMV Architecture, Inc
 MO State Certificate of Authority #F00364807

olsson

OLSSON - CIVIL ENGINEERING
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Project No. 018-3101-C www.olsson.com
 MO State Certificate of Authority #001592

**OFFICE OF ADJUTANT
 GENERAL
 DIVISION OF FACILITIES
 MANAGEMENT,
 DESIGN AND
 CONSTRUCTION
 DEPARTMENT OF
 PUBLIC SAFETY
 Missouri Army National Guard**

Camp Crowder Training Site

Design Master Plan Facilities,
 Prototype
 Neosho, Missouri
 PROJECT NO. T2027-01

FITNESS CENTER -
 STORM SHELTER

PROJECT # T2027-01
 SITE # 6260
 ASSET # 8136260016

REVISION: _____
 DATE: _____
 REVISION: _____
 DATE: _____
 REVISION: _____
 DATE: _____
 ISSUE DATE: 07/02/2020

CAD DWG FILE:
 T2027-01_6260_8136260016_C-501.DWG
 DRAWN BY: EWS
 CHECKED BY: JFN
 DESIGNED BY: EWS

SHEET TITLE:

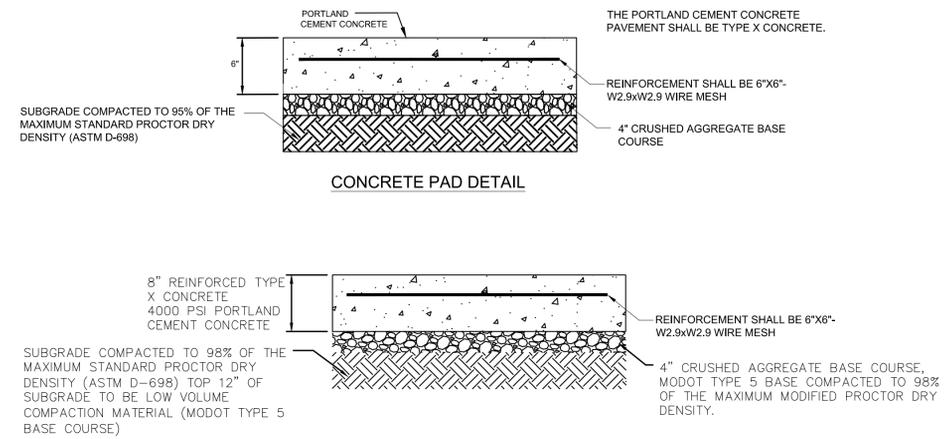
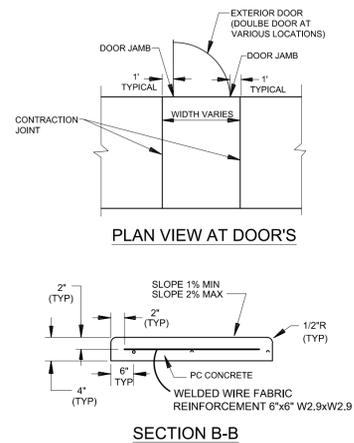
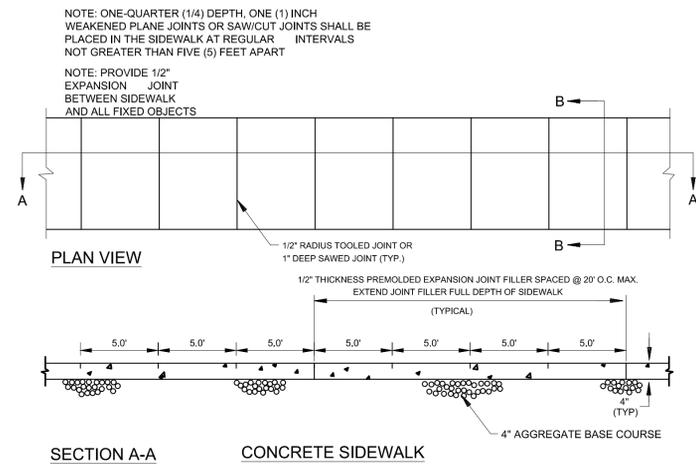
DETAILS

SHEET NUMBER:

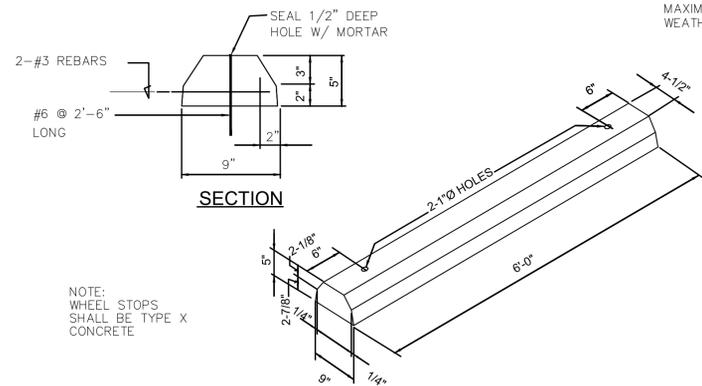
C-502

7 OF 32 SHEETS

07/02/2020



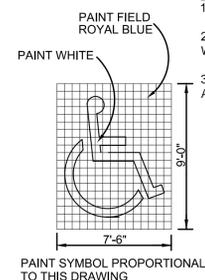
NOTES:
 PAVEMENT SUBGRADE SHALL CONSIST OF NATIVE, SILTY LEAN CLAY OR LEAN CLAY WITH SILT SOILS, OR ENGINEERED FILL MATERIAL. NATIVE SOILS SHALL BE OVER EXCAVATED AND REPLACED WITH 12 INCHES OF SELECT FILL. SELECT FILL SHALL CONSIST OF APPROVED LOW VOLUME CHANGE MATERIAL HAVING AN EFFECTIVE PLASTICITY INDEX OF 18 OR LESS AND CONTAINING AT LEAST 15 PERCENT FINES (MATERIAL PASSING THE NO. 200 SIEVE, BASED ON DRY WEIGHT). LOCALLY AVAILABLE CLAYEY GRAVEL ("HILLSIDE") MATERIALS CAN BE USED AS FILL, BUT SHOULD BE TESTED AND APPROVED PRIOR TO THEIR USE. SOILS CONTAINING ORGANIC MATTER OR DEBRIS SHOULD NOT BE USED AS FILL. SILTY SOILS, INCLUDING SOILS MEETING UNIFIED CLASSIFICATION GROUP SYMBOLS ML, SM AND CL-ML SHALL NOT BE USED. EXPOSED SUBGRADE SHALL BE PROOF-ROLLED WITH A RUBBER-TIRED CONSTRUCTION VEHICLE SUCH AS A LOADED SCRAPER OR TANDEM-AXEL DUMP TRUCK WEIGHING AT LEAST 25 TONS. THE SUBGRADE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 9 INCHES. MOISTURE CONTENT SHALL BE AT THE MATERIAL'S MAXIMUM LABORATORY DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM SPECIFICATION D-698 USING STANDARD PROCTOR PROCEDURE. SCARIFIED SUBGRADE SHALL THEN BE COMPACTED TO 95 PERCENT MAXIMUM LABORATORY DRY DENSITY. SEE GEOTECHNICAL REPORT FOR WET WEATHER CONDITIONS.



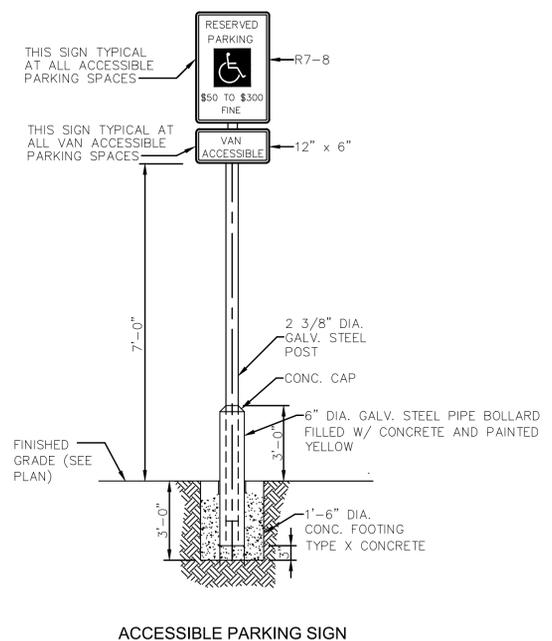
NOTE:
 WHEEL STOPS SHALL BE TYPE X CONCRETE

PRECAST CONCRETE WHEEL STOP

NOTES:
 1. SEE SITE PLAN FOR TOTAL PARKING LAYOUT.
 2. ACCESSIBLE STRIPING SHALL BE IN ACCORDANCE WITH ADA STANDARDS.
 3. ALL PAVEMENT STRIPING/MARKINGS SHALL BE IN ACCORDANCE WITH MUTCD REQUIREMENTS.



CONCRETE PAVEMENT
 N.T.S.



1. GENERAL REQUIREMENTS:

- A. BUILDING CODE: 2015 INTERNATIONAL BUILDING CODE
ICC 500-2014
UFC 1-200-01
UFC 4-010-01
- B. FLOOR LIVE LOADS:
- a. CLASSROOM 100 PSF
 - b. MECHANICAL 150 PSF
- C. ROOF LIVE LOAD (ICC 500) 100 PSF
- D. ROOF SNOW LOAD
- a. GROUND SNOW LOAD, PG 15 PSF
 - b. FLAT ROOF SNOW LOAD, PF 15 PSF
 - c. SNOW EXPOSURE FACTOR, CE 1.0
 - d. SNOW LOAD IMPORTANCE FACTOR, I 1.2
 - e. THERMAL FACTOR, HEATED STRUCTURE, CT 1.0
 - f. DRIFTING PER CODE
- E. WIND LOADS (ICC 500)
- a. BASIC WIND SPEED (3 SECOND GUST) 250 MPH
 - b. RISK CATEGORY IV
 - c. WIND EXPOSURE C
 - d. INTERNAL PRESSURE COEFFICIENT (GCPI) +/- 0.55
 - e. DIRECTIONALITY FACTOR, I 1.0
 - f. TOPOGRAPHIC FACTOR, Kzt 1.0
 - g. COMPONENTS AND CLADDING PER CODE
- F. SEISMIC LOADS
- a. RISK CATEGORY IV
 - b. SPECTRAL RESPONSE ACCELERATION, SS 0.141G
 - c. SPECTRAL RESPONSE ACCELERATION, S1 0.084G
 - d. SEISMIC IMPORTANCE FACTOR, I 1.5
 - e. SPECTRAL RESPONSE COEFFICIENTS, SDS 0.151
 - f. SPECTRAL RESPONSE COEFFICIENTS, SD1 0.135
 - g. SITE CLASS D
 - h. SEISMIC DESIGN CATEGORY C
 - i. BASIC SEISMIC-FORCE-RESISTING SYSTEM ORDINARY REINFORCED MASONRY SHEAR WALLS
 - j. RESPONSE MODIFICATION COEFFICIENT, R 2
 - k. SEISMIC RESPONSE COEFFICIENT, CS 0.113
 - l. DESIGN BASE SHEAR 0.113W
 - m. ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE
- G. FLOOD LOADS (NOT APPLICABLE)
- H. DEAD LOADS
- a. STRUCTURE ACTUAL WEIGHT
 - b. MISC. UNDERHUNG MECHANICAL 10 PSF
- I. CONTRACTOR SHALL REVIEW AND COMPARE THE STRUCTURAL DRAWINGS WITH ALL OTHER CONTRACT DOCUMENTS, VERIFYING ALL DIMENSIONS AND ELEVATIONS, AND REPORT ANY INCONSISTENCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- J. THE BUILDING IS NOT STRUCTURALLY STABLE UNTIL ALL CONNECTIONS, FRAMING, AND PERMANENT BRACING ARE COMPLETE AND HAVE ACHIEVED THEIR DESIGN STRENGTH. CONTRACTOR IS SOLELY RESPONSIBLE FOR MAINTAINING STRUCTURAL STABILITY DURING ERECTION AND CONSTRUCTION. TEMPORARY BRACING SYSTEMS ARE NOT TO BE REMOVED UNTIL STRUCTURAL WORK IS COMPLETE. THE DESIGN LOADS SHALL NOT BE EXCEEDED DURING CONSTRUCTION.
- K. FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK SHOWN OR INFERRED BY THESE DRAWINGS.
2. SPECIAL INSPECTIONS:
- A. THE STRUCTURAL DESIGN FOR THIS PROJECT IS BASED ON THE COMPLETION OF SPECIAL INSPECTIONS DURING CONSTRUCTION IN ACCORDANCE WITH CHAPTER 17 OF THE 2015 INTERNATIONAL BUILDING CODE AND THE 2014 VERSION OF THE ICC-500. THE CONTRACTOR SHALL EMPLOY ONE OR MORE QUALIFIED SPECIAL INSPECTORS TO PROVIDE THE REQUIRED SPECIAL INSPECTIONS. SPECIAL INSPECTIONS SHALL BE DONE UNDER THE SUPERVISION OF A REGISTERED DESIGN PROFESSIONAL.
- B. THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION. THE GENERAL CONTRACTOR SHALL PROVIDE NOTIFICATION TO THE SPECIAL INSPECTOR WHEN ITEMS REQUIRING SPECIAL INSPECTION ARE READY FOR OBSERVATION AND PROVIDE ACCESS TO THE ITEMS REQUIRING SPECIAL INSPECTION.
- a. PLACEMENT OF CONCRETE
 - b. TESTING OF CONCRETE
 - c. PLACEMENT OF REINFORCING STEEL
 - d. BOLTS & ANCHORS EMBEDDED IN CONCRETE
 - e. REINFORCED MASONRY CONSTRUCTION - LEVEL B INSPECTION
 - f. STORM DOOR, LOUVER, VAULTS AND SHUTTER ANCHORAGE
 - g. STRUCTURAL STEEL FRAMING
 - h. HIGH STRENGTH BOLTING
 - i. STRUCTURAL WELDING
 - j. ROOF AND FLOOR DECK ATTACHMENT
 - k. POST INSTALLED ANCHORS IN CONCRETE
 - l. VERIFICATION OF SOILS, EXCAVATIONS, FILLING & COMPACTION
 - m. SHOP FABRICATION OF STRUCTURAL STEEL (IF STEEL FABRICATOR IS NOT AISC OR MBMA CERTIFIED)

- C. THE SPECIAL INSPECTOR SHALL FURNISH SPECIAL INSPECTION REPORTS TO THE OWNER, CONTRACTOR, ARCHITECT AND STRUCTURAL ENGINEER ON A BI-WEEKLY BASIS.
- D. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF LEFT UNCORRECTED THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL, OWNER, ARCHITECT AND STRUCTURAL ENGINEER.
- E. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED AND SEALED REPORT STATING THAT THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH APPROVED PLANS AND SPECIFICATIONS.
- F. ICC500-2014 STANDARD FOR THE DESIGN AND CONSTRUCTION OF STORM SHELTERS: THE DESIGNER SHALL EMPLOY A REGISTERED DESIGN PROFESSIONAL TO PERFORM THE STRUCTURAL OBSERVATIONS REQUIRED BY THE ICC-500, SECTION 106.4. THESE OBSERVATIONS ARE IN ADDITION TO OTHER INSPECTIONS AND TESTING REQUIRED BY THE BUILDING CODE SPECIFIED ABOVE. THESE OBSERVATIONS SHALL NOT OBLVATE OR REDUCE THE NEED FOR OTHER INSPECTIONS OR TESTING REQUIRED BY THE BUILDING CODE.
3. FOUNDATIONS:
- A. THE GENERAL CONTRACTOR AND FOUNDATION CONTRACTOR SHALL UNDERSTAND THE SURVEY AND GEOTECHNICAL REPORT BEFORE BIDDING THE WORK. RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT SHALL BE INCLUDED IN THE CONTRACTOR'S WORK, UNLESS SPECIFIED OR DETAILED OTHERWISE.
- B. COMPLY WITH ALL ASPECTS OF SOILS REPORT NO. 018-3101 DATED FEBRUARY 13, 2019 PREPARED BY OLSSON, INC. 1700 EAST 123RD STREET, OLATHE, KANSAS 66061. (913) 829-0078.
- C. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY UNUSUAL SOIL CONDITIONS THAT ARE IN VARIANCE WITH THE GEOTECHNICAL REPORT OR WHEN DIFFERENT BEARING MATERIAL IS EVIDENT AND THERE IS A QUESTIONS OF BEARING CAPACITY.
- D. THE CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED TO TEST AND OBSERVE ALL EARTHWORK, FOUNDATION, AND SLAB SUPPORT MATERIAL TO VERIFY COMPLIANCE WITH THE DESIGN REQUIREMENTS AND CONTRACT DOCUMENTS. CONCRETE SHALL NOT BE PLACED WITHOUT GEOTECHNICAL ENGINEER'S APPROVAL.
- E. FOUNDATIONS AND STRIP FOOTINGS ARE DESIGNED TO BEAR ON NON-EXPANSIVE SOIL CAPABLE OF SUSTAINING 2,500 PSF.
- F. CONTRACTORS SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF UNSUITABLE FILL MATERIAL OR ORGANIC MATERIAL TO AN APPROVED LANDFILL.
4. CONCRETE:
- A. CAST-IN-PLACE CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST AMERICAN CONCRETE INSTITUTE DOCUMENTS, ACI-301, 305, 306, 315, 318 AND 347 AND CONCRETE REINFORCING STEEL INSTITUTE MANUAL OF STANDARD PRACTICE UNLESS OTHERWISE NOTED IN THESE CONTRACT DOCUMENTS.
- B. ALL CONCRETE, UNLESS OTHERWISE NOTED, SHALL DEVELOP A 28 DAY COMPRESSIVE STRENGTH AND HAVE MAXIMUM WATER/CEMENT RATIOS AS FOLLOWS:
- | | |
|----------------------------|---------------------|
| FOOTINGS, GRADE BEAMS: | 4000 PSI (w/c≤0.50) |
| SLAB-ON-GRADE: | 4000 psi (W/C≤0.45) |
| EXTERIOR CONCRETE FLATWORK | 4500 PSI (w/c≤0.45) |
- C. IT IS THE INTENT OF THESE CONCRETE SPECIFICATIONS THAT THE CONTRACTOR SUPPLY CONCRETE MIXES WITH A MINIMUM AMOUNT OF WATER IN ORDER TO LIMIT PLASTIC SHRINKAGE CRACKING IN FRESHLY PLACED CONCRETE. IT IS EXPECTED THAT WORKABILITY FOR CONCRETE MIXES WILL REQUIRE THE ADDITION OF WATER-REDUCING AND/OR SUPER-PLASTICIZING CHEMICAL ADMIXTURES. WATER SHALL NOT BE ADDED TO THE CONCRETE MIX ON SITE.
- D. CONCRETE SLUMP SHALL BE A MAXIMUM OF 4" +/- 1" (ASTM C-143) AS DELIVERED IN THE FIELD. CONTRACTOR MAY USE CHEMICAL ADMIXTURES TO ATTAIN A MAXIMUM SLUMP OF 8" FOR WORKABILITY.
- E. FLY ASH MAY BE USED AT A RATE NOT TO EXCEED 15% OF THE TOTAL CEMENT CONTENT.
- F. CONCRETE EXPOSED TO WEATHER, PARKED VEHICLES, AND/OR DEICING CHEMICAL SHALL CONTAIN 6% (+/- 1 1/2%) ENTRAINED AIR BY VOLUME FOR 3/4" AGGREGATE.
- G. ALL CONTRACTION JOINTS IN CONCRETE SLABS-ON-GRADE SHALL BE CUT TO 1/4 THE DEPTH. CUT JOINTS AS SOON AS POSSIBLE AFTER CONCRETE HAS BEEN PLACED WITHOUT DISLODGING AGGREGATE, OR USE KEYED COLD JOINT. CONTRACTION JOINTS IN SLAB-ON-GRADE SHALL BE AS SHOWN ON PLANS, WHERE NOT SHOWN, LIMIT CONTROLLED AREAS TO NOT MORE THAN 169 SQUARE FEET NOT GREATER THAN 13' ON ANY SIDE FOR THE 5" SLAB. CONSTRUCTION JOINTS MAY BE SUBSTITUTED FOR CONTRACTION JOINTS AT CONTRACTOR'S OPTION.
- H. CONSTRUCTION JOINTS IN BEAMS, SLABS AND GRADE BEAMS SHALL OCCUR AT THIRD POINTS OF THE SPAN UNLESS NOTED OTHERWISE. PROVIDE (1) 1 1/2" DEEP x 3 1/2" HORIZONTAL SHEAR KEY PER FOOT OF DEPTH AT JOINT. ENGINEER SHALL APPROVE ALL CONTROL JOINT LOCATIONS PRIOR TO PLACING CONCRETE.

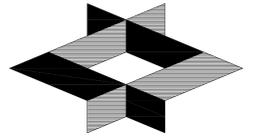
- I. PRIOR TO PLACING CONCRETE IN ANY LOCATION, IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO HAVE THOROUGHLY CHECKED AND COORDINATED ALL DIMENSIONS, ELEVATIONS, OPENINGS, RECESSES, AND BLOCKOUTS SHOWN ON THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND MECHANICAL DRAWINGS. IN THE EVENT ERRORS, CONFLICTS, OR OMISSIONS EXIST, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE ARCHITECT OR ENGINEER FOR NECESSARY CORRECTIVE ACTION.
- J. EMBEDDED ITEMS ARE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR PRIOR TO PLACING CONCRETE. ANCHOR RODS SHALL BE HELD IN PLACE WITH A RIGID TEMPLATE.
- K. NO ALUMINUM ITEMS SHALL BE EMBEDDED IN CONCRETE.
5. REINFORCING STEEL
- A. REINFORCING SHALL BE DETAILED, FABRICATED, PLACED, AND SUPPORTED IN ACCORDANCE WITH ACI 315, LATEST EDITION.
- B. ALL REINFORCING STEEL SHALL BE ASTM A615 GRADE 60, EXCEPT WELDED REINFORCING WHICH SHALL BE ASTM A706 GRADE 60.
- C. ALL WELDED WIRE FABRIC SHALL BE ASTM A185. ALL COLD DRAWN WIRE SHALL BE ASTM A82.
- D. ALL ACCESSORIES FOR SUPPORTING REINFORCING SHALL BE GALVANIZED OR HAVE PLASTIC-COATED FEET. WHERE CONCRETE IS SAND BLASTED OR BUSH HAMMERED PROVIDE ACCESSORIES OF STAINLESS STEEL.
- E. PROVIDE CORNER BARS AT THE EXTERIOR FACE OF ALL WALL AND GRADE BEAM CORNERS AND INTERSECTIONS EQUAL TO HORIZONTAL BARS.
- F. PROVIDE AT LEAST TWO VERTICAL #5 BARS AT ALL STEPS IN FOUNDATION WALLS, FOOTINGS, AND GRADE BEAMS.
- G. THE FOLLOWING ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED IN STOCK LENGTHS FOR GENERAL JOB USE AS DIRECTED BY THE ENGINEER. ALL COSTS FOR MATERIALS, FIELD FABRICATION AND PLACEMENT NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED.
- 8 - #4X30'-0" 8 - #5X30'-0" 4 - #6X30'-0"
- H. STANDARD COVERAGE OF REINFORCING, UNLESS OTHERWISE SHOWN, SHALL BE AS FOLLOWS (UFC 3-301):
- CAST AGAINST EARTH, PERMANENTLY EXPOSED TO WEATHER.....3"
EXPOSED TO EARTH & WEATHER (FORMED).....3"
NOT EXPOSED TO EARTH OR WEATHER: SLABS, WALLS.....1"
BEAMS AND COLUMNS.....2"
- I. WELDED WIRE FABRIC SHALL BE LAPPED ONE FULL MESH SPACING.
- J. AT ALL OPENINGS IN CONCRETE WALLS AND SLABS, ADD (2) #5 (OPENING DIMENSION PLUS 5'-0") AT EACH OF THE FOUR SIDES AND ADD (2) #5 x 5'-0" DIAGONALLY AT EACH OF FOUR CORNERS.
- K. ALL SPLICES SHALL BE LAPPED NOT LESS THAN 48 BAR DIAMETERS, OR 24 INCHES, WHICHEVER IS GREATER. STAGGER SPLICES IN ACCORDANCE WITH ACI 318.
- L. LAP TOP BARS AT MID-SPAN AND BOTTOM BARS AT SUPPORTS, UNO. STAGGER LAP LOCATIONS.
6. MASONRY REINFORCEMENT AND ATTACHMENT:
- A. MASONRY CONSTRUCTION SHALL CONFORM TO THE LATEST AMERICAN CONCRETE INSTITUTE DOCUMENTS, ACI-530 AND 530.1 AND IBC, CHAPTER 21 UNLESS OTHERWISE NOTED IN THESE CONTRACT DOCUMENTS.
- B. REINFORCED MASONRY MATERIALS:
- CONCRETE MASONRY UNITS.....ASTM C90
EXTERIOR LOCATIONS.....NORMAL WEIGHT
INTERIOR LOCATIONS.....NORMAL WEIGHT
MINIMUM COMPRESSIVE STRENGTH (F'm)2500PSI
- MORTAR.....ASTM C270, TYPE S
- GROUT.....ASTM C476
MINIMUM COMPRESSIVE STRENGTH.....2500PSI
- REINFORCING STEEL.....ASTM A615, GRADE 60
- C. ALL CMU WALLS SHALL BE REINFORCED VERTICALLY AS SPECIFIED ON DRAWINGS WITH A MINIMUM OF (1) #5 @ 4'-0" OC AND A MINIMUM OF (1) #5 OR THE SPECIFIED BAR FOR THAT WALL. AT THE ENDS AND CORNERS OF WALLS, AT EACH SIDE OF CONTROL OR EXPANSION JOINTS, AND AT EACH SIDE OF EACH OPENING, ALL IN FULLY GROUTED CELLS.
- D. PROVIDE BOND BEAMS AT THE TOP OF EACH WALL AND WHERE SHOWN. BOND BEAMS SHALL HAVE (2) #5 CONTINUOUS AND BE FULLY GROUTED. VERTICAL BARS SHALL EXTEND INTO THE BOND BEAM.
- E. PROVIDE DOWELS INTO FLOOR OR FOUNDATION AT BOTTOM OF WALL TO MATCH SIZE AND SPACING OF VERTICAL WALL REINFORCING UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- F. STABILIZE TOP OF ALL VERTICALLY REINFORCED WALLS PER DRAWINGS DETAILS.

- G. MIN LAP LENGTHS REQUIRED (TWO BARS PER CELL):
- #5 BARS 2'-8" #6 BARS 4'-9"
- H. MAXIMUM HEIGHT OF GROUT POUR SHALL NOT EXCEED 5'-4".
- I. ALL MASONRY SHALL BE RUNNING BOND, UNLESS NOTED OTHERWISE.
- J. SEE STRUCTURAL WALL ELEVATIONS FOR MASONRY CONTROL JOINT LOCATIONS AND ARCHITECTURAL DETAILS FOR ADDITIONAL INFORMATION. MAXIMUM CONTROL JOINT WIDTH SHALL NOT EXCEED 3/8".
- K. REINFORCEMENT SHALL BE PLACED PRIOR TO GROUTING.
- L. VERTICAL CELLS TO BE GROUTED SHALL HAVE A VERTICAL ALIGNMENT SUFFICIENT TO MAINTAIN A TOTAL MINIMUM CLEAR AREA OF 3" X 3". ALL OVERHANGING MORTAR, OBSTRUCTIONS AND DEBRIS SHALL BE CLEANED FROM THE INSIDE OF CELLS PRIOR TO GROUTING.
- M. TOLERANCE FOR THE PLACEMENT OF REINFORCEMENT IN WALLS SHALL BE PLUS OR MINUS 1/2 INCH FOR 12 INCH MASONRY. REINFORCEMENT SHALL BE SECURED AGAINST DISPLACEMENT PRIOR TO GROUTING AT THE TOP OF EACH GROUT LIFT.
- N. UNITS SHALL BE LAID TO THE FULL HEIGHT OF THE GROUT POUR AND GROUT SHALL BE PLACED IN A CONTINUOUS LIFT. BETWEEN GROUT POURS, A HORIZONTAL CONSTRUCTION JOINT SHALL BE FORMED BY STOPPING GROUT 1-1/2 INCHES BELOW A MORTAR JOINT EXCEPT AT THE TOP OF THE WALL.
- O. INITIAL BED JOINT THICKNESS SHALL NOT BE LESS THAN 1/4 INCH NOR MORE THAN 3/4 INCH. SUBSEQUENT JOINTS SHALL NOT BE LESS THAN 1/4 INCH NOR MORE THAN 5/8 INCH.
- P. ALL WALLS SHALL BE REINFORCED WITH HORIZONTAL BOND BEAMS WITH (2) #5 CONTINUOUS AT 48" OC, UNO. PROVIDE CORNER BARS AND LAP SPLICES AS REQUIRED.
7. STRUCTURAL STEEL:
- A. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH AISC, "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND AISC, "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
- B. STEEL MATERIALS, UNLESS NOTED OTHERWISE ON THE PLANS:
- a. WIDE FLANGE SHAPES AND WT SECTIONS ASTM A992
 - b. ANGLES, PLATES, CHANNELS ASTM A36
 - c. RECTANGULAR HSS SHAPES ASTM A500, GRADE C
 - d. ROUND HSS SHAPES ASTM A500, GRADE C
 - e. ANCHOR RODS ASTM F1554, GRADE 36
 - f. HIGH-STRENGTH BOLTS ASTM A325, TYPE 1
 - g. HEADED STUDS ASTM A108, GR 1015-1020
 - h. WELDED CONNECTIONS E70XX ELECTRODES
- C. ALL BOLTS SHALL BE 3/4" DIAMETER BOLTS WITH HEAVY HEX HEADS, UNLESS NOTED OTHERWISE ON DRAWINGS. ALL CONNECTIONS SHALL HAVE A MINIMUM OF TWO 3/4" DIAMETER BOLTS, SNUG-TIGHTENED TYPE CONNECTIONS UNLESS NOTED OTHERWISE IN THE DOCUMENTS.
- D. BEAM CONNECTIONS, NOT OTHERWISE INDICATED, SHALL BE DETAILED TO SUPPORT ONE-HALF THE TOTAL ALLOWABLE UNIFORM LOAD CAPACITY FOR THE GIVEN BEAM, SPAN AND GRADE OF STEEL.
- E. ALL STRUCTURAL STEEL WELDS IN THE SHOP OR THE FIELD SHALL BE PERFORMED BY A CERTIFIED WELDER AND SHALL CONFORM TO THE CURRENT REQUIREMENTS OF A.W.S.
- F. SHOP WELDED AND FIELD BOLTED CONNECTIONS ARE PREFERRED, UNLESS OTHERWISE SHOWN.
- G. FILLET WELDS NOT SPECIFICALLY SIZED IN THESE DOCUMENTS SHALL BE THE MINIMUM SIZE IN ACCORDANCE WITH AWS D1.1 LATEST EDITION, DEPENDENT ON THE THINNER PART JOINED, BUT NO LESS THAN 3/16".
- H. ALL STRUCTURAL STEEL SHALL HAVE ONE COAT OF RUST INHIBITOR PRIMER PAINT CONFORMING TO THE PROJECT MANUAL. FIELD TOUCHUP ALL UNPAINTED AREAS AND WELDED AREAS.
- I. PROVIDE GALVANIZED BOLTS AND ANCHORS AT ALL LOCATIONS WHERE ANCHORS COME INTO CONTACT WITH MASONRY OR CONCRETE. CLEAN AREAS WHERE GALVANIZING IS DAMAGED OR MISSING AND REPAIR.
- J. ALL OPENINGS IN ROOF SHALL BE LOCATED BETWEEN REINFORCING STEEL PRIOR TO CONCRETE BEING PLACED. OPENINGS OVER 8" IN ANY DIRECTION SHALL HAVE A WBX18 (WITH HEADED STUDS AT 24" ON CENTER) ON ALL 4 SIDES FRAMED BETWEEN ROOF BEAMS, UNLESS OTHERWISE NOTED ON DRAWINGS.
- K. THE CONTRACTOR SHALL PROVIDE SHELF ANGLES, GLASS SUPPORTS AND OTHER MISCELLANEOUS STEEL, AS SHOWN ON THE DRAWINGS AND AS REQUIRED TO PROVIDE SUPPORT (STABILIZATION) AROUND AND THROUGHOUT THE BUILDING. NOT EVERY DETAIL IS SHOWN. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL MISCELLANEOUS METAL DETAILS.
- L. THE STEEL FABRICATOR SHALL PARTICIPATE IN THE AISC QUALITY CERTIFICATION PROGRAM AND BE DESIGNATED AS AN AISC-CERTIFIED PLANT.

(CONTINUED ON S-002)



BID DOCUMENTS



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MO State Certificate of Authority #2004032065

OFFICE OF ADJUTANT
GENERAL
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND
CONSTRUCTION
DEPARTMENT OF
PUBLIC SAFETY

Missouri Army National Guard

Camp Crowder Training Site
890 Ray Carver Avenue
Neosho, Missouri 64850

FITNESS CENTER - STORM
SHELTER

PROJECT # T2027-01
SITE # 6260
ASSET # 8136260016

REVISION:
DATE:
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DATE:
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DATE:
ISSUE DATE: 07/02/2020

CAD DWG FILE:
T2027-01_6260_8136260016_S-001.DWG
DRAWN BY: GLB
CHECKED BY: KJH
DESIGNED BY: KHE

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

S-001

8 OF 32 SHEETS

8. STEEL DECK:
- A. ALL STRUCTURAL STEEL DECK SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE LATEST SPECIFICATION OF THE STEEL DECK INSTITUTE DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND CELLULAR METAL FLOOR DECK WITH ELECTRICAL DISTRIBUTION.
- B. ROOF DECK SHALL BE 2" VLI, 19 GAGE GALVANIZED COMPOSITE STEEL DECK WELDED IN A 36/4 PATTERN AT SUPPORTS AND SIDE LAPS/DECK EDGES SHALL BE WELDED AT 18" ON CENTER WITH 5/8" PUDDLE WELDS.
9. ANCHORS:
- A. CONCRETE:
- a. ALL POST-INSTALLED ANCHORS SHALL MEET THE REQUIREMENTS OF ACI 318, CHAPTER 17 AND SHALL BE ACCEPTABLE FOR CRACKED CONCRETE.
- b. MECHANICAL ANCHORS FOR CRACKED CONCRETE SHALL BE HILTI KWIK HUS EZ SCREW ANCHORS PER ICC ESR-3027, SIMPSON TITEN HD SCREW ANCHORS PER ICC ESR-2713, DEWALT SCREW-BOLT+ PER ICC ESR-3889, OR APPROVED EQUAL.
- c. ADHESIVE ANCHORS FOR CRACKED CONCRETE SHALL BE HILTI HIT-HY 200 SAFE SET SYSTEM PER ICC ESR-3187, SIMPSON AT-XP PER UES ER-263, DEWALT AC200+ PER ICC ESS-4027, OR APPROVED EQUAL. STEEL ANCHORS SHALL BE HILTI HAS-E THREADED ROD, F1554 GRADE 36 THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REINFORCING.
- B. SOLID GROUTED MASONRY:
- a. ADHESIVE ANCHORS FOR SOLID GROUTED MASONRY SHALL BE HILTI HIT-HY 270 ADHESIVE ANCHORING SYSTEM PER ESR-4143, SIMPSON AT-XP PER UES ER-281, DEWALT AC100+ PER ESR-3200, OR APPROVED EQUAL. STEEL ANCHORS SHALL BE HILTI HAS-E THREADED ROD, F1554 GRADE 36 THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REINFORCING.
- C. EMBEDMENT DEPTH SHALL BE DEFINED AS THE DISTANCE FROM THE SURFACE OF THE LOAD BEARING BASE MATERIAL TO THE DEEPEST PART OF THE ANCHOR AFTER THE ANCHOR HAS BEEN DRIVEN INTO THE HOLE BUT NOT YET EXPANDED.
- D. ALL HOLES ARE TO BE HAMMER-DRILLED UNLESS NOTED OTHERWISE.
- E. EQUIVALENT ANCHORS MAY BE SUBSTITUTED WITH THE ENGINEERS APPROVAL. SUBMITTAL IS THE CONTRACTOR'S RESPONSIBILITY AND MUST INCLUDE EVALUATION REPORTS FROM THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS.
- F. INSTALL ANCHORS TO MEET THE REQUIREMENTS INDICATED IN THE CONTRACT DOCUMENTS, THE MANUFACTURER'S RECOMMENDATIONS AND ICC CODE REPORTS.
- G. ANCHOR CAPACITY IS DEPENDANT UPON THE SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE OR MASONRY. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
- H. STAINLESS STEEL ANCHORS ARE REQUIRED AT EXPOSED WEATHER CONDITIONS.
- I. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE SHALL NOT BE CUT DURING ANCHOR INSTALLATION UNLESS NOTED OTHERWISE. LOCATE THE POSITION OF THE EXISTING REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS BY FERROSCAN, GPR, X-RAY OR OTHER APPROVED MEANS.
10. SUBMITTALS:
- A. ALL SHOP DRAWINGS AND SUBMITTALS MUST BE REVIEWED AND APPROVED BY THE CONTRACTOR PRIOR TO SUBMITTAL. ENGINEER'S REVIEW OF SHOP DRAWINGS IS LIMITED TO CHECKING FOR GENERAL CONFORMANCE WITH DESIGN DRAWINGS AND STRENGTH OF COMPONENTS AND MATERIALS. CONTRACTOR IS RESPONSIBLE FOR ANY CHANGES FROM THE DESIGN DRAWINGS, QUANTITIES, DIMENSIONAL ERRORS OR OMISSIONS ON THE SHOP DRAWINGS.
- B. ALL SHOP DRAWINGS MUST BE ORIGINAL DOCUMENTS AND SHALL NOT BE REPRODUCTIONS OF THESE CONTRACT DOCUMENTS.
- C. SUBMIT SHOP DRAWINGS DETAILING FABRICATION OF EACH MEMBER AND ITS CONNECTIONS. DETAIL DRAWINGS ARE TO BE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER.
- D. CONTRACTOR SHALL SUBMIT STRUCTURAL SHOP DRAWINGS FOR THE FOLLOWING:
- a. CONCRETE MIX DESIGN AND MATERIALS
b. CONCRETE AND MASONRY REINFORCING STEEL
c. MASONRY MATERIALS
d. STRUCTURAL STEEL
e. STEEL DECK
- E. DELEGATED DESIGN SUBMITTAL: CONTRACTOR SHALL SUBMIT SIGNED AND SEALED DESIGN ANALYSIS DATA BY A QUALIFIED PROFESSIONAL ENGINEER FOR THE FOLLOWING AND WHERE NOTED IN THE PROJECT SPECIFICATIONS:
- a. STRUCTURAL STEEL DESIGN
b. ARCHITECTURAL METALS
c. STORM DOORS AND CONNECTIONS
d. STORM SHUTTERS AND CONNECTIONS
e. STORM LOUVERS AND CONNECTIONS
f. BATHROOM PARTITIONS

1

STRUCTURAL GENERAL NOTES

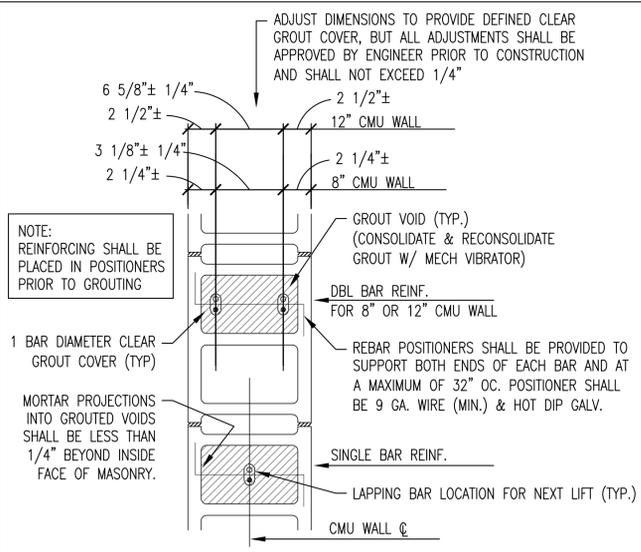
NTS (CONTINUED FROM S-001)

AR	ANCHOR ROD	ID	INSIDE DIAMETER
ADD	ADDENDUM	IF	INSIDE FACE
ADJ	ADJACENT	IN	INCHES
AFF	ABOVE FINISH FLOOR	JST	JOIST
ALT	ALTERNATE	JT	JOINT
ARCH	ARCHITECTURAL PLANS		
BAL	BALANCE	K	KIP (#1000 LBS)
BLDG	BUILDING	LBS	POUNDS
BM	BEAM	LLH	LONG LEG HORIZONTAL
BO	BOTTOM OF (ADD ITEM)	LVL	LAMINATED VENEER LUMBER
BOT	BOTTOM		
BPL	BASEPLATE	MAS	MASONRY
BRG	BEARING	MAX	MAXIMUM
BTWN	BETWEEN	MFR	MANUFACTURER
		MIN	MINIMUM
CC	CENTER TO CENTER	MISC	MISCELLANEOUS
CFMF	COLD-FORMED METAL FRAMING	MK	MARK
CH	CHANNEL		
CIP	CAST-IN-PLACE CONCRETE	NS	NEAR SIDE
CJ	CONTRACTION JOINT	NTS	NOT TO SCALE
CL	CENTERLINE		
CLR	CLEAR	OC	ON CENTER
COL	COLUMN	OD	OUTSIDE DIAMETER
CONC	CONCRETE	OF	OUTSIDE FACE
CONN	CONNECTION	OPNG	OPENING
CONST	CONSTRUCTION	OPP	OPPOSITE
CONT	CONTINUOUS	OSB	ORIENTED STRAND BOARD
COORD	COORDINATE		
CTR	CENTER	PCF	POUNDS PER CUBIC FOOT
		PEMB	PRE-ENGINEERED METAL BUILDING
DEG	DEGREE	PL	PLATE
DET	DETAIL	PSF	POUNDS PER SQUARE FOOT
DIA	DIAMETER	PSI	POUNDS PER SQUARE INCH
DIAG	DIAGONAL		
DIM	DIMENSION	RAD	RADIUS
DWG	DRAWING	REINF	REINFORCING
		SCHED	SCHEDULE
EA	EACH	SECT	SECTION
EF	EACH FACE	SHT	SHEET
EJ	EXPANSION JOINT	SIM	SIMILAR
EL	ELEVATION	SP	SPACES
EQ	EQUAL	SPEC	SPECIFICATIONS
EQUIP	EQUIPMENT	SQ	SQUARE
EW	EACH WAY	STD	STANDARD
EXIST	EXISTING	STL	STEEL
EXP	EXPANSION		
EXT	EXTERIOR	T&B	TOP AND BOTTOM
		T/	TOP OF (ADD ITEM)
FDN	FOUNDATION	TYP	TYPICAL
FF	FINISH FLOOR		
FIN	FINISH	UNO	UNLESS NOTED OTHERWISE
FLR	FLOOR	VAR	VARIES
FS	FAR SIDE	VERT	VERTICAL
FTG	FOOTING		
		W/	WITH
GA	GAGE	W/O	WITHOUT
GALV	GALVANIZED	WL	WIND LOAD
GB	GRADE BEAM	WP	WORK POINT
GR	GRADE	WWF	WELDED WIRE FABRIC
GYP	GYPSONUM		
HORIZ	HORIZONTAL		

2

STRUCTURAL ABBREVIATIONS

NTS



7

TYP CMU REINF. PLACEMENT

NTS

UNREINFORCED AND REINFORCED NON-LOAD BEARING CONCRETE MASONRY WALL SCHEDULE

MASONRY f'm = 2500 PSI REINFORCING fy = 60 KSI

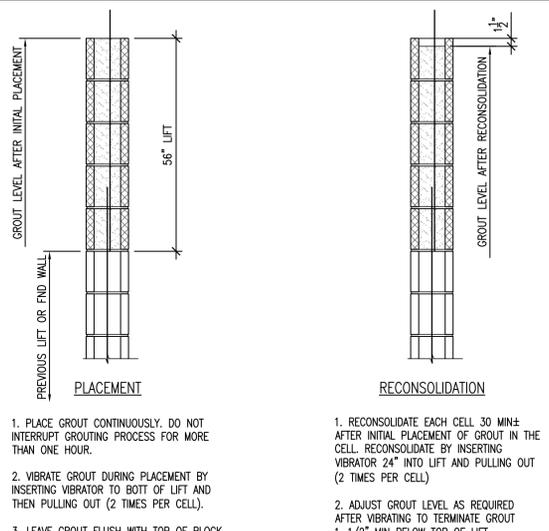
NOMINAL CMU WALL THICKNESS	REINFORCING	MAXIMUM ALLOWABLE UNBRACED HEIGHT
6"	#5 AT 48"	12'
8"	NONE	7'
	#5 AT 48"	14'

- NOTES:
- ALL WALLS TO BE BRACED AT TOP OF WALL PER ARCH OR TYPICAL DETAILS.
 - NOTIFY ARCHITECT/ENGINEER IF ANY WALLS EXCEED THE MAXIMUM HEIGHT CRITERIA GIVE IN THE SCHEDULE (FOR REQUIRED REINFORCEMENT).
 - FOR LOCATION OF CONTROL & EXPANSION JOINTS IN MASONRY WALLS NOT SHOWN ON STRUCTURAL, SEE ARCH. REINFORCE EACH SIDE OF JOINTS AND END OF WALL PER GENERAL NOTES.
 - PROVIDE DOWEL INTO FOUNDATION WALL OR BASE SLAB AS APPLICABLE. DOWELS SHALL MATCH VERTICAL WALL REINFORCEMENT U.N.O.
 - REINFORCE WALL OPENINGS (DOORS, WINDOWS, LOUVERS, ETC.) PER 3/S-002.
 - PROVIDE REBAR POSITIONED AT MAXIMUM OF 2'-8" O.C. IN GROUTED CELLS TO ASSURE PROPER PLACEMENT OF REINFORCING STEEL.
 - SHORE CMU WALLS UNTIL LATERAL SUPPORT IS PROVIDED AT TOP OF WALL.
 - FOR ADDITIONAL INFORMATION, SEE GENERAL NOTES ON S-001.

3

TYP NON-LOAD BRG WALLS

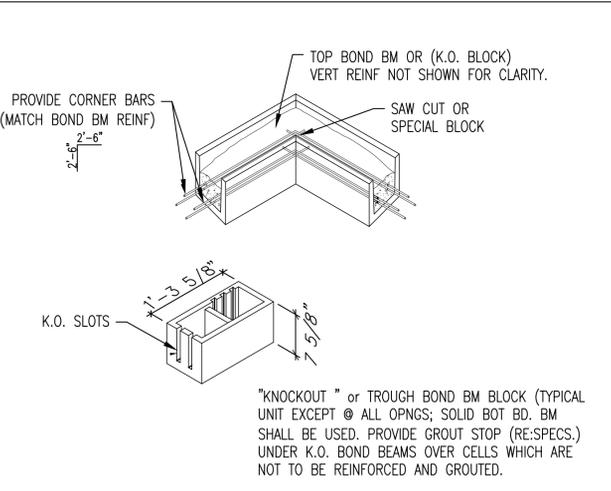
NTS



5

TYP CMU GROUTING

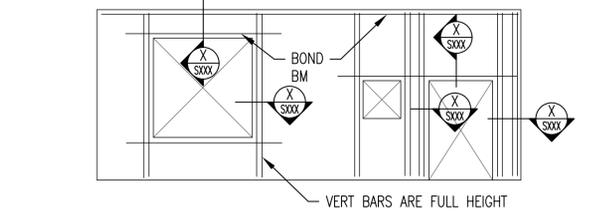
NTS



8

TYP BOND BEAM CORNER BARS

NTS

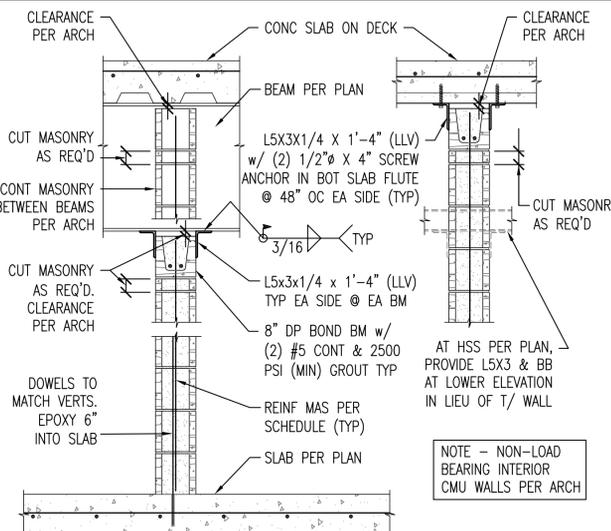


- TYPICAL OPENING REINFORCEMENT
- (2) #5 VERT BARS IN 12" CMU WALLS OR (1) #5 VERT BAR IN 8" CMU WALLS FOR EACH LINE SHOWN ON ELEVATION.
 - VERTICAL REINFORCING BARS SHOWN SEPARATE ON "TYPICAL OPENING" SHALL BE PLACED IN SEPARATE VOIDS.
 - VERTICAL REINF. BARS SHALL BE DOWELED TO FOUNDATION WITH A DOWEL OF MATCHING SIZE AND SPACING.
 - (2) #5 HORIZ. BARS IN 12", OR 8" CMU WALLS FOR EACH LINE SHOWN ON ELEVATION (U.N.O). EXTEND 2'-0" MINIMUM PAST EDGE OF OPENING.
 - CONTRACTOR SHALL COORDINATE AND VERIFY OPENINGS IN MASONRY WALLS.
 - ALL OPENINGS SHALL BE DETAILED ON REINFORCING SHOP DRAWING ELEVATIONS.
 - LINTEL REINFORCING (X/S-XXX)
 - OPENINGS LESS THAN 3'-4" WIDE 8" HIGH w/ (2) #5
 - OPENINGS GREATER THAN 3'-4" & LESS THAN 6'-8" 16" HIGH w/ (4) #5

4

TYP OPENINGS IN CMU WALLS

NTS



6

T/ WALL BRACING INT CMU

NTS



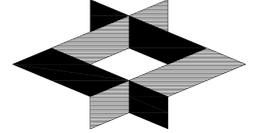
9

SECTION

NTS



BID DOCUMENTS



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FITNESS CENTER - STORM SHELTER

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SHEET TITLE:
GENERAL NOTES, ABBREVIATIONS, MISCELLANEOUS

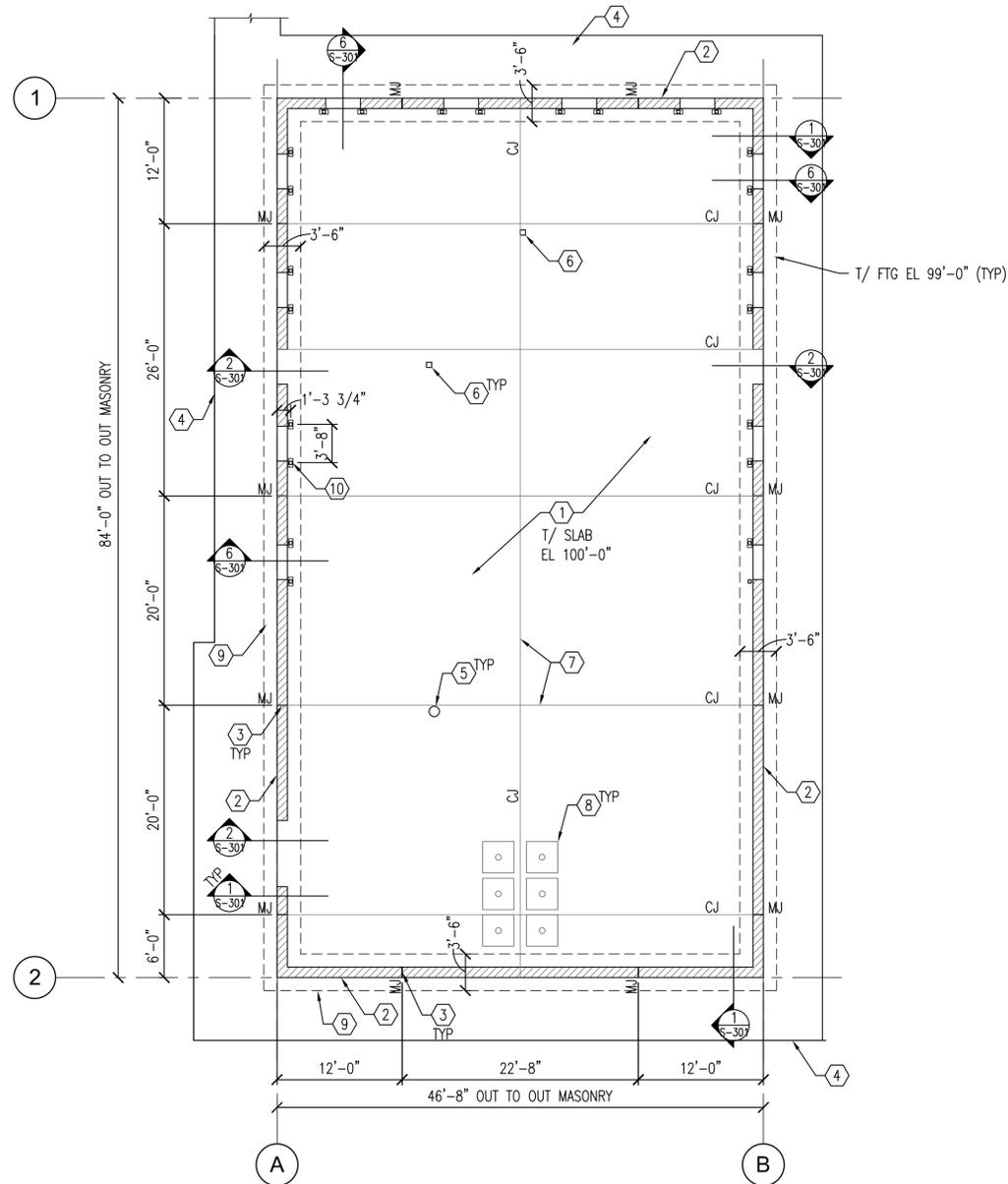
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S-002

9 OF 32 SHEETS

PLAN NOTES:

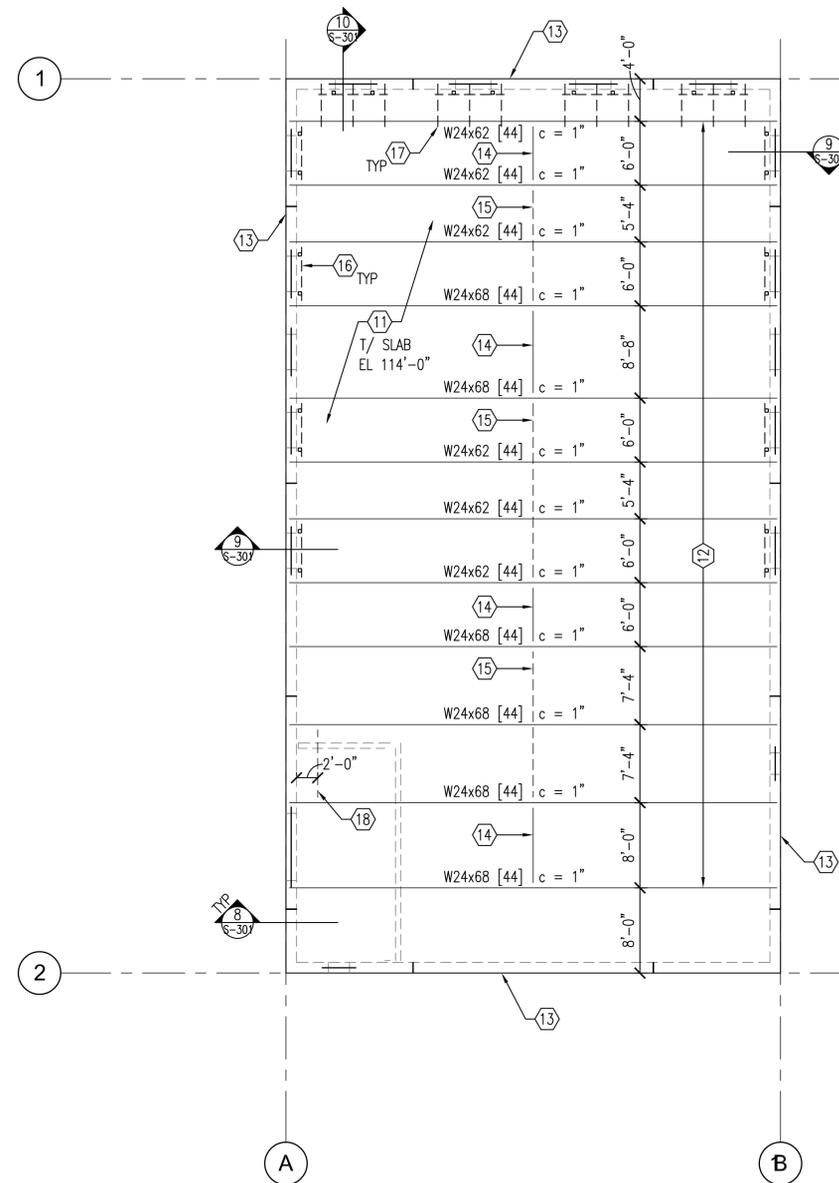
- ① 8" CONCRETE SLAB-ON-GRADE w/ #4 @ 12" OC EW, CENTERED IN SLAB, OVER 15 MIL VAPOR RETARDER OVER 4" OF FREE-DRAINING GRANULAR MATERIAL AND 1'-6" OF LOW PLASTICITY STRUCTURAL FILL AS DEFINED IN THE GEOTECHNICAL REPORT. T/CONC = EL 100'-0" (CIVIL ELEVATION 1279.50')
- ② 12" CMU WALL w/ (2) #5 @ 8" ON CENTER, ONE EACH FACE, EACH CELL (UNO). PROVIDE HORIZONTAL BOND BEAMS PER S-201 WALL ELEVATIONS.
- ③ MASONRY CONTROL JOINT (MJ). RE: ARCH
- ④ CONCRETE SIDEWALK PER CIVIL.
- ⑤ FLOOR DRAINS NOT SHOWN. LOCATE PER P-101 (TYP).
- ⑥ FLOOR ELECTRICAL BOXES NOT SHOWN. LOCATE PER E-101 (TYP).
- ⑦ CONTROL JOINT (CJ) PER 3/S-301.
- ⑧ RECESS FLOOR AT SHOWERS PER ARCHITECTURAL/PLUMBING (TYP).
- ⑨ SLEEVE FOOTING AT UTILITIES PER 4/S-301.
- ⑩ COILING SHUTTER SUPPORT PER 5/S-301 AT EACH WINDOW.



1 FOUNDATION PLAN
 TRUE NORTH PLAN NORTH
 0' 4' 8' 12' 1/8" = 1'-0"

PLAN NOTES:

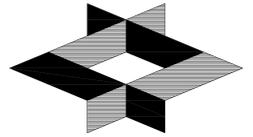
- ① 6" NORMAL WEIGHT CONCRETE SLAB ON 2" VLI, 18 GAUGE GALVANIZED COMPOSITE DECK (8" TOTAL). REINFORCE SLAB w/ #5 @ 16" ON CENTER EACH WAY, CENTERED IN SLAB. T/CONC = EL 114'-0".
- ② CAMBER ALL BEAMS 1" AND PROVIDE 3/4" x 7" HEADED ANCHOR STUDS @ 12" ON CENTER THROUGH DECK TO TOP OF BEAM (TYP).
- ③ 8" CMU PARAPET WALL ABOVE SLAB (NOT SHOWN). REINFORCE W/ (2) #5 @ 8" ON CENTER, ONE EACH FACE, EACH CELL (UNO). CONTINUE OUTER LAYER OF REINFORCING FROM WALL BELOW AND ADD #6 VERTS ABOVE 10'-8" PER 8/S-301. PROVIDE HORIZONTAL BOND BEAMS PER S-201 WALL ELEVATIONS.
- ④ W21X44 [4] w/ (6) 3/4" BOLTS TO FULL DEPTH STIFFENER EACH END.
- ⑤ L4X4X3/8 BETWEEN BEAMS AT BOTTOM FLANGE AT MID-SPAN (TYP).
- ⑥ C8 BETWEEN BEAMS PER 9/S-301.
- ⑦ HSS2x2 & L6x6 PER 10/S-301.
- ⑧ HSS4x4x1/4 BETWEEN BEAMS AT BOTTOM FLANGE FOR MAS WALL BRACE.



2 ROOF FRAMING PLAN
 0' 4' 8' 12' 1/8" = 1'-0"



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 DRAWN BY: GLB
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 DESIGNED BY: KHE

SHEET TITLE:
**FOUNDATION
 & ROOF PLANS**

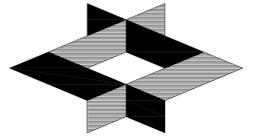
SHEET NUMBER:

S-101

10 OF 32 SHEETS



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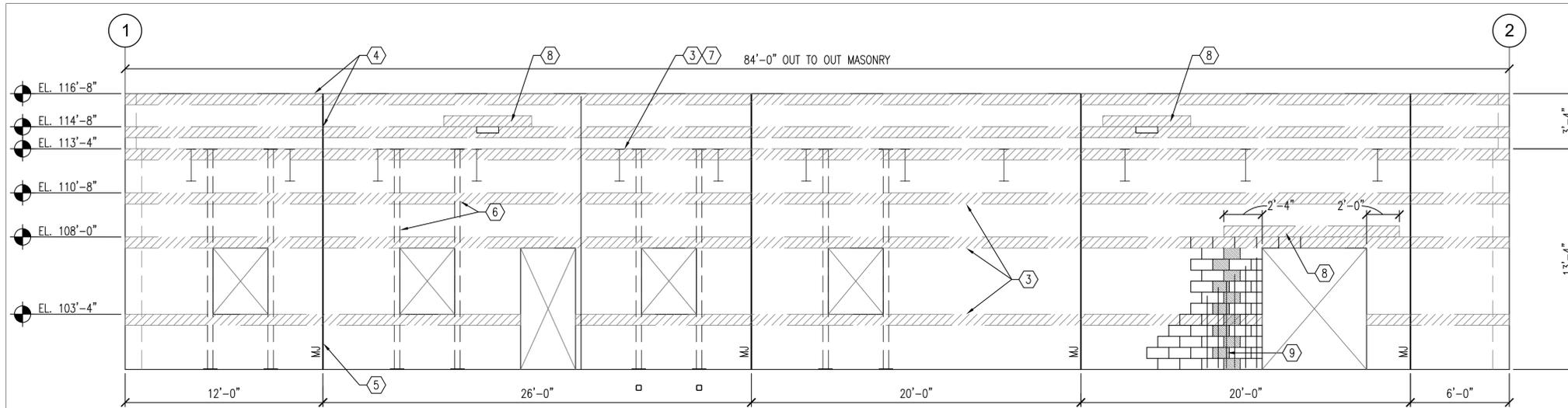
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CAD DWG FILE:
T2027-01_6260_8136260016_S-201.DWG
DRAWN BY: GLB
CHECKED BY: KJH
DESIGNED BY: KHE

SHEET TITLE:
EXTERIOR
WALL
ELEVATIONS

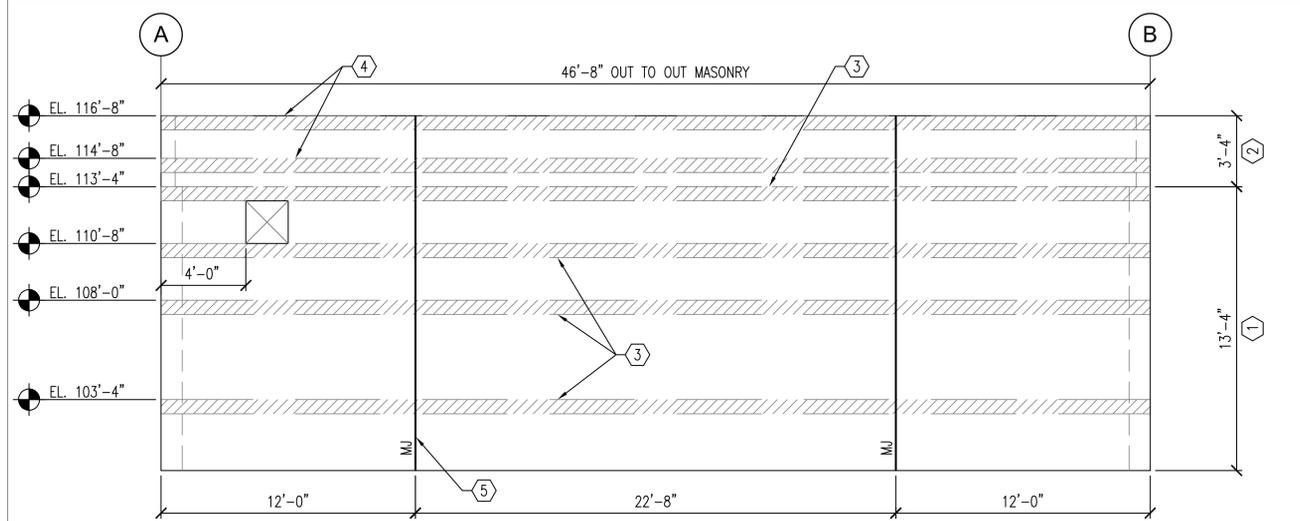
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S-201
11 OF 32 SHEETS



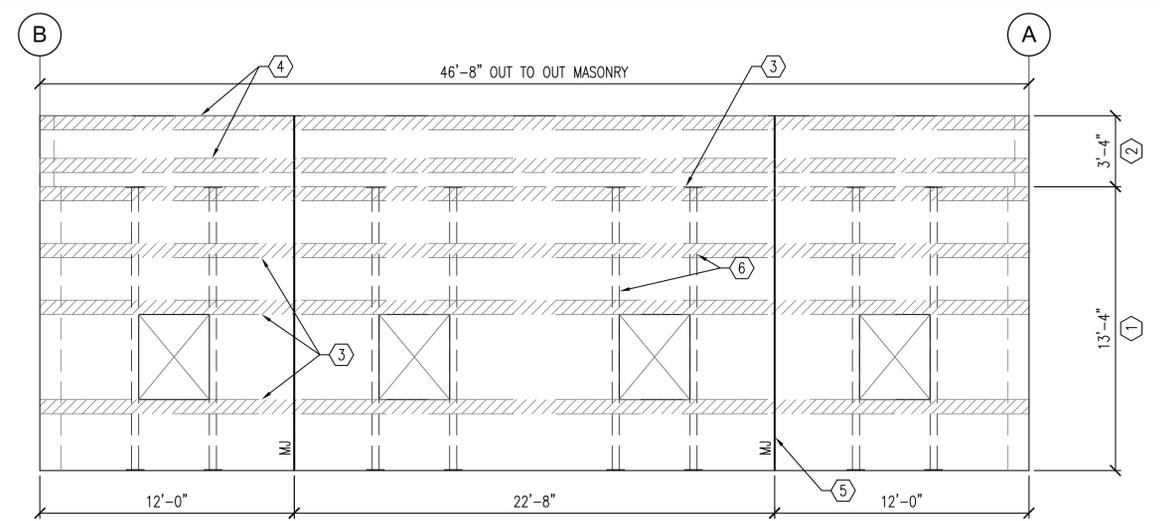
- ELEVATION NOTES:**
- ① 12" CMU WALL. REINFORCE EACH CELL PER PLAN.
 - ② 8" CMU PARAPET WALL. REINFORCE EACH CELL PER PLAN AND 8/S-301.
 - ③ 8" HIGH x 12" CMU BOND BEAM w/ (2) #5 CONT.
 - ④ 8" HIGH x 8" CMU BOND BEAM w/ (2) #5 CONT.
 - ⑤ 3/8" MAXIMUM WIDTH MASONRY CONTROL JOINT (MJ). RE: ARCH.
 - ⑥ COILING SHUTTER SUPPORT PER 5/S-301 AT EACH WINDOW.
 - ⑦ ROOF BEAM PER PLAN. CONTINUE BOND BEAM REINFORCING THROUGH BEAM OPENING PER DETAILS.
 - ⑧ ADD 8" HIGH x 12" CMU BOND BEAM LINTEL w/ (2) #5.
 - ⑨ CUT BLOCK BELOW LINTEL AS REQUIRED FOR COURSING (2'-0" NORTH OF OPENING). REINFORCE HALF CELL SECTION w/ (2) #5 VERTICALS.

NOTE - CONTROL JOINT LOCATIONS AND BOND BEAM ELEVATIONS MUST BE PROVIDED AS SHOWN FOR STORM SHELTER DESIGN.

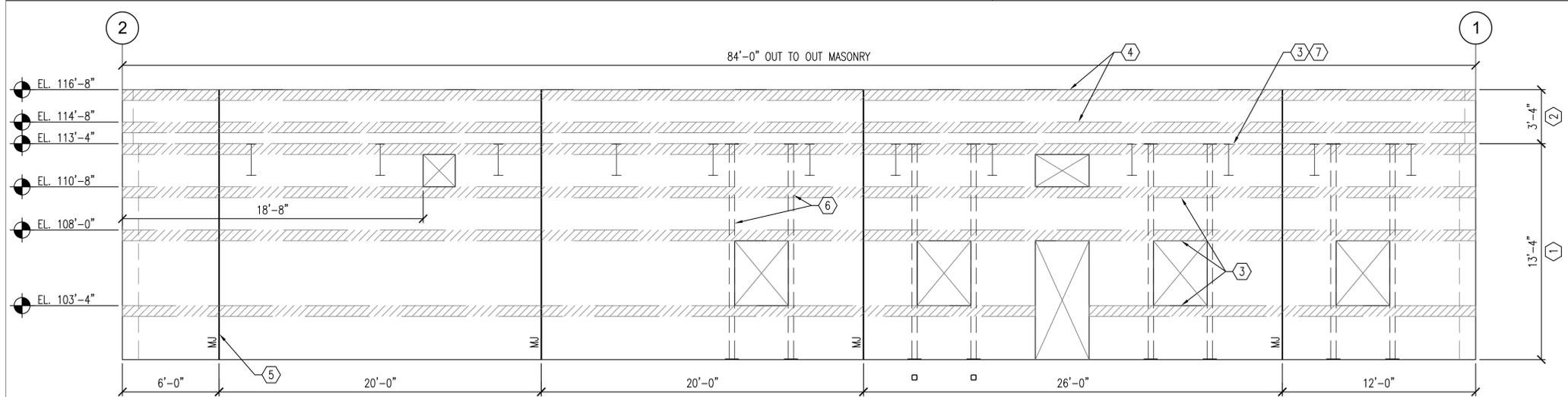
1 WEST WALL ELEVATION
1/4" = 1'-0"



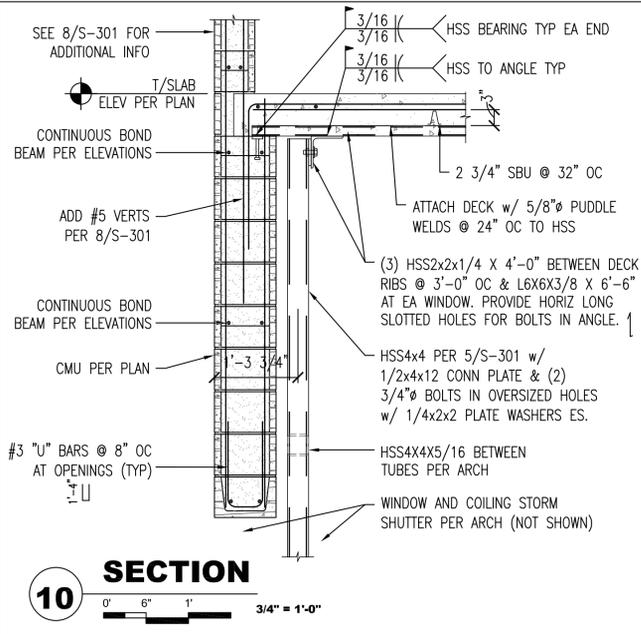
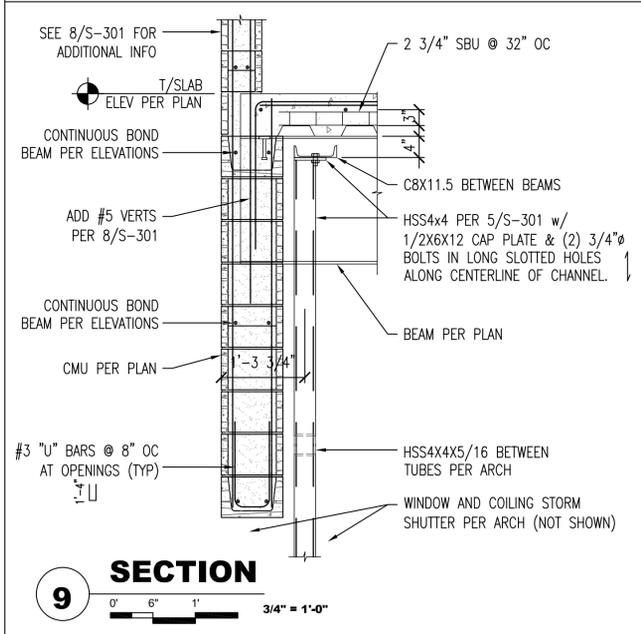
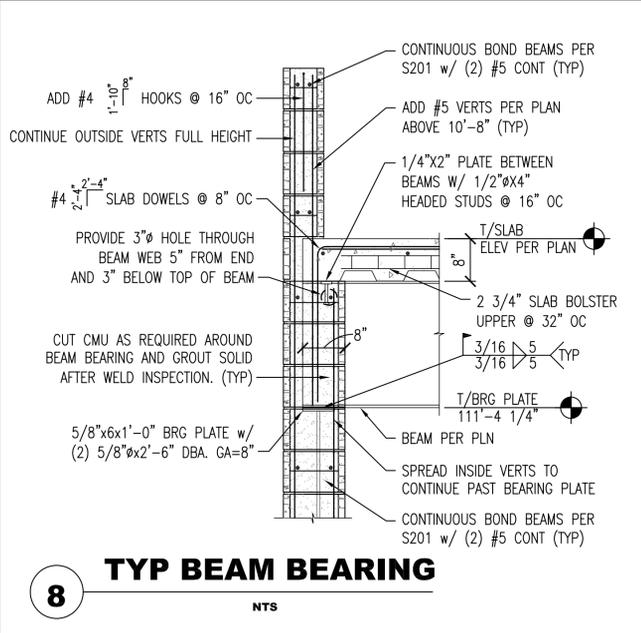
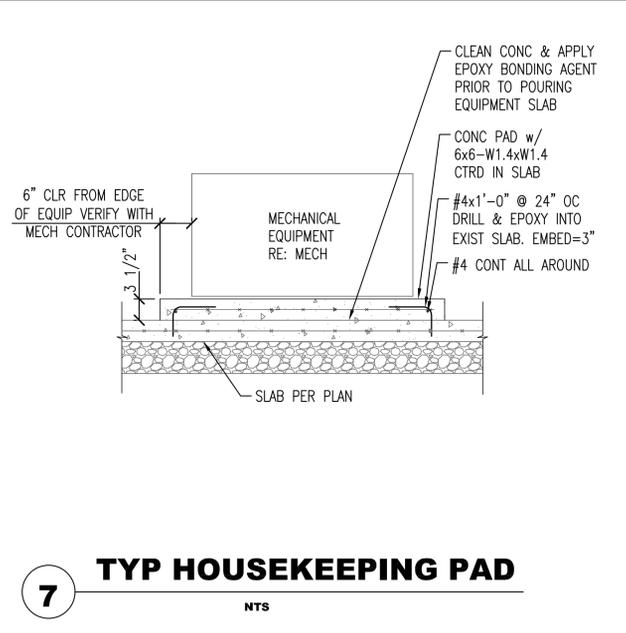
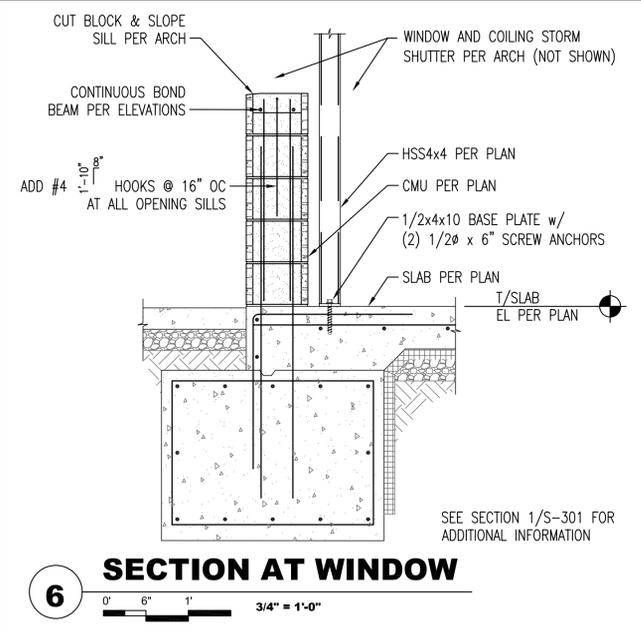
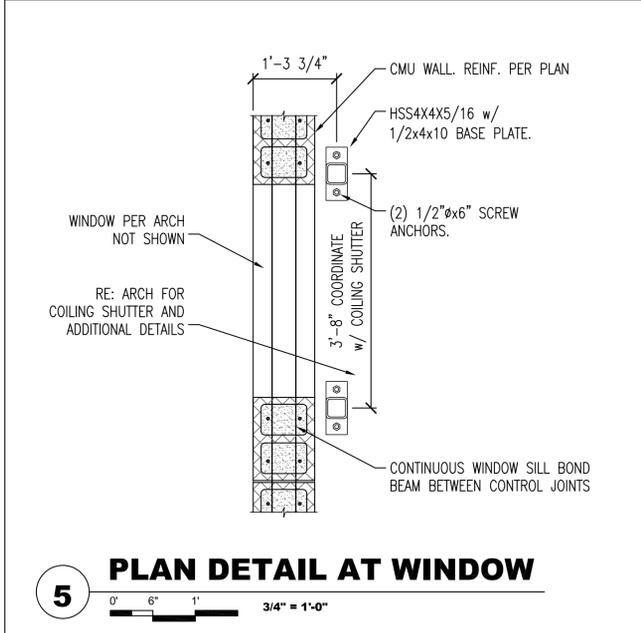
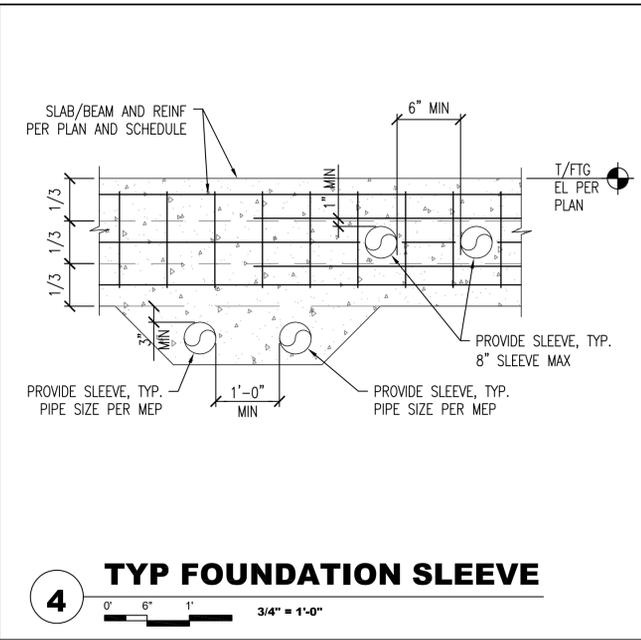
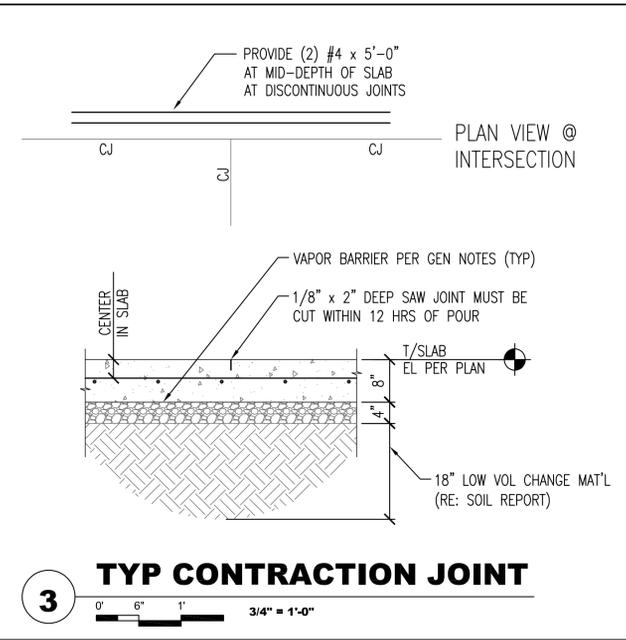
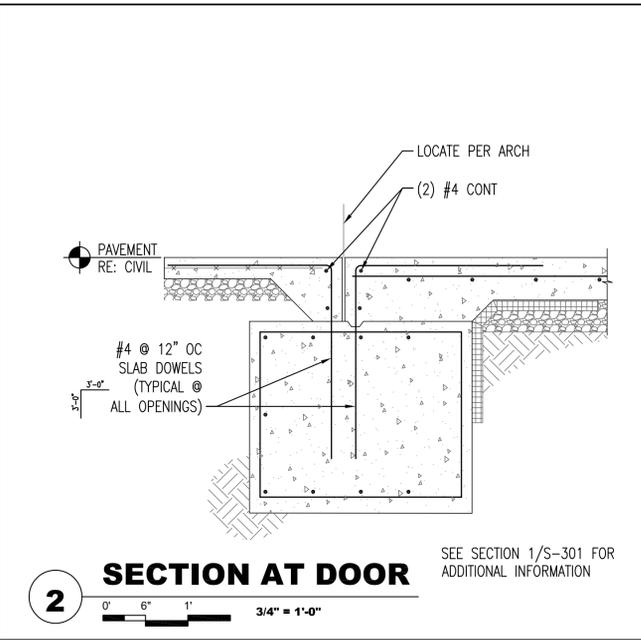
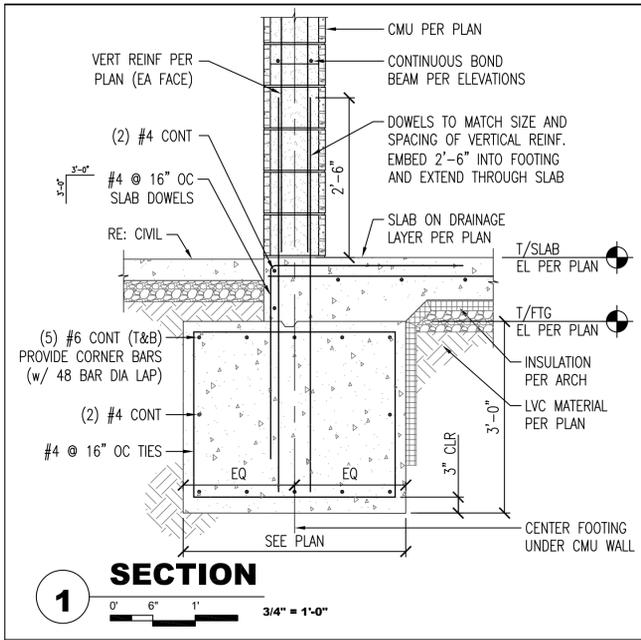
2 SOUTH WALL ELEVATION
1/4" = 1'-0"



3 NORTH WALL ELEVATION
1/4" = 1'-0"



4 WEST WALL ELEVATION
1/4" = 1'-0"



STATE OF MISSOURI
MIKE PARSON,
 GOVERNOR

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 ISSUE DATE: 07/02/2020

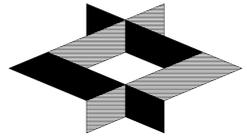
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 DRAWN BY: GLB
 CHECKED BY: KJH
 DESIGNED BY: KHE

SHEET TITLE:
SECTIONS

SHEET NUMBER:
S-301
 12 OF 32 SHEETS



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PUBLIC SAFETY
Missouri Army National Guard

Camp Crowder Training Site
890 Ray Carver Avenue
Neosho, Missouri 64850

FITNESS CENTER - STORM
SHELTER

PROJECT # T2027-01
SITE # 6260
ASSET # 8136260016

REVISION: _____
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CAD DWG FILE:
T2027-01_6260_8136260016_A-101.DWG
DRAWN BY: JSP
CHECKED BY: RPK
DESIGNED BY: GLMV

SHEET TITLE:
**FLOOR &
DIMENSION
PLANS**

SHEET NUMBER:
A-101

14 OF 32 SHEETS

FLR. PLAN KEYNOTE LEGEND

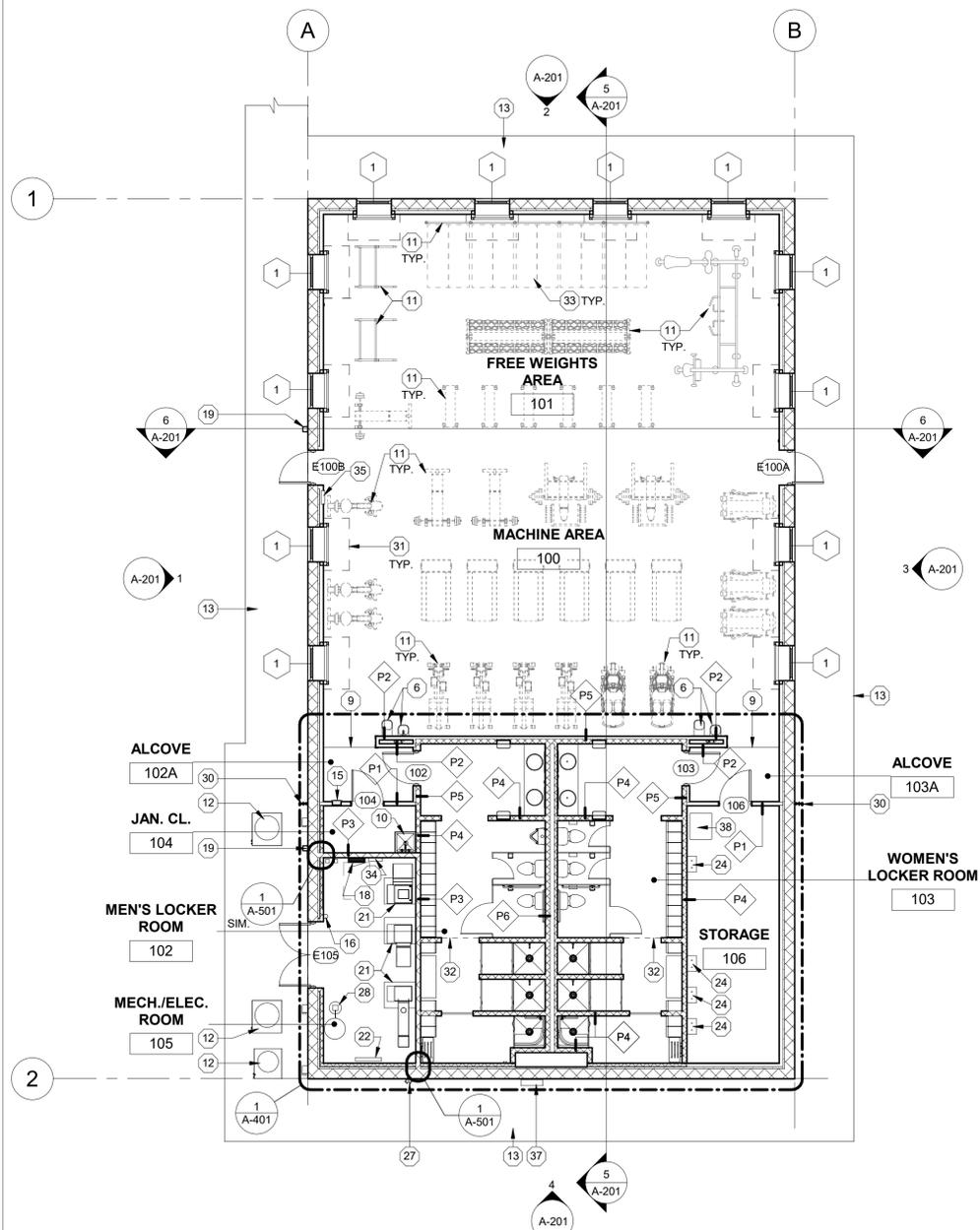
(KEYNOTES DO NOT NECESSARILY APPEAR ON ALL SHEETS)

- 1 SINGLE TIER STEEL LOCKER (RE: INT. ELEVATIONS)
- 2 DOUBLE TIER STEEL LOCKERS (TYP. U.N.O.)
- 3 ADA COMPLIANT LAVATORY (RE: PLMG.)
- 4 ADA COMPLIANT TOILET (RE: PLMG.)
- 5 ADA COMPLIANT URINAL (RE: PLMG.)
- 6 ADA COMPLIANT DRINKING FOUNTAINS (RE: PLMG.)
- 7 TOILET (RE: PLMG.)
- 8 CHANGING BENCH
- 9 ADA COMPLIANT TRANSITION STRIP (RE: DTL. 4/I-101)
- 10 JANITOR'S SINK (RE: DTL. 2/A-401, 3/A-401 & PLMG.)
- 11 FITNESS EQUIPMENT (RE: EQUIPMENT PLAN, RE: 1/I-101)
- 12 CONDENSER UNIT (RE: MECH.)
- 13 REINF. CONC. SIDEWALK (RE: CIVIL)
- 14 CMU CONTROL JT. LOCATION (RE: 2/A-601)
- 15 FIRE EXTINGUISHER W/ SEMI-RECESSED CABINET (RE: 9/A-501)
- 16 WALL-MOUNTED FIRE EXTINGUISHER (MOUNTED PER ADA REQMTS.)
- 17 CORNER GUARD (RE: FINISH LEGEND & DTL. 2/I-101)
- 18 ELECTRICAL PANEL AND REQUIRED CLEARANCES (RE: ELECT.)
- 19 RUN DOWN SPOUT TO BOOT AND UNDERGROUND TO DAYLIGHT (RE: CIVIL)
- 20 FLOOR DRAIN (RE: PLMG. & RE: 3/I-101)
- 21 CONCRETE HOUSEKEEPING PADS (RE: STRUCT.)
- 22 DOMESTIC WATER BACKFLOW PREVENTER (RE: PLMG.)
- 23 FIRE DEPARTMENT ENTRY AND RISER (RE: PLMG.)
- 24 INSTANT WATER HEATER (RE: PLMG. & ELECT.)
- 25 CT CABINET (RE: ELECT.)
- 26 CONDENSER UNIT DISCONNECT (RE: ELECT.)
- 27 FIRE DEPARTMENT CONNECTION (RE: PLMG.)
- 28 WATER SOFTENER COMPONENTS (RE: PLMG.)
- 29 HVAC UNITS AND ADJACENT DUCTWORK (RE: MECH.)
- 30 OUTDOOR HOSE BIB / WATER HYDRANT (RE: PLMG.)
- 31 TORNADO-RESISTANT STEEL OVERHEAD COILING DOOR (MOTOR & CASING ABOVE SHOWN DASHED)
- 32 RE: ALTERNATE #2 - SHOWER AREA LIMIT (RE: SHEET I-101, INTERIOR NOTES)
- 33 YOGA MATS (BY OTHERS)
- 34 FIRE ALARM PANEL (RE: ELECT.)
- 35 FIRE ALARM ANNUCIATOR PANEL (RE: ELECT.)
- 36 FIRE-TREATED PLYWD. PANELBOARD (RE: ELECT.)
- 37 GAS METER (RE: PLMG.)
- 38 INVERTER (RE: ELECT.)
- 39 SLOPED SHOWER BASIN (RE: 6/A-501, BASE BID SIM.)

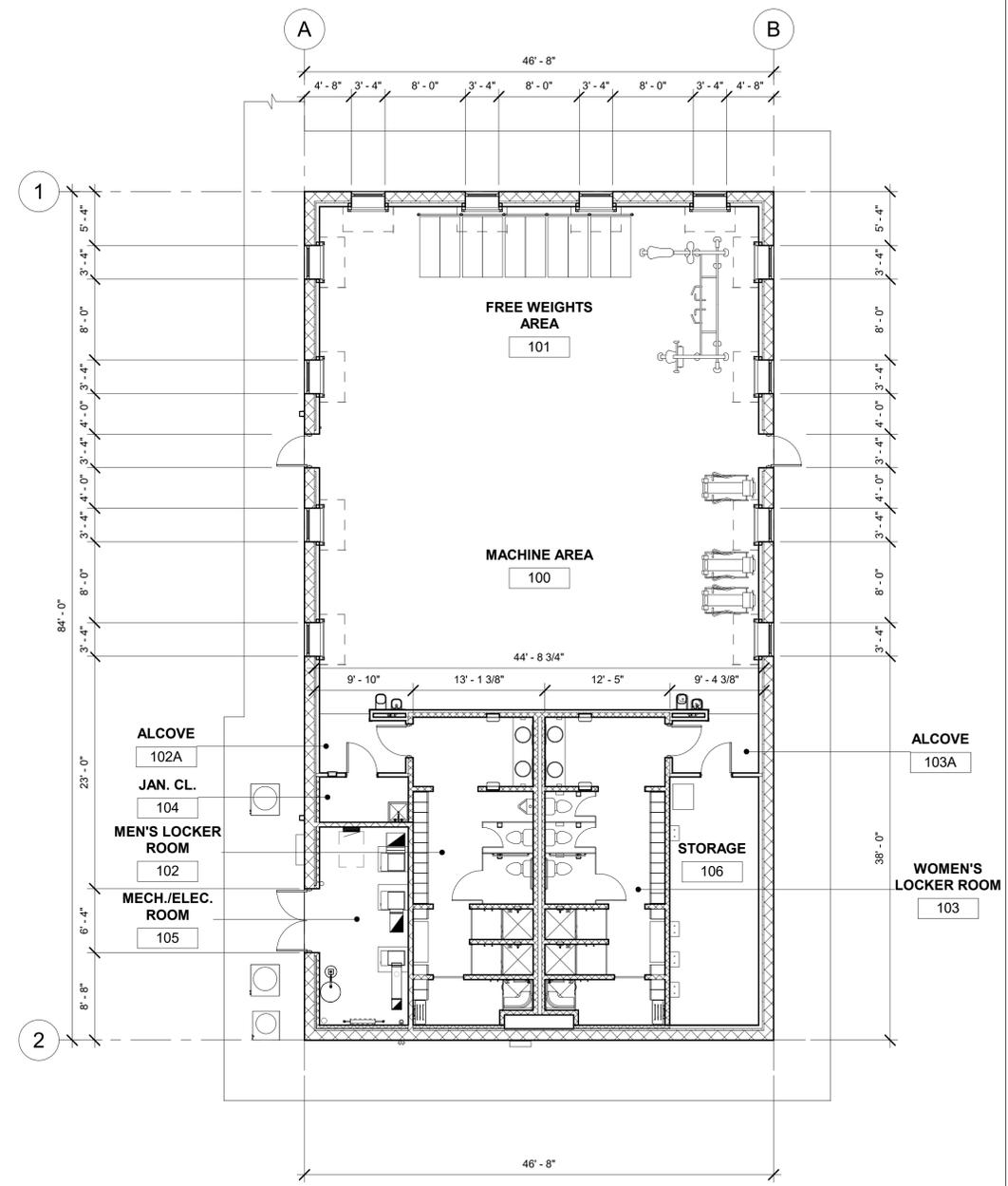
FLOOR PLAN LEGEND

FOR EXTERIOR WALL CONSTRUCTION (RE: STRUCT., WALL SECTIONS & DETAILS FOR ALL CONSTRUCTION COMPONENTS NOT NOTED BELOW):

- 12" REINF. CMU WITH 4" CMU VENEER LOCATED ON INTERIOR SIDE (VENEER FULL HT. U.N.O.)
- 12" REINF. CMU WITH 3 5/8" METAL STUDS (W/ FINISHED GYP. BD.) LOCATED ON INTERIOR SIDE (FURRED WALLS FULL HT. U.N.O.)



1 FLOOR PLAN
NORTH
PLAN TRUE
1/8" = 1'-0"



2 DIMENSION PLAN
NORTH
PLAN TRUE
1/8" = 1'-0"

DIMENSION NOTES

1. COLUMN LINES HAVE BEEN PROVIDED AND LOCATED ALONG THE EXTERIOR FACE OF THE MASONRY WALL CONSTRUCTION.
2. SEE ENLARGED PLANS AND PLAN DETAILS FOR ADDITIONAL INFORMATION INCLUDING DIMENSIONS NOT SHOWN.

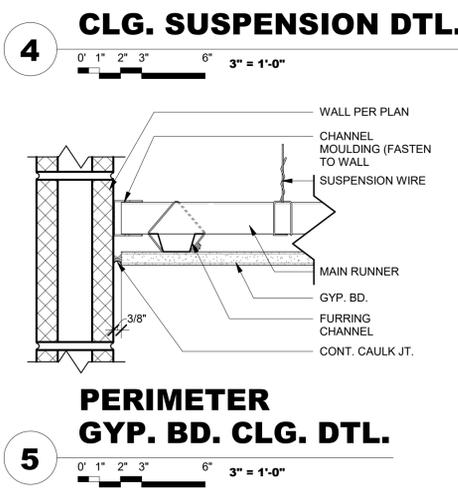
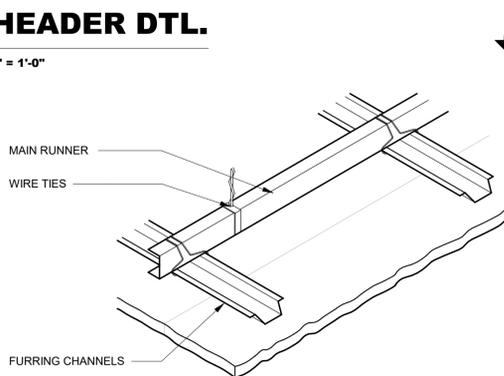
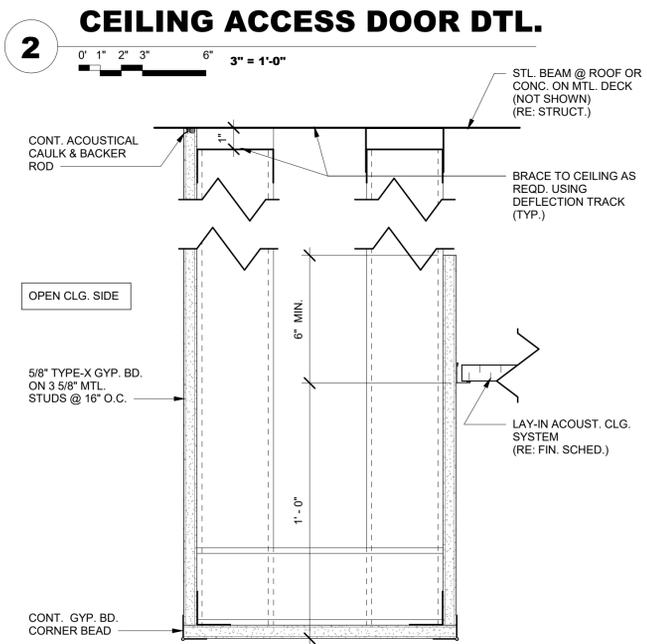
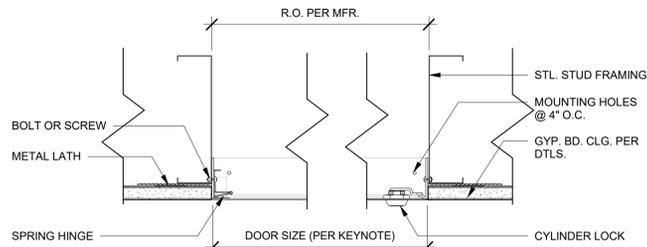
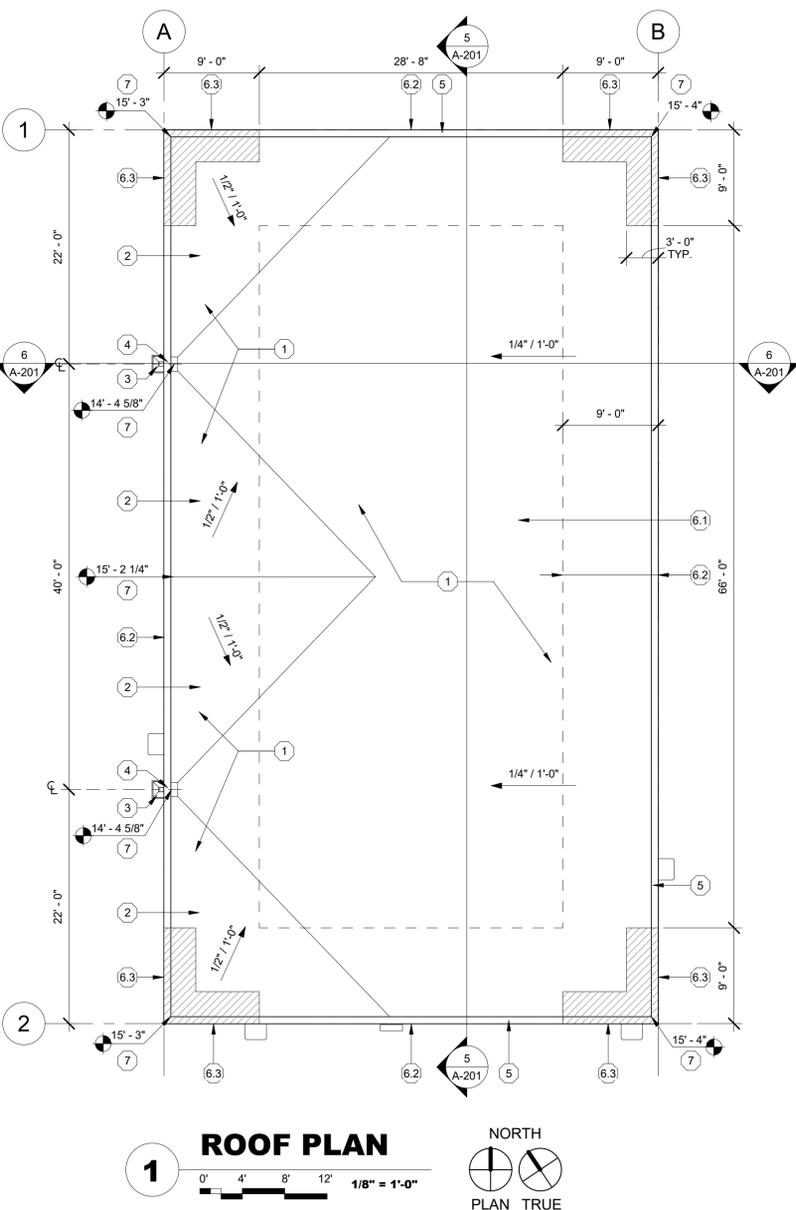
ARCH. FIN. FLR. 100' - 0" = 1279.50 CIVIL

GENERAL ROOF NOTES

- SEE PLUMBING AND MECHANICAL DRAWINGS FOR ROOF PENETRATIONS (IF ANY) INCLUDING BUT NOT LIMITED TO VENT PIPES AND FLUES.
- PENETRATIONS THROUGH ROOF INCLUDING FLASHING DEVICES FOR EQUIPMENT AND PIPE CURBS MUST BE APPROVED BY THE INSTALLED SINGLE-PLY MEMBRANE ROOF SYSTEM MANUFACTURER AND COMPLY WITH THE ROOF SYSTEM MANUFACTURER'S PROVISIONS AND REQUIREMENTS REGARDING ROOF PENETRATIONS FOR A WATER TIGHT CONDITION AND SPECIFIED WARRANTIES.
- IF PENETRATIONS OF SINGLE-PLY MEMBRANE ROOF IS UNAVOIDABLE, MAKE PROVISIONS TO REDUCE THE NUMBER OF PENETRATIONS TO AS FEW AS POSSIBLE.
- NIGHT-SEALS OR CUT-OFFS USED ON THE PROJECT SHALL FLASH THE ROOF SYSTEM DOWN TO THE DECK TO PREVENT WATER PENETRATION INTO THE NEW ROOF.

ROOF KEYNOTE LEGEND

- SINGLE-PLY MEMBRANE ROOF WITH COVER BOARD ON TAPERED INSULATION OR COMPOSITE SYSTEM OF THE SAME (RE: SPEC.)
- TAPERED INSULATION CRICKET
- 20" HT. x 20" W. x 12" DP. PRE-FIN. METAL CONDUCTOR HEAD
- 4 3/8" HT. x 1'-4" W. PRE-FIN. METAL THRU-WALL SCUPPER
- PRE-FIN. METAL PARAPET CAP FLASHING
- WIND UPLIFT ZONES (RE: DETAILS & SPEC.)
- 6.1 ZONE 1 (ROOF AREA FIELD)
- 6.2 ZONE 2 (ROOF AREA PERIMETER)
- 6.3 ZONE 3 (ROOF CORNERS) - ENHANCED WIND UPLIFT ZONE
- TOP-OF-INSULATION ELEVATIONS SHOWN ARE FROM FINISHED FLOOR



REFLECTED CLG. PLAN GENERAL NOTES

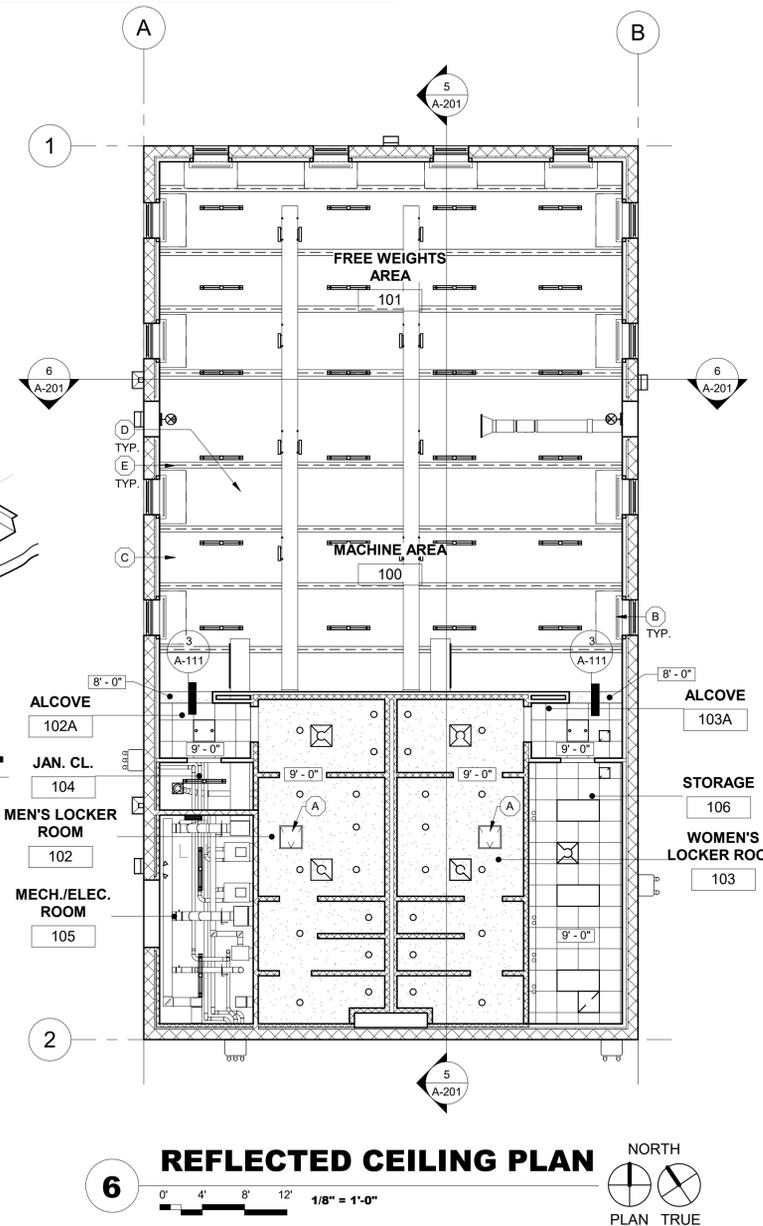
- REFERENCE ELECTRICAL AND MECHANICAL DRAWINGS FOR FINAL FIXTURE LOCATIONS AND IDENTITIES. ARCHITECTURAL CEILING PLANS ARE INTENDED TO SHOW FIXTURE LOCATIONS IN CEILING GRID AND CEILINGS AND SHOULD NOT BE USED TO DETERMINE ELECTRICAL AND MECHANICAL REQUIREMENTS.
- REFERENCE FINISH SCHEDULE FOR ADDITIONAL INFORMATION.
- PROVIDE PERIMETER RELIEF ALONG ALL SUSPENDED GYPSUM BOARD CEILING SYSTEMS (RE: DTL. 5/A-111).

REFLECTED CLG. PLAN KEY NOTES

- 24"x24" ACCESS PANEL (PTD.):
 1. PROVIDE ACCESS PANELS FOR ALL VALVES AND DAMPERS CONCEALED ABOVE GYPSUM BOARD CEILING REQUIRING ACCESS (RE: DTL. 2/A-111).
 2. COORDINATE WITH PLUMBING AND MECHANICAL FOR PLACEMENT AT ACTUAL LOCATIONS.
- TORNADO-RESISTANT OVERHEAD COILING DOOR AND HOOD (PT. ENTIRE GALV. STL. HOOD SAME COLOR AS CLG. - NO CLG. PT. LINE)
- EXPOSED CEILING ELEMENTS TO BE PAINTED (E.G. STRUCTURE, CONDUIT, PIPES, DUCTWORK, ETC.). PRE-FINISHED ITEMS MATCHING CEILING COLOR ARE NOT REQUIRED TO BE PAINTED. DO NOT PAINT ITEMS REQUIRING IDENTIFICATION VIA LABEL (E.G. FIRE-RATINGS), FIRE ALARM DEVICES OR OTHER ITEMS IF PAINTING POSES AN ELEVATED RISK TO PUBLIC SAFETY, HEALTH AND WELFARE. IF UNCLEAR, NOTIFY ARCHITECT FOR DETERMINATION.
- DUCTWORK - PTD. (RE: MECH.)
- STL. STRUCTURE - PTD. (RE: STRUCT.)

REFLECTED CLG. PLAN LEGEND

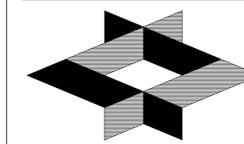
- 2'-0" x 2'-0" LAY-IN ACOUST. CLG. SYSTEM (RE: FIN. SCHED.)
- TYPE-X MOLD-RESISTANT GYP. BD. CLG. SYSTEM (RE: FIN. SCHED.) (RE: DTL. 5/A-111)
- UNFINISHED CEILING U.N.O. (RE: FIN. SCHED. FOR EXPOSED FIN. CLG. LOCATIONS)
- RETURN AIR GRILLE (RE: MECH.)
- SUPPLY AIR DIFFUSER (RE: MECH.)
- LIGHT FIXTURES (RE: ELECT.)
- EMERGENCY LIGHT FIXTURE (RE: ELECT.)
- EXTERIOR WALL-MOUNTED LIGHT FIXTURE (RE: ELECT.)
- WALL-MOUNTED ILLUMINATED EMERGENCY EXIT SIGN (RE: ELECT.)



STATE OF MISSOURI
 MIKE PARSON,
 GOVERNOR



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FITNESS CENTER - STORM
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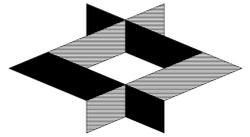
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 CHECKED BY: RPK
 DESIGNED BY: GLMV

SHEET TITLE:
**ROOF PLAN, RCP
 PLAN & DETAILS**

SHEET NUMBER:
A-111
 15 OF 32 SHEETS



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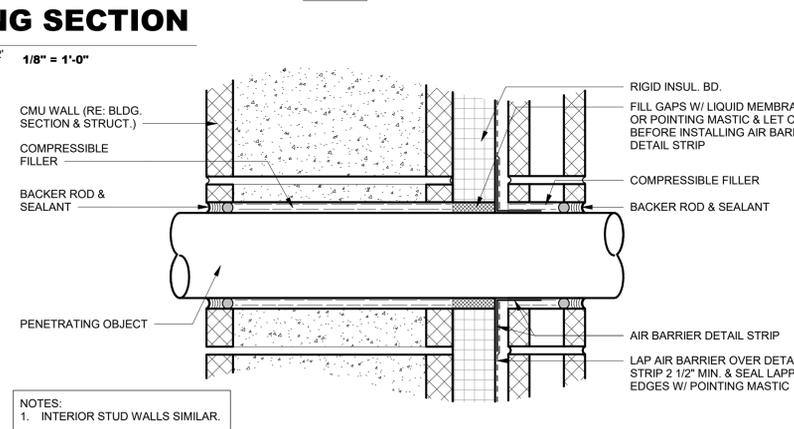
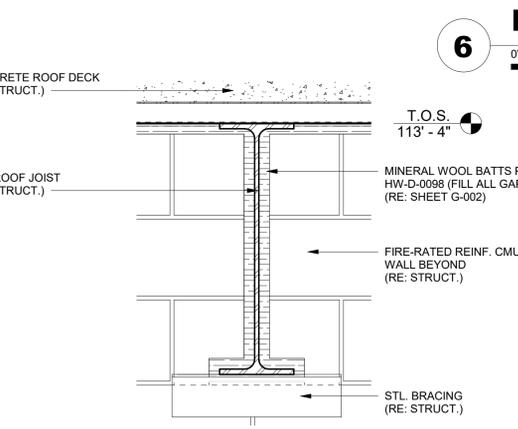
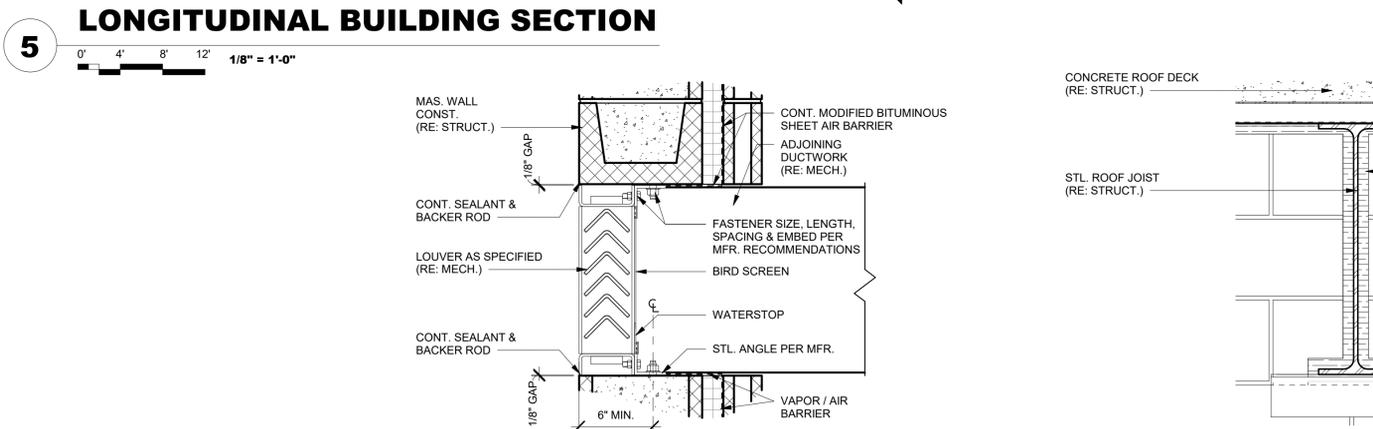
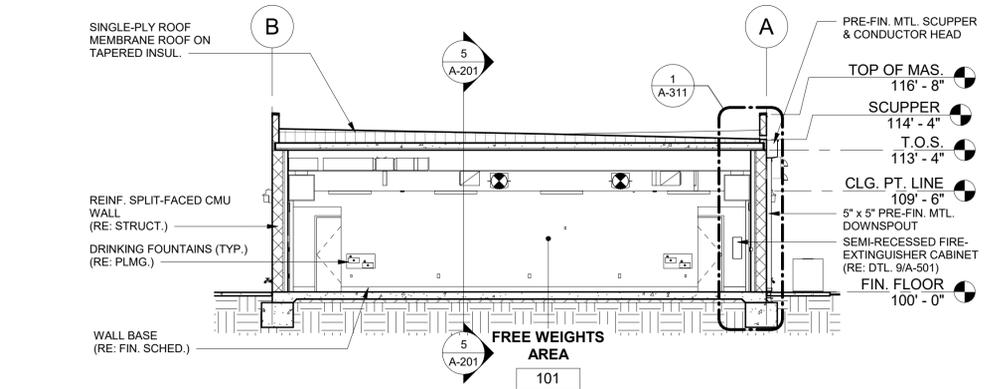
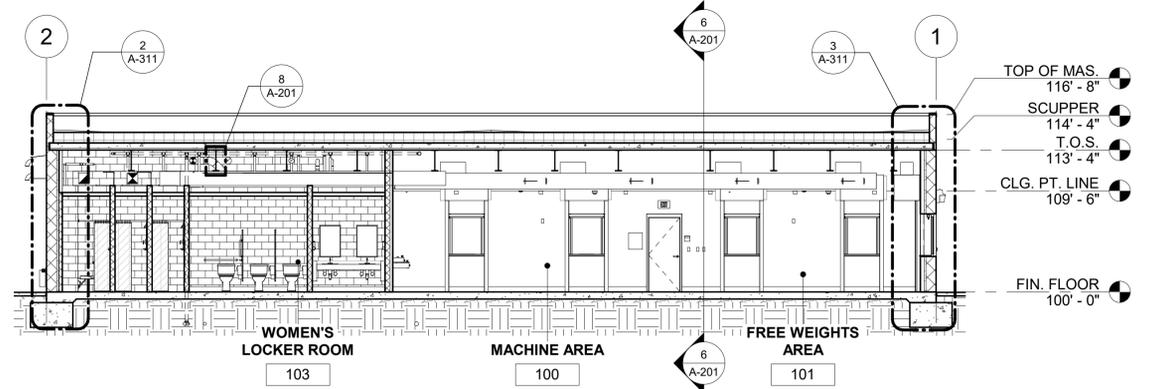
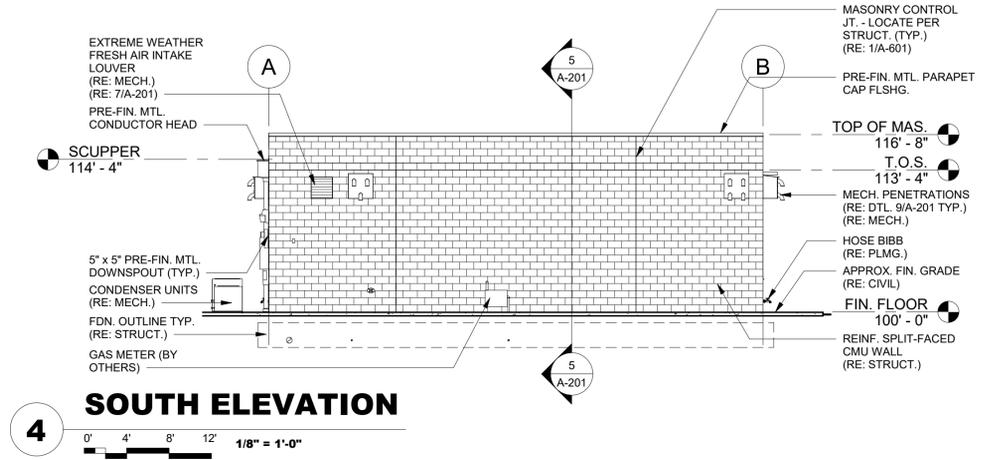
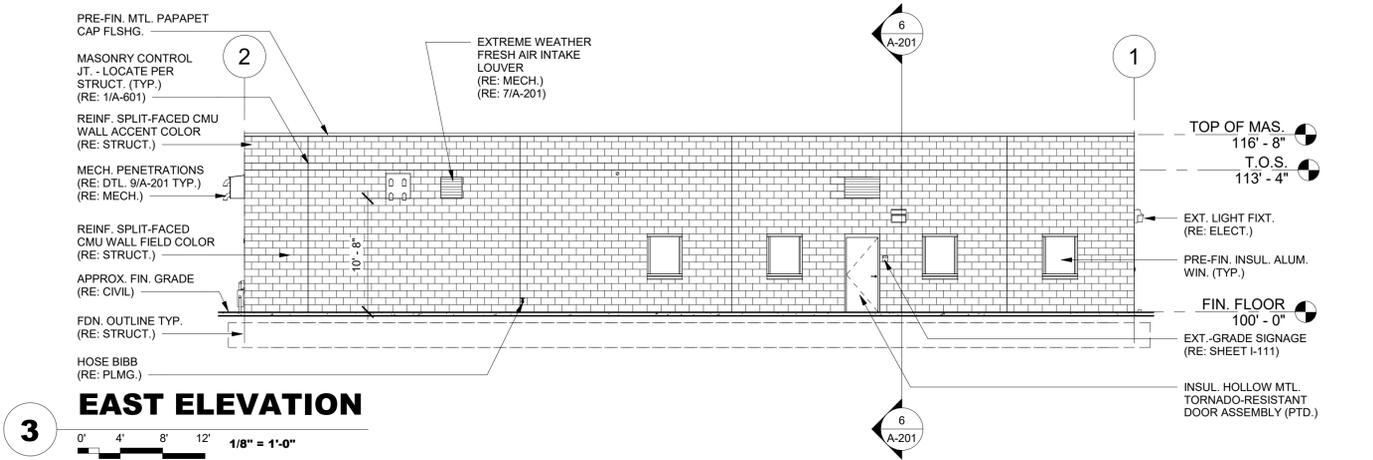
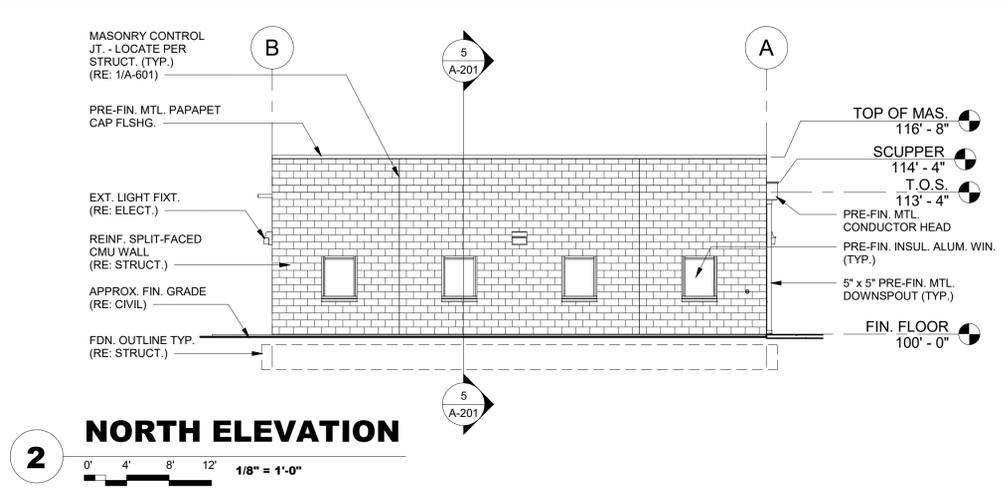
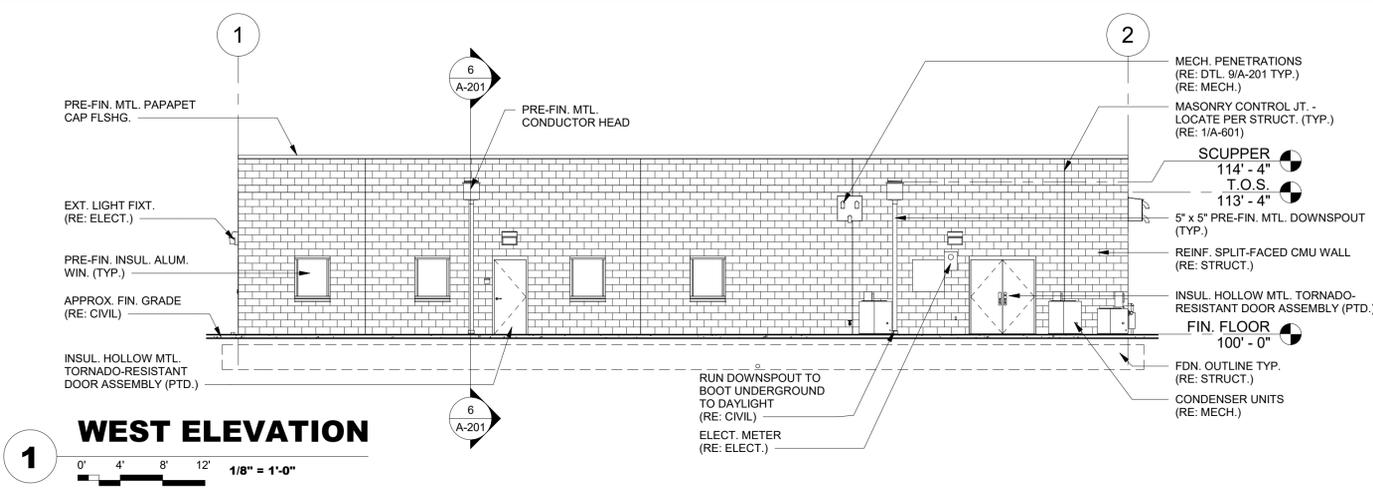
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CHECKED BY: RPK
DESIGNED BY: GLMV

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**BUILDING
ELEVATIONS &
SECTIONS**

SHEET NUMBER:

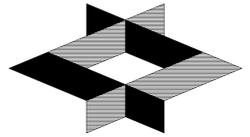
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16 OF 32 SHEETS





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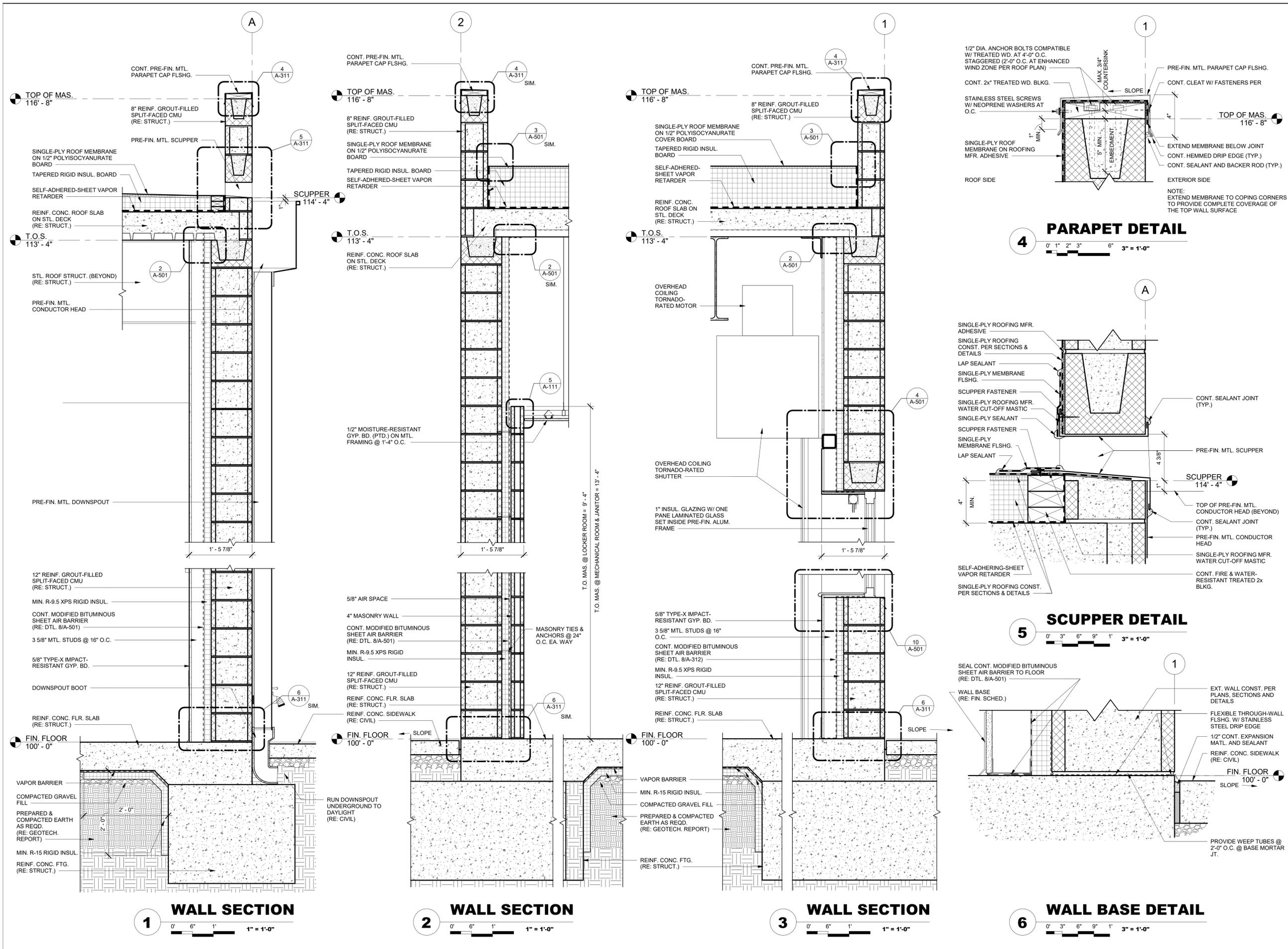
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SHEET TITLE:
**WALL SECTIONS
& DETAILS**

SHEET NUMBER:

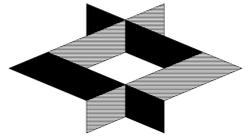
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17 OF 32 SHEETS

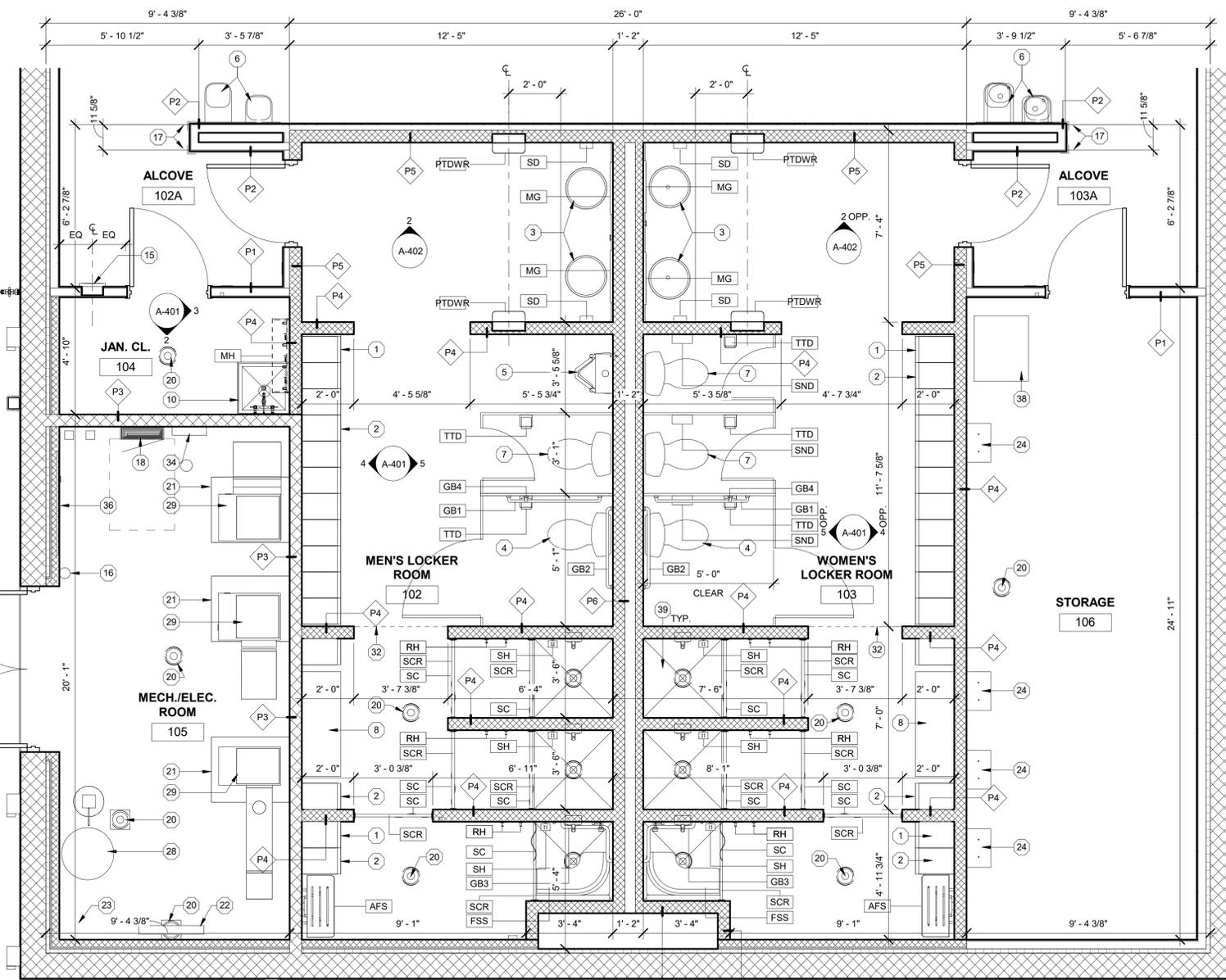




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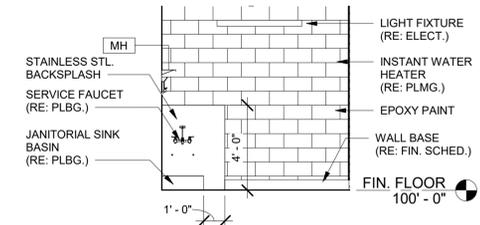


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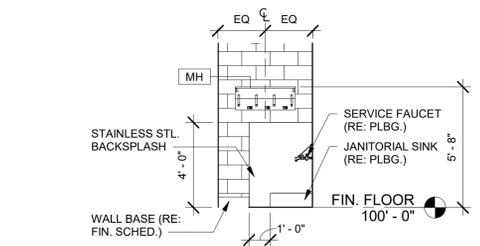


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 - GAS METER (RE: PLMG.)
 - INVERTER (RE: ELECT.)
 - SLOPED SHOWER BASIN (RE: 6/A-501, BASE BID SIM.)



2 JAN. ELEV. (SOUTH)
Scale: 1/4" = 1'-0"



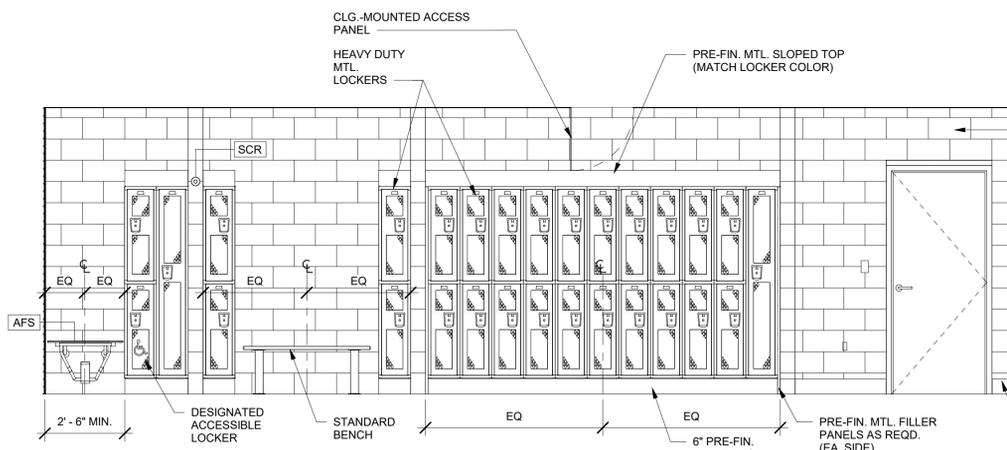
3 JAN. ELEV. (EAST)
Scale: 1/4" = 1'-0"

TOILET ACCESSORY SCHED.

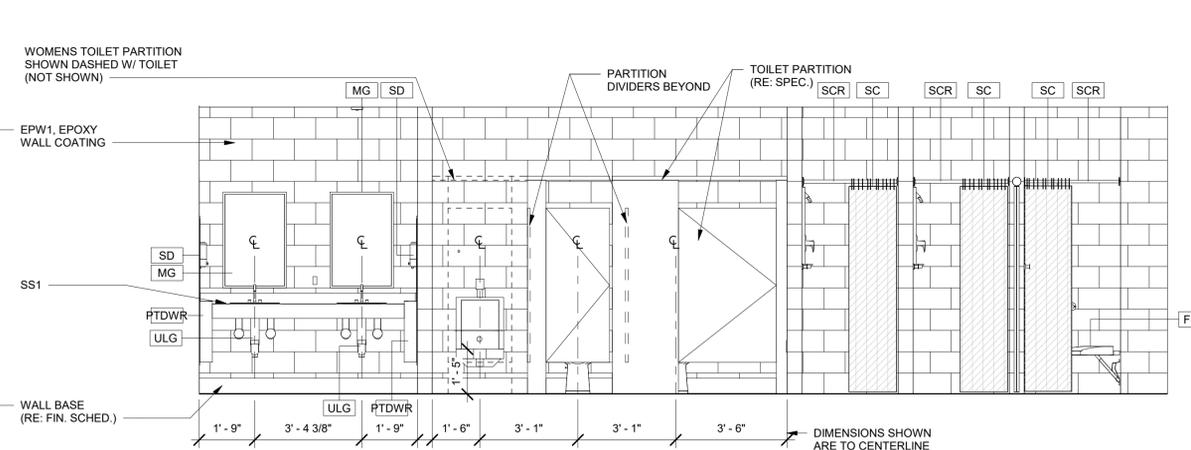
MARK	ITEM	DESCRIPTION
AFS	ACCESSIBLE FOLDING SEAT	22" x 15" SOLID PHENOLIC FOLDING / DRESSING AREA SEAT
FSS	FOLDING SHOWER SEAT	STANDARD ACCESSIBLE FOLDING SHOWER SEAT
GB1	GRAB BAR	42" LONG STANDARD STAINLESS STEEL GRAB BAR
GB2	GRAB BAR	36" LONG STANDARD STAINLESS STEEL GRAB BAR
GB3	GRAB BAR	STANDARD ACCESSIBLE STAINLESS STEEL SHOWER GRAB BAR(S)
GB4	GRAB BAR	18" LONG STANDARD STAINLESS STEEL VERTICAL GRAB BAR
MG	MIRROR	1/4" FLOAT GLASS, 24"x36" CHANNEL FRAME
MH	MOP RACK	34" LONG UTILITY SHELF, 3 MOP HOLDERS, 4 HOOKS
PTDWR	PAPER TOWEL DISPENSER/WASTE RECEPTACLE	SEMI-RECESSED, STAINLESS STEEL UNIT
RH	ROBE / TOWEL HOOK	STAINLESS STEEL
SC	SHOWER CURTAIN	BY OTHERS
SCR	SHOWER CURTAIN ROD	36" LONG STANDARD STAINLESS STEEL
SD	LIQUID SOAP DISPENSER	SURFACE MOUNTED
SH	SOAP DISH	SURFACE MOUNTED, STAINLESS STEEL
SND	SANITARY NAPKIN DISPOSAL	SURFACE MOUNTED, STAINLESS STEEL
TTD	TOILET TISSUE DISPENSER	SURFACE MOUNTED, STAINLESS STEEL
ULG	UNDER LAVATORY GUARD	ADA UNDER LAVATORY GUARD

NOTE: WALLS INSIDE MEN'S AND WOMEN'S LOCKER ROOMS MIRROR THE OTHER'S RESPECTIVE SPACE. TO REDUCE CLUTTER, SOME DIMENSIONS ARE NOT SHOWN. USE DIMENSIONS FROM BOTH SPACES TO LOCATE ALL WALLS.

1 ENLARGED LOCKER ROOM PLAN
Scale: 3/8" = 1'-0"
NORTH
PLAN TRUE



4 MEN'S LOCKER ROOM
Scale: 3/8" = 1'-0"



5 MEN'S LOCKER ROOM
Scale: 3/8" = 1'-0"

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ASSET # 8136260016

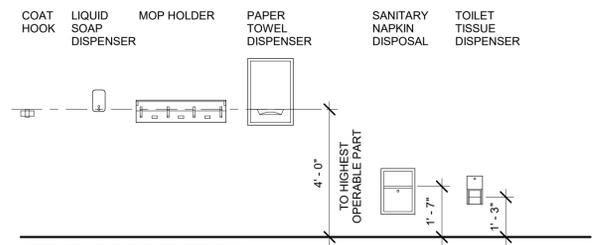
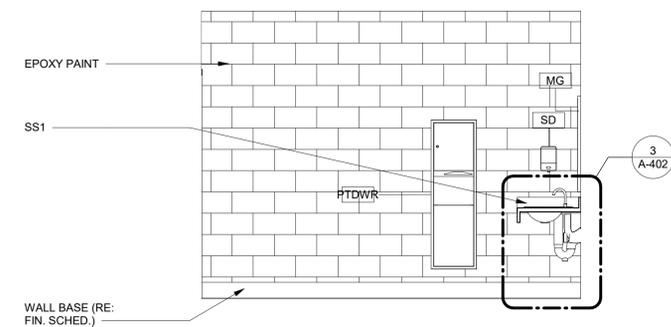
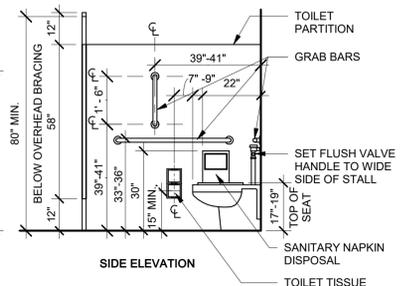
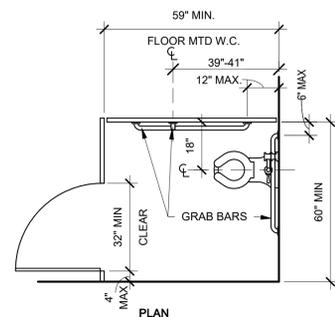
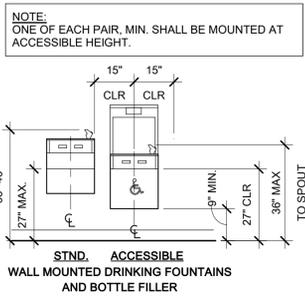
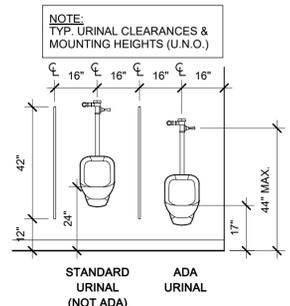
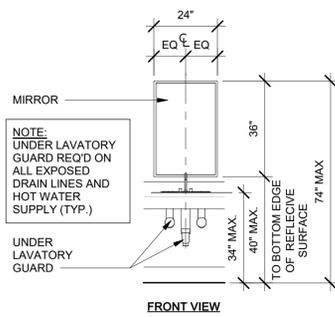
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 07/02/2020

CAD DWG FILE:
T2027-01 6260 8136260016 A-401.DWG
DRAWN BY: JSP
CHECKED BY: RPK
DESIGNED BY: GLMV

SHEET TITLE:
**ENLARGED
PLAN, INTERIOR
ELEV. & DETAILS**

SHEET NUMBER:
A-401

18 OF 32 SHEETS

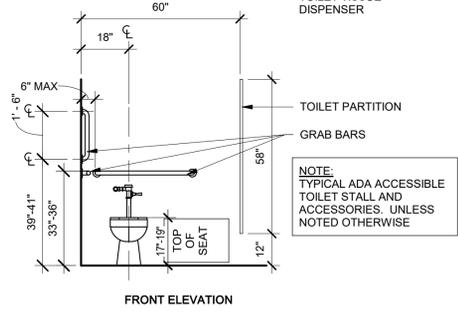


MOUNTING HEIGHTS NOTES

1. THESE PLANS & ELEVATIONS ARE INTENDED TO SHOW TYPICAL MOUNTING HEIGHTS, DIMENSIONS, CLEARANCES, ETC. FOR BOTH ACCESSIBLE (ADA) & NON-ACCESSIBLE FIXTURES & ACCESSORIES.
2. NOT ALL DEVICES, FIXTURES, ACCESSORIES, ETC. SHOWN IN THESE DIAGRAMS ARE APPLICABLE TO THIS PROJECT. REFER TO ENLARGED FLOOR PLANS, INTERIOR ELEVATIONS, ROOM FINISH SCHEDULE, PLMG. DWGS. & PROJECT MANUAL FOR ADDITIONAL INFORMATION, INCLUDING THE SPECIFIC DEVICES, FIXTURES & ACCESSORIES INCLUDED UNDER THIS CONTRACT.
3. COMPLY WITH THE MOUNTING HEIGHTS SHOWN ON THESE DIAGRAMS UNLESS SPECIFICALLY DIMENSIONED ELSEWHERE ON THESE DRAWINGS.
4. ALL DIMENSIONS ARE FROM FINISHED MATERIAL.
5. PLUMBING INSTALLATION KIT REQUIRED ON ALL EXPOSED DRAIN LINES AND HOT WATER SUPPLY (TYP.).
6. CONTRACTOR TO PROVIDE & INSTALL REGD. FIRE-TREATED WD. BLOCKING AS REQUIRED TO ENSURE PROPER INSTALLATION PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS & STRUCTURAL SUPPORT NECESSARY PER BLDG. CODE REQMTS.

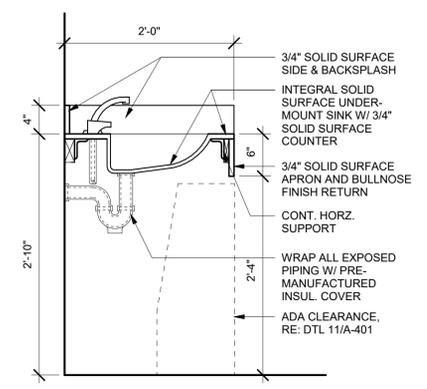
1 TOILET ACCESSORIES MOUNTING HEIGHTS

0' 1' 2' 4' 3/8" = 1'-0"



2 MEN'S LOCKER ROOM

0' 1' 2' 4' 3/8" = 1'-0"

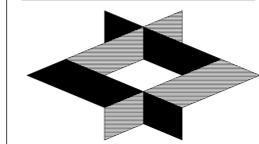


3 TYP. ADA LAVATORY

0' 6" 1' 1" = 1'-0"



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PUBLIC SAFETY
Missouri Army National Guard

Camp Crowder Training Site
890 Ray Carver Avenue
Neosho, Missouri 64850

FITNESS CENTER - STORM
SHELTER

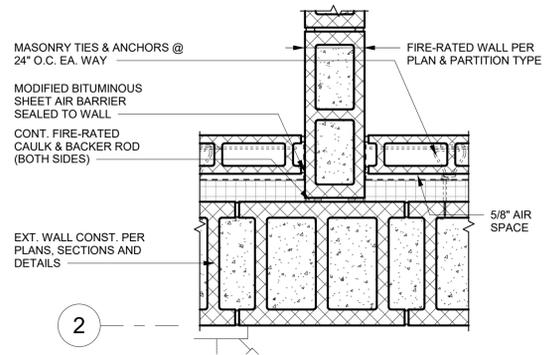
PROJECT # T2027-01
SITE # 6260
ASSET # 8136260016

REVISION: _____
DATE: _____
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DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 07/02/2020

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DRAWN BY: Author
CHECKED BY: Checker
DESIGNED BY: Designer

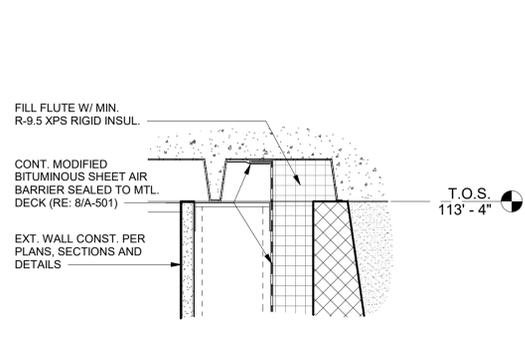
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**INTERIOR
ELEVATIONS &
DETAILS**

SHEET NUMBER:
A-402
19 OF 32 SHEETS



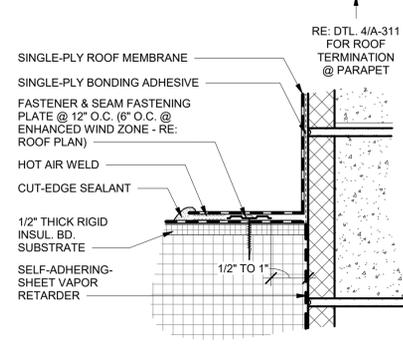
1 WALL TERMINATION PLAN DTL.

0' 3" 6" 9" 1" 1 1/2" = 1'-0"



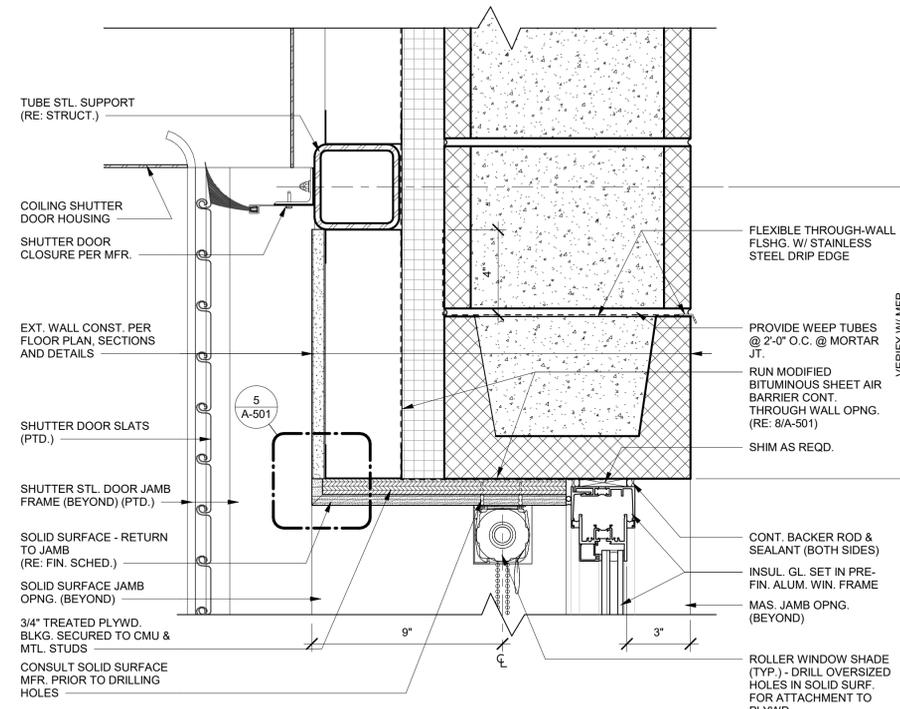
2 WALL TERMINATION DETAIL

0' 1" 2" 3" 6" 3" = 1'-0"



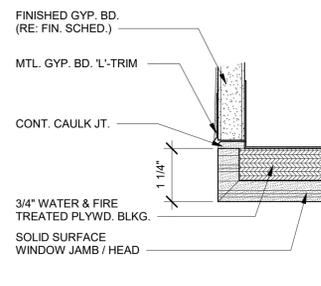
3 ROOF DETAIL

0' 1" 2" 3" 6" 3" = 1'-0"



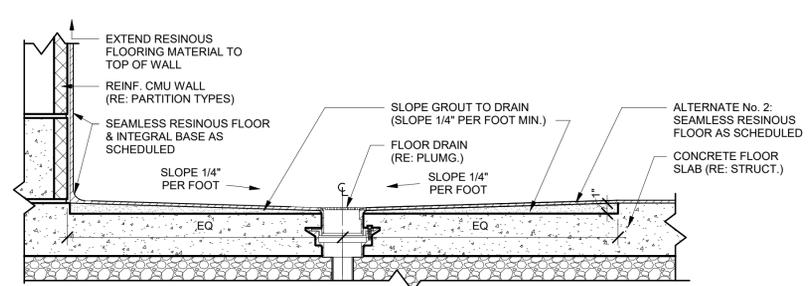
4 SHUTTER HEAD DETAIL

0' 1" 2" 3" 6" 3" = 1'-0"



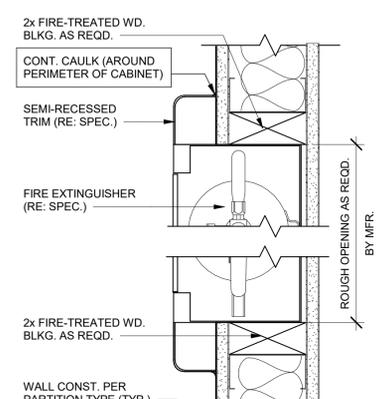
5 WINDOW DTL.

0' 3" 6" 9" 6" = 1'-0"



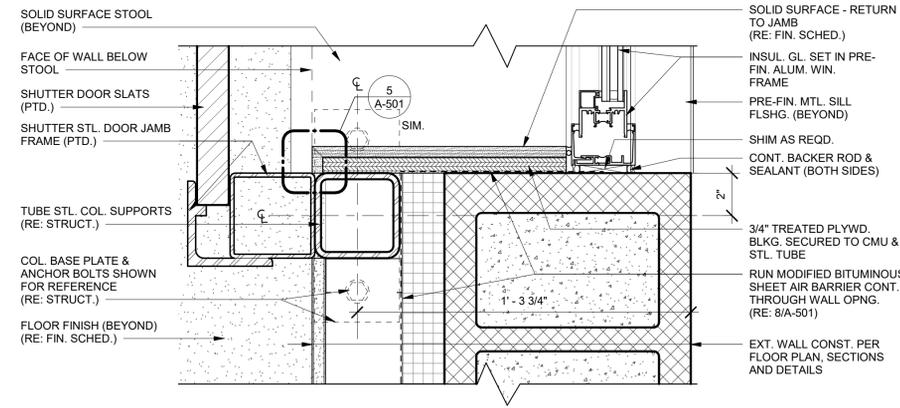
6 ALTERNATE 2 FLOOR (SHOWER) DRAIN DETAIL

0' 3" 6" 9" 1" 1 1/2" = 1'-0" (BASE BID SIM.)



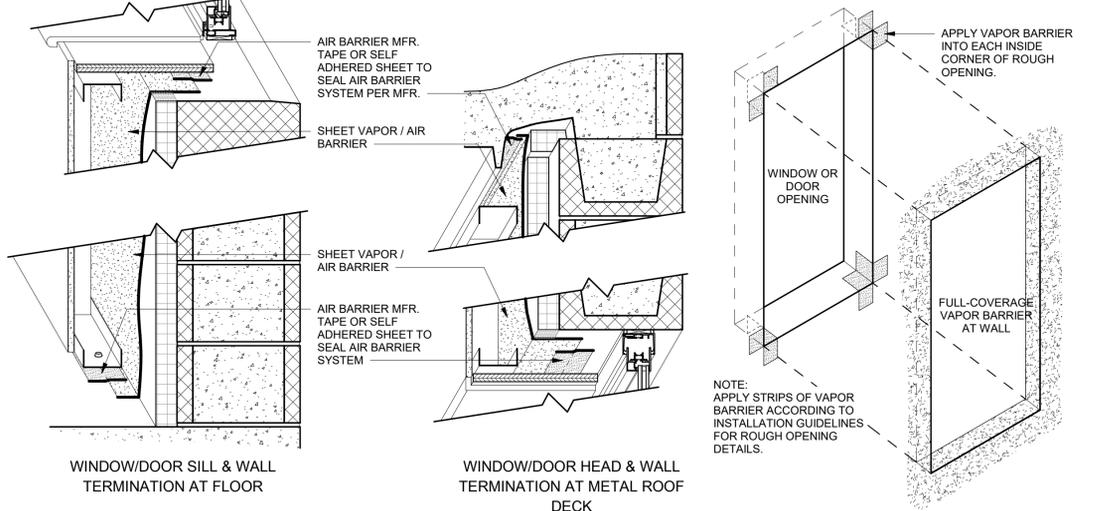
9 FIRE EXTINGUISHER DTL.

0' 1" 2" 3" 6" 3" = 1'-0"



7 SHUTTER JAMB DETAIL

0' 1" 2" 3" 6" 3" = 1'-0"

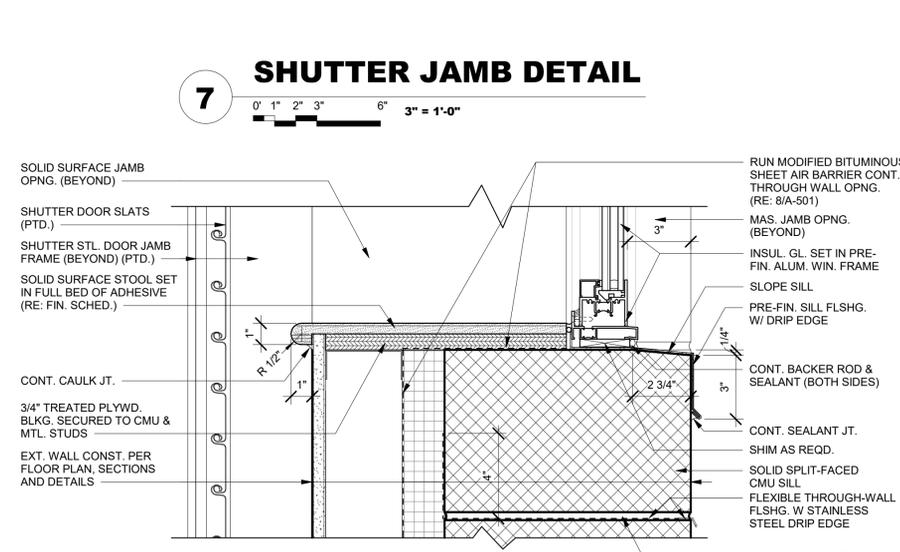


8 VAPOR / AIR BARRIER DETAIL

N.T.S.

AIR BARRIER NOTES:

- NOT ALL CONSTRUCTION COMPONENTS HAVE BEEN SHOWN OR NOTED. THE PURPOSE OF THE DETAILS HAVE BEEN PROVIDED TO DEMONSTRATE EXTENT OF AIR BARRIER.
- AIR / VAPOR BARRIER SYSTEM SHALL BE PLACED PRIOR TO THE INSTALLATION OF METAL STUDS, INTERIOR CMU, SHUTTERS AND OTHER ITEMS THAT WOULD OTHERWISE PREVENT AIR BARRIER SYSTEM FROM BEING CONTINUOUS.

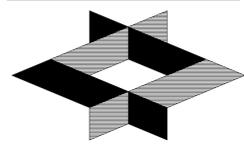


10 DETAIL - SHUTTER SILL

0' 1" 2" 3" 6" 3" = 1'-0"



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FITNESS CENTER - STORM
SHELTER

PROJECT # T2027-01
SITE # 6260
ASSET # 8136260016

REVISION: _____
DATE: _____
REVISION: _____
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REVISION: _____
DATE: _____
ISSUE DATE: 07/02/2020

CAD DWG FILE:
T2027-01 6260 8136260016 A-501.DWG
DRAWN BY: Author
CHECKED BY: Checker
DESIGNED BY: Designer

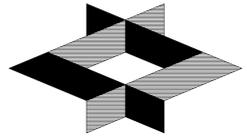
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DETAILS

SHEET NUMBER:
A-501

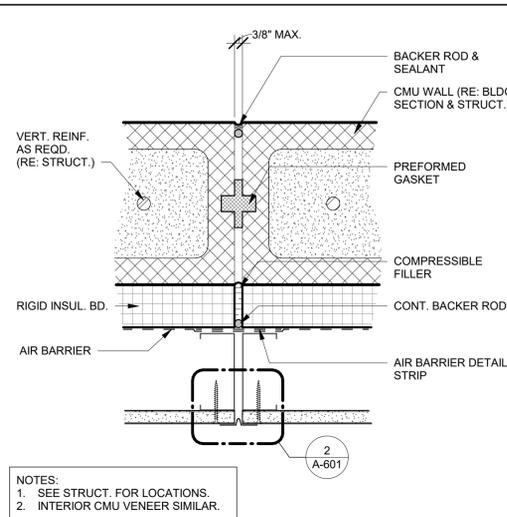
20 OF 32 SHEETS



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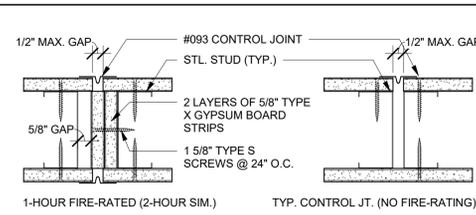
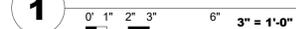


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NOTES:
1. SEE STRUCT. FOR LOCATIONS.
2. INTERIOR CMU VENER SIMILAR.

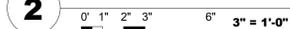
1 CMU CONTROL JOINT



1-HOUR FIRE-RATED (2-HOUR SIM.) TYP. CONTROL JT. (NO FIRE-RATING)
GYPGUM BOARD CONTROL JOINT MAXIMUM SPACING
APPLICATION MAXIMUM DISTANCE
PARTITION 30 FT.
CEILING 50 FT. (WITH PERIMETER RELIEF)
30 FT. (WITHOUT PERIMETER RELIEF)

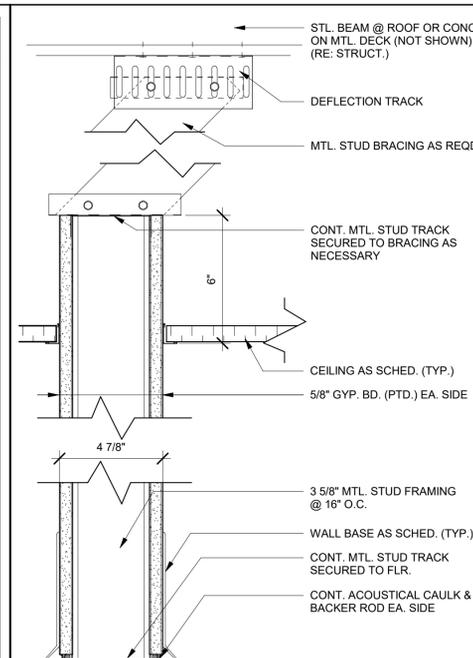
- NOTES:
- CONTROL JOINTS SHOULD BE LOCATED TO INTERSECT LIGHT FIXTURES, HEATING VENTS OR DIFFUSERS, ETC. (U.N.O.)
 - DOOR AND WINDOW FRAMES EXTENDING FROM FLOOR TO CEILING MAY SERVE AS A CONTROL JOINT.
 - FOR DOOR AND WINDOW FRAMES THAT DO NOT EXTEND FROM FLOOR TO CEILING, CONTROL JOINTS MAY EXTEND FROM THE UPPER CORNERS OR CENTER OF THE FRAME.
 - CONTROL JOINTS LOCATED IN EXTERIOR WALL FURRING SYSTEMS MUST BE AT THE SAME LOCATION ON THE INTERIOR SIDE.
 - DETAIL APPLIES TO NON-COMBUSTIBLE STEEL STUDS. SEE GYPSUM ASSOCIATION (GA) REQUIREMENTS FOR COMBUSTIBLE CONSTRUCTION.

2 GYP. BD. CONTROL JT.



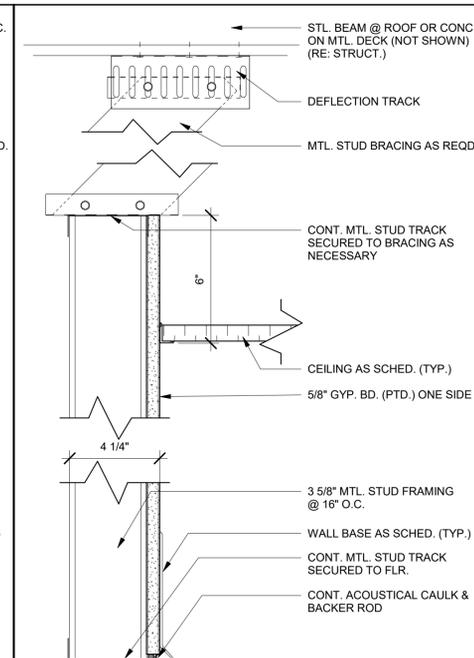
WALL TYPE NOTES

- STUD SPACING, GAUGE AND BRACING (KICKERS) AS REQUIRED BY FRAMING MANUFACTURER'S LOADING TABLES, OR AS REQUIRED BY STRUCTURAL DRAWINGS (RE: S-001). STUD SPACING NOT TO EXCEED 16" O.C.
- PARTITION TYPES ARE ASSEMBLED AS NOTED/DEPICTED IN THEIR RESPECTIVE "SERIES" DETAILS EXCEPT AS MODIFIED IN THE INDIVIDUAL PARTITION TYPE DESCRIPTIONS. THESE DESCRIPTIONS ARE INTENDED TO SUPPLEMENT THE REQUIREMENTS INDICATED AND ILLUSTRATED IN THEIR RESPECTIVE "SERIES" DETAILS.
- RATED PARTITIONS SHALL BE CONSTRUCTED PER THE UL ASSEMBLY NUMBERS INDICATED. IN THE EVENT OF A VARIANCE BETWEEN DETAILS IN THIS SET AND A DESIGNATED UL ASSEMBLY, THE UL ASSEMBLY SHALL GOVERN. NOTIFY THE ARCHITECT OF ANY SUCH VARIANCE.
- WALLS TO BE ERECTED IN ORIENTATION SHOWN IN PARTITION TYPE SERIES DETAILS ACCORDING TO DIRECTION OF LEADER ARROW INCLUDED ON PARTITION TYPE TAG (RE: FLOOR PLANS FOR PARTITION TAGS AND ORIENTATION OF WALLS).
- PENETRATIONS SUCH AS (HOWEVER, NOT LIMITED TO) CONDUIT, PIPE AND CABLES THROUGH FIRE-RATED CONSTRUCTION SHALL CONFORM TO UL LISTED ASSEMBLIES (RE: SHEET G-002) W-L-1027 FOR PIPE AND CONDUIT AND W-L-3023 FOR CABLES).



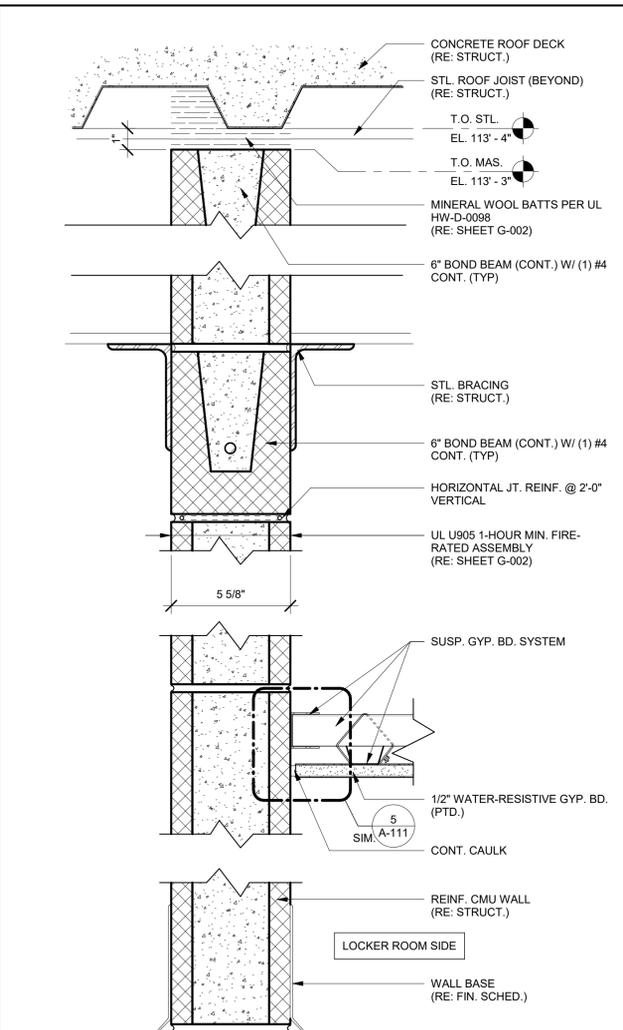
SERIES P1

P1 WALL ASSEMBLY AS NOTED (NON-FIRE-RATED)



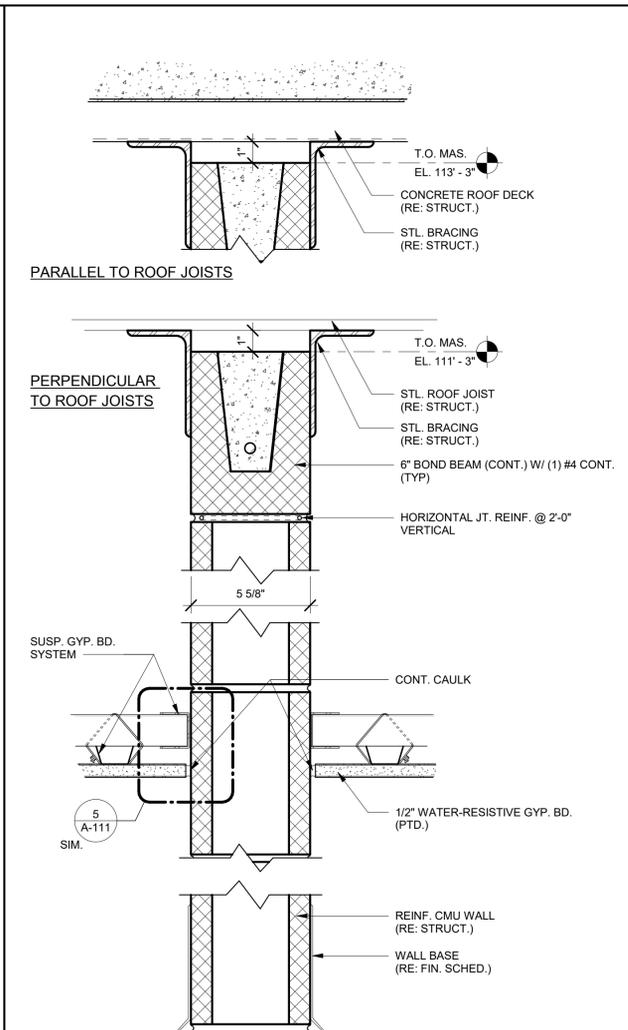
SERIES P2

P2 WALL ASSEMBLY AS NOTED (NON-FIRE-RATED)



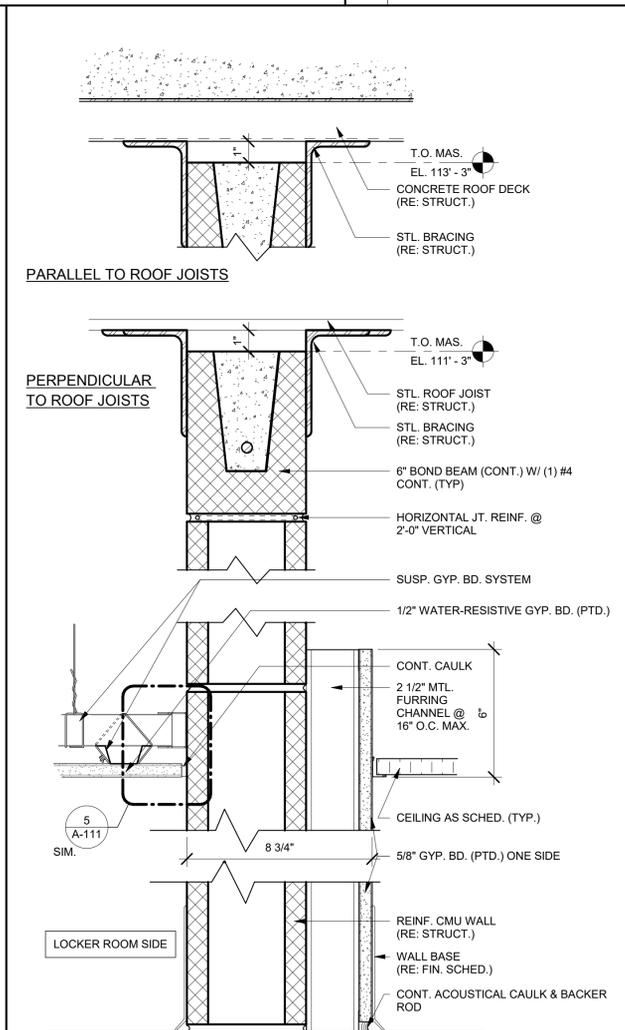
SERIES P3

P3 WALL ASSEMBLY AS NOTED (ONE-HOUR-FIRE-RATED)



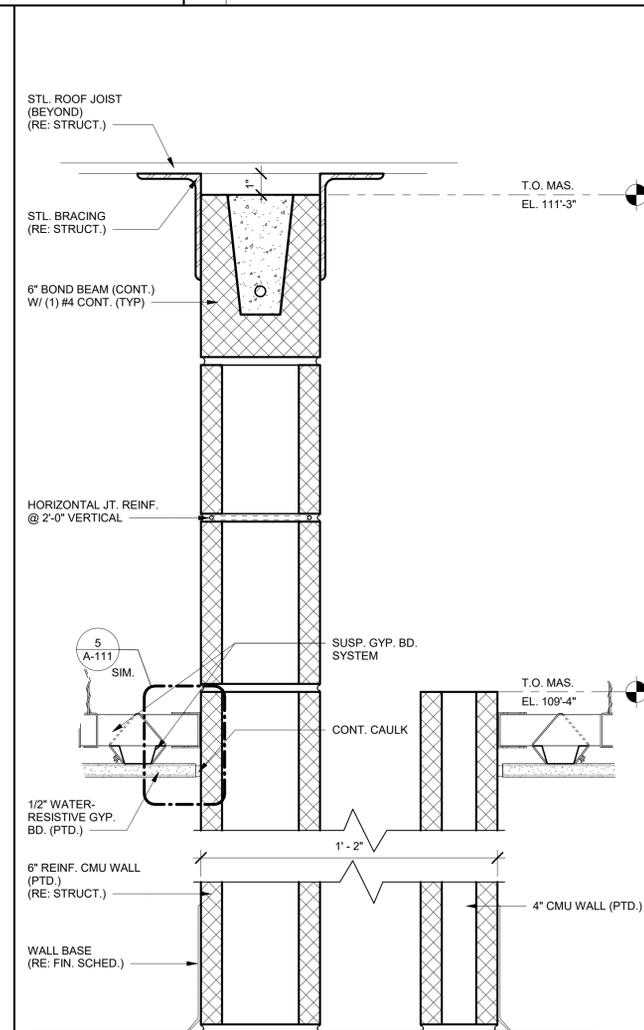
SERIES P4

P4 WALL ASSEMBLY AS NOTED (NON-FIRE-RATED)



SERIES P5

P5 WALL ASSEMBLY AS NOTED (NON-FIRE-RATED)



SERIES P6

P6 WALL ASSEMBLY AS NOTED (NON-FIRE-RATED)

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FITNESS CENTER - STORM
SHELTER

PROJECT # T2027-01
SITE # 6260
ASSET # 8136260016

REVISION: _____
DATE: _____
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REVISION: _____
DATE: _____
ISSUE DATE: 07/02/2020

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DRAWN BY: JSP
CHECKED BY: RPK
DESIGNED BY: GLMV

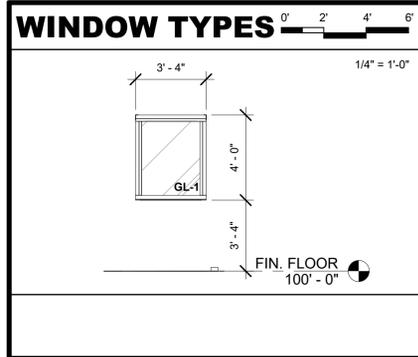
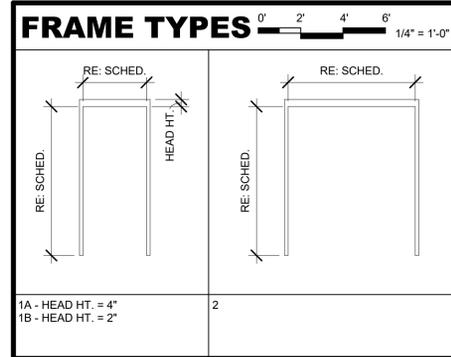
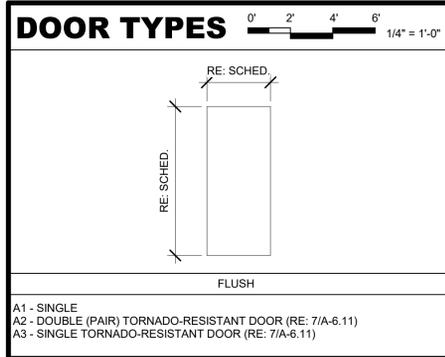
SHEET TITLE:
**PARTITION
TYPES &
DETAILS**

SHEET NUMBER:

A-601

21 OF 32 SHEETS

DOOR SCHEDULE												
DOOR NO.	DOOR				FRAME		DETAILS			FIRE RATING	HARDWARE	COMMENTS
	TYPE	WIDTH x HEIGHT	PAIR	MATERIAL	FINISH	TYPE	MATERIAL	FINISH	HEAD			
102	A1	3'-0" x 7'-0"		HDWD	S&V	1B	HM	PTD	2/A-611	4/A-611	-	5
103	A1	3'-0" x 7'-0"		HDWD	S&V	1B	HM	PTD	2/A-611	4/A-611	-	5
104	A1	3'-0" x 7'-0"		HDWD	S&V	1B	HM	PTD	1/A-611	3/A-611	-	3
106	A1	3'-0" x 7'-0"		HDWD	S&V	1B	HM	PTD	1/A-611	3/A-611	-	4
E100A	A3	3'-0" x 7'-0"		INSUL MTL	PTD	1A	HM	PTD	5/A-611	6/A-611	8/A-611	2
E100B	A3	3'-0" x 7'-0"		INSUL MTL	PTD	1A	HM	PTD	5/A-611	6/A-611	8/A-611	2
E105	A2	3'-0" x 7'-0"	Yes	INSUL MTL	PTD	2	HM	PTD	9/A-611	10/A-611	8/A-611	1



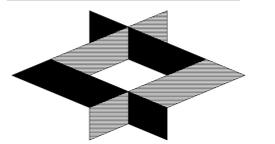
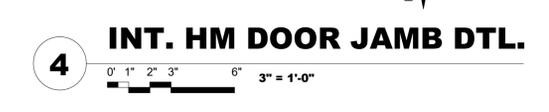
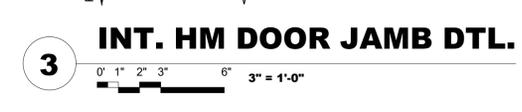
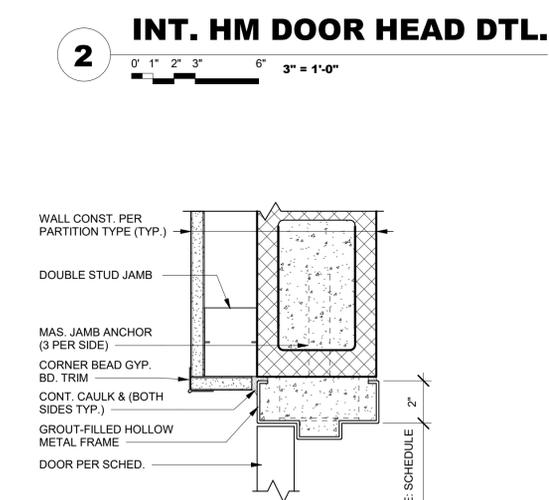
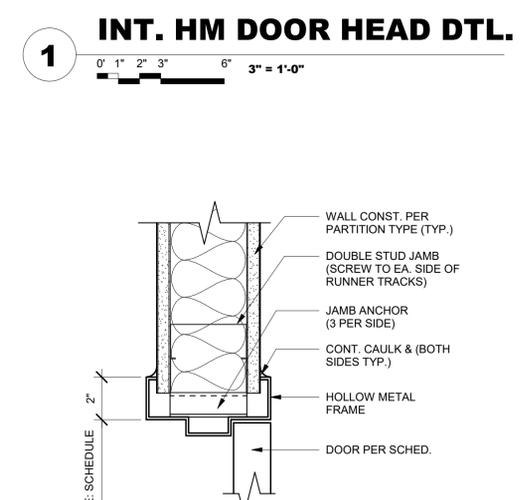
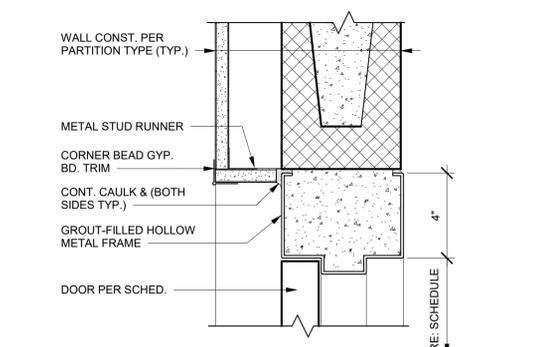
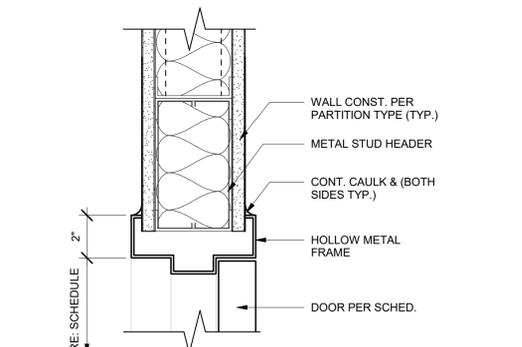
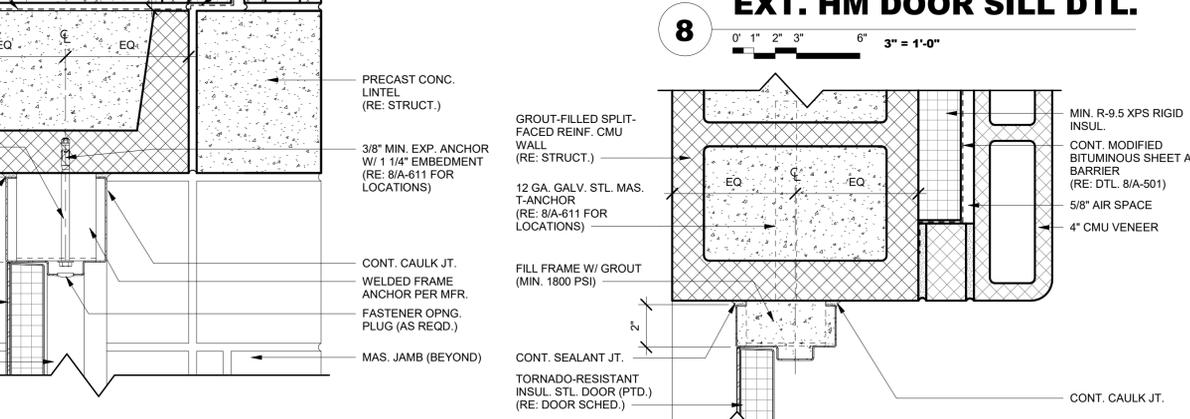
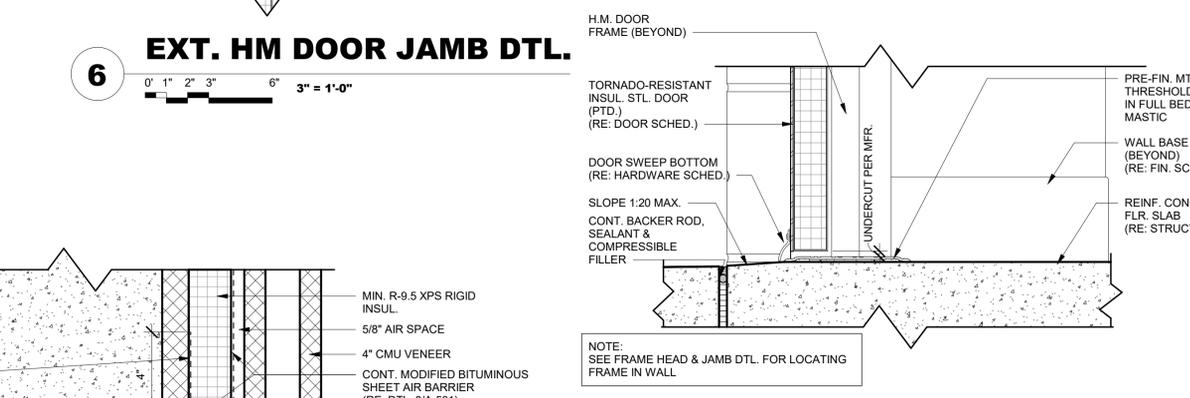
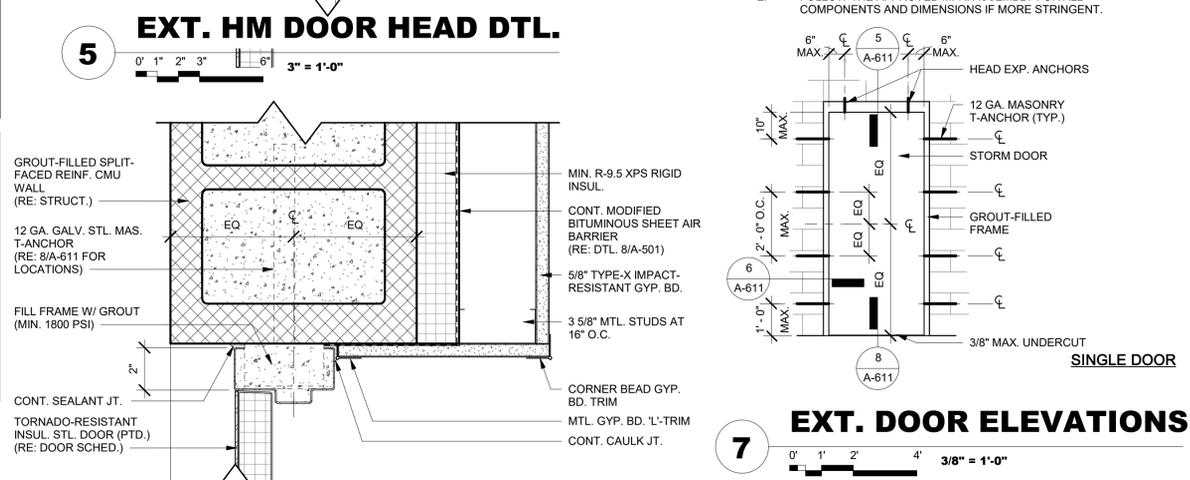
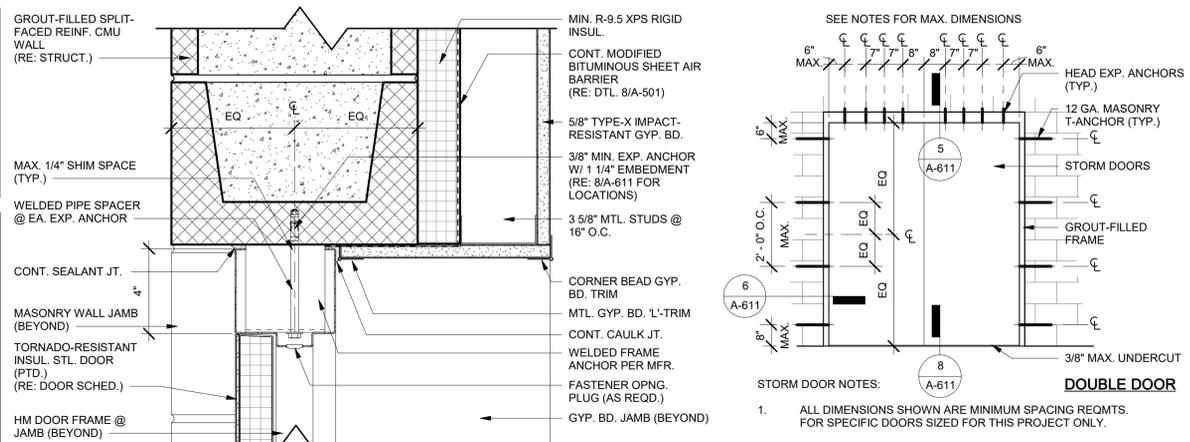
SCHEDULE ABBREVIATIONS (AS APPLICABLE)

HM - HOLLOW METAL (STEEL)	INSUL - INSULATED
ALUM - ALUMINUM	HT - HEIGHT
PTD - PAINTED	RE - REFERENCE
HDWR - HARDWARE	SCHED - SCHEDULE
PRE-FIN - PRE-FINISHED	HDWD - HARDWOOD
STL - STEEL	S&V - SAND & VARNISH

- ### DOOR NOTES
- DOOR OPENING FORCE SHALL COMPLY WITH ANSI A117.86, SECTION 4.13.11.
 - HOLLOW METAL DOORS & FRAMES TO BE PAINTED (RE: FIN. SCHED.).
 - ALL EXTERIOR TORNADO-RESISTANT STEEL DOORS AND FRAMES TO BE INSULATED, WEATHER-STRIPPED AND HARDWARE AS TESTED TO MEET THE 2014 ICC 500/NSSA STANDARD FOR THE DESIGN AND CONSTRUCTION OF STORM SHELTERS REQUIREMENTS.
 - SEE SPECIFICATION SECTION 083990 TORNADO-RESISTANT STEEL DOORS AND FRAMES FOR HARDWARE REQUIREMENTS.
 - DOOR DIMENSIONS NOTED IN THE DOOR SCHEDULE ARE NOMINAL. PROVIDE ACTUAL DIMENSIONS AS REQUIRED.
 - SEE FINISH SCHEDULE FOR ADDITIONAL FINISH INFORMATION.

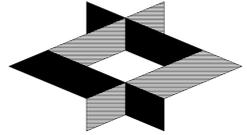
GLAZING

GL-1	LAMINATED INSULATED GLAZING (RE: SPEC. 088000 - GLAZING)
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ISSUE DATE: 07/02/2020

CAD DWG FILE:
T2027-01_6260_8136260016_I-101.DWG
DRAWN BY: JSP
CHECKED BY: RPK
DESIGNED BY: GLMV

SHEET TITLE:
FINISH SCHED.,
EQUIPMENT
PLAN & DETAILS

SHEET NUMBER:

I-101

23 OF 32 SHEETS

ROOM FINISH SCHEDULE

FITNESS CENTER ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR FINISH	BASE FINISH	NORTH WALL FINISH	EAST WALL FINISH	SOUTH WALL FINISH	WEST WALL FINISH	CEILING FINISH	INTERIOR FINISH NOTES
100	MACHINE AREA	AF1	RB1	-	P1, P3	P2, P3	P1, P3	PC2	1
101	FREE WEIGHTS AREA	AF1	RB1	P1, P3	P1, P3	-	P1, P3	PC2	1
102	MEN'S LOCKER ROOM	SC1	RB1	EPW1	EPW1	EPW1	EPW1	GYP, PC1	2, 4, 5
102A	ALCOVE	SC1	RB1	P2	P2	P2	P1	APC1	1, 3, 4
103	WOMEN'S LOCKER ROOM	SC1	RB1	EPW1	EPW1	EPW1	EPW1	GYP, PC1	2, 4, 5
103A	ALCOVE	SC1	RB1	P2	P1	P2	P2	APC1	1, 3, 4
104	JAN. CL.	SC1	RB1	P1	P1	P1	P1	GYP, PC1	1, 4
105	MECH./ELEC. ROOM	SC1	RB1	P1	P1	P1	P1	EXP. PC1	1
106	STORAGE	SC1	RB1	P1	P1	P1	P1	APC1	1

INTERIOR FINISH NOTES

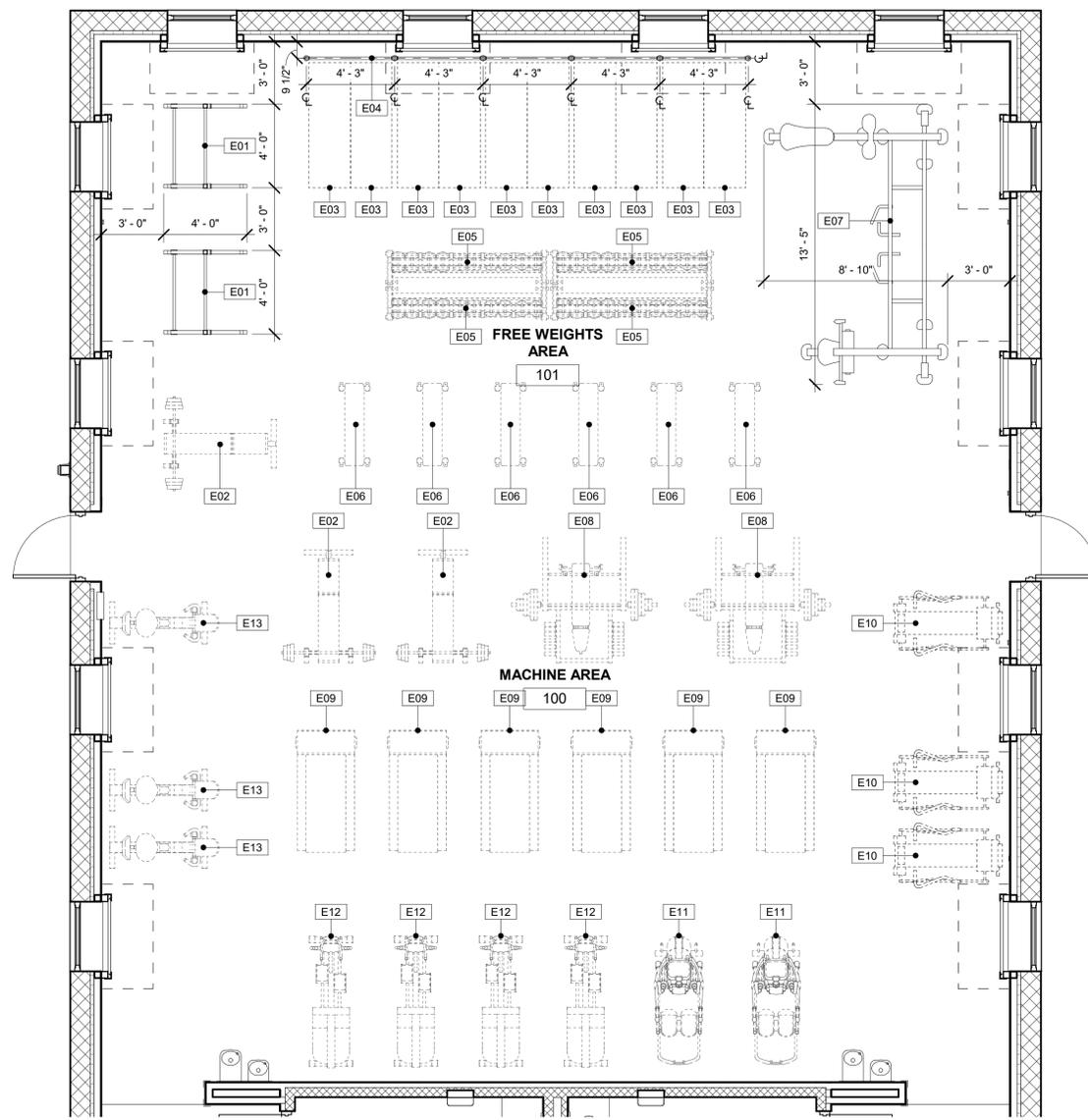
- EPOXY PAINT SHALL EXTEND FROM BASE TO 4'-0" A.F.F.; EPOXY PAINT TO MATCH COLOR OF PAINT SPECIFIED IN FINISH SCHEDULE. PAINT AS SCHEDULED TO EXTEND FROM 4'-0" TO CEILING.
- RUBBER BASE SHALL NOT BE INSTALLED IN SHOWER AREAS. SHOWER AREAS SHALL RECEIVE SC2 FLOOR & EPW1 WALLS. REFER TO KEYNOTE 32 ON SHEET A-101 FOR DEFINED 'SHOWER AREA'.
- RUBBER BASE SHALL EXTEND ALONG WEST WALL OF ALCOVE 102A AND EAST WALL OF ALCOVE 103A EVEN IF ADD ALTERNATE #2 IS ACCEPTED, SO AS TO MAINTAIN A CONTINUOUS WALL BASE MATERIAL BETWEEN MACHINE AREA AND ALCOVES ALONG THOSE RESPECTIVE WALLS.
- ADD ALTERNATE #2 - PROVIDE SEAMLESS RESINOUS FLOORING FINISHES IN THE FOLLOWING SPACES: MEN'S LOCKER ROOM 102 (AND SHOWER AREA), ALCOVE 102A, WOMEN'S LOCKER ROOM 103 (AND SHOWER AREA), ALCOVE 103A, & JANITOR 104. PROVIDE INTEGRAL SEAMLESS RESINOUS WALL BASE (IN CONJUNCTION WITH THE FLOOR) AT ALL WALL LOCATIONS. PROVIDE FULL HEIGHT EPOXY WALL COATING, EPW1, IN JANITOR 104. (RE: DETAIL 6/A-501 FOR SHOWER DRAIN)
- CEILING PAINT IN LOCKER ROOMS AND SHOWERS AREAS TO BE EPOXY.

GENERAL INTERIOR NOTES

- ALL EXPOSED CONCRETE FLOORS TO BE SEALED UNLESS NOTED OTHERWISE
- ALL FLOOR FINISH CHANGES AT DOORWAYS TO OCCUR UNDER CENTERLINE OF DOOR UNLESS NOTED OTHERWISE
- REFER TO REFLECTED CEILING PLAN FOR CEILING HEIGHTS.
- RESILIENT BASE CORNERS TO BE FIELD FORMED.
- ALL METAL DOORS & FRAMES TO BE FACTORY PRIMED AND FIELD PAINTED.
- ALL EXTERIOR WINDOWS SHALL RECEIVE WINDOW TREATMENT, WT1.
- REFER TO PAINT SPECIFICATION & FINISH LEGEND FOR ALL PAINT SHEENS & FINISHES.
- ALL EXPOSED PIPES UNDER SINKS SHALL RECEIVE 'PIK', PLUMBING INSULATION KIT PER ADA. REFER TO TOILET ACCESSORIES SCHEDULE & SPECIFICATION.

FINISH LEGEND

MATERIAL	DESCRIPTION	OTHER
BASE		
RB1	RESILIENT BASE	BASIS OF DESIGN: ROPPE/ RUBBER (TYPE TS)/ 114 LUNAR DUST/ 6" H
SRB1	SEAMLESS RESINOUS COVE BASE (ALTERNATE 2)	BASIS OF DESIGN: DESCO/ QUARTZ CREMONA/ TG-404/ 8" H INTEGRAL COVE (TO ALIGN WITH CMU COURSING); COLOR TO MATCH SRF1, SEAMLESS RESINOUS FLOOR (RE: 7/1-101)
CEILING		
APC1	ACOUSTICAL PANEL CEILING	BASIS OF DESIGN: ARMSTRONG/ ULTIMA/ 1910/ 24"X 24" with 15/16" SQUARE LAY-IN SUSPENSION SYSTEM
EXP	EXPOSED STRUCTURE	-
GYP	GYP SUM WALLBOARD	-
PC1	PAINT (CEILING)	BASIS OF DESIGN: SHERWIN WILLIAMS/ PURE WHITE 7005/ EGGSHELL
PC2	PAINT (CEILING)	BASIS OF DESIGN: SHERWIN WILLIAMS / BLACK OF NIGHT 6993 / MATTE
FLOORS		
AF1	ATHLETIC FLOOR	BASIS OF DESIGN: MATS INC/ DECATHLON DESIGN/ LUNAR LIGHT
SC1	SEALED CONCRETE	SEALED CONCRETE WITH HARDENER
SC2	SEALED CONCRETE (SHOWERS)	SEALED CONCRETE WITH SLIP RESISTANT TEXTURE
SRF1	SEAMLESS RESINOUS FLOOR (ALTERNATE 2)	BASIS OF DESIGN: DESCO/ QUARTZ CREMONA/ TG-404 (RE: DTL. 6/I-101 FOR FLOOR TRANSITIONS AT SEALED FLOORS)
MISCELLANEOUS		
SS1	SOLID SURFACE (COUNTERS)	BASIS OF DESIGN: WILSONART/ YUKON RIVERSTONE 9196RS
SS2	SOLID SURFACE (WINDOW SILL, JAMB & HEADER)	BASIS OF DESIGN: WILSONART/ LUMINOUS WHITE 9221SP
WT1	WINDOW TREATMENT	BASIS OF DESIGN: MECO SHADE/ SOHO/ 1800 SERIES/ 3% OPEN/ 1622 HOWARD
WALLS		
CG1	CORNER GUARD	BASIS OF DESIGN: INPRO/ SURFACE MOUNT STAINLESS STEEL/ 1/8 GAUGE/ 1-1/2" WING x 4'-0" H
EPW1	EPOXY WALL COATING	BASIS OF DESIGN: DESCO/ WALLGLASS FX/ COLOR TO MATCH P1, PAINT
P1	PAINT	BASIS OF DESIGN: SHERWIN WILLIAMS/ MINDFUL GREY 7016/ SATIN; PAINT TO MATCH MLP1, METAL LINER PANEL COLOR
P2	PAINT (ACCENT)	BASIS OF DESIGN: SHERWIN WILLIAMS/ SERIOUS GRAY 6256/ SATIN
P3	PAINT (CEILING COLOR EXTENDED ONTO WALLS)	BASIS OF DESIGN: SHERWIN WILLIAMS / BLACK OF NIGHT 6993 / MATTE; RE: 5/A-201 & 6/A-201 BUILDING SECTIONS FOR PAINT LIMIT FOR ENTIRE ROOM(S) (FROM CEILING PAINT LINE TO CEILING)
P4	PAINT (DOOR FRAMES)	BASIS OF DESIGN: SHERWIN WILLIAMS/ PORPOISE 7047/ SEMI-GLOSS; COLOR TO MATCH RB1, RUBBER BASE



EQUIPMENT PLAN NORTH
PLAN TRUE

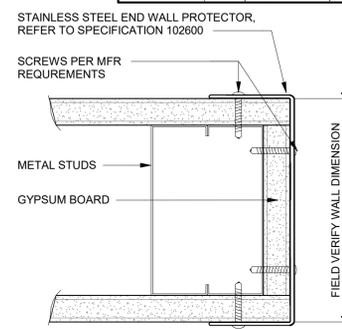
FITNESS EQUIPMENT SCHEDULE

MARK	TYPE	POWER	BASIS OF DESIGN	FURNISHED*	INSTALLED*
E01	SQUAT RACK W/ PULL-UP BAR	-	LEGEND FITNESS MODEL #3121	C	C
E02	LIFTING BENCH	-	BY OTHERS	C	C
E03	YOGA MAT	-	BY OTHERS	G	G
E04	FLOOR-MOUNTED SIT-UP BARS	-	RE: DTL. 5/I-101	C	C
E05	DUMBBELL RACK	-	BY OTHERS	C	C
E06	BENCH	-	BY OTHERS	C	C
E07	CABLE CROSSOVER MACHINE	-	LEGEND FITNESS MODEL #1132	C	C
E08	BENCH PRESS W/ BARBELLS	-	BY OTHERS	C	C
E09	TREADMILL	120V, 1-PH	BY OTHERS	G	G
E10	ROWING MACHINE	VERIFY	BY OTHERS	G	G
E11	STAIR CLIMBER	120V, 1-PH	BY OTHERS	G	G
E12	ELLIPTICAL MACHINE	VERIFY	BY OTHERS	G	G
E13	EXERCISE BIKE	VERIFY	BY OTHERS	G	G

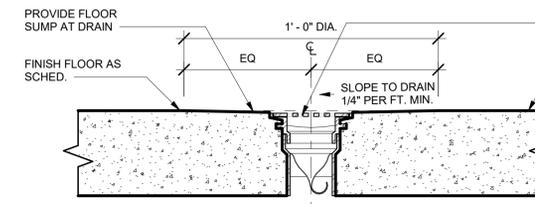
* RESPONSIBILITIES: C = CONTRACTOR; G = GOVERNMENT

EQUIPMENT NOTES

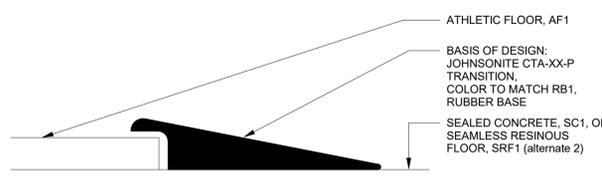
- ALL EQUIPMENT HAS BEEN SHOWN ON THE PLAN FOR PLANNING AND LAYOUT PURPOSES. REFER TO EQUIPMENT SCHEDULE FOR ITEMS TO BE INCLUDED IN THE CONTRACT.
- DIMENSIONS TO EQUIPMENT ARE FOR LOCATING THE RESPECTIVE ITEMS. REFER TO MANUFACTURER'S INSTALLATION MANUALS FOR ANCHORING EQUIPMENT TO THE FLOOR.
- POWER SHOWN IN THE SCHEDULE IS FOR THE OWNER'S USE IN THE SELECTION OF SPECIFIC EQUIPMENT.
- THE BASIS-OF-DESIGN HAS BEEN NOTED IN THE SCHEDULE. ACCEPTABLE MANUFACTURERS (OR EQUAL PRODUCTS) INCLUDE:
A. LEGEND FITNESS
B. ROGUE FITNESS
C. PRECOR
- CONTRACTOR SHALL FULLY ASSEMBLE EQUIPMENT TO OPERATE AS INTENDED.



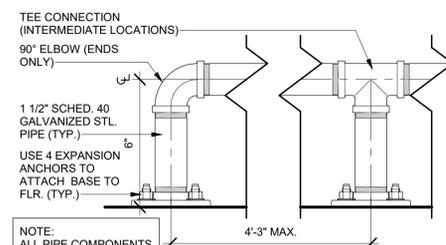
CORNER GUARD DETAIL



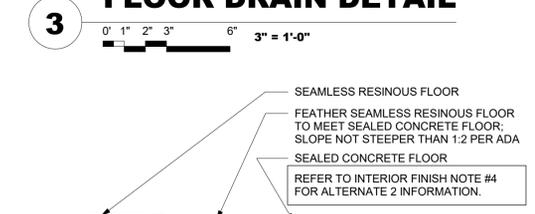
FLOOR DRAIN DETAIL



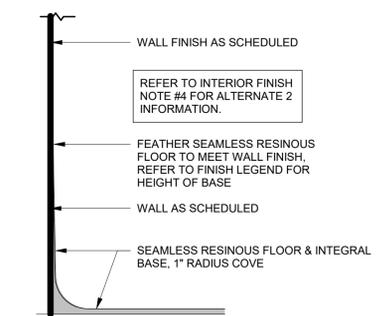
FLOORING TRANSITION DETAIL



SIT-UP BAR DETAIL



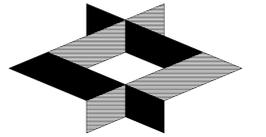
ALTERNATE 2 FLOORING TRANSITION



ALTERNATE 2 COVE BASE DETAIL



BID DOCUMENTS



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CONSTRUCTION
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Camp Crowder Training Site

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Neosho, Missouri 64850

FITNESS CENTER - STORM
SHELTER

PROJECT # T2027-01
SITE # 6260
ASSET # 8136260016

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 07/02/2020

CAD DWG FILE:
T2027-01_6260_8136260016_I-111.DWG
DRAWN BY: JSP
CHECKED BY: RPK
DESIGNED BY: GLMV

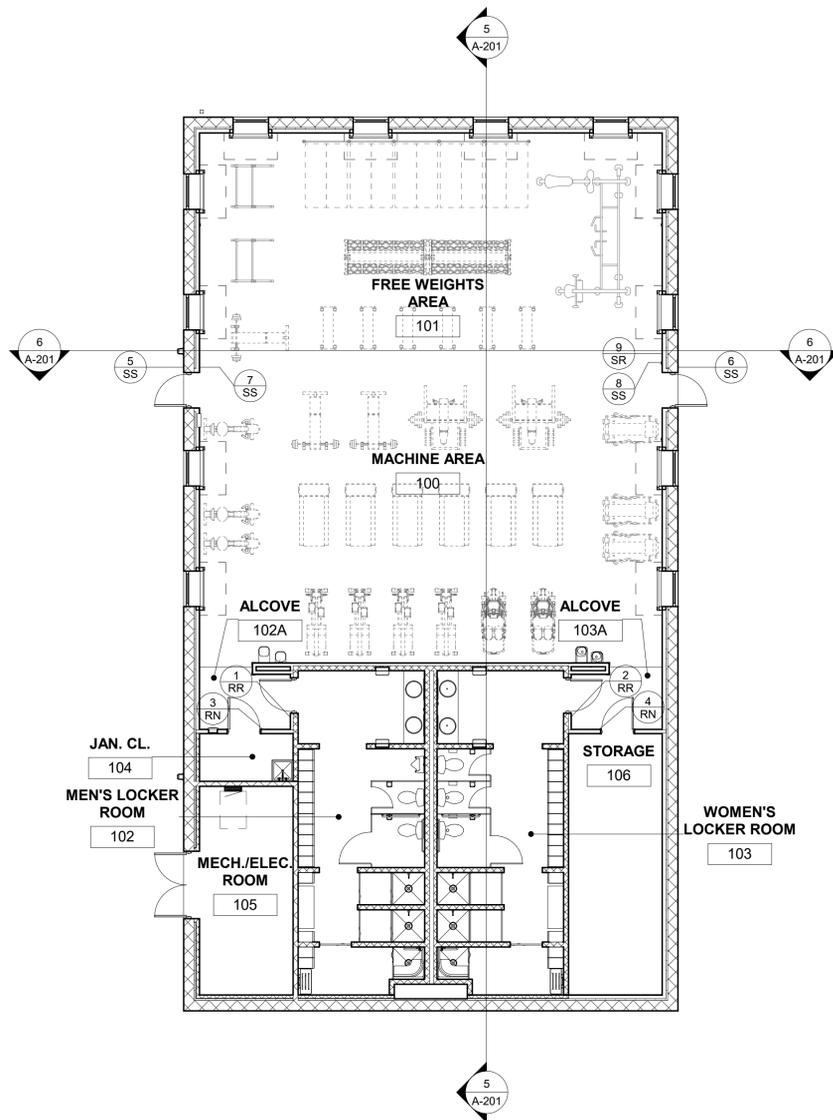
SHEET TITLE:

**SIGNAGE PLAN,
SCHEDULE &
DETAILS**

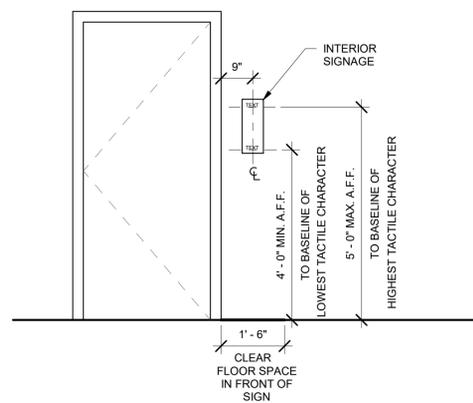
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I-111

24 OF 32 SHEETS



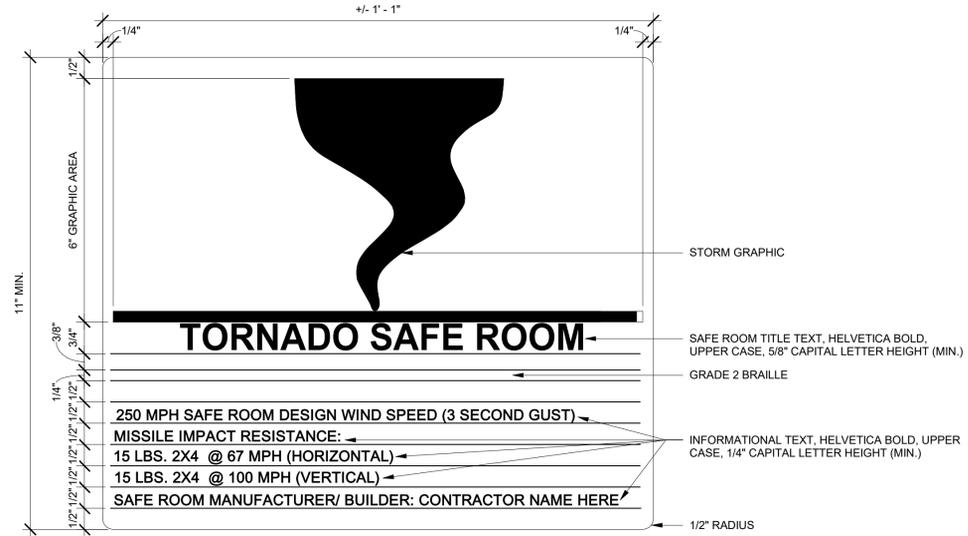
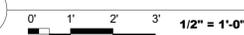
SIGNAGE SCHEDULE				
SIGN NO.	ROOM NO.	SIGN TYPE	SIGN COPY	ICON
1	102	RR	MEN	A & B
2	103	RR	WOMEN	A & C
3	104	RN	JANITOR	-
4	106	RN	STORAGE	-
5	-	SS	TORNADO SHELTER	-
6	-	SS	TORNADO SHELTER	-
7	101	SS	TORNADO SHELTER	-
8	101	SS	TORNADO SHELTER	-
9	101	SR	TORNADO SAFE ROOM; SEE 'INFORMATIONAL TEXT' ON SIGN FOR ADDITIONAL SIGN COPY	-



NOTE:
INSTALL INTERIOR SIGNS THAT IDENTIFY ROOMS ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR.
IF THERE IS NOT ADEQUATE SPACE ADJACENT TO THE LATCH SIDE OF THE DOOR ON THE WALL, MOUNT THE SIGN ON THE DOOR. CENTER THE SIGN ALONG THE WIDTH OF THE DOOR AND MOUNT AS THE SAME HEIGHTS AS INDICATED ABOVE.

MOUNT WITH CONCEALED ANCHORS. PER MANUFACTURER'S STANDARD METHOD FOR SUBSTRATE. SIGN PANEL SHALL REMAIN FLAT UNDER INSTALLED CONDITIONS AS INDICATED AND WITHIN A TOLERANCE OF +/- 1/16" MEASURED DIAGONALLY FROM CORNER TO CORNER.

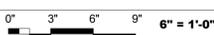
2 SIGNAGE - TYP. MOUNTING HEIGHT



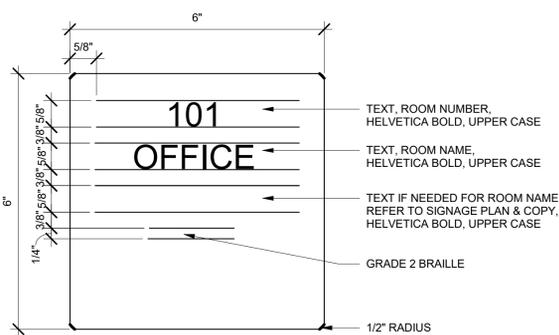
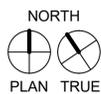
NOTE:
"SAFE ROOM TITLE TEXT" TO BE UPPERCASE HELVETICA BOLD, CENTERED WITH ACCOMPANYING GRADE TWO BRAILLE.
TEXT & ICON TO BE RAISED 1/32". BRAILLE TO BE DOMED.

"INFORMATIONAL TEXT" TO BE UPPERCASE HELVETICA BOLD, LEFT ALIGNED.
CONFIRM ALL TEXT WITH OWNER. CONFIRM WIND SPEEDS AND IMPACT RESISTANCE WITH ARCHITECT. CONFIRM BUILDER NAME WITH CONTRACTOR.

3 SIGNAGE SR - SAFE ROOM

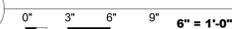


1 SIGNAGE PLAN



NOTE:
TEXT TO BE UPPERCASE HELVETICA BOLD, 5/8" CAPITAL LETTER HEIGHT, LEFT ALIGNED WITH ACCOMPANYING GRADE TWO BRAILLE.
TEXT TO BE RAISED 1/32". BRAILLE TO BE DOMED.

4 SIGNAGE RN - ROOM NAME



NOTE:
TEXT TO BE UPPERCASE HELVETICA BOLD, 5/8" CAPITAL LETTER HEIGHT, CENTERED WITH ACCOMPANYING GRADE TWO BRAILLE.
TEXT & ICON TO BE RAISED 1/32". BRAILLE TO BE DOMED.

5 SIGNAGE RR - RESTROOM



A. INTERNATIONAL SYMBOL OF ACCESSIBILITY

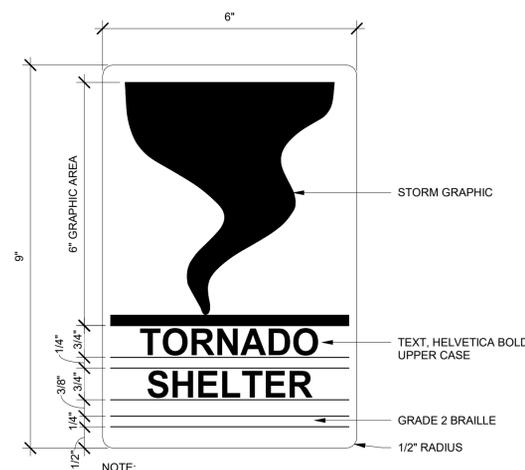


B. MEN/BOYS



C. WOMEN/GIRLS

NOTE:
IMAGES ILLUSTRATE GRAPHIC PROPORTIONS ONLY. REFER TO SIGN TYPE FOR ICON HEIGHTS REQUIRED.

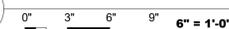


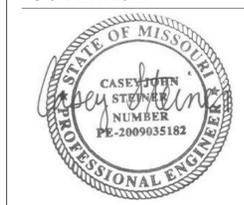
NOTE:
EXTERIOR SIGN & INTERIOR SIGN AS INDICATED ON PLAN. REFER TO SIGNAGE SPECIFICATION FOR MATERIALS.

TEXT TO BE UPPERCASE HELVETICA BOLD, 5/8" CAPITAL LETTER HEIGHT, CENTERED WITH ACCOMPANYING GRADE TWO BRAILLE.

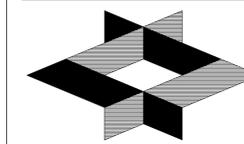
TEXT & ICON TO BE RAISED 1/32". BRAILLE TO BE DOMED.

6 SIGNAGE SS - STORM SHELTER





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Missouri Army National Guard

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Neosho, Missouri 64850

FITNESS CENTER -
STORM SHELTER

PROJECT # T2027-01
SITE # 6260
ASSET # 8136260016

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 07/02/2020

CAD DWG FILE: _____
DRAWN BY: MEB
CHECKED BY: CJS
DESIGNED BY: MEB

SHEET TITLE:
SYMBOLS LEGEND

SHEET NUMBER:

MPE-101

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07/02/2020

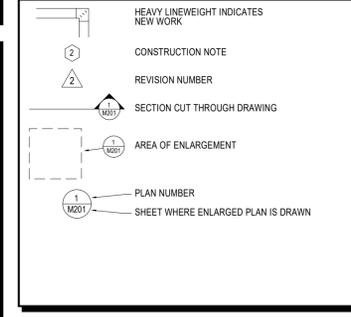
ABBREVIATIONS

A	AIR (COMPRESSED)	O	OXYGEN
A/C	AIR CONDITIONING	OA	OUTSIDE AIR
AF	AMPERE FUSE	OC	ON CENTER
AFB	ABOVE FINISHED CEILING	OD	OUTSIDE DIAMETER
AFFA	AREA FOR EVACUATION ASSISTANCE	OF	OWNER FURNISHED, CONTRACTOR INSTALLED
AFD	ABOVE FINISHED FLOOR	ORCI	OVERFLOW ROOF DRAIN
AFG	AREA FOR FINISHED GRADE	PA	PIPE ANCHOR
AHJ	AIR HANDLING UNIT	PCWR	PRIMARY CHILLED WATER RETURN
AL	ALUMINUM	PCR	PRIMARY CHILLED WATER SUPPLY
ALC	AMPERE INTERRUPTING CURRENT	PCRD	PUMPED CONDENSATE RETURN
APD	AIR PRESSURE DROP	PD	PRESSURE DROP (FEET OF WATER)
ATB	ACID WASTE	PH	PHASE
AV	ACID VENT	PHWR	PRIMARY HEATING WATER RETURN
AW	ACID WASTE	PHWS	PRIMARY HEATING WATER SUPPLY
AWG	AMERICAN WIRE GAUGE	PNL	PANEL
BCU	LOWER COIL UNIT	PRV	PRESSURE REDUCING VALVE
BFP	BACKFLOW PREVENTER	PS	PULSE START
BHP	BRACE HORSEPOWER	PSI	POUNDS PER SQUARE INCH
BFF	BELOW FINISHED FLOOR	PSIA	POUNDS PER SQUARE INCH-ABSOLUTE
BOD	BOTTOM OF DUCT	PSIG	POUNDS PER SQUARE INCH-GAUGE
B.O.D.	BOTTOM OF DESIGN	PT	POTENTIAL TRANSFORMER
BOP	BOTTOM OF PIPE	QTY	QUANTITY
BOS	BOTTOM OF STRUCTURE	R	REFRIGERANT
BTUH	BRITISH THERMAL UNITS PER HOUR	RA	RETURN AIR
C	CONDUIT	RCP	REINFORCED CONCRETE PIPE
CT	CURRENT TRANSFORMER	RD	ROOF DRAIN
CATV	CABLE TELEVISION SYSTEM	REV	REVISION
CAV	CONSTANT AIR VOLUME	RF	RETURN FAN
CCTV	CLOSED CIRCUIT TELEVISION	RH	RELATIVE HUMIDITY
CD	CONDENSATE DRAIN	RLA	RUNNING LOAD AMPS
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	RPM	REVOLUTIONS PER MINUTE
CFH	CUBIC FEET PER HOUR	RTU	ROOF TOP UNIT
CFM	CUBIC FEET PER MINUTE	S	SINK, STEAM
CH	CHILLER	SA	SANITARY SEWER
CO	CLEANOUT, CARBON MONOXIDE	SAN	SECONDARY CHILLED WATER RETURN
CO2	CARBON DIOXIDE	SCWR	SECONDARY CHILLED WATER SUPPLY
CT	COOLING TOWER	SCWS	SMOKE DAMPER, STORM DRAIN
CTR	COOLING TOWER RETURN	SD	SECONDARY CHILLED WATER SUPPLY
CU	CU TO TOWER SUPPLY	SE	SUPPLY FAN
CU	COPPER	SHR	SECONDARY HEATING WATER RETURN
CUH	CABINET UNIT HEATER	SHWS	SECONDARY HEATING WATER SUPPLY
CW	COLD WATER	SPST	SINGLE-POLE SINGLE-THROW
CWR	CHILLED WATER RETURN	SP	STATIC PRESSURE
CWS	CHILLED WATER SUPPLY	SQFT	SQUARE FEET/SQUARE FEET
D	DRAIN	START/STOP	START/STOP
DDC	DIRECT DIGITAL CONTROL	SS	SERVICE SINK, STAINLESS STEEL
DFU	DRAINAGE FIXTURE UNITS	ST	STORM DRAIN, SOUND TRAP, STEAM TRAP
DN	DOWN	STC	SOUND TRANSMISSION CLASS
DPDT	DOUBLE-POLE, DOUBLE-THROW	STM	STEAM
DPST	DOUBLE-POLE, SINGLE-THROW	SW	SOFT WATER
DX	DIRECT EXPANSION	SWBD	SWITCHBOARD
EA	EXHAUST AIR	T	TEMPERED WATER
EAT	ENTERING AIR TEMPERATURE	TG	TEMPERATURE GAUGE
E/C	ELECTRICAL CONTRACTOR	TDH	TOTAL DYNAMIC HEAD
Edb	ENTERING DRY BULB	TSP	TOTAL STATIC PRESSURE
EF	EXHAUST FAN	TSTAT	THERMOSTAT
EJ	EXHAUST JOINT	TL	TERMINAL UNIT
ESFR	EXTERNAL STATIC PRESSURE	TS	TWIST LOCK
ESP	EARLY SUPPRESSION FAST RESPONSE	TU	TERMINAL UNIT
ETR	EXISTING TO REMAIN	UF	UNDER FLOOR
EWB	ENTERING WET BULB	UG	UNDER GROUND
EWC	ELECTRIC WATER COOLER	LH	UNIT HEATER
FAA	FIRE ALARM ANNIUNCIATOR	UL	UNDERWRITERS LABORATORIES, INC.
FACP	FIRE ALARM CONTROL PANEL	UNO	UNLESS NOTED OTHERWISE
FBO	FURNISHED BY OTHERS	UPS	UNINTERRUPTIBLE POWER SUPPLY
FCD	FLOOR CLEANOUT	V	VACUUM
FDU	FAN COOL UNIT	VAC	VOLTS ALTERNATING CURRENT
FD	FIRE DAMPER, FLOOR DRAIN	VAV	VARIABLE AIR VOLUME
FF	FINISHED FLOOR	VCP	VITRIFIED CLAY PIPE
FGCD	FINISHED GRADE CLEANOUT	VD	VOLUME DAMPER
FL	FULL LOAD	VFD	VARIABLE FREQUENCY DRIVE
FLA	FULL LOAD AMPS	VTR	VENT THROUGH ROOF
FPC	FIRE PROTECTION CONTRACTOR	W	WATER SERVICE, WATTS
FTU	FAN TERMINAL UNIT	WB	WET BULB
FVNR	FULL VOLTAGE, NON-REVERSING	WCC	WALL CLEANOUT
G	GROUND FAULT CIRCUIT INTERRUPTER	WC	WATER COLUMN, WATER CLOSET
G/C	GENERAL CONTRACTOR	WH	WALL HYDRANT
GND	GROUND	WPD	WATER PRESSURE DROP
GPH	GALLONS PER HOUR	WP	WEATHERPROOF
GPM	GALLONS PER MINUTE	WT	WATERTIGHT, WEIGHT
GW	GREASE WASTE	XP	TRANSFORMER
HB	HOSE BIBB	XP	EXPLOSION-PROOF
HCR	HOT/CHILLED WATER RETURN		
HD	HOT/CHILLED WATER SUPPLY		
HDA	HEAD, HUB DRAIN		
HDA	HAND-OFF-AUTOMATIC		
HP	HEAT PUMP		
HPC	HIGH PRESSURE CONDENSATE		
HPS	HEAT PUMP RETURN		
HPS	HEAT PUMP SUPPLY, HIGH PRESSURE STEAM		
HSTAT	HUMIDISTAT		
HTG	HEATING		
HTR	HEATER		
HWR	HOT WATER RETURN		
HWS	HOT WATER SUPPLY		
I	INSIDE DIAMETER		
IE	INVERT ELEVATION		
IG	ISOLATED GROUND		
IN, INC.	INCHES OF WATER COLUMN INCANDESCENT		
kcmil	1000 CIRCULAR MILS		
KV	KILOVOLT		
KVA	KILOVOLT-AMPS		
KVAR	KILOVOLT-AMPS REACTIVE		
KWH	KILOWATT-HOUR		
L	LAVATORY		
LAT	LEAVING AIR TEMPERATURE		
LDB	LEAVING DRY BULB		
LF	LINEAR FEET		
LP	LOW PRESSURE		
LPG	LIQUIFIED PETROLEUM GAS (PROPANE)		
LPS	LOW PRESSURE STEAM		
LRA	LOCKED ROTOR AMPS		
LWB	LEAVING WET BULB		
LWT	LEAVING WATER TEMPERATURE		
MBH	1000 BTU PER HOUR		
MC	MECHANICAL CONTRACTOR		
MCA	MINIMUM CIRCUIT AMPACITY		
MCC	MOTOR CONTROL CENTER		
MCM	1000 CIRCULAR MILS		
MD	MOTORIZED DAMPER		
MDP	MAIN DISTRIBUTION PANEL		
MFR	MANUFACTURER		
MH	MANNING METAL HALIDE		
MLO	MAIN LUGS ONLY		
MPC	MEDIUM PRESSURE CONDENSATE		
MPS	MEDIUM PRESSURE STEAM		
MS	MOTOR STARTER		
MSB	MAIN SWITCHBOARD		
MTD	MOUNTED		
MAU	MAKE-UP AIR UNIT		
N	NITROGEN		
N/A	NOT APPLICABLE		
NC	NOISE CRITERIA		
NFPH	NON-FREEZE WALL HYDRANT		
NIC	NOT IN CONTRACT		
NO	NITROUS OXIDE		
NO/NC	NORMALLY OPEN, NORMALLY CLOSED		

FIRE ALARM

[FACP]	FIRE ALARM CONTROL PANEL
[FAX]	ANNUNCIATOR PANEL
[FA]	FIRE ALARM POWER EXTENDER
[P]	PULL STATION
[K]	KNOX BOX
[R]	CONTROL RELAY
[S]¹	SINGLE STATION SMOKE DETECTOR
[S]²	SMOKE DETECTOR (SUP. RELAY BASE)
[S]³	SYSTEM SMOKE DETECTOR
[S]	BEAM DETECTOR
[H]	HEAT/THERMAL DETECTOR
[D]	DUCT SMOKE DETECTOR
[M]	MAGNETIC DOOR HOLD
[X]	SPEAKER/SSTROBE
[S]	SPEAKER
[H]	HORN
[T]	VALVE TAMPER SWITCH
[F]	FLOW SWITCH

GENERAL



THIS IS A MASTER LEGEND.
NOT ALL SYMBOLS, ABBREVIATIONS,
ETC. ARE USED ON THE DRAWINGS.

SYMBOLS

PIPING

	DIRECTION OF FLOW
	UNION
	FLANGE CONNECTION
	CAP
	ELBOW UP
	ELBOW DOWN
	TEE UP
	TEE DOWN
	PIPE REDUCER
	PIPE GUIDE
	PIPE ANCHOR
	EXPANSION JOINT
	SHUT-OFF VALVE
	CHECK VALVE
	BALANCING VALVE WITH PRESSURE PORTS
	TRIPLE DUTY VALVE
	STRAINER
	STRAINER WITH BLOWOFF
	RELIEF/SAFETY VALVE
	MANUAL AIR VENT
	SOLENOID VALVE
	THREE-WAY CONTROL VALVE
	TWO-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE GAUGE
	THERMOMETER
[FS-1]	FLOOR SINK
[FD-1]	FLOOR DRAIN
[RD-1]	ROOF DRAIN
[HB-1]	HOSE BIBB
	FLOOR/GRADE CLEANOUT
	WALL CLEANOUT
	END OF LINE CLEANOUT

DUCTWORK

	EQUIPMENT TYPE AND NUMBER
	PUMP
	LINEAR SLOT DIFFUSER
	FLEXIBLE DUCT
	NEGATIVE PRESSURE AIR DUCT UP
	NEGATIVE PRESSURE AIR DUCT DOWN
	POSITIVE PRESSURE AIR DUCT UP
	POSITIVE PRESSURE AIR DUCT DOWN
	DUCT RISE OR DROP IN THE DIRECTION OF AIRFLOW
	SQUARE TO ROUND TRANSITION
	ROUND DUCT UP, DOWN
	ELBOW WITH TURNING VANES
	FLEXIBLE CONNECTION
	MANUAL BALANCE DAMPER
	MOTORIZED CONTROL DAMPER
	FIRE DAMPER
	SMOKE DAMPER
	FIRE/SMOKE DAMPER
	BACKDRAFT DAMPER
	SPIN-IN BRANCH DUCT CONNECTOR WITH DAMPER IF SHOWN
	HIGH EFFICIENCY BRANCH DUCT CONNECTOR WITH DAMPER IF SHOWN
	SUPPLY AIR DIFFUSER
	DUCT MOUNTED GRILLE/WALL GRILLE
	RETURN GRILLE
	NOISE REDUCING RETURN AIR TRANSFER
	SUPPLY DIFFUSER - THREE-WAY THROW
	DIFFUSER, GRILLE, OR REGISTER TYPE
100	CONNECTION SIZE

POWER EQUIPMENT

	ELECTRICAL DISTRIBUTION PANEL, SWITCHBOARD, OR MOTOR CONTROL
	PANEL BOARD
	LOAD CENTER
	METER
	J-BOX
	MOTOR
	DISCONNECT SWITCH
	VARIABLE FREQUENCY DRIVE
	COMBINATION DISCONNECT SWITCH AND MOTOR STARTER
	MAGNETIC MOTOR STARTER, NEMA SIZE AS NOTED
	HOME RUN
	CONCEALED CONDUIT
	CONDUIT BELOW SLAB
	ONE HOT, ONE NEUTRAL, AND ONE GROUND IN CONCEALED CONDUIT (#12 in 1/2" C. U.N.O.)
	EXPOSED CONDUIT
	CONDUIT TURNING DOWN
	CONDUIT TURNING UP

TEMPERATURE CONTROLS

	TEMPERATURE SENSOR/THERMOSTAT SERVING AHU-1
	HUMIDITY SENSOR/HUMIDISTAT
	REMOTE TEMPERATURE SENSOR
	REMOTE HUMIDITY SENSOR
[CO2]	CARBON DIOXIDE SENSOR
[OCO]	OCCUPANCY SENSOR
[CO]	CARBON MONOXIDE SENSOR
[SP]	STATIC PRESSURE SENSOR
[DPT]	DIFFERENTIAL PRESSURE TRANSMITTER
[FM]	FLOW METER

WIRING DEVICES & OUTLETS

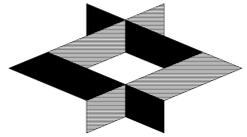
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	GROUND FAULT INTERRUPTER
	WEATHERPROOF GROUND FAULT INTERRUPTER
	DUPLEX RECEPTACLE WITH USB OUTLETS
	TAMPER RESISTANT RECEPTACLE
	QUAD RECEPTACLE
	HEAVY DUTY RECEPTACLE-NEMA TYPE AS NOTED
	FLOOR MOUNTED DEVICE
	CEILING MOUNTED DEVICE
	ISOLATED GROUND DUPLEX RECEPTACLE
	ISOLATED GROUND QUAD RECEPTACLE
	CONTROLLED RECEPTACLE
	WALL MOUNTED PHONE
	CENTER OF DEVICE AT 48" A.F.F.
	DEVICE MOUNTED ABOVE COUNTER
	DATA OUTLET
	TELEPHONE/DATA OUTLET
	CABLE T.V. OUTLET
	SWITCH, SPST U.N.O.
	SWITCH, DPST
	3-WAY SWITCH
	4-WAY SWITCH
	DIMMER SWITCH
	MOTOR RATED SWITCH
	SWITCH WITH WEATHERPROOF COVER
	TIME SWITCH
[TS]	PUSH BUTTON
	PHOTOCELL SWITCH
	OCCUPANCY SENSOR (TYPE INDICATED ON DWG)

LIGHTING

	WALL WASHER LIGHTING FIXTURE, ARROW INDICATES DIRECTION
	LIGHT FIXTURE AND TYPE
	EMERGENCY LIGHT FIXTURE
	NIGHT LIGHT FIXTURE
	LIGHT FIXTURE AND TYPE
	LIGHT FIXTURE AND TYPE
	WALL MOUNTED FIXTURE
	WALL SCONCE
	WALL MOUNTED FIXTURE
	EXIT LIGHT CLG. MNTD. (SGL. FACE)
	EXIT LIGHT CLG. MNTD. (DBL. FACE)
	EXIT LIGHT WALL MNTD. (SGL. FACE)
	EXIT/EMERGENCY LIGHT



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PUBLIC SAFETY
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Camp Crowder Training Site

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Neosho, Missouri 64850

FITNESS CENTER -
STORM SHELTER

PROJECT # T2027-01
SITE # 6260
ASSET # 8136260016

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 07/02/2020

CAD DWG FILE:

DRAWN BY: MEB
CHECKED BY: CJS
DESIGNED BY: MEB

SHEET TITLE:
MECHANICAL
PLAN AND
SCHEDULES

SHEET NUMBER:

M-101

26 OF 32 SHEETS

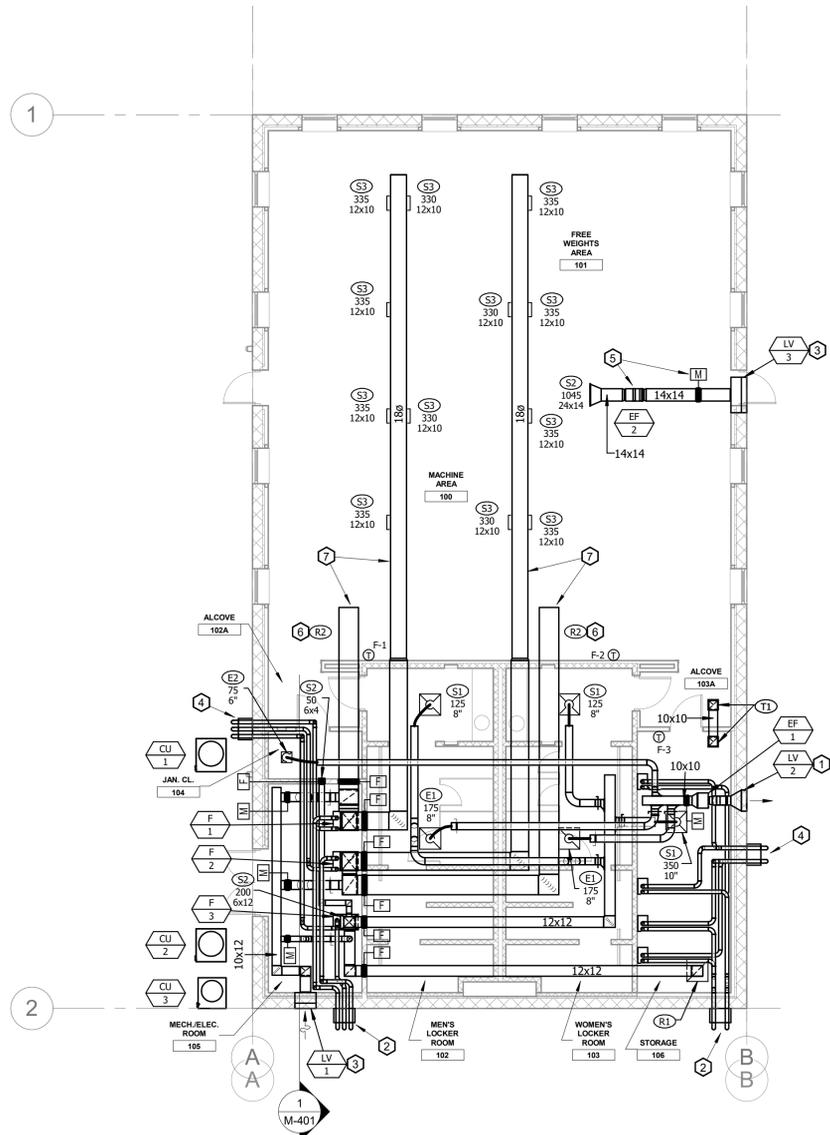
07/02/2020

GENERAL NOTES:

- THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. PROVIDE SHEET METAL SYSTEMS COMPLETE AND PER APPLICABLE CODES INCLUDING ALL NECESSARY OFFSETS, FITTINGS AND SPECIAL RADIUS OR MITRED ELBOWS WHICH ARE REQUIRED DUE TO SPACE CONSTRAINTS OR OTHER CONDITIONS.
- COORDINATE THE INSTALLATION OF THE DUCTWORK AND EQUIPMENT WITH THE WORK OF ALL OTHER TRADES. VERIFY ALL CLEARANCES PRIOR TO THE FABRICATION OF ANY SYSTEM COMPONENTS.
- DUCTWORK SHALL NOT BE LOCATED OVER ELECTRICAL EQUIPMENT OR PANELS. PROVIDE THE CODE REQUIRED WORKING CLEARANCE AROUND ALL ELECTRICAL EQUIPMENT AND PANELS.
- PROVIDE ALL MISCELLANEOUS SUPPORTING STEEL, ETC. FOR THE PROPER INSTALLATION OF ALL MECHANICAL SYSTEMS.
- COORDINATE FLOOR, WALL, ROOF PENETRATIONS, LOUVER SIZES, PAD LOCATIONS, ETC. WITH THE ARCHITECTURAL TRADES.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS AND WALL ELEVATIONS FOR EXACT LOCATION OF GRILLES, REGISTERS, AND DIFFUSERS.
- DUCTWORK UPSTREAM OF SUPPLY TERMINAL UNITS SHALL BE BOX INLET SIZE UNLESS NOTED OTHERWISE. PROVIDE STRAIGHT DUCT AT TERMINAL INLET. STRAIGHT DUCT LENGTH SHALL BE A MINIMUM OF 1 1/2 TIMES THE DIAMETER OF THE INLET DUCT, OR GREATER AS RECOMMENDED BY MANUFACTURER.
- DUCTWORK DOWNSTREAM OF SUPPLY TERMINAL UNITS SHALL BE BOX OUTLET SIZE UNLESS NOTED OTHERWISE.
- BRANCH DUCTWORK TO DIFFUSERS, REGISTERS OR GRILLES SHALL BE NECK SIZE UNLESS NOTED OTHERWISE.
- ALL DUCTWORK DIMENSIONS INDICATE THE INSIDE CLEAR DIMENSION.
- PROVIDE ACCESS DOORS IN HARD CEILING AREAS FOR ACCESS TO TERMINAL UNITS, BALANCING DAMPERS, TERMINAL UNIT HEATING COIL PIPING, ETC. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES. COORDINATE WITH THE ARCHITECTURAL TRADES.

PLAN NOTES:

- 10x10 EXHAUST DUCT TO EXTREME WEATHER RATED LOUVER ON EXTERIOR WALL. MOUNT LOUVER AT 11'-4" ABOVE FINISHED GRADE. COORDINATE PENETRATION OF STORM SHELTER WALL WITH STRUCTURAL.
- PROVIDE WALL VAULT/SHROUD AT 10'-8" ABOVE FINISHED GRADE, OR AS REQUIRED TO BE CENTERED BETWEEN STRUCTURAL BOND BEAMS IN EXTERIOR WALL. ROUTE COMBUSTION AIR DUCTS WITHIN WALL VAULT/SHROUD AS REQUIRED TO EXIT WALL VAULT/SHROUD ON EXTERIOR FACE AT 12" APART PER MANUFACTURER'S REQUIREMENTS. PROVIDE WALL VAULT/SHROUD WITH MANUFACTURER'S 90 DEGREE ELBOWS, SIZE AS REQUIRED TO ACCOMMODATE INTAKE DUCTS. CONTRACTOR SHALL COORDINATE WITH WALL VAULT/SHROUD MANUFACTURER AND PROVIDE BIRDSCREENS AT DUCT OPENINGS. ALL COMPONENTS OF WALL VAULT/SHROUD ASSEMBLY SHALL BE BY THE SAME MANUFACTURER. BE 3RD PARTY TESTED TO MEET ICC-500 2014/FEMA P-361 MISSILE IMPACT RATING 250+ MPH FOR SAFE ROOM/STORM SHELTER APPLICATIONS, AND BE ISO 9001:2015 CERTIFIED. REFER TO DETAIL ON SHEET M-401.
- PROVIDE 12" DEEP INSULATED DUCT PLENUM ON BACK OF INTAKE LOUVER. CONNECT DUCT INTO BACK OF PLENUM. MOUNT LOUVER AT 11'-4" ABOVE FINISHED GRADE. COORDINATE PENETRATION OF STORM SHELTER WALL WITH STRUCTURAL.
- PROVIDE WALL VAULT/SHROUD AT 10'-8" ABOVE FINISHED GRADE, OR AS REQUIRED TO BE CENTERED BETWEEN STRUCTURAL BOND BEAMS IN EXTERIOR WALL. ROUTE EXHAUST FLUES WITHIN WALL VAULT/SHROUD AS REQUIRED TO EXIT WALL VAULT/SHROUD ON EXTERIOR FACE AT 12" APART PER MANUFACTURER'S REQUIREMENTS. PROVIDE WALL VAULT/SHROUD WITH MANUFACTURER'S 90 DEGREE ELBOWS, SIZE AS REQUIRED TO ACCOMMODATE EXHAUST FLUES. CONTRACTOR SHALL COORDINATE WITH WALL VAULT/SHROUD MANUFACTURER AND PROVIDE BIRDSCREENS AT DUCT OPENINGS. ALL COMPONENTS OF WALL VAULT/SHROUD ASSEMBLY SHALL BE BY THE SAME MANUFACTURER. BE 3RD PARTY TESTED TO MEET ICC-500 2014/FEMA P-361 MISSILE IMPACT RATING 250+ MPH FOR SAFE ROOM/STORM SHELTER APPLICATIONS, AND BE ISO 9001:2015 CERTIFIED. REFER TO DETAIL ON SHEET M-401.
- EXHAUST FAN EF-2 TO ONLY OPERATE IN EMERGENCY CONDITIONS. FAN SHALL ACTIVATE IF NORMAL POWER IS LOST. MOTORIZED DAMPER SHALL BE CLOSED DURING NON-EMERGENCY OPERATION. DAMPER SHALL FAIL OPEN IN CASE NORMAL POWER IS LOST.
- MOUNT RETURN GRILLE ON SIDE OF RETURN DUCT.
- ALL EXPOSED MECHANICAL DUCTWORK SHALL BE PAINTED BLACK TO MATCH CEILING. CONTRACTOR SHALL COORDINATE WITH ARCHITECT.



1 First Floor Mechanical Plan
Scale: 1/8" = 1'-0"

GRILLE, REGISTER, & DIFFUSER SCHEDULE

- NOTES:
- GRILLE COLOR SHALL BE BLACK WHERE INSTALLED IN AREAS OF EXPOSED CEILING. COORDINATE WITH ARCHITECT'S CEILING PLAN.
 - MAXIMUM NC OF 30 FOR ALL GRILLES, REGISTERS, AND DIFFUSERS.
 - WHERE NOT NOTED, DIFFUSER NECK SIZE SHALL BE THE SAME AS THE BRANCH DUCT SIZE.
 - UNLESS NOTED OTHERWISE, COLOR SHALL BE STANDARD WHITE.
 - FOUR-WAY THROW PATTERN FOR SQUARE DIFFUSERS UNLESS NOTED OTHERWISE.
- GENERAL NOTES (APPLY TO ALL BELOW):
- PROVIDE MOUNTING FRAME TO MATCH CEILING TYPE. VERIFY WITH ARCHITECT'S PLANS PRIOR TO ORDERING.
 - MAXIMUM NC OF 30 FOR ALL GRILLES, REGISTERS, AND DIFFUSERS.
 - WHERE NOT NOTED, DIFFUSER NECK SIZE SHALL BE THE SAME AS THE BRANCH DUCT SIZE.
 - UNLESS NOTED OTHERWISE, COLOR SHALL BE STANDARD WHITE.
 - FOUR-WAY THROW PATTERN FOR SQUARE DIFFUSERS UNLESS NOTED OTHERWISE.

MARK	MANUFACTURER	MODEL	SERVICE	FACE SIZE	NECK SIZE	DAMPER	NOTES
E1	TITUS (B.O.D.)	PAR-AA (B.O.D.)	EXHAUST	24x24	"SEE PLAN"	NO	
E2	TITUS (B.O.D.)	PAR (B.O.D.)	EXHAUST	12x12	"SEE PLAN"	NO	
R1	TITUS (B.O.D.)	PAR (B.O.D.)	RETURN	24x24	22x22	NO	
R2	TITUS (B.O.D.)	S50RL (B.O.D.)	RETURN	NECK + 1.75"	6x12	NO	
S1	TITUS (B.O.D.)	OMINI-AA (B.O.D.)	SUPPLY	24x24	"SEE PLAN"	YES	
S2	TITUS (B.O.D.)	300RL (B.O.D.)	SUPPLY	NECK + 1.75"	"SEE PLAN"	YES	
S3	TITUS (B.O.D.)	S300FL (B.O.D.)	SUPPLY	NECK + 1.5"	"SEE PLAN"	YES	
T1	TITUS (B.O.D.)	PAR (B.O.D.)	TRANSFER	12x12	10x10	NO	

FAN SCHEDULE

- NOTES:
- PROVIDE WITH FACTORY INSTALLED AND WIRED DISCONNECT.
 - PROVIDE MANUFACTURER'S BACKDRAFT DAMPER.
 - PROVIDE MANUFACTURER'S FAN SPEED CONTROLLER, FACTORY MOUNTED AND WIRED.

MARK	MANUFACTURER	MODEL	CFM	S.P.	DRIVE	BHP	HP	RPM	dBA	V/PH	NOTES
EF-1	LOREN COOK (B.O.D.)	GN-542 (B.O.D.)	425	0.25	DIRECT	137 W	-	1248	44	120/1	1.2.3
EF-2	LOREN COOK (B.O.D.)	100SQN28D-VF (B.O.D.)	1045	0.5	DIRECT	0.324	1/2	2222	65	120/1	1.2.3

LOUVER SCHEDULE

- GENERAL NOTES (APPLY TO ALL BELOW):
- PROVIDE MOUNTING FRAME TO MATCH CONSTRUCTION.
 - COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS. REFER TO SPECIFICATIONS.
 - PROVIDE ALL FASTENERS, HANGERS, AND ASSOCIATED DEVICES REQUIRED FOR COMPLETE INSTALLATION.

MARK	MANUFACTURER	MODEL	SERVICE	SIZE W x H (IN.)	AIRFLOW CFM	MIN. FREE AREA (S.F.)	MAX. PD INCHES WC	NOTES
LV-1	RUSKIN (B.O.D.)	XP500 (B.O.D.)	INTAKE	24x24	440	1.24	0.10	
LV-2	RUSKIN (B.O.D.)	XP500 (B.O.D.)	EXHAUST	24x24	425	1.24	0.10	
LV-3	RUSKIN (B.O.D.)	XP500 (B.O.D.)	INTAKE	40x24	1045	2.38	0.10	

FURNACE AND CONDENSING UNIT SCHEDULE

- NOTES:
- ESP DOES NOT INCLUDE DIRTY FILTER PRESSURE DROP. ADD 0.5" TO INTERNAL PRESSURE DROP FOR DIRTY FILTERS FOR VARIABLE AIR VOLUME SYSTEMS.
 - DISCONNECT TO BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
 - PROVIDE UNIT WITH ATMOS AIR (B.O.D.) IONIZATION UNIT MODEL M1000 (B.O.D.) TO ACHIEVE SCHEDULED OUTSIDE AIR CFM. GREENT IONIZATION UNIT IN ACCESSIBLE LOCATION IN SUPPLY AIR DUCT PER MANUFACTURER'S REQUIREMENTS FOR OPTIMAL ION DISTRIBUTION. PROVIDE WITH MANUFACTURER'S AIR PRESSURE SWITCH TO ACTIVATE WHEN AIR HANDLER IS RUNNING.
 - PROVIDE UNIT WITH DUCT SMOKE DETECTOR IN RETURN AIR DUCT UPSTREAM OF OUTSIDE AIR CONNECTION. INTERLOCK DUCT DETECTOR WITH AIR HANDLING UNIT PER CODE TO SHUT DOWN AIR HANDLER WHEN SMOKE IS DETECTED. PROVIDE WITH A VISIBLE AND AUDIBLE SUPERVISORY SIGNAL AT ATTENDED LOCATION. ELECTRICAL CONTRACTOR SHALL PROVIDE NOTIFICATION EQUIPMENT.
 - INTERLOCK AIR HANDLING UNIT WITH MOTORIZED OUTSIDE AIR HANDLING UNIT. COORDINATE WITH ELECTRICAL CONTRACTOR PRIOR TO ROUGH IN.
 - PROVIDE WITH MANUFACTURER'S NEUTRALIZATION KIT.
 - PROVIDE UNIT WITH FIELD CONSTRUCTED WALL MOUNTING BRACKET.

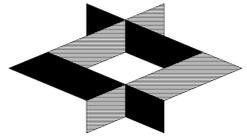
GENERAL NOTES (APPLY TO ALL BELOW):

- PROVIDE MINIMUM EFFICIENCY OF MERV 6 FOR FILTERS DURING CONSTRUCTION AND CHANGE MONTHLY AFTER UNIT START-UP. FINAL FILTER CHANGE AT OWNER OCCUPANCY SHALL BE MERV 8.
- MAXIMUM BHP FOR FANS SHALL NOT EXCEED 90% OF THE MOTOR NAMEPLATE RATING AT OPERATING CONDITIONS.
- AIR VELOCITY ACROSS THE COOLING COIL SHALL NOT EXCEED 500 FPM.
- FUEL SOURCE FOR GAS HEATER IS NATURAL GAS.
- PROVIDE A CONDENSATE DRAIN WITH A TRAP DEPTH 2" DEEPER THAN THE EXPECTED STATIC PRESSURE AT THE DRAIN LOCATION IN THE UNIT.

MARK	MANUFACTURER	MODEL	MIN. O/A CFM	SUPPLY FAN			GAS HEAT			CONDENSING UNITS					NOTES					
				CFM	ESP	EAT DB/WB	LAT DB/WB	INPUT MBH	OUTPUT MBH	CONTROL STEPS	V/PH	MCA	MOCP	MARK		MODEL	SEER	V/PH	MCA	MOCP
F-1	TRANE (B.O.D.)	4TXCD010+SVV2C (B.O.D.)	200	2000	0.5	79.5/65.8	55.0/53.2	100	97	2	120/1	13.9	20	CU-1	4TTR7060	16	208/1	37	60	1.2,3,4,5,6,7
F-2	TRANE (B.O.D.)	4TXCD010+SVV2C (B.O.D.)	200	2000	0.5	79.6/67.6	55.0/54.2	100	97	2	120/1	13.9	20	CU-2	4TTR7060	16	208/1	37	60	1.2,3,4,5,6,7
F-3	TRANE (B.O.D.)	4TXCB003+SVV2B (B.O.D.)	40	800	0.5	79.2/66.7	55.0/54.6	40	38.8	2	120/1	7.9	20	CU-3	4TTR6024	16	208/1	14	25	1.2,5,6,7



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Neosho, Missouri 64850

FITNESS CENTER -
STORM SHELTER

PROJECT # T2027-01
SITE # 6260
ASSET # 8136260016

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 07/02/2020

CAD DWG FILE:

DRAWN BY: MEB
CHECKED BY: CJS
DESIGNED BY: MEB

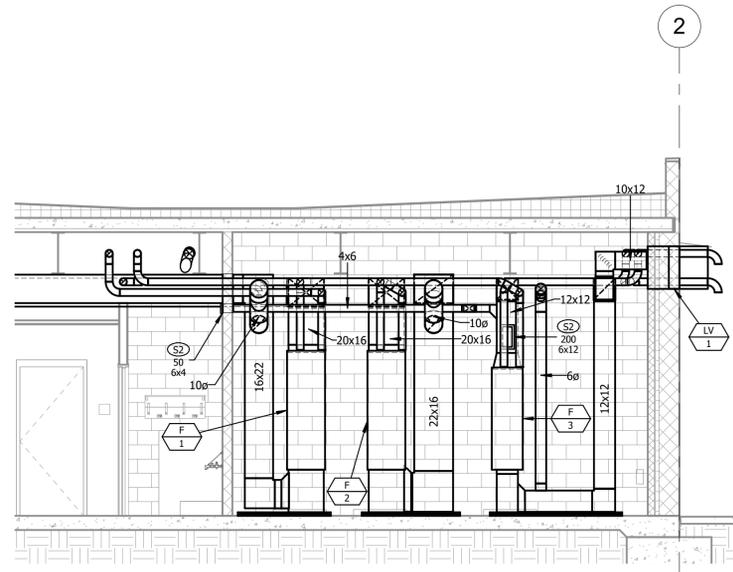
SHEET TITLE:
MECHANICAL
DETAILS

SHEET NUMBER:

M-401

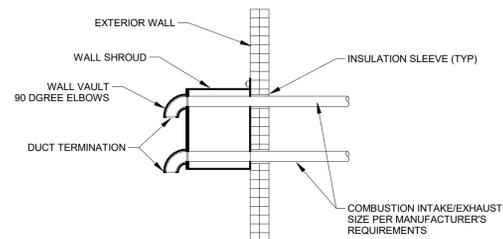
27 OF 32 SHEETS

07/02/2020



1 Mechanical Room

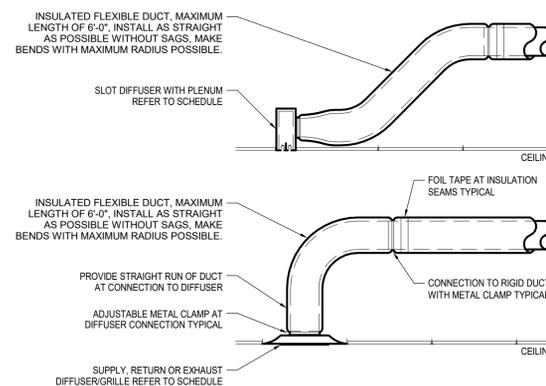
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- NOTES:
1. DUCT TERMINATIONS SHALL BE PROVIDED WITH BIRDSCREENS.
 2. MANUFACTURER'S WALL PLATE SHALL MOUNT FLAT TO STORM SHELTER WALL.
 3. MANUFACTURER'S 90 DEGREE ELBOWS SHALL BE OF SCHEDULE 40 BLACK STEEL.
 4. MANUFACTURER'S ELBOWS SHALL ALLOW FOR PASS-THROUGH PROTECTION OF PIPING/DUCT.
 5. WALL SHROUD ASSEMBLY SHALL BE VANDAL-PROOF.
 6. MANUFACTURER SHALL BE ABLE TO PROVIDE CUSTOM SIZES AS REQUIRED.

2 Storm Shelter Wall Vault/Shroud Detail

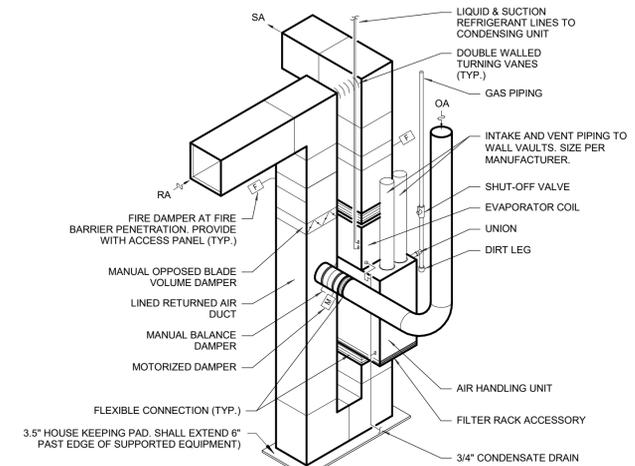
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- NOTES:
1. DUCT AND DIFFUSER SIZES SHALL BE AS INDICATED ON THE PLANS.
 2. SUPPORT DUCTWORK PER SPECIFICATIONS.
 3. COORDINATE CEILING TYPES WITH ARCHITECTURAL PLANS.

3 Diffuser Connection

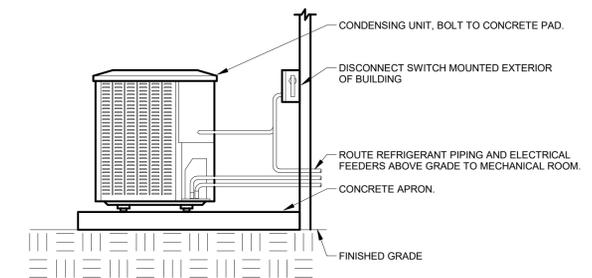
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- DESIGN NOTES:
1. ACTUAL LAYOUT OF DUCTWORK, PIPING, EQUIPMENT LOCATIONS, ETC., SHALL VARY BASED ON MANUFACTURER, COMPONENTS AND CONNECTIONS SUBJECT TO CHANGE PER MANUFACTURER'S REQUIREMENTS. AIR HANDLER & DUCTWORK SHALL BE SUPPORTED SEPARATELY.

4 Furnace Connection Detail

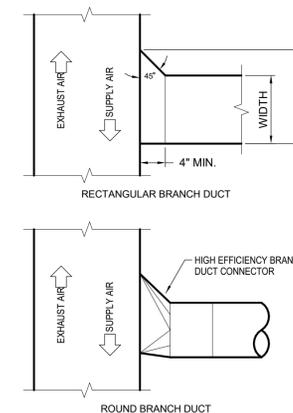
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- NOTES:
1. ARRANGEMENT SHOWN IN SCHEMATIC. REFER TO PLANS FOR LOCATION OF CONDENSING UNITS AND PIPE PENETRATIONS.
 2. MOUNT DISCONNECT SWITCH A MINIMUM OF 3'-0" ABOVE GRADE.
 3. INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

5 Condensing Unit Installation Detail

Scale: Not to Scale



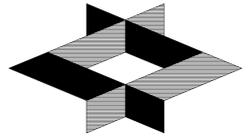
- NOTES:
1. SUPPLY, RETURN AND EXHAUST FITTINGS ARE SIMILAR, ONLY DIRECTION OF AIRFLOW CHANGES.
 2. REFER TO FLOOR PLANS FOR BRANCH LOCATIONS REQUIRING BALANCING DAMPERS.

6 Duct Branch Connection

Scale: Not to Scale



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Missouri Army National Guard

Camp Crowder Training Site

890 Ray Carver Avenue
Neosho, Missouri 64850

FITNESS CENTER -
STORM SHELTER

PROJECT # T2027-01
SITE # 6260
ASSET # 8136260016

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 07/02/2020

CAD DWG FILE:

DRAWN BY: MEB
CHECKED BY: CJS
DESIGNED BY: MEB

SHEET TITLE:
PLUMBING AND
FIRE PROTECTION
PLANS

SHEET NUMBER:

P-101

28 OF 32 SHEETS

07/02/2020

PLAN NOTES:

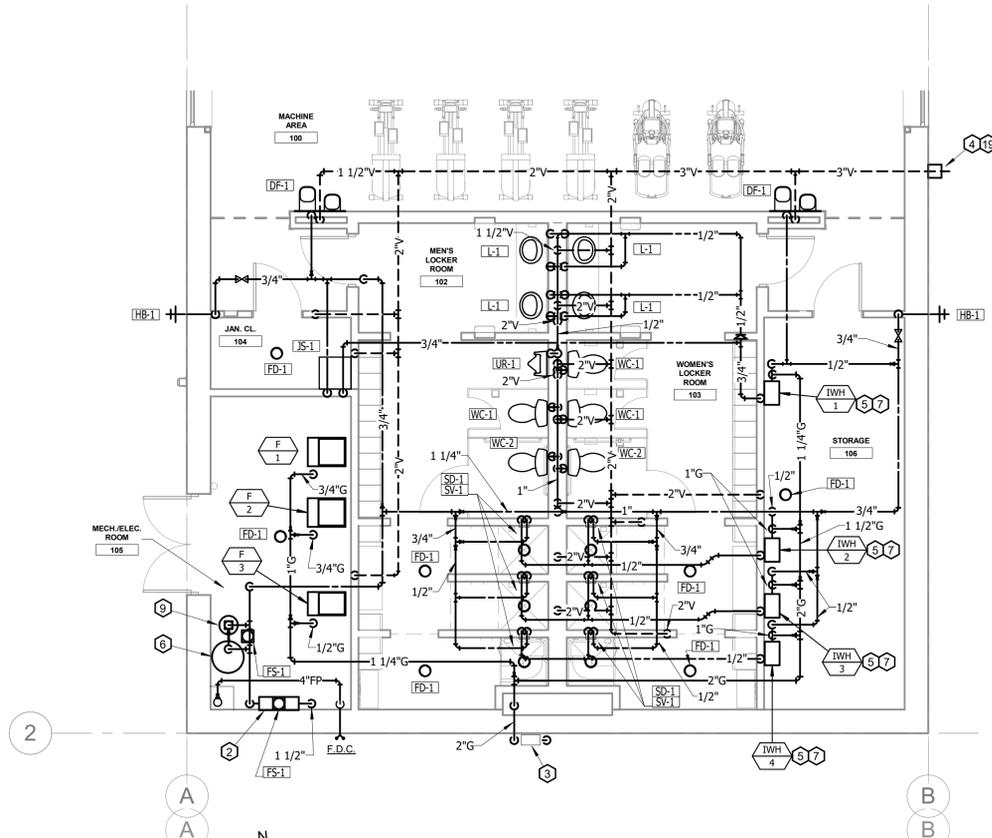
- 1 REFER TO CIVIL PLANS FOR CONTINUATION.
- 2 DOMESTIC WATER SERVICE BACKFLOW PREVENTER.
- 3 NATURAL GAS METER AND SERVICE. BUILDING GAS LOAD = 616 CFH @ 7" WC. PROVIDE AN AUTOMATIC SEISMIC GAS SHUT-OFF VALVE IN GAS PIPING PRIOR TO ENTERING BUILDING, ON DOWNSTREAM SIDE OF GAS METER. CONTRACTOR SHALL COORDINATE INSTALLATION WITH VALVE MANUFACTURER.
- 4 3" VENT THROUGH WALL. VENT TERMINAL SHALL NOT BE WITHIN 10'-0" OF AN OPERABLE OPENING INTO BUILDING. PROVIDE END OF VENT WITH BIRDSCREEN.
- 5 MOUNT WATER HEATER 1'-0" BELOW FINISHED CEILING. ROUTE DOMESTIC WATER PIPING ABOVE CEILING AS REQUIRED.
- 6 WATER SOFTENER BRINE TANK.
- 7 ROUTE CONDENSATE LINE DOWN WALL AND OVER TO NEAREST FLOOR DRAIN.
- 8 1-1/2" VENT PIPE UP IN WALL. REFER TO ABOVE GRADE PLUMBING PLAN FOR CONTINUATION.
- 9 50 GPM WATER SOFTENER. SEE DETAIL ON SHEET P401 FOR TYPICAL WATER SOFTENER CONNECTIONS.
- 10 3" SANITARY LINE UP TO FLOOR DRAIN.
- 11 3" SANITARY LINE UP TO FLOOR SINK.
- 12 2" SANITARY LINE UP TO BACK-TO-BACK LAVATORIES.
- 13 SANITARY LINE UP TO WATER CLOSET. REFER TO PLUMBING FIXTURE SCHEDULE TO PIPE SIZE.
- 14 SANITARY LINE UP TO URINAL. REFER TO PLUMBING FIXTURE SCHEDULE TO PIPE SIZE.
- 15 SANITARY LINE UP TO JANITOR SINK. REFER TO PLUMBING FIXTURE SCHEDULE TO PIPE SIZE.
- 16 SANITARY LINE UP TO DRINKING FOUNTAIN. REFER TO PLUMBING FIXTURE SCHEDULE TO PIPE SIZE.
- 17 2" VENT PIPE UP IN WALL. REFER TO ABOVE GRADE PLUMBING PLAN FOR CONTINUATION.
- 18 3" SANITARY LINE UP TO SHOWER DRAIN.
- 19 PROVIDE WALL VAULT/SHROUD AT 11'-3" ABOVE FINISHED GRADE, OR AS REQUIRED TO BE CENTERED BETWEEN STRUCTURAL BOND BEAMS IN EXTERIOR WALL. ROUTE VENT PIPE WITHIN WALL VAULT/SHROUD AS REQUIRED TO EXIT WALL VAULT/SHROUD ON EXTERIOR FACE. PROVIDE WALL VAULT/SHROUD WITH MANUFACTURER'S EXIT SEALS WHERE PIPE EXITS WALL VAULT/SHROUD. SIZE AS REQUIRED TO ACCOMMODATE VENT PIPES. VENT SHALL EXTEND 6" OUTSIDE OF WALL VAULT/SHROUD. CONTRACTOR SHALL COORDINATE WITH WALL VAULT/SHROUD MANUFACTURER. ALL COMPONENTS OF WALL VAULT/SHROUD ASSEMBLY SHALL BE BY THE SAME MANUFACTURER, BE 3RD PARTY TESTED TO MEET ICC-500 2014/FEMA P-361 MISSILE IMPACT RATING 250+ MPH FOR SAFE ROOM/STORM SHELTER APPLICATIONS, AND BE ISO 9001:2015 CERTIFIED. REFER TO DETAIL ON SHEET P-401.

GENERAL NOTES:

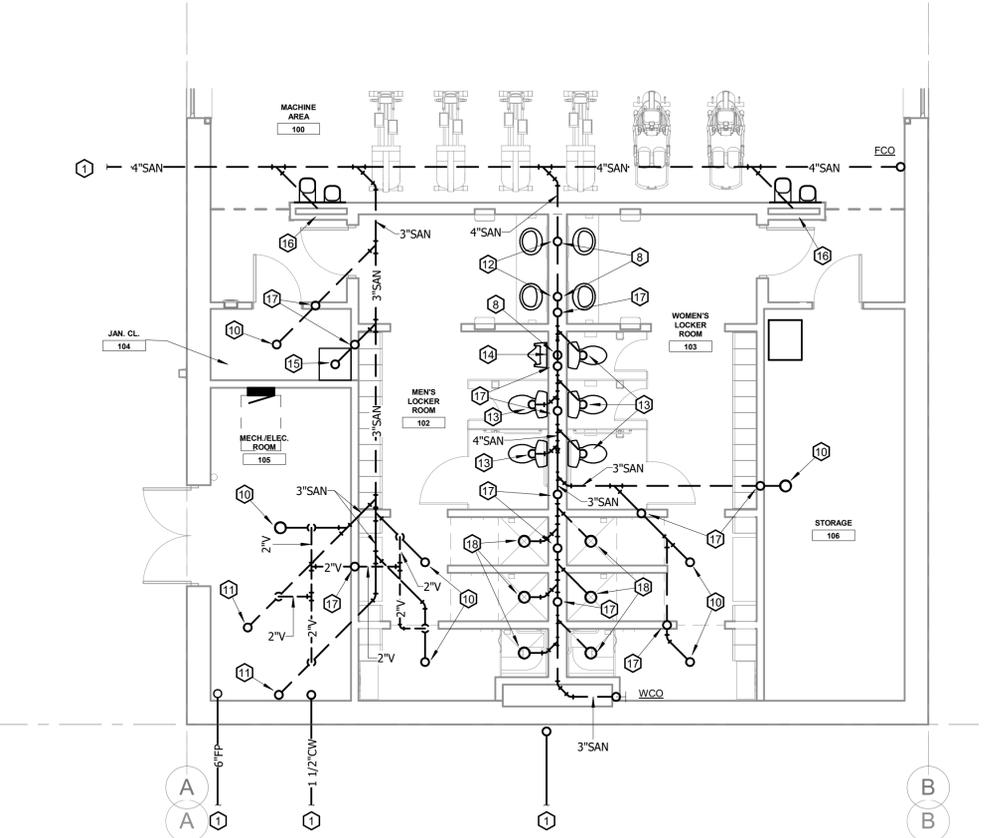
- A. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF THE WORK. PROVIDE PLUMBING SYSTEMS COMPLETE AND PER APPLICABLE CODES INCLUDING ALL NECESSARY COMPONENTS AND OFFSETS WHICH ARE REQUIRED DUE TO SPACE CONSTRAINTS OR OTHER CONDITIONS.
- B. REFER TO THE ARCHITECTURAL PLANS FOR THE EXACT LOCATIONS OF PLUMBING FIXTURES.
- C. COORDINATE THE INSTALLATION OF PLUMBING AND PIPING WITH THE WORK OF ALL OTHER TRADES.
- D. WHERE WALL MOUNTED FLUSH VALVE SENSORS ARE USED, THE PLUMBING CONTRACTOR SHALL COORDINATE THE LOCATION OF THE SENSORS WITH THE ELECTRICAL AND ARCHITECTURAL TRADES TO AVOID CONFLICTS WITH GRAB BARS OR ANY OTHER ACCESSORIES.
- E. PIPING SHALL NOT BE LOCATED OVER ELECTRICAL EQUIPMENT OR PANELS. PROVIDE THE CODE REQUIRED WORKING CLEARANCE AROUND ALL ELECTRICAL EQUIPMENT AND PANELS.
- F. THE CONTRACTOR SHALL NOT LOCATE PIPING BELOW DUCT MOUNTED AIR TERMINAL UNITS, TERMINAL HEATING COILS, OR OTHER EQUIPMENT.
- G. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL PLUMBING SYSTEMS.
- H. COORDINATE THE SHUT DOWN OF ANY EXISTING SERVICES AND/OR EQUIPMENT WITH THE OWNER'S REPRESENTATIVE.
- I. PLUMBING VENT PIPING THROUGH THE ROOF SHALL BE LOCATED A MINIMUM OF 10'-0" AWAY FROM ANY FRESH AIR INTAKE LOCATION.
- J. PROVIDE THE CODE REQUIRED CLEARANCE FOR ALL CLEANOUTS INSTALLED IN SANITARY WASTE AND VENT PIPING.
- K. MINIMUM UNDERGROUND PIPE SIZE SHALL BE 2".

GENERAL FIRE PROTECTION NOTES:

- A. PROVIDE A COMPLETE AUTOMATIC SPRINKLER SYSTEM TO SERVE THE ENTIRE BUILDING.
- D. PROVIDE FIRE PROTECTION SYSTEM COMPLETE, PER APPLICABLE CODES, PER NFPA, AND PER REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
- E. INCLUDE ALL PIPING, OFFSETS, FITTINGS, DRAINS, VALVES, SUPPORTS, HEADS, ETC. AS REQUIRED FOR A COMPLETE OPERABLE SYSTEM.
- F. SPRINKLER HEADS SHALL BE WHITE SEMI-RECESSED FOR AREAS WITH FINISHED CEILINGS. SPRINKLER HEADS SHALL BE ROUGH BRASS FOR AREAS WITH EXPOSED STRUCTURE. SPRINKLER HEADS IN CEILINGS, UNLESS FUNCTIONALLY IMPOSSIBLE, SHALL BE CENTERED WITH AND BETWEEN ROWS OF LIGHT FIXTURES. SPRINKLER HEADS IN MACHINE ROOMS SHALL BE 212F TEMPERATURE ACTIVATED.
- G. PIPING IN AREAS HAVING FINISHED CEILINGS SHALL BE CONCEALED. SPRINKLER PIPING 2-1/2" AND LARGER MAY BE SCHEDULE 10 BLACK STEEL. SPRINKLER PIPING 2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL. MINIMUM PIPE SIZE SHALL BE 1".
- H. PROVIDE AND INSTALL BACKFLOW PREVENTION EQUIPMENT AS REQUIRED BY LOCAL CODES. PROVIDE AND INSTALL FULL FLOW FIRE METER OR DETECTOR CHECK METER IF REQUIRED.
- I. THE SYSTEMS SHALL BE DESIGNED BY A LICENSED FIRE PROTECTION ENGINEER AND INSTALLED BY A LICENSED SPRINKLER CONTRACTOR.
- J. SEAL ALL FIRE PROTECTION FLOOR, WALL AND ROOF PENETRATIONS WATER-TIGHT AND WEATHER-TIGHT. CAULK AROUND FIRE PROTECTION PENETRATIONS WITH 3M CP-25 FIRE BARRIER CAULK (THICKNESS AS REQUIRED AND RECOMMENDED BY MANUFACTURER) TO MAINTAIN FIRE RESISTANCE RATING OF FIRE-RATED ASSEMBLIES.
- K. COORDINATE ALL SCHEDULING AND WORK WITH OTHER TRADES SO AS TO PREVENT CONFLICTS, AND TO ENSURE ORDERLY PROGRESS OF THE WORK, WITH A MINIMUM OF DELAYS. WHERE SPRINKLER PIPING IS INSTALLED WITHOUT COORDINATING WITH OTHER TRADES AND CONFLICTS OCCUR, SPRINKLER PIPING SHALL BE RELOCATED AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER TO RESOLVE THE CONFLICTS.
- L. WHERE PIPING PASSES THROUGH WALLS, FLOORS, CEILINGS, OR OTHER BUILDING CONSTRUCTION, SLEEVES MUST BE USED. WHERE EXPOSED PIPING PASSES THROUGH FINISH WORK, CHROME PLATED OR OTHER FINISH ACCEPTABLE TO THE ARCHITECT, SPLIT WALL PLATES OR ESCUTCHEONS SHALL BE INSTALLED TO FIT SNUGLY AROUND THE PIPING. WHERE FINISH IS NOT A PROBLEM SUITABLE PLATES SHALL BE PROVIDED AT EACH HOLE TO ASSURE EFFECTIVENESS OF CONSTRUCTION AS A FIRE STOP.



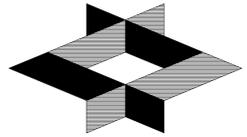
1 First Floor Above Grade Plumbing Plan
Scale: 3/16" = 1'-0"



2 First Floor Below Grade Plumbing Plan
Scale: 3/16" = 1'-0"



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DRAWN BY: MEB
CHECKED BY: CJS
DESIGNED BY: MEB

SHEET TITLE:
**PLUMBING
SCHEDULES &
DETAILS**

SHEET NUMBER:

P-401

29 OF 32 SHEETS

07/02/2020

PLUMBING FIXTURE SCHEDULE

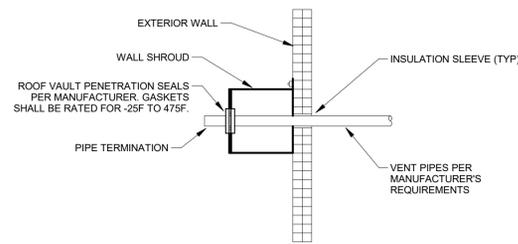
NOTES:

1. FIXTURE IS ADA COMPLIANT. REFER TO ARCHITECTURAL DRAWINGS FOR ACTUAL MOUNTING HEIGHT.
2. FAUCET HOLES TO MATCH FAUCET SPECIFIED.
3. MOUNT WITH HANDICAPPED RECEPTOR RIM 36" ABOVE FLOOR.
4. PIPE SIZE AS SHOWN ON DRAWING.
5. COORDINATE SPUD SIZE WITH FLUSH VALVE SUPPLIED.
6. EQUIVALENT CARRIER BY WADE.
7. FIXTURE ASSEMBLY MUST BE APPROVED BY AN INSTALLED PER ADA.
8. PROVIDE OPERATING ROD ASSEMBLY PER MANUFACTURER'S RECOMMENDATIONS BASED ON WALL THICKNESS.
9. PROVIDE SURSEAL SSK8000 R/LINE FLOOR DRAIN TRAP SEAL WITH ASSE 1072 RATING.
10. PROVIDE WITH MANUFACTURER'S 3/4" WALL CARRIER ACCESSORY.

GENERAL NOTES:

- A. PROVIDE INSULATION KIT ON ALL ADA FIXTURES WITH EXPOSED TRAP AND SUPPLIES.

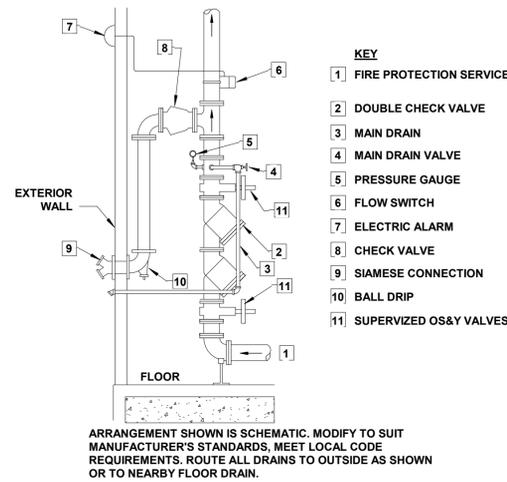
MARK	DESCRIPTION	MANUFACTURER	MODEL	TRIM	CONNECTIONS				NOTES
					CW	HW	W	V	
WC-1	FLOOR MOUNTED FLUSH TANK WATER CLOSET	AMERICAN STANDARD (B.O.D.)	CADET 3 270AA.001 (B.O.D.)	CHURCH 9500C OPEN FRONT SEAT	1/2"	-	4"	2"	
WC-2	ADA FLOOR MOUNTED FLUSH TANK WATER CLOSET (B.O.D.)	AMERICAN STANDARD (B.O.D.)	CADET 3 270AA.001 (B.O.D.)	CHURCH 9500C OPEN FRONT SEAT	1/2"	-	4"	2"	7
UR-1	ADA WALL MOUNTED URINAL (B.O.D.)	AMERICAN STANDARD (B.O.D.)	TRIMBROOK 6561.017 (B.O.D.)	FLUSH VALVE, FV-1; CARRIER, C-1	3/4"	-	2"	1-1/2"	1,5,6,7
FV-1	URINAL FLUSH VALVE (B.O.D.)	SLOAN (B.O.D.)	ROYAL 186 (B.O.D.)	-	-	-	-	-	
L-1	INTEGRAL LAVATORY PER ARCHITECT	-	-	REFER TO ARCHITECTURAL DRAWINGS, FAUCET, F-1	-	-	2"	1-1/2"	2
JS-1	MOLDED STONE JANITOR'S SINK (B.O.D.)	FIAT (B.O.D.)	MSB-2424 (B.O.D.)	FAUCET, F-2; S/S BUMPERGUARDS, S/S WALL GUARDS	-	-	3"	1-1/2"	1,3,7,10
DF-1	WALL HUNG BI-LEVEL DRINKING FOUNTAIN (B.O.D.)	ELKAY (B.O.D.)	EDFP2R17C (B.O.D.)	-	1/2"	-	2"	1-1/2"	1,3,7,10
F-1	ADA SINGLE LEVER LAVATORY FAUCET (B.O.D.)	AMERICAN STANDARD (B.O.D.)	RELIANT 7385.004 (B.O.D.)	0.5 GPM, VANDAL RESISTANT, GRID DRAIN, 4" CENTERS, MIXING VALVE, MV-1	1/2"	1/2"	-	-	7
F-2	JANITOR'S SINK FAUCET (B.O.D.)	AMERICAN STANDARD (B.O.D.)	8344.112 (B.O.D.)	VACUUM BREAKER, WALL BRACE, PAIL HOOK, 30" HOSE WITH WALL GRIP, MOP HANGER	3/4"	3/4"	-	-	7
SV-1	ADA SINGLE LEVER, PRESURE BALANCE, SHOWER FAUCET (B.O.D.)	SYMMONS (B.O.D.)	9605-XPLR (B.O.D.)	2.5 GPM, ORIGINS SHOWER SYSTEM	1/2"	1/2"	-	-	1,7
HB-1	NON-FREEZE WALL HYDRANT (B.O.D.)	WOODFORD (B.O.D.)	MODEL 65 (B.O.D.)	VACUUM BREAKER, LOOSE CONTROL KEY, WALL CLAMP	3/4"	-	-	-	8
FD-1	7" ROUND FLOOR DRAIN (B.O.D.)	ZURN (B.O.D.)	Z-415 (B.O.D.)	NICKEL BRONZE STRAINER, DEEP SEAL TRAP	-	-	3"	-	4,9
FS-1	12" FLOOR SINK (B.O.D.)	ZURN (B.O.D.)	Z-566 (B.O.D.)	NICKEL BRONZE STRAINER, DEEP SEAL TRAP, 1/2 GRATE	-	-	3"	-	4,9
SD-1	4" ROUND SHOWER DRAIN (B.O.D.)	ZURN (B.O.D.)	FDZ250 (B.O.D.)	-	-	-	2"	-	4
MV-1	POINT-OF-USE MIXING VALVE (B.O.D.)	LEONARD (B.O.D.)	Z70-LF (B.O.D.)	0.25-12 GPM FLOW, ASSE 1017 CERTIFIED, LOW FLOW	-	-	-	-	4
C-1	WALL URINAL CARRIER (B.O.D.)	ZURN (B.O.D.)	Z-1221 (B.O.D.)	-	-	-	-	-	



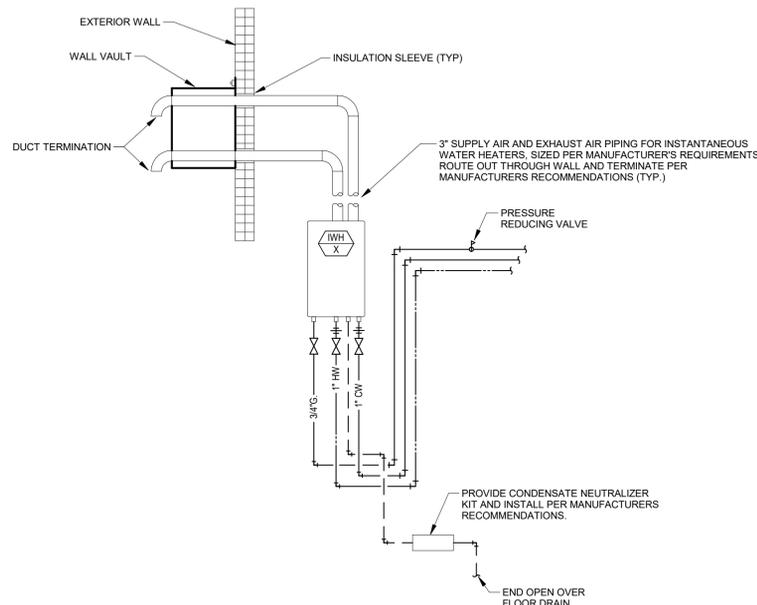
NOTES:

1. MANUFACTURER'S WALL PLATE SHALL MOUNT FLAT TO STORM SHELTER WALL.
2. MANUFACTURER'S PENETRATION SEALS SHALL ALLOW FOR PASS-THROUGH PROTECTION OF PIPING/DUCT.
3. WALL SHROUD ASSEMBLY SHALL BE VANDAL-PROOF.
4. MANUFACTURER SHALL BE ABLE TO PROVIDE CUSTOM SIZES AS REQUIRED.

1 Storm Shelter Wall Vault/Shroud Detail
Scale: Not to Scale



2 Fire Department Water Entry
Scale: Not to Scale



NOTES:

1. VERIFY EXACT PIPING PER MANUFACTURER'S SPECIFICATIONS.
2. CONCENTRIC VENT KIT SHALL INCLUDE RAIN CAP AND WYE CONCENTRIC FITTINGS.

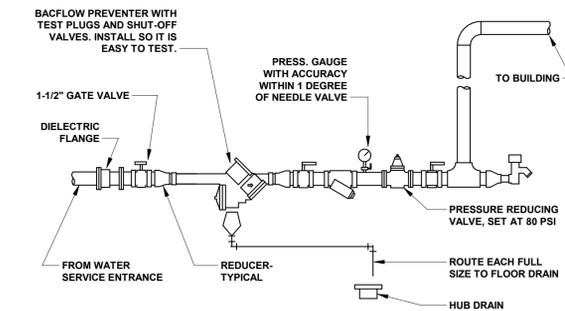
3 Instantaneous Water Heater Detail
Scale: Not to Scale

INSTANTANEOUS WATER HEATER

NOTES:

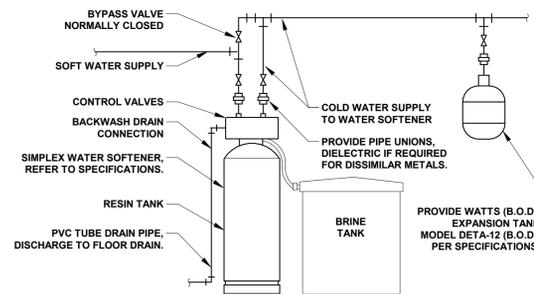
1. PROVIDE DIELECTRIC CONNECTIONS AT WATER HEATER.
2. PROVIDE WITH GAS PRESSURE REGULATOR TO BRING GAS PRESSURE BELOW MANUFACTURER'S MAXIMUM PRESSURE OF 10.0" WC. ROUTE VENT FROM REGULATOR UP THROUGH ROOF AND SEAL PENETRATION WEATHERTIGHT.
3. PROVIDE WITH MANUFACTURER'S NEUTRALIZATION KIT.

MARK	MANUFACTURER	MODEL	CAPACITY (GAL)	INPUT (MBH)	V/PH	NOTES
IWH-1	A.O. SMITH (B.O.D.)	ACT-199I-N (B.O.D.)	-	199	120/1	1,2,3
IWH-2	A.O. SMITH (B.O.D.)	ACT-199I-N (B.O.D.)	-	199	120/1	1,2,3
IWH-3	A.O. SMITH (B.O.D.)	ACT-199I-N (B.O.D.)	-	199	120/1	1,2,3
IWH-4	A.O. SMITH (B.O.D.)	ACT-199I-N (B.O.D.)	-	199	120/1	1,2,3



PROVIDE REDUCED PRESSURE BACKFLOW PREVENTER OF TYPE AND MANUFACTURER AS APPROVED BY LOCAL AUTHORITIES. INSTALL BFP IN HORIZONTAL UPRIGHT POSITION, UNLESS NOTED OTHERWISE. STRAINER AND REDUCING VALVES MAY BE INSTALLED IN VERTICAL PIPE IF SPACE LIMITATIONS REQUIRE. CLEAN STRAINER BEFORE TURNING BUILDINGS OVER TO OWNER. PROVIDE ANY REQUIRED CERTIFICATION TEST OF BFP TO LOCAL AUTHORITIES. ALL ITEMS SHALL BE APPROVED FOR DOMESTIC WATER SERVICE. ARRANGEMENT SHOWN IS SCHEMATIC. MODIFY TO SUIT CONDITIONS. INSTALL BFP SO IT CAN BE EASILY SERVICED AND TESTED. SUPPORT ASSEMBLY FROM WALL BRACKET OR FLOOR STAND.

4 Water Service Entrance
Scale: Not to Scale



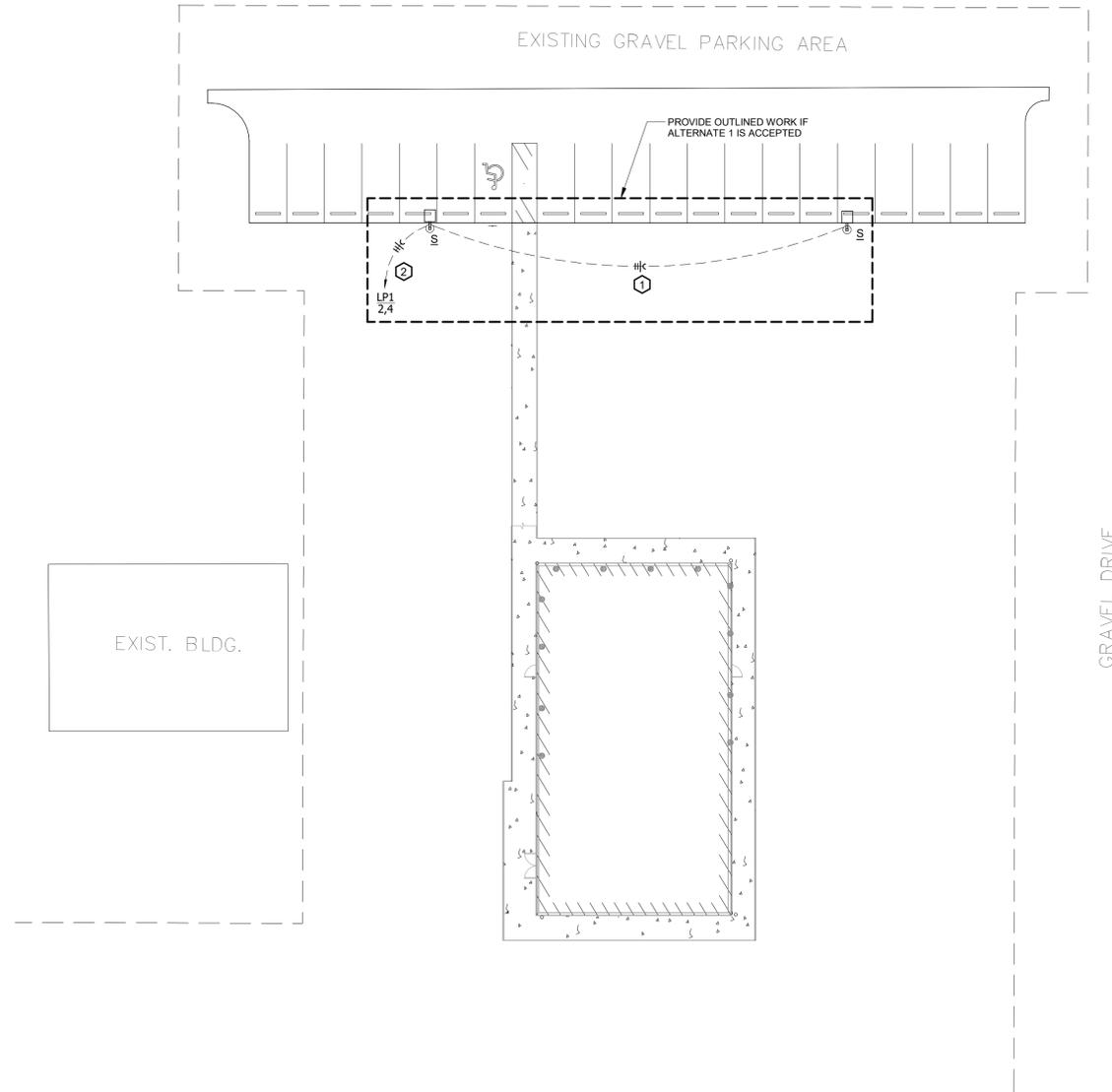
NOTES:

1. PIPING ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST TO SUIT FIELD CONDITIONS. REFER TO FLOOR PLANS FOR PIPE SIZES.

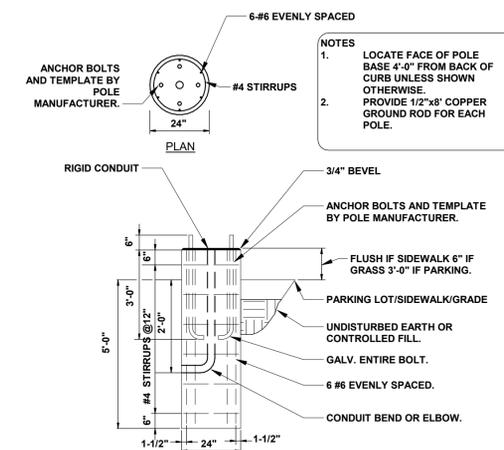
5 Water Softner Detail
Scale: Not to Scale

PLAN NOTES:

- ① ROUTE (3)#10 & #10GW IN 1" PVC CONDUIT.
- ② ROUTE HOMERUN WITH (3)#10 & #10GW IN 1" PVC CONDUIT. ROUTE CIRCUIT THROUGH EXTERIOR LIGHTING CONTACTOR.



1 ELECTRICAL SITE PLAN
Scale: 1" = 20'-0"

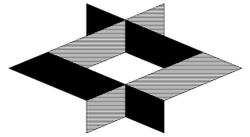


2 POLE BASE DETAIL
Scale: Not to Scale

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MIKE PARSON,
GOVERNOR



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CAD DWG FILE:

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CHECKED BY: CJS
DESIGNED BY: MEB

SHEET TITLE:
**ELECTRICAL SITE
PLAN**

SHEET NUMBER:

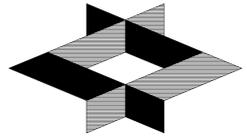
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30 OF 32 SHEETS

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SHEET TITLE:
ELECTRICAL
PLANS

SHEET NUMBER:

E-101

31 OF 32 SHEETS

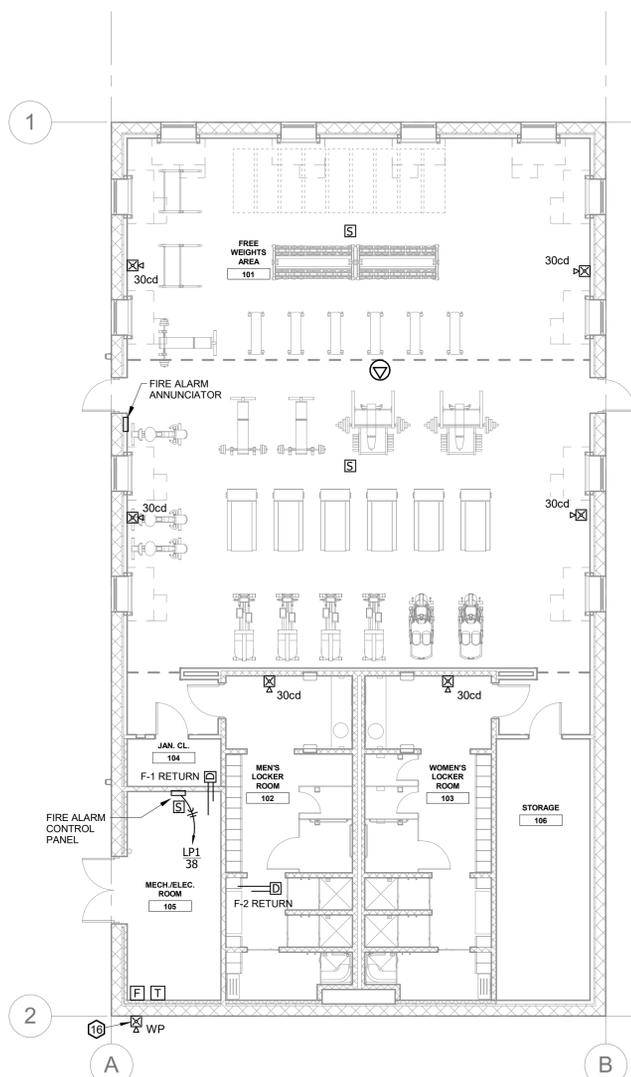
07/02/2020

GENERAL NOTES:

- A. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE GENERAL EXTENT OF THE WORK. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL PULL BOXES, JUNCTION BOXES AND INCIDENTAL MATERIALS AND LABOR FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.
- B. ELECTRICAL CONTRACTOR SHALL DERATE CONDUCTORS AS REQUIRED BY THE N.E.C. WHEN GROUPED IN COMMON RACEWAYS.
- C. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH CONTRACTOR PROVIDED SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN THE SUBMITTALS AND ELECTRICAL DRAWINGS.
- D. CONTRACTOR SHALL OFFSET OUTLET BOXES ON OPPOSITE SIDES OF A COMMON WALL TO PREVENT SOUND TRANSMISSION BETWEEN ADJOINING ROOMS. BOXES SHALL BE A MINIMUM OF 12" APART, AND MUST BE INSTALLED IN SEPARATE STUD CAVITIES.
- E. ALL LOW VOLTAGE WIRES NOT ROUTED IN CONDUIT SHALL BE PROVIDED AS PLENUM RATED CABLES.
- F. PROVIDE JUNCTION BOXES AND 3/4" CONDUIT WITH PULL-STRINGS UP TO ACCESSIBLE LOCATION IN PLENUM AT ALL VOICE AND DATA OUTLET LOCATIONS.
- G. WHERE BOXES ARE INSTALLED IN CONCRETE BLOCK WALLS, THE BOX MOUNTING HEIGHT SHALL BE AT THE BLOCK JOINT AND THE DEVICES SHALL BE PROVIDED WITH A JUMBO COVERPLATE.
- H. EQUIPMENT LAYOUTS ARE FOR REFERENCE ONLY. COORDINATE THE FINAL LOCATION OF ELECTRICAL DEVICES AND OUTLETS WITH ARCHITECT, OWNER AND FINAL EQUIPMENT PLANS PRIOR TO INSTALLATION.
- I. PROVIDE LOCKING CLIPS ON ALL CIRCUIT BREAKERS SERVING TELECOMMUNICATION EQUIPMENT AND FIRE ALARM CONTROL PANELS.
- J. COORDINATE THE EXACT LIGHT FIXTURE LOCATIONS WITH THE ARCHITECTURAL DRAWINGS.

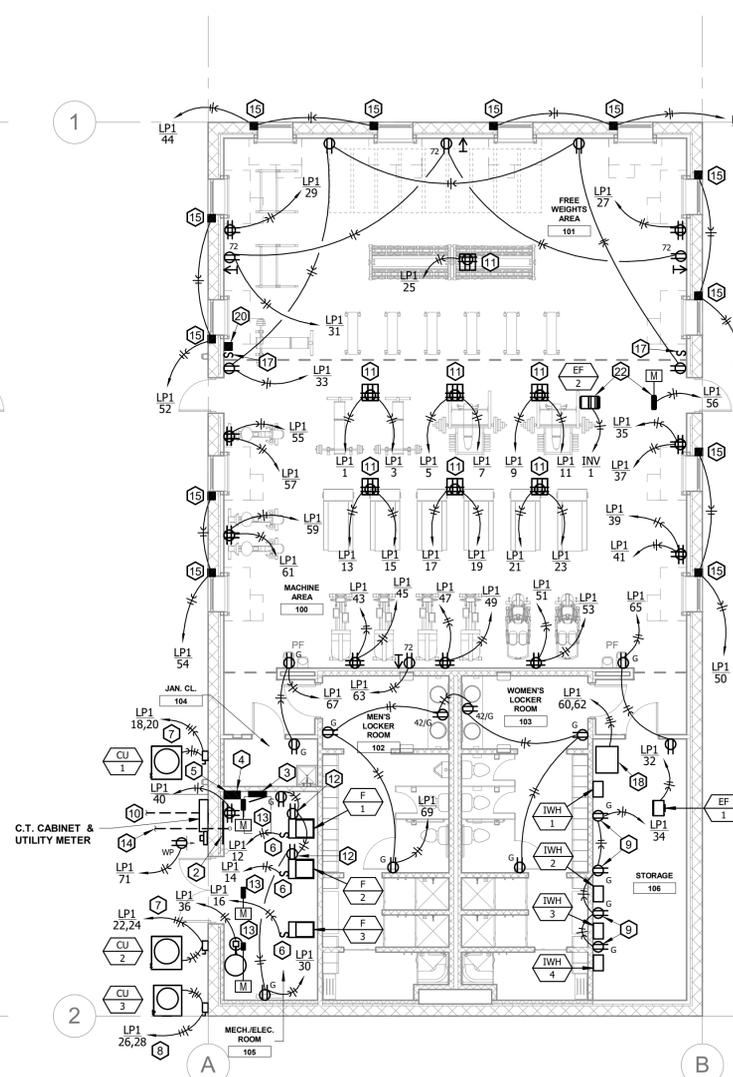
PLAN NOTES:

1. MOUNT EXTERIOR PHOTOCELL "PC" AT 2'-0" BELOW TOP OF ROOF, FACING NORTHERN EXPOSURE. CONTRACTOR SHALL COORDINATE WITH OWNER TO SET APERTURE OPENING. REFER TO E-401.
2. 48"x48"x3/4" FIRE TREATED PLYWOOD TELECOMMUNICATIONS BOARD FOR INSTALLATION OF TELEDATA EQUIPMENT. PROVIDE GROUNDING BUS AND CONNECT TO SYSTEM GROUND. COORDINATE EQUIPMENT TO BE MOUNTED TO TELEDATA BOARD WITH OWNER PRIOR TO BID. TELEDATA CABLING SHALL BE FIBER-OPTIC AS BASIS-OF-DESIGN. CONTRACTOR SHALL REFER TO SPECIFICATION SECTIONS 27 01 00 - GENERAL COMMUNICATIONS REQUIREMENTS, 27 20 13 - DATA/PHONE SYSTEM REQUIREMENTS, AND 27 20 15 - DATA/PHONE SYSTEM STRUCTURED CABLING FOR FURTHER INFORMATION AND WORK REQUIRED.
3. PROVIDE SCHNEIDER ELECTRIC (B.O.D.) MODEL TVS2HWAL0X (B.O.D.) 100KA TVSS PROTECTION AT NEW PANELBOARD. MINIMIZE CONDUCTOR DISTANCE.
ROUTE (4) #10 AND (1) #10 GROUND TO TVSS CONNECTION.
4. PROVIDE 7-DAY, 24 HOUR, ASTRONOMICAL TIMECLOCK "TE" AND INTERFACE WITH EXTERIOR LIGHTING CONTRACTOR. REFER TO DETAIL ON SHEET E-101.
5. PROVIDE 8-POLE, EXTERIOR LIGHTING CONTRACTOR "CE" AND INTERFACE WITH TIMECLOCK "TE". REFER TO DETAIL ON SHEET E-101.
6. PROVIDE 120V/20A/1PH AC MOTOR RATED TOGGLE SWITCH FOR DISCONNECTING MEANS. MAKE ALL REQUIRED ELECTRICAL CONNECTIONS TO FURNACE.
7. PROVIDE 208V/60A/1PH NON-FUSED DISCONNECT SWITCH IN A NEMA 3R ENCLOSURE AND MAKE ALL REQUIRED ELECTRICAL CONNECTIONS TO CONDENSING UNIT. HOMERUN WITH (3)#4 & #10 GROUND WIRE IN A 1" CONDUIT.
8. PROVIDE 208V/30A/1PH NON-FUSED DISCONNECT SWITCH IN A NEMA 3R ENCLOSURE AND MAKE ALL REQUIRED ELECTRICAL CONNECTIONS TO CONDENSING UNIT. HOMERUN WITH (3)#10 & #10 GROUND WIRE IN A 1/2" CONDUIT.
9. MOUNT RECEPTACLE FOR INSTANTANEOUS WATER HEATER ADJACENT TO ASSOCIATED WATER HEATER.
10. TO UTILITY TRANSFORMER. SIZE PER ELECTRICAL RISER DIAGRAM. COORDINATE WITH CIVIL DRAWINGS AND ELECTRICAL UTILITY. CONTACT RONI GIBBENS AT EVERGY. PHONE NUMBER: 816-896-8876.
11. PROVIDE 2-GANG FLOOR BOX. PROVIDE FLOOR BOX WITH (2) 20A DUPLEX RECEPTACLES. PROVIDE COVERPLATE SUITABLE FOR FLOOR FINISH AS NOTED IN ARCHITECTURAL DRAWINGS.
12. PROVIDE RECEPTACLE FOR ATMOS AIR IONIZER. INTERLOCK RECEPTACLE WITH MANUFACTURER PROVIDE AIR PRESSURE SWITCH SO THAT UNIT IS ACTIVATED WHEN AIR HANDLER TURNS ON. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION.
13. MOTORIZED OUTSIDE AIR DAMPER SHALL BE INTERLOCKED WITH AIR HANDLER. CIRCUIT MOTORIZED AIR DAMPER TO SAME CIRCUIT AS ASSOCIATED AIR HANDLER. DAMPER TO BE OPENED WHEN FAN IS RUNNING.
14. PROVIDE (1) 4" EMPTY CONDUIT WITH PULL STRING OUT FOR CABLE TV, TELEPHONE, AND INTERNET SERVICES. REFER TO CIVIL DRAWINGS FOR CONTINUATION. EXTEND CONDUIT TO PROPERTY LINE. COORDINATE WITH CIVIL ENGINEER FOR CONDUIT ROUTING OUTSIDE OF BUILDING. COORDINATE EXACT LOCATION AND CONNECTION REQUIREMENTS OF SERVICE PROVIDER'S UTILITY PEDESTAL WITH SERVICE PROVIDER AND OWNER PRIOR TO BID. STUB-UP IN ROOM A MINIMUM OF 6" ABOVE FINISHED GRADE. PROVIDE 4" CONDUIT SLEEVE THROUGH FLOOR FOR TELECOM CABLING.
15. MAKE ELECTRICAL CONNECTION TO MOTORIZED WINDOW SHUTTERS. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION. PROVIDE SINGLE CONTROL SWITCH FOR ALL WINDOW SHUTTERS AT EACH DOOR.
16. PROVIDE EXTERIOR, BUILDING MOUNTED, WEATHER PROOF COMBINATION AUDIBLE/VISUAL ALARM FOR CAMP CLARK FIRE DEPARTMENT NOTIFICATION NEAR FIRE DEPARTMENT CONNECTION. COORDINATE EXACT LOCATION WITH CAMP CLARK SECURITY PERSONNEL.
17. WINDOW SHUTTERS CONTROL SWITCH. PROVIDE ALL REQUIRED RELAYS/CONTACTOR SO THAT EITHER SWITCH AT EACH DOOR HAS THE ABILITY TO CONTROL ALL WINDOW SHUTTERS TOGETHER.
18. PROVIDE 1.5KVA INVERTER EQUAL TO MYERS #4-E-1-S-R120-BA2003/NA2001-T-2YW WITH MINIMUM 120 MINUTE RUNTIME, 240V INPUT-120/240V OUTPUT AND (4) 20A/120V OUTPUT CIRCUIT BREAKERS. (3) OF THE CIRCUIT BREAKERS SHALL BE NORMALLY ON AND (1) CIRCUIT BREAKER SHALL BE NORMALLY OFF FOR THE EMERGENCY EXHAUST FAN EF-2.
19. ROUTE CIRCUIT THROUGH EXTERIOR LIGHTING CONTRACTOR. REFERENCE CONTRACTOR DETAIL FOR MORE INFORMATION.
20. PROVIDE CONTINUOUS CONTACT RED MUSHROOM PUSH BUTTON LABELED "HVAC SHUTDOWN". INTERLOCK CONTROLS WITH ALL VENTILATION EQUIPMENT CONTROLS SO ALL POWER TO VENTILATION EQUIPMENT IS REMOVED WHEN BUTTON IS PUSHED. PROVIDE ALL REQUIRED RELAYS/CONTACTOR FOR SHUTDOWN OF ALL VENTILATION EQUIPMENT.
21. PROVIDE EMERGENCY LIGHTING CONTROL UNIT. MAKE ALL REQUIRED POWER AND CONTROL CONNECTIONS SO THAT EMERGENCY FIXTURES ARE CONTROLLED THE SAME AS THE NORMAL FIXTURES IN THE ROOM. MOUNT UNIT ABOVE NEAREST ACCESSIBLE CEILING. EMERGENCY LIGHT FIXTURES SHALL BE CONNECTED TO "NORMALLY ON" CIRCUIT BREAKER AT INVERTER LOCATED IN STORAGE ROOM.
22. EXHAUST FAN EF-2 TO ONLY OPERATE IN EMERGENCY CONDITIONS. FAN SHALL BE CONNECTED TO "NORMALLY OFF" CIRCUIT BREAKER AT INVERTER LOCATED IN STORAGE ROOM AND ACTIVATE IF NORMAL POWER IS LOST. MOTORIZED DAMPER SHALL BE CLOSED DURING NON-EMERGENCY OPERATION. DAMPER SHALL FAIL OPEN IN CASE NORMAL POWER IS LOST.



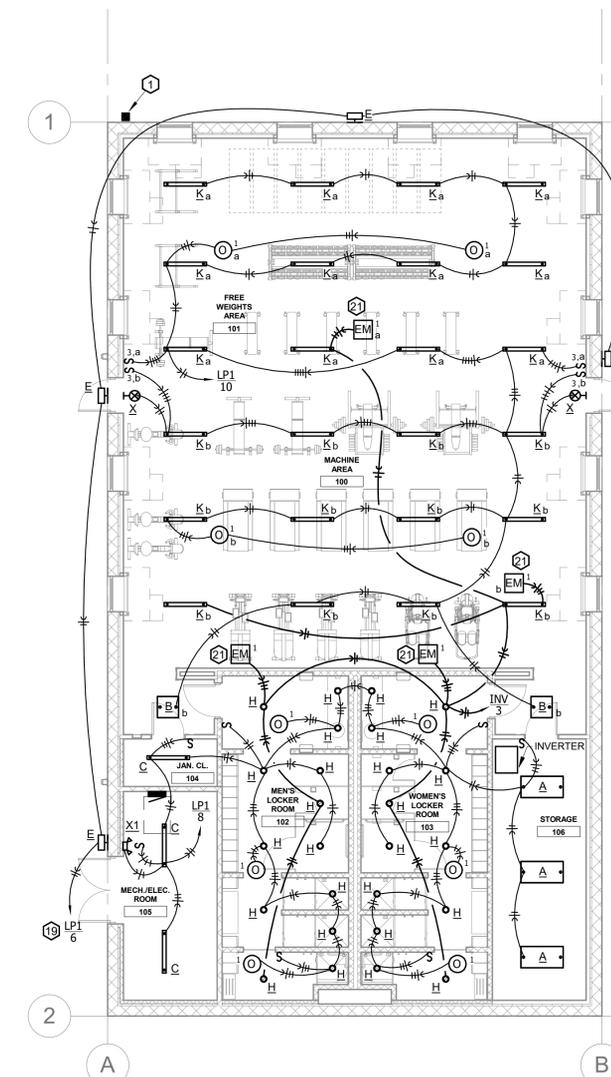
3 First Floor Special Systems Plan

Scale: 1/8" = 1'-0"



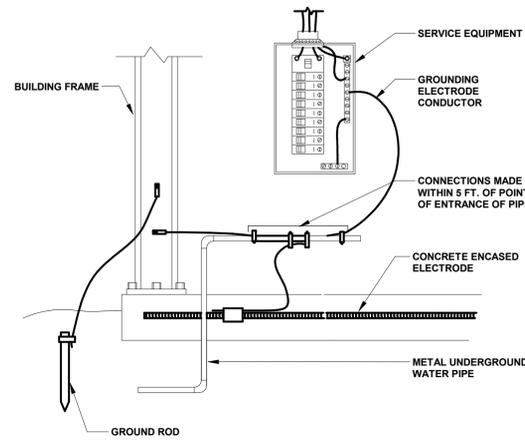
2 First Floor Power Plan

Scale: 1/8" = 1'-0"



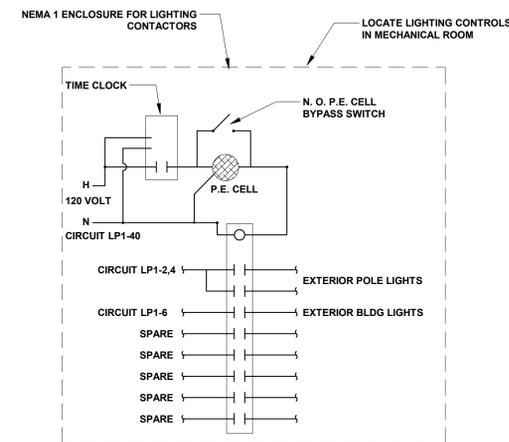
1 First Floor Lighting Plan

Scale: 1/8" = 1'-0"



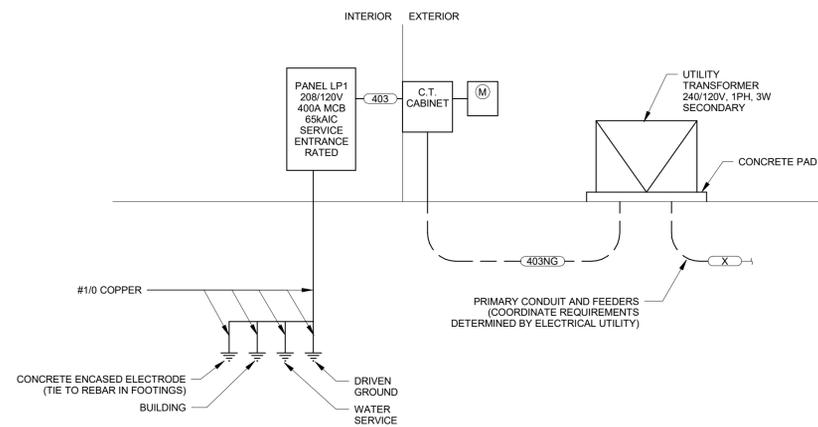
1 Grounding Electrode System

Scale: Not to Scale



2 Exterior Lighting Control Detail

Scale: Not to Scale



3 Electrical Riser Diagram

Scale: Not to Scale

LIGHT FIXTURE SCHEDULE

NOTES:

1. PROVIDE NUMBER OF FACES AND DIRECTIONAL ARROWS TO MATCH WHAT IS SHOWN ON DRAWINGS.
2. MOUNT FIXTURE 9'-0" ABOVE FINISHED GRADE.
3. MOUNT FIXTURE 9'-0" ABOVE FINISHED FLOOR.
4. MOUNT FIXTURE 9'-0" ABOVE FINISHED FLOOR.
5. PROVIDE FIXTURE WITH BLACK FINISH.

GENERAL NOTES:

- A. CONTRACTOR SHALL VERIFY CEILING TYPE PRIOR TO ORDERING ALL FIXTURES.
- B. PROVIDE ALL REQUIRED ACCESSORIES FOR A COMPLETE INSTALLATION.
- C. REFERENCE PLANS FOR FIXTURES REQUIRING EMERGENCY BALLASTS.

MARK	MANUFACTURER	MODEL	LAMP DATA			DIMMING	VOLTS	MOUNTING	WATTS	DESCRIPTION	NOTES
			LUMEN OUTPUT	TYPE	COLOR (K)						
A	LED2 (B.O.D.)	LED2-PANS-24-50W-40 (B.O.D.)	5928	LED	4000	-	120	RECESSED	50	2 X 4 FLAT PANEL LED	
B	LED2 (B.O.D.)	LED2-PANS-22-40W-40 (B.O.D.)	4673	LED	4000	-	120	RECESSED	40	2 X 2 FLAT PANEL LED	
C	H.E. WILLIAMS (B.O.D.)	75R-4-LS/835-DIM-UNV (B.O.D.)	6600	LED	3500	-	UNV	SURFACE	49	4 FT. LED STRIP	3
E	LITHONIA (B.O.D.)	WST-LED-P2-40K-VF-120-E7WC (B.O.D.)	3000	LED	4000	-	120	WALL	25	LED WALL PACK W/EMERGENCY BATTERY	2
H	LIGHTOLIER (B.O.D.)	S7R840K10 (B.O.D.)	1000	LED	4000	-	UNV	SURFACE	15	7 IN ROUND SLIM SURFACE	
K	H.E. WILLIAMS (B.O.D.)	LLM-4-L15/840-P-SQ-ACF48-DIM-UNV (B.O.D.)	6000	LED	4000	-	UNV	SUSPENDED	45	4 FT. LED LINEAR	4.5
S	H.E. WILLIAMS (B.O.D.)	VA1-L1107/60-T3-F-S (B.O.D.)	11000	LED	4000	-	UNV	POLE	110	POLE MOUNTED AREA LIGHT	
X	H.E. WILLIAMS (B.O.D.)	EXIT-REM-WHT-D (B.O.D.)	-	LED	-	-	UNV	SEE PLANS	5	LED EXIT SIGN W/EMERGENCY BATTERY	1
X1	H.E. WILLIAMS (B.O.D.)	EMER/LED-WHT-D (B.O.D.)	-	LED	-	-	120	WALL	2	LED EMERGENCY WALL LIGHT	

LIGHTING CONTROLS SCHEDULE

CONTROL NOTES:

1. AUTO ON (OCCUPANCY MODE): LOAD TURNS ON AND OFF AUTOMATICALLY BASED ON OCCUPANCY. IF LOAD IS TURNED OFF MANUALLY, LOAD REMAINS OFF UNTIL 5 MINUTES AFTER OCCUPANT DETECTED, IT THEN REVERTS TO AUTO ON MODE.
2. MANUAL ON (VACANCY MODE): OCCUPANT MUST MANUALLY PRESS ON/OFF BUTTON TO ENERGIZE THE LOAD. LOAD REMAINS ENERGIZED UNTIL NO MOTION IS DETECTED FOR THE SELECTED TIME DELAY.
3. 30 SECOND RE-TRIGGER DELAY - IF SENSOR DETECTS MOTION DURING DELAY SENSOR SHALL RE-ENERGIZE LOAD.
4. SENSOR SHALL ENERGIZE LOAD UPON DETECTION OF MOTION. LOAD IS DE-ENERGIZED ONCE SPACE IS VACANT AND THE ADJUSTABLE TIME DELAY ELAPSES.
5. MANUAL OVERRIDE SWITCH SHALL DE-ENERGIZE LOAD DURING OCCUPANCY FOR THE DURATION OF THE SET TIME DELAY. MANUAL ON SWITCH SHALL ENERGIZE LOAD FOR THE DURATION OF OCCUPANCY.
6. FOR DUAL SWITCH SENSORS DEFAULT IN AUTO-ON TO 50% OPERATION.

GENERAL NOTES (APPLIES TO ALL ABOVE):

- A. PROVIDE POWER PACKS FOR ALL LOW VOLTAGE OCCUPANCY SENSORS.
- B. PROVIDE POWER PACK TYPE AND QUANTITY RECOMMENDED BY MANUFACTURER FOR DEVICES SCHEDULED.
- C. PROVIDE ALL REQUIRED WIRING FOR A COMPLETE INSTALLATION. REFERENCE MANUFACTURER'S WIRING DIAGRAMS FOR ALL REQUIRED WIRING.
- D. AMBIENT LIGHT LEVEL THRESHOLD SHALL BE SET WITH ALL LIGHT FIXTURES IN ROOM ENERGIZED AND NO EXTERIOR LIGHT PRESENT. ADJUSTABLE AMBIENT LIGHT SENSOR WILL KEEP LOAD DE-ENERGIZED UPON OCCUPANCY IF LIGHT LEVEL SETPOINT IS ACHIEVED. IF AMBIENT LIGHT DROPS BELOW SETPOINT DURING OCCUPANCY, SENSOR SHALL RE-ENERGIZE LOAD.
- E. DUAL TECHNOLOGY SENSORS OCCUPANCY LOGIC SHALL BE SELECTED FOR DETECTION BY EITHER TECHNOLOGY AND SHOULD ONLY REQUIRE ONE FOR INITIAL AND MAINTAINED OCCUPANCY AND RETRIGGER WHEN OPTION IS AVAILABLE.

MARK	MANUFACTURER	MODEL	DEVICE	MOUNTING	SENSOR TYPE	TIME DELAY SETTINGS	MANUAL ON	AUTO ON	VOLTS	NOTES
EM1	WATTSTOPPER (B.O.D.)	ELCU-200 (B.O.D.)	EMERGENCY BYPASS CONTROL	PLENUM	-	-	-	-	120	-
O1	WATTSTOPPER (B.O.D.)	DT-355 (B.O.D.)	OCCUPANCY SENSOR	CEILING	DUAL-TECHNOLOGY	30 MINUTES	YES	RESTROOM/CORRIDORS	120	2,3,4,5,6
PC	WATTSTOPPER (B.O.D.)	EM-24D2 (B.O.D.)	EXTERIOR PHOTOCELL	WALL	-	-	-	YES	24VDC	-

PANEL LP1

DESCRIPTION: 400 A 100% Neutral Bus VOLTAGE: 120/208... 1 PH 3 WIRE

400 A MCB LOCATION: MECH./ELEC. ROOM 105

65 KAIC RATING SUPPLY FROM: MOUNTING: Surface

NOTES	NO	LOAD DESCRIPTION	AMP SIZE	P	A	B	AMP SIZE	LOAD DESCRIPTION	NO	NOTES	
	1	Treadmill 1	20 A	1	500	110	20 A	LTG - Exterior Pole Fixtures	2		
	3	Treadmill 2	20 A	1		500	110		4		
	5	Treadmill 3	20 A	1	500	202	1	LTS - Exterior Building	6		
	7	Treadmill 4	20 A	1		500	593	LTS - Locker Rooms/Mech	8		
	9	Treadmill 5	20 A	1	500	1031	1	LTS - Fitness Area	10		
	11	Treadmill 6	20 A	1		500	1669	F-1	12		
	13	Treadmill 7	20 A	1	500	1669	1	F-2	14		
	15	Treadmill 8	20 A	1		500	948	F-3	16		
	17	Treadmill 9	20 A	1	500	3848	2	CU-1	18		
	19	Treadmill 10	20 A	1		500	3848	--	20		
	21	Treadmill 11	20 A	1	500	3848	2	CU-2	22		
	23	Treadmill 12	20 A	1		500	3848	--	24		
	25	RCPT - Free Weights Floor Box	20 A	1	500	3640	2	CU-3	26		
	27	RCPT - Free Weights East	20 A	1		500	3640	--	28		
	29	RCPT - Free Weights West	20 A	1	500	720	1	RCPT - Mech/Air Ionizers	30		
	31	RCPT - Free Weights TV's	20 A	1		540	100	EF-1	32		
	33	RCPT - Free Weights General	20 A	1	720	720	1	IWH	34		
	35	RCPT - Machine Area East 1	20 A	1		500	10	Water Softener	36		
	37	RCPT - Machine Area East 2	20 A	1	500	100	1	MISC - FACP	38		
	39	RCPT - Machine Area East 3	20 A	1		500	180	RCPT - Teledata Board	40		
	41	RCPT - Machine Area East 4	20 A	1	500	100	1	MISC - Lighting Contactor	42		
	43	RCPT - Machine Area South 1	20 A	1		500	1000	MISC - Window Shutters North 1	44		
	45	RCPT - Machine Area South 2	20 A	1	500	1000	1	MISC - Window Shutters North 2	46		
	47	RCPT - Machine Area South 3	20 A	1		500	1000	MISC - Window Shutters East 1	48		
	49	RCPT - Machine Area South 4	20 A	1	500	1000	1	MISC - Window Shutters East 2	50		
	51	RCPT - Machine Area South 5	20 A	1		500	1000	MISC - Window Shutters West 1	52		
	53	RCPT - Machine Area South 6	20 A	1	500	1000	1	MISC - Window Shutters West 2	54		
	55	RCPT - Machine Area West 1	20 A	1		500	50	EF-2 Motorized Damper	56		
	57	RCPT - Machine Area West 2	20 A	1	500	0	1	Spare	58		
	59	RCPT - Machine Area West 3	20 A	1		500	600	INVERTER	60		
	61	RCPT - Machine Area West 4	20 A	1	500	225	--	--	62		
	63	RCPT - Machine Area TV's	20 A	1		180	0	1	20 A	64	
	65	RCPT - Machine Area General East	20 A	1	360	0	1	20 A	66		
	67	RCPT - Machine Area General West	20 A	1		360	0	1	20 A	68	
	69	RCPT - Locker Rooms	20 A	1	1080	0	1	20 A	70		
	71	RCPT - Exterior Maintenance	20 A	1		180	0	1	20 A	72	
			Total Load:		28558 VA	26379 VA					
			Total Amps:		272 A	254 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Cooling	22672 VA	100.00%	22672 VA	
Lighting	2261 VA	125.00%	2826 VA	Total Conn. Load: 54932 VA
Motor	4864 VA	111.08%	5403 VA	Total Est. Demand: 51565 VA
Other	0 VA	0.00%	0 VA	Total Conn.: 264 A
Receptacle	18820 VA	76.57%	14410 VA	Total Est. Demand: 248 A
Miscellaneous	6988 VA	100.00%	6988 VA	

Notes:

GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE ROUTING OF ALL FEEDERS THROUGH BUILDING.
2. METERING EQUIPMENT, BUILDING DISCONNECTS AND TRANSFORMER ARE SHOWN DIAGRAMMATICALLY. REFER TO SITE AND BUILDING POWER PLANS FOR ACTUAL LOCATIONS.
3. METER SOCKETS AND ASSOCIATED METER REQUIREMENTS SHALL BE IN CONFORMANCE WITH THE NEC AND LOCAL UTILITY COMPANY GUIDELINES. ANY DEVIATIONS FROM WHAT IS SHOWN SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO ORDERING AND INSTALLATION OF EQUIPMENT.

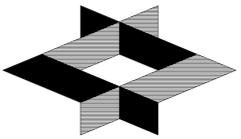
FEEDER SCHEDULE:

ALL SIZES LISTED BELOW ARE FOR STABILLOY ALUMINUM ALLOY CONDUCTORS:

- ⊗ BY OTHERS
- 403NG 2 SETS (3) #250 KCMIL IN 4" PVC.
- 403 2 SETS (3) #250 KCMIL & #1 GRD. IN 2-1/2".



BID DOCUMENTS



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MO State Certificate of Authority #F00364807



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OFFICE OF ADJUTANT GENERAL DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION DEPARTMENT OF PUBLIC SAFETY

Missouri Army National Guard

Camp Crowder Training Site

890 Ray Carver Avenue
Neosho, Missouri 64850

FITNESS CENTER - STORM SHELTER

PROJECT # T2027-01
SITE # 6260
ASSET # 8136260016

REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
REVISION: _____
DATE: _____
ISSUE DATE: 07/02/2020

CAD DWG FILE:

DRAWN BY: MEB
CHECKED BY: CJS
DESIGNED BY: MEB

SHEET TITLE: ELECTRICAL DETAILS AND SCHEDULES

SHEET NUMBER:

E-401

32 OF 32 SHEETS

07/02/2020