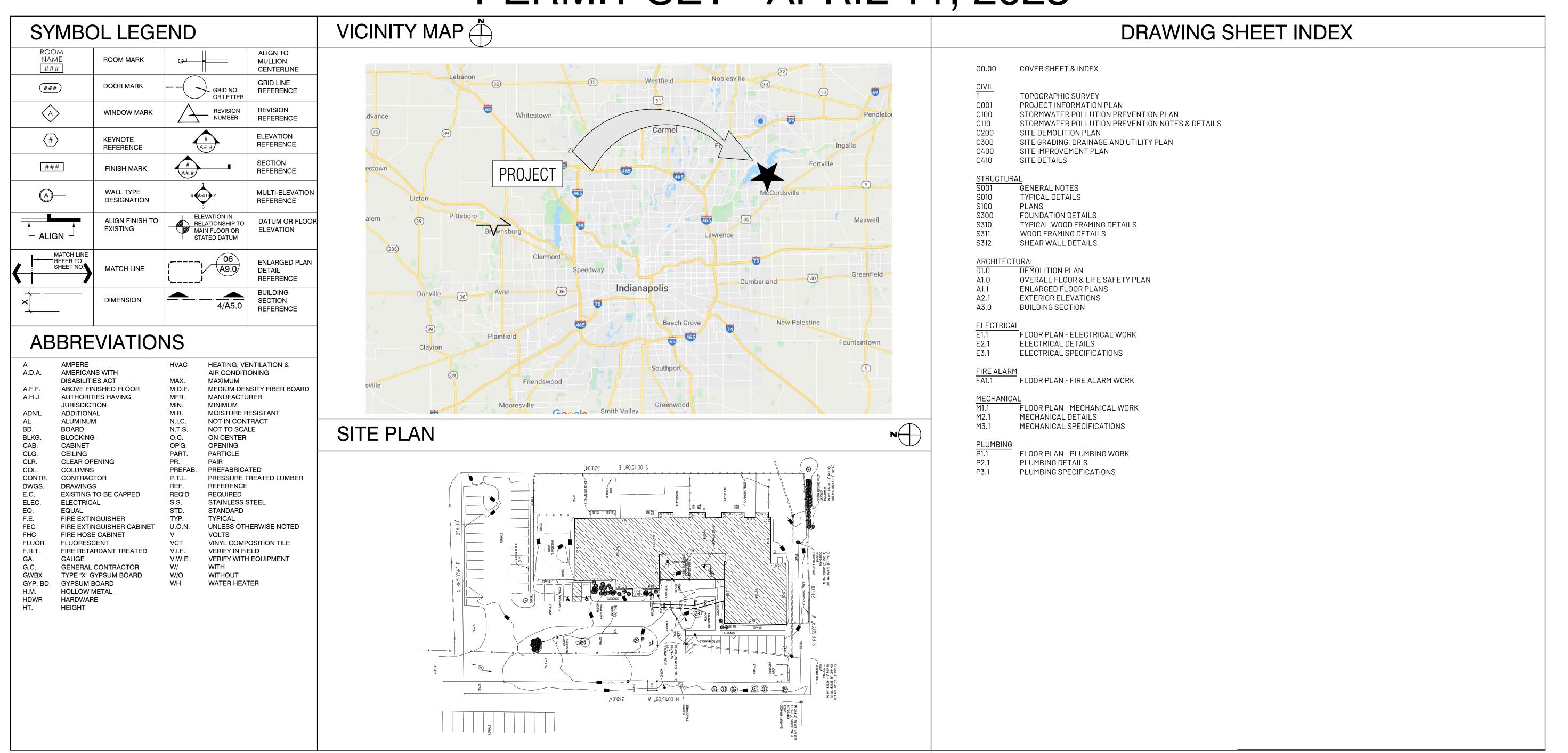
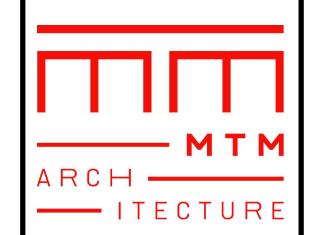
SHANNON'S EXCLUSIVE CHILDCARE AT GEIST BUILDING ADDITION

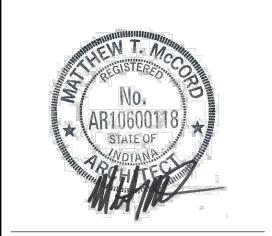
6633 W 900 N

MCCORDSVILLE, INDIANA 46055

PERMIT SET - APRIL 11, 2023







Certified By

SHANNON'S EXCLUSIVE CHILDCARE AT GEIST
BUILDING ADDITION
6633 W 900 N
MCCORDSVILLE, IN 46055

\bigcirc	4/11/23	PERMIT SET			
MARK	DATE	DESCRIPTION			
EVISION BLOCK					
			•		

PROJECT NO: 2023008

DATE: 4/11/2023

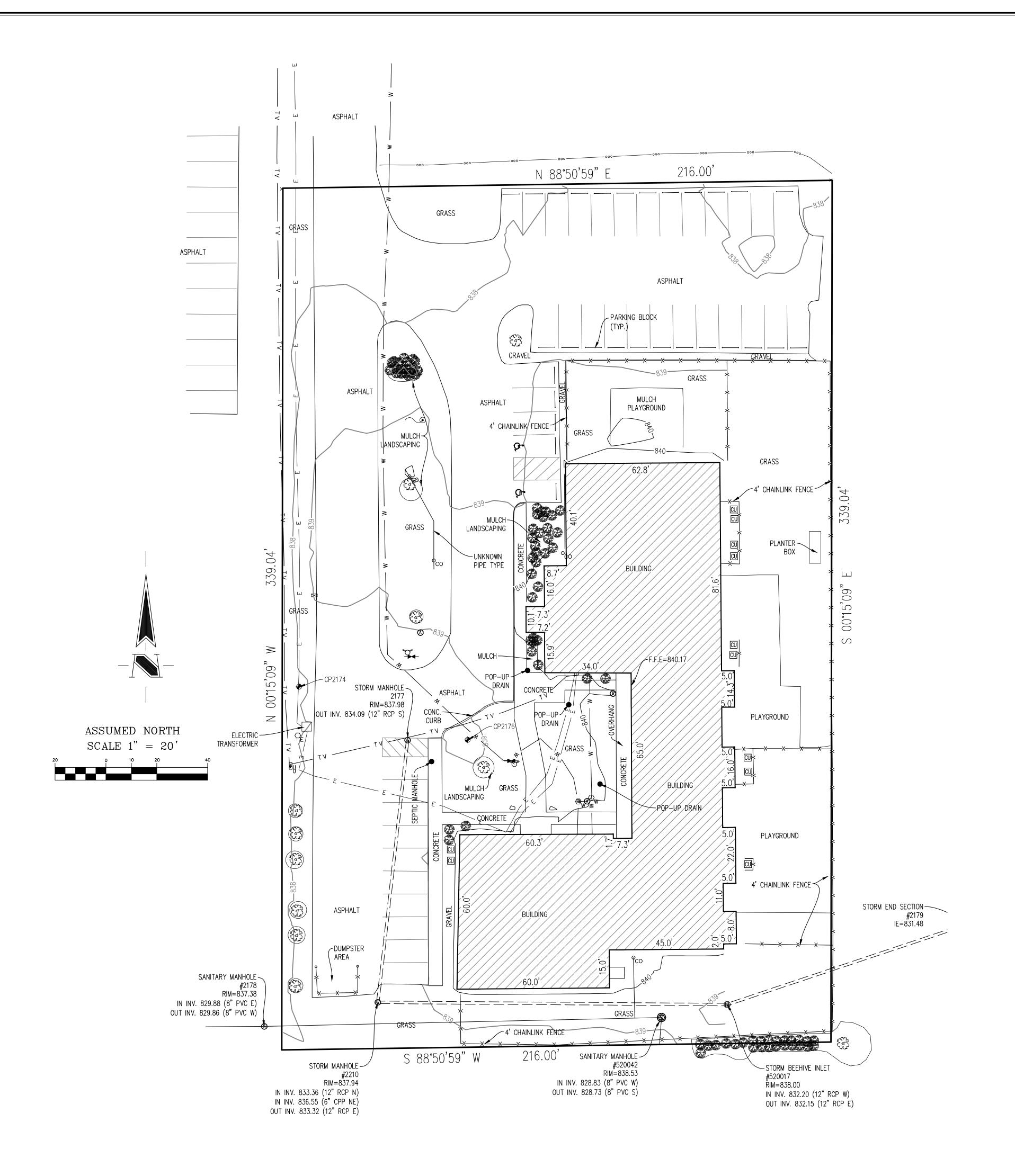
DRAWN BY: EGR

CHK'D BY: MTM

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MTM ARCHITECTURE, LLC

COVER SHEET AND INDEX

G-000



CERTIFICATE OF SURVEY:

I, the undersigned, hereby certify that to the best of my professional knowledge and belief the within plat represents a topographic survey of the real estate shown or described hereon. The nature, size and location of utilities shown on this plat are per plans and/or locations provided by the respective utility companies or their representatives together with field observation as further noted hereon. The topographic data was gathered using standard radial surveying techniques with an electronic total station and data collector and/or using a Global Positioning System (GPS). Elevations on hard surfaces or structures are accurate to within 0.05 feet, elevations on natural surfaces are accurate to within 0.1 feet. Contours are plotted based upon interpolation of spot elevations shown hereon and are accurate to generally within one half contour interval. The field data was collected on February 17,

Andrew D. Baxter Registered Land Surveyor #LS dbaxter@schneidergeomatics.com February 24, 2023

REDACTION STATEMENT:

I affirm, under the penalties for perjury, that I have taken reasonable care to redact each Social Security number in this document, unless required by law. Andrew D. Baxter

BENCHMARK INFORMATION:

Originating Benchmark:

The horizontal and vertical location data shown on this survey are based upon a positional solution derived from Global Positioning System (GPS) observations processed by National Geodetic Survey (NGS) utilizing their Online Positioning User Service (OPUS) software. The coordinate values shown are in the Indiana State Plane Coordinate System (East Zone) reference to the 1983 North American Datum utilizing the Continuously Operating Reference Stations (CORS) adjustment as determined by NGS (NAD 83 (CORS 96)(EPOCH 2002.0000) and reported on the 1988 North American Vertical Datum (NAVD88). This orthometric elevation was computed using Geoid18.

CP 2174 - N 1698773.84 E 253856.01 Elevation - 837.57 MAG NAIL SET CP 2176 - N 1698752.80 E 253922.25 Elevation - 838.51 MAG NAIL SET

SPECIAL NOTES:

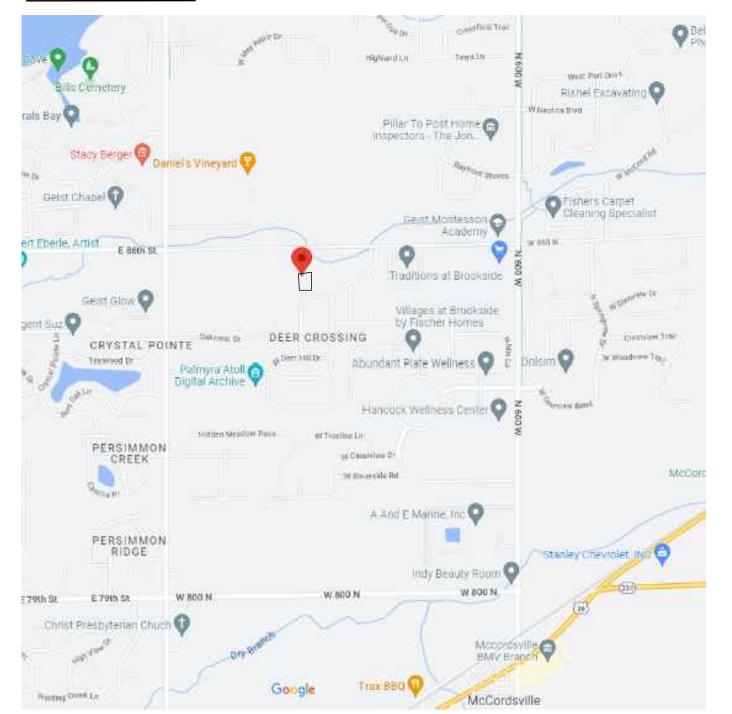
This drawing is not intended to be represented as a retracement or original boundary survey, a route survey, or a Surveyor's Location Report. Any boundary lines shown are for informational purposes only and are excluded from the certification.

<u>UTILITY INFORMATION:</u>

With regard to utility lines shown hereon, source information from plans and markings, where provided, was combined with observed evidence of utilities to develop a view of those underground utilities. However, lacking excavation, the exact location of underground features cannot be accurately, completely and reliably depicted. Where additional or more detailed information is required, the client is advised that excavation may be necessary. Member utilities are as follows: Call—in Ticket No.2205022126 dated 5/2/2022

COMCAST CABLE (INDIANAPOLIS) CENTERPOINT ENERGY (SOUTH) (FORMERLY VECTREN) GAS CITIZENS WATER INDIANAPOLIS POWER & LIGHT COMPANY ELECTRIC BRIGHT HOUSE NETWORKS INDIANAPOLIS CABLE TV COMMUNICATIONS AT&T - DISTRIBUTION

AREA MAP: (N.T.S.)



<u>LEGEND</u> ⊞ ■ INLET OR CATCH BASIN S SEWER MANHOLE TELEPHONE MANHOLE ACCESS COVER TRAFFIC MANHOLE W WATER MANHOLE MANHOLE o_{CO}CLEANOUT

☆ AREA LIGHT •

MUTILITY POLE WITH GUY WIRE $\mathscr{A}_{\!_{\mathbf{R}}}$ utility pole with Riser

> TRAFFIC POLE utility pedestal ○ ELECTRIC METER

CU CONDITIONING UNIT → UTILITY VALVE

THYDRANT

WELL → WATER VALVE \bigcirc_{w} water meter

-->> GAS VALVE \bigcirc_{G} GAS METER ∘∘ SIGNS

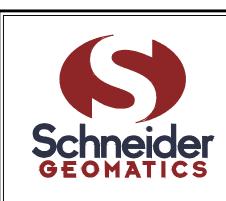
⊠ MAILBOX

🚱 र्हेंद्रे 💸 TREE, SHRUB BENCHMARK igoplus SOIL BORING

---- OVERHEAD UTILITY LINES T V — UNDERGROUND TELEVISION — E — UNDERGROUND ELECTRIC T — UNDERGROUND TELEPHONE — FO — UNDERGROUND FIBER OPTIC — F — UNDERGROUND FORCE MAIN — G — UNDERGROUND GAS LINE ---- W ------ UNDERGROUND WATER LINE

— S — SEWER LINE - — — — underground storm sewer UNDERGROUND SANITARY SEWER

EDGE OF WOODS XXXX FENCE LINE ---- FLOW LINE



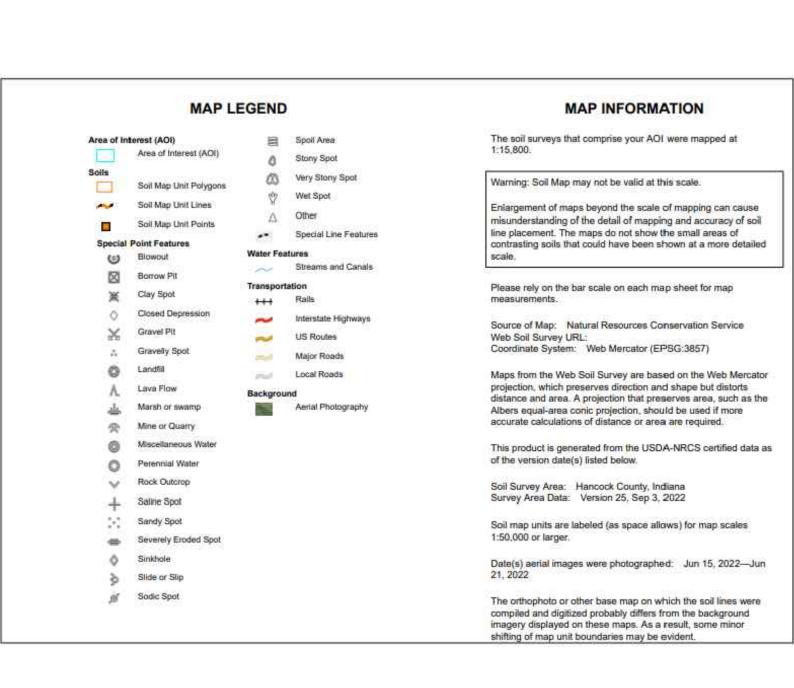
Historic Fort Harrison 8901 Otis Avenue Indianapolis, IN 46216-1037 Telephone: 317.826.7100 www.schneidercorp.com

CARE CHILD SURVEY EXCLUSIVE S/o JPS Row, Suite 116,

GEIST TOPOGRAPHIC
6633 W 900 N, MCCORDSVII

FORMATION: SHANNON'S 2/23/2023 15200 CHECKED BY: CCE ADB

REVISIONS: DRAWING FILES: T: \15K\15200\CAD\15200_S.dwg



Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI		
So	Sloan silty clay loam	0.0	0.4%		
YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes	0.5	15.3%		
YcuA	Crosby silt loam-Urban land complex, 0 to 2 percent slopes	2.6	84.3%		
Totals for Area of Interest		3.1	100.0%		

SOILS MAP

GENERAL NOTES

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, AND VERIFYING, THAT ALL PERMITS AND APPROVALS ARE OBTAINED FROM THE RESPECTIVE CITY, COUNTY, STATE AND FEDERAL AGENCIES PRIOR TO STARTING CONSTRUCTION.
- CONTRACTOR SHALL VERIFY LOCATION AND INVERT ELEVATIONS OF EXISTING SEWERS PRIOR TO START OF CONSTRUCTION.
- 3. CONTRACTOR SHALL MAINTAIN A COMPLETE AND OPERABLE UTILITY SYSTEM AT ALL TIMES.
- 4. CONTRACTOR SHALL INCLUDE COSTS FOR CUTTING AND PATCHING AS REQUIRED IN THEIR BID PROPOSAL TO COMPLETELY INSTALL THE WORK INDICATED.
- 5. CONTRACTOR SHALL INCLUDE ALL TAP FEES, PERMIT FEES AND APPLICATION FEES IN THEIR BID PROPOSAL AS NECESSARY TO COMPLETELY INSTALL THE WORK INDICATED.
- 6. INFORMATION SHOWN WAS OBTAINED FROM AN OWNER FURNISHED SITE SURVEY OF EXISTING CONDITIONS AND IS UNCONFIRMED. CONTRACTOR IS REQUIRED TO FIELD VERIFY THIS INFORMATION AND NOTIFY ARCHITECT OF ANY DISCREPANCIES SO MODIFICATION CAN
- CONTRACTOR SHALL COORDINATE EXACT UTILITY LOCATIONS WITH THE OWNER AND LOCAL UTILITY COMPANIES PRIOR TO COMMENCING ANY WORK. UTILIZE THE INDIANA UNDERGROUND UTILITY LOCATION SERVICE AT 811 OR 800-382-5544 PRIOR TO ANY **EXCAVATION ON THE SITE.**

SITE SYMBOLS **AND ABBREVIATIONS**

EXISTING

STEAM

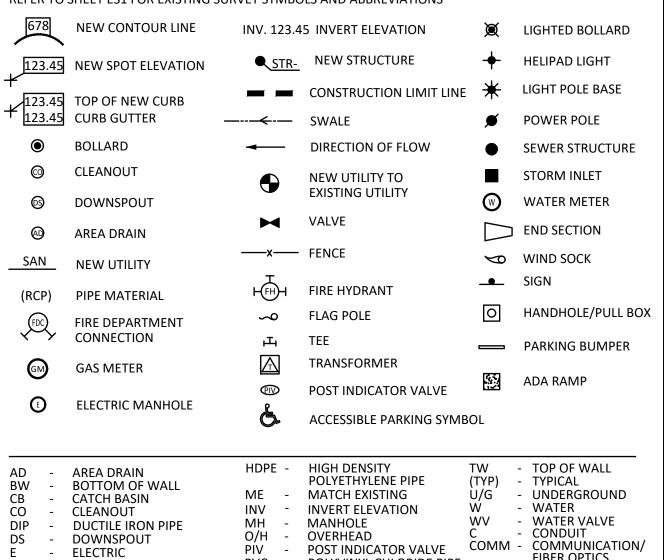
FIRE DEPARTMENT

CONNECTION

FIRE HYDRANT

CWS - CHILLED WATER SUPPLY

REFER TO SHEET ES1 FOR EXISTING SURVEY SYMBOLS AND ABBREVIATIONS



POLYVINYL CHLORIDE PIPE

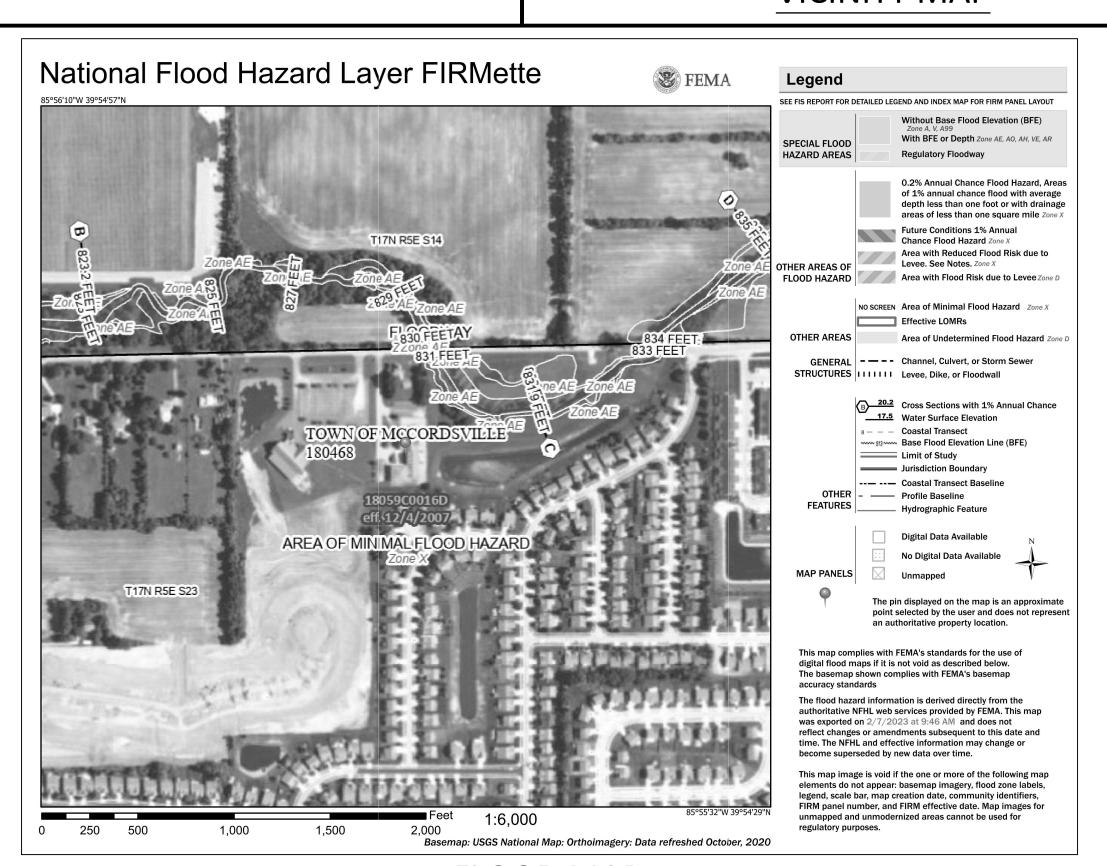
REINFORCED CONCRETE

SANITARY SEWER STORM SEWER

TOC - TOP OF CASTING ELEVATION CWR - CHILLED WATER RETURN

PROJECT SITE -

VICINITY MAP

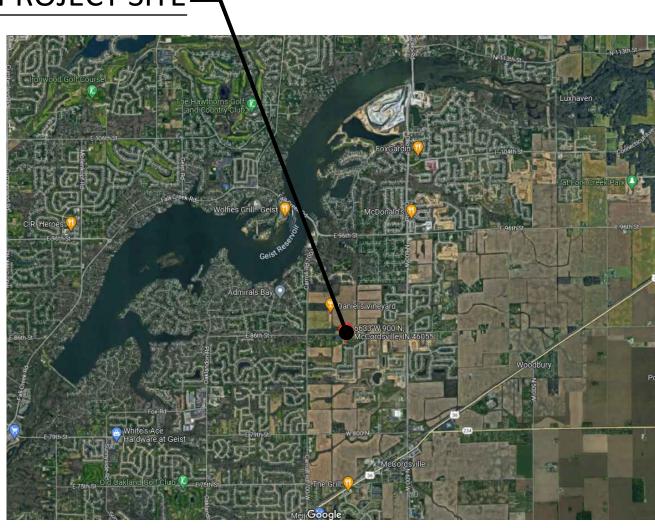


COMMUNICATION/

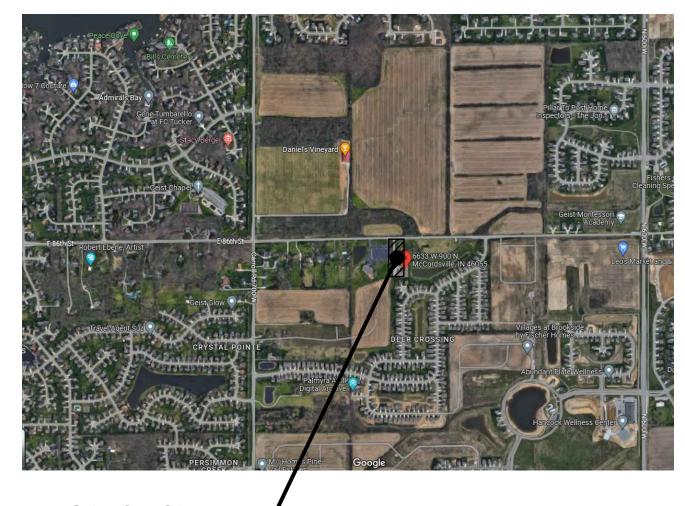
GAS VALVEHIGH POINTLOW POINT

FLOOD MAP

PROJECT SITE—



LOCATION MAP



GEIS⁻ ATHILDCARE 460 EXC MCCOI **SHANNON'S**

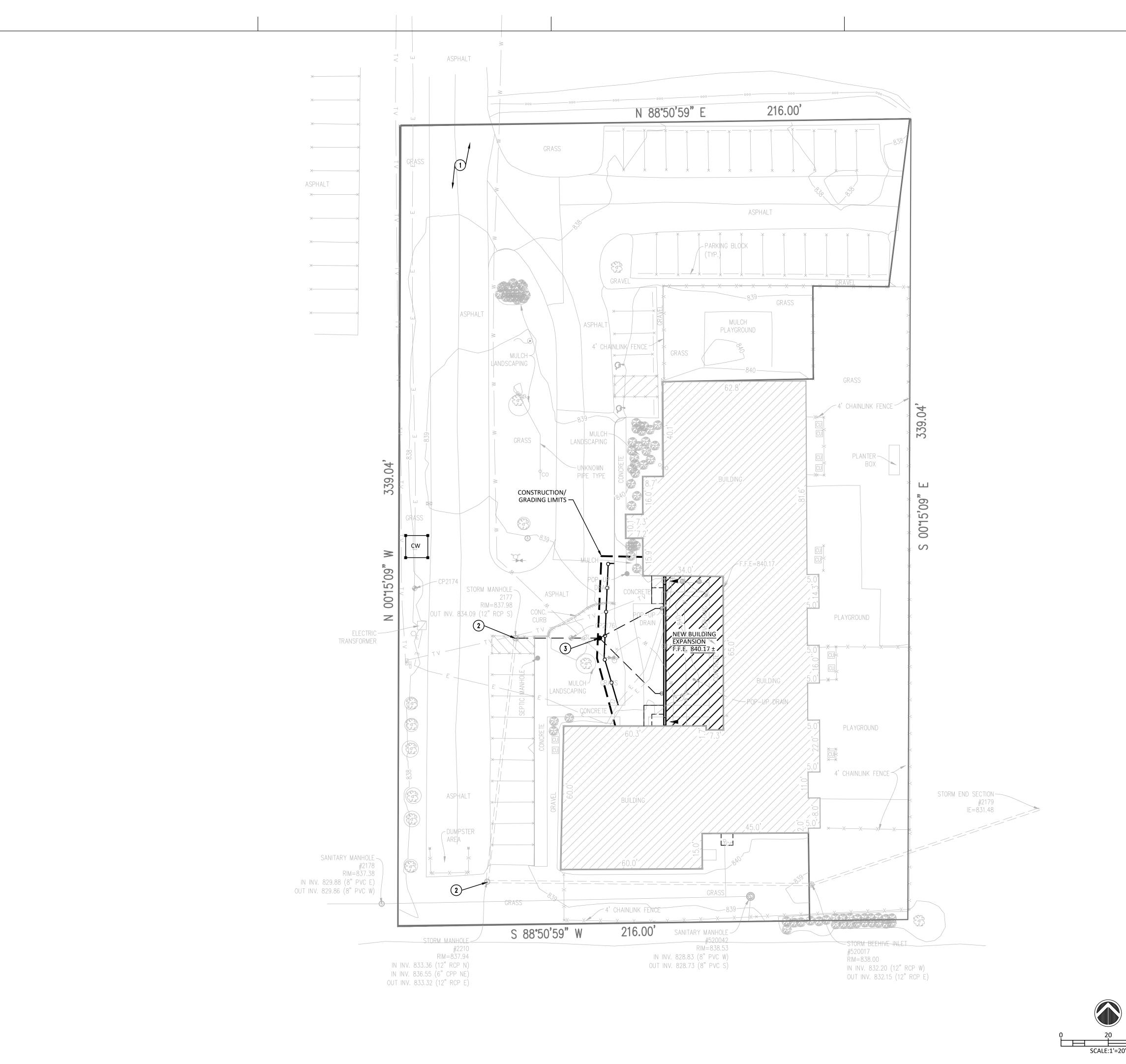
4/11/23 | PERMIT SET MARK DATE DESCRIPTION

REVISION BLOCK

PROJECT NO: 2023008 DRAWN BY:

CHK'D BY: COPYRIGHT 2023 MTM ARCHITECTURE, LLC SHEET TITLE

PROJECT INFORMATION PLAN



- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, AND VERIFYING, THAT ALL PERMITS AND APPROVALS ARE OBTAINED FROM THE RESPECTIVE CITY, COUNTY, STATE AND FEDERAL AGENCIES PRIOR TO STARTING CONSTRUCTION.
- B. CONTRACTOR SHALL VERIFY LOCATION AND INVERT ELEVATIONS OF EXISTING SEWERS PRIOR TO START OF CONSTRUCTION.
- C. CONTRACTOR SHALL MAINTAIN A COMPLETE AND OPERABLE UTILITY SYSTEM AT ALL TIMES.
- D. CONTRACTOR SHALL INCLUDE COSTS FOR CUTTING AND PATCHING AS REQUIRED IN THEIR BID PROPOSAL TO COMPLETELY INSTALL THE WORK INDICATED
- E. CONTRACTOR SHALL INCLUDE ALL TAP FEES, PERMIT FEES AND APPLICATION FEES IN THEIR BID PROPOSAL AS NECESSARY TO COMPLETELY INSTALL THE WORK INDICATED.
- F. INFORMATION SHOWN WAS OBTAINED FROM AN OWNER FURNISHED SITE SURVEY OF EXISTING CONDITIONS AND IS UNCONFIRMED. CONTRACTOR IS REQUIRED TO FIELD VERIFY THIS INFORMATION AND NOTIFY ARCHITECT OF ANY DISCREPANCIES SO MODIFICATION CAN BE MADE.
- G. CONTRACTOR SHALL COORDINATE EXACT UTILITY LOCATIONS WITH THE OWNER AND LOCAL UTILITY COMPANIES PRIOR TO COMMENCING ANY WORK. UTILIZE THE INDIANA UNDERGROUND UTILITY LOCATION SERVICE AT 811 OR 800-382-5544 PRIOR TO ANY EXCAVATION ON THE SITE.
- H. REFER TO UTILITY DETAILS FOR NOTE REFERENCES.
- . ALL CASTINGS SHALL HAVE THE WORDS 'NO DUMPING DRAINS TO STREAM" CAST IN RAISED OR RECESSED LETTERS AT A MINIMUM OF 1" HEIGHT. A SYMBOL OF A FISH SHALL ALSO BE CAST WITH THE LETTERS.
- . CASTINGS TO BE NEENAH TYPE OR APPROVED EQUAL.
- K. CONTRACTOR TO VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION.

O PLAN NOTES

- CONSTRUCTION ENTRANCE.
- 2. BASKET INLET PROTECTION.
- 3. SILT FENCE INLET PROTECTION.

PLAN SYMBOLS

CW

CONCRETE WASHOUT AREA

SILT FENCE

— — PROPOSED STORM SEWERS

_ _ _ _ PROPOSED IMPROVEMENTS

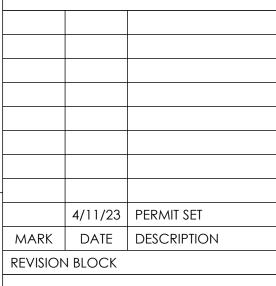
— — CONSTRUCTION/GRADING LIMITS

CONSULTIN ENGINEERS apolis, IN 46240



GEIST

SHANNON'S EXCLUSIVE CHILDCARE AT
BUILDING ADDITION
6633 W 900 N
MCCORDSVILLE, IN 46055



PROJECT NO: 2023008

DATE: 4/11/2023

DRAWN BY:

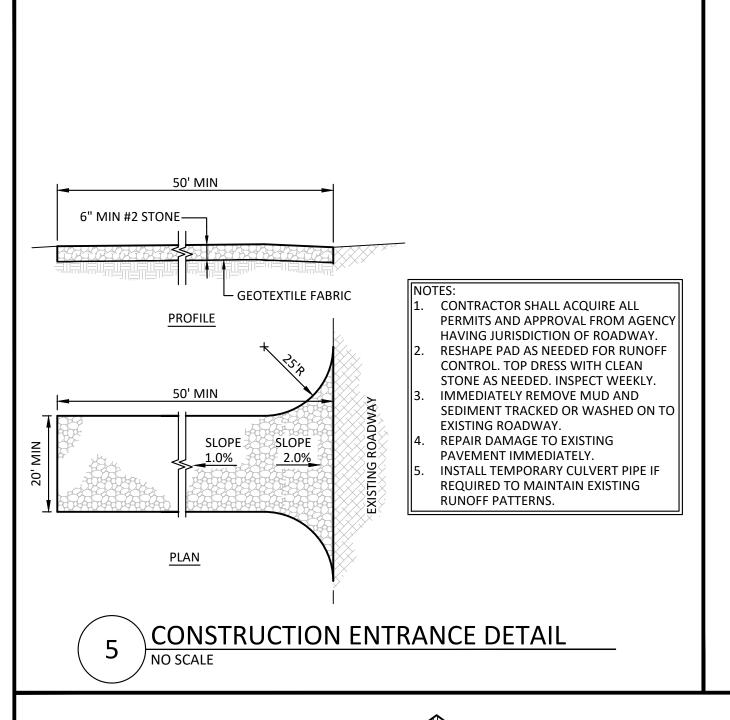
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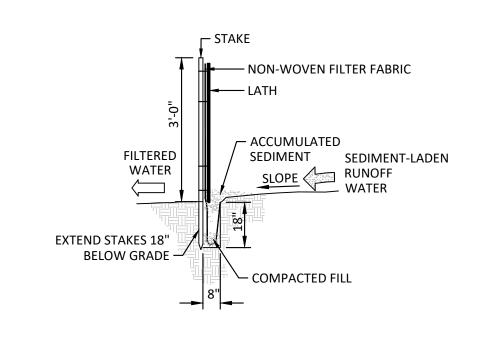
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SHEET TITLE

STORMWATER POLLUTION PREVENTION PLAN

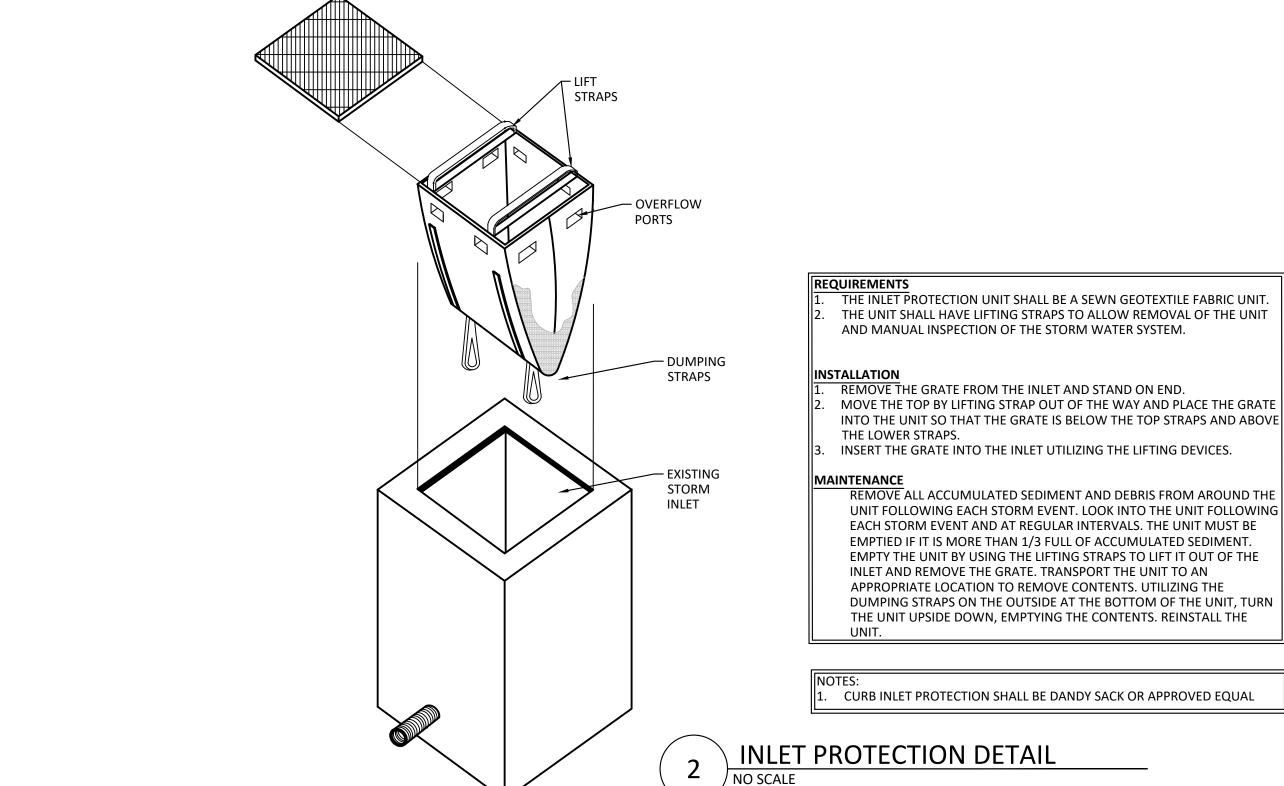


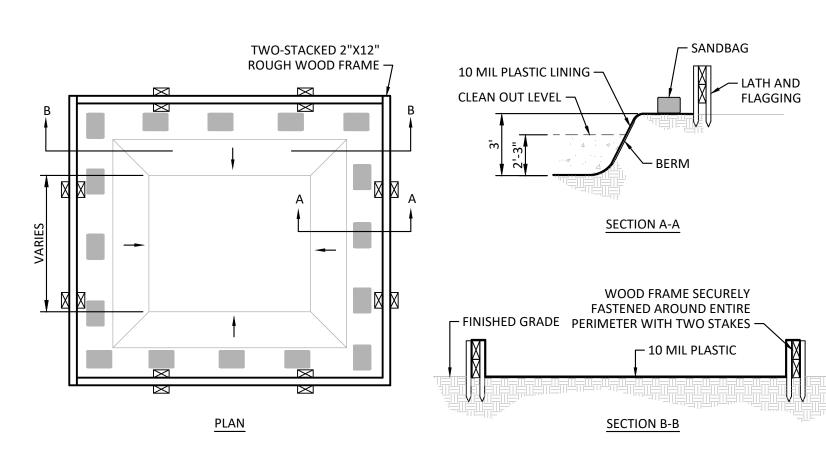


INSTALL TEMPORARY AND PERMANENT SEDIMENT AND EROSION CONTROL PRACTICES PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES. REFER TO SPECIFICATIONS FOR SILT FENCE INFORMATION. INSTALL AND



MAINTAIN PER MANUFACTURER'S RECOMMENDATIONS.



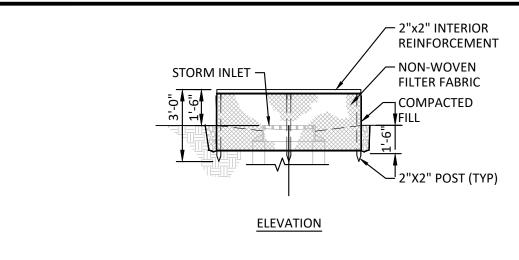


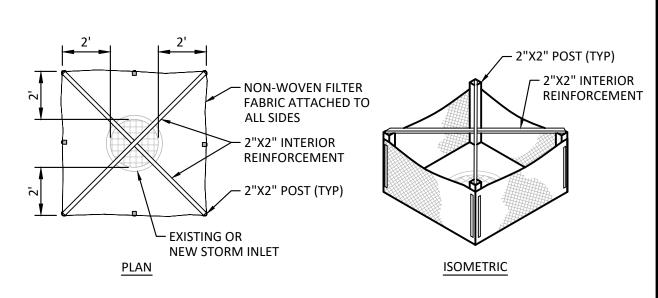
- PORTLAND CEMENT CONCRETE WASTE SHALL NOT BE ALLOWED TO ENTER STORM DRAINS OR WATERCOURSES. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE LOCATED AT LEAST 50
- FEET FROM OPEN DRAINAGE FACILITIES AND WATERCOURSES. EACH FACILITY SHALL BE LOCATED AWAY FROM CONSTRUCTION TRAFFIC OR ACCESS AREAS TO PREVENT DISTURBANCE OR TRACKING. PERFORM WASHOUT OF MIX TRUCK CHUTES IN DESIGNATED AREAS ONLY. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE
- REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITY SHALL BE RESTORED TO ORIGINAL GROUND WITH BERM AND SIMILAR SOIL MATERIALS. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE MAINTAINED TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM FREEBOARD OF 12 INCHES. MAINTAINING TEMPORARY WASHOUT FACILITIES SHALL INCLUDE REMOVING AND LEGALLY DISPOSING OF HARDENED CONCRETE AND RETURNING THE FACILITY TO A FUNCTIONAL CONDITION.
- EXISTING FACILITIES MUST BE CLEANED, OR NEW FACILITIES CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75% FULL. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED DAILY FOR DAMAGE (TEARS IN THE LINER, MISSING SANDBAGS, ETC.). DAMAGED
- FACILITIES SHALL BE REPAIRED BEFORE FURTHER USE. CONTRACTOR TO INSTALL TEMPORARY SIGNAGE OF SUFFICIENT MATERIALS TO INDICATE THE LOCATION OF THE WASHOUT AREA TO MIX TRUCK DRIVERS.

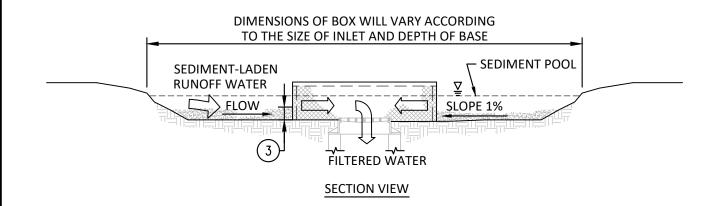
CONCRETE WASHOUT AREA DETAIL

STORMWATER POLLUTION PREVENTION **MAINTENANCE NOTES**

- 1. SILT FENCE: INSPECT SILT FENCE WEEKLY AND AFTER EACH STORM EVENT. IF FENCE FABRIC TEARS, STARTS TO DECOMPOSE. OR IN ANY WAY BECOMES INEFFECTIVE. REPLACE THE AFFECTED PORTION IMMEDIATELY. REMOVE DEPOSITED SEDIMENT WHEN IT REACHES HALF THE HEIGHT OF THE FENCE AT ITS LOWEST POINT OR IS CAUSING THE FABRIC TO BULGE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE THE FENCE AND SEDIMENT DEPOSITS, BRING THE DISTURBED AREA TO GRADE AND
- CATCH BASIN FILTER: INSPECT WEEKLY AND AFTER EACH STORM EVENT. REMOVE BUILT-UP SEDIMENT AND REPLACE THE GEOTEXTILE FABRIC AFTER EACH STORM EVENT. PERIODICALLY REMOVE SEDIMENT AND TRACKED ON SOIL FROM THE STREET (BUT NOT BY FLUSHING WITH WATER) TO REDUCE THE SEDIMENT LOAD ON THIS CURB INLET PRACTICE.
- EROSION CONTROL BLANKETS: DURING VEGETATIVE ESTABLISHMENT, INSPECT AFTER STORM EVENTS FOR ANY EROSION BELOW THE BLANKET. IF ANY AREA SHOWS EROSION, PULL BACK THAT PORTION OF THE BLANKET COVERING IT, ADD SOIL, RE-SEED THE AREA, RE-LAY AND STAPLE THE BLANKET. CHECK THE TREATED AREAS PERIODICALLY.
- 4. STONE CONSTRUCTION ENTRANCE: INSPECT ENTRANCE PAD AND SEDIMENT DISPOSAL AREA WEEKLY AND AFTER STORM EVENTS OR HEAVY USE. RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL. TOP DRESS WITH CLEAN STONE AS NEEDED. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING. FLUSHING SHOULD ONLY BE USED IF THE WATER IS CONVEYED INTO A SEDIMENT TRAP OR BASIN. REPAIR ANY BROKEN ROAD
- CONCRETE WASHOUT: INSPECT DAILY FOR DAMAGE. REPAIR ANY DAMAGE IMMEDIATELY. MAINTAIN 12" MINIMUM FREEBOARD. CLEAN OR CONSTRUCT NEW WASHOUT ONCE EXISTING WASHOUT IS 75% FULL.







INSTALL TEMPORARY AND PERMANENT SEDIMENT AND EROSION CONTROL PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES OR IMMEDIATELY AFTER CONSTRUCTION OF NEW INLET STRUCTURE. REMOVE SEDIMENT DEPOSITS WHEN THEY REACH 1/3 THE FENCE HEIGHT.



STORMWATER POLLUTION PREVENTION **GENERAL NOTES**

- 1. THE CONTRACTOR SHALL CONTROL WASTE, GARBAGE, DEBRIS, WASTEWATER, AND OTHER SUBSTANCES ON THE SITE IN SUCH A WAY THAT THEY SHALL NOT BE TRANSPORTED FROM THE SITE BY THE ACTION OF WINDS, STORM WATER RUNOFF, OR OTHER FORCES. PROPER DISPOSAL OR MANAGEMENT OF ALL WASTES AND UNUSED BUILDING MATERIAL, APPROPRIATE TO THE NATURE OF THE WASTE OR MATERIAL, IS REQUIRED.
- PUBLIC OR PRIVATE ROADWAY SHALL BE KEPT CLEARED OF ACCUMULATED SEDIMENT. BULK CLEARING OF ACCUMULATED SEDIMENT SHALL NOT INCLUDE FLUSHING THE AREA WITH WATER. CLEARED SEDIMENT SHALL BE RETURNED TO THE POINT OF LIKELY ORIGIN OR OTHER SUITABLE LOCATION.
- THE STORMWATER POLLUTION PREVENTION PLAN SHALL BE IMPLEMENTED ON ALL DISTURBED AREAS. ALL MEASURES INVOLVING POLLUTION PREVENTION PRACTICES SHALL BE INSTALLED UNDER THE GUIDANCE OF QUALIFIED PERSONNEL EXPERIENCED IN POLLUTION PREVENTION, AND FOLLOWING THE PLANS AND SPECIFICATIONS INCLUDED
- 4. ALL STORMWATER POLLUTION PREVENTION PLAN PRACTICES SHALL BE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REQUIREMENTS FOR MATERIALS, INSTALLATION AND MAINTENANCE STANDARDS.
- SEED ALL DISTURBED AREAS IMMEDIATELY AFTER GRADING SOIL. REFER TO SPECIFICATIONS FOR SEASONAL REQUIREMENTS AND SOIL PREPARATION.

STORMWATER POLLUTION PREVENTION PLAN -**CONSTRUCTION COMPONENT CONSTRUCTION SEQUENCE SCHEDULE**

.. DESCRIPTION OF POTENTIAL POLLUTANT SOURCES ASSOCIATED WITH CONSTRUCTION

POTENTIAL POLLUTION SOURCES ASSOCIATED WITH CONSTRUCTION ACTIVITY INCLUDE: SEDIMENT IN RUNOFF FROM EXPOSED SOILS, RUNOFF FROM CONSTRUCTION MATERIAL STORAGE, AND SPILLAGE FROM CONSTRUCTION EQUIPMENT AND REFUELING SITES. CONTRACTOR SHALL CONTAIN ALL SEDIMENT BY PROPER EROSION CONTROL PRACTICES AS INDICATED IN THE STORM WATER POLLUTION PREVENTION PLAN. CONTRACTOR SHALL CONTROL POLLUTION FROM MATERIAL STORAGE BY PROPER STORAGE PROCEDURES. MATERIALS THAT ARE A POTENTIAL SOURCE OF POLLUTION SHALL BE STORED IN CONTAINERS PROTECTED FROM ELEMENTS, OR IN THE JOB TRAILER. POLLUTION FROM REFUELING SHALL BE PREVENTED BY

. SEQUENCE DESCRIBING STORMWATER QUALITY MEASURES IMPLEMENTATION RELATIVE TO

PROPER REFUELING PRACTICES, PROPER CONTAINMENT AND CLEANUP SHALL BE EMPLOYED IF A SPILL OCCUR

LAND DISTURBING ACTIVITIES. CONSTRUCTION OPERATIONS **EROSION CONTROL PRACTICES)*** PRE-CONSTRUCTION ACTIONS BEFORE CONSTRUCTION, EVALUATE, MARK, AND

CUTTING/FILLING/STOCKPILING, GRADING DRAINS, SEDIMENT TRAPS, BARRIERS,

(EVALUATION/PROTECTION OF

IMPORTANT SITE CHARACTERISTICS)

DIVERSIONS, SURFACE ROUGHENING)

ROOTING ZONES, UNIQUE AREAS (E.G. WETLANDS) TO BE PRESERVED. ON-SITE SEPTIC SYSTEM. ABSORPTION FIELDS, AND VEGETATION SUITABLE FOR FILTER STRIPS, ESPECIALLY IN PERIMETER AREAS. BEGIN MAJOR CLEARING AND GRADING AFTER INSTALLING THE KEY SEDIMENT AND RUNOFF MEASURES. CLEAR BORROW AND DISPOSAL AREAS AS NEEDED. INSTALL ADDITIONAL CONTROL

MEASURES AS GRADING PROGRESSES AND AROUND

PROTECT IMPORTANT TREES AND ASSOCIATED

LANDSCAPING AND FINAL STABILIZATION (TOP SOILING, TREES AND SHRUBS, PERMANENT SEEDING, MULCHING, SODDING, RIP RAP)

INSTALL NECESSARY EROSION AND SEDIMENT CONTROL PRACTICES AS WORK TAKES PLACE STABILIZE ALL OPEN AREAS, INCLUDING BORROW AND SPOIL AREAS.

STOCKPILED AREAS.

REMOVE TEMPORARY CONTROL MEASURES AND STABILIZE

3. STABILIZE CONSTRUCTION ENTRANCE LOCATIONS AND SPECIFICATIONS (AT ALL POINTS OF INGRESS AND EGRESS) CONSTRUCTION PHASE (SPECIFIC ACTIVITIES OR

EROSION CONTROL PRACTICES)* (CONSTRUCTION ENTRANCES, CONSTRUCTION ROUTES, EQUIPMENT PARKING AREAS)

STABILIZE BARE AREAS IMMEDIATELY WITH GRAVEL AND TEMPORARY VEGETATION AS WORK TAKES PLACE. (UTILIZE EXISTING PAVEMENT SURFACES THROUGHOUT CONSTRUCTION)

CONSTRUCTION OPERATIONS

4. SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS CONSTRUCTION PHASE (SPECIFIC ACTIVITIES OR CONSTRUCTION OPERATIONS

EROSION CONTROL PRACTICES)* SURFACE STABILIZATION (TEMPORARY AND PERMANENT SEEDING, MULCHING, SODDING, RIP RAP)

APPLY TEMPORARY OR PERMANENT STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS WHERE WORK IS DELAYED OR COMPLETED. (NO AREA IS TO BE LEFT UNCOVERED MORE THAN 5 DAYS.)

5. SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS CONSTRUCTION PHASE (SPECIFIC ACTIVITIES OR **CONSTRUCTION OPERATIONS EROSION CONTROL PRACTICES)*** TORMWATER CONVEYANCE SYSTEM WHERE NECESSARY, STABILIZE SWALES AS EARLY AS (STABILIZED SWALES, STORM DRAINS POSSIBLE. INSTALL PRINCIPAL CONVEYANCE SYSTEM WITH RUNOFF CONTROL MEASURES, INSTALL INLET AND OUTLET PROTECTION) REMAINDER OF SYSTEM AFTER GRADING

6. STORM SEWER INLET PROTECTION MEASURE LOCATIONS AND SPECIFICATIONS REFER TO STORMWATER POLLUTION PREVENTION PLAN AND INLET STRUCTURE FILTER DETAIL

7. RUNOFF CONTROL MEASURES (E.G. DIVERSIONS, ROCK CHECK DAMS, SLOPE DRAINS, ETC.)

8. STORMWATER OUTLET PROTECTION SPECIFICATIONS CONSTRUCTION PHASE (SPECIFIC ACTIVITIES OR **CONSTRUCTION OPERATIONS EROSION CONTROL PRACTICES)***

RUNOFF CONTROL (DIVERSIONS. INSTALL PRACTICES AFTER PRINCIPAL SEDIMENT PERIMETER DITCHES, DAMS, OUTLET TRAPS AND BARRIERS ARE INSTALLED BUT BEFORE PROTECTION) LAND GRADING. INSTALL ADDITIONAL RUNOFF CONTROL MEASURES DURING GRADING AS NEEDED 9 GRADE STABILIZATION STRUCTURE LOCATIONS AND SPECIFICATIONS CONSTRUCTION PHASE (SPECIFIC ACTIVITIES OR CONSTRUCTION OPERATIONS **EROSION CONTROL PRACTICES)*** INSTALL PRINCIPAL BASINS AFTER CONSTRUCTION

TRAPS, SILT FENCES, OUTLET PROTECTION) SITE IS ASSESSED. INSTALL ADDITIONAL TRAPS AND BARRIERS AS NEEDED DURING GRADING. 10.LOCATION, DIMENSIONS, SPECIFICATIONS AND CONSTRUCTION DETAILS OF EACH STORM WATER QUALITY MEASURE

REFER TO STORMWATER POLLUTION PREVENTION PLAN AND DETAILS 11.TEMPORARY SURFACE STABILIZATION METHODS APPROPRIATE FOR EACH SEASON

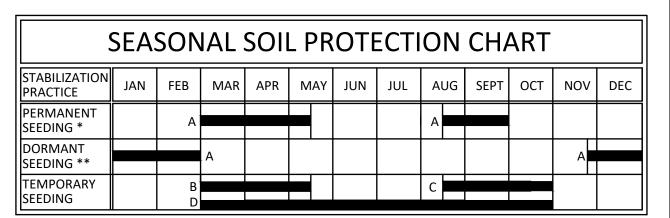
(INCLUDE SEQUENCING) 12.PERMANENT SURFACE STABILIZATION SPECIFICATIONS (INCLUDE SEQUENCING) REFER TO SEASONAL SOIL PROTECTION CHART

13.MATERIAL HANDLING AND SPILL PREVENTION PLAN CONTRACTOR SHALL CONTAIN ANY SPILL OF MATERIALS IN SUCH A MANNER TO PREVENT LEAKAGE INTO A STORM SEWER OR DRAINWAY. CONTACT THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM) OFFICE OF LAND QUALITY EMERGENCY RESPONSE SECTION, IDEM 24-HOUR SPILL LINE AT 888-233-7745, OR 317-233-7745 UPON DISCOVERY OF AN ACCIDENT TO DETERMINE IDEM'S

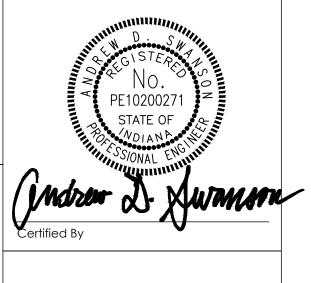
INVOLVEMENT AND PROCEDURES FOR CLEANUP. 14.MONITORING AND MAINTENANCE GUIDELINES FOR EACH PROPOSED STORMWATER QUALITY MEASURE.

MONITORING AND MAINTENANCE: (1) INSPECT PRACTICES AND REPAIR AS REQUIRED AT LEAST ONCE A WEEK, & (2) WITHIN 24 HOURS OF EVERY 1/2" RAIN EVENT

15. SOIL STOCKPILE AND STAGING AREA ALL DISTURBED GROUND SHALL NOT BE LEFT IDLE FOR MORE THAN 2 WEEKS WITHOUT SEEDING FOR STABILIZATION. SOIL STOCKPILES SHALL BE SURROUNDED WITH SILT FENCE AND SEEDED IF NOT USED WITHIN 2 WEEKS.



- A = REFER TO SPECIFICATIONS FOR PERMANENT SEEDING MIXTURE. FERTILIZE AS RECOMMENDED BY SOIL TEST, IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.
- B = SPRING OATS 3 BUSHELS / ACRE (2.3lbs. / 1000 Sq ft) FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.
- C = WHEAT OR RYE 2 BUSHELS/ACRE (3.5lbs. / 1000 Sq. ft) FERTILIZE AS RECOMMENDED BY SOIL TEST. IF TESTING IS NOT DONE, APPLY 400-600 LBS./ACRE OF 12-12-12 ANALYSIS, OR EQUIVALENT, FERTILIZER.
- D = ANNUAL RYEGRASS 40 LBS./ACRE (1 LB./1000 SQ. FT.)
- * IRRIGATION NEEDED DURING JUNE, JULY, AUGUST AND SEPTEMBER
- ** INCREASE SEEDING APPLICATION BY 50%



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PROJECT NO: 2023008 DATE: 4/11/2023 DRAWN BY:

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SHEET TITLE

STORMWATER POLLUTION PREVENTION NOTES & DETAILS

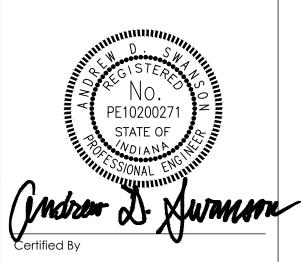


- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, AND VERIFYING, THAT ALL PERMITS AND APPROVALS ARE OBTAINED FROM THE RESPECTIVE CITY, COUNTY, STATE AND FEDERAL AGENCIES PRIOR TO STARTING CONSTRUCTION.
- B. CONTRACTOR SHALL VERIFY LOCATION AND INVERT ELEVATIONS OF EXISTING SEWERS PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN A COMPLETE AND OPERABLE UTILITY SYSTEM AT ALL TIMES.
- D. CONTRACTOR SHALL INCLUDE COSTS FOR CUTTING AND PATCHING AS REQUIRED IN THEIR BID PROPOSAL TO COMPLETELY INSTALL THE WORK INDICATED.
- E. CONTRACTOR SHALL INCLUDE ALL TAP FEES, PERMIT FEES AND APPLICATION FEES IN THEIR BID PROPOSAL AS NECESSARY TO COMPLETELY INSTALL THE WORK INDICATED.
- INFORMATION SHOWN WAS OBTAINED FROM AN OWNER FURNISHED SITE SURVEY OF EXISTING CONDITIONS AND IS UNCONFIRMED. CONTRACTOR IS REQUIRED TO FIELD VERIFY THIS INFORMATION AND NOTIFY ARCHITECT OF ANY DISCREPANCIES SO MODIFICATION CAN BE MADE.
- CONTRACTOR SHALL COORDINATE EXACT UTILITY LOCATIONS WITH THE OWNER AND LOCAL UTILITY COMPANIES PRIOR TO COMMENCING ANY WORK. UTILIZE THE INDIANA UNDERGROUND UTILITY LOCATION SERVICE AT 811 OR 800-382-5544 PRIOR TO ANY EXCAVATION ON THE SITE.

O PLAN NOTES

- 1. REMOVE EXISTING PLANTINGS COMPLETE.
- 2. REMOVE EXISTING CONCRETE WALK COMPLETE.
- 3. REMOVE EXISTING WATER PIPE AND STRUCTURES COMPLETE.
- 4. REMOVE EXISTING ELECTRICAL LINES.
- 5. REMOVE AREA DRAIN COMPLETE.
- 6. REMOVE POP UP DRAIN COMPLETE.





GEIST

 $\mathsf{A}\mathsf{T}$ E CHILDCARE AS ADDITION V 900 N LE, IN 46055 SHANNON'S EXCLUSIVE C BUILDING AE 6633 W 90

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PROJECT NO: 2023008 4/11/2023

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SHEET TITLE

SITE DEMOLITION PLAN

- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING, AND VERIFYING, THAT ALL PERMITS AND APPROVALS ARE OBTAINED FROM THE RESPECTIVE CITY, COUNTY, STATE AND FEDERAL AGENCIES PRIOR TO STARTING CONSTRUCTION.
- B. CONTRACTOR SHALL VERIFY LOCATION AND INVERT ELEVATIONS OF EXISTING SEWERS PRIOR TO START OF CONSTRUCTION.
- C. CONTRACTOR SHALL MAINTAIN A COMPLETE AND OPERABLE UTILITY SYSTEM AT ALL TIMES.
- D. CONTRACTOR SHALL INCLUDE COSTS FOR CUTTING AND PATCHING AS REQUIRED IN THEIR BID PROPOSAL TO COMPLETELY INSTALL THE WORK INDICATED.
- E. CONTRACTOR SHALL INCLUDE ALL TAP FEES, PERMIT FEES AND APPLICATION FEES IN THEIR BID PROPOSAL AS NECESSARY TO COMPLETELY INSTALL THE WORK INDICATED.
- F. INFORMATION SHOWN WAS OBTAINED FROM AN OWNER FURNISHED SITE SURVEY OF EXISTING CONDITIONS AND IS UNCONFIRMED. CONTRACTOR IS REQUIRED TO FIELD VERIFY THIS INFORMATION AND NOTIFY ARCHITECT OF ANY DISCREPANCIES SO MODIFICATION CAN BE MADE.
- G. CONTRACTOR SHALL COORDINATE EXACT UTILITY LOCATIONS WITH THE OWNER AND LOCAL UTILITY COMPANIES PRIOR TO COMMENCING ANY WORK. UTILIZE THE INDIANA UNDERGROUND UTILITY LOCATION SERVICE AT 811 OR 800-382-5544 PRIOR TO ANY EXCAVATION ON THE SITE.
- H. REFER TO UTILITY DETAILS FOR NOTE REFERENCES.

 I. ALL CASTINGS SHALL HAVE THE WORDS 'NO DUMPING DRAINS TO STREAM" CAST IN RAISED OR RECESSED LETTERS AT A MINIMUM OF 1" HEIGHT. A SYMBOL OF A FISH SHALL ALSO BE CAST WITH THE
- J. CASTINGS TO BE NEENAH TYPE OR APPROVED EQUAL.
 K. CONTRACTOR TO VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION.
- L. REFER TO PLUMBING PLANS FOR SANITARY PIPE.M. REFER TO PLUMBING PLANS FOR WATER PIPE.

O PLAN NOTES

- 1. CONTRACTOR TO FIELD VERIFY EXISTING STORM SEWER LOCATION, ELEVATION AND SIZE.
- 2. COORDINATE SIZE, LOCATION AND ELEVATION OF PIPING WITH PLUMBING PLANS.
- 3. NEW DOWNSPOUT CONNECTOR.
- 4. WATER AND SEWER CROSSING, MINIMUM 18" CLEARANCE OR USE CONCRETE CRADLE.
- 5. NEW WATER LINE.
- 6. NEW ELECTRIC LINE.

|

ENGINE

5 Counselors Row, Suite 1



GEIST

SHANNON'S EXCLUSIVE CHILDCARE AT
BUILDING ADDITION
6633 W 900 N
MCCORDSVILLE, IN 46055

4/11/23 PERMIT SET

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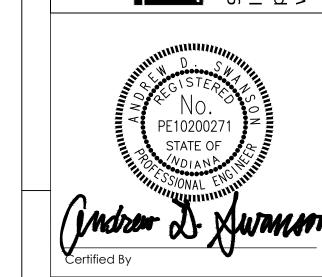
SHEET TITLE

SITE GRADING DRAINAGE & UTILITY PLAN

A. REFER TO IMPROVEMENT DETAILS FOR NOTE REFERENCES.

O PLAN NOTES

- CONCRETE STOOP.
- 2. 6" CONCRETE PAVEMENT.



SHANNON'S EXCLUSIVE CHILDCARE AT GEIST BUILDING ADDITION 6633 W 900 N MCCORDSVILLE, IN 46055

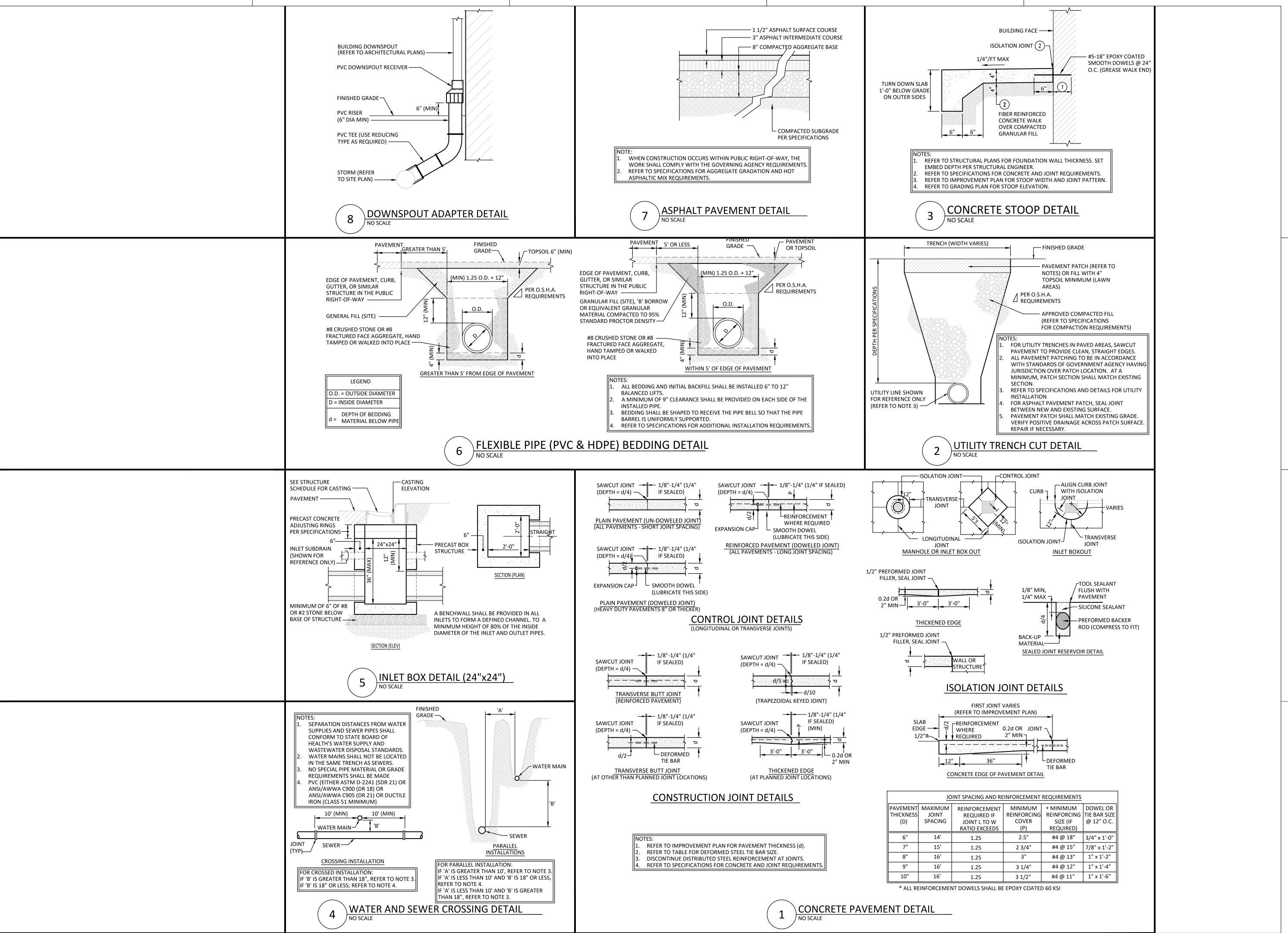
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SITE IMPROVEMENT PLAN



CONSULTING
ENGINEERS, III



SHANNON'S EXCLUSIVE CHILDCARE AT GE BUILDING ADDITION 6633 W 900 N MCCORDSVILLE, IN 46055

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SITE DETAILS

GENERAL INFORMATION

- THE CONTRACTOR SHALL RESOLVE ANY CONFLICT ON THE DRAWINGS OR IN THE SPECIFICATIONS WITH THE ARCHITECT / EOR BEFORE PROCEEDING WITH THE WORK. IN GENERAL, WHERE THE DRAWINGS AND SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT RESTRICTIONS AND REQUIREMENTS SHALL GOVERN. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE CONSTRUCTED AS SHOWN FOR SIMILAR WORK.
- 2. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBERS, AND ERECTION IN THE FIELD.
- 3. PLAN NOTES, DETAILS AND SECTIONS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES. "TYPICAL DETAILS" ARE APPLICABLE THROUGHOUT CONSTRUCTION DOCUMENTS AND MAY NOT BE SPECIFICALLY REFERENCED THEREIN. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING THESE TYPICAL DETAILS AND UNDERSTANDING EXTENT OF THEIR APPLICATION PRIOR TO PERFORMING WORK.
- 4. CONTRACT DOCUMENTS INDICATE INFORMATION SUFFICIENT TO CONVEY DESIGN INTENT. REVIEW CONTRACT DOCUMENTS AND VERIFY FIELD AND EXISTING CONDITIONS. PROMPTLY NOTIFY ARCHITECT / EOR, PRIOR TO PROCEEDING WITH WORK, IF FURTHER CLARIFICATION OF DESIGN INTENT IS NEEDED.
- 5. REFER TO ARCHITECTURAL AND/OR MEP DRAWINGS FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS. DO NOT SCALE DRAWINGS.
- 6. CONTRACTORS ARE REQUIRED TO COORDINATE THEIR RESPECTIVE WORK WITH ALL OTHER DISCIPLINES TO AVOID ANY CONFLICTS DURING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER CONSTRUCTION DOCUMENTS.
- 7. THE DRAWINGS DO NOT SHOW ALL OPENINGS REQUIRED. THE CONTRACTOR SHALL VERIFY ALL OPENING SIZES AND LOCATIONS WITH OTHER DISCIPLINES. ADDITIONAL OPENINGS, BLOCKOUTS AND SLEEVES MAY BE REQUIRED BY OTHER DISCIPLINES AND SHALL BE CONSTRUCTED USING THE TYPICAL DETAILS AND/OR THE CRITERIA INDICATED ON THE DRAWINGS.
- 8. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, BRACING, SHORING, UNDERPINNING, ETC. THE ARCHITECT / EOR IS NOT RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES OR SAFETY PROCEDURES DURING CONSTRUCTION.
- 9. SUBMIT SHOP DRAWINGS FOR REVIEW BEFORE FABRICATION. CONTRACTOR SHALL REVIEW FOR COMPLETENESS AND COMPLIANCE WITH CONTRACT DOCUMENTS PRIOR TO SUBMISSION TO ARCHITECT / EOR. ARCHITECT / EOR REVIEW IS FOR GENERAL CONFORMANCE WITH DESIGN INTENT AND WHEN INDICATED, THE SUBMITTAL SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE PROJECT LOCATION.
- 10. MODIFICATIONS AND SUBSTITUTIONS MUST BE ACCEPTED IN WRITING BY ARCHITECT / EOR. NO MODIFICATION OR SUBSTITUTION WILL BE ACCEPTED VIA SHOP DRAWING REVIEW.
- 11. NON-STRUCTURAL ITEMS, INCLUDING BUT NOT LIMITED TO, STAIR FRAMING, ARCHITECTURAL CLADDING, ETC., WHEN NOT DETAILED ON THE STRUCTURAL OR ARCHITECTURAL DRAWINGS, SHALL BE THE DESIGN RESPONSIBILITY OF THE CONTRACTOR. THESE NON-STRUCTURAL ITEMS MAY BE SUPPORTED BY THE PRIMARY STRUCTURE BUT SHALL NOT IMPOSE TORSIONAL LOADS ONTO THE PRIMARY SUPPORT MEMBERS. PROVIDE BRACES, KICKERS, STIFFENERS, ETC., AS NECESSARY TO ELIMINATE TORSIONAL LOADS AT NO ADDITIONAL COSTS TO THE OWNER.

DESIGN CRITERIA

DESIGN CODES:

PERFORM ALL CONSTRUCTION IN CONFORMANCE WITH THE BUILDING AND DESIGN CODES REFERENCED WITHIN THESE DOCUMENTS.

BUILDING CODE: THE 2012 INTERNATIONAL BUILDING CODE (IBC) W/ 2014 INDIANA BUILDING CODE AMENDMENTS.

AMERICAN CONCRETE INSTITUTE (ACI), 318-11 BUILDING CODE REQUIREMENTS FOR STRUCTURAL

- CONCRETE
- AMERICAN FOREST & PAPER ASSOCIATION (AF&PA), NDS-2012 NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION WITH 2005 SUPPLEMENT
- AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE), 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
- ALL OTHER APPLICABLE CODES AS REFERENCED IN CHAPTER 35 OF THE 2012 IBC

DESIGN LOAD CRITERIA: <u>GRAVITY LOADS</u>

DEAD LOAD OF STRUCTURE : ACTUAL

ADDITIONAL DEAD LOAD ALLOWANCES:
TOP CHORD DEAD LOAD : 15 PSF
BOTTOM CHORD DEAD LOAD : 10 PSF

LIVE LOADS: SLAB ON GRADE: 100 PSF ROOF LIVE LOAD: 20 PSF

SNOW LOAD

GROUND SNOW LOAD, P_q : 20 PSF LOW-SLOPE ROOF SNOW LOAD, P_f : 20 PSF SNOW IMPORTANCE FACTOR, I_s : 1.0 SNOW EXPOSURE FACTOR, C_e : 0.9 THERMAL FACTOR, C_t : 1.0 ROOF SLOPE FACTOR, C_s : 1.0

WIND LOAD CRITERIA

BUILDING RISK CATEGORY : II
BASIC WIND SPEED : 106 MPH
WIND EXPOSURE CATEGORY : B
ENCLOSURE CLASSIFICATION : ENCLOSED
VELOCITY PRESSURE, q_z : 17.13 PSF (ULTIMATE)
10.3 PSF (ALLOWABLE)

SEISMIC LOAD CRITERIA

BUILDING RISK CATEGORY: II
SEISMIC IMPORTANCE FACTOR, I_e: 1.0
SITE CLASS: C

MAPPED SPECTRAL RESPONSE ACCELERATION : $S_S = 0.144$, $S_1 = 0.081$ DESIGN SPECTRAL RESPONSE : $S_{ds} = 0.115$, $S_{d1} = 0.091$ SEISMIC DESIGN CATEGORY : B

LATERAL FORCE RESISTING SYSTEM: LIGHT FRAMED WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE
ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE PROCEDURE

RESPONSE MODIFICATION COEFFICIENT, R: 6.5 SEISMIC RESPONSE COEFFICIENT, Cs: 0.018

PROVISION FOR FUTURE EXPANSION IS NOTED AS FOLLOWS : A. VERTICAL EXPANSION: NONE

B. HORIZONTAL EXPANSION: NONE

EXISTING CONDITIONS

- 1. EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM EXISTING CONSTRUCTION DOCUMENTS AND SITE INVESTIGATION AND CAN BE USED FOR BIDDING PURPOSES. THE CONTRACTOR SHALL VERIFY ALL EXISTING JOB CONDITIONS, REVIEW ALL DRAWINGS AND VERIFY DIMENSIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ALL DISCREPANCIES AND EXCEPTIONS BEFORE PROCEEDING WITH THE WORK. DRAWINGS FOR THE EXISTING CONSTRUCTION ARE AVAILABLE FOR REVIEW.
- 2. THE CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT INFORMATION.
- 3. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION AND TAKE CARE TO PROTECT EXISTING UTILITIES THAT ARE TO REMAIN IN SERVICE.
- 4. THE REMOVAL, CUTTING, DRILLING, ETC. OF EXISTING WORK SHALL BE PERFORMED WITH GREAT CARE AND SMALL TOOLS IN ORDER NOT TO JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE BUILDING. IF STRUCTURAL MEMBERS OR MECHANICAL, ELECTRICAL, OR ARCHITECTURAL FEATURES NOT INDICATED FOR REMOVAL INTERFERE WITH THE NEW WORK, THE ARCHITECT SHALL BE IMMEDIATELY NOTIFIED AND PRIOR APPROVAL SHALL BE OBTAINED BEFORE REMOVAL OF MEMBERS.
- 5. PRIOR TO CORING OR SAWING EXISTING CONCRETE WALLS AND SLABS FOR NEW PENETRATIONS, CONTRACTOR SHALL LOCATE EXISTING REINFORCING IN CONCRETE USING A NON-DESTRUCTIVE METHOD. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND ENGINEER OF NEW PENETRATION LOCATIONS IN CONFLICT WITH EXISTING REINFORCING. DO NOT CUT EXISTING REINFORCING WITHOUT PRIOR APPROVAL BY THE ARCHITECT/EOR.
- 6. THE CONTRACTOR SHALL SAFELY SHORE EXISTING CONSTRUCTION WHEREVER EXISTING SUPPORTS ARE REMOVED TO ALLOW THE INSTALLATION OF THE NEW WORK. ALL SHORING METHODS AND SEQUENCING OF DEMOLITION SHALL BE SPECIFIED BY A LICENSED PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THIS PROJECT IS LOCATED, TO BE RETAINED BY THE CONTRACTOR.
- 7. THE CONTRACTOR SHALL REPAIR ALL DAMAGE CAUSED DURING CONSTRUCTION WITH SIMILAR MATERIALS AND WORKMANSHIP TO RESTORE CONDITIONS TO LEVELS ACCEPTABLE TO THE ARCHITECT.

EARTHWORK / FOUNDATION NOTES

- 1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND REVIEW THE PROJECT GEOTECHNICAL REPORT PRIOR TO BIDDING. CONTACT THE EOR WITH ANY DISCREPANCIES OR CONCERNS SO THAT A RESOLUTION MAY BE REACHED.
- 2. REFER TO GEOTECHNICAL REPORT NO. 23-0153-01G BY PATRIOT ENGINEERING AND ENVIRONMENTAL, INC. DATED MARCH 2, 2023. SOIL BEARING PRESSURE TO BE FIELD VERIFIED BY A QUALIFIED SOILS ENGINEER PRIOR TO CONSTRUCTION.
- 3. BUILDING FOUNDATION DESIGN IS BASED ON NET ALLOWABLE SOIL BEARING PRESSURE OF: 2000 PSF FOR COLUMN SPREAD FOOTINGS 1500 PSF FOR CONTINUOUS WALL FOOTINGS
- 4. BUILDING FOUNDATION SHALL BE PLACED ON FIRM, UNDISTURBED NATURAL SOILS OR ON ENGINEERED FILL MATERIAL. FOR AREAS REQUIRING ENGINEERED FILL, THIS MATERIAL SHALL CONSIST OF CLEAN GRANULAR FILL COMPACTED AS NOTED IN THE EARTHWORK SPECIFICATIONS AND PLACED IN LIFTS AS RECOMMENDED BY THE SOILS ENGINEER ON SITE OR AS SHOWN IN THE GEOTECHNICAL REPORT. SOIL BEARING PRESSURE OF ENGINEERED FILL TO BE FIELD VERIFIED BY A SOILS ENGINEER ON SITE PRIOR TO CONSTRUCTION.
- 5. SUBBASE MATERIAL UNDER SLABS-ON-GRADE TO BE CLEAN GRANULAR FILL COMPACTED AS NOTED IN THE EARTHWORK SPECIFICATIONS AND/OR THE GEOTECHNICAL REPORT.
- 6. BACKFILL AGAINST GRADE BEAMS AND FROST WALLS SHALL BE PLACED EVENLY ON BOTH SIDES.
- 7. ANY FOUNDATION INSULATION, WATERPROOFING, VAPOR BARRIER, ETC. SHOWN ON THE STRUCTURAL DRAWINGS IS FOR INFORMATION ONLY UNLESS SPECIFICALLY NOTED OTHERWISE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND REVIEW THE ARCHITECTURAL DOCUMENTS FOR EXACT LOCATIONS, PLACEMENT AND MATERIAL REQUIREMENTS.
- 8. NO RECYCLED MATERIAL MAY BE USED AS BACKFILL BELOW THE BUILDING FOUNDATIONS OR SLABS. ALL BACKFILL MATERIAL SHALL BE REVIEWED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO USE.
- 9. UNDERCUTTING OF THE SOIL FOR FOUNDATION PLACEMENT MAY BE REQUIRED. THE STRUCTURAL DRAWINGS MAY NOT INDICATE THE ENTIRE SCOPE OF UNDERCUTTING, FILL, BAD SOIL OR ROCK REMOVAL THAT MAY BE REQUIRED TO ATTAIN THE DESIGN SOIL BEARING PRESSURES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE GEOTECHNICAL REPORT, BEFORE BIDDING, TO ASSESS THE EXTENT OF EXCAVATION AND COMPACTION THAT MAY BE REQUIRED TO MEET THE DESIGN CRITERIA.
- 10. A REPORT CERTIFIED BY THE SOILS ENGINEER ON SITE SHALL BE FURNISHED TO THE A/E VERIFYING THAT ALL FOUNDATIONS WERE PLACED ON A MATERIAL CAPABLE OF SUSTAINING THE DESIGN BEARING PRESSURES.
- 11. IF DEWATERING IS REQUIRED. SUMPS SHALL NOT BE PLACED WITHIN THE FOUNDATION EXCAVATION.

REINFORCING STEEL

WORK.

- 1. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH THE LATEST ADDITION OF ACI 315, ACI 318, AND CRSI.
- 2. REINFORCEMENT SHALL HAVE DEFORMED SURFACES IN ACCORDANCE WITH ASTM A615 WITH MINIMUM YIELD STRENGTH OF 60,000 PSI.
- 3. WELDED WIRE FABRIC SHALL BE SMOOTH CONFORMING TO ASTM A185.
- 4. THE SHOP DRAWINGS FOR REINFORCING STEEL SHALL INCLUDE SCALE ELEVATIONS OF ALL CONCRETE WALLS AS APPLICABLE.
- 5. PROVIDE CORNER BARS OF SAME SIZE AND SPACING AS HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF ALL WALLS AND GRADE BEAMS. REFER TO TYPICAL DETAILS.
- 6. REINFORCING STEEL SHALL HAVE THE FOLLOWING CONCRETE PROTECTION (CLEAR COVER) UNLESS OTHERWISE NOTED:

SURFACES NOT FORMED AND IN CONTACT WITH SOIL : 3" FORMED SURFACES IN CONTACT WITH SOIL OR WEATHER : 2" SLABS, WALLS AND JOISTS : 3/4"

- 7. ALL 90 DEGREE AND 180 DEGREE BENDS SHOWN OR CALLED OUT ON THE DRAWINGS SHALL BE STANDARD HOOKS IN ACCORDANCE WITH ACI 318 UNLESS NOTED OTHERWISE.
- THE WELDED WIRE FABRIC IN THE CONCRETE SLAB-ON-GRADE SHALL BE SUPPORTED BY CONTINUOUS #4 SUPPORT BARS AT 2'-6" O.C. MAXIMUM. THE #4 BARS SHALL BE TIED AND SUPPORTED BY CONTINUOUS CHAIRS AT 2'-6" O.C. MAXIMUM.
- 9. CONTRACTOR SHALL PROVIDE FOR AN ALLOWANCE OF xx TONS OF REINFORCING STEEL TO BE FABRICATED AND/OR PLACED DURING THE PROGRESS OF WORK AS MAY BE DIRECTED BY THE ARCHITECT (STRUCTURAL ENGINEER). THE UNUSED PORTION SHALL BE CREDITED TO THE OWNER AT THE COMPLETION OF CONCRETE

CONCRETE

- ALL CONCRETE WORK SHALL CONFORM TO THE STANDARDS OF THE AMERICAN CONCRETE INSTITUTE, ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE" AND ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", WITH MODIFICATIONS AS NOTED IN THE CONTRACT DOCUMENTS.
- 2. ALL CONCRETE, UNLESS OTHERWISE NOTED IN SCHEDULES OR DETAILS, SHALL HAVE A MINIMUM 28 DAY CONCRETE COMPRESSIVE STRENGTH OF 4000 PSI. ALL CONCRETE SHALL BE NORMAL WEIGHT (145 PCF).
- 3. ALL CONCRETE EXPOSED TO THE WEATHER SHALL BE AIR-ENTRAINED. FOR SURFACE FINISHES AND OTHER REQUIREMENTS, REFER TO THE CONCRETE SPECIFICATIONS. CONCRETE MIX PROPORTIONING SHALL BE SUBMITTED TO THE ARCHITECT / EOR FOR REVIEW AND APPROVAL.
- 4. DETAILS OF FABRICATION OF REINFORCEMENT, HANDLING AND PLACEMENT OF THE CONCRETE, CONSTRUCTION OF FORMS AND PLACEMENT OF REINFORCEMENT, NOT OTHERWISE COVERED BY THE PLANS AND SPECIFICATIONS, SHALL COMPLY WITH THE LATEST ADDITION OF THE ACI CODE AND CRSI
- 5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONCRETE PLACING SEQUENCES, SIZE, AND CONSTRUCTION PROCEDURES AND ACCOUNT FOR TEMPERATURE DIFFERENTIALS AND SHRINKAGE OCCURING DURING THE CONSTRUCTION PHASE UNTIL THE BUILDING IS PERMANENTLY IN A MECHANICALLY CONTROLLED ENVIRONMENT.
- 6. THE CONTRACTOR SHALL CONSULT WITH THE ENGINEER BEFORE STARTING CONCRETE WORK TO ESTABLISH A SATISFACTORY PLACING SCHEDULE AND TO DETERMINE THE LOCATION OF CONSTRUCTION
- 7. NO HORIZONTAL CONSTRUCTION JOINTS SHALL BE MADE IN CONCRETE WALLS, FOOTINGS, BEAMS OR SLABS UNLESS SHOWN OR NOTED IN THE CONTRACT DRAWINGS. VERTICAL JOINTS ARE PERMITTED IN CONCRETE SLABS, WALLS, WALL FOOTINGS, TRENCH FOOTINGS AND GRADE BEAMS. REFER TO TYPICAL DETAILS.
- 8. ALL CONSTRUCTION JOINTS IN CONCRETE WALLS, FOOTINGS, BEAMS OR SLABS SHALL BE PROVIDED WITH A KEYWAY. THE SURFACE OF THE CONCRETE SHALL BE THOROUGHLY CLEANED AND ALL LATIANCE REMOVED. IN ADDITION, THE JOINT SHALL BE THOROUGHLY WETTED AND SLUSHED WITH A COAT OF CEMENT GROUT OR A BONDING AGENT IMMEDIATELY BEFORE PLACING CONCRETE.
- 9. CONTROL JOINTS, IF NOT SHOWN ON DRAWINGS, SHALL BE PROVIDED IN ALL SLABS-ON-GRADE. JOINTS SHALL BE LOCATED ON EACH COLUMN LINE, AT RE-ENTRANT CORNERS AND THE JOINT SPACING SHALL NOT EXCEED:
 - 12' IN EITHER DIRECTION FOR 4" THICK SLABS
 1.5:1 MAXIMUM PANEL LENGTH TO WIDTH RATIO

JOINTS SO AS TO MINIMIZE THE EFFECTS OF SHRINKAGE.

- SEE TYPICAL SLAB-ON-GRADE DETAILS FOR ADDITIONAL INFORMATION.

 10. THE SAW CUTTING OF CONTROL JOINTS IN A SLAB-ON-GRADE MAY BEGIN WHEN THE CUTTING ACTION WILL NOT TEAR, ABRADE, OR OTHERWISE DAMAGE THE SURFACE AND BEFORE THE CONCRETE DEVELOPS
- 11. REFER TO CONCRETE SPECIFICATIONS FOR FLOOR FLATNESS AND LEVELNESS REQUIREMENTS AT THE SLAB-ON-GRADE AND ELEVATED CONCRETE SLAB TYP.

RANDOM SHRINKAGE CRACKING. SAW CUTTING MAY BEGIN AND FINISH WITHIN 4 TO 12 HOURS AFTER

12. FOR SLABS CONTAINING FIBER REINFORCEMENT, THE FIBER DOSAGE SHALL BE CONFIRMED BY THE MANUFACTURER.

DIMENSIONSL LUMBER (CONVENTIONAL 2X) FRAMING

SURFACE FINISHING IS COMPLETE.

- 1. LUMBER AND ITS FASTENINGS SHALL CONFORM WITH THE "NATIONAL DESIGN SPECIFICATION FOR STRESS-GRADE LUMBER AND ITS FASTENINGS" BY THE NATIONAL FOREST PRODUCTS ASSOCIATION (LATEST EDITION AND REVISION)
- 2. LUMBER FOR EXTERIOR WALLS, INTERIOR BEARING WALLS AND SHEAR WALLS SHALL BE NO. 2 SOUTHERN PINE OR DOUGLS FIR OR BETTER UNLESS NOTED OTHERWISE IN THE WALL STUD SCHEDULE.
- 3. LUMBER FOR HEADERS, BEAMS, TOP AND SOLE PLATES, AND OTHER FRAMING MEMBERS SHALL BE NO. 1 SOUTHERN PINE OR DOUGLS FIR OR BETTER.
- 4. LOAD BEARING WALLS, INCLUDING SHEAR WALLS, CONSTRUCTED FROM FINGER JOINTED STUDS SHALL BE SHEATHED ON AT LEAST ONE FACE OR SHALL BE BRACED WITH CONTINUOUS 1X4 BRACING AT MID-HEIGHT OF WALL PRIOR TO LOADING THEM WITH FLOOR CONSTRUCTION.
- 5. BEARING WALL STUDS SHALL NOT BE LOADED WITH ANY CONSTRUCTION LOADS UNTIL SHEATHING HAS BEEN FULLY INSTALLED AND NAILED TO AT LEAST ONE FACE OF THE STUDS. IF BEARING WALLS MUST BE LOADED PRIOR TO SHEATHING INSTALLATION, CONTRACTOR SHALL PROVIDE CONTINUOUS TEMPORARY BRACING AT MID-HEIGHT OF ALL STUDS PRIOR TO LOAD APPLICATION.
- 6. ALL LUMBER IN CONTACT WITH CONCRETE OR MASONRY OR EXPOSED LUMBER SHALL BE PRESSURE-TREATED IN ACCORDANCE WITH AWPA SPECIFICATIONS.
- ALL HEADER AND BEAM SUPPORT STUDS SHALL BE BLOCKED CONTINUOUSLY THROUGH THE TRUSS CAVITY WITH AND EQUAL NUMBER OF STUDS.
- 8. BOLT HOLES THROUGH WOOD SHALL BE FITTED WITH STANDARD WASHERS AT HEAD AND NUT ENDS.
- 9. WOOD FRAMING CONNECTIONS SHALL BE MADE WITH JOIST HANGERS UNLESS NOTED OTHERWISE. TOE NAILING IS NOT PERMITTED FOR STRUCTURAL FRAMING MEMBERS.
- 10. FRAMING LAYOUTS ARE PROVIDED TO CONVEY INTENT AND DESIGN CONCEPTS AND SYSTEMS OF CONSTRUCTION. CONTRACTOR AND SUBCONTRACTORS ARE RESPONSIBLE FOR MATERIAL QUANTITIES AND FINAL LAYOUT AND ANY AND ALL UNSPECIFIED COMPONENTS REQUIRED FOR CONSTRUCTION.
- 11. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS AND STEPS TO ADEQUATELY BRACE THE BUILDING UNTIL ALL DIAPHRAGMS, SHEAR WALLS, AND PERMANENT BRACING IS INSTALLED. BEARING WALLS SHALL BE INSTALLED WITH 2X BLOCKING AT MID-HEIGHT OR AT 4'-6" OC (WHICHEVER IS LESSER SPACING).
- 12. CONNECTIONS AND FASTENERS FOR PRESERVATIVE TREATED AND FIRE-RETARDANT-TREATED WOOD SHALL BE OF STAINLESS STEEL, SILICON BRONZE, OR COPPER. THIS INCLUDES BUT IS NOT LIMITED TO ANCHOR BOLTS, POWDER ACTUATED FASTENERS, NAILS, SCREWS, BOLTS, AND METAL FRAMING HARDWARE.

WOOD SHEAR WALL AND DIAPHRAGMS

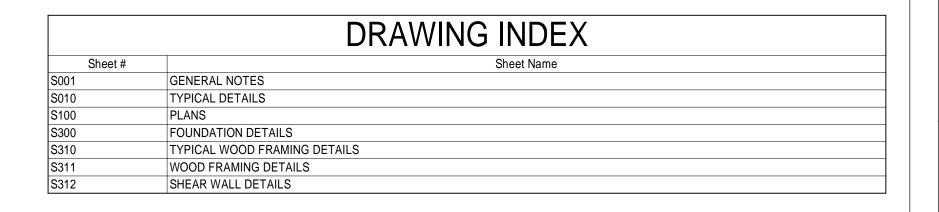
- 1. SHEATHING FOR ROOF SHALL BE 5/8" OSB APA RATED SHEATHING GRADE.
- 2. WOOD SHEATHING AT SHEAR WALLS SHALL BE APA RATED SHEATHING GRADE OSB WITH THICKNESS AS SHOWN IN THE SHEAR WALL SCHEDULE.
- 3. ROOF SHEATHING SHALL RUN CONTINUOUSLY BELOW ALL DORMERS, CUPOLAS, AND CHIMNEYS UNLESS NOTED OTHERWISE.
- 4. CONTRACTOR SHALL PROVIDE ACCESS / VENTILATION OPENINGS BETWEEN MAIN ROOF AND OVER-BUILD ROOFS. COORDINATE W/ ARCHITECTURAL AND M/E/P.

PRE-ENGINEERED WOOD TRUSSES

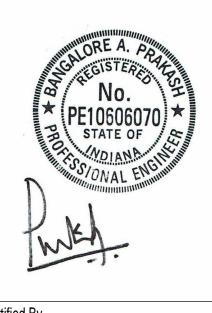
- 1. TRUSS MANUFACTURER SHALL DESIGN ALL ROOF TRUSSES FOR ALL GRAVITY AND LATERAL LOADS SPECIFIED IN THE CONSTRUCTION DOCUMENTS AND IN THE PROJECT MANUAL. ALL TRUSSES SHALL BE DESIGNED BASED ON SERVICE LOAD CONDITIONS (ALLOWABLE STRESS DESIGN) ONLY. THE DESIGN SHALL BE COMPLETED BY A PROFESSIONAL ENGINEER LICENSED AS SUCH IN THE PROJECT JURISDICTION.
- 2. TRUSS DESIGN SHALL INCLUDE CONSIDERATION OF TOP PLATE CRUSHING. ADDITIONAL PLIES OR CLOSER TRUSS/JOIST SPACING MAY BE REQUIRED. ALL TRUSS JOIST SPACING MODIFICATIONS MUST BE APPROVED BY THE ARCHITECT/EOR.
- 3. TRUSS MANUFACTURER SHALL SUBMIT CALCULATIONS AND DESIGN DRAWINGS FOR APPROVAL (INCLUDING LAYOUT AND PLACEMENT DRAWINGS). SUBMITTED CALCULATIONS AND DRAWINGS INCLUDING ALL LOADS REQUIRED FOR THE DESIGN OF THE TRUSSES, TRUSS PLACEMENT LOCATION, TRUSS CONNECTIONS AND CONNECTIONS TO THE MAIN STRUCTURE SHALL BEAR THE SEAL AND SIGNATURE OF THE TRUSS MANUFACTURER'S ENGINEER.
- 4. TRUSS LENGTHS AND PROFILES SHALL BE COORDINATED WITH THE ARCHITECTURAL DRAWINGS PRIOR TO FABRICATION. CONFIGURATION AND SIZE OF WEB AND CHORD MEMBERS SHALL BE DETERMINED BY TRUSS MANUFACTURER. LOCATION, ORIENTATION AND PROFILES SHOWN IN THE CONSTRUCTION DOCUMENTS ARE FOR SCHEMATIC PURPOSES ONLY.
- 5. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROPERLY BRACE TRUSSES DURING LIFTING AND ERECTION. CONTRACTOR SHALL KEEP ALL TRUSSES LATERALLY BRACED UNTIL ALL FLOOR AND ROOF DIAPHRAGMS AND ALL PERMANENT BRACING ARE INSTALLED.
- 6. DESIGN AND FABRICATION CRITERIA OF ALL WOOD TRUSSES SHALL BE IN ACCORDANCE WITH THE "NATIONAL DESIGN SPECIFICATION FOR STRESS-GRADE LUMBER AND ITS FASTENINGS" BY THE NATIONAL FOREST PRODUCTS ASSOCIATION (LATEST EDITION AND REVISION), "TIMBER CONSTRUCTION STANDARDS" BY THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (LATEST EDITION AND REVISION), AND THE "DESIGN SPECIFICATIONS FOR LIGHT METAL CONNECTED WOOD TRUSSES" BY THE TRUSS PLATE INSTITUTE.
- 7. MAXIMUM LIVE LOAD DEFLECTION SHALL BE SPAN/360 FOR ROOF TRUSSES AND SPAN/480 FOR FLOOR AND CORRIDOR TRUSSES UNLESS NOTED OTHERWISE.
- 8. SHOP DRAWINGS OF ALL TRUSSES SHALL BE SUBMITTED BY THE TRUSS MANUFACTURER FOR APPROVAL
- 9. THE FOLLOWING DESIGN DATA SHALL BE INCLUDED ON THE SHOP DRAWINGS:
- THE POLICY MAD DEGICAL PROPERTY OF THE PLANTS OF THE PROPERTY OF THE PROPERTY
- A. SLOPE, DEPTH, SPAN AND SPACING OF ALL TRUSSES
- B. LOCATION OF ALL JOINTS AND CONNECTIONS
- C. REQUIRED BEARING WIDTHSD. DESIGN LOADINGS AND ALLOWABLE UNIT STRESS INCREASES
- E. TOP AND BOTTOM CHORD DEAD AND LIVE LOADS
 F. CONCENTRATED LOADS AND THEIR POINTS OF APPLICATION
- G. CONTROLLING WIND AND EARTHQUAKE LOADSH. ADJUSTMENTS TO LUMBER AND CONNECTOR PLATE DESIGN VALUES FOR CONDITIONS OF USE EACH
- REACTION FORCE AND DIRECTION

 I. METAL CONNECTOR PLATE TYPE, SIZE, THICKNESS OR GAGE, AND THE DIMENSIONED LOCATION OF EACH
- CONNECTOR PLATE EXCEPT WHERE SYMMETRICALLY LOCATED WITH RESPECT TO THE JOINT INTERFACE J. LUMBER SIZE, SPECIES, AND GRADE FOR EACH MEMBER
- K. CONNECTION REQUIREMENT FOR TRUSS-TO-TRUSS, TRUSS-TO-TRUSS PLY, AND FIELD SPLICES
- L. CALCULATED DEFLECTION RATIO AND MAXIMUM VERTICAL AND HORIZONTAL DEFLECTIONS FOR TOTAL LOAD AND LIVE LOAD
- M. MAXIMUM AXIAL TENSION AND COMPRESSION FORCE IN THE TRUSS MEMBER
 N. REQUIRED PERMANENT INDIVIDUAL TRUSS MEMBER BRACING
- N. REQUIRED PERMANENT INDIVIDUAL TRUSS MEMBER BRACING
 O. EACH INDIVIDUAL TRUSS DRAWING SHALL BEAR THE SEAL AND SIGNATURE OF THE TRUSS MANUFACTURER'S ENGINEER
- 10. TRUSS MANUFACTURER SHALL PROVIDE END WALL TRUSSES AT EACH SIDE OF VAULTED CEILINGS, AT GABLE ENDS, BUILDING STEP-DOWNS AND AT CHANGE OF ROOF LINES.
- 11. TRUSS DRAWINGS SHALL BE MADE AVAILABLE AT THE JOB SITE DURING THE TIMES OF INSPECTION. THESE DRAWINGS SHALL BEAR CLEAR INDICATION THAT THEY HAVE BEEN REVIEWED AND APPROVED BY THE EOR.
- 12. CONTRACTOR SHALL BRACE ALL TRUSSES IN ACCORDANCE WITH THE TRUSS PLATE INSTITUTE'S HANDLING, INSTALLING, AND BRACING OF PLATE CONNECTED WOOD TRUSSES SUMMARY SHEET. TRUSS MANUFACTURER SHALL CLEARLY INDICATE BRACING LOCATIONS ON THE SHOP DRAWINGS AND ERECTION DRAWINGS.
- 13. THE MOISTURE CONTENT OF LUMBER SHALL NOT BE LESS THAN 19% NOR SHALL IT BE LESS THAN 7% AT THE TIME OF FABRICATION.
- 14. ALL TRUSS CONNECTOR PLATES SHALL BE MANUFACTURED FROM STRUCTURAL QUALITY GALVANIZED SHEET METAL NOT LESS THAN 20 GAUGE IN THICKNESS, WITH A MINIMUM YIELD STRENGTH OF 33,00 PSI AND A MINIMUM ULTIMATE TENSILE STRENGTH OF 45,000 PSI. THE CORROSION RESISTANT COATING SHALL MEET OR EXCEED ASTM A446 STANDARD SPECIFICATION FOR SHEET STEEL.
- 15. OPEN JOINTS WHICH DEPEND ON THE STIFFNESS OF THE METAL CONNECTOR PLATE TO TRANSMIT STRESSES AND IMPROPER FITTING JOINTS WILL NOT BE ACCEPTED.
- 16. DEAD KNOTS AND WANES ON LUMBER SHALL NOT BE LOCATED UNDER THE CONNECTOR PLATES.
- 17. DESIGN AND DETAILING OF PRE-ENGINEERED PRODUCTS, CONNECTIONS, AND ACCESSORIES SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AITC "TIMBER CONSTRUCTION MANUAL" AND THE NFPA "NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION".

18. TRUSSES SHALL BE KEPT COVERED DURING SHIPPING, STORAGE AND CONSTRUCTION. TRUSSES SHALL BE STORED OFF THE GROUND IN A MANNER WHICH WILL NOT DAMAGE OR WARP THE TRUSSES PRIOR TO ERECTION.







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SHANNON'S EXCLUSIVE CHILDCAR BUILDING ADDITION 6633 W 900 N MCCORDSVILLE, IN 46055

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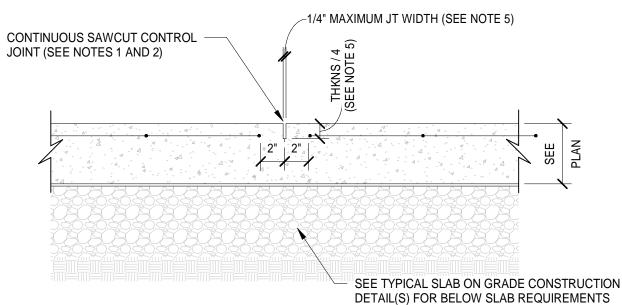
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GENERAL NOTES

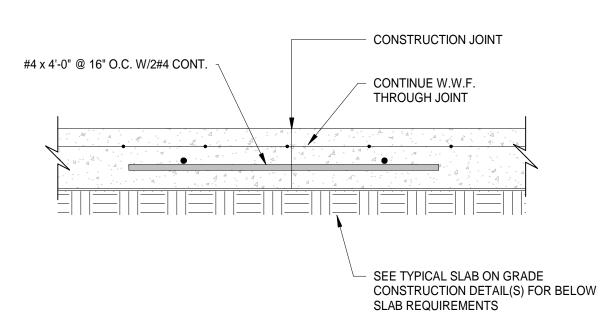
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NOTES:

- 1. SAWCUT JOINT AS SOON AS POSSIBLE AFTER THE CONCRETE HARDENS. THE CONCRETE IS HARD ENOUGH WHEN THE BLADE DOES NOT DISLODGE AGGREGATE, AND WHEN THE EDGES OF THE CUT DO NOT RAVEL. COMPLETE SAWCUTTING BEFORE SHRINKAGE STRESSES BECOME SUFFICIENT TO PRODUCE CRACKING.
- 2. CURLING OF THE SLAB ON GRADE WILL OCCUR AT CONTROL JOINT LOCATIONS. FOR SLABS WITH FLOOR COVERINGS, GRINDING MAY BE REQUIRED FOR PROPER INSTALLATION OF FLOOR COVERING.
- 3. LAYOUT CONTROL JOINT LOCATIONS BEFORE SLAB CONSTRUCTION AND DISCONTINUE ANY SLAB REINFORCING AT JOINTS.

1 TYPICAL SLAB ON GRADE CONTROL JOINT 1 1/2" = 1'-0"

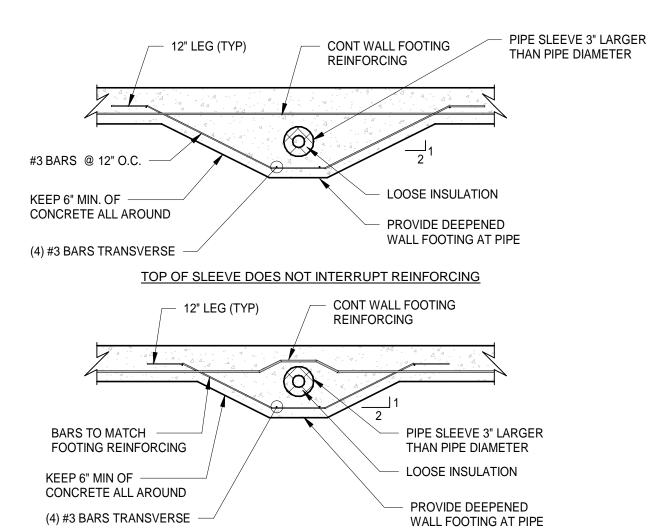


NOTE:

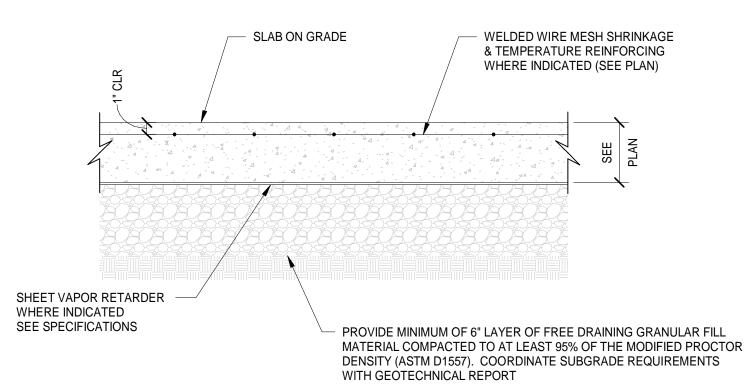
CONTRACTOR SHALL COORDINATE CONSTRUCTION JOINTS SUCH THAT THEY COINCIDE WITH CONTROL JOINT LOCATIONS SHOWN ON PLANS.

7 TYPICAL SLAB ON GRADE CONSTRUCTION JOINT 1 1/2" = 1'-0"

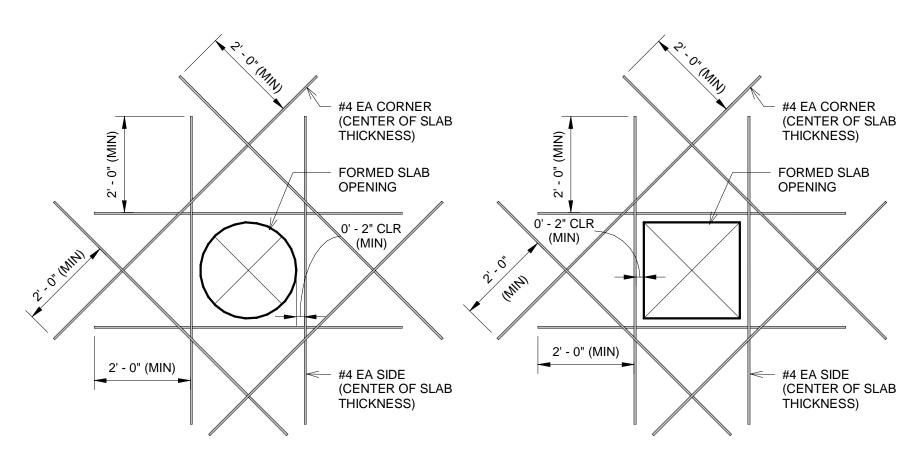
NOTE: THESE DETAILS DO NOT APPLY IF TOP OF PIPE IS MORE THAN 8" BELOW BOTTOM OF WALL FOOTING



TOP OF SLEEVE INTERRUPTS BOTTOM REINFORCING



2 TYPICAL SLAB ON GRADE CONSTRUCTION 1 1/2" = 1'-0"



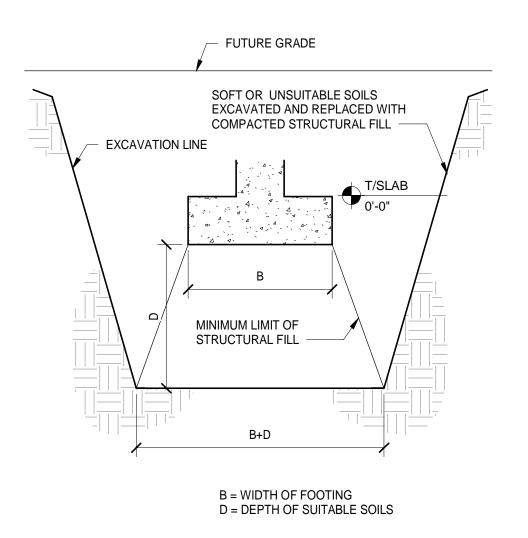
CIRCULAR OPENING > 12" DIA

SQUARE OPENING > 12" SQR

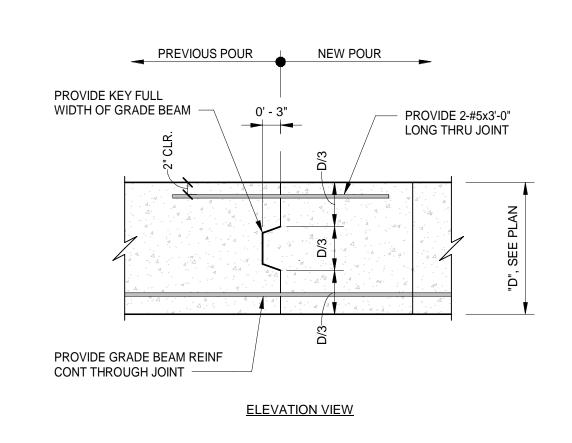
NOTES:

- 1. THIS DETAIL ONLY APPLIES WHER SLAB OPENING IS 12" DIAMETER OR 12" SQUARE OR LARGER.
- 2. DISTRIBUTE ONE-HALF OF INTERRUPTED CONTINUOUS REINFORCING AND/OR TENDONS (NOT SHOWN HERE) TO EACH SIDE (MIN (2) BARS EA SIDE
- 3. THE REINFORCING SHOWN HERE IS IN ADDITION TO ANY CONTINUOUS SLAB REINFORCING INTERRUPTED.





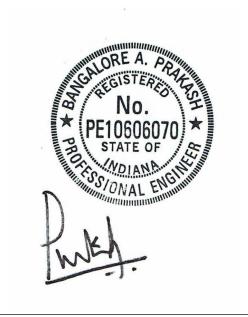
FOUNDATION UNDERCUTTING DETAIL 1/2" = 1'-0"



6 WALL FOUNDATION CONSTRUCTION JOINT

3/4" = 1'-0"





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SHANNON'S EXCLUSIVE CHILDCARE BUILDING ADDITION 6633 W 900 N MCCORDSVILLE, IN 46055

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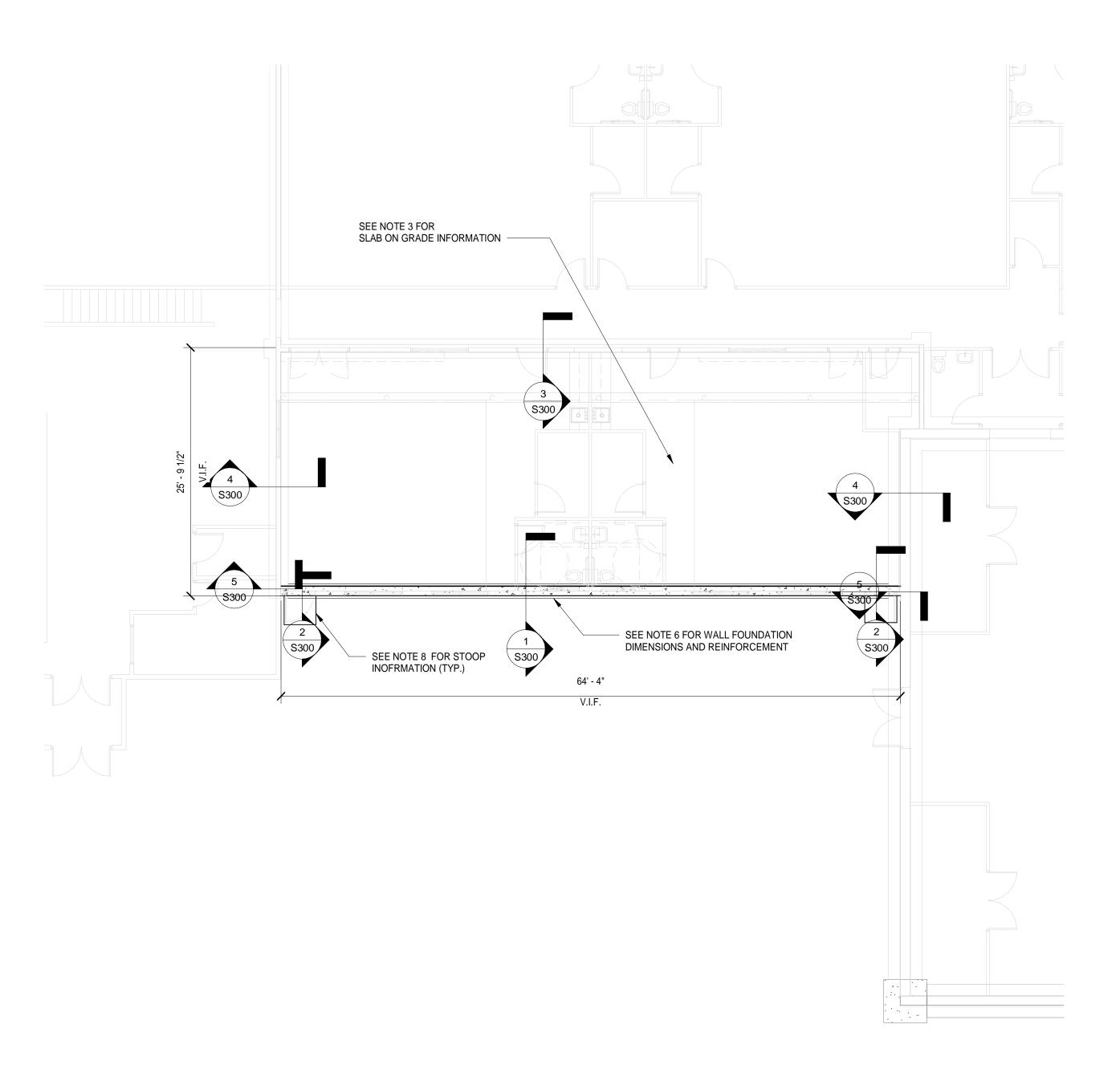
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TYPICAL

DETAILS

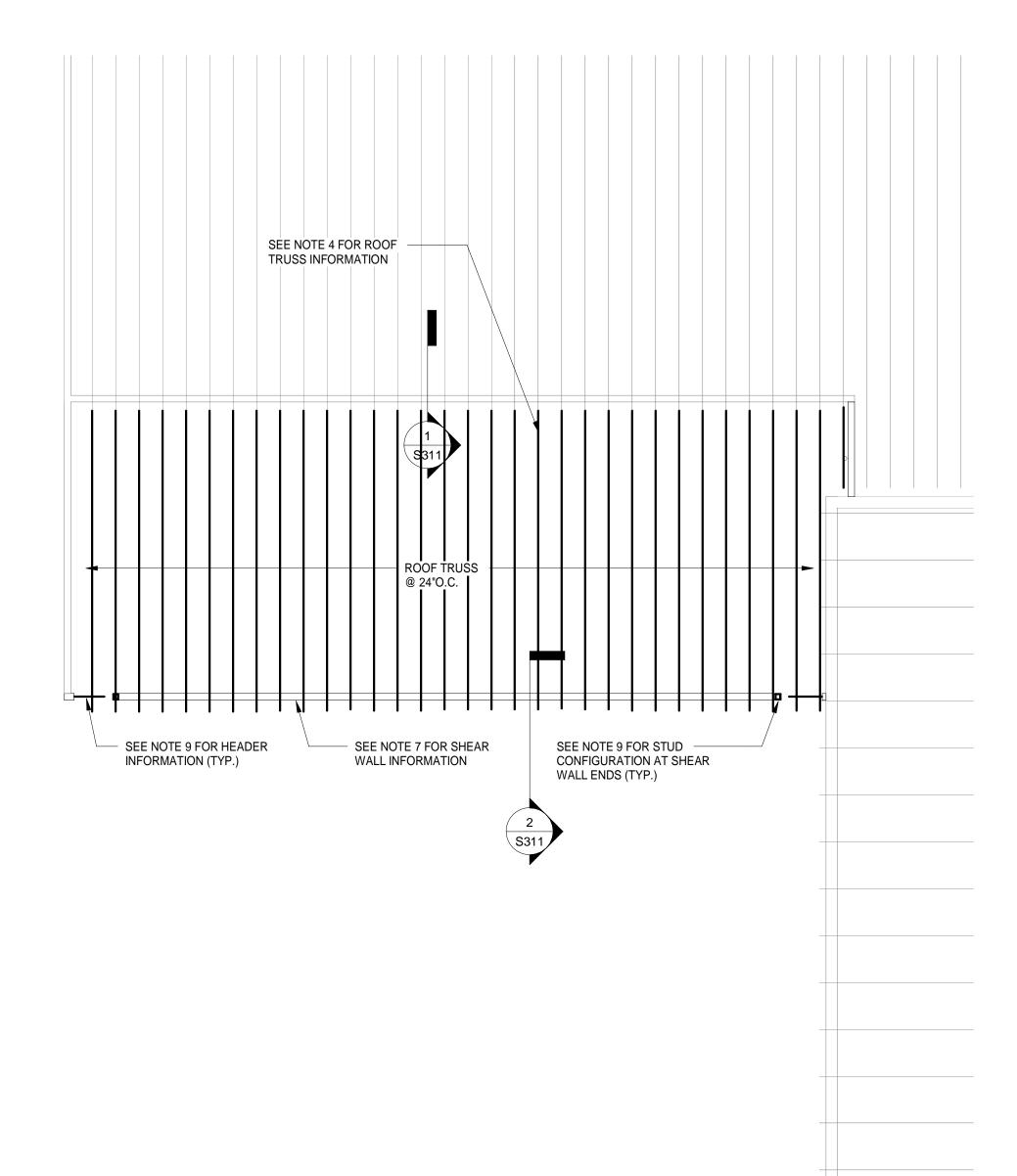
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FOUNDATION AND SLAB ON GRADE PLAN NOTES

- 1. REFER TO DRAWING S001 FOR GENERAL NOTES.
- 2. REFER TO DRAWING \$300 FOR FOUNDATION SCHEDULE AND TYPICAL FOUNDATION DETIALS.
- 3. SLAB ON GRADE SHALL BE 4" NORMAL WEIGHT CONCRETE REINFORCED WITH 6X6-W2.1XW2.1
- WIRE MESH REINFORCING IN SHEET FORM SUPPORTED BY BOLSTERS. 4 UNLESS NOTED OTHERWISE TOP OF SLAB SHALL BE AT ELEVATION 0'-0"
- 5. PROVIDE 18" x 12" CONCRETE WALL FOUNDATION W/ 12" FOUNDATION WALL. SEE SECTION
- 1/S300 FOR REINFORCING.
- 6. REFER TO ARCHITECTURE DRAWINGS FOR DIMENSIONS AND ELEVATIONS 7. CONTRACTOR SHALL INSTALL SAW-CUT CONTROL JOINTS NO FURTHER APART THAN 12 FEET. CONTRACTOR SHALL SUBMIT A CONTROL JOINT LAYOUT PLAN FOR A/E REVIEW PRIOR TO
- INSTALLATION OF CONTROL JOINTS. 8 REFER TO ARCHITECTURE DRAWINGS FOR THE STOOP DIMENSIONS AND LOCATIONS

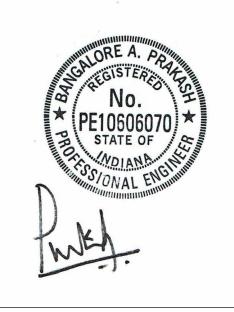




ROOF FRAMING PLAN NOTES

- REFER TO DRAWING S001 FOR GENERAL NOTES.
- REFER TO S311 AND S312 FOR SECTIONS AND DETAILS
- REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND ELEVATIONS
- ROOF DECKING SHALL BE 5/8" APA RATED SHEATHING-GRADE SHEATHING NAILED TO ROOF FRAMING.
- REFER TO GENERAL NOTES FOR LOAD CRITERIA PERTAINING TO TRUSS DESIGN.
- USE 8D NAILS W/ 1-3/8 INCH MIN. FASTENER PENETRATION IN FRAMING MEMBERS FOR DECKING ATTACHMENT. PROVIDE 7/16" OSB SHEATHING SHEAR WALL W/ 8D NAILS AT SPACING OF 4" O.C ALONG THE BOUNDARY AND 12" O.C. FIELD NAILING.
- PROVIDE SIMPSON HD5B HOLDDOWN W/ (2)- 3/4 DIA. STUD BOLTS AND SIMPSON SB 5/8 x 30 ANCHOR BOLT. PROVIDE 1/2" SILL
- BOLT AT 24" O.C. AND 16D NAILS AT 4 O.C. FOR SOLE PLATE NAILING. PROVIDE (2)-2X8 SP GRADE 1 LUMBER HEADERS AT THE DOOR OPENINGS W/ (2)-2X6 JACK STUDS AND ADDITIONAL (2)-2X6 KING
- STUDS AT THE END OF SHEAR WALLS. 10. PROVIDE 2X6 SOUTHERN PINE FUR WALL STUDS @16" O.C.
- UNLESS NOTED OTHERWISE PROVIDE HORIZONTAL 2 x BLOCKING BETWEEN STUDS AT MID HEIGHT OR AT 1/3 THE HEIGHT OF WALL STUDS (WHICHEVER IS LESSER SPACING) AND AT ALL SHEATHING JOINTS. REFER TO ARCHITECTURAL DRAWINGS FOR ANY ADDITIONAL NON-STRUCTURAL BLOCKING REQUIRED.





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ATCHILDCARE 46055 SHANNON'S EXCLI BUILDING ADDITIO 6633 W 900 N MCCORDSVILLE, II

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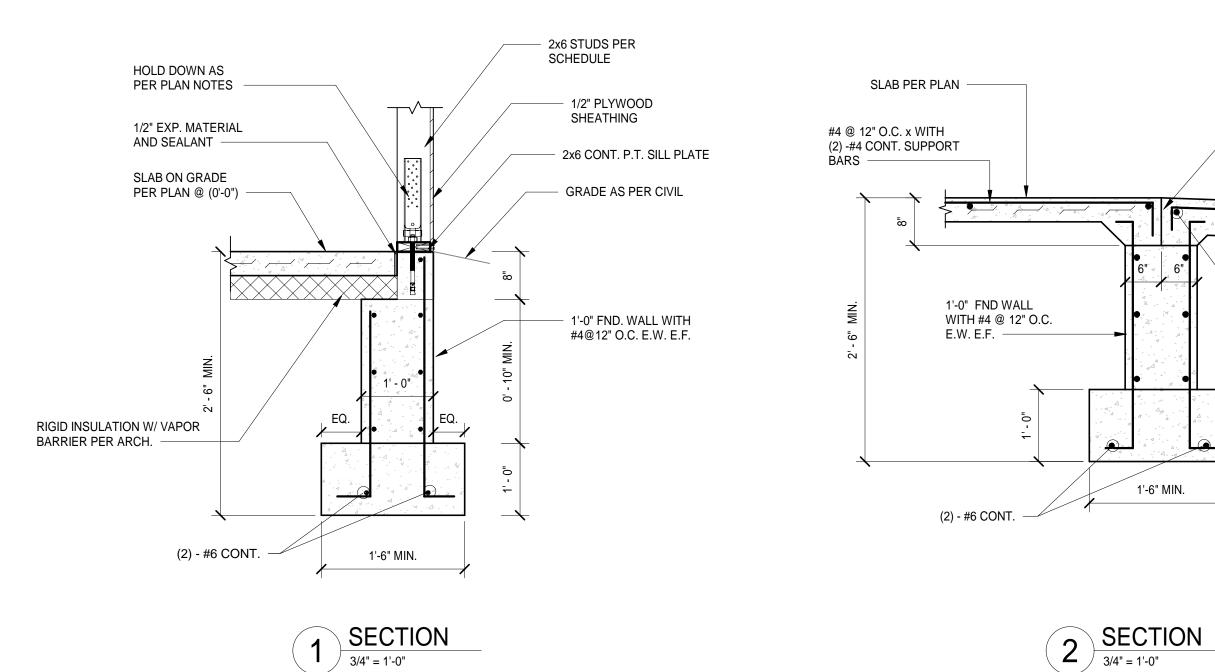
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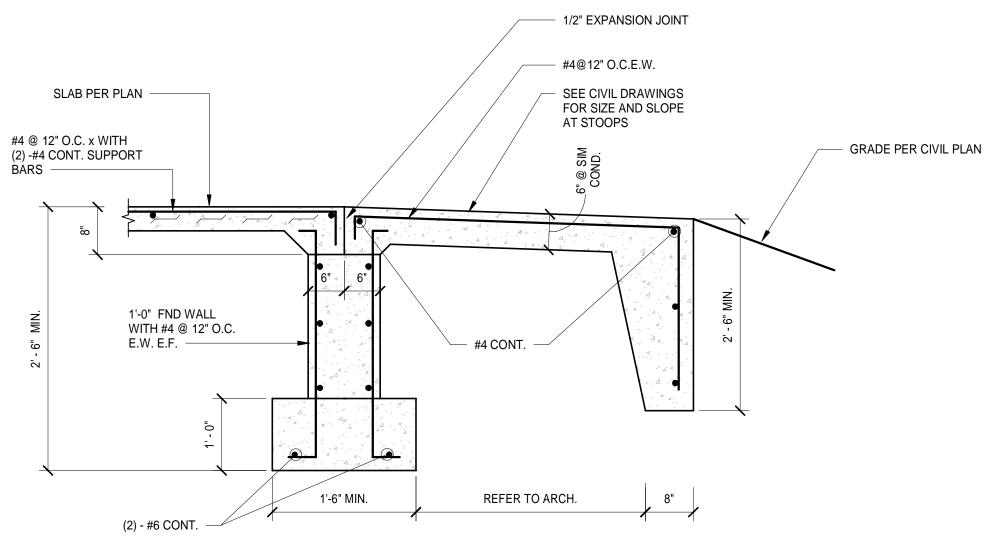
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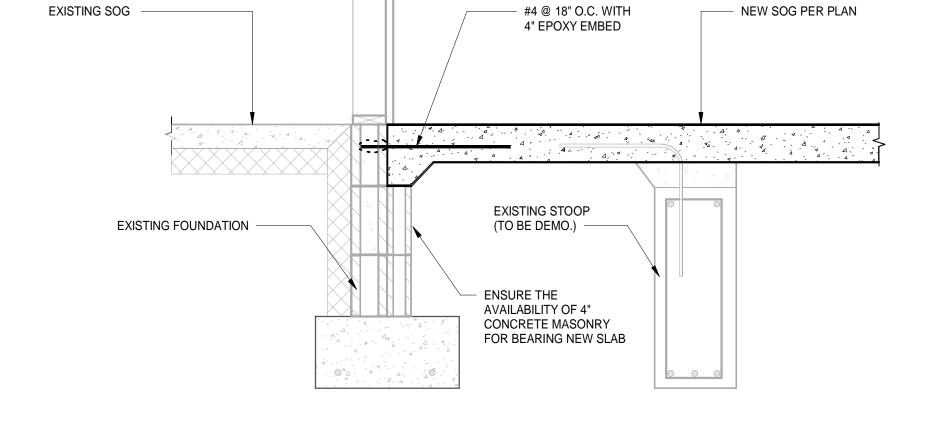
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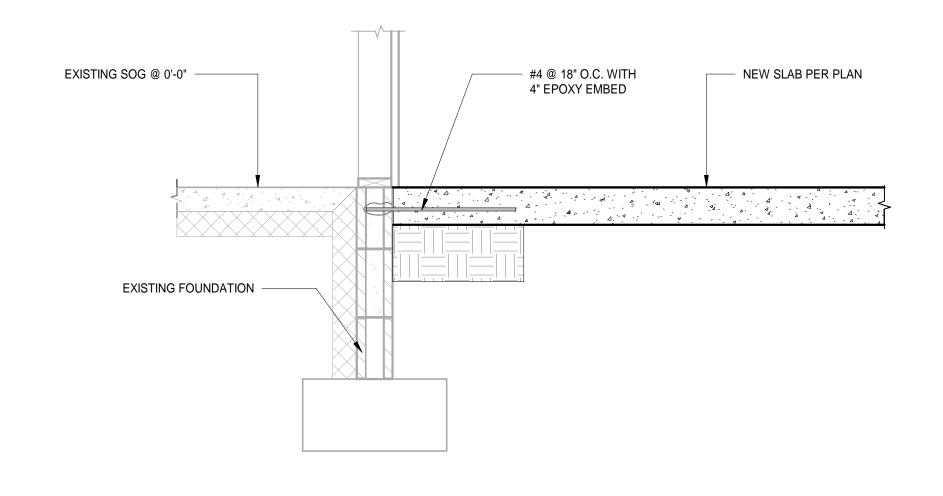
PLANS

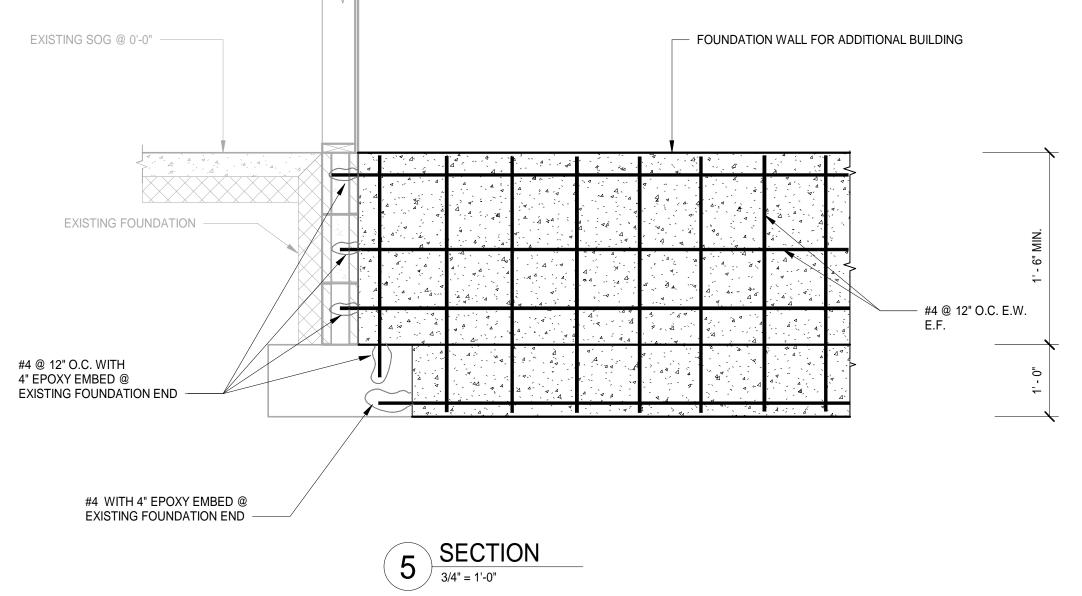












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JPS CONSULTING
ENGINEERS, LLC
9365 Counselors Row, Suite 116
Indianapolis, IN 46240



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SHANNON'S EXCLUSIVE CHILDCARE AT BUILDING ADDITION 6633 W 900 N MCCORDSVILLE, IN 46055

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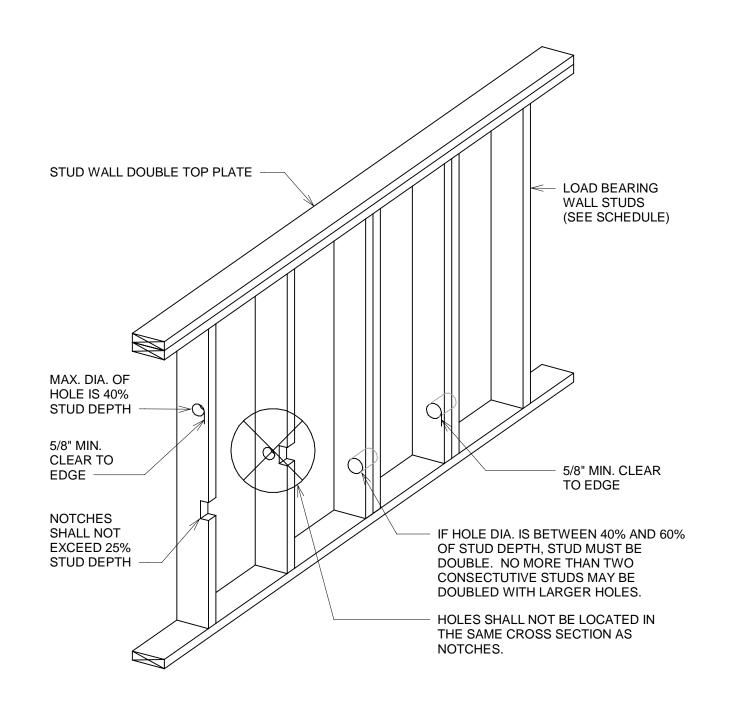
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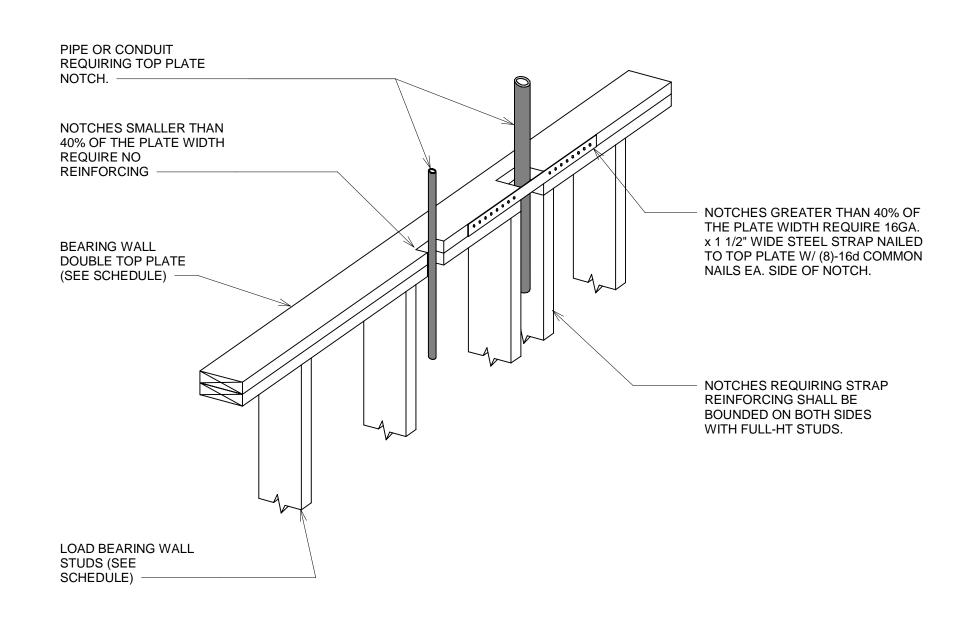
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FOUNDATION DETAILS

S300

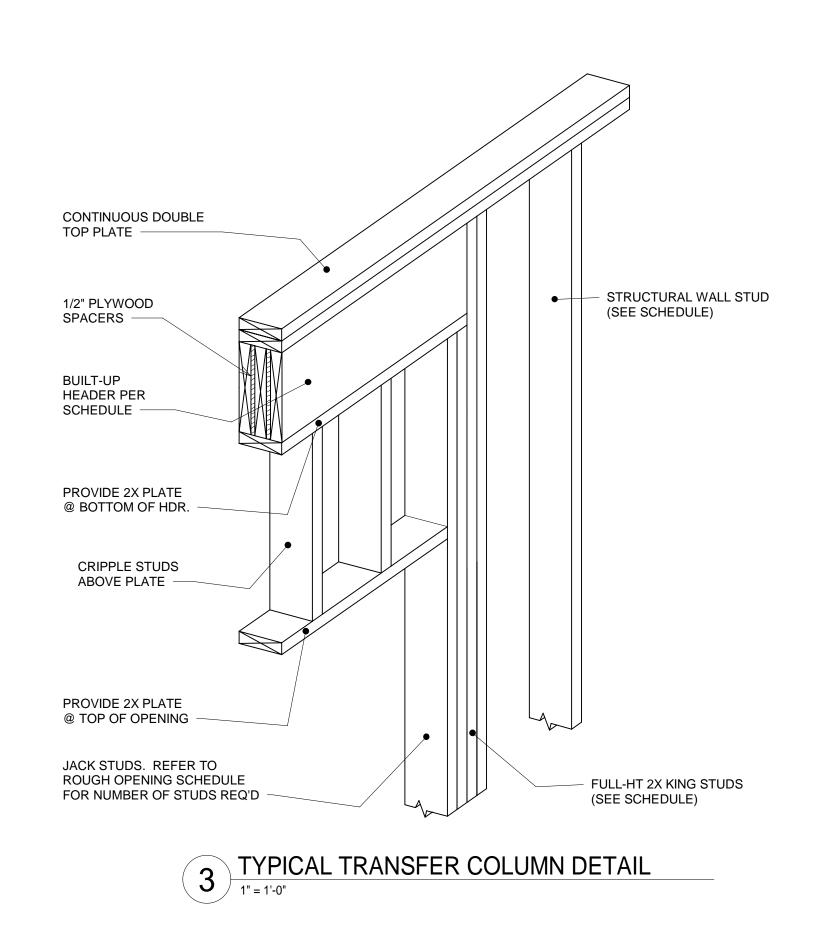


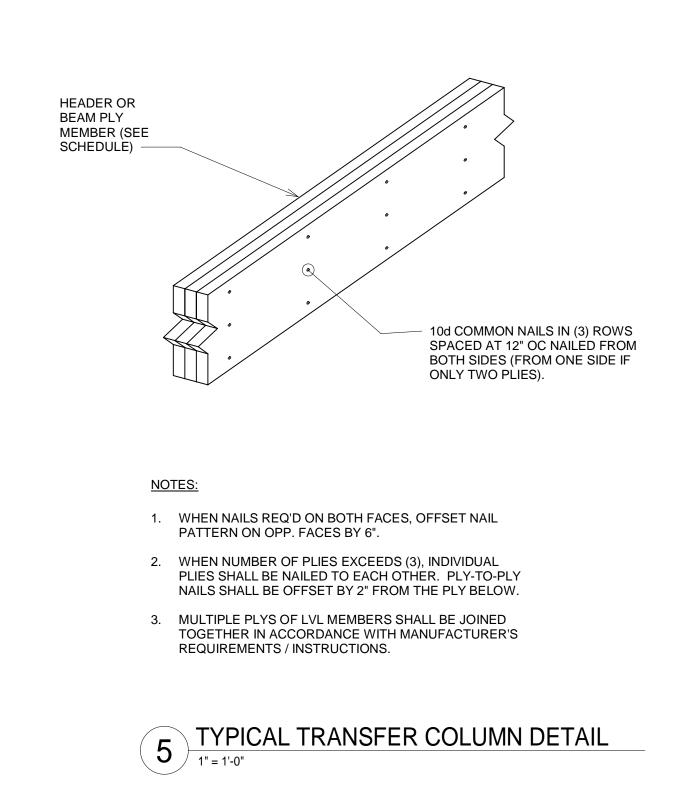


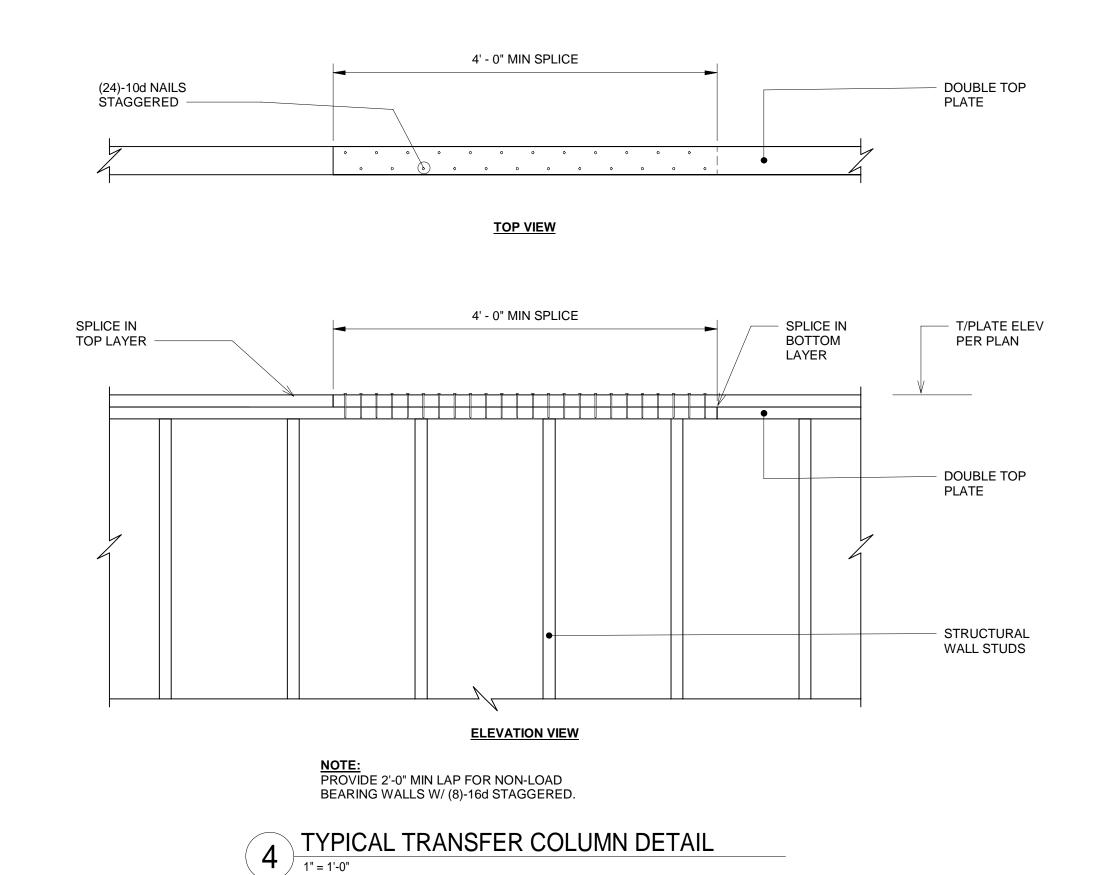


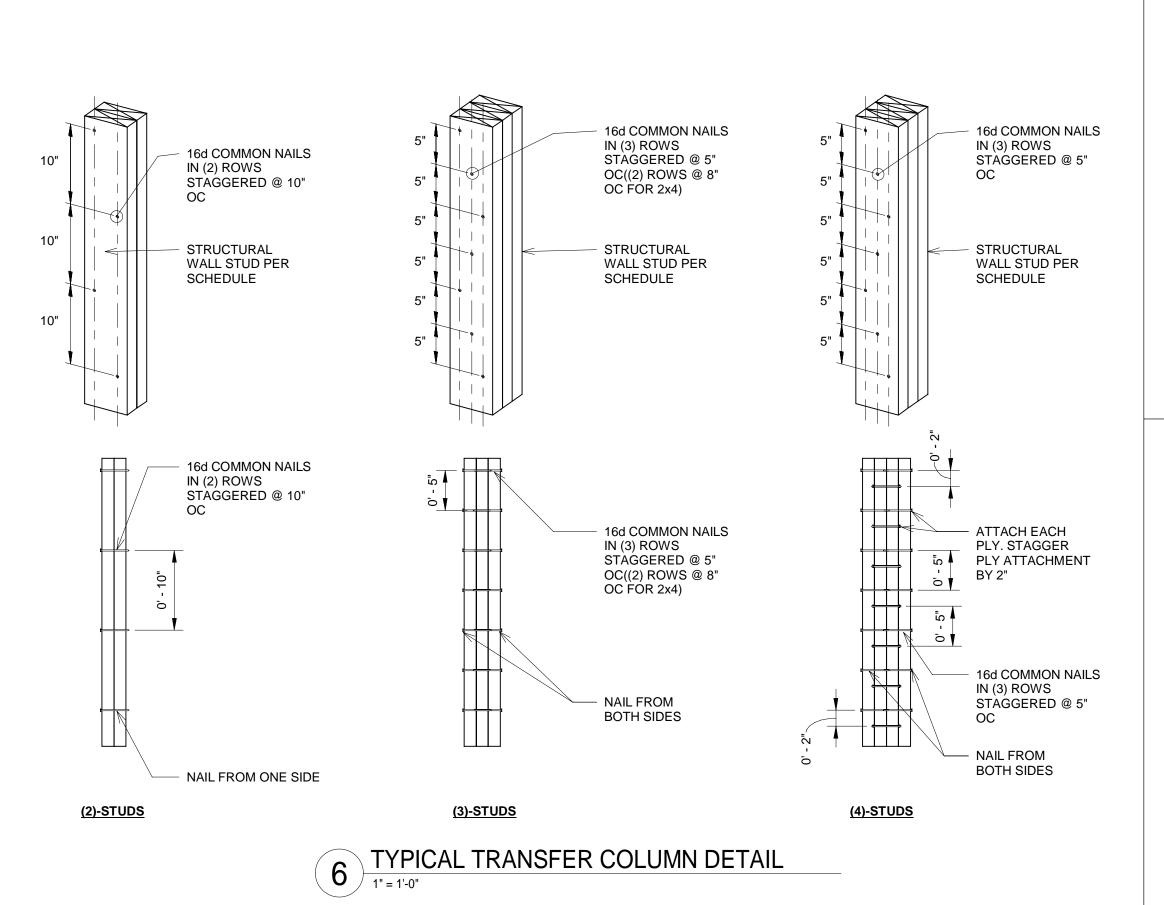
2 TYPICAL TRANSFER COLUMN DETAIL

1" = 1'-0"













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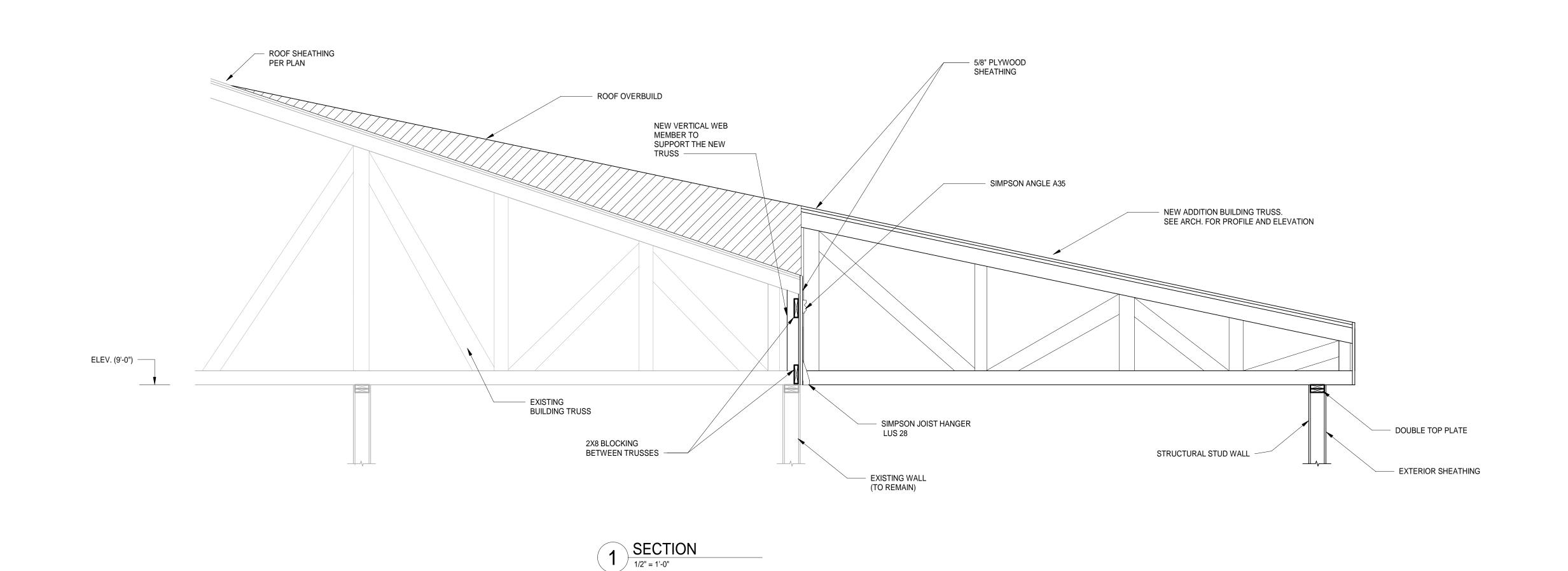
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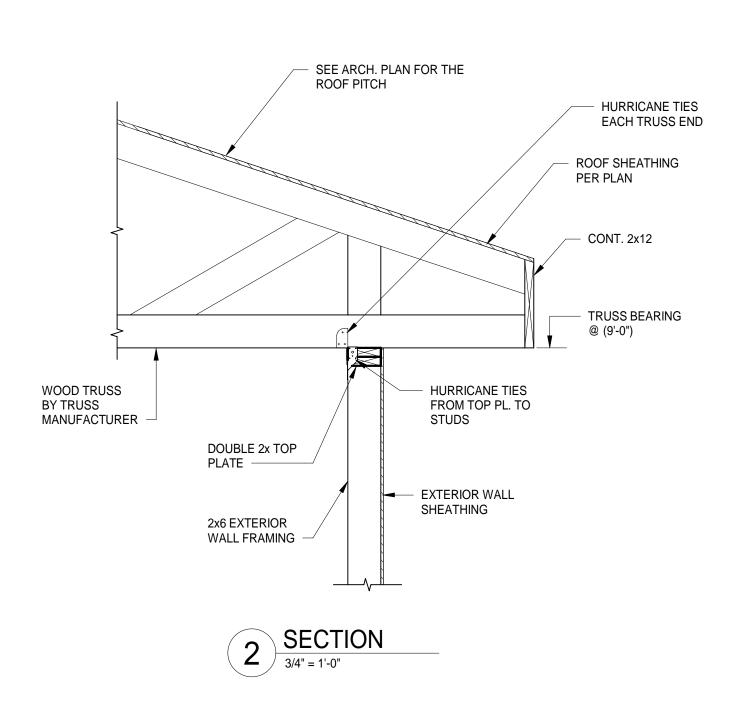
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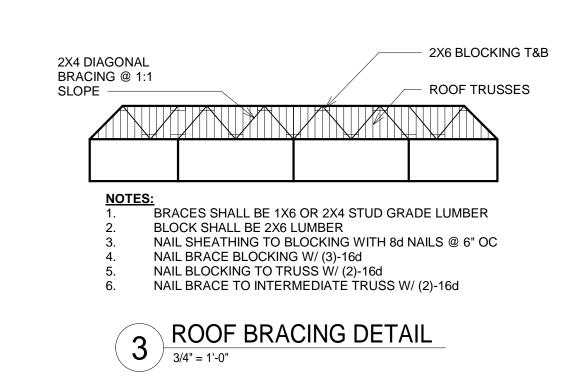
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TYPICAL WOOD FRAMING DETAILS







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GEIST CHILDCARE 46055 SHANNON'S EXCLI BUILDING ADDITIO 6633 W 900 N MCCORDSVILLE, II

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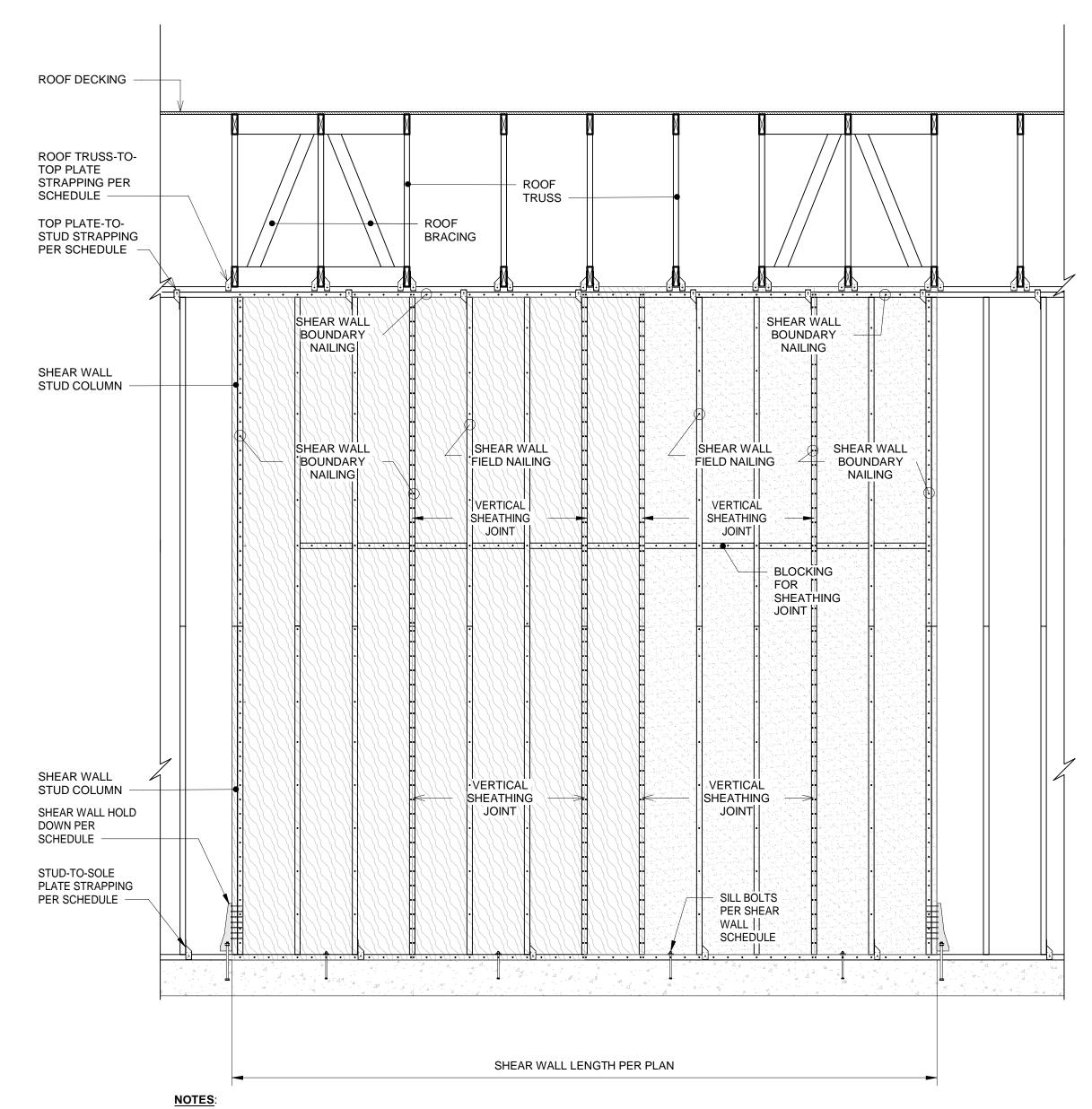
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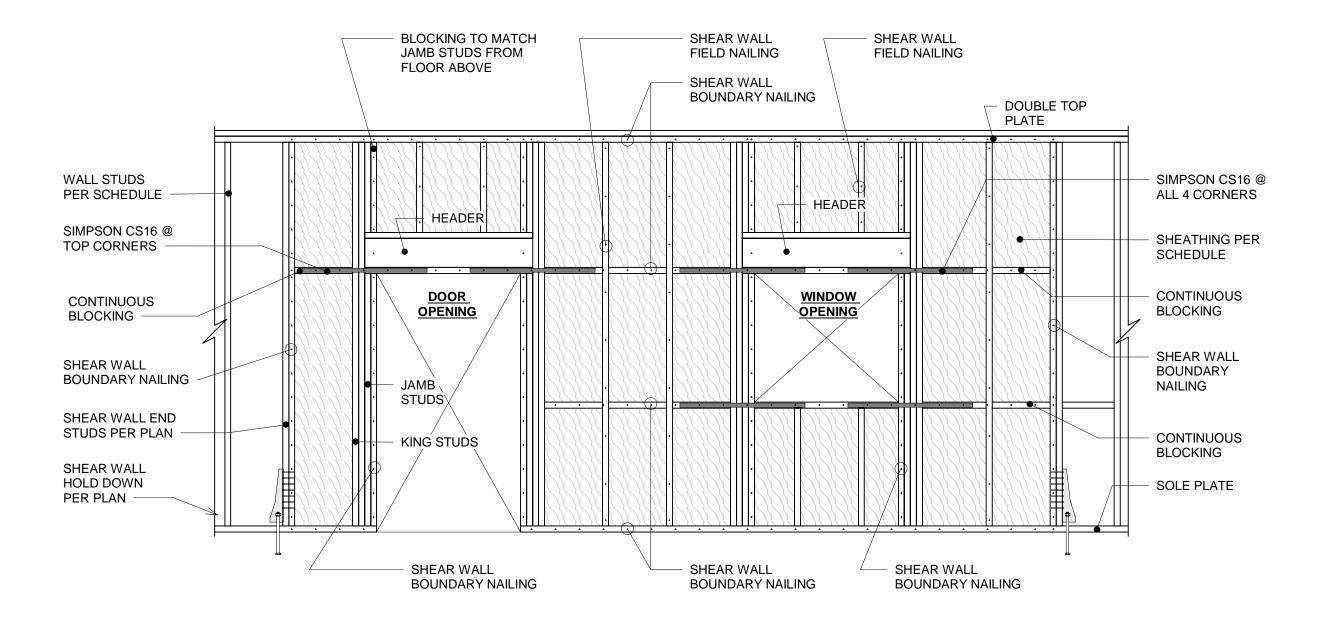
WOOD FRAMING DETAILS



- 1. REFER TO SHEAR WALL PLANS FOR LOCATION, EXTENTS AND TYPES OF SHEAR WALLS REQURIED.
- 2. LAP STRUCTURAL SHEATHING 2'-0" BELOW TOP PLATE. PROVIDE HORIZONTAL BLOCKING ALONG THE HORIZONTAL SHEATHING JOINT AND NAIL IN ACCORDANCE WITH THE SCHEDULED SHEAR WALL BOUNDARY NAILING.

TYPICAL SHEAR WALL ELEVATION - PERPENDICULAR TO FRAMING

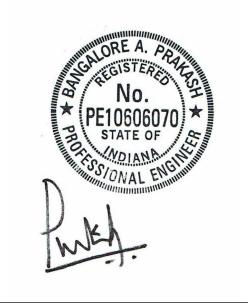
1/2" = 1'-0"



3 TYPICAL SHEAR WALL OPENING ELEVATION

1/2" = 1'-0"





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HANNON'S EXCLUSIVE CHILDCARE UILDING ADDITION 633 W 900 N 1CCORDSVILLE, IN 46055

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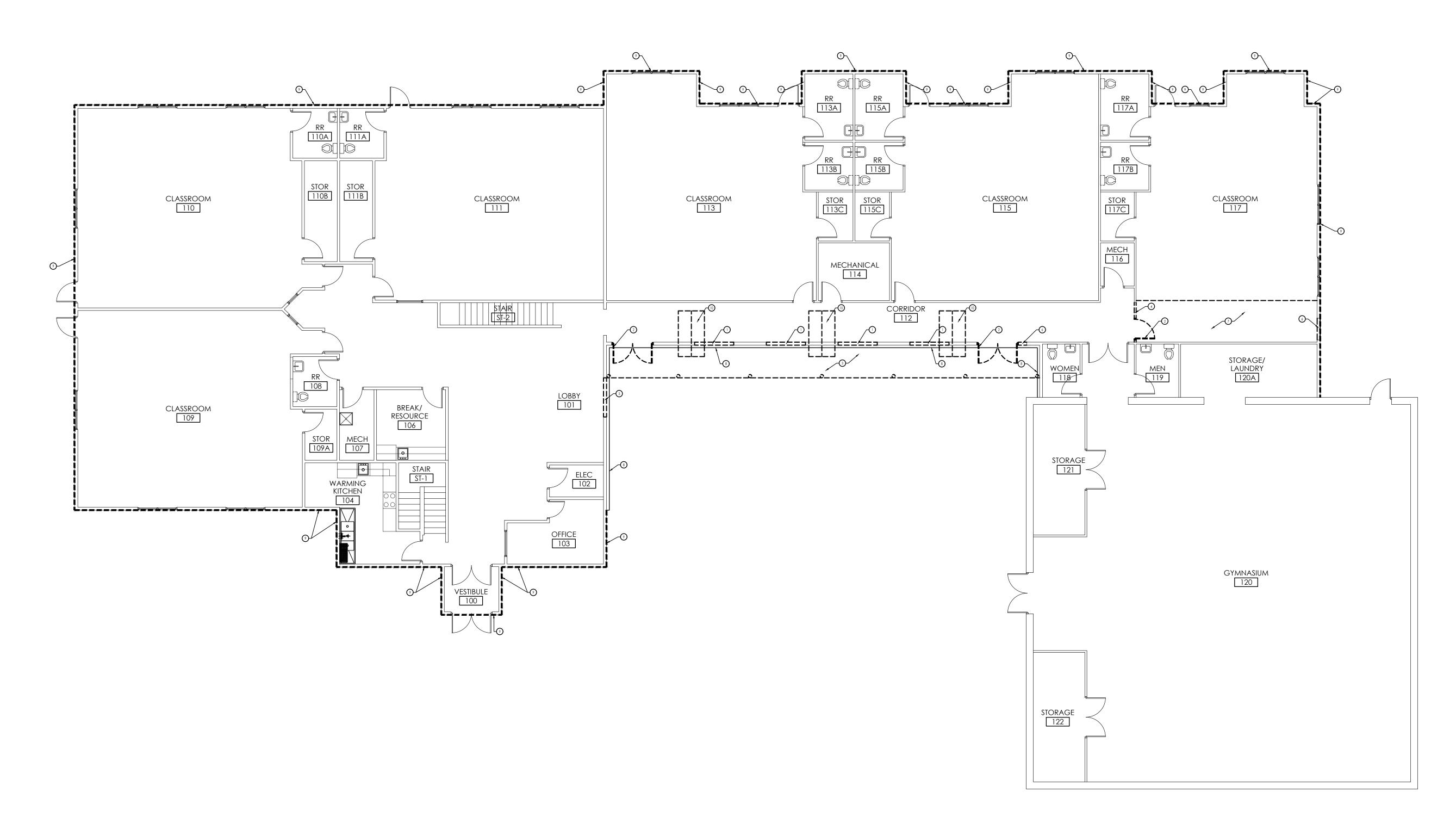
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SHEAR WALL DETAILS

S312

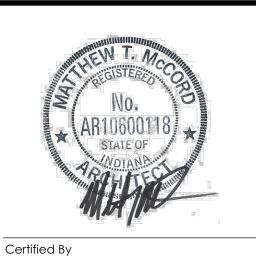


KEYED DEMOLITION NOTES:

- 1. SALVAGE EXISTING WINDOW FOR RE-INSTALLATION IN BUILDING ADDITION
- 2. REMOVE DOOR/FRAME
- 3. REMOVE EXISTING WALKWAY OVERHANG STRUCTURE. PARTIALLY REMOVE ROOF TRUSSES AT EXISTING OVERHANG. SEE STRUCTURAL DRAWINGS FOR CLARIFICATION. REMOVE ASPHALT ROOFING DOWN TO EXISTING SHEATHING IN AREA OR ROOF OVERBUILD ON ADDITION.
- 4. REMOVE WALL AS REQUIRED TO ACCOMMODATE NEW CORRIDOR WALL
- 5. REMOVE EXISTING WINDOW
- 6. REMOVE WALL AS REQUIRED TO ACCOMMODATE NEW DOOR/FRAME
- 7. REMOVE EXISTING FLOORING AND PREPARE SLAB FOR NEW VCT FLOORING
- 8. REMOVE EXISTING EXTERIOR FINISHES DOWN TO EXISTING STUDS WHERE ADDITION WHERE BE CONSTRUCTED. PREPARE FOR INSTALLATION OF NEW GYPSUM BOARD.
- 9. EXISTING EXTERIOR FACADE DEMOLITION NOTES: EXISTING BRICK REMAINS. REMOVE EXISTING VINYL SIDING DOWN TO EXISTING WEATHER BARRIER. EXAMINE INTEGRITY OF WEATHER BARRIER AND PREPARE FOR INSTALLATION OF NEW FINISHES AS INDICATED ON EXTERIOR ELEVATION
- 10. REMOVE EXISTING ROOF DORMER/WINDOW STRUCTURE. PATCH / REPAIR ROOF SHEATHING AS NEEDED FOLLOWING REMOVAL.







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SHANNON'S EXCLUSIVE CHILDCARE AT GEIST BUILDING ADDITION 6633 W 900 N MCCORDSVILLE, IN 46055

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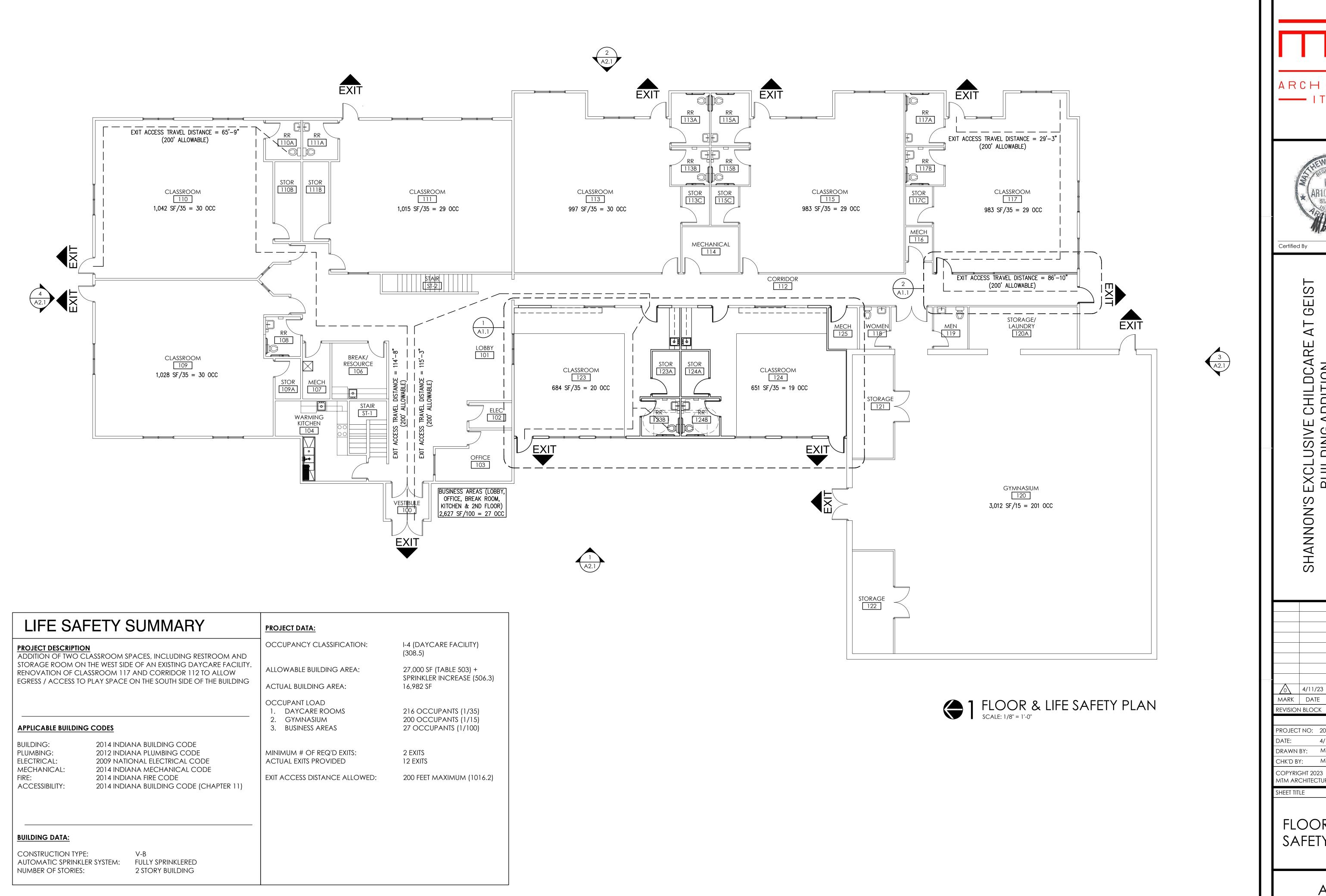
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DEMOLITION PLAN

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FLOOR & LIFE SAFETY PLAN

A1.0

INTER	INTERIOR FINISH SCHEDULE											
ROOM NO.	ROOM NAME	FLOOR FINISH	WALL BASE	WALL (NORTH)	WALL (EAST)	WALL (SOUTH)	WALL (WEST)	CEILING	NOTES			
112	CORRIDOR	VCT	4" VINYL COVE	PAINT	PAINT	PAINT	PAINT	PAINT	EXTEND VCT TO EXTERIOR WALL. MATCH EXISTING			
117	CLASSROOM	ETR	4" VINYL COVE	PAINT	PAINT	PAINT	PAINT	PAINT	CUT BACK CARPET IN AREA OF NEW CORRIDOR			
123	CLASSROOM	CPT TILE/LVT	4" VINYL COVE	PAINT	PAINT	PAINT	PAINT	PAINT	CPT TILE: MATCH EXISTING / LVT: ARMSTRONG AMERICAN CHARM 6 U5010 WEATHERED GRAY			
123A	STORAGE	LVT	4" VINYL COVE	PAINT	PAINT	PAINT	PAINT	PAINT	LVT: ARMSTRONG AMERICAN CHARM 6 U5010 WEATHERED GRAY			
123B	RESTROOM	LVT	4" VINYL COVE	PAINT	PAINT	PAINT	PAINT	PAINT	LVT: ARMSTRONG AMERICAN CHARM 6 U5010 WEATHERED GRAY			
124	CLASSROOM	CPT TILE/LVT	4" VINYL COVE	PAINT	PAINT	PAINT	PAINT	PAINT	CPT TILE: MATCH EXISTING / LVT: ARMSTRONG AMERICAN CHARM 6 U5010 WEATHERED GRAY			
124A	STORAGE	LVT	4" VINYL COVE	PAINT	PAINT	PAINT	PAINT	PAINT	LVT: ARMSTRONG AMERICAN CHARM 6 U5010 WEATHERED GRAY			
124B	RESTROOM	LVT	4" VINYL COVE	PAINT	PAINT	PAINT	PAINT	PAINT	LVT: ARMSTRONG AMERICAN CHARM 6 U5010 WEATHERED GRAY			
125	MECHANICAL	SEALED CONC.	4" VINYL COVE	PAINT	PAINT	PAINT	PAINT	PAINT				

DOOR HARDWARE SET FUNCTIONS:

CLASSROOM LOCKSET

02 - EXTERIOR DOORS (123C, 124C)

ALUMINUM THRESHOLD

HINGES
PASSAGE LEVER SET
SILENCERS

EXTERIOR LEVER (STOREROOM) FUNCTION

WEATHERSTRIPPING (ACOUSTICAL)

PANIC HARDWARE / EXTERIOR PULL

03 - STORAGE/MECHANICAL ROOM DOORS (123A, 124A, 125) *MATCH EXISTING SIMILAR CONDITIONS AT MECHANICAL ROOMS

04 - RESTROOM DOORS (123B, 124B)
*MATCH EXISTING SIMILAR CONDITIONS AT RESTROOM DOORS

PRIVACY LOCKSET & OCCUPIED INDICATOR

05 - EXTERIOR STOREFRONT DOOR (112) *MATCH EXISTING SIMILAR EXTERIOR STOREFRONT DOORS

CLOSER

HINGES CLOSER PANIC DEVICE

SILENCERS

CLOSER

SILENCERS

SILENCERS

CONTINUOUS HINGE

WEATHERSTRIPPING ALUMINUM THRESHOLD

SILENCERS OVERHEAD STOP

01 - CLASSROOM DOORS (117, 123, 124)

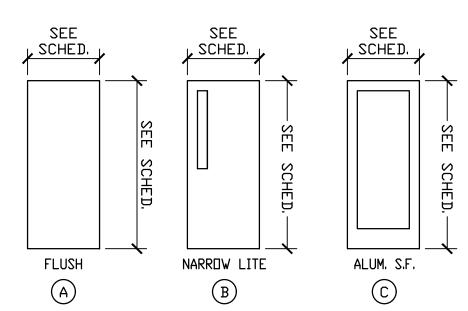
*MATCH EXISTING SIMILAR CONDITIONS AT CLASSROOM DOORS HINGES

*MATCH EXISTING SIMILAR CONDITIONS AT EXTERIOR CLASSROOM DOORS

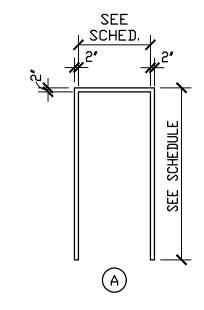
DC	DOOR SCHEDULE											
DOOR		DOOR					FRAME	FIRE	HDWE	DOOR		
#	TYPE	ELEV	SIZE (W X H)	MATERIAL	GLAZ.	ELEV	MATERIAL	RATING	SET	#		
112	SINGLE	С	3'-0" X 7'-0"	ALUM.	G1	Α	ALUM.	-	05	112		
117	SINGLE	Α	3'-0" X 7'-0"	S.C.W.	-	Α	H.M.	-	01	117		
123	SINGLE	Α	3'-0" X 7'-0"	S.C.W.	-	Α	H.M.	-	01	123		
123A	SINGLE	Α	3'-0" X 7'-0"	S.C.W.	-	Α	H.M.	-	03	123A		
123B	SINGLE	А	3'-0" X 7'-0"	S.C.W.	-	Α	H.M.	-	04	123B		
123C	SINGLE	А	3'-0" X 7'-0"	I.H.M.	-	Α	H.M.	-	02	123C		
124	SINGLE	А	3'-0" X 7'-0"	S.C.W.	-	Α	H.M.	-	01	124		
124A	SINGLE	А	3'-0" X 7'-0"	S.C.W.	-	Α	H.M.	-	03	124A		
124B	SINGLE	Α	3'-0" X 7'-0"	S.C.W.	-	Α	H.M.	-	04	124B		
124C	SINGLE	Α	3'-0" X 7'-0"	I.H.M.	-	Α	H.M.	-	02	124C		
125	SINGLE	А	3'-0" X 7'-0"	S.C.W.	-	Α	H.M.	-	03	125		

ABBREVIATIONS

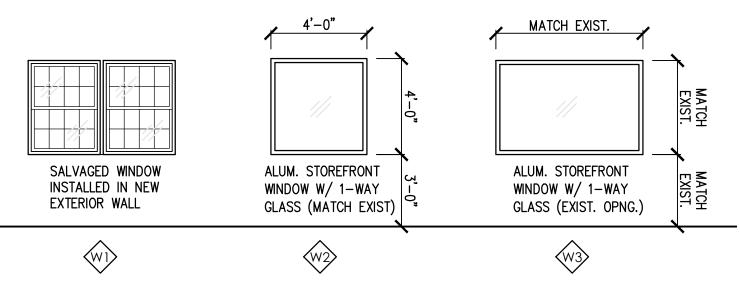
H.M. - HOLLOW METAL S.C.W. - SOLID CORE WOOD ALUM - ALUMINUM STOREFRONT I.H.M. - INSULATED HOLLOW METAL G1 - 1" INSULATING TEMPERED GLAZING



DE DOOR ELEVATIONS SCALE: 1/4" = 1'-0"



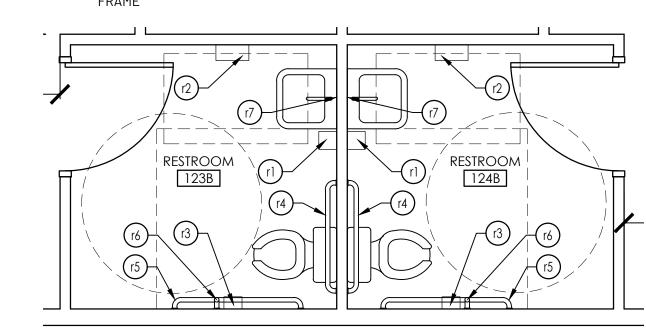
FE FRAME ELEVATION SCALE: 1/4" = 1'-0"



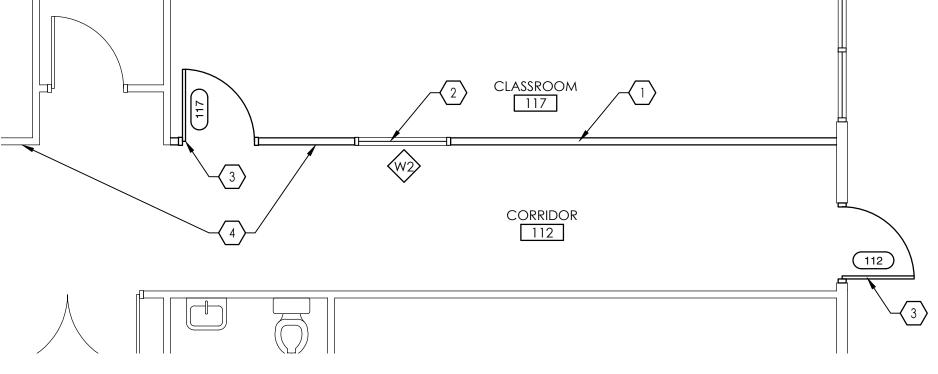
WE WINDOW ELEVATIONS SCALE: 1/4" = 1'-0"

TOILET ACCESSORIES:

- r1 WALL MOUNTED SOAP DISPENSER
- r2 WALL MOUNTED PAPER TOWEL DISPENSER
- WALL HOUNTED! AT EN TOWER BIOT ENOUN
- r3 WALL MOUNTED TOILET TISSUE DISPENSER
- r4 36" GRAB BAR
- r5 42" GRAB BAR
- r6 18" VERTICAL GRAB BAR
- r7 24"X36" WALL MOUNTED MIRROR, STAINLESS STEEL CHANNEL

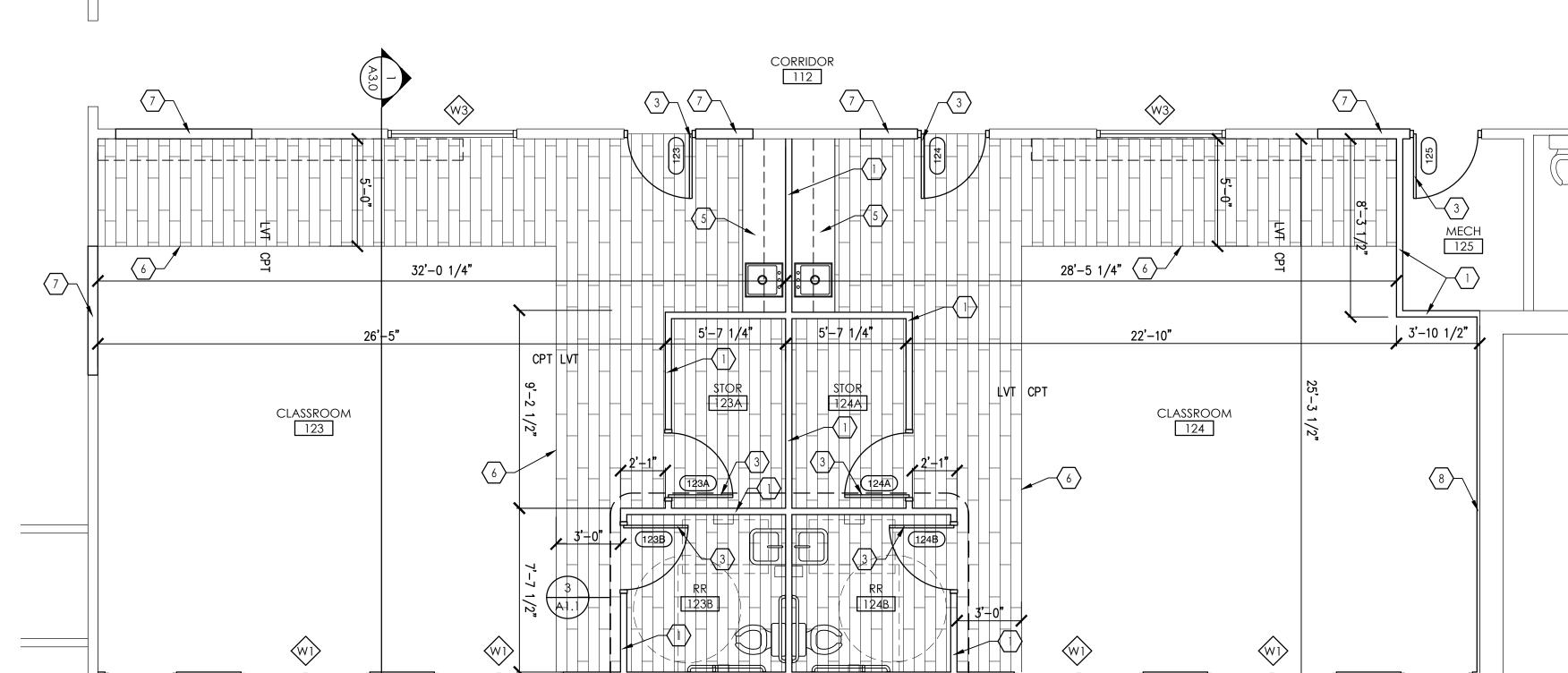








7**'**–8"



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

KEYED PLAN NOTES:

A. VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO

CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE

B. ALL CEILINGS IN BUILDING ADDITION TO BE 5/8" PAINTED GYPSUM

PROVIDE WATERTIGHT CONDITIONS AROUND BUILDING ADDITION

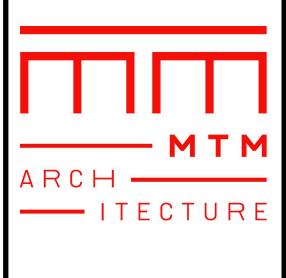
C. PROVIDE PRE-FINISHED METAL FLASHINGS AS REQUIRED TO

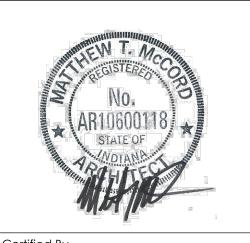
WHERE IT INTERFACES WITH EXISTING CONSTRUCTION.

ARCHITECT IMMEDIATELY FOR RESOLUTION.



- 1. 2X4 WOOD STUDS @ 16" O.C. WITH 1/2" GYPSUM BOARD EACH SIDE TO DECK ABOVE. 4" VINYL COVE BASE TO MATCH EXISTING. USE MOISTURE RESISTANT GYPSUM BOARD IN RESTROOM AREAS
- 2. 4'X4' ALUMINUM STOREFRONT WINDOW WITH ONE WAY GLASS (MATCH EXISTING)
- 3. NEW DOOR AND FRAME (SEE DOOR SCHEDULE)
- 4. ALIGN EXISTING AND NEW FINISHES
- 5. PLASTIC LAMINATE CABINETS (UPPER/LOWER) AND PLASTIC LAMINATE COUNTERTOP
- 6. VINYL TRANSITION STRIP (LVT TO CARPET)
- 7. NEW WOOD STUDS/GYPSUM BOARD (PAINTED) TO MATCH EXISTING WALL, INFILL EXISTING OPENING.
- 8. 1.5" METAL STUD FURRING WITH 1/2" GYPSUM BOARD, PAINTED





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SHANNON'S EXCLUSIVE CHILDCARE AT GEIS'
BUILDING ADDITION
6633 W 900 N
MCCORDSVILLE, IN 46055

4/11/23 PERMIT SET

MARK DATE DESCRIPTION

REVISION BLOCK

DATE: 4/11/2023

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PROJECT NO: 2023008

ENLARGED FLOOR PLANS

A1.1







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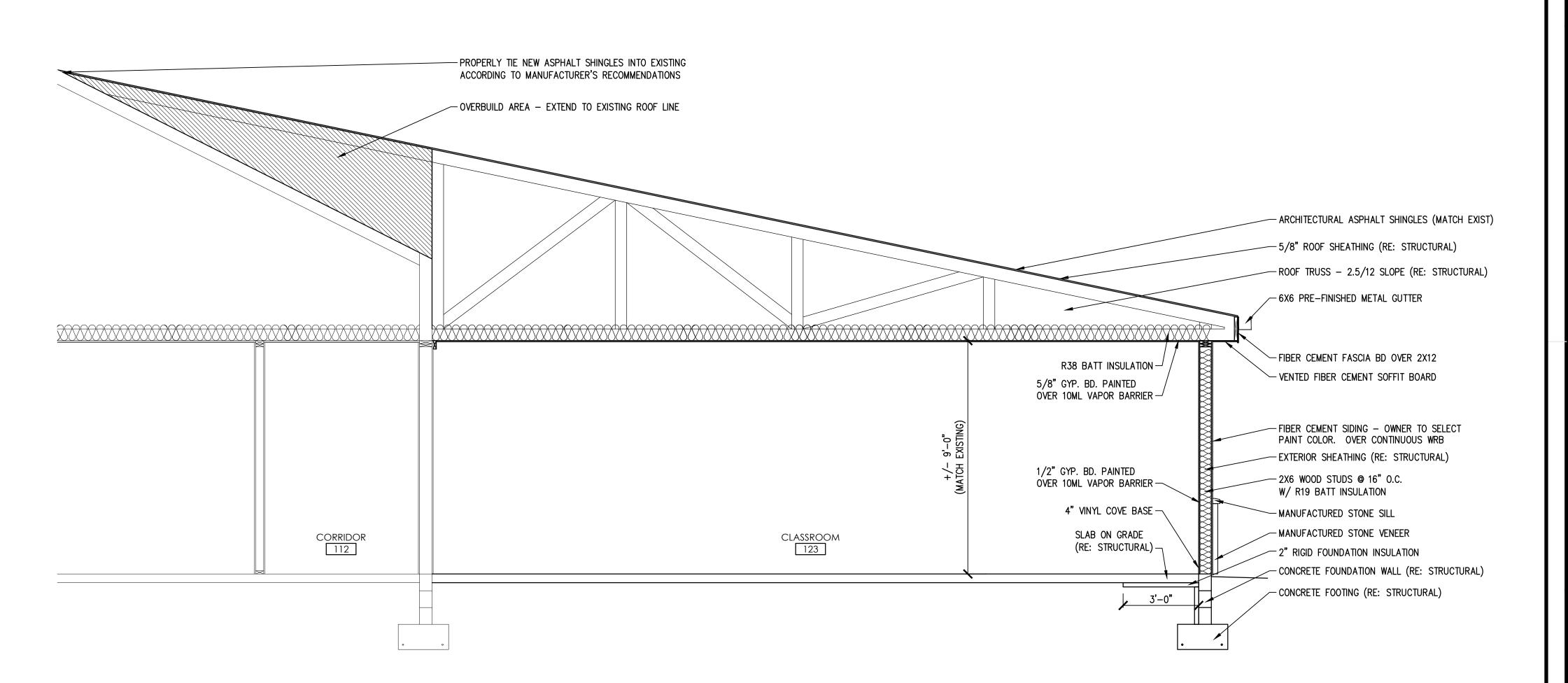
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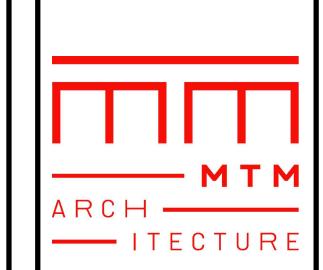
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EXTERIOR ELEVATIONS

A2.1



BUILDING SECTION SCALE: 3/8" = 1'-0"





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BUILDING ADDITION
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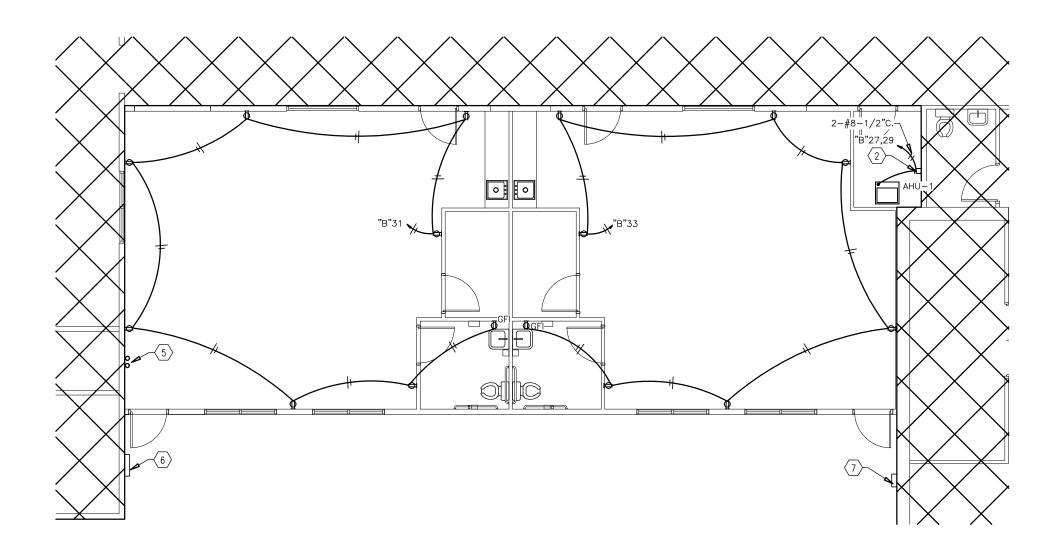
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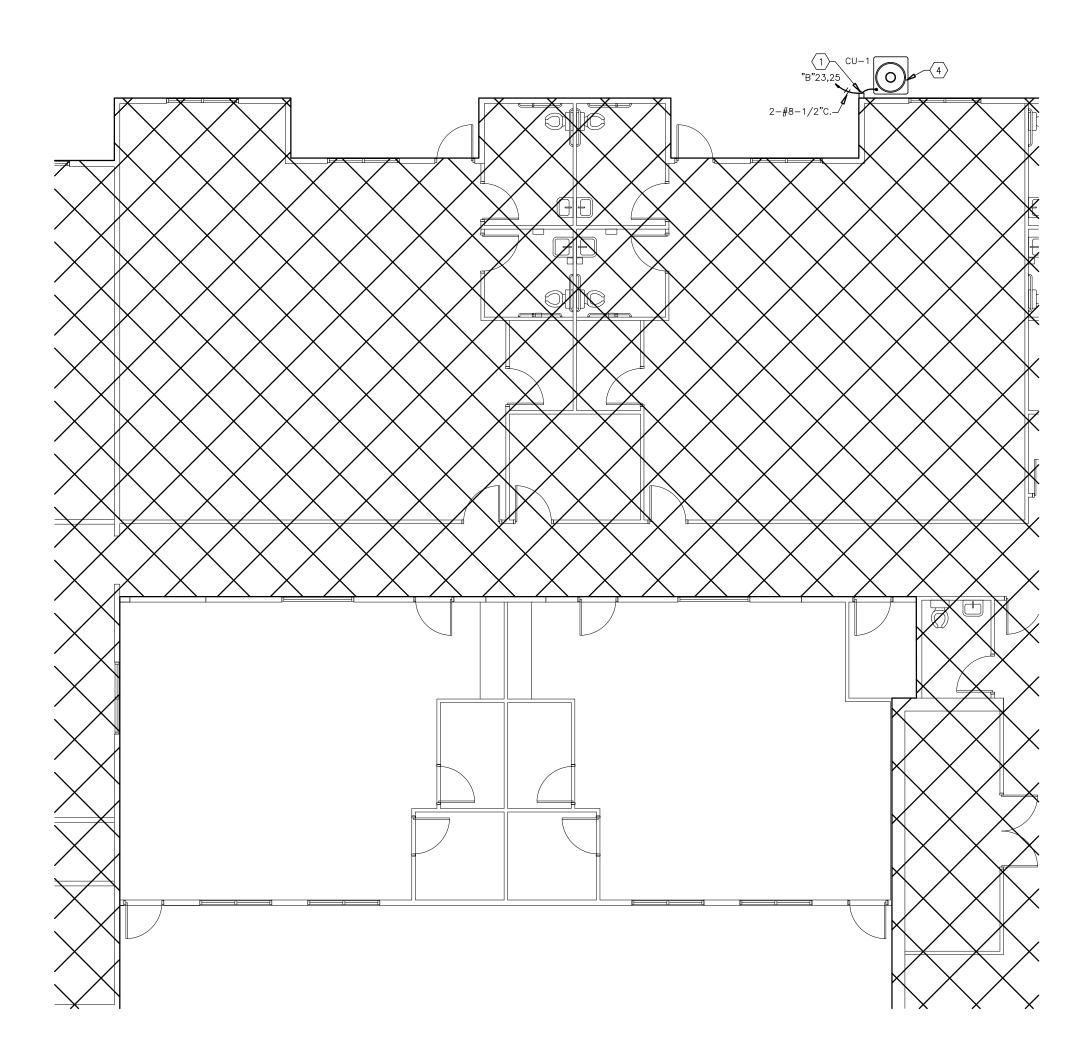
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BUILDING SECTION

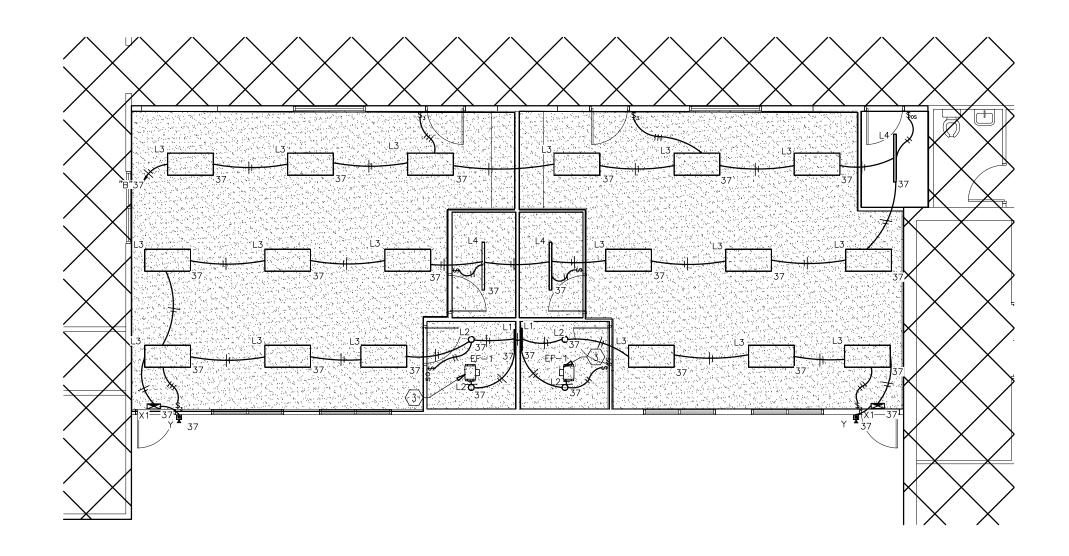
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FLOOR PLAN ELECTRICAL WORK SCALE: 1/8" = 1'-0"



FLOOR PLAN ELECTRICAL WORK(CU-1)
SCALE: 1/8" = 1'-0"



FLOOR PLAN LIGHTING WORK SCALE: 1/8" = 1'-0"

Schedule								
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lumens Per Lamp	Light Loss Factor	Wattage
	L1	2	Lithonia lighting	FMVCSL 24IN 30K	2ft LED CONTEMPORARY VANITY SQUARE 3000K	1303	0.95	17.68
	L2	4	Lithonia Lighting	WF6 LED 35K	6" Ultra-Thin LED Wafer Downlight, 3500K CCT, 120V	1159	0.95	13.4
	L3	18	Lithonia Lighting	CPX 2X4 ALO8 SWW7 3500K Med Lumen	CPX 2X4 Switchable Panle 3500K Medium Lumen	4679	0.95	36.8
	L4	3	Lithonia Lighting	CSS L48 ALO3 MVOLT SWW3 80CRI (4000LM 3500K)	Contractor LED Single Strip Light, 48", Switchable lumens (3000LM / 4000LM /5000LM), 120-277V, Switchable White (3500K, 4000K, 5000K), 80CRI, Set to 4000LM 3500K	4088	0.95	34.2
\bowtie	X1	2	Lithonia Lighting	EDG-1-R	LED EDGE-LIT EXIST SIGN WITH 90 MIN. BATTERY BACKUP	-	-	3.8
	Y	2	DUAL LITE	EVO-DB	EXTERIOR REMOTE EMERGENCY HEAD	-	-	1.0

ELECTRICAL GENERAL NOTES

- A. ALL RECEPTACLES ARE MOUNTED AT +18" AFF (TO CENTER), UNLESS OTHERWISE NOTED.
- B. ALL COVER PLATES SHALL BE WHITE.
- C. ALL PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASES WHEN SUBJECT TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIED FOR FIRE STOPS ASTM—E814.
- D. PER ADAAG, THE HEIGHT OF ALL ELECTRICAL OUTLETS, SWITCHES, AND CONTROLS SHALL BE:

 MAXIMUM 48" ABOVE FINISHED FLOOR PER SECTION 4.2.5

 MINIMUM 15" ABOVE FINISHED FLOOR PER SECTION 4.27.3
- E. ALL EXISTING UNUSED ELECTRICAL WIRE, CONDUIT, AND EQUIPMENT SHALL BE REMOVED.
- F. ALL WIRES SHALL BE IN RIGID CONDUIT. FLEXIBLE CONDUIT AND MC CABLE
- CAN BE USED FOR FINAL CONNECTIONS. ROMEX IS NOT PERMITTED.

 G. MAXIMUM LOAD ON A 20 AMP CIRCUIT MUST NOT EXCEED 80% OR 16 AMPS.

KEY NOTES (#)

- 1. NEW DISCONNECT SWITCH ON EXTERIOR OF BUILDING FOR CU-1. SQUARE D, MODEL #H222NRB. (60/50, NEMA 3R)
- 2. NEW DISCONNECT SWITCH FOR FURNACE IN MECHANICAL ROOM. SQUARE D, MODEL #HU22N. (60/35, NEMA 1)
- 3. EXHAUST FAN (EF-1) SHALL BE CONNECTED TO AND CONTROLLED WITH LIGHTING IN AREA.
- 4. COORDINATE BEST LOCATION FOR CU-1 WITH OWNER PRIOR TO INSTALLATION. PROVIDE FENCING IF INSIDE PLAY GROUND.
- 5. LOCATION OF EXISTING SERVICE CONDUITS RELOCATED TO BE COVERED. COORDINATE WITH ARCHITECT.
- RELOCATE AND RECONNECT TELEPHONE/IT SERVICE TO LOCATION SHOWN.
 RELOCATE AND RECONNECT SPRINKLER ALARM BELL TO LOCATION SHOWN.

35 WHITTINGTON DRIVE
SUITE 100
BROWNSBURG, IN 46112
WWW.SPENCERMEP.COM



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FLOOR PLAN -ELECTRICAL WORK

F1 1

PANEL DIRECTORIES

		•	AI1	EL DIKE	0.0			
PANEL EX. PANEL "B"						LUG	S	EX. 225 AMP
120/240 VOLT 1 PHASE	3 WI	<u>IRE</u>				MAII	N B	REAKER <u>EX. M-L-0</u>
USE	CKT. NO.	LOAD	BKR SIZE	АВ	BKR SIZE		CKT. NO.	USE
EX. HEAT UNIT 1	1	_	60/2	<u></u>	30/2	_	2	EX. HEAT UNIT 1
	3	_	V	<u> </u>		_	4	5
EX. HEAT UNIT 2	5	_	60/2	<u> </u> ^++^	30/2	_	6	EX. HEAT UNIT 2
	7	_	V	<u> </u>		_	8	5
EX. MAIN ENTRY LIGHTS	9	_	20/1	<u></u>	20/1	_	10	EX. SIGN
EX. BREAK/RR LIGHTS	11	_		<u> </u>		_	12	EX. CR 1 LIGHTS
EX. 2ND FLOOR EM LIGHTS	13	_		<u></u>	V	_	14	EX. 2ND FLOOR RECP.
EX. CR 2 COUNTER FRIDGE	15	_		<u> </u>	40/2	_	16	EX. AC UNIT 3
EX. CR 2 GFCI	17	_	V	<u></u>	- V	_	18	\$
EX. WATER HEATER	19	_	30/2	<u></u>	30/2	_	20	EX. WATER HEATER
	21	_	V	<u></u>		_	22	5
NEW CU-1	23	3680	50/2	<u></u>	40/2	_	24	EX. AC UNIT 4
	25	3680		<u></u>		_	26	5
NEW AHU-1	27	4025	35/2	<u></u>		_	28	BLANK
	29	4025	V	<u></u>	_	_	30	
NEW CLASSROOM RECPT.	31	1440	20/1		_	_	32	
V	33	1440			_	_	34	
SPARE	35	_			_	_	36	
NEW LIGHTING	37	854	V			_	38	
SPARE	39	_		<u></u>		_	40	
	41	_	_			_	42	V

PHASE A: 9999 WATTS PHASE B: 9145 WATTS TOTAL: 19144 WATTS

BALANCE: 8.54 %

PANEL "B" FEEDER

LCL	INPUT	FACTOR	VA
signage, general lighting, cash register, etc.	854	1.25	1068
show-window or entry lighting (at show-window)	0	1.25	0
* track lighting	0	75.00	0
* track lighting (show-window)	0	75.00	0
** a.c. equipment (rtu, ahu, cu, etc.) - 240 volt, 1 ph	35	240.00	8400
Sub Total			9468
NON LCL			
water heater,unit heater, sensormatic, traffic counter, misc., etc.	0	1	0
*** receptacles	2880		2880
**** show window lighting requirement (in feeder only)	0		0
Sub Total			2880
TOTAL			12348

@ 240 volt - total amperage eqauls 51.4

* Track lighting calculated per 2014 NEC Article 220.43(B)

** MCA used includes 125% of largest motor per 2014 NEC Article 220.18(A)

*** Receptacles calculated per 2014 NEC Article 220.44 **** Show-window lighting calculated per 2014 NEC Article 220.43(A)

1st 10 kva @ 100%, All other @ 50% 200 VA per LF of show-window minus actual lighting installed

ELECTRICAL SYMBOLS

HUBBELL, MODEL #5262WTR

GROUND FAULT DUPLEX RECEPTACLE: HUBBELL, MODEL #GFTRST15W3

☐ DISCONNECT SWTICH

DUPLEX RECEPTACLE:

SINGLE POLE SWITCH: HUBBELL, MODEL #HBL-1221

3-WAY SWITCH: HUBBELL, MODEL #HBL-1223

OCCUPANCY SENSOR: LEVITON, MODEL #OSSNL-IDW.

T DATA OUTLET

ELECTRICAL ABBREVIATIONS

A AMPERE(S)

AFF ABOVE FINISHED FLOOR

AHJ ATHORITY HAVING JURISDICTION

AMPERES INTERRUPTING CURRENT

ATS AUTOMATIC TRANSFER SWITCH

CIRCUIT

CURRENT TRANSFORMER

DIST DISTRIBUTION

DS DISCONNECT SWITCH

EC ELECTRICAL CONTRACTOR

EXHAUST FAN

EMERGENCY

EX EXISTING EXR EXISTING RELOCATED

FUSE

FLA FULL LOAD AMPS

GARBAGE DISPOSAL

GC GENERAL CONTRACTOR

GFI GROUND FAULT INTERRUPTER

GND GROUND

HORSE POWER

IG ISOLATED GROUND

KVA KILOVOLT AMPERE(S)

KW KILOWATT(S)

MCA MINIMUM CIRCUIT AMPERE(S)

MCB MAIN CIRCUIT BREAKER

MLO MAIN LUG ONLY

NIGHT LIGHT

PH PHASE

PNL PANEL

RECPT RECEPTACLE

SW SWITCH

VOLT(S)

W WATT(S)

WP WEATHERPROOF

ELECTRICAL WORK NOTES

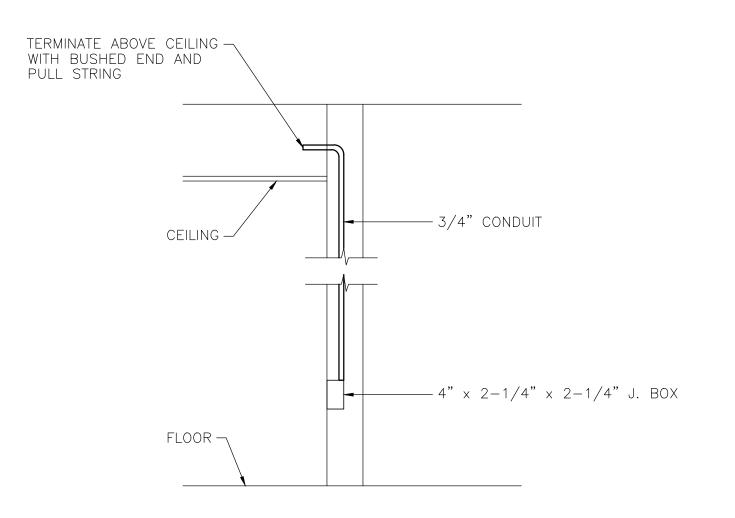
- 1. THE ENTIRE INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH THE OWNERS REQUIREMENTS. 2. ELECTRICAL WORK SHALL BE COMPLETE IN EVERY DETAIL AND ALL MISCELLANEOUS ITEMS OF MATERIAL AND LABOR NECESSARY TO COMPLETE THE WORK DESCRIBED, SHOWN OR REASONABLY IMPLIED ON DRAWINGS OR SPECIFICATIONS SHALL BE INCLUDED IN THE CONTRACT. CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO THE WORK WHERE REQUESTED BY THE OWNER, WHEN SUCH ADJUSTMENTS ARE NECESSARY TO PROPER OPERATION AND WITHIN THE INTENT OF THE CONTRACT.
- 3. ELECTRICAL CONTRACTOR SHALL VISIT THE SITE AND VIEW ALL EXISTING CONDITIONS BEFORE SUBMITTING A PROPOSAL FOR THE WORK AS DESCRIBED AND SHOWN. NO EXTRAS WILL BE ENTERTAINED FOR FAILURE
- 4. ELECTRICAL CONTRACTOR SHALL ACCEPT SOLE AND COMPLETE RESPONSIBILITY FOR CONDITIONS OF THE
- JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. 5. CONFORM TO GENERAL CONTRACTOR'S SCHEDULE AND INSTRUCTIONS THROUGHOUT THE DURATION OF THE PROJECT AS REQUIRED TO COMPLY IN EVERY WAY NECESSARY. AT NO TIME SHALL ANY WORK BE UNDERTAKEN WHICH SHALL INTERFERE WITH THE NORMAL OPERATION OF BUSINESS. ANY SHUTDOWN MUST OCCUR AFTER REGULAR BUSINESS HOURS AND MUST BE CLEARED WITH THE MANAGEMENT WITH PROPER PRIOR NOTICE GIVEN TO THE OWNER'S REPRESENTATIVE.
- 6. CONTRACTOR SHALL NOTIFY THE OWNER OF ERRORS, OMISSIONS OR DISCREPANCIES BEFORE CONSTRUCTION OR FABRICATION OF AFFECTED WORK, OR, FAILING SUCH NOTICE, SHALL BE RESPONSIBLE FOR CORRECTING
- SAME WITHOUT COST TO THE OWNER, ARCHITECT OR ENGINEER. 7. ORDER EQUIPMENT ON A TIMELY BASIS (WITHIN 5 DAYS OF RECEIPT OF CONTRACT) TO MAINTAIN
- CONSTRUCTION SCHEDULE. 8. SUBMIT THREE (3) COPIES OF SHOP DRAWINGS OF ALL EQUIPMENT FOR REVIEW BY THE ENGINEERING. ONE (1) COPIES WILL BE RETAINED FOR RECORD. ONLY FURNISH SYSTEMS, EQUIPMENT AND MATERIAL
- IN COMPLIANCE WITH APPROVED SHOP DRAWINGS 9. WORK SHALL INCLUDE STARTUP OF ALL SYSTEMS, FURNISHING OF OPERATING AND MAINTENANCE INSTRUCTIONS, WARRANTEE FOR ALL EQUIPMENT AND ONE YEAR GUARANTEE OF ALL WORKMANSHIP,
- COMMENCING ON DATE OF ACCEPTANCE BY THE OWNER. 10. WORK SHALL ALSO INCLUDE FULL ONE (1) YEAR MAINTENANCE, PARTS AND SERVICE CONTRACT FOR
- ALL EQUIPMENT FURNISHED UNDER THE CONTRACT. 11. ALL WIRE SHALL BE COPPER. MINIMUM SIZE #12 AWG. ALL CONDUCTORS #10 AND SMALLER SHALL HAVE TYPE "THHW" INSULATION. CONDUCTORS LARGER THAN #10 SHALL HAVE TYPE "THHN" INSULATION. 12. ALL WIRE SHALL BE IN CONDUIT AND SHALL BE CONCEALED FROM VIEW. EXPOSED CONDUIT SHALL BE INSTALLED IN STRAIGHT LINES PARALLEL WITH OR PERPENDICULAR TO COLUMN LINES OR BEAMS AND SHALL
- BE SEPERATED BY AT LEAST 3" INCHES FROM DOMESTIC WATER LINES WHENEVER ALONG SIDE OR ACROSS SUCH LINES. ROMEX IS NOT PERMITTED. FLEXIBLE CONDUIT OR TYPE MC CABLE MAY BE USED FOR FIXTURE AND EQUIPMENT CONNECTIONS ONLY, AND WHERE SO USED SHALL BE GROUNDED WITH A SEPERATE FULL SIZED GREEN GROUNDING CONDUCTOR. FLEXIBLE CONDUIT CONNECTIONS SHALL BE LIMITED TO 3'-0" IN LENGTH. CONDUIT EXPOSED TO WEATHER SHALL BE RIGID. ALL OTHER CONDUIT SHALL BE EMT. CONDUIT FITTINGS SHALL BE COMPRESSION OR THREADED TYPE, USE OF SET SCREW
- FITTINGS IS NOT ACCEPTABLE. 13. CONDUIT IN FINISHED AREAS SHALL BE CONCEALED. CONDUIT IN UNFINISHED AREAS MAY BE EXPOSED.
- 14. HOME RUNS OVER 100' IN LENGTH SHALL BE #10 WIRE. 15. CONTRACTOR SHALL ENSURE THAT ENTIRE INSTÄLLATION IN ACCORDANCE WITH N.E.C. ARTICLE 110-26 AND THAT ALL REQUIRED OPERATING AND MAINTENANCE CLEARANCES ARE MAINTAINED AND ACCOUNTED FOR. ADJUSTMENTS TO LAYOUT SHOWN TO ACCOMMODATE CLEARANCE REQUIREMENTS SHALL BE DISCUSSED WITH ARCHITECT AND/OR ENGINEER SO AS TO MINIMIZE IMPACT ON OTHER SYSTEMS. CONTACT ARCHITECT
- AND/OR ENGINEER FOR DISPOSITION. 16. CONTRACTOR SHALL OBTAIN AVAILABLE FAULT CURRENT RATING AND PROVIDE PROTECTION FOR MAIN
- CIRCUIT BREAKER AND BRANCH DEVICES AS REQUIRED. 17. SEAL ALL PENETRATIONS THROUGH WALLS, CEILINGS, FLOORS, ETC. SO THAT THEY ARE AIR, WATER AND
- 18. LIGHTING CIRCUITS WHICH ARE SWITCHED AT PANELS SHALL BE FITTED WITH TYPE "SWD" BREAKERS SUITABLE FOR SWITCHING SERVICE.
- 19. FURNISH AND INSTALL TYPEWRITTEN PANEL DIRECTORY(IES). IDENTIFY AND LABEL ALL ELECTRICAL SERVICE EQUIPMENT. FURNISH AND INSTALL AN ENGRAVED NAMEPLATE ON THE WALL ABOVE THE SINGLE
- 20. FURNISH TWO (2) COPIES OF THE ELECTRIC RISER DIAGRAM AND PANEL DIRECTORY(IES) TO THE OWNER FOR REVIEW AND APPROVAL, OR SUBMIT A LETTER TO THE TENANT CONFIRMING THAT THE SYSTEM WAS INSTALLED AS PER PLANS AND SPECIFICATIONS.
- 21. FURNISH ALL EQUIPMENT MANUALS AND WARRANTIES TO TENANT AT THE COMPLETION OF THE PROJECT. 22. WIRE EMERGENCY BALLAST AND BATTERY LIGHTS ON SAME CIRCUIT IN AREA AND AHEAD OF LOCAL
- 23. ALL LIGHTING FIXTURES WILL BE FURNISHED BY THE CONTRACTOR. 24. SWITCHES, NOT OTHERWISE CALLED OUT, SHALL BE MOUNTED 4'-6" ABOVE FLOOR.

RECEPTACLE IN THE REAR AREA FOR HANDHELD STEAMER IDENTIFYING IT AS SUCH.

- 25. RECEPTACLES AND TELEPHONE OUTLETS IN SPACE SHALL BE MOUNTED AT 18" A.F.F. UNLESS
- NOTED. RECEPTACLES AND COVERS SHALL BE AS CALLED FOR IN THE SPECIFICATIONS.

 26. ALL COVERPLATES FOR ALL DEVICES SHALL BE AS REQUIRED TO MATCH ADJACENT FINISHES —
- COORDINATE WITH OWNER.
- 27. VERIFY EXACT LOCATION OF OUTLETS AND DEVICES WITH OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. FURNISH AND INSTALL OUTLET BOXES, DEVICES, COVERPLATES AND FLANGES AS REQUIRED. 28. IG AND GFI RECEPTACLES SHALL BE RATED AT 20 AMPERES AND SHALL HAVE A DEDICATED INSULATED
- GREEN GROUND WIRE, THE GROUND WIRE SHALL BE RUN CONTINUOUS AND UNSPLICED BETWEEN THE DEVICE AND THE PANEL GROUND BUS.
- 29. MOUNTING HEIGHTS OF EQUIPMENT NOT SPECIFICALLY CALLED FOR ARE NOTED ON ARCHITECTURAL DRAWINGS - SEE ARCHITECTURAL DRAWINGS TO COORDINATE.
- 30. SUPPORT ALL FIXTURES ACROSS CEILING TEES OR FROM STRUCTURE ABOVE. IN NO CASE SHALL CEILING TILES OR PLASTER CEILING SUPPORT ANY FIXTURES.
- 31. SUPPORT ALL FIXTURES WITH UNISTRUT AS REQUIRED.
- 32. FURNISH ALL MATERIAL AND EQUIPMENT AS SPECIFIED, EXCEPT WHERE SPECIFIC APPROVAL FOR SUBSTITUTION IS GIVEN BY THE OWNER. 33. PROPOSAL SHALL BE BASED ON SPECIFIED MATERIAL AND EQUIPMENT. IN ORDER TO PROMOTE COMPETITION, HOWEVER, BIDDERS ARE ENCOURAGED TO SUBMIT ALTERNATE PROPOSALS ON ANY ALTERNATE MATERIALS AND/OR EQUIPMENT THEY WISH TO PROPOSE, INCLUDING ANY PRICE CHANGES EFFECTED BY
- ACCEPTANCE OF ALTERNATES. 34. COST OF ANY CHANGES REQUIRED BY OTHER TRADES DUE TO SUBSTITUTION OF ALTERNATE EQUIPMENT
- SHALL BE INCLUDED IN THE ALTERNATE PROPOSAL. 35. UPON COMPLETION OF WORK, PREPARE LIGHTING AND POWER PROJECT RECORD RECORD SET. PRESENT THE COMPLETED DRAWINGS TO THE OWNER. AS-BUILT DRAWINGS SHALL INCLUDE ALL BRANCH CIRCUIT WORK,
- ANY PANELBOARD INFORMATION, FINAL SWITCHING, ETC. RECORD SETS SHALL BE IN PDF AND CAD FORMAT. 36. ALL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE FIRE PROOFED TO THE SAME OR
- GREATER RATING THAN THAT OF THE ASSEMBLY. WHERE CONFLICT OCCURS, NOTIFY THE ARCHITECT. 37. ALL FUSES 600 AMPERES OR LESS SHALL BE UL LISTED, CLASS RK1 OR J, LOW-PEAK, DUAL ELEMENT, TIME DELAY, 600 VOLT. ACCEPTABLE MANUFACTURES ARE BUSSMAN, GOULD OR SHAWMUT.
- 38. VERIFY LOCAL CONDITIONS AT SITE. 39. COMPLY WITH ALL APPLICABLE CODES.

40. SECURE AND PAY FOR ALL REQUIRED PERMITS



TELEPHONE/DATA CONDUIT DETAIL **NOT TO SCALE**



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REVISION BLOCK PROJECT NO: 2023008

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SHEET TITLE

ELECTRICAL DETAILS

E2.

SECTION 16A GENERAL ELECTRICAL REQUIREMENTS:

16A 1 GENERAL INSTRUCTIONS

16A 1-1 GENERAL REQUIREMENTS

ALL REQUIREMENTS UNDER DIVISION 1 AND THE GENERAL AND SUPPLEMENTARY CONDITIONS OF THESE SPECIFICATIONS APPLY TO THIS SECTION AND DIVISION. WHERE THE REQUIREMENTS OF THIS SECTION AND DIVISION EXCEED THOSE OF DIVISION 1, THIS SECTION AND DIVISION TAKE PRECEDENCE. BECOME THOROUGHLY FAMILIAR WITH ALL THEIR CONTENTS AS TO REQUIREMENTS THAT AFFECT THIS DIVISION, SECTION OR BOTH. WORK REQUIRED UNDER THIS DIVISION INCLUDES ALL MATERIAL, EQUIPMENT, APPLIANCES, AND LABOR REQUIRED TO COMPLETE THE ENTIRE ELECTRICAL SYSTEM AS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS, OR REASONABLY INFERRED TO BE NECESSARY TO FACILITATE EACH SYSTEM'S FUNCTIONING AS IMPLIED BY THE DESIGN AND THE EQUIPMENT SPECIFIED.

THE SPECIFICATIONS AND DRAWINGS FOR THE PROJECT ARE COMPLEMENTARY, AND PORTIONS OF THE WORK DESCRIBED IN ONE, SHALL BE PROVIDED AS IF DESCRIBED IN BOTH. IN THE EVENT OF DISCREPANCIES, NOTIFY THE ENGINEER AND REQUEST CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK INVOLVED.

DRAWINGS ARE GRAPHIC REPRESENTATIONS OF THE WORK UPON WHICH THE CONTRACT IS BASED. THEY SHOW THE MATERIALS AND THEIR RELATIONSHIP TO ONE ANOTHER, INCLUDING SIZES, SHAPES, LOCATIONS, AND CONNECTIONS. THEY ALSO CONVEY THE SCOPE OF WORK, INDICATING THE INTENDED GENERAL ARRANGEMENT OF THE EQUIPMENT, FIXTURES, OUTLETS AND CIRCUITS WITHOUT SHOWING ALL OF THE EXACT DETAILS AS TO ELEVATIONS, OFFSETS, CONTROL LINES, AND OTHER INSTALLATION REQUIREMENTS. USE THE DRAWINGS AS A GUIDE WHEN LAYING OUT THE WORK AND TO VERIFY THAT MATERIALS AND EQUIPMENT WILL FIT INTO THE DESIGNATED SPACES, AND WHICH, WHEN INSTALLED PER MANUFACTURERS' REQUIREMENTS, WILL ENSURE A COMPLETE, COORDINATED, SATISFACTORY AND PROPERLY OPERATING SYSTEM.

DRAWINGS ARE SCHEMATIC IN NATURE, SHOW THE VARIOUS COMPONENTS OF THE SYSTEMS APPROXIMATELY TO SCALE AND ATTEMPT TO INDICATE HOW THEY SHALL BE INTEGRATED WITH OTHER PARTS OF THE WORK. FIGURED DIMENSIONS TAKE PRECEDENCE TO SCALED DIMENSIONS. DETERMINE EXACT LOCATIONS BY JOB MEASUREMENTS, BY CHECKING THE REQUIREMENTS OF OTHER TRADES, AND BY REVIEWING ALL CONTRACT DOCUMENTS. CORRECT ERRORS THAT COULD HAVE BEEN AVOIDED BY PROPER CHECKING AND INSPECTION, AT NO ADDITIONAL COST TO THE OWNER.

SPECIFICATIONS DEFINE THE QUALITATIVE REQUIREMENTS FOR PRODUCTS, MATERIALS, AND WORKMANSHIP UPON WHICH THE CONTRACT IS BASED.

16A 1-2 DEFINITIONS

WHENEVER USED IN THESE SPECIFICATIONS OR DRAWINGS, THE FOLLOWING TERMS SHALL HAVE THE INDICATED MEANINGS:

- FURNISH: "TO SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLING, INSTALLING, AND SIMILAR OPERATIONS."
- 2. INSTALL: "TO PERFORM ALL OPERATIONS AT THE PROJECT SITE, INCLUDING, BUT NOT LIMITED TO, AND AS REQUIRED: UNLOADING, UNPACKING, ASSEMBLING, ERECTING, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, TESTING, COMMISSIONING, STARTING UP AND SIMILAR OPERATIONS, COMPLETE, AND READY FOR THE INTENDED USE."
- 3. PROVIDE: "TO FURNISH AND INSTALL COMPLETE, AND READY FOR THE INTENDED USE."
- 4. FURNISHED BY OWNER (OR OWNER-FURNISHED) OR FURNISHED BY OTHERS: "AN ITEM FURNISHED BY THE OWNER OR UNDER OTHER DIVISIONS OR CONTRACTS, AND INSTALLED UNDER THE REQUIREMENTS OF THIS DIVISION, COMPLETE, AND READY FOR THE INTENDED USE, INCLUDING ALL ITEMS AND SERVICES INCIDENTAL TO THE WORK NECESSARY FOR PROPER INSTALLATION AND OPERATION. INCLUDE THE INSTALLATION UNDER THE WARRANTY REQUIRED BY THIS DIVISION.
- 5. ENGINEER: WHERE REFERENCED IN THIS DIVISION, "ENGINEER" IS THE ENGINEER OF RECORD AND THE DESIGN PROFESSIONAL FOR THE WORK UNDER THIS DIVISION, AND IS A CONSULTANT TO, AND AN AUTHORIZED REPRESENTATIVE OF, THE ARCHITECT, AS DEFINED IN THE GENERAL AND/OR SUPPLEMENTARY CONDITIONS. WHEN USED IN THIS DIVISION, IT MEANS INCREASED INVOLVEMENT BY, AND OBLIGATIONS TO, THE ENGINEER, IN ADDITION TO INVOLVEMENT BY, AND OBLIGATIONS TO, THE "ARCHITECT".
- 6. AHJ: THE LOCAL CODE AND/OR INSPECTION AGENCY (AUTHORITY)
 HAVING JURISDICTION OVER THE WORK.
- 7. NRTL: NATIONALLY RECOGNIZED TESTING LABORATORY, AS DEFINED AND LISTED BY OSHA IN 29 CFR 1910.7 (E.G., UL, ETL, CSA), AND ACCEPTABLE TO THE AHJ OVER THIS PROJECT.
- 8. THE TERMS "APPROVED EQUAL", "EQUIVALENT", OR "EQUAL" ARE USED SYNONYMOUSLY AND SHALL MEAN "ACCEPTED BY OR ACCEPTABLE TO THE ENGINEER AS EQUIVALENT TO THE ITEM OR MANUFACTURER SPECIFIED". THE TERM "APPROVED" SHALL MEAN LABELED, LISTED, CERTIFIED, OR ALL THREE, BY AN NRTL, AND ACCEPTABLE TO THE AHJ OVER THIS PROJECT.

16A 1-3 PRE-BID SITE VISIT

PERSONALLY INSPECT THE SITE OF THE PROPOSED WORK AND BECOME FULLY INFORMED OF CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. FAILURE TO DO SO WILL NOT BE CONSIDERED SUFFICIENT JUSTIFICATION TO REQUEST OR OBTAIN EXTRA COMPENSATION OVER AND ABOVE THE CONTRACT PRICE.

16A 1-4 MATERIAL AND WORKMANSHIP

PROVIDE ALL MATERIAL AND EQUIPMENT NEW AND IN FIRST CLASS CONDITION. PROVIDE MARKINGS OR A NAMEPLATE FOR ALL MATERIAL AND EQUIPMENT IDENTIFYING THE MANUFACTURER AND PROVIDING SUFFICIENT REFERENCE TO ESTABLISH QUALITY, SIZE AND CAPACITY. ALL WORKMANSHIP SHALL BE OF THE FINEST POSSIBLE BY EXPERIENCED MECHANICS OF THE PROPER TRADE. IN GENERAL, PROVIDE THE COMMERCIAL GRADE FOR ALL MATERIALS AND EQUIPMENT LIGHT DUTY AND RESIDENTIAL TYPE EQUIPMENT WILL NOT BE ACCEPTABLE.

PROVIDE ALL HOISTS, SCAFFOLDS, STAGING, RUNWAYS, TOOLS, MACHINERY AND EQUIPMENT REQUIRED FOR THE PERFORMANCE OF THE ELECTRICAL WORK. STORE AND MAINTAIN MATERIAL AND EQUIPMENT IN CLEAN CONDITION, AND PROTECTED FROM WEATHER, MOISTURE, AND PHYSICAL DAMAGE.

FURNISH ONLY MATERIAL AND EQUIPMENT THAT ARE LISTED, LABELED, CERTIFIED, OR ALL THREE, BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL), WHENEVER ANY LISTING OR LABELING EXISTS FOR THE TYPES OF MATERIAL AND EQUIPMENT SPECIFIED. AT A MINIMUM, GENERAL WORK PRACTICES FOR ELECTRICAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NECA 1 (LATEST EDITION), "STANDARD PRACTICES FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION".

16A 1-5 MANUFACTURERS

IN OTHER ARTICLES WHERE LISTS OF MANUFACTURERS ARE INTRODUCED, SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE MANUFACTURERS SPECIFIED.

WHERE A LIST IS PROVIDED, MANUFACTURERS ARE LISTED ALPHABETICALLY AND NOT IN ACCORDANCE WITH ANY RANKING OR PREFERENCE.

WHERE MANUFACTURERS ARE NOT LISTED, PROVIDE PRODUCTS SUBJECT TO COMPLIANCE WITH REQUIREMENTS FROM MANUFACTURERS THAT HAVE BEEN ACTIVELY INVOLVED IN MANUFACTURING THE SPECIFIED PRODUCT FOR NO LESS THAN 5 YEARS.

16A 1-6 COORDINATION

OF SERVICES

COORDINATE ALL WORK WITH OTHER DIVISIONS AND TRADES SO THAT VARIOUS COMPONENTS OF THE ELECTRICAL SYSTEMS ARE INSTALLED AT THE PROPER TIME, FIT THE AVAILABLE SPACE, AND ALLOW PROPER SERVICE ACCESS TO ALL EQUIPMENT. REFER TO ALL DRAWINGS, INCLUDING, BUT NOT LIMITED TO, CIVIL, ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND PLUMBING, AND TO RELEVANT EQUIPMENT SUBMITTALS AND SHOP DRAWINGS TO DETERMINE THE EXTENT OF CLEAR SPACES. MAKE ALL OFFSETS REQUIRED TO CLEAR EQUIPMENT, BEAMS AND OTHER STRUCTURAL MEMBERS, AND TO FACILITATE CONCEALING RACEWAYS IN THE MANNER ANTICIPATED IN THE DESIGN. PROVIDE MATERIALS WITH TRIM THAT WILL FIT PROPERLY THE TYPES OF CEILING, WALL, OR FLOOR FINISHES ACTUALLY INSTALLED.

COMPLY, AT A MINIMUM, WITH NATIONAL FIRE PROTECTION
ASSOCIATION (NFPA) STANDARDS, STATE AND LOCAL BUILDING CODES,
AND ALL OTHER APPLICABLE CODES AND ORDINANCES FOR
PERFORMANCE, WORKMANSHIP, EQUIPMENT, AND MATERIALS.
ADDITIONALLY, COMPLY WITH RULES AND REGULATIONS OF PUBLIC
UTILITIES AND MUNICIPAL DEPARTMENTS AFFECTED BY CONNECTION

16A 1-7 ORDINANCES, CODES, AND STANDARDS

WHERE CONFLICTS BETWEEN VARIOUS CODES, ORDINANCES, RULES, AND REGULATIONS EXIST, COMPLY WITH THE MOST STRINGENT. WHEREVER REQUIREMENTS OF THESE SPECIFICATIONS, DRAWINGS, OR BOTH, EXCEED THOSE OF THE ABOVE ITEMS, THE REQUIREMENTS OF THESE SPECIFICATIONS, DRAWINGS, OR BOTH, SHALL GOVERN. CODE COMPLIANCE, AT A MINIMUM, IS MANDATORY. CONSTRUE NOTHING IN THESE CONSTRUCTION DOCUMENTS AS PERMITTING WORK NOT IN COMPLIANCE, AT A MINIMUM, WITH THESE CODES.

BRING ALL CONFLICTS OBSERVED BETWEEN CODES, ORDINANCES, RULES, REGULATIONS, REFERENCED STANDARDS, AND THESE DOCUMENTS TO THE ENGINEER'S ATTENTION FOR FINAL RESOLUTION. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY VIOLATION OF THE

PROVIDE AND MAINTAIN ALL NECESSARY SIGNAL LIGHTS AND GUARDS FOR THE SAFETY OF THE PUBLIC. OBTAIN AND PAY FOR ALL PERMITS FOR WORK IN THIS DIVISION.

16A 1-8 PROTECTION OF EQUIPMENT AND MATERIALS

STORE AND PROTECT FROM DAMAGE EQUIPMENT AND MATERIALS DELIVERED TO JOB SITE, IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS. FOR MATERIALS AND EQUIPMENT SUSCEPTIBLE TO CHANGING WEATHER CONDITIONS, DAMPNESS, OR TEMPERATURE VARIATIONS, STORE INSIDE IN CONDITION SPACES. FOR MATERIALS AND EQUIPMENT NOT SUSCEPTIBLE TO THESE CONDITIONS, COVER WITH WATERPROOF, TEAR—RESISTANT, HEAVY TARP OR POLYETHYLENE PLASTIC AS REQUIRED TO PROTECT FROM PLASTER, DIRT, PAINT, WATER, OR PHYSICAL DAMAGE. EQUIPMENT AND MATERIAL THAT HAS BEEN DAMAGED BY CONSTRUCTION ACTIVITIES WILL BE REJECTED, AND CONTRACTOR SHALL FURNISH NEW EQUIPMENT AND MATERIAL OF A LIKE KIND.

PLUG OR CAP OPEN ENDS OF CONDUITS WHILE STORED AND INSTALLED DURING CONSTRUCTION WHEN NOT IN USE TO PREVENT THE ENTRANCE OF DEBRIS INTO THE SYSTEMS.

16A 1-9 SUBSTITUTIONS

INCLUDE IN THE BASE BID THE PRODUCTS SPECIFICALLY NAMED IN THESE SPECIFICATIONS OR ON THE DRAWINGS. SUBMIT, IN THE FORM OF ALTERNATES, WITH BID, PRODUCTS OF ANY OTHER MANUFACTURERS FOR SIMILAR USE, PROVIDED THE DIFFERENCES IN COST, IF ANY, ARE INCLUDED FOR EACH PROPOSED ALTERNATE.

PRIOR TO THE BID DATE, SUBSTITUTIONS WILL NOT BE CONSIDERED UNLESS SUBMITTED [TO THE ARCHITECT,] FOR ENGINEER'S REVIEW, AT LEAST TEN CALENDAR DAYS PRIOR TO THE DATE FOR RECEIPT OF BIDS. INCLUDE THE NAME OF THE MATERIAL OR EQUIPMENT FOR WHICH IT IS TO BE SUBSTITUTED AND A COMPLETE DESCRIPTION OF THE PROPOSED SUBSTITUTE INCLUDING CUTSHEETS, PHOTOMETRIC DATA, AND ALL OTHER INFORMATION NECESSARY FOR AN EVALUATION FOR EACH SUCH REQUEST. PROVIDE FACTORY GENERATED POINT—BY—POINT CALCULATIONS FOR ALL EXTERIOR LIGHT FIXTURES (PHOTOMETRIC FILES SUPPLIED SO THE ENGINEER CAN GENERATE A POINT—BY—POINT DO NOT SUFFICE FOR THE POINT—BY—POINT CALCULATIONS AT THE DISCRETION OF THE ENGINEER. SUBMIT A \$100.00 REVIEW FEE TO THE ENGINEER WITH EACH SUCH POINT—BY—POINT CALCULATION FOR USE OF ELECTRONIC BASE FILES.

AFTER THE BID DATE, PROPOSALS TO SUBSTITUTE LIGHT FIXTURES FOR THOSE SHOWN ON THE DRAWINGS OR SPECIFIED HEREIN, WILL ONLY BE CONSIDERED AS A DEDUCT. SUBMIT PROPOSED SUBSTITUTIONS SEPARATELY, IN SUBMITTAL FORM, WITH A LIST OF PROPOSED SUBSTITUTIONS TOGETHER WITH A DEDUCT PRICE FOR EACH SUBSTITUTION. THE [ARCHITECT,] ENGINEER[, OR BOTH,] WILL THEN REVIEW PROPOSED SUBSTITUTIONS.

THE ENGINEER WILL HAVE THE FINAL AUTHORITY AS TO WHETHER THE LIGHT FIXTURE IS AN ACCEPTABLE REPLACEMENT TO THE SPECIFIED ITEM. THE PROPOSED SUBSTITUTION MAY ALSO BE REJECTED [BY THE ARCHITECT] FOR AESTHETIC REASONS IF FELT NECESSARY OR DESIRABLE. IN THE EVENT THE PROPOSED SUBSTITUTIONS HEREIN DESCRIBED ARE REJECTED, FURNISH THE SPECIFIED ITEM.

16A 1-10 SUBMITTALS

ASSEMBLE AND SUBMIT TO THE ARCHITECT, FOR ENGINEER'S REVIEW, MANUFACTURERS' PRODUCT LITERATURE FOR MATERIAL AND EQUIPMENT TO BE FURNISHED, INSTALLED, OR BOTH, UNDER THIS DIVISION, INCLUDING SHOP DRAWINGS, MANUFACTURERS' PRODUCT DATA AND PERFORMANCE SHEETS, SAMPLES, AND OTHER SUBMITTALS REQUIRED BY THIS DIVISION. PROVIDE THE NUMBER OF SUBMITTALS REQUIRED BY DIVISION 1; HOWEVER, AT A MINIMUM, SUBMIT SEVEN (7) SETS. BEFORE SUBMITTING, VERIFY THAT ALL MATERIALS AND EQUIPMENT SUBMITTED ARE MUTUALLY COMPATIBLE AND SUITABLE FOR THE INTENDED USE, FIT THE AVAILABLE SPACES, AND ALLOW AMPLE AND CODE—REQUIRED ROOM FOR ACCESS AND MAINTENANCE. SUBMITTALS SHALL CONTAIN THE FOLLOWING INFORMATION. SUBMITTALS NOT SO IDENTIFIED WILL BE RETURNED TO THE CONTRACTOR WITHOUT ACTION:

1. THE PROJECT NAME.

- 2. THE APPLICABLE SPECIFICATION SECTION AND PARAGRAPH.
- 3. THE SUBMITTAL DATE.
- 4. THE CONTRACTOR'S STAMP, WHICH SHALL CERTIFY THAT THE STAMPED DRAWINGS HAVE BEEN CHECKED BY THE CONTRACTOR, COMPLY WITH THE DRAWINGS AND SPECIFICATIONS, AND HAVE BEEN COORDINATED WITH OTHER TRADES.

TRANSMIT SUBMITTALS AS EARLY AS REQUIRED TO SUPPORT THE PROJECT SCHEDULE. ALLOW FOR TWO WEEKS ENGINEER REVIEW TIME, PLUS MAILING TIME, PLUS A DUPLICATION OF THIS TIME FOR RESUBMITTALS, IF REQUIRED. TRANSMIT SUBMITTALS AS SOON AS POSSIBLE AFTER NOTICE TO PROCEED AND BEFORE CONSTRUCTION STARTS. THE ENGINEER'S SUBMITTAL REVIEWS WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN DIMENSIONS, DETAILS, SIZE OF MEMBERS, OR QUANTITIES; OR FOR OMITTING COMPONENTS OR FITTINGS; OR FOR NOT COORDINATING ITEMS WITH ACTUAL BUILDING CONDITIONS.

16A 2-4 ROUGH-IN 16A 1-11 ELECTRONIC DRAWING FILES

IN PREPARATION OF SHOP DRAWINGS, CONTRACTOR MAY, AS AN OPTION, OBTAIN ELECTRONIC DRAWING FILES IN AUTOCAD OR DXF FORMAT FROM THE ENGINEER FOR A SHIPPING AND HANDLING FEE OF \$200 FOR A DRAWING SET UP TO 12 SHEETS AND \$15 PER SHEET FOR EACH ADDITIONAL SHEET. CONTACT THE ARCHITECT FOR WRITTEN AUTHORIZATION; AND, CONTACT THE ENGINEER TO OBTAIN THE NECESSARY RELEASE AGREEMENT FORM AND TO INDICATE THE DESIRED SHIPPING METHOD AND DRAWING FORMAT. IF A 100 MB ZIP DISK OR CD-ROM IS DESIRED, ADD THE APPROPRIATE CHARGE INDICATED. IN ADDITION TO PAYMENT, ARCHITECT'S WRITTEN AUTHORIZATION AND ENGINEER'S RELEASE AGREEMENT FORM MUST BE RECEIVED BEFORE ELECTRONIC DRAWING FILES WILL BE SENT.

16A 1-12 OPERATION AND MAINTENANCE INSTRUCTIONS

SUBMIT TO THE ARCHITECT, FOR ENGINEER'S REVIEW, COPIES EACH OF OPERATIONS AND MAINTENANCE INSTRUCTION MANUALS, APPROPRIATELY BOUND INTO MANUAL FORM INCLUDING APPROVED COPIES OF THE FOLLOWING, REVISED IF NECESSARY TO SHOW SYSTEM AND EQUIPMENT AS ACTUALLY INSTALLED. PROVIDE THE NUMBER OF SUBMITTALS REQUIRED BY DIVISION 1; HOWEVER, AT A MINIMUM, SUBMIT THREE (3) SETS, AND INCLUDE, AT A MINIMUM, THE FOLLOWING INFORMATION:

- 1. MANUFACTURERS' CATALOGS AND PRODUCT DATA SHEETS
- 2. WIRING DIAGRAMS
- 3. MAINTENANCE INSTRUCTIONS
- 4. OPERATING INSTRUCTIONS
- 5. PARTS LISTS
- 6. TEST REPORTS AS DEFINED IN NETA ATS FOR THE SYSTEMS AND EQUIPMENT PROVIDED OR FURNISHED OR INSTALLED UNDER THIS CONTRACT.

7. NAMES, ADDRESSES, TELEPHONE NUMBERS, AND E-MAIL ADDRESSES OF LOCAL CONTACTS FOR WARRANTEE SERVICES AND SPARE PARTS.

SUBMIT MANUALS PRIOR TO REQUESTING THE FINAL PUNCH LIST AND BEFORE ANY REQUESTS FOR SUBSTANTIAL COMPLETION. ALSO PROVIDE ADEQUATE VERBAL INSTRUCTIONS OF SYSTEM OPERATIONS TO OWNER'S REPRESENTATIVE AT THE COMPLETION OF, AND BEFORE FINAL ACCEPTANCE OF, THE WORK.

16A 1-13 TRAINING

AT A TIME MUTUALLY AGREED UPON BETWEEN THE OWNER AND CONTRACTOR, PROVIDE THE SERVICES OF A FACTORY TRAINED AND AUTHORIZED REPRESENTATIVE TO TRAIN OWNER'S DESIGNATED PERSONNEL ON THE OPERATION AND MAINTENANCE OF THE EQUIPMENT PROVIDED FOR THIS PROJECT.

PROVIDE TRAINING TO INCLUDE BUT NOT BE LIMITED TO AN OVERVIEW OF THE SYSTEM AND/OR EQUIPMENT AS IT RELATES TO THE FACILITY AS A WHOLE; OPERATION AND MAINTENANCE PROCEDURES AND SCHEDULES RELATED TO STARTUP AND SHUTDOWN, TROUBLESHOOTING, SERVICING, PREVENTIVE MAINTENANCE AND APPROPRIATE OPERATOR INTERVENTION; AND REVIEW OF DATA INCLUDED IN THE OPERATION AND MAINTENANCE INSTRUCTIONS.

SUBMIT A CERTIFICATION LETTER TO THE ARCHITECT STATING THAT THE OWNER'S DESIGNATED REPRESENTATIVE HAS BEEN TRAINED AS SPECIFIED HEREIN. LETTER SHALL INCLUDE DATE, TIME, ATTENDEES AND SUBJECT OF TRAINING. THE CONTRACTOR AND THE OWNER'S REPRESENTATIVE SHALL SIGN THE CERTIFICATION LETTER INDICATING AGREEMENT THAT THE TRAINING HAS BEEN PROVIDED.

SCHEDULE TRAINING WITH OWNER WITH AT LEAST 7 DAYS' ADVANCE NOTICE.

16A 1-14 WARRANTIES

WARRANT EACH SYSTEM AND EACH ELEMENT THEREOF AGAINST ALL DEFECTS DUE TO FAULTY WORKMANSHIP, DESIGN OR MATERIAL FOR A PERIOD OF 12 MONTHS FROM DATE OF SUBSTANTIAL COMPLETION, UNLESS SPECIFIC ITEMS ARE NOTED TO CARRY A LONGER WARRANTY IN THE CONSTRUCTION DOCUMENTS OR MANUFACTURER'S STANDARD WARRANTY EXCEEDS 12 MONTHS. REMEDY ALL DEFECTS, OCCURRING WITHIN THE WARRANTY PERIOD(S), AS STATED IN THE GENERAL CONDITIONS AND DIVISION 1.

ALSO WARRANT THE FOLLOWING ADDITIONAL ITEMS:

- 1. ALL RACEWAYS ARE FREE FROM OBSTRUCTIONS, HOLES, CRUSHING, OR BREAKS OF ANY NATURE.
- 2. ALL RACEWAY SEALS ARE EFFECTIVE.
- 3. THE ENTIRE ELECTRICAL SYSTEM IS FREE FROM ALL SHORT CIRCUITS AND UNWANTED OPEN CIRCUITS AND GROUNDS.

 THE ABOVE WARRANTIES SHALL INCLUDE LABOR AND MATERIAL. MAKE

REPAIRS OR REPLACEMENTS WITHOUT ANY ADDITIONAL COSTS TO THE OWNER.

PERFORM THE REMEDIAL WORK PROMPTLY, UPON WRITTEN NOTICE FROM THE ENGINEER OR OWNER.

AT THE TIME OF SUBSTANTIAL COMPLETION, DELIVER TO THE OWNER ALL WARRANTIES, IN WRITING AND PROPERLY EXECUTED, INCLUDING TERM LIMITS FOR WARRANTIES EXTENDING BEYOND THE ONE YEAR PERIOD, EACH WARRANTY INSTRUMENT BEING ADDRESSED TO THE OWNER AND STATING THE COMMENCEMENT DATE AND TERM.

16A 1-15 MISCELLANEOUS REMODELING WORK

PROVIDE ALL DEMOLITION OF EXISTING ELECTRICAL SYSTEMS AND NEW ELECTRICAL SYSTEM MODIFICATIONS REQUIRED BECAUSE OF BUILDING REMODELING, AS NOTED ON THE DRAWINGS, OR NECESSARY FOR PROPER OPERATION AND NEW CONSTRUCTION. REMOVE ALL ABANDONED CABLES AND WIRING ABOVE ACCESSIBLE CEILINGS AND VENTILATION SHAFTS.

16A 2 ELECTRICAL WORK

16A 2-1 BUILDING OPERATION

COMPLY WITH THE SCHEDULE OF OPERATIONS AS OUTLINED IN THE ARCHITECTURAL PORTIONS OF THIS SPECIFICATION. BUILDING SHALL BE IN CONTINUOUS OPERATION. ACCOMPLISH WORK THAT REQUIRES INTERRUPTION OF BUILDING OPERATION AT A TIME WHEN THE BUILDING IS NOT IN OPERATION, AND ONLY WITH WRITTEN APPROVAL OF BUILDING OWNER AND/OR TENANT. COORDINATE INTERRUPTION OF BUILDING OPERATION WITH THE OWNER AND/OR TENANT A MINIMUM OF 7 DAYS IN ADVANCE OF WORK.

16A 2-2 COINCIDENTAL DAMAGE

REPAIR ALL STREETS, SIDEWALKS, DRIVES, PAVING, WALLS, FINISHES, AND OTHER FACILITIES DAMAGED IN THE COURSE OF THIS WORK. REPAIR MATERIALS SHALL MATCH EXISTING CONSTRUCTION. REPAIR MATERIALS SHALL GENERALLY MATCH EXISTING CONSTRUCTION. ALL BACKFILLING AND REPAIRING SHALL MEET ALL REQUIREMENTS OF THE OWNER, CITY AND OTHERS HAVING JURISDICTION. REPAIR WORK SHALL BE THOROUGHLY FIRST CLASS. CONFORM TO ALL REQUIREMENTS OF DIVISION 2 OF THESE SPECIFICATIONS.

16A 2-3 CUTTING AND PATCHING

FOLLOWING THE REQUIREMENTS IN DIVISION 1, CUT WALLS, FLOORS, CEILINGS, AND OTHER PORTIONS OF THE FACILITY AS REQUIRED TO PERFORM WORK UNDER THIS DIVISION. OBTAIN PERMISSION OF THE ENGINEER, OWNER, OR BOTH, BEFORE DOING ANY CUTTING. CUT ALL HOLES AS SMALL AS POSSIBLE. PATCH WALLS, FLOORS, AND OTHER PORTIONS OF THE FACILITY AS PROJUBED BY WORK

ALL AS POSSIBLE. PATCH WALLS, FLOORS, AND OTHER
PORTIONS OF THE FACILITY AS REQUIRED BY WORK UNDER THIS
DIVISION. ALL PATCHING SHALL BE THOROUGHLY FIRST CLASS AND
SHALL MATCH THE ORIGINAL MATERIAL AND CONSTRUCTION,
INCLUDING FIRE RATINGS IF APPLICABLE.

COORDINATE WITHOUT DELAY ALL ROUGHING—IN WITH OTHER DIVISIONS. CONCEAL ALL RACEWAYS EXCEPT IN UNFINISHED AREAS AND WHERE OTHERWISE INDICATED ON THE DRAWINGS.

16A 2-5 SUPPORT SYSTEMS

STEEL SLOTTED SUPPORT SYSTEMS (SLOTTED CHANNEL): COMPLY WITH MFMA-3, FACTORY-FABRICATED COMPONENTS FOR FIELD ASSEMBLY; 12-GAUGE, 1-5/8-INCH BY 1-5/8-INCH; COOPER B-LINE, ERICO INTERNATIONAL CORPORATION, HILTI, INC., POWER-STRUT, THOMAS & BETTS CORPORATION, UNISTRUT.

<u>INISHES:</u>

- 1. RETAIN ONE OR MORE COATING SYSTEMS IN FIRST THREE SUBPARAGRAPHS BELOW (USUALLY GALVANIZED IS ACCEPTABLE FOR MOST USES) STAINLESS STEEL SHOULD NOT REQUIRE ANY ADDITIONAL FINISHES. IF RETAINING MORE THAN ONE, SPECIFY WHERE EACH COATING SYSTEM IS REQUIRED. USE STAINLESS STEEL OUTDOORS OR INDOORS WHERE ADDED CORROSION PROTECTION IS DESIRED (TYPE 316 STAINLESS STEEL IS AVAILABLE FOR USE IN VERY CORROSIVE LOCATIONS). CONSULT WITH MANUFACTURER BEFORE SPECIFYING EITHER STAINLESS TYPES, DUE TO USAGE LIMITATIONS AND COSTS.
- 2. METALLIC COATINGS: HOT-DIP GALVANIZED AFTER FABRICATION AND APPLIED ACCORDING TO MFMA-3.
- 3. NONMETALLIC COATINGS: MANUFACTURER'S STANDARD PVC, POLYURETHANE, OR POLYESTER COATING APPLIED ACCORDING TO
- 4. PAINTED COATINGS: MANUFACTURER'S STANDARD PAINTED COATING APPLIED ACCORDING TO MFMA-3.
- 5. STAINLESS STEEL: TYPE 304, PER ASTM A240.

ALUMINUM SLOTTED SUPPORT SYSTEMS (SLOTTED CHANNEL): COMPLY WITH MFMA-3, TYPE 6063-T6, PER ASTM B221; FACTORY-FABRICATED COMPONENTS FOR FIELD ASSEMBLY; 12-GAUGE, 1-5/8-INCH BY 1-5/8-INCH; COOPER B-LINE, ERICO INTERNATIONAL CORPORATION, HILTI, INC., POWER-STRUT, THOMAS & BETTS CORPORATION, UNISTRUT.

FIELD FABRICATION:

- 1. WHERE FIELD CUTTING OF STANDARD LENGTHS OF CHANNEL ARE REQUIRED, MAKE CUTS STRAIGHT AND PERPENDICULAR TO MANUFACTURED SURFACES.
- 2. FOR FIELD—CUT OR DAMAGED SURFACES OF COATED CHANNELS, DRESS CUT ENDS, DAMAGED SURFACES, OR BOTH, WITH AN ABRASIVE MATERIAL (E.G., FILE, GRINDING STONE, OR SIMILAR) AND CLEANSER TO REMOVE OILS, RUST, SHARP EDGES AND SHARDS.
- 3. FOR CHANNEL WITH A FACTORY—APPLIED COATING, RE—FINISH CUT EDGES WITH A COATING COMPATIBLE WITH THE FACTORY FINISH AND AS RECOMMENDED BY THE MANUFACTURER (E.G., MANUFACTURER'S TOUCH—UP PAINT OR ZINC—RICH COLD—GALVANIZING COMPOUND, AS APPLICABLE).

16A 2-6 PENETRATIONS

COORDINATE SLEEVE SELECTION AND APPLICATION WITH SELECTION AND APPLICATION OF FIRE—STOPPING SPECIFIED IN DIVISION 7 SECTION "THROUGH—PENETRATION FIRESTOP SYSTEMS."

- 1. COORDINATE ALL ROOF PENETRATIONS WITH ENGINEER, OWNER, AND AS APPLICABLE, THE ROOFING CONTRACTOR PROVIDING A ROOF
- 2. KEEP ALL RACEWAY PENETRATIONS WITHIN MECHANICAL EQUIPMENT CURBS WHEREVER POSSIBLE. COORDINATE WITH DIVISION 15 WORK.
- 3. FLASH AND COUNTERFLASH ALL OPENINGS THROUGH ROOF, AND/OR PROVIDE PRE—FABRICATED MOLDED SEALS COMPATIBLE WITH THE ROOF CONSTRUCTION INSTALLED, OR AS REQUIRED BY THE ENGINEER, OWNER, OR ROOFING CONTRACTOR. ALL ROOF PENETRATIONS SHALL BE LEAKTIGHT AT THE TERMINATION OF THE WORK AND SHALL NOT VOID ANY NEW OR EXISTING ROOF WARRANTIES.

WALLS AND FLOORS:

1. SLEEVES FOR RACEWAYS AND CABLES

- A. STEEL PIPE SLEEVES: ASTM A 53/A 53M, TYPE E, GRADE B, SCHEDULE 40, GALVANIZED STEEL, PLAIN ENDS AND DRIP RINGS.
- B. CAST—IRON PIPE SLEEVES: CAST OR FABRICATED "WALL PIPE," EQUIVALENT TO DUCTILE—IRON PRESSURE PIPE, WITH PLAIN ENDS AND INTEGRAL WATERSTOP, UNLESS OTHERWISE INDICATED.
- 2. SLEEVES FOR RECTANGULAR OPENINGS: GALVANIZED SHEET STEEL WITH MINIMUM 0.052—INCH THICKNESS AS INDICATED AND OF LENGTH TO SUIT APPLICATION.

16B 2-7 FIRE-STOPPING THROUGH PENETRATIONS

FIRE-RESISTANT THROUGH PENETRATION SEALANTS: 1

FIRE—RESISTANT THROUGH PENETRATION SEALANTS: TWO—PART, FOAMED—IN—PLACE, SILICONE SEALANT FORMULATED FOR USE IN THROUGH—PENETRATION FIRE—STOPPING AROUND CABLES, RACEWAYS, AND CABLE TRAY PENETRATIONS THROUGH FIRE—RATED WALLS AND FLOORS. SEALANTS AND ACCESSORIES SHALL HAVE FIRE—RESISTANCE RATINGS INDICATED, AS ESTABLISHED BY TESTING IDENTICAL ASSEMBLIES IN ACCORDANCE WITH ASTM E 814, BY UNDERWRITERS' LABORATORIES, INC., OR OTHER NRTL ACCEPTABLE TO AHJ.

- 1. ACCEPTABLE MANUFACTURERS:
- A. HILTI, INC.
- B. 3M CORP.
- C. RECTORSEAL.
- D. SPECIFY TECHNOLOGY INC.E. UNITED STATES GYPSUM COMPANY.

SUBMITTALS

- 1. SUBMIT PRODUCT DATA: MANUFACTURER'S SPECIFICATIONS AND TECHNICAL DATA FOR EACH MATERIAL INCLUDING THE COMPOSITION AND LIMITATIONS, DOCUMENTATION OF UL FIRESTOP SYSTEMS TO BE USED AND MANUFACTURER'S INSTALLATION INSTRUCTIONS TO COMPLY WITH DIVISION 1.
- 2. MANUFACTURER'S ENGINEERING JUDGMENT IDENTIFICATION NUMBER AND DRAWING DETAILS WHEN NO UL SYSTEM IS AVAILABLE FOR AN APPLICATION. ENGINEERING JUDGMENT SHALL INCLUDE BOTH PROJECT NAME AND CONTRACTOR'S NAME WHO WILL INSTALL FIRESTOP SYSTEM AS DESCRIBED IN DRAWINGS.
- 3. SUBMIT MATERIAL SAFETY DATA SHEETS PROVIDED WITH PRODUCT DELIVERED TO JOB-SITE.

 16A 2-8 ACCESS DOORS

PROVIDE ACCESS DOORS IN CEILINGS AND WALLS, WHERE INDICATED OR REQUIRED FOR ACCESS OR MAINTENANCE TO CONCEALED EQUIPMENT INSTALLED UNDER THIS SECTION. PROVIDE CONCEALED HINGES, SCREWDRIVER—TYPE LOCK, AND ANCHOR STRAPS.

MANUFACTURED BY MILCOR, ZURN, TITUS, OR EQUAL. OBTAIN ARCHITECT'S APPROVAL OF TYPE, SIZE, LOCATION AND COLOR BEFORE

16A 2-9 EQUIPMENT FURNISHED BY OTHERS

PROVIDE NECESSARY EQUIPMENT AND ACCESSORIES THAT ARE NOT PROVIDED BY THE EQUIPMENT SUPPLIER OR OWNER TO COMPLETE INSTALLATION OF EQUIPMENT FURNISHED BY OTHERS, IN LOCATIONS AS INDICATED ON THE DRAWINGS, SPECIFIED HEREIN, OR BOTH. EQUIPMENT AND ACCESSORIES NOT PROVIDED BY THE EQUIPMENT SUPPLIER MAY INCLUDE SUCH ITEMS AS FLEXIBLE CORDS AND PLUGS, AS REQUIRED FOR PROPER OPERATION OF THE COMPLETE SYSTEM, IN ACCORDANCE WITH THE MANUFACTURERS' INSTRUCTIONS.

BE RESPONSIBLE FOR CORRECT ROUGH—IN DIMENSIONS, AND VERIFY THEM WITH ENGINEER, OWNER'S REPRESENTATIVE, EQUIPMENT SUPPLIER, OR ALL THREE, PRIOR TO ROUGH—IN AND SERVICE INSTALLATIONS.

16A 2-10 CLEANING

IN ADDITION TO THE REQUIREMENTS OF DIVISION 1, REMOVE FROM THE PREMISES DIRT AND REFUSE RESULTING FROM THE PERFORMANCE OF THE ELECTRICAL WORK, AS REQUIRED, TO PREVENT ACCUMULATION. COOPERATE IN MAINTAINING REASONABLY CLEAN PREMISES AT ALL TIMES. IMMEDIATELY PRIOR TO FINAL INSPECTION, MAKE A FINAL CLEANUP OF DIRT AND REFUSE RESULTING FROM THE WORK. CLEAN ALL MATERIAL AND EQUIPMENT INSTALLED UNDER THIS DIVISION. REMOVE DIRT, DUST, PLASTER, STAINS AND FOREIGN MATTER FROM ALL SURFACES. TOUCH UP AND RESTORE ALL DAMAGED FINISHES TO THEIR ORIGINAL CONDITION.

16A 2-11 ADJUSTING, ALIGNING AND TESTING

ADJUST, ALIGN, AND TEST ALL ELECTRICAL EQUIPMENT ON THIS PROJECT PROVIDED UNDER THIS DIVISION AND ALL ELECTRICAL EQUIPMENT FURNISHED BY OTHERS FOR INSTALLATION OR WIRING UNDER THIS DIVISION, FOR PROPER OPERATION.

TEST ALL SYSTEMS AND EQUIPMENT ACCORDING TO THE REQUIREMENTS IN NETA ATS (LATEST EDITION) AND ALL ADDITIONAL REQUIREMENTS SPECIFIED IN FOLLOWING SECTIONS.

MAINTAIN THE FOLLOWING ON THE PROJECT PREMISES AT ALL TIMES: A TRUE RMS READING VOLTMETER, A TRUE RMS READING AMMETER, AND A MEGOHMMETER INSULATION RESISTANCE TESTER. PROVIDE TEST DATA READINGS AS REQUESTED OR AS REQUIRED BY THE ENGINEER.

16A 2-12 EQUIPMENT IDENTIFICATION

PROVIDE EQUIPMENT IDENTIFICATION NAMEPLATES:

1. ON ALL PANELBOARDS AND SWITCHES.

NAMEPLATES:

- ENGRAVED, CONTRASTING COLOR, THREE-LAYER, LAMINATED PLASTIC INDICATING THE NAME OF THE EQUIPMENT, LOAD, OR CIRCUIT AS DESIGNATED ON THE DRAWINGS AND IN THE SPECIFICATIONS:
- 2. FIELD—APPLIED PERMANENT EPOXY ADHESIVE, COMPATIBLE WITH THE EQUIPMENT FINISH.
- 3. ATTACHMENT METHOD SHALL BE ACCEPTABLE TO THE MANUFACTURERS OF THE EQUIPMENT TO WHICH THE NAMEPLATES ARE BEING APPLIED.
- 4. COLOR: BLACK BACKGROUND WITH WHITE LETTERS FOR NORMAL POWER. LETTER HEIGHT: 1/2—INCH MINIMUM.
- 16A 2-13 SYSTEM START UP

 PRIOR TO STARTING UP THE ELECTRICAL SYSTEMS:
- PRIOR TO STARTING UP THE ELECTRICAL SY
- 1. CHECK ALL COMPONENTS AND DEVICES.
- LUBRICATE ITEMS ACCORDINGLY.
 TIGHTEN SCREWS AND BOLTS FOR CONNECTORS AND TERMINALS
 ACCORDING TO MANUFACTURER'S PUBLISHED TORQUE—TIGHTENING
 VALUES. IF MANUFACTURER'S TORQUE VALUES ARE NOT INDICATED,
 USE THOSE SPECIFIED IN UL 486A.
- 4. ADJUST TAPS ON EACH TRANSFORMER FOR RATED SECONDARY
- 5. CHECK AND RECORD BUILDING'S SERVICE ENTRANCE VOLTAGE, GROUNDING CONDITIONS, GROUNDING RESISTANCE, AND PROPER
- 6. IF ANY CHANGES ARE MADE TO PANEL SCHEDULES ON DRAWINGS, RE—BALANCE ALL SINGLE—PHASE LOADS AT EACH PANELBOARD, REDISTRIBUTING BRANCH CIRCUIT CONNECTIONS UNTIL BALANCE IS ACHIEVED. DO NOT TYPE UP FINAL PANELBOARD DIRECTORIES UNTIL
- ALL RE—BALANCING AND REDISTRIBUTION OF CIRCUITS ARE COMPLETE.

 7. REPLACE ALL BURNED—OUT LAMPS AND LAMPS USED FOR TEMPORARY
- CONSTRUCTION LIGHTING IN PERMANENT LIGHT FIXTURES.

 8. AFTER ALL SYSTEMS HAVE BEEN INSPECTED AND ADJUSTED, CONFIRM ALL OPERATING FEATURES REQUIRED BY THE DRAWINGS AND

SPECIFICATIONS AND MAKE FINAL ADJUSTMENTS AS NECESSARY.

16A 3 EXISTING EQUIPMENT REUSE AND REMOVAL

USED AT SUBSTANTIAL COMPLETION OF THE WORK.

SUBSTANTIAL COMPLETION OF THE WORK.

EXISTING RACEWAYS MAY BE REUSED IF THEIR POINTS OF TERMINATIONS ARE SUITABLE; IF THEY ARE CLEAN INSIDE WITH NO EVIDENCE OF RUST OR BURRS; IF FREE FROM CRACKS, FLATTENED SECTIONS OR SHARP BENDS; AND, IF SUITABLY LOCATED TO AVOID CONFLICTS WITH OTHER TRADES OR INSTALLATIONS. CAREFULLY

"FISH" ALL EXISTING CONDUITS REUSED UNDER THIS CONTRACT TO

REMOVE ALL DEBRIS AND OBSTRUCTIONS, AND SWAB UNTIL ALL

REMOVE ALL EXISTING WIRING, LIGHT FIXTURES, EXPOSED CONDUITS

AND OTHER ELECTRICAL INSTALLATIONS NOT REUSED PRIOR TO

MOISTURE IS REMOVED.

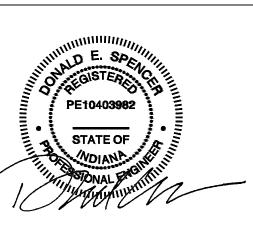
CUT, PATCH, AND REPAIR WHERE REQUIRED FOR NEW ELECTRICAL INSTALLATIONS, AND PATCH AND REPAIR ALL SURFACE DAMAGE RESULTING FROM THIS WORK. CUT FLUSH WITH THE FLOOR AND PLUG AT BOTH ENDS, RACEWAYS STUBBED ABOVE THE FLOOR AND NOT

RELOCATE ALL EXISTING ELECTRICAL SYSTEMS REQUIRED TO BE IN OPERATION AT SUBSTANTIAL COMPLETION OF THE CONTRACT, IF REQUIRED, AS A RESULT OF WORK INCLUDED UNDER THIS CONTRACT, EVEN IF NOT SPECIFICALLY INDICATED IN THE DRAWINGS OR SPECIFICATIONS.

SPENCER
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35 WHITTINGTON DRIVE
SUITE 100
BROWNSBURG, IN 46112

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'S EXCLUSIVE CHILDCARE AT G BUILDING ADDITION 6633 W 900 N MCCORDSVILLE, IN 46055

4/11/23 PERMIT SET

MARK DATE DESCRIPTION

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DATE: 4/11/2023

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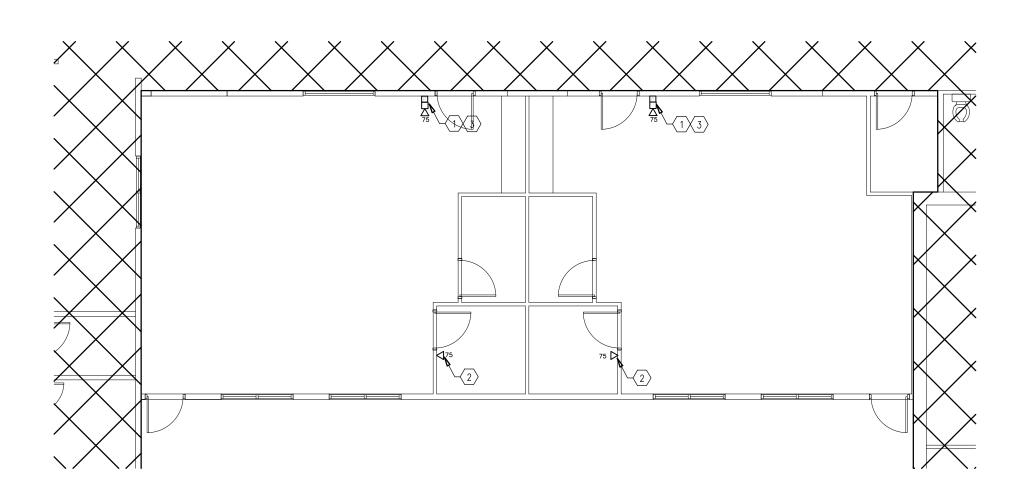
SHEET TITLE

PROJECT NO: 2023008

REVISION BLOCK

ELECTRICAL SPECIFICATIONS

F3 1



FLOOR PLAN FIRE ALARM WORK
SCALE: 1/8" = 1'-0"

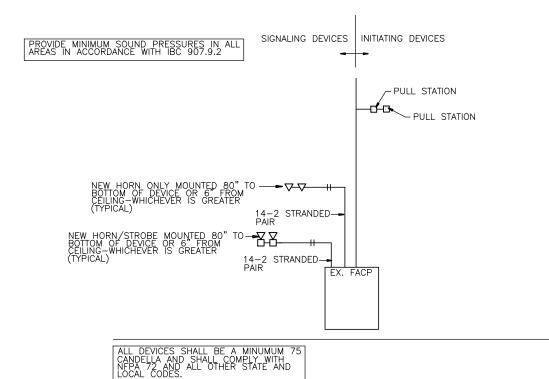
KEY NOTES (#)

- 1. FURNISH AND INSTALL NEW HORN/STROBE IN LOCATIONS SHOWN AND CALLED FOR. CONNECTED TO EXISTING FIRE ALARM CONTROL PANEL IN SPACE. SIMPLEX, MODEL #49AV (75 CANDELA).
- 2. FURNISH AND INSTALL NEW STROBE ONLY IN LOCATIONS SHOWN AND CALLED FOR. CONNECTED TO EXISTING FIRE ALARM CONTROL PANEL IN SPACE. SIMPLEX, MODEL #49VO. (75 CANDELA).
- 3. FURNISH AND INSTALL PULL STATION IN LOCATION SHOWN. SIMPLEX.

FIRE ALARM LEGEND

 \bigvee strobe only (see specification this sheet – key notes) 75 — indicates candela rating

P PULL STATION



FIRE ALARM RISER DIAGRAM

NOT TO SCALE

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SHANNON'S EXCLUSIVE CHILDCARE AT GEIST BUILDING ADDITION
6633 W 900 N
MCCORDSVILLE, IN 46055

A/11/23 PERMIT SET

MARK DATE DESCRIPTION

REVISION BLOCK

PROJECT NO: 2023008

DATE: 4/11/2023

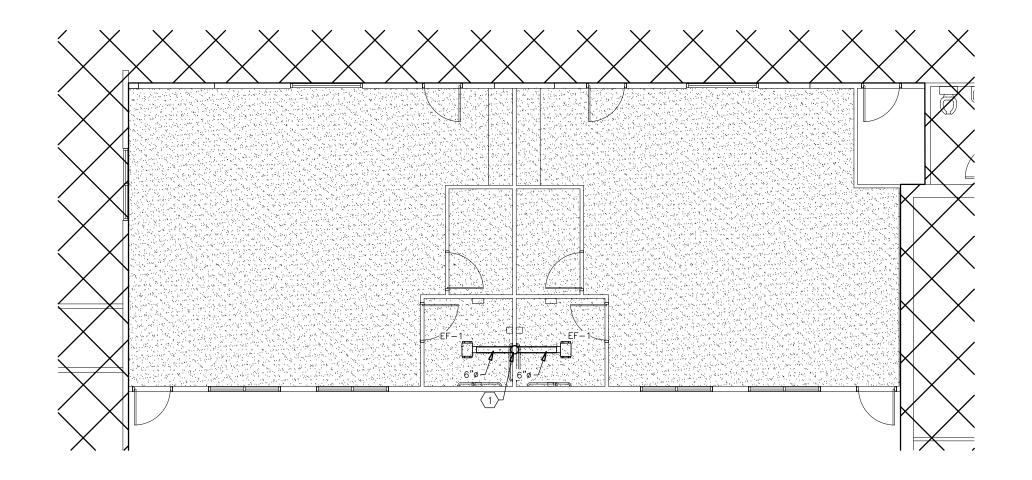
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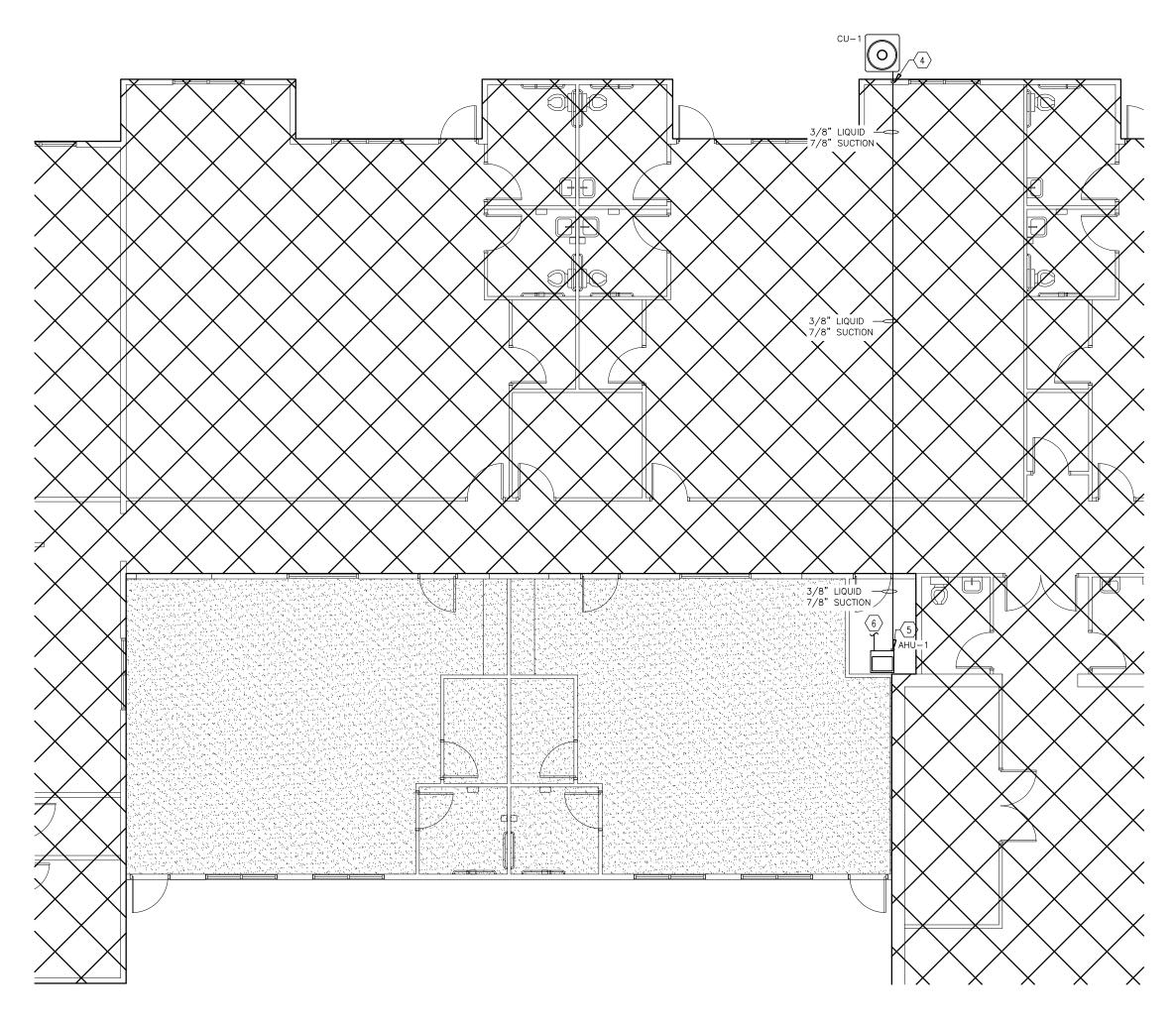
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SHEET TITLE

FLOOR PLAN -FIRE ALARM WORK

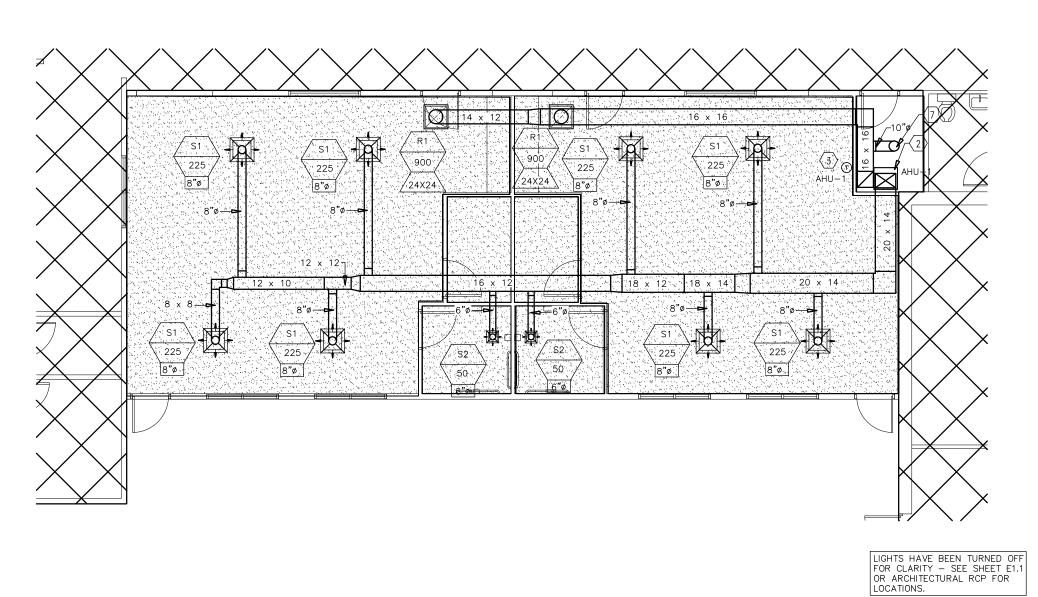
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FLOOR PLAN MECHANICAL WORK (EXHAUST) SCALE: 1/8" = 1'-0"



FLOOR PLAN MECHANICAL WORK (PIPING) SCALE: 1/8" = 1'-0"



FLOOR PLAN MECHANICAL WORK SCALE: 1/8" = 1'-0"

MECHANICAL GENERAL NOTES

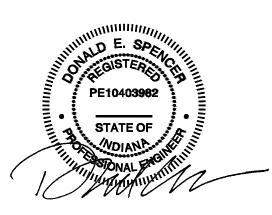
- THE BUILDING IS EXISTING AND AN ADDITION IS BEING ADDED.
- . FURNISH AND INSTALL NEW DIFFUSERS AND REGISTERS AS SHOWN AND SPECIFIED. FURNISH AND INSTALL VOLUME DAMPERS AT ALL NEW BRANCH TAKEOFFS.
- . TEMPERATURE CONTROLS, INCLUDING WIRING, SHALL BE PART OF THE MECHANICAL CONTRACT.
- 4. FIBERGLASS DUCTWORK IS NOT PERMITTED.
- 5. ALL DUCTWORK SHALL CONFORM TO THE LATEST EDITION OF SMACNA STANDARDS AND RECOMMENDATIONS.
- 5. DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS AND SHALL BE ADJUSTED IF REQUIRED TO ACCOUNT FOR METHOD OF INSULATION.
- . FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED PARTITIONS (IF REQUIRED) IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES.
- 8. NEW DUCTWORK SHALL BE INSTALLED USING THE FOLLOWING MATERIALS:
 8.1. RIGID: GALVANIZED SHEET METAL, IN ACCORDANCE WITH ASHRAE AND SMACNA REQUIREMENTS FOR LOW PRESSURE DUCTWORK. (1" WC)
 8.2. ROUND: SPIRO—SAFE ROUND DUCTWORK AND FITTINGS AS MANUFACTURED BY LINLAB, INC. (OR EQUAL) GALVANIZED STEEL, IN ACCORDANCE WITH ASTM, ASHRAE AND SMACNA REQUIREMENTS FOR LOW PRESSURE DUCTS. ALL VOLUME DAMPERS SHALL BE SPIRO—SAFE TYPE DRU, DSU OR DTU OR APPROVED EQUAL.
 8.3. FLEXIBLE: WIREMOLD TYPE WCK OR EQUAL FLEXIBLE CLASS 1 AIR DUCT, THICK, 3/4 LB. DENSITY FIBERGLASS INSULATION AND FIRE RETARDANT REINFORCED METALIZED POLYESTER FILM LAMINATED ON SHEET WIRE REINFORCING, WITH 1.5" VAPOR BARRIER (HI—VINYL) AND SHALL MEET NFPA 90A AND UL STANDARD 181.
- NEW DUCTWORK INSULATION SHALL BE INSTALLED USING THE FOLLOWING MATERIALS:
 9.1. WRAP: 1" THICK, 3/4 LB. DENSITY FIREBERGLASS INSULATION WITH VAPOR BARRIER JACKET.
- 10. FURNISH AND INSTALL NEW VOLUME DAMPERS AT ALL DUCTWORK TAKE-OFFS.

KEY NOTES (#)

- 8"Ø EXHAUST DUCT UP THROUGH THE ROOF. PROVIDE CAP AND BIRD SCREEN AS REQUIRED. SHALL BE 10'-0" FROM ANY INTAKE.
- . FURNISH AND INSTALL NEW AIR HANDLER UNIT IN MECHANICAL ROOM.
- FURNISH AND INSTALL NEW THERMOSTAT IN LOCATION SHOWN. HONEYWELL, MODEL
- . 3/8" LIQUID AND 7/8" SUCTION LINE ROUTED FROM CONDENSING UNIT UP THE WALL AND ABOVE THE CEILING FOR CONNECTION TO AHU-1. VERIFY EXACT LOCATION IN FIELD.
- 5. 3/8" Liquid and 7/8" Suction line routed down to ahu-1. Verify exact point of connection in field.
- 6. 3/4" CONDENSATE DRAIN TO BE ROUTED TO DRAIN IN SPRINKLER ROOM.

7. 10"Ø OUTSIDE AIR DUCT UP THROUGH ROOF.

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SHEET TITLE

FLOOR PLAN -MECHANICAL WORK

SPLIT SYSTEM SCHEDULE NOMINAL SA OSA SENSIBLE TOTAL EER/ INPUT OUTPUT EVAP. FAN COMPRESSORS CONDENSER FAN MIN. OPER. WT. TONS CFM CFM KW VOLT PH. AIR HANDLER/CU EVAPORATOR COIL (MBH) (MBH) SEÉR BTUH BTUH FLA/HP |QTY.|RLA | LRA |QTY. | HP | FLA | (LBS.) AHU-1 5.0 2000 520 7.6/1.0 35.0 4.8 | 230 | GAM5BOC60M51 CU-152.0 1 | .33 | 2.8 | 32.0 | 251 5.0 57.6 12.0/14.6 230 -/-23.7 152.5 4TWR4060N1

-AIR QUANTITY (CFM)

20.2

FLEXIBLE DUCT

115

850

- (1) LOW AMBIENT CONTROL TO 0°
- (2) PROVIDE 5 YEAR COMP. WARRANTY
- (3) PROVIDE 2" THICK THROWAWAY FILTERS
- (4) PROVIDE VIBRATION ISOLATORS FOR SUSPENDED OR FLOOR MOUNTING (AS REQUIRED)
- (5) COMPLETE WITH ALL FACTORY SAFETY & OPERATING CONTROLS AS REQUIRED MOUNTING OF UNITS SHALL BE AS REQUIRES W/ MINIMAL IMPACT TO EXISTING STRUCTURE

AIR DEVICE SCHEDULE											
MARK	SERVICE	TYPE	MODULE/FACE SIZE	BACKPAN	MFGR. & MOD. NO.	BORDER TYPE	PATTERN	NOTES	COMMENTS		
S1	SUPPLY	SQUARE	24" X 24"	18" X 18"	TITUS TDCA	3 – LAY-IN	4-WAY	2,4,7,9,12			
S2	SUPPLY	SQUARE	12" X 12"	_	TITUS TDCA	3 – LAY-IN	4-WAY	2,4,7,9,12			
			BORDER	CORE AREA							
R1	RETURN	SQUARE	24" X 24"	SEE PLAN	TITUS 50F	3 – LAY–IN	_	7,9,10,12			

EF-1

- PROVIDE WITH AG-35-AA OPPOSED BLADE VOLUME DAMPER (RECT. 272RS & 23RL) PROVIDE WITH MODEL EG EQUALIZING GRID
- PROVIDE WITH MODEL AG-95 OPPOSED BLADE VOLUME DAMPER (SQUARE)
- PROVIDE WITH MODEL AG-75 OPPOSED BLADE VOLUME DAMPER (ROUND) PROVIDE WITH TRM PLASTER FRAME
- PROVIDE WITH RUSKIN MODEL CFD FIRE DAMPER
- LIMIT FLEXIBLE DUCT CONNECTION TO 5'-0" MAXIMUM
- 8. PROVIDE WITH TITUS MODEL MPI37 INSULATED PLENUM (DO NOT SUPPLY FOR BLANK SECTIONS)
- 9. PROVIDE PREFAB PLASTER FRAME FOR MOUNTING
- 10. PROVIDE WITH MODEL AG-15-AA VOLUME DAMPER (RETURN RECT. 50F)
- 11. COMPLETE WITH SHEET METAL, WALL SLEEVE AND TAMPER PROOF SCREEN

SP-A70

- 12. PRICE AND KRUEGER ARE ACCEPTABLE ALTERNATES. CONTRACTOR SHALL SUBMIT ALTERNATE FOR APPROVAL. SEE NOTES #23-25 UNDER MECHANICAL WORK NOTES - GENERAL FOR

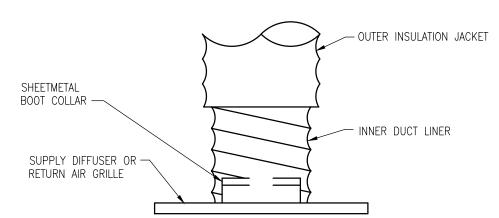
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A	ALTERNATE SUBMITTAL IN	ISTRUCTIONS.										
FAI	N SCHEDU	JLE										
UNIT NO.	MANUFACTURER	MODEL	CFM	PRESSURE DROP INCHES WC.	SONES	HP	RPM	VOLTAGE	PHASE	WATTS	WEIGHT	NOTES

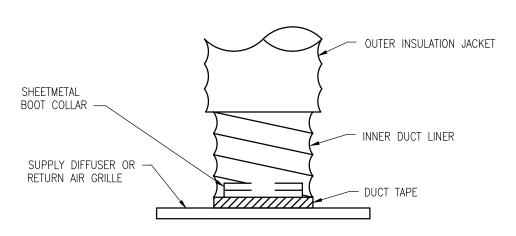
0.1"

Ventilation Schedule (based on the International Mechanical Code)											
OCCUPANCY CLASSIFICAITON SQUAR		OCCUPANT DENSITY (#/1000sf) OCCUPANT LOAD		PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE (cfm/person)	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE Ra (cfm/sf)	REQUIRED OUTSIDE AIR (cfm)					
Education											
Classrooms	1400	25	35	10	0.12	518					
Toilet rooms - public	100	0	0	0	0	0					
					Total:	518					

1. PULL OUTER INSULATION JACKET BACK AND SLIDE INNER LINE OVER SHEETMETAL COLLAR



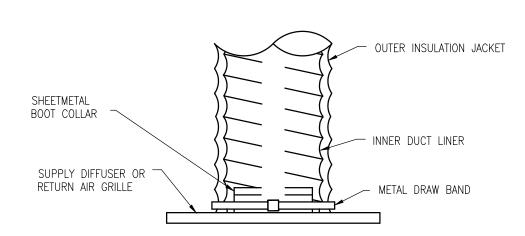
2.. TAPE INNER-LINER TO SHEETMETAL COLLAR WITH SILVER DUCT TAPE. DUCT TAPE SHOULD BE WRAPPED AROUND SHEETMETAL. COLLAR TWO FULL TURNS



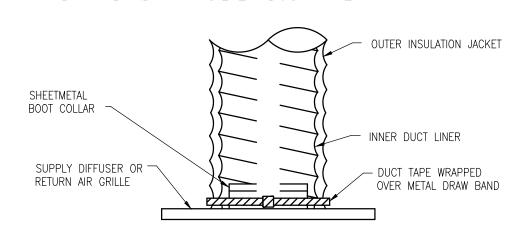
3. PULL OUTER INSULATION HACKET OVER SHEETMETAL COLLAR AND PLACE A METAL DRAW BAND OVER THE OUTER INSULATED JACKET BELOW THE SHEETMETAL COLLAR BEAD

- REGISTER TYPE

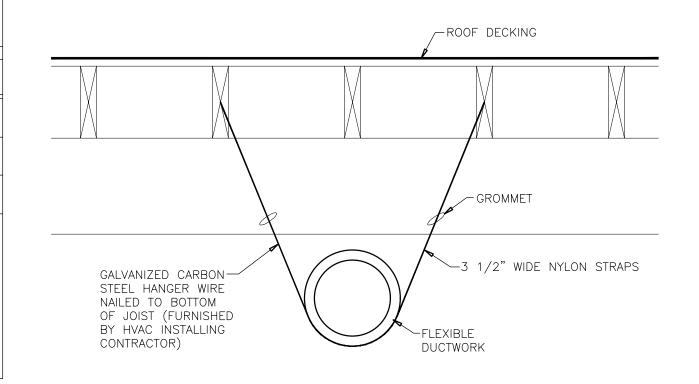
-AIR QUANTITY (CFM)



4. CUT EXCESS METAL DRAW BAND OFF AND WRAP METAL DRAW BAND WITH SILVER DUCT TAPE.



FLEX DUCT CONNECTION TO DUFFUSERS, GRILLES AND SHEETMETAL PLENUM COLLARS NOT TO SCALE



FLEXIBLE DUCT SUPPORT DETAIL **NOT TO SCALE**

MECHANICAL WORK NOTES - GENERAL

- MECHANICAL WORK SHALL BE COMPLETE IN EVERY DETAIL AND ALL MISCELLANEOUS ITEMS OF MATERIAL AND LABOR NECESSARY TO COMPLETE THE WORK DESCRIBED, SHOWN OR REASONABLY IMPLIED ON DRAWINGS OR SPECIFICATIONS SHALL BE INCLUDED IN THE CONTRACT. CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO THE WORK WHERE REQUESTED BY THE TENANT, WHEN SUCH ADJUSTMENTS ARE NECESSARY TO PROPER OPERATION AND WITHIN THE INTENT OF THE CONTRACT.
- MECHANICAL CONTRACTOR SHALL VISIT THE SITE AND VIEW ALL EXISTING CONDITIONS BEFORE SUBMITTING A PROPOSAL FOR THE WORK AS DESCRIBED AND SHOWN. NO EXTRAS WILL BE ENTERTAINED FOR FAILURE TO MAKE THIS VISIT.
- MECHANICAL CONTRACTOR SHALL ACCEPT SOLE AND COMPLETE RESPONSIBILITY FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY
- DURING PERFORMANCE OF THE WORK. CONFORM TO GENERAL CONTRACTOR'S SCHEDULE AND INSTRUCTIONS THROUGHOUT THE DURATION OF THE PROJECT AS REQUIRED TO COMPLY IN EVERY WAY NECESSARY. . CONTRACTOR SHALL NOTIFY THE ARCHITECT AND/OR ENGINEER OF ERROR, OMISSIONS OR DISCREPENCIES BEFORE CONSTRUCTION OR FABRICATION OF AFFECTED WORK, OR
- TO OWNER, ARCHITECT AND/OR ENGINEER. . ORDER EQUIPMENT ON A TIMELY BASIS (WITHIN 5 DAYS OF RECEIPT OF CONTRACT) TO

FAILING SUCH NOTICE, SHALL BE RESPONSIBLE FOR CORRECTING SAME WITHOUT COST

- MAINTAIN CONSTRUCTION SCHEDULE. SUBMIT ELECTRONIC COPY OF SHOP DRAWINGS FOR APPROVAL. FURNISH ONLY SYSTEMS, EQUIPMENT AND MATERIAL IN COMPLIANCE WITH APPROVED SHOP DRAWINGS.
- . WORK SHALL INCLUDE STARTUP OF ALL SYSTEMS, FURNISHING OF OPERATING AND MAINTENANCE INSTRUCTIONS, WARRANTEE FOR ALL EQUIPMENT AND ONE YEAR GUARANTEE OF ALL WORKMANSHIP, COMMENCING ON DATE OF ACCEPTANCE BY THE
- . WORK SHALL ALSO INCLUDE A FULL ONE (1) YEAR MAINTENANCE, PARTS AND SERVICE
- CONTRACT FOR ALL EQUIPMENT FURNISHED UNDER THE CONTRACT. 10. ON ALL AIR CONDITIONING EQUIPMENT WHICH INCLUDES COMPRESSORS (ROOF-TOP, SPLIT SYSTEMS, ETC.) INCLUDE AN EXTENDED FOUR (4) YEAR WARRANTY FOR THE
- COMPRESSOR. II. VOLUME DAMPERS, SPLITTERS AND DEFLECTORS SHALL BE INSTALLED IN ALL DUCTS TO PERMIT ACCURATE BALANCING OF THE SYSTEM. THE DAMPERS, SPLITTERS AND DEFLECTORS SHALL BE ADJUSTED TO SATISFY THE HVAC REQUIREMENTS OF THE
- CONDITIONED SPACE AND LOCKED IN PLACE AS REQUIRED 2. WORK SHALL ALSO INCLUDE TESTING AND BALANCING OF A.C. SYSTEM BY A CERTIFIED BALANCING CONTRACTOR. CONTRACTOR SHALL SUBMIT COPIES OF TEST AND BALANCE REPORTS SHOWING DETAILED RESULTS OF WORK, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: FLOW READINGS. STATIC PRESSURES, TEMPERATURE READINGS. MOTOR
- AMPERAGE, BALANCING OF AIR QUANTITIES TO PLAN REQUIREMENTS, ETC. AS REQUIRED. MAKE ALL ADJUSTMENTS AS REQUIRED TO PROVIDE DESIGN AIR FLOW. 13. FURNISH ALL EQUIPMENT MANUALS AND WARRANTIES TO TENANT AT THE COMPLETION
- OF THE PROJECT 14. WHERE APPLICABLE, FURNISH AND INSTALL VIBRATION ISOLATION AS REQUIRED TO REDUCE, LIMIT AND/OR REMOVE ALL VIBRATIONS FOR ALL MOVING EQUIPMENT.
- VIBRATION ISOLATION SHALL BE IN ACCORDANCE WITH ASHRAE RECOMMENDATIONS. 15. PROVIDE ENGRAVED BAKELITE NAMEPLATES FOR ALL MECHANICAL EQUIPMENT INCLUDING TENANT'S NAME AND SPACE NUMBER. LETTERS SHALL BE 2" HIGH OR AS REQUIRED BY THE LANDLORD.
- 16. ALL FABRICATED COMPONENTS (CONTRACTOR OR MANUFACTURER) OF THE OUTSIDE AIR, SUPPLY AIR, RETURN AIR AND EXHAUST AIR SYSTEMS SHALL BE CONSTRUCTED AND INSTALLED AIR TIGHT. THE INSTALLED SYSTEMS SHALL BE PRESSURE TESTED AS
- 17. FURNISH TWO (2) COPIES OF AS-BUILT DRAWINGS OF THE A.C. SYSTEM TO THE OWNER FOR REVIEW AND APPROVAL, OR SUBMIT A LETTER TO THE OWNER CONFIRMING THAT
- THE SYSTEM WAS INSTALLED AS PER PLANS AND SPECIFICATIONS. 18. ALL WORK AND EQUIPMENT SHALL BE CLEANED TO THE SATISFACTION OF THE OWNER
- BEFORE TURNING PROJECT OVER. 19. SEAL ALL PENETRATIONS THROUGH WALLS, CEILINGS, FLOORS, ETC. SO THAT THEY ARE
- AIR, WATER AND FIRE TIGHT. 20. FURNISH AND INSTALL ACCESS PANELS FOR ALL CONCEALED EQUIPMENT, FIRE DAMPERS, PIPING VALVES, CLEANOUTS, ETC. ACCESS PANELS SHALL BE OF SUFFICIENT SIZE TO
- PROVIDE ADEQUATE WORKING CLEARANCE AND ACCESS. 21. FURNISH ALL MATERIAL AND EQUIPMENT AS SPECIFIED, EXCEPT WHERE SPECIFIC APPROVAL FOR SUBSTITUTION IS GIVEN BY THE OWNER.
- 22. PROPOSAL SHALL BE BASED ON SPECIFIED MATERIAL AND EQUIPMENT IN ORDER TO PROMOTE COMPETITION. HOWEVER BIDDERS ARE ENCOURAGED TO SUBMIT ALTERNATE.
- PROPOSALS ON ANY ALTERNATE MATERIALS AND/OR EQUIPMENT THEY WISH TO PROPOSE, INCLUDING ANY PRICE CHANGES EFFÉCTED BY ACCEPTANCE OF ALTERNATES. 23. COST OF ANY CHANGES REQUIRED BY OTHER TRADES DUE TO SUBSTITUTION OF
- ALTERNATE EQUIPMENT SHALL BE INCLUDED IN THE ALTERNATE PROPOSAL. 24. ALTERNATE PROPOSALS WILL BE ACCEPTED OR REJECTED BEFORE ISSUANCE OF CONTRACTS. NO CHANGES WILL BE ALLOWED AFTER THE CONTRACT IS SIGNED. ANY UNAUTHORIZED CHANGES TO THE DESIGN AND LAYOUT MAY BE REQUIRED TO BE REMOVED AT CONTRACTOR'S EXPENSE IF DEEMED NECESSARY BY THE ARCHITECT, ENGINEER OR OWNER'S REPRESENTATIVE.
- 25. VERIFY LOCAL CONDITIONS AT SITE 26. COMPLY WITH ALL APPLICABLE CODES.
- 27. SECURE AND PAY FOR ALL REQUIRED PERMITS. 28. SEE REFLECTED CEILING PLAN FOR EXACT LOCATION OF CEILING GRID, LIGHT FIXTURES,
- 29. ALL INSULATION MATERIALS, INCLUDING BUT NOT LIMITED TO DUCT INSULATION AND PIPING INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS (ON THE FLAME SPREAD TEST SCALE) AND SMOKE DEVELOPMENT OF 50 OR LESS (ON THE SMOKE TEST SCALE) OR AS DEFINED BY NFPA 255 STANDARD METHOD OF TESTING OR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS, LOCAL CODES AND LOCAL AUTHORITIES HAVING JURISDICTION.
- 30. DIELECTRIC UNIONS SHALL BE USED TO CONNECT DISSIMILIAR METALS OR METAL PIPING SHALL HAVE METAL CONNECTIONS ON EACH END THREADED TO MATCH THE ADJACENT PIPING. METAL COMPONENTS SHALL BE SEPARATED BY A A NYLON INSULATOR TO PREVENT CURRENT FLOW BETWEEN DISSIMILAR METALS UNIONS SHALL BE SUITABLE FOR THE SYSTEM OPERATING PRESSURES AND TEMPERATURE WELD TYPE: ASTM A-234.

MECHANICAL WORK NOTES - AIR FILTERS

1. ON THE DAY OF STORE CONSTRUCTION COMPLETION/TURNOVER, THE AIR CONDITIONING EQUIPMENT FILTERS, IF ANY, (WHETHER NEW CONSTRUCTION OR EXISTING) SHALL BE REPLACED WITH NEW FILTERS.



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SHEET TITLE

MECHANICAL DETAILS

<u>15A 1-1 GENERAL REQUIREMENTS</u>

REQUIREMENTS UNDER DIVISION ONE AND THE GENERAL AND SUPPLEMENTARY CONDITIONS OF THESE SPECIFICATIONS SHALL BE A PART OF THIS SECTION. CONTRACTOR SHALL BECOME THOROUGHLY ACQUAINTED WITH ITS CONTENTS AS TO REQUIREMENTS THAT AFFECT THIS DIVISION OR SECTION. THE WORK REQUIRED UNDER THIS SECTION INCLUDES MATERIAL, EQUIPMENT, APPLIANCES, TRANSPORTATION, SERVICES, AND LABOR REQUIRED TO COMPLETE THE ENTIRE SYSTEM AS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS.

THE SPECIFICATIONS AND DRAWINGS FOR THE PROJECT ARE COMPLEMENTARY. AND PORTIONS OF THE WORK DESCRIBED IN ONE, SHALL BE PROVIDED AS IF DESCRIBED IN BOTH. IN THE EVENT OF DISCREPANCIES, NOTIFY THE ENGINEER AND REQUEST CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK INVOLVED.

<u>15A 1-2 DEFINITIONS</u>

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION AND SIMILAR

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT THE PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS.

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

FURNISHED BY OWNER OR FURNISHED BY OTHERS: THE ITEM WILL BE FURNISHED BY THE OWNER OR OTHERS. IT IS TO BE INSTALLED AND CONNECTED UNDER THE REQUIREMENTS. OF THIS DIVISION, COMPLETE AND READY FOR OPERATION, INCLUDING ITEMS INCIDENTAL TO THE WORK, INCLUDING SERVICES NECESSARY FOR PROPER INSTALLATION AND OPERATION. THE INSTALLATION SHALL BE INCLUDED UNDER THE GUARANTEE REQUIRED BY THIS

ENGINEER: WHERE REFERENCED IN THIS DIVISION, "ENGINEER" IS THE ENGINEER OF RECORD AND THE DESIGN PROFESSIONAL FOR THE WORK UNDER THIS DIVISION, AND IS A CONSULTANT TO, AND AN AUTHORIZED REPRESENTATIVE OF, THE ARCHITECT, AS DEFINED IN THE GENERAL AND/OR SUPPLEMENTARY CONDITIONS. WHEN USED IN THIS DIVISION, IT MEANS INCREASED INVOLVEMENT BY, AND OBLIGATIONS TO, THE ENGINEER, IN ADDITION TO INVOLVEMENT BY, AND OBLIGATIONS TO, THE "ARCHITECT"

AHJ: THE LOCAL CODE AND/OR INSPECTION AGENCY (AUTHORITY) HAVING JURISDICTION OVER THE WORK.

THE TERMS "APPROVED EQUAL", "EQUIVALENT", OR "EQUAL" ARE USED SYNONYMOUSLY AND SHALL MEAN "ACCEPTED BY OR ACCEPTABLE TO THE ENGINEER AS EQUIVALENT TO THE ITEM OR MANUFACTURER SPECIFIED". THE TERM "APPROVED" SHALL MEAN LABELED, LISTED, OR BOTH, BY A NATIONALLY RECOGNIZED TESTING LABORATORY (E.G. UL, ETL, CSA), AND ACCEPTABLE TO THE AHJ OVER THIS PROJECT.

15A 1-3 PREBID SITE VISIT

PRIOR TO SUBMITTING BID, VISIT THE SITE OF THE PROPOSED WORK AND BECOME FULLY INFORMED AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. FAILURE TO DO SO WILL NOT BE CONSIDERED SUFFICIENT JUSTIFICATION TO REQUEST OR OBTAIN EXTRA COMPENSATION OVER AND ABOVE THE CONTRACT PRICE.

15A 1-4 MATERIAL AND WORKMANSHIP

PROVIDE NEW MATERIAL, EQUIPMENT, AND APPARATUS UNDER THIS CONTRACT UNLESS OTHERWISE STATED HEREIN, OF BEST QUALITY NORMALLY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE, AND FREE FROM DEFECTS. MODEL NUMBERS LISTED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS ARE NOT NECESSARILY INTENDED TO DESIGNATE THE REQUIRED TRIM, WRITTEN DESCRIPTIONS OF THE TRIM GOVERN MODEL

PIPE, PIPE FITTINGS, PIPE SPECIALTIES AND VALVES SHALL BE MANUFACTURED IN PLANTS LOCATED IN THE UNITED STATES.

WORK PERFORMED UNDER THIS CONTRACT SHALL PROVIDE A NEAT AND "WORKMANLIKE" APPEARANCE WHEN COMPLETED. TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER. WORKMANSHIP SHALL BE THE FINEST POSSIBLE BY EXPERIENCED MECHANICS. INSTALLATIONS SHALL COMPLY WITH APPLICABLE CODES AND LAWS.

THE COMPLETE INSTALLATION SHALL FUNCTION AS DESIGNED AND INTENDED WITH RESPECT TO EFFICIENCY, CAPACITY, NOISE LEVEL, ETC. ABNORMAL NOISE CAUSED BY RATTLING EQUIPMENT, PIPING, DUCTS, AIR DEVICES, AND SQUEAKS IN ROTATING COMPONENTS WILL NOT BE ACCEPTABLE. IN GENERAL, MATERIALS AND EQUIPMENT SHALL BE OF COMMERCIAL SPECIFICATION GRADE IN QUALITY. LIGHT DUTY AND RESIDENTIAL TYPE EQUIPMENT WILL NOT BE ACCEPTED.

REMOVE FROM THE PREMISES WASTE MATERIAL PRESENT AS A RESULT OF WORK, INCLUDING CARTONS, CRATING, PAPER, STICKERS, AND/OR EXCAVATION MATERIAL NOT USED IN BACKFILLING, ETC. CLEAN EQUIPMENT INSTALLED UNDER THIS CONTRACT TO PRESENT A NEAT AND CLEAN INSTALLATION AT THE TERMINATION OF THE WORK.

REPAIR OR REPLACE PUBLIC AND PRIVATE PROPERTY DAMAGED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT TO THE SATISFACTION OF AUTHORITIES AND REGULATIONS HAVING JURISDICTION.

<u>15A 1-5 COORDINATION</u>

COORDINATE WORK WITH THAT OF OTHER TRADES SO THAT THE VARIOUS COMPONENTS OF THE SYSTEMS WILL BE INSTALLED AT THE PROPER TIME, WILL FIT THE AVAILABLE SPACE. AND WILL ALLOW PROPER SERVICE ACCESS TO THOSE ITEMS REQUIRING MAINTENANCE. COMPONENTS WHICH ARE INSTALLED WITHOUT REGARD TO THE ABOVE SHALL BE RELOCATED AT NO ADDITIONAL COST TO THE OWNER.

UNLESS OTHERWISE INDICATED, THE GENERAL CONTRACTOR WILL PROVIDE CHASES AND OPENINGS IN BUILDING CONSTRUCTION REQUIRED FOR INSTALLATION OF THE SYSTEMS SPECIFIED HEREIN. CONTRACTOR SHALL FURNISH THE GENERAL CONTRACTOR WITH INFORMATION WHERE CHASES AND OPENINGS ARE REQUIRED. KEEP INFORMED AS TO THE WORK OF OTHER TRADES ENGAGED IN THE CONSTRUCTION OF THE PROJECT, AND EXECUTE WORK IN A MANNER AS TO NOT INTERFERE WITH OR DELAY THE WORK OF OTHER TRADES.

FIGURED DIMENSIONS SHALL BE TAKEN IN PREFERENCE TO SCALE DIMENSIONS. CONTRACTOR SHALL TAKE HIS OWN MEASUREMENTS AT THE BUILDING, AS VARIATIONS MAY OCCUR. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ERRORS THAT COULD HAVE BEEN AVOIDED BY PROPER CHECKING AND INSPECTION.

PROVIDE MATERIALS WITH TRIM THAT WILL PROPERLY FIT THE TYPES OF CEILING, WALL, OR FLOOR FINISHES ACTUALLY INSTALLED. MODEL NUMBERS LISTED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS ARE NOT INTENDED TO DESIGNATE THE REQUIRED TRIM.

<u>15A 1-6 ORDINANCES AND CODES</u>

WORK PERFORMED UNDER THIS CONTRACT SHALL, AT A MINIMUM, BE IN CONFORMANCE WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES HAVING JURISDICTION. EQUIPMENT FURNISHED AND ASSOCIATED INSTALLATION WORK PERFORMED UNDER THIS CONTRACT SHALL BE IN STRICT COMPLIANCE WITH CURRENT APPLICABLE CODES ADOPTED BY THE LOCAL AHJ INCLUDING ANY AMENDMENTS AND STANDARDS AS SET FORTH BY THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), UNDERWRITERS LABORATORIES (UL), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME), AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS (ASHRAE), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICAN SOCIETY OF TESTING MATERIALS (ASTM) AND OTHER NATIONAL STANDARDS AND CODES WHERE APPLICABLE. WHERE THE CONTRACT DOCUMENTS EXCEED THE REQUIREMENTS OF THE REFERENCED CODES, STANDARDS, ETC., THE CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE.

PROCURE AND PAY FOR PERMITS AND LICENSES REQUIRED FOR THE ACCOMPLISHMENT OF THE WORK HEREIN DESCRIBED. WHERE REQUIRED, OBTAIN, PAY FOR AND FURNISH CERTIFICATES OF INSPECTION TO OWNER. CONTRACTOR WILL BE HELD RESPONSIBLE FOR VIOLATIONS OF THE LAW.

15A 1-7 PROTECTION OF EQUIPMENT AND MATERIALS

STORE AND PROTECT FROM DAMAGE EQUIPMENT AND MATERIALS DELIVERED TO JOB SITE. COVER WITH WATERPROOF, TEAR-RESISTANT, HEAVY TARP OR POLYETHYLENE PLASTIC AS REQUIRED TO PROTECT FROM PLASTER, DIRT. PAINT, WATER, OR PHYSICAL DAMAGE. EQUIPMENT AND MATERIAL THAT HAS BEEN DAMAGED BY CONSTRUCTION ACTIVITIES WILL BE REJECTED, AND CONTRACTOR IS OBLIGATED TO FURNISH NEW EQUIPMENT AND MATERIAL OF A LIKE KIND.

KEEP PREMISES BROOM CLEAN FROM FOREIGN MATERIAL CREATED DURING WORK PERFORMED UNDER THIS CONTRACT. PIPING, EQUIPMENT, ETC. SHALL HAVE A NEAT AND CLEAN APPEARANCE AT THE TERMINATION OF THE WORK.

PLUG OR CAP OPEN ENDS OF DUCTWORK AND PIPING SYSTEMS WHILE STORED AND INSTALLED DURING CONSTRUCTION WHEN NOT IN USE TO PREVENT THE ENTRANCE OF DEBRIS INTO THE SYSTEMS.

<u>15A 1-8 SUBSTITUTIONS</u>

THE BASE BID SHALL INCLUDE ONLY THE PRODUCTS FROM MANUFACTURERS SPECIFICALLY NAMED IN THE DRAWINGS AND SPECIFICATIONS. NO SUBSTITUTION WILL BE CONSIDERED PRIOR TO RECEIPT OF BIDS UNLESS WRITTEN REQUEST FOR APPROVAL TO BID HAS BEEN RECEIVED BY THE ENGINEER AT LEAST TEN CALENDAR DAYS PRIOR TO THE DATE FOR RECEIPT OF BIDS. EACH SUCH REQUEST SHALL INCLUDE THE NAME OF THE MATERIAL OR EQUIPMENT FOR WHICH IT IS TO BE SUBSTITUTED AND A COMPLETE DESCRIPTION OF THE PROPOSED SUBSTITUTE INCLUDING DRAWINGS, CUTS, PERFORMANCE AND TEST DATA AND OTHER INFORMATION NECESSARY FOR AN EVALUATION. A STATEMENT SETTING FORTH CHANGES IN OTHER MATERIALS, EQUIPMENT OR OTHER WORK THAT INCORPORATION OF THE SUBSTITUTE WOULD REQUIRE SHALL BE INCLUDED. THE BURDEN OF PROOF OF THE MERIT OF THE PROPOSED SUBSTITUTE IS UPON THE PROPOSER. THE ENGINEER'S DECISION OF APPROVAL OR DISAPPROVAL TO BID OF A PROPOSED SUBSTITUTION SHALL BE FINAL.

THE TERMS "APPROVED", "APPROVED EQUAL", OR "EQUAL", REFER TO APPROVAL BY THE ENGINEER AS AN ACCEPTABLE ALTERNATE BID. NO SUBSTITUTIONS WILL BE CONSIDERED THAT ARE NOT BID AS AN ALTERNATE. NO MATERIAL SUBSTITUTIONS SHALL BE CONSIDERED FOR APPROVAL PRIOR TO AWARD OF CONTRACT.

COORDINATE AND VERIFY WITH OTHER TRADES WHETHER OR NOT THE SUBSTITUTED EQUIPMENT CAN BE INSTALLED AS SHOWN ON THE CONSTRUCTION DRAWINGS WITHOUT MODIFICATION TO ASSOCIATED SYSTEMS OR ARCHITECTURAL OR ENGINEERING DESIGN. INCLUDE ADDITIONAL COSTS FOR ARCHITECTURAL AND ENGINEERING DESIGN FEES IN BID IF DRAWING MODIFICATIONS ARE REQUIRED BECAUSE OF SUBSTITUTED EQUIPMENT.

15A 1-9 SHOP DRAWINGS

UPON BEING AWARDED A CONTRACT, SUBMIT TO THE ARCHITECT FOR APPROVAL, SIX (6) COPIES OF MANUFACTURER'S SHOP DRAWINGS FOR EQUIPMENT TO BE FURNISHED UNDER THIS CONTRACT, ITEMS REQUIRING COORDINATION BETWEEN CONTRACTORS AND SHEET METAL DUCTWORK FABRICATION DRAWINGS. BEFORE SUBMITTING SHOP DRAWINGS AND MATERIAL LISTS, VERIFY THAT EQUIPMENT SUBMITTED IS MUTUALLY COMPATIBLE AND SUITABLE FOR THE INTENDED USE, AND WILL FIT THE AVAILABLE SPACE AND ALLOW AMPLE ROOM FOR MAINTENANCE.

THE ENGINEER'S CHECKING AND SUBSEQUENT APPROVAL OF SUCH SHOP DRAWINGS WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN DIMENSIONS, DETAILS, SIZE OF MEMBERS, QUANTITIES, OMISSIONS OF COMPONENTS OR FITTINGS; COORDINATION OF ELECTRICAL REQUIREMENTS; OR FOR COORDINATING ITEMS WITH ACTUAL BUILDING CONDITIONS. PROCEED WITH THE PROCUREMENT AND INSTALLATION OF EQUIPMENT ONLY AFTER RECEIVING APPROVED SHOP DRAWINGS RELATIVE TO EACH ITEM.

CATALOG DATA SHALL BE PROPERLY BOUND, IDENTIFIED, INDEXED AND TABBED IN A 3-RING BINDER, FACH ITEM OR MODEL NUMBER SHALL BE CLEARLY MARKED AND ACCESSORIES INDICATED. LABEL THE CATALOG DATA WITH THE EQUIPMENT IDENTIFICATION ACRONYM OR NUMBER AS USED ON THE DRAWINGS AND INCLUDE PERFORMANCE CURVES, CAPACITIES, SIZES, MATERIALS, FINISHES, WIRING DIAGRAMS AND DEVIATIONS FROM SPECIFIED EQUIPMENT OR MATERIALS. MARK OUT INAPPLICABLE ITEMS. SHOP DRAWINGS WILL BE RETURNED WITHOUT REVIEW IF THE ABOVE MENTIONED REQUIREMENTS ARE NOT MET.

15A 1-10 ELECTRONIC DRAWING FILES

IN PREPARATION OF SHOP DRAWINGS, CONTRACTOR MAY, AT HIS OPTION, OBTAIN ELECTRONIC DRAWING FILES IN AUTOCAD OR DXF FORMAT ON 3.5 INCH FLOPPY DISK, 100 MB ZIP DISK OR CD-ROM DISK, AS DESIRED, FROM THE ENGINEER FOR A SHIPPING AND HANDLING FEE OF \$200 FOR A DRAWING SET UP TO 12 SHEETS AND \$15 PER SHEET FOR EACH ADDITIONAL SHEET. CONTRACTOR SHALL CONTACT THE ARCHITECT FOR WRITTEN AUTHORIZATION AND ENGINEER FOR THE NECESSARY RELEASE AGREEMENT FORM AND TO SPECIFY SHIPPING METHOD AND DRAWING FORMAT. IN ADDITION TO PAYMENT, ARCHITECT'S WRITTEN AUTHORIZATION AND ENGINEER'S RELEASE AGREEMENT FORM MUST BE RECEIVED BEFORE ELECTRONIC DRAWING FILES WILL BE SENT.

15A 1-11 CUTTING AND PATCHING

PERFORM CUTTING OF WALLS, FLOORS, CEILINGS, ETC. AS REQUIRED TO INSTALL WORK UNDER THIS SECTION. OBTAIN PERMISSION FROM THE ARCHITECT PRIOR TO CUTTING. DO NOT CUT OR DISTURB STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL FROM THE ARCHITECT. CUT HOLES AS SMALL AS POSSIBLE. GENERAL CONTRACTOR SHALL PATCH WALLS, FLOORS, ETC. AS REQUIRED BY WORK UNDER THIS SECTION. PATCHING SHALL MATCH THE ORIGINAL MATERIAL AND CONSTRUCTION. REPAIR AND REFINISH AREAS DISTURBED BY WORK TO THE CONDITION OF ADJOINING SURFACES IN A MANNER SATISFACTORY TO THE ARCHITECT.

<u>15A 1-12 ROUGH-IN</u>

COORDINATE WITHOUT DELAY ROUGHING-IN WITH GENERAL CONSTRUCTION. CONCEAL PIPING AND CONDUIT ROUGH-IN EXCEPT IN UNFINISHED AREAS AND WHERE OTHERWISE

<u>15A 1-13 STRUCTURAL STEEL</u>

STRUCTURAL STEEL USED FOR SUPPORT OF EQUIPMENT, DUCTWORK AND PIPING SHALL BE NEW, CLEAN, AND CONFORM TO ASTM DESIGNATION A-36.

SUPPORT MECHANICAL COMPONENTS FROM THE BUILDING STRUCTURE. DO NOT SUPPORT MECHANICAL COMPONENTS FROM CEILINGS, OTHER MECHANICAL OR ELECTRICAL COMPONENTS, AND OTHER NON-STRUCTURAL ELEMENTS.

<u>15A 1-14 PENETRATIONS</u>

SEAL MECHANICAL FLOOR, EXTERIOR WALL AND ROOF PENETRATIONS WATERTIGHT AND WEATHERTIGHT. SEAL AROUND MECHANICAL PENETRATIONS WITH 3M CP-25 FIRE BARRIER CAULK (THICKNESS AS REQUIRED AND RECOMMENDED BY MANUFACTURER) TO MAINTAIN FIRE RESISTANCE RATING OF FIRE-RATED ASSEMBLIES.

PROVIDE PREFABRICATED ROOF CURBS MANUFACTURED BY CUSTOM CURB, INC., PATE COMPANY, THYCURB OR APPROVED EQUAL. PROVIDE ROOF CURB WITH FACTORY INSTALLED WOOD NAILER; WELDED, 18 GAUGE GALVANIZED STEEL SHELL, BASE PLATE AND FLASHING; 1-1/2" THICK, 3 POUND RIGID INSULATION; FULLY MITERED 3-INCH RAISED CANT; COVER OF WEATHER-RESISTANT, WEATHER-PROOF MATERIAL AND PIPE COLLAR OF WEATHER-RESISTANT MATERIAL WITH STAINLESS STEEL PIPE CLAMPS.

<u> 15A 1-15 AIR FILTERS</u>

PROVIDE FARR 30/30 PLEATED, THROWAWAY TYPE FILTERS, UNLESS OTHERWISE INDICATED. AIR UNITS SHALL HAVE NEW FILTERS INSTALLED WHEN THEY ARE OPERATED BEFORE FINAL ACCEPTANCE. FILTERS SHALL BE MANUFACTURED BY AMERICAN AIR FILTER, FARR, FLANDERS, OR APPROVED EQUAL.

IF HVAC EQUIPMENT IS USED DURING THE CONSTRUCTION PERIOD, CONTRACTOR SHALL PROVIDE ONE SET OF FILTERS WHEN THE UNIT IS STARTED AND REPLACE FILTERS WHEN NEEDED, BUT NOT LESS THAN EVERY MONTH. ON THE DAY OF SUBSTANTIAL COMPLETION, THE CONTRACTOR SHALL CLEAN THE UNIT AND PROVIDE A NEW SET OF FILTERS IN THE UNIT.

15A 1-16 MOTORS AND STARTERS

PROVIDE MOTORS AND STARTING EQUIPMENT WHERE NOT FURNISHED WITH THE EQUIPMENT PACKAGE. MOTORS SHALL HAVE COPPER WINDINGS, CLASS B INSULATION, AND STANDARD SQUIRREL CAGE WITH STARTING TORQUE CHARACTERISTICS SUITABLE FOR THE EQUIPMENT SERVED. MOTORS FOR AIR HANDLING EQUIPMENT SHALL BE SELECTED FOR QUIET OPERATION. EACH MOTOR SHALL BE CHECKED FOR PROPER ROTATION AFTER ELECTRICAL CONNECTION HAS BEEN COMPLETED. PROVIDE DRIPPROOF ENCLOSURE FOR LOCATIONS PROTECTED FROM WEATHER AND NOT IN AIR STREAM OF FAN; AND TOTALLY ENCLOSED FAN COOLED ENCLOSURE FOR MOTORS EXPOSED TO WEATHER. MOTORS SHALL BE MANUFACTURED BY CENTURY, GENERAL ELECTRIC, WESTINGHOUSE, LOUIS ALLIS, OR APPROVED EQUAL.

PROVIDE EVERY MOTOR, EXCEPT FRACTIONAL HORSEPOWER SINGLE PHASE MOTORS WITH AN APPROVED TYPE OF "BUILT-IN" THERMAL OVERLOAD PROTECTION. WITH A MOTOR STARTER. EACH STARTER SHALL BE PROVIDED WITH OVERLOAD HEATERS SIZED TO THE MOTOR RATING, AND EVERY THREE PHASE MOTOR STARTER SHALL HAVE OVERLOAD HEATERS IN EACH PHASE. AMBIENT COMPENSATED HEATERS SHALL BE INSTALLED WHEREVER NECESSARY. UNLESS NOTED OTHERWISE, MOTOR STARTERS SHALL BE FURNISHED BY THE DIVISION 15 CONTRACTOR FOR INSTALLATION AND CONNECTION BY THE DIVISION 16 CONTRACTOR. STARTERS SHALL BE ALLEN-BRADLEY, CLARK, FURNAS, SQUARE D, OR APPROVED EQUAL.

15A 1-17 ELECTRICAL WIRING

LINE VOLTAGE WIRING SHALL BE PROVIDED BY DIVISION 16. LINE VOLTAGE CONTROL AND INTERLOCK WIRING FOR MECHANICAL SYSTEMS SHALL ALSO BE PROVIDED BY DIVISION 16 CONTRACTOR. LOW VOLTAGE CONTROL WIRING SHALL BE PROVIDED BY THE DIVISION 15 CONTRACTOR. FURNISH WIRING DIAGRAMS TO THE DIVISION 16 CONTRACTOR AS REQUIRED FOR PROPER EQUIPMENT HOOKUP. COORDINATE WITH THE DIVISION 16 CONTRACTOR THE ACTUAL WIRE SIZING AMPS FOR MECHANICAL EQUIPMENT (FROM THE EQUIPMENT NAMEPLATE) TO ENSURE PROPER INSTALLATION.

15A 1-18 REFRIGERANT AND OIL

PROVIDE FULL REFRIGERANT AND OIL CHARGE IN NEW AIR CONDITIONING REFRIGERATION SYSTEMS, AND MAINTAIN IT FOR FULL TERM OF THE GUARANTEE.

15A 1-19 FINAL TESTING AND ADJUSTMENTS

FINAL SYSTEM TESTING, BALANCING AND ADJUSTMENTS SHALL BE PERFORMED BY A CONTRACTOR CERTIFIED BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). ASSOCIATED AIR BALANCE COUNCIL (AABC) OR OTHER APPROVED AGENCY. PERFORM TEST READINGS ON FANS, UNITS, COILS, ETC. AND ADJUST EQUIPMENT TO DELIVER SPECIFIED AMOUNTS OF AIR. PREPARE TESTING AND BALANCING REPORT LOG SHOWING AIR SUPPLY QUANTITIES, AIR ENTERING AND LEAVING TEMPERATURES AND PRESSURES, FAN AND UNIT TEST READINGS, ETC., AND SUBMIT SIX COPIES OF THE FINAL COMPILATION OF DATA TO THE ARCHITECT FOR EVALUATION AND APPROVAL BEFORE FINAL INSPECTION OF THE PROJECT BALANCE AIR SYSTEMS TO WITHIN PLUS OR MINUS 10 PERCENT FOR TERMINAL DEVICES AND BRANCH LINES AND PLUS OR MINUS 5 PERCENT FOR MAIN DUCTS AND AIR HANDLING EQUIPMENT OF THE AMOUNT OF AIR SHOWN ON THE DRAWINGS. FURTHER ADJUSTMENTS SHALL BE MADE TO OBTAIN UNIFORM TEMPERATURE IN SPACES. ADJUST EQUIPMENT TO OPERATE AS INTENDED BY THE SPECIFICATION. ALIGN BEARINGS AND REPLACE BEARINGS THAT HAVE DIRT OR FOREIGN MATERIAL IN THEM WITH NEW BEARINGS WITHOUT ADDITIONAL COST TO THE OWNER. BALANCE CONTRACTOR SHALL INCLUDE IN THE REPORT ANY IMPROPERLY INSTALLED OR MISSING BALANCING DEVICES THAT WOULD NEGATIVELY IMPACT THE SYSTEM OPERATION.

ADJUST THERMOSTATS AND CONTROL DEVICES TO OPERATE AS INTENDED. ADJUST BURNERS, FANS, ETC. FOR PROPER AND EFFICIENT OPERATION. CERTIFY TO ARCHITECT THAT ADJUSTMENTS HAVE BEEN MADE AND THAT SYSTEM IS OPERATING SATISFACTORILY. FURTHER ADJUSTMENTS SHALL BE MADE TO OBTAIN UNIFORM TEMPERATURE IN SPACES. CALIBRATE, SET, AND ADJUST AUTOMATIC TEMPERATURE CONTROLS. CHECK PROPER SEQUENCING OF INTERLOCK SYSTEMS, AND OPERATION OF SAFETY CONTROLS

15A 1-20 EQUIPMENT FURNISHED BY OTHERS

PROVIDE NECESSARY EQUIPMENT AND ACCESSORIES THAT ARE NOT PROVIDED BY THE EQUIPMENT SUPPLIER OR OWNER TO COMPLETE INSTALLATION OF COOKING EQUIPMENT WASHING EQUIPMENT, ETC., FURNISHED BY OTHERS, IN LOCATIONS AS INDICATED ON THE DRAWINGS AND/OR DESCRIBED IN THE GENERAL NOTES TO THIS CONTRACTOR. EQUIPMENT AND ACCESSORIES NOT PROVIDED BY THE EQUIPMENT SUPPLIER MAY INCLUDE FLUES, VENTS, INTAKES, ASSOCIATED ROOF JACKS AND CAPS TO OUTDOORS, DAMPERS, IN-LINE FANS, ROOF FANS, CONTROL INTERLOCKS, ETC. AS REQUIRED FOR PROPER OPERATION OF THE COMPLETE SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECT ROUGH-IN DIMENSIONS, AND SHALL VERIFY SAME WITH ARCHITECT AND/OR EQUIPMENT SUPPLIER PRIOR TO SERVICE INSTALLATIONS.

15A 1-21 MISCELLANEOUS REMODELING WORK

REMOVE ALL UNUSED EQUIPMENT, DUCTWORK, PIPING AND ASSOCIATED SUPPORTS. CAP DUCTWORK AND PIPING AT MAINS AND SEAL AIR AND WATER TIGHT.

PROVIDE ITEMS OF HVAC SYSTEMS MODIFICATION REQUIRED BECAUSE OF BUILDING REMODELING. AS NOTED ON THE DRAWINGS OR NECESSARY FOR PROPER OPERATION. MATCH EXISTING MATERIALS AND CONSTRUCTION TECHNIQUES WHEN MODIFYING EXISTING SYSTEMS UNLESS SPECIFIED OTHERWISE. COORDINATE ADDITIONAL REQUIREMENTS WITH GENERAL CONTRACTOR AND ARCHITECT.

SEAL AIRTIGHT EXISTING DUCTWORK REQUIRED TO BE ABANDONED IN PLACE OR NOT IN USE AT THE TERMINATION OF THE WORK.

CAP AND SEAL WEATHERTIGHT EXISTING ROOF CURBS AND ROOF OPENINGS TO BE ABANDONED IN PLACE AS A RESULT OF EQUIPMENT REMOVAL.

INTENDED FOR REUSE AS REQUIRED OR AS INDICATED ON DRAWINGS.

CLEAN AND REBALANCE EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES

CLEAN AND REFURBISH EXISTING HVAC EQUIPMENT INTENDED FOR REUSE AS REQUIRED FOR PROPER OPERATION INCLUDING REPLACEMENT OF FILTERS, BELTS, MOTORS, REMOTE CONTROLS, AND SAFETY INTERLOCKS.

15A 1-22 BUILDING OPERATION

COMPLY WITH THE SCHEDULE OF OPERATIONS AS OUTLINED IN THE ARCHITECTURAL PORTIONS OF THIS SPECIFICATION. BUILDING SHALL BE IN CONTINUOUS OPERATION. ACCOMPLISH WORK REQUIRING INTERRUPTION OF BUILDING OPERATION AT A TIME WHEN THE BUILDING IS NOT IN OPERATION, AND ONLY WITH WRITTEN APPROVAL OF BUILDING OWNER AND/OR TENANT. COORDINATE INTERRUPTION OF BUILDING OPERATION WITH THE OWNER AND/OR TENANT A MINIMUM OF SEVEN DAYS IN ADVANCE OF WORK.

15A 1-23 VIBRATION ISOLATION

MANUFACTURERS: PROVIDE VIBRATION ISOLATION EQUIPMENT AND MATERIALS BY A SINGLE MANUFACTURER. APPROVED MANUFACTURERS PROVIDED THEIR SYSTEMS ARE IN COMPLIANCE WITH THE SPECIFIED DESIGN AND PERFORMANCE REQUIREMENTS INCLUDE AMBER BOOTH, KINETICS NOISE CONTROL, MASON INDUSTRIES, INC., VIBRATION ELIMINATOR CO., INC., AND VIBRATION MOUNTING AND CONTROLS.

GENERAL REQUIREMENTS: SELECT VIBRATION ISOLATORS BY THE WEIGHT DISTRIBUTION TO PRODUCE UNIFORM DEFLECTION. VIBRATION ISOLATORS SHALL HAVE EITHER KNOWN UN-DEFLECTED HEIGHTS OR CALIBRATION MARKINGS SO THAT, AFTER ADJUSTMENT, THE STATIC DEFLECTION CAN BE VERIFIED. THUS DETERMINING THAT THE LOAD IS WITHIN THE PROPER RANGE OF THE ISOLATOR. ISOLATORS SHALL OPERATE IN THE LINEAR PORTION OF THEIR LOAD VERSUS DEFLECTION CURVES. SPRING ISOLATORS SHALL HAVE 50 PERCENT EXCESS CAPACITY WITHOUT BECOMING COIL BOUND. COAT VIBRATION ISOLATORS WITH FACTORY-APPLIED PAINT. COAT VIBRATION ISOLATORS EXPOSED TO WEATHER AND OTHER CORROSIVE ENVIRONMENTS WITH FACTORY-APPLIED CORROSION RESISTANCE PROTECTION. INSTALL AND ADJUST VIBRATION ISOLATORS IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.

PIPE CONNECTIONS. FLEXIBLE PIPING CONNECTORS SHALL BE INSTALLED TO CONNECT PIPING TO RECIPROCATING OR ROTATING EQUIPMENT. FABRICATE FLEXIBLE PIPING CONNECTORS FROM STAINLESS STEEL, BRONZE OR RUBBER MATERIALS AS SUITABLE FOR SYSTEM FLUID. FLEXIBLE PIPING CONNECTORS SHALL BE BELLOWS, SPHERICAL OR BRAIDED HOSE TYPE AS RECOMMENDED BY THE MANUFACTURER FOR THE APPLICATION.

DUCT CONNECTIONS. DUCTS SHALL BE CONNECTED TO FANS, FAN CASINGS AND FAN PLENUMS BY MEANS OF FLEXIBLE CONNECTORS. FLEXIBLE DUCT CONNECTORS SHALL NOT BE USED OUTSIDE THE MECHANICAL ROOM UNLESS EXPRESSLY SHOWN ON THE DRAWINGS. CONSTRUCT FLEXIBLE CONNECTIONS OF NEOPRENE—COATED FLAMEPROOF FABRIC CRIMPED INTO DUCT FLANGES FOR ATTACHMENT TO DUCT AND EQUIPMENT. MAKE AIRTIGHT JOINT. FLEXIBLE CONNECTORS SHALL HAVE FLAME-SPREAD INDEX OF 25 OR LESS, AND SMOKE-DEVELOPED INDEX OF 50 OR LESS, AS TESTED BY ASTM E 84 (NFPA 255) METHOD.

SELECT FIRST PARAGRAPH IF UNDER UBC, SECOND PARAGRAPH IF UNDER IBC. VERIFY WITH ARCHITECT THE APPROPRIATE SEISMIC ZONE, SEISMIC ZONE FACTOR AND OCCUPANCY CATEGORY FOR UBC AND APPROPRIATE USE GROUP AND SEISMIC DESIGN CATEGORY FOR SEISMIC PROTECTION FOR SEISMIC CONCERNS OF ALL MECHANICAL AND ELECTRIC SYSTEMS EXCEPT FIRE PROTECTION SYSTEMS MUST MEET MINIMUM REQUIREMENTS OF 2003 IBC FOR BUILDINGS CLASSIFIED AS SEISMIC USE GROUP AND SEISMIC DESIGN CATEGORY PER

ARCHITECT. SEISMIC PROTECTION OF WATER PIPES FOR FIRE PROTECTION SYSTEMS SHALL

BE INSTALLED IN STRICT ACCORDANCE WITH THE PROVISIONS OF NFPA 13.

SEISMIC RESTRAINTS, ISOLATORS, AND ISOLATION MATERIALS SHALL BE OF THE SAME MANUFACTURER, SHALL BE CERTIFIED BY THE MANUFACTURER AND SHALL BE BY AMBER/BOOTH COMPANY, INC., KINETICS NOISE CONTROL, INC., LOOS & COMPANY, INC., MASON INDUSTRIES, INC. OR UNI-STRUT. RESTRAINING DEVICES SHALL HAVE A PRE-APPROVAL NUMBER FROM CALIFORNIA OSHPD OR OTHER RECOGNIZED GOVERNMENT AGENCY SHOWING MAXIMUM RESTRAINT RATINGS.

THE REQUIREMENTS FOR SEISMIC PROTECTION MEASURES TO BE APPLIED TO MECHANICAL/ELECTRICAL EQUIPMENT AND SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND/OR FEDERAL CODES AND WITH MANUFACTURER'S REQUIREMENTS, THE MOST STRINGENT SHALL APPLY. ALL ANCHOR CONNECTIONS TO STRUCTURE FOR SUPPORT OF MECHANICAL AND ELECTRICAL EQUIPMENT, REGARDLESS OF THE NEED FOR SEISMIC RESTRAINTS, SHALL BE SHOWN ON SHOP

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE TYPE AND LOCATION OF SEISMIC RESTRAINTS REQUIRED FOR THE MECHANICAL AND ELECTRICAL ELEMENTS SHOWN ON THE CONTRACT DRAWINGS BASED ON THE SEISMIC CODE CRITERIA STATED ABOVE, THE SIZE AND WEIGHT OF THE SUPPORTED ELEMENT AND THE DISTANCE FROM STRUCTURE THAT THE ELEMENT WILL BE INSTALLED.

THE CONTRACTOR SHALL SUBMIT DESCRIPTIVE CATALOG DATA OF SEISMIC RESTRAINTS. SHOP DRAWINGS SHOWING THE TYPES, LOCATIONS AND INSTALLATION DETAILS OF SEISMIC RESTRAINTS AND CALCULATIONS SHOWING THAT THE SEISMIC RESTRAINTS MEET THE SEISMIC REQUIREMENTS TO THE ENGINEER OF RECORD AND TO THE LOCAL AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL. CALCULATIONS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF THE PROJECT LOCATION AND EMPLOYED BY THE MANUFACTURER OF THE SEISMIC RESTRAINT PRODUCTS. CALCULATIONS SHALL INCLUDE DEAD LOADS, STATIC SEISMIC LOADS AND CAPACITY OF MATERIALS UTILIZED FOR CONNECTIONS TO EQUIPMENT AND STRUCTURE.

15A 2 INSULATION AND SHEET METAL WORK

15A 2-1 DUCT INSULATION

PROVIDE DUCT LINER IN RECTANGULAR SUPPLY AND RETURN AIR DUCTWORK. LINER SHALL BE 1-1/2" THICK, 3 POUND DENSITY FIBERGLASS, CERTAINTEED CORP. "TOUGHGARD" OR OWENS-CORNING "AEROFLEX DUCT LINER. LINER SURFACE SHALL SERVE AS A BARRIER AGAINST INFILTRATION OF DUST AND DIRT. SHALL MEET ASTM C 1338 FOR FUNGI RESISTANCE AND SHALL BE CLEANABLE USING DUCT CLEANING METHODS AND EQUIPMENT OUTLINED BY NORTH AMERICAN INSULATION MANUFACTURERS ASSOCIATION (NAIMA) DUCT CLEANING GUIDE INSTALL WITH LINER ADHESIVE AND MECHANICAL FASTENERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. DUCTWORK SIZES SHOWN ON DRAWINGS ARE INSIDE CLEAR DIMENSIONS. INCREASE SHEET METAL BY LINER THICKNESS IN BOTH DIRECTIONS WHERE LINER IS INSTALLED.

COVER CONCEALED RIGID ROUND SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK AND RECTANGULAR OUTSIDE AIR DUCTWORK WITH 2" THICK DUCT WRAP, CERTAINTEED OR EQUAL OWENS-CORNING, 3/4 POUND DENSITY, WITH HEAVY-DUTY FOIL-SCRIM-KRAFT FACING, AND WITH JOINTS TAPED WITH 3" WIDE FOIL TAPE.

INSULATING MATERIALS, ADHESIVES, COATINGS, ETC., SHALL NOT EXCEED FLAME SPREAD RATING OF 25 AND SMOKE DEVELOPED RATING OF 50 PER ASTM E 84. CONTAINERS FOR MASTICS AND ADHESIVES SHALL HAVE U.L. LABEL.

<u>15A 2-2 DUCTWORK</u>

PROVIDE GALVANIZED STEEL DUCTWORK AND HOUSINGS AS SHOWN ON DRAWINGS. CONSTRUCT DUCTWORK INCLUDING FITTINGS AND TRANSITIONS IN CONFORMANCE WITH CURRENT SMACNA STANDARDS RELATIVE TO GAUGE, BRACING, JOINTS, ETC. MINIMUM THICKNESS OF DUCT SHALL BE 26 GAUGE SHEET METAL. REINFORCE HOUSINGS AND DUCTWORK OVER 30" WITH 1-1/4" ANGLES NOT LESS THAN 5'-6" ON CENTERS. AND CLOSER IF REQUIRED FOR SUFFICIENT RIGIDITY TO PREVENT VIBRATION. SUPPORT HORIZONTAL RUNS OF DUCT FROM STRAP IRON HANGERS ON CENTERS NOT TO EXCEED 8'-0". DO NOT SUPPORT CEILING GRID, CONDUITS, PIPES, EQUIPMENT, ETC. FROM DUCTWORK. COORDINATE ROUTING OF DUCTWORK WITH OTHER CONTRACTORS SUCH THAT PIPING, ELECTRICAL CONDUIT AND ASSOCIATED SUPPORTS ARE NOT ROUTED THROUGH THE DUCTWORK.

EXPOSED DUCTWORK TO BE FIELD PAINTED SHALL HAVE GALVANIZED METAL PRIMER APPLIED IN THE SHOP AFTER FABRICATION AND PRIOR TO SHIPPING.

SEAL DUCTWORK WITH HEAVY LIQUID SEALANT, HARDCAST IRONGRIP 601, DESIGN POLYMER DP 1010 , UNITED MCGILL DUCT SEALER OR APPROVED EQUAL, APPLIED ACCORDING TO SEALANT MANUFACTURER'S INSTRUCTIONS. FOR DUCTS WITH PRESSURE CLASSIFICATION OF 2" W.G. SEAL LONGITUDINAL AND TRANSVERSE DUCTWORK JOINTS AIRTIGHT TO MEET SMACNA CLASS B. FOR DUCTS WITH PRESSURE CLASSIFICATION LESS THAN 2" W.G. SEAL TRANSVERSE JOINTS AIRTIGHT TO MEET SMACNA CLASS C.

PROVIDE AIRFOIL TYPE TURNING VANES, OF SAME GAUGE AS DUCTWORK, RIGIDLY FASTENED WITH GUIDE STRIPS IN DUCTWORK HAVING AN OFFSET OF 45 DEGREES OR MORE.

CONNECT FANS, BLOWERS, UNITS, ETC. TO DUCTWORK WITH NEOPRENE COATED GLASS CLOTH CANVAS CONNECTIONS, DURO-DYNE, ELGEN, VENTFABRIC OR EQUAL. CANVAS CONNECTIONS SHALL HAVE A FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED RATING NOT HIGHER THAN 50. INSTALL WITH MINIMUM 1-1/2" SLACK.

PROVIDE BALANCING DAMPERS, MANUFACTURED BY RUSKIN, GREENHECK, NAILOR INDUSTRIES, CESCO, LOUVERS & DAMPERS, POTTORFF OR APPROVED EQUAL, WHERE SHOWN ON DRAWINGS AND WHEREVER NECESSARY FOR COMPLETE CONTROL OF AIR FLOW. SPLITTER DAMPERS SHALL BE CONTROLLED BY LOCKING QUADRANTS; PROVIDE YOUNG REGULATOR OR VENTLOK END BEARINGS FOR THE DAMPER ROD. RECTANGULAR VOLUME DAMPERS SHALL BE OPPOSED BLADE INTERLOCKING TYPE. ROUND VOLUME DAMPERS SHALL BE BUTTERFLY TYPE CONSISTING OF CIRCULAR BLADE MOUNTED TO A SHAFT. DAMPER LEAKAGE FOR OUTSIDE AIR DAMPERS SHALL NOT EXCEED 6.5 CFM/SQUARE FOOT IN FULL CLOSED POSITION AT 4" WG PRESSURE DIFFERENTIAL ACROSS DAMPER. REFERENCE MANUFACTURER AND MODEL NUMBER FOR OUTSIDE AIR DAMPERS IS RUSKIN MODEL CD-50. PROVIDE "SPIN-IN" FITTING WITH DOUBLE BEARING VOLUME DAMPER FOR ROUND DUCTWORK BRANCH TAKEOFFS TO INDIVIDUAL AIR DEVICES.

WHERE ACCESS TO DAMPERS THROUGH A HARD CEILING IS REQUIRED, PROVIDE A METROPOLITAN AIR TECHNOLOGY OR YOUNG'S REGULATOR CONCEALED, CABLE OPERATED VOLUME DAMPER WITH REMOTE OPERATOR. DAMPER SHALL BE ADJUSTABLE THROUGH THE DIFFUSER FACE OR FRAME WITH STANDARD 1/4" NUTDRIVER OR FLAT SCREWDRIVER. CABLE ASSEMBLY SHALL ATTACH TO DAMPER AS ONE PIECE WITH NO LINKAGE ADJUSTMENT. POSITIVE, DIRECT, TWO-WAY DAMPER CONTROL SHALL BE PROVIDED WITH NO SLEEVES, SPRINGS OR SCREW ADJUSTMENTS TO COME LOOSE AFTER INSTALLATION. SUPPORT CABLE ASSEMBLY TO AVOID BENDS AND KINKS IN CABLE.

ROUND OR OVAL DUCTWORK SHALL BE SEMCO, UNITED, WESCO OR EQUAL, SHEETMETAL, WITH SMOOTH INTERIOR SURFACE, WITH LOW PRESSURE (DUCT PRESSURE CLASS UP TO AND INCLUDING 2" W.G.) ROUND DUCTWORK GAUGES PER THE FOLLOWING TABLE (REFERENCE SMACNA HVAC DUCT CONSTRUCTION STANDARDS FOR GAUGES WHEN PRESSURES EXCEED 2" W.G.):

> 14" & UNDER 15" THRU 26"

LINDAB SPIROSAFE, LEWIS & LAMBERT OR APPROVED EQUAL FACTORY-MANUFACTURED ROUND DUCTWORK AND FITTINGS MAY BE SUBSTITUTED FOR SPECIFIED ROUND BRANCH DUCTWORK, AT CONTRACTORS OPTION. HEAVY LIQUID JOINT SEALANT MAY BE OMITTED ON FACTORY-MANUFACTURED ROUND DUCTWORK.

LOW PRESSURE (DUCT PRESSURE CLASS UP TO AND INCLUDING 2" W.G.) FITTINGS 24" IN DIAMETER AND LESS SHALL BE PREFABRICATED, SPOTWELDED AND INTERNALLY SEALED. CONTINUOUSLY WELD FITTINGS LARGER THAN 24"IN DIAMETER. FITTING GAUGE SHALL BE 22 GAUGE FOR 36" FITTINGS AND UNDER, 20 GAUGE FOR LARGER SIZES. 90 DEGREE TEE'S SHALL BE CONICAL TYPE. SEAL LONGITUDINAL AND TRANSVERSE DUCTWORK JOINTS AIRTIGHT WITH HEAVY LIQUID SEALANT APPLIED ACCORDING TO MANUFACTURER'S INSTRUCTIONS. PROVIDE GAUGE THICKNESS IN MEDIUM PRESSURE (DUCT PRESSURE CLASS 3" TO 6" W.G.) DUCTWORK AS RECOMMENDED BY SMACNA.

15A 2-3 FLEXIBLE DUCT

LOW PRESSURE (DUCT PRESSURE CLASS UP TO AND INCLUDING 2" W.G.) AND MEDIUM PRESSURE (DUCT PRESSURE CLASS 2.1" TO 6" W.G.) FLEXIBLE DUCT SHALL BE FLEXMASTER TYPE 8, THERMAFLEX TYPE G-KM, OR EQUAL (FIRE RETARDANT POLYETHYLENE) PROTECTIVE VAPOR BARRIER, U.L.181 CLASS 1, ACOUSTICAL INSULATED DUCT, 2" (R-6.0) FIBERGLASS INSULATION. PROVIDE CPE LINER WITH STEEL WIRE HELIX MECHANICALLY LOCKED OR PERMANENTLY BONDED TO THE LINER. FLEXIBLE DUCT RUNS SHALL NOT EXCEED 5 FEET IN LENGTH, AND SHALL BE INSTALLED STRAIGHT AS POSSIBLE AVOIDING TIGHT TURNS. CONNECT EACH END WITH STAINLESS STEEL SCREW OPERATED METAL DRAWBANDS.



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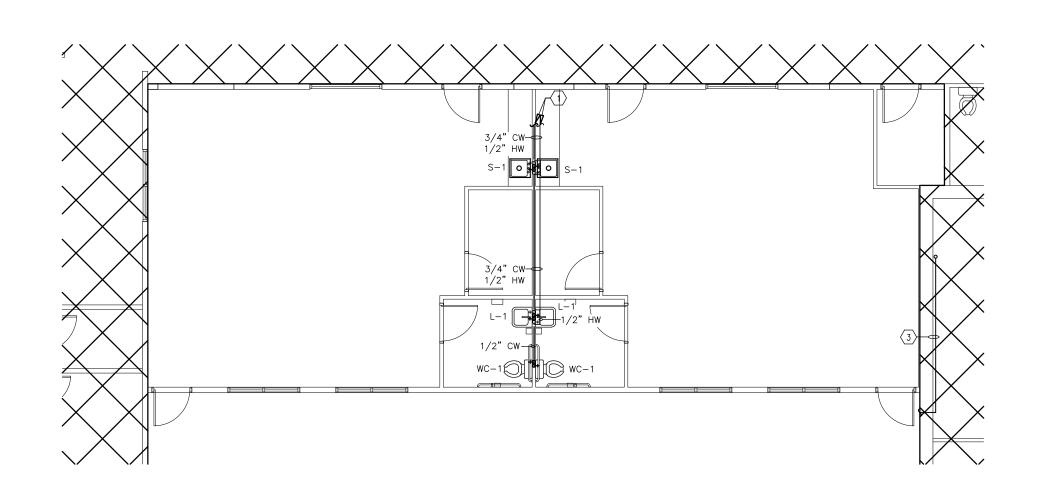
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SHEET TITLE

PROJECT NO: 2023008

MECHANICAL SPECIFICATIONS

4/11/2023



FLOOR PLAN WATER PIPING WORK SCALE: 1/8" = 1'-0"

GENERAL NOTES

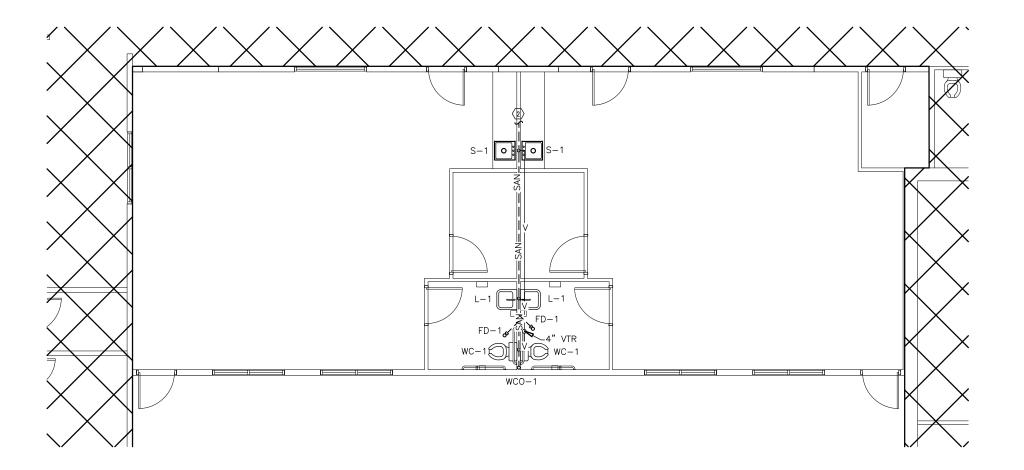
- A. DESIGN DRAWINGS ARE SCHEMATIC. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
- B. CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTORS COST.
- C. BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING, THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.
- D. PLUMBING CONTRACTOR SHALL COORDINATE THE RELOCATION OF EXISTING SPRINKLER AND WATER METERS LOCATED UNDER NEW BUILDING. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.

KEY NOTES (#)

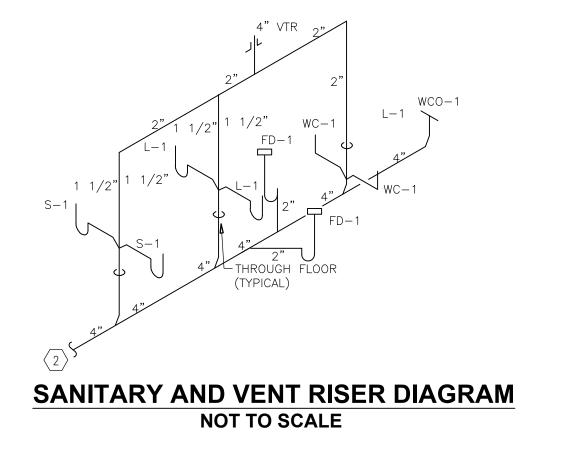
- 1. EXTEND AND CONNECT NEW HOT AND COLD WATER PIPES TO EXISTING HOT AND COLD WATER PIPES IN AREA. FIELD VERIFY EXACT LOCATION TO MAKE CONNECTION. ADJUST ROUTING AS REQUIRED.
- EXTEND AND CONNECT NEW SANITARY PIPE TO EXISTING SANITARY PIPE IN SPACE.FIELD VERIFY EXACT LOCATION TO MAKE CONNECTION. ADJUST ROUTING AS REQUIRED.

 EXISTING SPRINKLER DRAIN SHALL BE REROUTED THROUGH ROOM TO EXTERIOR OUTSIDE NEW ROOMS.

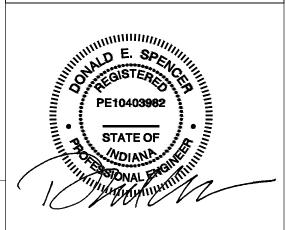
BALL VALVE	CO-	CLEANOUT
I-L 010 0004	EWC-	ELECTRIC WATER COOLER
IŲI GAS COCK	EWH-	ELECTRIC WATER HEATER
-> PIPING DROP	FD-	FLOOR DRAIN
C INLINE PIPE DROP	L-	LAVATORY
PIPING RISE	MS-	MOP SINK BASIN
	SA	SHOCK ABSORBER
— I WALL CLEANOUT/END FERRULE CLEANOUT	TMV-	THERMOSTATIC MIXING VALVE
☑ GATE VALVE ♀ SHOCK ABSORBER (SA)	U-	URINAL
	VTR-	VENT THROUGH ROOF
O CLEANOUT	WB-	WALL BOX
O FLOOR DRAIN	WC-	WATER CLOSET
	WH-	WALL HYDRANT
— SAN — SANITARY DRAIN BELOW FLOOR	"H"	SUFFIX INDICATES HANDICAP ACCESSIBLE
	A.F.F.	ABOVE FINISHED FLOOR
	A.F.G.	ABOVE FINISHED GRADE
V VENT	SCW	SOFT COLD WATER
CW COLD WATER	CW	RAW (NON SOFTENED) COLD WATER



FLOOR PLAN SANITARY AND VENT PIPING WORK SCALE: 1/8" = 1'-0"







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BUILDING ADDITION
6633 W 900 N

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PROJECT NO: 2023008

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FLOOR PLAN -PLUMBING WORK

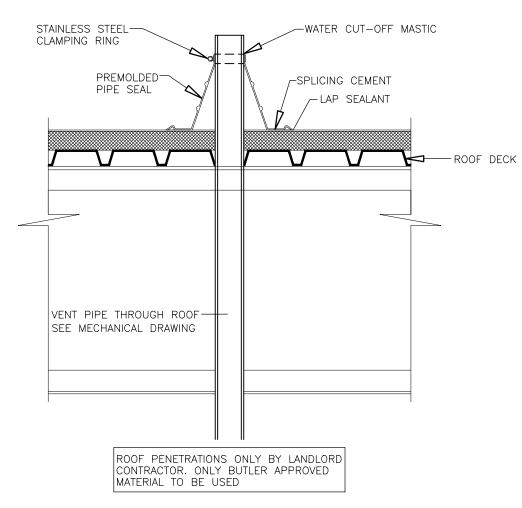
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PLUMBING FIXTURE SCHEDULE					-IN SC	HEDU	REMARKS	
MARK	MANUFACTURER & MODEL NO.	TRIM	CW	HW	WASTE	VENT	MTG. HT.	
WC-1	AMERICAN STANDARD MODEL #211AA.104.020	FLOOR MOUNTED, TANK TYPE TOILET WITH SEAT AND COVER.	1/2"		4"	2"		
L-1	AMERICAN STANDARD MODEL #0124.024	AMERICAN STANDARD, MODEL #7075.050 FAUCET.	1/2"	1/2"	1 1/2"	1 1/2"		
TP-1	TRAP PRIMER ZURN, MODEL #Z1022-DU2	ALL BRONZE TRAP PRIMER VALVE WITH 1/2" NPT INLET, INTERAL BACKFLOW PREVENTER, VACUUM BREAKER PORTS AND 1/2" NPT OUTLET. WALTER FLOWS WHEN A 5-10 PSI DIFFERENCE IS DETECTED.	-	-	-	-		
S-1	AMERICAN STANDARD MODEL #22SB.6252283S.075	AMERICAN STANDARD, MODEL #7500.170 FAUCET.	1/2"	1/2"	1 1/2"	1 1/2"		

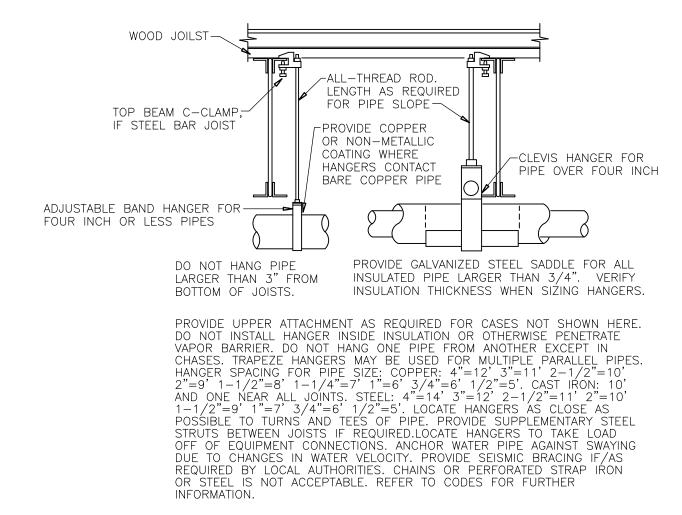
FLOO	FLOOR DRAIN AND MISCELLANEOUS SCHEDULE								
SYMBOL	MANUFACT./MODEL #	DESCRIPTION	REMARKS						
FD-1	ZURN, MODEL #Z415BZ	COATED CAST IRON BODY FLOOR DRAIN, TWO PIECE BODY WITH DOUBLE DRAINAGE FLANGE, INVERTABLE FLASHING COLLAR, WEEPHOLES PROVIDE TRAP PRIMER INLET PORT ON DRAINS REQUIRING TRAP PRIMER, PER DRAWINGS. EXPOSED, NON-FREEZE WALL HYDRANT, WITH BRONZE CASING, ALL BRONZE INTERIOR PARTS, NON-TURNING OPERATING ROD	SIZE AS SHOWN ON DRAWINGS. SLAB ON GRADE RIM FLUSH WITH CONCRETE IN UNFINISHED FLOORS, RAISE RIM THICKNESS OF FLOOR TILE IN TILED FLOORS						
WCO-1	ZURN, MODEL #Z1441	DURA-COATED CAST IRON BODY, SMOOTH STAINLESS STEEL ACCESS COVER WITH SECURING SCREW.							

	SANIT	ARY/DON	/IESTIC CA	LCULATIONS (Restroom only)		
SANITARY						
FIXTURES	QTY	DFU	TOTAL	Q	TY SFU	TOTAL
SANITARY SERVICE				DOMESTIC WATER SERVICE		
CLOTHES WASHER (COM)	0	3	0	BATHROOM GROUP, PRIVATE, FLUSH TANK	3.6	7.2
CLOTHES WASHER (RES)	0	2	0	BATHROOM GROUP, PRIVATE, FLUSHOMETER	8	0
BATHROOM GROUP (1.6 GPF)	2	5	10	BATHTUB, PRIVATE	1.4	0
BATHROOM GROUP (GREATER THAN 1.6 GPF)	0	6	0	BATHTUB, PUBLIC	4	0
BATHTUB	0	2	0	BIDET, PRIVATE	2	0
BIDET	0	1	0		3	0
COMBINATION SINK AND TRAY	0	2	0	DISHWASHING MACHINE, PRIVATE	1.4	0
DENTAL LAVATORY	0	1	0	DRINKING FOUNTAIN	0.25	0
DENTAL UNIT OR CUSPIDOR	0	1	0	KITCHEN SINK, PRIVATE	1.4	2.8
DISHWASHING MACHINE, DOMESTIC	0	2	0	KITCHEN SINK, HOTEL, RESTAURANT	4	0
DRINKING FOUNTAIN	0	0.5	0	LAUNDRY TRYAS (1 TO 3)	1.4	0
EMERGENCY FLOOR DRAIN	0	0	0	LAVATORY, PRIVATE	0.7	0
FLOOR DRAINS	2	2	4	LAVATORY, PUBLIC	2	0
FLOOR SINKS	0	2	0	SERVICE SINK, OFFICE	3	0
KITCHEN SINK, DOMESTIC	0	2	0	SHOWER HEAD, PUBLIC	4	0
KITCHEN SINK, DOMESTIC WITH FOOD DISPOSER	Ö	2	0	SHOWER HEAD, PRIVATE	1.4	0
LAUNDRY TRAY	0	2	0	URINAL, PUBLIC, 1" FLUSHOMETER VALVE	10	0
LAVATORY	Ö	1	0	URINAL, PUBLIC, 3/4" FLUSHOMETER VALVE	5	0
SHOWER (5.7 GPM OR LESS)	0	2	0	URINAL, PUBLIC, FLUSH TANK	3	0
SHOWER (5.7-12.3 GMP)	0	3	0	WASHING MACHINE (8 LBS), PRIVATE	1.4	0
SHOWER (12.3-25.8 GPM)	0	5	0	WASHING MACHINE (8 LBS), PUBLIC	3	0
SHOWER (25.8-55.6 GPM)	0	6	0	WASHING MACHINE (15 LBS), PUBLIC	4	0
SERVICE SINK	0	2	0	WATER CLOSET, PRIVATE, FLUSHOMTER VALVE	6	0
SINK	2	2	4	WASTER CLOSET, PRIVATE, FLUSH TANK	2.2	0
URINAL	0	4	0	WATER CLOSET, PUBLIC, FLUSHOMVER VALVE	10	0
URINAL, 1 GALLON PER FLUSH OR LESS	0	2	0		5	0
URINAL, NONWATER SUPPLIED	0	0.5	0) 2	0
WASH SINK (EACH SET OF FAUCETS)	0	2	0			
WASTER CLOSET, FLUSHOMETER TANK, PUBLIC OR PRIVATE	0	4	0			
WATER CLOSET, PRIVATE (1.6 GPF)	0	3	0		,	
WATER CLOSET, PRIVATE (FLUSHING GREATER THAN 1.6 GPF)	0	4	0		•	
WATER CLOSET, PUBLIC (1.6 GPF)	0	4	0			
WATER CLOSET, PUBLIC (FLUSHING GREATER THAN 1.6 GPF)	0	6	0		•	
		TOTAL DEU	18		TOTAL SFU	10

WAT	WATER HAMMER ARRESTOR SCHEDULE											
MARK	MARK FIXTURE UNIT RATING		J.R. SMITH MODEL NO.	WADE MODEL NO.	ZURN MODEL NO.	NOTES						
WHA-A	1-11	3/4"	5005	5	100							
WHA-B	12-32	1'	5010	10	200							
WHA-C	33-60	1'	5020	20	300							
WHA-D	61-113	1'	5030	50	400							
WHA-E	114-154	1'	5040	75	500							
WHA-F	155-330	1'	5050	100	600							

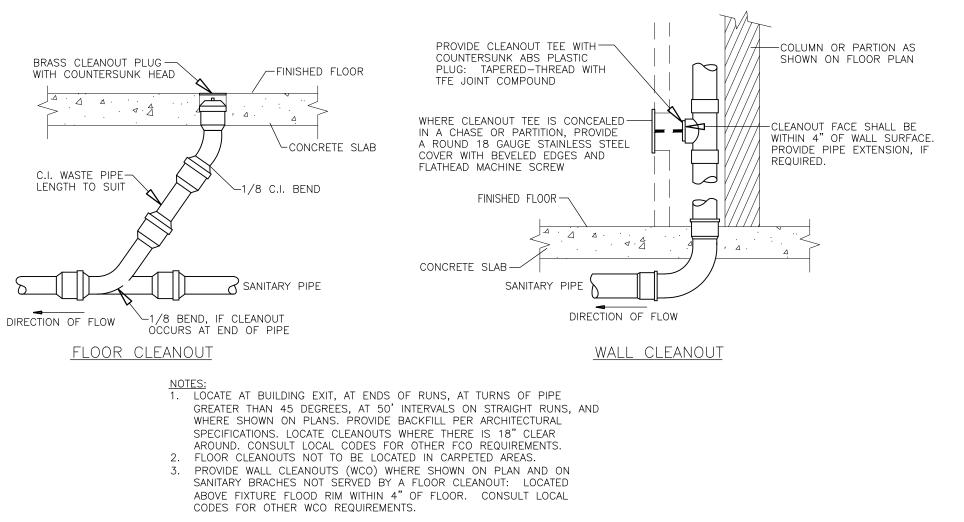


VENT PIPE THRU ROOF DETAIL NOT TO SCALE



PIPE SUPPORT DETAIL

NOT TO SCALE



SANITARY CLEANOUT DETAILS NOT TO SCALE

SHUT - OFF VALVE-

FLOOR-

TRAP PRIMER VALVE

(WHERE APPLICABLE)

CEILING OR —
UNDER COUNTER

TRAP PRIMER DETAIL

NOT TO SCALE

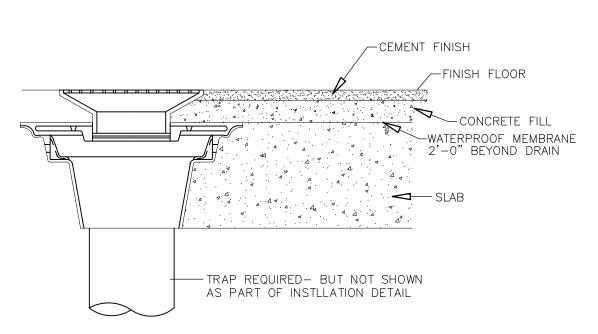
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PRIMER LINES (CONCEALED)

DISTRIBUTION UNIT(S) AS REQUIRED FOR SERVING MULTIPLE TRAPS

TO OTHER FLOOR DRAINS

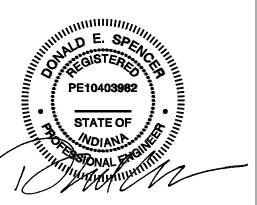
FLOOR DRAIN



FLOOR DRAIN DETAIL

NOT TO SCALE





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SHANNON'S EXCLUSIVE CHILDCARE AT

BUILDING ADDITION

6633 W 900 N

MCCORDSVILLE, IN 46055

PLUMBING DETAILS

MARK DATE DESCRIPTION

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SHEET TITLE

PROJECT NO: 2023008

MTM ARCHITECTURE, LLC

P2.1

15B1 GENERAL INSTRUCTIONS

15B 1-1 GENERAL REQUIREMENTS

REQUIREMENTS UNDER DIVISION ONE AND THE GENERAL AND SUPPLEMENTARY CONDITIONS OF THESE SPECIFICATIONS SHALL BE A PART OF THIS SECTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME THOROUGHLY ACQUAINTED WITH ITS CONTENTS AS TO REQUIREMENTS THAT AFFECT THIS DIVISION OR SECTION. WORK REQUIRED UNDER THIS SECTION INCLUDES MATERIAL, EQUIPMENT, APPLIANCES, TRANSPORTATION, SERVICES AND LABOR REQUIRED TO COMPLETE THE ENTIRE PLUMBING SYSTEM AS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS.

THE SPECIFICATIONS AND THE DRAWINGS ARE COMPLEMENTARY, AND ANY PORTION OF WORK DESCRIBED IN ONE SHALL BE PROVIDED AS IF DESCRIBED IN BOTH. IN THE EVENT OF DISCREPANCIES ON THE DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SAME PRIOR TO PROCEEDING WITH THE WORK INVOLVED, IN ORDER THAT CORRECT PROGRESS OF THE WORK MAY BE PERFORMED.

15B 1-2 DEFINITIONS

FURNISH: "TO SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION AND SIMILAR OPERATIONS."

INSTALL: "TO PERFORM ALL OPERATIONS AT THE PROJECT SITE INCLUDING, BUT NOT LIMITED TO, THE ACTUAL UNLOADING, UNPACKING, ASSEMBLING, ERECTING, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, TESTING, COMMISSIONING, STARTING UP AND SIMILAR OPERATIONS, COMPLETE, AND READY FOR THE

PROVIDE: "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE." FURNISHED BY OWNER OR FURNISHED BY OTHERS: "AN ITEM FURNISHED BY THE OWNER OR UNDER OTHER DIVISIONS OR CONTRACTS, AND INSTALLED UNDER THE REQUIREMENTS OF THIS DIVISION, COMPLETE, AND READY FOR THE INTENDED USE, INCLUDING ALL ITEMS AND SERVICES INCIDENTAL TO THE WORK NECESSARY FOR PROPER INSTALLATION AND OPERATION. INCLUDE THE INSTALLATION UNDER THE WARRANTY REQUIRED BY THIS DIVISION."

ENGINEER: WHERE REFERENCED IN THIS DIVISION, "ENGINEER" IS THE ENGINEER OF RECORD AND THE DESIGN PROFESSIONAL FOR THE WORK UNDER THIS DIVISION, AND IS A CONSULTANT TO, AND AN AUTHORIZED REPRESENTATIVE OF, THE ARCHITECT, AS DEFINED IN THE GENERAL AND/OR SUPPLEMENTARY CONDITIONS. WHEN USED IN THIS DIVISION, IT MEANS INCREASED INVOLVEMENT BY, AND OBLIGATIONS TO, THE ENGINEER, IN ADDITION TO INVOLVEMENT BY, AND OBLIGATIONS TO, THE "ARCHITECT"

AHJ: THE LOCAL CODE AND/OR INSPECTION AGENCY (AUTHORITY) HAVING JURISDICTION OVER

NRTL: NATIONALLY RECOGNIZED TESTING LABORATORY, AS DEFINED AND LISTED BY OSHA IN 29 CFR 1910.7 (E.G., UL, ETL, CSA), AND ACCEPTABLE TO THE AHJ OVER THIS PROJECT. THE TERMS "APPROVED EQUAL", "EQUIVALENT", OR "EQUAL" ARE USED SYNONYMOUSLY AND SHALL MEAN "ACCEPTED BY OR ACCEPTABLE TO THE ENGINEER AS EQUIVALENT TO THE ITEM OR MANUFACTURER SPECIFIED". THE TERM "APPROVED" SHALL MEAN LABELED, LISTED, OR BOTH, BY AN NRTL, AND ACCEPTABLE TO THE AHJ OVER THIS PROJECT.

15B 1-3 PREBID SITE VISIT

PRIOR TO SUBMITTING BID, VISIT THE SITE OF THE PROPOSED WORK AND BECOME FULLY INFORMED AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. FAILURE TO DO SO WILL NOT BE CONSIDERED SUFFICIENT JUSTIFICATION TO REQUEST OR OBTAIN EXTRA COMPENSATION OVER AND ABOVE THE CONTRACT PRICE.

15B 1-4 MATERIAL AND WORKMANSHIP

MATERIAL, EQUIPMENT, AND APPARATUS PROVIDED UNDER THIS CONTRACT SHALL BE NEW UNLESS OTHERWISE STATED HEREIN, OF BEST QUALITY NORMALLY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE, AND FREE FROM DEFECTS. MODEL NUMBERS LISTED IN SPECIFICATIONS OR SHOWN ON THE DRAWINGS ARE NOT NECESSARILY INTENDED TO DESIGNATE THE REQUIRED TRIM, WRITTEN DESCRIPTIONS OF THE TRIM GOVERN MODEL

PIPE, PIPE FITTINGS, PIPE SPECIALTIES AND VALVES SHALL BE MANUFACTURED IN PLANTS LOCATED IN THE UNITED STATES.

WORK PERFORMED UNDER THIS CONTRACT SHALL PROVIDE A NEAT AND "WORKMANLIKE" APPEARANCE WHEN COMPLETED, TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER. WORKMANSHIP SHALL BE THE FINEST POSSIBLE BY EXPERIENCED MECHANICS. INSTALLATIONS SHALL BE MADE IN A MANNER THAT WILL COMPLY WITH APPLICABLE CODES AND LAWS.

INSTALLATION SHALL FUNCTION AS DESIGNED AND INTENDED WITH RESPECT TO EFFICIENCY. PIPING AND SQUEAKS IN ROTATING COMPONENTS WILL NOT BE ACCEPTABLE. MATERIALS AND EQUIPMENT SHALL BE OF COMMERCIAL SPECIFICATION GRADE IN QUALITY. LIGHT DUTY AND RESIDENTIAL GRADE EQUIPMENT WILL NOT BE ACCEPTED UNLESS OTHERWISE INDICATED. REMOVE FROM THE PREMISES WASTE MATERIAL PRESENT AS A RESULT OF HIS WORK, INCLUDING CARTONS, CRATING, PAPER, STICKERS, AND/OR EXCAVATION MATERIAL NOT USED IN BACKFILLING, ETC. CLEAN PIECES OF EQUIPMENT INSTALLED UNDER THIS CONTRACT TO PRESENT A NEAT AND CLEAN INSTALLATION AT THE TERMINATION OF THE WORK.

REPAIR OR REPLACE PUBLIC AND PRIVATE PROPERTY DAMAGED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT TO THE SATISFACTION OF AUTHORITIES AND REGULATIONS HAVING JURISDICTION.

15B 1-5 COORDINATION

COORDINATE WORK WITH THAT OF OTHER TRADES SO THAT THE VARIOUS COMPONENTS OF THE SYSTEMS WILL BE INSTALLED AT THE PROPER TIME, WILL FIT THE AVAILABLE SPACE, AND WILL ALLOW PROPER SERVICE ACCESS TO THOSE ITEMS REQUIRING MAINTENANCE. COMPONENTS WHICH ARE INSTALLED WITHOUT REGARD TO THE ABOVE SHALL BE RELOCATED AT NO ADDITIONAL COST TO THE OWNER.

UNIFSS NOTED ELSEWHERE. GENERAL CONTRACTOR WILL PROVIDE CHASES AND OPENINGS IN BUILDING CONSTRUCTION REQUIRED FOR INSTALLATION OF THE SYSTEMS SPECIFIED HEREIN. CONTRACTOR SHALL FURNISH THE GENERAL CONTRACTOR WITH INFORMATION REGARDING CHASES AND OPENINGS WHEN REQUIRED. CONTRACTOR SHALL KEEP INFORMED AS TO THE WORK OF OTHER TRADES ENGAGED IN THE CONSTRUCTION OF THE PROJECT, AND SHALL EXECUTE HIS WORK IN SUCH A MANNER AS NOT TO INTERFERE WITH OR DELAY THE WORK OF

FIGURED DIMENSIONS SHALL BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS. CONTRACTOR SHALL TAKE HIS OWN MEASUREMENTS AT THE BUILDING, AS VARIATIONS MAY OCCUR. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ERRORS WHICH COULD HAVE BEEN AVOIDED BY PROPER CHECKING AND VERIFICATION.

PROVIDE MATERIALS WITH TRIM THAT WILL PROPERLY FIT THE TYPES OF CEILING, WALL, OR FLOOR FINISHES ACTUALLY INSTALLED. MODEL NUMBERS LISTED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS ARE NOT INTENDED TO DESIGNATE THE REQUIRED TRIM.

15B 1-6 ORDINANCES AND CODES

WORK PERFORMED UNDER THIS CONTRACT SHALL, AT A MINIMUM, BE IN CONFORMANCE WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES HAVING JURISDICTION. EQUIPMENT FURNISHED AND ASSOCIATED INSTALLATION WORK PERFORMED UNDER THIS CONTRACT SHALL BE IN STRICT COMPLIANCE WITH CURRENT APPLICABLE CODES ADOPTED BY THE LOCAL AHJ INCLUDING ANY AMENDMENTS AND STANDARDS AS SET FORTH BY THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), UNDERWRITERS LABORATORIES (UL), OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME), AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS (ASHRAE), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICAN SOCIETY OF TESTING MATERIALS (ASTM) AND OTHER NATIONAL STANDARDS AND CODES WHERE APPLICABLE. WHERE THE CONTRACT DOCUMENTS EXCEED THE REQUIREMENTS OF THE REFERENCED CODES, STANDARDS, ETC., THE CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE.

PROCURE AND PAY FOR PERMITS AND LICENSES REQUIRED FOR THE ACCOMPLISHMENT OF THE WORK HEREIN DESCRIBED. WHERE REQUIRED, OBTAIN, PAY FOR AND FURNISH CERTIFICATES OF INSPECTION TO OWNER. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY VIOLATION OF THE LAW. MAINTAIN NECESSARY SIGNAL LIGHTS AND GUARDS FOR THE SAFETY OF THE

<u>15B 1-7 PROTECTION OF EQUIPMENT AND MATERIAL</u>

STORE AND PROTECT FROM DAMAGE EQUIPMENT AND MATERIAL AFTER DELIVERY TO JOB SITE. COVER WITH WATERPROOF, TEAR-RESISTANT, HEAVY TARP OR POLYETHYLENE PLASTIC AS REQUIRED TO PROTECT FROM PLASTER, DIRT, PAINT, WATER, OR PHYSICAL DAMAGE. EQUIPMENT AND MATERIAL DAMAGED BY CONSTRUCTION ACTIVITIES WILL BE REJECTED, AND CONTRACTOR IS OBLIGATED TO FURNISH NEW EQUIPMENT AND MATERIAL OF A LIKE KIND AT HIS OWN FXPFNSF

KEEP PREMISES BROOM CLEAN OF FOREIGN MATERIAL CREATED UNDER THIS CONTRACT. PIPING, EQUIPMENT, ETC. SHALL HAVE A NEAT AND CLEAN APPEARANCE AT THE TERMINATION OF THE WORK

PLUG OR CAP OPEN ENDS OF PIPING SYSTEMS DURING CONSTRUCTION WHEN NOT IN USE, TO PREVENT THE ENTRANCE OF DEBRIS INTO THE SYSTEMS.

KEEP THE MANUFACTURER-PROVIDED PROTECTIVE COVERINGS ON FLOOR DRAINS, FLOOR SINKS AND TRENCH DRAINS DURING CONSTRUCTION. REMOVE COVERINGS AT THE TERMINATION OF THE WORK AND POLISH EXPOSED SURFACES.

<u>15B 1-8 SUBSTITUTIONS</u>

THE BASE BID SHALL INCLUDE ONLY THE PRODUCTS FROM MANUFACTURERS SPECIFICALLY NAMED IN THE DRAWINGS AND SPECIFICATIONS. NO SUBSTITUTION WILL BE CONSIDERED PRIOR TO RECEIPT OF BIDS UNLESS WRITTEN REQUEST FOR APPROVAL TO BID HAS BEEN RECEIVED BY THE ENGINEER AT LEAST TEN CALENDAR DAYS PRIOR TO THE DATE FOR RECEIPT OF BIDS. FACH SUCH REQUEST SHALL INCLUDE THE NAME OF THE MATERIAL OR FOUIPMENT FOR WHICH IT IS TO BE SUBSTITUTED AND A COMPLETE DESCRIPTION OF THE PROPOSED SUBSTITUTE INCLUDING DRAWINGS, CUTS, PERFORMANCE AND TEST DATA AND OTHER INFORMATION NECESSARY FOR AN EVALUATION. A STATEMENT SETTING FORTH CHANGES IN OTHER MATERIALS FOUIPMENT OR OTHER WORK THAT INCORPORATION OF THE SUBSTITUTE WOULD REQUIRE SHALL BE INCLUDED. THE BURDEN OF PROOF OF THE MERIT OF THE PROPOSED SUBSTITUTE IS UPON THE PROPOSER. THE ENGINEER'S DECISION OF APPROVAL OR DISAPPROVAL TO BID OF A PROPOSED SUBSTITUTION SHALL BE FINAL.

THE TERMS "APPROVED", "APPROVED EQUAL", OR "EQUAL", REFER TO APPROVAL BY THE ENGINEER AS AN ACCEPTABLE ALTERNATE BID. NO SUBSTITUTIONS WILL BE CONSIDERED THAT ARE NOT BID AS AN ALTERNATE. NO MATERIAL SUBSTITUTIONS SHALL BE CONSIDERED FOR APPROVAL PRIOR TO AWARD OF CONTRACT.

COORDINATE AND VERIFY WITH OTHER TRADES WHETHER OR NOT THE SUBSTITUTED FQUIPMENT CAN BE INSTALLED AS SHOWN ON THE CONSTRUCTION DRAWINGS WITHOUT MODIFICATION TO ASSOCIATED SYSTEMS OR ARCHITECTURAL OR ENGINEERING DESIGN. INCLUDE ADDITIONAL COSTS FOR ARCHITECTURAL AND ENGINEERING DESIGN FEES IN BID IF DRAWING MODIFICATIONS ARE REQUIRED BECAUSE OF SUBSTITUTED EQUIPMENT.

15B 1-9 SHOP DRAWINGS

UPON BEING AWARDED A CONTRACT, SUBMIT TO THE ARCHITECT FOR APPROVAL, SIX (6) COPIES OF MANUFACTURER'S SHOP DRAWINGS FOR FQUIPMENT TO BE FURNISHED UNDER THIS CONTRACT, ITEMS REQUIRING COORDINATION BETWEEN CONTRACTORS AND SHEET METAL DUCTWORK FABRICATION DRAWINGS. BEFORE SUBMITTING SHOP DRAWINGS AND MATERIAL LISTS, VERIFY THAT EQUIPMENT SUBMITTED IS MUTUALLY COMPATIBLE AND SUITABLE FOR THE INTENDED USE, AND WILL FIT THE AVAILABLE SPACE AND ALLOW AMPLE ROOM FOR

THE ENGINEER'S CHECKING AND SUBSEQUENT APPROVAL OF SUCH SHOP DRAWINGS WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN DIMENSIONS. DETAILS, SIZE OF MEMBERS, QUANTITIES, OMISSIONS OF COMPONENTS OR FITTINGS; COORDINATION OF ELECTRICAL REQUIREMENTS; OR FOR COORDINATING ITEMS WITH ACTUAL BUILDING CONDITIONS. PROCEED WITH THE PROCUREMENT AND INSTALLATION OF FOUIPMENT ONLY AFTER RECEIVING APPROVED SHOP DRAWINGS RELATIVE TO EACH ITEM.

CATALOG DATA SHALL BE PROPERLY BOUND, IDENTIFIED, INDEXED AND TABBED IN A 3-RING BINDER, FACH ITEM OR MODEL NUMBER SHALL BE CLEARLY MARKED AND ACCESSORIES INDICATED. LABEL THE CATALOG DATA WITH THE EQUIPMENT IDENTIFICATION ACRONYM OR NUMBER AS USED ON THE DRAWINGS AND INCLUDE PERFORMANCE CURVES, CAPACITIES, SIZES, MATERIALS, FINISHES, WIRING DIAGRAMS AND DEVIATIONS FROM SPECIFIED EQUIPMENT OR MATERIALS. MARK OUT INAPPLICABLE ITEMS. SHOP DRAWINGS WILL BE RETURNED WITHOUT REVIEW IF THE ABOVE MENTIONED REQUIREMENTS ARE NOT MET.

15B 1-10 ELECTRONIC DRAWINGS

IN PREPARATION OF SHOP DRAWINGS, CONTRACTOR MAY, AT HIS OPTION, OBTAIN ELECTRONIC DRAWING FILES IN AUTOCAD OR DXF FORMAT FROM THE ENGINEER FOR A COMMENSORATE AND NOMINAL FEE. CONTRACTOR SHALL CONTACT THE ARCHITECT FOR WRITTEN AUTHORIZATION. CONTRACTOR SHALL COMPLETE AND SEND THE FORM ATTACHED AT THE END OF THIS SECTION ALONG WITH A CHECK MADE PAYABLE TO ENGINEER OF RECORD. CONTRACTOR SHALL INDICATE THE DESIRED SHIPPING METHOD AND DRAWING FORMAT ON THE ATTACHED FORM. IN ADDITION TO PAYMENT, ARCHITECT'S WRITTEN AUTHORIZATION AND NGINEER'S RELEASE AGREEMENT FORM MUST BE RECEIVED BEFORE ELECTRONIC DRAWING FILES WILL BE SENT.

15B 1-11 OPERATION AND MAINTENANCE INSTRUCTIONS

DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE A COMPLETE BROCHURE OF FOUIPMENT FURNISHED AND INSTALLED ON THIS PROJECT. INCLUDE OPERATIONAL AND MAINTENANCE INSTRUCTIONS, MANUFACTURER'S CATALOG SHEETS, WIRING DIAGRAMS, PARTS LISTS, APPROVED SHOP DRAWINGS, AND DESCRIPTIVE LITERATURE AS FURNISHED BY THE EQUIPMENT MANUFACTURER. INCLUDE AN INSIDE COVER SHEET THAT LISTS THE PROJECT NAME, DATE, OWNER, ARCHITECT, CONSULTING ENGINEER, GENERAL CONTRACTOR, SUB-CONTRACTOR, AND AN INDEX OF CONTENTS.

SUBMIT THREE COPIES OF LITERATURE BOUND IN APPROVED BINDERS TO THE ARCHITECT AT THE TERMINATION OF THE WORK. PAPER CLIPS, STAPLES, RUBBER BANDS, AND MAILING ENVELOPES ARE NOT CONSIDERED APPROVED BINDERS. FINAL APPROVAL OF MECHANICAL SYSTEMS INSTALLED UNDER THIS CONTRACT WILL BE WITHHELD UNTIL THIS EQUIPMENT BROCHURE IS RECEIVED AND DEEMED COMPLETE BY THE ARCHITECT AND ENGINEER INSTRUCT WORKMEN TO SAVE REQUIRED LITERATURE SHIPPED WITH THE EQUIPMENT ITSELF, FOR INCLUSION IN THIS BROCHURE.

PROVIDE "AS-BUILT" DRAWINGS (SEE SPECIAL CONDITIONS).

15B 1-12 TRAINING

AT A TIME MUTUALLY AGREED UPON BETWEEN THE OWNER AND CONTRACTOR, PROVIDE THE SERVICES OF A FACTORY TRAINED AND AUTHORIZED REPRESENTATIVE TO TRAIN OWNER'S DESIGNATED PERSONNEL ON THE OPERATION AND MAINTENANCE OF THE EQUIPMENT PROVIDED FOR THIS PROJECT.

PROVIDE TRAINING TO INCLUDE BUT NOT BE LIMITED TO AN OVERVIEW OF THE SYSTEM AND/OR EQUIPMENT AS IT RELATES TO THE FACILITY AS A WHOLE; OPERATION AND MAINTENANCE PROCEDURES AND SCHEDULES RELATED TO STARTUP AND SHUTDOWN, TROUBLESHOOTING. SERVICING, PREVENTIVE MAINTENANCE AND APPROPRIATE OPERATOR INTERVENTION; AND REVIEW OF DATA INCLUDED IN THE OPERATION AND MAINTENANCE MANUALS.

SUBMIT A CERTIFICATION LETTER TO THE ARCHITECT STATING THAT THE OWNER'S DESIGNATED REPRESENTATIVE HAS BEEN TRAINED AS SPECIFIED HEREIN. LETTER SHALL INCLUDE DATE, TIME, ATTENDEES AND SUBJECT OF TRAINING. THE CONTRACTOR AND THE OWNER'S REPRESENTATIVE SHALL SIGN THE CERTIFICATION LETTER INDICATING AGREEMENT THAT THE TRAINING HAS BEEN PROVIDED.

SCHEDULE TRAINING WITH OWNER WITH AT LEAST 7 DAYS' ADVANCE NOTICE. <u>15B 1-13 WARRANTIES</u>

COORDINATE WITH DIVISION 1 AND GENERAL CONDITIONS TO DETERMINE WHAT THE ACTUAL REQUIREMENTS ARE, AND MODIFY THE FOLLOWING AS REQUIRED SO AS TO NOT CONTRADICT

WARRANT EACH SYSTEM AND EACH ELEMENT THEREOF AGAINST ALL DEFECTS DUE TO FAULTY WORKMANSHIP, DESIGN OR MATERIAL FOR A PERIOD OF 12 MONTHS FROM DATE OF SUBSTANTIAL COMPLETION, UNLESS SPECIFIC ITEMS ARE NOTED TO CARRY A LONGER WARRANTY IN THE CONSTRUCTION DOCUMENTS OR MANUFACTURER'S STANDARD WARRANTY EXCEEDS 12 MONTHS. REMEDY ALL DEFECTS, OCCURRING WITHIN THE WARRANTY PERIOD(S), AS STATED IN THE GENERAL CONDITIONS AND DIVISION 1.

WARRANTIES SHALL INCLUDE LABOR AND MATERIAL. MAKE REPAIRS OR REPLACEMENTS WITHOUT ANY ADDITIONAL COSTS TO THE OWNER.

PERFORM THE REMEDIAL WORK PROMPTLY, UPON WRITTEN NOTICE FROM THE ENGINEER OR

AT THE TIME OF SUBSTANTIAL COMPLETION, DELIVER TO THE OWNER ALL WARRANTIES, IN WRITING AND PROPERLY EXECUTED. INCLUDING TERM LIMITS FOR WARRANTIES EXTENDING BEYOND THE ONE YEAR PERIOD, EACH WARRANTY INSTRUMENT BEING ADDRESSED TO THE OWNER AND STATING THE COMMENCEMENT DATE AND TERM.

15B 1-14 SPARE PARTS

FURNISH TO OWNER, WITH RECEIPT, THE SPARE PARTS TO INCLUDE FAUCET WASHERS AND O-RINGS, FLUSHOMETER REPAIR KITS AND WATER CLOSET TANK REPAIR KITS FOR THE FIXTURES FURNISHED FOR THIS PROJECT.

15B 1-15 EXCAVATION AND BACKFILLING

PERFORM EXCAVATION AND BACKFILL REQUIRED FOR INSTALLATION OF UNDERGROUND WORK UNDER THIS CONTRACT. TRENCHES SHALL BE OF SUFFICIENT WIDTH. CRIB OR BRACE TRENCHES TO PREVENT CAVE-IN OR SETTLEMENT. DO NOT EXCAVATE TRENCHES CLOSE TO COLUMNS AND WALLS OF NEW BUILDING WITHOUT PRIOR CONSULTATION WITH THE ARCHITECT USE PUMPING EQUIPMENT IF REQUIRED TO KEEP TRENCHES FREE OF WATER. BACKFILL TRENCHES IN MAXIMUM 6" LAYERS OF WELL-TAMPED DRY EARTH IN A MANNER TO PREVENT FUTURE SETTLEMENT.

EXCAVATION AS HEREIN SPECIFIED SHALL BE CLASSIFIED AS COMMON EXCAVATION. COMMON EXCAVATION SHALL COMPRISE THE SATISFACTORY REMOVAL AND DISPOSITION OF MATERIAL OF WHATEVER SUBSTANCES AND OF EVERY DESCRIPTION ENCOUNTERED, INCLUDING ROCK, IF ANY WITHIN THE LIMITS OF THE WORK AS SPECIFIED AND SHOWN ON THE DRAWINGS. EXCAVATION SHALL BE PERFORMED TO THE LINES AND GRADES INDICATED ON THE DRAWINGS. EXCAVATED MATERIALS WHICH ARE CONSIDERED UNSUITABLE FOR BACKFILL, AND SURPLUS OF EXCAVATED MATERIAL WHICH IS NOT REQUIRED FOR BACKFILL. SHALL BE DISPOSED OF BY THE CONTRACTOR AT HIS OWN EXPENSE AND RESPONSIBILITY, AND TO THE SATISFACTION OF THE ARCHITECT.

15B 1-16 COINCIDENTAL DAMAGE

CONTRACTOR SHALL REPAIR STREETS, SIDEWALKS, DRIVES, PAVING, WALLS AND FINISHES ETC. THAT HE DAMAGES IN THE COURSE OF THIS PROJECT. REPAIR MATERIALS SHALL MATCH EXISTING CONSTRUCTION REPAIR WORK SHALL MEET REQUIREMENTS OF THE LOCAL AUTHORITIES HAVING JURISDICTION AND MEET THE SATISFACTION OF THE ARCHITECT. [CONFORM TO REQUIREMENTS OF DIVISION TWO OF THIS SPECIFICATION.]

15B 1-17 CUTTING AND PATCHING

OBTAIN PERMISSION FROM THE ARCHITECT BEFORE CUTTING WALLS, FLOORS, CEILINGS, ETC. AS REQUIRED BY THE PROJECT. DO NOT DISTURB STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL FROM THE ARCHITECT. CUT HOLES AS SMALL AS POSSIBLE. GENERAL CONTRACTOR SHALL PATCH WALLS, FLOORS, ETC. AS REQUIRED BY WORK UNDER THIS SECTION. PATCHING SHALL MATCH ORIGINAL MATERIAL AND CONSTRUCTION. REPAIR AND REFINISH AREAS DISTURBED BY WORK TO THE CONDITION OF ADJOINING SURFACES IN A MANNER SATISFACTORY TO THE ARCHITECT.

15B 1-18 ROUGH-IN

BEFORE STARTING CONSTRUCTION, COORDINATE WITH OTHER CONTRACTORS REGARDING ROUGH-IN WITH GENERAL CONSTRUCTION. CONCEAL PIPING, CONDUIT AND ROUGH-IN EXCEPT IN UNFINISHED AREAS AND WHERE OTHERWISE SHOWN.

15B 1-19 CONCRETE BASES

PROVIDE CONCRETE BASES FOR HIS EQUIPMENT WHERE INDICATED ON THE DRAWINGS. CONCRETE BASES SHALL HAVE CHAMFERED EDGES. SIZE OF PAD SHALL BE A MINIMUM OF 4" GREATER THAN THE FOOTPRINT OF THE EQUIPMENT THAT IT IS SUPPORTING.

CONSTRUCT EQUIPMENT BASES AND HOUSEKEEPING PADS OF A MINIMUM 28 DAY, 4000 PSI CONCRETE CONFORMING TO AMERICAN CONCRETE INSTITUTE STANDARD BUILDING CODE FOR REINFORCED CONCRETE (ACI 318-99) AND THE LATEST APPLICABLE RECOMMENDATIONS OF THE ACI STANDARD PRACTICE MANUAL. CONCRETE SHALL BE COMPOSED OF CEMENT CONFORMING TO ASTM C 150 TYPE I. AGGREGATE CONFORMING TO ASTM C33. AND POTABLE WATER. EXPOSED EXTERIOR CONCRETE SHALL CONTAIN 5 TO 7 PERCENT AIR ENTRAINMENT.

FQUIPMENT BASES AND HOUSEKEEPING PADS WITH NO. 4 REINFORCING BARS CONFORMING TO ASTM A 615 OR 6X6 - W2.9 X W2.9 WELDED WIRE MESH CONFORMING TO ASTM A185. PLACE REINFORCING BARS 24" ON CENTER WITH A MINIMUM OF TWO BARS EACH DIRECTION. PROVIDE GALVANIZED ANCHOR BOLTS FOR EQUIPMENT PLACED ON CONCRETE EQUIPMENT

PLACEMENT SHALL BE AS RECOMMENDED BY THE MANUFACTURER OF THE EQUIPMENT.

UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE STRUCTURAL DRAWINGS, REINFORCE

CONCRETE EQUIPMENT BASES SHALL HAVE MINIMUM HEIGHTS IN ACCORDANCE WITH THE FOLLOWING: FOR WATER HEATERS, WATER SOFTENERS AND OTHER FOUIPMENT NOT LISTED. MINIMUM HEIGHT IS 3-1/2. FOR WATER HEATERS OVER 200 GALLONS CAPACITY AND DOMESTIC WATER BOOSTER PUMPS. MINIMUM HEIGHT IS 5-1/2". HEIGHT OF EQUIPMENT BASES APPLIES TO EQUIPMENT INSTALLED ON SLAB-ON-GRADE. FOR EQUIPMENT INSTALLED ON FLOORS ABOVE

15B 1-20 STRUCTURAL STEEL

STRUCTURAL STEEL USED FOR PIPE SUPPORTS, EQUIPMENT SUPPORTS, ETC., SHALL BE NEW AND CLEAN, AND SHALL CONFORM TO ASTM DESIGNATION A-36.

SUPPORT PLUMBING EQUIPMENT AND PIPING FROM THE BUILDING STRUCTURE. DO NOT SUPPORT PLUMBING EQUIPMENT AND PIPING FROM CEILINGS, OTHER MECHANICAL OR ELECTRICAL COMPONENTS, AND OTHER NON-STRUCTURAL ELEMENTS.

GRADE AND ON THE ROOF, REFER TO THE DRAWINGS.

PROVIDE ACCESS DOORS IN CEILINGS AND WALLS WHERE INDICATED OR REQUIRED FOR ACCESS TO CONCEALED VALVES AND FOUIPMENT INSTALLED UNDER THIS SECTION. PROVIDE CONCEALED HINGES, SCREWDRIVER-TYPE LOCK, ANCHOR STRAPS; MANUFACTURED BY MILCOR, ZURN, TITUS, OR EQUAL. OBTAIN ARCHITECT'S APPROVAL OF TYPE, SIZE, LOCATION, AND COLOR BEFORE ORDERING.

15B 1-22 PENETRATIONS

<u>15B 1-21 ACCESS DOORS</u>

SEAL FLOOR, EXTERIOR WALL, AND ROOF PENETRATIONS WATER AND WEATHERTIGHT WITH APPROPRIATE NON-SHRINK, NON-HARDENING COMMERCIAL CONSTRUCTION SEALANT. SEAL ROOF PENETRATIONS WITH 4 POUND PER SQUARE FOOT LEAD FLASHING. PROVIDE A SLEEVE, AND SEAL NON-FIRE-RATED FLOOR AND WALL PENETRATIONS WITH FIBERGLASS PACKING AND SILICONE CAULK (FOR ACOUSTICAL INSULATION).

COORDINATE FIRE RATING REQUIREMENTS AND LOCATIONS WITH THE ARCHITECT. SEAL PIPING PENETRATIONS OF FIRE-RATED ASSEMBLIES WITH 3M # CP-25 FIRE BARRIER CAULK (PROVIDE THICKNESS AND METHOD AS REQUIRED AND RECOMMENDED BY MANUFACTURER) TO MAINTAIN THE FIRE RESISTANCE RATING OF FIRE-RATED ASSEMBLIES.

SEAL EXTERIOR WALL PENETRATIONS BELOW GRADE WITH CAST IRON WALL PIPES AND MODULAR MECHANICAL SLEEVE SEALS, MANUFACTURED BY THUNDERLINE / LINK SEAL, CALPICO, INC. AND METRAFLEX.

PROVIDE SLEEVES FOR HORIZONTAL PIPE PASSING THROUGH OR UNDER FOUNDATION. SLEEVES SHALL BE CAST IRON SOIL PIPE TWO NOMINAL PIPE SIZES LARGER THAT THE PIPE

PROVIDE SLEEVES FOR VERTICAL PIPE PASSING THROUGH SLAB ON GRADE. SLEEVES SHALL BE SCHEDULE 40 PVC PIPE, TWO NOMINAL PIPE SIZES LARGER THAN THE PIPE SERVED. SEAL WATER-TIGHT WITH SILICONE CAULK.

15B 1-23 ELECTRICAL WIRING

LINE VOLTAGE WIRING SHALL BE PROVIDED BY DIVISION 16. LINE VOLTAGE CONTROL AND INTERLOCK WIRING FOR PLUMBING SYSTEMS SHALL ALSO BE PROVIDED BY DIVISION 16 CONTRACTOR. LOW VOLTAGE CONTROL WIRING SHALL BE PROVIDED BY THE DIVISION 15 CONTRACTOR. FURNISH WIRING DIAGRAMS TO THE DIVISION 16 CONTRACTOR AS REQUIRED FOR PROPER EQUIPMENT HOOKUP. COORDINATE WITH THE DIVISION 16 CONTRACTOR THE ACTUAL WIRE SIZING AMPS FOR PLUMBING EQUIPMENT (FROM THE EQUIPMENT NAMEPLATE) TO ENSURE PROPER INSTALLATION.

15B 1-24 EQUIPMENT FURNISHED BY OTHERS

FURNISH AND INSTALL ROUGHED—IN WASTES, VENTS AND WATER SERVICES. PROVIDE FINAL CONNECTION TO KITCHEN EQUIPMENT, FURNISHED BY OTHERS, IN LOCATIONS AS INDICATED ON THE DRAWINGS. PROVIDE ACCESSORY ITEMS THAT ARE REQUIRED BUT NOT FURNISHED WITH THE EQUIPMENT, INCLUDING TRAPS, STOP VALVES, PRV'S, INDIRECT DRAIN FROM EQUIPMENT TO FLOOR DRAINS, AND ACCESSORY ITEMS INDICATED OR REQUIRED FOR THE PROPER OPERATION OF THE COMPLETE SYSTEM AT THE TERMINATION OF THE WORK.

DIVISION 15 CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECT ROUGH-IN DIMENSIONS, AND SHALL VERIFY SAME WITH ARCHITECT AND/OR EQUIPMENT SUPPLIER PRIOR TO SERVICE INSTALLATIONS.

<u>15B 1-25 ALTERNATES</u>

REFER TO THE ARCHITECTURAL PORTION OF THE SPECIFICATION FOR LIST OF ALTERNATES APPLICABLE SECTIONS OF THE BASE SPECIFICATIONS SHALL APPLY TO ALL WORK REQUIRED BY THE ALTERNATE UNLESS OTHERWISE SPECIFIED. DETERMINE WHETHER OR NOT AND HOW EACH ALTERNATE AFFECTS WORK. INCLUDE LABOR, MATERIALS, EQUIPMENT AND TRANSPORTATION SERVICES NECESSARY FOR AND INCIDENTAL TO THE COMPLETION OF WORK UNDER EACH PARTICULAR ALTERNATE. FURNISH SEPARATE BID FOR EACH ALTERNATE APPLICABLE TO WORK, STATING THE AMOUNT TO BE ADDED OR DEDUCTED FROM THE BASE BID.

<u>15B 1-26 UTILITY CONNECTIONS</u>

PROVIDE UTILITY CONNECTIONS REQUIRED AND INDICATED ON THE DRAWINGS. INSTALL INTERIOR AND EXTERIOR CONNECTIONS TO "MAINS" AND EXISTING SERVICE LINES COMPLETE AND FUNCTIONING, IN COMPLIANCE WITH THE REQUIREMENTS OF THE CODES HAVING JURISDICTION AND THE SERVING UTILITY INVOLVED. VERIFY THE EXACT LOCATION OF UTILITY MAINS, SERVICE LINES, AND CONNECTION POINTS REQUIRING CONNECTION IN THE FIELD PRIOR TO INSTALLATION. WORK IN CONJUNCTION WITH THE UTILITY INVOLVED IN THE INSTALLATION OF SERVICES. VERIFY THAT INSTALLATION WILL TIE INTO THE EXISTING UTILITY MAINS, SERVICE LINES, AND CONNECTION POINTS AT THE INDICATED INVERT ELEVATION POINT PRIOR TO INSTALLATION. IF THE INSTALLATION WILL NOT TIE INTO THE INDICATED INVERT ELEVATION POINT WHILE MAINTAINING PROPER FALL, NOTIFY THE ARCHITECT AND THE ENGINEER SO THAT AN ALTERNATIVE MAY BE DETERMINED.

PROVIDE SERVICE PIPING AND ACCESSORIES REQUIRED TO COMPLETE UTILITY CONNECTIONS THAT ARE NOT FURNISHED BY THE SERVING UTILITY. COORDINATE WITH THE SERVING UTILITY COMPANY REGARDING ITEMS FURNISHED, WORK PERFORMED, AND PERMITS AND INSPECTIONS REQUIRED. PAY ASSOCIATED FEES OR CHARGES.

PROVIDE A DOMESTIC WATER SERVICE CONNECTION FROM BUILDING TO MUNICIPAL WATER MAIN AS INDICATED ON THE DRAWINGS, INCLUDING METER, BYPASS, AND VALVES] [IN AN APPROVED METER PIT.

PROVIDE A SANITARY SEWER CONNECTION FROM BUILDING TO MUNICIPAL SEWER MAIN AS INDICATED ON THE DRAWINGS.

COORDINATE WITH THE LOCAL GAS SERVICE COMPANY TO PROVIDE A NEW GAS SERVICE, INCLUDING GAS METER, SHUT-OFF VALVES, AND REGULATOR AS INDICATED ON THE DRAWINGS. INSTALLATION SHALL BE IN COMPLETE CONFORMANCE WITH THE REQUIREMENTS OF THE LOCAL GAS SERVICE COMPANY.

15B 1-27 MISCELLANEOUS REMODELING WORK

PROVIDE ITEMS OF PLUMBING SYSTEMS MODIFICATION REQUIRED BECAUSE OF BUILDING REMODELING, AS NOTED ON THE DRAWINGS, OR NECESSARY FOR PROPER OPERATION. MATCH EXISTING MATERIALS AND CONSTRUCTION TECHNIQUES WHEN MODIFYING EXISTING SYSTEMS. COORDINATE REQUIREMENTS WITH GENERAL CONTRACTOR AND ARCHITECT.

EXISTING FLOOR DRAINS REQUIRED TO BE ABANDONED OR NOT IN USE AT THE TERMINATION OF THE WORK SHALL BE SEALED GAS-TIGHT. CLEAN TRAP OF DEBRIS AND FILL WITH SILICONE. REMOVE GRATE AND FILL DRAIN BODY WITH GROUT. IN THE FINISHED PORTIONS OF THE BUILDING THEY SHALL BE COVERED WITH FLOOR MATERIAL MATCHING ADJACENT AREA. ANY FLOOR DEPRESSIONS RESULTING FROM ABANDONED FLOOR DRAINS SHALL BE LEVELED BEFORE FINAL FLOOR FINISHING.

NEW FLOOR DRAINS SHALL BE CONNECTED TO THE EXISTING SANITARY DRAINAGE SYSTEM AS SHOWN ON THE DRAWINGS OR AS REQUIRED. SAW-CUT EXISTING CONCRETE FLOOR AS REQUIRED TO INSTALL NEW UNDERFLOOR LINES, AND PATCH TO MATCH EXISTING SUB-FLOOR. REFER TO ARCHITECTURAL SPECIFICATIONS FOR FINISH FLOOR PATCHING REQUIREMENTS.

EXISTING PLUMBING FIXTURES WHERE INDICATED ON THE DRAWINGS TO BE REUSED SHALL BE CLEANED, REPAIRED, PROVIDED WITH NEW WASHERS, ETC. AS REQUIRED TO PUT THEM INTO GOOD OPERATING CONDITION. PATCH HOLES WEATHER-TIGHT IN EXISTING ROOFS CAUSED BY REMOVAL OF PLUMBING ITEMS

SUCH AS PIPING. MAKE CONNECTION OF NEW PIPE TO SIMILAR EXISTING WASTE, WATER AND GAS PIPE USING

15B 1-28 BUILDING OPERATION

STANDARD FITTINGS AND JOINING PRACTICES.

COMPLY WITH THE SCHEDULE OF OPERATIONS AS OUTLINED IN THE ARCHITECTURAL PORTIONS OF THIS SPECIFICATION. BUILDING WILL BE IN OPERATION [AT ALL TIMES.] [DURING NORMAL WORK-DAY HOURS. ACCOMPLISH WORK REQUIRING INTERRUPTION OF BUILDING OPERATION AT A TIME WHEN THE BUILDING IS NOT IN OPERATION, AND ONLY WITH WRITTEN APPROVAL OF BUILDING OWNER AND/OR TENANT. COORDINATE INTERRUPTION OF BUILDING OPERATION WITH THE OWNER AND/OR TENANT A MINIMUM OF SEVEN DAYS IN ADVANCE OF WORK.

15B 1-29 SYSTEM TESTING AND ADJUSTING

UPON COMPLETION OF EACH PHASE OF THE INSTALLATION, TEST EACH SYSTEM IN CONFORMANCE WITH LOCAL CODE REQUIREMENTS AND AS NOTED BELOW. FURNISH LABOR AND EQUIPMENT REQUIRED TO TEST PLUMBING WORK INSTALLED UNDER THIS CONTRACT, AND ASSUME COSTS INVOLVED IN MAKING THE TESTS, AND REPAIRING AND/OR REPLACING DAMAGE RESULTING THEREFROM.

NOTIFY THE ARCHITECT AND THE AUTHORITY HAVING JURISDICTION, THREE (3) WORKING DAYS PRIOR TO MAKING PLUMBING SYSTEM TESTS. LEAVE CONCEALED WORK UNCOVERED UNTIL THE REQUIRED TESTS HAVE BEEN COMPLETED. BUT IF NECESSARY DUE TO CONSTRUCTION PROCEDURE, TESTS ON PORTIONS OF THE WORK MAY BE MADE, AND WHEN SATISFACTORY, THE WORK MAY BE CONCEALED. TEST PIPING BEFORE INSULATION IS INSTALLED, AND BEFORE BACKFILL. PIPES, JOINTS, FLANGES, VALVE STEMS, ETC., SHALL BE LEAK TIGHT. REPAIR OR REPLACE SYSTEM DEFECTS WITH NEW MATERIALS. CAULKING OF DEFECTIVE JOINTS, CRACKS OR HOLES WILL NOT BE PERMITTED. REPEAT TESTS AFTER DEFECTS HAVE BEEN ELIMINATED. MAKE TESTS IN THE PRESENCE OF THE ADMINISTRATIVE AUTHORITY AND/OR THE OWNER'S AUTHORIZED REPRESENTATIVE.

UPON COMPLETION OF THE SYSTEMS INSTALLATION, AND PRIOR TO ACCEPTANCE BY THE ARCHITECT AND ENGINEER, MAKE GENERAL OPERATING TESTS TO DEMONSTRATE THAT FOUIPMENT AND SYSTEMS ARE IN PROPER WORKING ORDER. AND ARE FUNCTIONING IN CONFORMANCE WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. AS A PART OF THESE TESTS, OPEN EVERY WATER OUTLET TO ENSURE COMPLETE SYSTEM FLUSHING, REMOVE AND CLEAN FAUCET AERATORS, CLEAN STRAINERS, LIGHT PILOT LIGHTS, AND OPERATE EVERY PIECE OF EQUIPMENT FURNISHED UNDER THIS CONTRACT TO DEMONSTRATE PROPER

TEST THE DRAINAGE AND VENT SYSTEM BY PLUGGING OPENINGS WITH TEST PLUGS, EXCEPT THOSE AT THE TOP OF THE STACKS. FILL THE SYSTEM WITH WATER: TEST RESULTS WILL BE SATISFACTORY IF THE WATER LEVEL REMAINS STATIONARY FOR NOT LESS THAN ONE (1) HOUR. SUBJECT THE DRAINAGE AND VENT SYSTEM TO A PRESSURE OF AT LEAST TEN (10) FEET OF WATER. IF LEAKS DEVELOP, REPAIR THEM AND REPEAT THE TEST

TEST THE DOMESTIC WATER SYSTEM BY FILLING IT WITH WATER AND THEN ISOLATING THE SYSTEM FROM ITS SOURCE. KEEP THE SYSTEM CLOSED FOR A PERIOD OF TWENTY-FOUR HOURS, WITH NO FIXTURE BEING USED. THE PRESSURE DIFFERENTIAL FOR THIS TEST PERIOD SHALL NOT EXCEED 10 PSIG. TEST WATER PIPING TO A 125 PSI HYDROSTATIC PRESSURE.

FOR LOW PRESSURE NATURAL GAS SYSTEMS, SUBJECT THE PIPE TO 10 PSIG AIR PRESSURE FOR A PERIOD OF ONE HOUR. THE RESULTANT PRESSURE DIFFERENTIAL FOR THIS PERIOD SHALL BE 0 PSIG. TEST PER GAS COMPANY REQUIREMENTS WHERE REQUIRED.

15B 1-30 GUARANTEE

THE WORK TO BE PERFORMED UNDER THIS CONTRACT SHALL INCLUDE THE FURNISHING, INSTALLATION, AND CONNECTION OF PLUMBING SYSTEMS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS. BY SIGNING THE CONTRACT, THE CONTRACTOR ACKNOWLEDGES THAT HE HAS ACQUAINTED HIMSELF WITH THE SITE AND THE EXISTING CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED, AND THE DRAWINGS AND SPECIFICATIONS PERTAINING THERETO, AND HE INDICATES THAT HE WILL COMPLY WITH THE REQUIREMENTS AND INTENT OF PERTINENT DOCUMENTS IN THE PERFORMANCE OF THE WORK.

GUARANTEE THAT THE PLUMBING INSTALLED UNDER THIS CONTRACT IS FREE OF DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF JOB ACCEPTANCE BY THE OWNER. THIS SHALL INCLUDE A GUARANTEE OF FREE CIRCULATION OF LIQUIDS THROUGHOUT THE SYSTEM AS INTENDED WITHOUT LEAKS, EXCESSIVE NOISE, OR WATER HAMMER.

IF DEFECTS OCCUR DURING THE ONE YEAR GUARANTEE PERIOD, REPAIR OR REPLACE SUCH DEFECTS AT NO EXPENSE TO THE OWNER, AND TO THE SATISFACTION OF THE OWNER, ARCHITECT AND ENGINEER.

15B2 PLUMBING PIPING

15B 2-1 PIPING MATERIALS

MATERIALS SPECIFIED OR NOTED ON THE DRAWINGS ARE SUBJECT TO THE APPROVAL OF LOCAL CODE AUTHORITIES. VERIFY APPROVAL BEFORE INSTALLING ANY MATERIAL OR JOINING

DOMESTIC WATER (COLD AND HOT]): DOMESTIC WATER MAINS INSTALLED ABOVE THE FLOOR SLAB INSIDE THE BUILDING SHALL BE TYPE "L" HARD TEMPER COPPER TUBE WITH WROUGHT COPPER FITTINGS AND SOLDERED CONNECTIONS MADE UP WITH 95/5 SOLDER. CPVC AND/OR PEX PIPING MAY BE USED IN FACH INDIVIDUAL APARTMENT UNIT. PIPING MUST BE APPROVED BY CODE; JOINTS IN CONFORMANCE WITH MANUFACTURERS INSTRUCTIONS.

UNDERGROUND DOMESTIC WATER PIPING 2" AND SMALLER SHALL BE TYPE "K" SOFT TEMPER COPPER TUBING WITH FLARED COPPER ALLOY FITTINGS AND CONNECTIONS. OR TYPE "K" HARD TEMPER COPPER TUBING WITH CONVENTIONAL WROUGHT COPPER FITTINGS AND SILVER SOLDER (SILFOS) JOINTS. INSTALL AS FEW UNDERGROUND COPPER PIPING JOINTS AS POSSIBLE. AT BUILDING SERVICE ENTRANCE, NO JOINTS SHALL BE INSTALLED UNDER OR WITHIN 5 FEET OF THE BUILDING. INSTALL DOMESTIC WATER PIPING BELOW GRADE OUTSIDE BUILDING AT ADEQUATE DEPTH TO PREVENT FREEZING.

UNDERGROUND DOMESTIC WATER PIPING 3" AND LARGER SHALL BE CLASS 52 DUCTILE IRON MEETING THE REQUIREMENTS OF ANSI / AWWA STANDARD C151/A21.51. PIPING SHALL BE DOUBLE CEMENT LINED IN ACCORDANCE WITH ANSI / AWWA STANDARD C104/A21.4. FITTINGS SHALL HAVE MECHANICAL JOINTS. AT CONTRACTOR'S OPTION. PIPE JOINTS IN STRAIGHT RUNS (NOT AT FITTINGS) AND NOT INSTALLED UNDER OR WITHIN 5 FEET OF THE BUILDING SLAB MAY BE PUSH-ON JOINTS. JOINTS SHALL CONFORM TO THE REQUIREMENTS OF ANSI 21.11.

INTERIOR WASTE AND VENT BELOW SLAB: WASTE AND VENT PIPE BELOW SLAB INSIDE BUILDING SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE WITH HUB AND SPIGOT FITTINGS WITH NEOPRENE GASKET JOINTS. HUBLESS WASTE AND VENT PIPE IS NOT PERMITTED BELOW BASE SLAB. PVC SCHEDULE 40 DWV ASTM D2665 PIPE WITH PVC MEETING ASTM B1784, CELL CLASS 12454-B WITH ASTM 2665 SOCKET FITTINGS WITH SOLVENT WELD JOINTS IS ALSO PERMITTED WHERE APPROVED BY CODE.

INTERIOR WASTE AND VENT ABOVE SLAB: WASTE AND VENT PIPE ABOVE SLAB INSIDE BUILDING SHALL BE HUBLESS CAST IRON SOIL PIPE AND FITTINGS WITH HUBLESS COUPLINGS. PVC SCHEDULE 40 DWV ASTM D2665 PIPE WITH PVC MEETING ASTM B1784, CELL CLASS 12454-B WITH ASTM 2665 SOCKET FITTINGS WITH SOLVENT WELD JOINTS IS ALSO PERMITTED WHERE APPROVED BY CODE, [EXCEPT WHERE OTHERWISE NOTED ON DRAWINGS]. (NOTE: PVC PIPING IS NOT ALLOWED IN CEILING RETURN AIR PLENUMS)

INDIRECT AND CONDENSATE DRAIN INSIDE BUILDING: INDIRECT AND CONDENSATE DRAIN PIPE INSTALLED INSIDE THE BUILDING SHALL BE TYPE "M" HARD COPPER WITH WROUGHT COPPER FITTINGS FOR 1" AND SMALLER AND "DWV" COPPER WITH WROUGHT COPPER DRAINAGE PATTERN FITTINGS FOR 1-1/4" AND LARGER HARD TEMPER COPPER TUBE AND SOLDERED CONNECTIONS MADE WITH 95/5 SOLDER. INSTALL CLEANOUTS AT ELBOWS GREATER THAN 45 DEGREES.

15B 2-2 PIPING AND EQUIPMENT INSULATION

DOMESTIC COLD WATER, HOT WATER, INDIRECT AND CONDENSATE DRAIN PIPE (WITHIN BUILDING) 1" ONE-PIECE FIBERGLASS COVERING WITH FIRE-RESISTANT JACKET WITH SELF-SEALING LAP TO PROVIDE A CONTINUOUS VAPOR BARRIER BY CERTAINTEED, OWENS-CORNING OR ARMSTRONG. FOR PIPING AT HANGERS PROVIDE 8" LONG SECTIONS OF HIGH DENSITY, HIGH TEMPERATURE CALCIUM SILICATE BY JOHNS-MANVILLE, FIBERGLASS BY KNAUF, OR 8" LONG STYROFOAM BILLETS BY DOW. INSULATION SHALL BE CONTINUOUS ALONG THE PIPE SURFACE, EXCEPT AT VALVES, UNIONS, AND WHERE PIPING IS EXPOSED AT FIXTURES. PROVIDE 1 FIRERGLASS INSULATION ON VENT PIPING WITHIN SIX FEFT OF VENT THROUGH THE OF ROOF PROVIDE FIBERGLASS INSULATION ON DOMESTIC COLD AND HOT WATER PIPES INSTALLED IN WALLS AND CHASES. PROVIDE FIBERGLASS INSULATION ON DOMESTIC COLD AND HOT WATER PIPES INSTALLED IN WALLS AND CHASES. PROVIDE INSULATION PROTECTION SHIELD AT EACH HANGER FOR INSULATED PIPING

COVER FITTINGS WITH ZESTON, KNAUF, OR EQUAL ONE-PIECE PVC PREMOLDED INSULATING COVERS. FITTING COVERS. JACKETS AND ADHESIVES SHALL NOT EXCEED FLAME SPREAD RATING OF 25 AND SMOKE DEVELOPMENT RATING OF 50 PER ASTM E84. AT ALL ELBOWS AND TEES. FILL VOIDS BETWEEN COVERS AND PIPING WITH FIBERGLASS INSULATION AND TAPE JOINTS. INSTALL PIPE INSULATION IN COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS. WHERE PREMOLDED INSULATING FITTINGS ARE NOT APPROVED BY LOCAL AUTHORITIES. MITER INSULATION AT FITTINGS.

PROVIDE 2" FIBERGLASS THICK INSULATION FOR WATER, SANITARY, WASTE OR GREASE WASTE PIPING IN UNHEATED SPACES WHERE INDICATED ON THE DRAWINGS. FOR HOT AND COLD WATER PIPING INSTALLED INSIDE MASONRY UNITS OF WALLS, PROVIDE 1/2" FLEXIBLE UNICELLULAR INSULATION BY ARMACELL

INSULATE WATER HEATERS, STORAGE TANKS, HOT WATER PUMPS, ETC. THAT ARE NOT FACTORY INSULATED.

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SHEET TITLE **PLUMBING**

SPECIFICATIONS