LANCER ASSOCIATES
145 N. East St.
Indianapolis, IN 46204
Telephone: 317.797.6595

www.lancerassociates.com

CROSSROAD ENGINEERS, PC
115 N. 17th Ave.
Beech Grove, IN 46107
Telephone: 317.780.1555

www.crossroadengineers.com

LYNCH, HARRISON & BRUMLEVE, INC.
550 Virginia Ave.
Indianapolis, IN 46203
Telephone: 317.423.1550

www.lhb-eng.com

DESIGN-AIRE ENGINEERING, INC
2707 Rand Rd
Indianapolis, IN 46241
Telephone: 317.464.9090

www.WEBSITE.com

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 4620234

JOHNSON COUNTY RECYCLING CENTER

100% CONSTRUCTION DOCUMENT
04/22/2024

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E300	SITE PLAN - POWER

0 N. GRAHAM ROAD, FRANKLIN, IN 46131

PROJECT LOCATION

PLOT DATE/TIME: 4/22/2024 5:34:10 PM

JOHNSON COUNTY
RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

JERRY L. CRIPPS
REGISTERED
No. 880133
STATE OF
INDIANA
ARCHITECT

REVISIONS:

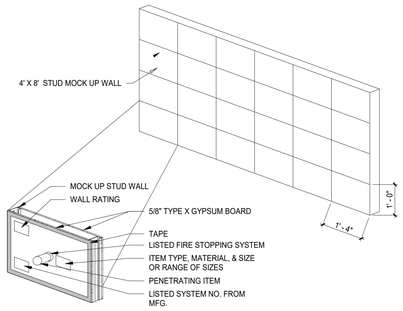
#	DATE	DESC.

100% CONSTRUCTION DOCUMENT

PROJECT: #23122
DATE: 04/22/2024
DRAWN BY: Author

COVER

G000

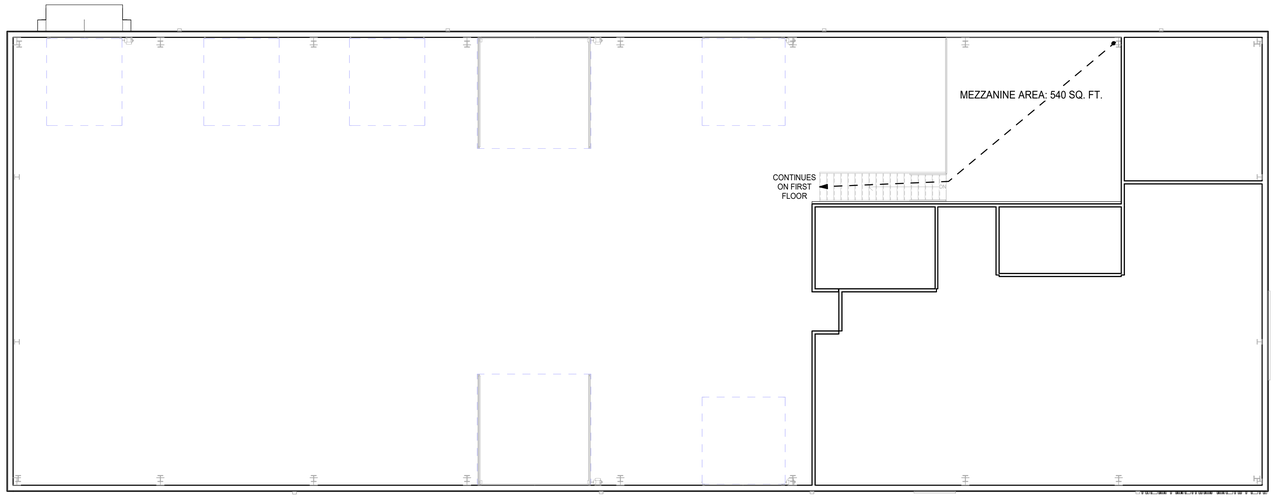


1 FIRESTOPPING PENETRATION MOCKUP PANEL

SCALE: 1/2" = 1'-0"

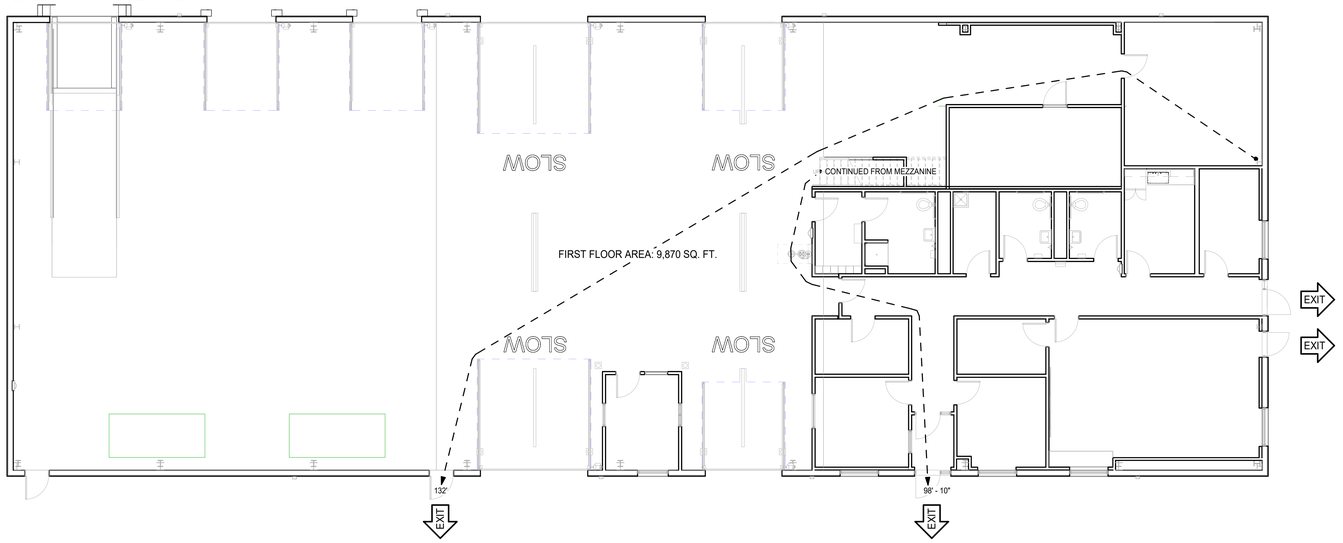
CODE SUMMARY - JOHNSON COUNTY RECYCLING CENTER

Applicable Codes:	General Administrative Rules (GAR) 2014 Indiana Building Code 2014 Indiana Fire Code (IFC) 2014 Indiana Mechanical Code (IMC) 2012 Indiana Plumbing Code (IPC) 2009 Indiana Electrical Code (NEC) ICC/ANSI A-117.1 Standard, 2009 Edition *Code reference unless otherwise noted
Project Scope:	Construction of a new recycling center for Johnson County. The building will have 9,870 sf on the main level, and will have a storage mezzanine of 540 sq ft.
Occupancy Classification:	Storage and sorting of recycled materials - hazardous materials will be maintained within allowable quantities - S-1 Occupancy [311.2,414.2.5] Office and administration areas - B Occupancy [304.1]
Contruction Type:	Type VB Construction permitted based upon allowable area [503.1]
Allowable Area	Tabular Area: 9,000 sf Table 503 Sprinkler Increase: 27,000 sf Frontage Increase: + 6,750 sf506.2 Total allowable area: 42,700 sf Actual area 1st Floor: 9,870 sf
Building Elements	Building elements, including bearing walls, mezzanine construction,, and roof structure are permitted to be of nonrated combustible construction [Table 601] Exterior walls are permitted to be of nonrated, combustible construction, where [illegible] 10 feet of fire separation distance [Table 602]
Incidental Use Areas	None applicable to this project [Table 509]
Exit Access Travel Distance:	The maximum travel distance to an exterior exit is permitted to be a maximum of 250 feet for S-1 areas, and 300 feet for B Occupancy areas [1016.2]
Panic Hardware	Panic hardware not required for either an S-1 Occupancy or a B Occupancy [1008.1.10]
Corridor Construction	Corridor is per.. [illegible] non-rated construction based upon automatic sprinkler protection throughout the building [1018.1]
Mezzanine Egress	The mezzanine is permitted to have a single means of egress based upon a common path of egress travel not exceeding 100 feet, and an occupant load of 29 or less [1015.1]
Automatic Sprinklers::	Automatic sprinkler protection will be provided throughout the building



4 LIFE SAFETY PLAN - MEZZANINE

SCALE: 1/8" = 1'-0" REF. 1 / A201



2 LIFE SAFETY PLAN - FIRST FLOOR

SCALE: 1/8" = 1'-0" REF. 1 / A201

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

JOHNSON COUNTY
RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

JERRY L. CRIPPS
REGISTERED
No 880033
STATE OF
INDIANA

REVISIONS:

#	Date	Desc.

100% CONSTRUCTION DOCUMENT

PROJECT: #23122
DATE: 04/22/2024
DRAWN BY: Author

LIFE SAFETY PLAN - FIRST FLOOR

N

LS001

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FINAL CONSTRUCTION PLANS

JOHNSON COUNTY RECYCLE CENTER

0 N. GRAHAM ROAD

FRANKLIN, INDIANA

VICINITY MAP

NO SCALE

LOCATION MAP

NO SCALE

PLAN INDEX	
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E02	SITE LIGHTING DETAILS

OWNER/DEVELOPER

JOHNSON COUNTY SOLID WASTE DISTRICT
86 W. COURT STREET
FRANKLIN, IN 46131
PHONE: (317) 346-4301
CONTACT: KEVIN WALLS
EMAIL: kwalls@co.johnson.in.us

ENGINEER

CROSSROAD ENGINEERS, PC
115 N. 17TH AVENUE
BEECH GROVE, IN 46107
PHONE: (317) 780-1555
CONTACT: GREGORY J. ILKO
EMAIL: gilko@crossroadengineers.com

ALL IMPROVEMENTS SHALL COMPLY WITH ALL APPLICABLE ADA REQUIREMENTS

INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND DETAILS DATED 2022 TO BE USED WITH THESE PLANS

LEGAL DESCRIPTION
INSTRUMENT NO. 2023-000852
LOT NUMBERED ONE IN THE LINVILLE COMMERCIAL MINOR SUBDIVISION AS RECORDED IN PLAT CABINET E, SLIDE 359B AND AS INSTRUMENT NO. 2019-000197 IN THE OFFICE OF THE RECORDER OF JOHNSON COUNTY, INDIANA.

UTILITY CONTACTS

Note: Listed below are the Indiana Underground Plant Protection Services Contacts. Others not listed may exist. The underground utilities shown have been located from field survey information and existing drawings. The surveyor makes no guarantee that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although the surveyor does certify that they are located as accurately as possible from information available. The surveyor has not physically located the underground utilities.

UTILITY	COMPANY	CONTACT	PHONE	EMAIL
COMMUNICATIONS	MCI	DEAN BOYERS	469-886-4238	investigations@verizon.com
FIBER OPTIC	BRIGHTSPEED	MELISSA TEAGUE	765-656-4663	melissa.teaguer@brightspeed.com
FIBER OPTIC	METRO FIBERNET	MARK DECKARD	812-253-2196	rrhwypermits@metronetinc.com
ELECTRIC	DUKE ENERGY	JESSICA TURNER	812-662-2007	jessica.turner3@duke-energy.com
SANITARY	CITY OF FRANKLIN DPW	EVAN HART	317-412-8450	ehart@franklin.in.gov
WATER	INDIANA AMERICAN WATER COMPANY	TRACY WHITE	317-885-2426	tracy.s.white@amwater.com
GAS	CENTERPOINT ENERGY	JON EASTHAM	765-287-2119	publicproject@centerpointenergy.com
FIRE DEPARTMENT	CITY OF FRANKLIN	BRYNE PURSIFULL	317-736-3650	bpursifull@franklin.in.gov

DIRECTORY PATH : R:\Active\Johnson Rental\JoCo Recycle Center\Design\CAD\Plans
FILENAME : 100 TITLE-FRANKLIN.dwg
DATE/USER : 4/11/2024 1:21 PM / Bvaughan

CROSSROAD ENGINEERS, PC
Transportation & Development Consultants
115 N. 17th AVENUE, BEECH GROVE, IN 46107 (317) 780-1555

SHEET 100

TITLE SHEET

JOHNSON COUNTY RECYCLE CENTER

JOB No.	-	DRAWN	LMC	CHECKED	BTV	APPR.	GJI
DATE	APRIL 11, 2024	DESIGNED	BTV				

GREGORY J. ILKO REGISTERED NO. 10300059 STATE OF INDIANA PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY	APPR.
1				
2				
3				
4				
5				
6				
7				
8				
9				

SCALE: 1" = 30'

EXISTING LEGEND

POWERPOLE	CONTOURS
POWERPOLE W/RISER	PROPERTY LINE
POWERPOLE W/LIGHT	SECTION LINE
GUY WIRE	RIGHT-OF-WAY
WATER VALVE	EASEMENT
FIRE HYDRANT	ADJOINER LINE
WATER METER	PAVEMENT LINE
GAS VALVE	FIELD LINE
SIGN	FENCE
MAILBOX	DITCH
TEMP. BENCHMARK	GAS LINE
MONUMENT FOUND	WATER LINE
	FIBER OPTIC LINE
ASPHALT	OVERHEAD UTILITY LINE
GRAVEL	SANITARY SEWER W/MANHOLE
CONCRETE	STORM SEWER W/ END SECTION
REMOVAL/DEMOLISH	

TOPOGRAPHICAL NOTES

1. CONTRACTOR SHALL DISPOSE OF ALL MATERIALS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
2. UTILITIES ARE GRAPHICAL REPRESENTATION PER SURVEY AND MAPPING. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

FLOODPLAIN INFORMATION

BY GRAPHIC PLOTTING ONLY, THIS TRACT OF LAND DESCRIBED HEREON LIES WITHIN ZONE 'X' (AREAS OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AND IS NOT IN A SPECIAL FLOOD HAZARD AREA AS PLOTTED ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP FOR JOHNSON COUNTY, INDIANA, COMMUNITY PANEL NO. 18081C0143E, WHICH BEARS AN EFFECTIVE DATE OF JANUARY 29, 2021.

BENCHMARK INFORMATION

ORIGINATING BENCHMARK

DESIGNATION – X 13
PID – KA0010
STATE/COUNTY – IN/MORGAN
USGS QUAD – MOORESVILLE EAST (1980)

VERT ORDER – FIRST CLASS II

DESCRIBED BY COAST AND GEODETIC SURVEY 1946
1.2 MI N FROM WAVERLY. IN JOHNSON COUNTY, 1.2 MILES NORTH ALONG STATE HIGHWAY 37 FROM THE INTERSECTION OF STATE HIGHWAY 144 AT WAVERLY, MORGAN COUNTY, 125 YARDS NORTH OF THE MORGAN-JOHNSON COUNTY LINE, 26 FEET WEST OF THE CENTERLINE OF THE HIGHWAY, IN LINE WITH THE WEST RIGHT-OF-WAY FENCE, 1.5 FEET SOUTH OF A WHITE WOODEN WITNESS POST, AND ABOUT 2 FEET HIGHER THAN THE HIGHWAY. A STANDARD DISK, STAMPED 686.370 X 13 1930 AND SET IN THE TOP OF A CONCRETE POST PROJECTING 7 INCHES ABOVE GROUND.
RECOVERY NOTE BY IN DEPT OF NAT RES 1985
NEW DESC- AT THE INTERSECTION OF NEW STATE ROAD 144 AND OLD STATE ROAD 37, IN THE SOUTHWEST QUARTER OF THE INTERSECTION, WITNESS POST IS GONE RIGHT-OF-WAY FENCE IS GONE, ALL OTHER INFORMATION APPEARS TO BE CORRECT.

ELEV. = 685.94 (NAVD 88)

TBM #400
CUT 'BOX' ATOP SW MOST CRNR OF CONC HEADWALL @ SE QUAD OF 'LINVILLE WAY' & 'GRAHAM RD'

ELEV. = 754.94

LEGAL DESCRIPTION

INSTRUMENT NO. 2023-000852

LOT NUMBERED ONE IN THE LINVILLE COMMERCIAL MINOR SUBDIVISION AS RECORDED IN PLAT CABINET E, SLIDE 359B AND AS INSTRUMENT NO. 2019-000197 IN THE OFFICE OF THE RECORDER OF JOHNSON COUNTY, INDIANA.

EXISTING UTILITY SIZE AND MATERIAL INFORMATION SHOWN ON THESE PLANS ARE PER THE BEST GRAPHICAL AND VISIBLE INFORMATION AVAILABLE. CONFLICTS MAY EXIST AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL SIZING AND MATERIAL INFORMATION PROVIDED. IF ACTUAL CONDITIONS DIFFER FROM THAT INFORMATION SHOWN ON THE PLANS, THE CONTRACTOR SHALL, PRIOR TO THE INSTALLATION OF ANY PROPOSED INFRASTRUCTURE, NOTIFY THE DESIGN ENGINEER IMMEDIATELY.

UTILITY CONTACTS

Note: Listed below are the Indiana Underground Plant Protection Services Contacts; Others not listed may exist. The underground utilities shown have been located from field survey information and existing drawings. The surveyor makes no guarantees that the underground utilities comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although the surveyor does certify that they are located as accurately as possible from information available. The surveyor has not physically located the underground utilities.

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GAS	CENTERPOINT ENERGY	JON EASTHAM	765-287-2119	publicproject@centerpointenergy.com
FIRE DEPARTMENT	CITY OF FRANKLIN	BRYNE PURSIFULL	317-736-3650	bpursifull@franklin.in.gov

INDIANA 811 Know what's below. Call before you dig.

CROSSROAD ENGINEERS, PC
Transportation & Development Consultants
115 N. 17th AVENUE, BEECH GROVE, IN 46107 (317) 780-1555

SHEET 200

TOPOGRAPHICAL SURVEY

JOHNSON COUNTY RECYCLE CENTER

JOB No.	.	DRAWN	LMC	CHECKED	BTV
DATE	APRIL 11, 2024	DESIGNED	BTV	APPR.	GJI

GREGORY J. ILKO
REGISTERED
NO. 10300059
STATE OF INDIANA
PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY	APPR.
1				
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SHEET 200

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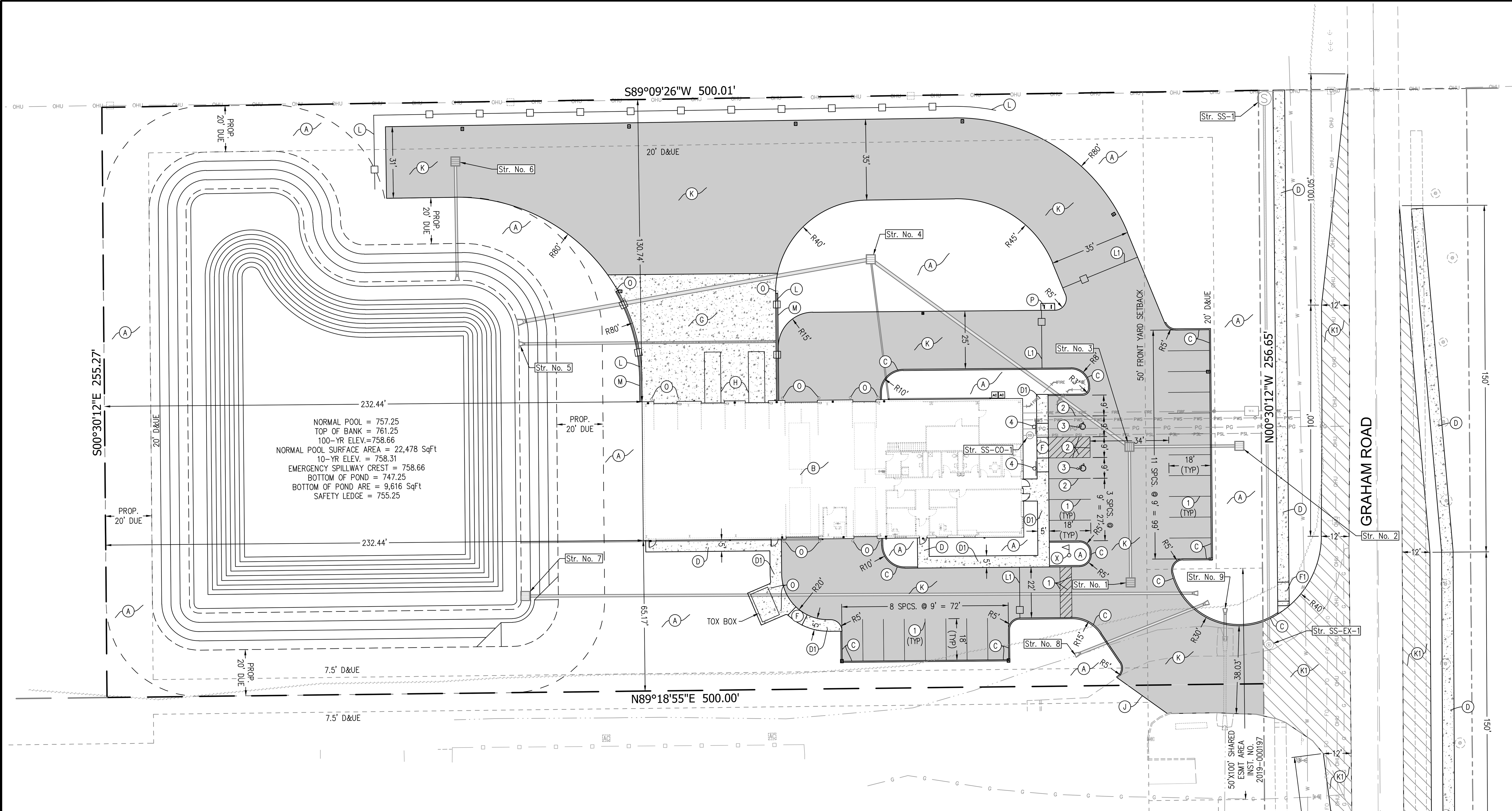
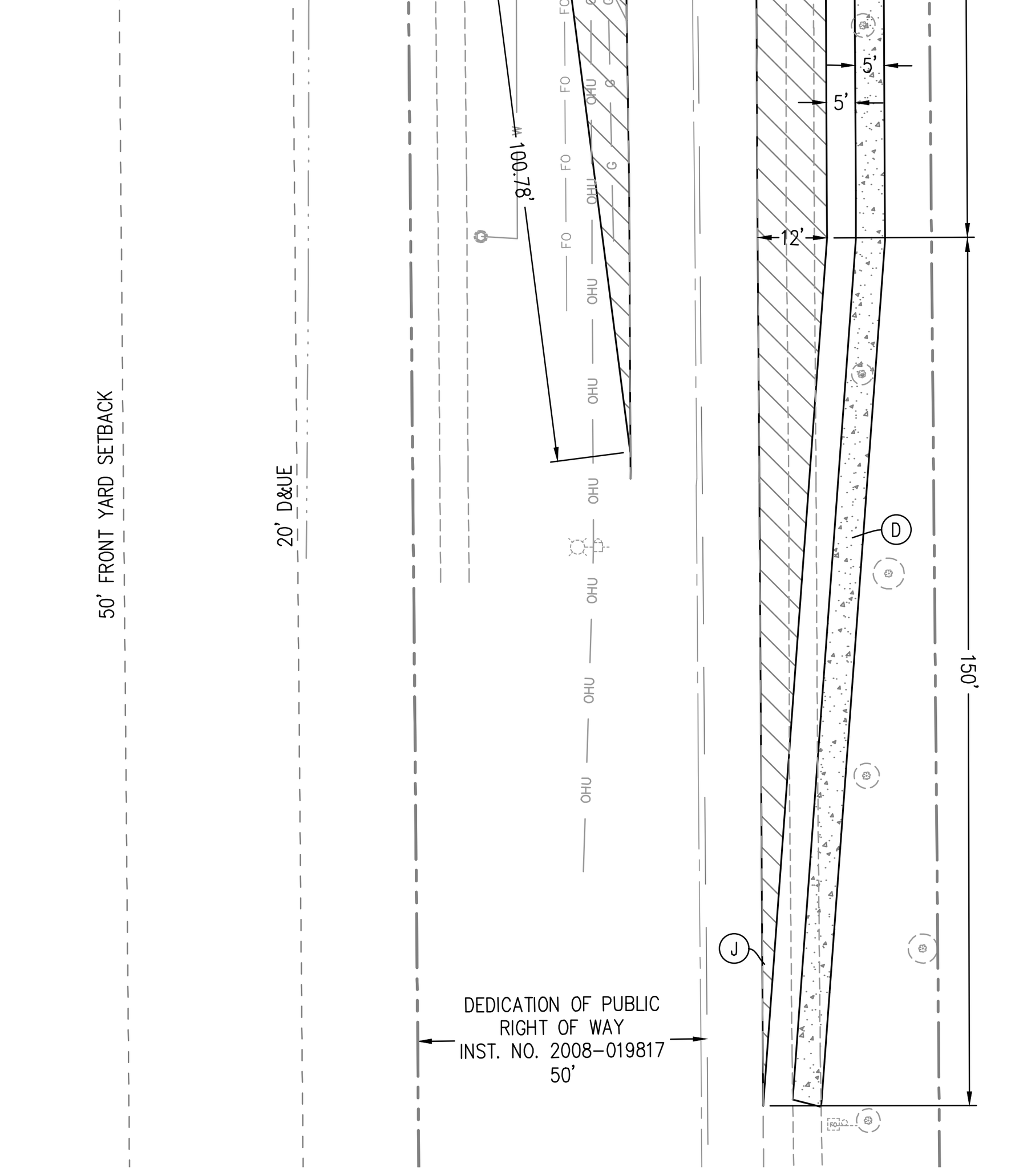
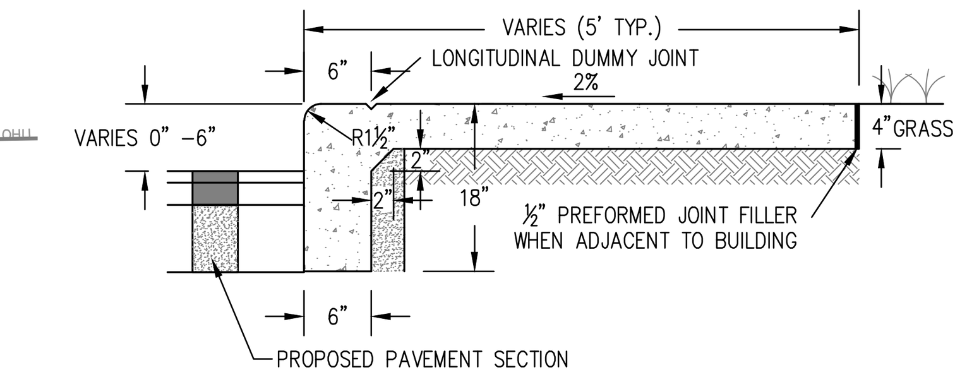
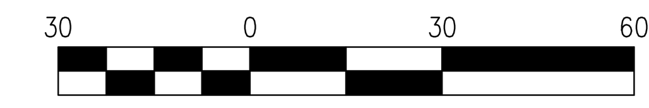


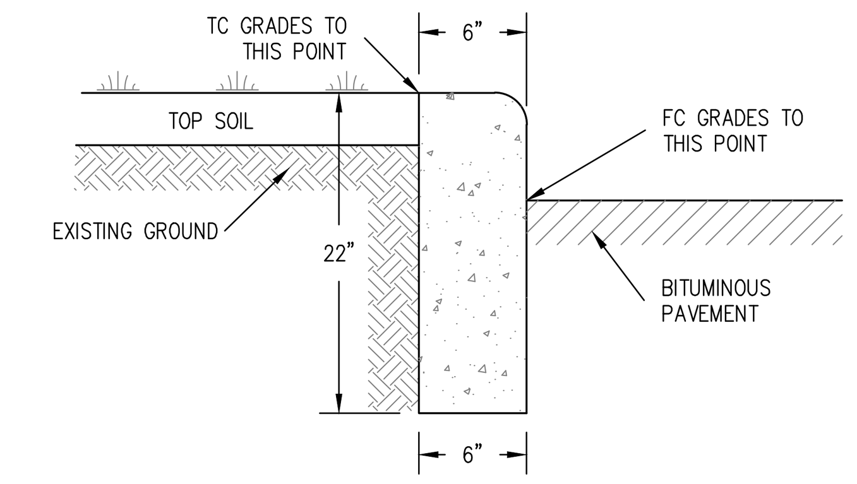




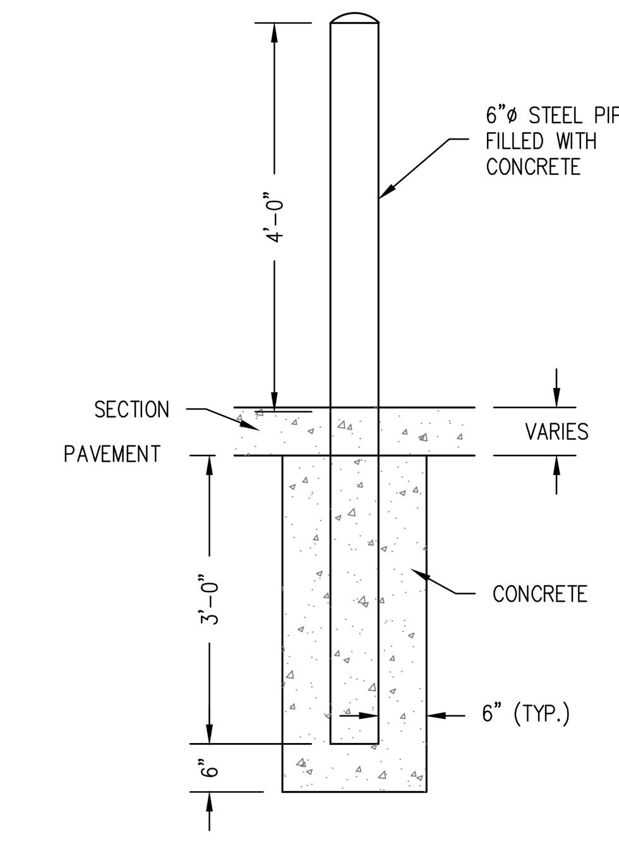
MONOLITHIC CURB AND SIDEWALK (D1)
NOT TO SCALE



SCALE: 1" = 30'



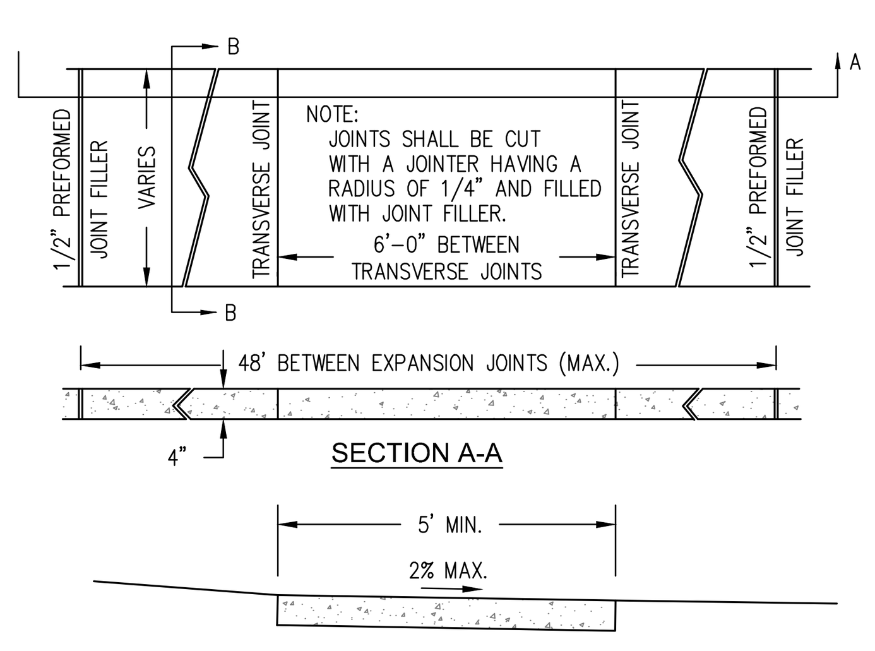
STRAIGHT CONCRETE CURB (C)
NOT TO SCALE



PIPE BOLLARD DETAIL (O)
NOT TO SCALE

SITE DIMENSION LEGEND

(A)	MULCH SEEDING/LANDSCAPE AREAS
(B)	STRUCTURE FOUNDATION – PER BUILDING PLANS
(C)	STRAIGHT CONCRETE CURB (SEE DETAIL–THIS SHEET)
(D)	4" CONCRETE SIDEWALK (SEE DETAIL–THIS SHEET)
(D1)	MONOLITHIC CONCRETE CURB AND SIDEWALK (SEE DETAIL–THIS SHEET)
(F)	HANDICAP RAMP (SEE DETAIL–THIS SHEET)
(F1)	HANDICAP RAMP (SEE DETAIL–THIS SHEET)
(G)	TYPICAL CONCRETE SECTION 9" CONCRETE SLAB ON 6" COMPACTED AGGREGATE #53 ON COMPACTED SUBGRADE (SEE DETAIL–THIS SHEET)
(H)	DUMPSTER/COMPACTER
(J)	SAWCUT
(K)	TYPICAL ASPHALT SECTION 1.5" HMA SURFACE 9.5mm, ON 3" HMA INTERMEDIATE 19.0mm, ON 6" HMA BASE 25.0mm, ON 8" COMPACTED AGGREGATE #53, ON COMPACTED SUBGRADE (SEE DETAIL–THIS SHEET)
(K1)	HEAVY DUTY ASPHALT SECTION 1.5" HMA SURFACE 9.5mm, ON 3" HMA INTERMEDIATE 19.0mm, ON 6" HMA BASE 25.0mm, ON 8" COMPACTED AGGREGATE #53, ON COMPACTED SUBGRADE (SEE DETAIL–THIS SHEET)
(L)	FENCE (SEE DETAIL–SHEET 1000)
(L1)	SWING GATE (DETAIL PER OWNER)
(M)	RETAINING WALL (SEE DETAIL–SHEET 1000)
(O)	BOLLARD (SEE DETAIL–THIS SHEET)
(P)	BICYCLE RACK (SEE DETAIL–THIS SHEET)
(X)	FLAG POLE PER OWNER
(1)	LINE, PAINTED, SOLID WHITE, 4"
(2)	LINE, PAINTED, SOLID BLUE, 4"
(3)	HANDICAP SYMBOL, PAINTED, SOLID BLUE, 4"
(4)	ADA SIGNAGE (SEE DETAIL THIS SHEET)

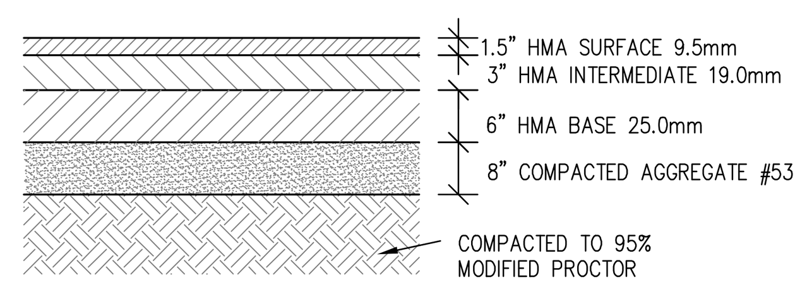


SECTION A–A

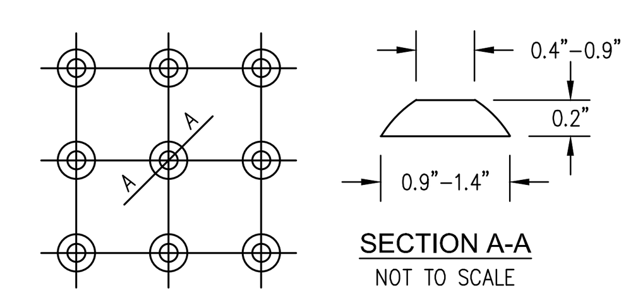
SECTION B–B

CONCRETE SIDEWALK (D)
NOT TO SCALE

NOTES:
1) MAXIMUM ALLOWABLE CROSS SLOPE OF SIDEWALK SHALL NOT EXCEED 2% IN ACCORDANCE WITH A.D.A. REQUIREMENTS. SIDEWALKS EXCEEDING THE ALLOWABLE CROSS SLOPE WILL BE REJECTED AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT.

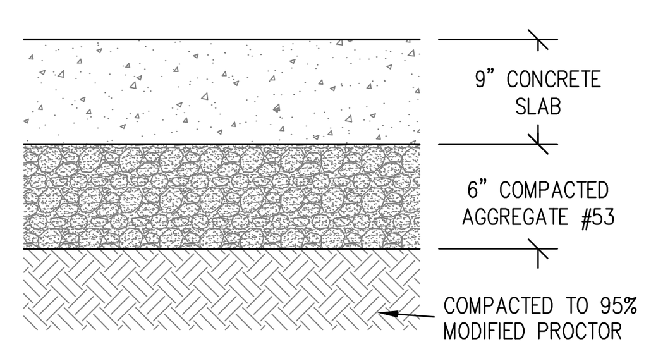


ASPHALT PAVEMENT SECTION (K) (K1)
NOT TO SCALE

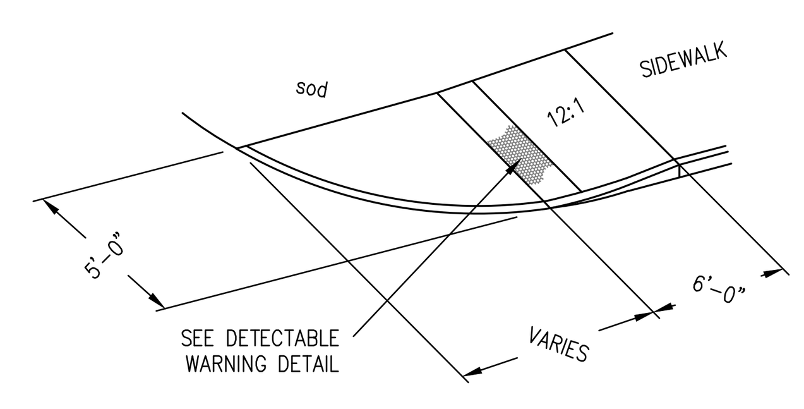


SECTION A–A

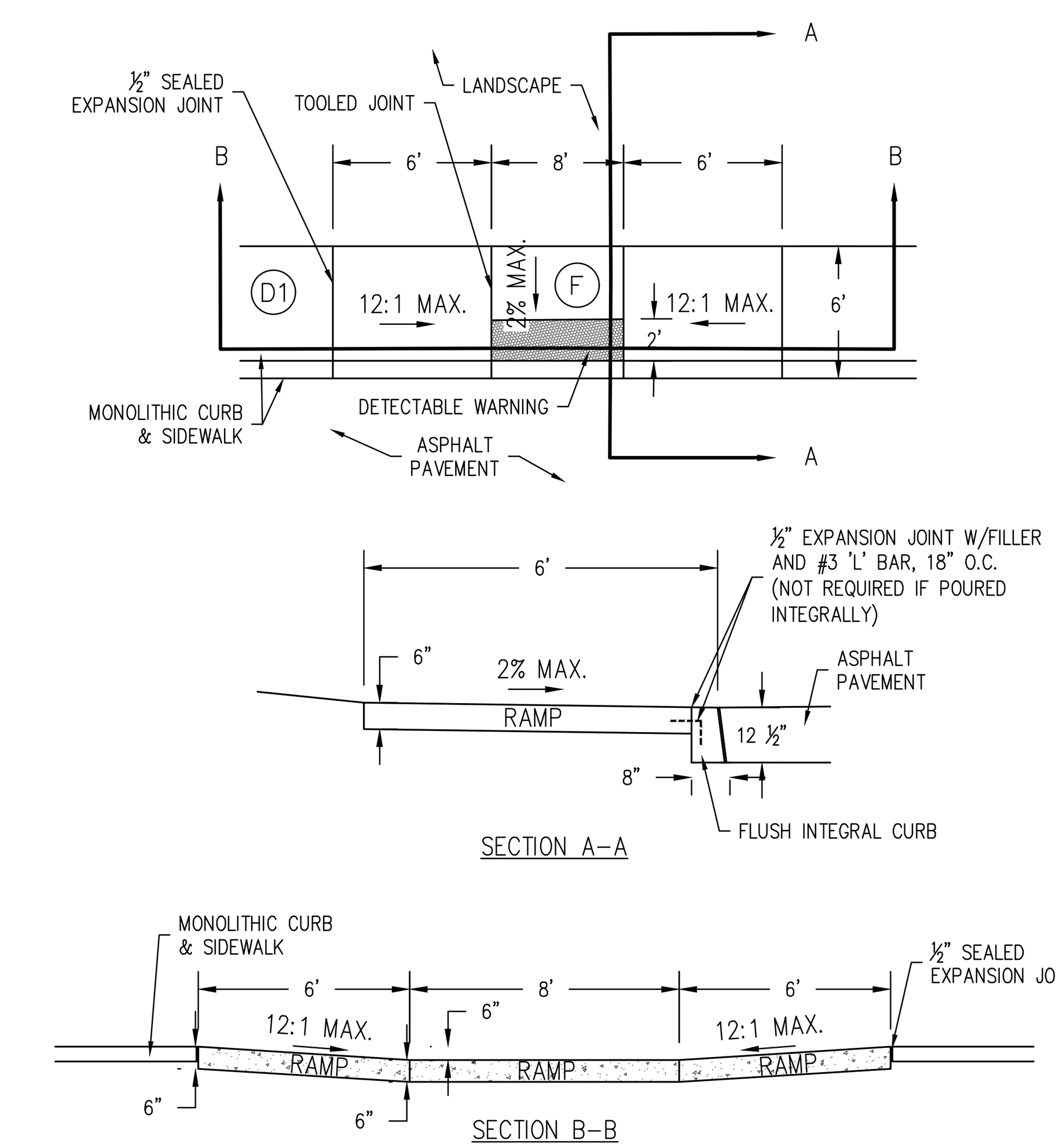
TRUNCATED DOMES USED IN DETECTABLE WARNINGS
NOT TO SCALE



TYPICAL CONCRETE SECTION (G)
NOT TO SCALE



HANDICAP RAMP TYPE 'H' MODIFIED (F1)
NOT TO SCALE



SECTION A–A

SECTION B–B

PARALLEL CURB RAMP (F)
NOT TO SCALE

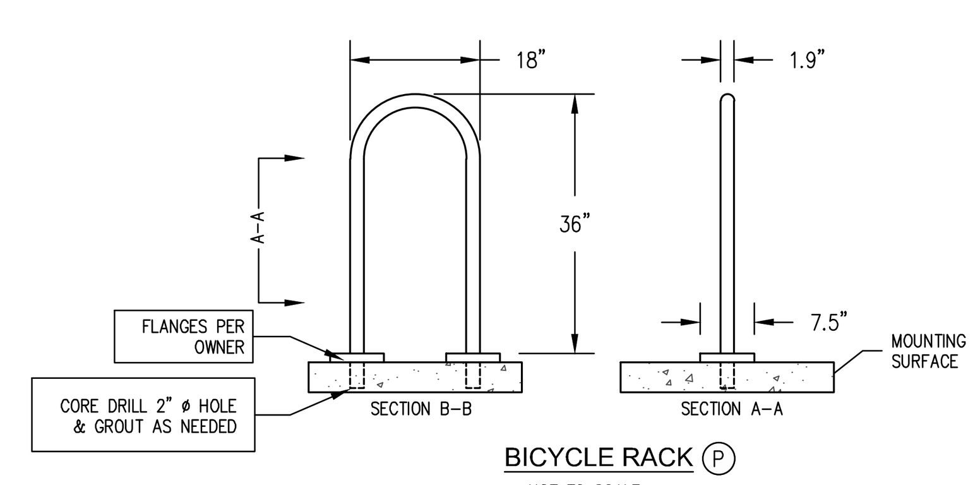
SITE DIMENSION NOTES

1. CONTRACTOR SHALL NOTIFY ENGINEER, IF PROOF ROLL OF SUBGRADE FAILS, TO DETERMINE IF LIME STABILIZATION OF SUBGRADE IS NECESSARY.
2. ALL RADII DIMENSIONS ARE TO THE BACK OF PROPOSED CURB OR EDGE OF PAVEMENT.
3. SIGNAGE SHALL INCLUDE ALL NECESSARY HARDWARE AND FITTINGS, INCLUDING 10 FT. OF 11 GUAGE FLANGED CHANNEL SIGN POST.
4. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL SIGNAGE. VERIFY CONFLICTS WITH OWNER.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC AND PROVIDING ALL NECESSARY FLAGMAN, BARRELS, SIGNAGE, ETC. DURING CONSTRUCTION. ALL APPLICABLE M.U.T.C.D. STANDARDS SHALL GOVERN THIS WORK.
6. CONTRACTOR SHALL COORDINATE WITH OWNER AND APPLICABLE UTILITY COMPANIES FOR CABLE, ELECTRIC, GAS, AND TELEPHONE SERVICE INSTALLATIONS.
7. EXISTING UTILITY SIZE AND MATERIAL INFORMATION SHOWN ON THESE PLANS ARE PER THE BEST GRAPHICAL AND VISIBLE INFORMATION AVAILABLE. CONFLICTS MAY EXIST AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL SIZING AND MATERIAL INFORMATION PROVIDED. IF ACTUAL CONDITIONS DIFFER FROM THAT INFORMATION SHOWN ON THE PLANS, THE CONTRACTOR SHALL, PRIOR TO THE INSTALLATION OF ANY PROPOSED INFRASTRUCTURE, NOTIFY THE DESIGN ENGINEER IMMEDIATELY.
8. PROOF ROLL OF PAVEMENT SECTIONS IN THE R/W (SUBGRADE AND STONE BASE) SHALL BE PERFORMED AND SHALL BE WITNESSED BY CITY ENGINEERING STAFF. CONTACT CITY OF FRANKLIN ENGINEERING AT LEAST 48 HOURS PRIOR TO PERFORMING PROOR ROLLS.

NOTE: MAXIMUM ALLOWABLE CROSS SLOPE OF SIDEWALK SHALL NOT EXCEED 2% IN ACCORDANCE WITH A.D.A. REQUIREMENTS. SIDEWALKS EXCEEDING THE ALLOWABLE MAX. WILL BE REJECTED AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REPLACEMENT.

PARKING ANALYSIS

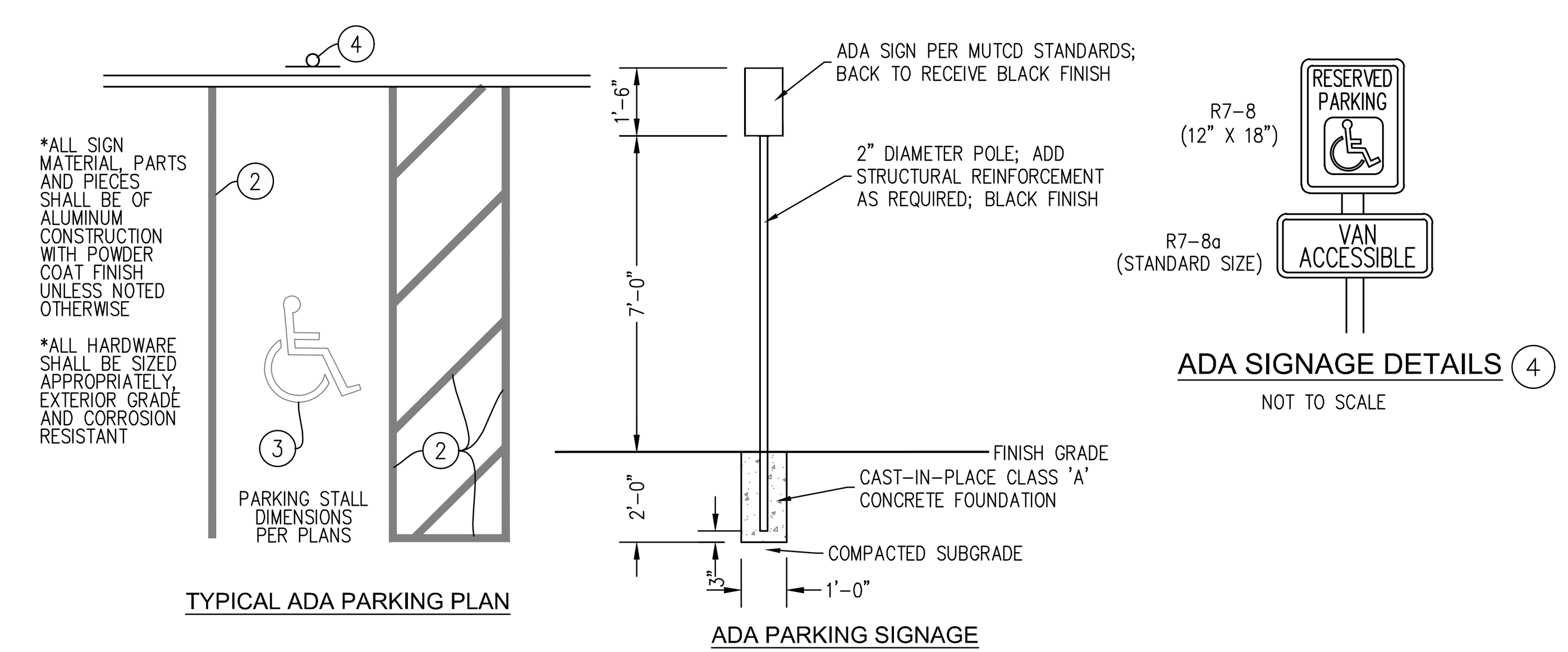
RECYCLING FACILITY		
TOTAL EMPLOYEES	=	8 TOTAL
REQUIRED RATIO	=	1 SPCS/EMP.
OFFICE SPACE	=	512 SFT.
REQUIRED RATIO	=	1 SPC./250 SFT.
TOTAL REQUIRED SPACES	=	11 SPACES
STANDARD PARKING SPACES	=	23 SPACES
HANDICAP ACCESSIBLE SPACES	=	2 SPACES
TOTAL PROPOSED PARKING SPACES	=	25 SPACES



SECTION B-B

SECTION A–A

BICYCLE RACK (P)
NOT TO SCALE



TYPICAL ADA PARKING PLAN

ADA PARKING SIGNAGE

ADA SIGNAGE DETAILS (4)
NOT TO SCALE

HANDICAP PARKING DETAILS
NOT TO SCALE

ABBREVIATIONS

FYS	FRONT YARD SETBACK
SYS	SIDE YARD SETBACK
RYS	REAR YARD SETBACK
DUE	DRAINAGE & UTILITY EASEMENT
NAE	NON–ACCESS EASEMENT
AE	ACCESS EASEMENT
M.F.P.G.	MINIMUM FLOOD PROTECTION GRADE
M.L.A.G.	MINIMUM LOWEST ADJACENT GRADE
F.F.E.	FINISH FLOOR ELEVATION

NOTE:
NO EARTHWORK DISTURBING ACTIVITY MAY COMMENCE UNTIL A STORM WATER MANAGEMENT PERMIT IS OBTAINED.

SITE DIMENSION PLAN

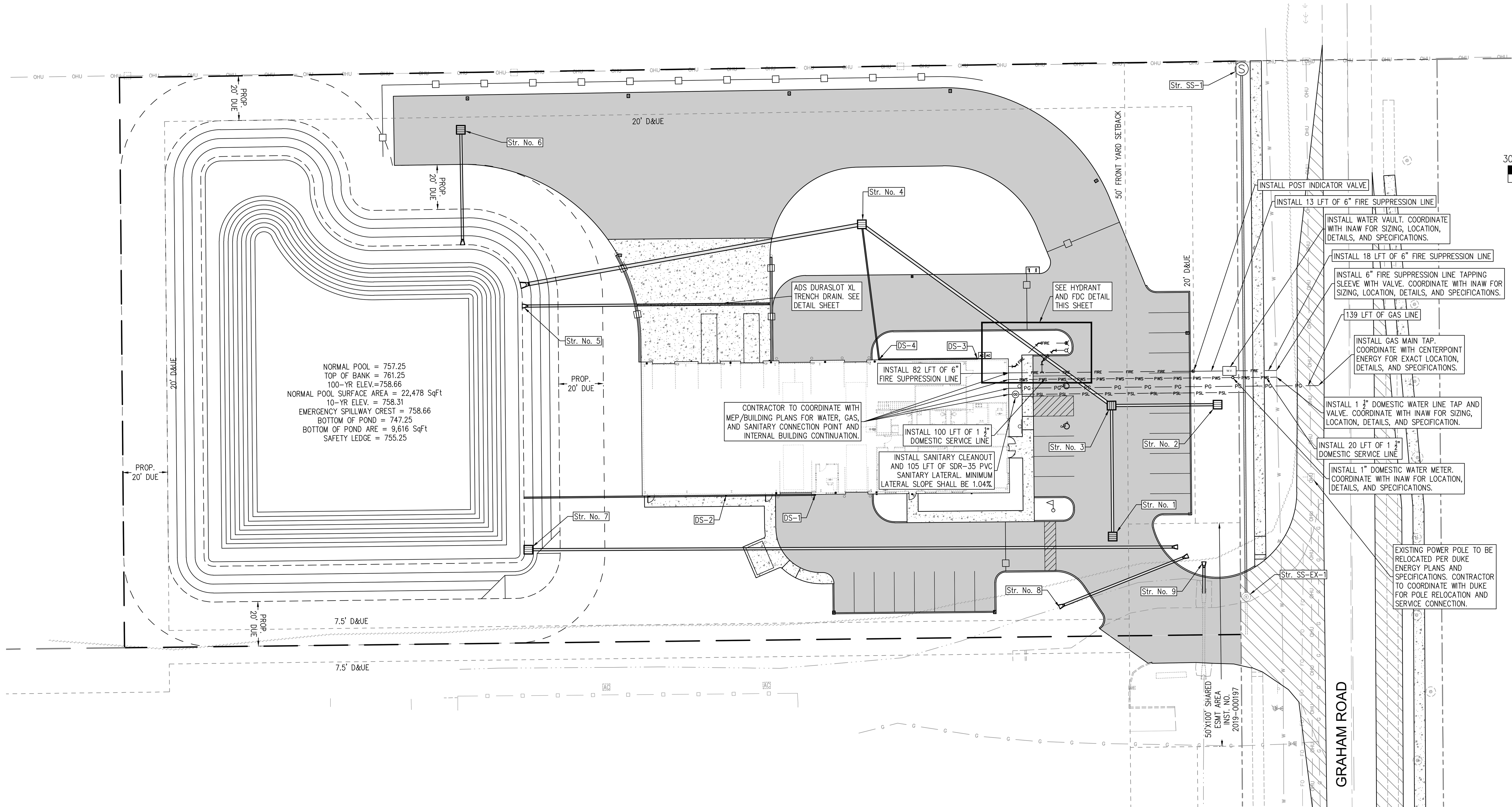
JOHNSON COUNTY RECYCLE CENTER

JOB No.	.	DRAWN	LMC
CHECKED	BTV	DATE	APRIL 11, 2024
DESIGNED	BTV	APPR.	GJI

CROSSROAD ENGINEERS, PC
Transportation & Development Consultants

GREGORY J. ILKO
REGISTERED
NO. 10300059
STATE OF INDIANA
PROFESSIONAL ENGINEER

SHEET 300



EXISTING LEGEND

POWERPOLE	CONTOURS
POWERPOLE W/RISER	PROPERTY LINE
POWERPOLE W/LIGHT	SECTION LINE
GUY WIRE	RIGHT-OF-WAY
WATER VALVE	EASEMENT
FIRE HYDRANT	ADJOINER LINE
WATER METER	PAVEMENT LINE
GAS VALVE	FIELD LINE
SIGN	FENCE
MAILBOX	DITCH
TEMP. BENCHMARK	GAS LINE
MONUMENT FOUND	WATER LINE
	FIBER OPTIC LINE
ASPHALT	OVERHEAD UTILITY LINE
GRAVEL	SANITARY SEWER W/MANHOLE
CONCRETE	STORM SEWER W/ END SECTION

STORM SEWER STRUCTURE TABLE

STR. DATA
STR. NO. 1 INSTALL TYPE 'E' INLET WITH NEENAH CASTING R-3405-A OR APPROVED EQUAL AND 59 LFT OF 12"ø RCP @ 0.25% RIM=760.70 INV OUT (12"~N)=758.24
STR. NO. 2 INSTALL TYPE 'E' INLET WITH NEENAH CASTING R-4215-C OR APPROVED EQUAL AND 48 LFT OF 12"ø RCP @ 0.25% RIM=760.80 INV OUT (12"~W)=758.22
STR. NO. 3 INSTALL TYPE 'F' INLET WITH NEENAH CASTING R-3405-A OR APPROVED EQUAL AND 138 LFT OF 15"ø RCP @ 0.35% RIM=761.00 INV IN (12"~S)=758.10 INV IN (12"~E)=758.10 INV OUT (15"~NW)=758.10

STORM SEWER STRUCTURE TABLE

STR. DATA
STR. NO. 4 INSTALL TYPE 'F' INLET WITH NEENAH CASTING R-4215-C OR APPROVED EQUAL AND ONE (1) CONCRETE END SECTION AND 155 LFT OF 18"ø RCP @ 0.25% RIM=761.00 INV IN (15"~SE)=757.63 INV IN (6"~S)=757.63 INV OUT (18"~W)=757.63
STR. NO. 5 60 LFT OF ADS DURASLOT XL TRENCH DRAIN PIPE 10" AND ONE (1) CONCRETE END SECTION TRENCH DRAIN U.S. ELEV.=758.05 D.S. ELEV.=757.90 12"ø RCP U.S. ELEV.=757.90 D.S. ELEV.=757.25
STR. NO. 6 INSTALL TYPE 'E' INLET WITH NEENAH CASTING R-3405-A OR APPROVED EQUAL AND ONE (1) CONCRETE END SECTION AND 52 LFT OF 12"ø RCP @ 0.35% RIM=759.70 INV OUT (12"~S)=757.43 D.S. ELEV.=757.25

STORM SEWER STRUCTURE TABLE

STR. DATA
STR. NO. 7 INSTALL TYPE 'E' INLET WITH NEENAH CASTING R-4215-C OR APPROVED EQUAL AND ONE (1) CONCRETE END SECTION AND 291 LFT OF 12"ø RCP @ 0.29% RIM=760.00 INV OUT (12"~E)=757.25 D.S. ELEV.=756.40
STR. NO. 8 INSTALL TWO (2) CONCRETE END SECTION AND 62 LFT OF 12"ø RCP @ 1.84% U.S. ELEV.=757.64 D.S. ELEV.=756.50
STR. NO. 9 INSTALL ONE (1) CONCRETE END SECTION AND EXTEND 14 LFT OF 12"ø RCP @ 0.64% U.S. ELEV.=756.40

SANITARY SEWER STRUCTURE TABLE

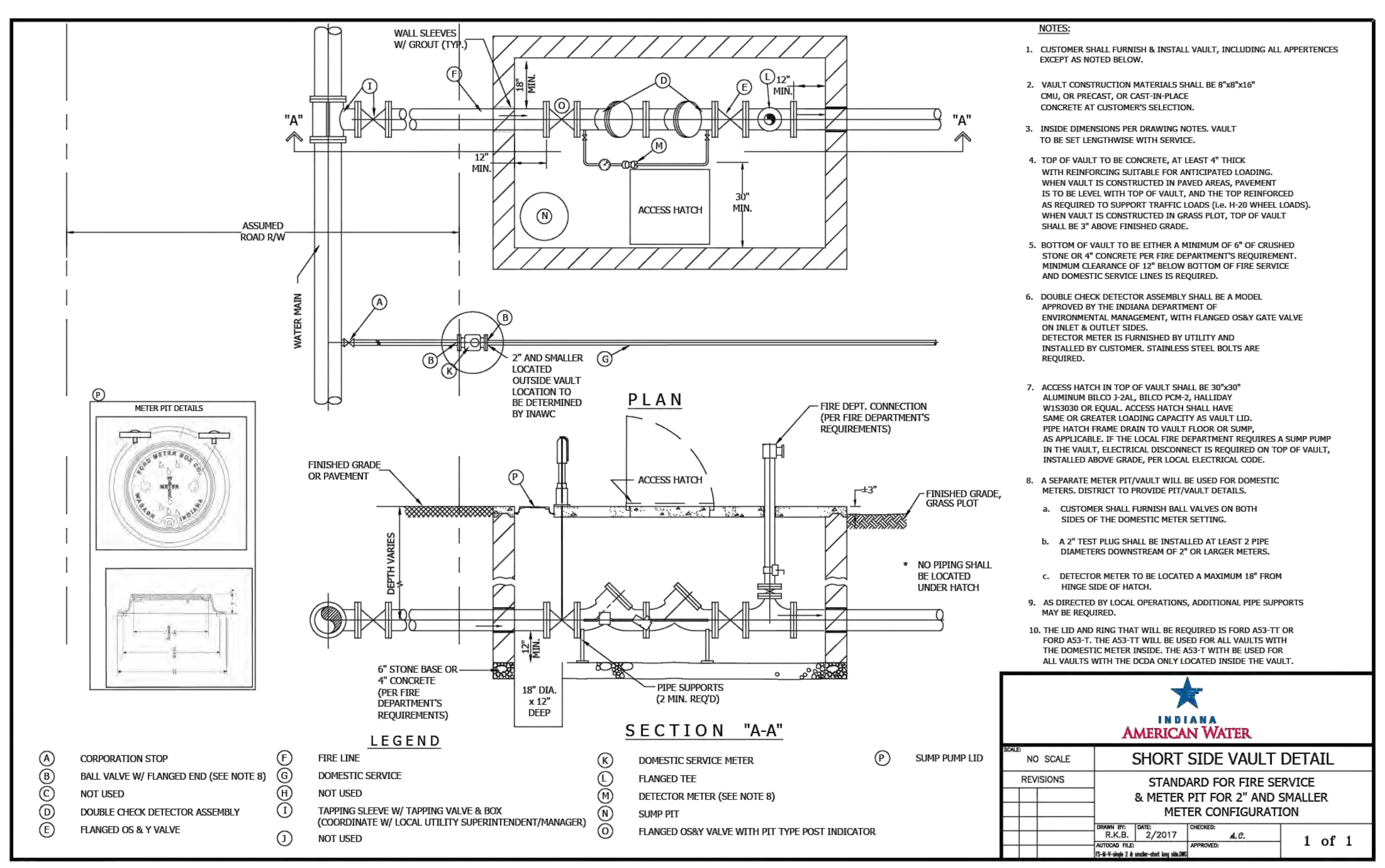
STR. DATA
STR. NO. SS-1 INSTALL SANITARY SEWER MANHOLE TYPE 'C' WITH NEENAH R-1712-B-SP CASTING OR APPROVED EQUAL AND 236 LFT OF 10"ø PVC @ 0.35% RIM=761.95 INV OUT (10"~S)=747.02
STR. NO. SS-EX-1 EXISTING SANITARY SEWER MANHOLE. MECHANICAL CORE AND DENOTE FLEXIBLE BOOT CONNECTION FOR NEW INCOMING PIPE. ADJUST CASTING TO GRADE. RIM=758.82 PROP. INV IN (10"~N)=746.21 EX. INV OUT (10"~S)=745.91

STORM DOWNSPOUT DATA TABLE

STR. DATA DOWNSPOUT
DS-1 SEE DETAIL-SHEET 1000 40 LFT OF 6"ø PVC @ 0.50% U.S. EL=757.90 D.S. EL.=757.70
DS-2 SEE DETAIL-SHEET 1000 90 LFT OF 6"ø PVC @ 0.50% U.S. EL=757.70 D.S. EL.=757.25

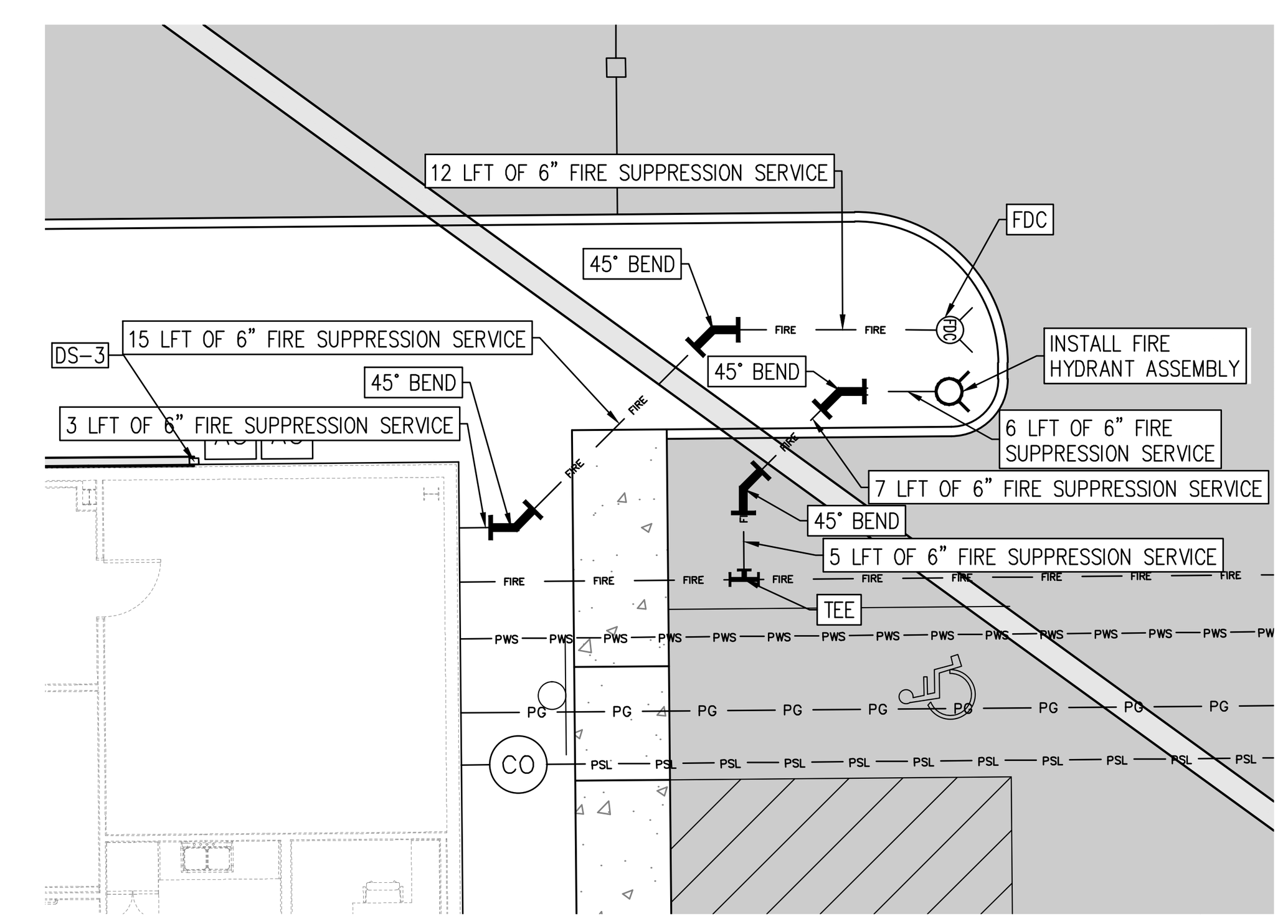
STORM DOWNSPOUT DATA TABLE

STR. DATA DOWNSPOUT
DS-3 SEE DETAIL-SHEET 1000 44 LFT OF 6"ø PVC @ 0.50% U.S. EL=758.16 D.S. EL.=757.94
DS-4 SEE DETAIL-SHEET 1000 61 LFT OF 6"ø PVC @ 0.50% U.S. EL=757.94 D.S. EL.=757.63



UTILITIES NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC AND PROVIDING ALL NECESSARY FLAGMAN, BARRELS, SIGNAGE, ETC. DURING CONSTRUCTION. ALL APPLICABLE M.U.T.C.D. STANDARDS SHALL GOVERN THIS WORK.
2. CONTRACTOR SHALL COORDINATE WITH APPLICABLE UTILITY COMPANIES AND CABLE, ELECTRIC, AND TELEPHONE CONNECTION SERVICE INSTALLATIONS. ALL LIGHTING FIXTURES AND POLES SHALL BE PER OWNER AND PHOTOMETRIC DETAILS, SHEET XXXX OF THESE PLANS.
3. CONTRACTOR TO INSTALL 1" SCH. 40 PVC AT 3' TO 4' DEPTH AS NEEDED FOR ALL SITE LIGHTING. INSTALL 2" SCH. 40 PVC AT ALL PAVEMENT CROSSINGS. CONTRACTOR SHALL CONFIRM ELECTRICAL TRANSFORMER LOCATION, SERVICE CONNECTION REQUIREMENTS, DIMENSIONS, AND SPECIFICATIONS, WITH DUKE ENERGY.
4. ALL LIGHT FIXTURES SHALL USE PULSE START BALLASTS AND TWO PHOTOCELL CONTROL RELAYS.
5. EXISTING UTILITY SIZE AND MATERIAL INFORMATION SHOWN ON THESE PLANS ARE PER THE BEST GRAPHICAL AND VISIBLE INFORMATION AVAILABLE. CONFLICTS MAY EXIST AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL SIZING AND MATERIAL INFORMATION PROVIDED. IF ACTUAL CONDITIONS DIFFER FROM THAT INFORMATION SHOWN ON THE PLANS, THE CONTRACTOR SHALL, PRIOR TO THE INSTALLATION OF ANY PROPOSED INFRASTRUCTURE, NOTIFY THE DESIGN ENGINEER IMMEDIATELY.
6. CONTRACTOR SHALL CONFIRM DEPTH AND LOCATION OF SANITARY SEWER MAIN STUB REPORT TO ENGINEERING PRIOR TO INSTALLING STR. NO. SS-XX.
7. ALL SANITARY SEWER MAIN SHALL BE SDR-35 PVC PIPE.
8. DURING CONSTRUCTION, CONTRACTOR SHALL INSTALL TWO (2) GREEN METAL SIGN POSTS AT EACH SANITARY MANHOLE, AND ONE (1) GREEN METAL SIGN POST AT EACH LATERAL STUB. CONTRACTOR SHALL PROTECT POSTS DURING CONSTRUCTION ACTIVITIES.
9. ALL STORM SEWER CASTINGS SHALL HAVE RECESSED OR RAISED LETTERS AT LEAST ONE INCH HIGH WITH THE PHRASE "DUMP NO WASTE – DRAINS TO WATERWAY" AND INCLUDE AN ENVIRONMENTAL LOGO (FISH). PHRASE AND LOGO SHALL BE A PART OF ALL CASTINGS.
10. ALL FIELD TILES DISTURBED DURING CONSTRUCTION MUST BE REPAIRED/CONNECTED TO NEW DRAINAGE FACILITIES.
11. GATE VALVES SHALL BE INSTALLED ON ALL SERVICE LINE TAPS. COORDINATE WITH THE INAW UTILITY FOR ALL STANDARDS AND SPECIFICATIONS.
12. COORDINATE INSTALLATION OF FIRE HYDRANTS WITH INDIANA AMERICAN WATER AND THE CITY OF FRANKLIN FIRE DEPARTMENT. TYPE, MATERIAL, AND MANUFACTURER OF FIRE HYDRANTS SHALL BE IN ACCORDANCE WITH FRANKLIN FIRE DEPARTMENT REQUIREMENTS. ALL PUBLIC FIRE HYDRANTS ARE TO BE YELLOW AND ALL PRIVATE FIRE HYDRANTS ARE TO BE RED WITH THE TOP CAP COLOR CODED TO SHOW WATER FLOW, AS FOLLOWS: 1500 gpm=BLUE, 1000-1499 gpm=GREEN, AND 500-999 gpm=ORANGE.
13. ALL HYDRANTS SHALL HAVE A STORZ CONNECTION.



HYDRANT AND FDC DETAIL
SCALE: 1" = 10'

UTILITY CONTACTS

Note: Listed below are the Indiana Underground Plant Protection Services Contacts; Others not listed may exist. The underground utilities shown have been located from field survey information and existing drawings. The surveyor makes no guarantees that the underground utilities comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although the surveyor does certify that they are located as accurately as possible from information available. The surveyor has not physically located the underground utilities.

UTILITY	COMPANY	CONTACT	PHONE	EMAIL
COMMUNICATIONS	MCI	DEAN BOYERS	469-886-4238	investigations@verizon.com
FIBER OPTIC	BRIGHTSPEED	MELISSA TEAGUE	765-656-4663	melissa.teague@brightspeed.com
FIBER OPTIC	METRO FIBERNET	MARK DECKARD	812-253-2196	rrhwypermits@metronetinc.com
ELECTRIC	DUKE ENERGY	JESSICA TURNER	812-662-2007	jessica.turner3@duke-energy.com
SANITARY	CITY OF FRANKLIN DPW	EVAN HART	317-412-8450	ehart@franklin.in.gov
WATER	INDIANA AMERICAN WATER COMPANY	TRACY WHITE	317-885-2426	tracy.s.white@amwater.com
GAS	CENTERPOINT ENERGY	JON EASTHAM	765-287-2119	publicproject@centerpointenergy.com
FIRE DEPARTMENT	CITY OF FRANKLIN	BRYNE PURSIFULL	317-736-3650	bpursifull@franklin.in.gov

PROPOSED LEGEND

PROPERTY LINE
SECTION LINE
SETBACK LINE
EASEMENT LINE
FENCE LINE
SANITARY SEWER LATERAL WITH CLEANOUT
STORM SEWER W/INLET & END SECTION
FIRE SERVICE LINE
WATER SERVICE LINE
GAS LINE
SIGN
PIV
WATER VAULT
FDC
45° BEND
FIRE HYDRANT
TEE

DIRECTORY PATH : R:\Active\Lancer+Beebe\JoCo Recycle Center\Design\CAD\Plans
FILENAME : 400 UTILITY-FRANKLIN.dwg
DATE/USER : 4/11/2024 10:03 AM / Bvaughan

CROSSROAD ENGINEERS, PC
Transportation & Development Consultants

UTILITY PLAN

JOHNSON COUNTY RECYCLE CENTER

JOB No.	.
DATE	APRIL 11, 2024
DRAWN	LMC
DESIGNED	BTV
CHECKED	BTV
APPR.	GJI

GREGORY J. ILKO
REGISTERED
NO. 10300059
STATE OF INDIANA
PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY	APPR.
1				
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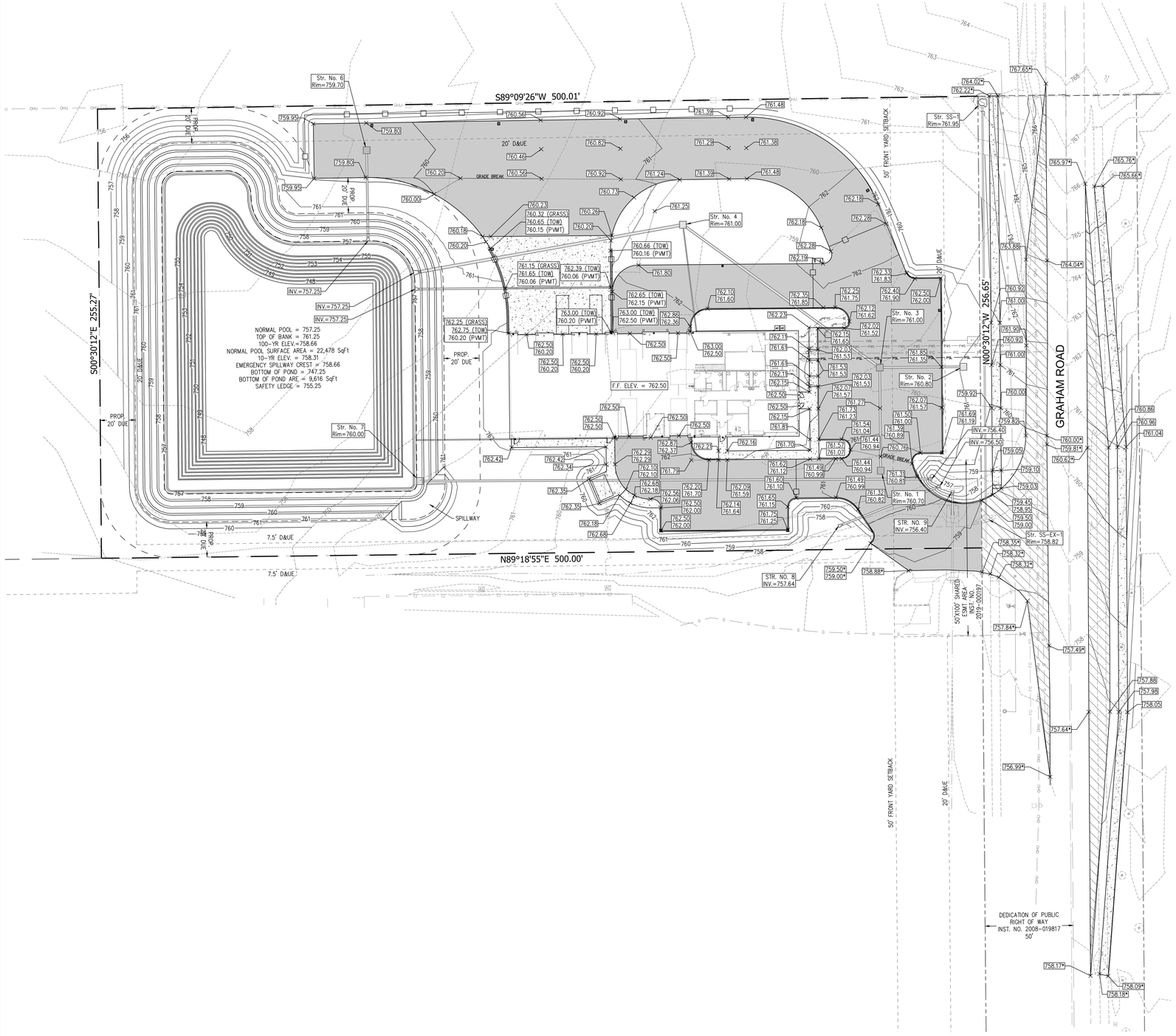
INDIANA 811
Know what's below. Call before you dig.

SHEET 400



30 0 30 60

SCALE: 1" = 30'

NOTE:
NO EARTHWORK DISTURBING ACTIVITY
MAY COMMENCE UNTIL A STORM WATER
MANAGEMENT PERMIT IS OBTAINED.

GRADING LEGEND

×—860.00 TOP OF CURB 859.50 EDGE OF PAVEMENT ×—860.00 FINISH GRADE	PROPOSED ELEVATIONS
×—860.00 * 859.50 * ×—860.00 *	EXISTING ELEVATIONS (TO BE FIELD VERIFIED)
FFE = XXX.XX	PROPOSED FINISH FLOOR ELEVATION
—··—··—··—	PROPOSED DRAINAGE SWALE
- - - - 800 - - - -	EXISTING CONTOURS
——— 800 ———	PROPOSED CONTOURS
_ GRADE BREAK _ _ _	GRADE BREAK
←— * —→	CURB HEIGHT TO TAPER FROM 0.5' TO 0.0' IN 6 LFT.

GRADING NOTES

1. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS IN FINAL GRADING OF SITE. CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT TO DETERMINE PROPER FOUNDATION EXPOSURE. IN NO INSTANCE SHALL DRAINAGE TOWARD THE BUILDING FOUNDATION BE ALLOWED.
2. CONTRACTOR SHALL NOT ALLOW DRAINAGE FROM PROJECT SITE TO DISCHARGE ONTO ADJACENT PROPERTIES IN FINAL GRADING OF SITE.

BENCHMARK INFORMATION

ORIGINATING BENCHMARK

DESIGNATION – X 13
PID – KA0010
STATE/COUNTY – IN/MORGAN
USGS QUAD – MOORESVILLE EAST (1980)

VERT ORDER – FIRST CLASS II

DESCRIBED BY COAST AND GEODETIC SURVEY 1946
1.2 MI N FROM WAVERLY. IN JOHNSON COUNTY, 1.2 MILES NORTH ALONG STATE HIGHWAY 37 FROM THE INTERSECTION OF STATE HIGHWAY 144 AT WAVERLY, MORGAN COUNTY, 125 YARDS NORTH OF THE MORGAN–JOHNSON COUNTY LINE, 26 FEET WEST OF THE CENTERLINE OF THE HIGHWAY, IN LINE WITH THE WEST RIGHT–OF–WAY FENCE, 1.5 FEET SOUTH OF A WHITE WOODEN WITNESS POST, AND ABOUT 2 FEET HIGHER THAN THE HIGHWAY. A STANDARD DISK, STAMPED 686.370 X 13 1930 AND SET IN THE TOP OF A CONCRETE POST PROJECTING 7 INCHES ABOVE GROUND.
RECOVERY NOTE BY IN DEPT OF NAT RES 1985
NEW DESC– AT THE INTERSECTION OF NEW STATE ROAD 144 AND OLD STATE ROAD 37, IN THE SOUTHWEST QUARTER OF THE INTERSECTION, WITNESS POST IS GONE RIGHT–OF–WAY FENCE IS GONE, ALL OTHER INFORMATION APPEARS TO BE CORRECT.

ELEV. = 685.94 (NAVD 88)

TBM #400
CUT 'BOX' ATOP SW MOST CRNR OF CONC HEADWALL @ SE QUAD OF 'LINVILLE WAY' & 'GRAHAM RD'

ELEV. = 754.94

INDIANA 811 Know what's below. Call before you dig

DIRECTORY PATH : R:\Active\Lancer+Beebe\JoCo Recycle Center\Design\CAD\Plans
FILENAME : 500 GRADING-FRANKLIN.dwg
DATE/USER : 4/11/2024 8:31 AM / Lcox

CROSSROAD ENGINEERS, PC
Transportation & Development Consultants
115 N. 17th AVENUE, BEECH GROVE, IN 46107 (317) 780-1555

SHEET 500

GRADING PLAN

JOHNSON COUNTY RECYCLE CENTER

JOB No.	.	DRAWN	LMC	CHECKED	BTV
DATE	APRIL 11, 2024	DESIGNED	BTV	APPR.	GJI

GREGORY J. ILKO
REGISTERED NO. 10300059
STATE OF INDIANA
PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY	APPR.
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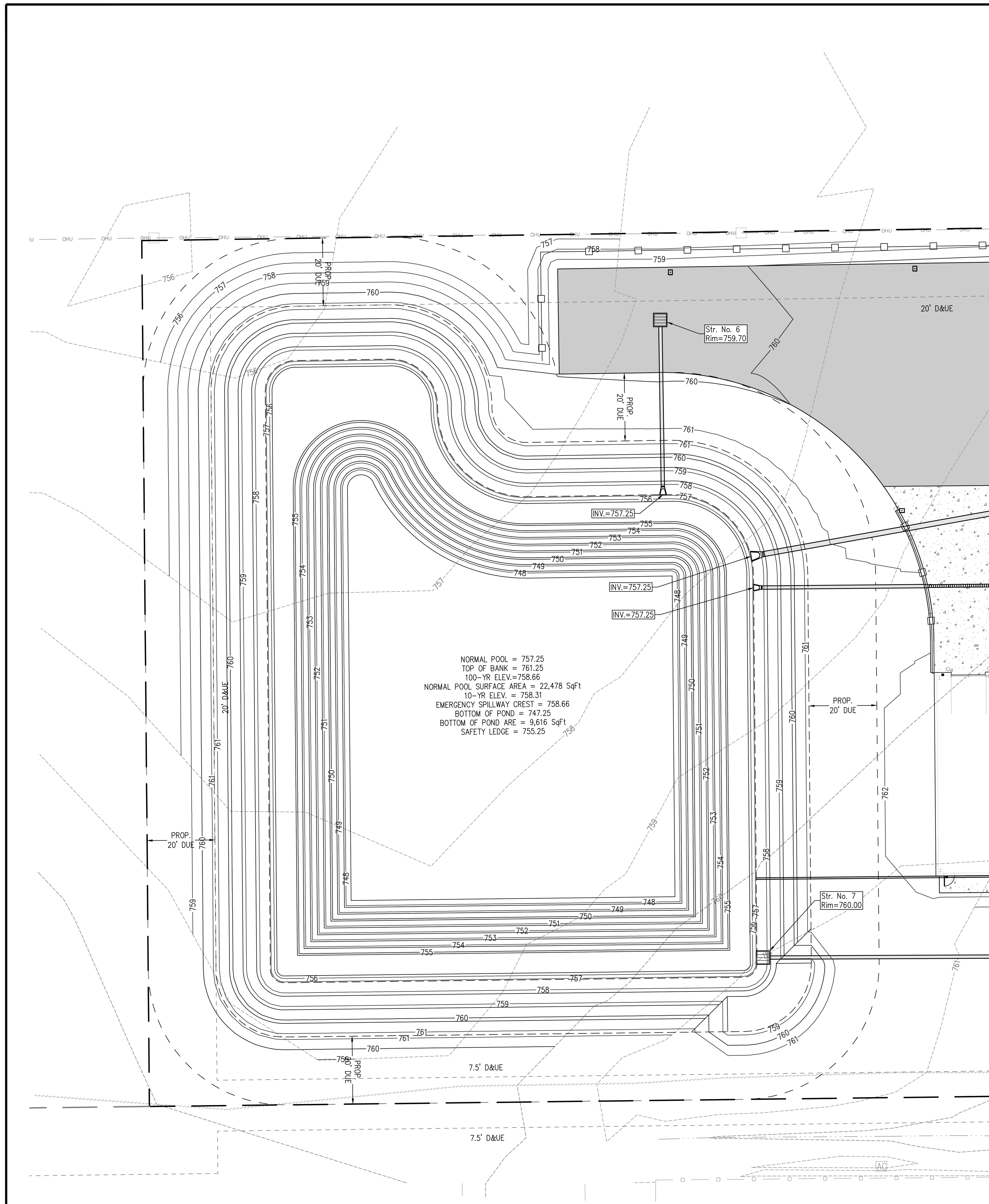
SHEET 500



BENCHMARK INFORMATION

ORIGINATING BENCHMARK

DESIGNATION – X 13
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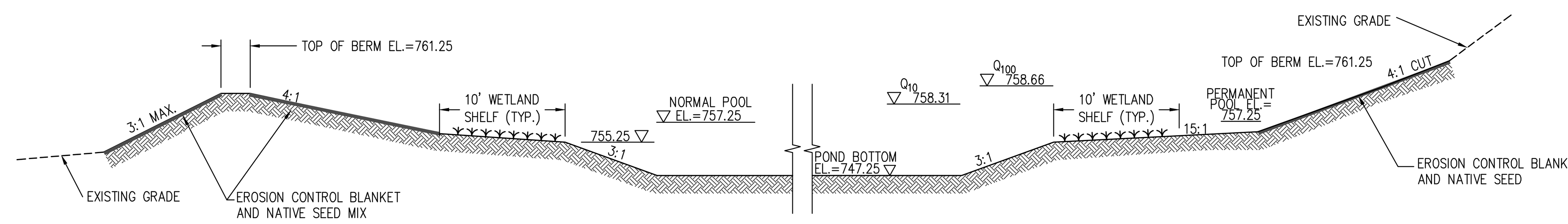
TBM #400
CUT 'BOX' ATOP SW MOST CRNR OF CONC HEADWALL @ SE QUAD OF 'LINVILLE WAY' & 'GRAHAM RD'

ELEV. = 754.94

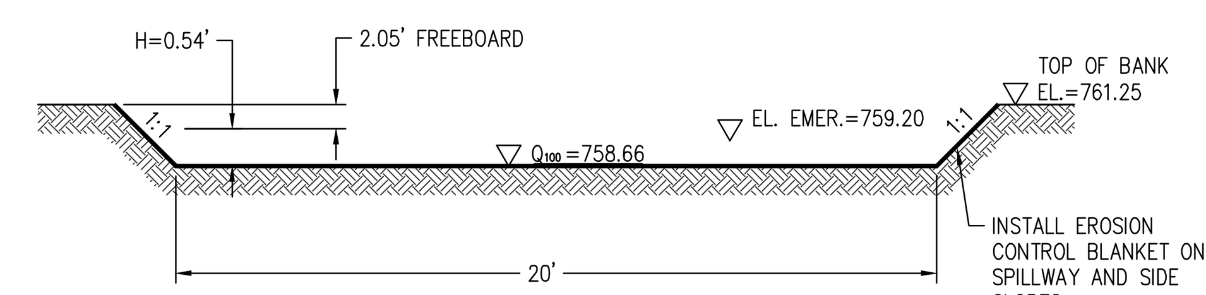
20 0 20 40
SCALE: 1" = 20'

PROPOSED LEGEND

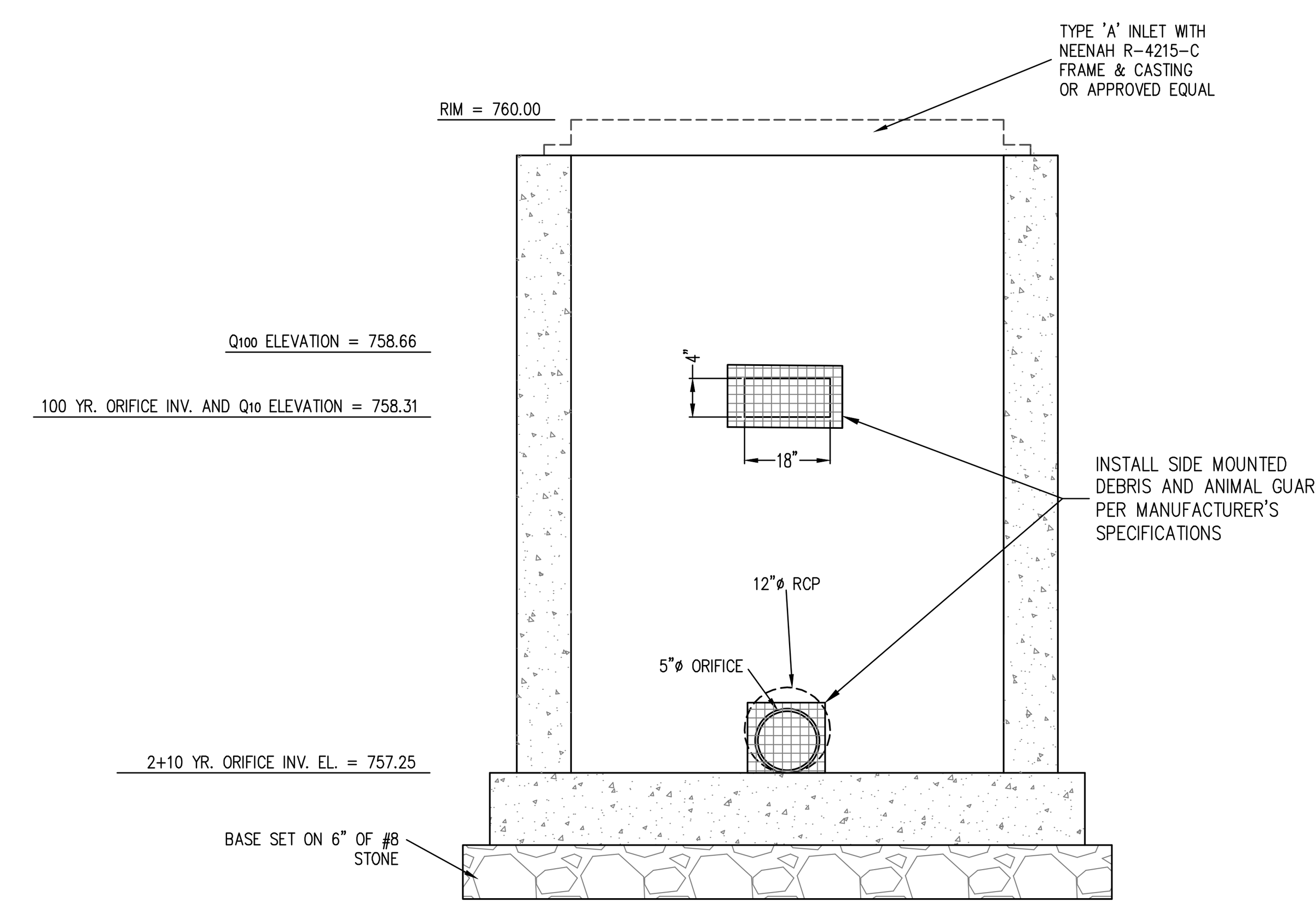
- PROPERTY LINE
- SECTION LINE
- SETBACK LINE
- EASEMENT LINE
- FENCE LINE
- SANITARY SEWER LATERAL WITH CLEANOUT
- STORM SEWER W/INLET & END SECTION
- FIRE SERVICE LINE
- WATER SERVICE LINE
- GAS LINE
- SIGN
- WATER VAULT
- 45° BEND
- PIV
- FDC
- FIRE HYDRANT
- TEE



TYPICAL DETENTION POND SECTION
NO SCALE



EMERGENCY SPILLWAY DETAIL
NO SCALE



DETENTION FACILITY OUTLET STRUCTURE DETAIL
STR. NO 7
NOT TO SCALE

ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY STATE, CITY OR COUNTY OFFICIALS

NOTE:
NO EARTHWORK DISTURBING ACTIVITY MAY COMMENCE UNTIL A STORM WATER MANAGEMENT PERMIT IS OBTAINED.

INDIANA 811 Know what's below. Call before you dig.

CROSSROAD ENGINEERS, PC
Transportation & Development Consultants

DRAINAGE PLAN

JOHNSON COUNTY RECYCLE CENTER

JOB No.	.	DRAWN	LMC	CHECKED	BTV
DATE	APRIL 11, 2024	DESIGNED	BTV	APPR.	GJI

GREGORY J. ILKO REGISTERED NO. 10300059 STATE OF INDIANA PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY	APPR.
1				
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6				
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SHEET 600

DIRECTORY PATH : R:\Active\Lancer+Beebe\JoCo Recycle Center\Design\CAD\Plans
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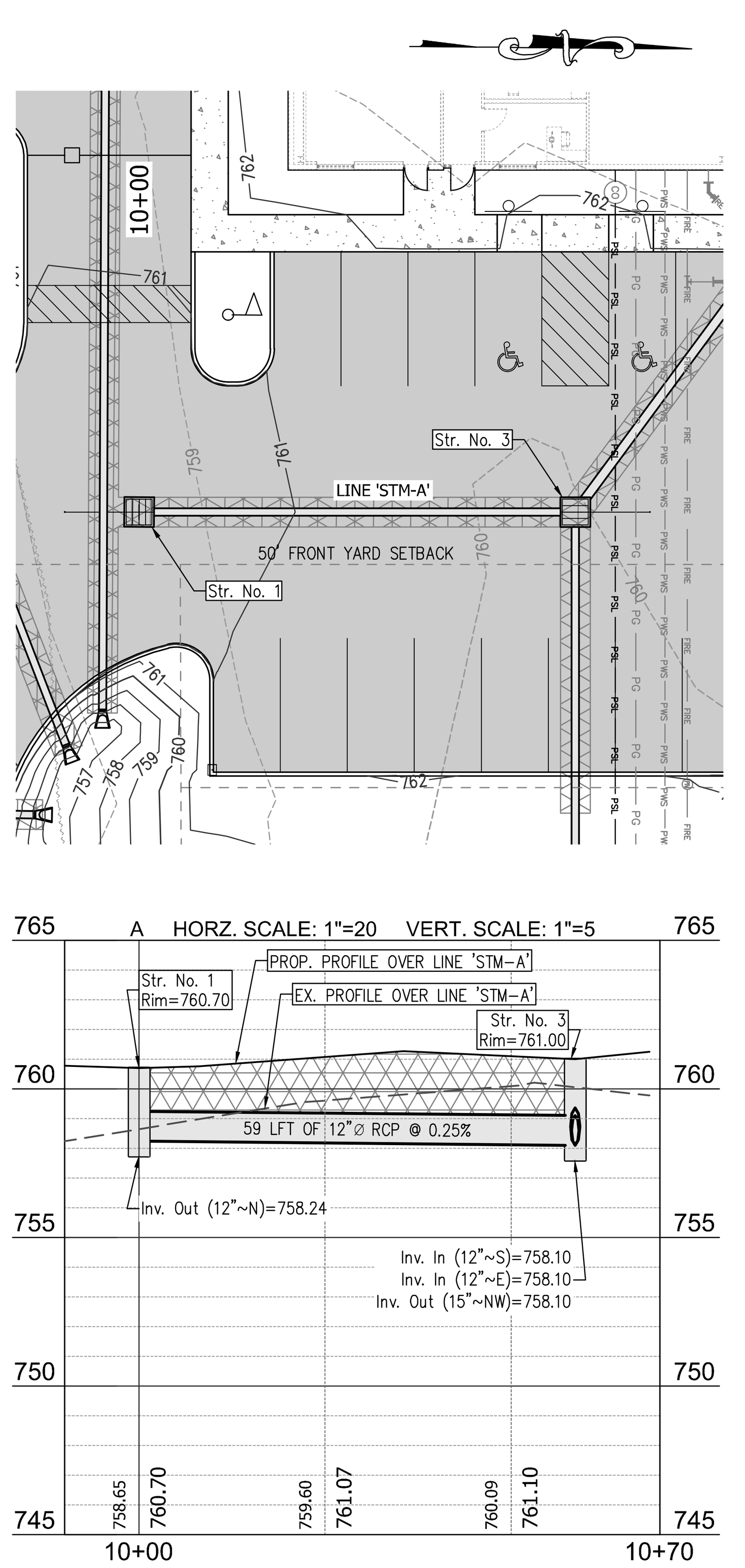
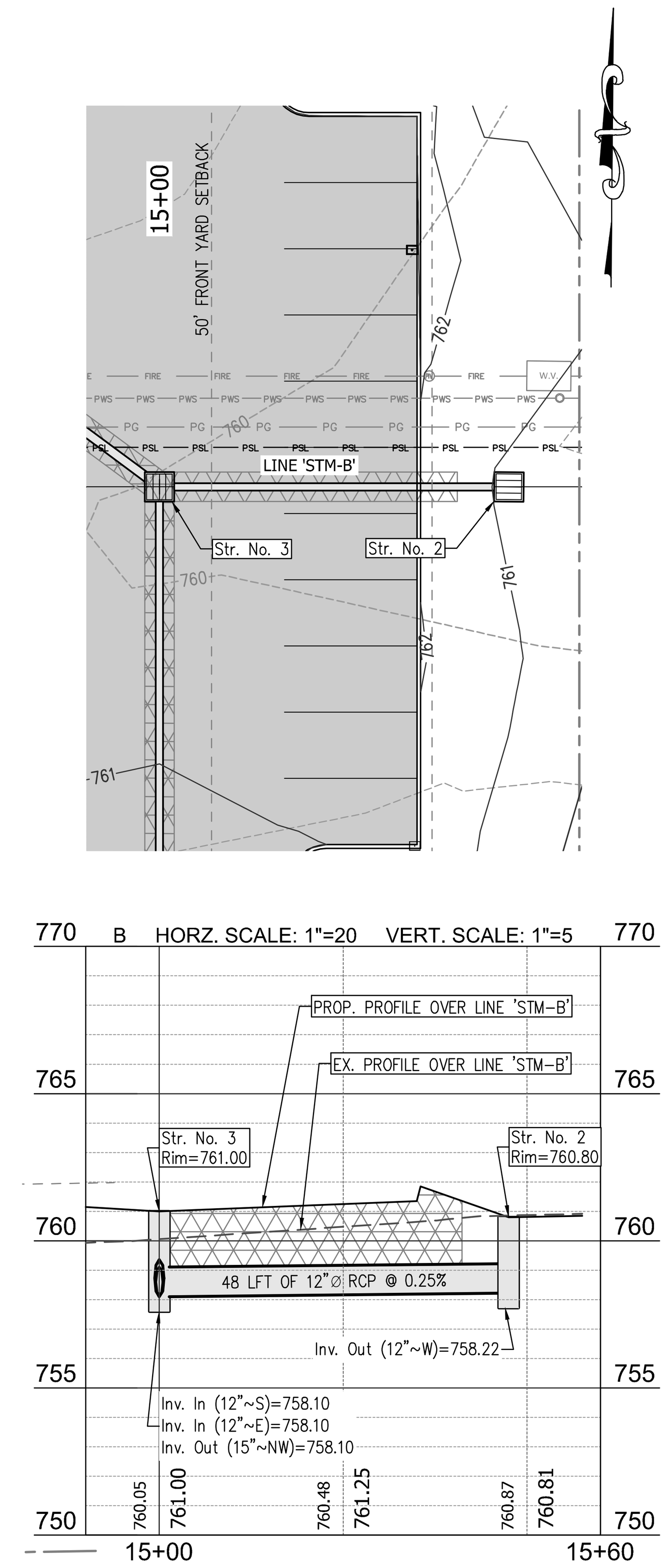
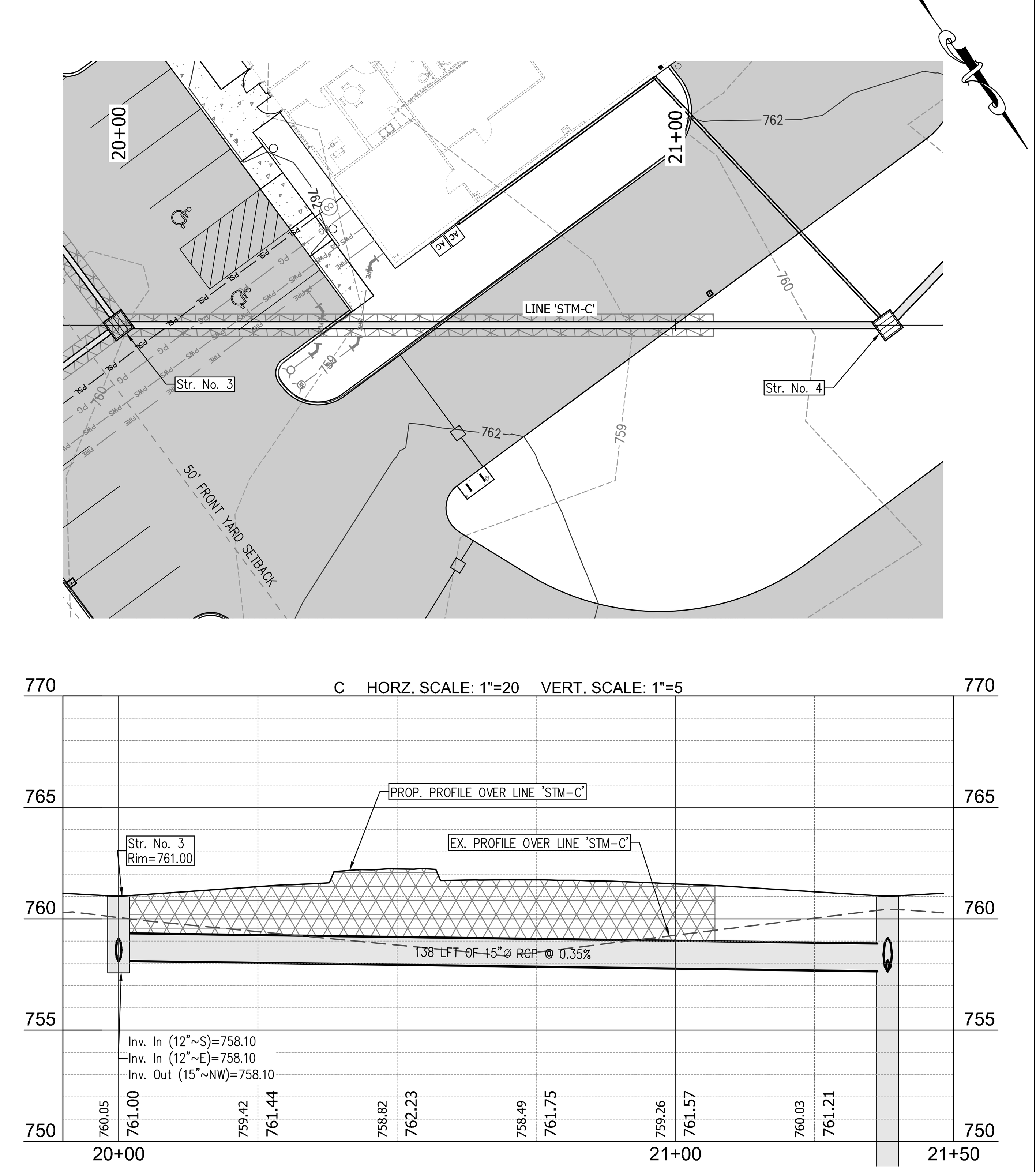
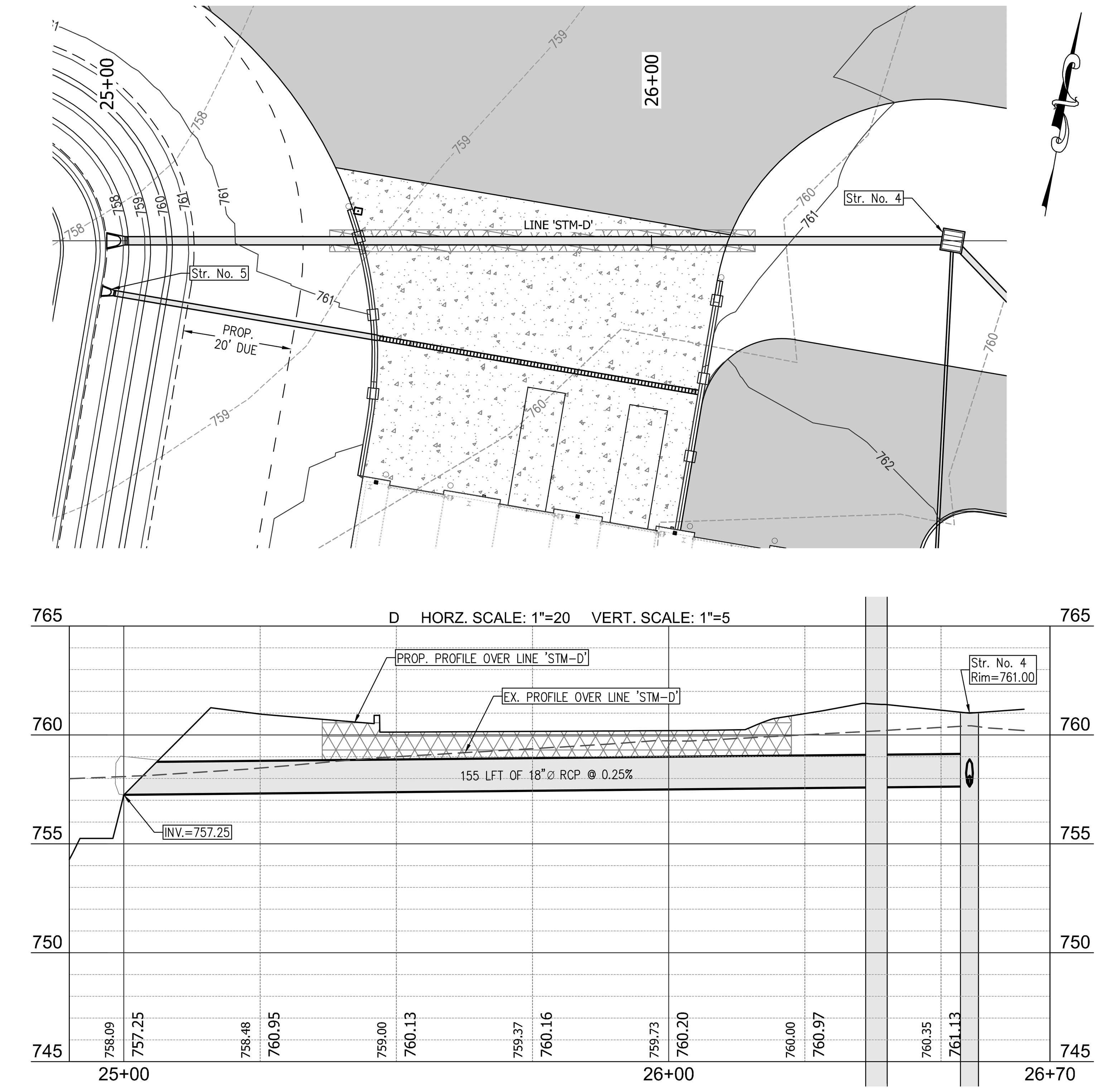
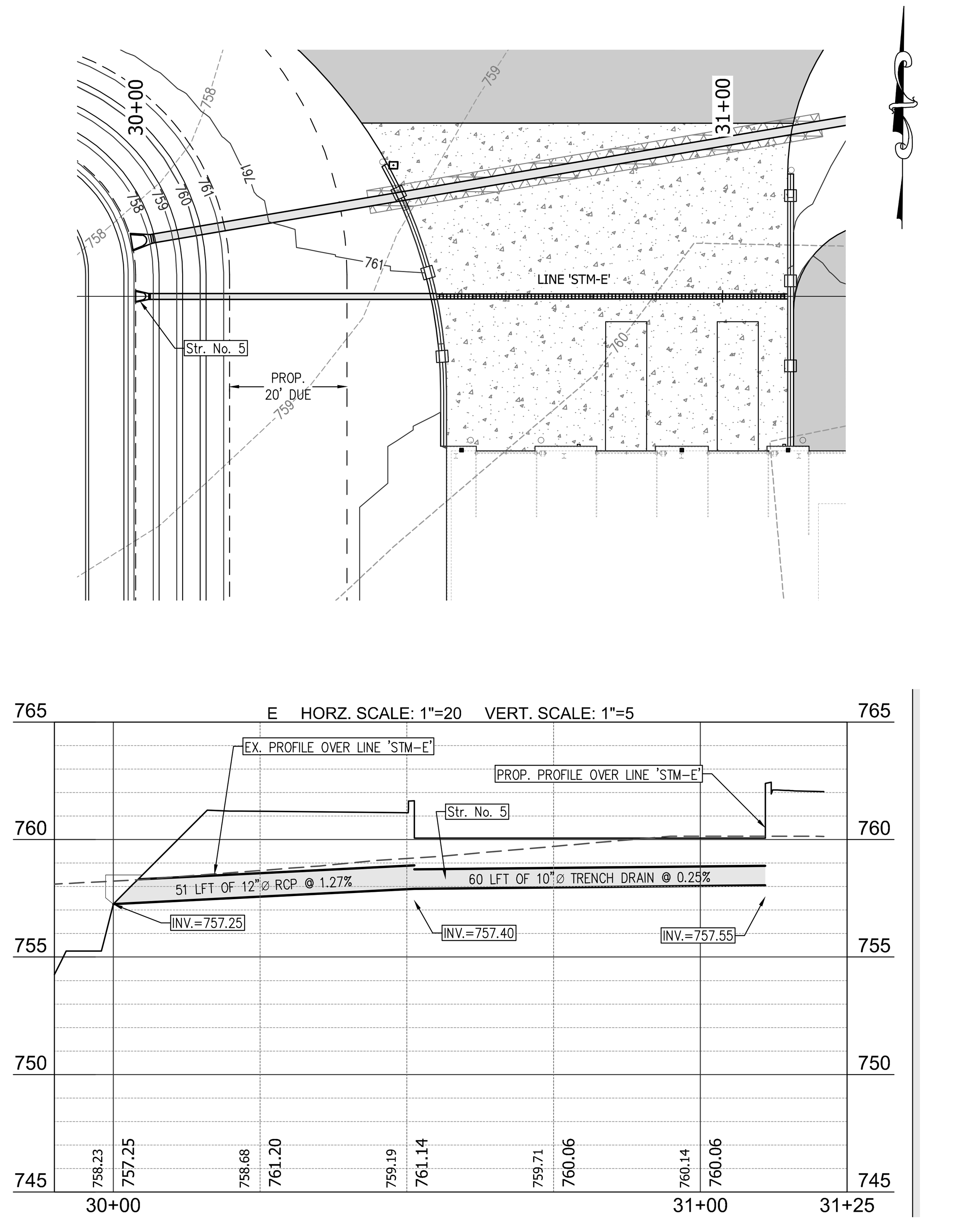
DATE/USER : 4/11/2024 10:35 AM / Beaughan

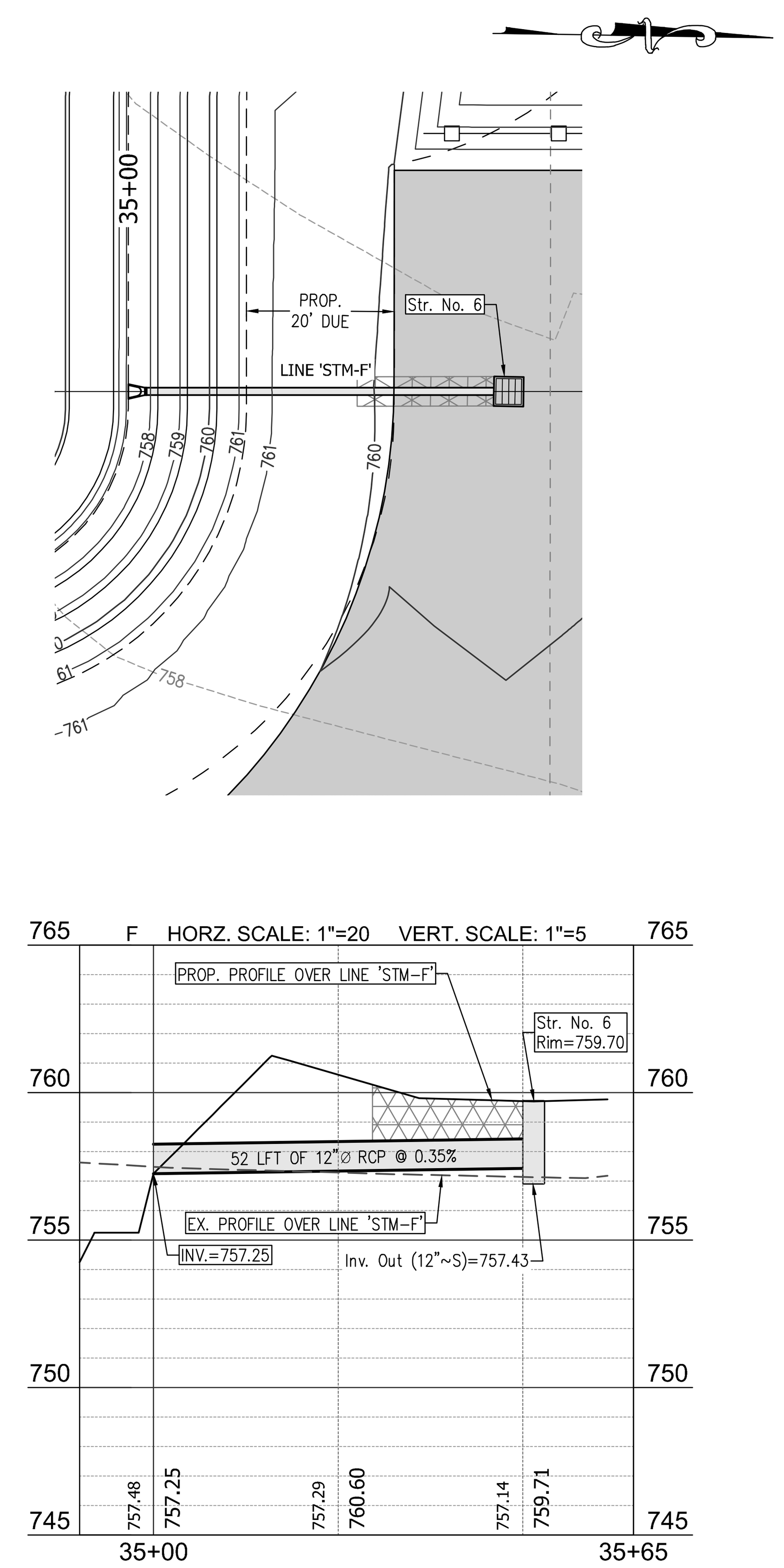


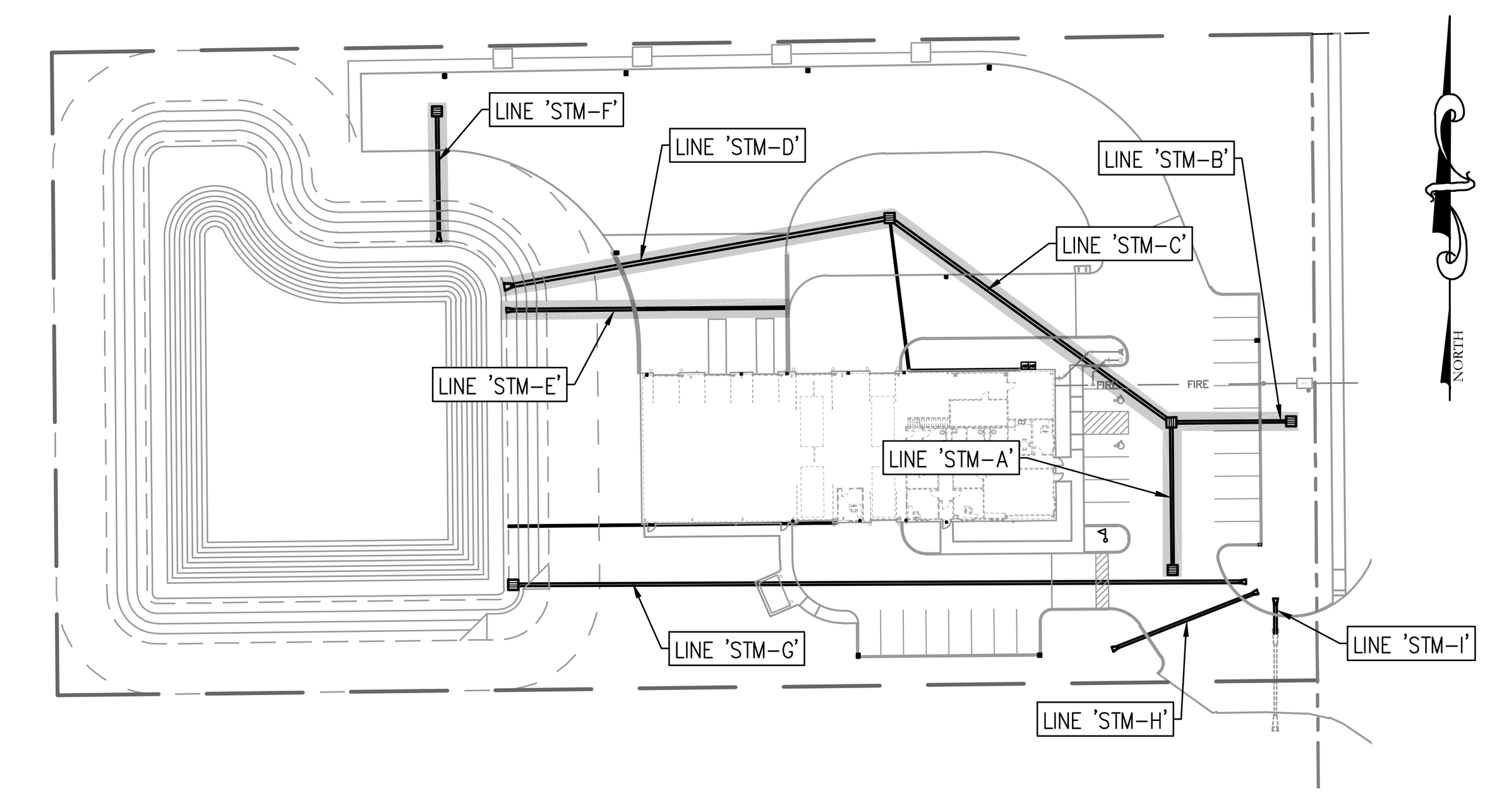












KEYMAP

NO SCALE

20 0 20 40

SCALE: 1" = 20'

PROPOSED LEGEND

- PROPERTY LINE
- SECTION LINE
- SETBACK LINE
- EASEMENT LINE
- FENCE LINE
- SANITARY SEWER LATERAL WITH CLEANOUT
- STORM SEWER W/INLET & END SECTION
- FIRE SERVICE LINE
- WATER SERVICE LINE
- GAS LINE
- SIGN
- WATER VAULT
- 45° BEND
- PIV
- FDC
- FIRE HYDRANT
- TEE

GRANULAR BACKFILL ALONG STORM SEWER

ALL STORM, SANITARY AND UTILITY TABLES ARE LOCATED ON SHEET ___

NOTE:
NO EARTHWORK DISTURBING ACTIVITY MAY COMMENCE UNTIL A STORM WATER MANAGEMENT PERMIT IS OBTAINED.

NOTES

1. ALL STORM SEWER CASTINGS SHALL INCLUDE AN EMBOSSED ENVIRONMENTAL LOGO WITH A DEPICTION OF A FISH AND THE PHRASE "DUMP NO WASTE–DRAINS TO STREAM".
2. ALL STORM SEWER LOCATED WITHIN PUBLIC RIGHT–OF–WAY SHALL BE REINFORCED CONCRETE PIPE (RCP), CLASS III, WITH TYPE B WALL THICKNESS, UTILIZING GASKET FITTINGS.
3. ALL HDPE PIPE SHALL BE SOIL TIGHT, N–12 DUAL WALL HDPE PIPE AS MANUFACTURED BY ADS DRAINAGE SOLUTIONS OR AN APPROVED EQUAL.

INDIANA 811 Know what's below. Call before you dig

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Transportation & Development Consultants
115 N. 17th AVENUE, BEECH GROVE, IN 46107 (317) 780-1555

STORM PLAN AND PROFILE

JOHNSON COUNTY RECYCLE CENTER

JOB No.	.	DRAWN	LMC	CHECKED	BTV
DATE	APRIL 11, 2024	DESIGNED	BTV	APPR.	GJI

GREGORY J. ILKO REGISTERED NO. 10300059 STATE OF INDIANA PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY	APPR.
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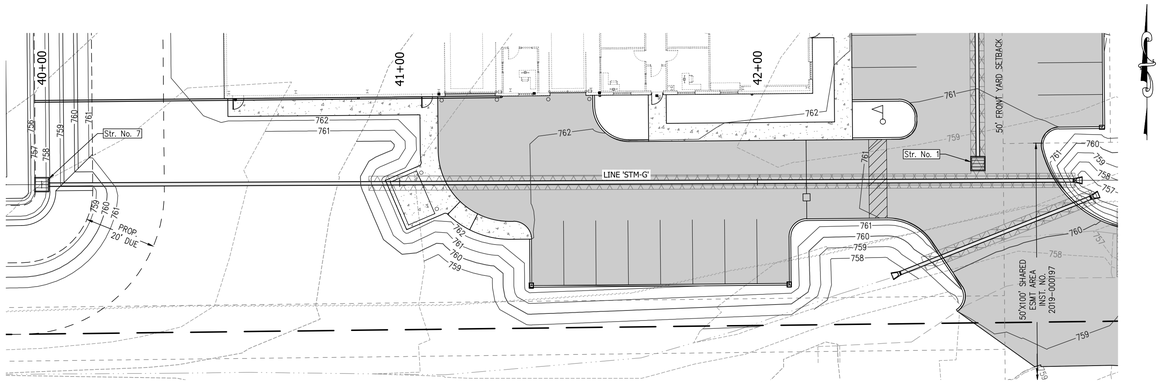
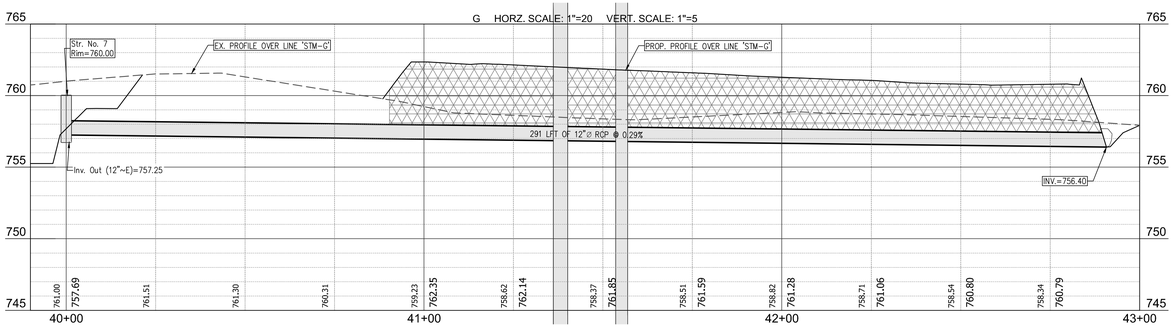
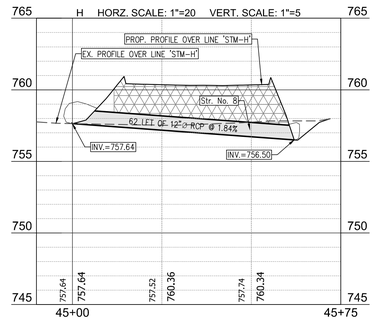
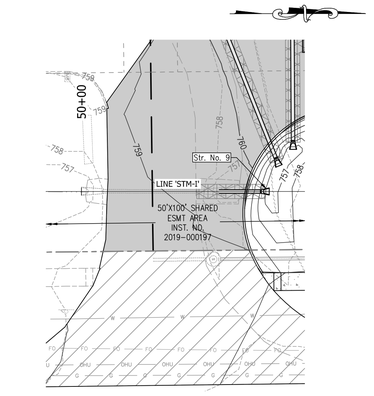
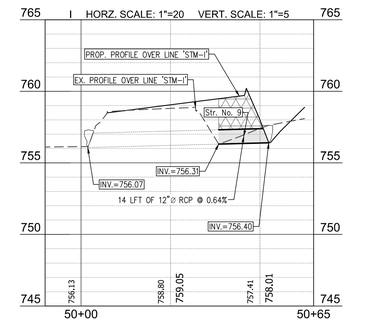
SHEET 700

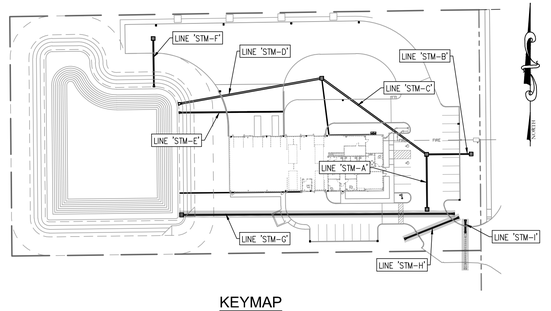












KEYMAP

NO SCALE

20 0 20 40

SCALE: 1" = 20'

PROPOSED LEGEND

- PROPERTY LINE
- SECTION LINE
- SETBACK LINE
- EASEMENT LINE
- FENCE LINE
- SANITARY SEWER LATERAL WITH CLEANOUT
- STORM SEWER W/INLET & END SECTION
- FIRE SERVICE LINE
- WATER SERVICE LINE
- GAS LINE
- SIGN
- WATER VAULT
- 45° BEND
- FIV
- FDC
- FIRE HYDRANT
- TEE
- GRANULAR BACKFILL ALONG STORM SEWER

ALL STORM, SANITARY AND UTILITY TABLES ARE LOCATED ON SHEET ____

NOTE:
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SHEET 701

STORM PLAN AND PROFILE

JOHNSON COUNTY RECYCLE CENTER

JOB No.	-	DRAWN	LMC	CHECKED	BTV	APPR.	CJI
DATE	APRIL 11, 2024	DESIGNED	BTV				

GREGORY J. ILKO
REGISTERED
NO. 10300059
STATE OF INDIANA
PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY	APPR.
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SHEET 701

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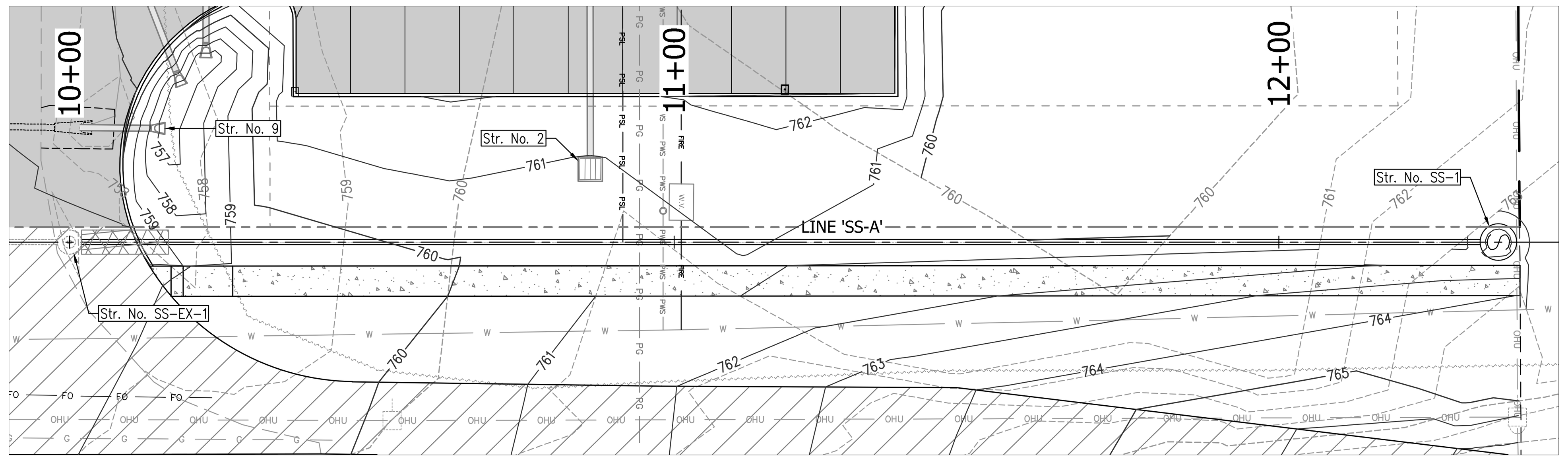

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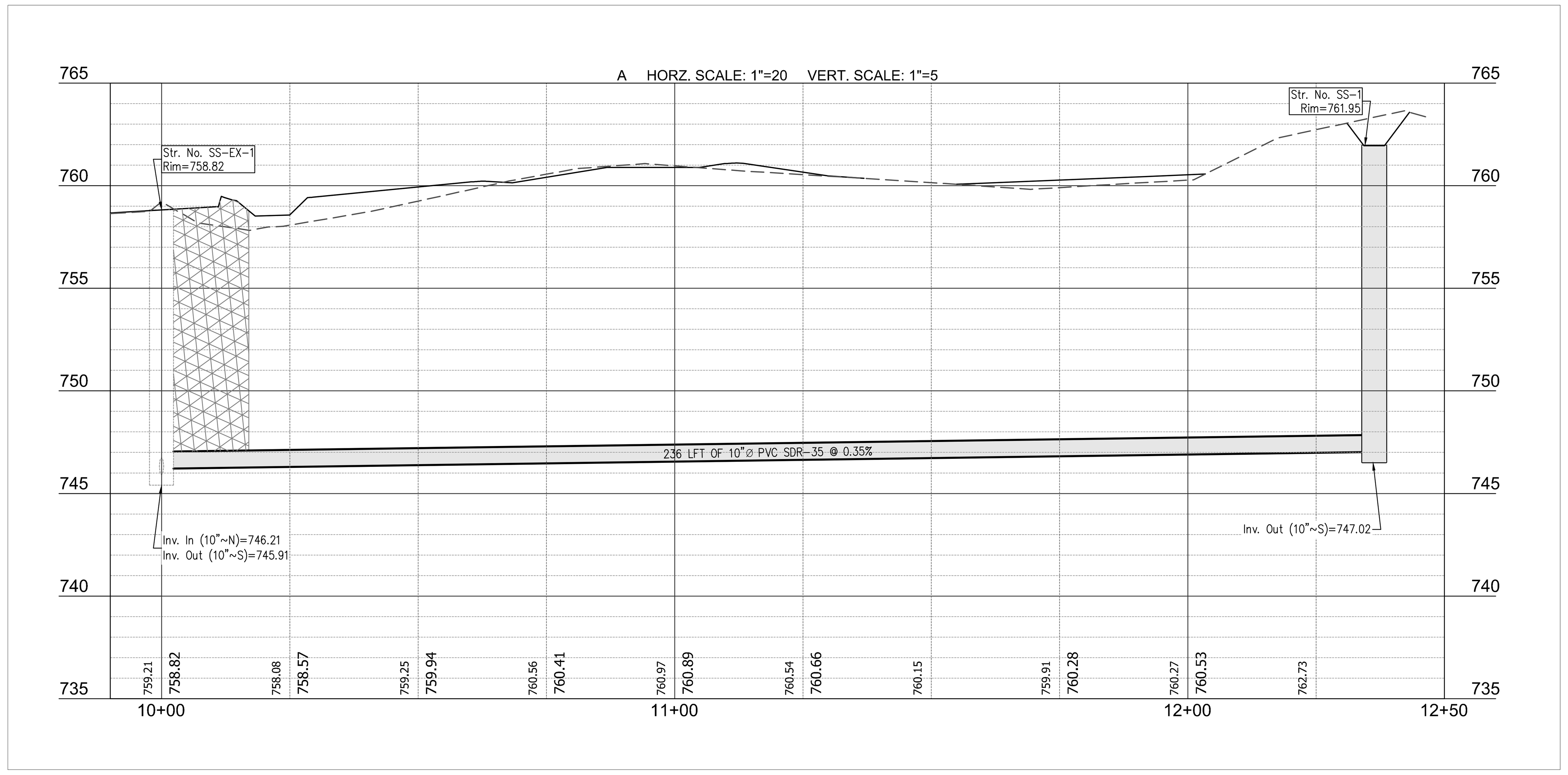
SCALE: 1" = 20'



GRANULAR BACKFILL ALONG SANITARY SEWER

ALL STORM, SANITARY AND UTILITY TABLES ARE LOCATED ON SHEET ___

NOTE:
CONTRACTOR TO FIELD VERIFY EXISTING ELEVATIONS OF STRUCTURE SS-__ PRIOR TO INSTALLATION OF ANY PROPOSED INFRASTRUCTURE. PROPOSED INVERT SHALL BE CORE DRILLED INTO EXISTING MANHOLE PER ALL REQUIRED FRANKLIN REQUIREMENTS

NOTE:
NO EARTHWORK DISTURBING ACTIVITY MAY COMMENCE UNTIL A STORM WATER MANAGEMENT PERMIT IS OBTAINED.

PROPOSED LEGEND

- PROPERTY LINE
- SECTION LINE
- SETBACK LINE
- EASEMENT LINE
- FENCE LINE
- SANITARY SEWER LATERAL WITH CLEANOUT
- STORM SEWER W/INLET & END SECTION
- FIRE SERVICE LINE
- WATER SERVICE LINE
- GAS LINE
- SIGN
- WATER VAULT
- 45° BEND
- PIV
- FDC
- FIRE HYDRANT
- TEE

INDIANA 811 Know what's below. Call before you dig

SANITARY PLAN AND PROFILE

JOHNSON COUNTY RECYCLE CENTER

CROSSROAD ENGINEERS, PC
Transportation & Development Consultants

JOB No.	.	DRAWN	LMC	CHECKED	BTV
DATE	APRIL 11, 2024	DESIGNED	BTV	APPR.	GJI

GREGORY J. ILKO REGISTERED NO. 10300059 STATE OF INDIANA PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY	APPR.
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SHEET 800

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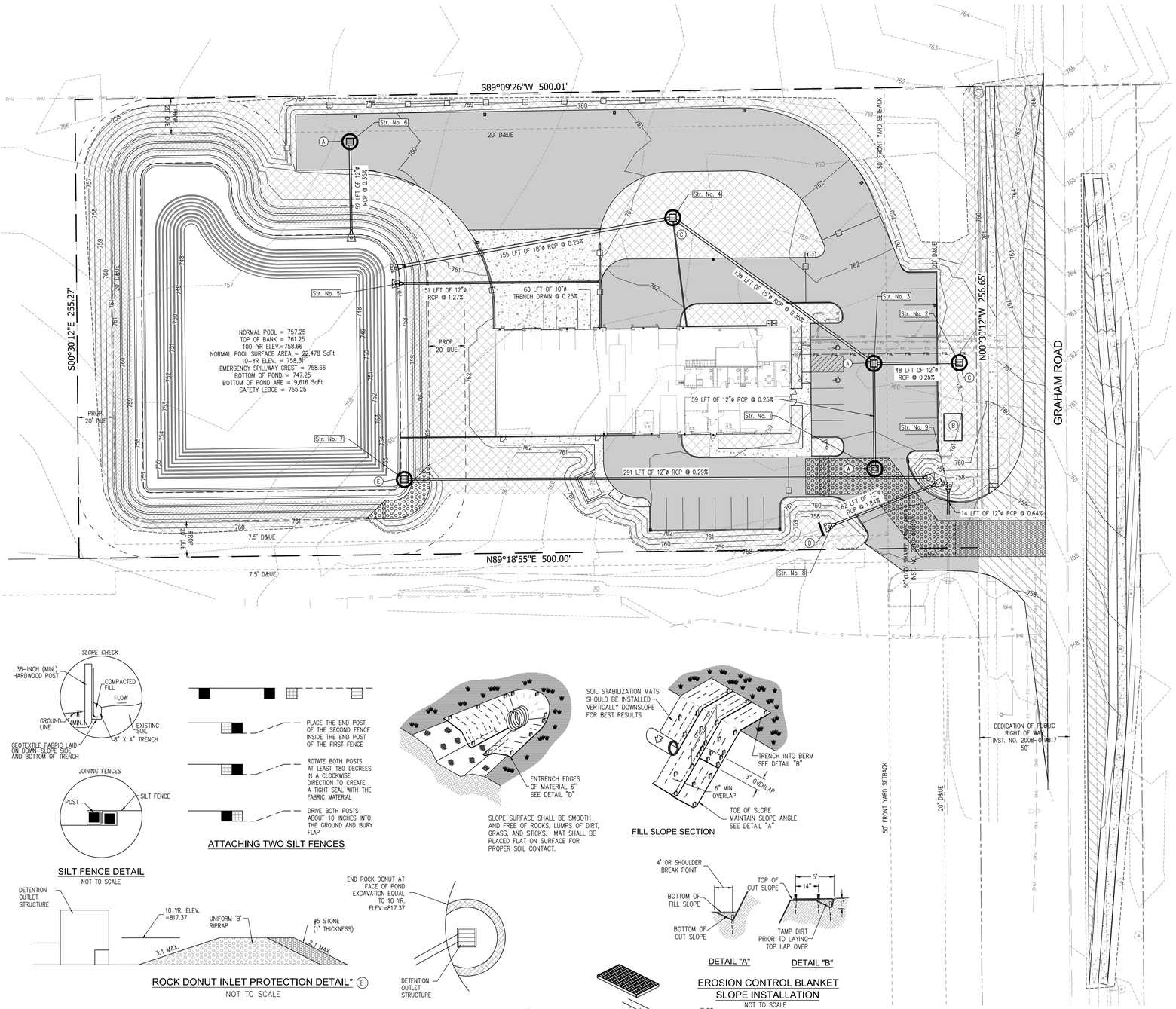
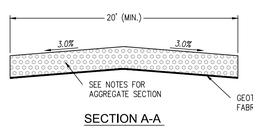
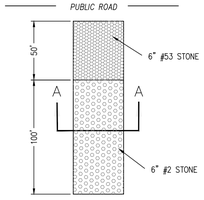




SECTION A-A



TEMPORARY CONSTRUCTION ENTRANCE DETAIL
NOT TO SCALE

EXISTING CONTOUR INTERVAL = 1'
PROPOSED CONTOUR INTERVAL = 1'

ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY STATE OR COUNTY OFFICIALS

EROSION CONTROL LEGEND

- MULCHED SEEDING
- EROSION CONTROL BLANKET (NORTH AMERICAN GREEN SC-150 OR EQUAL) AND MULCHED SEEDING
- REVETMENT RIPRAP
- CONSTRUCTION DRIVE (SEE DETAIL THIS SHEET)
- 800 — EXISTING CONTOURS
- 800 — PROPOSED CONTOURS
- SILT FENCE SLOPE CHECK (NUTEC 3 NWS-6 OR APPROVED EQUAL)
- CONSTRUCTION LIMITS
- (A) CURB INLET PROTECTION (SEE DETAIL-THIS SHEET)
- (B) CONCRETE WASHOUT AREA (SEE DETAIL-THIS SHEET)
- (C) FABRIC DROP INLET PROTECTION (SEE DETAIL-THIS SHEET)
- (D) ROCK CHECK DAM (SEE DETAIL-THIS SHEET)
- (E) ROCK DONUT INLET PROTECTION (SEE DETAIL-THIS SHEET)

EROSION CONTROL NOTES

1. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY STATE, COUNTY, OR LOCAL OFFICIALS.
2. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED IN THE FIELD BY THE INSPECTOR.
3. CONSTRUCTION STAGING AREA (TO BE DETERMINED BY CONTRACTOR) SHALL INCLUDE THE NOI POSTING, PORT-O-LETS, TRASH CONTAINERS, AND FUELING TANKS.
4. A TRAINED INDIVIDUAL MUST PERFORM AN INSPECTION ONCE A WEEK AND AFTER EVERY ½" OR MORE RAIN EVENT. A LOG OF THE INSPECTION REPORTS MUST BE KEPT AND MADE AVAILABLE TO THE CITY INSPECTOR UPON REQUEST.
5. THERE SHALL BE NO DIRT, DEBRIS, OR STORAGE OF MATERIALS WITHIN THE EXISTING STREET OR RIGHT-OF-WAYS.
6. ALL EROSION CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE INDIANA STORM WATER QUALITY MANUAL AND THE S.C.S. "FIELD OFFICE TECHNICAL GUIDE".
7. ALL STORM WATER CASTINGS SHALL BE PHASE II COMPLIANT.
8. CONTRACTOR SHALL UTILIZE 12 OZ/SQ. YD. MINIMUM WEIGHT, NON-WOVEN NEEDLE PUNCHED GEOTEXTILE FABRIC BENEATH ALL RIPRAP USED FOR OUTLET PROTECTION.

SILT FENCE DETAIL
NOT TO SCALE

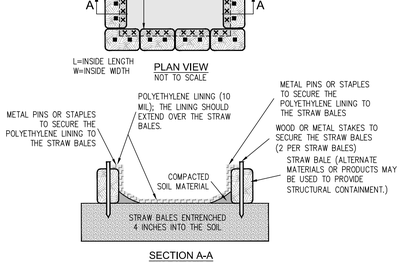
ATTACHING TWO SILT FENCES

SLOPE SURFACE SHALL BE SMOOTH AND FREE OF ROCKS, LUMPS OF DIRT, GRASS, AND STICKS. MAT SHALL BE PLACED FLAT ON SURFACE FOR PROPER SOIL CONTACT.

FILL SLOPE SECTION

ROCK DONUT INLET PROTECTION DETAIL* (E)
NOT TO SCALE

EROSION CONTROL BLANKET SLOPE INSTALLATION
NOT TO SCALE



PLAN VIEW
NOT TO SCALE

SECTION A-A
NOT TO SCALE

CONCRETE WASHOUT DETAIL (B)
NOT TO SCALE

ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY STATE, CITY OR COUNTY OFFICIALS

NOTE:
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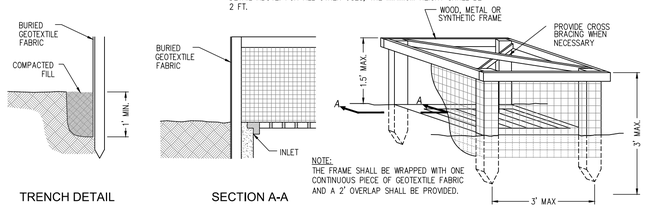
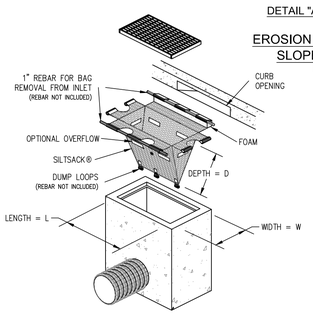
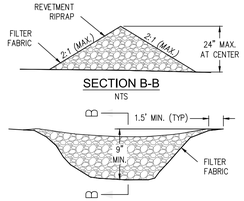


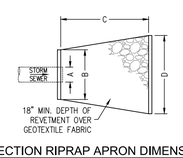
FABRIC DROP INLET PROTECTION DETAIL (C)
NOT TO SCALE



CURB INLET FILTER DETAIL (A)
NOT TO SCALE



ROCK CHECK DAM DETAIL (D)
NOT TO SCALE



END SECTION RIPRAP APRON DIMENSIONS
NOT TO SCALE

PIPE OUTLET NO.	A	B	C	D	REVETMENT (TONS)	GEOTEXTILE (SYS)
5	15"	4'	5'	6.5'	3	7
13	12"	3'	4'	5'	2	5
18	15"	4'	5'	6.5'	3	7
22	12"	3'	4'	5'	2	5
32	15"	4'	5'	6.5'	3	7
33A	18"	5'	6'	7.5'	4	9
56	48"	12'	16'	20'	21	39
57	15"	4'	5'	6.5'	3	7

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SHEET 900

EROSION CONTROL PLAN

JOHNSON COUNTY RECYCLE CENTER

JOB No.	.	DRAWN	LMC	CHECKED	BTV	APPR.	GJI
DATE	APRIL 11, 2024	DESIGNED	BTV				

GREGORY J. ILKO NO. 10300059 STATE OF INDIANA REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY	APPR.
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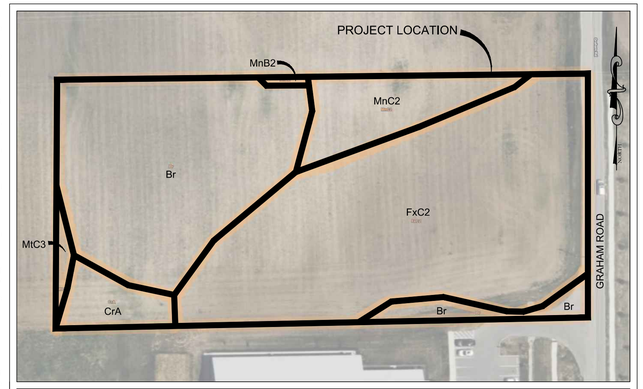
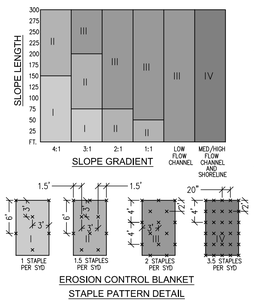
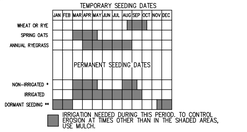






EROSION CONTROL PLAN INDEX
PLAN ELEMENTS

A1

CSGP EROSION CONTROL PLAN INDEX

ELEMENT	SHEET	ELEMENT	SHEET	ELEMENT	SHEET	ELEMENT	SHEET
A4	901	A19	400	B4	900 & 901	B11	900 & 901
A5	901	A21	900	B5	900 & 901	B12	900 & 901
A6	900	A22	900	B6	900 & 901	B13	901
A15	900	A23	900	B7	900 & 901	B14	901
A16	900	B2	901	B9	900 & 901		
A18	901	B3	901	B10	900 & 901		

A2 VICINITY MAP
A vicinity map depicting the project site location is located in right half of the Stormwater Pollution Prevention Plan.

A3 PROJECT NARRATIVE
The project involves the construction of a new recycling center for Johnson County. The project is located along Graham Road, north of Linville Way. Drives, curbs, parking and walks necessary for the development shall be constructed as part of the construction plans herein. A storm sewer system shall be utilized for stormwater collection. Drainage will discharge into the existing drive culvert located in the southeast corner of the property. Water, sanitary, telephone, cable, gas, and electric utilities shall serve the property as well. Construction is anticipated to begin in the Summer of 2024.

A4 LATITUDE & LONGITUDE
Latitude N 39°30'41" Longitude W 86°03'24"

A5 LEGAL DESCRIPTION
The Legal Description of the project site is located in the lower right quadrant of the Stormwater Pollution Prevention Plan.

A6 11 BY 17 INCH PLAT
The 11x17 inch Plat has been submitted to the respective Soils and Water Conservation District.

A7 100 YEAR FLOOD PLAINS, FLOODWAYS AND FLOODWAY FRINGES
By graphic plotting only, this tract of land described hereon lies within Zone 'X' (areas outside the 0.2% annual chance floodplain) and is not in a Special Flood Hazard Area as plotted on the Federal Emergency Management Agency Flood Insurance Rate Map for Johnson County, Indiana, Community Panel No. 18081C0143E, which bears an effective date of January 29, 2021.

A8 ADJACENT LAND USE
The adjacent landuses are labeled on the Erosion Control Plan.

A9 DESCRIPTION OF TOTAL MAXIMUM DAILY LOAD (TMDL) REPORT
Name: Canary Ditch (INW0463_T1006)
Location: West of the project site
Pollutants Addressed: Not applicable, as there are no TMDL associated with this watershed.

A10 RECEIVING WATERS
The receiving water for this project is Canary Ditch.

A11 DESCRIPTION OF 303(d) LIST
Name: Canary Ditch (INW0463_T1006)
Location: West of the project site.
Category: Yes, the project falls within a 303(d) listed watershed
Pollutants Addressed: Full body contact

A12 SOILS MAP AND DESCRIPTIONS
The soils map and all pertinent soil type information are located on the upper right quadrant of the Stormwater Pollution Prevention Plan.

A13 WETLANDS, LAKES AND WATER COURSES.
There are no potential wetland areas located within the project site, nor shall any potential wetland areas be disturbed as a result of construction

A14 STATE AND/OR FEDERAL WATER QUALITY PERMITS
IDEM CSGP is required for this project.

A15 EXISTING VEGETATIVE COVER
The existing site is cultivated farm land.

A16 EXISTING SITE TOPOGRAPHY
Existing one-foot contours are shown on the Erosion Control Plan.

A17 EXISTING RUN-OFF ENTRANCE AREA
Runoff enters the site from the northeast corner via roadside ditch. Runoff also comes onto the site from the existing ditch south of the site.

A18 EXISTING RUN-OFF DISCHARGE AREA
Runoff from the eastern half of the site discharges into the existing drive culvert at the southeast corner of the site. Runoff from the western half of the site discharges west to the adjacent farm field.

A19 EXISTING STORMWATER SYSTEMS
The existing stormwater system sizes and dimensions are labeled on the Topographic Survey Plan.

A20 EXISTING RETENTION/DETENTION FACILITIES
There are no existing retention/detention facilities onsite.

A21 POTENTIAL DISCHARGES TO GROUND WATER
There are no potential locations where stormwater may enter the groundwater.

A22 TOTAL PROJECT AREA
The total project area covers ±3.25 acres.

A23 EXPECTED DISTURBED AREA
The expected project land disturbance is ±3.25 acres.

A24 PROPOSED SITE TOPOGRAPHY
Proposed one-foot contours are shown on the Erosion Control Plan.

A25 DISTURBED AREAS
The construction limits (boundary of disturbed area) are shown on the Erosion Control Plan.

A26 PROPOSED STORMWATER SYSTEMS
The proposed stormwater system sizes and dimensions are labeled on the Erosion Control Plan.

A27 PROPOSED STORMWATER DISCHARGE
Stormwater will discharge from the site through the existing drive culvert in the southeast corner of the site.

A28 SITE IMPROVEMENTS
This project involves the construction of a new recycle center. New parking and drives will be installed as well as a wet detention pond and storm system.

A29 SOIL STOCKPILES, BORROW/DISPOSAL AREAS
Topsoil shall be stockpiled in a convenient location (as determined by the owner and/or contractor) within the construction site as shown on the Erosion Control Plan. There is no anticipated soil stockpile location.

A30 CONSTRUCTION SUPPORT ACTIVITIES
There are no construction support activities anticipated with these improvements.

A31 IN-STREAM ACTIVITIES
There are no in-stream activities anticipated with these improvements.

STORMWATER POLLUTION PREVENTION - DURING CONSTRUCTION

B1 POTENTIAL POLLUTANT SOURCES ASSOCIATED WITH CONSTRUCTION ACTIVITIES
There is a potential for pollutants associated with construction machinery including diesel fuel, hydraulic fluid, engine oils and lubricants, antifreeze and other petroleum products. It is unavoidable for a small amount of these pollutants to contaminate soil in the grading and construction of the site. Sediment pollution from site disturbing activities shall be remedied by Erosion Control measures (see following sections).

B2 CONSTRUCTION ENTRANCE
The construction entrance shall be constructed at the existing drive entrance off of Graham Road. Specifications and details are located on the Stormwater Pollution Prevention Plan.

B3 TEMPORARY & PERMANENT STABILIZATION
Temporary & Permanent surface stabilization methods are shown on the Erosion Control Plan and detailed on the Stormwater Pollution Prevention Plan.

B4 SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS
Sediment Control measures for concentrated flow areas are shown on the Erosion Control Plan. Specifications and details are located on the Stormwater Pollution Prevention Plan.

B5 SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS
Sediment Control measures for Sheet flow areas are shown on the Erosion Control Plan. Specifications and details are located on the Stormwater Pollution Prevention Plan.

B6 RUNOFF CONTROL MEASURES
Runoff control measures are shown on the Erosion Control Plan. Specifications and details are located on the Stormwater Pollution Prevention Plan.

B7 STORMWATER OUTLET PROTECTION MEASURES
Stormwater outlet protection measures are shown on the Erosion Control Plan. Specifications and details are located on the Stormwater Pollution Prevention Plan.

B8 GRADE STABILIZATION STRUCTURES
No grade stabilization structures are required for this project.

B9 DEWATERING ACTIVITIES
If required during excavation operations, dewatering shall be completed as shown on the Erosion Control Plan. Specifications and details are located on the Erosion Control Plan and Stormwater Pollution Prevention Plan.

B10 WATERBODY QUALITY MEASURES
Measures utilitized for work within waterbodies are shown on the Erosion Control Plan and associated details/specifications are shown on the Stormwater Pollution Prevention Plan.

B11 MONITORING AND MAINTENANCE GUIDELINES
Monitoring and Maintenance Guidelines are located in the middle on the Stormwater Pollution Prevention Plan

B12 PLANNED CONSTRUCTION GUIDLINES
Planned Construction Sequence guidelines are located in the middle on the Stormwater Pollution Prevention Plan.

B13 EROSION & SEDIMENT CONTROL MEASURES FOR INDIVIDUAL BUILDING LOTS
Not applicable, as this is to be developed as a standalone recycle center.

B14 MATERIAL HANDLING AND SPILL PREVENTION
Spill prevention shall be accomplished by utilizing spillguards for equipment fueling and servicing operations. Spillguards shall be 3'x3'x6" and shall be constructed of a material resistant petroleum products (including diesel fuel and oil). On-site fuel storage tanks shall have emergency storage capacity directly below the tank in case of rupture. Any hazardous material spillage shall be collected and/or cleaned immediately by a trained individual and disposed of in accordance with all federal, state and local regulations.

Indiana Department of Environmental Management
Office of Emergency Response (317) 233-7745, Toll Free (800) 233-7745
Franklin Fire Department (317) 736-3651
Additional Material Handling and Spill Prevention (this sheet)

B15 MATERIAL HANDLING AND STORAGE
Material Handling and Storage Procedure guidelines are located in the middle on the Stormwater Pollution Prevention Plan.

STORMWATER POLLUTION PREVENTION - POST CONSTRUCTION

C1 PROPOSED POLLUTANTS AND SOURCES ASSOCIATED WITH PROPOSED LAND USE
Potential pollutants include petroleum products and antifreeze from automobiles using the parking areas and sediment.

C2 PROPOSED POST CONSTRUCTION STORMWATER MEASURES
Post construction stormwater quality measures shall consist of a wet detention pond.

C3 LOCATION, DIMENSIONS, SPECIFICATIONS AND DETAILS OF EACH STORMWATER QUALITY MEASURE
The location of the wet detention pond is shown on the construction plans.

C4 STORMWATER QUALITY MEASURE IMPLEMENTATION
Stormwater quality measures are implemented by construction of the site improvements which include the wet detention pond for stormwater quality treatment.

C5 MAINTENANCE GUIDELINES OF POST CONSTRUCTION STORMWATER QUALITY MEASURES
All landscape areas shall be maintained by mowing, removing trash and debris, and re-planting any vegetated areas as necessary. The proposed storm sewer inlets shall be inspected for blockage of any type after each storm event. All obstructions, trash, and debris shall be removed upon inspection. Maintenance and inspection of the wet detention pond and outlet structure shall be performed in accordance with the manufacturer's recommendation ands the Operations and Maintenance (O&M) Manual approved by the City of Franklin MS4 Coordinator.

C6 PARTY RESPONSIBLE FOR POST-CONSTRUCTION STORMWATER POLLUTION PREVENTION
Owner: Johnson County Solid Waste District, Kevin Walls, Phone: (317) 346-4306, Email: kwalls@co.johnson.in.us

MONITORING AND MAINTENANCE GUIDELINES

GRAVEL CONSTRUCTION DRIVE AND PARKING AREA:
A. Inspect daily and after each storm event. Immediately remove mud and sediment tracked or washed onto public roads.
B. Top dress with clean aggregate as needed. Reshape pad as needed for drainage and runoff control.
C. Flushing should only be used if the water can be conveyed into a sediment trap or basin.

TOPSOIL:
A. Inspect daily until vegetation is established.
B. Check for erosion or damage of newly spread topsoil and repair immediately.

TEMPORARY AND PERMANENT SEEDING:
A. Inspect seeding within 24 hours of each rain event and at least once every seven calendar days until vegetation is established.
B. Check for erosion or movement of mulch and repair immediately.
C. Plan to add fertilizer the following growing season according to soil test recommendations.
D. Repair damaged, bare, or sparse areas by filling any gullies, re-fertilizing, over- or re-seeding, and mulching.
E. If plant cover is sparse or patchy, review the plant materials chosen, soil fertility, moisture condition, and mulching; repair the affected area either by over-seeding or by re-seeding and mulching after re-preparing the seed bed.
F. If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems.
G. If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.
H. Reference INDOT Specification 621.05.

EROSION CONTROL BLANKET:
A. Inspect within 24 hours of each rain event and at least once every seven calendar days. Check for erosion or displacement of the blanket.
B. If any area shows erosion, pull back that portion of the blanket covering the eroded area, add soil and tamp, re-seed the area, and re-lay and staple the blanket.
C. After vegetative establishment, check the treated area periodically.

MULCHING:
A. Inspect within 24 hours of each rain event to check for movement of mulch or for erosion.
B. If washout, breakage, or erosion is present, repair damage areas, re-seed, apply new mulch, and anchor mulch in place.
C. Continue inspections until vegetation is firmly established.
D. Reference INDOT Specification 621.05.

RIPRAP:
A. Inspect periodically for displaced rock material, slumping, and erosion at edges, especially downstream or downslope.

SILT FENCE:
A. Inspect within 24 hours of each rain event and at least once every seven calendar days.
B. If fence fabric tears, starts to decompose, or in any way becomes ineffective, replace the affected portion immediately.
C. Remove deposited sediment when it reaches half the height of the fence at its lowest point or is causing the fabric to bulge.
D. Take care to avoid undermining the fence during clean out.
E. After the contributing drainage area has been stabilized, remove the fence and sediment deposits, bring the disturbed area to grade and stabilize.

SILT SACK INLET PROTECTION:
A. Inspect the silt sack inlet protection periodically and after each ½" storm event.
B. Remove deposited sediment when it reaches half the height of the filter at the lowest point.
C. Remove the Silt Sack Inlet Protection and sediment deposits after contributing drainage area is stabilized.

ROCK CHECK DAM:
A. Inspect the check dam and channel after each storm event, and repair any damage immediately.
B. If significant erosion occurs between dams, install a riprap liner in that portion of the channel.
C. Remove sediment accumulated behind each dam as needed to maintain channel capacity, to allow drainage through the dam, and to prevent large flows from displacing sediment.
D. Add rock to the dams as needed to maintain design height and cross section.

CONCRETE WASHOUT:
A. Concrete washout area shall be installed prior to any concrete placement on site.
B. Signs shall be placed at the construction entrance, at the washout area, and elsewhere as necessary to clearly indicate the location of the concrete washout area to operators of concrete trucks and pump rigs.
C. The concrete washout area shall be repaired and enlarged or cleaned out as necessary to maintain capacity for wasted concrete.
D. At the end of construction, all concrete shall be removed from the site and disposed of at an approved waste site.
E. When the concrete washout area is removed, the disturbed area shall be seeded and mulched or otherwise stabilized in a manner approved by the inspector.

CONSTRUCTION SEQUENCE & SCHEDULE OF EROSION CONTROL IMPLEMENTATION

1. Silt fence and/or straw bales shall be placed around existing structures and in ditches as shown in these plans before any land disturbing activities are started.
2. Schedule a pre-construction meeting with Johnson County SWCD and City of Franklin 48 hours prior to start of earthwork.
3. Construct temporary gravel entrance in accordance with the "INDIANA STORM WATER QUALITY MANUAL". All other erosion control measures and detention areas shall be installed and constructed as shown at the beginning of the project.
4. Construct detention pond and install respective outlet structures.
5. Strip topsoil and stockpile as shown.
6. Rough grade site. Disturbed areas should be seeded immediately following rough grading. Areas that will not be disturbed again should be permanently seeded. No unvegetated areas should be exposed for more than seven days.
7. Place drainage structures. Erosion control measures shall be placed around proposed structures as soon as they are in place and until vegetation is secure.
8. Construct building and other remaining site improvements and utilities.
9. Final grade site. All erosion control blankets shall be installed per manufacturers recommendations as soon as final grading is complete.
10. Final paving operations. Temporary erosion control measures shall remain in place until vegetation is secure.

GENERAL EROSION CONTROL REQUIREMENTS FOR COMPLIANCE WITH IDEM GENERAL PERMIT RULES FOR STORM WATER RUNOFF FROM CONSTRUCTION SITES

1. All Erosion Control practices shall be in accordance with the latest edition of the INDIANA STORM WATER QUALITY MANUAL.
2. The Erosion Control measures included in this plan shall be installed prior to initial land disturbance activities or as soon as practical. Sediment shall be prevented from discharging from the project site by installing and maintaining silt fence, straw bales, sediment basins, etc. As shown on this plan. If shown on this plan, energy-dissipation devices or Erosion Control at the outfall of the storm sewer system shall be installed at the time of the construction of the outfall.
3. All on-site storm drain inlets shall be protected against sedimentation with silt sack inlet filters, filter fabric, or equivalent barriers as shown on this plan.
4. Except as prevented by inclement weather conditions or other circumstances beyond the control of the contractor/developer appropriate Erosion Control practices will be initiated within (7) seven days of the last land disturbing activity at the site. The site shall be stabilized by seeding, sodding, mulching, covering, or by other equivalent Erosion Control measures.
5. This Erosion Control plan shall be implemented on all disturbed areas within the construction site. All measures involving Erosion Control practices shall be installed under the guidance of a qualified person experienced in Erosion Control and following the plans and specifications included herein.
6. During the period of construction activity, all sediment basins and other Erosion Control measures shall be maintained by the contractor. At the completion of construction, the contractor shall coordinate the transfer of required maintenance responsibilities with the owner.
7. Public or private roadways shall be kept cleared of accumulated sediment. Bulk clearing of accumulated sediment shall not include flushing the area with water. Cleared sediment shall be returned to the point of likely origin or other suitable location.
8. The contractor shall control wastes, garbage, debris, wastewater, and other substances on the site in such a way that they shall not be transported from the site by the action of winds, storm water runoff, or other forces. Proper disposal or management of all wastes and unused building materials appropriate to the nature of the waste or material is required.
9. Additional Erosion Control measures may be required by state or county agencies.

ADDITIONAL MATERIAL HANDLING AND SPILL PREVENTION PLAN

A. PURPOSE
The purpose of this plan is two fold:
1. To help protect the health and safety of those working on the site as well as the environment.
2. Preventing the contamination of storm water runoff. Pollutants generated onsite may include gasoline, diesel fuel, oils, grease, paints, pesticides, nutrients, concrete washout, soil, solvents, paper, plastic, Styrofoam, metals, glass and other forms of liquid or solid wastes.

This plan outlines procedures to help prevent health and safety issues, contamination of storm water by onsite pollutants, help prevent fuel and chemical spills and provide a response procedure should a spill occur.

B. PREVENTION AND READINESS
1. The contractor or responsible party will prepare a contact list in the event of a spill on the site. The contact list will have names and contact numbers. The contact list will specify first responders and a chain of command. Include information on what circumstances require the initiation of the contact list and chain of command.
2. The contractor/owner shall maintain a list of qualified contractors, Vac-trucks, tank pumpers and other equipment or businesses qualified to do clean-up operations. Absorbent materials and supplies need to be available onsite in sufficient quantities to address minor spills. All employees need to be educated on the proper application of the absorbent materials.
3. All maintenance and equipment operators must be aware and trained for prevention of spills. A continuing education program is required for new employees and emphasizing the importance to all employees.
4. All materials used in the course of a cleanup will be disposed in a manor approved by Indiana Department of Environmental Management.
5. Using water to flush spilled material will not be permitted unless authorized by a state, federal, or local agency. Tarps can be used to cover spilled material during rain events.

C. SPILL RESPONSE
Minor – Small spills that typically involve oil gasoline, paint, hydraulic fluid etc. Minor spills can be controlled by the first responder at the discovery of the spill.
- Contain spill to prevent material from entering storm or ground water. Do not flush with water or bury.
- Use absorbent material to clean-up spill material and any subsequently contaminated soil and dispose of properly.

Semi-significant Spills – Approximately ten gallons or less of pollutant with no contamination of ground or surface waters. Minor spills can be generally controlled by the first responder with help from other site personnel. This response may require other operations to stop to make sure the spill is quickly and safely addressed. At the discovery of the spill:
- Contain spill to prevent material from entering storm or ground water. Do not flush with water or bury.
- Use absorbent material to clean-up spills and dispose of properly. Spills on impervious surfaces should be contained with a dry absorbent. Spills on clayey soils should be contained by constructing an earthen dike and should be disposed of as soon as possible to prevent migration deeper into the soil and groundwater. Dispose of contaminated soils or absorbents properly.
- Contact 911 if this spill could be a safety issue.
- Contact supervisors and designated inspectors immediately
- Contaminated solids to be removed to an approved landfill.

Major or Hazardous Spills – More than ten gallons, there is the potential for death, injury or illness to humans or animals or has the potential for surface or groundwater pollution.
- Control or contain the spill without risking bodily harm. Temporarily plug storm drains if possible to prevent migration of the spill into the stormwater system.
- Immediately contact the local Fire Department at 911 to report any hazard material spill.
- Contact supervisors and designated inspectors immediately. Other county or municipal officials (list as needed) responsible for storm water facilities should be contacted as well. The contractor is responsible for having these contact numbers available at the job site. A written report should be submitted to the owner as soon as possible.
- As soon as possible but within 2 hours of discovery, contact the Department of Environmental Management,
  Office of Emergency Response 1-888-233-7745. The following information should be noted for future reports to IDEM or the National Response Center.
  - o Name, address and phone number of person making the spill report
  - o The location of the spill
  - o The time of the spill
  - o Identification of the spilled substance
  - o Approximate quantity of the substance that has been spilled or may be further spilled
  - o The duration and source of the spill
  - o Name and location of the damaged waters
  - o Name of spill response organization
  - o What measures were taken in the spill response
  - o Other information that may be significant

Additional regulation or requirements may be present. A spill response professional should be consulted to make sure all appropriate and required steps have been taken. Contaminated solids should only be removed from the site after approval is given by Emergency Response.

D. THE FOLLOWING PROCEDURES AND PRACTICES WILL HELP PREVENT UNNECESSARY SPILLS

I. Vehicle and Equipment Fueling

Description and Purpose:
- Vehicle equipment fueling procedures and practices are designed to prevent fuel spills and leaks, and reduce or eliminate contamination of stormwater. This can be accomplished by using offsite facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors in proper fueling procedures.

Limitations:
- Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for fueling.

Implementation:
- Use offsite fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly. Performing this work offsite can also be economical by eliminating the need for a separate fueling area at a site.
- Discourage "topping-off" of fuel tanks.
- Absorbent spill cleanup materials and spill kits should be available in fueling areas and on fueling trucks, and should be disposed of properly after use.
- Drip pans or absorbent pads should be used during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
- Use absorbent materials on small spills. Do not hose down or bury the spill. Remove the absorbent materials promptly and dispose of properly.
- Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas.
- Train employees and subcontractors in proper fueling and cleanup procedures.
- Dedicated fueling areas should be protected from stormwater run-on and runoff, and should be located at least 50 feet away from the downstream drainage facilities and watercourses. Fueling must be performed on level-grade areas.
- Protect fueling areas with berms and dikes to prevent run-on, runoff, and to contain spills.
- Nozzles used in vehicle and equipment fueling should be equipped with an automatic shutoff to control drips. Fueling operations should not be left unattended.
- Federal, state, and local requirements should be observed for any stationary above ground storage tanks.

Inspection and Maintenance
- Vehicles and equipment should be inspected each day of use for leaks. Leaks should be repaired immediately or problem vehicles or equipment should be removed from the project site.
- Keep ample supplies of spill cleanup materials onsite.
- Immediately clean up spills and properly dispose of contaminated soils.

II. Solid Waste Management

Description of Purpose:
- Solid waste management procedures and practices are designed to prevent or reduce the discharge of pollutants to stormwater from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

Suitable Applications:
This BMP is suitable for construction sites where the following wastes are generated or stored:

- Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction.
- Packaging materials including wood, paper, and plastic.
- Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces, and masonry products.
- Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes,
- Construction waste including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts. Styrofoam and other materials send transport and package construction materials.

Implementation:
The following steps will help keep a clean site and reduce stormwater pollution:
- Select designated waste collection areas onsite.
- Inform trash-hauling contractors that you will accept only watertight dumpsters for onsite use.
- Inspect dumpsters for leaks and repair any dumpster that is not watertight.
- Provide an adequate number of containers with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it is windy.
- Plan for additional containers and more frequent pickup during the demolition phase of construction.
- Collect site trash daily, especially during rainy and windy conditions.
- Remove this solid waste promptly since erosion and sediment control devices tend to collect litter.
- Make sure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acid, pesticides, additives, curing compounds) are not disposed of in dumpsters designed for construction debris.
- Do not hose out dumpsters on the construction site. Leave dumpster cleaning to the trash hauling contractor.
- Arrange for regular waste collection before containers overflow.
- Clean up immediately if a container does spill.
- Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas. Solid waste storage areas should be located in areas prone to flooding or ponding.
- Locate solid waste dumpster a minimum of 50' away from storm water inlets or other drainage facilities.
- Locate dumpster on stone or earth to minimize the potential for spills or leaks to drain immediately into a drainage facility.

Inspection and Maintenance:
- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharge daily while non-stormwater discharges occur.
- Inspect construction waste are regularly.
- Arrange for regular waste collection.

III. Concrete Washout

The following steps will help reduce stormwater pollution from concrete wastes:
- Discuss the concrete management techniques described in the BMP (such as handling of concrete waste and washout) with the reddy-mix concrete supplier before any deliveries are made.
- Incorporate requirements for concrete waste management into material supplier and subcontractors' agreements.
- Store dry and wet materials under cover, away from drainage areas.
- Avoid mixing excess amounts of fresh concrete.
- Perform washout of concrete trucks offsite or in designed areas only.
- Do not wash concrete trucks into storm drains open ditches, streets, or streams.
- Do no allow excess concrete to be dumped onsite, except in designed areas.

For onsite washout:
- Locate washout areas at least 50 feet from storm drains, open ditches, or water bodies.
- Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
- Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly.
- Avoid creating runoff by drinking water to a bermed or level area when washing concrete to remove fine particles and expose the aggregate.
- Do not wash sweepings form exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile or dispose in the trash.

IV. Vehicle Maintenance Areas
Purpose– To prevent spills during the normal maintenance of construction machinery.

Implementation– Where and when feasible, maintenance shall be preformed offsite in covered facility with an impervious floor.
- Use a dedicated site for machinery maintenance
- Site the maintenance area at least 50 feet from storm water inlets or water bodies
- Maintain clean up materials close at hand. Utilize drip pans and absorbent pads to prevent oils from reaching the soil surface.
- Inspect equipment daily for leaks or worn hoses. Repair or replace to prevent onsite spills
- Properly dispose of all fluids removed or spilled from machinery.

V. Fluids, paints, solvents and other chemicals storage and use

Purpose– To prevent spills during the use and storage of the materials

Implementation–
- Store materials in there original containers
- Maintain safety data sheets on all products
- Store materials in a weather proof/vandal resistant locker or building
- Keep materials away from flammable sources
- Provide and read instructions for the proper use and storage of all materials
- For bulk material stored onsite, provide diking or double containment in case of leaks or failures.
- No washout of solvent from paint supplies should be done near or into a storm water inlet or other drainage facility.

VI. Disposal of sediment laden water

Purpose– To prevent the purposeful discharge of sediment laden water into waters of the United States.

Implementation–
- The sediment and any other pollutant from all pumping or dewatering operations that discharge into storm sewers, wetlands, drainage ways or water bodies must be removed from the water before it's discharged.
- A suitable practice is needed at the discharge to allow the suspended solids to be removed from the water column. Slow moving water and time are needed components for an effective practice. Mechanical filters and chemical flocculants can do an excellent job of removing the fine materials.
- Sediment removal pumping bags may be used at the outlet of a pump. The bags must be sized appropriately for the amount of flow. The practice needs to be installed on erosion resistant surfaces. The outlet of the pumping bag must be erosion resistant to prevent additional sedimentation.
- Pumping operations that are moving clean water through a site are not required to have a pumping bag or similar device at the outlet. The point of discharge should be protected to prevent soil erosion.

Johnson County, Indiana (IN081)

BROOKSTON SILTY CLAY LOAM (BR)
This nearly level soil is in depressions, on flats, and in narrow drainageways between better drained soils on broad, undulating plains. Slopes are 0 to 2 percent. Runoff is very slow. Wetness is the main limitation. Soil has limitations for building sites and must be artificially drained and protected from flooding.

CROSBY SILT LOAM (CrA)
This nearly level soil is on broad plains, on ridge tops in rolling areas, or in low drainageways. Slopes are 0 to 2 percent. Runoff is slow. Wetness is the main limitation.Soil has limitations for building sites and must be artificially drained and protected from flooding.

CROSBY-MIAMI SILT LOAMS, eroded (CsB2)
This gently sloping mapping unit is on broad, slightly undulating plains; on knolls of broad, nearly level plains; and at the heads of drainageways. Slopes are 2 to 4 percent. Runoff is medium. Moderate erosion is the main limitation.

FOX COMPLEX, eroded (FxC2)
This moderately sloping and strongly sloping mapping unit is on side slopes of drainageways, on steep breaks, and on side slopes of hummocky kames and eskers. Slopes are 6 to 15 percent. Runoff is medium. Moderate erosion is the main limitation.

MIAMI SILT LOAM, eroded (MnB2)
This gently sloping soil is along drainageways that cross areas of somewhat poorly drained Crosby soils.
Slopes are 2 to 6 percent. Runoff is medium. Moderate erosion is the main limitation.

MIAMI SILT LOAM, eroded (MnC2)
This moderately sloping soils is on irregularly shaped knolls surrounded by gently sloping and nearly level soils; in long narrow bands around ridgetops; along drainageways leading to terraces or bottom land; and on undulating moraines.
Slopes are 6 to 12 percent. Runoff is medium. Moderate erosion is the main limitation.

MIAMI CLAY LOAM, eroded (MtC3)
Slope: 6 to 12 percent; Depth to restrictive feature: 24 to 40 inches to densic material; Drainage class: Moderately well drained; Runoff class: High; Frequency of flooding: None; Frequency of ponding: None

SOIL MAP AND DESCRIPTION
NOT TO SCALE

VICINITY MAP
NO SCALE

SLOPE GRADIENT

EROSION CONTROL BLANKET
STAPLE PATTERN DETAIL

PERMANENT SEED MIXTURES

SPECIES	SEEDING RATE LBS/ACRE	SUITABLE pH	SITE SUITABILITY DROUGHTY	SITE SUITABILITY DRAINED	SITE SUITABILITY WET
LEVEL AND SLOPING, OPEN AREAS					
TALL FESCUE	35	5.5 – 8.3	2	1	2
TALL FESCUE RED CLOVER **	25 5	5.5 – 8.3		1	
KENTUCKY BLUEGRASS CREEPING RED FESCUE	15 15	5.5 – 7.5	2	1	
STEEP BANKS AND CUTS					
TALL FESCUE KENTUCKY BLUEGRASS	15 25	5.8 – 7.5	2	1	2
TALL FESCUE EMERALD CROWNVETCH **	35 10	5.5 – 8.3	2	1	
LAWNS AND HIGH MAINTENANCE AREAS					
KENTUCKY BLUEGRASS CREEPING RED FESCUE	40 40	5.8 – 7.5	2	1	
PERENNIAL RYEGRASS (TURF TYPE)	170	5.0 – 7.5		1	
TALL FESCUE	170	5.5 – 8.3	2	1	2

1-PREFERRED 2-WILL TOLERATE ** – INOCULATE WITH SPECIFIC INOCULATES

	SOIL CONDITION WET	SOIL CONDITION NORM	SOIL CONDITION DRY	SHADE TOLERANCE	CLOSE MOWING TO 2-3 1/2 INCHES	TRAMPING TOLERANCE	FERTILITY NEEDS	WINTER HARDINESS	FLOODING TOLERANCE (DAYS)	MATURE HEIGHT (INCHES)	EMERGENCE TIME (DAYS)	SALT TOLERANCE GEN.	SALT TOLERANCE SOIL	SALT TOLERANCE SPRAY
CREEPING RED FESCUE FESTUCA RUBRA	2	1	2	1	1	1	MED.	1	20–25	12–18	7–21			S
KENTUCKY BLUEGRASS POA PROTINSIS	2	1	2	1	1	1	MED.	1	25–35	12–18	10–20			MT
TALL FESCUE FESTUCA L ARUNDINACEA	2	1	1	1	1	1	LOW	1	24–35	24–36	5–14		T	
PERENNIAL RYEGRASS LOLIUM PERENNE	2	1	2	–	1	2	MED–HIGH	2	15–20	12–18	5–10		MT	
CROWNVETCH CORANILLA VARIA	–	1	1	2	–	–	LOW	1	5–10	24	14–21	T		
RED CLOVER TRIFOLIUM PRATENSE	–	1	–	2	–	–	MED.	1	7–10	18	5–10	S	S	

RANKING
1 GOOD
2 MEDIUM
– NOT TOLERANT

SALT TOLERANCE (TO BOTH SOIL SALTS AND SPRAY)
T – TOLERANCE
MT – MEDIUM TOLERANCE
S – SLIGHT TOLERANCE

SEEDBED PREPARATION
APPLY LIME TO RAISE THE pH TO THE LEVEL NEEDED FOR SPECIES BEING SEEDED. APPLY 23 LBS. OF 12-12-12 ANALYSIS FERTILIZER (OR EQUIVALENT) PER 1,000 SQ. FT. (APPROXIMATELY 1,000 LBS. PER ACRE) OR FERTILIZE ACCORDING TO TEST. APPLICATION OF 150 LBS. OF AMMONIUM NITRATE ON AREAS LOW IN ORGANIC MATTER AND FERTILITY WILL GREATLY ENHANCE VEGETATIVE GROWTH. WORK THE FERTILIZER AND LIME INTO THE SOIL A DEPTH OF 2 TO 3 INCHES WITH A HARROW, DISK, OR RAKE OPERATED ACROSS THE SLOPE AS MUCH AS POSSIBLE. FERTILIZER AND LIME SHALL MEET REQUIREMENTS OF INDOT STANDARD SPECIFICATIONS 1995.

SEEDING
SELECT A SEED MIXTURE BASED ON PROJECTED USE OF THE AREA WHILE CONSIDERING BEST SEEDING DATES.

TEMPORARY SEEDING DATES

IRRIGATION NEEDED DURING THIS PERIOD. TO CONTROL EROSION AT TIMES OTHER THAN IN THE SHADED AREAS, USE MULCH.

* -LATE SUMMER SEEDING DATES MAY BE EXTENDED 5 DAYS IF MULCH IS APPLIED.

** -INCREASE SEEDING APPLICATION BY 50%

TEMPORARY SEEDINGS

KIND OF SEED	PER 1,000 SQ. FT.	PER ACRE	REMARKS
WHEAT OR RYE	3.5 LBS	2 BU	COVER SEED 1" TO 1 1/2" DEEP
SPRING OATS	3.5 LBS	3 BU	COVER SEED 1" DEEP
ANNUAL RYEGRASS	1.0 LBS	40 LBS	COVER SEED 1/4" DEEP *

* NOT NECESSARY WHERE MULCH IS APPLIED.

LEGAL DESCRIPTION

INSTRUMENT NO. 2023-000852

LOT NUMBERED ONE IN THE LINVILLE COMMERCIAL MINOR SUBDIVISION AS RECORDED IN PLAT CABINET E, SLIDE 359B AND AS INSTRUMENT NO. 2019-000197 IN THE OFFICE OF THE RECORDER OF JOHNSON COUNTY, INDIANA.

ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY STATE OR COUNTY OFFICIALS

STORMWATER POLLUTION PREVENTION PLAN
JOHNSON COUNTY RECYCLE CENTER

CROSSROAD ENGINEERS, PC
Transportation & Development Consultants

GREGORY J. ILKO
No. 10300059

JOB No.	DATE	DRAWN	DESIGNED	CHECKED	APPR.
-	APRIL 11, 2024	LMC	BTV	BTV	GJI

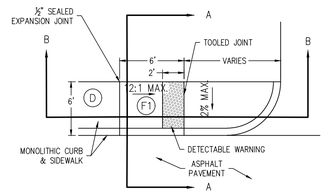
SHEET 901

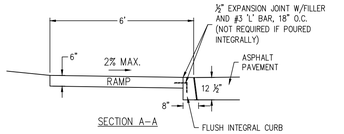
NO.	DATE	BY	APPR.	REVISIONS
1				
2				
3				
4				
5				
6				
7				
8				
9				

SHEET 901

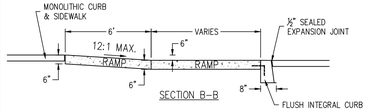
DIRECTORY PATH : R:\Active\Lancer+Beebe\JoCo Recycle Center\Design\CAD\Plans
FILENAME : 901 SWPPP.dwg
DATE/USER : 4/10/2024 10:50 AM / Bvaughan

GENERAL NOTES:
1. MAXIMUM ALLOWABLE RAMP SLOPES SHALL NOT EXCEED 8.33%.



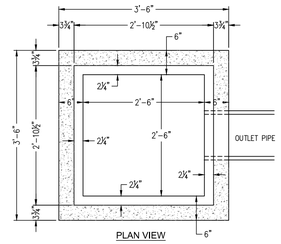


SECTION A–A

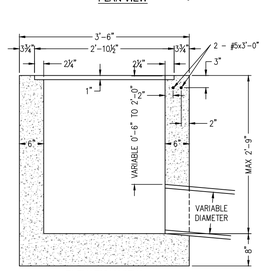


SECTION B–B

ONE-WAY DIRECTIONAL CURB RAMP (F1)
NOT TO SCALE

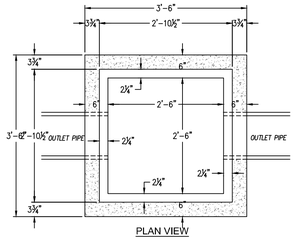


PLAN VIEW

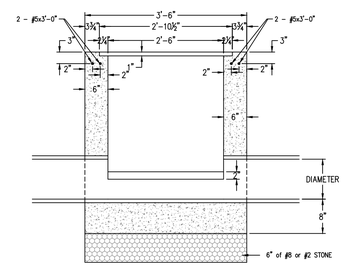


ELEVATION VIEW

INLET TYPE 'E'
NOT TO SCALE

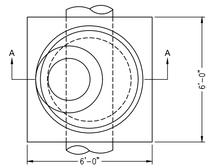


PLAN VIEW

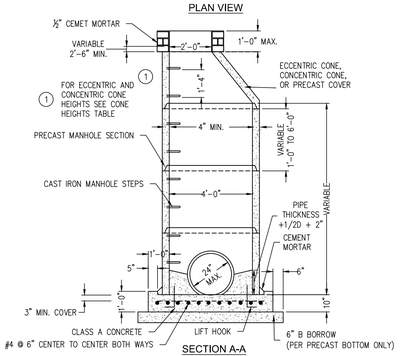


ELEVATION VIEW

INLET TYPE 'F'
NOT TO SCALE

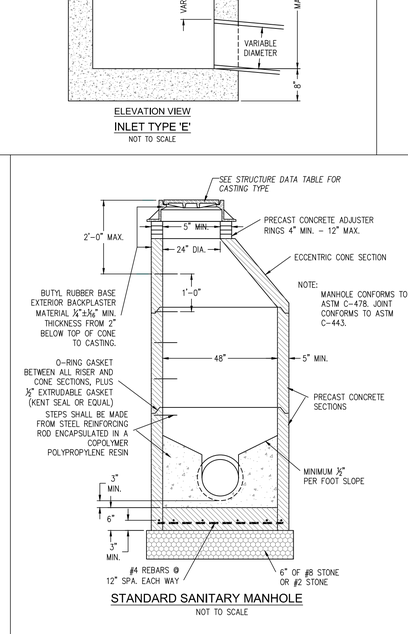


PLAN VIEW

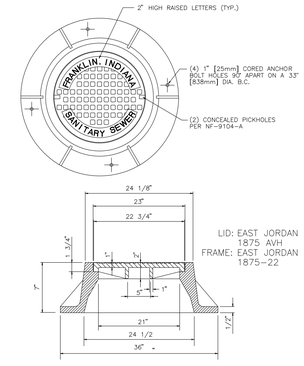


SECTION A-A

STORM MANHOLE TYPE 'C'
NOT TO SCALE



STANDARD SANITARY MANHOLE
NOT TO SCALE



NOTE: METAL: CAST GRAY IRON ASTM A-48 CL.35B
FINISH: NOT PAINTED

STANDARD SANITARY MANHOLE FRAME & LID
NOT TO SCALE

OUTSIDE 5' OF STREETS, WALKS AND CURBS BACKFILL WITH CLEAN FILL MATERIAL FREE OF ROCKS LARGER THAN 6" DIAMETER OR EXTRANEOUS MATERIAL.

MIN. 6" TOPSOIL TO ENSURE GRASS GROWTH IF NOT UNDER PAVEMENT.

WITHIN 5' OF STREETS, WALKS AND CURBS BACKFILL WITH B-BORROW OR EQUIVALENT MATERIAL (MECHANICAL COMPACTION TO 95% STANDARD PROCTOR DENSITY.)

NOTES:
ALL BEDDING & INITIAL BACKFILL SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS.

MIN. 9" OF CLEARANCE SHALL BE PROVIDED ON EACH SIDE OF THE INSTALLED PIPE.

MIN. 2' SEPARATION (O.D. TO O.D.) SHALL BE REQUIRED BETWEEN DUAL PIPE CULVERT STRUCTURES.

MIN. 1.25 O.D.+12"

O.D.

⅛ O.D. (ONLY IF OUTSIDE 5' OF STREETS, WALKS AND CURBS)

d

4" MIN. (BELOW THE BELL)

"B" BORROW OR EQUIV GRANULAR MATERIAL COMPACTED TO 95% STANDARD PROCTOR DENSITY

PIPE INSIDE DIAMETER	≤ 27"	30" TO 60"
BEDDING BELOW THE PIPE BELL, 'd'	3" (MIN. = 4")	4" (MAX. = 8")

RIGID PIPE BEDDING DETAIL
RCP AND VCP PIPE
NOT TO SCALE

OUTSIDE 5' OF STREETS, WALKS AND CURBS BACKFILL WITH CLEAN FILL MATERIAL FREE OF ROCKS LARGER THAN 6" DIAMETER OR EXTRANEOUS MATERIAL.

WITHIN 5' OF STREETS, WALKS AND CURBS BACKFILL WITH B-BORROW OR EQUIVALENT. (MECHANICAL COMPACTION TO 95% PROCTOR DENSITY.)

MIN. 1.25 O.D. + 12"

12" MIN.

O.D.

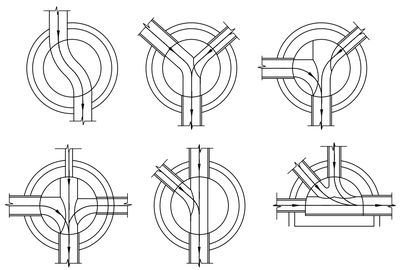
#8 CRUSHED STONE OR #8 FRACTURED FACE AGGREGATE, HAND TAMPED OR WALKED IN TO 1/2 O.D.

4" MIN. (BELOW THE BELL)

#8 CRUSHED STONE OR #8 FRACTURED FACE AGGREGATE, BELL HOLE EXCAVATED.

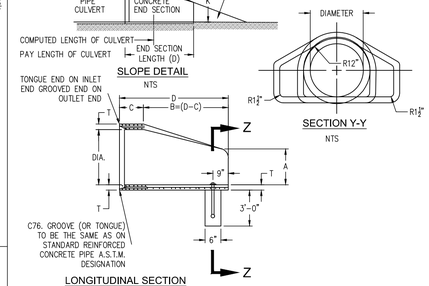
PIPE SIZE	8" TO 15"	18" & OVER
BEDDING BELOW THE PIPE BELL	O.D. / 4 MIN. = 4"	O.D. / 4 MAX. = 8"

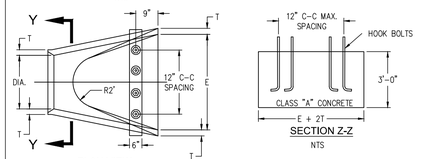
FLEXIBLE PIPE BEDDING DETAIL
PVC AND HDPE PIPE
NOT TO SCALE



SANITARY SEWER BENCH SLOPE = 1/2" PER FOOT

STANDARD MANHOLE BENCHES
NOT TO SCALE



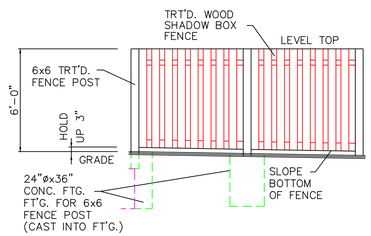


PRECAST CONCRETE END SECTION DETAIL

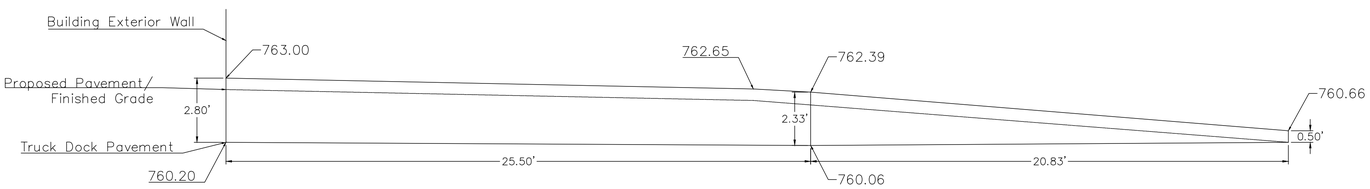
PRECAST CONCRETE END SECTION TABLE

DIA.	WALL 'G' OR 'T'	WT. SEC.	A	B	C	D	E	DIA.+1	R-1	SKIRT
12	2	1 1/2	530	4	24	48 7/8	72 7/8	24	13	10 1/16	3 1/2
15	2 1/4	2	740	6	27	46	73	30	16	12 1/2	3 1/2
18	2 1/2	2 1/2	990	9	27	46	73	36	19	15 1/2	4
21	2 1/4	2 1/4	1280	9	35	38	73	42	22	16 1/8	4
24	2 1/2	2 1/2	1520	9 1/2	43 1/2	30	73 1/2	48	25	16 11/16	4 1/2
27	2 1/2	2 1/2	1930	10 1/2	48	25 1/2	73 1/2	54	28	17 3/4	4 1/2
30	3	3	2190	12	54	19 3/4	73 3/4	60	31	18 5/16	5
33	3 3/8	3 3/8	3150	13 1/2	58 1/2	39 1/4	97 3/4	66	34	23 3/4	5 1/2
36	3 1/2	3 1/2	4100	15	63	34 3/4	97 3/4	72	37	24 1/16	5 1/2
42	3 3/4	3 3/4	5380	21	63	35	98	78	43	27 1/4	5 1/2
46	4 1/4	4 1/4	6550	24	72	26	98	84	49	28 1/8	5 3/4
54	4 3/4	4 3/4	8040	27	65	35	100	90	55	32 7/8	6 1/4
60	5	5	8750	30	60	39	99	96	61	36 3/4	6 3/4
66	5 1/2	5 1/2	10630	24	78	21	99	102	67	35 11/16	7 1/4
72	6	6	12520	34	78	21	99	108	73	38 5/8	7 3/4
78	6 1/2	6 1/2	14430	24	78	21	99	114	79	41 15/16	8 1/2
84	7	7	16350	24	78	21	99	120	85	44 13/16	9

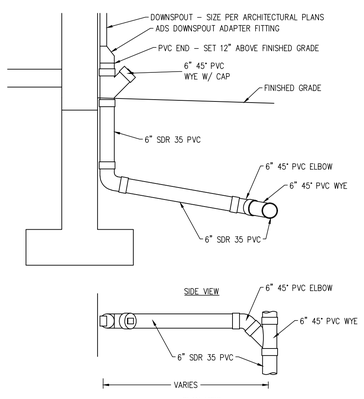
NOTES:
1. MANUFACTURE OF END SECTION IS IN ACCORDANCE WITH APPLICABLE PORTIONS OF A.S.T.M. SPECIFICATION C76.



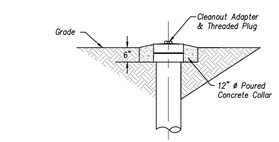
TYPICAL OPAQUE FENCE PANEL DETAIL (L)
NOT TO SCALE

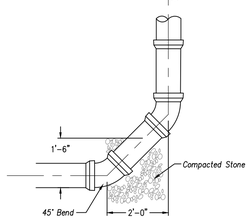


EAST RETAINING WALL DETAIL

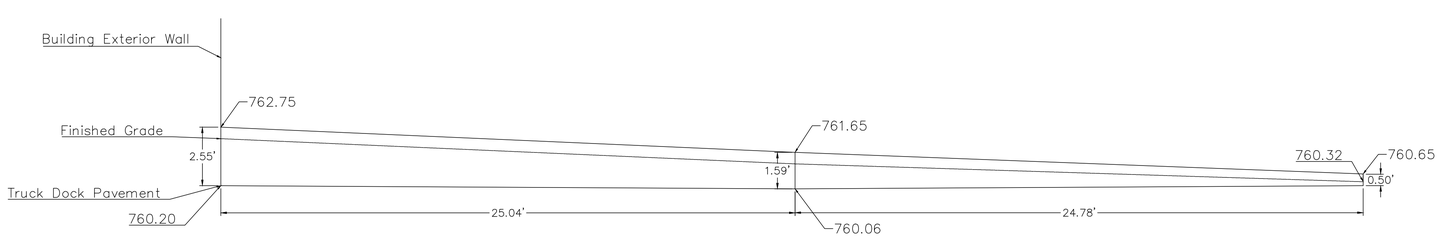


DOWNSPOUT CONNECTION & HEADER PIPE DETAIL
NOT TO SCALE





STANDARD CLEANOUT DETAIL
NOT TO SCALE



WEST RETAINING WALL DETAIL

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DATE/USER : 4/11/2024 8:33 AM / lbaughan

CROSSROAD ENGINEERS, PC
Transportation & Development Consultants
115 N. 17th AVENUE, BEECH GROVE, IN 46107 (317) 780-1555

MISCELLANEOUS DETAILS

JOHNSON COUNTY RECYCLE CENTER

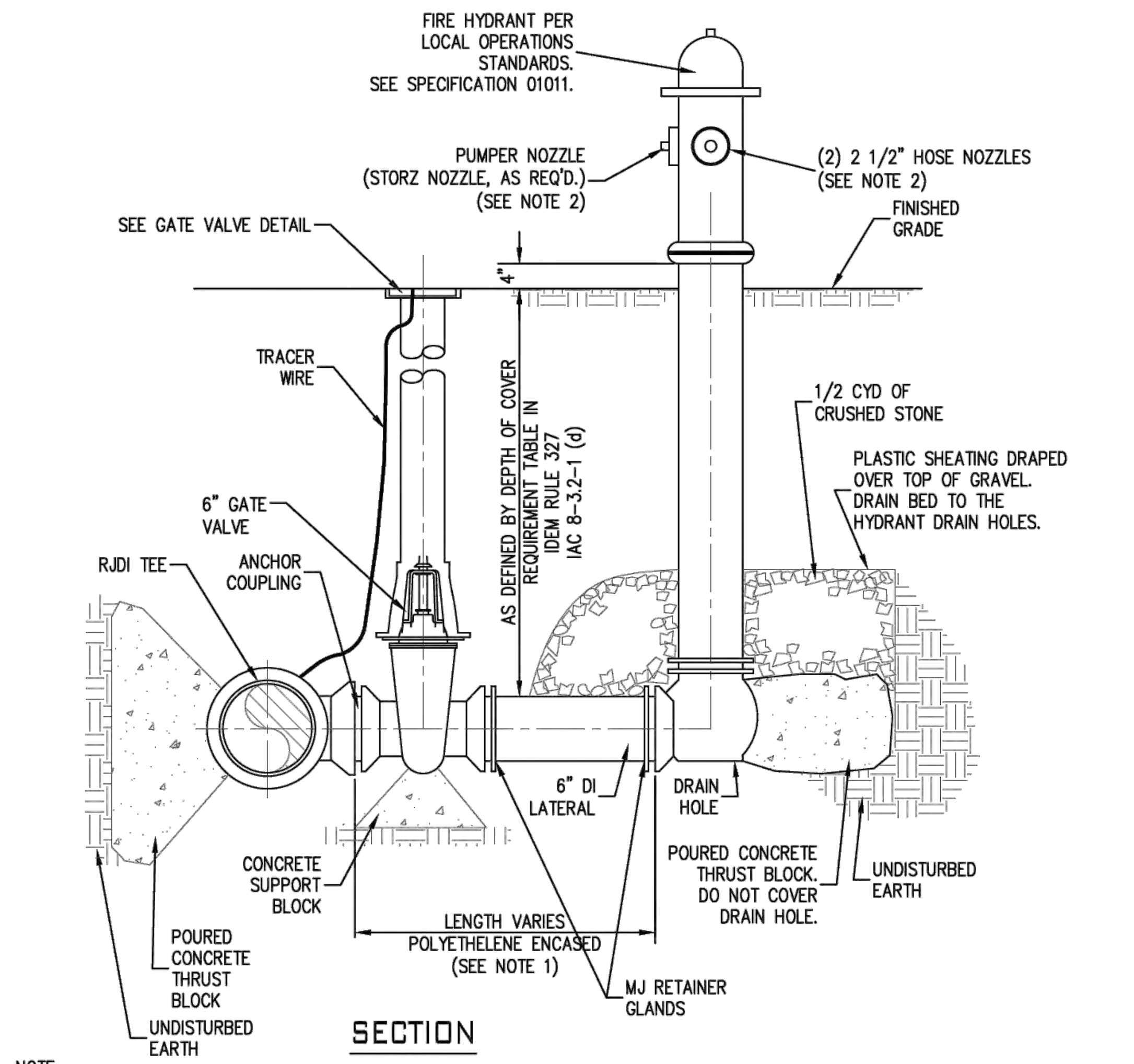
JOB No.	.	DRAWN	LMC	CHECKED	BTV	APPR.	GJI
DATE	APRIL 11, 2024	DESIGNED	BTV				

SHEET 1000

GREGORY J. ILKO
REGISTERED
NO. 10300059
STATE OF INDIANA
PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY	APPR.
1				
2				
3				
4				
5				
6				
7				
8				
9				

SHEET 1000



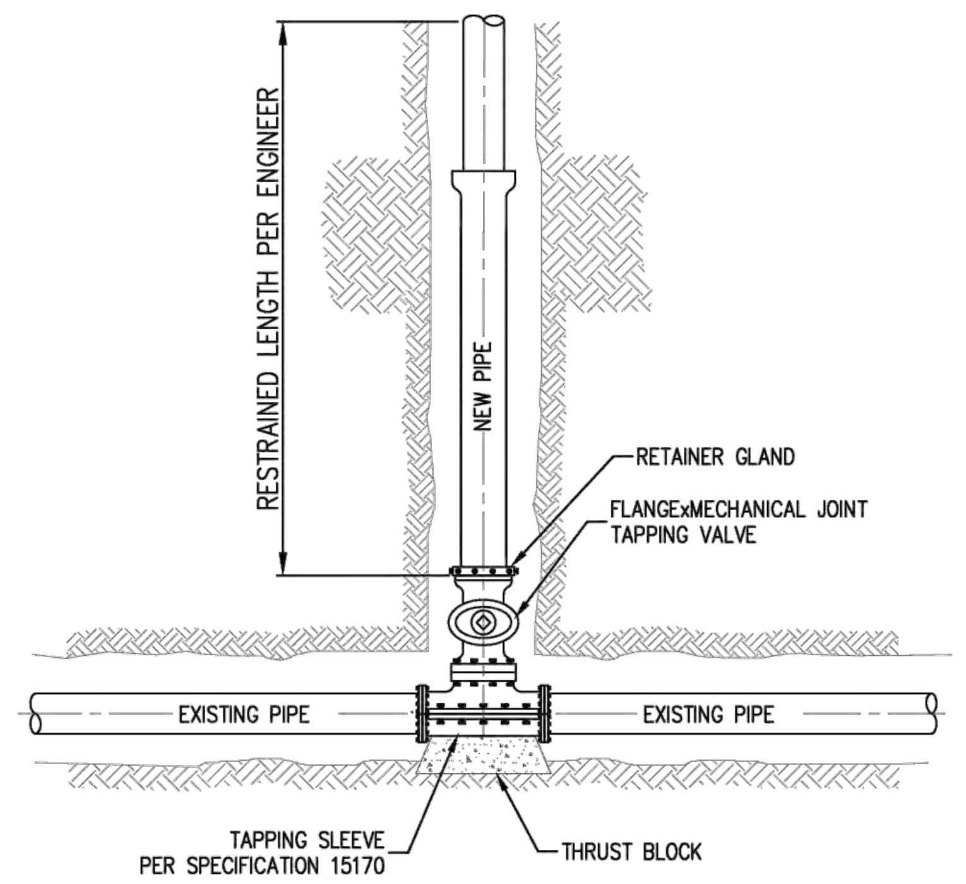
NOTE:
1. THE FIRE HYDRANT LATERAL, GATE VALVE, AND FIRE HYDRANT BARREL SHALL BE ENCASED IN POLYETHYLENE ENCASEMENT UP TO FINISHED GRADE PER SPECIFICATION 15130 PRIOR TO BACKFILL. THE POLYETHYLENE ENCASEMENT SHALL NOT INTERFERE WITH THE DRAIN HOLE.
2. WHEN INSTALLED BEHIND CURB, PUMPER AND HOSE NOZZLES TO BE AT LEAST 18"–24", DEPENDING ON LOCAL REQUIREMENTS, FROM FACE OF CURB.

FIRE HYDRANT DETAILS
N.T.S.

INDIANA AMERICAN WATER
ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL
FIRE HYDRANT DETAIL

DATE: JANUARY, 2018 | DRAWN BY: S. FORD
LATEST REV: JULY, 2018 | APP'D BY: E.N.



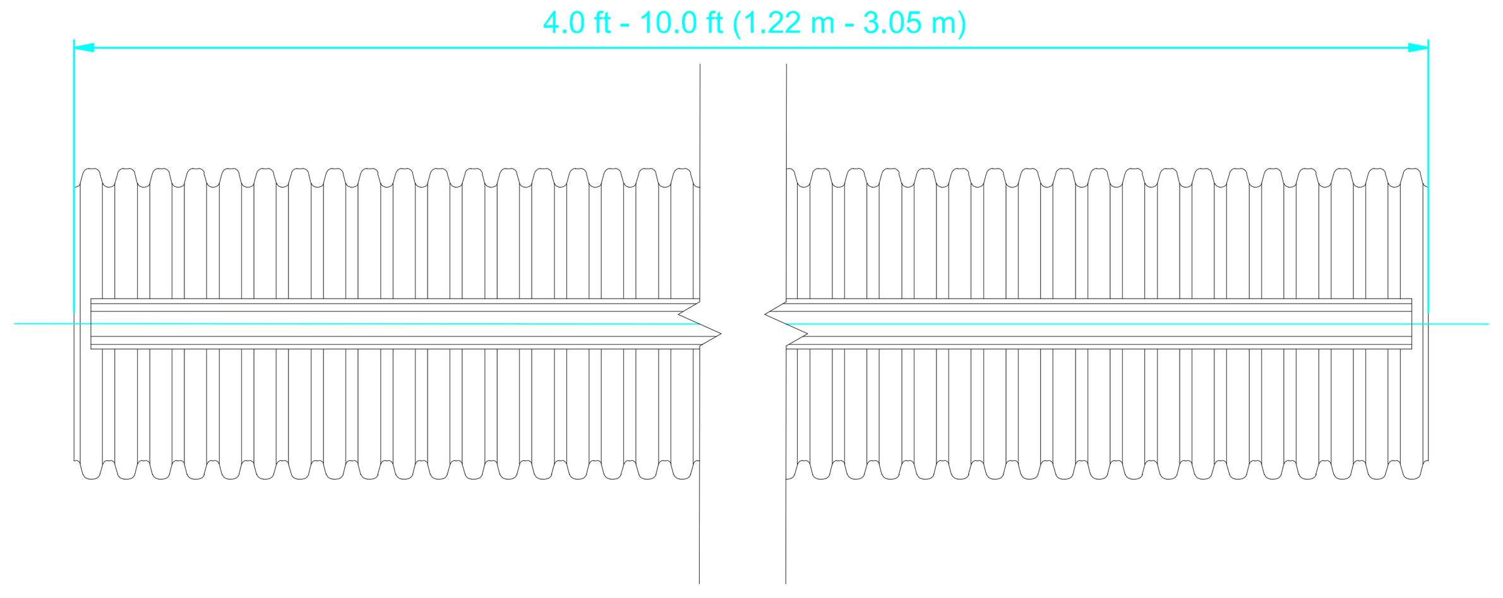
NOTE:
1. RETAINER GLAND PER SPECIFICATION 15130.
2. TAPPING SLEEVE FOR HDPE PIPE MUST BE APPROVED FOR THE APPLICATION BY THE MANUFACTURER AND INAWC.

TAPPING SLEEVE AND TAPPING VALVE DETAIL
N.T.S.

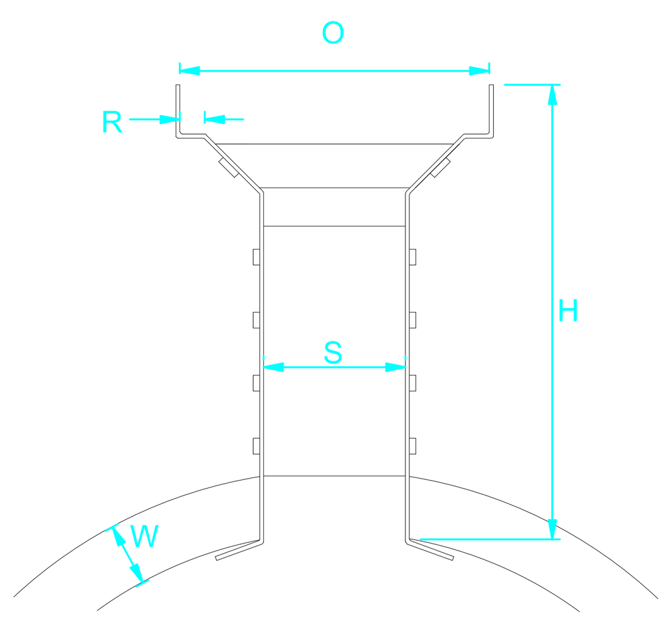
INDIANA AMERICAN WATER
ENGINEERING DEPARTMENT
153 N. EMERSON AVENUE
GREENWOOD, INDIANA 46143

STANDARD DETAIL
TAPPING SLEEVE AND TAPPING VALVE

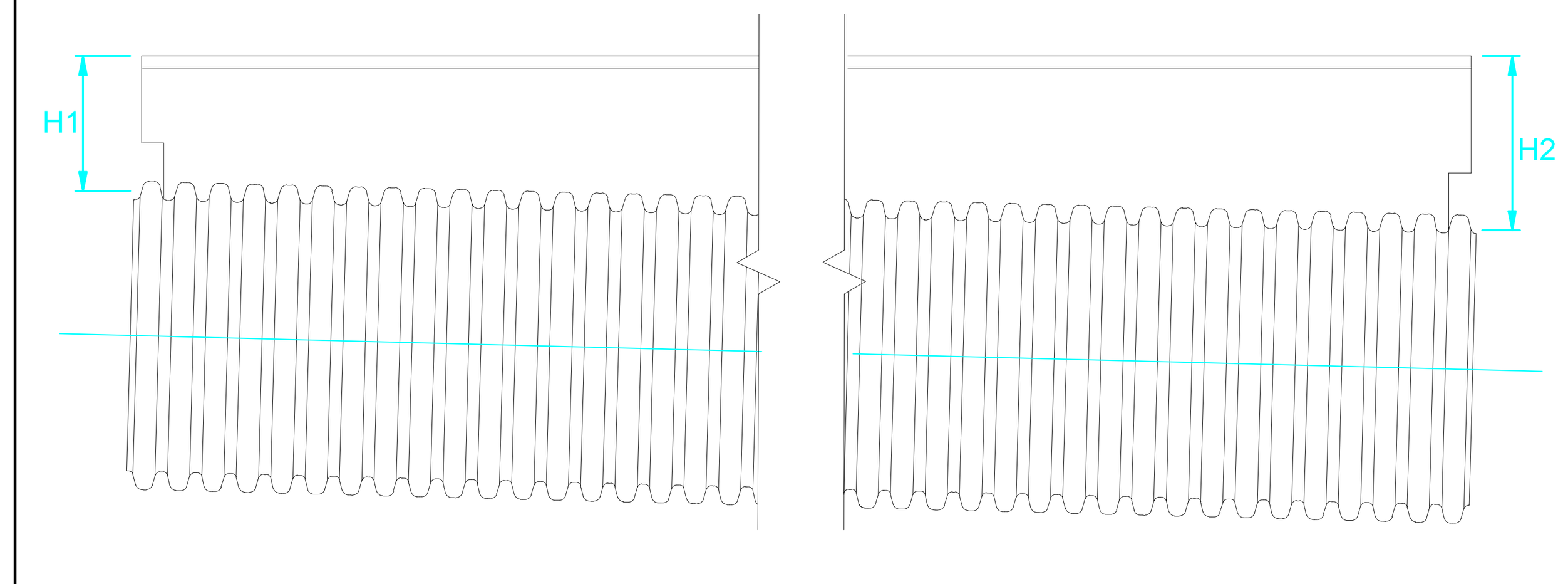
DATE: JANUARY, 2018 | DRAWN BY: S. FORD
LATEST REV: JANUARY, 2018 | APP'D BY: E.N.



PLAN VIEW



CROSS SECTION



PROFILE VIEW

PIPE Ø, in (mm)	H1-H2, in (mm)	W, in (mm)	O, in (mm)	S, in (mm)	R, in (mm)	PRODUCT #
6 (150)	3.00 - 24.00 (76 - 610)	0.46 (13)	5.00 (127)	2.25 (57)	0.32 (8)	0690DSXL
8 (200)	3.00 - 24.00 (76 - 610)	0.61 (15)				0890DSXL
10 (250)	3.00 - 24.00 (76 - 610)	0.73 (19)				1090DSXL
12 (300)	3.50 - 24.00 (89 - 609)	1.15 (29)				1290DSXL
12 (300)	24.01 - 36.00 (610 - 914)					1290DSDTXL
15 (375)	3.75 - 24.00 (95 - 609)	1.30 (33)				1590DSXL
15 (375)	24.01 - 36.00 (610 - 914)					1590DSDTXL
18 (450)	4.00 - 24.00 (102 - 609)	1.57 (40)				1890DSXL
18 (450)	24.01 - 36.00 (610 - 914)					1890DSDTXL
24 (600)	4.25 - 24.00 (121 - 609)	1.86 (40)				2490DSXL
24 (600)	24.01 - 36.00 (610 - 914)					2490DSDTXL
30 (750)	5.00 - 24.00 (127 - 609)	2.55 (65)				3090DSXL
30 (750)	24.01 - 36.00 (610 - 914)					3090DSDTXL
36 (900)	5.25 - 24.00 (133 - 609)	2.85 (72)				3690DSXL
36 (900)	24.01 - 36.00 (610 - 914)					3690DSDTXL

NOTES:
1. SEE GRATING DETAILS FOR SURFACE TREATMENT OPTIONS
2. H1 AND H2 VARY BASED ON PROJECT SPECIFICATIONS AND MAY NOT RESEMBLE THE IMAGES SHOWN ABOVE.

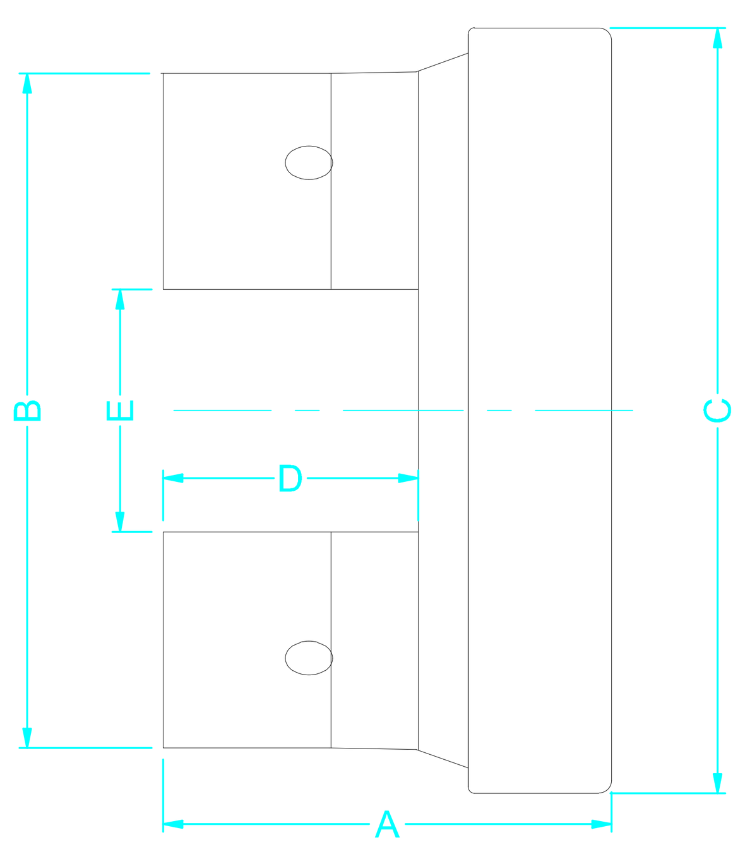
REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
1	Updates to dimensions	KJS	05/19/2023	–

Duraslot XL Pipe
Custom Slot Height
DRAWING NUMBER: STD-1401B

ADS Advanced Drainage Systems, Inc.
4640 TRUEMAN BLVD
HILLIARD, OHIO 43026

DRAWN BY: KJS
DATE: 04–18–2023
CK'D BY:
SCALE: NTS
SHEET 1 OF 1

SPIGOT END CAP FOR 6 & 10" PIPE DIAMETER

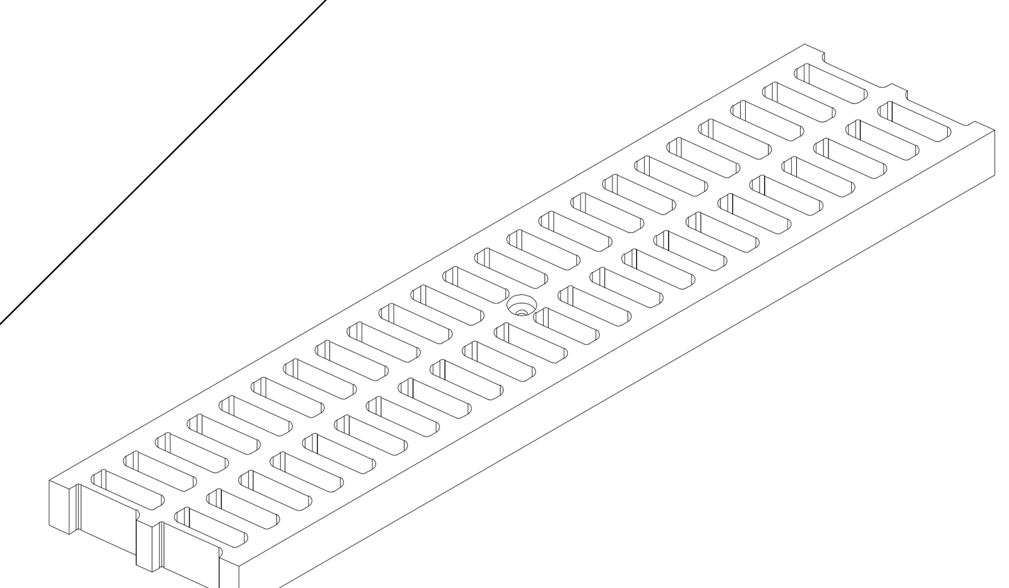


END CAP FOR DURASLOT XL DIMENSIONS

PIPE Ø, in (mm)	A, in (mm)	B, in (mm)	C, in (mm)	D, in (mm)	E, in (mm)	PRODUCT # (Std./Cust. Slot)
6 (150)	4.50 (114)	5.12 (130)	7.63 (194)	3.00 (76)	2.50 (64)	0633DSXL/ 0693DSXL
8 (200)	4.25 (108)	6.95 (177)	N/A	2.50 (64)	2.50 (64)	0833DSXL/ 0893DSXL
10 (250)	5.00 (127)	9.88 (251)	12.13 (308)	3.50 (89)	2.50 (64)	1033DSXL/ 1093DSXL
12 (300)	5.76 (146)	11.56 (294)	N/A	4.25 (108)	2.50 (64)	1233DSXL/ 1293DSXL
15 (375)	7.77 (197)	N/A	N/A	6.25 (159)	2.50 (64)	1533DSXL/ 1593DSXL
18 (450)	8.04 (204)	N/A	N/A	6.50 (165)	2.50 (64)	1833DSXL/ 1893DSXL
24 (600)	9.45 (240)	N/A	N/A	8.00 (200)	2.50 (64)	2433DSXL/ 2493DSXL
30 (750)	N/A	N/A	N/A	N/A	N/A	3033DSXL/ 3093DSXL
36 (900)	N/A	N/A	N/A	N/A	N/A	3633DSXL/ 3693DSXL

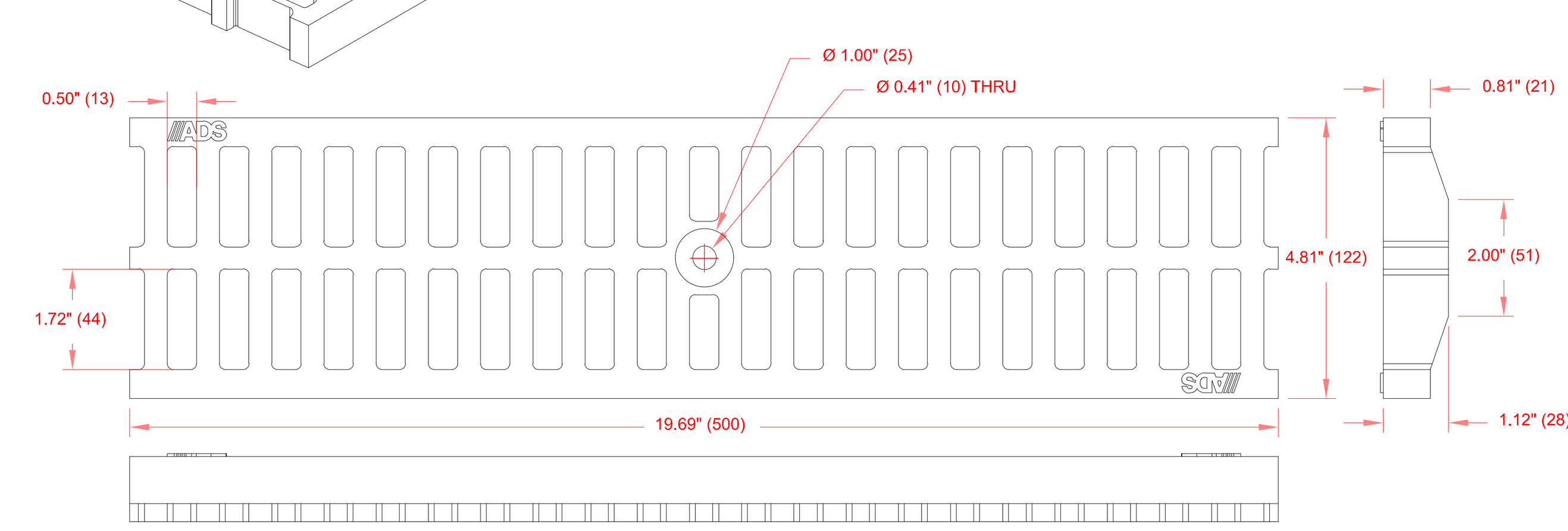
NOTES:
1. ALL FITTING DIMENSIONS ARE FOR REFERENCE ONLY.
2. ALL HARDWARE REQUIRED FOR ASSEMBLY IS INCLUDED WITH THE PURCHASE OF A COUPLER BAND, INCLUDING A SLOT END CAP.
3. THE TAYLOR END PLUG IS UTILIZED AS A PERMANENT END TREATMENT WITH DURASLOT PIPE.

ADS DURASLOT XL END CAP
NOT TO SCALE

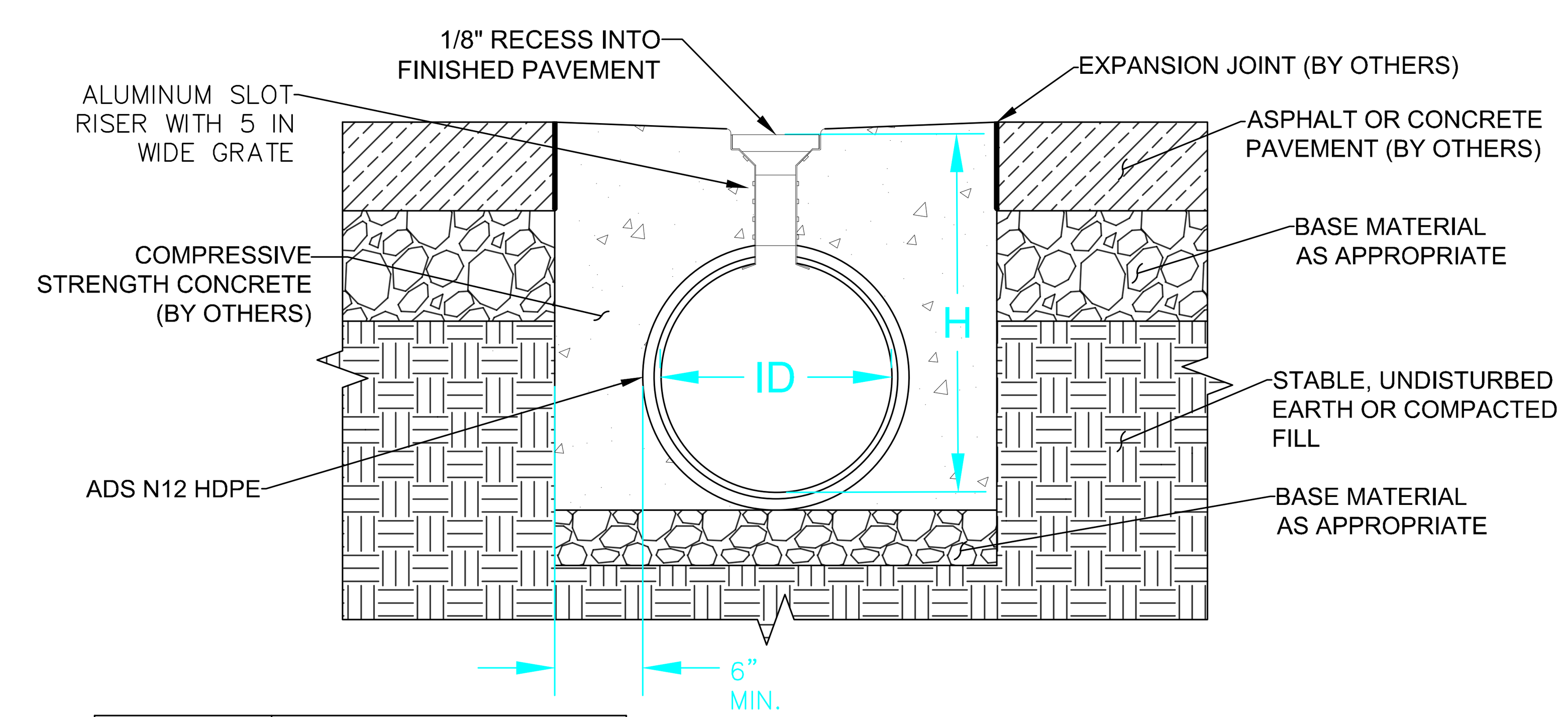


STANDARD GRATE INFORMATION

OPEN AREA (SQ IN)	OPEN AREA (%)	PRODUCT #
37.44	39.53	0520DIS



ADS DURASLOT XL GRATE DETAIL
NOT TO SCALE



Nominal Diameter, ID, in. (mm)	Depth of Invert, H, in. (mm)	
	Minimum	Maximum
6 (150)	12.50 (318)	30.00 (762)
8 (200)	14.50 (368)	32.00 (813)
10 (250)	16.50 (419)	34.00 (864)
12 (300)	19.00 (483)	48.00 (1219)
15 (375)	22.00 (559)	51.00 (1295)
18 (450)	25.00 (635)	54.00 (1372)
24 (600)	31.25 (794)	60.00 (1524)
30 (750)	38.25 (972)	66.00 (1676)
36 (900)	44.25 (1024)	72.00 (1829)

NOTES:
1. BACKFILL DESIGN SHOULD BE USED FOR HS–20 LOADING APPLICATIONS.
2. SITE ENGINEER TO PROVIDE SITE SPECIFIC DETAILS, SUCH AS CONCRETE STRENGTH.
3. REFER TO ADS TECH NOTE 2.11 FOR ADDITIONAL DESIGN INFORMATION.
4. SLOT RECESS IS NOT INCLUDED IN DEPTH OF INVERT TABLES.

ADS DURASLOT XL HEAVY TRAFFIC INSTALLATION DETAIL
NOT TO SCALE

CROSSROAD ENGINEERS, PC
Transportation & Development Consultants

MISCELLANEOUS DETAILS

JOHNSON COUNTY RECYCLE CENTER

DRAWN: LMC | CHECKED: BTV
DESIGNED: BTV | APPR.: GJI
JOB No.: . | DATE: APRIL 11, 2024

SHEET 1001

GREGORY J. ILKO, REGISTERED NO. 10300059, STATE OF INDIANA, PROFESSIONAL ENGINEER

REVISIONS: NO. | DATE | BY | APPR.
9 8 7 6 5 4 3 2 1

DIRECTORY PATH : R:\Active\Lancer+Beebe\JoCo Recycle Center\Design\CAD\Plans
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DATE/USER : 4/5/2024 3:15 PM / lbeaughan

EARTHWORK

1. SCOPE OF WORK

A. EXTENT: THE WORK REQUIRED UNDER THIS SECTION CONSISTS OF ALL EXCAVATING, FILLING, ROUGH GRADING AND RELATED ITEMS NECESSARY TO COMPLETE THE WORK INDICATED ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS. THE CONTRACTOR SHALL NOTIFY IN WRITING THE OWNER AND THE ENGINEER OF ANY CHANGES, ERRORS OR OMISSIONS FOUND ON THE PLANS OR IN THE FIELD, BEFORE WORK IS STARTED OR RESUMED.

1. IN GENERAL, THE ITEMS OF WORK TO BE PERFORMED UNDER THIS SECTION SHALL INCLUDE CLEARING AND GRUBBING, REMOVAL OF TREES AND STUMPS, STRIPPING AND STORAGE OF TOPSOIL, FILL COMPACTION AND ROUGH GRADING OF ENTIRE SITE. ALL TREES SHALL BE REMOVED UNLESS OTHERWISE NOTED IN PLANS OR DIRECTED BY OWNER.
2. EXCAVATED MATERIAL THAT IS SUITABLE MAY BE USED FOR FILLS. ALL UNSUITABLE MATERIAL AND ALL SURPLUS EXCAVATED MATERIAL NOT REQUIRED SHALL BE REMOVED FROM THE SITE. THE LOCATION OF DUMP AND LENGTH OF HAUL SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
3. PROVIDE AND PLACE ANY ADDITIONAL FILL MATERIAL FROM OFF THE SITE AS MAY BE NECESSARY TO PRODUCE THE GRADES REQUIRED. FILL OBTAINED FROM OFF SITE SHALL BE OF KIND AND QUALITY AS SPECIFIED FOR FILLS HEREIN AND THE SOURCE APPROVED BY THE OWNER.
4. THE CONTRACTOR SHALL ACCEPT THE SITE AS HE FINDS IT AND SHALL REMOVE ALL TRASH, RUBBISH AND DEBRIS FROM THE SITE PRIOR TO STARTING EXCAVATION

2. BENCHMARK

A. MAINTAIN CAREFULLY ALL BENCH MARKS, MONUMENTS AND OTHER REFERENCE POINTS; IF DISTURBED OR DESTROYED, CONTRACTOR SHALL CONTACT ENGINEER.

3. REMOVAL OF TREES

A. THE INTEGRITY OF THE TOPOGRAPHIC FEATURES (INCLUDING TREES) SHALL BE PERSEVERED AS MUCH AS POSSIBLE THE CONTRACTOR SHALL COORDINATE WITH OWNER AND/OR ENGINEER PRIOR TO CLEARING THE SITE FOR CONSTRUCTION.

B. ALL BRUSH, STUMPS, WOOD AND OTHER REFUSE FROM THE TREES REMOVED SHALL BE HAULED TO DISPOSAL AREAS OFF OF THE SITE. DISPOSAL BY BURNING SHALL NOT BE PERMITTED UNLESS PROPER PERMITS ARE OBTAINED (WHERE APPLICABLE).

4. HANDLING OF TOPSOIL

A. REMOVE ALL ORGANIC MATERIAL FROM THE AREAS TO BE OCCUPIED BY BUILDINGS, ROADS, WALKS AND PARKING AREAS. PILE AND STORE TOPSOIL AT A LOCATION WHERE IT WILL NOT INTERFERE WITH CONSTRUCTION OPERATIONS. TOPSOIL SHALL BE REASONABLE FREE FROM SUBSOIL, DEBRIS, WEEDS, GRASS, STONES, ETC.

B. AFTER COMPLETION OF SITE GRADING AND SUBSURFACE UTILITY INSTALLATION, TOPSOIL SHALL BE REPLACED IN AREAS DESIGNATED ON THE EROSION CONTROL PLAN FOR SEEDING AND/OR SODDING. ANY REMAINING TOPSOIL SHALL BE USED FOR FINISHED GRADING AROUND STRUCTURES AND LANDSCAPING AREAS.

5. DISPOSITION OF UTILITIES

A. RULES AND REGULATIONS GOVERNING THE RESPECTIVE UTILITIES SHALL BE OBSERVED IN EXECUTING ALL WORK UNDER THIS SECTION.

B. IF ACTIVE UTILITIES ARE ENCOUNTERED BUT NOT SHOWN ON THE DRAWINGS, THE ENGINEER SHALL BE ADVISED BEFORE WORK IS CONTINUED.

C. INACTIVE AND ABANDONED UTILITIES ENCOUNTERED IN EXCAVATING AND GRADING OPERATIONS SHALL BE REPORTED TO THE ENGINEER. THEY SHALL BE REMOVED, PLUGGED OR CAPPED AS DIRECTED BY THE UTILITY COMPANY OR THE ENGINEER.

D. IT SHALL BE THE RESPONSIBILITY OF EACH CONTRACTOR TO VERITY ALL EXISTING UTILITIES AND CONDITIONS PERTAINING TO HIS PHASE OF THE WORK. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNERS OF THE VARIOUS UTILITIES BEFORE WORK IS STARTED.

6. SITE GRADING

A. GRADES: CONTRACTOR SHALL PERFORM ALL CUTTING, FILLING, COMPACTING OF FILLS AND ROUGH GRADING REQUIRED TO BRING ENTIRE PROJECT AREA TO GRADE AS SHOWN ON THE DRAWINGS.

B. ROUGH GRADING: THE TOLERANCE FOR PAVED AREAS SHALL NOT EXCEED 0.10 FEET PLUS OR MINUS ABOVE THE ESTABLISHED SUBGRADE. ALL OTHER AREAS SHALL NOT EXCEED 0.10 FEET PLUS OR MINUS THE ESTABLISHED GRADE. ALL BANKS AND OTHER BREAKS IN GRADE SHALL BE ROUNDED AT THE TOP AND BOTTOM.

C. COMPACTION REQUIREMENTS:

1. ALL BUILDING PAD AREAS SHALL BE COMPACTED TO STANDARDS SPECIFIED BY LOCAL AND/OR STATE BUILDING CODES.
2. COMPACTION REQUIREMENTS OF PAVED AREAS SHALL BE 95% OF MAXIMUM DRY DENSITY.

7. EARTH WORK BALANCE

A. THE CONTRACTOR SHALL CONFIRM ALL EARTHWORK QUANTITIES PRIOR TO START OF CONSTRUCTION. IF AN EXCESS OR SHORTAGE OF EARTH IS ENCOUNTERED, THE CONTRACTOR SHALL CONFIRM WITH THE OWNER AND ENGINEER THE REQUIREMENTS FOR STOCKPILING, REMOVAL OR IMPORTING OF EARTH.

MINOR ADJUSTMENTS TO THE GRADES MAY BE REQUIRED TO EARTHWORK BALANCES WHEN MINOR EXCESS MATERIAL OR SHORTAGES ARE ENCOUNTERED. IT IS RECOGNIZED BY THE PARTIES HERETO THAT THE CALCULATIONS OF THE ENGINEER IN ACCORDANCE WITH THE AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARDS FOR SUCH CALCULATIONS. FURTHER, THAT THESE CALCULATIONS ARE SUBJECT TO THE INTERPRETATIONS OF SOIL BORINGS AS THE PHYSICAL LIMITS IN FINISH GRADE AND COMPACTION PERMITTED THE CONTRACTOR, AND THAT ALL OF THESE PARAMETERS MAY CAUSE EITHER AN EXCESS OR SHORTAGE OF ACTUAL EARTHWORK MATERIALS TO COMPLETE THE PROJECT. IF SUCH AN ACTUAL MINOR EXCESS OR SHORTAGE OF ACTUAL EARTHWORK MATERIALS OCCURS, THE CONTRACTOR SHALL CONTACT THE ENGINEER TO DETERMINE IF ADJUSTMENTS CAN BE MADE TO CORRECT THE IMBALANCE OF EARTH.

STREETS

1. SCOPE OF WORK

A. THE WORK REQUIRED UNDER THIS SECTION INCLUDES ALL CONCRETE AND BITUMINOUS PAVING AND RELATED ITEMS NECESSARY TO COMPLETE THE WORK INDICATED ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO:

1. ALL STREETS, PARKING AREAS WITHIN THE CONTRACT LIMITS.
2. CURBS AND CONCRETE RAMPS.
3. SIDEWALKS AND CONCRETE SLABS.
4. IN THE CASE OF ANY CONFLICTS WITH THESE SPECIFICATIONS AND LOCAL, STATE, FEDERAL SPECIFICATIONS THE MORE STRINGENT SHALL APPLY.

B. IN THE CASE OF ANY CONFLICTS WITH THESE SPECIFICATIONS AND LOCAL, STATE, FEDERAL SPECIFICATIONS THE MORE STRINGENT SHALL APPLY.

2. PAVEMENT CONSTRUCTION

A. ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND CONFORM TO THE MINIMUM STANDARDS OF THE CITY OF FRANKLIN AND ENGINEERING DEPARTMENTS, AND IF THERE ARE AREAS UNDEFINED USE THE CURRENT I.N.D.O.T. STANDARDS SPECIFICATIONS, AS REVISED.

B. FLEXIBLE PAVEMENT

1. MATERIALS

A. GENERAL: USE LOCALLY AVAILABLE MATERIALS AND GRADATIONS WHICH EXHIBIT A SATISFACTORY RECORD OF PREVIOUS INSTALLATIONS.

B. COMPACTED AGGREGATE BASE: SOUND, ANGULAR CRUSHED LIMESTONE, CRUSHED OR UNCRUSHED GRAVEL, OR CRUSHED OR PROCESSED AIR-COOLED BLAST FURNACE SLAG. COURSE AGGREGATE SHALL BE CLASS A, TYPE "O" AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.

C. BASE COURT AGGREGATE: SOUND, ANGULAR CRUSHED STONE, CRUSHED OR UNCRUSHED GRAVEL, OR CRUSHED SLAG, SAND, STONE, OR SLAG SCREENINGS. COARSE AGGREGATES SHALL BE CLASS A OR B AND CONFORM TO I.N.D.O.T. STANDARDS SPECIFICATIONS SECTION 903.

D. COARSE AGGREGATE FOR SURFACE AND BINDER MIXTURES: CRUSHED STONE, CRUSHED GRAVEL, CRUSHED SLAB, AND SHARP EDGED NATURAL SAND. SURFACE COARSE AGGREGATES SHALL BE CLASS A AND CONFORM TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.

E. ASPHALT CEMENT: PETROLEUM ASPHALT CEMENT, AP 5 WITH PENETRATION OF 60–70 OR VISCOSITY GRADED ASPHALT CEMENT AC-20 CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 903.

F. PRIME COAT: MEDIUM-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 408.

G. TACK COAT: RAPID-CURE LIQUID ASPHALT OR ASPHALT EMULSION CONFORMING TO I.N.D.O.T. STANDARD SPECIFICATIONS SECTION 409.

H. LANE MARKING PAINT: CHLORINATED RUBBER-ALKYD TYPE, AASHTO M248 (FS TT-P-115), TYPE III.

3. ASPHALT-AGGREGATE MIXTURE

ALL BITUMINOUS MIXTURES ARE TO CONFORM TO CURRENT I.N.D.O.T. SPECIFICATIONS

A. SURFACE COURSE: HMA SURFACE 9.5mm

B. BINDER COURSE: HMA INTERMEDIATE 19.0mm

C. BASE COURSE: TYPE: HMA BASE 25.0mm

**PROVIDED A JOB MIX FORMULA FOR EACH TYPE OF ASPHALT PRIOR TO THE BEGINNING OF THE CONSTRUCTION PROJECT.

4. SURFACE PREPARATION

A. REMOVE LOOSE MATERIAL FROM COMPACTED SUBBASE SURFACE IMMEDIATELY BEFORE APPLYING PRIME COAT.

I) PROOF ROLL SUBGRADE SURFACE WITH LOADED TRI-AXLE TRUCK (48 HOUR NOTICE IS REQUIRED TO BE GIVEN TO THE CITY OF FRANKLIN ENGINEERING DEPT.) TO CHECK FOR UNSTABLE AREAS AND AREAS REQUIRING ADDITIONAL COMPACTION. IF PROOF ROLL EXCEEDS MAXIMUM ¼" DEFLECTION, CONTRACTOR SHALL COORDINATE WITH ENGINEER AND CITY OF FRANKLIN TO DETERMINE IF SUBGRADE STABILIZATION IS REQUIRED.

II) NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.

B. AGGREGATE BASE: AFTER PLACEMENT, PROOF ROLL COMPACTED AGGREGATE BASE SURFACE TO CHECK FOR UNSTABLE AREAS AND AREAS REQUIRING ADDITIONAL COMPACTION.

I) NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT AGGREGATE BASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.

II) REMOVE LOOSE MATERIAL FROM COMPACTED AGGREGATE BASE SURFACE IMMEDIATELY BEFORE APPLYING PRIME COAT.

5. PLACING THE MIX

A. GENERAL: PLACE BITUMINOUS AGGREGATE MIXTURE ON PREPARED SURFACE, SPREAD AND STRIKE-OFF. SPREAD MIXTURE AT MINIMUM TEMPERATURE OF 225 DEGREES F.(107 DEGREES C). PLACE INACCESSIBLE AND SMALL AREAS BY HAND. PLACE EACH COURSE TO REQUIRED GRADE, CROSS-SECTION, AND COMPACTED THICKNESS.

B. BASE COURSE, COMPACTED AGGREGATE: SPREAD AND COMPACT IN TWO LIFTS AS FOLLOWS:

I) FIRST LIFT: NO. 53'S SHALL BE A MINIMUM OF 4" OR ½ THE TOTAL DEPTH OF AGGREGATE. EXTEND THE FIRST LIFT 4" OR A DISTANCE EQUAL TO THE DEPTH OF THE LIFT BEYOND THE SECOND LIFT.

II) SECOND LIFT: SIZE NO. 53

C. PRIME COAT: SUBBASE SURFACE SHALL BE PRIMED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SECTION 408 OF I.N.D.O.T. STANDARD SPECIFICATIONS.

D. HOT ASPHALT CONCRETE BINDER COURSE: SPREAD AND ROLL TO MINIMUM FINISH DEPTHS INDICATED ON DETAILS.

E. TACK COAT: BINDER COURSE SHALL BE TACKED PRIOR TO THE INSTALLATION OF THE SURFACE COURSE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SECTION 409 OF I.N.D.O.T. STANDARD SPECIFICATIONS.

F. SURFACE COURSE: SPREAD AND ROLL TO MINIMUM FINISH DEPTH INDICATED ON DETAILS. FINISH ELEVATION SHALL BE TRUE TO LINE AND GRADE WITHIN ½" OF TRUE ELEVATIONS.

G. PAVER PLACING: PLACE IN STRIPS NOT LESS THAN 10' WIDE, UNLESS OTHERWISE ACCEPTABLE TO ARCHITECT/ENGINEER. AFTER FIRST STRIP HAS BEEN PLACED AND ROLLED, PLACE SUCCEEDING STRIPS AND EXTEND ROLLING TO OVERLAP PREVIOUS STRIPS. COMPLETE BINDER COURSE FOR A SECTION BEFORE PLACING SURFACE COURSE.

H. JOINTS: MAKE JOINTS BETWEEN OLD AND NEW PAVEMENTS, OR BETWEEN PAVER PASSES, OR BETWEEN SUCCESSIVE DAYS WORK, TO ENSURE CONTINUOUS BOND BETWEEN ADJOINING WORK. CONSTRUCT JOINTS TO HAVE SAME TEXTURE, DENSITY AND SMOOTHNESS AS OTHER SECTIONS. CLEAN CONTACT SURFACES AND APPLY TACT COAT.

6. ROLLING

A. GENERAL: BEGIN ROLLING WHEN MIXTURE WILL BEAR ROLLER WEIGHT WITHOUT EXCESSIVE DISPLACEMENT.

I) COMPACT MIXTURE WITH HOT HAND TAMPERS OR VIBRATING PLATE COMPACTORS IN AREAS INACCESSIBLE TO ROLLERS.

B. BREAKDOWN ROLLING: ACCOMPLISH BREAKDOWN OR INITIAL ROLLING IMMEDIATELY FOLLOWING ROLLING OF JOINTS AND OUTSIDE EDGE. CHECK SURFACE AFTER BREAKDOWN ROLLING, AND REPAIR DISPLACED AREAS BY LOOSENING AND FILLING, IF REQUIRED, WITH HOT MATERIAL.

C. SECOND ROLLING: FOLLOW BREAKDOWN ROLLING AS SOON AS POSSIBLE, WHICH MIXTURE IS HOT. CONTINUE SECOND ROLLING UNTIL MIXTURE HAS BEEN THOROUGHLY COMPACTED.

D. FINISH ROLLING: PERFORM FINISH ROLLING WHILE MIXTURE IS STILL WARM ENOUGH FOR REMOVAL OF ROLLER MARKS. CONTINUE ROLLING UNTIL ROLLER MARKS ARE ELIMINATED AND COURSE HAS ATTAINED MAXIMUM DENSITY.

E. PATCHING: REMOVE AND REPLACE PAVING AREAS MIXED WITH FOREIGN MATERIALS AND DEFECTIVE AREAS. CUT OUT SUCH AREAS AND FILL WITH FRESH, HOT BITUMINOUS AGGREGATE MIX. COMPACT BY ROLLING TO MAXIMUM SURFACE DENSITY AND SMOOTHNESS.

F. PROTECTION: AFTER FINAL ROLLING, DO NOT PERMIT VEHICULAR TRAFFIC ON PAVEMENT UNTIL IT HAS COOLED AND HARDENED.

G. ERECT BARRICADES TO PROTECT PAVING FROM TRAFFIC UNTIL MIXTURE HAS COOLED ENOUGH NOT TO BECOME MARKED.

7. TRAFFIC AND LANE MARKINGS

A. CLEANING: SWEEP AND CLEAN SURFACE TO ELIMINATE LOOSE MATERIAL AND DUST.

B. STRIPPING: USE CHLORINATED RUBBER BASE TRAFFIC LANE-MARKING PAINT, FACTORY MIXED, QUICK-DRYING, AND NON-BLEEDING.
COLOR: YELLOW

I) DO NOT APPLY TRAFFIC AND LANE MARKING PAINT UNTIL LAYOUT AND PLACEMENT HAS BEEN VERIFIED WITH ARCHITECT/ENGINEER.

II) APPLY PAINT WITH MECHANICAL EQUIPMENT TO PRODUCE UNIFORM STRAIGHT EDGES. APPLY IN TWO COATS AT MANUFACTURER'S RECOMMENDED RATES.

8. FIELD QUALITY CONTROL

A. TESTING AND INSPECTION SERVICE:

I) OWNER SHALL EMPLOY A TESTING LABORATORY TO PERFORM PAVEMENT TESTING AND INSPECTION SERVICE FOR QUALITY CONTROL DURING PAVING OPERATIONS.

II) TESTING SERVICE SHALL HAVE REPRESENTATIVE PRESENT TO OBSERVE AND PERFORM TESTS AT ALL TIMES PAVING WORK IS IN PROGRESS.

B. GENERAL: TESTING SERVICE REPRESENTATIVE SHALL TAKE A MINIMUM OF TWO SAMPLES PER LIFT OF BITUMINOUS AGGREGATE MIX EACH DAY BEFORE PAVING OPERATION. LABORATORY TEST SHALL BE PERFORMED ON THESE SAMPLES TO DETERMINE AGGREGATE GRADATION AND ASPHALT CONTENT.

I) TEST IN-PLACE COMPACTED BITUMINOUS AGGREGATE MIX COURSES FOR COMPLIANCE WITH REQUIREMENTS FOR THICKNESS, DENSITY AND AIR VOIDS AND SURFACE SMOOTHNESS. REPAIR OR REMOVE AND REPLACE UNACCEPTABLE PAVING AS DIRECTED BY ENGINEER.

II) A TEST SECTION AT A MINIMUM SIZE OF 100'X12' SHALL BE PLACED AT A LOCATION AS DIRECTED BY THE COUNTY PRIOR TO FULL PRODUCTION FOR EACH TYPE OF MIX. THE TEST SECTION SHALL BE COMPACTED TO DETERMINE A TARGET DENSITY FOR THE REMAINDER OF THE PAVEMENT.

C. THICKNESS: IN-PLACE COMPACTED THICKNESS WILL NOT BE ACCEPTABLE IF EXCEEDING FOLLOWING ALLOWABLE VARIATION FROM REQUIRED THICKNESS:

AGGREGATE BASE COURSE: ½", PLUS OR MINUS
BASE COURSE: ½", PLUS OR MINUS
BINDER COURSE: ¼", PLUS OR MINUS
SURFACE COURSE: ¼", PLUS OR MINUS

I) A MINIMUM OF TWO PAVEMENT CORES PER COMPACTED LIFT SHALL BE TAKEN. CORES ARE TO BE TAKEN AT LOCATIONS AND AT TIMES OF DAY AS DIRECTED BY THE TESTING SERVICE. THE FOLLOWING TESTS SHALL BE PERFORMED BY THE TESTING SERVICE, ON EACH PAVEMENT CORE:

II) A TEST SECTION AT A MINIMUM SIZE OF 100'X12' SHALL BE PLACED AT A LOCATION AS DIRECTED BY THE COUNTY PRIOR TO FULL PRODUCTION FOR EACH TYPE OF MIX. THE TEST SECTION SHALL BE COMPACTED TO DETERMINE A TARGET DENSITY OF THE REMAINDER OF THE PAVEMENT.

D. PAVEMENT THICKNESS
DENSITY
AIR VOIDS

I) TESTING SERVICE SHALL SUBMIT CERTIFIED RESULTS TO THE OWNER AND ARCHITECT/ENGINEER WITHIN 72 HOURS AFTER TESTS ARE MADE, WITH THEIR COMMENTS AND RECOMMENDATIONS FOR ACTION.

II) PAVEMENT WHICH FAILS TO COMPLY WITH APPROVED JOB MIX FORMULA SHALL BE REPLACED AS DIRECTED BY THE ARCHITECT/ENGINEER.

E. SURFACE SMOOTHNESS: TEST FINISHED SURFACE FOR SMOOTHNESS, USING 10' STRAIGHTEDGE APPLIED PARALLEL WITH, AND AT RIGHT ANGLES TO CENTERLINE OF PAVED AREA. SURFACE WILL NOT BE ACCEPTABLE IF EXCEEDING THE FOLLOWING TOLERANCES FOR SMOOTHNESS.

AGGREGATE BASE COURSE SURFACE:1/4"
BASE COURSE SURFACE: 1/4"
BINDER COURSE SURFACE: 1/8"
WEARING COURSE SURFACE: 1/8"

I) CHECK SURFACED AREAS AT INTERVALS AS DIRECTED BY TESTING SERVICE.

F. DENSITY TESTS: DENSITY TESTS SHALL BE MADE AT EACH LIFT. TEST SHALL BE AS FOLLOWS:

I) TESTS WILL BE REQUIRED AT VARIOUS TIMES AND LOCATIONS FOR SUBGRADE AND BASE COURSES FOR ASPHALT PAVING AREAS.

G. TESTING SERVICE SHALL SUBMIT CERTIFIED RESULTS TO THE OWNER AND ENGINEER WITHIN 72 HOURS AFTER TESTS ARE MADE WITH THEIR COMMENTS AND RECOMMENDATIONS FOR ACTION.

I) SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH I.N.D.O.T. STANDARD SPECIFICATIONS, SECTION 207 AND SUBSECTION 501.07. NO TRAFFIC SHALL BE PERMITTED ON THE PREPARED SUBGRADE PRIOR TO PAVING.

II) SEE SITE GRADING, UNDER THE 'EARTHWORK' SECTION FOR ADDITIONAL COMPACTION REQUIREMENTS.

9. APPLICATION

A. GRADING: DO ANY NECESSARY GRADING IN ADDITION TO THAT PERFORMED IN ACCORDANCE WITH EARTHWORK SECTION TO BRING SUBGRADES, AFTER FINAL COMPACTION, TO THE REQUIRED GRADES AND SECTIONS FOR SITE IMPROVEMENTS.

B. PREPARATION OF SUBGRADE: REMOVE SPONGY AND OTHERWISE UNSUITABLE MATERIAL AND REPLACE WITH STABLE MATERIAL. NO TRAFFIC WILL BE ALLOWED ON PREPARED SUBGRADE PRIOR TO PAVING.

C. COMPACTION OF SUBGRADE: THE FIRST 6 INCHES BELOW THE SUBGRADE SHALL BE COMPACTED TO AT LEAST 100% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE PROVISIONS OF AASHO T-99. WATER SHALL BE PREVENTED FROM STANDING ON THE COMPACTED SUBGRADE.

D. UTILITY STRUCTURES: CHECK FOR CORRECT ELEVATION OF ALL MANHOLE COVERS, VALVE BOXES AND SIMILAR STRUCTURES LOCATED WITHIN AREAS TO BE PAVED, AND MAKE, OR HAVE MADE, ANY NECESSARY ADJUSTMENTS IN SUCH STRUCTURES.

E. PLACING CONCRETE

1. SUBGRADE: PLACE CONCRETE ONLY ON A MOIST, COMPACTED SUBGRADE OR BASE FREE FROM LOOSE MATERIAL. PLACE NO CONCRETE ON A MUDDY OR FROZEN SUBGRADE.
2. FORMS: ALL FORMS SHALL BE FREE FROM WARP, TIGHT ENOUGH TO PREVENT LEAKAGE AND SUBSTANTIAL ENOUGH TO MAINTAIN THEIR SHAPE AND POSITION WITHOUT SPRINGING OR SETTLING, WHEN CONCRETE IS PLACED. FORMS SHALL BE CLEAN AND SMOOTH IMMEDIATELY BEFORE CONCRETING.
3. PLACING CONCRETE: CONCRETE SHALL BE DEPOSITED SO AS TO REQUIRE AS LITTLE REHANDLING AS PRACTICABLE. WHEN CONCRETE IS TO BE PLACED AT AN ATMOSPHERIC TEMPERATURE OF 35 DEGREES F. OR LESS, PARAGRAPH 702.10 OF THE I.N.D.O.T. SPECIFICATIONS LATEST REVISIONS SHALL BE FOLLOWED.

F. CONCRETE CURB

1. EXPANSION JOINTS: SHALL BE 1/2 INCH THICK PREMOULDED AT ENDS OF ALL RETURNS AND AT A MAXIMUM SPACING OF 100 FEET.
2. CONTRACTION JOINTS UNLESS OTHERWISE PROVIDED, CONTRACTION JOINTS SHALL BE SAWED JOINTS SPACED 10 FEET ON CENTER.
3. FINISH: TAMP AND SCREED CONCRETE AS SOON AS PLACED, AND FILL ANY HONEY COMBED PLACES. FINISH SQUARE CORNERSTONE 1/4 INCH RADIUS AND OTHER CORNERS TO RADII SHOWN.

G. CONCRETE WALKS AND EXTERIOR STEPS

1. SLOPES: PROVIDE ¼ INCH PER FOOT CROSS SLOPE. MAKE ADJUSTMENTS ON SLOPES AT WALK INTERSECTIONS AS NECESSARY TO PROVIDE PROPER DRAINAGE.
2. DIMENSIONS: WALKS AND STEPS SHALL BE ONE COURSE CONSTRUCTION AND OF WIDTHS AND DETAILS SHOWN ON THE DRAWINGS.
3. FINISH: SCREED CONCRETE AND TROWEL WITH A STEEL TROWEL TO A HARD DENSE SURFACE AFTER SURFACE WATER HAS DISAPPEARED. APPLY MEDIUM BROOM FINISH AND SCRIBE TRANSVERSE JOINTS AT 6 FOOT SPACING. PROVIDE ½ INCH EXPANSION JOINTS WHERE SIDEWALKS INTERSECT, AND AT A MAXIMUM SPACING OF 48 FEET BETWEEN EXPANSION JOINTS.

H. CURING CONCRETE FOR WALKS AND CURBS: EXCEPT AS OTHERWISE SPECIFIED, CURE ALL CONCRETE BY ONE OF THE METHODS DESCRIBED IN SECTION 501.17 OF THE I.N.D.O.T. SPECIFICATIONS, LATEST REVISION.

I. BITUMINOUS PAVEMENT: HOT MIX ASPHALT PAVEMENT SHALL BE AS SPECIFIED IN SECTION 402 OF THE I.N.D.O.T. SPECIFICATIONS LATEST REVISIONS. PAVING WILL NOT BE PERMITTED DURING UNFAVORABLE WEATHER OR THEN THE TEMPERATURE IS 40 DEGREES F. AND FALLING.

J. COMPACTED AGGREGATE SUBBASE: THE THICKNESS SHOWN ON THE DRAWINGS IS THE MINIMUM THICKNESS OF THE FULL COMPACTED SUBBASE. COMPACTION SHALL BE ACCOMPLISHED BY ROLLING WITH A SMOOTH WHEELED ROLLER WEIGHING 8 TO 10 TONS. COMPACT TO 95% COMPACTION USING STANDARD TESTING PROCEDURES. ALONG CURBS, HEADERS AND WALLS AND AT ALL PLACES NOT ACCESSIBLE TO THE ROLLER, THE AGGREGATE MATERIAL SHALL BE TAMPED WITH MECHANICAL TAMPERS OR WITH APPROVED HAND TAMPERS.

K. CONCRETE RAMPS

1. CONCRETE RAMPS FOR THE DISABLED SHALL BE REQUIRED AS SPECIFIED IN THE PLANS AND SHALL CONFORM WITH CURRENT SPECIFICATIONS ESTABLISHED BY THE AMERICAN DISABILITIES ACT (ADA), SECTION 4.7, "CURB RAMPS."
2. THE CONCRETE RAMP SHALL BE FLUSH AND FREE OF ABRUPT CHANGES WITH SIDEWALKS, GUTTERS OR STREETS, AND PROVIDE A MAXIMUM SLOPE OF 1:12.
3. THE MINIMUM WIDTH OF A CONCRETE RAMP SHALL BE (48) INCHES EXCLUSIVE OF FLARED SIDES.
4. SIDES OF CONCRETE RAMPS SHALL HAVE FLARED SIDES AS SHOWN IN THE PLANS.

STORM SEWER SYSTEMS

1. SCOPE OF WORK

A. THE WORK UNDER THIS SECTION INCLUDES ALL STORM SEWERS, STORM WATER INLETS, AND RELATED ITEMS, INCLUDING EXCAVATING AND BACKFILLING NECESSARY TO COMPLETE THE WORK SHOWN ON THE DRAWINGS.

B. IN THE CASE OF ANY CONFLICTS WITH THESE SPECIFICATIONS AND LOCAL, STATE, FEDERAL SPECIFICATIONS THE MORE STRINGENT SHALL APPLY.

2. STORM SEWER CONSTRUCTION

A. STORM SEWERS

1. STORM SEWER STRUCTURES SHALL COMPLY WITH CURRENT SPECIFICATIONS OF THE CITY OF FRANKLIN PLANNING AND ALL OTHER RESPONSIBLE AGENCIES IN RESPECT TO DESIGN AND QUALITY OF CONSTRUCTION.
2. ALL STORM SEWER CONSTRUCTION INSIDE PUBLIC RIGHT-OF-WAY, EITHER EXISTING OR TO BE DEDICATED, SHALL BE IN ACCORDANCE WITH THE MOST CURRENT I.N.D.O.T. STANDARD SPECIFICATION.
3. WHERE REINFORCED CONCRETE PIPE IS SHOWN ON THE CONSTRUCTION PLANS, IT SHALL BE IN ACCORDANCE WITH A.S.T.M. C-76 CLASS III WALL "B" UNLESS OTHERWISE SPECIFIED ON THE PLANS.
4. WHERE CORRUGATED METAL PIPE IS SHOWN ON THE CONSTRUCTION PLANS, IT SHALL BE 14 GAUGE ALUMINIZED UNLESS OTHERWISE SPECIFIED AND SHALL HAVE THE CONNECTING BANDS AND SEALS AS SPECIFIED BY THE MANUFACTURER. C.M.P. SHALL BE ALUMINIZED PIPE IN ACCORDANCE WITH A.S.T.M. A-444.
5. WHERE HIGH DENSITY POLYETHYLENE (HDPE) PIPE IS SHOWN ON THE CONSTRUCTION PLANS, IT SHALL BE SOIL TIGHT, N-12 DUAL WALL HDPE PIPE AS MANUFACTURED BY ADS DRAINAGE SOLUTIONS OR AN APPROVED EQUAL.
6. MANHOLES, CATCH BASINS AND INLETS SHALL BE PRECAST CONCRETE. USE OF BRICK OR BLOCK WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE ENGINEER AND APPROVED IN WRITING BY THE CITY OF FRANKLIN PLANNING AND ENGINEERING DEPARTMENTS PRIOR TO CONSTRUCTION. IF THE CONTRACTOR ELECTS TO USE ALTERNATE PRECAST STRUCTURES, SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO ANY CONSTRUCTION.
7. PRECAST CONCRETE AND STEEL FOR MANHOLES AND INLETS SHALL BE IN ACCORDANCE WITH A.S.T.M. C-478.
8. CASTINGS SHALL BE AS SHOWN ON THE DETAIL SHEET(S) FOR MANUFACTURER, TYPE AND MODEL NUMBER.
9. GRANULAR BACKFILL SHALL BE REQUIRED UNDER ALL PAVEMENT AREAS AND TRENCHES WITHIN FIVE(5) FEET OF THE EDGE OF PAVEMENT.
10. ALL TRENCHES UNDER PAVEMENT SHALL BE COMPACTED TO 95 PERCENT MODIFIED PROCTOR.

3. APPLICATION

A. PERMITS AND CODES: THE INTENT OF THIS SECTION OF THE SPECIFICATIONS IS THAT THE CONTRACTOR'S BID ON THE WORK COVERED HEREIN SHALL BE BASED UPON THE DRAWINGS AND SPECIFICATIONS BUT THAT THE WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. THE CONTRACTOR SHALL FURNISH ALL BONDS NECESSARY TO GET PERMITS FOR CUTS AND CONNECTIONS TO EXISTING SEWERS.

B. LOCAL STANDARDS: THE TERM "LOCAL STANDARDS" AS USED HEREIN MEANS THE STANDARDS OF DESIGN AND CONSTRUCTION OF THE RESPECTIVE MUNICIPAL DEPARTMENT OR UTILITY COMPANY.

C. EXISTING IMPROVEMENTS: THE CONTRACTOR SHALL MAINTAIN IN OPERATING CONDITION ALL ACTIVE UTILITIES, SEWERS AND OTHER DRAINS ENCOUNTERED IN THE SEWER INSTALLATION. THE CONTRACTOR SHALL REPAIR TO THE SATISFACTION OF THE OWNER ANY DAMAGE TO EXISTING ACTIVE IMPROVEMENTS.

D. WORKMANSHIP: THIS WORK SHALL CONFORM TO ALL LOCAL, STATE AND NATIONAL CODES AND TO BE APPROVED BY ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION.

E. TRENCHING: LAY ALL PIPE IN OPEN TRENCHES, EXCEPT WHEN THE LOCAL AUTHORITY GIVES WRITTEN PERMISSION FOR TUNNELING. OPEN THE TRENCH SUFFICIENTLY AHEAD OF PIPE-LAYING TO REVEAL ANY OBSTRUCTIONS. THE MIN. WIDTH OF TRENCH SHALL BE 1.25 TIMES THE OUTSIDE DIA. OF PIPE. SHEET AND BRACE TRENCH AS NECESSARY TO PROTECT WORKMEN AND ADJACENT STRUCTURES. ALL TRENCHING TO COMPLY WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS. KEEP TRENCHES FREE FROM WATER WHILE CONSTRUCTION IS IN PROGRESS. UNDER NO CIRCUMSTANCES SHALL PIPE OR APPURTENANCES BE LAID IN STANDING WATER. CONDUCT THE DISCHARGE FROM TRENCH DE-WATERING TO DRAINS OR NATURAL DRAINAGE CHANNELS.

F. SPECIAL SUPPORTS: WHENEVER, IN THE OPINION OF THE ENGINEER, THE SOIL AT OR BELOW THE PIPE GRADE IS UNSUITABLE FOR SUPPORTING SEWERS AND APPURTENANCES SPECIFIED IN THIS SECTION, SUCH SPECIAL SUPPORT, IN ADDITION TO THOSE SHOWN OR SPECIFIED, SHALL BE PROVIDED AS THE ENGINEER MAY DIRECT, AND THE CONTRACT WILL BE ADJUSTED.

G. BACKFILLING: BACKFILL SHALL BE PLACED AS SHOWN IN THE PLANS. NOTE THAT PVC & HDPE PIPE SHALL BE COVERED WITH 12" MINIMUM OF #8 STONE. COMPACT THIS BACKFILL THOROUGHLY, TAKING CARE NOT TO DISTURB THE PIPE. BACKFILL UNDER AND WITHIN 5 FEET OF WALKS, PARKING AREAS, DRIVEWAYS AND STREETS SHALL BE "B" BORROW OR EQUIVALENT GRANULAR MATERIAL ONLY AND THOROUGHLY COMPACTED BY APPROVED METHODS.

H. MANHOLE INVERTS: CONSTRUCT MANHOLE FLOW CHANNELS OF CONCRETE SEWER PIPE OR BRICK, SMOOTHLY FINISHED AND OF SEMICIRCULAR SECTION CONFORMING TO THE INSIDE DIAMETER OF THE CONNECTING SEWERS. MAKE CHANGES IN SIZE OR GRADE GRADUALLY AND CHANGES INDIRECTION BY TRUE CURVES. PROVIDE SUCH CHANNELS FOR ALL CONNECTING SEWERS AT EACH MANHOLE.

I. SUBDRAINS: ALL SUBDRAINS SHALL BE OF THE SIZE SHOWN ON THE PLANS AND SHALL BE CONSTRUCTED TO THE GRADES SHOWN. ALL DRAINS CONSTRUCTED OFF-SITE AS PART OF THE OUTLET DRAIN WILL BE LOCATED AS SHOWN.

J. UTILITIES: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERITY ALL EXISTING UTILITIES AND CONDITIONS PERTAINING TO HIS WORK. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNERS OF THE VARIOUS UTILITIES BEFORE WORK IS STARTED. THE CONTRACTOR SHALL NOTIFY IN WRITING THE OWNER AND THE ENGINEER OF ANY CHANGES, ERRORS OR OMISSIONS FOUND ON THESE PLANS OR IN THE FIELD BEFORE WORK IS STARTED OR RESUMED.

WATER LINE SYSTEM

1. SCOPE OF WORK

A. THE WORK UNDER THIS SECTION INCLUDES ALL WATER MAIN, FIRE HYDRANTS, SERVICES AND RELATED ITEMS, INCLUDING EXCAVATING AND BACKFILLING NECESSARY TO COMPLETE THE WORK SHOWN ON THE DRAWINGS.

2. MATERIALS

A. ALL MATERIALS SHALL CONFORM TO ALL LOCAL, STATE, AND NATIONAL CODES AND SHALL BE APPROVED BY ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION. ALL C-900 PVC WATER MAIN SHALL BE DR-14 CLASSIFICATION.

3. APPLICATION

A. PERMITS AND CODES: THE INTENT OF THIS SECTION OF THE SPECIFICATIONS IS THAT THE CONTRACTOR'S BID ON THE WORK COVERED HEREIN SHALL BE BASED UPON THE DRAWINGS AND SPECIFICATIONS BUT THAT THE WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. THE CONTRACTOR SHALL FURNISH ALL BONDS NECESSARY TO GET PERMITS FOR CUTS AND CONNECTIONS TO EXISTING WATER MAINS.

B. LOCAL STANDARDS: THE TERM "LOCAL STANDARDS" AS USED HEREIN MEANS THE STANDARDS OF DESIGN AND CONSTRUCTION OF THE RESPECTIVE MUNICIPAL DEPARTMENT OR UTILITY COMPANY.

C. EXISTING IMPROVEMENTS: THE CONTRACTOR SHALL MAINTAIN IN OPERATING CONDITION ALL ACTIVE UTILITIES, SEWERS AND OTHER DRAINS ENCOUNTERED IN THE WATER LINE INSTALLATION. THE CONTRACTOR SHALL REPAIR TO THE SATISFACTION OF THE OWNER ANY DAMAGE TO EXISTING ACTIVE IMPROVEMENTS.

D. WORKMANSHIP: THIS WORK SHALL CONFORM TO ALL LOCAL, STATE AND NATIONAL CODES AND TO BE APPROVED BY ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION. THIS INCLUDES ALL REQUIRED CLEANING AND TESTING PROCEDURES REQUIRED BY THE STATE AND LOCAL AGENCIES.

E. TRENCHING: LAY ALL PIPE IN OPEN TRENCHES, EXCEPT WHEN THE LOCAL AUTHORITY GIVES WRITTEN PERMISSION FOR TUNNELING. OPEN THE TRENCH SUFFICIENTLY AHEAD OF PIPE-LAYING TO REVEAL ANY OBSTRUCTIONS. THE MIN. WIDTH OF TRENCH SHALL BE 1.25 TIMES THE OUTSIDE DIA. OF PIPE. SHEET AND BRACE TRENCH AS NECESSARY TO PROTECT WORKMEN AND ADJACENT STRUCTURES. ALL TRENCHING TO COMPLY WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS. KEEP TRENCHES FREE FROM WATER WHILE CONSTRUCTION IS IN PROGRESS. UNDER NO CIRCUMSTANCES SHALL PIPE OR APPURTENANCES BE LAID IN STANDING WATER. CONDUCT THE DISCHARGE FROM TRENCH DE-WATERING TO DRAINS OR NATURAL DRAINAGE CHANNELS.

F. SPECIAL SUPPORTS: WHENEVER, IN THE OPINION OF THE ENGINEER, THE SOIL AT OR BELOW THE PIPE GRADE IS UNSUITABLE FOR SUPPORTING PIPE AND APPURTENANCES SPECIFIED IN THIS SECTION, SUCH SPECIAL SUPPORT, IN ADDITION TO THOSE SHOWN OR SPECIFIED, SHALL BE PROVIDED AS THE ENGINEER MAY DIRECT, AND THE CONTRACT WILL BE ADJUSTED.

G. BACKFILLING: BACKFILL SHALL BE PLACED AS SHOWN IN THE PLANS. NOTE THAT PVC & HDPE PIPE SHALL BE COVERED WITH 12" MINIMUM OF #8 STONE. COMPACT THIS BACKFILL THOROUGHLY, TAKING CARE NOT TO DISTURB THE PIPE. BACKFILL UNDER AND WITHIN 5 FEET OF WALKS, PARKING AREAS, DRIVEWAYS AND STREETS SHALL BE "B" BORROW OR EQUIVALENT GRANULAR MATERIAL ONLY AND THOROUGHLY COMPACTED BY APPROVED METHODS.

H. UTILITIES: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING UTILITIES AND CONDITIONS PERTAINING TO HIS WORK. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNERS OF THE VARIOUS UTILITIES BEFORE WORK IS STARTED. THE CONTRACTOR SHALL NOTIFY IN WRITING THE OWNER AND THE ENGINEER OF ANY CHANGES, ERRORS OR OMISSIONS FOUND ON THESE PLANS OR IN THE FIELD BEFORE WORK IS STARTED OR RESUMED.

SANITARY SEWER SYSTEMS

1. SCOPE OF WORK

A. THE WORK UNDER THIS SECTION INCLUDES ALL SANITARY SEWERS, MANHOLES, CLEANOUTS AND RELATED ITEMS INCLUDING EXCAVATING AND BACKFILLING, NECESSARY TO COMPLETE THE WORK SHOWN IN THE DRAWINGS, STARTING OUTSIDE THE BUILDING WALLS. THE END OF SEWERS SHALL BE TIGHTLY PLUGGED OR CAPPED AT THE TERMINAL POINTS, ADJACENT TO THE BUILDING DRAIN AS SPECIFIED IN THE PLUMBING SPECIFICATIONS AND/OR ARCHITECTURAL DRAWINGS.

2. MATERIALS

A. SANITARY SEWERS

1. ALL GRAVITY PLASTIC SEWER PIPE FITTINGS SHALL CONFORM TO ASTM D3034 WITH A CELL CLASSIFICATION OF 12454-B OR 12454-C. FLEXIBLE GASKETED COMPRESSION JOINTS SHALL BE USED FOR PVC & PVC TRUSS PIPE. NO SOLVENT CEMENT JOINTS SHALL BE ALLOWED.
2. ABS SEWER PIPE AND FITTINGS SHALL CONFORM TO ASTM D2680 LATEST REVISION.
3. TRACER WIRE SHALL BE INSTALLED WITH ALL NEW SANITARY PIPE.

B. MANHOLES

1. PRECAST REINFORCED CONCRETE MANHOLE SECTIONS AND STEPS SHALL CONFORM TO ASTM C-478 LATEST REVISION. EXTERIOR OF THE MANHOLE SHALL BE WATERPROOFED WITH BISMATIC MATERIAL.
2. CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOW HOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL-CLEANED BY SHOT-BLASTING OR BY SOME OTHER APPROVED METHOD. THEY SHALL BE COATED WITH ASPHALT PAINT WHICH SHALL RESULT IN A SMOOTH COATING, TOUGH AND TENACIOUS WHEN COLD, NOT TACKY OR BRITTLE. THEY SHALL BE GRAY IRON MEETING ASTM A-48 LATEST REVISION. MANHOLE COVERS FOR SANITARY SEWER SHALL BE NEENAH TYPE R-1722 W/R-1712-B-SP FRAME W/SELF-SEALING APPLICATION.
3. JOINTS: MANHOLE SECTIONS SHALL BE JOINED WITH A NOMINAL ½ INCH SIZE BUTYL RUBBER BASE GASKET MATERIAL, CONFORMING TO AASHTO M-198 AND FEDERAL SPECIFICATION SS-S-210A. JOINT CONFORMS TO ASTM C-443.
4. MANHOLES SHALL INCLUDE STEPS. SANITARY SEWER STANDARDS REVISIONS SHALL BE THAT STEPS ARE TO BE POLYPROPYLENE COATED STEEL REINFORCING OR AN APPROVED NON-CORROSIVE FIBERGLASS MATERIAL. THE COPOLYMER POLYPROPYLENE SHALL MEET THE REQUIREMENTS OF ASTMD-4101 WITH DEFORMED ⅜ INCH DIAMETER OR LARGER REINFORCING STEEL CONFORMING TO ASTM A-615, GRADE 60. STEPS SHALL BE A MAXIMUM OF 24 INCHES FROM TOP, 24 INCHES FROM BOTTOM AND 16 INCHES SPACING BETWEEN.

C. SANITARY FORCE MAINS

1. ALL SANITARY FORCE MAIN PIPE AND FITTINGS SHALL CONFORM TO ASTM D2241, STANDARD SPECIFICATION FOR POLY VINYL CHLORIDE (PVC) PRESSURE-RATED PIPE, (SDR 21, GREATER THAN 4 INCH DIAMETER).
2. TRACER WIRE SHALL BE INSTALLED WITH ALL SANITARY FORCE MAIN PIPE.

D. CASING

1. SANITARY SEWERS CONSTRUCTED WITH POLYVINYL CHLORIDE (PVC) AND INSTALLED UNDER RAILROADS SHALL BE CASED IN CONFORMANCE WITH AWWA STANDARD C900-89, STANDARD FOR POLYVINYL CHLORIDE (PVC) PRESSURE PIPE, 4 IN. THROUGH 12 IN. FOR WATER DISTRIBUTION, APPENDIX A.

3. APPLICATION

A. PERMITS AND CODES:
THE INTENT OF THIS SECTION OF THE SPECIFICATIONS IS THAT THE CONTRACTOR'S BID ON THE WORK COVERED HEREIN SHALL BE BASED UPON THE DRAWINGS AND SPECIFICATIONS BUT THAT THE WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS AS AMENDED BY ANY WAIVERS. CONTRACTOR SHALL FURNISH ALL BONDS NECESSARY TO GET PERMITS FOR CUTS AND CONNECTIONS TO EXISTING SEWERS.

B. LOCAL STANDARDS:
THE TERM "LOCAL STANDARDS" AS USED HEREIN MEANS THE STANDARDS OF DESIGN AND CONSTRUCTION OF THE RESPECTIVE MUNICIPAL DEPARTMENT OR UTILITY COMPANY.

C. EXISTING IMPROVEMENTS:
THE CONTRACTOR SHALL MAINTAIN IN OPERATING CONDITION ALL ACTIVE UTILITIES, SEWERS AND OTHER DRAINS ENCOUNTERED IN THE SEWER INSTALLATION. THE CONTRACTOR SHALL REPAIR TO THE SATISFACTION OF THE OWNER ANY DAMAGE TO EXISTING ACTIVE IMPROVEMENTS.

D. WORKMANSHIP:
THIS WORK SHALL CONFORM TO ALL LOCAL, STATE AND NATIONAL CODES AND TO BE APPROVED BY ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION.

E. TRENCHING:
LAY ALL PIPE IN OPEN TRENCHES, EXCEPT WHEN THE LOCAL AUTHORITY GIVES WRITTEN PERMISSION FOR TUNNELING. OPEN THE TRENCH SUFFICIENTLY AHEAD OF PIPE-LAYING TO REVEAL ANY OBSTRUCTIONS. THE MIN. WIDTH OF TRENCH SHALL BE 1.25 TIMES THE OUTSIDE DIA. PLUS 12 INCHES. SHEET AND BRACE TRENCH AS NECESSARY TO PROTECT WORKMEN AND ADJACENT STRUCTURES. ALL TRENCHING TO COMPLY WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS. KEEP TRENCHES FREE FROM WATER WHILE CONSTRUCTION IS IN PROGRESS. UNDER NO CIRCUMSTANCES SHALL PIPE OR APPURTENANCES BE LAID IN STANDING WATER. CONDUCT THE DISCHARGE FROM TRENCH DE-WATERING TO DRAINS OR NATURAL DRAINAGE CHANNELS.

F. SPECIAL SUPPORTS:
WHENEVER, IN THE OPINION OF THE ENGINEER, THE SOIL AT OR BELOW THE PIPE GRADE IS UNSUITABLE FOR SUPPORTING SEWERS AND APPURTENANCES SPECIFIED IN THIS SECTION, SUCH SPECIAL SUPPORT, IN ADDITION TO THOSE SHOWN OR SPECIFIED, SHALL BE PROVIDED AS THE ENGINEER MAY DIRECT, AND THE CONTRACT WILL BE ADJUSTED.

G. BACKFILLING:
BACKFILL SHALL BE PLACED AS SHOWN IN THE PLANS. COMPACT THIS BACKFILL THOROUGHLY, TAKING CARE NOT TO DISTURB THE PIPE. BACKFILL UNDER AND WITHIN 5 FEET OF WALKS, PARKING AREAS, DRIVEWAYS AND STREETS SHALL BE GRANULAR MATERIAL ONLY AND THOROUGHLY COMPACTED BY APPROVED METHODS.

H. FLOW CHANNELS:
THE FLOW CHANNELS WITHIN MANHOLES SHALL BE AN INTEGRAL PART OF THE PRECAST BASE. THE CHANNELS SHALL BE SHAPED AND FORMED FOR A CLEAN TRANSITION WITH PROPER HYDRAULICS TO ALLOW THE SMOOTH CONVEYANCE OF FLOW THROUGH THE MANHOLE. THE BENCH WALL SHALL BE FORMED TO THE CROWN OF THE INLET AND OUTLET PIPES TO FORM A "U" SHAPED CHANNEL. THE BENCH WALL SHALL SLOPE BACK FROM THE CROWN AT ½ INCH PER FOOT TO THE MANHOLE WALL.

I. LEAKAGE TESTING:
THE CONTRACTOR SHALL FURNISH THE NECESSARY EQUIPMENT TO TEST SEWERS FOR INFILTRATION. ALL SANITARY SEWER GRAVITY LINES, UPON COMPLETION, SHALL BE REQUIRED TO PASS ONE OF THE FOLLOWING TESTS:

J. HYDROSTATIC TEST:
A HYDROSTATIC TEST SHALL BE PERFORMED WITH A MINIMUM OF TWO (2) FEET OF POSITIVE HEAD. THE RATE OF EXFILTRATION OR INFILTRATION SHALL NOT EXCEED TWO HUNDRED (200) GALLONS PER INCH OF PIPE DIAMETER PER LINEAR MILE PER DAY.

K. LOW PRESSURE AIR TEST:
A LOW PRESSURE AIR TEST SHALL BE CONDUCTED IN ACCORDANCE WITH ASTM F1417, STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR, FOR PLASTIC PIPE.

L. ALL SANITARY FORCE MAIN LINES, UPON COMPLETION, SHALL BE REQUIRED TO PASS A LEAKAGE TEST CONDUCTED IN ACCORDANCE WITH AWWA STANDARD C605-94, AWWA STANDARD FOR UNDERGROUND INSTALLATION OF POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND FITTINGS FOR WATER.

M. ALL SANITARY SEWER MANHOLES SHALL ALSO BE AIR TESTED IN ACCORDANCE WITH ASTM C1244-93, STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY NEGATIVE AIR PRESSURE (VACUUM) TEST.

N. FLUSHING SEWERS:
FLUSH ALL SANITARY SEWERS EXCEPT BUILDING SEWERS WITH WATER TO OBTAIN FREE FLOW THROUGH EACH LINE. REMOVE ALL SILT AND TRASH FROM APPURTENANCES JUST PRIOR TO ACCEPTANCE OF WORK.

O. PLASTIC SEWER PIPE INSTALLATION:
PLASTIC SEWER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321 PER LATEST REVISION. PIPES SHALL BE TESTED AFTER THIRTY DAYS, USING A MANDREL THAT IS 95% OF THE INSIDE DIAMETER OF THE PIPE BEING TESTED. SAID MANDREL SHALL BE PULLED BY HAND THROUGH EACH PIPE SECTION TO ENSURE DEFLECTION IS LESS THAN ACCEPTABLE LIMITS.

P. STORM WATER CONNECTIONS:
NO ROOF DRAINS, FOOTING DRAINS AND/OR SURFACE WATER DRAINS MAY BE CONNECTED TO THE SANITARY SEWER SYSTEMS, INCLUDING TEMPORARY CONNECTIONS DURING CONSTRUCTION.

Q. WATERLINE CROSSING:
WHERE WATER LINES AND SANITARY SEWERS CROSS AND WATER LINES CANNOT BE PLACED ABOVE THE SEWER WITH A MINIMUM OF 18 INCHES VERTICAL CLEARANCE, THE SEWER MUST BE CONSTRUCTED OF WATER WORKS GRADE DUCTILE IRON PIPE WITH MECHANICAL JOINTS WITHIN 10 FEET OF THE WATER LINE.

R. UTILITIES:
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERITY ALL EXISTING UTILITIES AND CONDITIONS PERTAINING TO HIS WORK. IT SHALL ALSO BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE OWNERS OF THE VARIOUS UTILITIES BEFORE WORK IS STARTED. THE CONTRACTOR SHALL NOTIFY IN WRITING THE OWNER AND THE ENGINEER OF ANY CHANGES, ERRORS OR OMISSIONS FOUND ON THESE PLANS OR IN THE FIELD BEFORE WORK IS STARTED OR RESUMED.

S. SERVICE LATERALS:
INDIVIDUAL BUILDING LINES SHALL BE 6 INCHES IN DIAMETER AND OF MATERIAL EQUAL TO THAT SPECIFIED IN 2A OF THIS SECTION. SERVICE LINES SHALL BE CONNECTED TO THE MAIN SEWER AT LOCATIONS SHOWN IN THESE PLANS.

THESE CONSTRUCTION PLANS AND SECONDARY PLAT ARE BASED UPON INFORMATION FROM AN ALTA/ACSM LAND TITLE SURVEY PERFORMED BY SEA GROUP, LLC WITH PROJECT NUMBER C11-6272 AND DATED DECEMBER 13, 2016 (LATEST VERSION).

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DATE/USER : 3/29/2024 12:19 PM / Lcox

CROSSROAD ENGINEERS, PC
Transportation & Development Consultants
115 N. 17th AVENUE, BEECH GROVE, IN 46107 (317) 780-1555

SPECIFICATIONS

JOHNSON COUNTY RECYCLE CENTER

JOB No.	.	DRAWN	LMC
CHECKED	BTV		
DATE	APRIL 11, 2024	DESIGNED	BTV
APPR.	GJI		

SHEET 1100

GREGORY J. ILKO
NO. 10300059

NO.	DATE	REVISIONS	BY	APPR.
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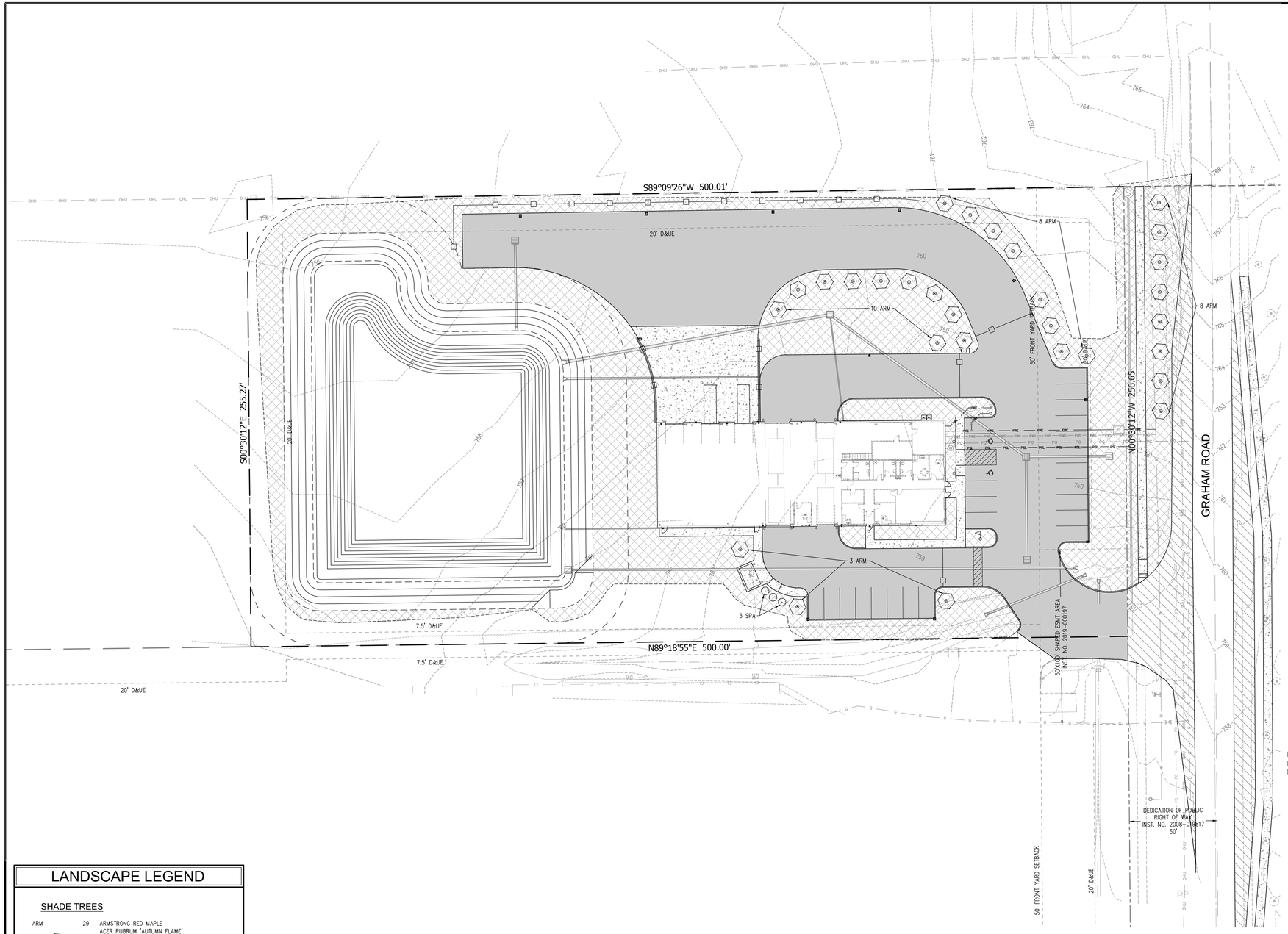


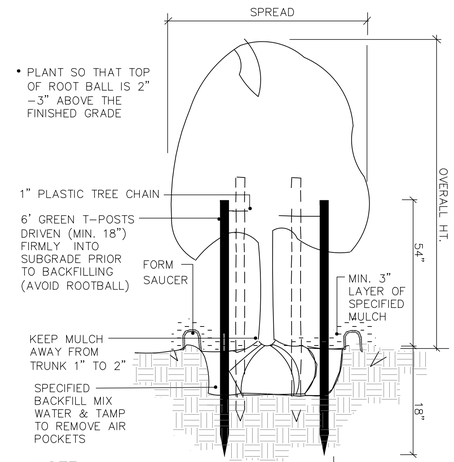
ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY STATE, CITY OR COUNTY OFFICIALS

NOTE:
NO EARTHWORK DISTURBING ACTIVITY MAY COMMENCE UNTIL A STORM WATER MANAGEMENT PERMIT IS OBTAINED.

30 0 30 60

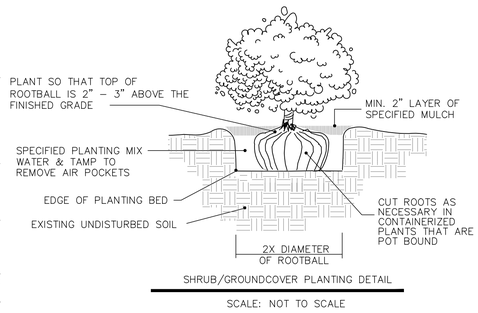
SCALE: 1" = 30'

EXISTING CONTOUR INTERVAL = 1'
PROPOSED CONTOUR INTERVAL = 1'



TREE PLANTING AND STAKING DETAIL

SCALE: NOT TO SCALE



SHRUB/GROUNDCOVER PLANTING DETAIL

SCALE: NOT TO SCALE

LANDSCAPE LEGEND

SHADE TREES

ARM 29 ARMSTRONG RED MAPLE
ACER RUBRUM 'AUTUMN FLAME'
2.5" CALIPER 6' CLEAR TRUNK

SHRUBS

SPA 3 DWARF KOREAN LILAC
SYRINGA PATULA 'MISS KIM'
3 GAL. 72" O.C

EROSION CONTROL

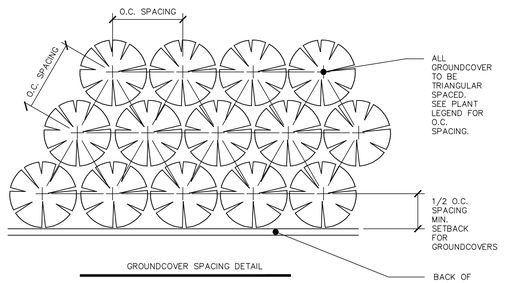
REVETMENT RIPRAP
(SEE DETAIL – EROSION CONTROL PLAN SHEET 900)

GROUNDCOVER

SEED AND MULCH S.F. ± 38,004
LOW MAINTENANCE MIX AS AVAILABLE FROM INDIANA SEED SOLUTIONS 65% TALL FESCUE, 25% PRG, 10% CR FESCUE

LANDSCAPE NOTES

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL VEGETATION AND LEAVING ALL LANDSCAPE AREAS AT TWO INCHES BELOW FINAL GRADE. THE LANDSCAPE CONTRACTOR WILL PROVIDE AND SPREAD A COMPACTED TWO INCH DEPTH OF LOAMY TOPSOIL IN ALL TURF AREAS – BRINGING THESE AREAS TO TOP OF CURB/FINAL GRADE (COMPACTED). THE LANDSCAPE CONTRACTOR WILL PROVIDE AND INSTALL A FOUR INCH DEPTH OF PLANTING MIX TO ALL PLANTING BEDS – CROWNING FOR PROPER DRAINAGE. (SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING BED PREPARATION.)
2. A THREE INCH DEPTH OF SHREDDED HARDWOOD BARK MULCH WILL BE USED AS A TOP DRESSING FOR ALL PLANTING BEDS AND TREE RINGS.
3. LANDSCAPE CONTRACTOR SHALL MAKE OWN PLANT QUANTITY TAKEOFFS USING DRAWINGS, SPECIFICATIONS AND PLANT SCHEDULE. PLANT SCHEDULE REQUIREMENTS (I.E. SPACING) DICTATE, UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE DESIGNER. LANDSCAPE CONTRACTOR TO VERIFY BED MEASUREMENTS AND INSTALL APPROPRIATE QUANTITIES AS GOVERNED BY THE THE PLANT SPACING PER THE SCHEDULE. ENSURE ALL MINIMUM REQUIREMENTS OF THE LOCAL GOVERNING AUTHORITY ARE MET (I.E. MINIMUM PLANT QUANTITIES.)
4. NO SUBSTITUTIONS OF PLANT MATERIALS WILL BE ALLOWED. IF PLANTS ARE NOT AVAILABLE, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE DESIGNER IN WRITING (VIA PROPER CHANNELS). PLANTS MAY BE INSPECTED AND APPROVED OR REJECTED ON THE JOBSITE BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
5. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR THE LANDSCAPE MAINTENANCE OF THIS PROJECT UNTIL FINAL ACCEPTANCE. TURF AREAS WILL NOT BE ACCEPTED UNTIL THEY AREA AT A MINIMUM OF 1-1/2 INCHES TALL, AND NO BARE AREAS LARGER THAN 12 SQUARE INCHES.
6. TREES SHALL BE PLANTED AT LEAST TWO AND ONE-HALF FEET (2'-6") FROM SIDEWALK OR CURB EDGE.



GROUNDCOVER SPACING DETAIL

SCALE: NOT TO SCALE

LANDSCAPE PLANTING DETAILS

NOT TO SCALE

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CROSSROAD ENGINEERS, PC
Transportation & Development Consultants
115 N. 17th AVENUE, SUITE 200, BOZEMAN, MONTANA 59715 (406) 587-0618

LANDSCAPE PLAN

JOHNSON COUNTY RECYCLE CENTER

JOB No.	.	DRAWN	LMC	CHECKED	BTV	APPR.	CJI
DATE	APRIL 11, 2024	DESIGNED	BTV				

SHEET 1200

GREGORY J. ILKO
REGISTERED
NO. 10300059
STATE OF MONTANA
PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	BY	APPR.
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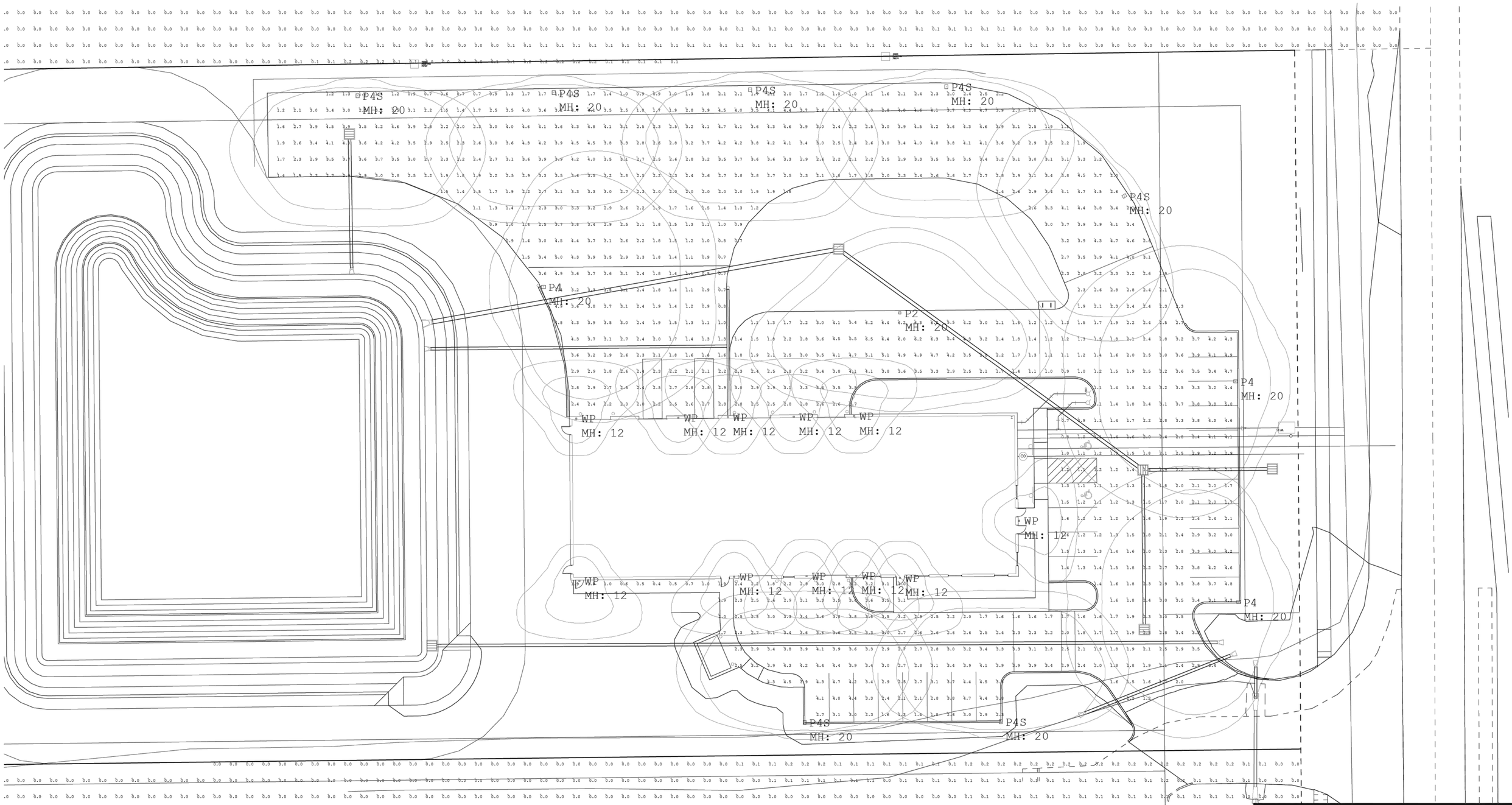
Know what's below. Call before you dig. 811 INDIANA

SHEET 1200



1 **SITE LIGHTING AND PHOTOMETRIC PLAN**
SCALE: 1/16" = 1'-0" (24 x 36 sheet)

National Lighting Vendor:

For pricing and technical assistance contact: Rob Thomson of CBMC INC, tel# 317-828-4119 / rthomson@cbmcinc.com

CBMC LIGHTING SOLUTIONS

5855 KOPETSKY DR. SUITE G. | INDIANAPOLIS, IN 46217
317-780-8350| WWW.CBMCINC.COM

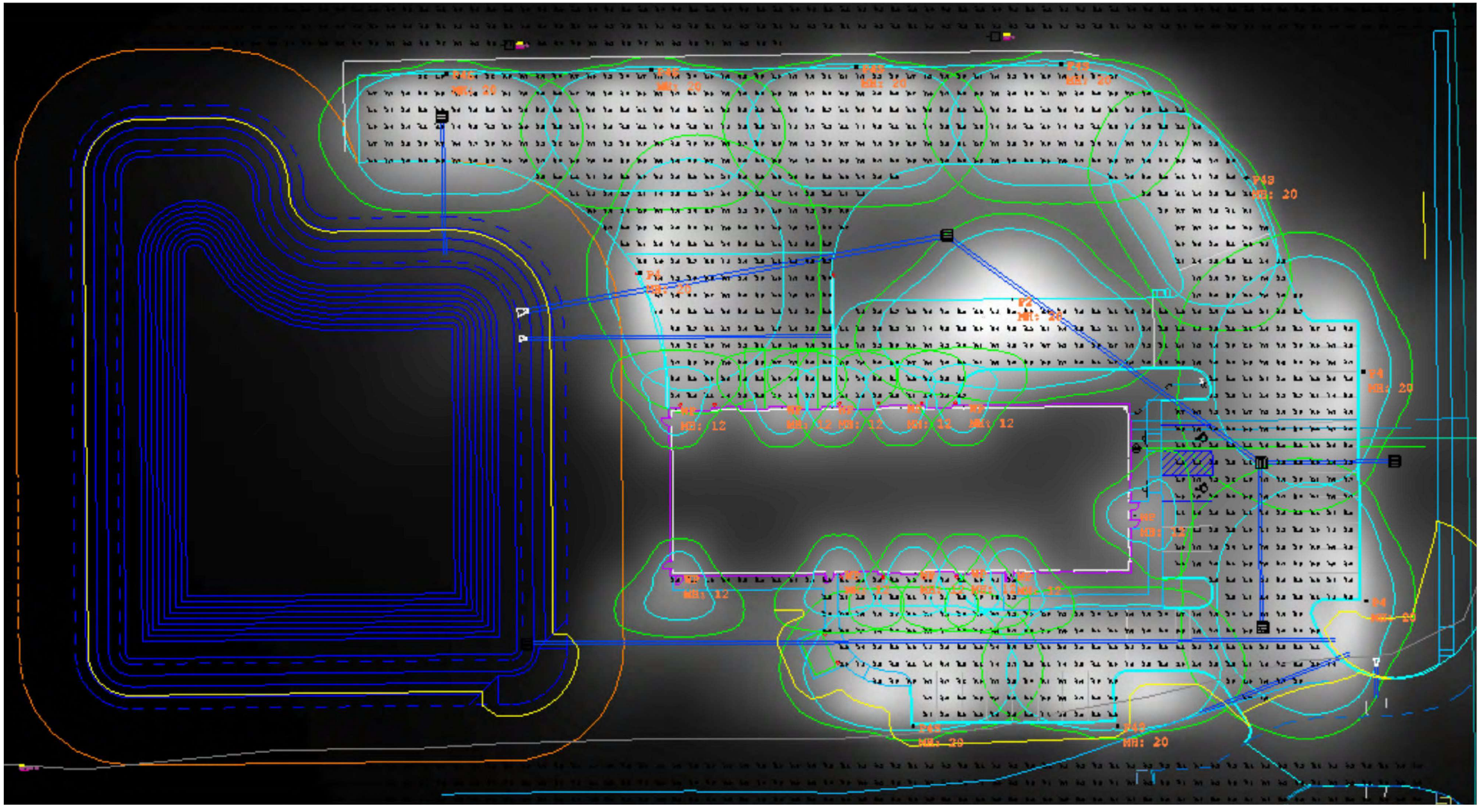
This lighting pattern represents illumination levels calculated from laboratory data taken under controlled conditions in accordance with IESNA approved methods. Actual performance of any manufacturer's luminaire may vary due to variation in electrical voltage, tolerance in lamps and LED lumen package, location adjustments, and other variable field conditions.

Contractor to check and verify all dimensions on site before commencing any work shown.

JOHNSON COUNTY RECYCLE CENTER

SITE LIGHTING & PHOTOMETRIC PLAN

Scale:	1/16"=1'-0"	Project No: E00	Revision
Date:	4/05/24	Drawing No: E00	1
Drawn By:	FG		
Checked By:	RT		



1 **GREY SCALE RENDERING**
SCALE: NONE

National Lighting Vendor:

For pricing and technical assistance contact: Rob Thomson of CBMC INC, tel# 317-828-4119 / rthomson@cbmcinc.com

CBMC · LIGHTING SOLUTIONS

5855 KOPETSKY DR. SUITE G. | INDIANAPOLIS, IN 46217
317-780-8350| WWW.CBMCINC.COM

This lighting pattern represents illumination levels calculated from laboratory data taken under controlled conditions in accordance with IESNA approved methods. Actual performance of any manufacturer's luminaire may vary due to variation in electrical voltage, tolerance in lamps and LED lumen package, location adjustments, and other variable field conditions.

Contractor to check and verify all dimensions on site before commencing any work shown.

JOHNSON COUNTY RECYCLE CENTER

GREY SCALE RENDERING

Scale:	NONE	Project No: E00	Revision
Date:	4/05/24	Drawing No: E01	1
Drawn By:	FG		
Checked By:	RT		

Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

Mirada Small Area (MRS)

Outdoor LED Area Light

IP66 IK08

OVERVIEW	
Lumen Package	6,000 - 30,000
Wattage Range	39 - 209
Efficacy Range (LPW)	112 - 163
Weight lbs(kg)	20 (9.1)
Control Options	IMSBT, ALB, ALS, 7-Pin, PCI

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction
- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 27 lbs in carton.

Optical System
- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, 4, 5W, FT, and LC/RC.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93-95%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377
- Minimum CRI of 70.
- Integral louver (IL) and integral half louver (IH) options available for enhanced backlight control.

Electrical
- High-performance driver features over-voltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L70 Calculated Life: >60k Hours
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F). 30L lumen packages rated to +40°C.
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls
- Optional integral passive infrared Bluetooth™ motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.

Installation
- Designed to mount to square or round poles.
- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional B3 drill pattern.

Warranty
- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings
- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- RoHS compliant
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications are qualified.
- IK08 rated luminiare per IEC 66262 me-chanical impact code
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

Mirada Small Area (MRS)

Outdoor LED Area Light

IP66 IK08

OVERVIEW

Lumen Package	6,000 - 30,000
Wattage Range	39 - 209
Efficacy Range (LPW)	112 - 163
Weight lbs(kg)	20 (9.1)
Control Options	IMSBT, ALB, ALS, 7-Pin, PCI

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction
- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 27 lbs in carton.

Optical System
- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, 4, 5W, FT, and LC/RC.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93-95%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377
- Minimum CRI of 70.
- Integral louver (IL) and integral half louver (IH) options available for enhanced backlight control.

Electrical
- High-performance driver features over-voltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L70 Calculated Life: >60k Hours
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F). 30L lumen packages rated to +40°C.
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls
- Optional integral passive infrared Bluetooth™ motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.

Installation
- Designed to mount to square or round poles.
- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional B3 drill pattern.

Warranty
- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings
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- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- RoHS compliant
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications are qualified.
- IK08 rated luminiare per IEC 66262 me-chanical impact code
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

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Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

Mirada Small Area (MRS)

Outdoor LED Area Light

IP66 IK08

OVERVIEW

Lumen Package	6,000 - 30,000
Wattage Range	39 - 209
Efficacy Range (LPW)	112 - 163
Weight lbs(kg)	20 (9.1)
Control Options	IMSBT, ALB, ALS, 7-Pin, PCI

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction
- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 27 lbs in carton.

Optical System
- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, 4, 5W, FT, and LC/RC.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93-95%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377
- Minimum CRI of 70.
- Integral louver (IL) and integral half louver (IH) options available for enhanced backlight control.

Electrical
- High-performance driver features over-voltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L70 Calculated Life: >60k Hours
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F). 30L lumen packages rated to +40°C.
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls
- Optional integral passive infrared Bluetooth™ motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.

Installation
- Designed to mount to square or round poles.
- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional B3 drill pattern.

Warranty
- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings
- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- RoHS compliant
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications are qualified.
- IK08 rated luminiare per IEC 66262 me-chanical impact code
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

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Catalog # : _____ Project : _____ Type : _____

Prepared By : _____ Date : _____

Mirada Small Wall Sconce Silicone (XWS SIL)

Outdoor LED Wall Light

IP65

OVERVIEW	
Lumen Package (lm)	2,000 - 8,000
Wattage Range (W)	13 - 61
Efficacy Range (LPW)	126 - 162
Weight lbs (kg)	10 (4.5)

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction
- Rugged die-cast aluminum housing.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Extended housing available with 1/2" threaded hubs for surface conduit and rated wire.
- Standard luminaire shipping weight: TBD lbs in carton.
- Max luminaire shipping weight: 12 lbs in carton (20 lbs w/EH option)

Optical System
- State-of-the-Art one piece silicone optic provides industry leading optical control while also acting as an integrated gasket reducing system complexity and improving fixture reliability.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, and FT.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377.
- Minimum CRI of 70

Electrical
- High-performance driver features over-voltage under-voltage, short-circuit, and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L70 Calculated Life: >60k Hours
- Total harmonic distortion (THD): <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F).
- Power factor (PF): >.90
- Input power stays constant over life.
- Optional 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance. Driver complies with FCC standards. Accessible driver and electrical components.
- Optional battery backup provides 90-minutes of constant power to the LED system, ensuring code compliance. A test switch/indicator button is installed on the housing for ease of maintenance. Standard battery rated for 0°C to 50°C with cold weather battery rated for -20°C to 50°C (40°C max for 8L). 120-277V Only.

Controls
- Optional integral passive infrared Bluetooth™ motion. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- Optional button photocell turns fixtures on and off based on ambient light levels for dusk to dawn lighting.
- LSI's AirLink Blue wireless control system options allow for fixture and motion sensor grouping while reducing energy and maintenance costs.

Installation
- Universal wall mounting plate mounts directly to vertical surface or 4" junction box (octagonal or square).
- Luminaire hinges to the top of the mounting plate and is secured via two flush mount screws that help to conceal the hardware and prevent over tightening during installation.

Warranty
- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings
- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP65 rated luminaire per IEC 60598-1.
- IK08 rated luminaire per IEC 66262 mechanical impact code.
- DesignLights Consortium® (DLC) Premium qualified product. Not all versions of this product may be DLC Premium qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

National Lighting Vendor:

For pricing and technical assistance contact:
Rob Thomson of CBMC INC, tel# 317-828-4119
/ rthomson@cbmcinc.com

All electrical work shall comply with National, State, and Local codes including and not limited to the National Electric Code, NFPA 101 Life Safety Code, ASHREA and /or IECC Energy Codes.

CBMC • LIGHTING SOLUTIONS

5855 KOPETSKY DR. SUITE G. | INDIANAPOLIS, IN 46217
317-780-8350| WWW.CBMCINC.COM

This lighting pattern represents illumination levels calculated from laboratory data taken under controlled conditions in accordance with IESNA approved methods. Actual performance of any manufacturer's luminaire may vary due to variation in electrical voltage, tolerance in lamps and LED lumen package, location adjustments, and other variable field conditions.

Contractor to check and verify all dimensions on site before commencing any work shown.

JOHNSON COUNTY RECYCLE CENTER

SITE LIGHTING DETAILS

Scale:	1/16"=1'-0"	Project No: E00	Revision
Date:		Drawing No: E02	1
Drawn By:	4/05/24 FG		
Checked By:	RT		

GENERAL NOTES

1. The Contractor shall be responsible for complying with all safety precautions and regulations during the work. The Structural Engineer of Record will not advise on, nor issue direction as to safety precautions and programs.
2. The Structural Drawings herein represent the finished structure. The Contractor shall provide all temporary guying and bracing required to erect and hold the structure in proper alignment until all Structural Work and connections have been completed. The investigation, design, safety, adequacy and inspection of erection bracing, shoring, temporary supports, etc. is the sole responsibility of the Contractor.
3. The Structural Engineer of Record (SER) shall not be responsible for the methods, techniques and sequences are not specifically shown, similar details of construction shall be used, subject to approval of the SER.
4. Drawings indicate general and typical details of construction. Where conditions are not specifically shown, similar details of construction shall be used, subject to approval of the Structural Engineer of Record.
5. All structural systems which are to be composed of components to be field erected shall be supervised by the Supplier during manufacturing, delivery, handling, storage, and erection in accordance with the Supplier's instructions and requirements.
6. Loading applied to the structure during the process of construction shall not exceed the safe load-carrying capacity of the structural members. The live loading used in the design of this structure are indicated in the "Design Criteria Notes." Do not apply any construction loads until structural framing is properly connected together and until all temporary bracing is in place.
7. All ASTM and other referenced standards and codes are for the latest editions of these publications, unless otherwise noted.
8. Shop drawings and other items shall be submitted to the Structural Engineer of Record (SER) for review prior to fabrication. All Shop Drawings shall be reviewed by the Contractor before submittal. The SER's review is to be fore conformance with the design concept and general compliance with the relevant Contract Documents. The SER's review does not relieve the Contractor of the sole responsibility to review, check, and coordinate the Shop Drawings prior to submission. The Contractor remains solely responsible for errors and omissions associated with the preparation of Shop Drawings as they pertain to member sizes, details, dimensions, etc.
9. Submit Shop Drawings in electronic PDF format. In no case shall reproductions of the Contract Documents be used as shop drawings. As a minimum, submit the following items for review.
   - A. Concrete Mix Design(s).
   - B. Reinforcing Steel Shop Drawings.
   - C. Pre-Engineered Metal Building Systems.
10. Resubmitted Shop Drawings: Resubmitted shop drawings are reviewed only for responses to comments made in the previous submittal.
11. When calculations are included in the submittals for components of work designed and certified by a Specialty Structural Engineer (SSE), the review by the Structural Engineer of Record (SER) shall be for conformance with the relevant Contract Documents. The SER's review does not relieve the SSE from responsibility for the design of the system(s) and the coordination with the elements of the structure under the certification of the SER, or other SSE's. The SER's review does not constitute a warranty of the accuracy or completeness of the SSE's design.
12. Contractors shall visit the site prior to bid to ascertain conditions which may adversely affect the work or cost thereof.
13. No structural member may be cut, notched, or otherwise reduced in strength without written direction from the Structural Engineer of Record.
14. When modifications are proposed to structural elements under the design and certification of a Specialty Structural Engineer (SSE), written authorization by the SSE must be obtained and submitted to the Structural Engineer of Record for review, prior to performing the proposed modification.

COORDINATION WITH OTHER TRADES

1. The Contractor shall coordinate and check all dimensions relating to Architectural finishes, mechanical equipment and openings, elevator shafts and overrides, etc. and notify the Architect/Engineer of any discrepancies before proceeding with any work in the area under question.
2. The Structural Drawings shall be used in conjunction with the Drawings of all other disciplines and the Specifications. The Contractor shall verify the requirements of other trades as to sleeves, chases, hangers, inserts, anchors, holes, and other items to be placed or set in the Structural Work.
3. There shall be no vertical or horizontal sleeves set, or holes cut or drilled in any beam or column unless it is shown on the Structural Drawings or approved in writing by the Structural Engineer of Record.
4. Mechanical and electrical openings through supported slabs and walls, 8" diameter or larger, not shown on the Structural Drawings must be approved by the Structural Engineer of Record (SER). Openings less than 8" in diameter shall have at least 1'-0" clear between openings, unless approved in writing by the SER.
5. Verify locations and dimensions of mechanical and electrical openings through supported slabs and walls shown on the Structural Drawings with the Mechanical and Electrical Contractors.
6. Do not install conduit in supported slabs, slabs on grade, or concrete walls unless explicitly shown or noted on the Structural Drawings.
7. Do not suspend any items, such as ductwork, mechanical or electrical fixtures, ceilings, etc. from steel roof deck or wood roof sheathing.
8. The Mechanical Contractor shall verify that mechanical units supported by the steel framing are capable of spanning the distance between the supporting members indicated on the Structural Drawings. The Mechanical Contractor shall supply additional support framing as required.
9. If drawings and specifications are in conflict, the most stringent restrictions and requirements shall govern.

SPECIALTY STRUCTURAL ENGINEERING (SSE)

1. A Specialty Structural Engineer is defined as a Professional Engineer licensed in the State of Indiana, not the Structural Engineer of Record, who performs Structural Engineering functions necessary for the structure to be completed and who has shown experience and/or training in the specific speciality.
2. It is the Specialty Structural Engineer's responsibility to review the Construction Drawings and Specifications to determine the appropriate scope of engineering.
3. It is the intent of the Drawings and Specifications to provide sufficient information for the Specialty Structural Engineer (SSE) to perform his design and analysis. If the SSE determines there are details, features, or unanticipated project limits which conflict with the engineering requirements as described in the project documents, the SSE shall in a timely manner, contact the Structural Engineer of Record for resolution of conflicts.
4. The Specialty Structural Engineer (SSE) shall forward documents to the Structural Engineer of Record for review. Such documents shall bear the stamp of the SSE and include:
   - A) Drawings introducing engineering input, such as defining the configuration or structural capacity of structural components and/or their assembly into structural systems.
   - B) Calculations.
   - C) Computer printouts which are an acceptable substitute for manual calculations provided they are accompanied by sufficient design assumptions and identified input and output information to permit their proper evaluation. Such information shall bear the stamp of the Specialty Engineer as an indication that said engineer has accepted responsibility for the results.
5. Contractors are referred to the specific technical specification sections and the structural drawings for those elements requiring Specialty Structural Engineering. Examples of components requiring Specialty Structural Engineering include, but are not limited to the following:
   - A) Specialty Foundation Systems.
   - B) Temporary and Permanent Retention Systems.
   - C) Temporary and Permanent Dewatering Systems.
   - D) Underpinning Systems.
   - E) Shoring and Bracing Systems.
   - F) High-Performance Concrete Mix Designs.
   - G) Steel Stairs.
   - H) Prefabricated Wood Wall Panels.
   - I) Pre-Engineering Metal Building Systems.
6. When modifications are proposed to elements under the design and certification of the Specialty Structural Engineer (SSE), written authorization by the SSE must be obtained and submitted to the Engineer of Record for review, prior to performing the proposed modification.

FOUNDATIONS

1. Proofroll slab on grade areas with a medium-weight roller or other suitable equipment to check for pockets of soft material hidden beneath a thin crust of better soil. Any unsuitable materials thus exposed should be removed and replaced with compacted, engineered fill as outlined in the specifications. Proofrolling operations shall be monitored by the Geotechnical Testing Agency.
2. All engineered fill beneath slabs and over footings should be compacted to a dry density of at least 93% of the Modified Proctor maximum dry density (ASTM D-1557). All fill which shall be stressed by foundation loads shall be approved granular materials compacted to a dry density of at least 95% (ASTM D-1557). Coordinate all fill and compaction operations with the Specifications and the Subsurface Investigation.
3. Compaction shall be accomplished by placing fill in approximate 8" lifts and mechanically compacting each lift to at least the specified minimum dry density. For large areas of fill, field density tests shall be performed for each 3,000 square feet of building area for each lift as necessary to insure adequate compaction is being achieved.
4. Column footings and wall footings to bear on firm natural soils or well-compacted engineered fill with allowable bearing pressures of XXXX PSF and XXXX PSF for column and wall footings respectively, as outlined in the Subsurface Investigation Report.

   It is essential that the foundations be inspected to insure that all loose, soft, or otherwise undesirable material (such as organics, existing uncontrolled fill, etc.) is removed and that the foundations will bear on satisfactory material. The Geotechnical Testing Agency shall inspect the subgrade and perform any necessary tests to insure that the actual bearing capacities meet or exceed the design capacities. The Geotechnical Testing Agency shall verify the bearing capacity at each spread column footing and every 10 feet on center for strip footings prior to placement of concrete.
5. Place footings the same day the excavation is performed. If this is not possible, the footings shall be adequately protected against any detrimental change in condition, such as from disturbance, rain, or freezing.
6. It is the responsibility of the Contractor and each Sub-Contractor to verify the location of all utilities and services shown, or not shown; and establish safe working conditions before commencing work.
7. The Contractor shall layout the entire building and field verify all dimensions prior to excavation.
8. For information regarding subsurface conditions, refer to the Subsurface Investigation & Foundation Recommendation Report. At the time of printing these bidding drawings, this report had not been completed. The recommendations in the report will be updated on these drawings when the report has been received.

DESIGN CRITERIA

1. DESIGN STANDARDS: The intended design standards and/or criteria are as follows:

General	The 2014 Indiana Building Code (2012 International Building Code (IBC) with Indiana Amendments)
Concrete	ACI 318
Masonry	ACI 530
Wood Framing	NDS

   All referenced standards and codes, as well as ASTM numbers, are for the editions of these publications referenced in the Building Code listed above, unless otherwise noted.
2. DEAD LOADS: Gravity Dead Loads used in the design of the structure are as computed for the materials of construction incorporated into the building, including but not limited to walls, floors, ceilings, stairways, fixed partitions, finishes, cladding and other similar architectural and structural items, as well as mechanical, electrical and plumbing equipment and fixtures, and material handling and fixed service equipment, including the weight of cranes.
3. LIVE LOADS: Gravity live loads used in the design of the structure meet, or exceed the following table (IBC 2012, 1607.1):

OCCUPANCY OR USE	UNIFORM (PSF)	CONCENTRATED (LB) [Note #1]
A. Office Buildings		
1. Lobbies & First Floor Corridors	100	2000
2. Offices	50	2000
3. Mezzanine Storage	150	---
4. Light Storage	125	---

   Note #1: Unless otherwise noted, the indicated concentrated load has been assumed to be uniformly distributed over an area of 30" x 30".
4. HANDRAILS AND GUARDS

A. Handrail Assemblies and Guards	50 PLF applied in any direction 200 LB concentrated load applied in any direction (non-concurrent with 50 PLF load)
B. Components, Intermediate Rails, Balusters, Fillers, Etc.	50 LBS horizontally applied normal load on an area not to exceed 1 square foot not superimposed with those of handrail assemblies.

5. ROOF LIVE/SNOW LOADS: Gravity Live Loads used in the design of the roof structure meet or exceed the following table:

A. Snow Load	
Ground Snow Load, Pg	20 PSF
Flat Roof Snow Load, Pf	15.4 PSF
Low Slope Minimum Snow Load, Pm	20 PSF
Exposure Factor, Ce	1.0
Risk Category (IBC Table 1604.5)	II
Snow Importance Factor, Is	1.0
Thermal Factor, Ct	1.1
B. Minimum Roof Live Load	20 PSF

   1. Unbalanced roof snow loads calculated in accordance with Section 7.6, ASCE 7. Specialty Structural Engineers must consider unbalanced snow loads in the design of pre-engineered trusses, frames, skylights, curtain walls, cold-formed metal framing, canopies, etc.
6. LATERAL LOADS: Lateral loads were computed using the following criteria:

A. Wind Load	
Ultimate Design Wind Speed, Vult	115 MPH
Nominal Design Wind Speed, Vasd	89 MPH
Wind Exposure Category	C
Risk Category (IBC Table 1604.5)	II
Internal Pressure Coefficient, GCpi	± 0.18
B. Seismic Load	
Site Classification	D
Risk Category (IBC Table 1604.5)	II
Seismic Importance Factor, Ie	1.0
Mapped Spectral Response Acceleration, Ss	0.167g
Mapped Spectral Response Acceleration, S1	0.089g
Design Spectral Response Acceleration, Sds	0.178g
Design Spectral Response Acceleration, Sd1	0.143g
Seismic Design Category, SDC	C
Response Modification Coefficient, R	3
Seismic Response Coefficient, Cs	0.059
Analysis Procedure	Equivalent Lateral Force
Base Seismic Force-Resisting System (ASCE 7-10, Table 12.2-1)	Structural steel systems not specifically detailed for seismic resistance

7. SAFETY FACTORS: This structure has been designed with 'Safety Factors' in accordance with accepted principles of structural engineering. The fundamental nature of the 'Safety Factor' is to compensate for uncertainties in the design, fabrication, and erection of structural building components. It is intended that 'Safety Factors' be used such that the load-carrying capacity of the structure does not fall below the design load and that the building will perform under design load without distress. While the use of 'Safety Factors' implies some excess capacity beyond design load, such excess capacity cannot be adequately predicted and SHALL NOT BE RELIED UPON.

CAST IN PLACE CONCRETE

1. Details of fabrication of reinforcement, handling and placing of the concrete, construction of forms and placement of reinforcement not otherwise covered by the Plans and Specifications, shall comply with the ACI Code requirements of the latest revised date.
2. Cold weather concreting shall be in accordance with ACI 306. Cold weather is defined as a period when for more than 3 successive days the average daily air temperature drops below 40F and stays below 50F. The Contractor shall maintain a copy of this publication on site.
3. Hot weather concreting shall be in accordance with ACI 305. Hot weather is defined as any combination of the following conditions that tends to impair the quality of the freshly mixed or hardened concrete: high ambient temperature, high concrete temperature, low relative humidity, wind speed, or solar radiation The Contractor shall maintain a copy of this publication on site.
4. A certified Testing Agency shall be retained to perform industry standard testing including measurement of slump, air temperature, concrete cylinder testing, etc. to ensure conformance with the Contract Documents. Submit reports to Architect/Engineer.
5. Finishing of Slabs: After screeding, bull floating and floating operations have been completed, apply final finish as indicated below, and as described in the Division 3 Cast In Place Concrete Specification of the Project Manual.

A. Floor Slabs	Hard Trowel Finish
B. Ramps, Stairs, & Sidewalks	Broom Finish
C. Surfaces to Receive Topping Slab	Float Finish
D. Surfaces to receive thick-set mortar beds or similar cementitious materials	Float Finish
E. Driving Surfaces	Rough Swirl Finish

   Sample Finishes: See Specifications for sample and mockup requirements, if any.

   Floor Tolerances: See the Specifications for specified Ff and Fl tolerances. Ff and Fl testing shall be performed by the Testing Agency in accordance with ASTM E-1155. Results, including acceptance or rejection of the work will be provided to the Contractor and the Architect/Engineer within 48 hours after data collection. Remedies for out-of-tolerance work shall be in accordance with the Specifications. When approved by the Structural Engineer of Record, measurement of the gaps beneath a 10-foot straight edge may be used in lieu of Ff and Fl testing. Approval must be obtained in writing prior to the beginning of concrete operations.
6. Finishing of Formed Surfaces: Finish formed surfaces as indicated below, and as described in the Division 3 Cast In Place Concrete Specification of the Project Manual.

A. Sides of Footings & Pile Caps	Rough Form Finish
B. Sides of Grade Beams	Rough Form Finish
C. Surfaces not exposed to public view	Rough Form Finish
D. Surfaces exposed to public view	Smooth Form Finish

7. The Contractor shall consult with the Structural Engineer of Record before starting concrete work to establish a satisfactory placing schedule and to determine the location of construction joints so as to minimize the effects of shrinkage in the floor system.
8. Sawn or tooled control/contraction joints shall be provided in all slabs on grade. For a framed structure, joints shall be located on all column lines. If the column spacing exceeds 20'-0", provide intermediate joints. Exterior slabs, and interior slabs without column shall have joints spaced a maximum of 15'-0" apart. Layout joints so that maximum aspect ratio (ratio of long side to short side) does not exceed 1.5.
9. Where vinyl composition tile, vinyl sheets goods, thin-set epoxy terrazzo, or other similar material is the specified finish floor material, the Contractor shall coordinate the locations of control/contraction and construction joints with the Finish Flooring Contractor. Submit a dimensioned plan showing joint locations and proposed sequence of floor pours.
10. Unless specifically noted on the Plans, composite and non-composite supported slabs on metal deck, and supported cast-in-place concrete slabs do not require sawn control joints.
11. Joints in slabs to receive a finished floor may remain unfilled, unless required by the finish flooring contractor. All exposed slabs shall be filled with sealant specified in Division 7, or as follows: All slabs in industrial, manufacturing, or warehouse applications subject to wheeled traffic shall be filled with specified epoxy resin sealant, all other joints shall be filled with specified elastometric sealant. Defer filling of joints as long as possible, preferably a minimum of 4 to 6 weeks after the slab has been cured. Prior to filling, remove all debris from the slab joints, the fill in accordance with the manufacturer's recommendations.
12. Refer to the Architectural Drawings for locations and details of reveals (1" maximum depth) in exposed walls.
13. Refer to the Architectural Drawings for chamfer requirements for corners of concrete. Where not indicated, provide 3/4" chamfers on exposed corners of concrete, except those abutting masonry.
14. Refer to the Architectural Drawings for exact locations and dimensions of recessed slabs, ramps, stairs, thickened slabs, etc. Slope slabs to drains where shown on the Architectural and Plumbing Drawings.
15. Sidewalks, drives, exterior retaining walls, and other site concrete are not indicated on the Structural Drawings. Refer to the Site/Civil and Architectural Drawings for locations, dimensions, elevations, jointing, and finish details.

CONCRETE REINFORCING

1. Reinforcement, other than cold drawn wire for spirals and welded wire fabric, shall have deformed surfaces in accordance with ASTM A305.
2. Reinforcing steel shall conform to ASTM A615, Grade 60, unless noted.
3. Welded wire fabric shall conform to ASTM A1064, unless noted.
4. Where hooks are indicated, provide standard hooks per ACI and CRSI for all bars unless other hook dimensions are shown on the plans or details.
5. Reinforcement in footings, walls and beams shall be continuous. Lap bars a minimum of 40 diameters, unless noted otherwise.
6. Reinforcement shall be supported and secured against displacement in accordance with the CRSI 'Manual of Standard Practice'.
7. Details of reinforcing steel fabrication and placement shall conform to ACI 315 'Details and Detailing of Concrete Reinforcement' and ACI 315R 'Manual of Engineering and Placing Drawings for Reinforced Concrete Structures', unless otherwise indicated.
8. Spread reinforcing steel around small openings and sleeves in slabs and walls, where possible, and where bar spacing will not exceed 1.5 times the normal spacing. Discontinue bars at all large openings where necessary, and provide an area of reinforcement, equal to the interrupted reinforcement, in full length bars, distributing one-half each side of the opening. Where shrinkage and temperature reinforcement is interrupted, add (2) #5 x opening dimension + 4'-0" on each side of the opening. Provide #5 x 4'-0" long diagonal bars in both faces, at each corner of openings larger than 12" in any direction.
9. Provide standees for the support of top reinforcement for footings, pile caps, and mats.
10. Provide individual high chairs with support bars, as required for the support of top reinforcement for supported slabs. Do NOT provide standees.
11. Provide snap-on plastic space wheels to maintain required concrete cover for vertical wall reinforcement.
12. Where walls sit on column footings, provide dowels for the wall. Dowels shall be the same size and spacing as the vertical wall reinforcement, unless noted otherwise, with lab splices as shown on the application sections. Install dowels in the footing forms before concrete is placed. Do NOT stick dowels into footings after concrete is placed.
13. Field bending of reinforcing steel is prohibited, unless noted on drawings.
14. Minimum concrete cover over reinforcing steel shall be as follows, unless noted otherwise on plan, section or note:

MINIMUM COVER FOR REINFORCEMENT

	MINIMUM COVER
FORMED CONCRETE SURFACES EXPOSED TO EARTH, WATER, OR WEATHER, AND OVER OR IN CONTACT WITH SEWAGE AND FOR BOTTOMS BEARING ON WORK MAT, OR SLABS SUPPORTING EARTH COVER:	
#5 BARS & SMALLER	1 1/2"
#6 THROUGH #18 BARS	2"
PIERS, FORMED	
FOR DRY CONDITIONS:	
STIRRUPS, SPIRALS & TIES	1 1/2"
PRINCIPAL REINFORCEMENT	2"
EXPOSED TO EARTH, WATER, SEWAGE, OR WEATHER:	
STIRRUPS & TIES	2"
PRINCIPAL REINFORCEMENT	2 1/2"
WALLS	
FOR DRY CONDITIONS:	
#11 BARS & SMALLER	3/4"
#14 & #18 BARS	1 1/2"
FORMED CONCRETE SURFACES EXPOSED TO EARTH, WATER, SEWAGE, WEATHER, OR IN CONTACT WITH GROUND	2"
FOOTINGS & BASE SLABS	
AT FORMED SURFACES & BOTTOMS BEARING ON CONCRETE WORK MAT	2"
AT UNFORMED SURFACES & BOTTOMS IN CONTACT WITH EARTH	3"
TOP OF FOOTINGS	2"

CONCRETE MIX CLASSES

FOOTINGS, FOUNDATION WALLS, & PIERS	
COMPRESSIVE STRENGTH	4000 PSI
MAXIMUM WATER/CEMENT RATIO	0.45
AIR CONTENT	0 - 3 PERCENT
WATER-REDUCING ADMIXTURE	REQUIRED
SLUMP	5" TO 6 1/2"
INTERIOR CONCRETE SLABS	
COMPRESSIVE STRENGTH	4000 PSI
MINIMUM CEMENTITIOUS MATERIAL CONTENT	517 LB/CU YD
AIR CONTENT	0 - 3 PERCENT
WATER-REDUCING ADMIXTURE	REQUIRED
SLUMP	5" TO 6 1/2"
ADMIXTURES AND REINFORCING PER PLAN NOTES	
EXTERIOR CONCRETE SUBJECT TO FREEZE-THAW	
COMPRESSIVE STRENGTH	4500 PSI
MINIMUM CEMENTITIOUS MATERIAL CONTENT	564 LB/CU YD
AIR CONTENT	6 ± 1 PERCENT
WATER-REDUCING ADMIXTURE	REQUIRED
SLUMP	5" TO 6 1/2"
COARSE AGGREGATE	CRUSHED STONE
LEAN CONCRETE FILL	
COMPRESSIVE STRENGTH	2000 PSI
MAXIMUM WATER/CEMENT RATIO	0.65
AIR CONTENT	OPTIONAL
WATER-REDUCING ADMIXTURE	NOT REQUIRED
SLUMP	4" TO 7"

1. SLUMP:

MIXES CONTAINING TYPE A WRDA	5" MAXIMUM
MIXES CONTAINING MID-RANGE WRDA	5 - 6 1/2"
MIXES CONTAINING HIGH-RANGE WRDA	5 - 8"

2. SPECIFIED MINIMUM CEMENTITIOUS MATERIAL CONTENTS ARE BASED ON THE USE OF WATER REDUCING ADMIXTURES.
3. INCLUDE AN AIR-ENTRAINING ADMIXTURE FOR ALL CONCRETE EXPOSED TO FREEZING AND THAWING IN SERVICE AND FOR ALL CONCRETE EXPOSED TO COLD WEATHER DURING CONSTRUCTION, BEFORE ATTAINING ITS SPECIFIED DESIGN COMPRESSIVE STRENGTH. REF. ACI 306 FOR DEFINITION OF COLD WEATHER.
4. CLASS C FLY ASH MAY BE USED AS A CEMENT SUBSTITUTE WITH A MAXIMUM 20% SUBSTITUTION RATE ON A POUND-PER-POUND BASIS.
5. SLAG CEMENT MAY BE USED AS A SUBSTITUTE FOR PORTLAND CEMENT WITH A MAXIMUM 50% SUBSTITUTION RATE ON A POUND-PER-POUND BASIS WITH THE EXCEPTION OF CLASS E CONCRETE, WHICH SHALL BE LIMITED TO 30%.
6. WHEN SLAB CEMENT AND FLY ASH ARE USED IN THE SAME CONCRETE MIX, THE MAXIMUM SUBSTITUTION RATES SHALL COMPLY WITH THE FOLLOWING:

PORTLAND CEMENT/SLAG/FLY ASH RATIO:	
CLASS E EXTERIOR CONCRETE	70% / 20% / 10%
ALL OTHER CLASSES	50% / 30% / 20%

7. FOR CONCRETE TO BE CAST DURING COLD WEATHER, THE MAXIMUM SUBSTITUTION RATE FOR SLAG CEMENT SHALL BE 30%. IF SLAG CEMENT AND FLY ASH ARE USED IN THE SAME MIX, THE MAXIMUM SUBSTITUTION RATES SHALL COMPLY WITH A RATIO OF PORTLAND CEMENT/SLAG/FLY ASH OF 70% / 20% / 10%.
8. PROPORTION CONCRETE MIXES TO PROVIDE WORKABILITY AND CONSISTENCY TO PERMIT CONCRETE TO BE WORKED READILY INTO THE CORNERS AND ANGLES OF THE FORMS AND AROUND REINFORCEMENT BY THE METHODS OF PLACEMENT AND CONSOLIDATION TO BE EMPLOYED, WITHOUT SEGREGATION AND EXCESSIVE BLEEDING.
9. ADJUSTMENTS TO THE APPROVED MIX DESIGNS MAY BE REQUESTED BY THE CONTRACTOR WHEN JOB CONDITIONS, WEATHER, TEST RESULTS, OR OTHER CIRCUMSTANCES WARRANT. THESE REVISED MIX DESIGNS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO USE.

FINISH FLOORS AND SLABS

1. Comply with recommendations of ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Perform this work in a manner which will provide floor flatness F(f) and floor levelness F(l) criteria specified.
2. Deposit and consolidate concrete floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
   - A. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement, other embedded items and into corners.
   - B. Maintain reinforcement in position on chairs during concrete placement.
   - C. Bring slab surfaces to correct elevation with a straightedge and strike off.
   - D. Slope slab surfaces uniformly to drains where required.
   - E. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plan, free of humps or hollows, before excess moisture or bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations. Provide wokr procedures required to meet F(f) and F(l) requirements and to meet requirements for applied floor finishes specified in Division 9.
3. Unless otherwise specified in the Contract Documents, the minimum F(f) and F(l) numbers shall be met:
   - A. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes. Apply scratch finish to surfaces to receive bonded concrete floor topping and other bonded cementitious floor finishes.
     1. Specified overall values of flatness, F(f) 20; and levelness F(l) 15; with minimum local values of flatness F(f) 15; and levelness, F(l) 10.
     2. Option: Finish and measure surface so gap at any point between concrete surface and an unleveled freestanding 10 foot long straightedge, resting on two high spots and placed anywhere on the surface, does not exceed 1/4".
   - B. Float Finish: Consolidate surface with power driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture. Apply float finish to monolithic concrete floor and slab surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or terrazzo, ceramic tile, and quarry tile set over a cleavage membrane. Uniformly slope surfaces to drains, unless otherwise indicated.
     1. Specified overall values of flatness, F(f) 25; and levelness, F(l) 20; with minimum local values of flatness F(f) 18; and levelness, F(l) 15.
     2. Option: Finish and measure surface so gap at any point between concrete surface and an unleveled freestanding 10 foot long straightedge, resting on two high spots and placed anywhere on the surface, does not exceed 3/16".
   - C. Trowel Finish: After applying fload finish, apply first trowel finish and consolidate concrete by power driven trowel or by hand trowel if area is small or inaccessible to power driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth surface defects that would telegraph through applied coatings or floor coverings. Uniformly slope surfaces to drains, unless otherwise indicated. Apply a trowel finish to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, thin-set ceramic or quarry tile, paint, or other thin film finish coating system. Finish surfaces to following tolerances, measured within 24 hours according to ASTM E1155 for a randomly trafficed floor surface:
     1. Specified overall values of flatness, F(f) 35; and levelness, F(l) 25; with minimum local values of flatness F(f) 25; and levelness, F(l) 18.
     2. Option for small areas: Finish and measure surface so gap at any point between concrete surface and an unleveled freestanding 10 foot long straightedge, resting on two high spots and placed anywhere on the surface, does not exceed 1/8".
     3. Athletic floors, Cafeterias, Large-Group Instruction areas and similar areas: Specified overall values of flatness, F(f) 45; and levelness, F(l) 35; with minimum local values of flatness F(f) 35; and levelness, F(l) 25. Grind high areas and fill low areas as required to produce a surface acceptable to the installer of the specified finish floor system. Provide screeds not exceeding 20 feet on center, vibrating screed to strike-off, highway straightedge to close and straighten, machine float, restraighten with highway straightedge or "cross rod," and machine trowel three times, in accordance with ACI referenced recommendations. For floors to receive fluid-applied athletic floors, assume a minimum of 10% of the length of sawn control joints will require grinding to address curling.
4. For suspended concrete slabs on metal deck, additional special requirements apply:
   - A. For estimating and bidding purposes, assume and additional 1/2" thickness of concrete will be necessary for all suspended (supported) elevated concrete slabs on metal deck to compensate for deflection of floor structure and deck. Suspended slabs on deck shall meet the following: Specified overall value of flatness, F(f) 30; with minimum local value of flatness F(f) 20. The use of a laser screed is highly recommended. Monitor the deflection of the structrue during early pours and adjust concrete placement and finishing procedures accordingly.

POST-INSTALLED DOWELS & ANCHOR RODS

1. All reinforcing steel and threaded rod anchors to be installed in a 2-part chemical anchoring system shall be treated as follows:
   - A. Drill holes larger than bar or rod to be embedded. Coordinate hole diameter with Manufacturer's recommendations.
   - B. Holes must be cleaned and prepared in accordance with Manufacturer's recommendations.
   - C. When reinforcing steel is encountered during drilling for installation of anchors; stop drilling, use a sensor to locate the reinforcing in the surrounding area and install anchor(s) as close as possible to the original location. Contact the Structural Engineer of Record (SER) for direction when the revised location is more than 2" from the original location, or when the original function of the anchorage is significantly altered. When in doubt, contact the SER for direction.
   - D. Drill the hole a minimum of 15 bar diameters or as shown on the plans.
   - E. Use a 2-part adhesive anchoring system, Hilti HY-200, or approved equal.
   - F. For anchorage into hollow substrate, use Hilti HY-270, or approved equal.
   - G. Reinforcing steel dowels shall be ASTM A615, Grade 60, unless noted.
   - H. Anchor rods shall be Hilti HAS-V-36, unless noted. Provide finish as noted on the Drawings. If not noted, provide hot-dip galvanized finish for interior applications. Provide stainless steel finish for all exterior applications, unless noted.
2. When column anchor bolts have been omitted, or damaged by construction operations, the Contractor must obtain the written approval of the Structural Engineer of Record prior to repair or replacement.
   - A. As a precaution, the affected column must be guyed and braced after repair for the balance of the erection period.
   - B. As an alternate to guying and bracing, the Contractor may at his option, employ a testing agency to perform a tensile pull test to confirm the strength for the repaired or replaced anchor bolt. The tensile proof load must exceed 1.33 x the design load of the original anchor without causing distress of the anchor bolt or the surrounding concrete. Reference the following table for the minimum proof loads:

3/4" diameter:	12.8 kips
7/8" diameter:	17.4 kips
1" diameter:	22.7 kips
1 1/8" diameter:	28.8 kips
1 1/4" diameter:	35.6 kips

     Note: Values listed above are for ASTM F-1554, Grade 36 material. When higher grade or strength materials are specified, refer to the AISC Steel Design Guide 1, Table 3.1 for minimum allowable loads to be multiplied by 1.33.
   - C. When affected anchor bolts are part of a fixed moment resisting column base, such as those in moment-resisting space frames, canopies, or fixed-base installations, the repaired anchor bolts must be proof-loaded, or the affected column footing and/or pier replaced in its entirety.
   - D. When affected anchor bolts are part of a braced frame the affected column footing and/or pier must be replaced in its entirety.
   - E. Prior to erection, the controlling Contractor must provide written notification to the Steel Erector if there has been a repair, replacement or modification of the anchor bolts for that column.

REINFORCED MASONRY NOTES

1. All construction of reinforced masonry walls to be in accordance with the Building Code Requirements for Concrete Masonry Structures (ACI 530) and Commentary.
   - A) f'm = 2000 PSI
   - B) Maximum height of masonry lift: 5'-0"
   - C) Maximum height of grout lift: 5'-0"
   - D) See Specifications for additional masonry wall information.
2. CONCRETE BLOCK: Minimum compressive test strength on the net cross-sectional area: 2800 PSI.
3. MORTAR: Type S required.
4. GROUT: ASTM C476, 2500 PSI with a slump of 8" min. and 11" max.
5. REINFORCING: fy = 60000 PSI with a min. lap of 48 bar diameters.

PRE-ENGINEERED METAL BUILDING (PEMB) NOTES

1. The entire PEMB system shall be designed by the PEMB Manufacturer in conformance with the provisions of the 2014 Indiana Building Code and the "Low Rise Building Systems Manual" as published by the Metal Building Manufacturer's Association. Where these criteria conflict, the more stringent criteria shall apply.
2. It is the responsibility of the PEMB Manufacturer to design the complete building system, including main frame members, anchor rods, purlins, girts, lateral force resisting system(s), connections, roofing, wall panel, flashing, components, attachments, etc. The Manufacturer shall submit certification in the form of a letter bearing the seal of a Professional Engineer registered in the state of Indiana stating that the building system design meets the indicated code, performance and loading requirements.
3. The PEMB Manufacturer shall be certified by the American Institute of Steel Construction (AISC), Category MB.
4. The foundation design is based upon the Nucor Building System. The Contractor shall be responsible for coordination of any revisions required as a result of a change in the PEMB Manufacturer, including the redesign of foundations.
5. The size, number and pattern of all anchors bolts shall be determined by the PEMB Manufacturer. Anchor rod embedments are indicated on the foundation drawings.
6. The PEMB Manufacturer shall submit the anchor bolt requirement and foundation reactions prior to submittal of the balance of the building shop drawings so as not to delay the work. Should the PEMB Manufacturer make any changes in the anchor rod configuration, base plate sizing, foundation reactions, etc. after submittal and review of anchor rod submittal, they must be communicated to all parties and explicitly noted on future submittals. The PEMB Manufacturer shall bear the cost for any changes necessary to the foundations based on changes made to the anchor rods sizes or patterns, base plate sizing, foundation reactions, etc. during preparation of the balance of the building design.
7. The Contractor shall submit shop drawings of the entire PEMB system for review. The Contractor shall also submit a complete structural design analysis of the building (for recording purposes only). All shop drawing and calculation submittals shall bear the seal of a Professional Engineer registered in state of Indiana.
8. The PEMB Manufacturer must use the same grid identification as those used on the Contract Documents.
9. Design criteria and loading to be used in the design of the PEMB shall match those listed in the "Design Load Criteria" section of the structural notes with the exception that the uniform collateral load of 10 PSF may be reduced to 5 PSF. Coordinate the location and magnitude of loads for mechanical equipment and electrical fixtures with the Mechanical Contractor. Coordinate the loads of suspended equipment, fixtures, bulkheads, operable partitions, etc. with the Architectural Drawings.
10. Calculations for frame deflections (drift) shall be performed using only the Bare Frame Method. Reductions based on engineering judgement using the assumed composite stiffness of the building envelope are not permitted.
    - A. Maximum lateral deflection/drift due to 10-year wind load shall not exceed H/120 for buildings with flexible cladding, such as metal wall panel, EIFS, wood siding, etc. H denotes the eave height of the building.
11. The PEMB Manufacturer shall provide all girts, purlins, eave struts, and other components required for a complete system. All wall systems, such as steel studs, curtain walls, storefronts, etc. shall be properly supported by the PEMB system. Allowable deflections of components shall not exceed the following:

A) Primary Framing - no ceilings*	L/150 for Roof Snow Load + Collateral Load
B) Primary Framing with suspended Acoustical Ceilings	L/240 for Roof Snow Load + Collateral Load
C) Secondary Framing - no ceilings*	L/150 for Dead Load + Roof Snow Load + Collateral Load
D) Secondary Framing with suspended Acoustical Ceilings	L/240 for Roof Snow Load + Collateral Load
E) Wall Girts w/ Flexible Cladding	L/150
F) Wall Girts w/ Brittle Cladding	L/600
G) Wind Beams - Flexible Cladding	L/240
H) Wind Beams - Brittle Cladding	L/400
I) Wind Columns - Flexible Cladding	L/240
J) Wind Columns - Brittle Cladding	L/400

    L denotes the span of the element between supports

    For 10-year wind values, use 75% of the 50-year wind pressure

    * The PEMB Manufacturer must check ponding for low-slope applications.
12. The PEMB shall be designed to resist lateral loads as follows:

A. Interior Frame Lines	Rigid Frames with Pinned Bases
B. Endwall Frame Lines	Bearing Endwalls with Diagonal Rod or Cable Bracing
C. Expandable Endwall Frame Lines	Full-Load Rigid Frame w/ Pinned Bases & Removable Wind Columns
D. Sidewalls Parallel to Eaves	Diagonal Rod, Cable Bracing, or Portal Frames

    Where endwall bracing is not feasible, provide horizontal bracing in plane of roof to distribute lateral load to first interior rigid frame line. Fixed base columns and portal frames are not permitted, unless shown otherwise on the Contract Documents.
13. The PEMB Erector shall provide all temporary guying and bracing as required.
14. Unless otherwise specified or noted, all steel members shall be cleaned and painted in accordance with Manufacturer's standard procedures. Paint color for both primary and secondary steel shall match.
15. Where purlin spans exceed the capacity of the PEMB Manufacturer's standard cold-rolled zees and channels, or where specifically shown or noted on the plans, provide open web joist purlins. Open web joist purlins may be the PEMB Mfr's proprietary system, or standard open-web joists designed, manufactured and erected in accordance with the Steel Joist Institute (SJI). PEMB Manufacturer shall design open web joist purlins as a complete system including, meeting all specified design criteria, with connections, extensions, bracing and bridging (including uplift bridging) as required. For open web joists conforming to SJI criteria, furnish size and number of rows of bridging conforming to the latest edition of the Steel Joist Institute Specification.
16. When modifications are proposed to PEMB members or elements under the design and certification of the PEMB Manufacturer, written authorization by the PEMB's Speciality Structural Engineer must be obtained and submitted to the Structural Engineer of Record for review prior to performing the proposed modification.

WOOD FRAMING NOTES

1. For wood connections not specifically noted or detailed, follow the requirements of IBC 2012 Table 2304.9.1 or ESR 1539.
2. All nails are common nails unless noted otherwise. All nails shall be carefully driven and not overdriven. Submit all proposed fasteners for approval prior to construction. Installation of all fasteners shall meet the requirements of NDS and ISANTA guidelines, including those in ESR 1539, and Section 2303.6 of the IBC.
3. Refer to the Wall Schedules and/or Framing Plans for size, spacing, and species of wall studs and plates. If not shown otherwise, studs and plates are to be #1 or #2 Spruce-Pine-Fir (SPF) with stud spacing 16" o/c maximum. If not shown otherwise, bearing wall headers are to be #2 Southern Pine (SYP).
4. At the contractor's discretion, studs in non-load bearing interior walls may be premium stud grade spaced at 16" o.c. on all levels.
5. Fasten double (DBL) studs together with 0.131" x 3" nails at 6" o.c. unless noted otherwise. For more than two studs, fasten in the same way, nailing as each stud is added.
6. See the header schedule for all header sizes and materials. All headers in non-load-bearing interior walls are to be (2) 2x4 #2 SPF for openings up to 4'-0" and (2) 2x6 #2 SPF for openings over 4'-0". All headers in non-load-bearing walls to have (1) jack stud at each end.
7. Refer to the Shear Wall Schedule for sheathing, nailing, strap ties, hold downs, etc. required for wood-panel-sheathed and gypsum-wallboard-sheathed shear walls.
8. Use double top plates on all walls, including non-load-bearing walls, with all splices and corners lapped. At "T" intersections do not lap top plate of intersecting wall cutting the top plate of the continuous wall, rather use a metal tie plate as described in the exception to Section 2308.9.2.1 of the IBC.
9. Unless otherwise noted on plan or detail, anchor wall plates to foundations and/or supporting structure using Simpson Strong-Tie Titen HD Heavy Duty Screw Anchors, 5/8" diameter with minimum 5" embedment. Space anchors at 48" o.c. for load-bearing and non-load-bearing walls. Reduce spacing to 24" o.c. for all shear walls.
10. Coordinate final floor and roof framing including joist or truss layout & truss member configuration with Mechanical, Electrical, & Plumbing (MEP) drawings. Obtain additional MEP information as needed for complete coordination. Keep all mechanical chases free of framing. Do not locate joists or trusses at parallel plumbing walls.
11. Always bear floor and roof joists or trusses on available interior and exterior bearing walls. Do not clear-span framing disregarding an available bearing wall where such a bearing wall is identified.
12. Where floor trusses are used, use a minimum of (2)4x2 vertical members in floor trusses at all bearings unless noted otherwise. One of these verticals may be under a ribbon board at the end of the truss where ribbon boards are allowed. Do not allow for, nor use ribbon boards at the ends of trusses where solid, continuous full-height blocking or continuous wood-sheathed knee walls are indicated to be used. Where ribbon boards are used with floor trusses they are to be 2x6 minimum.
13. Design roof joists or trusses to support the weight of snow drifting where it applies, as well as rooftop mechanical units, exhaust fans, access hatches, etc. Confirm weights & locations before final design and show the loads for these units/fixtures on the sealed drawings. The Contractor shall ensure the units are installed at their design locations.
14. Where framing supported by a joist or truss can cause uplift on that joist or truss (such as at cantilevered balcony framing) the designer shall consider a load case that maximizes the uplift load in combination with no live load applied to the joist or truss supporting the uplift.
15. All exposed framing to be pressure preservative treated wood (PPT) as described in the Specifications. All PPT wood to be kiln dried after treatment (KDAT). Hardware used with PPT wood to be hot-dip galvanized or stainless steel.
16. All hardware to be by Simpson Strong-Tie or approved equal. Where hardware is not specifically designated, submit proposed hardware for approval. Where more than one type of fastener or fastener pattern is allowed by the hardware manufacturer, hardware fasteners are to be of the type, size, and quantity to maximize the load capacity of the hardware in the specific application shown on these plans, unless noted otherwise.
17. Where a wood-framed wall backs up a non-structural masonry veneer, ties must be fastened to the wood framing members using screws meeting the requirements of the tie manufacturer. Where the tie manufacturer allows the use of nails, ring shank nails must be used. Smooth shank nails may never be used to attach masonry ties to wood framing.
18. Reference the Architectural Plans for layout of all walls, openings, wall types, etc. Verify all dimensions prior to design of wall panels & immediately notify the Architect and Engineer of any discrepancies.
19. Where a Specialty Structural Engineer designs floor and/or roof framing (such as trusses or I-joists), the floor and/or roof designer shall provide the Wall Panel Designer the loads/reactions and locations of all girder or beam bearing points. The Wall Panel Designer shall specify and the Wall Panel Manufacturer shall install sufficient columns/studs to support all such loads from the girder or beam bearing location down to the supporting foundation or podium framing. The Contractor shall ensure the presence of such columns/studs. Similarly, where walls are field-framed, the Framing Contractor shall install the columns/studs for support of girders and beams. As a minimum, the number of studs shown on the plans shall be used, with a minimum of (2) 2x6 or (3) 2x4 studs.
20. At bearing walls, blocking must be added in the floor system to create continuity of all shear wall chord studs, posts and columns, jack/king studs at headers, etc. Such blocking shall be part of the sheathed shear blocking panels, or knee walls where they are used. Where there are wood walls below, these studs, columns, posts, etc. must be present in those walls as well creating a continuous load path to structural steel, the foundation, or other identified adequate support.
21. Where decks or balconies are wood-framed, if the railing relies on a connection to the wood balcony beams or rim joists for stability and load resistance, then the railing designer shall check torsion and other effects on the edge beams or joists and their connections.

STRUCTURAL WOOD PANEL/SHEATHING NOTES

1. All plywood and Oriented Strand Board (OSB) construction shall be in accordance with the American Plywood Association (APA) Specifications and DOC PS1 or PS2.
2. All floor sheathing shall be 3/4" nominal (23/32" actual), APA-rated Sturd-I-floor, with tongue-and-groove edges, unless otherwise noted. Fasten floor sheathing/subfloor with 10d common (0.148" x 3") nails spaced 6" o.c. at supported edges and 12" o.c. at intermediate supports. Field-glue using adhesives meeting APA-specification AFG-01, applied in accordance with the manufacturer's recommendations.
3. The use of heavily loaded drywall carts or similar conveyances to transport building materials and/or debris can exceed the APA PS2 concentrated load test standard capacity. In areas subject to cart traffic (eg. corridors, elevator lobbies, etc.), the contractor shall place a temporary second layer of dry wood structural panel to help avoid failures of the floor panels. Refer to APA Technical Note TT-024, February 2008.
4. All structural wall panel sheathing shall be 7/16", APA-rated PS2 sheathing, unless otherwise indicated. Fasten wall sheathing with 8d common (0.131" x 2 1/2") nails spaced 6" o.c. at supported panel and 12" o.c. at intermediate supports, unless otherwise noted in the Shear Wall Schedule.
5. All gypsum wall board wall sheathing to be 5/8", unless otherwise shown or noted on the Architectural Drawings. Fasten sheathing with 8d cooler nails or 0.120" wallboard nails x 2 3/8" long spaced 7" o.c. at supported edges and 12" o.c. at intermediate supports, unless otherwise noted in the Shear Wall Schedule.
6. Provide 2x blocking with specified edge nailing at unsupported panel edges as follows:
   - A) Roofs and Floors - Not required unless indicated on the plans, noted, or details.
   - B) Walls - Required at all wood panel joints, unless noted otherwise.
7. Unless otherwise noted or shown, install plywood sheathing with the strength axis of the panel across supports and with panel continuous over two or more spans. Allow 1/8" spacing at panel ends and edges unless otherwise recommended by the sheathing manufacturer.
8. Wood structural panels used in shear walls shall be 4' x 8' minimum. These panels may only be cut at wall or wall opening boundaries. All panel edges shall fall on framing members. Block all horizontal joints and fasten with edge nailing.
9. For shear walls, where a vertical sheathing joint falls on the joint between two adjacent studs (such as the ends of shop or site built panels or at a vertical step in the building floor), fasten the end studs together with 0.131"x3" nails at same spacing as for the shear wall sheathing.
10. In all wood-framed roof, floor, ceiling, and wall areas where wood sheathing and/or gypsum wall board sheathing is applied, attach the sheathing to all wood framing members regardless of the closeness of their spacing. Where gypsum wall board sheathing is applied over resilient channels, attach the resilient channels to all framing members.
11. Installation of gypsum panel products must follow the requirements of the Gypsum Association. The "Floating Interior Angles" method as described in GA-216 shall be used to avoid negative effects from potential truss uplift, wood shrinkage, and other causes of framing movement. An extensive discussion of this issue can be found in the TTB "Partition Separation Prevention and Solutions" from the Structural Building Components Association. The contractor shall familiarize himself with the content of these documents before beginning the installation of gypsum panel products.
12. The requirements shown on the structural drawings for sheathing are the minimum requirements for the structural needs of the structure. They do not account for all possible quality, aesthetic, and other considerations. The contractor is expected to be familiar with APA's construction guidelines and other common construction practices necessary to avoid quality and aesthetic issues. The use of panel edge gaps to avoid panel buckling is an example. Another is the allowance of the application of wood sheathing to walls with the face grain vertical, which can lead to greater buckling possibilities. The contractor will need to consider stud size, stud spacing, and sheathing thickness in these situations.
13. For wood sheathed shear walls, unless otherwise indicated, regardless of the extent of a wall indicated as a wood sheathed shear wall, wood shear wall sheathing must extend the full length of the wall to maintain a smooth wall and avoid an offset/bump in the wall. Sheathing must continue to a corner or offset in the wall. If any part of the wall extends past a corner or offset (such as dropped headers across an inset entry) then the sheathing must continue past this point so that a smooth wall is created.

DIMENSIONS OF COMMON NAILS

PENNYWEIGHT	MIN. LENGTH, IN INCHES	SHANK DIA., IN IN.
6d	2	0.113
8d	2.5	0.131
10d	3	0.148
16d	3.5	0.162
20d	4	0.192

1. NAILS CALLED OUT IN PLAN, SECTION, DETAIL, OR SCHEDULE ARE ALWAYS COMMON NAILS. NAIL DIAMETER IS PER ESR-1539, NDS, AND THE TABLE ABOVE EXCEPT THAT NAIL LENGTH WILL ALWAYS BE 3" MINIMUM WHEN NAILING 2x FRAMING MEMBERS TOGETHER AND 3.5" WHEN NAILING LVL'S.

2. FOR CONNECTIONS NOT SHOWN, REFER TO IBC TABLE 2304.9.1 FOR MINIMUM FASTENING REQUIREMENTS.

3. FOR FASTENING OF MULTIPLE LVL PLIES, FOLLOW THE LVL MANUFACTURER'S REQUIREMENTS.

4. FOR FASTENING OF SIMPSON AND OTHER HARDWARE, FOLLOW THE HARDWARE MANUFACTURER'S REQUIREMENTS. FILL ALL FASTENER HOLES WITH THE REQUIRED FASTENERS, U.N.O.

DIAPHRAGM NAILING SCHEDULES

FLOOR DIAPHRAGM

LOCATION	SIZE	SPACING
BOUNDARY	8d	4"
PANEL EDGE	8d	4"
FIELD	8d	12"

1. 1-1/2" MINIMUM PENTRATION INTO FRAMING.
2. DIAPHRAGMS ARE UNBLOCKED, U.N.O.
3. NAILING SHOWN IS FOR ALL FLOOR LEVELS, U.N.O.
4. ALL NAILS ARE COMMON NAILS, REF. SCHEDULE THIS SHEET FOR MIN. LENGTHS AND SHANK DIAMETERS.

WOOD STAIR FRAMING NOTES:

1. ALL STAIRS SHOWN ON THE ARCHITECTURAL PLANS & DETAILS WILL HAVE WOOD LANDINGS AND FLIGHTS.
2. ALL WOOD STAIR INCLUDING STRINGERS, ARE TO BE DESIGNED BY THE STAIR MANUFACTURER FOR 100 psf LIVE LOAD PLUS DEAD LOAD. DO NOT ROUT, RIP, PLANE, OR NOTCH STRINGERS UNLESS DIRECTED TO DO SO BY A LICENSED P.E.
3. UNLESS DIRECTED TO DO SO BY A LICENSED P.E., THE STRINGER MAY NOT BE ROUTED, NOTCHED, RIPPED, PLANED, OR OTHERWISE ALTERED IN ANY WAY THAT REDUCES ITS FULL CROSS SECTION.
4. SEE ARCHITECTURAL STAIR PLANS, SECTIONS, AND DETAILS FOR ADDITIONAL DIMENSIONS AND ELEVATIONS.

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REVISIONS:

#	Date	Desc.

100% CONSTRUCTION DOCUMENT

PROJECT: #23122
DATE: 04/22/2024
DRAWN BY: DJL

STRUCTURAL NOTES

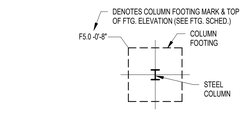
PLOT DATE/TIME: 4/22/2024 1:44:27 PM

PEMB FOUNDATION PLAN NOTES

GENERAL NOTES:

1. ALL DIMENSIONS, COLUMN LOCATIONS, COLUMN FOOTING, & TIE-ROD SIZES SHOWN ARE **PRELIMINARY** AND ARE SUBJECT TO CHANGE BASED ON FINAL COORDINATION AND LOADING PROVIDED BY THE PRE-ENGINEERED BUILDING SUPPLIER.
2. ALL DIMENSIONS SHOWN MUST BE COORDINATED WITH THE BUILDING SUPPLIER PRIOR TO SHOP DRAWING SUBMITTALS.
3. COLUMN FOOTINGS SHOWN ARE PRELIMINARY AND SUBJECT TO CHANGE BASED ON FINAL REACTIONS PROVIDED BY THE PRE-ENGINEERED METAL BUILDING SUPPLIER.
4. COLUMN FOOTINGS AND WALL FOOTINGS SHALL BEAR ON SOILS WITH AN ALLOWABLE BEARING PRESSURE PER THE GEOTECHNICAL REPORT. DESIGNS SHOWN WERE BASED ON AN ASSUMED ALLOWABLE BEARING PRESSURE OF 2000 PSF. THIS WILL BE UPDATED ONCE A GEOTECH REPORT IS MADE AVAILABLE.
5. ALL PEMB BASES ARE TO BE SET 8" BELOW FINISHED FLOOR.
6. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION REGARDING EXTERIOR FINISHES, ELEVATIONS, ETC.
7. TAPERED COLUMNS ARE ACCEPTABLE AT EXTERIOR WALLS FOR RIGID FRAMES. WIDE-FLANGE, BUILT-UP, OR SQUARE TUBE COLUMNS ARE ACCEPTABLE FOR POST-AND-BEAM FRAMES AND WIND COLUMNS.
8. FRAMING FOR THE INTERIOR MEZZANINE IS NOT PART OF THE P.E.M.B. SCOPE, AND NO LOADS FROM THE MEZZANINE WILL BE IMPARTED ONTO ANY P.E.M.B. MEMBERS.

PLAN LEGEND:



DENOTES APPROX. LOCATION OF DOWNSPOUT. TOP OF FOOTING MAY BE NOTCHED (MAX 1/4 DEPTH) AS REQUIRED TO ACCOMMODATE BOOT CONNECTION TO UNDERGROUND PIPE. PROVIDE (1) #5 x 6'-0" LONG BAR AT INSIDE OF NOTCH, TYP. IF TOP MAT OF REINFORCING IS PRESENT, IT SHOULD BE SHIFTED DOWN BELOW NOTCH. COORDINATE FINAL LOCATION AND QUANTITIES WITH THE APPROPRIATE TRADES.

PEMB KEYED NOTES

1. POST-AND-BEAM ENDWALL FRAME AT THIS LOCATION.
2. CLEAR-SPAN RIGID FRAME w/ REMOVEABLE WIND COLUMNS AT THIS LOCATION.
3. A FULL-HEIGHT PORTAL FRAME IS ACCEPTABLE IN THIS BAY FOR LONGITUDINAL BRACING .
4. ROD BRACING IS ACCEPTABLE IN THIS BAY FOR LONGITUDINAL BRACING .
5. PROVIDE TIE-BACK ROOF BRACING FOR LATERAL BRACING OF POST-AND-BEAM ENDWALL FRAME AS REQUIRED.
6. PROVIDE (2) #6 CONTINUOUS TIE RODS ENCASED IN 16" W. x 8" H. CONCRETE TRENCH. TOP OF TRENCH = -0'-8". RODS SHALL BE SPLICED WITH MECHANICAL COUPLERS CAPABLE OF ACHEVEING FULL TENSION, STAGGERED AT LEAST 10 FEET APART.
7. TRENCH DRAIN - COORD. FINAL LOCATION w/ ARCH. DRAWINGS. REF. S-400 FOR TYP. DETAIL.
8. WALL FOUNDATION TO REMAIN IF THE BUILDING IS EXPANDED. WALL REINFORCING TO BE CONTINUOUS BETWEEN FRAME FOOTINGS AND PASS THROUGH REMOVABLE WIND COLUMN FOOTINGS

FOUNDATION PLAN NOTES

1. REF. S001 FOR STRUCTURAL NOTES, DESIGN DATA & SCHEDULES.
2. ALL CONTRACTORS ARE REQUIRED TO COORDINATE THEIR WORK WITH ALL DISCIPLINES TO AVOID CONFLICTS. THE MECHANICAL, ELECTRICAL, AND PLUMBING ASPECTS ARE NOT IN THE SCOPE OF THESE DRAWINGS. THEREFORE, ALL REQUIRED MATERIALS AND WORK MAY NOT BE INDICATED.
3. COORDINATE EXACT SIZE & LOCATION OF ALL MECHANICAL OPENINGS IN FOUNDATION WALLS WITH THE MECHANICAL, ELECTRICAL & PLUMBING CONTRACTORS.
4. ALL ELEVATIONS ARE REFERENCED FROM THE FIRST FLOOR FINISH FLOOR ELEVATION 0'-0" REF. CIVIL DWGS FOR USGS.
5. REF. ARCH. DRAWINGS FOR ALL DIMENSIONS NOT SHOWN. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION AND IMMEDIATELY NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
6. REF. S400 & S401 FOR TYPICAL FOUNDATION DETAILS.
7. PERIMETER WALL AND COLUMN FOOTINGS SHALL BE LOWERED TO PASS BELOW UTILITY LINES (I.E. SANITARY & STORM SEWERS, WATER LINES, ETC.) SHOWN ON THE MEP DRAWINGS. PERIMETER FOUNDATION WALLS SHOULD BE SLEEVED.
8. ALL SLAB RECESSES SHALL BE LOCATED PER THE ARCHITECTURAL DRAWINGS. COORDINATE DEPTHS OF ALL SLAB RECESSES WITH THE ARCHITECTURAL DRAWINGS AND/OR THE FLOORING SUPPLIER.
9. GROUT ALL CORES OF CMU BELOW FINISH FLOOR SOLID.
10. COLUMN FOOTINGS, TRENCH FOOTINGS AND WALL FOOTINGS SHALL BEAR ON APPROVED SOIL. UNDERCUT AS REQ'D TO SUITABLE BEARING MATERIAL AS DETERMINED BY THE GEOTECHNICAL TESTING AGENCY. REF. TYPICAL FOOTING UNDERCUT DETAIL ON S400.
11. PROVIDE CONTROL/CONTRACTION JOINTS IN SLABS ON GRADE (REF. THE TYPICAL DETAILS ON SHEET S401) . ALL JOINTS IN SLABS TO RECEIVE THIN OR THICK-SET TERRAZZO, CERAMIC OR PORCELAIN TILE, VINYL-COMPOSITION TILE (VCT) OR VINYL SHEET GOODS, EPOXY OR SIMILAR THIN-FILM FINISH FLOORING SHALL BE CAREFULLY COORDINATED WITH THE FLOORING CONTRACTOR. THE CONTRACTOR SHALL SUBMIT SLAB JOINT LAYOUT TO ARCHITECT/ENGINEER FOR REVIEW PRIOR TO PLACING SLABS.
12. PLAN LEGEND:

F.F. DENOTES FINISH FLOOR

T/X DENOTES TOP OF FTG., GRADE BEAM, SLAB, PIER, ETC.

TF30 -2'-0" DENOTES FOOTING MARK & TOP OF FOOTING ELEVATION (SEE WALL FOOTING SCHEDULE)

S4 — 4" CONCRETE SLAB-ON-GRADE w/ "FIBERFORCE 300" FIBERS @ 1.5 LB/C.Y. (OR EQUAL) &
"ES INTERNAL CURE" ADMIXTURE AT 4 OZ/CWT &
"ES CATALYST" SPRAYED-ON BETWEEN 800-1,000 SF/GAL
OVER 15-MIL CLASS A VAPOR BARRIER
OVER 2" RIGID INSULATION (MIN. COMPRESSIVE STRENGTH OF 10 PSI)
OVER 6" COMPACTED GRANULAR FILL (INDOT No. 53 CRUSHED STONE).

S6 — 6" CONCRETE SLAB-ON-GRADE w/ "FIBERFORCE 300" FIBERS @ 1.5 LB/C.Y. (OR EQUAL) &
"ES INTERNAL CURE" ADMIXTURE AT 4 OZ/CWT &
"ES CATALYST" SPRAYED-ON BETWEEN 800-1,000 SF/GAL
OVER 15-MIL CLASS A VAPOR BARRIER
OVER 2" RIGID INSULATION (MIN. COMPRESSIVE STRENGTH OF 25 PSI)
OVER 6" COMPACTED GRANULAR FILL (INDOT No. 53 CRUSHED STONE).

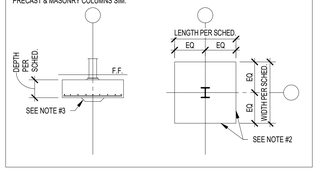
COLUMN FOOTING SCHEDULE

FOOTING MARK	FOOTING SIZE WIDTH	x LENGTH	x DEPTH	REINFORCING (EACH WAY)
F5.0T	5'-0"	5'-0"	2'-4"	(5) #5 x 4'-6" TOP & BOTTOM
F6.0T	6'-0"	6'-0"	2'-4"	(6) #5 x 5'-6" TOP & BOTTOM
F7.0T	7'-0"	7'-0"	2'-4"	(7) #5 x 6'-6" TOP & BOTTOM

NOTES:

1. CENTER FOOTINGS BENEATH COLUMNS, U.N.O.
2. ALL FOOTINGS MUST BE BOARD-FORMED, UNLESS APPROVED.
3. INCREASE FOOTING DEPTH WHERE REQ'D TO ENCASE COLUMN ANCHOR RODS

NOTE: WF STEEL COLUMN SHOWN,
TUBES, PIPES, C.I.P. CONCRETE,
PRECAST & MASONRY COLUMNS SIM.



TRENCH FOOTING SCHEDULE

FTG. MARK	FOOTING SIZE WIDTH	DEPTH	FOOTING REINFORCING LONGITUDINAL	TRANSVERSE
TF30	2'-6"	2'-4"	(4) #5 x CONTINUOUS	#5 x 2'-0" @ 32" O.C.
TF42T	3'-6"	2'-4"	(5) #7 x CONTINUOUS	#7 x 3'-0" @ 10" O.C.

1. CENTER FOOTINGS BENEATH WALLS, U.N.O.
2. TRENCH FOOTINGS MAY BE CAST DIRECTLY AGAINST SOIL WITHOUT FORMING WHERE EXISTING SOIL CONDITIONS PERMIT. FORM TOP OF TRENCH FOOTINGS WHERE SOIL HAS SLOUGHED SIGNIFICANTLY, WHERE GRADE IS LOWER THAN THE INDICATED TOP OF FOOTING ELEVATION, OR WHEREVER TRENCH FOOTING WOULD INTERFERE WITH THE INSTALLATION OF DOWNSPOUTS, CONDUIT, BOLLARDS, ETC. COORDINATE WITH MECHANICAL, ELECTRICAL, PLUMBING & SITE/CIVIL DRAWINGS.
3. INTERIOR OF TRENCH FOOTING SHALL BE FORMED WITH RIGID INSULATION. TAKE CARE IN TRIMMING INTERIOR FACE OF EXCAVATION TO MINIMIZE GAPS BEHIND THE INSULATION. FILL WITH #53 STONE, TAMPING AND COMPACTING WHERE SPACE PERMITS.
4. FOOTING MARKS THAT END WITH "T" SHALL HAVE THE REINFORCING IN BOTH TOP AND BOTTOM OF THE FOOTING.

CONCRETE PIER SCHEDULE

PIER MARK	PIER SIZE		PIER REINFORCING VERTICALS	TIES-SIZE & SPA.[1]	DETAIL	CRITICAL HEIGHT[2]
P28A	2' - 4"	2' - 4"	(8) #7	#4 @ 4" O.C.	B	≤ 3' - 0"

1. PROVIDE MIN. 1 ½" CLEAR TO PIER TIES.

2. 'CRITICAL HEIGHT' DENOTES THE HEIGHT ABOVE WHICH LARGER DIAMETER VERTICALS WITH FEWER TIES MAY BE USED. REF. FOUNDATION PLAN(S) FOR TOP OF PIER & FOOTING ELEVS.

3. REF. 'TYPICAL CONCRETE PIER REINFORCING' ON FOUNDATION DETAIL SHEET FOR FURTHER INFORMATION ON TIE SPACING.

4. VERTICAL DOWELS ARE TO FUNCTION AS PIER VERTICALS FOR PIERS LESS THAN OR EQUAL TO 3' - 0" HIGH. PROVIDE SEPARATE DOWELS & VERTICALS FOR PIERS GREATER THAN OR EQUAL TO 5' - 0" HIGH, UNLESS APPROVED.

5. CONTACT THE STRUCTURAL ENGINEER FOR DIRECTION IF COLUMN ANCHOR RODS FOUL WITH PIER TIES OR VERTICALS.

6. MIN. HEIGHT OF PIERS: #6 VERTICALS = 2' - 0", #7 VERTICALS = 2' - 8".

DETAIL "A" (1) SET — DETAIL "B" (2) SETS — ALT. DETAIL "B" (3) SETS

WOOD FRAMING PLAN KEYED NOTES

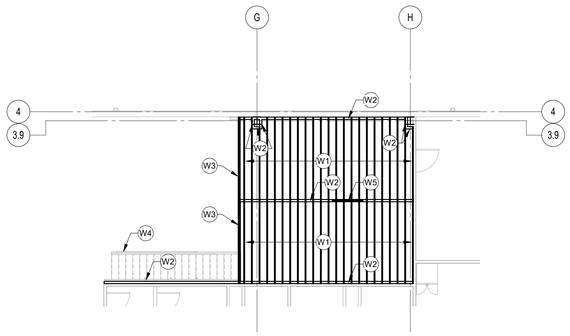
W1 — 2x12 WOOD SOUTHERN PINE JOISTS @ 12" O.C. MAX., TYPICAL, W/ 3/4" APA-RATED SUBFLOOR WITH TONGUE & GROOVE EDGES. GLUE & NAIL TO FLOOR MEMBERS.

W2 — 2X4 SOUTHERN PINE WOOD BEARING WALLS @ 12" o.c.

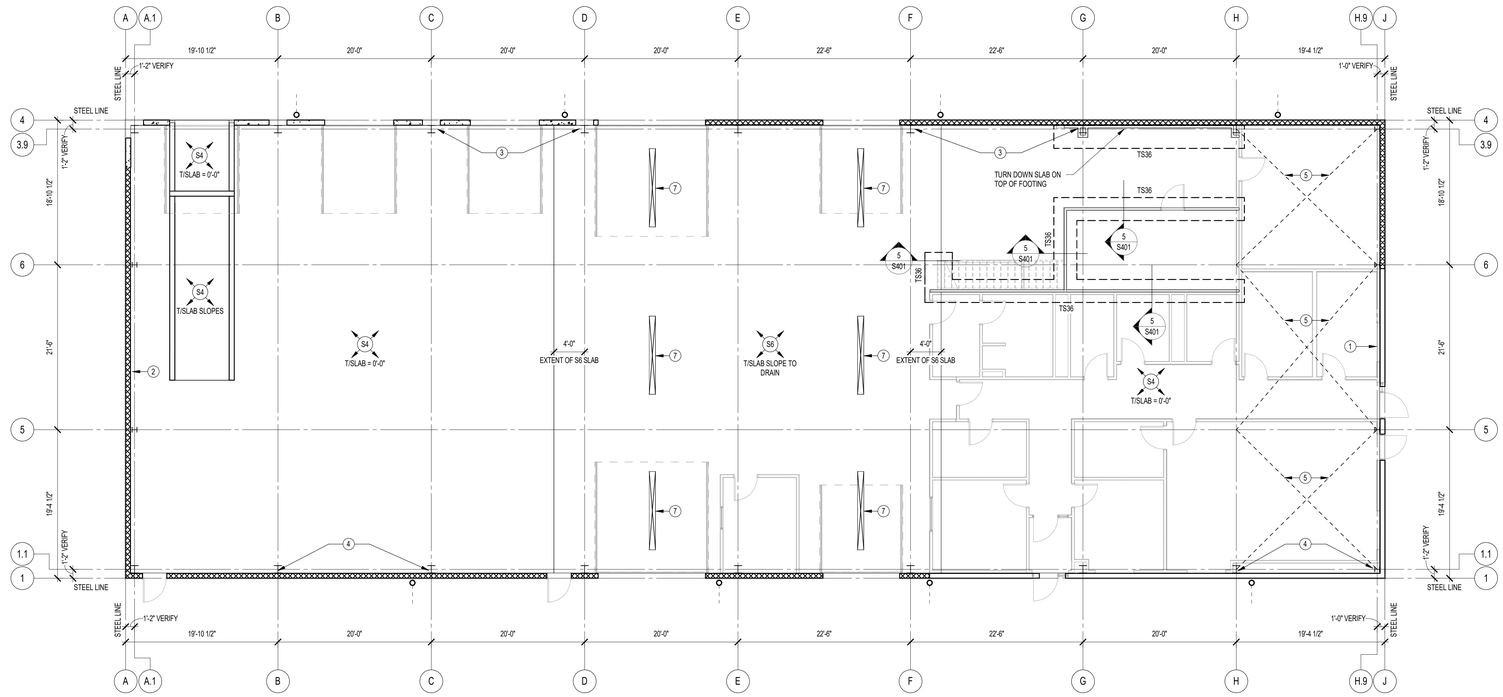
W3 — PROVIDE (2) 2X12 AT EDGE OF MEZZANINE

W4 — PROVIDE WOOD STAIR PER WOOD STAIR NOTES ON S001

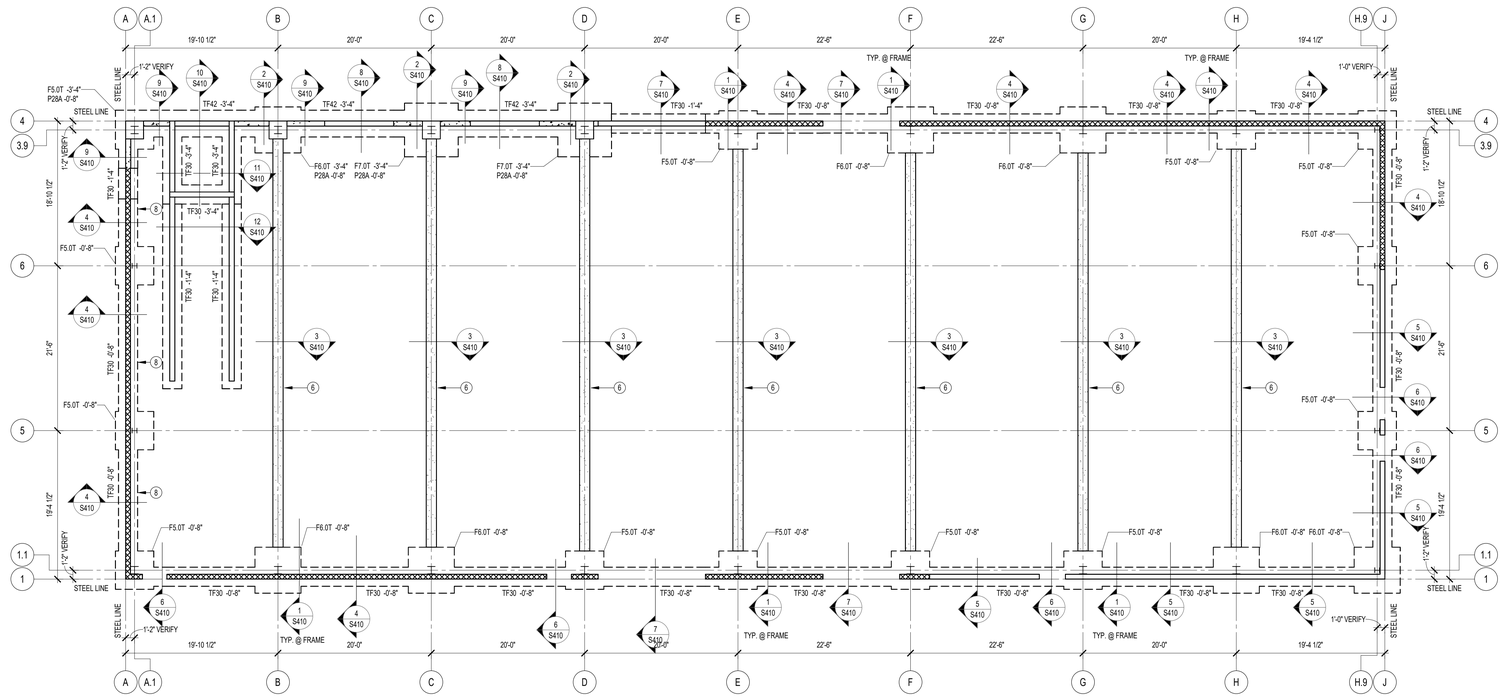
W5 — PROVIDE 2X8 HEADER OVER DOOR



3 S100 MEZZANINE FRAMING PLAN
SCALE: 1/8" = 1'-0"



2 S100 SLAB ON GRADE AND KEYED NOTE PLAN
SCALE: 1/8" = 1'-0"



1 S100 FOUNDATION PLAN
SCALE: 1/8" = 1'-0"

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PROFESSIONAL ENGINEER

REVISIONS:

#	Date	Desc.

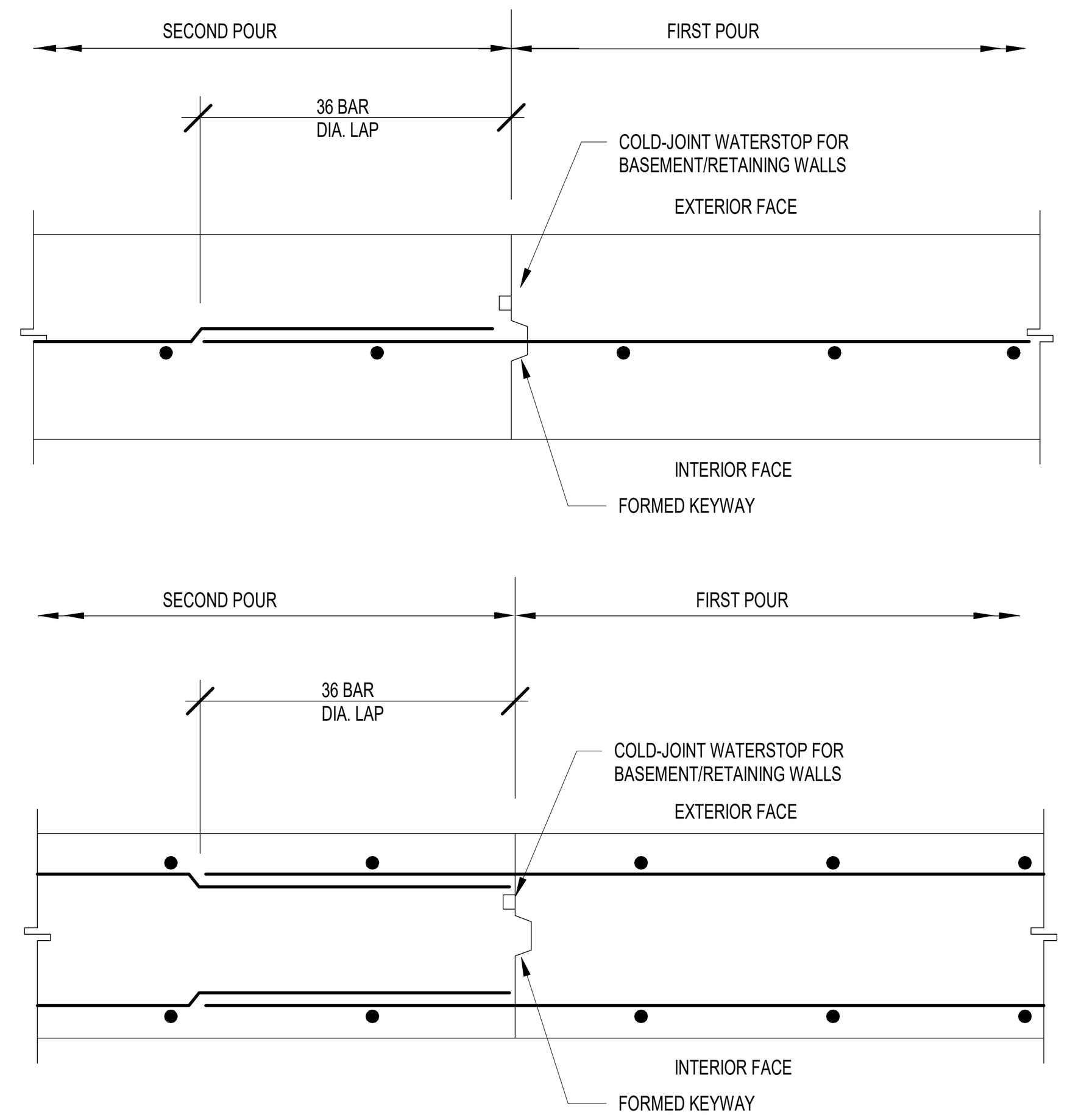
100% CONSTRUCTION DOCUMENT

PROJECT: #23122
DATE: 04/22/2024
DRAWN BY: DJL

FOUNDATION AND MEZZANINE FRAMING PLANS

S100

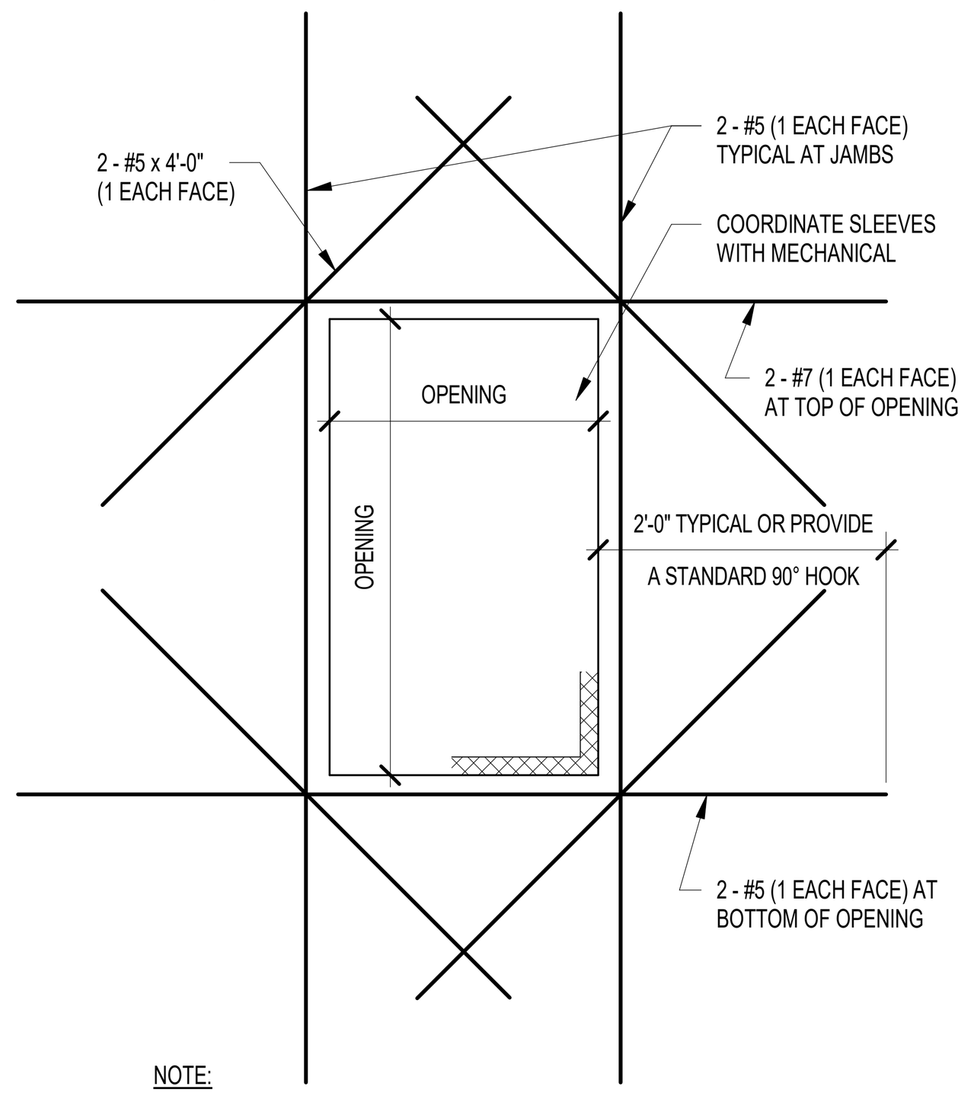
PLOT DATE/TIME 4/22/2024 1:40:34 PM



13 S400 C.I.P. WALL CONSTRUCTION JOINTS
SCALE: 1" = 1'-0"

NOTE:

WHERE VERTICAL REINFORCING IS INTERRUPTED BY THE OPENING, HALF OF THE INTERRUPTED STEEL SHALL BE ADDED EACH SIDE OF THE OPENING. USE FULL LENGTH BARS. IF BARS CANNOT BE PLACED AS DETAILED, REPLACE THE 1'-6" EXTENSION WITH 6" AND A STANDARD HOOK.



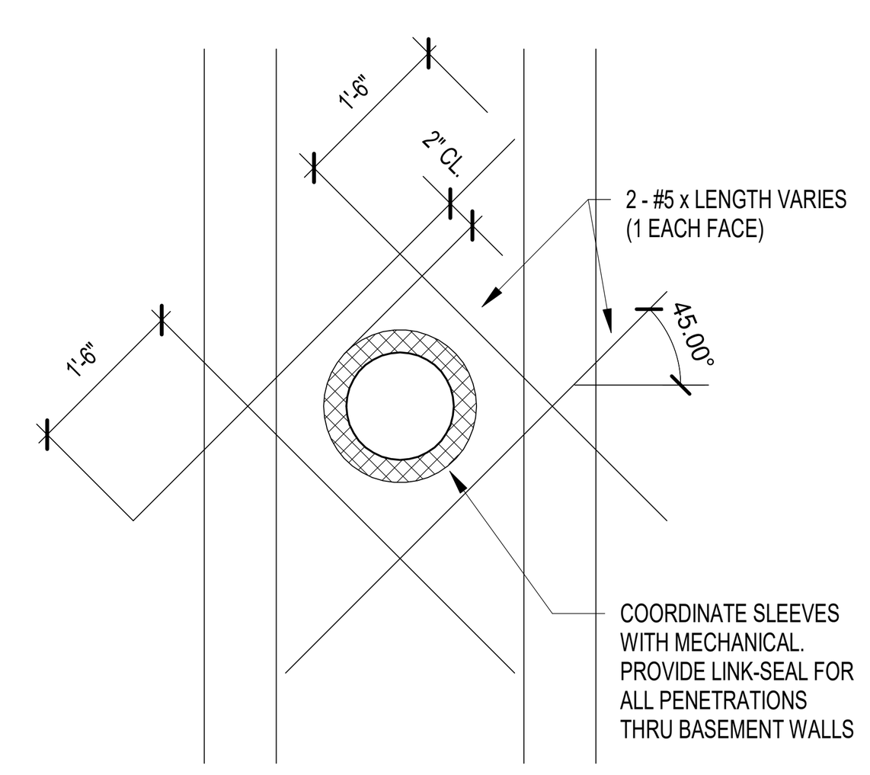
NOTE:

COORDINATE FINAL LOCATION OF MECHANICAL PENETRATIONS WITH MECHANICAL CONTRACTOR BEFORE INSTALLATION OF THE REINFORCING.

THIS DETAIL APPLIES TO ALL SQUARE AND RECTANGULAR OPENINGS IN CONCRETE WALLS UNLESS OTHERWISE NOTED ON THE PLANS.

12 S400 C.I.P. WALL RECTANGULAR OPENING
SCALE: 3/4" = 1'-0"

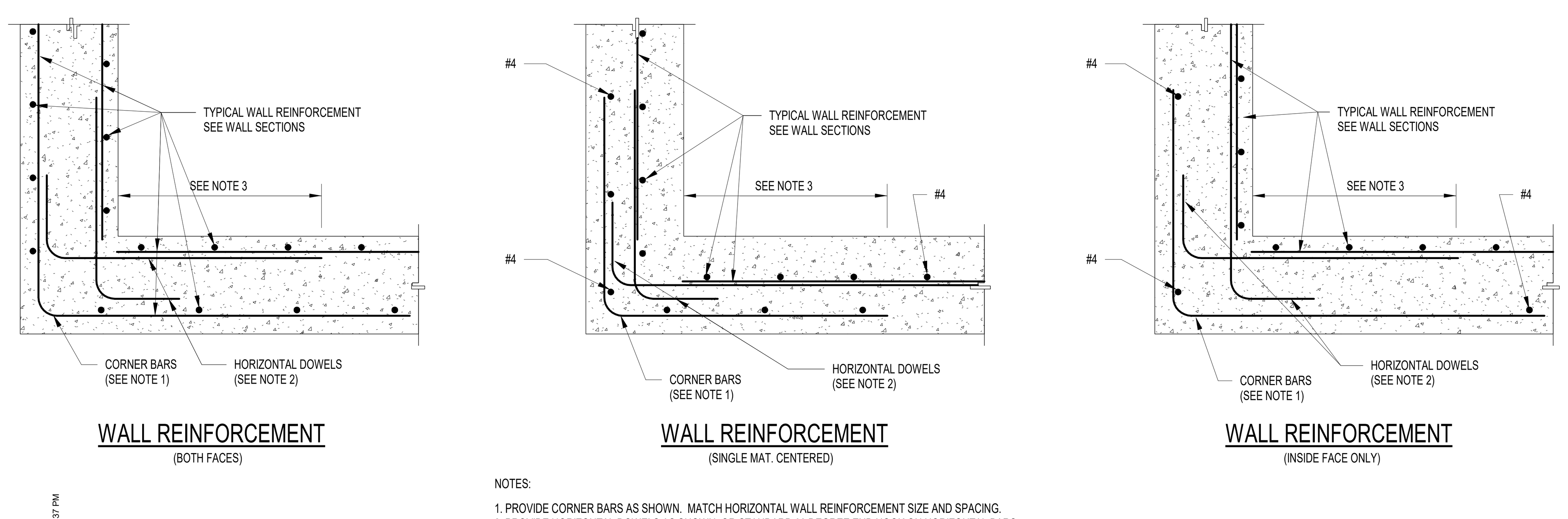
NOTE:
WHERE VERTICAL REINFORCING IS INTERRUPTED BY THE OPENING, HALF OF THE INTERRUPTED STEEL SHALL BE ADDED EACH SIDE OF THE OPENING. USE FULL LENGTH BARS. IF BARS CANNOT BE PLACED AS DETAILED, REPLACE THE 1'-6" EXTENSION WITH 6" AND A STANDARD HOOK.



NOTE:
COORDINATE FINAL LOCATION OF PIPE PENETRATIONS WITH MECHANICAL CONTRACTOR BEFORE INSTALLATION OF THE REINFORCING.

THIS DETAIL APPLIES TO ALL ROUND AND ELLIPTICAL OPENINGS IN CONCRETE WALLS, UNLESS OTHERWISE NOTED ON THE PLANS.

11 S400 C.I.P. WALL ROUND OPENING
SCALE: 3/4" = 1'-0"



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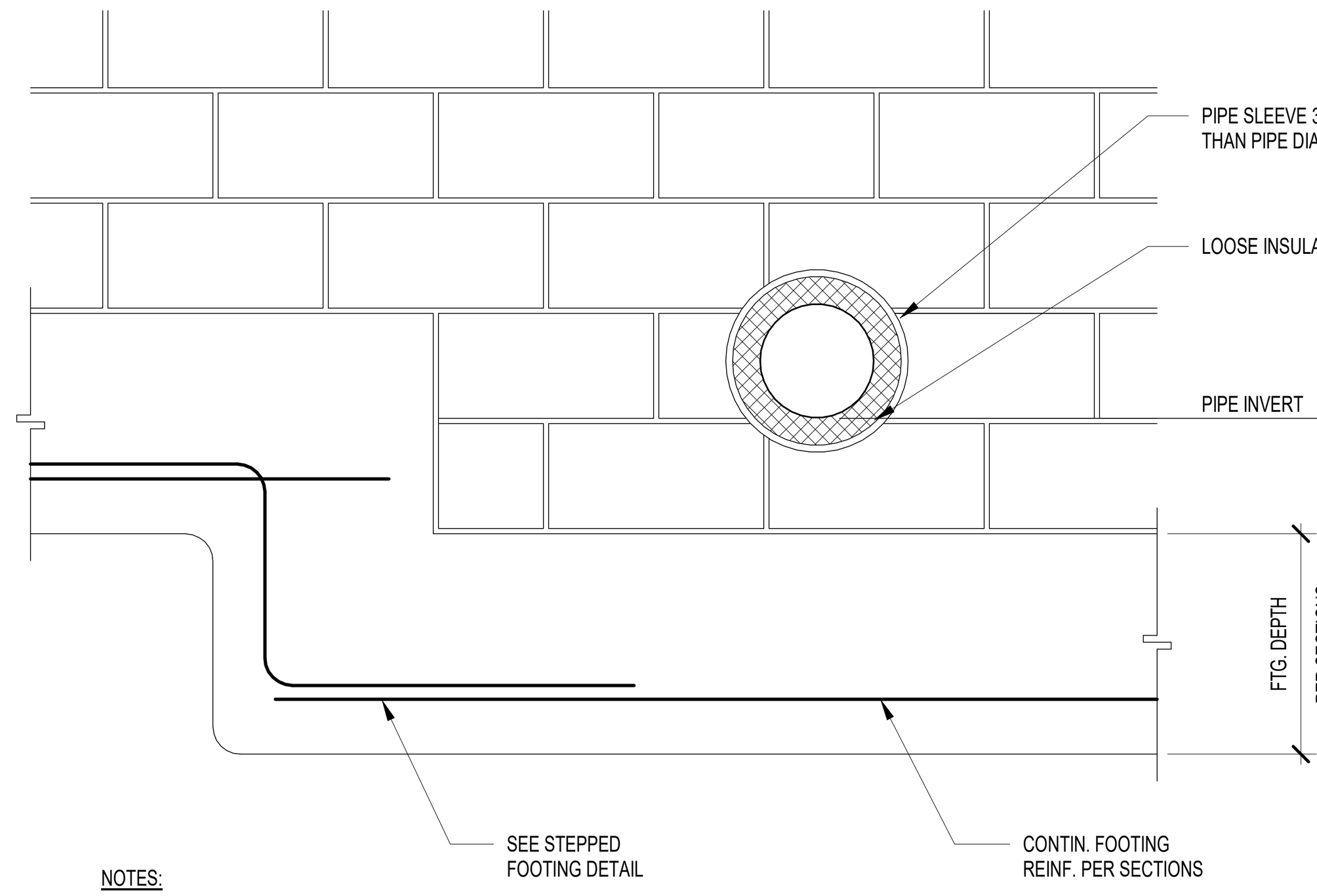
NOTES:

1. PROVIDE CORNER BARS AS SHOWN. MATCH HORIZONTAL WALL REINFORCEMENT SIZE AND SPACING.
2. PROVIDE HORIZONTAL DOWELS AS SHOWN, OR STANDARD 90 DEGREE END HOOK ON HORIZONTAL BARS.
3. PROVIDE TYPE III LAP SPLICE (SEE CONCRETE REINFORCING TENSION LAP SPLICE TABLE).
4. SEE APPLICABLE SECTIONS FOR REINFORCING STEEL CLEARANCES.
5. TERMINATE HORIZONTAL WALL REINFORCEMENT 2" CLEAR FROM END OF WALL.
6. GRADE BEAMS: PROVIDE CORNER BARS FOR LONGITUDINAL REINFORCEMENT AT GRADE BEAM CORNERS WITHOUT A SUPPORTING CONCRETE PIER, AS SHOWN IN "WALL REINFORCEMENT - BOTH FACES".

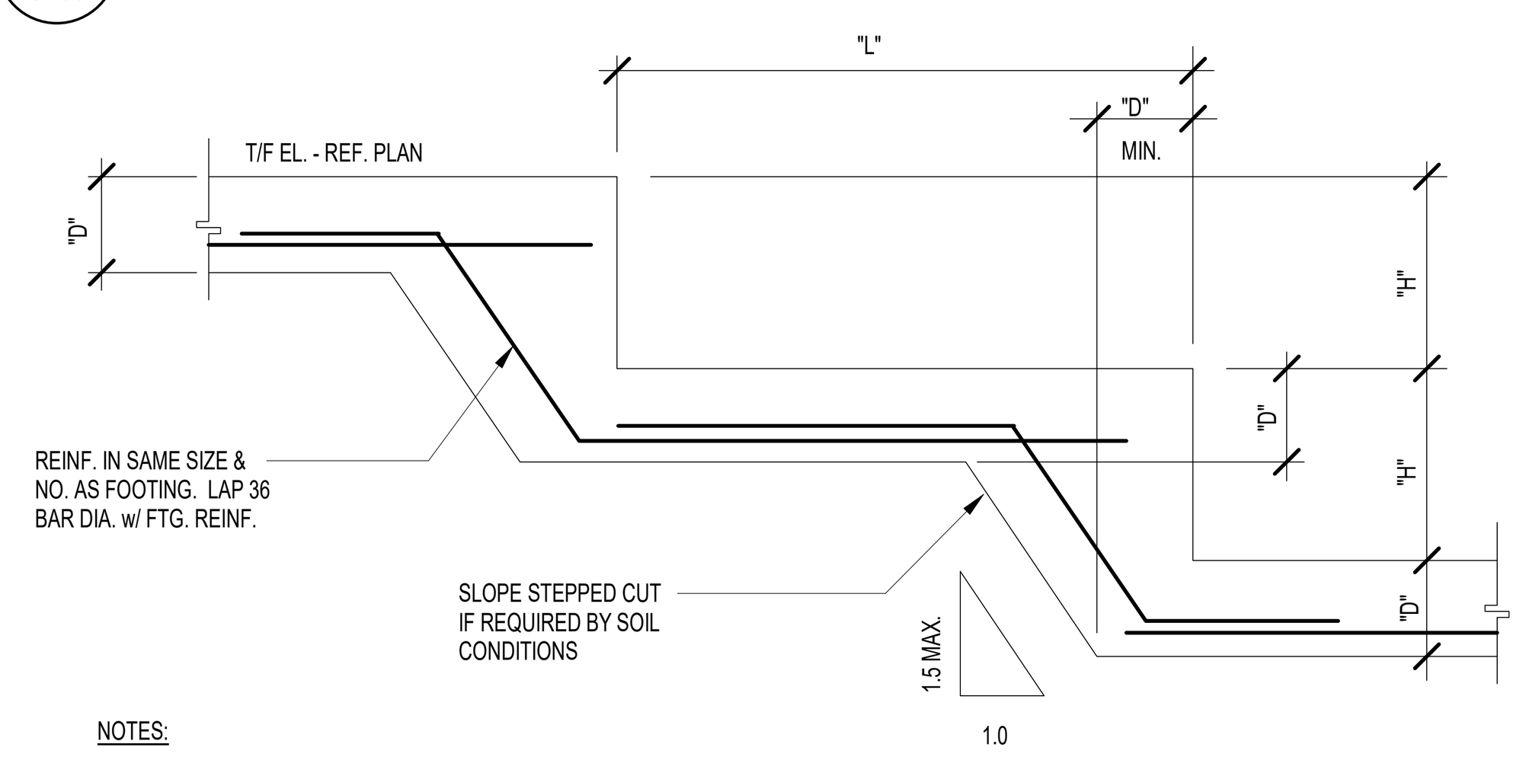
10 S400 TYPICAL CONCRETE WALL CORNERS
SCALE: 3/4" = 1'-0"



NOTES:

1. REFER TO PLUMBING DRAWINGS FOR INVERT ELEVATION OF ALL UNDERGROUND PIPING.
2. STEP FOOTING FOR PIPE PENETRATION THROUGH FOUNDATION WALL UNLESS WRITTEN PERMISSION IS OBTAINED FROM THE MEP ENGINEER.
3. PROVIDE PRECAST OR BOND BEAM LINTEL FOR MULTIPLE PENETRATIONS OR OPENINGS GREATER THAN 24" IN WIDTH.

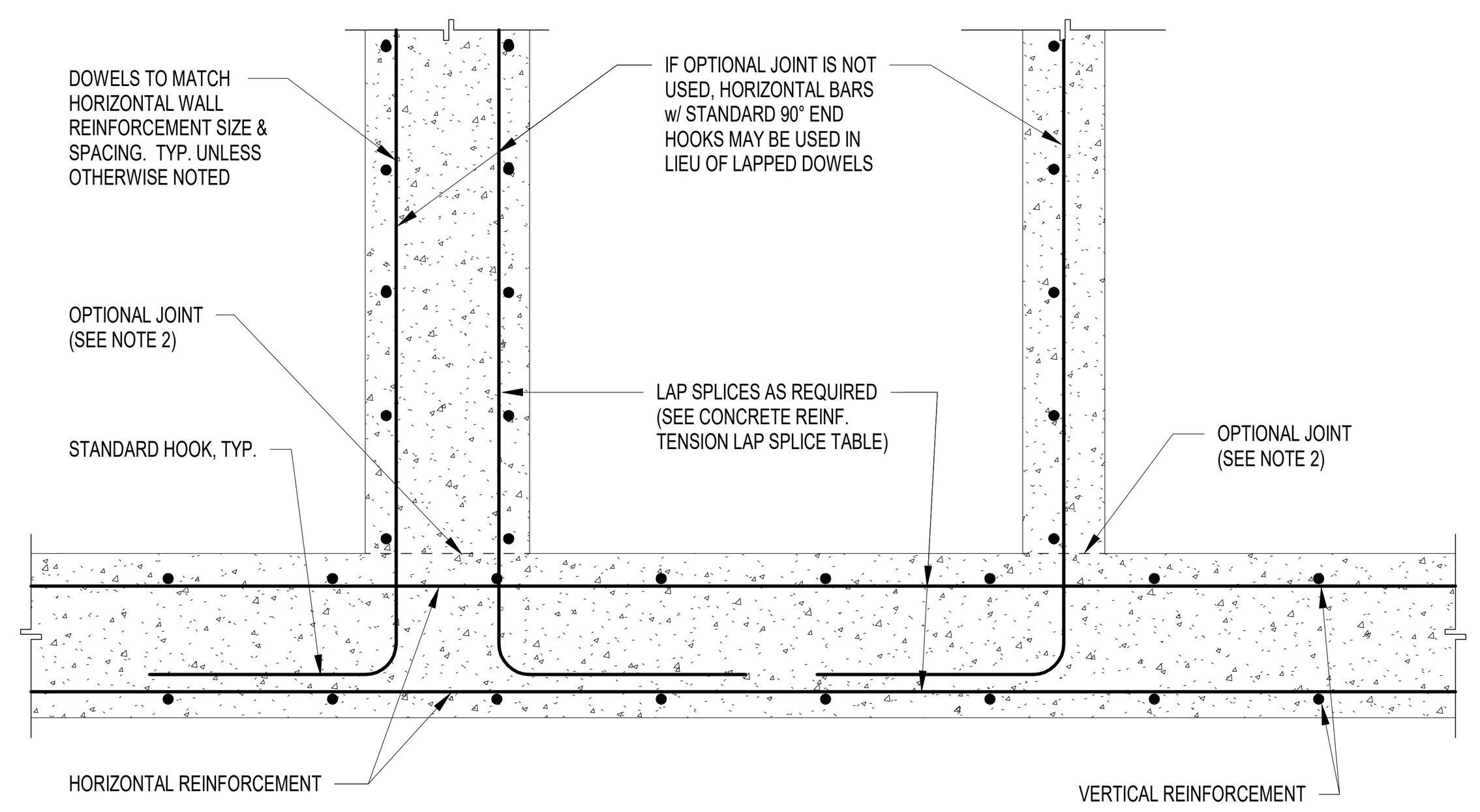
9 S400 CMU FOUNDATION WALL SLEEVE
SCALE: 1" = 1'-0"



NOTES:

1. "H" DENOTES HEIGHT OF STEP AS SHOWN ON PLAN.
2. "L" DENOTES LENGTH BETWEEN STEPS. LAYOUT TO MAINTAIN SLOPE OF 1 VERTICAL TO 2 HORIZONTAL UNLESS NOTED OTHERWISE.
3. "D" DENOTES FOOTING DEPTH, REFER TO PLANS, SECTIONS & SCHEDULES.

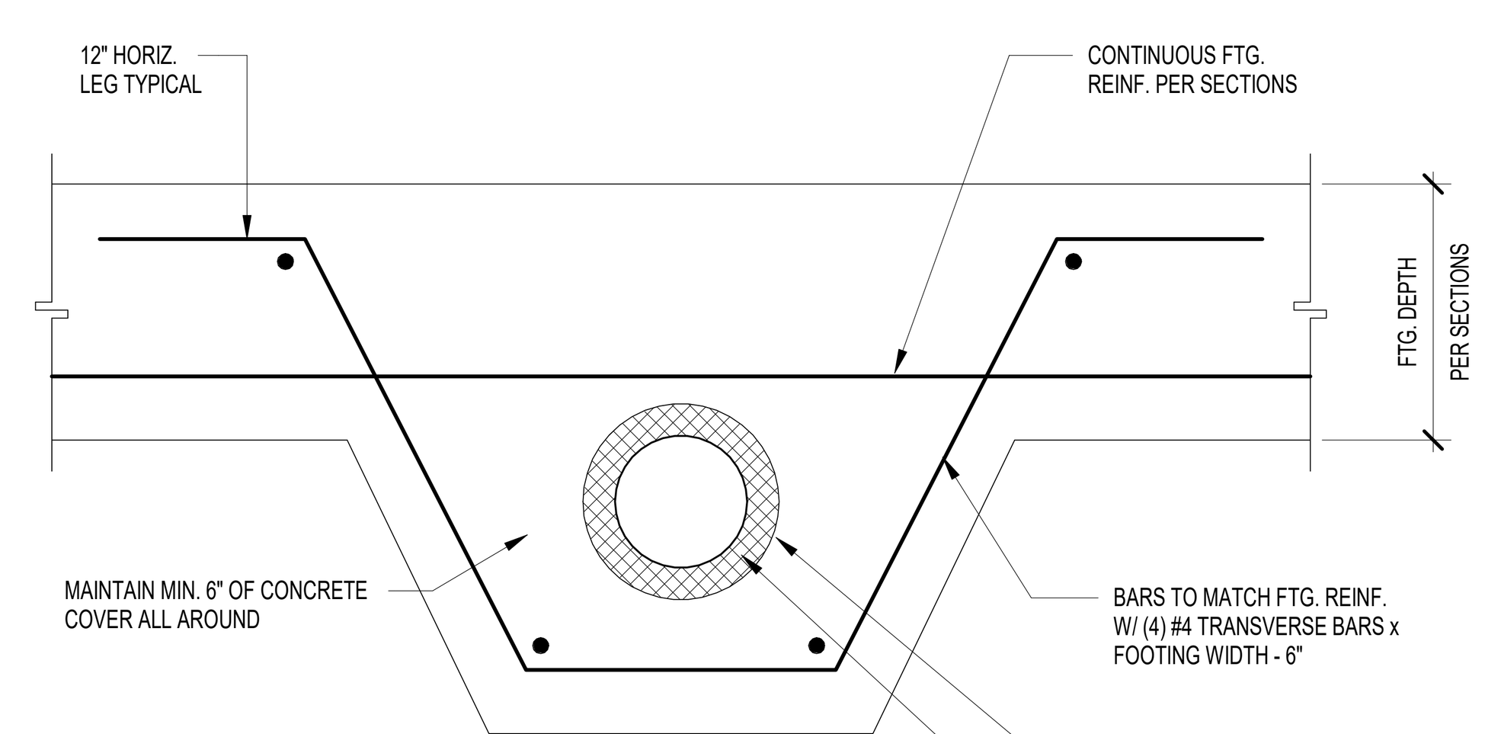
8 S400 STEPPED FOOTING DETAIL
SCALE: 3/4" = 1'-0"



PLAN VIEW

NOTES:
1. SEE APPLICABLE SECTIONS FOR WALL REINFORCEMENT AND REINFORCING STEEL CLEARANCES
2. DOWEL BAR SUBSTITUTES MAY BE PROVIDED AT INTERSECTING WALL CONSTRUCTION JOINTS AT CONTRACTOR'S OPTION. SEE SPECIFICATION 033000 - CAST IN PLACE CONCRETE.

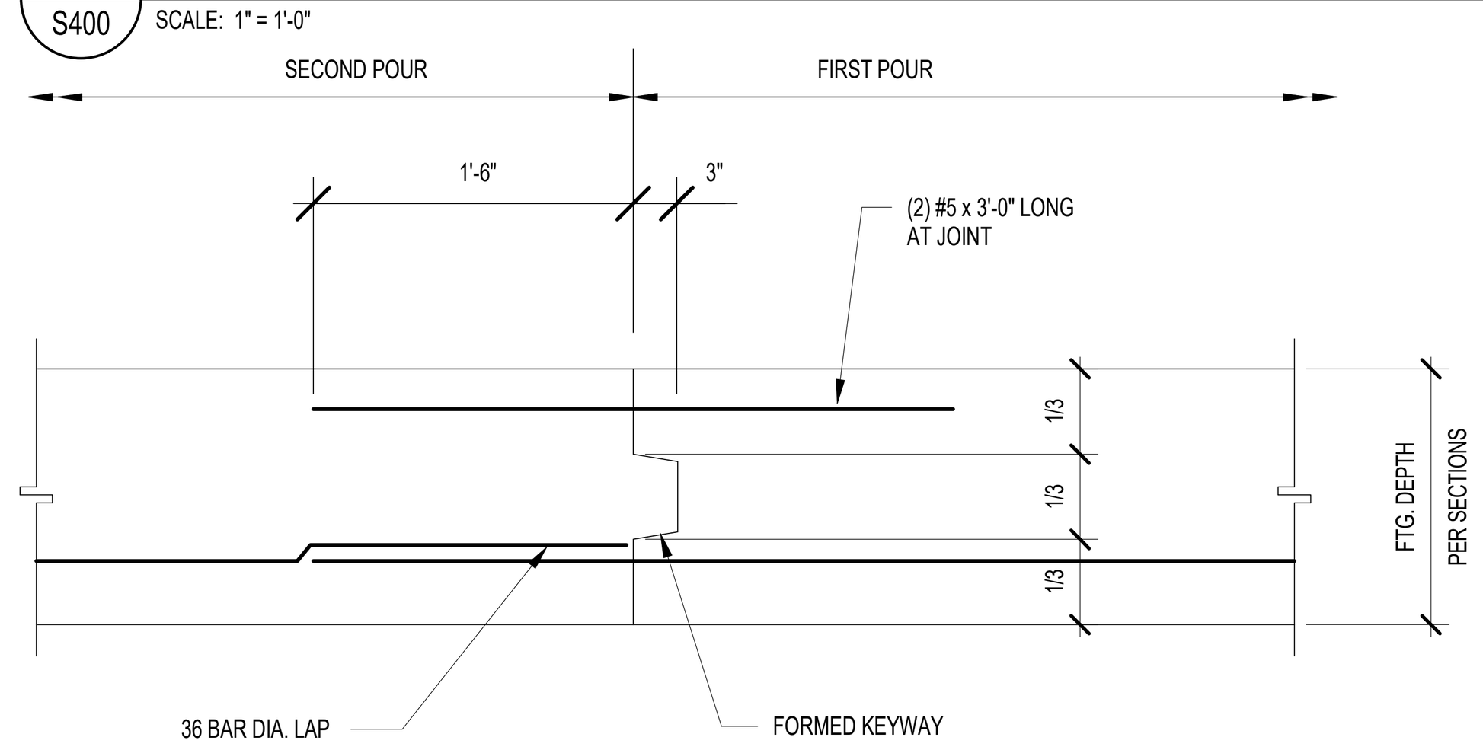
7 S400 TYPICAL CONCRETE WALL INTERSECTIONS
SCALE: 3/4" = 1'-0"



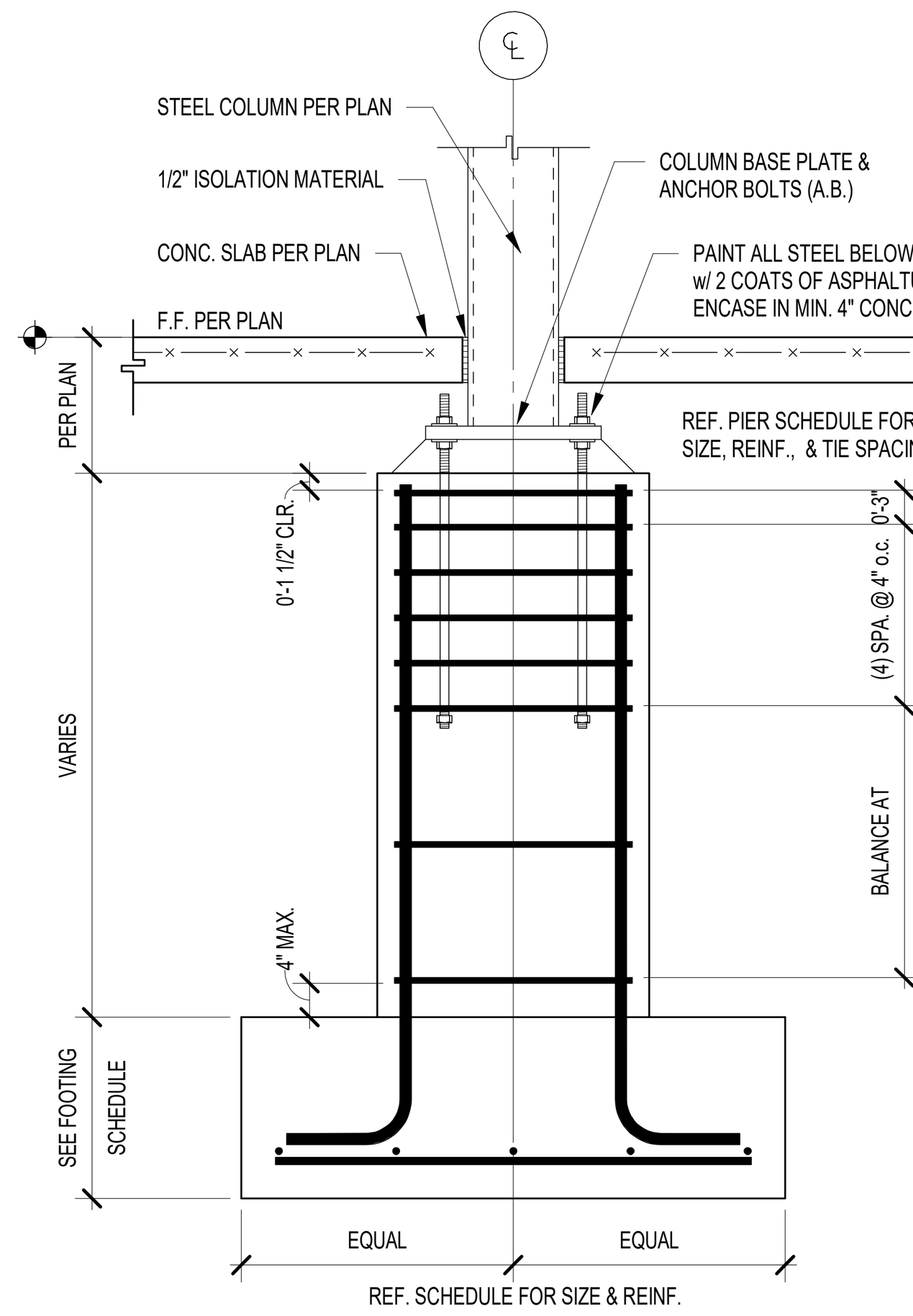
NOTES:

1. REFER TO PLUMBING DRAWINGS FOR INVERT ELEVATION OF ALL UNDERGROUND PIPING.
2. PROVIDE THIS DETAIL WHERE A PENETRATION THROUGH A WALL FOOTING IS UNAVOIDABLE AND APPROVED BY THE EOR.
3. NO SLEEVES IN COLUMN FOOTINGS ARE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.

6 S400 WALL FOOTING SLEEVE DETAIL
SCALE: 1" = 1'-0"

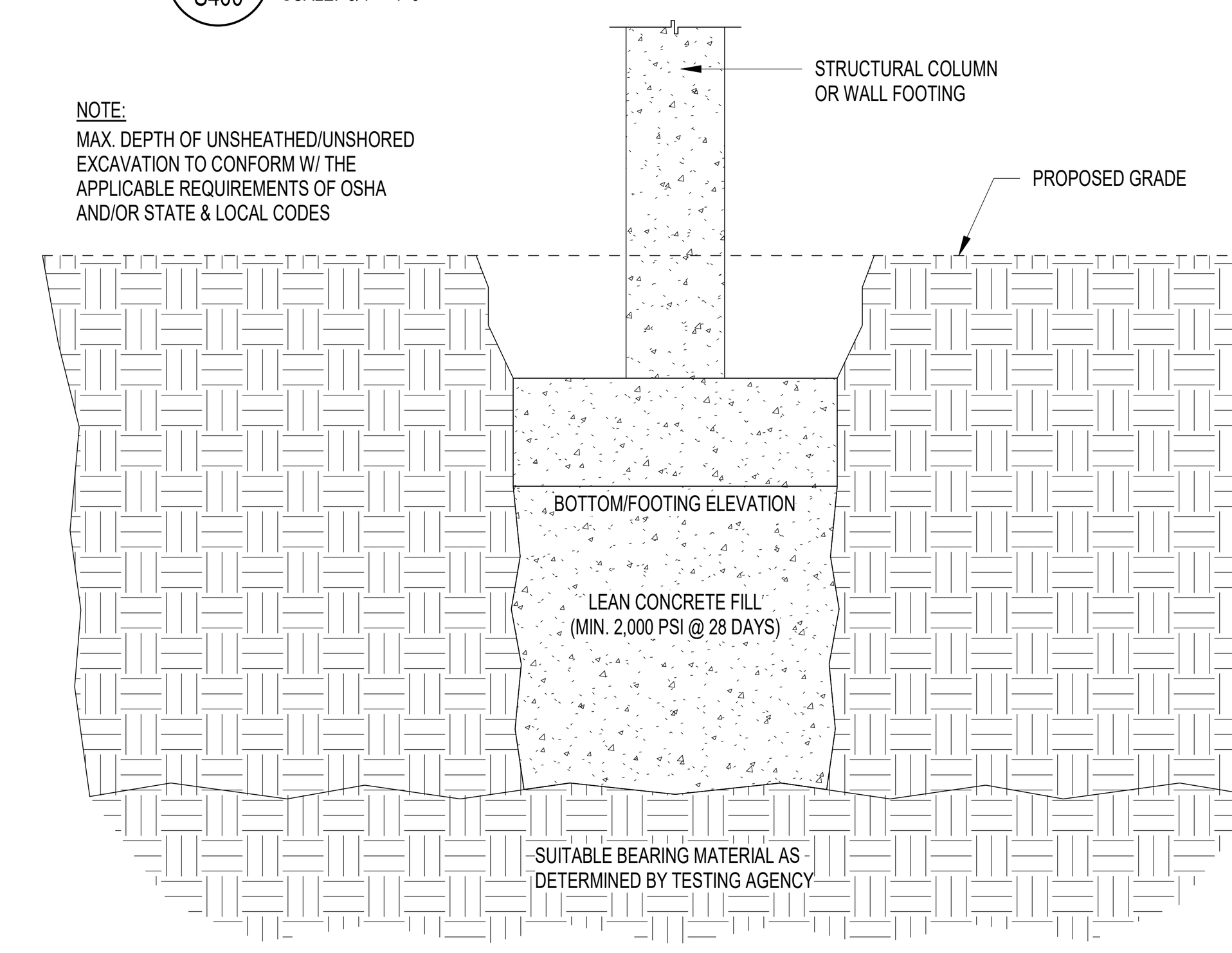


5 S400 WALL FOOTING CONSTRUCTION JOINT
SCALE: 1" = 1'-0"



4 S400 TYPICAL CONCRETE PIER REINFORCING
SCALE: 3/4" = 1'-0"

NOTE:
MAX. DEPTH OF UNSHEATHED/UNSHORED EXCAVATION TO CONFORM W/ THE APPLICABLE REQUIREMENTS OF OSHA AND/OR STATE & LOCAL CODES

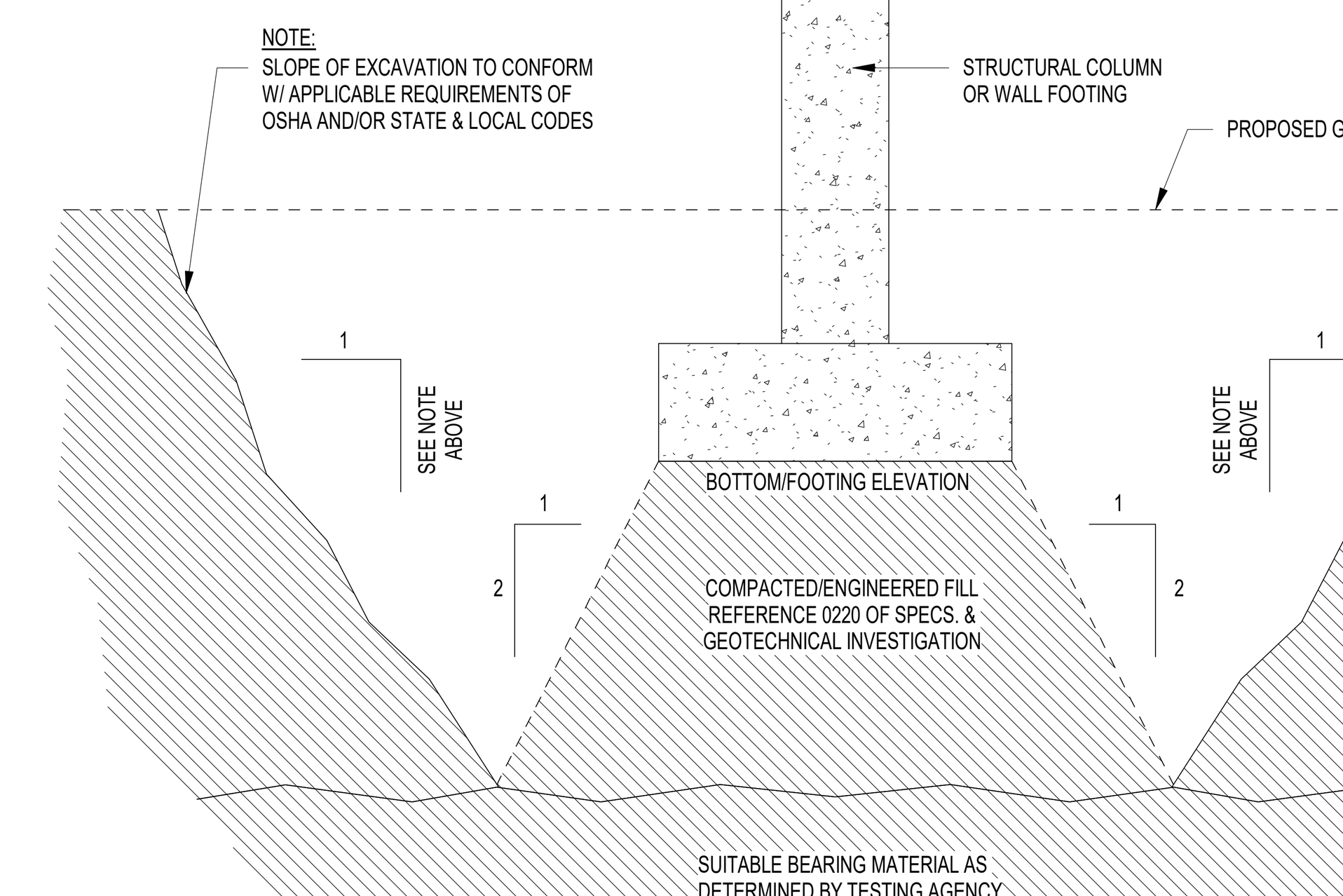


1. REFER TO THE SPECIFICATIONS FOR APPLICATION OF UNIT COSTS FOR REMOVAL OF UNSUITABLE BEARING MATERIAL & REPLACEMENT W/ LEAN CONCRETE FILL.

2. REFER TO THE GEOTECHNICAL ENGINEERING REPORT FOR ADDITIONAL INFORMATION RE: EXPECTED SOIL CONDITIONS, SUITABILITY OF EX. SOILS FOR USE AS ENGINEERED FILL, GROUNDWATER CONDITIONS, ETC.

3 S400 OVEREXCAVATION DETAIL - LEAN CONCRETE FILL
SCALE: 3/4" = 1'-0"

NOTE:
SLOPE OF EXCAVATION TO CONFORM W/ APPLICABLE REQUIREMENTS OF OSHA AND/OR STATE & LOCAL CODES



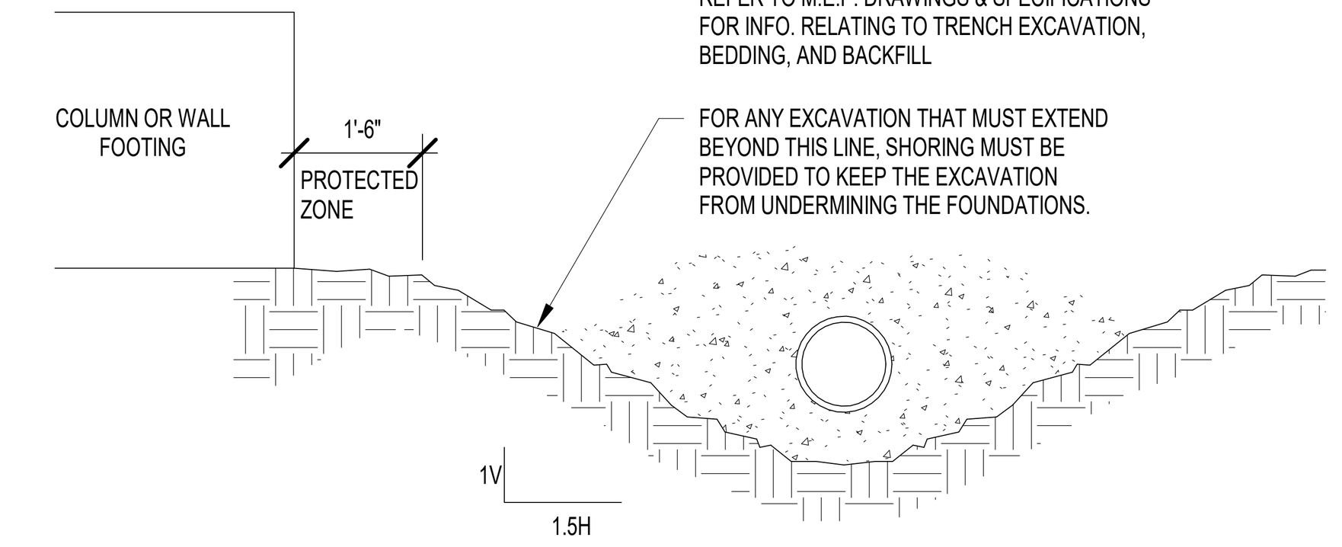
1. REFER TO THE SPECIFICATIONS FOR APPLICATION OF UNIT COSTS FOR REMOVAL OF UNSUITABLE BEARING MATERIAL & REPLACEMENT W/ COMPACTED, ENGINEERED FILL

2. REFER TO THE GEOTECHNICAL ENGINEERING REPORT FOR ADDITIONAL INFORMATION RE: EXPECTED SOIL CONDITIONS, SUITABILITY OF EX. SOILS FOR USE AS ENGINEERED FILL, GROUNDWATER CONDITIONS, ETC.

2 S400 OVEREXCAVATION DETAIL - COMPACTED FILL
SCALE: 3/4" = 1'-0"

REFER TO M.E.P. DRAWINGS & SPECIFICATIONS FOR INFO. RELATING TO TRENCH EXCAVATION, BEDDING, AND BACKFILL

FOR ANY EXCAVATION THAT MUST EXTEND BEYOND THIS LINE, SHORING MUST BE PROVIDED TO KEEP THE EXCAVATION FROM UNDERMINING THE FOUNDATIONS.



NOTE: ANY SHORING SCHEME REQUIRED MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW, PRIOR TO EXCAVATION.

1 S400 EXCAVATION LIMITS DETAILS
SCALE: 3/4" = 1'-0"

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JOHNSON COUNTY
RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

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PROJECT: #23122
DATE: 04/22/2024
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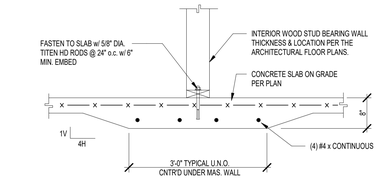
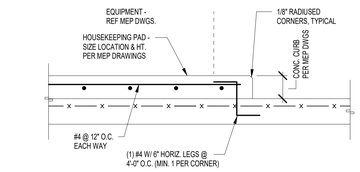
TYPICAL FOUNDATION DETAILS

S400



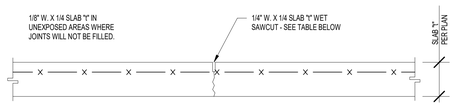
5 S401 **THICKENED SLAB DETAIL**

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



4 S401 **MECHANICAL EQUIPMENT PAD**

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

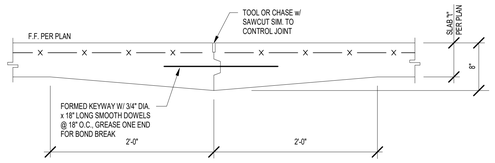


CONTROL JOINTS SHALL BE SAWN NOT LATER THAN THE FOLLOWING TABLE, OR 16 HOURS AFTER FINAL TROWELING (WHICHEVER IS LESS), WHERE TEMP EQUALS THE AMBIENT TEMPERATURE IN DEGREES FAHRENHEIT AT THEN TIME OF FINAL TROWELING. SAWCUTTING SHALL BE SUSPENDED ONLY IF THE LARGE AGGREGATE IS DISLODGED OR LOOSENED. ALTERNATE: USE PRE-FORMED JOINT FORMER.

TEMP., F°	TIME, HOURS
< 40°	16
50°	14
60°	8 1/2
70°	5 1/2
80°	4
90°	3

3 S401 **SLAB CONTROL/CONTRACTION JOINT**

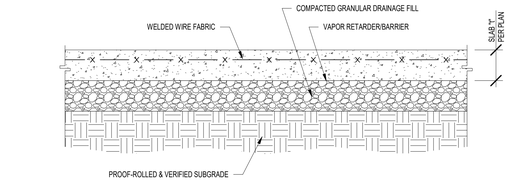
SCALE: 1" = 1'-0"



PROVIDE CONSTRUCTION JOINT IN LIEU OF CONTROL JOINT AT TERMINATION OF POUR

2 S401 **SLAB CONSTRUCTION JOINT**

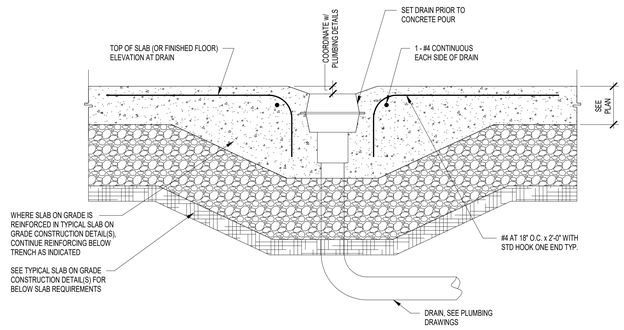
SCALE: 1" = 1'-0"



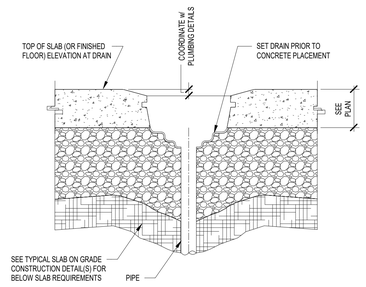
1. LOCATE WELDED WIRE FABRIC IN UPPER THIRD OF SLAB. SUPPORT ON BOLSTERS, CHAIRS, OR CONCRETE BRICKS.
2. LAP WELDED WIRE FABRIC A MIN. OF ONE FULL MESH SPACING.
3. THE USE OF NYLON OR POLYPROPYLENE FIBER IN LIEU OF WELDED WIRE FABRIC AS A SECONDARY REINFORCEMENT IS PERMISSIBLE, UNLESS OTHERWISE NOTED. NOTE: FIBER MAY NOT BE SUBSTITUTED FOR W.W.F. IN SUPPORTED SLABS.
4. SEE PLAN, NOTES, AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS SUCH AS FINISH, JOINTING, CURING, ETC.

1 S401 **SLAB ON GRADE CONSTRUCTION**

SCALE: 1" = 1'-0"



TYPICAL FLOOR TRENCH DRAIN



TYPICAL FLOOR DRAIN

6 S401 **TYPICAL FLOOR AND TRENCH DRAIN**

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

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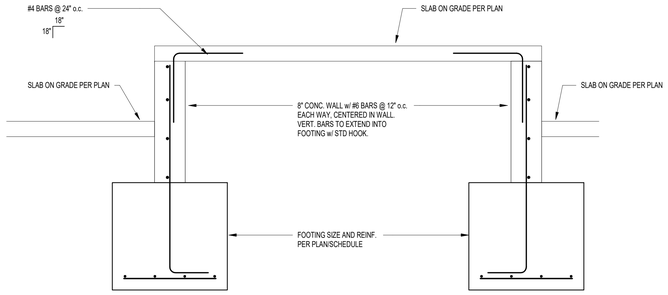
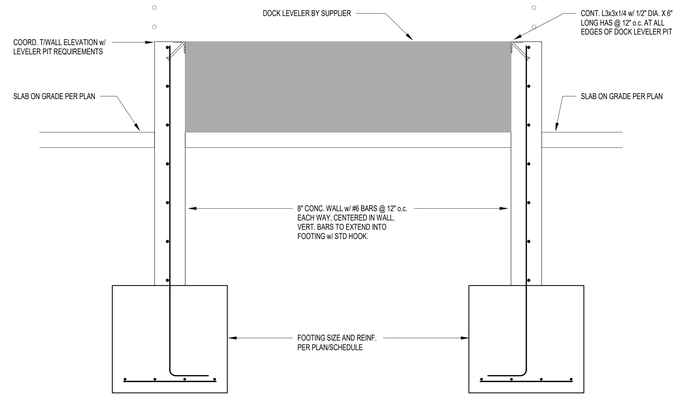
TYPICAL FOUNDATION DETAILS

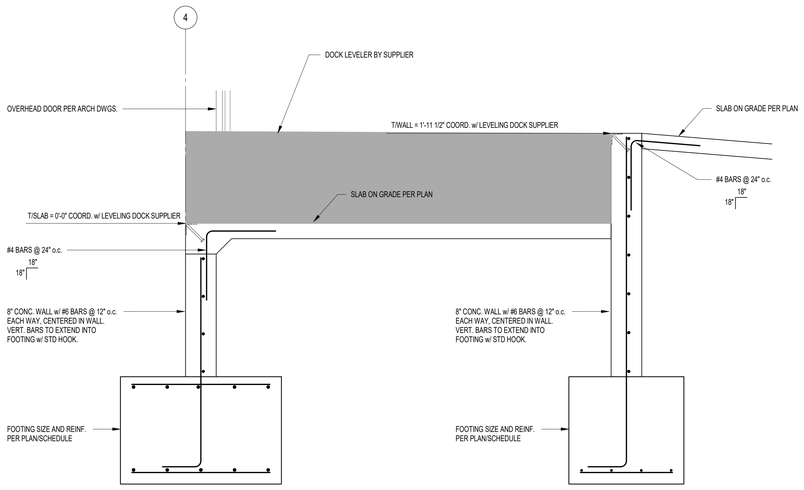
S401



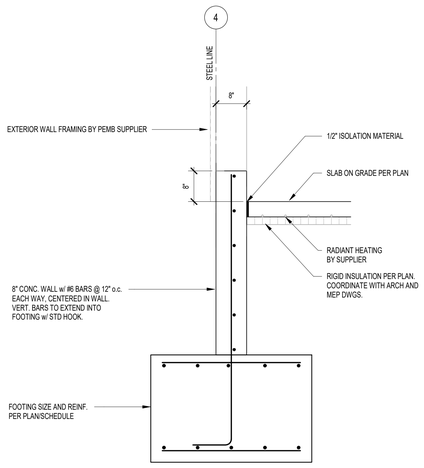
12 S410 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



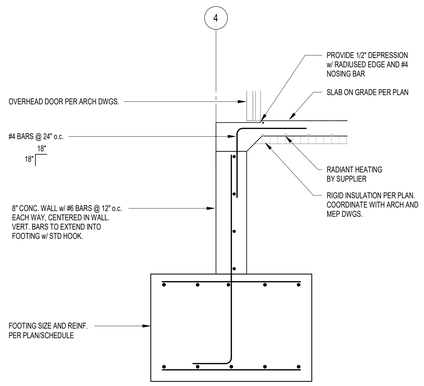
11 S410 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



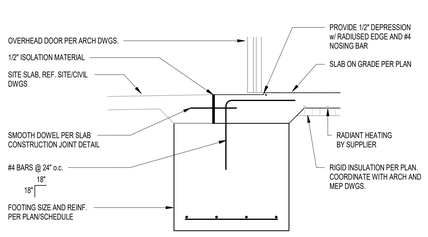
10 S410 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



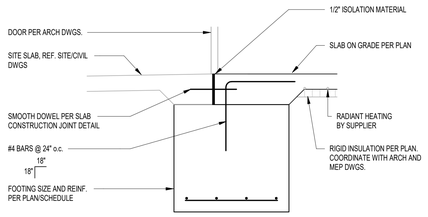
9 S410 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



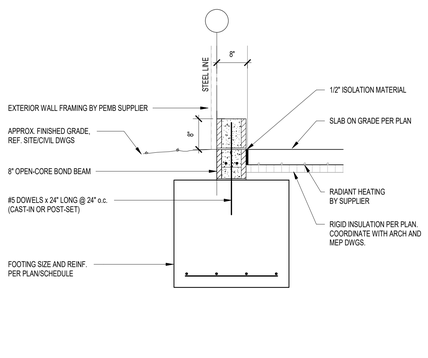
8 S410 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



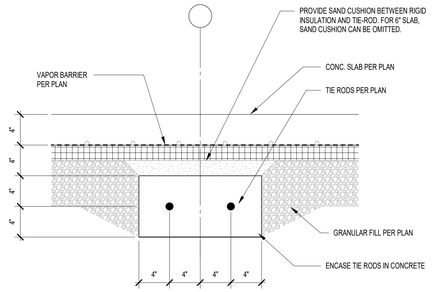
7 S410 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



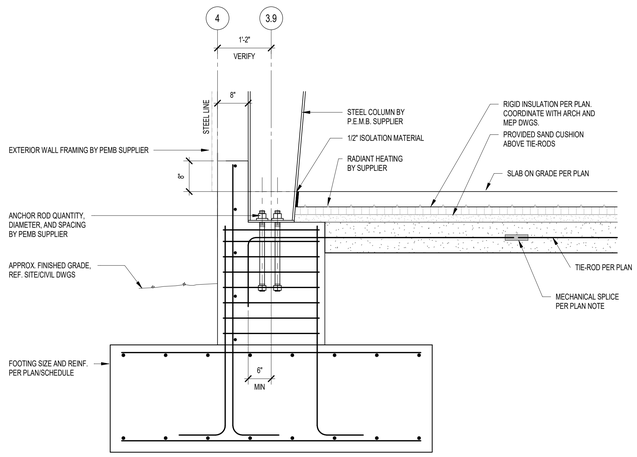
6 S410 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



5 S410 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"

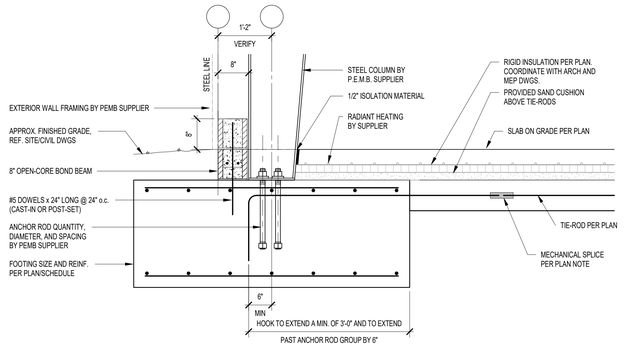


3 S410 FOUNDATION SECTION
SCALE: 1 1/2" = 1'-0"



2 S410 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"

4 S410 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



1 S410 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"

PLOT DATE/TIME: 4/22/2024 1:46:43 PM

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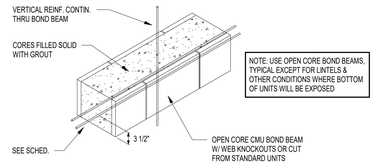
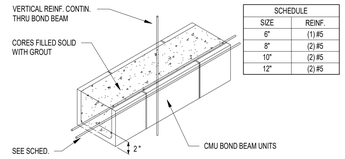
FOUNDATION SECTIONS

S410

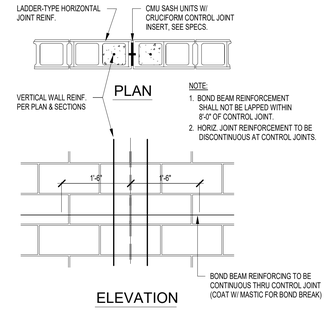




SCHEDULE	
SIZE	REINF.
6"	(1) #5
8"	(2) #5
10"	(2) #5
12"	(2) #5

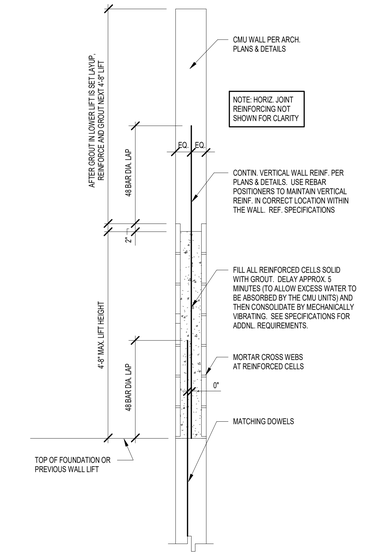
4 S500 CMU BOND BEAM DETAILS

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



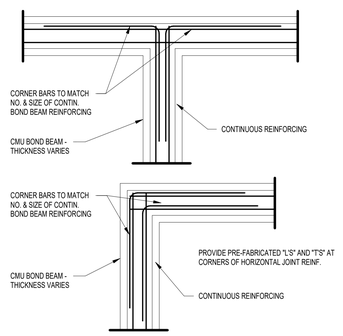
3 S500 CMU CONTROL JOINT DETAIL

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



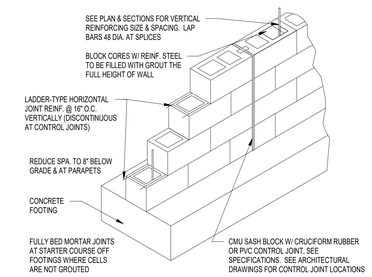
2 S500 LOW-LIFT WALL CONSTRUCTION

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



5 S500 BOND BEAM INTERSECTION DETAILS

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



1 S500 REINFORCED MASONRY DETAIL

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

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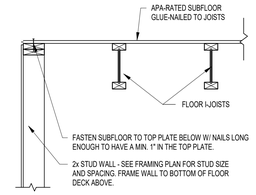
TYPICAL MASONRY DETAILS

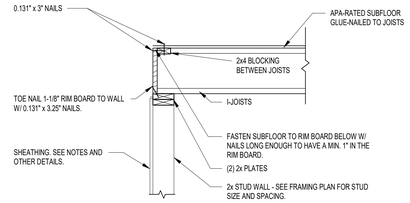
S500

PLOT DATE/TIME=4/22/2024 1:46:44 PM



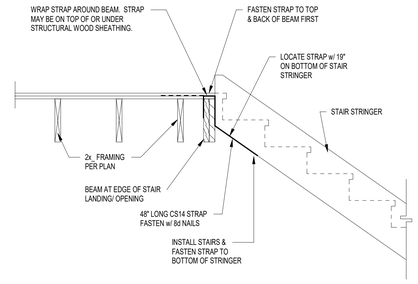
5 S600 WALL JOIST PARALLEL

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



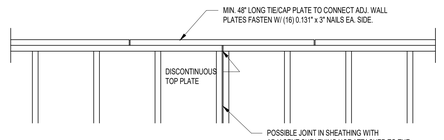
4 S600 WALL JOISTS PERPENDICULAR

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



3 S600 STAIR STRINGER SUPPORT DETAIL

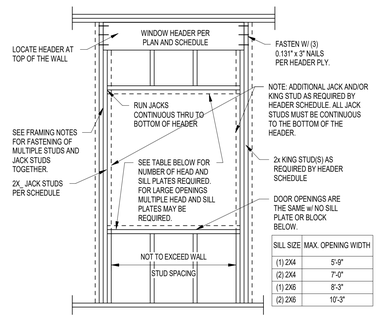
SCALE: 3/4" = 1'-0"



NOTE: DETAIL IS FOR EXTERIOR WALLS, BEARING WALLS AND SHEAR WALLS. FOR OTHER WALLS FOLLOW THE REQUIREMENTS OF THE IBC BUILDING CODE FOR CONVENTIONAL FRAMING.

2 S600 WALL CONTINUITY CAP PLATE DETAIL

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



SILL SIZE	MAX. OPENING WIDTH
(1) 2X4	5'-9"
(2) 2X4	7'-0"
(1) 2X6	8'-3"
(2) 2X6	10'-3"

SEE HEADER SCHEDULE FOR ADDITIONAL INFORMATION

1 S600 TYPICAL WALL OPENING

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

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TYPICAL WOOD FRAMING DETAILS

S600

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ABBREVIATIONS

A	
AB	Anchor Bolt
ACP	Acoustical Ceiling Panel
ACT	Acoustical Ceiling Tile
ADJ	Adjustable
AFF	Above Finished Floor
AGG	Aggregate
ALT	Alternate
ALUM/ AL	Aluminum
ANOD	Anodized Finish
AP	Access Panel
APPROX	Approximate
AV	Audio Visual
AWRB	Air/ Water Resistive Barrier
B	
B M	Bench Mark
BATT	Batt Insulation
BCMU	Burnished Concrete Masonry Unit
BD	Board
BFE	Bottom Footing Elevation
BIT	Bituminous
BLDG	Building
BLK	Block
BLKG	Blocking
BM	Beam
BOTT	Bottom
BR	Brick
BRG	Bearing
BUR	Built-Up Roof
C	
CAB	Cabinet
CB	Catch Basin
CBD	Cementious Board
CEM	Cement
CFG	Clear Float Glass
CFM	Cubic Foot Per Minute
CG	Corner Guard
CHBD	Chalk Board
CI	Cast Iron
CIP	Cast In Place
CJ	Control Joint
CL	Center Line
CLG	Ceiling
CLO	Closet
CMU	Concrete Masonry Unit
CO	Cleanout
COL	Column
CONC	Concrete
CONC BLK	Concrete Block
CONF	Conference
CONST	Construction
CONT	Continuous
CORR	Corridor
CP	Cement Plaster
CPT	Carpet
CSWK	Casework
CT	Ceramic Tile
D	
DEMO	Demolition
DEPT	Department
DF	Drinking Fountain
DIA	Diameter
DIM	Dimension
DKG	Decking
DN	Down
DR	Door
DS	Downspout
DWG	Drawing
DWLS	Dowels
E	
E	Existing Material
EA	Each
EDC	Elastometric Deck Coating
EHD	Electric Hand Dryer
EIFS	Exterior Finished Insulation System
EJ	Expansion Joint
ELEC	Electric
ELEV	Elevation or Elevator
ENT	Entrance
EQ	Equal
EQUIP	Equipment
EW	Each Way
EWC	Electric Water Cooler
EXIST	Existing
EXP	Exposed
EXT	Exterior
F	
FBC	Fire Blanket/ Cabinet
FBR	Face Brick
FD	Floor Drain
FDN	Foundation
FE	Fire Extinguisher
FEC	Fire Extinguisher Cabinet
FF	Factory Finish
FFE	Finished Floor Elevation
FG	Fire Glass

ABBREVIATIONS

FIN	Finish
FIXT	Fixture
FLR	Floor
FND	Feminine Napkin Dispenser
FNDISP	Feminine Napkin Dispenser
FOM	Face of Masonry
FR	Fire Rated
FRM	Frame
FRMG	Framing
FRP	Fiberglass Reinforced Paneling
FT	Foot or Feet
FTG	Footing
FURR	Furring
G	
GALV	Galvanized
GB/ GYP. BD	Gypsum Board
GBLK	Glazed Block
GC	General Contractor
GEN	General
GL	Glass or Glazing
GL BLK	Glass Block
GLU-LAM	Glue Laminated
H	
HC	Handicapped
HDW	Hardware
HDWD	Hardwood
HGT	Height
HM	Hollow Metal
HORZ	Horizontal
HR	Hour/ Handrail
HVAC	Heating or Venting or A/C
HYD	Hydrant
I	
ID	Inside Diameter
IG	Insulated Glass
IGT	Insulated Glass Tempered
INSUL	Insulation
INT	Interior
INV	Invert
IRGB	Impact Resistant Gypsum Board
ISSO	Insulated Steel Section Overead
J	
JAN	Janitor
JBE	Joist Bearing Elevation
JST	Joist
JT	Joint
K	
KO	Knock Out
L	
LAB	Laboratory
LAM	Laminated
LAV	Lavatory
LF	Lineal Foot
LLH	Long Leg Horizontal
LLV	Long Leg Vertical
LWCB	Lightweight Concrete Block
M	
MACH	Machine
MAF	Modular Athletic Flooring
MAS	Masonry
MAT	Material
MAX	Maximum
MBD	Marker Board
MCC	Multi-Color Coating
MECH	Mechanical
MEMB	Membrane
MET	Metal
MEZZ	Mezzanine
MFR	Manufacturer
MIN	Minimum or Minutes
MISC	Miscellaneous
MO	Masonry Opening
MR	Mirror
MULL	Mullion
N	
N	North
NIC	Not In Contract
NO	Number
NOM	Nominal
NTS	Not To Scale
O	
OA	Overall
OC	On Center
OD	Outside Diameter
OFF	Office
OHDR	Overhead Door
OPG	Opening
OPP	Opposite
P	
P/C	Precast Concrete
PC-TERR	Pre-Cast Terrazzo
PERF	Perforated
PF	Prefinished
PL	Plate
PLAM	Plastic Laminate
PLAS	Plaster

ABBREVIATIONS

PLBG	Plumbing
PLYWD	Plywood
PNL	Panel or Paneling
PPT	Porcelain Paver Tile
PROJ	Projection
PROP	Property
PT	Paint
PTD	Paper Towel Dispenser
PTDR	Paper Towel Dispenser/ Receptor
Q	
QT	Quarry Tile
R	
R	Riser/ Radius
RAD	Radiation
RB	Rubber Base
RD	Roof Drain
RDS	Roof Drainage Scuppers
REC	Recessed
REF	Refrigerator
REINF	Reinforced or Reinforcing
REQD	Required
REV	Reverse
RM	Room
RO	Rough Opening
ROD	Roof Overflow Drain
ROS	Roof Overflow Scupper
RS	Roof Scupper
RSS	Roof Slope (structural)
RST	Roof Sloped (tapered insulation)
RT	Rubber Tire or Tread
RTU	Roof Top Unit (see mechanical)
RUB	Rubber
RWL	Rain Water Leader
S	
SCHED	Schedule
SD	Soap Dispenser
SEAL	Sealed Concrete
SECT	Section
SGFT	Structural Glazed Facing Tile
SIM	Similar
SLNT	Sealant
SLR	Sealer
SPEC	Specification
SQFT	Square
SRF	Square Foot/ Feet
SRF	Seamless Resilient Floor Section
SST	Stainless Steel
ST	Stain
STL	Steel
STOR	Storage
SUSP	Suspended
SW	Switch
SYM	Symmetry/ Symmetrical
T	
T & G	Tongue & Groove
TB	Towel Bar
TBD	Tackboard
TEL	Telephone
TEMP	Temporary
TERR	Terrazzo
TFE	Top of Footing Elevation
TFG	Tempered Floating Glass
TOM	Top of Masonry
TOS	Top of Steel
TOW	Top of Wall
TPH	Toilet Paper Holder
TV	Television
TYP	Typical
U	
UH	Unit Heater
UNFIN	Unfinished
UNO	Unless Noted Otherwise
UV	Unit Ventilator
V	
VB	Vinyl Base
VCT	Vinyl Composition Tile
VDBD	Visual Display Board
VERT	Vertical
VEST	Vestibule
VP	Veneer Plaster - Smooth Finish
VP-SF	Veneer Plaster - Sand Float Finish
VRB	Vented Rubber Base
VWC	Vinul Wall Covering
W	
WC	Water Closet
WD	Wood
WD/PNL	Wood Panel
WF	Wash Fountain
WG	Wire Glass
WGT	Weight
WH	Water Heater
WP	Waterproofing
WRGB	Water Resistant Gypsum Board
WWF	Welded Wire Fabric

SYMBOLS LEGEND

NORTH ARROW

GRID NUMBER / LINE

SECTION/DETAL REFERENCE TAG

ELEVATION REFERENCE TAG

ELEVATION MARKER

BREAK LINE

ROOM NAME / NUMBER

DOOR NUMBER

WINDOW / CURTAIN WALL / LOUVER TAG

WALL TAG

REVISION TAG

CEILING TYPE / HEIGHT TAG

GLAZING TAG

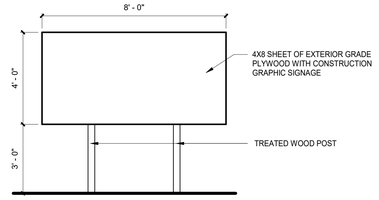
ROOF TAG

FLOOR TAG

FINISH TAG
ROOM NAME / NUMBER
WALL FINISH
WALL BASE FINISH
FLOORING FINISH

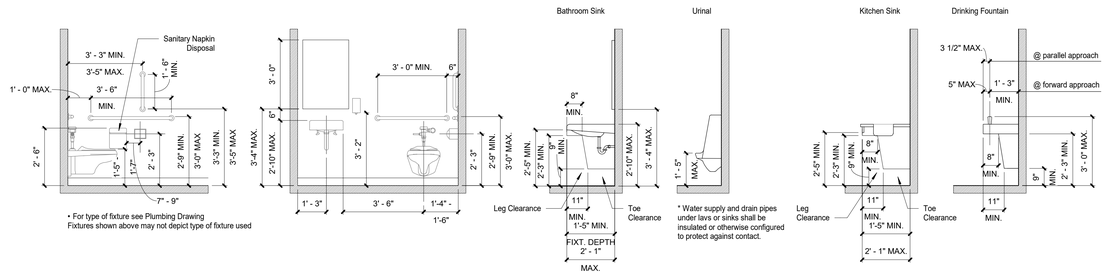
FLOORING FINISH DIRECTION

CONSTRUCTION SIGNAGE DETAIL



*SIGN INSTALLED BY CONTRACTOR
*GRAPHIC PROVIDED BY ARCHITECT

PLUMBING FIXTURE AND ACCESSORY LOCATIONS



• For type of fixture see Plumbing Drawing
Fixtures shown above may not depict type of fixture used

* Water supply and drain pipes under lavs or sinks shall be insulated or otherwise configured to protect against contact.

LANCER ASSOCIATES ARCHITECTURE
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JOHNSON COUNTY RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

REVISIONS:

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ARCHITECTURAL GENERAL NOTES

A001

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INTERIOR WALL NAMING CONVENTION

A 4 .1 A

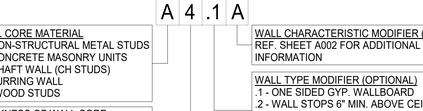
WALL CORE MATERIAL
A - NON-STRUCTURAL METAL STUDS
B - CONCRETE MASONRY UNITS
D - SHAFT WALL (CH STUDS)
F - FURRING WALL
W - WOOD STUDS

THICKNESS OF WALL CORE
NOMINAL DIMENSION OF WALL CORE

WALL CHARACTERISTIC MODIFIER (OPTIONAL)
REF. SHEET A002 FOR ADDITIONAL INFORMATION

WALL TYPE MODIFIER (OPTIONAL)
.1 - ONE SIDED GYP. WALLBOARD
.2 - WALL STOPS 6" MIN. ABOVE CEIILING
.3 - BOTH LINE ITEMS .1 AND .2
.4 - DOUBLE LAYER OF GYP. BOTH SIDES
.5 - "PONY" WALL, REF. PLANS FOR HEIGHT

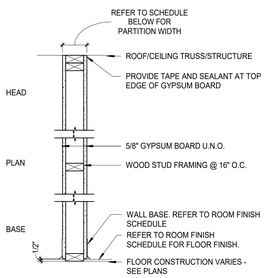
APC-B



APC-A

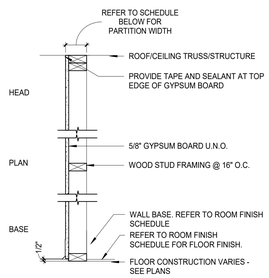
1 CEILING TYPES

SCALE: 1 1/2" = 1'-0"



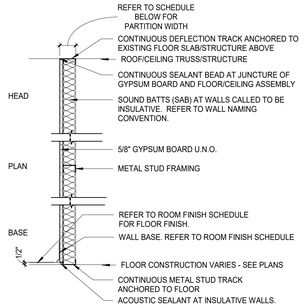
'Wx'

WALL	WIDTH		FIRE RATING	UL LISTING	STC	STC TEST
	PART	CORE				
W4	4 3/4"	3 1/2"				



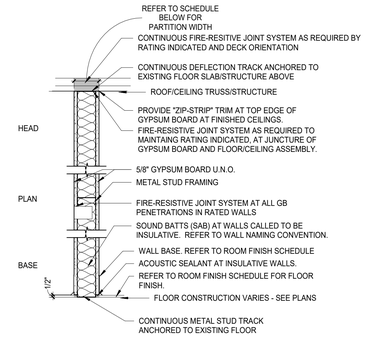
'Wx.1'

WALL	WIDTH		FIRE RATING	UL LISTING	STC	STC TEST
	PART	CORE				
W4.1	4 1/8"	3 1/2"				



'Ax.1'

WALL	WIDTH		FIRE RATING	UL LISTING	STC	STC TEST
	PART	CORE				
A4.1	4 1/4"	3 5/8"				



'Ax'

WALL	WIDTH		FIRE RATING	UL LISTING	STC	STC TEST
	PART	CORE				
A4	4 7/8"	3 5/8"				
A6	7 1/4"	6"				

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

JOHNSON COUNTY RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

JERRY L. CRIPPEN REGISTERED ARCHITECT NO 8800133 STATE OF INDIANA

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INTERIOR TYPES

A002

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LANCER ASSOCIATES ARCHITECTURE
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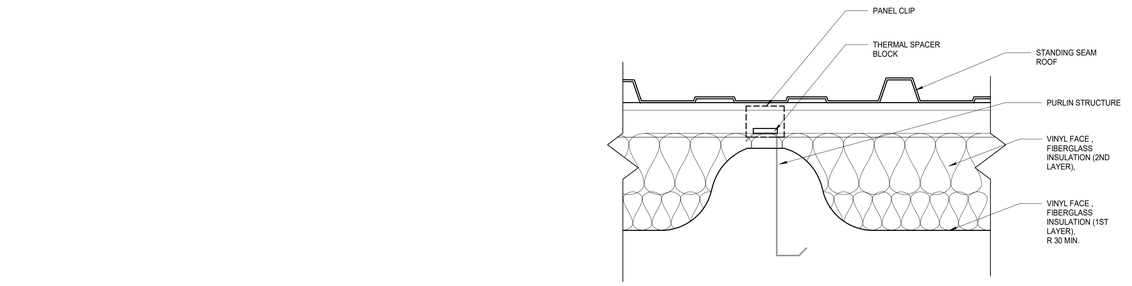
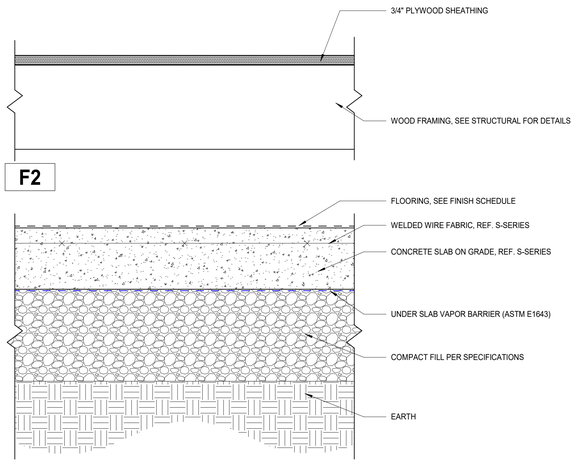
JOHNSON COUNTY
RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

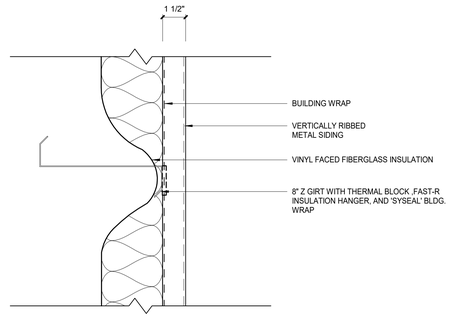


R1

2 ROOF ASSEMBLIES
SCALE: 3" = 1'-0"



3 FLOOR ASSEMBLIES
SCALE: 3" = 1'-0"



1 EXTERIOR WALL ASSEMBLIES
SCALE: 3" = 1'-0"

TERRY L. CRIPPS
REGISTERED
NO
8800133
STATE OF
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EXTERIOR TYPES

A003

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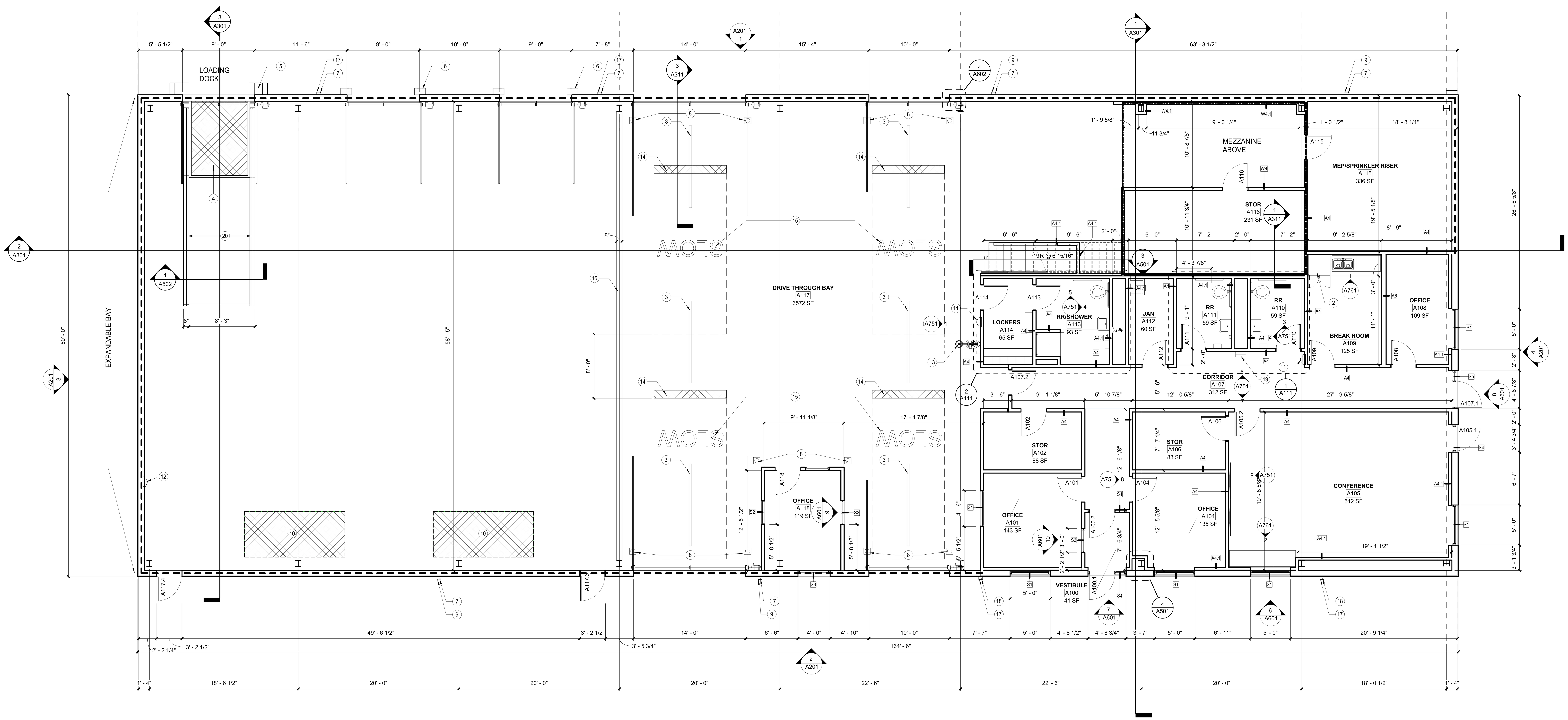
GENERAL NOTES

1. PROVIDE SOLID SURFACE WINDOW SILLS @ ALL STOREFRONT GLAZING SILLS ABOVE FINISHED FLOOR HEIGHT. WINDOW SILL TO EXTEND 1" PAST FINISHED WALL SURFACE, TYP. UNLESS OTHERWISE NOTED
2. SEE A110 FOR ENLARGED PLANS
3. VIF ALL DIMENSIONS FOR WINDOWS AND CASEWORK
4. INTERIOR DIMENSIONS ARE TAKEN TO THE FACE OF MASONRY OR STUDS
5. FOR ALL RESTROOM FACILITIES WIHT GYPSUM WALL FINISH REPLACE 5/8" TYPE "X" GYPSUM BOARD WIHT 5/8" MOISTURE RESISTANT GYPSUM BOARD, SEE SPECS FOR DETAILS
6. PROVIDE WINDOW SHADES AT ALL WINDOWS/STOREFRONTS (INTERIOR AND EXTERIOR). SHADES TO BE FULL PRIVACY SHADES.

- - - - - PEMB WITH ONE (1) COURSE OF 8" CMU

PLAN NOTES - FLOOR PLAN

1	REMOVEABLE WOOD RAILING
2	REFRIGERATORS. CONTRACTOR PROVIDED CONTRACTOR INSTALLED.
3	TRENCH DRAIN
4	HYDRAULIC DOCK LEVELER
5	DOCK SHELTER
6	DOCK SEAL
7	6"X6" METAL DOWNSPROUT
8	SURFACE MOUNTED BOLLARD
9	CAST IRON BOOT
10	BALER BY OWNER
11	SEMI RECESSED FIRE EXTINGUISHER
12	SURFACE MOUNTED FIRE EXTINGUISHER
13	EMERGENCY SHOWER AND EYE WASH
14	SURFACE MOUNTED SPEED BUMP
15	PAINTED FLOOR GRAPHIC "SLOW" 2' LETTERS
16	PAINTED FLOOR STRIPING
17	CONCRETE SPLASH BLOCK
18	6"X6" METAL DOWNSPOURT WITH A REMOVEABLE SECTION 6' FROM GOUND
19	ADA BOTTLE FILLER
20	ROUND METAL HANDRAIL (38") AND GUARD RAIL (42" MIN.) WITH VERTICAL BALUSTERS



1 FLOOR PLAN - FIRST FLOOR
SCALE: 3/16" = 1'-0" REF. 1 / A201

LANCER ASSOCIATES ARCHITECTURE
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JOHNSON COUNTY RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

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FLOOR PLAN - FIRST FLOOR

A101

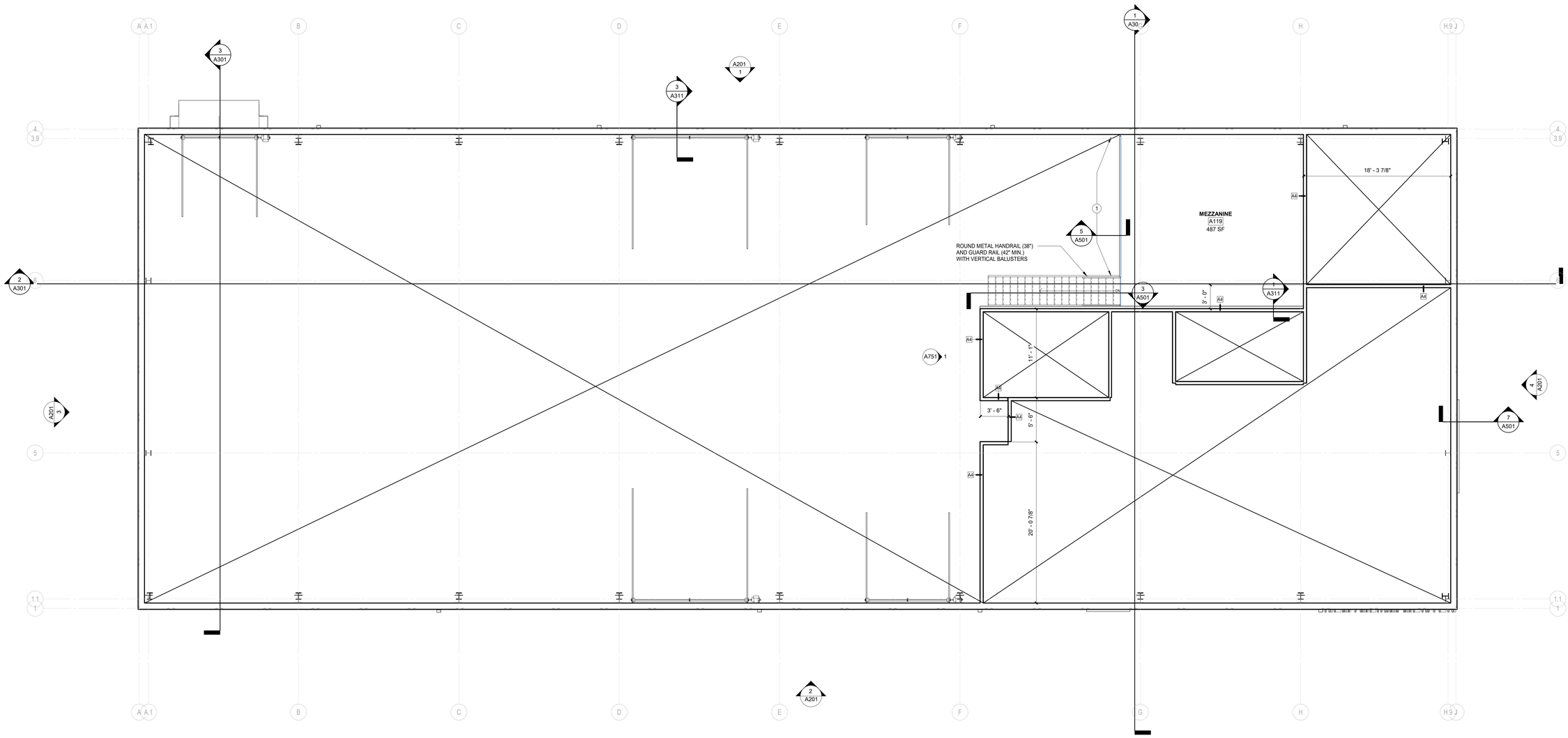
GENERAL NOTES

1. PROVIDE SOLID SURFACE WINDOW SILLS @ ALL STOREFRONT GLAZING SILLS ABOVE FINISHED FLOOR HEIGHT. WINDOW SILL TO EXTEND 1" PAST FINISHED WALL SURFACE, TYP, UNLESS OTHERWISE NOTED
2. SEE A110 FOR ENLARGED PLANS
3. VIF ALL DIMENSIONS FOR WINDOWS AND CASEWORK
4. INTERIOR DIMENSIONS ARE TAKEN TO THE FACE OF MASONRY OR STUDS
5. FOR ALL RESTROOM FACILITIES WIHT GYPSUM WALL FINISH REPLACE 5/8" TYPE "X" GYPSUM BOARD WIHT 5/8" MOISTURE RESISTANT GYPSUM BOARD, SEE SPECS FOR DETAILS
6. PROVIDE WINDOW SHADES AT ALL WINDOWS/STOREFRONTS (INTERIOR AND EXTERIOR). SHADES TO BE FULL PRIVACY SHADES.

PEMB WITH ONE (1) COURSE OF 8" CMU

PLAN NOTES - FLOOR PLAN

1 REMOVEABLE WOOD RAILING
2 REFRIGERATORS. CONTRACTOR PROVIDED CONTRACTOR INSTALLED.
3 TRENCH DRAIN
4 HYDRAULIC DOCK LEVELER
5 DOCK SHELTER
6 DOCK SEAL
7 6"X6" METAL DOWNSPROUT
8 SURFACE MOUNTED BOLLARD
9 CAST IRON BOOT
10 BALER BY OWNER
11 SEMI RECESSED FIRE EXTINGUISHER
12 SURFACE MOUNTED FIRE EXTINGUISHER
13 EMERGENCY SHOWER AND EYE WASH
14 SURFACE MOUNTED SPEED BUMP
15 PAINTED FLOOR GRAPHIC "SLOW" 2' LETTERS
16 PAINTED FLOOR STRIPING
17 CONCRETE SPLASH BLOCK
18 6"X6" METAL DOWNSPOUT WITH A REMOVEABLE SECTION 6' FROM GOUND
19 ADA BOTTLE FILLER
20 ROUND METAL HANDRAIL (38") AND GUARD RAIL (42" MIN.) WITH VERTICAL BALUSTERS



1 FLOOR PLAN - MEZZANINE

SCALE: 3/16" = 1'-0" REF. 1 / A201

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FLOOR PLAN - MEZZANINE

N

A102

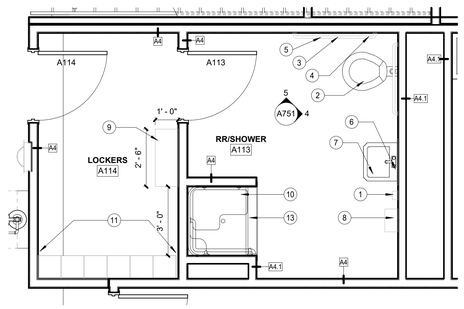
PLOT DATE/TIME 4/22/2024 4:55:29 PM

GENERAL NOTES

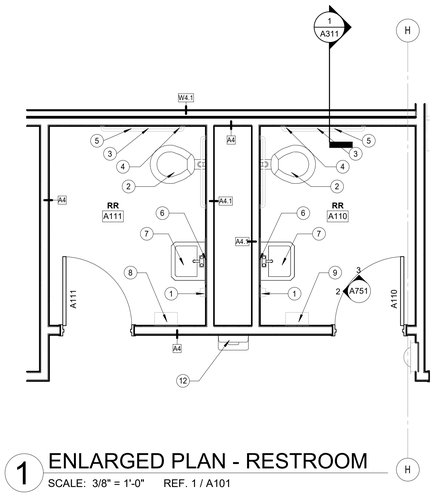
1. PROVIDE HOOKS ON ALL PARTITION DOORS
2. PROVIDE HOOKS ON ALL DOORS INTO SINGLE OCCUPANCY RESTROOMS
3. MOUNT HOOKS AT 48" AFF MAX IN ALL ACCESSIBLE RESTROOMS

PLAN NOTES - ENLARGED FLOO...

1 SOAP DISPENSER. CONTRACTOR PROVIDE CONTRACTOR INSTALL
2 TOILET PLUMBING FIXTURE. SEE P-SERIES
3 TOILET PAPER DISPENSE. CONTRACTOR PROVIDE CONTRACTOR INSTALL
4 ADA GRAB BARS. CONTRACTOR PROVIDE CONTRACTOR INSTALL
5 LINED SANITARY NAPKING DISPOSAL. CONTRACTOR PROVIDE CONTRACTOR INSTALL
6 24" X 36" MIRROR. CONTRACTOR PROVIDE CONTRACTOR INSTALL
7 LAVATORY SINK. SEE P-SERIES
8 ELECTRIC HAND DRYER. CONTRACTOR PROVIDE CONTRACTOR INSTALL
9 FLOOR MOUNTED WOOD BENCH. 30" X 12"
10 ADA SHOWER - ACRYLIC
11 METAL LOCKER DOUBLE TIER, SLOPED TOP
12 ADA BOTTLE FILLER
13 SHOWER ROD AND CURTAIN



2 ENLARGED PLAN - SHOWER/LOCKER ROOM
SCALE: 3/8" = 1'-0" REF. 1 / A101



1 ENLARGED PLAN - RESTROOM
SCALE: 3/8" = 1'-0" REF. 1 / A101

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DATE:	04/22/2024
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ENLARGED PLANS

N

A111

PLOT DATE/TIME:4/22/2024 4:55:29 PM

GENERAL NOTES

1. ALL INTERIOR CEILINGS AT 9'-0" UNLESS OTHERWISE NOTED.
2. ALL WALLS TO GO 8" ABOVE THE CEILING UNLESS CALL OUT DIFFERENTLY

RCP PLANLEGEND

WALL GO UP TO DECK

PLAN NOTES - RCP

1 REFLECTED CEILING PLAN - FIRST FLOOR - OVERALL

SCALE: 3/16" = 1'-0" REF. 1 / A201

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

JOHNSON COUNTY
RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

JERRY L. CRIPPS
REGISTERED
NO.
880133
STATE OF
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ARCHITECT

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DATE:	04/22/2024
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REFLECTED CEILING PLAN

N

A121

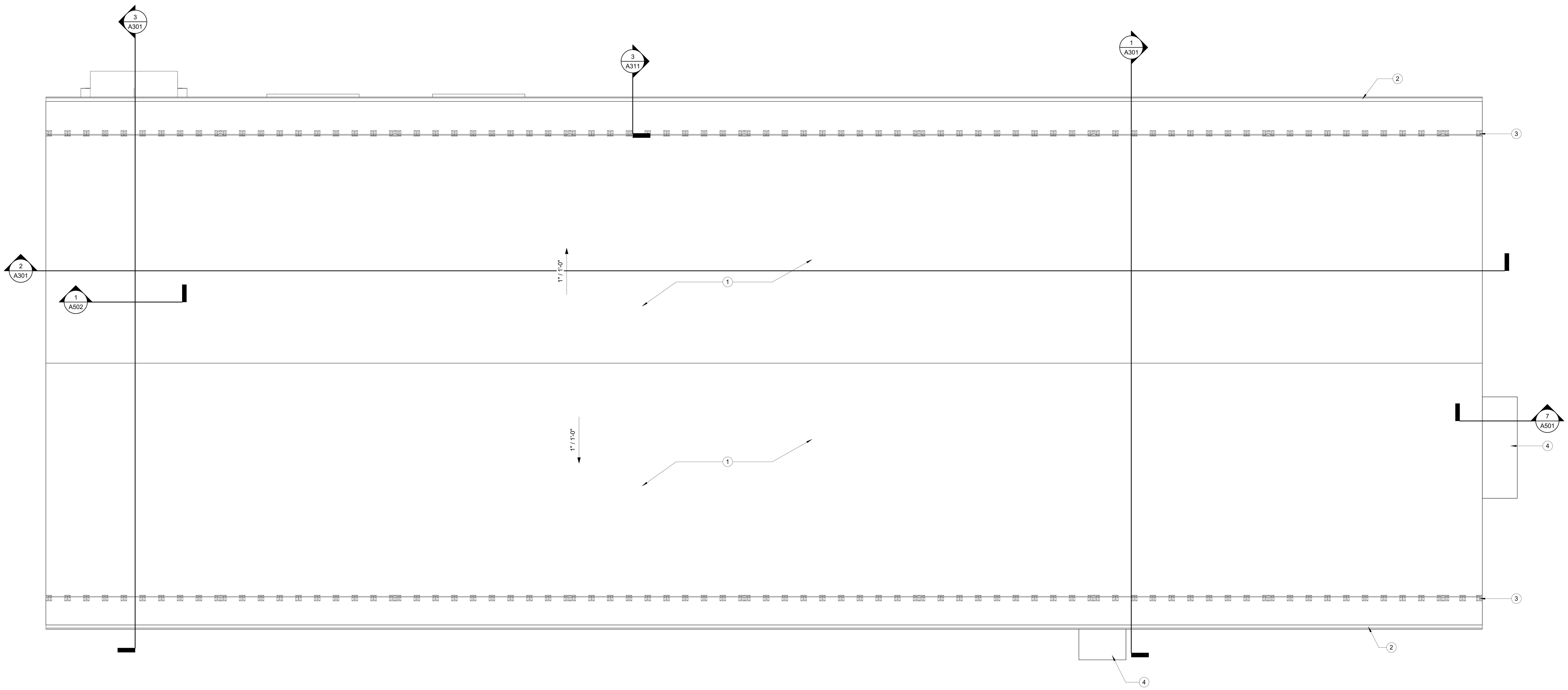
PLOT DATE/TIME 4/22/2024 4:55:30 PM

GENERAL NOTES

1. PROVIDE SPLASH BLOCKS W/WHERE DOWNSPOUTS OR EXTENDERS COME INTO ROOF SURFACE

PLAN NOTES - ROOF PLAN

1 STANDING SEAM METAL ROOF BY PEMB MANUFACTURER. COLOR TBD
2 5" D X 6" W GUTTER
3 SNOW GUARD
4 CANOPY BY PEMB MANUFACTURER



1 ROOF PLAN - OVERALL
SCALE: 3/16" = 1'-0" REF. 1 / A201

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

JOHNSON COUNTY
RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

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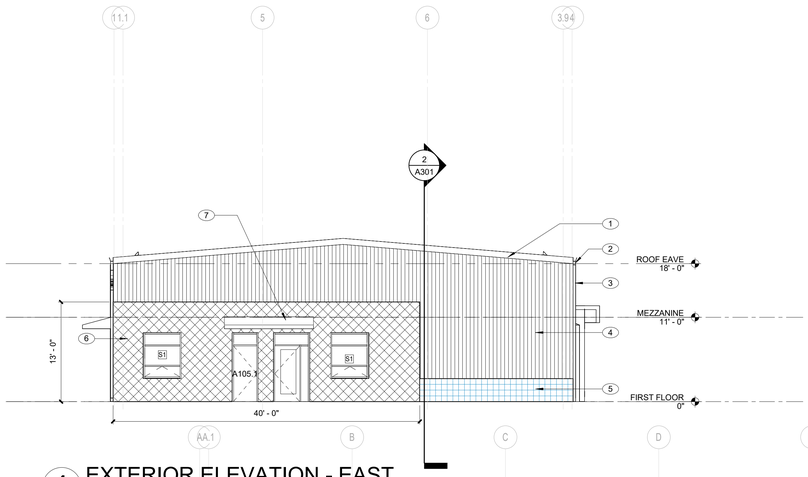
ROOF PLAN

N

A141

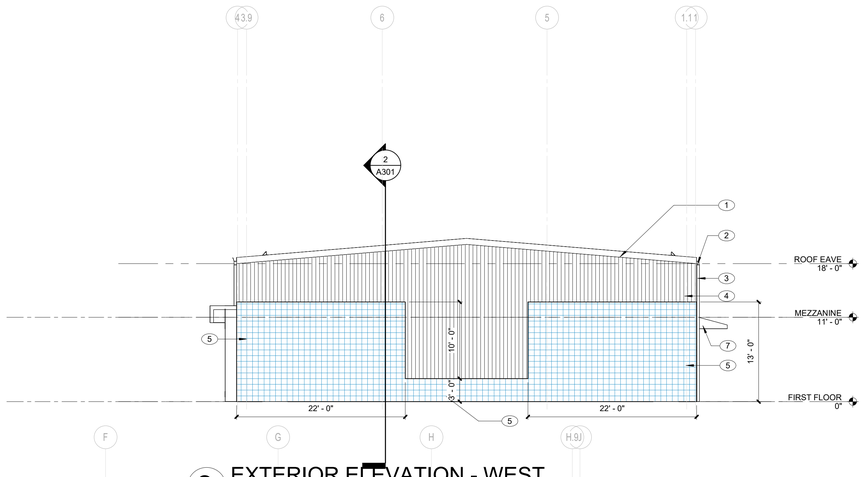
ELEVATION NOTES - EXTERIOR

1 STANDING SEAM METAL ROOF. COLOR D
2 8" D X 8" W METAL GUTTER
3 METAL DOWNSPOUT 6" X 6"
4 STANDING SEAM METAL WAL PANEL. COLOR A
5 STANDING SEAM METAL WAL PANEL. COLOR B
6 STANDING SEAM METAL WAL PANEL. COLOR C
7 CANOPY BY PEMB
8 DOCK LEVELER
9 DOCK SHELTER
10 DOCK SEAL
11 14" METAL LETTER SIGNAGE, CONFIRM WITH OWNER ON FINAL TEXT



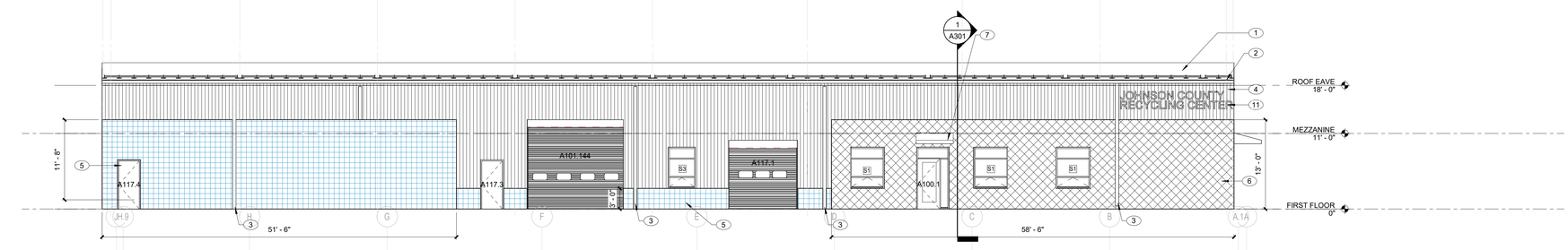
4 EXTERIOR ELEVATION - EAST

SCALE: 1/8" = 1'-0" REF. 1 / A101



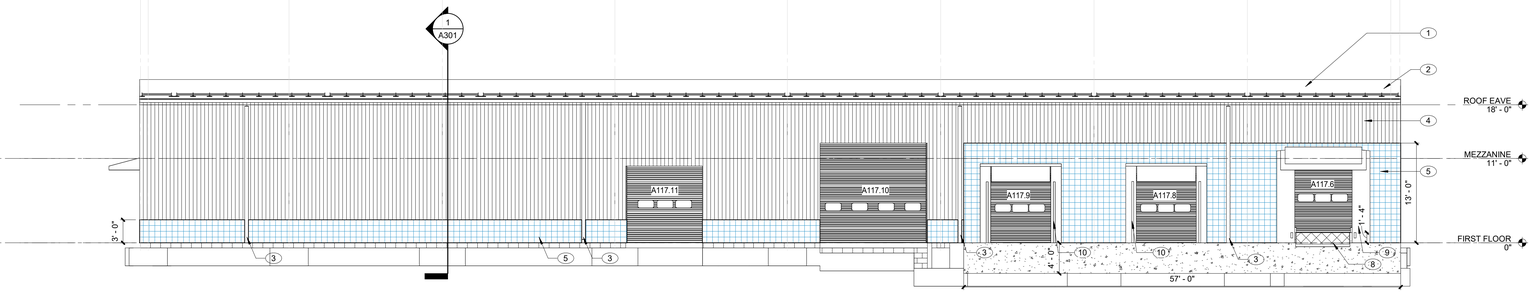
3 EXTERIOR ELEVATION - WEST

SCALE: 1/8" = 1'-0" REF. 1 / A101



2 EXTERIOR ELEVATION - SOUTH

SCALE: 1/8" = 1'-0" REF. 1 / A101



1 EXTERIOR ELEVATION - NORTH

SCALE: 1/8" = 1'-0" REF. 1 / A101

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LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

JOHNSON COUNTY
RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

JERRY L CRIPE REGISTERED No 880133 STATE OF INDIANA

REVISIONS:

#	Date	Desc.

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PROJECT:	#23122
DATE:	04/22/2024
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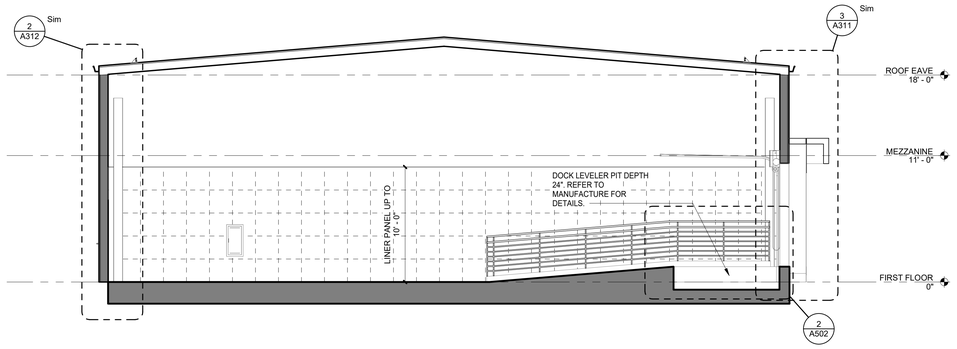
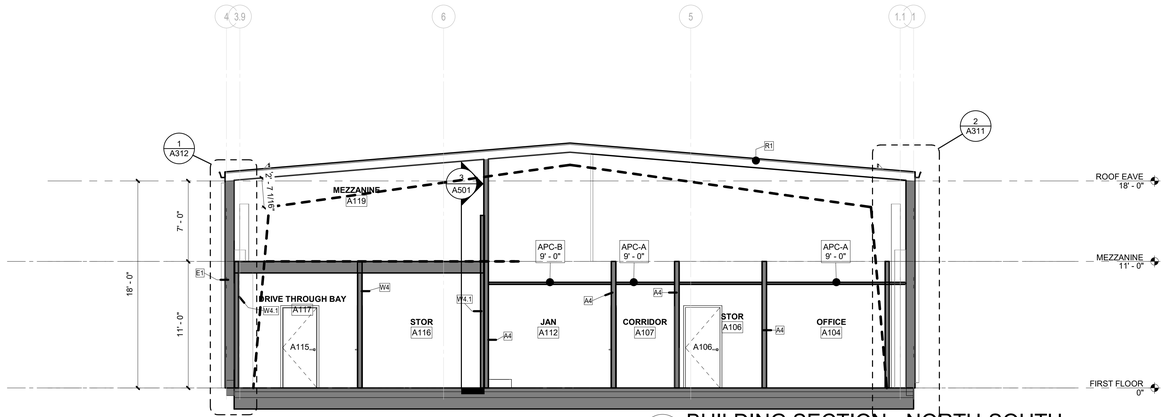
EXTERIOR ELEVATIONS

A201



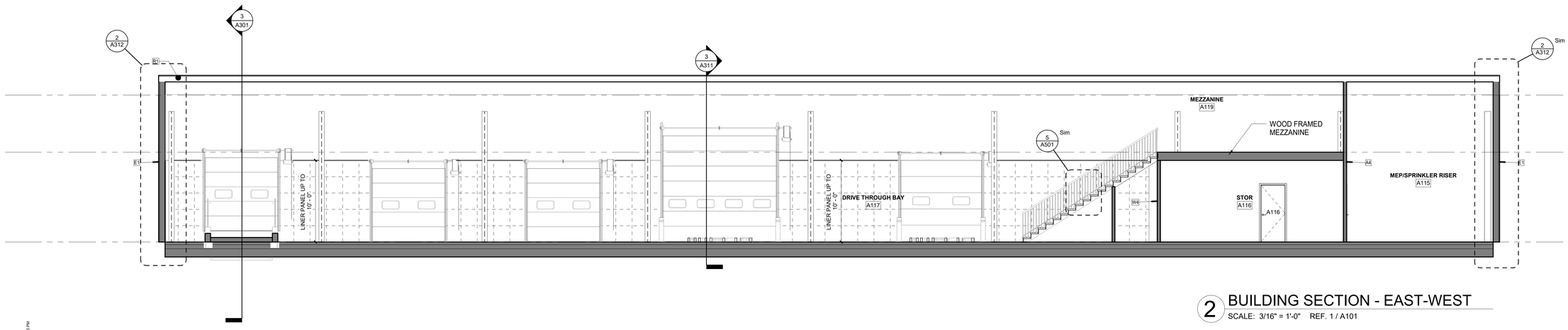
3 BUILDING SECTION - LOADING DOCK

SCALE: 3/16" = 1'-0" REF. 1 / A101



1 BUILDING SECTION - NORTH-SOUTH

SCALE: 3/16" = 1'-0" REF. 1 / A101



2 BUILDING SECTION - EAST-WEST

SCALE: 3/16" = 1'-0" REF. 1 / A101

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LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

JOHNSON COUNTY
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JERRY L. CRIPPS
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INDIANA
ARCHITECT

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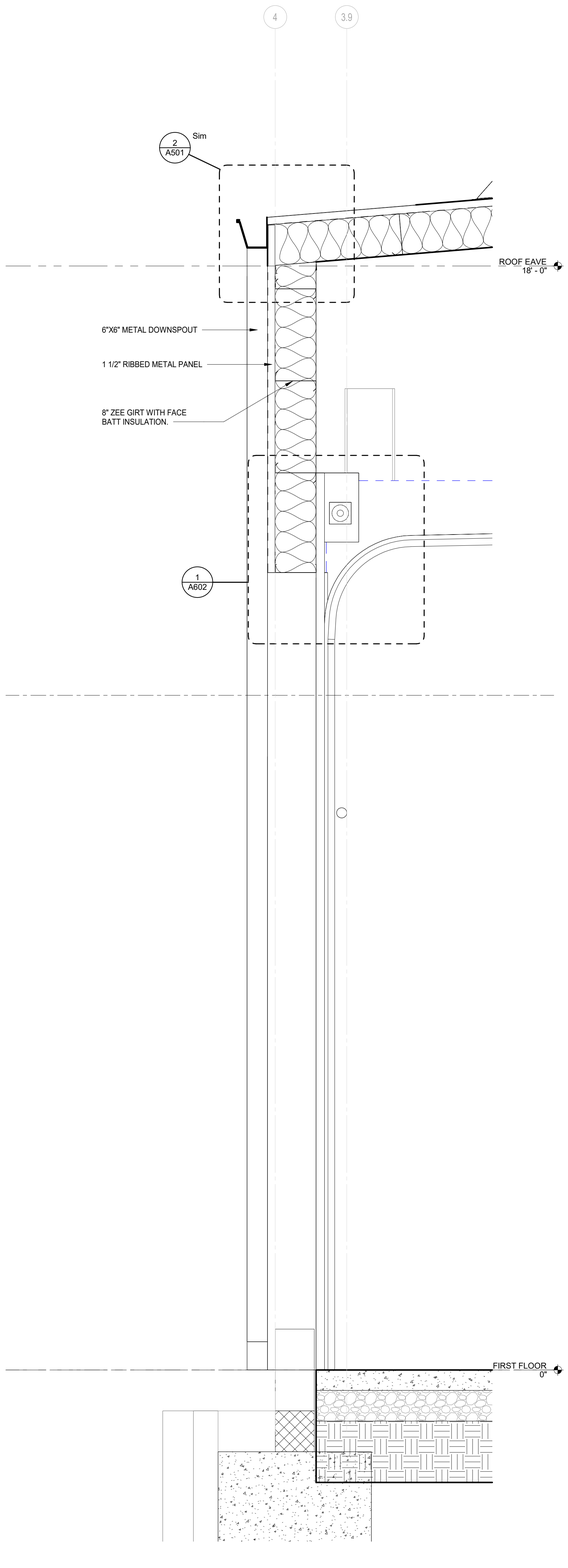
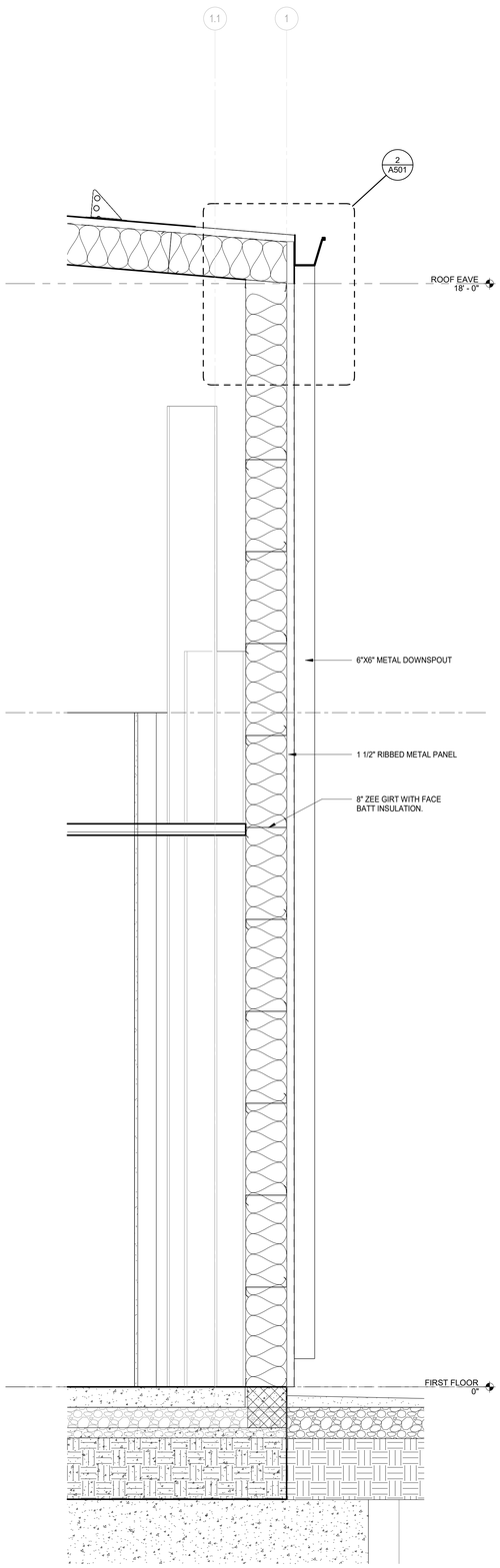
BUILDING SECTIONS

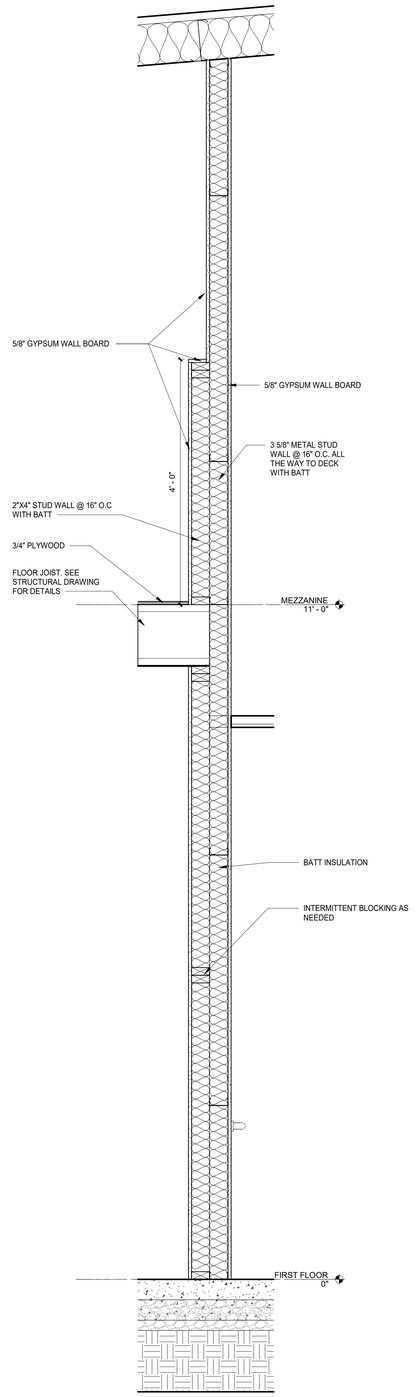
A301



3 WALL SECTION - OVERHEAD DOOR
SCALE: 1" = 1'-0" REF. 1 / A101



2 WALL SECTION - METAL STUD @ PEMB
SCALE: 1" = 1'-0" REF. 1 / A301



1 WALL SECTION - METAL AND WOOD STUD WALL
SCALE: 1" = 1'-0" REF. 1 / A101

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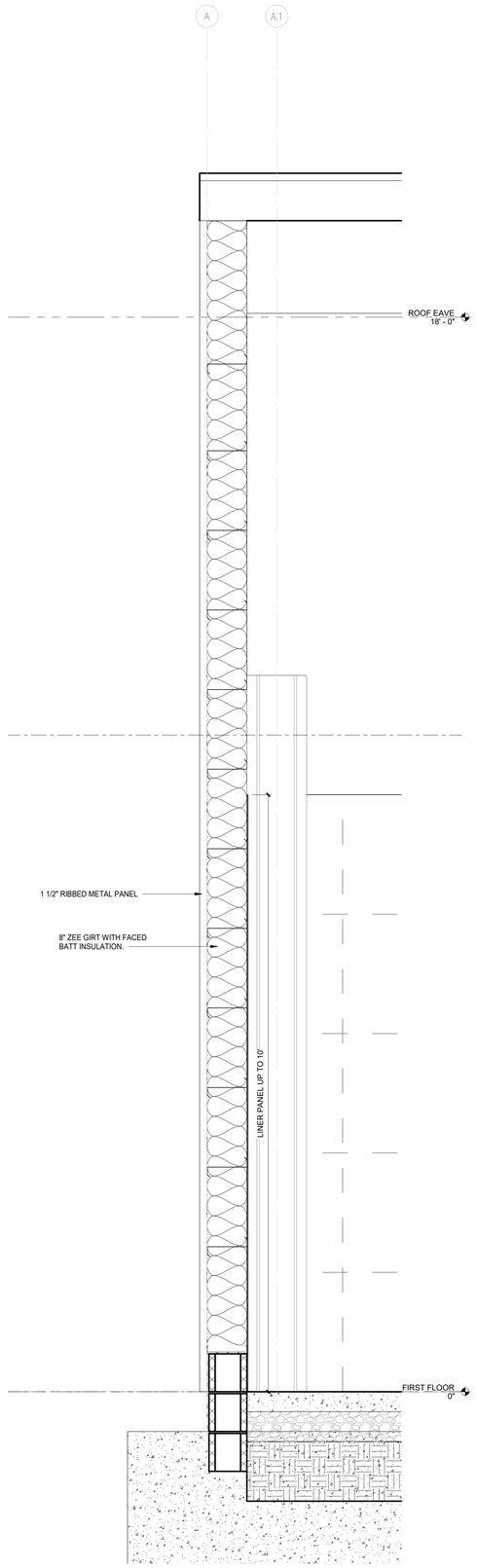
WALL SECTIONS

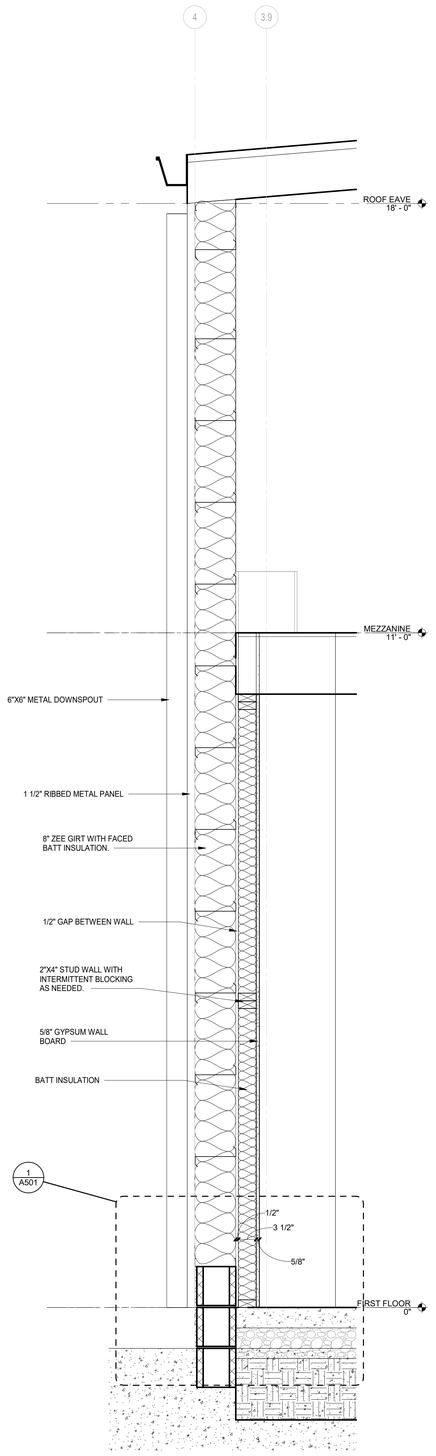
A311

PLOT DATE/TIME: 4/22/2024 4:55:39 PM



2 WALL SECTION - PEMB

SCALE: 1" = 1'-0" REF. 2 / A301



1 WALL SECTION - WOOD STUD @ EXTERIOR

SCALE: 1" = 1'-0" REF. 1 / A301

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
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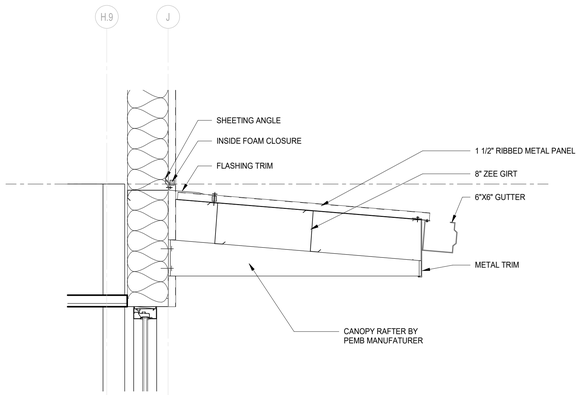
WALL SECTIONS

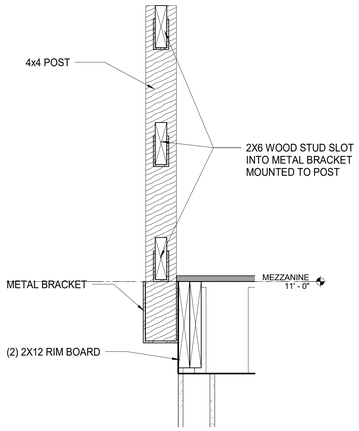
A312

PLOT DATE/TIME 4/22/2024 4:56:36 PM



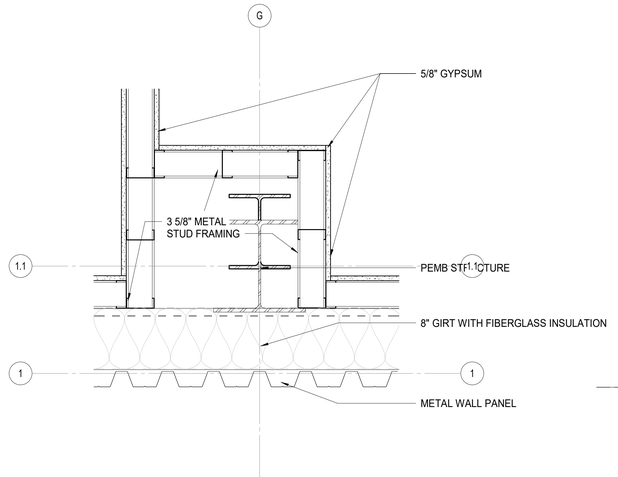
7 CANOPY DETAIL

SCALE: 1" = 1'-0" REF. 1 / A102



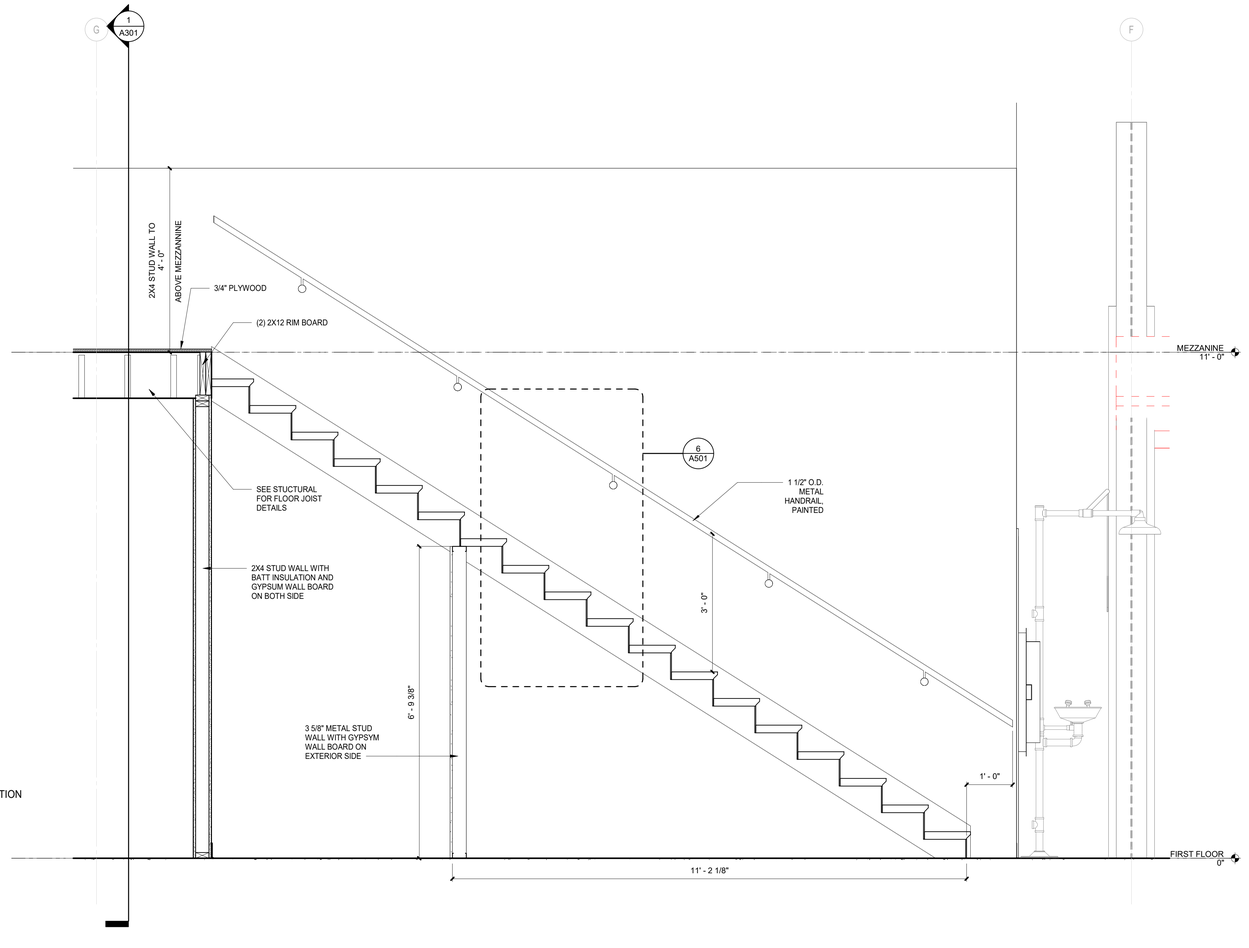
5 MEZZANINE RAILING DETAIL

SCALE: 1 1/2" = 1'-0" REF. 1 / A102



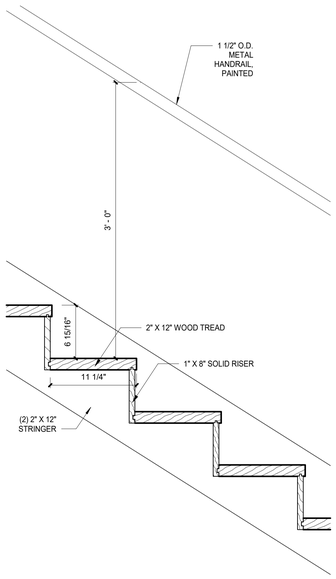
4 COLUMN ENCLOSURE DETAIL

SCALE: 1 1/2" = 1'-0" REF. 1 / A101



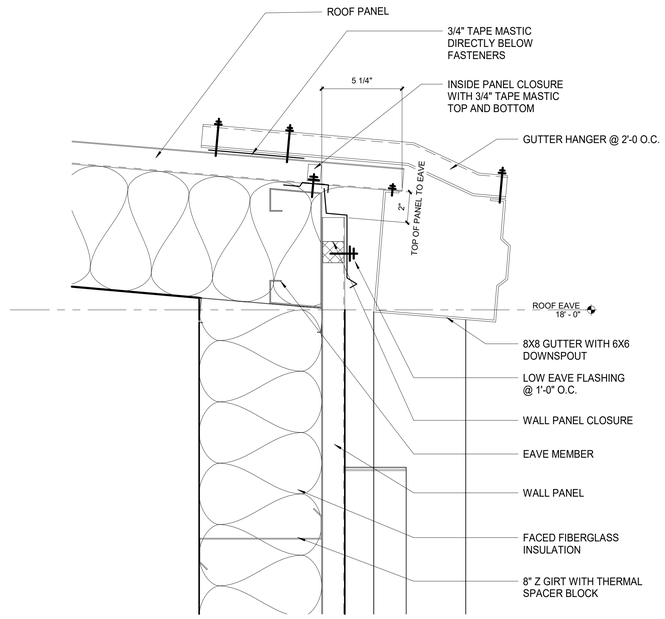
3 SECTION - MEZZANINE STAIR

SCALE: 3/4" = 1'-0" REF. 1 / A101



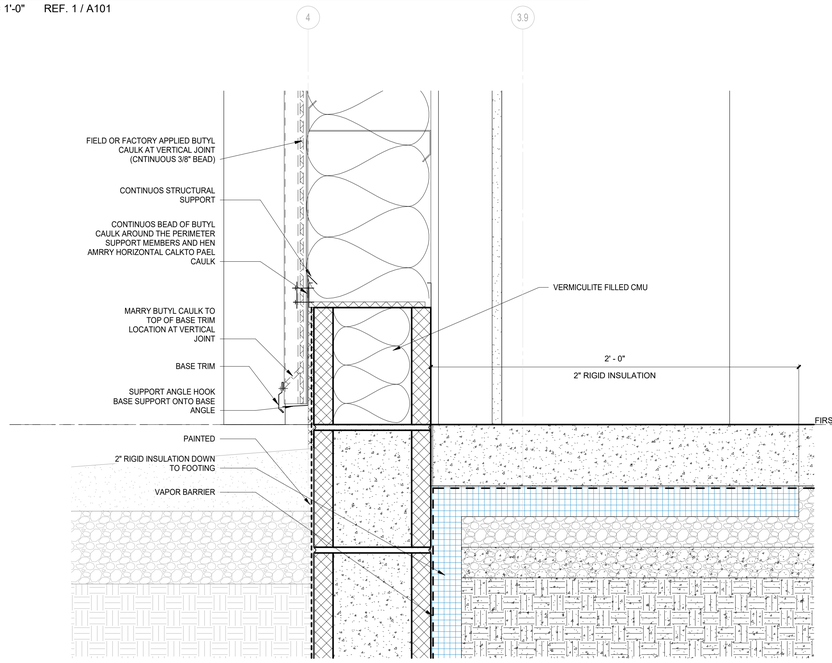
6 STAIR DETAIL

SCALE: 1 1/2" = 1'-0" REF. 3 / A501



2 PEMB LOW EAVE DETAIL

SCALE: 3" = 1'-0" REF. 2 / A311



1 PEMB WALL TO FLOOR DETAILS

SCALE: 3" = 1'-0" REF. 1 / A312

LANCER ASSOCIATES ARCHITECTURE
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JERRY L. CRITZER
REGISTERED
NO
880133
STATE OF

#	Date	Desc.

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DETAILS

A501

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PROJECT: #23122
DATE: 04/22/2024
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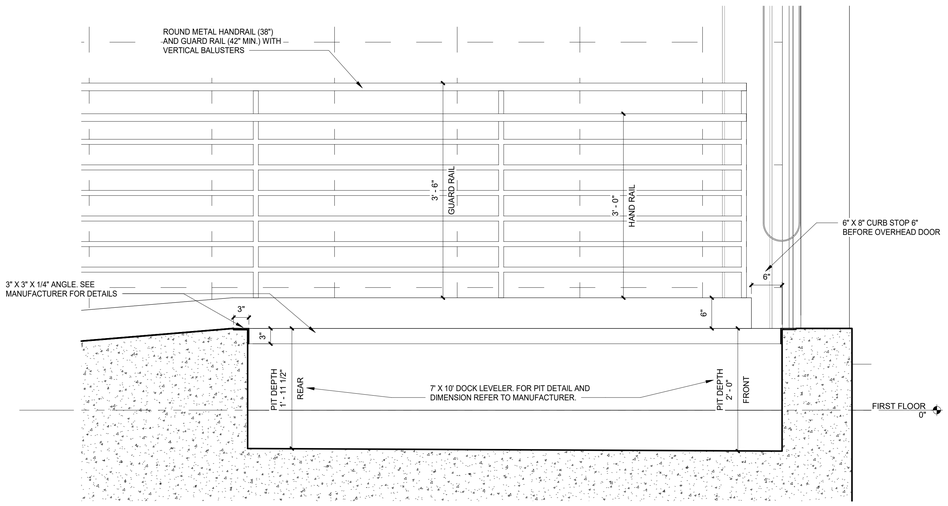
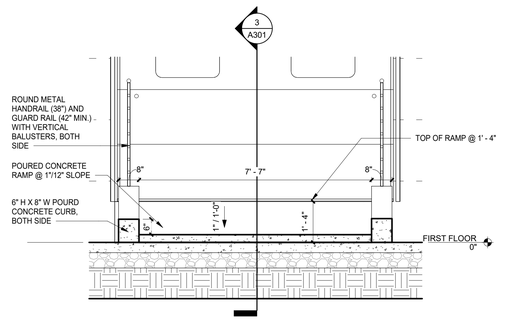
DETAILS

A502



2 DOCK LEVELER PIT DETAIL

SCALE: 1" = 1'-0" REF. 3 / A301



1 DOCK LEVELER RAMP DETAIL

SCALE: 1/2" = 1'-0" REF. 1 / A101

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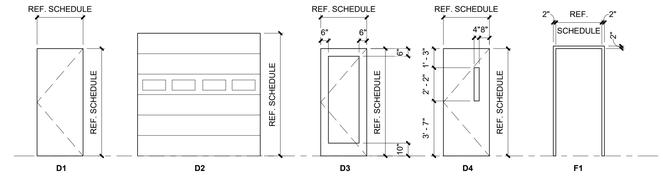
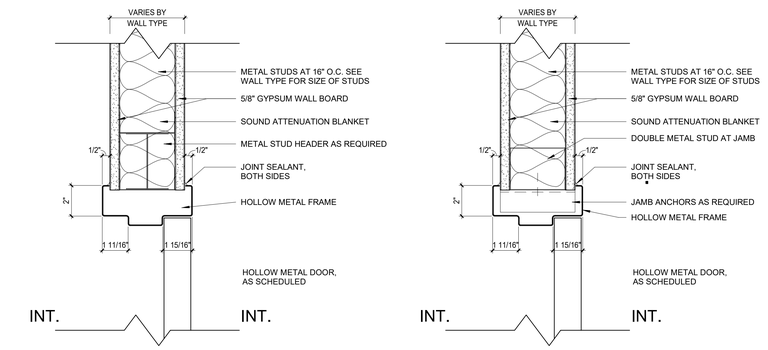
DOOR SCHEDULE

DR #	ROOM NAME	ROOM #	DOOR					FRAME				HARDWARE	GLAZING	NOTES
			HEIGHT	WIDTH	ELEV	MATERIAL	SIZE	ELEV	MATERIAL	HEAD	JAMB			
A100.1	VESTIBULE	A100	7' - 3 3/8"	3' - 2 1/8"	D3	ALUM	4 1/2" KAWNEER STOREFRONT e	N/A	ALUM	2/A602	3/A602	10	TEMPERED	CARD READER
A100.2	CORRIDOR	A103	7' - 3 3/8"	3' - 2 1/8"	D3	ALUM	4 1/2" KAWNEER STOREFRONT e	N/A	ALUM	2/A602	3/A602	9	TEMPERED	CARD READER
A101	OFFICE	A101	7' - 0"	3' - 0"	D4	WD	36" x 84" - 2" HEAD D4	F1	HM	2/A601	2/A601	04	TEMPERED	
A102	STOR	A102	7' - 0"	3' - 0"	D1	WD	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	06		
A104	OFFICE	A104	7' - 0"	3' - 0"	D4	HM	36" x 84" - 2" HEAD D4	F1	HM	2/A601	2/A601	04	TEMPERED	
A105.1	CONFERENCE	A105	7' - 3 3/8"	3' - 0 3/4"	D3	ALUM	4 1/2" KAWNEER STOREFRONT	N/A	ALUM	2/A602	3/A602	10	TEMPERED	CARD READER
A105.2	CONFERENCE	A105	7' - 0"	3' - 0"	D1	WD	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	03		
A106	STOR	A106	7' - 0"	3' - 0"	D1	WD	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	07		
A107.1	CORRIDOR	A107	7' - 3 3/8"	3' - 3 1/4"	D3	ALUM	4 1/2" KAWNEER STOREFRONT	N/A	ALUM	2/A602	3/A602	10	TEMPERED	
A107.2	DRIVE THROUGH BAY	A117	7' - 0"	3' - 0"	D1	HM	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	08		
A108	OFFICE	A108	7' - 0"	3' - 0"	D4	WD	36" x 84" - 2" HEAD D4	F1	HM	2/A601	2/A601	04	TEMPERED	
A109	BREAK ROOM	A109	7' - 0"	3' - 0"	D1	WD	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	04		
A110	RR	A110	7' - 0"	3' - 0"	D1	WD	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	02		
A111	RR	A111	7' - 0"	3' - 0"	D1	WD	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	02		
A112	JAN	A112	7' - 0"	3' - 0"	D1	WD	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	07		
A113	RR/SHOWER	A113	7' - 0"	3' - 0"	D1	WD	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	02		
A114	LOCKERS	A114	7' - 0"	3' - 0"	D1	HM	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	01		
A115	MEP/SPRINKLER RISER	A115	7' - 0"	3' - 0"	D1	HM	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	11		
A116	DRIVE THROUGH BAY	A117	7' - 0"	3' - 0"	D1	HM	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	07		
A117.1	DRIVE THROUGH BAY	A117	10' - 0"	10' - 0"	D2	STEEL	OVERHEAD SECTIONAL DOOR	N/A		1/A602	4/A602	12		
A117.2	DRIVE THROUGH BAY	A117	13' - 0"	14' - 0"	D2	STEEL	OVERHEAD SECTIONAL DOOR	N/A		1/A602	4/A602	12		
A117.3	DRIVE THROUGH BAY	A117	7' - 0"	3' - 0"	D1	HM	36" x 84" - 2" HEAD	F1	HM	3/A601	4/A601	05		
A117.4	DRIVE THROUGH BAY	A117	7' - 0"	3' - 0"	D1	HM	36" x 84" - 2" HEAD	F1	HM	3/A601	4/A601	05		
A117.6	DRIVE THROUGH BAY	A117	9' - 0"	9' - 0"	D2	STEEL	OVERHEAD SECTIONAL DOOR	N/A		1/A602	4/A602	12		
A117.8	DRIVE THROUGH BAY	A117	9' - 0"	9' - 0"	D2	STEEL	OVERHEAD SECTIONAL DOOR	N/A		1/A602	4/A602	12		
A117.9	DRIVE THROUGH BAY	A117	9' - 0"	9' - 0"	D2	STEEL	OVERHEAD SECTIONAL DOOR	N/A		1/A602	4/A602	12		
A117.10	DRIVE THROUGH BAY	A117	13' - 0"	14' - 0"	D2	HM	OVERHEAD SECTIONAL DOOR	N/A		1/A602	4/A602	12		
A117.11	DRIVE THROUGH BAY	A117	10' - 0"	10' - 0"	D2	STEEL	OVERHEAD SECTIONAL DOOR	N/A		1/A602	4/A602	12		
A118	OFFICE	A118	7' - 0"	3' - 0"	D1	HM	36" x 84" - 2" HEAD	F1	HM	2/A601	2/A601	04		



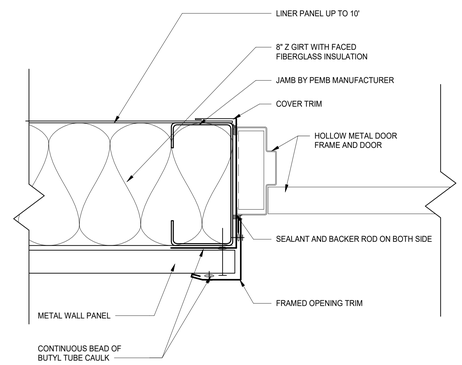


B) HOLLOW METAL HEAD IN MTL STUD/GYP

A) HOLLOW METAL JAMB IN MTL STUD/GYP

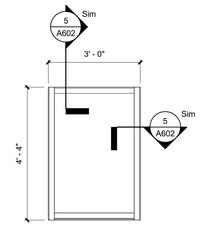
12 STANDARD INTERIOR DOOR DETAILS

SCALE: 3" = 1'-0"



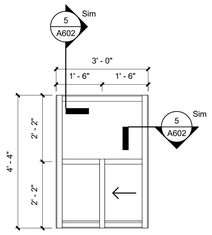
11 HM DOOR JAMB @ PEMB

SCALE: 3" = 1'-0"



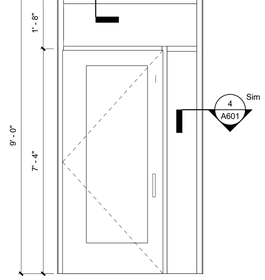
10 S3

SCALE: 1/2" = 1'-0" REF. 1 / A101



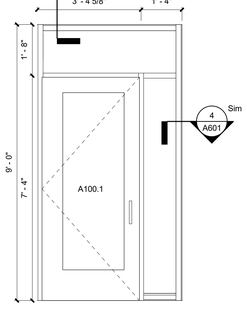
9 S2

SCALE: 1/2" = 1'-0" REF. 1 / A101



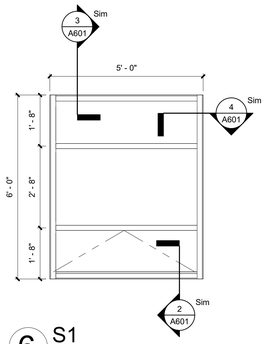
8 S5

SCALE: 1/2" = 1'-0" REF. 1 / A101



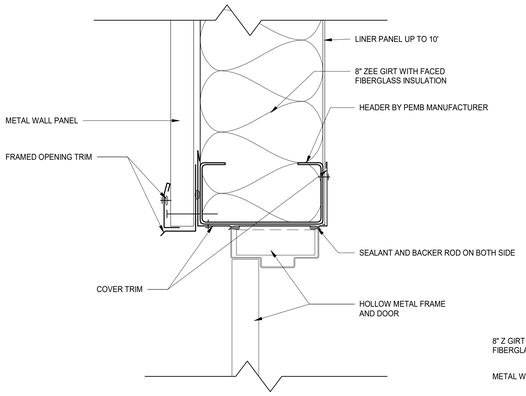
7 S4

SCALE: 1/2" = 1'-0" REF. 1 / A101



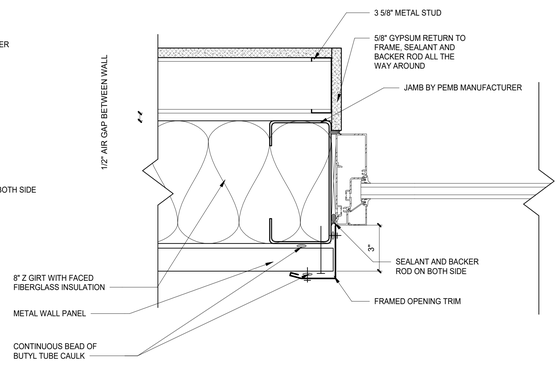
6 S1

SCALE: 1/2" = 1'-0" REF. 1 / A101



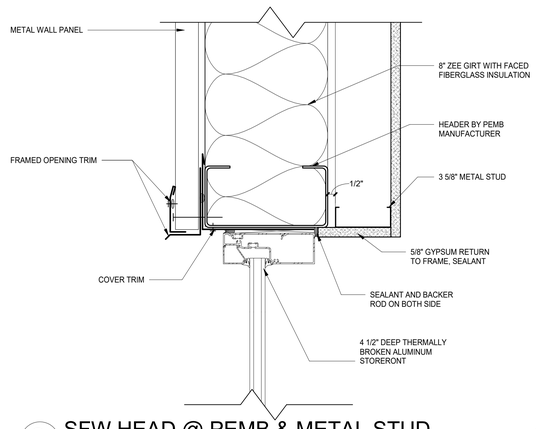
5 HM DOOR HEAD @ PEMB

SCALE: 3" = 1'-0"



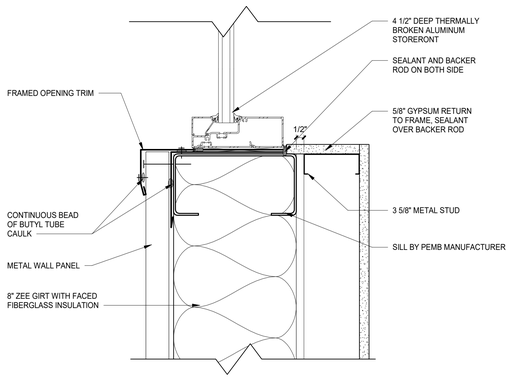
4 SFW JAMB @ PEMB & METAL STUD

SCALE: 3" = 1'-0" REF. 6 / A601



3 SFW HEAD @ PEMB & METAL STUD

SCALE: 3" = 1'-0" REF. 6 / A601



2 SFW SILL @ PEMB & METAL STUD

SCALE: 3" = 1'-0" REF. 6 / A601

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JERRY L. CRIPE REGISTERED NO. 830033 STATE OF INDIANA ARCHITECT

REVISIONS:

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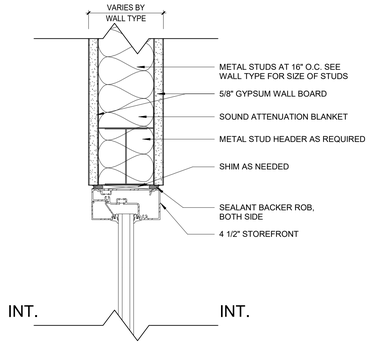
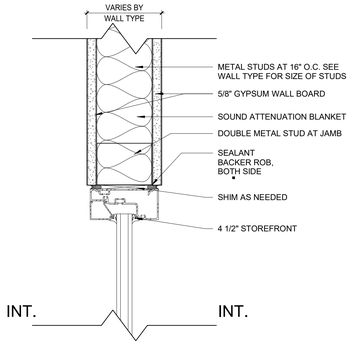
DOORS AND ASF/CW SCHEDULE & DETAILS

A601

PLOT DATE/TIME: 4/22/2024 4:05:39 PM



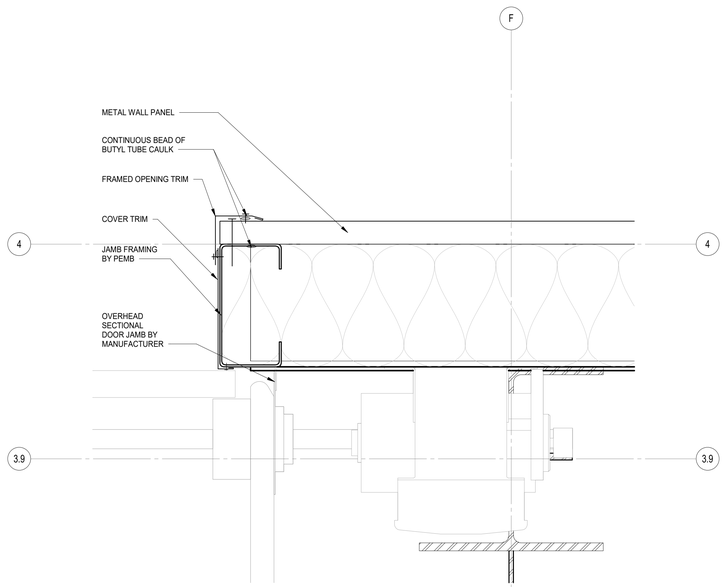
B) ALUMINUM STOREFRONT HEAD IN MTL STUD/GYP



A) ALUMINU STOREFRONT JAMB IN MTL STUD/GYP

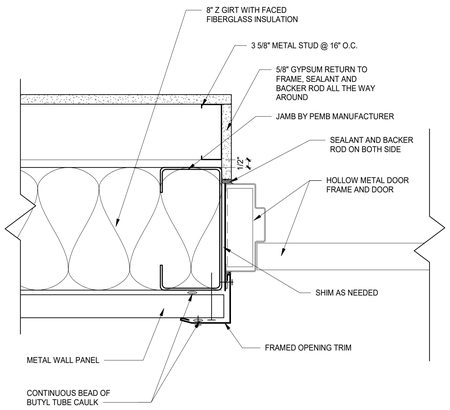
5 STANDARD INTERIOR WINDOW DETAILS

SCALE: 3" = 1'-0" REF. 9 / A601



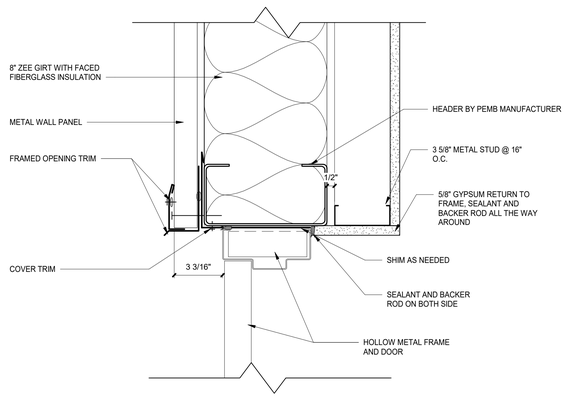
4 OVERHEAD SECTIONAL DOOR JAMB DETAIL

SCALE: 3" = 1'-0" REF. 1 / A101



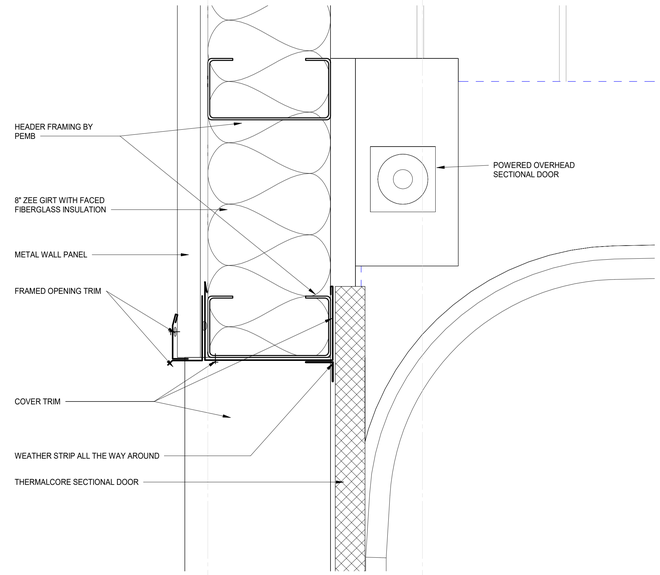
3 HM DOOR JAMB @ PEMB & METAL STUD

SCALE: 3" = 1'-0"



2 HM DOOR HEAD @ PEMB & METAL STUD

SCALE: 3" = 1'-0"



1 OVERHEAD SECTIONAL DOOR HEAD DETAIL

SCALE: 3" = 1'-0" REF. 3 / A311

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

JOHNSON COUNTY
RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

JERRY L CRIPE
REGISTERED
NO
880133
STATE OF
INDIANA

REVISIONS:

#	Date	Desc.

100% CONSTRUCTION DOCUMENT

PROJECT:	#23122
DATE:	04/22/2024
DRAWN BY:	Author

DOOR & ASF/CW DETAILS

A602

PLOT DATE/TIME: 4/22/2024 4:55:40 PM

GENERAL NOTES

1. CONTRACTOR TO VERIFY EXISITING CONDITIONS AND REPAIR ALL EXISTING WALLS, SLAB, AND CEILINGS TO A CONDITION SUITABLE FOR ACCEPTING NEW FINISHES AS PER MANUFACTURER'S RECOMMENDED INSTALLATION METHODS. MINIMUM LEVEL 4 FINISH ON EXISTING AND NEW WALLS, UNLESS NOTED OTHERWISE.

2. ALL FLOORING TRANSITIONS TO COMPLY WITH ADA GUIDELINES AND TO OCCUR UNDER CENTER OF DOORWAYS AND OR AT CENTERLINE OF WALL, UNLESS INDICATED DIFFERENTLY ON FINISH PLANS. PROVIDE REDUCER STRIPS WHEREVER CARPET OR LVT MEET CONCRETE.

3. CONTRACTOR TO PROVIDE PROTECTION AS NEEDED DURING CONSTRUCTION. IF, ANY, TO PERSERVE NEW FINISHES WHILE COMPLETING CONSTRUCTION.

4. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF DIMENSIONS AND JOB CONDITIONS. ANY DEVIATION FROM WHAT IS INDICATED ON THE FINISH PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS AND DESIGNERS. ALL DIMENSIONS SHOWN ARE TO FACE OF FINISH MATERIAL, UNLESS NOTED OTHERWISE.

5. WHERE WALLS ARE INDICATED TO RECEIVE PAINT FINISH, PRIME AND PAINT GRILLES, FIRE EXTINGUISHER CABINETS, AND OTHER ITEMS EMBEDDED IN WALL CONSTRUCTION TO MATCH SURFACE ON WHICH THEY OCCUR.

6. CONTRACTOR TO PROVIDE DRYWALL REVEAL JOINT WHERE DRYWALL MEETS DISSIMILAR MATERIALS.

7. CONTRACTOR TO PROVIDE SCHLUTER EDGE WHERE TILE MEETS DISSIMILAR MATERIALS. REFER TO INTERIOR ELEVATIONS FOR FURTHER DETAILS.

8. DO NOT INSTALL GYPSUM BOARD BEHIND TILE BACKER BOARD LOCATIONS.

9. IF ONLY PAINT IS INDICATED AS THE FINISH, REFER TO ARCHITECTURAL FLOOR PLANS FOR SUBSTRATE INFORMATION.

10. ALL MECHANICAL CLOSETS TO HAVE A SEALED CONCRETE FLOOR FINISH. PROVIDE RESILIENT TRANSITION STRIP TO MATCH RB-1.

11. ALL WALLS, COLUMNS, AND CEILINGS TO BE PAINTED PT-1, UNLESS NOTED OTHERWISE.

12. ALL NEW HM DOORS AND HM DOOR FRAMES ARE TO BE PAINTED PT-5, UNLESS NOTED OTHERWISE.

13. WINDOW SILLS TO RECEIVE SOLID SURFACE, SS-1. REFER TO FINISH LEGEND.

FINISH LEGEND

NOTES

ETR EXISTING TO REMAIN
TBD TO BE DETERMINED

FLOOR COVERING

CARPET TILE

CPT-1: MFG: INTERFACE
TYPE: 25CM X 1M CARPET PLANK
PATTERN: OPEN AIR 410
COLOR: 107739 MIST
INSTALL: ASHLAR, REF. PLAN FOR DIRECTION
LOCATION: OFFICES, CONFERENCE ROOM - MAIN
REMARKS: WHEN CPT-1 AND CPT-2 ARE COMBINED, CPT-1 IS TO BE 90%.
CONTACT: JAE PARK 317-459-8762

CPT-2: MFG: INTERFACE
TYPE: 25CM X 1M CARPET PLANK
PATTERN: OPEN AIR 410 STRIA
COLOR: 103253 MIST
INSTALL: ASHLAR, REF. PLAN FOR DIRECTION
LOCATION: OFFICES, CONFERENCE ROOM - ACCENT
REMARKS: WHEN CPT-1 AND CPT-2 ARE COMBINED, CPT-2 IS TO BE 10%.
CONTACT: JAE PARK 317-459-8762

WOM-1: MFG: MILLIKEN
TYPE: 50CM X 50CM WALK-OFF TILE
PATTERN: OBEX TILE - CUTX/ THREAD
COLOR: TDX118-119 DARK GREY
INSTALL: ASHLAR, REF. PLAN FOR DIRECTION
LOCATION: VESTIBULES
CONTACT: JESSALYN AYON 317-617-5057

CONCRETE

S-CON: TYPE: SEALED CONCRETE, REF. SPECS

WALL BASE

RESILIENT BASE

RB-1: MFG: TARKETT JOHNSONITE
TYPE: 4" RESILIENT WALL BASE
COLOR: 4B GREY
LOCATION: TYPICAL UNLESS NOTED OTHERWISE
REMARKS: COLOR TO BE USED WITH ALL VINYL TRANSITION STRIPS
CONTACT: JEN MAYNARD 765-480-3266

PAINT/WALL FINISH

PAINT

PT-1: MFG: PPG
TYPE: REF. SPECS FOR TYPE
COLOR: BILLOWING CLOUDS PPG1041-3
LOCATION: TYPICAL

PT-2: MFG: PPG
TYPE: REF. SPECS FOR TYPE
COLOR: GOSLING GRAY PPG099-3
LOCATION: ACCENT

PT-3: MFG: PPG
TYPE: REF. SPECS FOR TYPE
COLOR: BLUE OASIS PPG1158-6
LOCATION: ACCENT

PT-4: MFG: PPG
TYPE: REF. SPECS FOR TYPE
COLOR: MALLARD GREEN PPG1132-6
LOCATION: ACCENT

PT-5: MFG: PPG
TYPE: SEMI-GLOSS, REF. SPECS FOR TYPE
COLOR: CITY SKYLINE PPG0995-6
LOCATION: HM DOORS AND HM FRAMES

WALL TILE

WT-1: MFG: PLATFORM SURFACES
TYPE: 12" X 24" GLAZED PORCELAIN TILE
PATTERN: MIAMI
COLOR: TITANIUM
GROUT: MAPEI 27 SILVER
INSTALL: HORIZONTAL QUARTER OFFSET
LOCATION: RESTROOM WALLS, DRINKING FOUNTAIN WALLS
REMARKS: USE SCHLUTER TRIM AT EDGES
CONTACT: TRACEY KESSENS-GRIFFIN 317-366-2835

PLASTIC LAMINATE/SOLID SURFACE

PLASTIC LAMINATE

PL-1: MFG: FORMICA
TYPE: PLASTIC LAMINATE
COLOR: BEIGE ELM 5794-NG
INSTALL: MONOLITHIC, VERTICAL GRAIN
LOCATION: TYPICAL CASEWORK
CONTACT: KYLIE LEYBA 317-869-8717

SOLID SURFACE

SS-1: MFG: CORIAN
TYPE: 1/2" SOLID SURFACE
COLOR: ANTARTICA
INSTALL: MONOLITHIC
LOCATION: COUNTERTOP, WINDOW SILLS

MISCELLANEOUS

DOORS

DR-1: TYPE: STANDARD FINISH FROM SELECTED MANUFACTURER
COLOR: DESIGNER TO APPROVE
LOCATION: ALL NEW WOOD DOORS

LOCKERS

LR-1: TYPE: STANDARD FINISH FROM SELECTED MANUFACTURER
COLOR: DESIGNER TO APPROVE
LOCATION: LOCKER ROOM

WALL PROTECTION

WP-1: MFG: MARLITE OR SIMILAR
TYPE: 4' HIGH FRP WALL PANEL
COLOR: LIGHT GRAY
LOCATION: CUSTODIAN CLOSETS, GARAGE BAY
REMARKS: INSTALL ON WALLS BEHIND AND ADJACENT TO MOP SINK

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

JOHNSON COUNTY
RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

JERRY L CRIPE REGISTERED No 880133 STATE OF INDIANA

REVISIONS:

#	Date	Desc.

100% CONSTRUCTION DOCUMENT

PROJECT: #23122
DATE: 04/22/2024
DRAWN BY: Author

FINISH LEGEND

A720

PLOT DATE/TIME: 4/22/2024 4:55:40 PM

FLOOR FINISH HATCH LEGEND

- CPT-1
- CPT-1, CPT-2
- WOM-1

GENERAL NOTES

1. CONTRACTOR TO VERIFY EXISITING CONDITIONS AND REPAIR ALL EXISTING WALLS, SLAB, AND CEILINGS TO A CONDITION SUITABLE FOR ACCEPTING NEW FINISHES AS PER MANUFACTURER'S RECOMMENDED INSTALLATION METHODS. MINIMUM LEVEL 4 FINISH ON EXISTING AND NEW WALLS, UNLESS NOTED OTHERWISE.
2. ALL FLOORING TRANSITIONS TO COMPLY WITH ADA GUIDELINES AND TO OCCUR UNDER CENTER OF DOORWAYS AND OR AT CENTERLINE OF WALL, UNLESS INDICATED DIFFERENTLY ON FINISH PLANS. PROVIDE REDUCER STRIPS WHEREVER CARPET OR LVT MEET CONCRETE.
3. CONTRACTOR TO PROVIDE PROTECTION AS NEEDED DURING CONSTRUCTION. IF, ANY, TO PERSERVE NEW FINISHES WHILE COMPLETING CONSTRUCTION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF DIMENSIONS AND JOB CONDITIONS. ANY DEVIATION FROM WHAT IS INDICATED ON THE FINISH PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS AND DESIGNERS. ALL DIMENSIONS SHOWN ARE TO FACE OF FINISH MATERIAL, UNLESS NOTED OTHERWISE.
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6. CONTRACTOR TO PROVIDE DRYWALL REVEAL JOINT WHERE DRYWALL MEETS DISSIMILAR MATERIALS.
7. CONTRACTOR TO PROVIDE SCHLUTER EDGE WHERE TILE MEETS DISSIMILAR MATERIALS. REFER TO INTERIOR ELEVATIONS FOR FURTHER DETAILS.
8. DO NOT INSTALL GYPSUM BOARD BEHIND TILE BACKER BOARD LOCATIONS.
9. IF ONLY PAINT IS INDICATED AS THE FINISH, REFER TO ARCHITECTURAL FLOOR PLANS FOR SUBSTRATE INFORMATION.
10. ALL MECHANICAL CLOSETS TO HAVE A SEALED CONCRETE FLOOR FINISH. PROVIDE RESILIENT TRANSITION STRIP TO MATCH RB-1.
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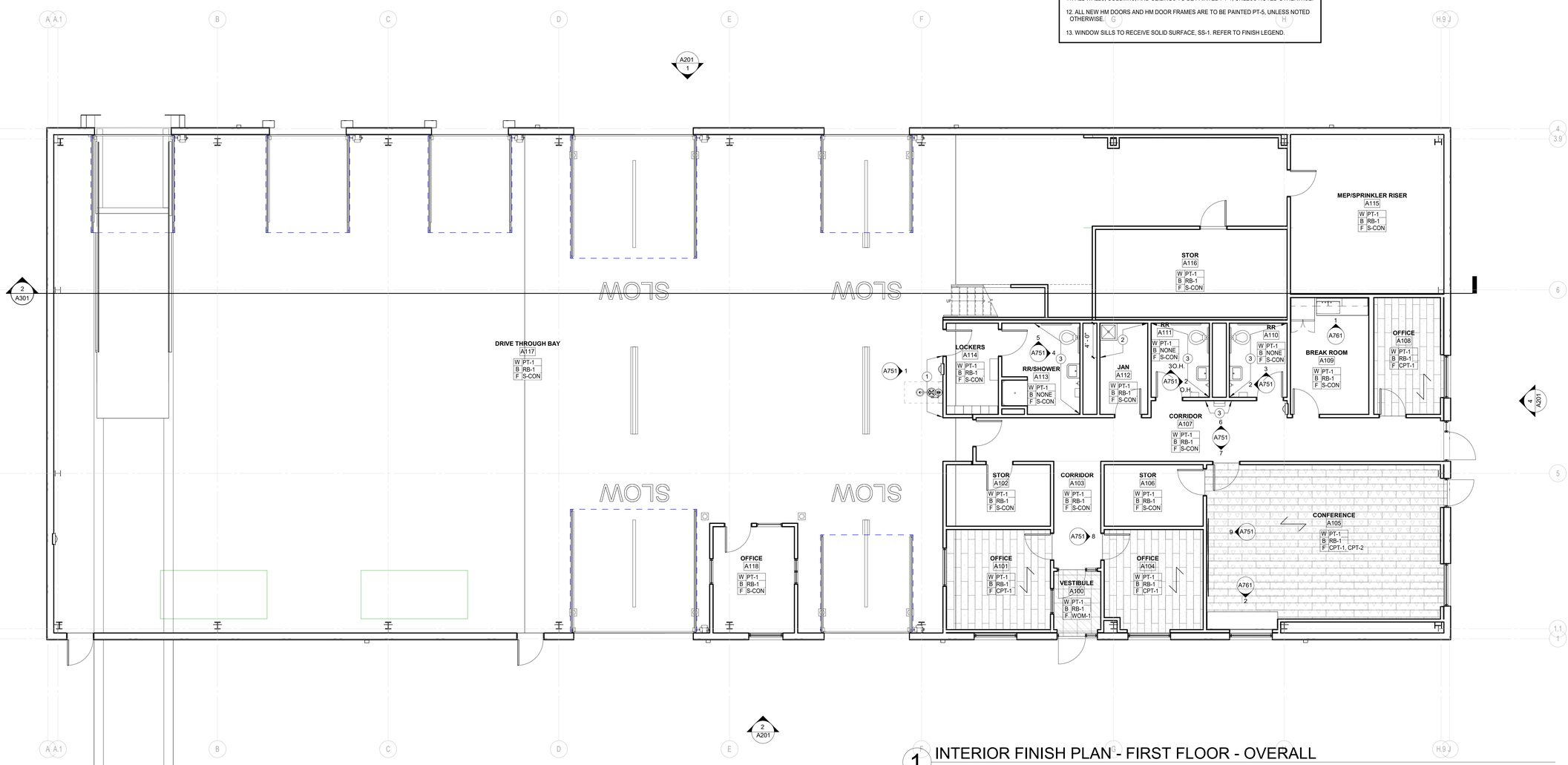
13. WINDOW SILLS TO RECEIVE SOLID SURFACE, SS-1. REFER TO FINISH LEGEND.

PLAN NOTES - FINISH PLAN

1 PROVIDE FIBERGLASS REINFORCED PANELS, WP-1 AT THIS LOCATION. INSTALL FROM TOP OF BASE UP TO ALIGN WITH DOOR FRAME.
2 PROVIDE FIBERGLASS REINFORCED PANELS, WP-1 ON WALLS ADJACENT TO TO MOP SINK. 4'-0" A.F.F. FINISH WITH TRIM.
3 WALL TILE, WT-1 AT THIS LOCATION. REFER TO INTERIOR ELEVATIONS.



1 INTERIOR FINISH PLAN - FIRST FLOOR - OVERALL

SCALE: 3/16" = 1'-0" REF. 1 / A201

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

JOHNSON COUNTY RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

JERRY L. CRIPE REGISTERED NO. 880133 STATE OF INDIANA

REVISIONS:

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100% CONSTRUCTION DOCUMENT

PROJECT:	#23122
DATE:	04/22/2024
DRAWN BY:	Author

INTERIOR FINISH PLAN - FIRST FLOOR

A721

PLOT DATE/TIME: 4/22/2024 4:55:41 PM

GENERAL NOTES

1. CONTRACTOR TO VERIFY EXISITING CONDITIONS AND REPAIR ALL EXISTING WALLS, SLAB, AND CEILINGS TO A CONDITION SUITABLE FOR ACCEPTING NEW FINISHES AS PER MANUFACTURER'S RECOMMENDED INSTALLATION METHODS. MINIMUM LEVEL 4 FINISH ON EXISTING AND NEW WALLS, UNLESS NOTED OTHERWISE.
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8. DO NOT INSTALL GYPSUM BOARD BEHIND TILE BACKER BOARD LOCATIONS.
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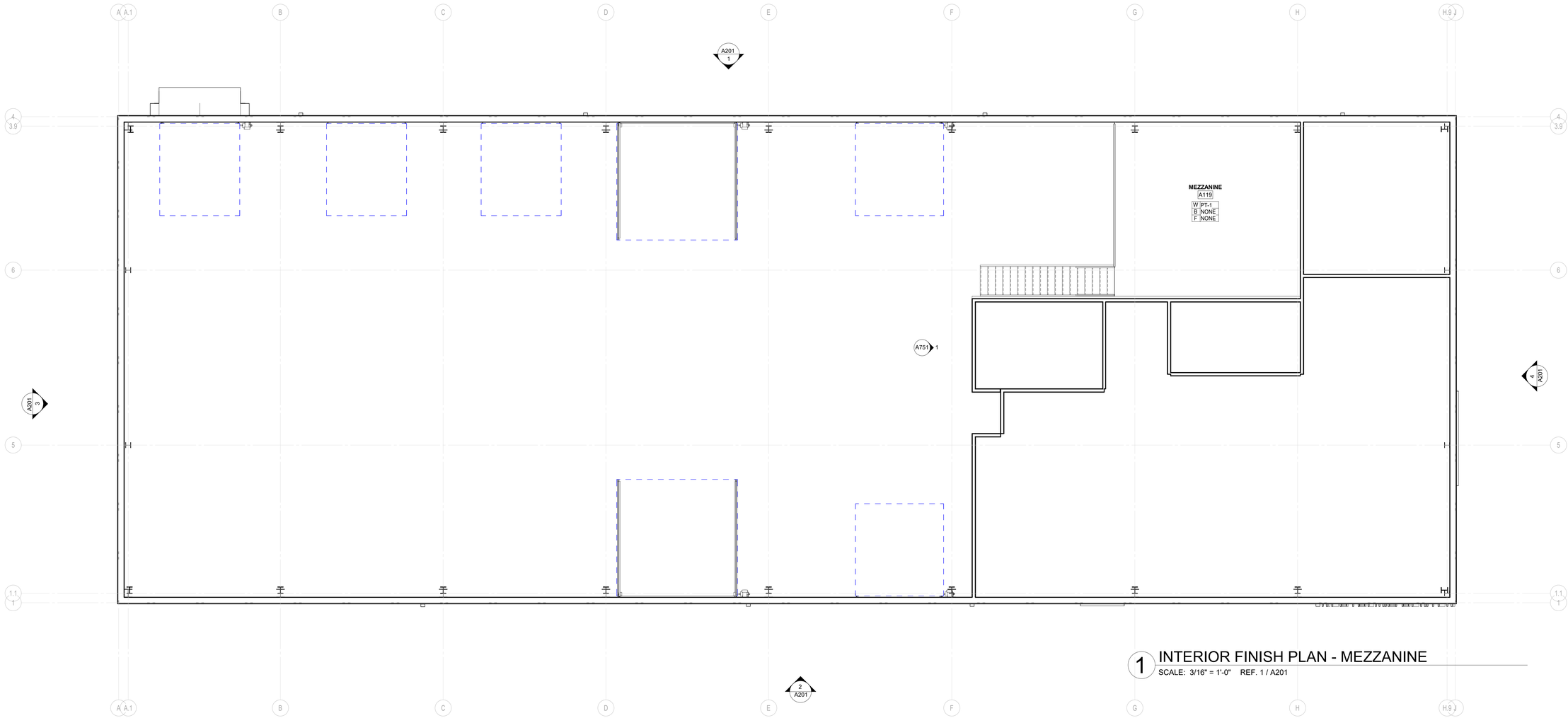
PLAN NOTES - FINISH PLAN

1 PROVIDE FIBERGLASS REINFORCED PANELS, WP-1 AT THIS LOCATION. INSTALL FROM TOP OF BASE UP TO ALIGN WITH DOOR FRAME.
2 PROVIDE FIBERGLASS REINFORCED PANELS, WP-1 ON WALLS ADJACENT TO TO MOP SINK. 4'-0" A.F.F. FINISH WITH TRIM.
3 WALL TILE, WT-1 AT THIS LOCATION. REFER TO INTERIOR ELEVATIONS.



1 INTERIOR FINISH PLAN - MEZZANINE
SCALE: 3/16" = 1'-0" REF. 1 / A201

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

JOHNSON COUNTY RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

JERRY L CRITZ REGISTERED NO 880133 STATE OF INDIANA

REVISIONS:

#	Date	Desc.

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PROJECT: #23122
DATE: 04/22/2024
DRAWN BY: Author

INTERIOR FINISH PLAN - MEZZANINE

N

A722

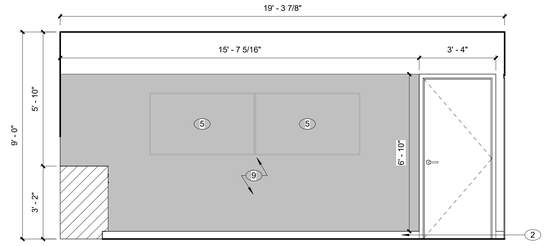
PLOT DATE/TIME:4/22/2024 1:55:42 PM

GENERAL NOTES

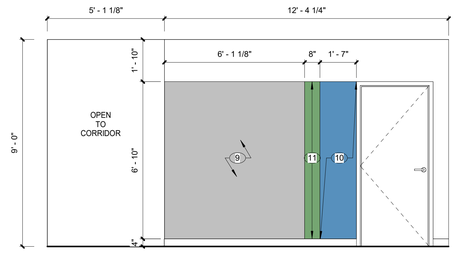
1. CONTRACTOR TO PROVIDE SCHLUTER TRIM WHERE TILE MEETS DISSIMILAR MATERIALS. REFER TO INTERIOR ELEVATIONS FOR FURTHER DETAILS.
2. DO NOT INSTALL GYPSUM BOARD BEHIND BACKER BOARD WHERE TILE FINISH IS INDICATED.
3. CONTRACTOR TO PROVIDE DRYWALL REVEAL JOINT WHERE DRYWALL MEETS DISSIMILAR MATERIALS.
4. IF ONLY PAINT IS INDICATED AS THE FINISH, REFER TO ARCHITECTURAL FLOOR PLANS FOR SUBSTRATE INFORMATION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF DIMENSIONS AND JOB CONDITIONS. ANY DEVIATION FROM WHAT IS INDICATED ON THE FINISH PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS AND DESIGNERS.
6. ALL DIMENSIONS SHOWN ARE TO FACE OF FINISH MATERIAL, UNLESS NOTED OTHERWISE.
7. ALL EXPOSED METAL SURFACES, SUCH AS GRILLES, FIRE EXTINGUISHER CABINETS, ETC., ARE TO BE PRIMED AND PAINTED TO MATCH THE SURFACE ON WHICH THEY OCCUR.
8. ALL WALLS AND COLUMNS TO BE PAINTED PT-1, UNLESS NOTED OTHERWISE.

ELEVATION NOTES - INTERIOR

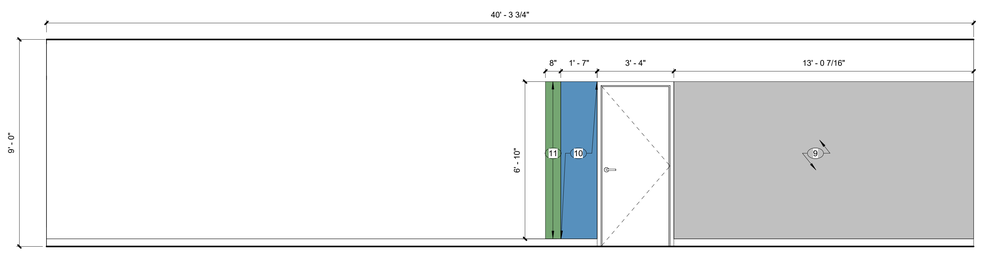
1 WALL TILE, WT-1 AT THIS LOCATION. 7'-0" A.F.F., FINISH WITH SCHLUTER JOLLY EDGE TRIM.
2 WALL BASE, RB-1. REFER TO FINISH LEGEND.
3 SOLID SURFACE COUNTERTOP, SS-1 WITH 4" HIGH BACKSPLASH AT THIS LOCATION. REFER TO FINISH LEGEND.
4 PLASTIC LAMINATE CASEWORK, PL-1 AT THIS LOCATION. REFER TO FINISH LEGEND.
5 SPACE FOR OWNER PROVIDED, CONTRACTOR INSTALLED APPLIANCE.
6 FIBERGLASS REINFORCED PANELS, WP-1 AT THIS LOCATION. INSTALL FROM TOP OF BASE TO ALIGN WITH DOOR FRAME.
7 1/4" BRUSHED NICKEL FINISH, SCHLUTER TRIM - FLOOR/WALL TRANSITION.
8 WALL TILE, WT-1 AT THIS LOCATION. ALIGN WITH TOP OF DOOR FRAME. FINISH EDGES WITH SCHLUTER JOLLY TRIM.
9 ACCENT PAINT, PT-2 AT THIS LOCATION. REFER TO FINISH LEGEND.
10 ACCENT PAINT, PT-3 AT THIS LOCATION. REFER TO FINISH LEGEND.
11 ACCENT PAINT, PT-4 AT THIS LOCATION. REFER TO FINISH LEGEND.



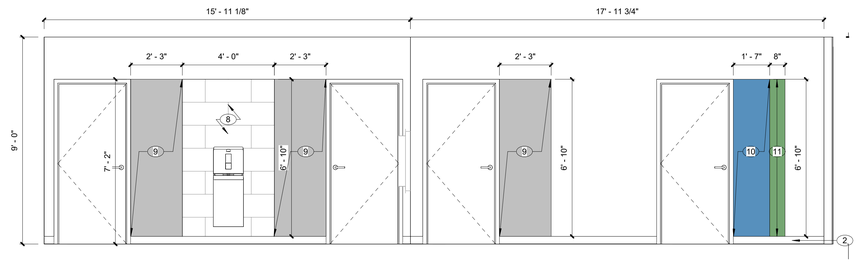
9 INT. ELEV. A105 CONF. ROOM
SCALE: 3/8" = 1'-0" REF. 1 / A101



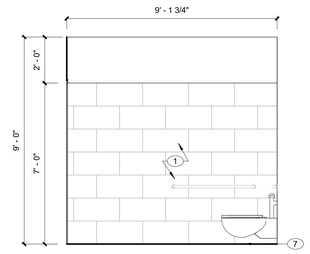
8 INT. ELEV. A103 CORRIDOR EAST
SCALE: 3/8" = 1'-0" REF. 1 / A101



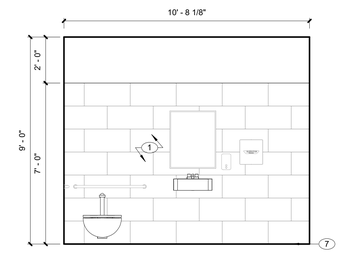
7 INT. ELEV. A107 CORRIDOR SOUTH
SCALE: 3/8" = 1'-0" REF. 1 / A101



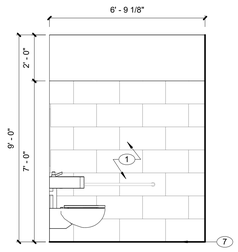
6 INT. ELEV. A107 CORRIDOR NORTH
SCALE: 3/8" = 1'-0" REF. 1 / A101



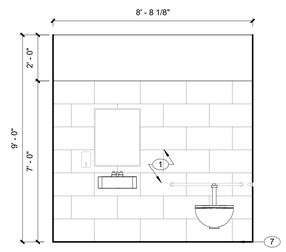
5 INT. ELEV. R.R. SHOWER SIDE
SCALE: 3/8" = 1'-0" REF. 1 / A101



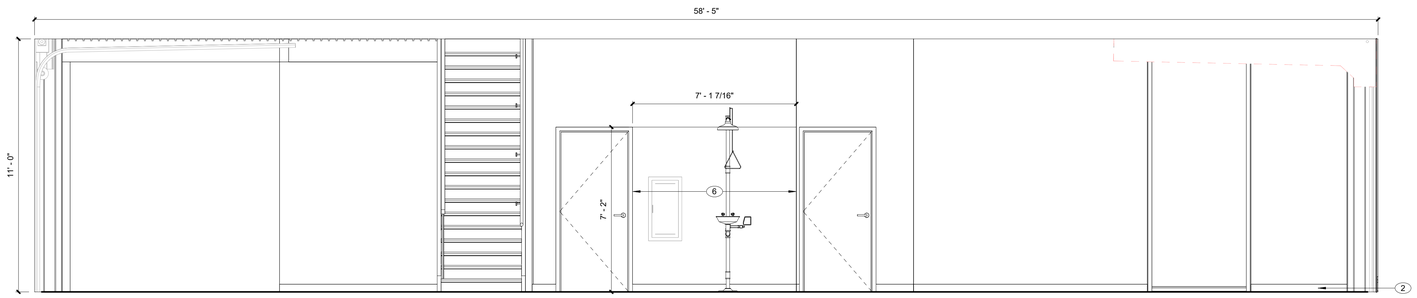
4 INT. ELEV. R.R. SHOWER PLUMBING
SCALE: 3/8" = 1'-0" REF. 1 / A101



3 INT. ELEV. R.R. SIDE
SCALE: 3/8" = 1'-0" REF. 1 / A101



2 INT. ELEV. R.R. PLUMBING
SCALE: 3/8" = 1'-0" REF. 1 / A101



1 INT. ELEV. - OFFICE AREA
SCALE: 3/8" = 1'-0" REF. 1 / A101

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
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0 N. GRAHAM ROAD, FRANKLIN, IN 46131

JERRY L. CRIPE REGISTERED NO 880133 STATE OF INDIANA ARCHITECT

REVISIONS:

#	Date	Desc.

100% CONSTRUCTION DOCUMENT

PROJECT:	#23122
DATE:	04/22/2024
DRAWN BY:	Author

INTERIOR ELEVATIONS

A751

PLOT DATE/TIME: 4/22/2024 4:55:43 PM

GENERAL CASEWORK NOTES

1. FABRICATE WOODWORK/ MILLWORK ITEMS TO ACTUAL FIELD DIMENSIONS. CONTRACTOR SHALL SUBMIT FOR DESIGNERS APPROVALS SHOP DRAWING SAMPLES OR MANUFACTURER'S LITERATURE FOR ALL ITEMS. SHOP DRAWINGS SHALL SHOW SUFFICIENT DETAIL TO DETERMINE COMPLIANCE WITH STANDARDS AND DESIGN INTENT.

2. PROVIDE ALL NECESSARY FURRING AND GROUNDS FOR WOODWORK AND FINISH ITEMS. COORDINATE LOCATION OF BLOCKING WITHIN FRAMED WALLS AS NECESSARY FOR ITMES TO BE SECURED TO SURFACE. ALL FASTENERS SHALL BE CONCEALED.

3. FINISH ALL SIDES AND BACK OF MILLWORK/ CASEWORK.

4. PROVIDE GROMMETS IN COUNTERTOPS ABOVE ALL ELECTRICAL RECPETICALS AND TELEPHONE DATA ROUTINGS.

5. ALL PULLS TO BE 4" SATIN NICKEL SOLID WIRE PULL

6. PROVIDE LOCKS FOR ALL STORAGE CASE CABINETS/ TALL STORAGE CABINETS, ALL DRAWERS AND DOORS, AND ALL UPPER WALL CABINETS.

7. ALL PLASTIC LAMINATE SURFACES ON EXTERIOR OF CABINETS SHALL BE A STANDARD COLOR AS LISTED ON THE FINISH SCHEDULE:
   - PLAM 2 - COUNTERTOPS AND WINDOW SILLS
   - PLAM 1 - ALL CABINETS AND CASEWORK

8. ALL INTERIORS BEHIND DOORS/ DRAWERS AND NOT VISIBLE SHALL BE WHITE. ALL COUNTERTOPS SHALL BE A STANDARD COLOR AS SELECTED BY DESIGNER.

9. SEE ELEC. DWGS FOR ELECTRICAL DEVICES.

10. INCLUDE FILLERS AS NEEDED.

ALTERNATES

GENERAL NOTES

1. CONTRACTOR TO PROVIDE SCHLUTER TRIM WHERE TILE MEETS DISSIMILAR MATERIALS. REFER TO INTERIOR ELEVATIONS FOR FURTHER DETAILS.

2. DO NOT INSTALL GYPSUM BOARD BEHIND BACKER BOARD WHERE TILE FINISH IS INDICATED.

3. CONTRACTOR TO PROVIDE DRYWALL REVEAL JOINT WHERE DRYWALL MEETS DISSIMILAR MATERIALS.

4. IF ONLY PAINT IS INDICATED AS THE FINISH, REFER TO ARCHITECTURAL FLOOR PLANS FOR SUBSTRATE INFORMATION.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF DIMENSIONS AND JOB CONDITIONS. ANY DEVIATION FROM WHAT IS INDICATED ON THE FINISH PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECTS AND DESIGNERS.

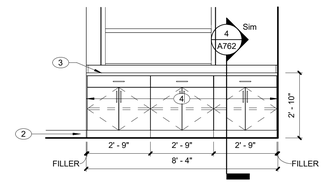
6. ALL DIMENSIONS SHOWN ARE TO FACE OF FINISH MATERIAL, UNLESS NOTED OTHERWISE.

7. ALL EXPOSED METAL SURFACES, SUCH AS GRILLES, FIRE EXTINGUISHER CABINETS, ETC., ARE TO BE PRIMED AND PAINTED TO MATCH THE SURFACE ON WHICH THEY OCCUR.

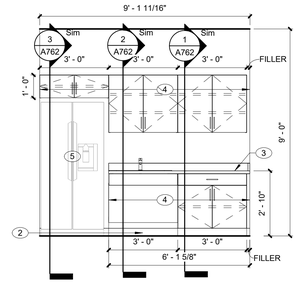
8. ALL WALLS AND COLUMNS TO BE PAINTED PT-1, UNLESS NOTED OTHERWISE.

ELEVATION NOTES - INTERIOR

1 WALL TILE, WT-1 AT THIS LOCATION. 7'-0" A.F.F.. FINISH WITH SCHLUTER JOLLY EDGE TRIM.
2 WALL BASE, RB-1. REFER TO FINISH LEGEND.
3 SOLID SURFACE COUNTERTOP, SS-1 WITH 4" HIGH BACKSPLASH AT THIS LOCATION. REFER TO FINISH LEGEND.
4 PLASTIC LAMINATE CASEWORK, PL-1 AT THIS LOCATION. REFER TO FINISH LEGEND.
5 SPACE FOR OWNER PROVIDED, CONTRACTOR INSTALLED APPLIANCE.
6 FIBERGLASS REINFORCED PANELS, WP-1 AT THIS LOCATION. INSTALL FROM TOP OF BASE TO ALIGN WITH DOOR FRAME.
7 1/4" BRUSHED NICKEL FINISH, SCHLUTER TRIM - FLOOR/WALL TRANSITION.
8 WALL TILE, WT-1 AT THIS LOCATION. ALIGN WITH TOP OF DOOR FRAME. FINISH EDGES WITH SCHLUTER JOLLY TRIM.
9 ACCENT PAINT, PT-2 AT THIS LOCATION. REFER TO FINISH LEGEND.
10 ACCENT PAINT, PT-3 AT THIS LOCATION. REFER TO FINISH LEGEND.
11 ACCENT PAINT, PT-4 AT THIS LOCATION. REFER TO FINISH LEGEND.



2 CSWK - A105 CONF. RM. SOUTH
SCALE: 3/8" = 1'-0" REF. 1 / A101



1 CSWK - A109 BREAK ROOM NORTH
SCALE: 3/8" = 1'-0" REF. 1 / A101

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

JOHNSON COUNTY RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

JERRY L CRIPE REGISTERED No 880133 STATE OF INDIANA

REVISIONS:

#	Date	Desc.

100% CONSTRUCTION DOCUMENT

PROJECT:	#23122
DATE:	04/22/2024
DRAWN BY:	Author

CASEWORK ELEVATIONS

A761

PLOT DATE/TIME: 4/22/2024 4:55:44 PM

GENERAL CASEWORK NOTES

1. FABRICATE WOODWORK/ MILLWORK ITEMS TO ACTUAL FIELD DIMENSIONS. CONTRACTOR SHALL SUBMIT FOR DESIGNERS APPROVALS SHOP DRAWING SAMPLES OR MANUFACTURER'S LITERATURE FOR ALL ITEMS. SHOP DRAWINGS SHALL SHOW SUFFICIENT DETAIL TO DETERMINE COMPLIANCE WITH STANDARDS AND DESIGN INTENT.

2. PROVIDE ALL NECESSARY FURRING AND GROUNDS FOR WOODWORK AND FINISH ITEMS. COORDINATE LOCATION OF BLOCKING WITHIN FRAMED WALLS AS NECESSARY FOR ITMES TO BE SECURED TO SURFACE. ALL FASTENERS SHALL BE CONCEALED.

3. FINISH ALL SIDES AND BACK OF MILLWORK/ CASEWORK.

4. PROVIDE GROMMETS IN COUNTERTOPS ABOVE ALL ELECTRICAL RECPETICALS AND TELEPHONE DATA ROUTINGS.

5. ALL PULLS TO BE 4" SATIN NICKEL SOLID WIRE PULL

6. PROVIDE LOCKS FOR ALL STORAGE CASE CABINETS/ TALL STORAGE CABINETS, ALL DRAWERS AND DOORS, AND ALL UPPER WALL CABINETS.

7. ALL PLASTIC LAMINATE SURFACES ON EXTERIOR OF CABINETS SHALL BE A STANDARD COLOR AS LISTED ON THE FINISH SCHEDULE:
   - PLAM 2 - COUNTERTOPS AND WINDOW SILLS
   - PLAM 1 - ALL CABINETS AND CASEWORK

8. ALL INTERIORS BEHIND DOORS/ DRAWERS AND NOT VISIBLE SHALL BE WHITE. ALL COUNTERTOPS SHALL BE A STANDARD COLOR AS SELECTED BY DESIGNER.

9. SEE ELEC. DWGS FOR ELECTRICAL DEVICES.

10. INCLUDE FILLERS AS NEEDED.

ALTERNATES

GENERAL NOTES

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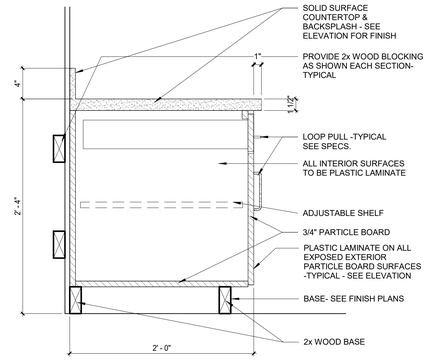
6. ALL DIMENSIONS SHOWN ARE TO FACE OF FINISH MATERIAL, UNLESS NOTED OTHERWISE.

7. ALL EXPOSED METAL SURFACES, SUCH AS GRILLES, FIRE EXTINGUISHER CABINETS, ETC., ARE TO BE PRIMED AND PAINTED TO MATCH THE SURFACE ON WHICH THEY OCCUR.

8. ALL WALLS AND COLUMNS TO BE PAINTED PT-1, UNLESS NOTED OTHERWISE.



4 CASEWORK LOWER DRAWER/CABINET SECTION

SCALE: 1 1/2" = 1'-0" REF. 2 / A761

ELEVATION NOTES - INTERIOR

1 WALL TILE, WT-1 AT THIS LOCATION. 7'-0" A.F.F.. FINISH WITH SCHLUTER JOLLY EDGE TRIM.
2 WALL BASE, RB-1. REFER TO FINISH LEGEND.
3 SOLID SURFACE COUNTERTOP, SS-1 WITH 4" HIGH BACKSPLASH AT THIS LOCATION. REFER TO FINISH LEGEND.
4 PLASTIC LAMINATE CASEWORK, PL-1 AT THIS LOCATION. REFER TO FINISH LEGEND.
5 SPACE FOR OWNER PROVIDED, CONTRACTOR INSTALLED APPLIANCE.
6 FIBERGLASS REINFORCED PANELS, WP-1 AT THIS LOCATION. INSTALL FROM TOP OF BASE TO ALIGN WITH DOOR FRAME.
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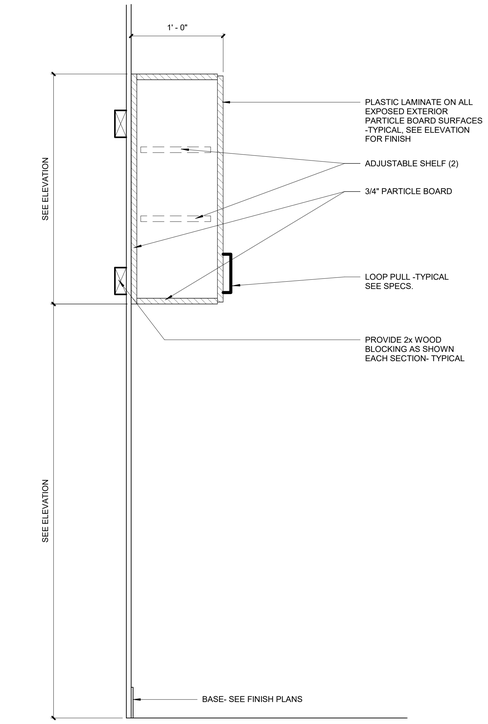
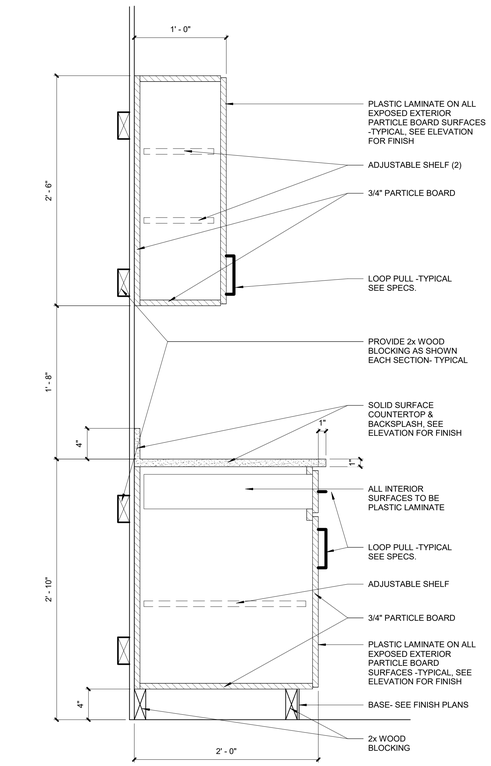
9 ACCENT PAINT, PT-2 AT THIS LOCATION. REFER TO FINISH LEGEND.
10 ACCENT PAINT, PT-3 AT THIS LOCATION. REFER TO FINISH LEGEND.
11 ACCENT PAINT, PT-4 AT THIS LOCATION. REFER TO FINISH LEGEND.



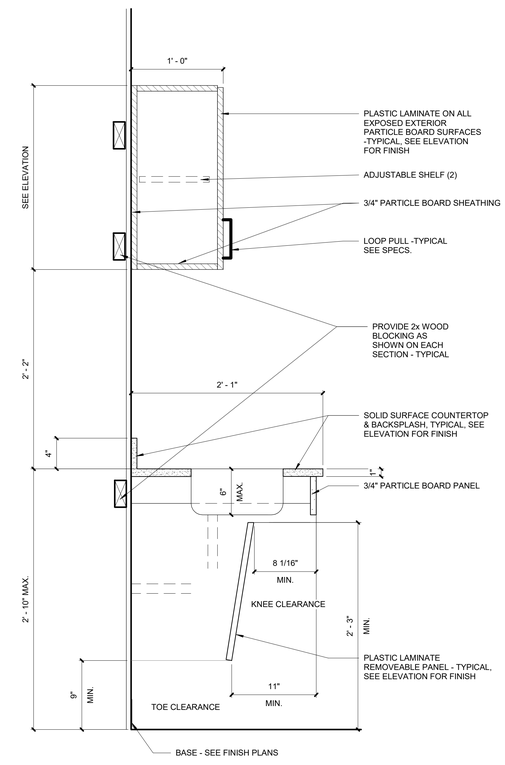
3 CASEWORK UPPERS SECTION

SCALE: 1 1/2" = 1'-0" REF. 1 / A761



2 CASEWORK UPPER & LOWER DRAWER SECTION

SCALE: 1 1/2" = 1'-0" REF. 1 / A761



1 CASEWORK UPPER & LOWER W/ADA SINK SECTION

SCALE: 1 1/2" = 1'-0" REF. 1 / A761

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
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JOHNSON COUNTY RECYCLING CENTER
0 N. GRAHAM ROAD, FRANKLIN, IN 46131

JERRY L CRIPE REGISTERED NO 880133 STATE OF INDIANA

REVISIONS:

#	Date	Desc.

100% CONSTRUCTION DOCUMENT

PROJECT:	#23122
DATE:	04/22/2024
DRAWN BY:	Author

CASEWORK SECTIONS

A762

PLOT DATE/TIME: 4/22/2024 4:55:45 PM

MECHANICAL SYMBOLOGY

- 24" x 24" DIFFUSER
- BACK DRAFT DAMPER (BDD)
- MOTORIZED DAMPER (M)
- TURNING VANES
- SMOKE DAMPER (SD)
- HEAT DETECTOR (HD)
- FIRE & SMOKE DAMPER (FSD)
- VOLUME DAMPER
- AIR FLOW DIRECTION
- GENERAL WELD
- FLOOR DRAIN
- MOTOR (M)
- SPRINKLER HEAD
- RETURN GRILLE
- WALL DIFFUSER
- WALL RETURN

PIPING SYMBOLOGY

- 45° TURNDOWN
- TEE
- 90° TURNDOWN TEE
- 90° TURN UP
- ELBOW
- 90° TEE DOWN

VALVES

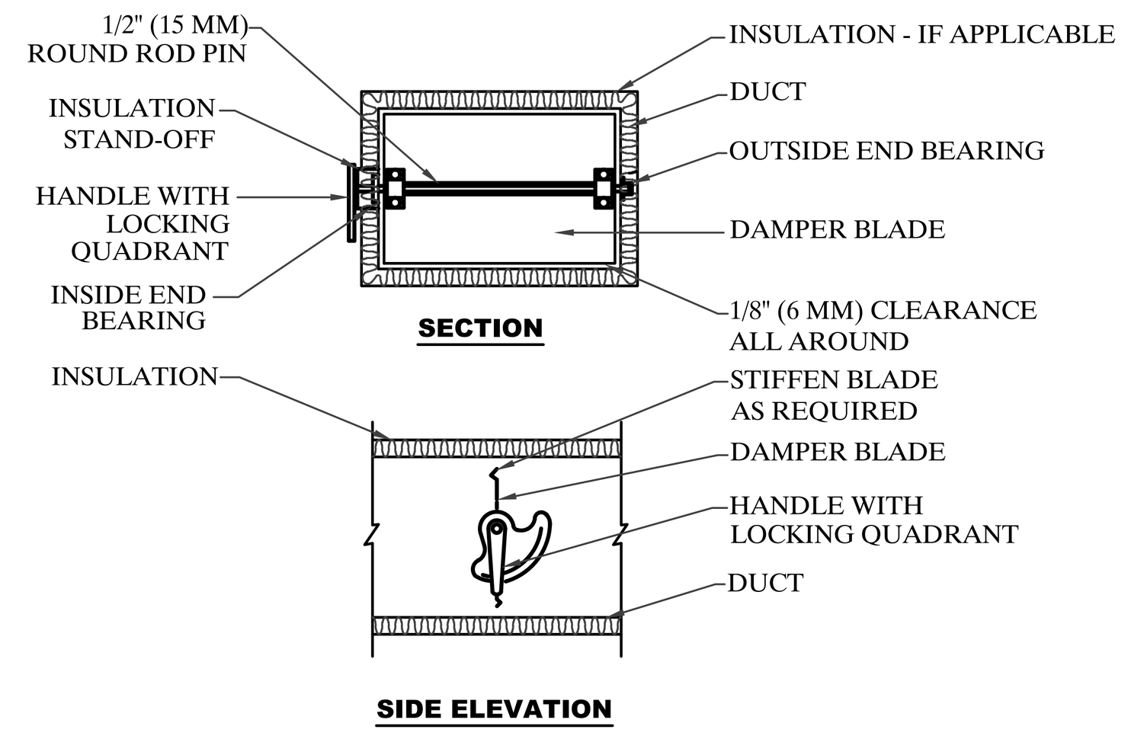
- CHECK VALVE
- BALL VALVE
- PLUG VALVE
- BUTTERFLY VALVE
- PRESSURE RELIEF VALVE
- NEEDLE VALVE
- PRESSURE REDUCING VALVE
- GLOBE VALVE
- GATE VALVE
- THREE-WAY VALVE
- THREE-WAY VALVE
- FOUR-WAY VALVE
- MANUAL ACTUATOR
- ACTUATOR

DUCT SYMBOLOGY

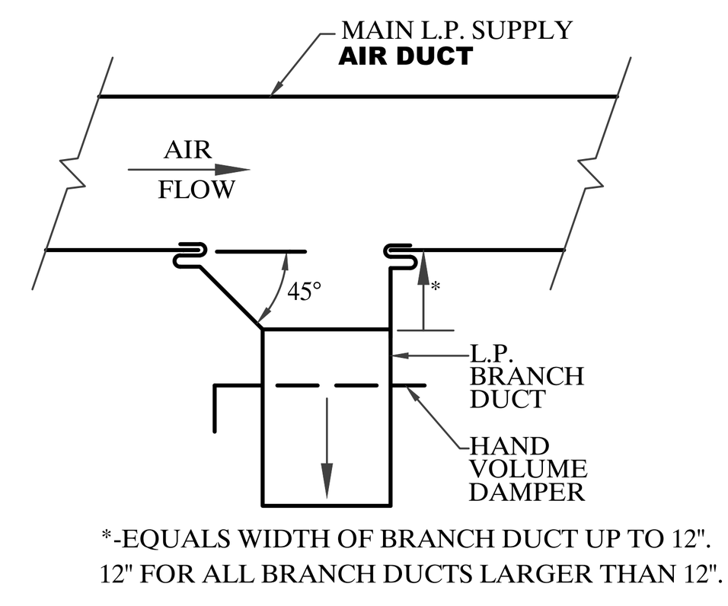
- 45° ELBOW
- LONG RADIUS ELBOW
- PANTS
- TEE WITH TURNING VANES
- SQUARE TO ROUND TRANSITION
- FLEX DUCT
- 45° SQUARE ELBOW
- HORIZONTAL CONICAL TAKE-OFF 'SHOE'
- VERTICAL CONICAL TAKE-OFF 'SHOE'
- BOOT

PIPING SYMBOLS

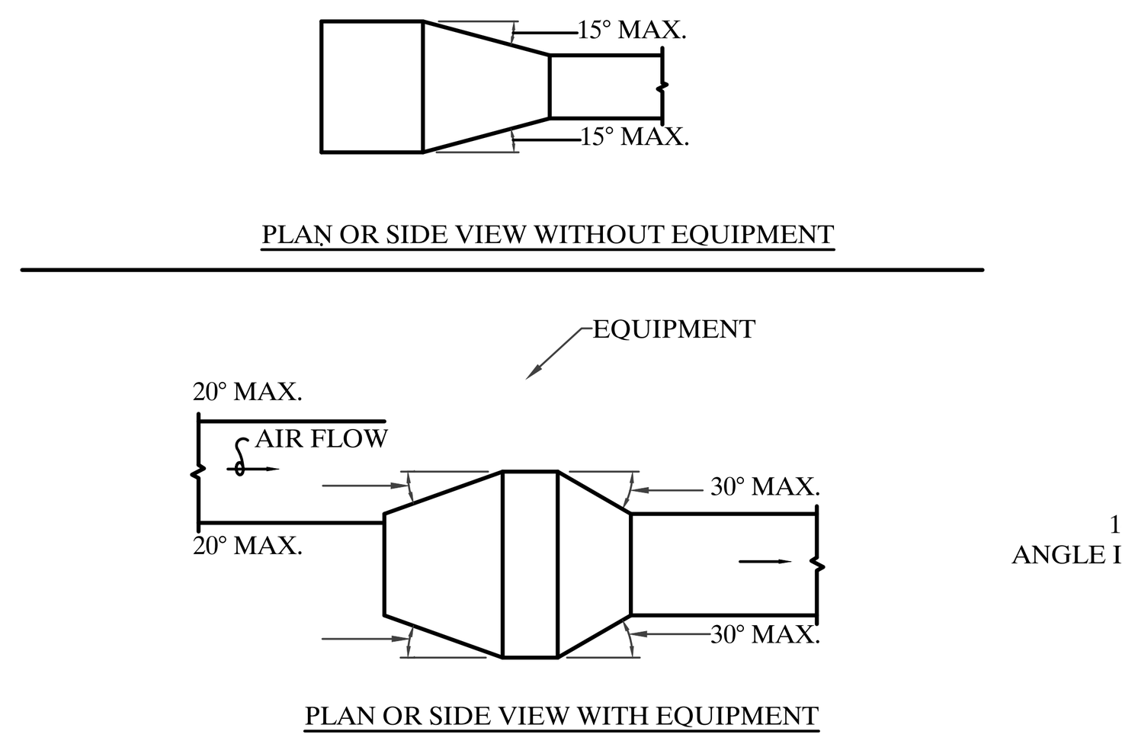
- PRESSURE SWITCH (PS)
- SLOPE DOWN (D)
- FLOW METER (VFM-1)
- FLOAT SWITCH (F)
- PRESSURE RELEASE
- FLOAT
- STRAINER
- PNEUMATIC VALVE (A)
- UNION
- PRESSURE GAGE
- DIRT LEG
- END CAP
- BASKET STRAINER
- FLOW SWITCH (FS)
- ORIFICE METER (OFM-1)
- IN-LINE MIXER
- RUPTURE DISK



A / M001 VOLUME DAMPER DETAIL
SCALE: NTS

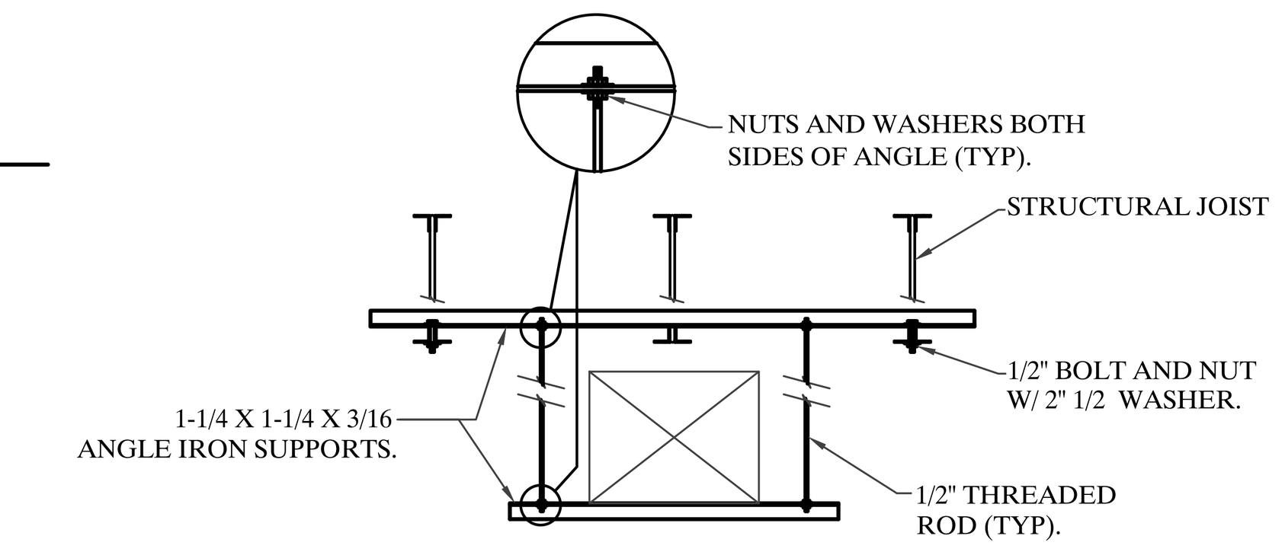


B / M001 TYPICAL LOW PRESSURE BRANCH
SCALE: NTS

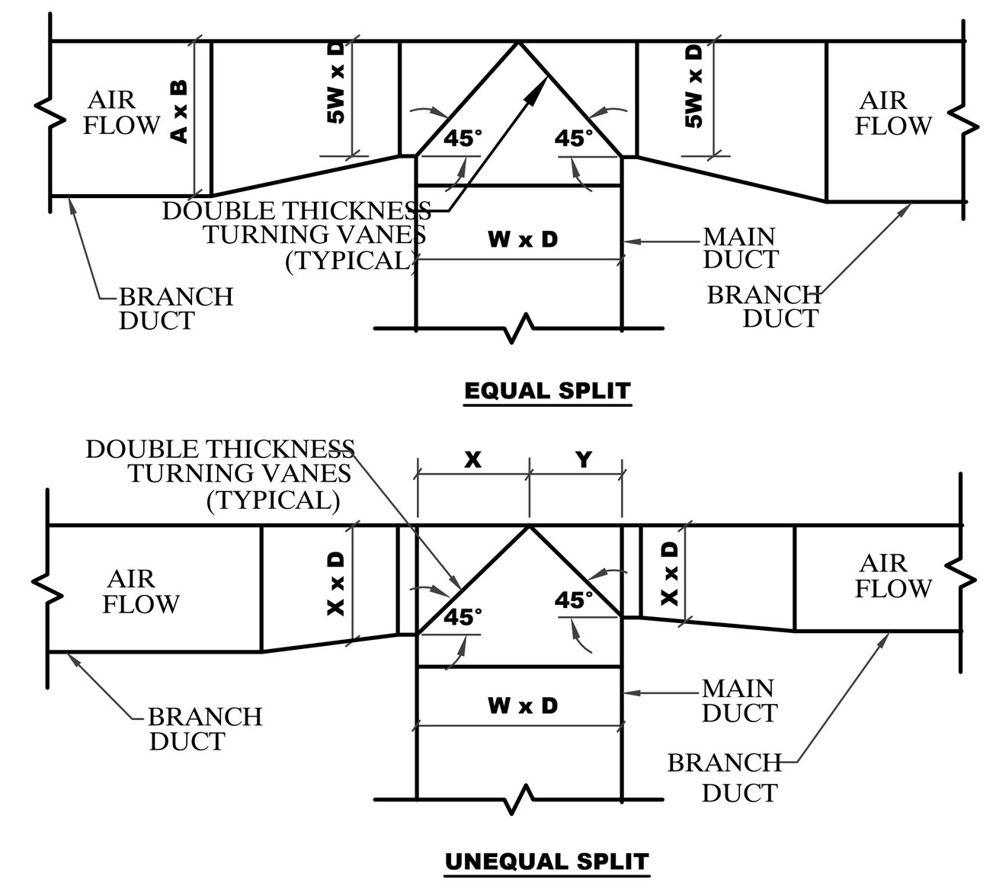


C / M001 TYPICAL DUCTWORK TRANSITIONS
SCALE: NTS

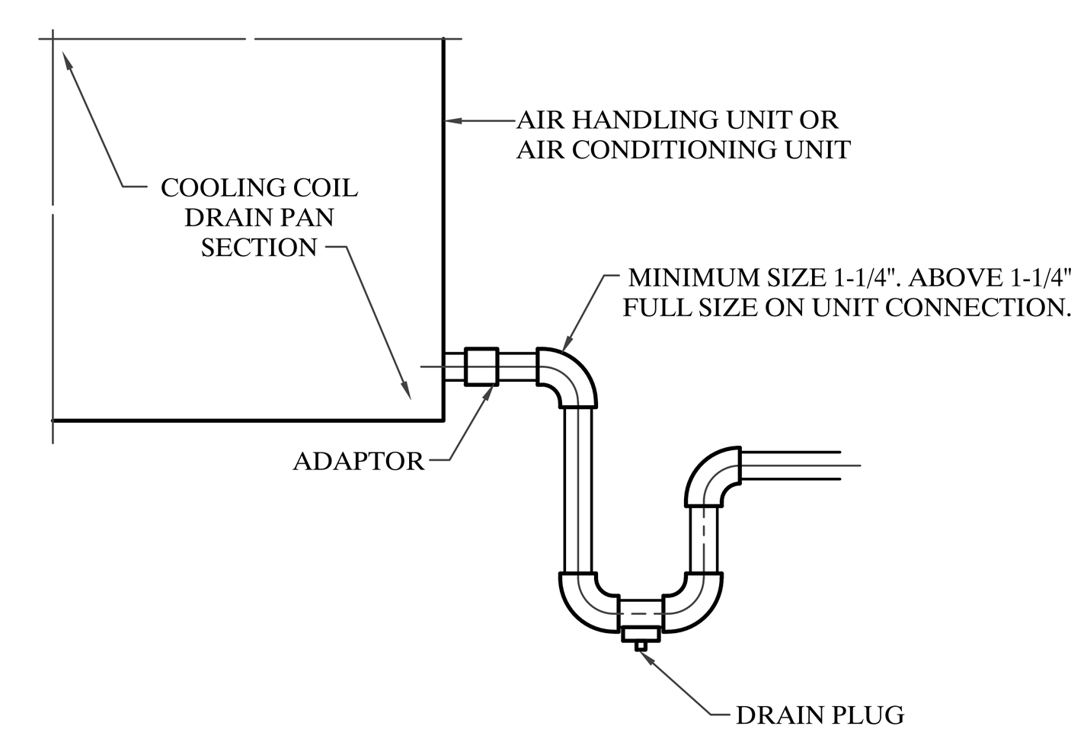
NOTE:
UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.



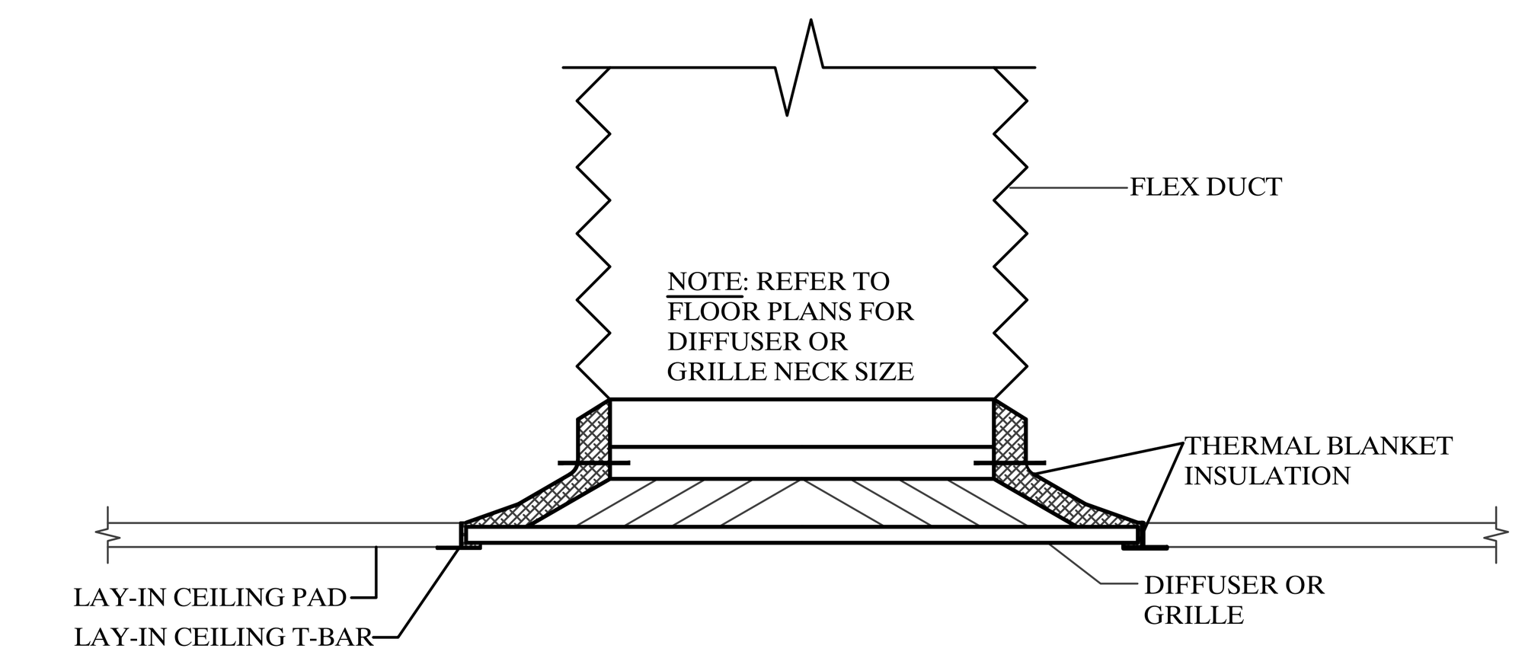
D / M001 DUCT HANGER DETAIL
SCALE: NTS



E / M001 DUCT DETAIL
SCALE: NTS



G / M001 CONDENSATE DRAIN DETAIL
SCALE: NTS



M / M001 DIFFUSER INSTALLATION DETAIL
SCALE: NTS

DRAWING INDEX	
DRAWING No.	DRAWING TITLE
M001	MECHANICAL SYMBOLS
M002	MECHANICAL SCHEDULES & SPECIFICATIONS
M101	FIRST FLOOR – MECHANICAL PLAN

A	B
C	D

N

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

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www.daengineering.com
Mechanical, Electrical, & Energy Engineering

JOHNSON COUNTY
RECYCLING CENTER
FRANKLIN, IN

HANNAH R. KIGER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS:

#	Date	Desc.

100% CONSTRUCTION DOCUMENTS

PROJECT:	24020
DATE:	04.22.2024
DRAWN BY:	DAE

SHEET NAME

MECHANICAL SYMBOLS

M001

GENERAL NOTES:

A. ALL WORK SHALL BE IN ACCORDANCE WITH THE BEST QUALITY STANDARDS OF THE TRADE AND SHALL CONFORM WITH ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS.

B. CONTRACT DOCUMENTS CONSIST OF BOTH THE PROJECT MANUAL AND DRAWINGS AND BOTH ARE INTENDED TO BE COMPLEMENTARY – ANYTHING APPEARING ON EITHER MUST BE EXECUTED THE SAME AS IF SHOWN ON BOTH.

C. THE CONTRACTOR SHALL INCLUDE IN BID PROPOSAL ALL COSTS REQUIRED TO COMPLETELY AND PROPERLY INSTALL ALL WORK REQUIRED FOR THE PROJECT AND SHALL EXAMINE THE SCOPE OF WORK OF OTHER TRADES PRIOR TO SUBMITTING A BID PROPOSAL.

D. CONSTRUCTION DOCUMENTS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, HOWEVER, SYSTEMS HAVE BEEN SHOWN DIAGRAMMATICALLY AND IN SOME CASES AND ENLARGED FOR CLARITY. ANY OFFSETS, ADDITIONAL FITTINGS, AND/OR APPURTENANCES REQUIRED TO PROVIDE A COMPLETE AND COORDINATED SYSTEM SHALL BE BORNE BY THE CONTRACTOR.

E. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED MATERIALS INCLUDING ALL DIFFUSERS, GRILLES, AND REGISTERS.

F. THE MECHANICAL CONTRACTOR SHALL COORDINATE DUCTWORK INSTALLATIONS WITH OTHER TRADES. LIGHTING AND DUCTWORK DESIGNS INDICATED ON CONTRACT DRAWINGS WERE COORDINATED, HOWEVER CONFLICTS WITH DUCTWORK AND LIGHTS MAY ARISE DUE TO GRID INSTALLATION. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DUCTWORK MODIFICATIONS AND OFFSETS REQUIRED TO ACCOMMODATE FIELD CONDITIONS.

G. ALL EQUIPMENT INCLUDING BUT NOT LIMITED TO DUCTWORK, PIPING, UNIT HEATERS, ETC. SHALL BE HUNG FROM THE TOP CHORD OF THE STRUCTURAL STEEL.

H. ALL EXTERIOR PENETRATIONS SHALL BE WEATHER AND WATER TIGHT.

I. REFRIGERANT PIPE SIZING AND CONFIGURATION BY UNIT MANUFACTURER.

J. CONTRACTORS SHALL REVIEW STRUCTURAL PLANS AND ACTUAL LAYOUT OF BEAMS, JOISTS, ETC. TO AVOID CONFLICT BETWEEN DUCT. ADJUST DUCT ROUTING TO ACCEPT STRUCTURAL CONDITIONS.

K. ALL EXHAUST DISCHARGES AND GAS FLUES WHERE INDICATED SHALL BE LOCATED A MINIMUM OF 10'–0" AWAY FROM OUTSIDE AND COMBUSTION AIR INTAKES UNLESS LOCAL AND STATE CODES MANDATE ADDITIONAL DISTANCE.

L. CONTRACTOR SHALL VERIFY ELECTRICAL CHARACTERISTICS OF ALL MECHANICAL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO PLACING EQUIPMENT ON ORDER.

M. WHERE WALL TYPE LOUVERS ARE INDICATED, MECHANICAL CONTRACTOR SHALL SEAL WATER–TIGHT ALL AROUND LOUVER WITH SILICON CAULKING. CONTRACTOR SHALL COORDINATE PAINTING REQUIREMENTS FOR LOUVERS WITH GENERAL CONTRACTOR PRIOR TO SUBMITTING BID.

N. PLANS INDICATE GENERAL LOCATION AND ARRANGEMENT OF MECHANICAL SYSTEMS. INSTALL AS INDICATED UNLESS DEVIATIONS ARE APPROVED.

O. PROVIDE SUBMITTALS FOR EACH TYPE OF EQUIPMENT, MATERIAL AND ACCESSORY.

P. INSTALL ALL MECHANICAL SYSTEMS PER SMACNA.

Q. INSTALL DUCT WORK WITH FEWEST AMOUNT OF JOINTS.

R. INSTALL DUCT WORK PARALLEL AND PERPENDICULAR TO BUILDING LINES.

S. DUCT WORK SHALL HAVE A MINIMUM OF 1" CLEARANCE.

T. PROTECT ALL MECHANICAL EQUIPMENT, SYSTEMS, MATERIALS AND ACCESSORIES FROM DAMAGE DURING STORAGE, INSTALLATION AND CONSTRUCTION.

U. EXAMINE AND REVIEW CONDITIONS FOR COMPLIANCE BEFORE PROCEEDING WITH CONSTRUCTION AND INSTALLATION.

DUCT SCHEDULE

	PRESSURE CLASS	SMACNA SEAL CLASS	SMACNA LEAKAGE CLASS (RECT)	SMACNA LEAKAGE CLASS (ROUND /OVAL)	LINER
SUPPLY DUCT - FAN COIL UNITS, HEAT PUMPS, TERMINAL UNITS	+1"	A	24	12	
SUPPLY DUCT - CONSTANT VOLUME AIR HANDLING UNITS	+3"	B	12	6	
SUPPLY DUCT VARIABLE AIR VOLUME AIR HANDLING UNIT	+3"	B	6	6	
RETURN DUCT - FAN COIL UNITS, HEAT PUMPS, TERMINAL UNITS	1"	A	24	12	
RETURN DUCT - AIR HANDLING UNITS	3"	B	12	6	
OTHER EQUIPMENT	+3"	B	12	6	
EXHAUST DUCT	+1"	A	24	12	
OUTDOOR AIR - FAN COIL UNITS, HEAT PUMPS, TERMINAL UNITS	+1"	A	24	12	
OUTDOOR AIR - AIR HANDLING UNITS	+3"	B	12	6	
DOUBLE WALL EXHAUST DUCT					

ESCUTCHEONS

		TYPE
NEW PIPE		
	PROTRUDING FROM WALL	ONE-PIECE, DEEP PATTERN
	INSULATED PIPING	ONE-PIECE, STAMPED-STEEL
	BARE PIPE	ONE-PIECE CAST BRASS - POLISHED CHROME-PLATED FINISH
	FOR THE FLOOR	ONE-PIECE, FLOOR-PLATE
EXISTING PIPE		
	ALL PIPE	SPLIT-PLATE STAMPED STEEL WITH POLISHED CHROME-PLATED FINISH
	FOR THE FLOOR	SPLIT-CASTING, FLOOR-PLATE
1	REPLACE BROKEN AND DAMAGED ESCHTCHEONS AND FLOOR PLATES USING NEW MATERIALS	
2	SUBMITT EACH TYPE FOR REVIEW	

CEILING DIFFUSER/RETURN GRILLE SCHEDULE

MARK NO.	A	B	C
MANUFACTURER	TITUS	TITUS	TITUS
MODEL NO.	TMS	350FL	350FL
DESCRIPTION	SUPPLY DIFFUSER	RETURN GRILLE	EXHAUST GRILLE
MAXIMUM CFM	225		
NOISE CRITERIA	22		
NECK SIZE	ON DRAWING	ON DRAWING	ON DRAWING
FACE SIZE	24"X24" or 12"X12"	ON DRAWING	ON DRAWING
MODULE SIZE	–		
CONST. MATERIAL	ALUM	ALUM	ALUM
FINISH	–	–	–
ACCESSORIES	–	–	–
REMARKS	FOR SUSPENDED OR DRYWALL	FOR SUSPENDED OR DRYWALL	FOR SUSPENDED OR DRYWALL
	CEILING SYSTEM	CEILING SYSTEM	CEILING SYSTEM
	INCLUDE INSULATION ON THE BACK		
	OF THE DIFFUSER		

NECK SIZE
A## –##
CFM

1. INSTALL ALL DEVICES LEVEL AND PLUMB.
2. INSTALL WITH AIRTIGHT CONNECTIONS TO DUCTS.
3. ADJUST AIR PATTERN AND DAMPERS AS REQUIRED FOR AIR BALANCING
4. COLOR BY ARCHITECT.

DUCT INSULATION SCHEDULE

	SUPPLY	RETURN	OUTDOOR AIR	EXHAUST
CONCEALED - PLENUM RETURN	NONE	NONE	MFB-1	NONE
CONCEALED - DUCTED RETURN	MFB-1	NONE	MFB-1	NONE
INDOOR EXPOSED DUCT	MFB-1	NONE	MFB-2	NONE
OUTDOOR EXPOSED DUCT	MFB-3	MFB-3	MFB-3	NONE

MFB -1: MINERAL FIBER BLANKET - 1 1/2" THICK, 0.75 LB/ CU. FT.
MFB -2: MINERAL FIBER BOARD - 1 1/2" THICK, 2-LB/ CU. FT.
MFB -3: MINERAL FIBER BLANKET - 3" THICK, 3-LB/ CU. FT.
INSTALL 0.024" THICK SMOOTH ALUMINUM JACKET OVER OUTDOOR EXPOSED INSULATED DUCT.

SEAL CLASS

	SUPPLY (2" PRESSURE AND LOWER)	SUPPLY (HIGHER THAN 2" PRESSURE)	EXHAUST	RETURN
OUTDOOR	A	A	C	C
UNCONDITIONED SPACES	B	A	C	B
CONDITIONED SPACES	C	B	B	C

LOUVER SCHEDULE

MARK	SERVICE	CFM	WIDTH INCHES	HEIGHT INCHES	FRAME DEPTH INCHES	VELOCITY FPM	MAX APD IN.WG	BLADE STYLE	MANUFACTURER	MODEL	REMARKS
L-1	OUTSIDE AIR	100	6	6	4				GREENHECK	EAC-401	
L-2	OUTSIDE AIR	400	12	12	4				GREENHECK	EAC-402	

REMARKS:
1. FURNISH WITH ALUMINUM BIRD SCREEN.
2. FURNISH WITH KYNAR PAINT FINISH OF STANDARD COLOR SELECTION BY ARCHITECT.
3. EXTRUDED ALUMININUM COMBINATION DAMPER/ LOUVER, DRAINABLE BLADES

METAL DUCTS

1.1 SHEET METAL MATERIALS

A. GALVANIZED STEEL SHEETS: COMPLY WITH ASTM A653/A 653M, G60 (Z180) AND A MILL PHOSPHATIZED FINISH FOR SURFACES EXPOSED TO VIEW.

B. REINFORCEMENT SHAPES AND PLATES SHALL BE GALVANIZED STEEL DISSIMILAR MATERIALS SHALL BE SEPARATED USING APPROPRIATE GASKET MATERIALS.

C. GALVANIZED STEEL TIE RODS THAT ARE 1/4-INCH MINIMUM DIAMETER FOR LENGTHS 36 INCHES OR LESS AND 3/8-INCH DIAMETER FOR LONGER LENGTHS LONGER.

D. CARBON STEEL SHEETS: COMPLY WITH ASTM A/1008 10080M, WITH OILED, MATTE FINISH FOR EXPOSED DUCTS.

1.2 DUCT LINER

A. TYPE I, FLEXIBLE LINER SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY OF 0.27 BTU X IN./H X SQ. FT. X DEG F AT 75 DEG F MEAN TEMPERATURE.

B. TYPE II, RIGID: LINER SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY OF 0.23 BTU X IN./H X SQ. FT. X DEG F AT 75 DEG F MEAN TEMPERATURE.

C. ANTIMICROBIAL EROSION-RESISTANT COATING TESTED AND REGISTERED FOR USE IN HVAC SYSTEMS

D. WATER-BASED LINER ADHESIVE: COMPLY WITH NFPA 90A OR NFPA 90B AND WITH ASTM C 916.

E. INSULATION PINS AND WASHERS:

1. CUPPED-HEAD CAPACITOR-DISCHARGE-WELD PINS SHALL BE COPPER- OR ZINC-COATED STEEL PIN, FULLY ANNEALED FOR CAPACITOR-DISCHARGE WELDING, 0.106-INCH DIAMETER SHANK, LENGTH TO SUIT DEPTH OF INSULATION LINED WITH INTEGRAL 1-1/2-INCH GALVANIZED CARBON-STEEL WASHER.
2. INSULATION-RETAINING WASHERS SHALL BE SELF-LOCKING WASHERS FORMED FROM 0.016-INCH THICK GALVANIZED STEEL; WITH BEVELED EDGE SIZED AS REQUIRED TO HOLD INSULATION SECURELY IN PLACE BUT NOT LESS THAN IN DIAMETER.

F. SHOP APPLICATION OF DUCT LINER IS PERMITTED.

1.3 SEALANT AND GASKETS

A. WATER-BASED JOINT AND SEAM SEALANT SHALL BE BRUSHED ON WITH A MINIMUM SOLIDS CONTENT OF 65%, A MINIMUM SHORE A HARDNESS OF 20, WATER MOLD AND MILDEW RESISTANT AND A MAXIMUM VOC OF 75 G/L. MUST BE RATED FOR UP TO 10" WG AND FOR INDOOR AND OUTDOOR SERVICE. SHALL BE COMPATIBLE WITH METAL SUBSTRATE.

B. FLANGED JOINT SEALANT SHALL BE A SINGLE-COMPONENT, ACID-CURING, SILICONE ELASTOMERIC, TYPE S, GRADE NS, CLASS 25 AND O USE.

C. FLANGE GASKETS SHALL BE BUTYL RUBBER, NEOPRENE, OR EPDM POLYMER WITH POLYISOBUTYLENE PLASTICIZER.

1.4 HANGERS AND SUPPORTS

A. HANGER RODS SHALL BE CADMIUM-PLATED STEEL RODS AND NUTS.

B. STEEL CABLES FOR GALVANIZED-STEEL DUCTS.

C. STEEL CABLE END CONNECTIONS SHALL BE CADMIUM-PLATED STEEL ASSEMBLIES WITH BRACKETS, SWIVEL, AND BOLTS DESIGNED FOR DUCT HANGER SERVICE; WITH AN AUTOMATIC-LOCKING AND CLAMPING DEVICE.

D. SHEET METAL SCREWS, BLIND RIVETS, OR SELF-TAPPING METAL SCREWS SHALL BE COMPATIBLE WITH DUCT MATERIALS.

E. SUPPORT GALVANIZED-STEEL DUCTS WITH GALVANIZED-STEEL SHAPES AND PLATES.

1.5 DUCT INSTALLATION

A. PROTECT ALL MATERIALS, INSTALLED AND STORED, FROM DAMAGE.

B. COVER OPENINGS BETWEEN NON-FIRE RATED INTERIOR PARTITIONS AND DUCT (OR DUCT INSULATION) WITH SHEET METAL OVERLAPPING ON FOUR SIDES BY A MINIMUM OF 1 ½".

C. TRIM DUCT SEALANTS FLUSH WITH METAL. CREATE A SMOOTH AND UNIFORM EXPOSED BEAD.

D. REPAIR OR REPLACE DAMAGED SECTIONS AND FINISHED WORK THAT DOES NOT COMPLY WITH THESE REQUIREMENTS.

E. HANGERS AND SUPPORTS SHALL USE STRUCTURAL-STEEL FASTENERS APPROPRIATE FOR CONSTRUCTION MATERIALS TO WHICH HANGERS ARE BEING ATTACHED.

F. HANGERS EXPOSED TO VIEW SHALL BE THREADED ROD AND ANGLE OR CHANNEL SUPPORTS.

G. INSTALL UPPER ATTACHMENTS TO STRUCTURES. SELECT AND SIZE UPPER ATTACHMENTS WITH PULL-OUT, TENSION, AND SHEAR CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS WHERE USED.

H. PAINT INTERIOR OF METAL DUCTS THAT ARE VISIBLE THROUGH REGISTERS AND GRILLES AND THAT DO NOT HAVE DUCT LINER. APPLY ONE COAT OF FLAT, BLACK, LATEX PAINT OVER A COMPATIBLE GALVANIZED-STEEL PRIMER.

I. PERFORM TESTS AND INSPECTIONS. DUCT SYSTEM WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.

J. CLEAN EXISTING DUCT SYSTEMS BEFORE TESTING, ADJUSTING, AND BALANCING.

1.6 DUCT SCHEDULE

A. INTERMEDIATE REINFORCEMENT SHALL BE STAINLESS STEEL.

DUCT ACCESSORIES

1.1 MATERIALS

A. REINFORCEMENT SHAPES AND PLATES SHALL MATCH OR BE COMPATIBLE WITH SHEET METAL DUCT MATERIAL.

B. TIE RODS SHALL BE STAINLESS STEEL, 1/4-INCH MINIMUM DIAMETER FOR LENGTHS 36 INCHES OR LESS; 3/8-INCH MINIMUM DIAMETER FOR LENGTHS LONGER THAN 36 INCHES.

1.2 MANUAL VOLUME DAMPERS

A. ALL STAINLESS STEEL DAMPER WITH STANDARD LEAKAGE RATING AND LINKAGE OUTSIDE OF AIRSTREAM. USE A HAT-SHAPED FRAME WITH STAINLESS STEEL CHANNELS, MITERED AND WELDED CORNERS, FLANGELESS FRAMES FOR INSTALLATION IN DUCTS, STAINLESS STIFFEN DAMPER BLADES AND OIL IMPREGNATED BRONZE BEARINGS.

1.3 FLANGE CONNECTORS

A. GALVANIZED STEEL MATCHING CONNECTING DUCTWORK IN GAGE AND SHAPE. IT SHALL BE AN ADD-ON, FACTORY-FABRICATED DEVICE WITH SLIDE-ON TRANSVERSE FLANGE CONNECTORS, GASKETS, AND COMPONENTS.

1.4 TURNING VANES

A. MANUFACTURED STAINLESS STEEL TURNING VANES WITH CURVED BLADES AND SUPPORTED WITH BARS PERPENDICULAR TO BLADES SET. INSTALL SINGLE WALL VANES FOR DUCTS UP TO 48" WIDE AND DOUBLE WALL FOR LARGER DUCTS.

1.5 DUCT-MOUNTED ACCESS DOORS

A. STAINLESS STEEL DOUBLE WALL RECTANGULAR DOOR WITH INSULATION PER DUCT PRESSURE CLASS AND 1"X1" BUTT OR PIANO HINGES AND CAM LATCHES. NUMBER OF HINGES SHALL BE APPROPRIATE TO DOOR SIZE. FRAME SHALL BE GALVANIZED WITH BED OVER TABS AND FOAM GASKETS.

1.6 FLEXIBLE CONNECTORS

A. FLEXIBLE CONNECTORS SHALL BE MADE OF FLAME-RETARDANT OR NONCOMBUSTIBLE FABRICS.

B. INDOOR SYSTEM FLEXIBLE CONNECTOR SHALL BE GLASS FABRIC DOUBLE COATED WITH NEOPRENE. MINIMUM WEIGHT SHALL BE 26 OZ/ SQ YD WITH A TENSILE STRENGTH OF 480 LBF/ INCH IN THE WRAP AND 360 LBF/INCH IN THE FILLING AT -40^{O}F TO 200^{O}F.

C. OUTDOOR SYSTEM FLEXIBLE CONNECTOR SHALL BE GLASS FABRIC DOUBLE COATED WITH PROOF, SYNTHETIC RUBBER RESISTANT TO UV RAYS AND OZONE. MINIMUM WEIGHT SHALL BE 24 OZ/ SQ YD WITH A TENSILE STRENGTH OF 500 LBF/ INCH IN THE WRAP AND 440 LBF/INCH IN THE FILLING AT -50^{O}F TO 250^{O}F.

1.7 FLEXIBLE DUCTS

A. NONINSULATED FLEXIBLE DUCT SHALL BE BLACK POLYMER FILM SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE WITH A PRESSURE RATING OF 4" WG TO -0.5" WG AT A MAXIMUM AIR VELOCITY OF 4000 FPM AND A TEMPERATURE RANGE OF -20^{O}F TO 175^{O}F.

B. INSULATED, FLEXIBLE DUCT SHALL BE BLACK POLYMER FILM SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE; FIBROUS-GLASS INSULATION WITH ALUMINIZED VAPOR-BARRIER FILM. PRESSURE RATING SHALL BE 4" WG TO -0.5" WG AT A MAXIMUM AIR VELOCITY OF 4000 FPM AND A TEMPERATURE RANGE OF -20^{O}F TO 175^{O}F.

C. STAINLESS STEEL CLAMPS WITH CADMIUM-PLATED HEX SCREW TO TIGHTEN BAND WITH A WORM GEAR ACTION IN SIZES 3 THROUGH 18

D. ADHESIVE PLUS SHEET METAL SCREWS FOR NON-CLAMP CONNECTORS.

1.8 INSTALLATION

A. INSTALL DUCT ACCESSORIES OF MATERIALS THAT ARE COMPATIBLE WITH DUCT MATERIALS.

B. INSTALL VOLUME DAMPERS AT POINTS ON SUPPLY, RETURN, AND EXHAUST SYSTEMS WHERE INDICATED ON DRAWINGS. WHERE DAMPERS ARE INSTALLED IN DUCTS HAVING DUCT LINER, INSTALL DAMPERS WITH HAT CHANNELS OF SAME DEPTH AS LINER, AND TERMINATE LINER WITH NOSING AT HAT CHANNEL.

C. SET DAMPERS TO FULLY OPEN POSITION BEFORE TESTING, ADJUSTING, AND BALANCING.

D. INSTALL DUCT ACCESS DOORS ON SIDES OF DUCTS TO ALLOW FOR PROPER USE AT THE FOLLOWING LOCATIONS:
1. DOWNSTREAM FROM DAMPERS AND EQUIPMENT.
2. ADJACENT TO AND CLOSE ENOUGH TO FIRE OR SMOKE DAMPERS, TO RESET OR REINSTALL FUSIBLE LINKS. ACCESS DOORS FOR ACCESS TO FIRE OR SMOKE DAMPERS HAVING FUSIBLE LINKS SHALL BE PRESSURE RELIEF ACCESS DOORS AND SHALL BE OUTWARD OPERATION FOR ACCESS DOORS INSTALLED UPSTREAM FROM DAMPERS AND INWARD OPERATION FOR ACCESS DOORS INSTALLED DOWNSTREAM FROM DAMPERS.
3. CONTROL DEVICES REQUIRING INSPECTION.
4. ELSEWHERE AS INDICATED.

E. INSTALL ACCESS DOORS WITH SWING AGAINST DUCT STATIC PRESSURE.

F. ACCESS DOOR SIZES:
1. ONE-HAND OR INSPECTION ACCESS: 8 BY 5 INCHES.
2. TWO-HAND ACCESS: 12 BY 6 INCHES.
3. HEAD AND HAND ACCESS: 18 BY 10 INCHES.
4. HEAD AND SHOULDERS ACCESS: 21 BY 14 INCHES.
5. BODY ACCESS: 25 BY 14 INCHES.

G. INSTALL FLEXIBLE CONNECTORS TO CONNECT DUCTS TO EQUIPMENT.

H. CONNECT DIFFUSERS OR LIGHT TROFFER BOOTS TO DUCTS WITH MAXIMUM 60-INCH LENGTHS OF FLEXIBLE DUCT CLAMPED OR STRAPPED IN PLACE.

I. CONNECT FLEXIBLE DUCTS TO METAL DUCTS WITH ADHESIVE PLUS SHEET METAL SCREWS.

J. FULLY TEST AND OPERATE ALL DAMPERS TO VERIFY FULL RANGE OF MOVEMENT.

K. INSPECT ALL EQUIPMENT AND ACCESSORIES FOR PROPER INSTALLATION.

ELECTRIC WALL HEATER SCHEDULE

TAG	CFM	MBH	KW	RPM	ELECTRICAL VOLTAGE	ELECTRICAL MCA	ELECTRICAL MOP	GRILL DIMENSIONS	MOUNTING	WEIGHT LBS	MANUFACTURER/MODEL NUMBER	NOTES
WH-1	245	13.65	4.0	1400	208V/1PHASE	19.2	_	25-1/32" H X 17-7/16"W	WALL	55	TPI CORP. F3454T	ALL

NOTES
1 Powder coated bar stock steel tamper proof grille, with extruded Aluminum frame and 16 gauge housing.
2 In-Built double pole tamper proof thermostat with a 60°-120°F temperature range & positive off, Manual reset thermal limit switch.
3 Corrosion resistant steel tubular element with brazed steel fins.
4 Permanently lubricated, unit bearing, shaded pole motor with impedance protection.
5 Van Axial Fan, Propeller type fan blade.
6 Wall box required - may be ordered early for rough in purposes. Factory installed contactors: circuit breakers, control transformers.

Furnace and Condensing Unit Schedule

Furnace																Condensing Unit										
GENERAL INFORMATION		INDOOR FAN			HEATING PERFORMANCE		DX COOLING COIL				ELECTRICAL			FURNACE MODEL INFORMATION		GENERAL INFORMATION					ELECTRICAL			CONDENSING UNIT MODEL INFORMATION		
TAG	OA CFM	CFM	E.S.P.	HP	MBH INPUT	MBH OUTPUT	MBH TOTAL	MBH SENSIBLE	EDB	EWB	Voltage	MCA	MOP	Approx Weight LBS	Furnace Manufacturer Model Number	TAG	NOMINAL TONS	AMB. AIR TEMP F.	TOTAL MBH	MIN. SEER	Voltage	MCA	MOP	Approx Weight LBS	Condensing Unit Manufacturer Model Number	NOTES
F-A1, A2		1032	0.5"	1/3			36		77.6	65	120/1/60				TRANE: TEM4A0C37S31SC	CU-1	3.0	95	36.0	17.0	208/3/60	15	25	245	TRANE: 4TTA7036A3000A	ALL

NOTES:
1 Condensing Unit to be provided with start assist kit, low ambeint controls, crank case heaters, five minutes restart time delay, and service vavles.
2 Unit mounted disconnect, internal thermal overload, low pressure switch, high pressure switch, filter drier, louvered coil guard,
3 For servicing or cleaning, a 24" front clearance is required. Unit connections (electrical, flue and drain) may necessitate greater clearances than the minimum clearances listed above.
4 Installer must supply one or two PVC pipes: one for combustion air (optional) and one for the flue outlet (required). Vent pipe must be either 2" or 3" in diameter, depending upon furnace input, number of elbows, length of run and installation (1 or 2 pipes). The optional Combustion Air Pipe is dependent on installation/code requirements and must be 2" or 3" diameter PVC.
5 Standard Gas Supply Pipe size is 3/4".
6 1/2" Ribbed vibration pad under entire unit.
7 Constant Volume, Single Zone Unit.
9 7 day programmable thermostat with touch screen interface (vision pro 8000)
10 Provide matching DX Coil with furnace.

CIRCULATING FAN SCHEDULE

FAN DATA						ELECTRICAL DATA				GENERAL INFORMATION			
TAG	CFM	ESP IN. W.C.	TIP SPEED	RPM	SONES	HP or WATTS	VOLTAGE	BHP	CONTROLLED BY	MANUFACTURER AND MODEL NUMBER	FAN TYPE	LOCATION	NOTES
CCF-A1, A2	5436					64watts	120	---	Manufaturer's ONN/OFF/SPEED	MARLEY QMARK CHD SERIES 56IN Diameter	CEILING CIRCULATING FAN	CEILING MOUNTED	

NOTES
1 ON/OFF SPEED CONTROL BY MANUFACTURER
2 PROVIDE WITH TWIST LOCK RECEPTICAL

EXHAUST FAN SCHEDULE

FAN DATA						ELECTRICAL DATA						GENERAL INFORMATION					
TAG	CFM	ESP IN. W.C.	TIP SPEED	RPM	SONES	HP	BHP	VOLTAGE	MCA	MOP	CONTROLLED BY	FAN TYPE	MANUFACTURER AND MODEL NUMBER	LOCATION	APPROX. WEIGHT LBS	NOTES
EF-A1	500	0.5	---			0.1		120 V			schedule	Centrifugal - in line	Greenheck, SQ-95-DGEX-QD	Plenum	38	ALL

NOTES
1 Fan with disconnect, speed controller, backdraft damper, and wall cap (Color as selected by Architect). Fan shall be energized when furnaces are energized.

A	B
C	D

N

LANCER ASSOCIATES ARCHITECTURE
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JOHNSON COUNTY
RECYCLING CENTER
FRANKLIN, IN

HANNAH R. KIGER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS:

#	Date	Desc.

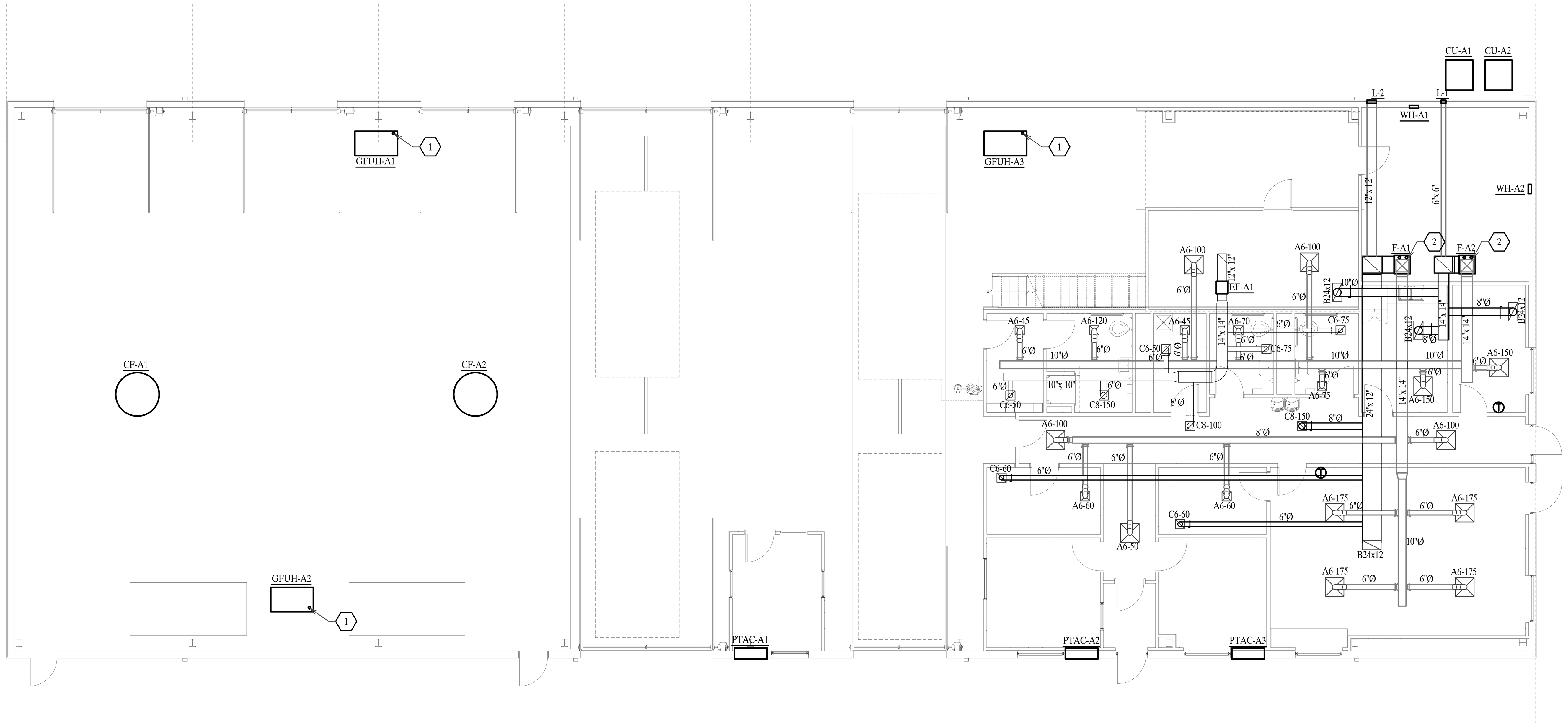
100% CONSTRUCTION DOCUMENTS
PROJECT: 24020
DATE: 04.22.2024
DRAWN BY: DAE

SHEET NAME
MECHANICAL SCHEDULES & SPECIFICATIONS

M002

KEYED PLAN NOTES:

1. INSTALL OUTSIDE AIR AND FLUE VENT FROM PROPELLER UNIT HEATER. ROUTE TO ROOF.
2. INSTALL OUTSIDE AIR AND FLUE VENT FROM FURNACE. ROUTE TO ROOF.



FIRST FLOOR - MECHANICAL PLAN

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

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
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DRAWN BY: DAE

SHEET NAME

FIRST FLOOR MECHANICAL PLAN

A	B
C	D

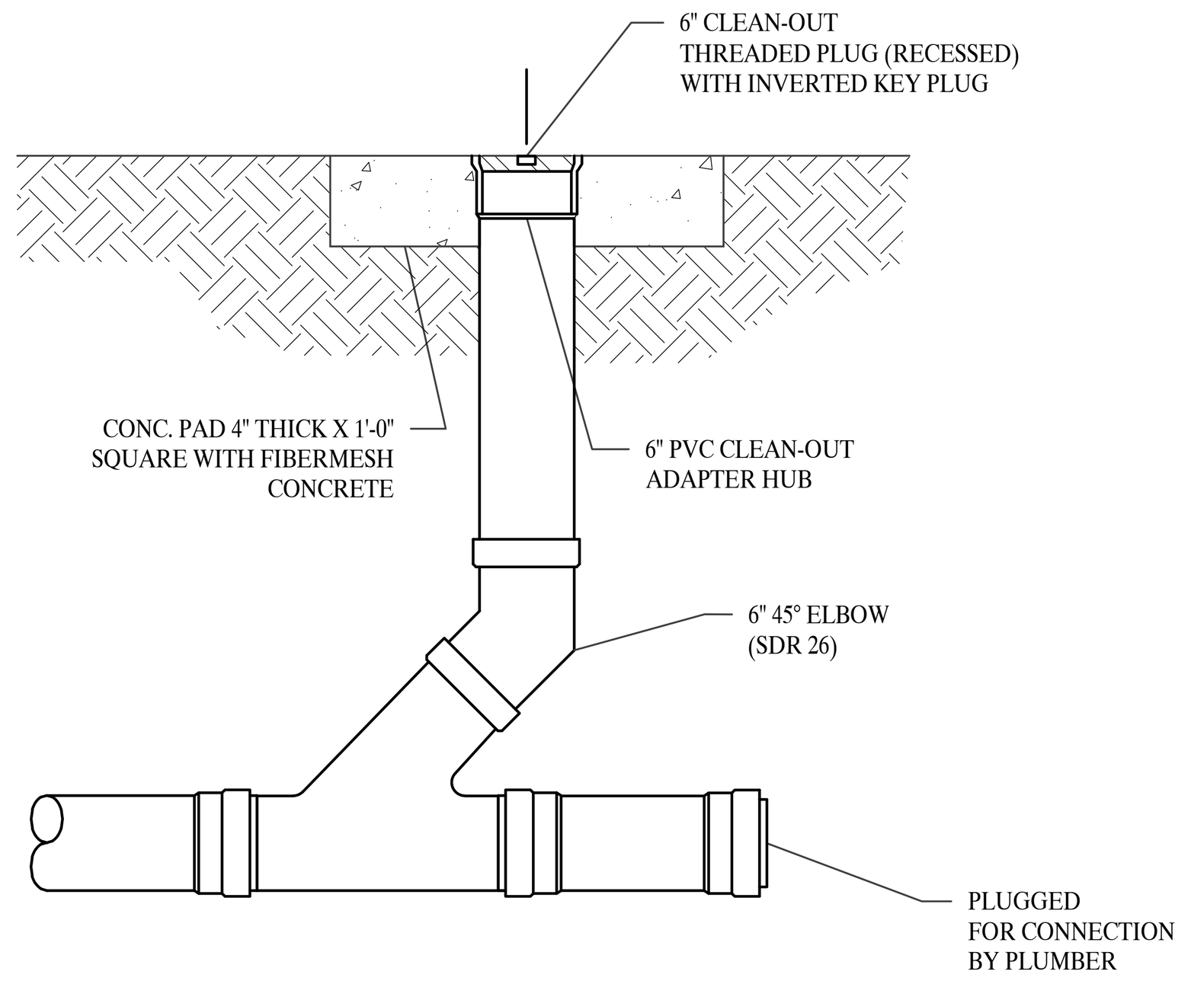
N

M101

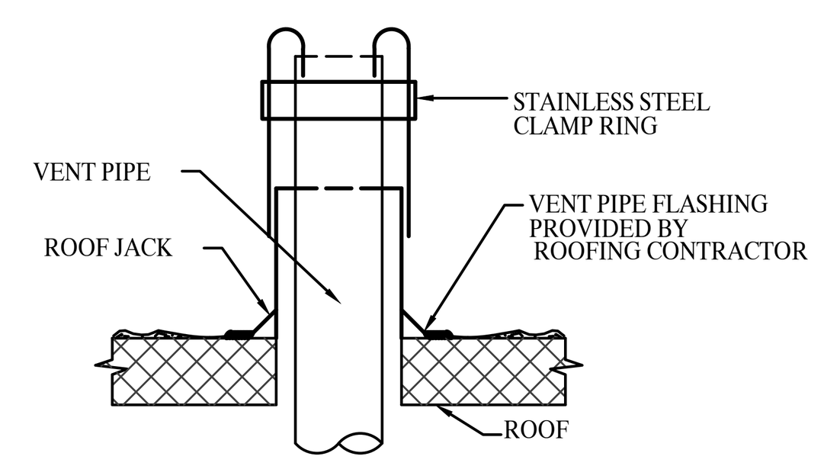
GENERAL NOTES

1. SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.
2. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. COORDINATE LOCATION OF PLUMBING SYSTEMS TO AVOID INTERFERENCE WITH LOCATION OF STRUCTURE AND OTHER BUILDING SYSTEMS. NOTIFY OWNER PRIOR TO CONSTRUCTION OF CONFLICTS, WHICH CANNOT BE RESOLVED.
4. ALL WORKMANSHIP AND MATERIALS SHALL BE OF THE HIGHEST QUALITY IN EVERY RESPECT. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, OF THE LATEST DESIGN, AND FREE OF DEFECTS. ALL MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST AMENDED EDITION OF ALL APPLICABLE STANDARDS, INCLUDING BUT NOT LIMITED TO, SMACNA, UL, AND NEMA STANDARDS.
5. OBTAIN ALL EQUIPMENT OF THE SAME TYPE FROM THE SAME MANUFACTURER.
6. WATER QUALITY TESTING IS REQUIRED.
7. DISRUPTIONS TO EXISTING SERVICES MUST BE COORDINATED WITH THE CONSTRUCTION MANAGER AND THE OWNER NO LESS THAN 10 BUSINESS DAYS IN ADVANCE.
8. INSTALL DIELECTRIC FITTINGS AS REQUIRED
9. SEE OTHER SECTIONS FOR DETAILS ON EXCAVATION REQUIREMENTS.
10. DRAWINGS ARE ONLY SCHEMATIC AND DIAGRAMMATIC IN NATURE. INSTALL PIPING AS GENERALLY INDICATED.
11. INSTALL VALVES AT ALL LOW POINT IN SYSTEM.
12. INSTALL AIR RELIEF VALVES AT ALL HIGH POINTS IN THE SYSTEM.
13. PROVIDE O&M MANUALS FOR ALL EQUIPMENT.
14. MINIMUM DESIGN WORKING PRESSURE SHALL BE 125 PSIG FOR ALL SUPPLY PIPING.
15. PROTECT ALL EQUIPMENT AND MATERIALS DURING WHILE IN STORAGE AND DURING CONSTRUCTION. REPLACE ANY DAMAGED ITEMS. DO NOT ATTEMPT TO REPAIR.
16. INSTALL FORCE MAINS AT ELEVATIONS INDICATED.
17. PROVIDE FINAL CONNECTIONS TO EQUIPMENT WITH SHUT-OFF VALVES, BALANCE REGULATORS, UNIONS, ETC. AS SPECIFIED AND AS REQUIRED BY EQUIPMENT OPERATION. COORDINATE WITH OWNER'S REPRESENTATIVE FOR EQUIPMENT IDENTIFICATION, CONNECTION REQUIREMENTS, EXACT LOCATIONS AND MOUNTING HEIGHTS.

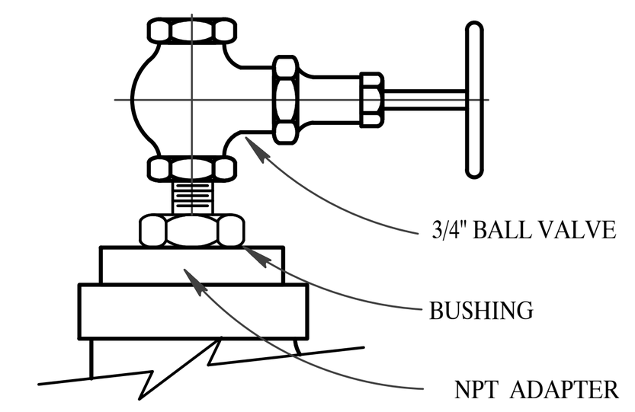
THE CONTRACTORS ARE REQUIRED TO VISIT THE SITE AND FULLY ACQUAINT THEMSELVES WITH THE EXISTING CONDITIONS AND THE DIFFICULTIES INVOLVED IN ACCOMPLISHING THE NEW WORK. PROBLEMS, DISCREPANCIES OR INFORMATION NEEDED SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER IN WRITING PRIOR TO SUBMITTING A PROPOSAL. THE SUBMISSION OF PROPOSAL WILL INDICATE THAT THE CONTRACTOR HAS FULLY UNDERSTOOD AND HAS INCLUDED ALL COSTS FOR THIS PROJECT.



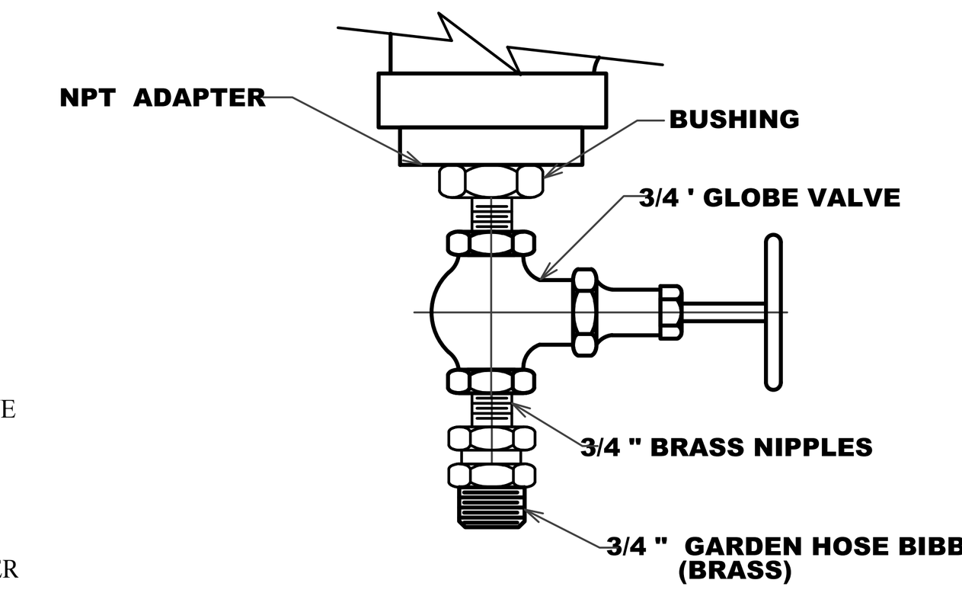
A / P001 TYPICAL CLEAN OUT DETAIL
SCALE: NTS



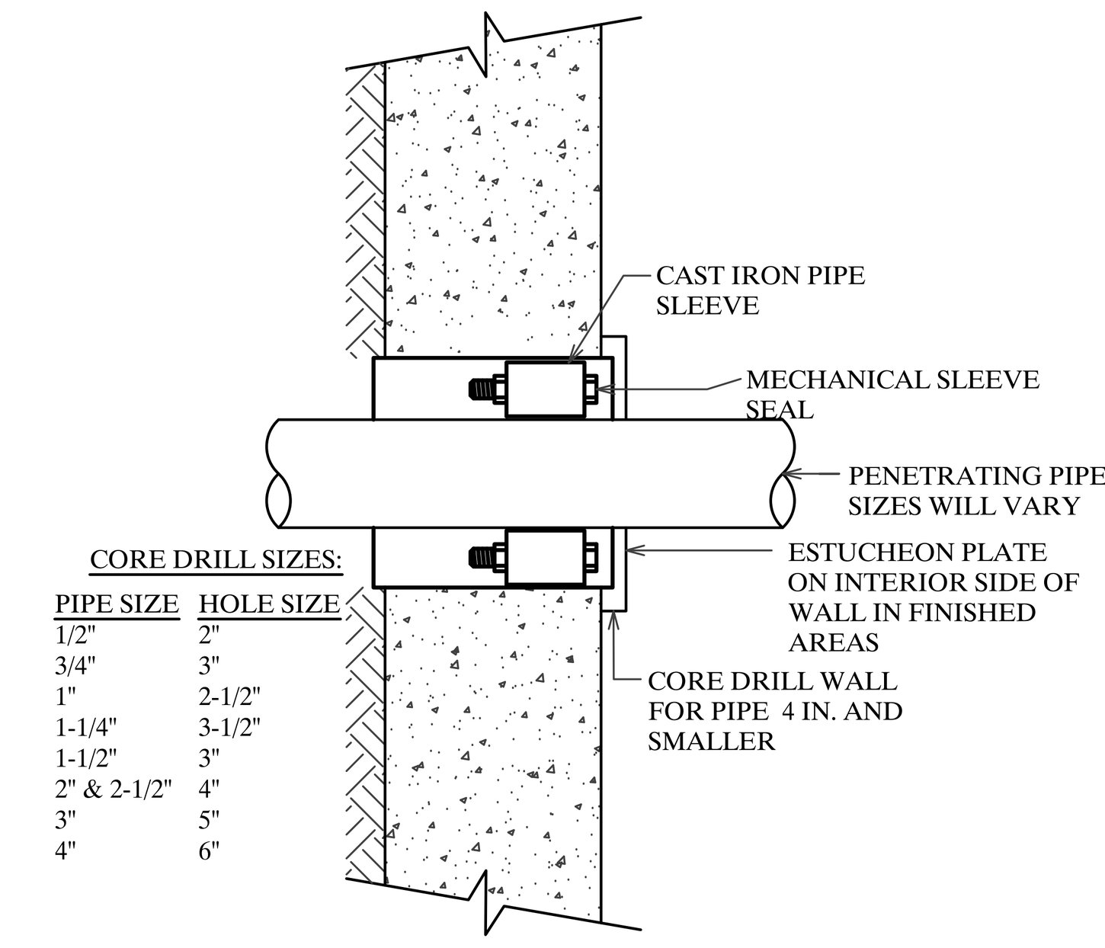
B / P001 PLUMBING VENT THRU ROOF DETAIL
SCALE: NTS



C / P001 MANUAL AIR VENT
SCALE: NTS



D / P001 DRAIN VALVE DETAIL
SCALE: NTS



E / P001 UNDERGROUND EXTERIOR WALL PIPING PENETRATION DETAIL
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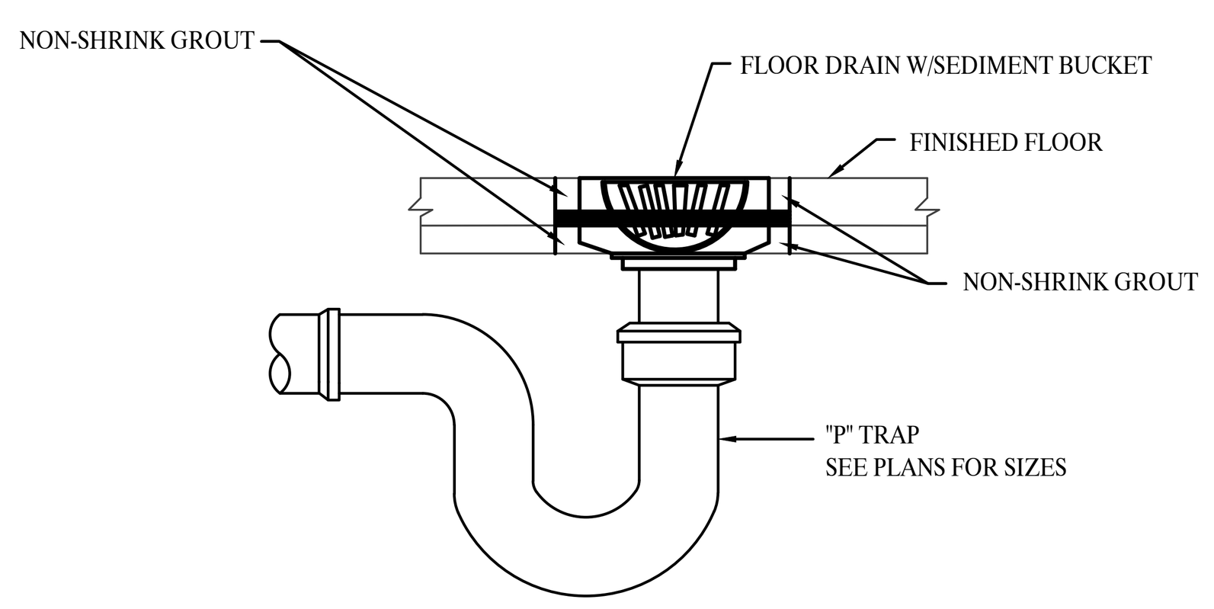

F / P001 TYPICAL FLOOR DRAIN DETAIL
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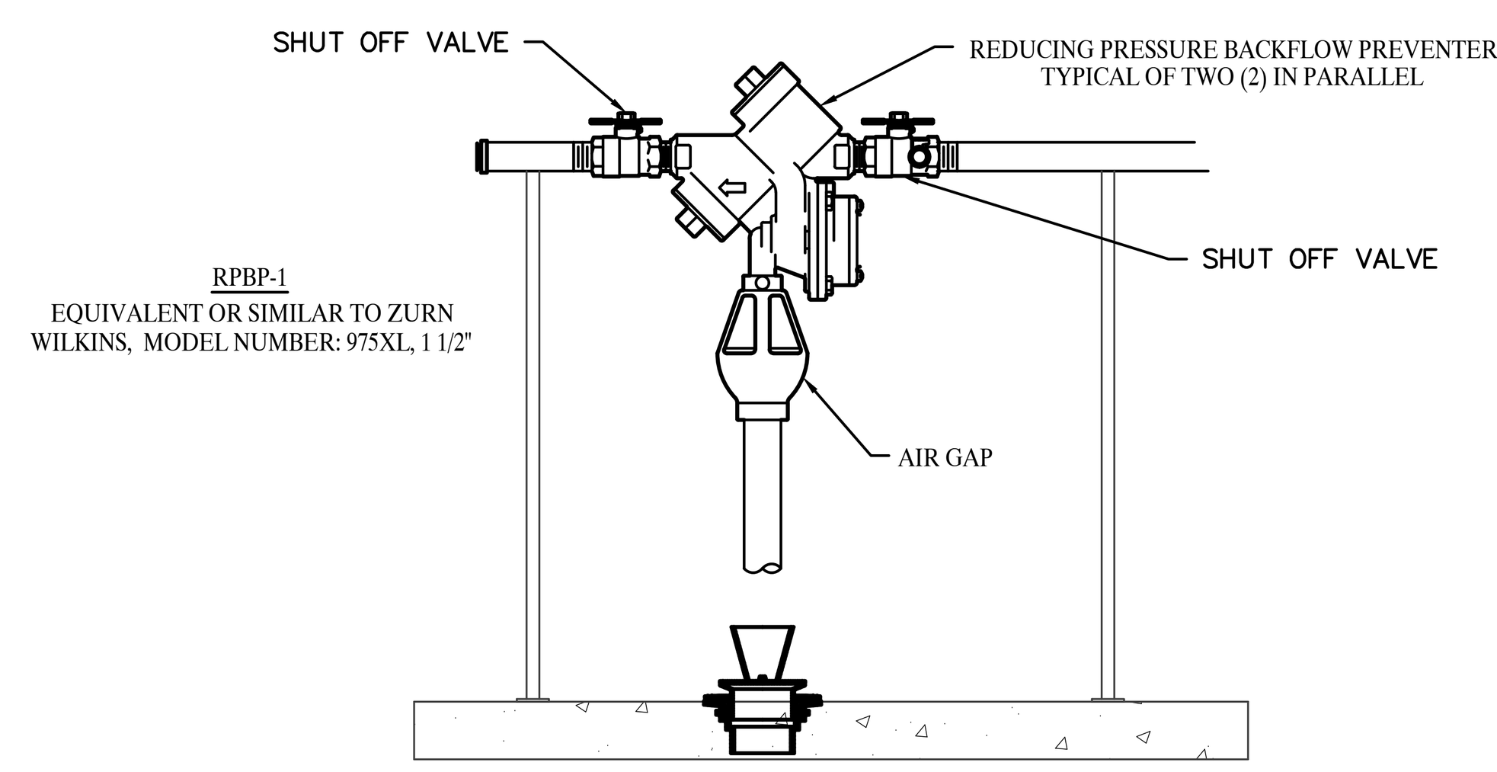
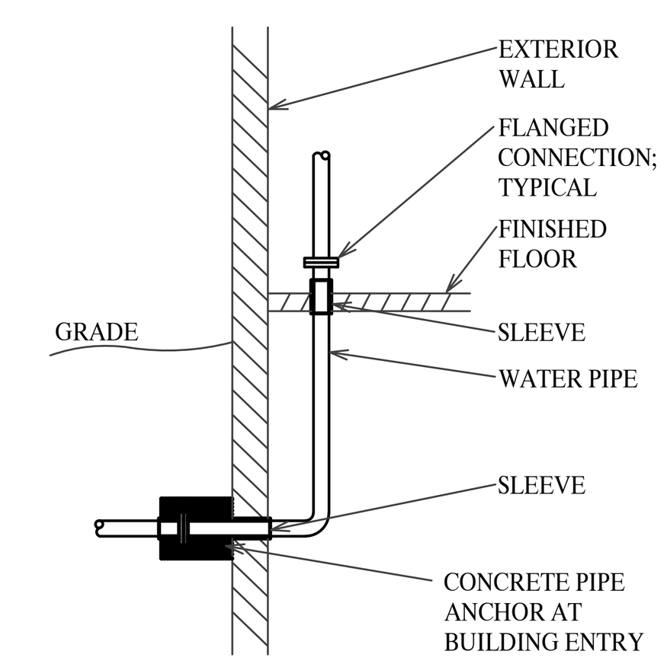
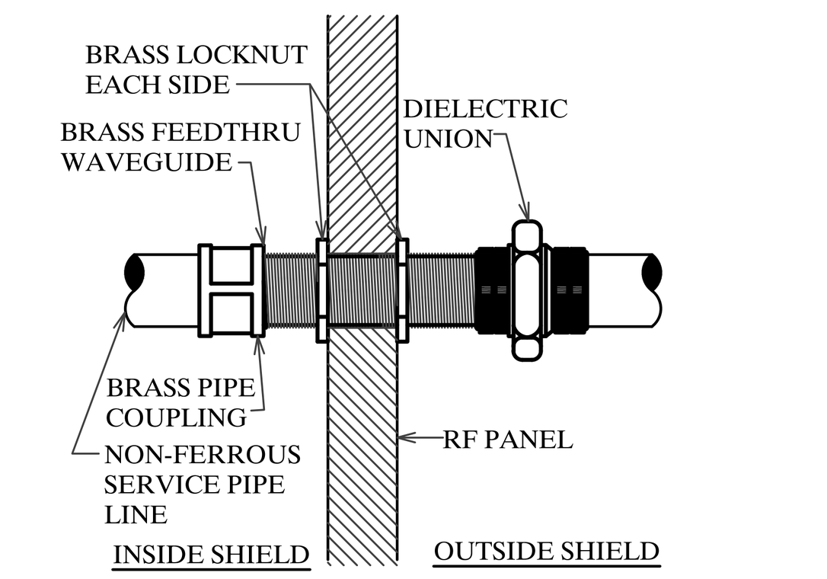


G / P001 REDUCING PRESSURE BACKFLOW PREVENTER DETAIL
SCALE: NTS



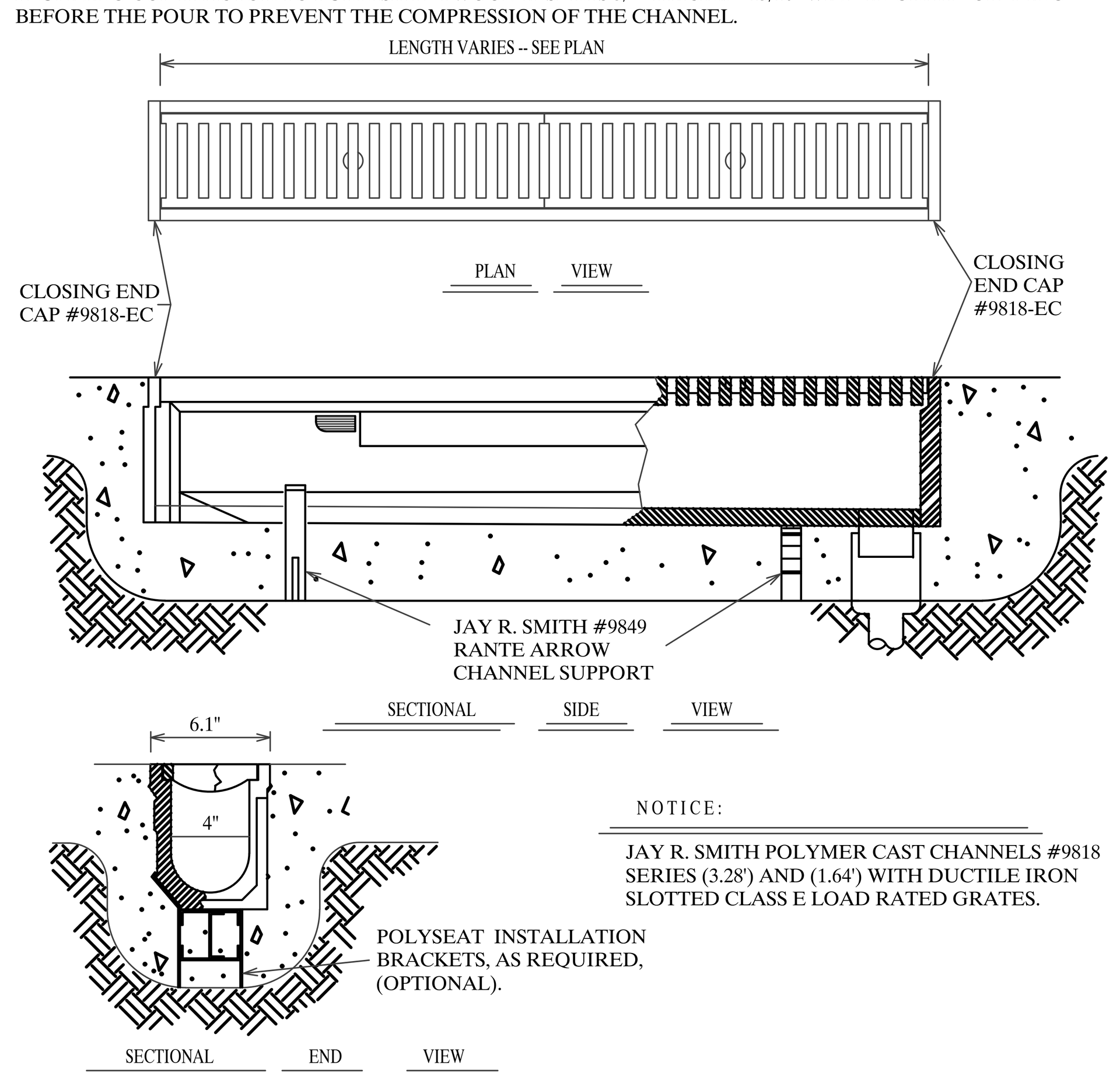
H / P001 BUILDING ENTRY DETAIL - WATER SUPPLY
SCALE: NTS



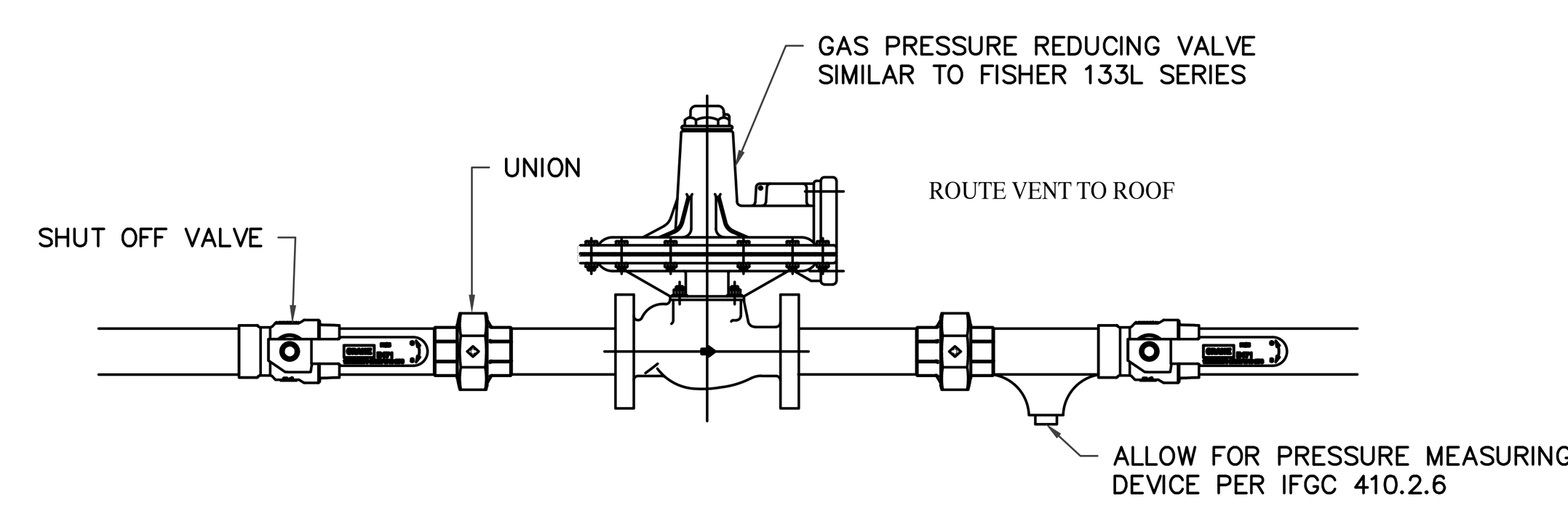
J / P001 DIELECTRIC WAVE GUIDE DETAIL
SCALE: NTS

NOTE:

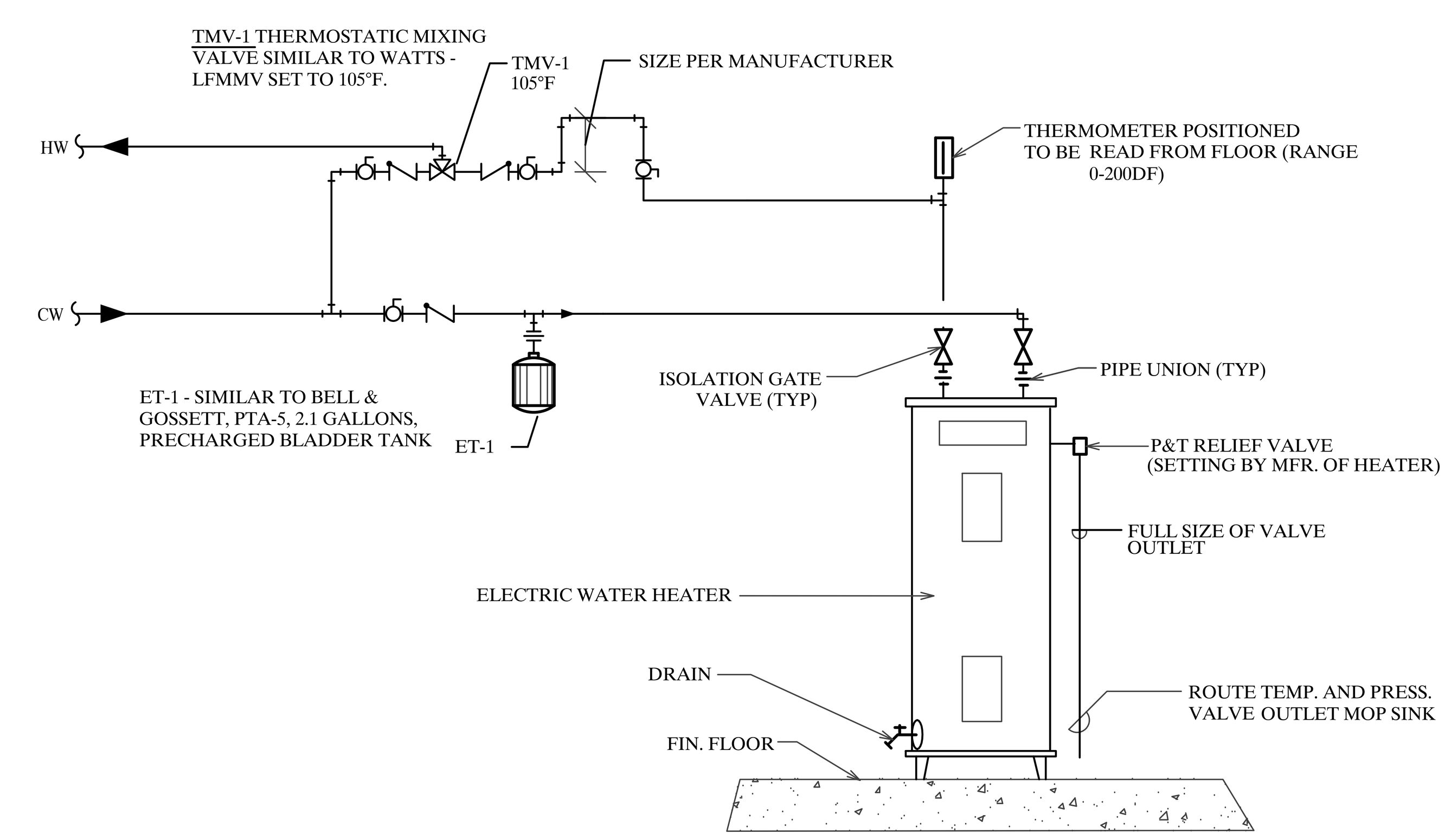
JAY R. SMITH #9818 SERIES MODULAR PRECAST POLYMER CONCRETE ON 12"AND 6" LENGTHS OF INTERLOCKING DESIGN WITH INTEGRAL GALVANIZED PROTECTIVE RAIL EDGE, WITH RADIUS INTERIOR, WITH BUILT- IN .6% SLOPE PER CHANNEL, WITH DUCTILE IRON #9870-461-M-LD DUCTILE IRON SLOTTED GRATES WITH LOCKING DEVICES WITH CLOSING END CAPS ON EACH END, WITH 4" VERTICAL PVC BOTTOM OUTLET CONNECTION, WITH #9849 RANTE ARROW CHANNEL SUPPORTS, WITH P-J EPOXY JOINT COMPOUND SEALANT. REFER TO THE DRAWINGS FOR THE VARIOUS LENGTHS. OR APPROVED EQUAL. PLUMBING CONTRACTOR TO FURNISH PLYWOOD INSERTS 3/4" THICK x 4-15/16" WIDE IN GRATE OPENING BEFORE THE POUR TO PREVENT THE COMPRESSION OF THE CHANNEL.



M / P001 TRENCH DRAIN DETAIL
SCALE: NTS



K / P001 GAS PRESSURE REDUCING VALVE
SCALE: NTS



L / P001 ELECTRIC WATER HEATER DETAIL
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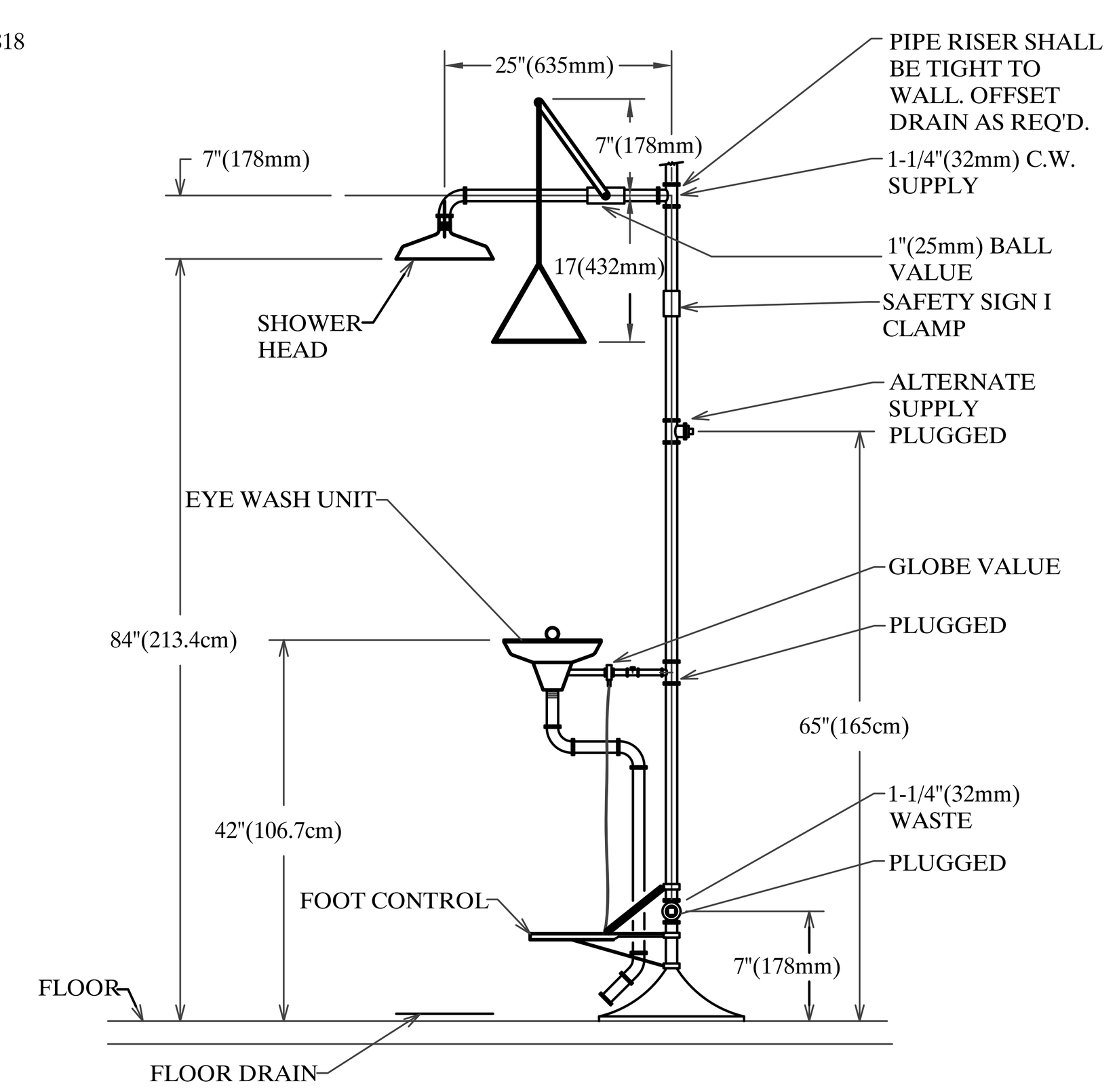
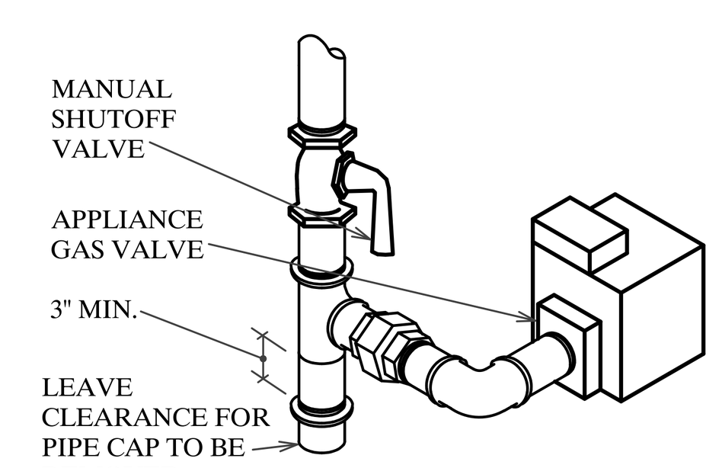


N / P001 EMERGENCY SHOWER AND EYE WASH
SCALE: NTS

NATURAL GAS LOAD

TAG	BTU/HR
GFUH-1, 2, 3 (400,000 EACH)	1,200,000
F-A1, A2 (60,000 EACH)	60,000
BOILER	–
–	–
TOTAL	3,320,000



P / M001 GAS DIRT LEG DETAIL
SCALE: NTS

DRAWING INDEX

DRAWING No.	DRAWING TITLE
P001	PLUMBING SYMBOLS
P002	PLUMBING SCHEDULES AND RISERS
P003	PLUMBING SPECIFICATIONS
P101	FIRST FLOOR PLUMBING PLANS
FP101	FIRST FLOOR FIRE PROTECTION PLAN

A	B
C	D

N

LANCER ASSOCIATES ARCHITECTURE
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DAE
Mechanical, Electrical, & Energy Engineering

JOHNSON COUNTY RECYCLING CENTER
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DRAWN BY: DAE

SHEET NAME

PLUMBING SYMBOLS

P001

MARK NO.	WC-1 & WC-2 *
LOCATION	RESTROOMS
MANUFACTURER	AMERICAN STANDARD
MODEL	2855.128
DESCRIPTION	MADERA® FLOWISE,
	WALL MOUNT, FLUSHOMETER
MATERIAL	VITREOUS CHINA
FLOW RATE	1.28 GPF
BOWL	ELONGATED
ROUGH-IN DIM	12"
ADA COMPLIANT	YES
INLET SPUD DIA.	1 1/2"
COLOR	WHITE
COMMENTS	WITH EVERCLEAN®
	DIRECT-FED SIPHON JET ACTION
	TOP SPUD
	INCLUDE TOILET SEAT: 5901.100
*WC-2 IS NOT ADA COMPLIANT	

NAME	WATER CLOSET WC-1
MANUF.	SLOAN
MODEL	ROYAL 111 ESS-1.6
INTERNAL DES.	DIAPHRAGM
STYLE	EXPOSED
INLET SIZE	1"
TRIP MECH	HARD WIRED
	SENSOR ACTUATED
CONSUMPTION	1.6 GPF
TAIL PIECE SZ.	1 1/2"
COMMENTS	

NAME	WATER CLOSET WC-1 & WC-2
MANUF.	AMERICAN STANDARD
MODEL	COMMERCIAL TOILET SEAT
CONFIGUR	OPEN FRONT
	WITHOUT COVER
MATERIAL	SOLID POLYPROPYLENE
	W/ ANTIMICROBIAL AGENT
SIZE	ELONGATED
HINGE TYPE	ELONGATED
ACTION	CHECK
CLASS	STANDARD COMMERCIAL
COLOR	WHITE

MARK NO.	L-1H
LOCATION	RESTROOMS
MANUFACTURER	AMERICAN STANDARD
MODEL	0355.012
DESCRIPTION	LUCERNE ™
	SELF-RIMMING
MATERIAL	VITREOUS CHINA
DIMENSIONS	20.5" x 18.25"
FAUCET HOLES	1 CENTER HOLE
DEPTH	6.5"
ADA COMPLIANT	YES
COLOR	WHITE
COMMENTS	CUTOUT TEMPLATE SUPPLIED
	FRONT OVERFLOW
	INCLUDE ADA INSULATION
	PACKAGE FOR ALL EXPOSED PIPING

NAME	FAUCET L-1
MANUF.	SLOAN
MODEL	SF-2350-BAT-TEE-CP-0.5GPM-MLM-IR-FCT
BODY MAT.	CAST BRASS
FINISH	POLISHED CHROME
MAX FLOW	0.5 GPM
TEMPERING	MECHANICAL
CENTERS	ONE HOLE
MOUNTING	DECK
HANDLES	SENSOR, HARD WIRED
INLET	1/2" MALE SHANKS
SPOUT TYPE	RIGID
SPOUT OUTLET	AERATOR
OPERATION	NON COMPRESS. MANUAL
DRAIN	NONE

NAME	MOP SINK MS-1
MANUF.	FIAT
MODEL	MOLDED STONE
DESCRIPTION	CAST POLYMER
	WITH RIM GUARD
SHAPE	SQUARE
SIZE	24" x 24" x 10"D
TILING FL.	ON TWO SIDES
RIM GUARD	ON ALL SIDES
COLOR	WHITE
FAUCET	INCLUDE MODEL 830 AA
DRAIN	GRID WITH 3" OUTLET
COMMENTS	INCLUDE MOP BRACKET

NAME	HOSE BIBB HB-1
MANUF.	WOODFORD MANUF. COMPANY
MODEL	B65
MAX PRESS.	165 PSI
MAX TEMP	120 °F
CONNECTION	3/4" MALE HOSE
TEE KEY	YES
VOLTS/HERTZ	120/60
INLET	3/4" FEMALE THREADED
REMARKS	BRASS VALVE BODY
	CHROME FINISH

NAME	WATER HEATER WH-1
MANUF.	AO SMITH
MODEL	ENT-50
TYPE	ELECTRIC; 50 GALLONS
HEAT RECOVERY	90 °F @ 21 GPH
KW	9.0
WATER CONNECTION	3/4"
DIMENSIONS	
VOLTS/HERTZ/PHASE	240V/60/1
COMMENTS	MAX TEMP SETTING: 120

DRAIN SCHEDULE

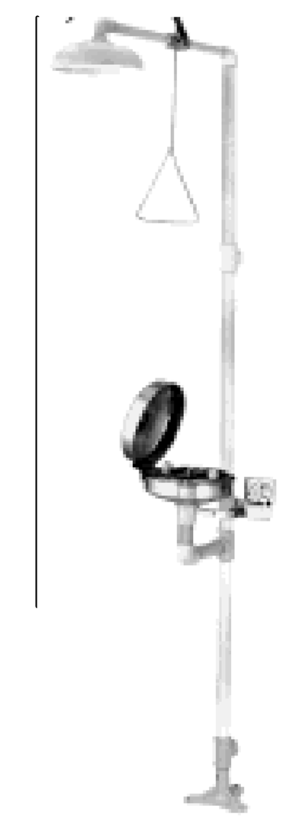
FIXTURE I.D.	MANUFACTURER	MODEL & (#) NO.	SIZE
FD-1	ZURN	Z300 FLOOR DRAIN	3"
		INC. TRAP GUARD BY PROSET SYSTEMS	
		MODEL TG33	
FD-2	ZURN	Z300 FLOOR DRAIN W/ FUNNEL	3"
		INC. TRAP GUARD BY PROSET SYSTEMS	
		MODEL TG33	
CO-1	ZURN	Z1400 CLEAN OUT	3"
TD-1	ZURN	ZXXX	8'x6" 4" OUTLET
YCO-1	ZURN	YARD CLEAN OUT	4"

NAME	BOTTLE FILLER, BF-1
MANUF.	ELKAY
MODEL	LZWSM8K
DESCRIPTION	BOTTLE FILLER
	WALL MOUNTED
CABINET	SINGLE LEVEL
BUBBLER	N/A
SUPPLY	3/8" WITH VALVE
FILTER	ONE FILTER
DRAIN	GRID WITH TRAP
COOLING SYS.	ELECTRIC
CAPACITY	GPH
SUPPORT	TYPE II CARRIER

NAME	WATER HEATER WH-1
MANUF.	AO SMITH
MODEL	DSE-40A
TYPE	ELECTRIC; 40 GALLONS
HEAT RECOVERY	100 °F @ 37 GPH
KW	9.0
WATER CONNECTION	3/4"
DIMENSIONS	54.75"H x 22" Ø
VOLTS/HERTZ/PHASE	208/60/3; FLA: 25A
COMMENTS	MAX TEMP SETTING: 110

NAME	KITCHEN SINK KS-1
MANUF.	DAYTON
MODEL	DXUH3118
DESCRIPTION	DOUBLE-BOWL RESIDENTIAL
	COUNTER-MOUNTING
	STAINLESS-STEEL
OVERALL DIM.	31.75" x 18.25"
METAL THICK.	18 GAUGE
BOWL SIZE	14"x15.75"x8" DEEP
HOLE PUNCH.	FOUR

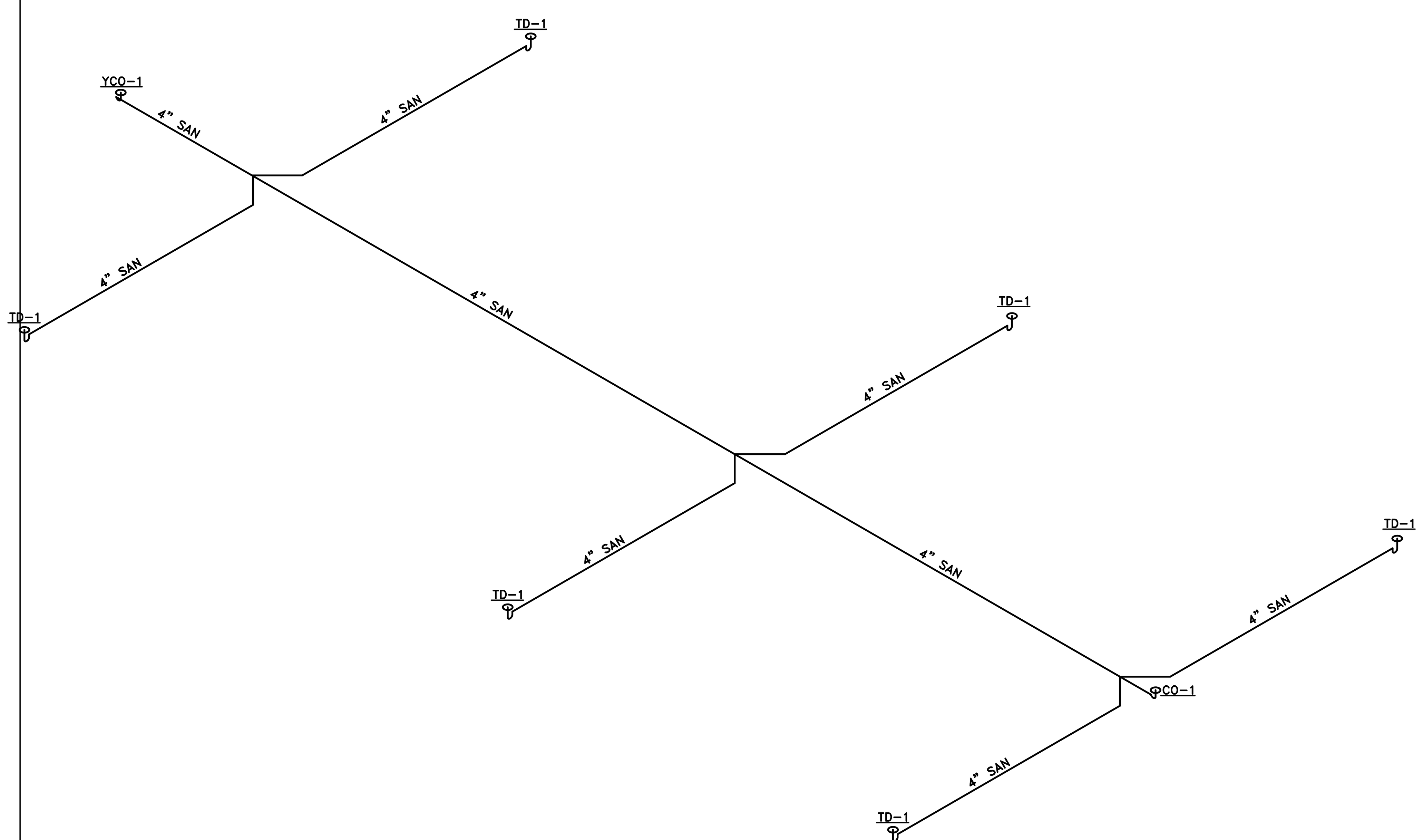
NAME	FAUCET, KS-1
MANUF.	DELTA
MODEL	400-DST
BODY MAT.	CAST BRASS
FINISH	POLISHED CHROME
MAX FLOW	1.8 GPM
MIXING VALVE	SINGLE CONTROL
CENTERS	4-HOLE
MOUNTING	DECK
HANDLES	LEVER
INLET	3/8" COMPRESS. CON.
SPOUT TYPE	SWING SOLID BRASS
SPOUT OUTLET	SWIVEL
VACUUM BREAK.	NOT REQUIRED
OPERATION	NON COMPRESS. MANUAL



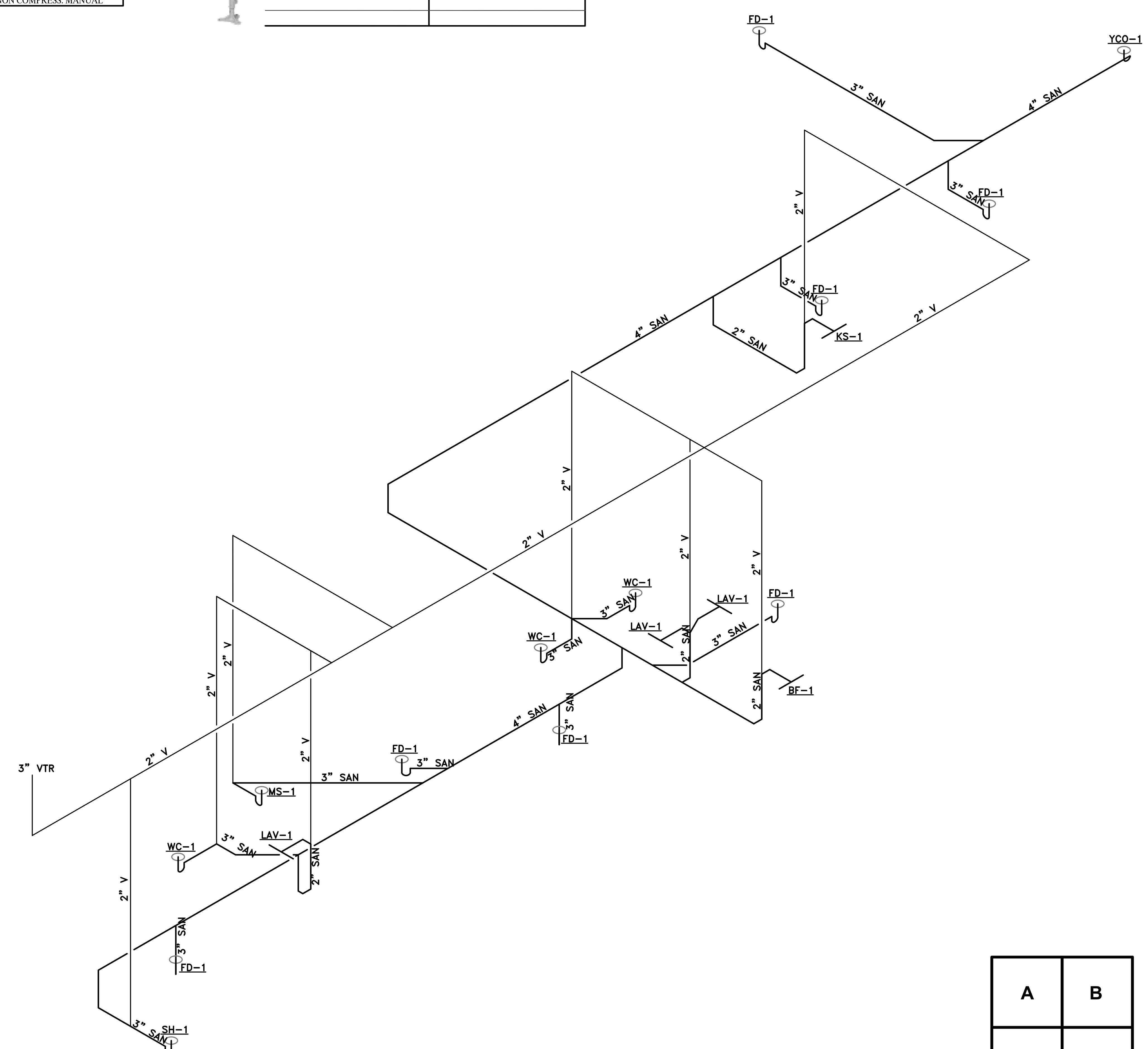
MARK NO.	EEWS-1
NAME/SERVICE	EMERGENCY EYEWASH
LOCATION	PLANT FLOOR
MANUFACTURER	BRADLEY CORP
MODEL	S-19-310DC
MOUNTING	FLOOR
CAPACITY	NOT LESS THAN 20 GPM
SUPPLY PIPE SIZE	1 1/4"
MAT. OF CONSTRUCTION	GALVANIZED STEEL
CONTROL VALVE ACTUATOR	PULL CHAIN
SHOWER HEAD SIZE	10"
SHOWER HEAD MOC	IMPACT-RESISTANT PLASTIC
BOWL SIZE	10"
BOWL MOC	STAINLESS STEEL
EYEWASH VALVE	1/2" STAY-OPEN BALL VALVE
COMMENTS	

HAND HELD/ SLIDE BAR PL-404-MO_SHR-01

	MARK NO.	SHOWER HEAD
	MANUFACTURER	MOEN
	MODEL	3670EP; A725
GENERAL	FUNCTION	4-SETTINGS
	FLOW	1.75 GPM (WATERSENSE CERT.)
	TYPE	HAND HELD SHOWER HEAD
	FINISH	POLISHED CHROME
	REMARKS	NON POSITIVE SHUTOFF DROP EL WALL
		CONNECTION; ADA COMPLIANT



RISER DIAGRAM
NOT TO SCALE



A	B
C	D

N

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REVISIONS: #	Date	Desc.

100% CONSTRUCTION DOCUMENTS

PROJECT: 24020
DATE: 04.22.2024
DRAWN BY: DAE

SHEET NAME

PLUMBING SCHEDULES AND RISERS

P002

DOMESTIC WATER PIPING

1.1 COPPER TUBE AND FITTINGS

A. ASTM B 88, TYPE L (ASTM B 88M, TYPE B) HARD COPPER TUBE, WATER TUBE, DRAWN TEMPER WITH SOLDER OR PUSH-ON JOINT FITTINGS, BRONZE FLANGES, COPPER UNIONS WITH EPDM-RUBBER O-RING SEALS AND GROOVED-END FITTINGS AND COUPLINGS.

B. ASTM B 88, TYPE K (ASTM B 88M, TYPE A), SOFT COPPER TUBE, WATER TUBE, ANNEALED TEMPER WITH

WROUGHT-COPPER PRESSURE FITTINGS OR PRESSURE-SEAL-JOINT FITTINGS WITH EPDM-RUBBER O-RING SEALS.

1.2 PIPING JOINING MATERIALS

A. PIPE-FLANGE GASKET MATERIALS SHALL BE, NONMETALLIC AND ASBESTOS FREE, FULL-FACE OR RING TYPE.

B. METAL PIPE-FLANGE BOLTS AND NUTS ARE CARBON STEEL.

C. SOLDER FILLER METALS SHALL BE LEAD FREE ALLOYS WITH WATER-FLUSHABLE FLUX.

1.3 TRANSITION FITTINGS

A. TRANSITION FITTING SHALL BE THE SAME SIZE, PRESSURE RATING AND END CONNECTIONS AS THE ADJOINING PIPES.

1.4 DIELECTRIC FITTINGS

A. SEPARATE DISSIMILAR PIPE MATERIALS WITH NONCONDUCTIVE INSULATING MATERIAL THAT IS COMPATIBLE WITH THE FLUID AND ITS CHARACTERISTICS.

1.5 FLEXIBLE CONNECTORS

A. CORRUGATED-BRONZE TUBING WITH BRONZE WIRE-BRAID COVERING AND ENDS BRAZED TO INNER TUBING, MINIMUM OF 200 PSIG WORKING PRESSURE AND PLAIN ENDS.

B. CORRUGATED-STAINLESS-STEEL TUBING WITH STAINLESS-STEEL WIRE-BRAID COVERING AND ENDS WELDED TO INNER TUBING, MINIMUM OF 200 PSIG WORKING PRESSURE AND THREADED OR FLANGED ENDS.

1.10 PIPING INSTALLATION

A. INSTALL SHUTOFF VALVE IMMEDIATELY UPSTREAM OF EACH DIELECTRIC FITTING.

B. INSTALL UNIONS IN COPPER TUBING AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT, MACHINE, AND SPECIALTY.

C. IDENTIFY ALL PIPING USING PIPE LABELS.

1.11 HANGER AND SUPPORT INSTALLATION

A. INSTALL MSS TYPE 8 OR 42 CLAMPS FOR VERTICAL PIPING.

B. INSTALL MSS TYPE 1, ADJUSTABLE STEEL CLEVIS HANGERS FOR PIPING RUNS LESS THAN 100 FEET.

C. INSTALL MSS TYPE 43 ADJUSTABLE ROLLER HANGERS OR MSS TYPE 49 SPRING CUSHION ROLLS FOR PIPING RUNS GREATER THAN 100 FEET.

D. INSTALL MSS TYPE 44 PIPE ROLLS FOR MULTIPLE, STRAIGHT, HORIZONTAL PIPE RUNS 100 FEET OR LONGER. SUPPORT PIPE ROLLS ON TRAPEZE.

E. BASE OF VERTICAL PIPING: MSS TYPE 52, SPRING HANGERS.

F. SUPPORT VERTICAL PIPING AND TUBING AT BASE AND AT EACH FLOOR.

G. ROD DIAMETER MAY BE REDUCED ONE SIZE FOR DOUBLE-ROD HANGERS, TO A MINIMUM OF 3/8 INCH.

1.12 FIELD QUALITY CONTROL

A. PERFORM TESTS AND INSPECTIONS.

B. COMPLY WITH AUTHORITIES HAVING JURISDICTION ON APPROPRIATE TESTING AND INSPECTIONS. PREPARE INSPECTION REPORTS AS REQUIRED.

C. PIPING TESTS:

1. FILL DOMESTIC WATER PIPING. CHECK COMPONENTS TO DETERMINE THAT THEY ARE NOT AIR BOUND AND THAT PIPING IS FULL OF WATER.
2. TEST FOR LEAKS AND DEFECTS IN NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED. IF TESTING IS PERFORMED IN SEGMENTS, SUBMIT A SEPARATE REPORT FOR EACH TEST, COMPLETE WITH DIAGRAM OF PORTION OF PIPING TESTED.
3. LEAVE NEW, ALTERED, EXTENDED, OR REPLACED DOMESTIC WATER PIPING UNCOVERED AND UNCONCEALED UNTIL IT HAS BEEN TESTED AND APPROVED. EXPOSE WORK THAT WAS COVERED OR CONCEALED BEFORE IT WAS TESTED.
4. CAP AND SUBJECT PIPING TO STATIC WATER PRESSURE OF 50 PSIG ABOVE OPERATING PRESSURE, WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS. ISOLATE TEST SOURCE AND ALLOW TO STAND FOR FOUR HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.
5. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING UNTIL ACCEPTABLE RESULTS ARE OBTAINED.
6. PREPARE REPORTS FOR TESTS AND FOR CORRECTIVE ACTION REQUIRED.

D. DOMESTIC WATER PIPING WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.

E. PREPARE TEST AND INSPECTION REPORTS.

F. PERFORM ADJUSTMENTS AS NECESSARY TO ALL VALVES, HYDRANTS, HOSE BIBBS.

G. CLEAN AND DISINFECT POTABLE AND NON-POTABLE DOMESTIC WATER PIPING PER AWWA PROCEDURES.

SANITARY WASTE AND VENT PIPING

1.1 PVC PIPE AND FITTINGS

A. SCHEDULE 40 CELLULAR-CORE PVC PIPE WITH CORRESPONDING ADHESIVE PRIMER AND SOLVENT CEMENT.

1.2 SPECIALTY PIPE FITTINGS

A. TRANSITION COUPLINGS:

1. FITTING OR DEVICE FOR JOINING PIPING WITH SMALL DIFFERENCES IN OD'S OR OF DIFFERENT MATERIALS. INCLUDE END CONNECTIONS SAME SIZE AS AND COMPATIBLE WITH PIPES TO BE JOINED.
2. FITTING-TYPE TRANSITION COUPLINGS SHALL BE MANUFACTURED PIPING COUPLING OR SPECIFIED PIPING SYSTEM FITTING.
3. SHIELDED, NONPRESSURE TRANSITION COUPLINGS SHALL BE ELASTOMERIC OR RUBBER SLEEVE WITH FULL-LENGTH, CORROSION-RESISTANT OUTER SHIELD AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.
4. PRESSURE TRANSITION COUPLINGS SHALL BE METAL SLEEVE-TYPE AND THE SAME MATERIAL AND JOINING ENDS AS THE PIPE.

1.3 PERFORMANCE REQUIREMENTS

A. MINIMUM WORKING PRESSURE FOR SOIL, WASTE AND VENT PIPING SHALL BE 10-FOOT HEAD OF WATER.

1.4 PIPING INSTALLATION

A. INSTALL PIPING FREE OF SAGS AND BENDS.

B. INSTALL ONLY SANITARY FITTINGS APPROPRIATE TO THE APPLICATION.

C. INSTALL BUILDING SANITARY DRAIN: WITH A 2 PERCENT DOWNWARD IN DIRECTION OF FLOW FOR PIPING NPS 3 AND SMALLER AND 1 PERCENT DOWNWARD IN DIRECTION OF FLOW FOR PIPING NPS 4 AND LARGER.

D. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT IS INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION.

E. INSTALL SLEEVES FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS.

1.5 SPECIALTY PIPE FITTING INSTALLATION

A. INSTALL TRANSITION COUPLINGS WHEN THERE ARE SMALL DIFFERENCES IN OD'S, IN SHIELDED NONPRESSURE DRAINAGE PIPING, AND FORCE MAIN PIPING.

B. INSTALL DIELECTRIC FITTINGS IN PIPING AT CONNECTIONS OF DISSIMILAR METAL PIPING AND TUBING.

1.6 HANGER AND SUPPORT INSTALLATION

A. INSTALL CARBON-STEEL PIPE HANGERS FOR HORIZONTAL PIPING IN NONCORROSIVE ENVIRONMENTS.

B. INSTALL FIBERGLASS PIPE HANGERS FOR HORIZONTAL PIPING IN CORROSIVE ENVIRONMENTS.

C. SUPPORT HORIZONTAL PIPING AND TUBING WITHIN 12 INCHES OF EACH FITTING AND COUPLING.

D. SUPPORT VERTICAL PIPING AND TUBING AT BASE AND AT EACH FLOOR.

E. ROD DIAMETER MAY BE REDUCED ONE SIZE FOR DOUBLE-ROD HANGERS, WITH 3/8-INCH MINIMUM RODS.

1.7 CONNECTIONS

A. CONNECT SANITARY AND VENT PIPING TO ALL INDICATED FIXTURES.

B. CONNECT WITH UNION IN PIPING THAT IS NPS 2 AND SMALLER.

C. CONNECT WITH FLANGES IN PIPING THAT NPS 2 ½ AND LARGER.

1.8 TESTING

A. DURING INSTALLATION, NOTIFY AUTHORITIES HAVING JURISDICTION AT LEAST 24 HOURS BEFORE INSPECTION MUST BE MADE. PERFORM ALL TESTS SPECIFIED BY AND IN THE PRESENCE OF AUTHORITIES HAVING JURISDICTION.

B. PREPARE INSPECTION REPORTS AND HAVE THEM SIGNED BY AUTHORITIES HAVING JURISDICTION.

C. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING UNTIL PIPES HAVE PASSING RESULTS.

1.9 CLEANING AND PROTECTION

A. STORE AND PROTECT ALL MATERIALS DURING THE ENTIRE CONSTRUCTION PROCESS.

PLUMBING IDENTIFICATION

1.1 EQUIPMENT LABELS

A. METAL LABELS FOR EQUIPMENT SHALL BE A MINIMUM OF 2.5"X 0.75"X 0.025" THICK STAINLESS STEEL WITH PREDRILLED OR STAMPED HOLES FOR ATTACHMENT AND STAINLESS STEEL RIVETS OR SELF-TAPPING SCREWS. LETTER SIZING SHALL BE A MINIMUM OF 0.5" TALL. AT A MINIMUM THE LABEL SHALL INCLUDE THE UNIQUE EQUIPMENT NUMBER DESIGNATION AS SHOWN ON THE DRAWINGS OR SPECIFICATIONS. PROVIDE AN EQUIPMENT SCHEDULE FOR THE OWNER.

1.2 WARNING SIGNS AND LABELS

A. WARNING SIGNS AND LABELS SHALL BE MULTILAYERED, MULTICOLORED, PLASTIC LABELS FOR MECHANICAL ENGRAVING, **1/8"** THICK, AND HAVE PREDRILLED HOLES FOR ATTACHMENT HARDWARE. LETTERING SHALL BE RED WITH A WHITE BACKGROUND. THE MINIMUM SIZE SHALL BE 2.5" X 0.75" WITH LETTERING A MINIMUM 0.5" TALL. FASTENERS STALL BE STAINLESS STEEL RIVETS OR SELF-TAPPING SCREWS. INFORMATION SHOULD INCLUDE CAUTION AND WARNING INFORMATION AND EMERGENCY INSTRUCTIONS.

1.3 PIPE LABELS

A. ALL PIPE LABELS SHALL BE PREPRINTED, COLOR-CODED WITH LETTERING INDICATING SERVICE AND FLOW DIRECTION. LETTERING SIZE SHALL BE AT LEAST 1.5" TALL.

B. SELF-ADHESIVE PIPE LABELS SHALL BE PRINTED PLASTIC WITH CONTACT-TYPE, PERMANENT-ADHESIVE BACKING.

1.4 VALVE TAGS

A. VALVE TAGS SHALL BE STAINLESS STEEL, 0.025" THICK WITH PREDRILLED OR STAMPED HOLES FOR BRASS WIRE-LINK, BEADED CHAIN OR S-HOOK AND STAMPED OR ENGRAVED WITH 0.25" LETTERS FOR PIPING SYSTEM ABBREVIATION AND 0.5" NUMBERS. VALVE TAGS SHALL BE 2" ROUND WITH BLACK LETTERING. PROVIDE A VALVE SCHEDULE FOR OWNER.

1.5 WARNING TAGS

A. WARNING TAGS SHALL BE A MINIMUM OF 3"X5.25" AND PREPRINTED OR PARTIALLY PREPRINTED, ACCIDENT-PREVENTION TAGS, OF PLASTICIZED CARD STOCK WITH MATTE FINISH SUITABLE FOR WRITING. INCLUDE BRASS GROMMET AND WIRES FOR FASTENING. WRITING SHALL BE LARGE-SIZE WITH WORDS SUCH AS "DANGER" OR "CAUTION". USE BLACK LETTERING WITH A YELLOW BACKGROUND.

1.6 INSTALLATION

A. ENSURE THAT SURFACES ARE CLEAN AND READY TO ACCEPT LABEL.

B. LOCATE LABELS WHERE ACCESSIBLE AND VISIBLE.

C. LOCATE PIPE LABELS WHERE PIPING IS EXPOSED OR ABOVE ACCESSIBLE CEILINGS IN FINISHED SPACES. LOCATE A MAXIMUM OF 50' INTERVALS AND 25' IF IN CONGESTED AREAS. ALWAYS LOCATE NEAR EQUIPMENT AND DEVICES.

D. PIPE LABEL COLOR SCHEDULE:

1. LOW-PRESSURE, COMPRESSED-AIR PIPING WITH WHITE BACKGROUND AND BLACK LETTERING
2. MEDIUM-PRESSURE, COMPRESSED-AIR PIPING WITH WHITE BACKGROUND AND BLACK LETTERING.
3. DOMESTIC WATER PIPING WITH WHITE BACKGROUND AND BLUE LETTERING.
4. SANITARY WASTE PIPING WITH BLACK BACKGROUND AND WHITE LETTERING.

E. ON WARNING TAGS WRITE REQUIRED MESSAGE ON, AND ATTACH WARNING TAGS TO, EQUIPMENT AND OTHER ITEMS REQUIRED BY OWNER.

PIPING INSULATION

1.1 INSULATION MATERIALS

A. FLEXIBLE ELASTOMERIC INSULATION:

B. MINERAL-FIBER BLANKET INSULATION:

C. MINERAL-FIBER, PREFORMED PIPE INSULATION:

1.2 INSULATING CEMENTS

A. MINERAL-FIBER INSULATING CEMENT

B. EXPANDED OR EXFOLIATED VERMICULITE INSULATING CEMENT

C. MINERAL-FIBER, HYDRAULIC-SETTING INSULATING AND FINISHING CEMENT

1.3 ADHESIVES

A. MATERIALS SHALL BE COMPATIBLE WITH INSULATION MATERIALS, JACKETS, AND SUBSTRATES AND FOR BONDING INSULATION TO ITSELF AND TO SURFACES TO BE INSULATED, UNLESS OTHERWISE INDICATED.

B. FLEXIBLE ELASTOMERIC ADHESIVE: COMPLY WITH MIL-A-24179A, TYPE II, CLASS I.

C. MINERAL-FIBER ADHESIVE: COMPLY WITH MIL-A-3316C, CLASS 2, GRADE A.

D. ASJ ADHESIVE, AND FSK JACKET ADHESIVE: COMPLY WITH MIL-A-3316C, CLASS 2, GRADE A FOR BONDING INSULATION JACKET LAP SEAMS AND JOINTS.

E. PVC JACKET ADHESIVE: COMPATIBLE WITH PVC JACKET.

1.4 SEALANTS

A. ASJ FLASHING SEALANTS AND PVC JACKET FLASHING SEALANTS SHALL BE WHITE WITH FIRE AND WATER RESISTANT ELASTOMERIC AND SERVICE TEMPERATURE RATING OF -40 TO +250 DEG F.

1.5 FACTORY-APPLIED JACKETS

A. ASJ IS WHITE WITH KRAFT-PAPER AND FIBERGLASS-REINFORCED SCRIM WITH ALUMINUM-FOIL BACKING.

B. ASJ-SSL IS SELF-SEALING ASJ WITH PRESSURE-SENSITIVE, ACRYLIC-BASED ADHESIVE COVERED BY A REMOVABLE PROTECTIVE STRIP.

1.6 FIELD-APPLIED JACKETS

A. PVC JACKET SHALL BE HIGH-IMPACT-RESISTANT, UV-RESISTANT. FINISH COLOR SHALL BE CHOSEN BY THE OWNER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

1.7 TAPES

A. ASJ TAPE SHALL BE 3" WIDE WHITE VAPOR-RETARDER TAPE MATCHING FACTORY-APPLIED JACKET WITH ACRYLIC ADHESIVE; 11.5 MILS THICK WITH A TENSILE STRENGTH OF 40LBF/INCH WIDTH AND USE PRECUT DISKS OR SQUARES.

B. PVC TAPE SHALL BE 2" WIDE WHITE VAPOR-RETARDER TAPE MATCHING FIELD-APPLIED PVC JACKET WITH ACRYLIC ADHESIVE AND SUITABLE FOR INDOOR AND OUTDOOR APPLICATIONS; 6 MILS THICK WITH A TENSILE STRENGTH OF 18 LBF/INCH IN WIDTH.

1.8 SECUREMENTS

A. 304 STAINLESS STEEL BANDS 0.015", ½" WIDE WITH WING SEAL.

B. STAPLES SHALL BE OUTWARD-CLINCHING INSULATION STAPLES, NOMINAL 3/4-INCH- WIDE, STAINLESS STEEL.

C. WIRE SHALL BE 0.062-INCH SOFT-ANNEALED, STAINLESS STEEL.

1.9 INSTALLATION

A. REVIEW CONDITIONS OF SUBSTRATES BEFORE BEGINNING INSTALLATION FOR COMPLIANCE WITH TOLERANCES, ETC.

B. INSTALL ACCESSORIES COMPATIBLE WITH INSULATION MATERIALS AND SUITABLE FOR THE SERVICE.

C. DO NOT WELD BRACKETS, CLIPS, OR OTHER ATTACHMENT DEVICES TO PIPING, FITTINGS, AND SPECIALTIES.

D. APPLY ADHESIVES, MASTICS, AND SEALANTS AT MANUFACTURER'S RECOMMENDED COVERAGE RATE AND WET AND DRY FILM THICKNESSES.

E. INSTALL INSULATION WITH FACTORY-APPLIED JACKETS PER MANUFACTURER'S RECOMMENDATIONS.

F. FINISH INSTALLATION WITH SYSTEMS AT OPERATING CONDITIONS. REPAIR JOINT SEPARATIONS AND CRACKING DUE TO THERMAL MOVEMENT.

G. REPAIR DAMAGED INSULATION FACINGS BY APPLYING SAME FACING MATERIAL OVER DAMAGED AREAS. EXTEND PATCHES AT LEAST 4 INCHES BEYOND DAMAGED AREAS. ADHERE, STAPLE, AND SEAL PATCHES SIMILAR TO BUTT JOINTS.

H. FOR ABOVE-AMBIENT SERVICES, DO NOT INSTALL INSULATION TO VIBRATION-CONTROL DEVICES, TESTING AGENCY LABELS AND STAMPS, NAMEPLATES AND DATA PLATES AND CLEANOUTS.

I. INSTALL INSULATION ON FITTINGS, VALVES, STRAINERS, FLANGES, AND UNIONS.

J. INSULATE INSTRUMENT CONNECTIONS FOR THERMOMETERS, PRESSURE GAGES, PRESSURE TEMPERATURE TAPS, TEST CONNECTIONS, FLOW METERS, SENSORS, SWITCHES, AND TRANSMITTERS ON INSULATED PIPES. SHAPE INSULATION AT THESE CONNECTIONS BY TAPERING IT TO AND AROUND THE CONNECTION WITH INSULATING CEMENT AND FINISH WITH FINISHING CEMENT, MASTIC, AND FLASHING SEALANT.

1.10 PENETRATIONS

A. INSTALL INSULATION CONTINUOUSLY THROUGH ROOF PENETRATIONS AND ABOVE GROUND EXTERIOR WALL PENETRATIONS. SEAL PENETRATIONS WITH FLASHING SEALANT. IF INSULATION IS ONLY REQUIRED INDOORS THEN TERMINATE INSULATION ABOVE ROOF SURFACE. IF REQUIRED OUTDOOR AS WELL THEN INSTALL INSULATION TIGHTLY JOINED TO INDOOR INSULATION AND SEAL THE JOINT WITH SEALANT.

B. INSTALL INSULATION AT UNDERGROUND EXTERIOR WALL PENETRATIONS AND TERMINATE INSULATION FLUSH WITH SLEEVE SEAL. SEAL TERMINATIONS WITH FLASHING SEALANT.

C. INSTALL INSULATION CONTINUOUSLY THROUGH WALLS AND PARTITIONS.

D. INSTALL INSULATION CONTINUOUSLY THROUGH FIRE-RATED WALL PARTITION PENETRATIONS AND FLOORS. SEAL WITH FIRE RATED SEALANT.

1.11 FIELD-APPLIED JACKET INSTALLATION

A. WHERE PVC JACKETS ARE INDICATED, INSTALL WITH 1-INCH (25-MM) OVERLAP AT LONGITUDINAL SEAMS AND END JOINTS. SEAL WITH MANUFACTURER'S RECOMMENDED ADHESIVE.

B. WHERE METAL JACKETS ARE INDICATED, INSTALL WITH 2-INCH (50-MM) OVERLAP AT LONGITUDINAL SEAMS AND END JOINTS. OVERLAP LONGITUDINAL SEAMS ARRANGED TO SHED WATER. SEAL END JOINTS WITH WEATHERPROOF SEALANT RECOMMENDED BY INSULATION MANUFACTURER. SECURE JACKET WITH STAINLESS-STEEL BANDS 12 INCHES (300 MM) O.C. AND AT END JOINTS.

1.12 FINISHES

A. INSULATION WITH ASJ SHALL HAVE TWO FINISH COATS OF FLAT ACRYLIC OVER A PRIMER THAT HAS A FUNGICIDAL AGENT.

B. FOR FLEXIBLE ELASTOMERIC THERMAL INSULATION APPLY TWO COATS OF MANUFACTURER'S RECOMMENDED PROTECTIVE COATING AFTER THE ADHESIVE HAS FULLY CURE.

C. DO NOT FIELD PAINT ALUMINUM OR STAINLESS-STEEL JACKETS.

1.13 FIELD QUALITY CONTROL

D. PERFORM TESTS AND INSPECTIONS. REPAIR ANY INSULATION THAT FAILS.

NATURAL GAS PIPING

	1" AND SMALLER	1" AND BIGGER
INDOOR, PRESSURE LESS THAN 0.5 PSIG	CORRUGATED STAINLESS STEEL TUBING WITH MECH. FITTINGS WITH SOCKET OR THREADED ENDS STEEL PIPING WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS	STEEL PIPING WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS
INDOOR, PRESSURE MORE THAN 0.5 PSIG but not more than 5 psig	CORRUGATED STAINLESS STEEL TUBING WITH MECH. FITTINGS WITH SOCKET OR THREADED ENDS STEEL PIPING WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS	STEEL PIPING WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS

1. JOIN DISSIMILAR MATERIALS WITH DIELECTRIC FITTINGS
3. INSTALL PIPING LEVEL AND PLUMB UNLESS INDICATED OTHERWISE AND WITH RIGHT ANGLES PARALLEL TO WALLS
4.INSTALL SCH. 40 PVC PIPE SLEEVES FOR PIPING PASSING THROUGH FLOORS, ROOFS, AND WALLS. INSTALL FLUSH EXCEPT IN MECHANICAL ROOMS AND THEN EXTEND 2" ABOVE THE FINISHED FLOOR.
5. IF APPLICABLE, MAINTAIN FIRE RATING AROUND PIPE PENETRATIONS

INTERIOR GAS PIPING SHALL BE SUPPORTED BY ROD HANGERS. HANGERS IN THE PIPE RUN SHALL BE 12" OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. HANGERS ARE DETAILED TO AVOID BENDING OF THE HANGERS AND THEIR ATTACHMENTS. PROVISIONS SHALL BE MADE TO ACCOMMODATE EXPECTED DEFLECTIONS.

DOMESTIC WATER PIPING

	2" AND SMALLER	2.5" AND BIGGER
UNDER-BUILDING-SLAB BUILDING SERVICE PIPING	SOFT COPPER TUBE - ASTM B 88, TYPE K (ASTM B 88M, TYPE A) - INSTALLED IN PE ENCASEMENT	MECHANICAL - JOINT, DUCTILE IRON PIPE; WITH MECHANICAL JOINTS PUSH-ON-JOINT, DUCTILE IRON PIPE WITH PUSH-ON-JOINT FITTINGS AND GASKETED JOINTS - INSTALLED IN PE ENCASEMENT PLAIN-END, DUCTILE-IRON PIPE; GROOVED-JOINT, DUCTILE-IRON-PIPE ACCESSORIES; AND GROOVED JOINTS - INSTALLED IN PE ENCASEMENT
UNDER-BUILDING-SLAB DOMESTIC WATER PIPING	HARD COPPER TUBE - ASTM B 88, TYPE L (ASTM B 88M, TYPE A)	
ABOVE GROUND DOMESTIC WATER PIPING	GALVANIZED-STEEL WITH GRAY-IRON WITH THREADED ENDS HARD COPPER TUBE - ASTM B 88, TYPE L (ASTM B 88M, TYPE A) PEX TUBE WITH CRIMPED JOINTS	GALVANIZED PIPE WITH TRHEADED OR GROOVED JOINTS HARD COPPER TUBE - ASTM B 88, TYPE L (ASTM B 88M, TYPE A)
FLEXIBLE CONNECTORS	CORRUGATED BRONZE TUBING WITH WIRE-BRAID COVERING; WORKING PRESSURE RATING OF 200 PSIG; PLAIN ENDS. CORRUGATED STAINLESS-STEEL TUBING WITH WIRE-BRAID COVERING; WORKING PRESSURE OF 200 PSIG WITH THREADED ENDS	CORRUGATED STAINLESS-STEEL TUBING WITH WIRE-BRAID COVERING; WORKING PRESSURE OF 200 PSIG WITH FLANGED ENDS

1. JOIN DISSIMILAR MATERIALS WITH DIELECTRIC FITTINGS
2. INSTALL FLEXIBLE CONNECTORS TO SUCTION AND DISCHARGE OF WATER PUMPS
3. INSTALL SUPPLY PIPING LEVEL AND PLUMB UNLESS INDICATED OTHERWISE AND WITH RIGHT ANGLES PARALLEL TO WALLS
4.INSTALL SCH. 40 PVC PIPE SLEEVES FOR PIPING PASSING THROUGH FLOORS, ROOFS, AND WALLS. INSTALL FLUSH EXCEPT IN MECHANICAL ROOMS AND THEN EXTEND 2" ABOVE THE FINISHED FLOOR.
5. IF APPLICABLE, MAINTAIN FIRE RATING AROUND PIPE PENETRATIONS

VALVES

	2" & SMALLER	**2 1/2" & BIGGER**
SHUT-OFF VALVE	BALL	BUTTERFLY
THROTTLING SERVICE	GLOBE OR BUTTERFLY	
HOT WATER - BALANCING	MEMORY STOP VALVE	
DRAIN DUTY	HOSE-END DRAIN VALVES	
COMPRESSED AIR	BRONZE OR BRASS - SOLDERED OR THREADED	IRON VALVES - THREADED OR FLANGED
	BALL - TWO OR THREE PIECE; FULL PORT BRASS OR BRONZE WITH BRASS TRIM	IRON, GROOVED BUTTERFLY - 300 CWP
	BRONZE LIFT CHECK - CLASS 125 WITH BRONZE DISC	IRON SWING CHECK VALVES - CLASS 250, WITH METAL OR NONMETALLIC-TO-METAL SEATS
	BRONZE SWING CHECK VALVE - CLASS 150, BRONZE DISC	IRON, GROOVED-END SWING CHECK VALVES - 300 CWP
	BRONZE GATE VALVES - CLASS 150, NON RISING STEM OR RISING STEM	IRON GATE VALVES - CLASS 250, NON-RISING STEM OR OS&Y
HOT & COLD WATER	BRONZE OR BRASS - SOLDERED OR THREADED	IRON VALVES - THREADED OR FLANGED
	BALL - TWO OR THREE PIECE; FULL PORT BRASS OR BRONZE WITH BRASS TRIM	IRON, GROOVED BUTTERFLY - 300 CWP
	BRONZE SWING CHECK VALVE - CLASS 150, BRONZE DISC	IRON SWING CHECK VALVES - CLASS 250, WITH METAL OR NONMETALLIC-TO-METAL SEATS
	BRONZE GATE VALVES - CLASS 150, NON RISING STEM OR RISING STEM	IRON, GROOVED-END SWING CHECK VALVES - 300 CWP
	BRONZE GLOBE VALVE - CLASS 125, BRONZE DISC	IRON GATE VALVES - CLASS 250, NON-RISING STEM OR OS&Y
		IRON GLOBE VALVE - CLASS 125

1. DO NOT ATTEMPT TO REPAIR DAMAGED VALVES
2. INSTALL VALVES TO ALLOW FOR SERVICE
3.INSTALL VALVE STEMS AT OR ABOVE CENTER OF HORIZONTAL PIPE
4. INSTALL TO ALLOW FOR FULL STEM MOVEMENT

SEWER AND VENT PIPING

	4" AND SMALLER	6" AND BIGGER
ABOVEGROUND SOIL AND WASTE PIPING	HUBLESS, CAST-IRON, CISPI COUPLINGS AND COUPLED JOINTS SOLID WALL PVC	HUBLESS, CAST-IRON, CISPI COUPLINGS AND COUPLED JOINTS SOLID WALL PVC
ABOVEGROUND VENT PIPING	HUBLESS, CAST-IRON, CISPI COUPLINGS AND COUPLED JOINTS SOLID WALL PVC	HUBLESS, CAST-IRON, CISPI COUPLINGS AND COUPLED JOINTS SOLID WALL PVC
UNDERGROUND SOIL AND WASTE PIPING	HUBLESS, CAST-IRON, CISPI COUPLINGS AND COUPLED JOINTS SOLID WALL PVC	HUBLESS, CAST-IRON, CISPI COUPLINGS AND COUPLED JOINTS SOLID WALL PVC
ABOVEGROUND SANITARY SEWER FORCE MAIN	GALVANIZED-STEEL PIPE , PRESSURE FITTINGS AND THREADED JOINTS	GROOVED-END, GALVANIZED-STEEL PIPE

1. JOIN DISSIMILAR MATERIALS WITH DIELECTRIC FITTINGS
2. IF APPLICABLE, MAINTAIN FIRE RATING AROUND PIPE PENETRATIONS

HANGER SPACING

	3/4"	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8	10-12	VERTICAL SPACING
COPPER TUBING	5' (3/8" ROD)	6' (3/8" ROD)	6' (3/8" ROD)	8' (3/8" ROD)	8' (3/8" ROD)	9' (1/2" ROD)	10' (1/2" ROD)	10' (1/2" ROD)	10' (5/8" ROD)	10' (3/4" ROD)		SUPPORT VERTICAL PIPE EVERY 10'
STEEL PIPING	7' (3/8" ROD)	7' (3/8" ROD)	7' (3/8" ROD)	9' (3/8" ROD)	10' (3/8" ROD)	11' (3/8" ROD)	12' (1/2" ROD)	12' (5/8" ROD)	12' (3/4" ROD)	12' (7/8" ROD)		SUPPORT VERTICAL PIPE EVERY 15'
PEX	32" (3/8" ROD)	32" (3/8" ROD)	32" (3/8" ROD)	32" (3/8" ROD)	32" (3/8" ROD)							SUPPORT VERTICAL PIPE EVERY 48"
CAST IRON DRAINAGE PIPING				5' (3/8" ROD)	5' (3/8" ROD)		5' (1/2" ROD)	5' (5/8" ROD)	5' (3/4" ROD)	5' (3/4" ROD)	5' (7/8" ROD)	SUPPORT VERICAL PIPE EVERY 15'
PVC DRAINAGE PIPING				4' (3/8" ROD)	4' (3/8" ROD)		4' (1/2" ROD)	4' (5/8" ROD)	4' (3/4" ROD)	4' (3/4" ROD)	4' (7/8" ROD)	SUPPORT VERICAL PIPE EVERY 4'
CORRUGATED STAINLESS STEEL TUBING	7' (3/8" ROD)											

1. SUPPORT ALL OTHER PIPING AND TUBING PER MSS SP-69

PIPING INSULATION SCHEDULE (INDOOR)

	SYSTEM	REFRIGERANT (SEE NOTE 4)	DOMESTIC HOT WATER & RETURN	DOMESTIC COLD WATER	HORIZONTAL STORM WATER (NOTE 3& 5)	CONDENSATE DRAIN
	FLUID TEMP. RANGE (°F)	40 & BELOW	100–300	40–75	40–75	40–55
	INSULATION TYPE	MF OR FE	MF OR FE	MF OR FE	MF OR FE	MF OR FE
	JACKET TYPE	FP	FP	FP	FP	FP
	VAPOR BARRIER REQ'D	–	–	–	–	–
INSULATION THICKNESS (IN)	RUNOUTS (NOTE 1& 2	1.0	0.5	–	–	–
	1" & LESS	1.0	0.5	0.5	–	0.5
	1.25" TO 2"	1.5	0.5	0.5	1.0	0.5
	2.5" TO 4"	1.5	1.0		1.0	0.5
	5" & ABOVE	–	–	–	–	–

NOTES:

1. INDOOR INSTALLATION – FLAME SPREAD INDEX OF 25 OR LESS AND SMOKE–DEVELOPED INDEX OF 50 OR LESS.
2. OUTDOOR INSTALLATION – FLAME SPREAD INDEX OF 75 OR LESS AND SMOKE–DEVELOPED INDEX OF 150 OR LESS.
3. MATERIALS MAY NOT CONTAIN ASBESTOS, LEAD, MERCURY OR MERCURY COMPOUNDS.
4. LONGITUDINAL SEAMS INSTALLED AT TOP AND BOTTOM OF HORIZONTAL RUNS.
5. MULTIPLE LAYERS SHALL HAVE STAGGERED SEAMS.
6. INSTALL WITH MINIMAL AMOUNT OF JOINTS.
7. AVOID COMPRESSING INSULATION TO 75% OR MORE OF ITS NOMINAL THICKNESS.
8. REPAIR ALL DAMAGED PRODUCT AS NECESSARY.
9. RUNOUTS NOT EXCEEDING 12 FEET IN LENGTH AND 2" PIPE TO INDIVIDUAL HVAC TERMINAL UNITS.
10. RUNOUTS THAT ARE NOT LARGER THAN 1" AND NON–CIRCULATING TO INDIVIDUAL PLUMBING UNITS.
11. INCLUDES ROOF DRAIN BODY AND VERTICAL RUN UP TO THE ROOF DRAIN BODY.
12. PROVIDE PVC JACKET ON EXTERIOR REFRIGERANT PIPING.
13. INSTALL 3'X3'X1" ARMAFLEX GLUED TO BOTTOM OF RD AND OFD BODY'S. (EXISTING & NEW

INSULATION TYPES

FE	FLEXIBLE ELASTOMERIC – COMPLYING WITH ASTM C 534, TYPE 1
MF	MINERAL FIBER BLANKET (FIBERGLASS) – COMPLYING WITH ASTM C 553, TYPE II AND ASTM C 1290, TYPE I MINERAL FIBER, PREFORMED PIPE INSULATION – COMPLYING WITH ASTM C 547, TYPE 1 , GRADE A WITH FACTORY APPLIED ASJ–SSL
FP	FOIL & KRAFT PAPER – COMPLYING WITH ASTM C 1136, TYPE II
SS	STAINLESS STEEL

ESCUTCHEONS

		TYPE
NEW PIPE		
	PROTRUDING FROM WALL	ONE-PIECE, DEEP PATTERN
	INSULATED PIPING	ONE-PIECE, STAMPED-STEEL
	BARE PIPE	ONE-PIECE CAST BRASS - POLISHED CHROME-PLATED FINISH
	FOR THE FLOOR	ONE-PIECE, FLOOR-PLATE
EXISTING PIPE		
	ALL PIPE	SPLIT-PLATE STAMPED STEEL WITH POLISHED CHROME-PLATED FINISH
	FOR THE FLOOR	SPLIT-CASTING, FLOOR-PLATE

1 REPLACE BROKEN AND DAMAGED ESCHTCHEONS AND FLOOR PLATES USING NEW MATERIALS
2 SUBMITT EACH TYPE FOR REVIEW

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JOHNSON COUNTY
RECYCLING CENTER
FRANKLIN, IN

HANNAH R. KIGER
No. 10505427

#	Date	Desc.

REVISIONS:

100% CONSTRUCTION DOCUMENTS
PROJECT: 24020
DATE: 04.22.2024
DRAWN BY: DAE

SHEET NAME
PLUMBING SPECIFICATIONS

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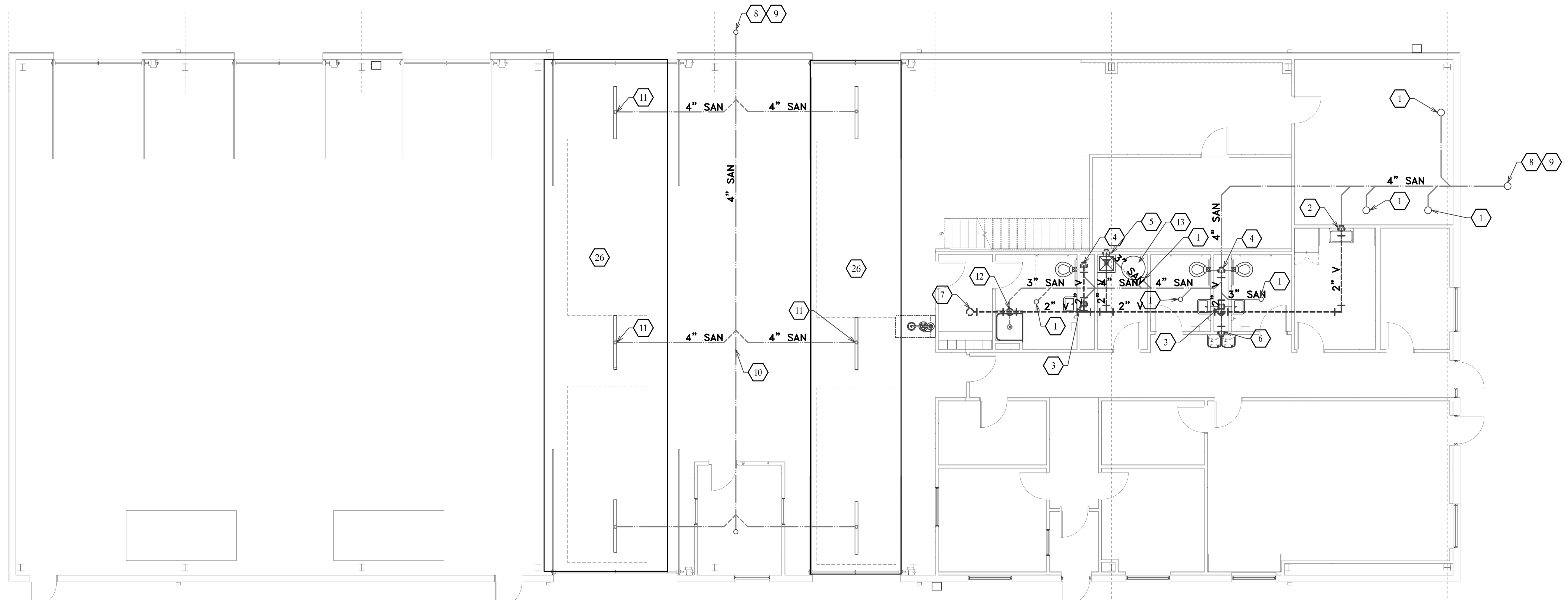
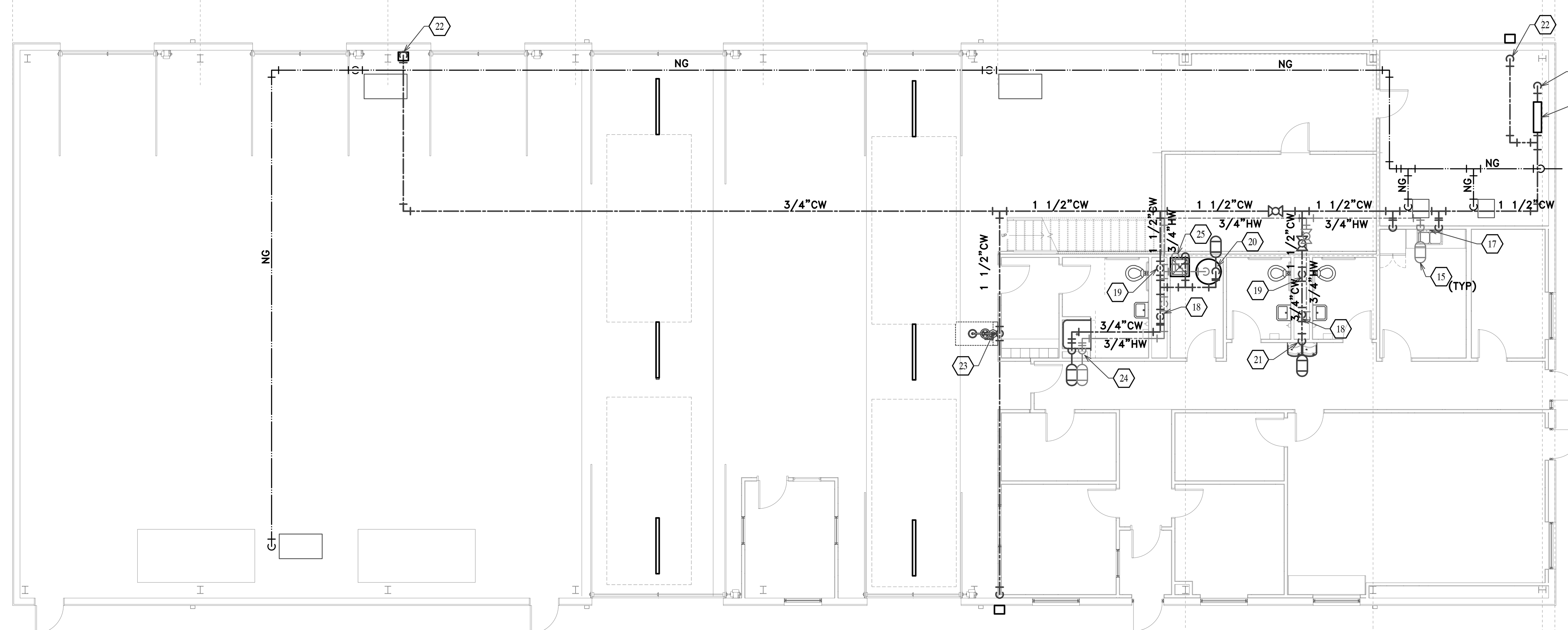


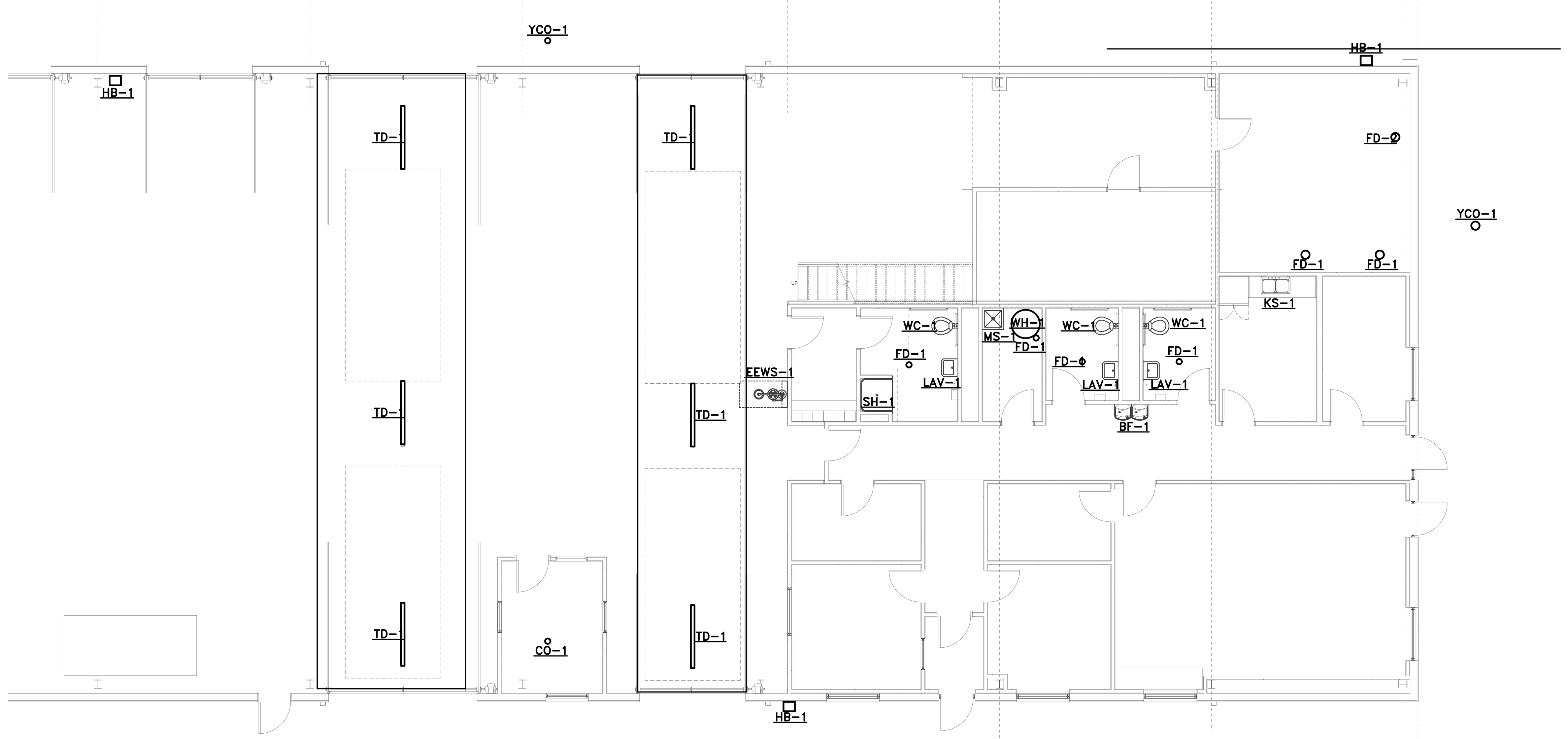
FIRST FLOOR - SANITARY SEWER AND VENT

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



FIRST FLOOR - DOMESTIC WATER SUPPLY PLAN

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



EQUIPMENT LAYOUT

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

(26) UNDER FLOOR RADIATION CRITERIA:

1. UNDER FLOOR TUBING SIMILAR TO WATTS RADIANT PEX-AL COILS.
2. MANIFOLD FOR A TOTAL OF (12) CIRCUITS. CIRCUITS SHALL COORDINATE WITH UNDER GROUND PIPING AND TRENCH DRAINS. SIMILAR TO WATTS CUSTOM TUBULAR MANIFOLDS - PEX COMPRESSION.
3. HEATING DENSITY SHALL BE FOR SNOW MELT.
4. BOILER AND BOILER SYSTEM SHALL BE SELECTED AND DESIGNED BY CONTRACTOR BASED ON RADIANT SYSTEM. BOILER SHALL BE GAS FIRED, 96% AFUE. CONDENSING BOILER PROVIDED WITH OUT SIDE AIR AND FLUE VENTS.

(#) KEYED PLAN NOTES:

1. 3" SANITARY SEWER FROM FLOOR DRAIN.
2. 2" SANITARY SEWER AND 2" VENT FROM BREAK ROOM SINK.
3. 2" SANITARY SEWER AND 2" VENT FROM LAVATORY.
4. 3" SANITARY SEWER AND 2" VENT FROM WATER CLOSETS.
5. 2" SANITARY SEWER AND 2" VENT FROM MOP SINK.
6. 2" SANITARY SEWER AND 2" VENT FROM ELECTRIC WATER COOLER.
7. 3" VENT TO ROOF.
8. 4" SANITARY SEWER FROM YARD CLEAN OUT.
9. 4" SANITARY SEWER CONTINUED ON CIVIL DRAWINGS. COORDINATE FINAL LOCATION.
10. 4" SANITARY SEWER FROM CLEAN OUT.
11. 4" SANITARY SEWER FROM TRENCH DRAIN.
12. 3" SANITARY SEWER AND 2" VENT FROM SHOWER.
13. ROUTE DRAIN FROM WATER HEATER TO FLOOR DRAIN.
14. 1 1/2" DOMESTIC COLD WATER CONTINUED ON CIVIL DRAWINGS. COORDINATE FINAL LOCATION.
15. WATER HAMMER ARRESTOR. SIZED AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. SIMILAR TO WATTS.
16. 1 1/2" COLD WATER UP TO REDUCING PRESSURE BACKFLOW PREVENTER.
17. 3/4" COLD WATER AND 3/4" HOT WATER DOWN TO SINK.
18. 3/4" COLD WATER AND 3/4" HOT WATER DOWN TO LAVATORY.
19. 1 1/2" COLD WATER DOWN TO FLUSH VALVE.
20. 3/4" COLD WATER AND 3/4" HOT WATER UP FROM WATER HEATER.
21. 3/4" COLD WATER DOWN TO ELECTRIC WATER COOLER.
22. 3/4" COLD WATER DOWN TO HOSE BIBB.
23. 1 1/2" COLD WATER DOWN TO EMERGENCY EYE WASH AND SHOWER.
24. 3/4" COLD WATER AND 3/4" HOT WATER DOWN TO SHOWER.
25. 3/4" COLD WATER AND 3/4" HOT WATER DOWN TO MOP SINK.

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JOHNSON COUNTY RECYCLING CENTER FRANKLIN, IN

HANNAH R. KIGER REGISTERED No. 10505427 STATE OF INDIANA PROFESSIONAL ENGINEER

REVISIONS:

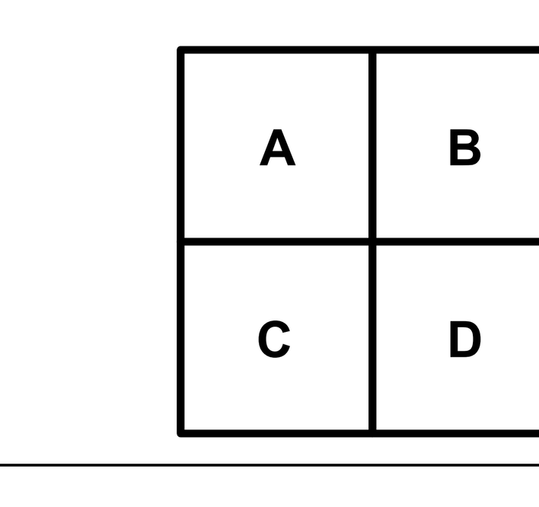
#	Date	Desc.

100% CONSTRUCTION DOCUMENTS

PROJECT:	24020
DATE:	04.22.2024
DRAWN BY:	DAE

SHEET NAME

FIRST FLOOR PLUMBING PLANS



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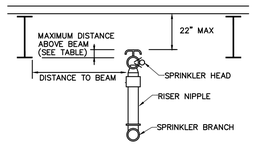

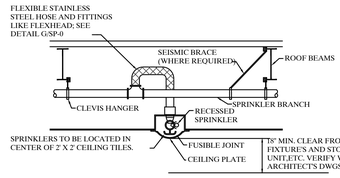

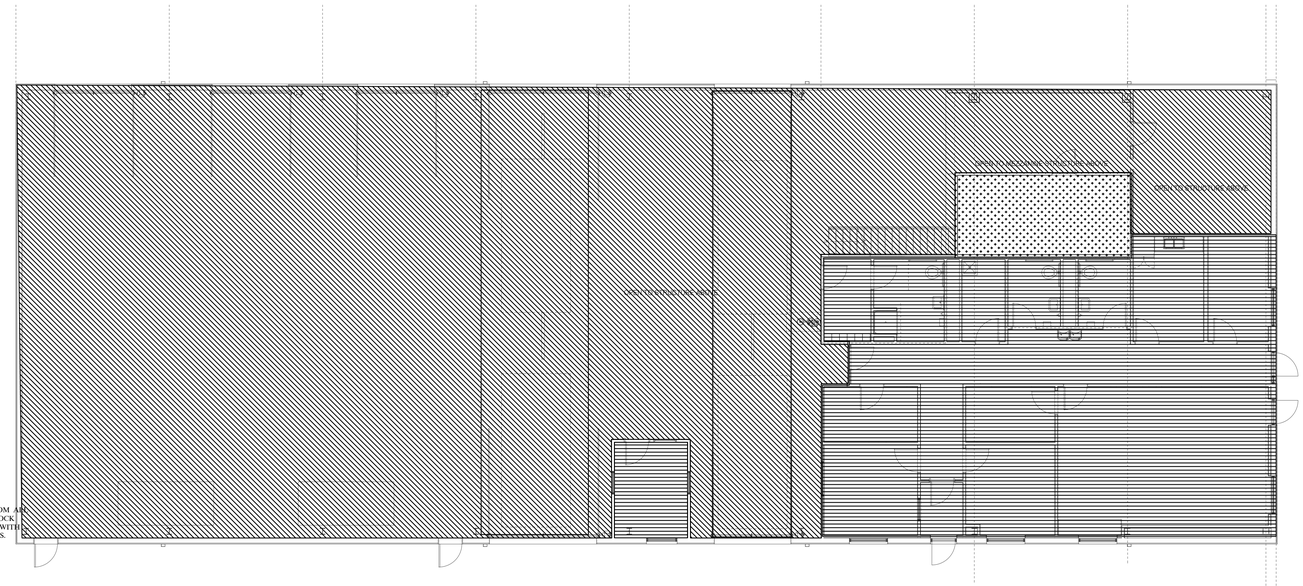

SPRINKLER SYSTEM NOTES

1. FIRE PROTECTION CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING AND FULLY FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS. ANY DEVIATIONS OR DISCREPANCIES BETWEEN THESE DRAWINGS AND ACTUAL EXISTING CONDITIONS SHALL BE PROMPTLY BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION. BID SHALL INCLUDE ALL COSTS DUE TO EXISTING CONDITIONS.
2. FIRE PROTECTION CONTRACTOR SHALL DESIGN AND INSTALL THE REQUIRED NEW SYSTEM OR MODIFICATIONS TO THE EXISTING HYDRAULICALLY CALCULATED WET PIPE SPRINKLER SYSTEM FOR THE ENTIRE DEMISED SPACE INDICATED HEREIN THESE DOCUMENTS. THE SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA-13 FOR OCCUPANCY LISTED, UNLESS NOTED OTHERWISE PROVIDING A SPRINKLER DENSITY OF .10 GPM SQFT OVER THE MOST REMOTE 1500 SQ.FT.
3. FIRE PROTECTION CONTRACTOR SHALL PREPARE AND FILE SPRINKLER SHOP DRAWINGS AND HYDRAULIC CALCULATIONS WITH VECTREN, THE INSURANCE RATING AGENCY, THE ARCHITECT, AND ALL STATE, LOCAL AND MUNICIPAL AUTHORITIES IN JURISDICTION, AND SHALL RECEIVE ALL NECESSARY APPROVALS PRIOR TO COMMENCEMENT OF ANY INSTALLATION WORK.
4. CONSTRUCTION DOCUMENTS FOR FIRE PROTECTION / SPRINKLER SYSTEMS ARE TO BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION BY SPRINKLER CONTRACTOR UNDER SEPARATE PERMIT APPLICATION. FIRE PROTECTION SYSTEMS ARE TO BE MAINTAINED IN ACCORDANCE WITH ORIGINAL INSTALLATION STANDARDS. REQUIRED FIRE PROTECTION SYSTEM SHALL BE MODIFIED AS NECESSARY TO MAINTAIN PROTECTION WHENEVER BUILDING IS ALTERED.
5. THE SPRINKLER CONTRACTOR SHALL SECURE FLOW TEST DATA FROM THE HYDRANT(S) NEAREST THE PROJECT SITE. IF RECENT FLOW TEST DATA IS NOTE AVAILABLE FROM LANDLORD OR CITY RECORDS, PERFORM THE NECESSARY FLOW TESTS AS REQUIRED BY NFPA STANDARDS TO DETERMINE THE CHARACTER OF THE AVAILABLE WATER SUPPLY, AND SUBMIT THAT DATA WITH THE CALCULATIONS.
6. NEW SPRINKLER HEADS SHALL BE APPROVED STANDARD TYPES, DESIGNED FOR LISTED COVERAGE. CHROME PLATED "TYCO", "GRINNELL", "VIKING", "STAR" OR EQUAL. SEE PLANS FOR SPRINKLER HEAD TYPES.
7. ALL SPRINKLER WORK SHALL COMPLY WITH ALL NFPA-13 RECOMMENDATIONS, AND SHALL BE PERFORMED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE OWNER, LOCAL FIRE RATING ORGANIZATION, FIRE AND/OR BUILDING DEPARTMENTS AND ALL AUTHORITIES IN JURISDICTION,
8. ALL SPRINKLER SYSTEM WORK SHALL BE SUBJECT TO THE ACCEPTANCE AND APPROVAL OF THE OWNER'S INSURERS AND SHALL BE DESIGNED TO SECURE THE BEST POSSIBLE INSURANCE RATES ON THE BUILDING AND IT'S CONTENTS.
9. FIRE PROTECTION CONTRACTOR SHALL FILE FOR, OBTAIN, AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS.
10. FIRE PROTECTION CONTRACTOR SHALL PROVIDE ALL REQUIRED TEST AND DRAIN CONNECTIONS, WHETHER OR NOT THEY ARE INDICATED HEREON THESE PLANS.
11. FIRE PROTECTION CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY ALARM INITIATING DEVICES AND SUPERVISORY DEVICES, AND SHALL COORDINATE THE ELECTRICAL REQUIREMENTS FOR THEM WITH THE E.C. AND/OR FIRE ALARM CONTRACTOR FOR THEIR CONNECTION TO THE FIRE ALARM SYSTEM.
12. UPON COMPLETION OF THE INSTALLATION, FIRE PROTECTION CONTRACTOR SHALL DEMONSTRATE TO THE SATISFACTION OF THE AUTHORITIES IN JURISDICTION AND THE OWNER'S INSURANCE UNDERWRITERS, THE OPERATION OF THE ENTIRE PROTECTION SYSTEM, INCLUDING ALL ALARM INITIATING DEVICES AND SYSTEM SUPERVISORY DEVICES.
13. PRIOR TO REQUESTING FINAL APPROVAL, THE SPRINKLER CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE CODE OFFICIAL INDICATING THAT THE FIRE PROTECTION SYSTEM HAS BEEN INSTALLED PER APPROVED PLANS, AND HAS BEEN TESTED AS REQUIRED, ANY EXCEPTIONS FROM THE DESIGN STANDARDS SHALL BE NOTED AND COPIES OF APPROVALS ATTACHED TO THE FORE MENTIONED WRITTEN STATEMENT.
14. ANY DUCTS OR OTHER OBSTRUCTIONS BELOW SPRINKLER HEADS WHICH EXCEED 4'-0" SHALL BE PROTECTED WITH A SEPARATE SPRINKLER LINE UNDER THE OBSTRUCTION.
15. COORDINATE INSTALLATION OF SPRINKLER WORK WITH ALL OTHER TRADES INVOLVED. PROVIDE ADEQUATE CLEARANCE AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE.
16. EARTHQUAKE BRACING TO BE PROVIDED AS PER CODE AND/OR AHJ.
17. ALL INSPECTOR'S TEST CONNECTIONS AND LOW POINT DRAINS TO BE INSTALLED PER CODES AND STANDARDS. ALL PIPING TO EXTERIOR TO BE GALVANIZED SCHEDULE 40.
18. ALL HANGERS TO BE INSTALLED PER NFPA AND OTHER APPLICABLE CODES, REFER TO DETAILS FOR ADDITIONAL INFORMATION.
19. PIPING TO BE PITCHED:

    WET PIPE SYSTEMS – LEVEL OR SLIGHT PITCH TO DRAIN.
    DRY PIPE SYSTEMS – MAINS & X-MAINS = 1/4" IN 10'
20. ALL SYSTEM COMPONENTS AND MATERIALS TO BE U.L LISTED AND INSTALLED PER NFPA AND MANUFACTURE'S LISTING.
21. PROVIDE SPARE HEAD CABINET WITH A MINIMUM OF 2 OF EACH TYPE OF SPRINKLER HEAD USED.
22. SYSTEM TO BE HYDROSTATICALLY TESTED @ 200PSI FOR 2 HOURS – PER N.F.P.A. #13.
23. LOW POINTS OF SYSTEM SHALL HAVE PROVISIONS FOR PROPER DRAINAGE.

DRAWINGS AND CALCULATIONS

1. THE SPRINKLER CONTRACTOR SHALL PREPARE SUBMITTAL DRAWINGS AND HYDRAULIC CALCULATIONS FOR THE SPACE IN ACCORDANCE WITH THE OWNER'S INSURANCE COMPANY, AND LOCAL FIRE AUTHORITY REQUIREMENTS.
2. THE SPRINKLER SYSTEM SHALL BE DESIGNED FOR LIGHT HAZARD OCCUPANCY, PROVIDING A DENSITY OF 0.1 GPM/SF OVER THE MOST REMOTE 1500 SQUARE FOOT AREA.
3. THE SPRINKLER CONTRACTOR SHALL SECURE FLOW TEST DATA FROM THE HYDRANT(S) NEAREST THE PROJECT SITE. IF RECENT FLOW TEST DATA IS NOTE AVAILABLE FROM LANDLORD OR CITY RECORDS, PERFORM THE NECESSARY FLOW TESTS AS REQUIRED BY NFPA STANDARDS TO DETERMINE THE CHARACTER OF THE AVAILABLE WATER SUPPLY, AND SUBMIT THAT DATA WITH THE CALCULATIONS.

NOTE:

THIS SPRINKLER DRAWING IS INTENDED FOR PRICING PURPOSES ONLY. THE FIRE PROTECTION CONTRACTOR SHALL PREPARE A COMPLETE SET OF WORKING FIRE PROTECTION DRAWINGS IN ACCORDANCE WITH NFPA-13, AND ALL STATE AND LOCAL REQUIREMENTS. PIPE SIZES SHALL BE DETERMINED BY HYDRAULIC CALCULATIONS USING THE CURRENT SITE SPECIFIC FLOW DATA.

Distance from Sprinkler to Side of Beam	Maximum Allowable Distance Deflector above Bottom of Beam
Less than 1 ft	0 in.
1 ft to less than 1 ft 6 in	2½ in.
1 ft 6 in to less than 2 ft	3½ in.
2 ft to less than 2 ft 6 in	5½ in.
2 ft 6 in to less than 3 ft	7½ in.
3 ft to less than 3 ft 6 in	9½ in.
3 ft 6 in to less than 4 ft	12 in.
4 ft to less than 4 ft 6 in	14 in.
4 ft 6 in to less than 5 ft	16½ in.
5 ft to less than 5 ft 6 in	18 in.
6 ft 6 in to less than 6 ft	20 in.
6 ft to less than 6 ft 6 in	24 in.
6 ft 6 in to less than 7 ft	30 in.
7 ft to less than 7 ft 6 in	35 in.

A FP101 UPRIGHT SPRINKLER INSTALLATION

SCALE: NO SCALE

(TYPICAL FOR ALL AREAS OF EXPOSED STRUCTURE CONSTRUCTION)

B FP101 CONCEALED SPRINKLER HEAD INSTALLATION

SCALE: NO SCALE

(TYPICAL FOR ALL AREAS OF FINISHED CEILING CONSTRUCTION)

APPLICABLE CODE IS NFPA 13

THERE IS AN EXISTING SPRINKLER SYSTEM
MODIFY SPRINKLER HEAD LOCATIONS AS NECESSARY
TO MEET CODE

LEGEND:
- ▤ SINGLE STORY – SUSPENDED CEILING
- ▧ SINGLE STORY – DRYWALL CEILING
- ▩ STAIR WELL
- ⁘ ELEVATOR
- ▨ KITCHEN HOOD
- ■ DUMB WAITER
- ▽ KITCHEN COOLER/ FREEZER
- ✡ EXPOSED TO DECK
- ⁘ ENCLOSED PATIO
- ▦ PATIO

FIRST FLOOR - FIRE PROTECTION PLAN

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

LEGEND:
- ▤ SINGLE STORY – SUSPENDED CEILING
- ▧ TWO STORY – OPEN TO DECK
- ⁘ STORAGE ROOM

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RECYCLING CENTER
FRANKLIN, IN

HANNAH R. KIGER
No. 10505427

Hannah R. Kiger

REVISIONS:

#	Date	Desc.

100% CONSTRUCTION DOCUMENTS

PROJECT: 24020
DATE: 04.22.2024
DRAWN BY: DAE

SHEET NAME

FIRST FLOOR
FIRE PROTECTION
PLAN

N

FP101

POWER

- DUPLEX RECEPTACLE
- RECEPTACLE SPECIAL, NEMA CONFIGURATION
- FLUSH FLOOR OUTLET
- FLUSH FLOOR BOX, THREE GANG
- BAT — EMERGENCY BATTERY UNIT
- RECEPTACLE, SINGLE
- RECEPTACLE, DUPLEX
- RECEPTACLE CEILING MOUNTED, DUPLEX
- RECEPTACLE, QUADPLEX
- WP — RECEPTACLE, DUPLEX WEATHERPROOF ('WHILE-IN-USE' TYPE)
- E — RECEPTACLE ON EMERGENCY CIRCUIT, RECEPTACLE AND PLATE SHALL BE RED
- TL — RECEPTACLE, DUPLEX, EMERGENCY RED TWIST LOCK
- GFI — RECEPTACLE, DUPLEX, GROUND FAULT CIRCUIT INTERRUPTER
- U — USB-A & C RECEPTACLE
- DOORBELL PUSH BUTTON
- DOOR BELL CHIME
- T LV — TRANSFORMER, 120V TO LOW VOLTAGE
- S — SECURITY ALARM POINT DOOR SWITCH
- S — SECURITY DOOR LOCK RELEASE - ELECTRIC STRIKE
- S — SECURITY MOTION DETECTOR
- S — SECURITY ALARM BELL
- C — CLOCK OUTLET
- C — CLOCK OUTLET WITH CONTROL STATION
- TV — TELEVISION OUTLET (RG6)
- JUNCTION BOX 4 11/16 x 4 11/16 x 2 1/8" UNLESS NOTED OTHERWISE
- MDP — MAIN DISTRIBUTION OR POWER PANELBOARDS
- FLUSH OR SURFACE MOUNTED BRANCH PANELBOARDS 120/280V
- ELECTRICAL MOTOR CONNECTION - VERIFY HP, AND PHASE
- DISCONNECT SWITCH
- MOTOR CONTROLLER WITH AUX CONTACTS HOA, PB, PILOT AND CONTROL TRANSFORMER.
- TV — TELEVISION OUTLET (RG6 AND 2-CAT6)
- FUSED DISCONNECT SWITCH
- T — ELECTRICAL TRANSFORMER
- NON-FUSED DISCONNECT SWITCH RATING AS NOTED
- CIRCUIT POWER TRANSFORMER 480V PRIMARY, 120V SECONDARY
- CIRCUIT BREAKER
- FUSE
- GROUND

LIGHTS

- SURFACE MOUNTED OR RECESSED LED FIXTURE
- WALL MOUNTED LED FIXTURE
- SURFACE/RECESSED 1 x 4 LED LIGHT FIXTURE
- SURFACE/RECESSED 2 x 4 LED LIGHT FIXTURE
- PHOTOCELL
- EXIT LIGHT FIXTURE CEILING MOUNTED
- EXIT LIGHT FIXTURE WALL MOUNTED
- LIGHT FIXTURE CONNECTED TO EMERGENCY POWER
- BATTERY OPERATED EMERGENCY LIGHT - WALL MOUNTED
- POLE MOUNTED LIGHT FIXTURE - SINGLE HEAD
- SURFACE / RECESSED LED FIXTURE
- WALL MOUNTED LED FIXTURE
- BOLLARD LIGHT FIXTURE
- FLOOD LIGHT GROUND MOUNTED

WIRE

- HOMERUN
- or — WIRING CONCEALED IN CEILING OR WALL
- WIRING CONCEALED UNDER OR IN FLOOR
- WIRING EMERGENCY
- A B C — A= GROUND; B= NEUTRAL; C= HOT
- WIRING TURNED UP
- WIRING TURNED DOWN
- WIREMOLD APPENDED NOTE DENOTES TYPE
- CABLE TRAY
- HEAT TRACE CABLE
- K — CARD KEY ACCESS CONTROL
- CEILING MOUNTED FIRE ALARM HORN / STROBE

FIRE

- I — IONIZATION SMOKE
- H — THERMAL DETECTOR 135° FIXED
- P — PHOTO DETECTOR PHOTO ELECTRIC
- F — PULL STATION
- STROBE UNIT 30CD
- FIRE ALARM, IONIZATION DUCT DETECTOR
- P CO — COMBINATION PHOTOELECTRIC & CARBON MONOXIDE DETECTOR
- FACP — FIRE ALARM CONTROL PANEL
- FAP — FIRE ALARM ANNUNICATOR PANEL
- T — FIRE ALARM, TAMPER SWITCH
- F — FIRE ALARM, FLOW SWITCH
- F — HORN STROBE
- S — FIRE ALARM, SPEAKER
- S — FIRE ALARM, SPEAKER STROBE

SWITCHES

- $ — SWITCH, SINGLE POLE
- $3 — SWITCH, THREE-WAY
- $4 — SWITCH, FOUR-WAY
- $D — SWITCH, DIMMER
- $DS — SWITCH, DOOR SECURITY
- $K — SWITCH, KEYED
- $P — SWITCH, PILOT LIGHT
- $a — SWITCH, CONTROLLING FIXTURES MARKED WITH a
- $T — SWITCH, MANUAL TIMER
- $TT — TT SWITCH FOR MOTORS 1/2HP OR SMALLER
- PUSH BUTTON CONTROL STATION
- PUSH BUTTON "UP-DOWN-DN"
- PANIC BUTTON
- MOTION DETECTOR
- GB — SECURITY GLASS BREAK DETECTOR
- (S) — SINGLE CIRCUIT PIR WALL SENSOR 'SCHNEIDER ELECTRIC' #SLSPWS1277UX(COLOR).
- (S)2 — DUAL CIRCUIT PIR WALL SENSOR 'SCHNEIDER ELECTRIC' #SLSPWD1277UX(COLOR).
- (S)U — LOW VOLTAGE ULTRASONIC CEILING SENSOR 'SCHNEIDER ELECTRIC' #SLSCUS2000 (SENSOR); 'SCHNEIDER ELECTRIC' #SLSPP1277 (POWER PACK)
- (S)I — LOW VOLTAGE CEILING MOUNT PIR OCCUPANCY SENSOR 'SCHNEIDER ELECTRIC' #SLSCI2000 (SENSOR); 'SCHNEIDER ELECTRIC' #SLSPP1277 (POWER PACK).
- (S)D/T — LOW VOLTAGE CEILING MOUNT DUAL-TECHNOLOGY OCCUPANCY SENSOR 'SCHNEIDER ELECTRIC' #SLSCDT2000 (SENSOR); 'SCHNEIDER ELECTRIC' #SLSPP1277 (POWER PACK).

COMMUNICATION / SECURITY

- TELEPHONE OUTLET BOX AND COVER PLATE
- P — TELEPHONE OUTLET BOX, AND COVER PLATE, PUBLIC
- TELEPHONE OUTLET FLOOR BOX WITH COVER PLATE
- TELEDATA OUTLET
- TELEDATA OUTLET FLOOR BOX WITH COVER PLATE
- DATA OUTLET
- SPEAKER, FLUSH CEILING MOUNTED
- SPEAKER, WALL MOUNTED
- SPEAKER HORN TYPE, WALL MOUNTED
- PA — SOUND SYSTEM AMPLIFIER
- INTERCOMM HANDSET
- INTERCOMM MASTER PANEL
- INTERCOMM SYSTEM POWER SUPPLY
- DEMO: POINT WHERE EXISTING TO REMAIN STOPS AND DEMOLITION BEGINS
  REVISED: POINT WHERE NEW WORK CONNECTS TO EXISTING TO REMAIN
- SECURITY CAMERA / (360°) SECURITY CAMERA (360°)
- IR — AUDIO/VISUAL WALL DEVICE
- U — AUDIO/VISUAL WALL DEVICE

GENERAL NOTES

1. INSTALLATION SHALL COMPLY WITH 2012 INDIANA ELECTRIC CODE. ALL ITEMS/ EQUIPMENT INSTALLED EITHER IN PART OR ASSEMBLY SHALL BE UL/ NRTL LISTED PER CODE.
2. SUBMIT SUBMITTALS ON ALL EQUIPMENT, DEVICES AND MATERIALS.
3. COORDINATE WITH OTHER DISCIPLINES AND OWNER TO VERIFY FINAL LOCATIONS OF DEVICES AND CONNECTIONS.
4. SLOPED PIPING HAS RIGHT OF WAY OVER CONDUIT.
5. INSTALL PENETRATION FIRESTOPPING AS INDICATED AND REQUIRED.
6. HEIGHTS OF SUSPENDED EQUIPMENT SHALL BE TO THE BOTTOM OF THE UNIT.
7. HEIGHTS OF WALL MOUNTED EQUIPMENT SHALL BE TO THE CENTER OF THE UNIT.
8. IF MOUNTING HEIGHT IS NOT INDICATED, INSTALL AS HIGH AS POSSIBLE.
9. INSTALL SLEEVES AS NECESSARY:
   a. SLEEVES FOR RACEWAYS AND CABLES SHALL BE SCHEDULE 40 GALVANIZED STEEL PIPE SLEEVES, ASTM A53/ A53M TYPE E, GRADE B WITH PLAIN ENDS.
   b. FOR RECTANGULAR OPENINGS USE GALVANIZED SHEET STEEL WITH A THICKNESS OF 0.052 INCHES FOR OPENINGS SMALLER THAN 50 INCHES IN PERIMETER AND 0.138 INCHES FOR THOSE LARGER.
   c. SLEEVES SHALL BE FLUSH WITH WALLS.
   d. EXTEND FLOOR SLEEVES 2" ABOVE FINISHED FLOOR LEVEL.
   e. IF NECESSARY GROUT SPACE OUTSIDE OF SLEEVE IN CONCRETE AND MASONRY WALLS AND FLOOR.
   f. IN NON RATED FIRE WALLS AND FLOORS SEAL ANNULAR SPACE WITH JOINT SEALANT.
   g. ALWAYS MAINTAIN FIRE RATING OF ASSEMBLY.
9. IF REQUIRED FOR HYDROSTATIC PRESSURE REASONS, INSTALL EPDM SEALING ELEMENTS WITH TWO PLASTIC PRESSURE PLATES AND STAINLESS STEEL CONNECTING BOLTS AND NUTS.
10. GROUT SHALL BE NONMETALLIC SHRINK-RESISTANT TYPE THAT IS NONSTAINING AND NON CORROSIVE.
11. EXTEND FLOOR SLEEVES 2" ABOVE FINISHED FLOOR.
12. MAINTAIN FIRE RATING OF FIRE-RATED ASSEMBLIES.
13. SEAL PENETRATION OF INDIVIDUAL RACEWAYS AND CABLES WITH FLEXIBLE BOOT-TYPE FLASHING.

DRAWING INDEX

A | B
C | D

N

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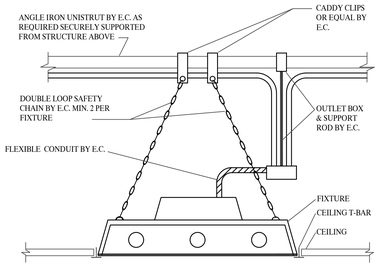
SHEET NAME

ELECTRICAL SYMBOLS

E001

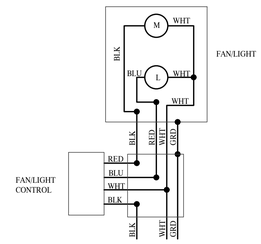
CONDUCTOR INSULATION AND MULTICONDUCTOR SCHEDULE TABLE

	THHN-THWN	XHHW	MI	NM	MC	UF	AC
SERVICE ENTRANCE	●						
EXPOSED FEEDERS	●						
CONCEALED FEEDERS	●				●		●
FEEDERS BELOW CONCRETE		●					
FEEDERS UNDERGROUND		●					
FEEDERS BELOW RAISED FLOORING	●						
FEEDERS IN CABLE TRAY	●				●		●
EXPOSED BRANCH CIRCUITS	●						
CONCEALED BRANCH CIRCUITS	●				●		●
BRANCH CIRCUITS BELOW CONCRETE	●						
BRANCH CIRCUITS UNDERGROUND		●					
BRANCH CIRCUITS BELOW RAISED FLOORING	●						
BRANCH CIRCUITS IN CABLE TRAY	●						
CLASS 1 CONTROL CIRCUITS	●						
CLASS 2 CONTROL CIRCUITS	●						



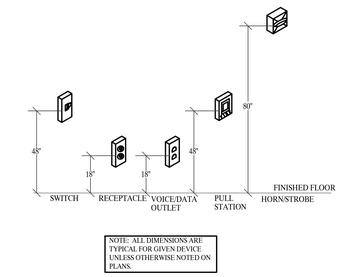
NOTE:
LIGHTING FIXTURES MUST BE SUPPORTED INDEPENDENTLY OF CEILING SYSTEM. UPON WRITTEN REQUEST TO THE ENGINEER, OTHER MEANS OF SUPPORT WILL BE CONSIDERED FOR APPROVAL.

A E002 LAY-IN FIXTURES SUPPORT DETAIL
SCALE: NTS



SIMILAR TO: AIR KING #AKDT60

B E002 FAN/ LIGHT SWITCH SCHEMATIC
SCALE: NTS



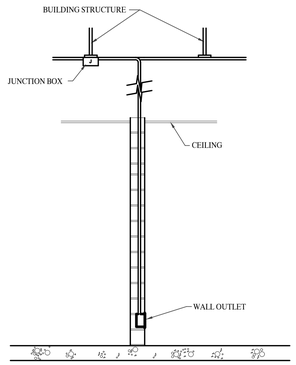
NOTE: ALL DIMENSIONS ARE TYPICAL FOR GIVEN DEVICE UNLESS OTHERWISE NOTED ON PLANS.

C E002 OPERABLE DEVICE MOUNTING HEIGHT DETAIL
SCALE: NTS

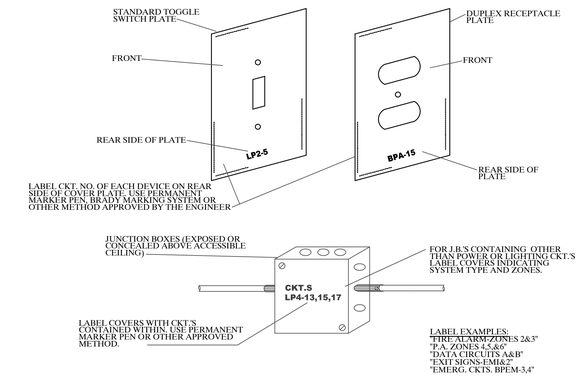
SCHEDULE OF CONDUIT APPLICATIONS

CONDUIT LOCATION OR APPLICATION	CONDUIT TYPE: RIGID	INTERMEDIATE	E.M.T.	FLEXIBLE	FLEXIBLE W/ W.P. JACKET	PVC-SCHED 40	AC CABLE		
IN CONCRETE SLAB (NOT LARGER THAN 1"C)		(3)							
BELOW LOWEST FLOOR SLAB		(3)				(2)			
CONCEALED IN WALLS, ABOVE CEILINGS AND IN FURRED SPACES		(3)	(1)						
INSIDE, ABOVE BOTTOM OF ROOF STEEL							◯		
FEEDER, POWER AND SIGNAL CIRCUITS RUN EXPOSED	(3)	(3)							
FINAL CONNECTION TO EQUIP. SUBJECT TO VIBRATION				◯					
FINAL CONNECTION TO EQUIP. IN DAMP LOCATIONS					◯				
SHORT CONNECTIONS WHERE NON-FLEXIBLE CONDUIT IS IMPRACTICAL				◯					

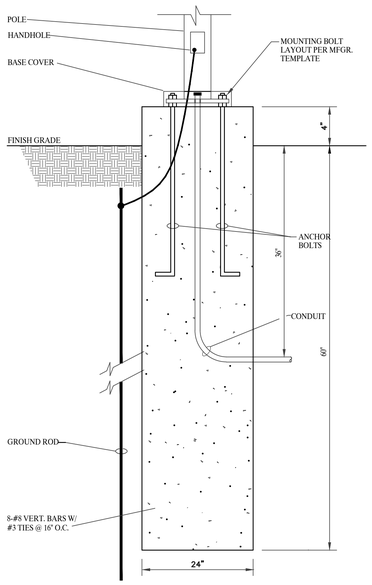
NOTE:
◯ - TYPE OF CONDUIT TO BE USED.
(1) - E.M.T. SHALL NOT BE USED IN SIZES LARGER THAN 2 INCH.
(2) - CONVERT TO RIGID OR INTER. THROUGH SLAB.
(3) - USE THREADED FITTINGS ONLY.



D E002 TYPICAL DETAIL FOR OVERHEAD FEED TO INTERIOR WALL OUTLET
SCALE: NTS



E E002 ELECTRICAL IDENTIFICATION DETAIL
SCALE: NTS



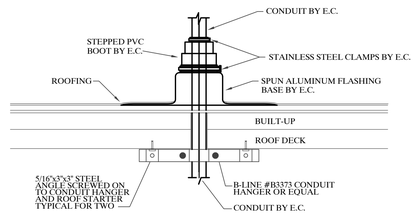
H E001 POLE BASE DETAIL
SCALE: NTS

MINIMUM SIZE EQUIPMENT GROUNDING CONDUCTORS FOR GROUNDING RACEWAY AND EQUIPMENT

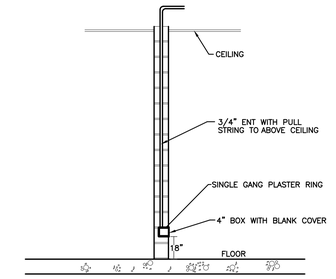
	SIZE (AWG OR KCMIL)	
AUTOMATIC OVER CURRENT SETTING (AMPS- NOT EXCEEDING)	COOPER	ALUMINUM OR COPPER CLAD ALUMINUM
15	14	12
20	12	10
60	10	8
100	8	6
200	6	4
300	4	2
400	3	1
500	2	1/0
600	1	2/0
800	1/0	3/0
1000	2/0	4/0
1200	3/0	250
1600	4/0	350
2000	250	400
2500	350	600
3000	400	600
4000	500	600
5000	700	750
6000	800	1200

CONDUCTOR SIZING FOR RHW, THHW, THW, THWN, XHHW, USE, ZW AT 167F

SIZE AWG OR KCMIL	COOPER	ALUMINUM
12	25	20
10	35	30
8	50	40
6	65	50
4	85	65
3	100	75
2	115	90
1	130	100
1/0	150	120
2/0	175	135
3/0	200	155
4/0	230	180
250	255	205
300	285	230
350	310	250
400	335	270
500	380	310
600	420	340
700	460	375
750	475	385
800	490	395
900	520	425
1000	545	445
1250	590	485
1500	625	520
1750	650	545
2000	665	560



F E002 TYPICAL ROOF PENETRATION
SCALE: NTS



G E002 TYPICAL TV OUTLET ROUGH-IN DETAIL
SCALE: NTS

SCHEDULE OF CONDUIT APPLICATIONS

CONDUIT LOCATION OR APPLICATION	CONDUIT TYPE: RIGID	INTERMEDIATE	E.M.T.	FLEXIBLE	FLEXIBLE W/ W.P. JACKET	P.V.C. SCHED 40	A.C. CABLE		
IN CONCRETE SLAB (NOT LARGER THAN 1"C)		(3)							
BELOW LOWEST FLOOR SLAB		(3)				(2)			
CONCEALED IN WALLS, ABOVE CEILINGS AND IN FURRED SPACES		(3)	(1)						
INSIDE, ABOVE BOTTOM OF ROOF STEEL							◯		
FEEDER, POWER AND SIGNAL CIRCUITS RUN EXPOSED	(3)	(3)							
FINAL CONNECTION TO EQUIP. SUBJECT TO VIBRATION				◯					
FINAL CONNECTION TO EQUIP. IN DAMP LOCATIONS					◯				
SHORT CONNECTIONS WHERE NON-FLEXIBLE CONDUIT IS IMPRACTICAL				◯					

NOTE:
◯ – TYPE OF CONDUIT TO BE USED.
(1) – E.M.T. SHALL NOT BE USED IN SIZES LARGER THAN 2 INCH.
(2) – CONVERT TO RIGID OR INTER. THROUGH SLAB.
(3) – USE THREADED FITTINGS ONLY.

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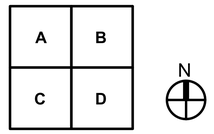
ELECTRICAL DETAILS



E002

ELECTRICAL SPECIFICATIONS:

1.0 GENERAL

1.1 ALL MATERIALS SHALL BE AS SPECIFIED AND APPROVED BY UNDERWRITERS LABORATORIES.

1.2 PROVIDE A COMPLETE ELECTRICAL SYSTEM CONDUIT SYSTEM AS INDICATED HEREIN AND/OR ON THE DRAWINGS. THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE SHALL BE THE MINIMUM REQUIREMENT FOR ALL WORK.

1.3 ANY SUBSTITUTIONS TO MANUFACTURERS OF EQUIPMENT LISTED IN THESE SPECIFICATIONS MUST BE APPROVED IN WRITING BY THE OWNER'S ENGINEER.

1.4 E.C. SHALL SUBMIT SHOP DRAWINGS OF ELECTRICAL SWITCHGEAR TO ARCHITECT/ENGINEER FOR REVIEW.

1.5 SHOP DRAWINGS SHALL INCLUDE:
A. SINGLE LINE RISER DIAGRAM OF ELECTRICAL SYSTEM.
B. COMPLETED SCHEDULES FOR ALL ELECTRIC PANELS.

1.6 DRAWINGS AND SPECIFICATIONS: IT SHALL BE THE CONTRACTOR'S DUTY TO EXAMINE AND HAVE THOROUGH KNOWLEDGE OF THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL AND SITE WORK DRAWINGS AND SPECIFICATIONS.

1.6.1 THE COMMENCEMENT OF WORK UNDER THIS SECTION INDICATED THAT THE CONTRACTOR HAS EXAMINED AND HAS KNOWLEDGE OF THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL, MECHANICAL AND SITE WORK DRAWINGS AND SPECIFICATIONS. THE FAILURE OF THE CONTRACTOR TO ACQUAINT HIMSELF WITH ALL AVAILABLE INFORMATION SHALL NOT RELIEVE HIM OF ANY RESPONSIBILITY FOR PERFORMING HIS WORK PROPERLY.

1.6.2 NO ADDITIONAL COMPENSATION SHALL BE ALLOWED BECAUSE OF CONDITIONS THAT OCCUR DUE TO THE CONTRACTOR'S FAILURE TO BECOME THOROUGHLY FAMILIAR WITH ALL OF THE CONTRACT DOCUMENTS FOR THIS PROJECT, AS DESCRIBED ABOVE, AND WITH THE JOB SITE.

1.6.3 IT SHALL BE THE CONTRACTOR'S DUTY TO NOTIFY THE ARCHITECT AND/OR ENGINEER, IN A TIMELY MANNER, OF ANY DISCREPANCIES, ERRORS, OMISSIONS, AMBIGUITIES, OR CONFLICTS WHICH WERE KNOWN OR DISCOVERED DURING THE COURSE OF THE PREPARATION OF THE BID OR THE CONDUCT OF WORK.

1.6.4 UNLESS EXPRESSLY STIPULATED, NO ADDITIONAL ALLOWANCE WILL BE MADE IN THE CONTRACTOR'S AND/OR MANUFACTURER'S FAVOR BY VIRTUE OF ERRORS, AMBIGUITIES AND/OR OMISSIONS WHICH WERE KNOWN TO OR WHICH SHOULD HAVE BEEN KNOWN OR DISCOVERED DURING THE PREPARATION OF THE BID ESTIMATE AND DIRECTED TO THE ARCHITECT AND/OR ENGINEER'S ATTENTION IN A TIMELY MANNER.

1.6.5 THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT ONE ANOTHER. ANY MATERIALS OR LABOR CALLED FOR IN ONE BUT NOT THE OTHER SHALL BE FURNISHED AS IF BOTH WERE MENTIONED IN THE SPECIFICATIONS AND SHOWN ON THE DRAWINGS. LABOR AND/OR MATERIALS NEITHER SHOWN NOR SPECIFIED, BUT NECESSARY FOR THE COMPLETION AND PROPER FUNCTIONING OF THE SYSTEMS, SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR.

1.6.6 THE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO DEPICT THE APPROXIMATE LOCATIONS OF EQUIPMENT, PIPING AND APPARATUS. DIMENSIONS GIVEN ON THE DRAWINGS, IN FIGURES, SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. ALL DIMENSIONS, WHETHER IN FIGURES OR SCALED, SHALL BE VERIFIED IN THE FIELD.

1.6.7 THE PLANS SHOW THE ARRANGEMENT OF ALL FIXTURES, EQUIPMENT AND MATERIAL AND ARE NOT INTENDED TO SHOW ALL DETAILS. EACH AND EVERY ACCESSORY INTENDED FOR THE PURPOSE OF EXECUTION OF THE WORK IS UNDERSTOOD TO BE PART OF THE WORK.

1.6.8 THE LOCATION OF EQUIPMENT AND PIPE, AS SHOWN ON THE DRAWINGS, IS DIAGRAMMATIC AND SCHEMATIC AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE HIS OWN FABRICATION AND INSTALLATION DRAWINGS AND LAYOUTS TO ELIMINATE ALL STRUCTURAL AND OTHER PHYSICAL INTERFERENCES WITHOUT DETRIMENT TO THE STRUCTURAL, MECHANICAL AND ARCHITECTURAL COMPONENTS OF THE BUILDING. THE CONTRACTOR MUST ORGANIZE THE PHYSICAL ARRANGEMENT OF THE SYSTEMS OF MATERIAL IN THE CONFINES OF THE SPACE IN ORDER FOR THEM TO FUNCTION AND PERFORM IN ACCORDANCE WITH THE INTENT OF THE DESIGN. THE CONTRACTOR IS NOT RESPONSIBLE FOR THE DESIGN PERFORMANCE; HE IS RESPONSIBLE FOR THE DEVELOPMENT OF INSTALLATION AND FABRICATION DRAWINGS FOR THE INSTALLATION OF HIS EQUIPMENT AND MATERIAL WITHIN THE AVAILABLE SPACES.

1.6.9 THE CONTRACTOR SHALL CAREFULLY VERIFY ALL MEASUREMENTS AT THE SITE, DETERMINE THE EXACT LOCATION OF ALL CHASES, OPENINGS, PLENUMS AND CEILING CAVITIES REQUIRED BY HIS WORK AND SHALL FURNISH AND SET ALL SLEEVES,INSERTS AND HANGERS AS REQUIRED FOR THE WORK HEREIN. THE CONTRACTOR SHALL VERIFY ACTUAL JOB DIMENSIONS BEFORE FABRICATION OF ANY MATERIALS, PURCHASING OR INSTALLATION OF EQUIPMENT.

1.7 SPACE CONDITIONS:IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT ALL APPARATUS, GEAR, FIXTURES, CONDUIT, ETC, SHALL FIT INTO THAT AVAILABLE SPACES IN THE BUILDING AND MUST BE INTRODUCED INTO THE BUILDING AT SUCH TIMES AND IN SUCH MANNER AS NOT TO CAUSE DAMAGE TO THE STRUCTURE.

1.7.1 WHERE MINOR DEVIATIONS FROM PLANS ARE REQUIRED IN ORDER TO CONFORM TO SPACE LIMITATIONS, SUCH CHANGES SHALL BE MADE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER AND SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT AND/OR ENGINEER.

1.7.2 ALL EQUIPMENT NORMALLY REQUIRING SERVICE SHALL BE EASILY ACCESSIBLE.

1.8 COORDINATION AND CONFLICTS: THE CONTRACTOR SHALL COORDINATE HIS WORK SO THAT IT DOES NOT INTERFERE WITH THE WORK OF OTHER TRADES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT HIS WORK IS INSTALLED IN A TIMELY MANNER.

1.8.1 IN THE EVENT THAT THERE IS A DISCREPANCY OR CONFLICT IN THE PLANS OR SPECIFICATIONS IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ARCHITECT AND/OR ENGINEER OF THIS CONFLICT OR DISCREPANCY PRIOR TO HIS ACCEPTANCE OF THE PROJECT. UNLESS EXPRESSLY STIPULATED, NO ADDITIONAL ALLOWANCE WILL BE MADE IN THE CONTRACTOR'S AND/OR MANUFACTURER'S FAVOR BY VIRTUE OF ERRORS, AMBIGUITIES AND/OR OMISSIONS WHICH WERE KNOWN TO OR WHICH SHOULD HAVE BEEN KNOWN OR DISCOVERED DURING THE PRESENTATION OF THE BID ESTIMATE AND DIRECTED TO THE ARCHITECT'S AND/OR ENGINEER'S ATTENTION IN A TIMELY MANNER.

1.9 GUARANTEE: ALL EQUIPMENT SHALL BE STARTED, TESTED, ADJUSTED AND PLACED IN SATISFACTORY OPERATING CONDITION BY THE CONTRACTOR. ALL EQUIPMENT SHALL BE COVERED FOR THE DURATION OF THE MANUFACTURER'S GUARANTEE OR WARRANTY AND THE CONTRACTOR SHALL FURNISH THE OWNER WITH ALL MANUFACTURER'S GUARANTEE WARRANTIES.

1.9.1 GUARANTEE ALL WORK, MATERIALS AND EQUIPMENT FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE BY THE OWNER'S ENGINEER. THE GUARANTEE SHALL INCLUDE FULL SERVICE ADJUSTMENTS, REPAIRS AND REPLACEMENT PARTS AT NO EXPENSE TO OWNER, AND TO THE COMPLETE SATISFACTION OF THE OWNER'S ENGINEER.

1.9.2 THE CONTRACTOR SHALL FURNISH A LETTER ADDRESSED TO THE OWNER OUTLINING THE YEAR'S GUARANTEES AND ADVISING THAT THE COMPLETED SYSTEMS HAVE BEEN INSTALLED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS AND THAT THEY ARE IN PROPER OPERATING CONDITION.

1.10 INSPECTION AUTHORITY CERTIFICATE OF APPROVAL SHALL BE FURNISHED THE OWNER'S ENGINEER BEFORE FINAL ACCEPTANCE WILL BE GIVEN.

1.10.1 PROVIDE ANY INSPECTIONS AND CERTIFICATES REQUIRED BY LOCAL JURISDICTIONAL AUTHORITIES TO OBTAIN ACCEPTANCE OF THE SPECIFIED EQUIPMENT AND THE INSTALLATION.

1.11 SUBMITTALS: CONTRACTOR AGREES THAT SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS; THAT THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT, THAT HE DEMONSTRATES HIS UNDERSTANDING BY INDICATING WHICH EQUIPMENT AND MATERIALS HE INTENDS TO FURNISH AND INSTALL AND BY DETAILING THE FABRICATION AND INSTALLATION METHODS HE INTENDS TO USE.

1.11.1 THE CONTRACTOR FURTHER AGREES THAT IF DEVIATIONS, DISCREPANCIES OR CONFLICTS BETWEEN SHOP DRAWINGS AND SPECIFICATION ARE DISCOVERED EITHER PRIOR TO OR AFTER SHOP DRAWING SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL AND SHALL BE FOLLOWED.

1.11.2 WHERE SHOP DRAWINGS ARE REVIEWED, SAID REVIEW DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY NOR THE NECESSITY OF FURNISHING MATERIAL OR PERFORMING WORK REQUIRED BY THE CONTRACT DRAWINGS AND SPECIFICATIONS.

1.11.3 SUBMITTAL REVIEW IS CONSIDERED AS GENERAL ACCEPTANCE OF THE BASIC APPLICABILITY OF THE EQUIPMENT. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ANY SUBSTITUTED EQUIPMENT WITHIN A GIVEN SPACE. WHEN THE CONTRACTOR DESIRES TO USE SUBSTITUTED EQUIPMENT, HE SHALL BE RESPONSIBLE FOR PRODUCING HIS OWN COORDINATED WORKING DRAWINGS WHICH DEPICT THE SUBSTITUTED EQUIPMENT ACCOMMODATED IN THE SPACE. WHERE THE SUBSTITUTED EQUIPMENT CREATES THE NEED FOR ALTERATIONS IN ANY PORTION OF THE WORK DEPICTED IN THE CONTRACT DOCUMENTS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL OF THE AFFECTED PARTIES AND COORDINATE THESE ITEMS WITH ALL OTHER TRADES. FURTHER, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASSUME ANY ADDITIONAL COST TO THE CONTRACT CREATED BY THE SUBSTITUTED EQUIPMENT.

1.11.3.1. SUBSTITUTED EQUIPMENT IS ANY EQUIPMENT WHICH DEVIATES FROM THE EQUIPMENT SPECIFIED HEREIN, AS THE FIRST NAMED MANUFACTURER OR THE EQUIPMENT SCHEDULED ON THE PLANS.

1.12 FIRE ALARMS, PULL STATIONS AND ALL OTHER SAFETY ITEMS WILL BE UPDATED TO CURRENT STANDARDS FOR ALL OUTDATED EXISTING BUILDINGS.

2.0 SERVICE ENTRANCE

2.1 CHARACTERISTICS - SERVICE SHALL BE AS INDICATED ON DRAWINGS. SEE ONE-LINE DIAGRAM ON DRAWINGS FOR ADDITIONAL INFORMATION.

2.2 PROVIDE AUXILIARY SERVICES FOR EXIT LIGHTS AND EMERGENCY LIGHTING.

2.3 GROUNDING - SYSTEM GROUNDING CONDUCTOR SHALL BE SIZED AS REQUIRED BY APPLICABLE CODE AND RUN IN CONDUIT WHERE EXPOSED IN BUILDING TO THE POINT OF WATER SERVICE TO BUILDING AND CONNECTED TO WATER SERVICE PIPING.

2.4 CONDUCTORS SHALL BE COPPER WITH TYPE THWN INSULATION.

2.5 BUS DUCT, WHEN USED FOR SERVICE ENTRANCE CONDUCTORS, SHALL BE PLATED ALUMINUM, COMPLETE WITH SUITABLE VAPOR BARRIER AND WEATHERHEAD.

4.0 PANELBOARDS

4.1 PANELS DEAD FRONT TYPE WITH CABINETS SURFACE MOUNTED (UNLESS OTHERWISE SPECIFIED) OF CODE THICKNESS WITH HINGED DOOR AND TRIM. DOOR HINGED WITH CONCEALED HINGES AND PROVIDED WITH TRIM CLAMPS AND TRIM ANGLE SUPPORTS AND WITH FLUSH TYPE COMBINATION LATCHES AND LOCKS WITH LOCKS KEYED ALIKE. DOOR SHALL INCLUDE A DIRECTORY FRAME ON FACE OF FRONT PANEL INTERIOR AND DIRECTORY CARD FACED WITH TRANSPARENT PLASTIC. ALL CIRCUITS CLEARLY AND PERMANENTLY IDENTIFIED ON DIRECTORY. BOXES FABRICATED OF GALVANIZED STEEL. NO CRINKLE FINISHES PERMITTED ON TRIM. PANEL BACK ADJUSTABLE. PANELS FACTORY ASSEMBLED. EACH PANEL SHALL CONTAIN A MINIMUM OF 10% SPARE CIRCUIT BREAKERS. IF NOT OTHERWISE INDICATED SPARE CIRCUIT BREAKERS SHALL BE 20 AMP. SINGLE POLE.

4.2 MULTIPLE POLE BREAKERS MUST BE OF COMMON TRIP TYPE. NO TIE HANDLES PERMITTED WITH SINGLE POLE BREAKERS

5.0 LIGHTING CONTROLLER

5.1 OCCUPANCY SENSORS AS SHOWN ON PLANS.

5.2 CONTRACTORS SHALL BE ELECTRICALLY HELD OF PROPER CAPACITY. CONTRACTORS SHALL BE WIRED WITH A RELAY FURNISHED BY THE ELECTRICAL CONTRACTOR TO PROPERLY ENGAGE AND RELEASE THE CONTRACTOR BASED ON ONE CHANNEL SWITCHING.

5.3 ALL OUTSIDE AND WORK AREA LIGHTING AND CIRCUITS SHALL INCLUDE TIME CLOCK AND PHOTOCELL CONTROL 'OTC' AS SHOWN, WITH MANUAL SPRING WOUND OVERRIDE SWITCH.

6.0 METHOD OF WIRING

6.1 CONDUIT RACEWAYS OR M.C. CABLE SHALL BE USED FOR INSTALLATION OF ALL WIRING WHERE INDICATED ON DRAWINGS.

6.1.1 EXPOSED CONDUIT SUBJECT TO MECHANICAL INJURY SHALL BE EITHER FULL WEIGHT RIGID STEEL (HEAVY-WALL) TYPE OR INTERMEDIATE METAL CONDUIT (I.M.C.) - ANY CONDUITS RUN IN THE MECHANICAL ROOM OR ELECTRICAL ROOM NOT CONCEALED IN PARTITIONS, ABOVE FINISHED CEILINGS OR UNDER THE FLOOR SLAB ARE CONSIDERED EXPOSED TO MECHANICAL INJURY. EITHER TYPE SHALL HAVE GALVANIZED OR EQUAL FINISH. CONDUIT RUN EXPOSED AND NOT SUBJECT TO MECHANICAL INJURY, CONCEALED ABOVE CEILING OR IN FURRED SPACES MAY BE ELECTRICAL METALLIC TUBING (E.M.T.) OR M.C, CABLE WITH GALVANIZED OR EQUAL FINISH ALUMINUM CONDUIT SHALL NOT BE USED IN CONCRETE OR MASONRY, BUT IS PERMITTED FOR USE WHERE EXPOSED AND NOT SUBJECT TO MECHANICAL INJURY OR WHERE CONCEALED ABOVE CEILING OR IN FURRED SPACES. CONDUIT JOINTS SHALL BE MADE WITH STANDARD CONDUIT COUPLINGS, (NO RUNNING-THREADS) CADMIUM PLATED. SCHEDULE 40 PVC CONDUIT IS ALSO PERMITTED FOR USE IN MASONRY OR CONCRETE. ANY FEEDER CONDUITS WHICH ARE PVC MUST BE BURIED BENEATH THE FLOOR SLAB - NOT IN THE CONCRETE. ANY EXPOSED CONDUIT PROJECTIONS OUT OF CONCRETE SLAB MUST BE CHANGED TO RIGID STEEL OR I.M.C. AT THE SURFACE OF THE SLAB. RIGID STEEL OR I.M.C. CONDUIT IS REQUIRED IN CONCRETE OR MASONRY CONSTRUCTION.

6.1.2 CONDUIT SHALL NOT BE SMALLER THAN 3/4" NOMINAL TRADE SIZE, EXCEPT FOR SWITCH LEGS OR WHERE EXPRESSLY NOTED.

6.1.3 INSTALL ALL CONDUITS AS NEAR BOTTOM CHORD OF JOISTS AS PRACTICAL. ALL CONDUITS MUST BE SECURELY FASTENED AND ADEQUATELY SUPPORTED. PERFORATED STRAPS WILL NOT BE PERMITTED. ALL SUSPENDED CONDUITS MUST BE SUPPORTED ON A TRAPEZE USING "UNISTRUT" AND BOLTED HANGER CONSTRUCTION. CONDUITS SUPPORTED USING SUSPENDED CEILING SYSTEM (EITHER TEE BARS OR HANGER WIRES) WILL NOT BE PERMITTED.

6.1.4 ALL CONDUIT SIZING FOR BRANCH CIRCUITS SHALL BE BASED ON THE USE OF TYPE THW CODE GRADE INSULATION. THIS METHOD OF SIZING SHALL BE USED REGARDLESS OF INSULATION TYPE USED IN THE CONDUIT.

6.1.5 ALL CONDUITS SHALL BE CONCEALED.

6.1.6 PULL BOXES AND JUNCTION BOXES SHALL BE INSTALLED WHERE INDICATED ON THE DRAWINGS OR WHERE REQUIRED TO FACILITATE WIRE INSTALLATION.

6.1.7 CUTTING OF STRUCTURAL CONCRETE OR STEEL TO FACILITATE WIRING INSTALLATION WILL NOT BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE OWNER'S ENGINEER.

6.1.8 ALL EXPOSED CONDUIT SHALL BE RUN RECTILINEAR WITH BUILDING CONSTRUCTION USING CONCENTRIC BENDS.

6.1.9 CONTROL CIRCUIT CONDUITS (W/PULL WIRES) UNDER FLOOR AND IN CEILING SHALL BE AS SHOWN ON DRAWINGS OR AS REQUIRED.

FIRE ALARM AND DETECTION SYSTEM

1. TYPE OF FIRE ALARM AND DETECTION SYSTEM IN THIS SECTION SHALL BE NEW.

2. MANUAL PULL STATIONS, SMOKE DETECTORS,DUCT DETECTORS,HORNS,AND HORN/STROBES SHALL BE FULLY SUPERVISED FOR PLACEMENTS,OPENS AND GROUNDS.

3. SUBMIT MANUFACTURER'S DATA ON FIRE ALARM AND DETECTION SYSTEM FOR ALL DEVICES SHOWN ON THE DRAWINGS.

4. MANUFACTURERS SHALL BE SIEMENS,EDWARDS,NOTIFIER,FIRELITE OR GAMEWELL.

5. WIRING SHALL COMPLY WITH ALL OTHER SECTIONS OF THIS SPECIFICATION AND COMPLY WITH ALL FEDERAL,LOCATE AND STATE CODES.

6. FIRE ALARM STATIONS SHALL BE SINGLE ACTION,NON CODED MANUAL STATION WITH DIE-CAST ALUMINUM HOUSING (RED) FITTED WITH A PULL LEVER WHICH WHEN OPERATED, LOCKS IN POSITION AFTER ACTIVATING AN ALARM INITIATING CONTACT. THE LEVER WILL PROTRUDE UNTIL RESET.RESETTING WILL REQUIRE OPENING THE FRONT COVER WITH AN ALLEN KEY FOR ACCESS TO THE ALARM SWITCH.

7. THE SCATTERED LIGHT SMOKE DETECTOR SHALL OPERATE ON THE IONIZATION PRINCIPLE AND SHALL COMPLY WITH UL 268 SPECIFICATIONS.

8. THE DUCT DETECTOR SHALL CONTINUALLY SAMPLE A CROSS-SECTION OF AIR FLOW IN A DUCT AND SEND AN ALARM WHENEVER THE QUALITY OF SMOKE EXCEEDS GIVEN LIMITS.

9. THE HORN AND HORN/STROBE DEVICE SHALL BE SPECIFICALLY DESIGNED FOR LIFE-SAFETY USE. THE HORN IS POLARIZED FOR SUPERVISION.THE VISUAL ALARM SHALL BE THREE DIMENSIONAL, TRIANGULAR WARNING LIGHT AND SHALL BE XENON TUBE STROBE DEVICE. THE STROBE SHALL HAVE A WHILE LENS WITH RED LETTERING. CANDELAS SHALL BE PER LIFE SAFETY CODE AND BASED ON AREA USE.

10. FIRE ALARM SHALL BE INSTALLED IN CONDUIT UNLESS PLENUM RATED CABLE IS USED.

11. INSPECT RELAYS AND SIGNALS FOR MALFUNCTIONING AND WHERE NECESSARY, ADJUST UNITS FOR PROPER OPERATION TO FULFILL PROJECT REQUIREMENTS.

A	B
C	D

N

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

DAE
DESIGN-AIRE ENGINEERING, INC
Mechanical, Electrical, & Energy Engineering

JOHNSON COUNTY
RECYCLING CENTER
FRANKLIN, IN

HANNAH R. KIGER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS:

#	Date	Desc.

100% CONSTRUCTION DOCUMENTS

PROJECT: 24020
DATE: 04.22.2024
DRAWN BY: DAE

SHEET NAME

ELECTRICAL SPECIFICATIONS

E003

PANEL: 'A'
LOCATION: RISER ROOM

VOLTS: 120/208
AMPS: 400
CKTS: 84
LUGS: MCB

MTG: SURFACE
PHASE: 3
WIRE: 4
FEED: BOTTOM

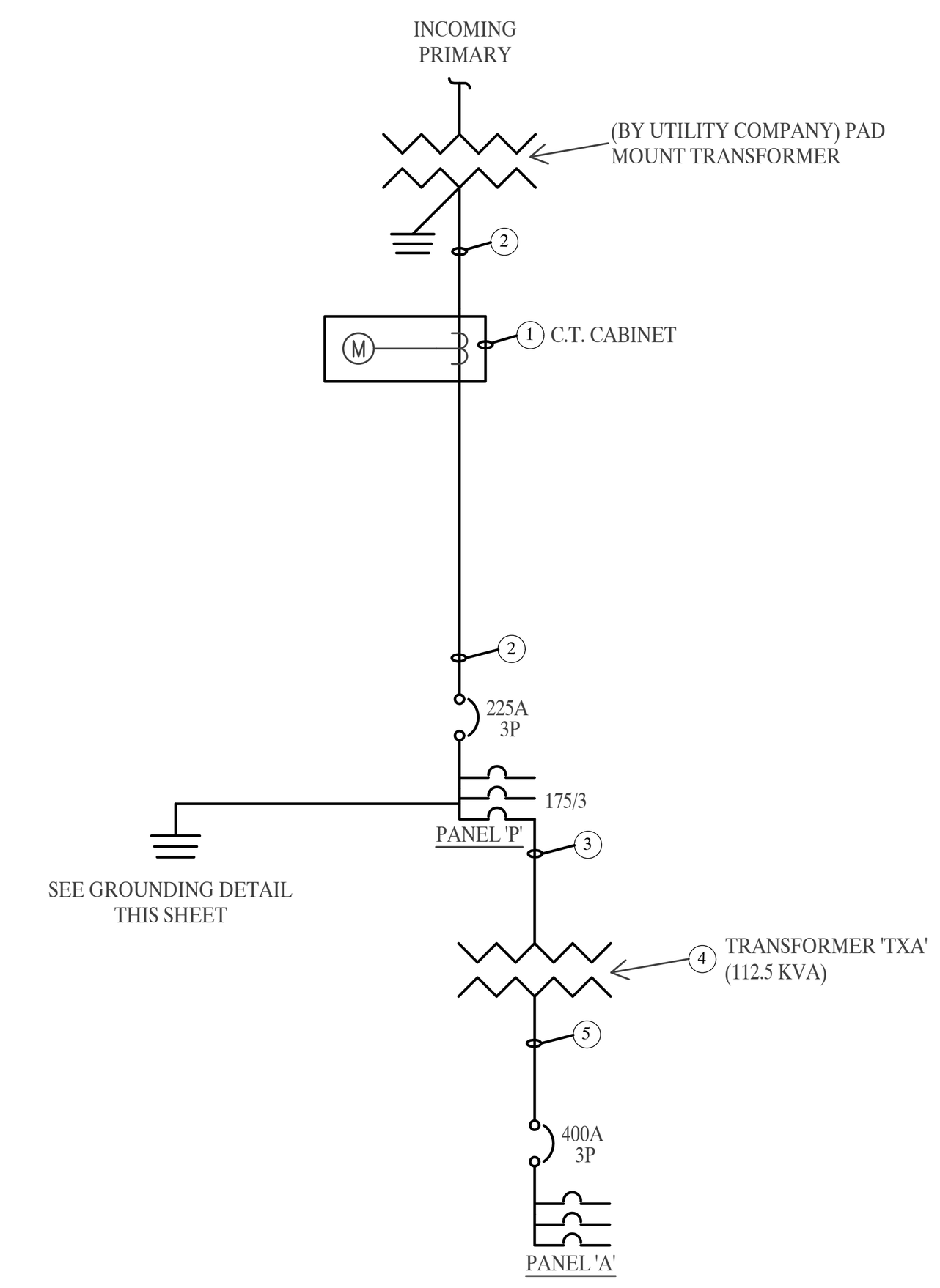
REMARKS	<LOAD> ØA	ØB	ØC	POLE	CIR. NO.	CIR. NO.	POLE	<LOAD> ØA	ØB	ØC	REMARKS
RECEPTACLE	1.4			20	1	2	20	1.4			RECEPTACLE
RECEPTACLE		1.4		20	3	4	20		1.4		RECEPTACLE
RECEPTACLE			1.4	20	5	6	20			1.4	RECEPTACLE
RECEPTACLE	1.4			20	7	8	20	1.4			RECEPTACLE
RECEPTACLE		1.4		20	9	10	20		1.4		RECEPTACLE
RECEPTACLE			1.0	20	11	12	20			1.4	RECEPTACLE
BF-1	0.5			20	13	14	20	0.5			REFRIGERATOR
COFFEE MAKER		0.5		20	15	16	20		0.5		COFFEE MAKER
MICROWAVE			0.5	20	17	18	20			0.8	MEZZANINE RECEPTACLE
EF-1	0.1			20	19	20	20	1.0			FACP
OVERHEAD DOOR		0.5		20	21	22	20		0.5		TIME CLOCK
OVERHEAD DOOR			0.5	20	23	24	20			0.8	MEZZANINE RECEPTACLE
OVERHEAD DOOR	0.5			20	25	26	20	0.2			KEY CARD
OVERHEAD DOOR		0.5		20	27	28	20		-		SPARE
OVERHEAD DOOR			0.5	20	29	30	20			-	SPARE
OVERHEAD DOOR	0.5			20	31	32	20	-			SPARE
OVERHEAD DOOR		0.5		20	33	34	25		3.0		CU-1
WH-A1			2.0	30	35	36				3.0	
	2.0			2	37	38	3	3.0			
WH-1		3.0		35	39	40	25		3.0		CU-2
			3.0		41	42				3.0	
	3.0			3	43	44	3	3.0			
FA-1		0.9		20	45	46	20		0.9		FA-2
CF-A1			0.1	20	47	48	20			0.1	CF-A2
GFUH-1	1.6			20	49	50	100	6.0			TOX BOX
GFUH-2		1.6		20	51	52	2		6.0		
GFUH-3			1.6	20	53	54	20			1.5	PTAC-A1
SPARE	-			20	55	56	2	1.5			
PTAC-A2		1.5		20	57	58	20		1.5		PTAC-A3
			1.5	2	59	60	2			1.5	
TRUCK RESTRAINT	1.0			20	61	62	20	1.0			DOCK LEVELER
TRUCK RESTRAINT		1.0		20	63	64	20		1.0		DOCK LEVELER
TRUCK RESTRAINT			1.0	20	65	66	20			1.0	DOCK LEVELER
TRUCK RESTRAINT	1.0			20	67	68	20	1.0			DOCK LEVELER
TRUCK RESTRAINT		1.0		20	69	70	20		1.0		DOCK LEVELER
TRUCK RESTRAINT			1.0	20	71	72	20			1.0	DOCK LEVELER
TRUCK RESTRAINT	1.0			20	73	74	20	1.0			DOCK LEVELER
SIGNAGE		0.2		20	75	76	20		0.5		BOILER
I.T. STATION			0.4	20	77	78	20			0.4	SECURITY STATION
WATER CLOSET AND FAUCET	0.5			20	79	80	60	4.3			BAILER
WH-A2		2.0		30	81	82			4.3		
			2.0	2	83	84	3			4.3	
	14.5	16.0	16.5					25.3	25.0	20.2	117.5 KVA (326 AMPS)

PANEL: 'P'
LOCATION: RISER ROOM

VOLTS: 277/480
AMPS: 225
CKTS: 42
LUGS: MCB

MTG: SURFACE
PHASE: 3
WIRE: 4
FEED: BOTTOM/TOP

REMARKS	<LOAD> ØA	ØB	ØC	POLE	CIR. NO.	CIR. NO.	POLE	<LOAD> ØA	ØB	ØC	REMARKS
HIGHBAY LIGHTING	2.5			20	1	2	20	1.7			LIGHTING
LIGHTING		0.5		20	3	4	20		0.5		EXTERIOR LIGHTING
EXTERIOR LIGHTING			0.5	20	5	6	20			-	SPARE
SPARE	-			20	7	8	20	-			SPARE
SPARE		-		20	9	10	20		-		SPARE
SPARE			-	20	11	12	20			-	SPARE
SPARE	-			20	13	14	20	-			SPARE
SPARE		-		20	15	16	20		-		SPARE
SPARE			-	20	17	18	20			-	SPARE
BAILER	5.0			30	19	20	20	-			SPARE
		5.0			21	22	20		-		SPARE
			5.0	3	23	24	20			-	SPARE
BAILER	5.0			30	25	26	175	37.3			TRANS. 'TXA'
		5.0			27	28			38.5		
			5.0	3	29	30	3			32.3	
COMPACTOR	5.0			30	31	32					SPACE
		5.0			33	34					SPACE
			5.0	3	35	36					SPACE
SPACE					37	38					SPACE
SPACE					39	40					SPACE
SPACE					41	42					SPACE
	17.5	15.5	15.5					39.0	39.0	32.3	158.8 KVA (191 AMPS)



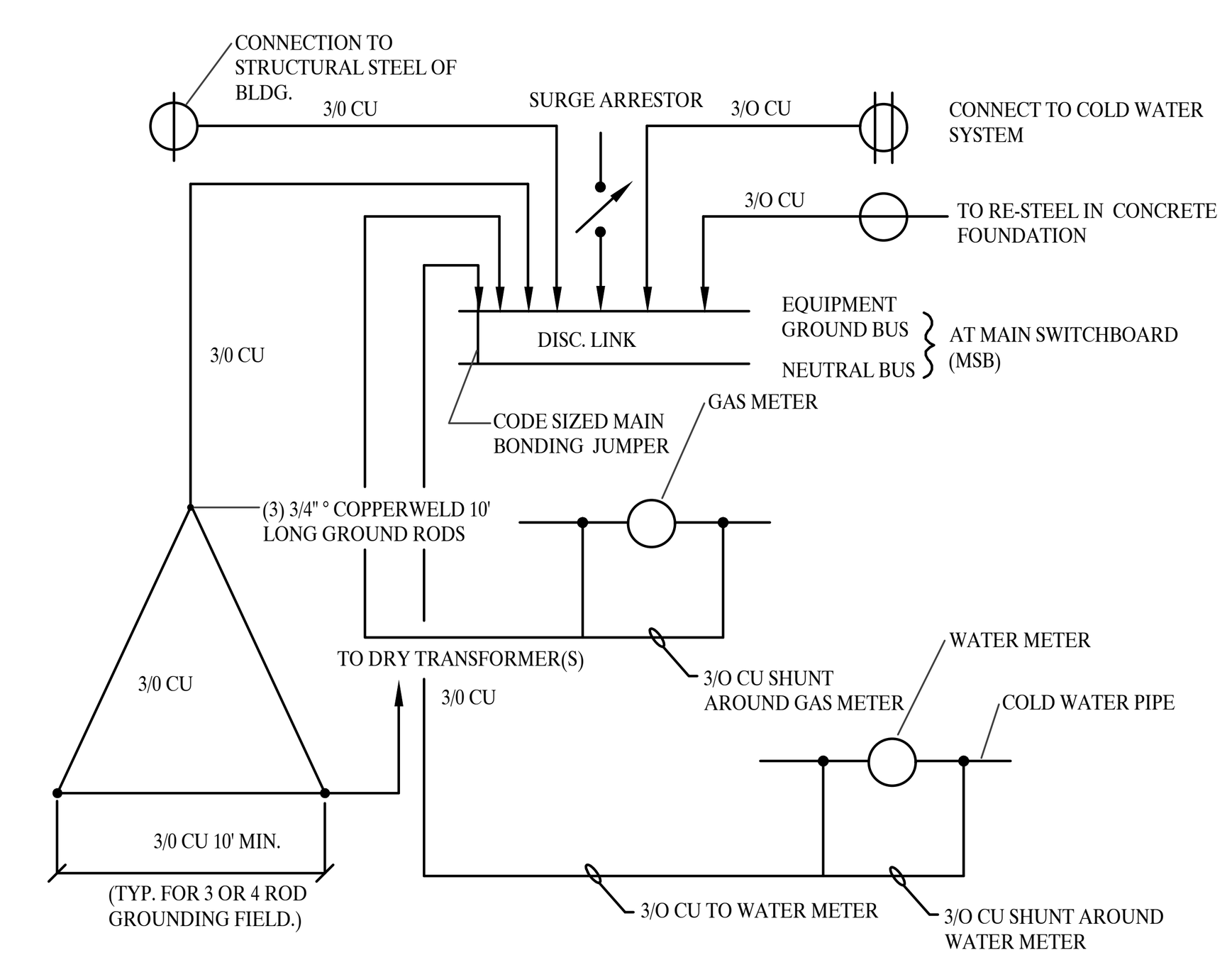
ELECTRICAL ONE-LINE DIAGRAM
NO SCALE:

PLAN NOTES

1. C.T. CABINET WILL BE PROVIDED BY UTILITY COMPANY AND INSTALLED BY E.C.
2. 4-#4/0, 1-#2 GND IN A 2 1/2" C.
3. 3-#2/0, 1-#4 GND IN A 2" C.
4. TRANSFORMER 'TXA' SHALL BE 112.5KVA, 480V-3Ø-3W PRIMARY, 120/208V 3Ø-4W SECONDARY.
5. 4-#500MCM, 1-#1/0 GND IN A 3 1/2"C.

LIGHT FIXTURE SCHEDULE

TYPE	MOUNTING	LAMPS	WATTS	NOMINAL DIMENSION	MFGR & CAT NO. OR ACCEPTABLE EQUIVALENT	REMARKS
A	LAY-IN	LED	35	2'x4'	LITHONIA #CPX-2X4-AL07-80CRI-SWW7-SWL-MVOLT	2'x4' LED LAY-IN FLAT PANEL
B	RECESSED	LED	10	4'	LITHONIA #CSS-L48-ALO3-MVOLT-40K-80CRI	4' STRIP LIGHT
C	RECESSED	LED	133	-	LITHONIA #CPHB-18000LM-SEF-GCL-MD-MVOLT-40K-70CRI-LSXR6-IBAC120 AIRCRAFT CABLE	COMPACT PRO HIGH BAY, 18000 LUMENS, STANDARD EFFICIENCY, GLARE CONTROL LENS
EM	WALL	LED	-	-	LITHONIA #ELM6 SERIES	LED EMERGENCY WALL PACK
EM1	WALL	LED	-	-	LITHONIA #ERE-W-SGL-RD-WP	LED EMERGENCY REMOTE HEAD WEATHER PROOF
FP	GROUND	LED	-	-	KAYIUNE SOLAR FLAG POLE LIGHT OUTDOOR DUSK TO DAWN 32 SUPER BRIGHT LED 4640LM AUTO ON/OFF	GROUND MOUNTED SOLAR POWER LIGHT FOR FLAG POLE
P2	POLE	LED	111	-	LSI #MRS-LED-15L-SIL-2-UNV-DIM-40 -70CRI-BRZ	LSI POLE LIGHT
P4	POLE	LED	111	-	LSI #MRS-LED-15L-SIL-4-UNV-DIM-40 -70CRI-BRZ	LSI POLE LIGHT
P4S	POLE	LED	111	-	LSI #MRS-LED-15L-SIL-4-UNV-DIM-40 -70CRI-BRZ-IL	LSI POLE LIGHT
WP	WALL	LED	24	-	LITHONIA #WPX1 LED P2-40K-MVOLT-PE	EXTERIOR LED WALLPACK
X	UNIV	LED	-	-	LITHONIA #LHM-LED-R-M6	LED EMERGENCY/EXIT WITH BATTERY BACKUP
X1	UNIV	LED	-	-	LITHONIA #LHQM-LED-R-M6	LED EMERGENCY/EXIT COMBO UNIT



E.C. SHALL FOLLOW THIS DETAIL FOR PROPER GROUNDING CONNECTIONS.

GROUNDING DETAIL
NOT TO SCALE

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

DAE
Mechanical, Electrical, & Energy Engineering

JOHNSON COUNTY
RECYCLING CENTER
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HANNAH R. KIGER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS:
#	Date	Desc.

100% CONSTRUCTION DOCUMENTS

PROJECT: 24020
DATE: 04.22.2024
DRAWN BY: DAE

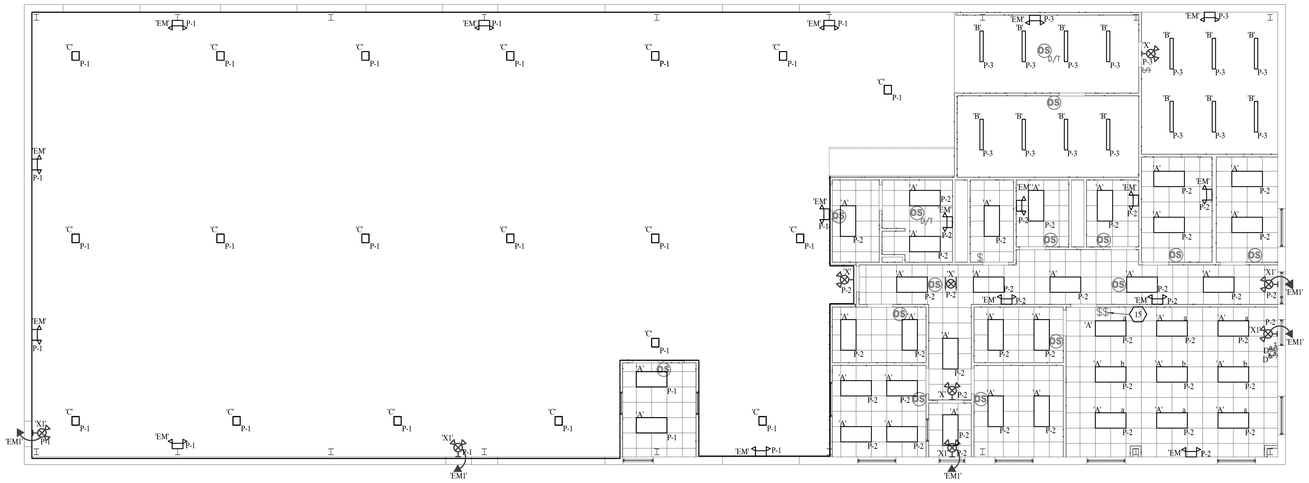
SHEET NAME

ELECTRICAL SCHEDULES

A	B
C	D

N

E004



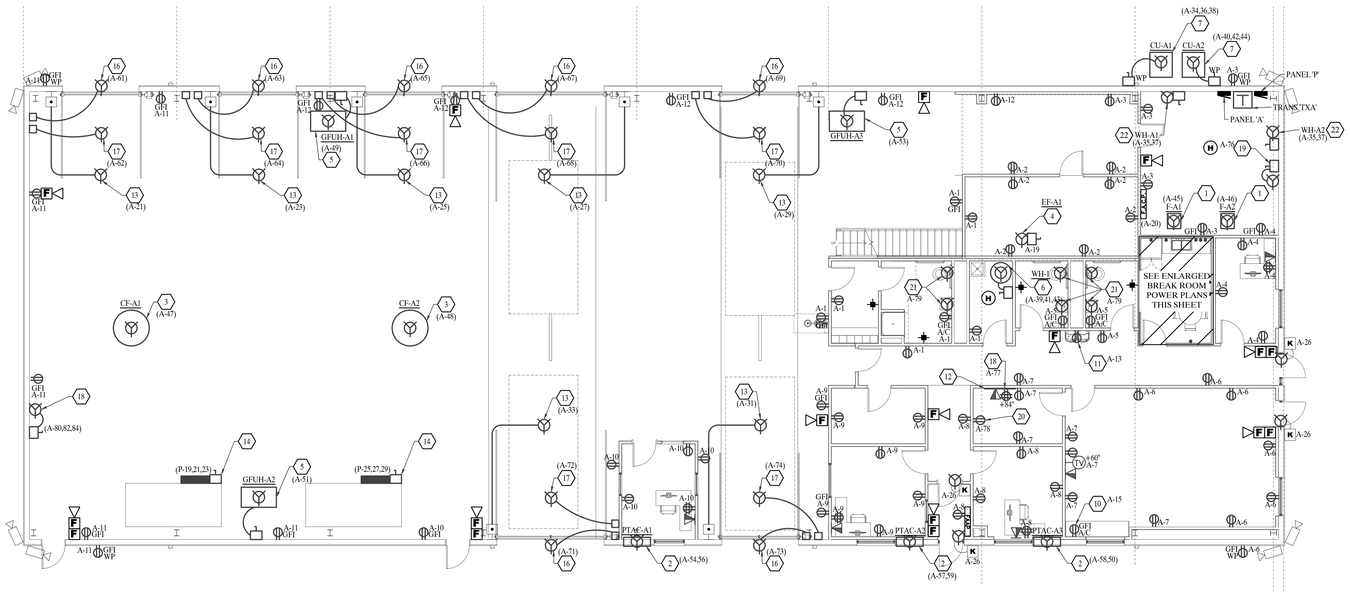
FIRST FLOOR - LIGHTING PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

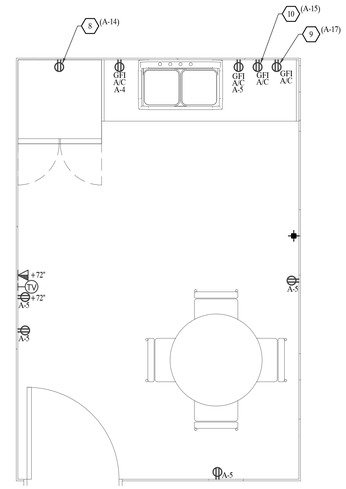
A. ALL WORK SHALL BE IN ACCORDANCE WITH THE BEST QUALITY STANDARDS OF THE TRADE, AND SHALL CONFORM WITH ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS.
B. THE CONTRACTOR SHALL INCLUDE IN BID PROPOSAL ALL COSTS REQUIRED TO COMPLETELY AND PROPERLY INSTALL ALL WORK REQUIRED FOR THE PROJECT, AND SHALL EXAMINE THE SCOPE OF WORK OF OTHER TRADES PRIOR TO SUBMITTING A BID PROPOSAL.
C. CONSTRUCTION DOCUMENTS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, HOWEVER, SYSTEMS HAVE BEEN SHOWN DIAGRAMMATICALLY AND IN SOME CASES, ENLARGED FOR CLARITY. ANY OFFSETS, ADDITIONAL FITTINGS, AND/OR APPURTENANCES REQUIRED TO PROVIDE A COMPLETE AND COORDINATED SYSTEM SHALL BE BORNE BY THE CONTRACTOR.
D. ALL CIRCUITS OVER 100' IN LENGTH SHALL BE A MINIMUM #10 AWG CONDUCTOR.
E. WIRING SYSTEM SHALL BE CONDUIT AND WIRE. MINIMUM WIRE SIZE SHALL BE #12 AWG. USE SOLID CONDUCTOR FOR #10 AWG AND SMALLER, USE STRANDED IN LARGER SIZES.
F. ALL COVER PLATES FOR ELECTRICAL DEVICES SHALL BE OF A COLOR TO MATCH THE AREA COLOR SCHEME AS DIRECTED BY THE OWNER.
G. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY CONDUIT, WIRING, PANELS, LIGHTING, ELECTRICAL DEVICES, SWITCHES AND OTHER COMPONENTS IN COMPLETE COMPLIANCE WITH ALL CURRENT FEDERAL, STATE AND LOCAL CODES AND ORDINANCES.
H. INSTALL GROUND WIRE IN ALL FEEDERS AND BRANCH CIRCUITS.
I. MINIMUM CONDUIT SIZE SHALL BE 3/4".
J. ALL DEDICATED RECEPTACLES SHALL BE 20 AMP RATED.

(#) KEYED PLAN NOTES:

1. 20A, 120V-1Ø CONNECTION FOR F-A1 AND F-A2.
2. 20A, 208V-1Ø CONNECTION FOR PTAC-A1, PTAC-A2, AND PTAC-A3.
3. 20A, 120V-1Ø CONNECTION FOR CF-A1 AND CF-A2.
4. 20A, 120V-1Ø CONNECTION FOR EXHAUST FAN. CONNECT TO LIGHTING CIRCUIT IN THIS ROOM AND CONTROL WITH LIGHTS.
5. 20A, 120V-1Ø CONNECTION FOR GFUH-1, GFUH-2, AND GFUH-3.
6. 35A, 208V-3Ø CONNECTION FOR WH-1.
7. 25A, 208V-3Ø CONNECTION FOR CU-A1 AND CU-A2. INSTALL 3-#12, 1-#12 GND IN A 3/4" C.
8. DEDICATED RECEPTACLE FOR REFRIGERATOR.
9. DEDICATED RECEPTACLE FOR MICROWAVE.
10. DEDICATED RECEPTACLE FOR COFFEE MAKER.
11. DEDICATED RECEPTACLE FOR BOTTLE FILLER.
12. INSTALL 3/4" TREATED PLYWOOD BACKBOARD FOR TELEPHONE/I.T. SYSTEMS, DATA RACKS. INSTALL 4" CONDUIT WITH PULL STRING AT BOARD AND STUB-OUT 5' BEYOND BUILDING.
13. 20A, 120V-1Ø CONNECTION FOR OVERHEAD DOOR. ALSO PROVIDE ROUGH-IN FOR DOOR CONTROLLER.
14. 30A, 480V-3Ø CONNECTION FOR BAILER CONTROL PANEL. INSTALL 3 - #10, 1 - #10 GND IN A 3/4" C. VERIFY ELECTRICAL REQUIREMENTS WITH OWNER.
15. PROVIDE OVERRIDE DIMMER SWITCHES FOR OCCUPANCY SENSOR.
16. 20A, 120V-1Ø CONNECTION FOR TRUCK RESTRAINT DEVICE. ALSO PROVIDE ROUGH-IN FOR TRUCK RESTRAINT CONTROLLER.
17. 20A, 120V-1Ø CONNECTION FOR DOCK LEVELER. ALSO PROVIDE ROUGH-IN FOR DOCK LEVELER CONTROLLER.
18. DEDICATED QUAD RECEPTACLE FOR I.T. STATION.
19. 20A, 120V-1Ø CONNECTION FOR BOILER.
20. DEDICATED RECEPTACLE FOR SECURITY STATION.
21. 20A, 120V-1Ø CONNECTION FOR FAUCET AND WATER CLOSET.
22. 30A, 208V-1Ø CONNECTION FOR ELECTRIC WALL HEATER. INSTALL 2-#10, 1-#10 GND IN A 3/4"C.



FIRST FLOOR - POWER PLAN
SCALE: 1/8" = 1'-0"



ENLARGED BREAK ROOM - POWER PLAN
SCALE: 1/2" = 1'-0"

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
INDIANAPOLIS, IN 46204

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DENKLER ENGINEERING, INC
Mechanical, Electrical, & Energy Engineering

JOHNSON COUNTY RECYCLING CENTER
FRANKLIN, IN

HANNAH R. KIGER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

REVISIONS:

#	Date	Desc.

100% CONSTRUCTION DOCUMENTS

PROJECT: 24020
DATE: 04.22.2024
DRAWN BY: DAE

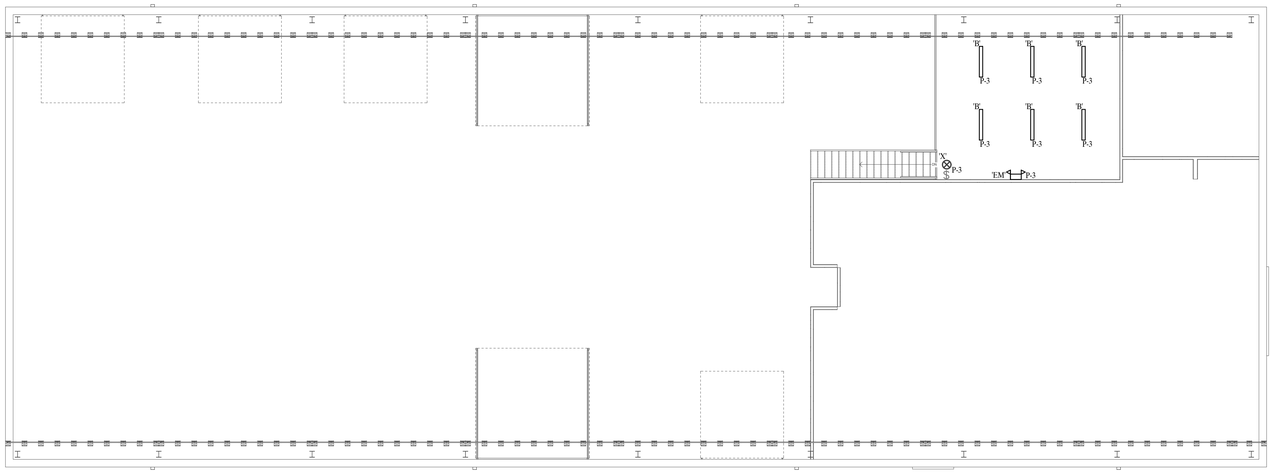
SHEET NAME

LIGHTING AND POWER PLAN

E101

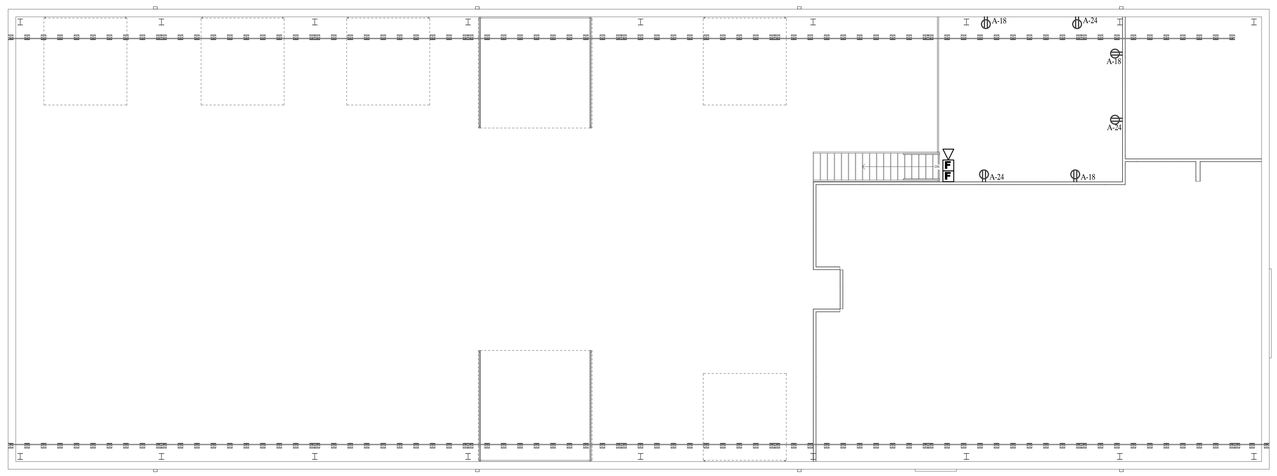
A | B
C | D

N



MEZZANINE LIGHTING PLAN

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



MEZZANINE POWER PLAN

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

LANCER ASSOCIATES ARCHITECTURE
145 N. EAST ST.
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HANNAH R. KIGER
REGISTERED
No.
10505427
STATE OF
INDIANA
PROFESSIONAL ENGINEER

REVISIONS:

#	Date	Desc.

100% CONSTRUCTION DOCUMENTS

PROJECT:	24020
DATE:	04.22.2024
DRAWN BY:	DAE

SHEET NAME

MEZZANINE POWER AND LIGHTING PLAN

E201

A B
C D

N

GENERAL NOTES:

A. ALL WORK SHALL BE IN ACCORDANCE WITH THE BEST QUALITY STANDARDS OF THE TRADE, AND SHALL CONFORM WITH ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS.
B. THE CONTRACTOR SHALL INCLUDE IN BID PROPOSAL ALL COSTS REQUIRED TO COMPLETELY AND PROPERLY INSTALL ALL WORK REQUIRED FOR THE PROJECT, AND SHALL EXAMINE THE SCOPE OF WORK OF OTHER TRADES PRIOR TO SUBMITTING A BID PROPOSAL.
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F. ALL COVER PLATES FOR ELECTRICAL DEVICES SHALL BE OF A COLOR TO MATCH THE AREA COLOR SCHEME AS DIRECTED BY THE OWNER.
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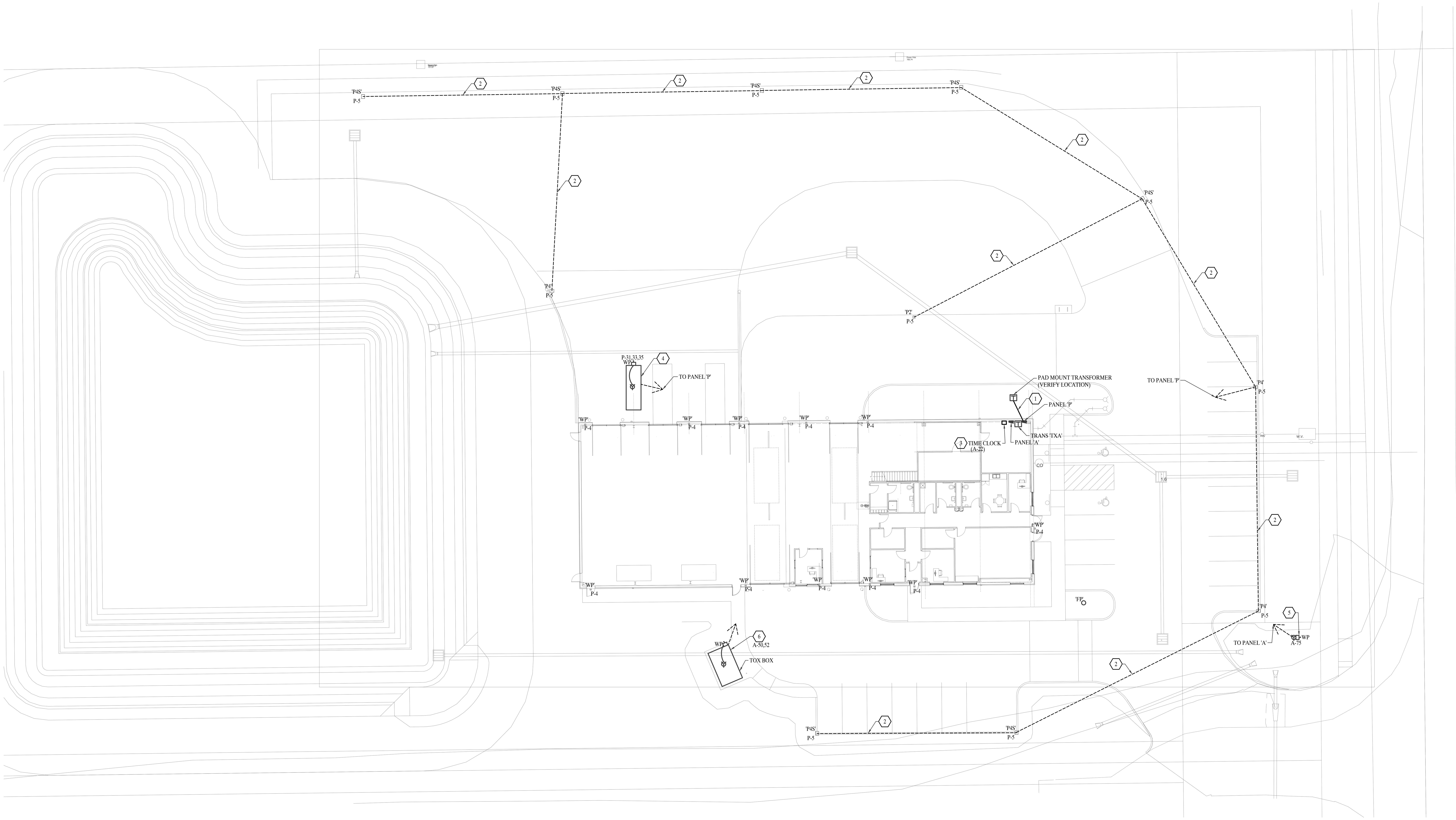
H. INSTALL GROUND WIRE IN ALL FEEDERS AND BRANCH CIRCUITS.
I. MINIMUM CONDUIT SIZE SHALL BE 3/4".
J. ALL DEDICATED RECEPTACLES SHALL BE 20 AMP RATED.

KEYED PLAN NOTES:

1. SEE ONE-LINE DIAGRAM.
2. 2-#10, 1-#10 GND IN A 1"C.
3. PROVIDE 2-CHANNEL DIGITAL TIME CLOCK SIMILAR TO 'TORK' #DG200A. CIRCUITS AS FOLLOWS"
   P-4: 'DUSK-TO-DAWN'
   P-5: 'DUSK-TO-TIME'
4. 30A, 480V-3Ø CONNECTION FOR COMPACTOR CONTROL PANEL. INSTALL 3 - #10, 1 - #10 GND IN A 1" C. VERIFY ELECTRICAL REQUIREMENTS WITH OWNER.
5. 20A, 120V-1Ø CONNECTION FOR SIGNAGE. INSTALL 2-#10, 1-#10 GND IN A 1"C.
6. 100A, 208V-1Ø CONNECTION FOR TOX BOX. INSTALL 2-#3, 1-#8 GND IN A 1 1/2"C. VERIFY ELECTRICAL REQUIREMENTS WITH OWNER.



SITE PLAN - POWER
SCALE: 1/16" = 1'-0"

A	B
C	D

N

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STATE OF INDIANA
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PROJECT: 24020
DATE: 04.22.2024
DRAWN BY: DAE

SHEET NAME
SITE PLAN – POWER

E300