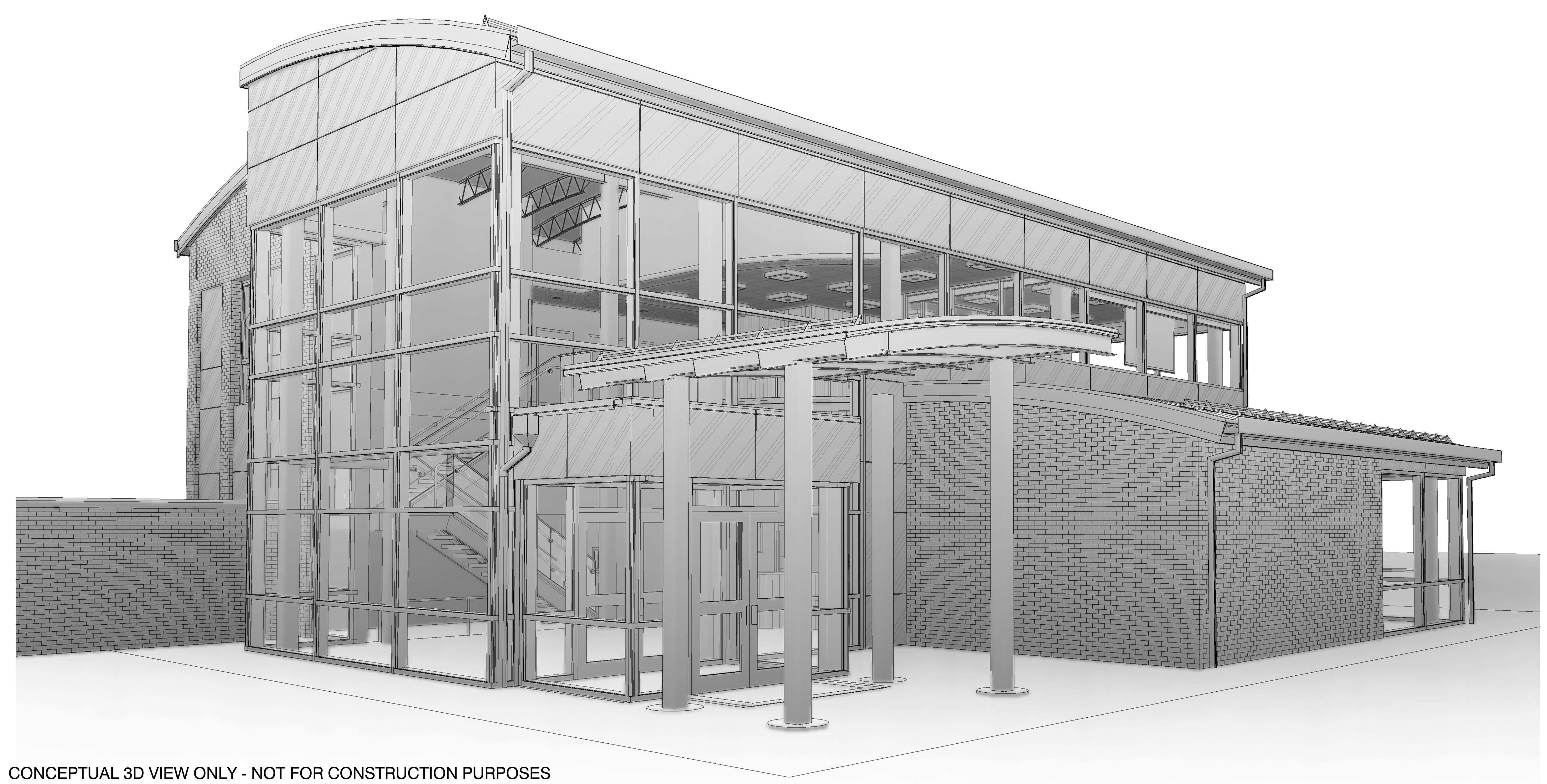
LAKE COUNTY EXECUTIVE AIRPORT TERMINAL

FOR

CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OH 44094

FAA PROJECT NUMBER: 3-39-0090-028-2024

VICINITY MAP	LOCATION MAP	PROJECT RENDERING
		

CONCEPTUAL 3D VIEW ONLY - NOT FOR CONSTRUCTION PURPOSES

PROJECT DIRECTORY

OWNERS

LAKE DEVELOPMENT AUTHORITY

LAKE DEVELOPMENT AUTHORITY
105 MAIN STREET SUITE B501
PAINESVILLE, OH 44077
440.357.2290

1840 Lake

LAKE COUNTY BOARD OF COMMISSIONERS
105 MAIN STREET, SUITE A513
PAINESVILLE, OH 44077

Commissioner	Commissioner	Commissioner
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STATE OF OHIO ANDREW D. TOROWSKI REGISTERED ARCHITECT EXP. 12-31-24

CT consultants engineers • architects • planners

REV	REVISIONS	DATE	BY
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DATE: 05/03/2024
DRAWN BY: DW/JR
CHECKED BY: MDOU
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

COVER SHEET

SCALE:
CONTRACT NO: 220656
SHEET G0.00

REV	DATE	REVISIONS
0	05/29/2024	ISSUED FOR BIDDING AND PERMIT

NEW OR REVISED ISSUE = X
NON REVISED ISSUE =

DWG #	SHEET TITLE	0	1	2	3	4	5	6	7	8	9
G0.00	COVER SHEET	X									
G0.01	DRAWING INDEX	X									
G0.11	LIFE SAFETY FLOOR PLANS	X									
C0.01	SITE GENERAL NOTES	X									
C1.01	EXISTING CONDITIONS PLAN	X									
C1.02	SITE DEMOLITION AND EROSION AND SEDIMENT CONTROL PLAN	X									
C1.03	SITE PLAN	X									
C1.04	SITE UTILITY PLAN	X									
C1.05	SITE GRADING PLAN	X									
C1.06	DETENTION SYSTEM DETAILS	X									
C1.07	DETENTION SYSTEM DETAILS	X									
C1.08	SITE DETAILS	X									
C1.09	SITE DETAILS	X									
C1.10	SITE DETAILS	X									
C1.11	EROSION AND SEDIMENT CONTROL NOTES	X									
L1.01	LANDSCAPE PLAN	X									
L1.02	LANDSCAPE DETAILS	X									
S0.1	GENERAL NOTES	X									
S0.2	GENERAL NOTES	X									
S0.3	GENERAL NOTES	X									
S1.1	FOUNDATION PLAN	X									
S1.2	SECOND FLOOR PLAN	X									
S1.3	ROOF PLAN	X									
S2.1	FOUNDATION TYPICAL DETAILS	X									
S2.2	FOUNDATION SECTIONS	X									
S3.1	COMPOSITE STEEL DETAILS	X									
S3.1A	STEEL DETAILS	X									
S3.2	MASONRY TYPICAL DETAILS	X									
S3.4	COLD FORMED STEEL DETAILS	X									
S3.5	COLD FORMED STEEL DETAILS	X									
S3.6	FLOOR SECTIONS	X									
S3.7	FLOOR SECTIONS	X									
S4.1	ROOF/STEEL TYPICALS	X									
S4.2	ROOF SECTIONS	X									
S4.3	ROOF SECTIONS	X									
S4.4	ROOF SECTIONS	X									
A0.01	ABBREVIATIONS & SYMBOLS	X									
A0.02	COMCHECK SHEETS	X									
A0.03	COMCHECK SHEETS	X									
A0.04	STANDARD SIGNAGE	X									
A0.05	PARTITION TYPES	X									
A1.01	FIRST FLOOR PLAN	X									
A1.02	SECOND FLOOR PLAN	X									
A1.03	REFLECTED CEILING FIRST FLOOR PLAN	X									
A1.04	REFLECTED CEILING SECOND FLOOR PLAN	X									
A1.05	ROOF PLAN	X									
A2.01	EXTERIOR ELEVATIONS	X									
A2.02	MONUMENT SIGNAGE DETAILS	X									
A3.01	BUILDING SECTIONS	X									
A3.02	BUILDING SECTIONS	X									
A3.10	WALL SECTIONS	X									
A3.11	WALL SECTIONS	X									
A3.12	WALL SECTIONS	X									
A3.13	WALL SECTIONS	X									
A3.14	WALL SECTIONS	X									
A4.01	ENLARGED PLANS AND DETAILS	X									
A4.02	ENLARGED PLANS AND ELEVATIONS	X									
A4.03	INTERIOR STAIR PLANS AND DETAILS	X									
A4.04	EXTERIOR STAIR PLANS AND DETAILS	X									
A4.05	ELEVATOR PLANS AND DETAILS	X									
A5.01	PLAN AND SECTION DETAILS	X									
A6.01	DOOR SCHEDULE AND DETAILS	X									

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NON REVISED ISSUE =

DWG #	SHEET TITLE	0	1	2	3	4	5	6	7	8	9
A6.02	ALUMINUM ASSEMBLIES	X									
A6.03	ALUMINUM ASSEMBLY DETAILS	X									
I0.01	ROOM FINISH SCHEDULE AND SPECIFICATIONS	X									
I1.01	FIRST FLOOR FINISH PLAN	X									
I1.02	SECOND FLOOR FINISH PLAN	X									
P0.01	PLUMBING SCHEDULES, NOTES, AND DETAILS	X									
P0.02	PLUMBING SPECIFICATIONS	X									
P1.01	FIRST FLOOR PLUMBING PLAN	X									
P1.02	SECOND FLOOR PLUMBING PLAN	X									
M0.01	MECHANICAL NOTES, DETAILS, SCHEDULES, SYMBOLS	X									
M0.02	MECHANICAL SPECIFICATIONS	X									
M1.01	FIRST FLOOR MECHANICAL PLAN	X									
M1.02	SECOND FLOOR MECHANICAL PLAN	X									
E0.01	SYMBOL LEGEND, NOTES, SCHEDULES AND DETAILS	X									
E1.01	FIRST FLOOR LIGHTING PLAN	X									
E1.02	SECOND FLOOR LIGHTING PLAN	X									
E1.03	FIRST FLOOR POWER AND COMM. PLAN AND SCHEDULES	X									
E1.04	SECOND FLOOR POWER AND COMM. PLAN	X									
E1.05	ELECTRICAL ROOF PLAN	X									
E1.06	SITE ELECTRICAL POWER PLAN	X									
E1.07	EXTERIOR LIGHTING PLAN ELEVATIONS	X									
E1.08	ELECTRICAL SPECIFICATION	X									

STATE OF OHIO
ANDREW D. TOROWSKI
REGISTERED ARCHITECT
EXP. 12-31-24

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DRAWING INDEX

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CODE COMPLIANCE SUMMARY

LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
LOST NATION ROAD
WILLOUGHBY OH 45144

APPLICABLE CODES
2024 OHIO BUILDING CODE
2024 OHIO FIRE CODE
2024 OHIO MECHANICAL CODE
2024 OHIO PLUMBING CODE
2024 OHIO ENERGY CODE
ICC/ANSI A117.1-2017

PROJECT DESCRIPTION
NEW TWO-STORY PRIVATE AIRPORT TERMINAL WITH PASSENGER AREAS AND OFFICE SPACES.

USE & OCCUPANCY
B PROFESSIONAL SERVICE WITH SMALL ASSEMBLY SPACE (STAFF LOUNGE / KITCHENETTE (<750 SF OR 50 PEOPLE)
311.1.1 ACCESSORY STORAGE SPACES ARE LIMITED TO LESS THAN 100 S.F. EACH. CUMULATIVE TOTAL PER FLOOR IS LIMITED TO LESS THAN 10% OF PRINICPAL OCCUPANCY.

CONSTRUCTION TYPE
IIB: 0 HOUR STRUCTURE, WALLS & FLOORS, NON-COMBUSTIBLE

FIRE PROTECTION
903.2.2 AUTOMATIC SPRINKLER SYSTEM REQUIRED.
904 ALTERNATIVE AUTOMATIC FIRE-EXTINGUISHING SYSTEMS PERMISSIBLE IN SPECIAL USE ROOMS I.E. MACHINE ROOMS
906 PORTABLE FIRE EXTINGUISHERS REQUIRED AND PROVIDED
705.2.3.1 SPRINKLER PROTECTION IS EXTENDED TO OUTSIDE AREAS UNDER ROOF.
705.5 WHERE FIRE SEPARATION DISTANCE TO ANOTHER BUILDING OR PROPERTY IS GREATER THAN OR EQUAL TO 10' AND LESS THAN 30', FIRE-RESISTANCE RATING OF EXTERIOR WALLS IS 0 HOUR.
TABLE 705.8 MAXIMUM AREA OF EXTERIOR WALL OPENINGS BASED ON FIRE SEPARATION DISTANCE AND DEGREE OF OPENING PROTECTION
10' TO LESS THAN 15' UNPROTECTED, SPRINKLERED 45%

HEIGHT AND AREA
502 APPROVED ADDRESS IDENTIFICATION REQUIRED. LEGIBLE AND PLACED IN A POSITION THAT IS VISIBLE FROM THE STREET OR ROAD FRONTING PROPERTY TO FACILITATE EMERGENCY RESPONSE.

ALLOWABLE HEIGHT AND AREA

	TERMINAL	HANGAR
TYPE IIB SPRINKLERED	B	S-1 & B
ALLOWABLE BUILDING HEIGHT	75'	75'
ALLOWABLE NO. OF STORIES	4 STORY	4 STORY
ACTUAL HEIGHT	26'/2 STORY	
ALLOWABLE BUILDING AREA	52,500 S.F.	
ACTUAL AREA	3,640 S.F. LARGEST FLOOR	
TOTAL AREA	5,848 S.F.	
	1ST FLR – 3,640 SF	1ST FLR - 22,686 SF
	2ND FLR – 2,208 SF	2ND FLR - 6,846 SF
	BALCONY – 155 SF	COMBINED TOTAL - 35,380 SF

705.3 X 1 WHERE TWO OR MORE BUILDING ARE CONSTRUCTED ON THE SAME PARCEL, THEY SHALL BE CONSIDERED AS PORTIONS OF ONE BUILDING WHERE THE AGGREGATE AREA MEETS THE REQUIREMENTS OF THE MOST RESTRICTIVE USE GROUP AND CONSTRUCTION TYPE

RATED ASSEMBLIES

PRIMARY STRUCTURAL FRAME:	0 HR
ROOF CONSTRUCTION & SECONDARY MEMBERS	0 HR
BEARING WALLS	0 HR
NONBEARING WALLS (INTERIOR OR EXTERIOR >30' TO PROP.LINE)	0 HR

MEANS OF EGRESS
1003.2 CEILING HEIGHT – NOT LESS THAN 7'-6" IN MEANS OF EGRESS
1003.3 PROTRUDING OBJECTS – MINIMUM HEADROOM 80" PROVIDED OVER ANY CIRCULATION PATHS. NO MORE THAN 50% OF THE CEILING AREA OF A MEANS OF EGRESS SHALL BE REDUCED.
1003.3.3 HORIZONTAL PROJECTIONS – NO MORE THAN 4" INTO CIRCULATION PATH
EXCEPTION – HANDRAILS ARE PERMITTED TO PROTRUDE NO MORE THAN 4.5"
1005.3.1 STAIRWAY WIDTH: .3" PER PERSON; PROVIDED: 48" STAIR = 160 PERSON CAPACITY
1005.3.2 CORRIDOR WIDTH: .2" PER PERSON; PROVIDED: 65" CORRIDOR = 325 PERSON CAPACITY
DOOR WIDTH: .2" PER PERSON, MIN. 36"; PROVIDED: 36" DOOR = 180 PERSON CAPACITY
TABLE 1006.2.1 SPACES WITH ONE EXIT OR EXIT ACCESS DORWAY: MAXIMUM COMMON PATH OF EGRESS
TRAVEL DISTANCE (SPRINKLED): BUSINESS 100'
MAXIMUM OCCUPANT LOAD: 49
1007.1.1 EX.2 REMOTENESS OF EXITS (SPRINKLERED): 1/3 MAX OVERALL DIAGONAL.
1009.1 WHERE TWO MEANS OF EGRESS ARE REQUIRED, BOTH SHALL BE ACCESSIBLE MEANS OF EGRESS.
1009.3 ACCESSIBLE STAIRWAYS SHALL HAVE CLEAR WIDTH OF 48" BETWEEN HANDRAILS. AN AREA OF REFUGE IS NOT REQUIRED SINCE BUILDING IS FULLY SPRINKLERED.
1010.1.2.1 DOORS SHALL SWING IN THE DIRECTION OF EGRESS TRAVEL WHERE SERVING A SPACE CONTAINING 50 OR MORE PERSONS.
1010.2 EGRESS DOORS SHALL BE READILY OPERABLE FROM THE EGRESS SIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
1011 STAIRWAY WIDTH AND CAPACITY – MINIMUM REQUIRED WIDTH 44". IF SERVING <50 PERS. MINIMUM REQUIRED WIDTH 36". HEADROOM – NO <80".
1013.1 APPROVED EXIT SIGN REQUIRED ON EXITS AND EXIT ACCESS DOORS.
1014.2 HANDRAILS AT STAIRS SHALL BE MOUNTED AT 34" TO 38" ABOVE THE LINE OF NOSINGS.
1014.6 HANDRAILS SHALL EXTEND HORIZONTALLY A MINIMUM OF 12" BEYOND THE TOP RISER AND CONTINUE TO SLOPE FOR THE DEPTH OF ONE TREAD BEYOND THE BOTTOM RISER. HANDRAIL EXTENSIONS SHALL BE IN THE SAME DIRECTION AS THE FLIGHT OF STAIRS. HANDRAIL ENDS SHALL RETURN TO A WALL, GUARD OR WALKING SURFACE.
1016.2 EGRESS THROUGH ANOTHER SPACE IS PERMITTED WHEN SECOND SPACE IS ACCESSORY TO THE FIRST, WHEN THE SECOND SPACE IS THE SAME OR LESSER HAZARD AS THE FIRST, THERE IS A CLEAR PATH OF EGRESS TRAVEL, AND SECOND SPACE CANNOT BE LOCKED TO PREVENT EGRESS.
TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE (SPRINKLED)
1ST STORY B 300'
2ND STORY B 300'
1019.3X1 FLOOR OPENINGS CONTAINING AN EXIT ACCESS STAIR THAT SERVES OR ATMOSPHERICALLY CONNECTS ONLY TWO STORIES MAY BE UNENCLOSED.
1020.3 MINIMUM CORRIDOR WIDTH – 44 INCHES
1020.5 DEAD ENDS: 50' MAX IN SPRINKLED BUILDINGS OF B USE OR 2.5 TIMES WIDTH OF CORRIDOR
2406.4.2 ALL GLASS IN DOORS SHALL BE SAFETY GLAZING. ALL GLASS WITHIN 24" HORIZONTALLY OF DOORS AND WITHIN 60" OF FLOORS SHALL BE SAFETY GLAZING. ALL GLAZING PANELS 9 SQUARE FEET OR LARGER IN SIZE WITH BOTTOM EDGE WITHIN 18" OF FLOOR SHALL BE SAFETY GLAZING. SAFETY GLAZING SHALL COMPLY WITH TEST CRITERIA FOR CATEGORY II WHEN TESTED IN ACCORDANCE WITH CPSC 16 CFR PART 1201 AND SHALL BE PERMANENTLY LABELED BY MANUFACTURER.

OCCUPANT LOAD
TABLE 1004.5
BUSINESS AREAS 150 S.F./PERS. GROSS
AIRPORT TERMINAL
- WAITING AREA 15 S.F./PERS. GROSS

ACCESSORY STORAGE/MECH 300 S.F./PERS. GROSS
ASSEMBLY (TABLES & CHAIRS) 15 S.F./PERS. NET
TABLE 1004.1.1 NOTE A: AN ASSEMBLY GATHERING SPACE OR CONFERENCE ROOM THAT IS ACCESSORY TO A BUSINESS OCCUPANCY SHALL BE CALCULATED AT 150 S.F. PER PERSON FOR OVERALL OCCUPANT LOAD OF THE FLOOR. THE ASSEMBLY GATHERING SPACE OR CONFERENCE ROOM SHALL BE CALCULATED AT 15 S.F. PER PERSON FOR EGRESS FROM THAT SPACE.
CALCULATED OCCUPANCY: 25 PERSONS FIRST FLOOR.
15 PERSONS SECOND FLOOR.
40 PERSONS TOTAL.

ACCESSIBILITY
ICC A117.1-2017 302.1 THE GROUND SURFACE OF AN ACCESSIBLE ROUTE SHALL BE STABLE, FIRM, AND SLIP RESISTANT. A GRAVEL PARKING LOT DOES NOT QUALIFY. POURED CONCRETE, ASPHALT, OR SOME PAVERS CAN QUALIFY.
1104.3.1 EMPLOYEE WORK AREAS SHALL HAVE COMMON USE CIRCULATION PATHS THAT ARE ACCESSIBLE ROUTES.
1104.4 AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT EACH ACCESSIBLE STORY IN MULTILEVEL BUILDINGS.
1104.5 ACCESSIBLE ROUTES SHALL COINCIDE WITH A GENERAL CIRCULATION PATH.
ICC A117.1-2017 403.5 THE CLEAR WIDTH OF ANY INTERIOR ACCESSIBLE ROUTE SHALL BE NOT LESS THAN 36". EXTERIOR MIN. 48" WIDE.
ICC A117.1-2017 307.2 OBJECTS, INCLUDING DRINKING FOUNTAINS, WITH LEADING EDGES BETWEEN 27" & 80" AFF SHALL PROTRUDE 4" MAXIMUM INTO CIRCULATION PATH.
ICC A117.1-2017 403.5.2 AN ACCESSIBLE ROUTE WITH A CLEAR WIDTH OF LESS THAN 60" SHALL HAVE MINIMUM 60" X 60" PASSING SPACES NO FURTHER APART THAN 200'.
1105.1 60% OF ALL PUBLIC ENTRANCES SHALL BE ACCESSIBLE
1106.1 PROVIDE ONE ACCESSIBLE SPACE FOR EVERY 25 PARKING SPACES, UP TO 100 PARKING SPACES. PLUS PROVIDE ONE ACCESSIBLE SPACE FOR EVERY 50 PARKING SPACES OVER 100 PARKING SPACES.
1106.6 PROVIDE ONE VAN ACCESSIBLE SPACE FOR EVERY SIX ACCESSIBLE SPACES.
1106.7 ACCESSIBLE PARKING SPACES SHALL BE ON THE SHORTEST ACCESSIBLE ROUTE TO AN ACCESSIBLE BUILDING ENTRANCE. IF THERE ARE MULTIPLE ACCESSIBLE ENTRANCES AND PARKING IS SCATTERED THROUGHOUT THE SITE, THEN ACCESSIBLE SPACES SHALL BE LOCATED PROXIMATE TO ACCESSIBLE ENTRANCES.
1112.1.1PROVIDE SIGNAGE AT ACCESSIBLE PARKING SPACES.
1110.2 EACH TOILET ROOM SHALL BE ACCESSIBLE.
1110.2.4 WHERE WATER CLOSET COMPARTMENTS ARE PROVIDED IN A TOILET ROOM, AT LEAST 5% (NOT LESS THAN ONE) OF THE COMPARTMENTS MUST BE WHEELCHAIR ACCESSIBLE.
1110.2.5 WHERE LAVATORIES ARE PROVIDED IN A TOILET ROOM, AT LEAST 5% (NOT LESS THAN ONE) OF THE LAVATORIES MUST BE ACCESSIBLE. 1110.3 WHERE SINKS ARE PROVIDED, AT LEAST 5% (NOT LESS THAN ONE) SHALL BE ACCESSIBLE.
1110.4 WHERE KITCHENETTES ARE PROVIDED, THEY SHALL BE ACCESSIBLE AND BE ON AN ACCESSIBLE ROUTE.
1110.5 WHERE DRINKING FOUNTAINS ARE REQUIRED, NO FEWER THAN TWO SHALL BE PROVIDED. ONE MEETING REQUIREMENTS FOR PEOPLE WHO USE WHEELCHAIR AND ONE FOR STANDING PERSONS.

INTERIOR ENVIRONMENT
1202.1 VENTILATION SHALL BE PROVIDED THROUGH MECHANICAL VENTILATION.
1202.3.2 NO INTERIOR CLASS I VAPOR RETARDERS ARE INSTALLED ON THE CEILING SIDE (ATTIC FLOOR) OF THE UNVENTED ATTIC ASSEMBLY OR ON THE CEILING SIDE OF THE UNVENTED ENCLOSED ROOF FRAMING ASSEMBLY.
1208.2 CEILING HEIGHTS CORRIDORS & OCCUPIABLE SPACES 7'-6" MINIMUM
TOILET ROOMS & STORAGE ROOMS 7'-0" MINIMUM

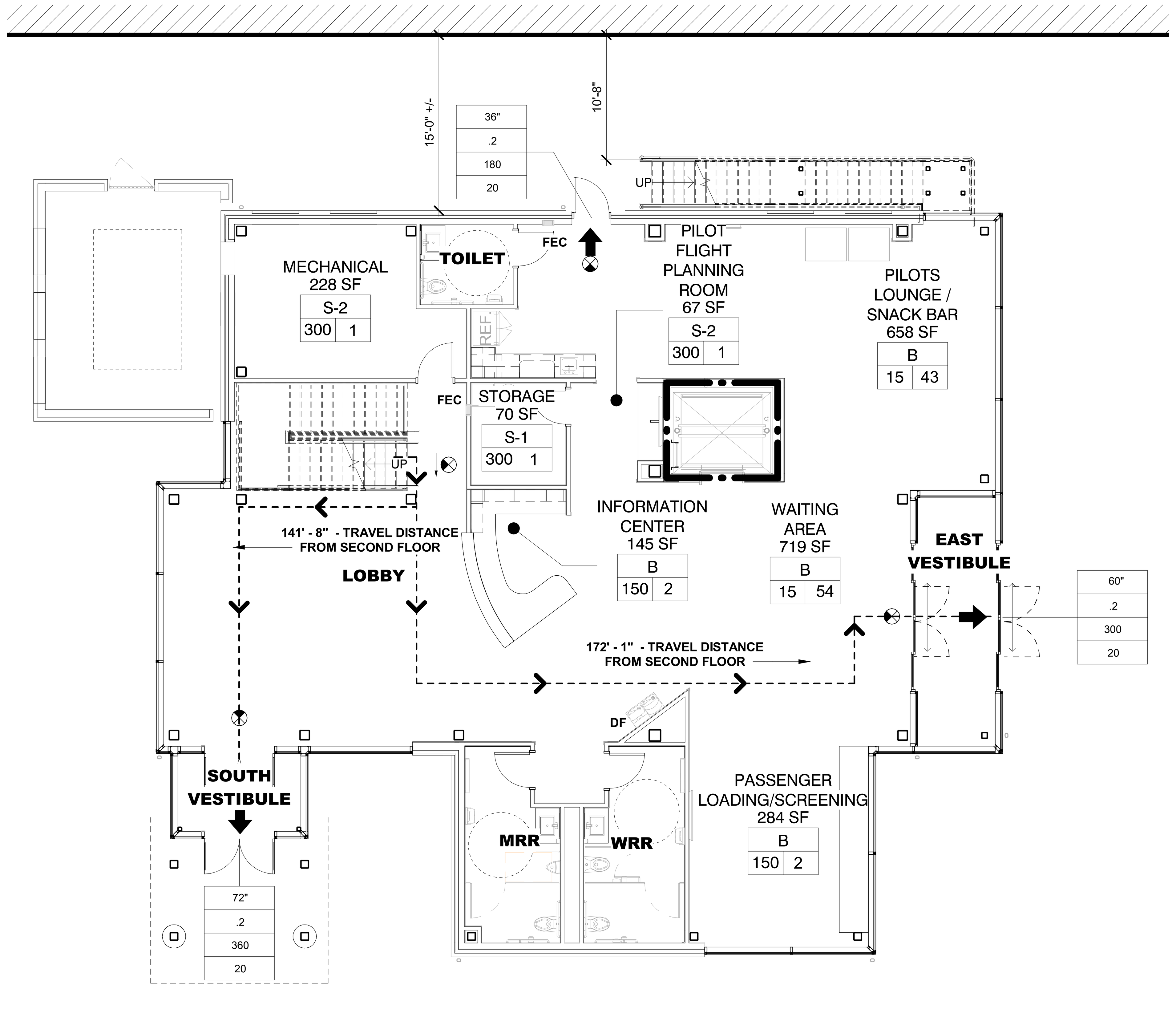
TOILET FIXTURE REQUIREMENTS
2902.3 EITHER SEPARATE OR COMBINED EMPLOYEE AND PUBLIC TOILET FACILITIES ARE REQUIRED TO BE PROVIDED WITHIN ONE STORY ABOVE OR BELOW THE SPACE REQUIRED TO BE PROVIDED WITH SUCH FACILITIES.
2902.3.1 THE PUBLIC SHALL HAVE ACCESS AT ALL TIMES THAT THE BUILDING IS OCCUPIED TO PUBLIC TOILET FACILITIES.
2902.4 PUBLIC TOILET FACILITIES SHALL BE PROVIDED FOR SEPARATE GENDERS.
SIGNAGE INDICATING GENDER SHALL BE READILY VISIBLE ADJACENT TO DOOR TO TOILET FACILITY (SEE ALSO ACCESSIBILITY REQUIREMENTS).
2902.1.2 SINGLE USER TOILET FACILITIES MAY BE PROVIDED AND MAY CONTRIBUTE TO THE TOTAL NUMBER OF REQUIRED PLUMBING FISTURES FOR A BUILDING. SINGLE-USER TOILET FACILITIES SHALL BE IDENTIFIED AS BEING AVAILABLE FOR USE BY ALL GENDERS.
2902.5 DRINKING FOUNTAIN SHALL BE LOCATED WITHIN A TRAVEL DISTANCE OF 500'.
2902.7 SERVICE SINK SHALL BE LOCATED WITHIN A TRAVEL DISTANCE OF 300'.

TABLE 2902.1 MINIMUM REQUIRED PLUMBING FIXTURES
BUSINESS ONE TOILET PER 25 PERSONS FOR THE FIRST 50 PERSONS, ONE PER 50 THEREAFTER.
ONE LAVATORY PER 40 PERSONS FOR THE FIRST 80 PERSONS, ONE PER 80 THEREAFTER.

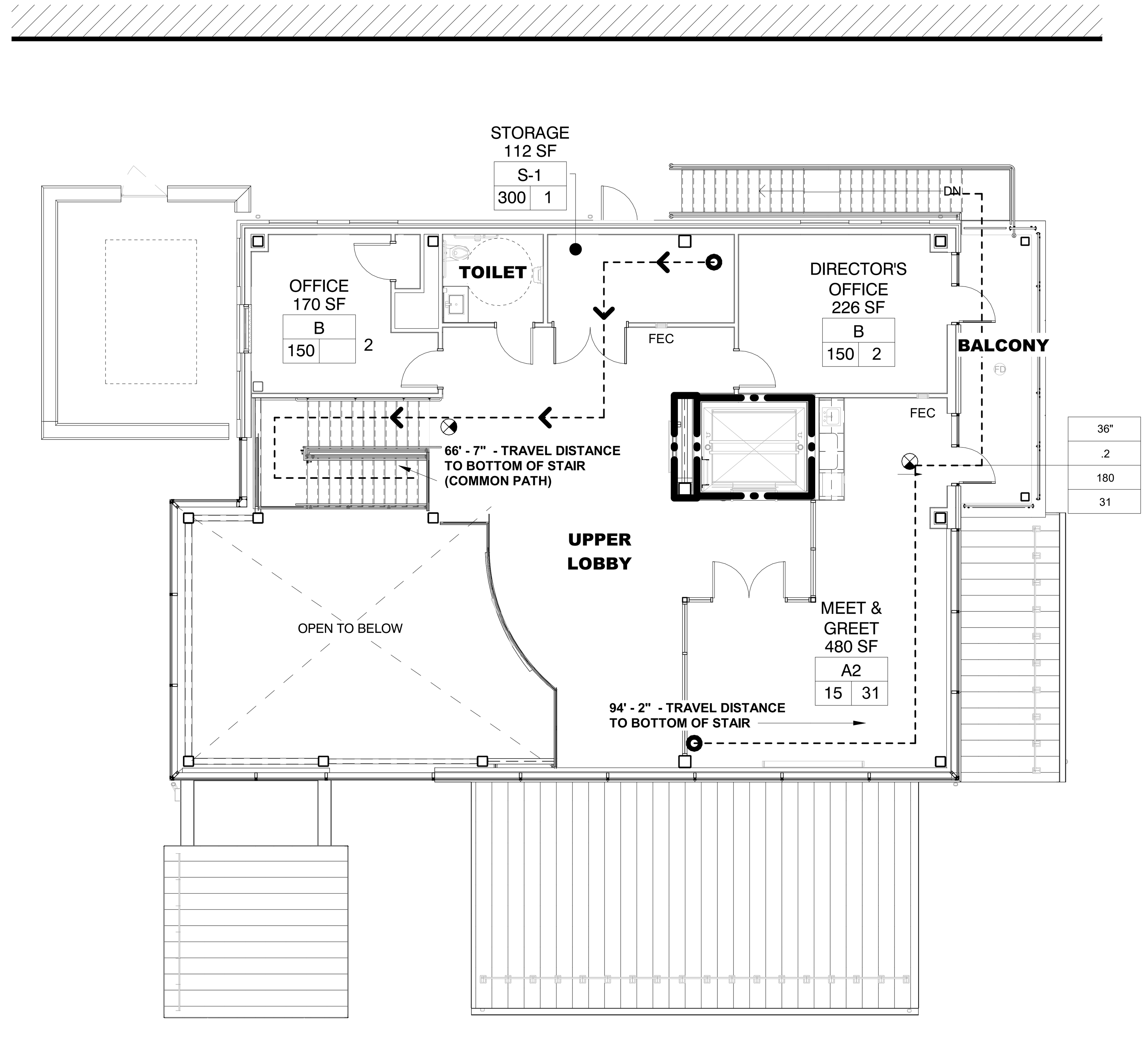
REQUIRED 1 SERVICE SINK, 1 SERVICE SINK PROVIDED
REQUIRED 1 DRINKING FOUNTAIN PER 100 PERSONS, 1 DUAL HEIGHT DRINKING FOUNTAIN PROVIDED.

FIRST FLOOR:
OFFICE 3,640 S.F. 25 PERSONS 1 MALE TOILET, 1 MALE URINAL PROVIDED
2 FEMALE TOILETS PROVIDED
1 SINGLE-USER TOILET PROVIDED
3 LAVATORIES PROVIDED
1 SERVICE SINK PROVIDED
1 DUAL HEIGHT DRINKING FOUNTAIN PROVIDED

SECOND FLOOR:
OFFICE 2,208 S.F. 15 PERSONS 1 SINGLE-USER TOILET PROVIDED
1 LAVATORIES PROVIDED



1 **FIRST FLOOR LIFE SAFETY PLAN**
G0.11 1/8" = 1'-0"



2 **SECOND FLOOR LIFE SAFETY PLAN**
G0.11 1/8" = 1'-0"

LIFE SAFETY LEGEND

1 HOUR FIRE BARRIER
EXIT SYMBOL
XX / YY = ACTUAL / CAPACITY
EXIT SIGN; SEE LIGHTING DWGS.
DF = DRINKING FOUNTAIN
FIRE EXTINGUISHER CABINET — FEC
FIRE EXTINGUISHER — FE
TRAVEL DISTANCE

OCCUPANT TABLE: B — OCCUPANCY USE CODE; 22 — OCCUPANT LOAD; 100 — OCCUPANCY LOAD CAPACITY PER SQ.FT. PER NFPA 101 T 7.3.1.2

EXIT CAPACITY (DOORS): 32" — WIDTH; 0.2 — WIDTH PER OCCUPANT PER NFPA 101 T 7.3.1.2; 160 — MAXIMUM OCCUPANT LOAD; 8 — ACTUAL OCCUPANT LOAD

STATE OF OHIO — ANDREW D. TOROWSKI — REGISTERED ARCHITECT — EXP. 12-31-24

consultants engineers • architects • planners

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NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

LIFE SAFETY FLOOR PLANS

SCALE: As indicated
CONTRACT NO: 220656
SHEET G0.11

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GENERAL NOTES

1. THE CONTRACTOR MUST CONTACT OUPS (OHIO UTILITIES PROTECTION SERVICE) AT 800-362-2764 OR 811 AT LEAST 48 HOURS, BUT NO MORE THAN 10 WORKING DAYS, BEFORE BEGINNING ANY DIGGING, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS. NON-MEMBER UTILITIES MUST BE CONTACTED DIRECTLY. IT IS THE CONTRACTOR RESPONSIBILITY TO BE FAMILIAR WITH THE REQUIREMENTS OF OUPS. THE CONTRACTOR SHALL COORDINATE THE MARKINGS AND/OR LOCATING TO STAY A MINIMUM OF 2 WORKING DAYS AHEAD OF PLANNED CONSTRUCTION ACTIVITIES.
2. ALL WORK REQUIRED TO COMPLETE THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THE 2023 EDITION OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIAL SPECIFICATIONS OR THE SPECIFICATIONS / REQUIREMENTS OF THE CITY, EXCEPT AS PROVIDED ON THESE CONSTRUCTION PLANS. WHERE CONFLICTS OCCUR IN THE ABOVE, THE NOTES AND DETAILS ON THESE CONSTRUCTION PLANS SHALL TAKE PRECEDENCE, UNLESS OTHERWISE DIRECTED BY THE DESIGN ENGINEER.
3. THERE SHALL BE NO DEVIATION FROM THE APPROVED CONSTRUCTION PLANS WITHOUT PRIOR WRITTEN APPROVAL. ANY DEVIATION WITHOUT PRIOR WRITTEN APPROVAL SHALL BE AT THE CONTRACTOR'S RISK AND EXPENSE.
4. ALL WORK INCLUDING PERMIT AND INSPECTION FEES REQUIRED FOR REMOVAL, RELOCATION OR NEW WORK AS PART OF THESE CONSTRUCTION PLANS SHALL BE PERFORMED BY AND AT THE EXPENSE OF THE CONTRACTOR, UNLESS DIRECTED IN WRITING BY THE OWNER. THE CONTRACTOR SHALL CONTACT, OBTAIN FROM AND PAY TO THE APPROPRIATE TOWNSHIP OR COUNTY DEPARTMENTS OR UTILITY COMPANIES FOR PERMITS AND FEES REQUIRED TO PERFORM THE WORK.
5. THE BIDDER SHALL EXAMINE THESE CONSTRUCTION PLANS AND VIEW THE SITE TO BECOME FAMILIAR WITH ALL MATTERS WHICH MAY AFFECT PERFORMANCE AND COMPLETION OF THE WORK. QUANTITIES PROVIDED ARE ESTIMATED, AND THE BIDDER IS RESPONSIBLE FOR VERIFYING BID QUANTITIES PRIOR TO SUBMITTING A BID. IF DISCREPANCIES ARE DISCOVERED, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND DESIGN ENGINEER SO THE APPROPRIATE ADJUSTMENT OR CORRECTION MAY BE MADE. THE ACT OF SUBMITTING A BID SHALL MEAN THAT THE BIDDER HAS COMPLIED WITH ALL REQUIREMENTS OF THIS NOTE, AND THEREFORE NO CONCESSION WILL BE GRANTED BECAUSE OF CLAIM OF MISUNDERSTANDING OR LACK OF INFORMATION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT STAKING INCLUDING HORIZONTAL AND VERTICAL CONTROL. THESE CONSTRUCTION PLANS HAVE BEEN DEVELOPED FOR ELECTRONIC LAYOUT STAKING. ANY DISCREPANCIES DISCOVERED IN THE CONSTRUCTION PLAN INFORMATION, OR BETWEEN THE CONSTRUCTION PLAN AND ELECTRONIC DATA, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE DESIGN ENGINEER SO THE APPROPRIATE ADJUSTMENTS MAY BE MADE PRIOR TO THE START OF CONSTRUCTION OR THE CONTINUATION OF THE SAME. THE DESIGN ENGINEER MAKES NO REPRESENTATION REGARDING FITNESS FOR ANY PARTICULAR PURPOSE, OR SUITABILITY FOR USE WITH ANY SOFTWARE OR HARDWARE. DUE TO THE EASILY ALTERABLE NATURE OF ELECTRONIC DOCUMENTS, THROUGH EITHER UNINTENTIONAL OR INTENTIONAL MEANS, THE DESIGN ENGINEER DOES NOT MAKE ANY EXPRESS OR IMPLIED WARRANTY FOR THE ACCURACY OR COMPLETENESS OF THIS INFORMATION AND THEREFORE, ACCEPTS NO LIABILITY FOR THE COMPLETENESS, CORRECTNESS OR LEGIBILITY OF THE ELECTRONIC DATA. HARD COPIES (I.E., PRINTS, PAPER COPIES, ETC.) SHALL PREVAIL IN ANY DISPUTE OVER ACCURACY OR SUFFICIENCY OF ELECTRONIC DOCUMENTS.
7. ALL WORK ON PRIVATE PROPERTY IS SUBJECT TO INSPECTION BY THE OWNER.
8. ANY DEFECTS IN THE CONSTRUCTION, INCLUDING MATERIALS OR WORKMANSHIP, SHALL BE REPLACED OR CORRECTED BY THE CONTRACTOR BY REMOVAL AND REPLACEMENT OR OTHER APPROVED METHODS PRIOR TO ACCEPTANCE WITH NO ADDITIONAL COMPENSATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, STORM OR SANITARY SYSTEMS RESULTING FROM NON-CONFORMANCE WITH THE APPLICABLE STANDARDS OR THROUGH GENERAL NEGLIGENCE. FAILURE BY THE CONTRACTOR TO VERIFY AND/OR DETERMINE EXISTING INFORMATION WILL RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR ANY CHANGES NECESSARY TO COMPLETE THE WORK SPECIFIED WITHOUT ADDITIONAL COMPENSATION.
9. SITE VISITS PERFORMED BY THE DESIGN ENGINEER SHALL NOT BE CONSTRUED AS INSPECTIONS OF MEANS AND METHODS OF CONSTRUCTION PERFORMED BY THE CONTRACTOR
10. THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF CONSTRUCTION PLANS ON SITE AT ALL TIMES. ATTENTION IS DIRECTED TO THE FACT THE CONSTRUCTION PLANS MAY HAVE BEEN ALTERED IN SIZE DURING PRINTING OR REPRODUCTION, AND MUST BE CONSIDERED WHEN OBTAINING SCALED DATA FROM THE CONSTRUCTION PLANS.
11. THE CONTRACTOR SHALL SUBMIT A PLAN OF OPERATIONS FOR REVIEW AND APPROVAL BY THE OWNER THAT WILL INDICATE EQUIPMENT STAGING AREAS, STOCKPILE LOCATIONS AND SANITATION FACILITIES.
12. THE CONTRACTOR SHALL MAINTAIN A SAFE WORKING ENVIRONMENT AT ALL TIMES AND IS SOLELY RESPONSIBLE FOR DESIGN AND CONSTRUCTION OF STABLE, TEMPORARY EXCAVATIONS PER LOCAL, STATE AND FEDERAL REGULATIONS INCLUDING OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION). NEITHER THE OWNER OR DESIGN ENGINEER ASSUME RESPONSIBILITY FOR CONSTRUCTION SAFETY OR THE CONTRACTOR'S OR OTHER PARTIES' COMPLIANCE WITH SAFETY REGULATIONS; SUCH RESPONSIBILITY IS NOT BEING IMPLIED AND SHOULD NOT BE INFERRED.
13. APPROPRIATE BARRICADES, SIGNS, FENCING, ETC. SHALL BE ERECTED AROUND THE CONSTRUCTION AREA DURING ALL NON-WORKING HOURS TO ALERT PERSONS OF THE POTENTIAL DANGER ASSOCIATED WITH THE AREA UNDER CONSTRUCTION AS WELL AS TO PREVENT ACCESS BY UNAUTHORIZED PERSONNEL TO THE CONSTRUCTION SITE. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY OF THE GENERAL PUBLIC AS WELL AS ALL CONSTRUCTION PERSONNEL.
14. ANY EXISTING ROADWAY, LAWN, CURB, SIDEWALK, SIGN, FENCE, LANDSCAPING ITEM OR OTHER APPURTENANCE DISTURBED DURING CONSTRUCTION BUT NOT DESIGNATED FOR REMOVAL OR REPLACEMENT SHALL BE RESTORED BY THE CONTRACTOR WITHOUT ADDITIONAL COMPENSATION TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO DISTURBANCE.
15. AS-BUILT INFORMATION IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PERFORMED BY A REGISTERED SURVEYOR. AS-BUILT INFORMATION SHALL CONSIST OF POST-CONSTRUCTION FIELD SURVEY OF LOCATIONS, LENGTHS, INVERTS, RIM ELEVATIONS AND PERCENT GRADES FOR ALL SANITARY AND STORM SEWERS AND STRUCTURES (I.E. MANHOLES, CATCH BASINS, OUTLET STRUCTURES). THE CONTRACTOR SHALL DOCUMENT ANY INFORMATION PERTAINING TO CONSTRUCTION THAT DEVIATED FROM THE CONSTRUCTION PLANS. AS-BUILT PLANS SHALL BE THE SAME SIZE AS THE CONSTRUCTION PLANS, WITH DIGITAL COPIES PROVIDED IN AUTOCAD AND PDF FORMATS. AS-DESIGNED INFORMATION SHALL BE SHOWN IN BLACK, WITH AS-BUILT INFORMATION SHOWN IN RED WITH THE AS-DESIGNED INFORMATION BEING STRUCK OUT WITH A SINGLE LINE. THE AS-BUILT LOCATION OF IMPROVEMENTS SHALL BE GRAPHICALLY SHOWN IN BOTH PLAN AND PROFILE VIEWS IN RED. THE CONTRACTOR SHALL PROVIDE AS-BUILTS TO THE OWNER AT THE COMPLETION OF THE PROJECT.

EXISTING CONDITION AND SURVEY NOTES

1. THE EXISTING UNDERGROUND UTILITIES SHOWN WERE OBTAINED FROM VARIOUS SOURCES INCLUDING, BUT NOT LIMITED TO, FIELD OBSERVATIONS (E.G. ABOVE GROUND FEATURES, FLAGGED OR PAINTED MARKED UNDERGROUND UTILITIES) AND RECORDS MADE AVAILABLE (E.G. ORIGINAL CONSTRUCTION PLANS, AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICE MAPS, GIS DATABASES, AERIAL PHOTOGRAPHY) TO CREATE A COMPOSITE DRAWING OF EXISTING CONDITIONS. ALTHOUGH GRAPHICALLY SHOWN AS ACCURATELY AS POSSIBLE FROM THE INFORMATION MADE AVAILABLE, THERE IS NO GUARANTEE OR WARRANTY, EXPRESSED OR IMPLIED, OF THE COMPLETENESS, CORRECTNESS OR ACCURACY OF SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXISTENCE AS WELL AS THE ACTUAL LOCATION, ALIGNMENT, AND ELEVATIONS OF ALL EXISTING UTILITIES WITHIN AND ADJACENT TO THE GENERAL LIMITS OF THESE IMPROVEMENTS INCLUDING WATERLINES, SANITARY AND STORM SEWERS, GAS LINES, COMMUNICATION LINES/BANKS, ELECTRIC LINES, ETC. THIS MAY REQUIRE EXPLORATORY EXCAVATIONS TO BE PERFORMED BY THE CONTRACTOR FOR WHICH HE WILL NOT BE REIMBURSED. THE CONTRACTOR SHALL NOT ASSUME EXISTING UTILITIES WERE INSTALLED AT TYPICAL DEPTHS OR AT UNIFORM SLOPES, GRADES OR DEPTHS BETWEEN ACCESS POINTS (I.E. CATCH BASINS, MANHOLES).
3. THE CONTRACTOR SHALL CONFIRM OR LOCATE ALL UNDERGROUND UTILITIES WITHIN EXCAVATION LIMITS, WHETHER OR NOT SHOWN ON THE CONSTRUCTION PLANS OR FIELD MARKED BY OUPS OR OTHER UTILITY MARKING SERVICE. THE CONTRACTOR SHALL DOCUMENT ANY UTILITY NOT SHOWN OR DIFFERING FROM THE CONSTRUCTION PLANS, AND PROVIDE THE INFORMATION TO THE OWNER SHOWING LOCATIONS WITH MEASUREMENTS TO REFERENCE POINTS. ANY RESULTING UTILITY CONFLICTS WITH PROPOSED IMPROVEMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER AND DESIGN ENGINEER.
4. THESE CONSTRUCTION PLANS HAVE BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND MAY BE SUBJECT TO EASEMENTS AND OTHER RESTRICTIONS, EITHER RECORDED OR UNRECORDED. THE SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS, RECORD ENCUMBRANCES, RESTRICTIVE COVENANTS OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.
5. THE SURVEY SHOWN WAS OBSERVED IN THE FIELD FOR CONSTRUCTION PURPOSES ONLY, AND MAY NOT BE SUITABLE FOR PROPERTY LINE SURVEYS OR OTHER PURPOSES.
6. THE CONTRACTOR SHALL PRESERVE BENCHMARKS, PROPERTY LINE REFERENCES (E.G., PINS, MONUMENTS) AND CONTROL POINTS. IF DISTURBED, THE CONTRACTOR SHALL REPLACE THEM AT HIS EXPENSE, BE RESPONSIBLE FOR ERRORS CAUSED BY THEIR DISTURBANCE, AND FURNISH A CERTIFICATION BY A REGISTERED SURVEYOR THEY HAVE BEEN RESTORED.
7. CONTRACTOR TO REFER TO GEOTECHNICAL ENGINEERING SERVICES REPORT CREATED BY INTERTEK PSI DATED MAY 9, 2024.

DEMOLITION NOTES

1. NO ATTEMPT HAS BEEN MADE TO NOTE ALL LOCATIONS OR SPECIFIC EXTENT OF DEMOLITION WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL DEMOLITION NECESSARY TO EXECUTE THE NEW PLAN INCLUDING COORDINATION OF DEMOLITION WORK WITH NEW WORK SO AS NOT TO CREATE CONFLICTS OF NEW INSTALLATION.
2. THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A SUBSURFACE UTILITY LOCATING SERVICE TO FIELD LOCATE PRIVATE UTILITY SERVICES (E.G. ROOF LEADER, SANITARY, WATER, ELECTRIC, GAS, CABLE TV, AND TELEPHONE). THE CONTRACTOR SHALL THEN DOCUMENT ANY UTILITY NOT SHOWN OR DIFFERING FROM THE CONSTRUCTION PLANS, AND PROVIDE THE INFORMATION TO THE OWNER SHOWING LOCATIONS WITH MEASUREMENTS TO REFERENCE POINTS. ANY RESULTING UTILITY CONFLICTS WITH PROPOSED IMPROVEMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER AND DESIGN ENGINEER.
3. THE CONTRACTOR SHALL REMOVE ALL SURPLUS, DEMOLISHED AND WASTE MATERIALS INCLUDING TREES, STUMPS AND BRUSH FROM THE PROJECT AND DISPOSE OF OFF-SITE. IN NO INSTANCE SHALL MATERIAL BE BURIED ON-SITE.
4. THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL MATERIAL DEEMED UNSUITABLE FOR EMBANKMENT BY THE GEOTECHNICAL ENGINEER AND BE DISPOSED OF OFF-SITE.
5. ANY UNKNOWN CONCRETE FLOOR SLAB DISCOVERED BELOW GRADE SHALL BE REMOVED IN ITS ENTIRETY OR BROKEN UP TO ALLOW PERCOLATION OF GROUND WATER, AT THE DIRECTION OF THE DESIGN ENGINEER.
6. THE OWNER SHALL HAVE FIRST RIGHT OF SALVAGE FOR ALL PROPOSED DEMOLITION ITEMS SUCH AS SIGNS, GATES, PARKING BLOCKS, BENCHES, TABLES, BRICKS, PAVERS, ETC. ALL OTHER DEMOLISHED ITEMS SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY.
7. ANY UTILITY TO BE REMOVED, RELOCATED, SHUT-OFF, AND/OR RECONNECTED BY THE RESPECTIVE UTILITY COMPANY SHALL BE COORDINATED BY THE CONTRACTOR.
8. ALL EXCAVATIONS RESULTING FROM UTILITY REMOVALS SHALL BE BACKFILLED WITH PREMIUM GRANULAR MATERIAL MEETING ODOT ITEM 304.
9. EXISTING ASPHALT AND CONCRETE PAVEMENT AND SIDEWALK TO BE REMOVED SHALL BE SAW CUT IN A NEAT AND STRAIGHT LINE PRIOR TO EXCAVATION AND REMOVED FULL DEPTH AT NEAREST EXISTING JOINTS OR AT LIMITS AS SHOWN ON THE CONSTRUCTION PLANS. ADDITIONAL SAW CUTS MAY BE DESIRED TO FACILITATE THE REMOVAL OF THE EXISTING PAVEMENT, BUT THERE WILL BE NO EXTRA PAYMENT. PAVEMENT SHALL BE REMOVED WITHOUT DAMAGING OR UNDERMINING THE PAVEMENT TO REMAIN. IF ADJACENT PAVEMENT IS DAMAGED, THE CONTRACTOR SHALL MAKE ADDITIONAL SAW CUTS, REMOVE THE DAMAGED AREAS AND REPAIR AS NECESSARY WITH NO ADDITIONAL COMPENSATION.

LAYOUT NOTES

1. IF CONCRETE TESTING REQUIREMENTS ARE NOT PROVIDED, THESE MINIMUM GUIDELINES SHALL BE FOLLOWED:
    - A. SAMPLING FRESH CONCRETE PER ASTM C-172, EXCEPT MODIFIED FOR SLUMP TO COMPLY WITH ASTM C-94.
    - B. SLUMP PER ASTM C-143: 1 TEST AT POINT OF DISCHARGE FOR EACH DAY'S POUR OF EACH CONCRETE CLASS AND ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY SEEMS TO HAVE CHANGED.
    - C. AIR CONTENT PER ASTM C-231 PRESSURE METHOD FOR NORMAL WEIGHT CONCRETE: MINIMUM 1 FOR EACH POUR OF EACH TYPE OF AIR-ENTRAINED CONCRETE, AND EACH TIME COMPRESSION TEST SPECIMENS ARE MADE.
    - D. COMPRESSION TEST SPECIMEN PER ASTM C-31: 1 SET OF 4 STANDARD CYLINDERS FOR EACH COMPRESSIVE STRENGTH TEST. 1 SET FOR EACH DAY'S POUR OF EACH CONCRETE CLASS EXCEEDING 5 CU.YD. PLUS ADDITIONAL SETS FOR EACH 50 CU.YD. OVER THE FIRST 25 CU.YD. OF EACH CONCRETE CLASS PLACED THE SAME DAY.
    - E. COMPRESSIVE STRENGTH TEST PER ASTM C-39: 1 TEST AT 7 DAYS AND 2 TESTS AT 28 DAYS.

4. THE CONTRACTOR SHALL INSTALL THE SPECIFIC TYPE OF WALK, CURB OR RAMP SHOWN ON THE PLANS. INSTALLATION OF THE INCORRECT TYPE MAY REQUIRE REPLACEMENT BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.
5. THE CONTRACTOR SHALL HAND FORM DROP CURBS FOR NEW APRONS AND HANDICAP RAMPS AT THE TIME OF THE POUR.
6. ALL PAINTED AREAS SHALL RECEIVE (2) 15 MIL COATS OF PAINT WITH A MINIMUM 4 OF WEEKS BETWEEN FIRST AND SECOND COATS, BUT NO LONGER THAN 12 WEEKS.

SANITARY SEWER NOTES

SANITARY SEWER NOTES (PRIVATE SEWER LESS THAN 200 FEET)

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STANDARDS OF THE CITY OF WILLOUGHBY AND TO THE SPECIFICATIONS OF THE OHIO DEPARTMENT OF TRANSPORTATION.
2. ALL SANITARY SEWER CONDUIT SHALL BE ASTM D-3034, SDR-35, WITH CELL CLASSIFICATION 12454-B OR APPROVED EQUAL.
3. ALL SANITARY SEWER CONDUIT SHALL CONTAIN PREMIUM JOINTS PER ASTM D-3212.
4. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.
5. GRANULAR MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF CITY OF TOLEDO ADDENDUM, ITEM 603.
6. SEWER TESTING

A. ALL RUNS OF THE SANITARY SEWER SHALL BE TESTED FOR INFILTRATION BY AN INDEPENDENT TESTING LABORATORY. THE MAXIMUM RATE OF LEAKAGE OR INFILTRATION SHALL NOT EXCEED 100 GALLONS PER INCH OF DIAMETER, PER MILE OF CONDUIT, PER 24 HOURS. A LOW PRESSURE AIR TEST MAY BE USED. ALL VISIBLE LEAKAGE IN SEWERS OR MANHOLES MUST BE REPAIRED EVEN THOUGH THE LEAKAGE IS AT A LOWER RATE THAN THE MAXIMUM ALLOWED.

B. ALL NEW MANHOLES SHALL BE VACUUM TESTED PER ASTM C-1244.

C. SHOULD ANY SECTION OF CONDUIT FAIL TO MEET THE TEST REQUIREMENTS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TELEVISION INSPECTION AND TO MAKE ALL NECESSARY CORRECTIONS. THE COST OF ALL MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS NECESSARY FOR PERFORMING THE TESTS AND MAKING ANY NECESSARY CORRECTIONS AND REPLACEMENTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

7. THE LOCATION OF ALL EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE APPROXIMATE. DETERMINATION OF THE EXACT LOCATION OF EXISTING UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING UTILITIES CAUSED BY HIS OPERATIONS.
8. UNDERGROUND UTILITIES: TWO (2) WORKING DAYS BEFORE YOU DIG, CALL OHIO UTILITIES PROTECTION SERVICE (OUPS) AT 1-800-362-2764. NONMEMBERS MUST BE CALLED DIRECTLY.
9. INSPECTIONS

A. IF **BOTH** THE PROPOSED SANITARY SEWER AND THE PROPOSED STORM DRAIN ARE INDIVIDUALLY LESS THAN 200 FT IN LENGTH, THE CONTRACTOR SHALL CALL THE SUPERVISOR-UTILITIES AT (419) 936-2927 A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION FOR INSPECTION.

B. IF **EITHER** THE PROPOSED SANITARY SEWER OR THE PROPOSED STORM DRAIN IS GREATER THAN 200 FT IN LENGTH, THE CONTRACTOR SHALL CALL THE UTILITIES CONSTRUCTION ENGINEER AT (419) 936-2847 A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION FOR INSPECTION.

10. **PERMIT APPLICATION FOR INSPECTION SERVICES** - REQUIRED IF EITHER SANITARY OR STORM PIPING IS > 200' IN LENGTH. IF SO, BOTH STORM AND SANITARY PIPING LENGTHS ARE COMBINED TO DETERMINE THE FEE. DEVELOPER OR HIS AGENT IS REQUIRED TO SIGN THE PERMIT APPLICATION. FEES FOR INSPECTION ARE TO BE PAID BEFORE PLAN APPROVAL WILL BE GRANTED. PERMIT AND FEES WILL BE HANDLED BY THE DIVISION OF ENGINEERING SERVICES.
11. **PROJECTS UNDER 200' LENGTH** - AFTER THE REVIEW PROCESS, PROJECTS OF THIS SIZE AND SMALLER, WILL BE INSPECTED AND FEES CHARGED BY SEWER & DRAINAGE SERVICES.
12. THE SANITARY SEWER, BETWEEN MANHOLE SECTIONS, SHALL BE TELEVISED AFTER INSTALLATION. PAN AND TILT TYPE CAMERA SHALL BE USED. OPERATOR SHALL PAN UP ALL LATERALS. ALL CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SEWER. IF CONSTRUCTION DEBRIS IS FOUND, THE SEWER SHALL BE CLEANED AND RE-TELEVISED. THIS PROCESS SHALL BE REPEATED UNTIL ALL CONSTRUCTION DEBRIS IS REMOVED FROM THE SEWER. ANY VISIBLE LEAKAGE SHALL BE REPAIRED; COST FOR ALL WORK UNDER THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE FOR THE SEWER. ONE COPY OF THE VIDEO AND INSPECTION REPORT SHALL BE PROVIDED TO THE CITY. SECTIONS WITHOUT MANHOLES SHALL BE INSPECTED BY PUSH CAMERA FROM THE CLEANOUT.

UTILITY NOTES

1. THE CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ADJOINING PROPERTIES WITHOUT INTERRUPTION. IF SERVICE IS DISRUPTED, THE CONTRACTOR SHALL IMMEDIATELY RECTIFY THE SITUATION WITH NO ADDITIONAL COMPENSATION.
2. THE CONTRACTOR SHALL PROTECT, SUPPORT AND SHORE UP ANY UTILITY ENCOUNTERED AND COORDINATE ALL WORK TO BE PERFORMED WITH EACH RESPECTIVE UTILITY COMPANY, INCLUDING WORK BEING PERFORMED DIRECTLY BY THE UTILITY COMPANIES, FOR MAIN OR SERVICE CONNECTIONS, DISCONNECTIONS, RELOCATIONS, DEMOLITION AND INSPECTIONS. THE CONTRACTOR SHALL SECURE AND PAY FOR ANY PERMITS, FEES AND UTILITY COMPANY CHARGES.
3. THE CONTRACTOR SHALL INSTALL PROXIMITY WARNING DEVICES ON ALL EXISTING, TEMPORARY AND PERMANENT OVERHEAD WIRES LOCATED AT THE SITE PRIOR TO START OF ANY WORK AND REMOVE UPON COMPLETION OF THE WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE THE NECESSARY LEVELS OF PROTECTION AND SAFEGUARDING OF OPEN TRENCHES WHEN WORK IS ACTIVE, COMPLETED AT END OF DAY OR SUSPENDED. THIS INCLUDES TRENCH PROTECTION SUCH AS TRENCH BOXES, WOOD SHEETING AND BRACING, OR ANY OTHER METHOD DETERMINED BY THE CONTRACTOR TO MAINTAIN A SAFE WORKING ENVIRONMENT. ALL EXCAVATIONS SHALL COMPLY WITH APPLICABLE LAWS AND REGULATIONS.
5. WHERE A NEW CONDUIT IS TO BE CONNECTED TO OR CROSS OVER OR UNDER AN EXISTING UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING UTILITY BOTH AS TO LINE AND GRADE BEFORE BEGINNING TO LAY THE NEW CONDUIT.
6. THE CONTRACTOR SHALL CLEAN ALL NEW STORM SEWERS AND VACUUM CLEAN ALL MANHOLES AND CATCH BASINS WITHIN THE PROJECT LIMITS BEFORE ACCEPTANCE.
7. ALL STORM SEWER JOINTS AND PIPES SHALL BE WATERTIGHT.
8. KNOCKOUT TYPE CONCRETE CATCH BASINS ARE NOT ALLOWED. CONCRETE CATCH BASINS SHALL BE POURED WITH SPECIFIC HOLE LOCATIONS AS PER PLAN.
9. A STORM SERVICE LATERAL CONNECTION TO A NEW OR EXISTING STORM MAIN SEWER SHALL USE A BOOT INSTALLED IN A CORED HOLE IN THE STORM SEWER.
10. ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.
11. STORM SEWERS AND SERVICE LATERALS SHALL BE AS FOLLOWS OR PER PLAN:
    - A. PVC SDR 26 OR 35 (4” THRU 15” DIA.) SHALL BE INTEGRAL BELL AND SPIGOT TYPE CONFORMING TO ASTM D-3034, GASKET MATERIAL TO ASTM F-477, JOINTS TO ASTM D-3212 AND BEDDING CLASSIFICATION PER ASTM D-2321.
    - B. HDPE SHALL BE SMOOTH INTERIOR, CORRUGATED EXTERIOR CONFORMING TO AASHTO M-252 TYPE S AND M-294 TYPE S, BELL AND SPIGOT JOINT TO ASTM F-2648, GASKET MATERIAL TO ASTM F-477, FITTINGS TO ASTM F-2306, AND BEDDING CLASSIFICATION PER ASTM D-2321.
12. UTILITY SERVICES (I.E. GAS, ELECTRIC, TELEPHONE, CATV AND WAN) SHALL BE AS FOLLOWS OR PER PLAN:
    - A. THE CONTRACTOR SHALL FURNISH AND INSTALL TRENCHING, CONDUITS, PULL STRINGS AND BACKFILL. DUCT BANK ROUTING SHALL BE COORDINATED IN-FIELD WITH SITE FEATURES AND UTILITIES. THE CONTRACTOR SHALL COORDINATE TRENCH OPENINGS WITH EACH UTILITY COMPANY.
    - B. ACCEPTABLE TRENCH BACKFILL MATERIAL SHALL BE:
    - C. PREMIUM BACKFILL: ODOT ITEM 304 CRUSHED LIMESTONE
    - D. CLEAN BACKFILL: WELL GRADED SAND, STONE DUST, LIMESTONE DUST OR ROCK-FREE SOIL (<1/4 IN. DIA. STONES). TOPSOIL, RIVER GRAVEL, FLY ASH, SLAG, CULM AND FOUNDRY SAND ARE NOT ALLOWED.
    - E. NATIVE SOIL BACKFILL: NO SHALE, SANDSTONE, LARGE ROCKS (>4 IN. DIA.) OR ROCKS WITH SHARP EDGES.
    - F. UTILITY SERVICE DUCTS SHALL BE PVC SCH. 40 PIPE WITH GLUED JOINTS. INSTALL 1/4 IN. DIA. UNBROKEN NYLON OR POLYPROPYLENE PULL ROPE IN DUCTS.
    - G. A RUGGED POLYETHYLENE MATERIAL WARNING TAPE SHALL BE PLACED OVER BURIED LIGHTING AND ELECTRIC PRIMARY AND SECONDARY RUNS WHETHER DIRECT BURIED, IN CONDUIT OR CONCRETE ENCASED. IT SHALL BE 6" WIDE, COLOR RED AND PRINTED WITH THE WORDS "DANGER - BURIED HIGH VOLTAGE CABLES BELOW".
    - H. PRE-MANUFACTURED CONDUIT CHAIR SUPPORTS SHALL BE USED FOR CONCRETE ENCASED DUCT BANKS AND SPACED PER MANUFACTURER RECOMMENDATIONS.

GRADING NOTES

1. ALL EXCAVATION IS CONSIDERED UNCLASSIFIED AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS, METHODS AND MATERIALS OF CONSTRUCTION. THE DESIGN ENGINEER SHALL NOT BE RESPONSIBLE FOR THE SUITABILITY OF MATERIAL UNDERLYING THE PROJECT SITE. THIS COULD INCLUDE, BUT NOT BE LIMITED TO, UNSUITABLE OR UNSTABLE SOIL/SUBSURFACE CONDITIONS, ROCK, WATER (PERCHED OR FREE), SPRINGS, OBSTRUCTIONS, ETC.
2. THE CONTRACTOR SHALL PROVIDE FINAL GRADING TO WITHIN 1" OF GRADES SHOWN ON THE GRADING PLANS.
3. THE CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, PAVEMENTS AND WALKS TO REMAIN FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING OR WASHOUT CREATED BY EARTH MOVING OPERATIONS.
4. TOPSOIL SHALL BE STRIPPED AND STOCKPILED TO WHATEVER DEPTH ENCOUNTERED,AND IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL.
5. SOIL SHALL NOT BE STOCKPILED NEAR THE EDGE OF EXCAVATIONS OR WITHIN DRIP LINES OF TREES TO REMAIN.
6. EXCESS MATERIAL GENERATED FROM TRENCH EXCAVATIONS SHALL BE INCORPORATED IN EMBANKMENT CONSTRUCTION. EXCESS SOIL UNABLE TO BE PLACED ON-SITE OR DEEMED UNSUITABLE FOR EMBANKMENT SHALL BE DISPOSED OFF-SITE.
7. THE CONTRACTOR SHALL FOLLOW THESE GUIDELINES:
    - A. STRUCTURAL FILL SHALL BE PLACED UNDER AREAS OF PAVEMENTS, WALKS, STEPS, RAMPS, BUILDING SLAB AND FOOTING, STRUCTURE, AND 45° ANGLE OF INFLUENCE.
    - B. FILL SHALL BE WETTED OR DRIED TO NEAR ITS OPTIMUM MOISTURE CONTENT, PLACED IN LIFTS AND COMPACTED TO A MINIMUM PERCENT COMPACTION, ALL UNDER THE OBSERVATION AND TESTING OF A TESTING AGENCY.
    - C. SOIL OBTAINED ON-SITE MAY BE USED AS FILL MATERIAL IF FREE OF ORGANIC MATTER, DEBRIS, EXCESSIVE MOISTURE AND ROCK FRAGMENTS 6" AND LARGER.
    - D. NO SLAG, RIVER GRAVEL, SANDSTONE, FOUNDRY SAND, RECYCLED PORTLAND CEMENT CONCRETE OR RECLAIMED ASPHALT CONCRETE PAVEMENT SHALL BE USED AS FILL OR EMBANKMENT.
    - E. UNSUITABLE MATERIAL ENCOUNTERED DURING INSTALLATION OF IMPROVEMENTS SHALL BE UNDERCUT AND REPLACED WITH COMPACTED FILL OR STABILIZED IN-PLACE UTILIZING CONVENTIONAL MEASURES SUCH AS DISKING, AERATION OR RECOMPACTION. OTHER MEANS OF STABILIZATION SHALL BE AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER.
8. IF EARTHWORK TESTING REQUIREMENTS NOT PROVIDED, THESE MINIMUM GUIDELINES SHALL BE FOLLOWED:
    - A. SPECIAL BACKFILL MATERIAL SIEVE ANALYSIS PER ASTM C-136: 1 TEST PER SOURCE.
    - B. ON-SITE TRENCH BACKFILL ANALYSIS PER ASTM D-2487: AS DIRECTED BY ENGINEER.
    - C. PIPE BEDDING AND COVER SIEVE ANALYSIS PER ASTM C-136: 1 TEST PER SOURCE.
    - D. DRAINAGE FILL SIEVE ANALYSIS PER ASTM C-136: 1 TEST PER SOURCE.
    - E. SOIL COMPACTION TESTING PER ASTM D-698.
    - I. EMBANKMENT: 1 TEST PER 5,000 S.F. OF EACH LIFT.
    - II. TRENCH BACKFILL: 1 TEST PER 50 L.F. OF EACH LIFT.
    - III. SUBGRADE AND/OR SUBBASE: 1 TEST PER 200 L.F.
    - F. BACKFILL COMPACTION PER ASTM D-4253 AND D-4254: 1 TEST PER 50 L.F. OF EACH LIFT.
    - G. LOW STRENGTH MORTAR TESTING PER ASTM D-4832.
9. EXPOSED PAVEMENT SUBGRADE AREAS SHALL BE MAINTAINED IN CONDITIONS TO PREVENT PONDING OF WATER AFTER RAINS.
10. ALL PROPOSED MANHOLE COVERS, SHALL BE FLUSH WITH THE WALKING SURFACE.
11. FROST SLABS, LANDINGS, DRIVEWAYS AND SIDEWALKS THAT ABUT BUILDINGS SHALL SLOPE AWAY FROM THE BUILDING AT 1.00% MINIMUM, OR AS SHOWN ON THE GRADING PLANS..
12. THE CONTRACTOR SHALL RECONSTRUCT ANY SUBGRADE DAMAGED BY FREEZING TEMPERATURES, FROST, RAIN, ACCUMULATED WATER OR CONSTRUCTION ACTIVITIES WITHOUT ADDITIONAL COMPENSATION.

STATE OF OHIO
JUSTIN
HASELTON
E-72378
REGISTERED
PROFESSIONAL ENGINEER

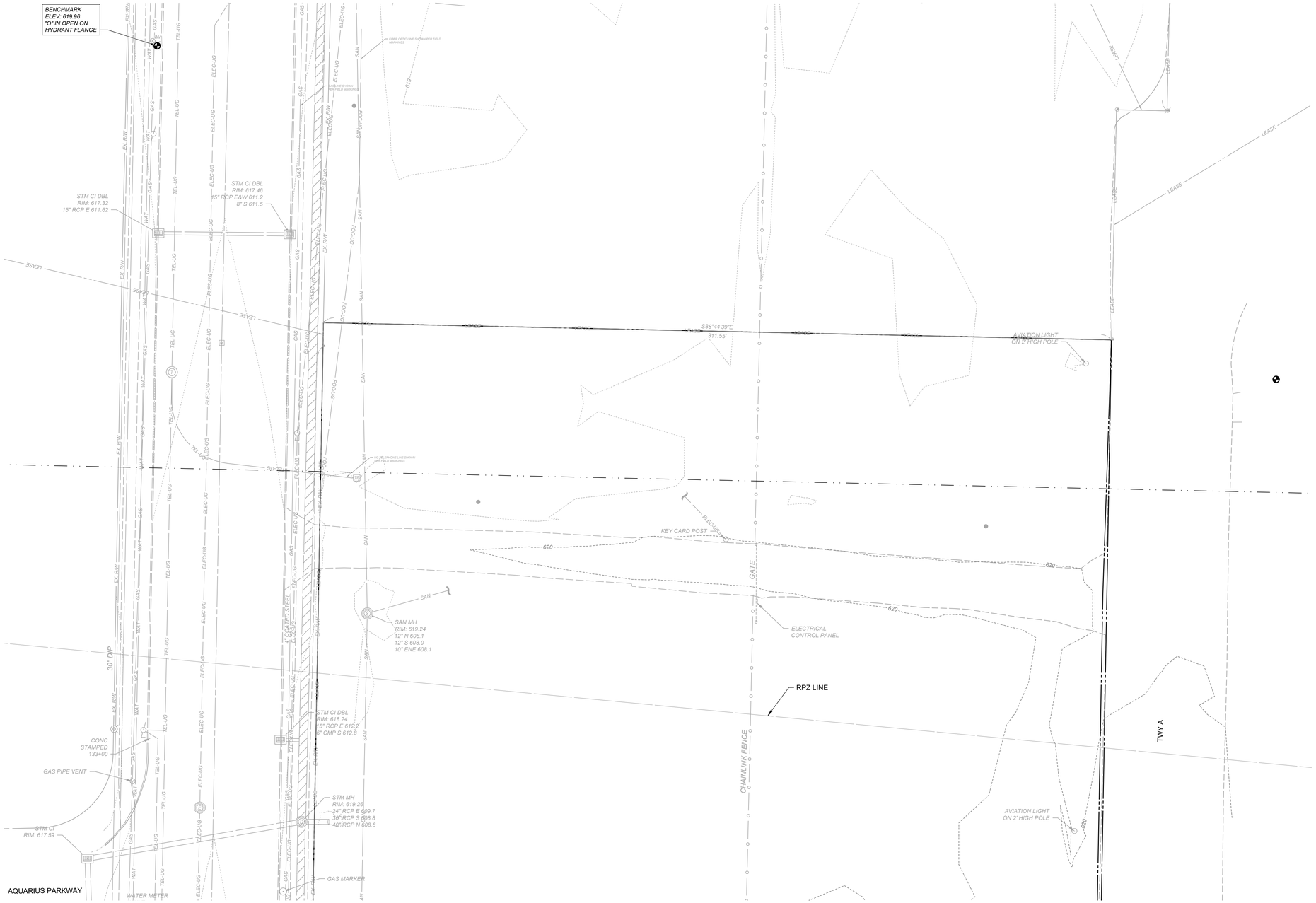
REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 03/29/2024
DRAWN BY: JRH
CHECKED BY: WTV
APPROVED BY:
F.B. NO.: PG.:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

SITE GENERAL NOTES

SCALE: AS NOTED
CONTRACT NO: 220656
SHEET
C0.01



20 ' 0 ' 20 '

SCALE: 1" = 20 '

NOTES:

1. THE SITE SURVEY PLAN DEPICTS SITE CONDITIONS PRIOR TO ANY CONSTRUCTION BEING PERFORMED WITHIN THIS AREA.
2. CONTRACTOR SHALL COMPLETE A FIELD VISIT PRIOR TO STARTING CONSTRUCTION TO VERIFY SITE CONDITIONS AND DEMOLITION WITHIN THE LIMITS OF DISTURBANCE.
3. EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY LOCATION PRIOR TO CONSTRUCTION.
4. THE EXISTING TOPOGRAPHY SHOWN ON THIS SHEET WAS COLLECTED BY CT CONSULTANTS IN MARCH 2024.

STATE OF OHIO
JUSTIN HASELTON
E-72378
REGISTERED PROFESSIONAL ENGINEER

REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/29/2024
DRAWN BY: JRH
CHECKED BY: WTV
APPROVED BY:
F.B. NO.: PG.:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL

CITY OF WILLOUGHBY

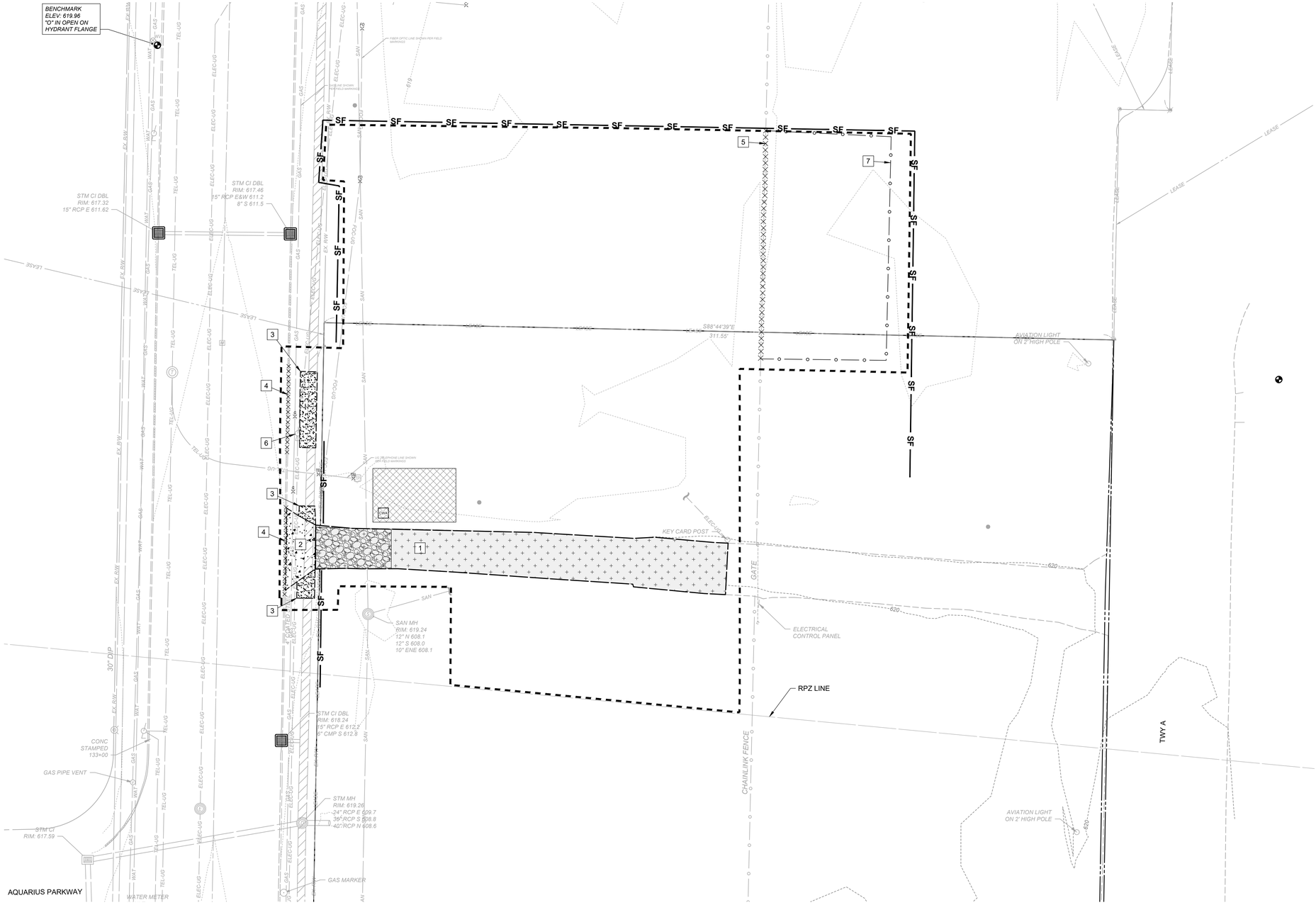
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

EXISTING CONDITIONS PLAN

SCALE: AS NOTED

CONTRACT NO: 220656

SHEET C1.01



20 ' 0 ' 20 '

SCALE: 1" = 20 '

SHEET CODED NOTES

1	REMOVE FULL DEPTH ASPHALT PAVEMENT
2	REMOVE FULL DEPTH CONCRETE PAVEMENT
3	REMOVE CONCRETE WALK
4	REMOVE EX. CURB
5	REMOVE EX. FENCE
6	RELOCATE EX. LIGHT POLE
7	TEMPORARY 10' CHAINLINK CONSTRUCTION FENCE
SF	SILT FENCE/FILTER SOCK (SEE DETAIL SHEET)
	INLET PROTECTION (SEE DETAIL SHEET)
	CONTRACTOR STAGING AREA, SEE NOTE 4
CWA	CONCRETE WASHOUT AREA (SEE DETAIL SHEET)
	LIMITS OF DISTURBANCE
	CONSTRUCTION ENTRANCE (SEE DETAIL SHEET)

SHEET NOTES

1. GRAPHICAL SCREENING OR SHADING IS USED TO DE-EMPHASIZE EXISTING ITEMS AND HIGHLIGHT SELECTED TRADE WORK.
2. EXISTING TOPOGRAPHY IS NOT SHOWN FOR CLARITY PURPOSES.
3. AMY ITEMS NOT MARKED TO BE REMOVED SHALL REMAIN IN PLACE UNDISTURBED AND BE PROTECTED FROM DAMAGE DURING CONSTRUCTION.
4. THE PROPOSED CONTRACTOR STAGING AREA SHALL BE USED FOR HANDLING, STORING, AND MIXING HAZARDOUS MATERIALS, DISPOSING OF WASTE, AND FUELING AND MAINTENANCE OF VEHICLES.

STATE OF OHIO
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APPROVED BY:
F.B. NO.: PG.:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL

CITY OF WILLOUGHBY

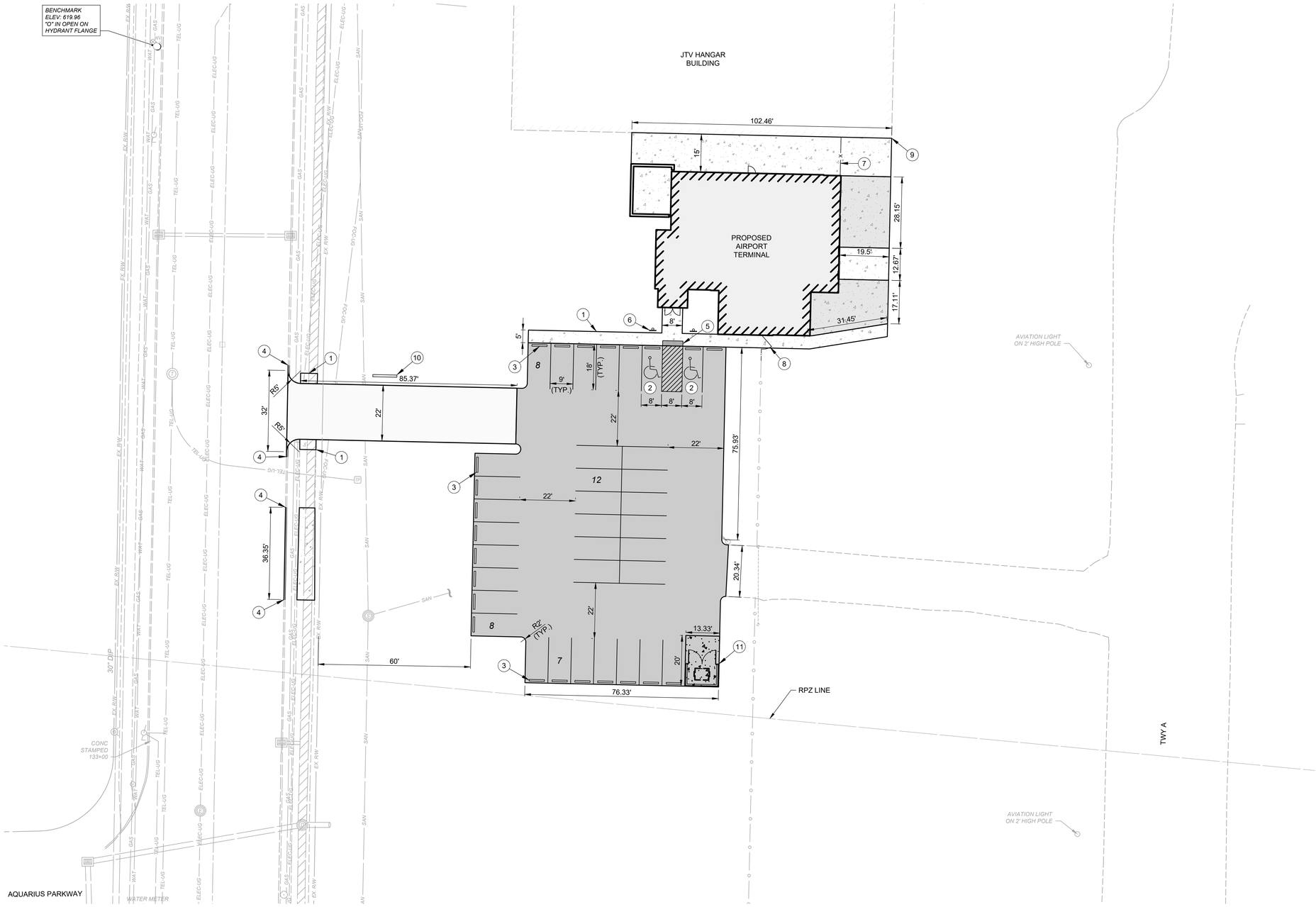
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

SITE DEMOLITION AND EROSION AND SEDIMENT CONTROL PLAN

SCALE: AS NOTED

CONTRACT NO: 220656

SHEET C1.02



20 ' 0 ' 20 '

SCALE: 1" = 20 '

LEGEND:

- PROPOSED BUILDING
- PROPOSED STANDARD DUTY ASPHALT PAVEMENT - BASE BID (SEE DETAIL SHEET)
- PROPOSED STANDARD DUTY ASPHALT PAVEMENT - ALTERNATE BID NO. A1 (SEE DETAIL SHEET)
- PROPOSED REINFORCED CONCRETE PAVEMENT - ALTERNATE BID NO. A1 (SEE DETAIL SHEET)
- PROPOSED CONCRETE SIDEWALK - BASE BID (SEE DETAIL SHEET)
- PROPOSED CONCRETE SIDEWALK - ALTERNATE BID NO. A1 (SEE DETAIL SHEET)

NOTES:

1. DIMENSIONS ARE TO FACE OF CURB, OUTSIDE FACE OF BUILDING, AND EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.
2. CONTRACTOR SHALL NOTIFY UTILITY COMPANIES AND GOVERNMENTAL AGENCIES IN WRITING AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO CONFIRM THE LOCATIONS OF ANY EXISTING BURIED UTILITIES.
3. ALL PARKING SPACES ARE 9' X 18' UNLESS NOTED OTHERWISE.
4. ALL PROPOSED ADA ACCESSIBLE ROUTES SHALL MEET FEDERAL ADA REQUIREMENTS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CURB CUTS AND TAPERS AT ALL PROPOSED CURB RAMP LOCATIONS
6. STRIPING SHALL BE APPLIED TO ASPHALT SURFACES PER ODOT ITEMS 642 & 645.
7. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD DIMENSIONS AND SHALL REPORT ANY DISCREPANCIES BETWEEN THE PLANS AND ACTUAL FIELD CONDITIONS TO THE OWNER OR OWNER'S REPRESENTATIVE IMMEDIATELY.
8. CONTRACTOR SHALL PROVIDE SMOOTH TRANSITIONS FROM PROPOSED FEATURES TO EXISTING FEATURES AS NECESSARY.
9. CONTRACTOR SHALL SEAL THE EDGE OF EXISTING ASPHALT PAVEMENT WITH TACK COAT IN ACCORDANCE WITH ODOT ITEM 409 NEW ASPHALT JOINS EXISTING ASPHALT SPECIFICATION.
10. CONTRACTOR SHALL REPAIR, RESURFACE, OR RECONSTRUCT ANY AREAS DAMAGED DURING CONSTRUCTION BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR SUPPLIERS AT NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR TO CONFIRM WITH LOCAL CODES AND BUILDING INSPECTOR FOR SPECIFIC DISABLED PARKING SIZES, STRIPING, AND SIGNAGE REQUIREMENTS.
12. BUILDING DIMENSIONS ARE FOR REFERENCE PURPOSES - REFER TO ARCHITECTURAL DRAWINGS ALL BUILDING DIMENSIONS.

PARKING TABLE	
STANDARD PARKING PROVIDED	33
ADA PARKING PROVIDED	2
TOTAL PARKING PROVIDED	35

CODED NOTES:

1. CONCRETE WALK (4" THICK), PER DETAIL, SHEET 1.08
2. ACCESSIBLE PARKING SPOT, PER DETAIL, SHEET 1.08
3. PARKING BLOCK TYPICAL, PER DETAIL, SHEET 1.08
4. CURB TO BE REPLACED TO NEXT EXISTING JOINT
5. ADA DETECTABLE WARNING
6. SIGN POST WITH MOUNTED VAN ACCESSIBLE SIGN (TYP. OF 2 - SEE SHEET 1.08)
7. 15' LENGTH FENCE TO MEET JTV HANGER BUILDING. FENCE TO BE 10' HIGH WIREWORKS ANTI-CLIMB HIGH SECURITY WELDED WIRE FENCE SYSTEM.
8. 10' LENGTH FENCE WITH SECURED GATE. FENCE TO BE 10' HIGH WIREWORKS ANTI-CLIMB HIGH SECURITY WELDED WIRE FENCE SYSTEM.
9. APPROXIMATE LOCATION OF JTV HANGER BUILDING (BY OTHERS)
10. ENTRANCE GROUND SIGN (SEE ARCHITECTURAL DRAWINGS)
11. SCREENED ENCLOSURE FOR DUMPSTER (SEE LANDSCAPE DRAWINGS)

STATE OF OHIO
JUSTIN HASELTON
E-72378
REGISTERED PROFESSIONAL ENGINEER

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NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL

CITY OF WILLOUGHBY

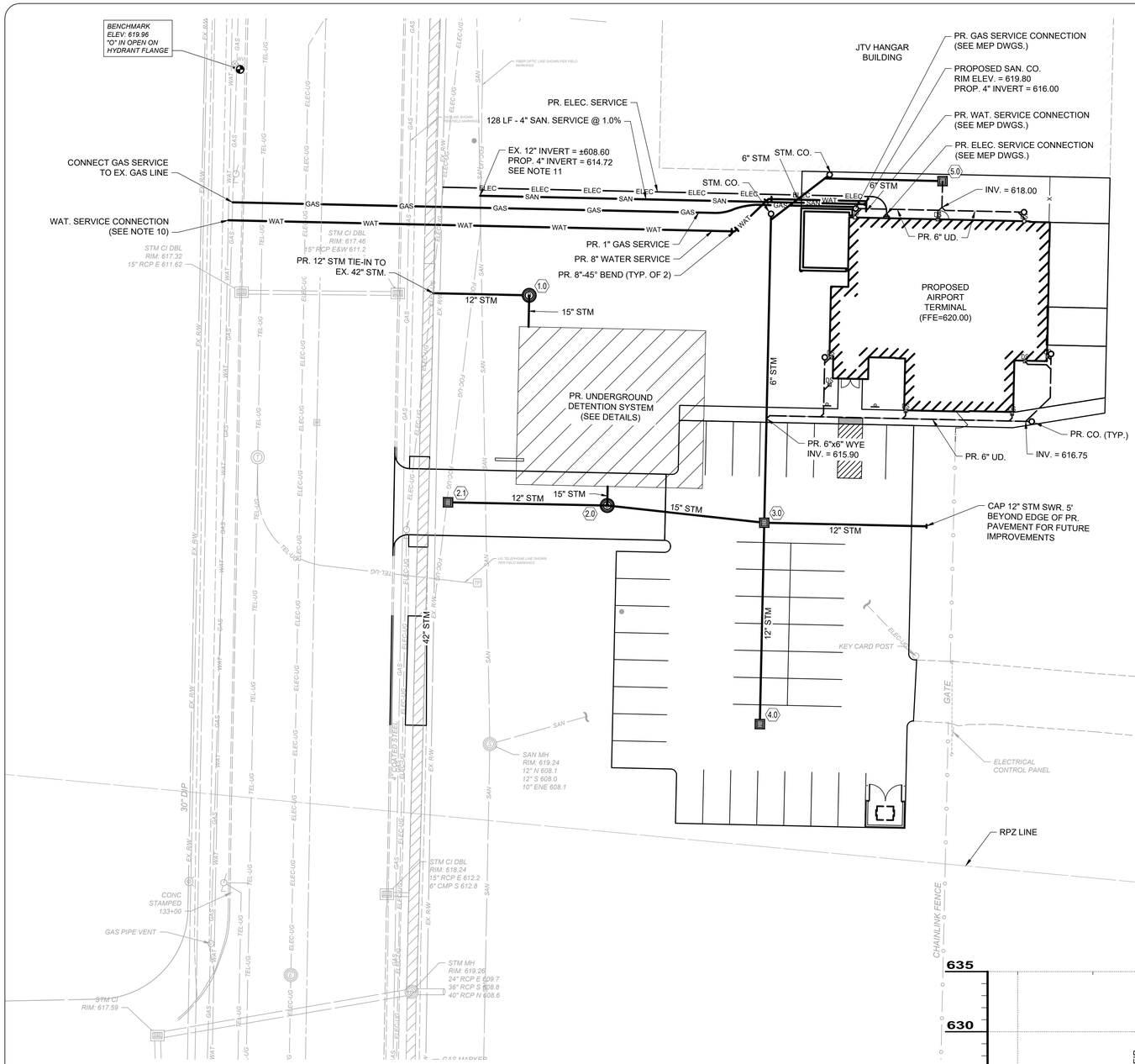
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

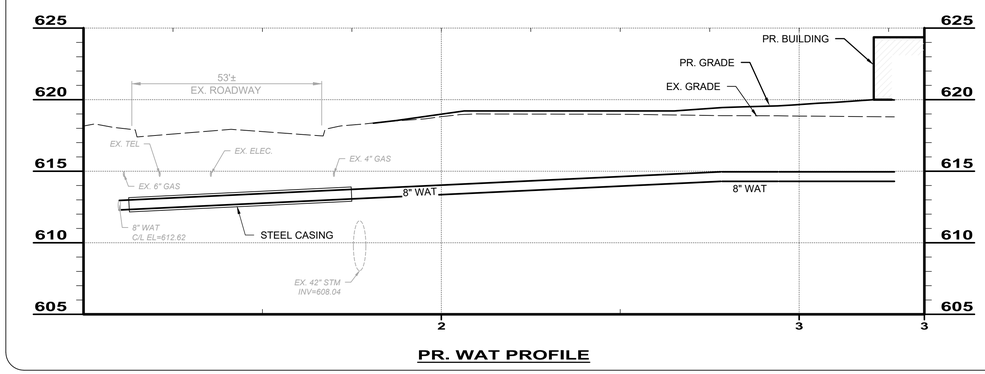
SITE PLAN

SCALE: AS NOTED

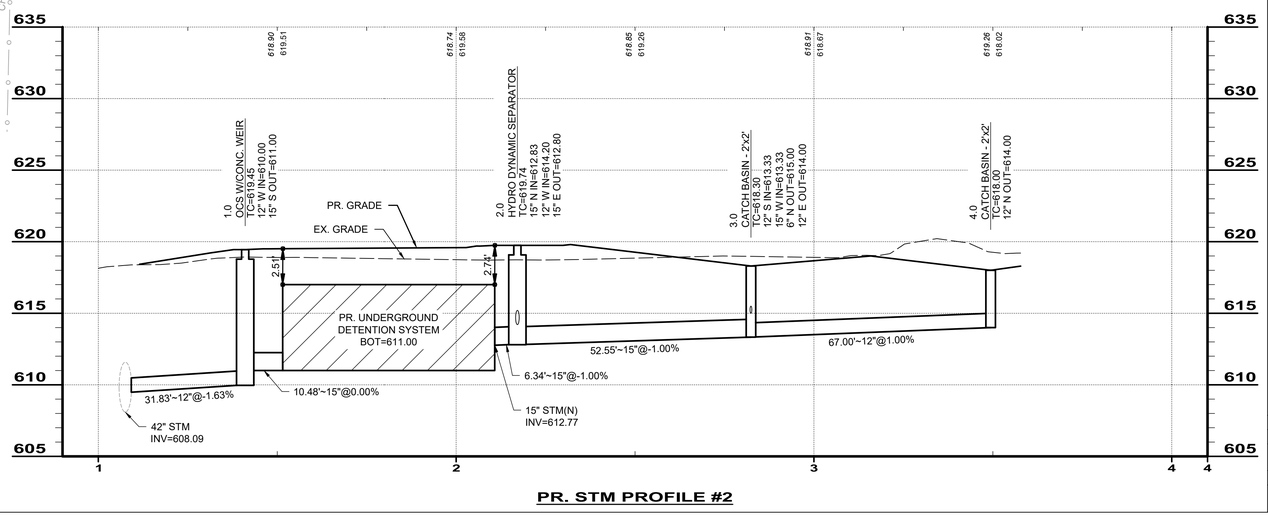
CONTRACT NO: 220656

SHEET C1.03





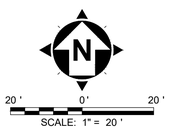
PR. WAT PROFILE



PR. STM PROFILE #2

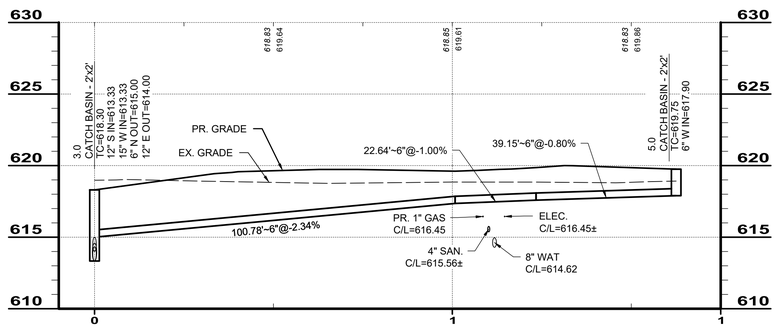
STRUCTURE TABLE

STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT
1.0	RIM = 619.45 SUMP = 610.0 INV IN = 610.00 INV OUT = 611.00	Pipe - 1, 12" INV IN =610.00	Pipe - 2, 15" INV OUT =611.00
2.0	RIM = 619.74 SUMP = 612.8 INV IN = 612.83 INV IN = 614.20 INV OUT = 612.80	Pipe - 3, 15" INV IN =612.83 Pipe - 6, 12" INV IN =614.20	Pipe - 4, 15" INV OUT =612.80
2.1	RIM = 618.35 SUMP = 614.8 INV OUT = 614.79		Pipe - 6, 12" INV OUT =614.79
3.0	RIM = 618.30 SUMP = 613.3 INV IN = 613.33 INV IN = 613.33 INV OUT = 615.00 INV OUT = 614.00	Pipe - 5, 12" INV IN =613.33 Pipe - 4, 15" INV IN =613.33	Pipe - 7, 6" INV OUT =615.00 Pipe - 10, 12" INV OUT =614.00
4.0	RIM = 618.00 SUMP = 614.0 INV OUT = 614.00		Pipe - 5, 12" INV OUT =614.00
5.0	RIM = 619.75 SUMP = 617.9 INV IN = 617.90	Pipe - 9, 6" INV IN =617.90	



NOTES:

1. ALL NEW UTILITY SERVICE LINES SHALL BE INSTALLED PER THE CITY OF WILLOUGHBY REQUIREMENTS.
2. EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY LOCATION PRIOR TO CONSTRUCTION. NOTE THE EXISTING 10" SANITARY SEWER AND UNDERGROUND ELECTRIC UNDER THE PROPOSED PARKING LOT.
3. CONTRACTOR SHALL INCLUDE BYPASS PUMPING AND DEWATERING AS NEEDED TO INSTALL ALL PROPOSED UTILITIES.
4. CONTRACTOR TO COORDINATE WITH OWNER, UTILITY COMPANY, AND MEP REGARDING GAS SERVICE ROUTING, CONNECTION TO MAIN, AND CONNECTION TO THE BUILDING.
5. REFER TO MEP PLANS FOR PROPOSED ELECTRICAL INFORMATION. CONNECTION TO EXISTING BY ELECTRIC COMPANY.
6. FINAL ROOF DRAIN LOCATIONS AND EXTENTS SHALL BE COORDINATED WITH GUTTER AND DOWNSPOUT INSTALLATION CONTRACTOR. ROOF DRAIN PIPING SHALL BE SDR-35 PVC PIPE SLOPED AT 1% MINIMUM, WITH 2.5' MINIMUM COVER.
7. REFER TO MEP PLANS FOR BACKFLOW PREVENTION DETAILS, WHICH WILL BE INSIDE THE BUILDING. METER WILL ALSO BE INSIDE THE BUILDING.
8. CONTRACTOR TO ENSURE 18" MINIMUM VERTICAL CLEARANCE BETWEEN PROPOSED WATER SERVICE AND ALL OTHER UTILITIES AT CROSSINGS.
9. CONTRACTOR IS REQUIRED TO REPLACE ANY DAMAGED AND/OR REMOVED CURBING AND SIDEWALK.
10. PROPOSED 8"x8" TAPPING SLEEVE AND VALVE. WATER LINE TO BE BORED UNDER LOST NATION ROAD WITH 12" STEEL CASING, SEE PROFILE, THIS SHEET. BORING PIT, RECEIVING PIT, EXCAVATION, SHORING, BACKFILL, RESTORATION INCLUDING PAVEMENT AND CURB BY THE CONTRACTOR.
11. SANITARY CUT-IN TEE, SEE SANITARY LATERAL CONNECTION DETAIL.



PR. STM PROFILE #1

STATE OF OHIO
JUSTIN HASELTON
E-72378
REGISTERED PROFESSIONAL ENGINEER

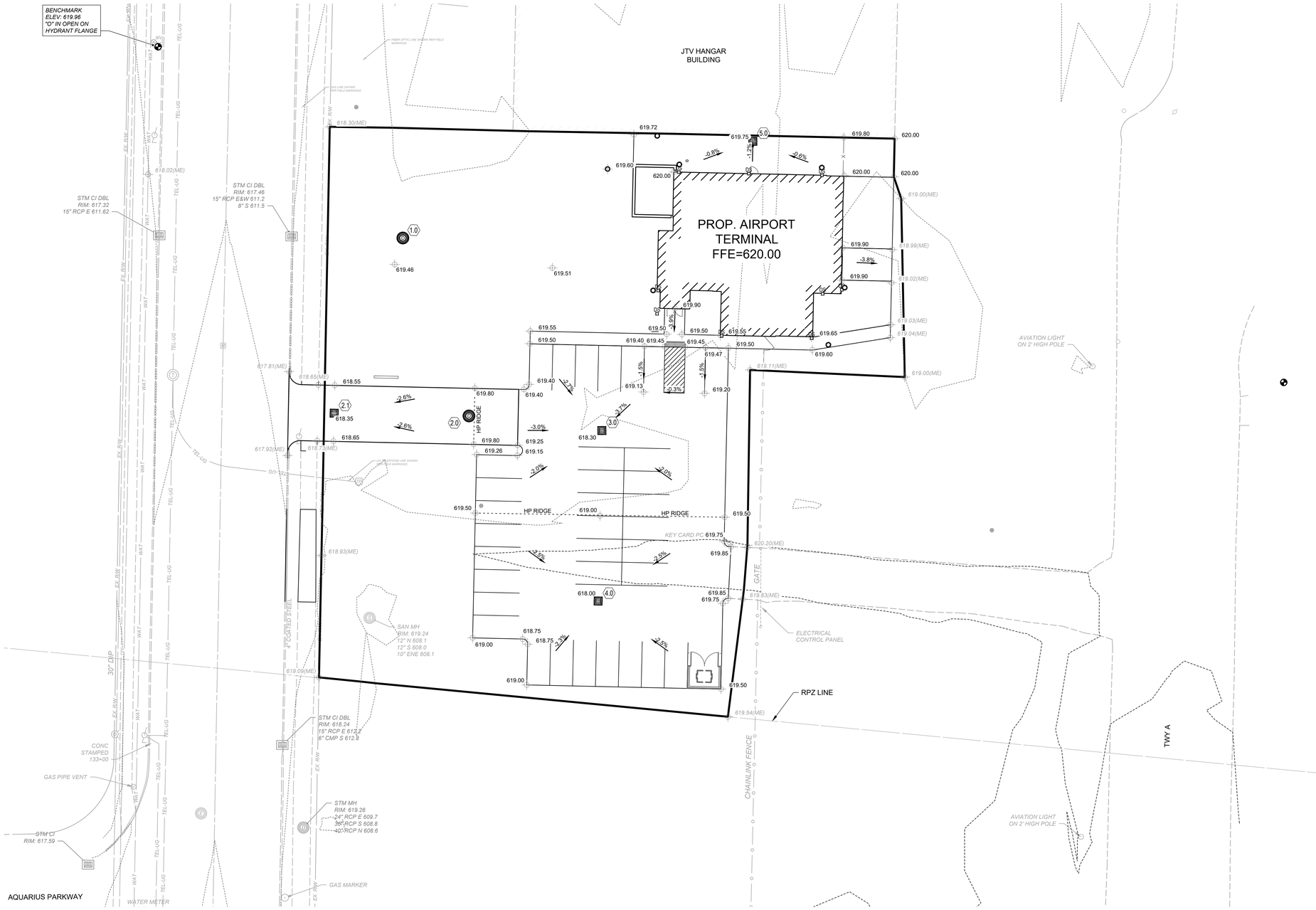
REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/29/2024
DRAWN BY: JRH
CHECKED BY: WTV
APPROVED BY:
F.B. NO.: — PG.: —

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

SITE UTILITY PLAN

SCALE: AS NOTED
CONTRACT NO: 220656
SHEET C1.04



20 ' 0 ' 20 '

SCALE: 1" = 20 '

LEGEND

850.00	PROPOSED ELEVATION
850.00(ME)	MATCH EXISTING ELEVATION
850.50BC 850.00EP	BACK OF CURB ELEVATION EDGE OF PAVEMENT ELEVATION
1.0%	PROPOSED SLOPE
DS	PROPOSED DOWNSPOUT (SEE ARCH. DWGS.)
650	CONTOUR - MAJOR
649	CONTOUR - MINOR
650	CONTOUR - MAJOR
649	CONTOUR - MINOR

GRADING NOTES

1. GRAPHICAL SCREENING AND SHADING IS USED TO DE-EMPHASIZE EXISTING ITEMS AND SOME NEW IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK.
2. SOME EXISTING AND PROPOSED UNDERGROUND AND OVERHEAD UTILITIES ARE NOT SHOWN FOR CLARITY PURPOSES.
3. CONTOURS SHOWN IN PAVED AREAS ARE TO THE TOP OF THE PROPOSED PAVEMENT.
4. IT IS THE INTENT OF THE SLOPES AND SPOT GRADES SHOWN ON THE PLANS TO PROVIDE POSITIVE DRAINAGE TO STORM WATER COLLECTION POINTS. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES IMMEDIATELY TO THE DESIGN ENGINEER FOR RESOLUTION.
5. THE INTENT OF THE GRADING PLAN IS TO ASSIST THE ARCHITECT OR STRUCTURAL ENGINEER DETERMINE THE MINIMUM PROPOSED BUILDING FOOTING ELEVATIONS REQUIRED FOR FROST DEPTH. IF SITE CONDITIONS CHANGE, THE BOTTOM FOOTING ELEVATION MAY NEED TO INCREASE TO MAINTAIN MINIMUM FROST DEPTH COVER.
6. THE CONTRACTOR SHALL HAVE THE UNDERGROUND DETENTION SYSTEM MANUFACTURERS REPRESENTATIVE ON-SITE DURING THE INSTALLATION OF THE UDS. THIS REPRESENTATIVE SHALL ADVISE THE CONTRACTOR AS TO THE REQUIRED INSTALLATION PROCEDURES OF THE UDS.

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NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL

CITY OF WILLOUGHBY

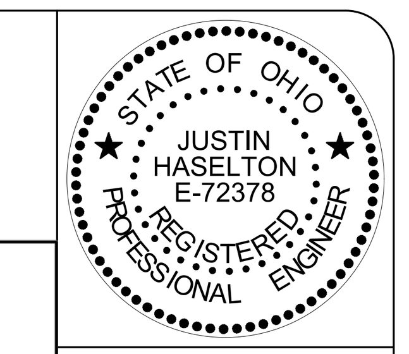
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

SITE GRADING PLAN

SCALE: AS NOTED

CONTRACT NO: 220656

SHEET C1.05



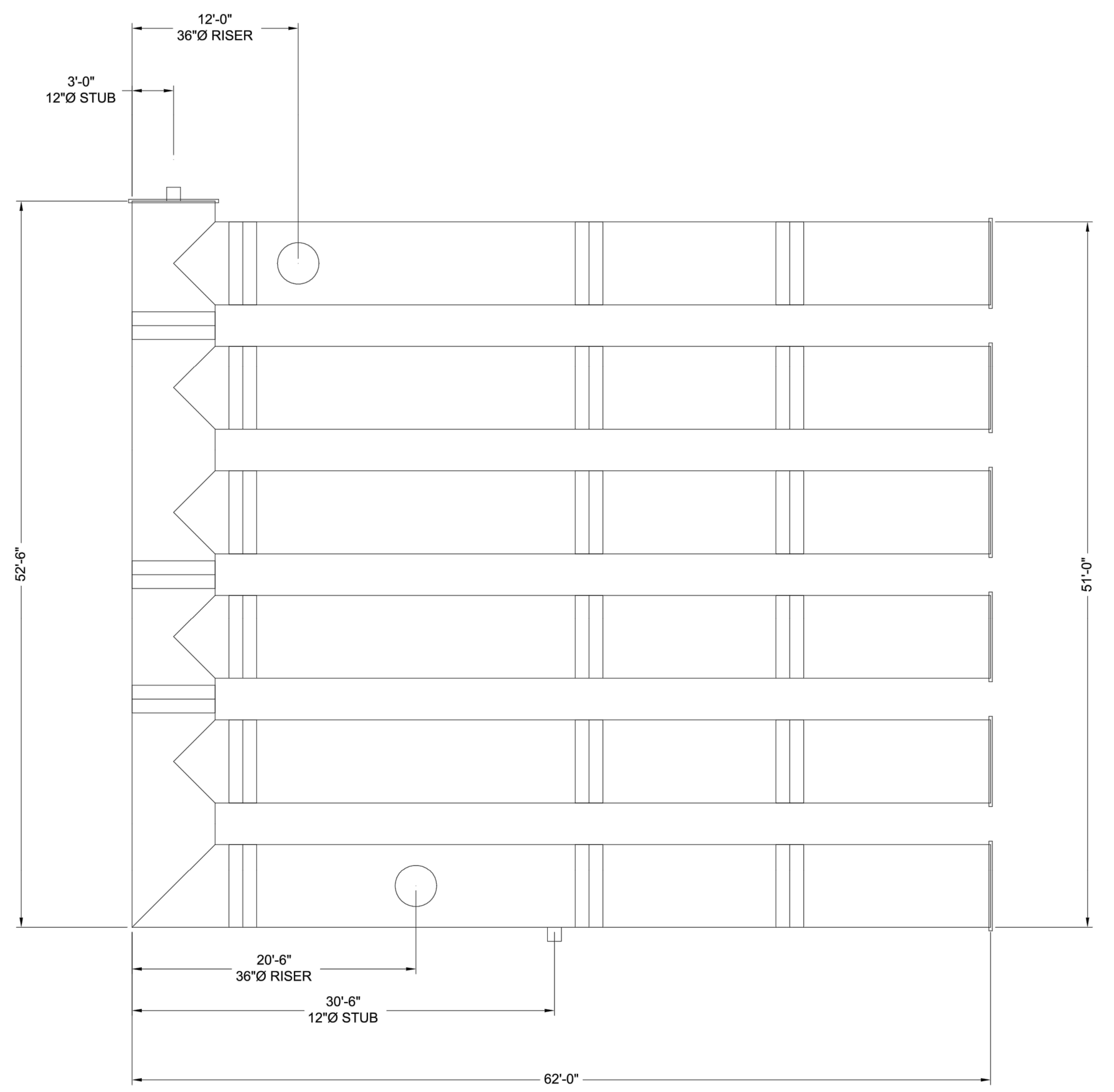
PROJECT SUMMARY

CALCULATION DETAILS
- LOADING = HS20/HS25
- APPROX. LINEAR FOOTAGE = 389 LF

STORAGE SUMMARY
- STORAGE VOLUME REQUIRED = 14,500 CF
- PIPE STORAGE VOLUME = 10,985 CF
- BACKFILL STORAGE VOLUME = 3,764 CF
- TOTAL STORAGE PROVIDED = 14,749 CF

PIPE DETAILS
- DIAMETER = 72"
- CORRUGATION = 5x1
- GAGE = 16
- COATING = ALT2
- WALL TYPE = XFILTRATION
- BARREL SPACING = 36"

BACKFILL DETAILS
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 0"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 0"



ASSEMBLY
SCALE: 1" = 10'

NOTES

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE $2\frac{2}{3}$" x $\frac{1}{2}$" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN, QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

DATE	REVISION DESCRIPTION	BY

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

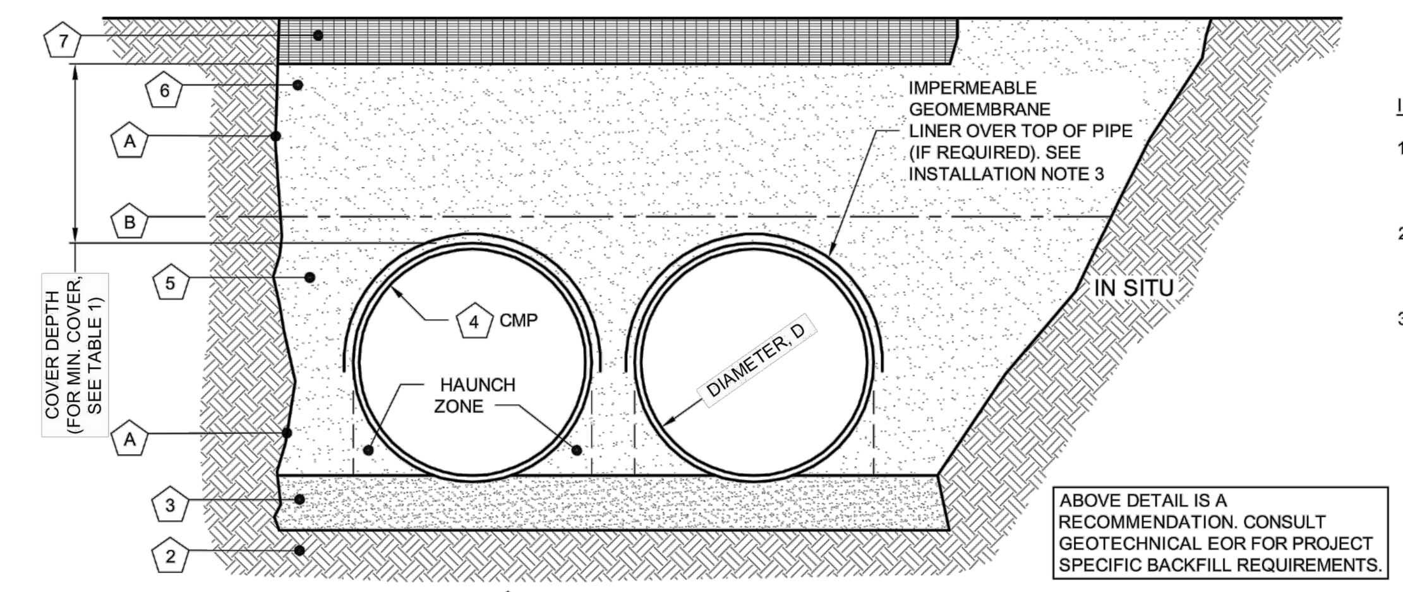
DYO51074 Lake County Executive Airport Terminal
72" Underground xFiltration
Willoughby, OH
DETENTION SYSTEM

PROJECT No.: 35532	SEQ. No.: 51074	DATE: 5/2/2024
DESIGNED: DYO		DRAWN: DYO
CHECKED: DYO		APPROVED: DYO
SHEET NO.: 1		

TABLE 1:

DIAMETER, D	MIN. COVER	CORR. PROFILE
6"-10"	12"	1 1/2" x 1/4"
12"-48"	12"	2 2/3" x 1/2"
>48"-96"	12"	3" x 1", 5" x 1"
>96"-144"	D/8	3" x 1", 5" x 1"

- STRUCTURAL BACKFILL MUST EXTEND TO LIMITS OF THE TABLE
- TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT.



ABOVE DETAIL IS A RECOMMENDATION. CONSULT GEOTECHNICAL EOR FOR PROJECT SPECIFIC BACKFILL REQUIREMENTS.

TRENCH ← 1 FILL ENVELOPE → EMBANKMENT

MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGEMENT

INSTALLATION NOTES

1. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES.
2. OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.
3. IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED OVER THE TOP OF THE PIPE. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

TABLE 2:

XFILTRATION® JOINT STANDARD BACKFILL SPECIFICATIONS

	MATERIAL LOCATION	MATERIAL SPECIFICATION	DESCRIPTION	
1	FILL ENVELOPE WIDTH	PER ENGINEER OF RECORD	MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE. THE SUGGESTED MINIMUM TRENCH WIDTH, OR EOR RECOMMENDATION: PIPE ≤ 12": D + 16" PIPE > 12": 1.5D + 12"	MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE: PIPE < 24": 3.0D PIPE 24" - 144": D + 4'0" PIPE > 144": D + 10'0"
2	FOUNDATION	**AASHTO 26.5.2** - PER ENGINEER OF RECORD	PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND FOUNDATION BROUGHT BACK TO GRADE WITH A FILL MATERIAL APPROVED BY THE ENGINEER OF RECORD.	
3	BEDDING	**AASHTO M 43: 3, 357, 4, 467, 5, 56, 57**	ENGINEER OF RECORD TO DETERMINE IF BEDDING IS REQUIRED. PIPE MAY BE PLACED ON THE TRENCH BOTTOM OF A RELATIVELY LOOSE, NATIVE SUITABLE WELL GRADED GRANULAR MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, 2" MIN DEPTH. THE BEDDING MATERIAL MAY BE SUITABLE OPEN GRADED GRANULAR BEDDING CONFORMING TO AASHTO SOIL CLASSIFICATIONS A1, A2, OR A3 WITH MAXIMUM PARTICLE SIZE OF 3" PER AASHTO 26.3.8.1	
4	CORRUGATED METAL PIPE			
5	BACKFILL	FREE-DRAINING, ANGULAR, WASHED-STONE PER **AASHTO M 43: 3, 357, 4, 467, 5, 56, 57** WITH A 1/2" - 2 1/2" PARTICLE SIZE OR APPROVED EQUAL MEETING **AASHTO M 145: A-1** (APPROVED REGIONAL EQUIVALENTS INCLUDE MIDOT 6AA, 6A, OR 5G)	HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION WITHOUT SOFT SPOTS. BACKFILL SHALL BE PLACED IN 8" +/- LOOSE LIFTS AND COMPACTED TO 90% STANDARD PROCTOR PER AASHTO T 99. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT (16") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHOULD BE ADVANCED ALONG THE LENGTH OF THE SYSTEM TO AVOID DIFFERENTIAL LOADING. WHERE CONVENTIONAL COMPACTION TESTING IS NOT PRACTICAL, THE MATERIAL SHALL BE MECHANICALLY COMPACTED UNTIL NO FURTHER YIELDING OF MATERIAL IS OBSERVED UNDER THE COMPACTOR.	
6	COVER MATERIAL	UP TO MIN. COVER - **AASHTO M 145: A-1, A-2, A-3** ABOVE MIN. COVER - PER ENGINEER OF RECORD	COVER MATERIAL MAY INCLUDE NON-BITUMINOUS, GRANULAR ROADBASE MATERIAL WITHIN MIN COVER LIMITS	
7	RIGID OR FLEXIBLE PAVEMENT (IF APPLICABLE)	PER ENGINEER OF RECORD	FLEXIBLE PAVEMENT SHOULD NOT BE COUNTED AS PART OF THE FILL HEIGHT OVER THE CMP. FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD.	
A	OPTIONAL SIDE GEOTEXTILE	NONE	GEOTEXTILE LAYER IS RECOMMENDED ON SIDES OF EXCAVATION TO PREVENT SOIL MIGRATION.	
B	OPTIONAL GEOTEXTILE BETWEEN LAYERS	NONE	IF SOIL TYPES DIFFER AT ANY POINT ABOVE PIPE INVERT, A GEOTEXTILE LAYER IS RECOMMENDED TO BE PLACED BETWEEN THE LAYERS TO PREVENT SOIL MIGRATION.	

NOTES:
- FOR MULTIPLE BARREL INSTALLATIONS, THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE THE PIPE DIAMETER /2 BUT NO LESS THAN 12" FOR DIAMETERS <72". FOR 72" AND LARGER DIAMETERS, THE MINIMUM SPACING IS 36". CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING.
- REGIONAL EQUIVALENTS ACCEPTED WHERE SHOWN. IF NO REGIONAL EQUIVALENT IS LISTED, MATERIAL SHOULD MEET THE AASHTO SPECIFICATION INDICATED.

MANUFACTURER RECOMMENDED BACKFILL
NOT TO SCALE

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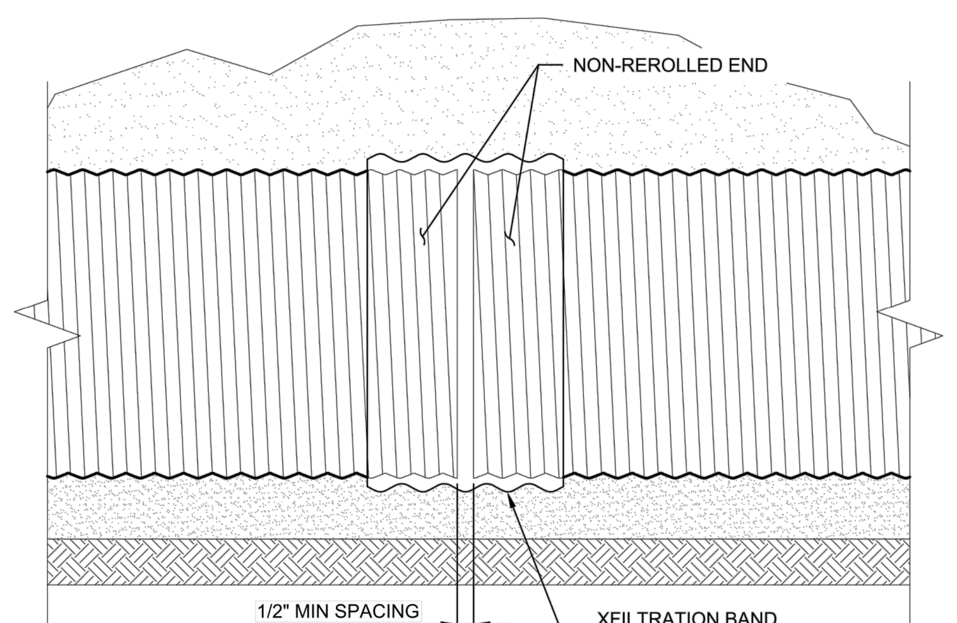
CONTECH CMP DETENTION SYSTEMS
CONTECH DYODS DRAWING

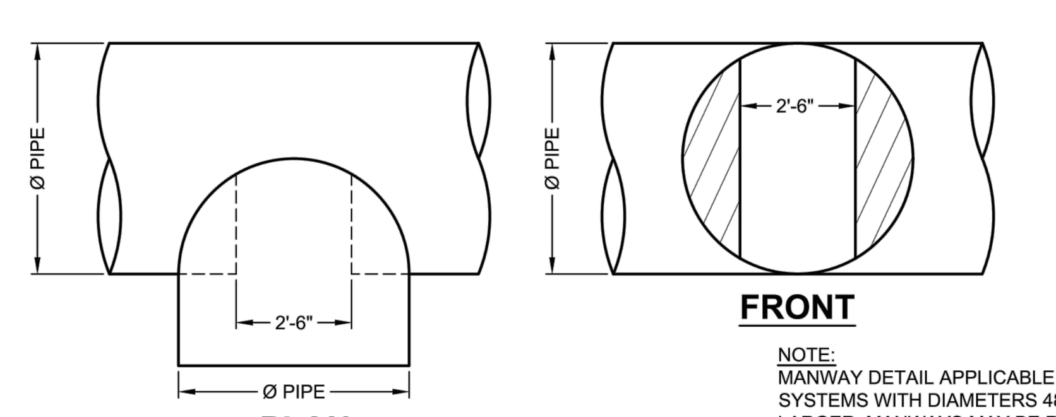
XFILTRATION RETENTION SYSTEM DETAILS

PROJECT No.:	SEQ. No.:	DATE:
DESIGNED: DYO		DRAWN: DYO
CHECKED: DYO		APPROVED: DYO
SHEET NO.:		



XFILTRATION BAND		
DIAMETER	BAND	FASTENER
UP TO 84"Ø	5-C OR H-12	STD. PLANT FASTENER WITH NO GASKET
84"Ø +	10-C	STD. PLANT FASTENER WITH NO GASKET

XFILTRATION JOINT DETAIL
NOT TO SCALE

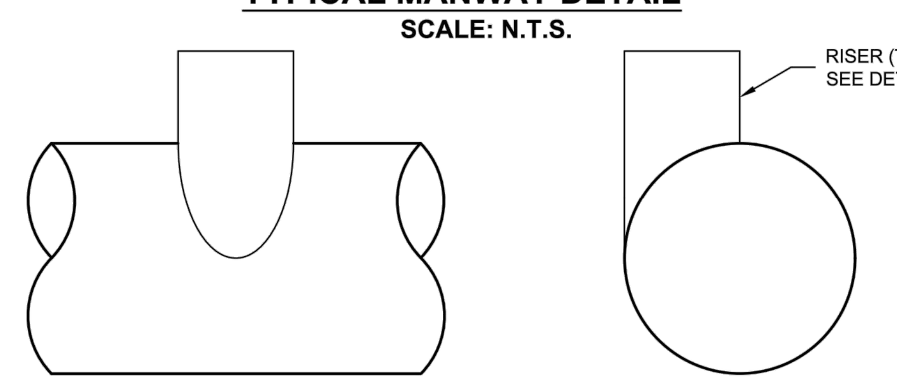


PLAN

FRONT

NOTE:
MANWAY DETAIL APPLICABLE FOR CMP SYSTEMS WITH DIAMETERS 48" AND LARGER. MANWAYS MAY BE REQUIRED ON SMALLER SYSTEMS DEPENDING ON ACTUAL SITE SPECIFIC CONDITIONS.

TYPICAL MANWAY DETAIL
SCALE: N.T.S.



ELEVATION

END

NOTE:
LADDERS ARE OPTIONAL AND ARE NOT REQUIRED FOR ALL SYSTEMS.

TYPICAL RISER DETAIL
SCALE: N.T.S.

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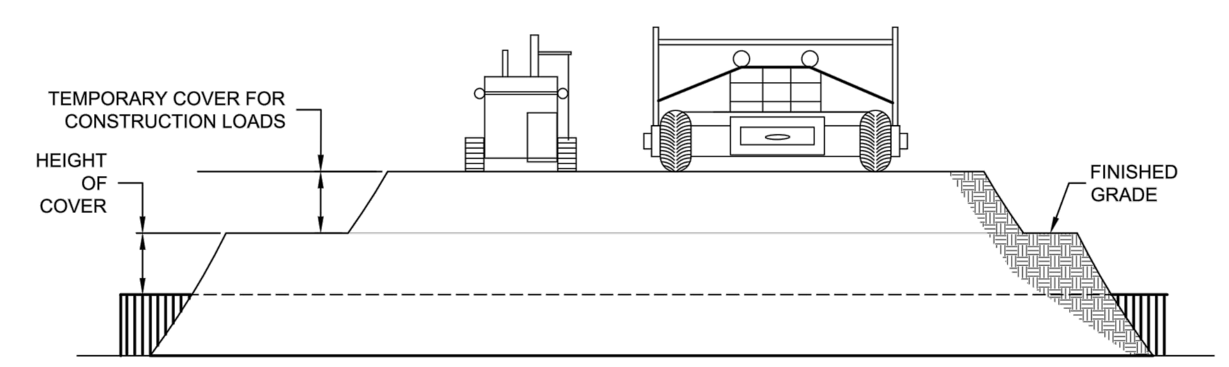


CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM
SCALE: N.T.S.

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE
THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL
THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

PIPE
THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760

GALVANIZED: AASHTO M-36 OR ASTM A-760

POLYMER COATED: AASHTO M-245 OR ASTM A-762

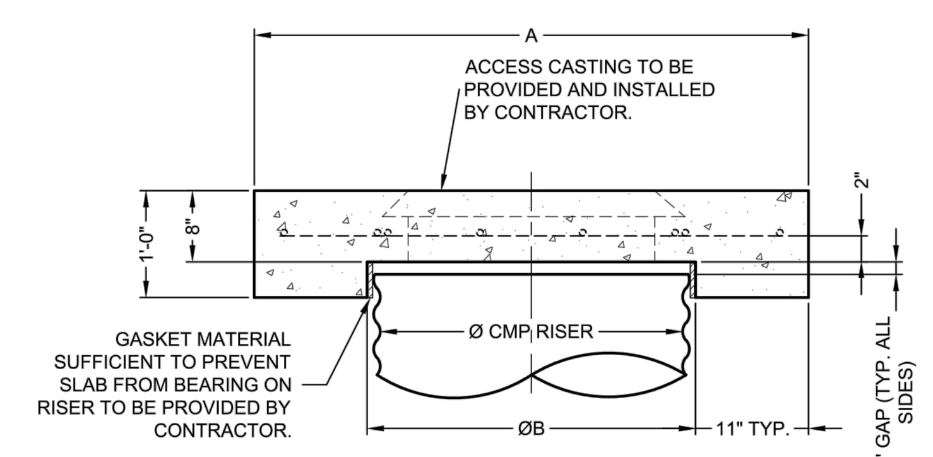
ALUMINUM: AASHTO M-196 OR ASTM B-745

HANDLING AND ASSEMBLY
SHALL BE IN ACCORDANCE WITH NCSP'S (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.

INSTALLATION
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II DIVISION II OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

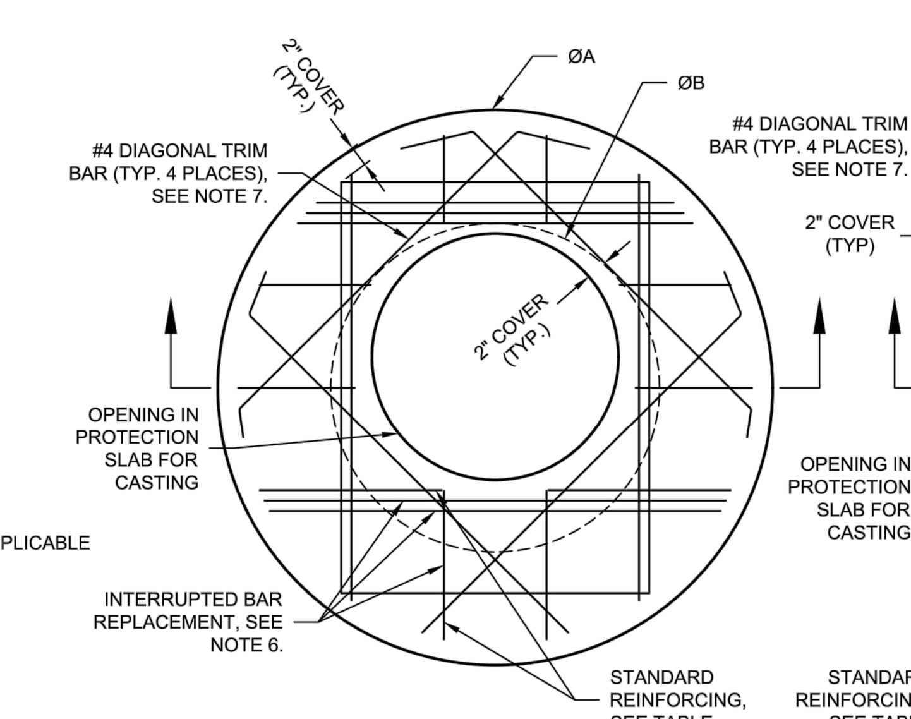
NOTE:
THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.



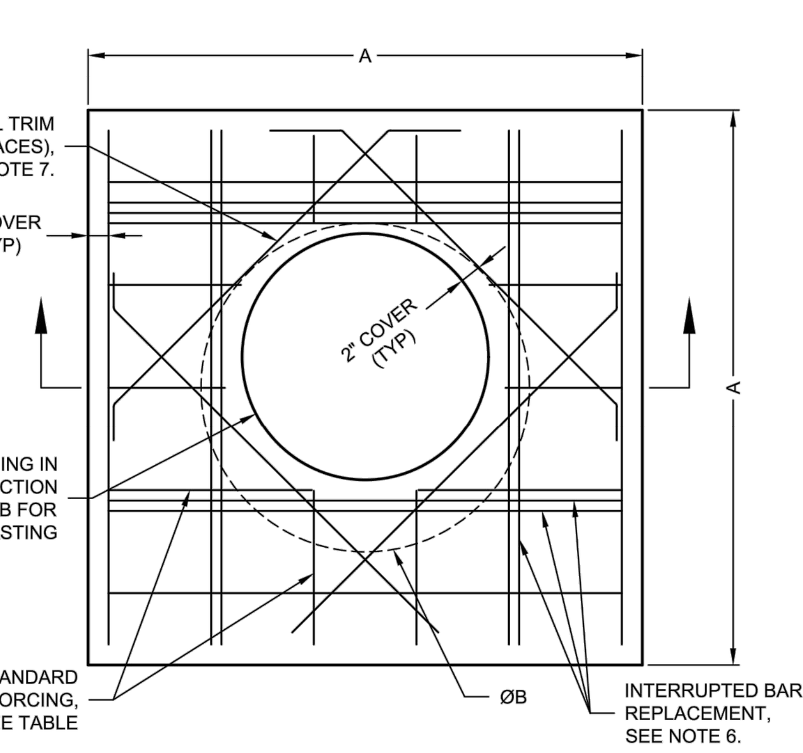
SECTION VIEW

REINFORCING TABLE				
Ø CMP RISER	A	Ø B	REINFORCING	**BEARING PRESSURE (PSF)
24"	Ø 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	Ø 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	Ø 5' 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	Ø 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	Ø 6' 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL
SCALE: N.T.S.

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XFILTRATION RETENTION SYSTEM DETAILS

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CHECKED: DYO		APPROVED: DYO
SHEET NO.:		

REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 03/29/2024
DRAWN BY: JRH
CHECKED BY: WTV
APPROVED BY:
F.B. NO.: PG.:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO
DETENTION SYSTEM DETAILS

SCALE: AS NOTED
CONTRACT NO: 220656
SHEET C1.06

STATE OF OHIO
JUSTIN HASELTON
E-72378
REGISTERED PROFESSIONAL ENGINEER

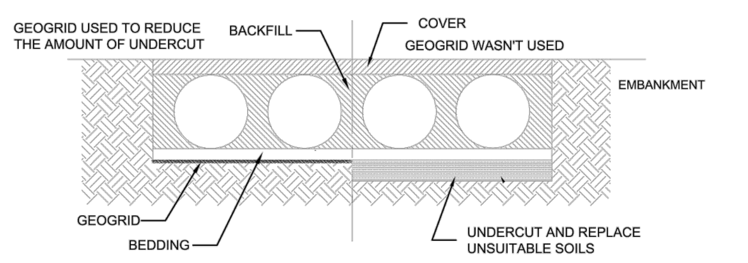
CMP DETENTION INSTALLATION GUIDE

PROPER INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY SUGGESTS SCHEDULING A PRE-CONSTRUCTION MEETING WITH YOUR LOCAL SALES ENGINEER TO DETERMINE IF ADDITIONAL MEASURES, NOT COVERED IN THIS GUIDE, ARE APPROPRIATE FOR YOUR SITE.

FOUNDATION

CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT AS WELL AS MAINTAIN ITS INTEGRITY DURING CONSTRUCTION.

IF SOFT OR UNSUITABLE SOILS ARE ENCOUNTERED, REMOVE THE POOR SOILS DOWN TO A SUITABLE DEPTH AND THEN BUILD UP TO THE APPROPRIATE ELEVATION WITH A COMPETENT BACKFILL MATERIAL. THE STRUCTURAL FILL MATERIAL GRADATION SHOULD NOT ALLOW THE MIGRATION OF FINES, WHICH CAN CAUSE SETTLEMENT OF THE DETENTION SYSTEM OR PAVEMENT ABOVE. IF THE STRUCTURAL FILL MATERIAL IS NOT COMPATIBLE WITH THE UNDERLYING SOILS AN ENGINEERING FABRIC SHOULD BE USED AS A SEPARATOR. IN SOME CASES, USING A STIFF REINFORCING GEOGRID REDUCES OVER EXCAVATION AND REPLACEMENT FILL QUANTITIES.

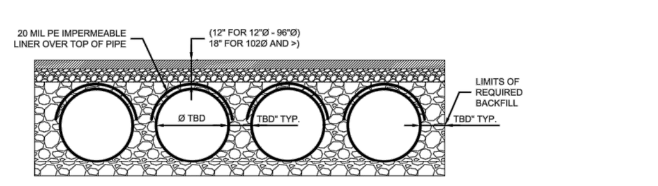


GRADE THE FOUNDATION SUBGRADE TO A UNIFORM OR SLIGHTLY SLOPING GRADE. IF THE SUBGRADE IS CLAY OR RELATIVELY NON-POROUS AND THE CONSTRUCTION SEQUENCE WILL LAST FOR AN EXTENDED PERIOD OF TIME, IT IS BEST TO SLOPE THE GRADE TO ONE END OF THE SYSTEM. THIS WILL ALLOW EXCESS WATER TO DRAIN QUICKLY, PREVENTING SATURATION OF THE SUBGRADE.

GEOMEMBRANE BARRIER

A SITE'S RESISTIVITY MAY CHANGE OVER TIME WHEN VARIOUS TYPES OF SALTING AGENTS ARE USED, SUCH AS ROAD SALTS FOR DEICING AGENTS. IF SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM THE USE OF SUCH AGENTS INCLUDING PREMATURE CORROSION AND REDUCED ACTUAL SERVICE LIFE.

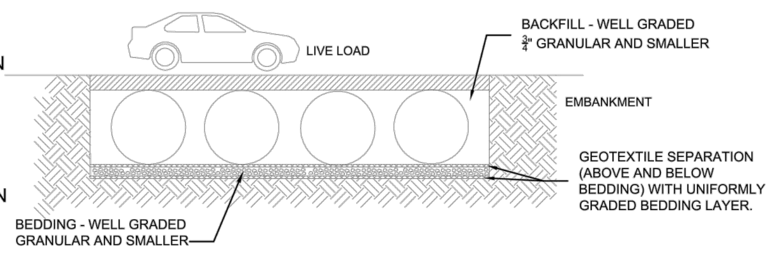
THE PROJECT'S ENGINEER OF RECORD IS TO EVALUATE WHETHER SALTING AGENTS WILL BE USED ON OR NEAR THE PROJECT SITE, AND USE HIS/HER BEST JUDGEMENT TO DETERMINE IF ANY ADDITIONAL PROTECTIVE MEASURES ARE REQUIRED. BELOW IS A TYPICAL DETAIL SHOWING THE PLACEMENT OF A GEOMEMBRANE BARRIER FOR PROJECTS WHERE SALTING AGENTS ARE USED ON OR NEAR THE PROJECT SITE.



IN-SITU TRENCH WALL

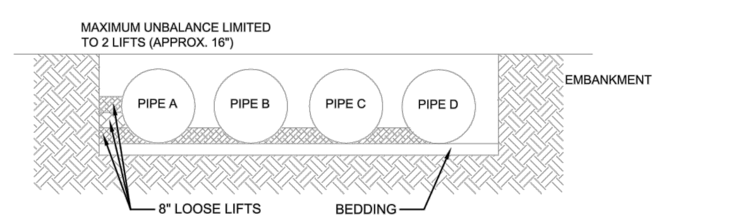
IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED. IF SOILS ARE NOT CAPABLE OF SUPPORTING THESE LOADS, THE PIPE CAN DEFLECT. PERFORM A SIMPLE SOIL PRESSURE CHECK USING THE APPLIED LOADS TO DETERMINE THE LIMITS OF EXCAVATION BEYOND THE SPRING LINE OF THE OUTER MOST PIPES.

IN MOST CASES THE REQUIREMENTS FOR A SAFE WORK ENVIRONMENT AND PROPER BACKFILL PLACEMENT AND COMPACTION TAKE CARE OF THIS CONCERN.



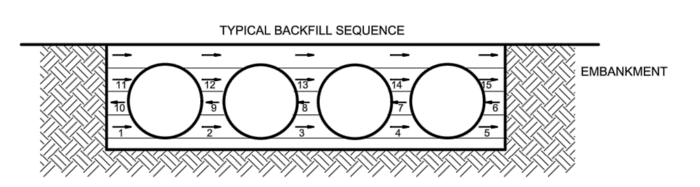
BACKFILL PLACEMENT

MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS.

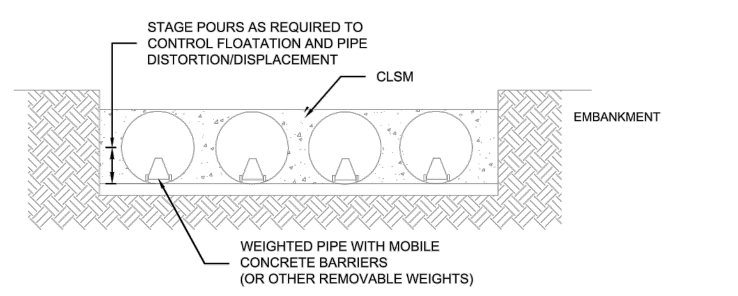


IF AASHTO T99 PROCEDURES ARE DETERMINED INFEASIBLE BY THE GEOTECHNICAL ENGINEER OF RECORD, COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE GEOTECHNICAL ENGINEER OF RECORD (OR REPRESENTATIVE THEREOF) IS SATISFIED WITH THE LEVEL OF COMPACTION.

FOR LARGE SYSTEMS, CONVEYOR SYSTEMS, BACKHOES WITH LONG REACHES OR DRAGLINES WITH STONE BUCKETS MAY BE USED TO PLACE BACKFILL. ONCE MINIMUM COVER FOR CONSTRUCTION LOADING ACROSS THE ENTIRE WIDTH OF THE SYSTEM IS REACHED, ADVANCE THE EQUIPMENT TO THE END OF THE RECENTLY PLACED FILL, AND BEGIN THE SEQUENCE AGAIN UNTIL THE SYSTEM IS COMPLETELY BACKFILLED. THIS TYPE OF CONSTRUCTION SEQUENCE PROVIDES ROOM FOR STOCKPILED BACKFILL DIRECTLY BEHIND THE BACKHOE, AS WELL AS THE MOVEMENT OF CONSTRUCTION TRAFFIC. MATERIAL STOCKPILES ON TOP OF THE BACKFILLED DETENTION SYSTEM SHOULD BE LIMITED TO 8- TO 10-FEET HIGH AND MUST PROVIDE BALANCED LOADING ACROSS ALL BARRELS. TO DETERMINE THE PROPER COVER OVER THE PIPES TO ALLOW THE MOVEMENT OF CONSTRUCTION EQUIPMENT SEE TABLE 1, OR CONTACT YOUR LOCAL CONTECH SALES ENGINEER.



WHEN FLOWABLE FILL IS USED, YOU MUST PREVENT PIPE FLOATATION. TYPICALLY, SMALL LIFTS ARE PLACED BETWEEN THE PIPES AND THEN ALLOWED TO SET-UP PRIOR TO THE PLACEMENT OF THE NEXT LIFT. THE ALLOWABLE THICKNESS OF THE CLSM LIFT IS A FUNCTION OF A PROPER BALANCE BETWEEN THE UPLIFT FORCE OF THE CLSM, THE OPPOSING WEIGHT OF THE PIPE, AND THE EFFECT OF OTHER RESTRAINING MEASURES. THE PIPE CAN CARRY LIMITED FLUID PRESSURE WITHOUT PIPE DISTORTION OR DISPLACEMENT, WHICH ALSO AFFECTS THE CLSM LIFT THICKNESS. YOUR LOCAL CONTECH SALES ENGINEER CAN HELP DETERMINE THE PROPER LIFT THICKNESS.

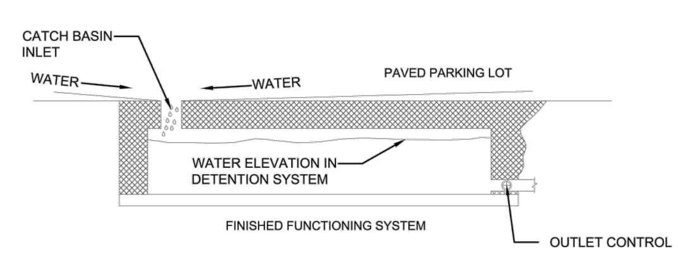


CONSTRUCTION LOADING

TYPICALLY, THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY. SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB, IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.

ADDITIONAL CONSIDERATIONS

BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION; POTENTIALLY CAUSING FLOATATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE OUTLET ALREADY CONSTRUCTED TO ALLOW A ROUTE FOR THE WATER TO ESCAPE. TEMPORARY DIVERSION MEASURES MAY BE REQUIRED FOR HIGH FLOWS DUE TO THE RESTRICTED NATURE OF THE OUTLET PIPE.



CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE

UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS FOR PURPOSES OF PERFORMANCE AND LONGEVITY.

INSPECTION

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE OF CMP DETENTION SYSTEMS AND IS EASILY PERFORMED. CONTECH RECOMMENDS ONGOING, ANNUAL INSPECTIONS. SITES WITH HIGH TRASH LOAD OR SMALL OUTLET CONTROL ORIFICES MAY NEED MORE FREQUENT INSPECTIONS. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE ON SITE SPECIFIC ACTIVITIES RATHER THAN THE SIZE OR CONFIGURATION OF THE SYSTEM.

INSPECTIONS SHOULD BE PERFORMED MORE OFTEN IN EQUIPMENT WASHDOWN AREAS, IN CLIMATES WHERE SANDING AND/OR SALTING OPERATIONS TAKE PLACE, AND IN OTHER VARIOUS INSTANCES IN WHICH ONE WOULD EXPECT HIGHER ACCUMULATIONS OF SEDIMENT OR ABRASIVE/ CORROSIVE CONDITIONS. A RECORD OF EACH INSPECTION IS TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM

MAINTENANCE

CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

ACCUMULATED SEDIMENT AND TRASH CAN TYPICALLY BE EVACUATED THROUGH THE MANHOLE OVER THE OUTLET ORIFICE. IF MAINTENANCE IS NOT PERFORMED AS RECOMMENDED, SEDIMENT AND TRASH MAY ACCUMULATE IN FRONT OF THE OUTLET ORIFICE. MANHOLE COVERS SHOULD BE SECURELY SEATED FOLLOWING CLEANING ACTIVITIES. CONTECH SUGGESTS THAT ALL SYSTEMS BE DESIGNED WITH AN ACCESS/INSPECTION MANHOLE SITUATED AT OR NEAR THE INLET AND THE OUTLET ORIFICE. SHOULD IT BE NECESSARY TO GET INSIDE THE SYSTEM TO PERFORM MAINTENANCE ACTIVITIES, ALL APPROPRIATE PRECAUTIONS REGARDING CONFINED SPACE ENTRY AND OSHA REGULATIONS SHOULD BE FOLLOWED.

ANNUAL INSPECTIONS ARE BEST PRACTICE FOR ALL UNDERGROUND SYSTEMS. DURING THIS INSPECTION, IF EVIDENCE OF SALTING/DE-ICING AGENTS IS OBSERVED WITHIN THE SYSTEM, IT IS BEST PRACTICE FOR THE SYSTEM TO BE RINSED, INCLUDING ABOVE THE SPRING LINE SOON AFTER THE SPRING THAW AS PART OF THE MAINTENANCE PROGRAM FOR THE SYSTEM.

MAINTAINING AN UNDERGROUND DETENTION OR INFILTRATION SYSTEM IS EASIEST WHEN THERE IS NO FLOW ENTERING THE SYSTEM. FOR THIS REASON, IT IS A GOOD IDEA TO SCHEDULE THE CLEANOUT DURING DRY WEATHER.

THE FOREGOING INSPECTION AND MAINTENANCE EFFORTS HELP ENSURE UNDERGROUND PIPE SYSTEMS USED FOR STORMWATER STORAGE CONTINUE TO FUNCTION AS INTENDED BY IDENTIFYING RECOMMENDED REGULAR INSPECTION AND MAINTENANCE PRACTICES. INSPECTION AND MAINTENANCE RELATED TO THE STRUCTURAL INTEGRITY OF THE PIPE OR THE SOUNDNESS OF PIPE JOINT CONNECTIONS IS BEYOND THE SCOPE OF THIS GUIDE.

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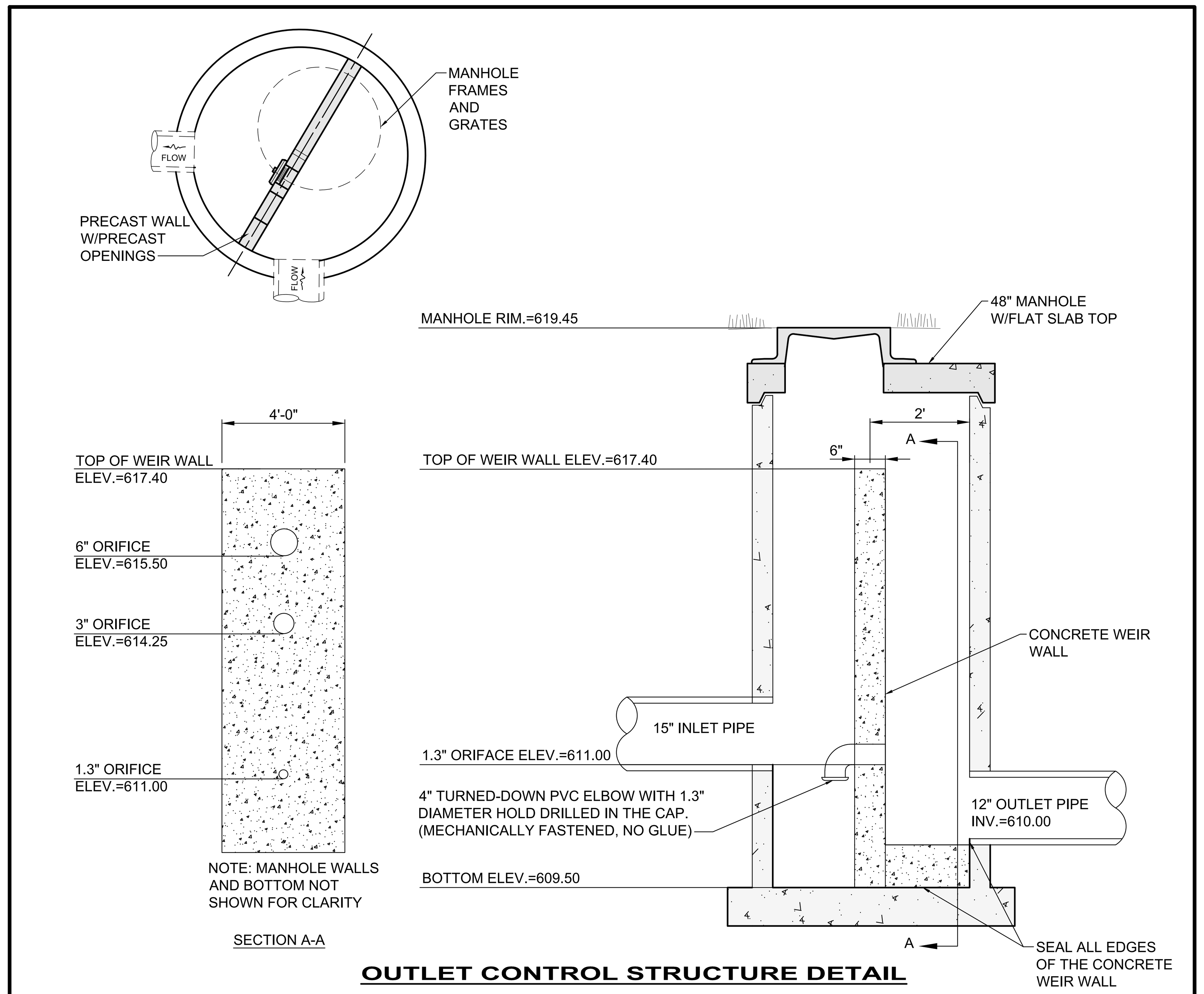
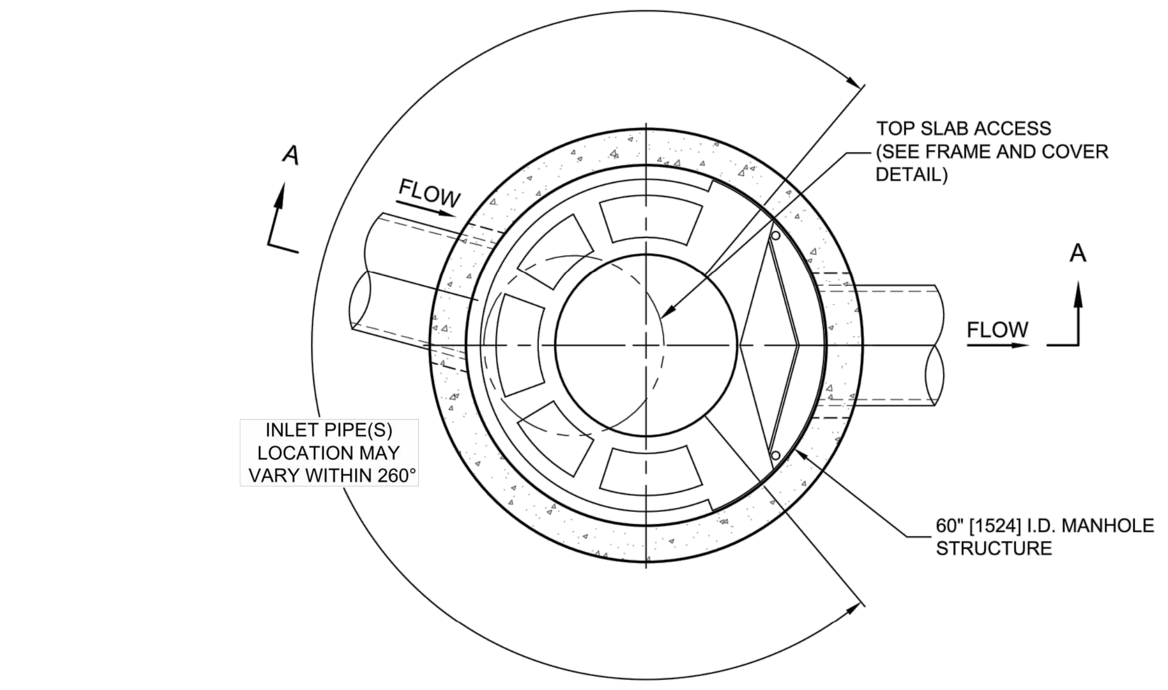
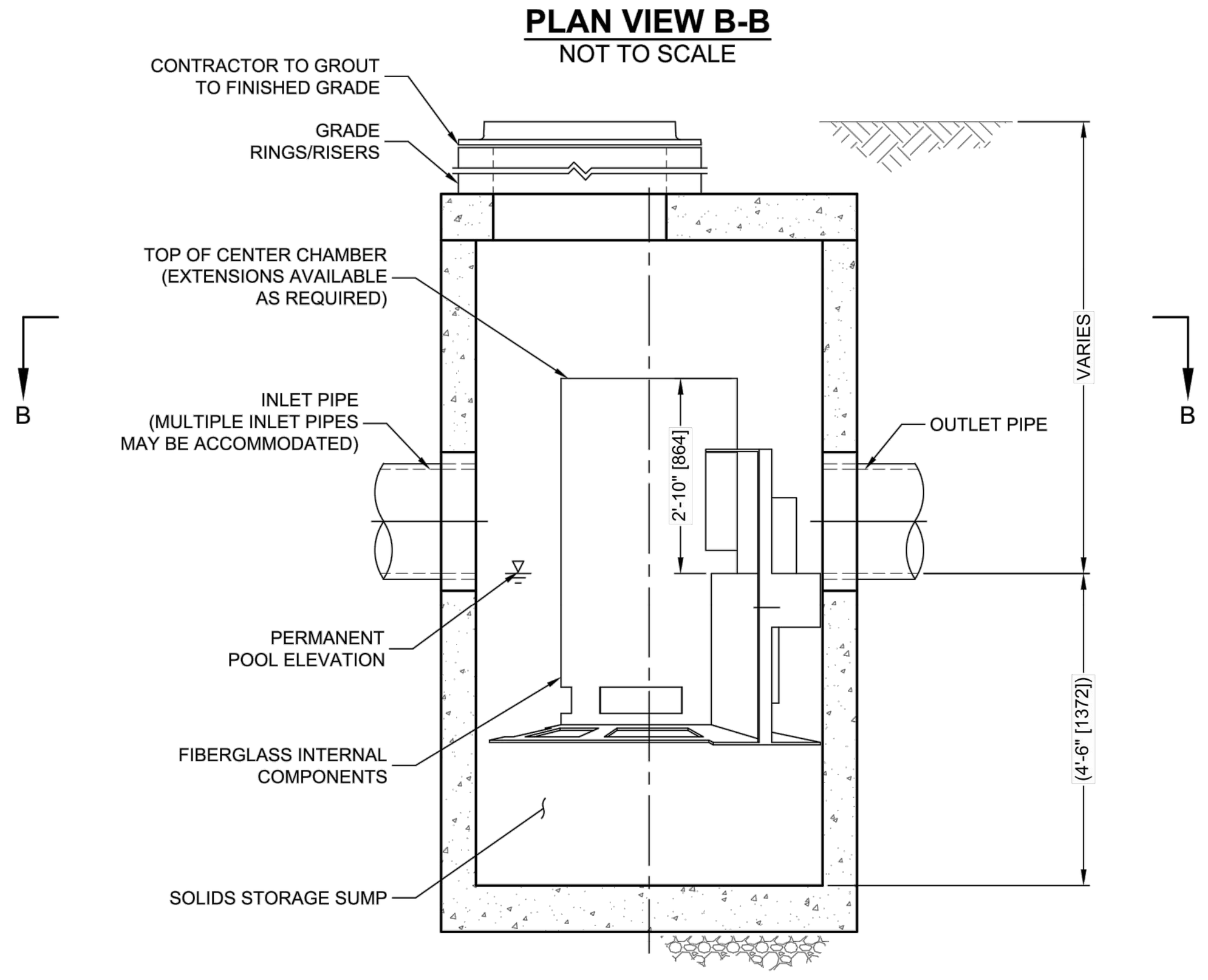
DATE	REVISION DESCRIPTION	BY



OUTLET CONTROL STRUCTURE DETAIL



PLAN VIEW B-B
NOT TO SCALE



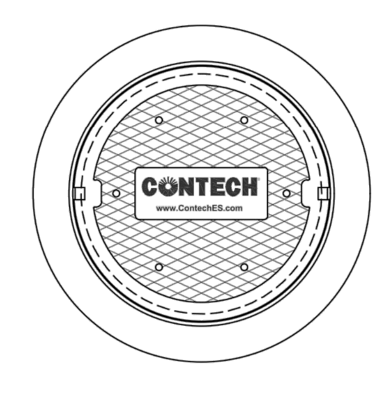
ELEVATION A-A
NOT TO SCALE

CASCADE separator™

CASCADE SEPARATOR DESIGN NOTES

THE STANDARD CS-5 CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES



FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			
WATER QUALITY FLOW RATE (cfs [L/s])			
PEAK FLOW RATE (cfs [L/s])			
RETURN PERIOD OF PEAK FLOW (yrs)			
RIM ELEVATION			
PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
NOTES / SPECIAL REQUIREMENTS:			

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CS-5
CASCADE SEPARATOR
STANDARD DETAIL

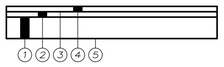
REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 03/29/2024
DRAWN BY: JRH
CHECKED BY: WTV
APPROVED BY:
F.B. NO.: PG.:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

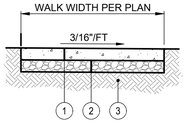
DETENTION SYSTEM DETAILS

SCALE: AS NOTED
CONTRACT NO: 220656
SHEET C1.07



1. ODOT ITEM 304 6" AGGREGATE BASE
2. ODOT ITEM 441 3 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), P.G. 64-22
3. ODOT ITEM 407 TACK COAT (0.15-0.20 GAL/SQ. YD.)
4. ODOT ITEM 441 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), P.G. 64-22
5. ODOT ITEM 204 SUBGRADE COMPACTION

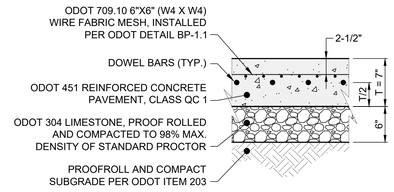
STANDARD DUTY PAVEMENT SECTION
NTS



PAVEMENT SECTION BASED ON TYPICAL SITE CONDITIONS. ANY AREAS OF BAD SOILS MUST BE REMOVED AND RECOMPACTED TO 95% MODIFIED PROCTOR.

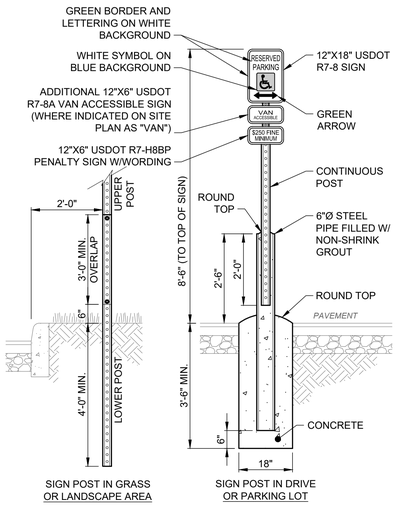
1. ODOT ITEM 608 4" CONCRETE WALK
2. ODOT ITEM 304 4" AGGREGATE BASE
3. ODOT ITEM 204 PROOF-ROLLED SUBGRADE

SIDEWALK SECTION
NTS



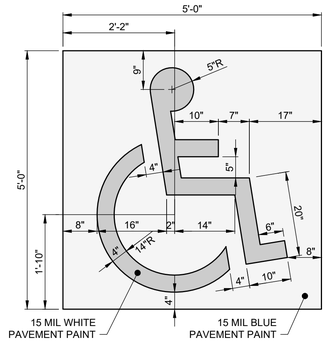
NOTES:
1. CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL JOINTS. DIVIDE JOINTS INTO EQUALLY SPACED RECTANGULAR BLOCKS.
2. APPLY LIQUID-MEMBRANE CURING COMPOUND (200 S.F./GAL.).
3. IF UNSUITABLE SOILS EXISTS, UNDERCUT SUBGRADE AND REPLACE WITH ODOT ITEM 304 CRUSHED LIMESTONE, 12" MIN.

REINFORCED CONCRETE PAVEMENT DETAIL
SCALE: NONE

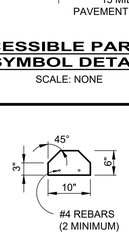


NOTES:
1. ALL CONCRETE SHALL BE ODOT ITEM 499, CLASS QC-1.
2. POST SHALL BE 2 LB/FT GALVANIZED STEEL U-CHANNEL WITH 3/8" HOLES ON 1" CENTERS.
3. PAINT STEEL PIPE TRAFFIC YELLOW OR COLOR PER PLAN.
4. LOCATE SIGNS ON BOTH SIDES WHERE ACCESSIBLE PARKING STALLS FACE EACH OTHER.

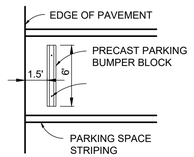
'ACCESSIBLE PARKING' SIGN W/ POST DETAIL
SCALE: NONE



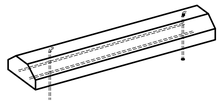
ACCESSIBLE PARKING SYMBOL DETAIL
SCALE: NONE



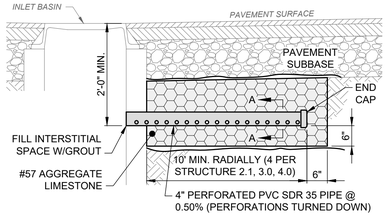
X-SECTION
NTS

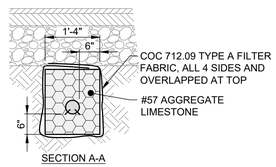


PLACEMENT PLAN
NTS

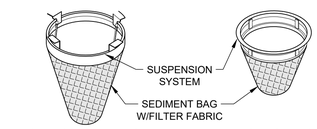


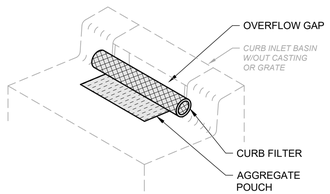
PARKING BLOCK DETAIL
NTS

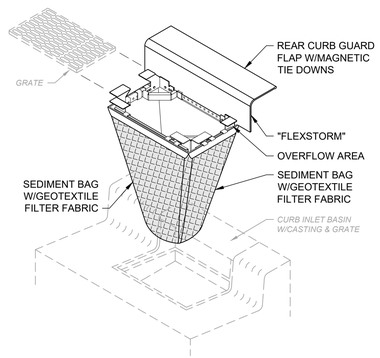


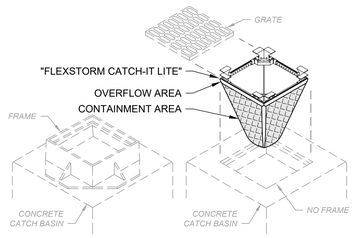


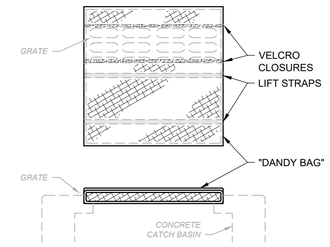
FINGER DRAIN DETAIL
NTS





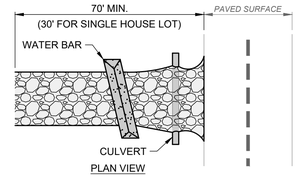




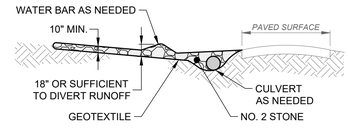


NOTES:
1. ALL NEW AND EXISTING STORM INLET BASINS WITHIN THE WORK LIMITS SHALL HAVE INLET PROTECTION INSTALLED.
2. INLET PROTECTION SHALL BE INSTALLED AS EACH STORM INLET IS CONSTRUCTED.
3. NOT ALL ITEMS SHOWN MAY APPLY OR DIFFERENT TYPES OR CONFIGURATIONS MAY BE REQUIRED. THE CONTRACTOR SHALL MEASURE EACH INLET TO CONFIGURE AND ASSEMBLE CUSTOMIZED INLET FILTERS.

INLET PROTECTION DETAIL
SCALE: NONE



PLAN VIEW



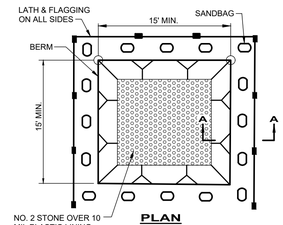
PROFILE

NOTES:
1. GEOTEXTILE SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS MEETING THE FOLLOWING:

TENSILE STRENGTH	200 LB
PUNCTURE STRENGTH	80 PSI
TEAR STRENGTH	50 LB
BURST STRENGTH	320 PSI
ELONGATION	20%
EQUIVALENT OPENING SIZE	< 0.6 MM
PERMITTIVITY	0.001 CM/SEC.

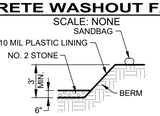
2. INSTALL WATER BAR, AS NEEDED, TO PREVENT SURFACE RUNOFF FROM FLOWING OUT ONTO PAVEMENT.
3. APPLY ADDITIONAL STONE AS CONDITIONS DEMAND, REPLENISH STONE WHEN THE DEPTH IS LESS THAN 6", AND REPLACE IF STONES BECOMES MUD-LADEN.
4. IMMEDIATELY REMOVE MUD DROPPED, WASHED OR TRACKED ONTO ROADS OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS BY SCRAPING OR SWEEPING.
5. CONSTRUCTION ENTRANCE SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES OR PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
6. CONSTRUCTION ENTRANCE SHALL REMAIN UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY.

CONSTRUCTION ENTRANCE DETAIL
SCALE: NONE



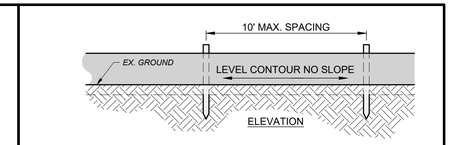
PLAN
TYPE "BELOW GRADE"

CONCRETE WASHOUT FACILITY
SCALE: NONE

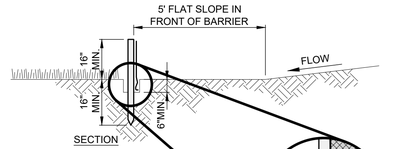


SECTION A-A
NTS

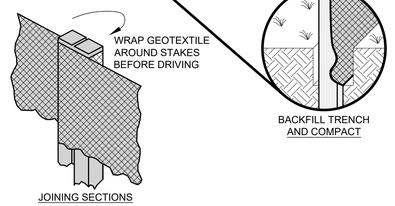
CONCRETE WASHOUT NOTES:
1. WASHOUT LOCATIONS SHALL BE GRADED IN SUCH A MANNER TO DRAIN AWAY FROM THE ADJACENT CREEK TO AVOID SPILL OVER.
2. WASHOUTS SHALL BE MAINTAINED DAILY. ACCUMULATED MATERIALS SHALL BE DISPOSED OF IN AN ENVIRONMENTALLY SOUND MANNER IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. THERE SHALL BE NO DISPOSAL IN OR NEAR ANY WATER BODY, FLOODPLAIN, WETLAND, DRAINAGE COURSE OR ENVIRONMENTALLY SENSITIVE AREAS, EVEN WITH PERMISSION OF THE PROPERTY OWNER.



ELEVATION



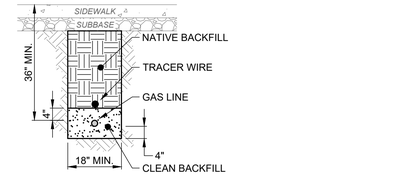
SECTION



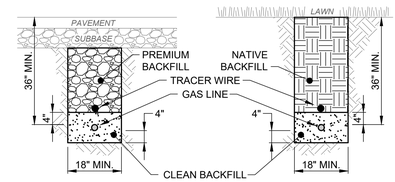
JOINING SECTIONS

NOTES:
1. PRESERVE VEGETATION FOR 5 FEET OR AS MUCH AS POSSIBLE UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE RE-ESTABLISHED WITHIN 7 DAYS FROM SILT FENCE INSTALLATION.
2. THE MAXIMUM DRAINAGE AREA PER 100 FEET OF SILT FENCE IS DEPENDENT ON THE SLOPE, BUT NO MORE THAN 1/2 ACRE. SILT FENCE CANNOT BE USED FOR DRAINAGE AREAS WITH SLOPES GREATER THAN 50%.
3. SILT FENCE MAY ONLY PASS RUNOFF AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, THEN CHANGE THE LAYOUT OF THE SILT FENCE, REMOVE ACCUMULATED SEDIMENT OR INSTALL OTHER PRACTICES.
4. SILT FENCE SHALL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, VERIFICATION FABRIC IS SECURELY ATTACHED TO FENCE POSTS, AND VERIFICATION FENCE POSTS ARE FIRMLY IN THE GROUND. BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED 1/3 THE FENCE HEIGHT.

SILT FENCE DETAIL
SCALE: NONE



UNDER SIDEWALK



UNDER PAVEMENT UNDER LAWN

NOTES:
1. THE CONTRACTOR SHALL PROVIDE ALL TRENCHING, TRACER WIRES AND BACKFILL.
2. GAS COMPANY WILL INSTALL GAS MAINS AND SERVICES.
3. ENDS OF TRACER WIRES SHALL BE BROUGHT ABOVE GROUND AT A BUILDING WALL OR RISER.

GAS MAIN OR SERVICE TRENCH DETAIL
SCALE: NONE

STATE OF OHIO
JUSTIN HASELTON
E-72378
REGISTERED PROFESSIONAL ENGINEER

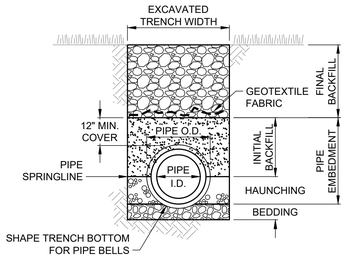
REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/29/2024
DRAWN BY: JRH
CHECKED BY: WTV
APPROVED BY:
F.B. NO.: PG.:

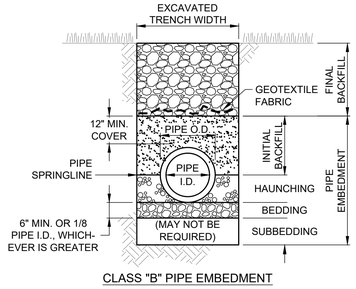
NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

SITE DETAILS

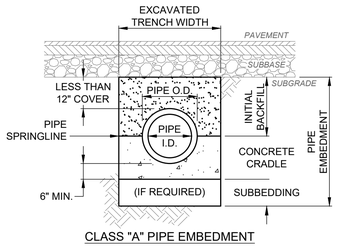
SCALE: AS NOTED
CONTRACT NO: 220656
SHEET C1.08



CLASS "C" PIPE EMBEDMENT



CLASS "B" PIPE EMBEDMENT



CLASS "A" PIPE EMBEDMENT

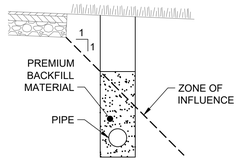
NOTES:

1. EXCAVATED TRENCH WIDTH: MEASURED FROM BOTTOM OF TRENCH TO 12" OVER TOP OF PIPE (WITHIN THE PIPE EMBEDMENT), THE MIN. TRENCH WIDTH SHALL BE 9" AND THE MAX. SHALL BE:
   - O.D.+ 24" FOR 24" AND SMALLER I.D. PIPE
   - O.D.+ 30" FOR 27" THRU 48" I.D. PIPE
   - O.D.+ 48" FOR 60" AND LARGER I.D. PIPE
2. FINAL BACKFILL: ALL AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE SHALL BE PREMIUM BACKFILL (ODOT ITEM 304 LIMESTONE). PAVEMENT INCLUDES ROADWAY, SHOULDER AND DRIVEWAY, BUT NOT SIDEWALK. NO SLAG OR SLACKER AGGREGATES ALLOWED. IN ALL OTHER AREAS, THE FINAL BACKFILL SHALL BE SUITABLE ON-SITE MATERIAL.
3. PIPE EMBEDMENT:

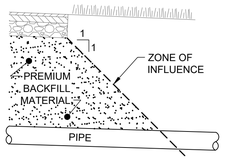
   CLASS "A": SHALL BE USED FOR ALL PIPES UNDER PAVEMENT OR STRUCTURES WITH LESS THAN 12" OF PIPE COVER TO THE SUBGRADE. THE CONCRETE CRADLE SHALL BE IN ACCORDANCE WITH ODOT ITEM 499, CLASS QC-1. THE INITIAL BACKFILL SHALL BE NO. 57 COURSE INTERLOCKING LIMESTONE AGGREGATE.

   CLASS "B": SHALL BE USED FOR ALL PIPES UNLESS OTHERWISE NOTED ON THE PLANS. BEDDING AND HAUNCHING SHALL BE NO. 57 OR 67 COURSE INTERLOCKING LIMESTONE AGGREGATE. IN AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE, THE INITIAL BACKFILL SHALL BE NO. 57 OR 67 COURSE INTERLOCKING LIMESTONE AGGREGATE. IN ALL OTHER AREAS, THE INITIAL BACKFILL MAY BE SUITABLE ON-SITE MATERIAL FOR RIGID PIPE, AND SHALL BE NO. 57 OR 67 COURSE INTERLOCKING LIMESTONE AGGREGATE FOR FLEXIBLE PIPE.

   CLASS "C": SHALL BE USED ONLY FOR DUCTILE IRON WATER MAIN OR FORCE MAIN. THE PIPE EMBEDMENT SHALL BE NO. 57 OR 67 COURSE INTERLOCKING LIMESTONE AGGREGATE IN ALL AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE. IN ALL OTHER AREAS, THE PIPE EMBEDMENT SHALL BE SUITABLE ON-SITE MATERIAL. BEDDING IS NOT REQUIRED. WHERE ROCK OR SHALE IS ENCOUNTERED, BEDDING SHALL BE 6" MIN. OF NO. 57 OR 67 COURSE INTERLOCKING LIMESTONE AGGREGATE OR SAND.
4. SUBBEDDING: WHERE AN UNSTABLE TRENCH BOTTOM CONDITION IS ENCOUNTERED, EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH MATERIAL AS DIRECTED BY THE ENGINEER.
5. GEOTEXTILE FABRIC SHALL BE PER ODOT 712.09, TYPE A, AND INSTALLED AFTER ALL INITIAL BACKFILL.
6. CLAY TRENCH DAMS SHALL BE REQUIRED FOR EACH LATERAL, UPSTREAM OF EVERY MANHOLE, AS SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.



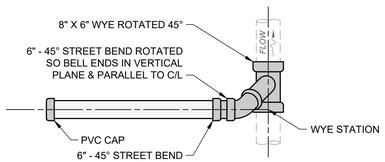
PARALLEL ZONE OF INFLUENCE



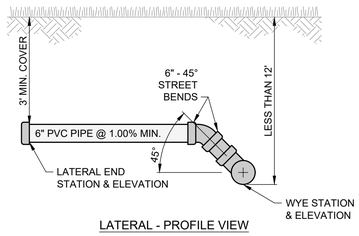
TRANSVERSE ZONE OF INFLUENCE

TRENCHING, EMBEDMENT AND BACKFILL DETAIL

SCALE: NONE



LATERAL - PLAN VIEW



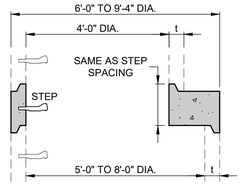
LATERAL - PROFILE VIEW

NOTES:

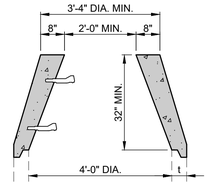
1. THIS DETAIL SHOWS 6" LATERAL PIPE FOR REFERENCE ONLY. SEE PLANS FOR ACTUAL PIPE SIZES, MATERIALS, SLOPES AND ELEVATIONS.

SANITARY LATERAL CONNECTION (<12') DETAIL

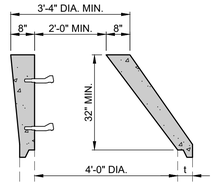
SCALE: NONE



FLAT SLAB TRANSITION

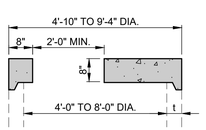


CONCENTRIC CONE TOP

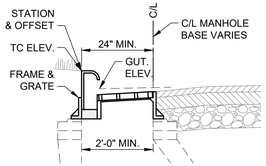


ECCENTRIC CONE TOP

MANHOLE		MAX. PIPE I.D.	
BASE I.D.	MIN. WALL "t"	STRAIGHT THRU INSTALLATION	RIGHT ANGLE INSTALLATION
4'-0"	5"	27"	24"
5'-0"	5"	36"	30"
6'-0"	6"	42"	36"
7'-0"	7"	54"	42"
8'-0"	8"	60"	48"



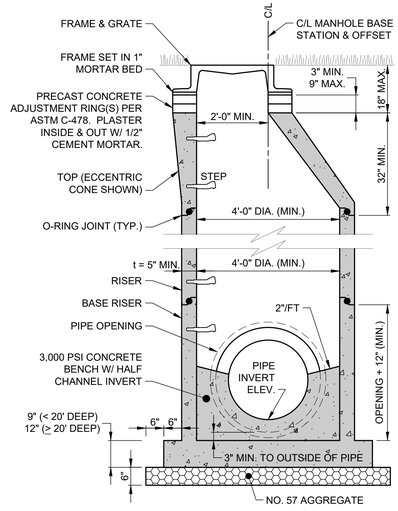
FLAT SLAB TOP



ADJACENT TO CURB

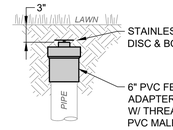
NOTES:

1. TOP SECTION SHALL BE AN ECCENTRIC CONE. ROTATE CONE TO OFFSET MANHOLE CASTING TO AVOID SIDEWALKS, UNDERDRAINS AND CURBS. USE FLAT SLAB TOP IF MANHOLE IS LESS THAN 6'-3" DEEP.
2. LARGER BASE WITH TRANSITION SECTION MAY REQUIRED BASED ON PIPE SIZES, QUANTITIES AND ANGLES.
3. PRECAST MANHOLE AND REINFORCEMENT SHALL CONFORM TO ASTM C-478.
4. STRUCTURE SHALL MEET H-20 LOADING.
5. BASE MUST BE PRECAST MONOLITHIC WITH BASE RISER.
6. ALL PRECAST CONCRETE SECTIONS SHALL BE MANUFACTURED AND FURNISHED AS SOLID SECTIONS WITHOUT LIFT HOLES OF ANY KIND.
7. O-RING JOINT BETWEEN PRECAST MANHOLE SECTIONS SHALL BE RESILIENT WATERTIGHT GASKET PER ASTM C-443.
8. ALL PIPE OPENINGS MUST BE PRECAST WITH FLEXIBLE CONNECTIONS (Z-LOK OR A-LOK) PER ASTM C-923. [OR: PIPE OPENINGS <24" MUST BE PREFABRICATED WITH FLEXIBLE CONNECTIONS (Z-LOK OR A-LOK) PER ASTM C-923. LARGER PIPES MAY USE FLEXIBLE CONNECTIONS OR FILL INTERSTITIAL SPACE WITH GROUT.]
9. USE REINFORCED PLASTIC MANHOLE STEPS.
10. FIRST STEP SHALL NOT BE MORE THAN 2'-0" BELOW TOP OF FRAME. MAKE PROJECTION 3-1/2" IF IN 24" DIA. SECTION.
11. CASTING TYPE VARIES BASED ON MANHOLE LOCATION AND SHALL BE AS FOLLOWS OR PER PLAN:
    A. IN PAVEMENT: EJ 1040 FRAME WITH TYPE "B" VENTED COVER LABELED "STORM".
    B. IN PAVEMENT ADJACENT TO CURB: EJ 7010 FRAME WITH TYPE "M4" VANE GRATE AND "T1" BACK.
    C. IN SIDEWALK: EJ 1040 FRAME WITH TYPE "A" SOLID COVER LABELED "STORM".
    D. IN GRASS: EJ 1040 FRAME WITH TYPE "N" OVAL GRATE.
11. ANY PRECAST CONCRETE SECTION DAMAGED IN TRANSIT OR ON-SITE AND WHERE THE WATER TIGHTNESS OF THE SECTION HAS BEEN ADVERSELY AFFECTED SHALL BE REPLACED AND NOT UTILIZED IN THE CONSTRUCTION OF THE MANHOLE.

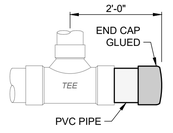


PRECAST CONCRETE MANHOLE (STORM) DETAIL

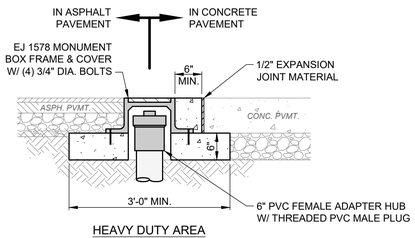
SCALE: NONE



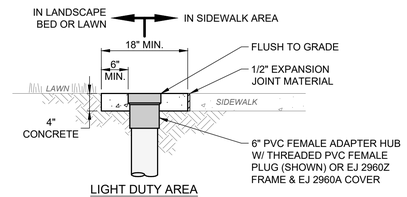
ALTERNATE FOR LAWN AREA



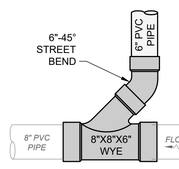
IF PIPE DOES NOT CONTINUE



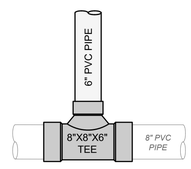
HEAVY DUTY AREA



LIGHT DUTY AREA



CLEANOUT



TEST TEE

NOTES:

1. CONCRETE SHALL BE ODOT ITEM 499, CLASS QC-1.
2. THIS DETAIL SHOWS A 6" CLEANOUT AND TEST TEE FOR REFERENCE ONLY. USE 4" CLEANOUT OR TEST TEE FOR 4" PIPE; 6" CLEANOUT OR TEST TEE FOR 6" PIPE AND LARGER; OR AS PER PLAN. NOT ALL ITEMS SHOWN MAY APPLY.

STORM & SANITARY CLEANOUT & TEST TEE DETAIL

SCALE: NONE

STATE OF OHIO
JUSTIN HASELTON
E-72378
REGISTERED PROFESSIONAL ENGINEER

REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/29/2024
DRAWN BY: JRH
CHECKED BY: WTV
APPROVED BY:
F.B. NO.: PG.:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

SITE DETAILS

SCALE: AS NOTED
CONTRACT NO: 220656
SHEET C1.09

EXHIBIT A
GENERAL WATER NOTES
LAKE COUNTY DEPARTMENT OF UTILITIES

1. ONLY WATER/SEWER CONTRACTORS LICENSED BY THE LAKE COUNTY BOARD OF COMMISSIONERS MAY INSTALL WATER MAINS.

2. THIS APPROVAL BY THE LCDU SHALL EXPIRE IF THE WATERLINE CONSTRUCTION HAS NOT BEEN INITIATED BY A DEVELOPER WITHIN (12) MONTHS OF THE EFFECTIVE APPROVAL DATE AS SHOWN ON THE ORIGINALLY SUBMITTED FOR APPROVAL BLUEPRINT COPY. (THIS IS NOT TO BE CONSTRUED AS THE DATE THAT IS SHOWN ON THE ORIGINAL MYLAR TITLE SHEET.)

3. THE CONTRACTOR SHALL NOTIFY THE LCDU AT LEAST 48 HOURS IN ADVANCE OF ANY WORK IN THEIR SYSTEMS.

4. THE LCDU SHALL PERFORM INSPECTION SERVICES. THE COST OF INSPECTION SHALL BE INCLUDED AS PART OF THIS CONSTRUCTION PROJECT AT THE CURRENT BASE RATE AS ESTABLISHED BY THE LAKE COUNTY BOARD OF COMMISSIONERS. (SEE SECTION 7 FEE SCHEDULE) COST FOR LAKE COUNTY INSPECTION FEE AND OTHER FEES SHALL BE INCLUDED IN THE UNIT PRICES BID FOR OTHER WATERLINE ITEMS.

5. WATERLINE WORK SHALL NOT BEGIN UNTIL THE AREAS OF CONSTRUCTION ARE ROUGH GRADED.

6. ALL WATERLINES ON THIS PROJECT SHALL BE LAID AT THE ELEVATIONS AND GRADES SHOWN ON THE DRAWINGS. HIGH POINTS IN THE WATERLINE MUST OCCUR AT THE STATIONED HYDRANT TEE LOCATIONS.

7. ALL HYDRANTS SHALL BE POSITIONED SO THAT THE STEAMER NOZZLES POINT IN THE DIRECTION SHOWN ON THE PLANS.

8. THE PROPOSED WATERLINE SHALL HAVE 5' MINIMUM COVER OVER THE TOP OF PIPE AT ALL PLACES, EXCEPT AT SPECIFIC HYDRANT TEE LOCATIONS AS SHOWN ON THE PLANS.

9. ALL BOLTS SHALL BE STAINLESS STEEL TYPE 304 OR 316. WITH ANTI-GALLING AGENT.

10. ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR PRELIMINARY CHECKING. THE ENGINEER SHALL FORWARD CHECKED SHOP DRAWINGS TO THE LCDU FOR FINAL CHECKING AND APPROVAL.

11. THE LCDU SHALL PROVIDE WATER FOR THE NEW WATER MAIN WITHOUT COST FOR THE INITIAL OPERATION. ALL WATER FOR FLUSHING OPERATIONS SHALL BE PAID FOR BY THE CONTRACTOR AT CURRENT RATES AS ESTABLISHED BY THE LAKE COUNTY BOARD OF COMMISSIONERS PER 100 CUBIC FEET OF WATER USED. (SEE SECTION 7 FEE SCHEDULE)

12. ALL WATER MAIN PIPE SHALL BE DUCTILE IRON PIPE, OR C909 PVCO MINIMUM THICKNESS DR11 ANSI A21.51, THICKNESS CLASS 53, UNLESS OTHERWISE SHOWN

ON THE PLANS, WITH PUSH-ON JOINTS, CEMENT LINED ANSI A 21.4. FITTINGS TO BE FULL BODY-ONLY.

13. LOCATION OF STERILIZATION AND TESTING CONNECTIONS SHALL BE AS DIRECTED BY THE LCDU AND ALL COSTS ASSOCIATED WITH PLACING AND UTILIZING SAID STERILIZATION AND TESTING CONNECTIONS SHALL BE INCLUDED IN THE PRICE BID PER LINEAL FOOT OF THE WATER MAINS. NO BACTERIA SAMPLES ARE TO BE TAKEN FROM FIRE HYDRANTS.

14. LCDU WILL MAKE THE NECESSARY NEW SERVICE CONNECTION TAPS ON EXISTING LCDU MAINS FOR THE CONTRACTOR AT CURRENT RATES AS ESTABLISHED BY THE LAKE COUNTY BOARD OF COMMISSIONERS PER 8" AND GREATER TAPS WITHIN RIGHT OF WAY. (SEE SECTION 7 FEE SCHEDULE) SERVICE CONNECTIONS TO EXISTING BUILDINGS SHALL BE MADE BY THE CONTRACTOR.

15. NO WATER SERVICE CONNECTIONS TO ANY BUILDING SHALL BE PERMITTED PRIOR TO FINAL ACCEPTANCE BY THE LCDU INCLUDING RECTIFICATION OF ALL PUNCH LIST ITEMS.

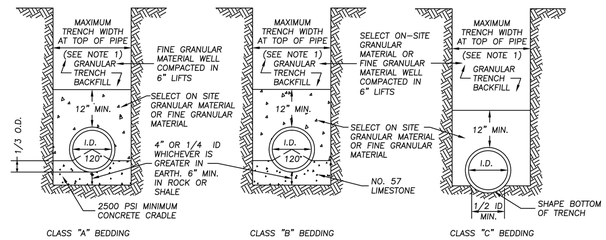
16. ALL CURB STOP BOXES, VALVE BOXES, ETC. TO BE SET AS SHOWN ON THE PLANS. RIMS WILL BE RAISED OR LOWERED AND BOXES PLUMBED BY THE CONTRACTOR AT TIME OF HOUSE CONSTRUCTION WHEN FINAL YARD GRADING IS COMPLETED.

17. ALL PROJECT HYDRANTS SHALL HAVE A FIELD COAT OF APPROVED PAINT APPLIED BY THE CONTRACTOR WITH THE EXCEPTION OF HYDRANTS THAT ARE FACTORY PAINTED WITH A ONE COAT UV RESISTANT HIGH GLOSS 2-PART POLYURETHANE ENAMEL, COLOR AS SPECIFIED. IF THE COATING ON THE HYDRANT IS DAMAGED BEFORE INSTALLATION THE HYDRANT MUST BE PAINTED.

18. THE CONTRACTOR SHALL NOTIFY THE FIRE DEPARTMENT PRIOR TO ANY PRESSURE TESTING. FIRE DEPARTMENT SHALL WITNESS ANY PRESSURE TESTING.

19. ALL PROPOSED WATER LINES SHALL BE LAID OUT BY A REGISTERED SURVEYOR WITH GRADE STAKES AT A MINIMUM OF EVERY 50' AND AT ALL FITTINGS AND A CUT SHEET PROVIDED PRIOR TO CONSTRUCTION.

20. THE CONTRACTOR/DEVELOPER SHALL SUBMIT A THREE YEAR MAINTENANCE BOND TO THE COMMISSIONERS BY DEVELOPER IN THE AMOUNT OF TEN PERCENT OF THE FINAL CONSTRUCTION COSTS AS CERTIFIED BY THE DEVELOPER'S ENGINEER, FOR PUBLIC EXTENSION PROJECTS.



CLASS "A" BEDDING CLASS "B" BEDDING CLASS "C" BEDDING

NOTES:
1. MAXIMUM TRENCH WIDTH AT TOP OF PIPE SHALL BE O.D. +24" FOR ALL PIPE SIZES UP TO AND INCLUDING 24" I.D., AND O.D. +30" FOR PIPE LARGER THAN 24" I.D.
2. GRANULAR TRENCH PIPE BACKFILL UNDER PAVEMENT AND STRUCTURES SHALL BE ODOT 304 LIMESTONE COMPACTED TO TOP OF TRENCH. SEE SECTION 1.24 FOR COMPACTION REQUIREMENTS. THE BACKFILL MATERIAL SHALL EXTEND A MINIMUM OF 3-FEET BEYOND EACH EDGE OF PAVEMENT OR STRUCTURE. IN AREAS OUTSIDE OF PAVEMENT, SELECT ON-SITE GRANULAR MATERIAL APPROVED BY LAKE COUNTY SANITARY ENGINEER MAY BE USED IN LIFTS NOT TO EXCEED 6-INCHES FOR PIPE BACKFILL ABOVE BEDDING.
3. ALL BEDDING SHALL BE CLASS "C" UNLESS OTHERWISE NOTED ON THE PLANS OR REQUIRED BY THE SANITARY ENGINEER.
4. SLAG SHALL NOT BE USED FOR BEDDING OR BACKFILL.
5. RECYCLED CONCRETE SHALL NOT BE USED.
6. CLAY DAMS SHALL BE REQUIRED WHEN AND WHERE NECESSARY PER THE SOLE DISCRETION OF THE LCDU.
7. THESE SPECIFICATIONS ARE TO BE CONSIDERED MINIMUM REQUIREMENTS AND ARE SUPERSEDED BY THE REQUIREMENTS OF THE LOCAL AUTHORITY WITH JURISDICTION OVER THE ROADWAY, WHEN APPLICABLE.

FIG 2.22.1

FOR WATER ONLY
SEE FIG 3.17.1 FOR SANITAARY

LAKE COUNTY DEPARTMENT OF UTILITIES		
TRENCH AND BEDDING DETAILS		
DATE: 6-16	DRAWN BY: DDB	SCALE: NONE

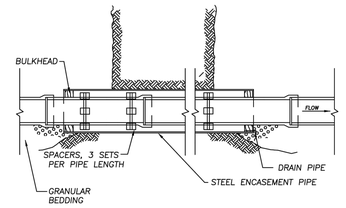
FOR C909 PVC WATERLINE ONLY

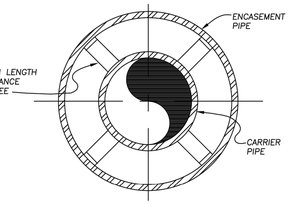
WATERLINE IN TREELAWN WATERLINE UNDER PAVEMENT AND/OR SIDEWALK

NOTES:
1. RECYCLED MATERIAL SHALL NOT BE USED.
ALL VALVES, HYDRANTS, HYDRANT VALVES SHALL BE BACKFILLED WITH 57 LIMESTONE.
2. FINE GRANULAR MATERIAL SHALL HAVE NO ROUGHS BIGGER THAN 1-INCH TO 2-INCH IN DIAMETER.
3. ON-SITE GRANULAR MATERIAL REQUIRED, OTHERWISE PROVIDE SAND (ODOT 703) OR ODOT 304.

FIG 2.22.2

LAKE COUNTY DEPARTMENT OF UTILITIES		
FLEXIBLE TRENCH AND BEDDING		
DATE: 10-2020	DRAWN BY: SC	SCALE: NONE



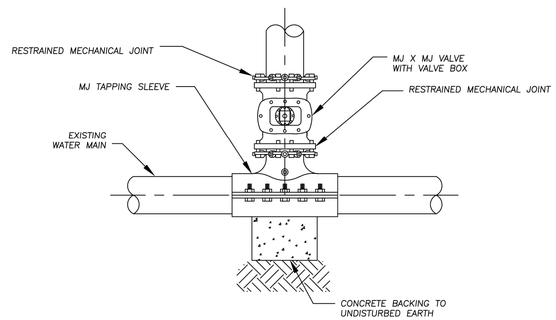


SECTION

NOTES:
1. WELD ALL ENCASEMENT PIPE JOINTS
2. MINIMUM THICKNESS FOR NEW CASING PIPE IS 3/8 INCHES. MINIMUM THICKNESS FOR USED CASING PIPE IS 1/2 INCHES. *1/2 IN. IS MIN. FOR R.R. BORES*
3. CASING DIAMETER SHALL BE A MINIMUM OF 6" GREATER THAN THE LARGEST O.D. OF THE CARRIER PIPE.
4. PROVIDE A 3/4" DRAIN PIPE AT THE BOTTOM OF THE DOWNSTREAM BULKHEAD.
5. CARRIER PIPE TO BE BOLTLESS RESTRAINT CL 56 PIPE.

WATER ONLY FIG 2.5.1

LAKE COUNTY DEPARTMENT OF UTILITIES		
BORING AND STEEL ENCASEMENT PIPE DETAILS		
DATE: 5-16	DRAWN BY: D.D.B.	SCALE: NONE



NOTES:
THE SIZE AND TYPE OF THE EXISTING WATER MAIN SHALL BE FIELD VERIFIED PRIOR TO CUTTING INTO THE EXISTING MAIN TO ENSURE CORRECT SOLID SLEEVE SIZE.
NO CAST IRON FITTINGS SHALL BE PERMITTED.
* = CONNECTION SHALL BE MADE WITH RESTRAINED MECHANICAL JOINT SOLID SLEEVES (LONG PATTERN) DUCTILE IRON CLASS 350.
ALL MATERIALS TO CONFORM TO THE LCDU APPROVED MATERIAL LIST.

FIG 2.6.3

LAKE COUNTY DEPARTMENT OF UTILITIES		
M.J. TAPPING SLEEVE & VALVE		
DATE: 10-09	DRAWN BY: D.D.B.	SCALE: NONE

STATE OF OHIO
JUSTIN HASELTON
E-72378
REGISTERED PROFESSIONAL ENGINEER

REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/29/2024
DRAWN BY: JRH
CHECKED BY: WTV
APPROVED BY:
F.B. NO.: PG.:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

SITE DETAILS

SCALE: AS NOTED
CONTRACT NO: 220656
SHEET C1.10

SITE INFORMATION

PROJECT INFORMATION:
1825 LOST NATION ROAD
WILLOUGHBY, LAKE COUNTY, OHIO 44094
LATITUDE: 41.6808 LONGITUDE: 81.3994

OWNER INFORMATION:
LAKE COUNTY EXECUTIVE AIRPORT

SITE-CIVIL ENGINEER INFORMATION:
CT CONSULTANTS, INC.
1001 LAKESIDE AVE. E, SUITE 1005
CLEVELAND, OHIO 44114
CONTACT: WILLIAM VASKO, PE
PHONE: 216-430-8503
EMAIL: WVASKO@CTCONSULTANTS.COM

TYPE OF CONSTRUCTION:
(X) NEW ( ) MAINTENANCE () REDEVELOPMENT

TYPE OF PROJECT:
( ) RETAIL (X) COMMUNITY ( ) MIXED USE
() OFFICE () RECREATION ( ) RESIDENTIAL
( ) MEDICAL ( ) PUBLIC SAFETY ( ) RESTAURANT
( ) UTILITY ( ) EDUCATION ( ) APARTMENT
( ) ROAD ( ) INDUSTRIAL ( ) MANUFACTURING

DESCRIPTION OF PROJECT:
CONSTRUCTION OF A NEW BUILDING WITH NEW STORM SEWERS, SITE GRADING, BUILDING UTILITY CONNECTIONS, AND SITE LIGHTING. STORM WATER WILL BE DIRECTED TO A HYDRODYNAMIC SEPARATOR AND UNDERGROUND DETENTION SYSTEM TO TREAT BOTH WATER QUALITY AND QUANTITY. WATER WILL OUTLET TO AN EXISTING STORM SEWER LOCATED ON LOST NATION ROAD.

SOIL DISTURBING ACTIVITIES INCLUDE:
EROSION AND SEDIMENT CONTROL INSTALLATION; REMOVAL OF VEGETATION, TOPSOIL, AND THE EXISTING PAVEMENT, AND SOIL BENEATH PAVEMENT; EARTHWORK GRADING; AND INSTALLATION OF NEW STORM WATER MANAGEMENT SYSTEM, UTILITIES, BUILDING AND ASPHALT PARKING LOT.

DESCRIPTION OF PRIOR LAND USE:
THE EXISTING SITE IS AN AIRPORT PROPERTY WITH AN EXISTING DRIVEWAY AND FENCE.

SITE AREA INFORMATION:

PROJECT LIMIT/CONSTRUCTION AREA:	0.91	AC.
AREA OF SOIL DISTURBANCE:	0.91	AC.
EXISTING IMPERVIOUS AREA:	0.08	AC.
PROPOSED IMPERVIOUS AREA:	0.43	AC.
INCREASE/DECREASE OF IMPERVIOUS AREA:	438	%
PRE-CONSTRUCTION RUNOFF COEFFICIENT:	.54	
POST-CONSTRUCTION RUNOFF COEFFICIENT:	.69	

NAME OF RECEIVING STREAM, SURFACE WATER OR MS4:
CITY OF WILLOUGHBY MS4

QUALITY OF STORM WATER DISCHARGE FROM SITE:
UNKNOWN

GENERAL NOTES

1. THE CONTRACTOR SHALL REVIEW AND FOLLOW THE PRACTICES AND REQUIREMENTS PROVIDED IN THE CURRENT, ACTIVE OHIO EPA NPDES PERMIT NO. OHC000006.
2. THIS SWP3 HAS BEEN PREPARED SHOWING THE ITEMS LISTED BELOW, BUT THE CONTRACTOR MAY NEED TO MOVE OR ADD ITEMS AS CONSTRUCTION PROGRESSES OR DURING THE VARIOUS STAGES OF CONSTRUCTION. THE CONTRACTOR IS REQUIRED TO DEVELOP THE SWP3 FOR THIS PROJECT AND SUBMIT FOR APPROVAL TO THE SWCD SHOWING THE ITEMS LISTED BELOW. SOME ITEMS MAY ALREADY BE SHOWN ON THE SWP3, BUT MOVED TO BETTER SUIT THE CONTRACTOR'S MEANS AND METHODS.
   - LIMITS OF EARTH DISTURBING ACTIVITY
   - CONSTRUCTION ENTRANCE(S)
   - EROSION AND SEDIMENT CONTROL MEASURES
   - CONCRETE WASHOUT PIT(S)
   - EQUIPMENT STAGING
   - FUEL STORAGE AND VEHICLE FUELING AREA
   - CONSTRUCTION TRAILER(S)
   - SANITATION FACILITY
   - MATERIAL STOCKPILE LOCATION(S)
   - ANY OTHER EROSION CONTROL REQUIRED
2. ALL WORK REQUIRED TO IMPLEMENT THIS PLAN INCLUDING INSPECTION FEES, MAINTENANCE AND REPAIRS SHALL BE DONE BY AND AT THE EXPENSE OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL AMEND THIS PLAN WHEN THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE THAT REQUIRES INSTALLATION OF BMPS OR MODIFICATION TO EXISTING BMPS.
4. ADDITIONAL OR DIFFERENT BMPS MAY BE NEEDED AS CONSTRUCTION PROGRESSES OR AS REQUIRED BY THE OWNER, SWCD OR OHIO EPA.
5. PHASE CONSTRUCTION ACTIVITIES TO MINIMIZE LAND DISTURBED AT ANY ONE TIME AND LEAVE EXISTING VEGETATION IN PLACE AS LONG AS POSSIBLE.

EROSION CONTROL NOTES

1. SPECIAL MEASURES SHALL BE TAKEN TO STABILIZE DRAINAGE CHANNELS AND STORM WATER OUTFALLS.
2. DIVERT SURFACE RUNOFF AWAY FROM DISTURBED AREAS AND STEEP SLOPES WHEREVER PRACTICABLE.
3. STABILIZATION OF DISTURBED AREAS SHALL BE INITIATED WITHIN THE TIME FRAMES IN THE FOLLOWING TABLES:

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY CONTROLS
AREA WITHIN 50 FEET OF A SURFACE WATER, NOT AT FINAL GRADE AND TO REMAIN IDLE MORE THAN 14 DAYS	WITHIN 2 DAYS OF MOST RECENT DISTURBANCE
ANY OTHER AREA TO BE DORMANT MORE THAN 14 DAYS, BUT LESS THAN 1 YEAR	WITHIN 7 DAYS OF MOST RECENT DISTURBANCE
AREA TO REMAIN IDLE OVER WINTER	PRIOR TO ONSET OF WINTER WEATHER
AREA TO BE PAVED	STABILIZE WITH STONE SUBBASE UNTIL PAVED

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY CONTROLS
AREA TO BE DORMANT FOR 1 YEAR OR MORE	WITHIN 7 DAYS OF MOST RECENT DISTURBANCE
AREA WITHIN 50 FEET OF A SURFACE WATER AND AT FINAL GRADE	WITHIN 2 DAYS OF REACHING FINAL GRADE
ANY OTHER AREA AT FINAL GRADE	WITHIN 7 DAYS OF REACHING FINAL GRADE

OTHER WASTE CONTROL NOTES

1. SOIL STOCKPILES SHALL BE RINGED WITH SILT FENCE ALONG THE BOTTOM FOOTPRINT. IF THE STOCKPILE WILL BE INACTIVE FOR 14 DAYS OR MORE, THE SURFACE SHALL BE SEEDED OR STABILIZED WITHIN 7 DAYS OF LAST DISTURBANCE.
2. CONCRETE TRUCKS ARE NOT PERMITTED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ONTO THE GROUND OR INTO STORM INLETS, DITCHES, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS. ALL EXCESS CONCRETE AND CONCRETE WASHOUT, INCLUDING FROM HAND MIXERS AND LIGHT EQUIPMENT, MUST BE DISPOSED OF IN A CONCRETE WASHOUT AREA TO COLLECT AND HARDEN.
3. OFF-SITE TRACKING OF SEDIMENT BY CONSTRUCTION VEHICLES MUST BE MINIMIZED. THE CONTRACTOR SHALL SWEEP ALL ADJACENT ROADS TO REMOVE MUD, DIRT OR ROCK TRACKED FROM THE SITE AT THE END OF EACH WORK DAY OR AS REQUIRED DURING THE DAY. DUMP TRUCKS HAULING MATERIAL FROM THE SITE SHALL BE COVERED WITH A TARPAULIN.
4. IT IS PROHIBITED TO BURN, BURY OR POUR ONTO THE GROUND OR INTO STORM INLETS, DITCHES, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS SOLID OR LIQUID WASTE INCLUDING TRASH, CONSTRUCTION DEBRIS, SOLVENTS, PAINT, DIESEL FUEL, GASOLINE, MOTOR OIL, HYDRAULIC FLUID, CEMENT CURING COMPOUND, ANTIFREEZE OR OTHER TOXIC OR HAZARDOUS WASTE. WASTE MATERIALS SHALL BE COLLECTED IN A SECURELY LIDDED DUMPSTER, DISPOSED OF IN AN APPROVED LANDFILL AND EMPTIED AS NECESSARY.
5. FUEL TANKS, DRUMS AND OTHER CONTAINERS HOLDING CHEMICALS MUST BE STORED WITHIN A DIKED AREA WITH A VOLUME OF AT LEAST 110% OF THE LARGEST TANK. A DIKED AREA IS NOT NECESSARY IF A SELF-CONTAINED SPILL PROOF TANK IS USED.
6. THE CONTRACTOR SHALL PROVIDE TEMPORARY SANITARY FACILITIES AT THE SITE. SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS 1 TIME PER WEEK, OR MORE OFTEN IF NECESSARY.
7. ANY TOXIC OR HAZARDOUS MATERIAL SPILL, REGARDLESS OF SIZE, MUST BE REPORTED WITHIN 30 MINUTES TO THE LOCAL FIRE DEPARTMENT AND OHIO EPA.
8. CONTAMINATED SOIL, SOIL WHERE CONSTRUCTION CHEMICALS HAVE BEEN SPILLED OR HAZARDOUS WASTE MATERIALS MUST BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.
9. STORM WATER THAT COMES IN CONTACT WITH CONTAMINATED SOIL OR HAS A VISIBLE SHEEN MUST BE COLLECTED BY A VACUUM TRUCK AND DISPOSED OF AS A WASTE WATER.

SEDIMENT CONTROL NOTES

1. INLET PROTECTION AND SEDIMENT BARRIERS MUST BE INSTALLED PRIOR TO CLEARING AND GRUBBING.
2. SEDIMENT PONDS, TEMPORARILY MODIFIED PERMANENT PONDS AND PERIMETER SEDIMENT BARRIERS MUST BE INSTALLED AS THE FIRST STEP OF GRADING AND WITHIN 7 DAYS FROM THE START OF CLEARING AND GRUBBING, AND CONTINUE TO FUNCTION UNTIL ALL DISTURBED UPLAND AREAS ARE STABILIZED.
3. SEDIMENT CONTROLS MUST POND RUNOFF TO BE CONSIDERED FUNCTIONAL.
4. SEDIMENT-LADEN TRENCH OR GROUND WATER MUST PASS THROUGH A SEDIMENT-SETTLING POND OR BE DEWATERED IN-PLACE USING A SUMP PIT, FILTER BAG OR OTHER COMPARABLE METHOD, PRIOR TO DISCHARGE FROM THE SITE.
5. TRENCH AND GROUND WATER FREE FROM SEDIMENT OR OTHER POLLUTANTS MAY BE DISCHARGED WITHOUT TREATMENT, PROVIDED THIS WATER DOES NOT BECOME POLLUTANT-LADEN BY TRAVERSING OVER DISTURBED SOILS OR OTHER POLLUTANT SOURCES.
6. SETTLED MATERIAL SHALL BE DISPOSED OF IN A STABILIZED LOCATION WHERE IT WILL NOT BE CARRIED OFF-SITE OR INTO A STORM SEWER BY RAINFALL.

TMDLS AND BMPS SELECTED

1. APPLICABLE TMDLS FOR THE SITE:
   (X) PHOSPHORUS ( ) AMMONIA (X) HABITAT
   (X) NITROGEN (X) BACTERIA ( ) FLOW
   ( ) SEDIMENT/TOTAL SUSPEND SOLIDS
   (X) DISSOLVED OXYGEN/ORGANIC ENRICHMENT
2. THE FOLLOWING BMPS ARE SELECTED TO ADDRESS APPLICABLE TMDLS FOR THE PROJECT:

CONSTRUCTION SITE:
( ) DEMARCATE PROTECTED AREA BEFORE CONSTRUCTION
(X) MAINTAIN PORTABLE TOILET AND EMPTY W/OUT SPILL
( ) PROPER STORAGE OF LANDSCAPE FERTILIZER
(X) MS4 MONTHLY INSPECTIONS DURING CONSTRUCTION
(X) RESOLVE NON-COMPLIANCE SW3P INSPECTION ITEMS
( ) FINAL INSPECTION TO ENSURE BMP IMPLEMENTATION

TEMPORARY EROSION CONTROL:
( ) CHECK DAMS ( ) TEMPORARY DIVERSION
( ) SLOPE DRAIN ( ) STREAM UTILITY CROSSING
( ) DEWATERING ( ) STREAM CROSSING

TEMPORARY SEDIMENT CONTROL:
( ) SEDIMENT BASIN ( ) SEDIMENT TRAP
(X) SILT FENCE (X) INLET PROTECTION
( ) FILTER SOCK ( ) FILTER BERM

SOIL STABILIZATION:
(X) DUST CONTROL ( ) PHASED DISTURBANCE
(X) MULCHING (X) CLEARING AND GRUBBING
( ) SODDING (X) TEMPORARY SEEDING
(X) TOPSOILING (X) PERMANENT SEEDING
( ) GRADE TREATMENT (X) CONSTRUCTION ENTRANCE
( ) TEMPORARY ROLLED EROSION CONTROL PRODUCTS
( ) TURF REINFORCEMENT MATTING
( ) TREE AND NATURAL AREA PRESERVATION

PERMANENT EROSION CONTROL:
( ) GRASSED SWALE ( ) ROCK LINED CHANNEL
( ) LEVEL SPREADER ( ) ROCK OUTLET PROTECTION
( ) DIVERSION ( ) SUBSURFACE DRAIN

POLLUTION PREVENTION AND GOOD HOUSEKEEPING:
(X) ROUTINE FACILITY INSPECTIONS
(X) VISUAL ASSESSMENT OF STORM WATER DISCHARGE
( ) ANNUAL COMPREHENSIVE SITE INSPECTION
(X) SWEEP PARKING LOT AND DRIVE LANES
(X) CLEAN CATCH BASINS
(X) STORE WASTE IN LIDDED CONTAINERS
(X) LOCATE SNOW DISPOSAL AREAS AWAY FROM BMPS
( ) ESTABLISH "PICK-UP PET WASTE" STATION

POST-CONSTRUCTION:
( ) WETLAND SETBACK ( ) STREAM SETBACK
( ) WATER QUALITY POND ( ) PERMEABLE PAVEMENT
( ) GRASS FILTER STRIP ( ) INFILTRATION TRENCH
( ) TREE BOX FILTER ( ) SAND FILTER
( ) GREEN ROOF (X) LTMA
( ) BIORETENTION AREA ( ) CISTERN
( ) BIORETENTION WITH INTERNAL WATER STORAGE
( ) OPEN CHANNEL SWALES
( ) WET EXTENDED DETENTION BASIN
(X) UNDERGROUND OVERSIZED PIPE SYSTEM WITH HYDRODYNAMIC SEPARATOR
( ) RETROFIT SWMF TO TREAT WQV
( ) RETROFIT SWMF TO INCREASE INFILTRATION
( ) RETROFIT SWMF POND TO FUNCTION AS WETLAND
( ) AS-BUILT POST-BMPS
( ) SUBMIT LTMA ANNUAL MAINTENANCE REPORT TO MS4
( ) VEGETATE MAINTENANCE/STORAGE YARD OPEN AREAS
( ) IMPLEMENT LOW-MOW OR NO-MOW PRACTICES
( ) PEST MANAGEMENT PROGRAM

MAINTENANCE REQUIREMENTS

1. BMPS SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL UPSLOPE AREAS THEY CONTROL ARE STABILIZED.
2. THE CONTRACTOR SHALL PROVIDE A QUALIFIED PERSON KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICES OF EROSION AND SEDIMENT CONTROLS, POSSESS THE TECHNICAL SKILLS TO ASSESS SITE CONDITIONS THAT COULD IMPACT STORM WATER QUALITY, AND CAN ASSESS THE EFFECTIVENESS OF ANY BMP SELECTED.
3. A QUALIFIED PERSON MUST INSPECT BMPS AT LEAST ONCE EVERY 7 DAYS AND WITHIN 24 HOURS OF A 0.5" OR GREATER RAINFALL IN A 24-HOUR PERIOD TO DETERMINE IF THE SWP3 WAS PROPERLY IMPLEMENTED.
4. THE QUALIFIED PERSON MUST PREPARE A WRITTEN REPORT AFTER EACH INSPECTION SUMMARIZING INSPECTION RESULTS INCLUDING THE FOLLOWING:
   - DATE OF INSPECTION
   - NAME AND QUALIFICATION OF THE INSPECTOR
   - WEATHER CONDITIONS
   - LOCATIONS WHERE IN-STREAM OR OFF-SITE SEDIMENTATION OR OTHER POLLUTANTS WERE OBSERVED.
   - LOCATIONS OF BMPS NEEDING MAINTENANCE.
   - LOCATIONS OF BMPS FAILING TO OPERATE CORRECTLY OR PROVIDE ADEQUATE PROTECTION.
   - LOCATION OF AREAS IN NEED OF ADDITIONAL BMPS NOT IN PLACE AT THE TIME OF INSPECTION.
   - CORRECTIVE ACTIONS REQUIRED, CHANGES TO THE SW3P AND IMPLEMENTATION DATES.
   - GRADING AND STABILIZATION ACTIVITY LOG
   - EROSION AND SEDIMENT CONTROL AMENDMENT LOG
5. ALL INCIDENCES OF NON-COMPLIANCE MUST BE IDENTIFIED IN THE REPORT. IF A REPORT DOES NOT IDENTIFY INCIDENCES OF NON-COMPLIANCE, IT MUST CONTAIN A CERTIFICATION THE SITE IS IN COMPLIANCE AT THE TIME OF INSPECTION.
6. BMP MAINTENANCE OR REPAIR MUST BE COMPLETED WITHIN 3 DAYS, AND SEDIMENT POND MAINTENANCE OR REPAIR WITHIN 10 DAYS, OF THE INSPECTION THAT REVEALED A DEFICIENCY.
7. WHEN AN INSPECTION REVEALS A BMP IS NOT EFFECTIVE AND A MORE APPROPRIATE BMP IS REQUIRED, THE SW3P SHALL BE AMENDED, THE NEW BMP INSTALLED WITHIN 10 DAYS OF THE INSPECTION THAT REVEALED THE DEFICIENCY, AND THE "STORMWATER POLLUTION PREVENTION PLAN AMENDMENT LOG" FORM COMPLETED.
8. WHEN AN INSPECTION REVEALS A BMP HAS NOT BEEN INSTALLED, BUT IS REQUIRED TO PROVIDE ADEQUATE CONTROL, IT MUST BE INSTALLED PRIOR TO THE NEXT STORM EVENT WHICH PRODUCES RUNOFF, BUT IN NO CASE LATER THAN 10 DAYS FROM THE INSPECTION THAT REVEALED THE DEFICIENCY.
9. THE INSPECTION FREQUENCY MAY BE REDUCED TO 1 TIME PER MONTH IF THE ENTIRE SITE IS TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER WEATHER (I.E. SUSTAINED SNOW COVER OR FROZEN GROUND CONDITIONS). A WAIVER OF INSPECTION REQUIREMENTS IS AVAILABLE UNTIL 1 MONTH BEFORE THAWING CONDITIONS ARE EXPECTED IF ALL THE FOLLOWING CONDITIONS ARE MET:
10. FROZEN CONDITIONS ARE ANTICIPATED TO CONTINUE FOR EXTENDED PERIODS OF TIME (I.E. MORE THAN 1 MONTH).
11. SOIL DISTURBANCE ACTIVITIES HAVE BEEN SUSPENDED.
12. THE BEGINNING AND ENDING DATES OF THE WAIVER PERIOD ARE DOCUMENTED IN THE SW3P.
13. ONCE A DEFINABLE AREA HAS BEEN FULLY STABILIZED, IT MAY BE MARKED ON THE SW3P AND NO FURTHER INSPECTION REQUIREMENTS ARE REQUIRED FOR THAT AREA OF THE SITE.
14. INSPECTIONS SHALL BE PERFORMED UNTIL A N.O.T. IS FILED WITH THE OHIO EPA.
15. INSPECTION RECORDS ARE TO BE KEPT FOR 3 YEARS AFTER TERMINATION OF CONSTRUCTION ACTIVITY.

SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES

1. CONTRACTOR SUBMITS CONSTRUCTION SCHEDULE FOR CONSTRUCTION ACTIVITIES.
2. BEGIN INSPECTION, MAINTENANCE, RECORD KEEPING AND SITE POSTING OF BMPS.
3. ESTABLISH STAGING AREA AND NON-SEDIMENT BMPS.
4. INSTALL SILT FENCE, INLET PROTECTION AND CONSTRUCTION ENTRANCE.
5. INSTALL OTHER TEMPORARY EROSION AND SEDIMENT CONTROL ITEMS AS SOON AS POSSIBLE, BUT NO LATER THAN 7 DAYS AFTER FIRST SOIL DISTURBANCE. INSPECT AND MAINTAIN BMPS FOR THE PROJECT DURATION UNTIL UPSLOPE AREAS ARE PERMANENTLY STABILIZED.
6. BEGIN SITE DEMOLITION AND CONSTRUCTION.
7. BEGIN EARTHWORK OPERATIONS TO ALLOW FOR INSTALLATION OF THE STORM SEWERS.
8. INSTALL STORM SEWERS AND INLETS.
9. BEGIN MASS GRADING OF THE SITE.
10. CONSTRUCT REMAINING UTILITIES INCLUDING SANITARY, WATER, ELECTRIC, GAS AND PHONE.
11. INSTALL ASPHALT AND CONCRETE SIDEWALKS AND PAVEMENT.
12. INSPECT AND CLEAN EXISTING AND NEW STORM SEWERS AND INLETS.
13. APPLY PERMANENT SEED.
14. INSTALL LANDSCAPING.
15. CONTINUE INSPECTIONS, MAINTENANCE, RECORD KEEPING, AND SITE POSTING UNTIL FINAL STABILIZATION ACHIEVED.
16. REMOVE TEMPORARY BMPS FROM STORM SEWER AND INLETS, AND OPEN GUTTERS AND DITCHES TO OBTAIN FREE DRAINAGE.
17. DISPOSE OF ALL DEBRIS AND WASTE MATERIAL.

1. SUBSOILING SHALL OCCUR WHEN SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING IS NOT PERMITTED ON SLIP-PRONE AREAS.
2. THE SEED BED SHALL BE PREPARED BY APPLYING AGRICULTURAL GROUND LIMESTONE OR FERTILIZER AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, APPLY LIME AT 2 TONS/AC. OR FERTILIZER AT 500 LB/AC. OF 10-10-10 OR 12-12-12 ANALYSIS. LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL TO A DEPTH OF 3".
3. APPLY SEED UNIFORMLY ON FIRM, MOIST SEED BED BETWEEN MARCH 1 AND MAY 31 OR AUGUST 1 AND SEPTEMBER 30. TILLAGE FOR SEEDBED PREPARATION SHALL OCCUR WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND. SEEDING SHOULD NOT BE APPLIED BETWEEN OCTOBER 1 AND NOVEMBER 20 BECAUSE SEEDS MAY GERMINATE, BUT WILL NOT SURVIVE THE WINTER. IF SEEDING MUST OCCUR, INCREASE THE SEEDING RATE BY 50% AND ANCHOR. APPLY ADDITIONAL MULCH AND IRRIGATION AS REQUIRED TO ENSURE GERMINATION.
4. MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING.
5. SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY OR HOT WEATHER OR ON ADVERSE SITE CONDITIONS.
6. SEEDING SHALL NOT BE CONSIDERED ESTABLISHED FOR AT LEAST 1 FULL YEAR FROM THE TIME OF SEEDING. DURING THIS PERIOD INSPECT FOR SOIL EROSION OR VEGETATION LOSS AND REPAIR BARE OR SPARSE AREAS, FILL GULLIES, RE-FERTILIZE, RE-SEED AND RE-MULCH AS NEEDED.
7. ADEQUATE PERMANENT VEGETATION SHALL BE GROUND COVER DENSE ENOUGH TO COVER 80% OF THE SOIL SURFACE BASED ON VISUAL INSPECTION.

PERMANENT SEEDING FERTILIZATION AND MOWING CHART

MIXTURE	FORMULA	LB/ AC.	TIME	MOW
CREEPING RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	10-10-10	500	FALL, YEARLY, OR AS NEEDED	>3"
TALL FESCUE	10-10-10	500		>4"
TURF-TYPE FESCUE	10-10-10	500		
CROWN VETCH FESCUE	0-20-20	400	SPRING, AND YEARLY AFTER ESTABLISHED	DO NOT MOW
FLAT PEA FESCUE	0-20-20	400		

PERMANENT SEEDING SPECIES SELECTION

SEED MIX	SEED RATE LB/AC.	NOTES:
GENERAL USE		
CREEPING RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	20 - 40 10 - 20 20 - 40	FOR CLOSE MOWING AND WATERWAYS WITH <2.0 FT./SEC. VELOCITY
TALL FESCUE	40 - 50	
TURF-TYPE FESCUE	90	
STEEP BANKS OR CUT SLOPES		
TALL FESCUE	40 - 50	
CROWN VETCH TALL FESCUE	10 - 20 20 - 30	DO NOT SEED LATER THAN AUGUST
FLAT PEA TALL FESCUE	20 - 25 20 - 30	DO NOT SEED LATER THAN AUGUST
ROAD DITCHES AND SWALES		
TALL FESCUE	40 - 50	
TURF-TYPE FESCUE KENTUCKY BLUEGRASS	90 5	
LAWN		
KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	100 - 120 100 - 120	
KENTUCKY BLUEGRASS CREEPING RED FESCUE	100 - 120 100 - 120	FOR SHADED AREAS

PERMANENT SEEDING NOTES

1. THE SEED BED SHALL BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION.
2. SOIL AMENDMENTS MAY BE REQUIRED TO ESTABLISH VEGETATION. PERFORM SOIL TESTS TO PREDICT THE NEED FOR LIME OR FERTILIZER. IN LIEU OF A SOIL TEST, APPLY LIME AT 2 TONS/AC. OR FERTILIZER AT 500 LB/AC. OF 10-10-10 OR 12-12-12 ANALYSIS
3. APPLY SEED UNIFORMLY. COVER BROADCASTED SEED BY RAKING OR DRAGGING, AND LIGHTLY TAMPING INTO PLACE.
4. MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING.
5. INSPECT FOR SOIL EROSION OR VEGETATION LOSS AND REPAIR BARE OR SPARSE AREAS, FILL GULLIES, RE-FERTILIZE, RE-SEED AND RE-MULCH AS NEEDED.

TEMPORARY SEEDING SPECIES SELECTION

DATES	SPECIES	LB/1,000 SF	LB/AC.
MARCH 1 - AUGUST 15	OATS TALL FESCUE PERENNIAL RYEGRASS	3 1 1	128 40 40
	PERENNIAL RYEGRASS TALL FESCUE	2 1	40 40
AUGUST 16 - OCTOBER 31	RYE TALL FESCUE PERENNIAL RYEGRASS	3 1 1	112 40 40
	WHEAT TALL FESCUE PERENNIAL RYEGRASS	3 1 1	120 40 40
	PERENNIAL RYEGRASS TALL FESCUE	2 1	40 40
NOVEMBER 1 - FEBRUARY 28	ONLY MULCH OR DORMANT SEEDING.		

TEMPORARY SEEDING NOTES

STATE OF OHIO
JUSTIN HASELTON
E-72378
REGISTERED PROFESSIONAL ENGINEER

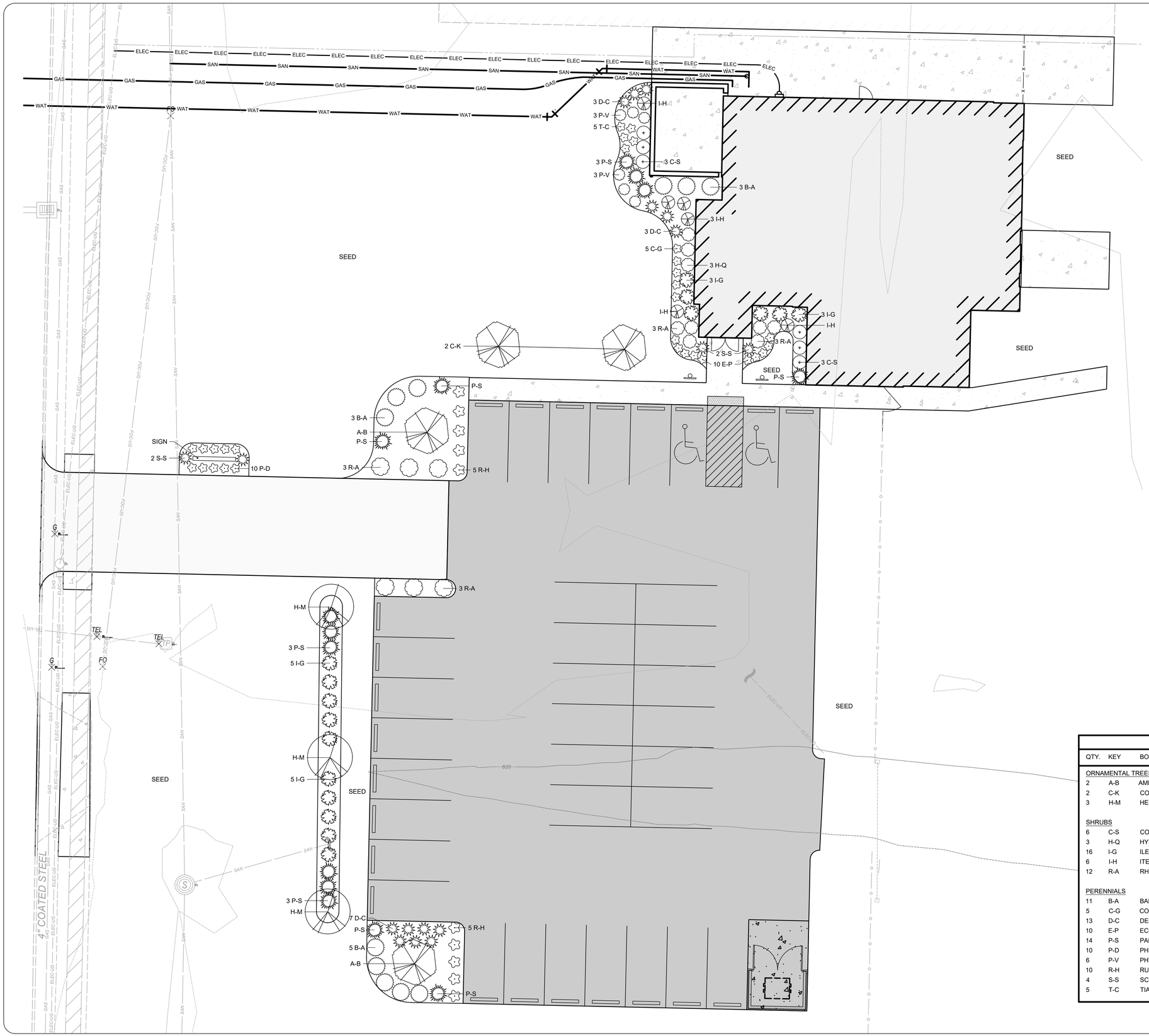
REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/29/2024
DRAWN BY: JRH
CHECKED BY: WTV
APPROVED BY:
F.B. NO: PG.:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

EROSION AND SEDIMENT CONTROL NOTES

SCALE: AS NOTED
CONTRACT NO: 220656
SHEET C1.11



SCALE: 1" = 10 '

PLANT MATERIAL LIST

QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
ORNAMENTAL TREES					
2	A-B	AMELACHIER X G. 'BALLERINA'	BALLERINA SERVICEBERRY	6' SINGLE	B&B
2	C-K	CORNUS KOUSA 'MILKY WAY'	MILKY WAY KOUSA DOGWOOD	6' MULTI	B&B
3	H-M	HEPTACODIUM MICONIOIDES "T OF B"	TEMPLE OF BLOOM 7-SON FLOWER	6' MULTI	B&B
SHRUBS					
6	C-S	CORNUS STOLONIFERA 'ARTIC FIRE'	ARCTIC FIRE DOGWOOD	24"	B&B
3	H-Q	HYDRANGEA Q. 'MUNCHKIN'	MUNCHKIN OAKLEAF HYDRANGEA	18"	#3 CONT.
16	I-G	ILEX G. 'DENSA'	DENSA COMPACT INKBERRY	18"	#5 CONT.
6	I-H	ITEA V. 'LITTLE HENRY'	LITTLE HENRY SWEETSPIRE	18"	#3 CONT.
12	R-A	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	24"	#3 CONT.
PERENNIALS					
11	B-A	BAPTSIA AUSTRALIS	BLUE FALSE INDIGO	2'	#2 CONT.
5	C-G	COREOPSIS G. 'EARLY SUNRISE'	EARLY SUNRISE COREOPSIS	CLUMP	#2 CONT.
13	D-C	DESCHAMPSIA CAESPITOSA	SCHOTTLAND TUFTED HAIRGRASS	CLUMP	#2 CONT.
10	E-P	ECHINACEA PURPUREA	PURPLE CONEFLOWER	CLUMP	#2 CONT.
14	P-S	PANICUM V. 'SHENANDOAH'	SHENANDOAH RED SWITCHGRASS	CLUMP	#2 CONT.
10	P-D	PHLOX DIVARICATA 'BLUE MOON'	BLUE MOON PHLOX	CLUMP	#2 CONT.
6	P-V	PHYSOSTEGIA V. 'VIVID'	VIVID OBEDIENT PLANT	CLUMP	#2 CONT.
10	R-H	RUDBECKIA HIRTA	BLACK-EYED SUSAN	CLUMP	#2 CONT.
4	S-S	SCHIZACHYRIUM S. 'THE BLUES'	THE BLUES LITTLE BLUESTEM	2'	#2 CONT.
5	T-C	TIARELLA CORDIFOLIA	FOAM FLOWER	CLUMP	#2 CONT.

STATE OF OHIO
RICHARD R. WASHINGTON
9400794
REGISTERED
LANDSCAPE ARCHITECT
Richard Washington, License #794
Expiration Date 12/31/2024

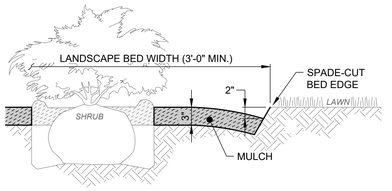
REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/29/2024
DRAWN BY: RDS
CHECKED BY: RWW
APPROVED BY:
F.B. NO.: PG.:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

LANDSCAPE PLAN

SCALE: AS NOTED
CONTRACT NO: 220656
SHEET L1.01

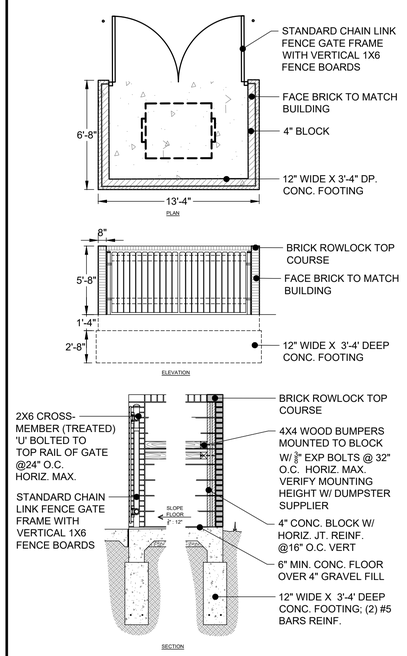


NOTES:

1. MULCH SHALL BE DOUBLE SHREDDED HARDWOOD BARK MULCH, DARK BROWN OR BLACK COLOR PER OWNER CHOICE, EXTRA FINE WITH TEXTURE AT 1-1/2" OR LESS FREE OF WEEDS, CHAFF OR OTHER FOREIGN MATERIAL.
2. MULCH SHALL BE PLACED IN ALL PLANTING AREAS SPREAD TO A SMOOTH, UNIFORM SURFACE PLANE WITH CRISP STRAIGHT AND SMOOTH CURVED MULCH BED EDGES. BED EDGES SHALL BE CUT IN "V" SHAPE WITH 60° ANGLE TO GROUND.
3. THIS DETAIL SHOWS A SHRUB FOR REFERENCE ONLY. SEE LANDSCAPE PLAN FOR ACTUAL PLANT TYPES AND LOCATIONS, AND CONFIGURATION OF BEDS.

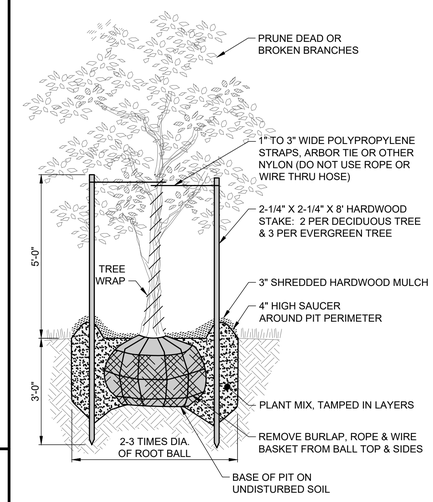
MULCH BED DETAIL

SCALE: NONE



BRICK DUMPSTER ENCLOSURE DETAIL

SCALE: NONE

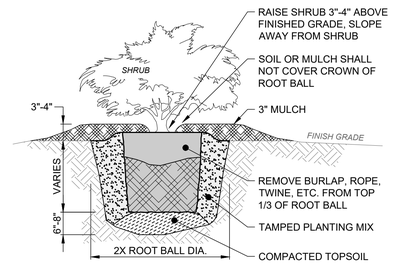


NOTES:

1. CROWN OF ROOT BALL TO BEAR THE SAME RELATION TO FINISH GRADE WHICH IT WAS GROWN AT THE NURSERY.
2. DO NOT DAMAGE ROOTS OR DESTROY ROOT BALL WHEN INSTALLING TREE STAKES.
3. REMOVE TREE RINGS, TREE WRAP AND STAKES 1 YEAR AFTER INSTALLATION. NOTIFY OWNER PRIOR TO REMOVAL.

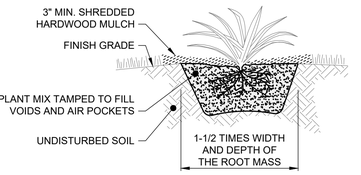
TREE PLANTING DETAIL

SCALE: NONE



SHRUB PLANTING DETAIL

SCALE: NONE



ANNUAL AND PERENNIAL PLANTING DETAIL

SCALE: NONE

STATE OF OHIO
RICHARD R. WASHINGTON
9400794
REGISTERED
LANDSCAPE ARCHITECT
Richard Washington, License #794
Expiration Date 12/31/2024

REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

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NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

LANDSCAPE DETAILS

SCALE: AS NOTED
CONTRACT NO: 220656
SHEET L1.02

GENERAL:

1. THESE NOTES ARE GENERAL REQUIREMENTS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREINAFTER FOR USE ON THIS PROJECT.
3. IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS OR SPECIFICATIONS ARE NOT IN AGREEMENT WITH THESE NOTES, THE CONTRACTOR SHALL CONTACT THE ARCHITECT/ENGINEER FOR CLARIFICATION.
4. TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON THE PLANS, BUT APPLY UNLESS NOTED OTHERWISE.
5. SHOP DRAWINGS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO SUBMISSION TO THE ENGINEER/ARCHITECT.
6. SHOP DRAWINGS PREPARED BY THE CONTRACTORS, SUPPLIERS, ETC., WILL BE REVIEWED BY THE ENGINEER/ARCHITECT ONLY FOR CONFORMANCE WITH DESIGN CONCEPT. NO WORK AFFECTED BY THE SHOP DRAWINGS SHALL BE STARTED WITHOUT SUCH REVIEW.
7. THE GENERAL CONTRACTOR SHALL COORDINATE ALL REVISIONS, CORRECTIONS, AND COMMENTS INDICATED ON THE SHOP DRAWINGS BY THE ARCHITECT/ENGINEER.
8. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR AND SHALL CONFORM TO THOSE SHOWN ON THE ARCHITECTURAL DRAWINGS.
9. THE STRUCTURAL CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES.
10. ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER ARE SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
11. ALL STRUCTURES ARE DESIGNED TO BE STABLE AND SELF-SUPPORTING AT THE COMPLETION OF CONSTRUCTION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE STABILITY AND SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS, AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS DURING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL IS NOT INDICATED ON THE DRAWINGS AND, IF PROVIDED, SHALL BE REMOVED, AS CONDITIONS PERMIT AND REMAIN THE PROPERTY OF THE CONTRACTOR.
12. ALL MATERIALS AND EQUIPMENT FURNISHED WILL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
14. COORDINATE WITH THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR MISCELLANEOUS STEEL ITEMS, LINTELS, METAL PAN STAIRS, SIZE AND LOCATION OF FLOOR SLOPES, DEPRESSED AREAS, FINISH FILLS, CHAMFERS, GROOVES, RAILING SLEEVES, ROOF EDGES, INSERTS, ETC.
15. COORDINATE WITH CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS FOR PIPE SLEEVES, FLOOR DRAINS, ROOF DRAINS, INSERTS, HANGERS, TRENCHES, PITS, WALL AND SLAB OPENINGS, CONDUIT RUNS IN WALLS AND SLABS, SIZE AND LOCATION OF MACHINE OR EQUIPMENT SUPPORTS, BASE AND ANCHOR BOLTS, RAILING, ETC.
16. COORDINATE WITH SITE, ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND CIVIL DRAWINGS FOR RETAINING WALLS, PADS, PAVEMENT AND OTHER SITE STRUCTURES.
17. EARTHWORK, FOUNDATION DRAINS, WATERPROOFING, PERIMETER INSULATION, MASONRY AND OTHER REQUIRED NON-STRUCTURAL ITEMS ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE WITH CIVIL/SITE AND ARCHITECTURAL DRAWINGS.

GOVERNING CODES AND STANDARDS:

IBC	- INTERNATIONAL BUILDING CODE, 2021 EDITION
ASCE 7	- MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, 2016 EDITION
ACI 318	- BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 2014 EDITION
ACI 301	- SPECIFICATIONS FOR STRUCTURAL CONCRETE, 2010 EDITION
ACI 305R	- HOT WEATHER CONCRETING, 2010 EDITION
ACI 306R	- COLD WEATHER CONCRETING, 2010 EDITION
ACI SP-66	- ACI DETAILING MANUAL, 2004
ACI 350.1	- TIGHTNESS TESTING OF ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES - SPECIFICATION, 2022 EDITION
ACI 530	- BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, 2013 EDITION
ACI 530.1	- SPECIFICATIONS FOR MASONRY STRUCTURES, 2013 EDITION
AISC 360	- STEEL CONSTRUCTION MANUAL, 14TH EDITION
AISC 341	- SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS, 2nd EDITION
AWS D1.1	- STRUCTURAL WELDING CODE - STEEL, 2010 EDITION
AWS D1.3	- STRUCTURAL WELDING CODE - SHEET STEEL, 2008 EDITION
AWS D1.4	- STRUCTURAL WELDING CODE - REINFORCING STEEL, 2011 EDITION
AWS D1.8	- STRUCTURAL WELDING CODE - SEISMIC SUPPLEMENT, 2009 EDITION
SJI	- STANDARD SPECIFICATION, LOAD TABLES, AND WEIGHT TABLES FOR STEEL JOIST AND JOIST GIRDERS, FORTY-THIRD EDITION
SDI-RDDM	- STEEL DECK INSTITUTE ROOF DECK DESIGN MANUAL, FIRST EDITION
SDI-FDDM	- STEEL DECK INSTITUTE FLOOR DECK DESIGN MANUAL, FIRST EDITION
AISI S100	- NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, 2012 EDITION
AISI S200	- NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS, 2012 EDITION
AISI S210	- NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - FLOOR AND ROOF SYSTEM DESIGN, 2007 EDITION (REAFFIRMED 2012)
AISI S211	- NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - WALL STUD DESIGN, 2012 EDITION, INCLUDING SUPPLEMENT 1, DATED 2012 (REAFFIRMED 2012)
AISI S212	- NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - HEADER DESIGN, 2007 EDITION (REAFFIRMED 2012)
AISI S213	- NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - LATERAL DESIGN, WITH SUPPLEMENT 1, DATED 2009 (REAFFIRMED 2012)

DESIGN LOADS:

1. LIVE LOADS: (REDUCIBLE PER GOVERNING CODE)	UNIFORM (PSF)	CONCENTRATED (LBS)
a. ROOF	20	300
b. FIRST FLOOR (SLAB ON GRADE)	100	2,000
c. SECOND FLOOR:		
BALCONIES AND DECKS	100	
CORRIDORS ABOVE FIRST FLOOR	80	2,000
ELEVATOR MACHINE ROOM	300	
PUBLIC ROOMS	100	2,000
RESTROOMS	60	
STAIRS AND EXITS	100	300
STORAGE ROOM- LIGHT	125	

2. SNOW LOADS:	
a. GROUND SNOW LOAD, P_g	30 PSF
b. FLAT ROOF SNOW LOAD, P_f	20.5 PSF
c. SNOW EXPOSURE FACTOR, C_e	1.0
d. SNOW LOAD IMPORTANCE FACTOR, I_s	1.0
e. THERMAL FACTOR, C_t	1.0
f. DESIGN SNOW LOAD, P_{final}	30 PSF

1. WIND LOADS	
a. ULTIMATE DESIGN WIND SPEED (3-SECOND GUST)	109 MPH
b. NOMINAL DESIGN WIND SPEED (3-SECOND GUST)	85 MPH
c. RISK CATEGORY	II
d. WIND EXPOSURE	C
e. DESIGN WIND PRESSURE FOR COMPONENTS AND CLADDING SHALL BE COMPUTED PER GOVERNING BUILDING CODE USING EXPOSURE	C (SEE DIAGRAM ON SHEET S0.3)
f. INTERNAL PRESSURE COEFFICIENT (ENCLOSED)	±0.18

2. EARTHQUAKE DESIGN DATA:	
a. OCCUPANCY RISK CATEGORY	II
b. SEISMIC IMPORTANCE FACTOR, I_e	1.0
c. MAPPED SPECTRAL RESPONSE ACCELERATIONS	$S_s = 0.157$ $S_1 = 0.049$
d. SITE CLASS	D
e. DESIGN SPECTRAL RESPONSE ACCELERATIONS	$S_{ds} = 0.168$ $S_{d1} = 0.079$
f. SEISMIC DESIGN CATEGORY	B
g. BASIC SEISMIC REINFORCING SYSTEM	STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
h. DESIGN BASE SHEAR	$V = C_s \times W$
i. SEISMIC RESPONSE COEFFICIENT	$C_s = 0.056$
j. RESPONSE MODIFICATION COEFFICIENT	R = 3.0
k. ANALYSIS PROCEDURE USED	EQUIVALENT LATERAL FORCE

FOUNDATIONS:

1. FOUNDATION DESIGN IS BASED ON RECOMMENDATIONS IN THE GEOTECHNICAL REPORT NO. 0142-2816, PREPARED BY PROFESSIONAL SERVICE INDUSTRIES, DATED MAY 9TH, 2024. CONTRACTOR SHALL REVIEW GEOTECHNICAL REPORT PRIOR TO CONSTRUCTION.
2. FOUNDATIONS ARE DESIGNED TO BEAR ON UNDISTURBED NATURAL SOILS OR PROPERLY COMPACTED ENGINEERED FILL WITH A GROSS ALLOWABLE BEARING CAPACITY OF 2,500 PSF AND 2,000 PSF FOR ISOLATED SPREAD FOOTING AND CONTINUOUS WALL FOOTING, RESPECTIVELY. (SEE GEOTECHNICAL REPORT).
3. TOPSOIL, FILL, AND/OR OTHER DELETERIOUS MATERIALS ENCOUNTERED DURING THE SITE PREPARATION MUST BE REMOVED AND REPLACED WITH SELECT ENGINEERED FILL COMPACTED TO 98% PER ASTM D1557 AND MEETING THE SPECIFIED DESIGN BEARING CAPACITY. (SEE GEOTECH REPORT FOR MORE INFORMATION).
4. FILL SOILS WERE FOUND IN AND NEAR BORING B-1. REPLACE FILL SOILSIN AND AROUND THE SURROUNDING AREA'S TO BORING B-1 TO A DEPTH OF 8.5 FT BELOW EXISTING GRADE WITH A COMPACTED ENGINEERED FILL MATERIAL PER THE GEOTECHNICAL REPORT. SEE THE GEOTECHNICAL REPORT FOR MORE INFORMATION/
5. CONTRACTOR SHALL EMPLOY A SOILS TESTING LABORATORY APPROVED BY THE ENGINEER TO PERFORM TESTING SERVICES AS REQUIRED BY THE SPECIFICATIONS AND TO INSPECT ALL BEARING SURFACES OF SLABS AND FOUNDATIONS.
6. NOTIFY ENGINEER IF FOUNDATION CONDITIONS ENCOUNTERED DIFFER FROM SOILS EXPLORATION INFORMATION MADE AVAILABLE TO THE CONTRACTOR.
7. REMOVE ALL EXISTING PAVEMENT, STRUCTURES AND FOUNDATIONS, AND TOPSOIL, UNSUITABLE FILLS AND ORGANIC SOILS ENCOUNTERED WITHIN AND BELOW THE AREA TO BE OCCUPIED BY SLABS ON GRADE AND FOUNDATIONS. THESE MATERIALS SHALL NOT BE USED FOR FILL WITHIN OR ADJACENT TO THE BUILDING.
8. CHANGES IN ELEVATION OF WALL FOOTING SHALL BE MADE IN STEPS NOT MORE THAN 2'-0" HIGH AND AT LEAST 4'-0" APART, UNLESS DETAILED OTHERWISE. SEE TYPICAL FOOTING STEP DETAIL.
9. THE CONTRACTOR IS RESPONSIBLE FOR AND SHALL PROVIDE TEMPORARY SHORING, BRACING, UNDERPINNING, AND OTHER MEASURES NECESSARY TO INSURE STABILITY AND SAFETY DURING ERECTION AND CONSTRUCTION AND TO PREVENT MOVEMENT OF SOIL THAT COULD DAMAGE EXISTING STRUCTURES, PAVEMENT, UTILITIES, ETC.
10. AFTER EXCAVATING FOR SLABS ON GRADE, THE EXPOSED NATURAL SOIL SHALL BE THOROUGHLY COMPACTED PRIOR TO PLACING THE GRANULAR MATERIAL.
11. CENTER FOOTINGS UNDER COLUMNS AND WALLS UNLESS NOTED.
12. THE DIFFERENCE IN ELEVATION OF THE BACKFILL ON THE INSIDE AND OUTSIDE OF WALLS SHALL NOT EXCEED TWO FEET UNTIL THE FIRST FLOOR STRUCTURE SUPPORTING THE WALLS IS IN PLACE, UNLESS THE WALL IS BRACED TO PREVENT MOVEMENT.
13. UNLESS NOTED OTHERWISE ON THE CIVIL/SITE DRAWINGS, PROVIDE A MINIMUM 2% GRADE WITHIN 10-FEET OF THE PERIMETER OF THE FOUNDATION SYSTEM TO ALLOW SURFACE WATER TO DRAIN AWAY.
14. DO NOT PLACE FILL OR CONCRETE ON FROZEN GROUND.

CAST-IN-PLACE CONCRETE AND REINFORCEMENT:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 318.
2. CONCRETE SHALL HAVE THE FOLLOWING 28-DAY COMPRESSIVE STRENGTHS:

CAST-IN-PLACE CONCRETE:	4,000 PSI
EXTERIOR CONCRETE (F3):	4,500 PSI
FILL CONCRETE:	1,500 PSI

3. USE 6% ±1.5%, ENTRAINED AIR PER ASTM C260 FOR ALL CONCRETE EXPOSED TO WEATHER.
4. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60. ALL REINFORCING TO BE WELDED SHALL CONFORM TO ASTM A706.
5. ALL WELDED WIRE REINFORCING SHALL CONFORM TO ASTM A1064 PROVIDED IN FLAT SHEETS OR ROLLS.
6. ADMIXTURES SHALL CONTAIN NO MORE THAN 0.05% CHLORIDE IONS BY WEIGHT OF CEMENT WHEN TESTED IN ACCORDANCE WITH AASHTO T260.
7. CONTRACTOR SHALL KEEP A COPY OF "FIELD REFERENCE MANUAL: STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE ACI 301 WITH SELECTED ACI REFERENCES", (ACI PUBLICATION SP-15) AT THE PROJECT FIELD OFFICE.
8. ALL REINFORCING DETAILS SHALL CONFORM TO THE ACI DETAILING MANUAL, SP-66, UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS.
9. SUBMIT FOR APPROVAL CONCRETE MIX DESIGN AND CERTIFICATION OF CONCRETE MATERIALS CONFORMING TO THE FOLLOWING EXPOSURE CATEGORIES:

CATEGORY	FOOTINGS, INTERIOR SLAB-ON-GRADE NON-AIR ENTRAINED CLASS:	PIERS, WALLS, EXTERIOR SLABS AIR ENTRAINED CLASS:
FREEZE AND THAWING	F0	F3
SULFATE	S1	S1
IN CONTACT WITH WATER	W1	W1
CORROSION PROTECTION	C2	C2

10. THE CONTRACTOR SHALL EMPLOY A TESTING LABORATORY APPROVED BY THE ENGINEER/ARCHITECT TO PERFORM THE TESTING SPECIFIED PER PARAGRAPH 1.6.4 OF ACI 301. THE TESTING LABORATORY SHALL MEET THE REQUIREMENTS OF ASTM E329. TESTING SHALL BE MADE BY AN ACI CONCRETE FIELD-TESTING TECHNICIAN GRADE 1 OR APPROVED EQUIVALENT. A TECHNICIAN GRADE 1 SHALL BE PRESENT DURING ALL CONCRETE PLACEMENT.
11. SUBMIT SHOP DRAWINGS FOR REVIEW. THESE DRAWINGS SHALL SHOW ALL CONCRETE MEMBER DIMENSIONS AND DOWELS FOR MASONRY WALLS.
12. PROVIDE DOWELS FROM FOUNDATIONS TO MATCH PIER AND WALL VERTICAL REINFORCING. WHERE SHOWN, PROVIDE DOWELS OUT OF WALLS TO MATCH SLAB REINFORCING.
13. PROVIDE CLASS "B" TENSION LAP SPLICE OR FULL MECHANICAL SPLICE (ACI 318, SECT. 12.14.3) FOR ALL VERTICAL STEEL IN WALLS, COLUMNS, AND SLABS. SEE LAP SCHEDULE ON SHEET S6.01 FOR LAP LENGTHS, UNO.
14. PROVIDE ADEQUATE BOLSTERS, HI-CHAIRS, SUPPORT BARS, ETC., TO MAINTAIN SPECIFIED CLEARANCES FOR THE ENTIRE LENGTH OF ALL REINFORCING BARS. SUPPORTS THAT BEAR DIRECTLY ON EXPOSED SURFACES SHALL BE STAINLESS STEEL.
15. ALL SLABS SHALL BE POURED MONOLITHICALLY, EXCEPT FOR THE REQUIRED CONSTRUCTION JOINTS.
16. PROVIDE PERIMETER INSULATION AGAINST EXTERIOR FOUNDATION WALLS AND GRADE BEAMS AND UNDER THE SLAB ADJACENT TO THE EXTERIOR OF THE BUILDING AS SHOWN ON THE ARCHITECTURAL DRAWINGS.
17. PROVIDE 3/4 INCH CHAMFER ON ALL EXPOSED CORNERS OF SLABS UNLESS OTHERWISE INDICATED ON THE ARCHITECTURAL DRAWINGS. MINIMUM CLEARANCES FOR REINFORCING STEEL SHALL BE MAINTAINED.
18. CURE ALL CONCRETE FOR A MINIMUM 7-DAYS. APPLY CURING COMPOUND AT THE MAXIMUM COVERAGE RATE OF 300 SQUARE FEET PER GALLON. USE PRODUCT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. SEE SPECIFICATIONS.
19. ALL CONSTRUCTION JOINTS SHALL BE KEYED. PROVIDE KEYWAYS AT MEMBER CENTERLINE WITH A DEPTH OF 1-1/2 INCH AND HEIGHT EQUAL TO ONE-THIRD OF THE MEMBER'S DEPTH/THICKNESS.
20. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS OF CONSTRUCTION JOINTS NOT INDICATED ON THE DRAWINGS FOR REVIEW BY THE ENGINEER/ARCHITECT.
21. ALL ALUMINUM IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL BE COATED WITH GRAY EPOXY PRIMER, APPROVED BY THE ENGINEER.
22. FORMWORK, FOR ALL CONCRETE THAT WILL BE EXPOSED IN THE COMPLETED STRUCTURE, SHALL BE CONSTRUCTED FROM A METAL OR SUITABLE SURFACE PLYWOOD THAT WILL PRODUCE AN ACCEPTABLY SMOOTH SURFACE. SEE SPECIFICATIONS.
23. PITCH CONCRETE SLABS TO FLOOR DRAINS SHOWN ON MECHANICAL OR ARCHITECTURAL DRAWINGS.
24. CONCRETE PROTECTION (CLEAR COVER) FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
    a. FOOTINGS:
        - 3 INCHES, BOTTOM AND UNFORMED EDGES
        - 2 INCHES, FORMED EDGES
        - 2 INCHES, EXPOSED TO EARTH, WATER OR WEATHER
        - 2 INCHES, BOTTOM, ON CONCRETE MUDMAT
    b. PIERS:
        - 1 1/2 INCH TO TIES
        - 2 INCH FOR VERTICAL REINFORCEMENT

CONCRETE MASONRY:

1. MASONRY IS SUPPORTED IN THE COMPLETED CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SUPPORTING THE MASONRY DURING CONSTRUCTION IN CONFORMANCE WITH LOCAL, STATE AND NATIONAL LAWS AND AS REQUIRED.
2. MASONRY CONSTRUCTION AND MATERIAL SHALL CONFORM TO ALL REQUIREMENTS OF "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI 530.1/ASCE 6) EXCEPT AS MODIFIED IN THE SPECIFICATIONS AND BELOW. A COPY OF ACI 530.1/ASCE 6 SHALL BE ON THE JOB SITE AT ALL TIMES THAT MASONRY WORK IS BEING PERFORMED.
3. SUBMIT FOR REVIEW, PRIOR TO CONSTRUCTION, SHOP DRAWINGS SHOWING A PLAN AND ELEVATION VIEW OF ALL CMU WALL, AND A PLAN THAT SHOWS ALL DOWELS REQUIRED FOR VERTICAL CMU REINFORCING THAT EXTEND OUT OF CONCRETE. SHOW WALL THICKNESS, AND DIMENSION WALL LENGTH AND LOCATION. SHOWING TOP ELEVATIONS OF WALLS, BOND BEAMS AND GROUT POURS. SHOW LOCATION OF CONTROL JOINT LOCATIONS, SOLID UNITS, CELLS TO BE GROUT FILLED, OPENING, LINTEL, JOINT REINFORCEMENT, REINFORCING BAR AND EMBEDMENT.
4. SUBMIT FOR REVIEW, PRIOR TO CONSTRUCTION, DOCUMENTATION FOR THE BLOCK, MORTAR, GROUT, ADMIXTURES, REINFORCING, BAR POSITIONER AND OTHER ACCESSORIES PROPOSED FOR USE. SUBMIT A WRITTEN DESCRIPTION OF THE METHOD OF REINFORCEMENT AND GROUT, AND OF GROUT CONSOLIDATION.
5. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, NORMAL WEIGHT.
6. CONCRETE MASONRY UNITS WHICH CONTAIN VERTICAL REINFORCEMENT SHALL BE TWO CORE UNITS AND WITH CORES AND WEBS VERTICALLY ALIGNED.
7. MORTAR FOR CONCRETE MASONRY UNITS SHALL BE NON-AIR ENTRAINED PORTLAND CEMENT-LIME CONFORMING TO ASTM C270, TYPE S. CEMENT IN MORTAR SHALL BE LOW-ALKALI AND NON-STAINING. TYPE N MORTAR AND MASONRY CEMENT SHALL NOT BE USED FOR CMU CONSTRUCTION.
8. ADMIXTURES SHALL NOT BE USED IN THE MORTAR OR GROUT. ANTIFREEZE AND CALCIUM CHLORIDE SHALL NOT BE USED.
9. MINIMUM NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS SHALL BE:
    NET AREA COMPRESSIVE STRENGTH OF ASTM C90 CMU, $f'_{cmu} = 2{,}000$ PSI
    NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY, $f'_m = 2{,}000$ PSI
10. COARSE GROUT SHALL CONFORM TO ASTM C476 WITH A MAXIMUM AGGREGATE SIZE OF 3/8" AND A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI.
11. ALL LOAD BEARING CONCRETE BLOCK WALLS SHALL BE REINFORCED VERTICALLY AS SHOWN ON PLAN, UNLESS NOTED OTHERWISE.
12. PROVIDE (1) #5 VERTICAL BAR IN FIRST CORE AT EACH CORNER, END OF WALL, AND ADJACENT TO OPENINGS AND CONTROL JOINTS.
13. VERTICAL REINFORCEMENT SHALL EXTEND THROUGH BOND BEAMS AND TO WITHIN 2 INCHES OF THE TOP OF WALLS.
14. REINFORCING STEEL SPLICES SHALL BE LAPPED A MINIMUM OF 48 BAR DIAMETERS BUT NO LESS THAN 12 INCHES, UNLESS NOTED OTHERWISE.
15. ANCHORAGE OF REINFORCING STEEL INTO CONCRETE SHALL BE 36 BAR DIAMETERS BUT NO LESS THAN 12 INCHES, UNLESS NOTED OTHERWISE.
16. HORIZONTAL JOINT REINFORCING SHALL BE, UNLESS SHOWN OTHERWISE, STANDARD 9 GAGE, LADDER TYPE CONFORMING TO ASTM A951, SPACED VERTICALLY AT 8 INCH ON CENTERS ABOVE AND BELOW OPENINGS FOR THREE CONSECUTIVE COURSES AND AT 16 INCHES ON CENTERS ELSEWHERE. EXTEND REINFORCEMENT 2 FEET BEYOND EACH SIDE OF OPENINGS BUT DO NOT EXTEND THROUGH CONTROL JOINTS. PROVIDE FACTORY FABRICATED "T" AND "L" SHAPED PIECES AT INTERSECTIONS AND CORNERS.
17. JOINT REINFORCEMENT SHALL BE SPLICED BY LAPPING THE LONGITUDINAL WIRES AT LEAST 12 INCHES; THE CROSS-WIRES WITHIN THE LAP SHALL BE REMOVED SO THAT THE LONGITUDINAL WIRES ARE SIDE BY SIDE. ALTERNATELY WHERE JOINT REINFORCING IS NOT REQUIRED IN BETWEEN EACH COURSE, SPLICES MAY BE MADE BY ABUTTING THE ADJACENT SECTIONS OF JOINT REINFORCING AND CENTERING A 48 INCH LENGTH OF JOINT REINFORCING IN THE BED JOINT IMMEDIATELY ABOVE OR BELOW THE BUTT JOINT. SPLICE WITH "T" AND "L" SHAPED PIECES AT INTERSECTIONS AND CORNERS.
18. LINTELS SHALL BE PROVIDED OVER ALL OPENINGS AND OVER RECESSES WIDER THAN 12 INCHES IN ACCORDANCE WITH THE ACCOMPANYING LINTEL SCHEDULE, UNLESS NOTED OTHERWISE ON DRAWINGS.
19. FOR LINTELS ENDING AT A CONTROL JOINT, PROVIDE 15 POUND FELT BOND BREAKER UNDER LINTEL BEARING AND A HORIZONTAL DUMMY CONTROL JOINT ON EXPOSED FACES. NO MORTAR OR GROUT SHALL BE IN THE HEAD JOINT OF DUMMY CONTROL JOINTS OPPOSITE THE BLOCK SHELL. PROVIDE A POSITIVE MEANS OF PREVENTING GROUT FROM ENTERING DUMMY JOINT OPPOSITE THE BLOCK SHELL. DUMMY JOINT SHALL BE CAULKED AND MATCH COLOR OF MORTAR.
20. BOND BEAMS SHALL BE PROVIDED IN EACH WALL AT EACH FLOOR LEVEL, ROOF LEVEL, AND AT TOP OF WALL. FILL BOND BEAMS WITH GROUT. REINFORCE BOND BEAMS WITH (2) # 5 UNLESS NOTED OTHERWISE. PROVIDE CORNER BARS WITH 2'-0" LEGS AND BAR SUPPORTS TO OBTAIN THE REQUIRED CLEARANCE.
21. BOND BEAMS AT THE TOP OF SLOPED WALLS SHALL FOLLOW THE SLOPE OF THE WALL. CUT OUT WEB OF BLOCKS SO THAT THE REINFORCING BAR(S) ARE 4 INCHES CLEAR OF THE TOP OF THE WALL. A MINIMUM OF 8 INCHES VERTICALLY SHALL BE GROUT FILLED. (SEE TYPICAL SLOPED BOND BEAM DETAIL).
22. BOND BEAM REINFORCEMENT AND GROUT AT WALL CONTROL JOINTS SHALL BE CONTINUOUS. PROVIDE A DUMMY CONTROL JOINT IN BOTH FACES OF BOND BEAM ALIGNED WITH WALL CONTROL JOINTS. THE BLOCK FACE SHELLS AT DUMMY CONTROL JOINTS SHALL BE FREE OF MORTAR AND GROUT. THE DUMMY CONTROL JOINT IN EXPOSED FACES SHALL HAVE BACKING ROD AND CAULK SEAL AS REQUIRED FOR THE CONTROL JOINT.
23. VERTICAL CONTROL JOINTS IN CONCRETE MASONRY WALLS (OTHER THAN BASEMENT WALLS) SHALL BE PROVIDED WHERE SHOWN ON THE PLANS AND AS GIVEN BELOW:
    a. AT 25 FEET OR LESS ON CENTERS BUT NOT MORE THAN 1 1/2 TIMES THE WALL HEIGHT
    b. AT A DISTANCE NOT OVER ONE-HALF THE ABOVE SPACING FROM BONDED INTERSECTIONS OR CORNERS.
    c. AT ONE END OF A LINTEL FOR WALL OPENINGS SIX FEET OR LESS IN WIDTH
    d. AT BOTH ENDS OF LINTELS FOR OPENINGS MORE THAN SIX FEET WIDE
    e. ALL ABRUPT CHANGES IN WALL HEIGHT.
    f. AT ALL CHANGES IN WALL THICKNESS, SUCH AS THOSE AT PIPE AND DUCT CHASES AND THOSE ADJACENT TO COLUMNS OR PILASTERS.
    g. ABOVE JOINTS IN FOUNDATIONS AND FLOORS.
    h. BELOW JOINTS IN ROOFS AND FLOORS THAT BEAR IN THE WALL.
    i. WHERE SHOWN IN BRICK OR OTHER VENEER.
24. CONTROL JOINTS SHALL NOT OCCUR AT WALL CORNERS, INTERSECTIONS, ENDS, WITHIN 2'-0" OF CONCENTRATED POINTS OF BEARING, OR JAMBS OVER OPENINGS UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS.
25. ALL MASONRY BELOW GRADE SHALL BE GROUTED SOLID.
26. ANCHOR MASONRY TO STRUCTURAL MEMBERS WITH ADJUSTABLE TIES SPACED AS INDICATED, BUT NOT MORE THAN 16" OC VERTICALLY AND 24" OC HORIZONTALLY.
27. PROVIDE AN EXPANSION JOINT WHERE THE TOP OF BRICK ABUTS CONCRETE OR STEEL AND WHERE THE SIDE OF BRICK ABUTS CONCRETE, CONCRETE BLOCK OR STEEL.
28. MECHANICALLY VIBRATE GROUT IN VERTICAL SPACES IMMEDIATELY AFTER POURING AND AGAIN MINUTES LATER.
29. PROVIDE CLEANOUTS IF GROUT LIFT EXCEEDS 4'-0" IN BLOCK WALLS. MAXIMUM GROUT LIFT SHALL BE 8'-0".
30. SEE VENEER ANCHORAGE NOTES FOR ATTACHMENT OF VENEER TO BLOCK WALLS.

STRUCTURAL STEEL:

1. STEEL SHALL BE FABRICATED BY A FABRICATOR HAVING AN AISC QUALITY CERTIFICATION CATEGORY: "STANDARD FOR STEEL BUILDING STRUCTURES (STD)."
2. STRUCTURAL STEEL WORK SHALL CONFORM TO THE "STEEL CONSTRUCTION MANUAL, AISC 360."
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF MEMBERS AND CONNECTIONS FOR ANY PORTION OF THE STRUCTURE NOT INDICATED ON THE PLANS. ALL SPECIAL CONDITIONS AND CONNECTIONS SHALL BE CAREFULLY AND COMPLETELY DETAILED AND SUBMITTED FOR APPROVAL.
4. CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND SIZE OF ALL OPENINGS FOR MECHANICAL EQUIPMENT WITH THE MECHANICAL CONTRACTOR PRIOR TO FABRICATION OF MATERIALS.
5. ANY STEEL SHOWN ON DRAWINGS FOR SUPPORTING OR CONNECTING MECHANICAL, ELECTRICAL, OR PLUMBING EQUIPMENT IS FOR BID PURPOSES ONLY. CONTRACTOR SHALL COORDINATE EXACT SIZE AND LOCATION PRIOR TO PROCEEDING WITH CONSTRUCTION.
6. UNLESS SHOWN ON STRUCTURAL DRAWINGS, CONTRACTOR SHALL NOT CUT ANY HOLES IN STRUCTURAL STEEL MEMBERS WITHOUT WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER.
7. ALL STEEL BEAMS SHALL BE FABRICATED AND ERECTED WITH THE NATURAL CAMBER (WITHIN THE MILL TOLERANCE) LOCATED ABOVE THE HORIZONTAL CENTERLINE BETWEEN THE END CONNECTIONS.
8. THE STEEL FRAME AS DESIGNED IS A NON-SELF SUPPORTING STEEL FRAME. CONTRACTOR SHALL COORDINATE THE ERECTION WITH THE INSTALLATION OF OTHER BUILDING ELEMENTS REQUIRED FOR THE STRUCTURES STABILITY. THESE ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO, SLABS, METAL DECK, MASONRY WALLS, AND CONCRETE WALLS.
9. STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE NOTED:
    a. W-SHAPES: ASTM A992
    b. ANGLES, PLATES, RODS, ETC: ASTM A36
    c. CHANNELS: ASTM A36 (A572, GRADE 50)
    d. PIPES: ASTM A53, GRADE B
    e. STRUCTURAL TUBING:
    ROUND - ASTM A500, GRADE B, 42 KSI
    SQUARE & RECTANGULAR, ASTM A500, GRADE B, 46 KSI
    f. ANCHOR RODS: ASTM F1554, GRADE 36
    g. SHEAR STUD CONNECTORS: ASTM A108
10. WELDED CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN WELDING SOCIETY, AWS D1.1. WELDING ELECTRODE MATERIAL SHALL BE E70XX.
11. WELDING OF SHEAR STUD CONNECTORS SHALL CONFORM TO AWS D1.1 SECTION 7.
12. ALL WELDED CONNECTIONS SHALL BE DESIGNED TO BE FULLY EQUIVALENT IN STRENGTH TO BOLTED CONNECTIONS FOR THE SAME SIZE BEAM.
13. MINIMUM WELDS, WHERE NOT SHOWN ON DRAWINGS, SHALL BE 3/16 INCH FILLET WELD, ALL AROUND.
14. IN GENERAL, IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT ALL SHOP CONNECTIONS BE WELDED OR BOLTED AND ALL FIELD CONNECTIONS BE BOLTED EXCEPT WHERE NOTED OTHERWISE.
15. ALL CONNECTIONS SHALL BE MADE WITH 3/4-INCH ASTM A325 BOLTS TIGHTENED TO SNUG-TIGHT CONDITION UNLESS OTHERWISE NOTED.
16. ALL CONNECTIONS NOT DETAILED ON THE DRAWINGS SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR UTILIZING THE REQUIREMENTS IN AISC 360, AND THE CONTRACT DOCUMENTS. THE FABRICATOR SHALL USE LOAD AND RESISTANCE FACTOR DESIGN, ALLOWABLE STRESS DESIGN METHODOLOGY TO COMPLETE ALL CONNECTION DESIGNS INCLUDING THE FOLLOWING GUIDELINES.
    a. DETAIL ALL BOLTED CONNECTIONS AS BEARING TYPE CONNECTIONS WITH THREADS IN THE SHEAR PLANE, EXCEPT THE FOLLOWING CONNECTIONS, WHICH SHALL BE DESIGNED AS SLIP-CRITICAL CONNECTIONS:
        - ALL CONNECTIONS IN DIRECT TENSION.
        - THE WEB SHEAR CONNECTION OF ALL MOMENT CONNECTIONS.
        - ALL BEAM OR GIRDER CONNECTIONS USING OVERSIZED HOLES OR LONG SLOTS.
        - ANY CONNECTION NOTED ON THE CONTRACT DRAWINGS AS SLIP-CRITICAL CONNECTION.
    b. NON-COMPOSITE BEAM CONNECTIONS SHALL BE DESIGNED TO DEVELOP 55% OF THE LOAD CAPACITY OF THE MEMBER AS TABULATED IN BEAM TABLE 3-6, PART 3, OF THE AISC "MANUAL OF STEEL CONSTRUCTION", UNLESS THE REACTION IS SHOWN ON THE DRAWINGS.
    c. COMPOSITE BEAM CONNECTIONS SHALL BE DESIGNED TO DEVELOP 75% OF THE LOAD CAPACITY OF THE MEMBER AS TABULATED IN THE BEAM TABLES, BUT NOT LESS THAN THE STANDARD "V/n" VALUE (MAXIMUM END REACTION FOR 3-1/2" BEARING AS SHOWN IN BEAM TABLE 3-6, PART 3, OF THE AISC "MANUAL OF STEEL CONSTRUCTION", UNLESS THE REACTION IS SHOWN ON THE DRAWINGS.
17. IN NO CASE SHALL THE MINIMUM NUMBER OF ROWS OF BOLTS FOR THE GIVEN BEAM SIZE BE LESS THAN THAT WHICH IS SHOWN IN TABLE 10-1, PART 10, OF THE AISC "MANUAL OF STEEL CONSTRUCTION".
18. ALL SHELF ANGLES AND LINTELS IN EXTERIOR WALLS, INCLUDING BEARING PLATES AND ANCHOR RODS, SHALL BE GALVANIZED AFTER FABRICATION.
19. ALL STEEL AND CORRESPONDING CONNECTIONS EXPOSED TO WEATHER SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 AND A153, RESPECTIVELY.
20. ALL STEEL, AND ANCHOR RODS THAT WILL BE GALVANIZED, ENCASED IN CONCRETE, OR RECEIVE SPRAYED ON FIREPROOFING SHALL NOT BE PAINTED.
21. PROVIDE 3/8-INCH DIAMETER WEEP HOLES AT BASE OF HSS AND PIPE COLUMNS AND IN BOTTOM OF CAPPED HSS BEAMS.
22. PROVIDE 1/4" MIN CLOSURE PLATES TO ALL HOLLOW STRUCTURAL SECTIONS WITH A 1/4" FILLET WELD ALL AROUND.
23. SET COLUMN BASE PLATES UPON NON-METALLIC, SHRINK RESISTANT GROUT CONFORMING TO ASTM C1107.
24. PROVIDE HARDENED STEEL WASHERS CONFORMING TO ASTM F436 AND HEAVY HEX NUTS ON ANCHOR RODS.
25. STEEL THAT EXTENDS BELOW GRADE SHALL BE ENCASED IN CONCRETE WITH A MINIMUM OF 3-INCHES OF CLEAR COVER.
26. CONNECTIONS FOR BRACING SHALL DEVELOP THE TENSILE CAPACITY OF THE BRACING MEMBER.
27. ALL STEEL COLUMNS AND BEAMS ARE TO RECEIVE SPRAYED FIREPROOFING TO ACHIEVE THE RESTRAINED FIRE RESISTANCE RATING AS SPECIFIED IN THE ARCHITECTURAL DRAWINGS.

STEEL JOISTS:

1. ALL STEEL JOISTS, INCLUDING ANCHORAGE AND BRIDGING, SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE STEEL JOIST INSTITUTE "STANDARD SPECIFICATIONS, LOAD TABLES AND WEIGHT TABLES FOR STEEL JOISTS AND JOIST GIRDERS".
2. JOIST SIZES INDICATED ON THE PLANS ARE THE MINIMUMS. JOIST AND GIRDER LOADS SHOWN ON THE PLANS ARE SUPERIMPOSED AND DO NOT INCLUDE SELF-WEIGHT.
3. JOIST MANUFACTURER SHALL DESIGN AND SUBMIT CALCULATIONS BY A REGISTERED ENGINEER FOR ALL SPECIALTY JOISTS, EXCEPT PARALLEL CHORD JOISTS WITH UNIFORM LOADS AND CONTINUOUSLY SUPPORTED COMPRESSION CHORDS PER SJI STANDARD LOAD TABLES.
4. JOIST MANUFACTURER SHALL DESIGN AND SUBMIT CALCULATIONS BY A REGISTERED ENGINEER FOR ALL JOIST GIRDERS.
5. ALL JOIST AND JOIST GIRDER CALCULATIONS SHALL INCLUDE DEFLECTION AND CAMBER REQUIREMENTS. LIVE LOAD DEFLECTIONS SHALL BE LIMITED TO SPAN/360 AND TOTAL LOAD SHALL BE LIMITED TO SPAN/240.
6. ALL JOISTS AND JOIST GIRDERS SHALL BE CAMBERED FOR THE DESIGN DEAD LOADS.
7. JOIST TOP CHORD AND BOTTOM CHORD EXTENSIONS SHALL BE PROVIDED WHERE INDICATED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS.
8. CAMBER OF JOIST ADJACENT TO BEAMS AND WALLS TO WHICH THE METAL DECK IS TO BE ATTACHED SHALL BE SUCH THAT THE METAL DECK CAN BE ATTACHED TO THE WALL OR BEAM WITHOUT DAMAGING THE METAL DECK. COORDINATE JOIST CAMBER WITH BEAM CAMBER.
9. K-SERIES JOISTS SHALL BE WELDED TO SUPPORTING STEEL WITH TWO 1/8 INCH FILLET WELDS 1 INCH LONG, MINIMUM, UNLESS NOTED OTHERWISE ON PLAN.
10. LH & DLH-SERIES JOISTS SHALL BE WELDED TO SUPPORTING STEEL WITH TWO 1/4 INCH FILLET WELDS 2 INCH LONG, MINIMUM, UNLESS NOTED OTHERWISE ON PLAN.
11. JOIST BRIDGING (SPACING, TYPE, SIZE AND INSTALLATION) SHALL BE AS SPECIFIED IN THE SJI SPECIFICATIONS AND SHALL BE THE RESPONSIBILITY OF THE JOIST MANUFACTURER. BRIDGING HAS NOT BEEN SHOWN ON THE PLANS.
12. ENDS OF ALL BRIDGING LINES TERMINATING AT WALLS OR BEAMS SHALL BE ANCHORED TO WALLS PER TYPICAL DETAILS.
13. FIELD DRILLING OR BURNING HOLES IN JOIST AND JOIST GIRDER MEMBERS IS NOT PERMITTED.
14. THE JOISTS AND JOIST GIRDERS HAVE BEEN SELECTED FOR THE DESIGN DEAD AND LIVE LOAD ONLY. THE JOIST MANUFACTURER SHALL PROVIDE JOISTS AND JOIST GIRDERS THAT ARE ALSO DESIGNED FOR THE LOAD COMBINATION OF 15 PSF DEAD LOAD PLUS A 2 KIP CONCENTRATED MOVING LIVE LOAD PER IBC PAR. 1607.4.
15. JOISTS AND JOIST GIRDERS SHALL BE DESIGNED FOR THE END MOMENTS SHOWN (A POSITIVE MOMENT CAUSES TENSION IN THE BOTTOM CHORD AND A NEGATIVE MOMENT PRODUCES TENSION IN THE TOP CHORD).
16. MANUFACTURER SHALL ADD ADDITIONAL WEB MEMBERS AS REQUIRED AND ADJUST CHORD AND WEB SIZES ACCORDINGLY. DEPTHS OF JOIST GIRDERS SHALL NOT BE ALTERED.
17. JOISTS AND JOIST GIRDERS SHALL BE DESIGNED FOR THE AXIAL FORCES SHOWN. THESE LOADS ARE CAUSED BY WIND/SEISMIC AND ALL FORCES MAY BE TENSION OR COMPRESSION.
18. DESIGN CALCULATIONS SHALL INCLUDE SUPERIMPOSED LOADS FOR FRAMING SUPPORTED EQUIPMENT. VERIFY SIZE, WEIGHT AND LOCATION WITH ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS AND SUBMITTED SHOP DRAWINGS.
19. THE JOISTS AND THE ERECTION OF THE JOISTS SHALL CONFORM TO THE REQUIREMENTS OF OSHA.
20. IF POSSIBLE, HANGERS SUPPORTING MECHANICAL EQUIPMENT, ETC. SHALL BE LOCATED AT THE JOIST PANEL POINTS. IF HANGERS ARE LOCATED BETWEEN JOIST PANEL POINTS, PROVIDE JOIST STIFFENERS AS INDICATED IN TYPICAL DETAILS. ALL HANGERS TO BE HUNG OFF BOTTOM CHORD CENTERLINE.
21. PROVIDE HEADERS SIZED FOR THE REACTION OF JOIST BEARING ON THE HEADER PLUS WEIGHT OF WALL BEARING ON HEADER.

BRAD A. FRONEK
E-84405
Brad Fronek
06/03/24

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STEEL JOISTS AND JOIST GIRDERS CONT:

22. MANUFACTURER SHALL DESIGN JOIST AND JOIST GIRDERS IN ACCORDANCE WITH THE UL DESIGN REQUIREMENTS IN ORDER TO ACHIEVE THE FIRE RATING SPECIFIED IN THE ARCHITECTURAL DRAWINGS/SPECIFICATIONS.

23. JOIST MANUFACTURER SHALL ALIGN WEB MEMBERS OF ADJACENT JOISTS WITH THE SAME DEPTH TO PERMIT MECHANICAL, ELECTRICAL, AND PLUMBING APPURTENANCES TO PASS THROUGH THE JOIST.

METAL DECK:

1. DESIGN, FABRICATION AND INSTALLATION OF STEEL DECK UNITS SHALL CONFORM TO THE STEEL DECK INSTITUTE "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS AND AISI NAS, AISI S210.

2. FLOOR DECK: (WHERE NOTED ON PLAN)
   a. 2 INCH DEEP GALVANIZED COMPOSITE DECK (ACOUSTICAL AND NON-ACOUSTICAL) BOTTOM PLATE OF CELLULAR DECK ASSUME NON-STRUCTURAL

20 GAUGE: I_{min} = 0.430 IN^4 18 GAUGE: I_{min} = 0.570 IN^4
$S_{p(min)}$ = 0.369 IN^3 $S_{p(min)}$ = 0.524 IN^3
$S_{n(min)}$ = 0.387 IN^3 $S_{n(min)}$ = 0.524 IN^3

16 GAUGE: I_{min} = 0.720 IN^4
$S_{p(min)}$ = 0.658 IN^3
$S_{n(min)}$ = 0.658 IN^3

3. ROOF DECK: (WHERE NOTED ON PLAN)
   a. 1 1/2 INCH DEEP GALVANIZED WIDE RIB STEEL DECK BOTTOM PLATE OF CELLULAR DECK ASSUME NON-STRUCTURAL

18 GAUGE: I_{min} = 0.292 IN^4 20 GAUGE: I_{min} = 0.210 IN^4
$S_{p(min)}$ = 0.318 IN^3 $S_{p(min)}$ = 0.232 IN^3
$S_{n(min)}$ = 0.327 IN^3 $S_{n(min)}$ = 0.245 IN^3

22 GAUGE: I_{min} = 0.167 IN^4
$S_{p(min)}$ = 0.186 IN^3
$S_{n(min)}$ = 0.194 IN^3

4. GALVANIZED STEEL ROOF DECK AND ACCESSORIES SHALL CONFORM TO ASTM A653 (STRUCTURAL QUALITY) WITH A MINIMUM YIELD STRENGTH OF 33 KSI WITH A MINIMUM G60 GALVANIZING FINISH IN ACCORDANCE WITH ASTM A924. PRIME PAINTED STEEL ROOF DECK AND ACCESSORIES SHALL CONFORM TO ASTM A1008 WITH A MINIMUM YIELD STRENGTH OF 33 KSI.

5. STEEL DECKING SHALL BE ATTACHED TO SUPPORTING STRUCTURAL FRAMING AS INDICATED IN TYPICAL DECK ATTACHMENT DETAIL. ATTACHMENT SHALL BE PERFORMED IN ACCORDANCE WITH THE MORE STRINGENT REQUIREMENTS FROM BOTH SDI AND THE DECK MANUFACTURER'S SPECIFICATIONS.

6. GALVANIZED NON-COMPOSITE STEEL FLOOR DECK SHALL CONFORM TO ASTM A653 (STRUCTURAL QUALITY) WITH A MINIMUM YIELD STRENGTH OF 33 KSI WITH A MINIMUM G60 GALVANIZING FINISH. UNCOATED OR PRIME PAINTED STEEL FLOOR DECK SHALL CONFORM TO ASTM A1008 WITH A MINIMUM YIELD STRENGTH OF 33 KSI.

7. GALVANIZED COMPOSITE STEEL FLOOR DECK SHALL CONFORM TO ASTM A653 (STRUCTURAL QUALITY) WITH A MINIMUM YIELD STRENGTH OF 33 KSI WITH A MINIMUM G60 GALVANIZING FINISH.

8. STEEL DECK SHALL BE CONTINUOUS OVER THREE SPANS. USE HEAVIER GAGE DECK WHEN DECK IS NOT CONTINUOUS OVER THREE SPANS TO PROVIDE SIMILAR ALLOWABLE LOAD CAPACITIES.

9. DUE ALLOWANCE SHALL BE MADE FOR DEFLECTION OF UNSHORED SLABS. NO ADDITIONAL PAYMENTS WILL BE MADE FOR EXTRA CONCRETE USED TO FINISH SURFACES TO REQUIRED ELEVATIONS.

10. DECK REINFORCEMENT SHALL BE PROVIDED AT OPENINGS IN THE METAL DECK. SEE TYPICAL DECK REINFORCEMENT DETAIL.

11. CONTRACTOR SHALL PROVIDE STANDARD POUR-STOPS AND CLOSURES IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, UNLESS NOTED OTHERWISE.

12. PROVIDE ANGLE SUPPORTS FOR METAL DECK AT COLUMNS PER TYPICAL DETAILS.

COLD-FORMED METAL FRAMING (DELEGATED DESIGN):

1. COLD FORMED METAL FRAMING SHALL CONFORM TO THE REQUIREMENTS OF THE AISI NAS, AISI HEADER, AISI WSD, AND AISI LATERAL. (AISI S100, AISI S200, AISI S210, AISI 211, AISI S212, AND AISI 213.)

2. PRIOR TO FABRICATION OF FRAMING, THE CONTRACTOR SHALL SUBMIT FABRICATION AND ERECTION DRAWINGS TO THE ENGINEER FOR APPROVAL. SAID DRAWINGS SHALL BE DESIGNED, DETAILED, SIGNED AND SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT.

3. COLD-FORMED MEMBERS SHALL BE FORMED FROM CORROSION-RESISTANT STEEL CONFORMING TO ASTM 653 WITH YIELD AS FOLLOWS:
   18 GAGE AND THINNER: 33 KSI
   16 GAGE AND THICKER: 50 KSI

4. WELDING SHALL CONFORM TO SHEET STEEL WELDING IN CONFORMANCE WITH AWS D1.3.

5. MEMBERS THAT ARE PART OF THE EXTERIOR ENVELOPE OF THE BUILDING SHALL HAVE A MINIMUM G90 COATING.

6. MEMBERS ON THE INTERIOR OF THE BUILDING SHALL HAVE A MINIMUM G60 COATING.

7. ALL THE COLD FORMED MEMBERS SHALL COME FROM A SINGLE MANUFACTURER. THE INSTALLATION SHALL COMPLY WITH THE MANUFACTURER'S RECOMMENDATIONS.

8. BASE TRACKS SHALL BE SET ON SMOOTH AND LEVEL CONCRETE, NON-SHRINK GROUT SUCH AS "MASTERFLOW 713" BY MASTER BUILDERS, OR STRUCTURAL STEEL.

9. LOW SHOT VELOCITY SHALL BE USED FOR POWDER ACTUATED FASTENERS IN CONCRETE AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.

10. FASTENING OF COMPONENTS SHALL BE WITH SELF-DRILLING CORROSION RESISTANT (OR ZINC COATED) SCREWS OR BY WELDING. SCREWS AND WELDS SHALL BE OF SUFFICIENT SIZE TO ENSURE THE STRENGTH OF THE CONNECTION. WELDS SHALL BE TOUCHED-UP WITH GALVANIZING PAINT.

11. SPLICES IN FRAMING COMPONENTS OTHER THAN TRACK ARE NOT PERMITTED.

12. STUDS SHALL BE INSTALLED SO THE ENDS ARE POSITIONED AGAINST THE INSIDE OF THE RUNNER TRACK WEB PRIOR TO FASTENING AND SHALL BE ATTACHED TO BOTH FLANGES OF THE UPPER AND LOWER RUNNER TRACKS.

13. FRAMING OF WALL OPENINGS SHALL INCLUDE HEADERS AND SUPPORTING STUDS AS RECOMMENDED BY THE STUD MANUFACTURER/DESIGNER.

14. RESISTANCE TO BENDING AND ROTATION SHALL BE PROVIDED BY SECONDARY BRACING AS RECOMMENDED BY THE STUD MANUFACTURER/DESIGNER.

15. ADDITIONAL STUDS SHALL BE INSTALLED IN THE WALLS TO RESIST THE VERTICAL COMPONENTS OF BRACING LOADS.

16. TRACKS OF STUD WALLS BEARING DIRECTLY ON CONCRETE SHALL BE ATTACHED TO THE CONCRETE WITH POWDER DRIVEN FASTENERS SPACED AT NO MORE THAN 24” OC FOR EXTERIOR WALLS AND 48” O.C. FOR INTERIOR WALLS, OR AS SPECIFIED ON THE DRAWINGS.

17. ATTACH TRACKS TO STRUCTURAL STEEL AND CONCRETE WITH ONE POWDER DRIVEN FASTENER, AS LISTED BELOW, AT EACH STUD LOCATION, UNLESS NOTED OTHERWISE.
   a. POWDER DRIVEN FASTENERS:
      - BY HILTI, SIMPSON STRONG TIE OR APPROVED EQUAL.
      - INSTALL CONFORMING TO THE MANUFACTURER'S RECOMMENDATIONS.
      - SHANK DIAMETER OF 0.177” (UNLESS OTHER SIZE IS SHOWN).
   b. IN CONCRETE:
      - USED LOW SHOT VELOCITY POWDER DRIVEN.
      - SMOOTH SHANKS.
      - 1 3/8” MINIMUM PENETRATION.
      - MINIMUM STRENGTH CAPACITY OF 150 LB PULLOUT AND 275 LB SHEAR.
      - SPACING NO CLOSER THAN 4” OC AND NO CLOSER THAN 3” TO A CONCRETE EDGE.
   c. IN STEEL:
      - KNURLED SHANKS.
      - 1/4" MINIMUM PENETRATION.
      - MINIMUM STRENGTH CAPACITIES OF 350 LB PULLOUT AND 700 LB SHEAR.
      - SPACING NO CLOSER THAN 1 1/2” OC AND NO CLOSER THAN 1/2” TO EDGE OF THE STEEL MEMBER.

18. MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

MEMBER	SIZE DEPTH	GAGE	F_y (KSI)	GROSS AREA (IN^2)	I_{eff} (IN^4)	S_{eff} (IN^3)
JOIST	12"	14	50	1.192	21.947	3.265
STUD	6"	18	33	0.447	2.316	0.767
TRACK	6"	18	33	0.405	1.868	0.534
PURLIN	10"	16	50	0.953	13.440	1.902
FURRING	7/8"	25	33	0.083	0.011	0.025

19. ALL STUDS SHALL BE SECURELY SEATED FOR FULL END BEARING ON TOP AND BOTTOM TRACK.

20. USE 6" DEEP STRUCTURAL STUDS FOR EXTERIOR WALLS, PARAPETS, OVERHANGS, RAILINGS, ETC. SPACING SHALL NOT EXCEED 16". PROVIDE HEADERS, FRAMING AROUND OPENINGS, ADDITIONAL STUDS AT ENDS OF OPENINGS AND CORNERS, BRACES AND ATTACHMENTS TO STRUCTURE. COORDINATE WITH ARCHITECTURAL ELEVATIONS, SECTIONS AND DETAILS. SEE SPECIFICATIONS.

STEEL LINTELS:

1. PROVIDE LINTELS OVER ALL MASONRY OPENINGS AND OVER RECESSES WIDER THAN 12 INCHES IN ACCORDANCE WITH THE ACCOMPANYING LINTEL SCHEDULE, UNLESS NOTED OTHERWISE ON DRAWINGS.

2. WHERE CONTROL JOINTS ARE AT ENDS OF LINTELS, PROVIDE 15 POUND FELT BOND BREAKER UNDER LINTEL BEARING AND DUMMY CONTROL JOINT ON EXPOSED FACES. NO MORTAR OR GROUT SHALL BE IN THE HEAD JOINT OF DUMMY CONTROL JOINTS OPPOSITE THE BLOCK SHELL. PROVIDE A POSITIVE MEANS OF PREVENTING GROUT FROM ENTERING DUMMY JOINT OPPOSITE THE BLOCK SHELL.

3. BELOW EACH BEARING POINT OF LINTEL, GROUT FILL CELLS FOR A MINIMUM OF 16" BEYOND EDGE OF OPENING AND A MINIMUM OF 16" BELOW LINTEL BEARING.

4. THE FABRICATOR SHALL SUPPLY LOOSE LINTEL ANGLES (DEFINED BELOW) OVER ALL MASONRY OPENING AND RECESSES UNLESS NOTED OTHERWISE. PROVIDE ONE ANGLE FOR EACH 4-INCHES OF WALL THICKNESS. FOR 10-INCH CMU PROVIDE THREE SIMILAR ANGLES BUT WITH 3-INCH HORIZONTAL LEGS.

MASONRY OPENING	STEEL ANGLE SIZE	BEARING END
4'-0" OR LESS	L 3 1/2 x 3 1/2 x 1/4	6"
4'-1" TO 6'-0"	L 4 x 3 1/2 x 1/4	6"
6'-1" TO 8'-0"	L 5 x 3 1/2 x 3/8	8"
8'-1" TO 10'-0"	L 6 x 3 1/2 x 3/8	8"

5. PLACE ANGLES WITH LONG LEG VERTICAL. ANGLES SUPPORTING BRICK SHALL BE PLACED WITH VERTICAL LEG TIGHT TO BACK OF INSIDE FACE OF THE BRICK.

6. ALL STEEL LINTELS FOR EXTERIOR WALLS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123.

7. BOTTOM PLATES SHALL BE 1/2 INCH LESS IN WIDTH THAN THE WALL THICKNESS AND 1/2 INCH LESS IN LENGTH THAN THE WALL OPENING, UNLESS NOTED OTHERWISE.

8. BOTTOM PLATES SHALL BE WELDED TO THE LINTEL BEAM WITH A 1/4" x 1 1/2" INTERMITTENT WELD AT 12 INCHES ON CENTER ON BOTH SIDES.

9. WHERE LINTELS ARE AT THE SAME COURSE AS BOND BEAMS, WELD REINFORCING BARS TO EACH END OF THE LINTEL OF SAME SIZE AND NUMBER AS IN THE BOND BEAM. THE BARS SHALL EXTEND 48 BAR DIAMETERS INTO THE BOND BEAM. THE BAR SHALL CONFORM TO ASTM A706 AND THE WELD SHALL BE SUFFICIENT TO DEVELOP THE STRENGTH OF THE BAR.

SPECIAL INSPECTIONS:

PER THE IBC SECTION 1705, SPECIAL INSPECTIONS ARE REQUIRED FOR THE FOLLOWING ITEMS:

1. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:
   a. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK DESIGNATED TO ASSURE IT IS CONSTRUCTED IN CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS.
   b. THE SPECIAL INSPECTOR SHALL SUBMIT INSPECTION REPORTS AND TESTS TO THE BUILDING OFFICIAL AND REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
   c. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK.
   d. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND TESTS, AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS OR TESTS, SHALL BE SUBMITTED WITHIN THE AGREED UPON TIME TO THE BUILDING OFFICIAL PRIOR TO THE START ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
   e. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A STATEMENT OF RESPONSIBILITY ACKNOWLEDGING THE AWARENESS OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS.

2. STRUCTURAL STEEL:
   a. PRIOR TO WELDING:
      - WELDER QUALIFICATION RECORDS AND CONTINUITY RECORDS. (PERIODIC)
      - WELDING PROCEDURE SPECIFICATION (WPS) AVAILABLE. (CONTINUOUS)
      - MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE. (CONTINUOUS)
      - MATERIAL IDENTIFICATION –TYPE/GRADE (PERIODIC)
      - WELDER IDENTIFICATION SYSTEM MAINTAINED BY FABRICATOR OR ERECTOR TO IDENTIFY WHICH WELDER HAS WELDED A JOINT OR MEMBER. (PERIODIC)
      - FIT UP OF GROOVE WELDS INCLUDING JOINT GEOMETRY (PERIODIC)
        A. JOINT PREPARATIONS
        B. DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)
        C. CLEANLINESS (CONDITION OF STEEL SURFACES)
        D. TACKING (TACK WELD QUALITY AND LOCATION)
        E. BACKING TYPE AND FIT, IF APPLICABLE.
      - FIT UP OF COMPLETE JOINT PENETRATION WELDS OF HSS T-, Y- AND K- JOINTS WITHOUT BACKING INCLUDING JOINT GEOMETRY (PERIODIC)
        A. JOINT PREPARATIONS
        B. DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)
        C. CLEANLINESS (CONDITION OF STEEL SURFACES)
        D. TACKING (TACK WELD QUALITY AND LOCATION)
      - CONFIGURATION AND FINISH OF ACCESS HOLES (PERIODIC)
      - FIT UP OF FILLET WELDS (PERIODIC)
        A. DIMENSIONS (ALIGNMENT, GAPS AT ROOT)
        B. CLEANLINESS (CONDITION OF STEEL SURFACES)
        C. TACKING (TACK WELD QUALITY AND LOCATION)
      - CHECK WELDING EQUIPMENT
   b. DURING WELDING
      - CONTROL AND HANDLING OF WELDING CONSUMABLES (PERIODIC)
        A. PACKAGING
        B. EXPOSURE CONTROL
      - NO WELDING OVER CRACKED TACK WELDS (PERIODIC)
      - ENVIRONMENTAL CONDITIONS (PERIODIC)
        A. WIND SPEED WITHIN LIMITS
        B. PRECIPITATION AND TEMPERATURE
      - WPS FOLLOWED (PERIODIC)
        A. SETTINGS ON WELDING EQUIPMENT
        B. TRAVEL SPEED
        C. SELECTED WELDING MATERIALS
        D. SHIELDING GAS TYPE/FLOW RATE
        E. PREHEAT APPLIED
        F. INTERPASS TEMPERATURE MAINTAINED (MIN/MAX)
        G. PROPER POSITION (F, V, H, OH)
      - WELDING TECHNIQUES (PERIODIC)
        A. INTERPASS AND FINAL CLEANING
        B. EACH PASS WITHIN PROFILE LIMITATIONS
        C. EACH PASS MEETS QUALITY REQUIREMENTS
      - PLACEMENT AND INSTALLATION OF STEEL HEADED STUDS. (CONTINUOUS)
   c. AFTER WELDING:
      - WELDS CLEANED (PERIODIC)
      - SIZE, LENGTH AND LOCATION OF WELDS (CONTINUOUS)
      - WELDS MEET VISUAL ACCEPTANCE CRITERIA (CONTINUOUS)
        A. CRACK PROHIBITION
        B. WELD/BASE-METAL FUSION
        C. CRATER CROSS-SECTION
        D. WELD PROFILES
        E. WELD SIZE
        F. UNDERCUT POROSITY
      - ARC STRIKES (CONTINUOUS)
      - k-AREA (CONTINUOUS)
      - WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES (CONTINUOUS)
      - BACKING REMOVED AND WELD TABS REMOVED, IF REQUIRED (CONTINUOUS)
      - REPAIR ACTIVITIES (CONTINUOUS)
      - DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER (CONTINUOUS)
      - NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD (PERIODIC)
   d. PRIOR TO BOLTING:
      - MANUFACTURER’S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS (CONTINUOUS)
      - FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS (PERIODIC)
      - CORRECT FASTENER SELECTED FOR THE JOINT DETAIL INCLUDING GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE (PERIODIC)
      - CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL (PERIODIC)
      - CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS (PERIODIC)
      - PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED. (PERIODIC)
      - PRTOECTED STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS (PERIODIC)
   e. DURING BOLTING:
      - FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS AND NUTS ARE POSITIONED AS REQUIRED. (PERIODIC)
      - JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRE-TENSIONING OPERATION (PERIODIC)
      - FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING. (PERIODIC)
      - FASTENERS ARE PRE-TENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES. (PERIODIC)
   f. AFTER BOLTING:
      - DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS. (CONTINUOUS)
   g. INSPECTION OF GALVANIZED STRUCTURAL STEEL MAIN MEMBERS AND EXPOSED CORNERS OF RECTANGULAR HSS FOR CRACKS SUBSEQUENT TO GALVANIZING (PERIODIC)
   h. SPECIAL INSPECTIONS ARE NOT REQUIRED FOR WORK DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTIONS. APPROVAL SHALL BE BASED UPON REVIEW OF THE FABRICATOR'S WRITTEN PROCEDURAL AND QUALITY CONTROL MANUALS AND PERIODIC AUDITING OF FABRICATION PRACTICES BY A BOARD RECOGNIZED INDUSTRY TRADE ASSOCIATION CERTIFICATION PROGRAM OR A BOARD RECOGNIZED FABRICATOR INSPECTION AGENCY.

3. COLD-FORMED STEEL DECK:
   a. PRIOR TO DECK PLACEMENT:
      - VERIFY COMPLIANCE OF MATERIALS, DECK AND DECK ACCESSORIES, WITH THE CONSTRUCTION DOCUMENTS, INCLUDING PROFILES, MATERIAL PROPERTIES, AND BASE METAL THICKNESS (CONTINUOUS)
      - DOCUMENT ACCEPTANCE OR REJECTION OF DECK AND DECK ACCESSORIES. (CONTINOUS)
   b. AFTER DECK PLACEMENT:
      - VERIFY COMPLIANCE OF DECK AND DECK ACCESSORIES INSTALLATION WITH CONSTRUCTION DOCUMENTS. (CONTINUOUS)
      - VERIFY DECK MATERIALS ARE REPRESENTED BY THE MILL CERTIFICATIONS THAT COMPLY WITH THE CONSTRUCTION DOCUMENTS (CONTINOUS)
      - DOCUMENT ACCEPTANCE OR REJECTION OF DECK AND DECK ACCESSORIES. (CONTINOUS)
   c. PRIOR TO WELDING:
      - WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE (PERIODIC)
      - MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE. (PERIODIC)
      - MATERIAL INDENTIFICATION, TYPE/GRADE (PERIODIC)
      - CHECK WELDING EQUIPMENT (PERIODIC)
   d. DURING WELDING:
      - USE OF QUALIFIED WELDERS (CONTINUOUS)
      - CONTROL AND HANDLING OF WELDING CONSUMABLES (PERIODIC)
      - REVIEW MANUFACTURER’S PRODUCT DATA FOR WELDING CONSUMABLES. (PERIODIC)
      - ENVIRONMENTAL CONDITIONS; WIND SPEED, MOISTURE, TEMPERATURE (PERIODIC)
      - WPS FOLLOWED (PERIODIC)
   e. AFTER WELDING:
      - VERIFY SIZE AND LOCATION OF WELDS, INCLUDING SUPPORT, SIDELAP, AND PERIMETER WELDS. (CONTINUOUS)
      - WELDS MEET VISUAL ACCEPTANCE CRITERIA (CONTINUOUS)
      - VERIFY REPAIR ACTIVITIES (CONTINUOUS)
      - DOCUMENT ACCEPTANCE OR REJECTION OF WELDS. (CONTINOUS)
   f. PRIOR TO MECHANICAL FASTENING:
      - MANUFACTURER INSTALLATION INSTRUCTIONS AVAILABLE FOR MECHANICAL FASTENERS (PERIODIC)
      - PROPER TOOLS AVAILABLE FOR FASTENER INSTALLATION (PERIODIC)
      - PRPER STORAGE FOR MECHANICAL FASTENERS (PERIODIC)
   g. DURING MECHANICAL FASTENING:
      - FASTENERS ARE POSITIONED AS REQUIRED (PERIODIC)
      - FASTENERS ARE INSTALLED IN ACCORDANCE WITH MANUFACTURER’S INSTRUCTIONS (PERIODIC)
   h. AFTER MECHANICAL FASTENING:
      - CHECK SPACING, TYPE, AND INSTALLATION OF SUPPORT FASTENERS (CONTINUOUS)
      - CHECK SPACING, TYPE, AND INSTALLATION OF SIDELAP FASTENERS (CONTINUOUS)
      - CHECK SPACING, TYPE, AND INSTALLATION OF PERIMETER FASTENERS (CONTINUOUS)
      - VERIFY REPAIR ACTIVITIES (CONTINUOUS)
      - DOCUMENT ACCEPTANCE OR REJECTION OF MECHANICAL FASTENERS (CONTINUOUS)

4. OPEN-WEB STEEL JOIST AND JOIST GIRDERS:
   a. END CONNECTIONS – WELDING OR BOLTING. (PERIODIC)
   b. BRIDGING – HORIZONTAL OR DIAGONAL:
      - STANDARD BRIDGING. (PERIODIC)
   c. BRIDGING THAT DIFFERS FROM THE SJI SPECIFICATIONS LISTED IN SECTION 2207.1. (PERIODIC)

5. MASONRY: (LEVEL B)
   a. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS. (PERIODIC)
   b. AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:
      - PROPORTIONS OF SITE-PREPARED MORTAR. (PERIODIC)
      - CONSTRUCTION OF MORTAR JOINTS. (PERIODIC)
      - GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGE (PERIODIC)
      - LOCATION OF REINFORCEMENT, CONNECTORS, PRESTRESSING TENDONS AND ANCHORAGES. (PERIODIC)
      - PRESTRESSING TECHNIQUE. (PERIODIC)
      - PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY (CONTINUOUS/PERIODIC)
   c. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:
      - GROUT SPACE (PERIODIC)
      - GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES (PERIODIC)
      - PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS. (PERIODIC)
      - CONSTRUCTION OF MORTAR JOINTS. (PERIODIC)
   d. VERIFY DURING CONSTRUCTION:
      - SIZE AND LOCATION OF STRUCTURAL ELEMENTS. (PERIODIC)
      - TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION. (PERIODIC)
      - WELDING OF REINFORCEMENT. (CONTINUOUS)
      - PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90°F). (PERIODIC)
      - APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE. (PERIODIC)
      - PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE. (CONTINUOUS)
      - PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS. (CONTINUOUS/PERIODIC)
   e. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS. (CONTINUOUS)

6. SOILS:
   a. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY. (PERIODIC)
   b. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL. (PERIODIC)
   c. PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS. (PERIODIC)
   d. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL. (CONTINUOUS)
   e. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PROPERLY PREPARED. (PERIODIC)

7. COLD-FORMED STEEL FRAMING:
   a. INSPECT SCREW ATTACHMENT, BOLTING AND ANCHORING AND OTHER FASTENING OF ELEMENTS WITHIN THE LATERAL-FORCE-RESISTING SYSTEM, INCLUDING SHEAR WALLS, BRACES, DIAPRAGMS, COLLECTORS, (DRAG STRUTS) AND HOLD-DOWNS. (PERIODIC)

STRUCTURAL DRAWING ABBREVIATIONS

ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCH EXPOSED STRUCTURAL STEEL
ALT	ALTERNATE
&	AND
APPROX	APPROXIMATELY
ARCH	ARCHITECT or ARCHITECTURAL
@	AT or SPACING
B/	BOTTOM OF
BL	BUILDING LINE
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BRDG	BRIDGING
BRG	BEARING
BTWN	BETWEEN
BOT	BOTTOM
CANT	CANTILEVER
CL	CENTERLINE
CLR	CLEAR
CTR	CENTER
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CJ	CONTROL/CONSTRUCTION JOINT
CMU	CONCRETE MASONRY UNIT
CONT	CONTINUOUS
CUFT	CUBIC FEET
CY	CUBIC YARDS
DBL	DOUBLE
DEG or °	DEGREE
DEMO	DEMOLITION
DET	DETAIL
DF	DOUGLAS FIR LARCH
DIAG	DIAGONAL
DIA or ø	DIAMETER
DIM	DIMENSION
DO	DITTO
DN	DOWN
DP	DEEP
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EMBED	EMBEDDED, EMBEDMENT
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
EX	EXISTING
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FAB	FABRICATE
FDN	FOUNDATION
FIN	FINISH
FLG	FLANGE
FLR	FLOOR
FS	FARSIDE
FT	FOOT, FEET
FTG	FOOTING
GA	GAGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERAL
GLB	GLUE LAMINATED BEAM
GR	GRADE
GYP BD	GYPSUM BOARD
HC	HOLLOW CORE
HORIZ	HORIZONTAL
HS	HIGH STRENGTH
HT	HEIGHT
HVY	HEAVY
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
INFO	INFORMATION
INT	INTERIOR
INV	INVERT
JST	JOIST
JT	JOINT
K	KIPS
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L	ANGLE
LBS	POUNDS
LF	LINEAL FEET
LG	LONG
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LONG	LONGITUDINAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LT WT	LIGHT WEIGHT
MANUF	MANUFACTURER
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MK	MARK
MO	MASONRY OPENING
MTL	METAL
NO or #	NUMBER
NOM	NOMINAL
NS	NEARSIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
O/O	OUT TO OUT
OPNG	OPENING
OPP	OPPOSITE
PAF	POWDER ACTUATED FASTENERS
PAR	PARALLEL
PC	PRECAST
PERP	PERPENDICULAR
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLYWD	PLY WOOD
PREFAB	PREFABRICATED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST TENSIONED
PTR	PRESSURE TREATED
QL	SEISMIC LOAD
QTY	QUANTITY
RAD	RADIUS
REF	REFERENCE
REINF	REINFORCEMENT, REINFORCING, REINFORCED
REQD	REQUIRED
SCHED	SCHEDULE
SECT	SECTION
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SOG	SLAB-ON-GRADE
SPA	SPACING
SPEC(S)	SPECIFICATION(S)
SPF	SPRUCE PINE FIR
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STR	STRUCTURAL
STRUCT	STRUCTURAL
SUP	SUPPORT
SYM	SYMMETRICAL
SYP	SOUTHERN YELLOW PINE
T	TOP
T/	TOP OF
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TEMP	TEMPERATURE STEEL
THD	THREAD
THK	THICK
THRU	THROUGH
TOL	TOLERANCE
TRANS	TRANSVERSE
TYP	TYPICAL
UN or UNO	UNLESS NOTED (OTHERWISE)
VERT	VERTICAL
VIF	VERIFY IN FIELD
w/	WITH
w/o	WITHOUT
WD	WOOD
WP	WORKPOINT
WT	WEIGHT
WWF	WELDED WIRE FABRIC

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GENERAL NOTES

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S-0.2

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TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS OF CONCRETE CONSTRUCTION

REQUIRED	TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD[a]	IBC REFERENCE
X	1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	-	X	ACI 318 CH. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
X	2. REINFORCING BAR WELDING:				
X	a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706;	-	X	AWS D1.4 ACI 318: 26.6.4	-
X	b. INSPECT SINGLE-PASS FILLET WELDS, MAZIMUM 5/16"; AND		X		
X	c. INSPECT ALL OTHER WELDS	X			
X	3. INSPECT ANCHORS CAST INTO CONCRETE.	-	X	ACI 318: 17.8.2	-
X	4. INSPECT ANCHORS POST-INSTALLED NI HARDENED CONCRETE MEMBERS.[b]				
X	a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X		ACI 318: 17.8.2.4	-
X	b. MECHANICAL ANCHORS AND ASHESIVE ANCHORS NOT DEFINED IN 4.a.		X	ACI 318: 17.8.2	
X	5. VERIFY USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
X	6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C172 ASTM C31 ACI 318: 26.4, 26.12	1908.10
X	7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
X	8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 26.5.3-26.5.5	1908.9
X	9. INSPECT PRESTRESSED CONCRETE FOR:				
X	a. APPLICATION OF PRESTRESSING FORCES; AND	X	-	ACI 318: 2610	-
X	b. GROUTING OF BONDED PRESTRESSING TENDONS.	X	-		
X	10. INSPECT ERECTION OF PRESCAST CONCRETE MEMBERS.	-	X	ACI 318: CH. 26.8	-
X	11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	X	ACI 318: 26.11.2	-
X	12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: CH. 26.11.2(b)	-

MINIMUM TESTS

VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATON ARTCLE 1.5 B.1.b.3 FOR SELF-CONSOLIDATING GROUT

VERIFICATION OF f'_m AND f'_{AAC} IN ACCORDANCE WITH SPECIFICATOIN ARTICLE 1.4 B PRIOR TO CONSTRUCTION, EXCEPT WHERE SPECIFICALLY EXEMPTED BY THIS CODE

REQUIRED	INSPECTION TASK	FREQUENCY		REFERENCE FOR CRITERIA	
		CONTINUOUS	PERIODIC	TMS 402/ ACI 530/ ASCE 5	TMS 602/ ACI 530.1/ ASCE 6
X	1. VERIFY COMPLIANCE WITH APPROVED SUBMITTAL	-	X	-	ART. 1.5
X	2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
X	a. PROPORTIONS OF SITE PREPARED MORTAR	-	X	-	ART. 2.1, 2.6 A
X	b. CONSTRUCTION OF MORTAR JOINTS	-	X	-	ART. 3.3 B
X	c. GRADE AND SIZE OF PRESTRUSSSING TENDONS AND ANCHORAGES	-	X	-	ART. 2.4 B, 2.4 H
X	d. LOCATION OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES	-	X	-	ART. 3.4, 3.6 A
X	e. PRESTRESSING TECHNIQUE	-	X	-	ART. 3.6 B
X	f. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X[b]	X[c]	-	ART. 2.1 C
X	3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
X	a. GROUT SPACE	-	X	-	ART. 3.2 D, 3.2 F
X	b. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES	-	X	SEC. 6.1	ART. 2.4, 3.4
X	c. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES	-	X	SEC. 6.1, 6.2.1, 6.2.6, 6.2.7	ART. 3.2 E, 3.4, 3.6 A
X	d. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS	-	X	-	ART. 2.6 B, 2.4 G.1.b
X	e. CONSTRUCTION OF MORTAR JOINTS	-	X	-	ART. 3.3 B
X	4. VERIFY DURING CONSTRUCTION				
X	a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS	-	X	-	ART. 3.3 F
X	b. TYPE, SIZE, AND LOCATION OF ANCHORS INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION	-	X	SEC. 1.2.1 (e), 6.1.4.3, 6.2.1	-
X	c. WELDING REINFORCEMENT	X	-	SEC. 8.1.6.7.2, 9.3.3.4 (c), 11.3.3.4 (b)	-
X	d. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40 DEG F (4.4 DEG C)) OR HOT WEATHER (TEMPERATURE ABOVE 90 DEG F (32.2 DEG C))	-	X	-	ART. 1.8 C, 1.8 D
X	e. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	-	X	-	ART. 3.6 B
X	f. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	-	X	-	ART. 3.5, 3.6 C
X	g. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X[b]	X[c]	-	ART. 3.3 B.9 3.3 F.1.b
X	5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS	-	X	-	ART. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3 1.4 B.4

TABLE 1705.6 REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

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

TABLE N5.4-1
INSPECTION TASKS PRIOR TO WELDING

INSPECTION TASKS PRIOR TO WELDING	QC	QA
WELDER QUALIFICATION RECORDS AND CONTINUITY RECORDS	P	O
WPS AVAILABLE	P	P
MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	P	P
MATERIAL IDENTIFICATION (TYPE/GRADE)	O	O
WELDER IDENTIFICATION SYSTEM • FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. • DIE STAMPING OF MEMBERS SUBJECTED TO FATIGUE SHALL BE PROHIBITED UNLESS APPROVED BY THE ENGINEER OF RECORD.	O	O
FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY) • JOINT PREPARATION • DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION) • BACKING TYPE AND FIT (IF APPLICABLE)	O	O
FIT-UP OF CJP GROOVE WELDS OF HSS T-, Y-, & K-JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY) • JOINT PREPARATION • DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION)	P	O
CONFIGURATION AND FINISH OF ACCESS HOLES	O	O
FIT-UP OF FILLET WELDS • DIMENSIONS (ALIGNMENT, GAPS AT ROOT) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION)	O	O
CHECK WELDING EQUIPMENT	O	-

TABLE N5.4-2
INSPECTION TASKS DURING WELDING

INSPECTION TASKS PRIOR TO WELDING	QC	QA
CONTROL AND HANDLING OF WELDING CONSUMABLES • PACKAGING • EXPOSURE CONTROL	O	O
NO WELDING OVER CRACKED TACK WELDS	O	O
ENVIRONMENTAL CONDITIONS • WIND SPEED WITHIN LIMITS • PRECIPITATION AND TEMPERATURE	O	O
WPS FOLLOWED • SETTINGS ON WELDING EQUIPMENT • TRAVEL SPEED • SELECTED WELDING MATERIALS • SHIELDING GAS TYPE AND FLOW RATE • PREHEAT APPLIED • INTERPASS TEMPERATURE MAINTAINED (MIN/MAX.) • PROPER POSITION (F, V, H, OH)	O	O
WELDING TECHNIQUES • INTERPASS AND FINAL CLEANING • EACH PASS WITHIN PROFILE LIMITATIONS • EACH PASS MEETS QUALITY REQUIREMENTS	O	O
PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	P	P

TABLE N5.4-3
INSPECTION TASKS AFTER WELDING

INSPECTION TASKS AFTER TO WELDING	QC	QA
WELDS CLEANED	O	O
SIZE, LENGTH, AND LOCATION OF WELDS	P	P
WELDS MEET VISUAL ACCEPTANCE CRITERIA • CRACK PROHIBITION • WELD AND BASE-METAL FUSION • CRATER CROSS SECTION • WELD PROFILES • WELD SIZE • UNDERCUT • POROSITY	P	P
ARC STRIKES	P	P
k-AREA[A]	P	P
WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES[B]	P	P
BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P	P
REPAIR ACITIVITIES	P	P
DOCUMENT ACCEPTANVE OR REJECTION OF WELDED JOINT OR MEMBER[C]	P	P
NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD	O	O

[A]WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES, OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3 IN. (75 MM) OF THE WELD.
[B]AFTER ROLLED HEAVY SHAPES (SEE SECTION A3.1D) AND BUILT-UP HEAVY SHAPES (SEE SECTION A3.1E) ARE WELDED, VISUALLY INSPECT THE WELD ACCESS HOLE FOR CRACKS.
[C]DIE STAMPING OF MEMBERS SUBJECTED TO FATIGUE SHALL BE PROHIBITED UNLESS APPROVED BY THE ENGINEER OF RECORD.

TABLE N5.6-1
INSPECTION TASKS PRIOR TO BOLTING

INSPECTION TASKS PRIOR TO BOLTING	QC	QA
MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O
CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)	O	O
CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O
PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P	O
PROTECTED STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS	O	O

TABLE N5.6-2
INSPECTION TASKS DURING BOLTING

INSPECTION TASKS DURING BOLTING	QC	QA
FASTENER ASSEMBLIES PLACED IN ALL HOLES, AND WASHERS AND NUTS ARE POSITIONED AS REQUIRED	O	O
JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	O	O
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O
FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	O	O

TABLE N5.6-3
INSPECTION TASKS AFTER BOLTING

INSPECTION TASKS DURING BOLTING	QC	QA
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P

TABLE 1705.2.3 REQUIRED SPECIAL INSPECTIONS OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD[a]
1. INSTALLATION OF OPEN-WEB STEEL JOIST AND JOIST GIRDERS			
a. END CONNECTIONS - WELDING OR BOLTED.	-	X	SJI SPECIFICATIONS LISTED IN SECTION 2207.1
b. BRIDGING - HORIZONTAL OR DIAGONAL.	-		
1. STANDARD BRIDGING.	-	X	SJI SPECIFICATIONS LISTED IN SECTION 2207.1
2. BRIDGING THAT DIFFERS FROM THE SJI SPECIFICATONS LISTED IN SECTION 2207.1.		X	

OBSERVE (O): THE INSPECTOR SHALL OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.

PERFORM (P): THESE TASKS SHALL BE PERFORMED FOR EACH WELDED JOINT OR MEMBER, OR BOLTED CONNECTION.

WIND PRESSURE (ASCE 7-16) FOR COMPONENTS & CLADDING

EFFECTIVE AREA OF OPENINGS, A (S.F.)	ZONE 1		ZONE 1'		ZONE 2		ZONE 3		ZONE 4		ZONE 5	
	PRESSURE (PSF)	SUCTION (PSF)	PRESSURE (PSF)	SUCTION (PSF)	PRESSURE (PSF)	SUCTION (PSF)	PRESSURE (PSF)	SUCTION (PSF)	PRESSURE (PSF)	SUCTION (PSF)	PRESSURE (PSF)	SUCTION (PSF)
A ≤ 10	16.00	-46.90	16.00	-27.00	16.00	-61.90	16.00	-84.40	27.00	-29.20	27.00	-36.00
10 < A ≤ 20	16.00	-43.80	16.00	-27.00	16.00	-57.90	16.00	-76.40	25.80	-28.00	25.80	-33.60
20 < A ≤ 50	16.00	-39.80	16.00	-27.00	16.00	-52.70	16.00	-65.90	24.20	-26.40	24.20	-30.40
50 < A ≤ 100	16.00	-25.50	16.00	-27.00	16.00	-48.70	16.00	-57.90	23.00	-25.20	23.00	-28.00

NOTES:
1. VALUES LISTED IN THE ABOVE TABLE ARE BASED UPON AN ENCLOSED BUILDING USING THE SPECIFIED WIND LOADING AS INDICATED IN THE 'DESIGN LOADS' SECTION OF THE GENERAL NOTES.
2. PRESSURE (POSITIVE) AND SUCTION (NEGATIVE) VALUES SIGNIFY LOADING ACTING TOWARDS AND AWAY FROM THE BUILDING SURFACES, RESPECTIVELY (FULL HEIGHT, UNLESS NOTED.)
3. VALUES LISTED IN THE ABOVE TABLE ARE ULTIMATE WIND PRESSURES. TO OBTAIN ALLOWABLE STRESS DESIGN WIND VALUES, MULTIPLY THE VALUES SHOWN IN THE ABOVE TABLE BY 0.6.
4. EFFECTIVE WIND AREAS, UNLESS NOTED OTHERWISE:
   "a" = 0.6h
   "b" = 0.2h
   "c" = 0.4h (3'-0" MIN)
5. SUCTION VALUES LISTED IN ROOF ZONES 1, 1', 2 & 3 INDICATE GROSS UPLIFT PRESSURES.

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GENERAL NOTES

SCALE: 12" = 1'-0"
CONTRACT NO: 220656
SHEET S-0.3

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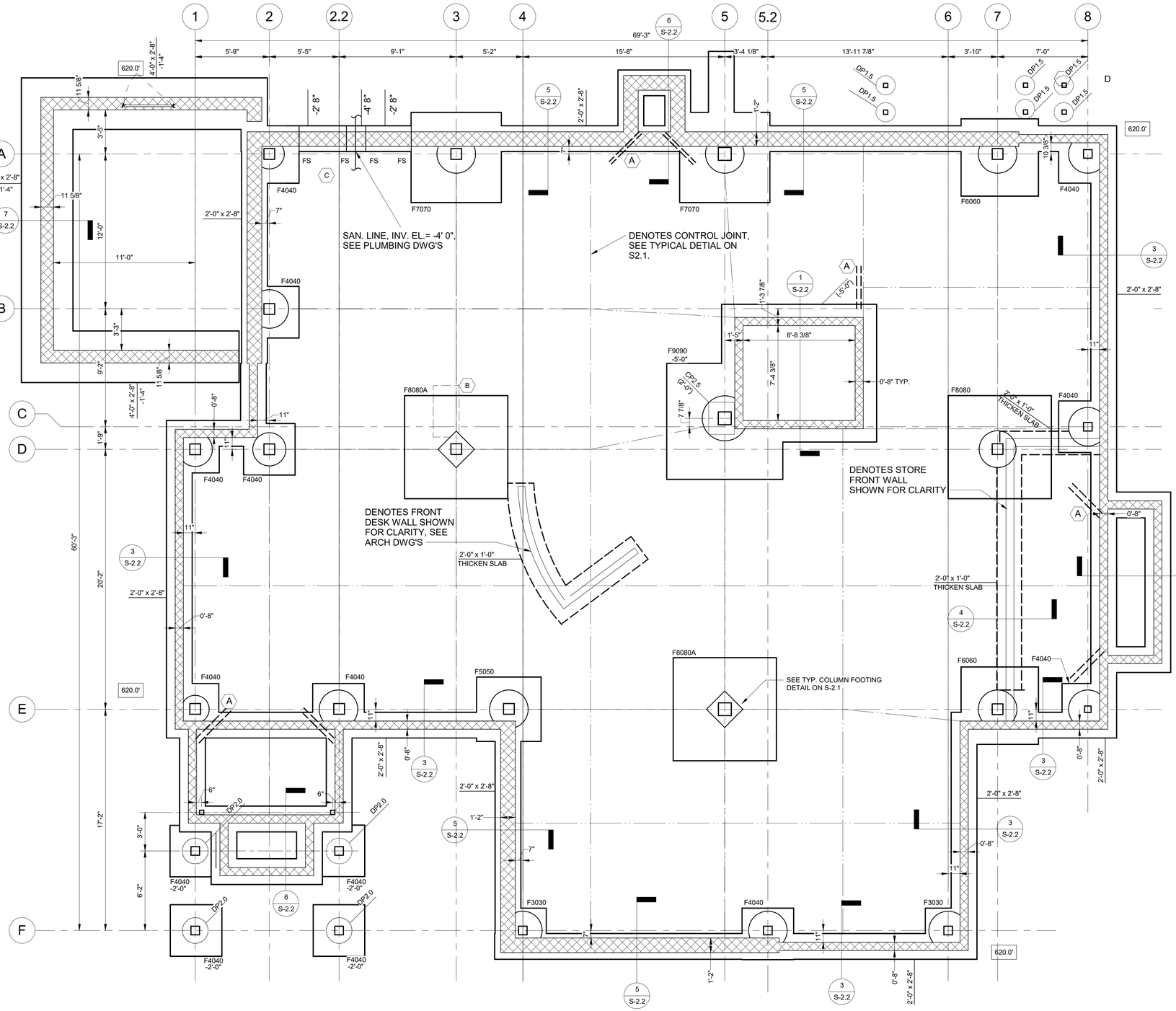

FOUNDATION PLAN
1/4" = 1'-0"

FOUNDATION PLAN NOTES:

1. SEE SHEETS S-0.1, S-0.2, AND S-0.3 FOR GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-2.1 FOR TYPICAL FOUNDATION DETAILS.
3. FLOOR CONSTRUCTION - 4" CONCRETE SLAB-ON-GRADE WITH ONE LAYER OF 6x6xW2.0xW2.0 WELDED WIRE REINFORCEMENT ON 4" THICK GRANULAR DRAINAGE BASE WITH A 15 MIL VAPOR RETARDER.
4. TOP OF SLAB-ON-GRADE ELEVATION = 100.00' = PROJECT DATUM = 620.0' USGS, TYP. UNO. ALL ELEVATIONS TO BE REFERENCES FROM THE PROJECT DATUM OF 100'-0".
5. FOOTINGS DENOTED FX'-X" x FX'-X" @ (-X'-X") DENOTES FOOTING WIDTH x THICKNESS / (DEPTH). DEPTH OF FOOTING IS TO THE TOP OF THE FOOTING REFERENCED FROM THE PROJECT DATUM, UNO. SEE THIS SHEET FOR FOOTING SCHEDULE.
6. TOP OF FOOTING ELEVATION SHALL BE AT ELEVATION 1'-4", TYP., UNO.
7. BOTTOM OF FOOTING ELEVATIONS ARE BASED UPON FOUNDATIONS BEARING ON MATERIALS AS LISTED IN FOUNDATION GENERAL NOTE NO. 1 ON SHEET S-0.1. BEARING ELEVATIONS HAVE BEEN ESTABLISHED FROM THE GRADING PLAN AND SOILS REPORT. FOUNDATION BEARING SURFACES MUST BE INSPECTED AND APPROVED IN ACCORDANCE WITH FOUNDATION GENERAL NOTES AND 3RD PARTY SOIL INSPECTIONS. BOTTOM OF FOOTING ELEVATIONS SHOULD BE ADJUSTED ACCORDINGLY TO MEET THE REQUIREMENTS IN THE SOILS REPORT.
8. F.S. INDICATES FOOTING STEP, REFER TO TYPICAL DETAIL ON SHEET S-2.1 FOR TYPICAL FOOTING STEP DETAIL.
9. XXXX.X DENOTES FINISHED GRADE AROUND PERIMETER OF BUILDING. COORDINATE FINAL FINISH GRADE ELEVATIONS WITH CIVIL DWG'S.
10. SEE ARCHITECTURAL DRAWINGS FOR ALL MEASUREMENTS NOT SHOWN. ALL DIMENSIONS SHALL CONFORM TO THE ARCHITECTURAL DRAWINGS.
11. COORDINATE LOCATION AND SIZE OF PENETRATIONS AND OPENINGS WITH MECHANICAL AND SITE DRAWINGS.
12. CONCRETE MASONRY WALLS SHALL BE 8" WIDE, U.N.O. ON PLAN, AND REINFORCED VERTICALLY WITH (1) #5 BARS SPACED AT 32' ON CENTER, CENTERED IN WALL. SEE GENERAL NOTES FOR MORE INFORMATION. CONCRETE MASONRY WALLS SHALL BE CENTERED ON FOOTING UNLESS NOTED OTHERWISE. SEE SHEET S-3.2 FOR TYPICAL MASONRY CONTROL / EXPANSION JOINT, COORDINATE LOCATION W/ARCH DRAWINGS.
13. FOR COLUMN, BASE PLATES, AND ANCHOR ROD SIZES, SEE COLUMN SCHEDULE ON SHEET S-1.3.
14. CONTRACTOR SHALL COORDINATE SLAB FINISHES WITH ARCHITECTURAL AND LANDSCAPE DRAWINGS.
15. CJ INDICATES CONSTRUCTION JOINT OR CONTROL JOINT. FOR SLAB-ON-GRADE CONSTRUCTION AND CONTROL JOINT SPACING CRITERIA AND DETAILS, SEE TYPICAL DETAIL ON SHEET S2.1.
16. DPX-X DENOTES DRILLED PIER. SEE PLAN FOR SCHEDULE AND SHEET S-1.2 FOR DETAILS. TOP OF PIER = 0'-1", TYP, UNO.
17. CP-X.X DENOTES CONRETE PIER. SEE SCHEDULE AND DETAILS FOR SIZE AND REINFORCING. SEE PLAN FOR TOP OF PIER ELEVATION.

FOUNDATION PLAN CODED NOTES:

A. REINFORCING BARS AT RE-ENTRANT CORNERS. SEE TYPICAL DETAIL ON SHEET S-2.1 FOR MORE INFORMATION.

B. THICKENED SLAB BENEATH STAIR. SEE TYPICAL DETAIL 2 ON SHEET S-2.2 MORE INFORMATION.

C. FOR STEPPED WALL, REFER TO TYPICAL DETAIL ON SHEET S-2.1 FOR MORE INFORMATION.

D. CONTRACTOR TO COORDINATE LOCATIONS OF DRILLED PIERS WITH STEEL STAIR MFG. AND SHOP DRAWINGS.

FOOTING SCHEDULE

MARK	DIMENSIONS			
	WIDTH	LENGTH	THICKNESS	REINFORCING
F3030	3'-0"	3'-0"	2'-8"	(11) #4, EA WAY, TOP & BOT
F4040	4'-0"	4'-0"	2'-8"	(12) #4, EA WAY, TOP & BOT
F5050	5'-0"	5'-0"	2'-8"	(11) #4, EA WAY, TOP & BOT
F6060	6'-0"	6'-0"	2'-8"	(8) #5, EA WAY, TOP & BOT
F7070	7'-0"	7'-0"	2'-8"	(9) #5, EA WAY, TOP & BOT
F8080	8'-0"	8'-0"	2'-8"	(12) #5, EA WAY, TOP & BOT
F8080A	8'-0"	8'-0"	2'-0"	(12) #5, EA WAY, TOP & BOT
F9090	9'-0"	9'-0"	1'-6"	(12) #6, EA WAY

CONCRETE PIER SCHEDULE

MARK	DIMENSIONS		REINFORCING	
	WIDTH	LENGTH	VERTICALS	TIES
CP2.5	2'-0"	2'-6"	(12) #6	(4) #4 @ ANCHOR RODS, 12" OC. REMAINING OC

- SEE CONCRETE PIER DETAIL ON S-2.1

DRILLED PIER SCHEDULE

MARK	DIMENSION	REINFORCING	
	DIAMETER	VERTICAL REINF.	TIES
DP1.5	1'-6"	(5) #5	(3) # 3 TIES FOR 1ST 12", 12" OC REMAINING
DP2.0	2'-0"	(8) #6	(3) #4 TIES @ ANCHOR RODS, 12"OC REMAINING

- SEE DRILLED PIER DETAIL ON S-2.1

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FOUNDATION PLAN

SCALE: As indicated
CONTRACT NO: 220656
SHEET S-1.1

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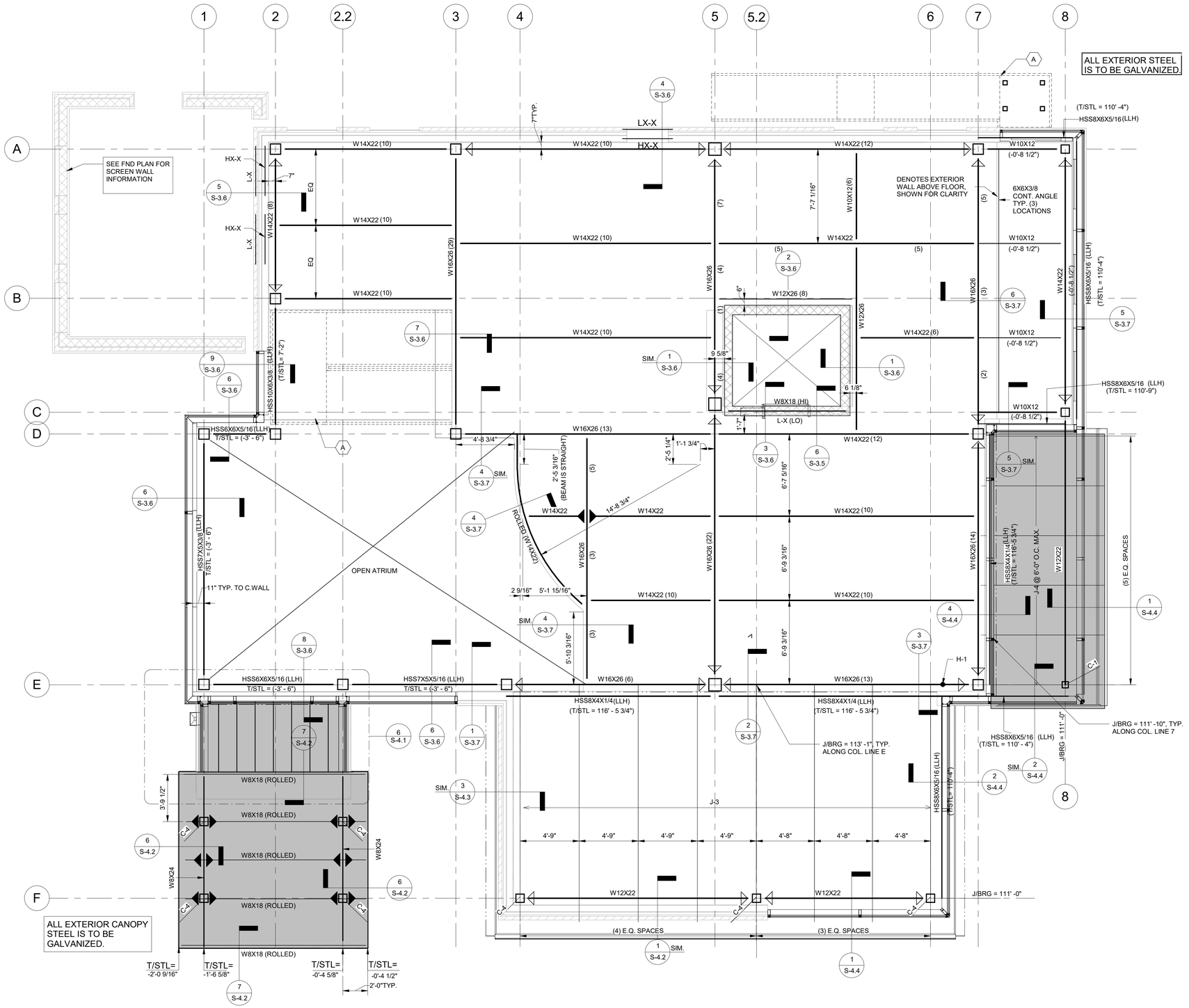

SECOND FLOOR PLAN

1/4" = 1'-0"

2ND FLOOR COMPOSITE FRAMING PLAN NOTES:

1. SEE SHEETS S-0.1, S-0.2, AND S-0.3 FOR GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-3.1 FOR TYPICAL DETAILS.
3. FLOOR CONSTRUCTION - 3" N.WT. CONCRETE (145PCF) ON 3" X 20GA COMPOSITE GALVANIZED METAL DECK (6 INCH TOTAL THICKNESS), REINFORCED WITH 6x6 – W1.4 x W1.4 WELDED WIRE REINFORCEMENT. DECK IS DESIGNED FOR A 3 SPAN CONDITION. DECK MFG IS RESPONSIBLE FOR FINAL DECK LAYOUT. SHOULD THE DECK LAYOUT BE DONE IN SUCH A WAY THE DECK IS A ONE SPAN OR TWO SPAN CONDITION, DECK MFG SHALL INCREASE DECK GAUGE TO MEET THE LOADING CONDITIONS.
4. ▭ DENOTES ROOF CONSTRUCTION. REFER TO SHEET S-1.3 FOR MORE INFORMATION.
5. TOP OF FLOOR ELEVATION = 114'-0" = TOP OF CONCRETE COMPOSITE FLOOR REFERENCED FROM THE PROJECT DATUM.
6. T/STL INDICATES THE TOP OF STEEL REFERENCED FROM THE PROJECT DATUM U.N.O. TOP OF STEEL EQUALS ELEVATION 113'-6", TYP. UNO. ELEVATIONS NOTED (X' -X") ARE REFERENCED FROM T/STL ELEV. OF 113'-6".
7. COMPOSITE FLOOR DESIGN IS LRFD DESIGN AND REACTIONS SHOWN ON PLAN ARE UNFACTORED REACTIONS.
8. C-X INDICATES STEEL COLUMN. SEE COLUMN SCHEDULE ON S-1.3.
9. HX-X INDICATES LIGHT GAUGE HEADER, SEE SHEET S-3.4 AND S-3.5 FOR HEADER SCHEDULE AND DETAILS. LIGHT GUAGE HEADER TO BE LOCATED AT THE TOP OF THE OPENING.
10. L-X INDICATES MISC. ANGLE LINTEL, SEE GENERAL NOTES FOR SIZES BASED ON OPENING SIZE.
11. BEAMS SHALL BE EQUALLY SPACED BETWEEN COLUMNS LINES, MAXIMUM SPACING 9'-0" OC, MAX., UNO.
12. SEE ARCHITECTURAL DRAWINGS FOR ALL MEASUREMENTS NOT SHOWN. ALL DIMENSIONS SHALL CONFORM TO THE ARCHITECTURAL DRAWINGS.
13. COORDINATE LOCATION AND SIZE OF ALL FLOOR PENETRATIONS AND OPENINGS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.
14. INDIVIDUAL HANGER RODS SUPPORTING MECHANICAL, ELECTRICAL, PLUMBING OR FIRE PROTECTION EQUIPMENTS SHALL BE SPACED IN SUCH A MANNER AS NOT TO IMPOSE A SINGLE POINT LOAD ON ANY STRUCTURAL MEMBER GREATER THAN 100 LBS. OR 5 LBS PER LINEAL FOOT. IF THIS CRITERION IS EXCEEDED, A WRITTEN REQUEST INDICATING THE LOADS WITH CORRESPONDING LOCATIONS SHALL BE SENT TO THE STRUCTURAL ENGINEER OF RECORD FOR APPROVAL.
15. CONCRETE MASONRY WALLS SHALL BE 8" WIDE AND REINFORCED VERTICALLY WITH (1) #5 BAR AT 32 INCHES ON CENTER. BARS SHALL BE CENTERED IN THE WALL, U.N.O. SEE GENERAL NOTES AND DETAILS FOR MORE INFORMATION. CONCRETE MASONRY WALLS SHALL BE CENTERED ON FOOTING UNLESS NOTED OTHERWISE.
16. PROVIDE POUR STOPS, CELL CLOSURES, ETC. TO CONTAIN CONCRETE DURING PLACEMENT. PROVIDE #4 BARS AT ALL CORNERS WHERE OPENINGS OCCUR.
17. ⊡◁ DENOTES FLEXIBLE MOMENT CONNECTION. SEE MOMENT CONNECTION DETAILS FOR MORE INFORMATION.
18. ⊡▶ DENOTES FULL MOMENT CONNECTION. DESIGN MOMENT CONNECTION FOR BEAMS MAXIMUM MOMENT PER AISC MANUAL.
19. H-1 DENOTES W8X18 HANGER.

COMPOSITE FLOOR FRAMING PLAN LEGEND:

1. ▨ INDICATES MASONRY WALL.

FRAMING PLAN CODED NOTES ⬡

A PRE-MANUFACTURED STAIRWAY ASSEMBLY, STAIRWAY ASSEMBLY (STRINGER, TREADS, LANDING, HANDRAIL, AND GUARD RRAIL) AND CONNECTION TO THE STRUCTURE SHALL BE DESIGNED BY THE STAIRWAY MANUFACTURER. IDENTIFY ADDITIONAL MODIFICATIONS REQUIRED TO STRUCTURE NEEDED TO SUPPORT STAIRWAY ASSEMBLY REACTIONS, SUBMIT SHOP DRAWINGS AND STRUCTURAL CALCULATION PACKAGE. CALCULATION PACKAGE, CALCULATION PACKAGE SHALL BE SIGNED AND SEALED BY AN OHIO ENGINEER.

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SECOND FLOOR PLAN

SCALE: As indicated
CONTRACT NO: 220656
SHEET S-1.2

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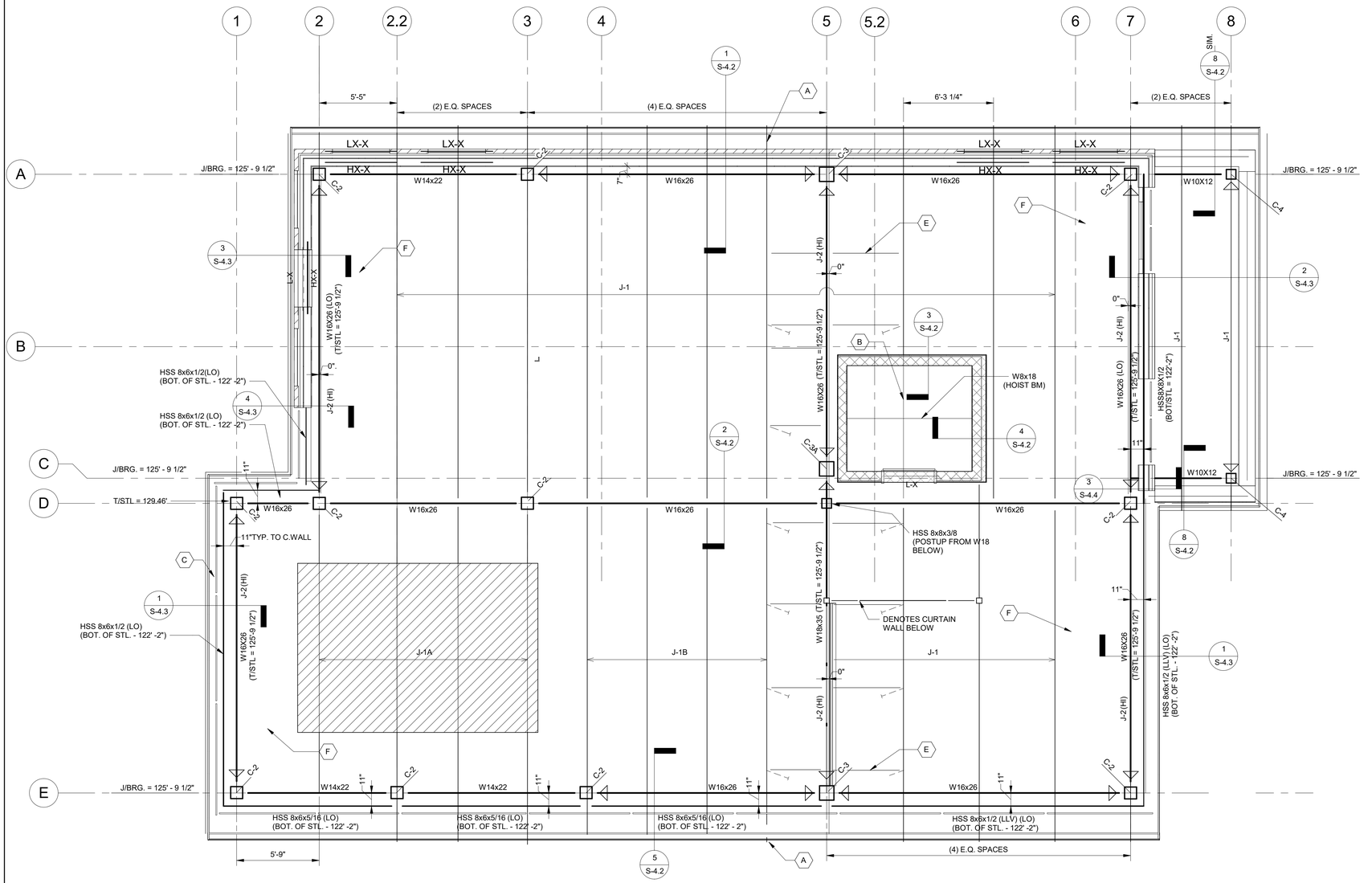
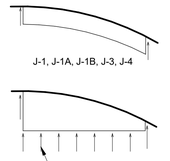


ROOF FRAMING PLAN

1/4" = 1'-0"

JOIST PROFILES

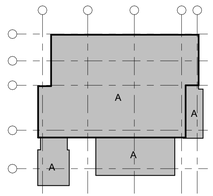


STEEL ROOF FRAMING PLAN NOTES:

1. SEE SHEETS S-0.1, S-0.2, AND S-0.3 FOR GENERAL STRUCTURAL NOTES.
2. SEE SHEET S-3.1, S-3.1A, S-3.1B, S-3.2 FOR TYPICAL DETAILS.
3. ROOF CONSTRUCTION - 1 1/2" x B20 GA PAINTED METAL ROOF DECK SUPPORTED ON STEEL JOIST/BEAMS. METAL DECK TO BE FASTENED TO THE JOIST PER THE ROOF DECK FASTENING SCHEDULE ON THIS SHEET. DECK IS DESIGNED FOR A 3 SPAN CONDITION. DECK MFG IS RESPONSIBLE FOR FINAL DECK LAYOUT. SHOULD THE DECK LAYOUT BE DONE IN SUCH A WAY THE DECK IS A ONE SPAN OR TWO SPAN CONDITION, DECK MFG SHALL INCREASE DECK GAUGE TO MEET THE LOADING CONDITIONS. DO NOT HANG STEMS FROM ROOF DECK, AD SUSPEND ITEMS TO BE FROM ROOF JOIST.
4. TOP OF ROOF ELEVATION = TOP OF ROOF METAL DECK REFERENCED FROM THE PROJECT DATUM.
5. J/BRG OR T/STL INDICATES THE TOP OF STEEL REFERNCED FROM THE PROJECT DATUM U.N.O. SEE PLAN FOR TOP OF STEEL ELEVATION TYP., UNO.
6. C-X INDICATES STEEL COLUMN. SEE COLUMN SHCEDULE THIS SHEET.
7. HX-X INDICATES LIGHT GAUGE HEADER, DESIGNED BY THE LIGHT GUAGE DESIGNER/MFG. SEE TYPICAL LIGHT GAUGE DETAILS ON SHEETS S-3.4 AND S-3.5. LIGHT GAUGE HEADER TO BE LOACTED AT THE TOP OF THE OPENING.
8. L-X INDICATES MISC. ANGLE LINTEL, SEE GENERAL NOTES FOR SIZES BASED ON OPENING SIZE.
9. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ROOF TOP EQUIPMENT WEIGHTS AND LOCATIONS NOT INDICATED.
10. BRIDGING IS NOT SHOWN. THE JOIST MANUFACTURER SHALL DETERMINE THE ROWS OF BRIDGING REQUIRED.
11. JOISTS SHALL BE EQUALLY SPACED BETWEEN COLUMNS LINES, MAXIMUM SPACING 6'-0" OC, MAX., UNO.
12. SEE ARCHITECTURAL DRAWINGS FOR ALL MEASUREMENTS NOT SHOWN. ALL DIMENSIONS SHALL CONFORM TO THE ARCHITECTURAL DRAWINGS.
13. COORDINATE LOCATION AND SIZE OF ALL ROOF PENETRATIONS AND OPENINGS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.
14. INDIVIDUAL HANGER RODS SUPPORTING MECHANICAL, ELECTRICAL, PLUMBING OR FIRE PROTECTION EQUIPMENTS SHALL BE SPACED IN SUCH A MANNER AS NOT TO IMPOSE A SINGLE POINT LOAD ON ANY STRUCTURAL MEMBER GREATER THAN 100 LBS. OR 5 LBS PER LINEAL FOOT. IF THIS CRITERION IS EXCEEDED, A WRITTEN REQUEST INDICATING THE LOADS WITH CORRESPONDING LOCATIONS SHALL BE SENT TO THE STRUCTURAL ENGINEER OF RECORD FOR APPROVAL.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE EXISTING CONDITIONS AND FOR THE PROPER FIT AND CLEARANCE IN THE FIELD OF ANY MATERIAL THAT IS FABRICATED FROM THESE DRAWINGS. IF THE CONTRACTOR DISCOVERS ANY CONDITIONS THAT ARE NOT AS REPRESENTED ON THESE DRAWINGS, CT CONSULTANTS SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE STRUCTURAL SIGNIFICANCE OF THE DEVIATION.
16. JOISTS TO HAVE MINIMUM 2 1/2" DEEP SEATS, UNO.
17. J# INDICATES SPECIAL JOIST LOADING REQUIREMENTS AND PROFILE. SEE THIS SHEET FOR JOIST LOADING DIAGRAMS AND JOIST PROFILES.
18. JOIST WITH MOMENT CONNECTIONS DESIGNATION SHALL BE DESIGNED FOR END MOMENTS SHOWN IN THE JOIST SCHEDULE.
19. DENOTES AREA WHERE JOIST ARE TO BE DESIGNED FOR ADDITIONAL COLLATERAL LOADING. SEE JOIST SCHEDULE FOR LOADING. CT CONSULTANTS IS NOT RESPONSIBLE FOR THE CONNECTIONS OF THE COLLATERAL LOADING TO THE STRUCTURE OR THE LATERAL BRACING.
20. DENOTES FLEXIBLE MOMENT CONNECTION. SEE MOMENT CONNECTION DETAILS FOR MORE INFORMATION.

ROOF FRAMING PLAN CODED NOTES

- A JOIST MANUFACTURER TO PROVIDE JOIST EXTENSION TYPER, TYP.
- B JOIST MANUFACTURER TO PROVIDE 2.5K2 JOIST SUBSTITUTE OVER ELEVATOR SHAFT
- C DENOTES CURTAIN WALL SYSTEM, SEE ARCH. DWG'S. FOR MORE INFORMATION
- E PROVIDE ANGLE 3X3X5/16" DIAGIONAL BRACE FROM BOTTOM FLANGE OF WF BEAM UP TO TOP CHORD OF JOIST ALONG COLUMN LINE 5 MOMENT FRAME. PROVIDE 3/8" STIFFENER PLATE, NS & FS, ON WF TO WELD BRACE TO. PROVIDE VERTICAL 4X4X5/16 ANGLE WELDED TO JOIST w 3/16" FILLET WELD, TYP TOP & BOT
- F JOIST MANUFACTURER TO PROVIDE MIN. OF 2 ROWS OF DOUBLE ANGLE BRACING IN EACH BAY.

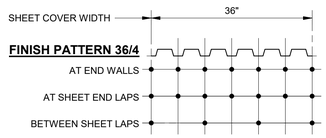


DECK FASTENING KEY PLAN

ROOF DECK FASTENING SCHEDULE

MARK	WELD	PATTERN	SIDE LAP FASTENERS
A	5/8" DIA. PUDDLE	36/4	(2) #10 TEK SCREWS PER SPAN

ROOF DECK FASTENING NOTES:
- MIN. EXTERIOR BEARING LENGTH OF 1 1/2".
- MIN. INTERIOR BEARING LENGTH OF 3".
- WELDING PER ANSI/AWS D1.3 STRUCTURAL WELD CODE/SHEET STEEL 98 STRUCTURAL WELDING CODE.
- SHEET STEEL TO CONFORM TO ASTM A653.
- PROVIDE INTERLOCKING SIDE LAP OR MIN. LAP OF METAL ROOF PANELS TO DEVELOPE FULL DIAPHRAM DECK CAPACITY.



TYPICAL METAL DECK CONNECTION

JOIST SCHEDULE

JOIST MARK NUMBER	JOIST DEPTH (MIN)	UNIFORM LOADS			AXIAL LOADS
		DEAD LOAD (PSF)	ROOF LIVE LOAD L, (PSF)	ROOF SNOW LOAD Ls, (PSF)	WIND AXIAL LOAD (W) (KIP/FT)
J1	18	20	20	30	NA.
J-1A*	18	20	20	30	NA.
J-1B	18	20	20	30	NA.
J2	18	20	20	30	0.15
J3	12	20	20	45	NA.
J4	12	20	20	40	NA.

(1) JOIST MANUFACTURER TO USE APPLICABLE CODE LOAD COMBINATIONS.
(2) DEFLECTION CRITERIA: LIVE LOAD DEFLECTION ≤ L/360.
(3) * DENOTES JOIST TO BE DESIGNED FOR AN ADDITIONAL COLLATERAL LOAD OF 15PSF.
(4) LOADS PROVIDED ABOVE ARE ASD LOADS.

COLUMN SCHEDULE

APRIL	Type	BASE PLATE SIZE			BASE PLATE TYPE	ANCHOR RODS		QUANTITY OF ANCHORS
		THICKNESS (t)	WIDTH (b)	LENGTH (n)		SIZE	EMBEDMENT	
C-1	HSS6X6X5/16	3/4"	12"	1'-0"	I	3/4"	7"	(4)
C-2	HSS10X10X3/8	1"	16"	1'-4"	II	3/4"	10"	(6)
C-3	HSS12X12X3/8	1 1/2"	24"	2'-0"	II	7/8"	12"	(6)
C-3A	HSS12X12X3/8 2	1 1/2"	24"	1'-11"	II	1"	12"	(6)
C-4	HSS8X8X5/16	3/4"	14"	1'-2"	I	3/4"	10"	(4)
C-5	HSS4X4X3/8	1/2"	10"	0'-10"	I	3/4"	7"	(4)

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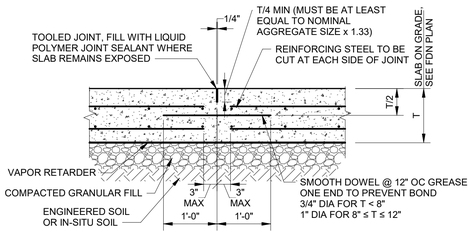
ROOF PLAN

SCALE: As indicated
CONTRACT NO: 220656
SHEET: S-1.3

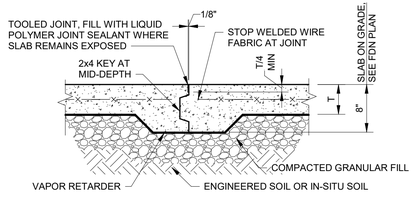
6/3/2024 8:19:44 AM



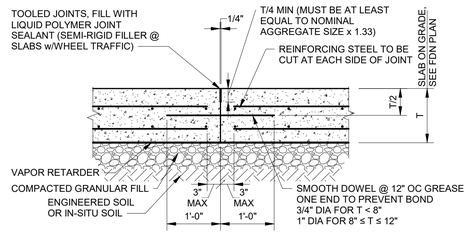
NOTES:
1. REINFORCING STEEL SHALL BE SUPPORTED INDEPENDENTLY FROM DOWELS.
2. SAW CUT JOINT INTO SLAB AS SOON AS CONCRETE IS FIRM ENOUGH THAT THE CUTTING ACTION WILL NOT TEAR, ABRADE, OR OTHERWISE DAMAGE SURFACE AND BEFORE CONCRETE DEVELOPS RANDOM CONTRACTION CRACKS.
3. AS A CONTRACTOR'S OPTION, A DOWEL BASKET ASSEMBLY WITH LOAD PLATE MAY BE USED IN LIEU OF A GREASED DOWEL.

1 S-2.1 TYPICAL CONTROL JOINT DETAIL
DETAIL FOR 6" - 12" SLABS

3/4" = 1'-0"



2 S-2.1 TYPICAL CONSTRUCTION JOINT DETAIL
1" = 1'-0"



NOTES:
1. REINFORCING STEEL SHALL BE SUPPORTED INDEPENDENTLY FROM DOWELS.
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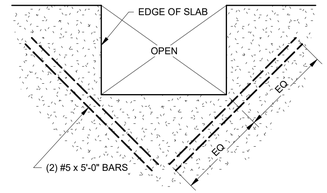
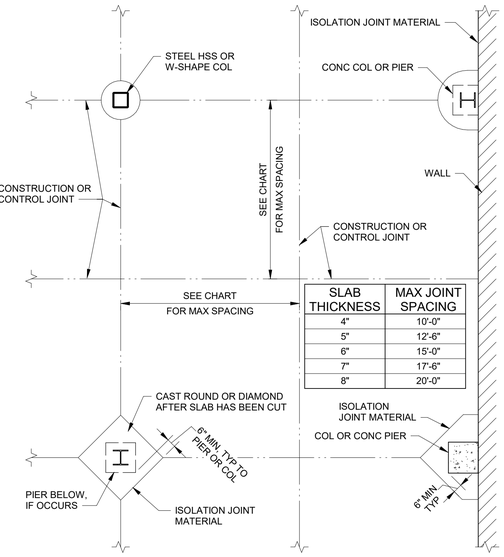
3 S-2.1 TYPICAL CONSTRUCTION JOINT DETAIL
DETAIL FOR 6" - 12" SLABS

3/4" = 1'-0"



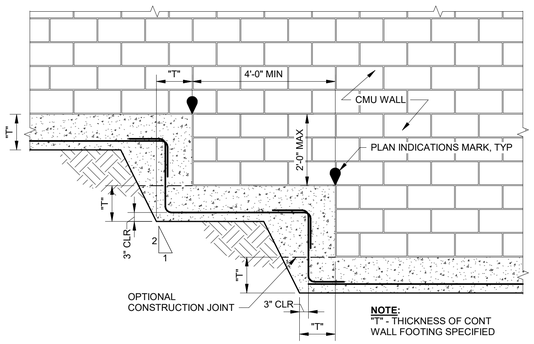
4 S-2.1 TYPICAL FLOOR SLAB REINF
AT RE-ENTRANT CORNERS DETAIL

1/2" = 1'-0"



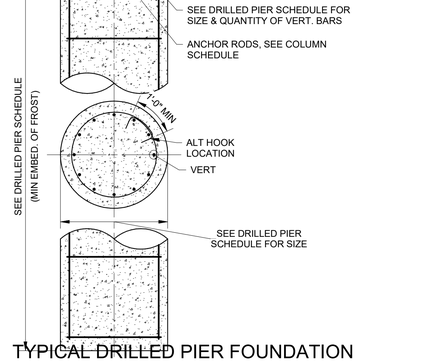
SLAB THICKNESS	MAX JOINT SPACING
4"	10'-0"
5"	12'-6"
6"	15'-0"
7"	17'-6"
8"	20'-0"

5 S-2.1 TYPICAL SLAB-ON-GRADE JOINT PATTERN
1/4" = 1'-0"

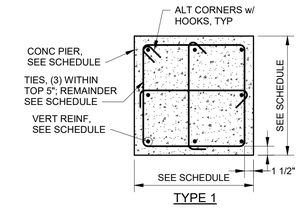


NOTE:
"T" - THICKNESS OF CONT WALL FOOTING SPECIFIED

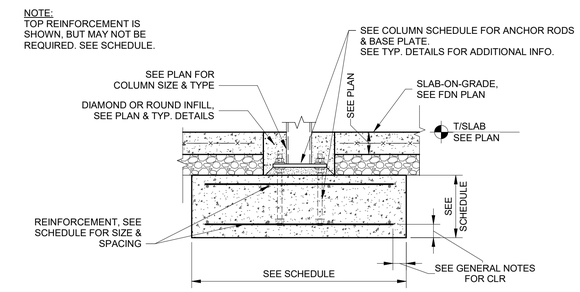
6 S-2.1 TYPICAL STEPPED FOOTING DETAIL
1/2" = 1'-0"



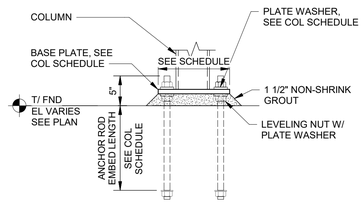
7 S-2.1 TYPICAL DRILLED PIER FOUNDATION DETAIL
3/4" = 1'-0"



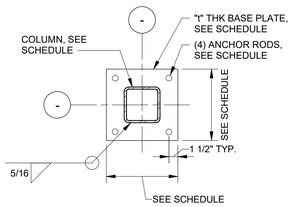
8 S-2.1 CONCRETE PIER DETAIL
1" = 1'-0"



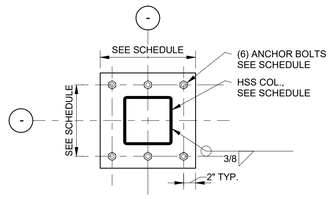
9 S-2.1 TYPICAL COLUMN FOOTING
3/4" = 1'-0"



10 S-2.1 ANCHOR ROD DETAIL
1" = 1'-0"



11 S-2.1 BASE PLATE DETAIL TYPE 1
1" = 1'-0"



12 S-2.1 BASE PLATE DETAIL TYPE 2
1" = 1'-0"

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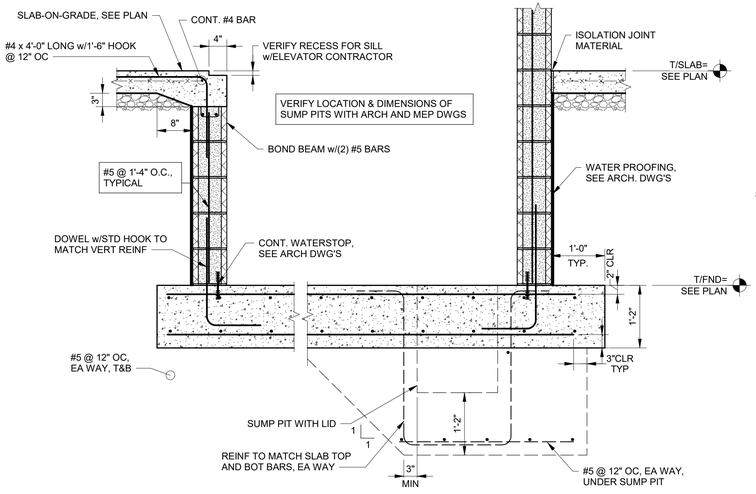
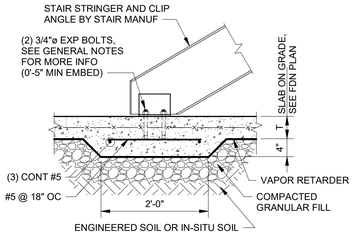
FOUNDATION TYPICAL DETAILS

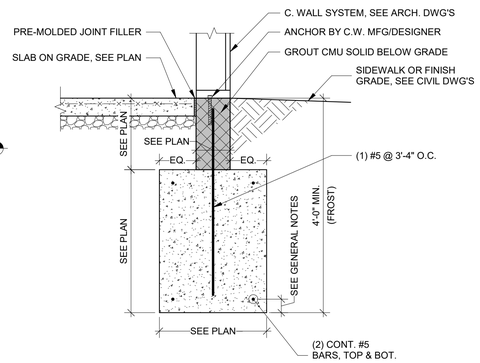
SCALE: As indicated
CONTRACT NO: 220656
SHEET S-2.1



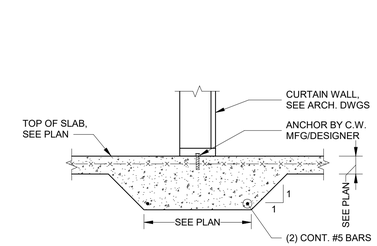
1 S-2.2 TYPICAL ELEVATOR PIT SECTION
3/4" = 1'-0"



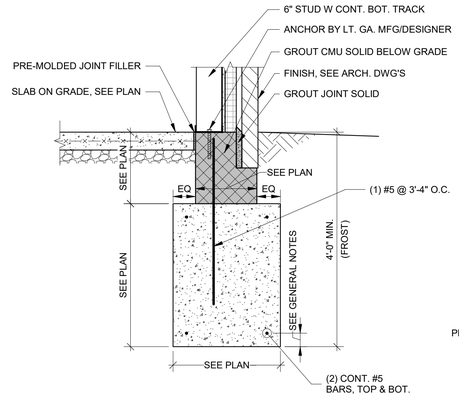
2 S-2.2 TYPICAL THICKENED SLAB AT STAIR DETAIL
3/4" = 1'-0"



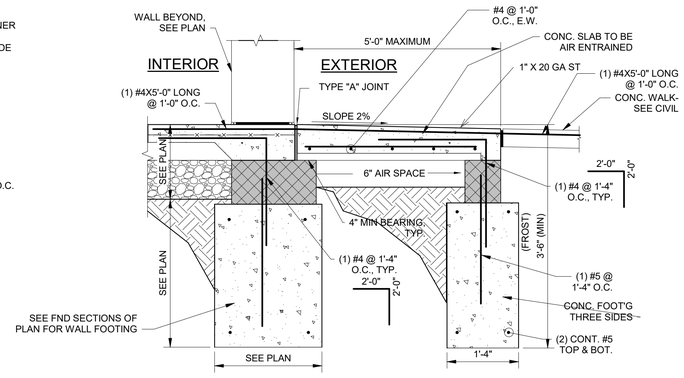
3 S-2.2 FOUNDATION SECTION
3/4" = 1'-0"



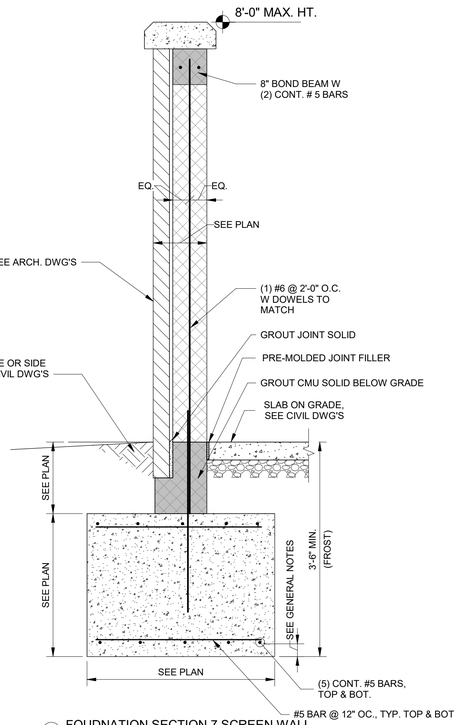
4 S-2.2 FOUNDATION SECTION
3/4" = 1'-0"



5 S-2.2 FOUNDATION SECTION
3/4" = 1'-0"



6 S-2.2 FOUNDATION SECTION
3/4" = 1'-0"



7 FOUDNATION SECTION 7 SCREEN WALL
3/4" = 1'-0"

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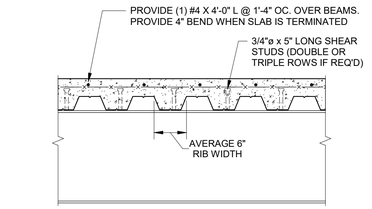
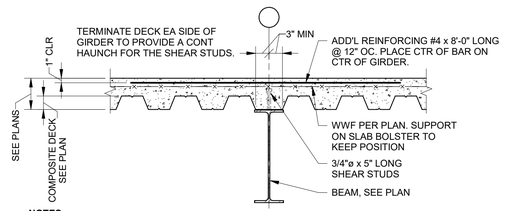
FOUNDATION SECTIONS

SCALE: 3/4" = 1'-0"
CONTRACT NO: 220656
SHEET S-2.2



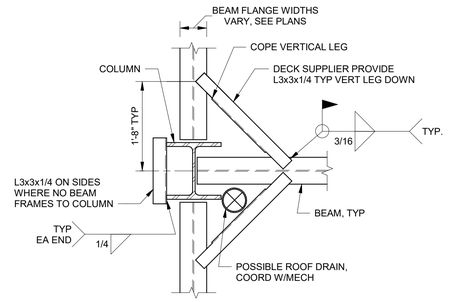
NOTES:
- DOUBLE OR TRIPLE ROWS OF STUDS IF REQ'D SHALL BE STARTED AT BEAM ENDS.
- FOR BEAMS WITH NO STUDS SHOWN ON PLANS, PROVIDE STUDS @ 3'-0" OC MAX.

1 S-3.1 TYPICAL COMPOSITE BEAM
3/4" = 1'-0"

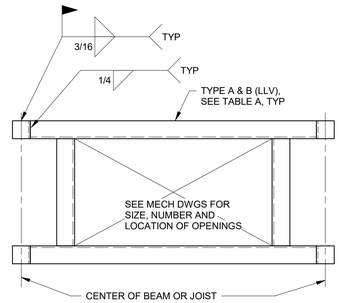


NOTES:
- SHEAR STUDS ON GIRDERS SHALL BE PLACED AS INDICATED ON PLAN.
- FOR GIRDERS WITH NO STUDS SHOWN ON PLANS, PROVIDE STUDS @ 3'-0" OC MAX.

2 S-3.1 TYPICAL COMPOSITE GIRDER
3/4" = 1'-0"



3 S-3.1 TYPICAL DECK SUPPORT AT ALL COLUMNS
3/4" = 1'-0"



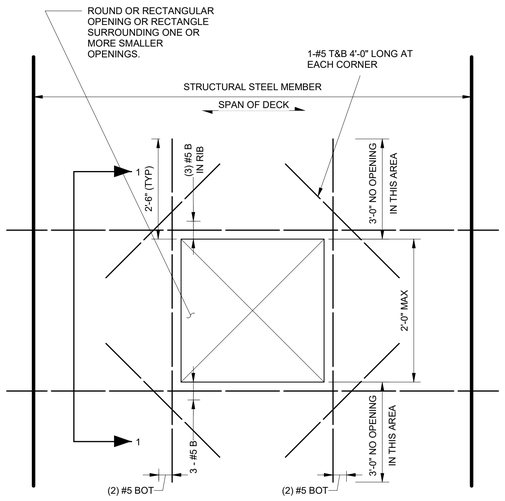
NOTES:
1. FOR OPENINGS 12" AND LARGER

TABLE A		
FRAME TYPE		
SPAN (FT)	TYPE A	TYPE B
2'-0"	X	-
3'-0"	X	-
4'-0"	X	-
5'-0"	-	X
6'-0"	-	X

TYPE A: ALL MEMBERS L6x6x3/8

TYPE B: ALL MEMBERS L8x8x1/2 EXCEPT FOR BEARING WHICH SHALL BE L6x4x1/2

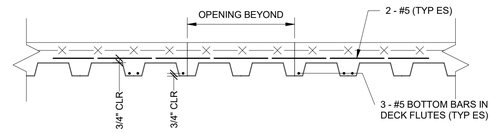
4 S-3.1 TYPICAL OPENING FRAME DETAIL
3/4" = 1'-0"



TYPE 2 - OPENINGS GREATER THAN 6", LESS THAN OR EQUAL TO 2'-0"

NTS

5 S-3.1 COMPOSITE FLOOR
1 1/2" = 1'-0"



SECTION 1

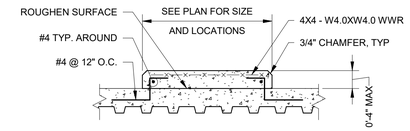
TYPE 2 - IF DECK CUT PRIOR TO CONCRETE PLACEMENT SHORE DECK AS REQUIRED - CUT DECK ONLY AFTER CONCRETE ATTAINS 75% OF DESIGN STRENGTH.

OPENING NOTES:

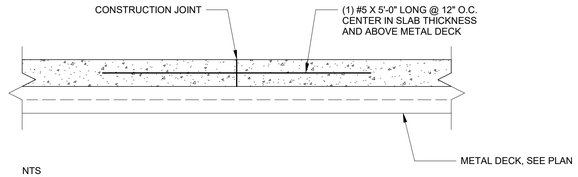
ADDITIONAL OPENINGS OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS MAY BE REQUIRED BY ARCHITECTURAL, ELECTRICAL, PLUMBING, AND MECHANICAL TRADES. REFER TO ARCH., ELEC., PLUMBING., AND MECH. DRAWINGS FOR SIZE, LOCATION AND NUMBER OF REQUIRED OPENINGS.

"ES" - DENOTES EACH SIDE

NTS



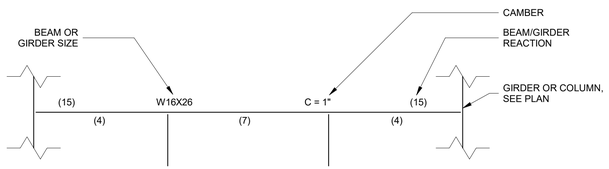
6 S-3.1 Typical Housekeeping on MTL Deck Detail
3/4" = 1'-0"



NTS

7 S-3.1 TYPICAL CONSTRUCTION JOINT DETAIL
1 1/2" = 1'-0"

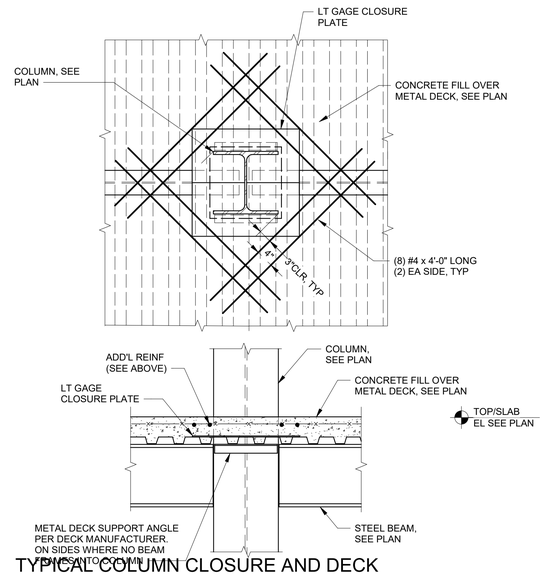
SHEAR STUDS SPACED EQUALLY OVER BEAM/GIRDER SPAN



SHEAR STUDS PER BAY

NTS

8 S-3.1 TYPICAL COMPOSITE BEAM DIAGRAM
1 1/2" = 1'-0"



9 S-3.1 TYPICAL COLUMN CLOSURE AND DECK SUPPORT
3/4" = 1'-0"

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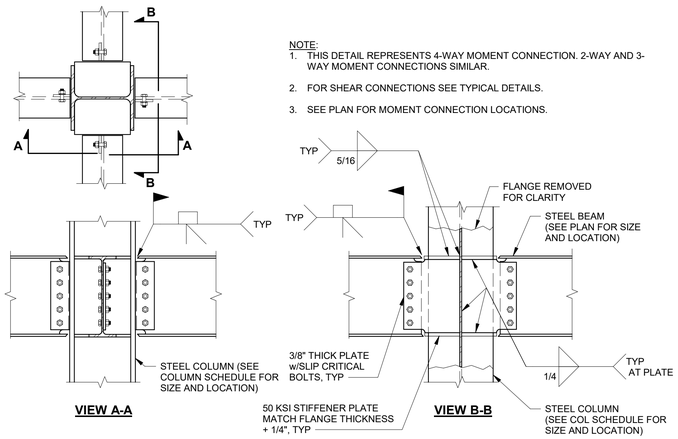
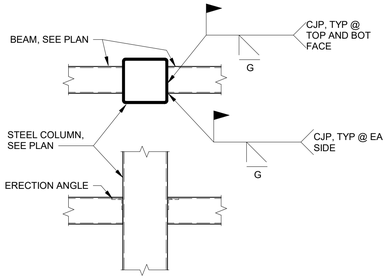
COMPOSITE STEEL DETAILS

SCALE: As indicated
CONTRACT NO: 220656
SHEET S-3.1

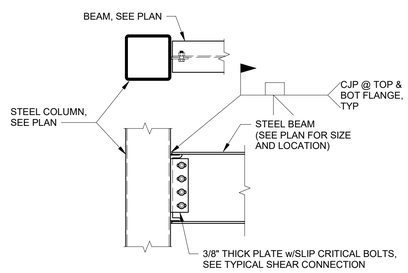


NOTE:
1. THIS DETAIL REPRESENTS 4-WAY MOMENT CONNECTION. 2-WAY AND 3-WAY MOMENT CONNECTIONS SIMILAR.
2. FOR SHEAR CONNECTIONS SEE TYPICAL DETAILS.
3. SEE PLAN FOR MOMENT CONNECTION LOCATIONS.

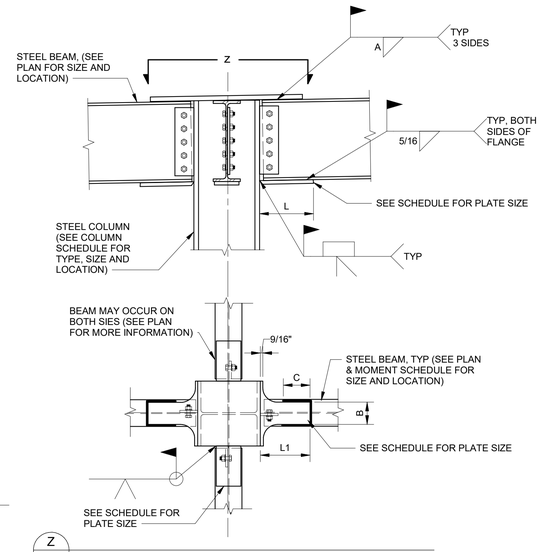
1 S-3.1A TYPICAL MOMENT CONNECTION AT FLOOR
3/4" = 1'-0"



2 S-3.1A TYPICAL HSS BEAM TO HSS COL. MOMENT CONN.
3/4" = 1'-0"



3 S-3.1A TYPICAL WF BEAM TO HSS COL. MOMENT CONN.
3/4" = 1'-0"



Z
-

NOTE:
1. THIS DEATIL REPRESENTS 4-WAY MOMENT CONNECTION. 2-WAY AND 3-WAY MOMENT CONNECTIONS SIMILAR.
2. FOR SHEAR CONNECTIONS SEE TYPICAL DETAILS.
3. SEE PLAN FOR FLEXIBLE MOMENT CONNECTION LOCATIONS.

BEAM SIZE	TOP PLATE	BOTTOM PLATE	WELD SIZE A	B	C	L1
ROOF	TH X W X L	TH X W X L	----------	-------	-------	-------
W18X35	1/4" x 5 " x 0'-7"	3/4" x 7" x 0"-7"	3/16"	4"	4"	10"
W16X26	1/4" x 4" x 0'-7"	3/4" x 6.5" x 0'-6"	3/16"	4"	4"	10"
W14X22	1/4" x 4" x 0'-6"	3/4" x 6" x 0'-6"	3/16"	4"	3"	9"
W12X22	1/4" x 3 x 0'-6"	3/4" x 5" x 0'-6"	3/16"	3"	3"	8"

BEAM SIZE	TOP PLATE	BOTTOM PLATE	WELD SIZE A	B	C	L1
FLOOR	TH X W X L	TH X W X L	----------	-------	-------	-------
W16X26	3/8" x 5" x 0'-7"	3/4" x 6.5" x 0'-6"	1/4"	5"	6"	13"
W14X22	3/8" x 4" x 0'-6"	3/4" x 6" x 0'-6"	1/4"	4"	5"	11"

4 S-3.1A TYPICAL FLEXIBLE MOMENT CONNECTIONS
3/4" = 1'-0"

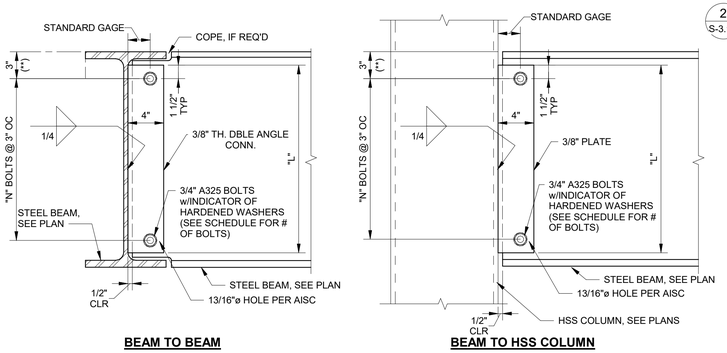
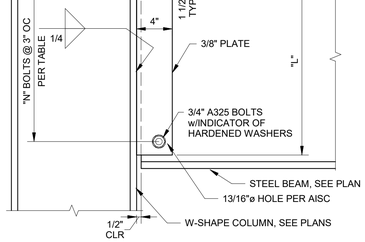


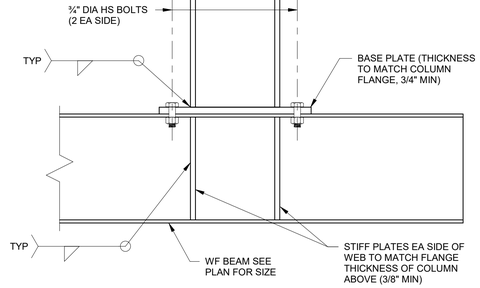
PLATE & BOLT DATA

NOMINAL BEAM DEPTH	"N"	"L" (INCHES)
10	2	6
12	3	9
14	3	9
16	4	12
18	5	15
21	6	18
24	7	21
27	8	24

(**) SPACING MAY BE DECREASED TO 2 1/2" IF REQUIRED.

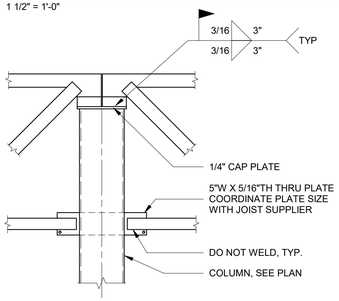
NOTES:
1. THE STEEL FABRICATOR SHALL DESIGN ALL CONNECTIONS FOR SHEAR REACTIONS GIVEN ON PLANS OR IN SECTIONS. IF NO REACTION IS GIVEN, THE SHEAR CAPACITIES IN THE SINGLE PLATE MINIMUM CONNNECTION REQUIREMENTS TABLE SHALL BE MAINTAINED.
2. PROVIDE DOUBLE ANGLE CONNECTIONS IN LIEU OF SINGLE PLATE CONNECTIONS WHERE EVER POSSIBLE AND FOR ALL BEAM TO BEAM CONNECTIONS. ALL CONNECTIONS SHALL MAINTAIN THE MINIMUM NUMBER OF BOLTS AS DEFINED IN THE ABOVE TABLE.



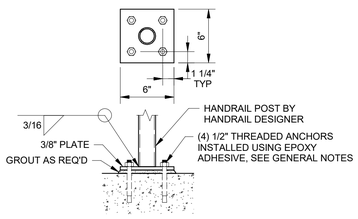


TYP. BEAM SUPPORTED COLUMN (TRANSFERRED COLUMN)
NTS

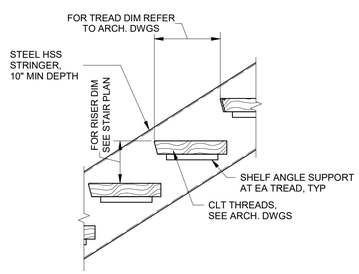
5 S-3.1A TYPICAL SHEAR CONNECTIONS
1 1/2" = 1'-0"



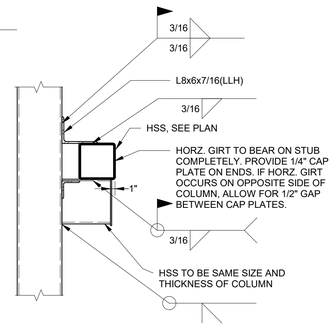
7 S-3.1A TYPICAL JOIST TO COLUMN DETAIL
3/4" = 1'-0"



8 S-3.1A TYPICAL HANDRAIL CONNECTION DETAIL
1 1/2" = 1'-0"



9 S-3.1A TYPICAL STAIR STRINGER DETAIL
3/4" = 1'-0"



10 S-3.1A HSS HORZ. GIRT TO HSS COL.
3/4" = 1'-0"

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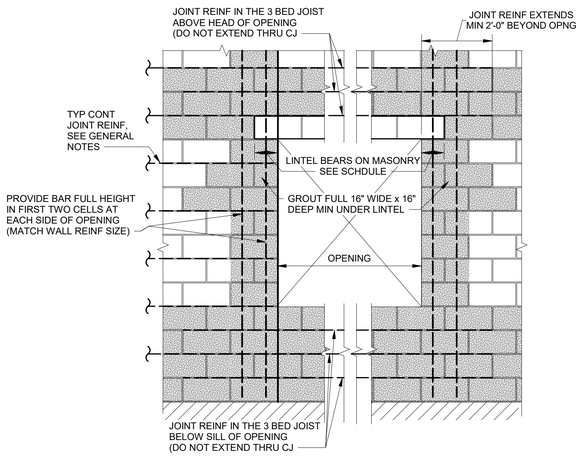
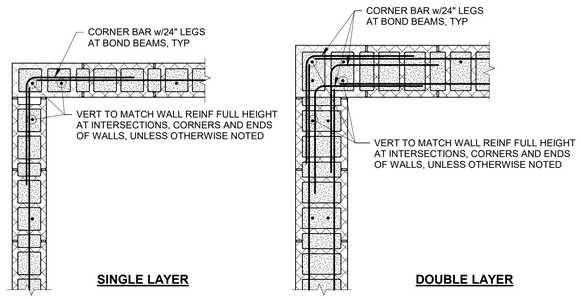
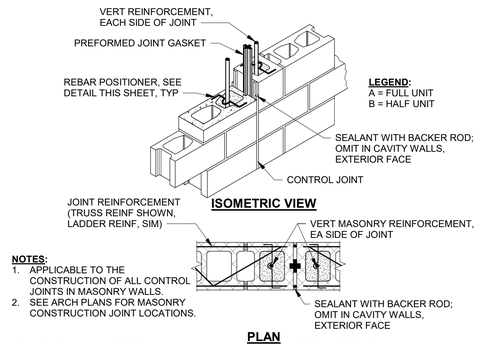


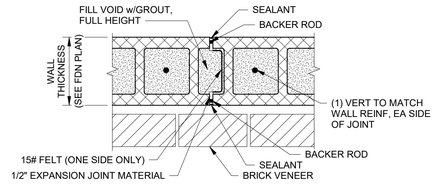
1 S-3.2 TYPICAL MASONRY OPENING DETAIL
1/2" = 1'-0"



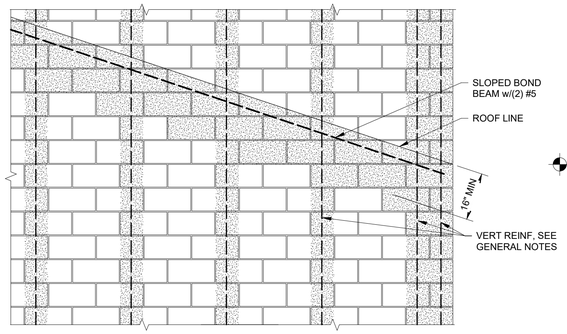
2 S-3.2 TYPICAL WALL CORNER DETAILS
3/4" = 1'-0"



3 S-3.2 TYPICAL VERTICAL CMU CONSTRUCTION JOINT DETAIL
1" = 1'-0"

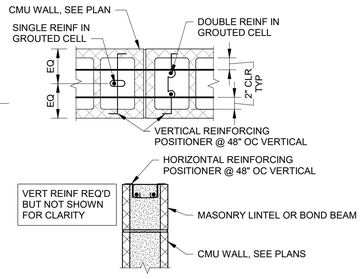


4 S-3.2 TYPICAL MASONRY CONTROL JOINT DETAIL
1 1/2" = 1'-0"



5 S-3.2 TYPICAL SLOPED WALL BOND BEAM DETAIL
1/2" = 1'-0"

T/BOND BEAM
EL SEE PLAN



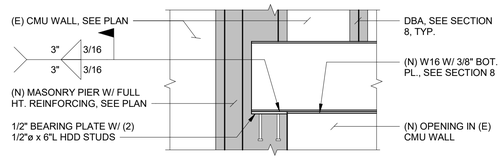
7 S-3.2 TYPICAL CMU REINF POSITIONERS DETAIL
1" = 1'-0"

CMU LAP TABLE (f'_m = 2,000 PSI)

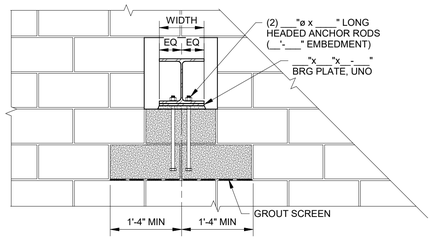
BAR SIZE \ WALL THICKNESS	8"	10"	12"
#3	37"	37"	37"
#4	48"	48"	48"
#5	60"	60"	60"
#6	72"	72"	72"
#7	84"	84"	84"
#8	96"	96"	96"

NOTES:
1. TABULATED VALUES ARE BASED ON A MINIMUM YIELD STRENGTH OF 60,000 PSI. LENGTHS ARE IN INCHES.
2. REINFORCEMENT SHALL BE CENTERED IN CELL OF CONCRETE MASONRY UNIT.

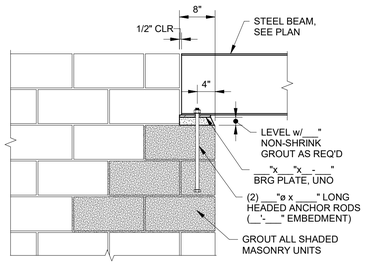
8 S-3.2 2000 PSI CMU LAP LENGTH TABLE
12" = 1'-0"



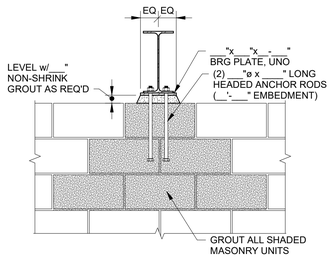
9 S-3.2 BEAM BEARING DETAIL
3/4" = 1'-0"



MEMBER PERPENDICULAR TO WALL w/o OPENING



MEMBER PARALLEL END WALL



MEMBER PERPENDICULAR TO WALL w/OPENING

10 S-3.2 TYPICAL BEAM BEARING DETAILS
3/4" = 1'-0"

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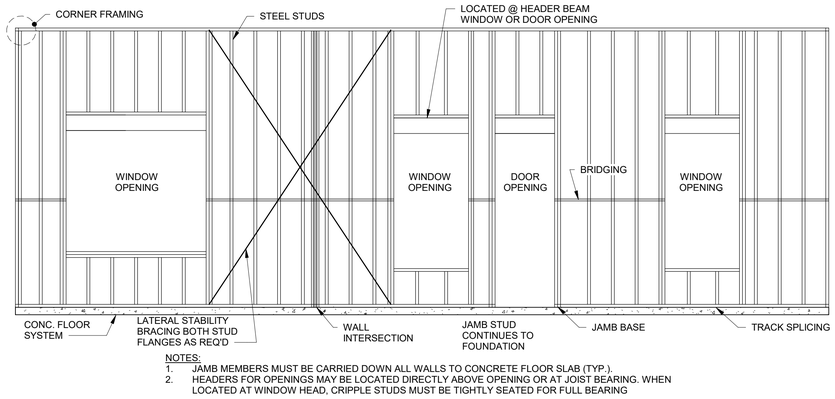
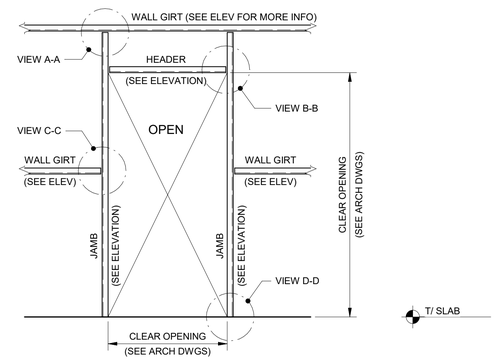
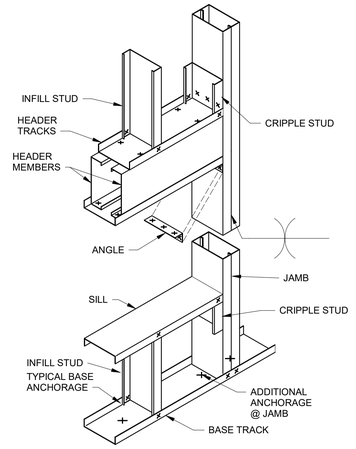


NOTES:
1. JAMB MEMBERS MUST BE CARRIED DOWN ALL WALLS TO CONCRETE FLOOR SLAB (TYP.).
2. HEADERS FOR OPENINGS MAY BE LOCATED DIRECTLY ABOVE OPENING OR AT JOIST BEARING. WHEN LOCATED AT WINDOW HEAD, CRIPPLE STUDS MUST BE TIGHTLY SEATED FOR FULL BEARING

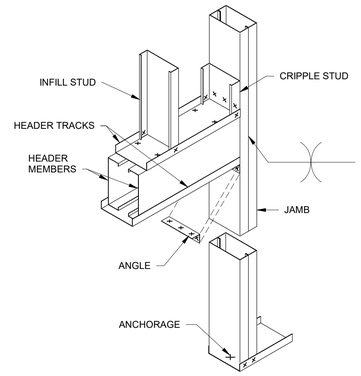
1 S-3.4 CF - 1 TYPICAL WALL FRAMING ELEVATION
1/4" = 1'-0"



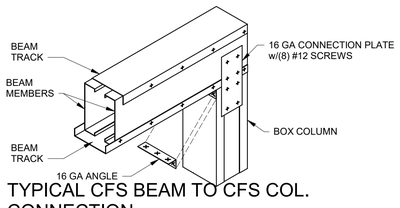
2 S-3.4 TYPICAL CFS FRAMED OPENING
1/2" = 1'-0"



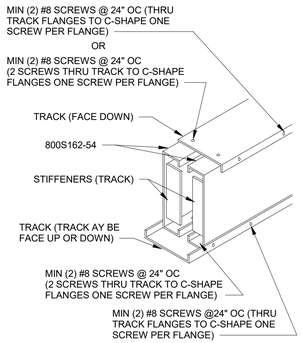
3 S-3.4 TYPICAL FRAMING AT WINDOW
1" = 1'-0"



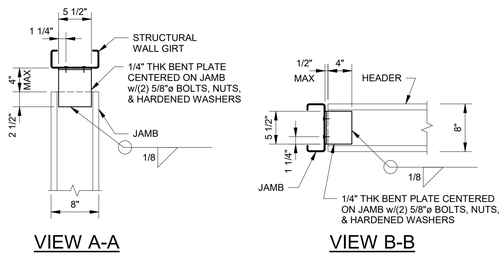
4 S-3.4 TYPICAL FRAMING AT DOOR
1" = 1'-0"



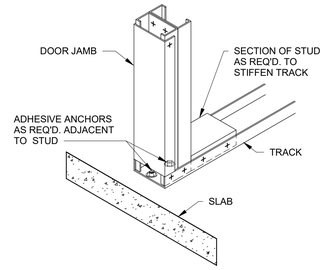
5 S-3.4 TYPICAL CFS BEAM TO CFS COL. CONNECTION
1" = 1'-0"



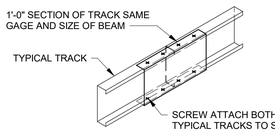
6 S-3.4 TYPICAL HEADER DETAIL
1" = 1'-0"



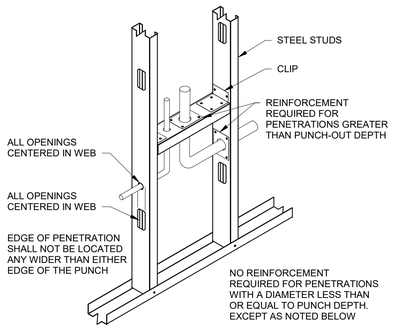
7 S-3.4 TYP. FRAMED OPENING DETAIL
1" = 1'-0"



8 S-3.4 TYPICAL DOOR JAMB
1" = 1'-0"

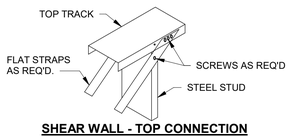


9 S-3.4 TYPICAL BEAM SPLICE DETAIL
1" = 1'-0"

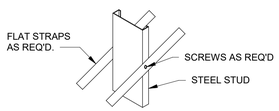


NOTES:
1. FLANGES SHALL NOT BE NOTCHED OR CUT.
2. CAPACITY VERIFICATION BY DESIGN IS REQ. FOR ANY OPENINGS LOCATED AT CONCENTRATED LOADS AND BEARING ENDS.
3. APPLICABLE TO TRACK, STUDS, JOISTS & RAFTERS

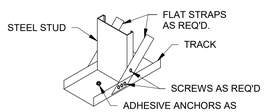
10 S-3.4 TYPICAL STUD WEB PENATRATION DETAIL
1" = 1'-0"



SHEAR WALL - TOP CONNECTION

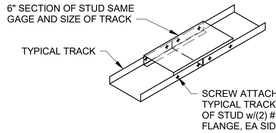


SHEAR WALL - INTERMEDIATE CONNECTION

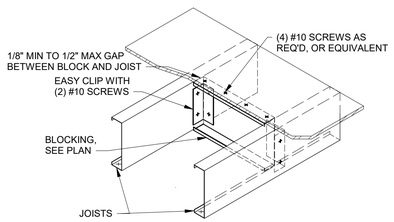


SHEAR WALL - BOTTOM CONNECTION

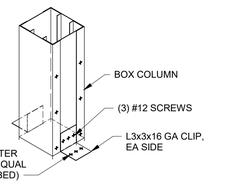
11 S-3.4 TYPICAL BRACING DETAILS
1" = 1'-0"



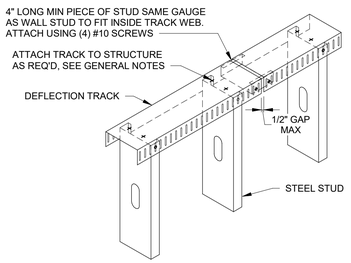
12 S-3.4 TYPICAL BOT TRACK SPLICE DETAIL
1" = 1'-0"



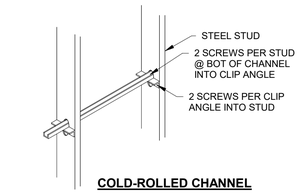
13 S-3.4 TYPICAL JOIST BLOCKING
1" = 1'-0"



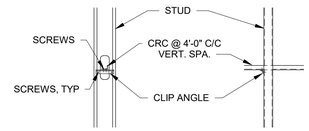
14 S-3.4 TYPICAL CFS BEAM TO CFS COL. CONN.
1" = 1'-0"



15 S-3.4 TYPICAL DEFLECTION TRACK DETAIL
1" = 1'-0"



COLD-ROLLED CHANNEL



16 S-3.4 TYPICAL BRIDGING DETAIL
1" = 1'-0"

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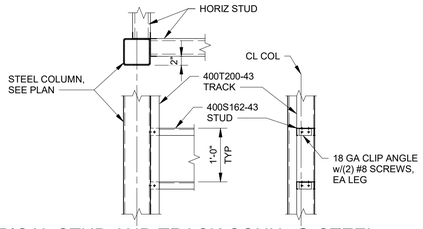
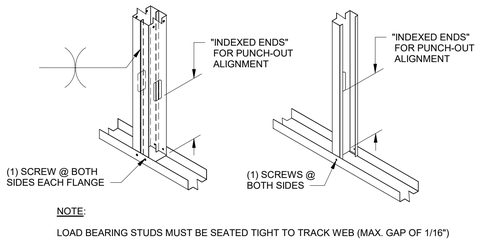


1 S-3.5 TYPICAL STUD AND TRACK CONN. @ STEEL COL.

3/4" = 1'-0"

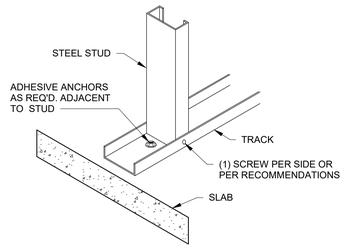


NOTE:

LOAD BEARING STUDS MUST BE SEATED TIGHT TO TRACK WEB (MAX. GAP OF 1/16")

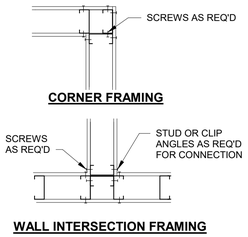
2 S-3.5 TYPICAL STUD TO TRACK CONNECTIONS

1" = 1'-0"



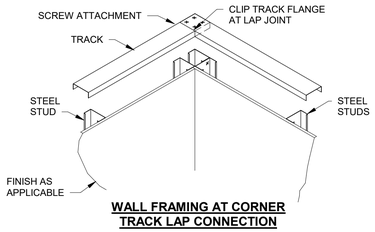
3 S-3.5 TYPICAL WALL BASE AT FLOOR

1" = 1'-0"



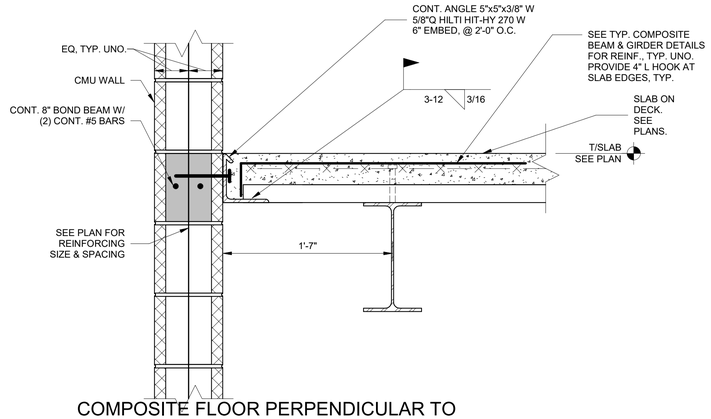
4 S-3.5 TYPICAL CORNER FRAMING DETAIL

1 1/2" = 1'-0"



5 S-3.5 TYPICAL CONRER TRACK CONNECTION

1" = 1'-0"



6 S-3.5 COMPOSITE FLOOR PERPENDICULAR TO CMU WALL

1 1/2" = 1'-0"

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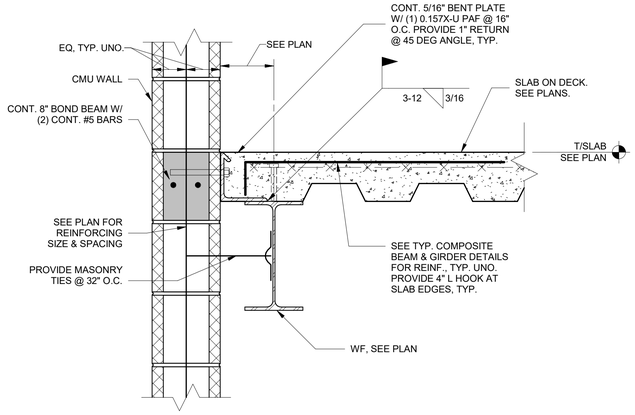
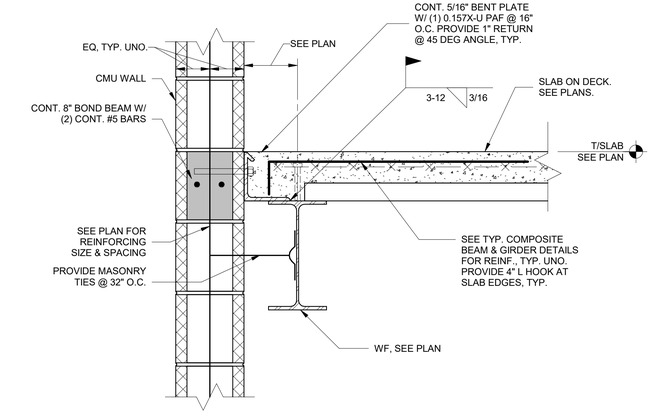


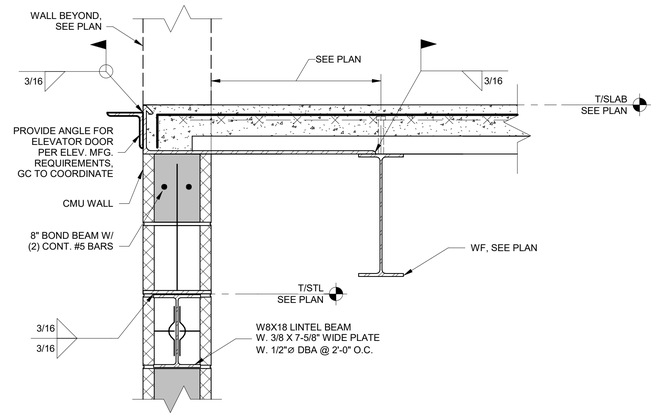
1 S-3.6 COMPOSITE FLOOR PARALLEL TO CMU WALL

1 1/2" = 1'-0"



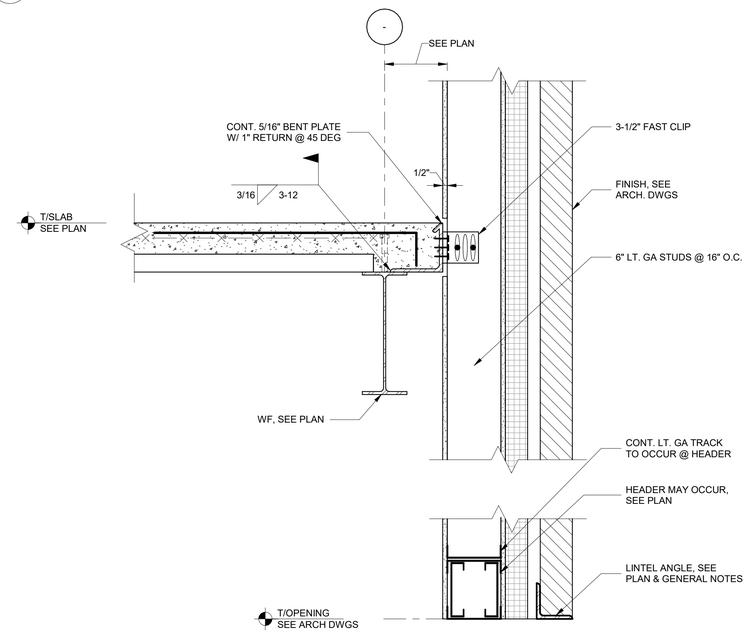
2 S-3.6 COMPOSITE FLOOR PERPENDICULAR TO CMU WALL

1 1/2" = 1'-0"



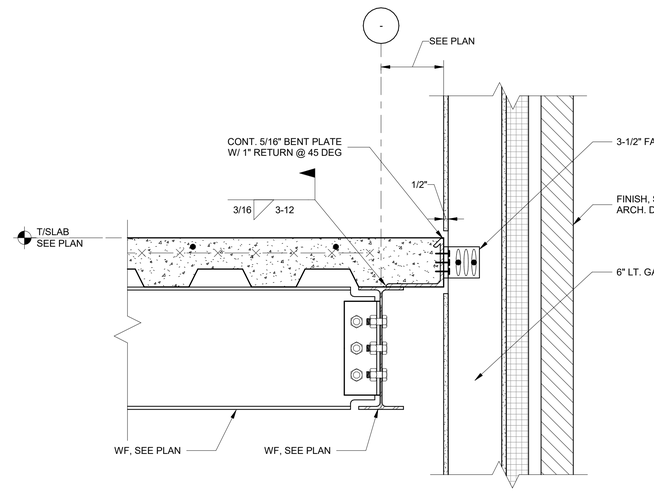
3 S-3.6 COMPOSITE FLOOR AT ELEVATOR

1 1/2" = 1'-0"



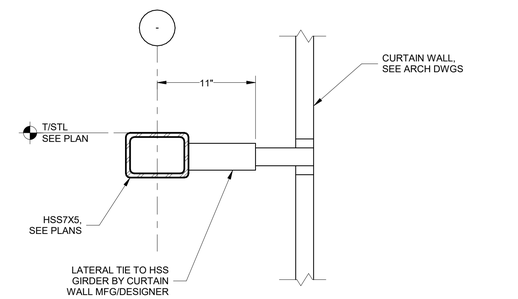
4 S-3.6 FLOOR SECTION

1 1/2" = 1'-0"



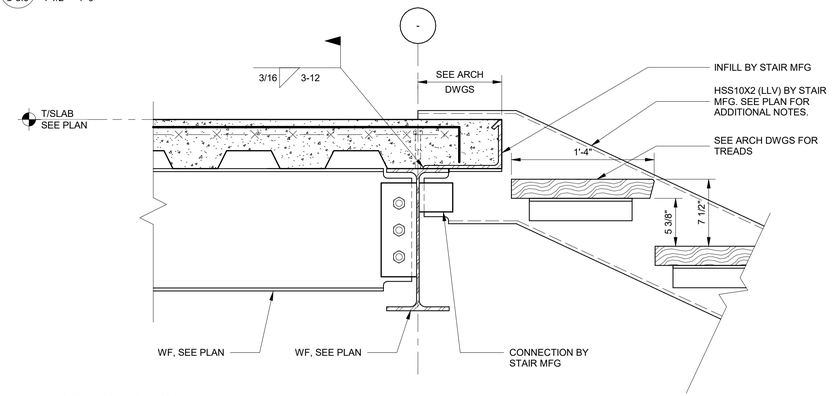
5 S-3.6 FLOOR SECTION

1 1/2" = 1'-0"



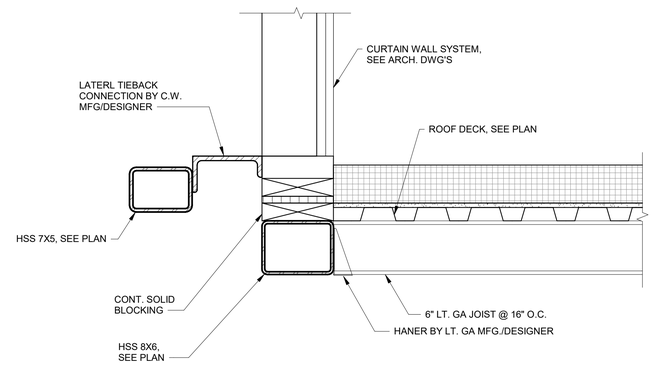
6 S-3.6 FLOOR SECTION

1 1/2" = 1'-0"



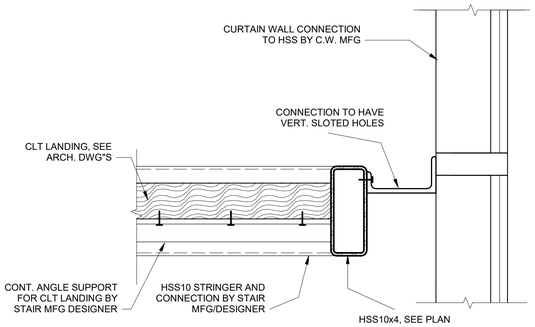
7 S-3.6 FLOOR SECTION

1 1/2" = 1'-0"



8 S-3.6 FLOOR SECTION

1 1/2" = 1'-0"



9 S-3.6 FLOOR SECTION

1 1/2" = 1'-0"

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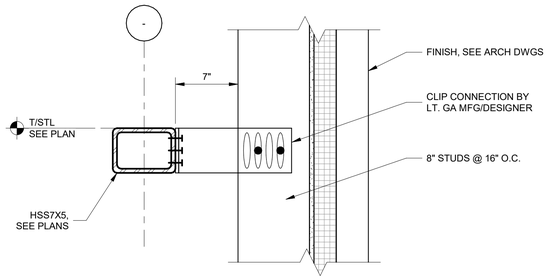
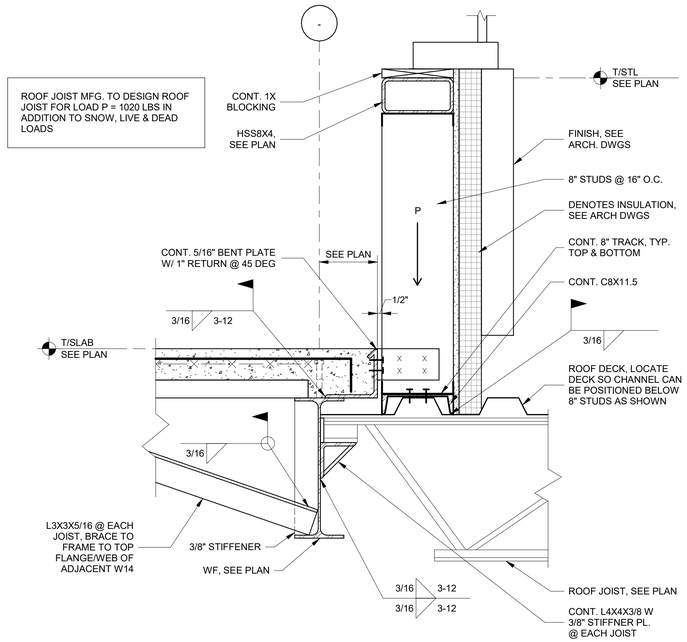
FLOOR SECTIONS

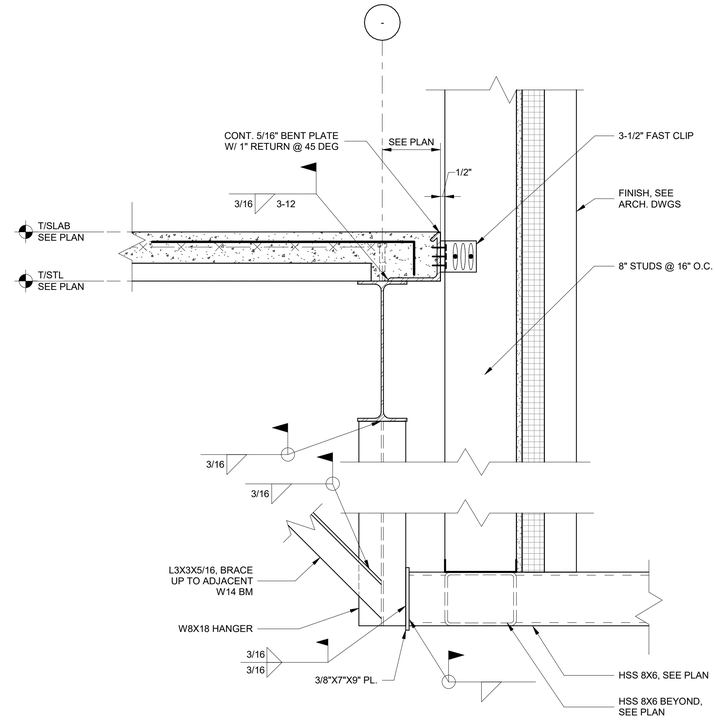
SCALE: 1 1/2" = 1'-0"
CONTRACT NO: 220656
SHEET S-3.6



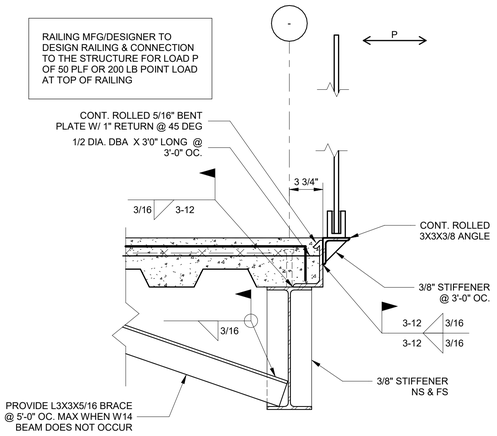
1 S-3.7 FLOOR SECTION
1 1/2" = 1'-0"



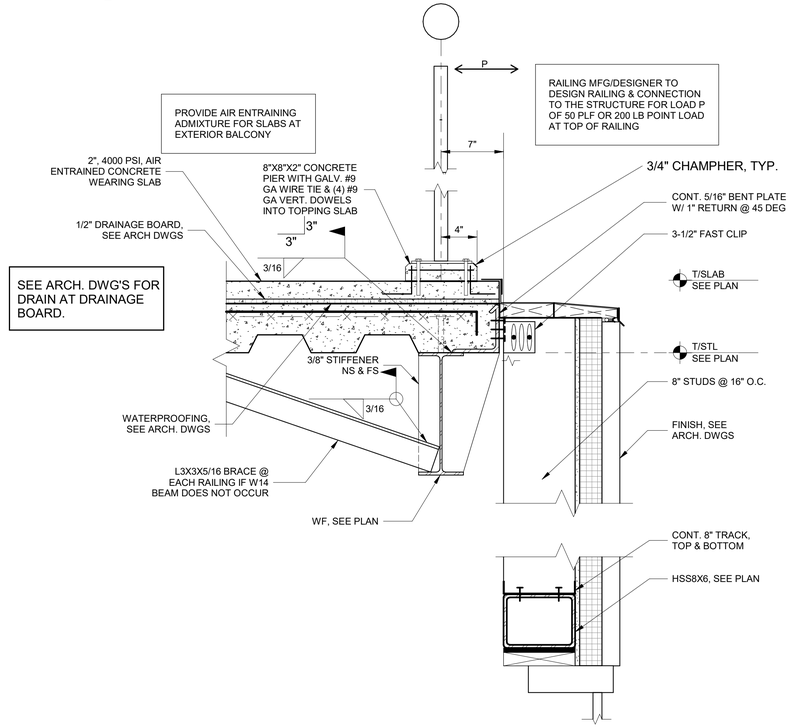
2 S-3.7 FLOOR SECTION
1 1/2" = 1'-0"



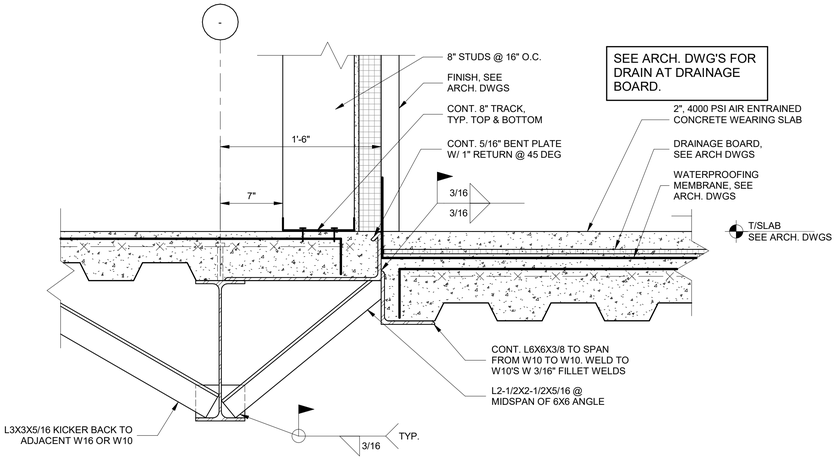
3 S-3.7 FLOOR SECTION
1 1/2" = 1'-0"



4 Floor Section 12 RAILING OPTION
1 1/2" = 1'-0"



5 Floor section 5/3.7
1 1/2" = 1'-0"



6 S-3.7 FLOOR SECTION
1 1/2" = 1'-0"

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SCALE: 1 1/2" = 1'-0"
CONTRACT NO: 220656
SHEET S-3.7

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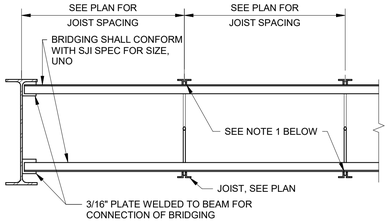
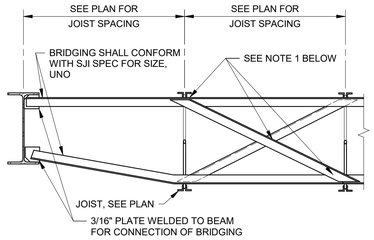


NOTES:
1. ALL WELDING TO STEEL JOIST SHALL NOT IMPAIR THE STRENGTH OF THE JOIST.

2. PROVIDE BRIDGING AND SPACING PER SJI SPECIFICATIONS IN EACH JOIST BAY.

3. PROVIDE MINIMUM OF (2) BAYS OF DIAGONAL AND BRIDGING ALONG PERIMETER OF BUILDING FOR UPLIFT FROM WIND. SEE GENERAL NOTES FOR WIND LOADS.

1 S-4.1 TYPICAL JOIST BRACING
3/4" = 1'-0"



NOTES:
1. ALL WELDING TO STEEL JOIST SHALL NOT IMPAIR THE STRENGTH OF THE JOIST.

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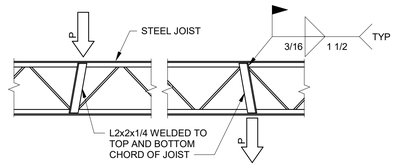
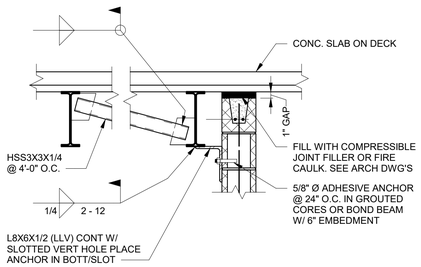
2 S-4.1 TYPICAL JOIST BRACING
3/4" = 1'-0"



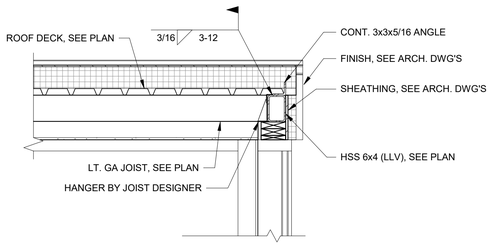
NOTES:

1. "P" IS THE LOCATION OF THE APPLIED CONCENTRATED LOAD.
2. PROVIDED REINFORCING FOR LOADS GREATER THAN 100 POUNDS WHEN LOAD OCCURS BETWEEN JOIST PANEL POINTS (MORE THAN 4" FROM PANEL POINT).
3. THE END OF THE REINFORCING AT THE LOAD SHALL BE CENTERED ON THE LOAD.
4. THE OPPOSITE END OF THE REINFORCING SHALL BE CENTERED ON THE JOIST PANEL POINT.
5. LOADS SHALL BE APPLIED ON CENTERLINE OF JOIST. PROVIDE ROOF OPENING FRAMING WHERE REQUIRED.

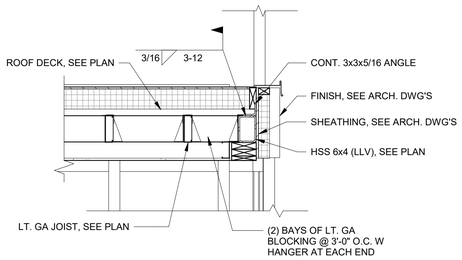
3 S-4.1 TYPICAL STEEL JOIST REINFORCING DETAIL
3/4" = 1'-0"



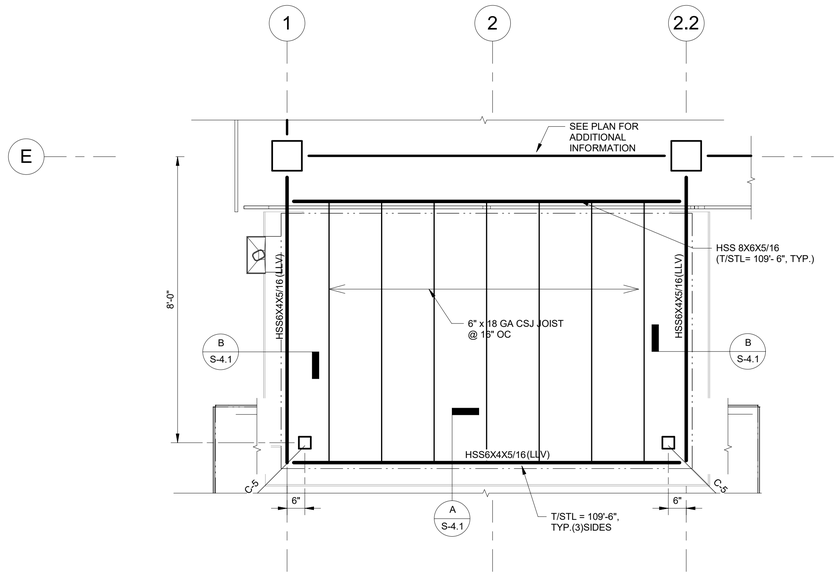
4 S-4.1 TOP OF WALL BRACING FOR CMU WALLS
3/4" = 1'-0"



A S-4.1 SECTION
3/4" = 1'-0"



B S-4.1 SECTION
3/4" = 1'-0"



SOUTH VESTIBULE FRAMING PLAN
1/2" = 1'-0"

2ND FLOOR COMPOSITE FRAMING PLAN NOTES:

1. SEE SHEET S-1.2 FOR SECOND FLOOR PLAN NOTES.

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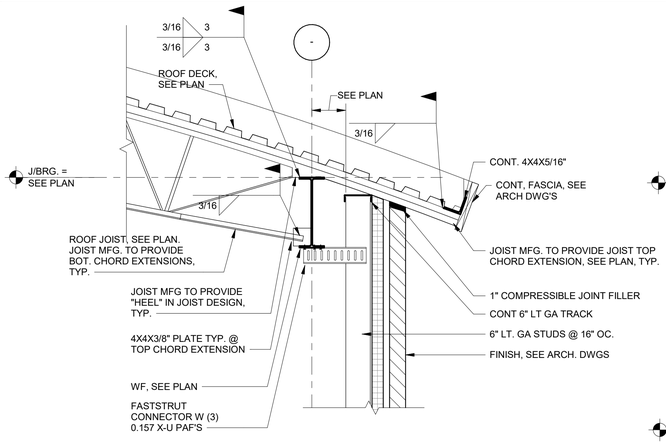
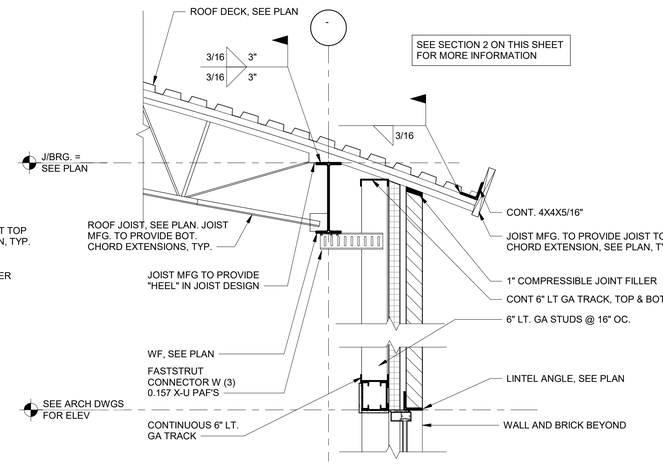
ROOF/STEEL TYPICALS

SCALE: As indicated
CONTRACT NO: 220656
SHEET S-4.1

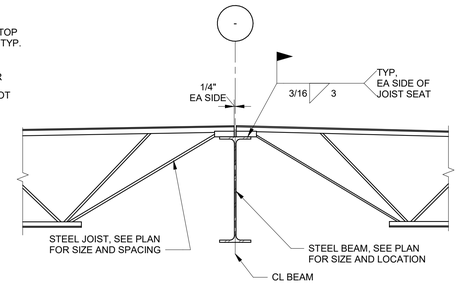
6/3/2024 8:19:52 AM



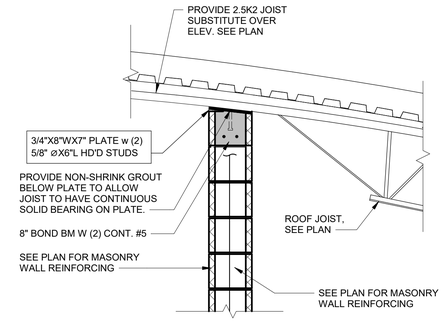
1 S-4.2 SECTION 1
3/4" = 1'-0"



1A S-4.2 SECTION 1A
3/4" = 1'-0"



2 S-4.2 TYPICAL JOIST TO BEAM DETAIL
3/4" = 1'-0"



3 S-4.2 SECTION 3
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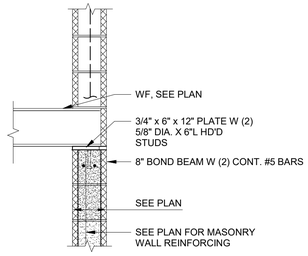
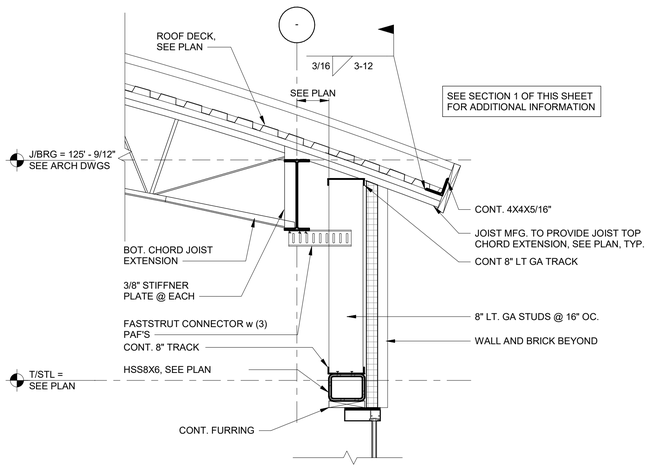


4 S-4.2 STEEL BEAM BEARING
3/4" = 1'-0"



5 S-4.2 SECTION 5
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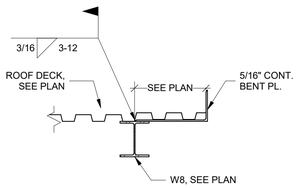
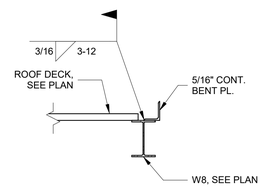
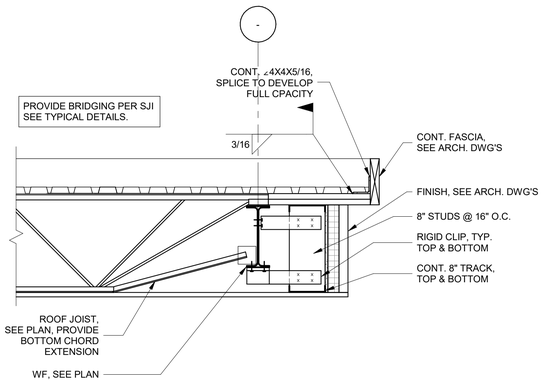


6 S-4.2 ROOF SECTION X
3/4" = 1'-0"



7 S-4.2 ROOF SECTION Y
3/4" = 1'-0"



8 S-4.2 SECTION 7
3/4" = 1'-0"

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SCALE: 3/4" = 1'-0"
CONTRACT NO: 220656
SHEET S-4.2

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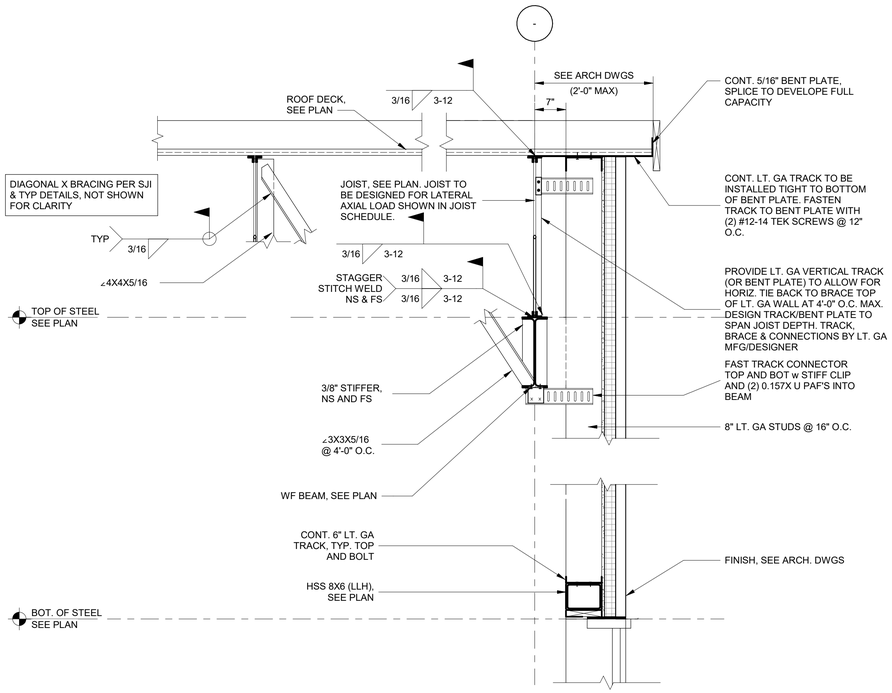
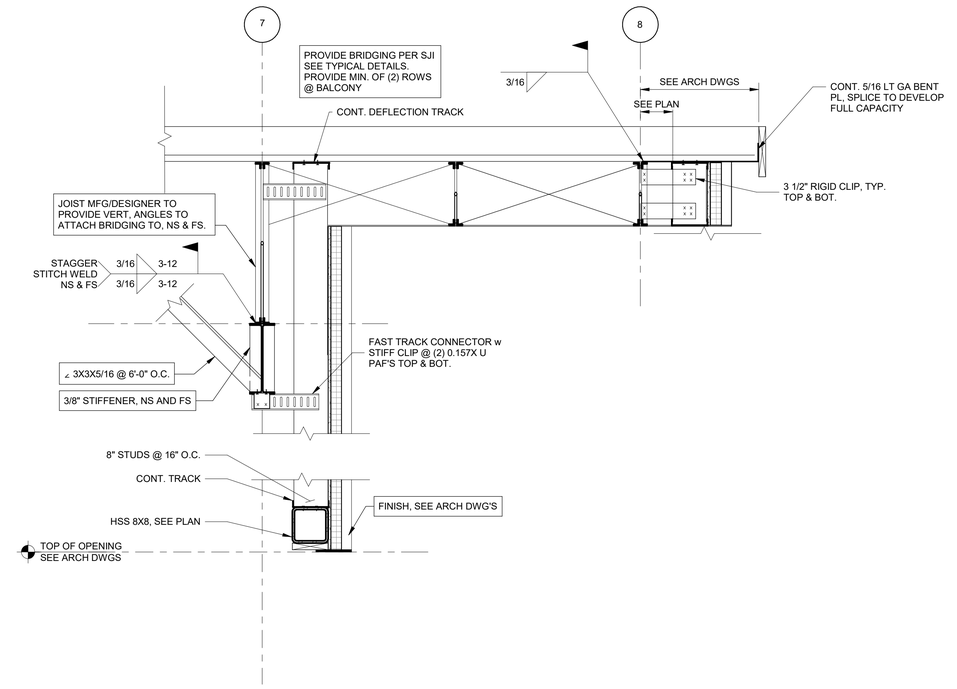


1 S-4.3 SECTION
3/4" = 1'-0"



2 S-4.3 SECTION
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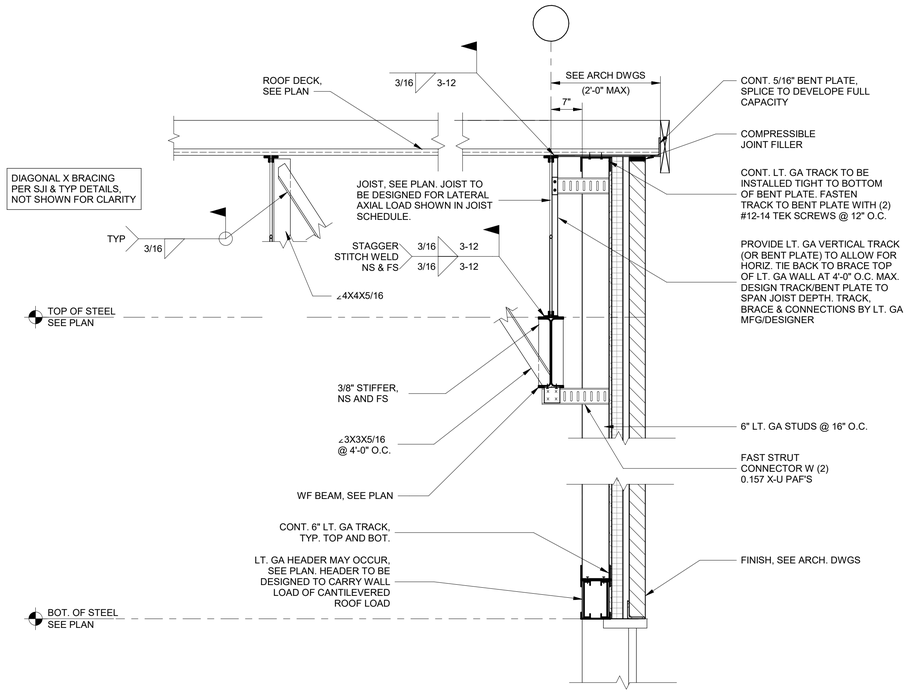

3 S-4.3 SECTION
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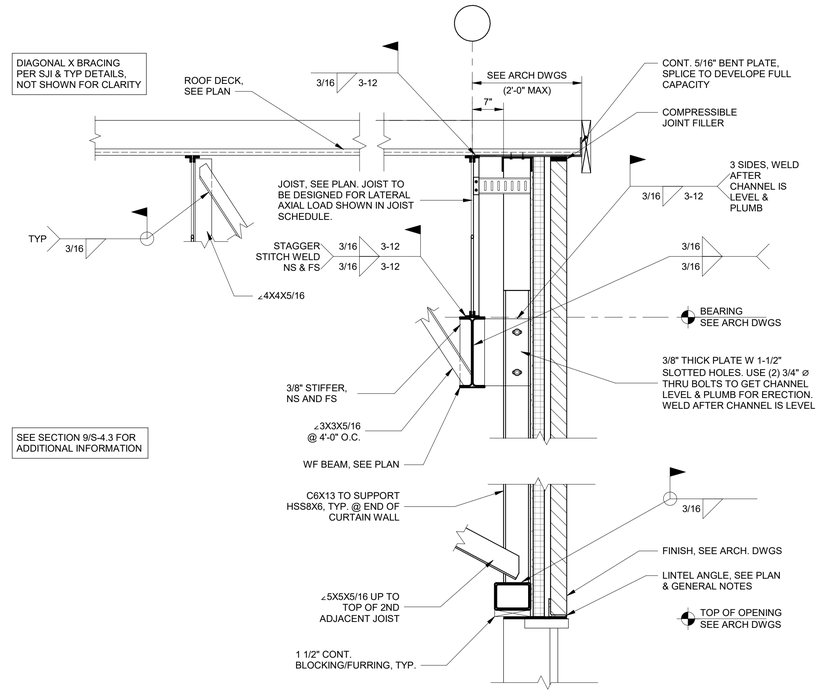

4 S-4.3 ROOF SECTION
3/4" = 1'-0"

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CONTRACT NO: 220656
SHEET S-4.3

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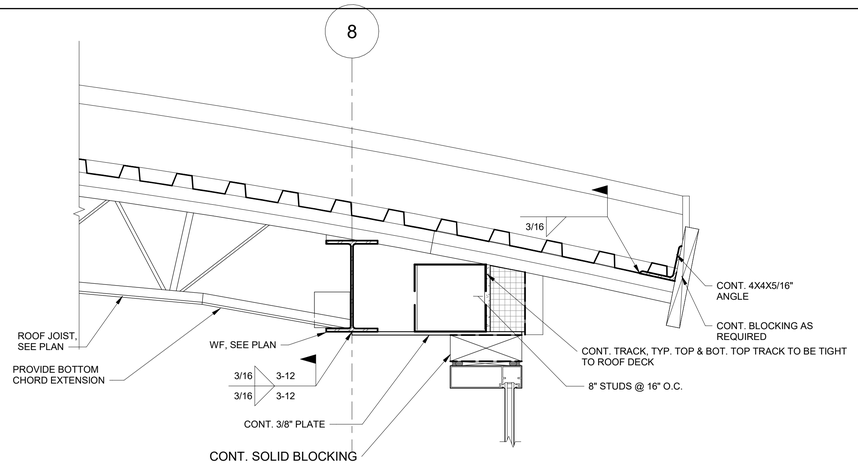

1 SECTION
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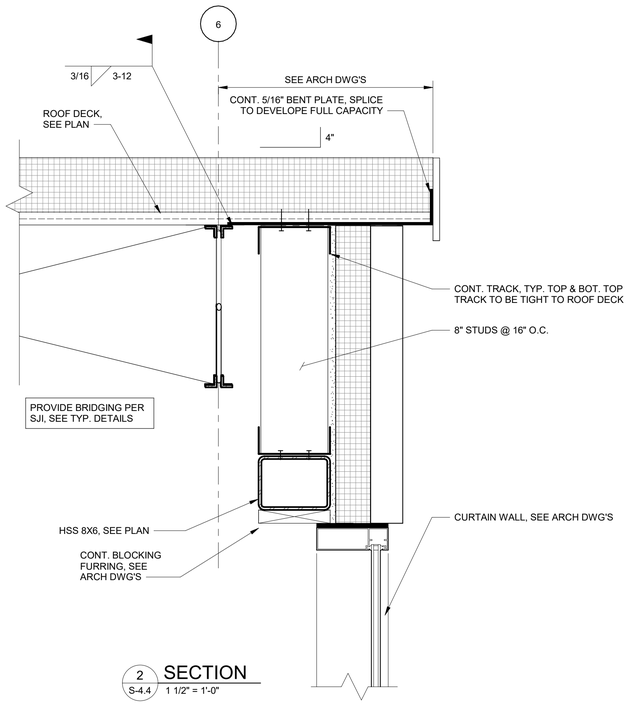

2 SECTION
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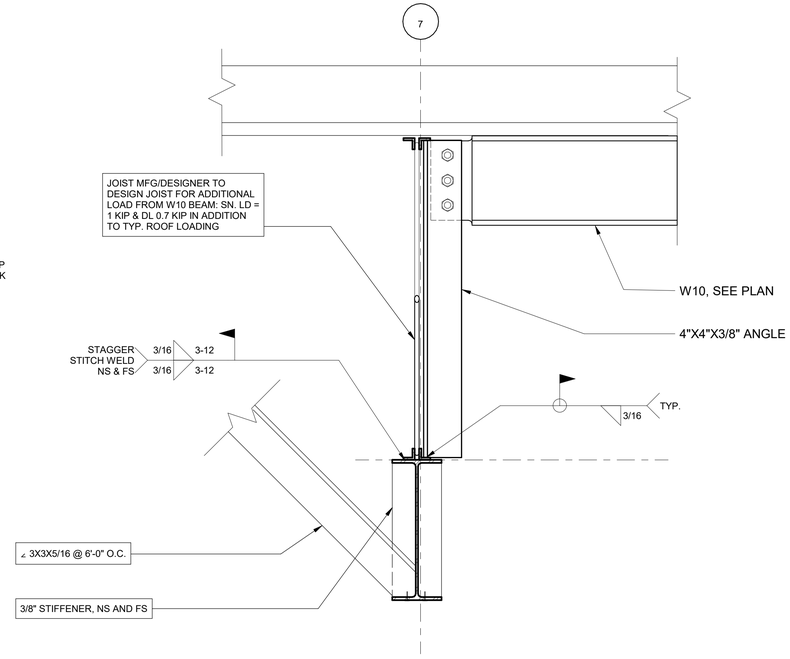

3 SECTION
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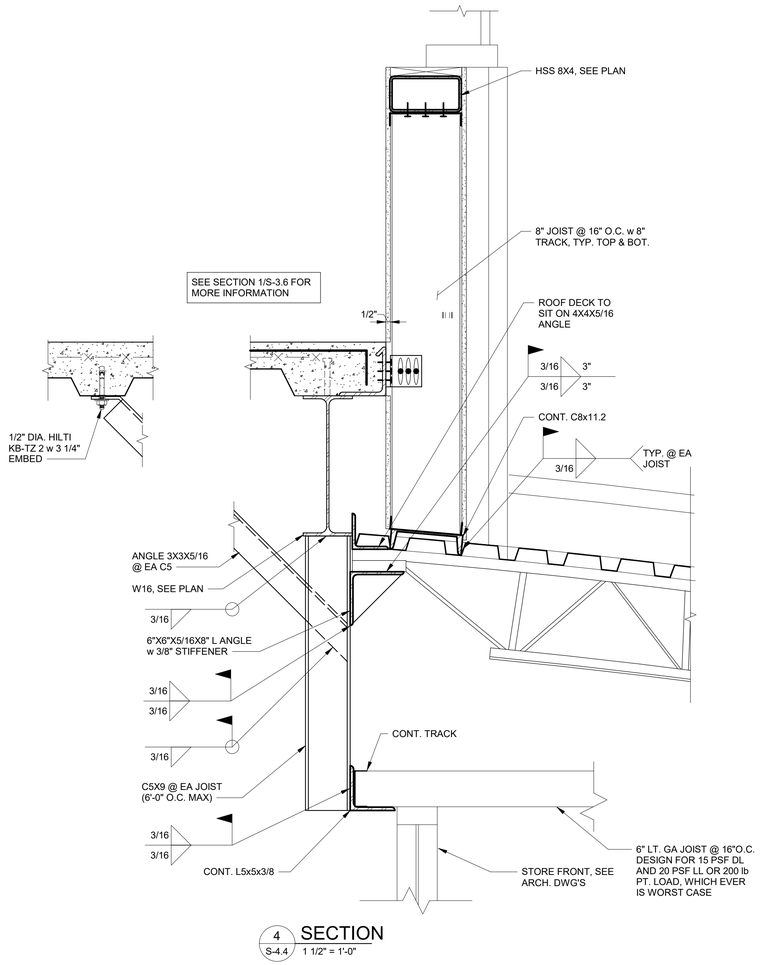

4 SECTION
S-4.4 1 1/2" = 1'-0"

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DRAWING ABBREVIATIONS

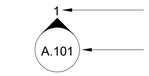
AB	ANCHOR BOLT
ABV	ABOVE
AC	ACOUSTICAL / AIR CONDITIONING
ACT	ACOUSTICAL CEILING TILE
AD	AREA DRAIN
ADA	AMERICANS WITH DISABILITIES ACT
ADDL	ADDITIONAL
ADJ	ADJUSTABLE
ADJT	ADJACENT
A/E	ARCHITECT/ENGINEER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFS	ABOVE FINISHED SLAB
AGG	AGGREGATE
AHU	AIR HANDLING UNIT
AIB	AIR INFILTRATION BARRIER
AL	ALIGN
ALT	ALTERNATE
ALUM	ALUMINUM
ANOD	ANODIZE
APPROX	APPROXIMATE
ARCH	ARCHITECT
AUX	AUXILIARY
A/V	AUDIO / VISUAL
AVG	AVERAGE
B/	BOTTOM OF
B/B	BACK TO BACK
B/F	BOTTOM OF FOOTING
BD	BOARD
BDRY	BOUNDARY
BHMA	BUILDER'S HARDWARE MANUFACTURER'S ASSOCIATION
BLDG	BUILDING
BLKG	BLOCKING
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BP	BASE PLATE
BRG	BEARING
BRK	BRICK
BRKT	BRACKET
BSMT	BASEMENT
BTWN	BETWEEN
BUR	BUILT-UP ROOFING
BW	BOTH WAYS
CAB	CABINET
CB	CATCH BASIN
CCTV	CLOSED CIRCUIT TV
CD	CONSTRUCTION DOCUMENTS
CDR	CARD READER
CEM	CEMENT
CER	CERAMIC
CF	CONTRACTOR FURNISHED
CF/CI	CONTRACTOR FURNISHED /CONTRACTOR INSTALLED
CFMF	COLD-FORMED METAL FRAMING
CG	CORNER GUARD
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLG HT	CEILING HEIGHT
CLO	CLOSET
CLR	COLOR, CLEARANCE
CLRM	CLASSROOM
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMB	COMBINATION
COMM	COMMUNICATION
CONC	CONCRETE
CONF	CONFERENCE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CORR	CORRIDOR, CORRUGATED
CPT	CARPET
CSWK	CASEWORK
CT	CERAMIC TILE
CTR	CENTER
CU FT	CUBIC FEET
D	DEPTH
DBL	DOUBLE
DEMO	DEMOLITION
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL. DIAGRAM
DIM	DIMENSION
DIR	DIRECTION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DOC	DOCUMENT
DR	DOOR
DS	DOWNSPOUT
DWG	DRAWING

EA	EACH
EF	EACH FACE
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EB	EXPANSION BOLT
EJ	EXPANSION JOINT
ES	EACH SIDE
EL	ELEVATION
ELEC	ELECTRIC
ELEV	ELEVATOR
EMER	EMERGENCY
EPS	EXPANDED POLYSTYRENE BOARD (INSULATION)
EQ	EQUAL
EWC	ELECTRIC WATER COOLER
EXP	EXPOSED
EXT	EXTERIOR, EXTINGUISHER
F/	FACE OF
F/C	FACE OF CONCRTETE
F/F	FACE TO FACE, FLOOR TO FLOOR
F/M	FACE OF MASONRY
F/S	FACE OF STUDS
FA	FIRE ALARM
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FF&E	FIXTURE, FURNISHING & EQUIPMENT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FIN	FINISH
FLR	FLOOR
FM	FACTORY MUTUAL
FP	FIRE PROOFING
FR	FRAME
FTG	FOOTING
FUR	FURRING
FUT	FUTURE
FVC	FIRE VALVE CABINET
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GEN	GENERAL, GENERATOR
GFCI	GOVERNMENT FURNISHED CONTRACTOR INSTALLED
GFGI	GOVERNMENT FURNISHED INSTALLED BY GOVERNMENT
GL	GLASS
GR	GRADE
GR BM	GRADE BEAM
GRD	GROUND
GUT	GUTTER
GYP BD	GYPSUM BOARD
H	HIGH
HB	HOSE BIBB
HC	HANDICAPPED
HD	HEAVY DUTY
HDR	HEADER
HDW	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
HTR	HEATER
HVAC	HEATING, VENTILATING, & AIR CONDITIONING
HWD	HARDWOOD
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
ILO	IN LIEU OF
IN	INCH
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
J	JOIST
JAN	JANITOR
JB	JUNCTION BOX
JT	JOINT
KD	KNOCK DOWN
KIP	KILO-POUND
KIT	KITCHEN
KO	KNOCKOUT
KPL	KICKPLATE

LAM	LAMINATE
LAV	LAVATORY
LBR	LUMBER
LB	POUND
LF	LINEAR FEET (FOOT)
LH	LEFT HAND
LIN	LINEAR
LKR	LOCKER
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LP	LOW POINT
LT	LIGHT
LTWT	LIGHT WEIGHT
LVR	LOUVER
M	METER
MAINT	MAINTENANCE
MAS	MASOMRY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MM	MILLIMETER
MO	MASONRY OPENING
MOD	MODULAR, MODIFY
MOV	MOVABLE
MTD	MOUNTED
MTL	METAL
MULL	MULLION
NA	NOT APPLICABLE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OFD	OVERFLOW DRAIN
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OWSJ	OPEN WEB STEEL JOIST
OPR	OPERABLE
ORD	OVERFLOW ROOF DRAIN
ORIG	ORIGINAL
OZ	OUNCE
PA	PUBLIC ADDRESS
PAR	PARAPET
PAT	PATTERN
PB	PULL BOX
PBD	PARTICLEBOARD
PCF	POUNDS PER CUBIC FOOT
PCT	PERCENT
PERF	PERFORATED
PERIM	PERIMETER
PH	PHASE
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER, PLASTIC
PLBG	PLUMBING
PLG	PILING
PLYWD	PLYWOOD
PNL	PANEL
PR	PAIR
PRCST	PRECAST
PRKG	PARKING
PROP	PROPERTY, PROPOSED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT, POINT, PRESSURE TREATED
PTN	PARTITION
PWR	POWER
QT	QUARRY TILE
QTY	QUANTITY
R	RADIUS, RISER
RB	RESILIENT BASE
RBM	REINFORCED BRICK MASONRY
RBR	RUBBER
RC	REINFORCED CONCRETE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RDG INS	RIGID INSULATION, SOLID
REC	RECESSED
REF	REFERENCE
REM	REMOVABLE
REP	REPAIR
REPL	REPLACE
REQ	REQUIRE

REQD	REQUIRED
RESIL	RESILIENT
REV	REVISED, REVISION
RFG	ROOFING
RH	RIGHT HAND
RHR	RIGHT HAND REVERSE
RL	ROOF LEADER
RLG	RAILING
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
RVL	REVEAL
SAN	SANITARY
SB	SPLASH BLOCK
SCHED	SCHEDULE
SD	SMOKE DETECTOR
SF	SQUARE FOOT (FEET)
SGL	SINGLE
SH	SHOWER
SHT	SHEET
SHTHG	SHEATHING
SHV	SHELVING
SIM	SIMILAR
SJ	SCORED JOINT
SK	SINK
SLV	SLEEVE
SM	SHEET METAL
SPEC	SPECIFICATION
SQ	SQUARE
SQ IN	SQUARE INCH
SQ YD	SQUARE YARD
SST	STAINLESS STEEL
ST	STAIRS
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STL	STEEL
STOR	STORAGE
STR	STRUCTURAL
SUB FL	SUBFLOOR
SUPP	SUPPLEMENTAL
SW	SIDEWALK, SHORT WAY
SYM	SYMMETRICAL
SYS	SYSTEM
T	TREAD
T&B	TOP & BOTTOM
T&G	TONGUE & GROOVE
T/	TOP OF
T/BM	TOP OF BEAM
T/C	TOP OF CONCRETE, TOP OF CURB
T/COL	TOP OF COLUMN
T/FTG	TOP OF FOOTING
T/J	TOP OF JOIST
T/S	TOP OF STEEL
TB	TEST BORING
TD	TRENCH DRAIN
TEL	TELEPHONE
TEMP	TEMPORARY
TER	TERRAZZO
THK	THICK
TKBD	TACKBOARD
TOPO	TOPOGRAPHY
TV	TELEVISION
TYP	TYPICAL
UC	UNDERCUT
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
UNF	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
USGS	UNITED STATES GEOLOGICAL SURVEY
VAR	VARIES
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VTR	VENT THRU ROOF
VWC	VINYL WALL COVERING
W	WIDE, WIDTH
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WF	WIDE FLANGE
WH	WALL HYDRANT, WATER HEATER
WL	WIND LOAD
WP	WATERPROOFING, WORK POINT
WSCT	WAINSCOT
WT	WEIGHT
WWF	WELDED WIRE FABRIC
YD	YARD DRAIN

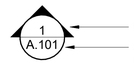
REFERENCE SYMBOLS



ELEVATION NUMBER ON SHEET

SHEET NUMBER WHERE ELEVATION IS DRAWN

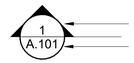
INTERIOR ELEVATION



ELEVATION NUMBER ON SHEET

SHEET NUMBER WHERE ELEVATION IS DRAWN

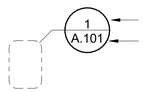
EXTERIOR ELEVATION



SECTION NUMBER ON SHEET

SHEET NUMBER WHERE SECTION IS DRAWN

SECTION

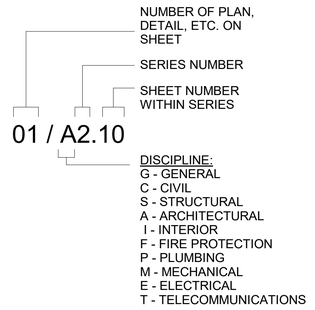


DETAIL NUMBER ON SHEET

SHEET NUMBER WHERE DETAIL IS DRAWN

DETAIL

DRAWING REFERENCE



NUMBER OF PLAN, DETAIL, ETC. ON SHEET

SERIES NUMBER

SHEET NUMBER WITHIN SERIES

DISCIPLINE:
G - GENERAL
C - CIVIL
S - STRUCTURAL
A - ARCHITECTURAL
I - INTERIOR
F - FIRE PROTECTION
P - PLUMBING
M - MECHANICAL
E - ELECTRICAL
T - TELECOMMUNICATIONS

DRAWING SYMBOLS

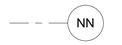
ROOM NAME / NUMBER

DOOR NUMBER

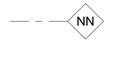
WINDOW TYPE

INTERIOR PARTITIONS

DRAWING NOTE



COLUMN CENTERLINE



FACE OF BUILDING

REVISION CLOUD

REVISION NUMBER

CEILING HEIGHT AFF

SPOT ELEVATION

FLOOR LEVEL & NAME

NORTH ARROW

STATE OF OHIO
REGISTERED ARCHITECT
ANDREW J. TORDOWSKI
EXP. 12-31-24

CT consultants
engineers • architects • planners

REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	ATOR

DATE: 05/30/2024
DRAWN BY: DW/JR
CHECKED BY: MDOU
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

ABBREVIATIONS & SYMBOLS

SCALE: 1/8" = 1'-0"
CONTRACT NO: 220656
SHEET A0.01

5/31/2024 12:21:18 PM

COM*check* Software Version COMcheckWeb
Envelope Compliance Certificate

Project Information

Energy Code:	2021 IECC
Project Title:	Lake County Executive Airport Terminal
Location:	Willoughby, Ohio
Climate Zone:	5a
Project Type:	New Construction
Vertical Glazing / Wall Area:	43%

Construction Site: Owner/Agent: Designer/Contractor:

Additional Efficiency Package(s)

Credits: 10.0 Required 13.0 Proposed
- Dedicated outdoor air, 5.0 credit
- Enhanced envelope performance, 5.0 credit
- Reduced lighting power, 0.0 credit
- Enhanced digital lighting controls, 0.0 credit
- Energy monitoring, 2.0 credit
- Fault detection and diagnostics system, 1.0 credit

Building Area	Floor Area
1-Airport Terminal Building (Transportation) : Nonresidential	5848

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Floor: Unheated Slab-On-Grade, Vertical 2 ft., [Bldg. Use 1 - Airport Terminal Building] (c)	287	---	15.0	0.520	0.520
Roof: Insulation Entirely Above Deck, [Bldg. Use 1 - Airport Terminal Building]	3376	---	38.0	0.026	0.032
Roof (lower): Insulation Entirely Above Deck, [Bldg. Use 1 - Airport Terminal Building]	716	---	38.0	0.026	0.032
Roof (entry): Insulation Entirely Above Deck, [Bldg. Use 1 - Airport Terminal Building]	88	---	38.0	0.026	0.032
Roof (rear): Insulation Entirely Above Deck, [Bldg. Use 1 - Airport Terminal Building]	179	---	38.0	0.026	0.032
NORTH					
Ext. Wall: Steel-Framed, 16in. o.c., [Bldg. Use 1 - Airport Terminal Building]	1750	19.0	12.5	0.046	0.055
Door: Insulated Metal, Swinging, [Bldg. Use 1 - Airport Terminal Building]	21	---	---	0.370	0.370
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID 8" insulated Curtain Wall, SHGC 0.33, [Bldg. Use 1 - Airport Terminal Building] (b)	190	---	---	0.290	0.360
EAST					
Ext. Wall: Steel-Framed, 16in. o.c., [Bldg. Use 1 - Airport Terminal Building]	1585	19.0	12.5	0.046	0.055
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID 8" insulated curtain wall, SHGC 0.33, [Bldg. Use 1 - Airport Terminal Building] (b)	863	---	---	0.290	0.360

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Door: Glass (over 50% glazing): Metal Frame, Entrance Door, Perf. Specs.: Product ID 8" insulated curtain wall, SHGC 0.33, [Bldg. Use 1 - Airport Terminal Building] (b)	134	---	---	0.290	0.630
SOUTH					
Ext. Wall: Steel-Framed, 16in. o.c., [Bldg. Use 1 - Airport Terminal Building]	1723	19.0	12.5	0.046	0.055
Door: Glass (over 50% glazing): Metal Frame, Entrance Door, Perf. Specs.: Product ID 8" insulated curtain wall, SHGC 0.33, [Bldg. Use 1 - Airport Terminal Building] (b)	43	---	---	0.290	0.630
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID 8" insulated curtain wall, SHGC 0.33, [Bldg. Use 1 - Airport Terminal Building] (b)	911	---	---	0.290	0.360
WEST					
Ext. Wall: Steel-Framed, 16in. o.c., [Bldg. Use 1 - Airport Terminal Building]	1585	19.0	12.5	0.046	0.055
Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID 8" insulated curtain wall, SHGC 0.33, [Bldg. Use 1 - Airport Terminal Building] (b)	697	---	---	0.290	0.360
Window: Metal Frame with Thermal Break: Operable, Perf. Specs.: Product ID operable storefront, SHGC 0.33, [Bldg. Use 1 - Airport Terminal Building] (b)	32	---	---	0.290	0.450

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.
(c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Envelope PASSES: Design 2% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Andrew Torowski - Architect | [signature] | 05-29-2024
Name - Title | Signature | Date

COM*check* Software Version COMcheckWeb
Interior Lighting Compliance Certificate

Project Information

Energy Code:	2021 IECC
Project Title:	Lake County Executive Airport Terminal
Project Type:	New Construction

Construction Site: Owner/Agent: Designer/Contractor:

Additional Efficiency Package(s)

Credits: 10.0 Required 13.0 Proposed
- Dedicated outdoor air, 5.0 credit
- Enhanced envelope performance, 5.0 credit
- Reduced lighting power, 0.0 credit
- Enhanced digital lighting controls, 0.0 credit
- Energy monitoring, 2.0 credit
- Fault detection and diagnostics system, 1.0 credit

Allowed Interior Lighting Power

Proposed Interior Lighting Power

Interior Lighting TBD: No lighting fixtures specified

COM*check* Software Version COMcheckWeb
Exterior Lighting Compliance Certificate

Project Information

Energy Code:	2021 IECC
Project Title:	Lake County Executive Airport Terminal
Project Type:	New Construction
Exterior Lighting Zone	0 (Unspecified)

Construction Site: Owner/Agent: Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
			Total Tradable Watts (a) =	0
			Total Allowed Watts =	0
			Total Allowed Supplemental Watts (b) =	350

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 350 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

Exterior Lighting TBD: Exterior lighting zone not specified (see project screen)

COM*check* Software Version COMcheckWeb
Mechanical Compliance Certificate

Project Information

Energy Code:	2021 IECC
Project Title:	Lake County Executive Airport Terminal
Location:	Willoughby, Ohio
Climate Zone:	5a
Project Type:	New Construction

Construction Site: Owner/Agent: Designer/Contractor:

Additional Efficiency Package(s)

Credits: 10.0 Required 13.0 Proposed
- Dedicated outdoor air, 5.0 credit
- Enhanced envelope performance, 5.0 credit
- Reduced lighting power, 0.0 credit
- Enhanced digital lighting controls, 0.0 credit
- Energy monitoring, 2.0 credit
- Fault detection and diagnostics system, 1.0 credit

Mechanical Systems List

Quantity System Type & Description

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title | Signature | Date

COM*check* Software Version COMcheckWeb
Inspection Checklist

Energy Code: 2021 IECC

Requirements: 0.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR1][1]	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C402.4.1 [PR10][1]	The vertical fenestration area <= 30 percent of the gross above-grade wall area.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C402.4.1 [PR11][1]	The skylight area <= 3 percent of the gross roof area.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C402.4.2 [PR14][1]	In enclosed spaces > 2,500 ft2 directly under a roof with ceiling heights >15 ft. and used as an office, lobby, atrium, concourse, corridor, storage, gymnasium/exercise center, convention center, automotive service, manufacturing, non-refrigerated warehouse, retail store, distribution/sorting area, transportation, or workshop, the following requirements apply: (a) the daylight zone under skylights is >= half the floor area; (b) the skylight area to daylight zone is >= 3 percent with a skylight VT >= 0.40; or a minimum skylight effective aperture >= 1 percent.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406 [PR9][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

STATE OF OHIO
ANDREW D. TOROWSKI
14836
REGISTERED ARCHITECT
EXP. 12-31-24

CT consultants
engineers • architects • planners

REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	ATOR

DATE: 05/03/2024
DRAWN BY: DWUR
CHECKED BY: MDOU
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

COMCHECK SHEETS

SCALE:
CONTRACT NO: 220656
SHEET A0.02

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Section # & Req.ID	Footing / Foundation Inspection	Complies?	Comments/Assumptions
C303.2 [FO4][2]	Slab edge insulation installed per manufacturer's instructions.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C303.2.1 [FO6][1]	Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C105 [FO3][2]	Installed slab-on-grade insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
C402.2.4 [FO7][2]	Slab edge insulation depth/length. Slab insulation extending away from building is covered by pavement or >= 10 inches of soil.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Framing / Rough-In Inspection	Complies?	Comments/Assumptions
C303.1.3 [FR12][2]	Fenestration products rated in accordance with NFRC certified and as to performance labels or certificates provided.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C402.4.3 [FR10][1]	Vertical fenestration SHGC value.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
C402.4.3, C402.4.3.4 [FR8][1]	Installed vertical fenestration U-factor and SHGC consistent with label specifications and as reported in plans and COMcheck reports.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
C402.4.5 [FR14][2]	U-factor of opaque swinging and nonswinging doors associated with the building thermal envelope meets requirements.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
C402.5.1.3 [FR19][1]	The building envelope contains a continuous air barrier that is sealed in an approved manner and material permeability <= 0.004 dfm/ft2. Air barrier penetrations are sealed in an approved manner.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C402.5.4 [FR18][3]	Factory-built fenestration and doors are labeled as meeting air leakage requirements.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.7.7 [ME58][3]	Outdoor air and exhaust systems have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Check gravity dampers where allowed. Reference section language for operational details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.7 [EL26][2]	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.8 [EL27][2]	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.9.1, C405.9.2 [EL28][2]	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.10 [EL29][2]	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.1.1 [EL30][2]	At least 90% of dwelling unit permanently installed lighting shall have lamp efficacy >= 65 lm/W or luminaires with efficacy >= 45 lm/W or comply with C405.2.4 or C405.3.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.11, C405.11.1 [EL31][2]	50% of 15/20 amp receptacles installed in enclosed offices, conference rooms, copy rooms, break rooms, classrooms and workstations and > 25% of branch circuit feeders for modular furniture will have automatic receptacle control in accordance with C405.11.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Insulation Inspection	Complies?	Comments/Assumptions
C303.1 [IN3][1]	Roof insulation installed per manufacturer's instructions and is labeled with R-value or insulation certificate providing R-value and other relevant data. Blown or poured loose-fill insulation is installed only where the roof slope is <=3 in 12.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C402.2.1 [IN20][1]	Roof assembly meets minimal thermal resistance installed between roof framing or in a continuous fashion on the roof assembly as stipulated in Table C402.1.3. Requirements for above deck insulation, minimum thickness, suspended ceilings, staggered joints and skylight curbs will be met.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C303.2 [IN7][1]	Above-grade wall insulation installed per manufacturer's instructions.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C105 [IN6][1]	Installed above-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
C402.2.3 [IN8][2]	Installed floor insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
C402.2.6 [IN18][3]	Radiant panels and associated components, designed for heat transfer from the panel surfaces to the occupants or indoor space are insulated with a minimum of R-3.5.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C105 [IN2][1]	Installed roof insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports. For some ceiling systems, verification may need to occur during Framing Inspection.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Envelope Assemblies table for values.*
C402.5.1.1 [IN1][1]	All sources of air leakage in the building thermal envelope are sealed, caulked, gasketed, weather stripped or wrapped with moisture vapor-permeable wrapping material to minimize air leakage.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C401.3 [FI58][1]	A thermal envelope certificate will be supplied and completed by an approved third party.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C402.5.10 [FI26][3]	Recessed luminaires in thermal envelope to limit infiltration and be IC rated and labeled. Seal between interior finish and luminaire housing.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C402.5.11 [FI59][1]	Operable openings > 40 ft2 will be interlocked with heating and cooling systems to setback setpoint temperatures within 10 minutes of opening.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C402.5.8 [FI37][1]	Weatherseals installed on all loading dock cargo door openings and provide direct contact along the top and sides of vehicles parked in the doorway.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406.3 [FI67][1]	Reduced lighting power - this credit specifies that the connected lighting power is >= 10% more efficient than 2021 IECC requirements.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406.4 [FI54][1]	Enhanced Digital Lighting Controls - Interior lighting has the following enhanced lighting controls in accordance with Sections C405.2.1 through C405.2.3, Luminaires capable of continuous dimming and being addressed individually, at least 8 luminaires controlled in combination in a daylight zone, digital control system for fixtures with load shedding or occupancy sensors, Sequence of Operations documentation, and functional testing per Section C408.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406.6 [FI52][1]	Dedicate outdoor air system efficiency energy credit - Building equipped with independent ventilation system designed to provide 100-percent outdoor air to each individual occupied space, as specified by the IMC. The ventilation system is capable of total energy recovery and includes HVAC system controls that manage temperature resets at least 25 percent of delta design supply-air / room-air temp.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406.8 [FI68][1]	Enhanced envelope performance - the building thermal envelope UA value is >= 15% better than the total UA of the envelope specified by Section C402.1.5.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406.10 [FI63][1]	Energy Monitoring - the building is equipped with an energy management system to monitor, record, and report energy consumption for electrical energy, by end-use category, contain meters, a data acquisition system and employ graphical reports.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406.11 [FI64][1]	Fault Detection and Diagnostics - a fault detection and diagnostics system installed to monitor the HVAC operation and performance. Includes monitoring sensors and devices, sampling every 15 minutes, automatically report faults and provide recommendations for repair, and transmit recommendations to local authorized personnel.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

STATE OF OHIO
ANDREW D. TOROWSKI
14856
REGISTERED ARCHITECT
EXP. 12-31-24

consultants
engineers • architects • planners

REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	ATOR

DATE: 05/03/2024
DRAWN BY: DWUR
CHECKED BY: MDOU
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL

CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

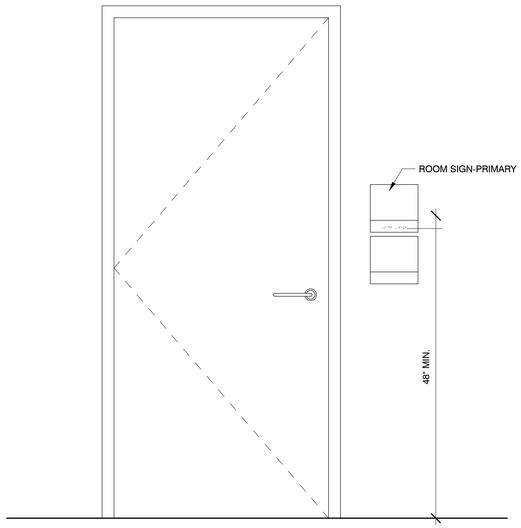
COMCHECK SHEETS

SCALE:
CONTRACT NO: 220656
SHEET A0.03

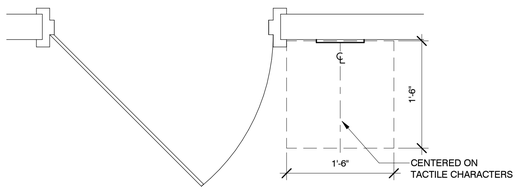
5/31/2024 12:21:21 PM

GENERAL NOTES - SIGNAGE

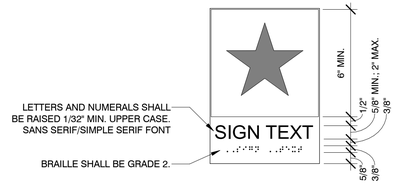
A. TACTILE CHARACTERS ON SIGNS SHALL BE LOCATED 48 INCHES MINIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE LOWEST TACTILE CHARACTER AND 60 INCHES MAXIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE MEASURED FROM THE BASELINE OF THE HIGHEST TACTILE CHARACTER.
B. WHERE A TACTILE SIGN IS PROVIDED AT A DOOR, THE SIGN SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH SIDE.
C. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH ONE ACTIVE LEAF, THE SIGN SHALL BE LOCATED ON THE INACTIVE LEAF.
D. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH TWO ACTIVE LEAFS, THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR.
E. WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF THE DOOR OR THE RIGHT SIDE OF THE DOUBLE DOORS, SIGN SHALL BE LOCATED AT THE NEAREST ADJACENT WALL.
F. SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18" MIN. BY 18 " MIN. CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION.
G. SIGN WITH TACTILE CHARACTERS SHALL BE PERMITTED ON THE PUSH SIDE OF DOORS WITH CLOSERS AND WITHOUT HOLD-OPEN DEVICES.



HEIGHT OF TACTILE CHARACTERS ABOVE FINISH FLOOR



LOCATION OF TACTILE SIGNS AT DOORS



LETTERS AND NUMBERS ON SIGNS SHALL HAVE A WIDTH TO HEIGHT RATIO BETWEEN 3:5 AND 1:1.

LETTERS AND NUMBERS ON SIGNS SHALL HAVE A STROKE WIDTH TO HEIGHT RATIO BETWEEN 1:5 AND 1:10.

CHARACTERS AND SYMBOLS SHALL CONTRAST WITH BACKGROUND (LIGHT ON DARK, OR DARK ON LIGHT)

TYPICAL SIGNAGE LOCATION

1" = 1'-0"

TYPICAL ADA SIGNAGE

3" = 1'-0"

A

B

C

D

E

F

EXAMPLE SIGNAGE SHOWN FOR REFERENCE ONLY

ANSI STANDARD - SIGN TYPES

1" = 1'-0"

5/31/2024 12:21:23 PM

STATE OF OHIO
REGISTERED ARCHITECT
MICHAEL D TOMOWSKI
EXP. 12-31-24

CT consultants
engineers • architects • planners

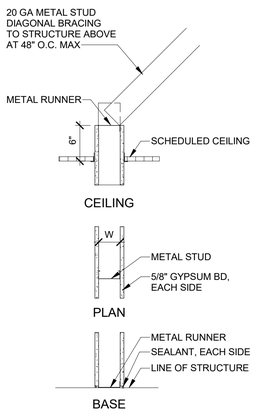
REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	ATOR

DATE: 05/03/2024
DRAWN BY: DWUR
CHECKED BY: MDOU
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

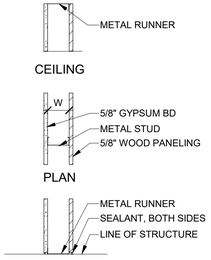
STANDARD SIGNAGE

SCALE: As indicated
CONTRACT NO: 220656
SHEET A0.04

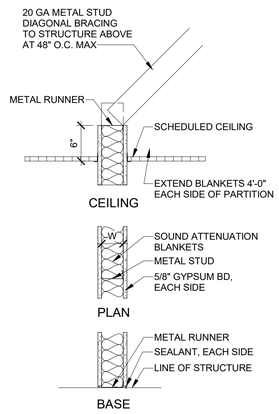


A3C W= 3 5/8"

A_C

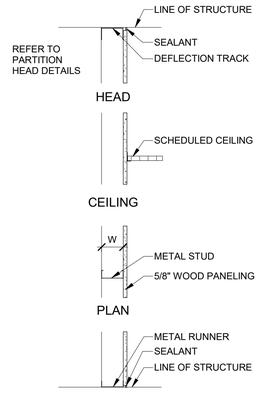


G6C W= 6"

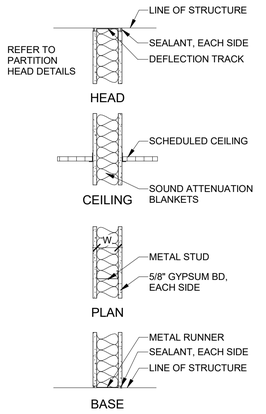


B3C W= 3 5/8"

B_C

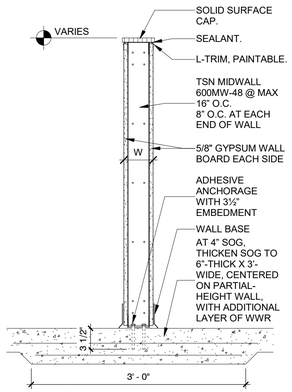


J3F W= 3 5/8"



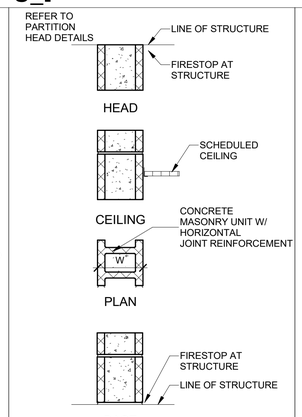
B3F W= 3 5/8"

B_F



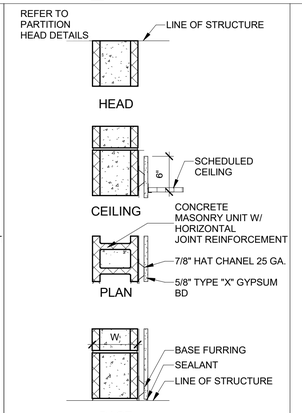
J3P W= 4 7/8"
J6P W= 7 1/4"

J_F

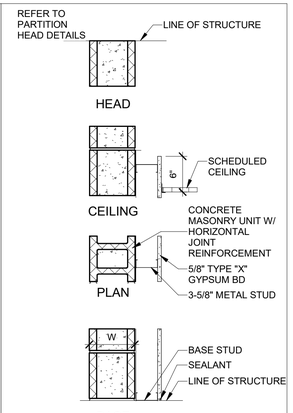


W= 7 5/8" UL # 905
2 HOUR RATED

K_P

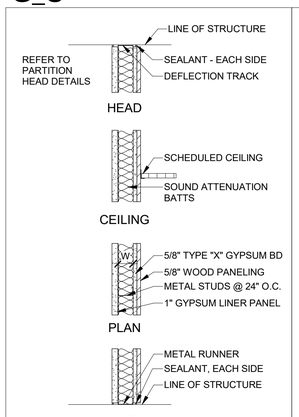


W= 7 5/8" UL # U905
2 HR RATED



W= 7 5/8" UL # U905
2 HR RATED

G_C



W= 2 1/2" UL # U415

1F2	1F8	1F8.2	1F8.3

PARTITION NOTES

A. "LINE OF STRUCTURE" AND "SCHEDULED CEILING" INDICATED ON PARTITION TYPES ARE DIAGRAMMATIC AND DO NOT INDICATE EXACT CONSTRUCTION CONDITIONS.
B. PROVIDE TYPE 'X' GYP BOARD IN LIEU OF NON-TYPE-X GYP BOARD AT ALL FIRE-RATED WALLS.
C. PROVIDE MOISTURE-RESISTANT GYP BOARD AT ALL RESTROOM WALLS.
D. PROVIDE CEMENT BACKER BOARD AT ALL WALLS WITH TILE FINISH.
E. NON-RATED PARTITIONS AND SMOKE PARTITIONS TO USE ACOUSTICAL SEALANT.
F. FIRE RESISTANT RATED PARTITIONS TO USE RATED FIRE/SMOKE RESISTANT FILL MATERIAL TOGETHER WITH COMPATIBLE RATED FIRE/SMOKE FIRESTOPPING SYSTEM.
G. PROVIDE FIRESTOPPING SYSTEM AT ALL PENETRATIONS THROUGH FIRE RESISTANT RATED PARTITIONS, AT PARTITION/DECK CONDITION, AND ELSEWHERE AS REQUIRED TO MAINTAIN THE FIRE RESISTIVE INTEGRITY OF THE ASSEMBLY.
H. FOR PARTITIONS TO RECEIVE SOUND ATTENUATION INSULATION, EXTEND INSULATION FULL HEIGHT OF PARTITION UNLESS INDICATED OTHERWISE. FLOOR TRACK TO BE SET IN CONTINUOUS BEAD OF SEALANT.
I. FOR NON-RATED PARTITIONS INDICATED TO RECEIVE SOUND ATTENUATION, USE SOUND ATTENUATION BLANKETS (SAB).
J. FOR FIRE RESISTANT RATED PARTITIONS INDICATED TO RECEIVE SOUND ATTENUATION, USE MINERAL WOOL SOUND ATTENUATION FIRE BLANKETS (SAFB).
K. FIRE AND SMOKE RESISTANT RATED PARTITIONS SUCH BE IDENTIFIED AS SUCH WITH A LABEL PLACED ON EACH WALL SEGMENT ABOVE THE CEILING ON BOTH SIDES AT 6'-0" MAX.
L. PROVIDE FULL THICKNESS OF INSULATION IN ALL STUD BOX BEAMS AND HEADERS.
M. PROVIDE BLOCKING IN PARTITIONS FOR ALL WALL SUPPORTED ITEMS. COORDINATE WITH OWNER FOR TYPE, SIZE, AND LOCATION REQUIREMENTS OF OWNER FURNISHED ITEMS.
N. PROVIDE 4'x8'x3/4" FIRE RESISTANT PLYWOOD BACK BOARDS IN ELECTRICAL CLOSETS, DATA/COMM ROOMS, AND WHERE REQUIRED OTHERWISE. MOUNT BOARDS VERTICALLY,4" ABOVE FLOOR AND TIGHT TO PARTITION FACE. COORDINATE WITH ELECTRICAL CONTRACTOR FOR LOCATIONS.
O. CLEAN INSIDE OF ALL STUD CAVITIES BEFORE ENCLOSING WALL.
P. PROVIDE BULLNOSE MASONRY UNITS AT ALL OUTSIDE CORNER CONDITIONS UNLESS INDICATED OTHERWISE OR SCHEDULED TO RECEIVE TILE FINISH.
Q. PROVIDE MASONRY BOND BEAM AND LINTEL UNITS WITH REINFORCING AND GROUT AS INDICATED ON STRUCTURAL DRAWINGS. PROVIDE LINTELS AT ALL MASONRY OPENINGS, AND AT HEAD OF DOORS, WINDOWS, ALUMINUM STOREFRONT, ETC.
R. UNLESS NOTED OTHERWISE PER SCHEDULE BELOW, ALL METAL STUDS TO BE 33 MIL (20 GA.) STUDS AT 24" O.C. BRACE THE FULL HEIGHT STUD FROM 17'-0" ABOVE FINISHED FLOOR BACK TO STRUCTURE ABOVE EVERY 48".

INTERIOR PARTITION METAL FRAMING LIMITING HEIGHTS
HEIGHTS LISTED BELOW ARE FOR UNBRACED LENGTHS

FOR 3-5/8" METAL STUDS PROVIDE THE FOLLOWING:
- UP TO 10'-0" HIGH UTILIZE 18 MIL (25 GAUGE) STUDS @ 24" O.C.
- BETWEEN 10'-0" HIGH AND 15'-0" HIGH UTILIZE 33 MIL (20 GAUGE) STUDS @ 24" O.C.
- BETWEEN 15'-0" HIGH AND 20'-0" HIGH UTILIZE 54 MIL (16 GAUGE) STUDS @ 24" 0.C.

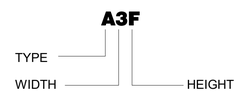
FOR 6" METAL STUDS PROVIDE THE FOLLOWING:
- UP TO 20'-0" HIGH UTILIZE 30 MIL (20 GAUGE DRYWALL) STUDS @ 24" O.C.
- BETWEEN 20'-0" HIGH AND 30'-0" HIGH UTILIZE 54 MIL (16 GAUGE) STUDS @ 24" O.C.

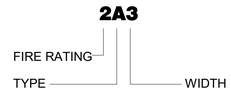
FOR 8" METAL STUDS PROVIDE THE FOLLOWING:
- UP TO 30'-0" HIGH UTILIZE 43 MIL (18 GAUGE) STUDS @ 24" O.C.
- BETWEEN 30'-0" HIGH AND 40'-0" HIGH UTILIZE 54 MIL (16 GAUGE) STUDS @ 24" O.C.

FOR PARTITIONS WITH TILE PROVIDE THE FOLLOWING:
- 33 MIL (20 GAUGE) STUDS @ 16" O.C.

FOR PARTITIONS WITH TILE PROVIDE THE FOLLOWING:
- 33 MIL (20 GAUGE) STUDS @ 16" O.C.

PARTITION TYPE LEGEND





NON-RATED WALLS

WIDTH
- **1** 1 5/8" METAL STUD
- **2** 2 1/2" METAL STUD
- **3** 3 5/8" METAL STUD
- **4** 4" METAL STUD, 4" CMU
- **6** 6" METAL STUD, 6" CMU
- **7** 7/8" METAL HAT CHANNELS
- **8** 8" CMU

RATED WALLS

HEIGHT
- **F** FULL HEIGHT TO STRUCTURE ABOVE
- **C** 6" ABOVE FINISH CEILING
- **P** PARTIAL HEIGHT AS INDICATED

FIRE RATING
- **1** 1 HOUR
- **2** 2 HOUR

STATE OF OHIO — REGISTERED ARCHITECT — EXP. 12-31-24

CT consultants
engineers • architects • planners

REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/23/2024	ATOR

DATE: 05/03/2024
DRAWN BY: DWUR
CHECKED BY: MDOU
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

PARTITION TYPES

SCALE: As indicated
CONTRACT NO: 220656
SHEET A0.05

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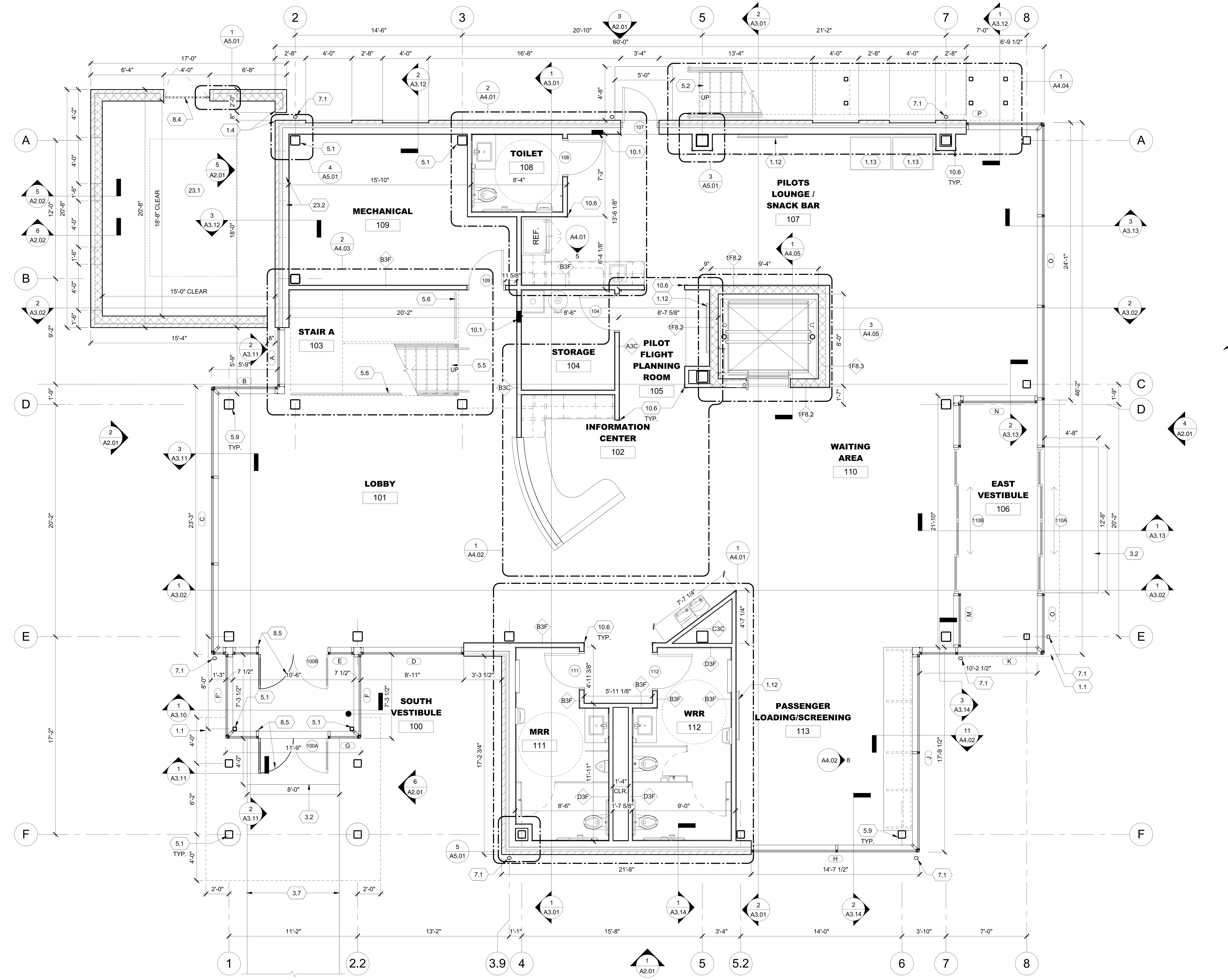

1 A1.01 **FIRST FLOOR PLAN**
1/4" = 1'-0"

GENERAL NOTES

A. FINISH FLOOR ELEVATION OF 100'-0" IS EQUAL TO USGS ELEVATION OF 620.50' UNLESS NOTED OTHERWISE.
B. VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ARCHITECT OF ANY DISCREPANCIES.
C. EXTERIOR DIMENSIONS SHOWN ARE TO OUTSIDE FACE OF FOUNDATION WALL OR ROUGH OPENINGS. TYPICAL UNLESS NOTED OTHERWISE.
D. INTERIOR DIMENSIONS SHOWN ARE TO FACE OF STUDS, CMU, OR CONCRETE CONSTRUCTION, UNLESS NOTED OTHERWISE.
E. ALL DOORS INSTALLED IN GYPSUM BOARD PARTITIONS TO BE LOCATED 0'-4" FROM EDGE OF JAMB OF DOOR TO ADJACENT WALL. ALL DOORS INSTALLED IN MASONRY PARTITIONS TO BE LOCATED 0'-8" FROM EDGE OF JAMB OF DOOR TO ADJACENT WALL. UNLESS NOTED OTHERWISE.
F. PROVIDE BULLNOSE CMU AT EXPOSED DOOR JAMBS AND OPENINGS EXPOSED TO VIEW.
G. VERIFY SIZE OF PRE-FABRICATED ITEMS SUCH AS FIRE EXTINGUISHER CABINETS, CABINET HEATERS, AND RESTROOM ACCESSORIES PRIOR TO INSTALLING ADJACENT FRAMING.
H. PROVIDE BLOCKING OR METAL STRAPS IN WALLS AS REQUIRED FOR ATTACHMENT OF SURFACE MOUNTED ITEMS SUCH AS RESTROOM ACCESSORIES, CASEWORK, AND FIRE EXTINGUISHERS.
I. PROVIDE SEALANT AT JOINTS BETWEEN ALL DISSIMILAR MATERIALS.
J. PROVIDE GYPSUM BOARD CONTROL JOINTS PER THE SPECIFICATIONS, BUT NOT TO EXCEED 30'-0" ALONG CONTINUOUS INTERIOR PARTITIONS.
K. PAINT ALL EXPOSED, UNFINISHED EXTERIOR STEEL (DOORS, FRAMES, LINTELS, BOLLARDS, ETC.).
L. PROVIDE MASONRY CONTROL JOINT (C.J.) AT EACH OPENING OF INTERIOR WALLS OR AS INDICATED (NOT TO EXCEED 1/3 OF WALL HEIGHT).
M. COORDINATE WORK BETWEEN TRADES AND OTHER DISCIPLINES. ADDITIONAL ITEMS OF WORK MAY APPEAR ELSEWHERE IN THE CONSTRUCTION DOCUMENTS.
N. SEE CIVIL DRAWINGS FOR EXTENT OF CONCRETE WALKS AND APRONS.
O. PROVIDE AND INSTALL WINDOW SHADES AT ALL EXTERIOR CURTAIN WALLS, OR AS OTHERWISE NOTED. REFER TO SCHEDULES FOR ADDITIONAL INFORMATION.

KEYNOTES

1.4 ALIGN WALLS THIS SIDE.
1.12 FLAT PANEL DISPLAY MONITOR BY OWNER.
1.13 VENDING MACHINE BY OWNER.
3.2 CONCRETE FROST SLAB. SEE STRUCTURAL DRAWINGS.
3.7 CONCRETE SIDEWALK. SEE CIVIL DRAWINGS.
5.1 STEEL COLUMN. PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.2 EXTERIOR METAL STAIRS WITH BAR GRATING TREADS. SEE DETAILS ON SHEET A4.04.
5.5 PAINTED METAL STAIRS WITH CROSS-LAMINATED TIMBER (CLT) TREADS AND LANDING BY STAIR MANUFACTURER, SEE DETAILS ON SHEET A4.03.
5.6 1-1/2" DIA., 27" HIGH, STAINLESS STEEL GUARDRAIL/BARRIER UNDER STAIR CONSTRUCTION.
5.9 EXPOSED STEEL COLUMN, PAINTED. SEE STRUC. DRAWINGS.
7.1 3" X 4" PREFINISHED METAL DOWNSPOUT. CONNECT TO STORM SYSTEM WITH BOOT. SEE CIVIL DRAWINGS.
8.4 ORNAMENTAL LOCKABLE ACCESS GATE.
8.5 AUTOMATIC DOOR OPERATOR CONTROLS, MOUNTED ON COLUMN, PEDESTAL, CURTAINWALL FRAMING, OR WALL AS INDICATED.
10.1 SEMI-RECESSED FIRE EXTINGUISHER CABINET WITH MULTIPURPOSE FIRE EXTINGUISHER.
10.6 STAINLESS STEEL CORNER GUARD - 6'-0" HIGH (TYP).
23.1 RTU. SEE MECHANICAL DRAWINGS.
23.2 MECHANICAL DUCT THROUGH-WALL PENETRATION, COORDINATE SIZE AND LOCATION. SEE MECHANICAL DRAWINGS.

STATE OF OHIO
ANDREW D. TOROWSKI
14836
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EXP. 12-31-24

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NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

FIRST FLOOR PLAN

SCALE: As indicated
CONTRACT NO: 220656
SHEET A1.01

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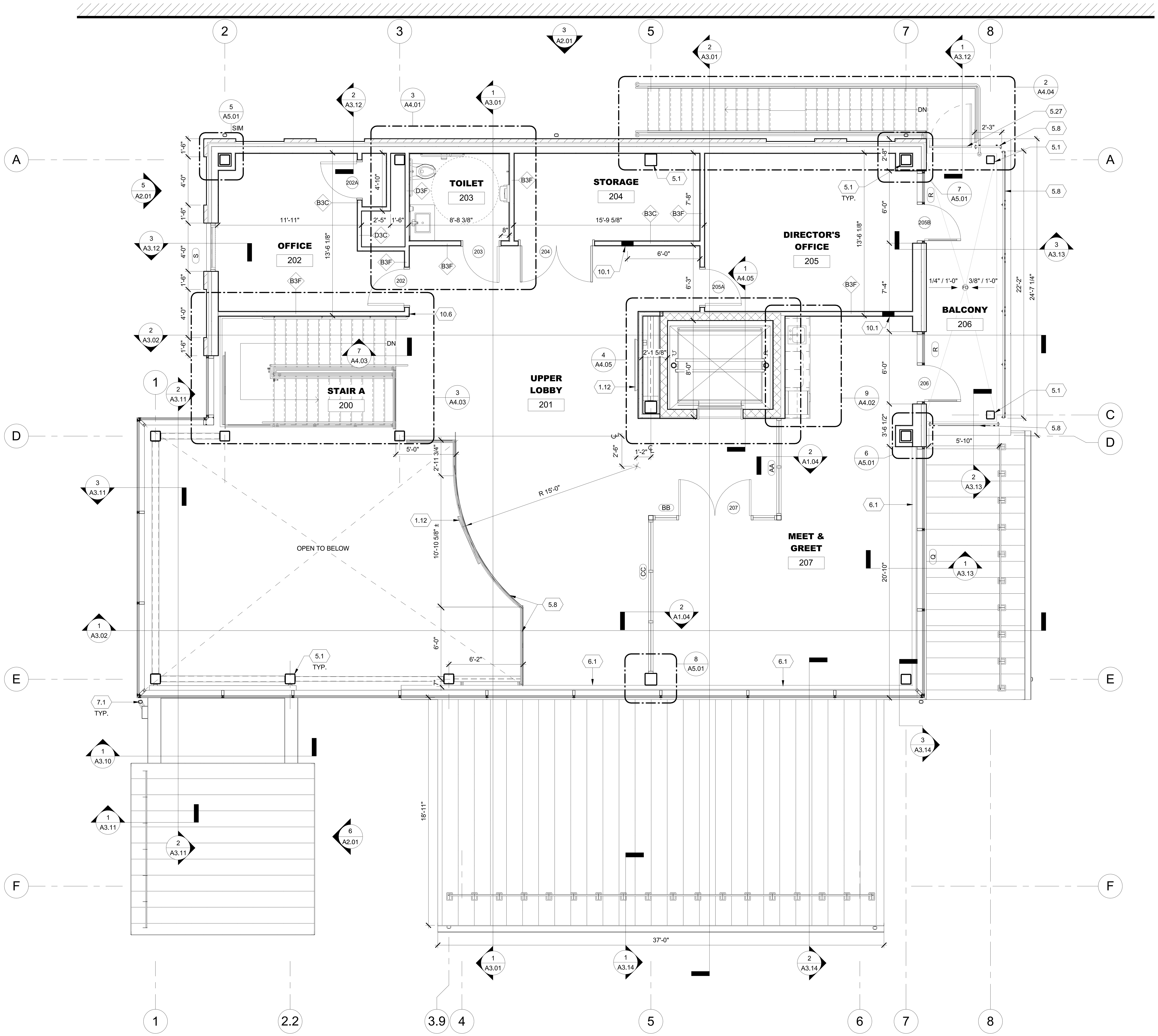

1 A1.02 **SECOND FLOOR PLAN**
1/4" = 1'-0"

GENERAL NOTES

A. FINISH FLOOR ELEVATION OF 100'-0" IS EQUAL TO USGS ELEVATION OF 620.50' UNLESS NOTED OTHERWISE.
B. VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ARCHITECT OF ANY DISCREPANCIES.
C. EXTERIOR DIMENSIONS SHOWN ARE TO OUTSIDE FACE OF FOUNDATION WALL OR ROUGH OPENINGS. TYPICAL UNLESS NOTED OTHERWISE.
D. INTERIOR DIMENSIONS SHOWN ARE TO FACE OF STUDS, CMU, OR CONCRETE CONSTRUCTION, UNLESS NOTED OTHERWISE.
E. ALL DOORS INSTALLED IN GYPSUM BOARD PARTITIONS TO BE LOCATED 0'-4" FROM EDGE OF JAMB OF DOOR TO ADJACENT WALL. ALL DOORS INSTALLED IN MASONRY PARTITIONS TO BE LOCATED 0'-8" FROM EDGE OF JAMB OF DOOR TO ADJACENT WALL. UNLESS NOTED OTHERWISE.
F. PROVIDE BULLNOSE CMU AT EXPOSED DOOR JAMBS AND OPENINGS EXPOSED TO VIEW.
G. VERIFY SIZE OF PRE-FABRICATED ITEMS SUCH AS FIRE EXTINGUISHER CABINETS, CABINET HEATERS, AND RESTROOM ACCESSORIES PRIOR TO INSTALLING ADJACENT FRAMING.
H. PROVIDE BLOCKING OR METAL STRAPS IN WALLS AS REQUIRED FOR ATTACHMENT OF SURFACE MOUNTED ITEMS SUCH AS RESTROOM ACCESSORIES, CASEWORK, AND FIRE EXTINGUISHERS.
I. PROVIDE SEALANT AT JOINTS BETWEEN ALL DISSIMILAR MATERIALS.
J. PROVIDE GYPSUM BOARD CONTROL JOINTS PER THE SPECIFICATIONS, BUT NOT TO EXCEED 30'-0" ALONG CONTINUOUS INTERIOR PARTITIONS.
K. PAINT ALL EXPOSED, UNFINISHED EXTERIOR STEEL (DOORS, FRAMES, LINTELS, BOLLARDS, ETC.).
L. PROVIDE MASONRY CONTROL JOINT (C.J.) AT EACH OPENING OF INTERIOR WALLS OR AS INDICATED (NOT TO EXCEED 1/3 OF WALL HEIGHT).
M. COORDINATE WORK BETWEEN TRADES AND OTHER DISCIPLINES. ADDITIONAL ITEMS OF WORK MAY APPEAR ELSEWHERE IN THE CONSTRUCTION DOCUMENTS.
N. SEE CIVIL DRAWINGS FOR EXTENT OF CONCRETE WALKS AND APRONS.
O. PROVIDE AND INSTALL WINDOW SHADES AT ALL EXTERIOR CURTAIN WALLS, OR AS OTHERWISE NOTED. REFER TO SCHEDULES FOR ADDITIONAL INFORMATION.

KEYNOTES

- 1.12 FLAT PANEL DISPLAY MONITOR BY OWNER.
- 5.1 STEEL COLUMN. PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
- 5.8 GLAZED DECORATIVE METAL RAILING.
- 5.27 OPERABLE EMERGENCY EGRESS GATE.
- 6.1 SOLID SURFACE WINDOWSILL.
- 7.1 3" X 4" PREFINISHED METAL DOWNSPOUT. CONNECT TO STORM SYSTEM WITH BOOT. SEE CIVIL DRAWINGS.
- 10.1 SEMI-RECESSED FIRE EXTINGUISHER CABINET WITH MULTIPURPOSE FIRE EXTINGUISHER.
- 10.6 STAINLESS STEEL CORNER GUARD - 6'-0" HIGH (TYP).

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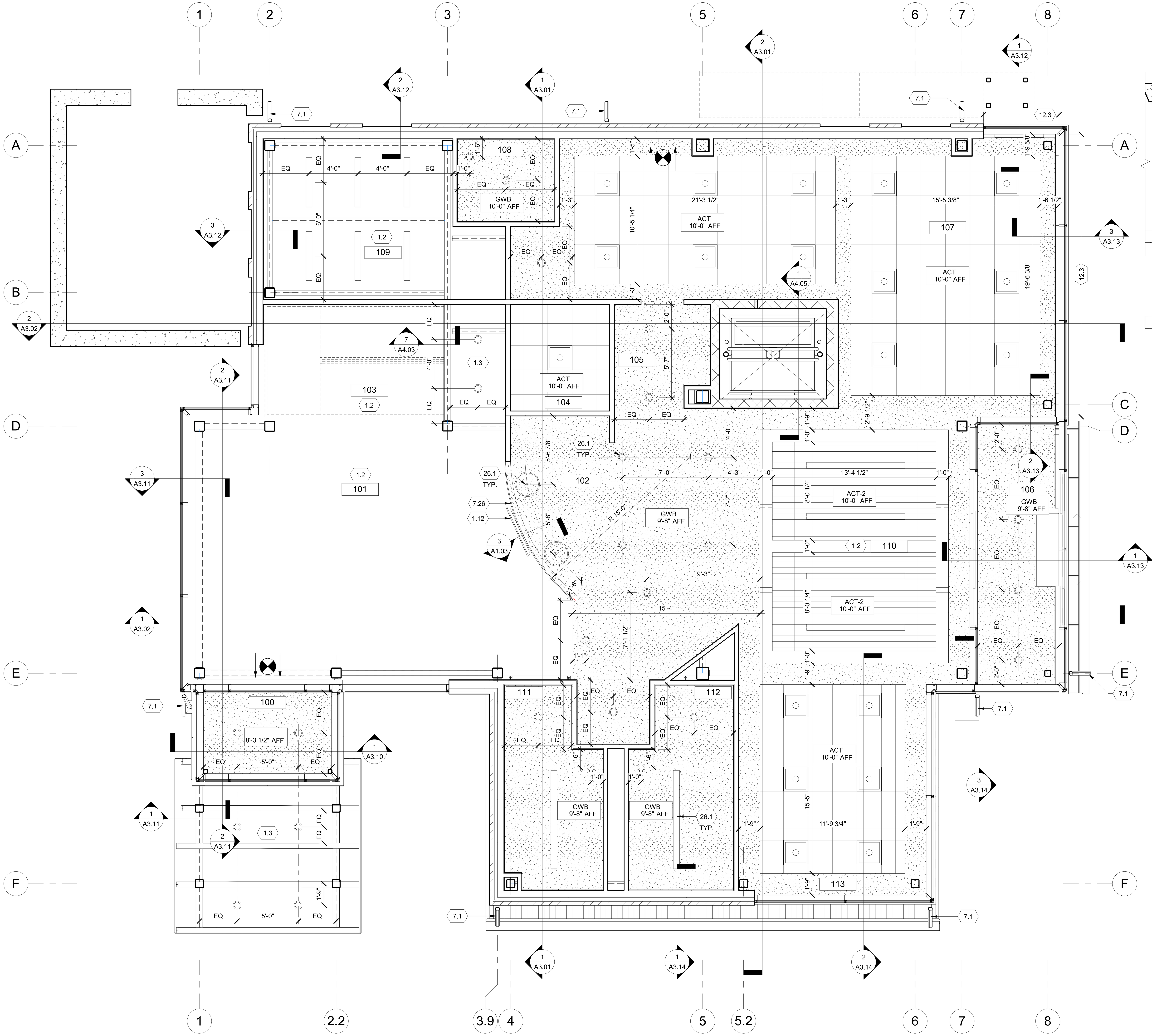
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

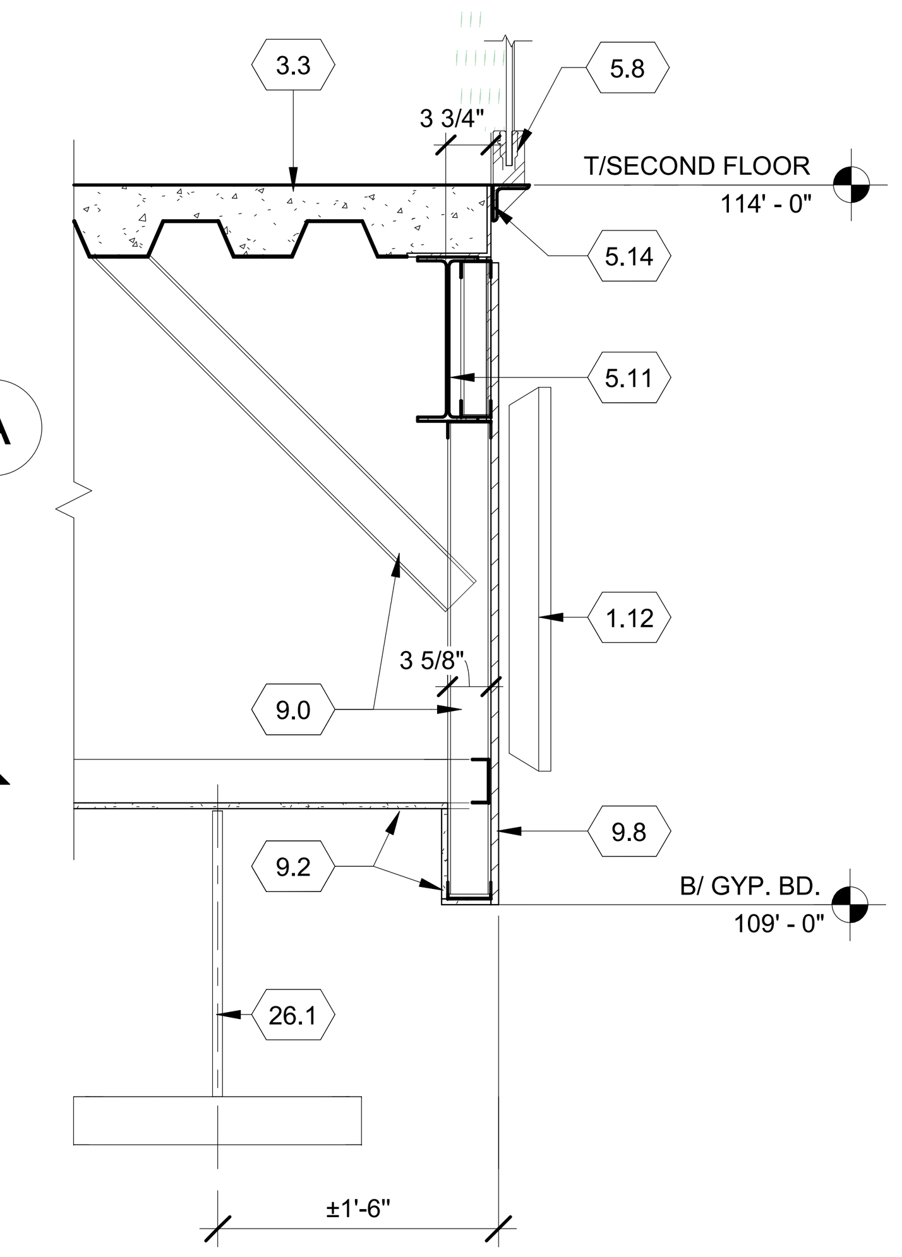
SECOND FLOOR PLAN

SCALE: As indicated
CONTRACT NO: 220656
SHEET A1.02

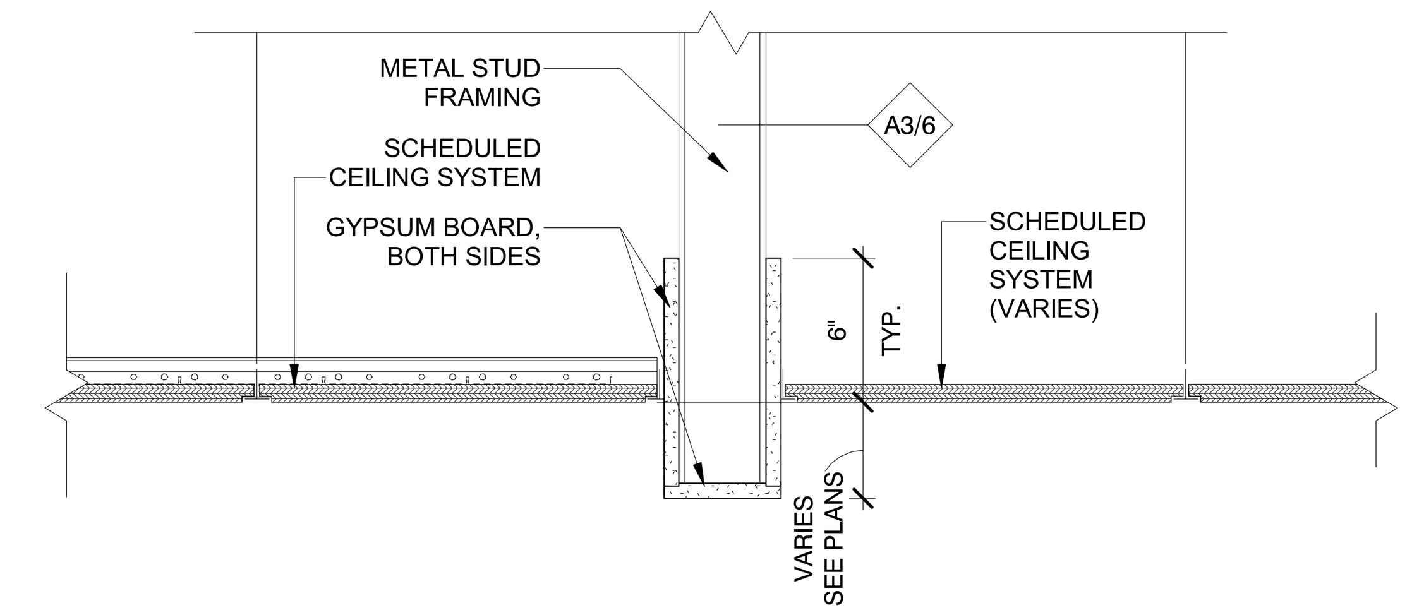
5/31/2024 12:21:30 PM



1 | A1.03 **REFLECTED CEILING FIRST FLOOR PLAN**
1/4" = 1'-0"



3 | A1.03 **SECTION**
3/4" = 1'-0"



2 | A1.03 **BULKHEAD DETAIL**
1 1/2" = 1'-0"

RCP GENERAL NOTES

A. ALL CEILINGS SHALL BE 10'-0" ABOVE FINISH FLOOR UNLESS INDICATED OTHERWISE
B. NOTIFY ARCHITECT OF ANY DISCREPANCIES OR UN-IDENTIFIED CEILING TYPES OR HEIGHTS PRIOR TO PROCEEDING WITH THE WORK
C. CENTER TILE / GRID LAYOUT IN SPACE AS SHOWN ON PLANS UNLESS INDICATED OTHERWISE
D. WHERE MINOR DISCREPANCIES OCCUR BETWEEN MECHANICAL OR ELECTRICAL DRAWINGS AND THE ARCHITECTURAL CEILING PLAN, THE ARCHITECTURAL PLAN SHALL GOVERN. IN THE CASE OF MAJOR DISCREPANCIES, THE ARCHITECT SHALL BE NOTIFIED AS SOON AS THE DISCREPANCY IS DISCOVERED PRIOR TO PROCEEDING WITH THE WORK.
E. REFER TO SHEET I-SERIES DRAWINGS FOR ALL CEILING FINISHES AND LOCATIONS.
F. REFERENCE MECHANICAL AND ELECTRICAL DRAWINGS FOR MOUNTING LOCATIONS OF ITEMS IN SPACES WHERE NO CEILING IS INDICATED
G. ALL CEILING DEVICES ARE TO BE CENTERED IN THE CEILING TILE IN WHICH THEY ARE LOCATED, UNLESS INDICATED OTHERWISE
H. ANY NON-DIMENSIONED LIGHT FIXTURES AND OTHER CEILING DEVICES LOCATED IN GYPSUM BOARD CEILINGS SHALL BE DIMENSIONED AND COORDINATED PRIOR TO CONSTRUCTION
I. REFERENCE MEP DRAWINGS AND SPECIFICATIONS FOR ACCESS PANELS IN GYPSUM BOARD CEILINGS NOT INDICATED ON THE CEILING PLANS
J. REFERENCE ELECTRICAL DRAWINGS FOR EXIT SIGNS NOT INDICATED ON THE CEILING PLANS
K. REFERENCE FIRE PROTECTION DRAWINGS FOR SPRINKLER HEAD LOCATIONS NOT INDICATED ON THE CEILING PLANS

LEGEND

SEE MECHANICAL, ELECTRICAL, AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION.

- 2'-0" x 2'-0" ACOUSTICAL CEILING TILE.
- GYPSUM BOARD CEILING, SOFFIT, OR BULKHEAD.
- EL. — ACOUSTIC ACCENT CANOPY.
- RECESSED LAY-IN FIXTURE OR DOWNLIGHT (CAN LIGHT).
- PENDANT FIXTURE.
- EXIT SIGN.

KEYNOTES

1.2	NO CEILING, OPEN TO ABOVE.
1.3	NO CEILING, OPEN TO UNDERSIDE OF DECK. PAINTED.
1.12	FLAT PANEL DISPLAY MONITOR BY OWNER.
3.3	CONCRETE SLAB OVER METAL DECK. SEE STRUCTURAL DRAWINGS.
5.8	GLAZED DECORATIVE METAL RAILING.
5.11	STEEL BEAM, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.14	STEEL ANGLE, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
7.1	3" X 4" PREFINISHED METAL DOWNSPOUT. CONNECT TO STORM SYSTEM WITH BOOT. SEE CIVIL DRAWINGS.
7.26	LINEAR FRT WOOD SOFFIT PANELS.
9.0	NON-STRUCTURAL METAL FRAMING. SEE PLANS AND SEE SHEET A0.04 FOR INTERIOR PARTITION TYPES.
9.2	1/2" GYPSUM BOARD.
9.8	FRT WOOD PANELING.
12.3	MANUAL OPERATED WINDOW ROLLER SHADE. FULL HEIGHT AND WIDTH OF WINDOW.
26.1	LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS.

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CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

REFLECTED CEILING FIRST FLOOR PLAN

SCALE: As indicated
CONTRACT NO: 220656
SHEET A1.03

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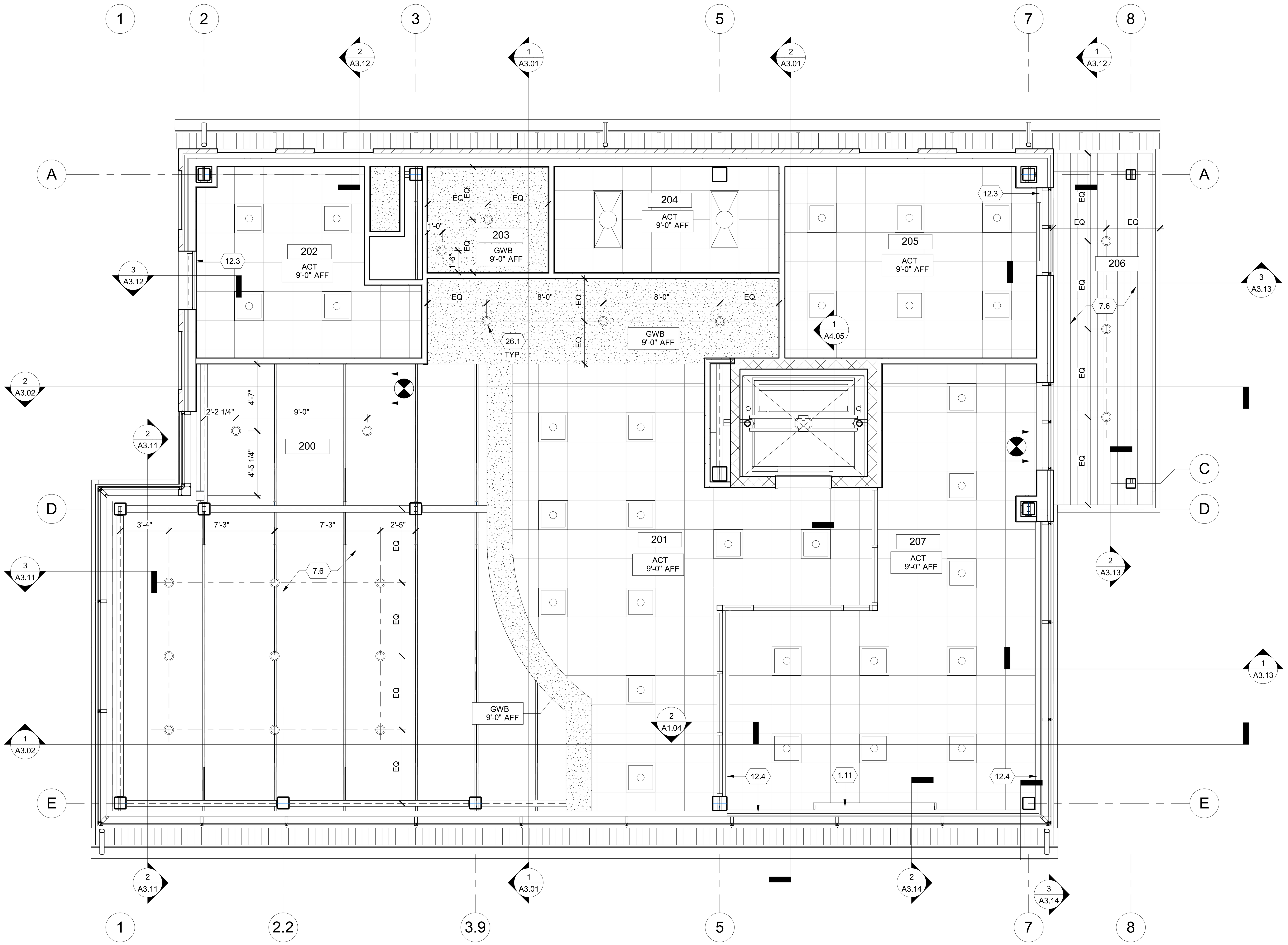


1 REFLECTED CEILING SECOND FLOOR PLAN
A1.04 1/4" = 1'-0"

RCP GENERAL NOTES

A. ALL CEILINGS SHALL BE 10'-0" ABOVE FINISH FLOOR UNLESS INDICATED OTHERWISE
B. NOTIFY ARCHITECT OF ANY DISCREPANCIES OR UN-IDENTIFIED CEILING TYPES OR HEIGHTS PRIOR TO PROCEEDING WITH THE WORK
C. CENTER TILE / GRID LAYOUT IN SPACE AS SHOWN ON PLANS UNLESS INDICATED OTHERWISE
D. WHERE MINOR DISCREPANCIES OCCUR BETWEEN MECHANICAL OR ELECTRICAL DRAWINGS AND THE ARCHITECTURAL CEILING PLAN, THE ARCHITECTURAL PLAN SHALL GOVERN. IN THE CASE OF MAJOR DISCREPANCIES, THE ARCHITECT SHALL BE NOTIFIED AS SOON AS THE DISCREPANCY IS DISCOVERED PRIOR TO PROCEEDING WITH THE WORK.
E. REFER TO SHEET I-SERIES DRAWINGS FOR ALL CEILING FINISHES AND LOCATIONS.
F. REFERENCE MECHANICAL AND ELECTRICAL DRAWINGS FOR MOUNTING LOCATIONS OF ITEMS IN SPACES WHERE NO CEILING IS INDICATED
G. ALL CEILING DEVICES ARE TO BE CENTERED IN THE CEILING TILE IN WHICH THEY ARE LOCATED, UNLESS INDICATED OTHERWISE
H. ANY NON-DIMENSIONED LIGHT FIXTURES AND OTHER CEILING DEVICES LOCATED IN GYPSUM BOARD CEILINGS SHALL BE DIMENSIONED AND COORDINATED PRIOR TO CONSTRUCTION
I. REFERENCE MEP DRAWINGS AND SPECIFICATIONS FOR ACCESS PANELS IN GYPSUM BOARD CEILINGS NOT INDICATED ON THE CEILING PLANS
J. REFERENCE ELECTRICAL DRAWINGS FOR EXIT SIGNS NOT INDICATED ON THE CEILING PLANS
K. REFERENCE FIRE PROTECTION DRAWINGS FOR SPRINKLER HEAD LOCATIONS NOT INDICATED ON THE CEILING PLANS

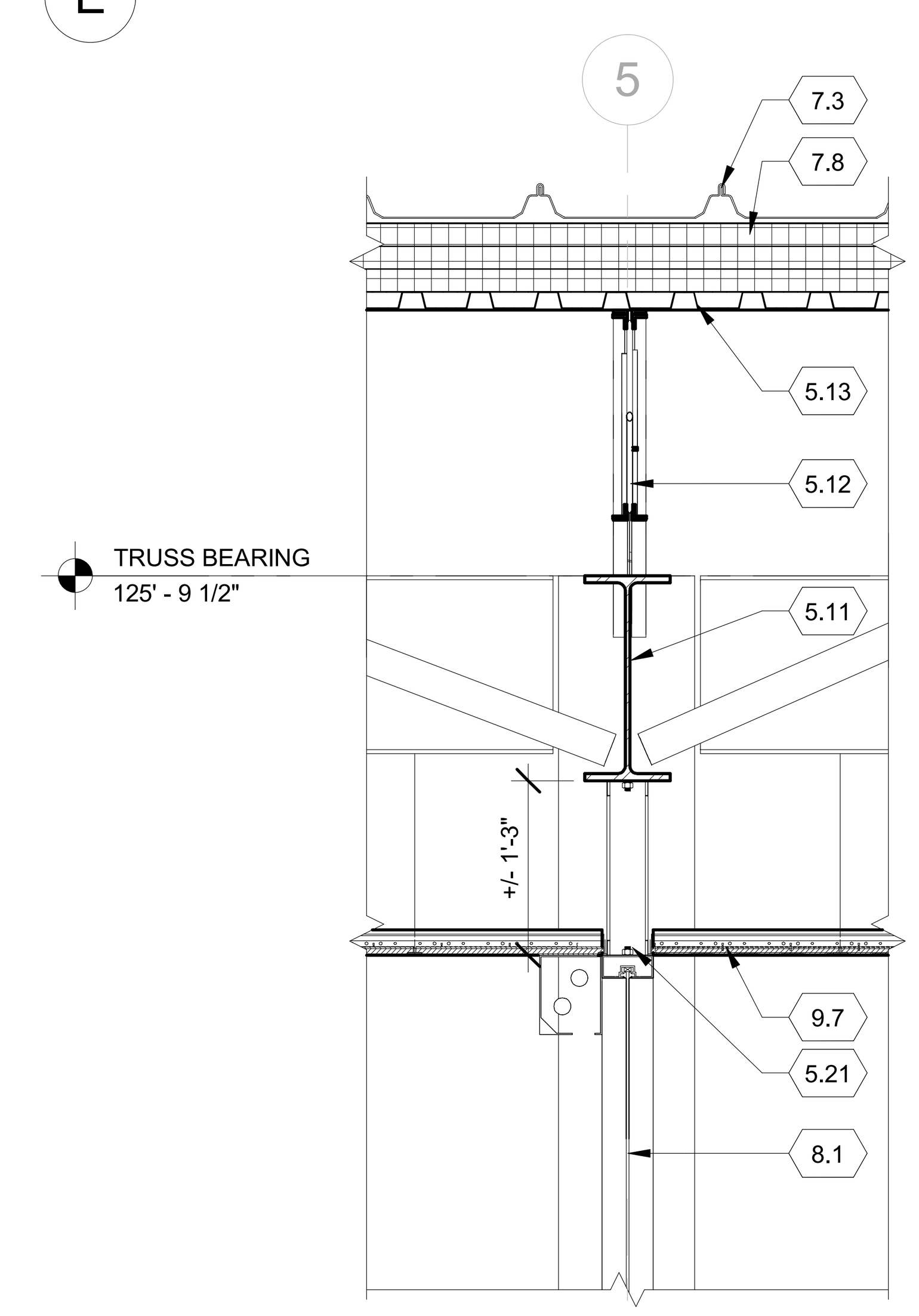
LEGEND

SEE MECHANICAL, ELECTRICAL, AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION.

- 2'-0" x 2'-0" ACOUSTICAL CEILING TILE.
- GYPSUM BOARD CEILING, SOFFIT, OR BULKHEAD.
- EL. ACOUSTIC ACCENT CANOPY.
- RECESSED LAY-IN FIXTURE OR DOWNLIGHT (CAN LIGHT).
- PENDANT FIXTURE.
- EXIT SIGN.

KEYNOTES

1.11	ELECTRIC PROJECTION SCREEN BY OWNER.
5.11	STEEL BEAM, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.12	STEEL ROOF JOIST, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.13	STEEL ROOF DECK, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.21	3-5/8" METAL STUD. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
7.3	STANDING-SEAM METAL ROOF.
7.6	PREFINISHED LINEAR METAL SOFFIT PANELS.
7.8	6" POLYISOCYANURATE ROOF INSULATION (R-38 MIN.); THREE LAYERS OF 2" WITH SEAMS STAGGERED.
8.1	ALUMINUM CURTAIN WALL SYSTEM. SEE ALUMINUM ASSEMBLIES AND DETAILS SHEETS.
9.7	ACOUSTICAL CEILING TILE SYSTEM. SEE RCP SHEETS.
12.3	MANUAL OPERATED WINDOW ROLLER SHADE. FULL HEIGHT AND WIDTH OF WINDOW.
12.4	MANUAL OPERATED, DUAL WINDOW ROLLER SHADE WITH BLACKOUT. FULL HEIGHT AND WIDTH OF WINDOW, AND PROVIDE ALUMINUM SIDE AND SILL CHANNELS FOR LIGHT GAP REDUCTION.
26.1	LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS.



2 WALL SECTION
A1.04 3/4" = 1'-0"

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NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

REFLECTED CEILING SECOND FLOOR PLAN

SCALE: As indicated
CONTRACT NO: 220656
SHEET A1.04

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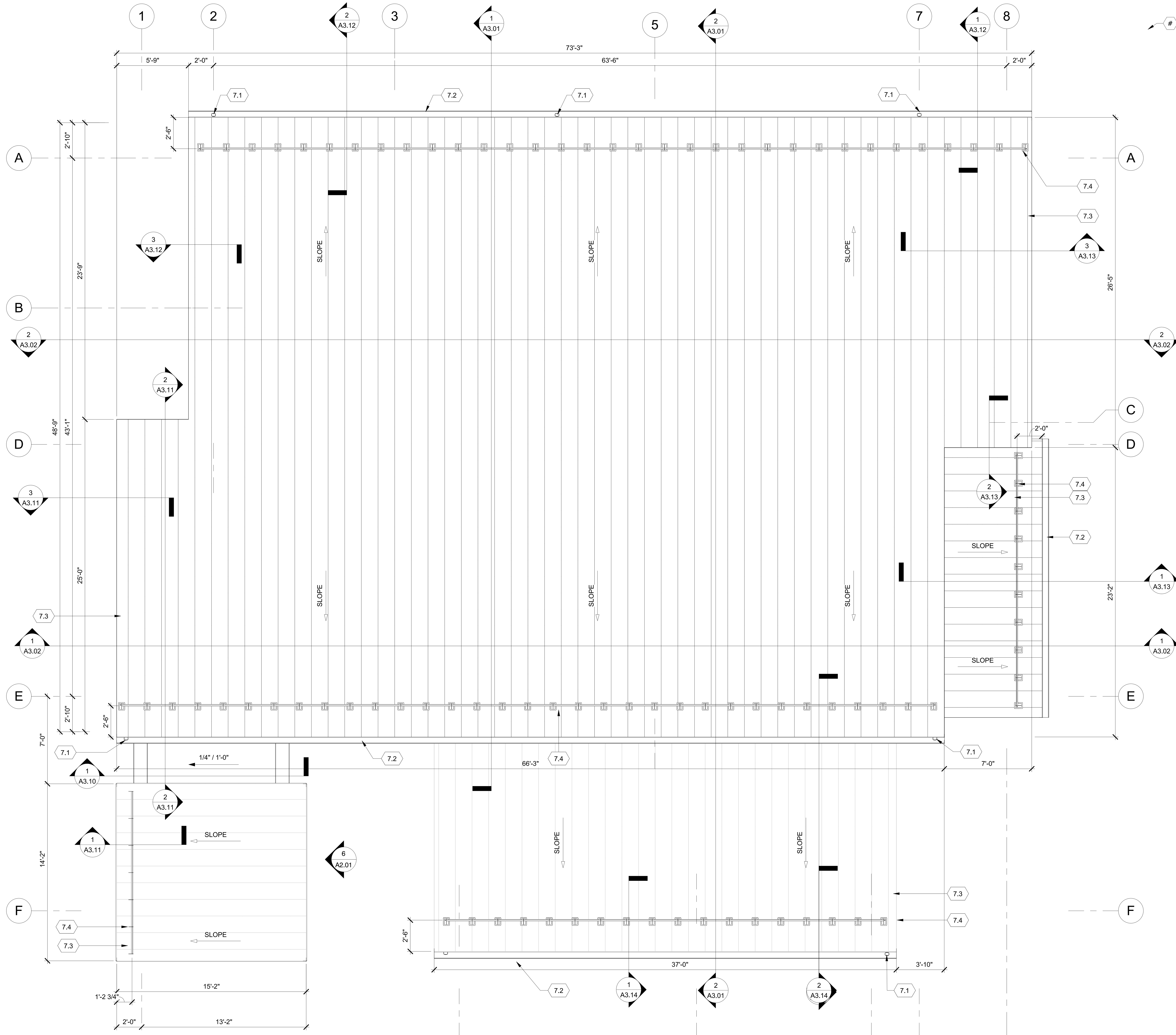

1 A1.05 **ROOF PLAN**
1/4" = 1'-0"

KEYNOTES

- 7.1 3" X 4" PREFINISHED METAL DOWNSPOUT, CONNECT TO STORM SYSTEM WITH BOOT. SEE CIVIL DRAWINGS.
- 7.2 9" X 9" PREFINISHED METAL GUTTER. SEE DETAILS.
- 7.3 STANDING-SEAM METAL ROOF.
- 7.4 SNOW GUARDS.

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ROOF PLAN

SCALE: As indicated
CONTRACT NO: 220656
SHEET A1.05

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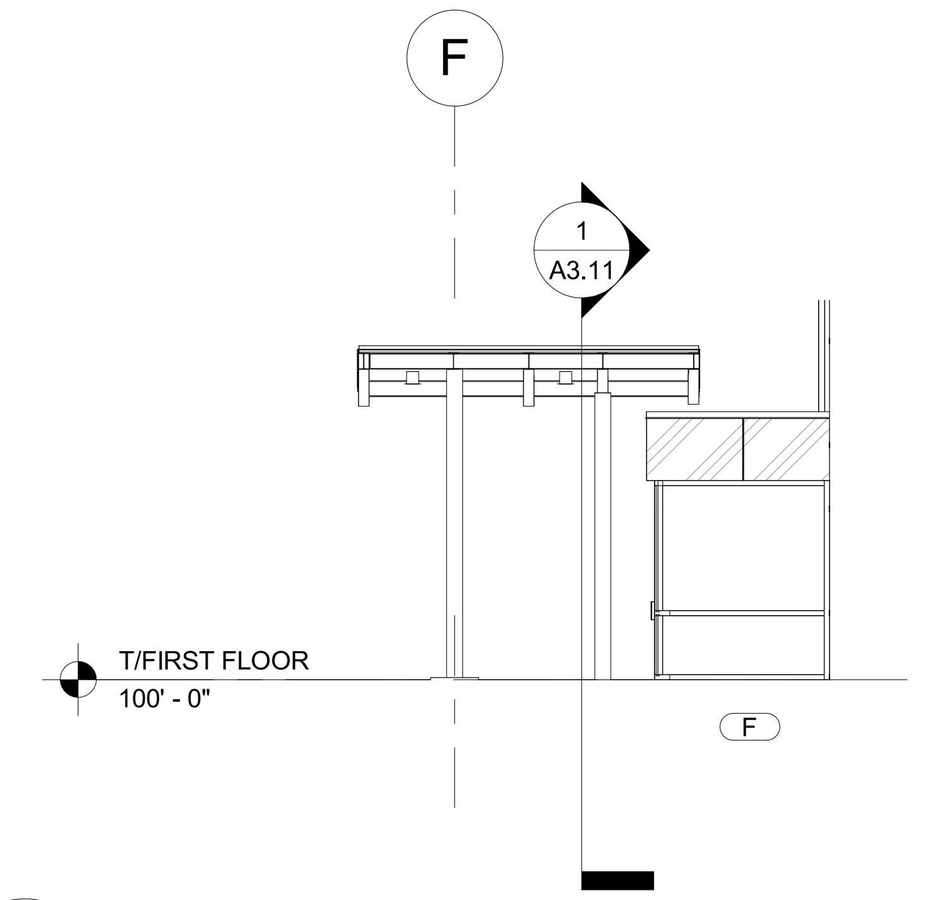
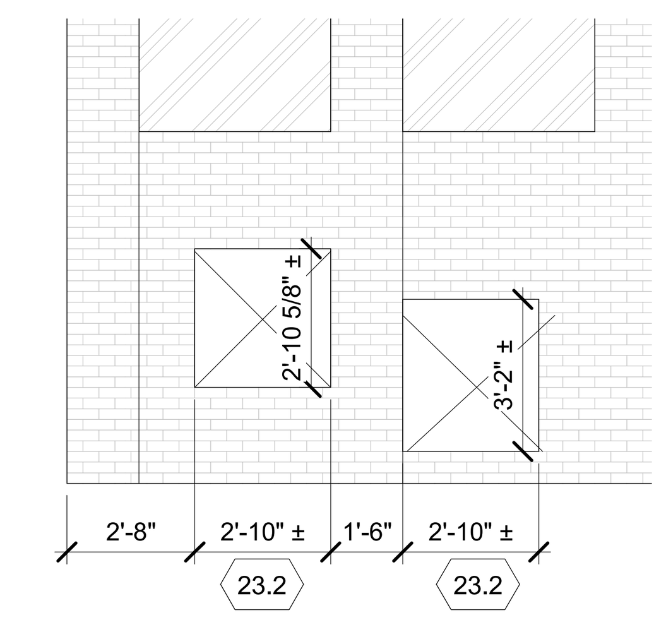


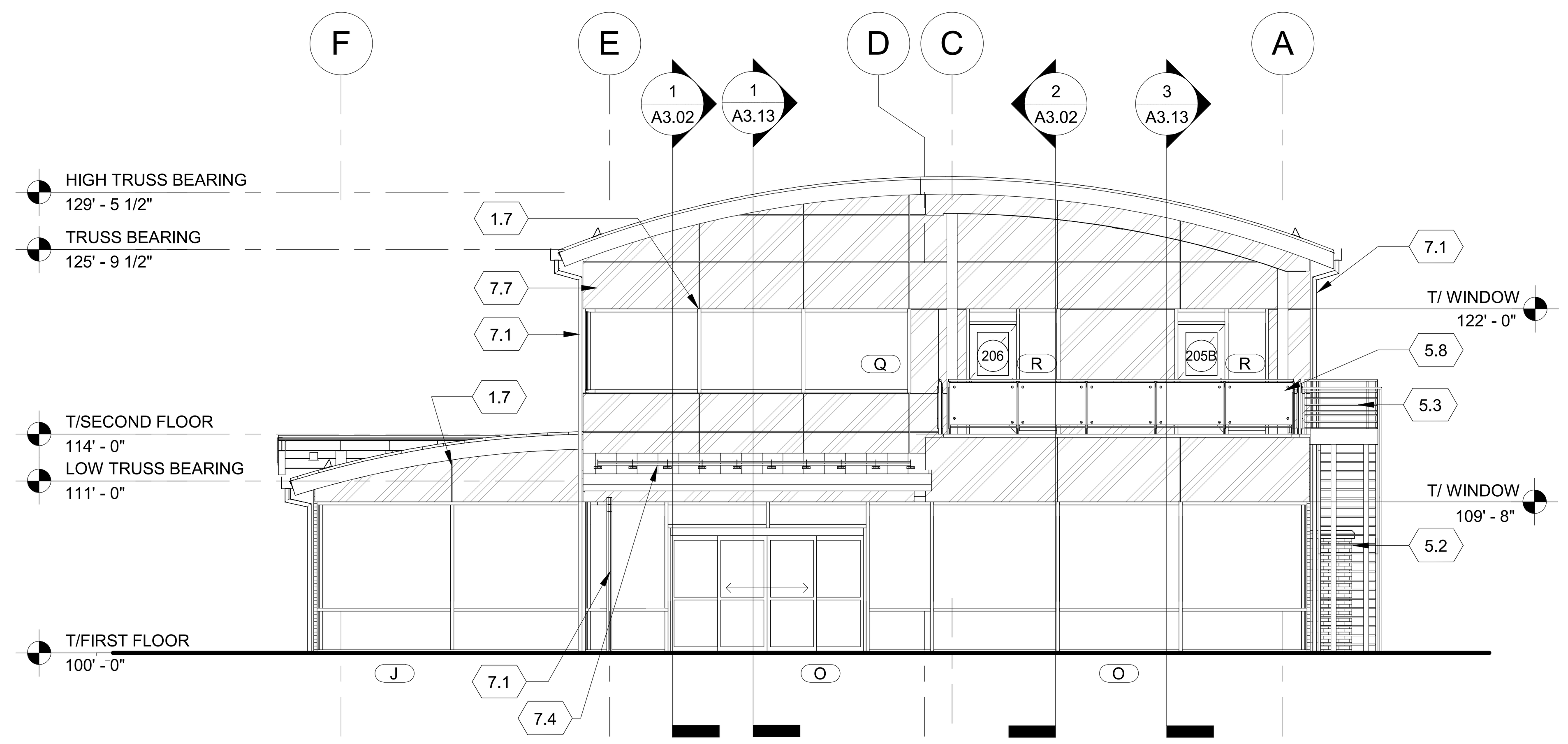
6 A2.01 **EAST VESTIBULE ELEVATION**
1/8" = 1'-0"



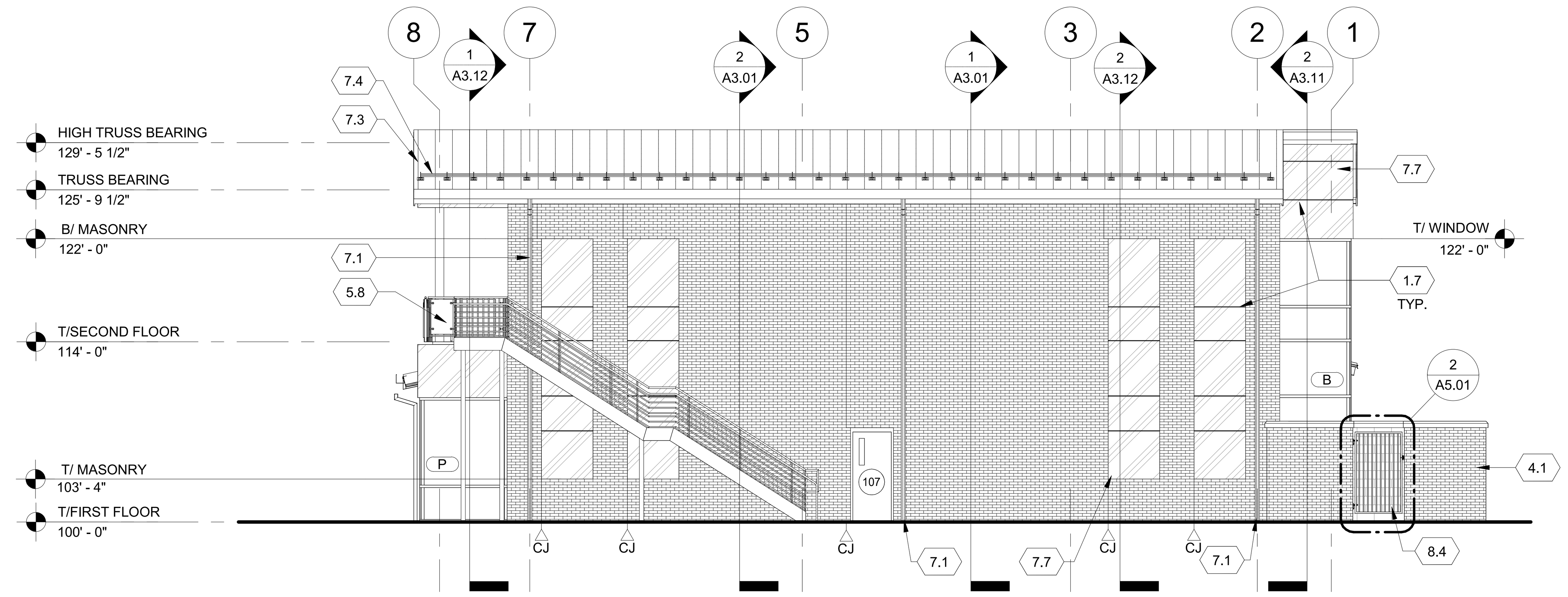
5 A2.01 **PARTIAL WEST ELEVATION**
1/4" = 1'-0"

KEYNOTES

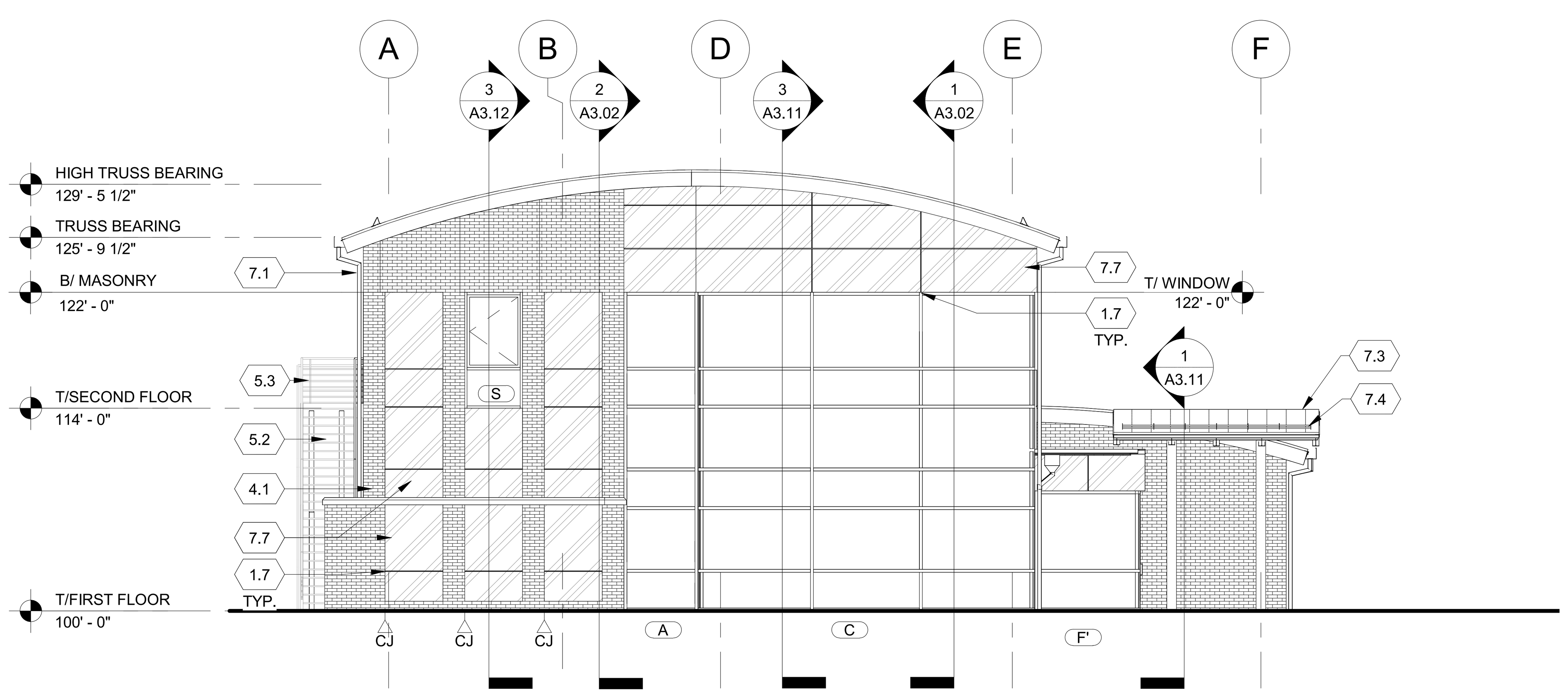
1.7	METAL PANEL SYSTEM JOINTS TO BE CENTERED WITH WINDOW MULLIONS (TYP).
4.1	4" (NOM.) MASONRY BRICK VENEER.
5.2	EXTERIOR METAL STAIRS WITH BAR GRATING TREADS. SEE DETAILS ON SHEET A4.04.
5.3	1-1/2" DIA., 42" HIGH, STEEL GUARDRAIL WITH HANDRAIL (WHERE APPLICABLE). PAINTED.
5.8	GLAZED DECORATIVE METAL RAILING.
7.1	3" X 4" PREFINISHED METAL DOWNSPOUT. CONNECT TO STORM SYSTEM WITH BOOT. SEE CIVIL DRAWINGS.
7.3	STANDING-SEAM METAL ROOF.
7.4	SNOW GUARDS.
7.7	ALUMINUM COMPOSITE PANEL SYSTEM.
8.4	ORNAMENTAL LOCKABLE ACCESS GATE.
23.2	MECHANICAL DUCT THROUGH-WALL PENETRATION, COORDINATE SIZE AND LOCATION. SEE MECHANICAL DRAWINGS.



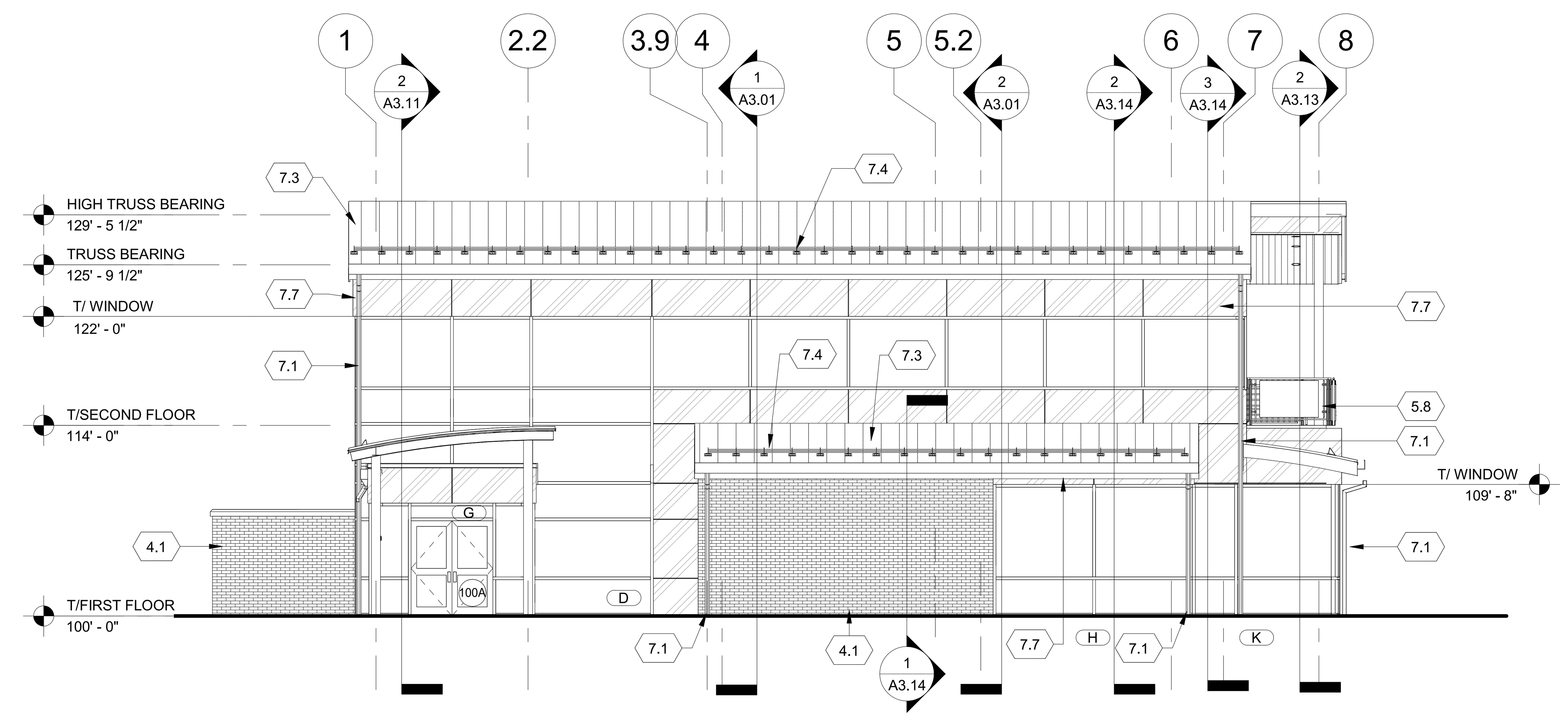
4 A2.01 **EAST ELEVATION**
1/8" = 1'-0"



3 A2.01 **NORTH ELEVATION**
1/8" = 1'-0"



2 A2.01 **WEST ELEVATION**
1/8" = 1'-0"



1 A2.01 **SOUTH ELEVATION**
1/8" = 1'-0"

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CITY OF WILLOUGHBY
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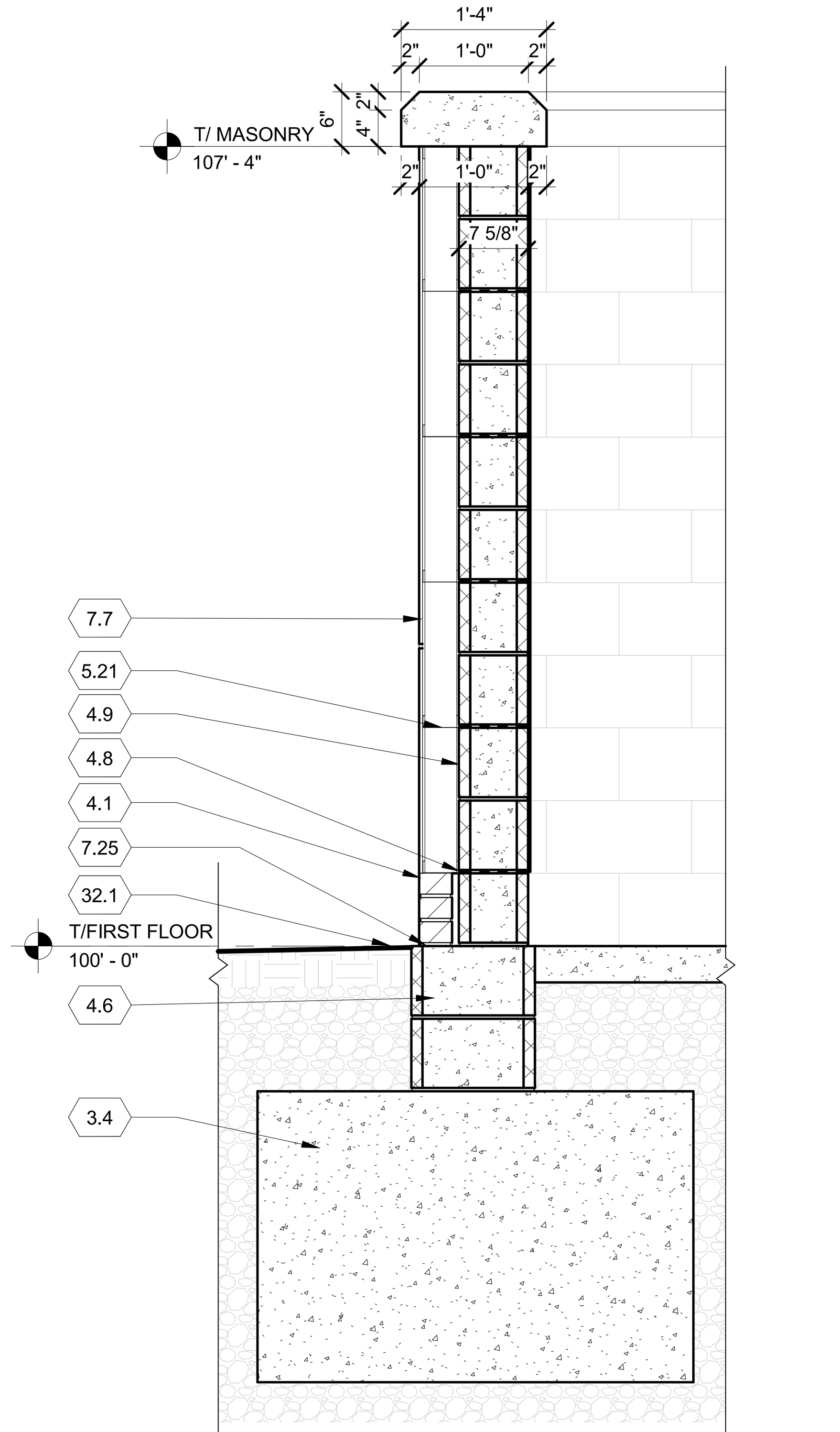
EXTERIOR ELEVATIONS

SCALE: As indicated
CONTRACT NO: 220656
SHEET A2.01

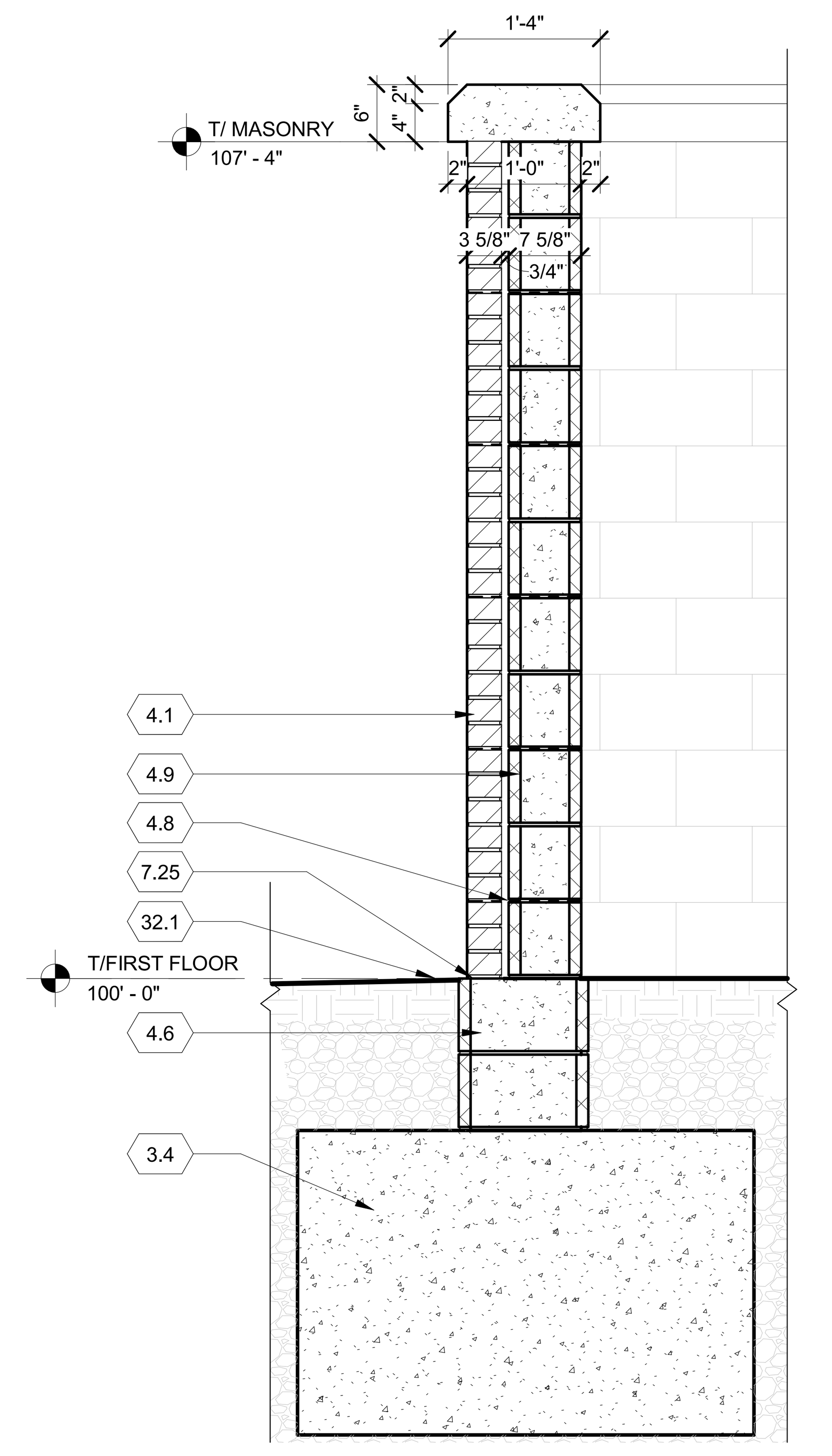
5/31/2024 12:21:44 PM

KEYNOTES

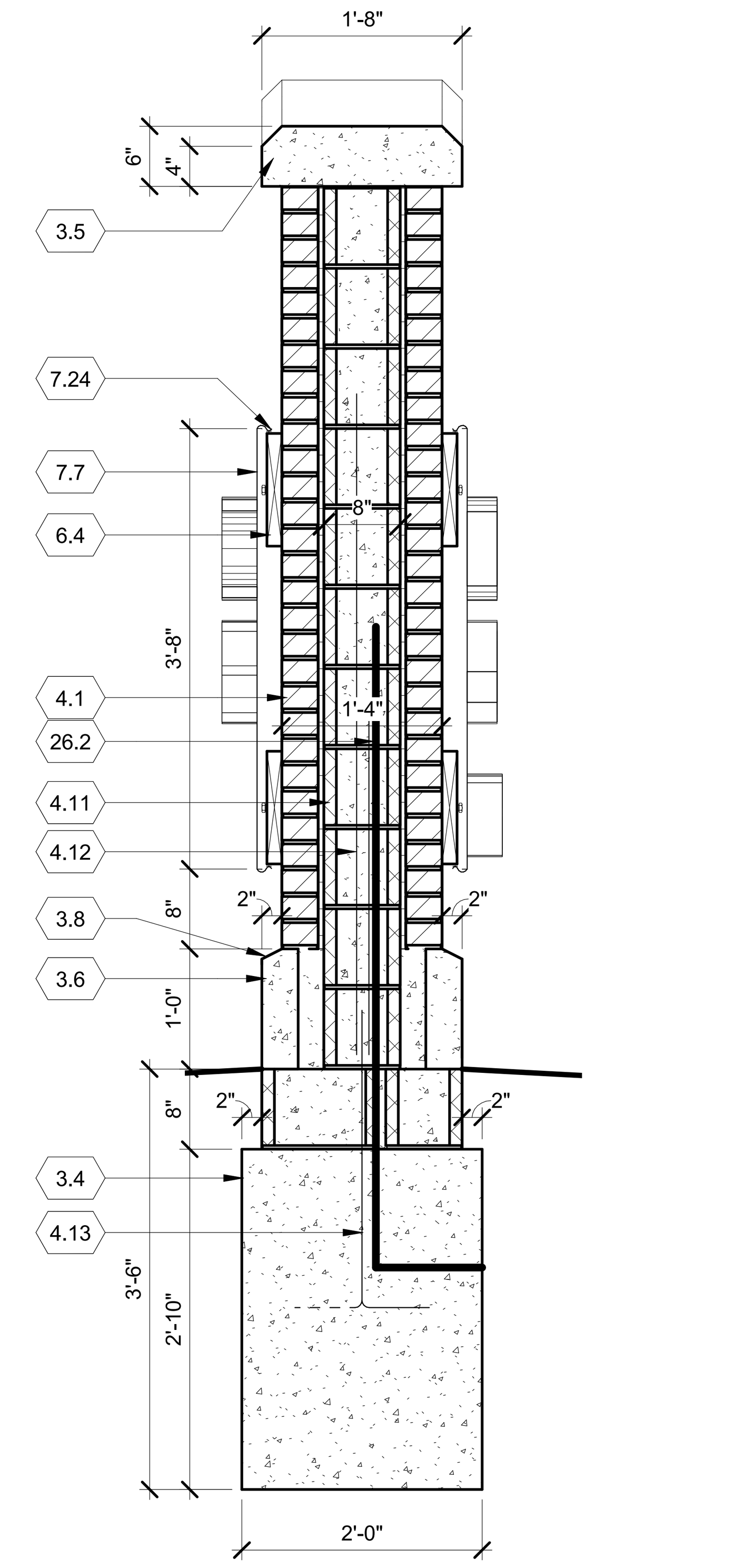
3.4	CONCRETE FOOTING. SEE STRUCTURAL DRAWINGS.
3.5	PRECAST CONCRETE CAP.
3.6	PRECAST CONCRETE BASE.
3.8	CHAMFER, TYP.
3.9	LINE OF FOOTING BELOW.
4.1	4" (NOM.) MASONRY BRICK VENEER.
4.6	CONCRETE MASONRY UNIT FOUNDATION. PROVIDE BRICK LEDGE WHERE APPLICABLE AND GROUT CAVITY BETWEEN BRICK AND CMU. SEE STRUCTURAL DRAWINGS.
4.8	MASONRY TIES.
4.9	8" (NOM) CMU, NORMAL WEIGHT. SEE STRUCTURAL DRAWINGS.
4.11	8" CMU, GROUT SOLID.
4.12	#5 DOWELS @ 24" O.C.
4.13	#5 DOWELS @ 24" O.C. BEND IN ALTERNATE DIRECTIONS. CENTERED IN BASE.
5.21	3-5/8" METAL STUD. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
6.4	2x12 PRESSURE-TREATED W 1/2" AB @ 32" O.C.
7.7	ALUMINUM COMPOSITE PANEL SYSTEM.
7.24	FLASH'S MATERIAL AT PERIMETER OF WOOD BLOCKING. MATCH ALUMINUM COMPOSITE PANEL.
7.25	WATER-RESISTANT SURFACE COATING AT VENEER BELOW GRADE.
10.3	10" HIGH BY 3" DEEP FABRICATED ALUMINUM LUCIDA SANS FONT ANODIZED ALUMINUM (DARK BRONZE), MOUNTING PER MFG'S INSTRUCTION. LETTERS BACKLIT WITH LEDS.
10.4	8" HIGH BY 5" DEEP FABRICATED ALUMINUM, "1825" NON-ILLUMINATED LUCIDA SANS FONT ANODIZED ALUMINUM (DARK BRONZE), MOUNTING PER MFG'S INSTRUCTION. LETTERS BACKLIT WITH LEDS.
13.3	VERTICAL JOINT, TYP.
26.2	CONDUIT FOR SIGN LIGHTING. SEE ELECTRICAL DRAWINGS.
32.1	EXTERIOR GRADE OR PAVING. SEE CIVIL DRAWINGS.



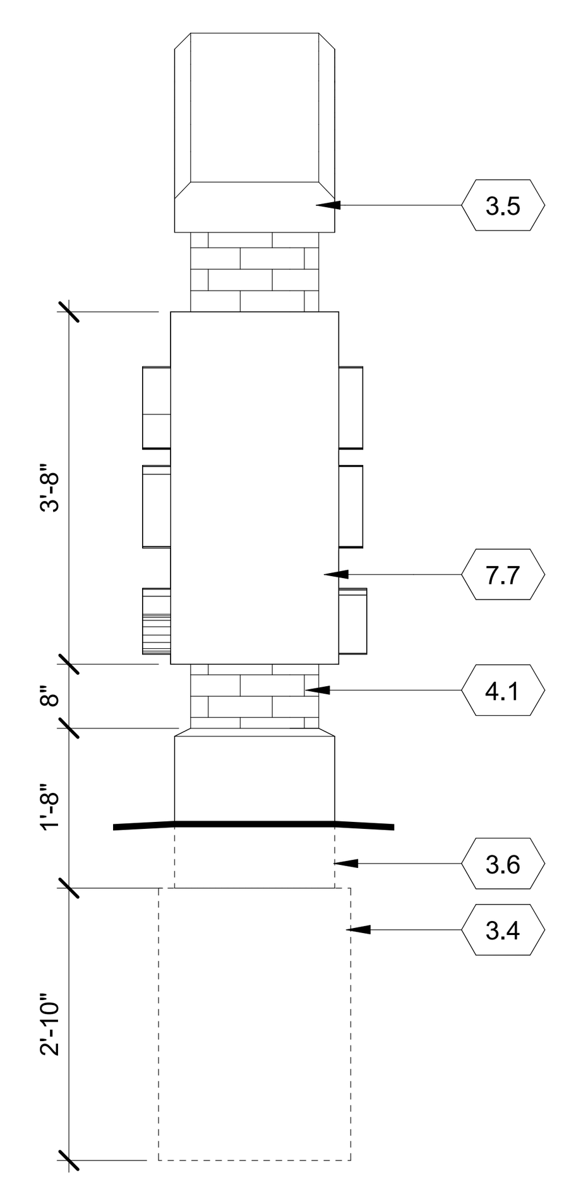
6 A2.02 **MECH SCREEN WALL SECTION**
3/4" = 1'-0"



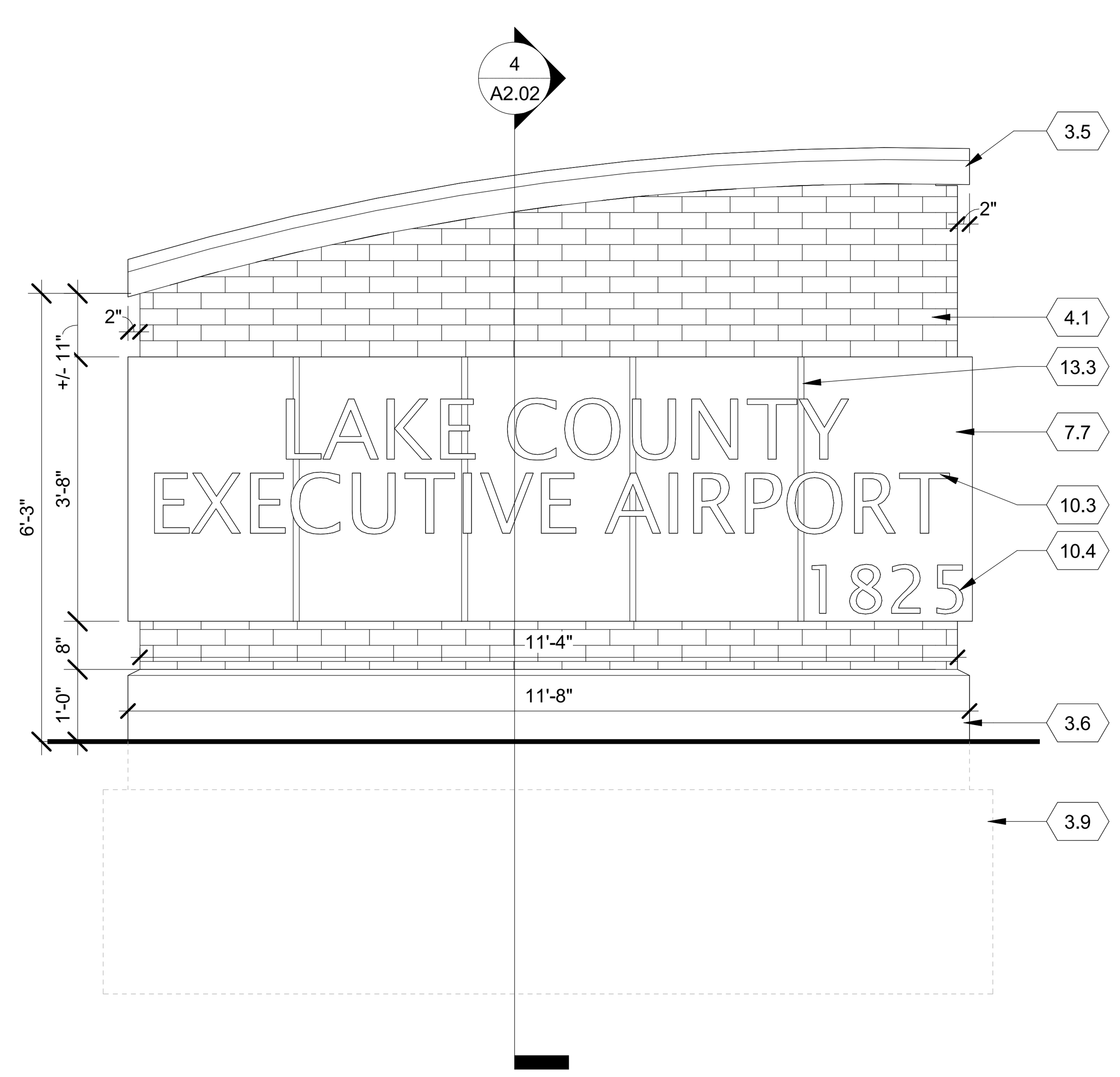
5 A2.02 **MECH SCREEN WALL SECTION**
3/4" = 1'-0"



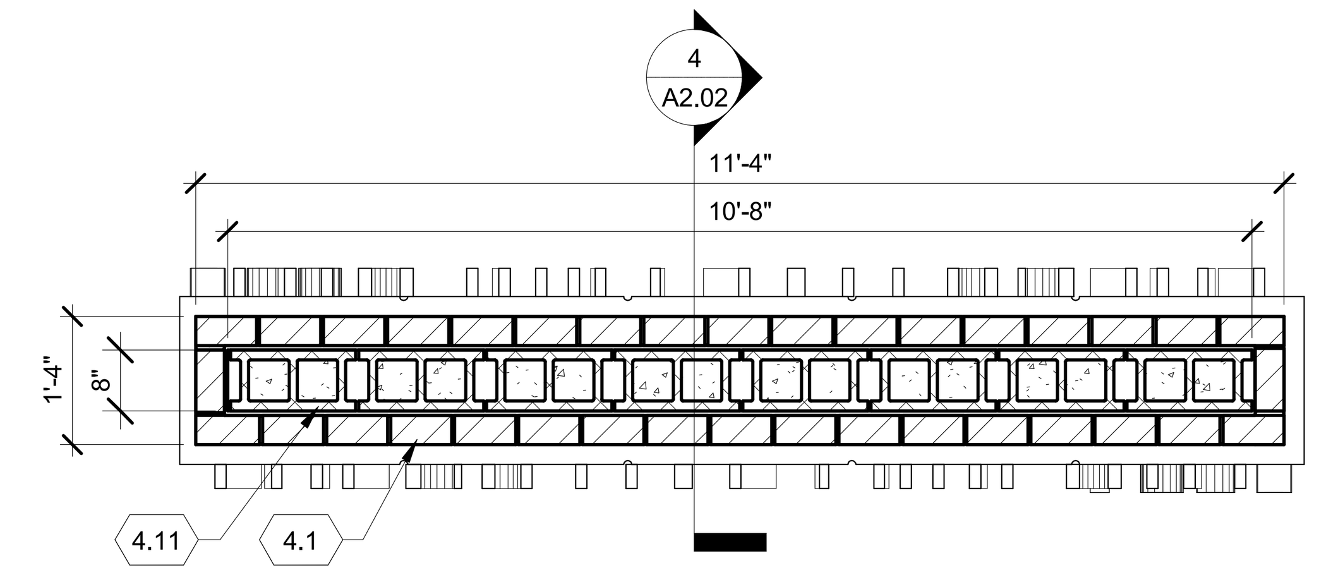
4 A2.02 **MONUMENT SIGN SECTION**
3/4" = 1'-0"



3 A2.02 **MONUMENT SIGN ELEVATION**
1/2" = 1'-0"



2 A2.02 **MONUMENT SIGN ELEVATION**
1/2" = 1'-0"



1 A2.02 **MONUMENT SIGN PLAN**
1/2" = 1'-0"

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MONUMENT SIGNAGE DETAILS

SCALE: As indicated
CONTRACT NO: 220656
SHEET A2.02

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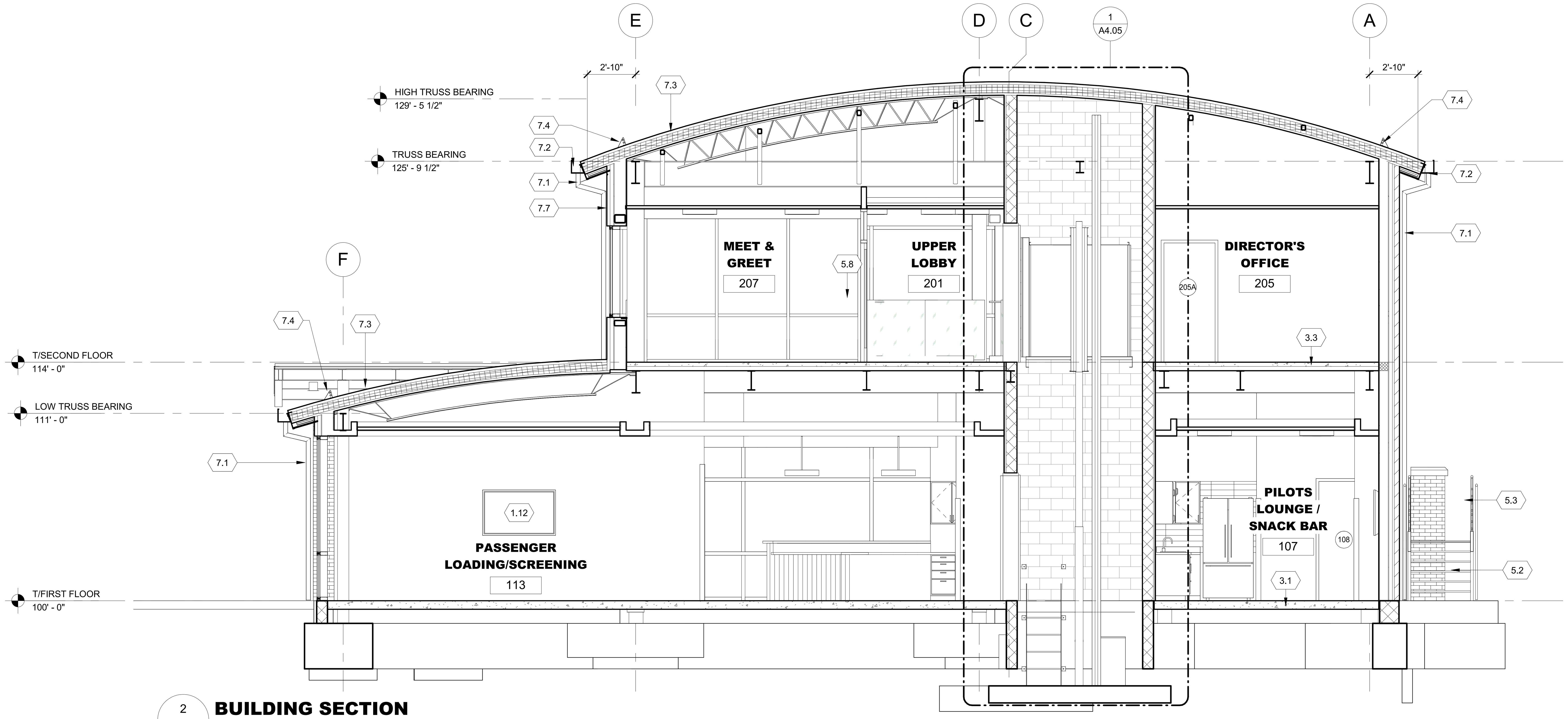
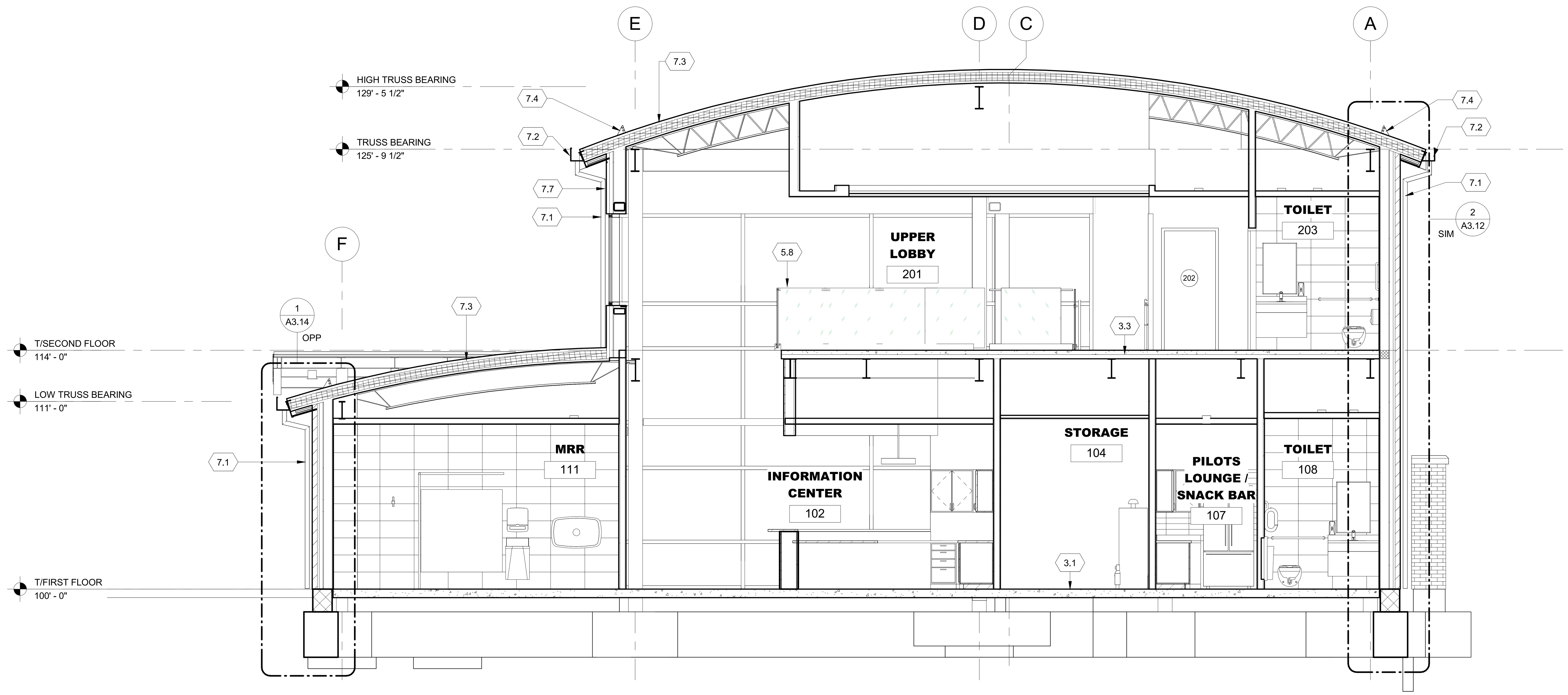


2
A3.01
BUILDING SECTION
1/4" = 1'-0"



1
A3.01
BUILDING SECTION
1/4" = 1'-0"

KEYNOTES

1.12	FLAT PANEL DISPLAY MONITOR BY OWNER.
3.1	CONCRETE SLAB-ON-GRADE OVER GRANULAR BASE AND VAPOR BARRIER. SEE STRUCTURAL DRAWINGS.
3.3	CONCRETE SLAB OVER METAL DECK. SEE STRUCTURAL DRAWINGS.
5.2	EXTERIOR METAL STAIRS WITH BAR GRATING TREADS. SEE DETAILS ON SHEET A4.04.
5.3	1-1/2" DIA., 42" HIGH, STEEL GUARDRAIL WITH HANDRAIL (WHERE APPLICABLE). PAINTED.
5.8	GLAZED DECORATIVE METAL RAILING.
7.1	3" X 4" PREFINISHED METAL DOWNSPOUT. CONNECT TO STORM SYSTEM WITH BOOT. SEE CIVIL DRAWINGS.
7.2	9" X 9" PREFINISHED METAL GUTTER. SEE DETAILS.
7.3	STANDING-SEAM METAL ROOF.
7.4	SNOW GUARDS.
7.7	ALUMINUM COMPOSITE PANEL SYSTEM.

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NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

BUILDING SECTIONS

SCALE: As indicated
CONTRACT NO: 220656
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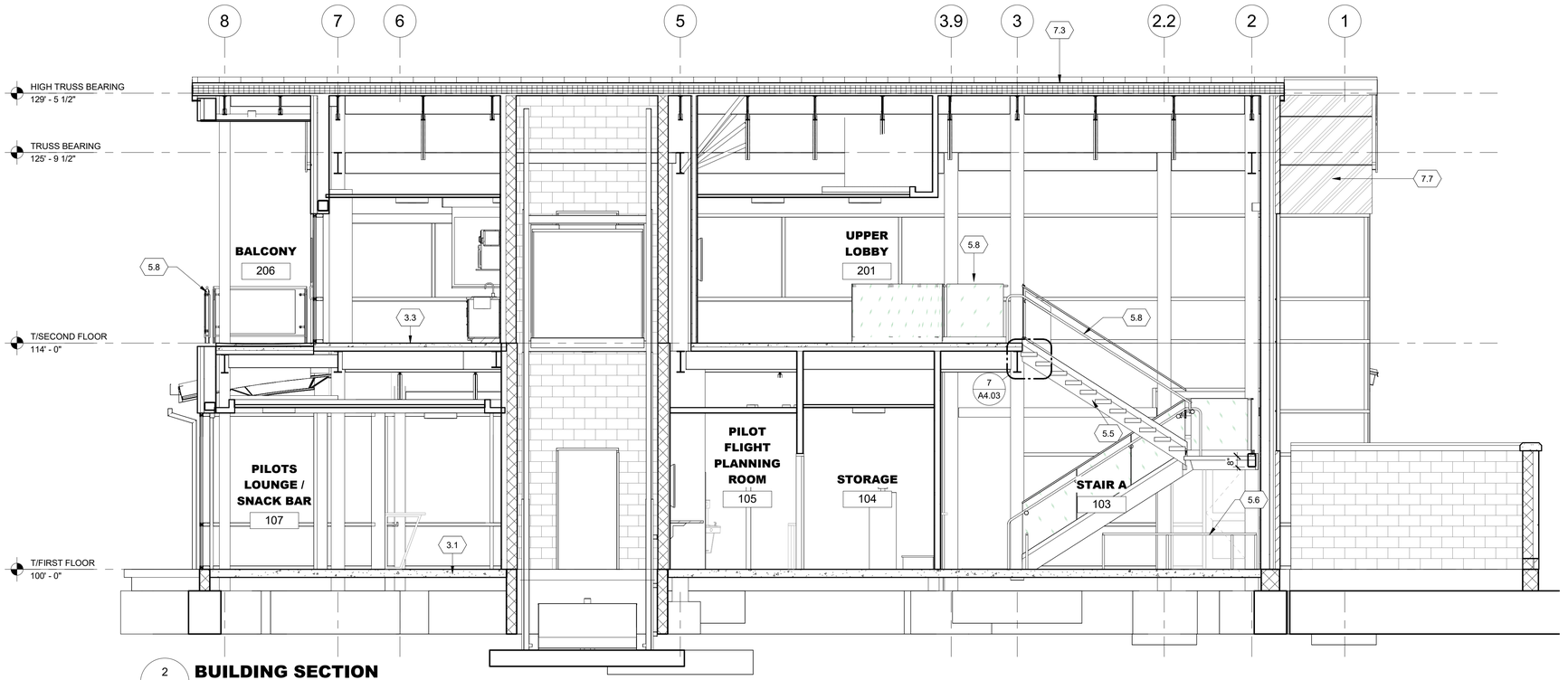
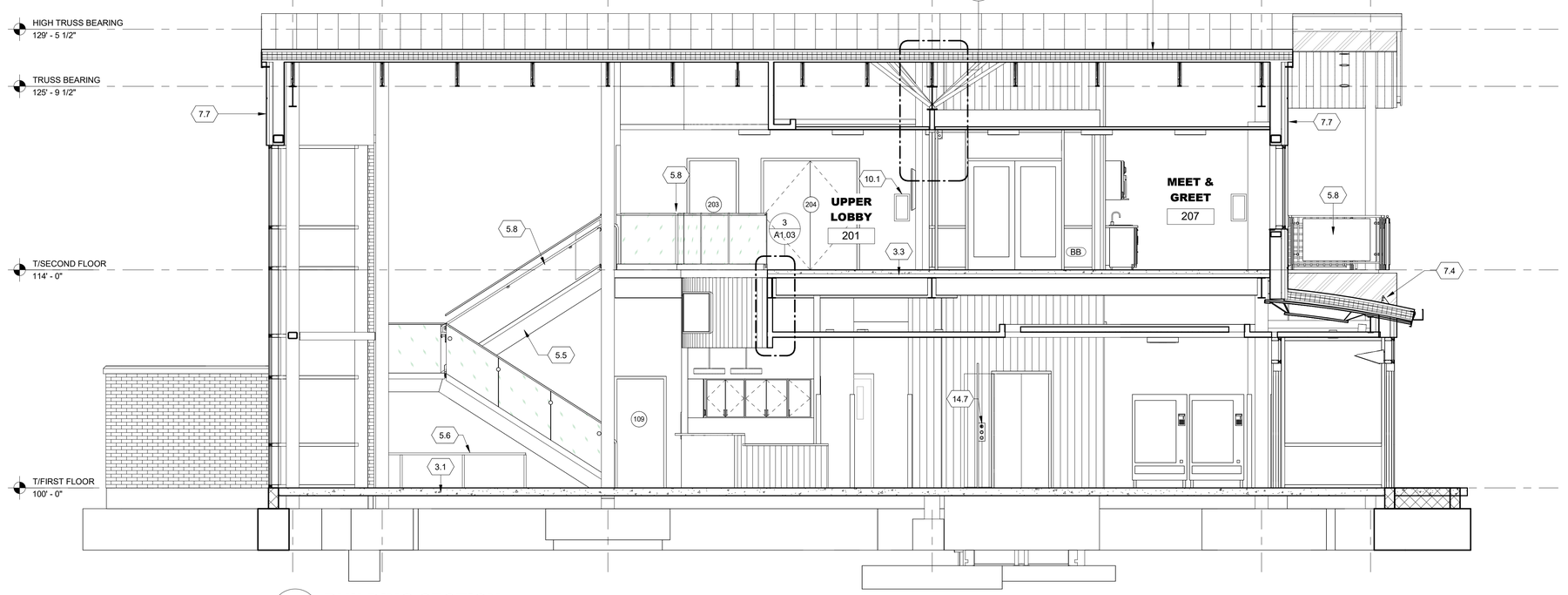


2 A3.02 **BUILDING SECTION**
1/4" = 1'-0"



1 A3.02 **BUILDING SECTION**
1/4" = 1'-0"

KEYNOTES

3.1	CONCRETE SLAB-ON-GRADE OVER GRANULAR BASE AND VAPOR BARRIER. SEE STRUCTURAL DRAWINGS.
3.3	CONCRETE SLAB OVER METAL DECK. SEE STRUCTURAL DRAWINGS.
5.5	PAINTED METAL STAIRS WITH CROSS-LAMINATED TIMBER (CLT) TREADS AND LANDING BY STAIR MANUFACTURER, SEE DETAILS ON SHEET A4.03.
5.6	1-1/2" DIA., 27" HIGH, STAINLESS STEEL GUARDRAIL/BARRIER UNDER STAIR CONSTRUCTION.
5.8	GLAZED DECORATIVE METAL RAILING.
7.3	STANDING-SEAM METAL ROOF.
7.4	SNOW GUARDS.
7.7	ALUMINUM COMPOSITE PANEL SYSTEM.
10.1	SEMI-RECESSED FIRE EXTINGUISHER CABINET WITH MULTIPURPOSE FIRE EXTINGUISHER.
14.7	ELEVATOR CALL BUTTON.

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CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

BUILDING SECTIONS

SCALE: As indicated
CONTRACT NO: 220656
SHEET A3.02

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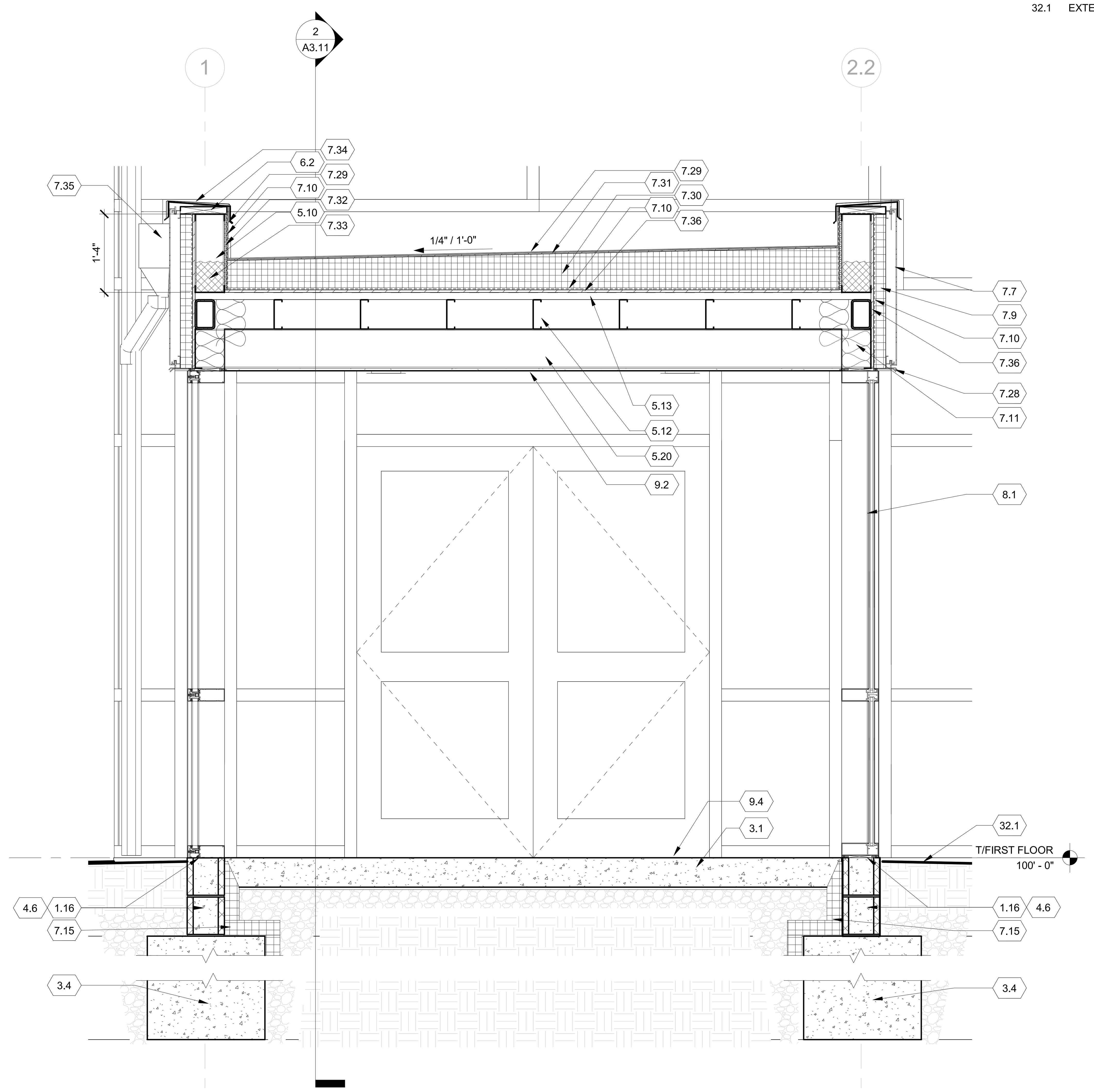
KEYNOTES

1.16	TOP COURSE OF CMU TO BE PROVIDED WITH A FINISHED SMOOTH SURFACE FOR CURTAIN WALL ASSEMBLY INSTALLATION (TYP).
3.1	CONCRETE SLAB-ON-GRADE OVER GRANULAR BASE AND VAPOR BARRIER. SEE STRUCTURAL DRAWINGS.
3.4	CONCRETE FOOTING. SEE STRUCTURAL DRAWINGS.
4.6	CONCRETE MASONRY UNIT FOUNDATION. PROVIDE BRICK LEDGE WHERE APPLICABLE AND GROUT CAVITY BETWEEN BRICK AND CMU. SEE STRUCTURAL DRAWINGS.
5.10	6" METAL STUD FRAMING. SEE STRUC. DRAWINGS.
5.12	STEEL ROOF JOIST, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.13	STEEL ROOF DECK, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.20	8" METAL STUD FRAMING. SEE STRUCTURAL DRAWINGS.
6.2	FIRE-RETARDANT TREATED 2X WOOD BLOCKING.
7.7	ALUMINUM COMPOSITE PANEL SYSTEM.
7.9	2-1/2" THICK CONTINUOUS INSULATION (R-12.5 MIN.).
7.10	FLUID APPLIED MEMBRANE AIR BARRIER PER MANUFACTURER'S RECOMMENDATIONS.
7.11	±6" THICK (R-19 MIN.), MEMBRANE FACED (VAPOR BARRIER TO THE INSIDE) GLASS-FIBER BLANKET INSULATION.
7.15	3" THICK x 24" HIGH (R-15 MIN.) EXTRUDED-POLYSTYRENE PERIMETER INSULATION.
7.28	FLASHING.
7.29	MEMBRANE ROOFING.
7.30	TAPERED INSULATION TO DOWNSPOUT. MIN 6" OF RIGID INSULATION.
7.31	ROOF COVER BOARD.
7.32	FRT PLYWOOD AT BACKSIDE OF PARAPET FOR ADHERING ROOF MEMBRANE.
7.33	6" CLOSED CELL SPRAY FOAM IN PARAPET WALL TRACK FOR INSULATION CONTINUITY.
7.34	PREFINISHED METAL COPING CAP ON RETAINING CLIP SYSTEM.
7.35	THROUGH WALL SCUPPER AND COLLECTOR BOX. CONNECT DOWNSPOUT TO ADJACENT MAIN DOWNSPOUT.
7.36	FIBERGLASS-MAT GYPSUM SHEATHING.
8.1	ALUMINUM CURTAIN WALL SYSTEM. SEE ALUMINUM ASSEMBLIES AND DETAILS SHEETS.
9.2	1/2" GYPSUM BOARD.
9.4	FLOOR FINISH AND/OR FLOOR BASE, SEE "I" FINISH SHEETS.
32.1	EXTERIOR GRADE OR PAVING. SEE CIVIL DRAWINGS.



1 A3.10 **WALL SECTION VESTIBULE**
3/4" = 1'-0"

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NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

WALL SECTIONS

SCALE: As indicated
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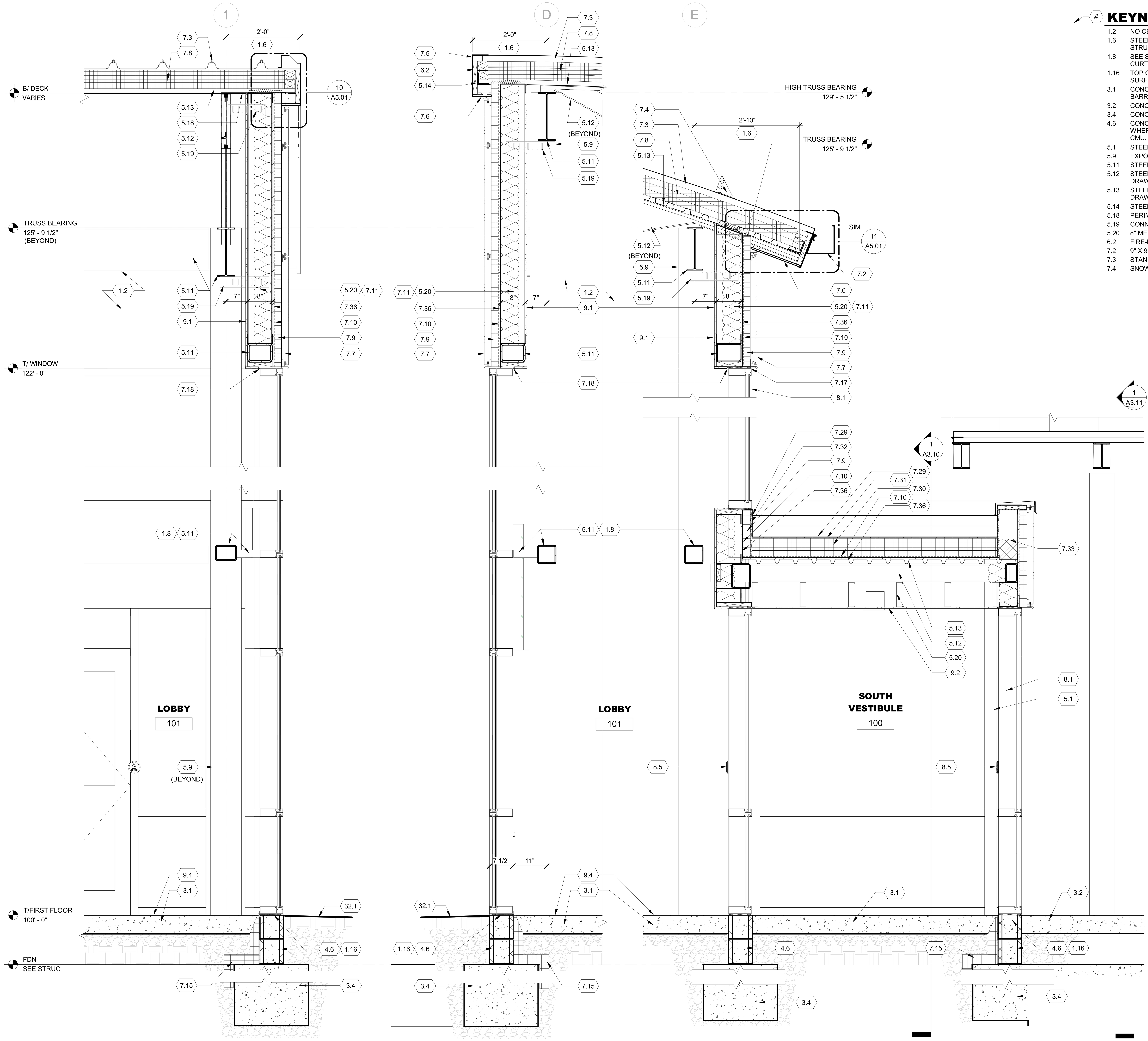
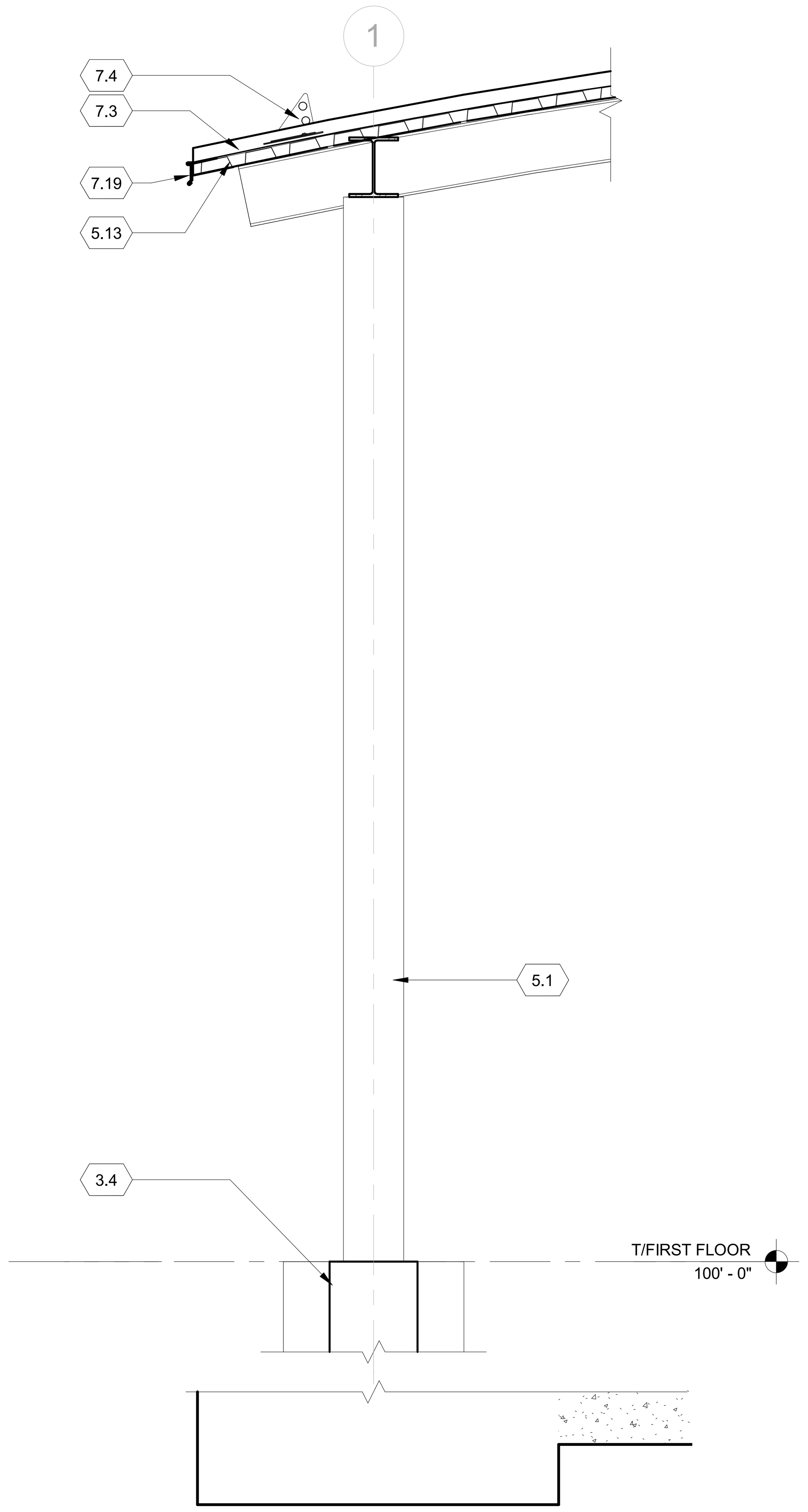


3 A3.11 **WALL SECTION**
3/4" = 1'-0"

2 A3.11 **WALL SECTION**
3/4" = 1'-0"



1 A3.11 **WALL SECTION**
3/4" = 1'-0"

KEYNOTES

1.2	NO CEILING, OPEN TO ABOVE.
1.6	STEEL TOP CHORD EXTENSION OR ROOF OVERHANG. SEE STRUCTURAL DRAWINGS.
1.8	SEE STRUCTURAL DRAWINGS FOR LATERAL TIE BETWEEN CURTAIN WALL SYSTEM AND STEEL.
1.16	TOP COURSE OF CMU TO BE PROVIDED WITH A FINISHED SMOOTH SURFACE FOR CURTAIN WALL ASSEMBLY INSTALLATION (TYP).
3.1	CONCRETE SLAB-ON-GRADE OVER GRANULAR BASE AND VAPOR BARRIER. SEE STRUCTURAL DRAWINGS.
3.2	CONCRETE FROST SLAB. SEE STRUCTURAL DRAWINGS.
3.4	CONCRETE FOOTING. SEE STRUCTURAL DRAWINGS.
4.6	CONCRETE MASONRY UNIT FOUNDATION. PROVIDE BRICK LEDGE WHERE APPLICABLE AND GROUT CAVITY BETWEEN BRICK AND CMU. SEE STRUCTURAL DRAWINGS.
5.1	STEEL COLUMN. PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.9	EXPOSED STEEL COLUMN, PAINTED. SEE STRUC. DRAWINGS.
5.11	STEEL BEAM, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.12	STEEL ROOF JOIST, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.13	STEEL ROOF DECK, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.14	STEEL ANGLE, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.18	PERIMETER EDGE PLATE. SEE STRUCTURAL DRAWINGS.
5.19	CONNECTOR. SEE STRUCTURAL DRAWINGS.
5.20	8" METAL STUD FRAMING. SEE STRUCTURAL DRAWINGS.
6.2	FIRE-RETARDANT TREATED 2X WOOD BLOCKING.
7.2	9" X 9" PREFINISHED METAL GUTTER. SEE DETAILS.
7.3	STANDING-SEAM METAL ROOF.
7.4	SNOW GUARDS.
7.5	PREFINISHED METAL FASCIA.
7.6	PREFINISHED LINEAR METAL SOFFIT PANELS.
7.7	ALUMINUM COMPOSITE PANEL SYSTEM.
7.8	6" POLYISOCYANURATE ROOF INSULATION (R-38 MIN.); THREE LAYERS OF 2" WITH SEAMS STAGGERED.
7.9	2-1/2" THICK CONTINUOUS INSULATION (R-12.5 MIN.).
7.10	FLUID APPLIED MEMBRANE AIR BARRIER PER MANUFACTURER'S RECOMMENDATIONS.
7.11	±6" THICK (R-19 MIN.), MEMBRANE FACED (VAPOR BARRIER TO THE INSIDE) GLASS-FIBER BLANKET INSULATION.
7.15	3" THICK x 24" HIGH (R-15 MIN.) EXTRUDED-POLYSTYRENE PERIMETER INSULATION.
7.17	PERIMETER JOINT SEALANT WITH BACKER ROD.
7.18	JOINT SEALANT.
7.19	DRIP EDGE.
7.29	MEMBRANE ROOFING.
7.30	TAPERED INSULATION TO DOWNSPOUT. MIN 6" OF RIGID INSULATION.
7.31	ROOF COVER BOARD.
7.32	FRT PLYWOOD AT BACKSIDE OF PARAPET FOR ADHERING ROOF MEMBRANE.
7.33	6" CLOSED CELL SPRAY FOAM IN PARAPET WALL TRACK FOR INSULATION CONTINUITY.
7.36	FIBERGLASS-MAT GYPSUM SHEATHING.
8.1	ALUMINUM CURTAIN WALL SYSTEM. SEE ALUMINUM ASSEMBLIES AND DETAILS SHEETS.
8.5	AUTOMATIC DOOR OPERATOR CONTROLS, MOUNTED ON COLUMN, PEDESTAL, CURTAINWALL FRAMING, OR WALL AS INDICATED.
9.1	5/8" GYPSUM BOARD.
9.2	1/2" GYPSUM BOARD.
9.4	FLOOR FINISH AND/OR FLOOR BASE, SEE "I" FINISH SHEETS.
32.1	EXTERIOR GRADE OR PAVING. SEE CIVIL DRAWINGS.

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NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

WALL SECTIONS

SCALE: As indicated
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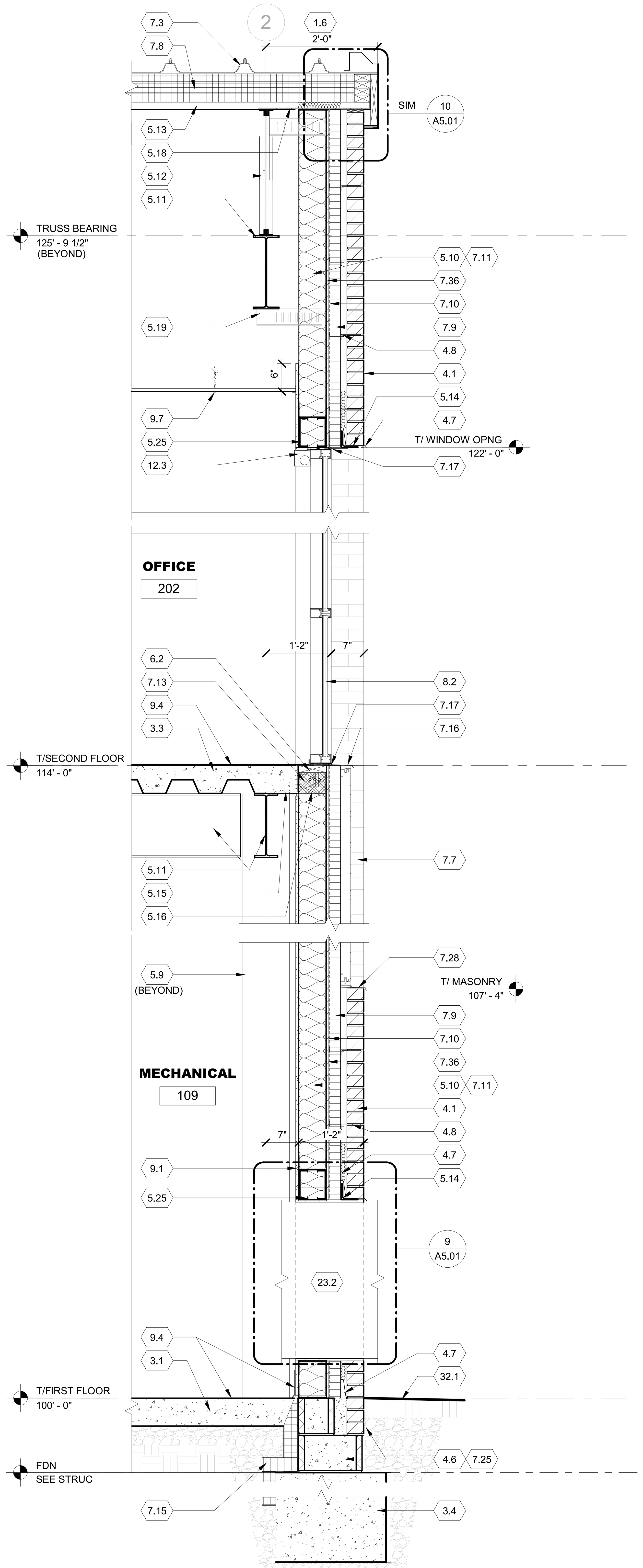
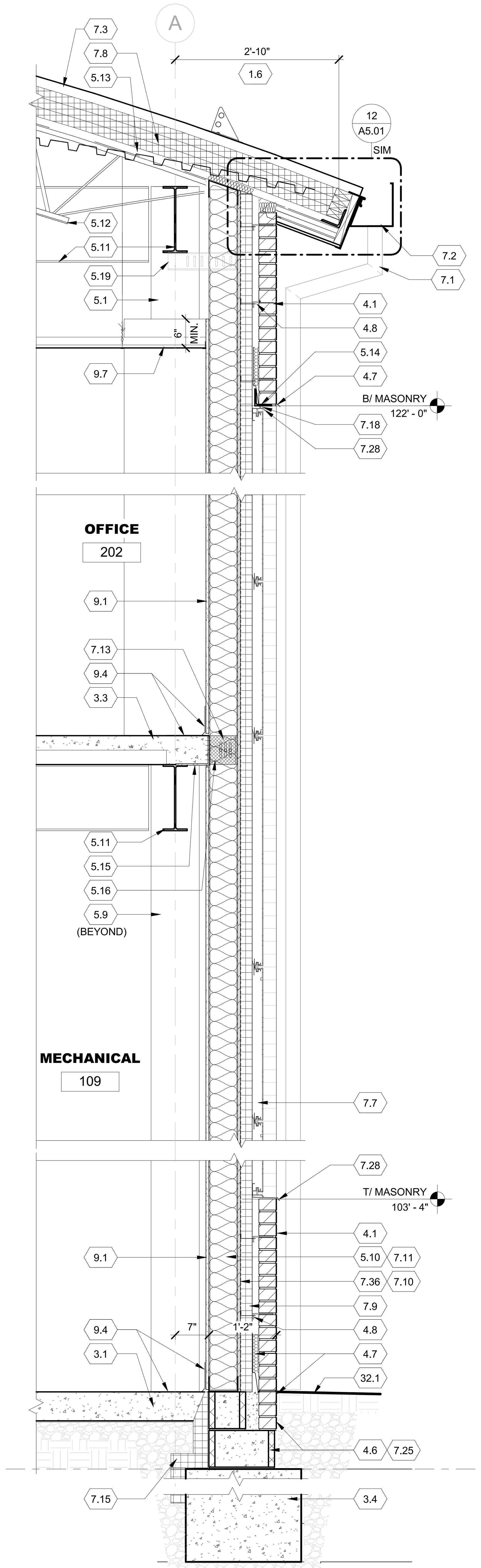
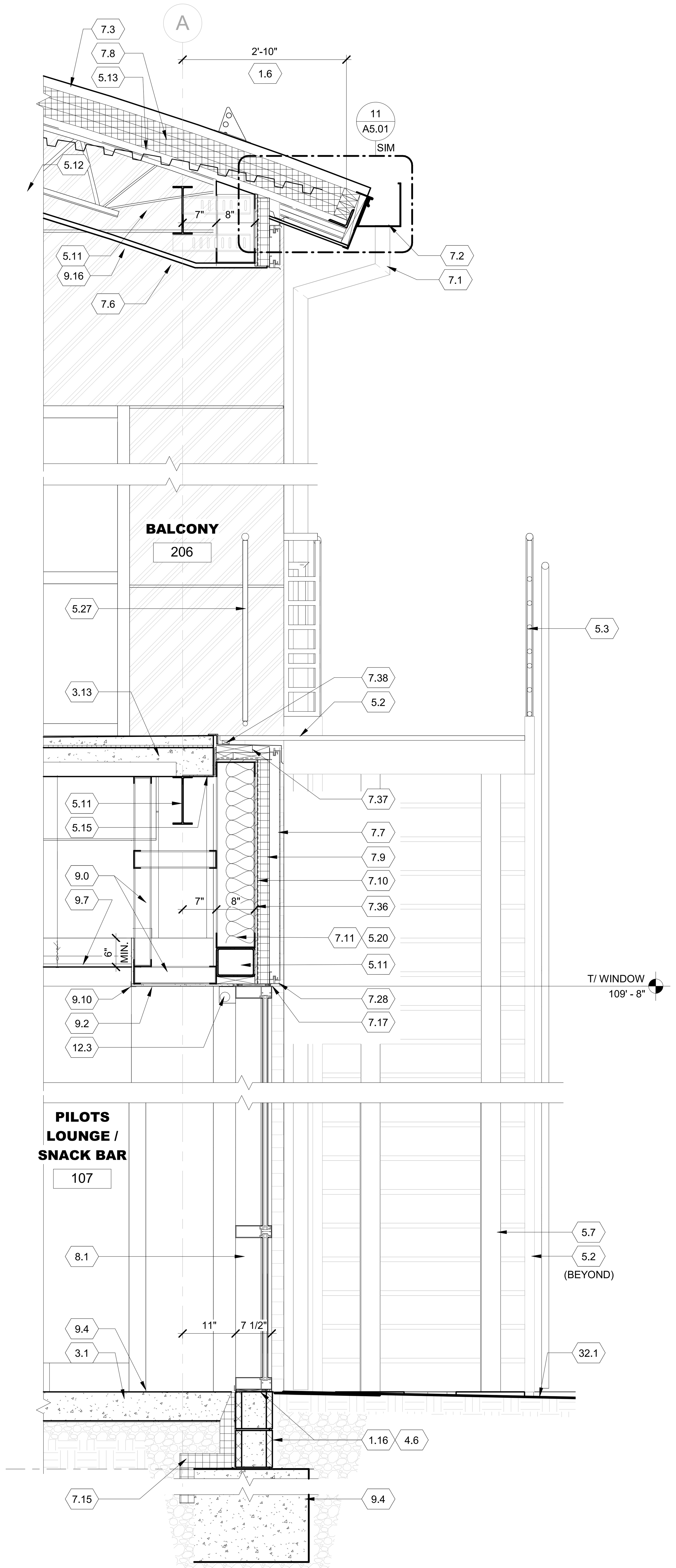


3
A3.12
WALL SECTION
3/4" = 1'-0"



2
A3.12
WALL SECTION
3/4" = 1'-0"



1
A3.12
WALL SECTION
3/4" = 1'-0"

KEYNOTES

1.6	STEEL TOP CHORD EXTENSION OR ROOF OVERHANG. SEE STRUCTURAL DRAWINGS.
1.16	TOP COURSE OF CMU TO BE PROVIDED WITH A FINISHED SMOOTH SURFACE FOR CURTAIN WALL ASSEMBLY INSTALLATION (TYP).
3.1	CONCRETE SLAB-ON-GRADE OVER GRANULAR BASE AND VAPOR BARRIER. SEE STRUCTURAL DRAWINGS.
3.3	CONCRETE SLAB OVER METAL DECK. SEE STRUCTURAL DRAWINGS.
3.4	CONCRETE FOOTING. SEE STRUCTURAL DRAWINGS.
3.13	EXTERIOR CONCRETE SLAB OVER METAL DECK WITH 1/2" DRAINAGE BOARD AND AN ADDITIONAL TOP LAYER OF CONCRETE. SLOPE TO CENTERED FLOOR DRAIN AT A MIN. 1/4" SLOPE PER FOOT. SEE STRUCTURAL DRAWINGS.
4.1	4" (NOM.) MASONRY BRICK VENEER.
4.6	CONCRETE MASONRY UNIT FOUNDATION. PROVIDE BRICK LEDGE WHERE APPLICABLE AND GROUT CAVITY BETWEEN BRICK AND CMU. SEE STRUCTURAL DRAWINGS.
4.7	CONTINUOUS THROUGH-WALL FLASHING, CAVITY DRAINAGE MATERIAL (WHERE APPLICABLE), AND WEEP VENTS (24" O.C. MAX.).
4.8	MASONRY TIES.
5.1	STEEL COLUMN. PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.2	EXTERIOR METAL STAIRS WITH BAR GRATING TREADS. SEE DETAILS ON SHEET A4.04.
5.3	1-1/2" DIA., 42" HIGH, STEEL GUARDRAIL WITH HANDRAIL (WHERE APPLICABLE). PAINTED.
5.7	STEEL COLUMNS BY STAIR MANUFACTURER.
5.9	EXPOSED STEEL COLUMN, PAINTED. SEE STRUC. DRAWINGS.
5.10	6" METAL STUD FRAMING. SEE STRUC. DRAWINGS.
5.11	STEEL BEAM, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.12	STEEL ROOF JOIST, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.13	STEEL ROOF DECK, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.14	STEEL ANGLE, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.15	BENT PLATE AT SLAB PERIMETER. SEE STRUC. DRAWINGS.
5.16	METAL DEFLECTION CLIP, SEE STRUCTURAL DRAWINGS.
5.18	PERIMETER EDGE PLATE. SEE STRUCTURAL DRAWINGS.
5.19	CONNECTOR. SEE STRUCTURAL DRAWINGS.
5.20	8" METAL STUD FRAMING. SEE STRUCTURAL DRAWINGS.
5.25	BOX HEADER. SEE STRUCTURAL DRAWINGS.
5.27	OPERABLE EMERGENCY EGRESS GATE.
6.2	FIRE-RETARDANT TREATED 2X WOOD BLOCKING.
7.1	3" X 4" PREFINISHED METAL DOWNSPOUT. CONNECT TO STORM SYSTEM WITH BOOT. SEE CIVIL DRAWINGS.
7.2	9" X 9" PREFINISHED METAL GUTTER. SEE DETAILS.
7.3	STANDING-SEAM METAL ROOF.
7.6	PREFINISHED LINEAR METAL SOFFIT PANELS.
7.7	ALUMINUM COMPOSITE PANEL SYSTEM.
7.8	6" POLYISOCYANURATE ROOF INSULATION (R-38 MIN.); THREE LAYERS OF 2" WITH SEAMS STAGGERED.
7.9	2-1/2" THICK CONTINUOUS INSULATION (R-12.5 MIN.).
7.10	FLUID APPLIED MEMBRANE AIR BARRIER PER MANUFACTURER'S RECOMMENDATIONS.
7.11	±6" THICK (R-19 MIN.), MEMBRANE FACED (VAPOR BARRIER TO THE INSIDE) GLASS-FIBER BLANKET INSULATION.
7.13	FIRESTOPPING.
7.15	3" THICK x 24" HIGH (R-15 MIN.) EXTRUDED-POLYSTYRENE PERIMETER INSULATION.
7.16	WINDOWSILL FLASHING, MATCH ALUMINUM ASSEMBLY FINISH.
7.17	PERIMETER JOINT SEALANT WITH BACKER ROD.
7.18	JOINT SEALANT.
7.25	WATER-RESISTANT SURFACE COATING AT VENEER BELOW GRADE.
7.28	FLASHING.
7.36	FIBERGLASS-MAT GYPSUM SHEATHING.
7.37	TOP OF WALL ALUMINUM COPING TO MATCH ACM. PROVIDE GASKET AND SEALANT AROUND PENETRATIONS THROUGH COPING. PROVIDE FRT BLOCKING UNDER COPING CAP.
7.38	NEOPRENE PAD TO SUPPORT CANTILEVERED STAIR LANDING.
8.1	ALUMINUM CURTAIN WALL SYSTEM. SEE ALUMINUM ASSEMBLIES AND DETAILS SHEETS.
8.2	ALUMINUM FRAMED WINDOW SYSTEM. SEE ALUMINUM ASSEMBLIES AND DETAILS SHEETS.
9.0	NON-STRUCTURAL METAL FRAMING. SEE PLANS AND SEE SHEET A0.04 FOR INTERIOR PARTITION TYPES.
9.1	5/8" GYPSUM BOARD.
9.2	1/2" GYPSUM BOARD.
9.4	FLOOR FINISH AND/OR FLOOR BASE, SEE "I" FINISH SHEETS.
9.7	ACOUSTICAL CEILING TILE SYSTEM. SEE RCP SHEETS.
9.10	GYPSUM BOARD TRIM (J, L, F, OR CORNER TRIM), PAINTABLE.
9.16	ATTACH SOFFIT PANELS TO UNDERSIDE OF ROOF JOISTS WITH 7/8" METAL FURRING CHANNEL. COORDINATE ADDITIONAL LIGHT GAUGE FRAMING WHERE REQUIRED FOR INSTALLATION.
12.3	MANUAL OPERATED WINDOW ROLLER SHADE. FULL HEIGHT AND WIDTH OF WINDOW.
23.2	MECHANICAL DUCT THROUGH-WALL PENETRATION, COORDINATE SIZE AND LOCATION. SEE MECHANICAL DRAWINGS.
32.1	EXTERIOR GRADE OR PAVING. SEE CIVIL DRAWINGS.

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NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL

CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

WALL SECTIONS

SCALE: As indicated
CONTRACT NO: 220656
SHEET A3.12

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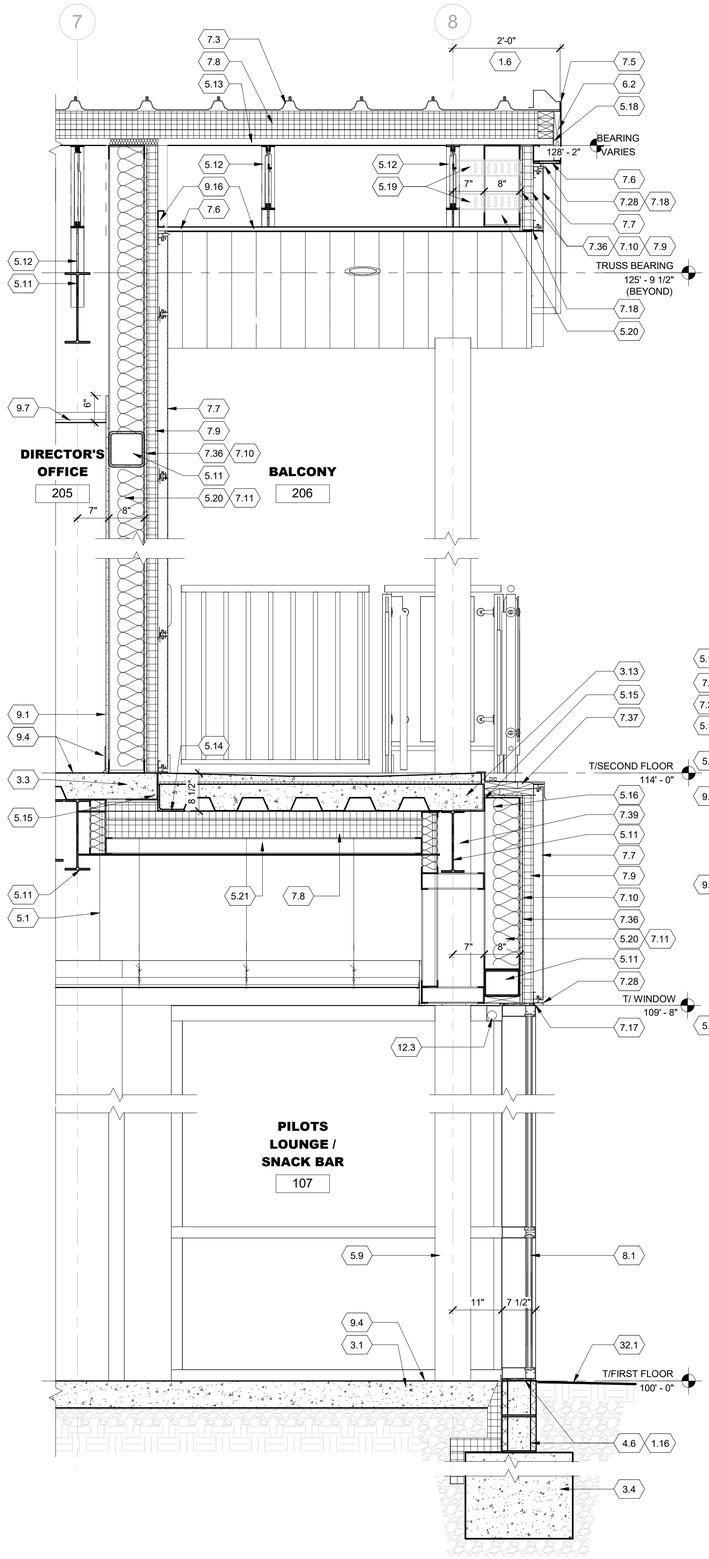

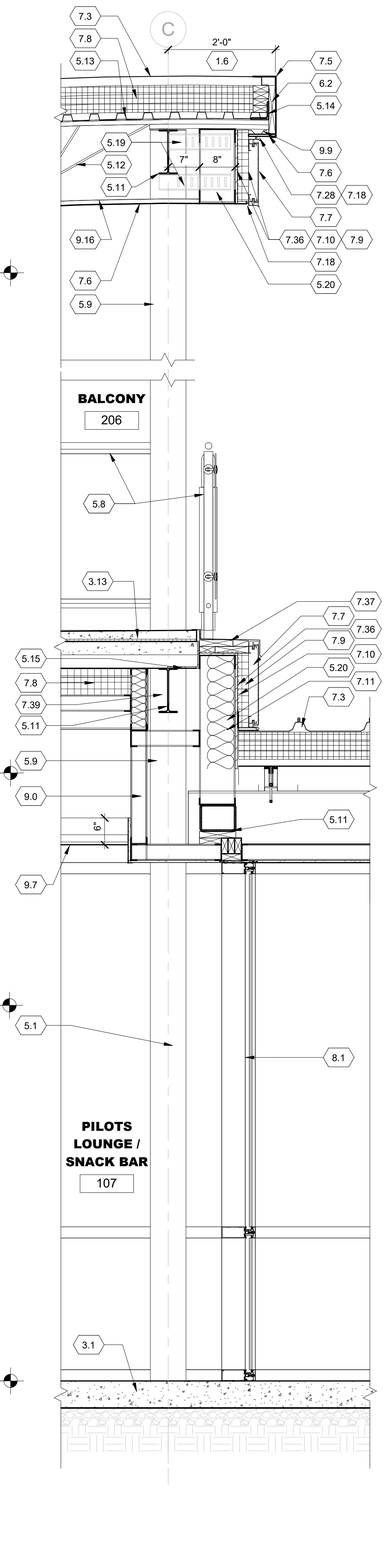

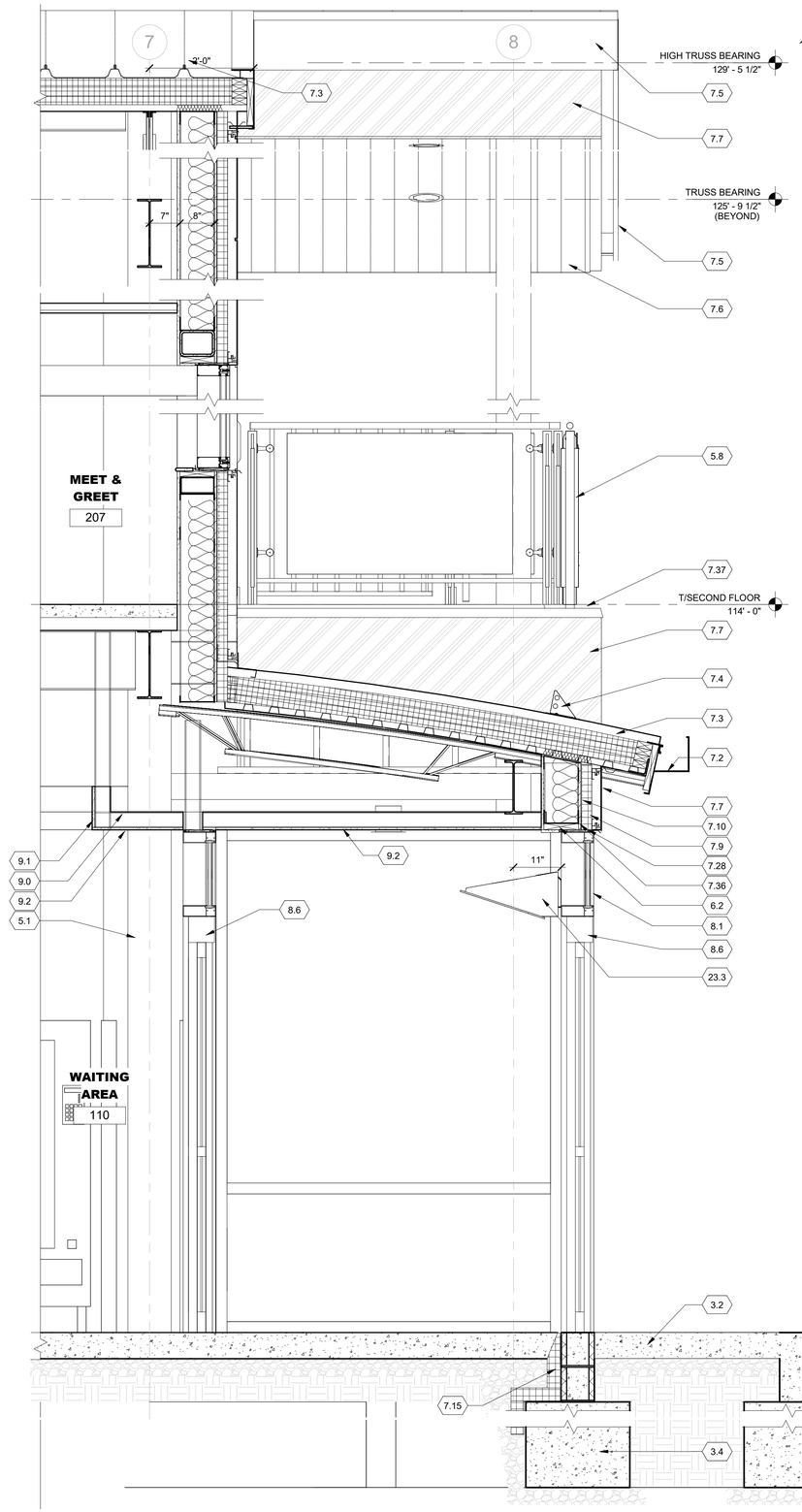

KEYNOTES

#	
1.6	STEEL TOP CHORD EXTENSION OR ROOF OVERHANG. SEE STRUCTURAL DRAWINGS.
1.16	TOP COURSE OF CMU TO BE PROVIDED WITH A FINISHED SMOOTH SURFACE FOR CURTAIN WALL ASSEMBLY INSTALLATION (TYP).
3.1	CONCRETE SLAB-ON-GRADE OVER GRANULAR BASE AND VAPOR BARRIER. SEE STRUCTURAL DRAWINGS.
3.2	CONCRETE FROST SLAB. SEE STRUCTURAL DRAWINGS.
3.3	CONCRETE SLAB OVER METAL DECK. SEE STRUCTURAL DRAWINGS.
3.4	CONCRETE FOOTING. SEE STRUCTURAL DRAWINGS.
3.13	EXTERIOR CONCRETE SLAB OVER METAL DECK WITH 1/2" DRAINAGE BOARD AND AN ADDITIONAL TOP LAYER OF CONCRETE. SLOPE TO CENTERED FLOOR DRAIN AT A MIN. 1/4" SLOPE PER FOOT. SEE STRUCTURAL DRAWINGS.
4.6	CONCRETE MASONRY UNIT FOUNDATION. PROVIDE BRICK LEDGE WHERE APPLICABLE AND GROUT CAVITY BETWEEN BRICK AND CMU. SEE STRUCTURAL DRAWINGS.
5.1	STEEL COLUMN. PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.8	GLAZED DECORATIVE METAL RAILING.
5.9	EXPOSED STEEL COLUMN, PAINTED. SEE STRUC. DRAWINGS.
5.11	STEEL BEAM, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.12	STEEL ROOF JOIST, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.13	STEEL ROOF DECK, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.14	STEEL ANGLE, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.15	BENT PLATE AT SLAB PERIMETER. SEE STRUC. DRAWINGS.
5.16	METAL DEFLECTION CLIP, SEE STRUCTURAL DRAWINGS.
5.18	PERIMETER EDGE PLATE. SEE STRUCTURAL DRAWINGS.
5.19	CONNECTOR. SEE STRUCTURAL DRAWINGS.
5.20	8" METAL STUD FRAMING. SEE STRUCTURAL DRAWINGS.
5.21	3-5/8" METAL STUD. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
6.2	FIRE-RETARDANT TREATED 2X WOOD BLOCKING.
7.2	9" X 9" PREFINISHED METAL GUTTER. SEE DETAILS.
7.3	STANDING-SEAM METAL ROOF.
7.4	SNOW GUARDS.
7.5	PREFINISHED METAL FASCIA.
7.6	PREFINISHED LINEAR METAL SOFFIT PANELS.
7.7	ALUMINUM COMPOSITE PANEL SYSTEM.
7.8	6" POLYISOCYANURATE ROOF INSULATION (R-38 MIN.); THREE LAYERS OF 2" WITH SEAMS STAGGERED.
7.9	2-1/2" THICK CONTINUOUS INSULATION (R-12.5 MIN.).
7.10	FLUID APPLIED MEMBRANE AIR BARRIER PER MANUFACTURER'S RECOMMENDATIONS.
7.11	±6" THICK (R-19 MIN.), MEMBRANE FACED (VAPOR BARRIER TO THE INSIDE) GLASS-FIBER BLANKET INSULATION.
7.15	3" THICK x 24" HIGH (R-15 MIN.) EXTRUDED-POLYSTYRENE PERIMETER INSULATION.
7.17	PERIMETER JOINT SEALANT WITH BACKER ROD.
7.18	JOINT SEALANT.
7.28	FLASHING.
7.36	FIBERGLASS-MAT GYPSUM SHEATHING.
7.37	TOP OF WALL ALUMINUM COPING TO MATCH ACM. PROVIDE GASKET AND SEALANT AROUND PENETRATIONS THROUGH COPING. PROVIDE FRT BLOCKING UNDER COPING CAP.
7.39	SPRAY FOAM INSULATION AROUND STRUCTURE TO MAINTAIN CONTINUITY OF R-38 INSULATION UNDER BALCONY.
8.1	ALUMINUM CURTAIN WALL SYSTEM. SEE ALUMINUM ASSEMBLIES AND DETAILS SHEETS.
8.6	AUTOMATIC SLIDING DOORS, SEE DOOR SCHEDULE AND DETAILS.
9.0	NON-STRUCTURAL METAL FRAMING. SEE PLANS AND SEE SHEET A0.04 FOR INTERIOR PARTITION TYPES.
9.1	5/8" GYPSUM BOARD.
9.2	1/2" GYPSUM BOARD.
9.4	FLOOR FINISH AND/OR FLOOR BASE, SEE "I" FINISH SHEETS.
9.7	ACOUSTICAL CEILING TILE SYSTEM. SEE RCP SHEETS.
9.9	7/8" METAL FURRING CHANNEL.
9.16	ATTACH SOFFIT PANELS TO UNDERSIDE OF ROOF JOISTS WITH 7/8" METAL FURRING CHANNEL. COORDINATE ADDITIONAL LIGHT GAUGE FRAMING WHERE REQUIRED FOR INSTALLATION.
12.3	MANUAL OPERATED WINDOW ROLLER SHADE. FULL HEIGHT AND WIDTH OF WINDOW.
23.3	AIR CURTAIN. MOUNT TO CURTAINWALL FRAMING AND SUPPORT FROM ABOVE AS REQUIRED. SEE MECHANICAL DRAWINGS.
32.1	EXTERIOR GRADE OR PAVING. SEE CIVIL DRAWINGS.

3 A3.13 **WALL SECTION** 3/4" = 1'-0"

2 A3.13 **WALL SECTION** 3/4" = 1'-0"

1 A3.13 **WALL SECTION** 3/4" = 1'-0"

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APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

WALL SECTIONS

SCALE: As indicated
CONTRACT NO: 220656
SHEET A3.13

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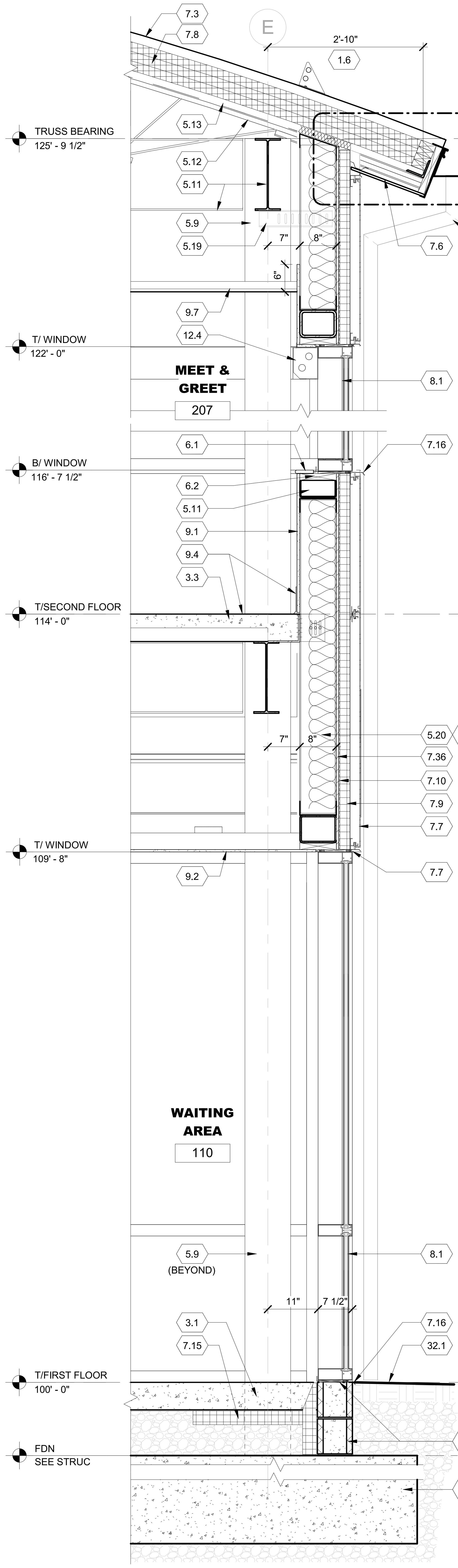
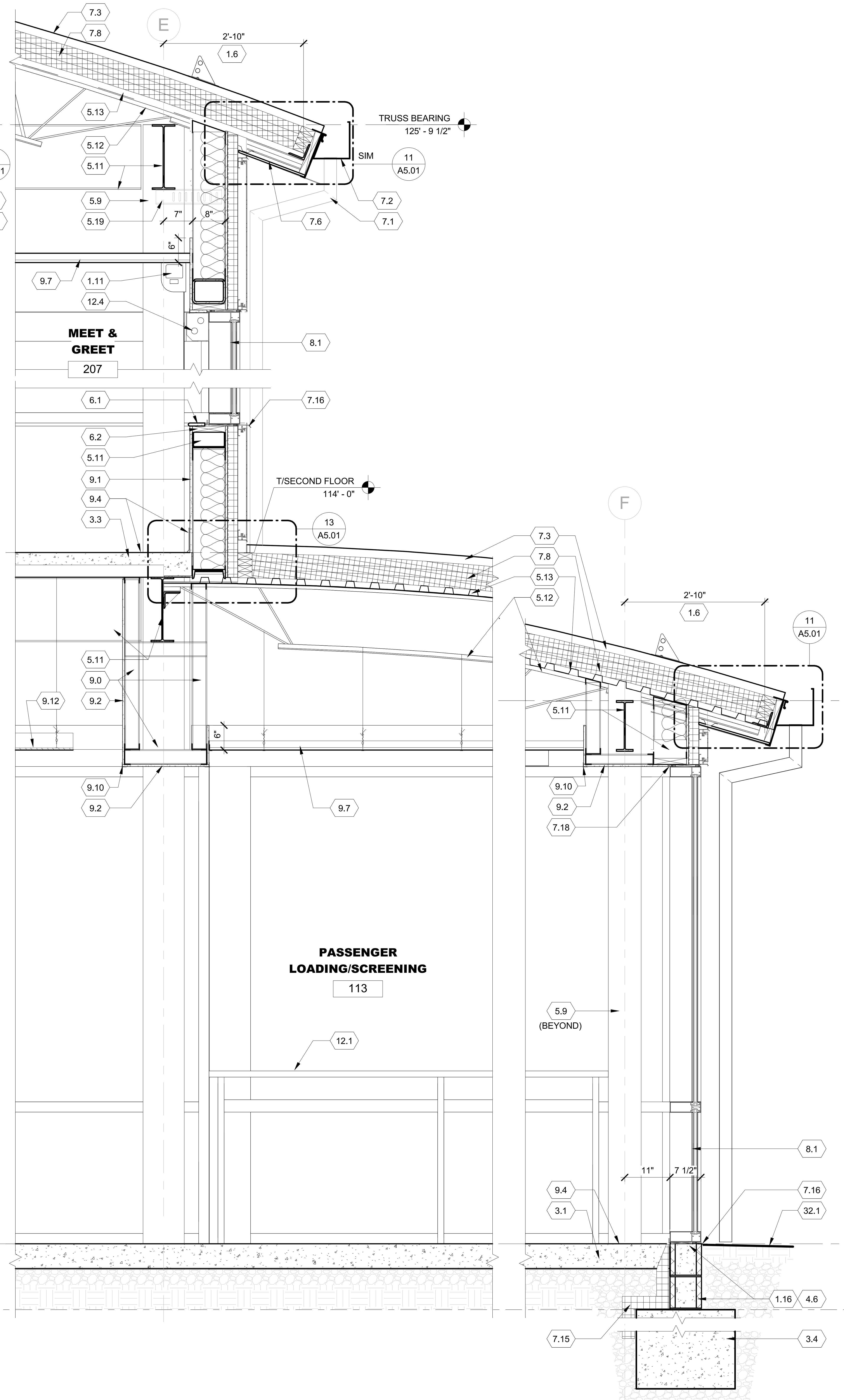
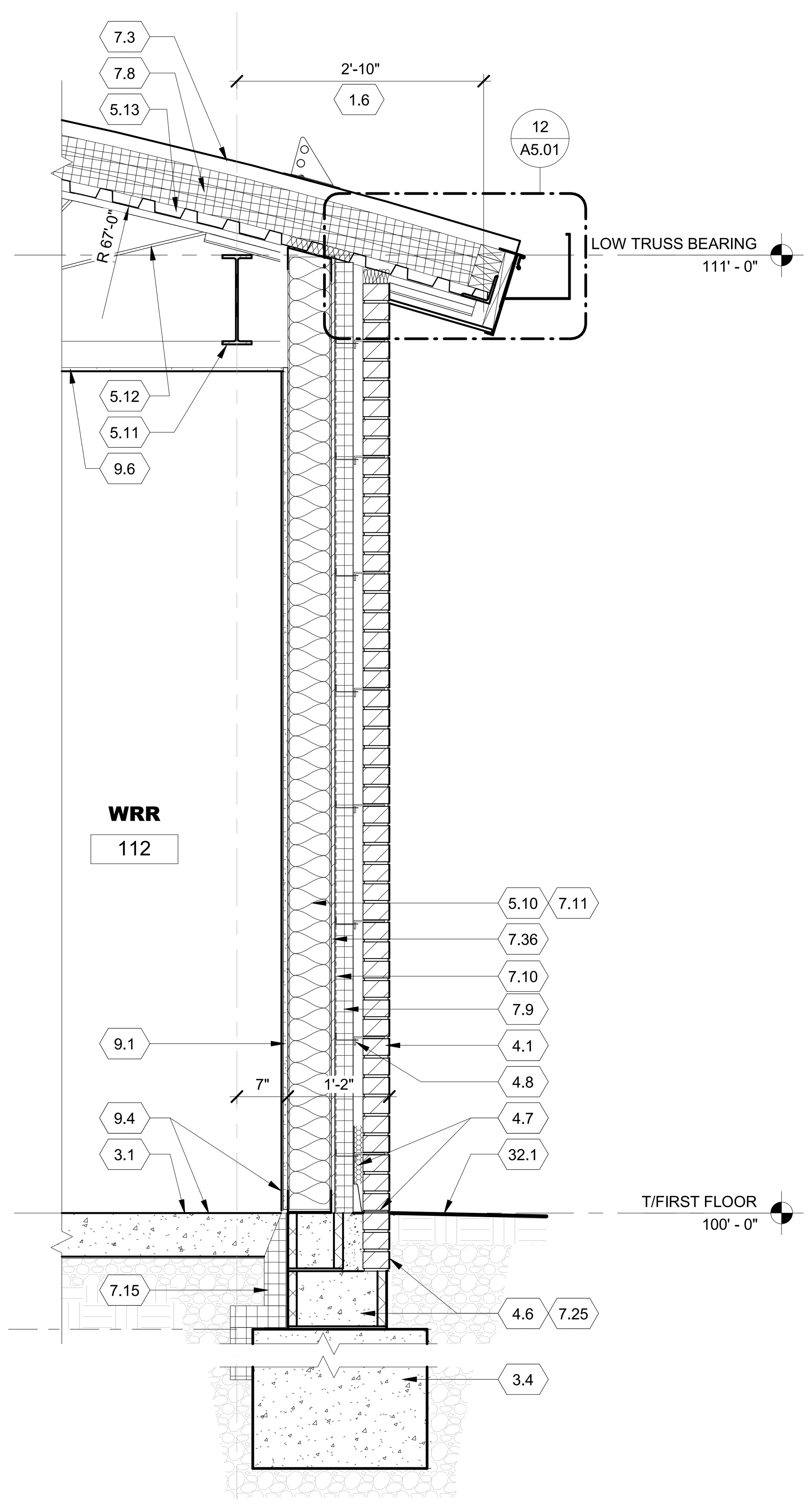


3 A3.14 **WALL SECTION** 3/4" = 1'-0"



2 A3.14 **WALL SECTION** 3/4" = 1'-0"



1 A3.14 **WALL SECTION** 3/4" = 1'-0"

KEYNOTES

1.6	STEEL TOP CHORD EXTENSION OR ROOF OVERHANG. SEE STRUCTURAL DRAWINGS.
1.11	ELECTRIC PROJECTION SCREEN BY OWNER.
1.16	TOP COURSE OF CMU TO BE PROVIDED WITH A FINISHED SMOOTH SURFACE FOR CURTAIN WALL ASSEMBLY INSTALLATION (TYP).
3.1	CONCRETE SLAB-ON-GRADE OVER GRANULAR BASE AND VAPOR BARRIER. SEE STRUCTURAL DRAWINGS.
3.3	CONCRETE SLAB OVER METAL DECK. SEE STRUCTURAL DRAWINGS.
3.4	CONCRETE FOOTING. SEE STRUCTURAL DRAWINGS.
4.1	4" (NOM.) MASONRY BRICK VENEER.
4.6	CONCRETE MASONRY UNIT FOUNDATION. PROVIDE BRICK LEDGE WHERE APPLICABLE AND GROUT CAVITY BETWEEN BRICK AND CMU. SEE STRUCTURAL DRAWINGS.
4.7	CONTINUOUS THROUGH-WALL FLASHING, CAVITY DRAINAGE MATERIAL (WHERE APPLICABLE), AND WEEP VENTS (24" O.C. MAX.).
4.8	MASONRY TIES.
5.9	EXPOSED STEEL COLUMN, PAINTED. SEE STRUC. DRAWINGS.
5.10	6" METAL STUD FRAMING. SEE STRUC. DRAWINGS.
5.11	STEEL BEAM, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.12	STEEL ROOF JOIST, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.13	STEEL ROOF DECK, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.19	CONNECTOR. SEE STRUCTURAL DRAWINGS.
5.20	8" METAL STUD FRAMING. SEE STRUCTURAL DRAWINGS.
6.1	SOLID SURFACE WINDOWSILL.
6.2	FIRE-RETARDANT TREATED 2X WOOD BLOCKING.
7.1	3" X 4" PREFINISHED METAL DOWNSPOUT. CONNECT TO STORM SYSTEM WITH BOOT. SEE CIVIL DRAWINGS.
7.2	9" X 9" PREFINISHED METAL GUTTER. SEE DETAILS.
7.3	STANDING-SEAM METAL ROOF.
7.6	PREFINISHED LINEAR METAL SOFFIT PANELS.
7.7	ALUMINUM COMPOSITE PANEL SYSTEM.
7.8	6" POLYISOCYANURATE ROOF INSULATION (R-38 MIN.); THREE LAYERS OF 2" WITH SEAMS STAGGERED.
7.9	2-1/2" THICK CONTINUOUS INSULATION (R-12.5 MIN.).
7.10	FLUID APPLIED MEMBRANE AIR BARRIER PER MANUFACTURER'S RECOMMENDATIONS.
7.11	±6" THICK (R-19 MIN.), MEMBRANE FACED (VAPOR BARRIER TO THE INSIDE) GLASS-FIBER BLANKET INSULATION.
7.15	3" THICK x 24" HIGH (R-15 MIN.) EXTRUDED-POLYSTYRENE PERIMETER INSULATION.
7.16	WINDOWSILL FLASHING, MATCH ALUMINUM ASSEMBLY FINISH.
7.18	JOINT SEALANT.
7.25	WATER-RESISTANT SURFACE COATING AT VENEER BELOW GRADE.
7.36	FIBERGLASS-MAT GYPSUM SHEATHING.
8.1	ALUMINUM CURTAIN WALL SYSTEM. SEE ALUMINUM ASSEMBLIES AND DETAILS SHEETS.
9.0	NON-STRUCTURAL METAL FRAMING. SEE PLANS AND SEE SHEET A0.04 FOR INTERIOR PARTITION TYPES.
9.1	5/8" GYPSUM BOARD.
9.2	1/2" GYPSUM BOARD.
9.4	FLOOR FINISH AND/OR FLOOR BASE, SEE "I" FINISH SHEETS.
9.6	GYPSUM BOARD CEILING. SEE REFLECTED CEILING PLAN.
9.7	ACOUSTICAL CEILING TILE SYSTEM. SEE RCP SHEETS.
9.10	GYPSUM BOARD TRIM (J, L, F, OR CORNER TRIM), PAINTABLE.
9.12	SUSPENDED LINEAR CEILING SYSTEM. SEE RCP SHEETS.
12.1	SOLID SURFACE COUNTERTOP. SEE INTERIORS DRAWINGS FOR ADDITIONAL INFORMATION.
12.4	MANUAL OPERATED, DUAL WINDOW ROLLER SHADE WITH BLACKOUT. FULL HEIGHT AND WIDTH OF WINDOW, AND PROVIDE ALUMINUM SIDE AND SILL CHANNELS FOR LIGHT GAP REDUCTION.
32.1	EXTERIOR GRADE OR PAVING. SEE CIVIL DRAWINGS.

STATE OF OHIO
ANDREW D. TOROWSKI
REGISTERED ARCHITECT
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APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

WALL SECTIONS

SCALE: As indicated
CONTRACT NO: 220656
SHEET A3.14

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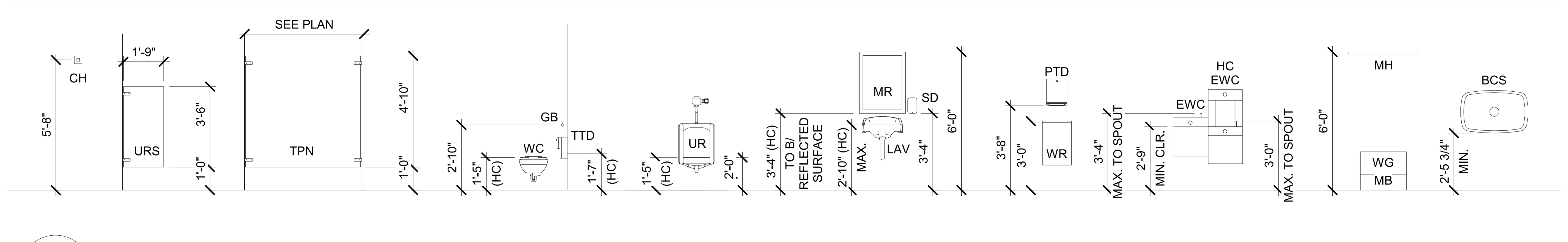


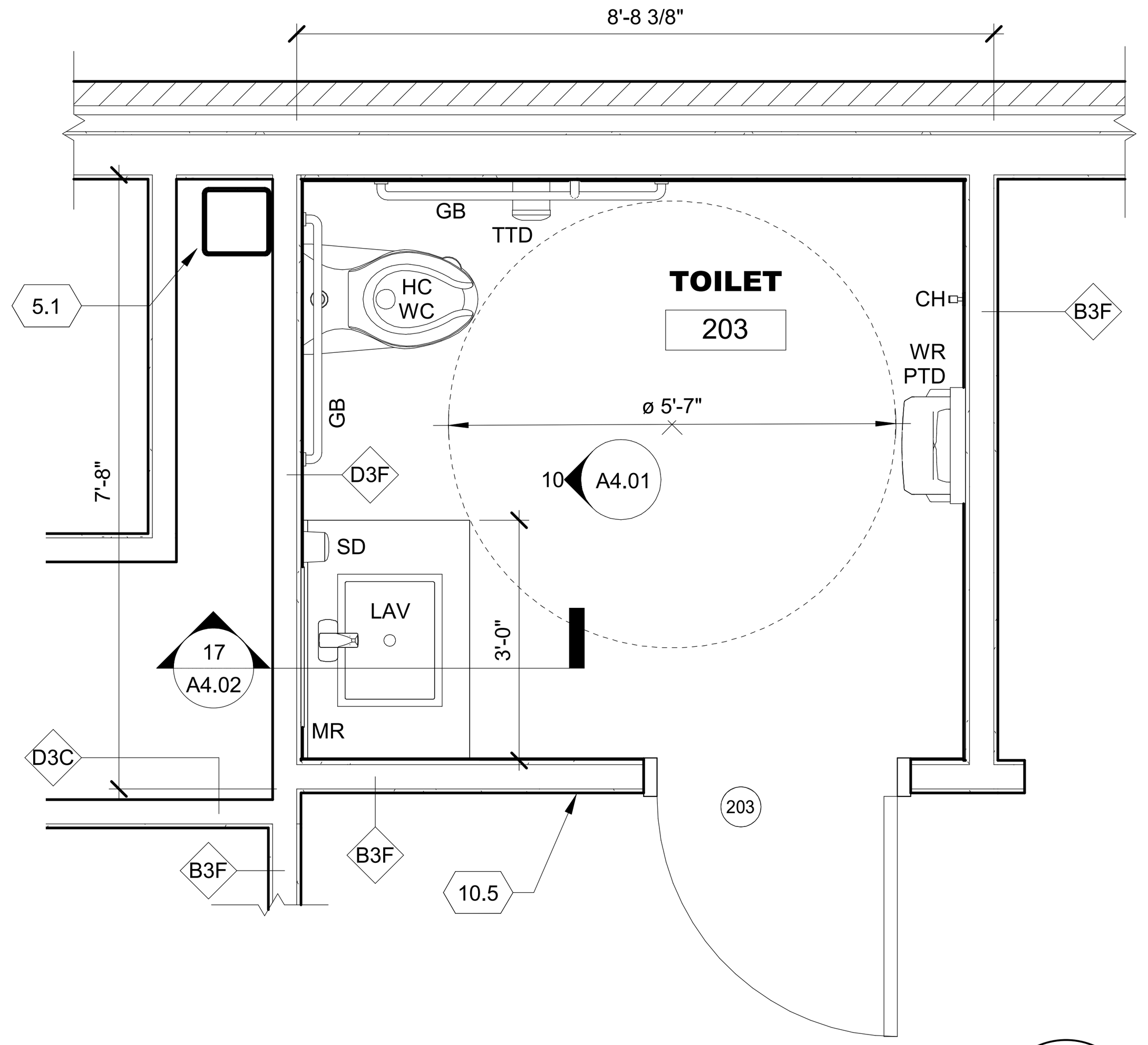
11 **TYP. FIXTURE MOUNTING HEIGHTS**
A4.01 1/4" = 1'-0"

KEYNOTES

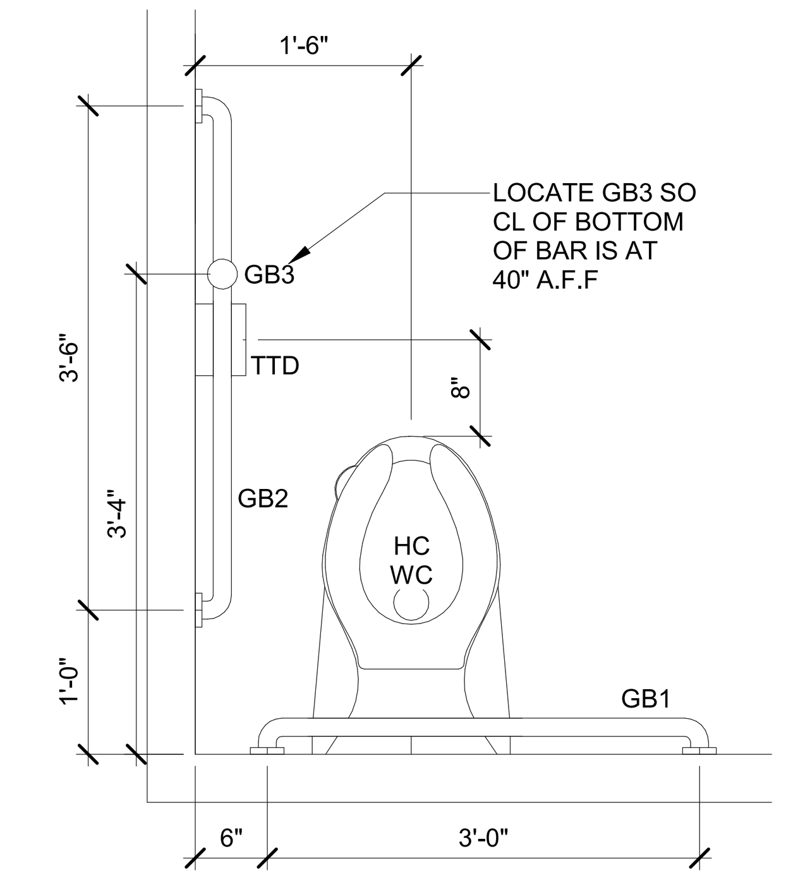
#	
1.12	FLAT PANEL DISPLAY MONITOR BY OWNER.
1.14	MICROWAVE BY OWNER.
1.15	REFRIGERATOR BY OWNER
5.1	STEEL COLUMN. PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.9	EXPOSED STEEL COLUMN, PAINTED. SEE STRUC. DRAWINGS.
10.5	RESTROOM SIGNAGE.
10.6	STAINLESS STEEL CORNER GUARD - 6'-0" HIGH (TYP).

TOILET ROOM ACCESSORY SCHEDULE

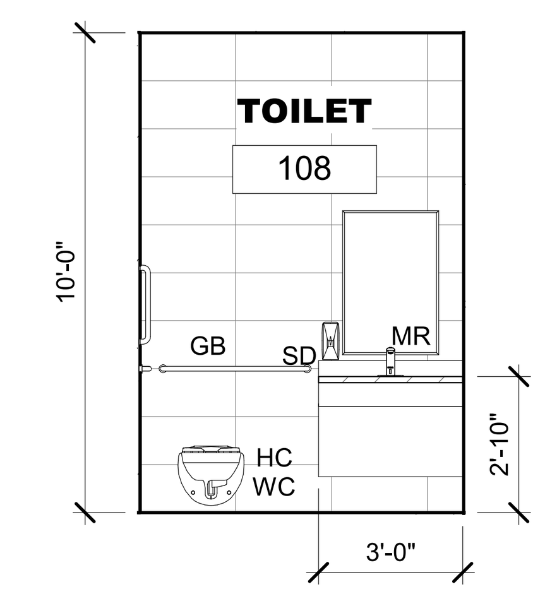
MARK	ITEM	MFR.	MODEL
BCS	BABY CHANGING STATION	BOBRICK	KB310-SSWM-MBLK
CH	CLOTHES HOOK, SURFACE-MOUNTED	BRADLEY	MODEL 915
GB	GRAB BARS, 42", 36" & 18" VERTICAL	BRADLEY	812 SERIES
MR	MIRROR - 24" x 36"	BRADLEY	MODEL 780-2436
NWR	NAPKIN WASTE RECEPTACLE, SURFACE-MOUNTED	BRADLEY	MODEL 4A10-11
PTD	PAPER TOWEL DISPENSER	GEORGIA PACIFIC	MODEL 59498A
SD	SOAP DISPENSER	BRADLEY	MODEL 6A03
TPN	TOILET PARTITION	SEE SPECIFICATIONS	-
TTD	TOILET TISSUE DISPENSER, SURFACE-MOUNTED	BRADLEY	MODEL 5A10-11
URS	URINAL SCREEN	SEE SPECIFICATIONS	-
WR	WASTE RECEPTACLE, SURFACE-MOUNTED	BRADLEY	MODEL 3A15-11



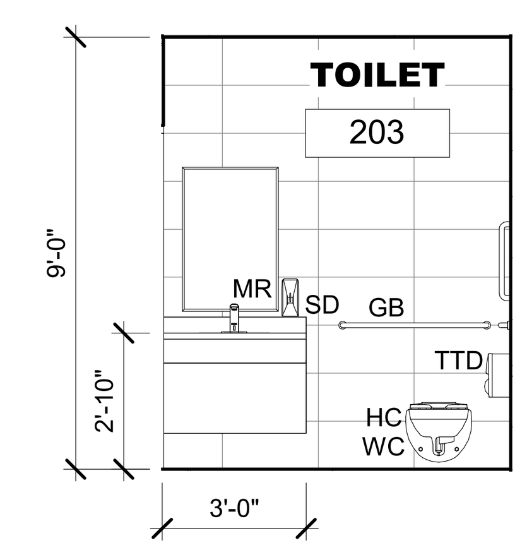
3 **ENLARGED PLAN**
A4.01 1/2" = 1'-0"



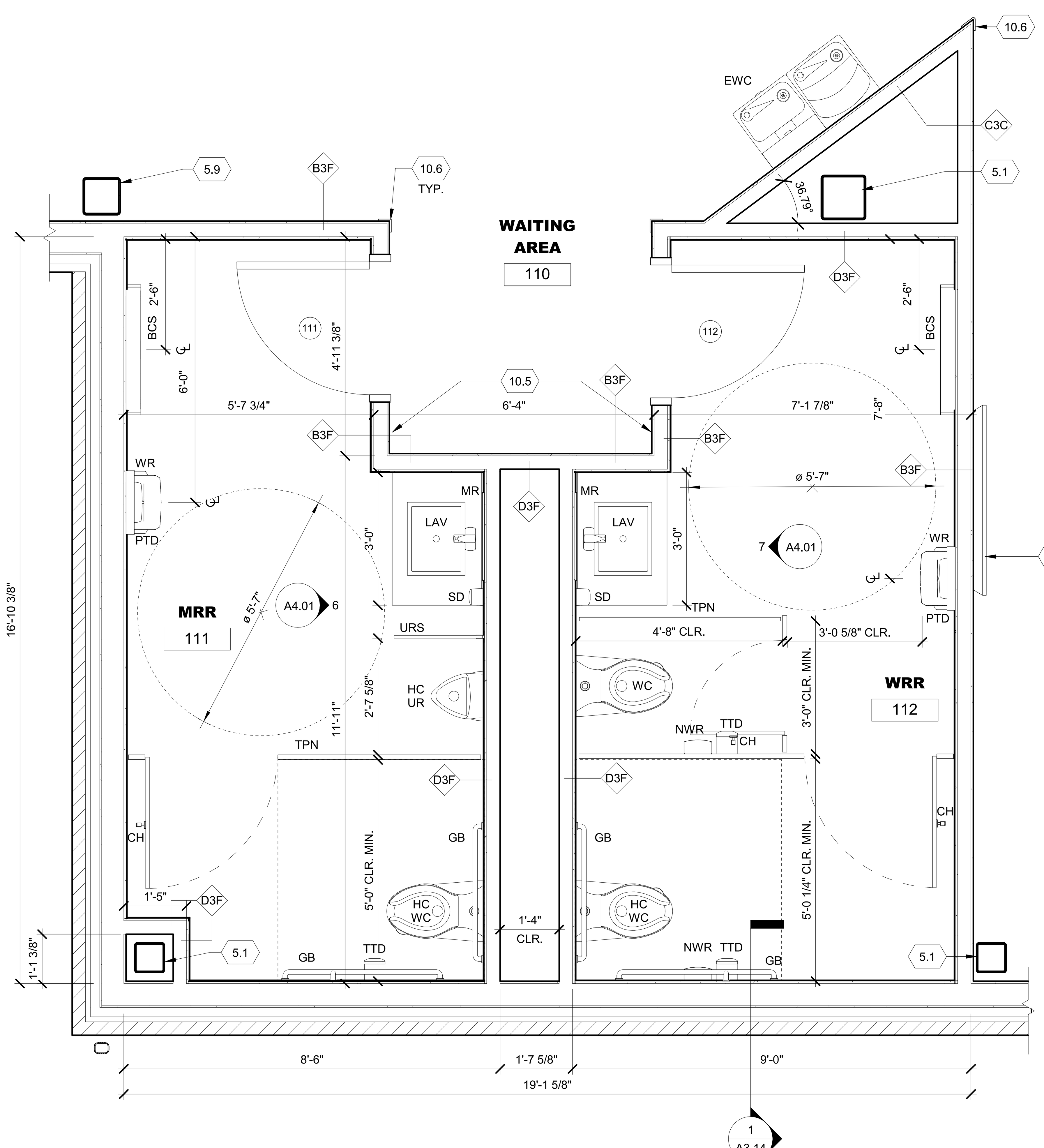
8 **TYP. WATER CLOSET LAYOUT**
A4.01 3/4" = 1'-0"



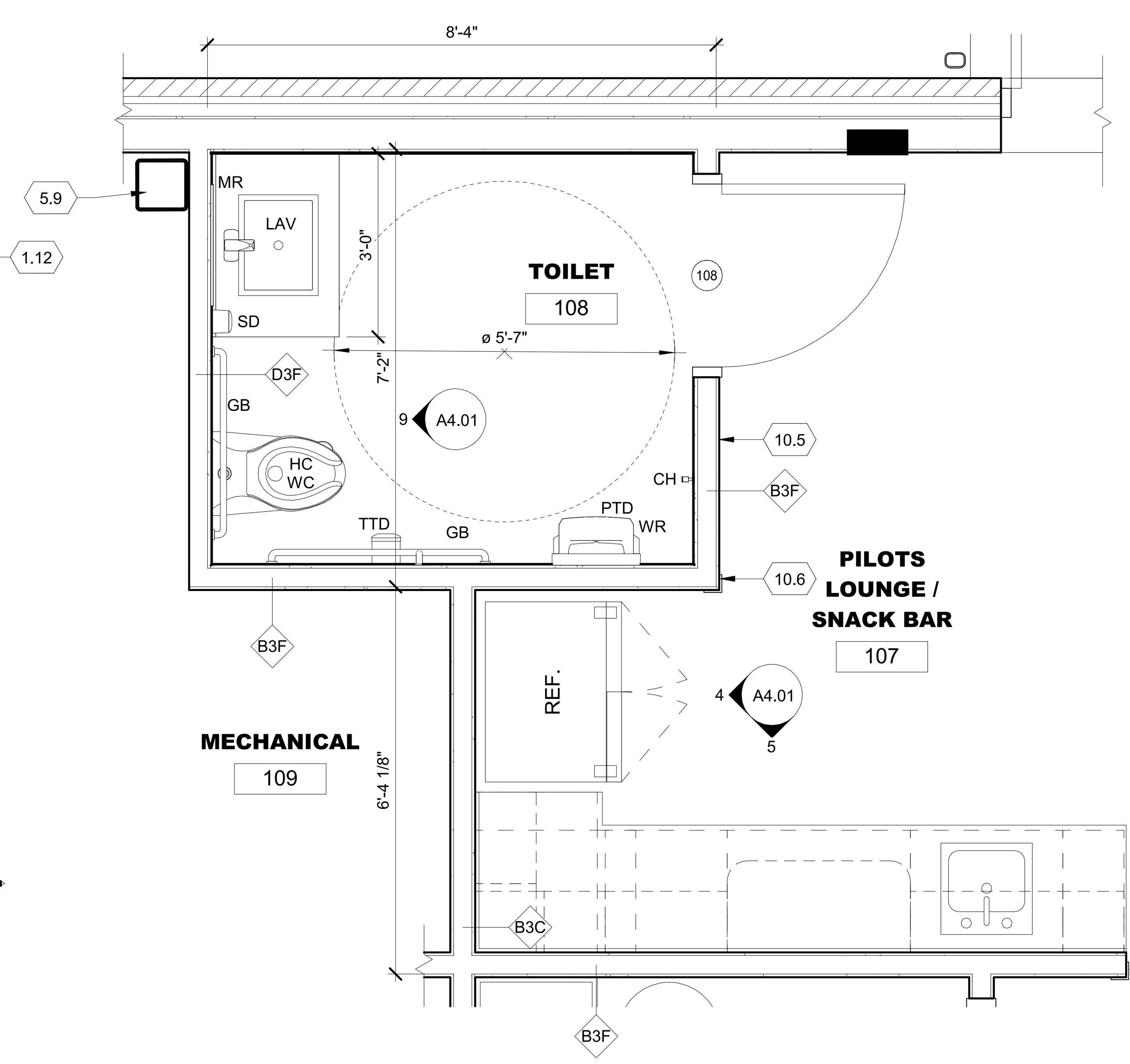
9 **INTERIOR ELEVATION**
A4.01 1/4" = 1'-0"



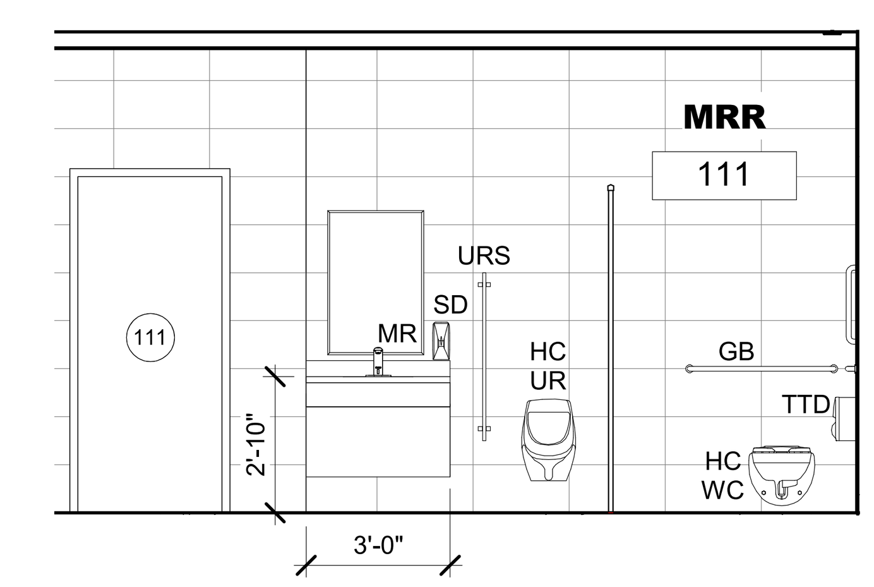
10 **INTERIOR ELEVATION**
A4.01 1/4" = 1'-0"



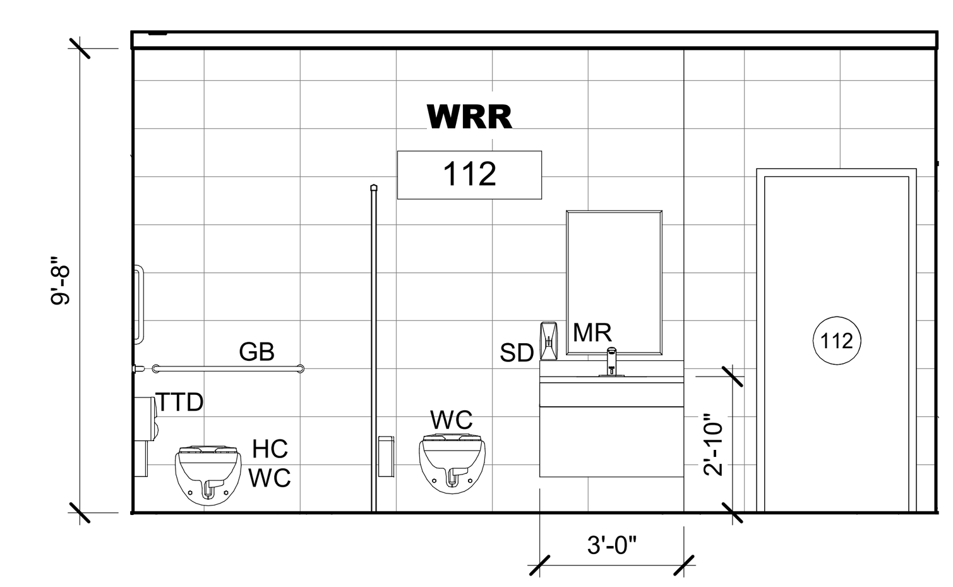
1 **ENLARGED PLAN**
A4.01 1/2" = 1'-0"



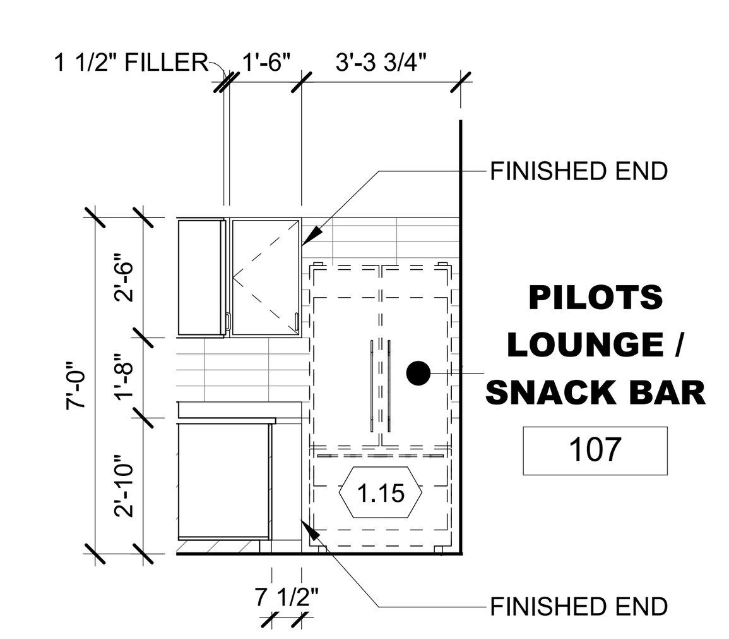
2 **ENLARGED PLAN**
A4.01 1/2" = 1'-0"



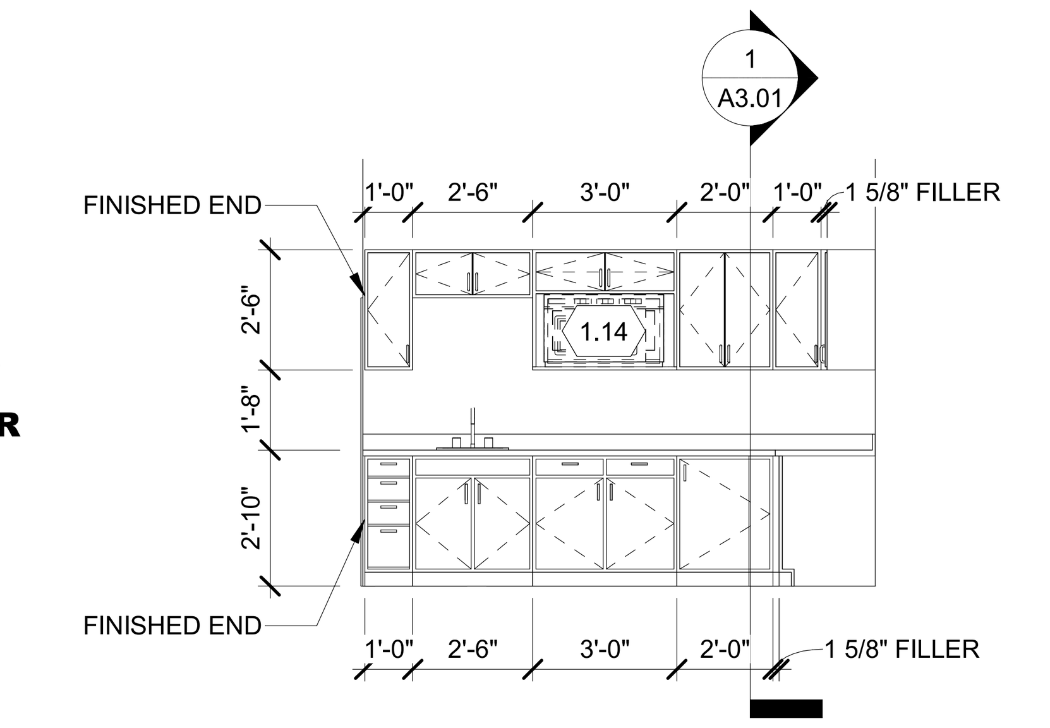
6 **INTERIOR ELEVATION**
A4.01 1/4" = 1'-0"



7 **INTERIOR ELEVATION**
A4.01 1/4" = 1'-0"



4 **INTERIOR ELEVATION**
A4.01 1/4" = 1'-0"



5 **INTERIOR ELEVATION**
A4.01 1/4" = 1'-0"

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NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

ENLARGED PLANS AND DETAILS

SCALE: As indicated
CONTRACT NO: 220656
SHEET A4.01

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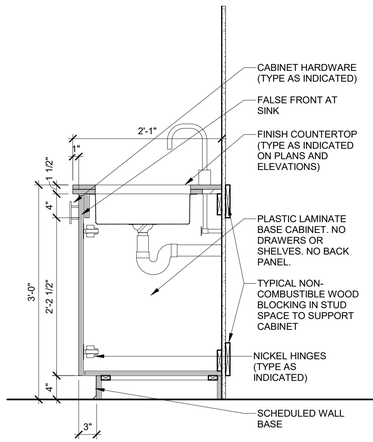
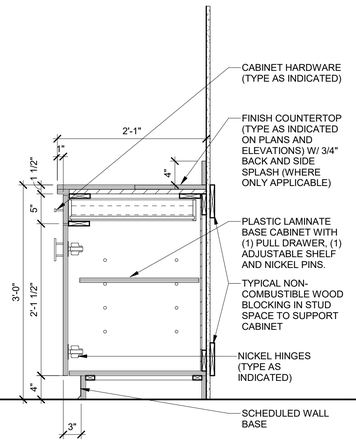
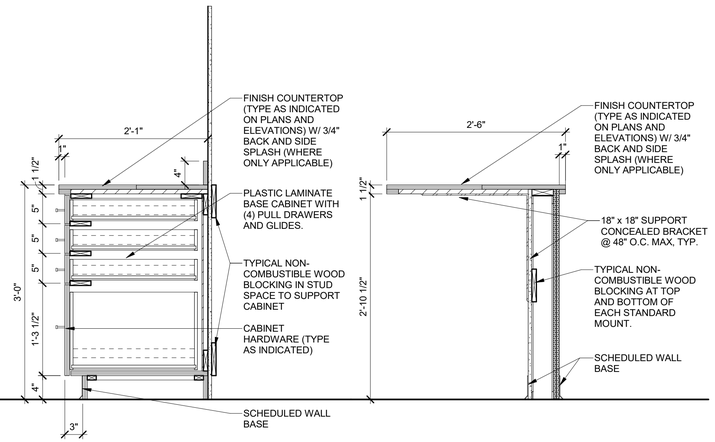


SINK
13 BASE CABINET
A4.02 — 1" = 1'-0"

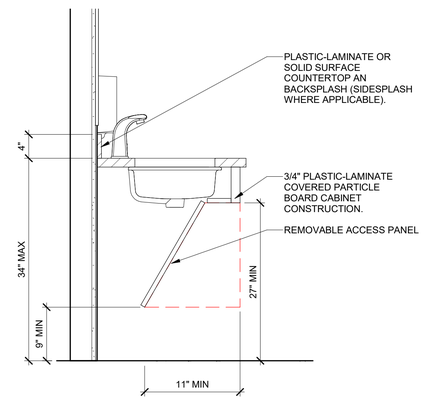


14 BASE CABINET
A4.02 — 1" = 1'-0"



15 BASE CABINET
A4.02 — 1" = 1'-0"

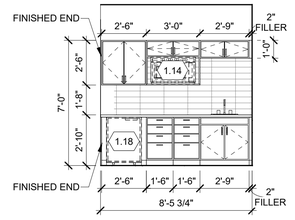
TICKET COUNTER
16 W/ BRACKET
A4.02 — 1" = 1'-0"



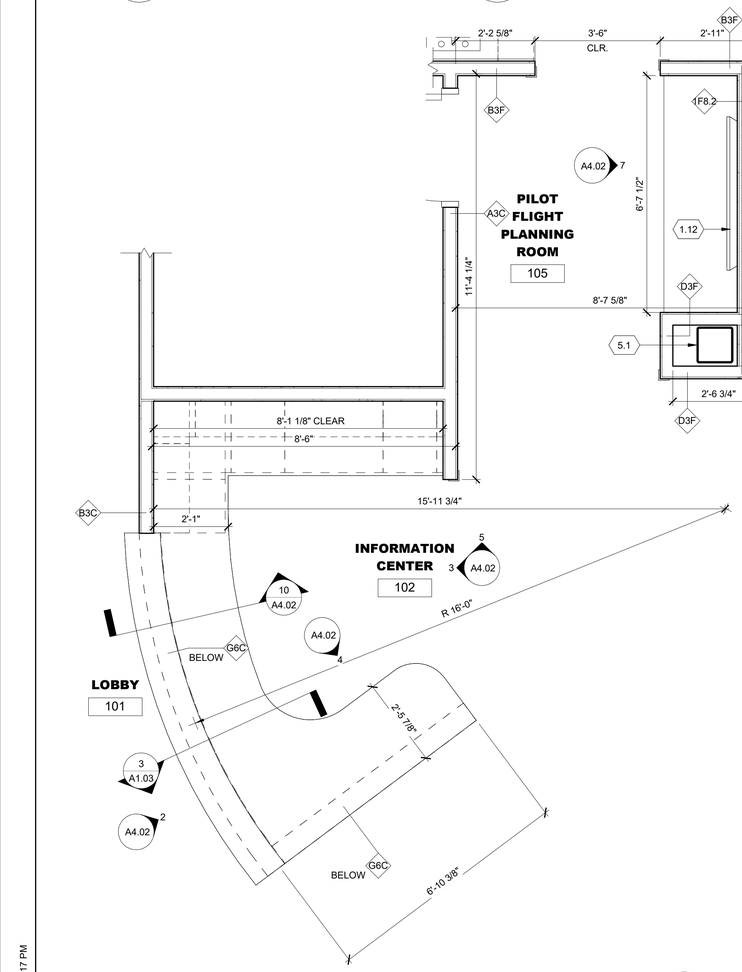
17 TYP. VANITY SECTION DETAIL
A4.02 — 1" = 1'-0"

KEYNOTES

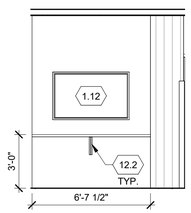
#	
1.4	ALIGN WALLS THIS SIDE.
1.12	FLAT PANEL DISPLAY MONITOR BY OWNER.
1.14	MICROWAVE BY OWNER.
1.18	UNDERCOUNTER REFRIGERATOR BY OWNER.
3.1	CONCRETE SLAB-ON-GRADE OVER GRANULAR BASE AND VAPOR BARRIER. SEE STRUCTURAL DRAWINGS.
5.1	STEEL COLUMN. PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
9.8	FRT WOOD PANELING.
12.1	SOLID SURFACE COUNTERTOP. SEE INTERIORS DRAWINGS FOR ADDITIONAL INFORMATION.
12.2	HEAVY DUTY L-SHAPE COUNTERTOP SUPPORT WITH CONCEALED BRACKETS.
12.5	1-1/2" SQUARE TUBE STEEL COUNTERTOP SUPPORT BOLTED TO FLOOR. PROVIDE CONCEALED ELECTRICAL TRAY AND CONCEALED BRAKETS.



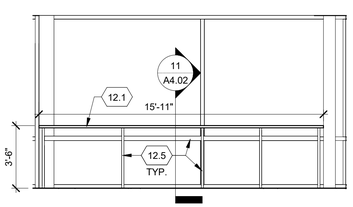
INTERIOR
12 ELEVATION
A4.02 — 1/4" = 1'-0"



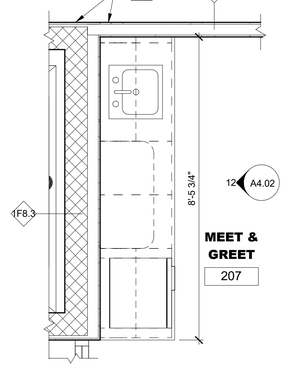
1 ENLARGED LOBBY DESK PLAN
A4.02 — 1/2" = 1'-0"



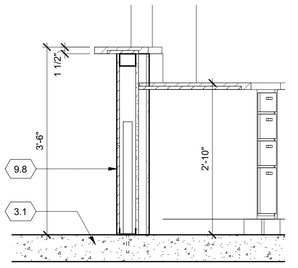
INT ELEVATION
7
A4.02 — 1/4" = 1'-0"



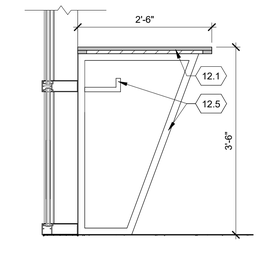
8 INTERIOR ELEVATION
A4.02 — 1/4" = 1'-0"



ENLARGED SECOND FLOOR PLAN
9
A4.02 — 1/2" = 1'-0"

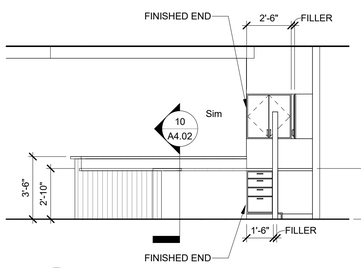


10 COUNTERTOP SECTION
A4.02 — 3/4" = 1'-0"

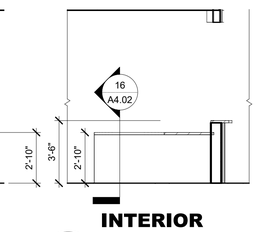


COUNTERTOP SECTION
11
A4.02 — 3/4" = 1'-0"

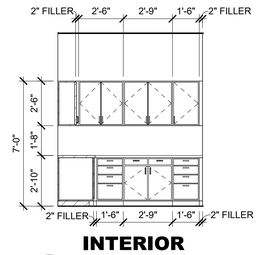
2 INTERIOR ELEVATION
A4.02 — 1/4" = 1'-0"



3 INTERIOR ELEVATION
A4.02 — 1/4" = 1'-0"



INTERIOR ELEVATION
4
A4.02 — 1/4" = 1'-0"



INTERIOR ELEVATION
5
A4.02 — 1/4" = 1'-0"

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NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

ENLARGED PLANS AND ELEVATIONS

SCALE: As indicated
CONTRACT NO: 220656
SHEET: A4.02

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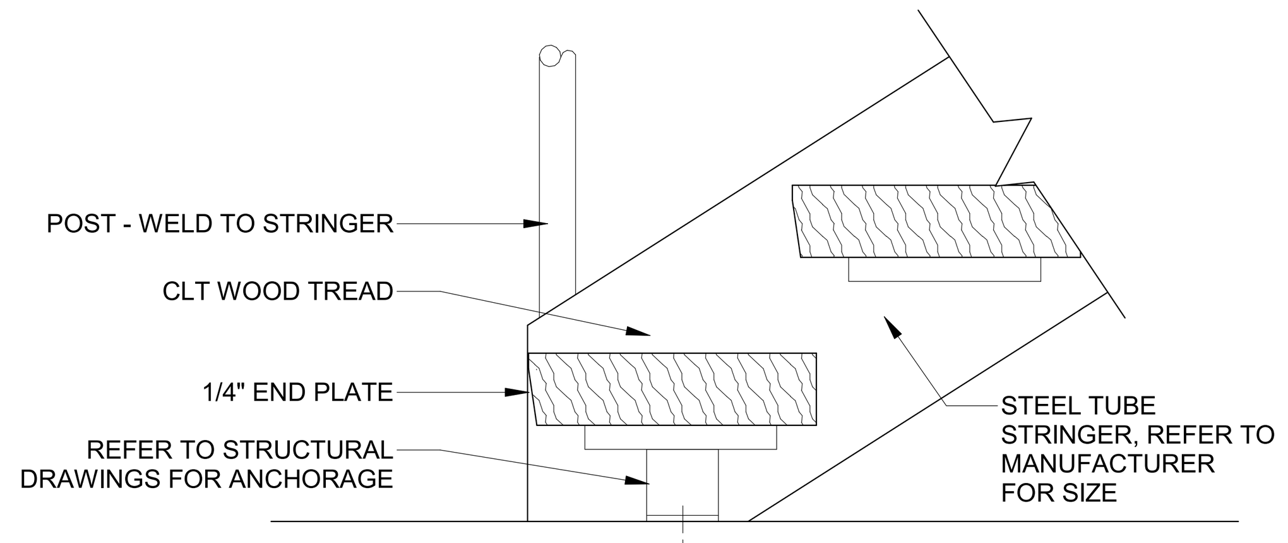
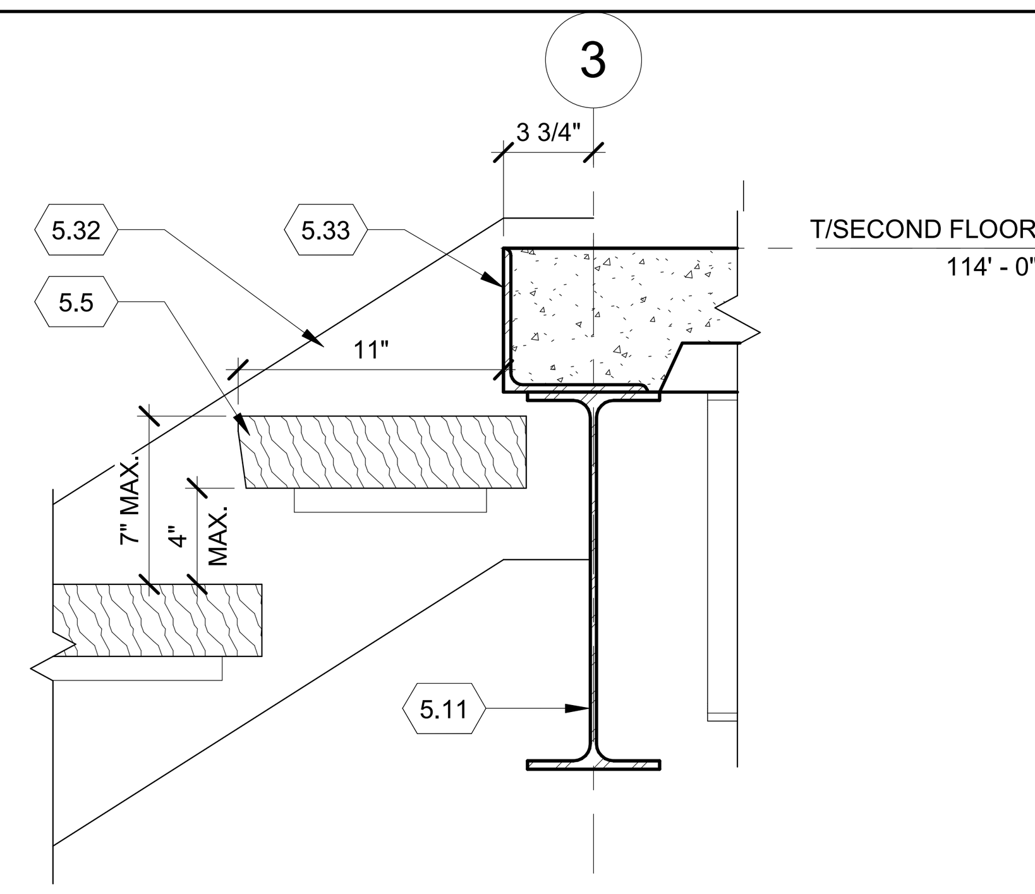
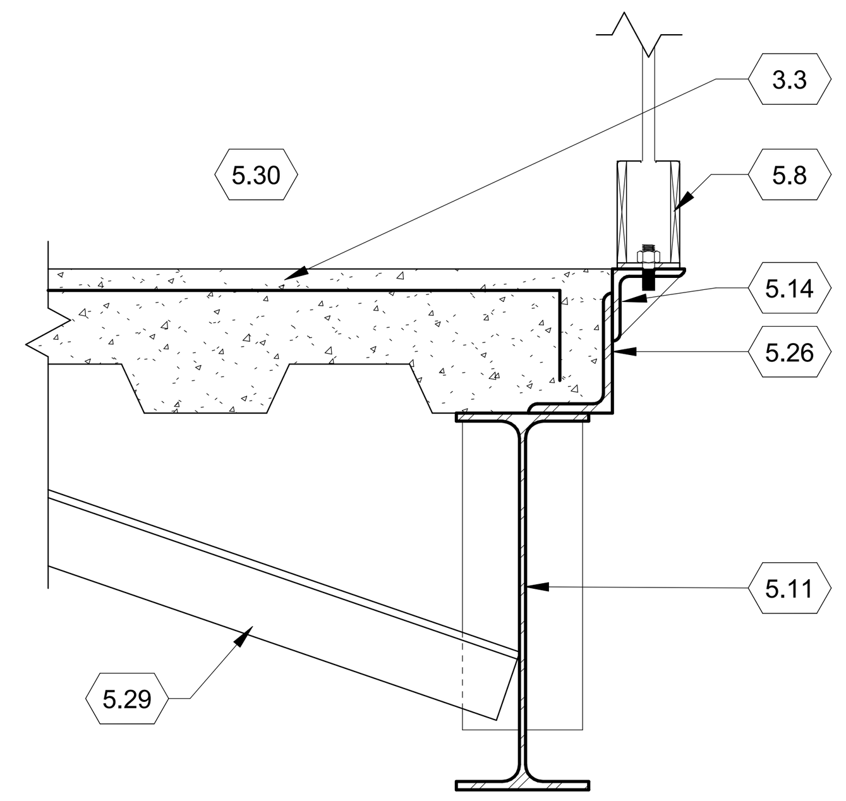


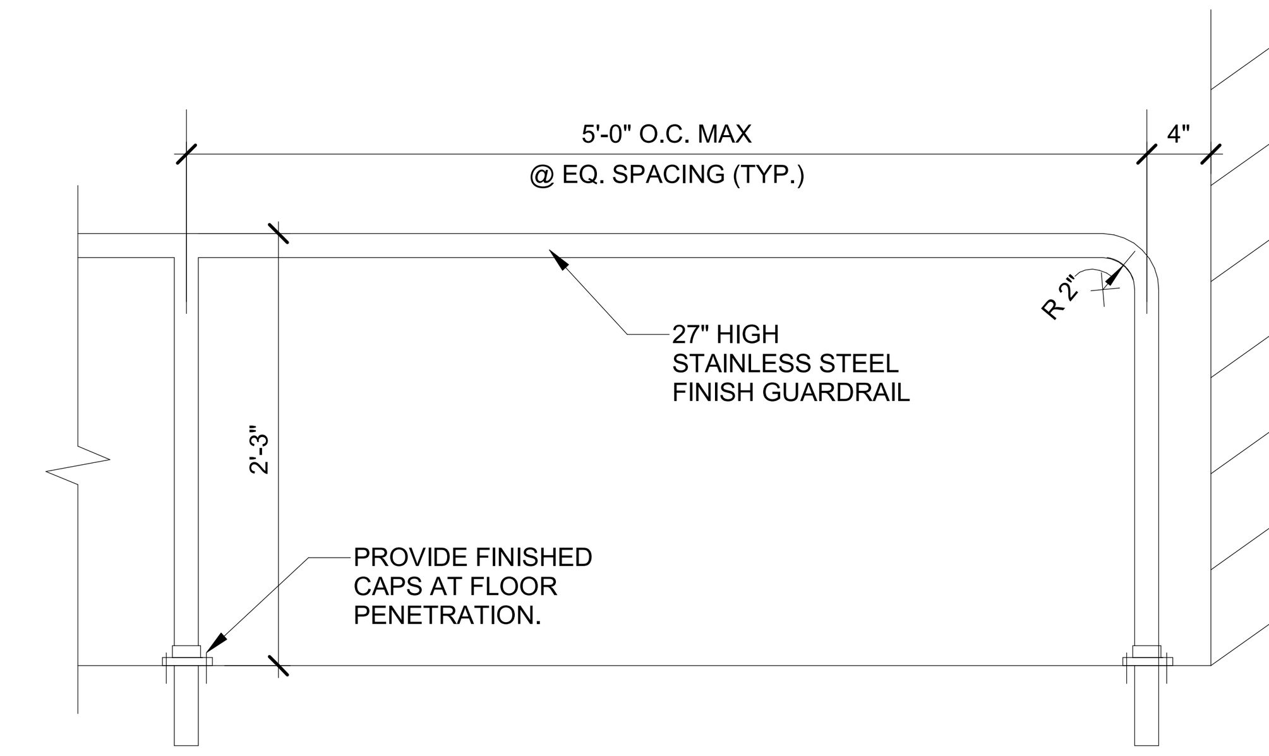
6 A4.03 **STAIR A SECTION DETAIL**
1 1/2" = 1'-0"



7 A4.03 **STAIR A SLAB EDGE DETAIL**
1 1/2" = 1'-0"



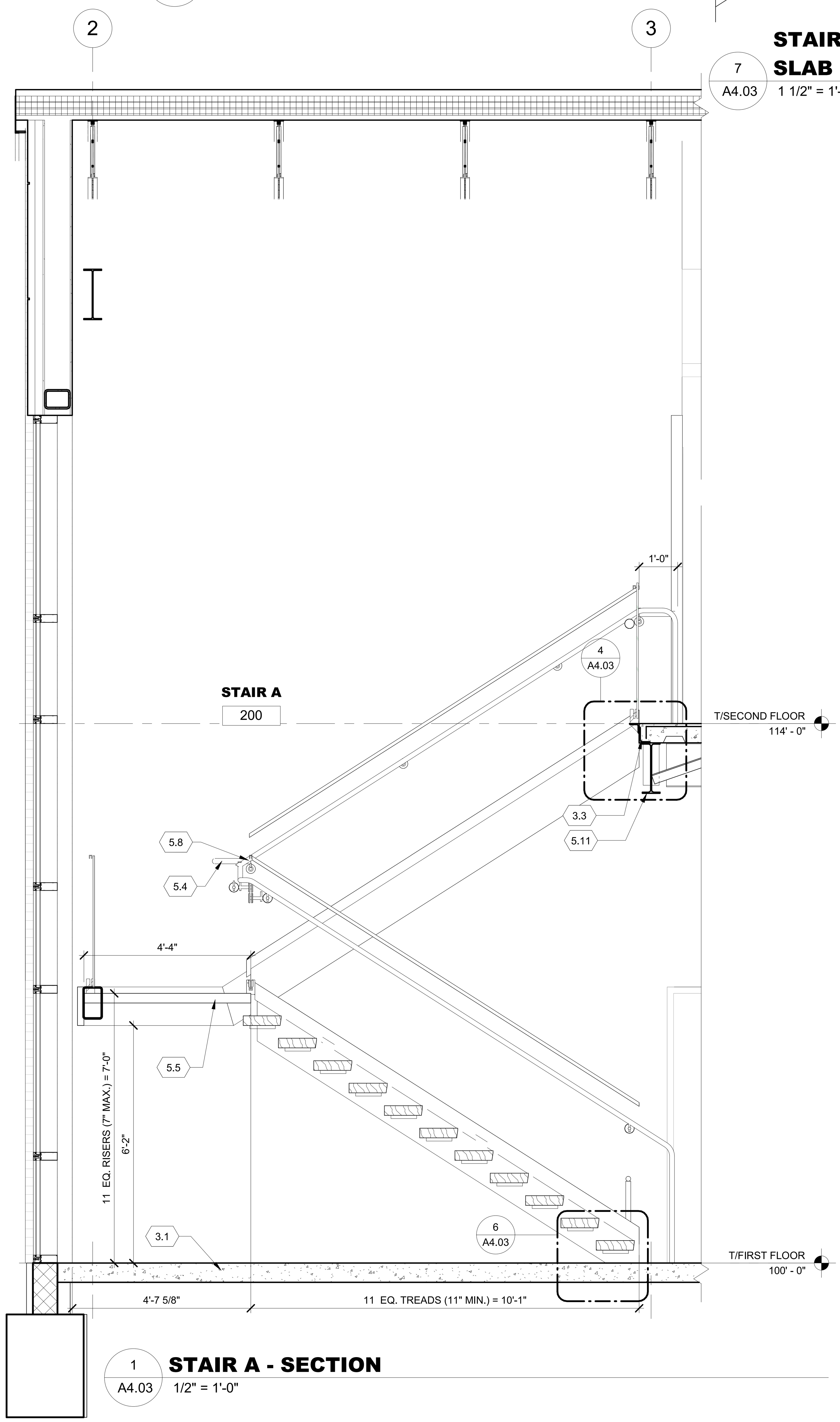
8 A4.03 **SLAB EDGE DETAIL**
1 1/2" = 1'-0"



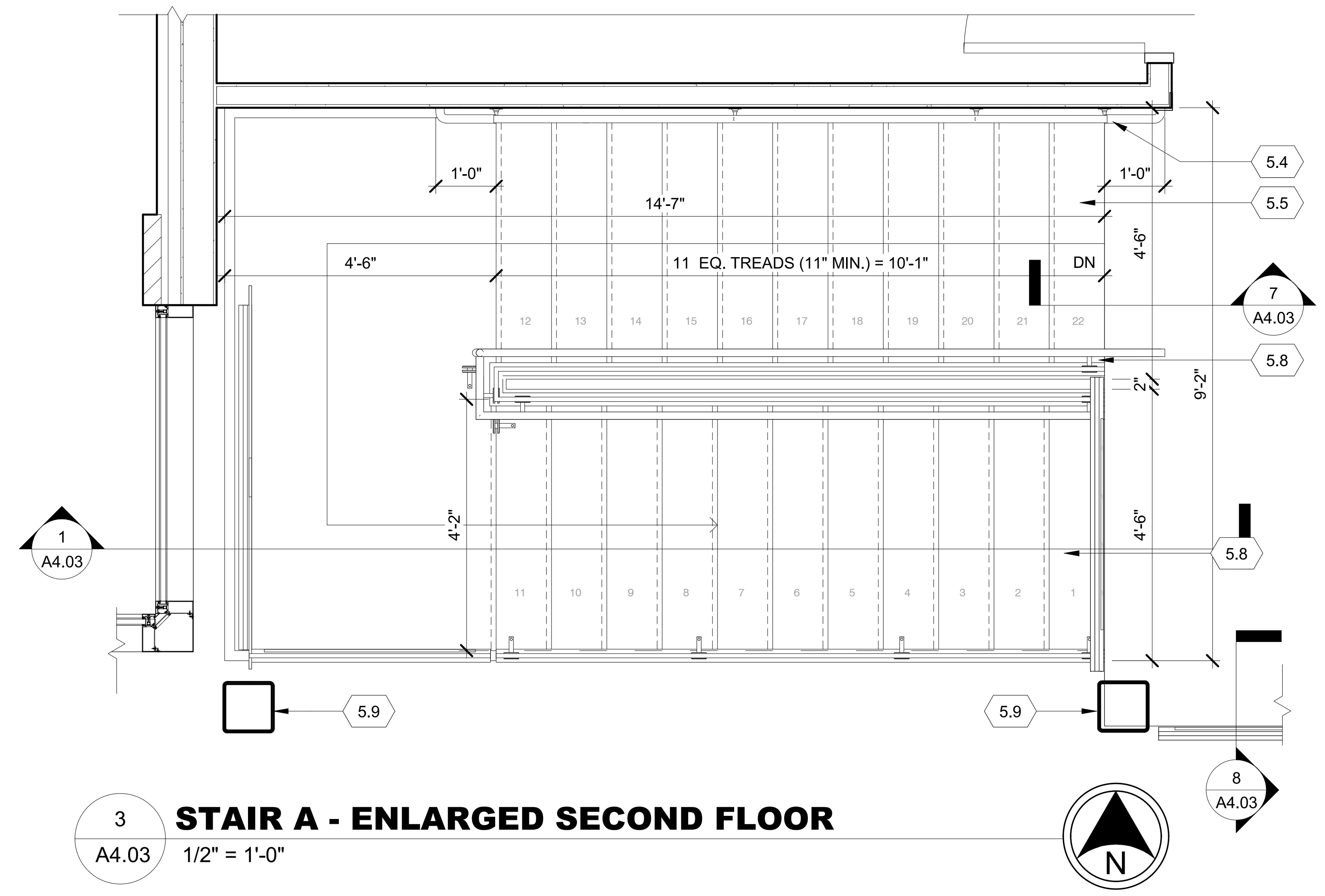
9 A4.03 **CONTINUOUS FIXED GUARD**
1" = 1'-0"

KEYNOTES

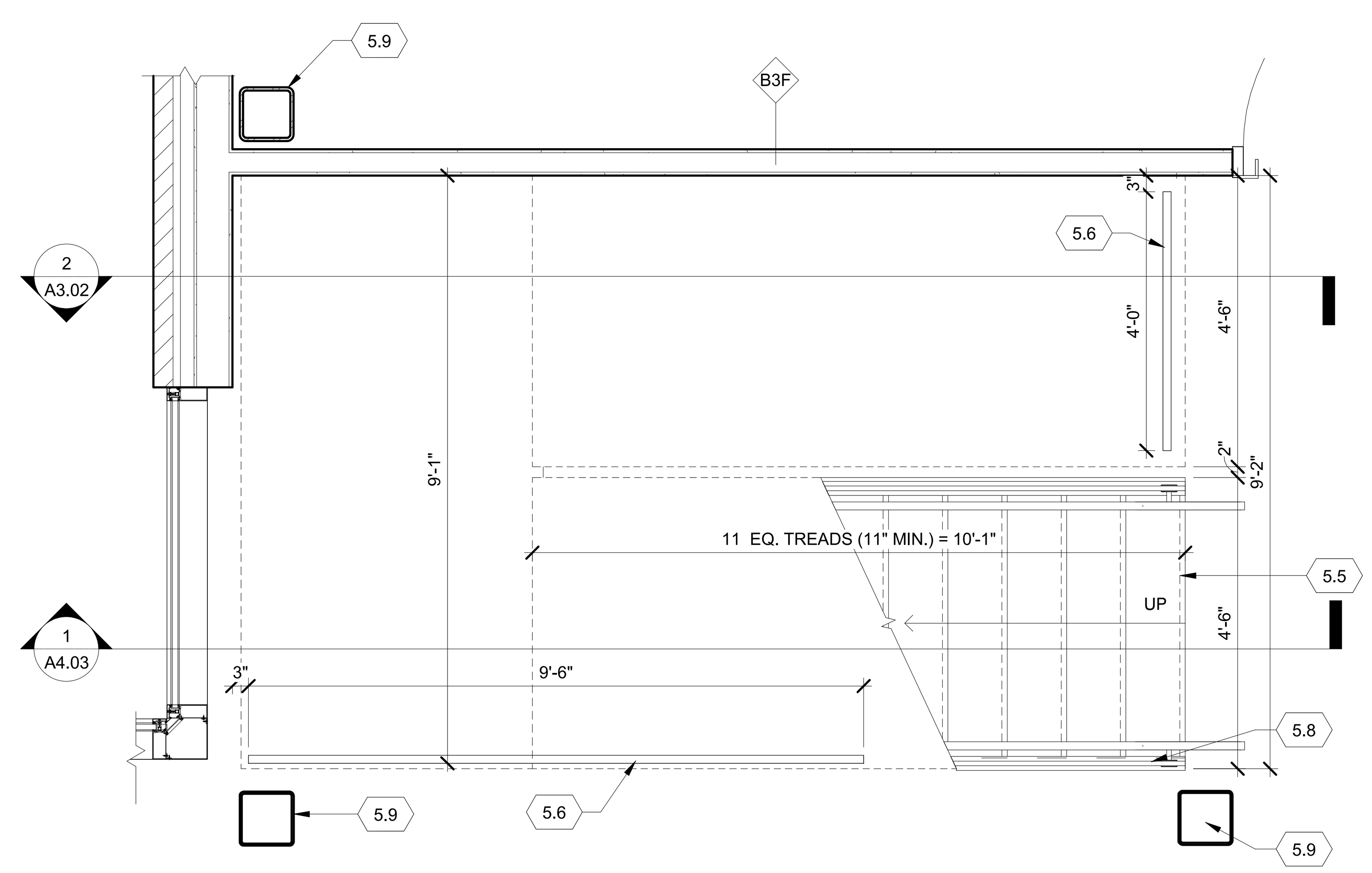
3.1	CONCRETE SLAB-ON-GRADE OVER GRANULAR BASE AND VAPOR BARRIER. SEE STRUCTURAL DRAWINGS.
3.3	CONCRETE SLAB OVER METAL DECK. SEE STRUCTURAL DRAWINGS.
5.4	1-1/2" DIA., 36" AFF, STEEL HANDRAIL MOUNTED TO WALL WITH BRACKETS. PAINTED. EXTEND HAND RAILS PAST TOP AND BOTTOM RISERS AS INDICATED. PAINTED.
5.5	PAINTED METAL STAIRS WITH CROSS-LAMINATED TIMBER (CLT) TREADS AND LANDING BY STAIR MANUFACTURER, SEE DETAILS ON SHEET A4.03.
5.6	1-1/2" DIA., 27" HIGH, STAINLESS STEEL GUARDRAIL/BARRIER UNDER STAIR CONSTRUCTION.
5.8	GLAZED DECORATIVE METAL RAILING.
5.9	EXPOSED STEEL COLUMN, PAINTED. SEE STRUC. DRAWINGS.
5.11	STEEL BEAM, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.14	STEEL ANGLE, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.26	CONTINUOUS 5/16" BENT PLATE W/ 1" RETURN @ 45 DEGREE ANGLE.
5.29	3"x3"x5/16" ANGLE BRACE @ EACH RAILING IF W14 BEAM DOES NOT OCCUR.
5.30	RAILING MFG/DESIGNER TO DESIGN RAILING & CONNECTION TO THE STRUCTURE FOR LOAD P OF 50 PLF OR 200 LB POINT LOAD AT TOP OF RAILING.
5.32	STEEL STRINGER BY STAIR MANUFACTURER. PAINT.
5.33	INFILL BY STAIR MANUFACTURER.



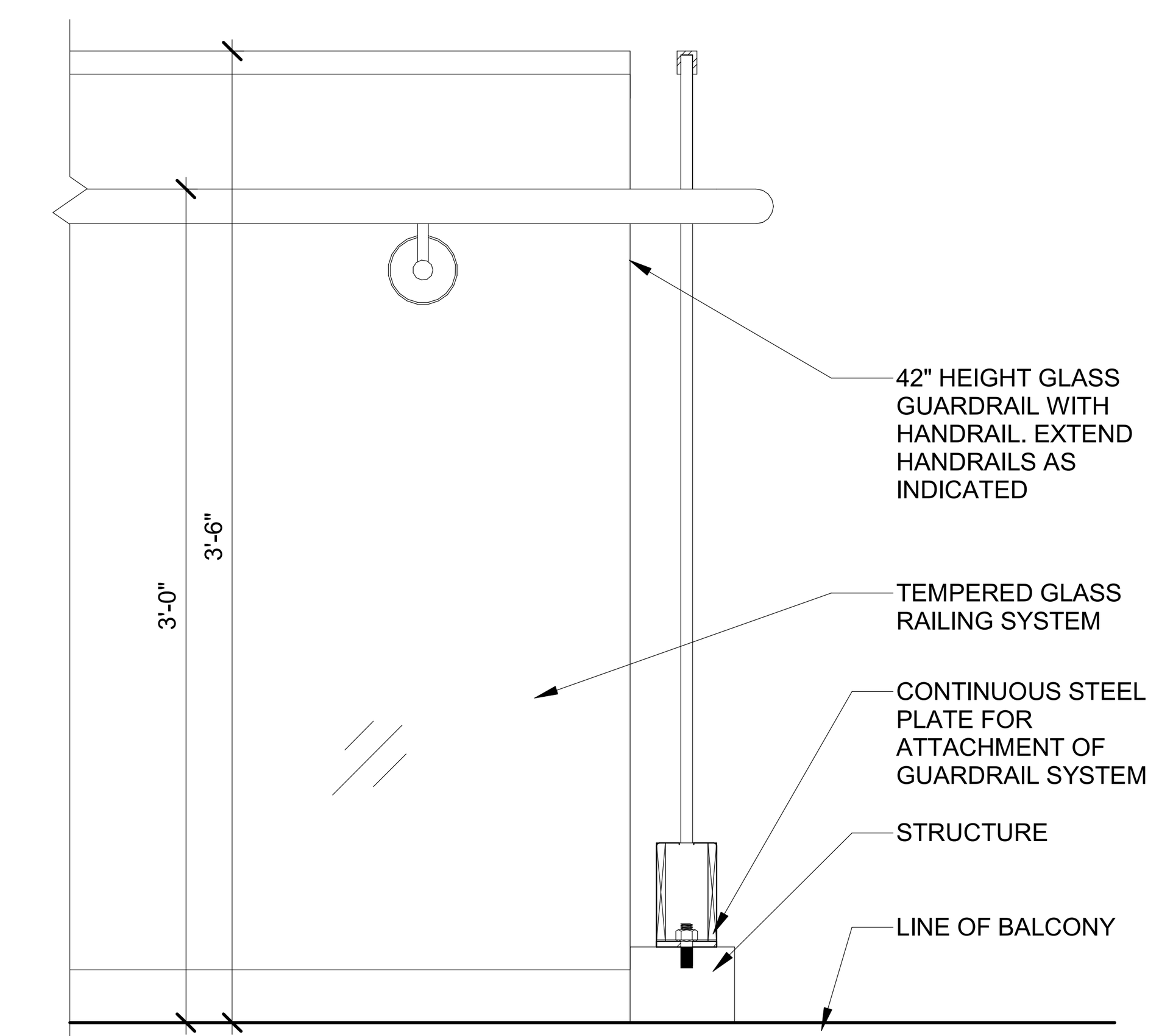
1 A4.03 **STAIR A - SECTION**
1/2" = 1'-0"



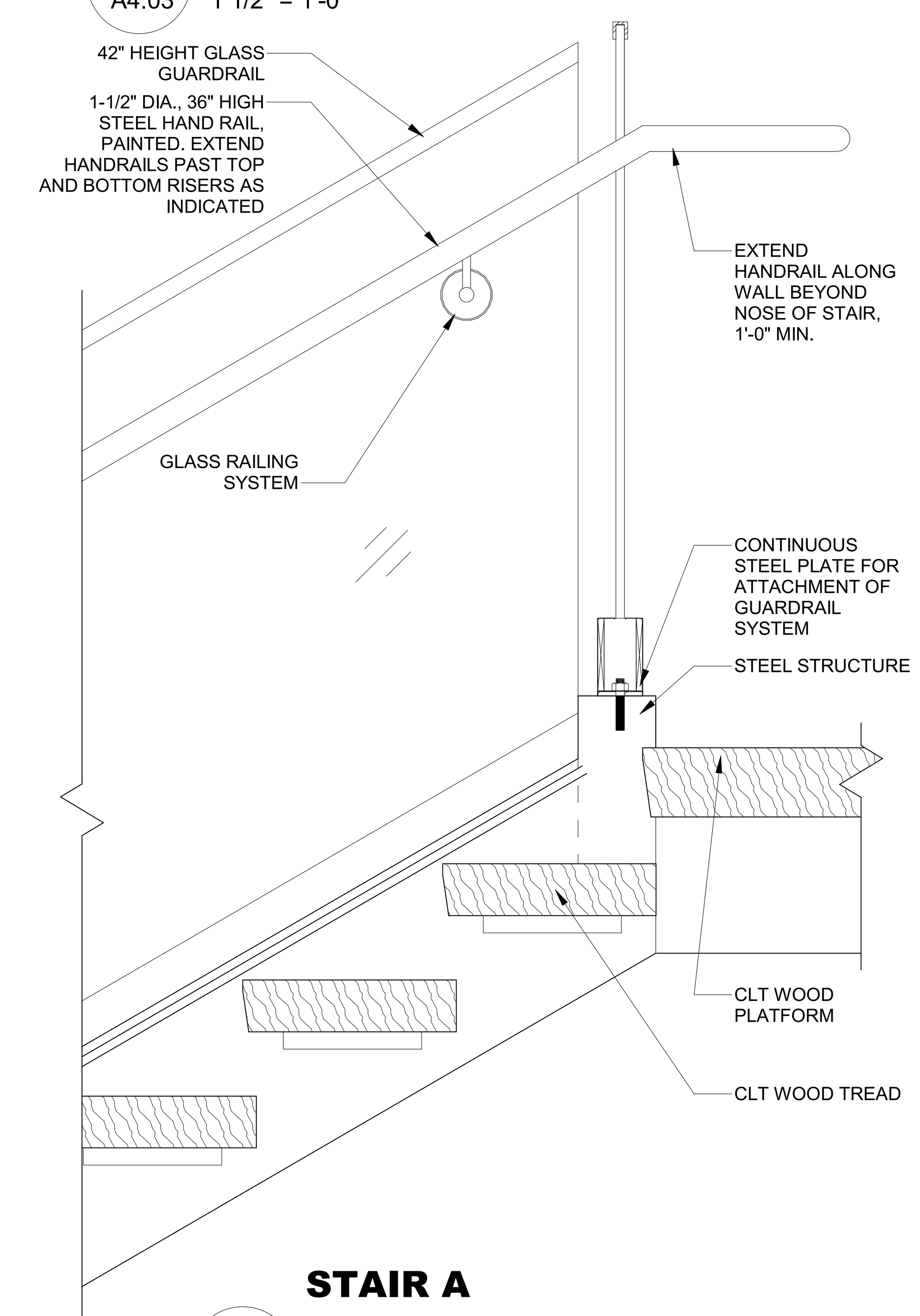
3 A4.03 **STAIR A - ENLARGED SECOND FLOOR**
1/2" = 1'-0"



2 A4.03 **STAIR A - ENLARGED FIRST FLOOR**
1/2" = 1'-0"



5 A4.03 **GUARDRAIL DETAIL - GLASS**
1 1/2" = 1'-0"



4 A4.03 **STAIR A SECTION DETAIL**
1 1/2" = 1'-0"

5/31/2024 12:22:20 PM

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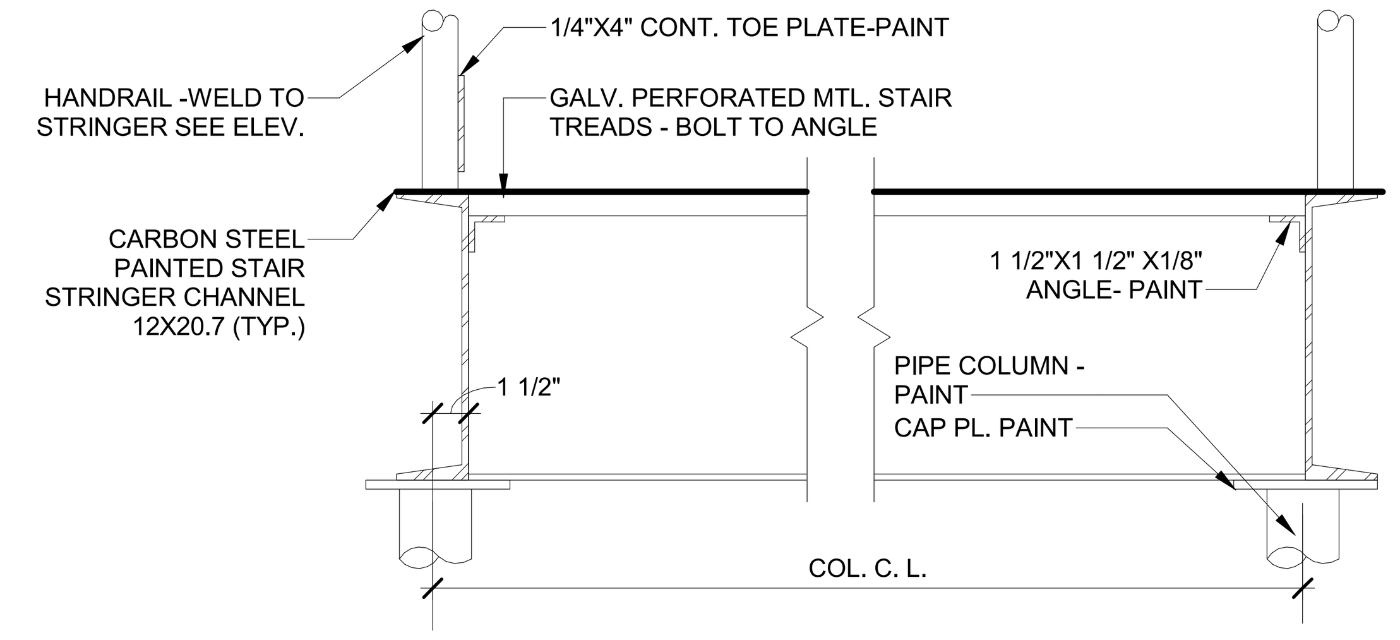
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

INTERIOR STAIR PLANS AND DETAILS

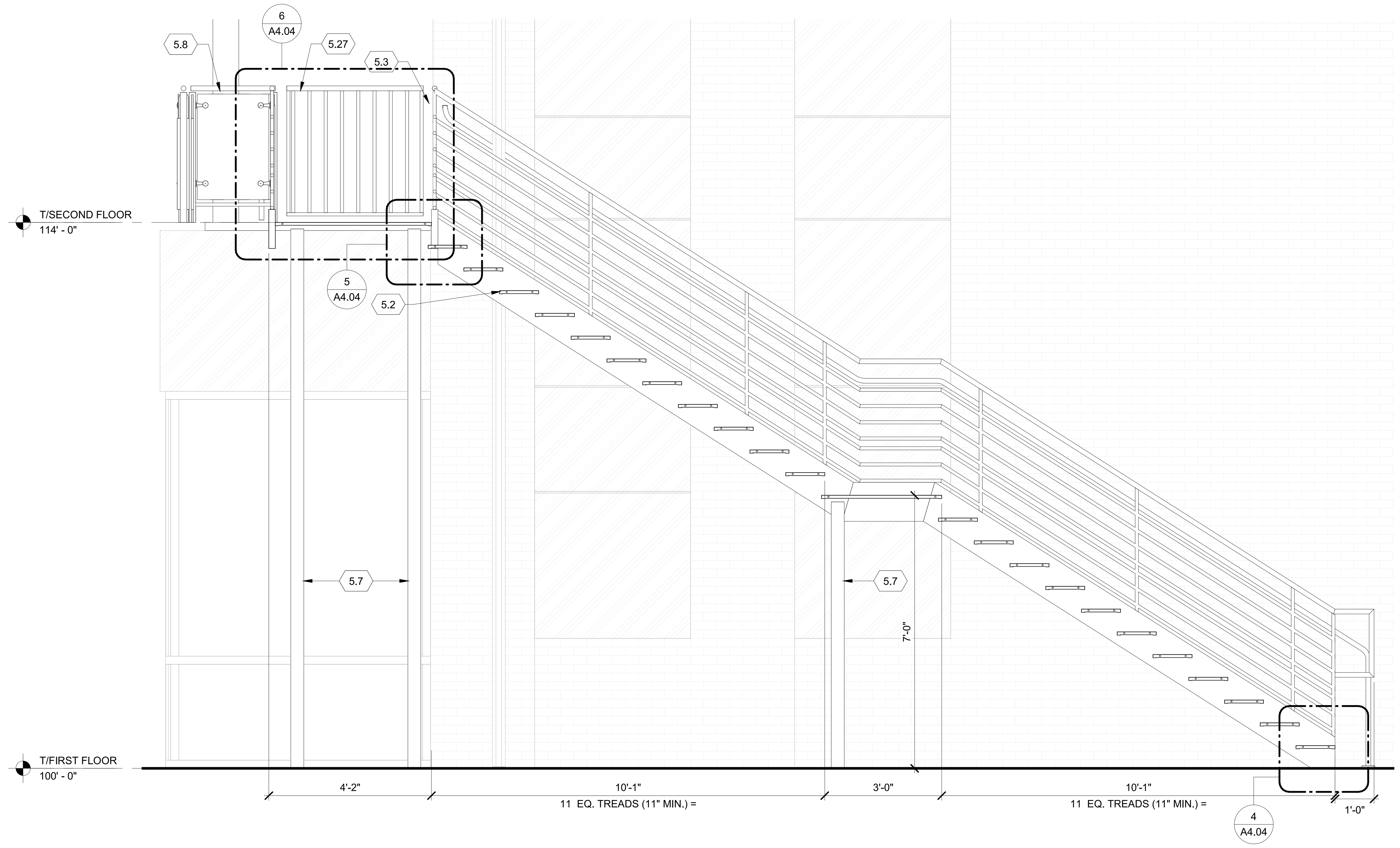
SCALE: As indicated
CONTRACT NO: 220656
SHEET
A4.03



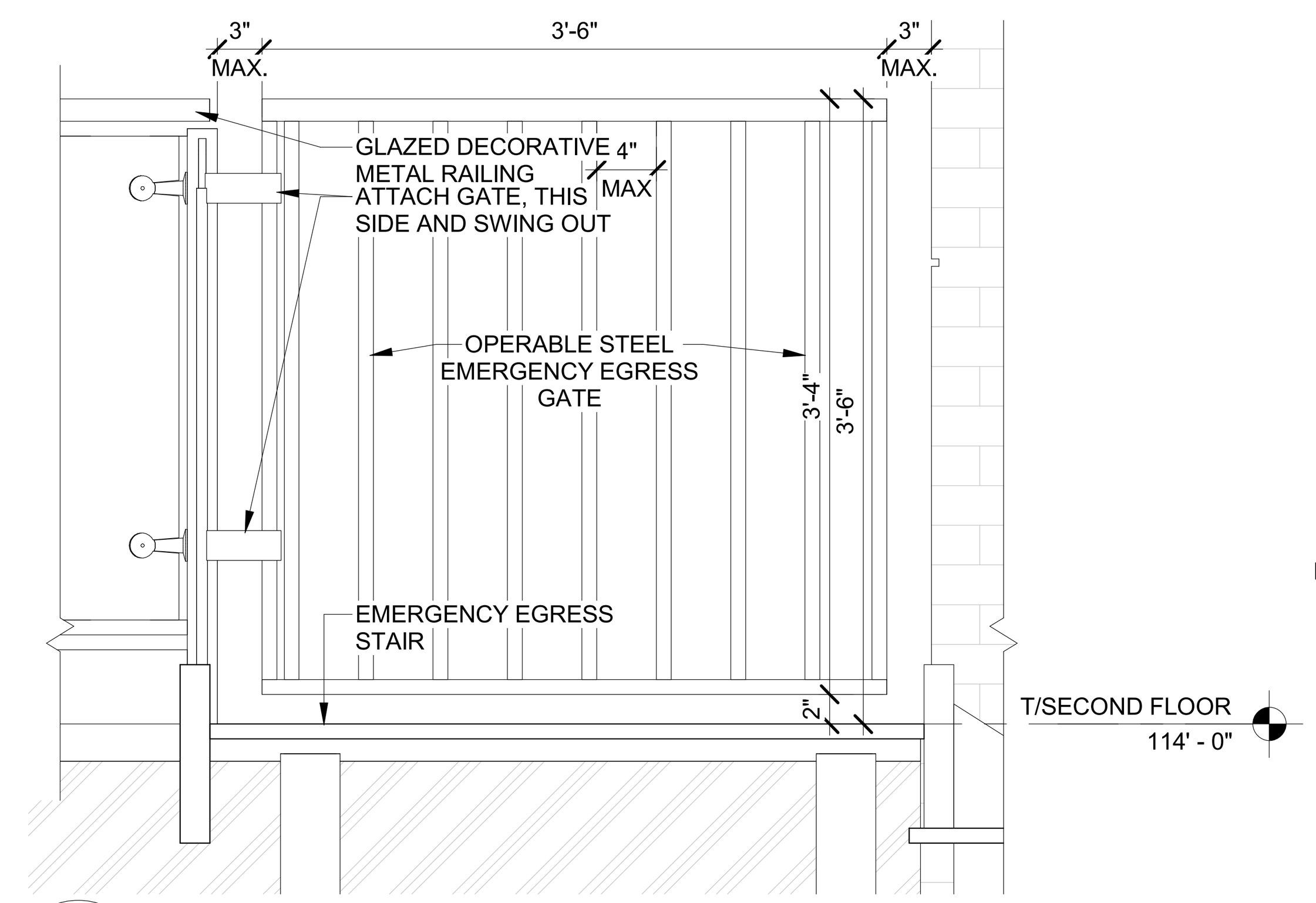
7 **STEEL LANDING DETAIL**
A4.04 1 1/2" = 1'-0"

KEYNOTES

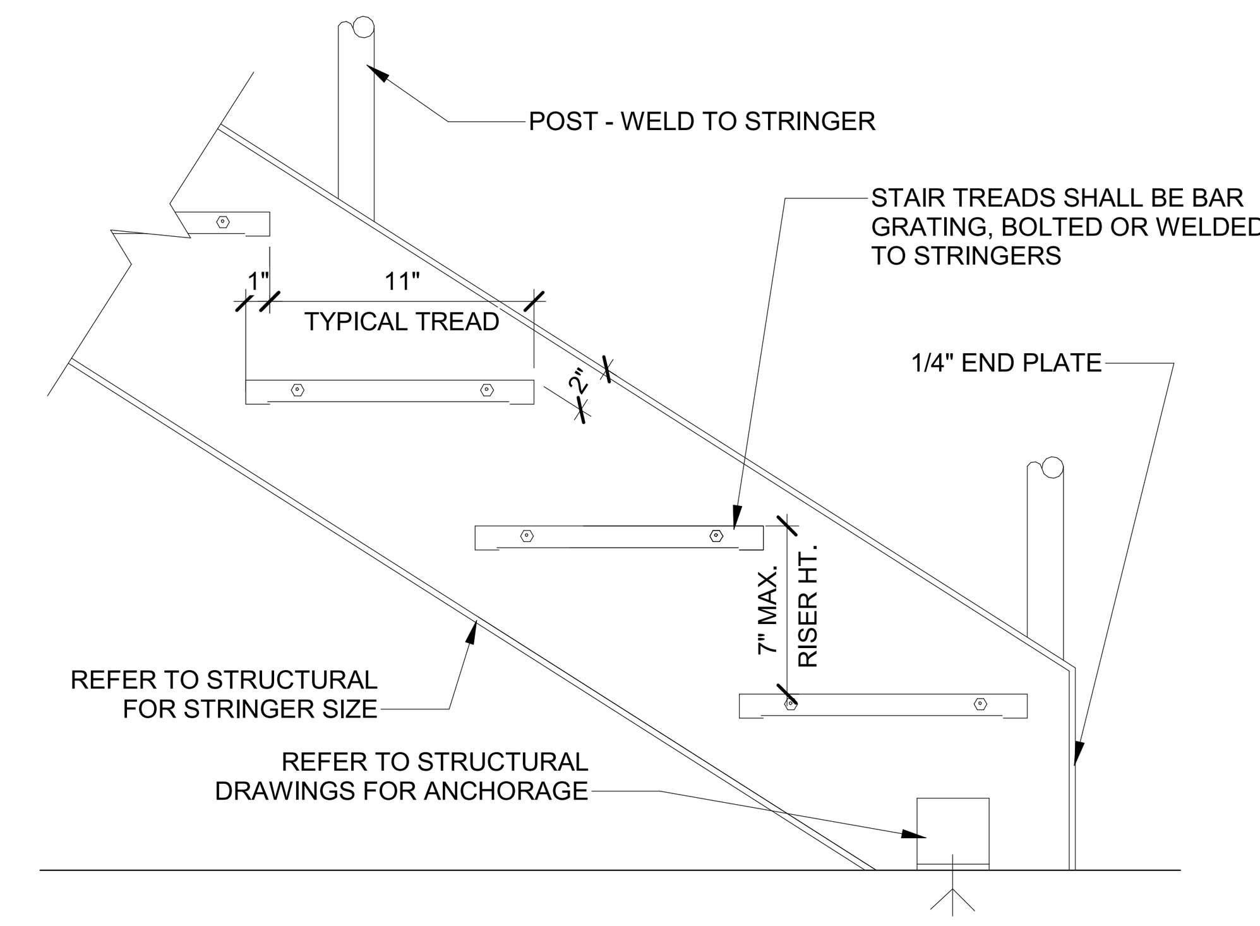
5.1	STEEL COLUMN. PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.2	EXTERIOR METAL STAIRS WITH BAR GRATING TREADS. SEE DETAILS ON SHEET A4.04.
5.3	1-1/2" DIA., 42" HIGH, STEEL GUARDRAIL WITH HANDRAIL (WHERE APPLICABLE). PAINTED.
5.7	STEEL COLUMNS BY STAIR MANUFACTURER.
5.8	GLAZED DECORATIVE METAL RAILING.
5.27	OPERABLE EMERGENCY EGRESS GATE.
7.1	3" X 4" PREFINISHED METAL DOWNSPOUT. CONNECT TO STORM SYSTEM WITH BOOT. SEE CIVIL DRAWINGS.



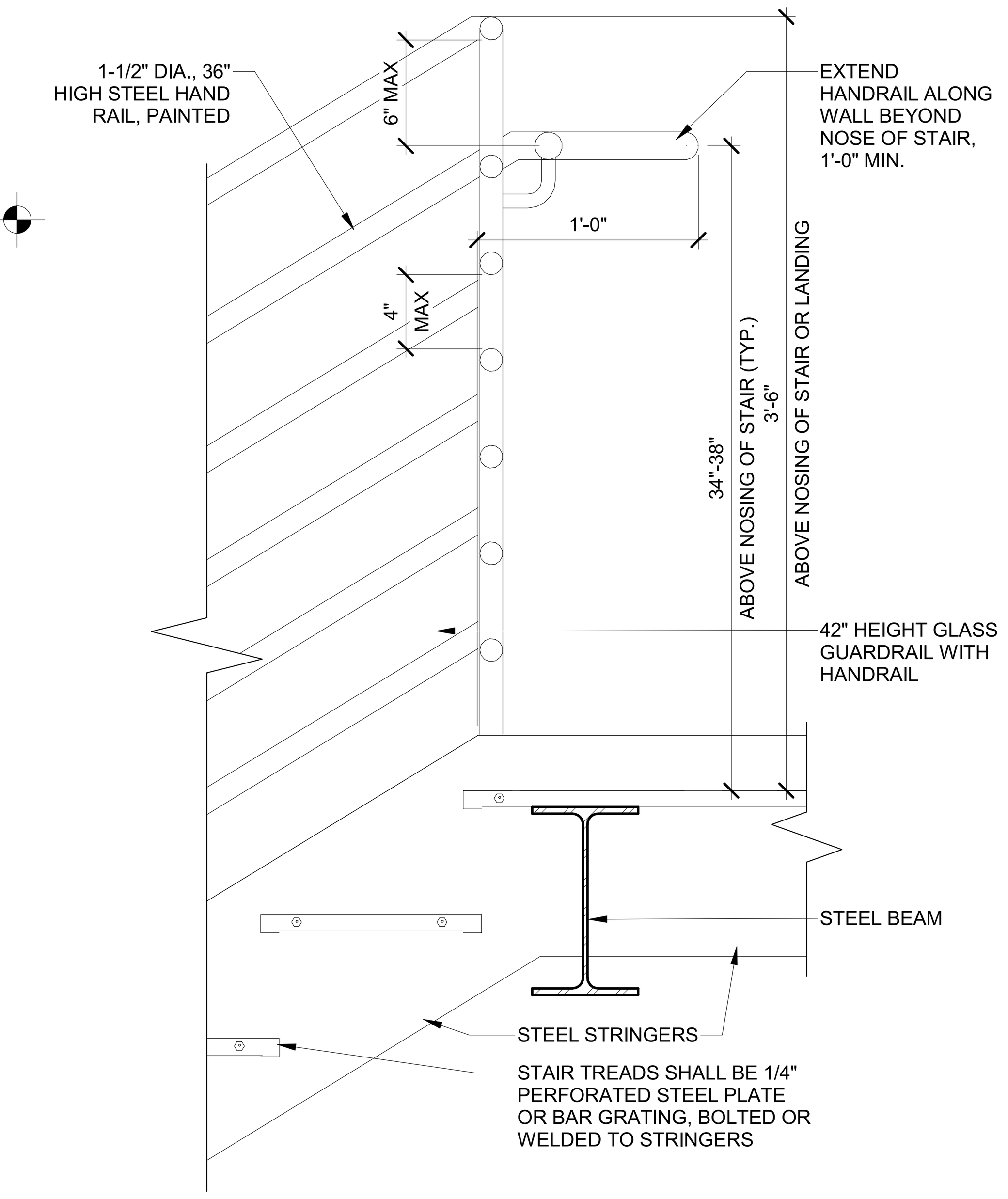
3 **EXTERIOR STAIR SECTION**
A4.04 1/2" = 1'-0"



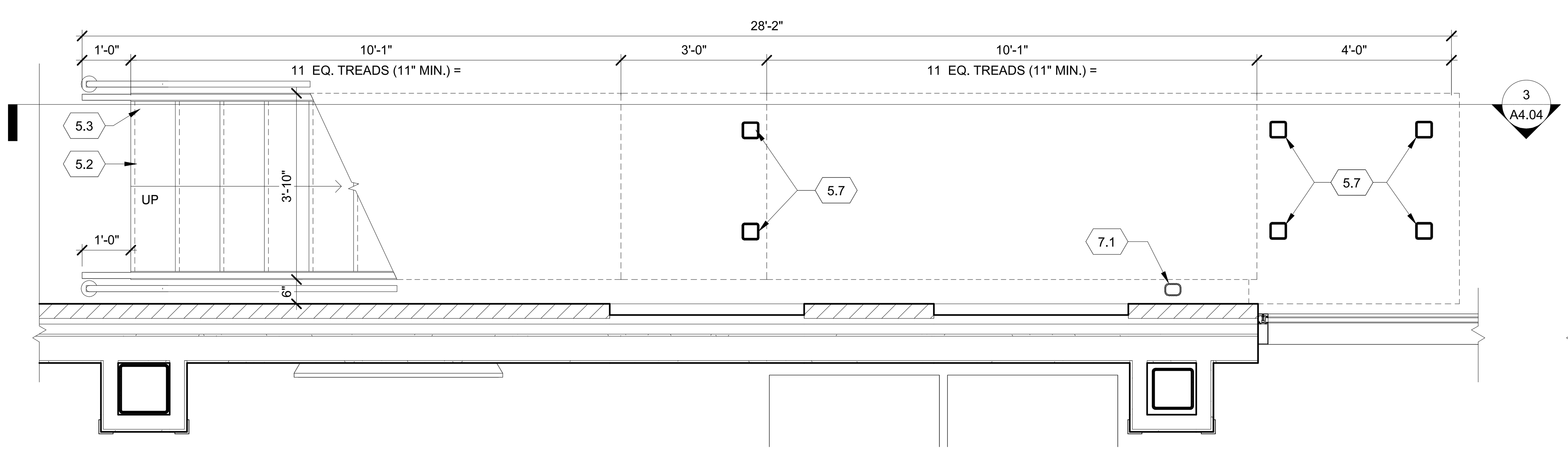
6 **STEEL PUSH GATE DETAIL**
A4.04 1" = 1'-0"



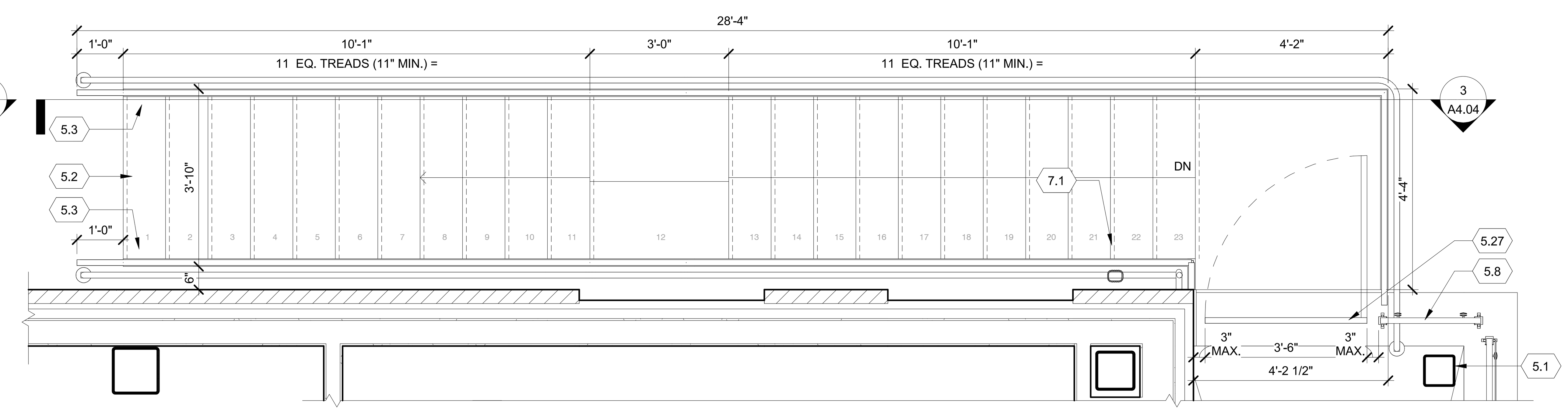
4 **STEEL STAIR DETAIL**
A4.04 1 1/2" = 1'-0"



5 **STEEL STAIR DETAIL**
A4.04 1 1/2" = 1'-0"



1 **ENLARGED FIRST FLOOR EXTERIOR STAIR PLAN**
A4.04 1/2" = 1'-0"



2 **ENLARGED SECOND FLOOR EXTERIOR STAIR PLAN**
A4.04 1/2" = 1'-0"

5/31/2024 12:22:23 PM

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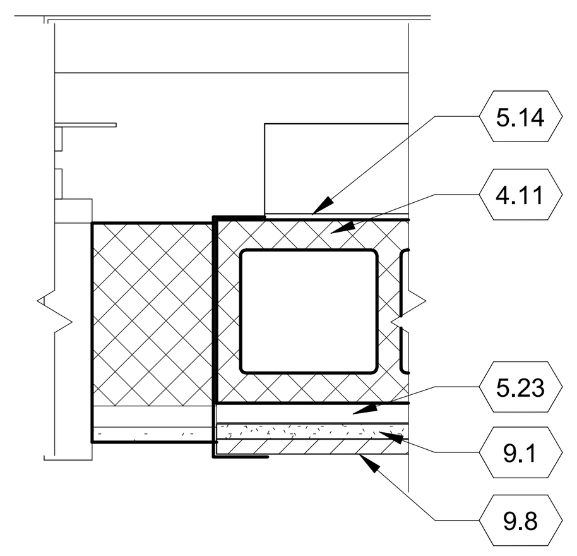
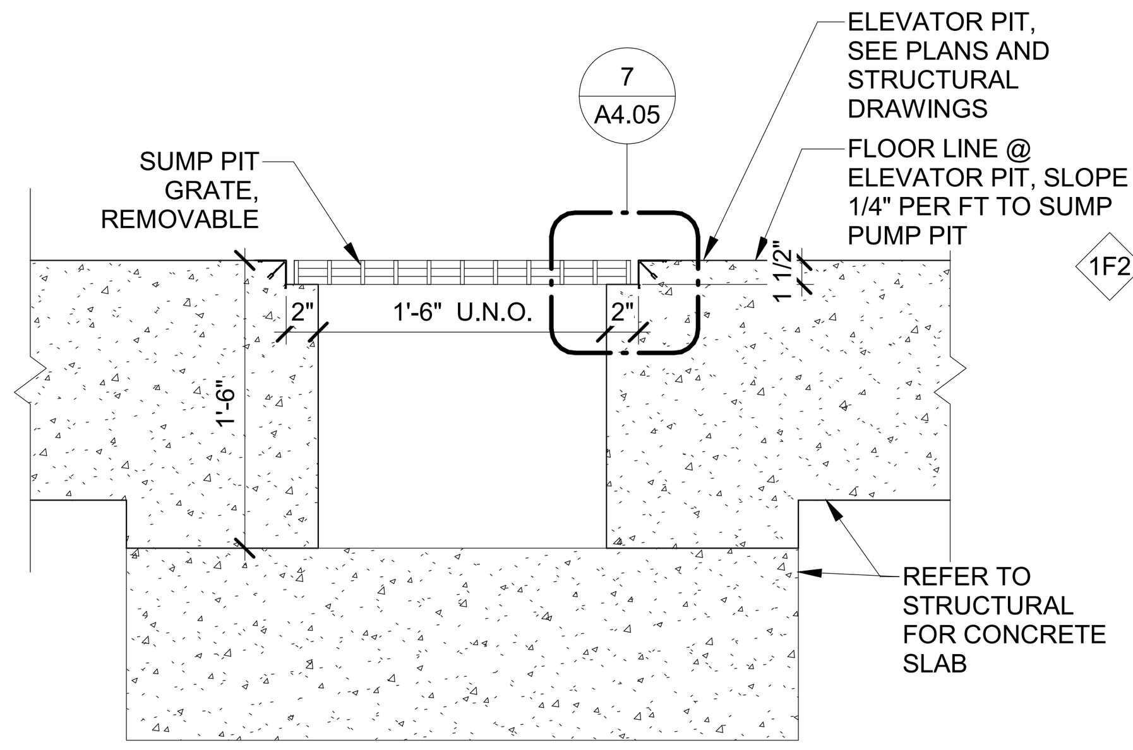
NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

EXTERIOR STAIR PLANS AND DETAILS

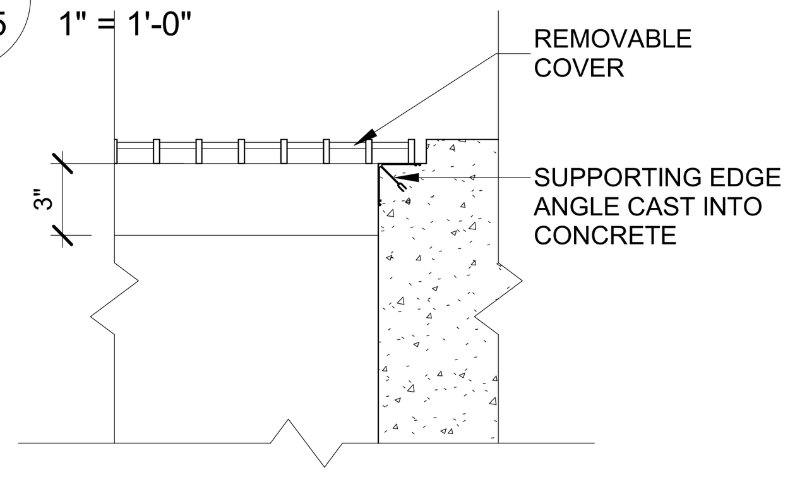
SCALE: As indicated
CONTRACT NO: 220656
SHEET
A4.04



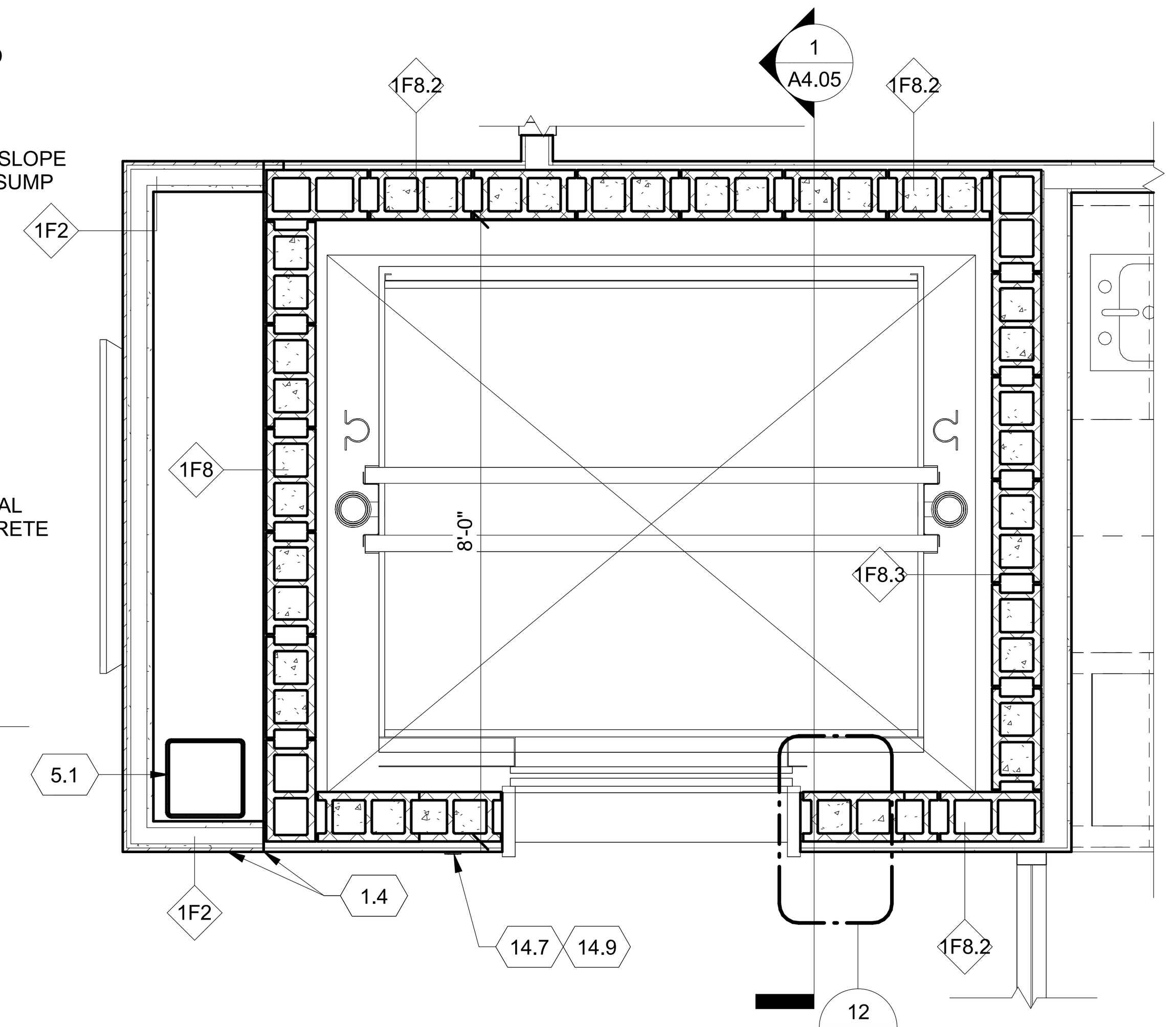
ELEVATOR DOOR JAMB DETAIL
12 A4.05 1 1/2" = 1'-0"



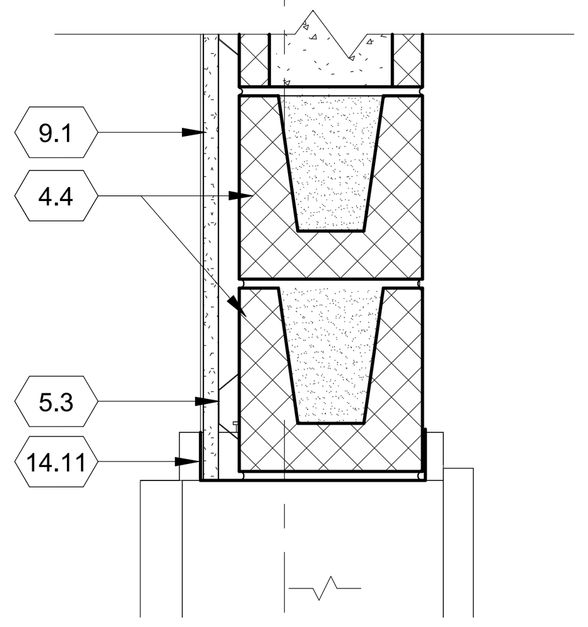
ELEVATOR SUMP SECTION
8 A4.05 1" = 1'-0"



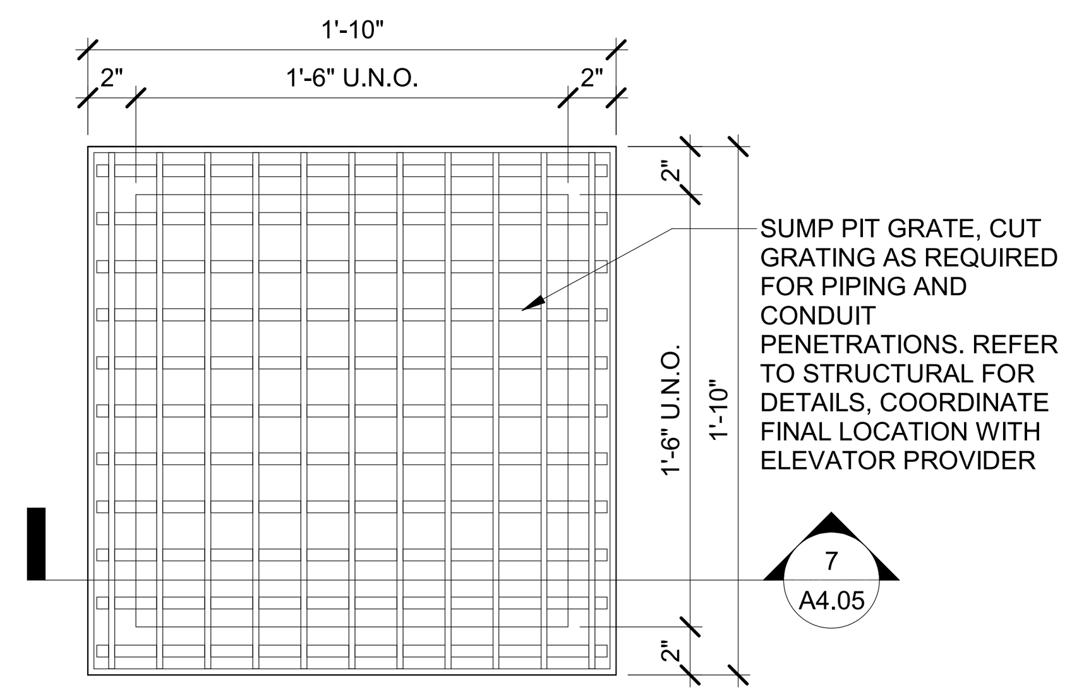
ELEVATOR SUMP COVER
7 A4.05 1 1/2" = 1'-0"



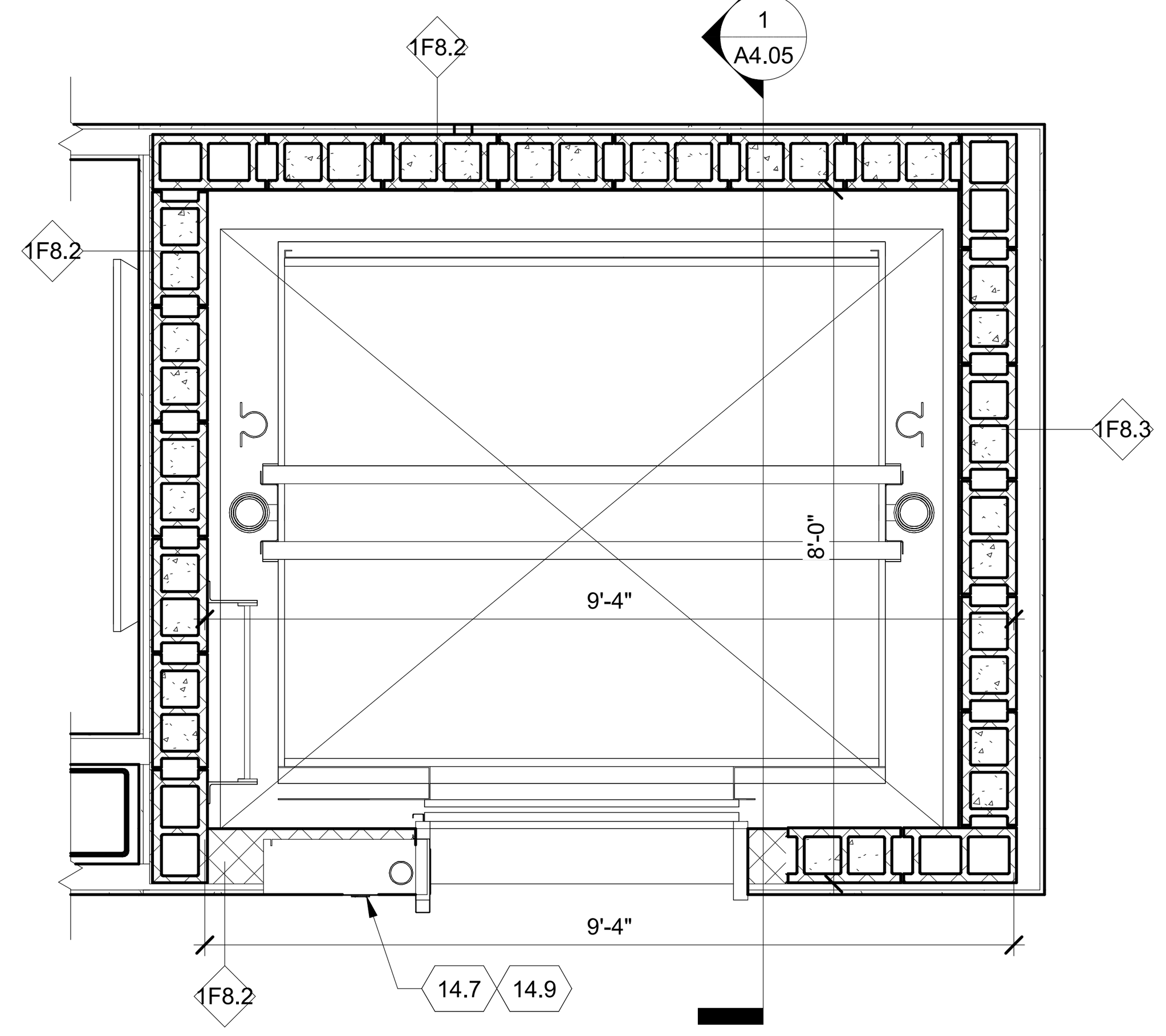
ENLARGED SECOND FLOOR ELEVATOR PLAN
4 A4.05 1/2" = 1'-0"



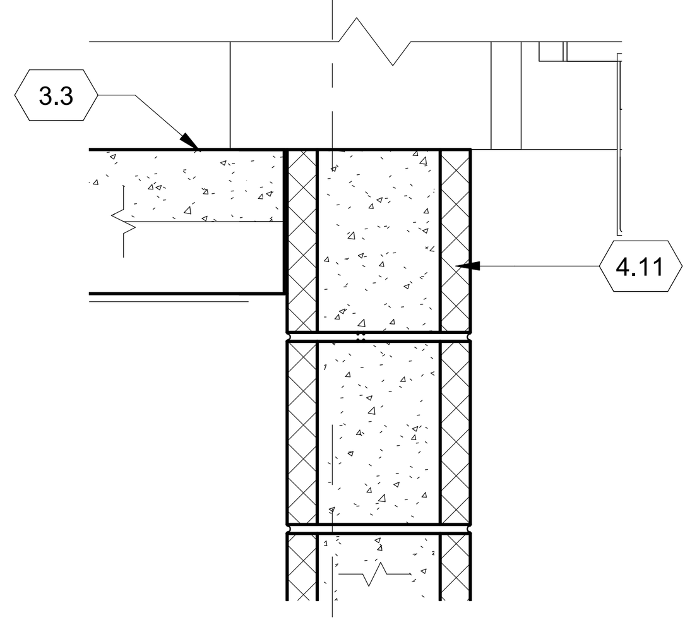
ELEVATOR DOOR HEAD DETAIL
11 A4.05 1 1/2" = 1'-0"



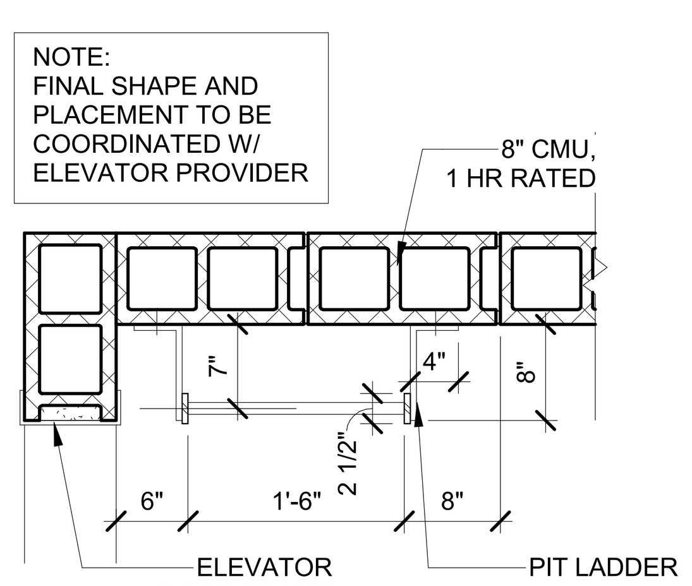
ELEVATOR SUMP PIT PLAN
6 A4.05 1 1/2" = 1'-0"



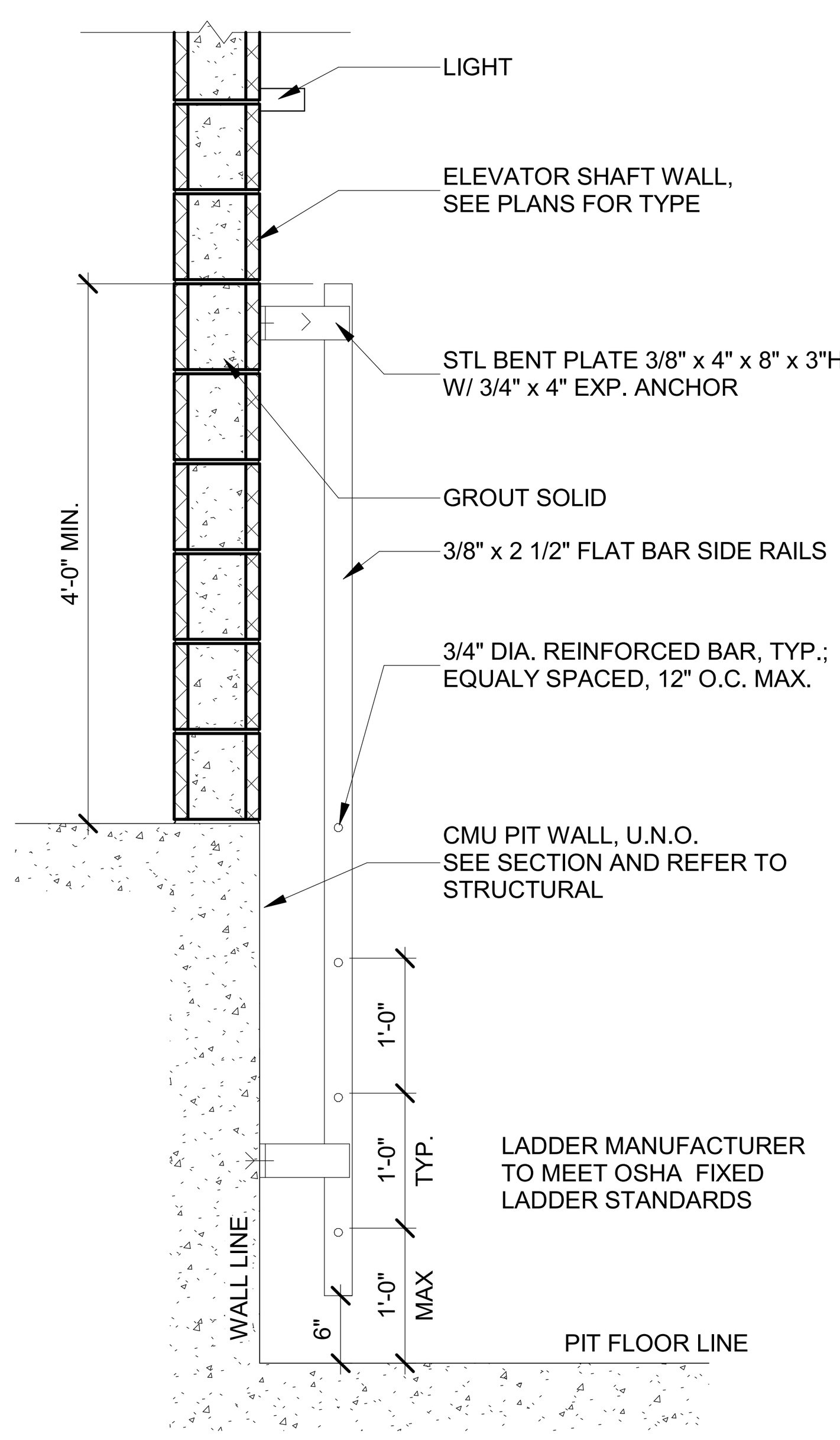
ENLARGED FIRST FLOOR ELEVATOR PLAN
3 A4.05 1/2" = 1'-0"



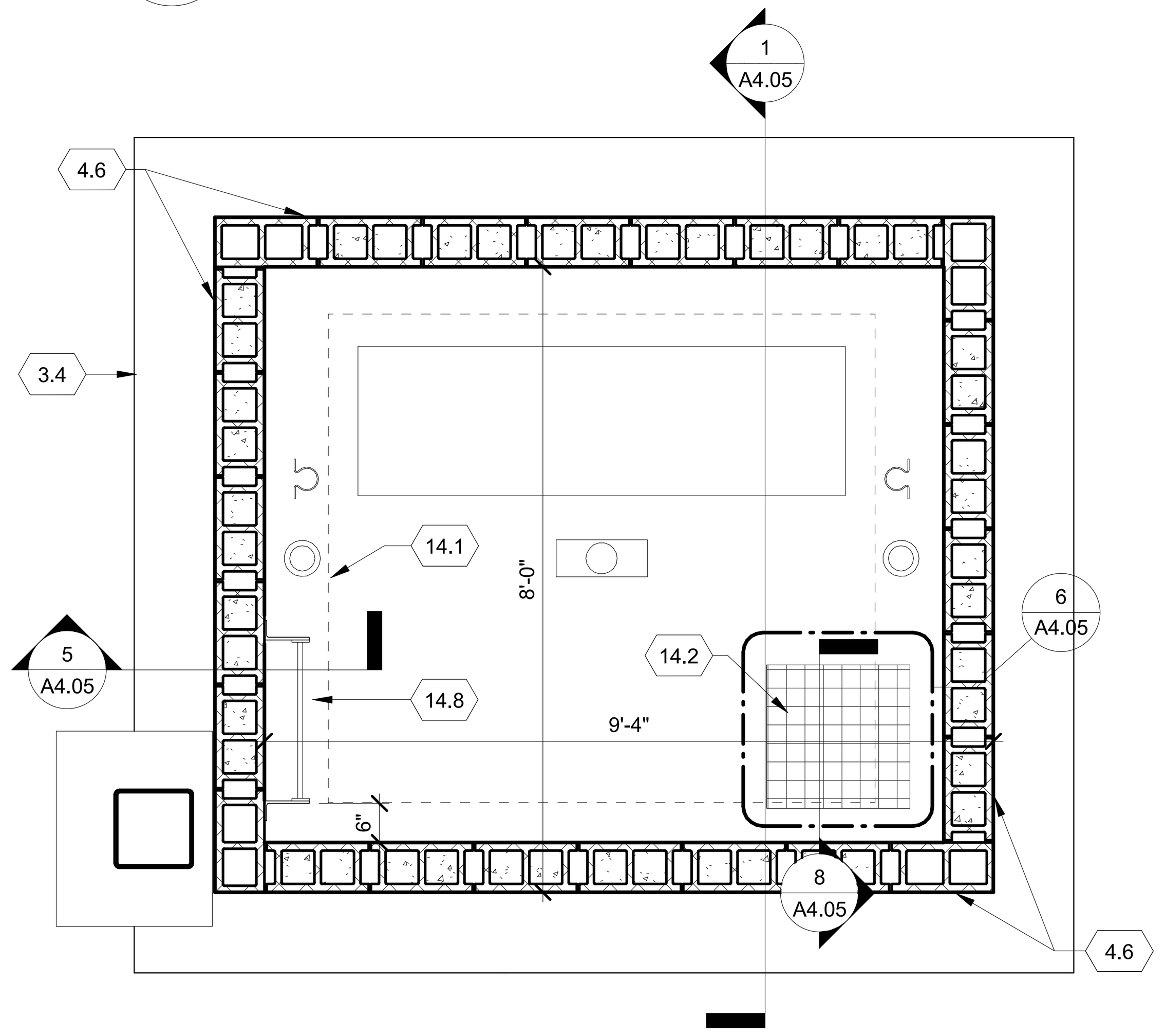
ELEVATOR DOOR SILL DETAIL
10 A4.05 1 1/2" = 1'-0"



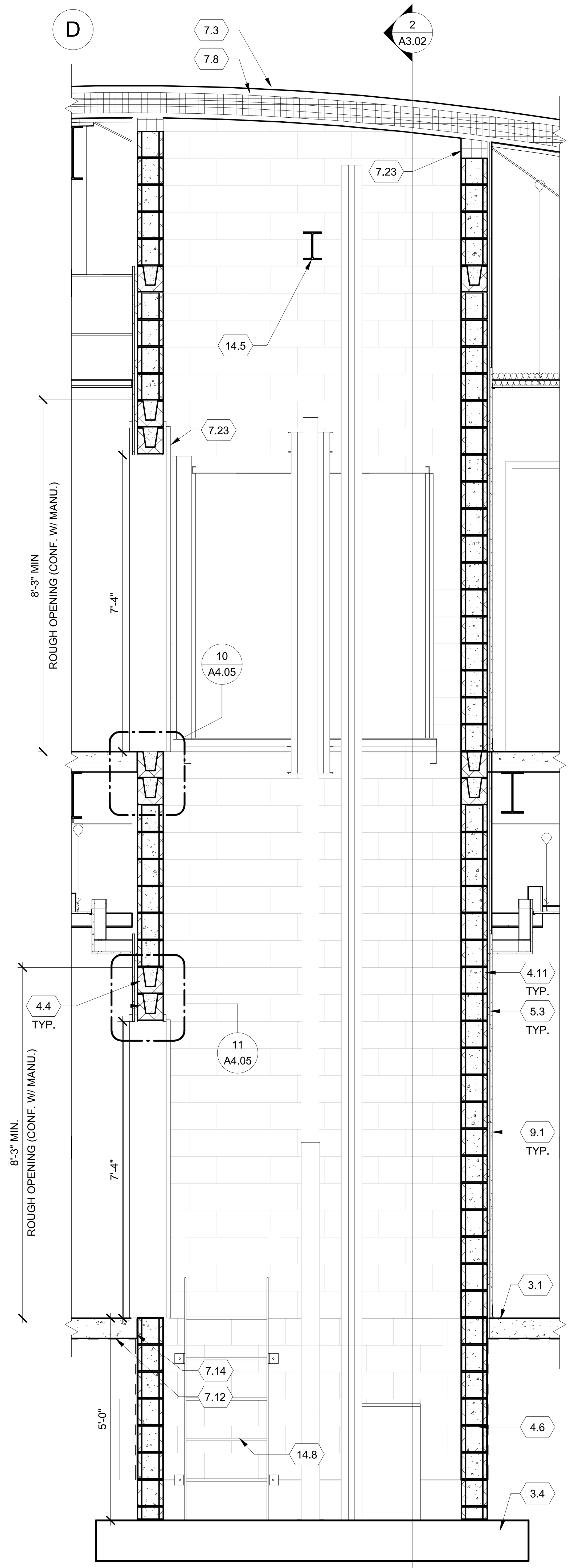
ELEVATOR PIT LADDER PLAN
9 A4.05 3/4" = 1'-0"



ELEVATOR PIT LADDER SECTION
5 A4.05 3/4" = 1'-0"



ENLARGED ELEVATOR PIT PLAN
2 A4.05 1/2" = 1'-0"



ELEVATOR SECTION
1 A4.05 1/2" = 1'-0"

KEYNOTES

1.4	ALIGN WALLS THIS SIDE.
3.1	CONCRETE SLAB-ON-GRADE OVER GRANULAR BASE AND VAPOR BARRIER. SEE STRUCTURAL DRAWINGS.
3.3	CONCRETE SLAB OVER METAL DECK. SEE STRUCTURAL DRAWINGS.
3.4	CONCRETE FOOTING. SEE STRUCTURAL DRAWINGS.
4.4	MASONRY LINTEL. SEE STRUCTURAL DRAWINGS.
4.6	CONCRETE MASONRY UNIT FOUNDATION. PROVIDE BRICK LEDGE WHERE APPLICABLE AND GROUT CAVITY BETWEEN BRICK AND CMU. SEE STRUCTURAL DRAWINGS.
4.11	8" CMU, GROUT SOLID.
5.1	STEEL COLUMN. PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.3	1-1/2" DIA., 42" HIGH, STEEL GUARDRAIL WITH HANDRAIL (WHERE APPLICABLE). PAINTED.
5.14	STEEL ANGLE, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.23	7/8" METAL FURRING STRIPS. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
7.3	STANDING-SEAM METAL ROOF.
7.8	6" POLYISOCYANURATE ROOF INSULATION (R-38 MIN.); THREE LAYERS OF 2" WITH SEAMS STAGGERED.
7.12	COLD FLUID-APPLIED WATERPROOFING ON FACE.
7.14	EXPANSION JOINT FILLER MATERIAL AND/OR JOINT SEALANT.
7.23	SEAL TOP OF WALL TIGHT TO DECK WITH FIRE SAFING INSULATION AND RATED SEALANT TO MAINTAIN RATING.
9.1	5/8" GYPSUM BOARD.
9.8	FRT WOOD PANELING.
14.1	ELEVATOR.
14.2	SUMP IN PIT BELOW ELEVATOR CAR. SIZE AND LOCATION AS REQUIRED BY ELEVATOR MANUFACTURER. COORDINATE WITH PLUMBING AND STRUCTURAL DRAWINGS.
14.5	W8 SAFETY BEAM, MAINTAIN 2" CLEAR AT TOP OF BEAM. COORDINATE WITH ELEVATOR SUPPLIER AND STRUCTURAL DRAWINGS.
14.7	ELEVATOR CALL BUTTON.
14.8	ELEVATOR PIT LADDER.
14.9	ELEVATOR SIGNAGE BY OTHERS.
14.11	ELEVATOR HEAD TRIM.

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CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

ELEVATOR PLANS AND DETAILS

SCALE: As indicated
CONTRACT NO: 220656
SHEET A4.05

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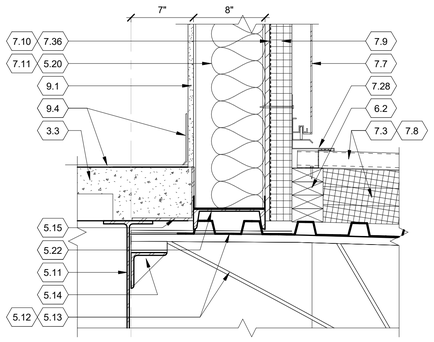
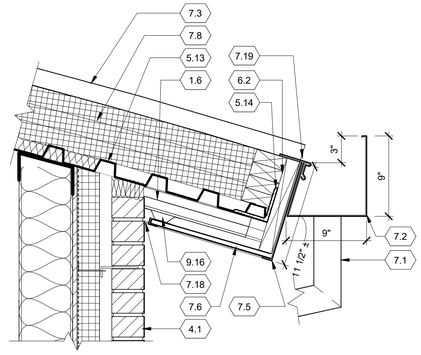
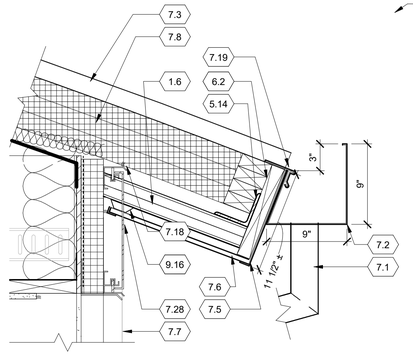


13 A5.01 **SECTION DETAIL**
1 1/2" = 1'-0"



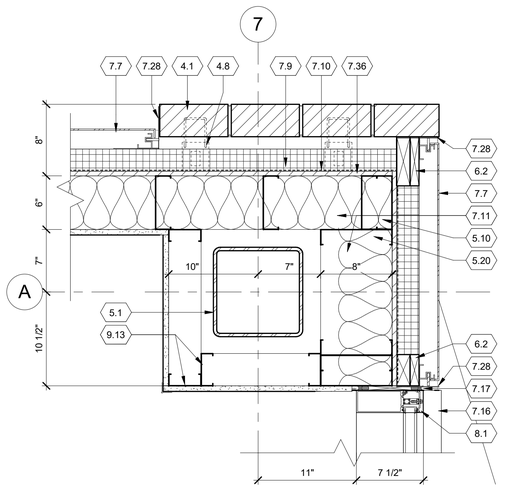
12 A5.01 **SECTION DETAIL**
1 1/2" = 1'-0"



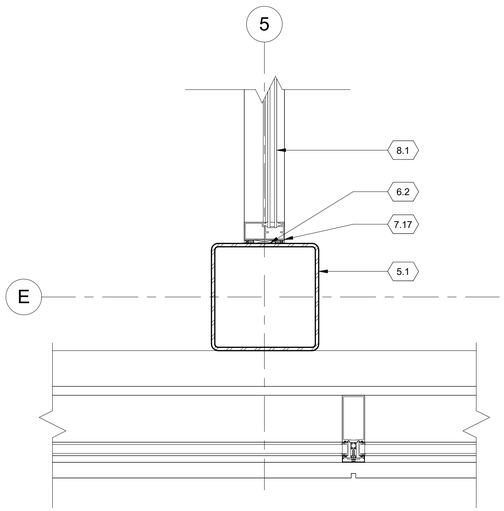
11 A5.01 **SECTION DETAIL**
1 1/2" = 1'-0"

KEYNOTES

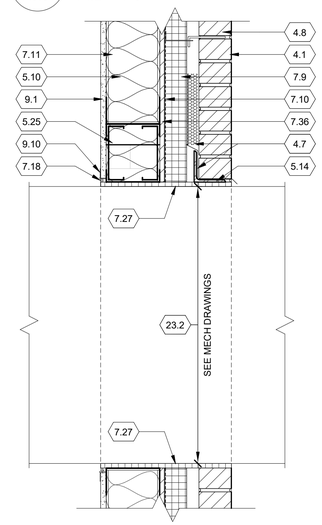
1.6 STEEL TOP CHORD EXTENSION OR ROOF OVERHANG. SEE STRUCTURAL DRAWINGS.
3.3 CONCRETE SLAB OVER METAL DECK. SEE STRUCTURAL DRAWINGS.
4.1 4" (NOM.) MASONRY BRICK VENEER.
4.7 CONTINUOUS THROUGH-WALL FLASHING, CAVITY DRAINAGE MATERIAL (WHERE APPLICABLE), AND WEEP VENTS (24" O.C. MAX.).
4.8 MASONRY TIES.
4.11 8" CMU, GROUT SOLID.
5.1 STEEL COLUMN. PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.9 EXPOSED STEEL COLUMN, PAINTED. SEE STRUC. DRAWINGS.
5.10 6" METAL STUD FRAMING. SEE STRUC. DRAWINGS.
5.11 STEEL BEAM, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.12 STEEL ROOF JOIST, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.13 STEEL ROOF DECK, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.14 STEEL ANGLE, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.15 BENT PLATE AT SLAB PERIMETER. SEE STRUC. DRAWINGS.
5.18 PERIMETER EDGE PLATE. SEE STRUCTURAL DRAWINGS.
5.20 8" METAL STUD FRAMING. SEE STRUCTURAL DRAWINGS.
5.22 STEEL CHANNEL. SEE STRUC. DRAWINGS.
5.25 BOX HEADER. SEE STRUCTURAL DRAWINGS.
6.1 SOLID SURFACE WINDOWSILL.
6.2 FIRE-RETARDANT TREATED 2X WOOD BLOCKING.
7.1 3" X 4" PREFINISHED METAL DOWNSPOUT. CONNECT TO STORM SYSTEM WITH BOOT, SEE CIVIL DRAWINGS.
7.2 9" X 9" PREFINISHED METAL GUTTER. SEE DETAILS.
7.3 STANDING-SEAM METAL ROOF.
7.5 PREFINISHED METAL FASCIA.
7.6 PREFINISHED LINEAR METAL SOFFIT PANELS.
7.7 ALUMINUM COMPOSITE PANEL SYSTEM.
7.8 6" POLYISOCYANURATE ROOF INSULATION (R-38 MIN.); THREE LAYERS OF 2" WITH SEAMS STAGGERED.
7.9 2-1/2" THICK CONTINUOUS INSULATION (R-12.5 MIN.).
7.10 FLUID APPLIED MEMBRANE AIR BARRIER PER MANUFACTURER'S RECOMMENDATIONS.
7.11 ±6" THICK (R-19 MIN.), MEMBRANE FACED (VAPOR BARRIER TO THE INSIDE) GLASS-FIBER BLANKET INSULATION.
7.16 WINDOWSILL FLASHING, MATCH ALUMINUM ASSEMBLY FINISH.
7.17 PERIMETER JOINT SEALANT WITH BACKER ROD.
7.18 JOINT SEALANT.
7.19 DRIP EDGE.
7.27 FILL SPACE BETWEEN DUCT AND WALL WITH SPRAY FOAM INSULATION.
7.28 FLASHING.
7.36 FIBERGLASS-MAT GYPSUM SHEATHING.
8.1 ALUMINUM CURTAIN WALL SYSTEM. SEE ALUMINUM ASSEMBLIES AND DETAILS SHEETS.
8.4 ORNAMENTAL LOCKABLE ACCESS GATE.
9.1 5/8" GYPSUM BOARD.
9.4 FLOOR FINISH AND/OR FLOOR BASE, SEE "I" FINISH SHEETS.
9.9 7/8" METAL FURRING CHANNEL.
9.10 GYPSUM BOARD TRIM (J, L, F, OR CORNER TRIM), PAINTABLE.
9.13 3-5/8" METAL STUD.
9.16 ATTACH SOFFIT PANELS TO UNDERSIDE OF ROOF JOISTS WITH 7/8" METAL FURRING CHANNEL. COORDINATE ADDITIONAL LIGHT GAUGE FRAMING WHERE REQUIRED FOR INSTALLATION.
10.6 STAINLESS STEEL CORNER GUARD - 6'-0" HIGH (TYP).
23.2 MECHANICAL DUCT THROUGH-WALL PENETRATION, COORDINATE SIZE AND LOCATION. SEE MECHANICAL DRAWINGS.



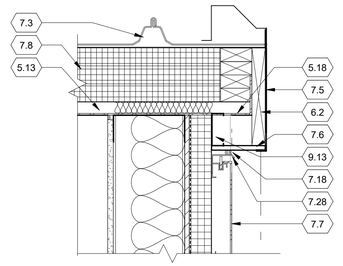
7 A5.01 **PLAN DETAIL**
1 1/2" = 1'-0"



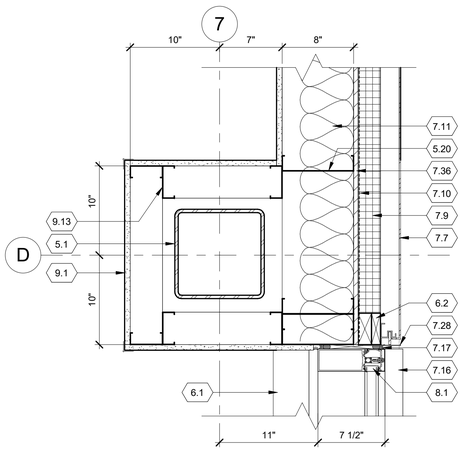
8 A5.01 **PLAN DETAIL**
1 1/2" = 1'-0"



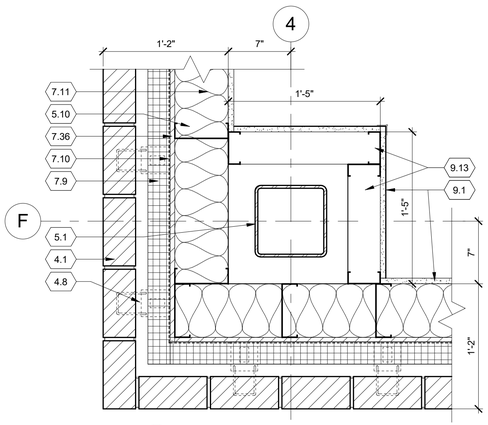
DUCT PENETRATION SECTION DETAIL
9 A5.01 1 1/2" = 1'-0"



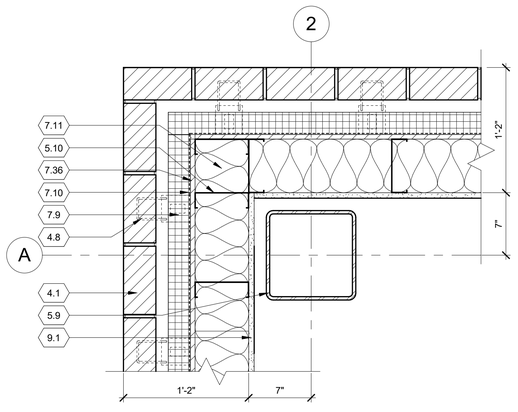
10 A5.01 **SECTION DETAIL**
1 1/2" = 1'-0"



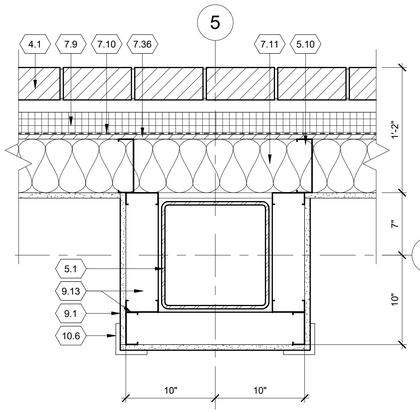
6 A5.01 **PLAN DETAIL**
1 1/2" = 1'-0"



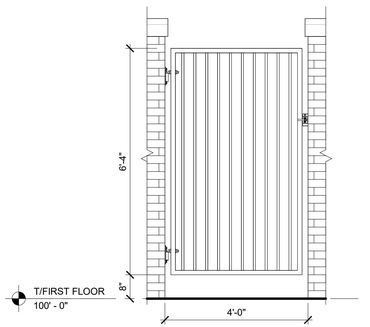
5 A5.01 **PLAN DETAIL**
1 1/2" = 1'-0"



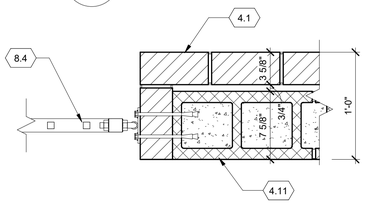
4 A5.01 **PLAN DETAIL**
1 1/2" = 1'-0"



TYPICAL INTERIOR COLUMN WRAP DETAIL
3 A5.01 1 1/2" = 1'-0"



2 A5.01 **GATE ELEVATION**
1/2" = 1'-0"



1 A5.01 **GATE DETAIL**
1 1/2" = 1'-0"

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1825 LOST NATION ROAD, WILLOUGHBY, OHIO

PLAN AND SECTION DETAILS

SCALE: As indicated
CONTRACT NO: 220656
SHEET A5.01

5/31/2024 12:22:31 PM

DOOR SCHEDULE

ABBREVIATIONS

AL	ALUMINUM
AN	ANODIZED
EXT.	EXTERIOR
FF	FACTORY FINISHED
FP	FIELD PAINTED
G#	GLASS TYPE
HM	HOLLOW METAL
SCW	SOLID CORE WOOD

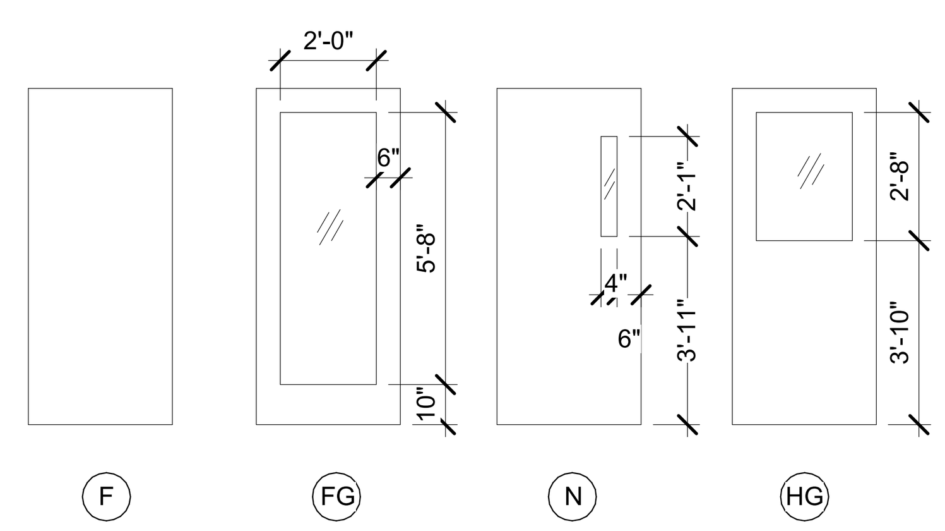
GLAZING

G1	1/4" CLEAR GLASS
G2	1/4" CLEAR, TEMPERED GLASS
G3	1" CLEAR, LOW E, INSULATED GLASS
G4	1" CLEAR, LOW E, TEMPERED, INSULATED GLASS

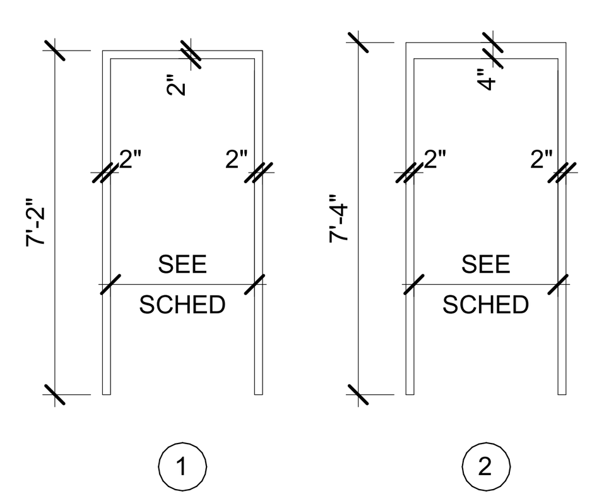
REMARKS

1. COORDINATE DOOR OPERATOR.
2. ELECTRIFIED DOOR AND HARDWARE.
3. COORDINATE DOOR HEIGHT AS REQUIRED WITH ALUMINUM ASSEMBLY.

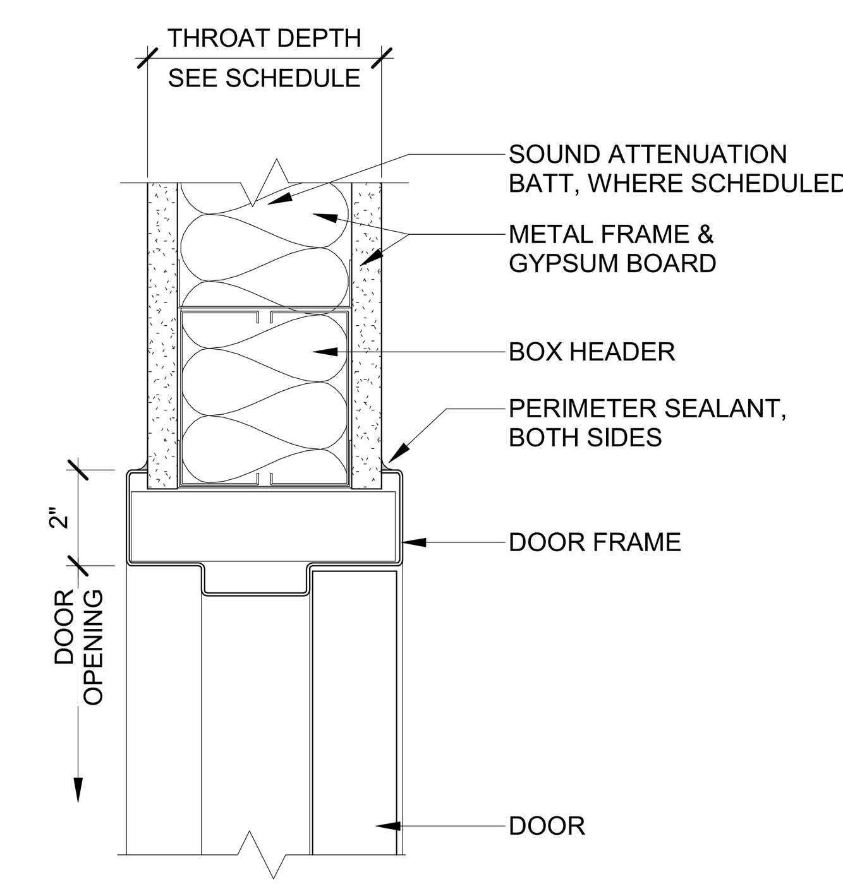
	DOOR								FRAME							HARDWARE		
	SIZE																	
MARK	W	H	T	RATING (MIN)	TYPE	MATERIAL	FINISH	GLAZING	TYPE	MATERIAL	FINISH	THROAT DEPTH (IN)	HEAD	JAMB	SILL	HARDWARE SET	KEYSIDE ROOM #	REMARKS
100A	6'-0"	7'-0"	1 3/4"	-	FG	AL	AN	G4	-	AL	AN	8"	-	-	S2	1	EXT.	1.
100B	6'-0"	7'-0"	1 3/4"	-	FG	AL	AN	G2	-	AL	AN	8"	-	-	S1	1	100	1.
104	3'-0"	7'-0"	1 3/4"	-	F	SCW	FF	-	1	HM	PT	4 7/8"	H1	J1	S1	2	103	
107	3'-0"	7'-0"	1 3/4"	-	N	HM	PT	G4	2	HM	PT	4 7/8"	H2	J2	S2	5	EXT.	
108	3'-0"	7'-0"	1 3/4"	-	F	SCW	FF	-	1	HM	PT	4 7/8"	H1	J1	S4	4	107	
109	3'-0"	7'-0"	1 3/4"	-	F	SCW	FF	-	1	HM	PT	4 7/8"	H1	J1	S1	2	103	
110A	12'-8"	8'-0"	1 3/4"	-	FG	AL	AN	G4	-	AL	AN	-	-	-	S2	11	EXT.	
110B	12'-8"	8'-0"	1 3/4"	-	FG	AL	AN	G2	-	AL	AN	-	-	-	S1	11	106	
111	3'-0"	7'-0"	1 3/4"	-	F	SCW	FF	-	1	HM	PT	4 7/8"	H1	J1	S4	3	110	
112	3'-0"	7'-0"	1 3/4"	-	F	SCW	FF	-	1	HM	PT	4 7/8"	H1	J1	S4	3	110	
202	3'-0"	7'-0"	1 3/4"	-	F	SCW	FF	-	1	HM	PT	4 7/8"	H1	J1	S1	8	201	
202A	3'-0"	7'-0"	1 3/4"	-	F	SCW	FF	-	1	HM	PT	4 7/8"	H1	J1	S1	10	201	
203	3'-0"	7'-0"	1 3/4"	-	F	SCW	FF	-	1	HM	PT	4 7/8"	H1	J1	S4	4	201	
204	6'-0"	7'-0"	1 3/4"	-	F	SCW	FF	-	1	HM	PT	4 7/8"	H1	J1	S1	7	201	
205A	3'-0"	7'-0"	1 3/4"	-	F	SCW	FF	-	1	HM	PT	4 7/8"	H1	J1	S1	8	201	
205B	3'-0"	7'-0"	1 3/4"	-	FG	AL	AN	G4	-	AL	AN	8"	-	-	S2	6	EXT.	
206	3'-0"	7'-0"	1 3/4"	-	FG	AL	AN	G4	-	AL	AN	8"	-	-	S2	6	EXT.	
207	6'-0"	7'-0"	1 3/4"	-	FG	AL	AN	G2	-	AL	AN	4 1/2"	-	-	S1	9	201	



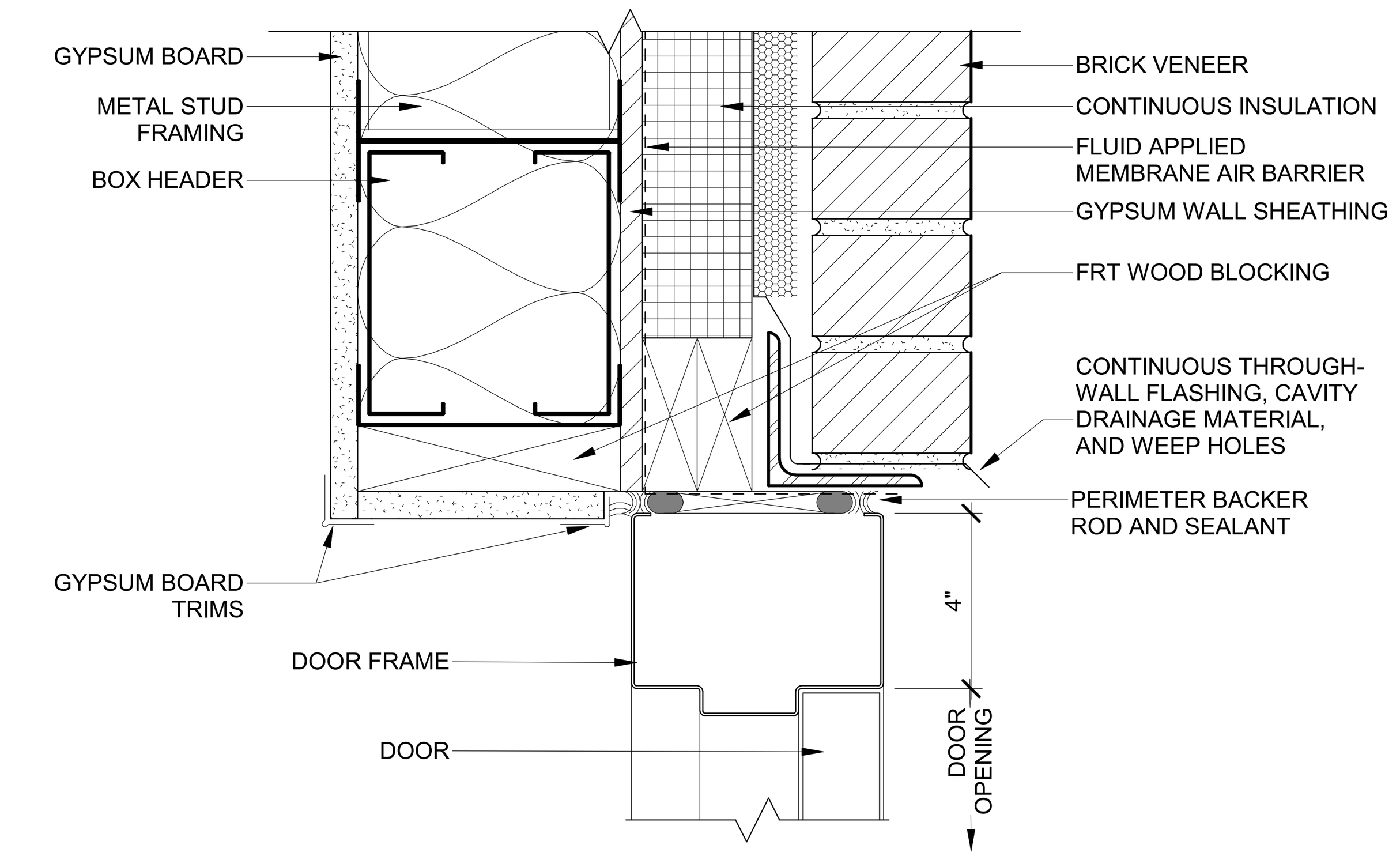
DOOR TYPES



DOOR FRAMES



H1 **HEAD**
A6.01 3" = 1'-0"



H2 **HEAD**
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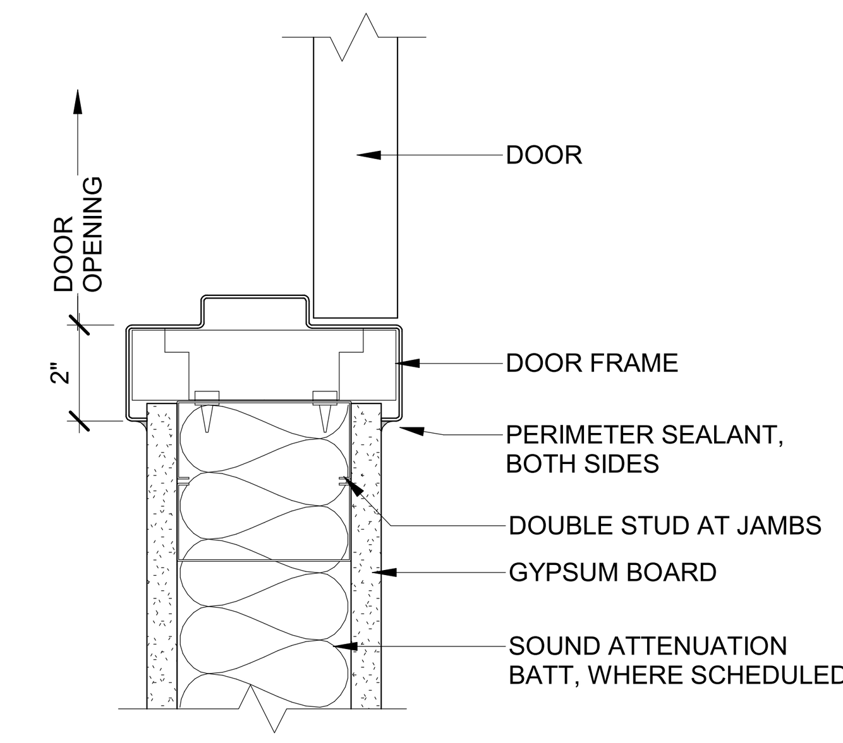
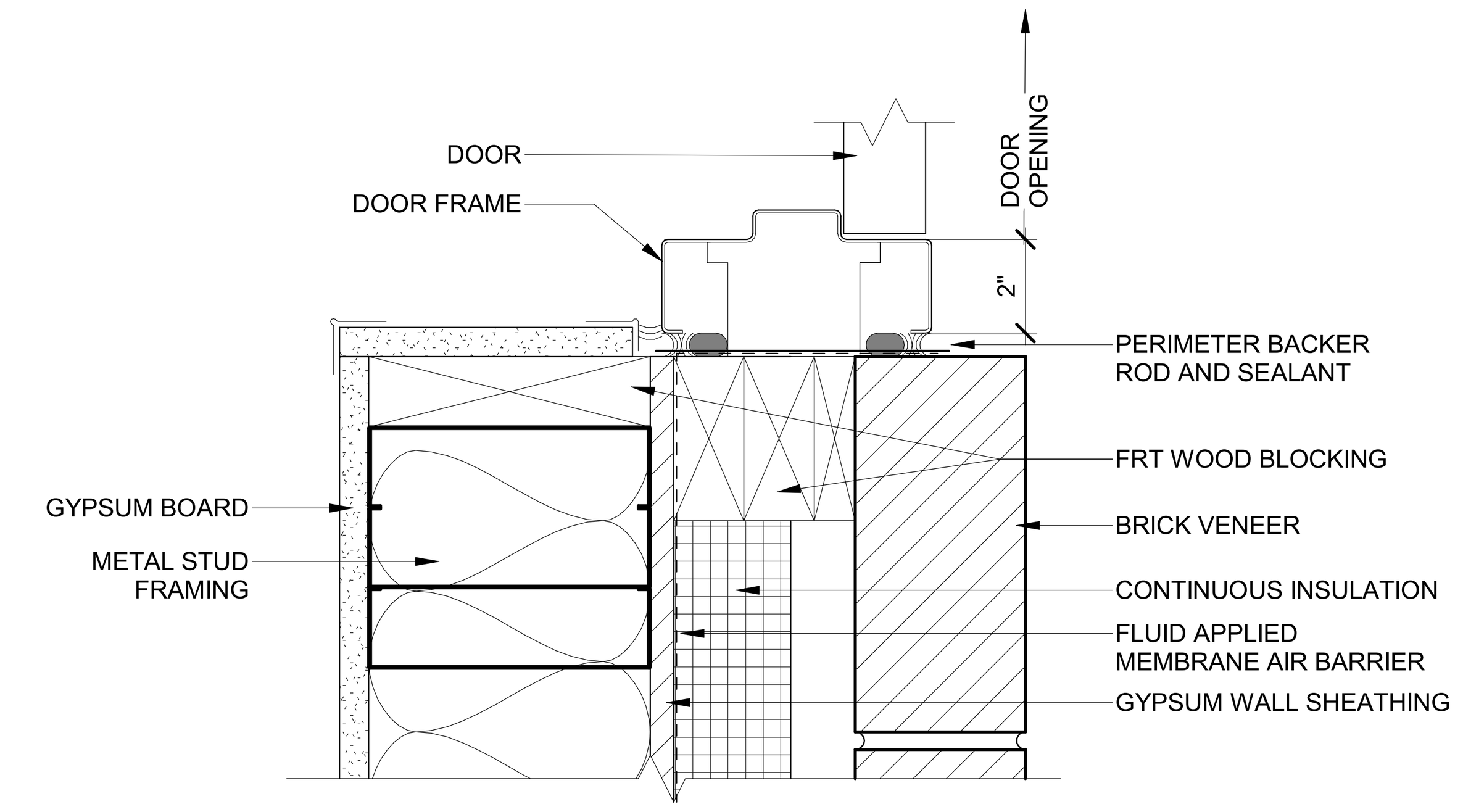


J1 **JAMB**
A6.01 3" = 1'-0"



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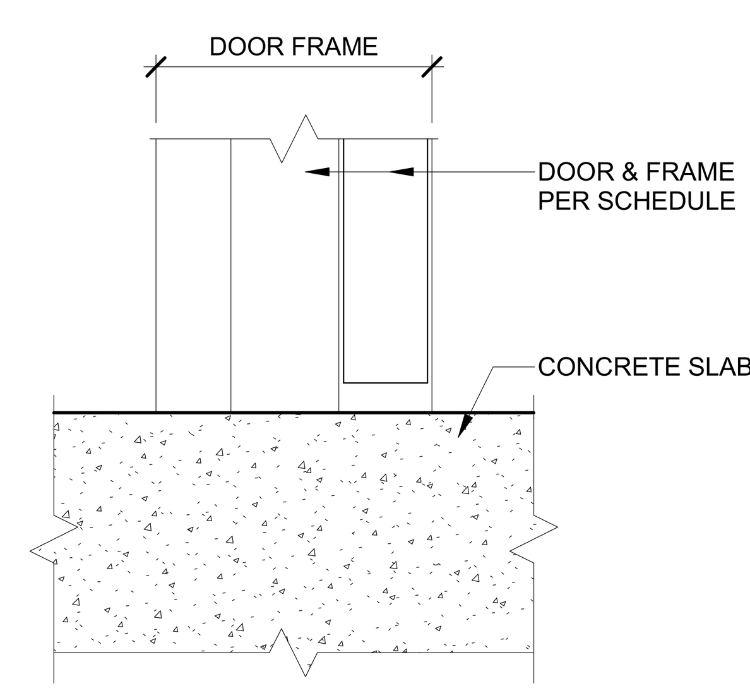
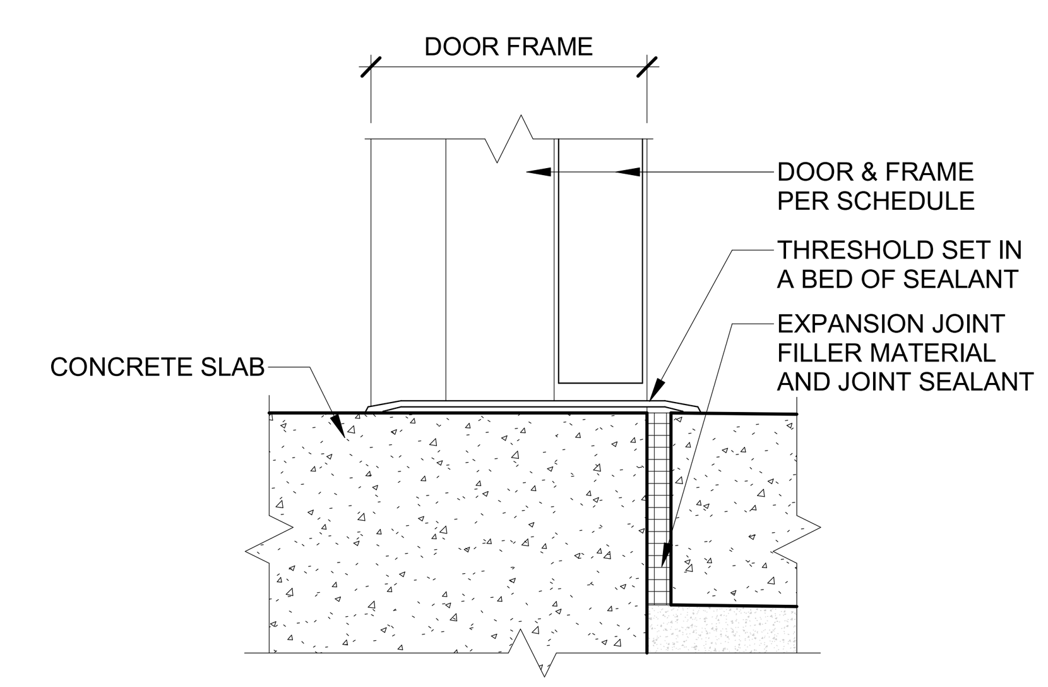


S1 **SILL**
A6.01 3" = 1'-0"



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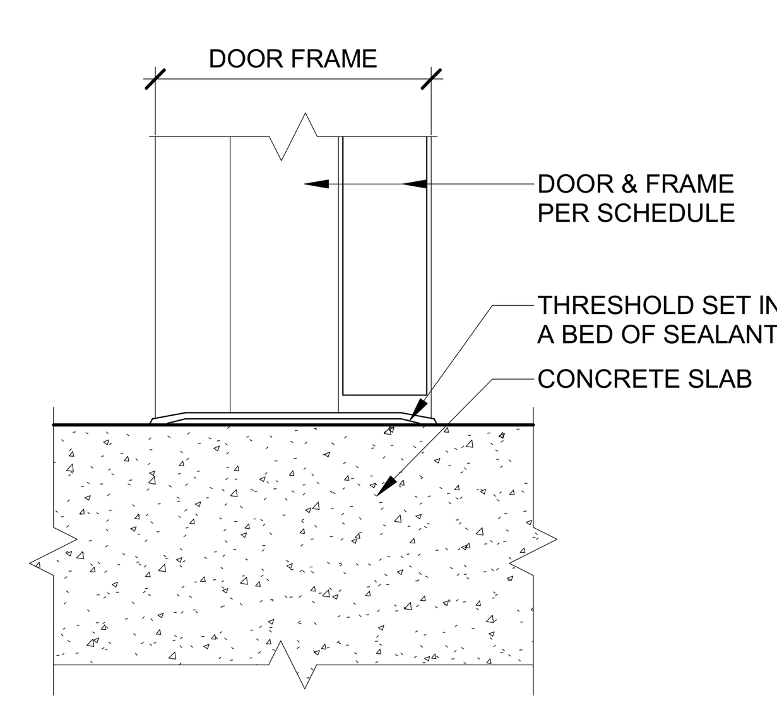
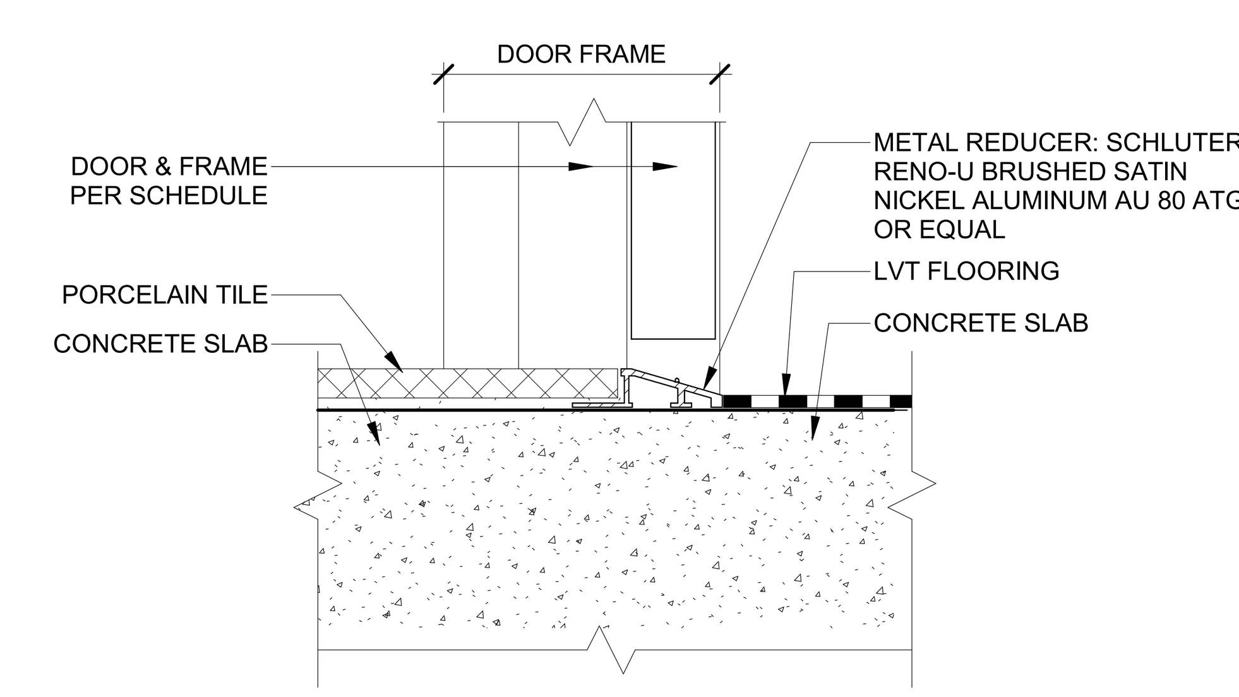
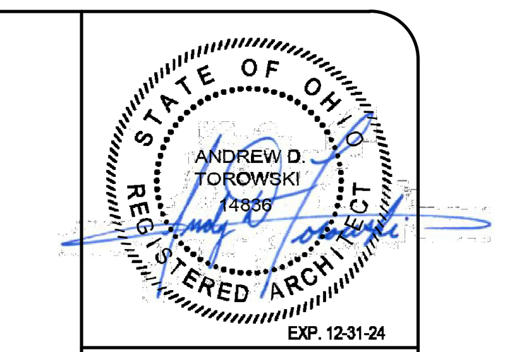


S3 **SILL**
A6.01 3" = 1'-0"



S4 **SILL**
A6.01 3" = 1'-0"



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REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	ATOR

DATE: 05/03/2024
DRAWN BY: DWUR
CHECKED BY: MDOU
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

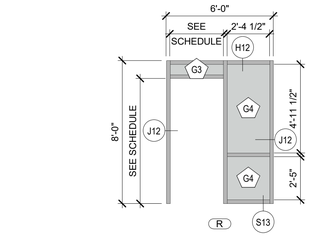
DOOR SCHEDULE AND DETAILS

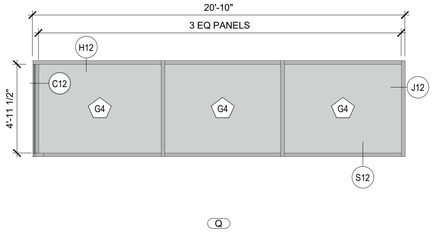
SCALE: As indicated
CONTRACT NO: 220656
SHEET A6.01

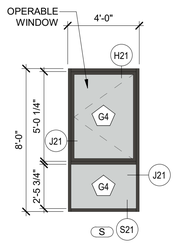
5/31/2024 12:22:33 PM

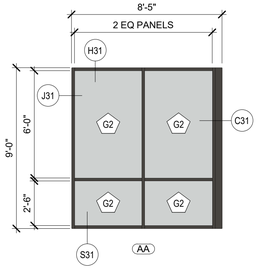
GLAZING

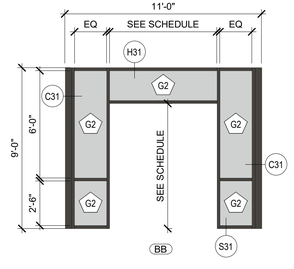
G1	1/4" CLEAR GLASS.
G2	1/4" CLEAR, TEMPERED GLASS.
G3	1" CLEAR, LOW E, INSULATED GLASS.
G4	1" CLEAR, LOW E, TEMPERED, INSULATED GLASS.

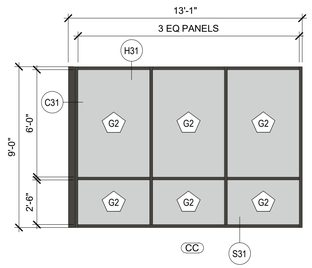


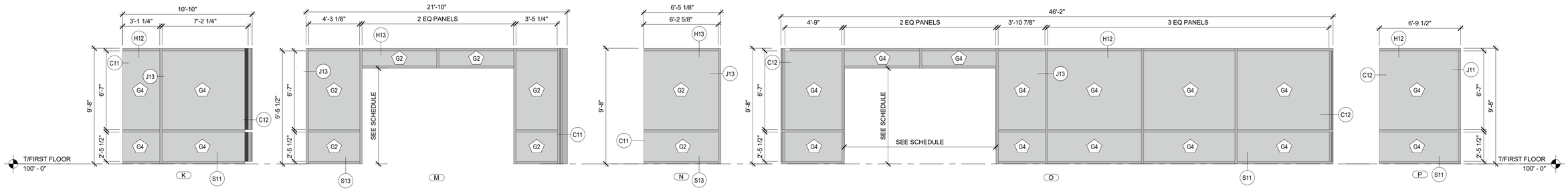


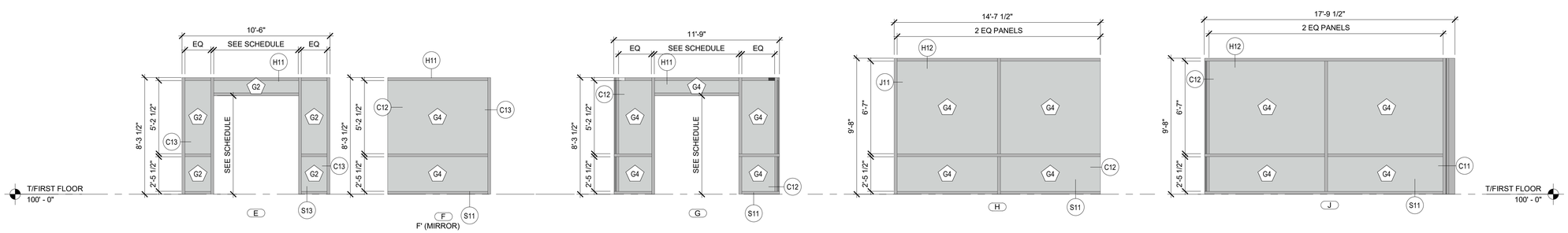


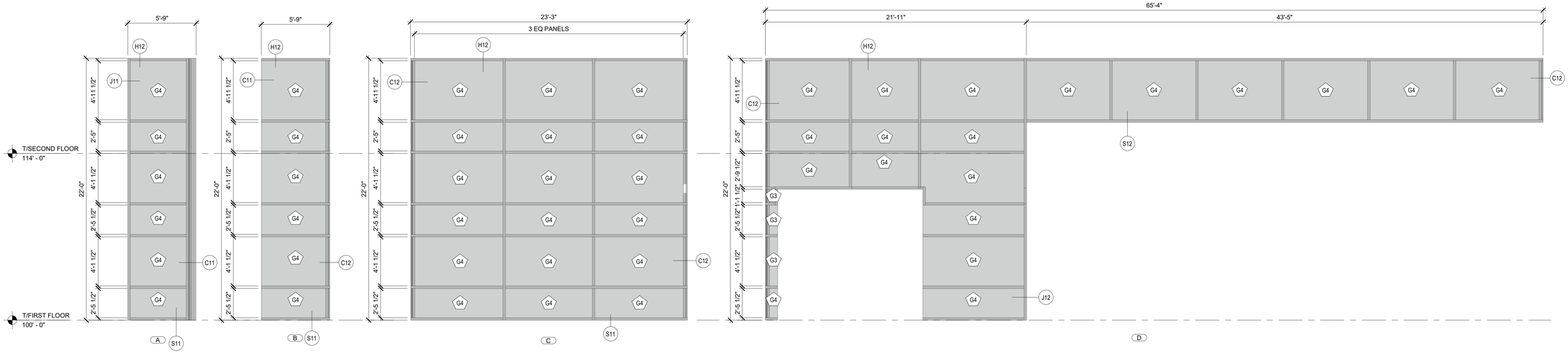












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STATE OF OHIO
REGISTERED ARCHITECT
EXP. 12-31-24

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REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/23/2024	ATOR

DATE: 05/03/2024
DRAWN BY: DVAUR
CHECKED BY: MDOU
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL

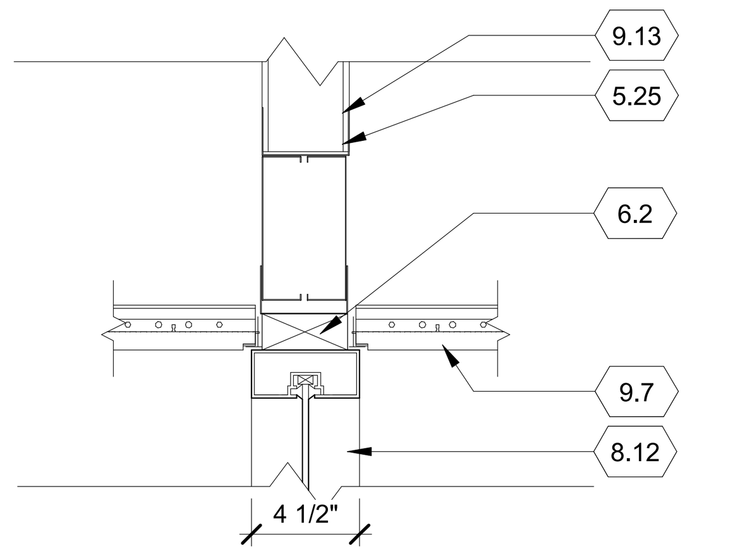
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

ALUMINUM ASSEMBLIES

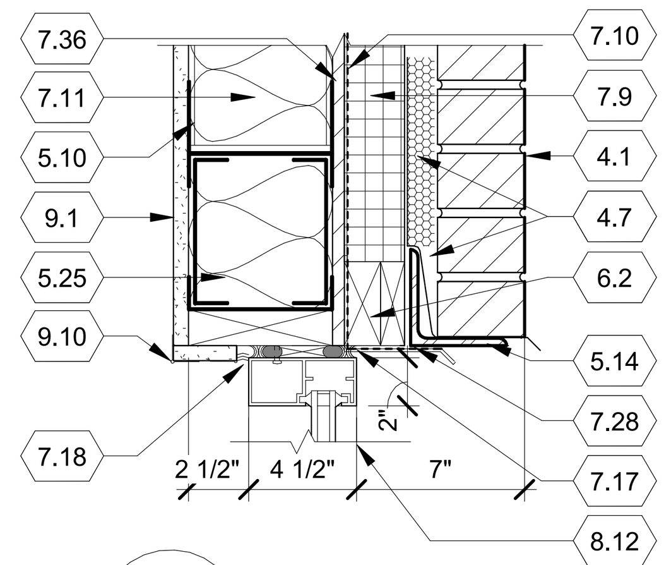
SCALE: As indicated
CONTRACT NO: 220656
SHEET A6.02

KEYNOTES

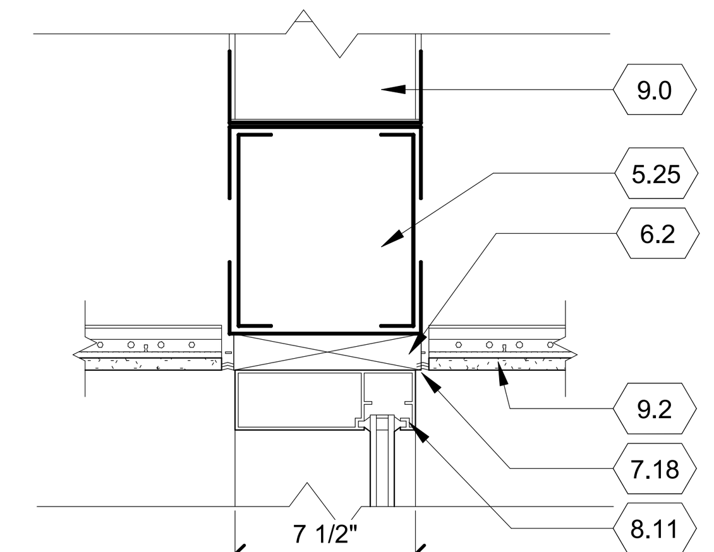
3.1	CONCRETE SLAB-ON-GRADE OVER GRANULAR BASE AND VAPOR BARRIER. SEE STRUCTURAL DRAWINGS.
3.3	CONCRETE SLAB OVER METAL DECK. SEE STRUCTURAL DRAWINGS.
4.1	4" (NOM.) MASONRY BRICK VENEER.
4.6	CONCRETE MASONRY UNIT FOUNDATION. PROVIDE BRICK LEDGE WHERE APPLICABLE AND GROUT CAVITY BETWEEN BRICK AND CMU. SEE STRUCTURAL DRAWINGS.
4.7	CONTINUOUS THROUGH-WALL FLASHING, CAVITY DRAINAGE MATERIAL (WHERE APPLICABLE), AND WEEP VENTS (24" O.C. MAX.).
4.11	8" CMU, GROUT SOLID.
5.10	6" METAL STUD FRAMING. SEE STRUC. DRAWINGS.
5.11	STEEL BEAM, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.14	STEEL ANGLE, PAINT WHERE EXPOSED. SEE STRUC. DRAWINGS.
5.20	8" METAL STUD FRAMING. SEE STRUCTURAL DRAWINGS.
5.25	BOX HEADER. SEE STRUCTURAL DRAWINGS.
6.2	FIRE-RETARDANT TREATED 2X WOOD BLOCKING.
7.7	ALUMINUM COMPOSITE PANEL SYSTEM.
7.9	2-1/2" THICK CONTINUOUS INSULATION (R-12.5 MIN.).
7.10	FLUID APPLIED MEMBRANE AIR BARRIER PER MANUFACTURER'S RECOMMENDATIONS.
7.11	±6" THICK (R-19 MIN.), MEMBRANE FACED (VAPOR BARRIER TO THE INSIDE) GLASS-FIBER BLANKET INSULATION.
7.16	WINDOWSILL FLASHING, MATCH ALUMINUM ASSEMBLY FINISH.
7.17	PERIMETER JOINT SEALANT WITH BACKER ROD.
7.18	JOINT SEALANT.
7.28	FLASHING.
7.36	FIBERGLASS-MAT GYPSUM SHEATHING.
8.11	ALUMINUM CURTAIN WALL SYSTEM.
8.12	ALUMINUM FRAMED WINDOW SYSTEM.
9.0	NON-STRUCTURAL METAL FRAMING. SEE PLANS AND SEE SHEET A0.04 FOR INTERIOR PARTITION TYPES.
9.1	5/8" GYPSUM BOARD.
9.2	1/2" GYPSUM BOARD.
9.4	FLOOR FINISH AND/OR FLOOR BASE, SEE "I" FINISH SHEETS.
9.7	ACOUSTICAL CEILING TILE SYSTEM. SEE RCP SHEETS.
9.9	7/8" METAL FURRING CHANNEL.
9.10	GYPSUM BOARD TRIM (J, L, F, OR CORNER TRIM), PAINTABLE.
9.13	3-5/8" METAL STUD.



H31 HEAD
A6.03



H21 HEAD
A6.03



H13 HEAD
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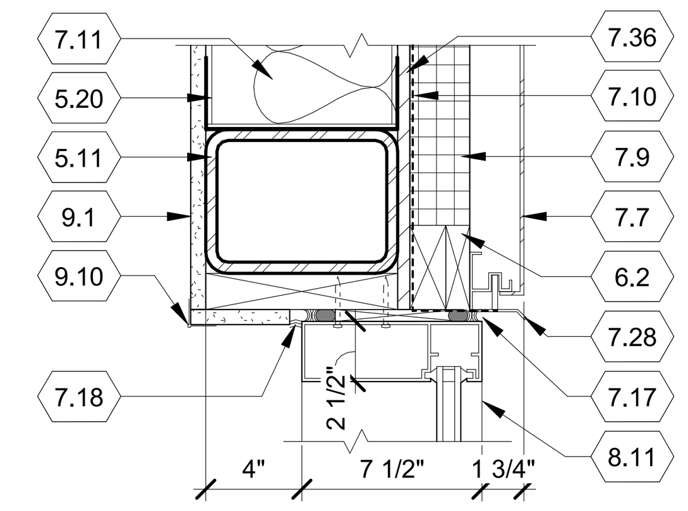
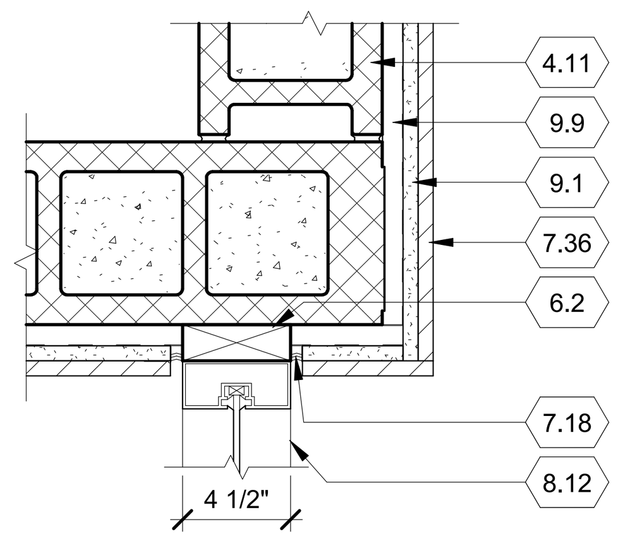


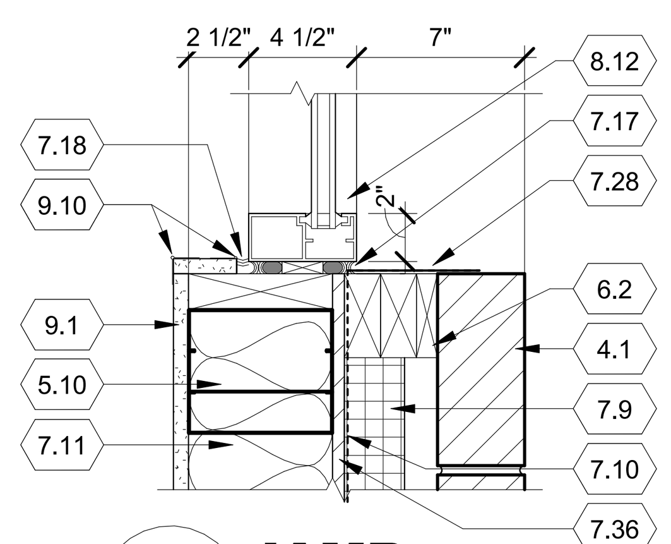
H12 HEAD
A6.03

SEE SECTIONS ON SHEETS A3.10 & A3.11

H11 HEAD
A6.03



J31 JAMB
A6.03



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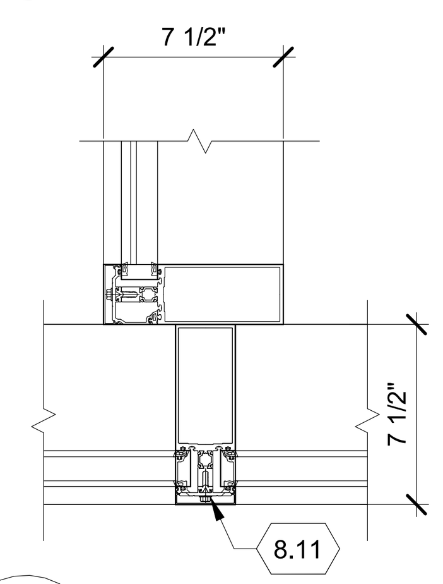

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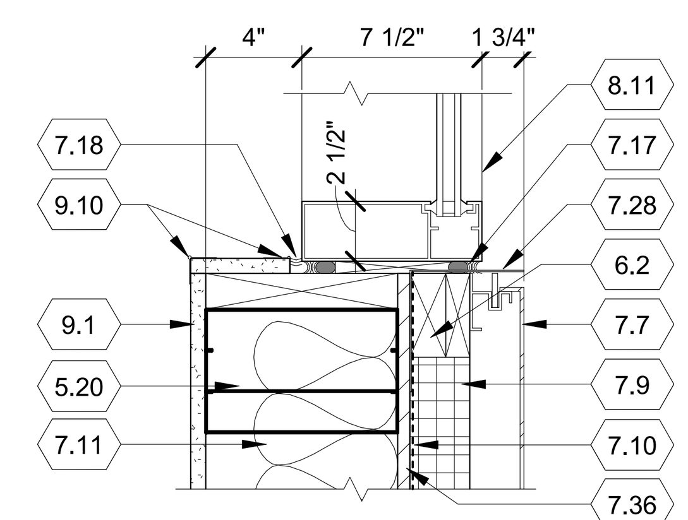

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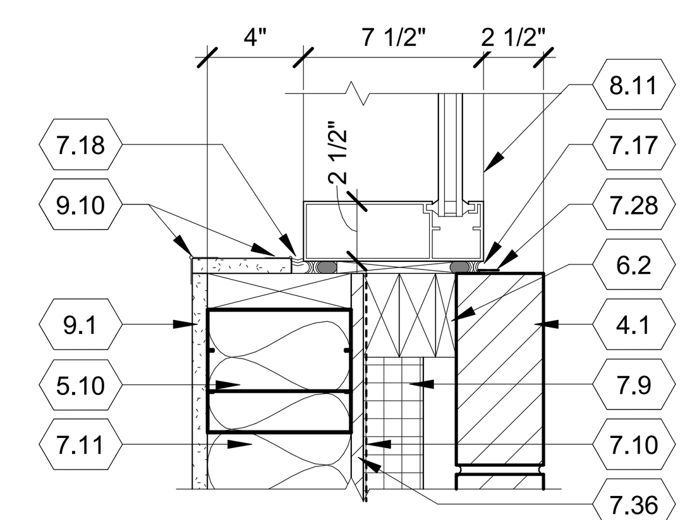

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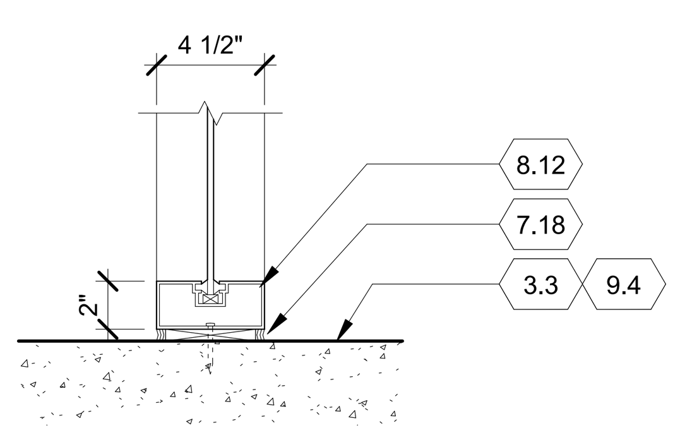
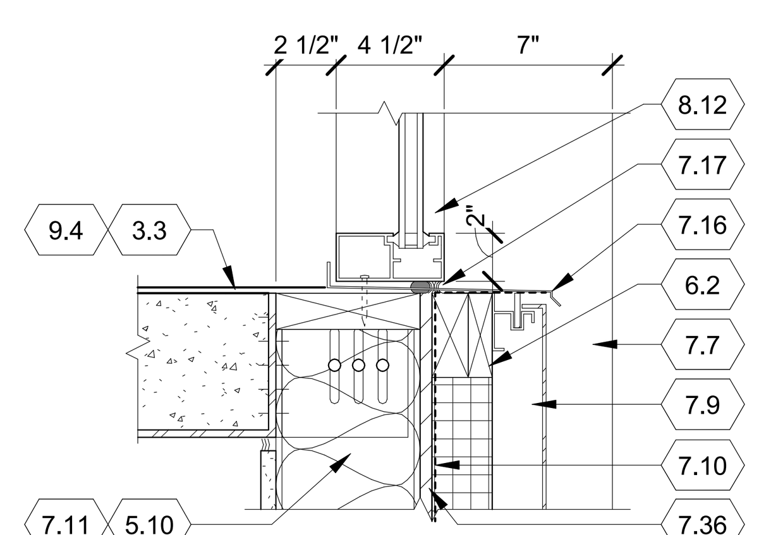


S31 SILL
A6.03



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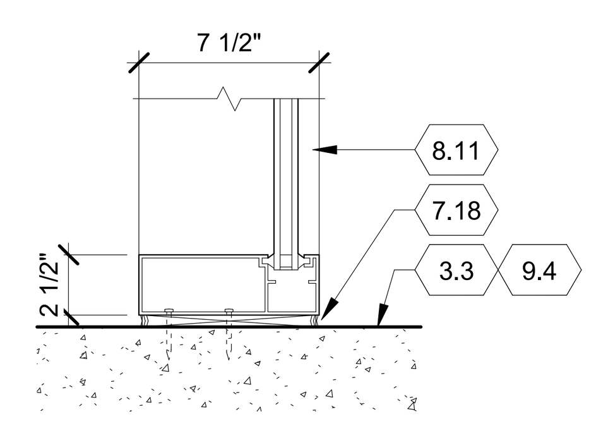
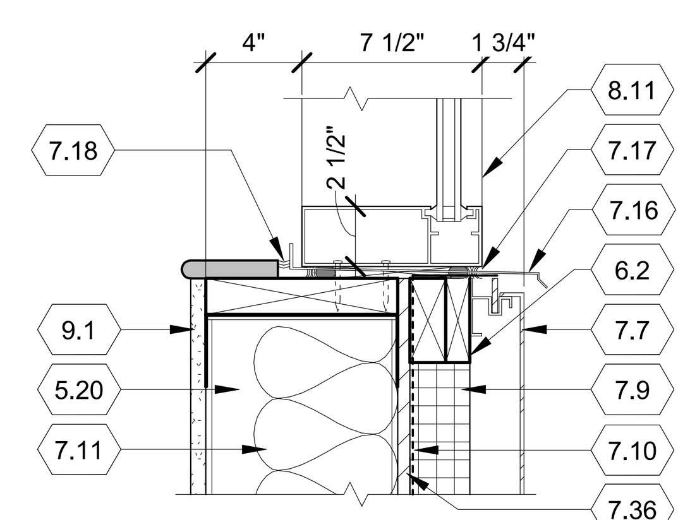


S13 SILL



S12 SILL
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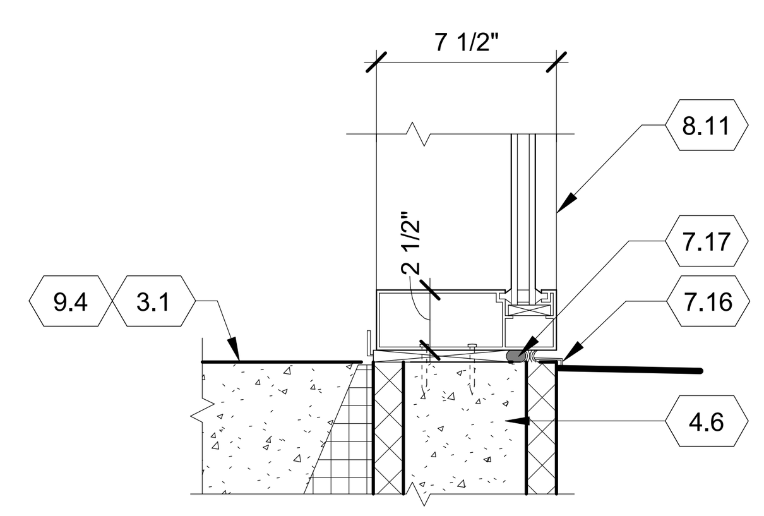
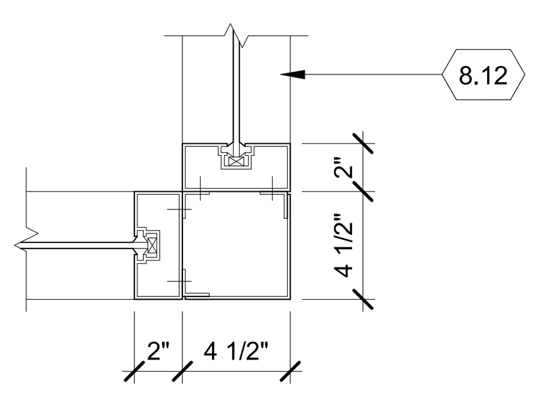
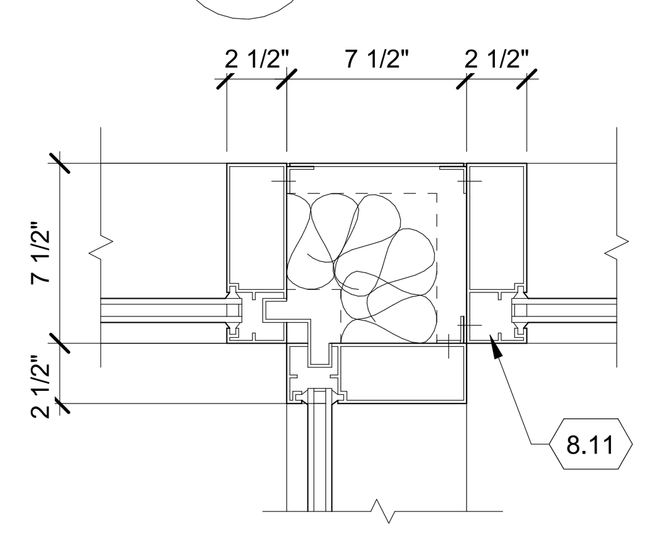


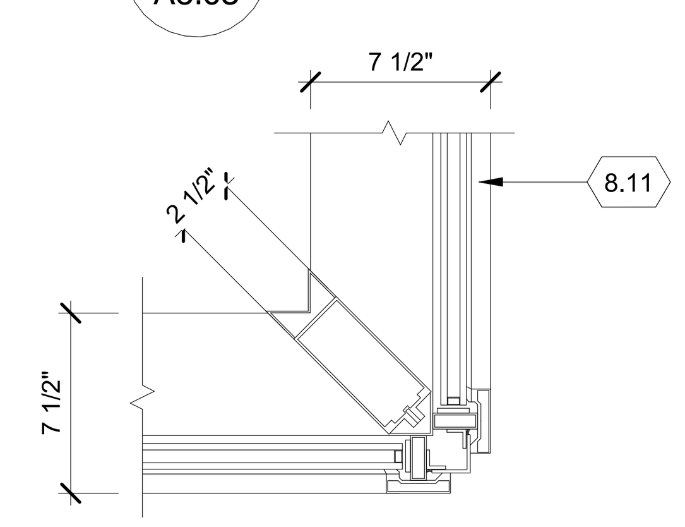
S11 SILL
A6.03



C31 CORNER JAMB
A6.03



C13 CORNER JAMB
A6.03



C12 CORNER JAMB
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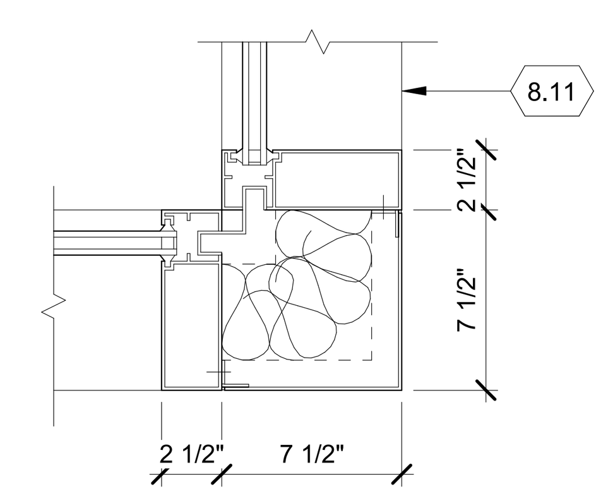

C11 CORNER JAMB
A6.03

STATE OF OHIO — ANDREW D. TOROWSKI — REGISTERED ARCHITECT — EXP. 12-31-24

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REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	ATOR

DATE: 05/03/2024
DRAWN BY: DWUR
CHECKED BY: MDOU
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL

CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

ALUMINUM ASSEMBLY DETAILS

SCALE: As indicated
CONTRACT NO: 220656
SHEET A6.03

5/31/2024 12:22:40 PM

ROOM FINISH SCHEDULE

ABBREVIATIONS

ACT	ACOUSTICAL CEILING TILE	LP	INTERIOR LINER PANEL
CONC	SEALED CONCRETE	LVT	LUXURY VINYL TILE
CPT	CARPET TILE	LWP	LINEAR WOOD PANEL
CT	CERAMIC TILE	P-GB	PAINTED GYPSUM BOARD
EXP.	EXPOSED CONSTRUCTION	P-MAS	PAINTED MASONRY
GB	GYPSUM BOARD	RB	RESILIENT COVE BASE
		WCPT	WALKOFF CARPET TILE

GENERAL NOTES

A. .

REMARKS

1. .

				WALLS					CEILINGS		
ROOM NO.	ROOM NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	ALL	MAT.	HGT.	REMARKS
100	SOUTH VESTIBULE	CPT	RB	-	-	-	-	P	GWB	9' - 0"	
101	LOBBY	LVT	RB	-	-	-	-	P	-	-	
102	INFORMATION CENTER	LVT	RB	-	-	-	-	P	GWB	9' - 8"	
103	STAIR A	LVT	RB	-	-	-	-	P	-	-	
104	STORAGE	CONC	RB	-	-	-	-	P	ACT	10' - 0"	
105	PILOT FLIGHT PLANNING ROOM	LVT	-	-	-	-	-	P	ACT	10' - 0"	
106	EAST VESTIBULE	CPT	RB	-	-	-	-	P	GWB	9' - 8"	
107	PILOTS LOUNGE / SNACK BAR	LVT	RB	-	-	-	-	P	GWB/ACT	9' - 8" / 10' - 0"	
108	TOILET	CT	CT	-	-	-	-	P-GB/CT	GWB	10' - 0"	
109	MECHANICAL	CONC	-					P	-	-	
110	WAITING AREA	LVT	RB	-	-	-	-	P	GWB/ACT	9' - 8" / 10' -0"	
111	MRR	CT	CT	-	-	-	-	P-GB/CT	ACT	9' - 8"	
112	WRR	CT	CT	-	-	-	-	P-GB/CT	ACT	9' - 8"	
113	PASSENGER LOADING/SCREENING	LVT	RB	-	-	-	-	P	GWB/ACT	9' - 8" / 10' - 0"	
200	STAIR A	WD-3	RB	-	-	-	-	P	-	-	
201	UPPER LOBBY	LVT	RB	-	-	-	-	P	GWB/ACT	9' - 0"	
202	OFFICE	CPT	RB	-	-	-	-	P	ACT	9' - 0"	
203	TOILET	CT	CT	-	-	-	-	P-GB/CT	GWB	9' - 0"	
204	STORAGE	CONC	RB	-	-	-	-	P	ACT	9' - 0"	
205	DIRECTOR'S OFFICE	CPT	RB	-	-	-	-	P	ACT	9' - 0"	
207	MEET & GREET	LVT	RB	-	-	-	-	P	ACT	9' - 0"	

INTERIOR FINISHES TBD

	ITEM	DESCRIPTION	BASIS OF DESIGN				
			MANUFACTURER	STYLE	SIZE	COLOR	NOTES
BASE	RB-1 CT-1	RUBBER BASE CERAMIC TILE BASE	TARKETT DALTILE	4" COVE 6"			
LUXURY VINYL TILE	LVT-1	LUXURY VINYL TILE	TARKETT				
CERAMIC TILE	CT-1 CT-2 CT-3	CERAMIC FIELD TILE; RESTROOM FLOORS CERAMIC WALL TILE; RESTROOM WALLS CERAMIC WALL TILE; SNACK BAR BACKSPLASH	DALTILE DALTILE DALTILE		12" X 24" 12" X 24" 3" X 12"		PATTERN: STACKED BOND PATTERN: STACKED BOND PATTERN: RUNNING BOND; FINISH: SMOOTH
GROUT	GR-1 GR-2 GR-3	GROUT - PAIR W/ CT-1 GROUT - PAIR W/ CT-2 GROUT - PAIR W/ CT-3					
CARPET	CPT-1 CPT-2 CPT-3	CARPET – TILE; GENERAL CARPET – TILE; OFFICES WALK OFF CARPET - TILE; VESTIBULE	J+J FLOORING J+J FLOORING TARKETT				
PAINT	P-1 P-2 P-3 P-4 P-5	PAINT – GENERAL; WALLS PAINT – ACCENT GREEN; PAINT – ACCENT BLUE; PAINT – METAL DOORS AND DOOR FRAMES, TRIM, HANDRAILS PAINT – CEILINGS	SHERWIN WILLIAMS SHERWIN WILLIAMS SHERWIN WILLIAMS SHERWIN WILLIAMS SHERWIN WILLIAMS				FINISH: EGGSHELL FINISH: EGGSHELL FINISH: EGGSHELL FINISH: EGGSHELL FINISH: EGGSHELL
PLASTIC LAMINATE	PL-1 PL-2	PLASTIC LAMINATE; COUNTERTOPS PLASTIC LAMINATE; BASE AND UPPER CABINETS	FORMICA FORMICA	MATTE MATTE			
SOLID SURFACE	SS-1 SS-2	SOLID SURFACE; COUNTERTOPS SOLID SURFACE; WINDOW SILLS	WILSONART FORMICA				
ACOUSTICAL CEILING TILES	ACT-1 ACT-2	ACOUSTICAL CEILING TILES; GENERAL / OFFICES ACOUSTICAL CEILING TILES; WAITING AREA	ARMSTRONG ARMSTRONG	OPTIMA METALWORKS LINEAR	24" X 24" 4"		OPTIMA TEGULAR WITH PRELUDE 15/16: SUSPENSION SYSTEM
WOOD	WD-1 WD-2 WD-3	WOOD SOFFIT PANELS WOOD WALL PANELING STAIR TREAD					

INTERIOR FINISHES TBD

STATE OF OHIO
ANDREW D. TOROWSKI
14836
REGISTERED ARCHITECT
EXP. 12-31-24

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REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	ATOR

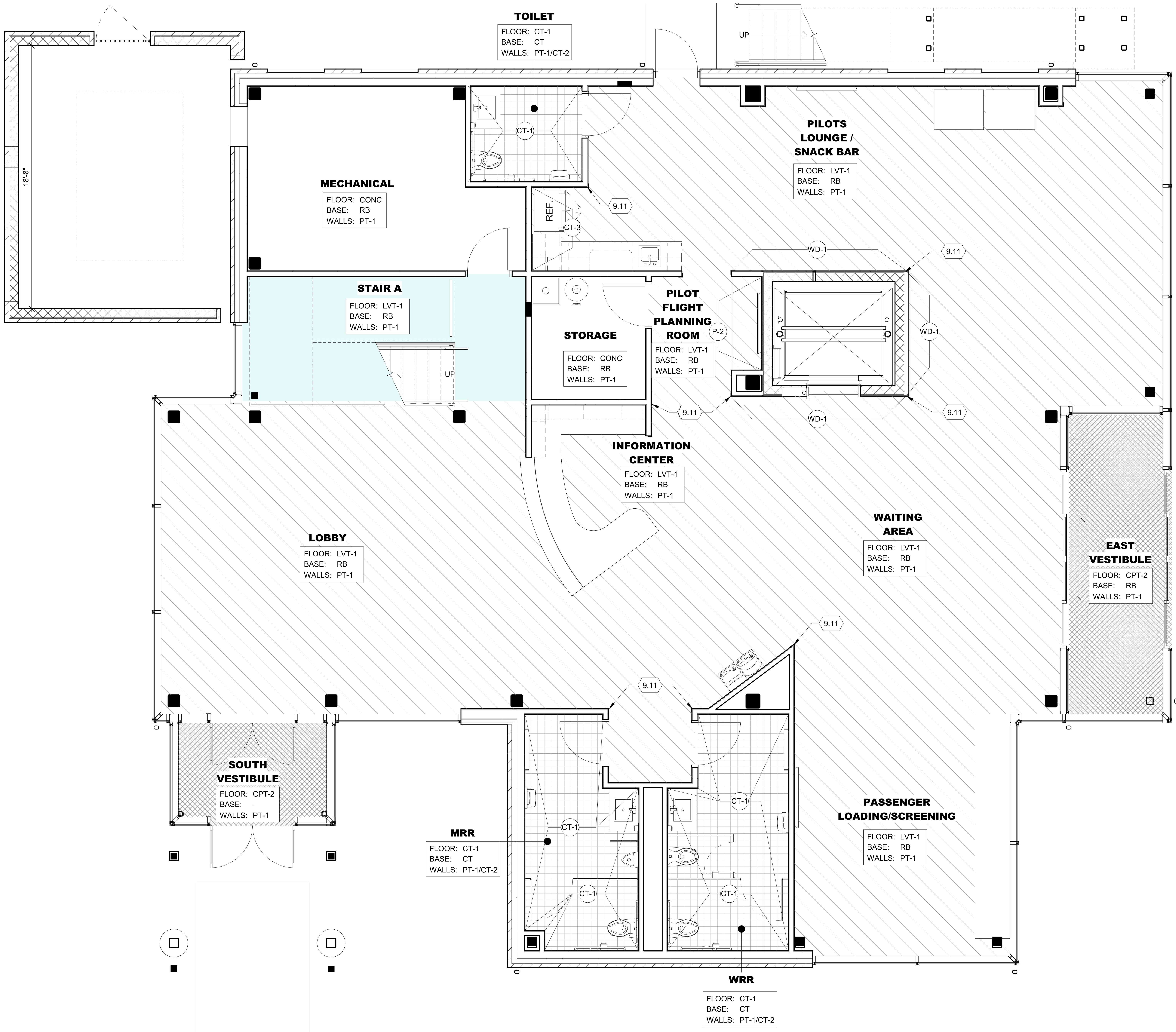
DATE: 05/03/2024
DRAWN BY: DWUR
CHECKED BY: MDOU
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

ROOM FINISH SCHEDULE AND SPECIFICATIONS

SCALE: 12" = 1'-0"
CONTRACT NO: 220656
SHEET I0.01

5/31/2024 12:22:42 PM



1 I1.01 **FIRST FLOOR FINISH PLAN**
1/4" = 1'-0"

GENERAL FINISH NOTES

A. SEE INTERIOR ELEVATIONS ON SHEETS A4.01/A4.02 FOR EXTENT OF CERAMIC WALL TILE.
B. INSTALL RUBBER TREADS AT STAIRS.

FLOOR FINISH LEGEND

REFER TO SHEET I0.01 FOR ADDITIONAL INFORMATION.

- CARPET TILE
- WALK-OFF CARPET TILE
- LUXURY VINYL TILE
- CERAMIC TILE
- WALK-OFF CARPET TILE

KEYNOTES

9.11 GYPSUM BOARD CORNER GUARD, UP TO 6'-0" A.F.F.

STATE OF OHIO ANDREW D. TOROWSKI REGISTERED ARCHITECT EXP. 12-31-24

CT consultants engineers • architects • planners

REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	ATOR

DATE: 05/03/2024
DRAWN BY: DWUR
CHECKED BY: MDOU
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

FIRST FLOOR FINISH PLAN

SCALE: As indicated
CONTRACT NO: 220656
SHEET I1.01

5/31/2024 12:22:45 PM

GENERAL FINISH NOTES

A. SEE INTERIOR ELEVATIONS ON SHEETS A4.01/A4.02 FOR EXTENT OF CERAMIC WALL TILE.
B. INSTALL RUBBER TREADS AT STAIRS.

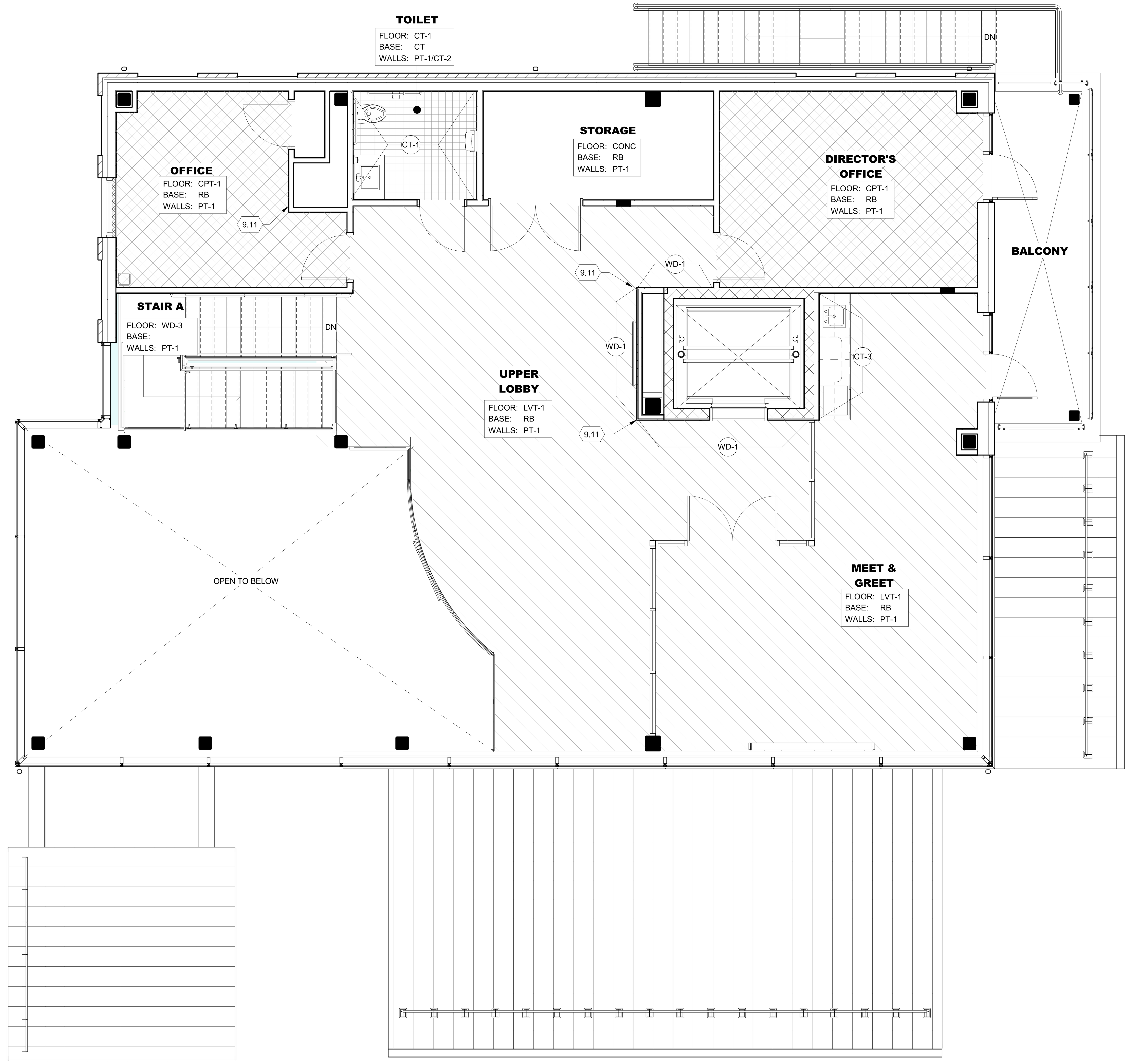
FLOOR FINISH LEGEND

REFER TO SHEET I0.01 FOR ADDITIONAL INFORMATION.

- CARPET TILE
- WALK-OFF CARPET TILE
- LUXURY VINYL TILE
- CERAMIC TILE
- WALK-OFF CARPET TILE

KEYNOTES

9.11 GYPSUM BOARD CORNER GUARD, UP TO 6'-0" A.F.F.



1 I1.02 **SECOND FLOOR FINISH PLAN**
1/4" = 1'-0"

N

STATE OF OHIO
REGISTERED ARCHITECT
EXP. 12-31-24

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REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	ATOR

DATE: 05/03/2024
DRAWN BY: DWUR
CHECKED BY: MDOU
APPROVED BY:

NEW LAKE COUNTY EXECUTIVE AIRPORT TERMINAL
CITY OF WILLOUGHBY
1825 LOST NATION ROAD, WILLOUGHBY, OHIO

SECOND FLOOR FINISH PLAN

SCALE: As indicated
CONTRACT NO: 220656
SHEET I1.02

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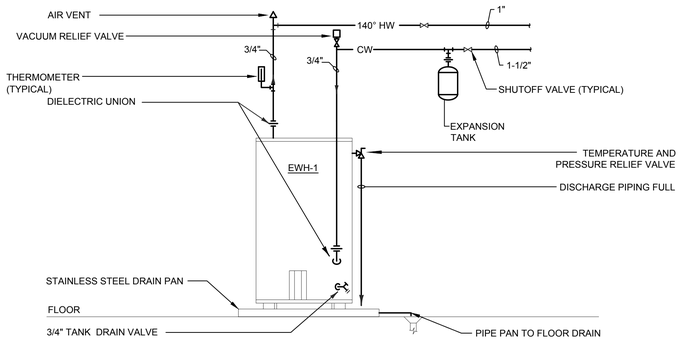
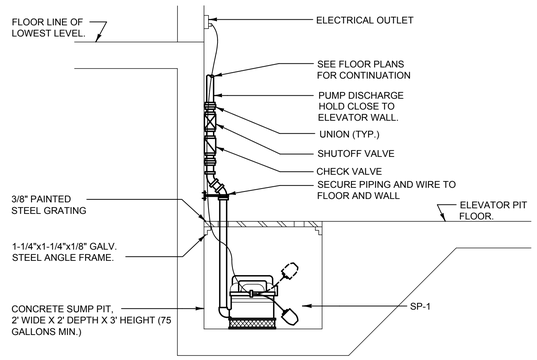


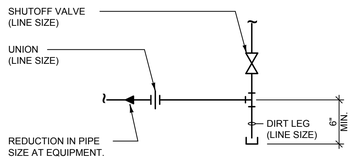
ELECTRIC WATER HEATER DETAIL

NO SCALE



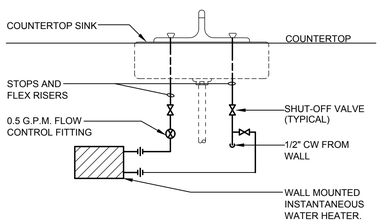
ELEVATOR SUMP PIT DETAIL

NO SCALE



GAS-FIRED EQUIPMENT CONNECTION DETAIL

NO SCALE



DOMESTIC WATER HEATER - ELECTRIC, POINT OF USE INSTANTANEOUS

NO SCALE

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	WASTE	VENT	HW	CW	MANUFACTURER AND MODEL NUMBER
S-1	SINGLE BOWL COUNTERTOP SINK	1-1/2"	1-1/2"	1/2"	1/2"	FIXTURE: 21 INCH BY 19 INCH BY 6-1/2 INCH DEPTH, INSIDE DIMENSIONS 16 INCH BY 19 INCH, 18 GAUGE, TYPE 302 STAINLESS STEEL, SELF RIM, DOUBLE LEDGE, SINGLE COMPARTMENT WITH UNDERCOATING, DRILLED TO ACCOMMODATE FAUCET. JUST SL-ADA-2122-A-GR OR SIMILAR BY ELKAY. FAUCET: CHROME PLATED BRASS FAUCET, WRIST BLADE HANDLES, 8 INCH CENTER, RIGID/SWING GOOSENECK SPOUT, 1.5 GPM FLOW RESTRICTOR, LAMINAR FLOW. CHICAGO FAUCET NO. 786-GN8A-E29-CP OR SIMILAR BY T&S BRASS, ZURN, OR EQUAL. SUPPLIES: FURNISH CHROME PLATED RIGID OR FLEXIBLE SUPPLIES, REDUCERS, AND ESCUTCHEONS. DRAIN: STAINLESS STEEL BASKET STRAINER WITH CHROME PLATED BRASS 1-1/2 INCH DIAMETER TAILPIECE. TRAP: FURNISH CHROME PLATED BRASS ADJUSTABLE "P" TRAP WITH CLEANOUT AND 17 GAUGE WASTE TO WALL WITH ESCUTCHEON.
L-1	LAVATORY WALL-HUNG (ADA)	1-1/4"	1-1/4"	1/2"	1/2"	FIXTURE: 20 INCH x 18 INCH WALL HUNG LAVATORY, 4 INCH CENTERS. AMERICAN STANDARD 0355.012 "LUCERNE" OR APPROVED EQUAL. FAUCET: PLUG-IN SENSOR FAUCET, CHROME PLATED FINISH, 0.5 GPM AERATOR. ZURN Z6915-XL-ACA OR EQUAL. CARRIER: ADJUSTABLE CARRIER WITH STEEL UPRIGHTS, ARMS FOR CONCEALED MOUNTING, BLOCK FEET FOR SECURING TO FLOOR AND FRAMING. WADE W-520 OR ZURN. SUPPLIES: FURNISH CHROME PLATED RIGID OR FLEXIBLE SUPPLIES WITH LOOSE KEY STOPS, REDUCERS, AND ESCUTCHEONS. INSULATED FOR ADA COMPLIANCE. DRAIN: STAINLESS STEEL NON-REMOVABLE STRAINER WITH 1-1/4 INCH TAILPIECE. CHICAGO FAUCET NO. 327. TRAP: CHROME PLATED CAST BRASS ADJUSTABLE "P" TRAP WITH CLEANOUT AND 17 GAUGE WASTE TO WALL WITH ESCUTCHEON. INSULATED AND OFFSET TO MEET ADA COMPLIANCE. PROVIDE PLUMBREX MODEL X4114 TRAP COVER AND MODEL X4333 PRO EXTREME TRAP WRAP.
WC-1	WALL MOUNTED WATER CLOSET FLUSH VALVE	4"	2"	-	1"	FIXTURE: WALL HUNG, FLUSH VALVE, WHITE VITREOUS CHINA, ELONGATED BOWL, 1-1/2 INCH INLET SPUD, SIPHON JET ACTION, LOW WATER CONSUMPTION. KOHLER K-4325 KINGSTON. SEAT: WHITE, HEAVY DUTY COMMERCIAL GRADE, OPEN FRONT, SELF-SUSTAINING CHECK HINGES WITH STAINLESS STEEL POSTS BY BENEKE. FLUSH VALVE: EXPOSED, DIAPHRAGM TYPE. CHROME PLATED FLUSHOMETER FOR LEFT OR RIGHT HAND SUPPLY, INTEGRAL SCREW DRIVER STOP AND VACUUM BREAKER. 1.6 GALLON PER MINUTE FLUSH. SLOAN ROYAL MODEL 111 CARRIER: SINGLE OR DOUBLE INLET, CAST IRON, ADJUSTABLE TYPE, FOOT SUPPORT, THROUGH WALL FINISHING FRAME, CHROMIUM PLATED FINISHED TRIM, AND REQUIRED ACCESSORIES OF TYPE APPROPRIATE FOR PIPE MATERIALS SPECIFIED. INSTALL AND ANCHOR IN ACCORDANCE WITH MANUFACTURERS' PUBLISHED INSTRUCTIONS. WATTS, ZURNS, OR SMITH. TOP RIM TO BE INSTALLED 15" ABOVE FINISHED FLOOR
WC-2	WALL MOUNTED WATER CLOSET FLUSH VALVE (ADA)	4"	2"	-	1"	SAME AS WC-1, MOUNTED AT ADA HEIGHT.
WH-1	FREEZE PROOF WALL HYDRANT	-	-	-	3/4"	FIXTURE: ENCASED, NON-FREEZE, FLUSH WALL HYDRANT WITH BRONZE CASING, ALL BRONZE INTERIOR PARTS, NON-TURNING OPERATING ROD WITH FREE FLOATING COMPRESSION CLOSURE VALVE, REPLACEABLE BRONZE SEAT AND SEAT WASHER, AND 3/4" IP INLET. NICKEL BRONZE BOX AND HINGED COVER WITH OPERATING KEY LOCK. ZURN Z1305 OR EQUAL.
MR-1	MOP RECEPTOR	2"	1-1/2"	1/2"	1/2"	FIXTURE: MUSTEE MODEL 63M, 24 X 24 X 10 INCH HIGH MOLDED STONE, FLOOR MOUNTED, STAINLESS STEEL STRAINER OR APPROVED EQUAL FAUCET:MUSTEE 63.600A FAUCET, ROUGH CHROME FINISH, THREADED SPOUT WITH BUCKET HOOK, VACUUM BREAKER, HOSE OUTLET SPOUT END, WALL BRACE, CAST BRASS INDEXED LEVER HANDLES, AND STOPS IN SHANKS OR EQUAL. ACCESSORIES: 48 INCH LONG HEAVY DUTY, 5/8 INCH DIAMETER HOSE AND HOSE CLIP, STAINLESS STEEL HOSE BRACKET, AND STAINLESS STEEL MOP HANGER WITH 3 GRIPS.
WB-1	WALL BOX FOR REFRIGERATOR	-	-	-	1/2"	FIXTURE: RECESSED WALL BOX, LEAD FREE, QUARTER TURN SHUTOFF VALVE, INTEGRAL WATER HAMMER ARRESTOR. EASTMAN 60240 OR EQUAL. BACKFLOW PREVENTER: WHERE USED FOR A COFFEE MACHINE OR SIMILAR, PROVIDE ASSE 1032 APPROVED INLINE CHECK VALVE. WATTS SD-2 OR SIMILAR.

PLUMBING EQUIPMENT SCHEDULE

MARK	FIXTURE	WASTE	VENT	HW	CW	BASIS OF DESIGN, MODEL NUMBER, AND DESCRIPTION
FD	FLOOR DRAIN	3"	-	-	-	FLOOR DRAIN, PVC ADJUSTABLE ROUND NICKEL BRONZE. SIOUX CHIEF 832-36PNR WITH 6 INCH NB TOP OR APPROVED EQUAL. PROVIDE A TRAP SEALER AT EACH INSTANCE.
WCO	WALL CLEANOUT	-	-	-	-	WALL CLEANOUT: DUCO CAST IRON CAULK FERRULE AND CAST IRON LEAD SEAL PLUG WITH STAINLESS STEEL COVER AND SCREW. ZURN MODEL Z1441 OR SIMILAR BY MIFAB OR SMITH. FULL SIZE OF PIPE AND NOT LESS THAN 4 INCHES FOR LARGER SIZES.
FCO	FLOOR CLEANOUT	-	-	-	-	NICKEL BRONZE NON-SKID GASKETED WATERTIGHT COVER SECURED INDEPENDENTLY OF PLUGS WITH VANDAL PROOF SCREWS. WADE W-6000 OR SIMILAR BY JOSAM, MIFAB, SMITH, WATTS, OR ZURN.
POINT OF USE THERMOSTATIC MIXING VALVE		–	–	3/8"	3/8"	WATER TEMPERATURE REGULATING VALVE. LEAD FREE BRONZE BODY, THREADED CONNECTIONS. LOW TEMPERATURE, DUAL ACTION, INTERCHANGEABLE THERMOSTAT, INTEGRAL FILTER WASHERS AND CHECK VALVES. ASSE 1070 LISTED. ADJUSTABLE FROM 80 DEGREES F TO 120 DEGREES F WITH LOCKING FEATURE. SET OUTLET TEMPERATURE AT 110 DEGREES F. MAXIMUM PRESSURE 150 PSI. WATTS SERIES LFUSG-B OR AS APPROVED. PROVIDE AT EACH INSTANCE OF L-1 AND S-1 SERVED BY EWH-1.
WATER HAMMER ARRESTORS		REFER TO ABOVE GROUND PLUMBING PLAN DRAWINGS FOR SIZING				PERMANENTLY SEALED BELLOWS OR EXPANDING CHAMBER TYPE DEVICE FOR CONTROL OF WATER HAMMER, P.D.I.APPROVED. SMITH HYDROTROL OR SIMILAR BY JOSAM, MIFAB, WADE, OR ZURN.

WATER HEATER SCHEDULE

MARK	BASIS OF DESIGN	MODEL	FUEL	KW INPUT	MAX FINAL TEMPERATURE (Deg. F)	STORAGE CAPACITY (GALLONS)	RECOVERY GPH	TEMPERATURE RISE (Deg. F)	VOLTAGE	EXPANSION TANK	REMARKS
EWH-1	RHEEM	ELDS40-TB	ELEC.	4.5	140	36	18	100	208V-1Ø	AMTROL ST-5	1

REMARKS:
1. MOUNT ON CONCRETE

SUBMERSIBLE PUMP SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	SERVICE	GPM	TOTAL HEAD (feet)	SIZE		IMPELLER	RPM	HP	VOLTAGE
							SUCTION	DISCHARGE				
SP-1	WEIL	1411	SUBMERSIBLE SUMP PUMP	ELEVATOR	50	20	-	2"	CAST IRON	1,750	1/2	120V-1Ø

INSTANTANEOUS WATER HEATER SCHEDULE

MARK	BASIS OF DESIGN	MODEL	FUEL	KW INPUT	FLOW ACTIVATION	MAX FINAL TEMPERATURE (Deg. F)	DESIGN GPM	TEMP RISE @ DESIGN GPM (Deg. F)	VOLTAGE	REMARKS
EWH-2	CHRONOMITE	CM-30L/208	ELEC.	6.24	0.2 GPM	110	0.5	85	208V-1Ø	1
EWH-3	CHRONOMITE	CM-30L/208	ELEC.	6.24	0.2 GPM	110	0.5	85	208V-1Ø	1

REMARKS:
1. FIELD ADJUSTABLE TEMPERATURE OUTLET CONTROL. ADJUST TO 110° F OUTLET TEMPERATURE.

PLUMBING SYMBOLS

- PIPE ELBOW, DOWN
- PIPE ELBOW, UP
- PIPE TEE, DOWN
- FLOW DIRECTION
- CHECK VALVE
- SHUTOFF VALVE
- SAN — SANITARY WASTE (BELOW FLOOR)
- V — VENT PIPING
- CW — DOMESTIC COLD WATER
- HW — DOMESTIC HOT WATER
- CONNECT TO EXISTING

PLUMBING ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
ARCH	ARCHITECT
BFF	BELOW FINISHED FLOOR
BTU	BRITISH THERMAL UNITS
CFH	CUBIC FEET PER HOUR
CLG	CEILING
CTE	CONNECT TO EXISTING
CW	DOMESTIC COLD WATER
deg. F	DEGREES FAHRENHEIT
DF	DRINKING FOUNTAIN
DS	DOWNSPOUT
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FS	FLOOR SINK
ft. hd	FEET OF HEAD
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HW	DOMESTIC HOT WATER
in. w.c.	INCHES WATER COLUMN
KW	KILOWATT
L	LAVATORY
MBH	THOUSAND BRITISH THERMAL UNIT (BTU)
MR	MOP RECEPTOR
P	PUMP
P.C.	PLUMBING CONTRACTOR
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE PLASTIC
RD	ROOF DRAIN
S	SINK
TYP	TYPICAL
UR	URINAL
V	VOLTS
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	WALL CLEANOUT

PLUMBING GENERAL NOTES

1. CONDUCT FIELD SURVEY OF EXISTING CONDITIONS PRIOR TO SUBMISSION OF BID AND START OF WORK. NO ADDITIONAL PAYMENTS WILL BE MADE ON CLAIMS THAT ARISE FROM LACK OF KNOWLEDGE OF EXISTING CONDITIONS.
2. COORDINATE SCHEDULE OF WORK REQUIRED IN OCCUPIED AND OPERATING AREAS WITH OWNER PRIOR TO STARTING SUCH WORK.
3. SCHEDULE UTILITY SERVICE SHUTDOWNS REQUIRED FOR NEW CONSTRUCTION WITH OWNER AND GENERAL TRADES PRIOR TO SHUTTING DOWN SYSTEMS. GIVE ONE WEEK ADVANCE NOTICE IN WRITING.
4. CUT FLOOR, WALL, AND CEILING CONSTRUCTION FOR PENETRATIONS TO ACCOMMODATE NEW WORK. COORDINATE WITH GENERAL TRADES. PATCH CONSTRUCTION TO MATCH, OR TO SATISFACTION OF ARCHITECT AND OWNER.
5. COORDINATE ROUTING OF NEW PIPING WITH EXISTING BUILDING CONDITIONS AND WITH WORK OF OTHER TRADES. PROVIDE CHANGES IN LOCATION, DIRECTION, OFFSETS, AS MAY BE REQUIRED, WHETHER SPECIFICALLY INDICATED OR NOT, AND AT NO ADDITIONAL COST TO THE OWNER.

STATE OF OHIO — MICHAEL J. FERRANTE — PE. 87823 — REGISTERED PROFESSIONAL ENGINEER — 5/24/24

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REV	DATE	BY
0	05/29/2024	

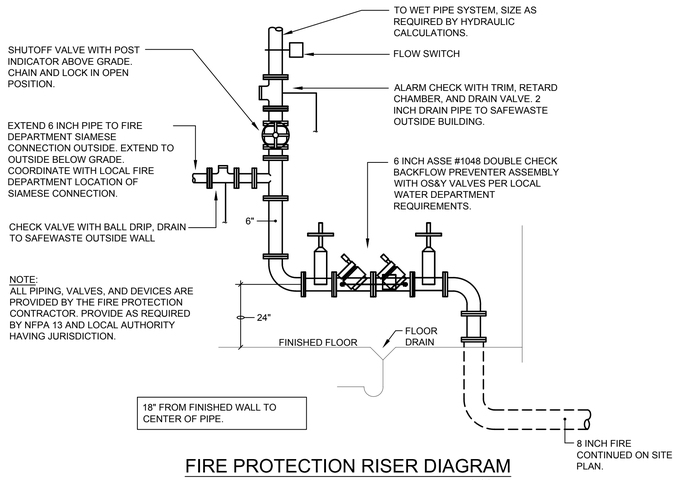
REVISIONS: ISSUED FOR BIDDING AND PERMIT

DATE: 05/03/2024 | DRAWN BY: SJA | CHECKED BY: MJF | APPROVED BY:

NEW TERMINAL
LAKE COUNTY EAP TERMINAL
1969 Lost Nation Rd., Willoughby, OH 44094

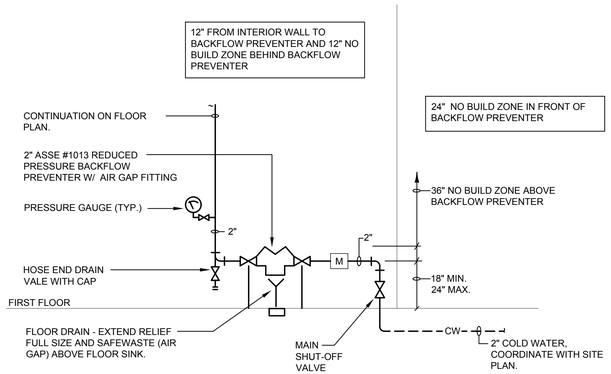
PLUMBING SCHEDULES, NOTES, AND DETAILS

SCALE: NO SCALE
CONTRACT NO: 24160
SHEET: P0.01



FIRE PROTECTION RISER DIAGRAM

NO SCALE



DOMESTIC WATER SERVICE ENTRANCE DETAIL

NO SCALE

NOTE:
REFER TO STANDARD DETAIL FOR BACKFLOW PREVENTER'S SETTING FOR THE CITY, DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER AND FOR DIMENSIONS ON THE NO BUILD ZONE IN FRONT AND BEHIND THE BACKFLOW PREVENTER.

SECTION 21 05 00 – COMMON WORK RESULTS FOR FIRE SUPPRESSION

PART 1 GENERAL

1.1 SYSTEM DESCRIPTION

A. SYSTEM TO PROVIDE COVERAGE FOR ENTIRE BUILDING.

B. ENTIRE BUILDING IS TO BE PROTECTED WITH A WET PIPE SPRINKLER SYSTEM.

C. DESIGN REQUIREMENTS - SPRINKLER SYSTEM: LIGHT HAZARD.

D. DETERMINE VOLUME AND PRESSURE OF INCOMING WATER SUPPLY BY PERFORMING A FLOW TEST PRIOR TO BIDDING.

1.2 SUBMITTALS

A. SUBMIT SHOP DRAWINGS, PRODUCT DATA, AND HYDRAULIC CALCULATIONS TO AUTHORITY HAVING JURISDICTION FOR APPROVAL. SUBMIT PROOF OF APPROVAL TO ARCHITECT.

B. SHOP DRAWINGS: REQUIRED. INDICATE HYDRAULIC CALCULATIONS, DETAILED PIPE LAYOUT, HANGERS AND SUPPORTS, SPRINKLERS, COMPONENTS AND ACCESSORIES. INDICATE SYSTEM CONTROLS.

C. PRODUCT DATA: REQUIRED. PROVIDE DATA ON SPRINKLERS, VALVES, AND SPECIALTIES, INCLUDING MANUFACTURER'S CATALOG INFORMATION. SUBMIT PERFORMANCE RATINGS, ROUGH-IN DETAILS, WEIGHTS, SUPPORT REQUIREMENTS, AND PIPING CONNECTIONS.

D. PROJECT RECORD DOCUMENTS: REQUIRED.

1.3 QUALITY ASSURANCE

A. REGULATORY REQUIREMENTS
1. SPRINKLER SYSTEMS: CONFORM TO NFPA 13.
2. EQUIPMENT AND COMPONENTS: UL LABELED.

PART 2 PRODUCTS

2.1 PIPE AND TUBE

A. STEEL: SCHEDULE 40 BLACK, WITH STEEL, CAST IRON, OR MALLEABLE IRON FITTINGS, OR MECHANICAL GROOVED COUPLINGS. SCHEDULE 10 PIPE IS NOT ACCEPTABLE.

B. COPPER: TYPE M OR L HARD DRAWN, WITH SOLDER OR BRAZED JOINTS.

C. CAST IRON: AWWA C151.

D. FLEXIBLE SPRINKLER DROPS THAT ARE LISTED ARE ACCEPTABLE FOR PIPING FROM BRANCH TO SPRINKLER HEAD.

2.2 SPRINKLERS

A. SUSPENDED CEILING TYPE: CONCEALED PENDANT TYPE WITH COVER PLATE THAT MATCHES CEILING COLOR.

B. EXPOSED AREA TYPE: STANDARD UPRIGHT TYPE.

C. SIDEWALL TYPE: RECESSED HORIZONTAL SIDEWALL TYPE CHROME PLATED FINISH WITH MATCHING ESCUTCHEON.

2.3 FIRE DEPARTMENT CONNECTION

A. TYPE: FREE STANDING TYPE WITH DUCTILE IRON PEDESTAL. COORDINATE FINISH WITH ARCHITECT AND FINAL LOCATION WITH CIVIL ENGINEER.

2.4 FIRESTOPPING

A. MANUFACTURERS:
1. DOW CORNING CORP.
2. FIRE TRAK CORP.
3. HILTI CORP.
4. INTERNATIONAL PROTECTIVE COATING CORP.
5. 3M FIRE PROTECTION PRODUCTS.
6. SPECIFIED TECHNOLOGY, INC.
7. TREMCO, INC.

B. MATERIALS CONFORMING TO FLAME (F) AND TEMPERATURE (T) RATINGS REQUIRED BY LOCAL BUILDING CODE AND AS TESTED BY NATIONALLY ACCEPTED TEST AGENCIES ACCORDING TO ASTM E814 OR UL 1479 FIRE TESTS IN CONFIGURATION THAT IS REPRESENTATIVE OF FIELD CONDITIONS. DEGREE RATING MUST BE MINIMUM OF ONE (1) HOUR BUT NOT LESS THAN FIRE RESISTANCE OF ASSEMBLY BEING PENETRATED.

C. DO NOT USE FIRESTOP MATERIALS WHICH DISSOLVE IN WATER AFTER CURING.

D. DO NOT USE FIRESTOP MATERIALS WHOSE SHELF LIFE HAS EXPIRED.

PART 3 EXECUTION

3.1 INSTALLATION

A. PROVIDE GATE VALVES FOR SHUT-OFF OR ISOLATING SERVICE. WHERE APPROVED, USE BUTTERFLY VALVES INSTEAD OF GATE VALVES.

B. PROVIDE DRAIN VALVES AT MAIN SHUT-OFF VALVES, LOW POINTS OF PIPING AND APPARATUS.

C. CONNECT SYSTEM TO WATER SOURCE AHEAD OF DOMESTIC WATER CONNECTION WITH DOUBLE DETECTOR CHECK VALVE ASSEMBLY.

D. HYDROSTATICALLY TEST ENTIRE SYSTEM. TEST WITNESSED BY AUTHORITY HAVING JURISDICTION.

3.2 INSTALLATION - FIRESTOPPING

A. INSTALL FIRESTOPPING AT THE FOLLOWING PENETRATIONS:
1. WHERE PENETRATIONS INCLUDING PIPING WHICH PASS THROUGH ONE OR BOTH OUTER SURFACES OF FIRE-RATED FLOOR OR WALL.
2. WHERE PENETRATION OCCURS THROUGH STRUCTURAL FLOOR OR ROOF AND SPACE WOULD OTHERWISE REMAIN OPEN BETWEEN SURFACES OF PENETRATION AND EDGE OF ADJOINING STRUCTURAL FLOOR OR ROOF.
3. WHERE PENETRATION OCCURS THROUGH FIRE-RATED WALLS OR PARTITIONS OF HOLLOW-TYPE CONSTRUCTION, PROVIDE FIRESTOPPING TO COMPLETELY FILL SPACES AROUND PENETRATION, ON EACH SIDE OF WALL OR PARTITION.
4. AT SLEEVED PENETRATIONS, FIRESTOP ANNULAR SPACE, BETWEEN SLEEVE AND WALL OPENINGS.

SECTION 22 05 00 – COMMON WORK RESULTS FOR PLUMBING

PART 1 GENERAL

1.1 SUBMITTALS

A. PRODUCT DATA: SUBMIT VALVES AND GAGES.

1.2 LEAD CONTENT OF DRINKING WATER PIPE AND FITTINGS:

A. PIPE, PIPE FITTINGS, JOINTS, VALVES FAUCETS AND FIXTURE FITTINGS UTILIZED TO SUPPLY WATER FOR DRINKING OR COOKING PURPOSES WILL COMPLY WITH THE REQUIREMENTS OF NSF 372 AND SHALL HAVE A WEIGHTED LEAD CONTENT OF 0.25 PERCENT LEAD OR LESS.

PART 2 PRODUCTS

2.1 PIPING

A. SANITARY SEWER AND VENT BURIED: SERVICE WEIGHT CAST IRON, TYPE DWV COPPER TUBE, ABS TYPE DWV, SOLID WALL PVC TYPE DWV.

B. SANITARY SEWER AND VENT ABOVE GRADE: SERVICE WEIGHT CAST IRON, TYPE DWV COPPER TUBE, ABS TYPE DWV, PVC TYPE DWV. DO NOT USE PVC OR ABS PIPING IN RETURN AIR PLENUMS.

C. DOMESTIC WATER BURIED WITHIN 5 FEET OF BUILDING: DUCTILE IRON PIPE: AWWA C151. FITTINGS: AWWA C110, DUCTILE OR GRAY IRON, STANDARD THICKNESS. JOINTS: AWWA C111, RUBBER GASKET WITH 3/4 INCH DIAMETER RODS.

D. DOMESTIC WATER BURIED INSIDE BUILDING: TYPE K COPPER TUBE, ANNEALED WITHOUT FITTINGS.

E. DOMESTIC WATER ABOVE GRADE: TYPE L COPPER TUBE, HARD DRAWN, SOLDERED JOINTS WITH 95-5 SOLDER, OR COPPER PRESS FITTINGS CONFORMING TO ASME B16.18 CAST COPPER ALLOY OR ASME B16.22, WROUGHT COPPER AND BRONZE WITH EPDM O-RING SEALS. COMPRESSION TYPE JOINTS MADE WITH MANUFACTURER'S TOOL.

F. NATURAL GAS ABOVE GRADE: SCHEDULE 40 BLACK STEEL, THREADED JOINTS. PIPES LARGER THAN 2" SHALL HAVE WELDED JOINTS.

2.2 VALVES

A. BALL VALVES
1. DOMESTIC WATER: 3 INCHES AND SMALLER, 150 SWP, 600 WOG, TWO PIECE BODY, THREADED ENDS, ALL BRONZE CONSTRUCTION, TEFLON SEATS, CHROME PLATED SOLID BRONZE BALL, CONVENTIONAL PORT, BLOWOUT PROOF STEM, LEVER HANDLE.

B. GATE VALVES
1. OVER 2 INCHES: IRON BODY, OS&Y TYPE.

C. GAS VALVES
1. UP TO 2 INCHES: BRONZE BODY, FULL PORT PLUG VALVE; OR BALL VALVE UL LISTED FOR GAS SERVICE; OR BUTTERFLY VALVE UL LISTED FOR GAS SERVICE.
2. OVER 2 INCHES: CAST IRON BODY AND FULL PORT PLUG.

D. SPRING LOADED CHECK VALVES: IRON BODY, BRONZE TRIM, STAINLESS STEEL SPRING, RENEWABLE COMPOSITION DISC.

2.3 GAGES

A. PRESSURE GAGES: STEEL OR ALUMINUM CASE, 4-1/2 INCH DIAMETER, ONE PERCENT (1%) MID-SCALE ACCURACY.

B. STEM TYPE THERMOMETERS: RED APPEARING, SPIRIT FILLED, ADJUSTABLE ANGLE, LENS FRONT TUBE, CAST ALUMINUM CASE, 9 INCH SCALE.

C. TEST PLUGS: 1/4 INCH OR 1/2 INCH FITTING AND CAP FOR RECEIVING PRESSURE OR TEMPERATURE PROBE WITH TEST KIT.

2.4 PIPE HANGERS

A. ALL SERVICES: CLEVIS TYPE CONFORMING TO MSS TYPE 1.

B. UPPER ATTACHMENTS: COMPATIBLE WITH TYPE OF STRUCTURE BEING USED. AT STEEL JOIST LOCATIONS ATTACH HANGERS TO TOP CHORD OF JOISTS.

PART 3 EXECUTION

3.1 INSTALLATION

A. PROVIDE DIELECTRIC CONNECTIONS WHEREVER JOINTING DISSIMILAR METALS.

B. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN END FERROUS PIPE.

C. INSTALL BALL VALVES FOR SHUT OFF APPLICATIONS (2 INCH AND SMALLER) IN DOMESTIC WATER SYSTEMS.

D. INSTALL GATE VALVES FOR SHUT OFF APPLICATIONS (2-1/2 INCH AND LARGER) IN DOMESTIC WATER SYSTEMS.

E. INSTALL BALL VALVES FOR THROTTLING OR BYPASS APPLICATIONS IN DOMESTIC WATER SYSTEMS.

F. INSTALL PLUG VALVES FOR SHUT OFF APPLICATIONS IN NATURAL GAS PIPING SYSTEMS.

G. INSTALL PRESSURE GAGES WITH GAGE COCK.

H. INSTALL THERMOMETERS IN PIPING SYSTEMS IN SOCKETS.

I. PROVIDE 3/4 INCH BALL DRAIN VALVES AT MAIN SHUT-OFF VALVES, LOW POINTS OF PIPING, BASES OF VERTICAL RISERS, AND AT EQUIPMENT.

J. CLEAN AND TEST DOMESTIC WATER PIPING SYSTEM IN ACCORDANCE WITH OBC.

K. TEST SANITARY AND VENT PIPING IN ACCORDANCE WITH OBC.

L. TEST NATURAL GAS PIPING IN ACCORDANCE WITH IFGC.

SECTION 22 07 00 - PLUMBING INSULATION

PART 4 GENERAL

4.1 SUBMITTALS

A. PRODUCT DATA: REQUIRED.

PART 5 PRODUCTS

5.1 PIPE INSULATION

A. GLASS FIBER: RIGID MOLDED, NONCOMBUSTIBLE WITH VAPOR BARRIER JACKET.

B. CELLULAR FOAM: FLEXIBLE, CELLULAR ELASTOMERIC, MOLDED OR SHEET.

C. PIPE INSULATION RATED FOR 0-1000 DEGREES F. WITH A "K" FACTOR OF 0.24 AT A MEAN TEMPERATURE OF 100 DEGREES F. REFER TO SCHEDULE FOR INSULATION REQUIRED THICKNESS.

D. INSULATION SHALL NOT CONTAIN ANY PBDE (POLYBROMINATED DIPHENYL ETHERS) FLAME RETARDANTS.

E. JACKETS
1. PVC PLASTIC: ONE PIECE MOLDED TYPE FITTING COVERS AND SHEET MATERIAL, OFF-WHITE COLOR.
2. ALUMINUM JACKET: SHEET, SMOOTH FINISH.

PART 6 EXECUTION

6.1 INSTALLATION

A. PIPING INSULATION
1. PROVIDE COLD PIPES WITH VAPOR BARRIER JACKETS.
2. INSULATE COMPLETE SYSTEM.

6.2 SCHEDULES

	PIPING INSULATION	PIPE SIZE INCH	INSULATION THICKNESS INCH
1.	DOMESTIC HOT WATER SUPPLY	UP TO 1.0	1.0
2.	DOMESTIC COLD WATER	ALL SIZES	0.5

SECTION 22 30 00 - PLUMBING EQUIPMENT

PART 1 GENERAL

1.1 SUBMITTALS

A. PRODUCT DATA: REQUIRED.

PART 2 PRODUCTS

2.1 PLUMBING SUPPLY AND DRAINAGE SPECIALTIES

A. SEE PLUMBING EQUIPMENT SCHEDULE FOR INFORMATION.

2.2 PLUMBING EQUIPMENT

A. SUMP PUMP:
1. SUBMERSIBLE TYPE FURNISHED WITH SUCTION STRAINER, CAST IRON SHELL, STAINLESS STEEL SHAFT AND PHENOLIC OR BRONZE IMPELLER. HERMETICALLY SEALED MOTOR WITH BUILT-IN OVERLOAD PROTECTION.
2. CONTROLS CONSIST OF FLOAT OPERATED MERCURY SWITCH, WITH POWER CORD AND GROUNDED PLUG.
3. MANUFACTURER: WEIL SERIES 1400 OR SIMILAR BY AURORA PUMP CO OR PACO.

B. ELECTRIC WATER HEATER:
1. RESIDENTIAL STORAGE TANK TYPE. LOW WATT DENSITY ELEMENT. FACTORY ASSEMBLED AND WIRED. STEEL TANK, GLASS LINED, BAKED ENAMEL FINISH WITH AUTOMATIC IMMERSION WATER THERMOSTAT, FLANGED OR SCREW IN IMMERSION TYPE ELEMENTS.
2. TANK INSULATED TO CONFORM TO ASHRAE STANDARDS.
3. FURNISH ASME TEMPERATURE AND PRESSURE RELIEF VALVE.
4. TANK DRAIN.

C. ELECTRIC WATER HEATER: INSTANTANEOUS POINT OF USE TYPE, UL LISTED, 85 DEGREE F TEMPERATURE RISE AT 0.5 GPM. CHRONOMITE CM-30L/208.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL WATER HAMMER ARRESTORS COMPLETE WITH ACCESSIBLE ISOLATION VALVE ON ALL FLUSH-VALVE BRANCH WATER PIPING BEFORE LAST FIXTURE TAKE-OFF AND AS RECOMMENDED BY MANUFACTURER.

B. INSTALL UNIONS DOWNSTREAM OF VALVES AND AT EQUIPMENT OR APPARATUS CONNECTIONS.

SECTION 22 40 00 - PLUMBING FIXTURES

PART 1 GENERAL

1.1 SUBMITTALS

A. PRODUCT DATA: REQUIRED

PART 2 PRODUCTS

2.1 PLUMBING FIXTURES

A. SEE PLUMBING FIXTURE SCHEDULE FOR INFORMATION.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL EACH FIXTURE WITH CHROME PLATED RIGID OR FLEXIBLE SUPPLIES WITH SCREWDRIVER STOPS, REDUCERS, AND ESCUTCHEONS.

B. SEAL SPACE BETWEEN PLUMBING FIXTURES AND WALL OR FLOOR WITH SILICONE SEALANT TO PROVIDE WATERTIGHT INSTALLATION.

C. INSTALL UNIONS DOWNSTREAM OF VALVES AND AT EQUIPMENT OR APPARATUS CONNECTIONS.

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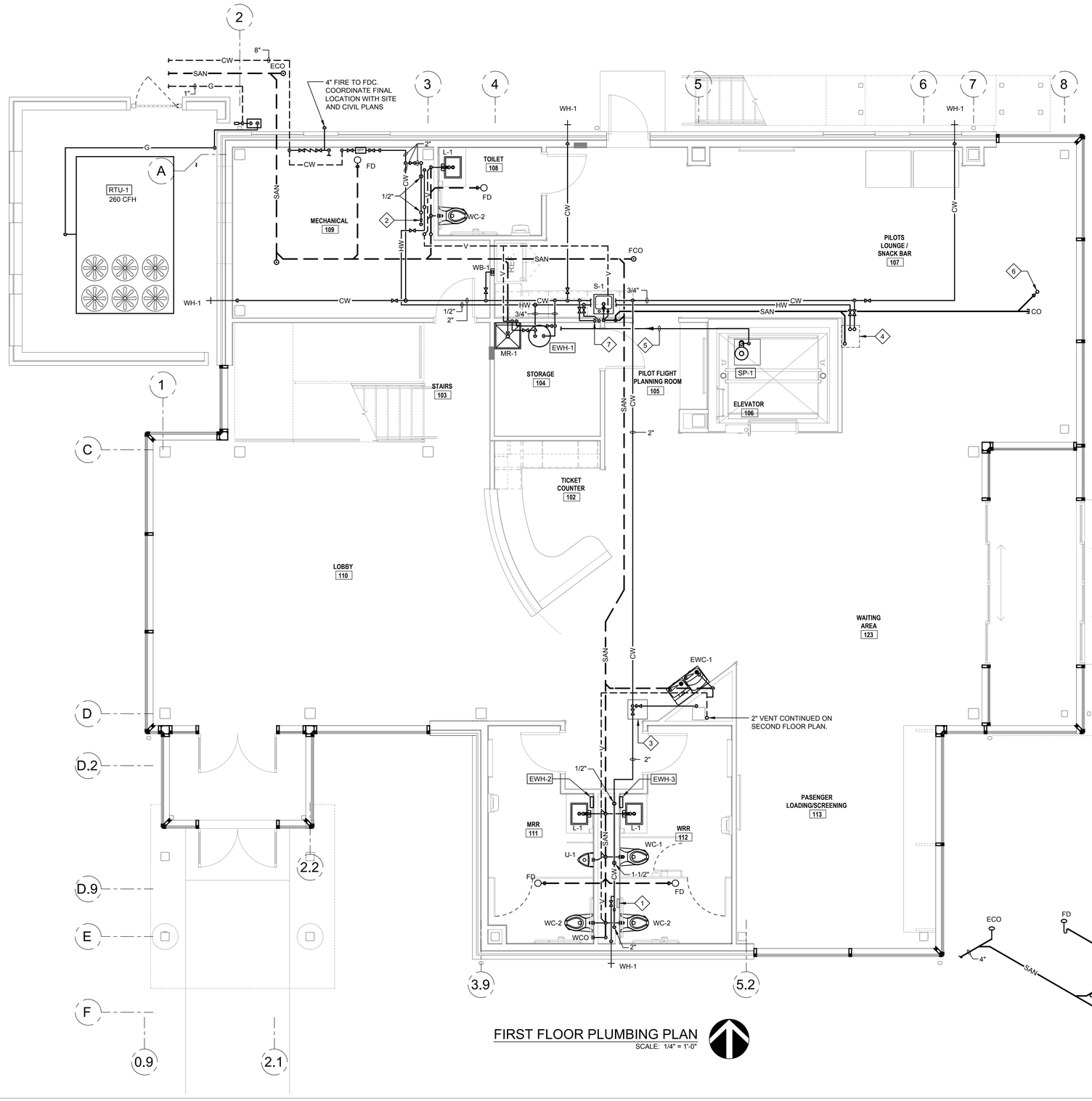
REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/03/2024
DRAWN BY: SJA
CHECKED BY: MJF
APPROVED BY:

NEW TERMINAL
LAKE COUNTY EAP TERMINAL
1969 Lost Nation Rd., Willoughby, OH 44094

PLUMBING SPECIFICATIONS

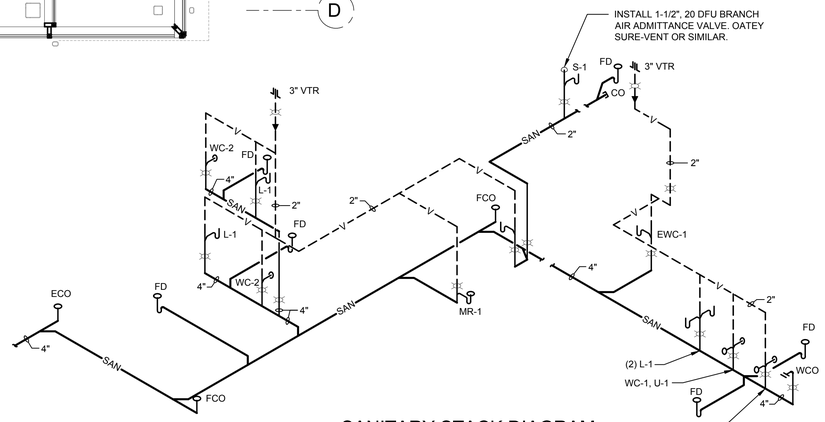
SCALE: NO SCALE
CONTRACT NO: 24160
SHEET P0.02



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

PLAN NOTES

1. PROVIDE 10" x 10" KEYED ACCESS PANEL FOR ACCESS TO 3/4" BALL VALVE SERVING WH-1 AND SIZE 'C' WATER HAMMER ARRESTER.
2. INSTALL SIZE 'B' WATER HAMMER ARRESTER IN SERVICEABLE LOCATION ON CW PIPE WHERE SHOWN.
3. PROVIDE 18" x 18" CEILING ACCESS PANEL FOR ACCESS TO BALL VALVES ABOVE CEILING.
4. 1/2" CW, HW, AND 1-1/2" SAN PIPES SERVING S-1 AND COFFEE MAKER ABOVE. PROVIDE ACCESSIBLE ASSE 1032 BACKFLOW PREVENTER FOR COFFEE MAKER CONNECTION.
5. ROUTE 2" SUMP PUMP DISCHARGE ABOVE CEILING TO MOP RECEPTOR.
6. 2" SAN UP TO FLOOR DRAIN ON BALCONY.
7. 1/2" CW DOWN TO SERVE S-1 AND COFFEE MAKER BELOW. PROVIDE ACCESSIBLE ASSE 1032 BACKFLOW PREVENTER FOR COFFEE MAKER CONNECTION. COORDINATE FINAL LOCATION OF COFFEE MAKER WITH OWNER.



SANITARY STACK DIAGRAM
NO SCALE

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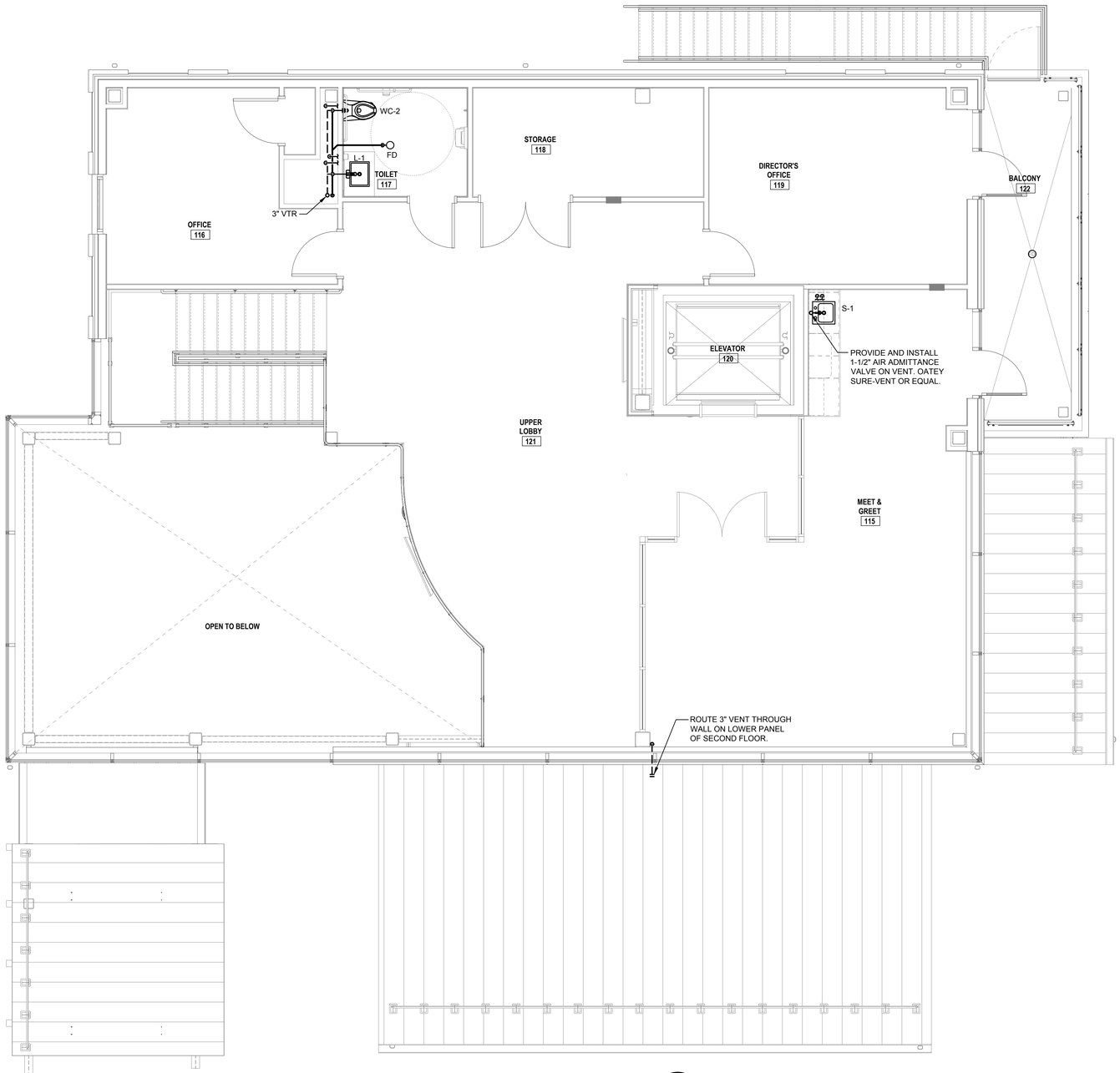
1969 Lost Nation Rd., Willoughby, OH 44094

FIRST FLOOR PLUMBING PLAN

SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET P1.01



SECOND FLOOR PLUMBING PLAN

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

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SECOND FLOOR PLUMBING PLAN

SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET P1.02

ROOFTOP HEATING/COOLING UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	AREA SERVED	FAN				COOLING						HEATING					ELECTRICAL			OPERATING WEIGHT (pounds)	REMARKS
				TOTAL CFM	OA CFM	ESP (inches)	MOTOR HP	NOMINAL TONS	TOTAL MBH	SENSIBLE MBH	EDB (Deg. F)	EWB (Deg. F)	AIR ON CONDENSER (Deg. F)	FUEL	MBH INPUT	MBH OUTPUT	GAS HEAT RISE (Deg. F)	STAGES	VOLTAGE	MCA	MOCP		
RTU-1	LENNOX	LGH300H4V-Y	1ST/2ND FLOOR	10000	2400	1.5	7.5	25	307	222	80	67	95	GAS	260	211	20	2	208V-3Ø	135	150	3,400	1-12

REMARKS:
1. SMOKE DETECTOR PROVIDED AND MOUNTED TO RETURN DUCT BY MC. WIRED BY EC.
2. HORIZONTAL SUPPLY AND RETURN.
3. PLACE RTU ON CONCRETE PAD.
4. PROVIDE FACTORY HORIZONTAL DISCHARGE KIT FOR SUPPLY AND RETURN AIR.
5. PROVIDE CONDENSATE DRAIN TRAP FOR ROOFTOP UNIT.
6. HIGH PERFORMANCE ECONOMIZER.
7. PROVIDE NEMA-3R DISCONNECT. DISCONNECT SHALL BE WIRED BY EC.
8. 2" MERV-4 FILTER.
9. BELT DRIVE.
10. SUPPLY FAN: VARIABLE-AIR VOLUME.
11. PROVIDE AND INSTALL FIELD INSTALLED NEEDLEPOINT BIPOLAR IONIZATION (NPBI) KIT FOR RTU.
12. MINIMUM OPERATING CFM OF 3400 WHILE CONDITIONING.

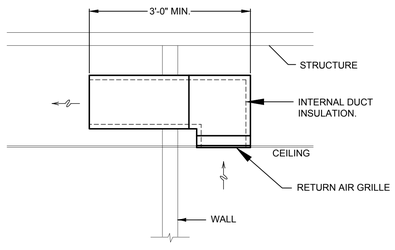
LOUVER SCHEDULE

MARK	MANUFACTURER	MODEL	FREE AREA	SIZE (HEIGHT X WIDTH)	APPLICATION	VOLUME (CFM)	PRESSURE DROP (IN. WG)	FREE AREA VELOCITY (ft/min)	FINISH
L-1	RUSKIN	ELF6375DX	0.3 SQFT	12" x 12"	EXHAUST	150	0.03	502	MATCH BLDG.

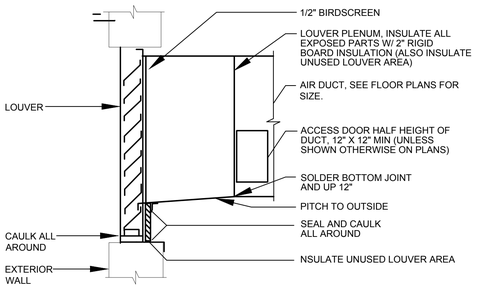
ELECTRIC HEATER SCHEDULE

MARK	MANUFACTURER	CATALOG #	DESCRIPTION	CFM	WATTS/FT	LENGTH	KW	AMPS	VOLTAGE	REMARKS
EH-1	INDEECO	916U04000C-2400-T1	DRAFT BARRIER HEATER	-	500	8 FEET	4	19.2	208V-1Ø	1, 2, 3
EH-2	INDEECO	916IB09500F201SWML00000000	DRAFT BARRIER HEATER	-	500	9 FEET	4.5	21.6	208V-1Ø	1, 2, 3
EH-3	INDEECO	916IB09500F201SWML00000000	DRAFT BARRIER HEATER	-	500	9 FEET	4.5	21.6	208V-1Ø	1, 2, 3
EH-4	QMARK	CDFSENW548	COMMERCIAL DOWNFLOW CEILING HEATER	200	-	-	2	9.6	208V-1Ø	1, 2, 3, 4
EH-5	INDEECO	916U00750C-900-T1	DRAFT BARRIER HEATER	-	500	3 FEET	1.5	7.2	208V-1Ø	1, 2, 3
EH-6	INDEECO	916U01250C-1500-T1	DRAFT BARRIER HEATER	-	250	5 FEET	1.25	6.0	208V-1Ø	1, 2, 3
EH-7	INDEECO	916U01250C-1500-T1	DRAFT BARRIER HEATER	-	250	5 FEET	1.25	6.0	208V-1Ø	1, 2, 3
EH-8	INDEECO	933U01500V	ARCHITECTURAL WALL HEATER	160	-	-	1.5	5.8	208V-1Ø	1, 2, 3
EH-9	INDEECO	933U01500V	ARCHITECTURAL WALL HEATER	160	-	-	1.5	5.8	208V-1Ø	1, 2, 3
EH-10	INDEECO	933U02000C	ARCHITECTURAL WALL HEATER	160	-	-	2	10.0	208V-1Ø	1, 2, 3
EH-11	INDEECO	933U02000C	ARCHITECTURAL WALL HEATER	160	-	-	2	10.0	208V-1Ø	1, 2, 3

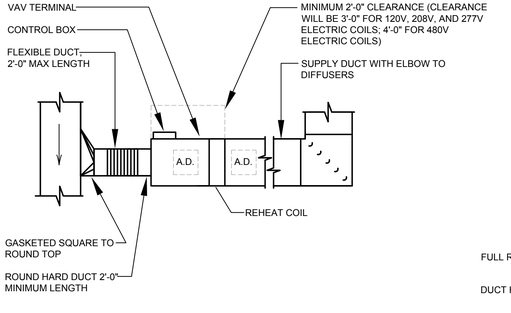
REMARKS:
1. INTEGRAL THERMAL OVERLOAD AND THERMOSTAT.
2. INTEGRAL DISCONNECT SWITCH.
3. COLOR BY ARCHITECT.
4. CDFSE "SURFACE MOUNTED." WIDE PATTERN AIRFLOW.



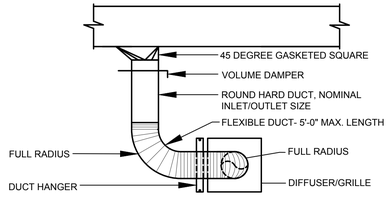
DUCT- TRANSFER WITH INTEGRAL GRILLE
NO SCALE



DUCT-LOUVER CONNECTION
NO SCALE



DUCT VARIABLE/ CONSTANT AIR VOLUME TERMINAL WITH REHEAT COIL
NO SCALE



DUCT DIFFUSER CONNECTION
NO SCALE

REGISTERS, GRILLES, AND DIFFUSERS SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION	MATERIAL	FINISH	FRAME TYPE	MAX. NC
S1	TITUS	OMNI	24" x 24" SQUARE PLAQUE DIFFUSER	STEEL	WHITE	MATCH APPLICATION	25
S2	TITUS	OMNI	12" x 12" SQUARE PLAQUE DIFFUSER	STEEL	WHITE	SURFACE MOUNT	25
S3	TITUS	300RL	DOUBLE DEFLECTION SUPPLY GRILLE	STEEL	WHITE	SURFACE MOUNT	25
S4	TITUS	T-SLOT (31R)	PLENUM SLOT DIFFUSER	STEEL	WHITE	MATCH APPLICATON	25
S5	TITUS	FL-30-JT	3" SLOT WIDTH, 2-SLOT, HIGHTHROW FLOWBAR LINEAR DIFFUSER	STEEL	WHITE	SIDEWALL MOUNT	25
R1	TITUS	350ZFS	0° DEFLECTION RETURN GRILLE, 3/4" BLADE SPACING	ALUMINUM	WHITE	SURFACE MOUNT	25
R2	TITUS	350FL	35 ° DEFLECTION RETURN GRILLE, 3/4" BLADE SPACING	ALUMINUM	WHITE	SURFACE MOUNT	25

NOTES:
1. PROVIDE OPPOSED BLADE DAMPER FOR 300RL DOUBLE DEFLECTION SUPPLY GRILLE.

FAN SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	CFM	ESP	MOTOR POWER	MAX RPM	DRIVE	VOLTAGE	SONES	WEIGHT	REMARKS
EF-1	COOK	GC-188	CEILING CASSETTE FAN	150	0.3	1/25 HP	1450	DIRECT	115V-1Ø	3	25 LBS	1-4
EF-2	COOK	GC-188	CEILING CASSETTE FAN	150	0.3	1/25 HP	1450	DIRECT	115V-1Ø	3	25 LBS	1-4
EF-3	COOK	GC-166	CEILING CASSETTE FAN	75	0.25	1/25 HP	1100	DIRECT	115V-1Ø	0.8	20 LBS	1-4
EF-4	COOK	GC-166	CEILING CASSETTE FAN	75	0.25	1/25 HP	1100	DIRECT	115V-1Ø	0.8	20 LBS	1-4
EF-5	COOK	GC-146	CEILING CASSETTE FAN	50	0.35	1/25 HP	900	DIRECT	115V-1Ø	1.3	20 LBS	1-4

REMARKS:
1. FAN SHALL TURN/OFF WITH LIGHTS IN ROOM SERVED.
2. INTEGRAL BACKDRAFT DAMPER.
3. PROVIDE FAN SPEED CONTROLLER FOR FAN.
4. PROVIDE NEMA-1 DISCONNECT SWITCH.

REHEAT TERMINAL BOX SCHEDULE

MARK	MANUFACTURER	MODEL	COOLING CFM		NECK SIZE	OUTLET (INCHES)	MAX HEATING CFM	HEATING				ELECTRICAL		VOLTAGE	REMARKS
			MAX.	MIN.				KW	STEPS	EAT (DEG F)	LAT (DEG F)	MCA	MOCP		
VAV-1	TITUS	DESV	1100	390	10	14 x 12.5	720	9.5	SCR	55	96.7	33.0	35	208V-3Ø	1
VAV-2	TITUS	DESV	1300	360	10	14 x 12.5	850	11	SCR	55	95.9	38.2	40	208V-3Ø	1
VAV-3	TITUS	DESV	1200	420	10	14 x 12.5	780	10.5	SCR	55	97.5	36.4	40	208V-3Ø	1
VAV-4	TITUS	DESV	400	140	6	12 X 8	260	3.5	SCR	55	97.5	12.1	15	208V-3Ø	1
VAV-5	TITUS	DESV	650	230	8	12 x 10	420	5.5	SCR	55	96.4	19.1	20	208V-3Ø	1
VAV-6	TITUS	DESV	1250	440	10	14 X 12.5	810	10.5	SCR	55	96	36.4	40	208V-3Ø	1
VAV-7	TITUS	DESV	1200	420	10	14 X 12.5	780	10.5	SCR	55	97.5	36.4	40	208V-3Ø	1
VAV-8	TITUS	DESV	1450	510	12	16 X 15	940	13	SCR	55	98.7	45.1	50	208V-3Ø	2
VAV-9	TITUS	DESV	1450	510	12	16 X 15	940	13	SCR	55	98.7	45.1	50	208V-3Ø	2

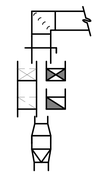
REMARKS:
1. PROVIDE SPACE THERMOSTAT FOR VAV BOX WHERE SHOWN ON FLOOR PLAN.
2. PROVIDE ONE SPACE THERMOSTAT SERVING VAV-8 AND VAV-9 WHERE SHOWN ON FLOOR PLAN.

AIR CURTAIN UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	TYPE	CFM	MOTOR HP	MAX VELOCITY(FPM)	MOCP	VOLTAGE	SONES	WEIGHT	REMARKS
ACU-1	BERNER	AE08-E-1072ABECWCATBSA	AMBIENT AIR CURTAIN	2200	1/5	2300	15 A	208V-1Ø	6	125 LBS	1-7

REMARKS:
1. UNIT SHALL BE MOUNTED ABOVE DOOR AS SHOWN ON M-1.01 FLOOR PLAN.
2. MOUNTING BRACKET SHALL BE PROVIDED BY MANUFACTURER.
3. PROVIDE NEMA-1 CONNECTOR FOR UNIT.
4. PROVIDE DOOR LIMIT SWITCHES FROM MANUFACTURER.
5. 1/4" ALUMINUM PRESSED FRAME BANK FILTER.
6. UNIT SHALL COME PACKAGED WITH BERNER AIR SMART CONTROLLER.
7. UNIT SHALL COME FURNISHED WITH ON/OFF SWITCH.

MECHANICAL SYMBOLS



TURNING VANES
VOLUME DAMPER
SUPPLY DUCT (DOWN - UP THROUGH LEVEL)
RETURN OR EXHAUST DUCT (DOWN - UP THROUGH LEVEL)
TRANSITION IN DUCT DIMENSION
TRANSITION (RECTANGULAR DUCT TO ROUND DUCT)
SUPPLY AIR DIRECTION ARROW
RETURN/EXHAUST DIRECTION ARROW
FLEXIBLE DUCT
S1-8"-200 — TERMINAL MARK - NECK SIZE - AIRFLOW (CFM)
CONNECT TO EXISTING
(T) THERMOSTAT
(SD) SMOKE DETECTOR

MECHANICAL ABBREVIATIONS

BTU	BRITISH THERMAL UNITS
CFM	CUBIC FEET PER MINUTE
CTE	CONNECT TO EXISTING
DB	DRY BULB TEMPERATURE
deg. F	DEGREES FAHRENHEIT
EC	ELECTRICAL CONTRACTOR
EDB	ENTERING DRY BULB TEMPERATURE
ESP	EXTERNAL STATIC PRESSURE
ETR	EXISTING TO REMAIN
FA	FREE AREA
FPM	FEET PER MINUTE
FT	FEET
HP	HORSEPOWER
KW	KILOWATT
MC	MECHANICAL CONTRACTOR
MBH	THOUSAND BRITISH THERMAL UNITS (BTU)
MCA	MINIMUM CIRCUIT AMPACITY
MOCP	MAXIMUM OVERCURRENT PROTECTION
NEC	NATIONAL ELECTRIC CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OBC	OHIO BUILDING CODE
OMC	OHIO MECHANICAL CODE
PH	PHASE
QTY	QUANTITY
RA	RETURN AIR
SA	SUPPLY AIR
TYP.	TYPICAL
V	VOLTS

GENERAL NOTES

1. CONDUCT FIELD SURVEY OF EXISTING CONDITIONS PRIOR TO SUBMISSION OF BID AND START OF WORK. NO ADDITIONAL PAYMENTS WILL BE MADE ON CLAIMS THAT ARISE FROM LACK OF KNOWLEDGE OF EXISTING CONDITIONS.
2. COORDINATE SCHEDULE OF WORK REQUIRED IN OCCUPIED AREAS WITH OWNER PRIOR TO STARTING SUCH WORK.
3. SCHEDULE UTILITY SERVICE SHUTDOWNS REQUIRED FOR NEW CONSTRUCTION WITH OWNER AND GENERAL TRADES PRIOR TO SHUTTING DOWN SYSTEMS. GIVE ONE WEEK ADVANCE NOTICE IN WRITING.
4. CUT FLOOR, WALL, AND CEILING CONSTRUCTION FOR PENETRATIONS TO ACCOMMODATE NEW WORK. COORDINATE WITH GENERAL TRADES. PATCH CONSTRUCTION TO MATCH, OR TO SATISFACTION OF ARCHITECT AND OWNER.
5. COORDINATE ROUTING OF NEW DUCTWORK WITH EXISTING BUILDING CONDITIONS AND WITH WORK OF OTHER TRADES. PROVIDE CHANGES IN LOCATION, DIRECTION, OFFSETS, AS MAY BE REQUIRED, WHETHER SPECIFICALLY INDICATED OR NOT, AND AT NO ADDITIONAL COST TO THE OWNER.
6. COORDINATE AIR DISTRIBUTION DEVICE LOCATIONS WITH FINAL REFLECTED CEILING PLAN.
7. UNLESS OTHERWISE NOTED, FLEXIBLE DUCTWORK IS SAME SIZE AS ROUND DUCTWORK TO WHICH IT IS CONNECTED. FLEXIBLE DUCTWORK TO BE NO MORE THAN 5'-0" AND TO BE INSTALLED TIGHT WITH NO SAGS OR KINKS.
8. THE DUCTWORK SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS.
9. UNLESS OTHERWISE NOTED, DUCTWORK SERVING A SINGLE DIFFUSER, GRILLE OR REGISTER IS TO BE FULL NECK SIZE OF AIR DISTRIBUTION DEVICE FROM BRANCH TAKE-OFF TO DEVICE CONNECTION.
10. PROVIDE MARK ON NEW CEILING GRID TO IDENTIFY LOCATIONS OF NEW VAV BOXES FOR EASE OF MAINTENANCE OF VAV BOXES.

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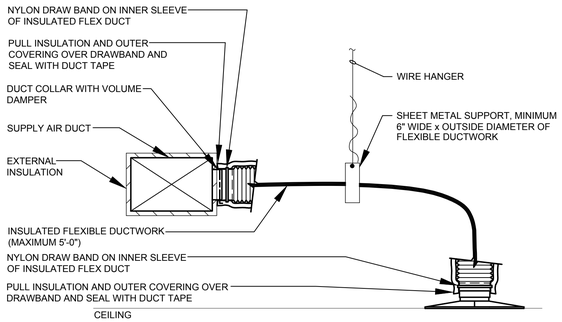
REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/29/2024
DRAWN BY: SJA
CHECKED BY: MJF
APPROVED BY:

NEW TERMINAL
LAKE COUNTY EAP TERMINAL
1969 Lost Nation Rd., Willoughby, OH 44094

MECHANICAL NOTES, DETAILS, SCHEDULES, SYMBOLS

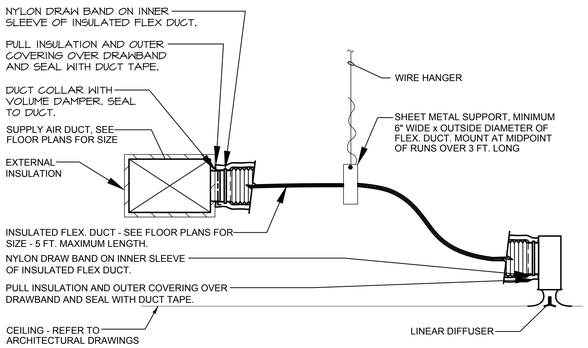
SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET: M0.01



DUCT-FLEXIBLE TO DIFFUSER

NOTE: NO SCALE

USE DRAWBAND INSTALLATION TOOL TO TIGHTEN BAND TO DUCTWORK. HAND INSTALLED DRAWBAND IS NOT ACCEPTABLE. MOUNT ALL SUPPORTS TO STRUCTURE.



DUCT-FLEXIBLE TO LINEAR DIFFUSER

NOTE: NO SCALE

USE DRAW BAND INSTALLATION TOOL TO TIGHTEN BAND TO DUCTWORK. HAND INSTALLED DRAWBAND IS NOT ACCEPTABLE.

SECTION 23 05 93 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 GENERAL

1.1 SUBMITTALS

A. FINAL REPORT: REQUIRED.

1.2 REPORT FORMS: AABC NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE FORMS.

1.3 THE CONTRACTOR SHALL OBTAIN THE SERVICES OF AN INDEPENDENT TEST, ADJUSTMENT AND BALANCE (TAB) AND COMMISSIONING AGENCY TO TEST, ADJUST BALANCE AND COMMISSION:

1. EACH SUPPLY AIR AND EXHAUST AIR DISTRIBUTION SYSTEM.
2. EACH CONTROL SYSTEM INCLUDING CALIBRATE ALL CONTROL ELEMENTS AND CHECK OPERATION INCLUDING ALL INTERLOCKS.
3. OVERALL BUILDING AIR BALANCE
4. REPORT ON ALL OF THE ABOVE.

B. TESTING AND BALANCING OF AIR DISTRIBUTION SYSTEMS SHALL BE PERFORMED, AT MINIMUM, IN ACCORDANCE WITH AABC NATIONAL STANDARDS, FIFTH EDITION, 1989. TEST AND BALANCE SHALL INCLUDE ALL EQUIPMENT AND DISTRIBUTION SYSTEMS AND SHALL BE REPORTED, AS A MINIMUM, ON FORMS AS PUBLISHED BY THE AABC (PAGE 213 AND 214 OF THE STANDARD MANUAL); NEBB EQUIVALENT OR OTHER APPROVED EQUAL.

C. MEASURE AND RECORD THE DRY BULB AND WET TEMPERATURES, HUMIDITIES (WHERE CONTROLLED), AND PRESSURES IN ALL SPACES SERVED WHEN THE OUTSIDE TEMPERATURE IS ABOVE 85°F (SUMMER TAB) AND BELOW 50°F (WINTER TAB). RECORD OUTSIDE DRY BULB AND WET BULB.

D. THE AGENCY SHALL, UNLESS APPROVED OTHERWISE BY THE OWNER, BE AN AABC OR NEBB MEMBER AND THE TAB WORK SHALL BE DONE BY AN AABC OR NERB CERTIFIED TEST AND BALANCE TECHNICIAN AND COMMISSIONING AGENT.

E. THE TAB AGENCY SHALL CHECK ALL THE SYSTEMS OPERATING TOGETHER TO ENSURE THAT THE VENTILATED SPACES ARE UNDER AN OVERALL PRESSURE PER ROOM CODE; SHALL CHECK AND REPORT THAT THE BUILDING ENVELOPE IS PROPERLY SEALED AND UNCONTROLLED AIR LEAKAGE INTO THE BUILDING DOES NOT OCCUR; SHALL CHECK THAT RETURN AND EXHAUST DUCTS LOCATED OUTSIDE AIR CONDITIONED SPACE ARE SEALED; SHALL CHECK SUPPLY AIR DUCTS FOR LEAKS TO ENSURE THAT COLD AIR LEAKAGE DOES NOT CAUSE CONDENSATION ON DUCT, EQUIPMENT AND BUILDING SURFACES ABOVE THE CEILING (DURING SUMMER TAB); SHALL CHECK RETURN AND EXHAUST GRILLES FOR PROPER SEAL AT DUCT CONNECTIONS TO ENSURE THAT AIR DOES NOT ENTER THESE DUCTS THROUGH UNCONDITIONED WALLS, CHASES, ETC.

F. INSTRUMENTS USED FOR TESTING AND BALANCING SHALL HAVE BEEN CALIBRATED WITHIN A PERIOD OF SIX MONTHS OF THE TIME OF THE TESTING AND BALANCING AND SUCH INSTRUMENTS SHALL CHECKED FOR ACCURACY PRIOR TO START OF WORK. SUBMIT VERIFICATION OF CERTIFICATION TO THE OWNER.

G. FOUR COPIES OF THE COMPLETE TEST REPORT SHALL BE SUBMITTED TO THE OWNER PRIOR TO FINAL INSPECTION OF THE PROJECT.

H. THE TAB REPORT SHALL INCLUDE A LIST OF ALL DEFICIENCIES FOUND DURING THE PRELIMINARY TESTING AND A CONTRACTOR RESPONSE INDICATING REMEDIAL ACTION TAKEN FOR EACH ITEM. THE TAB WORK SHALL NOT BE DEEMED DONE WITHOUT THIS REPORT.

SECTION 23 07 00 - HVAC INSULATION

PART 1 GENERAL

1.1 SUBMITTALS

A. PRODUCT DATA: REQUIRED.

B. SAMPLES: REQUIRED.

PART 2 PRODUCTS

2.1 DUCTWORK INSULATION

A. FLEXIBLE GLASS FIBER: FLEXIBLE, NONCOMBUSTIBLE BLANKET WITH VAPOR BARRIER JACKET.

B. JACKETS
1. ALUMINUM JACKET: SHEET, [SMOOTH] [EMBOSSED] FINISH.
2. OUTDOOR JACKET: ASPHALT IMPREGNATED AND COATED MINERAL FIBER SHEET.

C. DUCT INSULATION "R" VALUES SHALL BE EQUAL TO OR GREATER THAN REQUIRED BY CODE.

D. INSULATION SHALL NOT CONTAIN ANY PBDE (POLYBROMINATED DIPHENL ETHERS) FLAME RETARDANTS.

E. DUCT LINER: FLEXIBLE, NONCOMBUSTIBLE BLANKET, COATED ON AIR SIDE.

PART 3 EXECUTION

3.1 INSTALLATION

A. EXTERNAL DUCTWORK INSULATION
1. PROVIDE COLD DUCTWORK WITH VAPOR BARRIER JACKET. SEAL VAPOR BARRIER PENETRATIONS WITH VAPOR BARRIER ADHESIVE.
2. FOR EXPOSED DUCTWORK IN UNCONDITIONED ROOMS, FINISH WITH ALUMINUM JACKET.
3. FOR EXTERIOR APPLICATIONS, PROVIDE OUTDOOR JACKET.

B. DUCT LINER: DUCT DIMENSIONS INDICATED ARE NET INSIDE DIMENSIONS; INCREASE DUCT SIZE TO ALLOW FOR INSULATION THICKNESS.

3.2 SCHEDULES

		INSULATION THICKNESS INCH
A.	DUCTWORK INSULATION	
1.	FLEXIBLE GLASS FIBER	
	SUPPLY DUCTS	1.5
	RETURN DUCTS	1.5
2.	DUCT LINER	
	SUPPLY DUCTS	1.0
	RETURN DUCTS	0.5

SECTION 23 09 00 – INSTRUMENTATION AND CONTROL FOR HVAC

PART 1 GENERAL

1.1 SYSTEM DESCRIPTION

A. DESIGN REQUIREMENTS: ELECTRIC SYSTEM INCLUDING CONTROL DEVICES, ACTUATORS, AND ELECTRIC ACCESSORIES.

1.2 SUBMITTALS

A. PRODUCT DATA: REQUIRED.

B. SHOP DRAWINGS: REQUIRED.

PART 2 PRODUCTS

2.1 CONTROL COMPONENTS

A. FURNISH MATERIALS AND EQUIPMENT OF STANDARD COMPONENTS, MANUFACTURED FOR USE IN CONTROL SYSTEMS AND NOT CUSTOM DESIGNED ESPECIALLY FOR THIS PROJECT. FURNISH COMPONENTS TESTED AND PROVEN IN ACTUAL USE.

B. FURNISH PRODUCTS TO ACCOMPLISH SEQUENCES OF OPERATION DESCRIBED IN PART 3.

C. CONTROL WIRING: WIRING IN ACCORDANCE WITH REQUIREMENTS OF DIVISION 26. MINIMUM WIRE SIZE TO BE 14 GAUGE.

2.2 BUILDING AUTOMATION SYSTEM

A. PROVIDE AND INSTALL NEW STANDALONE BUILDING AUTOMATION SYSTEM FOR NEW BUILDING.

B. SYSTEM FUNCTIONS: SYSTEM SHOULD BE ABLE TO PROVIDE, AT A MINIMUM, THE FOLLOWING FUNCTIONS:
1. TIME-OF-DAY SCHEDULING.
2. OCCUPIED AND UNOCCUPIED TEMPERATURE CONTROL SET POINTS.
3. TIMED OVERRIDE.
4. TIME AND DATE.
5. ALARM LOG.
6. TREND LOGS.

C. POINTS: PROVIDE STANDARD CONTROL POINTS FOR AIR HANDLING UNITS AND ROOFTOP UNITS INCLUDING ON/OFF CONTROL, SUPPLY AIR TEMPERATURE, RETURN AIR TEMPERATURE, ALARMS, DIRTY FILTER, AND SETPOINT CONTROL. BAS SHALL ALSO BE ABLE TO MONITOR ZONE TEMPERATURE AND HUMIDITY IN EACH OF THE CLEAN ROOMS AND TEMPERATURE ONLY IN EACH OF THE SPACES. PROVIDE STATUS ONLY FOR ROOFTOP EXHAUST FAN AND DEHUMIDIFIERS.

D. INTERFACE: SOFTWARE SHOULD BE INSTALLED ON A STANDARD PC RUNNING WINDOWS 10 OR LATER. PROVIDE AT LEAST 1 GRAPHIC FOR EACH PIECE OF EQUIPMENT MONITORED. FURNISH AT LEAST 1 PC WORKSTATION IN THE BUILDING WITH BAS SOFTWARE INSTALLED. COORDINATE LOCATION WITH OWNER

E. MOBILE: BAS POINTS SHALL BE ABLE TO BE VIEWED FROM MOBILE PHONES POWERED BY APPLE OR ANDROID.

F. PROTOCOL: SYSTEM SHALL UTILIZE DDC CONTROLS COMPATIBLE WITH BACNET.

PART 3 EXECUTION

3.1 INSTALLATION

A. AFTER COMPLETION OF INSTALLATION, TEST AND ADJUST CONTROL EQUIPMENT.

B. PROVIDE GUARDS ON THERMOSTATS IN ENTRANCES AND OTHER PUBLIC AREAS.

C. PROVIDE CONDUIT AND ELECTRICAL WIRING IN ACCORDANCE WITH APPROPRIATE REQUIREMENTS OF DIVISION 26.

3.2 SEQUENCES OF OPERATION

A. ROOFTOP UNIT-VAV W/ REHEAT (RTU-1)
1. OCCUPIED CYCLE: FAN OPERATES CONTINUOUSLY. UNIT SHALL CYCLE GAS HEATER AND REFRIGERATION PACKAGE TO PROVIDE 55 DEGREE F AIR AT ALL TIMES. SUPPLY FAN SHALL MAINTAIN A DUCT STATIC PRESSURE SETPOINT AND RAMP UP OR DOWN DEPENDING ON THE POSITIONS OF VAV BOX DAMPERS.
2. ECONOMIZER: WHEN OUTDOOR CONDITIONS ARE FAVORABLE, OURISDE AIR DAMPER SHALL OPEN BEYOND ITS MINIMUM SETPOINT TO ALLOW MORE FRESH AIR INTO THE RTU.
3. SMOKE DETECTOR: A DUCT SMOKE DETECTOR SHALL BE INSTALLED ON THE RETURN AIR DUCT AND WIRED SUCH THAT THE UNIT SHUTS OFF WHEN SMOKE IS DETECTED.

B. VAV BOXES WITH ELECTRIC REHEAT (VAV-1 TO VAV-9)
1. UPON A CALL FOR COOLING FROM THE SPACE THERMOSTAT, THE AIR DAMPER SHALL OPEN TO ITS MAXIMUM POSITION TO PROVIDE THE DESIGN COOLING FLOW TO THE SPACE. UPON A CALL FOR HEATING FROM THE THERMOSTAT, THE AIR DAMPER SHALL OPEN TO ALLOW THE DESIGN HEATING FLOW TO THE SPACE AND THE ELECTRIC COIL SHALL ENERGIZE. WHEN THE THERMOSTAT IS NOT CALLING FOR HEATING OR COOLING, THE DAMPER SHOULD OPEN TO ITS MINIMUM POSITION TO PROVIDE THE MINIMUM AMOUNT OF AIR TO THE SPACE.

C. CEILING CASSETTE FANS (EF-1 TO EF-5)
1. FANS SHALL CYCLE ON AND OFF WITH THE LIGHTS IN THE ROOMS THAT THE FAN IS SERVICING.

D. AIR CURTAIN UNITS (ACU-1)
1. UNIT SHALL CYCLE ON AND OFF UPON ACTIVATION OF DOOR LIMIT SWITCH.

SECTION 23 30 00 – HVAC AIR DISTRIBUTION

PART 1 GENERAL

1.1 SUBMITTALS

A. PRODUCT DATA: REQUIRED.

B. SHOP DRAWINGS: REQUIRED.

PART 2 PRODUCTS

2.1 DUCTWORK

A. MATERIALS
1. STEEL DUCTS: GALVANIZED STEEL SHEET, LOCK-FORMING QUALITY.
2. FLEXIBLE DUCTS: FABRIC SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE OR FLAT STEEL BANDS.

B. METAL DUCTWORK
1. FABRICATE AND SUPPORT IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
2. CONSTRUCT T'S, BENDS, AND ELBOWS WITH RADIUS OF 1-1/2 TIMES WIDTH OF DUCT ON CENTER LINE OR PROVIDE TURNING VANES.
3. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 30 DEGREES DIVERGENCE AND 45 DEGREES CONVERGENCE.

C. MANUFACTURED DUCTWORK AND FITTINGS
1. MANUFACTURE IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. FURNISH DUCT MATERIAL, GAGES, REINFORCING, AND SEALING FOR OPERATING PRESSURES AS INDICATED ON DRAWINGS.

2.2 DUCT ACCESSORIES

A. VOLUME CONTROL DAMPERS
1. FABRICATION: SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
2. SINGLE BLADE DAMPERS: FABRICATE FOR DUCT SIZES TO 12 X 30 INCH.
3. QUADRANTS: PROVIDE LOCKING, INDICATING REGULATORS ON DAMPERS.

B. FLEXIBLE DUCT CONNECTIONS: UL LISTED FIRE-RETARDANT NEOPRENE COATED WOVEN GLASS FIBER FABRIC TO NFPA 90A, APPROXIMATELY 3 INCHES WIDE, CRIMPED INTO METAL EDGING STRIP.

C. DUCT ACCESS DOORS
1. FABRICATE IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
2. ACCESS DOORS WITH SHEET METAL SCREW FASTENERS ARE NOT ACCEPTABLE.

D. BACKDRAFT DAMPERS: FABRICATE MULTI-BLADE, PARALLEL ACTION GRAVITY BALANCED BACKDRAFT DAMPERS OF GALVANIZED STEEL OR EXTRUDED ALUMINUM, WITH CENTER PIVOTED BLADES LINKED TOGETHER.

2.3 FLUE

A. DOUBLE WALL TYPE, UL LISTED AND LABELED TYPE "B" CONSISTING OF GALVANIZED STEEL OUTER PIPE COMBINED WITH ALUMINUM ALLOY INNER PIPE INCLUDING ACCESSORIES, VENT TERMINALS, FINAL CONNECTIONS TO EQUIPMENT, FLASHING, AND SUPPORTS.

2.4 GRILLES, REGISTERS, AND DIFFUSERS

A. MANUFACTURER: PRICE OR SIMILAR BY ANEMOSTAT, TITUS, OR NAILOR-HART.

B. GENERAL: GRILLE, REGISTER, AND DIFFUSER INFORMATION MARK, MODEL NUMBER, TYPE, SIZE, FINISH, AND ACCESSORY ITEMS ARE INDICATED IN SCHEDULE. LOCATIONS, TYPE, CFM, AND DIRECTIONS OF THROW (WHERE APPLICABLE) ARE INDICATED ON DRAWINGS.

C. DEFINITIONS: TERMS USED FOR GRILLES, REGISTERS, AND DIFFUSERS ARE AS FOLLOWS:
1. GRILLES: SAME STYLE AS REGISTERS BUT WITHOUT DAMPER.
2. REGISTERS: ITEMS LABELED AS REGISTERS ARE TO BE FURNISHED WITH OPPOSED BLADE DAMPERS.

D. FINISH: FURNISH GRILLES, REGISTERS AND DIFFUSERS WITH FACTORY APPLIED OFF-WHITE FINISH UNLESS NOTED OTHERWISE.

2.5 LOUVERS

A. 6 INCHES DEEP WITH BLADES ON 45 DEGREE SLOPE, HEAVY CHANNEL FRAME, BIRDSCREEN WITH 1/2 INCH SQUARE MESH FOR EXHAUST.

B. MATERIAL: 12 GAGE THICK EXTRUDED ALUMINUM.

C. FINISH: COLOR TO BE SELECTED BY ARCHITECT.

D. INSTALLATION: EXTERIOR.

2.6 CEILING FANS

A. CENTRIFUGAL FAN UNIT: DIRECT DRIVE WITH GALVANIZED STEEL HOUSING LINED WITH 1/2 INCH ACOUSTIC INSULATION, RESILIENT MOUNTED MOTOR, GRAVITY BACKDRAFT DAMPER IN DISCHARGE.

B. DISCONNECT SWITCH: CORD AND PLUG-IN HOUSING FOR THERMAL OVERLOAD PROTECTED MOTOR AND SOLID STATE SPEED CONTROLLER.

C. GRILLE: PAINTED WHITE ALUMINUM.

D. MANUFACTURER: LOREN COOK "GEMINI" OR SIMILAR BY GREENHECK, ACME, OR TWIN CITY FAN.

2.7 VARIABLE AIR VOLUME TERMINAL UNITS

A. GENERAL: TEST AND RATE VAV BOXES ACCORDING TO ARI STANDARD 880.

B. SHUT-OFF, SINGLE DUCT CONTROL REHEAT UNIT (TBR):
1. CASING: GALVANIZED STEEL. INLET AND OUTLET CONNECTIONS SIZED TO FIT STANDARD ROUND, FLEXIBLE DUCT DIAMETERS. DISCHARGE OUTLET CONFIGURATION AND QUANTITY AS SHOWN ON THE DRAWINGS. LEAK RATE 2 PERCENT AT 0.5 INCH WATER GAGE. INTERIOR SURFACES OF CASING ACOUSTICALLY AND THERMALLY LINED WITH 1 INCH THICK, 1-1/2 POUND DENSITY, FIBERGLASS INSULATION FACED TO PREVENT EROSION. INTEGRAL OUTLET CONNECTIONS WITH FACTORY PROVIDED AND INSTALLED DAMPERS, WITH POSITION LOCATING HANDLES FOR AIR BALANCING.
2. CONTROLS: NORMALLY OPEN, CYLINDRICAL CAST ALUMINUM AIR FLOW CONTROL DEVICE WITH INTEGRAL OR FACTORY MOUNTED [ELECTRIC] [PNEUMATIC] ACTUATOR. VALVE TAPERED TO FIT STANDARD, ROUND FLEXIBLE DUCT DIAMETERS. SENSING RING CAPABLE OF SENSING AIR FLOW TO WITHIN 10 PERCENT AND INCLUDE PRESSURE TAPS ON INLET CONE OF AIR VALVE FOR VOLUME REGULATOR TO MEASURE AIR FLOW.
3. VOLUME REGULATOR: PRESSURE INDEPENDENT, FACTORY MOUNTED, CALIBRATED, AND WIRED TO ACTUATOR. PROVIDES CONSTANT AIR DELIVERY CONTROL WITHIN 5 PERCENT OF THE RATED FLOW INDEPENDENT OF CHANGES IN SYSTEM STATIC PRESSURE AND 1-1/2 DIAMETERS OF STRAIGHT DUCT AT INLET. FURNISH FIELD ADJUSTABLE MAXIMUM AND MINIMUM CFM SETTINGS. CONTROLLER INPUT SPAN REMAINS CONSTANT REGARDLESS OF FLOW SETTINGS.
4. HOT WATER COIL: ALUMINUM FINS MECHANICALLY BONDED TO THE COPPER TUBE. SAME END SOLDER TYPE CONNECTIONS. LEAK TESTED AT 300 PSIG AIR, UNDER WATER.
5. SOUND LEVEL: NOT TO EXCEED NC35 WHILE DISCHARGING 300 CFM OF AIR AT 8 DB ROOM EFFECT IN EACH OCTAVE BAND AND A FOUR FOOT, TWO SLOT LINEAR DIFFUSER.
6. TITUS MODEL DESV OR APPROVED EQUAL.

PART 3 EXECUTION

3.1 INSTALLATION

A. INSTALL BACKDRAFT DAMPERS ON DISCHARGE OF EXHAUST FANS.

B. CONNECT DIFFUSERS OR TROFFER BOOTS TO LOW PRESSURE DUCTS WITH 5 FEET MAXIMUM LENGTH OF FLEXIBLE DUCT.

C. INSTALL FLEXIBLE CONNECTIONS IMMEDIATELY ADJACENT TO EQUIPMENT IN DUCTS ASSOCIATED WITH FANS AND MOTORIZED EQUIPMENT.

D. INSTALL DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AND AT FIRE DAMPERS.

E. CHECK LOCATION OF AIR OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY, AND LIGHTING ARRANGEMENT.

F. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFF TO DIFFUSERS, AND GRILLES AND REGISTERS.

G. PAINT DUCTWORK VISIBLE BEHIND AIR OUTLETS AND INLETS MATTE BLACK.

H. INSTALLATION OF VARIABLE AIR VOLUME TERMINALS
1. INSTALL VAV TERMINALS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. SUPPORT VAV TERMINALS INDEPENDENTLY FROM BUILDING STRUCTURE. DO NOT SUPPORT FROM ADJACENT DUCTWORK, PIPING OR CONDUITS.
3. SUPPORT TERMINAL DEVICES CONNECTED BY FLEXIBLE DUCT INDEPENDENTLY OF THE FLEXIBLE DUCT.
4. INSTALL TRANSITION PIECE TO MATCH FLEXIBLE DUCT SIZE TO INLET OR OUTLET OF VAV TERMINAL.

I. VARIABLE VOLUME VARIABLE TEMPERATURE SYSTEM:
1. INSTALL PLENUM RATED WIRING NECESSARY FOR VARIABLE VOLUME VARIABLE TEMPERATURE CONTROL SYSTEM TO INTERFACE WITH ROOFTOP HVAC UNIT, ECONOMIZER AND HEATING CONTROLS.
2. AT COMPLETION OF SYSTEM INSTALLATION, PROVIDE TEST OF OPERATION, CHECK OF INSTALLATION, AND START-UP OF SYSTEM.

SECTION 23 70 00 – HEATING, VENTILATING, AND AIR CONDITIONING EQUIPMENT

PART 1 GENERAL

1.1 SUBMITTALS

A. PRODUCT DATA: REQUIRED.

B. SHOP DRAWINGS: REQUIRED.

C. PROJECT RECORD DOCUMENTS: REQUIRED.

PART 2 PRODUCTS

2.1 PACKAGED ROOFTOP AIR CONDITIONING UNITS

A. UNIT: SELF-CONTAINED, PACKAGED, FACTORY ASSEMBLED AND PREWIRED UNIT, CONSISTING OF CABINET AND FRAME, SUPPLY FAN, HEAT EXCHANGER AND BURNER, CONTROLS, AIR FILTERS, REFRIGERANT COOLING COIL AND COMPRESSOR, CONDENSER COIL AND CONDENSER FAN.

B. CABINET ACCESS PANELS: QUICK FASTENERS

C. HEAT EXCHANGERS: WELDED STAINLESS STEEL.

D. AIR FILTERS: CONSTRUCTION THROWAWAY FILTER.

E. ROOF MOUNTING CURB: 14 INCHES HIGH GALVANIZED STEEL CHANNEL FRAME WITH GASKETS AND NAILER STRIPS.

F. GAS BURNER: BURNER WITH INTERMITTENT SPARK OR GLOW COIL IGNITION.

G. EVAPORATOR COIL: COPPER TUBE ALUMINUM FIN COIL ASSEMBLY WITH CAPILLARY TUBES OR THERMOSTATIC EXPANSION VALVES.

H. COMPRESSOR: HERMETIC OR SEMI-HERMETIC COMPRESSOR, 3600 RPM, RESILIENTLY MOUNTED WITH POSITIVE LUBRICATION, CRANKCASE HEATER, HIGH AND LOW PRESSURE SAFETY CONTROLS, MOTOR OVERLOAD PROTECTION, SUCTION AND DISCHARGE SERVICE VALVES AND GAGE PORTS.

I. CONDENSER COIL: COPPER TUBE ALUMINUM FIN COIL ASSEMBLY WITH COIL GUARD, DIRECT DRIVE PROPELLER FANS, FAN GUARD.

J. DAMPERS: PROVIDE OUTSIDE, RETURN, AND RELIEF DAMPERS WITH DAMPER OPERATOR AND CONTROL PACKAGE TO AUTOMATICALLY VARY OUTSIDE AIR QUANTITY. OUTSIDE AIR DAMPER FALLS TO CLOSED POSITION. RELIEF DAMPERS MAY BE GRAVITY BALANCED.

K. THERMOSTAT: LOW VOLTAGE THERMOSTAT WITH SYSTEM SELECTOR SWITCH AND FAN CONTROL SWITCH.

L. REMOTE READOUT PANELS: CONTAIN SIGNAL LIGHTS INDICATING SYSTEM STATUS, HEATING SYSTEM FAILURE, COOLING SYSTEM FAILURE, AND DIRTY FILTERS; CHECK SWITCHES PROVING SIGNAL LIGHT OPERATIONS; SYSTEM ON-OFF SWITCH AND COOLING SYSTEM ON-OFF SWITCH.

2.2 AIR CURTAIN UNIT

A. COILS: OPEN TYPE FOR RAPID TEMPERATURE RISE

B. CABINET: SLEEK SELF-CONTAINED, ONE-PIECE, LIGHT GUAGE CORROSION RESISTANT METAL DESIGN

C. MOTOR: 1/5 HP VARIABLE SPEED CONTROL MOTOR WITH CW OR CCW ROTATION

D. CONTROL: INTEGRAL THERMOSTAT THERMAL OVERLOAD.

PART 3 EXECUTION

3.1 INSTALLATION

A. PROVIDE INITIAL START-UP AND SHUT-DOWN DURING FIRST YEAR OF OPERATION, INCLUDING ROUTINE SERVICING AND CHECK-OUT.

B. MOUNT ROOF MOUNTED UNITS ON FACTORY BUILT ROOF CURB.

C. PROVIDE SHUT-OFF VALVES IN CONDENSER WATER INLET AND OUTLET PIPING.

D. PIPE DRAIN PAN CONDENSATE WITH "P" TRAP TO NEAREST DRAIN.

SECTION 23 80 00 – DECENTRALIZED HVAC EQUIPMENT

PART 1 GENERAL

1.1 SUBMITTALS

A. PRODUCT DATA: REQUIRED.

B. SHOP DRAWINGS: REQUIRED.

PART 2 PRODUCTS

2.1 ELECTRIC WALL MOUNTED UNIT HEATERS

A. ASSEMBLY: UL LABELED WITH TERMINAL BOX AND COVER, FACTORY MOUNTED DISCONNECT SWITCH, AND BUILT-IN CONTROLS.

B. CABINET: ENAMELED STEEL WITH REMOVED FRONT PANEL WITH INTEGRAL AIR OUTLET AND INLET GRILLES.

C. FAN: DIRECT DRIVE PROPELLER TYPE, WITH FAN GUARD.

D. MOTOR: PERMANENT SPLIT CAPACITOR WITH PERMANENTLY LUBRICATED BEARINGS.

E. CONTROL: INTEGRAL THERMOSTAT THERMAL OVERLOAD.

2.2 CONVECTORS

A. HEATING ELEMENTS: SEAMLESS COPPER TUBING MECHANICALLY EXPANDED INTO ALUMINUM FINS AND CAST IRON HEADERS.

B. CABINET: 16 GAGE STEEL FRONT AND TOP, 18 GAGE STEEL BACK AND ENDS; EXPOSED CORNERS ROUNDED; PRIME COATED.

C. DAMPER: KNOB-OPERATED AT ENCLOSURE AIR OUTLET.

2.3 ELECTRIC UNIT HEATERS

A. ASSEMBLY: UL LABELED WITH TERMINAL BOX AND COVER, FACTORY MOUNTED DISCONNECT SWITCH, AND [BUILT-IN] CONTROLS.

B. HEATING ELEMENTS: ENCLOSED COPPER TUBE, ALUMINUM FINNED ELEMENT OF COILED NICKEL-CHROME RESISTANCE WIRE CENTERED IN TUBES AND EMBEDDED IN REFRACTORY MATERIAL.

C. CABINET: ENAMELED STEEL WITH REMOVED FRONT PANEL WITH INTEGRAL AIR OUTLET AND INLET GRILLES.

D. FAN: DIRECT DRIVE PROPELLER TYPE, WITH FAN GUARD.

E. MOTOR: PERMANENT SPLIT CAPACITOR WITH PERMANENTLY LUBRICATED BEARINGS.

F. CONTROL: SEPARATE FAN SPEED SWITCH AND THERMOSTAT HEAT SELECTOR SWITCH, THERMAL OVERLOAD.

PART 3 EXECUTION

3.1 INSTALLATION

A. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.

STATE OF OHIO
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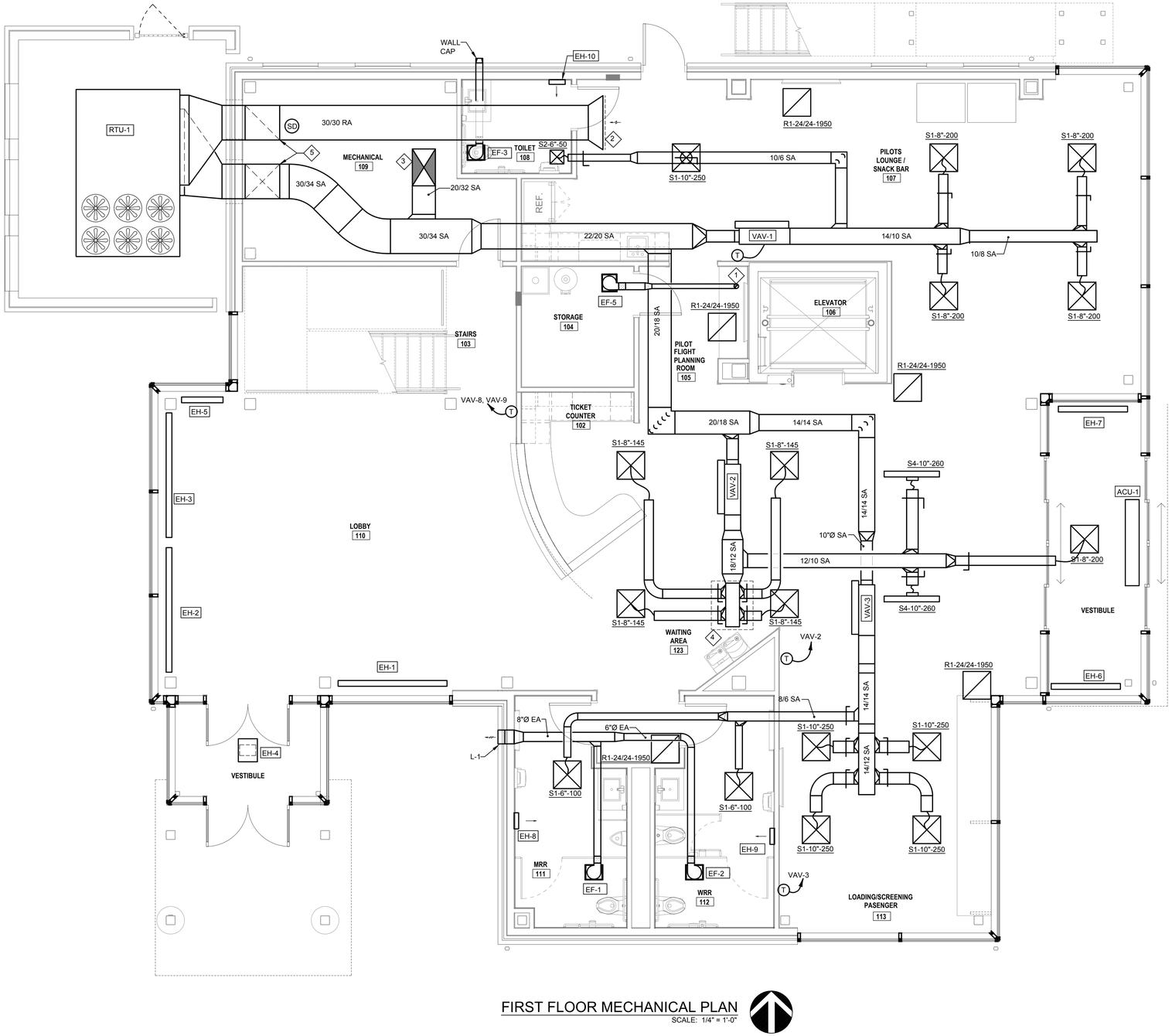
REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/03/2024
DRAWN BY: SLIA
CHECKED BY: MJF
APPROVED BY:

NEW TERMINAL
LAKE COUNTY EAP TERMINAL
1969 Lost Nation Rd., Willoughby, OH 44094

MECHANICAL SPECIFICATIONS

SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET M0.02



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

PLAN NOTES

1. 4" EA DUCT THRU CEILING TO ROOF.
2. PLENUM RETURN W/ 1/2" MESHSCREEN.
3. 20/32 SA TO SECOND FLOOR.
4. 42" X 36" ACCESS PANEL.
5. ROUTE SA AND RA DUCTS UP TIGHT TO WALL. PROVIDE TURNING VANES AT 90° BENDS.

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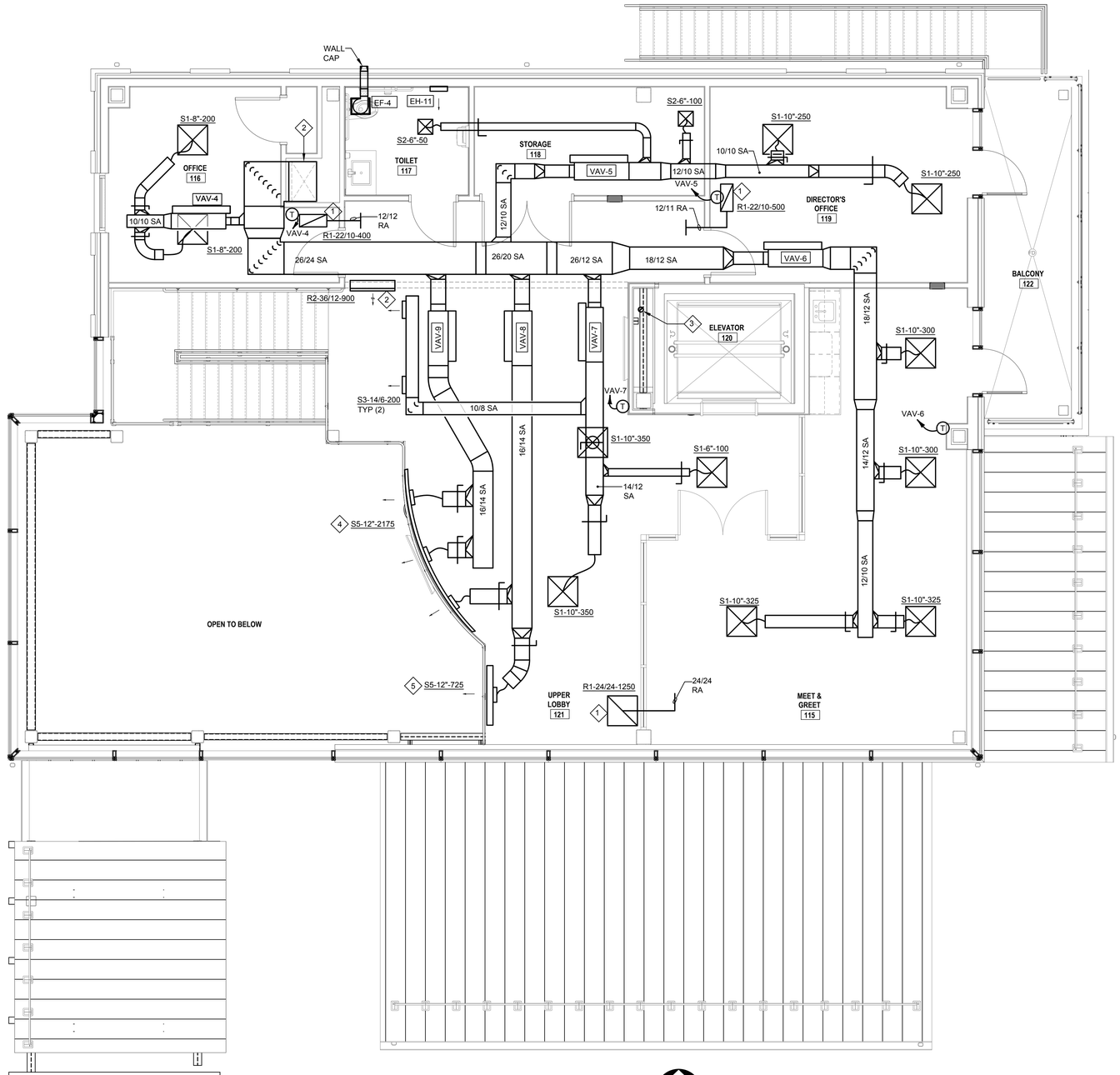
FIRST FLOOR MECHANICAL PLAN

SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET M1.01



SECOND FLOOR MECHANICAL PLAN

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

PLAN NOTES

1. SINGLE DEFLECTION RETURN GRILLE WITH TRANSFER DUCT.
2. 32/20 SA DUCT THROUGH SOFFIT.
3. 4" ROUND DUCT FROM FIRST FLOOR UP THROUGH ROOF. TERMINATE WITH WEATHERPROOF CAP.
4. COORDINATE CURVED DIFFUSER WITH ARCHITECT. VERIFY RADIUS OF CURVATURE AND TOTAL LENGTH PRIOR TO ORDERING.
5. 4" LENGTH DIFFUSER.

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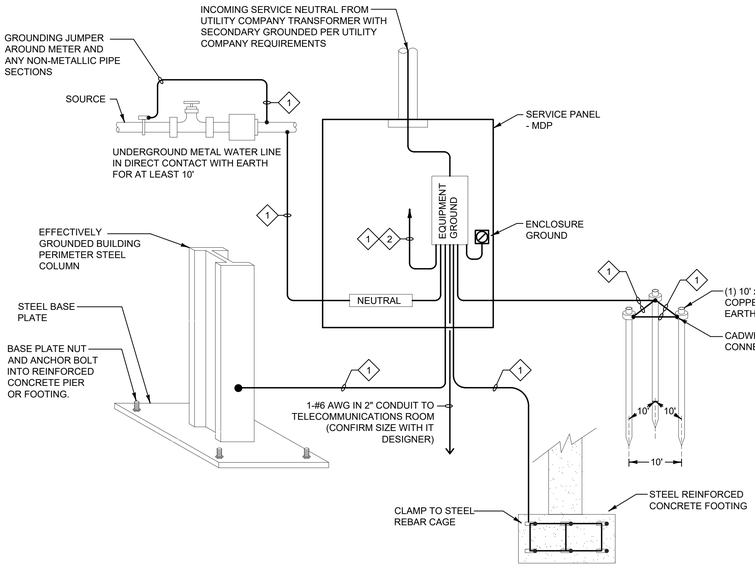
SECOND FLOOR MECHANICAL PLAN

SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET M1.02

MECHANICAL EQUIPMENT WIRING SCHEDULE

"DC"= DIRECT CONNECT
"VFD"= VARIABLE FREQUENCY DRIVE
COMBINATION STARTER AND FUSED DISCONNECT
FUSED DISCONNECT
NON-FUSED DISCONNECT
MANUAL MOTOR STARTER
SWITCH
JUNCTION BOX

ITEM NO.	EQUIPMENT	HP	KW	MCA	FLA	VOLTS	Φ	CONNECTION BY EC	PANEL / CKT.NO.	CIRC BKR AMPS	CIRC BKR POLES	WIRING AND CONDUIT	NOTES
RTU-1	ROOF TOP UNIT	7.5	-	135	-	208	3	200AS NEMA-3R	MDP	150	3	3-1/0 AWG & 1-6 AWG GND - 1 1/2" C.	
VAV-1	REHEAT TERMINAL BOX	-	9.5	33	-	208	3	60AS	M/1,3,5	35	3	3-8 AWG & 1-10 AWG GND - 3/4" C.	
VAV-2	REHEAT TERMINAL BOX	-	11.0	38.2	-	208	3	60AS	M/7,9,11	40	3	3-8 AWG & 1-10 AWG GND - 3/4" C.	
VAV-3	REHEAT TERMINAL BOX	-	10.5	36.4	-	208	3	60AS	M/13,15,17	40	3	3-8 AWG & 1-10 AWG GND - 3/4" C.	
VAV-4	REHEAT TERMINAL BOX	-	3.5	12.1	-	208	3	30AS	L2/19,21,23	15	3	3-12 AWG & 1-12 AWG GND - 3/4" C.	
VAV-5	REHEAT TERMINAL BOX	-	5.5	19.1	-	208	3	30AS	L2/25,27,29	20	3	3-12 AWG & 1-12 AWG GND - 3/4" C.	
VAV-6	REHEAT TERMINAL BOX	-	10.5	36.4	-	208	3	60AS	L2/31,33,35	40	3	3-8 AWG & 1-10 AWG GND - 3/4" C.	
VAV-7	REHEAT TERMINAL BOX	-	10.5	36.4	-	208	3	60AS	L2/37,39,41	40	3	3-8 AWG & 1-10 AWG GND - 3/4" C.	
VAV-8	REHEAT TERMINAL BOX	-	13.0	45.1	-	208	3	60AS	L2/16,18,20	50	3	3-6 AWG & 1-10 AWG GND - 3/4" C.	
VAV-9	REHEAT TERMINAL BOX	-	13.0	45.1	-	208	3	60AS	L2/22,24,26	50	3	3-6 AWG & 1-10 AWG GND - 3/4" C.	
ACU-1	AIR CURTAIN UNIT	1/5	0.4	-	-	208	1	30AS	M/39,41	15	2	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EF-1	EXHAUST FAN	1/25	0.3	-	-	120	1	S	L1/31	20	1	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EF-2	EXHAUST FAN	1/25	0.3	-	-	120	1	S	L1/33	20	1	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EF-3	EXHAUST FAN	1/25	0.3	-	-	120	1	S	L1/35	20	1	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EF-4	EXHAUST FAN	1/25	0.3	-	-	120	1	S	L2/14	20	1	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EF-5	EXHAUST FAN	1/25	0.3	-	-	120	1	S	L1/37	20	1	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EH-1	ELECTRIC HEATER	-	4.0	-	19.2	208	1	30AS	M/2,4	30	2	2-10 AWG & 1-10 AWG GND - 3/4" C.	
EH-2	ELECTRIC HEATER	-	4.5	-	21.6	208	1	30AS	M/6,8	30	2	2-10 AWG & 1-10 AWG GND - 3/4" C.	
EH-3	ELECTRIC HEATER	-	4.5	-	21.6	208	1	30AS	M/10,12	30	2	2-10 AWG & 1-10 AWG GND - 3/4" C.	
EH-4	ELECTRIC HEATER	-	2	-	9.6	208	1	30AS	M/14,16	20	2	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EH-5	ELECTRIC HEATER	-	1.5	-	7.2	208	1	30AS	M/18,20	20	2	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EH-6	ELECTRIC HEATER	-	1.25	-	6	208	1	30AS	M/22,24	20	2	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EH-7	ELECTRIC HEATER	-	1.25	-	6	208	1	30AS	M/26,28	20	2	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EH-8	ELECTRIC HEATER	-	1.5	-	5.8	208	1	30AS	M/30,32	20	2	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EH-9	ELECTRIC HEATER	-	1.5	-	5.8	208	1	30AS	M/34,36	20	2	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EH-10	ELECTRIC HEATER	-	2	-	10	208	1	30AS	M/38,40	20	2	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EH-11	ELECTRIC HEATER	-	2	-	10	208	1	30AS	L2/15,17	20	2	2-12 AWG & 1-12 AWG GND - 3/4" C.	
EWH-1	ELECTRIC WATER HEATER	-	4.5	-	-	208	1	30AS	M/19,21	30	2	2-10 AWG & 1-10 AWG GND - 3/4" C.	
IWH-2	INSTANTANEOUS WATER HEAT.	-	6.24	-	-	208	1	60AS	M/23,25	40	2	2-8 AWG & 1-10 AWG GND - 3/4" C.	
IWH-3	INSTANTANEOUS WATER HEAT.	-	6.24	-	-	208	1	60AS	M/27,29	40	2	2-8 AWG & 1-10 AWG GND - 3/4" C.	
SP-1	SUBMERSIBLE PUMP	1/2	0.4	-	-	120	1	Φ	L1/24	20	1	2-12 AWG & 1-12 AWG GND - 3/4" C.	



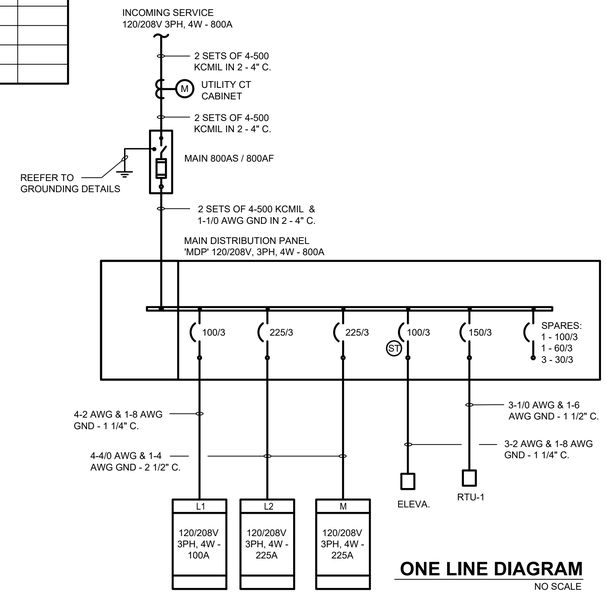
SERVICE GROUNDING ELECTRODE SYSTEM WIRING DIAGRAM

NO SCALE

1. THE GROUNDING ELECTRODE CONDUCTORS SHALL BE SIZED PER TABLE 250-66 OF THE NEC. RUN CONCEALED IN AREAS OF FINISHED CONSTRUCTION, EXPOSED IN UN-FINISHED AREAS.
2. GROUND CONDUCTORS TO OTHER POINTS AND EQUIPMENT, AS REQUIRED BY NEC ARTICLE 250.

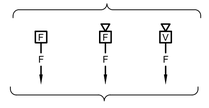
LUMINAIRE SCHEDULE

TYPE	LUMINAIRE WATTS	LUMINAIRE VOLTS	LAMP TYPE	DESCRIPTION	MOUNTING	MANUFACTURER	CATALOG NUMBER	REMARKS
A	25	120	LED 3300K 3358 LUMENS	2'X2' BACK-LIT TROFFER WITH SWITCHABLE LUMENS	RECESSED	COLUMBIA LIGHTING	CBT22-LS35	
B	38	120	LED 4400K 4300 LUMENS	2'X4' BACK-LIT TROFFER WITH SWITCHABLE LUMENS	RECESSED	COLUMBIA LIGHTING	CBT24-LS35	
C	31.6	120	LED 3500K 3000 LUMENS	8" LED DOWNLIGHT WITH WHITE CONE AND FLANGE	RECESSED	PRESCOLITE	LBRP-M-LS-HL-35K9-LBRP-8RD-T-WC	
D	36	120	LED 3500K 4500 LUMENS	MOD 4 RECESSED LINEAR FIXTURE WITH DIRECT OUTPUT AND MATTE WHITE FINISH	RECESSED	LITECONTROL	4L-DW-D-8-08-SOF-C1-35K9-D050-D01-1C-UNV	
G	56	120	LED 3500K 5500 LUMENS	26" PENDANT DECORATIVE FIXTURE WITH SPARKLING SILVER AND OPAL DIFFUSER	PENDANT	ZANEEN LIGHTING	A300062-DV-35K-01-01-10	
H	38	120	LED 3000K 5000 LUMENS	SUSPENDED MATREX RD DUAL HEAD WITH SILVER FINISH AND 0-10V DIMMING	PENDANT	BETA CALCO	MRDP1P01-LMA0250-LMB0250-CR80-CTA30-BB30-V1-DA01-FA20-CN1-CF20-NU1-CS1	
K	27	120	LED 3500K 3500 LUMENS	4' LINEAR SUSPENDED STRIP WITH WIDE DISTRIBUTION AND CURVED, FROSTED ACRYLIC LENS.	PENDANT	COLUMBIA LIGHTING	MPS-4-9-35-MW-C-W-E-U-CSHC	
L	42	120	LED 3000K 2500 LUMENS	MONOPOINT LUMINAIRE SURFACE MOUNTED WITH BRUSHED NICKEL FINISH	SURFACE	WAC LIGHTING	MO-2042-930-BN	
X	4.2	120	LED	WHITE THERMOPLASTIC, DUAL SQUARE LAMP HEAD, UNIVERSAL EXIT FACE, RED LETTERS, DAMP LOCATION LISTED.	SURFACE	COMPASS	CCRHOSQ	
X1	2	120	LED	WHITE THERMOPLASTIC, DUAL SQUARE HEAD EMERGENCY LIGHT.	WALL	COMPASS	CU2SQ	
X2	2.8	120	LED	WHITE THERMOPLASTIC EXIT, UNIVERSAL FACE RED LED	SURFACE	COMPASS	CARG	
RH	2	120	LED	REMOTE HEAD WITH WHITE FINISH	WALL	PORTOR LIGHTING	EML-S-WL-2H	



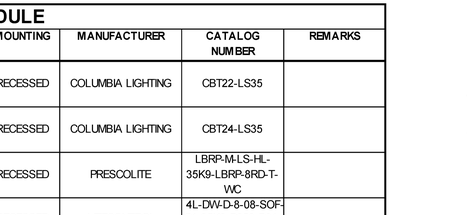
ONE LINE DIAGRAM

NO SCALE



TYPICAL DEVICE DESIGNATIONS - REFER TO FLOOR PLANS FOR DEVICE TYPES AND LOCATIONS, AND REFER TO SYMBOL LEGEND FOR DESCRIPTIONS

TYPICAL DEVICE WIRING TO FACP OR FAEP - 18 AWG, 16 AWG AND 14 AWG COPPER CABLES



FIRE ALARM SYSTEM BLOCK DIAGRAM

1.) ALL 24VDC FIRE ALARM CABLE SHALL BE INSTALLED IN CONDUIT, OR SHALL BE FIRE ALARM/CONTROL TYPE MC CABLE (RED SHEATH). AT THE CONTRACTORS OPTION, PLENUM RATED CABLE MAY BE USED WITHOUT CONDUIT ONLY ABOVE ACCESSIBLE, LAY-IN CEILINGS, AND IN EXPOSED STRUCTURE AREAS ABOVE 12'-0" A.F.F.

2.) THE SYSTEM SUPPLIER SHALL DETERMINE THE SIZE, TYPE AND QUANTITY OF 24VDC CABLES FOR THE SYSTEM, AND SHALL FURNISH INSTALLATION FLOOR PLANS FOR REVIEW AND APPROVAL.

3.) VERIFY QUANTITY AND LOCATION OF SPRINKLER SYSTEM TAMPER AND FLOW SWITCHES WITH THE SPRINKLER SYSTEM CONTRACTOR.

4.) REFER TO THE SPECIFICATIONS FOR ADDITIONAL SYSTEM REQUIREMENTS. ALL POWER SUPPLIES AND BATTERIES SHALL HAVE A 25% SPARE (MINIMUM) CAPACITY FOR FUTURE DEVICES.

ELECTRICAL GENERAL NOTES

A. THE ELECTRICAL INSTALLATION MUST MEET OR EXCEED THE MINIMUM REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE AND ANY APPLICABLE STATE OR LOCAL CODES, AS INTERPRETED BY THE LOCAL AUTHORITY HAVING JURISDICTION.

B. CONFIRM THE CEILING TYPES IN ALL AREAS WITH THE GENERAL TRADES CONTRACTOR OR WITH THE EXISTING BUILDING CEILING CONDITIONS, AND FURNISH THE PROPER LIGHT FIXTURE TRIMS AND SUPPORTS TO SUIT EACH CEILING TYPE.

C. ALL LIGHTING FIXTURE LOCATIONS INDICATED ON THIS DRAWING SHALL BE SUPERSEDED BY THE ARCHITECTURAL REFLECTED CEILING PLAN FOR THE AREA. ELECTRICAL CONTRACTOR SHALL REVIEW ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF LIGHT FIXTURES.

D. ALL WALL MOUNTED LIGHTING FIXTURE LOCATIONS INDICATED ON THIS DRAWING SHALL HAVE THE MOUNTING HEIGHTS VERIFIED WITH THE ARCHITECT BEFORE ROUGH-IN.

E. BRANCH CIRCUIT WIRING FOR EMERGENCY LIGHTING BATTERY PACKS AND EXIT LIGHTS SHALL BE INSTALLED AND CONNECTED IN ACCORDANCE WITH ARTICLE 700 OF THE NATIONAL ELECTRICAL CODE.

F. THIS CONTRACTOR SHALL COORDINATE INSTALLATION OF AND MOUNTING OF ALL DUPLEX RECEPTACLES, TELEPHONE, DATA, OUTLETS, ETC., WITH ROOM ELEVATIONS AND ALL MILLWORK DRAWINGS BEFORE ROUGH-IN.

G. THIS CONTRACTOR SHALL COORDINATE ALL FLOOR OUTLETS WITH FURNITURE PLAN LAYOUTS BEFORE ROUGH-IN. FINAL LOCATIONS SHALL BE APPROVED BY THE ARCHITECT. OBTAIN FURNITURE PLANS FROM ARCHITECT OR INTERIOR SPACE PLANNER.

H. OPEN WIRE AND OPEN CABLES INSTALLED WITHIN THE RETURN AIR CEILING SPACE SHALL BE PLENUM RATED LETTER CODE 'P'.

I. ALL WIRE FOR POWER, LIGHTING, AND CONTROL SYSTEMS SHALL BE 600 VOLT THHN-THWN, 90 DEGREE INSULATED AND SHALL BE COPPER. ALL WIRE FOR COMMUNICATIONS SYSTEMS SHALL BE COPPER.

J. FIRE SEAL OPENINGS AROUND ALL CONDUIT PENETRATIONS. PENETRATIONS THROUGH FIRE RATED CONSTRUCTION SHALL BE SEALED WITH LISTED FIRE RATED MATERIALS.

K. ALL HOMERUN WIRING SHALL BE RUN IN EMT THIN-WALL THREADLESS CONDUIT. TYPE MC CABLE MAY BE INSTALLED CONCEALED WITHIN WALL AND CEILING SPACES FOR BRANCH CIRCUIT WIRING.

L. ALL ELECTRICAL EQUIPMENT SHALL BE U.L. LISTED OR LABELED.

M. COORDINATE THE ELECTRICAL WORK WITH ALL TRADES ON SITE AND WITH THE OWNER'S REPRESENTATIVE. REFER TO THE PLANS AND DETAILS SHOWING THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND TECHNOLOGY WORK TO PROPERLY PLAN AND INSTALL THE ELECTRICAL SYSTEMS AND EQUIPMENT.

N. THE BUILDING MANAGEMENT SHALL PROVIDE CONTINUOUS SUPERVISION OF THE ELECTRICAL SERVICE AND ELECTRICAL MAINTENANCE WITHIN THE TENANT SPACE. IN ADDITION, BUILDING MANAGEMENT SHALL HAVE 24 HOUR ACCESS TO TENANT DISCONNECTING MEANS AND WILL PROVIDE ALL ELECTRICAL MAINTENANCE.

ELECTRICAL SYMBOLS

A 3,5	BRANCH CIRCUIT HOMERUN TO PANEL "A", CIRCUIT #3 AND #5. PROVIDE THE PROPER QUANTITY OF 12 AWG CONDUCTORS FOR THE CIRCUIT(S) INDICATED. A SEPARATE GROUNDING CONDUCTOR IS REQUIRED FOR ALL BRANCH CIRCUITS.
	HEAVY LINE WEIGHT INDICATES THIS EQUIPMENT IS NEW OR RELOCATED EXISTING UNLESS NOTED OTHERWISE
	LIGHT LINE WEIGHT INDICATES THIS EQUIPMENT IS EXISTING TO REMAIN, UNLESS NOTED OTHERWISE
S	SINGLE POLE SWITCH - MOUNTING AT 48" A.F.F.
S3	THREE-WAY SWITCH - MOUNTING AT 48" A.F.F.
S4	FOUR-WAY SWITCH - MOUNTING AT 48" A.F.F.
S D,a	DIMMER SWITCH - MOUNTING AT 48" A.F.F. - REFER TO PLANS FOR TYPES AND RATINGS. SUBSCRIPT "a" INDICATES LUMINAIRES, LAMPS OR DEVICES CONTROLLED BY THIS SWITCH OR AS NOTED
S P	SWITCH WITH PILOT LIGHT - MOUNTING AT 48" UNLESS OTHERWISE NOTED
M	OCCUPANCY SENSOR SWITCH WITH OVERRIDE SWITCH - WALL MOUNTED AT 48" A.F.F. OR AS NOTED
M	OCCUPANCY SENSOR SWITCH - CEILING MOUNTED. PROVIDE ONE POWER PACK PER ZONE TO BE CONTROLLED. POWER PACKS ARE NOT SHOWN ON PLANS
T/C	PROVIDE NEW ASTRONOMICAL, 4-CHANNEL TIMECLOCK TO BE INTERMATIC #ET2815C, OR EQUALS BY OTHERS.
A	LIGHT FIXTURE TYPE 'A'
B	LIGHT FIXTURE TYPE 'B'
	EXIT SIGN - CEILING MOUNTED. SHADING INDICATES LIGHTED FACE. ARROW INDICATES CHEVRON DIRECTION
	EXIT SIGN - WALL MOUNTED ABOVE DOOR OR AT 7'-6" A.F.F. UNLESS OTHERWISE NOTED
	EMERGENCY BATTERY PACK, WALL MOUNTED
Φ	DUPLEX RECEPTACLE - MOUNTING AT 18" A.F.F.
Φ	TWO DUPLEX RECEPTACLES MOUNTED IN A 2-GANG BOX AT 18" A.F.F. UNLESS OTHERWISE NOTED
Φ 48"	DUPLEX RECEPTACLE - INDICATES MOUNTING AT 48" A.F.F.
Φ C	DUPLEX RECEPTACLE - MOUNTING AT 6" ABOVE COUNTER
Φ G	DUPLEX RECEPTACLE - GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE
Φ TV	DUPLEX RECEPTACLE - MOUNTED AT 84" A.F.F. FOR TELEVISION - UNLESS OTHERWISE NOTED. COORDINATE EXACT MOUNTING LOCATION WITH TV WALL MOUNTING BRACKET PRIOR TO ROUGH-IN.
Φ WP G	GFCI TYPE DUPLEX RECEPTACLE IN WEATHERPROOF ENCLOSURE
	SPECIAL PURPOSE OUTLET - REFER TO PLANS FOR TYPES AND RATINGS
	FLUSH POKE THROUGH FLOOR OUTLET.
	220V OUTLET.
J	JUNCTION BOX - MOUNTING HEIGHT AND SIZE AS REQUIRED
	DEVICE PEDESTAL - MANUFACTURED BY PEDESTAL PRO - CATALOG # ADA-SS-TWR-47x4x4 OR EQUAL.
	DATA OUTLET - MOUNTING AT 18" A.F.F.
TV	TV DATA OUTLET - MOUNTED AT 84" A.F.F. FOR TELEVISION - UNLESS OTHERWISE NOTED. COORDINATE EXACT MOUNTING LOCATION WITH TV WALL MOUNTING BRACKET PRIOR TO ROUGH-IN.
T	THERMOSTAT
F	FIRE ALARM PULL STATION - MOUNTED AT 48" A.F.F.
F	FIRE ALARM HORN WITH VISUAL STROBE LIGHT - MOUNTED AT 80" A.F.F.
F	FIRE ALARM VISUAL STROBE LIGHT - MOUNTED AT 80" A.F.F.
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL - SURFACE MOUNTED
	SECURITY CAMERA. PROVIDE SINGLE GANG JUNCTION BOX AND INSTALL 1 1/4" CONDUIT BACK TO SECURITY HEAD END.
	PANELBOARD - 0 TO 150 VOLTS TO GROUND
	PANELBOARD - 151 TO 600 VOLTS TO GROUND
	DISTRIBUTION PANEL - 0 TO 150 VOLTS TO GROUND
	DISTRIBUTION PANEL - 151 TO 600 VOLTS TO GROUND
	TRANSFORMER
60AS	UNFUSED DISCONNECT SWITCH - "60/3" INDICATES 60 AMPERE SWITCH RATING AND POLES
60AS 50AF	FUSED DISCONNECT SWITCH - "60AS" INDICATES 60 AMPERE SWITCH RATING AND POLES / "50AF" INDICATES 50 AMPERE FUSE
60AS 50AF	ONE-LINE DIAGRAM REPRESENTATION OF A FUSED SWITCH - "60AS" INDICATES 60 AMPERE FUSIBLE SWITCH RATING, "50AF" INDICATES 50 AMPERE FUSE
60/3	ONE-LINE DIAGRAM REPRESENTATION OF A MOLDED CASE CIRCUIT BREAKER - "60/3" INDICATES 60 AMPERE CIRCUIT BREAKER RATING AND POLES
	ONE-LINE DIAGRAM REPRESENTATION OF A TRANSFORMER, SIZE AS NOTED
M	ONE-LINE DIAGRAM REPRESENTATION OF A METER
4	PLAN NOTE TAG, REFER TO PLANS FOR DESCRIPTION
A.F.F.	ABOVE FINISHED FLOOR
AS/AF/AT	AMPERE SWITCH/AMPERE FUSE/AMPERE TRIP
MLO	MAIN LUG ONLY
MCB	MAIN CIRCUIT BREAKER

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0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/30/2024
DRAWN BY: MG
CHECKED BY: TGP
APPROVED BY:

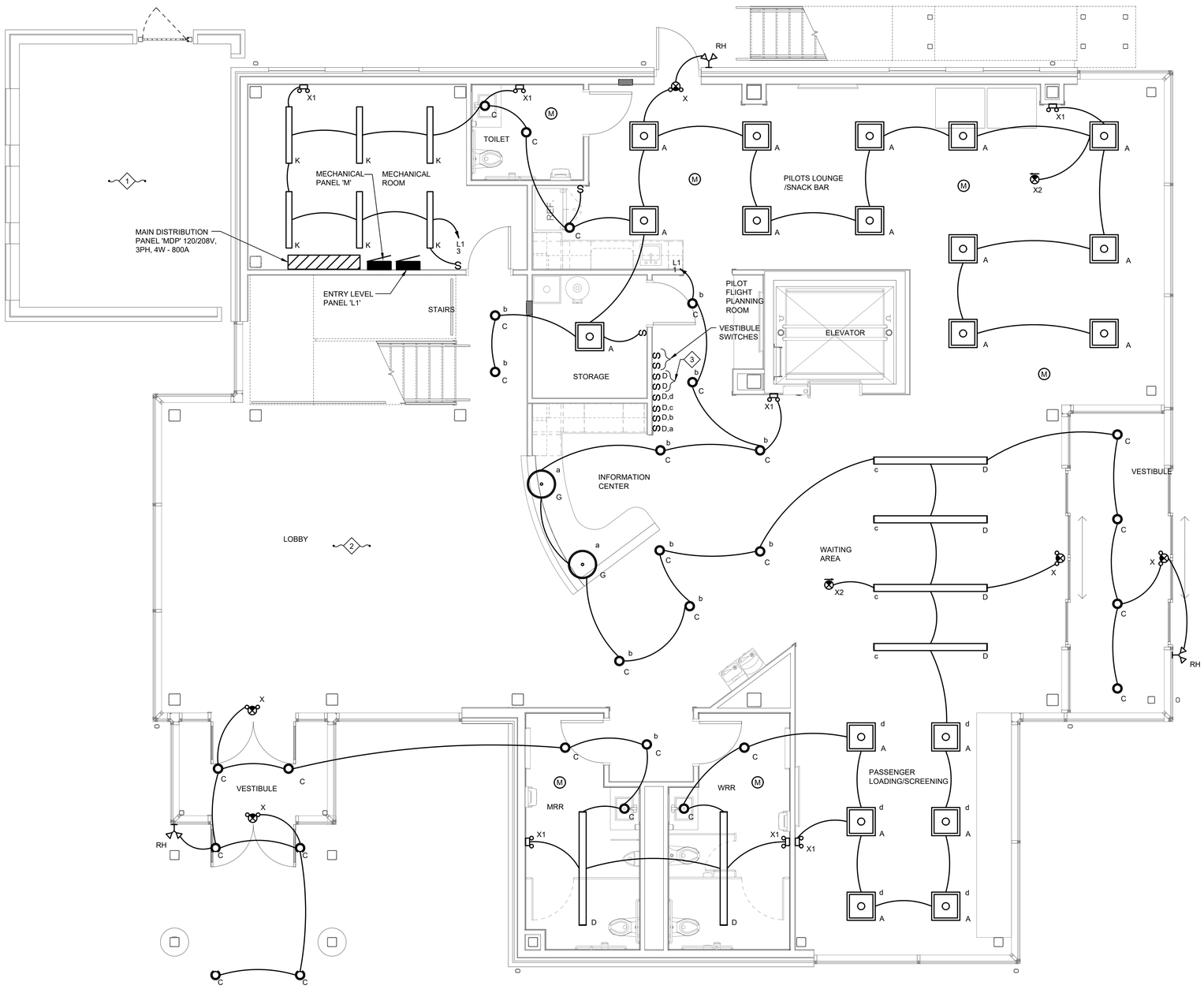
NEW TERMINAL
LAKE COUNTY EAP TERMINAL
1969 Lost Nation Rd., Willoughby, OH 44094

SYMBOL LEGEND, NOTES, SCHEDULES AND DETAILS

SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET: E0.01

PLAN NOTES

1. NO WORK IN THIS AREA UNLESS OTHERWISE NOTED.
2. SEE DRAWING E1.02 FOR OPEN SPACE / LOBBY LIGHTING.
3. TWO DIMMER SWITCHES FOR TYPE 'H' AND 'L' ABOVE THE LOBBY AREA.



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

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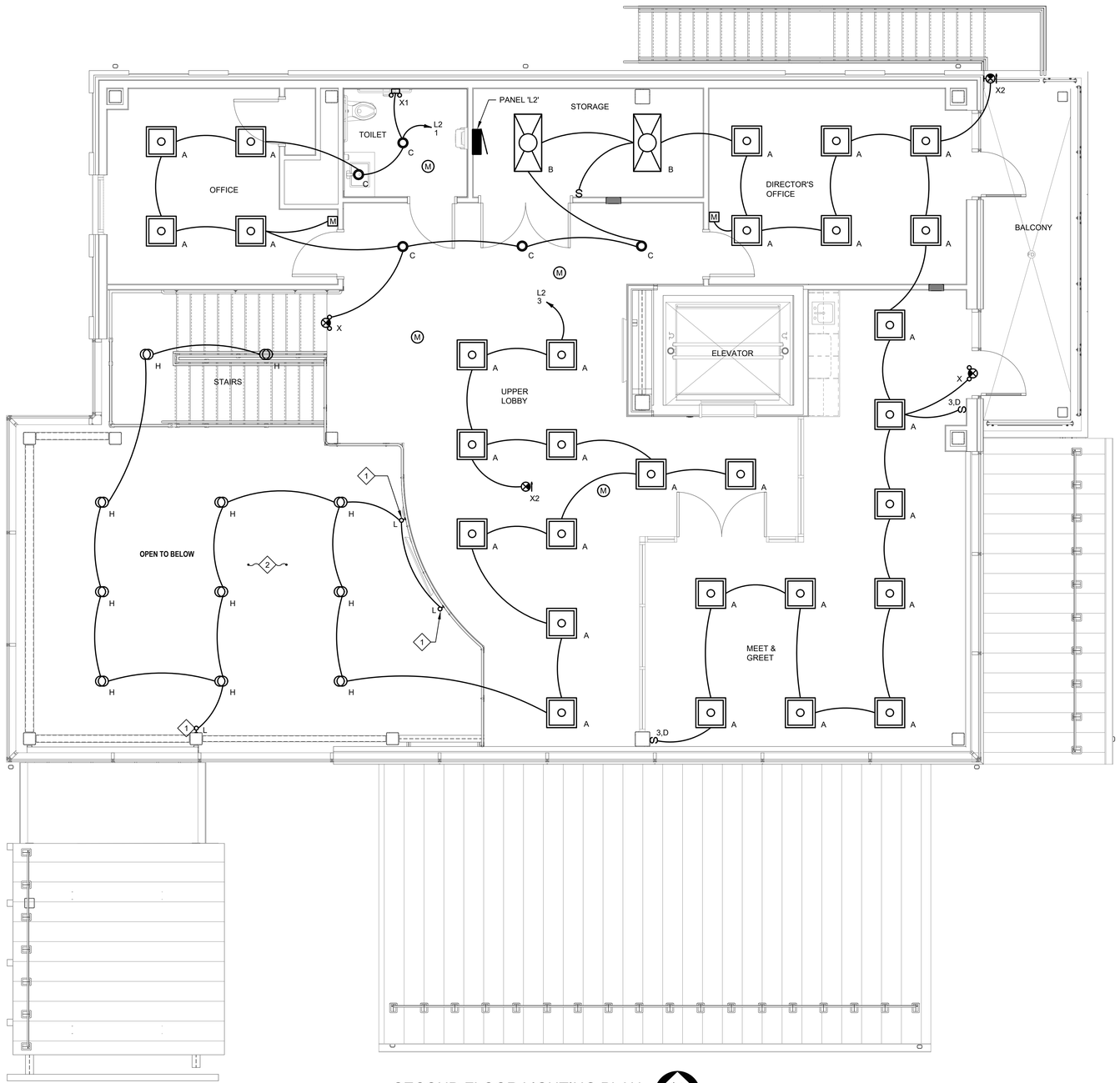
FIRST FLOOR LIGHTING PLAN

SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET E1.01

PLAN NOTES

1. MONOPOINT LUMINAIRE AIM UP. CONFIRM AIMING ANGLE AND EXACT LOCATION WITH OWNER BEFORE ROUGH-IN
2. SWITCH CONTROL FOR TYPES 'H' AND 'L' SHALL BE LOCATED AT THE FIRST FLOOR BY INFORMATION DESK.



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

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SECOND FLOOR LIGHTING PLAN

SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET E1.02

CIRCUIT BREAKER PANEL SCHEDULE

PANEL L1 AMP 100 VOLTAGE 208/120V-3Ø-4W

INTERRUPTING CAPACITY 10,000 SPACES 42 AMPS RMS SYM 10,000 MAIN MLO MOUNTING SURFACE

LOAD DESCRIPTION	CONTINUOUS LOAD ØA	ØB	ØC	NON-CONTINUOUS LOAD (80%) ØA	ØB	ØC	RECEPTACLE LOAD ØA	ØB	ØC	CKT / PHASE	CKT NO	Ø	CKT NO	CKT / PHASE	RECEPTACLE LOAD ØA	ØB	ØC	NON-CONTINUOUS LOAD (80%) ØA	ØB	ØC	CONTINUOUS LOAD ØA	ØB	ØC	LOAD DESCRIPTION
FRONT LIGHTS	1.1									20/1	1	A	2	20/1	0.9									PILOTS PLANNING
BACK LIGHTS		0.6								20/1	3	B	4	20/1		0.9			1.5					COFEE MAKER
RR. RECEPTCALE									0.5	20/1	5	C	6	20/1						1.0				REFRIGERATOR
WATER COOLER							1.0			20/1	7	A	8	20/1				1.5						MICROWAVE
PASSENGER L./S.									0.5	20/1	9	B	10	20/1	0.5									LOUNGE COUNTER
E. SLIDING DOOR									1.0	20/1	11	C	12	20/1			0.2							RR/OUTDOOR REC.
E. SLIDING DOOR							1.0			20/1	13	A	14	20/1	0.5									MECHANICAL RM.
INFO DESK									0.7	20/1	15	B	16	20/1										SPARE
PILOTS LOUNGE									0.5	20/1	17	C	18	20/1			0.8							TIME CLOCK
PASSENGER L./S.							0.7			20/1	19	A	20	20/1										ELEVATOR LIGHTS
PEDESTA.LS POWER								1.0		20/1	21	B	22	20/1										ELEVATOR SERVIC.
PEDESTA.LS POWER									1.0	20/1	23	C	24	20/1						0.5				ELEVATOR SUMP P.
F. SECURITY DOOR				1.0						20/1	25	A	26	20/1										ELEVATOR COND.
N. SECURITY DOOR					1.0					20/1	27	B	28	20/1					1.0					FIRE ALARM PANEL
SPARE										20/1	29	C	30	20/1									0.8	EXTERIOR LIGHTS
VENDING MACHINE				1.0						20/1	31	A	32	20/1							0.8			MONUMENT SIGN
VENDING MACHINE					1.0					20/1	33	B	34	20/1								0.7		EXT POLES
SPARE										20/1	35	C	36	20/1										SPARE
SPARE										20/1	37	A	38	20/1										SPARE
SPARE										20/1	39	B	40	20/1										SPARE
SPARE										20/1	41	C	42	20/1										SPARE
	1.1	0.6		2.0	2.0		2.7	2.3	3.1	KW SUB-TOTALS KW					1.4	1.4	1.0	1.5	2.5	1.5	0.8	0.7	0.8	

CONNECTED LOAD PER PHASE		
PHASE A	9.6	KWC
	79.7	AMPS
PHASE B	9.5	KWC
	78.8	AMPS
PHASE C	6.4	KWC
	53.2	AMPS

TOTAL CONNECTED LOAD	25.4	KWC
	70.5	AMPS
TOTAL DEMAND LOAD	22.5	KWD
	62.5	AMPS

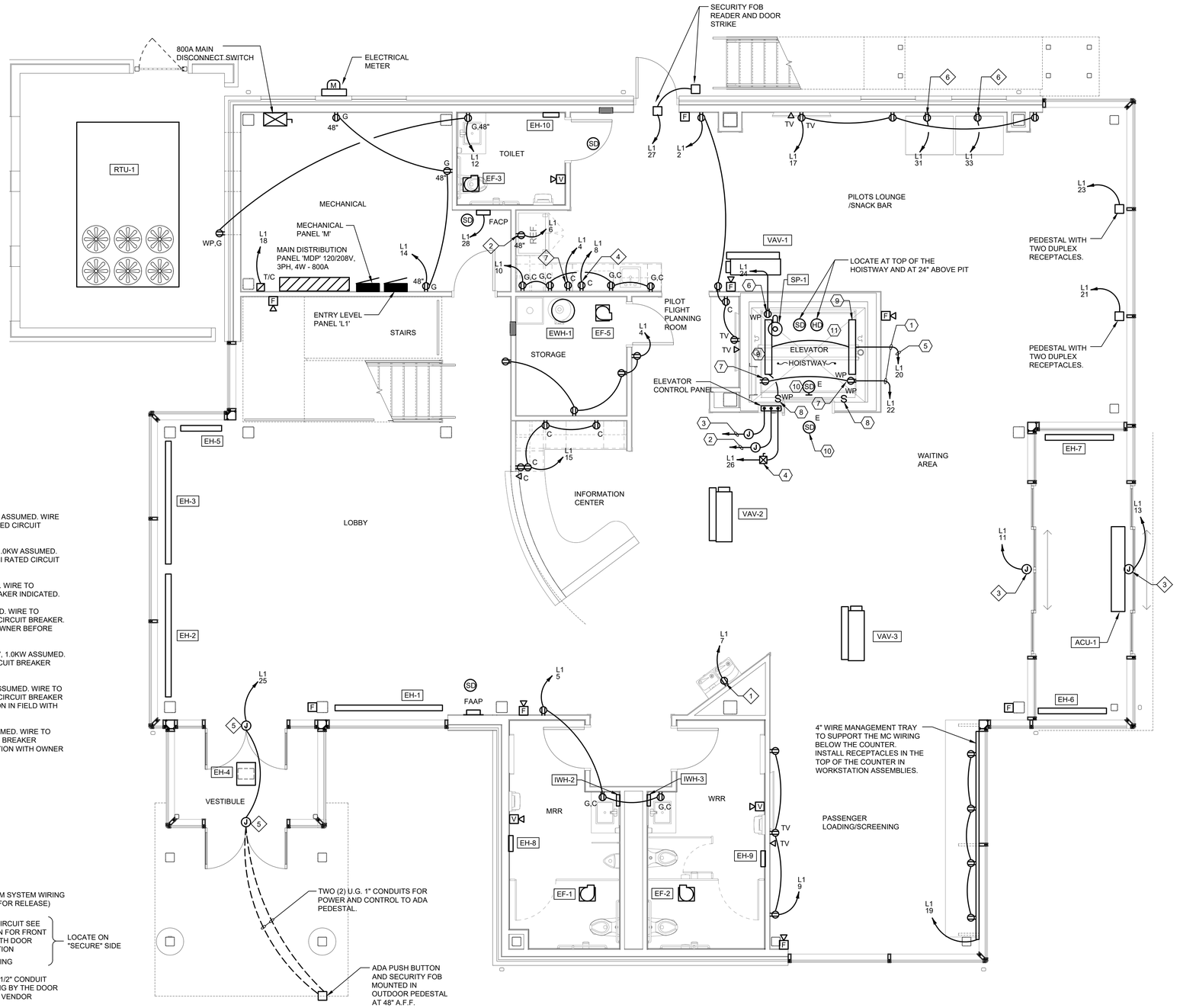
SCHEDULE REMARKS:

ELEVATOR NOTES

1. CONDUIT SHALL BE RIGID OR INTERMEDIATE GRADE STEEL IN PIT AND SHAFT 120V WIRING SHALL BE TYPE THWN IDENTIFIED FOR USE IN WET LOCATION.
2. (1)4-PAIL UNSHIELDED TWISTED PAIR CABLE, MINIMUM-CATAGORY 3 FROM CONTROLLER TO NEAREST AVAILABLE TELEPHONE SERVICES FOR CAR EMERGENCY PHONE/INTERCOM (ANSI A-17.1 - 211). COORDINATE EXACT LOCATION OF TELEPHONE SERVICES.
3. FIRE ALARM SYSTEM WIRING IN CONDUIT (AND COMPONENTS) FOR RECALL CONTROL. SEE FIRE ALARM RISER FOR MORE INFORMATION.
4. FUSIBLE DISCONNECT CAPABLE OF BEING LOCKED IN THE "OFF" POSITION FOR 120 VOLT SINGLE PHASE FEED (NEC 620.53). PROVIDE SECOND SWITCH IF SEPARATE HEATING OR AIR CONDITIONING POWER SUPPLY IS PROVIDED (NEC 620.54). PROVIDE DEDICATED 20 AMP, 120 VOLT BRANCH CIRCUIT - LOCATE DISCONNECT IN STORAGE ROOM ON SECOND FLOOR.
5. DEDICATED 20 AMP, 120V BRANCH CIRCUIT FOR CAR LIGHTS.
6. GFCI DUPLEX RECEPTACLE FOR A PORTABLE SUMP PUMP (120V, 1/2HP)
7. WEATHER PROOF GFI DUPLEX RECEPTACLE - FOR ELEVATOR SERVICING.
8. WEATHERPROOF LIGHT SWITCH - LOCATED AT THE PIT ACCESS (ANSI A-17.1 - 106).
9. WEATHERPROOF LUMEN LED FIXTURE - (2) IN PIT AND (2) ABOVE CONTROL PANEL. LIGHTS AND ELEVATOR CEILING TO BE SPECIFIED BY ARCHITECT AND TO BE WIRED TO THE DEDICATED CIRCUIT #20 IN PANEL L1 AS SHOWING ON PLAN.
10. SMOKE DETECTOR WITH AUXILIARY CONTACTS FOR ELEVATOR RECALL - LOCATE OUTSIDE EACH ELEVATOR LANDING, AT TOP AND BOTTOM OF THE HOISTWAY (2 FEET ABOVE FLOOR) AND IN THE MACHINE ROOM (ANSI A-17.1 - 211.3B).
11. NO PIPING, CONDUITS OR DUCTS SHALL BE LOCATED IN THIS AREA, EXCEPT THOSE RELATED TO THE OPERATION OF THE ELEVATOR (ANSI A-17.1 - 102).

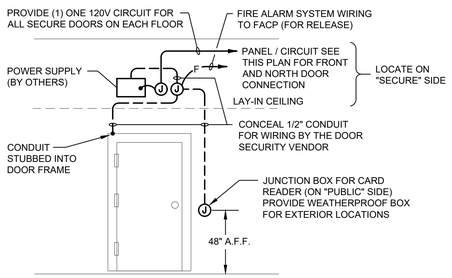
PLAN NOTES

1. ADA WATER FOUNTAIN 120V, 1.0KW ASSUMED. WIRE TO DEDICATED 120V, 20A, GFCI RATED CIRCUIT BREAKER INDICATED.
2. STANDING REFRIGERATOR - 120V, 1.0KW ASSUMED. WIRE TO DEDICATED 120V, 20A GFCI RATED CIRCUIT BREAKER INDICATED.
3. SLIDE DOOR 120V, 1.0KW ASSUMED. WIRE TO DEDICATED 120V, 20A CIRCUIT BREAKER INDICATED.
4. MICROWAVE - 120V, 1.5KW ASSUMED. WIRE TO DEDICATED 120V, 20A GFCI RATED CIRCUIT BREAKER. CONFIRM EXACT LOCATION WITH OWNER BEFORE ROUGH-IN
5. MOTOR ASSISTED ADA DOOR - 120V, 1.0KW ASSUMED. WIRE TO DEDICATED 120V, 20A CIRCUIT BREAKER INDICATED.
6. VENDING MACHINE - 120V, 1.0KW ASSUMED. WIRE TO DEDICATED 120V, 20A GFCI RATED CIRCUIT BREAKER INDICATED. VERIFY EXACT LOCATION IN FIELD WITH OWNER BEFORE ROUGH-IN.
7. COFFEE MAKER - 120V, 1.5KW ASSUMED. WIRE TO 120V, 20A GFCI DEDICATED CIRCUIT BREAKER INDICATED. CONFIRM EXACT LOCATION WITH OWNER BEFORE ROUGH-IN.



FIRST FLOOR POWER PLAN

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



TYPICAL CARD READER / SECURITY DOOR DETAIL

NO SCALE

NOTE: VERIFY ALL JUNCTION BOX, CONDUIT, AND POWER REQUIREMENTS WITH THE OWNER'S DOOR SECURITY VENDOR BEFORE ROUGH-IN

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0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/03/2024
DRAWN BY: MG
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APPROVED BY:

NEW TERMINAL
LAKE COUNTY EAP TERMINAL
1969 Lost Nation Rd., Willoughby, OH 44094

FIRST FLOOR POWER AND COMM. PLAN AND SCHEDULES

SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET E1.03

CIRCUIT BREAKER PANEL SCHEDULE

PANEL L2 AMP 225 VOLTAGE 208/120V-3Ø-4W

INTERRUPTING CAPACITY 10,000 SPACES 42 AMPS RMS SYM 10,000 MAIN MLO MOUNTING SURFACE

LOAD DESCRIPTION	CONTINUOUS LOAD			NON-CONTINUOUS LOAD (80%)			RECEPTACLE LOAD			CB / PHASE	CKT NO	Ø	CKT NO	CB / PHASE	RECEPTACLE LOAD			NON-CONTINUOUS LOAD (80%)			CONTINUOUS LOAD			LOAD DESCRIPTION
	ØA	ØB	ØC	ØA	ØB	ØC	ØA	ØB	ØC						ØA	ØB	ØC	ØA	ØB	ØC	ØA	ØB	ØC	
2ND LEVEL LIGHTS	1.4									20/1	1	A	2	20/1	0.9									MEET & GREET REC.
OPEN SPACE LTG		0.6								20/1	3	B	4	20/1		0.4								M&G COUNTER
OFFICE RECEPT.									0.9	20/1	5	C	6	20/1						1.0				SCREEN PROJECT.
RESTROOM REC.							0.4			20/1	7	A	8	20/1				1.0						U.C. FRIDGE
STORAGE									0.7	20/1	9	B	10	20/1						1.5				COFFEE MAKER
DIRECTOR'S OFFICE									0.9	20/1	11	C	12	20/1			0.5							LOBBY'S TV
BALCONY RECEPT.							0.4			20/1	13	A	14	20/1										EF-4
EH-11				1.0						20/2	15	B	16							4.3				
					1.0						17	C	18	50/3						4.3				VAV-8
VAV-4				1.2						15/3	19	A	20					4.3						
					1.2						21	B	22							4.3				
						1.2					23	C	24	50/3						4.3				VAV-9
VAV-5				1.8						20/3	25	A	26					4.3						
					1.8						27	B	28	20/1										SPARE
						1.8					29	C	30							0.8				ROOF DE-ICING SYSTEM
VAV-6				3.5						40/3	31	A	32	20/2				0.8						
					3.5						33	B	34	20/1						1.0				MICROWAVE
						3.5					35	C	36	20/1										SPARE
VAV-7				3.5						40/3	37	A	38											SPACE
					3.5						39	B	40											SPACE
						3.5					41	C	42											SPACE
	1.4	0.6		10.0	11.0	11.0	0.7	0.7	1.8	KW SUB-TOTALS KW					0.9	0.4	0.5	10.4	11.1	10.4				

CONNECTED LOAD PER PHASE		
PHASE A	23.4	KWC
	195.1	AMPS
PHASE B	23.8	KWC
	198.4	AMPS
PHASE C	23.7	KWC
	197.8	AMPS

TOTAL CONNECTED LOAD	71.0	KWC
	196.9	AMPS
TOTAL DEMAND LOAD	58.2	KWD
	161.5	AMPS

SCHEDULE REMARKS:

CIRCUIT BREAKER PANEL SCHEDULE

PANEL M AMP 225 VOLTAGE 208/120V-3Ø-4W

INTERRUPTING CAPACITY 10,000 SPACES 42 AMPS RMS SYM 10,000 MAIN MLO MOUNTING SURFACE

LOAD DESCRIPTION	CONTINUOUS LOAD			NON-CONTINUOUS LOAD (80%)			RECEPTACLE LOAD			CB / PHASE	CKT NO	Ø	CKT NO	CB / PHASE	RECEPTACLE LOAD			NON-CONTINUOUS LOAD (80%)			CONTINUOUS LOAD			LOAD DESCRIPTION
	ØA	ØB	ØC	ØA	ØB	ØC	ØA	ØB	ØC						ØA	ØB	ØC	ØA	ØB	ØC	ØA	ØB	ØC	
VAV-1				3.1						35/3	1	A	2	30/2				2.0						EH-1
					3.1						3	B	4						2.0					
						3.1					5	C	6	30/2						2.3				EH-2
VAV-2				3.6						40/3	7	A	8					2.3						
					3.6						9	B	10	30/2						2.3				EH-3
						3.6					11	C	12							2.3				
VAV-3				3.5						40/3	13	A	14	20/2				1.0						EH-4
					3.5						15	B	16						1.0					
						3.5					17	C	18	20/2						0.8				EH-5
EWH-1 ELECTRIC WATER HEATER				2.3						30/2	19	A	20					0.8						
					2.3						21	B	22	20/2						0.6				EH-6
WH-2 INSTANTANEOUS WATER HEATER						3.1				40/2	23	C	24							0.6				
				3.1							25	A	26	20/2				0.6						EH-7
WH-3 INSTANTANEOUS WATER HEATER					3.1					40/2	27	B	28						0.6					
						3.1					29	C	30	20/2						0.8				EH-8
EF-1				0.3						20/1	31	A	32					0.8						
EF-2					0.3					20/1	33	B	34	20/2						0.8				EH-9
EF-3						0.3				20/1	35	C	36							0.8				
EF-5				0.3						20/1	37	A	38					1.0						
					0.2						39	B	40	20/2						1.0				EH-10
ACU-1						0.2				15/2	41	C	42											SPACE
				16.2	16.1	16.9				KW SUB-TOTALS KW								8.4	8.3	7.4				

CONNECTED LOAD PER PHASE		
PHASE A	24.6	KWC
	204.8	AMPS
PHASE B	24.4	KWC
	203.0	AMPS
PHASE C	24.3	KWC
	202.3	AMPS

TOTAL CONNECTED LOAD	73.2	KWC
	203.2	AMPS
TOTAL DEMAND LOAD	58.6	KWD
	162.6	AMPS

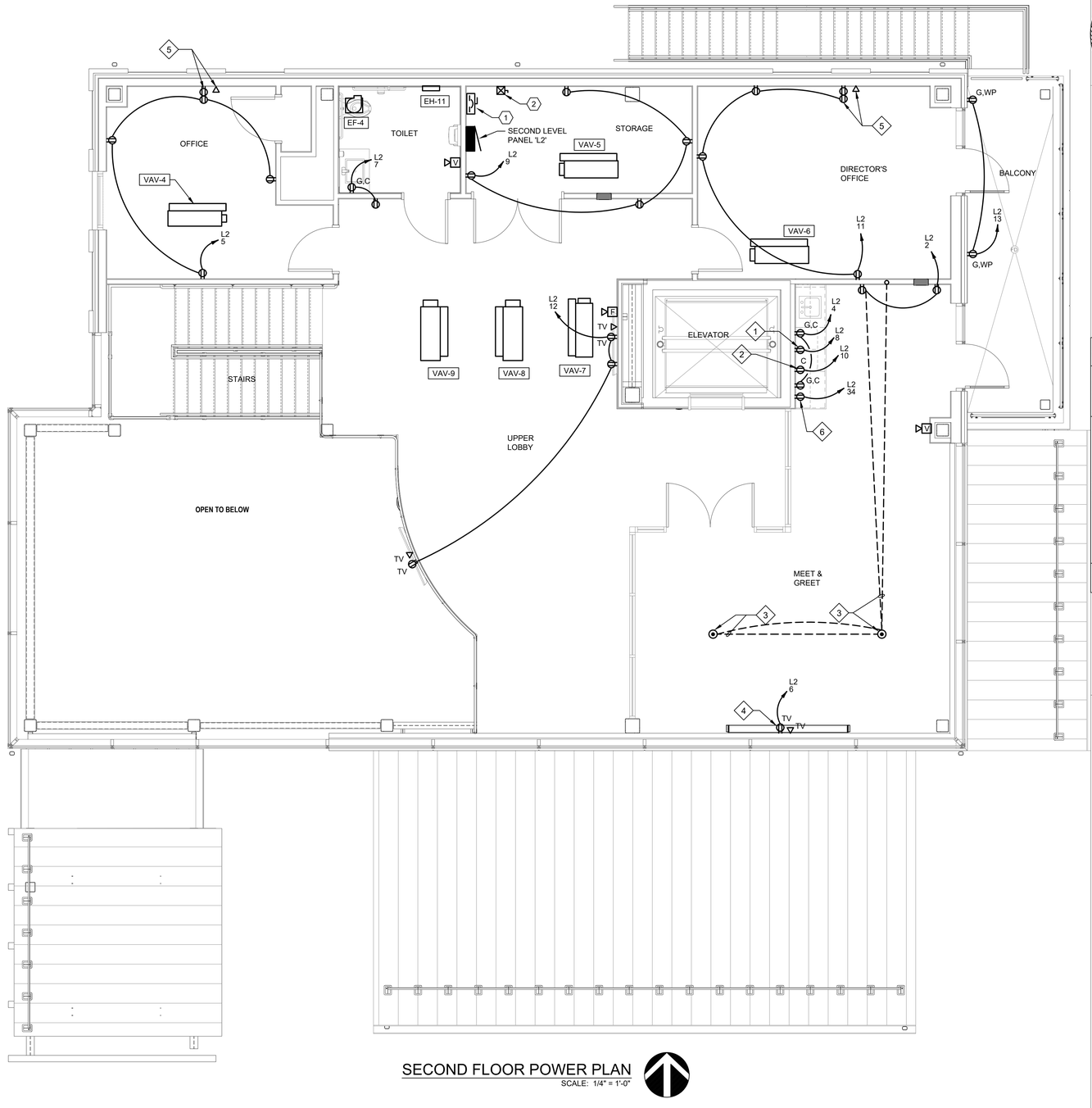
SCHEDULE REMARKS:

PLAN NOTES

1. UNDER COUNTER FRIDGE - 120V, 1.0KW ASSUMED. WIRE TO DEDICATED 120V, 20A GFCI RATED CIRCUIT BREAKER INDICATED. CONFIRM EXACT LOCATION WITH OWNER BEFORE ROUGH-IN.
2. COFFEE MAKER - 120V, 1.5KW ASSUMED. WIRE TO 120V, 20A GFCI DEDICATED CIRCUIT BREAKER INDICATED. CONFIRM EXACT LOCATION WITH OWNER BEFORE ROUGH-IN.
3. FLUSH POKE THROUGH FLOOR BOX WITH PROVISIONS FOR POWER AND DATA SERVICES TO FURNITURE FEED. CONFIRM FINAL LOCATION WITH FURNITURE CONNECTION POINT PRIOR TO ROUGH-IN. PROVIDE 1 1/4" CONDUIT WITH PULL WIRE FOR TELECOMMUNICATIONS ACROSS CEILING SPACE OF FIRST FLOOR. PROVIDE ALL PARTS, COVERS, DEVICES AND ACCESSORIES FOR A COMPLETE AND OPERABLE INSTALLATION.
4. AUTOMATIC ROLL DOWN SCREEN PROJECTION IN CEILING BULK HOLD - 120V, 1.0KW ASSUMED, WIRE TO DEDICATED 120V, 20A CIRCUIT BREAKER INDICATED. CONFIRM EXACT LOCATION WITH OWNER BEFORE ROUGH-IN.
5. VERIFY EXACT FURNITURE LOCATION BEFORE INSTALLING THE DATA AND POWER PORTS.
6. MICROWAVE - 120V, 1.0KW ASSUMED. WIRE TO DEDICATED 120V, 20A GFCI RATED CIRCUIT BREAKER INDICATED. CONFIRM EXACT LOCATION WITH OWNER BEFORE ROUGH-IN.

ELEVATOR NOTES

1. EXTERNALLY OPERABLE SHUNT TRIP CIRCUIT BREAKER CAPABLE OF BEING LOCKED IN THE "OFF" POSITION FOR ELEVATOR 3-PHASE POWER FEED (NEC 620.51). PROVIDE WIRING FROM THE FIRE ALARM SYSTEM TO THE CIRCUIT BREAKER FOR SHUNT TRIP ACTIVATION UPON OPERATION OF THE ELEVATOR CONTROL HEAT DETECTORS, UNLESS OTHERWISE DIRECTED BY LOCAL ELEVATOR INSPECTOR (ASME A17.1-102 AND NEC 620.51(B)). ROUTE 120V WIRING THROUGH FIRE ALARM CONTROL PANEL TO MONITOR LOSS OF SHUNT TRIP POWER (TROUBLE ONLY INDICATION). IF BATTERY POWERED LOWERING IS SPECIFIED BY THE ARCHITECT, PROVIDE A NORMALLY CLOSED CONTACT AND WIRING TO ELEVATOR CONTROLLER TO DISCONNECT ADDITIONAL POWER SOURCE (NEC 620.91(C)). ASSUMED 20HP, WIRE TO 100/3 CIRCUIT BREAKER IN MDP. ELECTRICAL CONTRACTOR TO VERIFY IN FIELD THE CORRECT POWER REQUIREMENTS BEFORE ROUGH-IN.
2. FUSIBLE DISCONNECT CAPABLE OF BEING LOCKED IN THE "OFF" POSITION FOR 120 VOLT SINGLE PHASE CAB LIGHTING FEED (NEC 620.53). PROVIDE SECOND SWITCH IF SEPARATE HEATING OR AIR CONDITIONING POWER SUPPLY IS PROVIDED (NEC 620.54). PROVIDE DEDICATED 20 AMP, 120 VOLT BRANCH CIRCUIT.



SECOND FLOOR POWER PLAN

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

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REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/30/2024
DRAWN BY: MG
CHECKED BY: TGP
APPROVED BY:

NEW TERMINAL
LAKE COUNTY EAP TERMINAL
1969 Lost Nation Rd., Willoughby, OH 44094

SECOND FLOOR POWER AND COMMUNICATION PLAN

SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET: E1.04

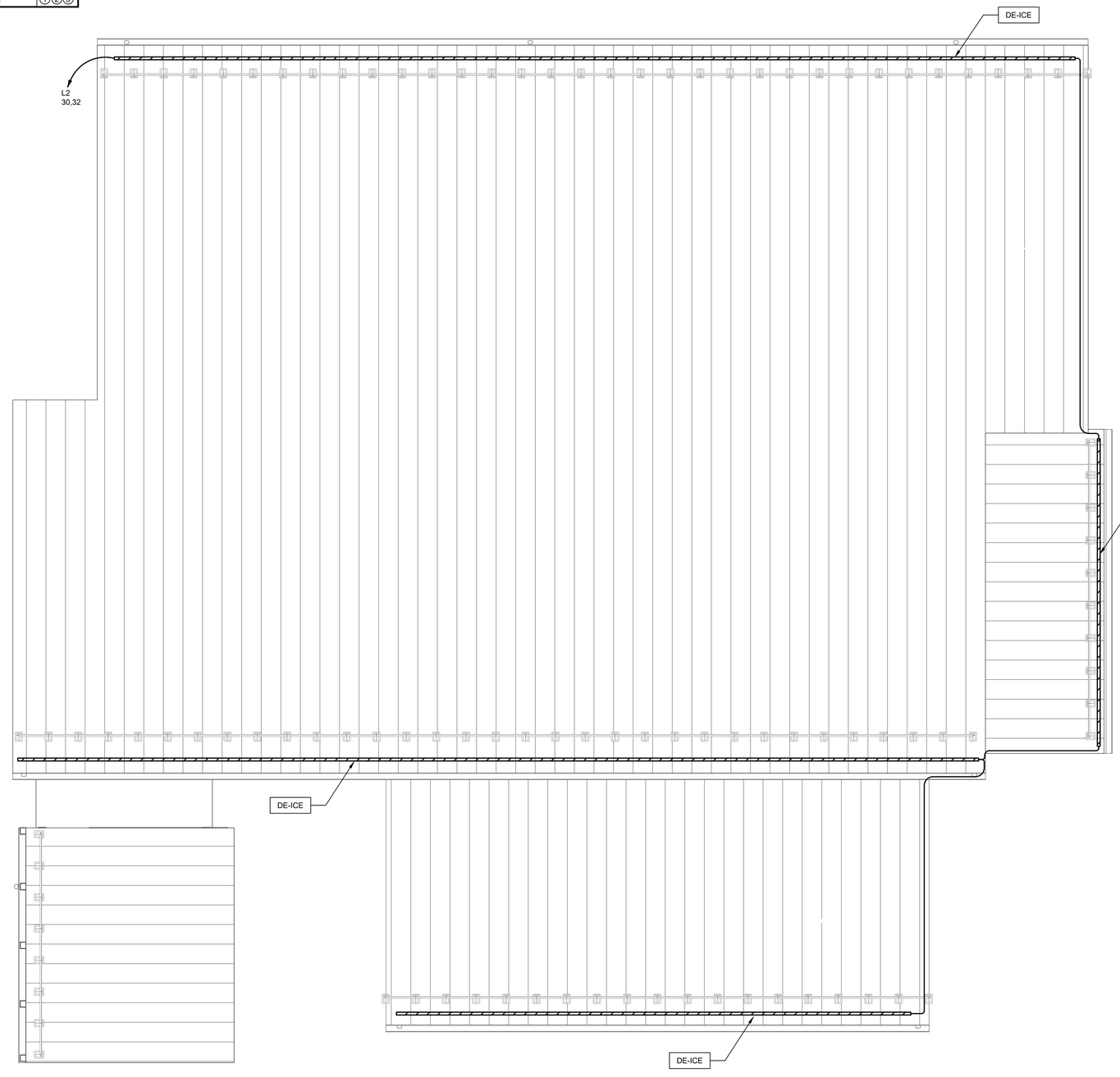
DE-ICING SYSTEM WIRING SCHEDULE

"DC"= DIRECT CONNECT
"VFD"= VARIABLE FREQUENCY DRIVE
COMBINATION STARTER AND FUSED DISCONNECT
FUSED DISCONNECT
NON-FUSED DISCONNECT
MANUAL MOTOR STARTER
S SWITCH
J JUNCTION BOX

ITEM NO.	EQUIPMENT	HP	KW	MCA	FLA	VOLTS	Φ	CONNECTION BY EC	PANEL / CKT.NO.	CIRC BKR AMPS	CIRC BKR POLES	WIRING AND CONDUIT	NOTES
DE-ICE	ROOF DE-ICING SYSTEM	-	2	-	-	208	1	30AS	L2 / 30,32	20	2	2-12 AWG & 1-12 AWG GND - 3/4" C.	1 2 3

SCHEDULE NOTES

1. ROOF DE-ICING SYSTEM - REQUIRED LENGTH IS 187' FT, MAX ALLOWED LENGTH IS 235' FT PER THIS 208V, 1PH, 20A CIRCUIT BREAKERS #30 AND #32.
2. DE-ICING SYSTEM SHOULD BE MANUFACTURED BY NVENT RAYCHEM - CATALOG # GM-2XT @ 208V, 20A CIRCUIT BREAKER.
3. SNOW MELT CONTROLLER TO HAVE INTEGRAL GFPE PROTECTION IN ACCORDANCE WITH THE NEC.



ELECTRICAL ROOF PLAN
SCALE: 1/4" = 1'-0"

STATE OF OHIO
TIMOTHY
C.
POOL
E-59700
REGISTERED
PROFESSIONAL ENGINEER
5/24/2024

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REV	DATE	BY
0	05/29/2024	

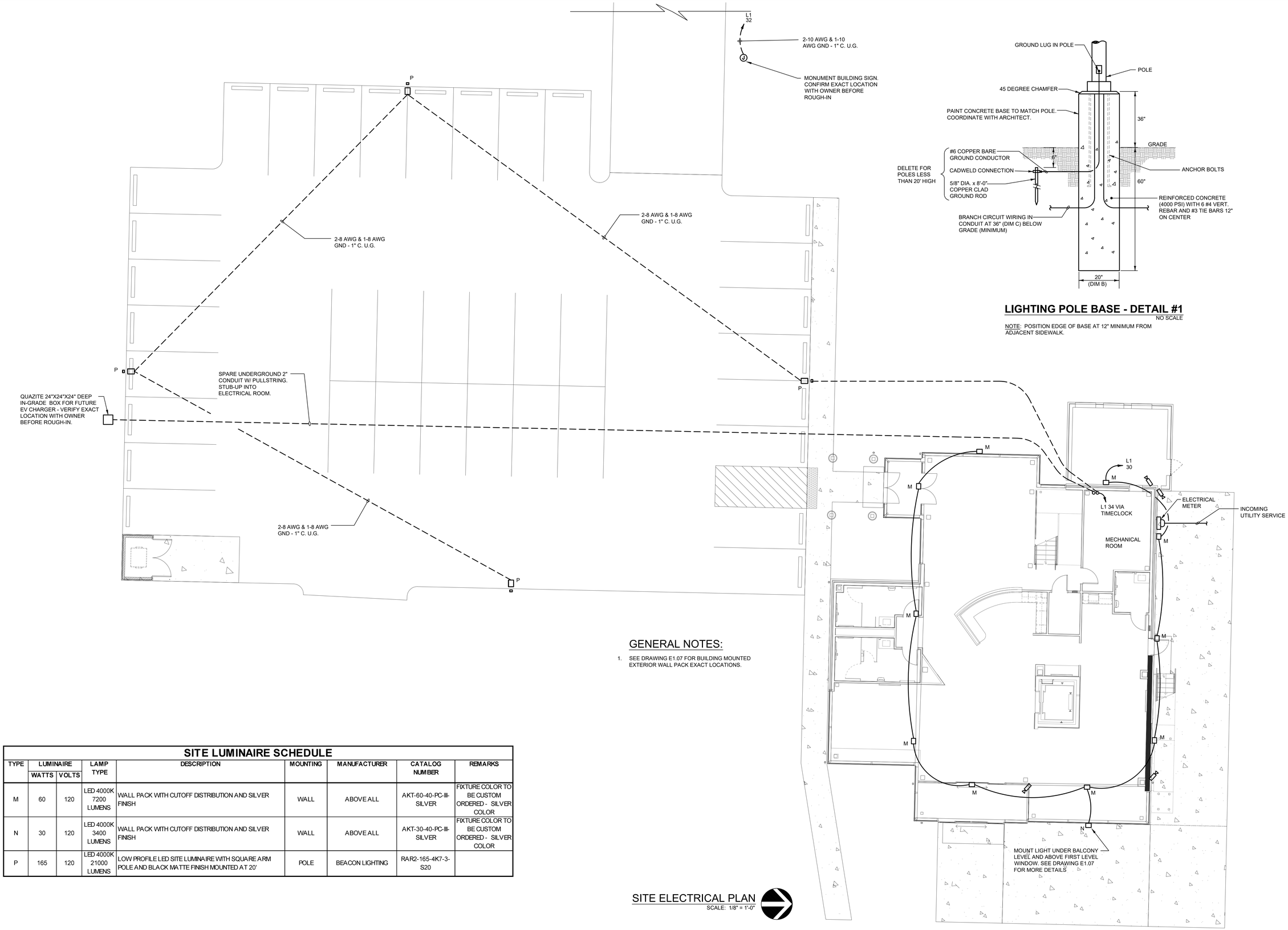
REVISIONS
ISSUED FOR BIDDING AND PERMIT

DATE: 05/30/2024
DRAWN BY: MG
CHECKED BY: TGP
APPROVED BY:

NEW TERMINAL
LAKE COUNTY EAP TERMINAL
1969 Lost Nation Rd., Willoughby, OH 44094

ELECTRICAL ROOF PLAN

SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET E1.05



LIGHTING POLE BASE - DETAIL #1

NO SCALE

NOTE: POSITION EDGE OF BASE AT 12" MINIMUM FROM ADJACENT SIDEWALK.

GENERAL NOTES:

1. SEE DRAWING E1.07 FOR BUILDING MOUNTED EXTERIOR WALL PACK EXACT LOCATIONS.

SITE LUMINAIRE SCHEDULE

TYPE	LUMINAIRE		LAMP TYPE	DESCRIPTION	MOUNTING	MANUFACTURER	CATALOG NUMBER	REMARKS
	WATTS	VOLTS						
M	60	120	LED 4000K 7200 LUMENS	WALL PACK WITH CUTOFF DISTRIBUTION AND SILVER FINISH	WALL	ABOVE ALL	AKT-60-40-PC-III-SILVER	FIXTURE COLOR TO BE CUSTOM ORDERED - SILVER COLOR
N	30	120	LED 4000K 3400 LUMENS	WALL PACK WITH CUTOFF DISTRIBUTION AND SILVER FINISH	WALL	ABOVE ALL	AKT-30-40-PC-III-SILVER	FIXTURE COLOR TO BE CUSTOM ORDERED - SILVER COLOR
P	165	120	LED 4000K 21000 LUMENS	LOW PROFILE LED SITE LUMINAIRE WITH SQUARE ARM POLE AND BLACK MATTE FINISH MOUNTED AT 20'	POLE	BEACON LIGHTING	RAR2-165-4K7-3-S20	

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

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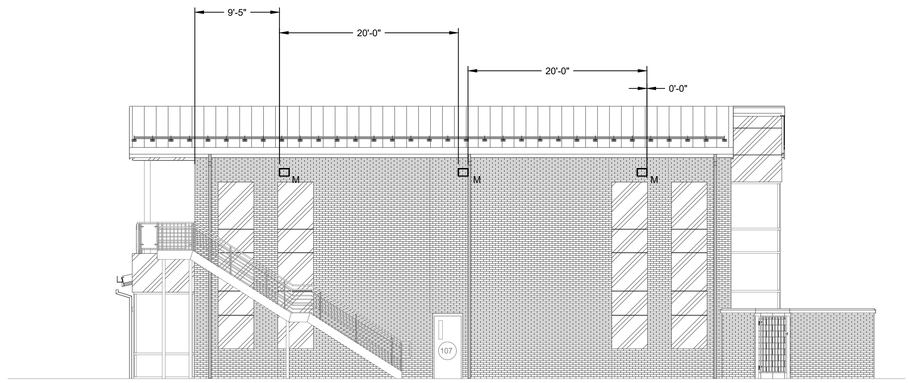
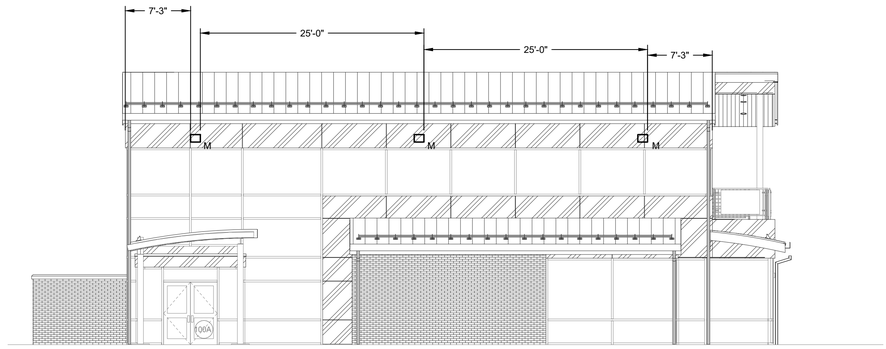
SITE ELECTRICAL POWER PLAN

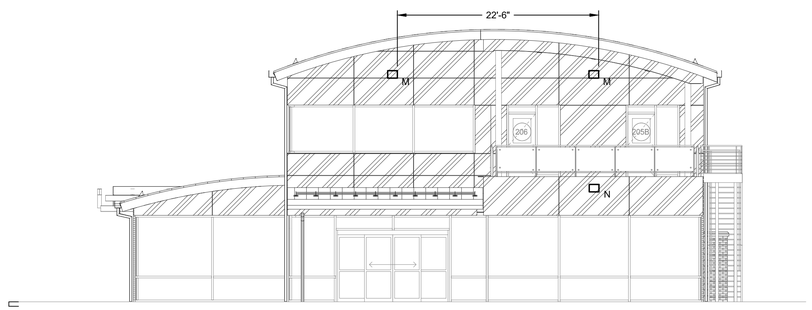
SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET: E1.06



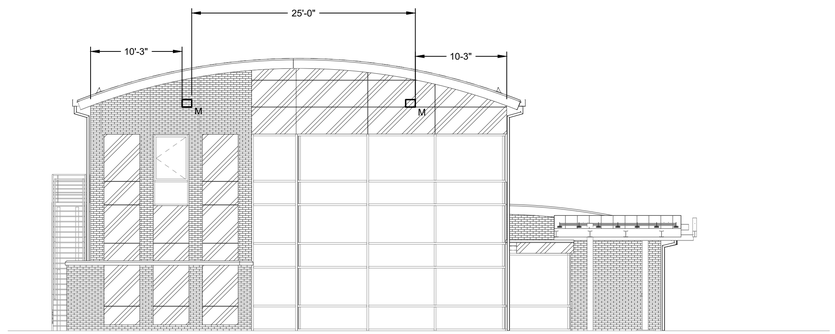
EXTERIOR LIGHTING NORTH ELEVATION
SCALE: 1/8" = 1'-0"



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



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



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

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EXTERIOR LIGHTING PLAN ELEVATIONS

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SECTION 260000 - ELECTRICAL SPECIFICATIONS

PART 1 GENERAL

1.1 PROVIDE ALL LABOR AND MATERIAL FOR ALL SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN, OR REASONABLY IMPLIED, TESTED AND READY FOR USE BY THE OWNER.

1.2 REFER TO THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND OTHER CONTRACT DOCUMENTS FOR THE PROJECT. ELECTRICAL WORK AND/OR COORDINATION ITEMS INDICATED ON THESE DOCUMENTS ARE A PART OF THE ELECTRICAL SCOPE OF WORK.

1.3 DISCREPANCIES BETWEEN EACH DIVISION'S DOCUMENTS OR BETWEEN THE DOCUMENTS AND THE EXISTING BUILDING OR SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE SUBMITTING A BID.

1.4 THE ELECTRICAL SCOPE OF WORK INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING EQUIPMENT OR SYSTEMS:

A. ELECTRICAL SERVICE, METERING, AND UTILITY SERVICE INSTALLATION COORDINATION

B. LIGHTING AND LIGHTING CONTROLS AND LIFE SAFETY EGRESS EMERGENCY LIGHTING

C. WIRING DEVICES INCLUDING FACEPLATES, BOXES, PEDESTALS, AND ASSOCIATED MOUNTING HARDWARE

D. POWER DISTRIBUTION EQUIPMENT AND ASSOCIATED BREAKERS INCLUDING CONDUIT AND WIRING, SUPPORTS, STRUT, BRIDGES, HANGERS, AND HARDWARE AS NOTED OR NECESSARY FOR PROPER INSTALLATION OF THE INTENDED SYSTEM.

E. BRANCH CIRCUIT PANELBOARDS AND ASSOCIATED BREAKERS WITH NAMEPLATES, SCHEDULES AND ASSEMBLY HARDWARE AS NOTED OR NECESSARY FOR PROPER INSTALLATION OF THE INTENDED SYSTEM.

F. FIRE ALARM

G. ELEVATOR

H. SECURITY / IT / AV / COMMUNICATIONS SYSTEM BOX AND CONDUIT ROUGH-IN

I. GROUNDING AND GROUNDING SYSTEMS

J. SNOW MELTING SYSTEM

K. COMMUNICATIONS, INTERNET AND CATV UTILITY SERVICES

L. CONNECTIONS AND POWER CIRCUITS FOR EQUIPMENT PROVIDED UNDER ANOTHER DIVISION, OR BY THE OWNER AS NOTED OR NECESSARY FOR PROPER INSTALLATION OF THE INTENDED SYSTEM.

1.5 SUBMITTALS, OR SHOP DRAWINGS ARE REQUIRED FOR THE FOLLOWING EQUIPMENT OR SYSTEMS:

A. LIGHTING AND LIGHTING CONTROLS

B. WIRING DEVICES

C. POWER DISTRIBUTION EQUIPMENT

D. BRANCH CIRCUIT PANELBOARDS

E. UTILITY SERVICE INSTALLATION DRAWINGS

F. ELEVATOR

G. FIRE ALARM

H. PROVIDE SUBMITTALS ONLY FOR EQUIPMENT LISTED ABOVE. ALL SUBMITTALS MUST BE REVIEWED FOR PROPER CONTENT AND ACCURACY BY THE CONTRACTOR BEFORE SUBMISSION TO THE ENGINEER.

I. SUBMITTALS SHALL BE REVIEWED ONLY FOR GENERAL COMPLIANCE AND NOT FOR DIMENSIONS, QUANTITIES, ETC. THE SUBMITTALS THAT ARE RETURNED SHALL BE USED FOR PROCUREMENT. THE RESPONSIBILITY OF CORRECT PROCUREMENT REMAINS SOLELY WITH THE CONTRACTOR. THE SUBMITTAL REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS OR OMISSIONS AND DEVIATIONS FROM THE CONTRACT REQUIREMENTS. ELECTRONIC COPIES ARE REQUIRED. REFER TO DIVISION 1 FOR EXACT QUANTITIES AND OTHER SUBMITTAL REQUIREMENTS.

1.6 RECORD DRAWINGS AND OPERATION AND MAINTENANCE MANUALS ARE REQUIRED TO BE SUBMITTED TO THE OWNER'S REPRESENTATIVE AND APPROVED BEFORE A FINAL CONTRACT PAY REQUEST. RECORD DRAWINGS INCLUDE A CLEAN SET OF CONTRACT DRAWINGS IDENTIFYING CHANGES OR DEVIATIONS MADE TO THE ORIGINAL DESIGN AND MUST INCLUDE FEEDER ROUTINGS. OPERATION AND MAINTENANCE MANUALS (3 SETS) SHALL INCLUDE A COPY OF ALL APPROVED SUBMITTALS, EQUIPMENT MAINTENANCE INSTRUCTIONS, TEST REPORTS, INSPECTION REPORTS, EQUIPMENT WARRANTIES, AND THE CONTRACTORS' ONE-YEAR GUARANTEE ON EQUIPMENT AND LABOR.

1.7 OBTAIN AND PAY FOR LOCAL PERMITS, LICENSES, AND INSPECTION FEES NECESSARY FOR THE WORK. TEMPORARY ELECRICAL SERVICE SHALL BE PROVIDED BY THE ELECRICAL CONTRACTOR. PERMANENT UTILITY SERVICE INSTALLATION CHARGES ARE NOT TO BE INCLUDED IN THE BASE-BID WORK; SUCH CHARGES SHALL BE INCLUDED AS AN ALLOWANCE OF $15,000 IN THE CONTRACT. THE UN-USED PORTION OF THIS ALLOWANCE SHALL BE RETURNED TO THE OWNER AT THE COMPLETION OF THE PROJECT. THIS CONTRACTOR IS RESPONSIBLE TO ARRANGE UTILITY WORK ORDERS.

1.8 TEMPORARY POWER AND LIGHTING SHALL BE PROVIDED TO OSHA REQUIREMENTS FOR THE CONSTRUCTION PERIOD. TEMPORARY UTILITY POWER AND TELEPHONE SERVICES WILL BE BROUGHT TO THE SITE UNDER THIS CONTRACT.

1.9 SUBMISSION OF A BID ASSUMES KNOWLEDGE OF ALL DOCUMENTS AVAILABLE RELATED TO THE WORK, AS WELL AS EXISTING CONDITIONS MADE AVAILABLE FOR REVIEW AND INSPECTION DURING THE BIDDING PERIOD. THIS CONTRACTOR SHALL INFORM THE OWNER'S REPRESENTATIVE OF ANY UNKNOWN AND/OR CONCEALED CONDITIONS AFFECTING THE NEW WORK, AS THEY ARE DISCOVERED.

1.10 WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN: FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

1.11 THE ELECTRIC SERVICE, THE ELECTRICAL DISTRIBUTION SYSTEM AND ALL NON-CURRENT CARRYING METAL PARTS OF THE ELECTRICAL SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE, AND ALL OTHER APPLICABLE CODES AND STANDARDS. ALL BRANCH CIRCUITS AND FEEDERS SHALL BE GROUNDED BY MEANS OF AN INSULATED GROUNDING CONDUCTOR INSTALLED WITHIN EACH RACEWAY. THE ENTIRE GROUNDING SYSTEM SHALL BE TESTED FOR CONTINUITY AT THE COMPLETION OF THE WORK.

1.12 THE NEW MATERIAL AND LABOR SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE BY THE OWNERS' REPRESENTATIVE. NOTE THAT CERTAIN SPECIFIED ITEMS OF EQUIPMENT MAY CARRY A LONGER PERIOD OF WARRANTEE.

1.13 PROVIDE A PERMANENT NAMEPLATE OR PLAQUE TO IDENTIFY THE MAXIMUM FAULT CURRENT AMPERES AVAILABLE AT THE MAIN SERVICE DISCONNECTING MEANS, IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE ARTICLE 110.

PART 2 PRODUCTS

2.1 ALL MATERIAL, EQUIPMENT INSTALLATION AND LABOR SHALL BE IN ACCORDANCE WITH THE LATEST APPLICABLE NATIONAL, STATE AND LOCAL CODES AND NFPA PUBLICATIONS, AS INTERPRETED BY THE AUTHORITY HAVING JURISDICTION. THIS CONTRACTOR MUST ADHERE TO PROPER INSTALLATION TECHNIQUES IN ACCORDANCE WITH INDUSTRY STANDARDS AS DEFINED BY ANSI AND NECA. IN ADDITION, OSHA REQUIREMENTS AND ANY SITE-SPECIFIC SAFETY STANDARDS SHALL BE FOLLOWED FOR SAFETY OF PERSONNEL ON SITE. NEW EQUIPMENT SHALL BE UL AND/OR CSA LISTED.

2.2 WIRING DEVICES SHALL BE "SPECIFICATION GRADE", AND SHALL BE OF ONE MANUFACTURER, WITH MATCHING PLASTIC PLATES. HUBBELL DEVICES ARE LISTED; LEVITON AND PASS & SEYMOUR DEVICES WITH EQUAL SPECIFICATIONS MAY BE SUPPLIED. COLOR SHALL BE SELECTED BY THE ARCHITECT. THE OWNERS' REPRESENTATIVE WILL CONFIRM COLORS OF DEVICES AND PLATES DURING THE SUBMITTAL APPROVAL PROCESS. UNLESS NOTED OTHERWISE, STANDARD DEVICES SHALL BE:

A. LIGHT SWITCHES: 120/277 VOLT, QUIET TYPE, HUBBELL #1221 (SINGLE POLE), #1223 (THREE-WAY) AND #1224 (FOUR-WAY).

B. LIGHTING DIMMERS: LUTRON "NOVA T-STAR" SERIES ONLY, SLIDE-TO-OFF FEATURE, WITH VOLTAGE, RATINGS AND TYPE TO SUIT THE APPLICATION AND WIRING AS INDICATED ON THE PLANS. USE MATCHING LUTRON "ON-OFF" SWITCHES WITH A COMMON COVER PLATE IF SHOWN ADJACENT TO DIMMER CONTROLS.

C. GENERAL PURPOSE RECEPTACLES: 125 VOLT, 20 AMPERE, 2-POLE, 3-WIRE, DUPLEX TYPE, NEMA 5-20R, HUBBELL #5362.

D. GFCI RECEPTACLES: 125 VOLT, 20 AMPERE, 2-POLE, 3-WIRE DUPLEX TYPE, NEMA 5-20R, HUBBELL #GFR-5362. SELF-TESTING AND FEED-THRU TYPE CAPABLE OF PROTECTING DOWNSTREAM CIRCUIT DEVICES.

E. TAMPER RESISTANT RECEPTACLES: 125 VOLT, 20 AMPERE, 2-POLE, 3-WIRE DUPLEX TYPE, NEMA 5-20R, HUBBELL #BR20-TR SERIES.

F. EXTERIOR RECEPTACLES: PROVIDE A GFCI RECEPTACLE WITH A TAYMAC #MX4380S, METAL EXTRA DUTY "IN-USE" COVER AND HORIZONTAL MOUNTED BOX.

G. OTHER SPECIAL PURPOSE DEVICES MAY BE SPECIFIED ON THE PLANS. THESE INCLUDE FLOOR OUTLETS AND SURFACE RACEWAY SYSTEMS.

H. LINE-VOLTAGE WALL OCCUPANCY SENSORS: WATTSTOPPER #DW-100 SERIES, DUAL TECHNOLOGY, 120/277 VOLT, 800W/1200W RATED, WITH ON/OFF BUTTON. SENSOR SWITCH TYPE WSD-PDT IS CONSIDERED AN EQUIVALENT.

I. LINE-VOLTAGE CEILING OCCUPANCY SENSORS: WATTSTOPPER #DT-355 SERIES, DUAL TECHNOLOGY, 120/277 VOLT, 800W/1200W RATED, WITH 360° COVERAGE. SENSOR SWITCH TYPE CMR-PDT-9 IS CONSIDERED AN EQUIVALENT.

J. LOW-VOLTAGE CEILING OCCUPANCY SENSORS: WATTSTOPPER #DT-300-U, DUAL TECHNOLOGY, 24VDC/VAC, 43MA, WITH 360° STANDARD COVERAGE. PROVIDE EACH SENSOR WITH A #BZ-150-U UNIVERSAL VOLTAGE (POWER PACK) RELAY. SENSOR SWITCH TYPE CM-PDT-9 WITH #PP-20 IS CONSIDERED AN EQUIVALENT.

K. WIRING DEVICES SHALL BE PROVIDED WITH A GROUNDED WIRE CONNECTED TO THE DEVICE AND/OR THE OUTLET BOX.

2.3 ALL WIRING SHALL BE COPPER, 90 DEGREE C. RATED, TYPE THHN, THWN OR XHHW, WITH 600-VOLT INSULATION UNLESS INDICATED OTHERWISE ON THE DRAWINGS. THE MINIMUM WIRE SIZE IS #12 FOR 120- AND 277-VOLT BRANCH CIRCUITS; #10 SHALL BE USED FOR CIRCUIT LENGTHS GREATER THAN 150 FEET.

A. COLOR CODE BRANCH CIRCUIT AND FEEDER CONDUCTORS AS FOLLOWS:
1. 208Y/120 VOLT, 3 PHASE, 4 WIRE SYSTEM
   A. PHASE A-BLACK
   B. PHASE B-RED
   C. PHASE C-BLUE
   D. NEUTRAL-WHITE
   E. GROUND-GREEN
2. IN ADDITION TO THESE REQUIREMENTS, ALSO PROVIDE COLOR CODING OF CONDUCTORS AT ALL JUNCTION OR PULLBOXES.

2.4 ALL WIRING SHALL BE INSTALLED IN CONDUIT, AS PERMITTED BY THE NATIONAL ELECTRICAL CODE. AT THE CONTRACTOR'S OPTION, AND AS PERMITTED BY THE NATIONAL ELECTRICAL CODE, TYPE MC CABLE, OR A MANUFACTURED WIRING SYSTEM MAY BE USED FOR 20 AMPERE AND 30 AMPERE BRANCH CIRCUITS IN STUD WALLS AND ABOVE ACCESSIBLE LAY-IN CEILINGS IN LIEU OF CONDUIT AND WIRE. HOMERUNS TO PANELS SHALL BE IN CONDUIT. PVC CONDUIT MAY BE USED FOR EXTERIOR UNDERGROUND CIRCUITS AND FOR INTERIOR CIRCUITS AND FEEDERS LOCATED UNDER THE GROUND FLOOR SLAB. FLEXIBLE CONDUIT SHALL BE USED FOR CONNECTIONS TO MOTORS, EQUIPMENT, TRANSFORMERS, LIGHTING FIXTURES, AND FOR BRANCH CIRCUIT WIRING INSTALLED IN CASEWORK. EXPOSED CONDUIT IN HIGH TRAFFIC AREAS SHALL BE RIGID GALVANIZED OR IMC, FROM THE FLOOR TO A LEVEL OF 8'-0" ABOVE THE FLOOR.

2.5 LIGHTING FIXTURES AND ASSOCIATED DRIVERS, AND LIGHTING CONTROLS SHALL BE AS INDICATED ON THE DRAWINGS, COMPLETE WITH PROPER LEDS, ACCESSORIES AND SUPPORTS AS RECOMMENDED BY THE MANUFACTURER AND IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE, ARTICLES 410 AND 411, OR ANY LOCAL CODES THAT MAY APPLY.

A. ADJUSTABLE FIXTURES SHALL BE AIMED AT NIGHT UNDER THE DIRECTION OF THE OWNER'S REPRESENTATIVE

B. IMMEDIATELY PRECEDING THE FINAL INSPECTION, THIS CONTRACTOR SHALL THOROUGHLY CLEAN ALL FIXTURES OF DUST, DIRT, GREASE, FINGERMARKS, ETC. ALL FIXTURES SHALL BE OPERATING AT THE TIME OF OWNER'S ACCEPTANCE.

2.6 SWITCHBOARDS, PANELBOARDS, DISCONNECTS, AND OTHER POWER DISTRIBUTION EQUIPMENT SHALL BE PROVIDED FROM ONE MANUFACTURER WHEREVER POSSIBLE. APPROVED MANUFACTURERS ARE SQUARE D, SIEMENS, EATON OR ABB. CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE, UNLESS INDICATED OTHERWISE ON THE DRAWINGS, WITH INTERRUPTING RATINGS EQUAL TO OR GREATER THAN FAULT CURRENTS AVAILABLE AT THE POINT OF SERVICE, 10 KAIC MINIMUM FOR 208Y/120 VOLT SYSTEMS; 14 KAIC MINIMUM FOR 480Y/277 VOLT SYSTEMS. OTHER CIRCUIT BREAKER RATINGS SUCH AS HACR, HID, SWD, GFCI AND SHUNT-TRIP FEATURES SHALL BE PROVIDED WHERE REQUIRED BY CODE OR AS INDICATED ON THE DRAWINGS. BALANCE THE LOAD ON EACH PANEL AND DISTRIBUTION SYSTEM INSTALLED.

A. BRANCH CIRCUIT PANELS SHALL BE FLUSH OR SURFACE MOUNTED AS INDICATED, LOCKABLE AND KEYED ALIKE, AND SHALL HAVE A DOOR-IN-DOOR COVER.

B. IF MULTI-WIRE BRANCH CIRCUITS ARE INSTALLED (SUCH AS FOR POWERED FURNITURE SYSTEMS), THE CIRCUITS SHALL BE PROVIDED WITH A HANDLE TIE OR MULTIPOLE CIRCUIT BREAKER DISCONNECTING MEANS IN ACCORDANCE WITH N.E.C. REQUIREMENTS.

C. BUSSING FOR PANELBOARDS OR SWITCHBOARDS SHALL BE COPPER.

D. SWITCHBOARDS AND DISTRIBUTION PANELS SHALL BE PROVIDED WITH BUSSED PROVISION SPACE EQUAL TO 20% (MINIMUM) OF THE ACTIVE DEVICE SPACE UTILIZED IN EACH SECTION.

E. CIRCUIT BREAKERS SERVING FIRE ALARM EQUIPMENT BRANCH CIRCUITS SHALL BE PROVIDED WITH A RED DISCONNECT HANDLE AND SHALL CARRY THE IDENTIFICATION OF "FIRE ALARM CIRCUITS".

2.7 FUSIBLE AND NON-FUSED DISCONNECT SWITCHES SHALL BE HEAVY DUTY WITH QUICK MAKE/ QUICK BREAK OPERATION, WITH A NEMA 1 RATING (INTERIOR) OR NEMA 3R RATING (EXTERIOR) UNLESS OTHERWISE NOTED OR REQUIRED BY CODE. PROVIDE DIFFERENT ENCLOSURES IF NEEDED, BASED ON THE CONDITIONS AFFECTING THE EQUIPMENT. FUSES SHALL BE DUAL ELEMENT-TIME DELAY, BUSSMAN TYPE LPN-RK (250 VOLT) OR LPS-RK (600 VOLT) FOR 600 AMPERES AND BELOW, AND BUSSMAN TYPE KRP-C ABOVE 600 AMPERES. EQUIVALENT FUSES BY FERRAZ-SHAWMUT OR LITTELFUSE ARE ACCEPTABLE.

2.8 NAMEPLATES SHALL BE PROVIDED FOR IDENTIFICATION OF ALL POWER DISTRIBUTION EQUIPMENT AND SHALL BE ENGRAVED PHENOLIC WITH WHITE LETTERING AND BLACK BACKGROUND, UNLESS DIRECTED OTHERWISE BY THE OWNER'S REPRESENTATIVE. PANELBOARD BRANCH CIRCUITS SHALL BE IDENTIFIED WITH TYPEWRITTEN DIRECTORIES.

A. SPARE CIRCUIT BREAKERS SHALL BE IDENTIFIED AS SUCH AND SHALL BE LEFT IN THE "OFF" POSITION AT THE CONCLUSION OF THE WORK.

2.9 MOTOR STARTERS SHALL BE COMBINATION TYPE WITH MOTOR CIRCUIT PROTECTOR, RUNNING PILOT LIGHT, H-O-A SELECTOR SWITCH, ELECTRONIC OVERLOAD RELAYS. 120 VOLT FUSED CONTROL TRANSFORMER, NEMA 1 ENCLOSURE AND OTHER AUXILIARY CONTACTS AND COMPONENTS NEEDED FOR PROPER MOTOR CONTROL. THE DIVISION 23 SPECIFICATIONS WILL INDICATE THE REQUIREMENTS OF EACH MOTOR STARTER BASED UPON THE CONTROL SEQUENCE – FRANKLIN CONTROL SYSTEMS, MODEL BAS OR EQUAL BY SQUARE D, ABB, OR EATON.

2.10 SINGLE PHASE MANUAL MOTOR STARTERS SHALL BE SURFACE MOUNTED, ELECTRONIC TYPE WITH HAND-OFF-AUTO SWITCH, LOCKING HARDWARE, PILOT LIGHT AND (1) AUXILIARY CONTACT FOR BAS OR INTERLOCK CONTROL – FRANKLIN CONTROL SYSTEMS, MODEL BAS-1P OR EQUAL BY SQUARE D, ABB, OR EATON.

2.11 THE OWNER'S TELECOMMUNICATIONS SYSTEM FACEPLATES, WIRING, EQUIPMENT RACKS AND "HEAD-END" EQUIPMENT IS FURNISHED AND INSTALLED UNDER ANOTHER CONTRACT WITH THE OWNER. THE ELECTRICAL CONTRACTOR SHALL PROVIDE:

A. 120- OR 208-VOLT POWER CIRCUITS AND ASSOCIATED RECEPTACLES AS SHOWN ON THE PLANS.

B. 4 11/16" SQUARE FLUSH OUTLET BOXES WITH SINGLE-GANG PLASTER RING AT DEVICE LOCATIONS, AND A BLANK COVER PLATE FOR ALL BOXES WITHOUT FACEPLATES. PROVIDE EACH BOX WITH A 1 1/4" EMT CONDUIT, STUBBED UP TO AN ACCESSIBLE LOCATION: 12" MINIMUM ABOVE LAY-IN GRID CEILINGS OR UP TO THE STRUCTURAL DECK IN EXPOSED CEILING AREAS.

C. PROVIDE 3/4" THICK FIRE-RETARDANT PAINTED PLYWOOD BACKBOARDS AS LOCATED ON THE PLANS.

D. PROVIDE A 12"L X 2"H COPPER GROUND BAR AT EACH RACK ON THE PLYWOOD BACKBOARD, AND CONNECT A #6 AWG COPPER GROUNDING CONDUCTOR CONNECTED TO THE BUILDING GROUNDING ELECTRODE SYSTEM.

E. CONDUITS, BOXES AND OTHER RACEWAYS SHALL BE INSTALLED TO SUPPORT THE OWNERS' TELECOMMUNICATIONS CABLING SYSTEM. IT IS THE RESPONSIBILITY OF THE OWNERS' REPRESENTATIVE TO PROVIDE THE CONTRACTOR WITH THE EXACT CONDUIT REQUIREMENTS FOR THESE SYSTEMS BEFORE ROUGH-IN WORK BEGINS.

2.12 PROVIDE A COMPLETE DIGITAL CLOSED CIRCUIT, ELECTRICALLY SUPERVISED, ZONED, ADDRESSABLE FIRE ALARM SYSTEM AS SPECIFIED HEREIN, AND INDICATED ON THE CONTRACT DOCUMENTS. THE SYSTEM SHALL INCLUDE BUT NOT BE LIMITED TO, ALL CONTROL PANELS, POWER EXTENDER PANELS, POWER SUPPLIES, BATTERY BACKUPS, ANNUNCIATORS, SIGNAL INITIATING DEVICES, AUDIBLE AND VISUAL ALARM DEVICES, CONDUIT, WIRE, FITTINGS AND ALL ACCESSORIES REQUIRED TO PROVIDE A COMPLETE OPERATING SYSTEM.

A. THE SYSTEM SHALL COMPLY WITH THE APPLICABLE PROVISIONS OF THE CURRENT NFPA 72 STANDARDS AND SHALL MEET ALL REQUIREMENTS OF THE LOCAL AUTHORITIES HAVING JURISDICTION. ALL EQUIPMENT AND DEVICES SHALL BE NEW, LISTED BY UNDERWRITERS LABORATORIES, INC. AND APPROVED. THE FIRE ALARM SYSTEM SHALL BE INSTALLED AND WIRED BY A CERTIFIED FIRE ALARM SYSTEM TECHNICIAN, IN ACCORDANCE WITH STATE REQUIREMENTS.

B. WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, LOCAL CODES AND THE NATIONAL FIRE PROTECTION ASSOCIATION STANDARD NUMBER 72. UNLESS OTHERWISE SPECIFIED BY LOCAL CODES, THE MINIMUM WIRE SIZE SHALL BE 14 AWG FOR A/C POWER SUPPLY CIRCUITS, 16-AWG FOR SIGNAL INITIATING CIRCUITS.

C. CONDUCT TESTS OF THE SYSTEM IN THE PRESENCE OF THE OWNER OR THEIR AGENT. ALL MATERIALS AND INSTALLATION SHALL BE GUARANTEED TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE (1) YEAR. THE CONTRACTOR SHALL TURN OVER TO THE OWNER, SYSTEM WIRING DIAGRAMS AND MAINTENANCE DATA.

D. SYSTEM SHALL BE MANUFACTURED BY NOTIFIER, SIEMENS, HONEYWELL, SILENT KNIGHT-FARENHYT.

E. PREPARE AND SUBMIT FIRE ALARM SHOP DRAWINGS INCLUDING BATTERY AND VOLTAGE DROP CALCULATIONS FOR PERMIT.

PART 3 EXECUTION

3.1 COORDINATE THE ELECTRICAL WORK WITH ALL OTHER TRADES ON SITE, INCLUDING PANEL LOCATIONS, CORE DRILL, FEEDER ROUTINGS, OPENINGS, AND DEVICES. PROVIDE LAYOUT DRAWINGS FOR ELECTRICAL DISTRIBUTION ROOMS AND CLOSETS AND SUBMIT COPIES TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL BEFORE ROUGHING-IN CONDUITS AND EQUIPMENT.

3.2 CUTTING AND PATCHING OF WALLS, FLOORS AND CEILINGS SHALL BE PROVIDED BY SKILLED MECHANICS IN THE TRADE. FINAL FINISHING AND PAINTING IS BY THE GENERAL TRADES CONTRACTOR.

3.3 IT IS THE PURPOSE OF THE CONTRACT DOCUMENTS TO INDICATE THE APPROXIMATE LOCATIONS OF ALL EQUIPMENT, OUTLETS, ETC. THE EXACT LOCATION OF EQUIPMENT AND OUTLETS MAY BE ADJUSTED FROM TIME TO TIME AS THE WORK PROGRESSES. THIS CONTRACTOR SHALL CONFIRM THE EXACT LOCATIONS AND ARRANGE THE WORK ACCORDINGLY. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO EFFECT REASONABLE CHANGES IN THE LOCATION OF OUTLETS UP TO THE TIME OF ROUGH-IN WITHOUT ADDITIONAL COST. ALL GFCI RECEPTACLES SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION, VISIBLE FOR TESTING AND INSPECTION.

3.4 SERVE AND CONNECT ALL ELECTRICAL EQUIPMENT FURNISHED BY OTHER DIVISIONS OR OWNER. COORDINATE ALL OUTLET LOCATIONS AND CONNECTION REQUIREMENTS WITH THE CONTRACTOR FURNISHING THE EQUIPMENT. BEFORE CONNECTING ANY PIECE OF EQUIPMENT, CHECK THE NAMEPLATE RATING AGAINST THE INFORMATION SHOWN ON THE CONTRACT DOCUMENTS AND CALL ANY DISCREPANCIES TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. CAREFULLY STUDY ALL MANUFACTURERS' EQUIPMENT WIRING DIAGRAMS AND MAKE CONNECTIONS ACCORDINGLY.

3.5 LOCATE AND PROVIDE ALL OPENINGS IN FLOORS, CEILINGS, AND WALLS TO ALLOW FOR CONDUIT PENETRATIONS.

A. SUBMIT TO THE OWNER'S REPRESENTATIVE ALL LOCATIONS AND SIZES OF OPENINGS WHICH MUST BE PROVIDED FOR THE WORK BEFORE DRILLING OR SETTING ANY SLEEVES.

B. FINAL LOCATIONS AND SIZES OF ALL OPENINGS SHALL BE SUBJECT TO THE OWNER'S REPRESENTATIVE FINAL APPROVAL.

C. PROVIDE ALL FIRE STOPS AND SMOKE AND FIRE BARRIERS AROUND ALL CONDUIT PENETRATIONS PROVIDED UNDER THIS WORK. ALL FIRE BARRIERS SHALL BE UL LISTED AND RECOGNIZED SUITABLE BY FACTORY MUTUAL AND NFPA. FIRE BARRIERS SHALL RESTORE ALL PENETRATIONS TO BE AT LEAST THE MINIMUM FIRE RATING OF THE SURFACE PENETRATED. BARRIERS SHALL COMPLETELY FILL THE OPENINGS AND SHALL BE SECURELY ANCHORED TO PREVENT ACCIDENTAL REMOVAL. ALL SMOKE AND FIRE BARRIERS SHALL BE MADE USING ONLY RECOGNIZED MATERIALS AND WILL BE ACCEPTABLE SUBJECT TO THE OWNER'S REPRESENTATIVE FINAL APPROVAL. SMOKE AND FIRE BARRIERS MAY BE STI FIRE SEAL, DUPONT, OR US GYPSUM.

D. SEAL EXTERNAL WALL PENETRATIONS WHERE CONDUIT PASSES FROM A COLDER AREA TO A WARMER AREA.

3.6 MOUNTING HEIGHTS OF DEVICES ARE AS INDICATED ON THE PLANS, OR AS SHOWN ON THE ARCHITECTURAL INTERIOR ELEVATIONS. OUTLET BOXES FOR DEVICES SHALL NOT BE MOUNTED BACK-TO-BACK IN STUD WALL CONSTRUCTION. ADJACENT DEVICES SHALL BE INSTALLED IN GANGED BOXES WITH COMMON COVER PLATES WHEREVER POSSIBLE. UNLESS OTHERWISE NOTED, RECEPTACLES SHALL BE MOUNTED VERTICALLY, WITH THE GROUND PIN ABOVE THE PHASE AND NEUTRAL PIN.

3.7 ALL BOXES AND CONDUITS SHALL BE CONCEALED IN FINISHED AREAS OF NEW CONSTRUCTION. CONDUIT SYSTEMS SHALL BE SUPPORTED FROM THE STRUCTURE, INDEPENDENT OF DUCTWORK AND OTHER TRADES. HANGERS, STRAPS AND CLAMPS SHALL BE APPROVED FOR THE PURPOSE. JUNCTION BOXES, OUTLET BOXES AND PULL BOXES SHALL BE LOCATED IN ACCESSIBLE AREAS AND SHALL BE PERMANENTLY MARKED ACCORDING TO THE CIRCUIT OR SYSTEM SERVED.

3.8 SUSPENDED CEILING SYSTEMS, INCLUDING THE ASSOCIATED SUPPORT WIRES, SHALL NOT BE USED FOR CONDUIT SUPPORT. CONDUITS SHALL NOT INTERFERE WITH CEILING TILE INSTALLATION OR REMOVAL AND SHALL NOT REST ON OR BE ATTACHED TO THE T-BARS OF THE SYSTEM.

3.9 RENOVATION WORK MAY REQUIRE THE INSTALLATION OF SURFACE MOUNTED CONDUIT OR SURFACE RACEWAYS WHERE CONCEALING CONDUIT IS NOT POSSIBLE. THE ROUTING AND LOCATION OF SUCH RACEWAYS SHALL BE APPROVED BY THE OWNERS' REPRESENTATIVE.

3.10 PROVIDE THE PROPER CONNECTION AND/OR DISCONNECT AND OVER-CURRENT PROTECTION FOR OWNER AND DIVISION 15 EQUIPMENT, BASED UPON THE CONTRACT DOCUMENTS. VERIFY THIS INFORMATION WITH THE UNIT NAMEPLATE OR FIELD WIRING SCHEMATIC BEFORE ROUGH IN.

3.11 ELECTRICAL EQUIPMENT SHALL BE STORED IN A HEATED AND VENTILATED SPACE UNTIL READY FOR DELIVERY TO THE FINISHED EQUIPMENT SPACE ON THE SITE.

3.12 FOR FEEDERS AND EQUIPMENT CIRCUITS 40 AMPERE RATED AND ABOVE, THE INTENT OF THE DESIGN IS TO INSTALL A MAXIMUM OF THREE (3) CURRENT-CARRYING CONDUCTORS IN A SINGLE CONDUIT (RACEWAY), UTILIZING THE FULL CONDUCTOR AMPACITIES ALLOWED AND DEFINED IN THE NATIONAL ELECTRICAL CODE ARTICLE 310. COMBINING FOUR (4) OR MORE CURRENT-CARRYING CONDUCTORS IN A SINGLE RACEWAY MUST BE REVIEWED AND APPROVED BY THE OWNER'S REPRESENTATIVE.

3.13 UNLESS SPECIFICALLY REQUESTED BY THE OWNER'S REPRESENTATIVE, CEILING AND WALL MOUNTED OCCUPANCY SENSORS SHALL BE SET WITH DEFAULT TIMES, AS FOLLOWS:
A. PRIVATE OFFICES – 10 MINUTES
B. STORAGE AREAS – 5 MINUTES
C. MULTIPLE PERSON WORK AREAS – 30 MINUTES
D. PUBLIC RESTROOMS – 30 MINUTES
E. HALLWAYS, CORRIDORS – 30 MINUTES
F. ALL OTHER SPACES – 10 MINUTES

3.14 CEILING MOUNTED OCCUPANCY SENSORS SHALL BE POSITIONED AND ADJUSTED BY THE CONTRACTOR TO ELIMINATE NUISANCE OPERATION OF THE CIRCUIT FROM HVAC DIFFUSERS OR MOVEMENT OUTSIDE THE CONTROLLED AREA OR ROOM.

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REV	REVISIONS	DATE	BY
0	ISSUED FOR BIDDING AND PERMIT	05/29/2024	

DATE: 05/30/2024
DRAWN BY: MG
CHECKED BY: TGP
APPROVED BY:

NEW TERMINAL
LAKE COUNTY EAP TERMINAL
1969 Lost Nation Rd., Willoughby, OH 44094

ELECTRICAL SPECIFICATION

SCALE: 1/4" = 1'-0"
CONTRACT NO: 24160
SHEET E1.08